



DOS AGREEMENT # 20-161

COUNTY OF MENDOCINO

Crisis Residential Treatment Facility

631 South Orchard Ave.

UKIAH, CALIFORNIA 95482

BID DOCUMENTS

Bid # 32-20

PROJECT LOCATION:

COUNTY OF MENDOCINO
Crisis Residential
Treatment Facility
631 South Orchard Ave.
Ukiah, CA 95482

INFORMATION:

COUNTY OF MENDOCINO

Facilities & Fleet Division
851 Low Gap Road
Ukiah, California 95482

Mendocino County Crisis Residential Treatment Facility

SECTION 00500 – AGREEMENT FOR LUMP SUM
BID

IN WITNESS WHEREOF

DEPARTMENT FISCAL REVIEW:

Janelle Rau **11/12/2020**

DEPARTMENT HEAD DATE

Budgeted: ☒ Yes ☐ No

Budget Unit: CA 1713

Line Item: 864365 CA003

Grant: ☐ Yes ☒ No

Grant No.: _____

COUNTY OF MENDOCINO

By: John Haschak
JOHN HASCHAK, Chair
BOARD OF SUPERVISORS

Date: **NOV 17 2020**

ATTEST:

CARMEL J. ANGELO, Clerk of said Board

By: Lyndsey Daugherty
Deputy **NOV 17 2020**

I hereby certify that according to the provisions of Government Code Section 25103, delivery of this document has been made.

CARMEL J. ANGELO, Clerk of said Board

By: Lyndsey Daugherty
Deputy **NOV 17 2020**

INSURANCE REVIEW:

By: Carmel J. Angelo
Risk Management **11/12/2020**

Date: _____

CONTRACTOR/COMPANY NAME

By: [Signature]

Date: 11/12/20

NAME AND ADDRESS OF CONTRACTOR:

Cupples and Sons Construction, Inc.

501 St. Mary's Ave,

Hopland, CA 95449

By signing above, signatory warrants and represents that he/she executed this Agreement in his/her authorized capacity and that by his/her signature on this Agreement, he/she or the entity upon behalf of which he/she acted, executed this Agreement

COUNTY COUNSEL REVIEW:

APPROVED AS TO FORM:

CHRISTIAN M. CURTIS,
County Counsel

By: Matthew Kiedrowski
Deputy

Date: **11/12/2020**

EXECUTIVE OFFICE/FISCAL REVIEW:

By: Janelle Rau
Deputy CEO

Date: **11/12/2020**

Signatory Authority: \$0-25,000 Department; \$25,001- 50,000 Purchasing Agent; \$50,001+ Board of Supervisors

Exception to Bid Process Required/Completed ☐

Mendocino County Business License: Valid ☐

Exempt Pursuant to MCC Section: _____

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SECTION 00002 - PROJECT DIRECTORY

PROJECT	MENDOCINO COUNTY CRISIS RESIDENTIAL TREATMENT FACILITY 631 South Orchard Ave. Ukiah, CA 95482
OWNER:	Mendocino County Behavioral Health and Recovery Services Administration 1120 S Dora St. Ukiah CA 95482 (707) 472-2300 Alyson Bailey, Administrative Project Manager, Measure B
AGENT:	Mendocino County Executive Office Facilities and Fleet Division 851 Low Gap Road Ukiah, CA 95482 (707) 234-6054 Doug Anderson, Assistant Facility Manager
ARCHITECT:	Nacht & Lewis 600 Q Street, Suite 100 Sacramento CA 95811 (916) 329-4000 Eric Fadness, Architect
CIVIL ENGINEER:	LACO Associates 776 S State St. Suite 103 Ukiah, CA 95482 (707) 472-2300
LANDSCAPE ARCHITECT:	GSM Landscape Architects 1700 Soskol Ave. Suite 23 Napa CA 94559 (707) 255-7630

MECHANICAL
ENGINEER:

Mazzetti
3600 American River Dr #203
Sacramento CA 95864
(916) 978-4122

SITE ELECTRICAL
ENGINEER:

Mazzetti
3600 American River Dr #203
Sacramento CA 95864
(916) 978-4122

END OF SECTION

SECTION 00005 - TABLE OF CONTENTS

BIDDING REQUIREMENTS AND REFERENCE MATERIAL

00001	Cover Sheet
00002	Project Directory
00005	Table of Contents
00015	List of Drawings, Tables and Schedules
00020	Notice Inviting Bids
00100	Instructions to Bidders
00120	Qualification Application
00306	Antitrust Claim Assignment
00307	Non-Collusion Affidavit
00308	Public Contract Code Questionnaire
00310	Bid Form
00430	Subcontractor Listing
00500	Agreement for Lump Sum Bid
00501	Workers' Compensation Certification
00530	Substitution Warranty
00600	Geotechnical Report
00650	Construction Site Storm Water Policy
00700	General Conditions
00811	Unforeseen Physical Conditions

DIVISION 1 – GENERAL REQUIREMENTS

01010	Summary of Work
01040	Coordination
01100	Alternates
01200	Allowances
01310	Progress Schedules
01340	Submittals and Substitutions
01400	Quality Control
01500	Construction Facilities & Temporary Controls
01700	Contract Closeout
01710	Cleaning

DIVISION 2 – SITEWORK

02080	Construction Waste Management

DIVISION 6 -WOOD, PLASTICS, AND COMPOSITES

061063	Exterior Rough Carpentry

DIVISION 8 - OPENINGS

087100	Door Hardware

DIVISION 12- FURNISHINGS

129300 Site Furnishings

DIVISION 13- SPECIAL CONSTRUCTION

133423 Prefabricated Modular Structures

DIVISION 26 - ELECTRICAL

260500 Common Work Results for Electrical
260519 Low-voltage Electrical Power Conductors and Cables
260526 Grounding and Bonding for Electrical Systems
260533 Raceway and Boxes for Electrical Systems
260553 Identification for Electrical Systems
260570 Overcurrent Protective Devices Studies
260800 Start-up Testing
260923 Lighting Control Devices
262416 Panelboards
262726 Wiring Devices
263100 Photovoltaic Power Systems
263213 Packaged Engine Generator Systems
263600 Transfer Switches
265600 Exterior Lighting

DIVISION 27 - COMMUNICATIONS

270500 Common Work Results for Communications

DIVISION 31 - EARTHWORK

311000 Site Preparation
312000 Earthwork
312300 Structural Excavation and Fill
312316 Trenching Backfill and Compaction
316800 Foundation Tiedown Anchors

DIVISION 32 – EXTERIOR IMPROVEMENTS

321216 Asphalt Paving and Base
321223 Paving Marking and Signs
321541 Permeable Stabilized Decomposed Granite Paving
321600 Concrete Sidewalks and Curbs
323113 Chain Link Fences and Gates
328400 Irrigation
329000 Landscape Planting

DIVISION 33 - UTILITIES

331100 Water Utility Distribution Piping
333000 Sanitary Sewerage Utilities
334000 Site Drainage

APPENDIX

Geotechnical Exploration and GeoHazard Report

Special Inspection and Testing Schedule – Short Form

Operation and Maintenance Manual – Department of Planning and Building Services Form

Draft Initial Study and Environmental Checklist

END OF SECTION

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SECTION 00015 - LIST OF DRAWINGS, TABLES AND SCHEDULES

INDEX OF DRAWINGS

G-000	COVER SHEET
G-111	PROJECT DATA
G-201	CAL GREEN MANDATORY MEASURES
G-202	CAL GREEN MANDATORY MEASURES
C0.1	CONSTRUCTION & ENGINEERING NOTES
C0.2	GENERAL NOTES & ABBREVIATIONS
C1.0	SITE PLAN & TYPICAL BLDG SECTIONS
C2.0	GRADING & LID PLAN
C3.0	SITE UTILITY & STORM DRAIN PLANS
C4.0	ORCHARD AVE FRONTAGE IMPROVEMENTS
C5.0	ORCHARD AVE CROSS SECTIONS
C6.0	EROSION CONTROL PLANS
C7.0	DETAILS 1
C7.1	DETAILS 2
C7.2	DETAILS 3
LID-1	LID EXHIBIT
L-100	MATERIALS, DETAIL REFERENCE & LAYOUT PLAN
L-101	CONSTRUCTION DETAILS
L-200	IRRIGATION PLAN
L-201	IRRIGATION NOTES & DETAILS
L-202	IRRIGATION NOTES & DETAILS
L-300	PLANTING PLAN
L-301	PLANTING NOTES, DETAILS & WELO WORKSHEET
A-101	SITE PLAN
A-102	SITE DETAILS
E000	SYMBOLS AND DRAWING INDEX
E001	SITE LIGHTING TITLE 24
E101	ELECTRICAL SITE PLAN

E500	POWER ONE LINE DIAGRAM

CONTINUED ON NEXT PAGE

CRITERIA DRAWINGS (Prefabricated Modular Buildings)	
A-000	CODE ANALYSIS – CONSTRUCTION & EXITING
A-001	CODE ANALYSIS – ACCESSIBILITY
A-110	FLOOR PLAN
A-111	DIMENSION PLAN
A-120	ROOF PLAN
A-130	REFLECTED CEILING PLAN
A-140	FINISH PLAN
A-150	FURNITURE PLAN
A-200	BUILDING ELEVATIONS
A-300	BUILDING SECTIONS
A-400	ENLARGED RESTROOM PLANS
A-410	ENLARGED KITCHEN PLAN & INTERIOR ELEVATIONS
A-500	EXTERIOR DETAILS
A-510	INTERIOR DETAILS
A-610	DOOR & WINDOW SCHEDULES
A-620	FINISH SCHEDULE

END OF SECTION

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COUNTY OF MENDOCINO
Executive Office
Facilities & Fleet Division

CARMEL J. ANGELO
CHIEF EXECUTIVE OFFICER

851 Low Gap Road
Ukiah, CA 95482

ADDENDUM NO. 01

Bid Opening – **October 22, 2020** at 2:00 PM PST

CRISIS RESIDENTIAL TREATMENT FACILITY

BID NO. 32-20

The additions, omissions, clarifications, and/or corrections herein shall be made part of the Contract plans and specifications and shall be included in the Scope of Work and bids to be submitted. This Addendum modifies the original plans and specifications as described below:

List of interested Prefabricated Modular Structures – Contractors*:

1. HybridCore Homes 416 B Street, Suite C Santa Rosa, CA 95401 (707) 523-3673 Jeff Ferrel	2. Hybrid Pre-fab Homes 5755 Mountain Hawk Drive Suite 208 Santa Rosa, CA 95409 (707) 527-3838
3. JL Modular/JL Construction 70 Stony Point Road, Suite D Santa Rosa, CA 95401 (707) 527-5788 Jeff Luchetti	4. Meehleis Modular Buildings, Inc. 1303 E. Lodi Avenue Lodi, CA 95240 (209) 334-4637 or (916) 802-8220 Carmen
5. All American Modular 13631 Montfort Rd, Herald, CA 95638 (209) 747-1788 Ranse Gale	6. BlokModular Constructors, Inc. 404 N 2nd Ave. Ste C, Upland, CA 91786 (888) 256- 5663 Kevin Kruze

* Note: These prefabricated modular structure contractors were contacted and had shown interest in the project. The listing above is not all inclusive or in any particular order, nor has the County pre-qualified them. The list is provided for bidder information only.

SPECIFICATIONS

A. SECTION 00020 – NOTICE INVITING BIDS

1. DELETE the first paragraph on page 1 in its entirety.

REPLACE this paragraph with the following:

“Notice is hereby given that sealed bids will be received at the Executive Office - Facilities and Fleet Division, County of Mendocino, 851 Low Gap Road, Ukiah, California 95482 until the hour of 2:00 p.m., **Thursday, October 22, 2020**, as determined by the clock on the wall of the Executive Office - Facilities and Fleet Division, County of Mendocino. Bids will be publicly opened and read at that time. Bidders, however, may attend the bid opening virtually by using the link: <https://mendocinocounty.zoom.us/j/89491567270?pwd=Y3gzZGVCUlYxb25hNjJnSkxranpZZz09> (Meeting ID:894 9156 7270; Passcode 846325) and join the bid opening in the Executive Office - Facilities and Fleet Division, County of Mendocino, 851 Low Gap Road, Ukiah, California for the following project:”

B. SECTION 00100 – INSTRUCTIONS TO BIDDERS

1. DELETE paragraph 1.1, subparagraph A, *BIDS RECEIVED*, in its entirety.

REPLACE this paragraph with the following:

“1.1 BIDS RECEIVED

- A. Sealed bids for the Mendocino County **Crisis Residential Treatment Facility** Project will be received at the Facilities and Fleet Division Office, County of Mendocino, 851 Low Gap Road, Ukiah, California 95482, until **2:00 p.m.** as determined by the clock on the wall of the Facilities and Fleet Division Office, on **October 22, 2020** and then publicly opened and read aloud in the Facilities and Fleet Division Office, County of Mendocino.

Bidders, however, may attend the bid opening virtually by using the link: <https://mendocinocounty.zoom.us/j/89491567270?pwd=Y3gzZGVCUlYxb25hNjJnSkxranpZZz09> (Meeting ID:894 9156 7270; Passcode 846325) and join the bid opening in the Executive Office - Facilities and Fleet Division, County of Mendocino, 851 Low Gap Road, Ukiah, California.

C. SECTION 00100 – INSTRUCTIONS TO BIDDERS

1. DELETE paragraph 1.18, *Environmental Impact Report*, on page 6 in its entirety.

REPLACE this paragraph as follows and see Attachment No. 2 for a copy of the document:

“1.18 ENVIRONMENTAL IMPACT REPORT

Bidder agrees to perform its work in conformance with any environmental impact reports that may be applicable to the project. The Notice of Determination, dated September 23, 2020 and



COUNTY OF MENDOCINO

Executive Office

Facilities & Fleet Division

CARMEL J. ANGELO
CHIEF EXECUTIVE OFFICER

851 Low Gap Road
Ukiah, CA 95482

Draft Final Study and Environmental Checklist for the Mendocino County Crisis Residential Treatment (CRT) Facility, dated August 2020, from Elizabeth Burks (Principal), Consulting Planner for the County of Mendocino, LACO Associate, is attached in the Appendix.”

D. SECTION 01400 – QUALITY CONTROL

1. ADD to subparagraph C to paragraph 1.6 in Section 01400, after subparagraph B, page 5, as follows:

“C. Provide all tests and inspections required by Section 1701 of the California Building Code. The special inspection form and the inspection firm shall be in accordance with the county requirements. Tests and inspections shall include, but not be limited to, the following:

1. Site and Building Improvements:

a. Geotechnical Subgrade Inspections:

- i. Verify that the building pad subgrade excavation and site civil improvements are consistent with the project soils report prior to placement of engineered fill.
- ii. Review and approval of proposed engineered fill prior to placement in conformance with the project plans and specifications.

b. Soil Compaction Testing and Inspections:

- i. Inspection of subgrade and engineered fill during placement at the building pad and other site civil improvements as shown on the approved plans.
- ii. Monitor lift thickness in conformance with the project geotechnical soils report.
- iii. Density testing of subgrade and engineered fill in conformance with the project plans and specifications.

c. Asphalt Testing and Inspection:

- i. Inspection of asphalt placement during paving operations.
- ii. Density testing of asphalt per City of Ukiah standards.

- iii. Sample hot mix during the paving operations while performing the density testing task.
- d. Concrete cylinder strength and slump tests:
 - i. For building foundation concrete, including the porch and ramps
- e. Placement of reinforcing.
- f. Placement of Concrete.
- g. Foundation Tie Down Anchors to foundation.
- h. Installation of post installed concrete anchors and reinforcement dowels.
- i. Testing of any building systems as required under the purview of the contractor's engineers or record.

See form, *Statement of Special Inspections*, attached at the back of these specifications. Provided for reference only.”

APPENDIX

- A. **ADD NEW** APPENDIX, *Bidder's Questions and Answers*, at the back of the specifications, after *Draft Initial Study and Environmental Checklist*, on page 3, and:
 - 1. “**INSERT NEW**, *Bidder's Questions and Answers*, with date returned October 9, 2020. See Appendix Attachments; Attachment No. 1, (3 pages)
- B. **REPLACE** APPENDIX, *Draft Initial Study and Environmental Checklist*, dated July 2020, at the back of the specifications, with **NEW** *Notice of Determination*, dated September 23, 2020, and **NEW** *Draft Initial Study and Environmental Checklist*, dated August 2020, see Appendix Attachments; Attachment No. 2, (209 pages).
- C. **ADD NEW** APPENDIX, *Statement of Special Inspections*, at the back of the specifications, after *Bidder's Questions and Answers*.
 - 1. “**INSERT NEW**, *Statement of Special Inspections*, See Appendix Attachments; Attachment No. 3, (11 pages).



COUNTY OF MENDOCINO
Executive Office
Facilities & Fleet Division

CARMEL J. ANGELO
CHIEF EXECUTIVE OFFICER

851 Low Gap Road
Ukiah, CA 95482

PLANS/DRAWINGS

- A. REPLACE Detail 8, *Toilet Elevation – West*, on sheet A-400 as shown on Addendum Drawing AD1, ITEM #1. See Attachment No. 5.
- B. REPLACE Detail 12, *Enlrgd Plan – Toilet – Typical*, on sheet A-400 as shown on Addendum Drawing AD1, ITEM #2. See Attachment No. 6.

ATTACHMENTS:

1. APPENDIX ATTACHMENTS (Separate PDF document)
 - (1) ATTACHMENT NO. 1 – Bidder's Questions and Answers, with date returned October 9, 2020, (3 pages)
 - (2) ATTACHMENT NO. 2 – Notice of Determination, dated September 23, 2020 (4 pages) and Draft Initial Study and Environmental Checklist, dated August 2020 (205 Pages).
 - (3) ATTACHMENT NO. 3 – County of Mendocino, Department of Planning and Building Service, Statement of Special Inspections, (11 pages)
2. ATTACHMENT NO. 4 – Pre-Bid Conference Presentation, dated October 1 and 5, 2020 with Sign-In Sheets, (34 pages)
3. ATTACHMENT NO. 5 – Addendum Drawing AD1, ITEM# 1, (1 page)
4. ATTACHMENT NO. 6 – Addendum Drawing AD1, ITEM# 2, (1 page)

BIDDERS ARE REMINDED THAT THEY SHALL COMPLETE THE ADDENDA CONTRACTOR ACKNOWLEDGEMENT IN THE BID FORM OF THEIR SPECIFICATION BOOK (SECTION 00310-3). FAILURE TO DO SO MAY RESULT IN DISQUALIFICATION OF THE SUBMITTED BID.

END OF ADDENDUM NO. 1

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COUNTY OF MENDOCINO
Executive Office
Facilities & Fleet Division

CARMEL J. ANGELO
CHIEF EXECUTIVE OFFICER

851 Low Gap Road
Ukiah, CA 95482

ADDENDUM NO. 02

Bid Opening – **October 22, 2020** at 2:00 PM PST

CRISIS RESIDENTIAL TREATMENT FACILITY

BID NO. 32-20

The additions, omissions, clarifications, and/or corrections herein shall be made part of the Contract plans and specifications and shall be included in the Scope of Work and bids to be submitted. This Addendum modifies the original plans and specifications as described below:

SPECIFICATIONS

A. SECTION 00020 – NOTICE INVITING BIDS (Repeat from Addendum No.1)

1. DELETE the first paragraph on page 1 in its entirety.

REPLACE this paragraph with the following:

“Notice is hereby given that sealed bids will be received at the Executive Office - Facilities and Fleet Division, County of Mendocino, 851 Low Gap Road, Ukiah, California 95482 until the hour of 2:00 p.m., Thursday, October 22, 2020, as determined by the clock on the wall of the Executive Office - Facilities and Fleet Division, County of Mendocino. Bids will be publicly opened and read at that time. Bidders, however, may attend the bid opening virtually by using the link: <https://mendocinocounty.zoom.us/j/89491567270?pwd=Y3gzZGVCUlYxb25hNjJnSkxranpZZz09> (Meeting ID:894 9156 7270; Passcode 846325) and join the bid opening in the Executive Office - Facilities and Fleet Division, County of Mendocino, 851 Low Gap Road, Ukiah, California for the following project.”

B. SECTION 133423 – PREFABRICATED MODULAR STRUCTURES

1. REVISE paragraph 1.6, H., 5., c, *Building Insulation*: , c., on page 7, as follows:

- “c. Roof insulation shall be faced fiberglass batt type and shall have a rating of R38. Minimum flame spread classification of 25 or less and a smoke developed rating of 50 or less. Provide additional insulation where required by energy calculations.

2. DELETE paragraph 1.6, I., 3., h, *Compressed Air*, on page 16 in its entirety.
3. DELETE paragraph 1.6, I., 3., e, *Sewer & Vent*, on page 15 in its entirety.

REPLACE this paragraph with the following:

“e. Sewer & Vent:

- 1) All building fixtures shall be served by new cast iron vent piping.
- 2) All building fixtures shall be served by new cast iron sewer piping below the ground and ABS Schedule 40 ASTM D2680 above ground.
- 3) Domestic pipe only, no imported pipe.”

4. DELETE paragraph 1.6, I., 4., k, *Fire Alarm*, on page 21 in its entirety.

REPLACE this paragraph with the following:

“k. Fire Alarm:

- 1) Provide and install fire detection, alarm, and carbon monoxide detection. Devices shall meet NFPA 72, CBC 907.2.10, and CBC Chapter 11B (ADA compliant). Provide hard wired devices with battery backup. Devices shall be interconnected per CBC 907.2.10.5 and shall be a combination CO2/Smoke/strobe. Locate per CBC 907.2.10.2.”

APPENDIX

- A. INSERT **NEW**, *Bidder's Questions and Answers*, with date returned October 16, 2020 to the Appendix after the *Bidder's Questions and Answers* with date returned October 9, 2020. See Attachment 1, (5 pages)

PLANS/DRAWINGS

- A. REVISE *ADA PATH DETAIL 2*, on sheet C2.0 as shown on Addendum Drawing AD2, ITEM #1. See Attachment No. 2.
- B. ADD Detail 3, *STORM DRAIN DETAIL – SOUTH*, on sheet C3.0 as shown on Addendum Drawing AD2, ITEM #2. See Attachment No. 3.
- C. REVISE *SITE PLAN*, on sheet C3.0 as shown on Addendum Drawing AD2, ITEM #3. See Attachment No. 4.
- D. REVISE Detail 3, *LANDSCAPE VEGETATED SWALE*, on sheet C7.0 as shown on Addendum Drawing AD2, ITEM #4. See Attachment No. 5.
- E. REVISE *PROJECT DESCRIPTION/CODE ANALYSIS SUMMARY*, on sheet G-111 as shown on Addendum Drawing AD2, ITEM #5. See Attachment No. 6.



COUNTY OF MENDOCINO
Executive Office
Facilities & Fleet Division

CARMEL J. ANGELO
CHIEF EXECUTIVE OFFICER

851 Low Gap Road
Ukiah, CA 95482

- F. ADD FIRE LIFE SAFETY SYSTEMS (CBC CHAPTER 9), on sheet A-000 as shown on Addendum Drawing AD2, ITEM #6. See Attachment No. 7.
- G. REVISE Drawing 1 *SITE PLAN*, on sheet A-101 as shown on Addendum Drawing AD2, ITEM #7. See Attachment No. 8.
- H. REVISE *KEYNOTES*, on sheet A-101 as shown on Addendum Drawing AD2, ITEM #8. See Attachment No. 9.
- I. REVISE *FINISH SCHEDULE*, on sheet A-620, as shown on Addendum Drawing AD2, ITEM #9, and Addendum Drawing AD2, ITEM #10 See Attachment Nos.10.and 11.
- J. REVISE *FINISH PLAN*, on sheet A-140, as shown on Addendum Drawing AD2, ITEM #11, See Attachment No.12.

ATTACHMENTS:

- 1. ATTACHMENT NO. 1 – *Bidder's Questions and Answers*, with date returned October 16, 2020, (5 pages)
- 2. ATTACHMENT NO. 2 – Addendum Drawing AD2, ITEM 1, (1 page)
- 3. ATTACHMENT NO. 3 – Addendum Drawing AD2, ITEM 2, (1 page)
- 4. ATTACHMENT NO. 4 – Addendum Drawing AD2, ITEM 3, (1 page)
- 5. ATTACHMENT NO. 5 – Addendum Drawing AD2, ITEM 4, (1 page)
- 6. ATTACHMENT NO. 6 – Addendum Drawing AD2, ITEM 5, (1 page)
- 7. ATTACHMENT NO. 7 – Addendum Drawing AD2, ITEM 6, (1 page)
- 8. ATTACHMENT NO. 8 – Addendum Drawing AD2, ITEM 7, (1 page)
- 9. ATTACHMENT NO. 9 – Addendum Drawing AD2, ITEM 8, (1 page)
- 10. ATTACHMENT NO. 10 – Addendum Drawing AD2, ITEM 9, (1 page)
- 11. ATTACHMENT NO. 11 – Addendum Drawing AD2, ITEM 10, (1 page)
- 12. ATTACHMENT NO. 12 – Addendum Drawing AD2, ITEM 11 (1 page)

**BIDDERS ARE REMINDED THAT THEY SHALL COMPLETE THE ADDENDA CONTRACTOR
ACKNOWLEDGEMENT IN THE BID FORM OF THEIR SPECIFICATION BOOK (SECTION 00310-3).
FAILURE TO DO SO MAY RESULT IN DISQUALIFICATION OF THE SUBMITTED BID.**

END OF ADDENDUM NO. 2



COUNTY OF MENDOCINO
Executive Office
Facilities & Fleet Division

CARMEL J. ANGELO
CHIEF EXECUTIVE OFFICER

851 Low Gap Road
Ukiah, CA 95482

ADDENDUM NO. 03

Bid Opening – **October 22, 2020** at 2:00 PM PST

CRISIS RESIDENTIAL TREATMENT FACILITY

BID NO. 32-20

The additions, omissions, clarifications, and/or corrections herein shall be made part of the Contract plans and specifications and shall be included in the Scope of Work and bids to be submitted. This Addendum modifies the original plans and specifications as described below:

SPECIFICATIONS

A. SECTION 00310 – BID FORM

1. DELETE at the top of page 00310-2 the following paragraph: .

“LOW BID WILL BE DETERMINED BY THE TOTAL AMOUNT OF THE BASE BID AND ANY CHOSEN ALTERNATES THAT ARE ACCEPTED.”

REPLACE this paragraph with the following:

“THE LOWEST BID SHALL BE THE LOWEST PRICE ON THE BASE BID. THE PRICES ON THE ADDITIVE OR DEDUCTIVE ITEMS WILL NOT BE CONSIDERED IN DETERMINING THE LOW BID.”

BIDDERS ARE REMINDED THAT THEY SHALL COMPLETE THE ADDENDA CONTRACTOR ACKNOWLEDGEMENT IN THE BID FORM OF THEIR SPECIFICATION BOOK (SECTION 00310-3). FAILURE TO DO SO MAY RESULT IN DISQUALIFICATION OF THE SUBMITTED BID.

END OF ADDENDUM NO. 3

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SECTION 00020 - NOTICE INVITING BIDS

Notice is hereby given that sealed bids will be received at the Executive Office - Facilities and Fleet Division, County of Mendocino, 851 Low Gap Road, Ukiah, California 95482 until the hour of 2:00 p.m., **Thursday, October 22, 2020**, as determined by the clock on the wall of the Executive Office - Facilities and Fleet Division, County of Mendocino, on at which time they will be publicly opened and read aloud in the Executive Office - Facilities and Fleet Division, County of Mendocino, 851 Low Gap Road, Ukiah, California for the following project:

Mendocino County Crisis Residential Treatment Facility - Bid # 32-20

Licenses Required for this Project are: **"B" – General Building Contractor**

Printed plans and documents may be seen at the Executive Office - Facilities and Fleet Division, 851 Low Gap Road, Ukiah, CA 95482. Electronic Plans and Documents may be seen or downloaded from the Mendocino County Web Page for Open RFP, Quotes and Bids:

<https://www.mendocinocounty.org/government/executive-office/open-rfp-quotes-bids>

Additionally, plans and documents have been distributed to builder's exchange plan rooms throughout Northern California. In Mendocino County, printed plans may be obtained from:

Creative Workshop
759 S. State St.
Ukiah, CA 95482
707-468-0251

Bids shall be made on a form provided by the County and accompanied by a Certified Check, Cashier's Check, or Bidder's Bond for ten percent (10%) of the amount bid, made payable to the County of Mendocino. The above-mentioned check or Bid Bond shall be given as a guarantee that the Bidder shall execute the contract if it be awarded to it in conformity with the contract documents and shall provide the surety bond or bonds required, sign the contract and commence work as set forth in the Instructions to Bidders of the contract documents.

The successful Bidder will be required to furnish a Labor and Material Bond and a Faithful Performance Bond in an amount equal to one hundred percent (100%) of the contract price. Bonds shall each be obtained from a surety company satisfactory to the County of Mendocino.

Federal Laws, including The Davis-Bacon Act and The Americans with Disabilities Act of 1990, are applicable to the project.

Bidders' attention is called to Instruction to Bidders and other related documents for full directions and information as to bidding and other requirements.

Pursuant to California Public Contract Code Section 22300, the Contractor may substitute securities for any money withheld by the County to insure performance under the Contract. Said securities shall be in a form and of a type acceptable to the County.

Two opportunities to attend a mandatory pre-bid conference will be held. One on Thursday, October 1, 2020 at 11:00 a.m., and one on Monday, October 5th, at 1:00 p.m., at the Project site, 631 South Orchard St. Ukiah, California.

PAYMENT OF PREVAILING WAGES

Pursuant to the provisions of the Labor Code of the State of California, the Department of Industrial Relations has made a determination of the rate of per diem wages to be paid on the prevailing rate of pay for regular, holiday and overtime work in the locality in which the public work is to be performed, for each craft, classification, or type of workman needed to execute the contract. All County of Mendocino projects greater than \$1,000 require that contractors adhere to Prevailing Wage requirements (California Labor Code, Sections 1770 through 1775). The rates can be found online here: <http://www.dir.ca.gov/OPRL/DPreWageDetermination.htm>

CONTRACTOR REGISTRATION

Per Labor Code Section 1771.1(a) A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.

CERTIFIED PAYROLL RECORDS

Per Labor Code Section 1776 each contractor and subcontractor shall keep accurate payroll records. A certified copy of all payroll records for work performed under this contract shall be furnished upon request to a representative of the awarding body. Per SB 854 contractors and subcontractors are required to furnish certified payroll reports directly to the Department of Industrial Relations.

EMPLOYMENT OF APPRENTICES

Each contractor and subcontractor performing work in an apprenticeable craft or trade shall comply with Section 1777.5 relating to Apprentices on public works projects.

LAWS AND GOVERNANCES

In the performance of the work contemplated by this contract, the contractor shall conform to and abide by all labor requirements and provisions of State and Federal Laws and City and County Ordinances and Regulations which may in any manner affect those engaged or employed on the work project, including but not limited to the overtime provisions of the Labor Code section 1813 and 1815 of the State of California.

END OF SECTION

SECTION 00100 - INSTRUCTIONS TO BIDDERS

PART 1 – GENERAL

1.1 BIDS RECEIVED

- A. Sealed bids for the Mendocino County **Crisis Residential Treatment Facility** Project will be received at the Facilities and Fleet Division Office, County of Mendocino, 851 Low Gap Road, Ukiah, California 95482, until **2:00 p.m.** as determined by the clock on the wall of the Facilities and Fleet Division Office, on **October 22, 2020** and then publicly opened and read aloud in the Facilities and Fleet Division Office, County of Mendocino.
- B. Late bids will not be accepted. It is Bidder's responsibility to assure that its bid is delivered and received at the location noted above on or before the date and hour set for the bid opening.

1.2 LICENSE REQUIREMENT

- A. The licenses required for this Project are **“B” – General Building Contractor**

1.3 SECURING OF PLANS AND DOCUMENTS - FEES

Plans and documents may be seen at the Facilities and Fleet Division office, 851 Low Gap Road, Ukiah, California, for the County of Mendocino. Electronic Plans and Documents are available on the County Website: <https://www.mendocinocounty.org/government/executive-office/open-rfp-quotes-bids> under Open RFP, Quotes and Bids, and at plan rooms throughout the region. In Mendocino County, printed plans may be obtained from the following business:

Creative Workshop
759 S. State St.
Ukiah, CA 95482
707-468-0251
service@creativeworkshopusa.com

1.4 BIDS

Bids, to be considered, must be in a sealed envelope identifying the name of the bidder and the project in accordance with the following instructions:

- A. Bids must be submitted on the bid form provided by County, properly and completely filled out with numbers stated both in writing and in figures and with signatures of all persons signing in longhand/cursive.
- B. The completed form shall be without erasures or interlineation and shall not contain recapitulations of the work to be done. Only written proposals will be permitted.

- C. A Bid Bond or Certified Cashier's Check made payable to the County of Mendocino for an amount equal to at least ten percent (10%) of the bid amount shall accompany each bid. Such guaranty to be forfeited should the Bidder to whom the contract is awarded fail to enter into the contract.

1.5 PRE-BID CONFERENCE AND SITE ACCESS

- A. **Two opportunities to attend a mandatory pre-bid conference will be held. One on Thursday, October 1, 2020 at 11:00 a.m., and one on Monday, October 5th, at 1:00 p.m., at the Project site, 631 South Orchard St. Ukiah, California.**
- B. Following the meeting, a site review will be conducted to acquaint Bidders with the Project.
- C. Failure to attend one of the pre-bid conferences will disqualify a non-attending bidder from the bid.

1.6 SUBCONTRACTORS LISTED

- A. In accordance with California Public Contract Code Sections 4100 *et seq.*, inclusive, each bidder shall provide a list of subcontractors (Section 00430), giving the name and location of place of business and contractor's license number of each subcontractor who will perform a portion of the contract work in an amount in excess of one-half of one percent (0.5%) of the total contract price. In each instance, the nature and portion of the work to be subcontracted shall be described.
- B. Failure of Bidder to specify a subcontractor for any portion of the work in an amount in excess of one-half of one percent (0.5%) of the total contract price constitutes an agreement for Bidder to perform that portion of the work itself. After bids are opened, no subcontractor may be designated or substituted except as provided for in Sections 4107 *et seq.* of the Public Contract Code.
- C. All Bidders must supply with their Bids the required information on all subcontractors who will perform any portion of the work including labor, rendering of service or specially fabricating and installing a portion of the Work or improvement according to detailed drawings contained in the plans and specifications, in excess of one-half of one percent (0.5%) of total bid. Violation of this requirement may result in Bid being deemed non-responsive and not being considered.

1.7 AWARD OR REJECTION OF BIDS

The contract shall be awarded to the lowest responsible bidder complying with these instructions, provided the bid is deemed reasonable and in the best interest of the County of Mendocino. County reserves the right to reject any and all bids, and to waive any informality on bids received whenever the rejection or waiver is in the best interest of County. The competency and dependability of the bidders will be considered when making the award.

Additive and Deductive Items: Method of Determining Lowest Bid. Pursuant to Public Contract Code section 20103.8, if this bid solicitation includes additive and/or deductive items, the checked [X] method shall be used to determine the lowest bid: *[check one]*

 X (a) The lowest bid shall be the lowest bid price on the base contract without consideration of the prices on the additive or deductive items.

 (b) The lowest bid shall be the lowest total of the bid prices on the base contract and those additive or deductive items that were specifically identified in the bid solicitation or Bid Form as being used for the purpose of determining the lowest bid price.

 (c) The lowest bid shall be the lowest total of the bid prices on the base contract and those additive or deductive items taken in order from a specifically identified list of those items that, when in the solicitation, and added to, or subtracted from, the base contract, are less than, or equal to, a funding amount publicly disclosed by the County before the first bid is opened.

 (d) The lowest bid shall be determined in a manner that prevents any information that would identify any of the bidders or the proposed Subcontractors or suppliers from being revealed to the public entity before the ranking of all bidders from lowest to highest has been determined.

If no method is checked, sub-paragraph (a) shall be used to determine the lowest bid.

Notwithstanding the method used by the County to determine the lowest responsible bidder, the County retains the right to add to or deduct from the contract any of the additive or deductive items included in the bid solicitation.

The award of the contract, if awarded, is expected to be made within thirty (30) days and in no event later than eighty (80) days after the bid opening. After award, County shall notify the successful Bidder in writing, and forward with the notification original contracts for Bidder's execution. Within eight (8) working days after such notification, the successful Bidder shall return the signed contracts to County, accompanied by all required Surety Bonds, insurance policies and endorsements.

1.8 TIME OF COMPLETION

Bidder agrees to commence work on or before a date to be specified in the written "Notice to Proceed" from County and to fully complete the project within **three hundred and seventy-five days (375)** calendar days from date of the written "Notice to Proceed", and as shown below in the Project Milestone Schedule:

Project Milestone Schedule

Milestone No.	Event	Start Milestone	Finish Milestone
1	Notice to Proceed	0 cds	
2	Submit 100% Approved Permit Construction Documents		100 cds

3	Complete Construction		345 cds
4	Facility Ready for County Occupancy	346 cds	
5	Completion of All Work		375 cds

1.9 ADDENDUM

Any addendum issued during the time of bidding and before bid opening shall be included in the bid. The addendum issued by County shall become part of the agreement. Questions to be considered for inclusion in an addendum must be in writing and in the hands of The County not less than seven (7) days prior to bid opening date. Direct all questions to:

AECOM

Attn: Mitch Vaccari, Sr. Construction Manager

mitch.vaccari@aecom.com

Cell: (916) 956-1069

Questions received after **October 15, 2020** may not be included in an addendum.

1.10 INTERPRETATION OF DRAWINGS AND DOCUMENTS

Should a Bidder find discrepancies in, or omissions from, the drawings or documents, or should it be in doubt as to their intent, it should at once notify County, which will then send responsive written instructions in the form of addenda to all Bidders. County will not be responsible for any oral instructions. Any verbal conversations with County during the bidding period are not to be construed as instructions. Any changes in the Contract documents will be issued by written addendum only.

1.11 WITHDRAWAL OF BID

Bids may be withdrawn prior to, but not later than, the time of bid opening.

1.12 BONDS

The successful Bidder is required to furnish a Labor and Material Bond and a Performance Bond each in the amount equal to one hundred percent (100%) of the contract price. In addition, the successful Bidder is required to furnish a Bid Bond or Certified Cashier's Check made payable to the County of Mendocino for an amount equal to at least ten percent (10%) of the bid amount. Said Bonds shall be obtained from a surety company satisfactory to County.

1.13 SUBSTITUTIONS

Any substitution shall be made in accordance with instructions contained in Section 00700 (General Conditions) Materials and Substitutions. Questions concerning substitutions will not be entertained during the bidding period.

1.14 LIQUIDATED DAMAGES

In case of failure on the part of Contractor to complete the work within the time stipulated plus any duly authorized extension of time granted in writing by County, Contractor shall pay to County the liquidated damages per calendar day as shown below for each day's delay beyond the time prescribed as liquidated damages, but not as a penalty. The language in the paragraph of the General Conditions entitled "Time of Completion and Liquidated Damages" is incorporated herein.

Schedule of Liquidated Damages

Milestone No	Event	Start Milestone	Finish Milestone	Liquidated Damages	
1	Notice to Proceed	0 cds			
2	Submit 100% Approved Permit Construction Documents		100 cds	\$0	
3	Complete Construction*		345 cds	\$1,000	
4	Facility Ready for County Occupancy	346 cds		\$0	
5	Completion of All Work		375 cds	\$100	

* This project is being funded by Measure B, requiring Contract Milestone No. 3 to be complete no later than November 2021.

1.15 BIDDER'S QUALIFICATIONS

- A. All Bidders, Contractors and Subcontractors bidding under joint venture agreements shall be duly licensed as provided for under Sections 7000 *et seq.* of the Business and Professions Code.
- B. A corporation which is awarded the Contract will be required to furnish certification attesting to its corporate existence, as well as evidence that the Officer signing the contract is duly authorized to do so.
- C. Bidders and their subcontractors may be required to furnish evidence satisfactory to County that they have sufficient means and have had experience in the class of work called for to enable them to complete the contract in a satisfactory manner.
- D. No person, firm or corporation shall make or file or be interested in more than one bid for the same work, except insofar as alternate bids may be called for. No person, firm or corporation shall submit a collusive or sham bid or seek directly or indirectly to induce any other bidder to submit a collusive or sham bid or to refrain from submitting a bid or to seek in any way to control or fix the price of the bid or any portion of the bid price in order to secure an advantage against County or any other person interested in the proposed contract. However, a person, firm or corporation submitting a sub-proposal to a bidder or quoting prices on materials to a bidder is not hereby disqualified from submitting sub-proposals or quoting prices to other bidders.

- E. A licensed contractor shall not submit a bid to a public agency unless (1) its contractor's license number appears clearly on the bid, (2) the license expiration date is stated, and (3) the bid contains a statement that the representations made therein are made under penalty of perjury. Any bid not containing this information, or a bid containing information which is subsequently proven false, shall be considered non-responsive and shall be rejected by County.

1.16 EXAMINATION OF SITE AND DOCUMENTS

By submitting a bid, Bidder agrees and warrants that (1) it has examined the site and all documents, drawings and specifications; (2) it is satisfied that the same are adequate to produce the required results; and (3) its bid covers the cost of all items required in the agreement. The work to be performed includes all of the items mentioned in these specifications and/or as shown on the plans and other documents included as a part of the project.

1.17 GEOTECHNICAL REPORT

- A. The *Geotechnical Exploration and GeoHazard Report* (see Appendix in the specifications) dated June 3, 2020 from LACO is considered a preliminary report and was obtained for the County's use in the preparation of the bid documents for the Project. However, the County does not guarantee the information contained therein for the prefabricated modular building structure and its foundation design, which the Contractor is required to design and construct. The report and log of borings are available for the Contractor's information but are not a warranty of subsurface conditions or continuity between soil borings.
- B. Upon Notice to Proceed, the Contractor shall provide its own (final) geotechnical investigation and corresponding report as part of its design responsibilities for the prefabricated modular building structure and / or verify the findings in the preliminary geotechnical report from the County. Furthermore, the Contractor shall provide such geotechnical engineering services required for the prefabricated modular building structure, including verifying tests and reports, and certifying conformation of work in place (including certification of the building pad), in conjunction with the County's independent testing and inspection services. The Contractor's geotechnical engineer shall be the Geotechnical Engineer of Record for the prefabricated modular building structure.

1.18 ENVIRONMENTAL IMPACT REPORT

Bidder agrees to perform its work in conformance with any environmental impact reports that may be applicable to the project. A draft of the environmental document, *Draft Initial Study and Environmental Checklist for the Mendocino County Crisis Residential Treatment (CRT) Facility*, dated August 2020 from Elizabeth Burks (Principal), Consulting Planner for the County of Mendocino, LACO Associate, is attached in the Appendix. The final environmental report will be provided in an addendum prior to the bid opening.

1.19 AGREEMENT

Contract documents include the Agreement which the successful Bidder, as Contractor, will be required to execute.

1.20 PRE-CONSTRUCTION CONFERENCE

The successful bidder shall be available for a pre-construction conference with County at a mutually convenient time.

1.21 QUALIFICATIONS OF BIDDERS

The work to be performed under this contract is of a very specialized nature. It is the desire of County to secure the best work attainable and to maintain a very critical and condensed schedule. Bidders considered for award will be limited to those firms who can show to the satisfaction of County that they have the facilities and experience necessary to perform the required construction in accordance with specifications proposed for this project. The terms under which bidders will be evaluated and the rules that will be applied are attached to the bid documents herein as Section 00120, "Qualification Statement".

END OF SECTION

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SECTION 00120 - QUALIFICATION APPLICATION

The information contained in this Application is confidential and is for the sole use of County in evaluating the qualifications of Bidder. Only the information below ("Contact Information") is considered public information.

CONTACT INFORMATION

Firm Name (as it appears on license): Cupples and Sons Construction Inc.

Check one: ☒ Corporation ☐ Partnership ☐ Sole Proprietor

Contact Person: Casey Cupples

Address: 501 St. Mary's Ave, Hopland, Ca 95449

Phone:(707) 972 - 7331 Fax: _____

If the firm is a sole proprietor or partnership:

Owner(s) of Company: _____

Contractor's License Number(s): 806992 B EXP: 04/30/2022

PART I. ESSENTIAL REQUIREMENTS FOR QUALIFICATION

The Contractor will be immediately disqualified if the answer to any of questions 1 through 5 is “no”.¹

The Contractor will be immediately disqualified if the answer to any of questions 6, 7, 8 or 9 is “yes”². If the answer to question 8 is “yes”, and if debarment would be the sole reason for denial of qualification, any qualification issued will exclude the debarment period.

1. Contractor possesses a valid and current California Contractor’s license for the project or projects for which it intends to submit a bid.
☒ Yes ☐ No
2. Contractor has a liability insurance policy with a policy limit of at least one million dollars (\$1,000,000) per occurrence and two million dollars (\$2,000,000) aggregate.
☒ Yes ☐ No
3. Contractor has a current workers’ compensation insurance policy as required by the Labor Code or is legally self-insured pursuant to Labor Code Section 3700 *et seq.*
☒ Yes ☐ No ☐ Contractor is exempt from this requirement because it has no employees
4. Contractor has attached its latest copy of a reviewed or audited financial statement with accompanying notes and supplemental information.³
☒ Yes ☐ No

NOTE: A financial statement that is not either reviewed or audited is not acceptable. A letter verifying availability of a line of credit may also be attached; however, it will be considered as supplemental information only, and is not a substitute for the required financial statement.

¹ A “no” answer to Question 4 will not be disqualifying if the Contractor is exempt from complying with Question 4, for reasons explained in footnote 3.

² A contractor disqualified solely because of a “yes” answer given to questions 6, 7, or 9 may appeal the disqualification and provide an explanation of the relevant circumstances during the appeal procedure.

³ Public Contract Code Section 20101(e) exempts from this requirement a contractor who has qualified as a small business pursuant to Government Code Section 14837(d)(1), if the bid is “no more than 25 per cent of the qualifying amount provided in Section 14837(d)(1)”. As of January 1, 2001, the qualifying amount is \$10 million, and 25 percent of that amount, therefore, is \$2.5 million.

5. Contractor has attached a notarized statement from an admitted surety insurer (approved by the California Department of Insurance) and authorized to issue bonds in the State of California, which states that Contractor's current bonding capacity is sufficient for the project for which it seeks qualification.
☒ Yes ☐ No

NOTE: Notarized statement must be from the surety company, not an agent or broker.

6. Has Contractor's license been revoked at any time in the last five (5) years?
☐ Yes ☒ No
7. Has a surety firm completed a contract on Contractor's behalf, or paid for completion because Contractor's firm was default terminated by the project owner within the last five (5) years?
☐ Yes ☒ No
8. At the time of submitting this qualification form, is Contractor's firm ineligible to bid on or be awarded a public works contract, or perform as a subcontractor on a public works contract, pursuant to either Labor Code Section 1777.1 or Labor Code Section 1777.7?
☐ Yes ☒ No

If the answer is "yes", state the beginning and ending dates of the period of debarment:

9. At any time during the last five (5) years, has Contractor's firm, or any of its owners or officers, been convicted of a crime involving the awarding of a contract of a government construction project, or the bidding or performance of a government contract?
☐ Yes ☒ No

PART II. ORGANIZATION, HISTORY, ORGANIZATIONAL PERFORMANCE, COMPLIANCE WITH CIVIL
AND CRIMINAL LAWS

A. Current Organization and Structure of the Business

For firms that are corporations:

- 1a. Date incorporated: _____
- 1b. Under the laws of the State of: _____
- 1c. Provide all the following information for each person who is either (a) an officer of the corporation (president, vice president, secretary, treasurer), or (b) the owner of at least ten percent (10%) of the corporation's stock:

Name	Position	Years with Co.	% Ownership	Social Security #

- 1d. Identify every construction firm that any person listed above has been associated with (as owner, general partner, limited partner or officer) at any time during the last five (5) years.
NOTE: For this question, "owner" and "partner" refer to ownership of ten percent (10%) or more of the business, or ten percent (10%) or more of its stock, if the business is a corporation.

Person's Name	Construction Firm	Date of Person's Participation with Firm

For firms that are partnerships:

- 1a. Date of formation: _____
- 1b. Under the laws of the State of: _____
- 1c. Provide all of the following information for each partner who owns ten percent (10%) or more of the firm:

Name	Position	Years with Co.	% Ownership	Social Security #

- 1d. Identify every construction company that any partner has been associated with (as owner, general partner, limited partner or officer) at any time during the last five (5) years.

NOTE: For this question, “owner” and “partner” refer to ownership of ten percent (10%) or more of the business, or ten percent (10%) or more of its stock, if the business is a corporation.

Person’s Name	Construction Firm	Date of Person’s Participation with Firm

For firms that are sole proprietorships:

- 1a. Date of commencement of business: _____
 1b. Social security number of company owner: _____
 1c. Identify every construction firm that the business owner has been associated with (as owner, general partner, limited partner or officer) at any time during the last five (5) years. _____

NOTE: For this question, “owner” and “partner” refer to ownership of ten percent (10%) or more of the business, or ten percent (10%) or more of its stock, if the business is a corporation.

Person’s Name	Construction Firm	Date of Person’s Participation with Firm

For firms that intend to make a bid as part of a joint venture:

- 1a. Date of commencement of joint venture: _____
- 1b. Provide all of the following information for each firm that is a member of the joint venture that expects to bid on one or more projects:

Name of Firm	% Ownership of Joint Venture

B. History of the Business and Organizational Performance

2. Has there been any change in ownership of the firm at any time during the last three (3) years?
NOTE: A corporation whose shares are publicly traded is not required to answer this question.
☐ Yes ☐ No

If “yes”, explain on a separate signed page.

3. Is the firm a subsidiary, parent, holding company, or affiliate of another construction firm?
NOTE: Include information about other firms if one firm owns fifty percent (50%) or more of another, or if an owner, partner, or officer of Contractor’s firm holds a similar position in another firm.
☐ Yes ☐ No

If “yes”, explain on a separate signed page.

4. Are any corporate officers, partners, or owners connected to any other construction firms?
NOTE: Include information about other firms if an owner, partner, or officer of Contractor’s firm holds a similar position in another firm.
☐ Yes ☐ No

If “yes”, explain on a separate signed page.

5. State Contractor’s firm’s gross revenues for each of the last three (3) years:

Year	Gross Revenue

6. How many years has Contractor's organization been in business in California as a contractor under its present business name and license number? _____ years

7. Is Contractor's firm currently the debtor in a bankruptcy case?

☐ Yes ☐ No

If "yes", please attach a copy of the bankruptcy petition, showing the case number, and the date on which the petition was filed.

8. Was Contractor's firm in bankruptcy at any time during the last five (5) years? (This question refers only to a bankruptcy action that was not described in answer to question 7 above.)

☐ Yes ☐ No

If "yes", please attach a copy of the bankruptcy petition, showing the case number and the date on which the petition was filed, and a copy of the Bankruptcy Court's discharge order, or of any other document that ended the case, if no discharge order was issued.

Licenses

9. List all California construction license numbers, classifications and expiration dates of the California contractor licenses held by Contractor's firm:

10. If any of Contractor's firm's license(s) are held in the name of a corporation or partnership, list below the names of the qualifying individual(s) listed on the CSLB records who meet(s) the experience and examination requirements for each license:

11. Has Contractor's firm changed names or license numbers in the past five (5) years?

☐ Yes ☐ No

If "yes", explain on a separate signed page, including the reason for the change.

12. Has any owner, partner, or (for corporations) officer of Contractor's firm operated a construction firm under any other name in the last five (5) years?

☐ Yes ☐ No

If "yes", please explain on a separate signed sheet.

Disputes

13. At any time in the last five (5) years, has Contractor's firm been assessed and paid liquidated damages after completion of a project under a construction contract with either a public or private owner?

☐ Yes ☐ No

If “yes”, explain on a separate signed page, identifying all such projects by owner, owner’s address, the date of completion of the project, amount of liquidated damages assessed, and all other information necessary to fully explain the assessment of liquidated damages.

14. In the last five (5) years, has Contractor’s firm, or any firm with which any of Contractor’s company’s owners, officers or partners was associated, been debarred, disqualified, removed or otherwise prevented from bidding on, or completing, any government agency or public works project for any reason?

NOTE: “Associated with” refers to another construction firm in which an owner, partner or officer of Contractor’s firm held a similar position, and which is listed in response to question 1c or 1d on this form.

☐ Yes ☐ No

If “yes”, explain on a separate signed page. State whether the firm involved was the firm applying for qualification here or another firm. Identify by name of the company, the name of the person within Contractor’s firm who was associated with that company, the year of the event, the owner of the project, the project, and the basis for the action.

16. In the last five (5) years, has Contractor’s firm been denied an award of a public works contract based on a finding by a public agency that Contractor’s company was not a responsible bidder?

☐ Yes ☐ No

If “yes”, explain on a separate signed page. Identify the year of the event, the owner, the project, and the basis for the finding by the public agency.

NOTE: The following two questions refer only to disputes between Contractor’s firm and the owner of a project. Contractor need not include information about disputes between its firm and a supplier, another contractor, or subcontractor. Contractor need not include information about “pass-through” disputes in which the actual dispute is between a subcontractor and a project owner. Also, Contractor may omit reference to all disputes about amounts less than \$50,000.

17. In the last five (5) years, has any claim *against* Contractor’s firm concerning the firm’s work on a construction project been *filed in court or arbitration*?

☐ Yes ☐ No

If “yes”, on separate signed sheets of paper identify the claim(s) by providing the project name, date of the claim, name of the claimant, a brief description of the nature of the claim, the court in which the case was filed, and a brief description of the status of the claim (pending or, if resolved, a brief description of the resolution).

18. In the last five (5) years, has Contractor's firm made any claim against a project owner concerning work on a project or payment for a contract and *filed that claim in court or arbitration*?

☐ Yes ☐ No

If "yes", on separate signed sheets of paper identify the claim by providing the project name, date of the claim, name of the entity (or entities) against whom the claim was filed, a brief description of the nature of the claim, the court in which the case was filed, and a brief description of the status of the claim (pending or, if resolved, a brief description of the resolution).

19. At any time during the last five (5) years, has any surety company made any payments on Contractor's behalf as a result of a default, to satisfy any claims made against a performance or payment bond issued on Contractor's behalf, in connection with a construction project, either public or private?

☐ Yes ☐ No

If "yes", explain on a separate signed page the amount of each such claim, the name and telephone number of the claimant, the date of the claim, the grounds for the claim, the present status of the claim, the date of resolution of such claim if resolved, the nature of the resolution, and the amount, if any, at which the claim was resolved.

20. In the last five (5) years, has any insurance carrier, for any form of insurance, refused to renew the insurance policy for Contractor's firm?

☐ Yes ☐ No

If "yes", explain on a separate signed page. Name the insurance carrier, the form of insurance, and the year of the refusal.

Criminal Matters and Related Civil Suits

21. Has Contractor's firm or any of its owners, officers or partners ever been found liable in a civil suit or found guilty in a criminal action for making any false claim or material misrepresentation to any public agency or entity?

☐ Yes ☐ No

If "yes", explain on a separate signed page, including who was involved, the name of the public agency, the date of the investigation and the grounds for the finding.

22. Has Contractor's firm or any of its owners, officers or partners ever been convicted of a crime involving federal, state, or local law related to construction?

☐ Yes ☐ No

If “yes”, explain on a separate signed page, including who was involved, the name of the public agency, the date of the conviction and the grounds for the conviction.

23. Has Contractor’s firm or any of its owners, officers or partners ever been convicted of a federal or state crime of fraud, theft, or any other act of dishonesty?
☐ Yes ☐ No

If “yes”, identify on a separate signed page the person(s) convicted, the court (the county if a state court, the district or location if a federal court), the year, and the criminal conduct.

Bonding

24. Bonding capacity: Provide documentation from surety identifying the following:

Name of bonding company/surety: _____

Name of surety agent, address, and telephone number:

25. If Contractor’s firm was required to pay a premium of more than one percent (1%) for a performance and payment bond on any project(s) on which the firm worked at any time during the last three (3) years, state the percentage that the firm was required to pay. (An explanation for such percentage rate may be provided at Contractor’s discretion.)

26. List all other sureties (name and full address) that have written bonds for Contractor’s firm during the last five (5) years, including the dates during which each wrote the bonds:
27. During the last five (5) years, has Contractor’s firm ever been denied coverage by a surety company, or has there ever been a period of time when your firm had no surety bond in place during a public construction project when one was required?
☐ Yes ☐ No

If “yes”, provide details on a separate signed sheet indicating the date when Contractor’s firm was denied coverage, the name of the company or companies which denied coverage, and the period during which no surety bond was in place.

C. Compliance with Occupational Safety and Health Laws and with Other Labor Legislation Safety

28. Has Cal-OSHA cited and assessed penalties against Contractor’s firm for any “serious”, “willful”, or “repeat” violations of its safety or health regulations in the last five (5) years?
NOTE: If Contractor has filed an appeal of a citation, and the Occupational Safety and Health Appeals Board has not yet ruled on your appeal, Contractor need not include information about it.
☐ Yes ☐ No

If “yes”, attach a separate signed page describing the citations, including information about the dates of the citations, the nature of the violation, the project on which the citation(s) was/were issued, and the amount of the penalty paid (if any). If the citation was appealed to the Occupational Safety and Health Appeals Board and a decision has been issued, state the case number and the date of the decision.

29. Has the Federal Occupational Safety and Health Administration cited and assessed penalties against Contractor’s firm in the last five (5) years?

NOTE: If Contractor has filed an appeal of a citation and the Appeals Board has not yet ruled on the appeal, or if there is a court appeal pending, Contractor need not include information about the citation.

☐ Yes ☐ No

If “yes”, attach a separate signed page describing each citation.

30. Has the EPA or any Air Quality Management District or any Regional Water Quality Control Board cited and assessed penalties against either Contractor’s firm or the owner of a project contracted to Contractor in the last five (5) years?

NOTE: If Contractor has filed an appeal of a citation and the Appeals Board has not yet ruled on the appeal, or if there is a court appeal pending, Contractor need not include information about the citation.

☐ Yes ☐ No

If “yes”, attach a separate signed page describing each citation.

31. How often does Contractor require documented safety meetings to be held for construction employees and field supervisors during the course of a project?

32. List Contractor’s Experience Modification Rate (EMR) (California’s Workers’ Compensation insurance) for each of the past three (3) premium years:

NOTE: An Experience Modification Rate is issued to Contractor annually by its workers’ compensation insurance carrier.

Current year: _____

Previous year: _____

Year previous to previous year: _____

If Contractor’s EMR for any of these three (3) years is or was 1.00 or higher, Contractor may, at its discretion, attach a letter of explanation.

33. Within the last five (5) years, has there ever been a period when Contractor had employees but was without workers' compensation insurance or state-approved self-insurance?
☐ Yes ☐ No

If "yes", please explain the reason for the absence of workers' compensation insurance on a separate signed page. If "no", please provide a statement from Contractor's current workers' compensation insurance carrier that verifies periods of workers' compensation insurance coverage for the last five (5) years. (If Contractor has been in business less than five (5) years, provide a statement from the workers' compensation insurance carrier verifying continuous workers' compensation insurance coverage for the period that Contractor has been in the construction business.)

Prevailing Wage and Apprenticeship Compliance Record

34. Has there ever been more than one occasion during the last five (5) years in which Contractor was required to pay either back wages or penalties for its failure to comply with the *state's* prevailing wage laws?

NOTE: This question refers only to Contractor's violation of prevailing wage laws, not to violations of the prevailing wage laws by a subcontractor.

☐ Yes ☐ No

If "yes", attach a separate signed page describing the nature of each violation, identifying the name of the project, the date of its completion, the public agency for which it was constructed, the number of employees initially underpaid, and the amount of back wages and penalties Contractor was required to pay.

35. During the last five (5) years, has there been more than one occasion in which Contractor has been penalized or required to pay back wages for failure to comply with the *federal* Davis-Bacon prevailing wage requirements?

☐ Yes ☐ No

If "yes", attach a separate signed page describing the nature of each violation, identifying the name of the project, the date of its completion, the public agency for which it was constructed, the number of employees initially underpaid, and the amount of back wages and penalties Contractor was required to pay.

36. Provide the name, address and telephone number of the apprenticeship program (approved by the California Apprenticeship Council) from whom Contractor intends to request the dispatch of apprentices to Contractor for use on any public work project for which it is awarded a contract by the County of Mendocino:

37. If Contractor operates its own State-approved apprenticeship program:

(a) Identify the craft(s) in which Contractor provided apprenticeship training in the past year.

- (b) State the year in which each such apprenticeship program was approved, and attach evidence of the most recent California Apprenticeship Council approval(s) of Contractor's apprenticeship program(s).
 - (c) State the number of individuals who were employed by Contractor as apprentices at any time during the past three (3) years in each apprenticeship and the number of persons who, during the past three (3) years, completed apprenticeships in each craft while employed by Contractor:
38. At any time during the last five (5) years, has Contractor been found to have violated any provision of California apprenticeship laws or regulations, or the laws pertaining to use of apprentices on public works?
- NOTE: Contractor may omit reference to any incident that occurred prior to January 1, 1998, if the violation was by a subcontractor and Contractor, as general contractor on a project, had no knowledge of the subcontractor's violation at the time it occurred.**
- ☐ Yes ☐ No

If "yes", provide the date(s) of such findings, and attach copies of the Department's final decision(s).

PART III. RECENT CONSTRUCTION PROJECTS COMPLETED

39. Contractor shall provide information about its six most recently completed public works projects and its three largest completed private projects within the last three (3) years.⁴ Names and references must be current and verifiable. Use separate sheets of paper that contain all of the following information:

- Project Name
- Location
- Owner
- Owner Contact (name and current phone number)
- Architect or Engineer
- Architect or Engineer Contact (name and current phone number)
- Construction Manager (name and current phone number)
- Description of Project, Scope of Work Performed
- Total Value of Construction (including change orders)
- Original Scheduled Completion Date
- Time Extensions (number of days)
- Actual Date of Completion

I, the undersigned, certify and declare that I have read all the foregoing answers to this qualification questionnaire and know its contents. The matters stated in the questionnaire answers are true of my own knowledge and belief, except as to those matters stated on information and belief, and as to those matters I believe them to be true. I declare under penalty of perjury under the laws of the State of California that the foregoing is correct.

Dated: _____
Contractor

END OF SECTION

⁴ Contractor may, using the same format, provide information about other projects that it has completed that are similar to the project for which it wishes to bid.

SECTION 00306 - ANTITRUST CLAIM ASSIGNMENT

Pursuant to California Labor Code Section 7103.5, the following certification is hereby set forth and made a part of these specifications:

In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the contractor or subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the contractor, without further acknowledgment by the parties.

END OF SECTION

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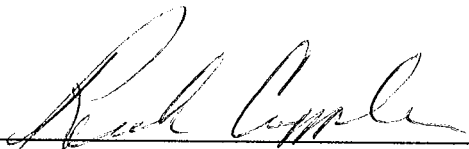
SECTION 00307 - NON-COLLUSION AFFIDAVIT

In accordance with California Public Contract Code Section 7106, the following affidavit must be completed by the Bidder:

Non-Collusion Affidavit to be executed by Bidder
and submitted with bid

State of California)
)
County of Mendocino) ss.

Rick Cupples, being first duly sworn, deposes and says that he or she is President of Cupples & Sons Const. Inc. the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.


Signature

END OF SECTION

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SECTION 00308 - PUBLIC CONTRACT CODE QUESTIONNAIRE

In accordance with California Public Contract Code Section 7106, the following questionnaire must be completed by the Bidder:

Has the Bidder, any officer of the Bidder, or any employee of the Bidder who has a proprietary interest in the Bidder, ever been disqualified, removed, or otherwise prevented from bidding on or completing a federal, state, or local government project because of a violation of law or a safety regulation?

☐ Yes ☒ No

If 'yes', explain the circumstances in the space below.

END OF SECTION

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SECTION 00310 - BID FORM

CRISIS RESIDENTIAL TREATMENT FACILITY

FOR MENDOCINO COUNTY

Date Received 10-22-20
Date Opened 10-22-20
Initials DM

TO: Honorable Board of Supervisors

It is understood that this bid is based upon completion of the work within the time of completion requirements contained in the Instructions to Bidders.

It is agreed that this bid may not be withdrawn for a period of eighty (80) days from the opening hereof.

The undersigned has carefully checked all its figures and understands that the County will not be responsible for any error or omissions on the part of the undersigned in making up this bid.

If awarded the Contract, the undersigned agrees to complete the Work **three hundred and seventy-five days (375) calendar days** from the date of Notice to Proceed.

The undersigned, having become completely familiar with all conditions affecting the cost of the work at the place where the work is to be done, and with the drawings, specifications and other contract documents prepared and issued thereof and now on file at the General Services Agency Office, hereby proposes and agrees to perform everything required to be performed, and to provide and furnish any and all required labor, materials, equipment, transportation and services necessary to erect and complete in the best workmanlike manner, all as shown and specified.

The following bid amounts are as defined and clarified in the Bids Required portion of these specifications:

BASE BID:

Two million eight hundred sixty-two thousand & 20/100 Dollars (\$2,862,000.)

CONTINGENCY ALLOWANCES (See Section 01200):

Unforeseen Site Conditions and Prefabricated Modular Structures Scope Additions

TOTAL CONTINGENCY ALLOWANCES, *One hundred Thousand Dollars* (\$ 100,000)

TOTAL BASE BID PRICE (INCLUDING CONTINGENCY ALLOWANCES):

Two million nine hundred sixty-two thousand & 20/100 Dollars (\$2,962,000.)

Name of Organization Cupples and Sons Construction Inc.

ADDITIVE/DEDUCTIVE ALTERNATES [Also See Section 01100.]:

"LOW BID WILL BE DETERMINED BY THE TOTAL AMOUNT OF THE BASE BID AND ANY CHOSEN ALTERNATES THAT ARE ACCEPTED."

Alternate No. 1: Provide and install a composition asphalt shingle roof per Section 133423 – Prefabricated Modular Structures, paragraph 1.6. H. 3.

Deduct Thirteen thousand one hundred Dollars (\$ 13,100.⁰⁰)

Alternate #2: Provide and install chain link fencing and gates as specified in Section 323113 and as indicated on the drawings.

Add Thirty one thousand eight hundred Dollars (\$ 31,800.⁰⁰)

Alternate #3: Provide and install a Natural Gas Generator as specified in Section 263213 Packaged Engine Generator Systems and as indicated on the drawings. Provide and install a natural gas supply as specified and as indicated on the drawings.

Add Sixty seven thousand nine hundred ^{sixty nine} Dollars (\$ 67,965.⁰⁰)

Alternate #4: Provide and install a roof mounted Photovoltaic Power System as specified in Section 133423 – Prefabricated Modular Structures, paragraph 1.6. I. 4.c. Photovoltaic (PV) Power System and as indicated on the drawings.

Add fifty thousand Dollars (\$ 50,000.⁰⁰)

Alternate #5: Provide and install an electrical vehicle charging station as specified and as indicated on the drawings.

Add Twenty three thousand Dollars (\$ 23,000.⁰⁰)

SALES TAX

All bids shall include required California State Sales Tax, cost of all bonds and insurance as required and all other items of expense incidental to the contract. The County of Mendocino is exempt from Federal Excise Tax.

A licensed Contractor shall not submit a bid to a public agency unless its Contractor's License number appears clearly on the bid, the license expiration date is stated, and the bid contains a statement that the representations made therein are made under penalty of perjury. Any bid not containing this information, or a bid containing information which is subsequently proven false, shall be considered nonresponsive and shall be rejected by the public agency.

Name of Organization Cupples and Sons Construction Inc.

Name of Organization Cupples and Sons Construction Inc.

Type of Organization Corporation
(Corporation, Partnership, etc.)

Address 501 St. Mary's Ave. Hopland CA 95449

Name of State where incorporated California

CONTRACTORS LICENSE NO. 806992 EXPIRATION DATE 04/30/2022

☒ Contractor has registered with the State of California's DIR (Department of Industrial Relations) website.

DIR Registration #: 1000014873

☒ Contractor is currently licensed to do business in the County of Mendocino. Mendocino County Business License

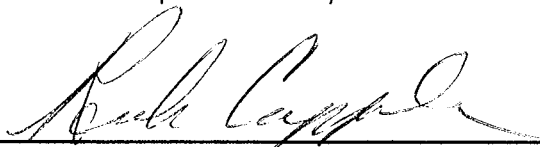
#: 127359

ADDENDA: CONTRACTOR TO ACKNOWLEDGE RECEIPT

I have received the following Addenda pertaining to this project and they have been included as part of my bid.

Numbers: 1 10/9/20 2 10/14/20 3 10/20/20

The undersigned hereby certifies under penalty of perjury that this bid is genuine and not collusive, that all the information is correct and that he/she has carefully checked all of the above figures and understands that the County will not be responsible for any errors or omissions on the part of the undersigned on making up this bid.

Signature 

Corporate Seal

END OF SECTION

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MERCHANTS
BONDING COMPANY™

MERCHANTS BONDING COMPANY (MUTUAL) 6700 WESTOWN PARKWAY, WEST DES MOINES, IA
PHONE: 800-678-8171 FAX: 515-243-3854

BID BOND
PUBLIC WORK

Bond No. MBC00846

KNOW ALL PERSONS BY THESE PRESENTS:

That Cupples & Sons Construction, Inc.

(hereinafter called the Principal) as Principal, and the Merchants Bonding Company (Mutual)

(hereinafter called Surety), as Surety, are held and firmly bound to County of Mendocino

(hereinafter called the Obligor) in the full and just sum of (Not to exceed 10% of the bid amount*****)
Not to exceed ten percent of the bid amount***** Dollars

good and lawful money of the United States of America, to the payment of which sum of money well and truly to be made, the Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Signed and dated this 14th day of October, 2020.

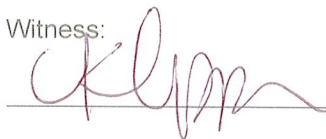
THE CONDITION OF THIS OBLIGATION IS SUCH, that, if the Obligor shall make any award to the Principal for

Construction of a Crisis Residential Treatment Facility; RFP No. Bid 32-20

according to the terms of the proposal or bid made by the Principal therefore, and the Principal shall duly make and enter into a contract with the Obligor in accordance with the terms of said proposal or bid and award, and shall give bond for the faithful performance thereof with the Merchants Bonding Company (Mutual), as Surety, or with other Surety or Sureties approved by the Obligor; or if the Principal shall, in case of failure to do so, pay to the Obligor the damages which the Obligor may suffer by reason of such failure, not exceeding the penalty of this bond, then this obligation shall be null and void; otherwise it shall be and remain in full force and effect.

IN TESTIMONY WHEREOF, the Principal and Surety have caused these presents to be duly signed and sealed.

Witness:

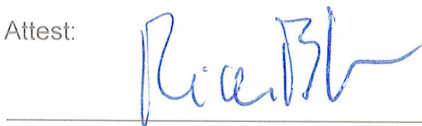


Cupples & Sons Construction, Inc.

By

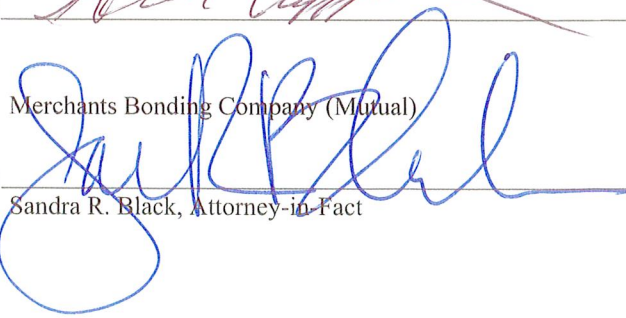
 Principal

Attest:



By

Merchants Bonding Company (Mutual)


Sandra R. Black, Attorney-in-Fact

CALIFORNIA ALL-PURPOSE 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 Sacramento

On 10/14/2020 before me, E. Johnson, Notary Public,
Date Insert Name of Notary exactly as it appears on the official seal

personally appeared Sandra R. Black

Name(s) of Signer(s)



Place Notary Seal Above

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

Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of the form to another document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: Sandra R. Black

- ☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner ☐ Limited ☐ General
☒ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

RIGHT THUMBPRINT
OF SIGNER

Top of thumb here

Signer is Representing:
Merchants Bonding
Company(Mutual)/Merchants
National Bonding, Inc.

Signer's Name: _____

- ☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

RIGHT THUMBPRINT
OF SIGNER

Top of thumb here

Signer is Representing:

MERCHANTS
BONDING COMPANY
POWER OF ATTORNEY

Know All Persons By These Presents, that MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC., both being corporations of the State of Iowa (herein collectively called the "Companies") do hereby make, constitute and appoint, individually,

Jonathan Russell; Kathleen Ann Beck; Misty Hemje; Peter D Holley; Robin L Amstutz; Sandra R Black; Sokha Evans

their true and lawful Attorney(s)-in-Fact, to sign its name as surety(ies) and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

This Power-of-Attorney is granted and is signed and sealed by facsimile under and by authority of the following By-Laws adopted by the Board of Directors of Merchants Bonding Company (Mutual) on April 23, 2011 and amended August 14, 2015 and adopted by the Board of Directors of Merchants National Bonding, Inc., on October 16, 2015.

"The President, Secretary, Treasurer, or any Assistant Treasurer or any Assistant Secretary or any Vice President shall have power and authority to appoint Attorneys-in-Fact, and to authorize them to execute on behalf of the Company, and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof."

"The signature of any authorized officer and the seal of the Company may be affixed by facsimile or electronic transmission to any Power of Attorney or Certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligations of the Company, and such signature and seal when so used shall have the same force and effect as though manually fixed."

In connection with obligations in favor of the Florida Department of Transportation only, it is agreed that the power and authority hereby given to the Attorney-in-Fact includes any and all consents for the release of retained percentages and/or final estimates on engineering and construction contracts required by the State of Florida Department of Transportation. It is fully understood that consenting to the State of Florida Department of Transportation making payment of the final estimate to the Contractor and/or its assignee, shall not relieve this surety company of any of its obligations under its bond.

In connection with obligations in favor of the Kentucky Department of Highways only, it is agreed that the power and authority hereby given to the Attorney-in-Fact cannot be modified or revoked unless prior written personal notice of such intent has been given to the Commissioner-Department of Highways of the Commonwealth of Kentucky at least thirty (30) days prior to the modification or revocation.

In Witness Whereof, the Companies have caused this instrument to be signed and sealed this 11th day of February, 2020.



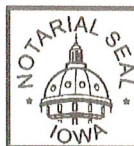
MERCHANTS BONDING COMPANY (MUTUAL)
MERCHANTS NATIONAL BONDING, INC.

By

Larry Taylor
President

STATE OF IOWA
COUNTY OF DALLAS ss.

On this 11th day of February, 2020, before me appeared Larry Taylor, to me personally known, who being by me duly sworn did say that he is President of MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC.; and that the seals affixed to the foregoing instrument are the Corporate Seals of the Companies; and that the said instrument was signed and sealed in behalf of the Companies by authority of their respective Boards of Directors.



POLLY MASON
Commission Number 750576
My Commission Expires
January 07, 2023

Polly Mason

Notary Public

(Expiration of notary's commission
does not invalidate this instrument)

I, William Warner, Jr., Secretary of MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC., do hereby certify that the above and foregoing is a true and correct copy of the POWER-OF-ATTORNEY executed by said Companies, which is still in full force and effect and has not been amended or revoked.

In Witness Whereof, I have hereunto set my hand and affixed the seal of the Companies on this 14 day of October, 2020



William Warner Jr.

Secretary

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SECTION 00430 - SUBCONTRACTORS LISTING

Mendocino County Crisis Residential Treatment Facility

FOR MENDOCINO COUNTY

In accordance with the provisions of Section 4100 *et seq.* of the Public Contract Code of the State of California, each bidder shall list below the name, license number, Department of Industrial Relations (DIR) Registration Number, and location of place of business of each subcontractor who will perform a portion of the contract work in an amount in excess of one-half of one percent (0.5%) of the total contract price. In each such instance, the nature and portion of the work to be subcontracted shall be described.

PORTION OF THE WORK SUBCONTRACTOR'S NAME CONTRACTOR LIC. # LOCATION
DIR REG #

Plumbing	Tri-Counties Plumbing	541757 1000035388	Willits, CA
HVAC	Reliance Interprises	845047 1000007731	Ukiah, CA
Landscaping	Johnson's Custom Landscaping Inc	748725 1000011617	Ukiah, CA
Fire Sprinklers/ Underground	Wipf Construction	629598 1000064006	Ukiah, CA
Earthwork	Cupples Excavating	999200 1000048226	Hopland, CA
Fencing	Humboldt Fence Co.	808339 1000063061	Fortuna, CA
Painting	Dunn Right Painting	691040 1000008654	Ukiah, CA
Drywall	Macias Drywall	900138 10000681183	Kelseyville, CA
Roofing	Solano County Roofing	495355 1000000777	Fairfield, CA
Insulation	Empire Insulation Contractors	819279 1000047932	Windsor, CA
Metal Fabrication	DT Fabrication	1044956 1000554880	Redwood Valley, CA

END OF SECTION

SECTION 00430 - SUBCONTRACTORS LISTING

Mendocino County Crisis Residential Treatment Facility

FOR MENDOCINO COUNTY

In accordance with the provisions of Section 4100 *et seq.* of the Public Contract Code of the State of California, each bidder shall list below the name, license number, Department of Industrial Relations (DIR) Registration Number, and location of place of business of each subcontractor who will perform a portion of the contract work in an amount in excess of one-half of one percent (0.5%) of the total contract price. In each such instance, the nature and portion of the work to be subcontracted shall be described.

PORTION OF THE WORK SUBCONTRACTOR'S NAME CONTRACTOR LIC. # LOCATION
DIR REG #

Electrical	Robert Colburn Electric Inc.	750471 1000006666	Eureka, CA
TILE	ROBERTS TILE	329858 100000944	Santa Rosa, CA
Glazing	B & L GLASS	1058949 1000571959	Santa Rosa, CA
Flooring	Universal Flooring	813425 1000003729	Sacramento, CA
Masonry	McI-Masonry Contractor Installers Inc.	757926 1000589138	Santa Rosa, CA
Architecture	Alameda Architecture Don Alameda	C-19767	Sebastopol, CA

END OF SECTION

SECTION 00500 - AGREEMENT FOR LUMP SUM BID

THIS AGREEMENT, made on the 17 day of November in the year 2020, between the County of Mendocino, hereinafter called COUNTY, and Cupples and Sons Construction, Inc. hereinafter called CONTRACTOR.

COUNTY and CONTRACTOR, for the consideration described below named, agree as follows:

FIRST: CONTRACTOR shall furnish all labor, materials, equipment, mechanical workmanship, transportation, and services for the installation and completion of the Mendocino County Crisis Residential Treatment Facility Project, in accordance with the contract documents, including the Addenda thereto, all as adopted by COUNTY.

SECOND: The work under this contract described below shall be completed within **three hundred and seventy-five (375) days** from the date of the "Notice to Proceed".

THIRD: The Contract consists of the following documents, all of which are fully a part hereof as if herein set out in full, whether or not hereto attached:

1. Invitation to Bid
2. Instructions to Bidders
3. Agreement
4. Contractor's Guarantee
5. Drawings & Specifications
6. All modifications thereof incorporated before execution of the Contract

FOURTH: COUNTY shall pay to CONTRACTOR, if CONTRACTOR is successful bidder, as full consideration for the faithful performance of the Contract the sum of:

Three million one hundred thirty-four thousand seven hundred sixty-five Dollars (\$ 3,134,765).

This sum constitutes the bid for the following project components (referenced hereunder to specifications section). This sum includes the following alternate bids:

Alternate 2, Alternate3, Alternate 4 and Alternate 5

Payment shall be made each month to CONTRACTOR in accordance with and subject to the provisions embodied in the Documents made a part of this Contract.

END OF SECTION

SECTION 00501 - WORKERS' COMPENSATION CERTIFICATION

Pursuant to California Labor Code Section 1861, the Contractor hereby certifies the following:

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.

Dated _____

Contractor Signature _____

END OF SECTION

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SECTION 00530 - SUBSTITUTION WARRANTY

Mendocino County Crisis Residential Treatment Facility

We propose to provide _____ for
_____ in lieu of, and as an equivalent to
_____ as indicated on the drawings and described in Section
_____ of the specifications. We agree to assume all costs for testing, research, etc. and any
modifications to other portions of the work as necessary to accommodate our material(s) and system(s),
including all appurtenances required for proper installation and functioning of said materials(s) and
system(s).

We hereby warrant that _____ is the equivalent of
_____ in every aspect and will perform satisfactorily
under the conditions and use indicated on the drawings and described in the specifications and have
attached complete descriptions and justifications of equivalency of substitutions hereto which are
incorporated herein by reference. All substitutions proposed in the original bid shall be documented
and warranted as specified above at time of bid submission.

Signed _____

Date: _____

Signed _____

Date: _____

END OF SECTION

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SECTION 00600 – GEOTECHNICAL REPORT

Mendocino County Crisis Residential Treatment Facility

PART I – GENERAL

1.1 SUMMARY

- A. A soils investigation for the site has been provided by County.
- B. Results of the soils investigation report may be inspected, and copies may be obtained at the cost of reproduction and handling upon request addressed to County and accompanied by full payment.

1.2 QUALITY ASSURANCE

- A. A soil engineer will be retained by Owner to observe performance of work in connection with excavating, trenching, filling, backfilling, and grading, and to perform compaction test.
- B. Readjust work performed that does not meet technical or design requirements but make no deviation from the Contract Documents without specific and written approval from County.

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SECTION 00650 - CONSTRUCTION SITE STORM WATER POLICY

PART I – GENERAL

1.1 SUMMARY

- A. Mendocino County Ordinance No. 4313 STORM WATER RUNOFF POLLUTION PREVENTION PROCEDURE (Mendocino County Code Chapter 16.30 et. seq.) requires any person performing construction and grading work anywhere in the county shall implement appropriate Best Management Practices (BMP) to prevent the discharge of construction waste, debris, sediment or contaminants from construction materials, tools and equipment from entering the storm drainage system or natural waterways (off-site).
- B. By commencing work in this contract, the contractor agrees to comply with Mendocino County Code Section 16.30.140 Inspection and monitoring. The County may enter the worksite whenever necessary to perform inspections related to the Storm Water Runoff Pollution Prevention Procedures for the project including inspection of BMP's and records relating to storm water plan compliance.

1.2 SUBMITTALS

- A. Prior to beginning construction activities, submit construction site Best Management Practice (BMP) Plans and Specifications prepared by a Qualified Storm Water Developer (QSD) or the Contractor referencing Mendocino County Building and Planning Services Documents noted below:
 - 1. Construction Best Management Practices for over-the-counter building permits for projects that do not disturb any soil.
 - 2. Small Construction Site Storm Water Erosion and Sediment Control Plan Template for projects that will disturb any soil.
- B. Submittal shall include a project specific BMP plan for all areas of soil disturbance and possible contamination source generated by the project. Attach copies of the relevant current BMP fact sheets from the California Storm Water BMP Handbook Portal planned to address each potential source of contamination generated by the project.
- C. A County approved BMP plan is required prior to beginning work on the project.

Part 2 – PRODUCTS

2.1 MATERIALS

- A. Provide Materials in Compliance with Approve BMP fact sheets in appropriate quantities to mitigate possible runoff, sedimentation and/or contamination in accordance with the approved BMP plan.

Part 3 – EXECUTION

3.1 PREPARATION

- A. Prepare BMP schedule to identify dates when BMP's will be installed.
- B. Ensure that BMP Materials are on site in the event of an untimely rain event and prior to October 15th.
- C. Identify and mark Storm Drain Inlets and drainage features leading to storm drains or natural waterways.
- D. Identify and provide instruction and training to on site personnel responsible for installation and management of BMP's.

3.2 INSTALLATION

- A. Complete BMP installation Prior to October 1st or prior to ground disturbance activities between October 1st and April 15th and call the project manager for an inspection of the installed BMP plan. Do not start grading activities without BMP's in place.
- B. Comply with installation guidelines included with BMP fact sheets and suitable to site conditions.
- C. Remove Contamination and Sediment BMP's after sources of sedimentation, or contamination have been removed from the site or final soil stabilization is complete. Do not remove Erosion Control BMP's until permanent Erosion Control features are established unless directed by the County.

3.3 INSPECTION

- A. It is the responsibility of the Contractor to provide regular inspection of BMP's throughout the rainy season. Maintain and replace all BMP's in accordance with the approve BMP plan.
- B. Prior to significant rain events, inspect installed BMP's to ensure all potential sources of contamination, sedimentation or erosion are protected by approved BMP's.

- C. During significant rain events verify that installed BMP's are adequate to the flows on the project site.
- D. Record inspection findings as required by approved BMP plan.
- E. Maintain Inspection records and a copy of the approved BMP plan on the project site for inspection by County and NCWRCB.
- F. Failure of the Contractor to comply with the requirements of these specifications and the provisions of the approved Storm Water pollution Prevention Plan or BMP plan may result in work stoppage, a written citation, monetary fine or any combination thereof.

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SECTION 00700 - GENERAL CONDITIONS

1. DEFINITIONS

Whenever in the Specifications and other Contract Documents the following abbreviations and terms are used, the intent and meaning shall be interpreted as follows:

- A. "Owner" - Board of Supervisors, County of Mendocino, or its authorized agents or assignees.
- B. "Agent" - The Agent acting for the County, which shall be either the County General Services Agency Director or his/her designee, or the County Executive Officer or his/her designee.
- C. "Contractor" - The person or persons, partnership, corporation, or combination thereof, private or municipal, who have entered into a contract with the County, as party or parties of the second part or his/her or their legal representatives.
- D. "Specifications" - The directions, provisions and requirements contained in these Specifications as supplemented by the Supplementary Conditions. Whenever the term "These Specifications" is used in this book, it means the provisions as set forth in this book.
- E. "Paragraph" - The particular section of subdivision herein designated by a number.
- F. "Laboratory" - The designated laboratory authorized by the County to test materials and work involved in the Contract.
- G. In the case of conflict between the Standard Specification and these Specifications, these Specifications shall take precedence over and be used in lieu of such conflicting portions:

A.W.S.	American Welding Society
A.S.T.M.	American Society for Testing Materials
A.S.A.	American Standard Association
N.B.F.U.	National Board of Fire Underwriters
N.B.S.	National Bureau of Standards
A.S.M.E.	American Society of Mechanical Engineers
A.R.I.	American Refrigeration Institute
N.E.M.A.	National Electrical Manufacturers Association
U.L.	Underwriter's Laboratories
E.T.L.	Electrical Testing Laboratories
A.C.I.	American Concrete Institute
F.A.	Federal Specifications
A.I.S.C.	American Institute of Steel Construction

- H. The County and the Contractor are those named as such in the Agreement. They are treated throughout the Contract Documents as if each were of the singular number and the masculine gender.
- I. When the words "Approved", "Satisfactory", or "Equal", "As Directed", etc. are used, approval by the County is understood.
- J. All Federal, State laws and local laws shall govern the construction of the Contract and all rules, ordinances and requirements of authorized officials shall be complied with.
- K. It is understood that any reference to the Specifications or designation of the American Society for Testing Materials, Federal Specifications or other standard, code, or order, refers to the most recent or latest amended specification or designation.

2. EXAMINATION OF PLANS AND SPECIFICATIONS

The Bidder shall examine carefully the site of the work contemplated and the proposal, plans, specifications, and Contract forms thereof. It will be assumed that the Bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and quantities of work to be performed and material to be furnished, and as to the requirements of these Specifications.

3. DRAWINGS AND SPECIFICATIONS

- A. Figured dimensions on the drawings shall govern but work not dimensioned shall be as directed. Work indicated but not particularly detailed or specified shall be equal to similar parts that are detailed or specified, or as directed. Full-size detailed shall take precedence over scale drawings as to shape and details of construction. It is intended that scale drawings, full-size details and specifications should agree, but should any discrepancy or apparent error occur in plans and specifications or should any work of others affect this work, the Contractor shall notify the County at once; if the Contractor proceeds with the work affected without instruction from the County he shall make good any resultant damage or defect.
- B. All misunderstandings of drawings or specifications shall be clarified by the County, whose decision shall be final.
- C. Any work called for by the drawings and not mentioned in the Specifications, or vice versa, is to be furnished as though fully set forth by both. Where not specifically stated otherwise, all work and materials necessary for each unit of construction, including special construction for any specific brand or shape of material called for even though only briefly mentioned or indicated, shall be furnished and installed fully and completely as a part of the Contract.

- D. Lists, rules and regulations referred to are recognized printed standard and shall be considered as one and a part of these Specifications within the limits specified.
- E. "General Conditions" apply with equal force to all of the work, including extra work authorized.
- F. For convenience, the Technical Specifications are arranged in Divisions and further divided into various sections. It is to be understood, this separation is for convenience of all parties involved and is not to be considered as the limits of the work required of any separate trade. The terms and conditions of such limitations are wholly between the County and the Contractors during bidding and construction phases; i.e., all work shown, as well as for the proper completion of the project as a whole, shall be coordinated by the Contractor and his Subcontractors during bidding and construction and shall be provided in this Contract.

4. CONDUCT OF WORK

- A. The County reserves the right to do other work in connection with the project by contract or otherwise. Contractor shall at all times conduct his work so as to impose no hardship on the County or others engaged in the work. Contractor shall adjust, correct, and coordinate his work with the work of others so that no discrepancies shall result in the whole work.
- B. The Contractor shall provide at his own cost and risk all labor, material, water, power tools, machinery, scaffolding, and framework for the execution of the work. Equipment shall be adequate and as approved.

The Contractor shall obtain all necessary measurements from the work and shall check dimensions, levels, and construction and layout and supervise the construction, for correctness of all of which he shall be responsible.

- C. Where work of one trade joins or is on other work, there shall be no discrepancy when same is completed. In engaging work with other materials, marring or damaging same shall not be permitted. Should improper work of any trade be covered by another which results in damage or defects, the whole work affected shall be made good without expense to the County.
- D. The Contractor must anticipate relation of all parts of the work and at the proper time furnish and set anchorage, blocking or bonding as required. Anchorage and blocking necessary for each trade shall be a part of same, except where stated otherwise.
- E. Assistance required by the County in obtaining measurements or information on the work shall be furnished accurately and fully without cost to the County.

5. OWNERSHIP OF DRAWINGS

All plans and specifications shall remain the property of the County and shall be returned to the office of the County Director of General Services or shall be accounted for by the Contractor before the final certificate will be issued.

6. PUBLIC AND COUNTY CONVENIENCE AND SAFETY

The Contractor shall furnish, erect, and maintain such fences, barriers, lights and signs as are necessary to give adequate warning to the public at all times and of any dangerous conditions until final acceptance of the work by the County.

7. ACCIDENT PREVENTION

- A. It shall be the Contractor's responsibility to keep himself fully informed of all existing and future safety regulations, Codes, OSHA requirements, and other laws and regulations governing the work which may in any manner affect anyone in and around the project or engaged or employed in the work, or materials, equipment, etc. used in the work or which in any way affect the conduct of the work.
- B. The Contractor shall appoint a Safety Officer for the project and submit his name to the County.
- C. The Contractor shall supply the County with a Material Safety Data Sheet (MSDS) on each hazardous substance to be used by the Contractor on the project.
- D. The Contractor and his Safety Officer shall be solely responsible for insuring compliance with those Codes, regulations, OSHA requirements, and for discovering and correcting any code violations or unsafe conditions.
- E. Reports of all lost-time accidents shall be promptly submitted to the Owner, giving all pertinent information.

8. RESPONSIBILITY FOR DAMAGE

The County shall not be answerable or accountable in any manner for: (1) any loss or damage that may happen to the work or any part thereof, for any loss or damage to any of the materials or other things used or employed in performing the work; (2) injury to or death of any person or persons, either workers or the public; (3) damage to property from any cause which might have been prevented by the Contractor or his workers or anyone employed by him. The Contractor shall be responsible for any liability imposed by law for injuries to or death of any person including, but not limited to, workers and the public or damage to property resulting from defects or obstructions or from any cause whatsoever during the progress of the work or at any time before its completion and final acceptance. The Contractor shall indemnify, save harmless and defend the County of Mendocino, its elected or appointed officers, agents, employees or

volunteers connected with the work, from all claims or actions for injuries or death of any person, or damage to property, resulting from the Contractor's performance of the Contract. With respect to third party claims against the Contractor, the Contractor waives any and all rights to any type of express or implied indemnity against the County of Mendocino, its elected or appointed officers, agents, employees or volunteers.

In addition to any remedy authorized by law, so much of the money due the Contractor under and by virtue of the Contract as shall be considered necessary by the County may be retained by the County until disposition has been made of such suits or claims for damages as aforesaid.

9. LAWS TO BE OBSERVED

The Contractor shall keep himself fully informed of all existing and future State, Federal and local laws, codes and regulations which in any manner affect those engaged or employed in the work, or the materials used in the work, or which in any way affect the conduct of the work, and of all such orders and decrees of bodies and tribunals having any jurisdiction or authority over the same and shall be solely responsible for insuring compliance with those laws, codes and regulations.

A partial, though not necessarily complete listing of laws to be observed by the Contractor is as follows:

- A. Federal Americans with Disabilities Act of 1990.
- B. Federal Labor Standards Act.
- C. The Anti Kick-Back regulations found in 29 CFR Part 3.
- D. All contract clauses required by 29 CFR 5.5 (a) and (c), 20 U.S.C. 1232b ; 40 U.S. C. 276a, 276c, 327-332; 29 CFR Parts, (926).
- E. Nondiscrimination clause and Certification of Non-Segregated Facilities prescribed by Executive Order No. 11246, September 24, 1965 as amended by Executive Order 11375.
- F. Executive Order No. 11288 of July 7, 1966 (31 FR 9261) "Prevention, Control and Abatement of Water Pollution".
- G. Executive Order 11988, relating to evaluation of flood hazards.
- H. Compliance with all Federal, State and local requirements for handicapped access, fire safety and seismic resistance.

10. BONDS REQUIRED

The successful bidder shall furnish bonds as required in the document entitled "Instructions to Bidders" which is part of these Contract documents.

11. INSURANCE

The Contractor, at his expense, shall secure and maintain at all times during the entire period of performance under this Contract, insurance as set forth below with insurance companies acceptable to the County of Mendocino.

The Contractor shall provide to the County of Mendocino certificates of insurance with endorsements properly executed by an officer or authorized agent of the issuing insurance company evidencing coverage and provisions as stated below:

A. INSURED

Name the County of Mendocino, its elected or appointed officials, employees, agents and volunteers as additional insured with regard to damages and defense of claims arising from: (a) activities performed by or on behalf of the Named Insured, (b) products and completed operations of the Named Insured, (c) Premises owned, leased or used by the Named Insured, or (d) Ownership, operation, maintenance, use, loading or unloading of any vehicle owned, leased, hired or borrowed by the Named Insured, regardless of whether liability is attributable to the Named Insured or a combination of the Named Insured and the County of Mendocino, its elected or appointed officials, employees, agents and volunteers.

B. SEVERABILITY OF INTEREST

Provide that the inclusion of more than one named insured shall not operate to impair the rights of one insured against another insured, and the coverages afforded shall apply as though separate policies had been issued to each insured.

C. CONTRIBUTION NOT REQUIRED

Provide that as respects: (a) work performed by the Named Insured on behalf of the County of Mendocino; or (b) products sold by the Named Insured to the County of Mendocino; or (c) premises leased by the Named Insured from the County of Mendocino; or (d) ownership, operation, maintenance, use, loading or unloading of any vehicle owned, leased, hired or borrowed by the Named Insured, the insurance afforded by this policy shall be primary insurance as respects the County of Mendocino, its elected or appointed officials, employees, agents and volunteers; or stand in an unbroken chain of coverage excess of the Named Insured's scheduled underlying primary coverage. In either event, any other insurance maintained by the County of Mendocino, its elected or appointed officials, employees, agents and volunteers shall be excess of this insurance and shall not contribute with it.

D. COVERAGE BELOW MINIMUM REQUIRED NOTICE

Provide that the limits of insurance afforded by this policy shall not fall below the minimum requirements of the County of Mendocino without notice to the County of Mendocino by certified mail return receipt requested. Such notice shall be addressed to: County of Mendocino, Courthouse, Ukiah, Calif. 95482, Attn: Risk Management.

E. CANCELLATION NOTICE

Provide that the insurance afforded by this policy shall not be suspended, voided, canceled, non-renewed or reduced in coverage or in limits except after thirty (30) day's prior written notice, delivered in person or by First Class U.S. Mail, has been given to the County of Mendocino. Such notice shall be addressed to: County of Mendocino, 841 Low Gap Road, Ukiah, Calif. 95482, Attn: Risk Management.

Contractor shall furnish to the County of Mendocino certificate(s) of insurance evidencing Workers Compensation Insurance coverage to cover its employees. The Contractor shall require all subcontractors similarly to provide Workers Compensation Insurance as required by the Labor Code of the State of California for all of the Contractor's and subcontractors' employees.

The Contractor shall not commence work, nor shall he allow his employees or subcontractors or anyone to commence work until all insurance required and provisions contained herein have been submitted to and accepted by the County of Mendocino. Failure to submit proof of insurance as required herein may result in awarding said Contract to another bidder. Failure to comply with the insurance requirements set forth herein shall constitute a material breach of contract and, at County of Mendocino's option, shall subject this Contract to termination.

Insurance coverage in the minimum amounts set forth herein shall not be construed to relieve the Contractor for liability in excess of such coverage, nor shall it preclude the County of Mendocino from taking such other action as is available to it under any other provisions of this Contract or otherwise in law.

SCOPE OF LIABILITY COVERAGES

Contractor shall furnish to the County of Mendocino certificates of insurance evidencing at the minimum the following:

1. Commercial General Liability (CGL) including products and completed operations, property damage, bodily injury and personal & advertising injury \$1,000,000 each occurrence and \$2,000,000 aggregate.

2. Vehicle-Bodily Injury \$500,000 each person, \$1,000,000 each occurrence,

and

Vehicle-Property Damage \$1,000,000 each occurrence.

---or---

Combined Single Limit Vehicle Bodily Injury and Property Damage Liability
\$1,000,000 each occurrence.

3. Contractor shall obtain, at Contractor's expense, and keep in effect until final acceptance by the County, all risk Builder's Risk Insurance (including earthquake and flood) covering the real and personal property of others in the care, custody, and control of the contractor. Coverage shall include theft and damage to building interiors. The minimum amount of coverage to be carried shall be equal to the full amount of the contract. Contractor shall be financially responsible for any deductible applied to loss. This insurance shall include Mendocino County, the Contractor and its subcontractors as their interests may appear.

12. WORKERS COMPENSATION CERTIFICATION

Contractor certifies as follows:

"I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for Workers Compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this Contract". (Labor Code Section 1861)

13. CONTRACTOR'S RESPONSIBILITY FOR WORK

Until the formal acceptance of the work by the County, the Contractor shall have the charge and care thereof and shall bear the risk of injury or damage to any part thereof or to materials or thing employed in doing the work or stored on the site by the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, replace, and make good all injuries or damages to any portion of the work occasioned by any of the above caused before final acceptance and shall bear the expense thereof, except such injuries or damages occasioned by acts of the Federal Government or the public enemy. The Contractor's responsibility also extends to adjoining property as related to the construction operation.

14. RESPONSIBILITY OF COUNTY

The County shall not be held responsible for the care or protection of any material or parts of the work prior to final acceptance, except as expressly provided in these Specifications.

15. COOPERATION BETWEEN CONTRACTORS

Where two or more contractors are employed on related or adjacent work, each shall conduct his operations in such a manner as not to cause any unnecessary delay or hindrance to the other. Each contractor shall be responsible to the other for all damage to work, to person or property, or for loss caused by failure to furnish the work within the time specified for completion.

Should the Contractor, through acts of neglect on the part of any Contractor, suffer loss or damage to the Work, the Contractor agrees to settle with such other Contractor by agreement. If such other Contractor should file claim against the County on account of alleged damages to be sustained, the County shall notify the Contractor who shall, at his expense, indemnify and save harmless the County against any such claim.

16. SUBCONTRACTING AND ASSIGNMENT

The Contractor shall give his personal attention to the fulfillment of the Contract and shall keep the work under his control. Should the Contractor subcontract any part of his Contract, the Contractor shall be fully responsible to the County for the acts and omissions of his subcontractor and of the persons either directly or indirectly employed by the subcontractor as he is for the acts and omissions of persons directly employed by himself.

No subcontractor will be recognized as such, and all persons engaged in the work on construction shall be considered as employees of the Contractor.

17. PERMITS AND LICENSES

The Contractor shall procure all permits and licenses, pay all charges and fees, and file all notices necessary and incidental to the due and lawful prosecution of the work.

18. PATENTS

The Contractor shall assume all responsibilities arising from the use of patented materials, equipment, devices or processes used on or incorporated in the work.

19. LIENS

Liens shall be enforced as provided by California State Law pertaining to Public Works.

20. CHANGES IN THE WORK

A. The County may authorize or order changes in the work, in which event the Contract sum shall be adjusted by one or more, or a combination of, the following methods:

1. Unit bid prices previously approved or as may be agreed upon.

2. An agreed lump sum substantiated by Contractor, itemizing labor, material, equipment, overhead, profit, bond, etc.
3. By ordering Contractor to proceed with work and keep correct account with vouchers the actual cost of:
 - a. Labor, including foreman;
 - b. Materials entering permanently into the work;
 - c. The ownership or rental cost of construction plant and equipment during the time of use on the extra work;
 - d. The work of subcontractors, accounted for as described herein;
 - e. Power and consumable supplies for the operation of power equipment;
 - f. Insurance;
 - g. Social Security and old age and employment contribution.
- B. To the cost under (2) and (3), there may be added a fixed fee to be agreed upon but not to exceed fifteen percent (15%) for the estimated cost of the work. The fee shall be compensation to cover the cost of administrative overhead, and profit.
- C. On changes which involve a credit to the County, no allowances for overhead need be figured.
- D. All such change orders and adjustments shall be in writing.
- E. All Claims by Contractor for extra cost shall be made in writing before executing the work involved. Refer to specification section 011900 – Unforeseen Physical Conditions for Claims procedures.
- F. All change orders shall be reviewed and approved by the County.

21. COUNTY'S RIGHT TO TERMINATE CONTRACT

If the Contractor should refuse or neglect to properly perform or prosecute the work or if he should substantially violate any provision of the Contract, then the County may, without prejudice to any other right or remedy upon seven (7) days written notice to the Contractor, terminate the services of the Contractor and take possession of the premises, and all materials, tools, and equipment thereon and complete the work. The expense thereof shall be deducted from the

balance otherwise due the Contractor. If such expense should exceed such unpaid balance, then the Contractor shall pay the difference to the County.

22. CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT

If the work is stopped for a period of thirty (30) days under an order of any court or other public authority having jurisdiction, or as a result of an act of government, such as a declaration of a national emergency making materials unavailable, through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing any of the work under a contract with the Contractor, or if the work should be stopped for a period of thirty (30) days by the Contractor because no certificate for payment has issued as provided in Paragraph 25 or because the County has not made payment thereon as provided in Paragraph 25, then the Contractor may, upon seven (7) additional days' written notice to the County, terminate the Contract and recover from the County payment for all work executed and for any proven loss sustained upon any materials, equipment, tools, construction equipment and machinery, including reasonable profit and damages.

