CALIFORNIA COASTAL COMMISSION
South Coast District Office
301 E Ocean Blvd., Suite 300
Long Beach, CA 90802-4302
(562) 590-5071

Th11a

5-21-0866 (OCTA & SCRRA)

NOVEMBER 5, 2026

EXHIBITS

Table of Contents:

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Exhibit 2 – Project Plans

Exhibit 3 – OCTA Railroad Right of Way and Tract Map

Exhibit 4 – OCTA Potential Reinforcement Areas

Exhibit 5 – Potential Sand Delivery Overview Map

Exhibit 6 – OCTA Rail Resiliency Study Short Listed Concepts

Exhibit 7 – Proposed Area 4 Seawall Rendering

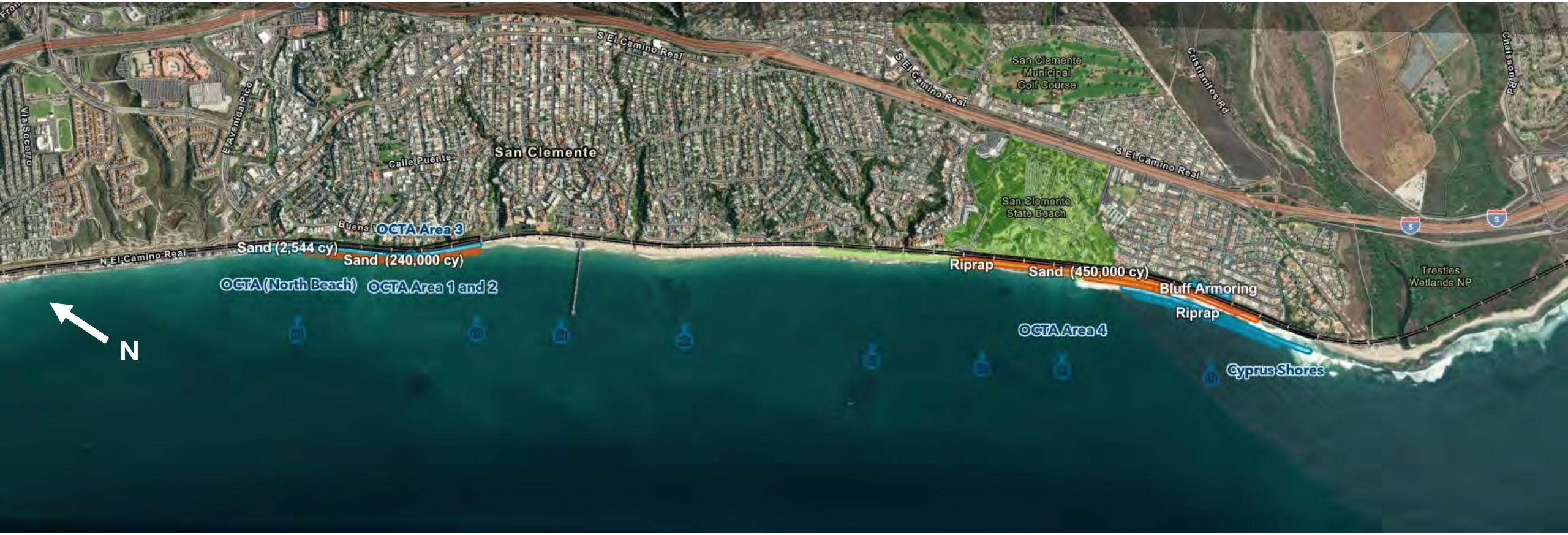
Exhibit 8 – Cyprus Shore Pre-Emergency and Expanded Riprap Footprints

Exhibit 9 – Construction Staging and Access Plans

Exhibit 10 – Consistency Certification No. CC-033-03


Monarch Beach Golf Links
Pacific Coast Hwy
Dana Point
Dana Island
Capistrano Beach
Talega Golf Club
Bella Collina Towne & Golf Club
Shorecliffs Golf Club
Dana Point Harbor
Zoom in for details
San Clemente
San Clemente Pier
CDP Application 5-21-0866 Area
San Clemente State Beach
San Onofre
N

For interactive map of project locations, see link: San Clemente LOSSAN Corridor – CDP Application 5-21-0866 Interactive Map
Please note that the map is provided for visual assistance only, and the project locations and areas are approximated and modified to enhance visualization. The interactive map may not represent the precise location of the emergency development and may not represent the final location of the development approved by this Permit.



North Beach Berm Restoration and Revetment Plan 2021

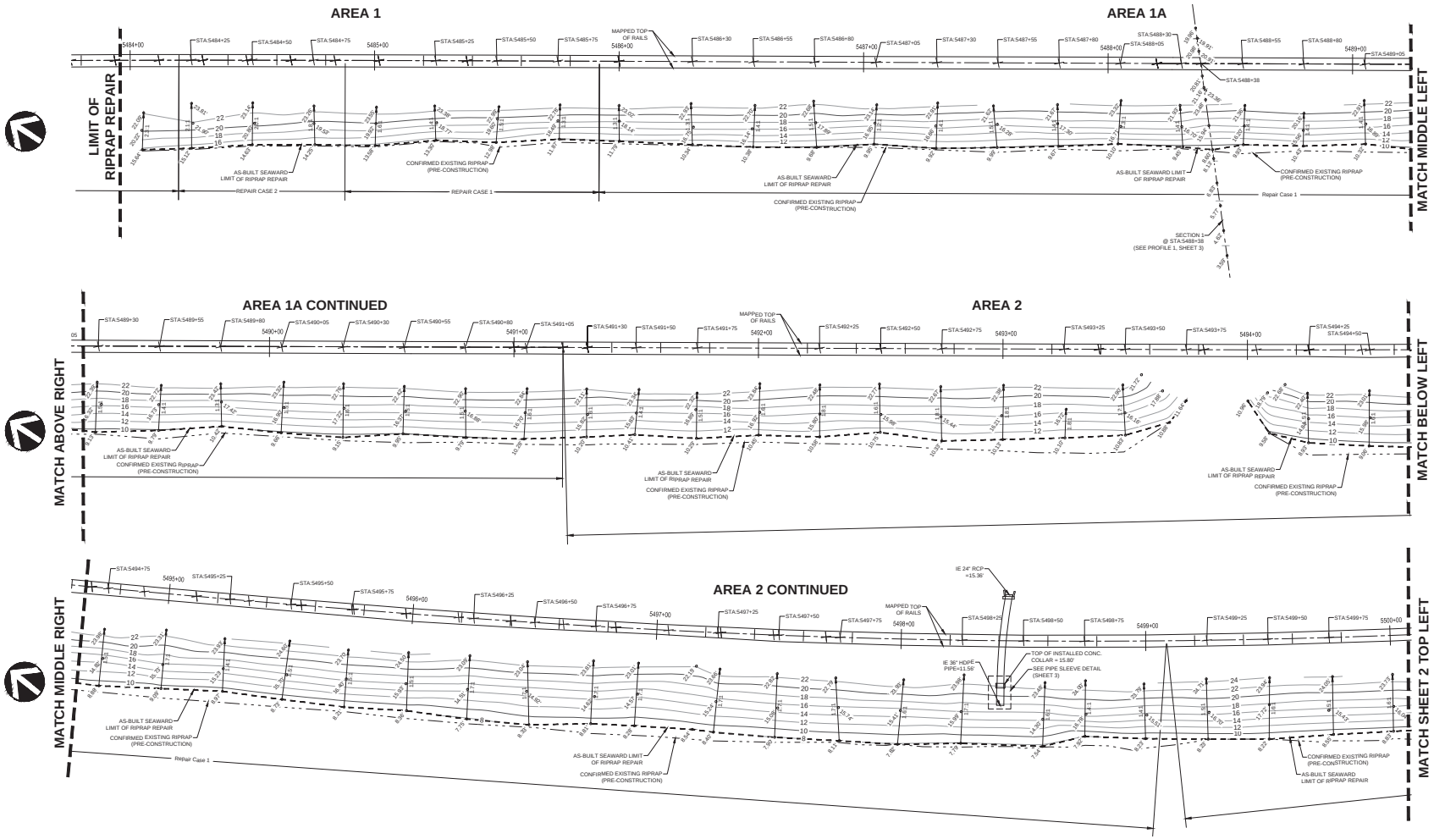

Appendix A - Site Plan
Revetment Restoration
(33.429408, -117.630146)
San Clemente North Beach
Legend
Access Route
Earthen Berm
Riprap
SCRRA Property Line
USACE Section 10 Landward Limits
USACE Section 404 Landward Limits
San Clemente Pedestrian Beach Trail
RR ROW Work Zone (300')
Earthen berm restoration avg dimensions - 130' L x 6' W
Riprap restoration avg dimensions - 170'L x 24' W
Google Earth
*Aerial image used is not an accurate representation of existing conditions.
Refer to photos for actual conditions.
© 2021 Google
100 ft


Vicinity Map
Appendix B
Orange Subdivision
Approximately 18,000 square feet of staging available
Parking lot staging of equipment
Limited space on up-mile left side due to station platform
Removal & re-installation of fence required for Access
Calle Desecha
Calle Colina
Calle Sacramento
Buena Vista
Boca De La Playa
San Clemente Pedestrian Beach Trail
Avenida Estacion
N El Camino Real
Legend
203.6087 San Clemente North Beach
Access - Hirail
BRIDGE-203.6359
Metrolink Property Line
Curve 203.64-1
Emergency Riprap Rehabilitation
Mile Marker
San Clemente Ant Elv 25 ft
*Aerial image used is not an accurate representation of existing conditions.
Refer to photos for actual conditions.
Google Earth
© 2021 Google
500 ft


Vicinity Map
Limit Lines
Legend
Average Existing Limit Line
Maximum Limit Line proposed as indicated in ES2003
Mile Marker
SCRRA Property Line
USACE Section 10 Landward Limits
USACE Section 404 Landward Limits
San Clemente Pedestrian Beach Trail
San Clemente Pedestrian Beach Trail
29 ft
46 ft
45 ft
Riprap will not exceed the Maximum Limit Line, in accordance with ES2003
Google Earth
*Aerial image used is not an accurate representation of existing conditions.
Refer to photos for actual conditions.
100 ft

Area 1 and 2 Riprap Repair As-Built Plan 2025

COASTAL RAIL STABILIZATION PRIORITY PROJECT - AS-BUILT SURVEY



LEGEND:

SCALE 1"=20'

- TRACK CENTERLINE ALIGNMENT
- MINOR CONTOUR LINE
- MAJOR CONTOUR LINE
- TOE OF CONSTRUCTED RIPRAP
- CONFIRMED EXISTING RIPRAP (PRE-CONSTRUCTION)
- MAPPED ELEVATION

SURVEYOR'S CERTIFICATION:

TO METROLINK & DRS CONTRACTING INC.:

THIS IS TO CERTIFY THAT THIS AS-BUILT MAP AND THE SURVEY ON WHICH IT IS BASED WERE MADE BY ME OR UNDER MY DIRECTION.
VERTICAL DATUM = NAVD88
DATES OF FIELD SURVEY: 4/25/2025 - 5/23/2025

BRIAN D. GILLOOLY
P.L.S. 9073
7/30/25
DATE

PROFESSIONAL LAND SURVEYOR — No 9073 — STATE OF CALIFORNIA
7/30/25

AS-BUILT SURVEY
OCTA - COASTAL RAIL STABILIZATION
PRIORITY PROJECT - SAN CLEMENTE

METROLINK

DAVID EVANS AND ASSOCIATES, INC.
1442 SE Bellevue Wa 98004
Bellevue Washington 98007
Phone: 425.519.6500

REVISIONS:		APPD.
INITIAL	5/27/25	BDG
ADD SECTIONS	6/3/25	BDG
REVISED	6/9/25	BDG
REVISED	6/27/25	BDG
REVISED	7/14/25	BDG
REVISED	7/17/25	BDG

DATE: JULY 30, 2025
DESIGN:
DRAWN: BDG
CHECKED: BDG
REVISION NUMBER: 0

SCALE: 1"=20'

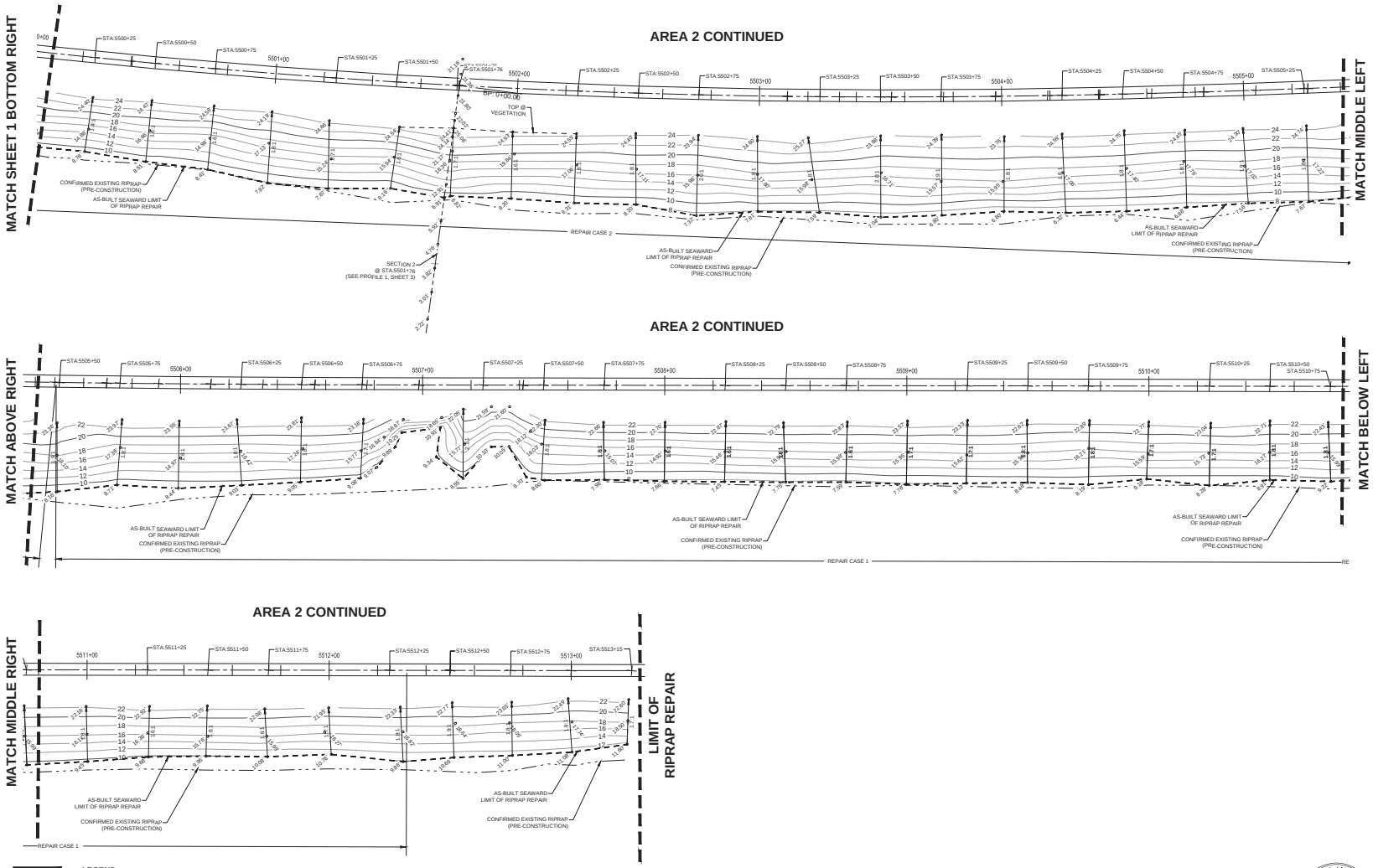
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DRAWING FILE:
DRSC0000-0001-AS-BUILT.DWG

SHEET NO.
1
OF 3

California Coastal Commission
5-21-0866
Exhibit 2
Page 6 of 59

COASTAL RAIL STABILIZATION PRIORITY PROJECT - AS-BUILT SURVEY



AS-BUILT SURVEY
OCTA - COASTAL RAIL STABILIZATION
PRIORITY PROJECT - SAN CLEMENTE

METROLINK

DAVID EVANS AND ASSOCIATES, INC.
1440 SE Bellevue Suite 400
Bellevue Washington 98007
Phone: 425.519.6500

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REVISED	6/9/25	BDG
REVISED	6/27/25	BDG
REVISED	7/14/25	BDG
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REVISION NUMBER: 0

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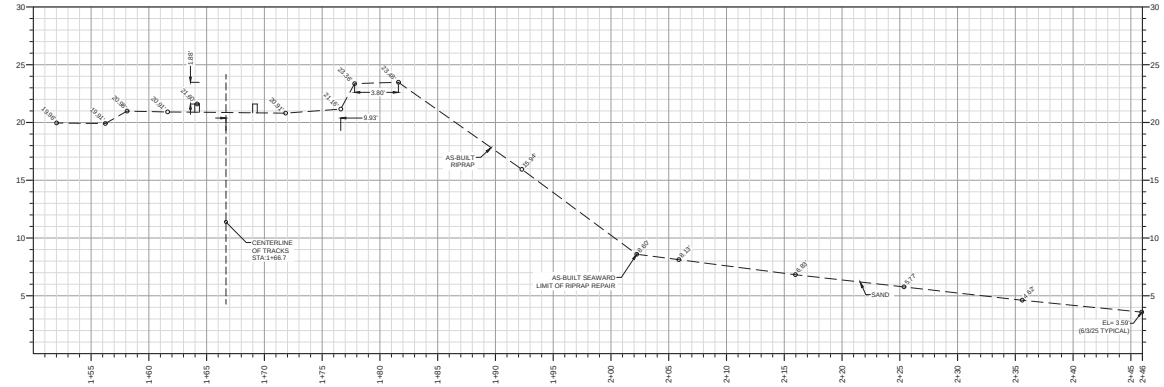
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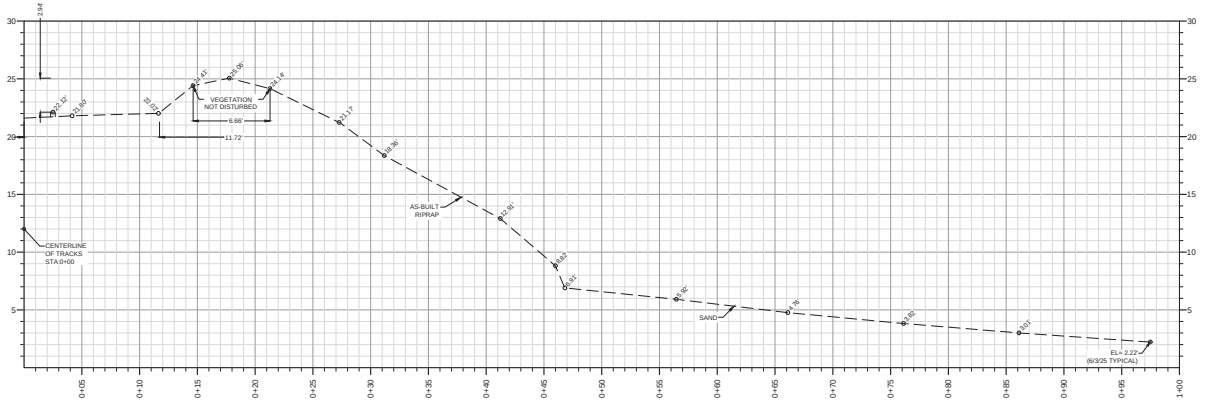
PROFESSIONAL LAND SURVEYOR — No 9973 — STATE OF CALIFORNIA
7/30/25

California Coastal Commission
5-21-0866
Exhibit 2
Page 7 of 59

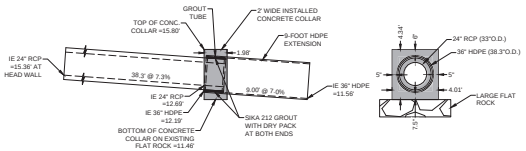
COASTAL RAIL STABILIZATION PRIORITY PROJECT - AS-BUILT SURVEY



AS-BUILT SECTION AT BEACH PROFILE 1
STA:5488+38



AS-BUILT SECTION AT BEACH PROFILE 2
STA:5501+76



PIPE SLEEVE / COLLAR DETAIL OF CULVERT AT STA:5498+40

SCALE 1"=20'

LEGEND:

PROFILE
MAPPED ELEVATION
RCP REINFORCED CONCRETE PIPE
HDPE HIGH-DENSITY POLYETHYLENE PIPE

AS-BUILT SURVEY
OCTA - COASTAL RAIL STABILIZATION
PRIORITY PROJECT - SAN CLEMENTE

METROLINK

DAVID EVANS AND ASSOCIATES, INC.
1442 130th Avenue NE, Suite 400
Bellevue Washington 98007
Phone: 425.519.6500

REVISIONS:		APPD.
INITIAL	5/27/25	BDG
ADD SECTIONS	6/3/25	BDG
REVISED	6/9/25	BDG
REVISED	6/27/25	BDG
REVISED	7/14/25	BDG
REVISED	7/17/25	BDG

DATE: JULY 29, 2025
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DRAWN: BDG
CHECKED: BDG
REVISION NUMBER: 0

SCALE: 1"=5'

PROJECT NUMBER:
DRSC0000-0001

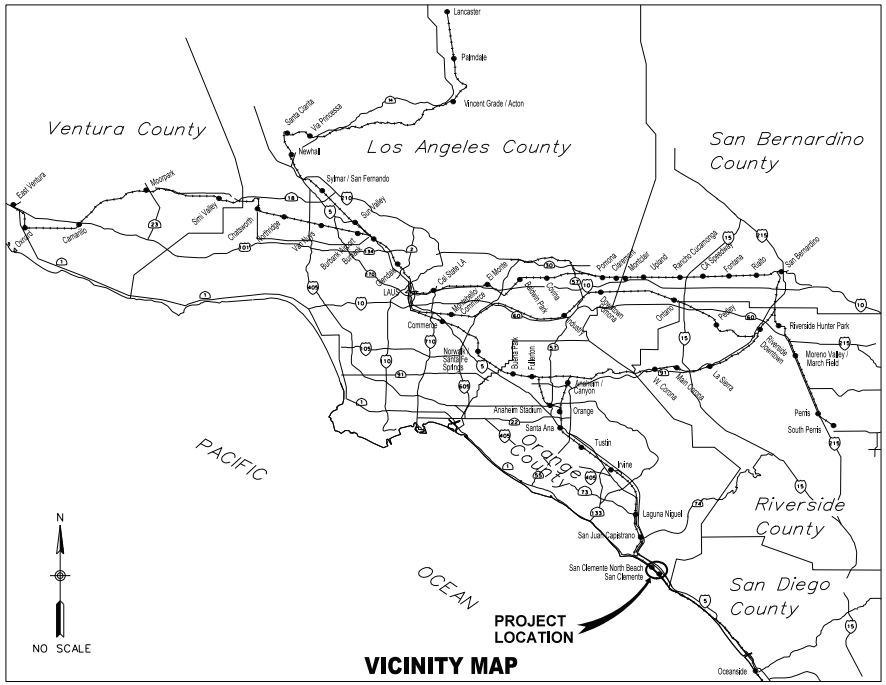
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SHEET NO.
3
OF 3

