



**ENGINEERING/OPERATIONAL COMMITTEE MEETING AGENDA**  
**TRABUCO CANYON WATER DISTRICT**  
**32003 DOVE CANYON DRIVE, TRABUCO CANYON, CA**  
**ADMINISTRATION FACILITY, CONFERENCE ROOM**  
**APRIL 5, 2023 AT 7:00 AM**

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**COMMITTEE MEMBERS**

Michael Safranski, Committee Chair  
Stephen Dopudja, Committee Member  
Don Chadd, Committee Member Alternate

**DISTRICT STAFF**

Fernando Paludi, General Manager  
Michael Perea, District Secretary  
Lorrie Lausten, District Engineer  
Gary Kessler, Water System Superintendent  
Oscar Ulloa, Wastewater Superintendent  
Jason Stroud, Maintenance Superintendent

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**AGENDA NOTE:**

*Trabuco Canyon Water District (District) will make this Engineering/Operational Committee Meeting available by telephone audio as follows:*

**Telephone Audio:** 1 (669) 900-6833

**Access Code:** 973-7562-7682

*Persons desiring to monitor the Committee meeting agenda items may download the agenda and documents on the internet at [www.tcwd.ca.gov](http://www.tcwd.ca.gov). You may submit public comments by email to the Committee at [mperea@tcwd.ca.gov](mailto:mperea@tcwd.ca.gov). In order to be part of the record, emailed comments on meeting agenda items must be received by the District at the referenced e-mail address not later than 7:00 a.m. (PDT) on the day of the meeting.*

**CALL MEETING TO ORDER**

**VISITOR PARTICIPATION**

*Members of the public wishing to address the Committee regarding a particular item on the agenda are requested to submit public comments by email to the Committee at [mperea@tcwd.ca.gov](mailto:mperea@tcwd.ca.gov). The Committee Chair will call on the visitor following the Committee's discussion about the matter. Committees do not constitute a quorum of the Board of Directors and Committee Members cannot make decisions on matters. The Committee makes recommendations only to the Board of Directors. Members of the public will be given the opportunity to speak to the Committee prior to making a recommendation on the matter. For persons desiring to make verbal comments and utilizing a translator to present their comments into English reasonable time accommodations, consistent with State law, shall be provided. Please limit comments to three minutes.*

**ORAL COMMUNICATION**

*Members of the public who wish to make comment on matters not appearing on the agenda are requested to submit oral communication by email to the Committee at [mperea@tcwd.ca.gov](mailto:mperea@tcwd.ca.gov). Under the requirements of State Law, Directors cannot take action on items not identified on the agenda and will not make decisions on such matters. The Board President may direct District Staff to follow up on issues as may be deemed appropriate. For persons desiring to make verbal comments and utilizing a translator to present their comments into English reasonable time accommodations, consistent with State law, shall be provided. Please limit comments to three minutes.*

**COMMITTEE MEMBER COMMENTS**

**REPORT FROM THE GENERAL MANAGER**

TRABUCO CANYON WATER DISTRICT  
ENGINEERING/OPERATIONAL COMMITTEE MEETING AGENDA | APRIL 5, 2023

ENGINEERING MATTERS

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PRESENTER(S): FERNANDO PALUDI, GENERAL MANAGER  
MICHAEL PEREA, ASSISTANT GENERAL MANAGER  
LORRIE LAUSTEN, DISTRICT ENGINEER

ITEM 1: ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP

**RECOMMENDED ACTION:**

*Approve the following Engineering/Operational Committee Meeting Recap(s) and recommend that the Board receive and file same (Consent Calendar).*

1. March 1, 2023

ITEM 2: DOVE DAM OUTLET REPAIR ALTERNATIVES EVALUATION

**RECOMMENDED ACTION:**

*Committee to receive information at the time of the Committee meeting.*

ITEM 3: DIMENSION WATER TREATMENT PLANT OFFICE IMPROVEMENTS

**RECOMMENDED ACTION:**

*Recommend the Board of Directors authorize the General Manager to execute a construction contract for the Dimension Water Treatment Plant Office Improvements to Blok Modular Constructors' Inc. in the amount of \$299,777, with a contingency of \$29,977, for a not-to-exceed amount of \$329,754 (Action Calendar).*

ITEM 4: GOLF CLUB SEWER LIFT STATION PROPOSED PROJECT BYPASS SOLUTION

**RECOMMENDED ACTION:**

*Committee to receive information at the time of the Committee meeting.*

ITEM 5: OTHER ENGINEERING AND OPERATIONS PROJECT UPDATES

1. Orange County Public Works (OCPW) Proposed Trabuco Creek Road Drainage Improvements
2. Trabuco Creek Groundwater Treatment Plant Fencing Improvements Update
3. Other Projects

**RECOMMENDED ACTION:**

*Committee to receive project status updates at time of the Committee Meeting.*

OPERATIONAL MATTERS

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PRESENTER(S): GARY KESSLER, WATER SYSTEM SUPERINTENDENT  
OSCAR ULLOA, WASTEWATER OPERATIONS SUPERINTENDENT  
JASON STROUD, MAINTENANCE DEPARTMENT SUPERINTENDENT

ITEM 6: WATER SYSTEM UPDATES

**RECOMMENDED ACTION:**

*Committee to receive system status updates. No action required.*



**TRABUCO CANYON WATER DISTRICT  
ENGINEERING/OPERATIONAL COMMITTEE MEETING AGENDA | APRIL 5, 2023**

**ITEM 7: WASTEWATER SYSTEM UPDATES**

**RECOMMENDED ACTION:**

*Committee to receive system status updates. No action required.*

**ITEM 8: MAINTENANCE DEPARTMENT UPDATES**

**RECOMMENDED ACTION:**

*Committee to receive system status updates. No action required.*

**REGULATORY AND OTHER MATTERS**

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**ITEM 9: OTHER MATTERS/REPORTS**

**RECOMMENDED ACTION:**

*Hear Other Matters/Reports that may have arisen after the posting of the agenda.*

**ADJOURNMENT**

**AVAILABILITY OF AGENDA MATERIALS**

*Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the Trabuco Canyon Water District Board of Directors in connection with a matter subject to discussion or consideration at an open meeting of the Board of Directors are available for public inspection at the Trabuco Canyon Water District Administrative Facility, 32003 Dove Canyon Drive, Trabuco Canyon, California (District Administrative Facility) or will be posted online on the District's website located at [www.tcwd.ca.gov](http://www.tcwd.ca.gov). If such writings are distributed to members of the Board less than 72 hours prior to the meeting, they will be available online at [www.tcwd.ca.gov](http://www.tcwd.ca.gov) at the same time as they are distributed to the Board Members, except that, if such writings are distributed immediately prior to or during the meeting, they will be posted online on the District's website located at [www.tcwd.ca.gov](http://www.tcwd.ca.gov).*

**COMPLIANCE WITH THE REQUIREMENTS OF CALIFORNIA GOVERNMENT CODE SECTION 54954.2**

*In compliance with California law and the Americans with Disabilities Act, if you need special disability-related modifications or accommodations, including auxiliary aids or services in order to participate in the meeting, or if you need the agenda provided in an alternative format, please contact the District Secretary at (949) 858-0277, at least 48 hours in advance of the scheduled Board meeting. Notification at least 48 hours prior to the meeting will assist the District in making reasonable arrangements to accommodate your request. The Board Meeting Room is wheelchair accessible.*



**TRABUCO CANYON WATER DISTRICT  
ENGINEERING/OPERATIONAL COMMITTEE MEETING | APRIL 5, 2023**

**ADMINISTRATIVE MATTERS**

**ITEM 1: ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP**

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**RECOMMENDED ACTION:**

*Approve the following Engineering/Operational Committee Meeting Recap(s) and recommend that the Board receive and file same (Consent Calendar):*

1. *March 1, 2023 Committee Meeting*

**CONTACTS (staff responsible): PALUDI/PEREA/SANGI**



## TRABUCO CANYON WATER DISTRICT ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP | MARCH 1, 2023

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### **DIRECTORS PRESENT**

Mike Safranski, Committee Chair  
Stephen Dopudja, Committee Member

### **STAFF PRESENT**

Fernando Paludi, General Manager  
Michael Perea, Assistant General Manager  
Lorrie Lausten, District Engineer  
Karen Warner, Principal Accountant  
Gary Kessler, Water Superintendent  
Oscar Ulloa, Wastewater Superintendent  
Jason Stroud, Maintenance Superintendent  
Lisa Sangi, Executive Assistant

### **PUBLIC PRESENT**

Mr. Mike Callahan, Resident

### **CALL MEETING TO ORDER**

Director Safranski called the March 1, 2023 Engineering/Operational Committee Meeting to order at 7:00 a.m.

### **VISITOR PARTICIPATION**

No comments were received.

### **ORAL COMMUNICATION**

No comments were received.

### **COMMITTEE MEMBER COMMENTS**

No comments were received.

### **REPORT FROM THE GENERAL MANAGER**

No comments were received.

### **ITEM 1: ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP**

Mr. Paludi presented the Engineering/Operational Committee Meeting Recap for Committee review in accordance with the agenda.

- MOTION:** Approve the Engineering/Operational Committee Meeting Recap and recommended that the Board receive and file the same (Consent Calendar) – Director Safranski
- SECOND:** Director Dopudja
- AYES:** Directors Dopudja & Safranski
- NOES:** None
- ABSTAIN:** None
- MOTION PASSED/FAILED:** Passed 2 - 0

**TRABUCO CANYON WATER DISTRICT  
ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP | MARCH 1, 2023**

**ITEM 2: DIMENSION WATER TREATMENT PLANT OFFICE IMPROVEMENTS**

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Mr. Paludi introduced this matter for Committee consideration. Ms. Lausten provided an overview of the fiscal impact to date, and she reported that the project will go out to bid in April 2023.

**MOTION:** None

**ITEM 3: SADDLECREST DEVELOPMENT**

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Mr. Paludi provided a brief update to the Committee, and he mentioned that the Developer is moving forward on selling lots which impacts the required system and facility improvements. Ms. Lausten provided highlights on the startup of the pump station and reservoir, and she reported on recent upper zone home sales. Discussion occurred concerning facility warranties to be provided by the Developer. Ms. Lausten reported the costs borne from this proposed amendment will be met by the developer.

**MOTION:** Recommend the Board of Directors authorize the General Manager to execute Amendment No. 1 for the Saddlecrest Development Construction Management to JS Held in the not to exceed amount of \$15,000 (Action Calendar).

**SECOND:** Director Dopudja

**AYES:** Directors Dopudja & Safranski

**NOES:** None

**ABSTAIN:** None

**MOTION PASSED/FAILED:** Passed 2 - 0

**ITEM 4: OTHER ENGINEERING AND OPERATIONS PROJECT UPDATES**

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1. **Rose and Lang Wells Groundwater Treatment Facility Property** – Mr. Paludi introduced customer Mr. Callahan to the Committee. Mr. Callahan expressed his appreciation for District staff efforts to present this matter to the Committee, and he provided an overview of his request related to the installation of a split-rail fence consistent with the original conceptual design for the facility. Discussion occurred concerning certain constraints related to the operation and maintenance of the facility that may conflict with the installation of a fence, as well as potential property liability issues and long-term maintenance responsibilities. The Committee recommended District staff work with Mr. Callahan concerning his request and bring this matter back to the next Engineering/Operational Committee meeting.
2. **Other Projects** – Ms. Lausten provided an overview of the Dove Dam repairs performed Myers Marine, including project photos.

**MOTION:** None – Informational item only.

**ITEM 5: WATER SYSTEM UPDATES**

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Mr. Kessler reviewed the projects and repairs for the prior month, and he reported that Water Operations staff has completed the following tasks:

1. Flushed seventy-two fire (72) hydrants and replaced two (2) fire hydrants in the Unincorporated Canyon areas.
2. Completed the Pressure Regulating Valve (PRV) Maintenance Program for FY 2022-23.
3. Repositioned the Filter Flow Meter Manifolds for Filters 1 – 3 at the Dimension Water Treatment Plant per TESCO Controls recommendation.
4. Worked with Maintenance Department to install new well pump motors at the Trabuco Creek Groundwater Treatment Facility.
5. Continued to work with TESCO Controls and Hydrotech Electric on SCADA System upgrades.

**TRABUCO CANYON WATER DISTRICT  
ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP | MARCH 1, 2023**

Mr. Kessler mentioned that there was not an updated Monthly Water System Operations Summary as it was the first of the month. Discussion occurred concerning the District's distribution system valve turning schedule.

**MOTION:** None – Informational item only.

**ITEM 6: WASTEWATER SYSTEM UPDATES**

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Mr. Ulloa reviewed the projects and repairs for the prior month, and he reported that Wastewater Operations staff had completed the following tasks:

1. Replaced all old lighting at the Robinson Ranch Wastewater Treatment Plant (WWTP) with LED lighting.
2. Cleaned and installed sump pumps in the dry pits of Via Allegre and Barneburg Sewer Lift Stations.
3. Worked with Maintenance Department staff to bypass Golf Club Sewer Lift Station for Harper Engineering to perform a condition inspection of the onsite wet well for planned improvements.
4. Continued to work with TESCO Controls on site inspections for PLC panel improvements related to the SCADA System upgrades.

Mr. Ulloa mentioned that there was not an updated Monthly Water System Operations Summary as it was the first of the month. Mr. Ulloa reported on the continued sale of recycled water to Santa Margarita Water District. Discussion occurred concerning the frequency of sewer line cleaning and overall schedule for completion.

Director Safranski inquired on the recycled water reservoir total volume calculation in relation to the current freeboard levels.

Discussion occurred concerning the status of the damaged v-ditch owned and operated by Dove Canyon Master Association (DCMA); Mr. Paludi reported that District staff is in communication with Dove Canyon Master Association.

**MOTION:** None – Informational item only.

**ITEM 7: MAINTENANCE DEPARTMENT UPDATES**

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Mr. Stroud reviewed the projects and repairs for the prior month, and he reported that Maintenance staff completed the following tasks:

**Water Operations**

1. Coordinated the repair of the roof at Canyon Creek Booster Pump Station with JRT Roofing (Contractor).
2. Continued work with TESCO Controls and Hydrotech Electrical on SCADA System upgrades.

**Wastewater Operations**

1. Worked with operations staff to clean up Coyote Flats and locate/clean onsite v-ditch system.
2. Coordinated with SS Mechanical for the surge tank concrete base pour at El Toro Sewer Lift Station.
3. Assisted Wastewater Operations staff to bypass Golf Club Sewer Lift Station for Harper Engineering to perform a condition inspection of the onsite wet well for planned improvements.
4. Continued work with TESCO Controls and Hydrotech Electrical on SCADA System upgrades.

**MOTION:** None – Informational item only.

**TRABUCO CANYON WATER DISTRICT  
ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP | MARCH 1, 2023**

**ITEM 8: OTHER MATTERS/REPORTS**

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Mr. Paludi provided an update on the Saddleback Meadows Developer Conditional Will Serve Letter and related conditions for the agreement for construction of a reservoir.

**MOTION:** None – Informational item only.

**ADJOURNMENT**

Director Safranski adjourned the March 1, 2023 Engineering/Operational Committee Meeting at 7:57 a.m.

DRAFT



**TRABUCO CANYON WATER DISTRICT  
ENGINEERING/OPERATIONAL COMMITTEE MEETING | APRIL 5, 2023**

**ENGINEERING MATTERS**

**ITEM 2: DOVE DAM OUTLET REPAIR ALTERNATIVES EVALUATION**

Trabuco Canyon Water District (District) operates Dove Dam in the Dove Canyon community via an agreement with the Dove Canyon HOA. The Division of Safety of Dams (DSOD) performs a yearly inspection on the Dam, outlet structure, and appurtenances. Operations Staff is responsible for completing the recommended maintenance as outlined in the DSOD report. In 2019, Staff contracted with Meyers Diving to inspect the outlet structure, sluice gate, gate stem and supports. The report on these items indicated that the stem and supports have significant corrosion and this equipment should be replaced. In 2022, the air vent pipe for the dam outlet conduit failed and Myers was contracted to make repairs.

Staff contracted with Hazen & Sawyer to prepare an alternatives evaluation of the repair options for the Dove Dam drain facilities, including air vent pipe, sluice gate, sluice gate structure, gate stem and supports. In addition, Staff contracted with J. Smith & T. Muli to perform a bathymetric survey which determines the lake bottom contours to calculate the current lake volume (Exhibit 1). This survey was utilized by Hazen to calculate the cost to dredge the lake to retain it to its original condition. The Hazen evaluation report of the repair alternatives was not available at the time of posting the agenda. Hazen representatives will present the report findings to the Committee at the time of the meeting.