23. TIME OF COMPLETION AND LIQUIDATED DAMAGES

- A. In case all the work called for under the Contract is not completed before or upon the expiration of the time limit as set forth in these specifications, damage will be sustained by the County, and it is impracticable to determine the actual damage which the County will sustain in the event of and by reason of such delay. It is therefore agreed that the Contractor will pay to the County the sum of money per calendar day for each day's delay beyond the time prescribed as required in the document entitled "Instructions to Bidders", which is a part of these Contract Documents. The Contractor agrees to pay such liquidated damages as herein provided, and in case the same are not paid, agrees that the County may deduct the amount thereof from any money due or that may become due the Contractor under the Contract.
- B. In case the work called for under the Contract is not finished and completed in all parts and requirements within the time specified, the County shall have the right to extend the time for completion or not, as may best serve the interest of the County. If the County decides to extend the time limit for the completion of the Contract, the County shall further have the right to charge the Contractor, his heirs, assigns or sureties, and to deduct from the final payment for the work, all or any part, as it may deem proper, of the actual cost of County, including inspections, superintendence, and other overhead expenses directly chargeable to the Contract, and which accrue during the period of such extension. The cost of final inspections shall not be included in such charges.
- C. The Contractor shall not be assessed with liquidated damages nor the cost of County's services and inspection during any delay in the completion of the work caused by acts of God or the public enemy, acts of the County, fire, flood, earthquake, epidemics, quarantine restrictions, strikes, freight embargoes, shortages of materials, labor, fixtures or equipment (provided the Contractor furnishes satisfactory and acceptable proof that he has made

diligent attempts to obtain same) and unusually severe weather or delays of subcontractors due to such causes, provided the Contractor shall within ten (10) days from the beginning of such delay notify the County in writing of the delay. County's findings of fact thereon shall be final and conclusive.

- D. The County agrees that changes in work ordered pursuant to Paragraph 20 and extensions of completion time made necessary by reasons thereof, shall in no way release any guarantee given by the Contractor or the Contract let hereunder, nor shall such changes in the work relieve or release the sureties on bonds executed pursuant to these specifications. Sureties shall be deemed to have expressly agreed to any change in the work and to any extension of time made by reason thereof.

24. ACCEPTANCE

- A. The Contract will be accepted as completed only when the whole and entire Contract shall have been completed satisfactorily to the County. In judging the work, no allowance for deviations from the original plans and specifications will be made unless already approved in writing at proper times and in a manner as called for herein.
- B. Should it become necessary to occupy a portion of the work before the Contract is fully completed, such occupancy shall not constitute acceptance.

25. PARTIAL PAYMENTS

On the twenty-fifth (25th) day of each month, the Contractor shall submit to the County for approval an application for payment, using the standard AIA forms, showing an itemized statement for work that has been performed. The County within thirty (30) days of receipt of an approved application, shall issue to the Contractor a certificate for the amount the County has approved for work that has been performed less retention as authorized by law.

Contractor shall submit certified copy of payroll showing payment of California State Prevailing wages with each request for payment submitted.

26. FINAL PAYMENT

Upon completion of the Contract, the County will cause to be made a final estimate of the amount of work done, and the value of such work. After approval by the County representative, the County shall pay the remainder due on the contract (with the exception of retainage) after deducting there from, all previous payments. All amounts retained (retainage) under the provisions of the Contract shall be due and payable 30 days from the date of acceptance in writing of the completion of Contract and / or Notice of Completion issued by the County representative. All prior partial estimates and payments shall be subject to correction in the final estimate and payments. Payment and the final estimate are due within thirty-five (35) days from the recorded date of the Notice of Completion, provided all as-built drawings, equipment manuals, instructions to the owner and guarantees have been received and accepted by the County.

27. PAYMENT WITHHELD

The County may withhold or, on account of subsequently discovered evidence, may nullify the whole or part of any certificates to such extent as may be necessary to protect the County from (1) defective work not remedied, (2) asserted claims against Contractor, (3) failure of the Contractor to make payments properly to employees or for material or labor, (4) any reasonable doubt that the Contract work can be completed for the balance then unpaid, or (5) damage to another contractor.

28. FAULTY WORK AND MATERIALS

The Contractor shall promptly remove from the premises all materials condemned by the County as failing to conform to the Contract, whether incorporated in the work or not. The Contractor shall promptly replace and re-execute his own work in accordance with the Contract and without expense to the County. The Contractor shall bear the expense of making good all work of other contractors destroyed or damaged by such removal.

If the Contractor does not remove such condemned work and materials within reasonable time, fixed by written notice, the County may remove them and may store the materials at the expense of the Contractor. If the Contractor does not pay the expenses of such removal within ten (10) days thereafter, the County may upon ten (10) days written notice, sell such materials at auction or at private sales and shall account for the net proceeds thereof after deducting all costs and expenses that should have been borne by the Contractor.

29. TEMPORARY SUSPENSION OF WORK

The County shall have the authority to suspend the work wholly or in part, for such period as it may deem necessary, due to unsuitable weather or to such other conditions as are considered unfavorable for the suitable progression of the work, or for such time as it may deem necessary due to the failure of the Contractor to carry out orders given by County, or to perform any provision of the Contract. The Contractor shall immediately obey such order of the County and shall not resume work until ordered in writing by the County.

30. SAMPLES

When requested, the Contractor shall submit for the County's review samples of the various materials, together with the finish thereof, as specified for and intended for use in the work. Samples of bulk materials shall be selected by the lab. All materials and workmanship shall in all respects be equal to the samples so submitted and reviewed. Samples shall be sent or delivered to the County, samples and delivery charges paid by Contractor. Samples will be returned to the Contractor if requested, shipping or delivery charges collect.

31. CLEANING AND REMOVAL OF DEBRIS

The Contractor shall, as directed by the County during the progress of the work, remove and properly dispose of dirt and debris and shall keep the premises reasonably clean. Upon completion of the work, the Contractor shall remove all of his equipment and unused materials provided for the work and shall put the building and appurtenances in a neat and clean condition and shall do all cleaning and washing required by the specifications.

32. OBSTRUCTIONS

The Contractor may be required to work around public utility facilities and other improvements which are to remain in place within the construction area. The Contractor shall be held liable to the owners of such facilities and improvements for any damage or interference with service resulting from the Contractor's operation.

The exact location of underground facilities and improvements within the construction area, whether shown on the drawings or not, shall be ascertained by the Contractor before using equipment that may damage such facilities or interfere with their service.

33. SUPERINTENDENT IN CHARGE

The Contractor shall keep on the work at all times and until the acceptance certificate is issued a competent superintendent or foreman for the purpose of receiving and executing without delay any orders from County in keeping with the terms of the Contract. This foreman shall have charge of the plans and specifications kept on the job. He shall be instructed to familiarize himself closely with all provisions of the plans and specifications and to follow the same accurately.

34. STORAGE OF MATERIALS AND EQUIPMENT

Materials and equipment shall not be stockpiled or placed outside of the site property lines unless written permission is obtained by the appropriate owner or political subdivision having jurisdiction over the adjacent property, roads, streets, etc.

35. GENERAL GUARANTY

Neither the final payment nor any partial payment, nor partial or entire use of the premises by occupancy by the County shall constitute an acceptance of the work not completed in accordance with the Contract. Final Payment or partial payment or partial or entire use of the premises by occupancy shall not relieve the Contractor of liability with respect to any warranties or responsibilities for faulty materials or workmanship. The Contractor shall remedy any defect in the work and pay for any damage to other work resulting therefrom which shall appear within a period of one (1) year from the date of final acceptance of the work, unless a longer period is specified elsewhere in these specifications. The County shall notify the Contractor of observed defects with reasonable promptness.

36. MATERIALS AND SUBSTITUTIONS

- A. Specific reference to materials, appliances, fixtures and equipment by trade name is intended to be used as standard, but this implies no right on the part of the Contractor to use other materials, fixtures, appliances, equipment, until review by the County.
- B. The County alone shall determine what will be considered as equal, but the burden of proof as to quality, utility and function, etc. shall be upon the Contractor.

If the Contractor desires to substitute any item, he shall in writing state the cost of such item and the original item named in the specifications if requested and shall submit a substitution warranty in the format shown in the specifications.

- C. As soon as practicable and within twenty (20) days after official award of Contract and before any fixtures, materials or equipment are purchased, the Contractor shall submit to the County a complete list of materials, fixtures and equipment in triplicate, giving the manufacturers' names, catalog numbers, etc., and, when requested, the original and substitute item of each article which he proposes to install as a substitution.
- D. Requests for substitution will not be considered after the above period of time unless the item specified is not obtainable or, in the opinion of the County, such substitution would serve the County's interest.

37. CONSTRUCTION, MATERIAL AND LABOR COST SCHEDULES

- A. The successful Contractor shall submit the following schedules to the County within ten (10) days after commencing the work:
 - 1. A construction schedule indicating the start and finish of each phase of the work.
 - 2. A detailed statement of the cost of material and labor included in the original estimate for each phase of the work so arranged that the value of the work as it progresses may be readily determined.

38. CONFERENCES

At any time during the progress of the work, the County may request the Contractor to attend a conference of any or all of the Contractors engaged on the work, and any notice of such conference shall be duly observed and complied with by the Contractor.

39. INSPECTION AND PAYMENTS - NOT ACCEPTABLE

The fact that the work and materials have been inspected by the County of Mendocino and payments on account have been made does not relieve the Contractor from the responsibility of replacing and making good any defective work or materials that may be discovered within one (1)

year from the date of the completion of the work by the Contractor and its acceptance by the County. [Five (5) years for roof.]

40. RETURN OF DRAWINGS AND SPECIFICATIONS

All plans and specifications shall be returned to the Office of the County Director of General Services or shall be accounted for by the Contractor before the final certificate will be issued.

41. ARRANGEMENT OF SPECIFICATION SECTION

- A. For convenience, these specifications are arranged in several sections, but such separation shall not be considered as limiting any work required to a particular trade. The Contractor shall in cooperation with other contractors establish responsibility for any work required by the plans and specifications which may be improperly arranged or not included in the appropriate section.
- B. In areas where one trade meets another for joining, the Contractor is responsible to be certain that all work shown is included in his bid.

42. QUALITY OF MATERIALS AND LABOR

All materials used on this Contract shall be new and the best market quality, unless specified or shown otherwise. All labor used on this Contract shall be competent and skilled for the work. All work executed under this Contract shall be done in the best, most thorough, substantial and workmanlike manner.

All material and labor not meeting these standards shall be removed. The County may refuse to issue any certificate of payment until all defective materials or work have been removed, and other material of proper quality substituted therefor.

43. INCOMPETENT WORKERS

If at any time any foreman or worker who shall be employed by the Contractor shall be declared by the County to be incompetent or unfaithful in executing the work, the Contractor, on receiving written notice, shall forthwith initiate appropriate action to dismiss such person from the work.

44. COUNTY TO DECIDE

All matters of color, texture, design, interpretation of plans and specifications shall be referred by the Contractor to County, whose decision thereon shall be final.

45. CODES

All work and materials shall be in full accordance with the latest rules and regulations of the State Fire Marshal; the Safety Orders of the Division of Industrial Safety; the California Electric Code; the

California Building Code; California Mechanical Code; the California Fire and Plumbing Codes; OSHA and other applicable State and local codes and laws. Nothing in these plans or specifications is to be construed to permit work not conforming to these Codes.

46. PAYMENT OF FEDERAL, STATE OR LOCAL TAXES

Any Federal, State or Local tax payable on articles furnished by the Contractor under the Contract shall be included in the Contract price and paid by the Contractor.

47. LIMITATIONS OF HOURS OF WORK

Eight (8) hours labor constitutes a legal day's work. The Contractor shall forfeit as a penalty \$25.00 for each worker employed in the execution of the Contract by the Contractor for each calendar day which such worker is required or permitted to work more than eight (8) hours in one (1) calendar day and forty (40) hours in any one (1) calendar week in violation of the provisions of the California Labor Code, and in particular Sections 1810 and 1816. Work performed by employees of Contractors in excess of eight (8) hours per day and forty (40) hours during any one (1) week, shall be permitted upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half (1 & 1/2) times the basic rate of pay, as provided in Section 1815.]

48. PAYMENT OF NOT LESS THAN THE GENERAL PREVAILING RATE OF PER DIEM WAGES

- A. The Contractor shall pay his workers on all work included in this Contract not less than the general prevailing rate of per diem wages for legal holiday and overtime work in said locality. Such per diem wages shall not be less than the stipulated rates contained in a schedule thereof which has been ascertained and determined by the State Director of Industrial Relations to be the general prevailing rate of per diem wages for each craft or type of worker needed to execute this Contract.
- B. The Contractor shall comply with Labor Code Section 1775. In accordance with Section 1775, the Contractor shall forfeit as a penalty twenty-five dollars (\$25.00) for each calendar day or portion thereof, for each worker paid less than the stipulated prevailing rates for such work or craft in which such worker is employed for any work done under the Contract in violation of the provisions of the Labor Code in particular Labor Code Sections 1770 and 1780. In addition to said penalty, and pursuant to Section 1775, the difference between such stipulated prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor.

49. LABOR CODE CLARIFICATION

It is to be understood that references to the California Labor Code shall mean the current Code or as may be amended during the period of the Contract.

The Contractor shall be responsible to notify all inspectors, testing agencies, and County representatives a minimum of seventy-two (72) hours before required tests and/or inspections.

Specifically omitted from the services of the County are all design and construction review services relating to the Contractor's safety precautions or to means, methods, techniques, sequences, or procedures required for the Contractor to perform his work.

52. RECORD DRAWINGS

- *****

Contractor _____ Date _____

- September 25, 2020
00700 - 18

53. OCCUPANCY OR USE BEFORE ACCEPTANCE OF COMPLETION

The County may occupy any building or portion thereof or use any improvement contemplated by the Contract prior to the completion of the entire work. A list of work to be completed and corrected by the Contractor, if any, shall be prepared and agreed to between the County and the Contractor before occupancy or use. Such occupancy or use shall not operate as an acceptance of any part of the work but shall start the guaranty-warranty period on the structure or portion thereof so occupied or improvement of equipment so used, provided, however, that such occupancy shall not start the guaranty-warranty period as to items appearing on the list of work to be completed and corrected. No such occupancy or use shall be deemed to have occurred unless and until the County has given the Contractor formal written notice of intention to so occupy or use, specifying the portion or portions of the structure, improvement or equipment which will be deemed so occupied or used.

54. COMPLIANCE WITH HANDICAPPED ACCESS LAWS

- A. It is the County's intent for all features on these plans and specifications to conform to applicable regulations for the accommodations of physically handicapped persons in buildings and facilities used by the public, whether or not said plans and specifications so conform.
- B. It shall be the responsibility of the manufacturers, suppliers and distributors to insure that all manufactured and fabricated products, devices and items they supply for this project conform to applicable regulations of Title 24 of the California Code of Regulations.
- C. When shop drawings and/or manufacturers product literature, and other matters subject to handicapped regulations are submitted to County, the following shall be provided:
 - 1. Statement that the item shown complies with the handicapped regulations of Title 24 of the California Code of Regulations.
 - 2. Show all required dimensions, heights, clearances, and locations that must be followed when items are installed on project.

55. CONTRACT AMBIGUITY

This Contract shall be deemed to have been prepared jointly by the parties signing the Contract and if any inconsistencies or ambiguities exist, they shall not be interpreted or construed against any of the parties as the drafter.

56. FAIR EMPLOYMENT PRACTICES/NONDISCRIMINATION

The Contractor shall comply with Federal and State Fair Employment Practices provisions.

The Contractor, in connection with performance of work under this agreement, agrees to comply with the rules and regulations which deal with or relate to nondiscrimination set forth as follows:

- A. During the performance of this Contract, the Contractor and its subcontractors shall not deny the Contract's benefits to any person on the basis of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex or age, nor shall they discriminate unlawfully against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, age, or sex. Contractor shall insure that the evaluation and treatment of employees and applicants for employment are free of such discrimination.
- B. The Contractor shall comply with the provisions of the California Fair Employment and Housing Act (Gov. Code, sections 12900 *et seq.*), the regulations promulgated thereunder (2 Cal. Code of Regulations sections 7285.0 *et seq.*), and Government Code Sections 11135 - 11139.5).
- C. The Contractor shall permit access by representatives of the Department of Fair Employment and Housing and the County upon reasonable notice at any time during the normal business hours, but in no case less than 24 hours notice, to view such of its books, records, accounts, other sources of information and its facilities as said Department or County shall require to ascertain compliance with this clause.
- D. The Contractor and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.
- E. The Contractor shall include the above nondiscrimination and compliance provisions in above subparagraphs 1 and 2 in all subcontracts to perform work under the Contract.

END OF SECTION

SECTION 00811 - UNFORESEEN PHYSICAL CONDITIONS

PART 1 - GENERAL

1.1 SUMMARY

This Section includes special requirements for unforeseen hidden conditions, differing site conditions and underground facilities as required for California Public Works Contracts.

1.2 UNFORESEEN SITE CONDITIONS

- A. Pursuant to Section 7104 of the California Public Contract Code, if any of the following conditions, hereinafter called hidden conditions, are encountered at the site, then Contractor shall promptly, before such conditions are disturbed and in no event later than three (3) days after discovery, notify County in writing using the "Hidden Conditions Report" attached to this Document:
 - 1. Material that Contractor believes may be hazardous waste material, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or a Class III disposal site in accordance with provisions of existing law.
 - 2. Subsurface or latent physical conditions at the site or in the building differing materially from those represented in the Contract Documents.
 - 3. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents or conditions that could be observed by examination of the site and the Reference Documents.
- B. Conditions that are not unforeseen, hidden, unknown or differing site and building conditions include but are not limited to, the following.
 - 1. All that is indicated in or reasonably interpreted from the Contract Documents.
 - 2. All that is indicated in or reasonably interpreted from the Reference Documents specified in Section 01010, "Summary of Work".
 - 3. All that could be seen on site and that could be observed.
 - 4. Conditions that are materially similar or characteristically the same.
 - 5. Conditions where the location of the building component is in the proximity where indicated in or reasonably interpreted from the Contract Documents or Reference Documents.

- C. County will promptly investigate the conditions reported which appear to be unforeseen conditions.
 - 1. If County determines that the reported conditions are inherent in work of the character provided for in the Contract Documents or observed by examination of the site and Reference Documents, or that the condition is not hidden, unforeseen or materially different, Contractor shall execute the Work at no additional cost to County.
 - 2. If County determines that the conditions are hidden or differing conditions and that they will materially cause a decrease or increase in Contractor's cost of any portion of the work, a Contract Modification will be issued for compensation of such portion of the work as provided in the General Conditions.
 - 3. If County determines that the conditions are hidden or differing conditions and that they will materially affect the performance time, Contractor, upon submitting a written request, will be granted an extension of time subject to the provisions of the General Conditions.
 - a. Time extensions or contract costs will not be granted for delays that could be or could have been avoided by Contractor redirecting his forces and equipment to perform other work on the Contract.
- D. Should Contractor disagree with County's determination, Contractor shall submit a Request for Change (RFC) to County that the condition is not indicated in or reasonably interpreted from the Contract Documents, and that the condition is not similar in character to the material that could have been observed by examination of the site and Reference Drawings, but that the condition is materially different and the condition is unforeseen and unknown.
 - 1. Contractor shall submit proof with written explanation, drawings, photographs, material and labor cost breakdowns, and other relevant data to show the condition.
 - 2. County will review Contractor's submission and make a determination. Contractor shall not file for claim or RFC before County makes the determination.
 - 3. In the event of continued disagreement, Contractor shall not be excused from any scheduled completion date provided for by the Contract but shall proceed with all work to be performed under the Contract.
 - 4. Contractor shall retain any and all rights provided either by the Contract or by law which pertain to the resolution of RFC and protests between the contracting parties.

1.3 REMOVAL, RELOCATION, OR PROTECTION OF EXISTING UTILITIES

- A. In accordance with the provisions of Section 4215 of the California Government Code, County will assume the responsibility for the removal, relocation, or protection of existing main or trunk-line utilities located on the site of the Contract work, if such utilities are not identified in the Contract Documents.
- B. Contractor shall immediately notify County and the public utility in writing of such utility facilities it discovers while performing the work which are not identified in the Contract Documents.
 - 1. Contractor shall negotiate with the owner of the utility, who shall have the sole discretion to perform repairs or relocation work or permit Contractor to do such repairs or relocation work at a reasonable price.
- C. Contractor shall not be assessed liquidated damages for delay in Substantial Completion if the delay was caused by such existing utilities in direct conflict with the work and not shown on the Drawings.
- D. Contractor will be compensated under the provisions of Article 7 for extra work involving existing utilities not shown on the Drawings or included in the Specifications but in direct physical conflict with Contractor's operations.
 - 1. This extra work shall include the following costs:
 - a. Locating, supporting, working around, and protecting or repairing damage not due to the failure of Contractor to exercise reasonable care.
 - b. Removing and relocating, as directed by County, existing main or trunk line utility facilities located on site but not indicated on the Drawings and Specifications with reasonable accuracy.
 - c. Equipment on the project necessarily idled during such work.
- E. Contractor shall not be entitled to any adjustment in the Contract Sum or Time if the existence of such condition:
 - 1. Could have been reasonably discovered or revealed as a result of any examination, investigation, exploration, test or study of the site and contiguous areas required by the Contract Documents to be conducted by or for Contractor prior to commencing such work, or

2. Could have been inferred from the presence of other visible facilities, such as buildings, meter and junction boxes, on or adjacent to the work site.

PART 2 - PRODUCTS
NOT USED

PART 3 - EXECUTION
NOT USED

HIDDEN CONDITIONS REPORT (HCR)

Mendocino County, Crisis Residential Treatment Facility

HCR No. _____

Submitted By: _____ Date: _____

Ctr to PM

PM to Arch

Arch to PM

PM to Ctr

Date Sent: _____

Date Received: _____

Type of Conditions Reported:

☐ Site Work

☐ Structural

☐ Architectural

☐ HVAC

☐ Plumbing

☐ Fire Protection

☐ Electrical

☐ Other

Location and Reference to Drawing: _____

Conditions Reported: _____

Investigated By: _____ Firm: _____ Date: _____

☐ Check this box if the hidden condition reported is not hidden. Reply with location(s) where the information can be obtained.

Reply of Findings: _____

By: _____ Firm: _____ Date: _____

The reply is a finding from the investigation. No change in the Contract Sum or Time is authorized. See Specifications Document 00811 for the timeliness of investigation.

END OF SECTION

SECTION 01010 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

- A. The General Conditions and Division 1 - General Requirements apply to the Work of all Sections.
- B. Contractor is hereby specifically directed to notify and apprise all subcontractors and other parties engaged in the Work as to the Contents of the General Conditions and Division 1 - General Requirements.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work shall be performed at a Project site located in the Mendocino County, Mendocino County Crisis Residential Treatment Facility, 631 South Orchard Ave., Ukiah, California.
- B. The Work of this Contract comprises construction of a new crisis residential treatment facility as per attached plans and per the Scope of Work below:

Scope of Work:

- 1. Work shall include but is not limited to, the construction of all site work, including grading, drainage, utilities, paving, fencing, landscaping, and irrigation; and completion of the building design, permitting, fabrication, delivery, and onsite construction of the prefabricated and/or partially prefabricated, modular building structures, and all appurtenant work required under the Contract Documents.
- 2. Additional requirements of all parties to the Contract are included in the Contract Forms and Conditions of the Contract part of the Project Manual.
- 3. If certain features or systems are not fully shown or called for in the Contract Documents, their construction shall be of the same character and quality as for similar conditions that are shown, called for, or reasonably inferred.
- 4. Contractor shall provide all labor, equipment, and materials that are required to provide a complete properly operating and safe site. The extent of the work as indicated on the Drawings and as described in the Specifications shall include all that may be reasonably inferred to be required for proper execution or installation of work and for complete systems.
- 5. Should the General Conditions or Contract Documents contradict themselves, Contractor shall provide the more stringent or higher quality or quantity unless otherwise accepted by County.

6. The Drawings shall be recognized as diagrammatic in nature and not completely descriptive of all requirements for construction. Whatever work may be specified, and not drawn, or drawn and not specified, is to be executed as fully as if described in both these ways; and should any workmanship or material be necessary which is not either directly or indirectly noted in these specifications, or shown on the Drawings, but is nevertheless necessary for the purpose of properly carrying out the obvious intention thereof, Contractor is to understand the same to be implied, and is to provide for the same in its bid, as fully as if it were particularly described or delineated.

1.3 TYPE OF CONTRACT

- A. Contractor shall construct the Work under a single fixed-price Contract incorporating segregated lump sum prices for various optional portions of the Work.
 1. Where the term "Contractor" is used in the Specification, the General Contractor is referred to.
 2. Where the terms "Plumbing Contractor," "Electrical Contractor," etc., are used, it has been for convenience only and in no way affects the overall responsibility of the General Contractor.

1.4 PRECEDENCE OF DOCUMENTS

- A. In the case of discrepancy or ambiguity in the Contract Documents the following order of precedence shall prevail:
 1. Modifications in inverse chronological order and in alphanumeric order.
 2. Signed Agreement and terms and conditions referenced in the Signed Agreement.
 3. Supplementary Conditions.
 4. General Conditions.
 5. Division 1 specifications.
 6. Drawings and Division 2 through 16 specifications.
 7. Written numbers and figures, unless obviously incorrect.
 8. Figured dimensions over scaled dimensions.

9. Large format drawings over small-scale drawings.

- B. Any conflict between the Drawings and Division 2 through 16 specifications will be resolved in favor of the document of the latest date (i.e., the most recent document), and if the dates are not the same or are not determinable, then in favor of the specifications.
- C. Any conflict between a bill or list of materials shown in the Contract Documents and the actual quantities required to complete the Work required, then the actual quantity shall take precedence.

1.5 USE OF PREMISES

- A. General: Comply with requirements in General Conditions and Section 01500.
- B. Area available for Contractor's use for work and storage, if any, is limited to the area designated on the Drawings.
- C. Fire Department Access: Contractor's use of premises shall not limit required Fire Department access.

1.6 EXAMINATION

- A. General: As stipulated in Document 00100, Contractor is responsible for inspection of the existing site conditions prior to bidding and shall include in the Contract any modifications of the Contract Documents proposed as a result of Contractor's inspection. Such modifications shall be included in the bid.
- B. Persons performing work shall examine conditions that affect their work and shall report in writing to Contractor, with a copy to County, conditions detrimental to work.
 - 1. Failure to examine and report makes the person responsible, at no increase in the Contract Sum, for corrections necessary for the proper installation of their work.
 - 2. Commencement of Work constitutes acceptance of existing condition.
- C. Field Verification: Contractor shall verify all existing conditions in the field prior to commencing the Work.

1.7 PERMITS FOR WORK

See specifications.

1.8 USE AND OCCUPANCY BY COUNTY PRIOR TO COMPLETION

County may use and occupy all portions of the building after substantial completion under the conditions stipulated in the General Conditions and the following:

- A. Written endorsement shall be furnished from Contractor's insurance carrier and surety permitting occupancy by County during the remaining period of the work.
- B. Contractor will not be held responsible for any damage to the occupied portion of the site directly resulting from County's occupancy.
- C. Access by County shall not be deemed to constitute a waiver of existing claims on behalf of County or Contractor against each other.
- D. County and Contractor shall agree to a list of incomplete items, corrections and deficiencies that remain to be completed by Contractor within the area to be occupied by County before County occupies the area.
- E. Contractor shall make available on a 24-hour-a-day, 7-day-a-week basis, utility services, and other operational systems, as are in usable condition to be put in operation when such occupancy occurs, if required by County for areas it has occupied.
 - 1. Contractor shall be responsible for the operation and maintenance of such equipment while it is so operated until all of the Work is totally complete and accepted.
 - 2. County shall assume operation and maintenance of such equipment when the entire Project is accepted.
- F. Occupancy of portions of the site shall not, in itself, indicate acceptance of all Work in areas of occupancy or indicate acceptable completion of the Work in total.

1.9 LISTING OF RELATED WORK

Listings of related work or sections in the various Sections are not necessarily complete listings. They are provided for information and convenience only and are intended to highlight related or similar work which is specified in other Sections. Related work listings and omissions from such listings are not intended to control Contractor in dividing the work among subcontractors or in establishing the extent of the work to be performed by any trade.

1.10 REQUEST FOR INFORMATION (RFI)

- A. Requirement: It is Contractor's responsibility to review Contract Documents a minimum of thirty (30) days in advance of the work to be executed, and to request information so that County will have sufficient time to respond to Requests for Information prior to the start of actual construction of that part of the Work to which the RFI relates. Contractor shall be

responsible for all delays, disruptions and other related impacts as a result of untimely RFI's submitted to County.

- B. Contractor shall coordinate all requests for information to prevent duplication. Requests for information that are duplicative, uncoordinated with each other, or do not allow for a reasonable time for response will be returned to Contractor.
 - 1. Contractor shall promptly notify County in writing of any discrepancies and shall not proceed with the Work until such discrepancies have been resolved.
 - 2. Failure to notify County shall not relieve Contractor of its responsibility for resulting damage and/or defect, and for the cost of any corrective work that may be required due to Contractor's failure to notify.
- C. Contractor shall prioritize RFI's and request a response based on its most current and accepted CPM schedule.
- D. Form:
 - 1. When an interpretation or clarification of the Contract Documents is required from County, Contractor shall make the request on a copy of the RFI form included in the end of this section.
 - 2. Contractor shall fill in all applicable information on the form.
 - 3. Contractor shall limit the subject to one design discipline to expedite reply and attach supplementary information where necessary.
 - 4. County will reply or give summary of reply on the same form and include supplementary information where necessary.
 - 5. The completed form shall be the written record of each RFI.
 - 6. Contractor shall not use any other RFI form on this Project.
- E. Uses:
 - 1. The RFI form shall be used for interpretation or clarification of the Contract Documents only.
 - 2. Contractor shall not use the RFI form for the following; County will not reply and will reject the RFI:
 - a. Product or material substitution.

- b. Questions relating to construction means, methods, techniques, sequences, procedures or safety precautions. (These are Contractor's responsibilities exclusively.)
- c. Questions relating to construction schedule, coordination between trades, or division of work among subcontractors. (These are also Contractor's responsibilities exclusively.)
- d. Questions on contract administration procedural matters, unless they require interpretation or clarification of the Contract Documents.
- e. Dimensions or quantities which are shown on the Contract Documents, or which can be measured from the building, or calculated from the information contained in the Contract Documents.
- f. Confirmation of interpretations or clarifications previously provided by County.

F. Reply:

- 1. County will endeavor to reply to all RFI's promptly as work schedule of the consultants allows; generally, no later than fifteen (15) days from the day received.
- 2. When an RFI involves a complex subject, extensive research or development, or substantial input from other governmental agency, County will inform Contractor and request additional time to prepare the reply. Contractor shall cooperate and agree to a reasonable time extension.
- 3. The reply shall be a clarification or an interpretation of the Contract Documents; the reply is not an authorization of change in the Contract Sum or Time.
- 4. Such written interpretation or clarification will be binding on Contractor and County. If County or Contractor believes that a written interpretation or clarification justifies an adjustment in the Contract Sum or Time, then County or Contractor may make a written request for change therefor as provided in the General Conditions, Article 1.07.

PART 2 - PRODUCTS
NOT USED

PART 3 - EXECUTION
NOT USED

REQUEST FOR INFORMATION (RFI)

Mendocino County, Mendocino County Crisis Residential Treatment Facility

RFI No. _____

Submitted By: _____ Date: _____

	<i>Ctr to PM</i>	<i>PM to Arch</i>	<i>Arch to PM</i>	<i>PM to Ctr</i>
Date Sent:	_____	_____	_____	_____
Date Received:	_____	_____	_____	_____

Type of Information Requested:

☐ Site Work	☐ Structural	☐ Architectural	☐ HVAC
☐ Plumbing	☐ Fire Protection	☐ Electrical	☐ Other

Spec. Section: _____ Paragraph(s): _____

Drawing Sheet: _____ Detail(s): _____

Information Requested: _____

μ Mark this circle if the RFI can be answered by Contractor's review of the documents. Reply with location(s) where the information can be obtained.

Reply: _____

By: _____ Firm: _____ Date: _____

The reply is a clarification or an interpretation of the Contract Documents. No change in the Contract Sum or Time is authorized. The Contractor shall notify the County in the event the Contractor believes the response to the RFI will result in additional costs. The Contractor shall comply with the requirements of Article 2.06 and 2.07 of the General Conditions regarding notice and submittal of an RFC. See Specification Section 01010 for the timeliness of reply.

END OF SECTION

SECTION 01040 - COORDINATION

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes: Provision of coordination of the Work of the Contract.
- B. Prior to the Bid, the General Contractor shall review the Construction Documents and verify each subcontractor has obtained and reviewed all drawings and specifications that relate to each subcontractor's scope of work, including the work of any other subcontractor whose scope of work may affect any other subcontractor.
- C. Related Sections: The completion of the work described in this Section may require work in or coordination with other Sections of these Specifications. Contractor and Subcontractor shall be responsible for identifying and including all related work in other Sections of these Specifications and/or drawings necessary for a complete installation of the work described in this Section. These related Sections include but are not limited to the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions, and Division 1 Specification Sections, apply to this Section.
 - 2. Section 00700 - General Conditions, Article 6.

1.2 GENERAL COORDINATION

- A. Contractor shall be responsible for all project coordination.
- B. Contractor shall coordinate schedules, submittals, and work of the various trades to ensure efficient and orderly sequence of installation of construction, with provisions for accommodating items to be installed later. Contractor shall coordinate the work among the Specifications and Drawings. Work shown on any drawing or specification is required by the Contract irrespective of the trade subdivision. Contractor shall require each trade subcontractor to review all other subdivisions of the documents for related work and shall coordinate the subcontracts accordingly.
- C. Contractor shall require all parties involved in the performance of the Work to cooperate in the overall coordination of the work under the direction of Contractor. Each party, when requested to do so, shall furnish information concerning its portion of the work, and shall respond promptly and reasonably to the decisions and requests of persons designated with coordination, supervisory, administrative, or similar authority.
- D. The Drawings use graphic symbols to show certain physical relationships of the various elements and systems and their interfacing with other elements and systems. Establishing

and coordinating the actual physical relationships is the responsibility of Contractor. Contractor shall layout and arrange all elements to contribute to safety and efficiency while maintaining the intent of the design. Before work proceeds in areas of potential conflict for installing different components of the work, Contractor shall prepare supplementary drawings for review by County and resolve the conflict.

- E. Contractor shall coordinate continuous checking of architectural and structural clearances for accessibility of equipment and mechanical and electrical systems. No allowances of any kind will be made for Contractor's failure to coordinate sequence of installing materials/equipment into position. Contractor shall verify that equipment will fit within the prescribed equipment room spaces.
- F. Prior to installation of each major unit of work which requires coordination and interfacing with other work, Contractor shall meet at project site with installer and representatives of manufacturers and fabricators who are involved in or affected by unit of work and review progress of other work and preparations for particular work under consideration.
- G. Contractor shall coordinate the tolerances of all materials to ensure a proper fit in achieving the requirements of the Contract Documents.
- H. Contractor shall coordinate matching finish, texture, color, etc. for the new work on existing components in the Project.
- I. Contractor shall coordinate work of like materials by submitting pilot samples to County for review of acceptable ranges of finish textures and color variation.
- J. Contractor shall coordinate completion and clean up Work of various trades in preparation for the Substantial Completion and for occupancy of the Building.

1.3 SUBCONTRACT COORDINATION

Contractor shall:

- A. Coordinate the Work and not delegate responsibility for coordination to any Subcontractor.
- B. Anticipate the interrelationship of all Subcontractors and their relationship with the Work.
- C. Resolve differences or disputes between Subcontractors concerning coordination, interference, or extent of work between Sections of the Specifications. Contractor's decisions, if consistent with the Contract Document requirements, shall be final.

- D. Coordinate the work of Subcontractors so that their portions of the work are performed in a manner that minimizes interference with the progress of the Work.

1.4 ADMINISTRATION

- A. General: Contractor shall prepare a written memorandum on required coordination activities. Items such as required notices, reports and attendance at meetings shall be included. Contractor shall distribute this memorandum to each trade performing work at the project site and prepare similar memoranda for separate contractors where interfacing of their work is required.
- B. Coordination Meetings: Contractor shall conduct general project coordination meetings with Subcontractors at least weekly at regularly scheduled times convenient for all parties involved. These meetings are in addition to specific meetings held for other purposes, such as regular project meetings and special preinstallation meetings. Contractor shall request representation at each meeting by every party currently involved in coordination or planning for the work of the entire Project and shall keep County informed about coordination meetings. Contractor shall conduct meetings in a manner which will resolve coordination problems, record results and minutes of each meeting, and distribute copies to everyone in attendance and to County. County may attend weekly jobsite meetings with Subcontractors.
- C. Superintendent: Contractor shall provide a full-time Superintendent experienced in administration and supervision of building construction. This Superintendent shall be authorized to act as general coordinator of interfaces between units of work. This Superintendent shall be on site, continuously during the construction period. Construction coordination shall be his/her principal duty.
 - 1. For the purpose of this provision, "interface" is defined to include scheduling and sequencing of work, sharing of access to work spaces, installations, protection of each other's work, cutting and patching, tolerances, cleaning, selections for compatibility, preparation of coordination drawings, inspections, tests, and temporary facilities and services.

- D. Mechanical/Electrical Coordinator: Contractor shall provide a single individual, a mechanical/electrical coordinator, experienced in administrative and supervisory coordination of mechanical and electrical work. This experience in coordination shall include coordination of the type of mechanical/electrical work required for this project. The mechanical/electrical coordinator is required to act as the specialized coordinator of interfaces both within mechanical/electrical work and between that work and other trades. The Mechanical/Electrical Coordinator shall be on site, full time during the construction period. The project Superintendent may serve as the Mechanical/Electrical Coordinator provided he/she has the necessary experience.

1.5 COORDINATION DRAWINGS AND SUBMISSION

- A. Contractor shall prepare Coordination Drawings where required before beginning fabrication or delivery of materials and equipment to the jobsite.
 - 1. Coordination Drawings shall clearly indicate coordination of mechanical, plumbing, fire protection, electrical, lighting, and equipment installations with structural, architectural, and finish elements.
 - 2. Scale: $\frac{1}{2}" = 1'-0"$. Scale may be revised to $\frac{1}{4}" = 1'-0"$ with consent of all involved Subcontractors.
- B. Contractor shall keep copies of Coordination Drawings at the jobsite.
- C. Contractor shall provide County with a record copy of initial Coordination Drawings, and with revisions to Coordination Drawings, within three (3) working days of completion of each drawing or revised drawing and thirty (30) days before work begins. County will verify that Coordination Drawings have been made, but no approval of these drawings will be made. Contractor shall include in submission of drawings the names of coordination staff.
- D. Coordination Drawings shall include, but are not limited to: structural, fire protection, plumbing, heating, ventilation and air conditioning, electrical power and lighting, security, life safety, telephone system, existing or reinstalled equipment, and new equipment.
- E. Coordination Drawings shall indicate layout of Work for all trades, for purposes of showing overlays and potential conflicts of crossover work and adjoining work.
- F. Contractor shall conditionally revise Coordination Drawings as subsequent work is added to areas containing existing work.
- G. Contractor shall provide dimensions and elevations where conflicts may exist and coordinate conflicts on Coordination Drawings to prevent conflicts in the field.

- H. Contractor shall require Subcontractors to develop Subcontractor Coordination Plans of the same scale as Contractor's Coordination Drawings to assist in making transcripts for transfer to Coordination Drawings. Approved Shop Drawings shall be used for Coordination Drawings where available.
- I. Coordination Drawings shall include dates and signatures of Contractor and Subcontractors involved in coordination; signed Coordination Drawings shall be subject to examination by County at any time. Failure to maintain up-to-date drawings will be considered non-conformance with Contract Documents and progress payment will be withheld.
- J. Failure of Contractor to provide adequate coordination and Coordination Drawings shall not be grounds for adjustment of Project cost or extension of time.

1.6 STRUCTURAL, MECHANICAL, AND ELECTRICAL COORDINATION

- A. Contractor shall use Coordination Drawings of structural, mechanical, and electrical Work, together with shop drawings and layout drawings of affected Work to check, coordinate and integrate the Work to prevent interferences.
- B. Contractor shall coordinate space requirements and installation of mechanical and electrical Work which are indicated by graphic symbols on Contract Documents.
- C. Routing shown for pipes, ducts, and conduits on Drawings are shown by graphic symbols only; make runs parallel with lines of building.
- D. Contractor shall utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. Contractor shall conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated, and coordinate locations of fixtures and outlets with finish elements.
- F. Where there is a potential conflict in the layout or interferences between the work, including structural and architectural, Contractor shall lay out the work with tape or other means to depict the layout on site to reduce or resolve the conflict and to allow County to review the work prior to execution. The tape or other means to depict layout shall not cause any damage, change in color or appearance of any work to remain, or leave a residue.
- G. Contractor shall coordinate shop drawings to include any and all penetrations of framing members resulting from the coordination of and with the work of the mechanical and electrical subcontractors. See structural drawing sheets and notes for additional structural coordination requirements.

1.7 INTERSTITIAL SPACE COORDINATION

- A. Contractor shall provide Coordination Drawings for the Interstitial Space to resolve installation conflicts prior to final approval of any shop drawings.
- B. All conflicts shall be brought to the attention of County.
- C. The following elements shall be included in the Coordination Drawings:
 - 1. Mechanical ducts and pipes, including floor penetrations.
 - 2. Plumbing pipes.
 - 3. Electrical bus ducts.
 - 4. Telephone communication lines.
 - 5. Interstitial space access.
 - 6. Structural elements including, but not limited to, beams, columns, slabs, hangers, and seismic bracing.
 - 7. Suspended ceilings.
 - 8. Insulation.
 - 9. Security system elements.
 - 10. Others as necessary.
- D. Schedule of Submission:
 - 1. Refer to "Coordination Drawings and Submission" specified in this Section.
 - 2. Review of the coordinated drawings shall be required prior to approval of any of the sub-system shop drawings for the elements listed above.
 - 3. An as-built version of this drawing should be required at the end of installation.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

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SECTION 01100 - ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

- A. The Alternate proposals as described herein shall state the net sum to be added to, or deducted from the lump sum in the event that the Alternate proposal is accepted. Dollar amounts for Alternate proposals shall be inserted in the "Bid Form."
- B. The Board reserves the right to accept or reject any or all Alternate proposals.
- C. Include in each Alternate proposal all changes in cost resulting in the work of all trades affected thereby. Work shall be performed in accordance with drawings and specifications affected unless otherwise specified.
- D. Each bidder shall determine to its own satisfaction the full extent to which the Work is affected by each Alternate proposal and shall make full and proper allowance therefore in preparation of its proposal.

1.2 ALTERNATES

- A. **Alternate No. 1** (Deductive): In lieu of the specified concrete tile roof system, provide and install a composition asphalt shingle roof system per Section 133423 – Prefabricated Modular Structures, paragraph 1.6. H. 3.
 - 1. Provide and install ultra-high-dimensional composition asphalt shingles. Adhere to Class A roofing system compliance, with a guaranteed (25 year) warranty.
- B. **Alternate No. 2** (Additive): Provide and install chain link fencing and gates as specified in Section 323113 and as indicated on the drawings.
 - 1. Provide and install a chain link fence on three sides of the north site parcel where shown on the drawings. Provide a chain link gate as shown on the drawings.
- C. **Alternate No. 3** (Additive): Provide and install a Natural Gas Generator as specified in Section 263213 Packaged Engine Generator Systems and as indicated on the drawings. Provide and install a natural gas supply as specified and as indicated on the drawings.
 - 1. Provide and install a natural gas generator and natural gas supply as specified and as shown on the drawings. The complete work shall include a concrete pad for the generator and all connections and metering for the gas supply.

- D. **Alternate No. 4** (Additive): Provide and install a roof mounted Photovoltaic Power System as specified in Section 133423 – Prefabricated Modular Structures, paragraph 1.6. I. 4.c. Photovoltaic (PV) Power System and as indicated on the drawings.
1. Provide a fully functional roof mounted Photovoltaic Power System as specified and as shown on the drawings. The roof mounting frame shall be compatible with the roofing system and roofing system warranty.
- C. **Alternate No. 5** (Additive): Provide and install an electrical vehicle charging station as specified and as indicated on the drawings.
1. In addition to the providing and installing the required 2019 California Green Building Standards Code, Chapter 4, Mandatory Measures for electrical vehicle (EV) charging stations, provide and install one (1) charging station as shown on the drawings. Provide power and data, and all accessories required for a complete and functional installation. Refer to site plans for location.

END OF SECTION

SECTION 01200 – ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
 - 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established to address any additional prefabricated modular structure scope and unknown site conditions, specifically during excavation activities on site. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
 - 1. Lump-sum allowances.
 - 2. Force account allowances.
- C. Related Requirements:
 - 1. Section 00700, "General Conditions" for Changes in the Work
 - 2. Section 00811, "Unforeseen Physical Conditions" for definition of hidden conditions.

1.3 SURVEY AND ASSESSMENT

- A. During geotechnical investigations and excavation activities, the Contractor shall coordinate observation of the existing subsurface hidden conditions discovered with the County.
- B. Should unforeseen site conditions or existing underground utilities be encountered and require additional work, the County will provide the Contractor with a Request for Proposal defining the scope of modifications or repairs. The Contractor shall promptly provide a Lump Sum or Force Account not-to-exceed Cost Proposal in accordance with Section 00700 General Conditions, Chapter 20 – Changes in the Work.
- C. In the event that the proposal is not authorized by the County, the County may direct the contractor to proceed with the authorized repairs by Force Account in accordance with Section 00700 – General Conditions, Chapter 20.
- D. In the event other hidden conditions are encountered, the Contractor shall promptly notify the County and Architect, and proceed according to paragraph 1.3C. above.

1.4 ACTION SUBMITTALS

- A. Submit proposals for modification, repair or removal work noted above.
- B. Upon completion of identified repairs, submit revised Schedule of Values noting allowance amounts used.

1.5 INFORMATIONAL SUBMITTALS

- A. Submit proposed construction and permit drawings as required for review by the County and Architect.
 - 1. In the event the County requests additional scope to the prefabricated modular structures, the County will provide the Contractor with a Request for Proposal defining the scope of such changes. The Contractor shall promptly provide a Lump Sum Cost Proposal in accordance with Section 00700 General Conditions, Chapter 20 – Changes in the Work.
 - 2. In the event that the proposal is not authorized by the County, the County may direct the contractor to proceed with the authorized repairs by Force Account in accordance with Section 00700 – General Conditions, Chapter 20.
- B. Submit timecards, invoices or delivery slips to show actual labor time and quantities of materials delivered to the site for use in completing allowance work authorized under force account.
- C. Coordinate and process submittals for allowance work items in same manner as for other portions of the Work.

1.6 COORDINATION

- A. Coordinate allowance items with other portions of the Work.

1.7 CONTINGENCY ALLOWANCES

- A. Use the contingency allowance only as directed by the County by lump sum price or force account authorized in writing by the owner.
- B. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.8 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between the authorized cost of all repairs completed and the allowance amount.

- B. Submit Contract Change Order to refund the balance of the Allowance to the County or claims for increased costs for work performed on authorized work items that exceed the allowance amount included in the Contract Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SITE INVESTIGATION

- A. Investigate the site thoroughly during the bid period and report any discrepancies between what is shown on the bid documents and the site conditions. Immediately report all conditions to the County.

3.2 PREPARATION

- A. Submit and secure County approval of all scope revisions related to the prefabricated modular structures.

3.3 SCHEDULE OF CONTINGENCY ALLOWANCES

- A. Allowance No. 1: Contingency Allowance: Include the sum of **\$50,000** to allow for scope additions to the prefabricated modular structures.
 - 1. This allowance includes all labor, material and equipment costs and Contractor overhead and profit and applicable taxes as documented for either lump sum or force account work to add scope of work items to the prefabricated modular structure, as directed by the County.
- B. Allowance No. 2: Contingency Allowance: Include the sum of **\$50,000** to allow for unforeseen site conditions.
 - 1. This allowance includes labor, material and equipment costs and Contractor overhead and profit and applicable taxes as documented for either lump sum or force account work to address existing unforeseen site conditions.

END OF SECTION

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SECTION 01310 - PROGRESS SCHEDULES

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes

1. Format
2. Content
3. Revisions to Schedules
4. Submittals

B. Related Sections: The completion of the work described in this Section may require work in or coordination with other Sections of these Specifications. Contractor and Subcontractor shall be responsible for identifying and including all related work in other Sections of these Specifications and/or drawings necessary for a complete installation of the work described in this Section. These related Sections include but are not limited to the following:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
2. Section 01010 – Summary of Work.
3. Section 01340 – Submittals and Substitutions.

1.2 FORMAT

- A. Contractor shall prepare schedules using the latest version of Primavera scheduling software.
- B. Contractor shall prepare an initial schedule in the first Fifteen (15) days of the project as a horizontal bar chart with separate bar for each major portion of Work or operation, identifying first workday of each week.
- C. Contractor shall prepare the Project Baseline CPM schedule in the form of a horizontal bar. Schedule shall clearly identify the critical path. As an alternate Contractor may prepare a network analysis system using the critical path method, as outlined in The Associated General Contractors of America (AGC) publication "The Use of CPM in

Construction - A Manual for General Contractors.”

- D. Sequence of Activities: Chronological order of start of each item of Work; identifying activity duration, start date, finish date and total float.
- E. Scale and Spacing: To provide space for notations and revisions.
- F. Sheet Size: Minimum 11x17 inches.
- G. Progress Schedule submittals shall be submitted in accordance with 1.5 D below and are subject to review by County. County retains the right to withhold progress payments until Contractor submits an acceptable Progress Schedule.

1.3 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify all design submittals and review times associated with the modular buildings, including the review time for permitting.
- C. Identify all Project Milestones as shown in section 00100, paragraph 1.8, *Time of Completion*.
- B. Identify each item by Specification section number.
- C. Identify work of Subcontractors and other logically grouped activities.
- D. Provide sub-schedules for each stage of Work identified in Section 01010, “Summary of Work.”
- E. Provide sub-schedules to define critical portions of entire schedule.
- F. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of date of application for payment each month.
- G. Provide separate schedule of submittal dates for shop drawings, product data, and samples.
- H. Cost Loading of the Schedule: The Baseline schedule shall allocate the cost of the Work to each scheduled activity in accordance with the schedule of values.

1.4 REVISIONS TO SCHEDULES

- A. Indicate progress of each activity to date of submittal, and projected completion date of

each activity.

- B. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
- C. Provide narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect (including the effect of changes on schedules of separate contractors).

1.5 SUBMITTALS

- A. Submit initial schedules within fifteen (15) days after date of the Notice to Proceed. After review, resubmit required revised data within seven (7) days.
- B. Submit preliminary Baseline CPM Schedule within thirty (30) days after date of the Notice to Proceed. After review, submit detailed schedules within fifteen (15) days modified to accommodate revisions recommended by County.
- C. Submit revised Progress Schedules with each Application for Payment.
- D. Submit initial bar chart schedule in sufficient number of opaque reproductions that Contractor requires, plus two (2) copies that will be retained by County.
- E. For Baseline CPM Schedule: Submit one (1) electronic copy on a compact disc and a sufficient number of opaque reproduction which Contractor requires, plus two (2) copies which will be retained by County, and one (1) reproducible transparency.

1.6 DISTRIBUTION

- A. Distribute copies of reviewed schedules to Project site file, Subcontractors, suppliers, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in Schedules.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

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SECTION 01340 - SUBMITTALS AND SUBSTITUTIONS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included:

1. Make submittals required by the Contract Documents, and revise and resubmit as necessary to establish compliance with the specified requirements.

B. Related work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. Individual requirements for submittals also may be described in pertinent Sections of these Specifications.
3. See General Conditions for submittal of schedules, cost breakdown, subcontractors list, etc.

C. Work not included:

1. Unrequired submittals will not be reviewed by the Project Administrator.
2. The Contractor may require his subcontractors to provide drawings, setting diagrams, and similar information to help coordinate the Work, but such data shall remain between the Contractor and his subcontractors and will not be reviewed by the Project Administrator.

1.2 QUALITY ASSURANCE

A. Coordination of submittals:

1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
2. Verify that each item and the submittal for it conform in all respects with the specified requirements.
3. All material submittals shall be numbered in sequence of submittal. Resubmittals shall receive a new number.
4. Materials shall not be shipped or transported to the job site prior to the review of submittals by the Project Administrator, and compliance with the Contract Documents has been verified.
5. The Contractor shall assume full responsibility for coordinating and verifying schedules, quantities, and dimensions shown on Contract Drawings. The Project Administrator assumes no responsibility for checking schedules, quantities, or dimensions.

B. Substitutions:

1. The Contract is based on the standards of quality established in the Contract Documents. Substitutions will be considered only when substantiated by the Contractor's submittal of required data within 5 calendar days after the Notice to Proceed. Only one substitution request will be considered for each specified item. Unless noted otherwise in a specific Section of the Specifications after 5 calendar days after the Notice to Proceed it will be assumed all items are to be as specified in these documents and substitutions may not be accepted by the Project Administrator. It shall be the Contractor's responsibility to notify the Project Administrator in writing, of any deviations in the submittals from the requirements of the Contract Documents.
2. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved in writing for this Work by the Project Administrator.
3. Do not substitute products identified as County Standard.

C. Time for review of substitutions:

1. In the interest of time, substitutions are not encouraged unless absolutely unavoidable. When submitting an item for substitution for a specified item, submit all pertinent data required to enable the Project Administrator to make an accurate and timely evaluation. Incomplete submittals or insufficient data will be cause for the submittal to be rejected.
2. Requests for extension of the time directly or indirectly related to approval of substituted items will not be granted.
3. Additional review time by the Project Administrator caused by a substitution shall in no way be charged as a delay to the Project.
4. It shall be the sole responsibility of the Contractor to avoid delays through the process of substitution.

D. "Or equal":

1. Where the phrase "or equal," or "as approved equal," occurs in the Contract Documents, do not assume that the materials, equipment, or methods will be considered as equal unless the item has been specifically so reviewed by the Project Administrator and deemed in conformance with design intent and quality established for this Work.
2. The decision of the Project Administrator shall be final.
3. If submittals on "or equal" items are not made within the prescribed time or are incomplete, then the item or material originally specified shall be supplied.

1.3 SUBMITTALS

- A. Make submittals of Shop Drawings, Samples, substitution requests, and other items in accordance with the provisions of this Section.

- B. Submittals shall include all technical and performance data on the product or material required for the Project Administrator to make a fair evaluation, including physical samples if deemed necessary by the Project Administrator.
- C. Incomplete submittals will be returned to the Contractor and will not be reviewed by the Project Administrator. The Contractor shall be solely responsible for any delays caused by making incomplete submittals.
- D. For purposes of uniformity, only one make and/or brand of material will be accepted for each type of material used.

1.4 PAYMENT

- A. Compensation for this Section shall be considered to be included in pay items for associated items of work and no additional compensation will be allowed.

PART 2 - PRODUCTS

2.1 SUBMITTALS REQUIRED

- A. Individual requirements for submittals also may be described in pertinent Sections of these Specifications.
- B. Design Submittals are required, but not limited to:
 - 1. Design submittals for the prefabricated modular structures specified in Section 133423.
- C. Contractor shall provide, upon delivery of materials to the jobsite, Certificates of Compliance, documenting that the supplier certifies the material to be placed complies with these specifications.

2.2 MANUFACTURERS' LITERATURE

- A. Where contents of submitted literature from manufacturers include data not pertinent to the submittal, clearly show which portions of the contents is being submitted for review.
- B. Submit the number of copies which are required to be returned, plus three copies which will be retained by the Project Administrator.

PART 3 - EXECUTION

3.1 IDENTIFICATION OF SUBMITTALS

- A. Each submittal shall be numbered consecutively by the Contractor and all documentation shall refer to that number.
 - 1. When material is resubmitted for any reason, transmit under a new letter of transmittal and with a new transmittal number.
 - 2. On resubmittals, cite the original submittal number for reference.

- B. Accompany each submittal with a letter of transmittal showing all information required for identification and checking.
- C. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number in which the item was included.

3.2 GROUPING OF SUBMITTALS

- A. Unless otherwise specified, make submittals in groups containing all associated items to assure that information is available for checking each item when it is received. Partial submittals may be rejected as not complying with the provisions of the Contract. The Contractor may be held liable for delays so occasioned.

3.3 TIMING OF SUBMITTALS

- A. Make submittals far enough in advance of scheduled dates for installation to provide time required for reviews, for securing necessary approvals, for possible revisions and resubmittals, and for placing orders and securing delivery. The Contractor will be solely responsible for any delays caused by not making submittals in time for proper review.

3.4 PROJECT ADMINISTRATOR'S REVIEW

- A. Review by the Project Administrator does not relieve the General Contractor from responsibility for errors which may exist in the submitted data, nor does review by the Project Administrator relieve the Contractor from responsibility or in any way change the original Contract.
 - 1. Allow 30 calendar days for County review time on initial submittals.
 - 2. For re-submittals, allow 14 calendar days for County review times.
 - 3. Provide submittals electronically for review in pdf format in the Contractor's management information system, such as Procore, Submittal Exchange, etc. Submittals with review comments and actions will be returned by the County through the Contractor's management information system.
- B. Revisions:
 - 1. Make revisions required by the Project Administrator.
 - 2. If the Contractor considers any required revision to be a change, he shall so notify the Project Administrator as provided for in the Contract Documents.
 - 3. Make only those revisions directed by the Project Administrator.
- C. Reimbursement of Project Administrator's costs:
 - 1. In the event substitutions are proposed to the Project Administrator after the Contract has been awarded, the Project Administrator will record all time used by him and by his consultants in evaluation of each such proposed substitution.
 - 2. Whether or not the Project Administrator approves a proposed substitution, the Contractor promptly upon receipt of the Project Administrator's billing shall

reimburse the Project Administrator at his standard billing rates and that of his consultants for all time spent by them in evaluating the proposed substitution.

3. If the Contractor does not reimburse the Project Administrator for all time spent by them in evaluating the proposed substitution, with the authorization of the Owner, the amounts due the Project Administrator will be deducted from the pay request.

END OF SECTION

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SECTION 01400 - QUALITY CONTROL

PART 1 – GENERAL

1.1 SUMMARY

- A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Contractor shall employ a competent full time Quality Assurance/Quality Control representative to assure that work is being installed in accordance with Contractor Documents and applicable codes and regulations.
- C. Failure of Materials and Equipment Tested or Inspected:
 - 1. Previous acceptance may be withdrawn and material may be subject to removal and replacement with material meeting Specification requirements, at no cost to County.
 - 2. County may refuse consideration of further sample of same item for testing.

1.2 INSPECTION OF THE WORK AND SITE ACCESS

- A. The work shall be conducted under the general observation of County and County's Representatives and shall be subject to inspection by representatives of County and other government agencies having jurisdiction to assure compliance with all requirements of the Contract Documents and applicable codes and regulations.
- B. During the course of construction, inspections may be conducted by authorized representatives of County, the City of Ukiah, various inspectors at the site, or independent agencies designated by County.
 - 1. The presence of inspectors or independent agencies shall not relieve Contractor of the responsibility for the proper execution of the work in accordance with the requirements of the Contract Documents. Compliance is a duty of Contractor, and said duty shall not be avoided by any act or omission on the part of the inspectors.
- C. All products, materials, and equipment furnished by Contractor may be subject to inspection by County both on-site and at the place of manufacture.
 - 1. Contractor shall at all times provide access to the work the representatives of County and other agencies designated by County wherever Contract work is in preparation, in progress or completed.

- D. Inspection items include, but are not limited to, construction quality, deficiencies, and corrections thereof; technical data on materials, tests, and laboratory analysis; contract change orders, claims, and other contract administration matters; and daily logs.
- E. Contractor shall be responsible for calling Code Enforcement Agencies.

1.3 MANUFACTURER'S FIELD SERVICES

- A. When specified in the respective Specification Sections, require manufacturer or supplier to have qualified representative(s) perform on-site observations and make recommendations.
 - 1. Observe field conditions, including conditions of surfaces and installation.
 - 2. Observe quality of workmanship.
 - 3. Furnish recommendations to assure acceptable installation and workmanship.
 - 4. Where required, start, test, and adjust equipment as applicable.
 - 5. Where required, certify that work is installed, adjusted, tested, and satisfactorily performs in accordance with the requirements of the Contract Documents.
- B. Representative shall submit written report to County listing observations and recommendations.

1.4 TESTING AGENCY SERVICES

- A. Testing Agency: An independent commercial testing organization contracted by County, or County's own testing laboratory employed and paid by County, will perform tests and inspections required by various Specification Sections and by applicable building codes or other regulations of public agencies having jurisdiction.
 - 1. County employment of Testing Agency shall not relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
 - 2. County-provided testing shall be limited to Project-specific testing and shall not include general tests or approvals of materials, equipment or systems.
 - 3. Special in-situ investigation and testing may be required for certain existing materials which may not be covered under present codes and standards but which may be utilized in the alteration or restoration work as indicated or otherwise specified. Contractor shall accommodate such special investigation and testing where required in its construction schedule and shall facilitate in-situ sampling by uncovering, cutting and patching existing work if necessary at no additional cost to County.

- B. Testing Agency will furnish sufficient personnel to perform testing and inspection in a reasonable manner so Contractor is not caused undue delays and expense.
- C. Testing Agency services will be performed in accordance with requirements of governing authorities and with specified standards.
- D. Reports will be submitted to County and Contractor giving observations and results of tests, indicating compliance or non-compliance with specified standards and with Contract Documents.
 - 1. Where required, Testing Agency will submit copy of test results directly to enforcing agency.
 - 2. When test or inspection reveals nonconformance with Contract Documents, Testing Agency will orally notify County and Contractor immediately, and subsequently by written report.
- E. Reinspection and Retesting: Where inspections or tests prove that Work is unsatisfactory or not in compliance with Contract Documents, Contractor shall be responsible for reimbursing County for costs for further inspection and retesting.
 - 1. Retesting and inspections of Work revised or replaced by Contractor shall be paid by Contractor where tests were performed on original Work.
 - 2. Contractor shall repair and replace damage to Work made necessary by retesting.
 - 3. Contractor shall reimburse County for overtime inspections and testing including:
 - a. Premium time fees for inspections or testing performed after regular working hours or on Saturdays, Sundays, or legal holidays, except when inspections or testing is required for County-requested overtime Work.
 - b. County's inspection or Testing Agency fees for travel and per diem expenses, when shops or plants of fabrication are located more than one hundred fifty (150) miles from Project site.
 - 4. If County has reasonable doubt that materials comply with specified requirements, additional inspections or tests will be required as directed by County.
 - a. If additional inspections or tests establish that materials comply with specified requirements, costs for such tests will be paid by County.

- b. If additional inspections or tests establish that materials do not comply with specified requirements, costs for such tests shall be paid by Contractor.
- F. Testing Agency is not authorized to:
 - 1. Release, revoke, alter, or enlarge requirements of Contract Documents.
 - 2. Accept any portion of Work.
 - 3. Stop Work, except as may be required to perform testing or inspection operations.
- G. Contractor's Responsibilities:
 - 1. Cooperate with Testing Agency personnel.
 - 2. Provide access to the Work.
 - 3. Obtain and handle samples of materials and equipment.
 - 4. Furnish storage and assistance as requested.
 - 5. Facilitate inspections and tests.
 - 6. Notify County in writing a minimum of two (2) working days nor more than five (5) working days prior to expected time for operations requiring testing services.
 - 7. Schedule Work to be tested or inspected to allow tests to be performed within reasonable time period.
 - 8. Where required, deliver samples to Testing Agency.
 - 9. When a specified test or inspection is not performed due to Contractor's failure to notify County as specified, County will establish remedial Work and Contractor shall bear cost of remedy.
 - 10. Take steps necessary to ensure no portion of the Work requiring testing or inspection is covered prior to written acceptance by authorized parties.
 - 11. Ensure that no testing or inspection is scheduled until such times as they are assured that all approvals for the work have been received. This includes welder's certifications, submittals, design/build engineering stamp and certification.

- H. Completed Work: Should County require tests and inspections for completed work that has not been tested or inspected, furnish necessary facilities, labor, and material to uncover or remove Work in question to extent necessary. Contractor shall reconstruct the work after the test or inspection.

1.5 TESTING LABORATORY

- A. Testing Laboratory: An organization other than the Testing Agency, employed and paid by Contractor to perform services not specified as being furnished by County; as required by local authorities for conformance to applicable codes; and to perform inspections, sampling, and testing for Contractor's own purposes.
 - 1. Testing Laboratory services furnished by Contractor shall be by an independent testing laboratory approved by County and applicable building officials.
 - 2. Testing Laboratory shall be a member of American Council of Independent Laboratories, Inc. (ACIL), and meet ACIL "Recommended Requirements for Independent Laboratory Qualifications."
 - 3. Testing Laboratory inspectors shall be trained and thoroughly experienced for inspection of particular type of construction or operation requiring inspection.
 - 4. Testing Laboratory shall conform with ASTM E329-90.
 - 5. Promptly submit one (1) copy of Testing Laboratory reports to County.

1.6 REQUIREMENTS OF TESTS

- A. Review Specifications Sections for additional requirements for testing and inspection.
- B. Tests referenced shall not be a limitation on County's rights for testing and inspection to verify conformance with Contract Documents.

1.7 QUALITY CONTROL PROCEDURE MANUAL

- A. Contractor shall submit to County a Quality Control Procedure Manual specifically developed for this project.
 - 1. The Manual shall include description of Contractor's management team and staff responsibilities, sample quality control checklists and forms for quality assurance and control, description of how deficient work will be identified and corrected.
- B. Submit three (3) copies of the Manual to County for review and approval within forty-five (45) calendar days after the Notice to Proceed.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

SECTION 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Provide and maintain construction facilities and temporary controls as required to perform the Work; relocate as required by the progress of the Work.
2. Unless otherwise required by County, materials for construction facilities and temporary controls may be new or used, and suitable for the purposes intended.
3. Materials, installation and maintenance of construction facilities and temporary controls shall be in compliance with applicable regulatory requirements.
4. Maintain construction facilities in sound, neat and clean condition. Remove any graffiti and repair any vandalism to satisfaction of County.
5. Do not encroach upon existing landscaping. Landscape sprinklers to remain operational during construction.
6. Remove construction facilities and controls, including associated utilities and equipment, when their use is no longer required.
 - a. Remove and legally dispose of debris resulting from removal and reconditioning operations.
 - b. Restore or recondition, as applicable, areas of the site damaged or disturbed by the use of construction facilities and temporary controls.
7. Do not attach any temporary facilities and controls to existing finishes or components to remain without written permission from County.

B. Related Sections: The completion of the work described in this Section may require work in or coordination with other Sections of these specifications. Contractor and Subcontractor shall be responsible for identifying and including all related work in other Sections of these specifications and/or drawings necessary for a complete installation of the work described in this Section. These related Sections include but are not limited to the following:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

2. Section 00700 - General Conditions.

1.2 TEMPORARY UTILITIES

A. Electric Power: Provide and pay for power service required from Utility source.

1. Provide lighting and convenience outlets in the temporary structures, if any.
2. Provide power outlets for construction operations, with branch wiring and distribution boxes located at each floor.
 - a. Provide flexible power cords as required.
3. Provide adequate distribution equipment, wiring, and outlets to provide single phase branch circuits for power and lighting.
4. Provide adequate artificial lighting for work areas when natural lighting and permanent lighting is necessary for performance of Work.
5. Provide and maintain lighting to exterior staging and storage areas after dark for security purposes.

B. Water: Arrange with utility service company, City of Ukiah or County of Mendocino Water District, to provide water for construction and other purposes; pay the costs for water used, sewer and related charges, permit and connection fees, if any.

1. If necessary, install temporary branch piping with taps located so that water is available throughout the Work by the use of hoses.
2. Make potable water available for human consumption.
3. As the work progresses protect existing interior finishes from damage by water.

C. Heat and Ventilation: Provide temporary heating or ventilation as required, to maintain environmental conditions to facilitate progress of the Work, and to prevent damage to building contents.

1. Meet specified minimum conditions for the installation and curing of materials, and to protect materials and finishes from damage due to temperature and humidity conditions.
 - a. Portable heaters shall be standard units complete with controls.
2. Provide temporary forced ventilation of enclosed areas for installation and curing of materials, to disperse humidity, and to prevent hazardous

accumulations of dust, fumes, vapors, and gases.

3. Pay the costs of installation, maintenance, operation, and removal of temporary heat and ventilation, including costs for fuel consumed, temporary construction filters, strainers and guards required for the performance of the Work.
- D. Sanitary Facilities: Provide and locate temporary sanitary facilities as approved by County.
1. Maintain in a neat, sanitary condition, with adequate supplies.
- E. Telephone: Arrange and pay for telephone service and pay the costs throughout the duration of the Contract.
- F. Fire Protection: Submit Contractor's plans for fire protection and Fire Department access for fire fighting and equipment to County for approval prior to commencing work at the project site.
1. Provide and maintain fire extinguishers, fire hoses, fire sprinklers, smoke detectors, controls and other equipment for fire protection in all areas of the Work and where materials are stored, in accordance with State fire codes and Cal-OSHA, whichever code is more stringent shall govern, and as directed by Fire Department.
 2. Use fire protection equipment for fire protection only.
 3. Appoint a trained person with authority under the supervision of Contractor's Superintendent to maintain fire protection equipment, institute fire protection measures, and direct the prompt removal of unnecessary combustible materials and waste.
 - a. Such person shall be responsible for overseeing correct and safe use of soldering coppers, extension lights, flammable liquids, welding and metal cutting apparatus, wax pots, and other flame tools.
 - b. Such person shall be responsible to perform a walk-through before leaving the Site at the end of each workday to inspect the work areas for fire hazards.
 - c. Immediately mitigate all fire hazards and submit a written report of said inspections daily to County.
 4. Take special precautions to minimize fire hazards when it becomes necessary to use stoves, tar pots or other temporary heating devices.
 - a. Such devices shall conform to the requirements of the National Fire

Code of the NFPA and shall be used only under proper supervision.

- b. Locate such devices so that there is a minimum clearance of 6 feet above and 2'-6" on all sides between the devices and unprotected combustible construction. Do not place within 10 feet of tarpaulins, canvas covers, loose paper or flammable material.
 - c. Properly insulate legs of temporary heating devices when it is necessary to place such equipment on combustible platforms.
 - d. Do not use heaters burning LP gas.
5. Use special precautions to reduce fire hazard where electric or gas welding or cutting work is done. Provide and maintain suitable fire extinguishing equipment near such welding operations.
6. Store paints, varnishes, volatile oils, and similar combustible materials in a non-combustible storage building having good ventilation and containing no other material, or in metal lockers or metal boxes with self-closing covers. Store gasoline and other volatile flammable liquids in metal barrels well away from structure or other combustible materials.
- a. No storage of chemicals, solvents, paints, or other flammable materials will be allowed in the building.

1.3 CONSTRUCTION AIDS

- A. Plant and Equipment: Furnish, operate, and maintain in safe and efficient operating condition a complete plant for fabricating, handling, conveying, applying, installing and erecting materials and equipment; and conveying systems for transporting workers.
 - 1. Include construction elevators, hoists, debris chutes and other equipment, tools and appliances necessary for performance of the Work.
- B. Construction Staging Areas: Construction staging shall be restricted to the areas shown on Sheet A1.00 or approved by County in writing.

1.4 BARRIERS AND ENCLOSURES

- A. General: Provide and maintain temporary barriers and enclosures to prevent entry of unauthorized persons, both existing and as required for the Work and not provided under other Sections.
 - 1. Provide as required to protect the Work and existing facilities from the elements.

2. Protect adjacent construction, improvements and persons from damage or injury from demolition and construction operations.
 3. Prevent unauthorized entry to construction areas.
 4. Protect vehicular and pedestrian traffic from injury or damage from Contractor's operations.
 5. Contractor is responsible for traffic safety in, near and around the project. Contractor shall implement traffic safety plan which allows for the safe passage of automobiles and pedestrians on or near the site.
- B. Fencing: Provide 8-foot high commercial grade chain link fence around construction site as required to provide complete enclosure of construction site and staging area.
1. Equip with vehicular gates with vandal-resistant locks, all keyed alike.
- C. Public Thoroughfare: Except as indicated or otherwise approved, construction operations shall not occupy public sidewalks.
- D. Provide 45°-beveled smooth, non-tripping transitions at all path-of-travel height changes over 1/4".
- E. Potential Hazards: Storing, positioning or use of equipment, tools, materials, scraps, and trash in a manner that could present a hazard to the public or building by its accidental shifting, ignition, fumes, or other hazardous qualities is prohibited.
- F. Remove barriers and enclosures upon completion of the Work, in accordance with applicable regulatory requirements and to the satisfaction of County.

1.5 GENERAL PROTECTION

- A. Summary:
1. Protect installed Work and provide special protection where specified in individual specification Sections.
 2. Provide temporary and removable protection for installed Products. Control activity in immediate work area to minimize damage.
 3. Provide protective coverings at walls, projections, jambs, sills and soffits of openings.
 4. Protect finished floors, stairs and other surfaces from traffic, dirt, wear, damage or movement of heavy objects, by protecting with durable sheet materials.

5. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
6. Designate no more than two (2) construction trade entrances to the Facility. Provide 48" high plywood wall and floor protection at entries and main routes of travel.
7. Prohibit traffic from landscaped areas.

1.6 SECURITY

- A. Contractor shall be responsible for securing the project Site (the fence, area within the fence, and the building) to:
 1. Provide site security to assure that no member of the public is able to gain access to the work area at any time. Contractor shall maintain access and egress routes at all times.
 2. Secure, maintain, and protect the building, its contents, the Work, stored materials, equipment and temporary facilities until time of acceptance, or such earlier time as County may choose to assume such responsibility. Security and protection may be by any legal method, or methods, acceptable to County.

1.7 TEMPORARY CONTROLS

- A. Dust Control: Perform the Work in a manner to minimize the generation of dust and dirt, to prevent dust and dirt from interfering with the progress of the Work, and to keep dust and dirt from accumulating in Work areas and adjacent areas.
 1. Wet/vacuum sweeper equipment shall have sufficient suction so as to ensure that while sweeping, dust and dirt is not blown towards neighboring businesses or residences.
 2. Minimize the amount of excavated or demolished materials at the Work site. Stockpiled excavated material is prohibited at the Work site unless specifically authorized in writing by County.
 - a. If excavated material is allowed to be stockpiled, cover all such material with 10 mil HDPE plastic at all times.
 3. Cover stockpiled imported backfill or other dust-generating soil materials with tarps at all times.
 4. Suspend all excavation and dirt moving activities if winds exceed 25 mph.

5. Trucks and trailers used to transport excavated material shall be suitably constructed and equipped to prevent spillage of loaded materials on public streets and highways.
 6. Hauling trucks carrying excavated material shall be loaded so that the material does not extend above the walls or back of the truck bed. The loaded material shall be wetted and tightly covered before the trucks leave the loading area.
- B. Pollution: Comply with applicable regulatory requirements and anti-pollution ordinances during the conduct of construction and disposal operations.
1. No burning of refuse, debris or other materials shall occur on or in the vicinity of the Project site.
 2. Prevent toxic concentrations of chemicals.
 3. Provide methods, means and facilities to prevent contamination of soil, water and atmosphere by the discharge of noxious substances from demolition and construction operations.
 4. Remove and legally dispose of soil contaminated by the performance of the Work and replace with good soil at no expense to County.
 5. Provide systems for control of atmospheric pollutants.
 6. Prevent harmful dispersal of pollutants into the atmosphere.
 7. Maintain and operate construction equipment to minimize exhaust emissions of particulate and other pollutants.
 - a. Prohibit idling motors when equipment is not in use or when trucks are waiting in queues.
 - b. Implement specific maintenance programs to reduce emissions from equipment that would be in frequent use for much of the demolition and construction periods.
- C. Noise Control: Conform with night and weekend construction work and general construction noise control requirements of the City of Ukiah.
- D. Water Control:
1. Provide proper site drainage to protect excavations and adjoining structures and improvements from damage from the date of Notice to Proceed to completion of all foundation work of this Contract.

- E. Erosion Control: Plan and execute construction and earth work by methods to control surface drainage from cuts and fills, and from borrow and waste disposal areas, to prevent erosion and sedimentation.
 - 1. Hold the areas of excavated soil exposed at one time to a minimum.
 - 2. Provide temporary control measures such as berms, dikes and drains.
 - 3. Construct fills and waste areas by selective placement to eliminate surface silts or clays which will erode.
 - 4. Periodically inspect earthwork to detect any evidence of the start of erosion.
 - 5. Apply corrective measures as required to control erosion.
- F. Sewerage Control: Take adequate measures to prevent the impairment of the operation of the sewerage system. Prevent all construction material, pavement, concrete, soil, or other debris from entering all sewers, sewer structure, catch basin, or storm water inlet.
- G. Cleaning During Construction: Control accumulation of waste materials and rubbish; dispose of off-site at intervals approved by County.
 - 1. Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.
 - 2. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces before closing the space.
 - 3. Maintain site in a clean and orderly condition. Maintain the site, equipment, fences and K-rail free of graffiti. Remove all graffiti daily using methods which cause no damage to the work or existing facilities.
 - 4. Maintain public areas adjacent to site in a clean and orderly condition. Keep temporary pedestrian walkways, sidewalks and other areas around the site clean and free of accumulate trash and debris.
- H. Rodent Control: Inspect for rodents and treat upon commencement of construction activities. Continue treatment weekly and treat after Substantial Completion.

1.8 CONTRACTOR FIELD OFFICES AND STORAGE

- A. Contractor's Field Office and Facilities, Minimum Requirements:
 - 1. One (1) direct line telephone, minimum.

2. Furnishings: Contractor shall provide as required.
 3. Provide a telephone answering machine and a plain-paper facsimile machine, both to remain on-line 24 hours a day, weekends and holidays included.
 4. Prior to Project Completion, clean and restore areas to the original condition.
- B. Storage:
1. Provide as required for the performance of the Work.
 2. Dimensions adequate for storage and handling of products.
 3. Ventilation to comply with specified and regulatory requirements for products stored.
 4. Heating adequate to maintain temperatures specified in respective Sections for products stored.
 5. Any use of any interior portion of building for storage shall be subject to County's approval.
- C. Provide periodic maintenance and cleaning for field office furnishings, equipment and services.

1.9 REMOVAL

- A. Remove temporary materials, equipment, services, and construction prior to Beneficial Occupancy by County.
- B. Clean and repair damage caused by installation or use of temporary facilities.

1.10 PROJECT IDENTIFICATION SIGN

- A. Contractor shall provide a 4-foot x 6-foot professionally created and installed painted project sign as approved by County. Project sign shall identify the name of the Project, Project address, names of County Board of Supervisors, County Project Manager's name, Architect's name, Engineers names and General Contractor's name and address. Type face shall be 2" high minimum letter size; clearly readable from 30 feet away.
- B. Contractor shall maintain the sign in good condition for the duration of the contract, and at the completion thereof shall remove them from the site as its property.
 1. Promptly clean all graffiti and other defacement from project sign.

- C. The project sign shall be complete and in place at the job site prior to the start of any work.
- D. No other signs are allowed without County's permission except those required by law.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

END OF SECTION

SECTION 01700 - CONTRACT CLOSEOUT

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes: General requirements for Contract Closeout.
- B. Related Sections: The completion of the work described in this Section may require work in or coordination with other Sections of these Specifications. Contractor and Subcontractor shall be responsible for identifying and including all related work in other Sections of these Specifications and/or drawings necessary for a complete installation of the work described in this Section. These related Sections include but are not limited to the following:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
 - 2. Section 01400 – Quality Control.
 - 3. Section 01500 – Construction Facilities and Temporary Controls
 - 4. Division 13 – Special Construction.
 - 5. Division 26 – Electrical.
 - 6. Division 27 – Communications.

1.2 OPERATIONAL TESTS

- A. Building Commissioning:
 - 1. The specified tests and submittals, if required, associated with commissioning, as described in Divisions 13, 26 and 27, shall be completed and reviewed by the commissioning agent before Completion.
 - 2. Final payment will not occur until after review of the commissioning agent's first post-occupancy quarterly report (60 days after Completion).
 - 3. County may retain a commissioning agent to:
 - a. Verify the installation and proper performance of the mechanical and electrical systems as specified.
 - b. Review the as-built drawings for the mechanical and electrical systems.

- c. Review operating and maintenance documentation for completeness and compliance with the construction documents.
 - d. Schedule and coordinate all mechanical and electrical system training sessions for County's operations and maintenance personnel.
 - 4. Contractor and relevant subcontractors and suppliers shall have the following responsibilities as part of the commissioning effort:
 - a. Coordinate all field tests, factory start-up of equipment and training with County's commissioning agent.
 - b. Provide all necessary tools and personnel to assist the commissioning agent in testing, balancing and readjusting of systems to confirm the functional performance of the system.
 - c. Notify the commissioning agent of the schedule for major installations, equipment startup and tests. A reasonable amount of advance notice shall be provided so that the commissioning agent may be present.
 - d. Notify the commissioning agent before major systems are covered up to allow tests or verifications while the system is accessible.
 - e. Cooperate with the commissioning agent in scheduling/preparation of required Operation and Maintenance training sessions.
 - f. Submit as-built documentation and operating and maintenance instructions to the commissioning agent for review.
 - g. Attend a commissioning planning meeting to be arranged by the commissioning agent close to the beginning of construction. The purpose of the meeting is to describe roles, coordinate schedules, and answer questions regarding commissioning process.
- B. Other Equipment and Systems: In addition to Building Commissioning requirements, conduct operational tests on equipment and systems not part of primary equipment and systems covered under Building Commissioning.
 - 1. Conduct operational tests as required to demonstrate that installations of systems have been completed in compliance with requirements of Contract Documents.
 - 2. Furnish a written record of test results, using recording-type instruments where applicable.

1.3 MATERIAL AND FINISH DATA

- A. Provide material and finish data, including manufacturer's maintenance and cleaning recommendations for materials and finishes.
- B. Format: Provide information in three-ring, durable, plastic binders sized for 8-1/2" x 11" sheets, and including as a minimum, the following:
 - 1. Identification on, or readable through, the front cover with the Project name and address and the general subject matter contained in the manual.
 - 2. Typewritten index near the front of the manual with contents based on Specification division and Section numbers.
 - 3. Manufacturer's product data marked to indicate actual products provided for Project and options of actual products provided.
 - a. Include names, addresses, and telephone numbers of suppliers, installers, and Subcontractors involved with products on this Project.
 - 4. Complete instructions regarding maintenance and cleaning requirements for each material and finish.
 - 5. List of recommended cleaning materials, where special materials are recommended by manufacturer, with current cost, name, address and telephone number of nearest source.

1.4 INSTRUCTION OF THE PERSONNEL

- A. Equipment and Systems: Refer to Sections as applicable.
- B. Other Equipment and Systems: Where specified in the individual Specification Sections, furnish qualified personnel for on-site instruction of County's operating and maintenance personnel.
 - 1. Furnish instruction, including special start-ups and running time, prior to Completion.

1.5 PREPARATION FOR FINAL INSPECTION

- A. Perform final cleaning as specified in Section 01710. Remove protective coverings and similar items.
- B. Deliver guarantees/warranties, bonds, service and maintenance contracts, operating and maintenance instructions, and other items specified, and deliver them to County before Completion.

- C. Deliver Record Documents to County.
- D. Deliver Operating and Maintenance Manuals to County.
- E. Deliver Spare Parts and Maintenance Materials to County.
- F. Keys and Final Keying Schedule: To requirements of Section 087100 - Door Hardware.
- G. Evidence of Payment and Release of Liens in compliance with the Conditions of the Contract Agreement and the General Conditions.
- H. Consent of Surety to Final Payment.
- I. Certificates of Insurance for Products and Complete Operations: In accordance with the Supplementary Conditions, Conditions of the Contract Agreement, and General Conditions.
- J. Final Application for Payment: To requirements of the Conditions of the Contract Agreement, and General Conditions.

1.6 RESTORATION OR REPLACEMENT OF DAMAGED WORK

- A. At no additional expense to County, restore or replace, as specified or determined by County, material and finishes damaged due to the performance of the Work.
- B. Restoration or replacement shall be equal in quality to and shall match the appearance of the existing Work.

1.7 REMEDIAL WORK

- A. At no additional expense to County, perform remedial Work necessitated by faulty materials or workmanship.

1.8 PROJECT RECORD DOCUMENTS

- A. Maintain on site, one set of the following record documents; record actual revisions to the Work:
 - 1. Contract Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other Modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
- B. Store Record Documents separate from documents used for construction. Label each document "Project Record" in neat large printed letters.

- C. Record information concurrent with construction progress.
 - 1. Do not conceal any Work until required "as-built" information is recorded.
 - 2. Recording and marking shall be legible using ink.
- D. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and Modifications.
- E. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish main floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 4. Field changes of dimension and detail.
 - 5. Details not on original Contract Drawings.
- F. Submit documents to County with claim for final Application for Payment.

1.9 OPERATION AND MAINTENANCE DATA

- A. Compile data and related information appropriate for Owner's maintenance and operation of products furnished under the Contract.
- B. Submit three sets prior to final inspection, bound in 8-1/2 x 11-inch text pages, three D side ring capacity expansion binders with durable plastic covers.
- C. Prepare binder covers with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.
- D. Internally subdivide the binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
- E. Contents: Prepare a Table of Contents for each volume, with each Product or system description identified, type on 24-pound white paper.
- F. Part 1: Directory, listing names, addresses, and telephone numbers of Architect, Contractor, Subcontractors, and major equipment suppliers.

- G. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
 - 1. Significant design criteria.
 - 2. List of equipment.
 - 3. Parts list for each component.
 - 4. Operating instructions.
 - 5. Maintenance instructions for equipment and systems.
 - 6. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.
- H. Part 3: Project documents and certificates, including the following:
 - 1. Shop drawings and product data.
 - 2. Air and water balance reports.
 - 3. Certificates.
 - 4. Photocopies of warranties.
- I. Submit one copy of completed volumes in final form 15 days prior to final inspection. This copy will be returned after final inspection, with County comments. Revise content of documents as required prior to final submittal.
- J. Submit final revised volumes within ten (10) days after final inspection. Final sets shall include two (2) hard copies in binders for the facility and copies in pdf format for the County.

1.10 GUARANTEES/WARRANTIES AND BONDS

- A. General: Manufacturers' guarantees/warranties notwithstanding, guarantee/warranty the entire Work against defects in materials and workmanship for twelve (12) months from the date of Project Completion, except as otherwise specified in individual Specification Sections.
 - 1. Comply with guarantee/warranty and bond Work, as applicable, as specified in the individual Specification Sections.
 - 2. Warranties between Contractor and manufacturers, and Contractor and suppliers, shall not affect guarantees/warranties between Contractor and County.
 - 3. Compile specified guarantees/warranties and bonds, as applicable, and verify their compliance with the Contract Documents; co-execute as required.
 - 4. Submit executed guarantees/warranties and bonds, as applicable, to County for review. Deliver them to County prior to Completion.
 - 5. These warranties shall be in addition to and not a limitation of other rights

County may have against Contractor under Contract Documents and which may be prescribed by law, regardless of wording of manufacturer's standard warranty.

- B. Guarantees/Warranties: Guarantees/warranties are intended to protect County against failure of work and against deficient, defective and faulty materials and workmanship, regardless of sources.
 - 1. Limitations: Warranties are not intended to cover failures which result from the following:
 - a. Unusual or abnormal phenomena of the elements.
 - b. County's misuse, maltreatment or improper maintenance of work.
 - c. Vandalism after Acceptance of the Work.
 - d. Insurrection or acts of aggression including war.
- C. Related Damages and Losses: Remove and replace work which is damaged as result of failure, or which must be removed and replaced to provide access for correction of warranted work.
- D. Warranty Reinstatement: After correction of warranted work, reinstate warranty for corrected work to date of original warranty expiration, but not less than half original warranty period.
- E. Replacement Cost: Replace or restore failing warranted items without regard to anticipated useful service lives.
- F. Rejection of Warranties: County reserves right to reject unsolicited and coincidental product warranties which detract from or confuse interpretations of Contract Documents.
- G. Submittal Requirements:
 - 1. For equipment or components of accepted equipment put into service for County's benefit during the progress of the Work, submit within thirty (30) days prior to Completion.
 - 2. Otherwise, submit within fourteen (14) days prior to Completion, and prior to request for final payment.
 - 3. Furnish information regarding proper procedures in case of failures, and information that might affect validity of guarantees/warranties and bonds.

4. Assemble guarantees/warranties and bonds in 8-1/2" x 11" size in three-ring binder with durable plastic cover; include table of contents.
 5. Assemble documents executed by subcontractors, installers, suppliers, and manufacturers.
 6. Provide information to County's personnel regarding proper procedure in case of failure and instances which might affect validity of guarantee/warranty.
- H. Correct Contract deficiencies identified by the commissioning agent. Record all such correction and provide documentation to the commissioning agent.
- I. Form of Guarantee/Warranty: Guarantees/warranties may be submitted in the sample form included hereinafter in the Project Manual, or in other form approved by County.
1. Submit guarantees/warranties typed on Contractor's letterhead if for the entire Work, or on Subcontractor's letterhead if for the Work of a Specification Section.
 2. Warranty shall be countersigned by manufacturer.
 3. Where specified, warranty shall be countersigned by Subcontractor and installer.
 - a. Provide required warranties for waterproofing and roofing systems countersigned by Subcontractor and installer.
 4. Acceptance of manufacturer's guarantees/warranties by County shall not be construed to limit County's recourse to Contractor for correction of defects under the law.

1.11 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification Sections.
- B. Deliver to Project site and place in location as directed; obtain receipt prior to final payment.

1.12 RELEASE OF LIENS OR CLAIMS

- A. Before County pays Contractor its final payment for the work, Contractor shall sign and deliver to County a release of liens or claims sworn to under oath and duly notarized. The release shall state that Contractor has satisfied all claims and indebtedness of every nature in any way connected with the work, including, but not limited to the foregoing, all payrolls, amounts due to the subcontractors, accounts for labor performed and

materials furnished, incidental services, liens, and judgements

- B. If any liens or claims remain unsatisfied after all payments to Contractor are made, Contractor shall refund to County all monies that the latter may be compelled to pay in discharging such a lien or claim, including all costs and a reasonable attorney's fee.

1.13 FINAL PAYMENT

- A. When, in the opinion of the Architect, the project is complete (NOTE: evaluation after inspection) the Architect will advise the Owner and the Owner will file the Notice of Completion with the County Recorder.
- B. Should there be items not available due to delays in delivery or should work remain incomplete the Architect and the Owner may require the Contractor to post a certified check in an agreed upon amount sufficient to cover such incomplete or uncorrected items. Such certified check shall be held until completion of all incomplete Work.
- C. The 10% retention shall be held by the Owner until Forty (40) days after Final Acceptance and filing of the notice of Completion with the County Recorder. If no liens or encumbrances are filed and if all work is complete, the retention shall be paid the Contractor. Assessed liquidated damages shall be deducted from the retention.
- D. Final payment to the Contractor will not be made until the Owner and Architect receive a signed-off final copy of the Building Permit.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

GUARANTEE/WARRANTY FORM

FOR

MENDOCINO COUNTY CRISIS RESIDENTIAL TREATMENT FACILITY

UKIAH, CALIFORNIA

GUARANTEE/WARRANTY FOR _____.

We hereby guarantee/warrant that the _____
which we have provided in the _____
has been completed in accordance with the requirements of Specification Section _____
and the other Contract Documents.

We agree to repair or replace any or all of our Work, together with any other adjacent Work which may be displaced by so doing, that may prove to be defective in its workmanship or material within a period of twelve (12) months from the date of acceptance of the above-named Project by County; and we also agree to repair any and all damages resulting from such defects, all without any expense to County, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of our failure to comply with the above-mentioned conditions within fifteen (15) days after being notified in writing by County, we collectively or separately do hereby authorize County to proceed to have such defective Work repaired or replaced and made good at our expense, and we will honor and pay the costs and charges therefor upon demand.

Signed _____ Date _____

(Include Subcontractor's name, address, and license number)

Countersigned _____ Date _____

(Include Contractor's name, address, and license number, or manufacturer's name and address)

or

Signed _____ Date _____

(Include Contractor's name, address, and license number)

ROOFING GUARANTEE

FOR

MENDOCINO COUNTY CRISIS RESIDENTIAL TREATMENT FACILITY

UKIAH, CALIFORNIA

We hereby guarantee that the labor and material which we have furnished for this project has been in accordance with the drawings and specifications. We agree to maintain the roof and flashings in a water-tight condition and to repair or replace any or all of the work, together with any other work which may be displaced in so doing, that may prove to be defective in its workmanship or material within a period of ten (10) years from date of acceptance of the above-named structure by County without any expense whatsoever to said County, ordinary wear and tear and unusual abuse or neglect expected.

In the event of our failure to comply with the above mentioned conditions with fifteen (15) calendar days after being notified in writing by County, we, collectively or separately, do hereby authorize County to proceed to have said defects repaired and made good at our expense and we will honor and pay the costs and charges therefor upon demand.

ROOFING CONTRACTOR:

SIGNED _____

DATED _____

DATE OF BUILDING ACCEPTANCE _____

END OF SECTION

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SECTION 01710 - CLEANING

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Work includes, throughout the construction period, maintaining the buildings and site in a standard of cleanliness as described in this Section.
- B. Related work:
 - 1. Documents affecting Work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - 2. In addition to standards described in this Section, comply with requirements for cleaning as described in pertinent other Sections of these Specification.

1.2 QUALITY ASSURANCE

- A. Conduct daily inspections, and more often if necessary, to verify that requirements for cleanliness are being met.
- B. In addition to the standards described in this Section, comply with pertinent requirements of governmental agencies having jurisdiction.

PART 2 – PRODUCTS

2.1 CLEANING MATERIALS AND EQUIPMENT

Provide required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.2 COMPATIBILITY

Use only cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material.

PART 3 – EXECUTION

3.1 PROGRESS CLEANING

- A. General:

1. Retain stored items in an orderly arrangement allowing maximum access, not impeding traffic or drainage, and providing required protection of materials.
2. Do not allow accumulation of scrap, debris, waste material, and other items not required for construction of this Work.
3. At least twice each month, and more often if necessary, completely remove all scrap, debris, and waste material from the job site.
4. Provide adequate storage for all items awaiting removal from the job site, observing requirements for fire protection and protection of the ecology.

B. Site:

1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris, and waste material. Remove such items to the place designated for their storage.
2. Weekly, and more often if necessary, inspect all arrangements of materials stored on the site. Restack, tidy, or otherwise service arrangements to meet the requirements of Paragraph 3.1.1.1 above.
3. Maintain the site in a neat and orderly condition at all times.

C. Structures:

1. Weekly, and more often if necessary, inspect the structures and pick up all scrap, debris, and waste material. Remove such items to the place designated for their storage.
2. Weekly, and more often if necessary, sweep interior spaces clean.

"Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort and a hand-held broom.

3. As required preparatory to installation of succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using equipment and materials required to achieve the necessary cleanliness.
4. Following the installation of finish floor materials, clean the finish floor daily (and more often if necessary) at all times while work is being performed in the space in which finish materials are installed.

"Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from foreign material which, in the opinion of Architect, is detrimental to the finished product.

3.2 FINAL CLEANING

- A. "Clean", for the purpose of this Article, and except as may be specifically provided otherwise, shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials.
- B. Prior to completion of the Work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste. Conduct final progress cleaning as described in Article 3.1 above.
- C. Site:
 - 1. Unless otherwise specifically directed by County, broom clean paved areas on the site and public paved areas adjacent to the site.
 - 2. Completely remove resultant debris.
- D. Structures:
 - 1. Exterior:
 - a. Visually inspect exterior surfaces and remove all traces of soil, waste materials, smudges, and other foreign matter.
 - b. Remove all traces of splashed material from adjacent surfaces.
 - c. If necessary, to achieve a uniform degree of cleanliness, hose down the exterior of the structure.
 - d. In the event of stubborn stains not removable with water, County may require light sandblasting or other cleaning at no additional cost to Owner.
 - 2. Interior:
 - a. Visually inspect exterior surfaces and remove all traces of soil, waste materials, smudges, and other foreign matter.
 - b. Remove all traces of splashed material from adjacent surfaces.

- c. Remove paint droppings, spots, stains, and dirt from finished surfaces.
 - d. Clean glass inside and outside.
 - e. To polished surfaces requiring routine application of buffed polish, apply as recommended by the manufacturer of the material being polished.
- E. Schedule final cleaning as approved by County to accept a completely clean Work.

3.3 CLEANING DURING COUNTY'S OCCUPANCY

Should County occupy the Work or any portion thereof prior to its completion by Contractor and acceptance by County, responsibilities for interim and final cleaning shall be as determined by County in accordance with the General Conditions of the Contract.

END OF SECTION

SECTION 02080 - CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Construction waste shall be managed in conformance with the applicable codes and regulations listed below.

1.2 APPLICABLE CODES AND REGULATIONS:

- A. General Requirements: See Specification Section 01010 - Summary of Work.
- B. This project is subject to the following Recycling Requirements:
 - 1. The Mendocino County "Construction and Demolition Recycling and Reuse" Ordinance to maximize the salvage and recycling of demolition and construction debris and document waste stream diversion. For more information refer to the Construction and Demolition Forms handout on the following web page of the County Department of Planning and Building Services:
<https://www.mendocinocounty.org/government/planning-building-services/forms-and-handouts>
- C. This project is subject to the requirements of the most recent edition of the California Green Building Standards Code (CALGreen) with current State and Local amendments.

1.3 QUALITY ASSURANCE:

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

PART 2 – PRODUCTS

(No products are required in this Section.)

PART 3 – EXECUTION

3.1 SITE AND SURFACE CONDITIONS

- A. Examine areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 CONSTRUCTION WASTE MANAGEMENT

- A. By careful study of the Contract Documents, determine the location and extent of construction waste management to be performed.
- B. In company with the Architect, visit the site and verify the extent and location of construction waste management required.
 - 1. Carefully identify limits of selective demolition.
 - 2. Mark interface surfaces as required to enable workmen to identify items to be managed according to the requirements of this section.
- C. Prepare and follow an organized plan for construction waste management.
 - 1. Establish a location on site for construction waste management tasks. Sort waste into required categories and stockpile materials until ready for disposal.
 - 2. Develop an organized plan for construction waste management and fully inform all employees of the requirements and conditions.
 - 3. Use means necessary to prevent dust, airborne debris and waterborne debris from becoming a nuisance to the public, to neighbors, workers and to other work being performed on or near the site.
- D. Disposal of Materials
 - 1. Completely remove items scheduled to be removed from site, leaving surfaces clean, solid, and ready to receive new materials specified elsewhere.
 - 2. In all activities, comply with pertinent regulations of governmental agencies having jurisdiction.

3.3 SUBMITTALS:

- A. Submit construction waste management plan, disposal confirmation and any other required documentation to governmental agencies having jurisdiction, Architect and Owner.

END OF SECTION

SECTION 061063 - EXTERIOR ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Wood fences.

1.3 DEFINITIONS

- A. Boards: Lumber of less than 2 inches nominal in thickness and 2 inches nominal or greater in width.
- B. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.
- C. Lumber grading agencies, and the abbreviations used to reference them, include the following:
 - 1. NeLMA: Northeastern Lumber Manufacturers' Association.
 - 2. NLGA: National Lumber Grades Authority.
 - 3. RIS: Redwood Inspection Service.
 - 4. SPIB: The Southern Pine Inspection Bureau.
 - 5. WCLIB: West Coast Lumber Inspection Bureau.
 - 6. WWPA: Western Wood Products Association.

1.4 ACTION SUBMITTALS

- A. Product Data: For preservative-treated wood products. Include chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.

1.5 INFORMATIONAL SUBMITTALS

1.6 QUALITY ASSURANCE

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store materials under cover and protected from weather and contact with damp or wet surfaces. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 LUMBER, GENERAL

- A. Comply with DOC PS 20 and with grading rules of lumber grading agencies certified by ALSC's Board of Review as applicable. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by ALSC's Board of Review.
 - 1. Factory mark each item with grade stamp of grading agency.
 - 2. For items that are exposed to view in the completed Work, mark grade stamp on end or back of each piece .
 - 3. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry wood products.
 - 4. Provide dressed lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content:
 - 1. Boards: **19** percent.
 - 2. Dimension Lumber: 15 percent.

2.2 LUMBER

- A. Hand select wood for freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot holes, shake, splits, torn grain, and wane.
- B. Dimension Lumber: No. 2 grade of the following species:
 - 1. Hem fir or hem fir (north); NLGA, WCLIB. Or WWPA.
- C. Boards:
 - 1. Redwood, Heart B or Select Heart; RIS.

2.3 PRESERVATIVE TREATMENT

- A. Pressure treat dimension lumber with waterborne preservative according to AWP A U1; Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.
- B. Pressure treat timber with waterborne preservative according to AWP A U1; Use Category UC4a.
- C. Preservative Chemicals: Acceptable to authorities having jurisdiction.
 - 1. Do not use chemicals containing arsenic or chromium .
- D. Use process for dimension lumber that includes water-repellent treatment.
- E. After treatment, redry dimension lumber to 19 percent maximum moisture content.
- F. Mark treated wood with treatment quality mark of an inspection agency approved by ALSC's Board of Review.
- G. Application: Treat items indicated on Drawings.

2.4 FASTENERS

- A. General: Provide fasteners of size and type indicated, acceptable to authorities having jurisdiction, and that comply with requirements specified in this article for material and manufacture. Provide nails or screws, in sufficient length, to penetrate not less than 1-1/2 inches into wood substrate.
 - 1. Use fasteners with hot-dip zinc coating complying with ASTM A153/A153M or ASTM F2329 unless otherwise indicated.
 - 2. For pressure-preservative-treated wood, use stainless steel fasteners.
 - 3. For redwood, use hot-dip galvanized-steel fasteners.
- B. Wood Screws and Lag Screws: ASME B18.2.1, ASME B18.6.1, or ICC-ES AC233.

2.5 METAL ACCESSORIES

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or approved equal.
- B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653/A653M, G90 coating designation.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit work to other construction; scribe and cope as needed for accurate fit.
- B. Framing Standard: Comply with AF&PA WCD1 unless otherwise indicated.
- C. Install metal framing anchors to comply with manufacturer's written instructions.
- D. Do not splice structural members between supports unless otherwise indicated.
- E. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
- F. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of members or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- G. Apply copper naphthenate field treatment to comply with AWPAC M4, to cut surfaces of preservative-treated lumber.
- H. Securely attach exterior rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. ICC-ES AC70 for power-driven fasteners.
 - 2. "Fastening Schedule" in ICC's International Building Code.
 - 3. "Fastener Schedule for Structural Members" and "Alternate Attachments" in ICC's International Residential Code for One- and Two-Family Dwellings.