PROFESSIONAL LAND SURVEYOR — No 9973 — STATE OF CALIFORNIA
7/30/25

California Coastal Commission
5-21-0866
Exhibit 2
Page 8 of 59

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS
AREA 1 RIPRAP REPAIR



VICINITY MAP



LOCATION MAP

APRIL 7, 2025

AS-BUILT

CONTRACT No. 10398757

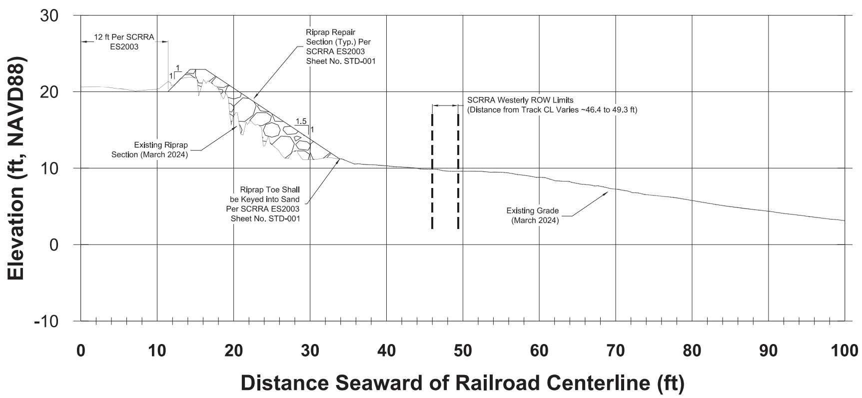
COASTAL FRONTIERS
882 A Patriot Drive
Moorpark, CA 93021
(818)341-8133

REV.	DATE		BY	APP.
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2	6-10-25	PROJECT RECORD DRAWING	JR	VH
0	4-14-25	ISSUED FOR BID	JR	VH

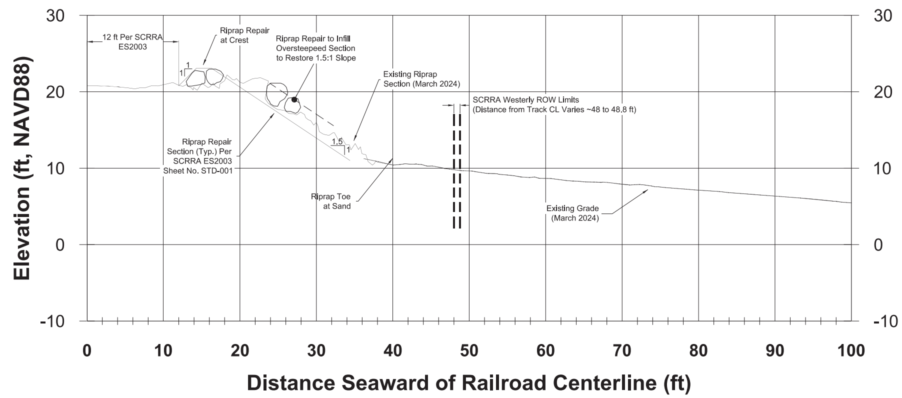
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8/4/2025
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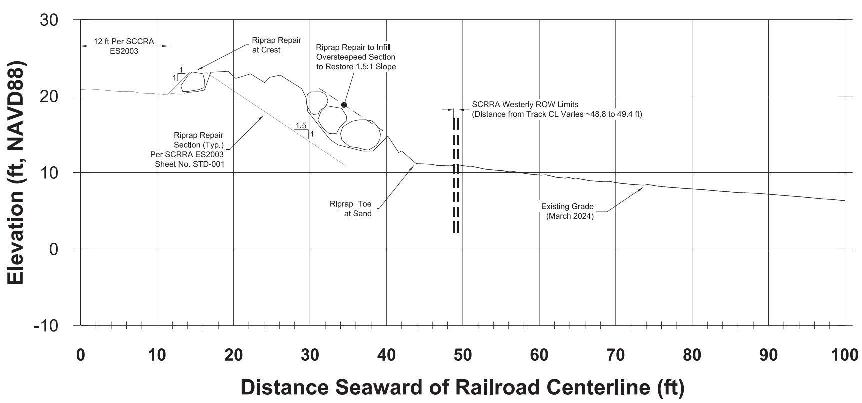
Typical Repair - Case 1



Typical Repair - Case 2



Typical Repair - Case 3



RIPRAP REPAIR WILL USE 3.5-TON STONE* IN CONFORMANCE WITH THE FOLLOWING GRADATION:

Stone Size	% Greater Than	Dimension**
5 ton	0-5	54 in.
3.5 ton	50-100	48 in.
2 ton	95-100	40 in.

* Close match of Class X average W_{50} stone size (3.5 tons)
** Dimensions correspond to size measured by sieve, grizzly or visual inspection for stone of 165 lbs./cu.ft.

NOTES:

1. CONTRACTOR SHALL RETRIEVE STONE TO THE MAXIMUM PRACTICAL EXTENT THAT HAS BEEN DISPLACED OFF AND SEAWARD OF THE RIPRAP SLOPE AND RE-USE IN THE SLOPE REPAIR.
2. REFER TO NOTES ON SHEET SCRRA ES2003, SEE DRAWING No. STD-001.

AS-BUILT

REV.	DATE		BY	APP.
3	8-4-25	AS-BUILT DRAWING	JR	VH
2	6-10-25	PROJECT RECORD DRAWING	JR	VH
0	4-14-25	ISSUED FOR BID	JR	VH

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DESIGNED BY J. RICHMOND
DRAWN BY J. HERNANDEZ
CHECKED BY R. BOUDREAU
APPROVED BY V. HAGHDOUST
DATE

REGISTERED PROFESSIONAL ENGINEER JOSEPH B. RICHMOND No. C 74069 Exp. 6-30-27 CIVIL STATE OF CALIFORNIA

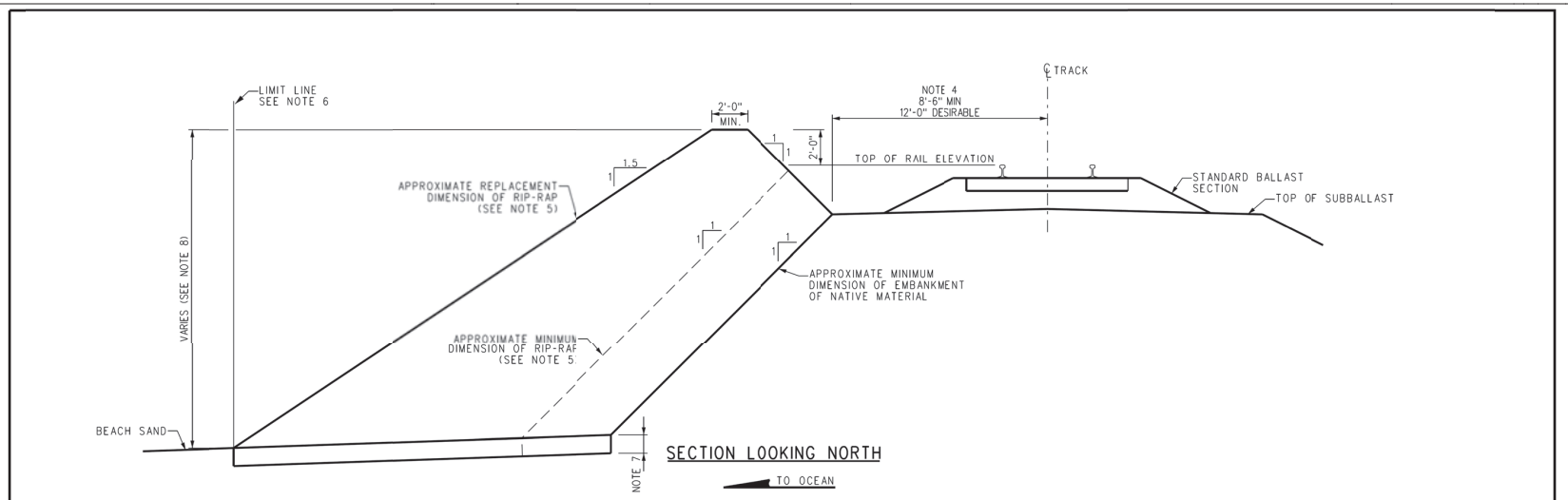
METROLINK
OCTA
COASTAL FRONTIERS

SUBMITTED: PROJECT MANAGER
APPROVED:

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS

TYPICAL SECTIONS
AREA 1 RIPRAP REPAIRS

CONTRACT NO. 10398757
DRAWING NO. SPT-001
REVISION 0
SHEET NO. 1 OF 3
SCALE NOT TO SCALE



NOTES:

1. APPLICATION: THIS STANDARD SHALL BE USED FOR RAILROAD EMBANKMENTS EXPOSED TO OCEAN WAVES. THE RIP-RAP IS USED TO SECURE THE TRACK BALLAST FROM EROSION DUE TO WAVES, AS REQUIRED BY FEDERAL RAILROAD ADMINISTRATION TRACK SAFETY STANDARDS PART 213.103, PROTECTION OF THE BALLAST AND EMBANKMENT BEING FUNDAMENTAL IN SUPPORTING THE TRACK STRUCTURE.
2. DIMENSION LINES: DIMENSIONS FOR STONE RIP-RAP ARE THE AVERAGE OF THE EXPOSED SURFACE OF ROCK. DUE TO THE IRREGULAR SIZE AND SHAPE OF NATURALLY BROKEN ROCK, ANY SPECIFIC POINT MAY VARY TWO FEET FROM THE AVERAGE DIMENSION SHOWN.
3. RIP-RAP MATERIAL: GRANITE, BASALT OR SIMILAR IGNEOUS OR METAMORPHIC ROCK NATIVE TO ORANGE OR RIVERSIDE COUNTIES, BROKEN INTO SIZE DISTRIBUTION MEETING ASTM D5519 GRADATION WILL BE USED TO REPLACE ERODED RIP-RAP AREAS, HOWEVER EXISTING INVENTORIES OF LARGER ROCK MAY BE USED UNTIL EXHAUSTED. CONCRETE, ASPHALT, TIMBER OR METAL IS NOT PERMITTED IN THE RIP-RAP.
4. A WALKWAY GENERALLY CONFORMING TO SCRRA ES2001 AND ES2002 WILL BE PROVIDED ON THE OCEAN SIDE OF THE TRACKS. THE MINIMUM WIDTH OF THE WALKWAY IN SURF AREAS IS EIGHT FEET AND SIX INCHES (8'-6") FROM THE CENTERLINE OF THE TRACK, WITH TWELVE FEET (12'-0") TO BE PROVIDED WHERE FIELD CONDITIONS PERMIT. WALKWAY SURFACE SHALL BE SUBBALLAST.
5. MINIMUM AND MAXIMUM REPLACEMENT DIMENSIONS: THE GENERAL CRITERIA FOR INITIATING REPLACEMENT OF RIP-RAP IS WHEN EROSION OR SETTLEMENT HAS DEGRADED THE RIP-RAP SUCH THAT THE TOP OF THE RIP-RAP HAS BECOME LOWER THAN THE TOP OF RAIL ELEVATION (AND THEREFORE DOES NOT SHIELD THE TRACK FROM WAVES), WHEN THE THICKNESS OF THE RIP-RAP HAS DETERIORATED SUCH THAT THE NATURAL EMBANKMENT IS EXPOSED TO WAVE ACTION, OR WHEN THE LOWER PORTIONS OF THE RIP-RAP HAVE BECOME ERODED LEAVING AN UNSTABLE (STEEPER THAN 1:1) SLOPE RATIO. RIP-RAP WILL BE REPLENISHED TO THE "REPLACEMENT LINE" SHOWN, GENERALLY TO A 1.5:1 SLOPE RATIO. (AT LOCATIONS WITH WELL-ESTABLISHED LARGE DIMENSION RIP-RAP AT A STEEPER SLOPE, LOCALIZED SEGMENTS OF NEW RIP-RAP MAY BE INSTALLED AT 1:1 SLOPE RATIO). THE NORMAL STATE OF MAINTENANCE WILL BE GRADUALLY ERODING COVER OF RIP-RAP BETWEEN THE "MINIMUM" AND "REPLACEMENT" DIMENSION LINES.
6. ~~THE SCRRA AND LOCAL AGENCIES HAVE ESTABLISHED A "LIMIT LINE" TO DEFINE THE MAXIMUM WIDTH OF THE RIP-RAP.~~ THIS LINE IS LOCATED BY REFERENCE TO GPS MEASURED COORDINATES, TO OFFSETS FROM TRACK CENTERLINE, OR BOTH. PLACEMENT OF RIP-RAP SHALL CONFORM TO THE LIMIT LINE UNLESS UNPRECEDENTED EROSION OF THE BEACH LOWERS THE LEVEL OF THE SAND, IN WHICH CASE THE LIMIT LINE WILL BE ADJUSTED SEAWARD AT A 1.5:1 (OR 1:1 AT LOCALIZED SITES) SLOPE RATIO FOR THE ADDED HEIGHT OF THE ENBANKMENT. AFTER RIP-RAP REPLACEMENT OPERATIONS ARE COMPLETE SCRRA WILL MAKE A SURVEY OF THE LIMIT LINE TO DETECT ANY DEVIATIONS FROM THE LIMIT LINE.

NOTES: (continued)

7. THE BOTTOM OF THE RIP-RAP SHALL BE KEYED INTO THE BEACH SAND BY APPROXIMATELY THE SIZE OF THE RIP-RAP ROCK NOMINAL DIMENSION. EXISTING RIP-RAP OR NATIVE ROCK SHALL NOT BE EXCAVATED TO ESTABLISH A NEW KEY UNLESS REQUIRED TO ACHIEVE A STABLE STRUCTURE.
8. THE ELEVATION OF THE RIP-RAP SHALL REMAIN AS DIMENSIONED ON THIS STANDARD. IF THE ELEVATION OF THE BEACH SAND RISES OR FALLS, THE EFFECTIVE HEIGHT OF THE RIP-RAP SHALL BE ADJUSTED AT THE 1.5:1 OR 1:1 SLOPE RATIO SHOWN.
9. RIP-RAP WILL BE PLACED BY GRAVITY DUMP FROM RAILROAD EQUIPMENT, FOLLOWED BY RE-STACKING WITH EQUIPMENT WORKING FROM THE BEACH THAT IS CAPABLE OF MOVING THE LARGEST ROCKS BEING USED. THE RE-STACKING IS TO PLACE ALL ROCKS IN A STABLE MATRIX, TO RECOVER ANY ROCKS BEYOND THE LIMIT LINE, AND TO FILL VOIDS BETWEEN LARGE ROCKS WITH SMALLER ROCK ELEMENTS. EXISTING RIP-RAP MAY BE MOVED PRIOR TO ADDITION OF REPLENISHMENT ROCK IN ORDER TO FACILITATE DUMPING.
10. FOR EMBANKMENT DETAILS NOT SHOWN, REFER TO SCRRA ES2001 AND ES2002.
11. AT LOCATIONS WHERE SAND MOVES TO COVER UP THE RIP-RAP, RIP-RAP SHALL BE LEFT IN PLACE.
12. SCRRA MAINTENANCE MANAGER WILL INFORM THE GOVERNING AGENCIES ONE MONTH IN ADVANCE OF PLANNED PLACEMENT OF REPLENISHMENT RIP-RAP. IF RAPID EROSION REQUIRES PLACEMENT IN LESS THAN THE FULL MONTH NOTIFICATION PERIOD, NOTICE WILL BE GIVEN AS PROMPTLY AS PRACTICABLE.
13. INSTALLATION AND RE-STACKING OF ROCK SHALL CONFORM TO PERMIT GUIDELINES AND SHALL BE PERFORMED ONLY AFTER PROVIDING PROTECTION FOR MEMBERS OF THE PUBLIC WHO MAY BE USING THE BEACH.
14. ROUTINE REPLENISHMENT AND MAINTENANCE OF THE RIP-RAP SHALL BE SCHEDULED TO AVOID PEAK BEACH RECREATIONAL USE TIMES.
15. LOCALIZED EXCEPTIONS TO THIS STANDARD SHALL BE MADE IN ORDER TO FIT RIP-RAP TO CONFORM TO DRAINAGE STRUCTURES, PUBLIC CROSSINGS, SIGNAL FACILITIES AND OTHER STRUCTURES.

AS-BUILT

REV.	DATE	DESCRIPTION	DES.	ENG.
A	06-12-20	REVISE NOTE 8	AC	JMM

DRAWN BY: A. CALOS DATE: 10/01/03

PRINCIPAL ENGINEER, DESIGN & STANDARDS

ASSISTANT DIRECTOR, DESIGN

SCRRA ENGINEERING STANDARDS ARE INTENDED FOR SCRRA APPROVED USES ONLY. FOR NON-SCRRA APPROVED USES, SCRRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRRA. ALL RIGHTS RESERVED.

METROLINK
SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
900 WILSHIRE BLVD., SUITE 1500, L. A., CA. 90017

ENGINEERING STANDARDS

ROADBED SECTIONS FOR EXPOSURE TO OCEAN SURF

STANDARD: 2003
SCALE: NTS
REVISION: A SHEET: 1 OF 1
CADD FILE: ES2003

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8/4/2025

REV.	DATE		BY	APP.
2	8-4-25	AS-BUILT DRAWING	JR	VH
1	6-10-25	PROJECT RECORD DRAWING	JR	VH
0	4-14-25	ISSUED FOR BID	JR	VH

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DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED BY
DATE

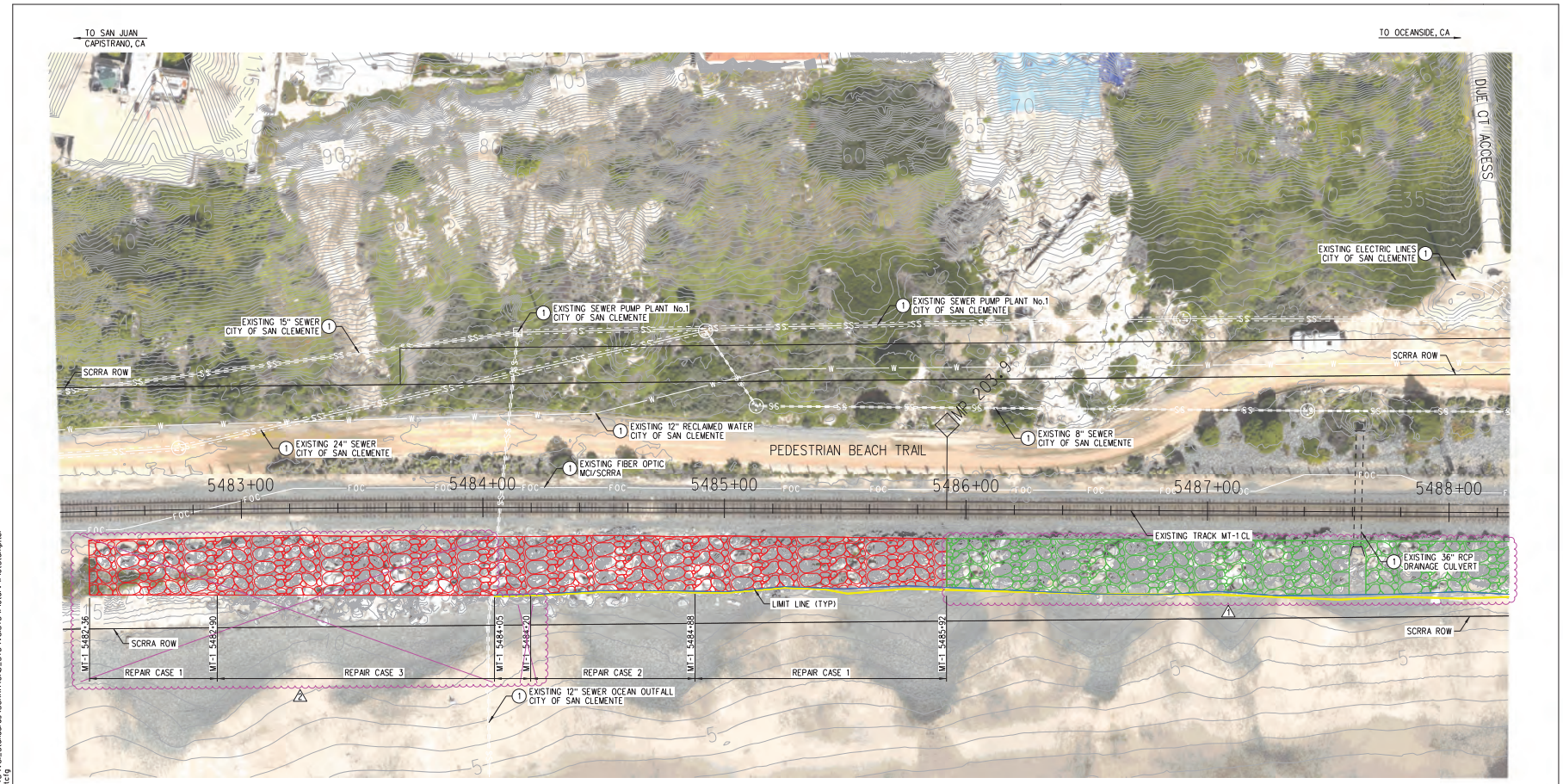
REGISTERED PROFESSIONAL ENGINEER — KEITH D. RICHMOND — No. C 74069 — EXP. 6-30-27 — CIVIL — STATE OF CALIFORNIA

METROLINK

SUBMITTED: _____ PROJECT MANAGER
APPROVED: _____

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS
SCRRA
AREA 1 RIPRAP REPAIRS

CONTRACT NO. 10398757
DRAWING NO. STD-001
REVISION 0 SHEET NO. 2 OF 3
SCALE NOT TO SCALE



LEGEND:

- RIPRAP REPAIR AREA 1
- RIPRAP REPAIR AREA 1A
- CL — CENTER LINE
- ROW — RIGHT OF WAY
- SCRRA — SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
- AS-BUILT SEAWARD LIMIT OF RIPRAP REPAIR, SURVEYED BY DAVID EVANS AND ASSOCIATES IN MAY 2025
- CONFIRMED EXISTING RIPRAP (PRE-CONSTRUCTION), SURVEYED BY DAVID EVANS AND ASSOCIATES IN MARCH 2025

CONSTRUCTION NOTES:

1. PROTECT IN PLACE

GENERAL NOTES:

1. TYPICAL REPAIR CASES 1, 2, AND 3 ARE SHOWN AS GENERAL GUIDE AND FIELD CONDITIONS WILL DETERMINE APPROPRIATE LEVEL OF REPAIR AT A GIVEN LOCATION.
2. REFER TO DRAWING No. SPT-001 FOR TYPICAL REPAIR CASES.
3. CONTOURS INDICATE CONDITIONS IN MARCH 2024. SITE CONDITIONS HIGHLY DYNAMIC DUE TO EXPOSURE TO WAVES AND TIDES.
4. CONTOUR INTERVALS IS 1 FT.
5. VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) WITH UNITS EXPRESSED IN FEET.
6. FINAL RIPRAP LIMITS MAY BE ADJUSTED BASED ON FIELD CONDITIONS.
7. CONTRACTOR TO RESTACK LOOSE, SURFACE-LEVEL INDIVIDUAL STONES OUTSIDE OF LIMIT LINE THAT ARE NOT SUPPORTING THE OVERALL EMBANKMENT STRUCTURE. CONTRACTOR SHALL EVALUATE THE POTENTIAL RE-USE OF QUARRY STONE THAT EXISTS WITHIN THE WORK AREA AND MAY REINCORPORATE THE STONE WITHIN THE WORK.