**FUNDING SOURCE:**

General Fund

**FISCAL IMPACT (PROJECT BUDGET):**

<b>Original Project Budget</b>	<b>N/A</b>	CIP budget has not yet been developed
Initial inspection of outlet works (2019)*	\$16,975	Myers Marine
Vent pipe repairs (2022)	\$18,065	Myers Marine
Inspection/Jetting (2022)	\$16,320	Myers Marine
Air Vent Repair- Fiberglass Wrap/Supports	\$105,243	Myers Marine
Dam outlet works replacement alternatives analysis	\$44,528	Amendment to Hazen Condition Assessment Contract
Dove Lake Bathymetric Survey	\$27,076	J. Smith & T. Muli
<b>Project Expenditures To Date</b>	<b>\$228,207</b>	

\*includes WWTP Reservoir inspection

**ENVIRONMENTAL COMPLIANCE:**

Notice of Exemption

**RECOMMENDED ACTION:**

*Committee to receive information at the time of the Committee meeting.*

**EXHIBIT(S):**

1. Dove Lake Bathymetric Survey

**CONTACTS (staff responsible): PALUDI/LAUSTEN**



**J. SMITH  
&  
T. MULLI**

# Calculations Sheet

PROJECT NAME: Dove Canyon Lake

DESIGNED BY: Jonis Smith, PE

PROJECT NUMBER: 1016

DESCRIPTION: Lake Volumetric Analysis

DATE: March 14, 2023

SHT 1 OF 1

## Dove Canyon Lake Volumetric Analysis

Time Reference	Lake Bottom Surface Area (SF)	Ref Water Surface Elev (ft)	Lake Vol (cy)	Lake Vol (cf)	Lake Vol (gal)	Lake Vol (MG)	Lake Vol (acft)	Delta Vol (ac-ft)	Max Depth (ft)
<b>As-Built Condition (Aug 1992)</b>	659,927	1,090	653,419	17,642,301	131,973,575	132	405	0	60
<b>Current Condition (Feb 2023)</b>	667,365	1,090	533,723	14,410,529	107,798,240	108	331	-74	51

**TRABUCO CANYON WATER DISTRICT  
ENGINEERING/OPERATIONAL COMMITTEE MEETING | APRIL 5, 2023**

**ENGINEERING MATTERS**

**ITEM 3: DIMENSION WATER TREATMENT PLANT OFFICE IMPROVEMENTS**

Trabuco Canyon Water District (District) owns, operates, and maintains the Dimension Water Treatment Plant (WTP) in the City of Lake Forest. Water Operations Staff has been working out of a 12'x30' office trailer since approximately 2006. The office is in poor condition, is not ADA compliant, and is too small to accommodate five operators, a bathroom and kitchen area. Staff worked with JIG Consultants to design a new office. The new office is a 12'x60' modular building and includes a supervisor's office, two cubicles, a kitchen area and an improved bathroom which includes a shower and locker facilities. Staff received two bids on March 29, 2023 as follows:

<b>Summary of Bids</b>	
<b>Company</b>	<b>Amount</b>
Blok Modular Construction	\$299,777
Modular Building Concepts, Inc.	\$309,425

**FUNDING SOURCE:**

Capital Improvement Program

**FISCAL IMPACT (PROJECT BUDGET)**

<b>Original Project Budget</b>	<b>\$360,000</b>	<b>FY 21/22</b>
Engineering (complete)	\$ 47,000	FY 21/22; First design (24' x 60' trailer)
Engineering (complete)	\$ 21,000	FY 22/23; Current design (12' x 60' trailer)
Site Work (estimated)	\$50,000	Managed by staff (Electrical, Cox, IT, SCADA)
Construction (bid submitted)	\$299,777	Not including 10% contingency
<b>Total Revised Budget to Date</b>	<b>\$417,777</b>	

**ENVIRONMENTAL COMPLIANCE:**

Notice of Exemption was filed with the County of Orange on February 24, 2022

**RECOMMENDED ACTION:**

*Recommend the Board of Directors authorize the General Manager to execute a construction contract for the Dimension Water Treatment Plant Office Improvements to Blok Modular Constructors' Inc. in the amount of \$299,777, with a contingency of \$29,977, for a not-to-exceed amount of \$329,754 (Action Calendar).*

**EXHIBIT(S):**

1. Bid Comparison

**CONTACTS (staff responsible): PALUDI/LAUSTEN**

**BID COMPARISON : Dimension Office Trailer Project**

**PROJECT 2122-011**

**Bid Opening Date: 03/29/2023**

						#1	#2		
						Blok Modular Const.	Modular Building Concepts, Inc.		
						John "Kevin" Kruze	Christopher Kerper		
						404 N 2nd Ave., Suite C	12580 Stotler Ct		
						Upland, CA 91784	Poway, CA 92064		
						888-256-5663	858-679-1185		
						License #	1054345	License #	945244
Item	Description	Quantity	Unit	Engineer's Unit Price	Engineer's Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost
1	Mobilization / Demobilization	1	LS	\$15,000.00	\$14,000.00	\$14,577.00	\$14,577.00	\$20,000.00	\$20,000.00
2	Structural, Mechanical, and Electrical Demolition	1	LS	\$16,000.00	\$16,000.00	\$7,950.00	\$7,950.00	\$3,000.00	\$3,000.00
3	Design, Permit, Manufacture, Ship, & Construct	1	LS	\$200,000.00	\$200,000.00	\$226,200.00	\$226,200.00	\$222,218.95	\$222,218.95
4	Sewer and Water Service Connection	1	LS	\$15,000.00	\$15,000.00	\$6,750.00	\$6,750.00	\$12,425.73	\$12,425.73
5	Misc. Electrical & Commuication Improvements	1	LS	\$40,000.00	\$50,000.00	\$32,300.00	\$32,300.00	\$41,419.10	\$41,419.10
6	All Other Work	1	LS	\$5,000.00	\$5,000.00	\$2,000.00	\$2,000.00	\$561.48	\$561.48
7	Interior Furnishing Allowance	1	LS	\$10,000.00	\$10,000.00	\$10,000.00	\$10,000.00	\$9,800.00	\$9,800.00
<b>TOTAL (1 THROUGH 7) :</b>					<b>\$310,000.00</b>		<b>\$299,777.00</b>		<b>\$309,425.26</b>

**TRABUCO CANYON WATER DISTRICT  
ENGINEERING/OPERATIONAL COMMITTEE MEETING | APRIL 5, 2023**

**ENGINEERING MATTERS**

**ITEM 4: GOLF CLUB SEWER LIFT STATION PROPOSED PROJECT BYPASS SOLUTION**

Trabuco Canyon Water District (District) owns and operates the Golf Club Sewer Lift Station (SLS) in the Dove Canyon community adjacent to the golf club driving range. This station receives wastewater flows from majority of the community by way of Bell Canyon and Barneburg Sewer Lift Stations and gravity sewer flows, and then conveys the wastewater to the Robinson Ranch Wastewater Treatment Plant via a sewer force main on Hillrise. The station was constructed in the early 1990s and had undergone only minor improvements until Fiscal Year (FY) 2021-22, when a bypass was installed, along with a short section of the force main, the surge tank repaired, and the motor control center replaced. Staff identified a series of critical repairs and improvements for the station that have been budgeted for completion in the F Y 2022-23 CIP.

Due to the long procurement time of equipment, Staff pre-purchased the three Cornell pumps (one spare), two guide rail systems/discharge elbows and the surge tank.

One of the biggest challenges during construction is bypassing the wet well due to the elevation of the sewer lateral from the lower level of the golf course clubhouse (Exhibit 1). The project went out to bid in February 2023, but contractors would not take on the risk of the wet well sewer bypass during construction (Exhibit 2). Staff, along with JIG Consultants, have developed a plan for an alternative bypass which builds a secondary wet well to prevent sewage back-up at the golf course clubhouse (Exhibit 3). JIG is incorporating this bypass solution into the final design and the project will be advertised for construction again in April.

<b>GOLF CLUB LIFT STATION REHABILITATION PROJECT</b>		
<b>ITEM</b>	<b>TASK DESCRIPTION</b>	<b>BUDGET</b>
1	Construction -Engineer's Estimate	<b>\$1,560,000</b>
2	Pre-Purchased Pumps/Guide Rails, Surge Tank	<b>\$270,000</b>
3	Engineering Design/Services During Construction	<b>\$125,000</b>
4	Construction Management/Inspection/Geotechnical	<b>\$140,000</b>
5	Site Survey	<b>\$5,000</b>
6	Easement Procurement	<b>\$10,000</b>
Total:		<b>\$2,110,000</b>

**FUNDING SOURCE:**

Capital Improvement Program

**FISCAL IMPACT (PROJECT BUDGET)**

<b>YEAR</b>	<b>ORIGINAL</b>	<b>FINAL/PROJECTED</b>	<b>STATUS</b>
FY 21/22	\$420,000	\$579,291	MCC, By-Pass Tee, Emergency By-Pass
FY 22/23	\$ 870,000	\$330,000	Engineering/Pumps/Surge Tank/Survey
FY 23/24	\$1,780,000	\$1,780,000	Construction/CSDC/CM/Esmt
<b>TOTAL</b>		<b>\$2,689,291</b>	New Project Total

**ENVIRONMENTAL COMPLIANCE:**

Notice of Exemption was filed with the County of Orange on November 1, 2021.

**RECOMMENDED ACTION:**

*Committee to receive information at the time of the Committee meeting.*

**TRABUCO CANYON WATER DISTRICT  
ENGINEERING/OPERATIONAL COMMITTEE MEETING | APRIL 5, 2023**

**EXHIBIT(S):**

1. Summary of By-Pass Issues
2. Original Sewer By-Pass
3. Proposed Sewer By-Pass

**CONTACTS (staff responsible): PALUDI/LAUSTEN**



# Engineering/Operations Committee

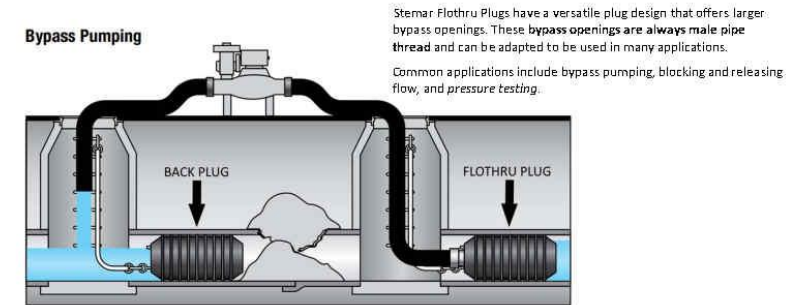
## April 5, 2023

### Golf Club Sewer Lift Station

#### Issue to By-Pass Golf Club Sewer Lift Station Wet Well:

- The peak flow into the lift station is 430 gpm based on a flow monitoring study.
- The only way to bypass the station is to use an existing 4-foot diameter manhole (MH#2) upstream of the lift station. The allowable capacity of the subject manhole is limited. Further, the sewer lateral from the Golf Course Clubhouse limits the volume of water that can be allowed to surcharge as it would backup into the Clubhouse lower level (restaurants and locker rooms).
- Staff completed a wet well assessment (with Harper & Associates) at night which required a short-term bypass. Sewage flow did not slow down until 11:00 pm and there was some uncertainties with the one-night bypass system.
- Prior Design from Sewage Bypass company proposed a flowthrough plug at the Clubhouse sewer manhole (MH#4) to eliminate any surcharge backup, along with 2 pumps, a baker tank, and generators. Contractors and operations did not feel comfortable taking on the risk of sewage spill into the Clubhouse. Contractors would not have bid the project.
- New option is to construct a secondary wet well to allow proper bypass for this project as well as future bypass requirements.
- TCWD would acquire additional easement in the parking lot.
- Cost Estimate: Prior design was \$1,130,000 and new design is \$1,560,000
- Total Estimate of Project is \$1,820,000 with the pre-purchased pumps and surge tank.