END OF SECTION 061063

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes commercial door hardware for the following:
 - 1. Swinging doors.
 - 2. Sliding doors.
 - 3. Other doors to the extent indicated.
- B. Door hardware includes, but is not necessarily limited to, the following:
 - 1. Mechanical door hardware.
 - 2. Cylinders specified for doors in other sections.
- C. Related Sections:
 - 1. Division 08 Section "Flush Wood Doors".
 - 2. Division 08 Section "Aluminum-Framed Entrances and Storefronts".
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
 - 2. ICC/IBC - International Building Code.
 - 3. NFPA 70 - National Electrical Code.
 - 4. NFPA 80 - Fire Doors and Windows.
 - 5. NFPA 101 - Life Safety Code.
 - 6. NFPA 105 - Installation of Smoke Door Assemblies.
 - 7. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards:
 - 1. ANSI/BHMA Certified Product Standards - A156 Series
 - 2. UL10C – Positive Pressure Fire Tests of Door Assemblies

1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
 - 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
 - 3. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 - h. Warranty information for each product.
 - 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- D. Informational Submittals:
 - 1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

- E. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

1.4 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.
- D. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
 - 1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
- E. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.
- F. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
 - 1. Function of building, purpose of each area and degree of security required.
 - 2. Plans for existing and future key system expansion.
 - 3. Requirements for key control storage and software.
 - 4. Installation of permanent keys, cylinder cores and software.
 - 5. Address and requirements for delivery of keys.
- G. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
 2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
 3. Review sequence of operation narratives for each unique access controlled opening.
 4. Review and finalize construction schedule and verify availability of materials.
 5. Review the required inspecting, testing, commissioning, and demonstration procedures
- H. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
 - 1. Structural failures including excessive deflection, cracking, or breakage.
 - 2. Faulty operation of the hardware.
 - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 4. Electrical component defects and failures within the systems operation.
- C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.
- D. Special Warranty Periods:
 - 1. Ten years for mortise locks and latches.
 - 2. Seven years for heavy duty cylindrical (bored) locks and latches.
 - 3. Twenty five years for manual overhead door closer bodies.

1.8 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.
- B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
 - 1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.
- C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

- A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
1. Quantity: Provide the following hinge quantity:
 - a. Two Hinges: For doors with heights up to 60 inches.
 - b. Three Hinges: For doors with heights 61 to 90 inches.
 - c. Four Hinges: For doors with heights 91 to 120 inches.
 - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
 2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
 - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
 - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
 3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
 - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
 - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
 4. Hinge Options: Comply with the following:
 - a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.
 5. Manufacturers:
 - a. Hager Companies (HA) - CB Series.
 - b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - TA Series.
 - c. Stanley Hardware (ST) - CB Series.
- B. Sliding and Folding Door Hardware: Hardware is to be of type and design as specified and should comply with ANSI/BHMA A156.14.
1. Sliding Bi-Passing Pocket Door Hardware: Provide complete sets consisting of track, hangers, stops, bumpers, floor channel, guides, and accessories indicated.
 2. Cascading: Provide a bi-parting or single direction telescoping system as required with a minimum 200 lb. per door capacity.
 3. Bi-folding Door Hardware: Rated for door panels weighing up to 125 lb.
 4. Pocket Sliding Door Hardware: Rated for doors weighing up to 200 lb.
 5. Manufacturers:
 - a. Hager Companies (HA).
 - b. Johnson Hardware (JO).
 - c. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).

2.3 DOOR OPERATING TRIM

- A. Door Push Plates and Pulls: ANSI/BHMA A156.6 certified door pushes and pulls of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
 - 1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
 - 2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
 - 3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
 - 4. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.
 - 5. Manufacturers:
 - a. Hiawatha, Inc. (HI).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
 - c. Trimco (TC).

2.4 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.
- C. Cylinders: Original manufacturer cylinders complying with the following:
 - 1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
 - 2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 - 3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
 - 4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
 - 5. Keyway: Match Facility Restricted Keyway.
- D. Keying System: Each type of lock and cylinders to be factory keyed.
 - 1. Conduct specified "Keying Conference" to define and document keying system instructions and requirements.
 - 2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
 - 3. Existing System: Field verify and key locks to match Owner's existing system.
- E. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Two (2)
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Keys (where required): Ten (10).

F. Construction Keying: Provide construction master keyed cylinders.

2.5 MECHANICAL LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 certified. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.

1. Manufacturers:
 - a. Corbin Russwin Hardware (RU) – ML2000 Series.
 - b. Sargent Manufacturing (SA) – 8200 Series.
 - c. Yale Locks and Hardware (YA) – 8800FL Series.

B. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Grade 1 certified.

1. Furnish with solid cast levers, standard 2 3/4" backset, and 1/2" (3/4" at rated paired openings) throw brass or stainless steel latchbolt.
2. Locks are to be non-handed and fully field reversible.
3. Extended cycle test: Locks to have been cycle tested in ordinance with ANSI/BHMA 156.2 requirements to 2 million cycles.
4. Manufacturers:
 - a. Corbin Russwin Hardware (RU) – CL3300 Series.
 - b. Sargent Manufacturing (SA) – 10 Line.

2.6 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.

4. Dustproof Strikes: BHMA A156.16.

2.7 DOOR CLOSERS

- A. All door closers specified herein shall meet or exceed the following criteria:
 1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.
 2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
 3. Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.
 4. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.
 5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
 6. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
 7. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.
- B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.
 1. Manufacturers:
 - a. Corbin Russwin Hardware (RU) - DC6000 Series.
 - b. Sargent Manufacturing (SA) - 351 Series.
 - c. Norton Door Controls (NO) - 7500 Series.
 - d. Yale Locks and Hardware (YA) - 4400 Series.

2.8 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where

they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Manufacturers:
 - a. Hiawatha, Inc. (HI).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
 - c. Trimco (TC).

2.9 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
 1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NPFA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Manufacturers:
 1. National Guard Products (NG).
 2. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).
 3. Reese Enterprises, Inc. (RE).

2.10 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.11 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
 - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
 - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."

2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Section "Closeout Procedures" for project punch and reporting requirements including compliance with approved submittals and verification door hardware is properly installed, operating and adjusted.

3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
1. Quantities listed are for each pair of doors, or for each single door.
 2. The supplier is responsible for handling and sizing all products.
 3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate selection for the material and application.

Hardware Sets

Set: 1.0

Doors: 100, 106

4 Hinge, Full Mortise	TA2314	US32D	MK
1 Deadbolt Lock	70 8225 LNP	US26D	SA
1 Final Core	Best Patented		BE
1 Door Closer	7500	689	NO
1 Wall Stop	409	US32D	RO
1 Threshold	Per Detail x FHSL14		PE
1 Gasket	S44D Head & Jambs		PE
1 Door Bottom	2251AV	AI	PE

Set: 2.0

Doors: 122A

4 Hinge, Full Mortise	TA2314 NRP	US32D	MK
1 Deadbolt Lock	70 8225 LNP	US26D	SA
1 Final Core	Best Patented		BE
1 Door Closer	PR7500	689	NO
1 Door Stop	471 EXP	US26D	RO

1 Threshold	Per Detail x FHSL14		PE
1 Gasket	S44D Head & Jambs		PE
1 Sweep	57AV		PE

Set: 3.0

Doors: 126

4 Hinge, Full Mortise	TA2714	US26D	MK
1 Storeroom Lock	70 10G04 LP	US26D	SA
1 Final Core	Best Patented		BE
1 Door Closer	7500	689	NO
1 Door Stop & Holder	491R	US26D	RO

Set: 4.0

Doors: 102, 107A, 122B

3 Hinge, Full Mortise	TA2714	US26D	MK
1 Storeroom Lock	70 10G04 LP	US26D	SA
1 Final Core	Best Patented		BE
1 Door Closer	7500	689	NO
1 Wall Stop	409	US32D	RO

Set: 5.0

Doors: 101

4 Hinge, Full Mortise	TA2714	US26D	MK
1 Storeroom Lock	70 10G04 LP	US26D	SA
1 Final Core	Best Patented		BE
1 Surface Closer	CLP7500R	689	NO
1 Wall Stop	409	US32D	RO

Set: 6.0

Doors: 103, 109, 112, 116, 119

4 Hinge, Full Mortise	TA2714	US26D	MK
1 Passage Latch	10U15 LP	US26D	SA
1 Wall Stop	409	US32D	RO
1 Gasket	S773D		PE

Set: 7.0

Doors: 110, 117

3 Hinge, Full Mortise	TA2714	US26D	MK
1 Privacy Lock	V21 8265 LNP	US26D	SA
1 Surface Closer	CLP7500R	689	NO
1 Gasket	S773D		PE

Set: 8.0

Doors: 107B, 108, 111, 115, 118

1 Bypass Door Hardware	HBP200A		PE
2 Flush Pull	BF97	US32D	RO

Set: 9.0

Doors: 104

1 Pocket Sliding Door Hardware	PF28200A		PE
1 Cavity Sliders Lockset	CL100A7018	626	OT
1 Final Core	Best Patented		BE

Set: 10.0

Doors: 123

1 Pocket Sliding Door Hardware	PF28200A		PE
1 Cavity Sliders Privacy	CL100B30xx	626	OT

Set: 11.0

Doors: 114

1 Hardware	By Door Manufacturer		

END OF SECTION 087100

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SECTION 129300 – SITE FURNISHINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General Conditions and Division 1 apply to work of this section.

1.2 SUMMARY

- A. The General Conditions and all other Contract Documents for this project are complementary and applicable to this Section of the Specifications.
- B. Work Included: furnish all labor, materials, equipment and services necessary to provide and construct, repair or install the site elements, complete in place, as shown and specified, including, but not limited to:
 - 1. Bench (Owner furnished; Owner installed)
 - 2. Side Table (Owner furnished; Owner installed)
 - 3. Waste Receptacle (Owner furnished; Owner installed)
 - 4. Bike Rack (Owner furnished; Owner installed)
 - 5. Vegetable Planter (Owner furnished; Owner installed)
- C. Refer to the project Drawings for Bid Schedule and identification of work described herein that may be provided a Bid Alternate or Owner Furnished, Owner Installed.
- D. Related Work
 - 1. 03 3000 Cast-In-Place Concrete

1.3 SUBMITTALS

- A. Submit shop drawings to the District for approval before installing any manufactured items. Plans shall include dimensions, color, finish, structural design (custom items) and connection details.
- B. Submit shop drawings of other materials listed in this section to the District for approval before installation.
 - 1. Provide material samples, color samples, brushouts or charts for all items.

PART 2 - PRODUCTS

2.1 ITEMS

A. Bench

1. Bench shall be as specified on the Drawings or approved equal.

B. Side Table

1. Side Table shall be as specified on the Drawings or approved equal.

C. Waste Receptacle

1. Waste Receptacle shall be as specified on the Drawings or approved equal.

D. Bike Rack

1. Bike Rack shall be as specified on the Drawings or approved equal.

E. Vegetable Planter Type A and Type B

1. Vegetable Planter Type A and Type B shall be as specified on the Drawings or approved equal.

2.2 MISCELLANEOUS MATERIALS

- #### A.
- All other materials for site elements shall be as specified on the Drawings and these specifications

PART 3 - EXECUTION

3.1 INSTALLATION

- #### A.
- Examination: Verify that conditions are satisfactory for installation of each item of site elements. When unsatisfactory conditions exist, do not begin installation until such conditions have been corrected.
- #### B.
- Installation: Install products in conformance with the manufacturer's recommendations, Drawings and approved shop drawings, and as indicated.
1. Install products square, plumb, level, accurately aligned and securely anchored.
 2. Repair abraded areas of shop-applied coating and areas of welds where shop-applied coating has been damaged, using a primer or galvanized repair compound compatible with the shop coating. Repair paint surface per manufacturer's specifications and District direction to match undamaged finish

3. Completion: Completed installation shall be securely anchored and free from defects and damage in material and finish.

3.2 GUARANTEE

- A. At completion of project, Contractor shall provide District with written guarantee from each manufacturer identifying the nature of warranty for each product component.
- B. Contractor shall provide District with two (2) bound maintenance manuals identifying each piece of equipment on manufacturer's recommended maintenance program including, but not limited to, daily, weekly and monthly check lists.
- C. Contractor shall provide District with minimum of one (1) gallon each type and color of paint used on items with recommended surface preparation and application guidelines.

END OF SECTION 129300

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SECTION 133423 - PREFABRICATED MODULAR STRUCTURES

PART 1 - PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General Conditions and Division 1 apply to work of this section.
- B. RELATED REQUIREMENTS
 - 1. Section 087100 Door Hardware

1.2 SUMMARY

- A. This section describes prefabricated and/or partially prefabricated, modular building structures. The prefabricated modular structure shall be erected at the designated site within the State of California, complete and ready for use. All costs for transportation and installation at the site are to be included in the Bid price.
- B. Extent of Prefabricated Modular Structure is as shown on the Drawings and as specified herein.
- C. Work included as part of Contractor's work includes all work described within this section.
- D. Bidder of this Section shall coordinate requirements of this Section with all scope of work of the project including Site Development work by the General Contractor.

1.3 FEES

- A. All agency fees required for construction permitting will be paid by the County, including the Mendocino County Planning and Building Services and other agencies who may have jurisdiction.

1.4 SUBMITTALS

- A. Provide complete submittal to Mendocino County Planning and Building Services for plan review and approval process as well as the following in electronic PDF format:
 - 1. A 100% Design Development milestone submittal to the County for review.
 - 2. A 90% Construction Documents milestone submittal to the County for review.

1.5 QUALITY ASSURANCE

A. Applicable Documents (Most current editions):

1. The following documents form a part of this specification to the extent they are applicable.
2. California Code of Regulations (C.C.R.).
 - a. Title 22 Division 6, Licensing of Community Care Facilities
 - b. Title 24 Building Code
3. National Fire Protection Association NFPA 90A
4. National Electrical Code 2019
5. California Building Code 2019
6. California Mechanical Code 2019
7. Cal Green 2019
8. California Residential Code 2019
9. NFPA 37, NFPA 110 for Generator
10. Geotechnical Exploration and Geotechnical Report, Dated June 3, 2020, prepared by LACO Associates (LACO) for the Mendocino County Crisis Residential Treatment Facility, 631 South Orchard Avenue, Ukiah, California.

1.6 BUILDING DESIGN REQUIREMENTS:

A. Building Type

1. Drawings include annotated preliminary floor plans, exterior elevations, building sections, mechanical/plumbing plan, and electrical plan. These drawings and this specification section shall provide the design criteria for the Contractor's further development of the design and engineering and preparation of the construction documents and specifications for agency review and approval.
2. Modular building shall consist of portions of new prefabricated modules or components, including roof, walls, windows, electrical, plumbing, and mechanical services. Building shall be of any construction consistent with requirements of the Geotechnical Investigation report prepared for this project by LACO Associates . The building shall be engineered by the Contractor as one of the following:
 - a. A wood frame, shear wall construction or light gauge, cold-rolled galvanized steel framing system with structural braces as required if best for this building type.
 - b. Roof frame to be wood, wood truss, light gage metal truss, steel bent plate, wood TJI or as appropriate for the uninterrupted clear spans as shown on the Drawings.
 - c. Dimensions as shown on plans may deviate slightly in order to accommodate the accessible clearance requirements as required by the 2019 CBC Chapter 11B.
3. Components of the building layout must conform to architectural design appearance and criteria shown and requirements specified hereinafter.
4. The Contractor shall provide all drawings and calculations acceptable to the County and meeting the provisions of the California Code of Regulations for Mendocino County Planning and Building Services submittal and review. The Contractor shall bear all costs for the production of drawings, specifications and associated structural calculations. Contractor shall make all revisions and corrections to those documents required by

Mendocino County Planning and Building Services, and shall resubmit as required to obtain approvals.

5. To the extent reasonably applicable, the County's Architect will provide guidance and assistance in the Contractor's design and documentation of the construction document package. The County's Architect will make available all electronic drawing files of the Criteria building design package to assist in the development of the project.
6. The County will pay applicable fees for Mendocino County Planning and Building Services submittal and review. The Contractor shall make all changes or corrections required by Mendocino County Planning and Building Services and deliver to the County's Architect all original reproducible full-size drawings as required for approved drawings and calculations. Original drawings cited here shall be the original drawings on bond paper, bearing the County's approval stamp of identification. The modular building drawings and specifications shall be signed by Contractor's California Licensed Architect / Engineer as required by Mendocino County Planning and Building Services. County's Architect will accompany Contractor to all County appointments.
7. The County's Architect's decision about the product aesthetics shall be binding on the Contractor. Basic design loads, as well as auxiliary and collateral loads, are as follows:
 - a. Exterior walls shall be designed to withstand wind loads perpendicular to wall plane equivalent to exposure C, wind speed to meet code requirements. This requirement applies to all exterior walls of building section even though present configuration of building may be such that some of these walls are not exposed to wind. All buildings are required to meet all current requirements of Title 24, Parts 1 & 2 and DSA Interpretations of Regulations.
 - b. Roofs: Design live load of 20 psf (reducible per area). All roofs shall be designed as diaphragms as required for resisting applied horizontal loads. Roof shall be sloped in one direction to drain with slopes as indicated on the Drawings to provide positive drainage.
 - c. Patio covers, raised decks, landings, ramps and stairs.: Building shall include a covered entry ramp in front of the building, a covered deck in the rear, and a side entry stoop, as indicated in the drawing package. These features shall be consistent with the construction and aesthetics of the building. Patio covers shall slope away from building to a continuous gutter and rainwater leaders.
 - d. Design each member to withstand stresses resulting from combinations of loads that produce maximum percentage of actual to allowable stress in that member.
 - e. It is important that the new modular building exterior design and aesthetics be very similar to the design criteria indicated in the drawing package.
 - f. The successful winning Contractor shall work with the County's Architect to refine design and materials to meet the needs of the client. Contractor shall attend user group meetings facilitated by the County's Architect as needed to finalize the building design.
 - g. There is an allowance included on the Bid Form to allow for scope additions to these specifications and criteria drawings after bid award.

B. Submittals

1. Contractor's drawings, standard details, and specifications for building assemblies manufactured hereunder shall be submitted to the Architect for review and his submission to governing authorities in compliance with governing codes, rules and

regulations, and stamped approval obtained thereon as prescribed by Codes. Modular building must meet State of California, Department of General Services, and Division of the State Architect construction requirements.

2. Design and structural calculations shall be prepared by a structural engineer registered by the State of California retained by the Contractor, or as otherwise required by governing State Authorities and submitted to the County's Architect for review and submission to the governing authorities for approval.
3. Additional drawings and instructions deemed necessary to carry out the work included in Contract shall be supplied to, or by, the Contractor or so prepared as to be consistent with the Contract Documents.

C. Quality Assurance

1. For structural steel members, comply with CBC 2019, Chapter 22, Division IX.
2. For light gage steel members, comply with CBC 2019, Chapter 22, Division V.

D. Governing Codes

1. All work and materials shall comply with the rules and regulations of the Division of the State Architect, Title 24, Parts 1 & 2, and California Code of Regulations. The regulations of the State Fire Marshall, the California Building Code, the California Mechanical Code, the California Plumbing Code, the California Electrical Code, and any other applicable State Laws and regulations.
2. Refer to other sections of this specification for applicable code references and standards.

E. Energy Requirements

1. Contractor shall be responsible for providing and submitting complete energy compliance documentation and calculations as required by California Building Code as established by the Energy Efficiency Standards for Buildings as prescribed by the California Energy Commission.

F. Fabrication Criteria

1. General Contractor who is regularly engaged in the design, fabrication and erection of custom and/or modular structures of type and quality indicated.
2. Design prefabricated components and necessary with field connections required for erection to permit easy assembly.

G. Structural Requirements

1. Steel: (Structural Shapes) ASTM A36
2. Sheet Steel: ASTM A570 (Grade 33 or 40) See Plans. Tubes: ASTM A500 (Grade B)
3. Bolts: ASTM A307 or A325
 - a. For structural steel members, comply with CBC, Chapter 22, and Division IX.
 - b. For light gauge steel members, comply with CBC, Chapter 22, and Division VI.
 - c. Steel frame building shall meet with the design requirements of the Invitation for Bid and stud spacing, etc.
4. Roof:

- a. Plywood Sheathing:
 - 1) 1/2" APA rated OSB sheathing.
- b. Design roof load to accommodate future solar panels as required by 2019 CBC and CalGreen.
- 5. Wall Framing:
 - a. Studs: Light gauge galvanized steel or wood.
 - b. Sill (Sole Plate): Light gauge galvanized steel or wood.
 - c. Top Plates: Light gauge galvanized steel or wood
 - d. Headers: Galvanized steel box beams or wood.
 - e. Door & Window Openings: Light gauge galvanized steel or wood.
 - f. Blocking: Light gauge galvanized steel or wood.
 - g. Fire Blocking: As required by Section 2708 California Building Code. Provide blocking at ceiling.
 - h. Structural Members: Steel or wood.
- 6. Sheathing
 - a. All plywood backing shall be APA or comparable rated exterior type. Each panel shall be identified with grade mark of grading association and shall meet the requirements of Product Standards PS183. Plywood shall be 1/2" minimum thick.
- 7. Foundations
 - a. The building shall be reinforced concrete slab foundation as required by site and building conditions.
 - b. Minimum footings as required as outlined in the District provided Geotechnical Report. Foundations shall be designed to meet T24, Part 1, Part 1, & D.S.A. requirements and additional loading requirements as indicated on the Geotechnical Report provided for this project.
 - c. Off Hauling of soil related to building foundations excavation shall be performed by Modular manufacturer.

H. Architectural Product Requirements

- 1. Fiber-Cement Siding
 - a. General: ASTM C 1186, Type A, Grade II, fiber-cement board, noncombustible when tested according to ASTM E 136; with a flame-spread index of 25 or less when tested according to ASTM E 84.
 - b. Basis-of-Design Product: Subject to compliance with requirements, provide James Hardie Building Products, Inc.; HardiePlank® Lap Siding or comparable product by one of the following:
 - 1) American Fiber Cement Corporation.
 - 2) CertainTeed Corporation; Saint-Gobain North America.
 - 3) GAF.
 - c. Nominal Thickness: Not less than 5/16 inch.
 - d. Horizontal Pattern: Boards 8-1/4 to 8-1/2 inches wide in plain style.
 - 1) Texture: Hardie Plank Select Cedarmill.
 - e. Factory Priming: Manufacturer's standard acrylic primer.
 - f. Weather Barrier:
 - 1) Building Wrap: ASTM E 1677, Type I air barrier; with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, when tested

according to ASTM E 84; UV stabilized; and acceptable to authorities having jurisdiction.

- a) Basis-of-Design Product: Subject to compliance with requirements, provide DuPont de Nemours, Inc.; Tyvek HomeWrap or comparable product by one of the following:
 - (1) Dow Chemical Company (The).
 - (2) TYPAR; TYPAR® BuildingWrap
- b) Water-Vapor Permeance: Not less than 8 perms per ASTM E 96/E 96M, Desiccant Method (Procedure A).
- c) Flame Propagation Test: Materials and construction shall be as tested according to NFPA 285.

g. Warranty

- 1) Special Warranty: Manufacturer agrees to repair or replace products that fail in materials or workmanship within specified warranty period.
 - a) Failures include, but are not limited to, the following:
 - (1) Structural failures including cracking and deforming.
 - (2) Deterioration of materials beyond normal weathering.
 - (a) Warranty Period: 30 years from date of Substantial Completion

2. Roofing

a. The roofing shall be equal to the following Class A roofing system:

- 1) Concrete Roof Tile:
 - a) Provide Eagle Roofing Products Ponderosa Flat Profile Tile or comparable product by one of the following:
 - (1) Boral USA; Boral Roofing LLC.
 - (2) Approved equal.
 - b) Accessory Tiles: Type IV, Ridge and closed ridge end header course L-shaped rake edge starter end band units.
 - c) Colors, Blends, and Patterns: As selected by Architect from manufacturer's full range.
 - d) Warranty:
 - (1) Materials Warranty: Manufacturer agrees to repair or replace concrete roof tiles that fail in materials within specified warranty period.
 - (a) Warranty Period: 50 years from date of Substantial Completion.
 - (2) Roofing Installer's Warranty: On warranty form at end of this Section, signed by Installer, in which Installer agrees to repair or replace components of concrete-tile roofing that fail in materials or workmanship within specified warranty period.
 - (a) Warranty Period: Five years from date of Substantial Completion.
 - e) Underlayment Materials:
 - (1) Felt: ASTM D226/D226M Type II, asphalt saturated ,
ASTM D4869/D4869M Type IV, asphalt saturated ,
unperforated.
 - (a) Double-Layer Installation: Install on roof deck.

- (b) Valley Underlayment: Install one layer of 36-inch- wide underlayment centered in valley, running full length of valley, and on top of underlayment on field of roof that is woven through valley. Install all layers of underlayment in and through valley tight with no bridging.
- 3. Roofing Alternate
 - a. The roofing shall be equal to the following Class A roofing system:
 - 1) Glass Fiber Reinforced Asphalt Shingles:
 - a) Provide GAF Timberline UHD Shingles or comparable product by:
 - (1) CertainTeed Corporation; Saint-Gobain North America.
 - (2) Owens Corning.
 - b) Color and Blends: As selected by Architect from manufacturer's full range.
 - c) Materials Warranty: Manufacturer agrees to repair or replace asphalt shingles that fail within specified warranty period.
 - d) Materials Warranty Period: 25 years from date of Substantial Completion.
 - e) Algae-Resistance Warranty Period: Asphalt shingles will not discolor for 25 years from date of Substantial Completion.
 - f) Roofing Installer's Warranty: 5 Years from date of Substantial Completion.
- 4. Roof Overhang:
 - a. All overhangs shall present a pleasing and finished appearance.
 - b. Exposed CDX sheathing will not be acceptable.
 - c. Soffit to be vented T&G metal soffit panels by Metal Sales or equal.
- 5. Building Insulation:
 - a. Exterior wall insulation shall be fiberglass batt type and shall have a rating of R19 and shall fill full depth of wall cavity.
 - b. All interior walls shall be provided with fiberglass batt type sound insulation and shall have a minimum rating of R11 and shall fill full depth of wall cavity. Extend to full height of wall.
 - c. Roof insulation shall be faced fiberglass batt type installed below roof sheathing and shall have a rating of R38. Minimum flame spread classification of 25 or less and a smoke developed rating of 50 or less. Provide additional insulation where required by energy calculations.
- 6. Sheet Metal Accessories:
 - a. General: Unless otherwise indicated, provide minimum 24 ga. galvanized RediCote or approved equal. No aluminum will be allowed.
 - b. Gutters: Formed in sections not less than 10'-0" in length, complete with end pieces, outlet tubes, and special pieces that may be required. Join sections with riveted and soldered joints. Unless otherwise indicated, provide expansion type slip joint at center of runs. Furnish gutter supports spaced at 36" o.c., constructed of same metal as gutters. Provide standard bronze, copper, or aluminum wire ball strainers at each outlet. Gutters shall be easily cleaned.
 - c. Rain Water Leaders (RWL): Shall be 4" galvanized pipe typical with cleanouts at the base of each RWL indicated to be connected to self-draining landscape areas at

grade, to landscape areas with area drains, or to on-site storm water system. RWLs shall not drain directly onto walkways.

7. Glazed Aluminum Windows:
 - a. Basis of Design Manufacturer: Milgard Manufacturing Inc.
 - 1) Acceptable Alternates: Approved Equal
 - b. Provide thermally broken nail-fin aluminum windows; dual glazed insulated units with low-E coating. Configuration as indicated on Drawings. Finish– Clear anodized aluminum. Milgard Thermally Improved Aluminum Series or approved equal.
 - c. Glazing: Glass to be clear insulating glass; Low Emissivity, 1" hermetically sealed, argon filled, assembly consisting of 3/16" glass on the outboard surface, 5/8" air space and 3/16" Tempered) on the inboard surface. Temper all glass components. Provide .030" interlayer safety film on interior.
 - d. Sealer: Butyl primary seal and polysulfide of silicone secondary seal.
 - e. Certification: All glazing to be certified in accordance with ASTM E773 and E774.
8. Glazed Interior Windows:
 - a. Interior window openings shall be 2" x 16 ga. pressed metal frames/paint with clear laminated 7/32" glass with 0.030" interlayer safety film.
9. Skylights
 - a. Basis of Design Manufacturer: Velux
 - 1) Acceptable Alternates: Approved Equal
 - b. Model: Velux FS A21.
 - c. Size: 2 feet by 4 feet nominal.
 - d. Provide fixed deck mounted skylights with insulated thermal pane glass with three coats of low e silver.
 - e. Finish to include pre-finished white wooden frame, exterior maintenance free aluminum cladding.
 - f. Flashing to include condensation drainage gasket, counter flashing, corner keys, and silicone-based sealant.
 - g. Fastening to deck with continuous deck seal mounting system with durable foam seal directly to the roof deck.
10. Doors and Frames:
 - a. Exterior Doors:
 - 1) Manufactured by Pella Corporation, 102 Main Street, Pella, Iowa 50219. Toll Free (800) 54-PELLA. Phone (641) 621-1000. Website www.pella.com.
 - 2) Pella pre-finished wood-look fiberglass construction or equal.
 - a) Factory-assembled doors with outward-swing and inward-swing door panels installed in frames.
 - b) Frames:
 - (1) Exterior surfaces are a multi-part composite material at the head and jambs.
 - (2) Interior surfaces are composite factory-primed .
 - c) Fiberglass Door Panels:
 - (1) 0.075-inch minimum fiberglass skin on exterior and interior surfaces with CFC-free injected foam insulating core.
 - (2) Rails and Stiles: Wood top rails and stiles and wood plastic composite bottom rails secured with structural adhesive between skins at perimeter.

- (3) Fiberglass Grain: Oak .
 - (4) Lock Block: 12-inches or greater, solid wood.
 - (5) Panel Thickness: 1-3/4 inches (44 mm).
 - (6) Door Closer Reinforcement: Solid reinforcement positioned to support surface-mounted closer and panic hardware.
 - d) Glazing:
 - (1) 1. Float Glass: ASTM C 1036, Quality 1.
 - (a) Tempered Glass: ASTM C 1036.
 - (b) ASTM E1300 compliant.
 - (2) Type:
 - (a) 1-inch Impact-Resistant Tempered Insulating Glass
 - 3) Rear patio door shall be fiberglass door, frame and/or sidelight configuration shown on plans. Milgard Ultra Series Out-Swing French Doors or approved equal.
 - a) Glazing: 1-inch Impact-Resistant Tempered Insulating Glass.
 - 4) Weather Stripping: All exterior doors shall be weather stripped at door jambs and head.
 - b. Interior Doors: shall be paneled composite, paint grade. Jeld-Wen Tria Composite C1000, or approved equal.
11. Door Hardware: See Section 087100 Door Hardware for Requirements.
 - a. County's Architect will assist Contractor with defining actual hardware functions after bid.
12. Flooring and Base:
 - a. Vinyl Tile: High performance plank flooring. Manufactured by Interface, Armstrong, or approved equal.
13. Painting:
 - a. Exterior Stucco and cementitious paneling:
 - 1) Primer: 3210-1200 Ultra-hide aqua acrylic gripper primer- sealer or approved equal
 - 2) Finish: 2- coats 2200-xx Dulux professional ext 100% acrylic flat or approved equal.
 - b. Exterior Frames:
 - 1) Primer: Zinsser cover stain or approved equal
 - 2) Finish: 2-coats 2406-xx Dulux professional ext 100% acrylic semi- gloss or approved equal
 - c. Exterior Doors:
 - 1) Primer: Zinsser cover stain or approved equal
 - 2) Finish: 2- coats 2402-xx Dulux professional ext 100% acrylic satin or approved equal
 - d. Interior Doors and Trim:
 - 1) Primer: Zinsser cover stain or approved equal
 - 2) Finish: 2-coats 1406-xx Dulux professional acrylic semi- gloss or approved equal
 - e. Interior Painted Walls and Components:
 - 1) All exposed gypsum board to be painted with Zinsser cover stain or approved equal primer and 2-coats 1406-xx Dulux professional acrylic satin finish or approved equal.

- 2) Provide gloss finish at restroom locations.
 - 3) All visually exposed conduits, sheet metal accessories, mechanical units, electrical boxes and other manufactured items may be left un-painted, factory finish.
14. Gypsum Board: Complying with ASTM C 36/C 36M or ASTM C 1396/C 1396M as applicable to type of gypsum board indicated
 - a. 5/8" gypsum sheathing on interior walls, ceilings, and soffits of dry areas.
 - b. 5/8" water resistant gypsum wallboard on walls at kitchens, toilet rooms, janitor rooms, and other "wet" areas. Seal joints with water resistant joint compound.
 - c. 5/8" cementitious backer board units at shower room walls and other areas to receive tile. Seal joints with water resistant joint compound.
 - d. Fastening.
 - 1) Provide backing for all sheathing with studs or blocking members at 24" o.c. maximum.
 - 2) Providing backing or blocking at all edges except for cutouts at outlets and switches.
 - 3) Provide fasteners at 8 inches maximum along edges and 12 inches maximum in the field.
 - 4) Do not located fasteners less than 3/8" from edges or ends of sheets.
 - e. Backing: Coordinate structural backing with grab bars locations and other equipment, casework, or furnishings.
 - f. Joint treatment: Perforated joint tape with ready mixed joint compound recommended by the wallboard manufacturer for the type of wallboard.
 - g. Trim
 - 1) Corner bead: fine mesh expanded steel wing type, zinc coated.
 - 2) Edge trim: steel, of configuration and size dictated by project conditions, zinc coated.
 - h. Finish texture: Level 4. Embed tape in joint compound and apply first, fill (second), and finish (third) coats of joint compound over joints, angles, fasteners heads, and accessories. Touch up and sand between coats and after last coat as needed to produce a surface free of visual defects.
15. 16 Bases, Wall Protection, Wall coverings and Chair Rails:
 - a. Base and chair rail trim: Medium-density fiberboard (MDF) or pine, painted.
 - b. Wainscot: Polyethylene terephthalate glycol (PETG) wall panels.
 - 1) Manufactured by Acrovyn or approved equal.
 - c. Corner trim protection: Polyethylene terephthalate glycol (PETG) to 6 feet above finish floor, min.
 - 1) Manufactured by Acrovyn or approved equal.
16. 19. Casework:
 - a. All casework to be WI certified, custom flush overlay in the configuration shown on the criteria drawings.
 - b. Lower and upper cabinet finishes: Plastic laminate. Manufacturers: Panolam or approved equal.
 - c. Countertops:
 - 1) Recycled glass and resin. Manufactured by Vetrazzo or approved equal.
 - 2) Acrylic polymer. Manufactured by Corian or approved equal.

- d. Standard Hardware: Brushed chrome steel loop pulls. Heavy-duty cabinet locks at doors and drawers indicated on plan documents.
 - e. Anti-ligature hardware (toilet rooms): Brushed chrome. Kingsway Group KG50 small cupped pull handle or approved equal. Heavy-duty cabinet locks at all doors.
17. Restroom Accessories:
- a. Accessories to be Whitehall anti-ligature powder coated fixtures or approved equal.
 - b. Provide all required accessible accessories. At minimum, each restroom shall receive 36" and 48" water closet grab bars, shower grab bars, and recessed toilet tissue dispenser. Owner to provide paper towel and soap dispensers.
18. Window Coverings:
- a. At all exterior windows in public areas: provide manually operated single roller rolling shades equal to MechoShade Model M5 fully integrated roller assembly and drive sprocket, with SnapLoc aluminum fascia and #10 stainless steel chain rated at 90 lb. minimum breaking strength. Designed for under-sill mounting. Face mounted shades will not be acceptable.
 - b. Environmentally Certified Shadecloth: MechoSystems, EcoVeil Group, 1350 Series (5% open), and EcoVeil 950 Series (1% open), fabricated from TPO for both core yarn and jacket, single thickness, 0.018 opaque coated reinforced yarn, non-raveling 0.030 inch thick fabric.
 - 1) Basket Weave: 5 percent open (EcoVeil Basket Weave 5300 Series) on North, East, and West building faces. 3 percent open (EcoVeil Reversible Weave 6000 Series) on South building face. Install with lighter grey side facing interior of room.
 - 2) Color: As indicated on drawings.
 - 3) Warranty: 10-Year Limited.
 - c. Environmentally Certified Shadecloth: MechoSystems, EcoVeil Group, 1350 Series (5% open), and EcoVeil 950 Series (1% open), fabricated from TPO for both core yarn and jacket, single thickness, 0.018 opaque coated reinforced yarn, non-raveling 0.030 inch thick fabric.
 - 1) Basket Weave: 5 percent open (EcoVeil Basket Weave 5300 Series) on North, East, and West building faces. 3 percent open (EcoVeil Reversible Weave 6000 Series) on South building face. Install with lighter grey side facing interior of room.
 - 2) Color: As indicated on drawings.
 - 3) Warranty: 10-Year Limited.
19. Equipment:
- a. Kitchen Equipment:
 - 1) Wall Oven - Single - Built-in Electric
 - a) Manufacturer: General Electric Corporation - GE Appliances, (www.GEappliances.com). or approved equal.
 - b) Model: Cafe Brand - Model no. CTS70DM2NS5- (cafeappliances.com)
 - c) Cabinet Width: 30-inches
 - d) Capacity: 5.0 Cubic Feet
 - e) ADA Compliant
 - f) Color: Platinum; brushed stainless steel handle.
 - g) Power: 20 Amp. rating at 208 V.

- h) Installation: Undercounter, under cooktop.
- 2) Cooktop - Built-in electric
 - a) Manufacturer: General Electric Corporation - GE Appliances, (www.GEappliances.com), or approved equal.
 - b) Model: Cafe Brand, Model no. CEP70362MS1
 - c) Width: 36-inches
 - d) ADA Compliant.
 - e) Cook Surface: Black Ceramic Glass with Beveled Edge, Frameless.
 - f) Cooking elements: Five (5) radiant elements; Left Front 7" 1500W; Left Rear 7" 1500W; Right Front 9"/7"/5" 3000W Power Boil; Right Rear 6" 1200W; Center 12"/9"/6" 3600W Power Boil.
 - g) Control Type/Location: Knob (infinite switch); Front center.
 - h) Indicator Lights: Five (5) Hot Surface, Surface Element "ON" White/Red.
 - i) Installation: Above wall-oven.
- 3) Range Hood
 - a) Manufacturer: Samsung Electronics America, Inc. 85 Challenger Road, Ridgefield Park, NJ 07660. Tel: 800-SAMSUNG. samsung.com., or approved equal.
 - b) Model: 36-inch range hood; Model No. NK36K7000WS/A2.
 - c) ADA Compliant.
 - d) Four (4) fan speeds, including booster.
 - e) Wall-Mounted chimney style.
 - f) Color: Stainless Steel.
 - g) Digital touch control.
 - h) Exterior venting.
 - i) Noise level: 74 dBA (10.8 sonnes).
 - j) Wireless Monitoring.
- 4) Dishwasher
 - a) Manufacturer: Bosch, BSH Home Appliances Corporation, www.bosch-home.com/us, 1-800-944-2904. Or approved equal.
 - b) Model: 800 Series, 24-inch ADA Compliant, Model No. SGE68X55UC.
 - c) ADA Compliant.
 - d) Color: Stainless Steel.
 - e) Noise level: 44 dBA.

I. Mechanical, Plumbing and Electrical Requirements

- 1. Applicable Codes and Design Guides Include but are not limited to:
 - a. 2019 California Building Code
 - b. 2019 California Mechanical Code
 - c. 2019 California Plumbing Code
 - d. 2019 California Electrical Code
 - e. 2019 California Fire Code
 - f. 2019 California Green Building Code
 - g. 2019 Title 24 Regulations
 - h. NFPA 37, NFPA 110 for generator
- 2. Mechanical:

- a. Comply with the following design and construction guides/standards:
 - 1) SMACNA: Related to duct construction, support and bracing for all ductwork and piping, seismic bracing, and vibration isolation.
 - 2) ASHRAE 62.1: Ventilation.
 - 3) ASHRAE 55: Thermal comfort design.
 - 4) AABC and NEBB: Testing, Adjusting and Balancing.
- b. Design Criteria:
 - 1) All load calculations shall be completed using computer load simulation software (Trace 700, HAP or equal). The following shall be the conditions.
 - a) Summer: 98.7 F dry bulb; 67.8 F wet bulb
 - b) Winter: 27 F dry bulb
 - c) Altitude: 154 ft
 - d) Indoor Design Conditions Summer: 74 F
 - e) Indoor Design Conditions Winter: 70 F
- c. Internal Load Assumptions: The following internal load assumptions shall be made in the load calculations:
 - 1) Bedrooms:
 - a) Equipment/Miscellaneous Load: .5 watts/SF
 - b) Lighting Load: .6 watts/SF
 - c) Occupant Load: 2 persons per bedroom
 - d) Ventilation: Per load calcs
 - 2) Intake and Program Interview Offices:
 - a) Equipment/Miscellaneous Load: 1.5 watts/SF
 - b) Lighting Load: .8 watts/SF
 - c) Occupant Load: Per CBC
 - d) Ventilation: Load Calculation
 - 3) Toilets and Showers:
 - a) Equipment/Miscellaneous Load: 0.1 watts/SF
 - b) Lighting Load: 1.0 watts/SF
 - c) Ventilation: Per CMC
 - 4) Laundry:
 - a) Equipment/Miscellaneous Load: 70 watts
 - b) Lighting Load: 0.6 watts/SF
 - c) Occupant Load: Per CBC
 - d) Ventilation: Per Load Calculations
 - 5) Great Room:
 - a) Equipment/Miscellaneous Load: 0.5 watts/SF
 - b) Lighting Load: 0.8 watts/SF
 - c) Occupant Load: Per CBC
 - d) Ventilation: Per Load Calculations
 - 6) Kitchen:
 - a) Equipment/Miscellaneous Load: 10 watts/SF
 - b) Lighting Load: 1 watt/SF
 - c) Occupant Load: Per CBC
 - d) Ventilation: Per Load Calculations
 - 7) Storage:
 - a) Equipment/Miscellaneous Load: 0.2 watts/SF

- b) Lighting Load: 0.6 watts/SF
 - c) Occupant Load: Per CBC
 - d) Ventilation: Per Load Calculations
 - d. HVAC Equipment:
 - 1) Coordinate equipment locations and sizes with the architect. HVAC system is a split heat pump which consists of an indoor horizontal variable speed air handling unit and outdoor multi-stage heat pump unit. The indoor unit will be located in the attic and have a fan, DX-coil, and filter. The ductwork from indoor unit will be routed in the attic to a ceiling grille in each space. Trane Comfort Link system with individual zone dampers will provide temperature control for up to 6 zones. The outdoor heat pump unit will be mounted on a housekeeping pad outside. A set of refrigerant piping will be routed from the outdoor heat pump to the indoor unit DX-coil.
 - a) Heat pump system to comply with Title 24. High efficiency/COP heat pump..
 - b) MERV 13 filters.
 - c) Constant or variable supply air volume, based on manufacturer selected.
 - d) Carrier, Trane or Equal.
 - 2) Exhaust Fans:
 - a) Ceiling exhaust fans for toilet/showers, laundry, and janitor.
 - b) Kitchen hood exhaust.
 - c) Inline exhaust fan for storage room.
 - d) Provide factory wired disconnect.
 - e) Provide motor starter for fans ¾ horsepower and higher and all three phase fans.
 - f) Greenheck, Cook or Equal.
 - e. Ductwork and Air Distribution:
 - 1) All ductwork shall meet SMACNA standards for construction and support.
 - 2) The system shall be overhead exposed ducted supply and return located in the attic.
 - 3) Duct zone branches shall be sized with a maximum of 800 FPM and 0.08" w.c. per 100 ft..
 - 4) Ductwork shall be designed and constructed to limit losses due to fittings.
 - 5) Acoustic flexible ductwork could be used.
 - 6) No exposed ductwork.
 - 7) Provide ductwork insulation R-Value to comply with Title 24.
 - f. Controls:
 - 1) Controls for HVAC system and zone dampers shall be located to be accessed by staff only. Provide local and Wi-Fi-based controls.
 - g. Testing and Balancing:
 - 1) Provide factory startup for all HVAC equipment.
 - 2) The HVAC systems shall be tested and balance by a qualified third-party test and balance company. TAB company shall be certified by NEBB and/or AABC.
- 3. Plumbing:
 - a. Domestic Cold Water:

- 1) The domestic water service shall enter the building and be distributed to the building fixtures through Type L copper piping.
- 2) Isolation valves shall be provided at each bank of fixtures.
- 3) Perform water calculations per 2019 CPC based on available pressure upstream of the meter and backflow.
- 4) All piping in unheated areas and/or exposed to the exterior shall be insulated. Provide jacketing where piping is exposed.
- b. Domestic Hot Water:
 - 1) Provide electric water heater and circulating pump with a timer. Provide expansion tank, route PRV pipe from the water heater to the outside.
- c. Rain and Storm drain:
 - 1) For gutter and downspout requirements, see architectural design scope.
- d. Natural gas piping:
 - 1) Provide natural gas meter and piping to connect to the emergency generator. Coordinate gas meter location and size, gas pressure, and pressure regulator size and requirements with local utility company.
 - 2) Generator required: 492 ft³/hour.
- e. Sewer & Vent:
 - 1) All building fixtures shall be served by new cast iron sewer and vent piping.
 - 2) Domestic pipe only, no imported pipe.
 - 3) Provide 4-band couplings, Husky HD2000 or equal.
- f. Condensate Drain:
 - 1) Condensate drain to be Type L copper piping.
 - 2) Condensate to be routed from indoor HVAC unit to exterior landscape area.
 - 3) Provide condensate drain pan and condensate pump for HVAC indoor unit.
- g. Plumbing Fixtures:
 - 1) Water Closets: Two-piece elongated ADA compliant toilet, 1.28 gpf. Color: white. Kohler K-20197 or approve equal.
 - 2) Toilet room lavatories: Custom solid surface lavatory with integral sink bowl & pipe enclosure. ADA compliant mounting height, knee clearance, faucet reach range, and drain location. Configuration and solid surface color as shown on plans.
 - 3) Toilet room faucets: Polished chrome. Kohler K-14406-4 or approved equal.
 - 4) Kitchen Sink – ADA triple compartment sink.
 - a) Top mount
 - b) Two 12"x12"x6-1/2" deep compartments (right side and middle) with center rear drain
 - c) One 12"x12"10" deep bowl (left side) to receive garbage disposal unit with center drain
 - d) Two single hole faucet punches between compartments
 - e) Hole punch top left for dishwasher attachment
 - f) Just Manufacturing Company Model TL-ADA-1843-A-GR-1-1-6.5 DCR modified or approved equal. PPG Sales (510) 781-4800
 - 5) Kitchen sink faucets: Two (2) Polished Chrome. Kohler K-24982 or approved equal.
 - 6) Showers: Dual head ligature resistant shower heads and valves. Whitehall Manufacturing WH538-FH-CSH or approved equal

- 7) Utility sinks: Free-standing stainless steel utility sink with wall mounted faucet, Just model J-127 with Chicago model 332-E35ABCP, or equal.
- 8) Hose bibbs: Exterior wall mounted recessed hose bibb with door and vacuum breaker, Acorn model 8151, or equal.
- 9) All fixtures shall comply with 2019 California Green Building Code for water use reduction and ADA accessibility requirements.
- 10) Provide water hammer arrestors located per manufacturers recommendation at all plumbing fixtures with quick acting valves. Sized per PDI guidelines.
- h. Compressed Air:
 - 1) Air compressor is to be vertical type with minimum 120 gallon tank, minimum 35 ACFM at 175 PSIG, minimum 10 horsepower. Quincy or Equal.
 - 2) Air compressor to be provided with filter and regulator with piping routed to shop overhead hose reels and drops perimeter walls as shown on Drawings with quick disconnect couplings and blow down valves.
 - 3) Compressed air to be Type L copper piping or rigid steel threaded black gas iron piping at Contractor's option.
 - 4) Anchor to reinforced concreted housekeeping pad.
4. Electrical:
 - a. Coordinate all panels and conduits with site contractor. Breakers for site equipment like EVSE, generator and lighting are required. Conduits from site electrical equipment and to roof mounted PV is required. Any item mounted to building is contractors responsibly to 5' outside building.
 - b. Site contractor and building manufacturer are responsible for delivering a code compliant electrical system. Coordinate any connection and interface requirements for a functional building.
 - c. Electrical Service:
 - 1) The new building will require 350amp, 120/208 volt, 3 phase, 4 wire electrical service from a new utility transformer. Main building bus upsized to handle PV. Main building breaker to remain 250A. Refer to site package for location. Utility transformer shall be sized to support 2nd building on the proposed site with exactly the same loads. Verify electrical building electrical service size in conjunction with the exact design of the building. Project shall also include infrastructure for future solar power connected to building service. Provide 2-1" and 1-2" empty conduits from PV equipment location shown on site plan to roof and a 2" empty conduit from Solar equipment to service entrance panel. Service Entrance panel shall have a pull section and Utility meter as well as a main breaker and subfeed breakers. Refer to site package for single line diagram. Contractor is responsible for providing a complete design. Provide utility company the three-digit utility certification code for the main service panel so utility can confirm panel meets utility guidelines. If panel does not meet utility guidelines, replace panel with approved panel. Panel shall meet utility requirements and shall be rated for outdoors, Nema 3R. Coordinate between building and site contractor on electrical panels. Site contract to provide panels. Coordinate breakers with site contractor.

- 2) Provide natural gas emergency generator sized for full building load. Coordinate gas connection and meter connection with site contractor and utility company. Generator shall be tested at full load before occupancy of building. Generator and equipment shall be provided by the site contractor. Coordinate breaker requires for electrical panel with site contractor.
 - 3) Provide 250A automatic transfer switch and 250A distribution panel. Panel shall have a copper bus and have 10% spare capacity and 10% spare breaker space. Equipment shall be Nema 3R as it intended to be outdoors. Refer to site single line for additional information.
 - 4) Buses:
 - a) The distribution panel buses shall be rectangular cross section copper, with tin or copper plating (except the ground bus shall be copper).
 - b) Buses shall be non-tapered.
- d. Electrical Distribution (Disaggregation):
- 1) The electrical system shall fully comply with the current title 24.
 - 2) All panelboards shall contain 10% spare capacity and circuit breaker mounting space.
 - 3) Panelboards shall be dead front with hardware for accepting molded case bolt-on circuit breakers of maximum size allowable in each space. Main buses and branch circuit straps shall be copper; electrical grade aluminum with tin or copper plating is acceptable. Unplated aluminum current carrying parts are not acceptable.
 - 4) Enclosures shall be suitable for the conditions encountered. All electrical equipment is design for outdoors and shall be NEMA 3R. NEMA 3R panels, which are not factory gasketed against dust, will not be acceptable. Enclosures shall be code gauge steel cabinets, surface, flush or floor mounted as designed. Provide with a flush type combination lock and latch all keyed alike. Provide 2 keys with panelboard. All exposed metal parts shall be factory finished grey enamel.
 - 5) Provide a type written panelboard circuit directory with plastic cover and shall be placed in the door rack provided, and with the circuit functions actually connected at the time of occupancy.
- e. Photovoltaic (PV) Power System (Alternate Bid Item)
- 1) The work shall include the design, engineering, materials, labor, equipment, installation, testing, services, and incidentals necessary to install complete Photovoltaic (PV) Systems in conformity with applicable codes and professionally recognized standards.
 - 2) PV systems shall consist of arrays of framed photovoltaic modules, mounting hardware, terminal boxes, combiner boxes, quick-connect electrical connectors, DC wiring, DC disconnects, utility interactive inverters, AC disconnects, AC feeders, AC circuit breakers, AC panel boards / switchgear, and complete data acquisition and monitoring systems.
 - 3) The PV systems shall be utility grid connected. The Contractor shall be responsible for all required utility company coordination, applications, inspections, permits, and final approval for the complete interconnection of the PV systems with the utility company grid, including bidirectional utility meters at each location.

- 4) All equipment shall be listed to Underwriters' Laboratories (UL) standards as applicable.
 - 5) Installer Qualifications – The installing contractor shall be familiar with the equipment to be installed and have the necessary training to install in the equipment.
 - 6) Contractor proprietary products shall have an ICC report, or a testing report stamped and signed by a licensed California engineer.
 - 7) All PV Modules shall meet the following specifications:
 - a) Modules are from a field-tested product line that has been commercially available for no less than three years.
 - b) Module manufacturer shall provide a 25-year warranty on the solar modules with at least 80 percent power output guaranteed at 25 years.
 - c) Have a minimum 25-year design life, designed for normal, unattended operation.
 - d) UL 1703 listed.
 - e) UL listed for the specified voltage (typically 1000 V-DC).
 - f) Meet IEC 61215 (crystalline silicon PV modules) or IEC 61646 (thin film PV modules) standards.
 - 8) All inverters shall include a 10-year warranty.
 - 9) Coordinate location and size of inverter.
 - 10) Coordinate size and location of site conduits.
 - 11) System shall be size for the maximum number of panels on the roof. Refer to the architectural size plan for area of panels. Breaker and equipment for system shall be size accordingly.
- f. Power:
- 1) General convenience outlets, dedicated outlets at select areas and kitchen/laundry equipment throughout as indicated on Drawings shall be considered a minimum. Hard wire connections for larger shop equipment as required. Power connections to HVAC and plumbing equipment including disconnect switches, conduit and wiring.
 - 2) Comply with all California Energy Code Requirements, including metering, separation of circuits, voltage drop and controlled receptacles.
 - 3) Install wall mounted outlet boxes so that the distance from the center line of the box to the finished floor is as listed, unless specifically designed otherwise.
 - a) Switches, +48"
 - b) Receptacles, +18"
 - c) Telephone, data, +18"
 - d) Counter Height Locations, +44"
 - e) All face plates shall be stainless steel for all power, lighting control and low voltage outlets.
 - 4) Provide power for all mechanical and plumbing equipment including controls.
 - 5) Site contractor to provide EVSE station. Coordinate power and telecom requirements.
 - 6) Refer to architectural criteria documents for additional outlet locations.

- 7) Minimum quantities of outlets in addition to those indicated below:
 - a) All rooms shall have a minimum of one duplex receptacle in each room. Provide GFCI type where required by code. All receptacle shall be tamper proof type.
 - b) Provide GFCI duplex receptacle with while in use cover at all exterior doors and one in enclosed generator yard.
 - c) Bedrooms: Provide duplex receptacle on each wall with one duplex receptacle switch.
 - d) Restroom: Provide a GFCI duplex receptacle at all sink locations.
 - e) Laundry: Provide a GFCI duplex receptacle in room along with connections for electric washer and dryer.
 - f) Common Spaces: Provide a GFCI duplex receptacle at all sink locations.
 - g) Office: Provide duplex receptacle at each wall locations.
 - h) IT Closet: Provide three fourplex receptacles.
 - i) Telephone/data, television outlets, and wireless access points: Provide a duplex receptacle adjacent to outlet or access point.
 - j) Provide one telephone/data locations for each bedroom, three in each office, one at each TV location, one at IT take, one at quit program interview and one at each wireless access points.
 - k) Provide one television outlet at each tv location and one in each office.
 - l) General and computer: Provide general receptacles with no more than six for each 20 amp circuit.
- g. Wire and Cable:
 - 1) Accept where noted otherwise, all conductors are to be copper. All grounding and bonding conductors shall be copper.
 - 2) Minimum conductor size shall be #12 AWG for power and lighting circuits and #14 AWG for control and signal circuits.
 - 3) All conductors #10 and smaller, shall be 600 volt, type THWN, THW, TW or THHN. All conductors for underground and conductors #8 and larger shall be 600 volt, type XHHW or THWN. Insulation type XHHW shall be used for wire #2 and larger.
 - 4) Grounding wire #1/0 or larger shall be tinned stranded copper, all smaller ground wires shall be insulated with green color insulation.
 - 5) MC cable is not acceptable for installation for branch circuit wiring or equipment feeders, unless where specifically requested by owner/user.
 - 6) Exposed cable used in return air plenum shall be rated for plenum use.
- h. Raceway System:
 - 1) All raceways shall be concealed in walls, floors, slabs, underground or above ceilings and as dictated by construction conditions at the site. Exposed runs are allowed only at surface mounted equipment in unfinished areas. Raceways shall be of the type suitable to the conditions of installation.
 - 2) Provide no more than (3) 90-degree conduit bends or the equivalent number of smaller radius bends in any conduit run between boxes or equipment. Radius of underground bends shall be minimum 12 times conduit radius.

- 3) Minimum conduit sizes shall be 3/4" diameter (trade size), 3/4" diameter where installed in or under slab, and 1" diameter where installed underground.
 - 4) Wall or ceiling penetrations shall be sealed. Grout raceway penetration suitable for the specific conditions of each penetration and finish to match adjacent surfaces. Where penetration of a fire rated surface is required, seal the opening with an approved "Fire Stop" compound installed in strict accordance with the manufacturer's instructions for each specific application.
 - 5) In empty conduits and stubs, install #12 TW pull wire for conduits less than 1 1/4" diameter (trade size); and 3/16" polypropylene pull rope in conduits 1 1/4" diameter and larger.
 - 6) The entire electrical raceway system shall form a continuous metallic electrical conductor and shall be grounded by connection to the main service ground. A ground wire shall be installed in each conduit.
 - 7) Provide expansion couplings in conduit runs which cross expansion joints in the structures. Place expansion couplings at the expansion joints.
- i. Interior Lighting:
- 1) All lighting shall comply with Cal Green and Title 24. Contractor is responsible for all title 24 forms including all Acceptance testing.
 - 2) Provide LED lighting fixtures throughout the project area. Lighting control system to comply with current Title 24 requirements to include but not limited to master lighting control panel, occupancy sensors, day lighting sensors, timer control. All spaces shall have antiligature fixtures. Fixture style shall be mid-modern architectural where it meets the behavioral health high abuse fixture criteria.
 - 3) Lighting illumination levels for all interior spaces shall meet the following average maintained levels at 2 1/2 feet above finished floor.
 - a) Restrooms 20 foot candles
 - b) Storage 20 foot candles
 - c) Offices 40 foot candles
 - d) Bedrooms 30 foot candles
 - e) Common Space 70 foot candles with dimmer in office.
 - f) Laundry 50 foot candles.
 - g) Kitchen 70 foot candles.
 - 4) Interior lighting fixtures shall be LED type. All fixtures shall be behavioral health high abuse fixtures. Refer to architectural drawings for additional fixture locations and criteria. Minimum criteria as follows:
 - a) All fixtures shall not make any noise. If fixtures make noise when installed, fixtures shall be replaced with a non-noise making fixture.
 - b) All fixtures shall be full spectrum lighting except in restrooms and deck. Those fixtures shall be violet spectrum lighting.
 - c) Common area and bedroom areas shall have warm lighting color temperature, 2700k. In all other spaces, lighting shall be cool color temperatures, 4000k.

- d) Restrooms shall have a lighted mirror, either oval or rectangle with an outer lens with polycarbonate mirror. Visa Lighting fixture is acceptable.
 - e) Common areas shall have wall mounted fixtures along with pendent and down lighting to achieve lighting levels. Wall mounted fixtures shall be Visa lighting Gig task Light or similar. Pendent fixture shall be over dinning table. Coordinate fixture style with owner/architect.
 - f) All bedrooms shall have low level night lights. Hubbel NiteWay Night Light or Kenall MedMaster SoftStep Contour Steplight.
 - g) Any lighting fixture that requires emergency backup shall be provided with battery backup.
 - h) Final fixture style shall be approved by Architect/Owner.
- j. Exterior Lighting:
 - 1) Exterior Building: Provide LED building wall mounted lighting fixtures around the perimeter building of the project area. All lighting shall comply with current Title 24 requirements. Provide minimum lighting levels per IES if not stated below. All fixtures shall have vandal resistant lenses. All screws shall be tamper proof. Refer to site drawings for additional requirements.
 - 2) Lighting illumination levels for all exterior areas shall meet the following levels at grade.
 - a) Lighting shall not be directed into any of the bedrooms. House side shields, low level lighting shall be used to eliminate any lighting that is directed toward bedrooms.
 - b) Exterior egress doors: 1 foot candle minimum.
 - c) Exterior pathways and flatwork: 1 foot candle minimum.
 - d) Parking: 5 foot candles average with a 1 to 3 min to max ratio.
 - e) Any lighting fixture that requires emergency backup shall be provided with battery backup.
 - 3) Exterior lighting fixtures shall be LED type, and match theme of exterior style and shall be approved by Architect and Owner.:
 - 4) Provide and connect exterior lighting to lighting control panel capable of controlling exterior lighting automatically.
- k. Fire Alarm:
 - 1) Provide a complete design/build fire alarm package in accordance with all codes, regulations and local AHJ. Confirm with the county that local fire alarms with strobes are acceptable.
 - 2) Provide carbon monoxide detectors as required by the county.
- l. Data and Voice Systems:
 - 1) Provide 4" empty conduit form street telecom utility to new telecom closet. Conduit shall have pull string. Confirm with utility company on conduit size for data and TV..
 - 2) For voice/data outlet locations provide 4" square box with (2) 3/4" conduit stubbed up into accessible ceiling space with pull ropes for cable installation by others.
 - 3) System design (excludes data server(s), Liebert HVAC and UPS, IDF, and voice system head end equipment) to include IDF server racks or cabinets, outlet boxes and empty conduit stubbed up to accessible ceiling space and/or

- empty conduit pathways in conjunction with the County's I.T. system consultant or vendor, locations as identified by the owner.
- 4) All data and voice system conduits to home-run back to IDF location in Classroom.
 - 5) Provide home-run conduit pathway from IDF to single low-voltage building point of entry gutter located on exterior of building near southeast corner. Coordinate location with Architect, Owner and Site Contractor.
- m. Audio/Visual Control System: not part of project
 - n. Intrusion Alarm System: not part of project
 - o. Security/Surveillance Camera system: not part of project
 - p. Card Key Access System: not part of project
 - q. Intercom or Public Address (PA) system: not part of project
5. Fire Sprinkler System
- a. Modular Building (MB) manufacturer will procure local design and installation of water-based fire sprinkler system.
 - b. The fire sprinkler system is to be designed by a California-licensed Fire Sprinkler Contractor working under contract with the MB manufacturer.
 - c. The fire sprinkler system to be designed in accordance with NFPA 13D requirements and field-installed.
 - d. The fire sprinkler contractor shall obtain all necessary permits, inspections and approvals.
 - e. The fire sprinkler contractor will connect to the street water piping and provide a water meter, backflow preventer, PIV, and fire department connection.
 - f. All fire sprinkler system products shall be UL-listed and FM approved for fire protection service.
 - g. Sprinkler drops shall be compatible with the installation conditions.
 - h. The Fire Sprinkler Scope includes system design and calculations, procurement and installation:
 - 1) Shop drawings
 - 2) Sprinkler riser components
 - 3) Sprinkler heads
 - 4) Calculations
 - 5) Piping and Accessories
 - 6) Bracing design details and coordination with modular building structure. The fire sprinkler system will be the only piped system supported by the roof structure.

PART 2 - PART 2 – PRODUCTS

2.1 GENERAL

- A. Manufacturers/Products/Substitutions: The manufacturers and products listed are intended to establish a level of quality, size, material type and finish. Substitutions will be considered only in strict conformance with procedures and provisions of the General Requirements of these specifications.

- B. Single Product Responsibility: Provide products of the same manufacturer for each type of product incorporated into the work.

PART 3 - PART 3 – EXECUTION

3.1 INSTALLATION AT SITE

- A. Site Construction: Once delivery of modules and components on site is made, erection shall commence immediately and be pursued in a timely manner until complete. All modules and components called for at that site shall be scheduled for delivery and erection in one continuous time frame.
- B. Construction Progress: The Contractor shall furnish materials, articles and equipment in ample quantities and at such times as to assure uninterrupted progress of the work. Failure to provide adequate working force, or material of proper quality, or failure in any other respect to prosecute the work with diligence and force specified herein are grounds for declaring a default on the contract.
- C. Site Security: Security of the modular building and its stored components against vandalism is the sole responsibility of the Contractor. Coordinate with Site Contractor.
- D. Coordination: Contractor shall coordinate with all site construction activities with Site Contractor.

3.2 CLEAN UP

- A. The adjacent site and the structures shall be clean and ready for occupancy prior to acceptance by the Owner.

3.3 UTILITY HOOK-UP

- A. Utility Connections: All utility connections shall be provided within 5' of building perimeter to accommodate hook-up at the site. Utilities connections will be by the Site Contractor.
- B. Guarantee: Contractor hereby unconditionally guarantees that work will be done in accordance with requirements of contract, and further guarantees the work of the contract to be and remain free of defects in workmanship and materials for a period of one year from date of acceptance by the County, unless a longer guarantee period is specifically called for. Contractor hereby agrees to repair or replace any and all work, together with any other adjacent work which may have been damaged or displaced in so doing, that may prove to be not in accordance with requirements or contract or that may be defective in its workmanship or material within guarantee period specified, without any expense whatsoever to County for ordinary wear and tear and unusual abuse or neglect expected. Contract bonds are in full force and effect during guarantee period.

3.4 TEMPORARY FACILITIES

- A. Contractor shall make arrangements for secure laydown, storage, parking and toilet facilities as may be required for site. Compliance with such requirements and restrictions for their use may be prescribed by authorities having jurisdiction. Coordinate with Site Contractor
 - 1. Temporary field office facilities are required. Coordinate with Site Contractor.
- B. Temporary fencing around building scope of work shall be provided during all the construction process duration. Coordinate with Site Contractor.

END OF SECTION 133423

SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

SCOPE OF WORK

- 1.1 The scope of for the site electrical is to provide all exterior lighting, irrigation power, utility transformer, utility connections, electrical site equipment, generator, Automatic transfer switch and panel boards.
- 1.2 Refer to electrical drawings for additional drawings.
- 1.3 Comply with the General Conditions of this contract. The requirements of this specification are in addition to the requirements of the General Conditions.
- 1.4 Provide all labor and material necessary to accomplish the work specified herein and as shown on the drawings.
- 1.5 Coordinate work with all other trades and with the building manufacturer to create a complete system.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Electrical materials and installation instruction common to most electrical systems and components including but not limited to: equipment, raceways, fittings, sleeve/seals, sleeves, wires and connectors, conductors, demolition, equipment installation requirements common to equipment sections, painting and finishing, concrete bases, supports and anchorages, general coordination, electrical wiring and device coordination.

1.2 DEFINITIONS

- A. Following is a list of abbreviations generally used in Division 26.
 - 1. AHJ – Authority Having Jurisdiction.
 - 2. ETL – Electric Testing Laboratories.
 - 3. NEC – National Electric Code.
 - 4. NEMA – National Electrical Manufacturers Association.

5. NFPA – National Fire Protection Association.
6. OSHA – Occupational Safety and Health Administration.
7. UL – Underwriters Laboratories Inc.

B. Terms used on the drawings or in the specifications shall have the following meanings:

1. Approved Equal: An Item suggested by the Contractor that is allowed by the Engineer to replace an item listed in the Specifications or Drawings. The burden of proof of equality is the responsibility of the Contractor.
2. Furnish: Supply and deliver, ready for installation, assembly or intended use, all materials, labor, equipment, testing apparatus, controls, tests, accessories, and all other items customarily required for the proper and complete application for the particular work referred to.
3. Install: Includes unloading, unpacking, assembling, erecting, installation, applying, finishing, protecting, cleaning and similar operations at the project site as required to complete all items of work as required for the intended use/operation including all testing, certification, commissioning, and other requirements for final turnover to the Owner.
4. Provide: "Furnish" and "Install."
5. Owner Furnished, Contractor Installed: The Owner will furnish at his cost and the Contractor shall receive, protect, store and install in the performance of the Work.
6. Finished Spaces: Spaces other than electrical equipment rooms, furred spaces, pipe and duct shafts, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawlspaces, and tunnels.
7. Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.
8. Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations embedded in or below masonry or concrete construction, earthwork/trenches, within unheated shelters, crawl spaces or enclosures.
9. Wiring: All wires, raceways, fittings, conductors, connectors, tape, junction and outlet boxes, connectors, splices, and all other items necessary and/or required in connection with such work.
10. Raceway: All raceways, conduit, fittings, hangers, supports, sleeves, etc.

1.3 GENERAL REQUIREMENTS

- A. Examine the Drawings, specifications and other Contract Documents relating to the Work and the work of all trades and become fully informed as to the extent and character of work required. Coordinate all work with that of others to ensure proper and complete installation of all materials, equipment and supports. It is the intent of the drawings, specifications and related contract Documents to provide a complete working installation of all systems and equipment called for, in proper operating condition, finished, tested and ready for its intended use (hereinafter "Design Intent"). Provide all items not specifically shown on the drawings, called for in the specifications or related Contract Documents, but required to conform to the labor, material and equipment to achieve the Design Intent and all scaffolding, access provisions, tools,

appliances, consumables, fees, permits and licenses, debris removal/disposal, supervision and labor, including required start-up, check-out and training to provide complete and fully operable systems in full compliance with the Contract Documents.

- B. Before submitting a bid and prior to the start of work, Contractor shall examine all conditions relating to the Work, including that associated with the work of other trades upon which Contractor's work may rely or otherwise depend, to achieve the Design Intent, in accordance with the best trade practices, workmanship and highest quality product installation, taking into account the sequence of the work, delivery, storage and hoisting requirements, requirements for access, testing and temporary services and all other site limitations and project complexities. Report to the Architect/Engineer any conditions which might prevent installation of materials and/or equipment in the manner intended by the Contract Documents or contrary to applicable codes, standards or regulations.
- C. No consideration or allowance will be granted for any alleged misunderstanding of materials, equipment or components to be furnished or work to be done; it being agreed that tender of proposal carries with it agreement to items, terms and conditions required by the Contract Documents.
- D. Site Visit: Visit the site and verify the exact conditions relating to the work and obtain such information as may be necessary to present a complete and comprehensive bid. No allowance will be made for any extra expense due to Contractor's failure to make such a visit and reasonably verify all actual/existing conditions. In the event of a conflict between existing conditions and the requirements of the Contract Documents, perform the necessary work to conform to Design Intent. The Owner or his representative will be the sole individual to interpret the intent of the Drawings in the event of a conflict between (1) existing conditions and those shown on the drawings, or (2) quality of existing material and quality of material indicated on the drawings or in the specifications. Wherever a conflict such as this occurs, the higher standard shall prevail.

1.4 SPECIAL REQUIREMENTS

- A. When applicable, Contractor acknowledges the ongoing operations of the Owner at or in close proximity to the Project and agrees to coordinate the timing of the Work with the Owner's ongoing operations; perform the Work in a manner that minimizes or eliminates an adverse impact upon the Owner's ongoing operations; confine operations at the site to areas approved by Owner, permitted by law, permits and the Contract Documents; comply with the Owner's standard security, health and safety policies and procedures; not unreasonably encumber the site with any materials or equipment; and not place signs or advertising on or about the site without prior approval of Owner.
- B. Where applicable, all seismic construction, restraints, bracing, mounts and hanging systems shall be in full compliance with the requirements of all Authorities Having Jurisdiction (AHJ's), pre-approval, certification and engineering (including certified engineering calculations and stamps). Contractor shall be solely responsible for obtaining and complying with all requirements of the AHJ.

1.5 SUBMITTALS

- A. Reference Division 01 for submittal requirements.
- B. Submittal Schedule: Provide a detailed submittal schedule including all requirements of this Division and its subdivisions to the Architect and Engineer within thirty days of contract award.
 - 1. Contractor shall submit for the Engineer's approval a Submittal Schedule for the performance of the work that is consistent with the requirements of the project schedule. The Submittal Schedule shall allow reasonable time for the Architect and other consultants review as specified in Division 01 Submittal Procedures. If the time for Architects/Engineers review is not otherwise specified, the review period (from date of receipt) shall be fifteen business days. Once approved by the Architect/Engineer, submittal dates and time limits established by the Submittal Schedule shall not, except for reasonable cause, be changed or exceeded by the Contractor.
 - 2. For each submittal required by the Contract Documents the schedule shall include: specification section number, subsection/paragraph identification number, item description (as stated in the applicable specification section, subsection or other Contract Document) and the scheduled delivery date to the Architect/Engineer.
 - 3. Contractor shall be responsible to the Architect/Engineer and/or Owner for all costs, expenses and impact to the project schedule resulting from any deviation to the approved Submittal Schedule, including but not limited to; payment for required overtime, out-of-house resources/consultants or other higher cost resources of the Architect/Engineer as may be required to perform out of sequence, stacked, critical, delayed, unscheduled or multiple reviews of required submittals necessitated by rejection of a prior submittal, (cumulatively and hereinafter, "Additional Review Costs")
- C. General:
 - 1. Review is for general conformance with the Contract Documents and is not intended to otherwise approve or verify dimensions, quantities, or to coordinate the Work shown on shop drawings on or between Contractor and the work of other trades or Sections. Contractor is solely responsible for quantities, dimensions, means and methods. Dimensions shall be confirmed and correlated by Contractor at the jobsite prior to the start of the Work (procurement, fabrication, construction or other commencement activities). Contractor's failure to fully verify conditions at the jobsite prior to commencement of the work shall not relieve Contractor of its obligations under the Contract Documents and Contractor shall be responsible for all damages caused by or related to its failure to comply with the requirements of this provision.
 - 2. Submittal review shall be performed to show compliance with the design intent. Contractor shall specifically note any deviations from the Contract Documents and explain the reason and nature of the deviation. Such deviations will be reviewed or rejected on the submittal. Deviations not so identified shall not relieve the Contractor from the requirements of the Contract Documents.
 - 3. Resubmittals will be reviewed for compliance with comment(s) made on the original submittal only. Architect/Engineer shall not be responsible for changes made upon resubmittal that are not clearly identified (highlighted) and respond directly to the initial

rejection. Resubmittals should not be packaged with non-related first time submittals; all resubmittals must be marked with the resubmittal number and date and must otherwise comply with all submittal requirements.

4. Submit shop drawings, commissioning plan(s) and checklists, penetration locations, supplemental data, etc., as may be required by the Contract Documents for all materials, equipment and other components of the work included in all Sections of this Division and other provisions of the Contract Documents in accordance with the requirements of this Division and Division 01.
 5. All submittals must be reviewed by Contractor, and bear Contractor's review stamp and signoff for Conformity to the Contract Documents, prior to the submission of any required submittal to Architect/Engineer. Submittals that fail to meet this requirement will be considered incomplete, will not be reviewed by Architect/Engineer and will be returned to Contractor, without review and/or rejected and resubmittal will be required. Contractor shall be solely responsible for any and all Additional Review Costs and/or other project costs or schedule impact.
 6. Forward all submittals to Architect/Engineer in a coherent, organized fashion, complete and packaged as required herein, Architect/Engineer may reject submittals that fail to comply with this or any other provision of the Contract Documents and Contractor shall be solely responsible for any and all Additional Review Costs and/or other project costs or schedule impact.
 7. Subject to other provisions of the Contract Documents and in the absence of a more stringent requirement, Architect/Engineer will review a submittal not more than two (2) times. Contractor shall be solely responsible for any and all Additional Review Costs and/or other project costs or schedule impact.
 8. Identify each submittal item by reference to Specification Section paragraph in which item is specified, or drawing/detail number, as applicable. In addition, for equipment submittals, include identification numbers appearing on the equipment schedule.
 9. Identify each item by manufacturer, brand, trade name, number, size, rating, or whatever other data is necessary to properly identify and check materials and equipment. Words "as specified" are not sufficient identification.
 10. Organize submittals in same sequence as they appear in specification sections, articles or paragraphs.
 11. All materials and equipment submittals shall have a summary sheet at the front complete with catalog numbers
 12. Submittals shall show physical arrangement, construction details, finishes, materials used in fabrications, provisions for piping and/or conduit entrance, access requirements for installation and maintenance, physical size and dimension, electrical characteristics and requirements, foundation/curbs and all permanent and temporary support details as well as all information relating to weight, including but not limited to live and dead weights.
- D. Catalog Cuts and Submittal Literature: Catalog cuts, submittal literature and published material may be included to supplement scale drawings.
1. Prepare submittals electronically in accordance with the following and Division 01.
 2. Submittal literature, drawings and diagrams shall be specifically applicable to this project and shall not contain extraneous material or optional choices. Clearly mark literature to indicate the proposed item.

3. Substitutions: Comply with Division 01 Product Substitution Procedures.

E. Shop Drawings:

1. Shop drawings shall include all significant Division systems, equipment and components, including but not limited to all terminal devices, connections and elevations. Include all related specialty rooms (i.e., electrical, data/technology). Drawings shall be at a minimum scale of **1/4 inch per 1 ft.-0 inch** and shall be fully coordinated with the work of other trades and/or Sections.
2. Identify congested areas and clearly indicate solutions to space problems, developed in conjunction with the work of other trades and/or Sections. Identification of space problems without proposed solutions is not acceptable and is grounds for rejection. For such areas indicate, superimposed, the work of all trades and/or Sections involved and:
 - a. Clearly identify each area of congestion and deviations from the Contract Documents, and:
 - b. Proposed solution(s), clearly documented and signed-off by all other trades and/or Sections involved.

F. Anchorage and Supports: Submit details and calculations for support and anchors that are not specifically detailed on the drawings. All calculations must meet 2010 CBC.

1. Provide details and calculations for electrical equipment per 2010 CBC:
 - a. Having an operating weight over **400 pounds** or more and mounted directly to the floor.
 - b. Having an operating weight over **20 pounds** and suspended from the roof, floor, or wall or supported by vibration isolation devices.
2. **Once these details and calculations have been reviewed by the Architect/Engineer, submit them to OSHPD and obtain their approval.**
3. Where pre-approved bracing systems will be employed, submit:
 - a. System component brochure describing components used and detailed installation instructions.
 - b. Loads to be transmitted to the structure at anchor points.
 - c. **Prove the systems meets 2010 CBC.**
4. Where anchorage, support, and bracing are not detailed on the drawings, and pre-approved systems are not used, submit details and calculations of proposed systems. Include:
 - a. **Detailed drawings showing system to be installed, stamped by a Structural Engineer registered in the State of California.**
 - b. Anchorage and Supports:
 - 1) Where equipment substitutions change the weight, size, configuration, or other aspects of systems and equipment that will affect the performance of

- anchorages and/or supports, submit calculations for proposed anchors and supports, and install them as shown in these calculations.
 - 2) Where substitutions will have no effect on anchors and supports detailed on Contract Documents, submit information on sizes, weights, center of gravity and other relevant information to demonstrate this fact.
- c.
- G. Shop Fabrication Drawings: Drawings are for the Contractor's use and shall be its responsibility. Do not submit shop fabrication documents unless specifically requested.
 - H. Testing and Balancing: Coordinate Shop Drawings to include any additional components for proper system testing and balancing.
 - I. Certificates: Submit final inspection certificates signed by governing authorities.
 - J. Operating and Maintenance Instructions and Manuals.
 - 1. Instructions on major items, including but not limited to: switchgear, generators, pumps, air compressors, water heaters, water softeners, specialty units, fans, air handlers, AC units and temperature controls, shall be by representative of manufacturer of respective equipment.
 - 2. Submit as identified below and as directed in Division 01.
 - a. Names, addresses and phone numbers of contractors and subcontractors. Alphabetical list of all system components, with the name, address, and 24-hour phone number of the company responsible for servicing each item during the first year of operation.
 - b. Complete operating and maintenance instructions and parts lists of all equipment and component parts. Data sheets to show complete internal wiring, and electrical ratings and characteristics, catalog data on component parts whether furnished by equipment manufacturer or others, names, addresses and telephone numbers of source of supply for parts subject to wear or failure, and description of operating, test, adjustment, and maintenance procedures.
 - 1) Where data sheets included in manual cover equipment, options, or other features not part of equipment actually furnished, line out these references or otherwise clearly mark so remaining text, diagrams, drawings, schedules, and similar information shall apply specifically to equipment furnished.
 - c. Operating Instructions should include, but not be limited to:
 - 1) Normal starting, operational and shutdown procedures, including emergency procedures for each type of equipment/system.
 - 2) Equipment wiring diagrams.
 - 3) All other items as may be specified/required by this Section and the Contract Documents.

- d. Maintenance Instructions: All items as may be specified/required by this Section and the Contract Documents.
- e. Manufacturers Data (each piece of equipment):
 - 1) Installation instructions.
 - 2) Drawings and specifications.
 - 3) Parts List, including recommended stock and long lead parts/components.
 - 4) Wiring and riser diagrams.
 - 5) Warranties and guarantees for all equipment, materials and components, including repair, replacement and labor from both Contractor and manufacturer as required by the Contract Documents.
 - 6) Certificates of Installation – manufacturer's certification of supervision during equipment installation and start-up procedures.
 - 7) Instruction certificates – certificates of compliance with Sections specific training and instruction programs.
 - 8) All other items as may be specified/required by this Section and the Contract Documents.

K. Record Documents:

- 1. Maintain one complete set of blueline prints and specifications at the job site exclusively for recording deviations from the drawings which are necessary because of job conditions, request for information and/or approved change orders. Record locations and depths of buried and concealed conduits or other systems components from fixed, easily identifiable objects. Drawings, specifications (as-builts) and approved submittals.
- 2. Where the project uses a BIM model the Contractor shall keep the model updated in a similar fashion, maintaining the current project record as described in (a), above and submit, an addition to all other requirements of this Section and other provisions of the Contract Documents a complete and accurate BIM model for the project.
- 3. Prior to Substantial Completion, obtain from the Architect a complete set of electronic CAD drawings. Record all revisions to these drawings to indicate as-built conditions. Indicate all changes, including RFI's, on this set of documents. Submit one set of blueprints of these revised drawings for review. Make necessary changes and deliver to Architect one set of reproducibles and one electronic copy, including and BIM model, upon Final Completion and Acceptance. Refer to Division 01 for additional requirements.
- 4. Provide full size copies of record one-line diagrams, in metal frames with glass front. Obtain Record prints from Owner's Representative at Contractor's cost and have prints framed by a firm normally engaged in this work. Locate diagrams as directed.
- 5. All test reports, certifications, and inspection reports.
- 6. AHJ/Specialty AHJ Approvals (i.e., Fire Marshal and/or Fire Department system approvals).
- 7. Substantial and Final inspection certificate signed by governing authorities.
- 8. All other items as may be specified/required by this Section and/or other provisions of the Contract Documents.

1.6 EQUIPMENT DEVIATIONS AND SUBSTITUTIONS

- A. See Division 01 for requirements and procedures related to Deviations and Substitutions. Unless specified elsewhere in the Contract Documents, a minimum of two (2) weeks shall be allowed for evaluation. The burden of all systems re-engineering/design, testing, suitability and constructability is solely placed upon the Contractor for all deviations from the basis of design as reflected in the Contract Documents.
- B. No substitutions will be allowed and/or considered unless the description of a product includes the phrase “approved equal” and then only upon a determination as to equivalency and impact upon the project budget, schedule and the work of others, including any redesign of the project or its system components by the Architect, Engineer or other trades. The final determination as to sufficiency or acceptance of any such substitution and/or deviation properly requested and submitted by Contractor will lie solely with the Architect/Engineer. Contractor may not implement substitutions that have not been approved by Architect/Engineer.
- C. Where the Contractor proposes to use an item of equipment other than that specified or detailed on the drawings which requires any redesign of any portion of the project, including but not limited to the mechanical, electrical, plumbing, structure, or architectural design or any of their respective subcomponents. Contractor shall be responsible to the Architect/Engineer and/or Owner for all costs, expenses and impact to the project budget and/or schedule resulting from any required investigation, analysis or redesign, including but not limited to; payment for required overtime, out-of-house resources/consultants or other higher cost resources of the Architect/Engineer, Owner or AHJ as may be required to perform the investigation, analysis or redesign (cumulatively and hereinafter, “Deviation Review Costs”).
- D. If approved by Architect/Engineer, all such redesign, including all new drawings and detailing required, will be prepared by the Architect/Engineer and their sub-consultants for Change Order documentation for approval by Owner and the Authority Having Jurisdiction will be paid by the Contractor as part of the Deviation Review Costs.
- E. Were such approved deviation requires a different quantity and arrangement of equipment, wiring, conduit, supports, foundations, pads, curbs, or equipment from that specified or indicated on the drawings or other Contract Documents, Contractor shall be responsible for all such costs, including the work of other trades and shall be solely responsible to furnish and install any such ductwork, piping, structural supports, insulation, controllers, motors, starters, electrical wiring and conduit, and any other additional equipment required by the system at no additional cost or schedule impact to the project (cumulatively and hereinafter “Deviation Construction Costs”).

1.7 COORDINATION

- A. Drawings and corresponding electronic media are diagrammatic and indicate the general arrangement of systems and work included in the Work. Consult the drawings, details and other electronic media for locations of fixtures and equipment; where same are not definitely located, obtain this information from the Architect/Engineer.

- B. Coordinate all connections with building manufacturer including but not limited to, electrical panels, lighting controllers and breakers needed for site electrical.
- C. The drawings and related electronic media have been made to scale with the best knowledge of conditions, dimensions and space requirements available at the time of design and shall be followed as closely as possible during performance of the Work and coordination with the work of others. The forgoing however shall not relieve Contractor from its responsibility to verify all conditions. Dimensions and space requirements prior to commencement of the Work and to immediately report any errors or discrepancies to the Architect/Engineer.
- D. Check drawings and related electronic media of other trades to verify spaces and conditions in which work will be performed prior to commencement of the work.
- E. If directed by the Architect/Engineer or required for proper installation, execution and coordination of the work, the Contractor shall, without extra charge, make reasonable modifications in the layout as needed.
- F. Take all dimensions from Architectural and Structural Drawings, certified equipment drawings and from the actual field measurements before fabricating work. All conflicts shall immediately be reported to the Architect/Engineer. Contractor is solely responsible for conflicts known or which reasonably should have been known but not reported or resolved before commencement of the work.
- G. Equipment furnished shall fit in allocated space with due provision for manufacturer's recommended access and proper maintenance requirements. Verify and coordinate space requirements with all trades and equipment which comprise the Work.
- H. Prior to construction, coordinate the Work with that of other trades. Prepare coordination drawings (or other specified electronic media) for all major trades, utilities and other primary systems routing in conjunction with the contract documents to maximize the pre-installation planning and coordination of trades, utilities and systems and minimize the requirement to manage field coordination through the RFI's, ASI's or other similar processes.
- I. Coordinate connection of systems with interior/exterior underground and overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies.
- J. Before starting work, carefully examine the site and all Contract Documents. Become thoroughly familiar with new and existing conditions governing work on this project. Verify indicated elevations, measurements, rough-in dimensions and equipment locations before proceeding with any of the work.
- K. Drawings shall be accurately scaled to **1/8 inch – 1 foot** or larger using the same version of AutoCAD or other electronic media as used by Architect/Engineer. Drawings shall include all addenda and Change Order items.
- L. Contractor shall be solely responsible for coordination and shall bear the cost of its failure to coordinate installation or of failure to advise Architect/Engineer of installation conflicts.

- M. Sequence, coordinate, and integrate installations of systems materials and equipment for efficient flow of the Work.

1.8 ACCESSIBILITY

- A. Contractor is responsible for verifying that equipment and devices will fit within the space shown on the drawings. Contractor shall locate all equipment which must be serviced, operated or maintained, in fully accessible positions.
- B. Minor deviations from the drawings may be made to allow for better accessibility, but changes of magnitude or which involve extra cost shall not be made without approval from the Architect/Engineer.

1.9 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five years documented experience.
- B. Installer Qualifications: Company specializing in performing the work of this section with a minimum of five years documented experience. Company personnel shall be approved by manufacturer for all product installations and required training.
- C. Conform to all applicable standards, codes and regulation and industry best practice requirements.
- D. All materials and equipment shall be new, shall bear manufacturer's name, and shall conform to the grade, quality and standards specified herein. Type, capacity and application shall be suitable and capable of satisfactory operation for the purpose intended. All equipment and components shall include UL label and/or marking on equipment body/device including manufacturer's name, pressure rating(s), electrical classification(s), limits and ratings as applicable to individual components for the purpose specified and intended.
- E. Equipment Selection: All items of a given type shall be the product of the same manufacturer. Equipment of greater or larger power, dimensions, capacities, and ratings may be considered provided such proposed equipment is approved in writing by Architect/Engineer and connecting electrical services, circuit breakers, conduit, motors, bases, and equipment spaces are increased. See Deviations and Substitutions for requirements. No additional costs will be approved for these increases, if larger equipment is approved. If minimum energy ratings or efficiencies of the equipment are specified, the equipment must meet the design requirements and commissioning requirements.
- F. Listing and labeling: Provide motors that are listed and labeled. Terms "listed and labeled": as defined by UL, NEC, Article 100 or other applicable recognized agency as specified in the Contract Documents.

- G. Cutting and Patching: Unless otherwise required by the Contract Documents, Contractor shall be responsible for all cutting, fitting and patching required to complete the Work, or to make portions of the Work and existing conditions fit together properly, and all such areas shall be restored to the conditions existing prior to the cutting, fitting and patching unless otherwise provided in the Contract Documents.
- H. Contractor shall promptly correct any portion of the Work that is defective or not in accordance with the Contract Documents or rejected by the Architect/Engineer or Owner. Contractor shall be responsible for, and pay for all costs arising out of, any additional testing and inspections, demolition, uncovering and replacement and additional design and consulting services required to properly correct any portion of the Work.
- I. Contractor **shall comply** with the Contract Documents and all Laws, standards and handling criteria regarding hazardous substances, wastes and materials, including asbestos-containing materials, lead-based paints, petroleum (or any constituent thereof), mold, radon, and polychlorinated biphenyl (PCB), (“Hazardous Materials”) in performing the Work. Unless required by the Contract Documents, no Hazardous Materials shall be brought onto the Project.
- J. Lead Free Requirements: Contractor shall endeavor to use lead free products and where required by law, ordinance, regulation or standard all materials products and practices shall comply with limitations and requirements as to the allowable limits and/or percentages of lead. Lead free products must be certified by and independent 3rd party.
 - 1. This provision shall apply to any and all similarly regulated materials, products and practices that may be considered hazardous or are otherwise regulated by applicable law, ordinance regulation or standard in the project local.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. All materials and equipment shall be adequately covered and protected against dirt, water, chemical or mechanical damage, and theft. At completion, all work, equipment and materials shall be cleaned, and damage repaired by Contractor. Damaged equipment will be replaced by the Contractor if Owner does not accept repairs done to the equipment. Such replacement shall be scheduled to minimize system interruption of occupied or scheduled for occupancy.
- B. Material delivered at the site shall not be left exposed to the weather or left unattended. Deliver pipes, tubes and conduit with factory-applied end-caps. Contractor shall be responsible to maintain end-caps or provide temporary end caps on all open-ended piping, tubes and conduit through shipping, storage, and handling to prevent pipe-end damage and prevent entrance of dirt, debris, and moisture.
- C. Protect stored material from moisture and dirt. Protect plastic pipes and materials from sunlight and support to prevent sagging and bending.
- D. Elevate stored materials above grade. When stored inside, to not exceed structural capacity of the floor.

- E. Provide protective coatings to materials to prevent damage and/or infiltration of moisture and dirt on all materials and equipment including but not limited to cast iron and steel valves.
- F. Contractor shall provide all rigging, erection and hoisting equipment as required to handle or place equipment and piping in position. This rigging and hoisting equipment shall only be attached and placed on the structure in locations as approved by Architect/Engineer at the site.

1.11 PERMITS, FEES AND UTILITIES

- A. Obtain and pay for all necessary permits, fees and utilities and inspections required to perform the Work.
- B. Coordinate work with local regulatory entities, utility companies and others as required to fully comply with the requirements of this section and the Contract Documents, including those for both temporary and permanent services.
- C. Permits, fees and utility expenses to be paid by Owner, if any, shall only where specifically required by the Contract Documents, and then only to the extent so specified.

1.12 DOCUMENT OWNERSHIP

- A. The Drawings and Specifications, combined with the calculations, field data, notes, and reports, are the intellectual and real property of the Architect and/or Engineer. This covers all forms of written and recorded or electronic media. The reuse of these documents without specific permission of the Engineer is prohibited. The Drawings may be employed by the Owner and Contractor for the express use of constructing, commissioning and operating the facility only upon proper execution of the Agreement for Use of Electronic Files and Data.

1.13 GUARANTEE AND WARRANTY

- A. Contractor warrants to Owner that the materials and equipment provided under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects. Work, materials and equipment not conforming to these requirements, including substitutions not properly approved by Change Order, shall be considered defective. This warranty excludes remedy for damage caused by improper or insufficient maintenance, improper operation or normal wear, tear and usage. Contractor shall assign to Owner, or otherwise assure the Owner has the full benefit of, all warranties and guarantees of manufacturer, subcontractors, sub-subcontractors and suppliers, and Contractor shall perform the Work in a manner that does not adversely affect or invalidate any available warranties or guarantees.
- B. Contractor shall warrant and guarantee all work against faulty material or workmanship for a period of one year from the date of final completion and written acceptance by the Owner, unless specified more stringently elsewhere in the Contract Documents.

- C. If a defect or deficiency in the Work is discovered within the one year Warranty and Guarantee period or within such longer period as may be prescribed by the Laws or by any specific guarantee, and Owner elects to have Contractor correct such defect or deficiency, Owner shall notify Contractor of such defect or deficiency in writing. This period of correction relates only to the specific obligation to correct defects and deficiencies and in no way otherwise limits the Contractor's responsibility for Work that is not in accordance with the Contract Documents, If Contractor fails to timely correct defects or deficiencies in the Work, Owner may, at its sole option, correct them and charge Contractor for all cost therefore.
- D. See Division 01 – Closeout Submittals for additional warranty requirements.
- E. Specific exclusions, if any, from this one year warrantee and guarantee period are listed in the individual specification sections.

1.14 LIMITATIONS OF LIABILITY

- A. To the extent any of the following provisions are not more stringently included in the Contract Document the following Limitations of Liability shall apply:
- B. Architect/Engineer is not responsible for Contractor's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and is not responsible for Contractor's failure to perform or furnish the work in accordance with the Contract Documents.
- C. In the event that Architect/Engineer's employees or sub-consultants make comments or issue warnings about safety issues, such comments and warnings shall be considered to have been offered by a Good Samaritan and shall not impose any obligation or responsibility.
- D. Engineer will not be responsible for the acts or omissions of Owner, Contractor, any subcontractor, any supplier, or of any other person or organization performing or furnishing any of the portions of the work.
- E. Contractor understands and acknowledges that Engineer is not authorized to order extra work or issue Change Orders to the work, however in the event and to the degree that Engineer may offer advice, suggestions, and opinions Contractor shall not rely on such advice, suggestions, and opinions unless directed in writing by Owner or its designated representative, and shall, in no event, make any claim against the Engineer for any such advice, suggestions, and opinions.
- F. To the fullest extent permitted by law, Contractor shall indemnify and hold harmless Architect, Engineer, and their joint ventures, officers, directors, partners, employees and agents from and against any and all claims, costs, loses and damages (including but not limited to all fees and charge of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) caused in whole or in part by the negligent acts or omissions of Contractor, Contractor's officers, directors, partners, employees, agents; or Contractor's subcontractors or material men in the performance of Work. Contractor shall direct its insurer to list Architect, Engineer, and their joint ventures, as Additional Insureds on general liability

insurance policies covering this project. Prior to commencing work, Contractor shall submit copies of its certificate of insurance to both Architect and Engineer.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.
 - 2. Manufacturer: Unless otherwise specified, company specializing in manufacturing specified products for at least three years.

2.2 MATERIALS AND EQUIPMENT

- A. The device numbers noted in this specification are generally those of a specific manufacturer and represent the minimum quality required as the basis of design for this project. Subject to the Substitutions and other provisions of the Contract Documents, Contractor may submit equivalent devices from the other manufacturers listed in the section.
- B. Materials and equipment used in carrying out these specifications shall be new and have UL listing, or listing by other recognized testing laboratory when such listings are available.
- C. All material shall bear manufacturer's name, model number, electrical characteristics and other identification and shall be the standard product of manufacturer regularly engaged in production of similar material.
- D. Construction of equipment shall be as follows:
 - 1. All prefabricated equipment shall be designed and constructed in such a manner that all parts of said equipment and the equipment as a whole, including attachments, will resist the forces (including seismic where applicable) to which they may be subjected.
 - 2. Unless otherwise specified or required, design criteria shall be no less than 1.5g for lateral forces and 0.6g for vertical forces.
 - 3. Provisions for support and anchorage of equipment shall be an integral part of each item and shall include the fastening means and all necessary internal and external bracing, brackets and connections.
- E. Specifications for many items are or may be described on the drawings, including but not limited to wiring devices, lighting fixtures, control devices, etc., are or may be described on the drawings. Contractor shall promptly advise Architect of any conflicts or discrepancies.

- F. Except for conduit, conduit fittings, outlet boxes, wire and cable (600V and below only), all items of equipment or material shall be the product of one manufacturer throughout.
- G. The documents contain specifications regarding equipment design, including BIL levels, AIC ratings, and series ratings. In all cases provide equipment sufficient for the use intended. Do not provide materials whose ratings fall below those included in the Documents.

PART 3 - EXECUTION

3.1 DEMOLITION

- A. Refer to Division 01 Sections for "Cutting and Patching" and "Selective Demolition" and "Minor Demolition" in this Section for general demolition requirements and procedures.
- B. Disconnect, demolish, and remove systems, equipment, and components indicated to be removed.
 - 1. Raceways to Be Removed: Remove portion of raceways and wire indicated to be removed and cap or plug remaining piping with same or compatible material.
 - 2. Raceways to Be Abandoned in Place: Remove wire, cap or plug with same or compatible piping material.
 - 3. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - 4. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - 5. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
 - a. If raceways, wire or other components or equipment to remain is damaged in appearance or is unserviceable, remove damaged or unserviceable portions and replace with new products of equal capacity and quality.

3.2 UTILITY SERVICE(S)

- A. Contractor shall be responsible for verifying and coordinating the work with local utility companies providing service to the facility and/or site and coordination with the work of others. This shall include, but not be limited to:
 - 1. Confirmation of schedule and service routing and sequence of the work to be performed by each utility, Contractor, subcontractor or others to ensure that the work can be performed without impact to the project schedule and with minimum interruption to services.
 - 2. Verification of utility services point of entry to the facility, including applicable invert elevations, proper placement of sleeves and/or penetrations and sealant thereof.

3. Establishing utility point of contact, documenting the local utility company representatives:
 - a. Company:
 - b. Contact Person:
 - c. Contact Telephone Number:
 - d. Provide required connections for each incoming utility service.

3.3 ELECTRICAL SYSTEMS

- A. Visit site and observe conditions under which work must be performed.
- B. Before starting work, carefully examine Architectural, Civil, Landscape, Structural, Plumbing, Heating, Ventilating and Air Conditioning drawings to become thoroughly familiar with conditions governing work on this project. Verify elevations, measurements, rough-in requirements of equipment and its installation location before proceeding with the work. Install equipment with access as required by the NEC.
- C. Circuit "tags" on the Electrical Drawings in the form of arrows are used to indicate home runs of raceways to electrical distribution points. These tags show the circuits in each home run and the panel designation. Do not combine circuits other than those shown or allowed on the Drawings. Show the actual circuit numbers on the finished record drawing, and on the panel directory card. Provide an insulated grounding conductor sized in accordance with NEC in every power circuit.
- D. The general directions and location of homeruns are indicated on Drawings and are to be extended to panels as though routes were completely shown. Items which are installed other than as shown on Drawings and without receiving prior written approval will be ordered removed and installed as shown without additional cost to Owner.
- E. The Drawings do not indicate the exact number of wires in each conduit for the branch circuit wiring. Provide the correct quantity of wires as indicated by: the circuit numbers indicated, wiring diagrams, and by applicable requirements of the NEC.
- F. Electrical Drawings are diagrammatic and shall not be scaled for exact sizes. Adjust location of conduits, panels, equipment, pull boxes and fixtures to accommodate the work and to prevent interferences.
 1. Lines which pitch have right-of-way over those that do not. Lines whose elevation cannot be changed have right-of-way over lines whose elevations can.
 2. Make offsets, transitions, and changes in direction in raceways as required to maintain proper headroom pitch of sloping lines.
- G. Wire and cable routing shown on the Drawings is approximate. Route wire and cable as required to meet Project Conditions.
- H. When wire and cable routing is not shown, and destination only is indicated, determine exact routing and lengths required.

- I. The Drawings are diagrammatic. They do not show every offset, bend, conduit body, elbow or junction box that may be required to install work in the space provided and avoid conflicts. Follow the Drawings as closely as is practical and install additional bends, offsets and elbows where needed by local job site conditions. Provide necessary junction boxes to meet code regulations for the allowed number of conduit bends.
- J. Establish sizes and locations of the various concrete bases required. Coordinate and provide all necessary anchor bolts together with templates for holding these bolts in position.
- K. Provide supports, blocking, hangers, and auxiliary structural members required for support of work.
- L. Furnish and set all sleeves for passage of raceways through structural, masonry, and concrete walls, floors, and elsewhere for proper protection of the raceways.
- M. Establish size, location, and count of cast-in conduits or conduits to be concealed underneath the foundations. Coordinate with steel reinforcing.
- N. The architectural drawings govern the locations and elevations of all electrical equipment, devices and fixtures. Resolve conflicts with the Architect prior to rough-in.
- O. Verify that the physical dimension of each item of electrical equipment will fit the available space. Coordinate electrical equipment space requirements with the allotted space provisions, and access routes through the construction area.
- P. Coordinate rough-in and wiring requirements for all mechanical, kitchen and other equipment with equipment supplier and installer. Make installation in accordance with rough-in and wiring diagrams provided by equipment supplier and installer.
- Q. Coordinate all aspects of the electrical, telephone and other utility services with the appropriate serving utility company.
- R. Coordinate underground work with other contractors working on the site. Common trenches may be used with other trades. In such areas, maintain clearances as required by codes and ordinances.
- S. Coordinate underground work with foundation plans and work.
- T. Existing wires, conduits, pipes, ducts or other service facilities are shown in a general way only. The Contractor shall visit the site and make exact determination of the existence of any such facilities prior to submission of his bid. It is understood that he will be responsible for making the exact determination of the location and condition of these facilities.
- U. The location of utilities indicated on the plans is taken from existing public records. The exact location and elevation of public utilities must be determined by the Contractor. The Contractor shall ascertain whether any additional facilities other than those shown on the Drawings may be present.

- V. Call to the attention of the Architect any error, conflict or discrepancy in Plans and/or Specifications. Do not proceed with any questionable items of work until clarification of same has been made. Supplementary Details and Plans may be supplied as required and they will become a part of the Contract Documents.
- W. Arrange work to reduce interruption of any existing service to minimum. When interruptions are unavoidable, consult Owner or Utility involved and agree in writing, with copy to the Architect, upon a mutually satisfactory time and duration.