AS-BUILT

SCALE: 1"=40'

REV.	DATE		BY	SUB.	APP.
3	8-4-25	AS-BUILT DRAWING	JR		VH
2	6-10-25	PROJECT RECORD DRAWING	JR		VH
1	5-15-25	DCN-01	JR		VH
0	4-14-25	ISSUED FOR BID	JR		VH

INFORMATION CONFIDENTIAL: All plans, drawings, specifications, and or information furnished herewith shall remain the property of the the Southern California Regional Rail Authority and shall be held confidential and shall not be used for any purpose not provided for in agreements with the Southern California Regional Rail Authority.

DESIGNED BY: J. RICHMOND
DRAWN BY: J. HERNANDEZ
CHECKED BY: R. BOUDREAU
APPROVED BY: V. HAGHDOUST
DATE:

REGISTERED PROFESSIONAL ENGINEER — JOSEPH S. ATTEBERY — No. C 74069 — Exp. 6-30-27 — CIVIL — STATE OF CALIFORNIA

METROLINK

OCTA — COASTAL FRONTIERS

SUBMITTED: _____ PROJECT MANAGER
APPROVED: _____

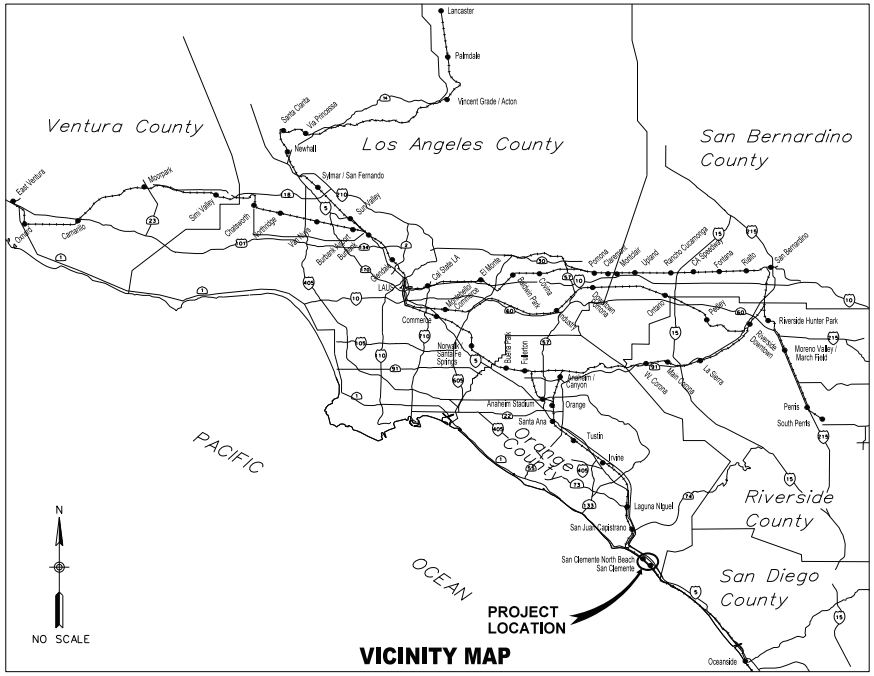
ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS

AREA 1 RIPRAP REPAIRS
STA 5482+36 TO 5485+92

CONTRACT NO. 10398757
DRAWING NO. SPR-001
REVISION 0 | SHEET NO. 3 OF 3
SCALE AS NOTED

8/4/2025
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ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS
AREA 1A RIPRAP REPAIR



VICINITY MAP



LOCATION MAP

MAY 16, 2025

AS-BUILT

CONTRACT No. 10398757

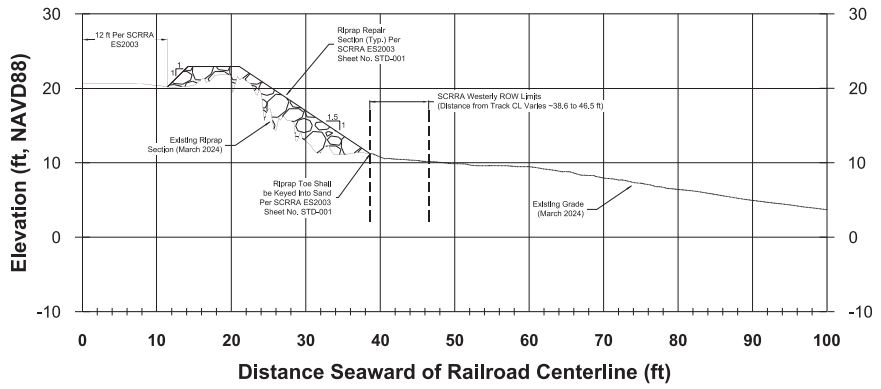
COASTAL FRONTIERS
882 A Patriot Drive
Moorpark, CA 93021
(818)341-8133

REV.	DATE		BY	APP.
3	8-4-25	AS-BUILT DRAWING	JR	VH
2	6-10-25	PROJECT RECORD DRAWING	JR	VH
1	5-15-25	DCN-01	JR	VH
0	4-14-25	ISSUED FOR BID	JR	VH

OCTA METROLINK

8/4/2025
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Typical Repair - Case 1



RIPRAP REPAIR WILL USE 3.5-TON STONE* IN CONFORMANCE WITH THE FOLLOWING GRADATION:

Stone Size	% Greater Than	Dimension**
5 ton	0-5	54 in.
3.5 ton	50-100	48 in.
2 ton	95-100	40 in.

* Close match of Class X average W_{50} stone size (3.5 tons)
** Dimensions correspond to size measured by sieve, grizzly or visual inspection for stone of 165 lbs./cu.ft.

NOTES:

1. CONTRACTOR SHALL RETRIEVE STONE TO THE MAXIMUM PRACTICAL EXTENT THAT HAS BEEN DISPLACED OFF AND SEAWARD OF THE RIPRAP SLOPE AND RE-USE IN THE SLOPE REPAIR.
2. REFER TO NOTES ON SHEET SCRRA ES2003, SEE DRAWING No. STD-001.

AS-BUILT

REV.	DATE		BY	APP.
3	8-4-25	AS-BUILT DRAWING	JR	VH
2	6-10-25	PROJECT RECORD DRAWING	JR	VH
1	5-15-25	DCN-01	JR	VH
0	4-14-25	ISSUED FOR BID	JR	VH

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DESIGNED BY: J. RICHMOND
DRAWN BY: J. HERNANDEZ
CHECKED BY: R. BOUDREAU
APPROVED BY: V. HAGHDOUST
DATE:

JOSEPH A. RICHMOND No. C 74069 Exp. 6-30-27 CIVIL STATE OF CALIFORNIA

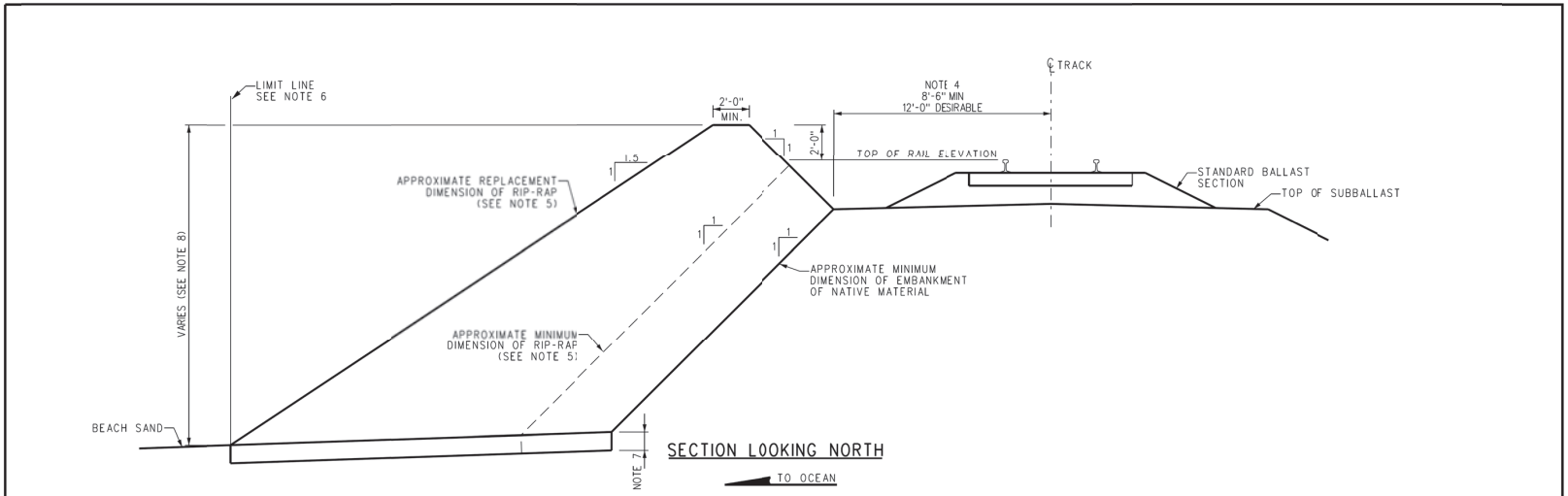
METROLINK
OCTA COASTAL FRONTIERS

SUBMITTED: _____ PROJECT MANAGER
APPROVED: _____

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS
TYPICAL SECTION
AREA 1A RIPRAP REPAIRS

CONTRACT NO. 10398757
DRAWING NO. SPT-001
REVISION 0
SHEET NO. 1 OF 3
SCALE NOT TO SCALE

8/4/2025
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NOTES:

1. APPLICATION: THIS STANDARD SHALL BE USED FOR RAILROAD EMBANKMENTS EXPOSED TO OCEAN WAVES. THE RIP-RAP IS USED TO SECURE THE TRACK BALLAST FROM EROSION DUE TO WAVES, AS REQUIRED BY FEDERAL RAILROAD ADMINISTRATION TRACK SAFETY STANDARDS PART 213.103, PROTECTION OF THE BALLAST AND EMBANKMENT BEING FUNDAMENTAL IN SUPPORTING THE TRACK STRUCTURE.
2. DIMENSION LINES: DIMENSIONS FOR STONE RIP-RAP ARE THE AVERAGE OF THE EXPOSED SURFACE OF ROCK. DUE TO THE IRREGULAR SIZE AND SHAPE OF NATURALLY BROKEN ROCK, ANY SPECIFIC POINT MAY VARY TWO FEET FROM THE AVERAGE DIMENSION SHOWN.
3. RIP-RAP MATERIAL: GRANITE, BASALT OR SIMILAR IGNEOUS OR METAMORPHIC ROCK NATIVE TO ORANGE OR RIVERSIDE COUNTIES, BROKEN INTO SIZE DISTRIBUTION MEETING ASTM D5519 GRADATION WILL BE USED TO REPLACE ERODED RIP-RAP AREAS, HOWEVER EXISTING INVENTORIES OF LARGER ROCK MAY BE USED UNTIL EXHAUSTED. CONCRETE, ASPHALT, TIMBER OR METAL IS NOT PERMITTED IN THE RIP-RAP.
4. A WALKWAY GENERALLY CONFORMING TO SCRRA ES2001 AND ES2002 WILL BE PROVIDED ON THE OCEAN SIDE OF THE TRACKS. THE MINIMUM WIDTH OF THE WALKWAY IN SURF AREAS IS EIGHT FEET AND SIX INCHES (8'-6") FROM THE CENTERLINE OF THE TRACK, WITH TWELVE FEET (12'-0") TO BE PROVIDED WHERE FIELD CONDITIONS PERMIT. WALKWAY SURFACE SHALL BE SUBBALLAST.
5. MINIMUM AND MAXIMUM REPLACEMENT DIMENSIONS: THE GENERAL CRITERIA FOR INITIATING REPLACEMENT OF RIP-RAP IS WHEN EROSION OR SETTLEMENT HAS DEGRADED THE RIP-RAP SUCH THAT THE TOP OF THE RIP-RAP HAS BECOME LOWER THAN THE TOP OF RAIL ELEVATION (AND THEREFORE DOES NOT SHIELD THE TRACK FROM WAVES), WHEN THE THICKNESS OF THE RIP-RAP HAS DETERIORATED SUCH THAT THE NATURAL EMBANKMENT IS EXPOSED TO WAVE ACTION, OR WHEN THE LOWER PORTIONS OF THE RIP-RAP HAVE BECOME ERODED LEAVING AN UNSTABLE (STEEPER THAN 1:1) SLOPE RATIO. RIP-RIP WILL BE REPLENISHED TO THE "REPLACEMENT LINE" SHOWN, GENERALLY TO A 1.5:1 SLOPE RATIO. (AT LOCATIONS WITH WELL-ESTABLISHED LARGE DIMENSION RIP-RAP AT A STEEPER SLOPE, LOCALIZED SEGMENTS OF NEW RIP-RAP MAY BE INSTALLED AT 1:1 SLOPE RATIO). THE NORMAL STATE OF MAINTENANCE WILL BE GRADUALLY ERODING COVER OF RIP-RAP BETWEEN THE "MINIMUM" AND "REPLACEMENT" DIMENSION LINES.
6. ~~THE SCRRA AND LOCAL AGENCIES HAVE ESTABLISHED A "LIMIT LINE" TO DEFINE THE MAXIMUM WIDTH OF THE RIP-RAP.~~ THIS LINE IS LOCATED BY REFERENCE TO GPS MEASURED COORDINATES, TO OFFSETS FROM TRACK CENTERLINE, OR BOTH. PLACEMENT OF RIP-RAP SHALL CONFORM TO THE LIMIT LINE UNLESS UNPRECEDENTED EROSION OF THE BEACH LOWERS THE LEVEL OF THE SAND, IN WHICH CASE THE LIMIT LINE WILL BE ADJUSTED SEAWARD AT A 1.5:1 (OR 1:1 AT LOCALIZED SITES) SLOPE RATIO FOR THE ADDED HEIGHT OF THE EMBANKMENT. AFTER RIP-RAP REPLACEMENT OPERATIONS ARE COMPLETE SCRRA WILL MAKE A SURVEY OF THE LIMIT LINE TO DETECT ANY DEVIATIONS FROM THE LIMIT LINE.

NOTES: (continued)

7. THE BOTTOM OF THE RIP-RAP SHALL BE KEYED INTO THE BEACH SAND BY APPROXIMATELY THE SIZE OF THE RIP-RAP ROCK NOMINAL DIMENSION. EXISTING RIP-RAP OR NATIVE ROCK SHALL NOT BE EXCAVATED TO ESTABLISH A NEW KEY UNLESS REQUIRED TO ACHIEVE A STABLE STRUCTURE.
8. THE ELEVATION OF THE RIP-RAP SHALL REMAIN AS DIMENSIONED ON THIS STANDARD. IF THE ELEVATION OF THE BEACH SAND RISES OR FALLS, THE EFFECTIVE HEIGHT OF THE RIP-RAP SHALL BE ADJUSTED AT THE 1.5:1 OR 1:1 SLOPE RATIO SHOWN.
9. RIP-RAP WILL BE PLACED BY GRAVITY DUMP FROM RAILROAD EQUIPMENT, FOLLOWED BY RE-STACKING WITH EQUIPMENT WORKING FROM THE BEACH THAT IS CAPABLE OF MOVING THE LARGEST ROCKS BEING USED. THE RE-STACKING IS TO PLACE ALL ROCKS IN A STABLE MATRIX, TO RECOVER ANY ROCKS BEYOND THE LIMIT LINE, AND TO FILL VOIDS BETWEEN LARGE ROCKS WITH SMALLER ROCK ELEMENTS. EXISTING RIP-RAP MAY BE MOVED PRIOR TO ADDITION OF REPLENISHMENT ROCK IN ORDER TO FACILITATE DUMPING.
10. FOR EMBANKMENT DETAILS NOT SHOWN, REFER TO SCRRA ES2001 AND ES2002.
11. AT LOCATIONS WHERE SAND MOVES TO COVER UP THE RIP-RAP, RIP-RAP SHALL BE LEFT IN PLACE.
12. SCRRA MAINTENANCE MANAGER WILL INFORM THE GOVERNING AGENCIES ONE MONTH IN ADVANCE OF PLANNED PLACEMENT OF REPLENISHMENT RIP-RAP. IF RAPID EROSION REQUIRES PLACEMENT IN LESS THAN THE FULL MONTH NOTIFICATION PERIOD, NOTICE WILL BE GIVEN AS PROMPTLY AS PRACTICABLE.
13. INSTALLATION AND RE-STACKING OF ROCK SHALL CONFORM TO PERMIT GUIDELINES AND SHALL BE PERFORMED ONLY AFTER PROVIDING PROTECTION FOR MEMBERS OF THE PUBLIC WHO MAY BE USING THE BEACH.
14. ROUTINE REPLENISHMENT AND MAINTENANCE OF THE RIP-RAP SHALL BE SCHEDULED TO AVOID PEAK BEACH RECREATIONAL USE TIMES.
15. LOCALIZED EXCEPTIONS TO THIS STANDARD SHALL BE MADE IN ORDER TO FIT RIP-RAP TO CONFORM TO DRAINAGE STRUCTURES, PUBLIC CROSSINGS, SIGNAL FACILITIES AND OTHER STRUCTURES.

AS-BUILT

REV.	DATE	DESCRIPTION	DES.	ENG.
A	06-12-20	REVISE NOTE 8	AC	JMM

DRAWN BY: A. CALOS DATE: 10/01/03

PRINCIPAL ENGINEER, DESIGN & STANDARDS

ASSISTANT DIRECTOR, DESIGN

SCRRA ENGINEERING STANDARDS ARE INTENDED FOR SCRRA APPROVED USES ONLY. FOR NON-SCRRA APPROVED USES:
SCRRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES THAT IT ASSUMES ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRRA.
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METROLINK
SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
900 WILSHIRE BLVD., SUITE 1500, L.A., CA. 90017

ENGINEERING STANDARDS

ROADBED SECTIONS FOR
EXPOSURE TO OCEAN SURF

STANDARD 2003
SCALE: NTS
REVISION A SHEET 1 OF 1
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REV.	DATE	DESCRIPTION	BY	SUB.	APP.
3	8-4-25	AS-BUILT DRAWING	JR		VH
2	6-10-25	PROJECT RECORD DRAWING	JR		VH
1	5-15-25	DCN-01	JR		VH
0	4-14-25	ISSUED FOR BID	JR		VH

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DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED BY
DATE

JOSEPH D. RICHMOND No. C 74069 Exp. 6-30-27 CIVIL STATE OF CALIFORNIA

METROLINK

SUBMITTED: _____ PROJECT MANAGER

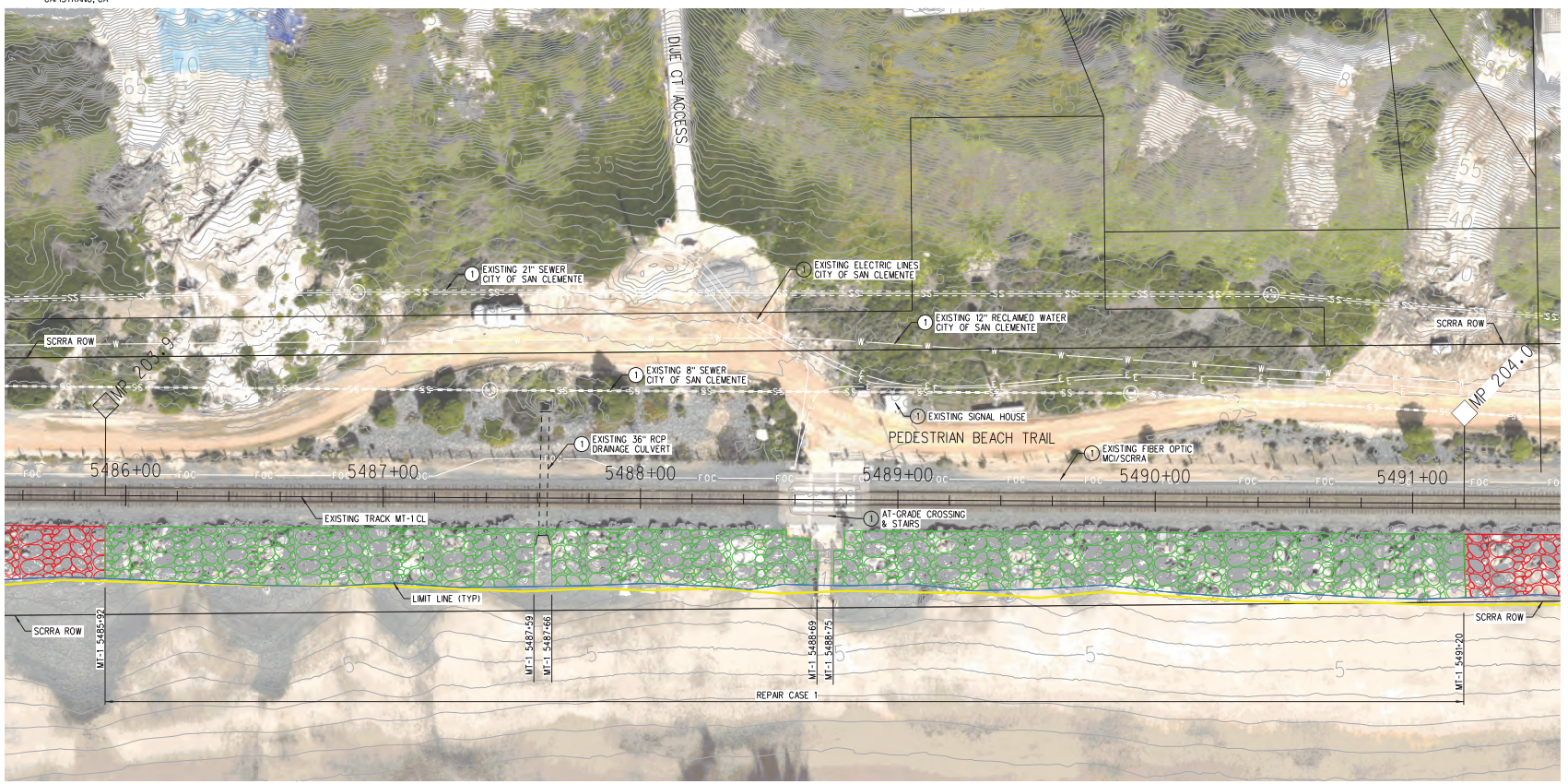
APPROVED: _____

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS

SCRRA
AREA 1A RIPRAP REPAIRS

CONTRACT NO. 10398757
DRAWING NO. STD-001
REVISION 0 SHEET NO. 2 OF 3
SCALE NOT TO SCALE

8/4/2025
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LEGEND:

- RIPRAP REPAIR AREA 1A
- AREAS 1 & 2 RIPRAP REPAIR (COMPLETED)
- CL — CENTER LINE
- ROW — RIGHT OF WAY
- SCRRA — SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
- AS-BUILT SEAWARD LIMIT OF RIPRAP REPAIR, SURVEYED BY DAVID EVANS AND ASSOCIATES IN MAY 2025
- CONFIRMED EXISTING RIPRAP (PRE-CONSTRUCTION), SURVEYED BY DAVID EVANS AND ASSOCIATES IN MARCH 2025

CONSTRUCTION NOTES:

1. PROTECT IN PLACE

GENERAL NOTES:

1. TYPICAL REPAIR CASE 1 IS SHOWN AS GENERAL GUIDE AND FIELD CONDITIONS WILL DETERMINE APPROPRIATE LEVEL OF REPAIR AT A GIVEN LOCATION.
2. REFER TO DRAWING No. SPT-001 FOR TYPICAL REPAIR CASES.
3. CONTOURS INDICATE CONDITIONS IN MARCH 2024. SITE CONDITIONS HIGHLY DYNAMIC DUE TO EXPOSURE TO WAVES AND TIDES.
4. CONTOUR INTERVALS IS 1 FT.
5. VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) WITH UNITS EXPRESSED IN FEET.
6. FINAL RIPRAP LIMITS MAY BE ADJUSTED BASED ON FIELD CONDITIONS.
7. CONTRACTOR TO RESTACK LOOSE, SURFACE-LEVEL INDIVIDUAL STONES OUTSIDE OF LIMIT LINE THAT ARE NOT SUPPORTING THE OVERALL EMBANKMENT STRUCTURE. CONTRACTOR SHALL EVALUATE THE POTENTIAL RE-USE OF QUARRY STONE THAT EXISTS WITHIN THE WORK AREA AND MAY REINCORPORATE THE STONE WITHIN THE WORK.