#### FLOTHRU PLUGS (PUMP BYPASS) SPECIFICATIONS





NORTH

FROM BELL CANYON LS

DOVE CANYON GOLF COURSE CLUBHOUSE

Dove Canyon Golf Club

MH#4

FLOW THRU PLUG

MH#3

FROM BARNBURG LS

MH#1

PLUG

DISCHARGE TO FM

MH#2

SUCTION

PUMPS #1A

TANK

PUMPS #2

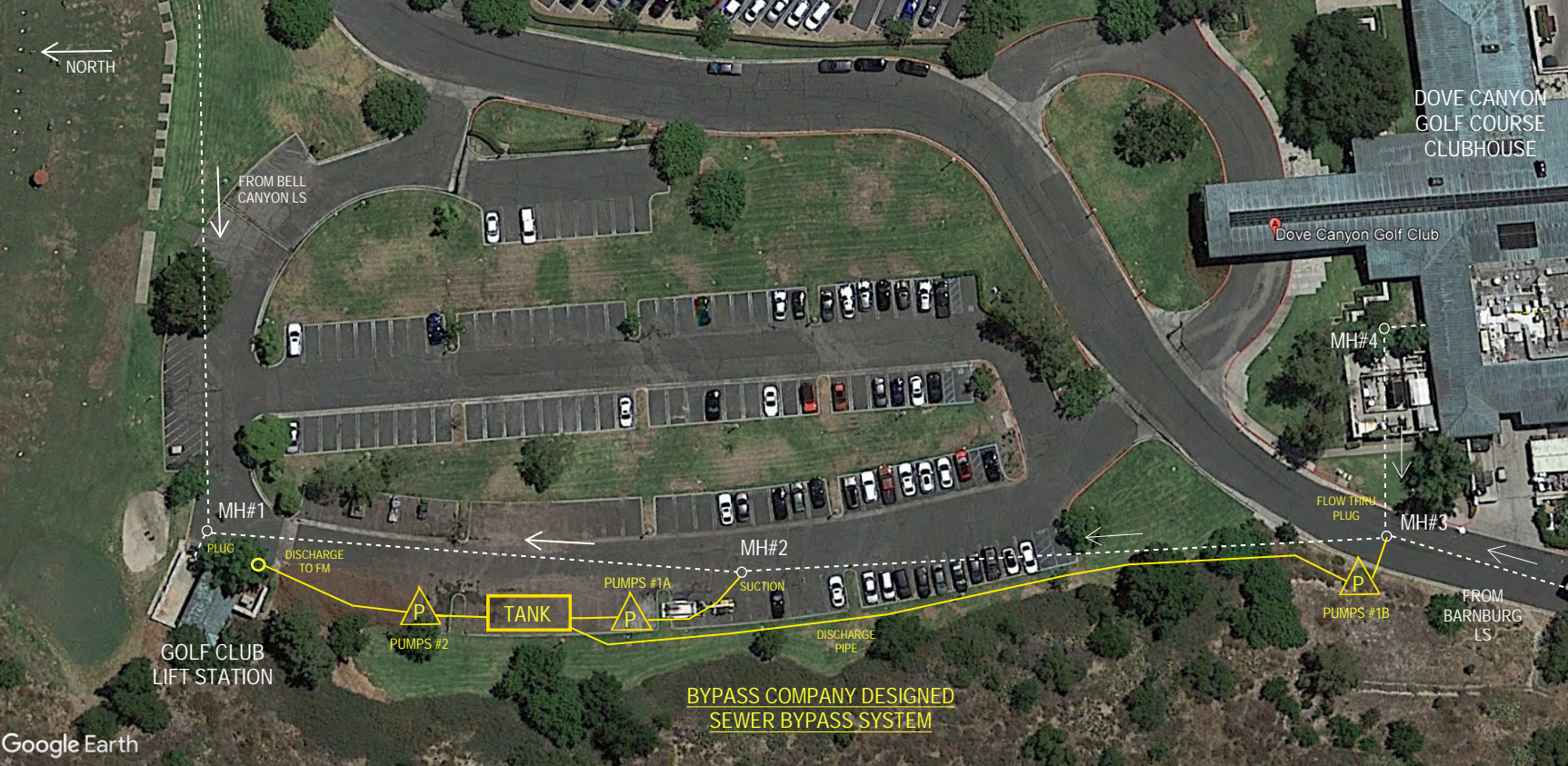
DISCHARGE PIPE

PUMPS #1B

GOLF CLUB LIFT STATION

BYPASS COMPANY DESIGNED SEWER BYPASS SYSTEM

Google Earth





NORTH

FROM BELL CANYON LS

DOVE CANYON GOLF COURSE CLUBHOUSE

Dove Canyon Golf Club

MH#4

MH#3

FROM BARNBURG LS

MH#1

PUMPS #1

DIVERSION MH

DISCHARGE

MH#2

PLUG

DISCHARGE TO FM

SUCTION WETWELL

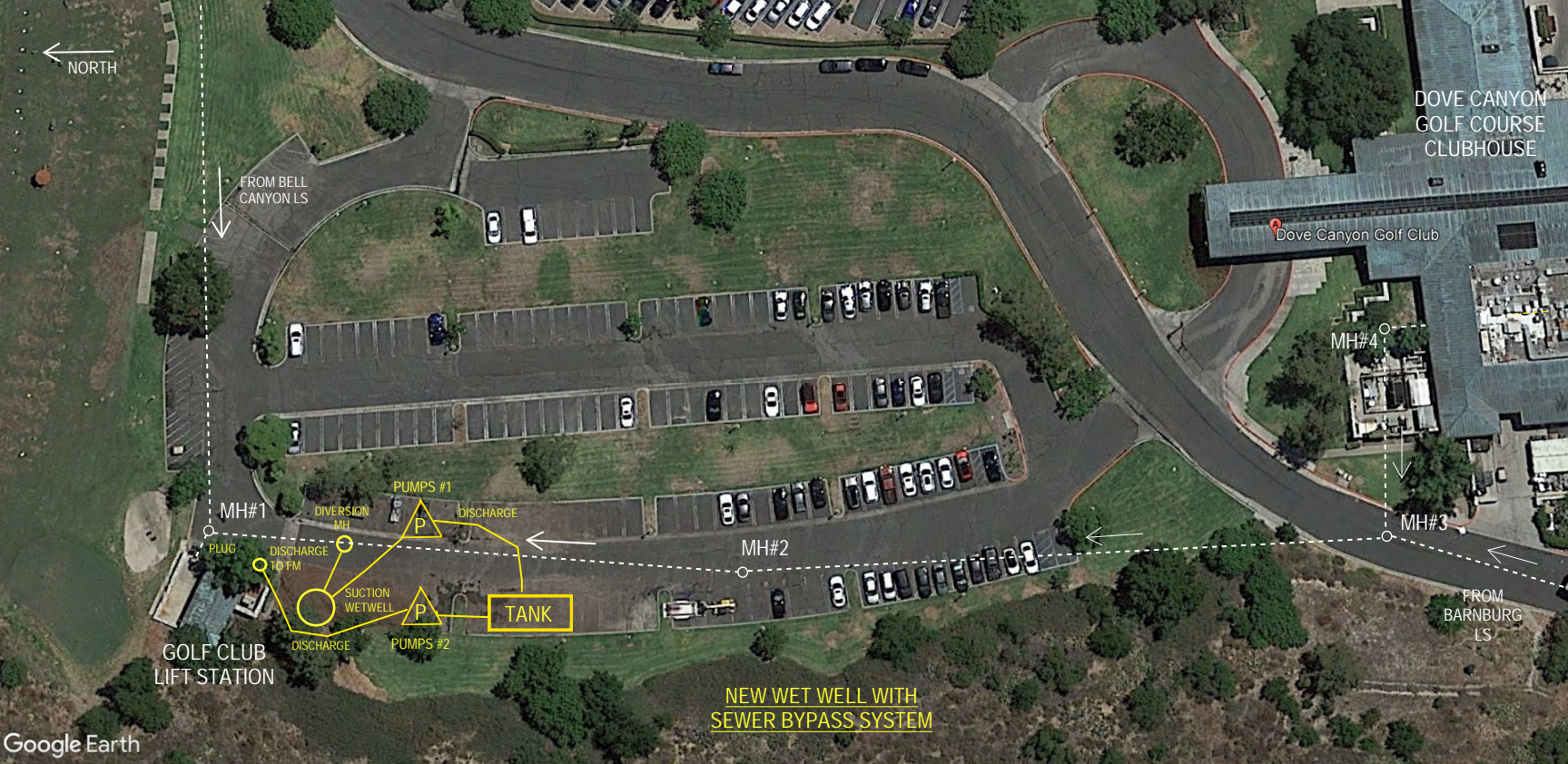
TANK

PUMPS #2

DISCHARGE

GOLF CLUB LIFT STATION

NEW WET WELL WITH SEWER BYPASS SYSTEM



**TRABUCO CANYON WATER DISTRICT  
ENGINEERING/OPERATIONAL COMMITTEE MEETING | APRIL 5, 2023**

**ENGINEERING MATTERS**

**ITEM 5: OTHER ENGINEERING AND OPERATIONS PROJECT UPDATES**

---

1. Orange County Public Works (OCPW) Proposed Trabuco Creek Road Drainage Improvements Project
2. Trabuco Creek Groundwater Treatment Plant Fencing Improvements Update
3. Other Projects

**RECOMMENDED ACTION:**

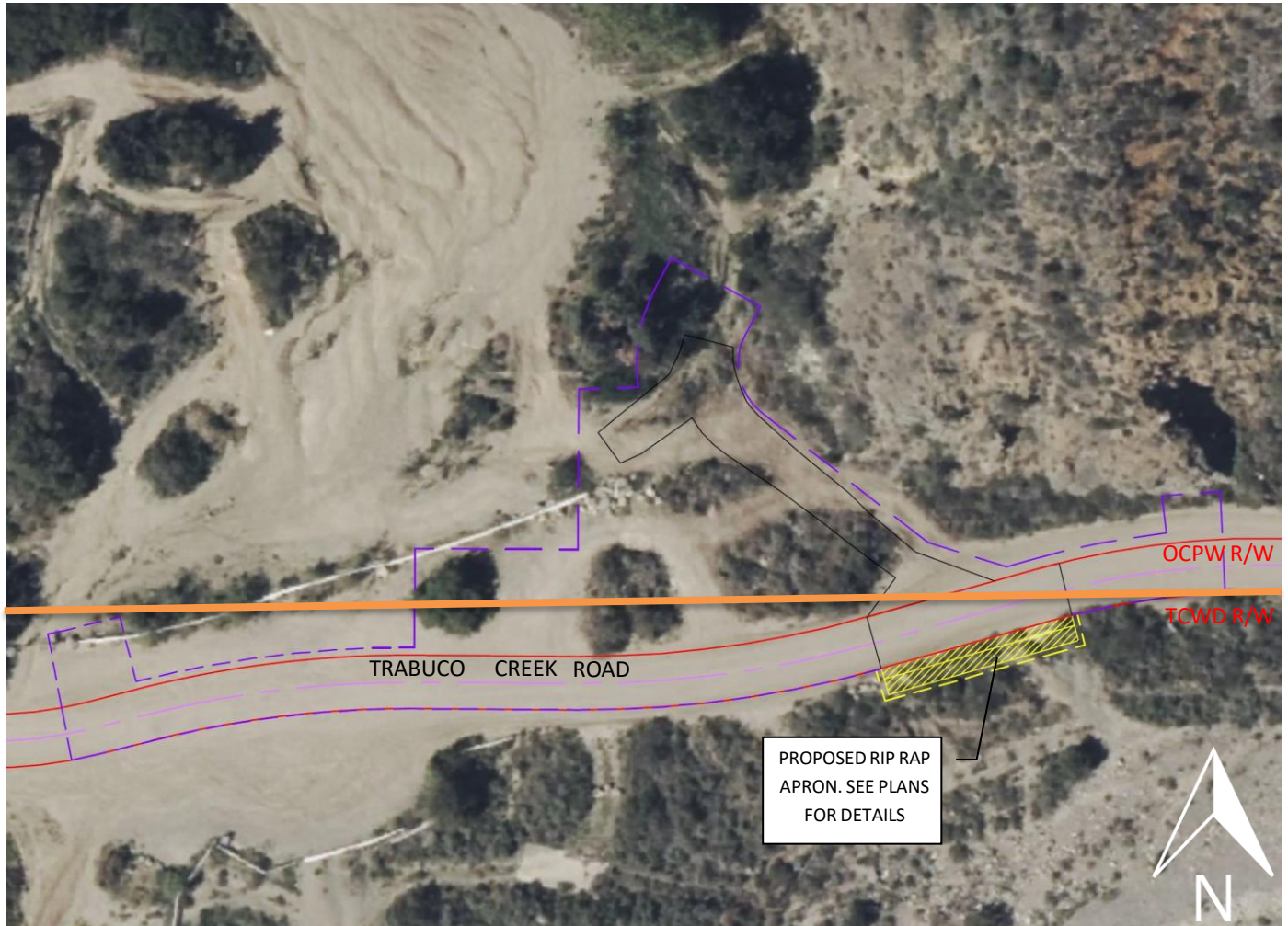
*Committee to receive project status updates at time of the Committee Meeting.*

**EXHIBIT(S):**

1. OCPW Project Right of Way Exhibit
2. OCPW Project Construction Plans

**CONTACTS (staff responsible): PALUDI/PEREA/LAUSTEN**





**LEGEND:**

- - - - - Project Limit
- Proposed Project Feature
- Proposed Rip Rap Apron
- - - - - Proposed Encroachment Area (APN 842-061-05)  
Approximately 935 sq ft
- TCWD Property Line



**PROJECT: TRABUCO CREEK ROAD DRAINAGE  
SWALE IMPROVEMENTS**

Right-of-Way Exhibit

DRAWING NOT TO SCALE

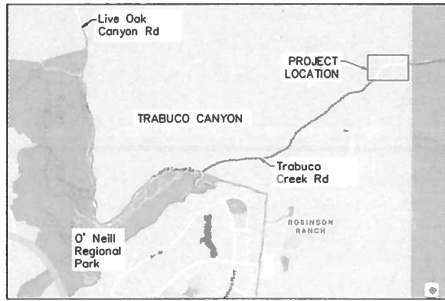
# County of Orange

## Public Works

SANTA ANA, CALIFORNIA  
 JAMES TREADAWAY, P.E., DIRECTOR

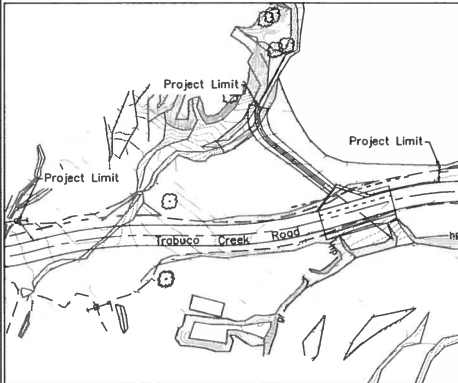
### PLANS FOR CONSTRUCTION OF TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT AT APPX. 1.89 MILES EAST OF TRABUCO CANYON ROAD

OCTOBER 2022



INDICATES SHOWN ON LOCATION MAP

VICINITY MAP (NOT TO SCALE)



PROJECT LIMITS

LOCATION MAP (NOT TO SCALE)

**BASIS OF BEARINGS:**

THE BASIS OF BEARINGS FOR THIS SURVEY IS BASED ON THE CALIFORNIA COORDINATE SYSTEM (CCS83), ZONE VI, NAD 83, OCS (2017.50) EPOCH ADJUSTMENT, AS DETERMINED LOCALLY BY A LINE BETWEEN CONTINUOUS GLOBAL POSITIONING STATIONS COPS STATIONS (P471) AND (M4PK) BEING NORTH 02°18'24" WEST AS DERIVED FROM THE COORDINATES PUBLISHED BY THE CALIFORNIA SPATIAL REFERENCE CENTER (CSRC) ALONG WITH DATA SHEETS ON FILE IN THE OFFICE OF THE ORANGE COUNTY SURVEYOR.

**HORIZONTAL DATUM:**

COORDINATES SHOWN ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM (CCS83), ZONE VI, NAD 83, OCS (2017.50) EPOCH ADJUSTMENT.

ALL DISTANCES SHOWN ARE GRID, UNLESS OTHERWISE NOTED. TO OBTAIN GROUND DISTANCES MULTIPLY GRID BY A COMBINED FACTOR OF 1.00007820.

ALL DISTANCES ARE BASED ON THE U.S. SURVEY FOOT.

THIS COMBINATION FACTOR WAS DERIVED BY HOLDING THE AVERAGE BETWEEN:  
 POINT #3005 N: 2186143.93', E: 6154888.82', ELEVATION= 1014.28'  
 AND  
 POINT #312 N: 2190620.10', E: 6164987.49', ELEVATION= 1003.88'

**BASIS OF STATIONING:**

THE BASIS OF STATIONING IS STA 10+00 STARTING AT CENTERLINE INTERSECTION OF TRABUCO CANYON ROAD, AND TRABUCO CREEK ROAD USING A RECORD ALIGNMENT PER COUNTY OF ORANGE RIGHT OF WAY MAP " TRABUCO CREEK ROAD Z9963 DATED JAN, 2011".

**VERTICAL DATUM:**

O.C.S. BM. 3WW-13-70 ELEV. = 1024.565' YEAR LEVELED: 1990

NAVD 1988 (O.C.S. 1995 ADJUSTMENT)

DESCRIPTION: FOUND 3 3/4" OCS ALUMINUM BENCHMARK DISK STAMPED "3WW-13-70", SET IN THE TOP OF A 6 IN. BY 6 IN. CONCRETE POST. MONUMENT IS LOCATED IN THE SOUTHEASTERLY ALONG TRABUCO CANYON ROAD FROM THE TRABUCO FIRE STATION TO THE INTERSECTION OF TRABUCO CANYON ROAD AND ITS CROSSING OF TRABUCO CREEK, PROCEED 0.15 MILES NORTHEASTERLY ALONG DIRT ROAD ON SOUTHERLY SIDE OF CREEK TO WHERE A SET OF POWER LINES CROSSES SAID DIRT ROAD, 85 FT. SOUTHERLY OF THE CENTERLINE OF THE SAID DIRT ROAD AND 4 FT. SOUTHWESTERLY OF A POWER POST. MONUMENT IS SET LEVEL WITH THE GROUND.

**INDEX OF SHEETS**

SHEET	DESCRIPTION
1	TITLE SHEET
2	CONSTRUCTION NOTES AND REGULATORY REQUIREMENTS
3	PLAN
4	PLAN - FENCE INSTALLATION
5	PLAN - CONCRETE CROSSING
6	PLAN - VOID FILLED RIPRAP SWALE
7	TYPICAL CROSS SECTIONS-CONCRETE CROSSING
8	TYPICAL CROSS SECTIONS and DETAILS -VOID FILLED RIPRAP SWALE
9	DETAIL - FENCING
10	PROFILE - CONCRETE CROSSING
11	PROFILE - VOID FILLED RIPRAP SWALE
12-13	CROSS SECTIONS - CONCRETE CROSSING (STA 110+75 TO STA 111+50)
14-16	CROSS SECTIONS - VOID FILLED RIPRAP SWALE (STA 1+77 TO STA 2+95)
17	SPECIFICATIONS FOR VOID-FILLED RIPRAP



MARK	DESCRIPTION	DATE	APPY

PREPARED UNDER THE RESPONSIBLE CHARGE OF

ROBERT MCLEAN

DESIGNED BY: [Blank]

DRAWN BY: [Blank]

CHECKED BY: [Blank]

DATE: [Blank]

FILE NAME: TRABUCO CREEK ROAD\_DRAINAGE\_SUPPORT

SCALE: AS SHOWN

PLOT DATE: [Blank]

County of Orange Engineering & Public Works

PREPARED BY: MAINTENANCE ENGINEERING SUPPORT

PROJECT NAME: FOUNTAIN VALLEY CHANNEL

TITLE SHEET

SHEET

1

OF 17

CONSTRUCTION NOTES:

- 1 Construct 8" Reinforced PCC pavement per OCPW Std. plan 1803 and as shown on the plan, typical section and detail. Construction shall be phased as shown on plans.
- 2 Construct Reinforced PCC cut-off wall per OCPW Std. plan 1803 and as shown on the plan, typical section and detail
- 3 Install 6" of crushed rocks (No. 3 rock) over native soil as shown on the plan, typical section and detail
- 4 Re-grade road shoulder, feather to match existing
- 5 Install riprap apron per OCPW Std. plan 1809 and as shown on these plans. Riprap shall be Class 375 gradation per Greenbook.
- 6 Install void filled riprap swale per plans, Regulatory Permit Requirements on this sheet, Typical Cross Sections and Details on sheet 8, and specifications on sheet 17
- 7 Unclassified Excavation per plan and as shown in Typical Cross Sections
- 8 Unclassified Backfill per plan and as shown in Typical Cross Sections
- 9 Install fencing per plan and Fencing Detail. Work to be performed by other (Not JOC Work Item)
- 10 Install non woven filter fabric Type I per OCPW Standard plan 1808.
- 11 Clear and grub additional 10 feet width clearing area for Temporary Traffic Control