3.4 EQUIPMENT INSTALLATION

- A. Follow manufacturer's instructions.
- B. Where the product has no manufacturer's instructions, follow these specifications. Where neither the manufacturer nor these specifications contain such instructions, install in accordance with the standards listed above. No allowance of any kind will be made for negligence on part of Contractor to foresee means of bringing in or installing equipment into position.
 - 1. Verify all dimensions by field measurements.
 - 2. Install systems, materials, and equipment to provide the maximum headroom possible.
 - 3. Install systems, materials, and equipment to comply with approved submittal data, including coordination drawings
 - 4. Install systems, materials, and equipment level and plumb, parallel and perpendicular to other systems and components, where installed exposed in finished spaces.
 - 5. Fit surface panels, devices and outlets with neat, appropriate trims, plates or covers, without over-hanging edges, protruding corners or raw edges, to leave a finished appearance.
 - 6. Extend maintenance and access components (i.e., grease fittings, service panels, and similar items) to accessible locations.
 - 7. Install equipment to allow right of way for piping installed at required slope.
- C. Locations:
 - 1. Verify all locations with actual field conditions, architectural, structural, electrical, plumbing, heating and ventilating plans to avert possible installation conflicts.
 - 2. Architect reserves the right to make minor changes prior to installation without cost to Owner.
 - 3. Coordinate work with that of other trades to assure symmetrical placing of fixtures, sprinkler heads and other exposed components with respect to ceiling tile, grilles, etc. See Architectural reflected ceiling plan for exact location of light fixtures and other equipment.
 - 4. Any work which is incorrectly installed without prior verification without required coordination will be ordered removed and relocated and any changes or damage resulting to other work shall be repaired and/or replaced at no cost to the Owner.
 - 5. In general, locate all finished devices or other exposed finished devices as indicated on or by symbols on drawings. Where devices or other exposed finished components occur in

face, decks or base millwork, walls, ceilings or other finished surfaces carefully coordinate with details and arrangements of same.

6. All mounting heights shown on drawings are from finish floor to centerline unless otherwise indicated or required by code. Mounting heights at non-typical locations shown with (+) sign and height required noted adjacent to such device. Devices located in concrete block, brick or tile walls are to be adjusted in height to coordinate with modular joints of the materials. Verify requirements with Architect prior to installation.
7. Wiring Requirements: Install wiring complete to every outlet with all devices shown and/or required. All wiring to be in raceways and concealed throughout finished areas unless specifically noted otherwise. For the purpose of electrical specifications, all areas, with the exception of boiler rooms, mechanical rooms and mechanical spaces, are to be considered as finished areas.

D. Equipment Connections:

1. Coordinate the work with that of other trades to ensure all required connections are provided to ensure proper installation and operation.
2. Provide complete electrical connections for all items of equipment requiring such connections, including incidental wiring, materials, devices and labor necessary for a finished working installation.
3. Verify the location and method for connecting to each item of equipment prior to roughing-in. Check voltage and phase of each item of equipment before connection.
4. Make motor connections for the proper direction of rotation.

3.5 NOISE CONTROL

- A. Provide insulation, isolators and other sound attenuation requirements as specified by Contract Documents.
- B. Back to back or straight through boxes are not permitted unless specifically noted on the drawings.
- C. Contactors, transformers, starters and similar noise producing devices shall not be placed on walls which are common to occupied spaces unless specifically called for on the drawings. Where equipment is mounted on wall common to occupied spaces, provide shock mounting or noise isolators to effectively prevent transmission to occupied spaces.
- D. Ballasts, contactors, starters transformers and like equipment found noticeably noisier than similar equipment of same type are to be removed and replaced as directed by Architect at no cost to Owner.
- E. Route raceways along corridors or other noncritical noise space to minimize penetrations through sound rated walls. Seal raceway penetrations through sound rated walls.

3.6 EQUIPMENT SUPPORT

A. General:

1. Provide a system of supporting devices and hangers for support and bracing of piping, conduit and equipment as required by code or as provided under this Division as indicated on plans and as described herein.
2. Do not install supporting devices so as to obstruct access to equipment.
3. Floor-mounted equipment shall not be held in place solely by its own dead weight. Include floor anchor fastening in all cases.
4. Do not support ductwork, piping, conduits, conductors, or equipment from other piping, conduits, ceiling grids, equipment, ductwork, or ceiling supports. In all cases, provide independent supports for such components and equipment.

B. Concrete Bases: Anchor equipment to concrete base according to equipment manufacturer's written instructions and according to code (including seismic codes where applicable).

1. Construct concrete bases and form equipment anchorages as detailed in the structural drawings.
2. Construct concrete bases of dimensions indicated, but not less than 4-inches larger in both directions than supported unit.
3. Install epoxy-coated anchor bolts for supported equipment that extend through concrete base, and anchor into structural concrete floor.
4. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
5. Install anchor bolts to elevations required for proper attachment to supported equipment.
6. Install anchor bolts according to anchor-bolt manufacturer's written instructions.
7. Use concrete and reinforcement as specified in Division 03 Sections and the Structural Drawings.

C. Metal Supports and Anchorages:

1. Refer to local codes, practices and standards for installation and material requirements and limitations relating to the use of metal supports and anchorages (including applicable seismic requirements).
2. Refer to Division 05 Section "Metal Fabrications" for structural steel.
3. Field Welding: Comply with AWS D1.1.

D. Grouting:

1. Mix and install grout for equipment base bearing surfaces, pump and other equipment base plates, and anchors.
2. Clean surfaces that will come into contact with grout.
3. Provide forms as required for placement of grout.
4. Avoid air entrapment during placement of grout.
5. Place grout, completely filling equipment bases.

6. Place grout on concrete bases and provide smooth bearing surface for equipment.
7. Place grout around anchors.
8. Cure placed grout.

3.7 PAINTING

- A. Painting of systems, equipment, and components is specified in Division 09. Unless and to the extent that painting is not specified elsewhere in the Contract Documents, all exposed materials in finished areas and on exterior walls shall be painted to match surrounding surfaces.
- B. Contractor shall be responsible for and shall coordinate the timing of painting with the work of other trades and to minimize the requirements for damage and touchup to the work.
- C. Damage and Touchup: Repair marred and damaged factory-painted finishes with materials and procedures to match original factory finish.

3.8 CUTTING, PATCHING AND CORE DRILLING

- A. General:
 1. Refer to Divisions 01, 03, and other related provision of the Contract Documents, including Structural Drawings and Specifications for requirements relating to cutting, patching and core drilling of walls, floors and other surfaces.
 2. Do not cut or break any steel or wood framing, concrete, masonry, or partitions, etc., without permission from the Architect or as shown on the Drawings.
 3. Subject to the provisions of this Section and other portions of the Contract Documents cut, channel, chase and drill floors, walls, partitions and ceilings as necessary for the proper installation, support and anchorage of piping, ductwork, raceway, boxes, and other equipment.
 4. Repair any damage to the building, piping, equipment, or finish.
 5. Perform repairs with materials matching the original and install in accordance with appropriate sections of the Contract Documents.
 6. Where trenching is done through existing paving, walks, curbs, etc., Contractor is responsible for patching and repairs to original condition.
 7. In new work, patch and refinish all finished surfaces damaged by this Contractor to match adjacent surface.
 8. All related refinishing to be as directed by the Architect.
- B. All cutting, patching and/or core drilling of structural systems that are do not appear on or that deviate in any way from the Structural Drawings must be preapproved by the Structural Engineer and Contractor shall provide all data, calculations and/or other requirements as maybe required by the Structural Engineer, prior to commencement of the work, including but not limited to:
 1. X-Ray of structural systems to show the actual location of reinforcement.

2. Size and dimensions of penetrating ductwork, piping or conduit including placement within desired opening and required clearances, means of fastening and/or support including all anchoring systems and fasteners.
 3. As a general rule, subject to adjustment by Structural Engineer, penetrating ductwork, piping or conduit shall pass through the center of all structural openings, avoiding structural members by minimums specified on the Structural Drawings.
- C. Core Drilling Layouts: Unless otherwise specified in the Contract Documents Contractor shall provide to the Structural Engineer a complete floor by floor core drilling layout for all required floor core penetrations in advance of the work for Structural Engineer's review and approval. Core drilling layouts shall include size, dimension and specific locations of core drilling for all trades. Contractor shall not be permitted to conduct independent coring without providing such layout to Structural Engineer.

3.9 EXCAVATION, BACKFILL AND WATERPROOFING

- A. Refer to Divisions 01, 02, and other related provisions of the Contract Documents, including but not limited to Sitework and Structural Drawings and related specifications for requirements relating to excavation, backfill and waterproofing for each trade.
- B. Do necessary trenching and excavating for installation of underground piping, raceways and equipment. Use necessary precautions not to affect the bearing value of soil under and near footings. Excavate trenches with proper pitch **6-inches** deeper than required by line grade and prefill to line grade with pea gravel. Where trenching occurs through existing paving, walks, curbs, etc., patch and repair to original conditions. Compact backfill with vibratory or roller compaction equipment in **9-inch** layers to 90 percent density. Dispose of excess excavated material as directed. Backfill under floor slabs and under hard surfaced yard areas (i.e., walks, drives, parking areas) to be crushed rock unless otherwise indicated, compacted in **9-inch** layers. Backfill material and compaction to comply with Site Work Section of these Specifications.
- C. Provide and maintain ample means and devices with which to promptly remove and dispose of water entering the excavation during the time it is being prepared for the piping, raceways or equipment laying, during the laying of materials or equipment and until the backfill has been completed.
- D. Avoid, if possible, penetrations of waterproof membranes. Where such penetration is required, perform it prior to waterproofing and in accordance with Architectural details. Where penetrations are not detailed or must be conducted through waterproof membranes, provide a detail of the penetrations for approval of the Architect.

3.10 SAFETY AND PROTECTION

- A. The Contract Documents do not include nor is Architect/Engineer responsible for the design of construction details or instructions relating to Contractor' safety or protective measures or precautions or as it pertains to its means, methods, techniques, sequences or procedures required for to perform the work.

- B. Provide necessary shoring, railing, barricades, protective devices, temporary systems/supports, safety instructions and procedures to perform the work safely and to comply with the Safety Requirements of the governing authorities.
- C. Unless otherwise specifically detailed and included, the Contract Documents represent the finished state of all systems and components related to the work and it is Contractor's sole responsibility to provide the necessary means, methods, equipment and protection of the work and those performing the work during construction. Neither Architect/Engineer nor any of their respective subconsultants shall be responsible or liable for Contractors failure to adequately protect the work or those performing the work during construction.

3.11 FUTURE PROVISIONS TO BE INCLUDED IN THE WORK

- A. The following provisions shall be provided for and included in the work:
 - 1. Provide pull line in each empty conduit provided for future installation of wiring.
 - 2. At all systems such as fire alarm, clock and program, intercom, etc., where future stations are to be fed from adjacent outlets or terminal cabinets, all conductors required for complete installation of additional units are to be provided to nearest outlet or terminal cabinet as required. In general, all wiring installed so it will not be necessary to remove existing conductors and re-pull additional wiring to install additional units. All spare conductors properly labeled and terminated in outlet boxes or at terminals in terminal cabinets.

3.12 CLEANING

- A. General:
 - 1. At all times keep the premises free from accumulation of waste materials or rubbish caused by the employees or the work. At the completion of the work, remove all superfluous materials, equipment and debris related to or resulting from the work.
 - 2. All systems, equipment and component including but not limited to all panels, compartments, points of access, surface areas, panels, whether concealed or not shall be free from debris, filings, clippings, dirt, dust and debris and in a new condition. Touch up paint where necessary.
 - 3. Where existing systems are expanded and/or remodeled, clean the new installation prior to making final connection to the existing systems.

3.13 COOPERATION WITH OTHER TRADES

- A. Contractor shall cooperate with and coordinate the work with that of all other trades in the performance of the work, including but not limited to; delivery of equipment and materials, furnishing material and location requirements of sleeves, bucks, chases, supports, mountings, backings, inserts, anchor bolts, cast-in-place box-out or steel embeds, routings, sequencing, locations, finished devices, etc., for proper installation of its work. Contractor shall be

responsible for any and all removal, replacement or repairs to its work or the work of others for its failure to fully comply with this provision.

3.14 OPERATION AND INSTRUCTION

- A. Upon completion of the work and prior to final acceptance, Contractor shall operate the equipment for a period as required to fully instruct the Owner and its authorized representatives in all details of operation, adjustment and maintenance. Absent more stringent requirements found elsewhere in the Contract Documents, Contractor shall, at a minimum:
 - 1. Schedule with Owner and its designated representatives a single time and location for a one-day instruction class and submit three copies of certificate, signed by Owner's representatives, attesting to the Owner's authorized representatives having been so instructed. All arrangements shall be made through Architect and Owner's Representative.
 - 2. Thoroughly review and instruct Owner and its designated representatives on all aspects of systems and facilities operations and maintenance utilizing the Instructions and Manuals submitted under the provisions of this Section. Any required instructions from manufacturer's representatives shall be given during this period.
 - 3. This requirement is in addition to any "Operation Test" specified in the Contract Documents.

END OF SECTION 260100

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SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - SCOPE

- 1.1 Provide all site conductors. All conductors to be THHN or THWN as described below. Coordinate with building manufacturer on tie in points between site and building.

PART 2 - WIRE AND CABLE:

- 2.1 Branch Circuits and Homeruns: Type THHN or THWN, 600-volt insulation, stranded copper conductor. Minimum conductor size:
- A. Neutral: #12 AWG
 - B. Ground: #12 AWG
 - C. Phase conductors (more than six in a raceway): #10 AWG
 - D. Phase conductors (six or less in a raceway): #12 AWG
- 2.2 Feeders: Feeders shall be sized as shown on the drawings and color-coded in accordance with list below. Make no splices unless shown on the plans.
- 2.3 Color Coding Requirements: 120/208 Volt, 3-Phase, 4-Wire Systems
- A. Phase A: Black
 - B. Phase B: Red
 - C. Phase C: Blue
 - D. Neutral: White
 - E. Ground: Green
 - F. Travelers: Yellow (For 3- And 4-Way Switching)
 - G. Controls: Black With Wire Numbers On Each Conductor

- 2.4 Splices and Terminations: Lighting and receptacle branch circuit conductors up to No. 10 AWG shall be spliced with Wing Nut type connectors.
- 2.5 Identify and color-code conductors and cables according to this specification and Section 260553 "Identification for Electrical Systems."
- 2.6 Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

PART 3 - FIELD QUALITY CONTROL

- 3.1 Tests and Inspections:
 - A. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors for compliance with requirements.
 - B. Perform each of the following visual and electrical tests:
 - 1. Test bolted connections for high resistance using one of the following:
 - a. A low-resistance ohmmeter.
 - b. Calibrated torque wrench.
 - a. Inspect compression-applied connectors for correct cable match and indentation.
 - b. Inspect for correct identification.
 - c. Inspect cable jacket and condition.
 - d. Insulation-resistance (Megger) test on each conductor for ground and adjacent conductors. Apply a potential of 1000-V dc for 600-V rated cable for a one-minute duration.
 - e. Continuity test on each conductor and cable.
 - f. Uniform resistance of parallel conductors.
 - B. Cables will be considered defective if they do not pass tests and inspections.
 - C. Prepare test and inspection reports to record the following:
 - 1. Procedures used.
 - 2. Results that comply with requirements.
 - 3. Results that do not comply with requirements, and corrective action taken to achieve compliance with requirements.

END OF SECTION 260519

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL: Coordinate grounding of the building with the building manufacturer. Provide through the entire electrical system. A separate green equipment grounding conductor shall be provided in all lighting and power raceways. Coordinate building and site grounding. Provide all grounding as required for California Electrical Code.

PART 2 - BONDING: Insulated grounding bushings shall be installed to bond all feeder conduits to the switchboard ground bus or panel ground bus at both ends of feeder raceways. Insulated grounding bushings shall be installed to bond all feeder conduits to the ground bus or panel enclosures at both ends of the runs.

PART 3 - NEUTRAL GROUNDING: The neutral point of all transformers shall be solidly grounded to the grounding system and transformer enclosure with code size ground conductors. The neutral bus in each panelboard shall be isolated from ground. The neutral shall be grounded only at a single point at the main switchboard or at separately derived system transformers.

PART 4 - RECEPTACLE GROUNDING: Connect the ground terminal of all receptacles by utilizing a separate grounding conductor between the receptacle grounding screw and the ground conductor provided in the branch circuit. Integral mounting straps within the receptacle connected to the device mounting straps are not approved as a grounding method.

PART 5 - FLEXIBLE CONDUIT GROUNDING: Provide a separate grounding conductor in all flexible conduit runs including watertight flexible conduit with integral grounding straps. Install ground conductor inside conduit with ungrounded conductors.

PART 6 - GROUND CONNECTIONS: Ground connections to building steel, ground rods and cable taps shall utilize an exothermic welding process. Cadweld, Erico Products, Inc., or approved equal.

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SECTION 260533 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - SCOPE

- 1.1 Provide all underground conduits per site electrical drawings. Coordinate connection with site building manufacturer. All conduits to be schedule 80. Coordinate with utility as to the conduit type allowed.

PART 2 - RACEWAYS

- 2.1 RIGID METALLIC CONDUIT: Zinc-coated steel with full threaded connections.
- 2.2 ELECTRICAL METALLIC TUBING (EMT): Zinc-coated steel.
- 2.3 RIGID NONMETALLIC CONDUIT: Rigid PVC, schedule 80, UL listed for direct burial or concrete encasement.
- 2.4 FLEXIBLE METALLIC CONDUIT: Helically wound galvanized steel, securely interlocked, RWS (reduced wall steel) type.
- 2.5 LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT: Helically wound, galvanized steel, interlocked, with integral ground conductor and overall PVC jacket.

PART 3 - FITTINGS

- 3.1 Rigid metallic conduit:
 - A. Couplings: Threaded-metallic type of the same material as the conduit.
 - B. Locknuts: Steel up to 2" inches, malleable iron for 2-1/2 inches and larger.
 - C. Bushings: Bakelite or plastic up to 2", malleable iron with insulating collar for 2-1/2 inches and larger.
 - D. Unions: Zinc-plated malleable iron, three piece conduit coupling.
 - E. Electrical Metallic Tubing (EMT): Steel set-screw type. Fittings 2" and larger shall be steel and may be setscrew type containing dual setscrews on each side of coupling.

- 3.2 Rigid nonmetallic conduit: Slip-on, non-threaded type of same material as conduit.
- 3.3 Flexible metallic conduit: Steel, one- or two-screw clamp type.
- 3.4 Liquidtight flexible metallic conduit: Galvanized steel, compression type.
- 3.5 Conduit Straps: Heavy duty, two-hole pressed steel.

PART 4 - OUTLET AND DEVICES BOXES

- 4.1 Interior Surface-Mounted in Unfinished Areas: One-piece pressed steel, electro-galvanized, size and depth required by Code, except 4-inch square or 4-inch octagonal minimum.
- 4.2 Interior Flush-Mounted: Same as above except provide plaster ring extension to finished surface.

PART 5 - JUNCTION AND PULL BOXES: Interior Areas, steel, screw cover, code gauge and size. Large junction and pull boxes shall be fabricated sheet steel with baked enamel finish and return flange with screw retained cover.

PART 6 - EXECUTION

- 6.1 General:
 - A. Coordination: The Contractor shall review all drawings, details and elevations prior to rough-in. Where equipment is furnished by others, the Contractor shall ascertain the proper voltage, load and connection requirements prior to rough-in.
 - B. Materials: All materials of a specific type shall be provided by the same manufacturer throughout the project.
- 6.2 Raceway Types: Install raceway types and sizes as listed below:
 - A. Rigid Metallic Conduit: In concrete and masonry and exposed exteriors.
 - B. Electrical Metallic Tubing (EMT): All areas other than above. May be used for feeders with integral green ground conductor.

- C. Rigid Nonmetallic Conduit: Exterior underground installations. 90 degree elbows to be galvanized rigid steel.
- D. Flexible Metallic Conduit: Recessed fixture connections, interior concealed equipment connections, expansion joints and sound control. Not to be used exposed installations within the building.
- E. Liquidtight Flexible Metallic Conduit: Exterior equipment connections.
- F. Minimum raceway size shall be 3/4 inch, except for raceways with no more than three #12 AWG conductors which may be 1/2".

6.3 Raceway Installation:

- A. Concealment: All raceways shall be concealed in finished areas. Where existing wall surfaces are inaccessible, surface metal raceways for these exceptions may be provided when approved.
- B. Exposed Raceways: Install exposed raceways as high as possible, above ductwork, parallel or at right angles to building lines.
- C. Expansion and Earthquake Joints: Raceways shall not be installed in concrete slab or wall construction when passing through an expansion or earthquake joint. Raceways shall be installed in furred or suspended ceiling spaces with a minimum of 24 inches of flexible conduit crossing the expansion or earthquake joints.
- D. Routing: All raceways shall be installed parallel or at right angles to the building construction unless prohibited by a physical obstruction.
- E. Raceway Supports: Raceways shall be supported with heavy-duty, one-hole, pressed steel straps on interior surfaces. Support pendant-mounted raceways on 3/8-inch rod with pear-shaped hanger or trapeze-type hanger with 3/8-inch rod (minimum) and 1-5/8-inch square preformed channel and pipe clamps. Parallel, surface-mounted raceways shall be supported from 1-5/8-inch square preformed channel and pipe clamps. All fittings and supports shall be hot-dip galvanized in exterior areas.
- F. Independent Support: Conduits shall not be supported from the ceiling suspension system, ducts, pipes or other systems foreign to the electrical installation. The entire electrical installation shall be kept independent from any other trade.
- G. Pull boxes with Covers: Shall be provided as shown on the drawings or as required by Code. All pull boxes shall be located so as to be accessible.
- H. Flexible Conduit: Shall be used only for lighting fixture pigtails in accessible ceilings, flush-mounted speaker pigtails in accessible ceilings, sound control, motor connections and at building expansion joints as specified. Any other proposed use of flexible conduit must be approved prior to installation.

- I. Penetrations: Raceways which pass through building roof, exterior walls of building above or below grade and floor slabs on grade shall be sealed on the interior side of the building using non-hardening sealing compound after all conductors have been installed in the raceway. Sealing material shall be specifically designed for electrical wiring systems.
- J. Conduit Passing Through Building Roof: Provide a 4 lb. lead plumbing vent flashing with a counter flashing attached above using a galvanized steel clamp.
- K. Conduit Penetrating Membranes: All conduits penetrating walls or slabs with membranes shall be installed with approved membrane clamping devices in order to provide necessary seal.
- L. Exterior Walls: Conduits passing through exterior walls below grade and/or bridging an area which was previously excavated and backfilled shall be rigidly supported by a structurally reinforced concrete duct bank spanning between the building wall and a bearing surface on undisturbed earth.
- M. Empty Raceways: Provide a nylon pull string in all empty raceways.

6.4 Boxes and Fittings:

- A. General: Boxes shall be supported securely and independently. Mount boxes on building surfaces or support with trapeze hanger as described in Raceway Installation. Junction boxes shall not be used unless the number of bends, pulling length, or circuit requirements necessitates their installation. Junction or pull box openings must be accessible.
- B. Sound Control: Where boxes are mounted in a common wall, they shall wherever possible, be offset horizontally so that they are not mounted back-to-back. Connect offset boxes with flexible conduit not to exceed 18 inches in length.

END OF SECTION 260533

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL: Label all junction boxes, terminal cabinets, etc., with the circuit number or low-voltage system contained within. Hand written labeling is not acceptable.

PART 2 - EQUIPMENT NAMEPLATES: Shall be engraved in 1/16 inch thick phenolic letters a minimum of 3/16 inch high. Coloring shall be white letters on black background for normal equipment and white letters on red background for emergency equipment.

PART 3 - IDENTIFICATION: Panels shall have voltage, name, fed from on label. Labels shall be permanent.

END OF SECTION 260553

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SECTION 260570 - OVERCURRENT PROTECTIVE DEVICE STUDIES

PART 1 - GENERAL: Contractor shall provide a short circuit study, protective device coordination study, and arc-flash hazard analysis per the requirements of NFPA 70E for all new equipment provided under this project.

PART 2 - DESCRIPTION OF WORK: The studies shall include all portions of the electrical distribution system from the normal to emergency power source or sources down to and including the smallest adjustable trip circuit breaker in the distribution system

PART 3 - SHORT CIRCUIT STUDY: The system short circuit study shall be based on available fault current stated by the utility provider at the point of service as described in IEEE 399. The contractor shall coordinate with the utility provider and be responsible for obtaining an available fault current letter from the utility.

PART 4 - COORDINATION STUDY: A protective device coordination study shall be performed to provide the necessary, protective relay characteristics and settings, ratios and characteristics of associated current transformers, ground fault relays and low voltage breaker trip characteristics and settings. Provide time-current curves for devices and recommended settings in tabulated form.

PART 5 - ARC-FLASH HAZARD ANALYSIS: Perform an arc flash hazard analysis study per the requirements set forth in NFPA 70 E – Standard for Electrical Safety in the Workplace. The arc flash hazard analysis shall be performed according to the IEEE 1584 equations that are presented in NFPA 70e-2012, Annex D. Provide a summary of the results including incident energy and flash protection boundaries in tabulated form.

PART 6 - REPORT: The results of the studies shall be summarized in a final report and submitted in accordance with Division 1.

PART 7 - LABELS: Labels shall be self-adhesive, have an orange header with the wording, "WARNING, ARC-FLASH HAZARD," and shall include the information taken directly from the arc-flash hazard analysis. Install labels on all new electrical distribution equipment.

END OF SECTION 260570

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SECTION 260800 - START UP AND TESTING

PART 1 - GENERAL: Contractor shall provide personnel and equipment to start up and test the electrical systems as outlined in the drawings plan, as specified herein.

PART 2 - The following systems shall be functionally tested as part of the commissioning process:

- 2.1 Generators
- 2.2 Automatic Transfer Switches (ATS)
- 2.3 Lighting Controls

PART 3 - PRE-FUNCTIONAL CHECKLIST

- 3.1 Contractor shall complete pre-functional checklists for each panelboard, transformer, and equipment listed above installed on the project. The pre-functional test scripts are to be provided by the contractor . Completed pre-functional checklists shall be submitted to the Architect for review.

PART 4 - FUNCTIONAL TEST SCRIPTS

- 4.1 Contractor, at the direction of the Construction Manager, shall complete functional testing of the electrical equipment according to functional test scripts developed by the Construction Manager. Prior to functional testing, the contractor shall provide a Certificate of Readiness stating the specific equipment is ready for functional testing and any require prerequisites have been completed. The functional test scripts shall be completed by the Construction Manager.
- 4.2 The contractor shall have a factory-authorized field technician present during functional testing of the electrical equipment unless otherwise noted by the Commissioning Agent.

PART 5 - FIELD TEST AND START-UP REPORTS

- 5.1 The contractor shall submit field test reports for circuit breakers, feeder megger tests, ground resistance tests, and tests as identified in the commissioning equipment matrix.
- 5.2 The contractor shall submit all vendor start-up reports to the Construction manager to review these reports for completeness.

END OF SECTION 260800

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SECTION 260923 - LIGHTING CONTROL DEVICES

PART 1 - SCOPE

- 1.1 Provide a lighting controls system for building mounted and exterior lighting. Lighting shall be controlled by photo sensor and motion detectors as required by current Energy Code. Equipment shall be located in building. Coordinate with building manufacturer. All fixtures to be dimming.
- 1.2 System to be Watt Stopper or approved equal.

PART 2 - TOGGLE SWITCHES

- 2.1 Approved Manufacturers: Cooper, Hubbell, P & S or Leviton. All part numbers refer to Hubbell.
- 2.2 Switches, 120/277V, 20A
 - A. Single Pole: HBL1221
 - B. Three Way: HBL1223
 - C. Four Way: HBL1224

PART 3 - DIMMER SWITCHES

- 3.1 Approved Manufacturers: Lutron, Leviton or WattStopper.
- 3.2 Modular, full-wave, solid-state units with integral, quiet on-off, with audible frequency and EMI/RFI suppression filters.
- 3.3 Continuously adjustable slider with single-pole or three-way switching.
- 3.4 Fluorescent and LED Lamp Dimmer Switches: Modular, compatible with dimmer ballasts and drivers.

PART 4 - DEVICE PLATES: Brushed stainless steel, P&S/Sierra or approved equal.

- 4.1 General: Install devices level, plumb and square with building lines.

END OF SECTION 260923

SECTION 262416 - PANELBOARDS

PART 1 - Coordinate panel requirements with building manufacturer as panels shall be connected recessed in building. Refer to single line for additional information.

PART 2 - RATING: 120/208-volt, 3-phase, 4-wire, copper bus bolt-on molded case, thermal magnetic type circuit breakers having a minimum interrupting rating of 10,000 amperes for 120/208-volt panels. Provide calculation on KAIC value in coordination with Utility company. Provide Surge protective device on all panels. calculation on KAIC value in coordination with Utility company. Provide Surge protective device on all panels.

PART 3 - ENCLOSURE: All outdoors panels are to be provide NEMA 3R enclosure.

PART 4 - SURGE PROTECTION DEVICE (SPD): Panelboards connected to the emergency power system shall include a factory installed SPD as an integral part of the panelboard, complying with UL 1449 SPD Type 2.

PART 5 - MOUNTING: Where panelboards are to be installed against plasterboard walls, provide separate support channels secured to blocking between steel studs. Coordinate blocking work with the gypsum wallboard contractor. Panels shall not be secured directly to gypsum wallboard material.

PART 6 - INSTALLATION

- 6.1 Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.
- 6.2 Comply with NECA 1.
- 6.3 Install panelboards and accessories according to [NECA 407] [NEMA PB 1.1].
- 6.4 Equipment Mounting:
 - A. Install panelboards on cast-in-place concrete equipment base(s). Comply with requirements for equipment bases and foundations specified in Section 033000 "Cast-in-Place Concrete."
 - B. Attach panelboard to the vertical finished or structural surface behind the panelboard.

- C. Comply with requirements for seismic control devices specified in Section 260548.16 "Seismic Controls for Electrical Systems."
- A. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from panelboards.
- B. Comply with mounting and anchoring requirements specified in Section 260548.16 "Seismic Controls for Electrical Systems."
- C. Mount top of trim 90-inches above finished floor unless otherwise indicated.
- D. Mount panelboard cabinet plumb and rigid without distortion of box.
- E. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.
- F. Mount surface-mounted panelboards to steel slotted supports 5/8-inch in depth. Orient steel slotted supports vertically.
- G. Install overcurrent protective devices and controllers not already factory installed.
 - 1. Set field-adjustable, circuit-breaker trip ranges.
 - 2. Tighten bolted connections and circuit breaker connections using calibrated torque wrench or torque screwdriver per manufacturer's written instructions.
- H. Make grounding connections and bond neutral for services and separately derived systems to ground. Make connections to grounding electrodes, separate grounds for isolated ground bars, and connections to separate ground bars.
- I. Install filler plates in unused spaces.

PART 7 - IDENTIFICATION

- 7.1 Identify field-installed conductors, interconnecting wiring, and components; install warning signs complying with requirements in Section 260553 "Identification for Electrical Systems."
- 7.2 Create a directory to indicate installed circuit loads; incorporate Owner's final room designations. Obtain approval before installing. Handwritten directories are not acceptable. Install directory inside panelboard door.
- 7.3 Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
- 7.4 Device Nameplates: Label each branch circuit device in power panelboards with a nameplate complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
- 7.5 Install warning signs complying with requirements in Section 260553 "Identification for Electrical Systems" identifying source of remote circuit.
- 7.6 FIELD QUALITY CONTROL
 - A. Perform tests and inspections.
 - B. Tests and Inspections:
 - 1. Perform each visual and mechanical inspection and electrical test for low-voltage air circuit breakers and low-voltage surge arrestors stated in NETA ATS, Paragraph 7.6 Circuit

Breakers and Paragraph 7.19.1 Surge Arrestors, Low-Voltage]. Do not perform optional tests. Certify compliance with test parameters.

2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
 - C. Panelboards will be considered defective if they do not pass tests and inspections.
 - D. Prepare test and inspection reports.
- 7.7 ADJUSTING
- A. Adjust moving parts and operable components to function smoothly and lubricate as recommended by manufacturer.

END OF SECTION 262416

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SECTION 262726 - WIRING DEVICES

PART 1 - WIRING DEVICES

- 1.1 Approved Manufacturers: Cooper, Hubbell, P & S or Leviton. All part numbers refer to Hubbell.
- 1.2 Receptacle Color: White for power, all outlets to be on generator power .
- 1.3 Receptacle Orientation:
 - A. Install receptacles vertically
 - B. Install receptacles with the ground pin down.

PART 2 - RECEPTACLES

- 2.1 All exterior receptacle shall be weather/tamper resistant. Outlets shall be GFCI per code. All outside devices shall be in a while in use/lockable cover.

PART 3 - DEVICE PLATES: Brushed stainless steel, P&S/Sierra or approved equal.

- 3.1 GENERAL: Install devices level, plumb and square with building lines.

PART 4 - RECEPTACLE MOUNTING HEIGHT: +18" to the centerline of the box unless otherwise noted.

END OF SECTION 262726

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SECTION 263213 - PACKAGED ENGINE GENERATOR SYSTEMS

PART 1 - Generator Requirements

- 1.1 Provide a natural gas generator that will serve the entire site and building load. Generator to be size by size contractor for entire load of both the size and building. Provide calculations showing that the generator is size correctly. Preliminary calculations show generator at 100kw.
- 1.2 Unit shall be in accordance with located regulatory requirements.
- 1.3 Conform to the requirements of the following publications:
 - A. NFPA 110 Standard for Emergency and Standby Power Systems
 - B. UL 2200 UL Standard for Safety for Stationary Engine Generator Assemblies
- 1.4 Conform to current environmental protection agency (EPA) applicable emission regulations.
- 1.5 Conform to requirements of fire marshal for flammable/combustible liquids. Obtain and pay for related permit(s).
- 1.6 Provide all documentation and applications for AQMD. Generator to conform to all regulations set by AQMD.

PART 2 - TESTING AND ADJUSTMENTS

- 2.1 Field start-up, testing and adjustment shall be performed under the supervision of a factory-trained manufacturer's representative.
- 2.2 Provide full load test utilizing portable test bank for one hour minimum. Simulate power failure including operation of transfer switch, and return to normal.
- 2.3 During test, record the following at 20 minute intervals:
 - A. Kilowatts
 - B. Amperes

- C. Voltage
- D. Temperature
- E. Frequency
- F. Oil pressure

2.4 Test alarm and shut-down circuits.

2.5 Adjust generator output and engine speed.

PART 3 - DEMONSTRATION AND INSTRUCTIONS

- 3.1 Demonstrate operation and maintenance of system to Owner's personnel prior to contract closeout. Allow one two-hour session scheduled at convenience of Owner.
- 3.2 Use operation and maintenance manuals as basis of instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance.
- 3.3 Demonstrate operation, control, trouble shooting, maintenance and testing of system.

END OF SECTION 263213

SECTION 263600 - TRANSFER SWITCHES

PART 1 - SUBMITTALS

- 1.1 Submit product data for transfer switches showing overall dimensions, electrical connections, electrical ratings, and environmental requirements.
- 1.2 Submit shop drawings showing complete factory wiring diagrams and field wiring requirements for equipment installation. Include manufacturer recommended initial settings for adjustable time delays and sensors.

PART 2 - OPERATION AND MAINTENANCE DATA

- 2.1 Submit data in Operation and Maintenance (O&M) Manuals.
- 2.2 Include record of final settings for adjustable and factory time delays and sensors from system start up.

PART 3 - AUTOMATIC TRANSFER SWITCH

- 3.1 Description: UL 1008, NEMA ICS 2; automatic transfer switch Characteristics: Designed for continuous-duty repetitive transfer of full-rated current between active power sources.
- 3.2 Switches using molded-case switches or circuit breakers, or insulated case circuit breaker components are not acceptable.
- 3.3 Transfer switches shall be double-throw, electrically and mechanically interlocked, and mechanically held in the Source 1 and Source 2 positions.
- 3.4 Main switch contacts shall be high-pressure silver alloy. Contact assemblies shall have arc chutes for positive arc extinguishing. Arc chutes shall have insulating covers to prevent inter-phase flashover.
- 3.5 Contacts shall be operated by a high-speed electrical mechanism that causes contacts to open or close within three electrical cycles from signal.
- 3.6 The transfer switch operation shall include the ability to switch to an open position (both sources disconnected) for the purpose of load shedding from the generator set.
- 3.7 The power transfer mechanism shall include provisions for manual operation under load with the enclosure door closed. Manual operation may be electromechanical or mechanical, but must be coordinated with control function.
- 3.8 Transfer switch shall be provided with flame retardant transparent covers to allow viewing of switch contact operation but prevent direct contact with components that could be operating at line voltage levels.
- 3.9 The transfer switch shall include the mechanical and control provisions necessary to allow the device to be field-configured for operating speed. Transfer switch operation with motor loads shall be as is recommended in NEMA 3.

- 3.10 Configuration: Electrically-operated, mechanically-held transfer switch.
- 3.11 Ratings: UL 1008, NEMA ICS 2, as follows:
 - A. Voltage: 120/208 volts, three phase, four wire, 60 Hz.
 - B. Switched poles: Four
 - C. Load inrush rating: Combination tungsten lamp, electric discharge lamp, resistive load, and motor load.
 - D. Continuous rating: as indicated on the drawings
 - E. Withstand current rating: Three-cycle rated as follows:
 - F. Contractor to provide study for AIC for all equipment.

PART 4 - AUTOMATIC SEQUENCE OF OPERATION

- 4.1 Initiate time delay to start standby source engine generator: Upon initiation by normal source monitor.
- 4.2 Time delay to start standby source engine generator: 0 to 6 seconds, adjustable.
- 4.3 Initiate transfer load to standby source: Upon initiation by normal source monitor and permission by alternate source monitor.
- 4.4 Time delay before transfer to standby power source: 0 to 60 seconds, adjustable.
- 4.5 Initiate retransfer load to normal source: upon permission by normal source monitor.
- 4.6 Time delay before transfer to normal power: 0 to 30 minutes, adjustable; bypass time delay in event of alternate source failure.
- 4.7 Time delay before engine shut down: 0 to 5 minutes, adjustable, of unloaded operation.
- 4.8 Engine exerciser: programmable, set for engine start every 30 days; run for 30 minutes before shutting down. Bypass exerciser control if normal source fails during exercising period. Provide load/no-load selector switch.

PART 5 - ENCLOSURE

- 5.1 Enclosure: ICS 6; Type 3R for damp or outdoor locations; 30-inch maximum width. Provide hinged door with locking handle latch and gasketed jambs.

PART 6 - ACCESSORIES

- 6.1 Indicating Lights: Mount in cover of enclosure to indicate normal source available, alternate source available and switch position.
- 6.2 Key-Operated Selector Switch: Mount in cover of enclosure for test-auto-off-engine start.

- 6.3 Transfer Switch Auxiliary Contacts: One normally open; one normally closed.

PART 7 - INSTALLATION

- 7.1 Install in accordance with manufacturer's instructions and approved shop drawings.
- 7.2 Provide all field wiring and interface cabling for transfer switch operation and control according to approved shop drawings.
- 7.3 Nameplates: Comply with Section 260533.

PART 8 - TESTING AND ADJUSTMENTS

- 8.1 Comply with Section 263213.
- 8.2 Comply with NFPA requirements for optional standby systems.
- 8.3 Make initial and final settings for adjustable time delays and sensors.

END OF SECTION 263600

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SECTION 265600 - EXTERIOR LIGHTING

PART 1 - General

A. Scope of work:

1. Contractor shall provide site photometrics to meet code minimums. Pole mounted fixtures: Provide 30" tall base for pole base. Poles shall be round and 24' tall. Fixtures shall provide 1 fct minimum light levels on parking and driveways. Fixtures shall not shine in any bedroom windows.
2. Building Mounted Fixtures: Provide building mounted fixtures as shown on the drawings. Refer to drawings for locations. Fixtures shall be connected
3. Low Voltage lighting: Provide low voltage lighting for pathways. Refer to landscape plans for additional information. Lighting shall be 1 fct minimum on path.
4. All lighting shall comply with Cal Green and Title 24. Contractor is responsible for all title 24 forms including all Acceptance testing.
5. All lighting shall be 2700k.

B. General

1. RELATED DOCUMENTS
 - a. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
2. SUMMARY
 - a. Section includes all exterior luminaires used on the exterior of the building.
3. DEFINITIONS
 - a. CCT: Correlated color temperature.
 - b. CRI: Color rendering index.
 - c. Fixture: See "Luminaire."
 - d. IP: International Protection or Ingress Protection Rating.
 - e. Lumen: Measured output of lamp and luminaire, or both.
 - f. Luminaire: Complete lighting unit, including lamp, reflector, and housing.
4. SUBMITTALS, SAMPLES, HANDLING AND SHOP DRAWINGS
 - a. See Section 265000 "General Lighting Provisions."
 - b. See Luminaire Schedule located on drawings for additional information.
5. WARRANTY
 - a. See Section 265000 "General Lighting Provisions."

PART 2 - PRODUCTS

1. PERFORMANCE REQUIREMENTS

- a. Seismic Performance: Luminaires shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
 - b. Seismic Performance: Luminaires and lamps shall be labeled vibration and shock resistant.
 - 1) The term "withstand" means "the luminaire will remain in place without separation of any parts when subjected to the seismic forces specified and the luminaire will be fully operational during and after the seismic event."
2. LUMINAIRE REQUIREMENTS
- a. Manufacturers: See luminaire Schedule on drawings for acceptable manufacturers of individual luminaires.
 - b. General:
 - 1) Provide new exterior luminaires of sizes, types, and ratings indicated, complete with, but not limited to, housings, energy-efficient lamps, lamp holders, reflectors, energy efficient ballasts, starters, bases, backing, and wiring. Ship luminaires factory-assembled, with parts and components required for a complete installation. Design luminaires with concealed hinges and catches, with metal parts grounded as common unit, and construct as to dampen ballast-generated sound. Luminaires shall be UL Listed for Wet or Damp Location.
 - 2) The finish of all luminaires shall be treated in such a manner as to render it corrosion resistant. All metal surfaces of new luminaires shall be bonderized, galvanized or sherardized after fabrication and treated to provide rust inhibiting and finish coat adherence properties. All metal surfaces of refurbished materials should be made to match the original new condition.
 - c. Lamp Rating: Lamp marked for outdoor use.
 - d. Source Limitations: Obtain luminaires from single source from a single manufacturer.
 - e. Source Limitations: For luminaires, obtain each color, grade, finish, type, and variety of luminaire from single source with resources to provide products of consistent quality in appearance and physical properties.
3. LUMINAIRE STANDARDS
- a. A light standard shall consist of a metal pole, base, reinforcing, and connector bolts.
 - b. All structural components of light standards, bases, couplers anchor bolts, luminaires, and other attachments to be used for lighting shall be designed for wind velocity or as required by local wind loading conditions.
 - c. All standards shall have cable-entrance holes and hand holes with appropriate covers. Metal surfaces shall be free of any imperfections marring the appearance and or any burrs or sharp edges that may damage the cable.
 - d. All metal poles shall be supplied with pole caps.
 - e. All metal poles and base flanges shall have a powder coat finish. Paint color shall be as specified in the luminaire schedule.
 - f. After erection and alignment of the light standard, the space between the foundation and the base plate shall be filled with non-shrink grout.
 - g. Light standard assemblies shall be fabricated and placed in accordance with the details and dimensions shown on the Drawings, or as directed by the Architect. The careful erection and aligning of the components furnished shall be considered a

most essential feature of the installation and shall be as near to true vertical alignment as practical.

- h. Where dissimilar metals are used in the materials of the light standard, contractor shall ensure protection against galvanic corrosion.
- i. The light standard and its accessories must be manufactured of material of like appearance.
- j. Provide removable unitized ballast/component tray with separable connector in all pole mounted luminaires.
- k. Luminaire Pole Bases: Size and construct as indicated on Drawings. Project anchor bolts per luminaire manufacturer and structural requirements or **2 inches** minimum above base if not otherwise noted. Install poles on bases plumb; provide shims for adjustment. Provide structural grout around pole base.

4. FOUNDATIONS

- a. The Contractor shall be required to construct a new foundation at each location according to the electrical and structural details.
- b. All foundations shall be constructed to not less than minimum dimensions as designed by structural consultant including but not necessarily limited to reinforcing, concrete strength and mixture, depth, and elevation of the top of the base above finished grade, etc. The size and number of conduit bends shall be installed in each foundation as indicated in the Drawings. The caged anchor bolt assembly shall be placed in the foundation so that it remains plumb and with the projection set as specified by the pole manufacturer. Anchor bolts shall be "caged" in a manner specified by the manufacturer and approved by the Structural Engineer. The top elevation of the foundation shall be set accurately and leveled.
- c. All materials removed from the foundations and not required shall be disposed of as directed by the Owner.
- d. Variations in Finishes: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- e. Luminaire Finish: Manufacturer's standard paint applied to factory-assembled and -tested luminaire before shipping. Where indicated, match finish process and color of pole or support materials.
- f. Factory-Applied Finish for Aluminum Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
 - 1) Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
 - 2) Natural Satin Finish: Provide fine, directional, medium satin polish (AA-M32); buff complying with AA-M20 requirements; and seal aluminum surfaces with clear, hard-coat wax.
 - 3) Class I, Clear-Anodic Finish: AA-M32C22A41 (Mechanical Finish: Medium satin; Chemical Finish: Etched, medium matte; Anodic Coating: Architectural Class I, clear coating **0.018-mm** or thicker) complying with AAMA 611.
 - 4) Class I, Color-Anodic Finish: AA-M32C22A42/A44 (Mechanical Finish: Medium satin; Chemical Finish: Etched, medium matte; Anodic Coating:

Architectural Class I, integrally colored or electrolytically deposited color coating 0.018-mm or thicker), complying with AAMA 611.

a) Color: Dark bronze.

- g. Factory-Applied Finish for Steel Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1) Surface Preparation: Clean surfaces to comply with SSPC-SP 1, to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1 or SSPC-SP 8.

2) Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.

a) Color: As selected from manufacturer's standard catalog of colors.

b) Color: Match Architect's sample of manufacturer's standard color.

c) Color: As selected by Architect from manufacturer's full range.

5. LUMINAIRE SUPPORT COMPONENTS

- a. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for channel and angle iron supports and nonmetallic channel and angle supports.

PART 3 - EXECUTION

1. GENERAL INSTALLATION REQUIREMENTS

- a. Comply with NECA 1.
- b. Use fastening methods and materials selected to resist seismic forces defined for the application and approved by manufacturer.
- c. Supports:
- 1) Sized and rated for luminaire weight.
- 2) Able to maintain luminaire position after cleaning and relamping.
- 3) Support luminaires without causing deflection of finished surface.
- 4) Luminaire-mounting devices shall be capable of supporting a horizontal force of 100 percent of luminaire weight and a vertical force of 400 percent of luminaire weight.
- d. Install all luminaires at locations and heights as indicated, in accordance with luminaire manufacturer's written instructions, applicable requirements of NEC, NECA's "Standard of Installation," NEMA standards, and with recognized industry practices to ensure that luminaires fulfill all requirements. All workmanship shall be first class and finished work shall present a neat, uncluttered appearance. The Contractor shall coordinate his work with other construction phases so as to provide a minimum of interference to the combined operations.
- e. Coordinate layout and installation of luminaires with other construction.
- f. Use belt slings or non-chafing ropes to raise and set pre-finished luminaire poles.
- g. Where a ground wire is indicated, connect ground wire to pole and luminaire ground; otherwise, provide a ground rod at each pole with grounding conductors.

2. CORROSION PREVENTION

- a. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.
- b. Steel Conduits: Comply with Section 260533 "Raceways and Boxes for Electrical Systems." In concrete foundations, wrap conduit with 0.010-inch thick, pipe-wrapping plastic tape applied with a 50 percent overlap.

END OF SECTION 265600

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SECTION 270500 - COMMON WORK RESULTS FOR COMMUNICATIONS

PART 1 - Provide provisions only (conduit, backbox, pullstring) for communications and data devices shown on the plans. Cabling and faceplates shall be provided by others.

END OF SECTION 270500

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SECTION 311000 – SITE PREPARATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Locate and mark existing utilities within the limits of work.
- B. Remove existing trees, including root ball, within the area of work, as indicated on plan.
- C. Remove existing surface improvements within the area of work as indicated on plan.
- D. Remove existing subsurface utilities, including appurtenances, within the area of work, as indicated on plan.
- E. Properly dispose of all excess and unsuitable material.
- F. Strip all areas within the limits of work as indicated on the plan.
- G. Deploy and subsequently remove temporary construction area and tree protection fencing at completion of construction.
- H. Install and maintain erosion control measures.

1.2 RELATED SECTIONS

- A. Earthwork - Section 312000
- B. Trenching, Backfilling and Compaction - Section 312316

1.3 REFERENCES

- A. Reference Data:
 - 1. If the year of the adoption or latest revision is omitted from the designation, it shall mean the specification, manual or test designation in effect the date the Notice to Proceed with the work is given.
- B. Caltrans Standard Plans and Specifications.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 CLEARING AND GRUBBING

- A. Install tree protective fencing around trees designated to be saved, prior to the start of demolition work. See Civil and Landscape Plans and Specifications. Install fencing as far from the trunk as possible to allow for construction of proposed improvements. Maintain fencing throughout duration of construction.
- B. The area above the natural ground surface shall be cleared of all vegetation such as trees not designated to be saved, roots, brush, grass, weeds, and all other objectionable material including buildings (footings, slabs, etc.), asphalt, concrete, curbs, mulch, headerboard, ramps, stairs, utility piping (including appurtenances), bike racks, fences/gates, site furniture, and similar materials, within the limits of construction.
- C. All concrete and asphalt pavements and other existing improvements within the areas to be developed should be removed during site demolition. At the Contractor's option, salvaged class 2 aggregate base material may be stockpiled for reuse.
- D. Existing building foundations should be entirely removed below final subgrade in the building pad areas, and to a depth of at least three feet in areas outside the building footprints. The excavations beneath the planned building area should be backfilled with engineered fill. See also Section 312000.
- E. The natural ground surface within the entire site, except within the tree protection zones, shall be grubbed to a depth necessary to remove all stumps, buried logs, roots over 2-inches in diameter, and all other unsuitable material. Stumps shall be removed to a depth of at least 24" below original grade.
- F. Existing utilities designated to be removed that do not conflict with proposed improvements may be abandoned in place. If they are abandoned in place, the utility shall be slurried and capped. Any portions of these utilities that conflict with the new improvements shall be removed.
- G. All unsuitable material shall be removed from the construction area and disposed of properly. Comply with hazardous material abatement regulations that may apply.

3.2 DEMOLITION SEQUENCING

- A. Permanent and/or temporary facilities may need to be installed prior to demolition to limit utility outages. Any planned and or necessary interruption of existing utilities shall be coordinated with the Construction Manager. A minimum of one week's notice shall be provided before any such interruption.

3.3 STRIPPING

- A. The upper soils containing grass, small roots, and other vegetation, to a depth of 4+/- inches,

shall be stripped from and removed from the site. Deeper stripping may be required in localized areas to remove roots or other concentrations of organic material.

- B. Dust control shall be performed by the contractor during all phases of the construction. Payment for the dust control work involved shall be considered included in the items of work and no additional allowance will be made therefor.
- C. The Geotechnical Engineer will observe the clearing and stripping operations and recommend the maximum depth of stripping required and any additional excavation necessary due to contamination of materials or concentrations of vegetation.
- D. All suitable stripped material in excess of those needed to backfill landscape and/or planter areas shall be removed from the project site and disposed of properly.

3.4 CLEARED MATERIAL

- A. The objectionable cleared material including buildings (footings, slabs, etc.), curbs, mulch, headerboard, ramps, utility piping (including appurtenances), bike racks, fences/gates, site furniture, etc., shall be removed from the project site and disposed of properly.

3.5 STRIPPED MATERIAL

- A. Excess and objectionable stripped material including asphalt and concrete pavements, grass/vegetation, etc. shall be removed from the project site and disposed of properly. Contractor is encouraged to recycle the existing aggregate base materials for use in hardscape areas only (non-building).

3.6 EROSION AND SEDIMENT CONTROL

- A. Install and maintain erosion control devices/measures, including, but not limited to drainage inlet protection, fiber rolls, silt fence, etc., until such time as all vegetative and hard surface improvements within their individual tributary areas are completed. Provide periodic maintenance of all such devices, and following completion of said improvements, remove and dispose of erosion control devices and repair surfaces to match final specified surface finishes.
- B. Any areas where ground has been disturbed, and where final landscaping has not been installed by October 15, will require the installation and maintenance of erosion control devices by the Contractor, as generally noted in the Erosion Control Notes on the plans.
- C. Additionally, the Contractor shall implement and adhere to the requirements of the Water Pollution Control Plan (WPCP), including, but not limited to, rain event inspections, storm water discharge sampling and analysis, vehicle/equipment maintenance, and cleaning, etc..

3.7 SURFACE IMPROVEMENT AND UTILITY REMOVAL AND RELOCATION

- A. The Contractor shall have Underground Service Alert mark all existing public utilities as a first order of work. Additionally, the Contractor shall have a locating service mark all existing

private utilities within the limits of work.

- B. The Contractor shall pothole each existing utility that will be extended or reused at its point of cut and removal to confirm the actual locations and depths as well as all proposed crossings as shown on the drawings. Notify Engineer of results via the RFI process.
- C. Existing water, sewer, storm drain, gas, electrical, communication (data) services and laterals to be abandoned or removed as indicated on the plans shall be provided with replacement facilities as to comply with construction sequencing requirements and limit utility/service outages as required by the Owner.
- D. See Mechanical, Electrical, and Civil plans for detailed removal/replacements requirements.

3.8 CLEAN UP

- A. Remove all debris and stains resulting from the work of this section.

END OF SECTION 311000

SECTION 312000 - EARTHWORK

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Description of suitable materials for earthwork operations.
- B. Definitions of terms.
- C. Description of the duties and responsibilities of the Geotechnical Engineer.
- D. Excavate earth, rock, and all material regardless of character and subsurface conditions.
- E. Requirements for excavation, overexcavation, and disposal of surplus and unsuitable material off the project site.
- F. Dewatering of excavations.
- G. Spread and compact engineered/import/select fill.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including the Division 01 Specification Section, apply to this Section.
- B. Related Sections include the following:
 - 1. Site Preparation - Section 311000
 - 2. Trenching, Backfilling and Compaction - Section 312316

1.3 REFERENCES

- A. Reference Data:
 - 1. If the year of the adoption or latest revision is omitted from the designation, it shall mean the specification, manual, or test designation in effect the date the Notice to Proceed with the Work is given.

1.4 EXISTING CONDITIONS

- A. All grading activities shall be in accordance with the project Geotechnical Investigation, prepared by LACO Associates, titled Geotechnical Evaluation and Geohazard Report, and dated June 3, 2020.
- B. The project site is underlain by interbedded alluvial deposits variously composed of low to high plasticity, medium stiff to very stiff, silty to sandy clay and loose to medium dense silty and clayey sands and gravels.

- C. It is the Contractor's responsibility to achieve the finished grades shown on the plan, and to determine the quantity of and provide for soil import or export required to achieve plan grades.

1.5 GEOTECHNICAL ENGINEER

- A. The work covered by these specifications shall be performed under the observation of the Geotechnical Engineer, who shall be retained and paid by the Owner. The Geotechnical Engineer will be present at the site intermittently during the conduct of work to observe the work, and to perform field and laboratory tests to evaluate material quality and compaction. The Contractor shall cooperate with the Geotechnical Engineer in performing the observations and tests. The Geotechnical Engineer shall notify the Contractor of failing test results. The Contractor shall rework these areas until the specified degree of compaction is obtained. At the completion of his work, the Geotechnical Engineer shall submit a report to the Owner, including a tabulation of all tests performed. The Geotechnical Engineer's costs for observing and testing the repair of unsatisfactory work performed by the Contractor shall be billed to the Owner. The Owner shall pay them and then shall deduct the amount from monies due the Contractor.

1.6 SUBMITTALS

- A. Submit test reports and compaction curve analysis for engineered fill required in accordance with Section 013300.

1.7 DEFINITIONS

- A. Standard Specifications
 - 1. Where referred to in these specifications, "Standard Specifications" shall mean the State of California Standard Specifications, latest edition. All work shall be carried out in conformance with the Standard Specification, unless otherwise specified herein.
 - 2. Where referred to in these specifications, "County" shall mean the latest edition of the standard plans and drawings for the County of Mendocino. All work shall be carried out in conformance with the standards.
 - 3. Where referred to in these specifications, "City" shall mean the latest edition of the standard plans and drawings of the City of Ukiah. All work shall be carried out in conformance with the referenced standard.
 - 4. Site Grading shall comply with the applicable sections of Title 24 and of Appendix J of the California Building Code, latest adopted edition.
- B. Percent Compaction -- As referred to in these specifications, percent compaction is the required in-place dry density of the material, expressed as a percentage of the maximum dry density of the same material determined by the ASTM D 1557 test procedure.
- C. Optimum Moisture Content -- As referred to in these specifications, optimum moisture

content is the moisture content, percent (by dry weight), corresponding to the maximum dry density of the same material as determined by the ASTM D 1557 test procedure.

- D. Soil Subgrade – Where used in these specifications, soil subgrade shall mean within exterior slab areas, the surface on which aggregate base material is placed, and within building areas, the surface on which footings bear and/or on which floor slab structural section is placed.

PART 2 - PRODUCTS

2.1 IMPORT FILL

- A. Import fill shall be material consisting of soil and rock mixtures that: 1) are free of organic material. 2) have a Liquid Limit less than 40 and a Plasticity Limit of less than 20, and 3) have a maximum particle size of 6 inches.
- B. In general, the onsite soils, to the extent that they may be available, will be suitable for use as fill, provided they are prepared as described below.
- C. General engineered fill shall be approved by the Soils Engineer prior to fill placement.

PART 3 - EXECUTION

3.1 SPILLAGE, DUST AND EROSION CONTROL

- A. The Contractor shall prevent spillage when hauling on or adjacent to any public streets or highways. In the event that such occurs, the Contractor shall remove all spillage and sweep, wash or otherwise clean such streets or highways as required by local City and County authorities and/or the State of California.
- B. The Contractor shall take all precautions needed to prevent a dust nuisance to adjacent public or private properties and to prevent erosion and transportation of soil to downstream adjacent properties. Any damage so caused shall be corrected or repaired by the Contractor at no cost to the Owner.

3.2 EXCAVATION

- A. Following clearing and stripping, overexcavate existing subgrade materials in non-building areas to planned subgrade. The overexcavations should extend three feet beyond the edges of exterior hardscape edges, as required. The overexcavated materials may be stockpiled and reused as properly placed compacted/engineered fill. The excess and unsuitable excavated material shall be disposed of properly, offsite.
- B. The upper 8" of all exposed exterior hardscape subgrade soils shall be scarified, thoroughly moisture- conditioned to at least 3% above optimum moisture content, and

compacted to at least 90% relative compaction. The upper 6" of subgrade in asphalt pavement areas shall be compacted to at least 95% relative compaction.

- C. Once compacted, the subgrade materials should be maintained at least 3 percentage points above optimum moisture content prior to placement of additional fill or aggregate base material. This is likely to require periodic sprinkling during the dry season. Should drying of the soils occur, they should again be scarified, moisture-conditioned to the proper moisture content and recompacted.
- D. Recompacked subgrade shall have a firm and unyielding surface under the observation of the Geotechnical Engineer or their designated representative. If excessive pumping or instability is observed, overexcavation and the placement of a stabilizing fabric and a 12" to 18" thick layer of class 2 aggregate base may be required by the project Geotechnical Engineer.
- E. Final surfaces exposed by the completed excavations (cutting) shall be finished true to line and grade. Depressions shall be filled and compacted, and loose material shall be removed.
- F. Temporary construction slopes shall not exceed requirements set forth in Cal-OSHA Industrial Safety Orders, or ratio suggested in the field by the Geotechnical Engineer.
- G. It is the Contractor's responsibility to achieve the finished grades shown on the plan, and to determine the quantity of and provide for soil import or export required to achieve plan grades
- H. Refer to the Geotechnical Investigation Report for further requirements.

3.3 FIELD QUALITY CONTROL

- A. The Geotechnical Engineer will observe the excavation, soil removal, moisture-conditioning and recompaction operations. After the completion of these operations and before placement of fill, the Contractor shall obtain the Geotechnical Engineer's approval of the site preparation in each area.

3.4 DEWATERING

- A. During excavation activities, groundwater may be encountered. The contractor is responsible for accounting in their bid the necessary equipment required to remove groundwater from excavations to allow for the proper placement of fill per the Geotechnical Report.
- B. Groundwater shall be discharged through a silt-sack type device at the outlet end of the discharge pipe to allow for filtration.

- C. Silty water shall not be discharged to any storm drain.

3.5 PLACEMENT MOISTURE CONDITIONING AND COMPACTION

- A. Exposed subgrade materials shall be ripped, moisture-conditioned, and compacted as noted in Paragraph 3.02B. above. Onsite fill materials to be used in exterior hardscape areas should subsequently be placed in loose, horizontal lifts of 8 inches thick or less, moisture-conditioned to within 2% of optimum moisture content or as directed in the field by the project Geotechnical Engineer, and uniformly compacted to at least 90% relative compaction. The upper 6" of subgrade in asphalt pavement areas shall be compacted to at least 95% relative compaction
- B. All site preparation and fill placement should be observed by a representative of the Geotechnical Engineer.
- C. Where field density tests indicate that required compaction and/or moisture content has not been attained, the fill shall be reconditioned as necessary and recompacted to the required density and/or moisture content prior to placing additional material. The Contractor shall be responsible for placing, moisture conditioning and compacting approved material in accordance with these specifications.
- D. Sufficient testing and inspection should be performed to assure compliance with the recommended compaction standards. Samples of proposed native or imported fill should be submitted to the Geotechnical Engineer material testing laboratory for assessment at least 48 hours prior to placement or importing to the site (whichever is soonest).

3.6 FINISH

- A. Fill slopes shall be compacted by slope rolling and trimming or shall be overfilled and trimmed back to planned grade. The completed fill shall be finished true to line and grade. Depressions shall be filled and compacted and all loose material shall be removed.
- B. After completion of compaction and finish grading operations, fill slopes, horizontal surfaces disturbed by construction operations, and cut slopes shall be moisture conditioned and 'trackwalked' to provide a firm and uniformly roughened surface free of loose material.
- C. See also requirements in landscape specifications for slope and landscaped area requirements.

3.7 CLEAN UP

- A. Remove all debris and stains resulting from the work of this section, including any and all excess material, which shall be removed from the project site.

END OF SECTION 312000

SECTION 312300 – STRUCTURAL EXCAVATION AND FILL

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Available Information: “Geotechnical Evaluation and GeoHazard Report” prepared by LACO Associates and dated June 3, 2020, is available in accordance with “Information Available to Bidders”.

1.2 SUMMARY

- A. This Section Includes:
 - 1. Excavation for foundations and pits.
 - 2. Backfilling structural excavations as required.
 - 3. Fill over concrete mat foundations.
- B. Related Sections:
 - 1. Division 03 Section “Concrete Formwork” for formwork for footings.
 - 2. Division 31 Section “Earthwork” for mass excavation and/or fill for building pad.

1.3 REFERENCES

- A. ASTM: Standards of the American Society for Testing and Materials (ASTM) apply where cited in this Section.
- B. American Concrete Institute (ACI):
 - 1. ACI 301 - Specifications for Structural Concrete for Buildings, 2010.
 - 2. ACI 229R – Controlled Low Strength Materials, 2013.
- C. California Department of Transportation’s (Caltrans):
 - 1. CSS - Standard Specifications, 2010.

1.4 SITE CONDITIONS

- A. Notify Owner’s Representative when site conditions differ from findings of Geotechnical Investigation Report.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Concrete: Concrete materials and proportions shall be in accordance with ACI 301 to produce concrete with minimum compressive strength of 2500 psi at 28 days.

- B. Structural Fill: CSS Section 26, Class 2 Aggregate Base rock, 3/4" size.
- C. Controlled Low Strength Material: Machine mixed, self-compacting, low-strength fill consisting of fine aggregate, cementitious materials, entrained air and water. Mix and mixing shall conform to recommendations of ACI 229 to achieve the following properties:
 - 1. Slump: 8 to 10 inches.
 - 2. Compressive Strength:
 - a. For backfill: Minimum 150 psi to maximum 300 psi at 30 days.
 - b. For fill beneath footings: Minimum 300 psi at 30 days.
 - 3. Fresh Density: 115 to 145 pounds per cubic.
 - 4. Subsidence: Minimal; a maximum of 1/16" per foot of thickness.
- D. Pea Gravel: ASTM C 33, Size No 7.
 - 1. Fill material (over mat foundation): Crushed rock of uniform gradation, 100% passing 3/4 inch sieve.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Take measures to prevent surface water from entering excavations.
- B. Notify Geotechnical Engineer at least 48 hours prior to commencing and upon completion of excavations.

3.2 EXCAVATION

- A. Accurately cut foundation excavations to dimensions and elevations shown on Drawings to tolerances of ACI 301.
- B. Where sides are unstable or excavations are not accurately cut, over-excavate to permit placement and removal of formwork.
- C. Shore and brace excavations as required to prevent caving and danger to persons and structures. Comply with applicable safety regulations.
- D. Prepare bottoms of footing excavations to produce conditions acceptable to Owner's Representative, based on professional opinion of Geotechnical Engineer.
 - 1. The bottoms of excavations shall be firm, undisturbed earth, clean and free from loose material, debris and foreign matter.
 - 2. Remove or recompact disturbed material.
 - 3. Remove soft or unstable material to a depth satisfactory to Geotechnical Engineer.
 - 4. Fill over-depth excavations with concrete, flowable fill, or structural fill compacted to minimum 95% relative compaction.
- E. Maintain footing conditions approved by Geotechnical Engineer until concrete work is complete.

1. In periods of wet weather, over-excavate footings and place 2-inches minimum concrete mud-slab as soon as practical after completing excavation.
- F. Keep excavations free of water at all times until foundation concrete is cast.
- G. Stockpile or remove excavated material from site in accordance with Division 31 Section "Earthwork".

3.3 BACKFILLING

- A. Place and compact fill in accordance with Division 31 Section, "Earthwork".
 1. Use pea gravel or controlled density material for backfill against sides of footings and pits, where adequate compaction of structural fill cannot be achieved.
- B. Backfill footings after formwork is removed. Do not backfill pits until concrete has cured a minimum of 7 days.

3.4 FILL OVER CONCRETE MAT FOUNDATIONS

- A. Preparation:
 1. Verify piping is securely supported against vertical and lateral displacement.
 2. Where area is not enclosed prior to placement of fill, make provision for removal of water.
- B. Placement: Fill may be placed to the full specified thickness without compaction.
 1. Pipes: Bed pipes in fill up to grade of underside of pipe, taking care not to place material atop pipe. Shovel slice material under and beside the pipe up to the spring line without moving the pipe.
- C. Consolidation: Immediately prior to placement of vapor retarder, consolidate surface with a minimum of 3 passes of a vibratory plate. Achieve specified grade to plus 0 inch to minus 1-1/2 inch tolerance.

3.5 FIELD QUALITY CONTROL

- A. The Geotechnical Engineer will observe footing excavations prior to placement of reinforcement; and again, immediately prior to casting of concrete.
- B. The Geotechnical Engineer will observe the placement of fill and backfill material.

END OF SECTION 312300

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SECTION 312316 – TRENCHING BACKFILL AND COMPACTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Locate and mark existing utilities within the limits of work.
- B. Trenching and other excavation needed for the installation of pipe (storm drain, water, sanitary sewer and gas) and appurtenances.
- C. Provide and install bedding material as specified for each type of utility.
- D. Backfill and compact trenches and excavations with suitable material, as specified.
- E. Provide and install subbedding material as required.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including the Division 01 Specification Sections apply to this Section.
- B. Related Sections include the following:
 - 1. Site Drainage – Section 334000
 - 2. Water Utility Distribution Piping – Section 331100
 - 3. Sanitary Sewerage Utilities – Section 333000

1.3 SUBMITTALS

- A. In accordance with Section 013300, Submittal Requirements:
 - 1. Sand equivalent and gradation analysis of bedding and backfill materials.

1.4 REFERENCES

- A. Standard Specifications
 - 1. Where referred to in these specifications, "Standard Specifications" shall mean the State of California Department of Transportation Standard Specifications, latest edition. All work shall be carried out in conformance with the Standard Specifications unless otherwise specified herein.

1.5 EXISTING SITE CONDITIONS

- A. The Contractor shall have Underground Service Alert mark all existing public utilities as a first order of work. Additionally, the Contractor shall have a locating service mark all existing private utilities within the limits of work.
- B. The Contractor shall pothole each existing utility that will be extended or reused at its

point of cut and removal to confirm the actual locations and depths, as well as all proposed crossings as shown on the drawings. Notify Engineer of results via the RFI process.

- C. Existing water, sewer, storm drain, gas, electrical, communication (data), etc. services and laterals to be abandoned or removed as indicated on the plans shall be provided with replacement facilities as to comply with construction sequencing requirements and limit utility/service outages as required by the Owner. See Mechanical, Electrical, and Civil plans for detailed removal/replacements requirements.
- D. The Contractor shall acquaint himself with all site conditions. If unknown/unmarked active utilities are encountered during the work, the Engineer shall be promptly notified for instruction via the RFI process. Failure to notify will make the Contractor liable for damage to these utilities arising from Contractor's operations subsequent to his discovery of such unknown/unmarked utilities.
- E. The Contractor shall review the Soils Investigation and plan their work accordingly.

1.6 QUALITY ASSURANCE

- A. Testing Agency: The project Geotechnical Engineer representative (Inspector) shall verify the adequacy of sub-bedding conditions and monitor bedding, backfilling, and compaction operations.
- B. Unsatisfactory Conditions: The Inspector will advise the Contractor immediately if unsatisfactory conditions or test results are observed. The area where compaction is unsatisfactory shall be reworked until the required density has been attained. The Inspector shall have the authority to reject structural bedding or backfill until unsuitable material has been replaced and/or rework, as needed, has taken place. It shall be the sole responsibility of the Contractor to achieve the specified degree of compaction.

1.7 PROTECTION FROM CAVING

- A. Construction Safety Orders
 - 1. Nothing in this section shall be deemed to allow the use of a shoring, sloping, or protective system less effective than that required by the Construction Safety Orders. The Contractor shall take all necessary measures to protect the workmen and adjacent areas and structures from the hazards of the trenching or excavation operations. Sheet piling and other sheeting shall be withdrawn in such a manner as to prevent caving at the walls of excavation or damage to piping or other structures. Except as may be hereinafter modified, no sheeting shall be left in the trench and no backfill shall be made against the sheeting before it is removed. Any sheeting extending below the invert of the pipe shall be left in place by cutting off in a manner satisfactory to the Inspector.
- B. Liability
 - 1. Nothing in this section shall be construed to impose tort liability on the Architect

or the Design Engineer.

PART 2 - PRODUCTS

2.1 TRENCH STABILIZATION SUBBEDDING

- A. Drain rock for trench stabilization subbedding shall be of the nominal sizes designated as 3/4" x 1/4".

2.2 BEDDING MATERIAL (STORM DRAIN, WATER AND SANITARY SEWER)

- A. Bedding material shall be well graded sand free from vegetable matter and refuse.
- B. The minimum sand equivalent value shall be 30.
- C. The grading shall conform to the following:

Sieve	Percentage Passing	
	Minimum	Maximum
1"	100	100
3/4"	100	100
3/8"	100	100
No. 4	90	100
No. 200	0	5

2.3 BEDDING MATERIAL (GAS)

- A. Bedding material for gas line installation shall be backfill sand meeting the requirements of the PG&E Green Book.

2.4 BACKFILL

- A. In non-hardscape areas (as shown on the Increment 3 set of plans), backfill material may be native excavated material free of vegetable matter, refuse and other unsatisfactory material.
- B. The backfill material shall be free of stone and lumps exceeding 4 inches in greatest dimension.
- C. Backfill material shall have minimum Plastic Index (PI) value of 15. Liquid limit (LL) value shall be no more than 40.
- D. Granular trench backfill material may be used in lieu of native material at the Contractor's option.

2.5 GRANULAR BACKFILL MATERIAL

- A. Within paved and other hardscape areas, the upper 12" of backfill for trenches shall be Caltrans Class 2 aggregate base.
- B. Granular backfill material, above bedding material, and below class 2 aggregate base, shall be gravel, sand or rock material free from deleterious materials, shall be used in hardscape areas.
- C. Minimum sand equivalent value shall be 25.
- D. Granular backfill material shall conform to the following:

Sieve Size	Percentage Passing
3"	100
3/4"	-
3/8"	-
No. 4	40 - 100
No. 30	10-100
No. 200	-

PART 3 - EXECUTION

3.1 EXCAVATION

- A. The Contractor shall make all necessary excavations to construct the work shown on the Drawings and in accordance with trench detail appropriate to the utility being installed and the City Standards.
- B. The Contractor shall perform all excavations of every description and all substances encountered to the depth indicated on the drawings. During excavation, that material suitable for backfilling shall be deposited in an orderly manner, a sufficient distance from the banks for the trench to avoid overloading and to prevent slides or cave-ins. All excavated material not required or suitable for backfill shall be removed and properly disposed of offsite.
- C. Excavation shall include the removal of all materials or surface obstructions of any nature that would interfere with the execution of the work, and such items shall be returned to their equivalent preconstruction condition after installation of utilities.
- D. All trench excavation work shall conform to the Division of Industrial Safety Construction Safety Orders, which are currently in use.

3.2 TRENCH WIDTH AND DEPTH

- A. The maximum allowable width of trench measured at the top of the pipe shall be the outside diameter of the pipe exclusive of bells and collars, plus twenty-four (24) inches, and such maximum width shall be inclusive of all trench sheeting. Minimum width of trench for

pipes 18" diameter and less shall be pipe diameter plus 6". Maximum width of trench for pipes 18" diameter and less shall be pipe diameter plus 9". Minimum width of trench for pipes 18" diameter and greater shall be pipe diameter plus 9". Maximum width of trench for pipes 18" diameter and greater shall be pipe diameter plus 12". Whenever the maximum allowable trench width is exceeded for any reason, the Contractor shall, at his expense, embed or cradle the pipe in concrete in a manner satisfactory to the Engineer.

- B. The trench shall be excavated to the dimensions and depth shown on the Drawings and in a manner, which will produce a firm foundation for supporting the entire length of each section of pipe. Bell holes shall be provided so that the load is carried on the pipe barrel.
- C. Minimum cover for domestic and recycled/reclaimed water lines shall be 24".
- D. Minimum cover for fire water lines shall be 42".
- E. Minimum cover for gas lines shall be 30".

3.3 CONTROL OF WATER

- A. The Contractor, at his own expense, shall provide sufficient pumping equipment, and the operation thereof, to remove ground water from the excavation.
- B. Water shall be disposed of in such a manner as to cause no injury to public or private property, nor be a menace to the public health. Discharges directly to storm drainage systems, ditches, and creeks shall not be allowed.
- C. Dewatering shall be performed under a Contractor obtained permit from either the City of Ukiah (if discharge is to the sewer system) or the Regional Water Quality Control Board (if discharge is to the storm drain system). The Contractor is advised that both of these agencies may require testing of the proposed dewatering discharge for contaminants. It shall be the sole responsibility of the Contractor to apply for and obtain the necessary permits, obtain and pay for any required water quality tests, design shoring and dewatering systems, and pay any fees associated with discharging the water to the sanitary sewer system if that option is selected. Permits must be obtained prior to any discharge occurring.

3.4 UNSUITABLE SUB-BEDDING

- A. Where soft, wet, spongy, or unsuitable trench foundation is encountered, sub-bedding material shall be placed under the pipe to facilitate construction. The cost of furnishing and placing sub-bedding material shall be included in the price bid for the job.

3.5 BRACING EXCAVATIONS

- A. Excavations shall be so braced and supported that they will be safe, and the ground alongside the excavation will not slide or settle, and all existing improvements of any kind, either on public or private property will be fully protected from damage.

- B. If any damage does result to such improvements, the Contractor shall make the necessary repairs or reconstruction at his own expense.

3.6 PIPE BEDDING (STORM DRAIN, WATER AND SANITARY SEWER)

- A. Bedding material shall be placed under the pipe before the pipe joints have been completed and inspected.
- B. Bedding material shall be placed carefully around and under the pipe in horizontal layers 4 inches thick after compaction.
- C. The bedding material shall be brought up uniformly on each side of the pipe.
- D. Bedding material shall have the proper moisture content to assure maximum compaction by using hand or pneumatic tampers.
- E. Bedding shall be accomplished in a manner which will not disturb the pipe but will secure a relative compaction of 90 percent.
- F. Bedding shall be installed up to 4 inches below and 12" over the top of the pipe.

3.7 PIPE BEDDING (GAS)

- A. Bedding material shall be placed under the pipe before the pipe joints have been completed and inspected.
- B. Bedding material shall be placed carefully around and to the sides of the pipe in horizontal layers 4 inches thick after compaction.
- C. No compaction is allowed directly above the pipe until there is at least 12" of cover.
- D. The bedding material shall be brought up uniformly on each side of the pipe.
- E. Bedding material shall have the proper moisture content to assure maximum compaction by using hand or pneumatic tampers.
- F. Bedding shall be accomplished in a manner which will not disturb the pipe but will secure a relative compaction of 90 percent.
- G. Bedding shall be installed at least 2 inches below and 12" over the top of the pipe.

3.8 TRENCH BACKFILL

- A. Backfill material shall be placed after the pipe and bedding have been inspected by the Inspector. Native backfill may be used, at the contractor's option, outside of exterior slab and pavement areas. All other areas shall use Caltrans Class 2 aggregate base in the upper

12 inches of the trench backfill. All trenches shall be backfilled to pavement or exterior slab structural section subgrade, or to finished grade in unpaved areas.

- B. Backfill and compaction of utility trenches in and immediately adjacent to building pads, driveways, parking, and other flatwork areas should be such that no settlement will occur.
- C. Where trenches closely parallel a footing and the trench bottom is within a 2 horizontal to 1 (one) vertical plane, projected outward and downward from any structural element, grout slurry should be utilized to backfill that portion of the trench below this plane. The use of slurry backfill is not required where a narrow trench crosses a footing at or near a right angle.
- D. Granular Backfill (Non-native)
 - 1. The backfill material shall be placed in layers not exceeding 6" in uncompacted thickness.
 - 2. Compaction may be accomplished by adding sufficient water to the material as it is placed in the trench to achieve 90 percent relative compaction.
 - 3. Supplemental compactive effort using vibratory means shall be employed if necessary to obtain specified degree of compaction.
 - 4. Ponding or the use of excessive amounts of water will not be allowed.
 - 5. Vibratory or other compaction equipment shall be used whenever necessary to obtain the required compaction, and must be used within 12 inches of pavement subgrade in paved areas, where compaction is required to be 95% R.C.
- E. Native Backfill
 - 1. Native backfill material shall be placed in layers not exceeding 6" in uncompacted thickness.
 - 2. Compaction may be accomplished by adding sufficient water to the material as it is placed in the trench to achieve 90 percent relative compaction.
 - 3. Supplemental compactive effort using vibratory means shall be employed if necessary to obtain specified degree of compaction.
 - 4. Ponding or the use of excessive amounts of water will not be allowed.
 - 5. Vibratory or other compaction equipment shall be used whenever necessary to obtain the required compaction.

3.9 CLEAN UP

- A. Remove all debris and stains resulting from the work of this section.

END OF SECTION 312316

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SECTION 316800 – FOUNDATION TIEDOWN ANCHORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Geotechnical Report: "Geotechnical Evaluation and GeoHazard Report" prepared by LACO Associates and dated June 3, 2020, is available in accordance with "Information Available to Bidders".

1.2 SUMMARY

- A. This Section includes:
 - 1. Permanent tiedown anchors used to provide resistance to seismic uplift forces, including drilling, grouting, stressing, load testing and lock-off.

1.3 SYSTEM REQUIREMENTS

- A. Contractor design responsibility: Contractor shall determine the bond length, borehole diameter and grouting method to achieve the performance requirements, subject to the minimum requirements of the Contract Documents.
- B. Performance requirements:
 - 1. Each tiedown anchor shall be capable of sustaining an Ultimate Load (UL) as designated on Drawings, when performance tested in accordance with Part 3 of this Section.
- C. Minimum requirements:
 - 1. Contractor shall not be permitted to adjust the location and number of tiedown anchors or change the anchor bar size or type from that designated in the Contract Documents.
 - 2. Minimum borehole diameter shall be as designated on Drawings.
 - 3. Free-stressing length designated on Drawings is a minimum requirement. Free-stressing length shall not exceed specified minimum by more than five feet unless approved by Owner's Representative, considering effect on anchor elongation.
 - 4. Minimum length of bonded zone shall be as designated on Drawings.
 - 5. Provide the minimum total anchor length designated on Drawings to achieve the required load capacity of anchor groups, where indicated.
- D. Performance Verification: All tiedown anchors shall be tested in accordance with Part 3 of this Section.
 - 1. Contractor shall complete the initial performance testing program prior to installation of additional anchors.

1.4 REFERENCES

- A. Standards listed below apply where designation is cited in this Section. Where the

applicable year of adoption or revision is not listed below, the latest edition applies.

- B. ASTM: Standards of the American Society for Testing and Materials (ASTM) apply where cited in this Section.
- C. PTI: Post-Tensioning Institute's "Recommendations for Prestressed Rock and Soil Anchors", 2014 (PTI DC35.1-14)

1.5 DEFINITIONS

- A. Alignment Load (AL): A nominal load applied to an anchor during testing to keep the testing equipment positioned correctly.
- B. Design Load (DL): As designated on Drawings. The Design Load is the maximum anchor load determined using allowable stress load combinations.
- C. Free-stressing length: The length of the anchor bar that is not bonded to the surrounding ground or grout during stressing, measured from the bearing plate.
- D. Lock-off load: The prestressing force after transferring the load from the jack to the foundation, as specified on the Drawings.
- E. Ultimate Load (UL): The maximum load to which performance test anchors are subjected, equal to the maximum load determined based on load combinations for strength design using overstrength factors. Anchors designated for performance testing shall be subjected to UL equal to 240% of DL.
- F. Proof Load (PL): The maximum load to which production anchors are subjected, equal to 160% of DL.
- G. Tiedown: A system used to transfer tensile loads to soil or rock that includes the anchor bar, anchorage, corrosion protection, sheathings, centralizers, and grout.

1.6 SUBMITTALS

- A. Submittal procedures and administrative provisions are established by Division 01 Section "Submittals".
- B. Qualifications: Project lists for the Anchor Installer.
- C. Design calculations: Generate calculations showing test load, nominal borehole diameter, bond length and free-stressing length for each tiedown. Indicate basis for determination of bond length. Identify minimum and maximum anchor deformation under Proof Load.
 - 1. Calculations shall bear the seal and signature of a Civil Engineer registered in the State of California.
- D. Fabrication drawings: Indicate bar size and material. Provide detailed drawing of factory installed corrosion protection and sheath systems, including end terminations. Provide detailed drawing of anchor zone, including all anchorage components. Indicate location and type of centering devices. If utilized, specify location of anchor bar splice.
- E. Installation and monitoring procedures: Provide detailed written procedure to be followed for installing anchors, including description of equipment and methods to be used.

Describe procedures for monitoring grout quality, volume of grout, and grouting pressure during installation. Include form proposed for preparation of standard daily log.

- F. Load testing procedures: Describe procedures to be employed for load testing.
 - 1. Submit certified calibration charts for each test jack, pressure gauge, master gauge, and load cell to be used.
- G. Mill test reports: Submit test reports certifying compliance with specified standards to Testing Agency for record purposes.
 - 1. Anchor bars. Include stress-strain curves and creep tests per Section 4.2.2 of PTI document.
 - 2. Cement.
- H. Mix design for grout.
- I. Anchor bar coupler: If utilized, submit code approval report.

1.7 QUALITY ASSURANCE

- A. Installer qualifications: Not less than 5 successfully completed projects within the preceding 5 years with similar site conditions, shaft sizes, and anchor testloads.
- B. Preinstallation conference: Conduct conference at project site to comply with requirements in Division 01 Section "Project Management and Coordination."
 - 1. Schedule: Three weeks minimum prior to installation of tiedown anchors.
 - 2. Attendees: For the Contractor, include representatives of the Anchor Installer and their Professional Engineer. For the Owner, include representatives of the Geotechnical Engineer, Structural Engineer, and Testing Agency.
 - 3. Agenda: General Contractor shall review status of submittals and discuss outstanding items and proposed schedule for work. Anchor Installer shall present procedures for installation, testing, and monitoring. Roles and responsibilities for testing, inspection and monitoring by Contractor, Geotechnical Engineer, and Testing Agency will be reviewed and coordinated. Process for response to field conditions that require modification to approved drawings will be reviewed.
- C. Each anchor shall be load tested by the Contractor, with observation by the Geotechnical Engineer and Owner's Testing Agency in accordance with "Load Testing" provisions of this Section.
 - 1. Jacks shall be calibrated, and load versus gauge pressure/load cell reading curves provided for each pressure gauge, for 25 percent and 75 percent of the minimum jack extension for two cycles of loading, over the full range of expected load usage. At least six (6) load increments shall be applied, and all measured points shall be shown on the calibrations.
 - 2. Provide means to measure load application within an accuracy of plus or minus five percent (5%).

1.8 PRODUCT HANDLING AND STORAGE

- A. Handle anchor bars in such a manner to ensure that bars are not bent and that corrugated PVC sheathing is not damaged. Repair damage to sheathing in accordance with the manufacturer's recommendations.

- B. Maintain anchors free of soil. Do not drag on ground. Store off ground on suitable supports.

PART 2 - PRODUCTS

2.1 TIEDOWNS

- A. General: Factory fabricate tiedown anchor assemblies as one continuous unit to achieve 100-year certified PTI Class I (Double Corrosion Protection) in the completed installation.
- B. Acceptable products: Dywidag Threadbar® Anchors with Double Corrosion Protection, SAS Stressteel Inc. threadbars with DCP, or Williams Threadbar with Multiple Corrosion Protection III (No substitutions).
- C. Anchor bar: Alloy steel threaded bars fabricated from steel conforming to ASTM A722, with a minimum tensile strength of 150,000 psi, and manufacturer's standard threaded deformations.
- D. Factory corrosion protection: Anchor bars shall be encapsulated in a corrugated plastic sheath over the full length of the anchor. The annular space between the bar and the sheath shall be completely filled with encapsulation grout. Encase corrugated sheathing in a smooth plastic sheath over the free-stressing length and tape ends.
 - 1. Plastic sheaths: High density polyethylene (HDPE) according to ASTM D1248, Type III, or polyvinyl chloride (PVC) according to ASTM D1784, Class 13464-B.
 - a. Corrugated sheath: Sheath shall have a minimum wall thickness of 1.5 mils. Inside diameter shall be 1/2-inch minimum larger than the anchor bar diameter, measured from the outside of anchor bar deformations. Outside diameter shall be 1/2-inch minimum larger than inside diameter.
 - b. Smooth sheath: Tube or pipe with a minimum wall thickness of 0.10 inches. Inside diameter shall not be more than 0.25 inches larger than outside diameter of corrugated sheath. Outside diameter shall not exceed 4 inches.
 - c. The materials for accessories such as end caps, grouting caps, grout tubes and sealing caps shall have properties equal to the plastic sheath.
 - 2. Encapsulation grout: A combination of Type I or II Portland cement and potable water. Chemical admixtures that retard set or reduce bleeding may be used. Other admixtures shall be allowed only with approval of Owner's Representative.
 - 3. Tape: 20 mil thick by minimum 2 inch wide polyethylene tape. Same as 3M Scotchrap™ All-Weather Corrosion Protection Tape 51, or approved equal.
- E. Accessories: Furnish manufacturer's standard accessories as necessary for complete installation.
 - 1. Couplers: Shall be as specified by the supplier of the anchor and shall develop at least 100% of the guaranteed minimum ultimate strength of the bar.
 - 2. Anchor nuts and washers: Shall be as specified by the supplier of the anchor and shall develop at least 100% of the guaranteed minimum ultimate strength of the bar. Capable of accommodating variations in angle.
 - 3. Bearing plates: ASTM A36 or ASTM A572, Grade 50 steel.
 - 4. Trumpet: Fabricate from steel pipe according to ASTM A53 with a minimum wall

thickness of

0.20 inches. Trumpet shall have an inside diameter larger than the outside diameter of the smooth sheath.

- a. Trumpet shall be long enough to accommodate movements of the structure and the anchor bar during stressing and testing, but not less than 18 inches. The trumpet shall overlap the smooth sheath by at least 6 inches and the fully encapsulated anchor bar by at least 12 inches.
 - b. Where shown on Drawings, trumpet shall extend full length to bottom of footing to receive waterproofing. Grind inside and outside edges to form minimum 1/16 chamfer and epoxy coat bottom 8 inches for corrosion protection.
 - c. The joint between trumpet and bearing plate shall be made watertight by seal welding.
 - d. A seal to retain corrosion inhibiting compound or grout within trumpet shall be provided between the outside of the smooth sheath and inside face of trumpet. A description of the seal shall be provided to the Owner's Representative for approval. Install seal within 3 inches of bottom of trumpet.
5. Centralizers: PVC devices that will position the anchor bar assembly at the center of the shaft and will hold it securely in place during grout placement. The centering devices shall not interfere with grout placement. Place at 10-foot intervals along bond length.
 6. Covers: Steel or plastic cover that forms a permanent watertight enclosure for the anchor head. Cover shall provide minimum 1 inch vertical clearance over top of anchor bar. Cover shall positively and securely fasten to bearing plate. Cover shall have provision for filling with corrosion inhibiting compound.

F. Fabrication:

1. Shop fabricate anchor bar assemblies. Field splice only as necessary and with approval of Owner's Representative. Splices are not allowed in the free stressing length of the tie down.
2. Anchor bars shall be cut with an abrasive saw.
3. All of the bond length shall be free of dirt, lubricants, or other deleterious substances that may significantly affect bond or the service life of the anchor.
4. Encapsulation grouting shall be done on an inclined frame or bed by injecting the grout from the low end of the anchor.
5. Joints in the plastic sheath shall be made watertight.

2.2 GROUT

- A. A pumpable mixture of Types I or II Portland cement, water, and admixtures. Chemical additives which can control bleed or retard set may be used. Expansive additives will not be allowed. Additives, if used, shall be mixed in accordance with the manufacturer's recommendations.
 1. The grout shall achieve a minimum compressive strength of 2,500 psi at 7 days and 3,500 psi at 28 days. Minimum concrete compressive stress at time of stress is 3,500 psi.
 2. The grout shall bleed less than 2 percent when allowed to stand for 1 hour.

3. Subject to compliance with requirements, fine aggregate (sand) and/ or fly ash may be added to grout mix.

2.3 MISCELLANEOUS

- A. Corrosion-inhibiting compound: Grease or wax with appropriate moisture-displacing, corrosion-inhibiting additives, and self-healing properties. The compound shall permanently stay viscous and be chemically stable and non-reactive with the prestressing steel, the sheathing material, and the anchor grout. Conform with Table 4-1 of PTI "Recommendations for Prestressed Rock and Soil Anchors."

2.4 SOURCE QUALITY CONTROL

- A. Inspection and testing will be performed under provisions of Division 01 Section, "Quality".
- B. Testing Agency will:
 1. Review manufacturer's test reports for compliance with specified requirements.
 2. Verify material identification.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Perform field engineering and layout work including furnishing necessary centerlines, offsets, and grade stakes.
- B. Notify the Geotechnical Engineer at least four working days in advance of the beginning of work or on resumption of work after stoppage. Any hole drilled or cast without continuous observation of the Geotechnical Engineer will be rejected.

3.2 INSTALLATION

- A. Install tiedown anchors in accordance with approved layout drawings and installation and monitoring procedures.
- B. Tolerances:
 1. Plan location: Plus or minus 3 inches.
 2. Vertical alignment: Shafts out of plumb, or differing from prescribed angle, not more than 1.5 percent of length.
 3. Where specified tolerances are exceeded, provide corrective construction to compensate for eccentricity as determined by Owner's Representative and DSA.
- C. Minimum formwork: Case top 2 feet of anchor shaft with leave-in place metal, plastic or fiber tube. Formwork may remain in place. Backfill around form with clean sand upon completion of anchor.
- D. Grouting equipment shall be sized to enable anchor shaft to be grouted in one continuous operation.
 1. Mixer shall be capable of producing a grout free of lumps and undispersed cement. Mixer shall continuously agitate the grout.

2. Neat cement grouts shall be screened to remove lumps. The maximum size of the screen openings shall be 0.25 inches (6.4 mm).
3. Grout pump shall be equipped with a pressure gauge to monitor grout pressures.
- E. Grouting:
 1. Tremie grout from the bottom of the hole. As drill casing is withdrawn pump grout under sufficient pressure to create the bond zone.
 2. Record the quantity of the grout and the grout pressures along the height of the shaft.
 3. Fill the entire anchor shaft with grout in one continuous operation.
 4. Upon completion of grouting, the filled grout tube may remain in the hole.
- F. Post-grouting: The number of phases of post-grouting shall be determined by Installer and proven in Preproduction and Performance Test anchors. Production anchors shall be grouted using the methods and target pressures that were used for installation of acceptable test anchors. Grouting pressures shall be incrementally increased until a refusal is reached or an acceptable amount of grout is pumped.

3.3 LOAD TESTING

- A. Test installed tiedowns in accordance with the procedures herein prior to installation of foundations.
- B. Load testing shall be performed by Contractor, under the observation of Geotechnical Engineer.
- C. Testing shall be performed in accordance with provisions of PTI "Recommendations for Prestressed Rock and Soil Anchors", except as modified herein.
- D. Testing apparatus: Apparatus for applying loads shall be in accordance with ASTM D3689.
 1. Maintain 8 feet clear distance between test anchor and cribbing.
- E. Test the first 2 production anchors plus 2% of the remaining anchors using Performance Test procedures.
 1. Contractor shall propose locations for test anchors. Geotechnical Engineer shall review and approve locations as representative of site conditions.
 2. Do not install other anchors until tests are completed and accepted by Geotechnical Engineer.
- F. Performance test procedures:
 1. Test anchors using the Performance Test procedures and loading schedule (Table 8.1) of PTI "Recommendations for Prestressed Rock and Soil Anchors" except as modified herein. Add two additional loading steps to Table 8.1 as follows.
 - a. Loading step 7. Apply load according to the following increments: AL, 0.25 DL, 0.50 DL, 0.75 DL, 1.00 DL, 1.20 DL, 1.33 DL, 1.60 DL.
 - b. Loading step 8. Apply load according to the following increments: AL, 0.25 DL, 0.50 DL, 0.75 DL, 1.00 DL, 1.20 DL, 1.33 DL, 1.60 DL, 2.00 UL.
 - c. Loading step 9. Apply load according to the following increments: AL, 0.25 DL, 0.50 DL, 0.75 DL, 1.00 DL, 1.20 DL, 1.33 DL, 1.60 DL, 2.00 DL, 2.40 DL (UL).
 2. In the performance test, the anchor is incrementally loaded and unloaded. At each increment, the movement of the anchor bar is recorded. The loading at each increment is held just long enough to obtain movement readings, but not longer than 1 minute. The maximum load is held for a minimum of 10 minutes, with movement readings taken at 1, 2, 3, 4, 6 and 10 minutes.

3. If the total movement between the 1 and 10 minute readings exceeds 0.04 inches, hold the load for 50 additional minutes. The movement shall then be recorded at 15, 20, 25, 30, 45, and 60 minutes.
- G. During performance testing, the movement of the stressing end of the anchor shall be monitored to the nearest 0.001 inches using a free-standing dial gauge. Measurements shall be recorded at each increment of loading and at 1- and 10- minutes.
 1. Plot a graph of total anchor movement at each load increment.
 2. Acceptance criteria:
 - a. The total elastic movement shall exceed 80% of the theoretical elastic movement of the anchor bar over the free-stressing length.
 - b. The total elastic movement shall not exceed the theoretical elastic movement of the anchor bar over the free-stressing length plus one half of the bonded length.
 - c. The total movement, measured during the final cycle of loading, shall not exceed the designated performance criteria.
 - d. The creep rate does not exceed 0.080 inches/log cycle during the final log cycle of the test.
- H. Proof tests: All remaining anchors shall be Proof Tested.
 1. Test anchors using the Proof Test procedures of PTI "Recommendations for Prestressed Rock and Soil Anchors".
 2. The proof test measures the movement of the anchor during one cycle of incremental loading. The loading at each increment is held just long enough to obtain movement readings, but not longer than 1 minute. The maximum load is held for a minimum of 10 minutes, with movement readings taken at 1, 2, 3, 4, 6 and 10 minutes.
 3. Apply the Proof Load (PL) according to the following increments: AL, 0.25 DL, 0.50 DL, 0.75 DL, 1.00 DL, 1.20 DL, 1.33 DL, 1.6 DL (PL).
 4. Hold Proof Load for 10 minutes. If the total movement between the 1- and 10-minute readings exceeds 0.04 inches, hold the load for 50 additional minutes. The movement shall then be recorded at 15, 20, 25, 30, 45, and 60 minutes.
 5. Acceptance Criteria:
 - a. The total movement shall exceed 80% of the theoretical elastic movement of the anchor bar over free-stressing length, when measured between 0.50 DL and PL.
 - b. The creep rate does not exceed 0.080 inches/log cycle during the final log cycle of the test.
- I. When, in the professional opinion of the Geotechnical Engineer, the proof test results for an anchor show significant variation from the performance test results, the Contractor shall perform a performance test on that anchor at no additional cost to Owner.
 1. Allow for additional Performance Testing of 5 percent of the total number of anchors in Contract Price.
- J. Defective anchors:
 1. If an anchor fails to meet the above acceptance criteria for testing, then that anchor will be rejected. All rejected anchors shall be replaced or supplemented by anchors installed at locations approved by the Owner's Representative and DSA, as required to provide the total anchor capacity indicated on the Drawings.
 2. No extension or time or additional compensation will be provided for

replacing or installing additional anchors.

- K. Records: The Contractor shall provide the Owner's Representative two (2) copies of test record for each anchor within five (5) days of each test. Test records shall include the information listed below.
 - 1. General: Project identification, anchor identification, bar size and type, bond length, free-stressing length.
 - 2. Grouting data: Date grouted, pressure and grout volume.
 - 3. Test results: Date tested, test type (performance or proof) and graphs of results. Note any adjustments made during test and unusual occurrences during test.

3.4 LOCK-OFF

- A. Preparation: Observe placement, sealing and securing of trumpet immediately prior to placement of foundation concrete. Verify that compressible material is installed over top of shaft.
- B. Upon completion of foundations, stress anchor bars to lock-off and anchor. Provide a method of anchorage which will limit the load loss to not more than five percent of the lock-off load in the transfer of loads from the jacks to the footing.
- C. Fill trumpet completely with corrosion preventative compound.
- D. Install and seal cover and fill completely with corrosion preventative compound.

3.5 FIELD QUALITY CONTROL

- A. Inspection and testing will be performed under provisions of Division 01 Section "Quality".
- B. Geotechnical Engineer will:
 - 1. Continuously observe drilling for anchors paying attention to the depths of soil and rock materials encountered. Notify Contractor and Owner's Representative when depth of materials encountered varies from expected conditions.
 - 2. Continuously observe tiedown anchor installation. Notify Contractor and Owner's Representative when grout volume or pressure deviates from observations of test program.
 - 3. Monitor load testing and recording of results.
 - 4. Perform final determination of the acceptability of installed tiedown anchors; assign reduced capacity to tiedown anchors that fail to comply with specified requirements.
 - 5. Compile records of each tiedown anchor from Contractor's log, Geotechnical Engineer's observations, load testing, and as-built locations provided by the Contractor.
 - 6. Prepare final report.
- C. Testing Agency will:
 - 1. Sample and test grout for compressive strength in accordance with ASTM C109.
 - 2. Observe final stressing, lock-off and installation of corrosion protection measures.

END OF SECTION 316800

SECTION 321216 – ASPHALT PAVING AND BASE

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Provide, spread, and compact aggregate base as shown on the Contract Documents and as specified herein.
- B. Provide, spread, and compact asphaltic concrete pavement.
- C. Adjust to finish grade: any, and all, new or existing utility cleanouts, drainage structures, valve boxes, etc., which are included in the limits of work.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including the Division 01 Specification Sections apply to this Section.
- B. Related Sections includes, but are not limited to the following:
 - 1. Earthwork - Section 312000
 - 2. Trenching, Backfilling and Compaction - Section 312316
 - 3. Concrete Sidewalk and Curbs - Section 321600

1.3 REFERENCES

- A. Reference Data:
 - 1. If the year of the adoption or latest revision is omitted from the designation, it shall mean the specification, manual or test designation in effect the date the Notice to Proceed with the Work is given.
- B. Caltrans Standard Specifications.

1.4 QUALITY ASSURANCE

- A. Testing and inspection of the aggregate base, aggregate subbase and asphaltic concrete shall be done by a testing laboratory retained and paid for by the County. Any areas receiving failing tests shall be reworked by the Contractor to achieve the minimum specified degree of compaction. It shall be the sole responsibility of the Contractor to achieve satisfactory results.
- B. Test Methods: Unless otherwise indicated, tests shall be made in conformance with the following standard methods:
 - 1. Relative compaction shall be determined by Test Method No. California 216 and 231.
 - 2. Caltrans Standards and Specifications, most recent edition.

1.5 SUBMITTALS

- A. Submit certificate of compliance for aggregate base.
- B. Submit gradation and strength analysis of any recycled Class 2 aggregate base.
- C. Submit asphalt mix design parameters and certificates of compliance.
- D. Submittals shall conform to the requirements of Section 013300.

PART 2 - PRODUCTS

2.1 AGGREGATE BASE

- A. Aggregate for aggregate bases shall be clean and free of vegetable matter and other deleterious substances.
- B. Aggregate base shall be of such a nature that it can be compacted readily under watering and rolling to form a firm, stable base.
- C. Aggregate base shall be Class 2, and the combined aggregate shall conform to the 3/4 inch maximum grading specified in Section 26-1.02A "Class 2 Aggregate Base" of the Caltrans Standard Specification
- D. Recycled Class 2 Aggregate base materials meeting the gradation and strength requirements of virgin material is acceptable for use in hardscape areas only (non-building areas).

2.2 ASPHALT CONCRETE

- A. The asphalt concrete in pedestrian areas shall be Type A, 1/2 inch maximum, medium and shall conform to the applicable portions of Section 39 of the Caltrans Standard Specifications.
- B. The asphalt concrete in vehicular areas shall be Type A, 3/4 inch maximum, medium and shall conform to the applicable portions of Section 39 of the Caltrans Standard Specifications

PART 3 - Execution

3.1 SUBGRADE PREPARATION FOR BASE MATERIAL

- A. Subgrade preparation shall conform to the requirements in Section 312000 - Earthwork, and shall not vary more than 0.05 foot above, or 0.05 foot below the grade established by the Plans.
- B. Prepared subgrade shall be inspected by the independent testing laboratory retained by the District prior to the placement of any aggregate base.
- C. As per Section 312000 - Earthwork.

3.2 SPREADING

- A. Aggregate base shall be delivered to the roadbed as uniform mixtures and shall be graded in layers or windrows. Segregation shall be avoided and the base/subbase shall be free from pockets of coarse or fine material.
- B. The aggregate base, after spreading as above specified, shall be shaped to such thickness that after watering and compacting the completed base will conform to the required grade and cross section, within the tolerances specified in Section 26-1.05 "Compacting" of the Caltrans Specifications.
- C. The base shall be spread, watered and compacted in layers not to exceed 6 inches in compacted thickness to achieve the specified thickness.

3.3 COMPACTION AND TOLERANCE

- A. The relative compaction of the base shall not be less than 95 percent.
- B. The finished surface of the aggregate base shall not vary more than 0.05 foot from the design grades.
- C. Aggregate base which fails to meet the specified tolerances shall be reshaped, dewatered, and recompactd at the Contractor's expense.