AS-BUILT

SCALE: 1"=40'

REV.	DATE		BY	APP.
2	8-4-25	AS-BUILT DRAWING	JR	VH
2	6-10-25	PROJECT RECORD DRAWING	JR	VH
1	5-15-25	DCN-01	JR	VH
0	4-14-25	ISSUED FOR BID	JR	VH

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DESIGNED BY: J. RICHMOND
DRAWN BY: J. HERNANDEZ
CHECKED BY: R. BOUDREAU
APPROVED BY: V. HAGHDOUST
DATE:

REGISTERED PROFESSIONAL ENGINEER — JOSEPH A. RICHMOND — No. C 74069 — EXP. 6-30-27 — CIVIL — STATE OF CALIFORNIA

METROLINK

OCTA COASTAL FRONTIERS

SUBMITTED: _____ PROJECT MANAGER

APPROVED: _____

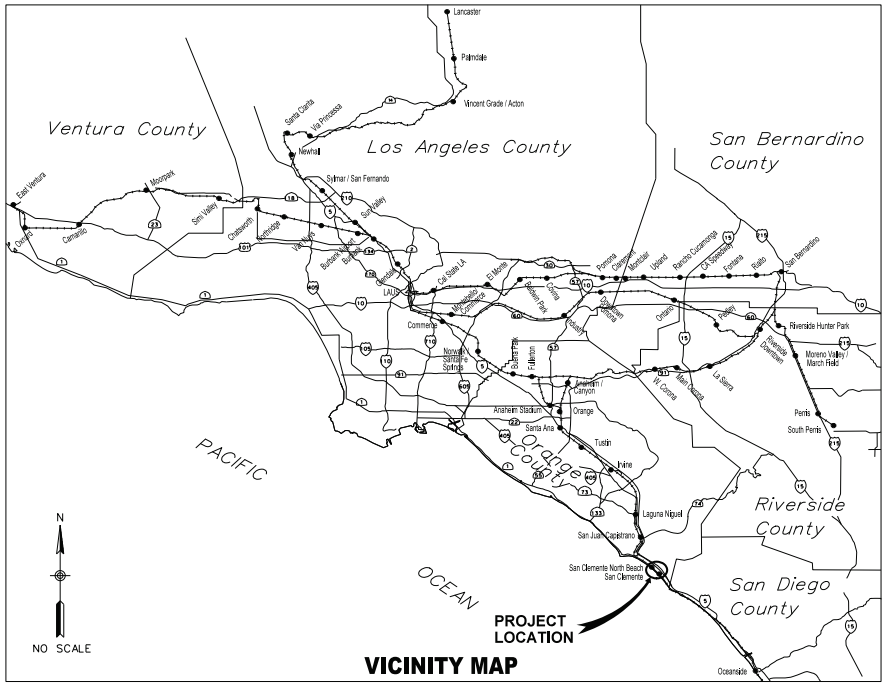
ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS

AREA 1A RIPRAP REPAIRS
STA 5485+92 TO 5491+20

CONTRACT NO. 10398757
DRAWING NO. SPR-001
REVISION 0
SHEET NO. 3 OF 3
SCALE AS NOTED

8/4/2025
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ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS
AREA 2 RIPRAP REPAIR



VICINITY MAP



LOCATION MAP

APRIL 7, 2025

AS-BUILT

CONTRACT No. 10398757

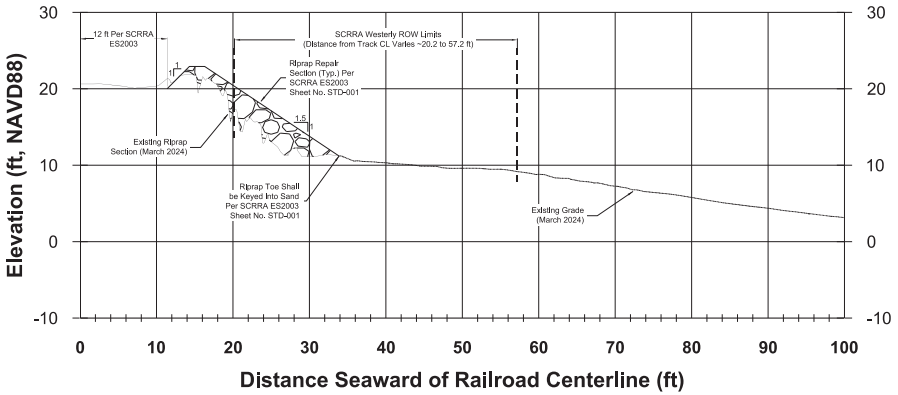
COASTAL FRONTIERS
882 A Patriot Drive
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(818)341-8133

REV.	DATE		BY	APP.
2	8-4-25	AS-BUILT DRAWING	JR	VH
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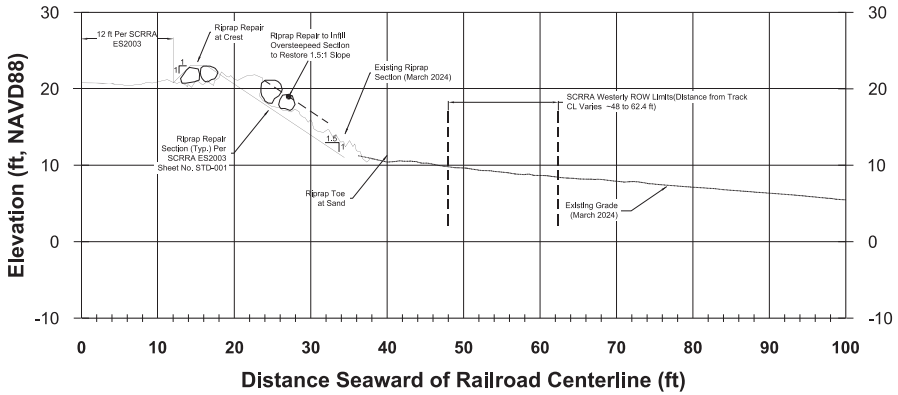
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Typical Repair - Case 1



Typical Repair - Case 2



RIPRAP REPAIR WILL USE 3.5-TON STONE* IN CONFORMANCE WITH THE FOLLOWING GRADATION:

Stone Size	% Greater Than	Dimension**
5 ton	0-5	54 in.
3.5 ton	50-100	48 in.
2 ton	95-100	40 in.

* Close match of Class X average W_{50} stone size (3.5 tons)
** Dimensions correspond to size measured by sieve, grizzly or visual inspection for stone of 165 lbs./cu.ft.

NOTES:

1. CONTRACTOR SHALL RETRIEVE STONE TO THE MAXIMUM PRACTICAL EXTENT THAT HAS BEEN DISPLACED OFF AND SEAWARD OF THE RIPRAP SLOPE AND RE-USE IN THE SLOPE REPAIR.
2. REFER TO NOTES ON SHEET SCRRA ES2003, SEE DRAWING No. STD-001.

AS-BUILT

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DESIGNED BY J. RICHMOND
DRAWN BY J. HERNANDEZ
CHECKED BY R. BOUDREAU
APPROVED BY V. HAGHDOUST
DATE

REGISTERED PROFESSIONAL ENGINEER — AUSTIN S. RICHMOND — No. C 74069 — Exp. 6-30-27 — CIVIL — STATE OF CALIFORNIA

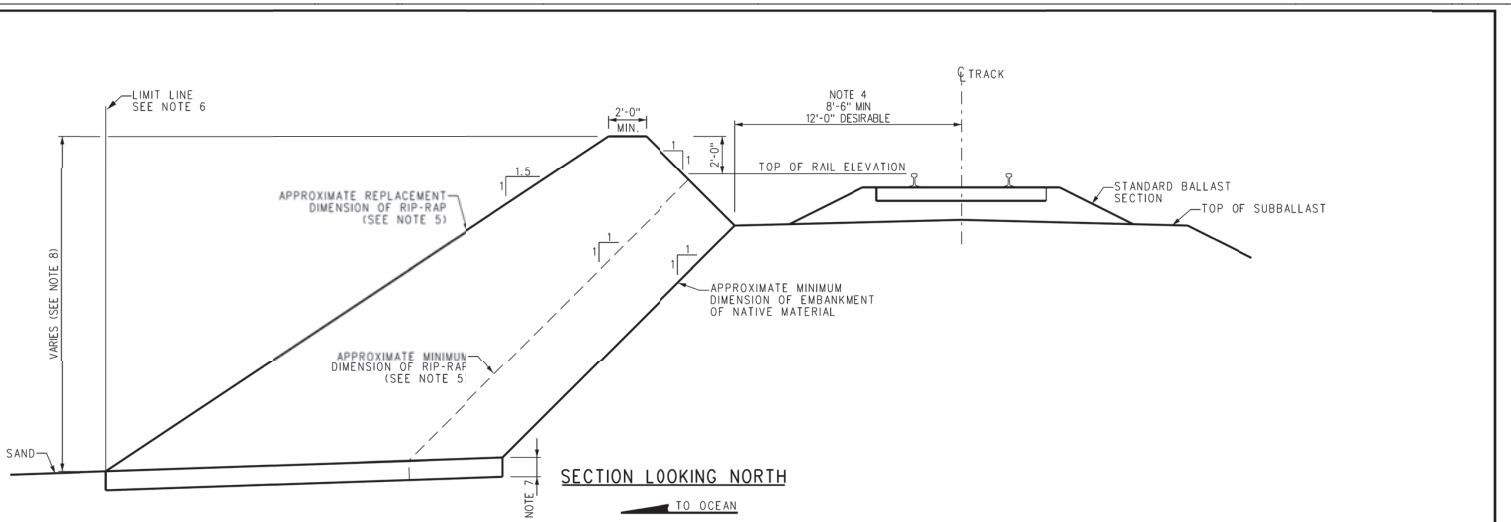
METROLINK
OCTA COASTAL FRONTIERS

SUBMITTED: _____ PROJECT MANAGER
APPROVED: _____

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS
TYPICAL SECTIONS
AREA 2 RIPRAP REPAIRS

CONTRACT NO. 10398757
DRAWING NO. SPT-001
REVISION 0 | SHEET NO. 1 OF 67
SCALE NOT TO SCALE

8/4/2025
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USER: JJHERNANDE



NOTES:

1. APPLICATION: THIS STANDARD SHALL BE USED FOR RAILROAD EMBANKMENTS EXPOSED TO OCEAN WAVES. THE RIP-RAP IS USED TO SECURE THE TRACK BALLAST FROM EROSION DUE TO WAVES, AS REQUIRED BY FEDERAL RAILROAD ADMINISTRATION TRACK SAFETY STANDARDS PART 213.103, PROTECTION OF THE BALLAST AND EMBANKMENT BEING FUNDAMENTAL IN SUPPORTING THE TRACK STRUCTURE.
2. DIMENSION LINES: DIMENSIONS FOR STONE RIP-RAP ARE THE AVERAGE OF THE EXPOSED SURFACE OF ROCK. DUE TO THE IRREGULAR SIZE AND SHAPE OF NATURALLY BROKEN ROCK, ANY SPECIFIC POINT MAY VARY TWO FEET FROM THE AVERAGE DIMENSION SHOWN.
3. RIP-RAP MATERIAL: GRANITE, BASALT OR SIMILAR IGNEOUS OR METAMORPHIC ROCK NATIVE TO ORANGE OR RIVERSIDE COUNTIES, BROKEN INTO SIZE DISTRIBUTION MEETING ASTM D5519 GRADATION WILL BE USED TO REPLACE ERODED RIP-RAP AREAS, HOWEVER EXISTING INVENTORIES OF LARGER ROCK MAY BE USED UNTIL EXHAUSTED. CONCRETE, ASPHALT, TIMBER OR METAL IS NOT PERMITTED IN THE RIP-RAP.
4. A WALKWAY GENERALLY CONFORMING TO SCRRA ES2001 AND ES2002 WILL BE PROVIDED ON THE OCEAN SIDE OF THE TRACKS. THE MINIMUM WIDTH OF THE WALKWAY IN SURF AREAS IS EIGHT FEET AND SIX INCHES (8'-6") FROM THE CENTERLINE OF THE TRACK, WITH TWELVE FEET (12'-0") TO BE PROVIDED WHERE FIELD CONDITIONS PERMIT. WALKWAY SURFACE SHALL BE SUBBALLAST.
5. MINIMUM AND MAXIMUM REPLACEMENT DIMENSIONS: THE GENERAL CRITERIA FOR INITIATING REPLACEMENT OF RIP-RAP IS WHEN EROSION OR SETTLEMENT HAS DEGRADED THE RIP-RAP SUCH THAT THE TOP OF THE RIP-RAP HAS BECOME LOWER THAN THE TOP OF RAIL ELEVATION (AND THEREFORE DOES NOT SHIELD THE TRACK FROM WAVES), WHEN THE THICKNESS OF THE RIP-RAP HAS DETERIORATED SUCH THAT THE NATURAL EMBANKMENT IS EXPOSED TO WAVE ACTION, OR WHEN THE LOWER PORTIONS OF THE RIP-RAP HAVE BECOME ERODED LEAVING AN UNSTABLE (STEEPER THAN 1:1) SLOPE RATIO. RIP-RAP WILL BE REPLENISHED TO THE "REPLACEMENT LINE" SHOWN, GENERALLY TO A 1.5:1 SLOPE RATIO. (AT LOCATIONS WITH WELL-ESTABLISHED LARGE DIMENSION RIP-RAP AT A STEEPER SLOPE, LOCALIZED SEGMENTS OF NEW RIP-RAP MAY BE INSTALLED AT 1:1 SLOPE RATIO). THE NORMAL STATE OF MAINTENANCE WILL BE GRADUALLY ERODING COVER OF RIP-RAP BETWEEN THE "MINIMUM" AND "REPLACEMENT" DIMENSION LINES.
6. ~~THE SCRRA AND LOCAL AGENCIES HAVE ESTABLISHED A "LIMIT LINE" TO DEFINE THE MAXIMUM WIDTH OF THE RIP-RAP.~~ THIS LINE IS LOCATED BY REFERENCE TO GPS MEASURED COORDINATES, TO OFFSETS FROM TRACK CENTERLINE, OR BOTH. PLACEMENT OF RIP-RAP SHALL CONFORM TO THE LIMIT LINE UNLESS UNPRECEDENTED EROSION OF THE BEACH LOWERS THE LEVEL OF THE SAND, IN WHICH CASE THE LIMIT LINE WILL BE ADJUSTED SEAWARD AT A 1.5:1 (OR 1:1 AT LOCALIZED SITES) SLOPE RATIO FOR THE ADDED HEIGHT OF THE ENBANKMENT. AFTER RIP-RAP REPLACEMENT OPERATIONS ARE COMPLETE SCRRA WILL MAKE A SURVEY OF THE LIMIT LINE TO DETECT ANY DEVIATIONS FROM THE LIMIT LINE.

NOTES: (continued)

7. THE BOTTOM OF THE RIP-RAP SHALL BE KEYED INTO THE BEACH SAND BY APPROXIMATELY THE SIZE OF THE RIP-RAP ROCK NOMINAL DIMENSION. EXISTING RIP-RAP OR NATIVE ROCK SHALL NOT BE EXCAVATED TO ESTABLISH A NEW KEY UNLESS REQUIRED TO ACHIEVE A STABLE STRUCTURE.
8. THE ELEVATION OF THE RIP-RAP SHALL REMAIN AS DIMENSIONED ON THIS STANDARD. IF THE ELEVATION OF THE BEACH SAND RISES OR FALLS, THE EFFECTIVE HEIGHT OF THE RIP-RAP SHALL BE ADJUSTED AT THE 1.5:1 OR 1:1 SLOPE RATIO SHOWN.
9. RIP-RAP WILL BE PLACED BY GRAVITY DUMP FROM RAILROAD EQUIPMENT, FOLLOWED BY RE-STACKING WITH EQUIPMENT WORKING FROM THE BEACH THAT IS CAPABLE OF MOVING THE LARGEST ROCKS BEING USED. THE RE-STACKING IS TO PLACE ALL ROCKS IN A STABLE MATRIX, TO RECOVER ANY ROCKS BEYOND THE LIMIT LINE, AND TO FILL VOIDS BETWEEN LARGE ROCKS WITH SMALLER ROCK ELEMENTS. EXISTING RIP-RAP MAY BE MOVED PRIOR TO ADDITION OF REPLENISHMENT ROCK IN ORDER TO FACILITATE DUMPING.
10. FOR EMBANKMENT DETAILS NOT SHOWN, REFER TO SCRRA ES2001 AND ES2002.
11. AT LOCATIONS WHERE SAND MOVES TO COVER UP THE RIP-RAP, RIP-RAP SHALL BE LEFT IN PLACE.
12. SCRRA MAINTENANCE MANAGER WILL INFORM THE GOVERNING AGENCIES ONE MONTH IN ADVANCE OF PLANNED PLACEMENT OF REPLENISHMENT RIP-RAP. IF RAPID EROSION REQUIRES PLACEMENT IN LESS THAN THE FULL MONTH NOTIFICATION PERIOD, NOTICE WILL BE GIVEN AS PROMPTLY AS PRACTICABLE.
13. INSTALLATION AND RE-STACKING OF ROCK SHAILL CONFORM TO PERMIT GUIDELINES AND SHALL BE PERFORMED ONLY AFTER PROVIDING PROTECTION FOR MEMBERS OF THE PUBLIC WHO MAY BE USING THE BEACH.
14. ROUTINE REPLENISHMENT AND MAINTENANCE OF THE RIP-RAP SHALL BE SCHEDULED TO AVOID PEAK BEACH RECREATIONAL USE TIMES.
15. LOCALIZED EXCEPTIONS TO THIS STANDARD SHALL BE MADE IN ORDER TO FIT RIP-RAP TO CONFORM TO DRAINAGE STRUCTURES, PUBLIC CROSSINGS, SIGNAL FACILITIES AND OTHER STRUCTURES.

AS-BUILT

REV.	DATE	DESCRIPTION	DES.	ENG.
A	06-12-20	REVISE NOTE 8	AC	JMM

DRAWN BY: A. CALOS DATE: 10/01/03

PRINCIPAL ENGINEER, DESIGN & STANDARDS

ASSISTANT DIRECTOR, DESIGN

SCRRA ENGINEERING STANDARDS ARE INTENDED FOR SCRRA APPROVED USES ONLY FOR NON-SCRRA APPROVED USES, SCRRA SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE DATA OR INFORMATION CONTAINED HEREIN. THE SELECTION AND USE OF THESE STANDARDS IS THE SOLE RESPONSIBILITY OF THE USER AND SHOULD NOT BE USED WITHOUT CONSULTING A REGISTERED PROFESSIONAL ENGINEER. ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND ARE DISCLAIMED. ANYONE MAKING USE OF THIS INFORMATION AGREES TO ASSUME ALL LIABILITY ARISING FROM SUCH USE. NO PART OF THESE STANDARDS SHOULD BE REPRODUCED OR DISTRIBUTED IN ANY FORM OR BY ANY MEANS WITHOUT THE PRIOR WRITTEN PERMISSION OF SCRRA. ALL RIGHTS RESERVED.