ABBREVIATIONS:

BC	Begin of Curve	PCC	Portland Cement Concrete
CL	Centerline	Pvmt	Pavement
Clr.	Clearance	ROW	Right of Way
EC	End of Curve	Rt	Right
EP	Edge of Pavement	S'y	Southerly
Exist	Existing	Typ.	Typical
FL	Flowline		
FS	Finished Surface		
GB	Grade Break		
HP	Hinge point		
Lt	Left		
N'y	Northerly		
OG	Original Ground		

REGULATORY PERMIT REQUIREMENTS:

1. 404 Permit:
  - a. Use appropriate BMP (silt fences, silt basins, gravel bags, etc)
  - b. Work to be carried out of California gnatcatcher breeding season, or qualified biologist needs to be on site during breeding season to confirm no impacts to gnatcatcher.
  - c. Biological monitor to be on site prior to start of vegetation and sediment removal and for the duration of the work to conduct clearance surveys for federally listed species.
  - d. Prior to commencement, all work areas, including staging and temporary construction easements must be demarcated with fencing. No work is permitted outside of delineated work area.
  - e. At least 0.12 acres of coastal sage scrub to be established (by separate Restoration Contractor)
  - f. Maintain site in good condition.
  - g. If historic or archeological remains are discovered, immediately notify the Corps.
  - h. Corps to be allowed to visit the site at any time.
  - i. Prior to initiating construction, OCPW to submit final grading/construction plans showing all work and structures in Waters of the US.
  - j. No access to Waters of the US, outside of permitted construction area.
2. 401 Permit: The project is enrolled in SWRCB GWDR Order No. 2003-017-DWQ Small Habitat Restoration Projects. All work must be completed as described in the Notice of Intent and associated documents and includes:
  - The new 0.07-acre (130 linear foot) stream channel will be established and vegetated with native riparian species, vegetation by separate restoration contractor.
  - A concrete Arizona crossing will be constructed across the road to prevent flows eroding the roadway.
  - The point of confluence where the tributary will flow into Trabuco Creek will be armored using large rock and planted with riparian vegetation.
  - The 0.75-acre hillside and newly established stream channel will be fenced off to prevent further damage by off-road vehicles (ORV) and re-vegetated with Coastal sage scrub. (Fencing and Vegetation to be completed by separate Restoration Contract)
  - A 0.07-acre (130 linear foot) stream channel will be established on-site to ensure there is no net loss of streambed from implementation of the project and vegetated with native riparian species.
  - The Project also includes re-establishment of approximately 60 linear feet of the currently degraded channel bed and rehabilitation of 120 linear feet of existing upstream channel. (To be completed by separate Restoration Contract)
  - Fencing designed to prevent ORV access will be installed around the Project site providing protection to over on acre of hillside from further ORV degradation.
3. 1600 Permit – Op. by Law. The Op. by Law requires that the project be constructed as described in the permit application and includes:
  - Project activities consist of 0.75 acre of restoration activities including 0.26 acre of coastal sage scrub and 0.03 acre of riparian scrub re-establishment, 0.07 acre of new channel with riparian vegetation establishment and 0.39 acre of adjacent coastal sage scrub and upstream tributary enhancement. The entire area will be fenced off to protect the area from future illegal 4x4 activity.



**OC Infrastructure Programs/Engineering  
Maintenance Engineering Support**

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Prepared by: SL

Date: 10/14/2022

Revision:

Sheet 2 of 17

**CONSTRUCTION NOTES AND  
REGULATORY REQUIREMENTS**

TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT

TRABUCO CREEK ROAD CENTERLINE DATA TABLE

CURVE TABLE					
CURVE NO	ANGLE	RADIUS	LENGTH	START STATION	END STATION
(a)	30°58'52"	150'	81.10'	106+98.19	107+79.29
(b)	14°36'00"	400'	101.92'	108+00.09	109+02.01
(c)	16°07'42"	400'	112.59'	109+62.98	110+75.57
(d)	19°37'26"	300'	102.74'	111+40.98	112+43.72

LINE TABLE				
LINE NO	BEARING	LENGTH	START STATION	END STATION
L1	N75°45'26.98"E	20.80'	107+79.29	108+00.09
L2	S89°38'33.33"E	60.97'	109+02.01	109+62.98
L3	N74°13'44.97"E	65.41'	110+75.57	111+40.98

Note: Refer to Survey File 2021PW-ENG0002 for additional survey topographic data and Basis of Stationing.

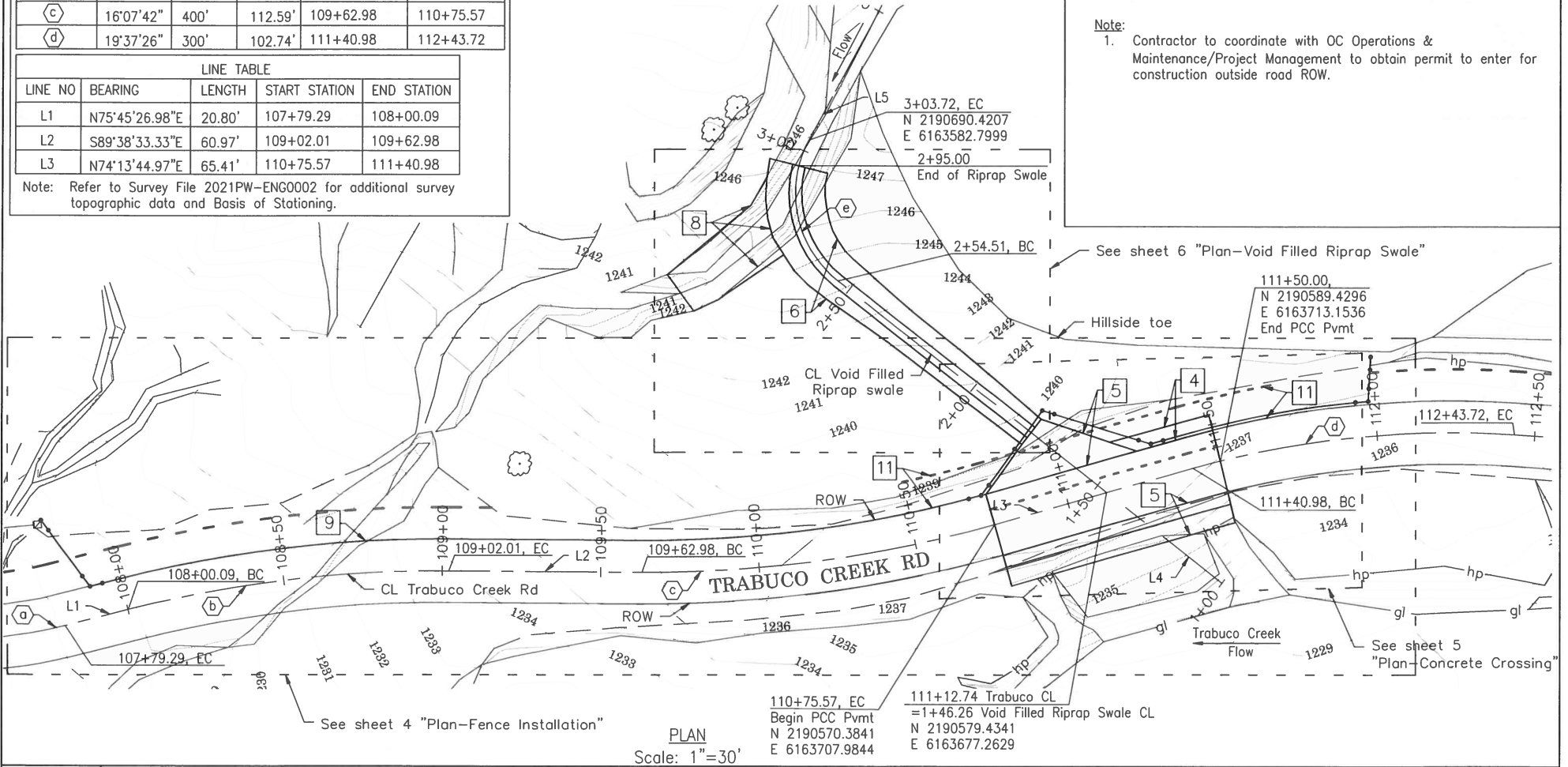
RIPRAP SWALE CENTERLINE DATA TABLE

CURVE TABLE					
CURVE NO	ANGLE	RADIUS	LENGTH	START STATION	END STATION
(e)	80°33'22"	35'	49.21'	2+54.51	3+03.72

LINE TABLE				
LINE NO	BEARING	LENGTH	START STATION	END STATION
L4	N51°58'58.99"W	154.51'	1+00.00	2+54.51
L5	N28°34'22.57"E	46.28'	3+03.72	3+50.00

Note:

- Contractor to coordinate with OC Operations & Maintenance/Project Management to obtain permit to enter for construction outside road ROW.



PLAN  
Scale: 1"=30'



OC Public Works

OC Infrastructure Programs/Engineering  
Maintenance Engineering Support

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Date: 10/14/2022

Revision:

Sheet 3 of 17

PLAN

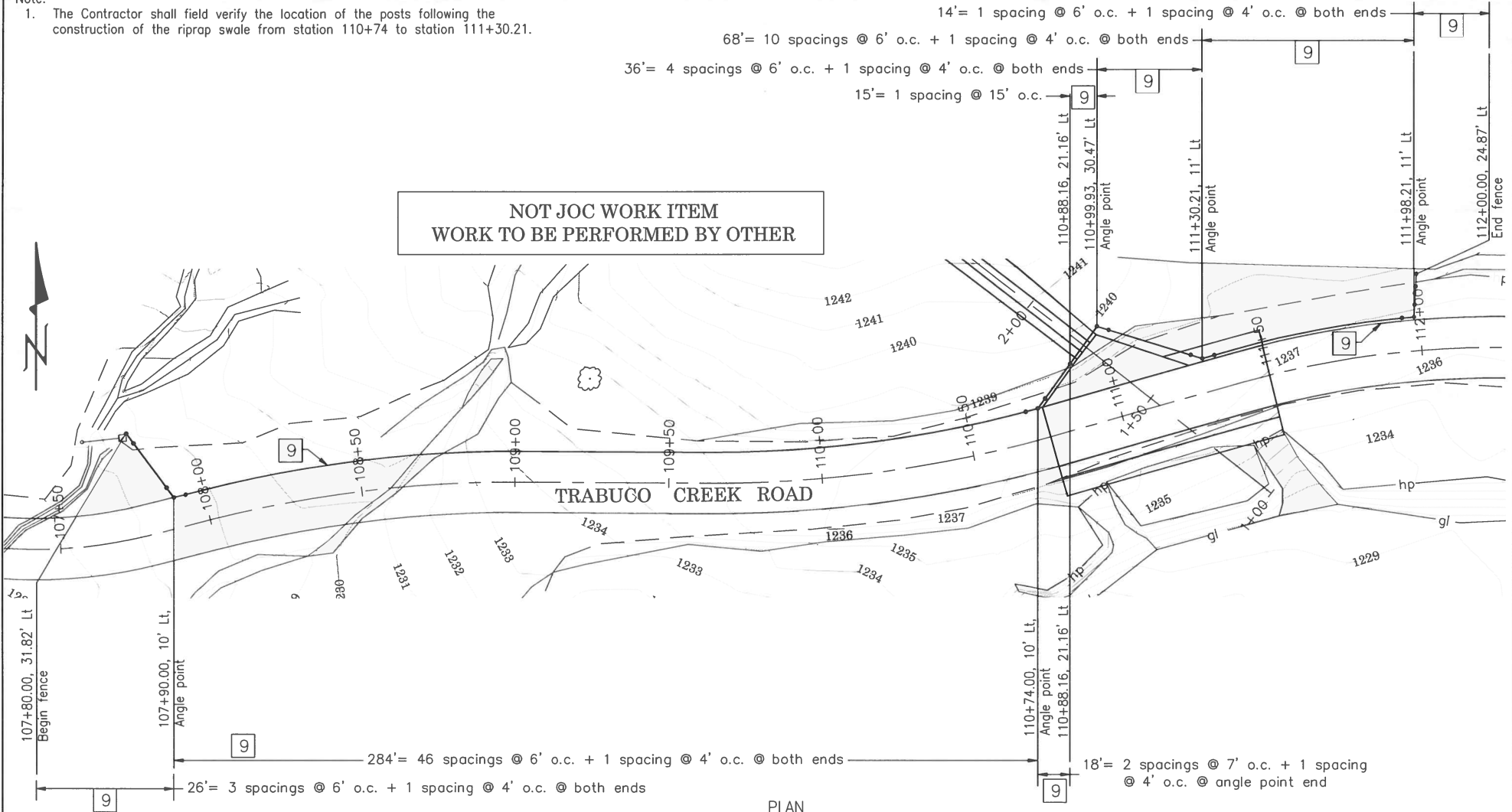
TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT

Note:




- The Contractor shall field verify the location of the posts following the construction of the riprap swale from station 110+74 to station 111+30.21.

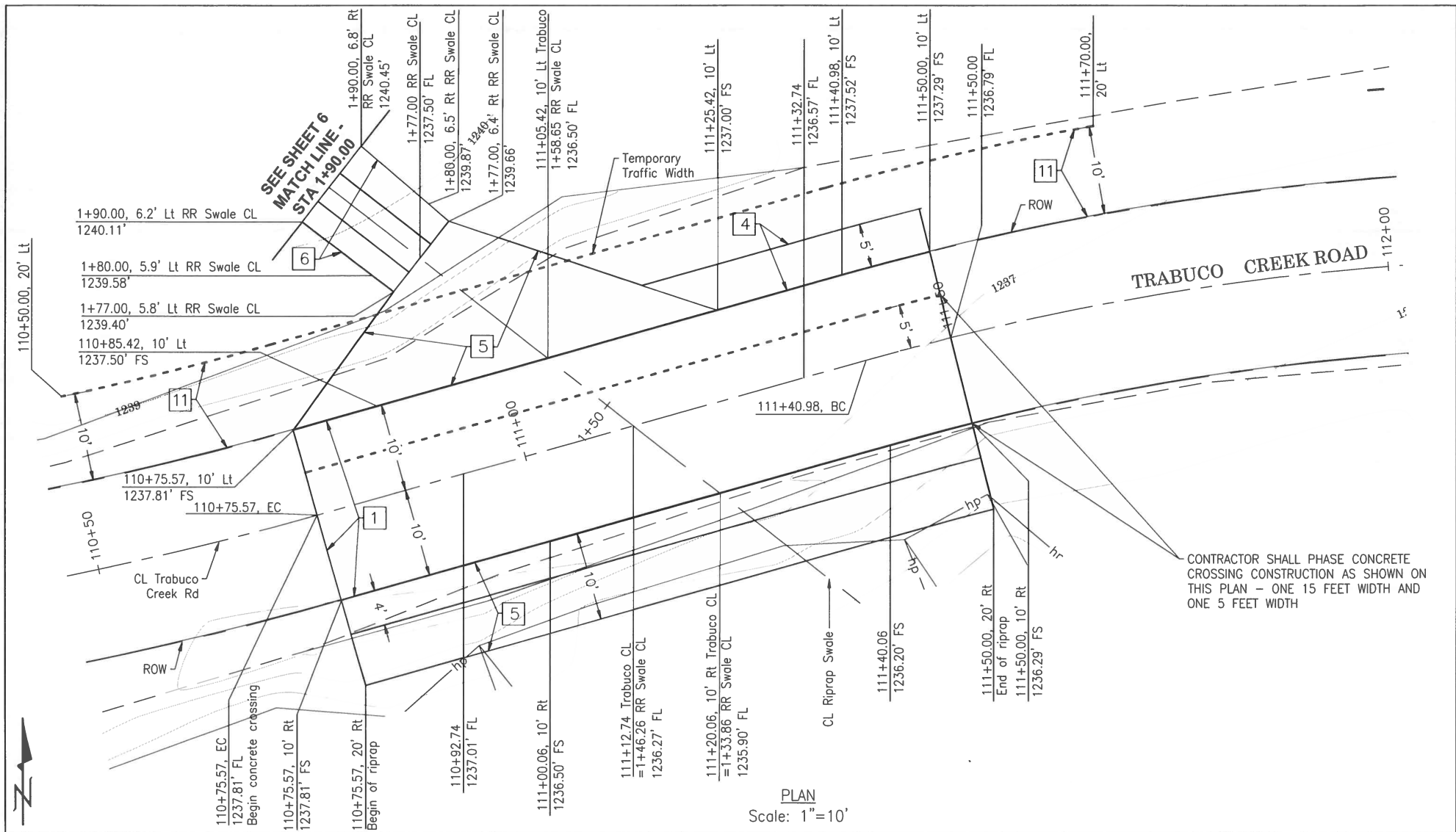
14' = 1 spacing @ 6' o.c. + 1 spacing @ 4' o.c. @ both ends  
 68' = 10 spacings @ 6' o.c. + 1 spacing @ 4' o.c. @ both ends  
 36' = 4 spacings @ 6' o.c. + 1 spacing @ 4' o.c. @ both ends  
 15' = 1 spacing @ 15' o.c.