3.4 SUBGRADE PREPARATION FOR ASPHALT CONCRETE

- A. All construction beneath the subgrade shall be completed, including pipeline testing, prior to asphalt concrete placement.
- B. Subgrade shall not vary more than 0.05 foot above or below design grade.
- C. Any soft spots in the subgrade shall be repaired by the Contractor, regardless of cause, prior to paving.
- D. Minimum Class 2 aggregate base material under private walkways as shown on the Drawings shall be 6" in compacted thickness, unless otherwise noted.

3.5 TACK COAT

- A. Apply tack coat of RS-1 or CRS1 Emulsion to vertical surfaces of existing surfacing that will come into contact with asphalt concrete.

3.6 SPREADING AND COMPACTING ASPHALT CONCRETE

- A. Shall be in accordance with Section 39 of the Caltrans Standard Specifications.

3.7 STRUCTURE ADJUSTMENT

- A. The Contractor shall mark the location of all structures to be adjusted to grade and shall be responsible for their location after paving operations are completed.
- B. After surfacing or resurfacing is completed, the Contractor shall construct or reconstruct the structures to grade as shown on the plans.

3.8 FLOW TEST

- A. Finished pavement areas shall be flow tested in the presence of the Inspector of record to confirm that positive gradients, that facilitate proper and complete surface drainage, have been achieved in all paved areas.
- B. Any areas that fail the flow test, defined as any area where depth of ponding water exceeds 1/8 inch or where the surface of a ponding area exceeds 10 square feet, shall be repaved to achieve positive drainage.

3.9 CLEAN UP

- A. Remove all debris and stains resulting from the work of this section.

END OF SECTION

SECTION 321223 - PAVEMENT MARKINGS AND SIGNS

PART 1 - GENERAL

1.1 Section Includes

- A. Furnish materials and install painted parking stalls, pavement markings, crosswalk striping.
- B. Furnish and paint curbs.
- C. Furnish materials and install signs and posts.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Related Sections include the following:
 - 1. Asphalt Concrete Paving and Base – Section 321216
 - 2. Concrete Sidewalk and Curbs – Section 321600

1.3 SUBMITTALS

- A. In accordance with Section 013300, Submittal Requirements:
 - 1. Paint product data.
 - 2. Sign product data.

1.4 REFERENCES

- A. California Manual of Uniform Traffic Control Devices (MUTCD), latest edition.
- B. California Code of Regulations, Title 24, Part 2 – California Building Code (CBC), latest edition.
- C. American with Disabilities Act (ADA), latest edition.

PART 2 - PRODUCTS

2.1 STRIPING PAINT

- A. The paint to be used on striping shall be commercial quality paint and be applied in two coats to achieve the designed coverage. Thinner shall not be mixed with paint.
- B. White paint shall be used on all parking stall, pavement markings and crosswalk striping.
- C. Blue paint shall be used on ADA parking stalls where indicated on the details.
- D. Red paint shall be used on curbs where indicated on the drawings.
- E. Refer to Architectural drawings for color(s) of playground striping.

2.2 SIGNS

- A. Accessible signs shall also comply with the applicable sections of California Title 24 regulations and the ADA.
- B. Signs shall be mounted at standard heights on 2" diameter steel posts set in concrete as detailed on the plans.

PART 3 - EXECUTION

3.1 STRIPING

- A. No striping shall be started until all paving work on the entire job has been completed, and the various finished surfaces are sufficiently cured to prevent undue tracking onto new striping.
- B. All stripes for parking spaces shall have a width of four inches. All widths shall be within 1/4-inch of the specified width
- C. All lines and other shapes shall be clean and sharp as to dimensions and shall be painted in the locations shown on the plans. Ragged ends of segments, fogginess along the sides, or objectionable dribbling along the unpainted portions of the stripe shall not be permitted.
- D. The finished product shall have an opaque, well painted appearance with no black or other discolorations showing through. Any smears shall be painted out with black paint to the satisfaction of the Owner's Representative.
- E. The Contractor shall take all reasonable precautions to protect the paint during drying time and may be required to paint out all objectionable tracking. Appropriate traffic control necessary to insure non-tracking as well as reasonable traffic flows shall be the Contractor's responsibility.
- F. Painted stripes shall receive two coats of paint to achieve the desired coverage.
- G. No work shall be done when the pavement is appreciably damp.

3.2 SIGNS

- A. Signs shall be installed in the locations shown on the plans and in accordance with the referenced standards for height, setbacks, and embedment.
- B. Signs for disabled accessibility shall be installed in accordance with the requirements of the California Building Code.

3.3 CLEAN UP

- A. Remove all debris and stains resulting from the work of this section.

END OF SECTION 321223

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SECTION 321541 – PERMEABLE STABILIZED DECOMPOSED GRANITE PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Permeable Stabilized Decomposed Granite (DG) Paving
- B. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to Work of this Section
- C. Work included: All service, labor, materials, transportation and equipment necessary to perform the Work indicated on the Drawings and as specified.

1.2 SYSTEM DESCRIPTION

- A. Decomposed Granite paving locations are per plan.
- B. Compacted base depth to be per geotechnical recommendation, unless otherwise indicated.

1.3 SUBMITTALS

- A. Comply with Section 013300- Submittal Procedures, unless otherwise indicated.
- B. Submit product data and manufacturer's instructions for:
 - 1. Decomposed granite
 - 2. Stabilizer binder
 - 3. Metal header
 - 4. Geotextile fabric
- C. Samples:
 - 1. Contractor shall provide a material sample consisting of 1/2 pint container of

decomposed granite (DG) to the Owner's representative for approval prior to installation.

1.4 QUALITY ASSURANCE/FIELD QUALITY CONTROL

- A. Installer qualifications: Installer to provide evidence to indicate successful commercial installations of decomposed granite surfacing containing GraniteCrete admixture. Contact manufacturer for certified installers. If product is installed by a non-certified installer, Contractor to coordinate review of installation process by a GraniteCrete personnel. Failure to coordinate this oversight will void the manufacturer warranty. If the warranty is voided by the manufacturer due to lack of Contractor coordination, the Contractor will repair or replace unsatisfactory product at his or her own expense.

1.5 MOCK UP

- A. Construct a 20-sf mock-up of the Stabilized aggregate paving, including edging material and base course, at an owner-approved location, 5 days prior to installation. If approved, this mock-up will be the basis to demonstrate color, texture and standard of workmanship for the remainder of the project.
- B. Notify the Owner's Representative 3 days prior to placing mock up.
- C. Obtain approval of the mock-up prior to completing stabilized aggregate paving, the mock-up may remain as part of the project.

1.6 GENERAL REQUIREMENTS

- A. Contractor shall be responsible for damages caused by his operations.
- B. Metal Header and geotextile fabric shall be in place before installation of DG.
 - 1. Scaled dimensions are approximate. Before proceeding with any work, the Contractor shall carefully check and verify all dimensions.
 - 2. Contractor shall acquaint himself with all site conditions prior to submitting bid proposal.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Packing and Shipping: Deliver products in original unopened packaging with

legible manufacturer's identification.

- B. Storage and Protection: Comply with manufacturer's recommendations.
- C. Store in a cool, dry place out of direct sunlight.
- D. Protect from damage by the elements and construction procedures.
- E. Store at temperature above 40 degrees F.

1.8 FIELD CONDITIONS

- A. Do not install crushed aggregate blended with GraniteCrete admixture surfacing when sub-base is wet at saturated field capacity.
- B. Do not install GraniteCrete materials during rainy conditions or below 40 degrees Fahrenheit.

1.9 MAINTENANCE

- A. The Maintenance Period begins on the day the Landscape Architect has given notice of substantial completion and shall continue thereafter for no less than ninety (90) continuous calendar days
- B. The Contractor shall continuously maintain and repair all involved areas of the Contract during the progress of the work and during the Maintenance Period until the Final Acceptance of the work.
- C. The Contract completion date of the Maintenance Period will be extended, when in the opinion of the Landscape Architect, improper maintenance is evident at the termination of the scheduled Maintenance Period. The Contractor shall be responsible for additional maintenance of the work at no charge in Contract price until all of the work is completed and acceptable.
- D. The contractor shall be responsible for maintaining adequate protection of the areas. Damaged areas shall be repaired immediately at the Contractor's expense.
- E. The Contractor shall physically remove any and all weed growth from DG areas.

1.10 WARRANTY

- A. Contractor shall provide warranty for performance of of product. Contractor shall warranty installation of product for the time of one year from completion.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Decomposed granite:

1. Description: Shall be 3/8-inch maximum gradation, produced from naturally friable rock/granite with enough fines to produce a smooth walking surface. Materials should be free from clay lumps, organic matter and deleterious material. Blends of coarse sand and rock duct are not acceptable. Color to be natural sand/golden.
2. Use a single supply source for the entire quantity required.
3. Gradation:

Sieve Sizes	% Passing
3/8"	100
#4	85-100
#8	70-80
#16	50-65
#30	40-50
#50	25-35
#100	15-25
#200	10-15

B. Aggregate Binder:

1. Provide GraniteCrete admixture or approved Equal, Color: natural
2. Manufacturer: GraniteCrete (1-800-670-0849) or approved Equal. Contact Mick Wells at SBI Building Materials (707) 975-0216

C. Metal header:

1. Description: 3/16" thick by 5" deep heavy-duty steel edging with (7) 16-inch long stakes per 16' section.

2. Product: DURAEDGE, or approved equal
 3. Manufacturer: J.D. Russell Company (1-800-888-7425, www.jdrussellco.com), or approved equal. Available from Wyatt Irrigation Supply 707-578-3747 or John Deere Landscape 707-526-1171.
 4. Color: Black, Powder Coat
- D. Geotextile Fabric:
1. Description: Product: Non-woven geotextile with 3 oz/sy minimum weight.
 2. Product: 140 N (135 gal/ min flow rate)
 3. Manufacturer: Mirafi or approved equal. Contact Eric Gibson at 310-903-2120.
- E. Aggregate Base
1. Class II Permeable Base Rock, see aggregate base specification
- F. EXCESS MATERIAL
1. Provide Owner with excess materials for use in future maintenance- provide at minimum 1/2 yard of aggregate in 50 lb sacks.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine areas and conditions under which Work is to be performed and identify conditions detrimental to proper or timely completion.
1. Do not proceed until unsatisfactory conditions have been corrected.

3.2 BLENDING STABILIZER

- A. Blend 12 to 16-lbs (call manufacturer for exact blend) of stabilizer per 1-ton of decomposed granite or crushed 3/8" aggregate screenings. It is critical that the stabilizer be thoroughly and uniformly mixed throughout decomposed granite. Bucket blending is not acceptable. Blending with a rake or shovel is not acceptable. Blend material dry as water will make the

material hard.

3.3 INSTALLATION

- A. Comply with manufacturer's recommendations for product installation.
- B. Layout stabilized decomposed granite paved areas(DG) per Drawings. Owner's Representative to approve layout prior to excavation.
- C. Do not proceed with installation of DG until all walls, curbs, headers, and paving and utility work in the area has been installed.
- D. Excavate and compact the subgrade to depths, slopes and widths as shown on the Drawings. Do not over- excavate compacted subgrades of adjacent pavement or structures.
- E. Confirm that the subgrade is at the proper elevation and compacted as required. Subgrade elevations slope parallel to the finished grade and/or as shown on the Drawings to provide positive drainage.
- F. Set metal landscape edging per drawings and in accordance with manufacturer's specifications. Headers shall be set and staked to provide tight, clean lines, both vertically and horizontally. Set top of steel edging to provide positive drainage.
- G. Install geotextile fabric per drawings and in accordance with manufacturer's specifications.
- H. After pre- blending with stabilizer, place the stabilized decomposed granite on prepared sub-grade. Level to grade and cross section per plans.
- I. Water heavily for full depth moisture penetration, per manufacturer. Water activates the stabilizer.
- J. Compact per manufacturer recommendations. Do not use a vibratory plate. Roll and compact within 3 to 48 hours after placement. Product can be compacted up to 48 hours after placement.
 - 1. Upon final compaction – finished surface of walkway shall be smooth, uniform, and solid. There shall be no evidence of chipping or cracking. Cured and compacted pathway shall be firm throughout profile with no spongy areas. Loose material will not be present on the surface after installation but may appear after use and according to environmental conditions. Pathway should remain stable underneath the loose granite on top. It is a natural looking pathway, yet stable throughout. Any significant irregularities in path surface shall be repaired to the uniformity of entire installation.

- K. Saw Cut/trowel/install expansion joints every 12' and at every engineered stress area (vertical change)
- L. Completed finished surface shall be consistent quality and free of deleterious materials such as organic materials, stones and loose material. Surface shall not have depressions or humps greater than 1/4 " in ten feet. Cold joints, if any should be inconspicuous.
- M. Protect adjacent walls, walks and utilities from damage or staining by DG. Any damage to paving or architectural work caused by DG installation shall be repaired by the Contractor at the Contractor's expense.

3.4 OBSERVATION SCHEDULE

- A. The Contractor shall be responsible for notifying Owner's Representative 72 hours (3 working days) in advance for the following observations:
 - 1. Layout of areas to receive DG
 - 2. Preparation of subgrade, prior to placing geotextile fabric
 - 3. Upon final compaction

3.5 CLEAN-UP

- A. As project progresses, Contractor shall maintain all areas in a neat manner and remove unsightly debris as necessary. After completion of project, Contractor shall remove all debris and containers used in accomplishing work, and clear paving and planting areas of DG.

END OF SECTION 321541

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SECTION 321600 – CONCRETE SIDEWALKS AND CURBS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Construct concrete curbs and sidewalks.
- B. Provide mockup of exterior concrete walk finish.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including the Division 01 Specification Sections apply to this Section.
- B. Related Sections include, but are not limited to, the following:
 - 1. Concrete Reinforcing – Section 032000
 - 2. Cast-in-Place Concrete – Section 033000
 - 3. Earthwork – Section 312000
 - 4. Asphalt Paving and Base – Section 321216

1.3 REFERENCES

- A. Reference Data:
 - 1. If the year of the adoption or latest revision is omitted from the designation, it shall mean the specification, manual or test designation in effect the date the Notice to Proceed with the Work is given.
- B. Caltrans Standard Specifications, Sections 73 (Concrete Curbs and Sidewalks) and 90 (Concrete).

1.4 SUBMITTALS

- A. Submit concrete mix design to Engineer for review at least 21 days prior to concrete.
- B. Submit mockup of exterior concrete walk finish, including, but not limited to score pattern, color and texture to Architect for review prior to any concrete installation.

PART 2 - PRODUCTS

2.1 CONCRETE

- A. Concrete shall comply with the applicable provisions of Section 90 "Concrete" of the Caltrans Standard Specifications for Section 90-2. "Minor Concrete" and meet the following requirements listed below.
 - 1. Concrete shall have a minimum 28-day compressive strength of 3,000 psi.
 - 2. Concrete shall have a maximum slump of 4 inches.
 - 3. Concrete must contain at least 505 pounds of cementitious material per cubic yard.
 - 4. Cementitious material must be Type II or V Portland cement or a combination of Type II or V Portland cement and other approved Supplementary Cementitious Materials (SCM's). Typical SCM's are ground granulated blast furnace slag, fly ash, silica fume, rice hull ash and natural pozzolans such as calcined shale, calcined clay and metakaolin. The amount of SCM's in the concrete mix shall not exceed the requirements listed in section 90-1.02B of the Caltrans Standard Specifications.
 - 5. The quantity of free water must not exceed 310 pounds per cubic yard of concrete

- plus 20 pounds of free water for each required 100 pounds of cementitious material in excess of 550 pounds of cementitious material per cubic yard of concrete.
6. The maximum coarse aggregate size must not be larger than 1-1/2" or smaller than 3/4" and meet the gradation requirements in section 90-1.02C(4)(b).
 7. Fine Aggregate grading shall meet the gradation requirements in section 90-1.02C(4)(c).
 8. Acceptable admixtures shall conform to Section 90-1.02E. Chemical admixtures must comply with ASTM C 494, Air-entraining admixtures must comply with ASTM C 260.

PART 3 - EXECUTION

3.1 GENERAL

- A. Curbs and walkways shall conform to the details shown on the plans.
- B. Provide representative mockup of sidewalk including, but not limited to score pattern, color and finish for review and approval by Architect prior to construction.
- C. Concrete finishes along accessible routes of travel shall be at least as slip-resistant as that described as a medium salted finish for slopes of less than 6%, and slip-resistant at slopes of 6% or greater.
- D. Concrete finishes in non-accessible path of travel areas should be a medium broom finish.

3.2 SUBGRADE PREPARATION

- A. As per Section 312000, Earthwork.
- B. Minimum Class 2 aggregate base material under sidewalks as shown on the Drawings shall be at least 6 inches in compacted thickness, or otherwise noted.
- C. Subgrade and forms shall be wet immediately before concrete placement.
- D. Reinforcement shall be carefully placed and supported.
- E. Steel dowels, reinforcement steel and welded wire reinforcement must comply with Section 52 "Reinforcement" of the California Standard Specifications
- F. Apply soil sterilizer 6" each side of the edges of sidewalks/walkways to prevent growth of vegetation under sidewalks/walkways.
- G. Excavate for thickened edges where they occur.

3.3 EXISTING CURBS, GUTTERS AND WALKWAYS

- A. Joint shall be cut to a minimum depth of 1-1/2 inches with an abrasive type saw.
- B. Joint shall be at first scoring line at or beyond the planned joint location.

3.4 FORMS

- A. Smooth face against concrete, true smooth upper edge, and rigid enough to withstand pressure of fresh concrete without distortion.
- B. Clean and oil coated.
- C. Carefully set to alignment, grade and required dimensions.
- D. Adequately secured from movement by stakes, clamps, spreaders, and braces.

3.5 CURB AND WALKWAY CONSTRUCTION

- A. Dimensions as shown on Drawings.
- B. Weakened plane joints shall be constructed at intervals not exceeding 10 feet.
- C. Expansion joints, 1/2-inch-wide, shall be installed where the new walkway joins existing curbs, drainage structures, and other fixed objects and at intervals not exceeding 60'.
- D. Expansion joints shall contain 1/2-inch thick pre-molded joint fillers the full thickness of concrete. Preformed expansion joint filler must comply with ASTM D 1751. Once concrete has cured, expansion joints shall be caulked.
- E. The top and face of curbs, and non-decorative sidewalks, shall be finished with a steel trowel and be given a final fine brush finish.
- F. The top and face of curb shall be true and straight and not vary more than 0.01 foot above or below the staked grade.
- G. Concrete curing shall be as provided in Section 90-1.03B of the California Standard Specifications.
- H. Repairs shall be made by removing and replacing the entire unit between scoring lines or joints.

3.6 ADJUST UTILITY BOXES

- A. The Contractor shall adjust all existing and new utility boxes, and any other service castings falling within the limits of work to exact grade at the same time the concrete improvements are being constructed and shall maintain these appurtenances to true and exact grade until concrete is thoroughly set.

3.7 CURING

- A. Moist Curing: Cover with reinforced waterproof curing paper. Seal all joints and weights down edges. Maintain moist for 14 days.
- B. Liquid Curing Compound: Locations as approved by Architect. Apply a uniform coating within two hours of final troweling.

3.8 REPAIRS AND PROTECTIONS

- A. Repair or replace broken or defective concrete as directed by Architect.
- B. Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

3.9 CLEAN UP

- A. Remove all debris and stains resulting from the work of this section.

END OF SECTION 321600

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SECTION 323113 - CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Chain-link fences.
 - 2. Swing gates.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
 - a. Fence and gate posts, rails, and fittings.
 - b. Chain-link fabric, reinforcements, and attachments.
 - c. Gates and hardware.
- B. Shop Drawings: For each type of fence and gate assembly.
 - 1. Include plans, elevations, sections, details, and attachments to other work.
 - 2. Include accessories, hardware, gate operation, and operational clearances.
 - 3. Wiring Diagrams: For power, signal, and control wiring.
- C. Samples for Initial Selection: For each type of factory-applied finish.
- D. Samples for Verification: For each type of component with factory-applied finish, prepared on Samples of size indicated below:
 - 1. Polymer-Coated Components: In 6-inch lengths for components and on full-sized units for accessories.

1.4 QUALITY ASSURANCE

- A. Mockups: Build mockups to set quality standards for fabrication and installation.

1.5 FIELD CONDITIONS

- A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.6 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Failure to comply with performance requirements.
 - b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CHAIN-LINK FENCE FABRIC

- A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to "CLFMI Product Manual" and requirements indicated below:
 - 1. Fabric Height: As indicated on Drawings.
 - 2. Steel Wire for Fabric: Wire diameter of 0.192 inch .
 - a. Mesh Size: 2 inches .
 - b. Zinc-Coated Fabric: ASTM A 392, Type II, Class 2, 2.0 oz./sq. ft. with zinc coating applied before weaving.

2.2 FENCE FRAMEWORK

- A. Posts and Rails : ASTM F 1043 for framework, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1043 or ASTM F 1083 based on the following:
 - 1. Fence Height: As indicated on Drawings .
 - 2. Light-Industrial-Strength Material: Group IC-L, round steel pipe, electric-resistance-welded pipe .
 - a. Line Post: 2.875 inches in diameter .
 - b. End, Corner, and Pull Posts: 2.875 inches .
 - 3. Horizontal Framework Members: top and bottom rails according to ASTM F 1043.
 - a. Top Rail: 1.66 inches in diameter .
 - 4. Brace Rails: ASTM F 1043.

5. Metallic Coating for Steel Framework:
 - a. Coatings: Any coating above.

2.3 SWING GATES

- A. General: ASTM F 900 for gate posts and double swing gate types.
 1. Gate Leaf Width: As indicated .
 2. Framework Member Sizes and Strength: Based on gate fabric height as indicated .
- B. Pipe and Tubing:
 1. Zinc-Coated Steel: ASTM F 1043 and ASTM F 1083; manufacturer's standard protective coating and finish .
 2. Gate Posts: Round tubular steel .
 3. Gate Frames and Bracing: Round tubular steel .
- C. Frame Corner Construction: Welded .
- D. Hardware:
 1. Hinges: 360-degree inward and outward swing.
 2. Latch: Permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.

2.4 FITTINGS

- A. Provide fittings according to ASTM F 626.
- B. Tie Wires, Clips, and Fasteners: According to ASTM F 626.
 1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, according to the following:
 - a. Hot-Dip Galvanized Steel: 0.148-inch- diameter wire ; galvanized coating thickness matching coating thickness of chain-link fence fabric.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for a certified survey of property lines and legal boundaries, site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.
 1. Do not begin installation before final grading is completed unless otherwise permitted by Architect.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 CHAIN-LINK FENCE INSTALLATION

- A. Install chain-link fencing according to ASTM F 567 and more stringent requirements specified.
 - 1. Install fencing on established boundary lines inside property line.
- B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.
- C. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.
 - 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
 - 2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
 - a. Concealed Concrete: Place top of concrete below grade as indicated on Drawings to allow covering with surface material.
- D. Terminal Posts: Install terminal end, corner, and gate posts according to ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of as indicated on Drawings . For runs exceeding 500 feet, space pull posts an equal distance between corner or end posts.
- E. Line Posts: Space line posts uniformly at 96 inches o.c.
- F. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.
 - 1. Locate horizontal braces at mid-height of fabric 72 inches or higher, on fences with top rail, and at two-third fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.
- G. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.
- H. Intermediate and Bottom Rails: Secure to posts with fittings.

- I. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 2-inch bottom clearance between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
- J. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts, with tension bands spaced not more than 15 inches o.c.
- K. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric according to ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.
 - 1. Maximum Spacing: Tie fabric to line posts at 12 inches o.c. and to braces at 24 inches o.c.
- L. Fasteners: Install nuts for tension bands and carriage bolts on the side of fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.
- M. Barbed Tape: Install according to ASTM F 1911. Install barbed tape uniformly in configurations indicated and fasten securely to prevent movement or displacement.

3.4 GATE INSTALLATION

- A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation.

3.5 ADJUSTING

- A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Lubricate hardware and other moving parts.

END OF SECTION 323113

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SECTION 328400 – IRRIGATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General Conditions and Division 1 apply to work of this section.

1.2 SUMMARY:

- A. Work Included:

Order and furnish all labor, materials, supplies, tools and transportation and perform all operations in connection with and reasonably incidental to the complete installation of the automatic irrigation system as shown on the Drawings. Items listed hereinafter are included as an aid to estimating quantities and are not necessarily a complete list of work items.

1. Trenching, stockpiling excavation materials and refilling trenches.
2. Furnishing materials and installation for complete system including point of water connection, master control valve and flow sensor, electrical connection for controller, automatic controller, piping, valves, fittings, irrigation heads, emitters, bubblers, drip line, subsurface drip line, and final adjustment to ensure complete irrigation coverage.
3. 120-volt line voltage connections to the irrigation controllers.
4. Low voltage control wiring.
5. Replacement of unsatisfactory materials.
6. Clean-up, inspection and approval.
7. All work of every description mentioned in the Specification and/or addenda thereto, and all other labor and materials reasonably incidental to the satisfactory completion of the work, including clean-up of the site, as directed by the Architect.
8. Tests.
9. Record Drawings.

- B. Refer to the project Drawings for Bid Schedule and identification of work described herein that may be provided as a Bid Alternate.

- C. Related Work Described Elsewhere:

1. Section 329000: Landscape Planting
2. Section 260000: Electrical Specification

1.3 GENERAL REQUIREMENTS:

- A. Purpose: It is the intention of these Specifications to accomplish the work of installing an irrigation system which shall operate in an efficient manner, provide 100% uniform coverage, and be water conserving. The Drawings indicate the general arrangement of piping and equipment, and do not necessarily indicate all offsets, fittings and accessories that may be required. Furnish incidental materials and labor not specifically called for but required to complete work as intended.
- B. OSHA Compliance: All articles and services covered by this Specification shall meet or exceed the safety standards established under the Federal Occupational Safety and Health Act of 1970, together with all amendments in effect as of the date of this Specification.
- C. Codes and Standards: Comply with all applicable codes and standards.
 - 1. Perform work in accordance with the Mendocino County Standard Plans and Specifications unless otherwise noted. Should there be discrepancies between the standard plans and specifications and the project drawings and specifications, the most stringent shall prevail as determined by the Architect.
 - 2. Work and materials shall be in full accordance with the latest rules and regulations of the California Electric Code, the Uniform Plumbing Code, published by the Western Plumbing Officials Association and other applicable State or local laws or regulations. Nothing in these Drawings or Specifications shall be construed to permit work not conforming to these codes.
 - 3. When the Specifications call for materials or construction of a better quality or larger size than required by the above mentioned rules and regulations, the provision of the Specifications shall take precedence over the requirements of the said rules and regulations.
 - 4. Furnish, without any additional cost to the County, any additional material and labor required to comply with these rules and regulations. Provide the work even if it is not mentioned in this section, or shown on the Drawings.
 - 5. Erect and maintain barricades, guards, warning signs and lights as required by the Architect or required by County regulations for the protection of the public or work crew.
 - 6. Damage by Leaks: The Contractor shall be responsible for damages to any property or work caused by leaks in the piping systems being installed. Repair, at no additional expense to the County, all damages so caused. All repair work shall be done as directed, and in a manner satisfactory to the Architect.
 - 7. Protection: The Contractor shall be responsible for any damage to this work, which occurs before final acceptance. Securely cover all openings into the systems and protect all apparatus, equipment and appliances, both before and after being set in place, to prevent obstructions in the pipes and breakage, misuse or disfigurement of the apparatus, equipment of appliance.

1.4 QUALITY ASSURANCE:

- A. Provide evidence to the Architect that a skilled and an experienced supervisor and work crew will be employed on the job from beginning to end.
- B. Provide evidence to the Architect that the Contractor is skilled and experienced in the construction of a commercial-grade, irrigation system. Contractor shall provide with the bid documents a list of at least five irrigation projects constructed in the last five years by the Contractor that have used the listed equipment.

1.5 LAYOUT OF WORK:

- A. Stake out the irrigation system as shown on the Drawings. Obtain approval from the Architect before starting work.

1.6 INSTRUCTION:

- A. After the system has been installed and approved, instruct the County's personnel in the complete operation and maintenance of the irrigation system.

1.7 SUBMITTALS:

- A. Equipment List and Drawings: Within 14 days after date of Notice to Proceed, submit to the Architect for approval, a list of the proposed equipment and material to be furnished and installed. The list shall be complete as to name of manufacturer, size and catalog number of unit, and be supplemented by such other data as may be required, including detailed scale Drawings, plumbing and wiring diagrams.

Submit materials list using the following format:

<u>Item</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Model No.</u>
1	Pressure Supply Line	Lasco	Sch. 40
2	Lawn Head	Rainbird	2400
3	etc.	etc.	etc.

B. Record Drawings:

- 1. Record accurately on one set of blue or black line prints, changes in the work constituting departures from the original contract Drawings, including changes in pressure and non-pressure line locations, and a complete schematic circuit diagram.
- 2. Record the changes and dimensions in a legible manner and to the satisfaction of the Architect. Prior to final inspection of work, and prior to transferring the information to mylars, submit record prints to the Architect for approval.
- 3. Dimension from two permanent points of reference (buildings, monuments, sidewalks, curbs, pavements, etc.). Record data to be shown on record prints, day-to-day, as the project is being installed.

4. Show locations and depths of the following items:
 - a. Point of connection.
 - b. Irrigation controller.
 - c. Routing of irrigation main line pipe. Provide dimensions a minimum of 100 feet along main line route.
 - d. Gate valves.
 - e. Remote control valves or valve groups.
 - f. Quick coupling valves.
 - g. Routing of control wires.
 - h. Routing of conduit.
 - i. Sleeves.
 - j. Related equipment including irrigation heads (as may be directed by the Architect).
5. Maintain record prints on-site at all times.
6. Upon completion of work, transfer all as-built information and dimensions to reproducible sepia mylars. Correct and record the changes and dimensions in a legible manner and to the satisfaction of the Architect.

PART 2 - PRODUCTS

2.1 PIPE:

- A. Pipe manufacturer: PW Pipe, JM Pipe or approved equal.
- B. Pipe Material: Polyvinylchloride (PVC) plastic in conformance with ASTM D1784 (cell class 12454-B).
- C. Schedule or Class:
 1. Main line pipe:
 - a. 3 inch diameter pipe: Class 200 PVC plastic pipe with solvent cemented joints
 - b. 2-1/2 inch and smaller: Schedule 40 PVC plastic pipe with solvent cemented joints.
 2. Lateral line pipe (non-pressure):
 - a. Schedule 40 PVC plastic pipe with Schedule 40 Type I, Grade I, PVC with solvent weld fittings.
- D. Identification marking:
 1. Pipe shall be clearly marked at regular intervals indicating the manufacturer's name, nominal pipe size, schedule or class, pressure rating in PSI, and date of extrusion.
- E. Sleeves:
 1. Sleeves: 1120-Schedule 40 PVC pipe, minimum of two times the diameter of pipe contained within.

- 2.2 Connections between main lines and remote control valves: Schedule 80 PVC (threaded both ends) nipples and fittings.

2.3 PIPE FITTINGS:

- A. Fitting manufacturer: Dura, Spears, Lasco, or approved equal.
- B. Schedule or Class:
 - 1. 3 inch and smaller main line pipe and all lateral pipe: Schedule 40 PVC plastic with solvent cemented or threaded joints as shown on the Drawings.

2.4 GATE OR BALL VALVES:

- A. Provide the Master Control Valve and Flow sensor listed on the Drawings.
- B. Provide the valves as listed on the Drawings.
- C. Gate valves shall have a resilient wedge.
- D. Ball valves shall be the full port style.

2.5 QUICK COUPLING VALVES:

- A. Provide the two-piece, locking, and rubber covered quick coupler valves as listed on the Drawings.

2.6 REMOTE CONTROL VALVES:

- A. Provide the remote control valves as listed on the Drawings.

2.7 BOXES FOR QUICK COUPLING VALVES:

- A. Carson round plastic valve box with plastic lid. Lid shall be marked: "Irrigation".
- B. See Drawings for sizes.
- C. Boxes and lids shall be black in color unless noted otherwise on the Drawings.

2.8 BOXES FOR REMOTE CONTROL VALVES, GATE VALVE, OR BALL VALVE:

- A. Remote control valves: Provide valve boxes with bolt-down plastic lids as listed on the Drawings or approved equal. Lid shall be marked: "Irrigation Valve".
- B. Gate valve: Carson round plastic valve box with plastic lid. Lid shall be marked: "Irrigation".
- C. Use plastic box extensions made by the same manufacturer and of equal size to the valve box as required to allow access to the valve.

- D. See Drawing for sizes.
- E. Boxes and lids shall be black in color unless noted otherwise on the Drawings.

2.9 CONTROLLER:

- A. Provide the specified controller as listed on the Drawings.

2.10 LOW VOLTAGE WIRE:

- A. Wire type: single conductor, copper with insulating jacket, UL approval for direct burial in ground, AWG-UF.
- B. Common ground wire: minimum size #12-1, white jacket with colored stripe to match jacket color of controller's control wire. Caution: provide a separate common ground wire for each controller.
- C. Spare wire: minimum size #14-1, yellow jacket with colored stripe to match jacket color of control wire.
- D. Control wire: minimum size #14-1, unique color jacket for each controller, such as:
 - 1. Controller "A" = Red
- E. Weatherproof splices: 3M model 3M-DBY, King model Dryconn #10999, Spears model #400 pre-filled seal packs or approved equal.

2.11 IRRIGATION HEADS, BUBBLERS, EMITTERS, AND DRIP LINE:

- A. Provide and install irrigation heads, bubblers, emitters, and drip line as listed on the Drawings.
- B. Swing joints and risers: Provide and install as shown in the construction details using PVC threaded nipples with PVC elbows, Architect approved vendor pre-fabricated swing joints, or algae resistant flexible PVC tubing, as indicated on the Drawings.

2.12 PULL BOXES:

- A. Install pull boxes at the locations shown on the plans or at locations designated by the Architect at site of work. Contractor may, at no additional expense to the County, install such additional pull boxes as may be desired to facilitate work.
- B. Carson valve box with bolt-down plastic lid or approved equal. Lid shall be marked: "Irrigation".
- C. Boxes and lids shall be black in color unless noted otherwise on the Drawings.

2.13 PVC-CONDUIT:

- A. Polyvinylchloride conduit: heavy-wall, Schedule 40, with factory made solvent cemented socket sweep elbows, couplings and fittings, as permitted by NEC.

2.14 MISCELLANEOUS INSTALLATION MATERIALS:

- A. Solvent cement and primer for solvent weld joints: make and type approved by manufacturer(s) of pipe and fittings. Maintain cement at proper consistency throughout use.
- B. Pipe joint compound: non-hardening, non-toxic materials designed specifically for use on threaded connections in water carrying pipe. Rectorseal T+2 pipe thread sealant or equal.

2.15 MISCELLANEOUS EQUIPMENT:

- A. Provide all equipment called for by the Drawings.

PART 3 - INSTALLATION

3.1 PREPARATION:

- A. General: Prior to all work of this section, carefully inspect the installed work of all other trades and verify that their work is complete or to the point where this installation may properly commence. Verify that irrigation system can be installed in strict accordance with pertinent codes and regulations, the original design, the referenced standards and the manufacturer's recommendations.
 - 1. In the event any equipment or methods indicated on the Drawings or in Specifications is in conflict with local codes, immediately notify the inspector prior to installing. If this notification is not provided, assume full responsibility for the cost of any and all revisions necessary to comply with code.
 - 2. Grades: Before starting work, carefully check grades to determine that work may safely proceed, keeping within the specified material depths with respect to finish grade.
 - 3. Coordination with work of other trades: Provide all necessary measurements in the field to ensure precise fit of items in accordance with the original design. Coordinate the installation of irrigation materials with all other work. Give special attention to coordination of piping locations with new and existing signage, light standards, hydrants, and other utility locations to avoid conflicts.
- B. Water Supply: Connect the water supply to locations as shown on the Drawings. Make minor changes caused by actual site conditions at no additional cost to the County.

- C. Electrical Service: Provide and/or coordinate installation of the electrical meter, if necessary, and make 120 volt-single phase connection to the irrigation controllers, for a complete and operational system.

3.2 HANDLING AND STORAGE:

- A. Protect work and materials from damage during construction and storage as directed by the Architect.
- B. Handle plastic pipe carefully; especially protect it from prolonged exposure to sunlight.

3.3 LAYOUT:

- A. Lay out work in accordance with diagrammatic construction Drawings.
- B. Where site conditions do not permit location of piping, valves and heads where shown, notify the Architect immediately and determine relocation in joint conference.
- C. Run pipelines and automatic control wiring in common trenches wherever practical. When pipe and wire are placed in the same trench, it is required that a minimum separation of 3 inches shall be maintained between pipes and/or pipes and wiring.

3.4 EXCAVATING AND TRENCHING:

- A. Excavate trenches ample in size to permit the pipes to be laid at the elevations intended and to permit ample space for joining. When two pipes are to be placed in the same trench, maintain a minimum of 3 inches between pipes.
- B. Make trenches for pipelines deep enough to provide minimum cover from finish grade as follows:
 - 1. Main line pipe:
 - a. Provide sand bedding.
 - b. 3 inch diameter: 24 inch minimum cover over main lines to control valves and quick coupling valves.
 - c. 2-1/2 inch diameter and smaller: 18 inch minimum cover over main lines to control valves and quick coupling valves.
 - d. Low voltage wire: 24 inch minimum cover in sleeve under pavement; 18 inch minimum cover over control wires from controller to remote control valves.
 - e. Lateral line pipe: 24 inch minimum cover in sleeve under pavement; 12 inch minimum cover over remote control valves to irrigation heads, bubblers and emitters.
 - 2. Low voltage wire: 18 inch minimum cover over control wires from controller to remote control valves.
 - 3. Lateral line pipe: 12 inch minimum cover over RCV controller lines to irrigation heads, bubblers or emitters.

- C. Restore surfaces, existing underground installations, utilities, plant materials, etc., damaged or cut as a result of excavations, to original conditions in manner approved by the Architect.
- D. Where other utilities interfere with irrigation trenching and pipe work, adjust the trench depth as instructed by the Architect.

3.5 ASSEMBLING PIPELINES:

- A. Assemble pipe free from dirt and pipe scale. Ream field cut ends to full pipe diameter with rough edges and burrs removed.
- B. Solvent-Weld Main Line:
 - 1. At changes in direction or branch mains, use appropriate Schedule 40 PVC fittings as approved by the Uniform Plumbing Code.
- C. Solvent Weld Joint:
 - 1. Prepare joint by first making sure the pipe end is square, then deburring the pipe end and cleaning pipe and fittings of dirt, dust and moisture.
 - 2. Dry-insert pipe into fitting. Pipe should enter fitting 1/3 to 2/3 depth of socket.
 - 3. Coat the inside of socket surface of the fitting and the external surface of the male end of the pipe with solvent cement primer (P-70 as manufactured by Weld-On or approved equal). Then without delay, apply solvent cement (Weld-On 711 as manufactured by Weld-On or approved equal) liberally to the male end of the pipe and also apply solvent cement lightly to the inside of the socket. At this time, apply a second coat of solvent cement to the pipe end. (Solvent cement with primer incorporated into the solvent cement may be used.)
 - 4. Insert pipe immediately into fitting and turn ¼ turn to distribute cement and remove air bubbles. The pipe must seat to the bottom of the socket and fitting. Check alignment of the fitting. Align the pipe and fitting properly to prove no strain to either.
 - 5. Hold joint still for approximately thirty (30) seconds and then wipe excess cement from the pipe and fitting.
 - 6. Cure joints a minimum of thirty (30) minutes before handling and at least six (6) hours before allowing water in the pipe.
- D. Threaded Joint:
 - 1. Field threading of plastic pipe or fittings is not permitted. Provide factory-formed threads only.
 - 2. Field-cut threads in metallic pipe will be permitted only where absolutely necessary. When field threading, cut threads accurately an axis with sharp dies.
 - 3. Provide threaded joints with pipe joint compound. Apply compound to male threads and first two female threads only.
 - 4. Where assembling metallic pipe to metallic fitting or valve, no more than one full turn beyond hand tight.
 - 5. Where assembling to threaded plastic fitting, take up joint no more than one full turn beyond hand tight.

- 6. Where assembling soft metal (brass or copper) or plastic pipe, use strap type friction wrench only; do not use metal-jawed wrench.
- E. Cap or unplug openings as pipeline is assembled to prevent entrance of dirt or obstruction. Remove caps or plugs only when necessary to continue assembly.
- F. Where pipes or control wires pass through sleeves, provide removable non-decaying plug at ends of sleeve to prevent entrance of earth.

3.6 SLEEVES AND ELECTRICAL CONDUIT:

- A. Install sleeves to carry main line pipe, lateral line pipe, and wire under concrete and asphalt surfaces. Provide a sleeve even if the Drawings do not indicate a sleeve under concrete and asphalt surfaces.
- B. Install PVC electrical conduit to carry control wires under concrete and asphalt surfaces where a sleeve does not exist for main and/or lateral line pipe.
- C. Sleeves and/or conduit under existing paving: Bore for sleeves and/or conduit under existing paving and extend 12 inches beyond paving edge. Provide a separate sleeve for each water line and conduit for electrical control wires.

3.7 REMOTE CONTROL VALVES:

- A. Install where shown and on Drawings and group together where practical. Provide only remote control valve per box without exceptions.
- B. Locate valve boxes 12 inches from and perpendicular to hardscape edges and walls.
- C. Provide 12 inches between valve boxes where valves are grouped together.
- D. Thoroughly flush main line before installing valve.
- E. Install in shrub or ground cover areas rather than turf areas where possible.
- F. Adjust remote control valve flow stems and/or pressure regulator as follows:
 - 1. The most remote irrigation heads operate at the pressure recommended by the head manufacturer.
 - 2. Uniform distribution of water is applied by the irrigation heads to the planting areas.
- G. Label control line wire at each valve with a 2-1/4 inch x 2-3/4 inch polyurethane I.D. tag, indicating identification number of valve (controller and station number). Attach label to control wire.

3.8 VALVE BOXES:

- A. Provide and install remote control valves, ball valves, gate valves, or other valves in a valve box as shown in details, complete with cover bolted to valve box.
- B. Set valve boxes to finish grade in turf areas and 2 inches above finish grade in groundcover areas.
- C. Install one remote control valve in one valve box - no exceptions.
- D. Do not allow valve boxes to rest on pipes.
- E. Provide a minimum of 2 inches clear distance between valve and the box wall.
- F. Install valve boxes located near walks, curbs, headerboards and paving in such a way as to allow for valve boxes to abut those items with top lid surface matching plane of items listed above.

3.9 AUTOMATIC CONTROL WIRING:

- A. Run wires along mains wherever practical. Tie wires in bundles with pipe wrapping tape at 10 foot intervals and allow slack for contraction between strappings. Do not tape wire together where contained within sleeving of conduit.
- B. Loop a minimum of three (3) feet of extra wire in each valve box; control wire, spare wire and common ground wire.
- C. Provide an expansion curl within three (3) feet of each wire connection and at least every 100 feet of wire length on runs more than 100 feet in length. Form expansion curls by wrapping at least 5 turns of wire around a 1 inch diameter pipe, then withdraw the pipe.
- D. Make connections by crimping bare wires with brass connectors and sealing with splice kits as detailed.
- E. Field splicing will be permitted only upon written approval from the Architect. Locate splices at valve locations within valve boxes.
- F. Where control lines pass under paving, install wire inside a sleeve.

3.10 IRRIGATION CONTROLLER:

- A. Provide and install irrigation controller in location shown on Drawings. The exact locations will be determined on the site by the Architect. Provide conduit and wire and connect to 120-volt switch accessible to controller for ease of maintenance.
- B. Connect control lines to controller in sequential arrangement according to assigned identification number of valve. Label each control line wire at controller with a permanent, non-fading label indicating station number of valve controlled. Attach label to control wire.

- C. Arrange for the entire controller and installation to be approved and certified by the vendor in writing. Provide written certification to the Architect.

3.11 BACKFILLING:

- A. Backfill only after piping has been tested, inspected and approved by the Architect.
- B. Backfill material for piping under pavement: refer to trenching and backfill specifications for placement of suitable material.
- C. Backfill material for planting areas: earth excavated from the trenches, free from rocks, concrete chunks and other foreign or coarse materials.
- D. Place backfill materials in 4 inch layers and compact to between 85 and 90% relative compaction.
- E. Dress areas to finish grades and remove excess oil, rocks or debris remaining after backfill is completed.
- F. If settlement occurs along trenches, and adjustments in pipes, valves and irrigation heads, bubblers, emitters, drip line, soil, sod or paving are necessary to bring the system, soil, sod or paving to the proper level or the permanent grade, as part of the work under this Contract, make all adjustments without additional cost to the County.

3.12 IRRIGATION HEADS, BUBBLERS, EMITTERS, DRIP LINE, AND QUICK COUPLER VALVES:

- A. Thoroughly flush lines before installing heads, bubblers, emitters, drip line, or QCV's.
- B. Locate heads, bubblers, emitters, drip line, and QCV's as shown in the Drawings and detail.
- C. Adjust irrigation heads for proper distribution and trim.
- D. Adjust drip line to apply water to top of root ball. Add Emitter Micro-Tubing and Adapter as required to ensure each new plant has emitter on top center of plants root ball. Contractor shall provide temporary plugs for emitters when line source emitter is not in vicinity of roots of new planting.
- E. Install turf heads 2 inches above grade in turf area at time of installation. Lower to finished grade after turf is well established and as directed by the Architect.

3.13 TESTS:

- A. Perform tests as specified below. Remake any faulty joints with new materials. Use of cement or caulking to seal leaks is absolutely prohibited.
 - 1. Record Prints: No testing or system observation shall commence without "record" prints. In the event the Contractor calls for testing or system observation without up to date

“record” prints, without completing previously noted corrections, or without preparing the system for testing or system observation, the testing or system observation will be canceled and the Contractor will be charged for the direct costs of all County personnel’s time and consultant’s time lost. Testing or system observation will be required for:

2. Cross-connection control testing
 3. Pressure test of irrigation main line.
 4. Coverage test.
 5. Start of maintenance period.
 6. Final acceptance.
- B. Notify the Architect at least three (3) days in advance of testing.
- C. Perform testing at no additional expense to the County and in the presence of the Architect.
- D. Center load piping with small amount of backfill to prevent arching or slipping under pressure. No fitting shall be covered.
- E. Apply the following tests after weld plastic pipe joints have cured at least 24 hours.
1. Prior to the installation of any valves to the main line, flush pipes with water and fully expel air from piping. Cap ends of pipe and test pressure lines with the line fully charged with water.
 2. Test live (constant pressure), QCV lines at ____-psi minimum. Lines will be approved if test pressure is maintained for six (6) hours. Contractor shall make tests and repairs as necessary until test conditions are met.
 3. Test RCV controlled (lateral) lines prior to installation of irrigation heads, bubblers, and line source drip with water at line pressure and risers capped, and visually inspect for leaks. Retest after correcting defects.
- F. Coverage Test: When the irrigation system is completed, perform a coverage test in the presence of the Architect to determine if the water coverage for planting areas is complete and adequate. Provide this test prior to planting. Overspray that causes runoff to non-landscaped areas such as storm drain system, streets, or waterway shall not be permitted. Overspray on drinking fountains, picnic areas, and non-turf play areas shall not be permitted.
- G. Testing of Electrical System: Prior to acceptance of the work, provide the following tests to wiring:
1. Continuity test of each circuit.
 2. Ground fault of each circuit.
 3. A functional test to demonstrate that each and every part of the system functions as specified or intended herein.
- 3.14 Complete testing and provide Water Efficient Landscape Ordinance (WELO) Certificate of Completion with post-installation documentation, Parts 1-6.

3.15 GUARANTEE:

- A. Unconditionally guarantee the entire irrigation system for material and installation, including settling of backfilled areas below grade for a minimum period of one year following the date of final acceptance of the work.
- B. Submit a guarantee on Contractor letterhead as follows:

We hereby guarantee that the irrigation system we have furnished and installed is free from defects in materials and workmanship, and the work has been completed in accordance with the Drawings and specifications, ordinary wear and tear and unusual abuse, or neglect excepted, and that the work, materials and equipment as installed will fulfill the requirements of the guarantee included in the specifications. We agree to repair or replace any or all of our work, together with any other adjacent work which may be displaced by doing so, that may prove to be defective in materials and installation within a period of one (1) year from date of acceptance of the below named project in Mendocino County, at no additional cost to the County. We shall make such repairs or replacement of the work within seven (7) calendar days of written notification by the County. When the immediate repair or replacement of the work is necessary to ensure the public safety and welfare, which would be endangered by continued usage of the facility, such circumstance will be deemed an operational emergency. In the event of such an emergency after the County contacts our firm and after authorizing 24 hours to initiate repairs, if we fail to initiate and diligently complete such repairs in a timely manner, the County may direct County forces to perform such functions as may be necessary to correct the work and immediately place the facility back in operations condition. If such procedure is implemented, we shall bear all expenses incurred by the County. In all cases, the judgment of the County shall be final in determining whether an operational emergency exists. In the event of our failure to make such repairs or replacements within the times specified after receipt of written notice from the County (other than an operational emergency), we authorize the County to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefore upon demand.

PROJECT: _____

LOCATION: _____

SIGNED: _____

ADDRESS: _____

PHONE: _____

- C. If, within one year following acceptance of the work, settlement occurs and adjustments in pipes, valves and irrigation heads, sod or paving is necessary to bring the system, sod or paving to the proper level of the permanent grades, as part of the work under this Contract, make all adjustments without extra cost to the County, including the complete restoration of all damaged planting, paving or other improvements of any kind.
- D. Should any operational difficulties in connection with the irrigation system develop within the specified guarantee period which in the opinion of the Architect may be due to inferior material and/or workmanship, correct said difficulties immediately and to the satisfaction of the Architect and at no additional cost to the County, including any and all other damage caused by such defects.

3.16 CLEAN UP:

- A. Upon completion of the work, and at the end of each day, smooth all ground surfaces; remove excess materials, rubbish, debris, etc., sweep adjacent streets, curbs, gutters and trails and remove construction equipment from the premises.

3.17 MAINTENANCE:

- A. Properly and completely maintain the irrigation system. Maintain a balanced water program to ensure proper germination and growth until acceptance of the work. Plants which cannot be watered sufficiently with the irrigation system shall be watered by means of a hose.
- B. All controllers shall have each station individually adjusted on a weekly basis. Program controller considering the application rate each area is capable of receiving. Operate the system on short intervals, with the cycle repeating at a later time to reduce runoff. Program the irrigation system to operate between dusk and dawn (nightly) only and during non-windy hours.

3.18 TURNOVER ITEMS:

- A. Controller Charts:
 - 1. The Architect must approve record prints before charts are prepared.
 - 2. Provide two controller charts (of the maximum size controller door will allow) for each automatic controller. Chart shall show the area covered by controller.
 - 3. The chart shall be a reduced copy of the actual "record" print. In the event the controller sequence is not legible when the print is reduced, enlarged to a readable size.
 - 4. Color code the chart with a different color to show the area of coverage for each station.
 - 5. When completed and approved, hermetically seal the chart between two pieces of plastic, each piece being minimum 20 mils in thickness. Install the chart in the controller enclosure using weatherproof Velcro fasteners.
 - 6. Controller charts shall be completed prior to final observation.

B. Operation and Maintenance Manuals:

Prior to acceptance of construction, prepare and deliver to the Architect all required descriptive materials, properly prepared in two individually bound copies of the operation and maintenance manual. The manual shall describe the material installed and be in sufficient detail to permit operating personnel to understand, operate and maintain all equipment. Include spare parts lists and related manufacturer's information for each equipment item installed. Each complete, bound manual shall include the following information:

1. Index sheet stating Contractor's address and telephone, including names and addresses of local manufacturer's representative.
2. Complete operating and maintenance instructions on all major equipment.

C. Materials to be furnished:

1. Supply as part of the contract the following spare parts:
 - a. 4 percent additional irrigation heads, bubblers, emitters, and drip line of each type and pattern shown.
 - b. Two (2) wrenches for disassembly and adjustment of each type irrigation head installed.
 - c. Two (2) keys for each automatic controller.
 - d. Two (2) cover keys, coupling keys, and key swivels.
 - e. "As-built" mylars from "record" prints.
 - f. Gate valve key.
2. Turnover the above spare parts to the Architect at the final observation.

END OF SECTION 328400

SECTION 329000 – LANDSCAPE PLANTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY:

- A. Work Included:
 - 1. Furnish all plant materials.
 - 2. Furnish boulders.
 - 3. Furnish all labor, equipment and materials necessary for landscape planting installation and maintenance according to these Specifications.
- B. Refer to project Drawings for Bid Schedule and identification of work described herein that may be provided a Bid Alternate.
- C. Related Work:
 - 1. Section 32 80 00: Irrigation System
 - a. Irrigation system shall be installed and operative before beginning planting operation. Contractor shall fully acquaint themselves with the existing conditions, particularly in reference to underground piping. Any damage caused by the Contractor to work of other trades shall be repaired by them at no cost to the County.

1.3 COORDINATION:

- A. Coordinate work fully with all other trades involved. Coordinate with items of other trades to be furnished and set in place. Such portions of their work as is all or in part embedded, built-in, attached to, or supported by the work shall be executed by them in ample time that progress of the work is not delayed. Contractor shall be responsible for the proper installation of all items related to this section.
- B. Contractor shall coordinate with the Architect and fully acquaint themselves with the existing conditions particularly in reference to any existing underground piping. Any damage caused by the Contractor to work of other trades shall be repaired by them at no cost to the County.

1.4 REFERENCE:

- A. Perform work in accordance with all applicable laws, codes and regulations, as required by the Architect.
- B. Reference to “Standard Specifications” shall mean the current Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation, CALTRANS.

1.5 QUALITY ASSURANCE:

- A. Personnel: All planting shall be performed by personnel familiar with planting procedures under the supervision of a qualified foreman.
- B. Codes and Standards: Nursery stock shall meet the standards of the current edition of the “Agricultural Code of California” and the “Regulations of the Director of Agriculture Pertaining to Nursery Stock” as to grading and quality. They shall be true to type and name in accordance with “Standardized Plant Names, Second Edition.”
- C. Substitutions: No substitutions shall be permitted without approval of the Architect. The County reserves the right to require the Contractor to replace at the Contractor’s cost any plants which the Contractor has installed without the Architect’s approval.
- D. Plants shall be subject to inspection and approval of the Architect at place of growth and upon delivery for conformity to specifications. Such approval shall not impair the right of inspection and rejection during progress of the work.

1.6 SUBMITTALS:

- A. Plant Certification: All plants must meet specifications of Federal, State and County laws requiring inspection for plant disease and insect infestations. Inspection certifications required by law shall accompany each shipment, invoice and order for stock.
- B. Plant Material: Contractor shall submit nursery sources for all plant material, clearly stating Botanical Name and container size. Additionally, Contractor shall submit photos from the sources and size specification including container size, height, diameter, and trunk caliper.
- C. Seed: Contractor shall submit written certificates stating quantity, type, composition, purity, weight and source for all seed.
- D. Sod: Contractor shall submit written certificates stating quantity, type, composition, and source for all sod.
- E. Hydroseeding Materials: Contractor shall submit manufacturer’s information and rate of application for wood fiber, fertilizer and tackifier.

- F. Topsoil, Amendment and Fertilizer: Provide current, accurate analysis from an approved testing laboratory.
- G. Mycorrhiza planting backfill: MycoApply Endo/Ecto Plus, available from Mycorrhizal Applications, Inc., www.mycorrhizae.com.
- H. Test Results for each planting area shall include Combination Fertility, Agricultural Suitability, and Particle-Size Test by a soils laboratory approved the Architect. See Planting Plan for areas
- I. Tree Stakes and ties as indicated on the Drawings.
- J. Root Barriers as indicated on the Drawings.
- K. Mulch as indicated on the Drawings.
- L. Boulders as indicated on the Drawings.

1.7 JOB CONDITIONS:

- A. Delivery:
 - 1. Deliver fertilizer and amendments to site in original, unopened containers bearing manufacturer's guaranteed chemical analysis, name, trade mark and conformance to state law.
 - 2. Deliver plants with identification labels.
 - a. Labels shall state correct name and size.
 - b. Use durable, water-proof labels with water resistant ink that will remain legible for at least 60 days.
 - 3. Protect plant materials during transport to prevent damage to rootball or desiccation of leaves.
 - 4. Remove unacceptable plant materials immediately from job site.
- B. Storage:
 - 1. Contractor shall maintain the plant material properly between delivery and planting. This includes protection from animals and vandals; proper watering, and feeding when necessary.
 - 2. Shade plants shall be stored in the shade, and sun plants shall be stored in the sun.
- C. Timing: Under no circumstances shall any work be performed when the temperature exceeds 90 degrees or is below 40 degrees. No planting shall be done with the soil saturated with water.

PART 2 - PRODUCTS

2.1 SOIL AMENDMENTS:

- A. The following organic amendments, soil amendments and fertilizer rates and quantities are to be used for bid basis only. Contractor shall arrange and pay for testing by an accredited soils laboratory of existing site soil after rough grading operations are complete, and shall amend the soils according to said laboratory's recommendations. The soils recommendations shall be considered a part of this specification.
- B. Topsoil: Provide and install topsoil as required to complete landscape work. Top 8" of all planting areas shall be topsoil.
1. Topsoil may include clean on-site material that has been previously stripped from the top 6 inches of original grade or acceptable import material (as applicable). Acceptable topsoil shall be free from "rocks" (rock, stones, rubble, clay clods, etc. over 1" in diameter), roots, toxins, and any other deleterious material per the discretion of the Architect. All import topsoil proposed for use shall be submitted to the Architect for review and acceptance prior to use. Submit samples and current soil fertility and structure analyses for approval by the Architect.
 2. Topsoil to be furnished shall be fertile and friable, possessing characteristics of representative productive soils on the site. It shall not contain toxic substances which may be harmful to plant growth. When herbicide contamination is suspected then a radish/rye grass growth trial must be performed. Consult with the Architect prior to decision to test. It shall be uniformly textured and free of all objectionable foreign materials, oil or chemicals which may be injurious to plant growth. Natural topsoil shall possess a pH factor between 5.5 and 7.5, a sodium absorption ratio (SAR) of less than 8, a boron concentration of the saturation extract of less than 1 ppm, and salinity of the saturation extract at 25 degrees C. of less than 4.0 millimhos per centimeter. Obtain topsoil from naturally well-drained sites where topsoil occurs in a depth of not less than four inches (4"); do not obtain from bogs or marshes.
- C. Organic Amendment:
1. Physical Properties: A minimum of 90% of the material by weight shall pass a ½" screen. Material passing the ½" screen shall meet the following criteria:

% Passing	Sieve Designation
85-100	9.51 mm 3/8"
50-80	2.38 mm No. 8
0-40	500 micron No. 35
 2. Source material: Fully composted organic green waste
 3. Carbon and Nitrogen ratio: Maximum 35:1 if material is claimed to be nitrogen stabilized.
 4. Organic matter: Minimum 50% based on dry weight and determined by ash method. Minimum 270 lbs. organic matter per cubic yard of compost.
 5. Iron content: Minimum 0.08% dilute acid soluble iron based on dry weight; iron treated.
 6. Salinity (ECe): 4.5 dS/m maximum @ 25 degrees C. as determined in a saturation extract.
 7. Reaction (pH): Minimum: 5.5, Maximum: 8.0 as determined in saturated paste.

8. Moisture content 35% - 60%
9. Contaminants: the compost shall be free of contaminants such as glass, metal and plastic.
10. Maturity: Shall exhibit visible characteristics of maturity, including: dark brown to black color. Acceptable odor: moldy/musty, soil like, or none. Unacceptable odor: sour, ammonia or putrid.
11. Appearance: Identifiable wood pieces are acceptable, but the balance of the material should be soil like, without recognizable leaves.

D. Fertilizer:

1. Fertilizer shall be a commercial inorganic fertilizer in the granular or pelleted form. Fertilizer shall be delivered to the site in containers labeled in accordance with the applicable State of California regulations, bearing the warranty of the producer or the grade furnished, and shall be uniform in composition, dry and free-flowing.
2. Planting Areas:
 - a. 6N-20P-20K, and 16-6-8, pelleted type.
 - b. Sulphate – sulphur
 - c. Lime for pH adjustment of moderately acid soil
 - d. Starting one (1) month after planting, on a monthly basis, 21N-0P-0K Ammonium sulfate. 5 lbs. per 1,000 square feet
3. Trees:
 - a. 21 gram 20N-10P-5K slow release fertilizer tablets as manufactured by Agriform. Apply according to manufacturer's instructions.
 - b. After planting: 21N-0P-0K Ammonium sulfate 5 lbs. per 1,000 square feet.

- E. Mycorrhiza Planting backfill: MycoApply End/Ecto plan, available from Mycorrhizal Applications, inc.

2.2 MULCH:

- A. Mulch shall be as stated on the Drawings. Bark size shall be no greater than 1".

2.3 CONTAINER PLANTS:

- A. All plant materials shall be nursery grown in accordance with the best known horticultural practices and under climatic conditions similar to those in the locality of the project.
- B. Plants shall be vigorous and shall have a normal habit of growth. Plants shall be free of damage by insects, pests, diseases or wind; burns from insecticides or fertilizer; and stunted growth due to lack of water, lack of food, diseases or other causes. Plants shall be in conformity with the sizes shown on the Drawings.
- C. Trees: Unless otherwise specified, tree trunks shall be straight with leader intact, undamaged and uncut. All old abrasions and cuts are acceptable only when completely callused over.
- D. Quantities: Quantities necessary to complete the work as shown on the Drawings shall be furnished.

- E. Root Systems: All trees shall have a normal root system. No plants with roots that have encircled themselves will be accepted. In case of any unsatisfactory root system, a total group of plants may be rejected.

2.4 TURF:

- A. Sod: Various sod types shall be as specified on the Drawings.

2.5 ROOT BARRIER:

- A. Root barrier shall be installed between trees and pavement when trees are located within eight feet (8') of pavement. Root barrier shall run parallel to pavement.
- B. Root barrier units shall be Deep Root Barrier as specified on Drawings, or approved equal.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS:

- A. Inspections by the Landscape Contractor:
 - 1. Prior to all work in this section, verify grades and carefully inspect the installed work of all other trades. Verify that all such work is complete to the point where the installation may properly commence.
 - 2. All planting areas shall contain a minimum of eight (8) inches of acceptable topsoil. As applicable and where needed, only previously acceptable topsoil shall be installed.
 - 3. Inspect plant materials for injury, insect infestations and proper pruning.
 - 4. Landscape Contractor shall receive site graded to plus or minus one-tenth of a foot (0.10') of finish grades shown on the Drawings. Allow for depth of soil amendments and mulch in determining the difference between finished subgrade in groundcover and shrub beds. Verify that subgrades are not compacted.
 - 5. Landscape Contractor shall over excavate planting beds along the perimeter of lime treated areas to remove excess lime that was added for construction. Refer to geotechnical report for required overbuild and depth of lime to determine extent of removal. Provide new topsoil in these planting areas.
 - 6. Contaminated Soil:
 - a. Do not perform any soil preparation work in areas where soil is contaminated with cement, plaster, paint or other construction debris. Bring such areas to the attention of the Architect and do not proceed until the contaminated soil is removed and replaced.
 - b. Contaminated soil shall be removed to full depth of contaminants with a minimum depth of 12 inches and replaced with acceptable topsoil.
 - 7. Moisture Content: Soil shall not be worked when moisture content is so great that excessive compaction will occur, nor when it is so dry that dust will form in the air or that

- clods will not break readily. Water shall be applied, if necessary, to bring soil to an optimum moisture content for tilling and planting.
8. Soil Loosening: Soil in all planting areas (only) shall be ripped or cultivated to the depths specified below. Water shall be added and ripping or cultivating shall be continued until the entire specified depth is loose and friable. All debris, pavement, concrete, and rocks over 1 inch in diameter shall be removed to the specified depth and shall be removed from the site and disposed of properly.
 - a. Slopes 2½ horizontal to 1 vertical and steeper: No loosening required.
 - b. All other areas to be planted: 12 inches deep.
 9. Weed Control and removal:
 - a. Remove all weeds and other debris prior to any soil preparation or grading work. Weeds and debris shall be disposed of off the site properly.
 - b. Grow and Kill: After grading finish is complete, apply water in sufficient quantity over a minimum period of 14 days to germinate weed seeds. When weeds have germinated, kill them and remove them in a manner acceptable to the District and that will not have a detrimental residual effect on the growth and vigor of the landscape planting work. Provide temporary irrigation as required to apply the water.
 10. In the event of discrepancy, immediately notify the Architect. Do not proceed with this installation in areas of discrepancies until all such discrepancies have been fully resolved

3.2 SOIL PREPARATION:

- A. In the areas designated for landscaping on the Drawings, Contractor shall, prior to placing imported material and replacing existing topsoil before doing any planting, verify that the areas are clear and free of weeds, roots, debris, rocks and underground obstructions, and construction debris to a depth acceptable for planting. Scarify the subgrade to a four inch (4") minimum depth prior to spreading topsoil. Finished grades shall be approved by the Architect prior to commencing soil preparation and planting operations.
- B. Cultivation and Placement of Amendment:
 1. In planting areas (excluding Bioretention Areas to receive Infiltration Sod), cultivate soil to a depth of twelve inches (12"). Incorporate six (6) cubic yards per 1,000 square feet of nitrified fir bark. Prior to planting, incorporate to a depth of six inches (6") the following fertilizers, per 1,000 square feet: 30lbs. 6N-20P-20K.
 2. All work in the proximity of existing trees to remain shall follow the Tree Protection Specifications on the Drawings. Apply fertilizer in accordance with soils test results.
- C. Soil Mix for Backfill of Trees:
 1. The following ingredients shall be tumbled to achieve a homogenous mix:

Organic Amendment	1 cubic yard
Topsoil	3 cubic yards
Fertilizer	10 pounds 6N-20P-20K
 2. Mix Mycorrhiza planting backfill with the planting backfill in the top 1" of the plant hole evenly distributed and as close to the rootball as possible at the following rates:

4" pot or Liner:	1 teaspoon
# 1 gallon:	1 tablespoon
# 5 gallon:	4 tablespoons
# 15 gallon:	6 tablespoons
24" box	8 tablespoons

D. Finish Preparation:

1. After approval of amendment and fertilizer applications by the Architect, incorporate into the top six inches (6") of soil by repeated rotary-hoe cultivation except within tree protection zones.
2. When rough grading and soil conditioning has been completed, all planting areas shall be smooth graded, ready for placement of plant materials and for seeding. Grading shall be done when soil is at optimum moisture content for working.
3. Finished grades shown on the Civil Drawings are given in feet and decimals of feet. Slope uniformly between given spot elevations. Planting areas shall be true to grade within one inch when tested in any direction with a 10 foot straightedge.
4. Grades not otherwise indicated shall be uniform levels or slopes between points where elevations are given or between points established by walks, paving, curbs or catch basins. Finished grades shall be smooth even and on a uniform plane with no abrupt change of surface. Minor adjustments of finish grades shall be made at the direction of the Architect if required.
5. All grades shall provide for natural runoff of water without low spots or pockets. Flow line grades shall be accurately set and shall not be less than 2 percent gradient wherever possible unless otherwise indicated on the Drawings.
6. Tops and toes of all slopes shall be rounded to produce a gradual and natural-appearing transition between relatively level areas and slopes.
7. Roll to compact amended soil to not more than 85% compaction.
8. Finish out to a smooth, even surface conforming to established grades after settlement. Rake immediately prior to planting.
9. If rain is likely between completion of soil preparation and planting, precaution shall be taken to prevent erosion of the soil.

3.3 BOULDERS:

- A. The Drawings indicate the general arrangement of the boulders to be placed on the project site. The final location of all boulders shall be reviewed and approved in the field by the Architect prior to installation.
- B. Contractor shall take all necessary precautions to ensure that boulders are not damaged or scarred during loading, transport, unloading and placement.
- C. After locations are approved, Contractor shall excavate an area twice as wide as each boulder to a depth of 1/3 of the overall height of the boulder.

- D. Boulders shall not be dumped or dozed into place but rather shall be set by use of a crane or “cherry picker” utilizing slings or tongs. Boulders shall be placed so that any scars or defects are not visible after the rock is placed.
- E. Boulder placement shall be approved in place by the Architect prior to backfill. Contractor shall adjust placement and orientation of boulders until approved by the Architect. Boulders that are damaged or scarred shall be removed and replaced by the Contractor at no additional cost to the County.
- F. Following approval of boulder placement, Contractor shall backfill the excavation around the boulder, compact and finish grade to the elevation indicated on the Drawings.

3.4 CONTAINER PLANTS:

A. Preparation:

- 1. Stake out location for plants and outline of planting beds on ground and obtain the approval of the Architect before digging.
- 2. The Contractor shall protect all utilities, vegetation and structures during work.

B. Excavation:

- 1. All plant pits shall be dug circular in outline and with vertical walls. The sides and bottoms of all planting pits shall be thoroughly scarified.
- 2. Holes for fifteen (15) gallon size plants or larger: twenty-four inches (24”) wider than the can or rootball, and twelve inches (12”) deeper than the rootball.
- 3. After pits are dug, break sides to open wall of pit for root penetration and loosen bottom of pit three inches (3”). Construct a foot tamped mound in bottom of pit to support plant at proper level.

C. Plants in Containers:

- 1. Plants shall be removed carefully from their containers after the containers have been cut on two (2) sides minimum; fifteen (15) gallon containers shall be opened in three (3) places.
- 2. After removing plant material from its container, stimulate root growth by making four (4) or five (5) vertical cuts, one inch (1”) deep around the circumference of the rootball.
- 3. Do not lift or handle plants by the top, stems or trunk at any time. All plants shall be lifted in such a manner that the rootball is supported from the underside.
- 4. The Contractor shall check all plants for adequate root systems. When the root system is defective, he shall remove deficient plants from the site and replace them with new ones with adequate root system.

D. Planting:

- 1. Center plant in pit or trench over tamped mound.
- 2. Face for best effect.
- 3. Set plant plumb and hold rigidly in position.

4. All plants shall be set in the ground so that the rootball will be flush with the finish grade. All plants that settle below the finish grade within thirty (30) days of acceptance of the work shall be replanted in the proper position. In case a total section of planting area settles, the Contractor shall lift the plants, import additional soil mix, regrade and replant, at no additional cost to the County.
5. Use amended soil mix only for backfill. Backfill pit with soil mix in nine inch (9") layers and water each layer thoroughly to settle soil. The filled pit shall be flush with surrounding grade when complete.
 - a. In the top 1" of the plant hole, mix Mycorrhiza planting backfill with the plant backfill. Evenly distribute the Mycorrhiza and place as close to rootball as possible at the following rates.

4" pot or Liner:	1 teaspoon
# 1 gallon:	1 tablespoon
# 5 gallon:	4 tablespoons
# 15 gallon:	6 tablespoons
24" box:	8 tablespoons
6. When the plant pit has been approximately one-half (1/2) filled, place planting tablets according to the manufacturer's schedule.
7. Planting areas shall be hand raked to remove all clods, weeds, roots, debris, and rocks 1-inch in diameter and larger.

3.5 TREE STAKING:

- A. Stake trees as indicated on the Drawings.
- B. Tying: find the proper support height by holding the trunk in one hand and pulling the top to one side and releasing it. The lowest height at which the trunk will return to the upright position when the top is released is the height at which to attach tree ties. Tree stakes shall be adjusted throughout the maintenance period as necessary to insure perpendicular growth habit due to severe windy conditions.

3.6 PRUNING:

- A. Pruning shall be performed as required to maintain a natural appearance, promote healthy and vigorous growth and eliminate diseased or damaged growth.
- B. Trees shall be pruned to thin crown and avoid wind damage, eliminate narrow V-shaped branch forks that lack strength, eliminate sucker growth and maintain a radial branching pattern to avoid crossing branches.
- C. Under no circumstances will stripping of lower branches ("raising-up") of young trees be permitted. Lower branches shall be retained in a "tipped back" or pinched condition with as much foliage as possible to promote caliper trunk growth (tapered trunk).
- D. Major pruning of trees to compensate for root loss or for aesthetic reasons shall be done only with approval of the Architect.

- E. All pruning shall be made flush to lateral branches, buds or trunk. "Stubbing" will not be permitted.
- F. Damage: All cuts over one inch (1") resulting from pruning or wind breakage shall be inspected periodically for insect infestation or disease.

3.7 SODDING

- A. Sod shall be as indicated on the Drawings.
- B. After soil preparation, areas to be planted to sod shall be graded to drain and shall be smooth and uniform prior to placing sod. Areas shall be hand raked to remove all clods, weeds, roots, debris, and rocks 1-inch in diameter and larger. Areas to be planted to sod adjacent to pavement areas shall be 1 inch below the finish grade. After fine grading, rolling, and settlement of the soil, sod shall be placed.
- C. Grading in turf areas that has been established under work of another Section and/or Contract shall be maintained in a true, even condition, equal to when said grades were previously approved by the Architect.
- D. Sod shall be placed so that the ends of adjacent strips of sod are staggered a minimum of 2 feet. Edges and ends of sod shall be placed firmly against adjacent sod and against sidewalks, concrete headers, header boards, and other paved borders and surfaced areas. Where no edging is present, Contractor shall cut edge of sod in line indicated on the Drawings and backfill edges with soil. Edges of sod rolls shall not be exposed.
- E. After placement of the sod, the entire sodded area shall be lightly rolled to eliminate air pockets and to ensure close contact with the soil.
- F. Turf areas shall be watered so that the soil is moistened to a minimum depth of 4 inches. Turf areas shall not be allowed to dry out for a minimum of 14 days.

3.8 HYDROSEEDING

- A. Apply to areas indicated on Drawings.
- B. Preparation:
 - 1. After soil preparation, areas to be hydroseeded shall be hand raked to remove all clods, weeds, roots, debris, and rocks 1-inch in diameter and larger.
 - 2. Areas designated to be hydroseeded, that have been established under work of another Section and/or Contract shall be maintained in a true, even condition, equal to when said grades were previously approved by the Architect.
 - 3. Repair erosion caused by surface water runoff or by wind and restore areas to their original condition.
 - 4. Architect shall inspect and approve final grades prior to hydroseeding.

C. Mixing:

1. Equipment used for the application of slurry shall be commercial type hydroseeder and have a built-in agitation system with an operating capacity sufficient to agitate, suspend and homogenously mix slurry.
2. Prepare slurry by mixing fiber, tackifier, seed, fertilizer, and water. The materials shall be loaded and mixed in such a sequence as to provide homogenous slurry. The slurry shall have the proper consistency to adhere to the earth without lumping or running.
3. Mixing time of the materials shall not exceed 45 minutes from the time the seeds contact the water to the complete discharge of the slurry on the earth or the batch shall be rejected.

D. Application:

1. Apply slurry hydraulically at the rates indicated on the Drawings.
2. Distribution of the slurry shall be uniform throughout.
3. When conditions are unfavorable due to high wind, excessive moisture, or other factors such inhibit uniform application the work shall be stopped until conditions are favorable.
4. Contractor shall reseed in 10 day intervals any areas that do not take root and grow. Hydroseeded areas shall germinate and grow vigorously with no bare spots greater than 6" in the greatest dimension. Contractor shall maintain area during establishment to be weed free.

3.9 PROTECTION:

- A. Protect all planted areas and plants against trespassing and damage at all times. If any plants are damaged, replace as directed by the Architect with no additional cost to the County.

3.10 CLEAN UP:

- A. Upon completion of planting, all cans, boxes and other debris that is a part of the planting operation shall be removed from the site.
- B. All pavements shall be washed off, and site shall be left in an absolutely clean condition. All planting areas shall be cultivated and weed free before final inspection. Clean-up operations shall take place throughout the course of work so that walks and drives are clean at all times.

3.11 REVIEW CHECK POINTS:

- A. Notification: The Contractor shall notify the Architect a minimum of 72 hours before requiring a visit by the Architect.
- B. Check Points: The following shall be considered check points and the Contractor shall only proceed with the work after the Architect has visited the site and determined that the work is proceeding satisfactorily.

1. Completion of rough grading in planting areas in which boulders are to be placed.
2. After placement of topsoil, soil amendment and fine grading before planting, seeding or sodding.
3. Contractor shall complete excavations for boulders and place boulders. Architect shall review boulder placement with Contractor and equipment on site. Contractor shall schedule all boulders to be placed in one day.
4. Layout of plant material. All plant material in the planting area shall be placed in the configuration shown on the Drawings prior to plant pit excavation.
5. Maintenance period shall not start until all construction for the entire project is complete.
6. A check visit shall be made to begin the maintenance period. At this time the Contractor shall have completed all phases of the Drawings and Specifications. Any discrepancies shall be noted at that time and the Contractor shall make appropriate corrections before beginning the maintenance period.

3.12 MAINTENANCE:

- A. Contractor shall furnish all labor, material, equipment and services required to maintain the landscape in a healthy and attractive condition for a period of ninety (90) calendar days.
- B. Maintenance shall include fertilization, watering, insect and disease control, weed control (hand or spray), mowing, pruning, restaking, continual checking, adjusting, programming and making all necessary repairs to the automatic irrigation system, cleaning of pavement, replenishment of bark mulch, and weekly trash removal from all project site areas. All chemical use shall conform to County's standards for application and notification.
- C. No later than two (2) calendar weeks prior to the end of the maintenance period, the Contractor shall request in writing a review of the work by the Architect. When, upon review, the Architect finds all project work to be complete, the plant material to be in a healthy condition and all landscape areas to be weed-free and in a neat, orderly condition, then written acceptance of work shall be given by the Architect. When approval and acceptance of the work is not given, the Architect shall prepare a "construction punch list" of items to be completed before acceptance of the work is given. Acceptance shall only then be given upon verification by the Architect that the punch list items have been completed. Maintenance period shall only commence after "construction punch list" items have been completed and approved. "Construction punch list" items shall be completed within the specified construction period to avoid liquidated damages and extension of maintenance period.
 1. All plant material shall be live, healthy, undamaged, vigorous and free from infestations.
 2. All turf areas shall be completely covered at the time of final acceptance, leaving no bare spots. Turf shall be free of all weeds (broadleaf and grass weeds).
 3. Planting areas shall be free of all weeds.
 4. Nursery stakes shall be removed from trees.
- D. The Contractor's maintenance period will be extended when the provisions required within the drawings and specifications are not full complete and accepted by the Architect.
- E. Watering:

1. All plants shall be kept watered as often as it is necessary to keep them in optimum, vigorous growth. Watering shall be done preferably during the early morning hours.
2. Water shall be controlled so that there will be no excessive run-off, ponding or overwatering.
3. Root Growth: Periodically the Contractor shall check the progress of the root growth within the back fill area. As the root growth increases beyond the root ball, the frequency of watering shall be reduced to that the roots are encouraged to grow to a lower soil depth. Watering then shall be less frequent, but applications shall be very slow and the Contractor shall assure that water does penetrate to the depth of the former plant pit.

F. Mowing:

1. Winter: Mow grass weekly to 1-1/2" when it reaches height of 2-1/2". Remove no more than 1/3 of the grass blade at each mowing event
2. Other seasons: Mow grass weekly to 2-1/2" when it reaches a height of 3-1/2". Remove no more than 1/3 of the grass blade at each mowing event
3. Biofiltration Sod and Native Mow Free Sod shall be mowed or trimmed with a line trimmer to remove dead growth or remove seed heads as approved by the Architect.

G. Spraying:

1. Trees shall be inspected at least two (2) times a month during the growing period to determine the need for spraying to control insect damage, fungus development or any other disease that might be attacking the plants. Plants shall be sprayed with a broad spectrum material that will control the specific pest and any other pests that might normally be anticipated during that part of the season. Preventative spraying shall be done only with the approval of the County.
2. Operators of spray equipment shall take all reasonable precautions to protect themselves, other people and buildings from spray. The Contractor shall publicly notice the use of herbicides and have all permits and licenses required for such an operation. Where applicable, dormant spray shall be applied to shrubs and trees during the winter period.
3. All equipment shall be properly washed before and after use.
4. No spraying shall take place without proper public noticing procedures or during windy or gusty days.

H. Staking and Guying: Stakes and guys shall be inspected a minimum of two (2) times a month to assure that the wires and ties are tight and no damage has occurred to the tree trunk or branches. Contractor shall restake and guy trees as directed by the Architect.

I. Weed Control:

1. Weeds shall be kept under control by hand removal. Herbicides shall only be used when approved by the County. Weed all areas at an interval of not more than ten (10) days.
2. Pre-emergent herbicide shall be applied to all tree and turf areas including plant basins. Chemicals used are to be in written chemical control program prepared by a licensed pest control advisor and approved by the Architect. Apply prior to any mulching.

3. All equipment used for herbicides shall be properly cleaned before it is used on this project. Herbicides shall be applied at temperatures recommended by the manufacturers. Herbicides shall not be used during windy or gusty days. All possible precautions shall be taken to protect vegetation which is susceptible to damage from the particular herbicides to be used.
 4. The bases of all plants shall be kept completely free of weeds. Periodically, the base of the trees and shrubs shall be cultivated in order to allow better penetration of water, but such cultivation shall be carefully done in order not to destroy surface roots.
- J. Fertilization: Topdress all areas at one (1) month intervals from time of planting with fertilizer of same composition and at same rate as at time of planting.
- K. Litter: The Contractor shall remove promptly after pruning, trimming and weeding or other work required under the contract, all debris generated by his performance of the work. Walkways, driveways and paved areas shall be vacuumed clean with suitable equipment immediately after working in these areas. All areas covered by this contract shall be kept free of debris and litter.
- L. Pruning: Prune as necessary to remove injured twigs and branches, dead wood and suckers.

3.13 GUARANTEE AND REPLACEMENT:

- A. Guarantee period shall be extended for a period of one (1) year from the date of written acceptance.
- B. All plants shall be guaranteed to be alive and healthy as determined by the Architect at the end of the guarantee period.
- C. The Contractor shall replace within two (2) weeks of notice and in accordance with the Drawings and Specifications throughout the guarantee period, any plants that die, or in opinion of the Architect, are in an unhealthy or unsightly condition, and or have lost their natural shape due to dead branches, excessive pruning, inadequate or improper maintenance, or any other causes due to the Contractor's negligence. Any plant that shows 25% defoliation shall be considered unhealthy.

END OF SECTION 329000

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SECTION 331100 – WATER UTILITY DISTRIBUTION PIPING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Locate and verify pipe size at water system connections.
- B. Provide and install water system pressure pipe, fittings, and appurtenances.
- C. Provide and install all water system appurtenances, i.e. post-indicator valve(s), fire department connection(s), backflow preventer(s), hose bibb(s), fitting(s), valves(s), etc.
- D. Provide and install concrete thrust blocks.
- E. Connect new water system to existing service lines.
- F. Disinfection and testing of new water line.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including the Division 01 Specification Sections apply to this Section.
- B. Related Sections include the following:
 - 1. Trenching, Backfilling and Compaction – Section 312316.

1.3 SUBMITTALS

- A. In accordance with Section 013300, Submittal Requirements:
 - 1. Submit choice of pipe, fittings, and appurtenances for review prior to ordering.

1.4 REFERENCES

- A. California Plumbing Code (CPC), latest edition.
- B. California Fire Code (CFC), latest edition.
- C. National Fire Protection Association (NFPA) Standard for the Installation of Private Fire Service main and their Appurtenances, latest edition.
- D. City of Ukiah Standard requirements.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Water pipe shall be delivered, handled, and stored in a way that prevents damage to the pipe and the entry of foreign materials into the pipe.
- B. Regardless of cause, damaged pipe shall be replaced with new products at the expense of the Contractor.

PART 2 - PRODUCTS

2.1 WATER SERVICE PIPE AND FITTINGS

- A. All domestic water piping 3-inch diameter and smaller shall be PVC Sch. 80, with solvent cement fittings compatible with the pipe.
- B. All domestic water piping 4-inch in diameter shall be PVC C900, DR18.
- C. All fire and domestic water piping 6-inch diameter and larger shall be PVC C900, DR14.
- D. All recycled/reclaimed water piping 3-inch in diameter and smaller shall be purple PVC Sch. 80, with solvent cement fittings compatible with the pipe.

2.2 WATER SYSTEM APPURTENANCES

- A. All domestic water line valves shall be bronze body ball valves centered in a valve box with a PVC riser.
- B. All fire water line valves shall be resilient wedge, non-rising stem suitable for 200 psi minimum working pressure centered in a valve box with a PVC riser.
- C. Domestic and fire water valve boxes shall be model G05 as manufactured by Oldcastle Infrastructure, or approved equal with lid marked "WATER."
- D. All recycled/reclaimed water line valves shall be bronze body ball valves centered in a valve box with a purple PVC riser. Valve handle shall be purple and lettered "RECLAIMED WATER."
- E. Recycled/reclaimed water valve boxes shall be model G05, color coded purple, as manufactured by Oldcastle Infrastructure, or approved equal with lid marked "RECLAIMED WATER."
- F. Post-indicator valves, fire department connections, backflow preventers shall be the model indicated on the plans per the drawing details and the City of Ukiah approved list and standard drawings, or approved equal.

PART 3 - EXECUTION

3.1 GENERAL

- A. Construction of the private domestic and recycled/reclaimed water system shall conform to the requirements of the CPC.
- B. Construction of the private fire water system shall conform to the requirements of the CFC and NFPA 24, and shall be inspected during installation by the local fire authority.

3.2 POTHOLING AT CONNECTION POINTS

- A. The exact location and size of existing water service lines is unknown and is depicted on the plans based upon the best information available.
- B. The Contractor shall pothole in the vicinity of each connection point to verify the exact location and size of the existing water line. That information shall be presented in the form of a field sketch through the RFI process, for confirmation by the Engineer that the line as located is adequate to serve the proposed buildings.

3.3 PIPE DISTRIBUTION AND HANDLING

- A. Pipe distribution shall not take place too far in advance of laying operations.
- B. Pipe shall be handled carefully to avoid damage. Pipe handling by mechanical equipment shall be in accordance with the pipe manufacturer's recommendations.
- C. The spigot ends of pipes and fittings that utilize polyvinyl chloride or polyurethane factory applied flexible compression joints shall not rest on the ground or pavement.
- D. All pipe, fittings, and valves shall be carefully lowered into the trench by means of a derrick, ropes or other suitable tools or equipment, in such a manner as to prevent damage to pipe materials, protective coatings and linings. Under no circumstances shall pipe materials be dropped or dumped into the trench.

3.4 PIPE LAYING

- A. No pipe shall be laid in water or when trench conditions are unsuitable to allow performing the job in a professional manner.
- B. Pipe shall be laid with bell ends facing in the direction of laying, and shall progress uphill.
- C. Pipe deflections, where permitted, shall not exceed that recommended by the pipe manufacturer.
- D. Pipe and fittings which do not allow sufficient space for joints shall be removed and replaced with pipe and fittings of proper dimensions.

- E. Every precaution shall be taken to prevent foreign material from entering the pipe. If necessary, a heavy, tightly woven canvas bag of suitable size shall be placed over each end and left there until the connection is to be made to the adjacent pipe. During laying operations, no debris, tools, clothing or other materials shall be placed in the pipe. If foreign materials do enter the pipe, they shall be removed continuously as work progresses.
- F. At times when pipe laying is not in progress, the open ends of laid pipe shall be closed by a watertight plug.
- G. Wherever the jointing material specified is cement, two or more lengths of pipe shall be in place ahead of each joint before such joint is finished.
- H. Where PVC, SCH 80, pipe is used, pipe ends shall be lightly sanded and wiped just prior to making the joint to assure good adhesion.
- I. The Contractor is advised that the City Fire Department typically inspects private fire main testing and generally requires that testing be performed with exposed joints and with the pipe restrained with partial backfill over the center of the pipe.

3.5 FLUSHING AND TESTING

- A. Private Potable Water System
 - 1. The system shall be flushed with potable water until only potable water appears at the outlet point.
 - 2. The system shall be disinfected in accordance with Section 609.9 of the CPC.
 - 3. The system shall be hydrostatically tested in accordance with Section 609.4 of the CPC.
- B. The private fire mains shall be flushed and tested in accordance with NFPA24:
 - 1. Pipes shall be flushed at the design flow rate of the system or at a rate which produces a velocity in the pipe of 10 feet per second, whichever is greater.
 - 2. The systems shall be hydrostatically tested at not less than 200 psi for two hours. Leakage at the joints shall not exceed two quarts per hour per 100 gaskets or joints.
 - 3. Testing shall be observed by the local fire authority.
- C. Tests shall be made by the Contractor in the presence of the authority having jurisdiction and the Owner's Representative.

3.6 CONNECTIONS TO EXISTING SERVICES AND MAINS

- A. Contractor shall make connections to existing mains where indicated on the plans. Said connections shall be made after new water pipe is flushed and tested in accordance with this specification. The Owner's Representative and City of Ukiah Inspector shall observe all tests.

- B. Sawcut, remove, and repair existing pavements as noted on plans.

3.7 CLEAN UP

- A. Remove all debris and stains resulting from the work of this section.

END OF SECTION 331100

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SECTION 333000 – SANITARY SEWERAGE UTILITIES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Locate and verify invert elevation of existing pipe at proposed point of connection.
- B. Provide and install gravity sewer pipe.
- C. Provide and install sewer cleanouts.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including the Division 01 Specification Sections, apply to this Section.
- B. Related Sections include the following:
 - 1. Trenching, Backfilling and Compaction - Section 312316

1.3 SUBMITTALS

- A. In accordance with section 013300, Submittal Requirements:
 - 1. Submit choice of pipe and appurtenances for review prior to ordering.

1.4 REFERENCES

- A. California Plumbing Code (CPC), latest edition.
- B. City of Ukiah Standards

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Sewer pipe and appurtenances shall be delivered, handled, and stored in a way that prevents damage to the pipe and prevents entry of foreign materials into the pipe.
- B. Regardless of cause, damaged pipe and appurtenances shall be replaced with new products at the expense of the Contractor.

1.6 GRADE AND ALIGNMENT CONTROL

- A. General
 - 1. Necessary installation procedures, as needed to ensure pipes are installed at the location and grade staked in the field, shall be used.
- B. Method

1. One of the following methods shall be utilized to control grade and alignment:
 - a. Batter boards set at 25' intervals with a string line set over at least three batter boards.
 - b. Electronic 'Laser' beam set at manhole locations or grade breaks (with at least three grade points shall be checked to verify the set grade).
 - c. Survey instrument set at cleanout to site, between cleanouts at the set grade.
- C. Equipment
 1. The Contractor shall furnish all equipment necessary to install and inspect the pipe installation. Grade rod shall be held to a minimum in all cases.

PART 2 - PRODUCTS

2.1 GRAVITY SEWER PIPE AND SERVICE LATERALS

- A. Sewer pipe 6 inches in diameter and smaller shall be PVC, SDR 35 with gasketed joints, or approved equal.
- B. Pipe shall be green in color.

2.2 CLEANOUTS

- A. As shown and detailed on the Drawings.
- B. Lids shall be concrete, marked "sewer".

PART 3 - EXECUTION

3.1 GENERAL

- A. Construction of the private sewer system shall conform to the requirements of the CPC, as well as City of Ukiah Standards and drawings details.

3.2 VERIFY EXISTING CONDITIONS

- A. The exact location and depth of existing sewer lines is unknown and is shown based upon the best information available.
- B. Prior to ordering any materials, Contractor shall pot hole in the vicinity of each point of connection and crossing with existing utilities to verify the exact location (horizontal and vertical) and size of the existing sanitary sewer/utilities. This information shall be presented in the form of a field sketch through the RFI process for review and confirmation by the Engineer that the existing line and proposed design is adequate to serve the project.

3.3 PIPE DISTRIBUTION AND HANDLING

- A. Pipe distribution shall not take place too far in advance of laying operations.
- B. Pipe shall be handled carefully to avoid damage. Pipe handling by mechanical equipment shall be in accordance with the pipe manufacturer's recommendations.
- C. The spigot ends of pipes and fittings that utilize polyvinyl chloride or polyurethane factory applied flexible compression joints shall not rest on the ground or pavement.
- D. All pipe and fittings shall be carefully lowered into the trench by means of a derrick, ropes, or other suitable tools or equipment, in such a manner as to prevent damage to pipe materials, protective coatings and linings. Under no circumstances shall pipe materials be dropped or dumped into the trench.

3.4 PIPE LAYING

- A. No pipe shall be laid in water or when trench conditions are unsuitable to allow performing the job in a professional manner.
- B. Pipe shall be laid with bell ends facing in the direction of laying and shall progress uphill.
- C. Pipe deflections where permitted shall not exceed that recommended by the pipe manufacturer.
- D. Pipe and fittings which do not allow sufficient space for joints shall be removed and replaced with pipe and fittings of proper dimensions.
- E. Every precaution shall be taken to prevent foreign material from entering the pipe. If necessary, a heavy, tightly woven canvas bag of suitable size shall be placed over each end and left there until the connection is to be made to the adjacent pipe. During laying operations, no debris, tools, clothing or other materials shall be placed in the pipe. If foreign materials do enter the pipe, they shall be removed continuously as work progresses.
- F. At times when pipe laying is not in progress, the open ends of laid pipe shall be closed by a watertight plug.
- G. Wherever the jointing material specified is cement, two or more lengths of pipe shall be in place ahead of each joint before such joint is finished.

3.5 TESTING

- A. All new sewer laterals shall be tested in accordance with procedures specified in the CPC, Section 712.2 (Water Test) as described herein. The tests shall be observed by the Owner's Representative.

- B. The water test shall be applied to the drainage and vent systems either in its entirety or in sections. If the test is applied to the entire system, openings in the piping shall be tightly closed, except the highest opening, and the system filled with water to point of overflow. If the system is tested in sections, each opening shall be tightly plugged, except the highest opening of the section under test, and each section shall be filled with water, but no section shall be tested with less than a ten (10) foot (3,048 mm) head of water. In testing successive sections, not less than the upper ten (10) feet (3,048 mm) of the next preceding section shall be tested, so that no joint or pipe in the building (except the uppermost ten (10) feet (3,048 mm) of the system) shall have been submitted to a test of less than a ten (10) foot (3,048 mm) head of water. The water shall be kept in the system, or in the portion under test, for not less than fifteen (15) minutes before inspection starts. The system shall then be tight at points.
- C. A City of Ukiah Inspector shall witness all sewer utility testing.

3.6 CLEAN UP

- A. Remove all debris and stains resulting from the work of this section.

END OF SECTION 333000

SECTION 334000 – SITE DRAINAGE

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Provide and install storm and roof drain pipe and appurtenances.
- B. Provide and install subdrain pipe and appurtenances.
- C. Provide and install storm and roof drain system structures, including clean-outs, drainage inlets, etc.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including the Division 01 Specification Sections, apply to this Section.
- B. Related Sections include the following:
 - 1. Trenching, Backfilling and Compaction - Section 312316

1.3 SUBMITTALS

- A. In accordance with Section 013300, Submittal Requirements:
 - 1. Submit choice of storm drain pipe and cleanouts, drainage structures, and drainage grates to Engineer for review prior to ordering.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Storm drain and roof drain piping and structures shall be delivered, handled, and stored in a way that prevents damage to the pipe/structures, or the entry of foreign materials into the pipe.
- B. Regardless of cause, damaged pipe/structures shall be replaced with new products at the expense of the Contractor.

1.5 GRADE AND ALIGNMENT CONTROL

- A. General
 - 1. The necessary installation procedures that will insure the pipes are installed at the location and grade staked in the field shall be used.
- B. Method
 - 1. One of the following methods shall be utilized to control grade and alignment:
 - a. Batter boards set at 25' intervals with a string line set over at least three batter

- boards.
 - b. Electronic 'Laser' beam set at structure locations or grade breaks. At least three grade points shall be checked to verify the set grade.
 - c. Survey instrument set at structure to site between structures at the set grade.
- C. Equipment
- 1. The Contractor shall furnish all equipment necessary to install and inspect the pipe installation. Grade rod shall be held to a minimum in all cases.

PART 2 - PRODUCTS

2.1 STORM DRAIN PIPE

- A. Storm drain and roof pipe 8" to 12" in diameter shall be Polyvinyl Chloride Pipe (PVC), SDR 35, Series 46, High Density Polyethylene (HDPE), Type S, or approved equal.
- B. Storm drain and roof pipe 4" to 6" in diameter and shall be Polyvinyl Chloride Pipe (PVC), SDR 35, Series 46, or approved equal
- C. Storm and roof drain pipe 3" diameter and smaller shall be Polyvinyl Chloride Pipe (PVC), SCH 80, or approved equal.
- D. Subdrain pipe shall be perforated Polyvinyl Chloride Pipe (PVC), SDR 35, Series 46, or approved equal.
- E. PVC pipe (SDR 35) shall be have with water tight, gasketed couplings.
- F. PVC pipe (SCH 80) shall have solvent weld couplings.
- G. PVC pipe shall have fittings (ells, tees, wyes, etc.) compatible to the pipe type.

2.2 DRAINAGE STRUCTURES

- A. Drainage inlets (SDDI) noted on the plan as "1212", "1818" or "2424" shall be as manufactured by Oldcastle Infrastructure, or approved equal, and shall be of the model/size indicated on the plans. Grates shall be heavy duty in hard surfaced areas with ½" maximum opening bolt down grates, and standard duty in planting areas, with bolt down grates.
- B. SDDIs placed in concrete areas shall be installed with a paving notch.

PART 3 - EXECUTION

3.1 GENERAL

- A. All construction of the storm drain shall conform to the requirements of the City of Ukiah Standards.

3.2 VERIFY EXISTING CONDITIONS

- A. The exact location and depth of the existing storm drains is unknown and is shown based on the best information available.
- B. Prior to ordering of any materials, Contractor shall pot hole in the vicinity of each point of connection and crossing with existing utilities to verify the exact location (horizontal and vertical) and size of the existing storm drain/existing utilities. This information shall be presented in the form of a field sketch through the RFI process for review and confirmation by the Engineer that the proposed design is adequate to serve the project.

3.3 STORM DRAIN PIPE

- A. Trenching shall be as indicated in Section 312316, Trenching, Backfilling and Compaction.
- B. Pipe laying shall be as indicated in paragraph 3.05 herein.
- C. No pipe shall be installed which is cracked, damaged or otherwise unsuitable for use in the opinion of the Engineer

3.4 STORM DRAINAGE STRUCTURES

- A. Excavation and backfill shall conform to Section 312316, Trenching, Backfilling and Compaction.
- B. Joints shall be grouted to form a watertight seal. Any visible leaks shall be permanently plugged.

3.5 PIPE LAYING

- A. No pipe shall be laid when trench conditions are unsuitable to allow performing the job in a professional manner.
- B. Where ground water occurs, pumping shall continue until backfilling has progressed to a sufficient height to prevent flotation of the pipe. Water shall be disposed of in such a manner as to cause no property damage or be a hazard to public health in accordance with Section 31 2316, Trenching, Backfilling and Compaction.
- C. Pipe shall be laid with bell ends facing in the direction of laying, and shall progress uphill/upslope.
- D. Pipe deflections where permitted shall not exceed that recommended by the pipe manufacturer.
- E. If High Density Polyethylene (HDPE) pipe is used, the exterior ribbed wall may be removed

to avoid conflicts with other utilities. The extent of the removal shall not exceed 18" measured along the length of the pipe.

- F. Every precaution shall be taken to prevent foreign material from entering the pipe. If necessary, a heavy, tightly woven canvas bag of suitable size shall be placed over each end and left there until the connection is to be made to the adjacent pipe. During laying operations, no debris, tools, clothing or other materials shall be placed in the pipe. If foreign materials do enter the pipe, they shall be removed continuously as work progresses.
- G. At times when pipe laying is not in progress, the open ends of laid pipe shall be closed by a water-tight plug.

3.6 CLEAN UP

- A. Remove all debris and stains resulting from the work of this section.
- B. Properly repair all surfaces disturbed by construction.

END OF SECTION 334000

APPENDIX

The following documents and forms are included:

1. Geotechnical Exploration and GeoHazards Report
2. Special Inspection and Testing Schedule – Short Form
3. Operation and Maintenance Manual – Department of Planning and Building Services Form
4. Draft Initial Study and Environmental Checklist

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June 3, 2020

9528.00

Nacht & Lewis
600 Q Street, Suite 100
Sacramento, California, 95811

Attention: Eric Fadness

Sent via email: EFadness@nachtlewis.com

Subject: Geotechnical Exploration and GeoHazard Report
Mendocino County Crisis Residential Treatment Facility
631 South Orchard Avenue, Ukiah, California

Dear Mr. Fadness:

LACO Associates (LACO) is pleased to submit this report presenting the results of our Geotechnical Exploration and GeoHazard Report for the proposed crisis residential treatment facility.

EXECUTIVE SUMMARY

LACO Associates has completed a geotechnical exploration for the proposed crisis residential treatment facility located at 631 South Orchard Avenue in Ukiah, California. This Executive Summary is provided as a brief overview of our geotechnical engineering evaluation for the project and is not intended to replace more detailed information contained elsewhere in this report.

A total of four borings (B1 through B4) were drilled for this exploration: 1 boring (B2) to a depth of 52 feet below ground surface (bgs) and 3 borings to between 15 and 15.5 feet bgs. Borings indicate the Site is blanketed by interbedded alluvial soils comprised of primarily clays, sands, and gravels. The results of our exploration indicate that the project is feasible from a geotechnical standpoint. New buildings may be supported on shallow footings bearing on a minimum 12-inch engineered pad of select fill constructed following the Site Preparation and Grading section (Section 6.1).

To check for conformance of final design with the recommendations contained in this report, LACO should perform the following:

- Review the completed project plans and specifications;
- Observe and test (as necessary) the earthwork and foundation phases of construction to confirm that subsurface conditions exposed during construction are consistent with our subsurface exploration and allow design changes in the event that subsurface conditions differ from those anticipated; and,
- Observe subdrain installations.

21 W. Fourth Street
Eureka, CA 95501

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776 S. State Street, Suite 103
Ukiah, CA 95482

707 462-0222 – Fax 707 462-0223

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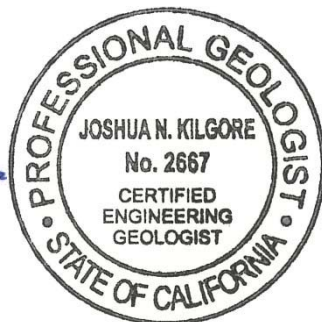
932 B W. Eighth Avenue
Chico, CA 95926

530 801-6170 – Fax 707 462-0223

If you have any questions, please contact us at (707) 525-1222.