METROLINK.
SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
900 WILSHIRE BLVD., SUITE 1500, L. A., CA. 90017

ENGINEERING STANDARDS

ROADBED SECTIONS FOR
EXPOSURE TO OCEAN SURF

STANDARD 2003
SCALE: NTS
REVISION A SHEET 1 OF 1
CADD FILE ES2003

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REV.	DATE	DESCRIPTION	BY	SUB.	APP.
3	8-4-25	AS-BUILT DRAWING	JR		VH
2	6-10-25	PROJECT RECORD DRAWING	JR		VH
0	4-14-25	ISSUED FOR BID	JR		VH

INFORMATION CONFIDENTIAL: All plans, drawings, specifications, and or information furnished herewith shall remain the property of the Southern California Regional Rail Authority and shall be held confidential and shall not be used for any purpose not provided for in agreements with the Southern California Regional Rail Authority.

DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED BY
DATE

REGISTERED PROFESSIONAL ENGINEER — JOSEPH D. RICHMOND — No. C 74069 — EXP. 6-30-27 — CIVIL — STATE OF CALIFORNIA

METROLINK

SUBMITTED: _____ PROJECT MANAGER
APPROVED: _____

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS
SCRRA
AREA 2 RIPRAP REPAIRS

CONTRACT NO. 10398757
DRAWING NO. STD-001
REVISION 0 SHEET NO. 2 OF 67 (2)
SCALE NOT TO SCALE

8/4/2025
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LEGEND:

- RIPRAP REPAIR AREA 2
- RIPRAP REPAIR AREA 1A ⚠1
- CL CENTER LINE
- RR RAILROAD
- ROW RIGHT OF WAY
- SCRRA SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
- AS-BUILT SEAWARD LIMIT OF RIPRAP REPAIR, SURVEYED BY DAVID EVANS AND ASSOCIATES IN MAY 2025
- CONFIRMED EXISTING RIPRAP (PRE-CONSTRUCTION), SURVEYED BY DAVID EVANS AND ASSOCIATES IN MARCH 2025 ⚠2

CONSTRUCTION NOTES:

① PROTECT IN PLACE

GENERAL NOTES:

1. TYPICAL REPAIR CASES 1 AND 2 ARE SHOWN AS GENERAL GUIDE AND FIELD CONDITIONS WILL DETERMINE APPROPRIATE LEVEL OF REPAIR AT A GIVEN LOCATION.
2. REFER TO DRAWING No. SPT-001 FOR TYPICAL REPAIR CASES.
3. CONTOURS INDICATE CONDITIONS IN MARCH 2024. SITE CONDITIONS HIGHLY DYNAMIC DUE TO EXPOSURE TO WAVES AND TIDES.
4. CONTOUR INTERVALS IS 1FT.
5. VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) WITH UNITS EXPRESSED IN FEET.
6. FINAL RIPRAP LIMITS MAY BE ADJUSTED BASED ON FIELD CONDITIONS.
7. CONTRACTOR TO RESTACK LOOSE, SURFACE-LEVEL INDIVIDUAL STONES OUTSIDE OF LIMIT LINE THAT ARE NOT SUPPORTING THE OVERALL EMBANKMENT STRUCTURE. CONTRACTOR SHALL EVALUATE THE POTENTIAL RE-USE OF QUARRY STONE THAT EXISTS WITHIN THE WORK AREA AND MAY REINCORPORATE THE STONE WITHIN THE WORK.

AS-BUILT

20 0 20 40
SCALE: 1"=40'

REV.	DATE		BY	SUB.	APP.
2	8-4-25	AS-BUILT DRAWING	JR		VH
1	6-10-25	PROJECT RECORD DRAWING	JR		VH
1	5-15-25	DCN-01	JR		VH
0	4-14-25	ISSUED FOR BID	JR		VH

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DESIGNED BY: J. RICHMOND
DRAWN BY: J. HERNANDEZ
CHECKED BY: R. BOUDREAU
APPROVED BY: V. HAGHDOUST
DATE:

REGISTERED PROFESSIONAL ENGINEER — JOSEPH S. RICHMOND — No. C 74069 — Exp. 6-30-27 — CIVIL — STATE OF CALIFORNIA

METROLINK
OCTA COASTAL FRONTIERS

SUBMITTED: _____ PROJECT MANAGER
APPROVED: _____

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS
AREA 2 RIPRAP REPAIRS
STA 5491+20 TO 5494+25

CONTRACT NO. 10398757
DRAWING NO. SPR-001
REVISION 0 | SHEET NO. 3 OF 67 ⚠2
SCALE AS NOTED

8/4/2025
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California Coastal Commission
5-21-0866
Exhibit 2
Page 20 of 59



LEGEND:

- RIPRAP REPAIR
- CL — CENTER LINE
- RR — RAILROAD
- ROW — RIGHT OF WAY
- SCRRA — SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
- AS-BUILT SEAWARD LIMIT OF RIPRAP REPAIR, SURVEYED BY DAVID EVANS AND ASSOCIATES IN MAY 2025
- CONFIRMED EXISTING RIPRAP (PRE-CONSTRUCTION), SURVEYED BY DAVID EVANS AND ASSOCIATES IN MARCH 2024

CONSTRUCTION NOTES:

1. PROTECT IN PLACE

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2. REFER TO DRAWING No. SPT-001 FOR TYPICAL REPAIR CASES.
3. CONTOURS INDICATE CONDITIONS IN MARCH 2024. SITE CONDITIONS HIGHLY DYNAMIC DUE TO EXPOSURE TO WAVES AND TIDES.
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AS-BUILT

SCALE: 1"=40'

REV.	DATE		BY	SUB.	APP.
3	8-4-25	AS-BUILT DRAWING	JR		VH
2	6-10-25	PROJECT RECORD DRAWING	JR		VH
1	4-14-25	REVISED PER ADDENDUM #01	JR		VH
0	4-14-25	ISSUED FOR BID	JR		VH

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DESIGNED BY: J. RICHMOND
DRAWN BY: J. HERNANDEZ
CHECKED BY: R. BOUDREAU
APPROVED BY: V. HAGHDOUST
DATE:

METROLINK
COASTAL FRONTIERS
OCTA

SUBMITTED: _____ PROJECT MANAGER
APPROVED: _____

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS

AREA 2 RIPRAP REPAIRS
STA 5494+25 TO 5500+25

CONTRACT NO. 10398757
DRAWING NO. SPR-002
REVISION 0 | SHEET NO. 4 OF 87
SCALE AS NOTED

8/4/2025
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LEGEND:

- RIPRAP REPAIR
- CL — CENTER LINE
- RR — RAILROAD
- ROW — RIGHT OF WAY
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AS-BUILT

SCALE: 1"=40'

REV.	DATE		BY	SUB.	APP.
2	8-4-25	AS-BUILT DRAWING	JR		VH
1	6-10-25	PROJECT RECORD DRAWING	JR		VH
0	4-14-25	ISSUED FOR BID	JR		VH

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DESIGNED BY: J. RICHMOND
DRAWN BY: J. HERNANDEZ
CHECKED BY: R. BOUDREAU
APPROVED BY: V. HAGHDOUST
DATE:

JOSEPH S. RICHMOND No. C 74069 Exp. 6-30-27 CIVIL STATE OF CALIFORNIA

METROLINK

COASTAL FRONTIERS

SUBMITTED: _____ PROJECT MANAGER

APPROVED: _____

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS

AREA 2 RIPRAP REPAIRS
STA 5500+25 TO 5506+25

CONTRACT NO. 10398757
DRAWING NO. SPR-003
REVISION 0 | SHEET NO. 5 OF 87
SCALE AS NOTED

8/4/2025
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LEGEND:

	RIPRAP REPAIR
CL	CENTER LINE
RR	RAILROAD
ROW	RIGHT OF WAY
SCRRA	SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
	AS-BUILT SEAWARD LIMIT OF RIPRAP REPAIR, SURVEYED BY DAVID EVANS AND ASSOCIATES IN MAY 2025
	CONFIRMED EXISTING RIPRAP (PRE-CONSTRUCTION), SURVEYED BY DAVID EVANS AND ASSOCIATES IN MARCH 2025

CONSTRUCTION NOTES:

1. PROTECT IN PLACE

GENERAL NOTES:

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AS-BUILT

SCALE: 1"=40'

REV.	DATE		BY	SUB.	APP.
2	8-4-25	AS-BUILT DRAWING	JR		VH
1	6-10-25	PROJECT RECORD DRAWING	JR		VH
0	4-14-25	ISSUED FOR BID	JR		VH

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DESIGNED BY J. RICHMOND
DRAWN BY J. HERNANDEZ
CHECKED BY R. BOUDREAU
APPROVED BY V. HAGHDOUST
DATE

REGISTERED PROFESSIONAL ENGINEER JOSEPH S. RICHMOND No. C 74069 Exp. 6-30-27 CIVIL STATE OF CALIFORNIA

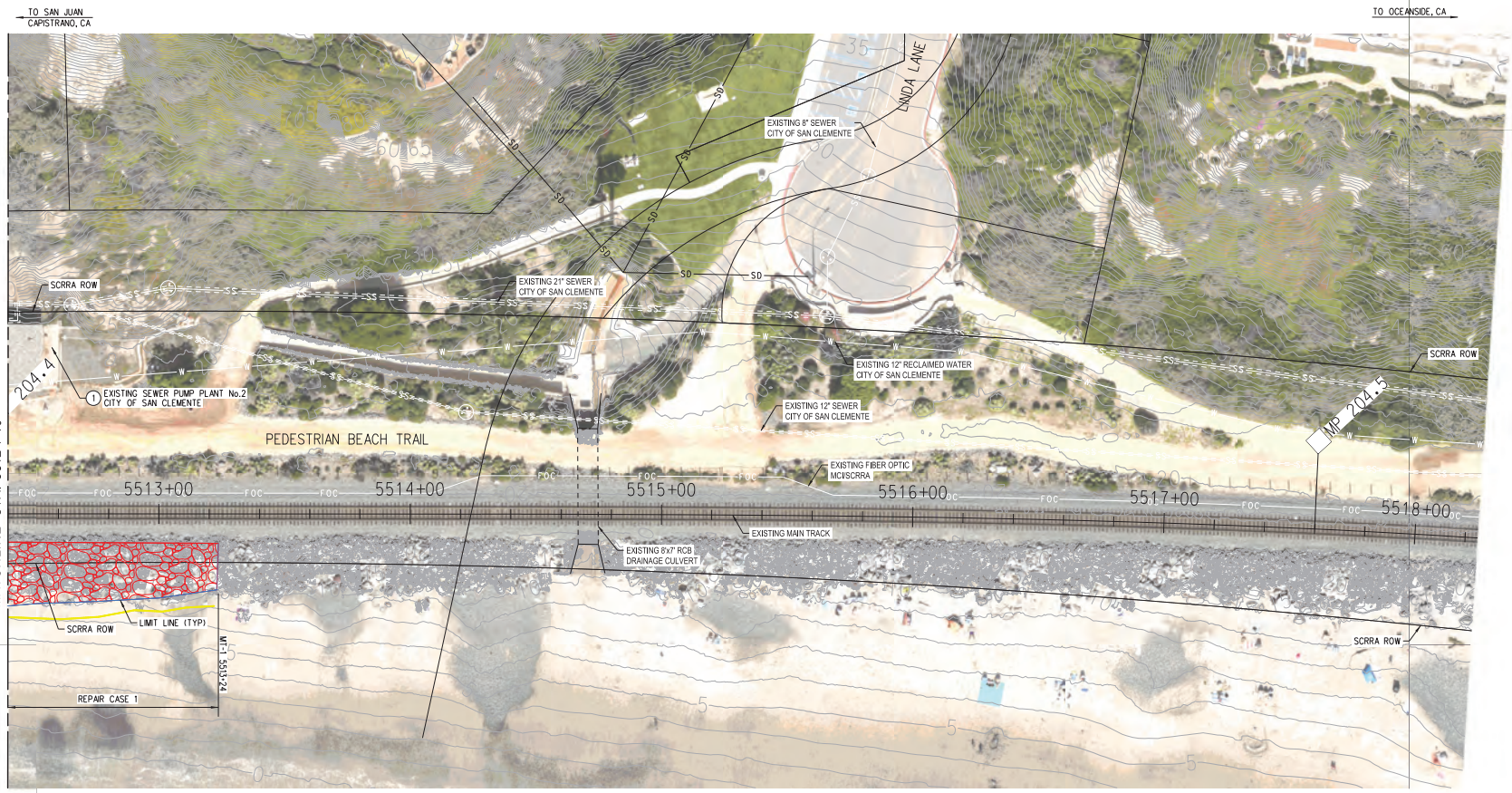
METROLINK
OCTA COASTAL FRONTIERS

SUBMITTED: _____ PROJECT MANAGER
APPROVED: _____

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS
AREA 2 RIPRAP REPAIRS
STA 5506+25 TO 5512+40

CONTRACT NO. 10398757
DRAWING NO. SPR-004
REVISION 0 SHEET NO. 6 OF 67
SCALE AS NOTED

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LEGEND:

- RIPRAP REPAIR
- CL — CENTER LINE
- RR — RAILROAD
- ROW — RIGHT OF WAY
- SCRRA — SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
- AS-BUILT SEAWARD LIMIT OF RIPRAP REPAIR, SURVEYED BY DAVID EVANS AND ASSOCIATES IN MAY 2025
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AS-BUILT

SCALE: 1"=40'

REV.	DATE		BY	SUB.	APP.
2	8-4-25	AS-BUILT DRAWING	JR		VH
1	6-10-25	PROJECT RECORD DRAWING	JR		VH
0	4-14-25	ISSUED FOR BID	JR		VH

INFORMATION CONFIDENTIAL: All plans, drawings, specifications, and or information furnished herewith shall remain the property of the the Southern California Regional Rail Authority and shall be held confidential and shall not be used for any purpose not provided for in agreements with the Southern California Regional Rail Authority.

DESIGNED BY: J. RICHMOND
DRAWN BY: J. HERNANDEZ
CHECKED BY: R. BOUDREAU
APPROVED BY: V. HAGHDOUST
DATE:

KEITH B. RICHMOND — No. C 74069 — Exp. 6-30-27 — CIVIL — STATE OF CALIFORNIA

METROLINK

COASTAL FRONTIERS

SUBMITTED: _____ PROJECT MANAGER

APPROVED: _____

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS

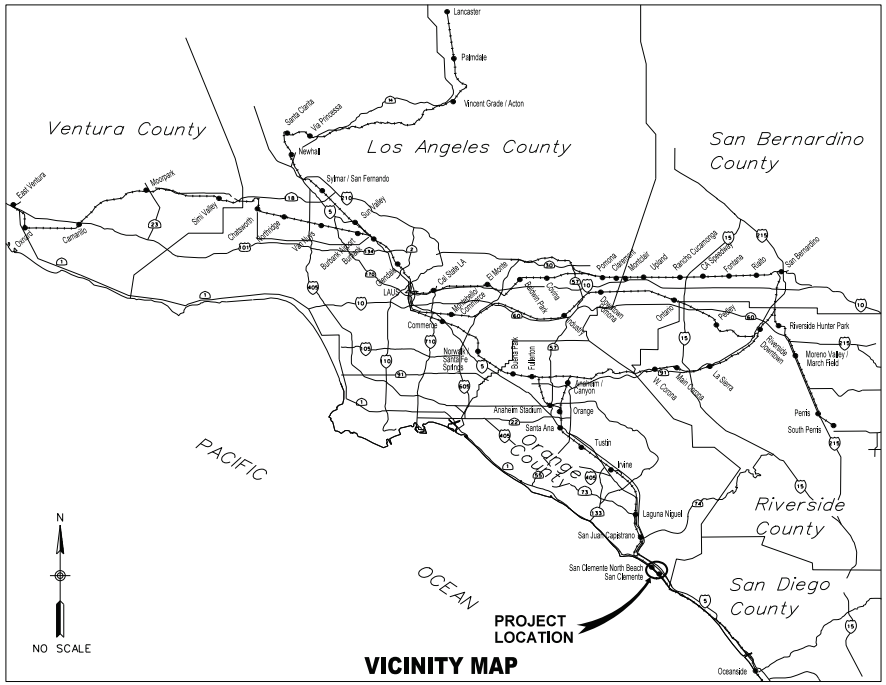
AREA 2 RIPRAP REPAIRS
STA 5512+40 TO 5513+24

CONTRACT NO. 10398757
DRAWING NO. SPR-005 (2)
REVISION 0
SHEET NO. 7 OF 7
SCALE AS NOTED

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Area 1 Sand Nourishment
As-Built Plan 2025

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS
AREA 1 BEACH SAND NOURISHMENT



VICINITY MAP



LOCATION MAP

NOVEMBER 12, 2025

AS-BUILT

CONTRACT No. 10398757

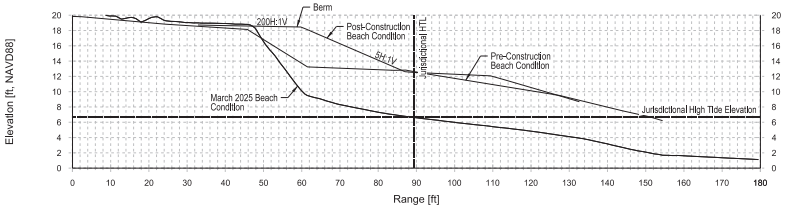
COASTAL FRONTIERS
882 A Patriot Drive
Moorpark, CA 93021
(818)341-8133

REV.	DATE		BY	APP.
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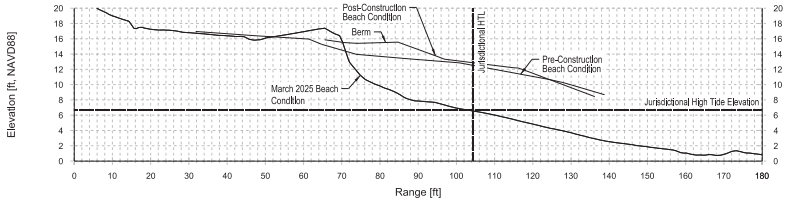
OCTA

CITY OF SAN CLEMENTE CALIFORNIA

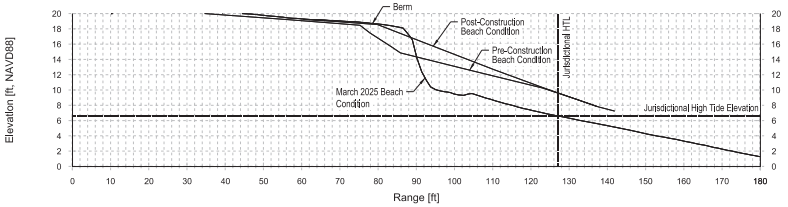
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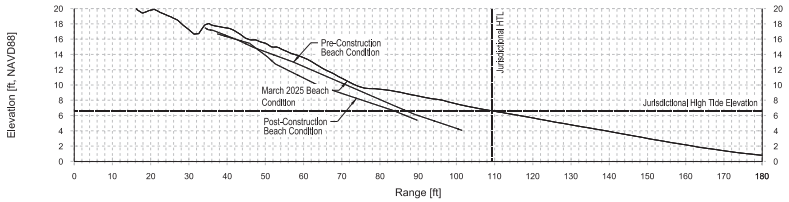
Section A



Section B



Section C



Section D

AS-BUILT NOURISHMENT TEMPLATE

BERM WIDTH: VARIES
BERM ELEVATION: VARIES (NOMINAL 16-17 FT) AT BACK BEACH
BERM SLOPE: 20OH:1V NOMINAL
OFFSHORE SLOPE: 5H:1V NOMINAL

ABBREVIATIONS:

HTL: USACE JURISDICTIONAL HIGH TIDE LINE

NOTES:

1. PRE-CONSTRUCTION BEACH CONDITION DERIVED FROM TOPOGRAPHIC SURVEY CONDUCTED ON SEPTEMBER 4, 2025 BY DAVID EVANS AND ASSOCIATES.
2. POST-CONSTRUCTION BEACH CONDITION DERIVED FROM TOPOGRAPHIC SURVEY CONDUCTED ON SEPTEMBER 12, 2025 BY DAVID EVANS AND ASSOCIATES.
3. MARCH 2025 BEACH CONDITION DERIVED FROM LIDAR SURVEY CONDUCTED ON MARCH 8, 2025 BY PSOMAS.
4. USACE JURISDICTIONAL HIGH TIDE LINE (HTL) DERIVED AS INTERSECTION OF THE PLANE OF THE JURISDICTIONAL HIGH TIDE ELEVATION (6.65 FT, NAVD88) AND THE MARCH 2025 BEACH CONDITION.
5. TOTAL SEDIMENT PLACEMENT QUANTITY: 2,544 CY.
6. CROSS SECTION VERTICAL EXAGGERATION: 1H:2V

AS-BUILT

20 0 20 40
SCALE: 1"=40'

REV.	DATE		BY	APP.
1	11-12-25	AS-BUILT DRAWING	JR	VH
0	8-26-25	ISSUED FOR BID	JR	VH

INFORMATION CONFIDENTIAL: All plans, drawings, specifications, and or information furnished herewith shall remain the property of the the Southern California Regional Rail Authority and shall be held confidential and shall not be used for any purpose not provided for in agreements with the Southern California Regional Rail Authority.

DESIGNED BY: G. HEARON
DRAWN BY: J. HERNANDEZ
CHECKED BY: R. BOUDREAU
APPROVED BY: V. HAGHDOUST
DATE:

REGISTERED PROFESSIONAL ENGINEER — No. C 60328 — EXP. 6-30-26 — CIVIL — STATE OF CALIFORNIA

OCTA

COASTAL FRONTIERS

SUBMITTED: _____ PROJECT MANAGER
APPROVED: _____

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS

TYPICAL SECTIONS
AREA 1 BEACH SAND NOURISHMENT

CONTRACT NO. 10398757
DRAWING NO. BST-001
REVISION 0 | SHEET NO. 1 OF 4
SCALE NOT TO SCALE

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LEGEND:

	BEACH SAND NOURISHMENT FOOTPRINT
CL	CENTER LINE
ROW	RIGHT OF WAY
SCRRA	SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
	USACE JURISDICTIONAL HIGH TIDE LINE SURVEYED BY DAVID EVANS AND ASSOCIATES IN MARCH 2025
	NOMINAL LANWARD LIMIT OF SAND PLACEMENT BASED ON THE USACE HIGH TIDE LINE ESTABLISHED BY DAVID EVANS AND ASSOCIATES AT TIME OF CONSTRUCTION

CONSTRUCTION NOTES:

1. PROTECT IN PLACE

GENERAL NOTES:

1. POST-CONSTRUCTION BEACH CONDITION DERIVED FROM TOPOGRAPHIC SURVEY CONDUCTED ON SEPTEMBER 12, 2025 BY DAVID EVANS AND ASSOCIATES.
2. CONTOUR INTERVAL IS 2 FT.
3. VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) WITH UNITS EXPRESSED IN FEET.
4. BEACH SAND NOURISHMENT FOOTPRINT DENOTES AREA WHERE SAND WAS PLACED.