NOT JOC WORK ITEM  
 WORK TO BE PERFORMED BY OTHER



PLAN  
 Scale: 1"=30'

	 <b>OC Infrastructure Programs/Engineering                  Maintenance Engineering Support</b>	Prepared under the responsible charge of the Engineer whose seal is affixed for use in repairs for the project shown hereon. 	Prepared by: SL	<b>PLAN - FENCE INSTALLATION</b>
			Date: 10/13/2022	
			Sheet 4 of 17	TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT



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Date: 10/14/2022

Revision:

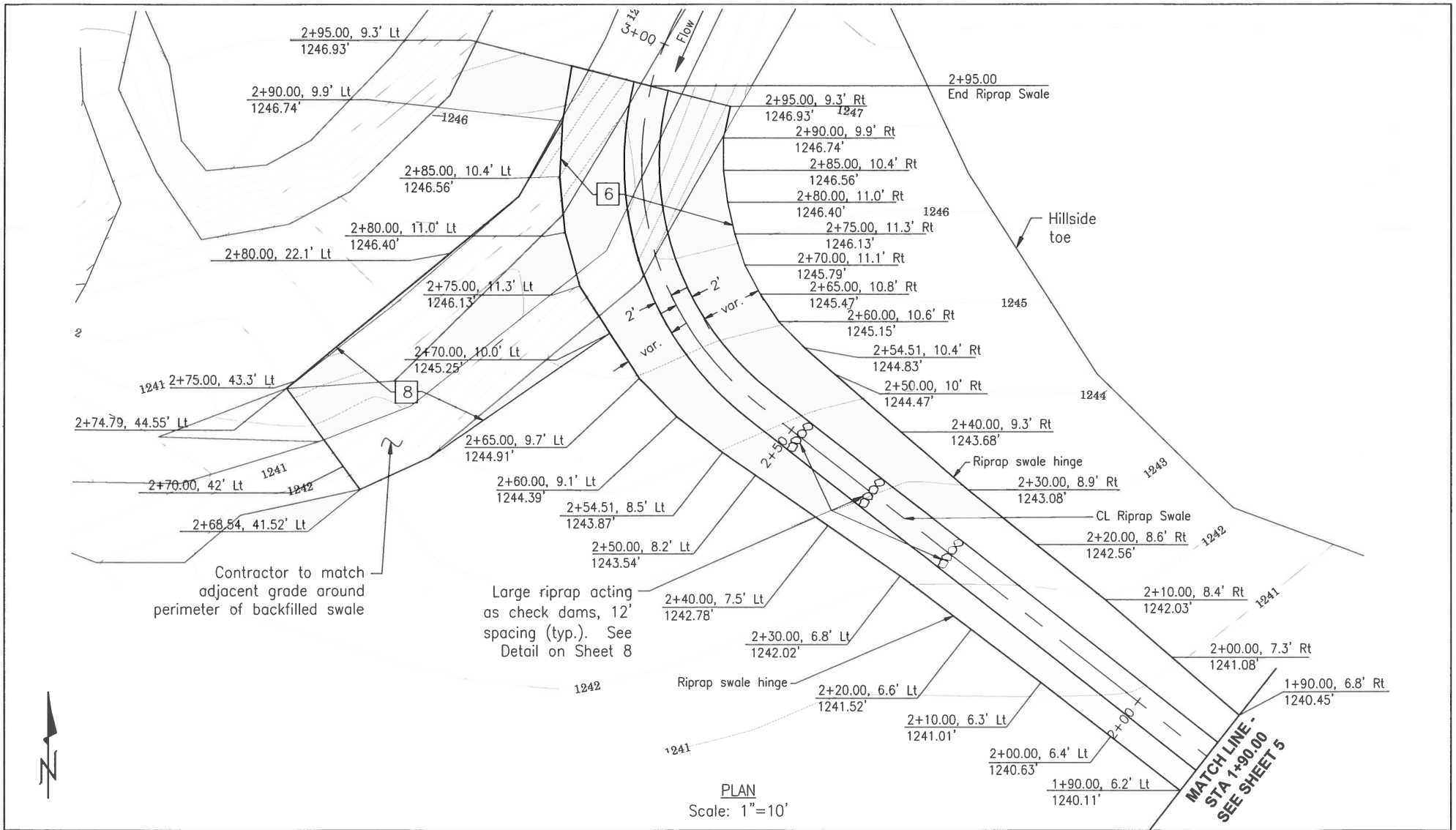
Sheet 5 of 17

**PLAN - CONCRETE CROSSING**

STATION 110+75.57 TO STATION 112+00

TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT





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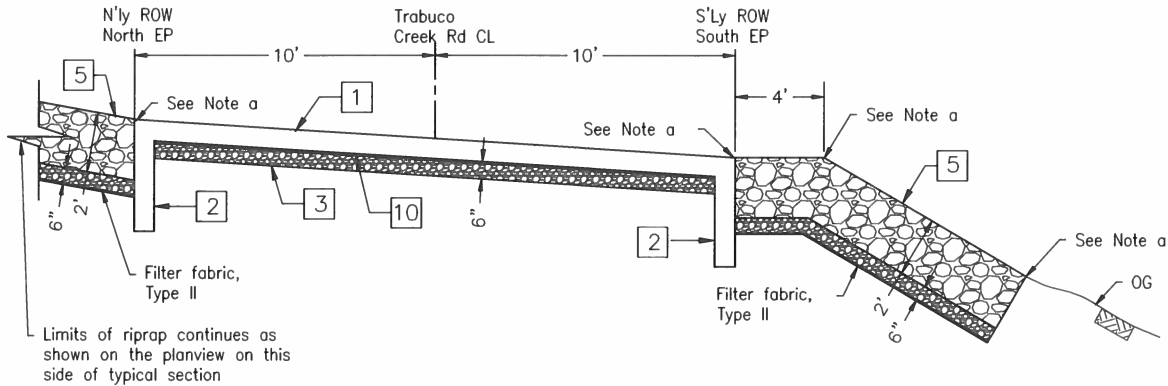


Prepared by: SL  
Date: 10/13/2022  
Revision:

Sheet 6 of 17

**PLAN - VOID FILLED RIPRAP SWALE**

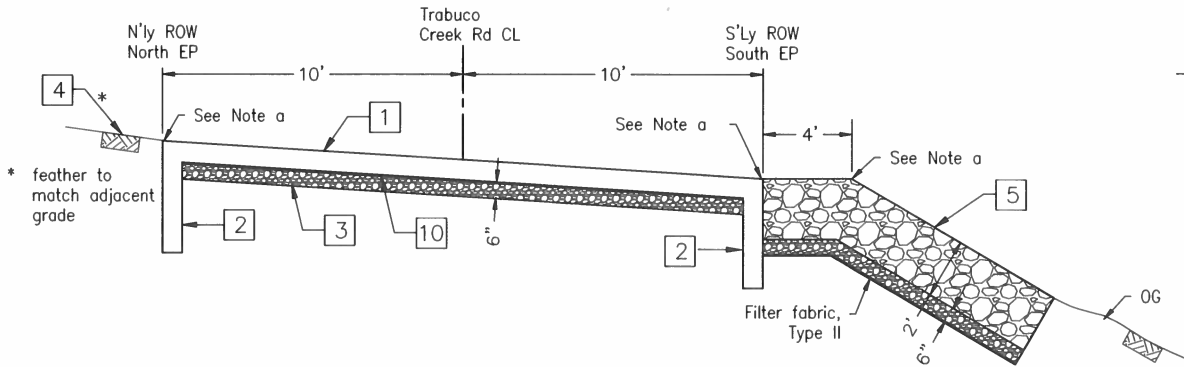
TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT



Limits of riprap continues as shown on the planview on this side of typical section

**TYPICAL SECTION – CONCRETE CROSSING**  
Scale: N.T.S.

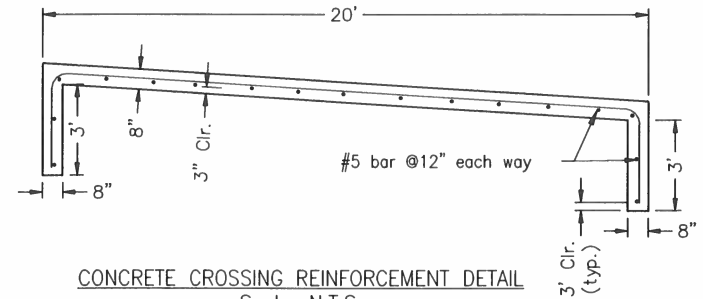
(Northside: From Sta. 110+75.57 to Sta 111+25.42  
Southside: From Sta. 110+75.57 to Sta. 111+50.00)



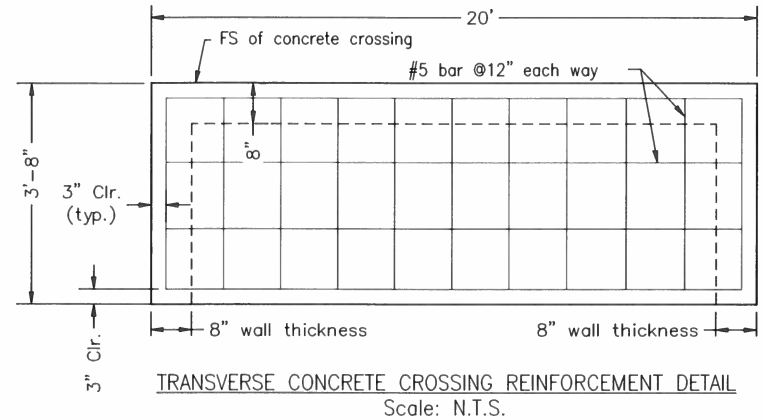
\* feather to match adjacent grade

**TYPICAL SECTION – CONCRETE CROSSING**  
Scale: N.T.S.

(Northside: From Sta. 111+25.42 to Sta. 111+50.00)



**CONCRETE CROSSING REINFORCEMENT DETAIL**  
Scale: N.T.S.



**TRANSVERSE CONCRETE CROSSING REINFORCEMENT DETAIL**  
Scale: N.T.S.

**NOTES:**

- a. Refer to "Plan-Concrete Crossing" and "Cross Sections – Concrete Crossing" sheets for offsets and elevations..
- b. Cut-off wall installations are on both sides and from station 110+75.57 to station 111+50.
- c. Transverse cut-off wall installations are at both ends of Reinforced PCC pavement at stations 110+75.57 and 111+50.



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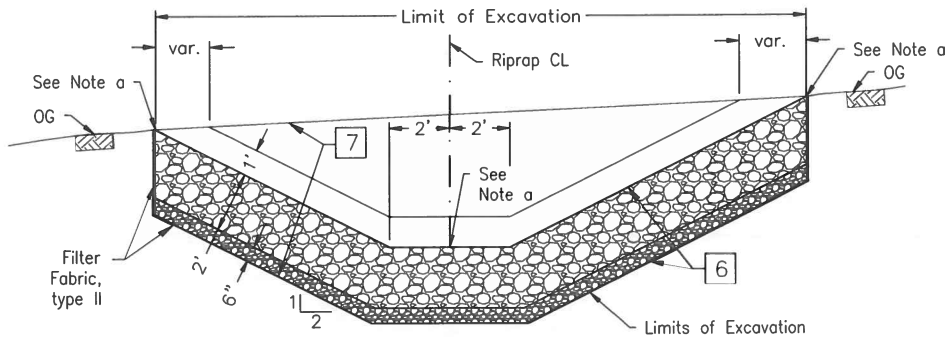
Date: 10/13/2022

Revision:

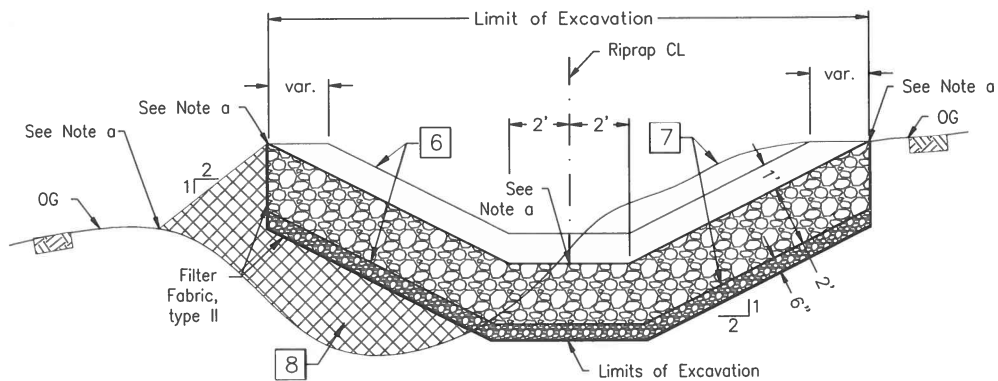
Sheet 7 of 17

**TYPICAL CROSS SECTIONS -  
CONCRETE CROSSING**

TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT



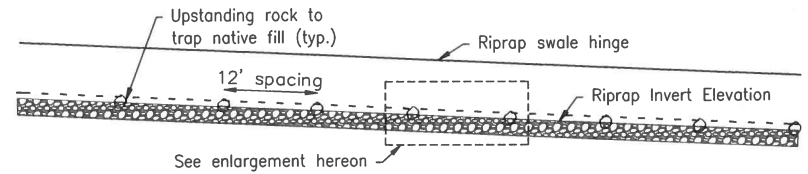
**TYPICAL SECTION – VOID FILLED RIPRAP SWALE**  
 Scale: N.T.S.  
 (From station 1+77.00 to station 2+75.00)



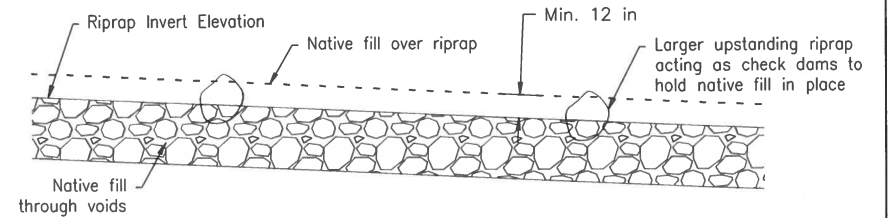
**TYPICAL SECTION – VOID FILLED RIPRAP SWALE**  
 Scale: N.T.S.  
 (From station 2+75.00 to station 2+95.00)

**NOTES:**

- a. Refer to "Plan-Riprap Swale", and "Cross Sections – Riprap Swale" sheets for flowline elevations, and other station offsets and elevations.