Sincerely,
LACO Associates


Joshua N. Kilgore, C.E.G.
Senior Engineering Geologist




J. Erich Rauber, P.E., G.E.
Senior Geotechnical Engineer



CRG/JNK/JER:mmm

Geotechnical Exploration and GeoHazard Report for Mendocino County Crisis Residential Treatment Facility

631 South Orchard Avenue, Ukiah, California

June 3, 2020

Prepared for:
Nacht & Lewis

Prepared By:
LACO Associates, Inc
776 South State Street, Suite 103
Ukiah, California 95482
707-462-0222

Project No. 9528.00

LACO

advancing the quality of
life for generations to come

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Planning
Engineering
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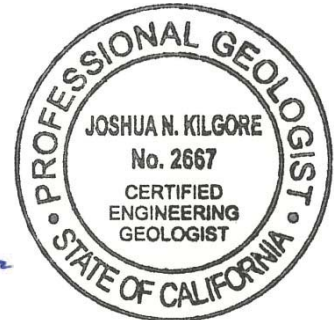
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TABLE OF CONTENTS

1.0	Introduction	1
1.1	Project Description	1
1.2	Scope of Services	1
2.0	Exploration	2
2.1	Laboratory Testing	2
3.0	Site and Subsurface Conditions	3
3.1	Site Conditions	3
3.2	Geologic Setting	3
3.3	Subsurface Conditions	4
3.4	Groundwater Conditions	4
4.0	Geologic Hazards	4
4.1	Soil Corrosivity	5
4.2	Seismic Ground Shaking	5
4.3	Liquefaction	6
4.3.1	Liquefaction-Induced Settlement	6
4.3.2	Bearing Capacity Failure	6
4.3.3	Lateral Spreading	7
4.4	Static Settlement	7
4.4.1	Densification	7
4.5	Slope Instability	7
4.6	Lurching	7
4.7	Flooding	8
4.8	Tsunami Inundation	8

4.9	Volcanism	8
4.10	Soil Swelling or Shrinkage Potential	8
5.0	Conclusions	8
6.0	Recommendations	8
6.1	Site Preparation and Grading	8
6.2	Footings	9
6.1.1	Footings on Select Engineered Fill	9
6.3	Concrete Slab-on-Grade Floors	10
6.1.2	Walkways and Courtyard Areas	11
6.4	Asphalt Pavement	11
6.5	Seismic Design Parameters	11
7.0	Construction Considerations	13
7.1	Groundwater	13
7.2	Utility Trench Backfill	13
7.3	Temporary Slopes and Trench Excavations	13
7.4	Surface Drainage	13
7.5	Subsurface drainage	14
8.0	Future Geotechnical Services	14
9.0	Limitations	14
10.0	References	16

Figures

Figure 1	Vicinity Map
Figure 2	Site Plan
Figure 3	Geologic Map
Figure 4	Geologic Cross Sections

Figure 5 Alquist Priolo Map
Figure 6 Slab-on-Grade Subdrain
Figure 7 Perimeter Subdrain

A p p e n d i x 1

Boring Logs

A p p e n d i x 2

Laboratory Test Results

A p p e n d i x 3

Liquefaction Analysis

1.0 INTRODUCTION

This report presents the results of a geotechnical exploration performed by LACO Associates (LACO) for a planned new crisis residential treatment facility (CRT) at 631 South Orchard Street in Ukiah, California [Assessor's Parcel Numbers (APNs) 002-340-50 and 002-340-48; the Site]. As shown on the Vicinity Map (Figure 1), the Site is located in the Ukiah Valley on the west side of U.S. Highway 101, approximately 750 feet northwest of the East Gobbi Street exit (latitude: 39.1463, longitude: -123.1983). The planned developments will be situated on an undeveloped parcel adjacent to South Orchard Street (APN 002-340-44), shown on the Site Plan (Figure 2).

1.1 Project Description

Based on a pre-design site plan provided by Nacht & Lewis, dated March 11, 2020, and Exhibit A of the service agreement between the County of Mendocino and Nacht & Lewis, dated November 14, 2019, it is our understanding that the project includes the construction and operation of a 3,090-square foot, one-story, Crisis Residential Treatment (CRT) Facility, outdoor decks, a CRT parking area, Low Impact Development (LID) features for stormwater capture and treatment, landscaping, and a perimeter galvanized steel fence. We understand that a Crisis Stabilization Unit (CSU) is planned north of the CRT. Construction details were not available at the time of this report; when construction details are available, the CSU will be addressed in a separate report. We anticipate that the proposed structure will be of wood or metal frame construction with concrete slab-on-grade or joist supported raised wood floors and that anticipated loads will be on the order of one kip per linear foot. We anticipate that Site grading will be minor and limited to those necessary to improve the near-surface soils with cuts and fills of less than three feet.

1.2 Scope of Services

As described in our Services Agreement dated January 15, 2020, our scope of services was limited to reviewing available documents, performing a site reconnaissance of one (1) development location and mark proposed exploration locations, notify utility companies via Underground Service Alert (USA) of proposed exploration, obtaining a drilling permit from the Mendocino County Environmental Health Department (MCEHD), exploring surface and subsurface conditions, obtaining soil samples, and performing laboratory tests to develop recommendations regarding:

- California Geological Survey (CGS) Note 48-compliant geohazards evaluation;
- Anticipated excavation characteristics;
- Site preparation and earthwork recommendations, including Site and subgrade preparation, subdrains, onsite fill material suitability, import fill recommendations, placement, and compaction requirements;
- Utility trench excavation and backfill recommendations;
- Foundation type(s) for the planned buildings, and design criteria for the recommended foundation type(s), consistent with the 2019 California Building Code (CBC), including allowable bearing capacity and minimum embedment depths;
- Estimates of foundation settlement;
- Seismic design criteria consistent with the 2019 CBC Chapter 16;
- Liquefaction-induced total and differential settlement and lateral spreading. As described in the CBC guidelines, and in accordance with CGS Special Publication 117, this analysis will be based on cyclic stress ratios calculated from the maximum considered earthquake ground motions for the Site,

and cyclic resistance ratios based on soil properties and groundwater conditions encountered in the upper 50 feet;

- Seismic design parameters based on Site-specific ground motion analysis for Item 15 CGS 48 Check List following procedures outlined in 2019 CBC and American Society of Civil Engineers (ASCE) 7-16;
- Pavement design recommendations;
- Exterior flatwork recommendations;
- Soil corrosivity; and
- Construction considerations.

2.0 EXPLORATION

Our exploration consisted of reviewing published geotechnical reports and maps related to the surface topography and geology of the Site vicinity and performing a subsurface exploration. Documents reviewed are presented in the References section (Section 10.0) of this report.

On March 3, 2020, LACO explored subsurface conditions by drilling four borings (B1 through B4) to a maximum depth of 52 feet below ground surface (bgs) at the approximate locations shown in Figure 2. Borings were drilled by Clear Heart Drilling, using a track mounted DSR-5K1 rig equipped with 6-inch outer diameter (OD) hollow stem augers. Our geologist logged the borings and obtained both disturbed and relatively undisturbed soil samples for visual classification and laboratory testing. Soils were logged in general accordance with the American Society for Testing and Materials (ASTM) Test Procedure D2488 Visual-Manual Procedures. Borings logs are presented in Appendix 1.

LACO obtained soil samples from borings with split-spoon samplers that were driven with a 140-pound auto-trip hammer falling 30 inches. The samplers included a 1.5-inch inside diameter (ID) Standard Penetration Test (SPT) sampler and a 2.5-inch ID modified California sampler. The number of hammer blows required to drive the samplers were recorded and are presented on the boring logs. Blow counts were converted to SPT values using a 0.65 conversion factor.

2.1 Laboratory Testing

Relatively undisturbed and disturbed soil samples collected during the field exploration were submitted to LACO's materials laboratory for testing. Laboratory tests were performed on select soil samples and included the following:

- Particle Size Analysis – Finer than #200 Sieve (ASTM D1140);
- Coarse and Fine Sieve (ASTM C136);
- Atterberg Limits (ASTM D4318);
- Unconfined Compressive Strength (ASTM D2166);
- Expansion Index (ASTM D4829);
- Moisture Content (ASTM D2216);
- Density of Soils in Place (ASTM D2937); and,
- Soil Corrosivity.

Laboratory test results are included as Appendix 2 and summarized in the boring logs and Table 1. LACO will archive the soil samples collected for this project for 60-days following the issuance of this Report. Unless directed otherwise by the Client, all samples will be discarded after the 60-day archive period.

Table 1. Laboratory Test Results

Boring	Depth (feet bgs)	USCS Soil Type	ASTM D1140	ASTM D2166		ASTM D2216/D2937		ASTM D2166	ASTM D4829
			Fines Content (percent finer than No. 200 sieve)	Liquid Limit (percent)	Plasticity Index (percent)	Moisture Content (percent)	Density of Soils in Place (pcf)	Unconfined Shear Strength (psf)	Expansion Index
B1	2.0	SC	47.9	27	11	-	-	-	-
B1	5.5	CL	68.0	30	13	-	-	-	-
B1	8.5	CL	-	-	-	21.3	102.0	-	-
B2	2.0	CL	72.0	36	16	-	-	-	-
B2	3.5	CL	-	-	-	16.1	109.1	-	-
B2	8.5	SC	24.4	-	-	-	-	-	-
B2	11.5	SW-SC	17.8	-	-	-	-	-	-
B2	13.0	SW-SC	8.6	-	-	-	-	-	-
B2	16.0	SW-SC	13.5	-	-	-	-	-	-
B2	26.0	SW-Sc	9.8	-	-	-	-	-	-
B2	31.5	SW-SC	7.3	-	-	-	-	-	-
B2	40.0	CL	-	-	-	21.3	105.7	-	-
B2	46.0	SC	25.8	26	9	-	-	-	-
B3	2.0	CL	-	-	-	-	-	1,000	-
B4	2.0	CL	-	-	-	-	-	-	60

bgs – below ground surface
USCS – Unified Soil Classification System
pcf – pounds per cubic foot
psf – pounds per square foot
NP – non plastic

3.0 SITE AND SUBSURFACE CONDITIONS

3.1 Site Conditions

The Site is located on a 0.865-acre parcel that is between 600 and 598 feet above mean sea level and gently slopes to the southeast. It is undeveloped and grass covered and is bounded by South Orchard Street to the east, access driveways to the north and south, and a parking lot to the west. Drainage across the Site appears to flow to the southeast towards the southern access road. The nearest body of water is Gibson Creek, which is located approximately 1,300 feet east of the Site. Regional drainage is controlled by the Russian River, which is located approximately 0.85 miles east of the Site.

3.2 Geologic Setting

The Site is in the California Coast Ranges Geomorphic Province (CGS, 2002). This province is seismically active and geologically complex due to historic and ongoing tectonic deformation that is characterized by northwest trending faults and topographic and geologic features. The California Coast Range province

extends west to the Pacific Ocean, east to the Great Valley, north to Oregon, and south to the Transverse Ranges. The complex structure of the Coast Range Geomorphic Province began with a period of plate convergence during late Jurassic, which involved eastward thrusting of oceanic crust beneath the coastal crust, and was characterized by the accretion of material to the continent and the formation of east-dipping thrust and reverse faults. Beginning in the mid-Cenozoic and continuing to the present, the plate boundary was dominated by right-lateral, strike-slip deformation, which was superimposed on the existing structures. This is characterized by the northwest-trending nearly vertical faults of the San Andreas system.

The oldest bedrock units in the Coast Ranges Geomorphic Province are those of the Jurassic-Cretaceous Franciscan Complex and the Great Valley Sequence. Younger bedrock units consist of the Tertiary-aged Sonoma Volcanic Group, the Plio-Pleistocene-age Clear Lake Volcanics, and Sedimentary rock formations such as the Petaluma, Wilson Grove, and Huichica. Quaternary-aged alluvium generally covers the bedrock in the valleys and low-lying areas.

As shown on the Geologic Map (Figure 3), the Site is underlain by Quaternary (present to 2.6 million years old) nonmarine terrace deposits (Qt, Jennings and Strand, 1960). These deposits are generally described as unconsolidated interbedded silts, sands, gravels, and clays. The Site is not published on available slope stability maps.

3.3 Subsurface Conditions

Our exploration indicates the Site is blanketed by interbedded alluvial soils comprised of primarily clays, sands, and gravels. Local alluvial soils consist of a surficial layer of sandy lean clay that extends to between 11 and 15 feet bgs; well graded sand with clay and gravel that extends to approximately 39 feet bgs; sandy lean clay that extends to approximately 43 feet bgs; clayey sand that extends to approximately 50 feet bgs; and clayey sand with gravel that extended to the maximum depth explored 52 feet. Surficial sandy lean clay was generally dark yellowish brown mottled with gray, moist, and medium stiff to stiff with fine sand. Well graded sand with clay and gravel was generally dark brown, wet, and medium dense with fine to coarse sand and fine to coarse subrounded gravel. Sandy lean clay at depth was generally dark yellowish-brown mottled gray, moist to wet, and medium stiff with fine sand. Clayey sand was generally gray, moist to wet, and medium dense with fine sand. Clayey sand with gravel was generally dark, moist, and very dense with fine to coarse sand and fine to coarse subrounded to subangular gravel. Geologic cross sections between borings B1 and B4, and B2 and B3 are presented in Figures 4A-B (Geologic Cross Section A-A' and Geologic Cross Section B-B', respectively).

3.4 Groundwater Conditions

Groundwater was encountered in our borings at depths between 7 and 14 feet bgs. Groundwater level measurements in monitoring wells at an Express Mart (North Coast Regional Water Quality Control Board Case No. 1NMC640), approximately 1,000 feet southwest of the Site, in December 2011, varied between 16.38 to 16.77 feet bgs. An undated measurement was taken from the same monitoring wells and varied between 6.01 and 7.22 feet bgs (<https://geotracker.waterboards.ca.gov/>).

4.0 GEOLOGIC HAZARDS

Potential geologic hazards assessed for the project include soil corrosivity, seismic ground shaking, volcanism, liquefaction and related phenomena, settlement, flooding, high groundwater, and expansive soils. An evaluation of these potential hazards is presented below.

4.1 Soil Corrosivity

Corrosion is the deterioration of metal through a chemical reaction with its environment. Factors that contribute to corrosion potential include the presence of soluble salts, soil and water resistivity, soil and water pH, and the presence of oxygen.

A composite soil sample from boring B3 between 3 to 4 feet was analyzed for sulfate, chloride, and sulfide, resistivity, oxidation/reduction potential, and pH; results are presented in Appendix 2 and summarized in Table 2.

Table 2: Summary of Corrosivity Test Results

Sample	Depth (ft)	pH	Min. Resistivity (Ohm-cm)	Electrical Conductivity (µmhos/cm)	Sulfate (ppm)	Chloride (ppm)
B3	3/3.5	6.95	1,922	520	9	30

ppm – parts per million

ft – feet

For structural elements, the California Department of Transportation (CalTrans) considers a site to be corrosive if one or more of the following conditions exist for the representative soil and/or water samples taken at the Site: chloride concentration is 500 ppm or greater, sulfate concentration is 2,000 ppm or greater, or the pH is 5.5 or less. A minimum resistivity value for soil and/or water less than 1,000 ohm-cm indicates the presence of high quantities of soluble salts and a higher propensity for corrosion (CalTrans, 2012). On this basis, we conclude Site soils have a relatively low corrosion potential.

4.2 Seismic Ground Shaking

The Site is situated within a seismically active area proximal to multiple seismic sources capable of generating moderate to large ground motions. Given the proximity of the new buildings to active seismic sources (the Maacama Fault Zone and San Andreas Fault), there is a high probability that the Site will experience strong ground shaking during the economic lifespan (50 years) of the project.

The seismicity of the area is dominated by the presence of the San Andreas Fault system, which forms the boundary between the Pacific and North American Plates. The northward movement of the Pacific Plate relative to the North American Plate is accommodated across a complex system of strike-slip, right-lateral, parallel, and sub-parallel faults which include the San Andreas, Maacama-Garberville, Bartlett Springs, and Concord-Green Valley Faults, among others. The nearest potentially active fault is the northern section of Maacama fault zone, located approximately 1.3 miles east of the Site. The northern section of the Maacama fault zone is a 66.5-mile long right-lateral strike-slip fault with an average strike and dip of N24°W and 90°, respectively (Hart and Bryant, 2001).

The Site is not located within a "Fault Rupture Hazard Zone" (Bryant and Hart, 2007) or within an area currently designated as a "Seismic Hazard Zone" by the state, shown in Figure 5 (Alquist-Priolo Map). Based on the distance between the Site and the closest active fault, the Maacama fault zone, we judge the potential for surface fault rupture to occur within the Site is low. General seismic design parameters are presented in the Recommendations section (Section 6.0) of this report.

4.3 Liquefaction

Liquefaction is a phenomenon in which loosely deposited granular soils with silt and clay contents of less than approximately 35 percent and generally less than 50 feet bgs that extend below the groundwater table undergo momentary loss of shear strength when subjected to strong earthquake-induced ground shaking. The occurrence of this phenomenon is dependent on many complex factors including the intensity and duration of ground shaking, particle size distribution, and density of the soil.

To, date no seismic hazard maps have been produced evaluating the liquefaction potential for the Site and vicinity. To evaluate the potential for liquefaction-induced settlement to occur at the Site, we utilized the results of field and laboratory tests, Standard Penetration Test (SPT) data obtained in the field, input parameters presented in Table 3, and the computer program LiqSVs developed by GeoLogismiki®.

Table 3. Liquefaction Analysis Input Parameters

Calculation Method	Maximum Moment Magnitude	PGA _M
NCEER 1998	7.4	0.85

In our analysis, we used field and laboratory data from boring B2, a groundwater level during drilling of 7 feet bgs, and, based on relatively nearby monitoring wells, a groundwater level at 6 feet bgs during a hypothetical seismic event. Maximum moment magnitude was estimated from the Maacama-Garberville seismic source, approximately 1.3 miles east of the Site. Risk-Targeted maximum considered earthquake peak ground acceleration adjusted for Site Class effects (PGA_M) was estimated in accordance with Section 11.8.3 of ASCE 7-16. Fine-grained soils with a plasticity index (PI) of 7 or greater tend to exhibit clay-like behavior and the fine-grained fraction tends to control when that fraction exceeds 35 percent (Boulanger and Idriss, 2006). Therefore, soils that have more than 35 percent passing No. 200 sieve and a PI of 7 or greater were input into LiqSVs as non-liquefiable layers. Due to the relatively high concentration of fines (26%), Plasticity Index of 17, and the relative depth, we consider the layer of clayey sand encountered between 43 and 50 feet non-liquefiable.

Liquefaction has three potential consequences: liquefaction-induced settlement, bearing capacity failure, and lateral spreading toward a free face. Each is evaluated in the following paragraphs.

4.3.1 Liquefaction-Induced Settlement

Our evaluations indicate layers susceptible to liquefaction were encountered in boring B2 at depths between 6.25 to 9 feet bgs and 11 to 17 feet bgs. Liquefaction-induced settlement was calculated to be less than 0.9 and 1.5 inches for the respective layers. On this basis, we estimate total liquefaction-induced settlement will be less than 2.4 inches. Provided the near-surface soils are improved by site grading; we estimate the potential for total liquefaction-induced settlement will be approximately 2.4 inches with differential liquefiable settlement less than 2.1 inches over distances of 20 feet. The results of our analyses are presented in Appendix 3.

4.3.2 Bearing Capacity Failure

Bearing capacity failure is sudden and extreme settlement of foundations that typically occurs when the liquefied layer is relatively close (typically within two times the footing width, depending on the loads) to the bottom of the foundation. Due to the liquefiable layer between 6.25 and 9 feet bgs (approximately 3 times the footing width), we judge that there is the potential for bearing capacity failure during a major

earthquake. Provided the Site's near-surface soils are improved according to the specification of this report and footing widths do not exceed 24 inches, we judge that the potential for bearing capacity failure can be minimized to negligible.

4.3.3 Lateral Spreading

Lateral spreading can occur where continuous layers of liquefiable soil extend to a free face, such as a creek bank. Due to the flat nature of the Site, we judge the potential for liquefaction-induced lateral spreading at the Site is low.

4.4 Static Settlement

Static settlement is the result of compressive deformation of soil beneath an applied load. The compressive deformation generally results from a reduction in voids within the soil. In dry granular soils, the compression of the soil occurs relatively rapidly. However, in saturated soils, the voids are filled with water that must be drained to accommodate the compression. In cohesive soils, the rate at which water moves through the soil is slow. As a result, settlement of saturated fine-grained soils can occur very slowly. Our exploration indicates soils beneath the Site are cohesive from ground surface to between 11 to 15 feet and primarily granular with interbedded fine-grained soils between 15 and 52 feet bgs.

Near surface cohesive soils appear to be in a relatively thin layer and overconsolidated. Granular soils are relatively deep and are anticipated to receive a minimal increase in pressure from new building loads. On this basis we judge that soils beneath new buildings have a low susceptibility to static settlement. Total foundation settlement is estimated to be on the order of ½ inch over the course of the project construction and differential settlement less than ¼ inch between adjacent footings or along a continuous foundation.

4.4.1 Densification

Densification is the settlement of loose, granular soils above the groundwater level due to earthquake shaking. Typically, soils susceptible to liquefaction are similarly susceptible to densification when not saturated. As discussed in the liquefaction section (Section 4.3) of this memorandum, the soils above the water table at the Site consist of primarily cohesive soils. However, should groundwater levels drop below the potentially liquefiable layers encountered at 6.25 feet and 11 feet bgs, they may densify in lieu of liquefying. In such case, densification at the Site should be anticipated to be approximately 0.9 and 1.5 inches for the respective layers, resulting in total settlement of less than 1.4 inches.

4.5 Slope Instability

Given the relatively low slopes, both on and adjacent to the Site, we consider the potential for slope instability to adversely affect the Site to be negligible.

4.6 Lurching

Seismic slope failure, or lurching, is a phenomenon that occurs during earthquakes when slopes or man-made embankments yield and displace in the unsupported direction. Due to the flat nature of the Site and the lack of man-made embankments at the Site, we consider the potential for lurching to be low.

4.7 Flooding

According to the FEMA Flood Insurance Rate Map, Map Number 06045C1514F, effective June 2, 20011, the Site is not located in an area designated as a flood hazard zone, indicating an area of minimal flooding potential (FEMA, 2011). On this basis, we conclude the risk of flooding to occur at the Site is low.

4.8 Tsunami Inundation

According to the CGS Tsunami inundation hazard maps (CGS, 2009), the Site is not located in an area anticipated to experience inundation. On this basis, we conclude the risk of tsunami inundation is low.

4.9 Volcanism

According to the United States Geologic Survey (USGS) Volcano Hazards Program, the Site is not situated in a volcanically active area. The nearest volcano (Mt. Konocti) is located approximately 26 miles to the southeast. The likelihood of the Site experiencing active volcanism is low (USGS, 2017).

4.10 Soil Swelling or Shrinkage Potential

Expansive soils have a tendency to undergo volume changes (shrink or swell) with changes in moisture content. They generally consist of cohesive fine-grained clay soils and represent a significant structural hazard to buildings founded on them. The soils encountered during our field exploration consist primarily of granular soils (sands and gravels) and low to medium plasticity silts and clays. Laboratory tests indicate the upper five feet of surface soils have a plasticity index (PI) between 11 and 16 with an expansion index (EI) of 60, resulting in a moderate expansive potential. Provided foundations are constructed following the recommendations of this report, we judge that the potential risk of expansive soils detrimentally affecting the proposed project can be minimized to negligible.

5.0 CONCLUSIONS

The results of our exploration program indicate the project is feasible from a geotechnical standpoint. The primary geotechnical concerns at the Site is the presence of relatively soft, moderately expansive surface soils, and presence of potentially liquefiable soils. New buildings may be supported on shallow footings bearing on a minimum 12-inch engineered pad of select fill constructed following the Site Preparation and Grading section (Section 6.1).

If designed and constructed per the following recommendations, we estimate total settlement resulting from the imposed foundation loads will be less than ½ inch and differential settlement will be less than ¼ inch over distances of approximately 20 feet. As discussed above, we estimate the potential for liquefaction induced settlement will be less than 2.4 inches, with differential settlement over distances of approximately 20 feet estimated to be less than 1.2 inches.

6.0 RECOMMENDATIONS

6.1 Site Preparation and Grading

To mitigate relatively soft and moderately expansive surface soils, we recommend soils in building areas be removed to a minimum depth of 30 inches and replaced with an engineered fill pad consisting of soils that

meet our select fill criteria (below). Areas to be graded should be stripped of any vegetation and topsoil containing organic material. Bushes and designated trees should be removed and their roots grubbed. These materials are not suitable for re-use as select fill. Prior to placement and compaction of select fill, soft or weak and porous surface soils, as determined by a representative of the project geotechnical engineer in the field, should be removed to their full depth. We anticipate that these excavations will extend approximately 30 inches below grade. Excavations for engineered fill pads should be overbuild a minimum of three feet beyond the footprint of the structure, where obtainable. Following the excavation, a representative of the project geotechnical engineer in the field should approve the subgrade to ensure a firm and unyielding subgrade.

Prior to placing fill, the exposed soil subgrade should be scarified to a depth of 6 inches, moisture conditioned near optimum moisture content and compacted to at least 90 percent relative compaction.¹ Material proposed for use as select fill should be free of organic or other deleterious material and rocks with a maximum dimension greater than 3 inches, and should meet the following criteria:

Fraction Finer than No. 200 Sieve:	Between 5 percent and 60 percent
Plasticity Index:	15 percent or less
Liquid Limit:	35 percent or less

Our exploration indicates that on-site soils are not in general suitable for use as select engineered fill. Granular soils may have to be imported and mixed with proposed on-site soils to generate suitable select engineered fill. Material proposed for use as select fill should be observed and tested by the geotechnical engineer for conformance to the criteria listed above prior to importation to the Site. Fill should be placed in lifts no greater than 8 inches in loose thickness, moisture conditioned to at least 2 percent wet of optimum moisture content, and compacted into select engineered fill with at least 90 percent relative compaction. In areas to receive vehicular loads, the upper 6 inches of soil subgrade should be compacted to at least 95 percent relative compaction and be firm and unyielding when subjected to proof-rolling during construction.

6.2 Footings

Footing excavations should be free of standing water or loose debris before placement of concrete. If shrinkage cracks appear in the footing excavations, they should be thoroughly saturated prior to concrete placement. Footings adjacent to existing utility trenches or other footings should be deepened enough to bear below a 1:1 (horizontal to vertical) plane extending upwards from the bottom edge of the utility trench or footing excavation. A representative of the project geotechnical engineer should observe the footing excavations prior to the placement of reinforcing steel and concrete forms to check that suitable bearing materials are exposed, and proper cleanout achieved.

6.1.1 Footings on Select Engineered Fill

Buildings may be supported by footings bearing entirely on a engineered fill pad, compacted following the recommendations presented in the Site Preparation and Grading section (Section 6.1). Footings should bear

¹ Relative compaction refers to the ratio of the in place dry density of the soil to the maximum dry density as described in the latest addition of the ASTM D1557 compaction test procedure. Optimum Moisture Content is the water content as a percentage of the dry weight of the soil corresponding to the maximum dry density.

on a minimum of 12-inches of select engineered fill, be at least 12 inches wide, 12 inches deep, and designed using maximum allowable bearing pressures presented in Table 4.

Table 4. Maximum Allowable Bearing Pressures for Footings on Select Engineered Fill

Loading Condition	Maximum Allowable Bearing Pressure (psf)
Dead Load	2,500
Dead plus Live Loads	3,750
Total, including Wind or Seismic	5,000

psf-pounds per square foot

Resistance to lateral loads can be provided via skin friction between the footing bottoms and underlying soil, and passive earth pressures acting on the vertical faces of foundations. Use a friction factor of 0.35 between footing bottoms and the underlying soil and a passive soil pressure of 300 pounds per cubic foot (pcf) equivalent fluid pressure. When calculating passive pressure, ignore the upper foot unless confined by concrete or asphalt pavement. If friction and passive resistances are to be combined, reduce the lesser value by 50 percent.

6.3 Concrete Slab-on-Grade Floors

Concrete slab-on-grade floors should be prepared after footings have been poured and utility trenches in the building footprint installed and properly backfilled. The upper 6 inches of select engineered fill should be scarified to a depth of 6 inches, moisture conditioned wet of the optimum moisture content, and compacted to at least 90 percent relative compaction.

To provide a capillary moisture break between the slab and the supporting soil, we recommend the concrete slab to be constructed on a 4-inch-thick layer of clean $\frac{3}{4}$ -inch crushed rock. The crushed rock should be placed as soon as possible after moisture conditioning and compaction of the select subgrade materials to reduce the potential for drying and cracking of the subgrade soil. Where the risk of moisture vapor movement through the slab may be detrimental to its intended use, the capillary break material should be covered by an impermeable membrane consisting of 15-mil Stego® Wrap sheeting, or equivalent, installed in accordance with the manufacturer's recommendations.

Special precautions should be taken during the placement and curing of concrete slabs. Excessive slump (high water-cement ration) of the concrete and/or improper curing procedures used during either hot- or cold-weather conditions could lead to excessive shrinkage, cracking, or curling of the slabs. High water-cement ration and/or improper curing also greatly increase the water vapor permeability of concrete. We recommend the concrete placement and curing operations be performed in accordance with the American Concrete Institute (ACI) manual.

Slab underdrains should be installed to intercept groundwater that may seep and collect in the slab rock. Slab underdrains should consist of 6-inch-wide trenches that extend at least 12 inches below the bottom of the slab rock and are sloped to drain by gravity. The slab underdrain trenches should be spaced no further than 20 feet, both ways. Additional drain trenches should be installed, as necessary, to drain all isolated under slab areas. Slab subdrains have been detailed in Figure 6 (Slab-on-Grade Subdrain).

6.1.2 Walkways and Courtyard Areas

Exterior concrete slab-on-grades for walkways and courtyards can be supported on a minimum of 12 inches of engineered fill prepared in accordance with the Site Preparation and Grading section (Section 6.1). Excavation of soft or weak near-surface soils should extend a minimum of 3 feet beyond the edge of exterior slabs; the exposed soil should be evaluated by a representative of the project geotechnical engineer in the field. Prior to fill placement, the subgrade should be scarified to a depth of 6 inches, moisture conditioned within 2 percent wet of the optimum moisture content, and compacted to at least 90 percent relative compaction.

6.4 Asphalt Pavement

Soil subgrade in pavement areas should consist of a minimum of 12 inches of select engineered fill the upper 6 inches of which is compacted to 95 percent relative compaction, and is firm and unyielding when subjected to proof-rolling as observed by a representative of the project geotechnical engineer in the field. Minimum pavement section thicknesses are presented in Table 6. They are based on (1) a R-value of 13 for driveways and parking areas and (2) CalTrans flexible pavement design procedures.

Table 6. Minimum Pavement Section Thicknesses with Corresponding Traffic Index

Pavement Section Use Area	Traffic Index (TI)	HMA Thickness (inches)	Class 2 Aggregate Base Thickness (inches)
Parking Lot	4.5	2.5	8.0
Access Driveways	5.5	3.0	10.5

HMA-Hot Mix Asphalt

Hot mix asphalt (HMA) and Class 2 aggregate base materials should meet the requirements specified in the latest edition of the CalTrans Standard Specifications. The Class 2 aggregate base should be compacted to at least 95 percent relative compaction prior to HMA placement.

6.5 Seismic Design Parameters

Section 1613A of the 2019 California Building Code (CBC) mandates that structures be designed and constructed to resist earthquake damages in pursuant to ASCE 7-16 and modifications included in Section 1613A (ASCE, 2016; CBC, 2019). Earthquake design parameters are based on the maximum considered earthquake ground motion, defined as the motion caused by an event with a 2 percent probability of exceedance within a 50-year period (recurrence interval of approximately 2,500 years). Per Section 20.3.1 of ASCE 7-16, the Site should be assigned Site Class F due to the presence of potentially liquefiable soils. However, structures with fundamental periods of vibration equal to or less than 0.5 seconds do not require a Site-specific response analysis to determine spectral accelerations for liquefiable soils. Therefore, the Site Class was estimated using uncorrected blow counts from Boring B2, shown in Table 7, resulting in Site Class D.

Table 7: Site Classification by Average SPT Blow Counts

Layer by USCS Classification	Depth (ft)	Thickness (d _i) (feet)	Average SPT blow counts within layer (N _i)	$\frac{d_i}{N_i}$
CL	0-6.25	6.25	10.5	0.595
SC	6.25-9	2.75	8.0	0.344
CL	9-11	2.0	6.0	0.333

SW-SC	11-38.5	27.5	25.7	1.069
CL	38.5-43	4.5	14.0	0.300
SC	43-50	7	13.0	0.538
SW	50-50.5	0.5	51.0	0.010
SC	50.5-52	1.5	69.0	0.022
Sum		52		3.21

Seismic design parameters S_s and S_1 for the Site were generated using Seismic Design Maps tool co-developed by the Structural Engineers Association of California (SEAOC) and California's Office of Statewide Health Planning and Development (OSHPD), Site Class D, and the following location: 38.1463 °N, -122.1983 °E (SEAOC and OSHPD, 2020).

$$S_s = 2.017$$

$$S_1 = 0.774$$

where:

S_s Mapped spectral response acceleration, 5 percent damped, at 0.2 second period [times the acceleration of gravity (g)].

S_1 Mapped spectral response acceleration, 5 percent damped, at 1.0 second period (times g).

Structures on Site Class D with a S_1 greater than or equal to 0.2 require a Site-specific response analysis unless designed following the exceptions presented in Section 11.4.8 of ASTM 7-16. It is our assumption that structures can be designed following the exceptions presented in Section 11.4.8 (summarized below) and that a Site-specific response analysis is not required.

Structures on Site Class D sites with S_1 greater than or equal to 0.2, provided the value of the seismic response coefficient C_s is determined by Eq. (12.8-2) for values of $T \leq 1.5 \cdot T_s$ and taken as equal to 1.5 times the value computed in accordance with either Eq. (12.8-3) for $T_L \geq T > 1.5 \cdot T_s$ or Eq. (12.8-4) for $T > T_L$.

Should the fundamental period of vibration of any structure prove to be greater than 0.5 seconds or the exceptions presented in Section 11.4.8 prove unachievable during the design of a structure, a Site-specific response analysis can be provided in a supplemental document, under a separate agreement.

Provided the stated exceptions are incorporated into the design of all structures, seismic design parameters presented in Table 8 may be utilized. Structures should be assigned a seismic design category of E for structures with risk category I, II or III and a seismic design category of F for structures with a risk category of IV.

Table 8. Summary of Seismic Design Parameters

Site Class	F_a	F_v	S_s	S_1	S_{MS}	S_{M1}	S_{DS}	S_{D1}	T_s
D	1.0	1.7*	2.018	0.775	2.018	1.318*	1.345	0.878*	0.653

*Values F_v , S_{M1} , and S_{D1} may only be used for calculation of T_s .

The factors are defined as follows:

- F_a – Short period coefficient to modify 0.2 second period of mapped spectral response accelerations.
- F_v – Long-period coefficient to modify 1.0 second period of mapped spectral response accelerations.
- S_{MS} – Maximum considered earthquake spectral response acceleration, 5 percent damped, at 0.2 seconds (times g).
- S_{M1} – Maximum considered earthquake spectral response acceleration, 5 percent damped, at 1.0 second period (times g).
- S_{DS} – Design spectral response acceleration, 5 percent damped, at 0.2 second period (times g).
- S_{D1} – Design spectral response acceleration, 5 percent damped, at 1.0 second period (times g).
- T_s S_{D1}/S_{DS} .

7.0 CONSTRUCTION CONSIDERATIONS

7.1 Groundwater

Shallow groundwater levels were encountered between 7 and 13 feet bgs during our exploration. Provided construction is performed during the dry months of summer or early fall, it may not be a concern. However, if groundwater accumulates in foundation excavation, it should be pumped out prior to concrete placement.

7.2 Utility Trench Backfill

Trench backfill quality and compaction should generally conform to the requirements of the Site Preparation and Grading section (Section 6.1) of this memorandum. Where trenches closely parallel a shallow foundation element and the trench bottom is within a 2:1 plane projected outward and downward from the foundation, concrete slurry (two-sack minimum) should be used to backfill that portion of the trench below this plane. The use of slurry backfill is not required where a narrow trench crosses a footing at or near a right angle.

7.3 Temporary Slopes and Trench Excavations

The contractor should be responsible for the stability of all temporary slopes and trenches excavated at the Site and the design and construction of any required shoring. Shoring and bracing, if necessary, should be designed and constructed in accordance with all applicable local, state, and federal safety regulations, including the current Occupational Hazards and Safety Administration (OSHA) excavation and trench safety standards. Because of the potential for variable soil conditions, field modifications of temporary cut slopes may be required. Unstable materials encountered on the slopes during the excavation should be trimmed off, even if this requires cutting the slope back at flatter inclinations.

7.4 Surface Drainage

The Site should generally be graded to provide positive drainage away from foundations. A minimum gradient of 3 percent should be maintained for hardscaped areas. A minimum 5 percent gradient should be maintained for landscaped areas within 10 feet of a structure. The grading or landscaping design and construction should not allow water to pond on the Site nor to migrate beneath any structure. Runoff from hardscaped areas, roofs, patios, and other impermeable surfaces should be contained, controlled, and collected in a tight-line pipe that outlets into the Site storm drainage system.

7.5 Subsurface drainage

Given the historic high groundwater conditions and low-permeability surface soils, we recommend slab subdrains should be installed to dispose of surface and/or groundwater that may seep and collect around footings and within the slab rock. Subdrains should be constructed as shown in Figures 6 and 7.

8.0 FUTURE GEOTECHNICAL SERVICES

To check for conformance of final design with the recommendations contained in this report, LACO should perform the following:

- Review the completed project plans and specifications;
- Observe and test (as necessary) the earthwork and foundation phases of construction to confirm that subsurface conditions exposed during construction are consistent with our subsurface exploration and allow design changes in the event that subsurface conditions differ from those anticipated; and,
- Observe subdrain installations.

These services and associated fees are not included in LACO's current scope of services. LACO can provide a scope and fee estimate for these services at the time the project plans are near completion and when project construction schedules are known.

9.0 LIMITATIONS

This memorandum has been prepared for the exclusive use of Nacht & Lewis, its contractors and consultants, and appropriate public authorities for specific application to development of the Site. LACO has exercised a standard of care equal to that generated for this industry to ensure that the information contained in this memorandum is current and accurate. The opinions presented in this memorandum are based upon information obtained from subsurface excavations, a site reconnaissance, review of geologic maps and data available to us, and upon local experience and engineering judgment, and have been formulated in accordance with generally accepted geotechnical engineering practices that exist in California at the time this memorandum was prepared. In addition, geotechnical issues may arise that are not apparent at this time. No other warranty, expressed or implied, is made or should be inferred.

Data generated for this memorandum represent information gathered at that time and at the widely spaced locations indicated. Subsurface conditions may be highly variable and difficult to predict. As such, the recommendations included in this memorandum are based, in part, on assumptions about subsurface conditions that may only be observed and/or tested during subsequent project earthwork. Accordingly, the validity of these recommendations is contingent upon review of the subsurface conditions exposed during construction in order to check that they are consistent with those characterized in this memorandum. Upon request, LACO can discuss the extent of (and fee for) observations and tests required to check the validity of the recommendations presented herein.

The opinions presented in this memorandum are valid as of the present date for the property evaluated. Changes in the condition of the property can occur over time, whether due to natural processes or the works of man, on this or adjacent properties. In addition, changes in applicable standards of practice can occur, whether from legislation or the broadening of knowledge. Accordingly, the opinions presented in this memorandum may be invalidated, wholly or partially, by changes outside our control. Therefore, this memorandum is subject to review and should not be relied upon after a period of three years, nor should it

be used, or is it applicable, for any property other than that evaluated. This memorandum is valid solely for the purpose, site, and project described in this document. Any alteration, unauthorized distribution, or deviation from this description will invalidate this memorandum. LACO assumes no responsibility for any third-party reliance on the data presented. Additionally, the data presented should not be utilized by any third-party to represent data for any other time or location.

10.0 REFERENCES

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FIGURES

Figure 1	Vicinity Map
Figure 2	Site Plan
Figure 3	Geologic Map
Figure 4	Geologic Cross Sections
Figure 5	Alquist Priolo Map
Figure 6	Slab-on-Grade Subdrain
Figure 7	Perimeter Subdrain

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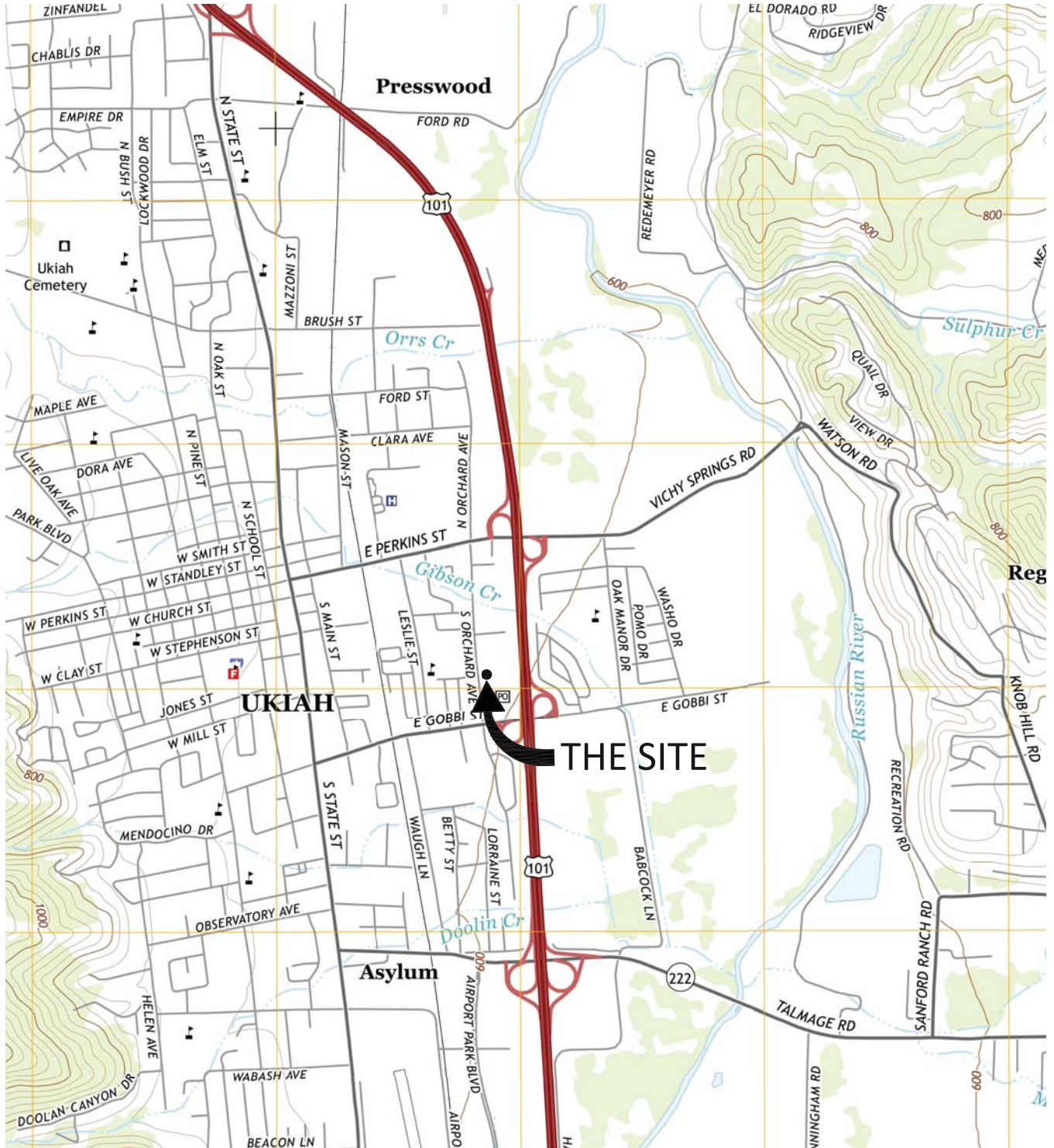
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PROJECT	MENDOCINO COUNTY CRT	BY	CRGT	FIGURE	1
CLIENT	NACHT & LEWIS	DATE	4/15/20	JOB NO.	
LOCATION	631 SOUTH ORCHARD STREET, UKIAH	CHECK	JNK		
	VICINITY MAP	SCALE	AS SHOWN		9528.00

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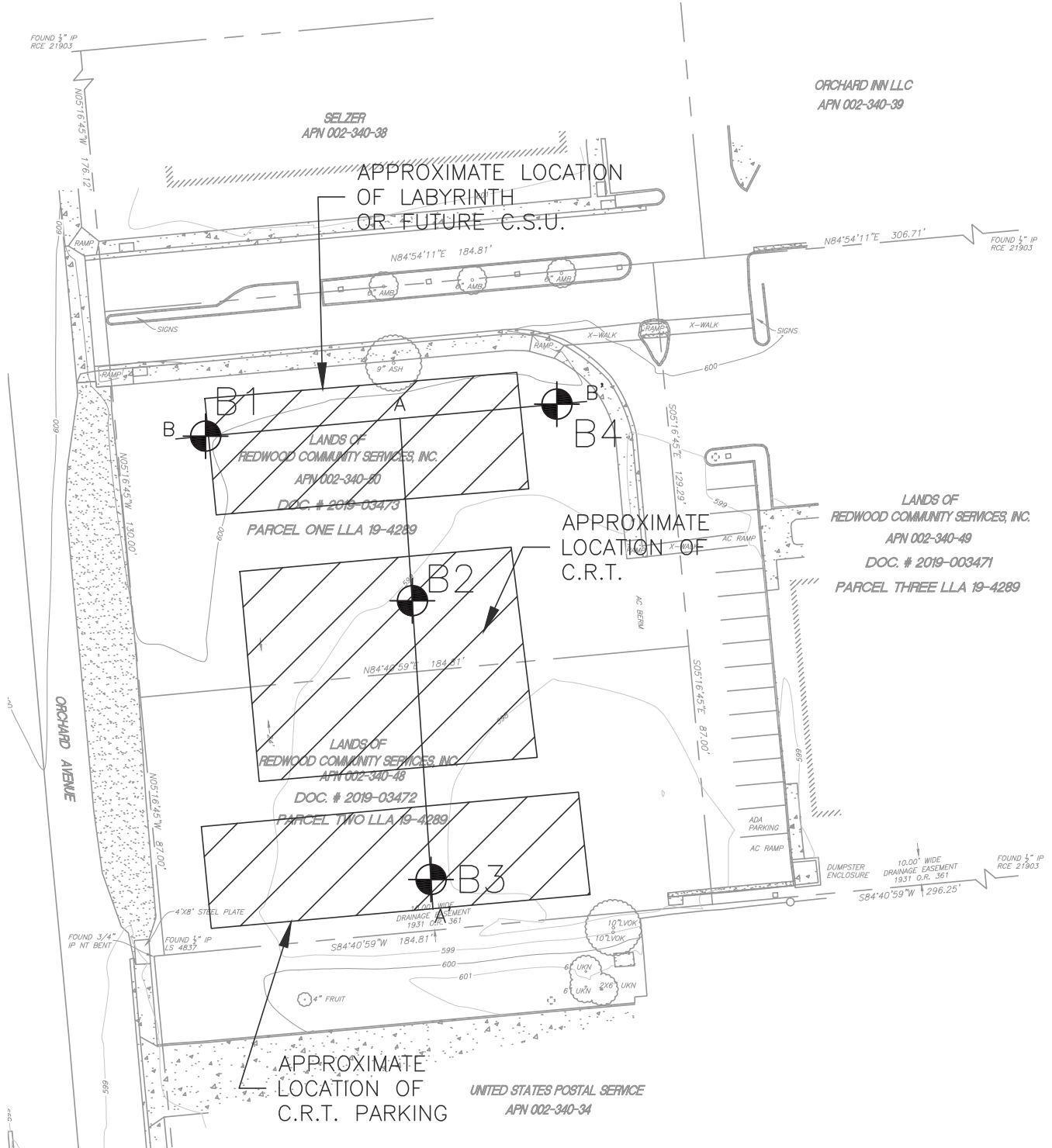
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PROJECT	MENDOCINO COUNTY CRT	BY	CRGT	FIGURE
CLIENT	NACHT & LEWIS	DATE	4/21/20	2
LOCATION	631 SOUTH ORCHARD STREET, UKIAH	CHECK	JNK	JOB NO.
	SITE PLAN	SCALE	AS SHOWN	9528.00

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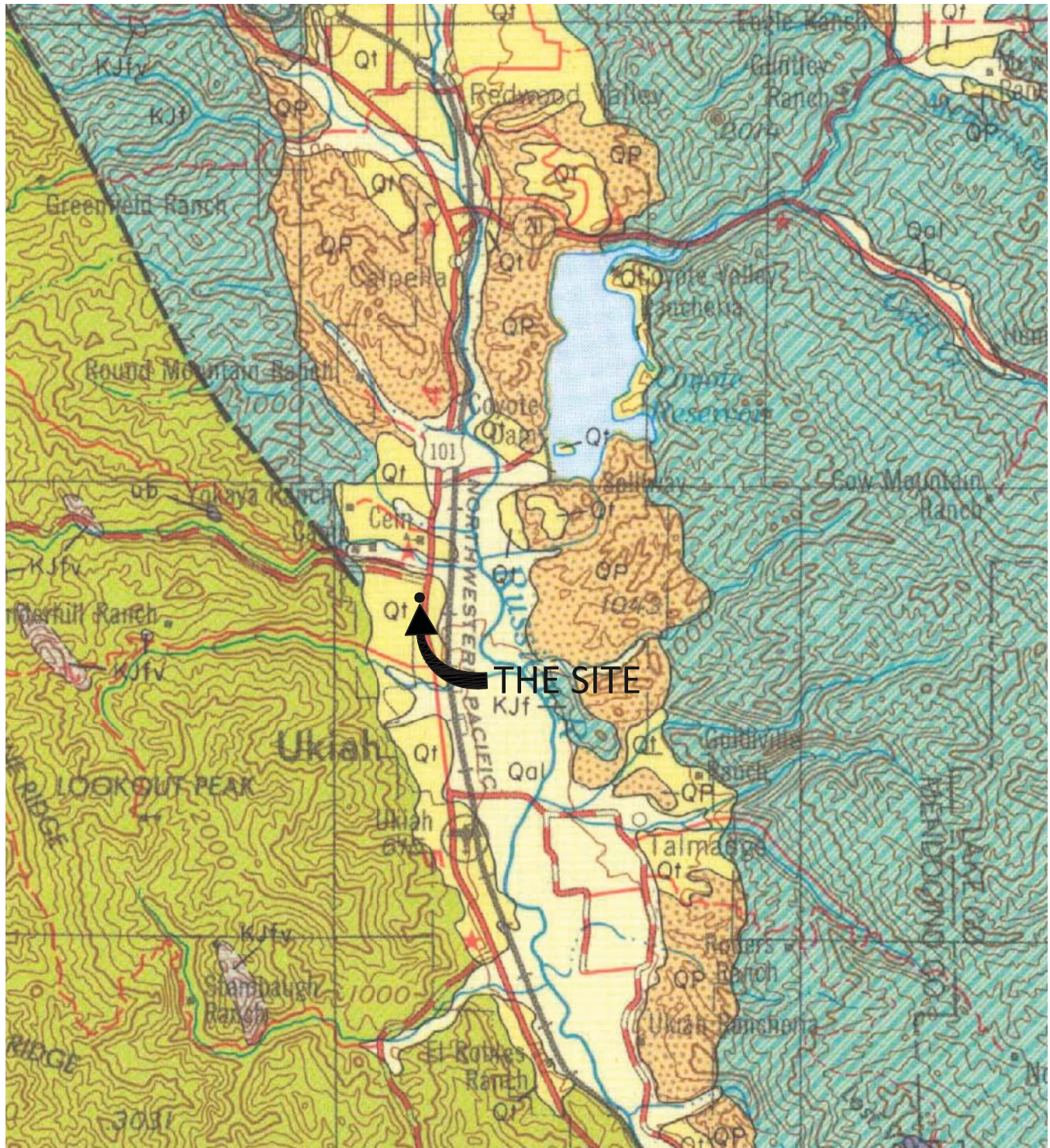
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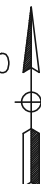
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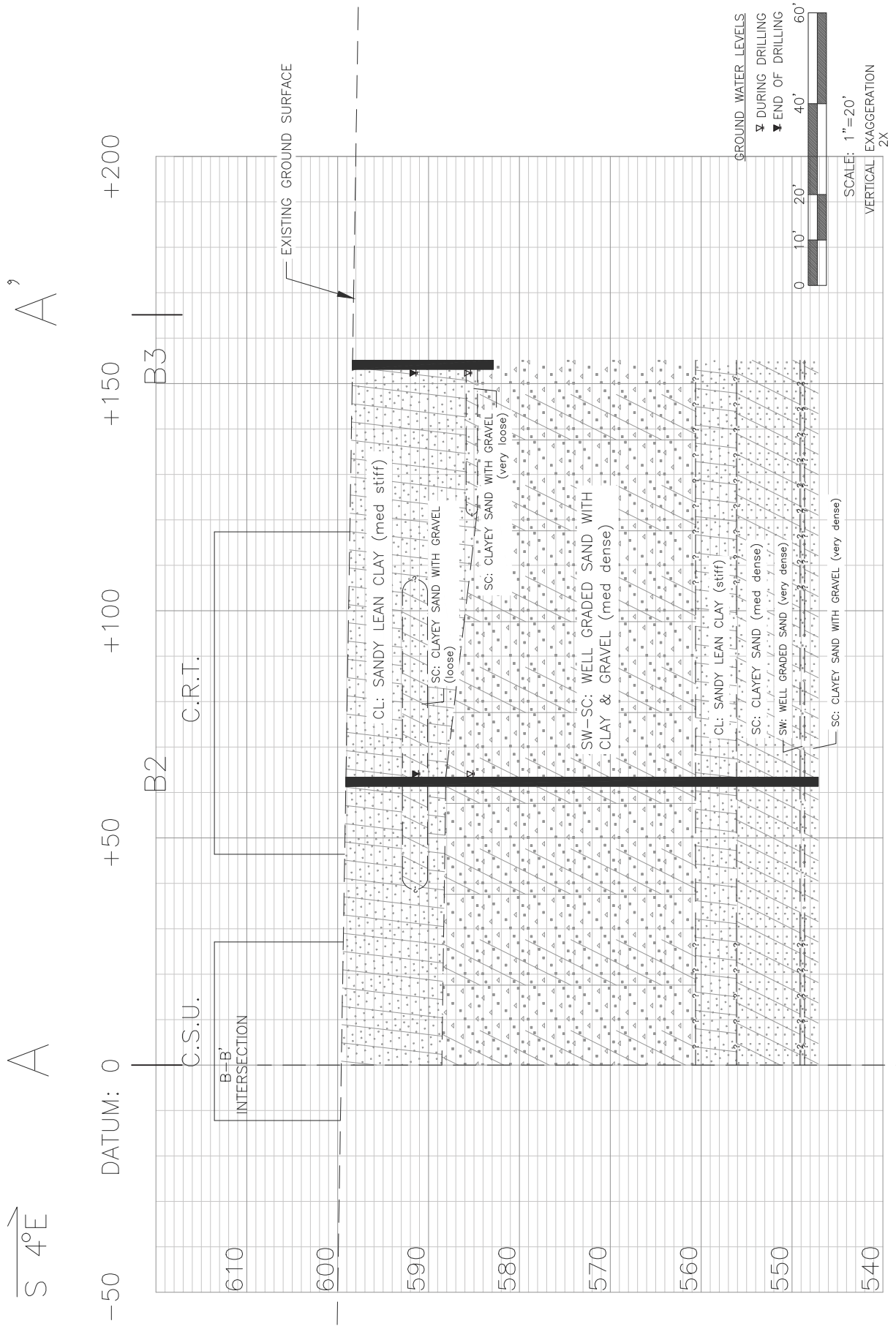
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CLIENT	NACHT & LEWIS	DATE	4/22/20	3A
LOCATION	631 SOUTH ORCHARD STREET, UKIAH	CHECK	JNK	JOB NO.
	GEOLOGIC MAP	SCALE	AS SHOWN	9528.00

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SCALE: 1"=10000'



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MENDOCINO COUNTY CRT
GEOLOGIC CROSS SECTION A-A'
631 S. ORCHARD AVE, UKIAH, CALIFORNIA
NACH & LEWIS

DRAWN	CRGT
CHECK	JNK
APPROVED	JER
DATE	6/2/20
JOB NUMBER	9528.00
FIGURE	

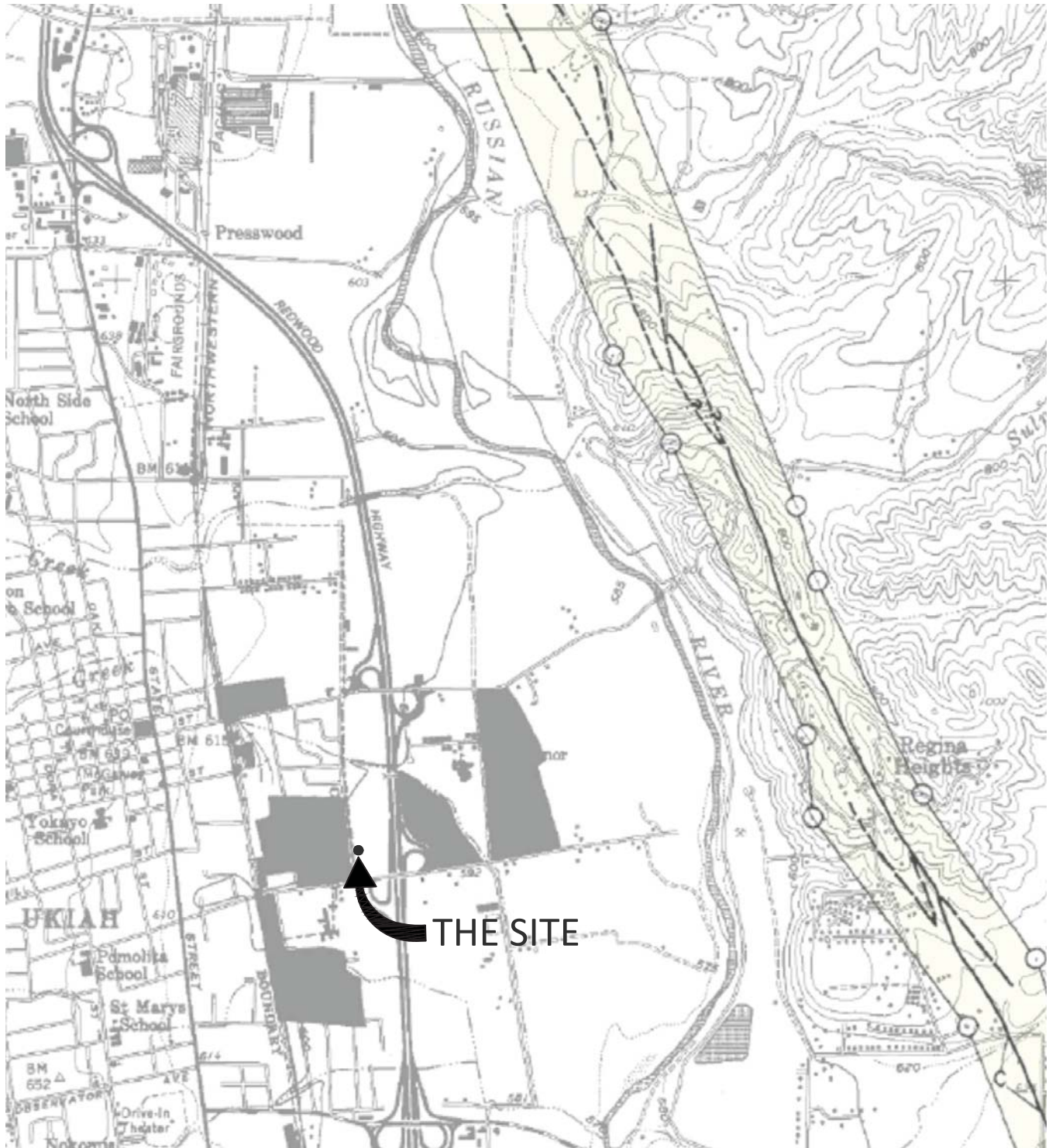
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PROJECT	MENDOCINO COUNTY CRT	BY	CRGT	FIGURE
CLIENT	NACHT & LEWIS	DATE	4/15/20	5
LOCATION	631 SOUTH ORCHARD STREET, UKIAH	CHECK	JNK	JOB NO.
	ALQUIST-PRIOLO MAP	SCALE	AS SHOWN	9528.00

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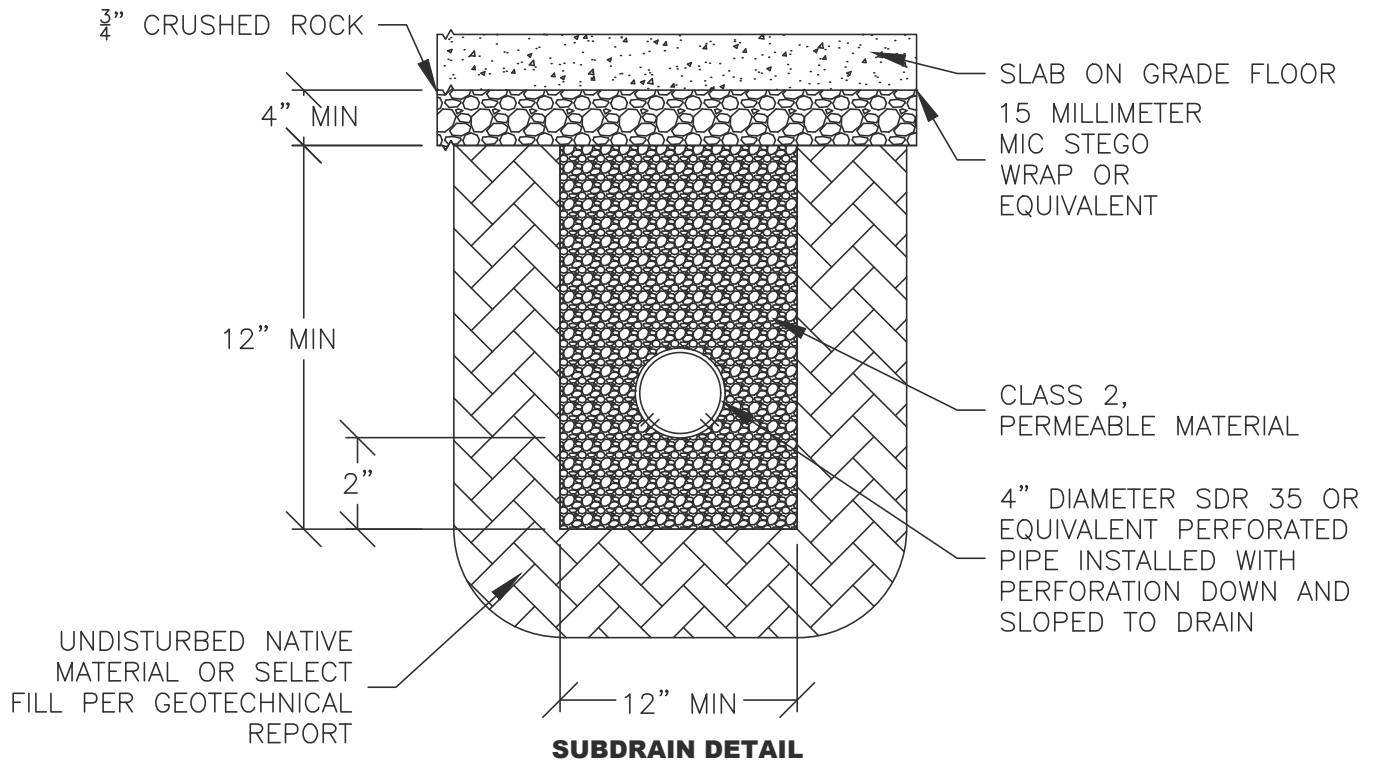
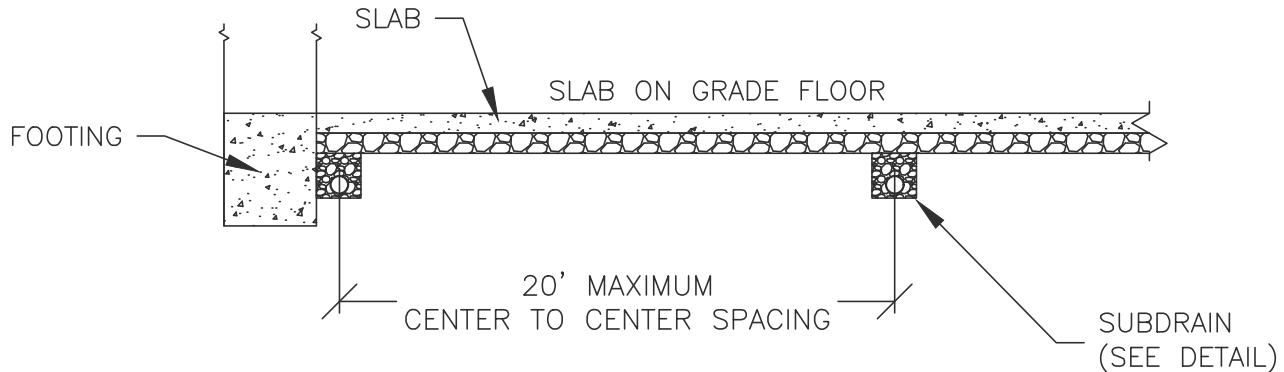
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PROJECT	MENDOCINO COUNTY CRT
CLIENT	NACHT & LEWIS
LOCATION	631 SOUTH ORCHARD STREET, UKIAH
	SLAB-ON-GRADE SUBDRAIN

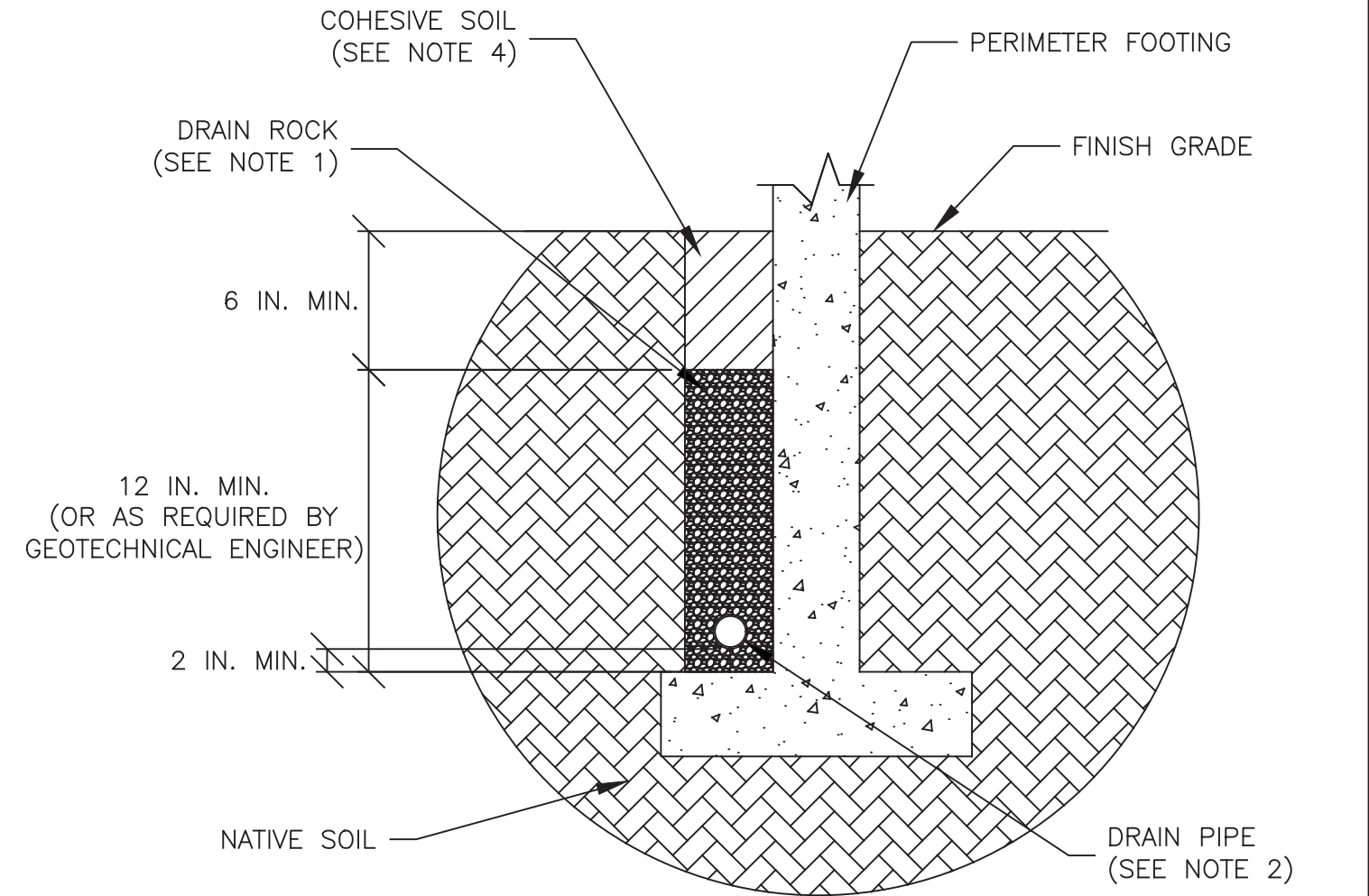
BY	CRGT
DATE	4/15/20
CHECK	JN
SCALE	NTS

FIGURE	6
JOB NO.	9528.00

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LACO EUREKA • UKIAH • SANTA ROSA 1-800-515-5054 www.lacoassociates.com	PROJECT	MENDOCINO COUNTY CRT	BY	CRGT	FIGURE 7
	CLIENT	NACHT & LEWIS	DATE	4/15/20	
	LOCATION	631 SOUTH ORCHARD STREET, UKIAH	CHECK	JNK	JOB NO. 9528.00
	PERIMETER SUBDRAIN		SCALE	NTS	
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- NOTES:**
- (1) Drain rock should meet the Class 2 permeable material requirements in the latest version of the Caltrans standard specifications.
 - (2) Drain pipe should be SDR 35 or equivalent, placed with perforation down, and sloped at a minimum of 1 percent to drain to gravity outlet.
 - (3) A clean-out pipe with cap should be installed at the up-slope end of perforated pipe, and pipe elbows should be 45 degrees or less (for "snake" access)
 - (4) Top 12 inches of fill above back drain should contain at least 20 percent clay to limit surface water from flowing into the drain rock.

APPENDIX 1

Boring Logs

CLIENT <u>Nacht & Lewis</u>	PROJECT NAME <u>Mendocino County CRT</u>
PROJECT NUMBER <u>9528.00</u>	PROJECT LOCATION <u>631 S. Orchard Ave, Ukiah</u>
DATE STARTED <u>4/3/20</u> COMPLETED <u>4/3/20</u>	GROUND ELEVATION <u>600 feet</u> HOLE SIZE <u>inches</u>
DRILLING CONTRACTOR <u>Clear Heart Drilling</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>Hollow Stem Auger</u>	▽ AT TIME OF DRILLING <u>13.50 feet / Elevation 586.50 feet</u>
LOGGED BY <u>KRM</u> CHECKED BY <u>JNK</u>	▼ AT END OF DRILLING <u>8.50 feet / Elevation 591.50 feet</u>
NOTES <u>Mod Cal blows converted to SPT blows (*0.64)</u>	

GEOTECH BORING NEW - GINT STD US LAB.GDT - 6/2/20 09:09 - P:\950019528 NACHT & LEWIS\9528.00 MENDOCINO COUNTY PSYCHIATRIC HEALTH FACILITY\08 GEOLOGY\9528.00 GINT FILE.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	TESTS AND REMARKS	Pocket Penetrometer (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			FINES CONTENT (%)
										LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0													
		(SC) Dark Yellowish Brown Clayey Sand with Silt moist, soft fine sand	MC	83	3-2-2 (4)					27	11	16	48
		(CL) Dark Brown Sandy Lean Clay moist, stiff fine sand	MC	90	3-4-7 (11)								
5			MC	100	3-4-5 (9)					30	13	17	68
		▼ becomes reddish brown minor fine to 1 inch diameter subrounded gravel present (<15%)	MC	80	3-5-6 (11)		102	21					
10													
		(SW-SC) Dark Yellowish Brown Well Graded Sand with Clay moist, medium dense fine to coarse sand	MC	97	10-12-10 (22)								
15			SPT	83	10-11-11 (22)								

Bottom of borehole at 15.5 feet.

CLIENT <u>Nacht & Lewis</u>	PROJECT NAME <u>Mendocino County CRT</u>
PROJECT NUMBER <u>9528.00</u>	PROJECT LOCATION <u>631 S. Orchard Ave, Ukiah</u>
DATE STARTED <u>4/3/20</u> COMPLETED <u>4/3/20</u>	GROUND ELEVATION <u>599 feet</u> HOLE SIZE <u>inches</u>
DRILLING CONTRACTOR <u>Clear Heart Drilling</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>Hollow Stem Auger</u>	▽ AT TIME OF DRILLING <u>8.00 feet / Elevation 591.00 feet</u>
LOGGED BY <u>KRM</u> CHECKED BY <u>JNK</u>	▼ AT END OF DRILLING <u>14.00 feet / Elevation 585.00 feet</u>
NOTES <u>Mod Cal blows converted to SPT blows (*0.64)</u>	

GEOTECH BORING NEW - GINT STD US LAB.GDT - 6/2/20 09:09 - P:\950019528 NACHT & LEWIS\9528.00 MENDOCINO COUNTY PSYCHIATRIC HEALTH FACILITY\108 GEOLOGY\9528.00 GINT FILE.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	TESTS AND REMARKS	Pocket Penetrometer (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			FINES CONTENT (%)
										LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		(CL) Dark Yellowish Brown Sandy Lean Clay moist, medium stiff to stiff fine sand	MC	90	3-3-4 (7)								
			MC	83	4-6-8 (14)								
5		minor fine subrounded gravel	MC	87	3-3-4 (7)			109	16	36	16	20	72
		(SC) Dark Brown Clayey Sand with Gravel wet, loose											
		▽ fine to coarse sand, fine to 2 inch diameter subrounded to rounded gravel	MC	100	7-4-4 (8)								24
10		(CL) Dark Brown Sandy Lean Clay wet, stiff fine sand	MC	100	2-3-7 (10)								
		(SW-SC) Dark Brown Well Graded Sand with Clay and Gravel wet, medium dense											
		▼ fine to coarse sand, fine to 3 inch diameter rounded to subrounded gravel	MC	73	7-8-9 (17)								18
15		increased fine content	MC	50	8-7-4 (11)								9
20			SPT	67	6-8-16 (24)								14
25		becomes dense, Well Graded Sand with Clay and Gravel fine to coarse sand, fine to 2+ inch rounded to subrounded gravel	SPT	67	12-15-15 (30)								10
30													
		Difficulty drilling - heaving conditions. Sample at 30 feet mainly slough, resampled at 31.5 feet	SPT	17	8-15-17 (32)								
			SPT	72	6-8-13 (21)								7
35													

(Continued Next Page)

CLIENT Nacht & Lewis

PROJECT NAME Mendocino County CRT

PROJECT NUMBER 9528.00

PROJECT LOCATION 631 S. Orchard Ave, Ukiah

GEOTECH BORING NEW - GINT STD US LAB.GDT - 6/2/20 09:09 - P:\950019528 NACHT & LEWIS\9528.00 MENDOCINO COUNTY PSYCHIATRIC HEALTH FACILITY\08 GEOLOGY\9528.00 GINT FILE.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	TESTS AND REMARKS	Pocket Penetrometer (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			FINES CONTENT (%)
										LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
35		(SW-SC) Dark Brown Well Graded Sand with Clay and Gravel wet, medium dense fine to coarse sand, fine to 3 inch diameter rounded to subrounded gravel (<i>continued</i>) Difficulty drilling - heaving conditions.	SPT	94	10-18-27 (45)								
40		(CL) Dark Yellowish Brown mottled with Gray Sandy Lean Clay moist to wet, stiff fine sand attempted Mod Cal but difficulty with sampler due to heaving conditions, switched to SPT	SPT	94	6-6-9 (15)			106	21				
45		(SC) Gray Clayey Sand moist to wet, medium dense fine sand	MC	90	3-5-8 (13)					30	13	17	26
50		(SW) Dark Brown Well Graded Sand moist, very dense fine to coarse sand Began to sample with Mod Cal but refusal in first 6 inch interval on very dense material. Switched to SPT.	MC SPT	100 67	51 38-37-32 (69)								
		(SC) Dark Brown Clayey Sand with Gravel moist, very dense fine to coarse sand, fine to 2+ inch subrounded to subangular gravel											

Bottom of borehole at 52.0 feet.

PROJECT NAME Mendocino County CRT

PROJECT LOCATION 631 S. Orchard Ave, Ukiah

GROUND ELEVATION 598 feet **HOLE SIZE** inches

GROUND WATER LEVELS:

 AT TIME OF DRILLING 13.00 feet / Elevation 585.00 feet

▼ AT END OF DRILLING 7.00 feet / Elevation 591.00 feet

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	TESTS AND REMARKS	Pocket Penetrometer (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			FINES CONTENT (%)
										LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0													
5		(CL) Dark Yellowish Brown Sandy Lean Clay moist, medium stiff fine sand, fine to 1/2 inch diameter rounded gravel	MC	87	3-3-4 (7)	UC: 1000							
			MC	87	3-4-6 (10)								
			MC	100	4-4-5 (9)								
		mottled with reddish brown moist fine to 1 inch diameter subrounded to rounded gravel	MC	100	3-5-6 (11)								
15		(SC) Dark Yellowish Brown Clayey Sand with Gravel wet at 13 feet, very loose fine to coarse sand, fine to 3/4 inch diameter rounded to subrounded gravel. Coarsens with depth	MC	93	2-2-2 (4)								
		(SW-SC) Dark Yellowish Brown Well Graded Sand with Gravel and Clay wet, medium dense fine to coarse sand, fine to 3/4 inch diameter subrounded to rounded gravel some fine sand lenses	SPT	86	5-6-6 (12)								
Bottom of borehole at 15.5 feet.													

Bottom of borehole at 15.5 feet.

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CLIENT Nacht & LewisPROJECT NAME Mendocino County CRTPROJECT NUMBER 9528.00PROJECT LOCATION 631 S. Orchard Ave, UkiahDATE STARTED 4/3/20COMPLETED 4/3/20GROUND ELEVATION 600 feetHOLE SIZE inchesDRILLING CONTRACTOR Clear Heart Drilling

GROUND WATER LEVELS:

DRILLING METHOD Hollow Stem AugerAT TIME OF DRILLING --- Note EncounteredLOGGED BY KRMCHECKED BY JNKAT END OF DRILLING ---NOTES Mod Cal blows converted to SPT blows (*0.64)

GEOTECH BORING NEW - GINT STD US LAB.GDT - 6/2/20 09:09 - P:\950019528 NACHT & LEWIS\9528.00 MENDOCINO COUNTY PSYCHIATRIC HEALTH FACILITY\108 GEOLOGY\9528.00 GINT FILE.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	TESTS AND REMARKS	Pocket Penetrometer (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			FINES CONTENT (%)
										LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0													
		(CL) Dark Brown Sandy Lean Clay moist, stiff fine sand	MC	87	6-5-4 (9)								
			MC	87	3-5-6 (11)								
5		minor fine to 1 inch diameter subrounded to subangular gravel	MC	100	3-4-5 (9)								
			MC	100	2-4-6 (10)								
10		becomes Dark Yellowish Brown fine to 1 inch diameter subrounded gravel	MC	100	4-4-4 (8)								
			SPT	100	4-6-9 (15)								
15													

Bottom of borehole at 15.0 feet.

CLIENT Nacht & Lewis

PROJECT NAME Mendocino County CRT

PROJECT NUMBER 9528.00

PROJECT LOCATION 631 S. Orchard Ave, Ukiah

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS				TYPICAL NAMES	
COARSE GRAINED SOILS More than Half > #200 sieve	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES
			GP		POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 15% FINES	GM		SILTY GRAVELS, POORLY GRADED GRAVEL-SAND-SILT MIXTURES
			GC		CLAYEY GRAVELS, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS, GRAVELLY SANDS
			SP		POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 15% FINES	SM		SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES
			SC		CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS More than Half < #200 sieve	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL		ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt		PEAT AND OTHER HIGHLY ORGANIC SOILS

KEY TO TEST DATA

	Modified California (MC)	RV	R-Value	LL	Liquid Limit (%)		
	Standard Penetration Test (SPT)	SA	Sieve Analysis	PI	Plastic Index (%)		
	Pushed Shelby Tube (ST)	SW	Swell Test	Gs	Specific Gravity	Shear Strength (psf)	Confining Pressure (psf)
	Auger Cuttings	CP	Compaction	MA	Particle Size Analysis		
	Grab Sample (GB)	TC	Cyclic Triaxial	Tx	Unconsolidated Undrained Triaxial	320	(2600)
	Continuous Core Sample (CC)	EI	Expansion Index	TxCU	Consolidated Undrained Triaxial	320	(2600)
c	Cohesion	Perm	Permeability	DS	Consolidated Drained Direct Shear	2750	(2000)
	Friction Angle	Consol	Consolidation	FVS	Field Vane Shear	470	
MC	Moisture Content		Shear Strength	UC	Unconfined Compression	2000	
DD	Dry Density		Water Level at Time of Drilling	LVS	Laboratory Vane Shear	700	
PP	Pocket Penetrometer		Water Level after Drilling				

NOTES: The lines separating soil layers are approximate boundaries.

Blow counts represent the number of blows of a 140-pound hammer falling 30 inches to drive an 18-inch sampler the final 12 inches.

Modified California Sampler blow counts have been converted to standard N-value blow counts using Burmister's energy input factor of 0.65.

LACO ROCK CLASSIFICATION SYSTEM

Consolidation of Sedimentary Rocks: Usually determined from unweathered samples. Largely dependent on cementation.

unconsolidated
poorly consolidated
moderately consolidated
well consolidated

Bedding of Sedimentary Rocks

Splitting Property	Thickness	Stratification
Massive	greater than 4.0 feet	very thick bedded
Blocky	2.0 to 4.0 feet	thick-bedded
Slabby	0.2 to 2.0 feet	thin-bedded
Flaggy	0.05 to 0.2 feet	very thin-bedded
Shaly or Platy	0.01 to 0.05 feet	laminated
Papery	less than 0.01 feet	thinly laminated

FRACTURING

Intensity	Size of Pieces in Feet
Very little fractured	Greater than 4.0
Occasionally fractured	1.0 to 4.0
Moderately fractured	0.5 to 1.0
Closely fractured	0.1 to 0.5
Intensely fractured	0.05 to 0.1
Crushed	less than 0.05

HARDNESS

Soft	Reserved for plastic material alone
Low Hardness	Can be gouged deeply or carved easily with a knife blade
Moderately Hard	Can be readily scratched by a knife blade; scratch leaves a heavy trace of dust and is readily visible after the powder has been blown away
Hard	Can be scratched with difficulty; scratch produces little powder and is often faintly visible
Very Hard	Cannot be scratched with knife blade; leaves a metallic streak

Strength

Plastic	very low strength
Friable	crumbles easily by rubbing with fingers
Weak	an unfractured specimen of such material will crumble under light hammer blows
Moderately Strong	specimen will withstand a few heavy hammer blows before breaking
Strong	specimen will withstand a few heavy ringing hammer blows and will yield with difficulty only dust and small flying fragments
Very Strong	specimen will resist heavy ringing hammer blows and will yield with difficulty only dust and small flying fragments

Weathering: The physical and chemical disintegration and decomposition of rocks and minerals by natural processes such as oxidation, reduction, hydration, solution, carbonation and freezing and thawing

Deep	moderate to complete mineral decomposition, extensive disintegration, deep and thorough discoloration, many fractures. all extensively coated or filled with oxides, carbonates and/or clay or silt.
Moderate	slight change or partial decomposition of minerals, little disintegration, cementation little to unaffected. moderate to occasionally intense discoloration moderately coated fractures.
Little	no megascopic decomposition of minerals, little or no effect on normal 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.

APPENDIX 2

Laboratory Test Results



FINER THAN #200 SIEVE
ASTM C117/ASTM D-1140

PROJECT	Mendocino County PFH, CST and CRT	JOB NO.	9528.00	SHEET
CLIENT	Nacht & Lewis	SAMPLE ID	280	1 of 1
LOCATION	631 S. Orchard Ave., Ukiah	TEST BY	GF	DATE 5/13/20
SOIL TYPE	Brown Clayey Sand (SC)	CHECKED BY	GF	CHECK DATE 5/14/20

B1 @ 2.0'-2.5'

(B)	Net sample (Dry)	162.8	gms
(C)	Dry sample after washing	84.8	gms
	Total Material finer than 200 sieve	78.0	gms

(A)	% Material finer than 200 sieve	47.9%
	$A = [(B-C)/B] \times 100$	



FINER THAN #200 SIEVE
ASTM C117/ASTM D-1140

PROJECT	Mendocino County CRT	JOB NO.	9528.00	SHEET
CLIENT	Nacht & Lewis	SAMPLE ID	280	1 of 1
LOCATION	631 S. Orchard Ave., Ukiah	TEST BY	GF	DATE 5/27/20
		CHECKED BY	GF	CHECK DATE 5/28/20

B2 @ 11.0'-11.5'	SC
(B) Net sample (Dry)	434.8 gms
(C) Dry sample after washing	357.2 gms
Total Material finer than 200 sieve	77.6 gms

(A) % Material finer than 200 sieve **17.8%**
 $A = [(B-C)/B] \times 100$

B2 @ 16.0'-16.5'	GC
(B) Net sample (Dry)	572.9 gms
(C) Dry sample after washing	495.4 gms
Total Material finer than 200 sieve	77.5 gms

(A) % Material finer than 200 sieve **13.5%**
 $A = [(B-C)/B] \times 100$

B2 @ 25.0'-26.5'	GP-GC
(B) Net sample (Dry)	602.6 gms
(C) Dry sample after washing	543.6 gms
Total Material finer than 200 sieve	59.0 gms

(A) % Material finer than 200 sieve **9.8%**
 $A = [(B-C)/B] \times 100$



FINER THAN #200 SIEVE
ASTM C117/ASTM D-1140

PROJECT	Mendocino County CRT			JOB NO.	9528.00	SHEET
CLIENT	Nacht & Lewis			SAMPLE ID	280	1 of 1
LOCATION	631 S. Orchard Ave., Ukiah	TEST BY	GF	DATE	5/21/20	
		CHECKED BY	GF	CHECK DATE	5/22/20	

B1 @ 5.5'-6.0'	CL
(B) Net sample (Dry)	187.7 gms
(C) Dry sample after washing	61.0 gms
Total Material finer than 200 sieve	126.7 gms
(A) % Material finer than 200 sieve	68%
$A = [(B-C)/B] \times 100$	

B2 @ 2.0'-2.5'	CL
(B) Net sample (Dry)	192.6 gms
(C) Dry sample after washing	54.0 gms
Total Material finer than 200 sieve	138.6 gms
(A) % Material finer than 200 sieve	72.0%
$A = [(B-C)/B] \times 100$	

B2 @ 8.5'-9.0'	GC
(B) Net sample (Dry)	381.8 gms
(C) Dry sample after washing	288.6 gms
Total Material finer than 200 sieve	93.2 gms
(A) % Material finer than 200 sieve	24.4%
$A = [(B-C)/B] \times 100$	

B2 @ 31.5'-33.0'	SP-SC
(B) Net sample (Dry)	452.5 gms
(C) Dry sample after washing	419.4 gms
Total Material finer than 200 sieve	33.1 gms
(A) % Material finer than 200 sieve	7.3%
$A = [(B-C)/B] \times 100$	

B2 @ 46.0'-46.5'	SC
(B) Net sample (Dry)	112.5 gms
(C) Dry sample after washing	83.5 gms
Total Material finer than 200 sieve	29.0 gms
(A) % Material finer than 200 sieve	25.8%
$A = [(B-C)/B] \times 100$	



Ensign 21 W. 4th Street, P.O. Box 1023, Ensign, California 95932 707-462-0564 FAX 707-462-0563
Lujan 311 South Main Street, Lujan, California 95462 707-462-0022 FAX 707-462-0022
800-515-0564 www.lacosolutions.com

SIEVE ANALYSIS WORKSHEET (ASTM C-136)

Project No.	9528.00				Material Desc.				Brm Sand W/ Clay & Gravel (SP-SC)				Tested By:		Date:	
Client:	Nacht & Lewis				Manufacturer								GF		Date:	
Sample ID:	B2 @ 13.0'-13.5				Sample Location								Checked By:		Date:	
													Initial Weight:		% Difference	
													622.8 gm		> 0.3%	
Partial Weight (gm)					(37.5mm x 19mm) 1 1/2 x 3/4				(19mm x 4.75mm) 3/4 x #4				Pass (4.75mm) #4			
% Used																
Size of Sample (gm)																
(75mm) 3																
(62.5mm) 2 1/2																
(50mm) 2																
(37.5mm) 1 1/2																
(25mm) 1																
(19mm) 3/4																
(12.5mm) 1/2																
(9.5mm) 3/8																
(4.75mm) 4																
(2.38mm) 8																
(1.19mm) 16																
(600µm) 30																
(300µm) 50																
(150µm) 100																
(75µm) 200																
Wash Wt.																



ATTERBERG LIMITS **ASTM D-4318**

PROJECT	Mendocino County CRT			JOB NO.	9528.00	SHEET
CLIENT	Nacht & Lewis			SAMPLE ID	280	1 of 1
SOURCE	B1 @ 2.0'-2.5'	TEST BY	GF	DATE	5/13/20	
SOIL TYPE	Brown Clayey Sand (SC)	CHECKED BY	GF	CHECK DATE	5/14/20	

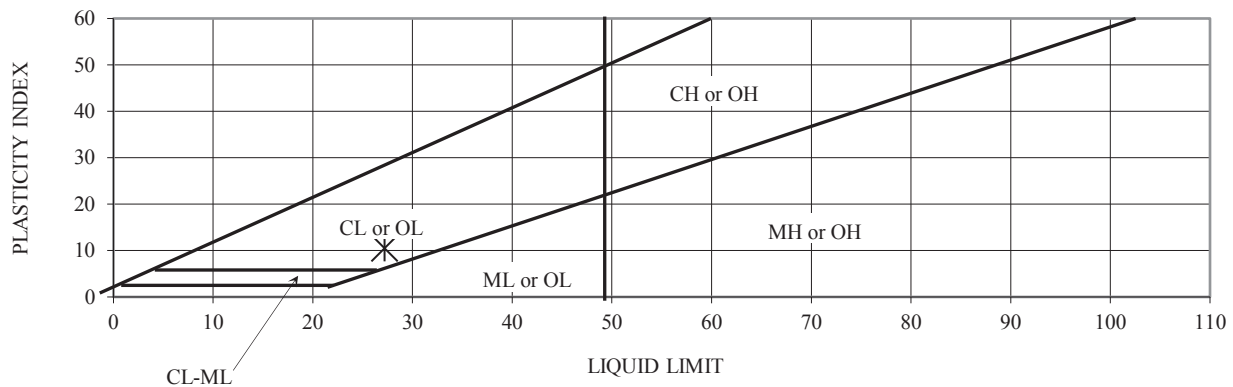
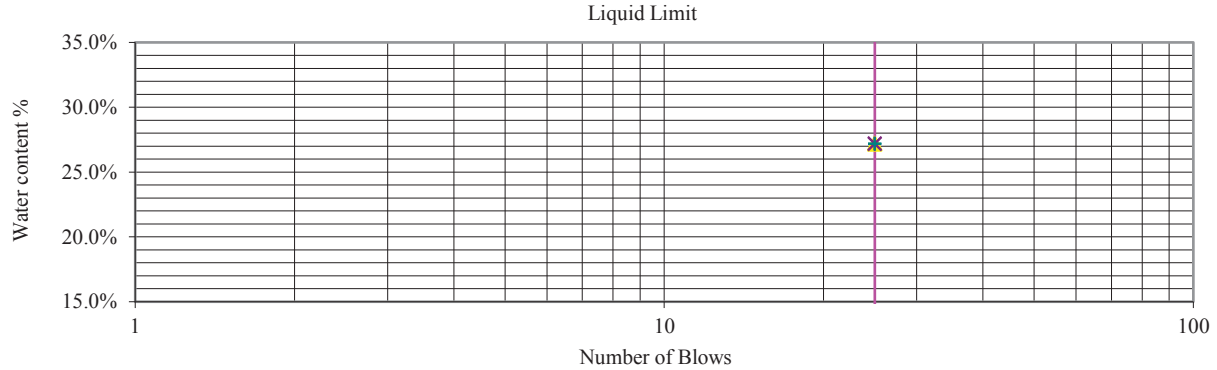
PLASTIC LIMIT

	Point 1	Point 2	Point 3
Tare + Wet Soil (gm)	24.88	24.41	
Tare + Dry Soil (gm)	22.39	22.05	
Water (gm)	2.49	2.36	
Tare (gm)	13.24	13.36	
Dry Soil (gm)	9.15	8.69	
Water Content (%)	27.2%	27.2%	
* Number of Blows	25	25	

* Groove closure = 13mm

Run 1	Run 2	Run 3
14.52	14.65	
13.49	13.60	
1.03	1.05	
7.35	7.27	
6.14	6.33	
16.8%	16.6%	

LIQUID LIMIT = 27
PLASTIC LIMIT = 17
PLASTIC INDEX = 11





ATTERBERG LIMITS **ASTM D-4318**

PROJECT	Mendocino County CRT			JOB NO.	9528.00	SHEET
CLIENT	Nacht & Lewis			SAMPLE ID	280	1 of 1
SOURCE	B2 @ 2.0'-2.5'	TEST BY	GF	DATE	5/21/20	
SOIL TYPE	Brn Clay W/ Sand (CL)	CHECKED BY	GF	CHECK DATE	5/22/20	

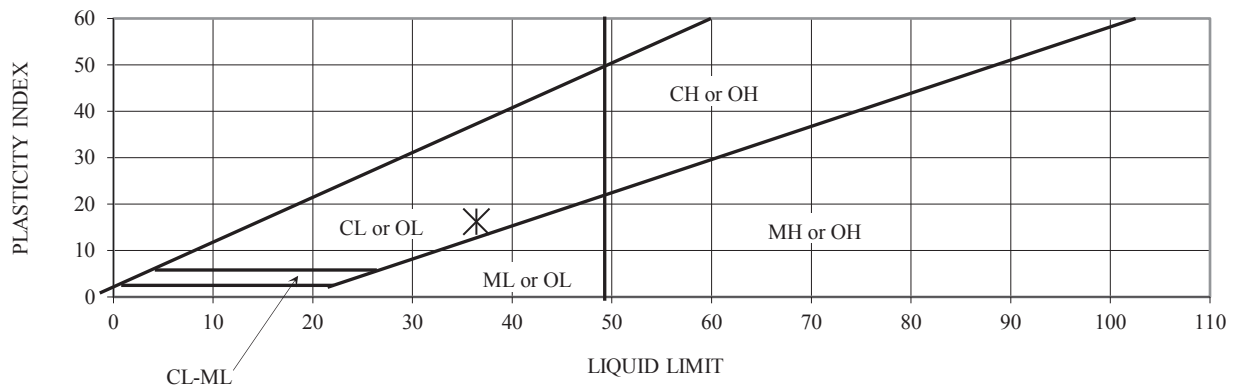
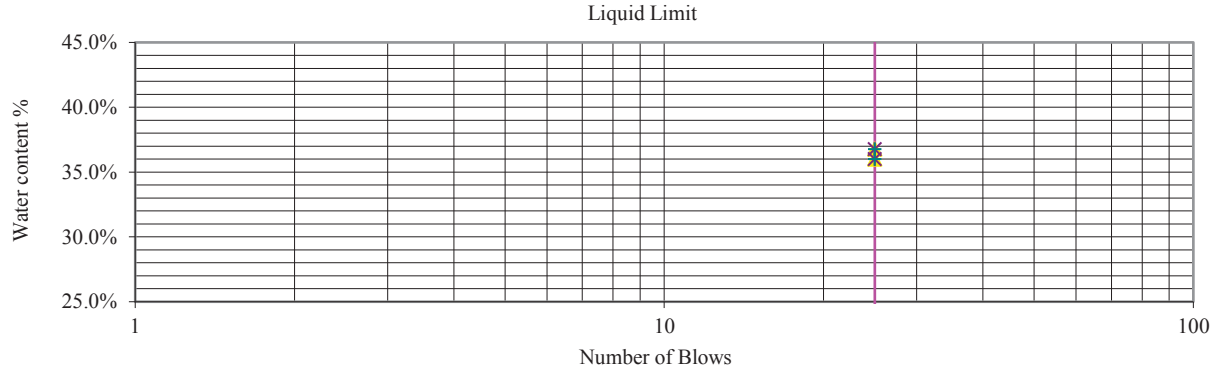
PLASTIC LIMIT

	Point 1	Point 2	Point 3
Tare + Wet Soil (gm)	22.74	23.51	
Tare + Dry Soil (gm)	20.24	20.81	
Water (gm)	2.50	2.70	
Tare (gm)	13.44	13.31	
Dry Soil (gm)	6.80	7.50	
Water Content (%)	36.8%	36.0%	
* Number of Blows	25	25	

* Groove closure = 13mm

Run 1	Run 2	Run 3
14.30	14.07	
13.14	12.94	
1.16	1.13	
7.43	7.30	
5.71	5.64	
20.3%	20.0%	

LIQUID LIMIT = 36
PLASTIC LIMIT = 20
PLASTIC INDEX = 16





ATTERBERG LIMITS **ASTM D-4318**

PROJECT	Mendocino County CRT			JOB NO.	9528.00	SHEET
CLIENT	Nacht & Lewis			SAMPLE ID	280	1 of 1
SOURCE	B1 @ 5.5'-6.0'	TEST BY	GF	DATE	5/21/20	
SOIL TYPE	Brn Sandy Clay (CL)	CHECKED BY	GF	CHECK DATE	5/22/20	

PLASTIC LIMIT

	Point 1	Point 2	Point 3
Tare + Wet Soil (gm)	22.52	23.04	
Tare + Dry Soil (gm)	20.40	20.83	
Water (gm)	2.12	2.21	
Tare (gm)	13.32	13.43	
Dry Soil (gm)	7.08	7.40	
Water Content (%)	29.9%	29.9%	
* Number of Blows	25	25	

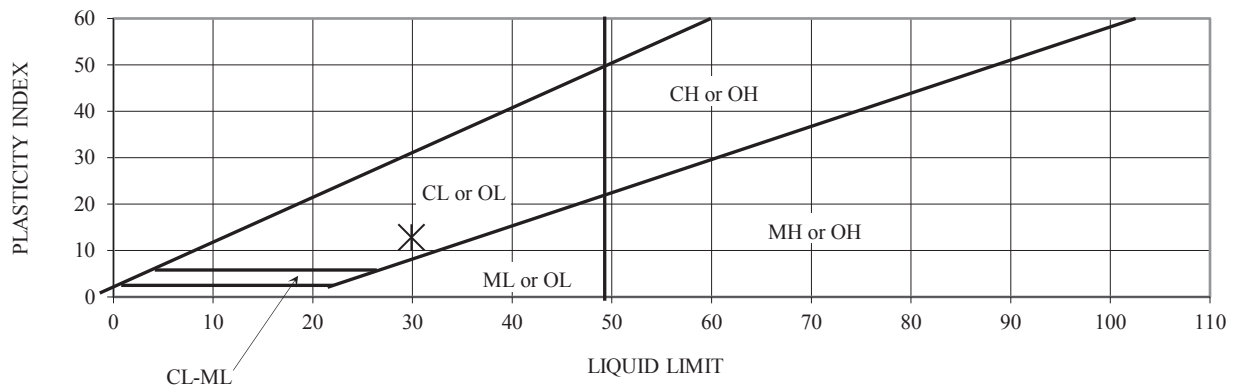
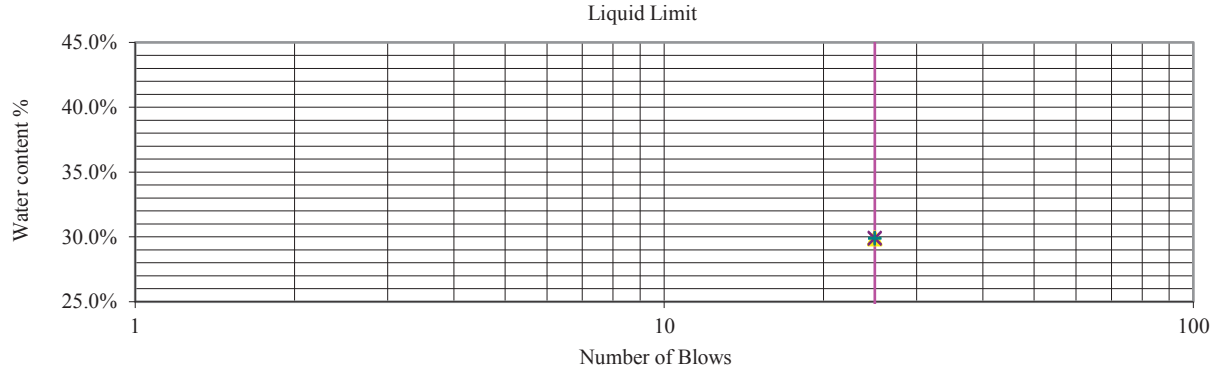
* Groove closure = 13mm

Run 1	Run 2	Run 3
14.43	14.35	
13.39	13.33	
1.04	1.02	
7.37	7.27	
6.02	6.06	
17.3%	16.8%	

LIQUID LIMIT = 30

PLASTIC LIMIT = 17

PLASTIC INDEX = 13





ATTERBERG LIMITS **ASTM D-4318**

PROJECT	Mendocino County CRT			JOB NO.	9528.00	SHEET
CLIENT	Nacht & Lewis			SAMPLE ID	280	1 of 1
SOURCE	B2 @ 46.0'-46.5'	TEST BY	GF	DATE	5/21/20	
SOIL TYPE	Gray Clayey Sand (SC)	CHECKED BY	GF	CHECK DATE	5/22/20	

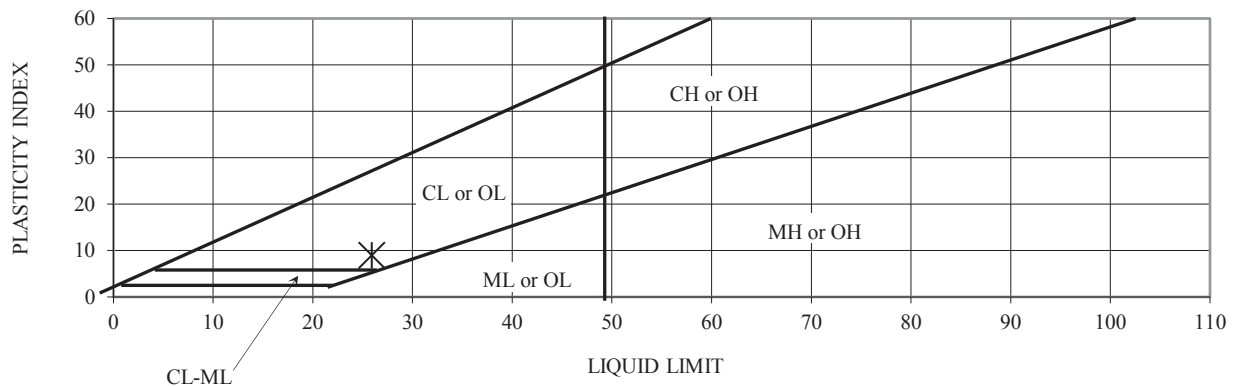
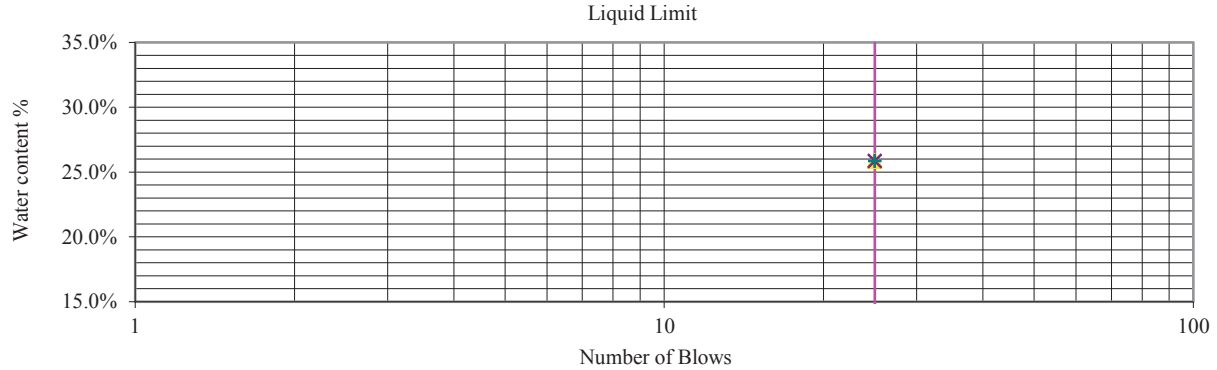
PLASTIC LIMIT

	Point 1	Point 2	Point 3
Tare + Wet Soil (gm)	25.68	25.61	
Tare + Dry Soil (gm)	23.11	23.06	
Water (gm)	2.57	2.55	
Tare (gm)	13.16	13.21	
Dry Soil (gm)	9.95	9.85	
Water Content (%)	25.8%	25.9%	
* Number of Blows	25	25	

* Groove closure = 13mm

Run 1	Run 2	Run 3
14.47	14.67	
13.41	13.64	
1.06	1.03	
7.23	7.48	
6.18	6.16	
17.2%	16.7%	

LIQUID LIMIT = 26
PLASTIC LIMIT = 17
PLASTIC INDEX = 9





Eureka: 21 W. 4th Street - P.O. Box 1023 - Eureka, California 95502 - 707-443-0554 - FAX 707-443-0553
Ukiah: 311 South Main Street - Ukiah, California 95492 - 707-452-0222 - FAX 707-452-0223
800-515-0554 - www.lacosolates.com

ASTM D4829**EXPANSION INDEX**

Page

1

Project No.