AS-BUILT

N

20 0 20 40
SCALE: 1"=40'

REV.	DATE		BY	APP.
1	11-12-25	AS-BUILT DRAWING	JR	VH
0	8-26-25	ISSUED FOR BID	JR	VH

INFORMATION CONFIDENTIAL: All plans, drawings, specifications, and or information furnished herewith shall remain the property of the the Southern California Regional Rail Authority and shall be held confidential and shall not be used for any purpose not provided for in agreements with the Southern California Regional Rail Authority.

DESIGNED BY G. HEARON
DRAWN BY J. HERNANDEZ
CHECKED BY R. BOUDREAU
APPROVED BY V. HAGHDOUST
DATE

REGISTERED PROFESSIONAL ENGINEER — No. C 60328 — Exp. 6-30-26 — CIVIL — STATE OF CALIFORNIA

OCTA

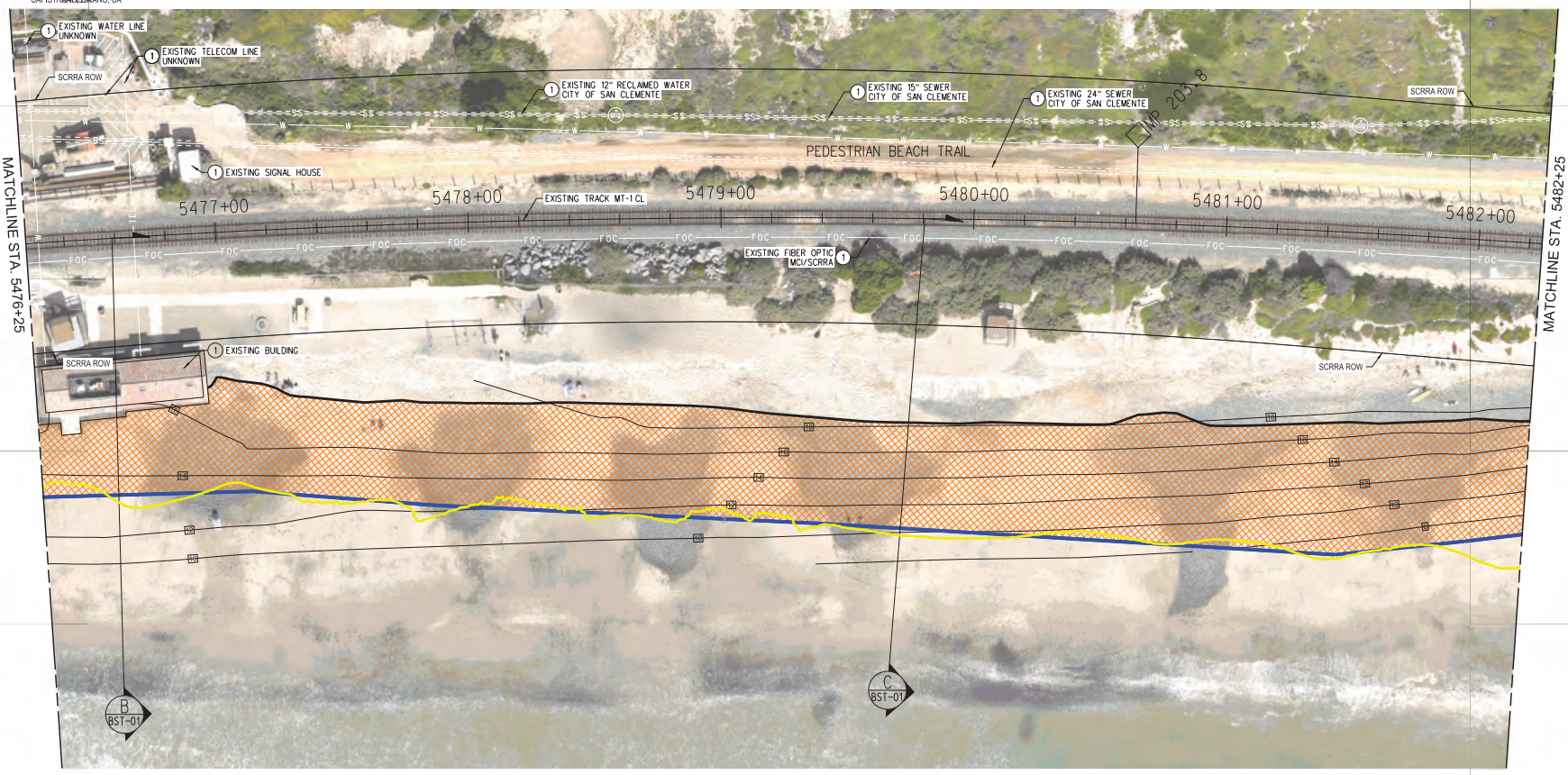
COASTAL FRONTIERS

SUBMITTED: _____ PROJECT MANAGER
APPROVED: _____

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS
AREA 1 BEACH SAND NOURISHMENT
STA 5472+38 TO 5476+25

CONTRACT NO. 10398757
DRAWING NO. BSN-001
REVISION 0 | SHEET NO. 2 OF 4
SCALE AS NOTED

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LEGEND:

	BEACH SAND NOURISHMENT FOOTPRINT
CL	CENTER LINE
ROW	RIGHT OF WAY
SCRRA	SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
	USACE JURISDICTIONAL HIGH TIDE LINE SURVEYED BY DAVID EVANS AND ASSOCIATES IN MARCH 2025
	NOMINAL LANWARD LIMIT OF SAND PLACEMENT BASED ON THE USACE HIGH TIDE LINE ESTABLISHED BY DAVID EVANS AND ASSOCIATES AT TIME OF CONSTRUCTION

CONSTRUCTION NOTES:

1. PROTECT IN PLACE

GENERAL NOTES:

1. POST-CONSTRUCTION BEACH CONDITION DERIVED FROM TOPOGRAPHIC SURVEY CONDUCTED ON SEPTEMBER 12, 2025 BY DAVID EVANS AND ASSOCIATES.
2. CONTOUR INTERVAL IS 2 FT.
3. VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) WITH UNITS EXPRESSED IN FEET.
4. BEACH SAND NOURISHMENT FOOTPRINT DENOTES AREA WHERE SAND WAS PLACED.

AS-BUILT

SCALE: 1"=40'

REV.	DATE		BY	SUB.	APP.
1	11-12-25	AS-BUILT DRAWING	JR		VH
0	8-26-25	ISSUED FOR BID	JR		VH

INFORMATION CONFIDENTIAL: All plans, drawings, specifications, and or information furnished herewith shall remain the property of the the Southern California Regional Rail Authority and shall be held confidential and shall not be used for any purpose not provided for in agreements with the Southern California Regional Rail Authority.

DESIGNED BY G. HEARON
DRAWN BY J. HERNANDEZ
CHECKED BY R. BOUDREAU
APPROVED BY V. HAGHDOUST
DATE

REGISTERED PROFESSIONAL ENGINEER — No. C 60328 — Exp. 6-30-26 — CIVIL — STATE OF CALIFORNIA

OCTA

COASTAL FRONTIERS

SUBMITTED: _____ PROJECT MANAGER

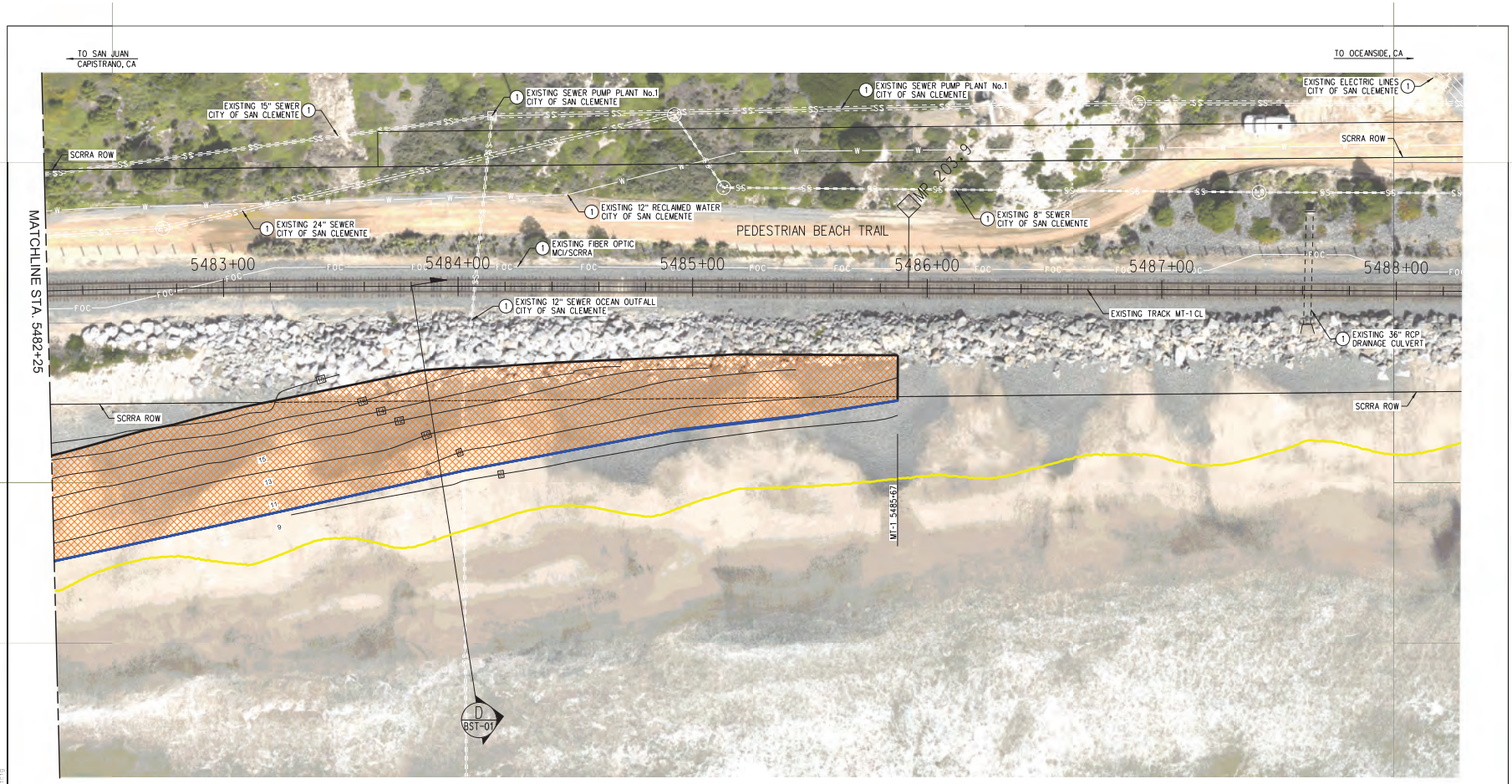
APPROVED: _____

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS

AREA 1 BEACH SAND NOURISHMENT
STA 5476+25 TO 5482+25

CONTRACT NO. 10398757
DRAWING NO. BSN-002
REVISION 0
SHEET NO. 3 OF 4
SCALE AS NOTED

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LEGEND:

	BEACH SAND NOURISHMENT FOOTPRINT
CL	CENTER LINE
ROW	RIGHT OF WAY
SCRRA	SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
	USACE JURISDICTIONAL HIGH TIDE LINE SURVEYED BY DAVID EVANS AND ASSOCIATES IN MARCH 2025
	NOMINAL LANWARD LIMIT OF SAND PLACEMENT BASED ON THE USACE HIGH TIDE LINE ESTABLISHED BY DAVID EVANS AND ASSOCIATES AT TIME OF CONSTRUCTION

CONSTRUCTION NOTES:

1. PROTECT IN PLACE

GENERAL NOTES:

1. POST-CONSTRUCTION BEACH CONDITION DERIVED FROM TOPOGRAPHIC SURVEY CONDUCTED ON SEPTEMBER 12, 2025 BY DAVID EVANS AND ASSOCIATES.
2. CONTOUR INTERVAL IS 2 FT.
3. VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) WITH UNITS EXPRESSED IN FEET.
4. BEACH SAND NOURISHMENT FOOTPRINT DENOTES AREA WHERE SAND WAS PLACED.

AS-BUILT

SCALE: 1"=40'

REV.	DATE		BY	SUB.	APP.
1	11-12-25	AS-BUILT DRAWING	JR		VH
0	8-26-25	ISSUED FOR BID	JR		VH

INFORMATION CONFIDENTIAL: All plans, drawings, specifications, and or information furnished herewith shall remain the property of the the Southern California Regional Rail Authority and shall be held confidential and shall not be used for any purpose not provided for in agreements with the Southern California Regional Rail Authority.

DESIGNED BY G. HEARON
DRAWN BY J. HERNANDEZ
CHECKED BY R. BOUDREAU
APPROVED BY V. HAGHDOUST
DATE

REGISTERED PROFESSIONAL ENGINEER — No. C 60328 — Exp. 6-30-26 — CIVIL — STATE OF CALIFORNIA

OCTA

COASTAL FRONTIERS

SUBMITTED: _____ PROJECT MANAGER

APPROVED: _____

ORANGE COUNTY TRANSPORTATION AUTHORITY
COASTAL RAIL STABILIZATION PRIORITY PROJECTS

AREA 1 BEACH SAND NOURISHMENT
STA 5482+25 TO 5486+44

CONTRACT NO. 10398757
DRAWING NO. BSN-003
REVISION 0 | SHEET NO. 4 OF 4
SCALE AS NOTED

11/12/2025
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California Coastal Commission
5-21-0866
Exhibit 2
Page 30 of 59

Area 1 and 2 Proposed Sand Placement 30% Design Plan

SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY

COASTAL RAIL STABILIZATION PRIORITY PROJECTS

AREA 1 & 2 SAND PLACEMENT DESIGNS

April 29, 2026

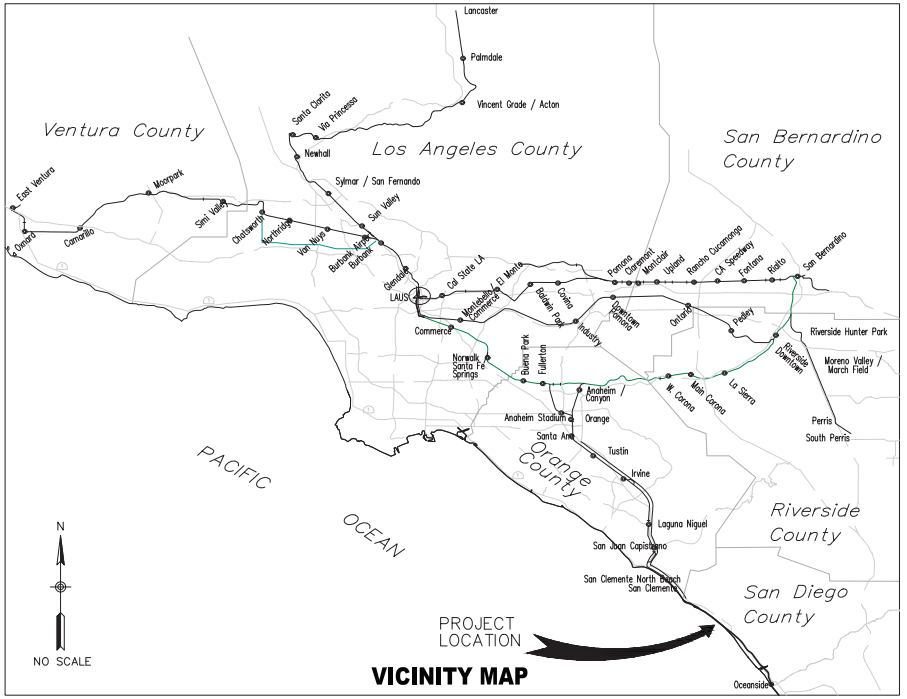


LOCATION MAP

APRIL, 2026

30% SUBMITTAL

SUBMITTAL STATUS



VICINITY MAP

CONTRACT No. **C-XXXX-XX**

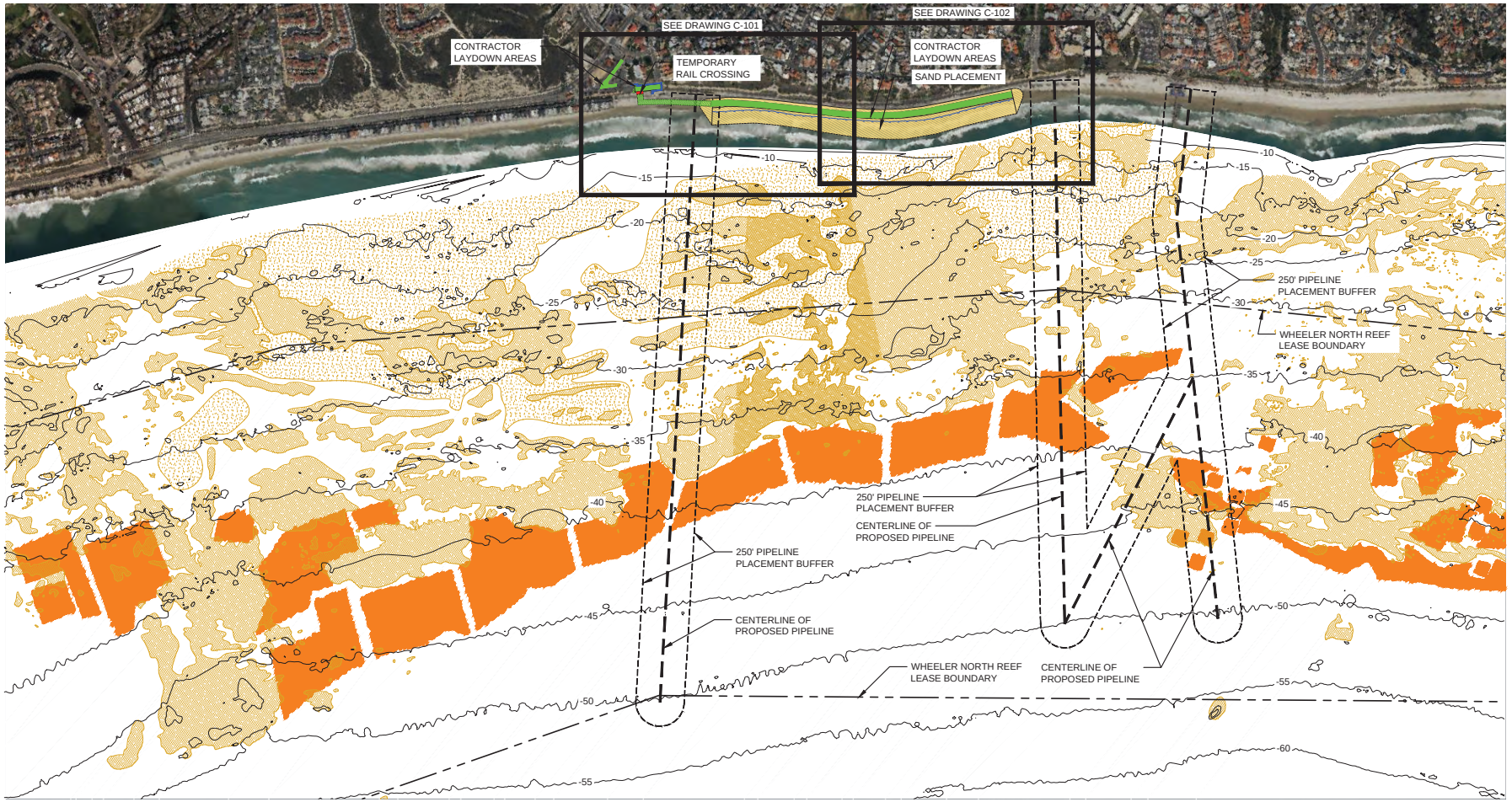
COASTAL FRONTIERS

APPROVED BY: _____ DATE: XX-XX-XX
NAME, SCRRA

SUBMITTED BY: _____ DATE: XX-XX-XX
NAME, PROJECT MANAGER

OCTA

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REV.	DATE		BY	CHK'D	APP.

INFORMATION CONFIDENTIAL:
All plans, drawings, specifications, and or information furnished herewith shall remain the property of the the Southern California Regional Rail Authority and shall be held confidential; and shall not be used for any purpose not provided for in agreements with the Southern California Regional Rail Authority.