**DETAIL – VOID FILL AND COVER OVER RIPRAP**  
 Scale: N.T.S.



**ENLARGEMENT – VOID FILL AND COVER OVER RIPRAP**  
 Scale: N.T.S.



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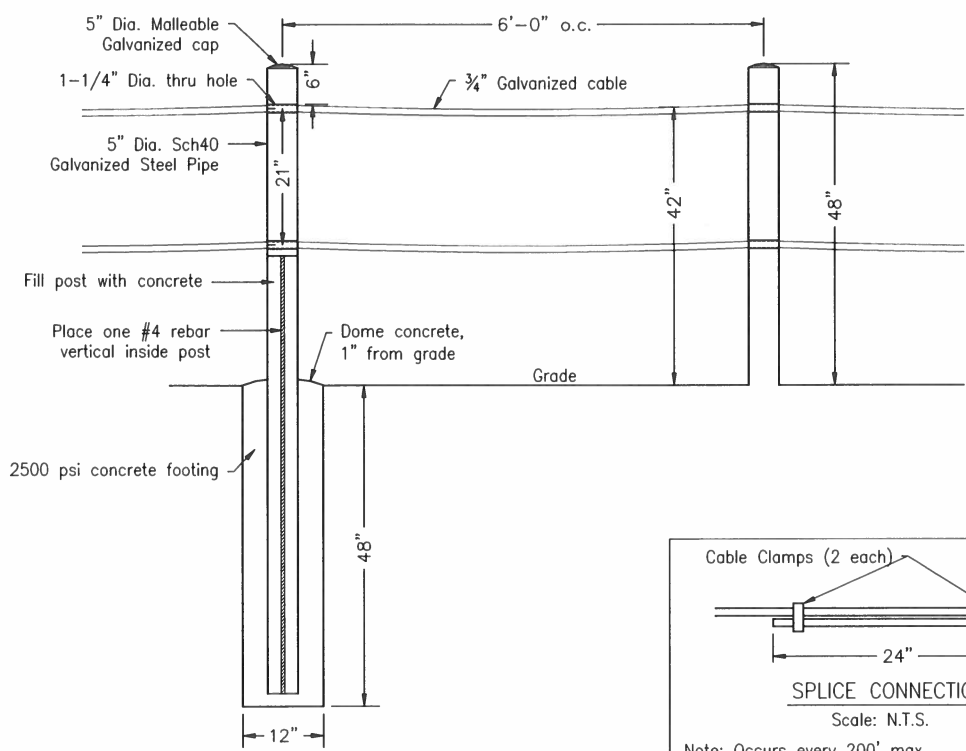
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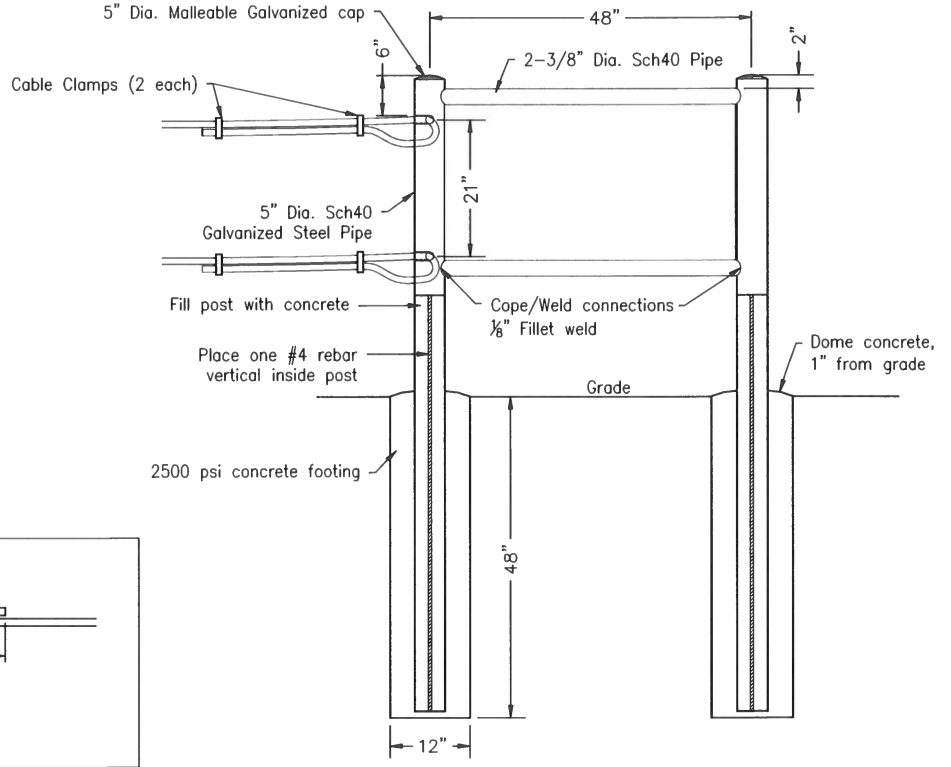
Sheet 8 of 17

**TYPICAL CROSS SECTIONS and DETAILS - VOID FILLED RIPRAP SWALE**

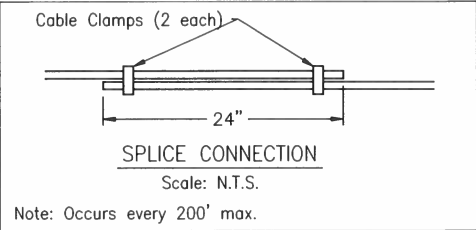
TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT



TYPICAL CABLE FENCE  
Scale: N.T.S.



END POST, TERMINATION, OR CHANGE IN DIRECTION  
Scale: N.T.S.



Note: Occurs every 200' max.

- NOTES:
1. All material to have a galvanized finish.
  2. Cable to pass through post.

NOT JOC WORK ITEM  
WORK TO BE PERFORMED BY OTHER



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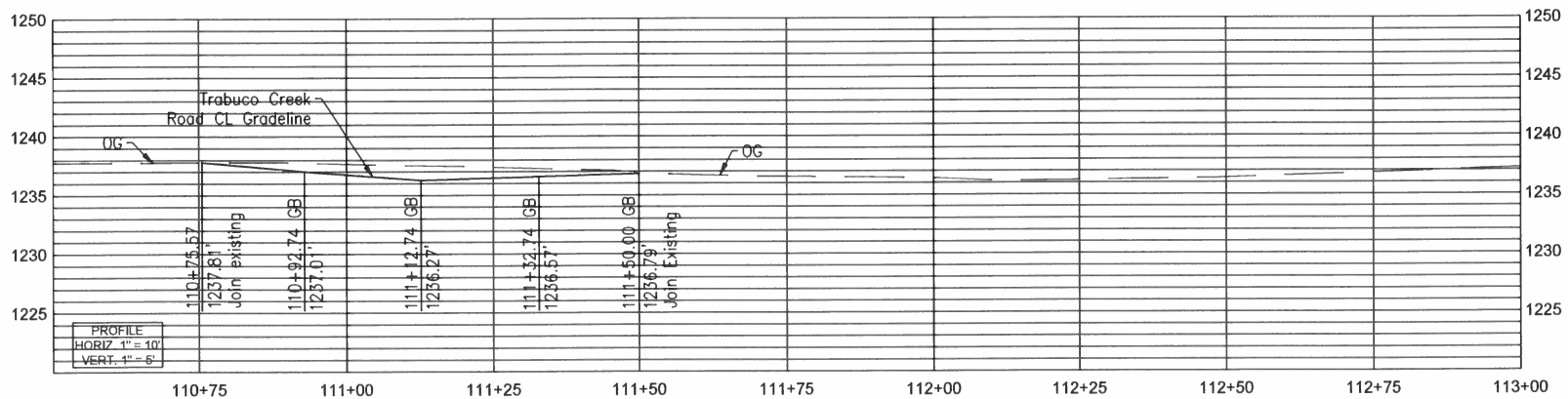
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Date: 09/12/2022  
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DETAIL - FENCING

TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT



PROFILE - CONCRETE CROSSING CL GRADELINE  
 Scale: HORIZ: 1"=10'  
 VERT: 1"=5'



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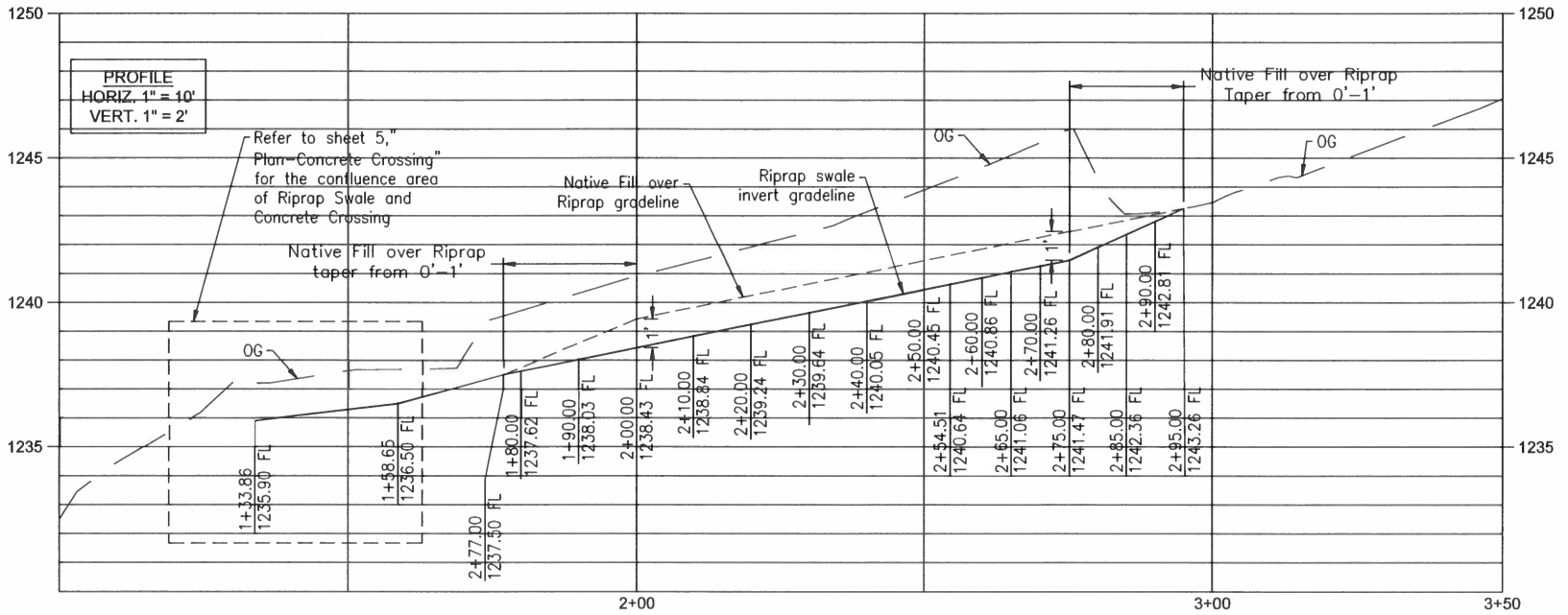


Prepared by: SL  
 Date: 09/12/2022  
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**PROFILE - CONCRETE CROSSING**

TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT



PROFILE - VOID FILLED RIPRAP SWALE INVERT GRADELINE

Scale: HORIZ: 1"=10'  
 VERT: 1"=2'



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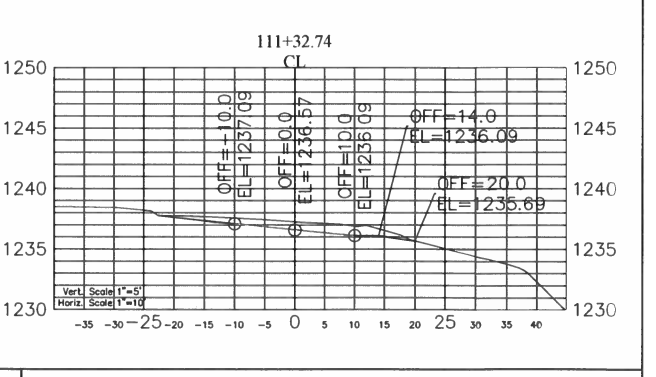
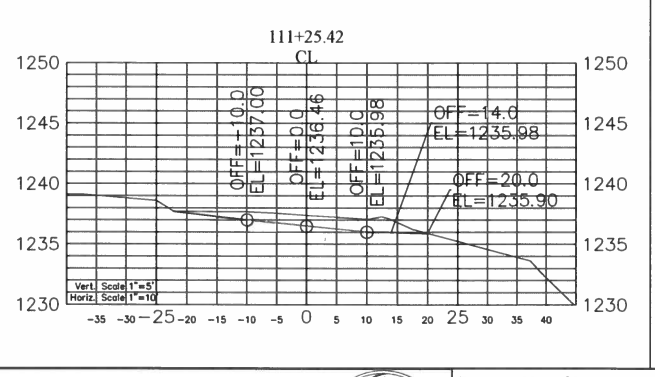
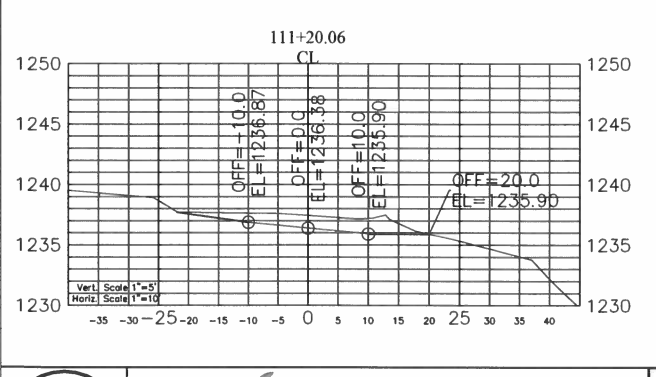
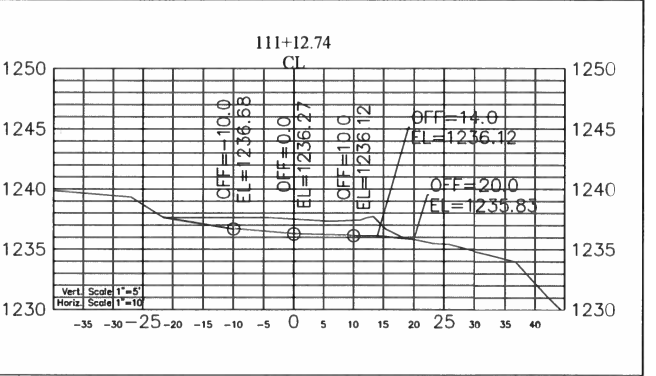
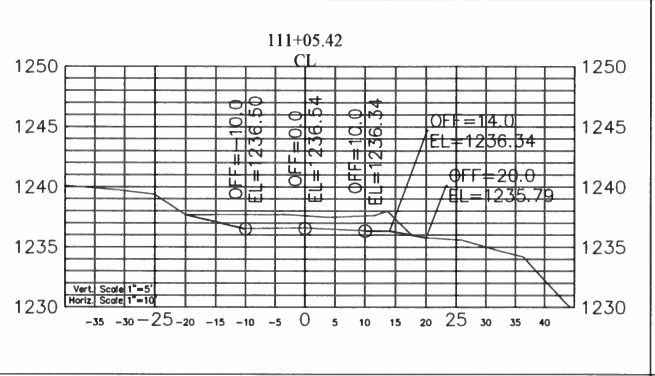
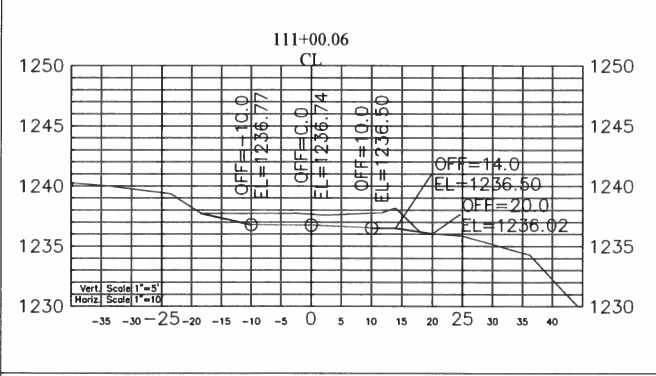
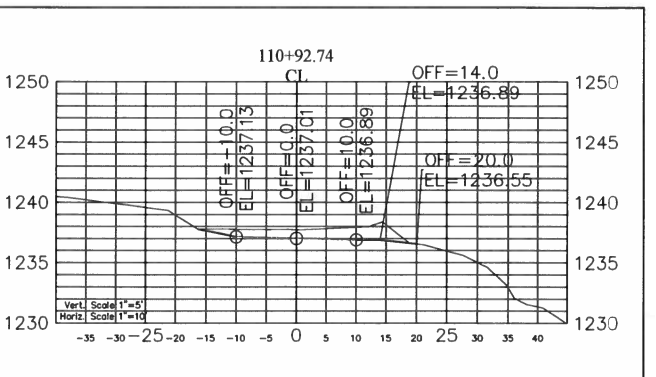
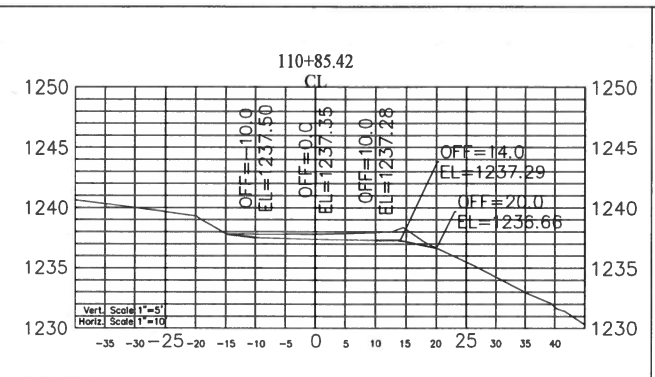
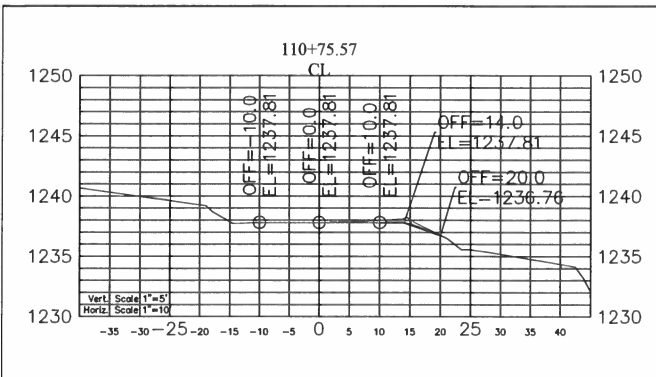
Date: 09/12/2022