9528.00

Project

Mendocino County CRT

Tested By

GF

Date

5/24/20

Location

631 S. Orchard Ave., Ukiah

Checked By

GF

Date

5/26/20

Client

Nacht & Lewis

Sample ID:

280

DATE	TIME	TIME (minutes)	READING (in)
5/23/2020	11:05:00		0.150
	11:15:00		0.150
	11:35:00		0.180
5/24/2020	11:10:00		0.210
	11:50:00		0.210

D₁ INITIAL READING (in) 0.1500D₂ FINAL READING (in) 0.2100 ΔH CHANGE IN HEIGHT (in) 0.06H₁ INITIAL HEIGHT (in) 1EI= **60**

Wet soil + ring 743.5 gm

Ring 364.2 gm

Volume of ring 205.93 cm³Wet Density 115.0 lb/ft³

Wet soil + pan 158.8 gm

Dry soil + pan 148.9 gm

Pan 65.8 gm

Total water 9.9 gm

Dry soil 83.1 gm

Percent H₂O = 11.9 %Dry Density = 102.7 lb/ft³Notes: Water content adjusted to achieve saturation of 50% $\pm$ 2%

Sample tested was saturated at = 50.2%



MOISTURE / DENSITY
ASTM D-2216 / 2937

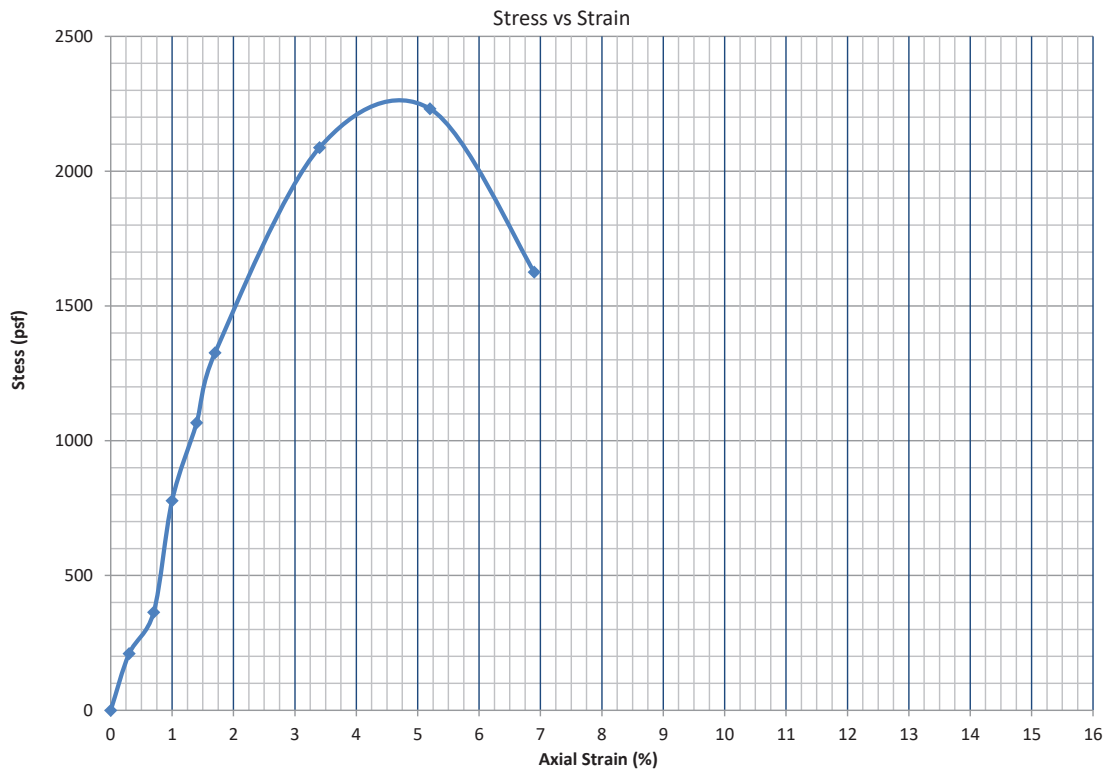
PROJECT	Mendocino County CRT		SHEET	1/1	
CLIENT	Nacht & Lewis	JOB NO.	9528.00	LAB ID	280
LOCATION	631 S. Orchard Ave., Ukiah	TEST BY	GF	DATE	5/21/20
		CHECKED BY	GF	CHECK DATE	5/22/20

SAMPLE LOCATION	B1	B2	B2		
DEPTH (ft)	8.5'-9.0'	3.5'-4.0'	40.0'-41.5'		
SOIL TYPE (USCS)	CL	CL	CL		
WET SOIL+PAN+TUBE	220.2	228.7	238.0		
DRY SOIL + PAN + TUBE	192.8	206.1	207.7		
PAN + TUBE	64.2	65.7	65.5		
MOISTURE CONTENT (%)	21.3	16.1	21.3		
TUBE DIAMETER (cm)	6.17	6.10	3.81		
TOTAL TUBE LENGTH (cm)	15.2	15.2	15.2		
EMPTY TUBE LENGTH (cm)	0.0	0.3	0.8		
NET SPECIMEN LENGTH (cm)	15.2	15.0	14.4		
TARE WEIGHT OF TUBE (gm)	0.0	258.2	0.0		
NET WET SOIL + TUBE (gm)	902.5	1144.5	337.9		
WET SOIL (gm)	902.5	886.3	337.9		
VOLUME OF WET SOIL (cf)	0.016	0.015	0.006		
WET DENSITY (pcf)	123.7	126.7	128.2		
DRY DENSITY (pcf)	102.0	109.1	105.7		
VOID RATIO	0.6	0.5	0.6		
% SATURATION	90.5	82.4	99.5		



Unconfined Compressive Strength Test
ASTM D-2166

PROJECT	Mendocino County CRT	JOB NO.	9528	PM	KD	SHEET	1 of 1
CLIENT	Nacht & Lewis	SAMPLE ID	B3	TEST BY	GF	DATE	5/21/20
LOCATION	631 S. Orchard Ave., Ukiah	SAMPLE DEPTH	2.0'-2.5'	CHECKED BY	GF	DATE	5/22/20
SOIL TYPE	Brn Clay (CL)	COMMENTS					



Failure strain	5.2 %
Unconfined Compressive Strength	2168 psf
Undrained shear strength	1084 psf
Strain rate	1 %/min

Sample height	5.80 in
Sample diameter	2.43 in
Height / diameter ratio	2.39
Moisture content	22.5 %
Void ratio	4.23
Saturation	%
Specific gravity (assumed)	2.70

MATERIAL TEST REPORT

Date Of Issue : 6/2/2020

Re: Mendocino County PHF, CSU & CRT
631 S Orchard Street
Ukiah, CA 95482

Permit# N/A

CEL# 4055694PW

LAB# 10S200602-3

MATERIAL/SAMPLE DATA

Material: Dark Brown Sandy Clay

Source: N/A

Location: N/A

Sample Date: 05/26/2020

Sampled By: Others

TESTS COMPLETED

Consolidated Engineering Laboratories has performed testing of materials for the above project as noted below.

Testing was performed in accordance with the indicated test method. Results as follows:

1 Resistance "R" Value of Untreated Soils ASTM D 2844

Date Tested: 06/02/2020

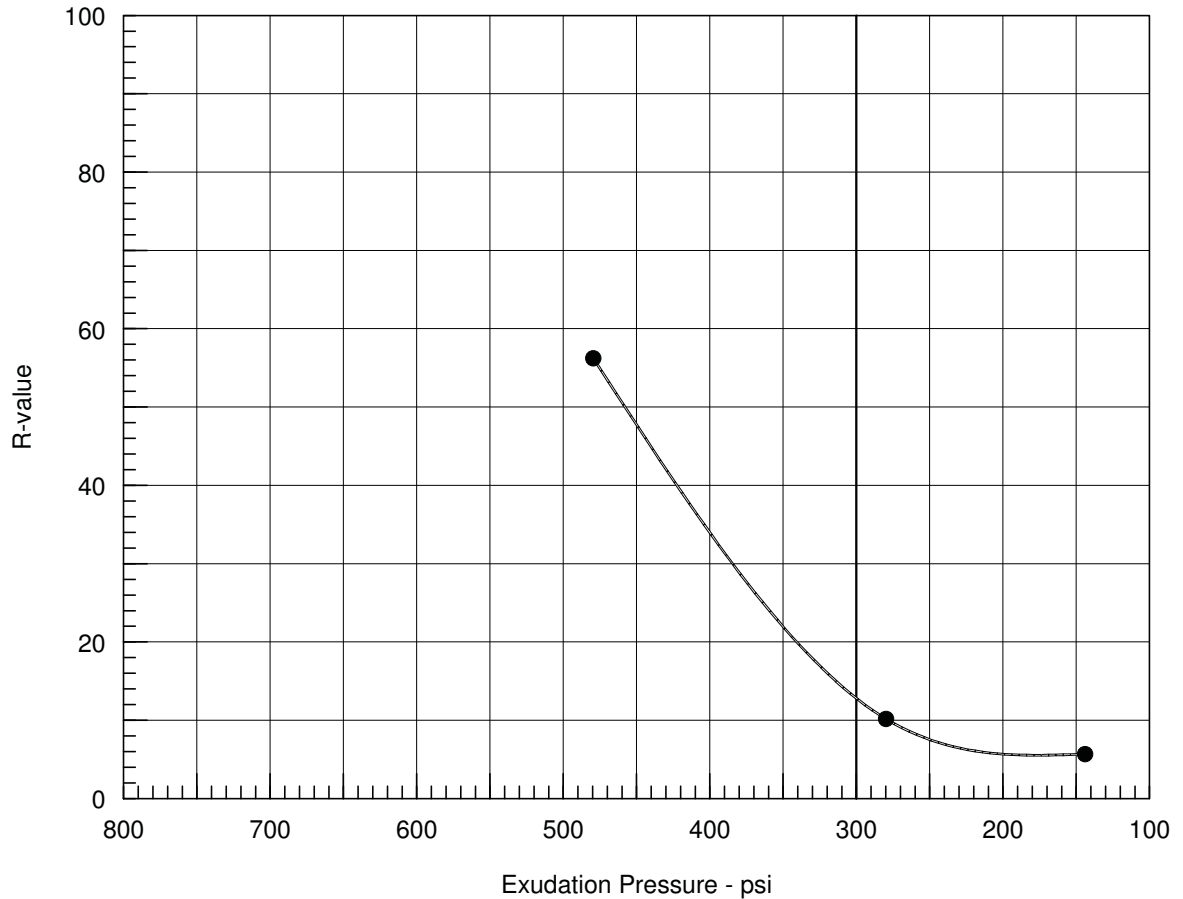
Please refer to the attached data sheets for results.

CC: Respectfully Submitted: Greg D. LeRoy, PE, Laboratory Director

Placeholder (ER)

LACO (ER)

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	90	116.1	14.4	0.00	134	2.50	280	10	10
2	50	113.4	15.4	0.00	146	2.65	144	5	6
3	250	121.2	11.7	0.00	59	2.45	480	56	56

Test Results	Material Description
R-value at 300 psi exudation pressure = 13	Dark Brown Sandy Clay Sampled by Others on 5/26/2020
Project No.: 4055694PW Project: Mendocino County PHF, CSU & CRT Location: N/A / N/A Sample Number: 10S200602-3 Date: 6/2/2020	Tested by: JC Checked by: GL Remarks:
R-VALUE TEST REPORT CONSOLIDATED ENGINEERING LABORATORIES	Figure 10S200602-3



ETS

Environmental Technical Services

- Soil, Water & Air Testing & Monitoring
- Analytical Labs
- Technical Support

975 Transport Way, Suite 2
 Petaluma, CA 94954
 (707) 778-9605/FAX 778-9612
 e-mail: entech@pacbell.net

**Serving people and the environment
 so that both benefit.**

COMPANY: LACO Associates, 3450 Regional Parkway, Suite B2, Santa Rosa, CA 95407				ANALYST(S)		SUPERVISOR	
ATTN: Coleton R. Golden-Tudor				L. Quijano		S. Santos	
JOB NAME: Mendocino County PHF, CST, CRT				DATE RECEIVED		LAB DIRECTOR	
JOB #: 9538.00				5/6/2020		G.S. Conrad PhD	
				DATE of COMPLETION			
				5/15/2020			

LAB SAMPLE NUMBER	SAMPLE ID	DESCRIPTION of SOIL and/or SEDIMENT	SOIL pH -log[H ⁺]	NOMINAL MIN RESISTIVITY ohm-cm	ELECTRICAL CONDUCTIVITY µmhos/cm	SULFATE SO ₄ ppm	CHLORIDE Cl ppm
08368-1	MC1-PCC/C	Native Soil B3 @ 3-3.5'/B3 @ 3.5-4'	6.95	1,922	[520]	9	30
Method	Detection	Limits --->	---	1	0.1	1	1

LAB SAMPLE NUMBER	SAMPLE ID	DESCRIPTION of SOIL and/or SEDIMENT	SALINITY ECe mmhos/cm	SOLUBLE SULFIDES (S=) ppm	SOLUBLE CYANIDES (CN=) ppm	REDOX mV	PERCENT MOISTURE %
08368-1	MC1-PCC/C	Native Soil B3 @ 3-3.5'/B3 @ 3.5-4'		0.261		+344.2	
Method	Detection	Limits --->	---	0.1	0.1	1	0.1

COMMENTS

Resistivity is nearly 2,000 ohm-cm, i.e., mediocre, and soil reaction (i.e., pH) is near neutral but very slightly acidic; sulfate is very low (i.e., @ <200 ppm), as is chloride (@ <100 ppm); redox is mildly reduced (300-400 mV); sulfides are at a trace level (@ 0.1-1 ppm) [see table below on right for the assigned point values and ranges]. CalTrans (CT) times to perforation of galvanized steel and full depth pitting times (following Uhlig) for this soil are determined based on pertinent parameters [see table at left below]. Sulfate should not have any adverse impact on concrete, cement, mortar or grout; similarly, chloride should not have any adverse impact on rebar or buried steel. Lime or mild cement (@ 1%-2%) treatment to raise soil pH would be of some potential benefit for galvanized steel, but not other steels due to passivation. To increase steel longevity any more in this soil would require upgrading or other actions. At times, structural strength considerations may require heavier gauge steel than are used in the presented examples such that perf and pitting to depth times can be beyond the specified life span. Where this is not the case then cathodic protection along with coating or wrapping steel assets is one potential solution. Other options can include increased and/or specialized engineering fill, use of polymer coating, or the use of plastic, fiberglass or concrete assets. Based on these results, standard concrete mixes and rebar may be acceptable for many routine projects, but modestly elevated sulfides could be a concern in certain in cases where greater longevity or resistance might be desirable necessitating some action such as remediation or upgrading (e.g. ASTM Type II concrete, heavier gauge rebar, etc.).

SAMPLE ID	CT 18 ga	CT 12 ga	2 mm (Uhlig)	PARAMETER/ID	MC1-PCC/C	Total Point Range
MC1-PCC/C treated	>20 yrs	~45 yrs	~20 yrs	pH	Ø	3-11.5
	>32 yrs	<72 yrs	~22 yrs	Rs	1-6	
				SO ₄	Ø	
				Cl	Ø	
				Redox	Ø-3.5	
				Sulfides	2	

\\NOTES: Methods are from following sources: extractions by Cal Trans protocols as per Cal Test 417 (SO₄), 422 (Cl), and 532/643 (pH & resistivity); &/or by ASTM Vol. 4.08 & ASTM Vol. 11.01 (=EPA Methods of Chemical Analysis, or Standard Methods); pH - ASTM G 51; Spec. Cond. - ASTM D 1125; resistivity - ASTM G187; redox - Pt probe/ISE; sulfate - extraction Title 22, detection ASTM D 516 (=EPA 375.4); chloride - extraction Title 22, detection ASTM D 512 (=EPA 325.3); sulfides - extraction by Title 22, and detection EPA 376.2 (=SMEWW 4500-S= D); cyanides - extraction by Title 22, and detection by ASTM D 4374 (=EPA 335.2).

APPENDIX 3

Liquefaction Analysis

SPT BASED LIQUEFACTION ANALYSIS REPORT

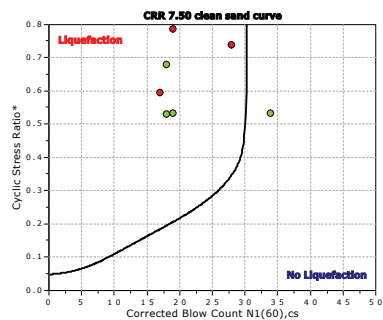
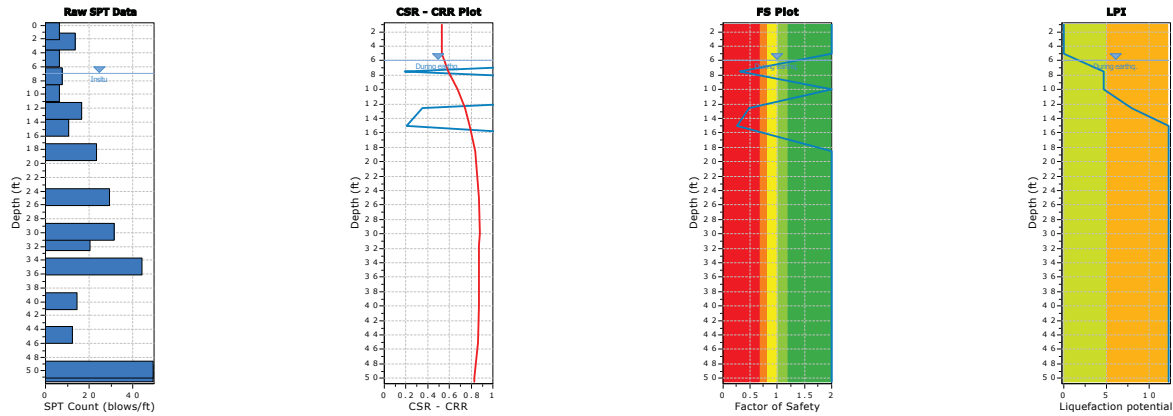
Project title : Mendocino County CRT

SPT Name: B2

Location : 631 S Orchard Avenue, Ukiah

:: Input parameters and analysis properties ::

Analysis method:	NCEER 1998	G.W.T. (in-situ):	7.00 ft
Fines correction method:	NCEER 1998	G.W.T. (earthq.):	6.00 ft
Sampling method:	Standard Sampler	Earthquake magnitude M_w :	7.40
Borehole diameter:	65mm to 115mm	Peak ground acceleration:	0.85 g
Rod length:	3.30 ft	Eq. external load:	0.00 tsf
Hammer energy ratio:	1.40		



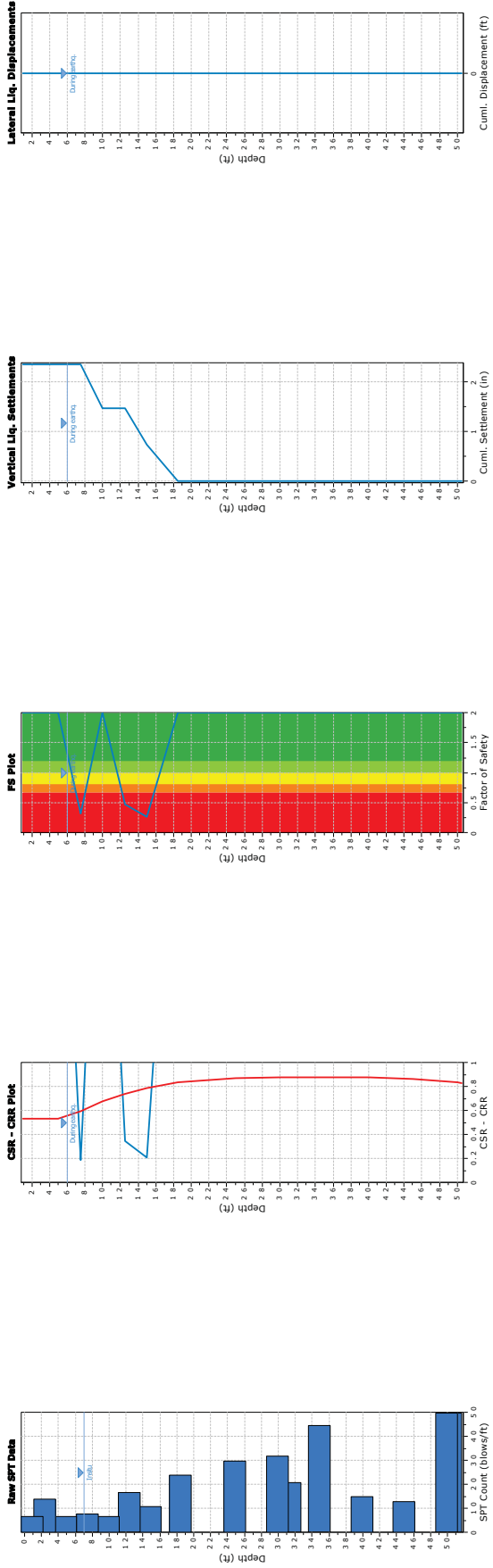
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

:: Overall Liquefaction Assessment Analysis Plots ::



:: Field input data ::

Test Depth (ft)	SPT Field Value (blows)	Fines Content (%)	Unit Weight (pcf)	Infl. Thickness (ft)	Can Liquefy
1.00	7	72.00	109.00	2.50	No
2.50	14	72.00	109.00	2.00	No
5.00	7	72.00	109.00	1.75	No
7.50	8	24.00	110.00	2.75	Yes
10.00	7	72.00	109.00	2.00	No
12.50	17	11.40	110.00	3.50	Yes
15.00	11	11.40	110.00	2.50	Yes
18.50	24	11.40	110.00	5.50	Yes
25.00	30	11.40	120.00	5.50	Yes
30.00	32	11.40	120.00	3.50	Yes
31.50	21	11.40	120.00	2.50	Yes
35.00	45	11.40	120.00	4.50	Yes
40.00	15	75.00	110.00	4.50	No
45.00	13	26.00	110.00	7.00	No
50.00	50	10.00	110.00	0.50	Yes
50.50	50	30.00	120.00	1.50	Yes

Abbreviations

Depth: Depth at which test was performed (ft)
 SPT Field Value: Number of blows per foot
 Fines Content: Fines content at test depth (%)
 Unit Weight: Unit weight at test depth (pcf)
 Infl. Thickness: Thickness of the soil layer to be considered in settlements analysis (ft)
 Can Liquefy: User defined switch for excluding/including test depth from the analysis procedure

:: Cyclic Resistance Ratio (CRR) calculation data ::

Depth (ft)	SPT Field Value	Unit Weight (pcf)	α_r (tsf)	u_0 (tsf)	σ'_{vo} (tsf)	C_H	C_E	C_B	C_R	C_S	$(N_1)_{60}$	Fines Content (%)	α	β	$(N_1)_{60cs}$	CRR _{7.5}
1.00	7	109.00	0.05	0.00	0.05	1.70	1.40	1.00	0.75	1.00	12	72.00	5.00	1.20	19	4.000
2.50	14	109.00	0.14	0.00	0.14	1.66	1.40	1.00	0.75	1.00	24	72.00	5.00	1.20	34	4.000
5.00	7	109.00	0.27	0.00	0.27	1.51	1.40	1.00	0.75	1.00	11	72.00	5.00	1.20	18	4.000
7.50	8	110.00	0.41	0.02	0.39	1.40	1.40	1.00	0.75	1.00	12	24.00	4.18	1.11	17	0.185
10.00	7	109.00	0.55	0.09	0.45	1.35	1.40	1.00	0.85	1.00	11	72.00	5.00	1.20	18	4.000
12.50	17	110.00	0.68	0.17	0.51	1.31	1.40	1.00	0.85	1.00	26	11.40	1.35	1.03	28	0.348
15.00	11	110.00	0.82	0.25	0.57	1.26	1.40	1.00	0.85	1.00	17	11.40	1.35	1.03	19	0.206
18.50	24	110.00	1.01	0.36	0.65	1.21	1.40	1.00	0.95	1.00	39	11.40	1.35	1.03	41	4.000
25.00	30	120.00	1.40	0.56	0.84	1.10	1.40	1.00	0.95	1.00	44	11.40	1.35	1.03	47	4.000
30.00	32	120.00	1.70	0.72	0.99	1.03	1.40	1.00	1.00	1.00	46	11.40	1.35	1.03	49	4.000
31.50	21	120.00	1.79	0.76	1.03	1.01	1.40	1.00	1.00	1.00	30	11.40	1.35	1.03	32	4.000
35.00	45	120.00	2.00	0.87	1.13	0.97	1.40	1.00	1.00	1.00	61	11.40	1.35	1.03	64	4.000
40.00	15	110.00	2.28	1.03	1.25	0.92	1.40	1.00	1.00	1.00	19	75.00	5.00	1.20	28	4.000
45.00	13	110.00	2.55	1.19	1.37	0.88	1.40	1.00	1.00	1.00	16	26.00	4.39	1.12	22	4.000
50.00	50	110.00	2.83	1.34	1.49	0.84	1.40	1.00	1.00	1.00	59	10.00	0.87	1.02	61	4.000
50.50	50	120.00	2.86	1.36	1.50	0.84	1.40	1.00	1.00	1.00	59	30.00	4.71	1.15	73	4.000

:: Cyclic Resistance Ratio (CRR) calculation data ::

Depth (ft)	SPT Field Value	Unit Weight (pcf)	σ_v (tsf)	u_0 (tsf)	σ'_{vo} (tsf)	C_N	C_E	C_B	C_R	C_S	$(N_1)_{60}$	Fines Content (%)	α	β	$(N_1)_{60cs}$	CRR _{7.5}

Abbreviations

σ_v : Total stress during SPT test (tsf)
 u_0 : Water pore pressure during SPT test (tsf)
 σ'_{vo} : Effective overburden pressure during SPT test (tsf)
 C_N : Overburden correction factor
 C_E : Energy correction factor
 C_B : Borehole diameter correction factor
 C_R : Rod length correction factor
 C_S : Liner correction factor
 $N_{1(60)}$: Corrected N_{SPT} to a 60% energy ratio
 α, β : Clean sand equivalent clean sand formula coefficients
 $N_{1(60)cs}$: Corrected $N_{1(60)}$ value for fines content
 $CRR_{7.5}$: Cyclic resistance ratio for M=7.5

:: Cyclic Stress Ratio calculation (CSR fully adjusted and normalized) ::

Depth (ft)	Unit Weight (pcf)	$\alpha_{v,eq}$ (tsf)	$u_{0,eq}$ (tsf)	$\sigma'_{vo,eq}$ (tsf)	r_d	α	CSR	MSF	$CSR_{eq,M=7.5}$	$K_{\sigma\sigma}$	CSR*	FS	
1.00	109.00	0.05	0.00	0.05	1.00	1.00	0.552	1.03	0.534	1.00	0.534	2.000	🟢
2.50	109.00	0.14	0.00	0.14	1.00	1.00	0.550	1.03	0.532	1.00	0.532	2.000	🟢
5.00	109.00	0.27	0.00	0.27	0.99	1.00	0.547	1.03	0.529	1.00	0.529	2.000	🟢
7.50	110.00	0.41	0.05	0.36	0.98	1.00	0.614	1.03	0.594	1.00	0.594	0.311	🔴
10.00	109.00	0.55	0.12	0.42	0.98	1.00	0.701	1.03	0.678	1.00	0.678	2.000	🟢
12.50	110.00	0.68	0.20	0.48	0.97	1.00	0.765	1.03	0.739	1.00	0.739	0.471	🔴
15.00	110.00	0.82	0.28	0.54	0.97	1.00	0.813	1.03	0.786	1.00	0.786	0.263	🔴
18.50	110.00	1.01	0.39	0.62	0.96	1.00	0.863	1.03	0.834	1.00	0.834	2.000	🟢
25.00	120.00	1.40	0.59	0.81	0.94	1.00	0.901	1.03	0.871	1.00	0.871	2.000	🟢
30.00	120.00	1.70	0.75	0.95	0.92	1.00	0.907	1.03	0.877	1.00	0.877	2.000	🟢
31.50	120.00	1.79	0.80	1.00	0.91	1.00	0.906	1.03	0.876	1.00	0.876	2.000	🟢
35.00	120.00	2.00	0.90	1.10	0.89	1.00	0.897	1.03	0.867	0.99	0.874	2.000	🟢
40.00	110.00	2.28	1.06	1.22	0.85	1.00	0.880	1.03	0.850	0.97	0.875	2.000	🟢
45.00	110.00	2.55	1.22	1.34	0.80	1.00	0.848	1.03	0.820	0.95	0.859	2.000	🟢
50.00	110.00	2.83	1.37	1.46	0.75	1.00	0.808	1.03	0.781	0.94	0.832	2.000	🟢
50.50	120.00	2.86	1.39	1.47	0.75	1.00	0.803	1.03	0.776	0.94	0.829	2.000	🟢

Abbreviations

$\alpha_{v,eq}$: Total overburden pressure at test point, during earthquake (tsf)
 $u_{0,eq}$: Water pressure at test point, during earthquake (tsf)
 $\sigma'_{vo,eq}$: Effective overburden pressure, during earthquake (tsf)
 r_d : Nonlinear shear mass factor
 α : Improvement factor due to stone columns
 CSR : Cyclic Stress Ratio (adjusted for improvement)
 MSF : Magnitude Scaling Factor
 $CSR_{eq,M=7.5}$: CSR adjusted for M=7.5
 K_{sigma} : Effective overburden stress factor
 CSR^* : CSR fully adjusted
 FS : Calculated factor of safety against soil liquefaction

:: Liquefaction potential according to Iwasaki ::

Depth (ft)	FS	F	wz	Thickness (ft)	I_L
1.00	2.000	0.00	9.85	1.50	0.00
2.50	2.000	0.00	9.62	1.50	0.00
5.00	2.000	0.00	9.24	2.50	0.00

:: Liquefaction potential according to Iwasaki ::

Depth (ft)	FS	F	wz	Thickness (ft)	I _L
7.50	0.311	0.69	8.86	2.50	4.65
10.00	2.000	0.00	8.48	2.50	0.00
12.50	0.471	0.53	8.10	2.50	3.26
15.00	0.263	0.74	7.71	2.50	4.33
18.50	2.000	0.00	7.18	3.50	0.00
25.00	2.000	0.00	6.19	6.50	0.00
30.00	2.000	0.00	5.43	5.00	0.00
31.50	2.000	0.00	5.20	1.50	0.00
35.00	2.000	0.00	4.67	3.50	0.00
40.00	2.000	0.00	3.90	5.00	0.00
45.00	2.000	0.00	3.14	5.00	0.00
50.00	2.000	0.00	2.38	5.00	0.00
50.50	2.000	0.00	2.30	0.50	0.00

Overall potential I_L : 12.25I_L = 0.00 - No liquefactionI_L between 0.00 and 5 - Liquefaction not probableI_L between 5 and 15 - Liquefaction probableI_L > 15 - Liquefaction certain**:: Vertical settlements estimation for dry sands ::**

Depth (ft)	(N ₁) ₆₀	τ _{av}	p	G _{max} (tsf)	a	b	γ	ε ₁₅	N _c	ε _{Nc} (%)	Δh (ft)	ΔS (in)
1.00	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.50	0.000
2.50	24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.000
5.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.75	0.000

Cumulative settlements: 0.000**Abbreviations**τ_{av}: Average cyclic shear stress

p: Average stress

G_{max}: Maximum shear modulus (tsf)

a, b: Shear strain formula variables

γ: Average shear strain

ε₁₅: Volumetric strain after 15 cyclesN_c: Number of cyclesε_{Nc}: Volumetric strain for number of cycles N_c (%)

Δh: Thickness of soil layer (in)

ΔS: Settlement of soil layer (in)

:: Vertical settlements estimation for saturated sands ::

Depth (ft)	D ₅₀ (in)	q _c /N	e _v (%)	Δh (ft)	s (in)
7.50	0.00	5.00	2.67	2.75	0.881
10.00	0.00	5.00	0.00	2.00	0.000
12.50	0.00	5.00	1.77	3.50	0.745
15.00	0.00	5.00	2.44	2.50	0.731
18.50	0.00	5.00	0.00	5.50	0.000
25.00	0.00	5.00	0.00	5.50	0.000
30.00	0.00	5.00	0.00	3.50	0.000

:: Vertical settlements estimation for saturated sands ::

Depth (ft)	D ₅₀ (in)	q _c /N	e _v (%)	Δh (ft)	s (in)
31.50	0.00	5.00	0.00	2.50	0.000
35.00	0.00	5.00	0.00	4.50	0.000
40.00	0.00	5.00	0.00	4.50	0.000
45.00	0.00	5.00	0.00	7.00	0.000
50.00	0.00	5.00	0.00	0.50	0.000
50.50	0.00	5.00	0.00	1.50	0.000

Cumulative settlements: 2.357**Abbreviations**

D₅₀: Median grain size (in)
 q_c/N: Ratio of cone resistance to SPT
 e_v: Post liquefaction volumetric strain (%)
 Δh: Thickness of soil layer to be considered (ft)
 s: Estimated settlement (in)

:: Lateral displacements estimation for saturated sands ::

Depth (ft)	(N ₁) ₆₀	D _r (%)	Y _{max} (%)	d _z (ft)	LDI	LD (ft)
1.00	12	48.50	0.00	2.50	0.000	0.00
2.50	24	68.59	0.00	2.00	0.000	0.00
5.00	11	46.43	0.00	1.75	0.000	0.00
7.50	12	48.50	34.10	2.75	0.000	0.00
10.00	11	46.43	0.00	2.00	0.000	0.00
12.50	26	71.39	14.50	3.50	0.000	0.00
15.00	17	57.72	22.70	2.50	0.000	0.00
18.50	39	87.43	0.00	5.50	0.000	0.00
25.00	44	100.00	0.00	5.50	0.000	0.00
30.00	46	100.00	0.00	3.50	0.000	0.00
31.50	30	76.68	0.00	2.50	0.000	0.00
35.00	61	100.00	0.00	4.50	0.000	0.00
40.00	19	61.02	0.00	4.50	0.000	0.00
45.00	16	56.00	0.00	7.00	0.000	0.00
50.00	59	100.00	0.00	0.50	0.000	0.00
50.50	59	100.00	0.00	1.50	0.000	0.00

Cumulative lateral displacements: 0.00**Abbreviations**

D_r: Relative density (%)
 Y_{max}: Maximum amplitude of cyclic shear strain (%)
 d_z: Soil layer thickness (ft)
 LDI: Lateral displacement index (ft)
 LD: Actual estimated displacement (ft)

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SPECIAL INSPECTION AND TESTING SCHEDULE – SHORT FORM

Plan Check # _____

Prior to issuance of a building permit, the Owner, on the advice of the Architect or Engineer, shall complete, sign and submit this form to the Building Official.

_____		_____	
Project Name and Address		Testing/Inspection Agency	
_____		_____	
Name and Signature of Engineer		Date	
		Signature & Title of a Responsible Employee of the Testing Agency	
_____		_____	
Owner's Name (Print)		(Signature)	
		Date	
_____		_____	
Contractors Name (Print)		(Signature)	
		Date	

Hereby certifies that the Testing/Inspection Agency named above has been engaged to perform structural tests and inspection during construction, as checked below, to satisfy all applicable portions of the Building Code. The Owner and their Agents acknowledge they are responsible for specifying and conducting all inspections required by CBC Chapter 17 for a given project, even if not listed or checked below.

Copies of all laboratory reports and inspections shall be sent directly to this Division and to the registered design professional in responsible charge by the Testing agency on a weekly basis.

Prior to issuance of an occupancy permit, the Inspection Agency shall submit a statement that all items of designated work performed were reported. Any items checked but not tested or inspected will be noted and explained.

REINFORCING STEEL:

_____ Tensile & Bend, one set per heat per _____ tons
_____ Inspection of Placement
_____ Inspection of Welding
_____ Other:

MASONRY:

_____ Preliminary Acceptance Tests (Masonry Units, Wall Prisms)
_____ Subsequent Tests (Mortar, Grout, Field Wall Prisms)
_____ Inspection of Grouting
_____ Inspection of Placement & Grouting
_____ Other:

CONCRETE, SHOTCRETE, GROUT & MORTAR:

Conc.	Shot.	Grout	Mortar	
				Aggregate Tests for Designs
				Suitability of Aggregates
				Mix Designs
				Test Panel
				Batch Plant Inspection
				Cement Grab Sample
				Inspect Placing
				Compression Tests
				Cast Specimens
				Pick-Up Samples
				Shrinkage Bars
				Yield Check
				Air Check
				Dry Unit Weight

PRECAST AND POST-TENSION CONCRETE:

_____ Reinforcing Tests
_____ Inspection of Reinforcing Placement
_____ Tendon Tests
_____ Inspection of Tendon Placement
_____ Inspection of Concrete Placement
_____ Inspection of Concrete Batching
_____ Inspection of Panel Attachments & Inserts
_____ Compression Tests
_____ Inspection of Stressing/Transfer
_____ Other:

PILING, CAISSONS, CAPS, TIES:

_____ Inspection of Reinforcing Placement
_____ Inspection of Concrete Placement
_____ Inspection of Concrete Batching
_____ Other:

STRUCTURAL STEEL:

_____ Sample & Test (list specific members below)
_____ Shop Identification & Welding Inspection
_____ Shop Ultrasonic Inspection
_____ Shop Radiography
_____ Field Welding Inspection
_____ Field Bolting Inspection
_____ Field Ultrasonic Inspection
_____ Field Radiography
_____ Metal Deck Welding Inspection
_____ Other:

FIREPROOFING / INTUMESCENT PAINT / FIRE-RESISTANT PENETRATIONS AND JOINTS (1705.14-1705.16)

_____ Inspection of Placement
_____ Density Tests
_____ Thickness Tests
_____ Inspect Batching
_____ Other:

SOILS:

_____ Excavation depths and material determination
_____ Classification and testing of compacted fill
_____ Field Density, materials and lift thicknesses during placement and compacted fill
_____ Inspection of subgrade and site preparation prior to fill placement
_____ Other:

STRUCTURAL WOOD:

_____ Inspection of Fabrication
_____ Sample & Test Components
_____ Inspection of field Glu Lam Fabrication
_____ Other:

ANCHORS:

_____ Adhesive anchors resisting sustained tension (Continuous)
_____ Mechanical anchors and other adhesive anchors (Periodic)
_____ Anchors cast in concrete (Periodic)
_____ Storage Racks > 8ft high (Periodic)

Specify if Other Tests, Inspections or Special Instructions are Required for the Project:

Building Official's Acceptance (Print)

(Signature)

Date

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COUNTY OF MENDOCINO

DEPARTMENT OF PLANNING AND BUILDING SERVICES

860 NORTH BUSH STREET • UKIAH • CALIFORNIA • 95482
120 WEST FIR STREET • FT. BRAGG • CALIFORNIA • 95437

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www.co.mendocino.ca.us/planning

OPERATION AND MAINTENANCE MANUAL

In compliance with the California Green Building Standards Code, this Operation and Maintenance Manual shall be available at Final Inspection and remain with the building throughout the life-cycle of the structure.

This manual has been prepared for the dwelling located at:

Address

City/State/Zip

Builder

Address

City/State/ Zip

Phone/Internet

Electricity for this property is provided by:

☐ Check if solar or alternate source of electricity is used.

Service Provider

Address

City/State/Zip

Phone/Internet

Alternate Source

***Information to reduce use of electricity is included.**

Water for this property is provided by: ☐ Check if well or alternate source of water is used.	
Service Provider	
Address	
City/State/Zip	
Phone/Internet	
*Information to reduce consumption of water is included.	
Sewer for this property is provided by: ☐ Check if private sewage disposal/septic is used.	
Service Provider	
Address	
City/State/Zip	
Phone/Internet	
*Information to reduce demand on sewage system is included.	
Fuel Gas for this property is provided by: ☐ Check if Liquid Propane tank is used.	
Service Provider	
Address	
City/State/Zip	
Phone/Internet	
*Information to reduce consumption of fuel gas is included.	

Garbage/Trash removal for this property is provided by:	
Service Provider	
Address	
City/State/Zip	
Phone/Internet	
*Information on waste reduction is included.	
Recycling for this property is provided by:	
Service Provider	
Address	
City/State/Zip	
Phone/Internet	
*Information about local recycling programs and their locations is included.	
Public Transportation	
Regional and local public transportation options, including address, phone and web addresses are provided below.	
Bus line	Phone/Internet
Light Rail / Train	Phone/Internet
Car Pool/Van Pool	Phone/Internet
Ride Share or Other	

Building Department	
Occupancy of this dwellings occupancy was authorized by authority of the Local Enforcing Agency.	
Local Enforcing Agency	
Address	
City/State/Zip	
Phone	
Special Inspection Verification/Certification	
Special inspection required by the CALGreen code or by the local enforcing agency shall be verified. Upon completion a copy of inspection verification and/or certificates of completion shall be included in this manual.	
• HVAC system commissioning • HERS Verification • Cool roof verification • Material conservation • Other third party requirements	• Blower door testing • Attic Insulation • Thermal insulation • Cement reduction
Note: The above listed items are not an all inclusive of measures that may need "Special Inspection." Check with the local enforcing agency to verify mandated special inspections and verification requirements.	
Fill in any other verifications or certifications below:	

Solar Incentive Programs

California Programs

Information about state renewable energy incentive programs, such as the California Solar Initiative, is available through the California Energy Commission or through Go Solar California at the websites below.

- <http://www.energy.ca.gov/>
- <http://gosolarcalifornia.ca.gov>

Other Programs

Contact your local government or public utility from the information provided previously in this manual for more information regarding energy conservation tips, strategies and public/private partnerships that promote enhanced sustainability and/or save money.

Tax breaks, including rebates, credits or discounts may also be available through the local government, public utilities or the Federal Government, US Department of Energy.

The U.S. Department of Energy website: <http://www.energy.gov/yourhome.htm>

Water Conserving Landscape

To comply with the California Green Building Standards Code, automatic irrigation system controllers for landscaping installed at the time of final inspection must be weather- or soil moisture-based.

Irrigation Controllers

There are several types of irrigation controllers that base the irrigation schedule on evapotranspiration data. Other irrigation controllers may use a combination of historical data and real-time data feeds from on-site temperature sensors, soil moisture sensors, sunlight intensity indicators or they may use data from weather stations. Weather and/or soil moisture-based controllers represent technological advances in irrigation that enable the proper amount of water required by the landscape plants or postpone irrigation during periods of rain. Utilizing these "smart" controllers is an improvement over irrigating by an arbitrary "run time" where the amount of water needed and the amount of water applied may not be effectively matched.

Landscape Water Use Conservation Methods

There are many methods to reduce the amount of water used in a landscape and still maintain the health, appearance and function of the landscape. Following are a few examples:

- Conform to local or the California Department of Water Resources' model Water Efficient Landscape Ordinance
- Use water-efficient landscape designs utilizing native and drought tolerant plants and by minimized turf areas
- Use mulch, soil amendments or other soil improvement methods to reduce water loss through evaporation or runoff and to improve water availability for plant use.
- Install efficient irrigation systems and follow a regulator maintenance schedule. Adjust irrigation controllers as necessary to accommodate changes in seasons and plants needs.
- Schedule landscape irrigation during early or late hours
- Continue learning or education to stay current on new technologies, strategies or products that promote efficient water use.

Irrigation System Design

Homeowners or a design professional can develop an efficient system design meeting homeowner expectations while also reducing waste and conserving natural resources.

When planning landscaping and irrigation the follow ideas can help:

- Use drought tolerant or native species plants.
- Minimize the usage of spray heads.
- Install a low consumption irrigation system such as drip or subsurface.
- Use graywater or recycled water when possible.
- Consider rainwater catchment and storage systems.
- Follow the manufacturer's installation instructions to ensure optimum system efficiency.

Operation and Maintenance Information

This property and structure requires periodic maintenance of the grounds, equipment and appliances.

Manufacturer installation, operation and maintenance instructions must be followed for all equipment and appliances.

Examples of these manuals include but are not limited to;

- HVAC system
- Water heater
- Water saving devices and water reuse systems
- Water pump and/or well
- Water treatment system
- Kitchen appliances
- Garage door and opener
- Whole house fan
- Security alarm system
- Smoke, fire and carbon monoxide alarms
- Landscape irrigation system
- Photovoltaic electrical system
- Septic system

Included or attached to this manual are the manufacturer's installation and maintenance instructions for each specific appliance and/or equipment installed.

Checklist
Proper maintenance will extend the life of a building and the systems installed there in. In addition to specific manufacturer instructions for maintenance and service, the following checklist will assist setting a typical maintenance schedule required on a building.
Weekly
Survey the property, check overall condition
Check landscape irrigation system for leaks and broken heads
Check exterior lighting for burned out bulbs
Monthly
Change return air filters
Check caulking- exterior, interior at plumbing fixtures and at floors (tub, toilet etc.)
Check exterior drainage and swales
Check exhaust fan and damper door for correct operation
Dust off and test smoke and carbon monoxide detectors for operation
Check plumbing for leaks (bathtubs, dishwasher, sinks, lavatories, showers, laundry hook ups, water heater, toilets and any other plumbing)
Check plants and shrubs – trim to avoid contact with house
Check irrigation sprinklers and adjust as necessary – avoid water spray on building and ensure uniform coverage
Test ground fault circuit interrupter (GFCI) outlets
Semi-Annually
Check clothes dryer vent pipe and remove any lint
Clean out roof gutters and downspouts
Inspect roof system for broken or missing roofing material
Check and clean window weep holes
Check weather stripping
Check outdoor AC condenser unit for obstructions and/or debris, clean fins with water hose (while unit is off) for optimal performance
Check house for evidence of termites and other pests
Check all painted surfaces
Drain water heater to remove sediment
Annually
Change batteries in smoke and carbon monoxide detectors
Check condensate drain lines for blockage
Trim trees back to avoid contact with house
Check chimney flue and vents for obstructions and debris

NOTE: Portions of this property will require routine maintenance and may not have a specific manual.

Grading

The grading around the building is sloped away from the structure is not only functional, but a building code requirement enforced during the final inspection. The yard drainage must not drain onto neighboring property or near the building foundation. It is important the owner or tenant maintain this grade or swale to protect the building from moisture. An inspection after any landscaping, construction or a storm is necessary, so the swale or grade always directs the flow of water away from the foundation of the building and to storm sewer systems or other appropriate locations approved for the structure.

Gutters

The gutter and downspouts will need periodic maintenance to ensure proper function. The required interval for this maintenance will vary by season, however, gutters and downspouts should be inspected for debris before the rainy season. When trees and other deciduous vegetation shed leaves that drop into the gutters, this will inhibit the flow of water and possibly clog downspouts. The leaves and/or debris must be removed in order for the system to work as designed. The downspouts should direct the storm water away from the foundation at least 5 feet to avoid damage to the structure. Always keep the area clear where the storm water flows out of the downspout, if a clear area is not possible subsurface drains may need to be installed.

Irrigation

Inspect the landscape irrigation systems weekly for leaking or broken heads.

Frost Protected Foundation Systems

When the building utilizes a Frost-Protected Shallow Foundation, as allowed by local conditions, the monthly mean temperature of the building must be maintained at a minimum of 64°F (18°C).

Relative Humidity (RH)

RH is the percent of moisture in the air compared to the maximum amount of moisture this air can hold at the same condition. Warm air will hold more moisture than cold air. The design of the HVAC system should include controlling the moisture levels appropriate to the climate. The addition of moisture (humidification) may be required in colder climates during the winter season and removed (dehumidification) during the summer months.

Automatic, computer controlled humidifiers can control the humidity levels, providing enough moisture for a healthy comfortable dwelling and within the limits to prevent window and cold surface condensation. These levels are usually between 30 to 60 percent RH although certain health conditions may dictate benefits at either the higher or lower ranges.

Hygrometer

The hygrometer will show RH. Although the RH will not be exactly the same throughout the structure, one hygrometer is usually sufficient. It should be placed where the humidity symptoms are most obvious, in the room that you are most concerned about.

Low Relative Humidity

Below 30 percent RH, people can be uncomfortable and can suffer from dry mucus membranes which can lead to nosebleeds and infections. In general, low RH is only a problem during the winter months, when the outside air contains very little moisture. It is this dry outside air entering through cracks and openings in the building shell that causes the inside air to become dry. The greater the amount of outside air which leaks into the building, the dryer the indoor air becomes. By air-sealing and using energy-efficient construction, uncontrolled air leakage is greatly reduced, a more controlled indoor environment is created, and RH can be maintained at acceptable levels without the use of a humidifier.

Humidifiers require maintenance to avoid becoming breeding grounds for biological contaminants. The effects of bacteria, viruses, fungi, respiratory infections, allergic rhinitis and asthma, and ozone production can be minimized by higher humidity levels. Studies have shown that wintertime operation at 68° F at 60% RH provides the same level of occupant comfort as does 72° F at 30% RH; so lower utility bills and healthier environment are both benefits of controlled RH.

High Relative Humidity

High RH can lead to occupant discomfort, annoyances, and possibly serious health issues as they relate to bacteria, viruses, fungi, mites (dust mites and mold), allergic rhinitis and asthma, and chemical interactions with mold, dust mites, and other biological pollutants.

The air conditioning system and/or stand-alone dehumidifier are designed to remove moisture (latent load) and decrease the RH levels. Studies show that summertime operation at 78° F at 30% RH provides the same level of occupant comfort as does 74° F at 70% RH. This lower humidity level will provide increased comfort, lower utility bills and less risk of health issues associated with high humidity.

Using exhaust fans in the bathrooms and kitchen can remove much of the moisture that builds up from everyday activities and help keep RH below 50%. Having a humidistat connected to an exhaust fan is required in bathrooms. This is an effective way to control RH in moisture prone areas. When using an adjustable humidistat, the setting should be adjusted according to the season -- lower RH in the summer and higher RH in the winter. Another benefit to using kitchen and bathroom exhaust fans is removal of odors and pollutants. These fans can also be part of an active ventilation system for the entire house and help to reduce humidity levels.

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DRAFT INITIAL STUDY and ENVIRONMENTAL CHECKLIST

FOR

MENDOCINO COUNTY CRISIS RESIDENTIAL TREATMENT (CRT) FACILITY

August 2020

Lead Agency:
County of Mendocino



Prepared by:
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LACO Associates
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Ukiah, CA 95482
(707) 462-0222

LACO Project No. 9528.00

State Clearinghouse Number:

TABLE OF CONTENTS

I. PROJECT SUMMARY	1
II. PROJECT DESCRIPTION	3
III. PROJECT SETTING AND LOCATION	6
IV. ENVIRONMENTAL EFFECTS	6
V. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED	7
VI. REFERENCES	72

FIGURES AND APPENDICES

Figure 1: Project Location Map

Figure 2: City of Ukiah Land Use Designation

Figure 3: City of Ukiah Zoning Designation

Figure 4: Airport Zone Compatibility Map (1996)

Figure 5: Site Plan

Appendix A: Mitigation Monitoring and Reporting Program (MMRP)

Appendix B: Cultural Resources Correspondence

Appendix C: California Emissions Estimator Model (CalEEMod) Report for CRT Facility

Appendix D: Geotechnical Exploration and GeoHazard Report

I. PROJECT SUMMARY

Date: August 2020

Project Title: Mendocino County Crisis Residential Treatment (CRT) Facility

Lead Agency: County of Mendocino

Contact/Prepared By: Elizabeth Burks (Principal), Consulting Planner for the County of Mendocino
LACO Associates
776 S. State St., Suite 103
Ukiah, CA 95482

Location: The proposed project is located at 631 S. Orchard Avenue within the City of Ukiah city limits in Mendocino County, on the east side of Orchard Avenue, approximately 450 feet north of its intersection with Gobbi Street, and is identified by Assessor's Parcel Numbers (APNs) 002-340-50 and 002-340-48 (Site). The Site comprises a total of 0.92 acres and is accessed via South Orchard Avenue (see Figure 1).

Coastal Zone: No

Affected Parcel(s): Assessor's Parcel Number(s) 002-340-50 and 002-340-48

Current City of Ukiah Land Use Designation: Commercial (C) – see Figure 2.

Current City of Ukiah Zoning Designation: Community Commercial (C-1) – see Figure 3.

Anticipated Permits and Approvals:

- 1) General Plan Conformance Review by the City of Ukiah

Tribal Cultural Resources: Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

On April 28, 2020 LACO Associates (LACO), on behalf of the County of Mendocino (County), contacted the Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and the contact information for the representatives of the Native American tribes associated with the project area. The NAHC response letter, dated May 1, 2020, indicated that a search of the SLF returned a positive result with connections to the Pinoleville Pomo Nation, and included a list of five (5) Native American tribes with cultural affiliations to the area. The list received from the NAHC included the Coyote Valley Band of Pomo Indians, Guidiville Indian Rancheria, Hopland Band of Pomo Indians, Pinoleville Pomo Nation, and Redwood Valley or Little River Band of Pomo Indians, with contact information for the Chairperson of each Tribe provided.

On June 2, 2020, in compliance with Assembly Bill (AB) 52, LACO, on behalf of the County of Mendocino, sent a consultation letter to each of the five (5) Native American tribes provided in the NAHC response letter, including the Coyote Valley Band of Pomo Indians, Guidiville Indian Rancheria, Hopland Band of Pomo Indians, Pinoleville Pomo Nation, and Redwood Valley or Little River Band of Pomo Indians. As of the date of

this Initial Study, no requests for consultation have been received from any of the five (5) Native American tribes that were sent formal notification of the project in compliance with AB 52, as noted above. As no requests for consultation were received within the 30 day deadline specified by Public Resources Code section 21082.3 (d), the County of Mendocino, as Lead Agency, has deemed the Tribal consultation process complete. Copies of the response letter from the NAHC and the letters sent to the Tribal representatives are included in Appendix B.

CEQA Requirement:

The proposed project is subject to the requirements of the California Environmental Quality Act (CEQA). The Lead Agency is the County of Mendocino. The purpose of this Initial Study (IS) is to provide a basis for determining whether to prepare an Environmental Impact Report (EIR) or a Negative Declaration. This IS is intended to satisfy the requirements of the CEQA (Public Resources Code, Div. 13, Sec. 21000-21177) and the State CEQA Guidelines (California Code of Regulations, Title 14, Sec 15000-15387).

CEQA encourages lead agencies and applicants to modify their projects to avoid significant adverse impacts (CEQA Section 20180(c) (2) and State CEQA Guidelines Section 15070(b) (2)).

Section 15063(d) of the State CEQA Guidelines states that an IS shall contain the following information in brief form:

- 1) A description of the project including the project location
- 2) Identification of the environmental setting
- 3) Identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to provide evidence to support the entries
- 4) Discussion of means to mitigate significant effects identified, if any
- 5) Examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls
- 6) The name of the person or persons who prepared and/or participated in the Initial Study

II. PROJECT DESCRIPTION

The County of Mendocino (County) is proposing to construct a Crisis Residential Treatment (CRT) Facility on a 0.92-acre site located at 631 S. Orchard Avenue, Ukiah, and identified by Assessor's Parcel Numbers (APNs) 002-340-50 and 002-340-48 (Site). The Site is owned by the County and is located within the City of Ukiah city limits. The Site has a City of Ukiah land use designation of Commercial (C) (1995) and a zoning designation of Community Commercial (C-1) per the City of Ukiah Zoning Map (2017). No changes to the Site's current land use or zoning designations are proposed under the project.

The project includes the construction and operation of a 3,462 square-foot, one-story, CRT Facility with space for up to 10 beds for clients, a staff office/intake room, den, great room, kitchen, dining area, laundry room, and janitor/storage room. Associated improvements include an outdoor deck oriented to the north and recessed within the building exterior, a parking area, Low Impact Development (LID) features for stormwater capture and treatment, landscaping, a galvanized steel fence surrounding the proposed CRT Facility with gated pedestrian entrances, and driveways. Landscaping, including medium and large trees and shrubs along the east and wide sides of the Site and bioretention facilities located south of the structure, would be placed outside the proposed fence. Additional landscaping would be placed within the fence, including a garden area and various plantings surrounding the structure. All exterior lighting would be motion-censored, downcast, and shielded in compliance with regulations set by the International Dark-Sky Association. The project will additionally include a boundary line adjustment to accommodate the footprint of the proposed CRT Facility within one of the resulting parcels.

Purpose and Need

The CRT Facility will serve as a social rehabilitation facility that will provide adults (18 years and older) (clients) who are experiencing an acute psychiatric episode or crisis, but do not meet the criteria for inpatient psychiatric hospitalization, a positive, short-term (up to 30 days) structured program in a home-like, non-institutional environment. A crisis is a situation in which a person's actions, feelings, or behaviors may potentially lead to them hurting themselves or others or being unable to care for themselves or being unable to function in the community in a healthy manner. The program will be designed to help resolve a crisis before it becomes severe enough to require hospitalization, provide continued stabilization after hospitalization if it is necessary, and assist the client in returning to his or her home environment when the crisis is resolved. The expected outcome of the program is that there will be a reduction in psychiatric hospitalizations, emergency room visits, and inappropriate incarcerations by addressing clients' needs before the crisis becomes severe.

The CRT Facility will fill a gap in the Mendocino County system of care that has been problematic for decades. As described in the Mendocino County Behavioral Health System Program Gap Analysis & Recommendations for Allocation of Measure B Revenues prepared by Kemper Consulting Group and dated August 21, 2018 (Kemper Report), "the current mental health continuum of care...is missing key services that are essential to reducing the need for inpatient psychiatric care, including but not limited to Crisis Residential Treatment, day treatment, and a robust array of community-based wellness and support services" (p. 4). As of 2018, there had been an increasing volume of persons needing mental health assessment, putting increasing strain and costs on hospital Emergency Departments in Mendocino County as they hold patients awaiting mental health assessments and/or placement in out-of-county psychiatric facilities (Kemper Consulting Group, 2018, p. 27).

The project would be constructed using funds from the Mendocino County Behavioral Health Treatment Act (more commonly known as Measure B). Currently, one-fifth of a cent (0.2 percent) is taken from sales tax

revenue, an excise tax, to fund facilities and infrastructure for behavioral health aid in Mendocino County. In approximately three (3) years, that will transfer to one-eighth of a cent (0.125 percent), and will continue on at that rate, unless, or until, the tax is repealed by a majority vote in a general election.

Services to be Provided

The CRT Facility will be operated by 10 full-time staff and two (2) managers with staff working 8- to 10-hour shifts and will be staffed 24 hours per day, seven (7) days per week. A structured program for clients will be provided seven (7) days per week and will generally include:

- Individual plan of treatment
- Individual and group counseling and support
- Crisis Intervention
- Planned activities
- Family counseling (with available family members when indicated in the client's treatment plan)
- Development of community support systems
- Pre-vocational or vocational counseling
- Client Advocacy
- Activity Programs
- Community Living Skills Training
- Educational groups

Access

The Site is bordered to the west by S. Orchard Avenue, a two-lane minor arterial road managed by the City of Ukiah Public Works, and located a short distance from Gobbi Street, a two-lane minor arterial road managed by the City of Ukiah Public Works, to the south, and Highway 101, a four-lane highway managed by the California Department of Transportation (Caltrans), to the east. Currently, the Site has no defined entrance and is accessed primarily on the north end via a paved entrance to S. Orchard Avenue that serves adjacent parcels. The proposed project includes construction of a new, defined entrance to S. Orchard Avenue on the south end of the Site to accommodate CRT Facility entrance. No modifications to the existing driveway on the north end of the Site, which is used to access properties east of the Site, are proposed as part of the project. The project will additionally include sidewalk improvements in the City of Ukiah right-of-way, connecting the Site development with adjacent uses. A total of 10 standard parking spaces and 1 accessible parking space would be provided on-site to serve the CRT Facility.

Utilities and Services

The Site is located within the service boundaries of the City of Ukiah water and electric distribution, wastewater collection, and storm drain systems. There are currently no on-site utility connections; however, connections to existing utilities located in close vicinity to the Site will be established during project construction. Water service will be extended to the Site by tying in to the existing 8-inch water main with a 2-inch water line. A proposed 6-inch sanitary sewer lateral will be cut in with a wye to the existing 6-inch sanitary sewer line. Both the existing water main and the existing sanitary sewer line are located west of the Site within Orchard Avenue. As noted above, on-site drainage will be managed utilizing post-construction Best Management Practices (BMPs), including bioretention facilities sized to capture and treat runoff from the proposed impervious surfaces produced by the 24 hour 85th percentile rain event, and landscaped areas throughout the Site to encourage natural stormwater infiltration.. Post-construction BMPs will connect to an existing curb inlet near the southeast corner of the Site. Additionally, a connection will be established to the existing electric utility feed located along the south edge of the Site. Natural gas service, if needed, would be provided by Pacific Gas and Electric Company (PG&E).

The City of Ukiah would also provide solid waste collection services through the Ukiah Waste Solutions, a component of C&S Waste Solutions located in Ukiah, which would be collected from a trash bin enclosure to be installed in the southeast portion of the Site. According to the City of Ukiah Utility Services & Billing webpage (2020), as the proposed project would include a commercial facility, garbage service would be setup directly through Ukiah Waste Solutions who operates weekly curb-side residential and commercial garbage and recycling collection within the City of Ukiah.

Drainage

As the Site is currently undeveloped with gently sloping topography, stormwater typically infiltrates. Drainage improvements on-site would include post-construction Best Management Practices (BMPs), including bioretention facilities sized to capture and treat runoff from the proposed impervious surfaces produced by the 24 hour 85th percentile rain event, and landscaped areas throughout the Site to encourage natural stormwater infiltration. Drainage across the Site appears to flow to the southeast towards the southern access road. The nearest body of water is Gibson Creek, which is located approximately 1,300 feet east of the Site. Regional drainage is controlled by the Russian River, which is located approximately 0.85 miles east of the Site.

City of Ukiah General Plan Conformance

The proposed CRT Facility would be licensed and regulated by the Department of Health Care Services in accordance with California Code of Regulations (CCR) Title 22 and would be certified as a Social Rehabilitation Program, licensed as a Social Rehabilitation Facility, as defined by Health and Safety Code 1502(a), and authorized to operate as a Mental Health Rehabilitation Center. The Ukiah City Code (2019) defines a "community care facility" as "the facilities described in Health and Safety Code 1502(a)." In accordance with the Ukiah City Code *Regulations in Community Commercial (C-1) Districts* (2018), the proposed 10-bed CRT Facility (Community care facility) would be a permitted use on-site, subject to the approval of a use permit. However, per Government Code Section 65402(b), as the County proposes to construct a public structure on a County-owned property, the County is under no obligation to conform to City of Ukiah standards with regard to zoning or permitting. California Government Code Section 65402(b) requires that, prior to construction or authorization of construction, a county report the location, purpose, and extent of any proposed public structure to the planning agency having jurisdiction to determine conformity with the adopted general plan.. On May 29, 2020, a letter was submitted to the City of Ukiah in accordance with this reporting requirement. No response was received from the City of Ukiah within 40 days of notification of the project. As such, in accordance with California Government Code Section 65402(b), the County has conclusively deemed that the proposed action is in conformity with the adopted general plan.

Compatibility with the Mendocino County Airport Comprehensive Land Use Plan

The Site is located approximately 4,472 feet (0.85 miles) northeast of the Ukiah Municipal Airport. In 1993, the Mendocino County Airport Comprehensive Land Use Plan (ACLUP) was adopted, and later revised in 1996, by the Mendocino County Airport Land Use Commission (ALUC) to provide land use compatibility guidelines for lands near each of the airports in Mendocino County with the intention to avert potential safety problems and ensure unhindered airport operations. In February 2019, the City of Ukiah, with support from the County of Mendocino and the ALUC initiated a planning effort to prepare an updated compatibility plan for the Ukiah Municipal Airport, entitled the Ukiah Municipal Airport Land Use Compatibility Plan (UKIALUCP). A Public Review Draft of the UKIALUCP, dated January 31, 2020, was made available for public review in July 2020. As of the date of this Initial Study, the UKIALUCP has not been adopted by the ALUC. As such, the proposed project's compatibility with the Ukiah Municipal Airport has been determined based on the compatibility criteria established by the 1996 ACLUP and the January 2020 Public Review Draft of the UKIALUCP.

Per the ACLUP (1996), the Site is located within Zone B2 of the Ukiah Municipal Airport, the "Extended Approach/Departure Zone." Pursuant to Table 2A *Compatibility Criteria* of the ACLUP (1996), Zone B2 is associated with moderate risk (aircraft commonly below 800 feet above ground level) and significant noise, is limited to residential parcels of 2 acres or larger, requires less than 60 people per acre, and recommends 30 percent open land. Prohibited uses within the Zone B2 include schools, day care center, libraries, hospitals, and nursing homes, among other uses. Normally Acceptable Uses in Zone B2 include single-story offices, single-family homes on an existing lot, and low-intensity retail, office, etc., among other uses. The ACLUP (1996) does not provide guidance on the compatibility of community care facilities in Zone B2; however, the proposed use would be consistent with Zone B2 based on consistency with Table 2A *Compatibility Criteria* and similar uses discussed in the ACLUP. The proposed project includes the construction and operation of a 3,462 square-foot, one-story, CRT Facility with space for up to 10 beds for clients, and would be operated by 10 full-time staff and two (2) managers working 8-to-10 hour shifts to provide coverage 24 hours per day, 7 days per week. Even at full client and staffing capacity, the project would be well below maximum density of 60 people per acre allowed in Zone B2 pursuant to Table 2A *Compatibility Criteria* of the ACLUP (1996). In addition, the project supports the Policy 2.1.6 (Infill), which allows new development of a similar intensity to that of surrounding, already existing uses. The Site is located in an urban, built-up environment and is surrounded by public service, commercial, and residential uses of a similar scale to the proposed project.

Per the Public Review Draft of the UKIALUCP dated January 2020, the Site is located within Compatibility Zone 6, the "Traffic Pattern Zone." Pursuant to Table 3B *Compatibility Zone Delineation* of the Public Review Draft of the UKIALUCP (January 2020), Compatibility Zone 6 is associated with low risk and a low noise impact, has a maximum sitewide average intensity of 300 people per acre and a maximum single-acre intensity of 1,200 people per acre, and recommends 15 percent open land for the entire zone. Aircraft in Compatibility Zone 5 are typically 1,000 to 1,500 feet above the runway, with airspace concern generally with objects heights at heights greater than 100 feet above runway elevation. According to Table 3A *Basic Compatibility Criteria* of the Public Review Draft of the UKIALUCP (January 2020), Congregate Care facilities, which includes assisted living/residential care facilities are Normally Compatible uses in Compatibility Zone 6. Therefore, the proposed project would be compatible with the Public Review Draft of the UKIALUCP (January 2020).

III. PROJECT SETTING AND LOCATION

The approximately 0.92-acre Site is currently undeveloped, with no existing structures or utilities on-site and is located in an urban built-up environment. Based on a review of Google Earth imagery, it appears that, at least dating back to 1993, the Site has been vacant, and has been used on a limited basis for vehicle parking and for accessing the development located east of the Site. The Site is bordered to the west by S. Orchard Avenue, a two-lane minor arterial road managed by the City of Ukiah Public Works, and single-family residences, to the south by the United States Postal Service, to the east by a family services agency, and to the north by a commercial business. Nearby uses include Gobbi Street, a two-lane minor arterial road managed by the City of Ukiah Public Works, to the south, Highway 101, a four-lane highway managed by Caltrans, to the east, residences and commercial businesses to the west, churches to the south and northwest, motels to the south and northeast, and government buildings, such as the Department of Motor Vehicles, the Ukiah Unified School District, and the U.S. Social Security Administration to the north.

Elevations at the project Site range between approximately 598 feet and 600 feet above mean sea level (amsl). The Site is located in Zone "X" – area of minimal flood hazard – as shown on Federal Emergency Management Agency's (FEMA) National Flood Hazard Layer FIRMette map number 06045C1514F, effective June 2, 2011. The Site is undeveloped with a vegetative cover primarily consisting of grasses and weedy species and a limited number of landscaping trees planted to the north and southeast of the Site. The Site is

not known to contain any creeks/streams, riparian areas, or wetlands on-site (USFWS, 2020). According to the Geotechnical Exploration and GeoHazard Report (Geotech Report) prepared by LACO and dated June 3, 2020, the Site is blanketed by interbedded alluvial soils comprised of primarily clays, sands, and gravels. Local alluvial soils consist of a surficial layer of sandy lean clay that extends to between 11 and 15 feet bgs; well graded sand with clay and gravel that extends to approximately 39 feet bgs; sandy lean clay that extends to approximately 43 feet bgs; clayey sand that extends to approximately 50 feet bgs; and clayey sand with gravel that extended to the maximum depth explored 52 feet bgs. Groundwater was encountered in our borings at depths between 7 and 14 feet bgs (LACO, 2020).

IV. ENVIRONMENTAL EFFECTS

An environmental checklist follows this section, and addresses all potential adverse effects resulting from the proposed project. No significant adverse effects are expected from any of the proposed activities.

V. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a **"Potentially Significant Impact"** or **"Potentially Significant Unless Mitigation Incorporated"** as indicated by the checklists on the following pages.

	Aesthetics		Agriculture and Forestry Resources		Air Quality
	Biological Resources	X	Cultural Resources		Energy
X	Geology/Soils		Greenhouse Gas Emissions		Hazards & Hazardous Materials
X	Hydrology/Water Quality		Land Use/Planning		Mineral Resources
X	Noise		Population/Housing		Public Services
	Recreation		Transportation		Tribal Cultural Resources
	Utilities/Service Systems		Wildfire		Mandatory Findings of Significance

An explanation for all checklist responses is included, and all answers take into account the whole action involved and the following types of impacts: off-site and on-site; cumulative and project-level; indirect and direct; and construction and operational. The explanation of each issue identifies (a) the threshold of significance, if any, used to evaluate each question; and (b) the mitigation measure identified, if any, to reduce the impact to less than significance. The mitigation measures recommended for the project are included in Appendix A.

In the checklist the following definitions are used:

"Potentially Significant Impact" means there is substantial evidence that an effect may be significant.

"Potentially Significant Unless Mitigation Incorporated" means the incorporation of one or more mitigation measures can reduce the effect from potentially significant to a less than significant level.

"Less Than Significant Impact" means that the effect is less than significant and no mitigation is necessary to reduce the impact to a lesser level.

"No Impact" means that the effect does not apply to the proposed project, or clearly will not impact nor be impacted by the proposed project.

DETERMINATION: (To be completed by the Lead Agency on the basis of this initial evaluation)

☐	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☒	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Date

Elizabeth Burks (Principal), Consulting Planner for the County of Mendocino

I. AESTHETICS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Thresholds of Significance: The project would have a significant effect on aesthetics if it would have a substantial adverse effect on a scenic vista; substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway; substantially degrade the existing visual character or quality of public views of the site and its surroundings (if the project is in a non-urbanized area) or conflict with applicable zoning and other regulations governing scenic quality (if the project is in an urbanized area); or create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

DISCUSSION

The Site is located within the City of Ukiah city limits in a built-up urban area, surrounded by parcels utilized for a variety of uses including governmental functions, commercial businesses, and residences. The Site is undeveloped with a vegetative cover primarily consisting of grasses and weedy species and a limited number of landscaping trees planted to the north and southeast of the Site. Currently, the Site has no defined entrance and is accessed primarily on the north end via a paved entrance to S. Orchard Avenue that serves adjacent parcels.

Under the proposed project, a Crisis Residential Treatment (CRT) Facility would be constructed on the southern portion of the Site. Conceptual plans for the proposed project indicate that the new CRT Facility would be a one-story structure approximately 3,462 square feet in size. The proposed CRT Facility would include space for up to 10 beds for clients, a staff office/intake room, laundry room, kitchen, dining room, living space, and den. As shown on the attached Site Plan (see Figure 5), associated improvements on-site would include an outdoor deck oriented to the north and recessed within the building exterior, a parking area on the south side of the building, Low Impact Development (LID) features for stormwater capture and treatment, landscaping throughout the Site, and a galvanized steel fence surrounding the proposed CRT Facility. Landscaping, including medium and large trees and shrubs along the east and wide sides of the Site, and bioretention facilities located south of the structure, would be placed outside the proposed fence. Additional landscaping would be placed within the fence, including a garden area and various plantings surrounding the structure. All exterior lighting would be motion-censored, downcast, and shielded in compliance with regulations set by the International Dark-Sky Association.

The Site is bordered to the west by S. Orchard Avenue, to the south by the United States Postal Service, to the east by a family services agency, and to the north by a commercial business. Nearby uses include

residences and commercial businesses to the west, churches to the south and northwest, motels to the south and northeast, government buildings, such as the Department of Motor Vehicles, the Ukiah Unified School District, and the U.S. Social Security Administration to the north, and Highway 101 to the east.

I.a-b) The project would not have a substantial adverse effect on scenic vista, nor substantially damage scenic resources, or views along a state scenic highway. Per Chapter 4 of the 2009 Mendocino County General Plan (pg. 4-31), there are no officially designated State Scenic Highways in Mendocino County, although there are two designated State Scenic Byways through forests, which include the North Central Coast Heritage Corridor on State Route 1 and the Tahoe-Pacific Heritage Corridor encompassing sections of State Route 20 and Highway 101. While not officially designated as State Scenic Highways, Highway 20 through Mendocino County is eligible for designation and Highway 128, which passes through Yolo, Napa, Sonoma, and Mendocino Counties and is 140 miles long, was recently made eligible for designation under Assembly Bill (1998) signed by Governor Gavin Newsom in July 2019. However, Highways 20 and 128 are not in the vicinity of the Site.

The majority of the Site is currently vacant and undeveloped and is located in a built-up urban environmental with no scenic resources or views in the vicinity of the Site. No impact would occur.

I.c) The proposed project would not conflict with applicable zoning and other regulations governing scenic quality. The Site is located within the City of Ukiah city limits and has a City of Ukiah land use designation of Commercial (C) (1995) with a zoning designation of Community Commercial (C-1) per the City of Ukiah Zoning Map (2017). The proposed project would align with the requirements of Article 7. *Regulations in Community Commercial (C-1) Districts* of the Ukiah City Code (adopted 1998) to the extent feasible and would be compatible with the building height, landscaping, and parcel coverage of structures in the surrounding area; however, as noted prior, per Government Code Section 65402(b) (amended 1974), the project has been deemed to be in conformance with the City of Ukiah General Plan and the County is under no obligation to conform to the City zoning requirements. A less than significant impact would occur.

I.d) The proposed development has the potential to increase light and glare and impact nighttime views as compared to existing conditions, as the Site is currently undeveloped. The Application proposes the installation of exterior landscaping, including medium and large trees and hedges along the north, west, and east sides of the Site, which would help to obscure views of the Site and would minimize potential impacts of light and glare from the Site on the surrounding properties. In order to further minimize potential impacts associated with light and glare on surrounding development, the proposed project would include motion-censored, downcast, and shielded exterior lighting in compliance with regulations set by the International Dark-Sky Association. A less than significant impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less than Significant Impact** on Aesthetics.

II. AGRICULTURE AND FORESTRY RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by PRC section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use?	☐	☐	☐	☒

Thresholds of Significance: The project would have a significant effect on agriculture and forestry resources if it would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (hereafter "farmland"), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses; conflict with existing zoning for agricultural use or a Williamson Act contract; conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by PRC section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)); Result in the loss of forest land or conversion of forest land to non-forest use; or involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use.

DISCUSSION

The Site is located within the City of Ukiah city limits on County-owned parcels. The approximately 0.92-acre Site is currently undeveloped, with no existing structures or utilities on-site and is located in an urban built-up environment. The Site is bordered to the west by S. Orchard Avenue, to the south by the United States Postal Service, to the east by a family services agency, and to the north by a commercial business. Nearby uses include residences and commercial businesses to the west, churches to the south and northwest, motels to the south and northeast, government buildings, such as the Department of Motor Vehicles, the Ukiah Unified School District, and the U.S. Social Security Administration to the north, and Highway 101 to the east.

The Site is designated as "Urban and Built-Up Land" under the Farmland Mapping and Monitoring Program (FMMP) of the California Department of Conservation (DOC, 2016), Division of Land Resource Protection, and is not under a Williamson Act Agricultural Preserve contract (Mendocino County Maps - Timber Production & Williamson Act Lands, 2014).

II.a-b) The proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use, conflict with existing zoning for agricultural use, or a Williamson Act

contract. As noted above, the Site is designated as "Urban and Built-Up Land" under the FMMP of the DOC and is located within the City of Ukiah in a built-up urban environment. No impact would occur.

II.c-d) The Site is neither designated nor zoned as forest land or timberland and there is no forest land in the vicinity of the Site. No impact would occur.

II.e) There are no components of the project that would involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use or conversion of forest land to non-forest use. As described above, the Site is located within the City of Ukiah city limits in an urban built-up environment. No impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have **No Impact** on Agricultural and Forestry Resources.

III. AIR QUALITY. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Thresholds of Significance: The project would have a significant effect on air quality if it would conflict with or obstruct implementation of applicable air quality plans; result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard; expose sensitive receptors to substantial pollutant concentrations; or result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

DISCUSSION: Air pollution control in the State of California is based on federal, state, and local laws and regulations. According to the 2005 Mendocino County Air Quality Management District (MCAQMD) Particulate Matter Attainment Plan (PM Attainment Plan) (pg. 5), the United States Environmental Protection Agency (EPA), California Air Resources Board (CARB), and regional clean air agencies all regulate air quality. The EPA and the CARB have set thresholds for each of the criteria pollutants, which include: ozone (O₃), carbon monoxide (CO), oxides of nitrogen (NO_x), lead (Lb), sulfur dioxide (SO₂), particulate matter less than 10 microns in size (PM₁₀), and particulate matter less than 2.5 microns in size (PM_{2.5}). The standards set by the CARB are generally more stringent than those set by the EPA and the CARB has set additional standards for visibility-reducing particles (of any size), sulfates, and hydrogen sulfide (H₂S). These standards are based on observable short-term (acute) health effects (MCAQMD, 2005).

The Site is located within the North Coast Air Basin (NCAB) and is subject to the requirements of the MCAQMD. The MCAQMD is responsible for monitoring and enforcing the state and federal Clean Air Acts as well as local air quality protection regulations in the County of Mendocino. The entire NCAB is currently designated as "non-attainment," or in excess of allowable limits, for the state 24-hour allowable limits for breathable particulate matter of 10 microns or less (PM₁₀), and as "attainment," or within allowable limits, with respect to the balance of the criteria pollutants. The MCAQMD has been determined to be in "attainment", or within allowable limits, for all federal and state ambient air quality standards, except for the state annual average PM₁₀ standard and the 24-hour PM₁₀ standard.

The California Clean Air Act does not require attainment plans or transportation conformity for Districts that exceed the PM₁₀ standard, but only requires that the Districts make reasonable efforts toward coming into attainment, defined as a five percent reduction in emissions per year, until the standard is attained. Although not required for coming into attainment for the state standard, the MCAQMD adopted the PM Attainment Plan in 2005. The PM Attainment Plan includes a description of local air quality, the sources of local particulate matter (PM) emissions, and recommended control measures to reduce future PM₁₀ levels. While PM₁₀ levels have dropped over the last 20 years, due to changing industrial base, enhanced regulations, and increased enforcement by the MCAQMD, the MCAQMD still exceeds the State PM₁₀ level several times a year. The

majority of these exceedances result from wildfires, residential wood burning, unpaved roads, and construction activities (MCAQMD, 2005).

The project and its emission sources are subject to the rules and regulations contained in the most recent version of the *Rules and Regulations* of the MCAQMD. The MCAQMD has also identified significance thresholds for use in evaluating project impacts under CEQA, provided in Table 1, below. [Please note: the MCAQMD does not specify thresholds for SO₂. As a result, the Best Available Control Technology (BACT) emission rates for stationary sources, utilized by the North Coast Unified Air Quality Management District (NCUAQMD) specific to SO₂ are used for this analysis.]

Table 1. MCAQMD Significance Thresholds

Criteria Pollutant and Precursors	Construction Related		Operational Related	
	Average Daily Emissions (lb/day)	Maximum Annual Emissions (tons/year) ¹	Indirect Source Average Daily Emissions (lb/day)	Project/Stationary Source Maximum Annual Emissions (tons/year)
ROG	54	10	180	40
NOx	54	10	42	40
PM ₁₀	82	15	82	15
PM _{2.5}	54	10	54	10
Fugitive Dust (PM ₁₀ /PM _{2.5})	Best Management Practices	--	same as above	
Local CO	--	--	125 tons/year	
SO ₂ *	--	--	80	40

¹ = Specific maximum allowable annual emissions related to construction were not provided by MCAQMD and were calculated based on the maximum average daily emissions thresholds.

* = MCAQMD does not specify thresholds for SO₂. As such, the NCUAQMD threshold for SO₂ is used for this analysis.

Source: MCAQMD, 2010; NCUAQMD, 2015.

The proposed project involves the construction and operation of a 3,462 square-foot, one-story, Crisis Residential Treatment (CRT) Facility on the currently vacant and undeveloped Site. The CRT would include space for up to 10 beds for clients, a staff office/intake room, laundry room, kitchen, dining room, living space, and den. Associated improvements include an outdoor deck, a parking area, Low Impact Development (LID) features for stormwater capture and treatment, landscaping, and a perimeter galvanized steel fence surrounding the proposed CRT Facility. Landscaping, including medium and large trees and shrubs along the east and wide sides of the Site, and bioretention facilities located south of the structure, would be placed outside the proposed fence. Additional landscaping would be placed within the fence, including a garden area and various plantings surrounding the structure. All exterior lighting would be motion-censored, downcast, and shielded in compliance with regulations set by the International Dark-Sky Association.

As the Site is currently vacant, there are no on-site emission sources at the Site. During construction at the Site, the contractor would be expected to use heavy construction machinery and temporary air pollutant emissions would be associated with grading, excavation, and construction on the Site; however, the project would be required to comply with policies regarding the control of fugitive dust during these activities, which have been established by the MCAQMD, maintaining all construction equipment in good working condition, and limiting truck idling on-site to a maximum of five minutes, pursuant to State law. Once construction is complete, emissions from operation of the project would include stationary, mobile, and fugitive sources and would be comprised of direct and indirect emissions, including but not limited to exhaust and fugitive dust from the operation of personal vehicles associated with clients, visitors, and employees traveling to and from

the Site, and service trucks, in addition to operation of the new facilities, including heating and cooling and equipment operation. Continued compliance with MCAQMD emissions standards would be required once the new building has been constructed.

III.a-b) The project would not conflict with or obstruct implementation of any air quality plan or result in a cumulatively considerable net increase of PM₁₀, the only criteria pollutant for which the project region is in non-attainment. As noted above, the MCAQMD is in "non-attainment" for PM₁₀ (MCAQMD, 2005). Therefore, any use or activity that generates unnecessary airborne particulate matter may be of concern to MCAQMD and has the potential to create significant project-specific and cumulative effects to air quality. However, MCAQMD has advised that generally an activity that individually complies with the state and local standards for air quality emissions will not result in a cumulatively considerable net increase in the countywide PM₁₀ emissions.

Potential air quality impacts associated with the proposed project were modeled using the California Emissions Estimator Model (CalEEMod) model and compared to the significance thresholds shown in Table 1, above. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. This program is the standard for Air Quality and Greenhouse Gas (GHG) analysis within the MCAQMD jurisdiction. The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Further, the model identifies mitigation measures to reduce criteria pollutants and GHG emissions and calculates the benefits achieved from measures chosen by the user (CalEEMOD). Vehicles are known to be a major pollution contributor, producing significant amounts of nitrous oxides (NO_x), carbon monoxide (CO), ozone (O₃), and particulate matter (PM_{2.5} and PM₁₀), and must also be considered when evaluating potential air quality impacts of a proposed project. In both cases the CalEEMod-generated default values for equipment and project phase time frames were used (except where noted in the respective reports).

The CalEEMod results in their entirety are included in Appendix C. The CalEEMod analysis assumes implementation of basic construction- and operational-level mitigation measures, including watering exposed areas and unpaved roads; reducing vehicle speeds on unpaved roads to 10 miles per hour; utilizing low-VOC paints and cleaning supplies; installing high efficiency lighting and low-flow faucets and fixtures; and utilizing a water-efficient irrigation system and landscape. However, as shown in Table 2, below, construction and operational emissions would be below annual and daily thresholds for the listed pollutants even if the specific mitigation measures provided by the CalEEMod model are not implemented. The CalEEMod model assumes that the proposed project would break ground on September 1, 2020 (during the dry season) and be constructed over an approximately 6-month period until the entire project is complete in approximately February 2021. While it is possible the construction would take a total of 6 months to complete, there are likely to be pauses in construction, especially during the rainy season (typically November through March), which may extend the estimated completion date beyond February 2021. The results of the CalEEMod analysis for both construction and operation of the proposed project are shown in Table 2, below.

Table 2. CalEEMod Results for Construction and Operation of the Mendocino County Crisis Residential Treatment Facility over a 6-Month Construction Period and at Full Build-out

Pollutant	Emissions [tons/year (lb/day)]				Thresholds	
	Modeled Unmitigated Construction Emissions	Modeled Mitigated Construction Emissions (including % reduction)	Modeled Unmitigated Operational Emissions	Modeled Mitigated Operational Emissions (including % reduction)	Annual (tons/year) Daily (lb/day)	Thresholds Exceeded?
Carbon monoxide (CO)	0.3045 (8.2651)	0.3045 (8.2651) (no change)	0.4842 (3.7585)	0.4842 (3.7585) (no change)	125 None	No No
Nitrogen oxides (NOx)	0.3555 (9.1622)	0.3555 (9.1622) (no change)	0.2781 (2.0629)	0.2781 (2.0629) (no change)	40 54	No No
Particulate matter (PM ₁₀) (total)	0.7235 (57.6958)	0.3733 (29.0772) (-48.57%)	6.9403 (50.4433)	6.9403 (50.4433) (no change)	15 82	No No
Particulate matter (PM _{2.5}) (total)	0.0896 (6.0724)	0.0545 (3.2106) (-40.02%)	0.6996 (5.0876)	0.6996 (5.0876) (no change)	10 54	No No
Reactive organic gases (ROG)	0.0575 (17.8314)	0.0575 (17.8314) (no change)	0.0668 (0.4550)	0.0658 (0.4495) (-1.51%)	40 54	No No
Sulfur oxides (SO ₂)	0.00048 (0.0128)	0.00048 (0.0128) (no change)	0.0011 (0.00808)	0.0011 (0.00808) (no change)	40 80	No No

Source: CalEEMod Results, June 17, 2020 and July 15, 2020, Appendix C.

As shown in Table 2, above, the anticipated emissions associated with construction of the CRT Facility and associated improvements at the site would be well-below MCAQMD annual and daily thresholds of significance for carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM₁₀ and PM_{2.5}), reactive organic gases (ROG), and sulfur oxides (SO₂) without any mitigation. Compliance with standard regulations of the MCAQMD during project construction would further reduce PM₁₀ and PM_{2.5} emissions. Operational emissions would also be well-below MCAQMD's annual and daily thresholds of significance without mitigation; however, with compliance with standard regulations during project operation, ROG emissions would be further reduced.

While the anticipated development at the Site would generate temporary emissions and direct and indirect emissions once construction is complete, the project would not include any source of visible emissions, including intentional fire/burning or manufacturing and would control exhaust emissions from construction equipment by minimizing idling. In addition, the contractor would suppress fugitive dust during construction and operation, pursuant to Rule-1-430 (Fugitive Dust Emissions) of Chapter IV (Prohibitions) of Regulation 1 (Air Pollution Control Rules) of the MCAQMD's Rules and Regulations (February 2011), and would maintain all construction equipment in good working order such that exhaust and fugitive dust emissions are minimized. The project would be subject to current and future regulations adopted by MCAQMD, including the PM Attainment Plan (2005), and compliance with these regulations would ensure the project would not result in a substantial increase of PM₁₀ within the vicinity of the Site. Based on the aforementioned analysis, the proposed project would not conflict with or obstruct implementation of federal, state, or MCAQMD standards, or MCAQMD's Attainment Plan; violate any air quality standard; or result in a cumulatively

considerable net increase in the PM₁₀ non-attainment levels in Mendocino County. As such, a less than significant impact would occur.

III.c) Sensitive receptors are generally defined as people that have an increased sensitivity to air pollution or environmental contaminants, and include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s). Sensitive receptors in the vicinity of the Site include:

- The project itself;
- Existing single-family residences and a mobile home park located immediately west of the Site;
- River Oak Charter School located approximately 475 feet northwest of the Site;
- A mobile home park located approximately 520 feet east of the Site; and
- Ukiah Senior Center located approximately 625 feet northwest of the Site.

As provided in Table 2, above, emissions associated with construction and operation of the proposed project would not be anticipated to exceed the annual thresholds of significance of the MCAQMD for the six listed pollutants. However, temporary exhaust from construction equipment may, over the course of the 6-month construction period, impact residents living near the Site. However, with suppression of fugitive dust during construction and operation, pursuant to Rule-1-430 (Fugitive Dust Emissions) of Chapter IV (Prohibitions) of Regulation 1 (Air Pollution Control Rules) of the MCAQMD's *Rules and Regulations* (February 2011), and maintaining all equipment in good working condition, fugitive dust and exhaust emissions would be minimized, and a less than significant impact would occur.

III.d) The project would not create substantial emissions (such as odors or dust) adversely affecting a substantial number of people. Temporary odors and dust, typical of construction sites and equipment use, may be generated during the construction phase. However, with suppression of fugitive dust during construction and operation, pursuant to Rule-1-430 (Fugitive Dust Emissions) of Chapter IV (Prohibitions) of Regulation 1 (Air Pollution Control Rules) of the MCAQMD's *Rules and Regulations* (February 2011), and maintaining all equipment in good working condition, fugitive dust and exhaust emissions would be minimized. A less than significant impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less Than Significant Impact** on Air Quality.

IV. BIOLOGICAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Thresholds of Significance: The project would have a significant effect on biological resources if it would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service; have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service; have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means; interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

DISCUSSION

The approximately 0.92-acre Site is currently undeveloped, with no existing structures or utilities on-site and is located within the City of Ukiah city limits in an urban built-up environment. The Site is bordered to the west by S. Orchard Avenue and single-family residences, to the south by the United States Postal Service, to the east by a family services agency, and to the north by a commercial business. According to the U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory (NWI) Wetlands Mapper, there are no known

creeks/streams or wetlands on-site (USFWS, 2020). The Site is undeveloped with a vegetative cover primarily consisting of grasses and weedy species and a limited number of landscaping trees planted to the north and southeast of the Site. Based on a review of Google Earth imagery, it appears that, at least dating back to 1993, the Site has been vacant, with limited use for vehicle parking and occasional ground disturbance from driving vehicles. Drainage across the Site appears to flow to the southeast. The nearest body of water is Gibson Creek, which is located approximately 1,300 feet east of the Site. Regional drainage is controlled by the Russian River, which is located approximately 0.85 miles east of the Site.

The Site is not known to contain any wetland or riparian areas (USFWS, 2020). However, as provided by the U.S. Fish and Wildlife Service's (USFWS) Information, Planning, and Consultation (IPaC) System, 8 mammal, bird, amphibian, and flowering plant species, listed as threatened or endangered under the Endangered Species Act (ESA), have the potential to occur at the Site. Additionally, per the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDDB), there are 26 special status species with the potential to occur within the Ukiah Quad, which includes the Site. Furthermore, the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Plants*, lists 7 rare or endangered plants with the potential to occur within the Ukiah Quad. The candidate, sensitive, or special status species with the potential to occur at the Site are listed in Table 3, below. Because the Site is located in a heavily-trafficked built-up urban environment, surrounded by similar, urban uses, there is limited potential for any special status plant or wildlife species to be present at the Site.

Table 3. Species with the Potential to Occur at or Within Close Vicinity of the Site

Common Name	Scientific Name
Birds	
Northern spotted owl	<i>Strix occidentalis caurina</i>
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>
Yellow-billed cuckoo	<i>Coccyzus americanus</i>
Great blue heron	<i>Ardea Herodias</i>
Yellow-breasted chat	<i>Icteria virens</i>
Osprey	<i>Pandion haliaetus</i>
Oak titmouse	<i>Baeolophus inornatus</i>
Lewis' woodpecker	<i>Melanerpes lewis</i>
Mammals	
Fisher	<i>Pekania pennanti</i>
North American porcupine	<i>Erethizon dorsatum</i>
Amphibians	
California Red-legged Frog	<i>Rana draytonii</i>
Foothill yellow-legged frog	<i>Rana boylei</i>
Red-bellied newt	<i>Taricha rivularis</i>
Plants	
Burke's Goldfields	<i>Lasthenia burkei</i>
Contra Costa Goldfields	<i>Lasthenia conjugens</i>
Showy Indian Clover	<i>Trifolium amoenum</i>
Mendocino tarplant	<i>Hemizonia congesta ssp. calyculata</i>
Raiche's manzanita	<i>Arctostaphylos stanfordiana ssp. raichei</i>
Stinkbells	<i>Fritillaria agrestis</i>
Purdy's fritillary	<i>Fritillaria purdyi</i>
California lady's slipper	<i>Cypripedium californicum</i>
Mountain lady's slipper	<i>Cypripedium montanum</i>
Baker's meadowfoam	<i>Limnanthes bakeri</i>
Bristly leptosiphon	<i>Leptosiphon acicularis</i>
Broad-lobed leptosiphon	<i>Leptosiphon latisectus</i>
Baker's navarretia	<i>Navarretia leucocephala ssp. Bakeri</i>
Lobb's aquatic buttercup	<i>Ranunculus lobbii</i>
Great burnet	<i>Sanguisorba officinalis</i>

Source: USFWS, 2020; CDFW, 2020; and CNPS, 2020.

In addition to the species listed in Table 3, above, it should be noted that one (1) mollusk species [Western pearlshell (*Margaritifera falcata*)], one (1) reptile species [Western pond turtle (*Emys marmorata*)], and four (4) fish species [Russian River tule perch (*Hysterothorax traskii*), Coho salmon – central California coast ESU (*Oncorhynchus kisutch* pop. 4), Steelhead – central California coast DPS (*Oncorhynchus mykiss irideus* pop. 8), and Chinook salmon – California coastal ESU (*Oncorhynchus tshawytscha* pop. 17)] were also identified as having the potential to occur at the Site. However, since the Site does not contain any rivers, streams, or wetland habitat, nor is located in close proximity to any such habitat, there is no potential for these species to occur on-site and they have not been included in Table 3, above.

IV.a) The project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS) based on location of the Site and the surrounding uses.

The approximately 0.92-acre Site is currently undeveloped, and is located in an urban built-up environment. As shown in Table 3, above, there are 28 special status plant and wildlife species with the potential to occur on or within the vicinity of the Site; however, there is limited potential for any special status plant or wildlife species to be present at the Site. As noted above, the Site is located within a heavily-trafficked built-up urban environment and is comprised of ruderal vegetation consisting of non-native grasses and weedy species that does not provide suitable habitat for the above-listed species. A less than significant impact would occur.

IV.b) The proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community. No riparian habitat is mapped on-site or within the vicinity (NWI, 2020), and no other sensitive natural communities are located on or adjacent to the Site. No impact would occur.

IV.c) As provided by the USFWS National Wetlands Inventory (NWI) Wetlands Mapper, there are no known creeks/streams or wetlands on-site (USFWS, 2020). The nearest body of water is Gibson Creek, which is located approximately 1,300 feet east of the Site. Regional drainage is controlled by the Russian River, which is located approximately 0.85 miles east of the Site. As there are no wetlands in or in close vicinity to the Site, no impact would occur.

IV.d) The project would not be anticipated to substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Although according to the USFWS IPac List, generated April 15, 2020, there is potential for three (3) bird species listed as Threatened under the Endangered Species Act and 16 migratory bird species protected under the Endangered Species Act, Migratory Bird Treaty Act of 1918 (MBTA), the Bald and Golden Eagle Protection Act of 1940, or other regulations to be present at the Site, there is little potential for these native resident bird species to be impacted during project construction and operation, as there are currently no trees on-site that may provide nesting habitat for these native birds. In addition, the Site does not contain any streams, creeks, or wetland areas, and is located within an urban area with no existing wildlife corridors. There are no existing wildlife nursery sites within or near the Site that could be impacted by the project. A less than significant impact would occur.

IV.e) Although the project is not required to follow the City of Ukiah's General Plan policies, the project has been reviewed for consistency with Section 1 (Open Space and Conservation) of Chapter 4 (The Resource Elements) of the City of Ukiah General Plan, which contains goals and policies related to the preservation of biological resources, including but not limited to, open space, the Russian River and its tributaries, creeks and streams, hillside development, oak woodlands, water resources, and native plants and animals.

The proposed project would introduce development to a vacant parcel located within an urban area and covered with non-native grasses and weedy species, with a limited number of landscaping trees planted to the north and southeast of the Site. The project includes substantial landscaping that would introduce native plants to the Site. In addition, during construction of the project, BMPs to prevent erosion and the discharge of sediment would be implemented to protect waterbodies from stormwater pollutants due to project construction. The project would not conflict with any local policies or ordinances related to the protection of biological resources. A less than significant impact would occur.

IV.f) The proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan, as there are no such plans applicable to the Site. No impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less Than Significant Impact** on Biological Resources.

V. CULTURAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Thresholds of Significance: The project would have a significant effect on cultural resources if it would cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5; cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5; or disturb any human remains, including those interred outside of formal cemeteries.

DISCUSSION

According to Chapter 3 (Development Element) of the Mendocino County General Plan (2009), ten (10) Native American tribes historically had territory in what is now Mendocino County. Native American tribes known to inhabit Mendocino County concentrated mainly along the coast and along major rivers and streams, while mountainous areas and redwood groves were occupied seasonally by some tribes. The first permanent non-native settlers came to Mendocino County in the middle of the 16th century, exploring and establishing small outposts. It was almost 300 years before the first permanent non-Spanish settlements in Mendocino County were established in April of 1852 on the coast north of Big River. As European-American settlement expanded in Mendocino County, most of the tribes known to inhabit the land were restricted to reservations and rancherias. During the 19th century, other tribes from the interior of California were forced to settle on the Round Valley Reservation in the northeastern portion of Mendocino County. The City of Ukiah (City) is situated in a valley of the Russian River between the Russian River and western hills. The City was first settled in 1856 by Samuel Lowry and has served as the Mendocino County Seat since 1859. Logging, cattle, and agricultural ventures contributed to the early settlement and growth of the City throughout the remainder of the 19th and early 20th centuries (City of Ukiah, 2019). The City is within the territory of the Northern Pomo. The Pomo often established permanent villages in areas with access to staple foods, often times along eco-tones (transitions between varying environments), with access to good water, and generally flat land. Areas within the Ukiah Valley that are most typically culturally sensitive include those adjacent to streams, springs, and mid-slope benches above watercourses because Native Americans and settlers favored easy access to potable water (ESA, 2013).

Various County and City policies exist related to the protection and preservation of cultural and historical resources, including but not limited to: Chapter 3 (Historic and Archaeological Resources) of the Ukiah General Plan (1995); City Ordinance No. 838 (1983); Chapter 3 of the Mendocino County General Plan (2009), pages 3-94 through 3-95; and Chapter 22.12 of the Mendocino County Code (1987). Chapter 3 (Historic and Archaeological Resources) of the Ukiah Valley General Plan and Growth Management Program (Ukiah General Plan) (1995) states that Ukiah is committed to maintaining cultural resources as a link to past populations, but recognizes that effective cultural resource protection is a balance between preserving and protecting the past and accommodating future growth. Figure V.3-DD of the Ukiah General Plan (1995) identifies areas of high archaeological sensitivity, based on terrain, location of already-recorded sites, and other scientific factors, the majority of which are clustered north of the City. The City additionally maintains a Historic and Architectural Inventory that includes properties within the City limits with historic importance that

were identified in an Historical and Architectural Survey Update prepared for the City by P.S. Preservation Services in 1999 (City of Ukiah, 2019). City Ordinance No. 838 requires City Council approval of the proposed demolition of any building over 50 years old, allowing some review and public input opportunity regarding the potential loss of historically significant buildings (City of Ukiah, 2019). In an effort to protect archaeological and cultural resources, in particular Native American sites, from potential development impacts, the County of Mendocino (County) has adopted an Archaeological Ordinance, Chapter 22.12 of the Mendocino County Code (1987). The ordinance establishes a County Archaeological Commission that evaluates the potential impacts of proposed projects on archaeological resources and recommends measures to reduce or eliminate impacts on these resources. The ordinance additionally includes the "Discovery Clause," which establishes procedures to follow in the event that archaeological or cultural resources or human remains are unearthed during project construction, including but not limited to Site preparation and excavation, in accordance with Mendocino County Code Sections 22.12.090 and 22.12.100. Both Policy DE-115 of Chapter 3 of the Mendocino County General Plan (2009) and Mendocino County Code Sections 22.12.050 through 22.12.100 (1987) include provisions for archaeological sensitivity review, field evaluations, impact mitigations, archaeological discovery, and human remain discovery protocols.