DESIGNED BY	WT
DRAWN BY	JLH
CHECKED BY	NCB
APPROVED BY	
DATE	APRIL 2026

OCTA

COASTAL FRONTIERS

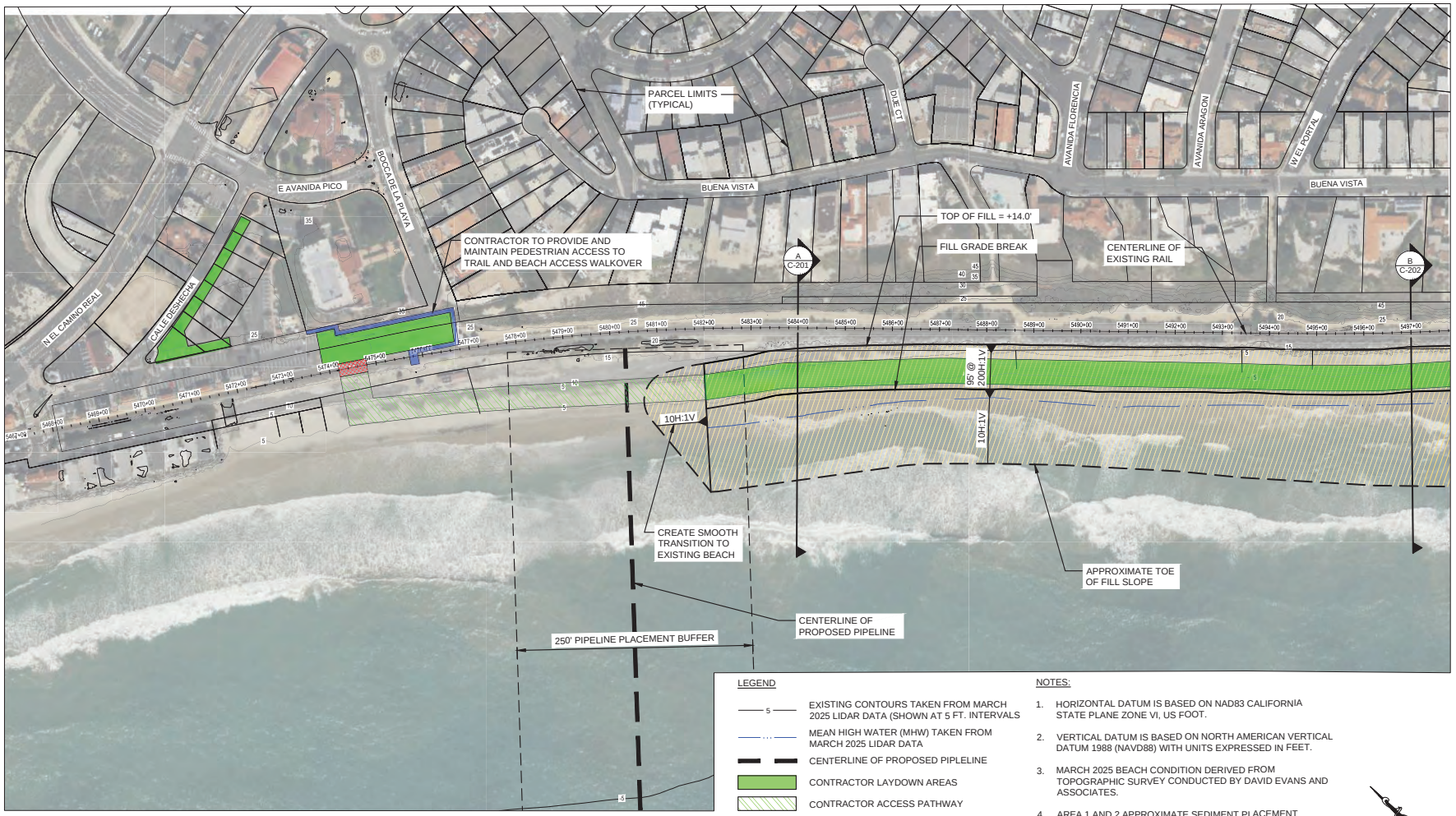
SUBMITTED: _____ PROJECT MANAGER

APPROVED: _____

OCTA 30% SUBMITTAL SAND PLACEMENT DESIGNS

SITE PLAN AREA 1 AND 2

CONTRACT NO.	XXX
DRAWING NO.	C-100
REVISION	0
SHEET NO.	XXXX OF 0000
SCALE	SCALE



LEGEND

- EXISTING CONTOURS TAKEN FROM MARCH 2025 LIDAR DATA (SHOWN AT 5 FT. INTERVALS
- MEAN HIGH WATER (MHW) TAKEN FROM MARCH 2025 LIDAR DATA
- CENTERLINE OF PROPOSED PIPLELINE
- CONTRACTOR LAYDOWN AREAS
- CONTRACTOR ACCESS PATHWAY
- SAND PLACEMENT
- TEMPORARY RAIL CROSSING
- PEDESTRIAN ACCESS PATHWAY

NOTES:

1. HORIZONTAL DATUM IS BASED ON NAD83 CALIFORNIA STATE PLANE ZONE VI, US FOOT.
2. VERTICAL DATUM IS BASED ON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) WITH UNITS EXPRESSED IN FEET.
3. MARCH 2025 BEACH CONDITION DERIVED FROM TOPOGRAPHIC SURVEY CONDUCTED BY DAVID EVANS AND ASSOCIATES.
4. AREA 1 AND 2 APPROXIMATE SEDIMENT PLACEMENT QUANTITY = 240,000 CY.

0 100' 200'
SCALE: 1" = 100'-0"

Plot Time: Sunday, May 03, 2026 – 9:45am Plotted by: JDHEL
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REV.	DATE		BY	SUB.	APP.

INFORMATION CONFIDENTIAL:
All plans, drawings, specifications, and or information furnished herewith shall remain the property of the the Southern California Regional Rail Authority and shall be held confidential; and shall not be used for any purpose not provided for in agreements with the Southern California Regional Rail Authority.

DESIGNED BY	WT
DRAWN BY	JLH
CHECKED BY	NCB
APPROVED BY	
DATE	APRIL 2026

COASTAL FRONTIERS

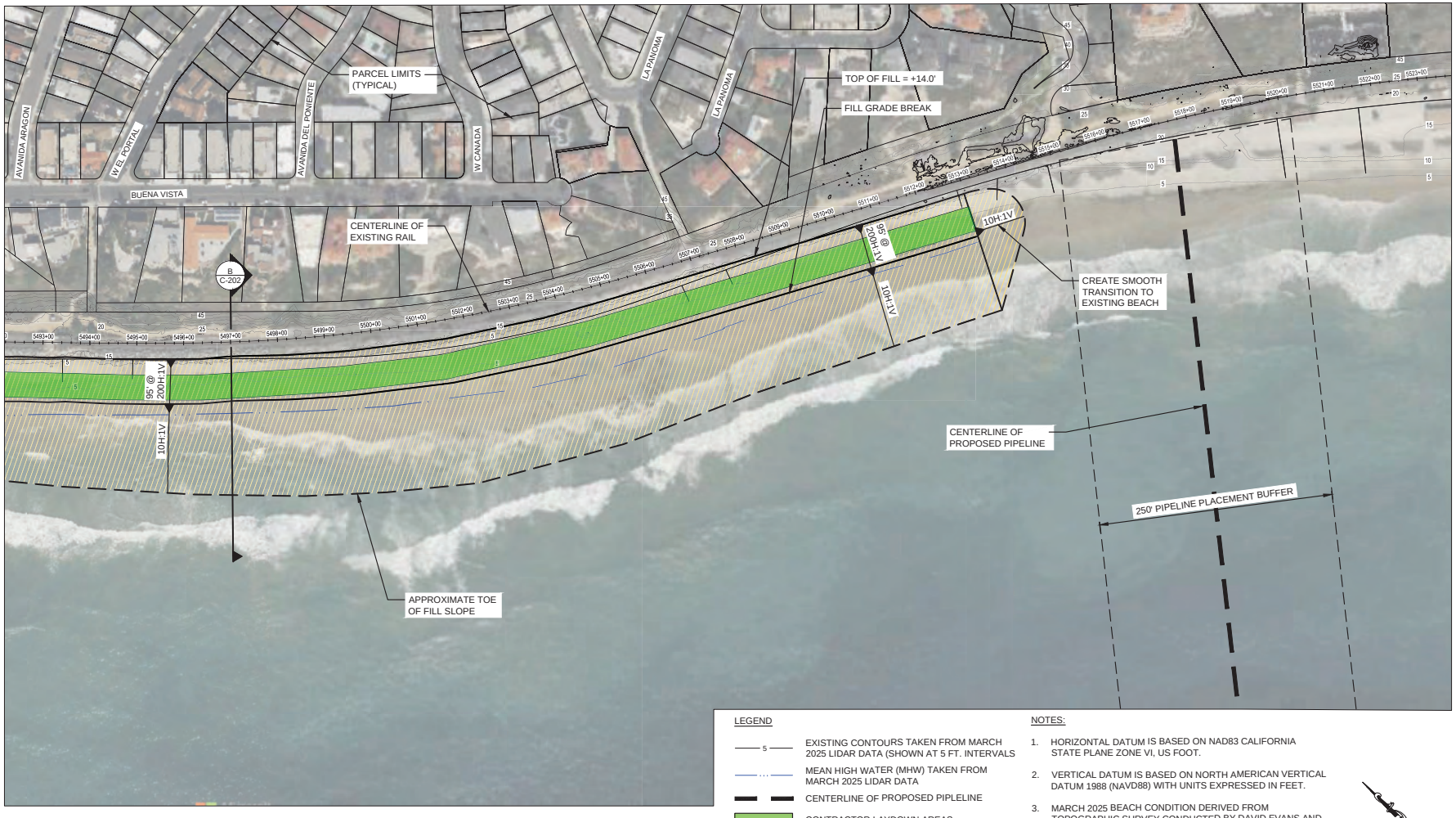
SUBMITTED: _____ PROJECT MANAGER

APPROVED: _____

OCTA 30% SUBMITTAL
SAND PLACEMENT DESIGNS

SITE ENLARGEMENT PLAN AREA 1 AND 2

CONTRACT NO.	XXX
DRAWING NO.	C-101
REVISION	0
SHEET NO.	XXXX OF 0000
SCALE	AS SHOWN



LEGEND

- 5 — EXISTING CONTOURS TAKEN FROM MARCH 2025 LIDAR DATA (SHOWN AT 5 FT. INTERVALS
- MEAN HIGH WATER (MHW) TAKEN FROM MARCH 2025 LIDAR DATA
- CENTERLINE OF PROPOSED PIPELINE
- CONTRACTOR LAYDOWN AREAS
- SAND PLACEMENT

NOTES:

1. HORIZONTAL DATUM IS BASED ON NAD83 CALIFORNIA STATE PLANE ZONE VI, US FOOT.
2. VERTICAL DATUM IS BASED ON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) WITH UNITS EXPRESSED IN FEET.
3. MARCH 2025 BEACH CONDITION DERIVED FROM TOPOGRAPHIC SURVEY CONDUCTED BY DAVID EVANS AND ASSOCIATES.
4. AREA 1 AND 2 APPROXIMATE SEDIMENT PLACEMENT QUANTITY = 240,000 CY.

0 100' 200'
SCALE: 1" = 100'-0"

Plot Time: Sunday, May 03, 2026 – 9:52am Plotted by: JDHEL
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REV.	DATE	BY	SUB.	APP.

INFORMATION CONFIDENTIAL: All plans, drawings, specifications, and or information furnished herewith shall remain the property of the the Southern California Regional Rail Authority and shall be held confidential; and shall not be used for any purpose not provided for in agreements with the Southern California Regional Rail Authority.

DESIGNED BY WT
DRAWN BY JLH
CHECKED BY NCB
APPROVED BY
DATE APRIL 2026

COASTAL FRONTIERS

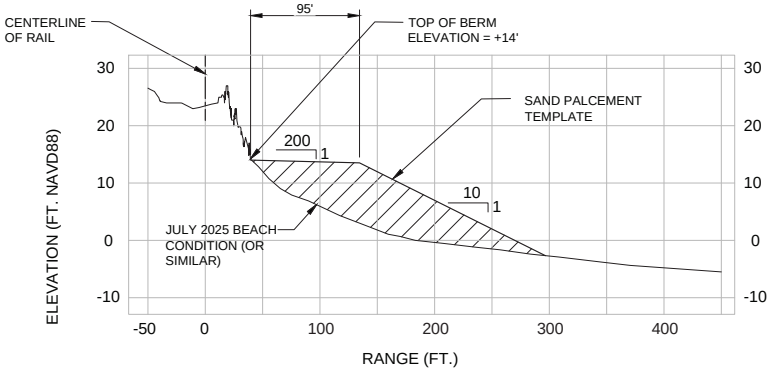
OCTA

SUBMITTED: _____ PROJECT MANAGER
APPROVED: _____

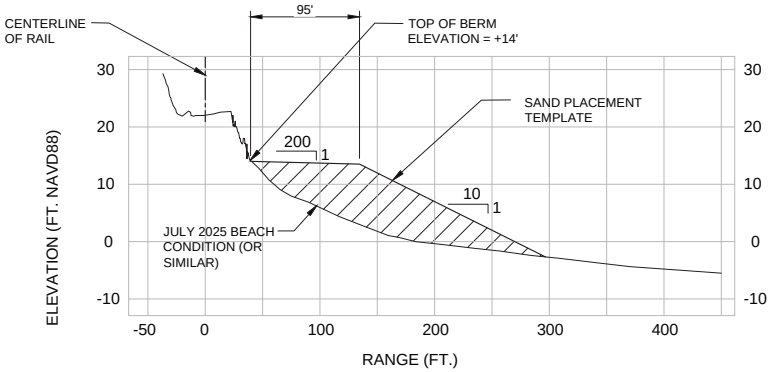
OCTA 30% SUBMITTAL SAND PLACEMENT DESIGNS

SITE ENLARGEMENT PLAN AREA 1 AND 2

CONTRACT NO. XXX
DRAWING NO. C-102
REVISION 0
SHEET NO. XXXX OF 0000
SCALE AS SHOWN



A C-101 STA. 5484+00



B C-101,C-102 STA. 5497+00

NOTES:

1. HORIZONTAL DATUM IS BASED ON NAVD83 CALIFORNIA STATE PLANE ZONE VI, US FOOT.
2. VERTICAL DATUM IS BASED ON NORTH AMERICAN VERTICAL DATUM 1983 (NAVD83) WITH UNITS EXPRESSED IN FEET.
3. MARCH 2025 BEACH CONDITION DERIVED FROM TOPOGRAPHIC SURVEY BY DAVID EVANS AND ASSOCIATES.
4. AREA 1 AND 2 APPROXIMATE SAND PLACEMENT QUANTITY = 240,000 CY.

VERTICAL 0 10' 20' SCALE: 1" = 10'-0"

HORIZONTAL 0 50' 100' SCALE: 1" = 50'-0"

Plot Time: Sunday, May 03, 2026 – 10:59am Plotted by: JEHEL
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REV.	DATE	BY	SUB.	APP.

INFORMATION CONFIDENTIAL: All plans, drawings, specifications, and or information furnished herewith shall remain the property of the the Southern California Regional Rail Authority and shall be held confidential; and shall not be used for any purpose not provided for in agreements with the Southern California Regional Rail Authority.

DESIGNED BY	WT
DRAWN BY	JLH
CHECKED BY	NCB
APPROVED BY	
DATE	APRIL 2026

OCTA

COASTAL FRONTIERS

SUBMITTED: _____ PROJECT MANAGER

APPROVED: _____

OCTA 30% SUBMITTAL
SAND PLACEMENT DESIGNS

TYPICAL CROSS SECTIONS AREA 1 AND 2

CONTRACT NO.	XXX
DRAWING NO.	C-201
REVISION	0
SHEET NO.	XXXX OF 0000
SCALE	SCALE

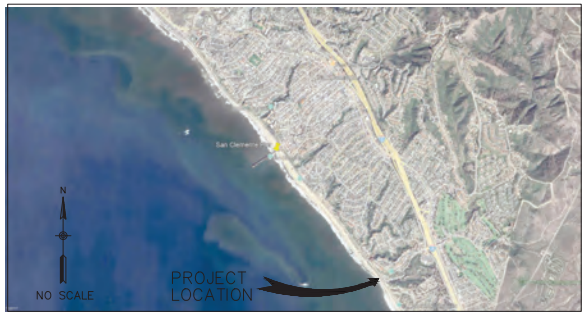
Area 4 Proposed Sand Placement 30% Design Plan

SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY

COASTAL RAIL STABILIZATION PRIORITY PROJECTS

AREA 4 **SAND PLACEMENT DESIGNS**

April 29, 2026

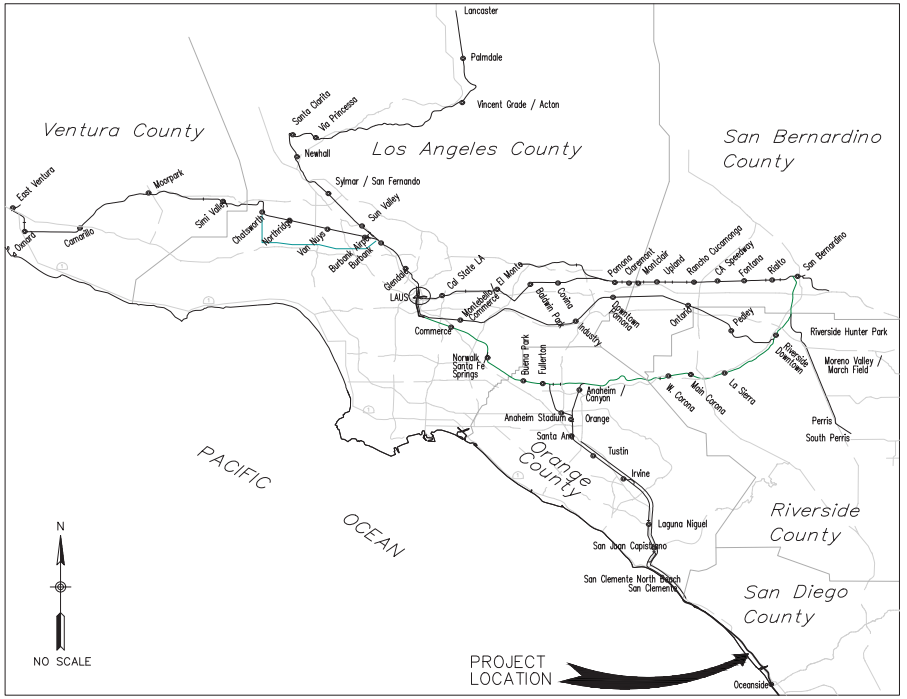


LOCATION MAP

APRIL, 2026

30% SUBMITTAL

SUBMITTAL STATUS



VICINITY MAP

CONTRACT No. **C-XXXX-XX**

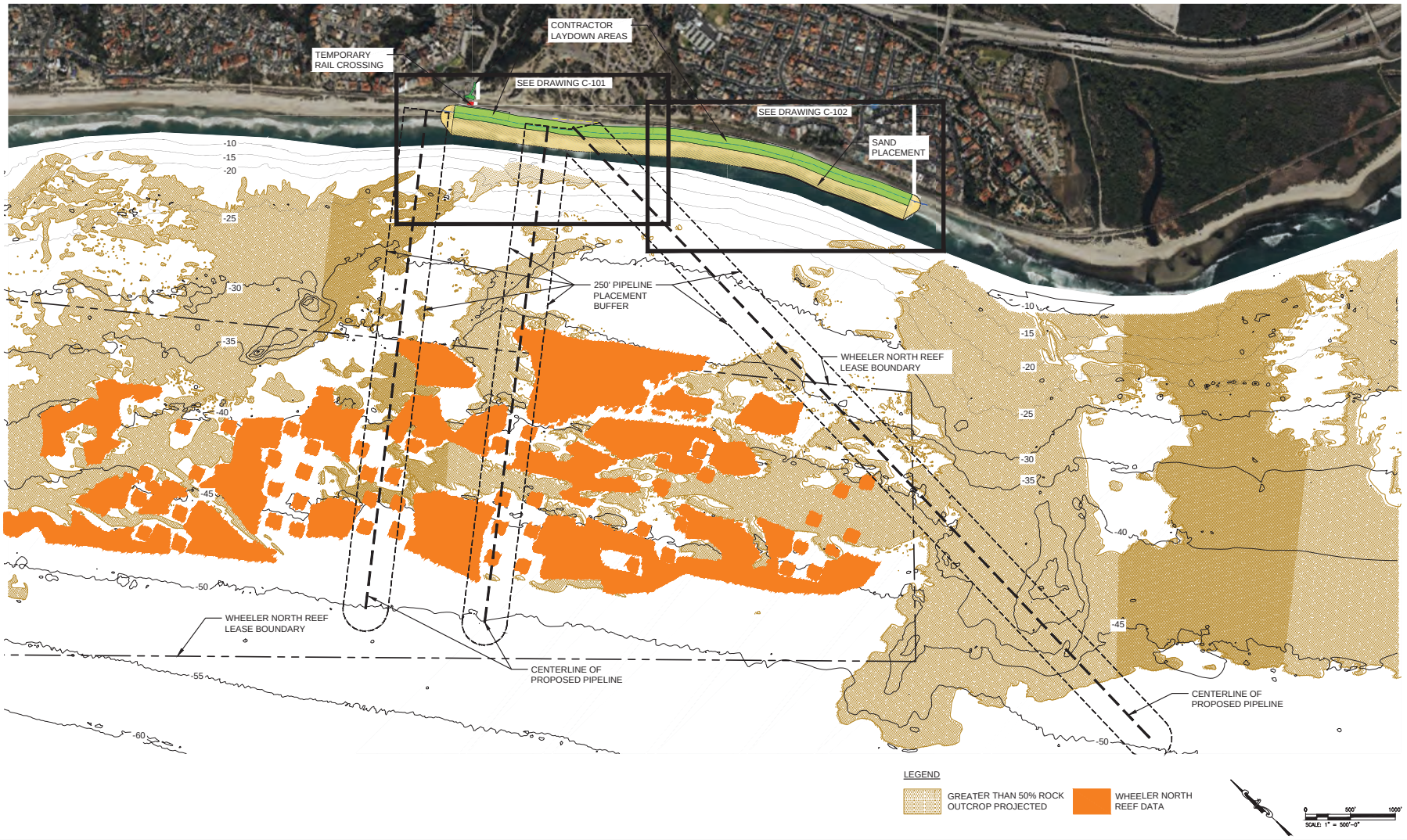
COASTAL FRONTIERS

APPROVED BY: _____ DATE: XX-XX-XX
NAME, SCRRA

SUBMITTED BY: _____ DATE: XX-XX-XX
NAME, PROJECT MANAGER

OCTA

Plot Time: Wednesday, April 29, 2026 - 11:41am Plotted by: JDHEL
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Plot Time: Sunday, May 03, 2026 – 11:27am Plotted by: JEHEL
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REV.	DATE		BY	SUB.	APP.

INFORMATION CONFIDENTIAL: All plans, drawings, specifications, and or information furnished herewith shall remain the property of the the Southern California Regional Rail Authority and shall be held confidential; and shall not be used for any purpose not provided for in agreements with the Southern California Regional Rail Authority.