Revision:

Sheet 11 of 17

**PROFILE -  
 VOID FILLED RIPRAP SWALE**

TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT



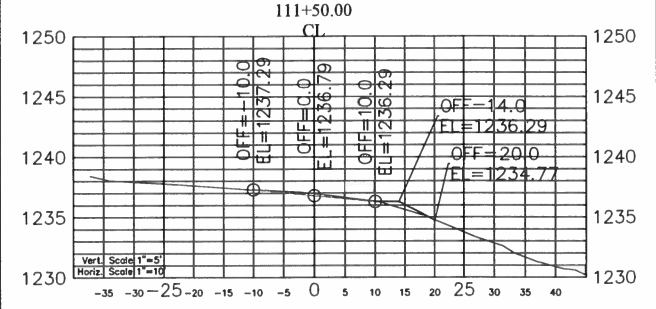
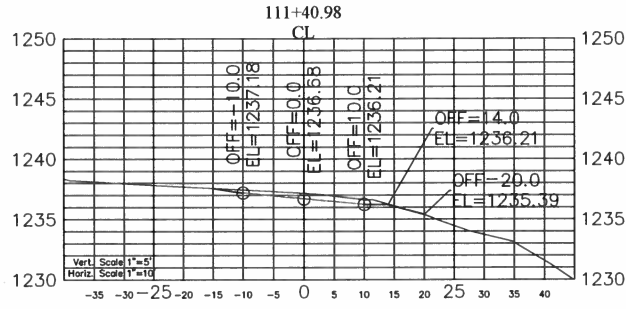
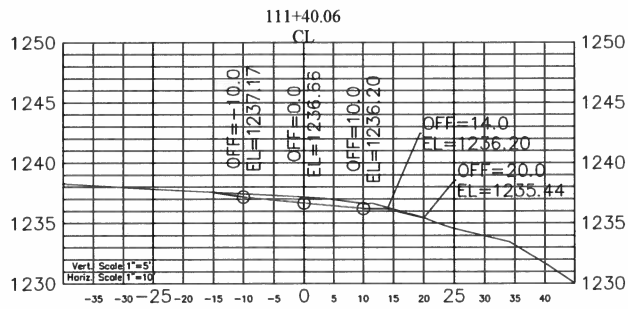
**OC Public Works**  
OC Infrastructure Programs/Engineering  
Maintenance Engineering Support

Prepared under the responsible charge of the Engineer whose seal is affixed for use in repairs for the project shown herein.



Prepared by: SL  
Date: 09/12/2022  
Revision:  
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**CROSS SECTIONS**  
CONCRETE CROSSING: STA 110+75.57 TO STA 111+32.74  
TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT



**OC Public Works**

**OC Infrastructure Programs/Engineering  
Maintenance Engineering Support**

Prepared under the responsible charge of the Engineer whose seal is affixed for use in repairs for the project shown hereon.



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Date: 09/12/2022

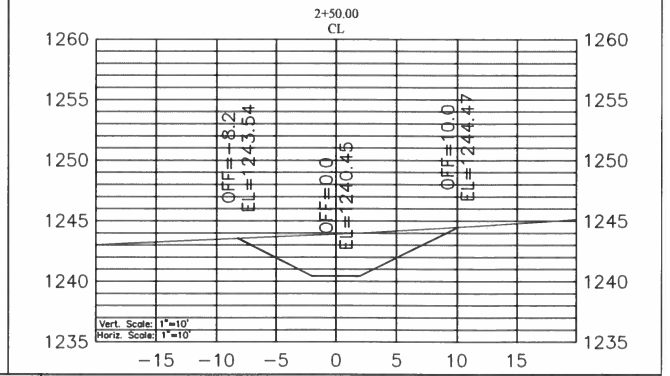
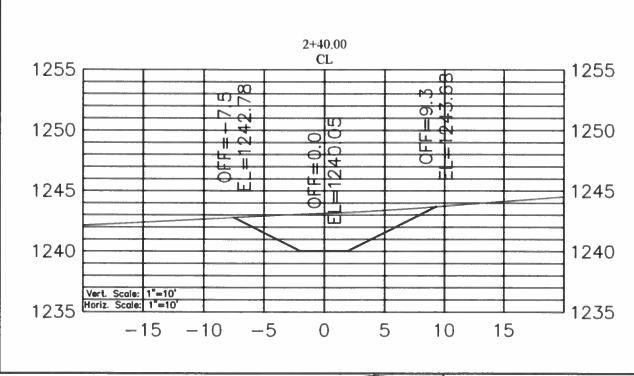
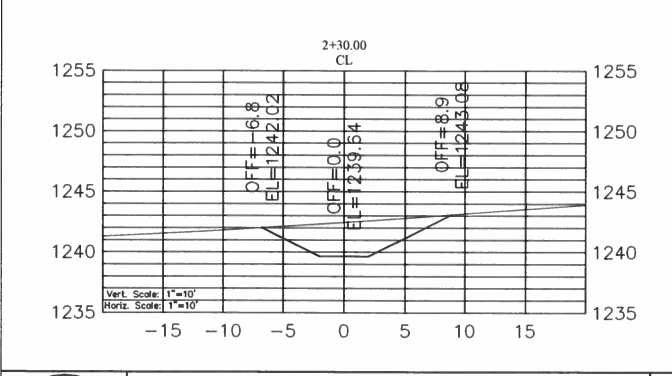
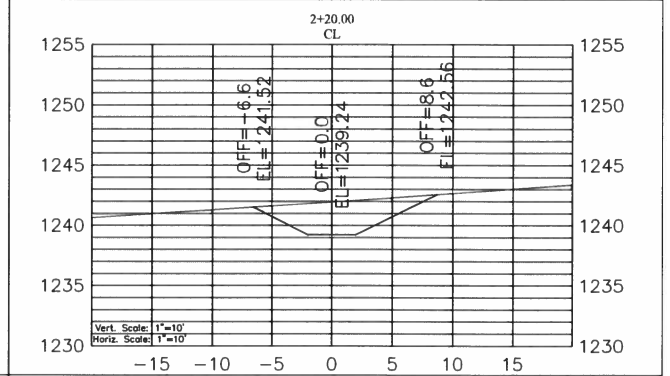
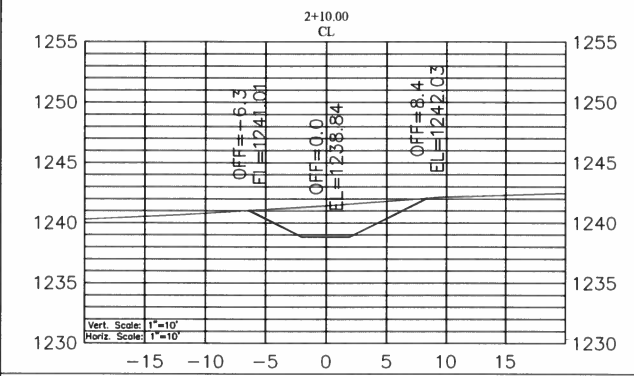
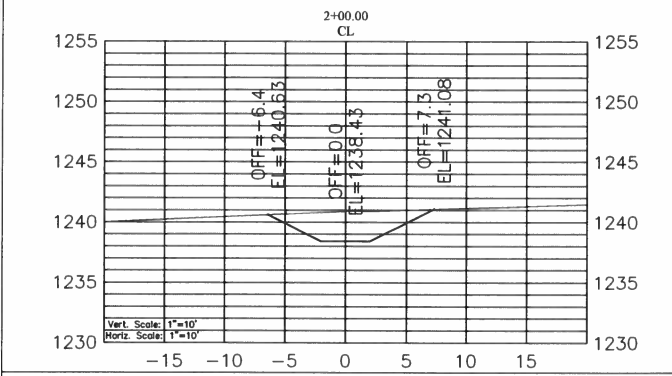
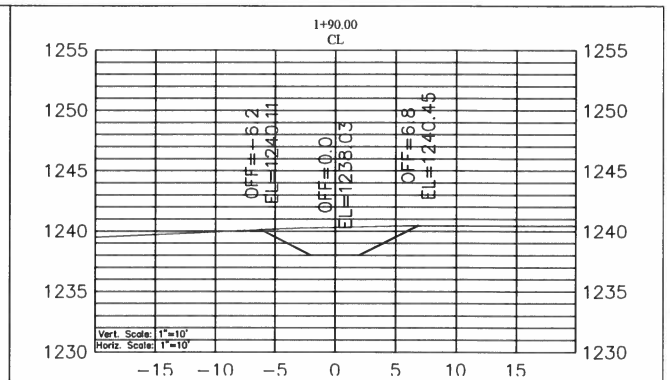
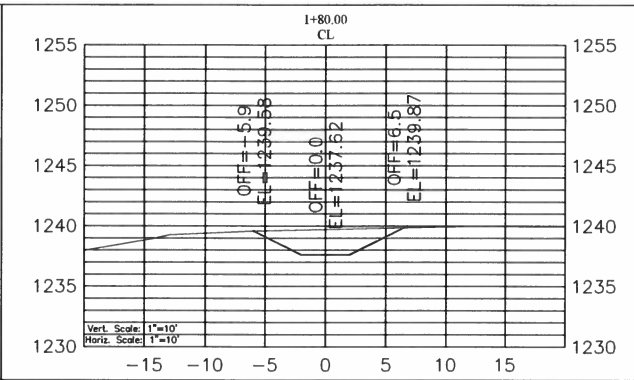
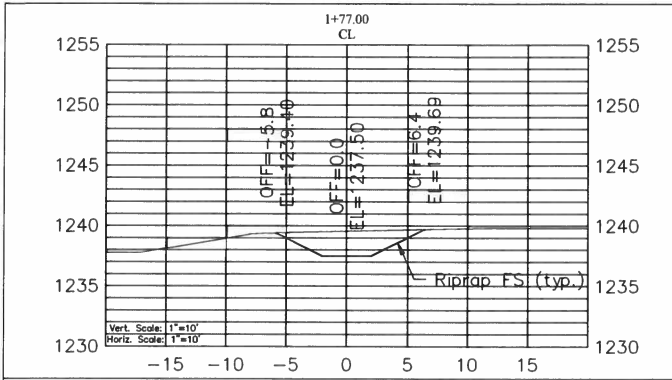
Revision:

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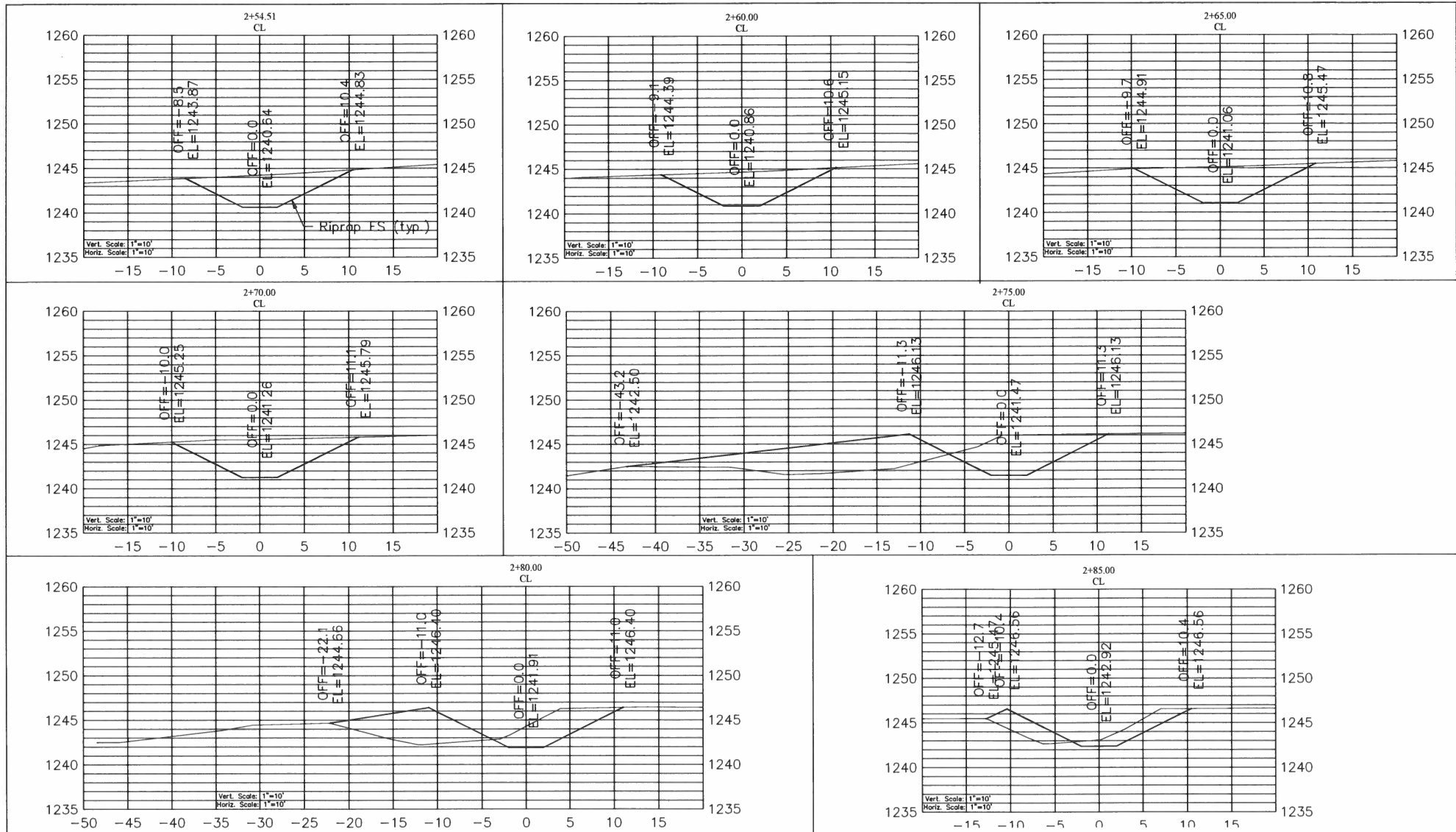
## CROSS SECTIONS

CONCRETE CROSSING: STA 111+40.06 TO STA 111+50  
TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT





	 <b>OC Infrastructure Programs/Engineering Maintenance Engineering Support</b>	Prepared under the responsible charge of the Engineer whose seal is affixed for use in repairs for the project shown herein.		Prepared by: SL	<b>CROSS SECTIONS</b> VOID FILLED RIPRAP SWALE: STA 1+77 TO STA 2+50 TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT
				Date: 10/13/2022	
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**OC Public Works**

**OC Infrastructure Programs/Engineering Maintenance Engineering Support**

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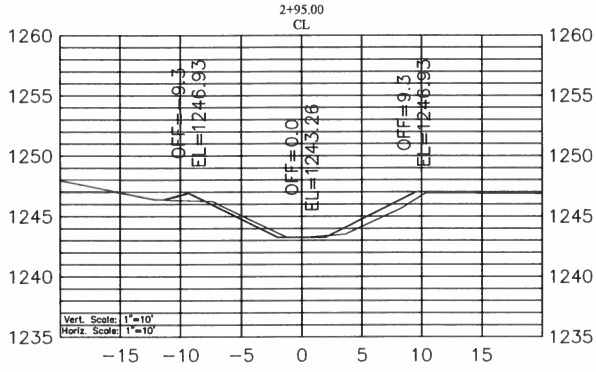
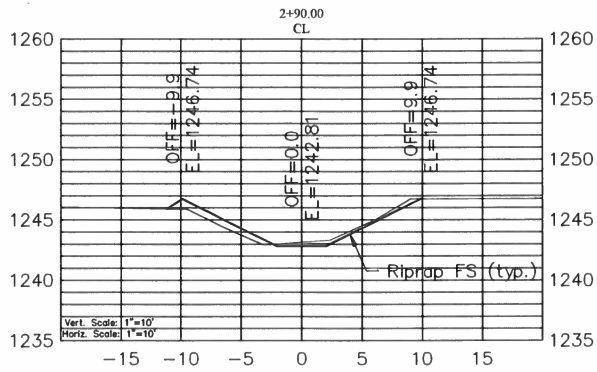
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**CROSS SECTIONS**

**VOID FILLED RIPRAP SWALE: STA 2+60 TO STA 2+85**  
**TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT**



OC Public Works

OC Infrastructure Programs/Engineering  
Maintenance Engineering Support

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Date: 10/13/2022

Revision:

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### CROSS SECTIONS

VOID FILLED RIPRAP SWALE: STA 2+90 TO STA 2+95  
TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT

**SPECIFICATIONS FOR VOID-FILLED RIPRAP**

Void-Filled Riprap shall consist of a conglomerate material comprised of both Rock Riprap and washed-in 4" minus gradation screenings (SCREENINGS) obtained from in-situ soils. Screenings shall be obtained from the unclassified excavations shown on the plans. Screenings shall consist of those materials that pass through a 4-inch-minus gradation skeleton bucket attachment actuated at the end of an excavator arm. Screenings shall be used to fill the voids within the riprap protection via a washed-in method and in the manner as described below within **Void-Filled Riprap Placement**.