On April 28, 2020, LACO Associates (LACO), on behalf of the County, contacted the Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and the contact information for the representatives of the Native American Tribes associated with the area and the Northwest Information Center (NWIC) located on the Sonoma State University campus to request a Records Search. The NAHC response letter, dated May 1, 2020, indicated that a search of the SLF returned a positive result with connections to the Pinoleville Pomo Nation, and included a list of five (5) Native American tribes with cultural affiliations to the area. The list received from the NAHC included the Coyote Valley Band of Pomo Indians, Guidiville Indian Rancheria, Hopland Band of Pomo Indians, Pinoleville Pomo Nation, and Redwood Valley or Little River Band of Pomo Indians, with contact information for the Chairperson of each Tribe provided. On May 19, 2020, LACO received a letter response from the NWIC (File No. 19-1892), which noted that no previous cultural resource studies have been completed and documented for the Site. In addition, the NWIC stated the Site has a moderate to high potential for containing unrecorded Native American resources and recommended further archival and field study and that the local Native American tribes be contacted regarding traditional, cultural, and religious heritage values. The NWIC additionally recommended that a qualified professional familiar with the architecture and history of Mendocino County conduct a formal CEQA evaluation regarding any building or structure 45 years or older; however, the Site is undeveloped and therefore, no existing structures will be impacted by the proposed project. On June 2, 2020, in compliance with Assembly Bill (AB) 52, LACO, on behalf of the County, sent a consultation letter to each of the five (5) Native American tribes provided in the NAHC response letter, including the Coyote Valley Band of Pomo Indians, Guidiville Indian Rancheria, Hopland Band of Pomo Indians, Pinoleville Pomo Nation, and Redwood Valley or Little River Band of Pomo Indians. As of the date of this Initial Study, no requests for consultation or any other responses have been received from any of the five (5) Native American Tribes that were sent formal notification of the project in compliance with AB 52. Copies of the request letters sent to the NAHC, NWIC, and Native American tribes, in addition to the responses from NAHC and NWIC, are included in Appendix B. No further field study was initiated because the Site is located in an urban built-up environment, is not identified as an area of high archaeological sensitivity in the City of Ukiah General Plan (City of Ukiah, 1995), and further study was not requested by the Native American Tribes contacted.

V.a) The project is not anticipated to have an adverse effect on historical resources. No structures are being demolished or altered as a result of the project and no historical resources are identified at or near the Site, per Figure V.3-DD of the Ukiah General Plan (1995) and the City Historic and Architectural Inventory (1999). As a result, no impact would occur.

V.b-c) The project is not anticipated to cause a substantial adverse change in the significance of an archaeological resource or disturb any human remains. Although no further field study was initiated because the Site is located in an urban built-up environment, is not identified as an area of high archaeological sensitivity in the City of Ukiah General Plan (City of Ukiah, 1995), and further study was not requested by the Native American Tribes contacted, there is the possibility that an archaeological resource or human remains could be inadvertently discovered due to the ground-disturbing activities required during project construction and the potential for cultural resources in the area noted in the letter from the NWIC, discussed above, the incorporation of Mitigation Measure CUL-1, which requires that the contractor implement standard protocol similar to the County's "Discovery Clause" during project construction, will ensure that cultural resources are not adversely impacted by the project, and that implementation of the proposed project will be consistent with Mendocino County policies for protection of cultural resources, including human remains. With mitigation incorporated, a less than significant impact would occur.

MITIGATION MEASURES

CUL-1: CUL-1: In the event archaeological resources or human remains are inadvertently unearthed or discovered during construction, all further excavation and disturbances within 100 feet of the discovery shall be halted, and the Director of Planning and Building Services (PBS), in the case of the discovery of archaeological resources, or the Sheriff-Coroner, in the case of the discovery of human remains, shall be immediately notified.

For the discovery of archaeological resources, all activity in the vicinity of the resource(s) shall cease until the discovery can be evaluated by the Director of PBS or a duly authorized representative, in consultation with the Mendocino County Archaeological Commission (Commission). If the Director of PBS does not arrange for an inspection of the area of discovery within 72 hours of receiving the notification and has not issued an order to cease and desist for a longer period of time, the excavation and disturbance of the site may resume. If the Commission, or an authorized representative, determines that the resource(s) is one of archaeological significance, the person who made the discovery shall be notified and an appropriate treatment plan for the resources shall be developed. The Commission shall consult with archaeologists and Native American representatives, as deemed necessary, in determining appropriate treatment for prehistoric or Native American cultural resources. In considering any suggested mitigation proposed by the archaeologist and Native American representative, the Commission will determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted. Work may proceed in other parts of the project area while mitigation for cultural resources is being carried out.

For the discovery of human remains, all activity in the vicinity of the discovery shall cease until specifically authorized by the Sheriff-Coroner. The Sheriff-Coroner shall notify a designated representative of the Commission and if the remains are considered to be those of a Native American Indian, the Sheriff-Coroner shall also make notification as required by Section 7050.5 of the California Health and Safety Code. The Sheriff-Coroner shall determine, in consultation with the Commission and Native American representatives, as deemed necessary, the jurisdiction and custody of the human remains. Should human remains be discovered as part of an archaeological site, the Sheriff-Coroner or the Commission on behalf of the Sheriff-Coroner shall additionally solicit recommendations of the Native American Heritage Commission. No further excavation or disturbance within 100 feet of the point of discovery may proceed until the lapse of 30 days or written approval of the Commission, whichever occurs first.

FINDINGS

The proposed project would have a **Less Than Significant Impact with Mitigation Incorporated** on Cultural Resources.

DRAFT

VI. ENERGY. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Thresholds of Significance: The project would have a significant effect on energy if it would result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation.

DISCUSSION

On October 7, 2015, Governor Edmund G. Brown, Jr. signed into law Senate Bill (SB) 350, known as the Clean Energy and Pollution Reduction Act of 2015, which sets ambitious annual targets for energy efficiency and renewable electricity aimed at reducing greenhouse gas (GHG) emissions. According to the Final Commission Report of the California Energy Commission (CEC), dated October 2017, SB 350 requires the CEC to establish annual energy efficiency targets that will achieve a cumulative doubling of statewide energy efficiency savings and demand reductions in electricity and natural gas final end uses by January 1, 2030. This mandate is one of the primary measures to help the state achieve its long-term climate goal of reducing GHG emissions to 40 percent below 1990 levels by 2030. The proposed SB 350 doubling target for electricity increases from 7,286 gigawatt hours (GWh) in 2015 up to 82,870 GWh in 2029. For natural gas, the proposed SB 350 doubling target increases from 42 million of therms (MM) in 2015 up to 1,174 MM in 2029 (CEC, 2017).

Under the proposed project, the County of Mendocino proposes the construction and operation of a 3,462 square-foot, one-story, Crisis Residential Treatment (CRT) Facility and associated improvements including an outdoor deck, a parking area, Low Impact Development (LID) features for stormwater capture and treatment, landscaping, and a galvanized steel fence surrounding the proposed CRT Facility. Construction of the proposed project would be subject to Part 6 (California Energy Code) of Title 24 of the California Code of Regulations, which contains energy conservation standards applicable to residential and non-residential buildings throughout California (CEC, 2020).

XIX.a-b) The proposed project would not be anticipated to result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy or wasteful use of energy resources, nor would the proposed project conflict with or obstruct a State or local plan for renewable energy or energy efficiency. As discussed above, the County of Mendocino is proposing construction of new Crisis Residential Treatment (CRT) Facility and associated improvements on-site.

The consumption of energy would occur during construction through the use of fossil fuels and electricity in construction equipment and vehicles. Construction would occur during normal business hours, typically 7:00 am to 6:00 pm, Monday through Friday, and would be temporary in nature. The contractor would keep all construction equipment in good working order and would limit idling of vehicles and equipment during construction, in accordance with California Code of Regulations, Title 13, Section 2485: *Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling* (adopted 2005), which limits idling from both on-road and off-road diesel-powered equipment and is enforced by the California Air Resources Board (ARB). Therefore, it is anticipated that the construction phase of the project would not result in wasteful, inefficient, and unnecessary consumption of energy.

Operation of the project would be subject to Part 6 (California Energy Code) of Title 24 of the California Code of Regulations, which contains energy conservation standards applicable to residential and non-residential buildings throughout California to ensure new and existing buildings achieve energy efficiency and preserve outdoor and indoor environmental quality. Additionally, medium and large shade trees are proposed to be planted throughout the Site, helping to facilitate energy conservation within the proposed CRT Facility structure. While no on-site renewable energy is proposed, the Site is located within the service boundaries of the City of Ukiah Electric Utility, which, according to the 2018 Power Content Label, receives approximately 29 percent of its power from eligible renewable sources. Therefore, a less than significant impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less Than Significant Impact** on Energy.

VII. GEOLOGY AND SOILS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☒	☐	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☒	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☒	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☒	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Thresholds of Significance: The project would have a significant effect on geology and soils if it would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides; result in substantial soil erosion or the loss of topsoil; be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse; be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property; have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; or directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

DISCUSSION

A *Geotechnical Exploration and GeoHazard Report* (Geotech Report) was prepared by LACO Associates (LACO) on June 3, 2020 (see Appendix D), in order to explore the surface and subsurface conditions and develop recommendations regarding the following: California Geological Survey (CGS) Note 48-compliant geohazards evaluation; anticipated excavation characteristics; Site preparation and earthwork recommendations, including Site and subgrade preparation, subdrains, on-site fill material suitability, import

fill recommendations, placement, and compaction requirements; utility trench excavation and backfill recommendations; foundation type(s) for the planned buildings, and design criteria for the recommended foundation type(s), consistent with the 2019 California Building Code (CBC), including allowable bearing capacity and minimum embedment depths; estimates of foundation settlement; seismic design criteria consistent with the 2019 CBC Chapter 16; liquefaction-induced total and differential settlement and lateral spreading; seismic design parameters based on Site-specific ground motion analysis for Item 15 CGS 48 Check List following procedures outlined in 2019 CBC and American Society of Civil Engineers (ASCE) 7-16; pavement design recommendations; exterior flatwork recommendations; soil corrosivity; and construction considerations.

The Site is undeveloped and grass-covered, is situated between 598 and 600 feet above mean sea level (amsl), and gently slopes to the southeast. As noted in the Geotech Report, on March 3, 2020, LACO explored subsurface conditions by drilling four (4) borings (B1 through B4) to a maximum depth of 52 feet below ground surface (bgs). Laboratory tests were performed on select soil samples by LACO's materials testing laboratory to evaluate and characterize the soils. The Site is blanketed by interbedded alluvial soils comprised of primarily clays, sands, and gravels. Local alluvial soils consist of a surficial layer of sandy lean clay that extends to between 11 and 15 feet bgs; well graded sand with clay and gravel that extends to approximately 39 feet bgs; sandy lean clay that extends to approximately 43 feet bgs; clayey sand that extends to approximately 50 feet bgs; and clayey sand with gravel that extended to the maximum depth explored 52 feet bgs. Groundwater was encountered in the borings at depths between 7 and 14 feet bgs (LACO, 2020).

According to the Geotech Report (LACO, 2020), the Site is located in the California Coast Ranges Geomorphic Province, a seismically active and geologically complex province due to historic and ongoing tectonic deformation that is characterized by northwest trending faults and topographic and geologic features. Potential geologic hazards assessed for the project include the following: soil corrosivity, seismic ground shaking, volcanism, liquefaction and related phenomena, settlement, flooding, high groundwater, and expansive soils. The seismicity of the area is dominated by the presence of the San Andreas Fault system, with the nearest potentially active fault is the northern section of Maacama fault zone, located approximately 1.3 miles east of the Site. However, the Site is not located within a "Fault Rupture Hazard Zone" or within an area currently designated as a "Seismic Hazard Zone" by the State and based on the distance between the Site and the closest active fault, the Maacama fault zone, the potential for surface fault rupture to occur within the Site is low (LACO, 2020).

Based on the exploration program, the Geotech Report (LACO, 2020) concludes that, from a geotechnical standpoint, the project is feasible. LACO found a low potential for soil corrosivity, liquefaction-induced lateral spreading, slope instability, lurching, flooding, tsunami inundation, and volcanism, and a low susceptibility to static settlement. The primary geotechnical concerns at the Site are the presence of relatively soft, moderately expansive surface soils, and the presence of potentially liquefiable soils.

VII.a.i) The Site is situated within a seismically active area proximal to multiple seismic sources capable of generating moderate to large ground motions. Given the proximity of the proposed project to active seismic sources (the Maacama Fault Zone and San Andreas Fault), there is a high probability that the Site will experience strong ground shaking during the economic lifespan (50 years) of the project. However, as the Site is not located within a "Fault Rupture Hazard Zone" or within an area currently designated as a "Seismic Hazard Zone" by the State and based on the distance between the Site and the closest active fault, the Maacama fault zone, the potential for surface rupture at the Site is considered low. A less than significant impact would occur.

VII.a.ii) As noted above, there are no mapped faults or Alquist-Priolo special studies zones traversing the Site. However, since the project area is situated within a seismically active region and given the proximity of significant active faults to the Site, the Site will likely experience strong ground shaking during the economic life span of any development on the Site and the risk of ground shaking at the site is high.

The proposed project would be subject to the recommendations contained in the Geotech Report (LACO, 2020) and the latest version of the California Building Code (CBC), to reduce any potential geological risks. Furthermore, the Geotech Report (LACO, 2020) provides several recommendations pertaining to Site development, including Site grading and preparation, footings, concrete slab-on-grade floors, asphalt pavement, and seismic design parameters. These recommendations are included as Mitigation Measure GEO-1, below, in order to reduce potential seismic risks. Mitigation Measure GEO-1 requires compliance with the design recommendations provided in the Geotech Report (LACO, 2020), and with adherence to the requirements of the latest version of the CBC, the proposed project, would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. With mitigation incorporated, a less than significant impact would occur.

VII.a.iii) As noted in the Geotech Report (LACO, 2020), due to the liquefiable layer observed between 6.25 and 9 feet bgs, there is the potential for liquefaction-induced settlement and bearing capacity failure (two of three potential consequences of liquefaction identified in the Geotech Report) during a major earthquake. Recommendations related to Site grading and preparation and footings were provided in the Geotech Report and included as Mitigation Measure GEO-1, below, in order to reduce the potential for liquefaction-induced settlement and bearing capacity failure. With mitigation incorporated, a less than significant impact would occur.

VII.a.iv) Landslides generally occur on relatively steep slopes and/or on slopes underlain by weak sediments. As noted in the Geotech Report (LACO, 2020), the Site is located at an elevation between 598 and 600 feet amsl and gently slopes to the east. Given the relatively low slopes, both on and adjacent to the Site, no impact would occur.

VII.b) On-site development would require excavation and groundbreaking activities. All development activities, including the proposed CRT Facility, would be subject to the design standards outlined in Section 9703 of the Ukiah City Code, which include environmental protection and Best Management Practices (BMPs) for minimizing erosion resulting from construction, avoiding runoff into sensitive habitat areas, limiting ground disturbance to the minimum necessary, and stabilizing disturbed surfaces as soon as feasible after construction is complete. In compliance with these regulations, the project contractor would be required to implement the BMPs provided on the approved Erosion and Sediment Control Plan (ESCP) prepared for the project, which may include, but are not limited, to straw bales, fiber rolls, and/or silt fencing structures, and a less than significant impact would occur.

VII.c) As previously discussed, based on the exploration program provided in the Geotech Report (LACO, 2020), the project is feasible from a geotechnical standpoint. LACO found a low potential for soil corrosivity, liquefaction-induced lateral spreading, slope instability, lurching, flooding, tsunami inundation, and volcanism, and a low susceptibility to static settlement. However, as noted, the primary geotechnical concerns at the Site are the presence of relatively soft, moderately expansive surface soils and the presence of potentially liquefiable soils. As such, there is the potential for liquefaction, settlement, and soil swelling or shrinkage. Additionally, although the Site is not located within a mapped Alquist-Priolo special study zone, the Site is located within a seismically active region and would likely experience ground shaking during the economic lifespan of the project. Several recommendations were provided in the Geotech Report (LACO,

2020) in order to minimize and reduce the potential for such risks, which have been included under Mitigation Measure GEO-1. With mitigation incorporated, potential geological risks would be minimized and a less than significant impact would occur.

VII.d) Expansive soils generally consist of cohesive fine-grained clay soils and represent a significant structural hazard to buildings founded on them as they have a tendency to undergo volume changes (shrink or swell) with changes in moisture content. As previously discussed, the Site contains relatively soft, moderately expansive surface soils. Laboratory tests provided in the Geotech Report (LACO, 2020) found that the upper five feet of surface soils have a plasticity index (PI) between 11 and 16 with an expansion index (EI) of 60, resulting in a moderate expansive potential. Foundations will be constructed following the recommendations provided in the Geotech Report (LACO, 2020) and included under Mitigation Measure GEO-1, including removing soils in building areas to a minimum depth of 30 inches and replacing them with an engineered fill pad consisting of soils that meet the selected fill criteria. With mitigation incorporated, a less than significant impact would occur.

VII.e) The project will be served by community water and sanitary sewer systems. The Site is located within the service boundaries of the City of Ukiah water and electric distribution, sewer collection, and storm drain systems. The Site has existing connections to the water and electric distribution systems along the southern perimeter of the Site. There are currently no on-site connections to the sewer collection nor storm drain systems; however, a sewer main and a storm drain pipe are located adjacent to the west of the Site in Orchard Avenue. Connections will be established to each during project construction. Since the project would not require the use of septic tanks or alternative wastewater disposal systems, no impact would occur.

VII.f) Based on a query of the University of California Museum of Paleontology (UCMP), the majority of paleontological resources found in Mendocino County were located in proximity to the coast. As such, the probability of a unique paleontological resource or site or unique geologic feature at the Site is low. However, as the Site has not been substantially excavated, there is the possibility that unique paleontological resources or sites or unique geologic features could exist on the Site. Mitigation Measure GEO-2, which includes halting construction until the resource can be evaluated and mitigated for, if needed, has been included to prevent significant impacts to fossils or fossil-bearing deposits in the event they are encountered during project construction. With mitigation incorporated, a less than significant impact would occur.

MITIGATION MEASURES

GEO-1: The project shall comply with the recommendations pertaining to site grading and preparation, footings, concrete slab-on-grade floors, asphalt pavement, and seismic design parameters provided in the *Geotechnical Exploration and GeoHazard Report* (Geotech Report), prepared by LACO Associates and dated June 3, 2020 (see Appendix D). Prior to issuance of building permits, the County of Mendocino Department of Planning and Building Services shall review and approve of the site development plans, which must demonstrate project compliance with the recommendations of the Geotech Report (LACO, 2020), in addition to any seismic requirements of the latest adopted edition of the CBC. In addition, all soil engineering recommendations and structural foundations shall be designed by a licensed Professional Engineer. All on-site geotechnical engineering activities shall be conducted under the supervision of a licensed Geotechnical Engineer or Certified Engineering Geologist.

GEO-2: In the event that fossils or fossil-bearing deposits are discovered during project construction, the contractor shall notify a qualified paleontologist to examine the discovery and excavations within 50 feet of the find shall be temporarily halted or diverted. The area of discovery shall be protected to ensure that fossils are not removed, handled, altered, or damaged until the Site is properly evaluated, and further action is

determined. The paleontologist shall document the discovery as needed, in accordance with Society of Vertebrate Paleontology standards (Society of Vertebrate Paleontology 1995), evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The plan shall be submitted to the County of Mendocino for review and approval prior to implementation.

FINDINGS

The proposed project would have a **Less Than Significant Impact with Mitigation Incorporated** on Geology and Soils.

VIII. GREENHOUSE GAS EMISSIONS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions (GHG), either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Thresholds of Significance: The project would have a significant effect on greenhouse gas emissions if it would generate greenhouse gas emissions (GHG), either directly or indirectly, that may have a significant impact on the environment; or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

DISCUSSION

The Global Warming Solutions Act of 2006, also known as Assembly Bill (AB) 32, is a State law that establishes a comprehensive program to reduce greenhouse gas (GHG) emissions from all sources throughout the State. AB 32 requires the State to reduce its total GHG emissions to 1990 levels by 2020, a reduction of approximately 15 percent below emissions expected under a "business as usual" scenario. Pursuant to the AB 32 Scoping Plan (last reviewed in 2018), the California Air Resources Board (CARB) must adopt regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. The following major GHGs and groups of GHGs being emitted into the atmosphere are included under AB 32: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃). The 2020 GHG emissions statewide limit set by AB 32, equal to the 1990 level, is 431 million metric tonnes of carbon dioxide equivalent (MMTCO_{2e}). In addition, in 2016, Senate Bill (SB) 32 was signed into law to codify the reduction target to reduce GHG emissions to 40 percent below the 1990 levels by 2030 (CARB, 2018).

CARB, in its *California Greenhouse Gas Emissions for 2000 to 2017* (California GHG Emission Inventory), 2019 edition, states that GHG emissions within the State of California have followed a declining trend since 2007. In 2017, statewide GHG emissions were 424 million metric tons of CO₂ equivalent (MMTCO_{2e}), 5 MMTCO_{2e} lower than 2016 levels and lower than the 2020 statewide GHG limit of 431 MMTCO_{2e}. The transportation section remains the largest source of GHG emissions in the State, accounting for 41 percent of the State's GHG emissions in 2017 (CARB, 2019).

As noted above, the Site is located within the North Coast Air Basin (NCAB) and is subject to the requirements of the Mendocino County Air Quality Management District (MCAQMD). The MCAQMD is responsible for monitoring and enforcing federal, state, and local air quality standards in the County of Mendocino. As shown in Table 4, below, the MCAQMD has adopted thresholds of significance (effective June 2, 2010) for use in determining whether GHG emissions from a project in Mendocino County would be considered significant, provided in Table 4, below. The MCAQMD has not adopted construction related thresholds and therefore only operational related significance thresholds are shown below. As the proposed project does not include a stationary source, the proposed project would be evaluated against the annual emissions threshold of 1,100 metric tons of CO_{2e} (MTCO_{2e}). The alternative annual emissions threshold of 4.6 MTCO_{2e} per service population (SP) per year would not be relevant to the project as Mendocino County does not have a qualified GHG reduction plan and the project is not a high-density project whose impacts would be more appropriately quantified by a service population threshold to reflect the per-person emission efficiency.

Table 4: MCAQMD Operational Related GHG Significance Thresholds

Project Type	Maximum Annual Emissions
Projects other than Stationary Sources	1,100 MTCO ₂ e per year OR 4.6 MTCO ₂ e per service population per year
Stationary Sources	10,000 MTCO ₂ e per year

MTCO₂e= Metric Tons of Carbon Dioxide Equivalents
Source: MCAQMD, 2010

The California Emissions Estimator Model (CalEEMod) was utilized to quantify potential criteria pollution and GHG emissions associated with both construction and operation of the proposed project. The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Further, the model identifies mitigation measures to reduce criteria pollutants and GHG emissions along with calculating the benefits achieved from measures chosen by the user (CalEEMod). The results of the CalEEMod analysis in their entirety are included in Appendix C.

Since the proposed project would result in new development on the currently vacant Site, it is anticipated that emissions in the vicinity of the project Site would be anticipated to increase. According to the CalEEMod results for the proposed project and as shown in Table 5, below, construction activities (both unmitigated and mitigated) would result in approximately 43.0161 metric tons of CO₂e (MTCO₂e) over the anticipated 6-month construction period (assuming 5 work days per week), and the project's unmitigated operational emissions of CO₂ equivalent gasses would be approximately 134.5564 MTCO₂e per year, with mitigated operational emissions of approximately 134.1672 MTCO₂e per year. It is anticipated that mobile sources would account for approximately 73.8 percent of the project's anticipated annual operational emissions (both unmitigated and mitigated). Compared to the emission amounts provided in the California GHG Emission Inventory (CARB, 2019), construction and operation of the proposed project would account for approximately 0.000011 and 0.000032 percent of the State's total GHG emissions recorded in 2017 (424 MMTCO₂e), respectively. Compared to the relevant MCAQMD significance threshold for GHG emissions (MCAQMD, 2010), the operational related GHG emissions from the project would account for approximately 12.23 percent for unmitigated emissions and for 12.20 percent mitigated emissions.

Table 5: Construction, Operational, and Mobile Greenhouse Gas Emissions of the Proposed Project

Emission Category	CO ₂ e Emissions (Metric tons/year)	
	Unmitigated	Mitigated
Construction ¹	43.0161	43.0161
Operational	134.5564	134.1672
Area	0.00045	0.00045
Energy	15.4273	15.2983
Mobile	98.9740	98.9740
Stationary	0	0
Waste	18.7934	18.7934
Water	1.3616	1.1010

CO₂e= Carbon Dioxide Equivalents

¹= Analysis assumes a 6-month construction period, beginning on September 1, 2020, and ending on February 18, 2021. Once construction activities are completed, only operational emissions would be anticipated at the Site.

Source: CalEEMod Model Results, June 17, 2020, Appendix C.

As previously mentioned, while no on-site renewable energy is proposed, the Site is located within the service boundaries of the City of Ukiah Electric Utility, which, according to the 2018 Power Content Label, receives approximately 29 percent of its power from eligible renewable sources, with an additional 15 percent of the power coming from large hydroelectric sources. Although the State of California does not consider power from large hydroelectric dams to be renewable, power from large hydroelectric dams helps the City of Ukiah to decrease its reliance on standard electrical services, which are typically generated from fossil fuels, such as coal and natural gas.

VIII.a) The project would have a less than significant impact on greenhouse gas (GHG) emissions as neither construction nor operation of the project would generate significant amounts of GHGs. As noted above, construction activities (both unmitigated and mitigated) would result in approximately 43.0161 MTCO₂e, and the project's unmitigated operational emissions of CO₂e would be approximately 134.5564 MTCO₂e per year, with mitigated operational emissions of approximately 134.1672 MTCO₂e per year, which would account for significantly less than one percent of the State's total GHG emissions recorded in 2017. In addition, as discussed under Section III, Air Quality, above, the proposed project would increase emissions within the vicinity of the Site. However, as previously discussed, compliance with MCAQMD standards and regulations, including obtaining all necessary permits for equipment through the MCAQMD, and California Code of Regulations, Title 13, Section 2485: *Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling* (adopted 2005), which limits idling of both on-road and off-road diesel-powered equipment and is enforced by the California Air Resources Board (CARB), would limit the potential for GHG emissions during construction. Compliance would require that the contractor keep all construction equipment in good working order and limit idling of vehicles and equipment during construction. Therefore, a less than significant impact would occur.

VIII.b) The proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Action Item RM-50.2 in Chapter 4 of the Mendocino County General Plan (2009) requires the County to "create a greenhouse gas reduction plan for the unincorporated areas of the county that sets specific reduction strategies and targets to meet." Although the County has not yet prepared and adopted this plan, a significant amount of GHG emissions is not anticipated under the project, as described above. In addition, the proposed project would not conflict with local, MCAQMD, State, or federal regulations pertaining to GHG emissions. A less than significant impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less Than Significant Impact** on Greenhouse Gas Emissions.

IX. HAZARDS AND HAZARDOUS MATERIALS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☒	☐
f) Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Thresholds of Significance: The project would have a significant effect on hazards and hazardous materials if it were to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school; be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment; result in a safety hazard or excessive noise for people residing or working in the project area if located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport; or impair the implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan; or expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

DISCUSSION

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or has characteristics defined as hazardous by a federal, state, or local agency. Chemical and physical properties such as toxicity, ignitability, corrosiveness, and reactivity cause a substance to be considered hazardous. These properties are defined in the California Code of Regulations, Title 22, Article 3: Characteristics of Hazardous Waste (effective July 1, 1991). A "hazardous waste" includes any hazardous material that is discarded, abandoned, or will be recycled. The criteria that render a material hazardous also

cause a waste to be classified as hazardous, per California Health and Safety Code, Chapter 6.5, Section 25117 (effective January 1, 1997).

The Site does not include any known hazardous waste sites, as mapped by the State Water Resources Quality Control Board (SWRQCB) or the California Department of Toxic Substances Control (DTSC). The Site or immediate vicinity does not include any known hazardous waste sites as mapped by the California Department of Toxic Substances Control (DTSC). As provided on the SWRQCB's GeoTracker, 6 listed sites are located within one-half mile of the Site, as provided in Table 6, below.

Table 6: GeoTracker-Listed Hazardous Materials Sites within Close Proximity (0.5 miles) to Site

ID	Name & Case No.	Case Type	Location	Distance & Direction to Site	Cleanup Status
1	Express Mart [T10000012680; RB Case #: 1TMC640]	LUST Cleanup Site	390 East Gobbi Street	603 feet SW of Site	Open – Assessment & Interim Remedial Action
2	Fast and Easy Mart [T0604516589; RB Case #: 1TMC532]	LUST Cleanup Site	390 East Gobbi Street	603 feet SW of Site	Completed – Case Closed
3	Coca-Cola of Ukiah [T0604500136; RB Case #: 1TMC155]	LUST Cleanup Site	650 Babcock Lane	1,585 feet SW of Site	Completed – Case Closed
4	Chevron #9-6361 [T0604500008; RB Case #: 1TMC008]	LUST Cleanup Site	605 East Perkins Street	1,635 feet N of Site	Completed – Case Closed
5	Dibble Investments/ Chevron [T0604500053; RB Case #: 1TMC062]	LUST Cleanup Site	187 East Gobbi Street	1,765 feet SW of Site	Completed – Case Closed
6	BP, East Perkins [T0604500180; RB Case #: 1TMC207]	LUST Cleanup Site	596 East Perkins Street	1,790 feet N of Site	Completed – Case Closed

LUST = Leaking Underground Storage Tank

Source: SWRCB, 2020

The project would require the transport, use, storage, and disposal of small quantities of hazardous materials common for equipment and property maintenance and operation, such as gasoline, diesel fuel, hydraulic fluids, oils, lubricants, and cleaning solvents and supplies. All hazardous materials would be utilized and disposed of in accordance with all applicable federal and state regulations.

IX.a-b) It is anticipated that the proposed project would require the routine transport, use, or disposal of hazardous materials common to medical facilities, such as cleaning supplies, as well as the construction process, such as gasoline, diesel fuel, hydraulic fluids, oils, lubricants, and cleaning solvents. However, the types and quantities of hazardous materials to be used are not expected to pose a significant risk to the public and/or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Any hazardous materials transported, used, or disposed of on-site would be managed in accordance with federal, state, and local regulations. A less than significant impact would occur.

IX.c) River Oak Charter School is located 475 feet (0.09 miles) northwest of the Site and Oak Manor Elementary School is located approximately 1,115 feet (0.21 miles) east of the Site. As noted above, it is

anticipated that the proposed project would require the routine transport, use, or disposal of hazardous materials common to medical facilities, such as cleaning supplies, as well as the construction process, such as gasoline, diesel fuel, hydraulic fluids, oils, lubricants, and cleaning solvents. However, the types and quantities of hazardous materials to be used are not expected to pose a significant risk to the public and/or environment, including existing schools. A less than significant impact would occur.

IX.d) As shown in Table 6, above, six (6) listed hazardous materials sites listed on the SWRCB's GeoTracker database are located within one-half mile of the project Site. No hazardous materials sites within the vicinity of the Site are included on DTSC's EnviroStor database. Of the 6 total sites, all are LUST sites, and all but one (1) case have been completed and closed. The Site is not included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5. The one (1) remaining open LUST site is not located immediately adjacent to the Site (located 603 feet southwest of the Site) and is in the cleanup process under the authority and oversight of the NCRWQCB. No impact would occur.

IX.e) The Site is located approximately 4,472 feet (0.85 miles) northeast of the Ukiah Municipal Airport. Per the Mendocino County Airport Comprehensive Land Use Plan (ACLUP), dated June 6, 1996, the Site is located within Zone B2 of the Ukiah Municipal Airport, the "Extended Approach/Departure Zone", which is associated with moderate risk (aircraft commonly below 800 feet above ground level) and significant noise, is limited to residential parcels of 2 acres or larger, requires less than 60 people per acre, and recommends 30 percent open land. Prohibited uses within the Zone B2 include schools, day care center, libraries, hospitals, and nursing homes, among other uses. Normally Acceptable Uses in Zone B2 include single-story offices, single-family homes on an existing lot, and low-intensity retail, office, etc., among other uses. In addition, per the Public Review Draft of the Ukiah Municipal Airport Land Use Compatibility Plan (UKIALUCP) dated January 2020, the Site is located within Compatibility Zone 6, the "Traffic Pattern Zone." Pursuant to Table 3B *Compatibility Zone Delineation* of the Public Draft UKIALUCP (January 2020), Compatibility Zone 6 is associated with low risk and a low noise impact, has a maximum sitewide average intensity of 300 people per acre and a maximum single-acre intensity of 1,200 people per acre, and recommends 15 percent open land for the entire zone. Aircraft in Compatibility Zone 5 are typically 1,000 to 1,500 feet above the runway, with airspace concern generally with objects heights at heights greater than 100 feet above runway elevation.

The ACLUP (1996) does not provide guidance on the compatibility of community care facilities in the B2 zone; however, the proposed use would be consistent with Zone B2 based on consistency with Table 2A *Compatibility Criteria* and similar uses discussed in the ACLUP. The proposed project includes the construction and operation of a 3,090 square-foot, one-story, CRT Facility with space for up to 10 beds for clients, and would be operated by 10 full-time staff and two (2) managers working 8-to-10 hour shifts to provide coverage 24 hours per day, 7 days per week. Even at full client and staffing capacity, the project would be well below maximum density of 60 people per acre allowed in Zone B2 pursuant to Table 2A of the ACLUP (1996). In addition, the project supports the Policy 2.1.6 (Infill), which allows new development of a similar intensity to that of surrounding, already existing uses. The Site is located in an urban, built-up environment and is surrounded by public service, commercial, and residential uses of a similar scale to the proposed project. The proposed project would be consistent with the uses normally acceptable in Zone B2 and would comply with the development and density requirements. According to Table 3A *Basic Compatibility Criteria* of the Public Draft UKIALUCP (January 2020), Congregate Care facilities, which includes assisted living/residential care facilities are Normally Compatible uses in Compatibility Zone 6. Therefore, the proposed project would be compatible with both the ACLUP (1996) and the Public Review Draft of the UKIALUCP (January 2020). A less than significant impact would occur.

VIII.f) The County of Mendocino has adopted numerous plans related to hazard management and mitigation, and emergency response, including but not limited to: Community Wildfire Protection Plan, Hazardous Waste Management Plan, Operational Area Emergency Operations Plan, and Multi-Jurisdictional Hazard Mitigation Plan, in which the City of Ukiah (City) is a participant. In addition, the Safety Element of the City of Ukiah General Plan aims at protecting people and property from natural hazards and other locally relevant safety issues.

The County of Mendocino adopted the *Mendocino County Operational Area Emergency Operations Plan* (County EOP) on September 13, 2016, under Resolution Number 16-119. As noted on the Plans and Publications webpage of the Mendocino County Office of Emergency Services (MCOES), the County EOP, which complies with local ordinances, state law, and state and federal emergency planning guidance, serves as the primary guide for coordinating and responding to all emergencies and disasters within the County. The purpose of the County EOP is to “facilitate multi-agency and multi-jurisdictional coordination during emergency operations, particularly between Mendocino County, local and tribal governments, special districts as well as state and Federal agencies” (MCOES – Plans and Publications, 2019). The proposed development would be compatible with existing surrounding development and would be designed to current standards with suitable road widths and turn radii to accommodate emergency vehicles. A less than significant impact would occur.

VIII.g) The proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. The Site is located within a “Moderate” Fuel Rank fire hazard severity zone per Figure C-13 of the 2014 Mendocino County Multi-Hazard Mitigation Plan, in an urban built-up environment within the City of Ukiah city limits. Additionally, the Site is located within the Local Responsibility Area (LRA) (Mendocino County Maps – Ukiah Valley – Fire Responsibility Areas, 2019) and, per the City of Ukiah website (2020), is served by the Ukiah Valley Fire Authority, a cooperation between the City of Ukiah Fire Department and the Ukiah Valley Fire District. The nearest fire station to the Site is the Ukiah Valley Fire District located approximately 1.43 miles southwest of the Site. The CRT Facility would be constructed in accordance with state and local standards, including safety and emergency access requirements. By meeting current standards and design requirements and with sufficient fire protection services available to serve the Site, a less than significant impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less Than Significant Impact** on Hazards or Hazardous Materials.

X. HYDROLOGY AND WATER QUALITY. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
i) Result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
iv) Impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Thresholds of Significance: The project would have a significant effect on hydrology and water quality if it would violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality; substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin; substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner, which would result in substantial erosion or siltation on- or off-site, substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or impede or redirect flows; in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

DISCUSSION

The National Pollutant Discharge Elimination System (NPDES) permit program of the U.S. Environmental Protection Agency (EPA) addresses water pollution by regulating point sources that discharge pollutants to waters of the United States. Created in 1972 by the Clean Water Act, the NPDES permit program grants authority to state governments to perform many permitting, administrative, and enforcement aspects of the program. Within California, the NPDES permit program is administered by the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards.

Discharges of storm water and non-storm water from the Municipal Separate Storm Sewer System (MS4) within the jurisdictional boundary of the City of Ukiah are subject to the waste discharge requirements NPDES Permit No. CA0025054, pursuant to Order No. R1-2015-0030 (Order) issued by the North Coast Regional Water Quality Control Board (NCRWQCB), adopted October 8, 2015. The City of Ukiah is a Co-Permittee with other municipalities located within the Russian River Watershed, including the Cities of Cloverdale, Cotati, Healdsburg, Rohnert Park, Santa Rosa, Sebastopol; the County of Sonoma; the Sonoma County Water Agency; and the Town of Windsor. The Co-Permittees are required to regulate the discharges of storm water and non-storm water from the MS4s within their jurisdictions in accordance with the Order. The Order includes requirements pertaining to the development of a Public Information and Participation Program (PIPP); Industrial/Commercial Facilities Program; Industrial and Construction Site Regulation program; Planning and Land Development program, which includes the implementation and enforcement of a Low Impact Development (LID) Manual; Development Construction Program; Public Agency Activities program; Illicit Connection and Illicit Discharges Elimination Program; and Special Projects (NCRWQCB, 2015). The City of Ukiah has adopted the Low Impact Development (LID) Technical Design Manual prepared by the City of Santa Rosa and County of Sonoma (LID Manual), which provides technical design guidelines for projects that require the implementation of permanent storm water Best Management Practices (BMPs) (City of Santa Rosa, 2011).

All development activities proposed on-site would be subject to the design standards outlined in Section 9703 of the Ukiah City Code, which include environmental protection and BMPs designed to prevent, at a minimum, erosion resulting from construction activities and minimize the discharge of sediment and other pollutants associated with construction sites. In compliance with these regulations, the project contractor would be required to implement the BMPs provided on the approved Erosion and Sediment Control Plan (ESCP) prepared for the project, which may include, but are not limited to straw bales, fiber rolls, and/or silt fencing structures. These BMPs would aid in limiting erosion and unauthorized discharges by preventing runoff from reaching sensitive habitat areas, limiting ground disturbance to the minimum necessary, and stabilizing disturbed surfaces as soon as feasible after construction is complete.

The 0.92-acre Site is situated between 598 and 600 feet above mean sea level (amsl) and is undeveloped with a vegetative cover primarily consisting of grasses and weedy species and a limited number of landscaping trees planted to the north and southeast of the Site. The Site is located in Zone "X" – area of minimal flood hazard – as shown on Federal Emergency Management Agency's (FEMA) National Flood Hazard Layer FIRMette map number 06045C1514F, effective June 2, 2011. Drainage across the Site appears to flow to the southeast. The Site is located within the Russian River Hydrologic Unit, Upper Russian River Hydrologic Area, Ukiah Hydrologic Subarea and the nearest body of water is Gibson Creek, which is located approximately 1,300 feet east of the Site. Regional drainage is controlled by the Russian River, located approximately 0.85 miles east of the Site. The Russian River is on the State Water Resources Control Board's (SWRCB) 303(d) list of impaired water bodies for water temperature and sedimentation/siltation. The Russian River provides habitat for Chinook salmon and steelhead trout, which are listed as threatened species under the federal Endangered Species Act (City of Ukiah, 2019).

The project proposes the construction and operation of a 3,462 square-foot, one-story, CRT Facility. Associated improvements include an outdoor deck, a parking area, LID features for stormwater capture and treatment, landscaping, a galvanized steel fence surrounding the proposed CRT Facility with gated pedestrian entrances, and driveways. Landscaping, including medium and large trees and shrubs along the east and wide sides of the Site, and bioretention facilities located south of the structure, would be placed outside the proposed fence. Additional landscaping would be placed within the fence, including a garden area and various plantings surrounding the structure. All exterior lighting would be motion-censored,

downcast, and shielded in compliance with regulations set by the International Dark-Sky Association. Drainage improvements proposed to be developed as part of the project include post-construction BMPs, which include bioretention facilities, sized to capture and treat runoff from the proposed impervious surfaces produced by the 24 hour 85th percentile rain event to accommodate flows from the proposed impervious surfaces, and natural stormwater filtration in landscaped areas throughout the Site to encourage natural stormwater infiltration.. Flows from the post-construction BMPs will be directed towards an existing drainage inlet located near the southeast corner of the Site. The project additionally includes the construction of pedestrian facilities, including curb, gutter, and sidewalk along the west side of the Site. Stormwater from these proposed surfaces and off-site flows would be directed to the storm drain collection system.

X.a) The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. As discussed above, as the Site is located within the City of Ukiah jurisdictional boundaries, the proposed development is subject to the Planning and Land Development program of NPDES Order No. R1-2015-0030 (Order), which includes compliance with the Low Impact Development (LID) Manual prepared by the City of Santa Rosa and the County of Sonoma, dated August 2011. Construction activities would be subject to the design standards outlined in Section 9703 of the Ukiah City Code, which include environmental protection and Best Management Practices (BMPs) designed to prevent, at a minimum, erosion resulting from construction activities and minimize the discharge of sediment and other pollutants associated with construction sites. The Geotechnical Exploration and GeoHazard Report (Geotech Report) prepared by LACO Associates (LACO) on June 3, 2020, notes that shallow groundwater levels were encountered between 7 and 13 feet below ground surface (bgs) during on-site exploration, but that groundwater may not be a concern if construction is performed during the dry months of summer or early fall. Should groundwater be encountered during excavation related to concrete foundation installation, construction shall be performed in accordance with Mitigation Measure HYDRO-1, below, in order to reduce potential impacts to groundwater quality.

Additionally, the proposed development would be provided water service by the City of Ukiah and wastewater collection service by the Ukiah Valley Sanitation District (UVSD). These service providers are required to operate in compliance with all water quality standards and waste discharge requirements. Through proper implementation of appropriate BMPs, compliance with the aforementioned regulations, and the incorporation of Mitigation Measure HYDRO-1 to limit the potential for impacts to groundwater during excavation related to the placement of concrete, the proposed project would not violate any water quality standards or waste discharge requirements. With mitigation incorporated, a less than significant impact would occur.

X.b) The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge. As noted above, the proposed development would be provided water service by the City of Ukiah and wastewater collection service by the Ukiah Valley Sanitation District (UVSD). As elaborated upon in Section XXIX (Utilities and Service Systems), below, according to the Draft 2015 Urban Water Management Plan, the City of Ukiah's diverse water supply sources are considered adequate for existing and projected water demands (City of Ukiah, 2016) and as of 2019, the Ukiah Wastewater Treatment Plant (UWWTP) has a current capacity to add nearly 1,603 equivalent sewer service units (ESSUs) before reaching capacity (Ukiah 2040, 2020). As such, these service providers have adequate capacity to serve the proposed development.

Additionally, the Site is located within the boundaries of the Ukiah Valley groundwater basin (Basin), which encompasses a surface area of 37,500 acres (59 square miles) (Larry Walker Associates, Inc., 2019). As the Site is currently vacant and undeveloped, the proposed project would increase the amount of impervious

surfaces on-site. However, the project proposal includes landscaping and post-construction Best Management Practices (BMPs), including bioretention facilities, designed in accordance with the LID Manual (City of Santa Rosa, 2011) to capture and treat runoff from the proposed impervious surfaces produced by the 24 hour 85th percentile rain event, and substantial landscaping that would allow for stormwater infiltration and groundwater recharge throughout the Site. With the incorporation of landscaping and post-construction BMPs, development of the 0.92-acre Site would not significantly impact groundwater recharge of the Basin and a less than significant impact would occur.

X.c.i-ii) The proposed project would not alter the existing drainage pattern of the Site in a manner which would result in substantial erosion or siltation on- or off-site or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, since any potential runoff from the Site would be controlled within the guidance of existing regulations. During construction, erosion would be minimized, and runoff would be managed through the implementation of site- BMPs detailed in the Erosion and Sediment Control Plan (ESCP) prepared for the proposed project, which includes physical barriers such as straw bales, fiber rolls, and/or silt fencing structures, and preventative actions such as scheduling construction for the non-rainy season, if possible, soil compaction, and seeding/mulching disturbed areas. In addition, post-construction runoff and stormwater flows would be managed through stormwater facilities designed in accordance with the LID Manual. A less than significant impact would occur.

X.c.iii) The proposed project would not be anticipated to create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. As previously discussed, drainage improvements proposed to be developed as part of the project include post-construction BMPs, which include bioretention facilities sized to capture and treat runoff from the proposed impervious surfaces produced by the 24 hour 85th percentile rain event , and landscaped areas throughout the Site to encourage natural stormwater infiltration. Flows from the post-construction BMPs will be directed towards an existing drainage inlet located near the southeast corner of the Site. The project additionally includes the construction of pedestrian facilities, including curb, gutter, and sidewalk along the west side of the Site. Stormwater from these proposed surfaces and off-site flows would be directed to the storm drain collection system. These on-site stormwater facilities would be designed in accordance with the LID Manual, which would ensure runoff from the Site would not exceed the capacity of the existing stormwater drainage system. A less than significant impact would occur.

X.c.iv) As discussed above, the Site is located in Zone "X" – area of minimal flood hazard – as shown on Federal Emergency Management Agency's (FEMA) National Flood Hazard Layer FIRMette map number 06045C1514F, effective June 2, 2011. On the basis of the FEMA designation, and as provided in the *Geotechnical Exploration and GeoHazard Report* (Geotech Report), the risk of flooding to occur at the Site is low (LACO, 2020). No impact would occur.

X.d) The Site is located in central Mendocino County within the City of Ukiah, approximately 28 miles east of the Pacific Ocean and is therefore not located in a tsunami zone. As noted above, the Site is located in an area of minimal flood hazard (FEMA, 2011). According to the City of Ukiah Final Initial Study and Negative Declaration for 2019-2027 Housing Element, the Site is not located in a seiche zone (City of Ukiah, 2019). No impact would occur.

X.e) As discussed above, the proposed project would be subject to the design standards outlined in Section 9703 of the Ukiah City Code, which include environmental protection and BMPs designed to prevent, at a minimum, erosion resulting from construction activities and minimize the discharge of sediment and other pollutants associated with construction sites. Additionally, the project would be subject to the authority of

the Planning and Land Development program of NPDES Order No. R1-2015-0030 (Order), which includes compliance with the Low Impact Development (LID) Manual prepared by the City of Santa Rosa and the County of Sonoma, dated August 2011. Compliance with these regulations would facilitate the implementation of water quality control efforts at the local and state levels. In addition, there is currently no sustainable groundwater management plan for the Ukiah Valley groundwater basin; however, a Groundwater Sustainability Plan (GSP) is currently under development by the Ukiah Valley Basin Groundwater Sustainability Agency (UVBGS). The project would include post-construction BMPs to encourage the capture, treatment, and eventual infiltration of runoff from the Site and the Site would be provided water service by the City of Ukiah and wastewater collection service by the Ukiah Valley Sanitation District (UVSD). Both of these service providers operate in compliance with the applicable water quality control plans. The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. A less than significant impact would occur.

MITIGATION MEASURES

HYDRO-1: In the event groundwater is encountered during foundation excavation activities, the contractor shall dewater the excavation area prior to placing concrete. Extracted groundwater shall be discharge in a manner that does not cause erosion at the discharge point. Any dewatering activities on-site shall be conducted under the supervision of a Qualified Stormwater Practitioner (QSP).

FINDINGS

The proposed project would have a **Less Than Significant Impact with Mitigation Incorporated** on Hydrology and Water Quality.

XI. LAND USE AND PLANNING. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

THRESHOLDS OF SIGNIFICANCE: The project would have a significant effect on land use and planning if it would physically divide an established community or cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

DISCUSSION

The County of Mendocino (County) is proposing to construct a Crisis Residential Treatment (CRT) Facility on a 0.92-acre site located at 631 S. Orchard Avenue, Ukiah, and identified by Assessor's Parcel Numbers (APNs) 002-340-50 and 002-340-48 (Site). The Site is owned by the County and is located within the City of Ukiah city limits. The Site has a City of Ukiah land use designation of Commercial (C) (1995) (see Figure 2), a zoning designation of Community Commercial (C-1) per the City of Ukiah Zoning Map (2017) (see Figure 3), and per the 1996 Mendocino County Airport Comprehensive Land Use Plan (ACLUP), the Site is located within Zone B2 of the Ukiah Municipal Airport, the "Extended Approach/Departure Zone" (see Figure 4). It should additionally be noted that in accordance with the January 2020 Public Draft of the Ukiah Municipal Airport Land Use Compatibility Plan (UKIALUCP), the Site is located within Compatibility Zone 6, the "Traffic Pattern Zone" of the Ukiah Municipal Airport (January 2020); however, as of the date of this Initial Study, the UKIALUCP has not been adopted by the Mendocino County Airport Land Use Commission (ALUC). No changes to the Site's current land use or zoning designations are proposed under the project.

The proposed CRT Facility would be licensed and regulated by the Department of Health Care Services in accordance with California Code of Regulations (CCR) Title 22 and would be certified as a Social Rehabilitation Program, licensed as a Social Rehabilitation Facility, as defined by Health and Safety Code 1502(a), and authorized to operate as a Mental Health Rehabilitation Center. The Ukiah City Code (2019) defines a "community care facility" as *"the facilities described in Health and Safety Code 1502(a)."* In accordance with the *Permitted Uses* in the Community Commercial (C-1) Districts (adopted 2018), the proposed 10-bed CRT Facility (Community care facility) would be a permitted use on-site, subject to the approval of a use permit. However, per California Government Code Section 65402(b), as the County proposes to construct a public structure on a County-owned property, the County is under no obligation to conform to City of Ukiah standards with regard to zoning or permitting. California Government Code Section 65402(b) requires that, prior to construction or authorization of construction, a county report the location, purpose, and extent of any proposed public structure to the planning agency having jurisdiction to determine conformity with the adopted general plan. On May 29, 2020, a letter was submitted to the City of Ukiah in accordance with this reporting requirement. No response was received from the City of Ukiah within 40 days of notification of the project. As such, in accordance with California Government Code Section 65402(b), the County has conclusively deemed that the proposed action is in conformity with the adopted general plan.

The Site is located approximately 4,472 feet (0.85 miles) northeast of the Ukiah Municipal Airport. In 1993, the Mendocino County Airport Comprehensive Land Use Plan (ACLUP) was adopted, and later revised in 1996, by the Mendocino County Airport Land Use Commission (ALUC) to provide land use compatibility guidelines

for lands near each of the airports in Mendocino County with the intention to avert potential safety problems and ensure unhindered airport operations. In February 2019, the City of Ukiah, with support from the County of Mendocino and the ALUC initiated a planning effort to prepare an updated compatibility plan for the Ukiah Municipal Airport, entitled the UKIALUCP. A Public Review Draft of the UKIALUCP, dated January 31, 2020, was made available for public review in July 2020. As of the date of this Initial Study, the UKIALUCP has not been adopted by the ALUC. As such, the proposed project's compatibility with the Ukiah Municipal Airport has been determined based on the compatibility criteria established by the 1996 ACLUP and the January 2020 Public Review Draft of the UKIALUCP.

As noted above, per the ACLUP (1996), the Site is located within Zone B2 of the Ukiah Municipal Airport, the "Extended Approach/Departure Zone." Pursuant to Table 2A *Compatibility Criteria* of the ACLUP (1996), Zone B2 is associated with moderate risk (aircraft commonly below 800 feet above ground level) and significant noise, is limited to residential parcels of 2 acres or larger, requires less than 60 people per acre, and recommends 30 percent open land. Prohibited uses within the Zone B2 include schools, day care center, libraries, hospitals, and nursing homes, among other uses. Normally Acceptable Uses in Zone B2 include single-story offices, single-family homes on an existing lot, and low-intensity retail, office, etc., among other uses. The ACLUP (1996) does not provide guidance on the compatibility of community care facilities in the B2 zone; however, the proposed use would be consistent with the B2 zone based on consistency with Table 2A *Compatibility Criteria* and similar uses discussed in the ACLUP. The proposed project includes the construction and operation of a 3,462 square-foot, one-story, CRT Facility with space for up to 10 beds for clients, and would be operated by 10 full-time staff and two (2) managers working 8-to-10 hour shifts to provide coverage 24 hours per day, 7 days per week. Even at full client and staffing capacity, the project would be well below maximum density of 60 people per acre allowed in Zone B2 pursuant to Table 2A of the ACLUP (1996). In addition, the project supports the Policy 2.1.6 (Infill), which allows new development of a similar intensity to that of surrounding, already existing uses. The Site is located in an urban, built-up environment and is surrounded by public service, commercial, and residential uses of a similar scale to the proposed project.

Per the Public Draft UKIALUCP dated January 2020, the Site is located within Compatibility Zone 6, the Traffic Pattern Zone." Pursuant to Table 3B Compatibility Zone Delineation of the Public Draft UKIALUCP (January 2020), Compatibility Zone 6 is associated with low risk and a low noise impact, has a maximum sitewide average intensity of 300 people per acre and a maximum single-acre intensity of 1,200 people per acre, and recommends 15 percent open land for the entire zone. Aircraft in Compatibility Zone 5 are typically 1,000 to 1,500 feet above the runway, with airspace concern generally with objects heights at heights greater than 100 feet above runway elevation. According to Table 3A Basic Compatibility Criteria of the Public Draft UKIALUCP (January 2020), Congregate Care facilities, which includes assisted living/residential care facilities are Normally Compatible uses in Compatibility Zone 6. Therefore, the proposed project would be compatible with the Public Draft UKIALUCP (January 2020).

XI.a) The project is proposed on a currently vacant undeveloped Site located in an urban, built-up environment. No aspect of the proposed project would physically divide the community; therefore, no impact would occur.

XI.b) The proposed project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect as the project is consistent with all applicable land use plans, policies, and regulations, including the City of Ukiah General Plan the Mendocino County Airport Comprehensive Land Use Plan (ACLUP), and the Public Review Draft of the Ukiah Municipal Airport Land Use Compatibility Plan (UKIALUCP). As noted above, pursuant to California Government Code Section 65042(b),

in a letter dated May 29, 2020, the County reported the location, purpose, and extent of the proposed CRT Facility to the City of Ukiah to determine conformity with the adopted City of Ukiah General Plan. No response was received from the City of Ukiah within 40 days of notification of the project. As such, in accordance with California Government Code Section 65402(b), the County has conclusively deemed that the proposed action is in conformity with the adopted general plan. A less than significant impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less than Significant Impact** on Land Use and Planning.

XII. MINERAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

THRESHOLDS OF SIGNIFICANCE: The project would have a significant effect on mineral resources if it would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

DISCUSSION

The proposed project is not located in an area of known rock, aggregate, sand, or other mineral resource deposits of local, regional, or state residents. There are no known mineral resources of significance on the Site that would be made unavailable by the proposed project. Furthermore, the project Site is not utilized for Surface Mining and Reclamation Act (SMARA) activities.

XII.a-b) The proposed project area does not contain mineral resources that are of value locally, to the region, or to residents of the City, County or state. According to the Mineral Land Classification Studies Index of the California Department of Conservation (DOC, 2015), the proposed project is not located in an area with known mineral resources. The proposed project area is not identified as a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, the proposed project would not interfere with materials extraction or otherwise cause a short-term or long-term decrease in the availability of mineral resources. No impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have **No Impact** on Mineral Resources.

XIII. NOISE. Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

THRESHOLDS OF SIGNIFICANCE: The project would have a significant effect on noise if it would result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; or generation of excessive groundborne vibration or groundborne noise levels; or expose people residing or working in the project area to excessive noise levels (for a project located within the vicinity of a private airstrip or an airport or an airport land use plan, or where such as plan has not been adopted, within two miles of a public airport or public use airport).

DISCUSSION

Noise is typically defined as unwanted sound. In any one location, the noise level will vary over time, from the lowest background or ambient noise level to temporary increases caused by traffic or other sources. Acceptable levels of noise vary depending on the land use. Generally speaking, land uses considered noise-sensitive are those in which noise can adversely affect the people performing general activities on the land. For example, a residential land use where people live, sleep, and study is generally considered sensitive to noise because noise can disrupt these activities. Churches, schools, and certain kinds of outdoor recreation are also usually considered noise-sensitive. State and federal standards have been established as guidelines for determining the compatibility of a particular use with its noise environment. The Noise Element of the City of Ukiah General Plan (2004) establishes maximum exterior noise level standards for affected land uses, which are consistent with state guidance and apply to all development projects. Additional regulations relevant to the general project area that may be used to evaluate noise-related impacts of development, depending on the location of proposed development, include the City of Ukiah Noise Ordinance (Division 7, Chapter 1, Article 6) (adopted 1980), the Noise Element of the Mendocino County General Plan (2009), the Mendocino County Airport Comprehensive Land Use Plan (ACLUP) (last updated 1996), and the Public Draft of the Ukiah Municipal Airport Land Use Compatibility Plan (UKIALUCP).

The City of Ukiah Noise Ordinance (1980) establishes maximum exterior noise level standards that apply to specific zoning districts within the City of Ukiah (see Table 7, below).

Table 7. City of Ukiah Noise Ordinance Ambient Base Noise Level

Zoning District	Time Period	Noise Level Standards (dBA)
R1 & R2	10 pm to 7 am	40
R1 & R2	7 pm to 10 pm	45
R1 & R2	7 am to 7 pm	50
R3	10 pm to 7 am	45
R3	7 am to 10 pm	50
Commercial	10 pm to 7 am	60
Commercial	7 am to 10 pm	65
Industrial (M)	Anytime	70

Source: City of Ukiah, 1980

Additional pertinent policies in the City of Ukiah Noise Ordinance (1980) include:

Section 6053 – Machinery, Equipment, Fans, and Air Conditioning: *"It shall be unlawful for any person to operate any machinery, equipment, pump, fan, air conditioning apparatus, or similar mechanical device in any manner so as to create any noise which would cause the noise level at the property line of any property to exceed the ambient base noise level by more than five (5) decibels between seven o'clock (7:00) P.M. and seven o'clock (7:00) A.M. (Ord. 748, Article 1, adopted 1980)."*

Section 6054 – Construction of Buildings and Projects: *"It shall be unlawful for any person within a residential zone, or within a radius of five hundred feet (500') therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures or projects or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist or any other construction type device (between the hours of 7:00 P.M. of one day and 7:00 A.M. of the next day) in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless beforehand a permit therefor has been duly obtained from the Director of Public works. No permit shall be required to perform emergency work as defined in §6046 of this Article. (Ord. 748, Article 1, adopted 1980)."*

The approximately 0.92-acre Site is currently undeveloped, with no existing structures or utilities on-site and is located in an urban built-up environment. The Site is bordered to the west by S. Orchard Avenue and single family residences, to the south by the United States Postal Service, to the east by a family services agency, and to the north by a commercial business. Nearby uses include residences and commercial businesses to the west, churches to the south and northwest, motels to the south and northeast, government buildings, such as the Department of Motor Vehicles, the Ukiah Unified School District, and the U.S. Social Security Administration to the north, and Highway 101 to the east.

The noise environment surrounding the Site is influenced by traffic on Highway 101, Orchard Avenue, and Gobbi Street, local traffic associated with surrounding businesses, facilities, and residences, and occasionally, air traffic associated with the Ukiah Municipal Airport. Noise levels are relatively high during business hours, typically 7:00 am to 7:00 pm, due to the amount and proximity of traffic on Highway 101 and surrounding roads. Sensitive receptors that could be affected by noise from the Site include the single-family residences located 70 feet directly west of the Site, hotels located 100 feet to the northeast and 270 feet south of the Site, and mobile homes located 230 feet due west of the Site.

Construction of the proposed project would generate short-term noise corresponding to the phase of construction and the noise generating equipment used during those phases. Construction activities could involve excavation, grading, drilling, trenching, earth movement, and vehicle travel to and from the Site.

Operation of the proposed project would generate minimal noise and would be generally consistent with that of a single family residence or office building.

XIII.a) The proposed project would result in a temporary increase in noise levels surrounding the Site during construction, but would not be expected to generate operational noise in excess of what is common for the proposed uses and for development in the general vicinity of the Site. The Site is located in an urban built-up environment and surrounded by residential, public service, and commercial uses, as described above. Sensitive receptors that could be affected by noise from the Site include the single-family residences located 70 feet directly west of the Site, hotels located 100 feet to the northeast and 270 feet south of the Site, and mobile homes located 230 feet due west of the Site.

During construction, temporary noise would be anticipated as a result of utilizing standard heavy equipment, which may include, but is not limited to the following: excavator, cement mixer, dump truck, water truck, and backhoe. These noise impacts would be temporary in nature; however, to limit the potential impact of the noise associated with project construction on the nearby sensitive receptors, hours of construction should be limited and noise reducing Best Management Practices (BMPs) should be implemented during the period of project construction, as detailed in Mitigation Measure NOISE-1.

Upon build-out of the Site, operational noise would be associated with use and operation of the CRT Facility, in addition to employees and clients traveling to and leaving from the Site. The 10- bed CRT Facility would be operated by ten (10) full-time staff and two (2) managers working 8-to-10-hour shifts to keep the CRT Facility staffed 24 hours per day, 7 days per week. The staff would be responsible for ensuring clients do not exceed established noise standards. The majority of activities associated with the CRT Facility would include but not be limited to counseling, activity programs, educational groups, etc. These activities would typically occur within the building and would have a minimal impact on the ambient noise of the surrounding properties. In addition, the structure would be constructed to meet the standards of the Uniform Building Code, including the interior noise level requirements, and while the proposed improvements include outdoor space for clients and employees of the CRT Facility, as shown on the Site Plan (see Figure 5), the outdoor deck would be oriented to the north, away from the existing single-family residences, and would be recessed within the building exterior. As such, operational noise is not anticipated to have an impact on nearby uses. The proposed 3,462 square-foot, one-story CRT Facility and associated improvements is similar to and compatible with the residential, public service, and commercial uses that already exist in the area.

With mitigation incorporated, a less than significant impact would occur.

XIII.b) With the exception of minor nearby vibrations created from standard heavy equipment, there are no elements of the proposed project that would create either temporary or permanent ground borne vibrations or noise levels. A less than significant impact would occur.

XIII.c) The Site is located approximately 4,500 feet (0.85 miles) northeast of the Ukiah Municipal Airport. Per the Mendocino County Airport Comprehensive Land Use Plan (ACLUP), the Site is located within Zone B2 of the Ukiah Municipal Airport, the "Extended Approach/Departure Zone", which is associated with moderate risk (aircraft commonly below 800 feet above ground level) and significant noise. In addition, per the Public Review Draft of the UKIALUCP dated January 2020, the Site is located within Compatibility Zone 6 the "Traffic Pattern Zone." Pursuant to Table 3B *Compatibility Zone Delineation* of the Public Draft of the UKIALUCP (January 2020), Compatibility Zone 6 is associated with low risk and a low noise impact. As the majority of activities associated with the CRT Facility would typically occur within the building and the structure would be constructed to meet the standards of the Uniform Building Code, including the interior noise level

requirements, the project would not expose clients and staff to excessive noise levels due to the Ukiah Municipal Airport and a less than significant impact would occur.

MITIGATION MEASURES

NOISE-1: Implementation of the following measures are required during the duration of the project construction period to reduce potential noise impacts on the nearby sensitive receptors:

- Construction shall be limited to between the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, with no construction activities permitted on Saturday, Sunday, or holidays;
- All internal combustion engine-driven equipment shall be equipped with intake and exhaust mufflers that are in good condition and appropriate for the equipment. Air compressors and pneumatic equipment shall be equipped with mufflers and impact tools shall be equipped with shrouds or shields.
- All unnecessary idling of internal combustion engines on-site shall be prohibited.

FINDINGS

The proposed project would have a **Less Than Significant Impact with Mitigation Incorporated** on Noise.

XIV. POPULATION AND HOUSING. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and/or businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

THRESHOLDS OF SIGNIFICANCE: The project would have a significant effect on population and housing if it would induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and/or businesses) or indirectly (e.g., through extension of roads or other infrastructure); or displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

DISCUSSION

Based on the U.S. Census Bureau Quick Facts, Mendocino County had a population of approximately 86,749 persons as of July 1, 2019, a decrease of approximately 1.3 percent since April 1, 2018. There were an estimated 40,926 housing units as of July 1, 2018, with 2.50 persons per household. Based on estimates from the 2018 American Community Survey of the U.S. Census Bureau, Ukiah city, a census-designated place, had a population of 15,946 persons, with 5,923 total occupied housing units and an average household size of 2.59 persons in 2018. Approximately 18.4 percent of the persons living in Mendocino County reside in the City of Ukiah, based on the aforementioned estimates.

The project includes the construction and operation of a 3,462 square-foot, one-story, Crisis Residential Treatment (CRT) Facility. The proposed CRT Facility would serve as a social rehabilitation facility for clients who are experiencing an acute psychiatric episode or crisis, but do not meet the criteria for inpatient psychiatric hospitalization and who might otherwise face voluntary or involuntary commitment, a positive, short-term (up to 30 days) structured program in a home-like environment (non-institutional). The CRT Facility would be equipped with space for up to 10 beds for clients and be operated by ten (10) full-time staff and two (2) managers working 8- to 10-hour shifts to keep the CRT Facility staffed 24 hours per day, 7 days per week.

XIV.a) The proposed project would not induce substantial unplanned population growth in the area as the project entails beds for up to 10 clients for short-term stay and up to a total of 12 employees are anticipated under operation of the project. While some staff members may relocate to the Ukiah area to work at the proposed CRT Facility, a portion of the staff may commute from their current residences within surrounding communities. In addition, the clients who would receive services from the proposed CRT Facility would largely be those who reside in the County and their stay at the CRT Facility would be short-term (less than 30 days). As previously discussed, under Section III (Air Quality), above, for the purposes of this Initial Study, it is assumed that the proposed project would break ground on September 1, 2020, and be constructed over an approximately 6-month period until the entire project is complete February 18, 2021. Because construction of the project would be temporary in nature, it is anticipated that most, if not all, of the construction workers would be local, although some workers may relocate to the area for the duration of the construction period. In addition, the Site is located in an urban built-up environment within the City of Ukiah and while there is currently no development on-site that would warrant utility connections, all utility lines are located in close vicinity to the Site and serve the surrounding built-up parcels. Although there may be a minimal increase in

employees and population in the area as a result of the project, the population would be limited, and no significant infrastructure improvements would be required to serve the project. As such, a less than significant impact would occur.

XIV.b). The proposed project would not displace any residents or housing, as the Site is vacant and no residential units are currently located on-site; therefore, no impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less Than Significant Impact** on Population and Housing.

XV. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☒	☐
d) Parks?	☐	☐	☒	☐
e) Other public facilities?	☐	☐	☒	☐

THRESHOLDS OF SIGNIFICANCE: The project would have a significant effect on public services if it would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for (a) fire protection, (b) police protection, (c) schools, (d) parks, or (e) other public facilities.

DISCUSSION

There are no elements of the proposed project that would impact the ability of the County or other local services providers to provide public services to the Site or local community. The project includes the construction and operation of a 3,462 square-foot, one-story, Crisis Residential Treatment (CRT) Facility with space for up to 10 beds for clients, a staff office/intake room, laundry room, kitchen, dining room, living space, and den. Associated improvements include an outdoor deck, a parking area, Low Impact Development (LID) features for stormwater capture and treatment, landscaping, and a galvanized steel fence surrounding the proposed CRT Facility. The proposed driveways and parking area would be designed to current standards with suitable road widths and turn radii to accommodate emergency vehicles.

While it is expected that most, if not all, of the Site's employees (12 maximum) would already live locally, it is possible that some workers may relocate from another location since the proposed CRT Facility would fill a current gap in the Mendocino County system of care. In addition, the clients who would receive services from the proposed CRT Facility would largely be those who reside in the County and their stay at the CRT Facility would be short-term (less than 30 days). Since a significant population is not expected as a result of the project, significant impacts on public services are also not anticipated.

XV.a) As previously discussed, the Site is located within the Local Responsibility Area (LRA) (Mendocino County Maps – Ukiah Valley – Fire Responsibility Areas, 2019) and is mapped as located within an area with "Moderate" Fuel Rank fire hazard severity zone per Figure C-13 of the 2014 Mendocino County Multi-Hazard Mitigation Plan. Per the City of Ukiah website (2020), the Site is served by the Ukiah Valley Fire Authority (UVFA), a cooperation between the City of Ukiah Fire Department and the Ukiah Valley Fire District. The UVFA was formed in an effort to consolidate overhead for the two organizations while maintaining comprehensive coverage for both the City and surrounding valley. As of April 2015, as detailed on the City of Ukiah website, each agency has retained its own personnel and equipment ownership; a Fire Chief is shared, as are two coordinated fire stations serving the City and the District. The nearest fire station to the Site is the Ukiah Valley

Fire District located approximately 1.43 miles southwest of the Site. The Ukiah Valley Fire Authority station 643 is located 1.96 miles northwest of the Site. In addition, on April 29, 2020, the Fire Marshall of the Ukiah Valley Fire District reviewed the preliminary design and confirmed that the proposed gate widths and turning radii are sufficient for emergency access.

Although the project would develop the currently vacant and undeveloped Site, a significant population increase is not anticipated as a result of the project and the project would be located within the service boundaries of the Ukiah Valley Fire Authority. A less than significant impact would occur.

XV.b) Since the Site is located within the City of Ukiah, the Site and surrounding area is currently and would continue to be served by the Ukiah Police Department (Ukiah PD). The Ukiah PD is located at 300 Seminary Avenue in Ukiah, California, approximately 0.60 miles west of the Site. Although the project would develop the currently vacant and undeveloped Site, a significant population increase is not anticipated as a result of the project and the project would be located within the service boundaries of the Ukiah PD. In addition, it is anticipated that the project would help to decrease the burden on Ukiah PD staff who may currently be partially responsible for attending to adults in the City of Ukiah experiencing an acute psychiatric episode or crisis. As noted above, the proposed CRT Facility would serve as a social rehabilitation facility for clients who are experiencing an acute psychiatric episode or crisis, but do not meet the criteria for inpatient psychiatric hospitalization, a positive, short-term (up to 30 days) structured program in a home-like environment (non-institutional) who might otherwise face voluntary or involuntary commitment. The expected outcome of the program to be instituted at the CRT Facility is that there would be a reduction in psychiatric hospitalizations, emergency room visits, and inappropriate incarcerations by addressing clients before the crisis becomes severe (Kemper, 2018). Therefore, a less than significant impact would occur.

XV.c) The Site is located within the Ukiah Unified School District (UUSD) (Mendocino County Maps - School Districts, 2014), which is comprised of six (6) elementary schools, two (2) middle schools, two (2) high schools, one (1) adult school, and the Ukiah Independent Study Academy. River Oak Charter School, which is not affiliated with the UUSD, is located approximately 475 feet (0.09 miles) northwest of the Site and Oak Manor Elementary School, which is affiliated with the UUSD, is located approximately 1,115 feet (0.21 miles) east of the Site. The proposed project does not involve the development of any residential units; however, since the proposed CRT Facility would fill a current gap in the Mendocino County system of care, it is anticipated that some staff new to the Mendocino County system of care would be necessary to serve the new CRT Facility. However, as discussed under Section XIV (Population and Housing), above, while some of the new staff members may relocate to Ukiah to work at the new CRT Facility, some staff may commute from their current residences within surrounding communities. In addition, the clients who would receive services from the proposed CRT Facility would largely be those who reside in the County and their stay at the CRT Facility would be short-term (less than 30 days). As a result, the proposed project would not be anticipated to result in substantial population growth or a significant increase in the student population. Therefore, it is anticipated that any new students as a result of the proposed project could be adequately accommodated by the existing schools within the UUSD and a less than significant impact would occur.

XV.d) As detailed in Section XVI (Recreation), below, 12 parks and recreational facilities are located within 2 miles of the Site, including Oak Manor Park, which is located approximately 0.23 miles east of the Site, and Orchard Park, located approximately 0.3 miles south of the Site. Although the amount of development would increase at the currently undeveloped Site, no residential units are proposed nor is a significant population increase anticipated as a result of the project. As a result, the use of existing park and recreational facilities would not substantially increase as a result of the project and there would not be a need for a new or physically-altered park facility. A less than significant would occur.

XV.e) There are no elements of the proposed project that would impact other public facilities, such regional hospitals. The project involves the construction of a new Crisis Residential Treatment (CRT) Facility that would serve clients who are experiencing an acute psychiatric episode or crisis, but do not meet the criteria for inpatient psychiatric hospitalization and who might otherwise face voluntary or involuntary commitment, a positive, short-term (up to 30 days) structured program in a home-like environment (non-institutional). As the County of Mendocino currently lacks a CRT Facility in the County of Mendocino, individuals experiencing an acute psychiatric episode or crisis are oftentimes placed in out-of-county psychiatric facilities, incarcerated, and/or end up in emergency rooms. As such, this project would lead to a decrease in the strain on other public facilities, such as regional hospitals, and a less than significant impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less than Significant Impact** on Public Services.

XVI. RECREATION. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

THRESHOLDS OF SIGNIFICANCE: The project would have a significant effect on recreation if it would increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, or include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

DISCUSSION

The Site is located within the vicinity of the following neighborhood parks and recreational facilities:

- Oak Manor Park, located approximately 0.23 miles east of the Site;
- Orchard Park, located approximately 0.3 miles south of the Site;
- McGarvey Park, located approximately 0.68 miles northwest of the Site;
- Riverside Park, located approximately 0.70 miles east of the Site;
- Ukiah Sports Complex, located approximately 0.87 miles northeast of the Site;
- Observatory Park, located approximately 0.89 miles southwest of the Site;
- Pomolita Field, located approximately 1.11 miles northwest of the Site;
- Todd Grove Park, located approximately 1.13 miles northwest of the Site;
- Anton Stadium, located approximately 1.21 miles northwest of the Site;
- Vinewood Park, located approximately 1.24 miles northwest of the Site;
- Ukiah Valley Golf Course, located approximately 1.31 miles northwest of the Site;
- Alex Rorabaugh Center, located approximately 1.57 miles southwest of the Site; and
- Low Gap Park and Low Gap Dog Park, located approximately 1.73 miles northwest of the Site.

XVI.a-b) No residential units would be constructed, nor is the population expected to substantially increase, as a result of the proposed project. While some staff members may relocate to the Ukiah area to work at the proposed Crisis Residential Treatment (CRT) Facility, some staff may commute from their current residences within surrounding communities. In addition, the clients who would receive services from the proposed CRT Facility would largely be those who reside in the County and their stay at the CRT Facility would be short-term (less than 30 days). As a result, a substantial population increase is not anticipated and the use of existing park and recreational facilities would not be expected to substantially increase as a result of the project. Therefore, there would not be a need for a new or physically-altered park or recreational facility and a less than significant impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less than Significant Impact** on Recreation.

XVII. TRANSPORTATION. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

THRESHOLDS OF SIGNIFICANCE: The project would have a significant effect on transportation if it would conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities; conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b); substantially increase hazards due to a geometric design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or result in inadequate emergency access.

DISCUSSION

On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law, initiating an update to the CEQA Guidelines to change how lead agencies evaluate transportation impacts under CEQA, with the goal to better measure the actual transportation-related environmental impacts of a given project. Traditionally, transportation impacts had been evaluated by using Level of Service (LOS) analysis. Starting July 1, 2020, lead agencies are required to analyze the transportation impacts of new projects using vehicle miles traveled (VMT), instead of LOS. According to the *SB 743 Frequently Asked Questions* provided by the Governor's Office of Planning and Research (OPR), VMT measures how much actual auto travel (additional miles driven) a proposed project would create on California roads. If the project adds excessive car travel onto the roads, the project may cause a significant transportation impact. VMT analysis is intended to promote the state's goals of reducing greenhouse gas emissions and traffic-related air pollution, promoting the development of a multimodal transportation system, and providing clean, efficient access to destinations (OPR, 2020). On May 20, 2020, Fehr & Peers, on behalf of the Mendocino Council of Governments (MCOG), prepared a *Senate Bill 743 Vehicle Miles Traveled Regional Baseline Study* (SB 743 Baseline Study) to provide an overview of SB 743, summarize VMT data available for Mendocino County, discuss alternatives for and recommend VMT measurement methods and thresholds for lead agencies in Mendocino County, and recommend transportation demand management (TDM) strategies for reducing VMT on projects in Mendocino County.

The Site is bordered to the west by S. Orchard Avenue, a two-lane minor arterial road managed by the City of Ukiah Public Works, and located a short distance from Gobbi Street, a two-lane minor arterial road managed by the City of Ukiah Public Works, to the south, and Highway 101, a four-lane highway managed by Caltrans, to the east. Currently, the Site has no defined entrance and is accessed primarily on the north end via a paved entrance to S. Orchard Avenue that serves adjacent parcels. Numerous Mendocino Transit Authority (MTA) bus stops are located in close proximity to the Site, including at distances of approximately 145 feet south, 260 feet north, and 1,100 feet north of the Site. In addition to sidewalks along the frontage of the majority of properties in the vicinity of the Site, pedestrian improvements include a trail and pedestrian bridge over Highway 101, located approximately 815 feet northeast of the Site.

The proposed project includes construction of a new, defined entrance to S. Orchard Avenue on the south end of the Site to accommodate the CRT Facility entrance. No modifications to the existing driveway on the north end of the Site, which is used to access properties east of the Site, are proposed as part of the project. The project will additionally include sidewalk improvements in the City of Ukiah right-of-way, connecting the Site development with adjacent uses. A total of 10 standard parking spaces, and 1 accessible parking space would be provided on-site to serve the CRT Facility.

Anticipated trip generation associated with the proposed project was modeled using the California Emissions Estimator Model (CalEEMod). As described in Section II (Air Quality), above, CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. Based on the CalEEMod analysis, included in Appendix C, the project is anticipated to generate an average of 125 trips per weekday, 31 trips on Saturdays, and less than 6 trips on Sundays, for an annual VMT of 185,043 and an average daily VMT of 507 miles. However, it should be noted that for the purposes of the CalEEMod analysis, the CRT Facility was designated as a medical office, which would be anticipated to generate a greater number of daily trips than a residential treatment facility, such as the proposed CRT Facility, as patients would generally arrive to and leave from a medical office in the same day. In contrast, clients at the proposed CRT Facility would stay, and generally not be allowed to leave, for up to 30 days at a time. As such, the average daily trip rate and annual VMT estimated using CalEEMod most likely overestimates the anticipated trip generation of the proposed project.

XVII.a) The proposed project would not conflict with a plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths. It is expected that construction of the project will result in a slight increase in traffic to and from the Site, as construction workers arrive and leave the Site at the beginning and end of the day, in addition to minor interruption of traffic on adjacent streets when heavy equipment necessary for project construction is brought to and removed from the Site. However, once construction is complete, the construction workers and equipment would no longer be required at the Site. Upon build-out of the Site, staff (12 maximum) and clients (up to 10 persons per night maximum) would travel to and leave the Site at the end of their shifts or stay. The temporary traffic increases during construction and vehicle and pedestrian increases during operation of the project are not anticipated to significantly impact the capacity of the street system or the overall effectiveness of the circulation system. Additionally, the project is not anticipated to substantially impact alternative transportation facilities, such as transit, bicycle, or pedestrian facilities, as the Site is located adjacent to Orchard Avenue, a two-lane minor arterial road managed by the City of Ukiah Public Works, along which a number of Mendocino Transit Authority (MTA) bus stops are located, and in close vicinity to Gobbi Street, Highway 101, and a pedestrian highway overcrossing. As the project proposes to construct sidewalks along the project's currently undeveloped frontage, the project would provide additional pedestrian connectivity in the area. A less than significant impact would occur.

XVII.b) CEQA Guidelines Section 15064.3, subdivision (b) indicates that a land use project would have a significant impact if the project results in vehicle miles traveled (VMT) exceeding an applicable threshold of significance, but that projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant impact. CEQA Guidelines Section 15064.3 further notes that if existing models or methods are not available to estimate a project's expected VMTs, a lead agency may analyze the project's expected VMT qualitatively. As of the date of this Initial Study, the County of Mendocino and City of Ukiah have not established thresholds of

significance for VMT consistent with SB 743 and CEQA Guidelines Section 15064.3, subdivision (b). Although the County of Mendocino and the City of Ukiah have not established thresholds of significance for VMT, the SB 743 Baseline Study (MCOG, 2020) recommends that lead agencies in Mendocino County implement screening criteria to simplify analysis for smaller projects.

Since the Site is currently undeveloped, any development on-site will increase VMT. Under the proposed project, VMT will be attributed to employees and clients traveling to and from the Site, with the majority of daily trips attributed to employees, as clients would stay at the proposed CRT Facility, and generally not be allowed to leave, for up to 30 days at a time. Using the recommending screening criteria adapted from the OPR *Technical Advisory* for the SB 743 Baseline Study (MCOG, 2020), the project may be presumed to cause a less-than-significant VMT impact as the project is anticipated to generate less than 640 VMT per day, as described above, and is consistent with the City of Ukiah General Plan and the 2017 Mendocino County Regional Transportation Plan. In addition, the Site is located in an urban built-up environment in close proximity to major roadways of the City of Ukiah and the County of Mendocino. The Site is located adjacent to Orchard Avenue and a short distance from Gobbi Street, Highway 101, numerous Mendocino Transit Authority (MTA) bus stops, and a pedestrian highway overcrossing. Consistent with CEQA Guidelines Section 15064.3, described above, as the Site is located within one-half mile of numerous transit stops and principal transit corridors of the surrounding community, the project should be presumed to cause a less than significant impact. Based on the analysis presented above, a less than significant impact would occur.

XVII.c) The proposed project is not be anticipated to substantially increase hazards due to design features or incompatible uses. As discussed above, the Site currently has no defined entrance and is accessed primarily on the north end via a paved entrance to S. Orchard Avenue that serves adjacent parcels. The proposed project includes construction of a new, defined entrance to S. Orchard Avenue on the south end of the Site to accommodate the CRT Facility entrance. No modifications to the existing driveway on the north end of the Site, which is used to access properties east of the Site, are proposed as part of the project. The project will additionally include sidewalk improvements in the City of Ukiah right-of-way, connecting the Site development with adjacent uses. As demonstrated by the proposed design improvements shown on the attached Site Plan (see Figure 5), the Site has been designed to provide ample access, driveway width, and turning radii. A less than significant impact would occur.

XVII.d) The proposed project will not result in inadequate emergency access, as the project has been designed to meet pertinent design criteria to provide adequate emergency access. The attached project Site Plan (see Figure 5) proposes a general site layout with ample space surrounding all proposed development to provide adequate emergency access. In addition, on April 29, 2020, the Fire Marshall of the Ukiah Valley Fire District reviewed the preliminary design and confirmed that the proposed gate widths and turning radii are sufficient for emergency access. A less than significant impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less Than Significant Impact** on Transportation.

XVIII. TRIBAL CULTURAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	☐	☐	☒	☐
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code §5020.1(k)?	☐	☐	☒	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code §5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code §5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

Thresholds of Significance: The project would have a significant effect on Tribal Cultural Resources if it would cause a substantial adverse change in the significance of a cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Places or in a local register of historical resources as defined in Public Resources Code §5020.1(k), or is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code §5024.1.

DISCUSSION

According to Chapter 3 (Development Element) of the Mendocino County General Plan (2009), ten (10) Native American tribes historically had territory in what is now Mendocino County. Native American tribes known to inhabit Mendocino County concentrated mainly along the coast and along major rivers and streams, while mountainous areas and redwood groves were occupied seasonally by some tribes. The first permanent non-native settlers came to Mendocino County in the middle of the 16th century, exploring and establishing small outposts. As European-American settlement expanded in Mendocino County, most of the tribes known to inhabit the land were restricted to reservations and rancherias. During the 19th century, other tribes from the interior of California were forced to settle on the Round Valley Reservation in the northeastern portion of Mendocino County. The entire southern third of Mendocino County was the home of groups of Central Pomo. To the north of the Central Pomo groups were the Northern Pomo, who controlled a strip of land extending from the coast to Clear Lake. The Coast Yuki claimed a portion of the coast from Fort Bragg north to an area slightly north of Rockport. They were linguistically related to a small group, called the Huchnom, living along the South Eel River north of Potter Valley. Both of these smaller groups were related to the Yuki, who were centered in Round Valley. At the far northern end of the county, several groups extended south from Humboldt County. The territory of the Cahto was bounded by Branscomb, Laytonville, and

Cummings. The North Fork Wailaki was almost entirely in Mendocino County, along the North Fork of the Eel River. Other groups in this area included the Shelter Cove Sinkyone, the Eel River, and the Pitch Wailaki. The City of Ukiah (City) is situated in a valley of the Russian River between the Russian River and western hills and is within the territory of the Northern Pomo. The Pomo often established permanent villages in areas with access to staple foods, often times along eco-tones (transitions between varying environments), with access to good water, and generally flat land. Areas within the Ukiah Valley that are most typically culturally sensitive include those adjacent to streams, springs, and mid-slope benches above watercourses because Native Americans and settlers favored easy access to potable water (ESA, 2013).

On June 2, 2020, in compliance with Assembly Bill (AB) 52, LACO, on behalf of the County of Mendocino (County), sent a consultation letter to each of the five (5) Native American Tribes provided in the NAHC response letter, including the Coyote Valley Band of Pomo Indians, Guidiville Indian Rancheria, Hopland Band of Pomo Indians, Pinoleville Pomo Nation, and Redwood Valley or Little River Band of Pomo Indians. As of the date of this Initial Study, no requests for consultation have been received from any of the five (5) Native American Tribes that were sent formal notification of the project pursuant to AB 52, and no responses or other communications have been received from the Tribal community, in general, regarding the project. As no requests for consultation were received within the 30 day deadline specified by Public Resources Code Section 21082.3 (d), the County, as Lead Agency, has deemed the Tribal consultation process complete. Copies of the response letter from the NAHC and the letters sent to the Tribal representatives are included in Appendix B.

a.i-ii) As discussed in Section V (Cultural Resources), above, no historical resources are identified at or near the Site, per Figure V.3-DD of the Ukiah General Plan (1995) and the City Historic and Architectural Inventory (1999), and as of the date of this Initial Study, no response has been received from the Tribal consultation effort and there are no known Tribal cultural resources in the project area. A less than significant impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less Than Significant Impact** on Tribal Cultural Resources.

XVIX. UTILITIES AND SERVICE SYSTEMS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

THRESHOLDS OF SIGNIFICANCE: The project would have a significant effect on utilities and service systems if it would require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects; not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years; result in a determination by the wastewater treatment provider, which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments; generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or not comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

DISCUSSION

The Site is located within the service boundaries of the City of Ukiah water and electric distribution, wastewater collection, and storm drain systems. There are currently no on-site utility connections; however, connections to existing utilities located in close vicinity to the Site will be established during project construction. Water service will be extended to the Site by tying in to the existing 8-inch water main with a 2-inch water line. A proposed 6-inch sanitary sewer lateral will be cut in with a wye to the existing 6-inch sanitary sewer line. Both the existing water main and the existing sanitary sewer line are located west of the Site within Orchard Avenue. As noted above, on-site drainage would be controlled using post-construction Best Management Practices (BMPs), including bioretention facilities sized to capture and treat runoff from the proposed impervious surfaces produced by the 24 hour 85th percentile rain event and landscaped areas throughout the Site to encourage natural stormwater infiltration.. Additionally, a connection will be

established to the existing electric utility feed located along the south edge of the Site. Natural gas service, if needed, would be provided by Pacific Gas and Electric Company (PG&E).

The City of Ukiah would also provide solid waste collection services through the Ukiah Waste Solutions, a component of C&S Waste Solutions located in Ukiah, which would be collected from a trash bin enclosure to be installed in the southeast portion of the Site. According to the City of Ukiah Utility Services & Billing webpage (2020), as the proposed project would include a commercial facility, garbage service would be setup directly through Ukiah Waste Solutions who operates weekly curb-side residential and commercial garbage and recycling collection within the City of Ukiah.

Electricity

Electricity would be provided to the Site by the City of Ukiah Electric Utility Department. As noted above, an electric utility line is located along the southern portion of the Site. Ukiah's electric utility is part of the Northern California Power Agency (NCPA) – a consortium of municipally owned power companies that maintains its own power-generating capabilities (City of Ukiah, 2020b). The City of Ukiah maintains and operates the Lake Mendocino Hydroelectric Plant, which provides a portion of the City's renewable energy supply. According to the 2018 Power Content Label, the City of Ukiah Electric Utility receives approximately 29 percent of its power from eligible renewable sources, with an additional 15 percent of the power coming from large hydroelectric sources. Although the State of California does not consider power from large hydroelectric dams to be renewable, power from large hydroelectric dams helps the City of Ukiah to decrease its reliance on standard electrical services, which are typically generated from fossil fuels, such as coal and natural gas (City of Ukiah, 2020b).

Water Service

Water would be provided to the Site by the City of Ukiah Water Utility. According to the Draft 2015 Urban Water Management Plan (2016), the City of Ukiah's water distribution system is supplied from diverse water sources, including groundwater from the Ukiah Valley Groundwater Basin, surface water from the Russian River underflow, and surface water from the Russian River which is treated at the water treatment plant and piped throughout the water distribution system. The City of Ukiah's primary water source is the underflow from the Russian River, which is classified as Ground Water under Direct Influence for Surface Water (City of Ukiah, 2020e). This water is supplied by the Ranney collector, which can be used only when turbidity in the Russian River is low, and a well that both draw from an alluvial zone along the Russian River and can supply up to approximately 6,123 acre-feet per year (ac-ft/yr), combined, when operated continuously. However, the City of Ukiah's surface water rights could provide for up to 16,507 ac-ft/yr, under a Pre-1914 Appropriative Right and Water Right Permit 12952 (Application 15704), under which the aforementioned surface water supplies are regulated. Groundwater is supplied by four (4) groundwater wells that have a total capacity of 3,700 ac-ft/yr, combined. The City additionally has a water supply agreement with the Russian River Flood Control District (Flood Control District) that allows the purchase of up to 800 ac-ft/yr under the Flood Control District's water rights permit (City of Ukiah, 2016).

As of 2015, the City of Ukiah supplied approximately 2,534 acre-feet (ac-ft) of water to approximately 4,781 residential and non-residential connections located within its water service area. Although the City of Ukiah's water supply sources are considered adequate for existing and projected water demands, the City is actively growing its groundwater and recycled water supply to improve the reliability of the overall water supply (City of Ukiah, 2016).

Wastewater Collection Service

Wastewater generated on-site would be collected by the Ukiah Valley Sanitation District (UVSD) and treated at the Ukiah Wastewater Treatment Plant (UWWTP), which is owned and operated by the City of Ukiah. The UWWTP is responsible for the treatment and disposal of wastewater from the City of Ukiah and the nearby UVSD (City of Ukiah, 2020d). The UVSD contracts via a Participation Agreement to the City of Ukiah for use of the UWWTP and for maintenance of its collection system (UVSD, 2018). The UWWTP is located southeast of the City of Ukiah on Plant Road and has been operational since 1958. In 2009, the UWWTP underwent a three year, \$56.5 million improvement project that was completed to ensure continued compliance with permit requirements and meet future demand growth. In recent years the City of Ukiah has also expanded its recycled water delivery program, which is intended to offset groundwater pumping and diversions of the Russian River for non-potable water uses (City of Ukiah, 2016).

Primary treatment removes floating material, oils and greases, sand and silt and organic solids heavy enough to settle in water. Secondary treatment biologically removes most of the suspended and dissolved organic material (City of Ukiah, 2020d). The UWWTP discharges disinfected secondary effluent to three percolation/evaporation ponds located at the UWWTP on a year-round basis, and discharges disinfected tertiary effluent to the Russian River as needed during wet weather months (City of Ukiah, 2016). The UWWTP has a current treatment capacity of approximately 3,136 ac-ft/yr of dry weather flow and 22,402 ac-ft/yr of peak wet weather flow (City of Ukiah, 2020d). According to data collected from the Department of Water Resources (DWR), the UWWTP collected 2,997 ac-ft of wastewater in 2015 (City of Ukiah, 2016). As of 2019, the UWWTP has a current capacity to add nearly 1,603 equivalent sewer service units (ESSUs) before reaching capacity (Ukiah2040, 2020).

Storm Drainage System

As noted discussed in Section IX (Hydrology and Water Quality), above, the City of Ukiah Storm Water Utility manages a series of drainage inlets throughout the City, which flow directly into creeks, and eventually the Russian River. Drainage across the Site appears to flow to the southeast. The nearest body of water is Gibson Creek, which is located approximately 1,300 feet east of the Site. Regional drainage is controlled by the Russian River, which is located approximately 0.85 miles east of the Site. Street and pedestrian improvements including curb, gutter, sidewalk, and storm drain inlets are located on both sides of Orchard Avenue, up to and surrounding the Site, and within the parking lots of surrounding commercial developments. As the Site is currently undeveloped, it is the only property within the general vicinity of the Site that does not include curb, gutter, and sidewalk along its frontage.

Drainage improvements proposed to be developed as part of the project include post-construction BMPs, which include bioretention facilities sized to capture and treat runoff from the proposed impervious surfaces produced by the 24 hour 85th percentile rain event and landscaped areas throughout the Site to encourage natural stormwater infiltration.. Flows from the post-construction BMPs will be directed towards an existing drainage inlet located near the southeast corner of the Site. The project additionally includes the construction of pedestrian facilities, including curb, gutter, and sidewalk along the west side of the Site. Stormwater from these proposed surfaces and off-site flows would be directed to the storm drain collection system.

Solid Waste Service

As noted above, Ukiah Waste Solutions, a component of C&S Waste Solutions located in Ukiah, provides weekly curb-side residential and commercial garbage, recycling, and green waste collection within the City of Ukiah. Waste collected by Ukiah Waste Solutions is taken to the Ukiah Transfer Station and Recycling Center located at 3515 Taylor Drive in Ukiah for processing and transport. As noted in Chapter 3

(Development Element) of the Mendocino County General Plan (2009), there are no remaining operating landfills in Mendocino County, and, as a result, solid waste generated within the County is exported for disposal to the Potrero Hills Landfill in Solano County. Based on information provided on CalRecycle's website (2019), the Potrero Hills Landfill has a maximum permitted throughput of 4,330 tons per day and a remaining capacity of 13.872 million cubic yards, and is estimated to remain in operation until February 2048.

Telecommunications

Various telecommunication companies provide telecommunications to the surrounding area.

XVIX.a) As noted above, the proposed project will require new connections to the City of Ukiah water and electric distribution, wastewater collection, and storm drain systems. The Site is currently undeveloped and new infrastructure will be required to establish these connections; however, the Site is located in an urban, built-up environment in which connections to each of these utilities exist on all surrounding parcels and, as discussed above, the City has ample capacity to supply the needed utilities to the Site. Additionally, as discussed in Section IX (Hydrology and Water Quality), above, in order to ensure significant environmental effects would not occur, the respective utility providers and installers would implement applicable Best Management Practices (BMPs) to reduce the potential for impacts, including but not limited to erosion during construction, to occur. As such, a less than significant impact would occur.

XVIX.b) Water to the Site would be provided by the City of Ukiah Water Utility. As discussed above, according to the City of Ukiah 2015 Urban Water Management Plan, the City of Ukiah's diverse water supply sources are considered adequate for existing and projected water demands (City of Ukiah, 2016). A less than significant impact would occur.

XVIX.c) Wastewater collection service at the Site would be provided by the Ukiah Valley Sanitation District (UVSD). As noted above, wastewater collected by the UVSD is treated at the Ukiah Wastewater Treatment Plant (UWWTP). The proposed project has received a will serve letter from the UVSD, implying that the UVSD has adequate capacity to serve the project's projected demand. A less than significant impact would occur.

XVIX.d-e) A significant amount of solid waste is not anticipated under the project and all solid waste generated under the project would be disposed of in accordance to all federal, state, and local statutes and regulations related to solid waste including state and local waste diversion requirements. As noted above, the project would be served by Ukiah Waste Solutions, a component of C&S Waste Solutions located in Ukiah. A trash bin for collecting solid waste generated on-site would be located in the southeast portion of the Site. Solid waste collected by Ukiah Waste Solutions would eventually be disposed of at Potrero Hills Landfill, which has a remaining capacity of 13.872 million cubic yards (CalRecycle, 2019). As such, the proposed would not negatively impact the provision of solid waste services or impair the attainment of solid waste reduction goals. A less than significant impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less Than Significant Impact** on Utilities and Service Systems.

XX. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage challenges?	☐	☐	☒	☐

THRESHOLDS OF SIGNIFICANCE: The project would have a significant effect on wildfire if it would impair an adopted emergency response plan or emergency evacuation plan; due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire; require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage challenges.

DISCUSSION

The Site is located within the Local Responsibility Area (LRA) (Mendocino County Maps – Ukiah Valley – Fire Responsibility Areas, 2019) and per the City of Ukiah website (2020), is served by the Ukiah Valley Fire Authority, a cooperation between the City of Ukiah Fire Department and the Ukiah Valley Fire District. The Site is mapped as located within an area with “Moderate” Fuel Rank fire hazard severity zone per Figure C-13 of the 2014 Mendocino County Multi-Hazard Mitigation Plan. The nearest fire station to the Site is the Ukiah Valley Fire District, located approximately 1.43 miles southwest of the Site.

XX.a) The County of Mendocino County adopted a *Mendocino County Operational Area Emergency Operations Plan* (County EOP) on September 13, 2016, under Resolution Number 16-119. As noted on the Plans and Publications webpage of the Mendocino County Office of Emergency Services (MCOES), the County EOP, which complies with local ordinances, state law, and state and federal emergency planning guidance, serves as the primary guide for coordinating and responding to all emergencies and disasters within the County. The purpose of the County EOP is to “*facilitate multi-agency and multi-jurisdictional coordination during emergency operations, particularly between Mendocino County, local and tribal governments, special districts as well as state and Federal agencies*” (MCOES – Plans and Publications, 2019).

As discussed under Section IX (Hazards and Hazardous Materials), above, there are no components of the project that would impair an adopted emergency response plan or emergency evaluation plan, including the adopted County EOP. The Site is located with the LRA and within a “Moderate” Fuel Rank fire hazard severity zone per Figure C-13 of the 2014 Mendocino County Multi-Hazard Mitigation Plan. The CRT Facility

would be constructed in accordance with state and local standards, including safety and emergency access requirements. As such, there are no components of the project that would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. A less than significant impact would occur.

XX.b) Under the proposed project, it is not anticipated that wildfire risks would be exacerbated due to slope, prevailing winds, and other factors. The Site is flat, with elevations at the Site ranging between approximately 598 feet and 600 feet above mean sea level. In addition, the Site is located in an urban built-up environment where there is a low threat of wildfire. No impact would occur.

XX.c) The Site would be served natural gas by Pacific Gas & Electric (PG&E), electricity, water and wastewater service by the City of Ukiah, and solid waste services by a local waste hauler. While there is currently no development on-site that would warrant connections, all utility lines are located in close vicinity to the Site and serve all surrounding parcels, and connections to the proposed CRT Facility would be established as part of the project. As such, the project would not require the installation or maintenance of infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. No impact would occur.

XX.d) The proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage challenges, as the Site is flat, with elevations at the Site ranging between approximately 598 and 600 feet above mean sea level, and is surrounded by a built-up urban environment. In addition, Low Impact Development (LID) stormwater retention features would be constructed on-site to capture and treat increased stormwater flows due to the proposed impervious surfaces. As such, a less than significant impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less than Significant Impact** on Wildfire.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).	☐	☐	☒	☐
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

THRESHOLDS OF SIGNIFICANCE: The project would have a significant effect on mandatory findings of significance if it would have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory; have impacts that are individually limited, but cumulatively considerable ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.); or have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.

DISCUSSION

Certain mandatory findings of significance must be made to comply with CEQA Guidelines §15065. The proposed project has been analyzed and it has been determined that it would not:

- Substantially degrade environmental quality;
- Substantially reduce fish or wildlife habitat;
- Cause a fish or wildlife population to fall below self-sustaining levels;
- Threaten to eliminate a plant or animal community;
- Reduce the numbers or range of a rare, threatened, or endangered species;
- Eliminate important examples of the major periods of California history or pre-history;
- Achieve short term goals to the disadvantage of long term goals;
- Have environmental effects that will directly or indirectly cause substantial adverse effects on human beings; or
- Have possible environmental effects that are individually limited but cumulatively considerable when viewed in connection with past, current, and reasonably anticipated future projects.

Potential environmental impacts from the construction and operation of a 3,462 square-foot, one-story, Crisis Residential Treatment (CRT) Facility with space for up to 10 beds for clients and associated improvements, have been analyzed in this document and mitigation measures have been included in the document to ensure impacts would be held to a less than significant level.

XXI.a) The project does not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. The vacant Site does not provide habitat for any fish or wildlife species, nor does the Site support any notable plant or animal communities. There are no important examples of California Pre-history or history located on the Site. Mitigation has been applied to reduce any potential environmental impacts to levels that are less than significant.

XXI.b) No cumulative impacts have been identified as a result of the proposed project. The project is a small-scale (10-beds, maximum of 12 employees) infill project and will be served by community services. Individual impacts from the project would not significantly contribute to cumulative impacts in the area. The project is anticipated with the expected level of growth and density of use on the site. A less than significant impact would occur.

XXI.c) The project will not have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly. Concerns related to the suitability of soils on-site for this type of construction are mitigated by Mitigation Measures GEO-1 and GEO-2, which reduce the threat of building failure to a level that is less than significant and concerns related to the impact of construction noise on nearby sensitive receptors are mitigated by Mitigation Measure NOISE-1. A less than significant impact would occur.

MITIGATION MEASURES

Refer to Mitigation Measures CUL-1 in Section V (Cultural Resources), GEO-1 and GEO-2 in Section VII (Geology and Soils), HYDRO-1 in Section X (Hydrology and Water Quality), and NOISE-1 in Section XIII (Noise), above.

FINDINGS

The proposed project would have a **Less Than Significant Impact with Mitigation Incorporated** on Mandatory Findings of Significance.

VI. REFERENCES

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FIGURES

Figure 1	Location Map
Figure 2	City of Ukiah Land Use Designation
Figure 3	City of Ukiah Zoning Designation
Figure 4	Airport Zone Compatibility Map (1996)
Figure 5	Site Plan

APPENDIX A

Mitigation and Monitoring Program (MMRP)

APPENDIX B

Cultural Resources Correspondence

APPENDIX C

California Emissions Estimator Model (CalEEMod) Report for CRT Facility

APPENDIX D

Geotechnical Exploration and GeoHazard Report