*Riprap Protection* shall conform to OC Public Works Standard Plan 1809 with the exception of gradation requirements. Stone gradation for Riprap Protection shall be Class 375 per Greenbook.

*Screenings* shall be sourced from the limits shown on the plans and shall consist of those materials that pass through a 4-inch skeleton bucket attached to the end of an excavator arm. Approximately 100 cubic yards (CY) of screenings are required to fill the voids within the approximately 250 CY of riprap protection. Field inspection of the source area indicates that in-situ soils possess approximately 40%-50% by volume passing the 4-inch screening gradation. Approximately 200 CY-250 CY of soil will need to be screened to obtain the estimated 100 CY of void fill screenings.

*Spoils* from the screening operation are to be removed from the site.

**Void-Filled Riprap Placement**

Riprap shall be placed in horizontal lifts of 2-foot thickness and interlocked together in accordance with the requirements of OC Public Works Standard Plan 1809. A void ratio of 35% is assumed to exist within the riprap once placed. Upon placement of the first layer of riprap, the screenings material shall be spread evenly atop the finished horizontal surface of the riprap sufficient to fill the voids less a gap of six inches from the top of the finished riprap's horizontal surface. This gap shall allow for successive interlocking of the next riprap layer. Infilling of the voids with screenings shall be accomplished via a washing-in method. Once this first layer of riprap has been filled in this manner, subsequent layers of riprap protection shall be placed and in-filled with screenings in the same 2-foot lift thickness interval to achieve the lines and grades shown on the plans. To contractor is to use care to prevent excessive washing of material into the stream and shall adhere to the requirements of the ESCCP and other Water Quality Requirements. The contractor shall coordinate the placement of the void-filled riprap such that the construction shall not occur during times when flows are present within the creek.

**Void-Filled Riprap Inspection and Testing**

Riprap inspection and testing shall conform to OC Public Works Standard Plan 1809.

Formal test methods to confirm void fill compliance do not exist; however, it is possible to obtain a general idea of the void fill production via a probing test between riprap stones. Probing should confirm dense confinement of the of the screenings placed and shall not plunge between riprap stones. Probing tests shall occur at a rate of approximately 2 tests per 100 square foot area of horizontal surface placed. This shall be done to ensure voids are adequately filled. **Further, the first and second 2-foot layers placed in this manner will be coordinated with the Inspector/Resident-Engineer to allow for observation by a representative from the OCPW Maintenance Engineering Support Unit**

**Payment**

Payment for Riprap Protection shall be unit price per TON of riprap placed. Payment for obtaining, sorting, spreading, and washing-in of Screenings shall be on a time and material basis coordinated with JOC Special Projects.



OC Public Works

OC Infrastructure Programs/Engineering  
Maintenance Engineering Support

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Date: 10/14/2022

Revision:

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**SPECIFICATIONS FOR  
VOID-FILLED RIPRAP**

TRABUCO CREEK ROAD DRAINAGE SWALE REMODEL PROJECT







# E/O Committee

April 5, 2023

Alternative Location

TCWD Property

Proposed Fence



**TRABUCO CANYON WATER DISTRICT  
ENGINEERING/OPERATIONAL COMMITTEE MEETING | APRIL 5, 2023**

**OPERATIONAL MATTERS**

**ITEM 6: WATER SYSTEM UPDATES**

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The following is a brief report of the water system for **March 2023**.

**Projects and Repairs**

Water Operations staff performed and/or completed the following tasks and projects:

1. Successfully started the Trabuco Creek Groundwater Treatment Facility (GWTF) on March 24, 2023 and is currently supplementing demand at 450 gpm (approximately 1 CFS).
2. Worked with Ferreira Construction to repair an 8" water main on Inverary in the Dove Canyon community.
3. Worked with the Maintenance Department to repair a broken air vacuum breaker behind CVS in the Trabuco Marketplace.
4. Completed the Unregulated Contaminant Monitoring Requirement 5 (UCMR5) [*EPA requirement*] and Annual Vulnerability Assessment [*State requirement*] sampling at both the treatment facilities.
5. Prepared Customer Confidence Report (CCR) data for annual customer notification [*State requirement*].

**Monthly Water System Operations Summary**

The Monthly Water System Operations Summary is attached for the Committee's review. Any anomalies will be presented at the time of the Engineering/Operational Committee Meeting.

**RECOMMENDED ACTION:**

*Committee to receive system status updates. No action required.*

**EXHIBITS**

1. Monthly Water System Operations Summary

**CONTACTS (staff responsible): PEREA/KESSLER**





**TRABUCO CANYON WATER DISTRICT**  
**MONTHLY WATER SYSTEM OPERATIONS SUMMARY - 2022**

<b>System Demands**</b>													
AF/Day	3.0	4.0											
Daily Average, CFS	1.5	2.0											
<b>Other Water Deliveries/Purchases</b>													
Ridgeline (DWTP Delivery)	85.2	103.0											
El Toro (Interconnection Purchase)	0.0	0.0											
Baker WTP (CSC Delivery)	115.0	108.0											
Portola Hills (Wholesale Purchase)	8.0	8.4											
Skyridge (Wholesale Purchase)	1.5	1.5											
* Usage estimated	** Excludes Operational use, losses, and supplement to Recycled Water Reservoir (RW)												

**TRABUCO CANYON WATER DISTRICT  
ENGINEERING/OPERATIONAL COMMITTEE MEETING | APRIL 5, 2023**

**OPERATIONAL MATTERS**

**ITEM 7: WASTEWATER SYSTEM UPDATES**

The following is a brief report of the wastewater system for **March 2023**.

**Projects and Repairs**

Wastewater Operations staff performed and/or completed the following tasks and projects:

1. Quarterly cleaning of wet wells at lift stations.
2. Quarterly inspections of commercial grease interceptors.
3. Completed quarterly sampling for Robinson Ranch Wastewater Treatment Plant (WWTP).
4. Removed 15HP submersible pump from wet well at WWTP for tank cleaning.
5. Installed all new building signage to comply with fire department inspections.
6. Replaced a section of the influent 12" pipe to the SBR tanks at the WWTP.

**Sewer System Management Plan (SSMP) Report**

*The purpose of the program is to communicate on a regular basis with the public on the development, implementation, and performance of TCWD's SSMP. Status updates on the work and type of work performed on the sewer system will be provided, including sewer line and manhole cleaning, system repairs, lift station cleaning, and updates from satellite facilities:*

<b>Sewer System Management Plan (SSMP) Monthly Update</b>	
Total Sewer Line, Feet*	212,045
<b>Total Sewer Line Cleaned (Ft) – Month</b>	<b>12,700</b>
Total Sewer Line Cleaned (Ft) – Cleaning Cycle	61,200
Cleaning Cycle Period (Mos.) [Start date: 9/1/22]	6
<b>Total Sewer Line Cleaned, %</b>	<b>29%</b>
The Oaks at Trabuco – Pumping Frequency for the Month	21
O’Neill Park Sewer System Status	Ok
O’Neill Park Sewer System Repairs	None
SSMP Quarterly Report – <i>Next Quarterly Report</i>	2Q 2023
SSMP Program Audit – <i>Next Audit Report**</i>	February 2024

*\*This amount includes the OC Parks-owned O’Neill Park sewer system the District is contracted to clean.*

*\*\*Periodic internal audits shall be conducted, at a minimum every two years, with reports kept on file. The audit shall focus on evaluating the effectiveness of the SSMP and TCWD’s compliance with the mandatory elements of TCWD’s SSMP:*

**Monthly Recycled Water System Operations Summary**

The Monthly Recycled Water System Operations Summary is attached for the Committee’s review. Any anomalies will be presented at the time of the Engineering/Operational Committee Meeting.

**RECOMMENDED ACTION:**

*Committee to receive system status updates. No action required.*

**EXHIBITS**

1. Monthly Recycled Water System Operations Summary
2. SSMP 2<sup>nd</sup> Quarter Report

**CONTACTS (staff responsible): PEREA/ULLOA**

**TRABUCO CANYON WATER DISTRICT | NON-DOMESTIC WATER SYSTEM SUMMARY - 2023**

<b>RECYCLED WATER SUPPLY</b>															
	MAX	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	FIVE YEAR AVG
WWTP Reclaimed Water Production, AF	78.3	58.6	37.8											96.3	529.1
Reclaimed Reservoir Level, FT	1274.5	1,273.0	1,274.0											-	-
Reclaimed Reservoir Free Board, FT	25.5	1.5	0.5											-	-
Reclaimed Reservoir Storage, AF	145.5	135.7	139.3											-	-
Supplemental Domestic Water Added, AF	N/A	0.0	0.0											0.0	35.5

<b>RECYCLED WATER SYSTEM DEMAND</b>															
NON DOMESTIC WATER USER	ALLOC. AF	8% JAN	17% FEB	25% MAR	33% APR	42% MAY	50% JUN	58% JUL	67% AUG	75% SEP	83% OCT	92% NOV	100% DEC	TOTAL	ALLOC. %
Dahlia Court	8.2	0.07	0.14											0.21	2.5%
Dove Canyon Golf Course	106.7	0.29	5.93											6.22	5.8%
Dove Canyon Master Association	279.3	0.28	1.09											1.37	0.5%
Robinson Ranch	80.2	0.25	1.38											1.63	2.0%
Trabuco Highlands	159.7	2.25	5.88											8.13	5.1%
City of RSM	0.1	0.00	0.03											0.03	21.5%
Construction Water	N/A	0.00	0.00											0.00	N/A
Sakaida Nursery	1.1	0.00	0.00											0.00	0.0%
SMWD	N/A	41.74	40.64											82.38	N/A
TY Nursery	17.9	0.00	0.05											0.05	0.3%
<b>TOTAL, AF</b>	<b>653.2</b>	<b>44.9</b>	<b>55.1</b>											<b>100.01</b>	<b>15.3%</b>
<b>PERCENTAGE OF NDW ALLOCATION/YEAR</b>		<b>6.9%</b>	<b>15.3%</b>												
<b>TOTAL ANNUAL AVG. NDW AVAILABLE**</b>	<b>774.36</b>														

<b>URBAN RUNOFF CAPTURE AND REUSE</b>															
DISTRICT FACILITY		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	FIVE YEAR AVG
Shadow Rock Detention Basin Production		0.15	0.00											0.15	14.2
Dove   Tick Creek Production*	<i>Dry Season</i>	0.0	0.0											0.0	58.8
	TCWD Portion	0.0	0.0											0.0	-
	SMWD Portion	0.0	0.0											0.0	-
Dove Lake Water Pumped		0.0	0.0											0.0	185.8
Dove Lake Free Board, Ft		0.0	0.0											-	-
Dove Lake Storage, AF		180.0	180.0											-	-
Total Rainfall, In.		8.1	2.1											10.1	14.7

\* SMWD share of Dove/Tick Pump Station Dry Season Water is 50% of production.

\*\* Based on 5-Year Average Reclaimed Water Reservoir Base Supply & Recycled Water Production

**TRABUCO CANYON WATER DISTRICT**  
**Sewer System Management Plan (SSMP) Quarterly Report**

**Report Date:** March 30, 2023  
**Report Period:** First Quarter 2023 - March 2023  
**Prepared By:** Oscar Ulloa, Wastewater Operations Superintendent

District Sub-Section	Santiago/Portola Hills			Dove Canyon			Rancho Cielo/Walden			Robinson Ranch/Trabuco Highlands		
	Total Amount	Amount Completed	% Completed	Total Amount	Amount Completed	% Completed	Total Amount	Amount Completed	% Completed	Total Amount	Amount Completed	% Completed
Sewer Line Cleaned, Feet	44,625	44,625	100%	64,135	0	0%	29,865	0	0%	59,170	0	0%
Manholes, Inspected/Cleaned	205	205	100%	212	0	0%	124	0	0%	236	0	0%
Manholes Needing Repair	0	0	0%	0	0	0%	0	0	0%	0	0	0%
Wet Wells, Inspected/Cleaned	2	2	100%	3	3	100%	1	1	100%	2	2	100%
Lift Stations, Inspected/Maintained	2	2	100%	3	3	100%	1	1	100%	2	2	100%
Grease Interceptors Inspected	2	2	100%	2	2	100%	10	10	100%	n/a	n/a	n/a

*Note: All Sewage Lift stations are inspected 3-4 times a week*

Contract Services	O'Neill Park/OCFA			The Oak's		
	Total Amount	Amount Completed	% Completed	Total Amount	Amount Completed	% Completed
Sewer Line Cleaned, Feet	12,700	12,700	100%	1,550	0	0%
Manholes, Inspected/Cleaned	95	95	100%	5	0	0%
Manholes Needing Repair	0	0	0%	0	0	100%
Wet Wells, Inspected/Cleaned	1	1	100%	2	2	100%
Lift Stations, Inspected/Maintained	1	1	100%	1	1	100%
Grease Interceptors Inspected	0	0	0%	0	0	100%

**TRABUCO CANYON WATER DISTRICT  
ENGINEERING/OPERATIONAL COMMITTEE MEETING | APRIL 5, 2023**

**OPERATIONAL MATTERS**

**ITEM 8: MAINTENANCE DEPARTMENT UPDATES**

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The following is a brief report of work completed by Maintenance staff for **March 2023**.

**Projects and Repairs**

Maintenance staff performed and/or completed the following tasks and projects:

**Water Operations**

1. Replaced solenoids on the waste line valves in the SBR dry pit at the WWTP
2. Worked with Duthie Power (service provider) to perform preventative maintenance on emergency backup power generators.
3. Cleaned out and re-organized the storage sheds at WWTP for parts storage

**Wastewater Operations**

1. Worked with Mr. Crane (service provider) to install well pumps/motors at the Trabuco Creek GWTF.
2. Worked with Flo-Services (service provider) to perform vibration testing on the backwash pump at the Dimension Water Treatment Plant.
3. Completed oil changes on the four electrical motors at Ridgeline Booster Pump Station.

**District Fleet Upgrades**

1. Vehicle oil changes on #18 F150, #23 Toyota Tacoma, #19 Ford Escape (#19 sent to Ford dealer for recall repairs).
2. Installed new toolboxes on two vehicles (#1 Toyota Tundra and #25 Toyota Tundra).
3. Windshield replacement and MAF sensor on vehicle #14 F250
4. Completed the regulatory BIT program.
5. Replaced the tires on vehicle #8 F250 and #14 F250
6. Installed a new emergency light bar on vehicle #15 Toyota Tacoma

**RECOMMENDED ACTION:**

*Committee to receive system status updates. No action required.*

**EXHIBITS**

None

**CONTACTS (staff responsible): PEREA/STROUD**

**TRABUCO CANYON WATER DISTRICT  
ENGINEERING/OPERATIONAL COMMITTEE MEETING | APRIL 5, 2023**

**REGULATORY AND OTHER MATTERS**

**ITEM 9: OTHER MATTERS/REPORTS**

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Other Matters/Reports from the General Manager and/or District staff may be provided at the time of the Engineering/Operational Committee Meeting.

**RECOMMENDED ACTION:**

*Hear Other Matters/Reports that may have arisen after the posting of the agenda.*

**EXHIBITS**

None

**CONTACTS (staff responsible): PALUDI/PEREA**