DESIGNED BY	WT
DRAWN BY	JLH
CHECKED BY	NCB
APPROVED BY	
DATE	APRIL 2026

COASTAL FRONTIERS

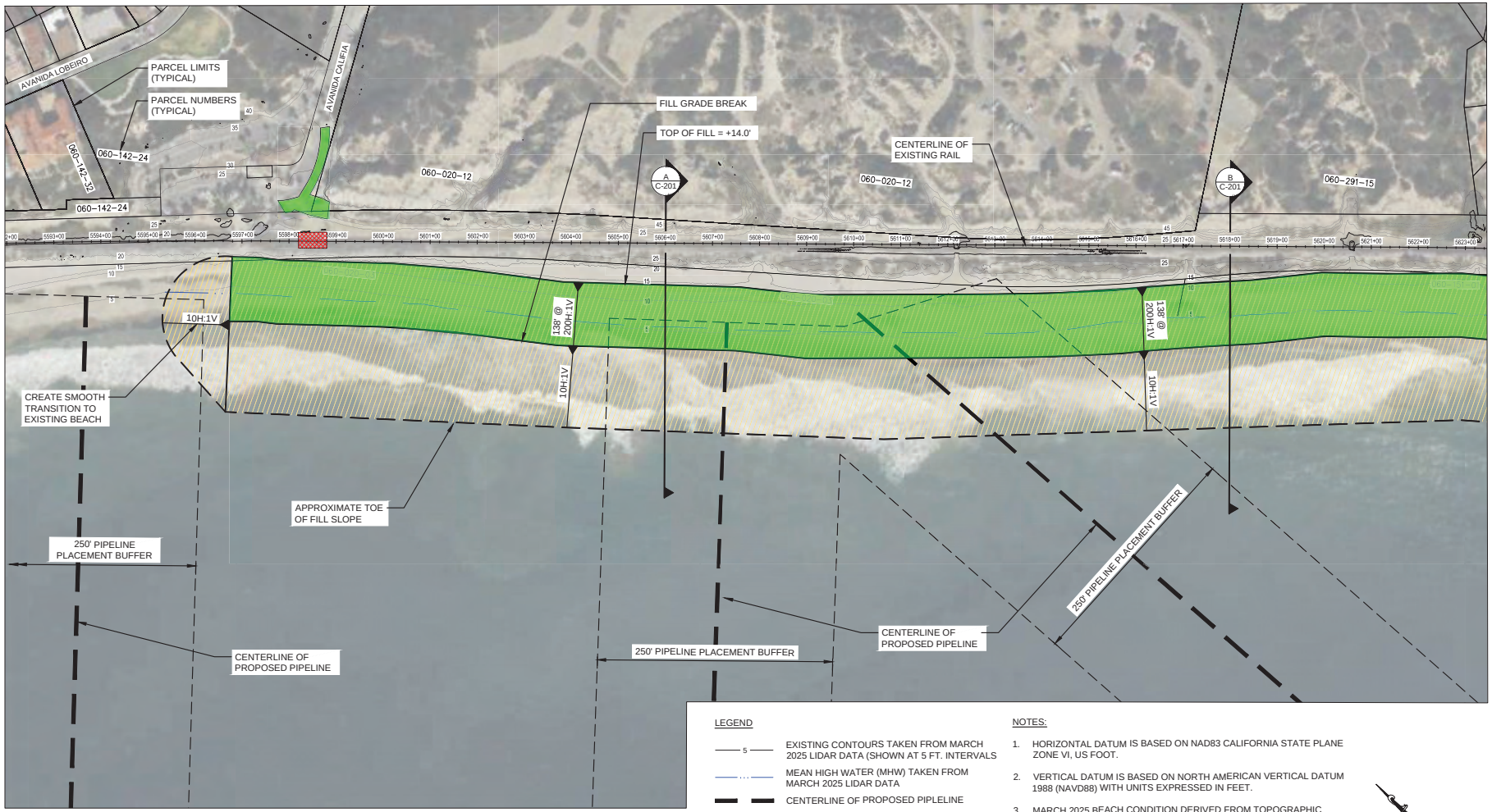
SUBMITTED: _____ PROJECT MANAGER

APPROVED: _____

OCTA 30% SUBMITTAL SAND PLACEMENT DESIGNS

SITE PLAN AREA 4

CONTRACT NO.	XXX
DRAWING NO.	C-100
REVISION	0
SHEET NO.	XXXX OF 0000
SCALE	AS SHOWN



Plot Time: Sunday, May 03, 2026 – 11:34am Plotted by: JEHEL
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REV.	DATE		BY	SUB.	APP.

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DESIGNED BY	WT
DRAWN BY	JLH
CHECKED BY	NCB
APPROVED BY	
DATE	APRIL 2026

COASTAL FRONTIERS

SUBMITTED: _____ PROJECT MANAGER

APPROVED: _____

OCTA 30% SUBMITTAL SAND PLACEMENT DESIGNS

SITE ENLARGEMENT PLAN AREA 4

CONTRACT NO.	XXX
DRAWING NO.	C-101
REVISION	0
SHEET NO.	XXXX OF 0000
SCALE	AS SHOWN



LEGEND

- EXISTING CONTOURS TAKEN FROM MARCH 2025 LIDAR DATA (SHOWN AT 5 FT. INTERVALS
- MEAN HIGH WATER (MHW) TAKEN FROM MARCH 2025 LIDAR DATA
- CENTERLINE OF PROPOSED PIPELINE
- CONTRACTOR LAYDOWN AREAS
- SAND PLACEMENT

NOTES:

1. HORIZONTAL DATUM IS BASED ON NAD83 CALIFORNIA STATE PLANE ZONE VI, US FOOT.
2. VERTICAL DATUM IS BASED ON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) WITH UNITS EXPRESSED IN FEET.
3. MARCH 2025 BEACH CONDITION DERIVED FROM TOPOGRAPHIC SURVEY CONDUCTED BY DAVID EVANS AND ASSOCIATES.
4. AREA 4 APPROXIMATE SEDIMENT PLACEMENT QUANTITY = 450,000 CY.

SCALE: 1" = 100'-0"

Plot Time: Sunday, May 03, 2026 – 11:39am Plotted by: JEHEL
File Name: H:\OCTA 30% Beach Nourishment Designs\01-Working\AREA 4 C-104-LARGE PLAN 044.dwg Layout Name: Working

REV.	DATE		BY	SUB.	APP.

INFORMATION CONFIDENTIAL:
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DESIGNED BY	WT
DRAWN BY	JLH
CHECKED BY	NCB
APPROVED BY	
DATE	APRIL 2026

COASTAL FRONTIERS

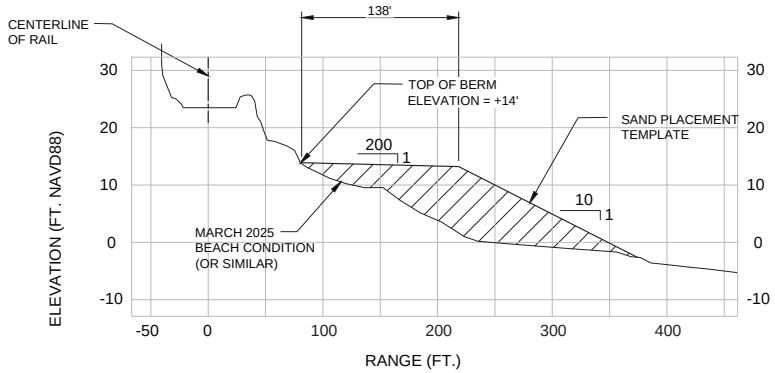
SUBMITTED: _____ PROJECT MANAGER

APPROVED: _____

OCTA 30% SUBMITTAL SAND PLACEMENT DESIGNS

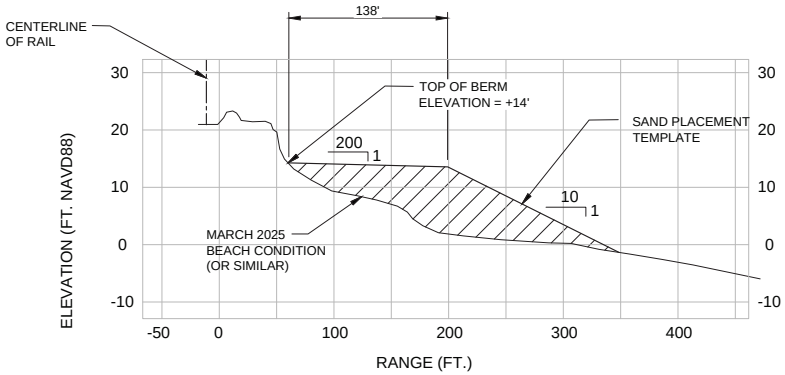
SITE ENLARGEMENT PLAN AREA 4

CONTRACT NO.	XXX
DRAWING NO.	C-102
REVISION	0
SHEET NO.	XXXX OF 0000
SCALE	AS SHOWN



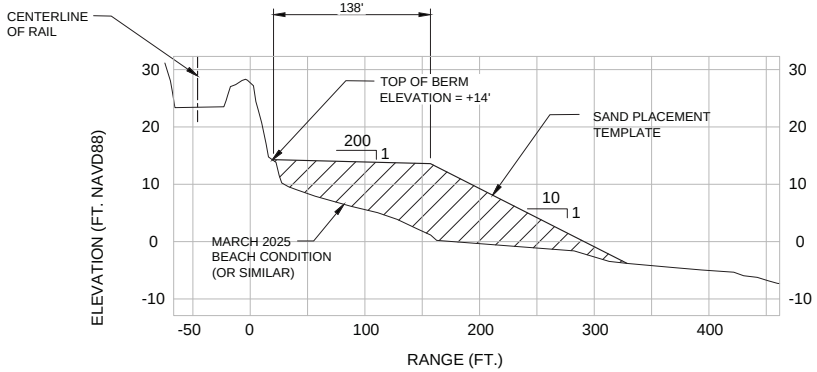
A
C–101

STA. 5606+00



C
C–102

STA. 5636+00



B
C–101

STA. 5618+00

NOTES:

1. HORIZONTAL DATUM IS BASED ON NAD83 CALIFORNIA STATE PLANE ZONE VI, US FOOT.
2. VERTICAL DATUM IS BASED ON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) WITH UNITS EXPRESSED IN FEET.
3. MARCH 2025 BEACH CONDITION DERIVED FROM TOPOGRAPHIC SURVEY CONDUCTED BY DAVID EVANS AND ASSOCIATES.
4. AREA 4 APPROXIMATE SAND PLACEMENT QUANTITY = 450,000 CY.

VERTICAL
0 10' 20'
SCALE: 1" = 10'-0"

HORIZONTAL
0 50' 100'
SCALE: 1" = 50'-0"

REV.	DATE	BY	APP.

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DRAWN BY	JLH
CHECKED BY	NCB
APPROVED BY	
DATE	APRIL 2026

OCTA

COASTAL FRONTIERS

SUBMITTED: _____ PROJECT MANAGER

APPROVED: _____

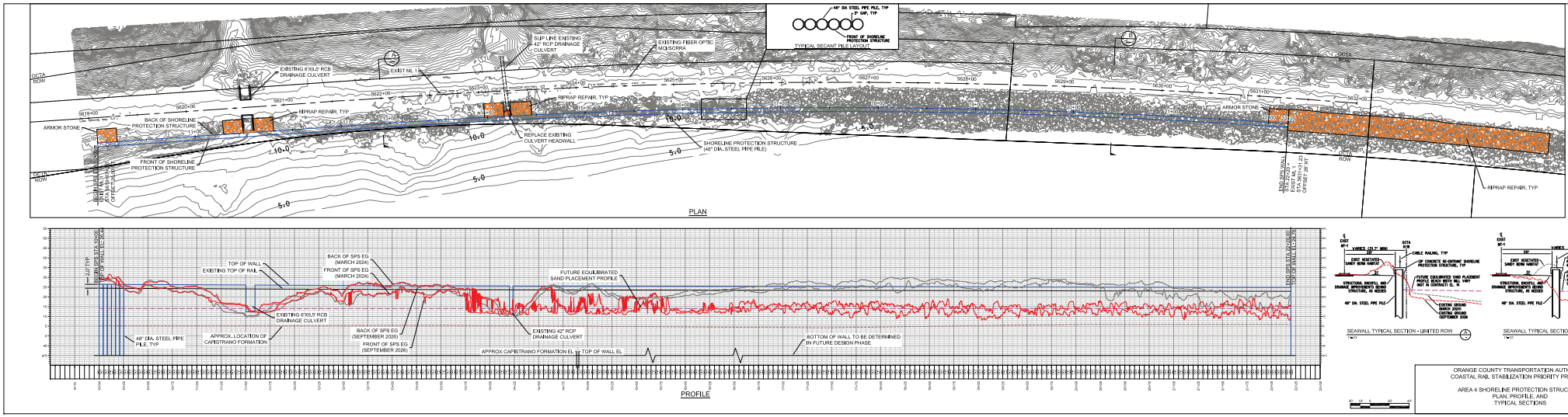
OCTA 30% SUBMITTAL
SAND PLACEMENT DESIGNS

TYPICAL CROSS SECTIONS AREA 4

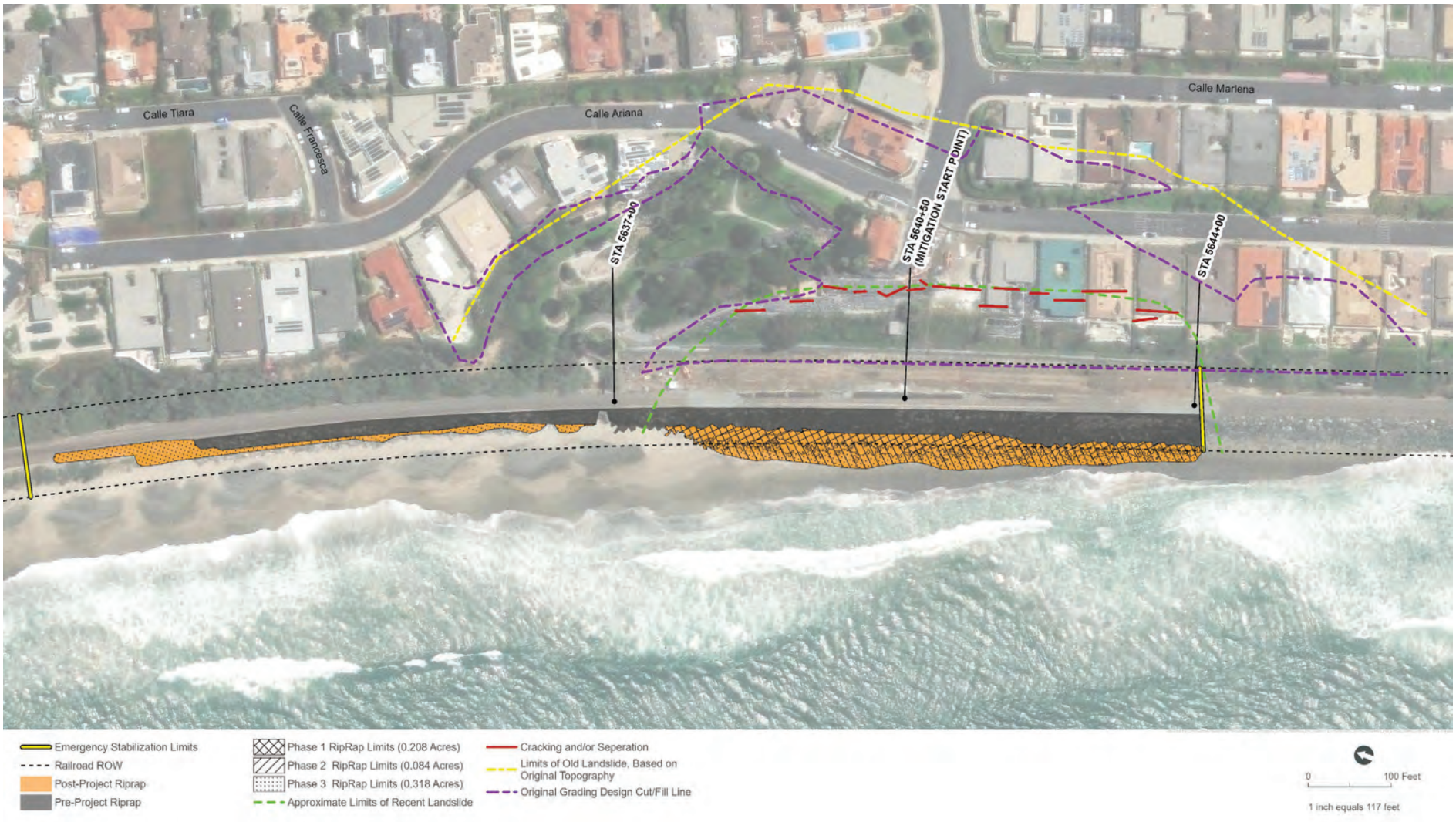
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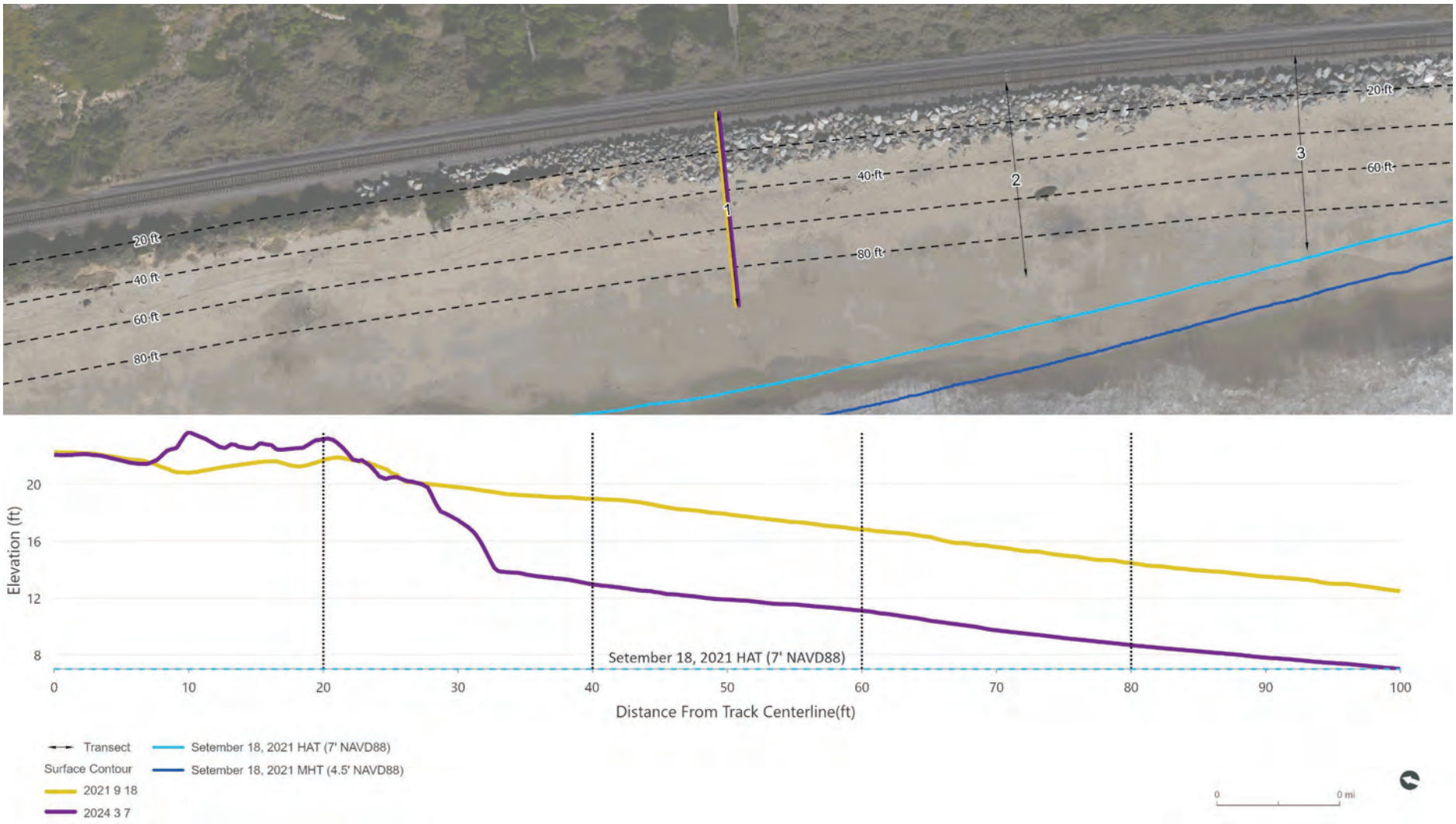
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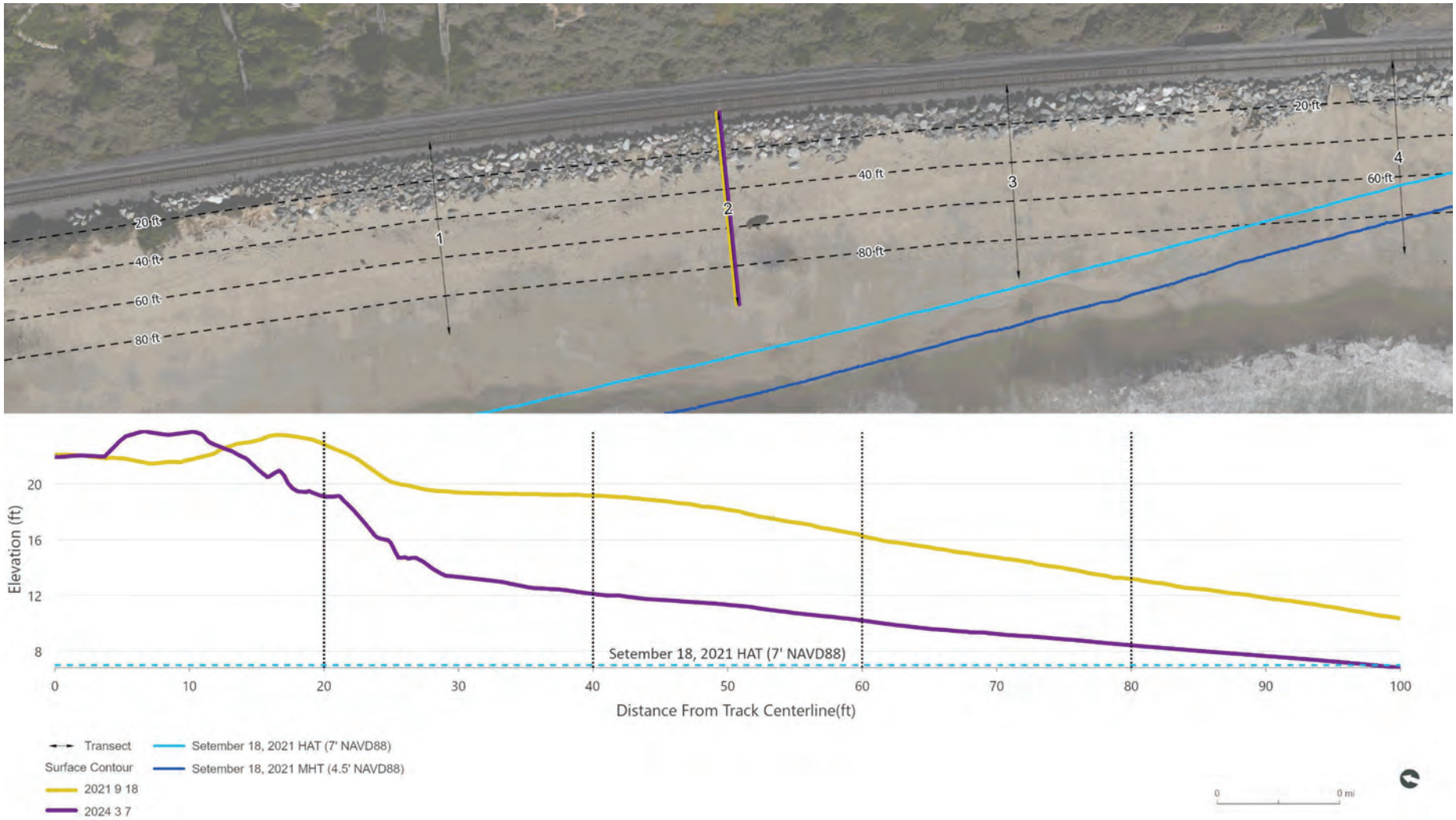
Area 4 Proposed Seawall and Riprap Repair Plan

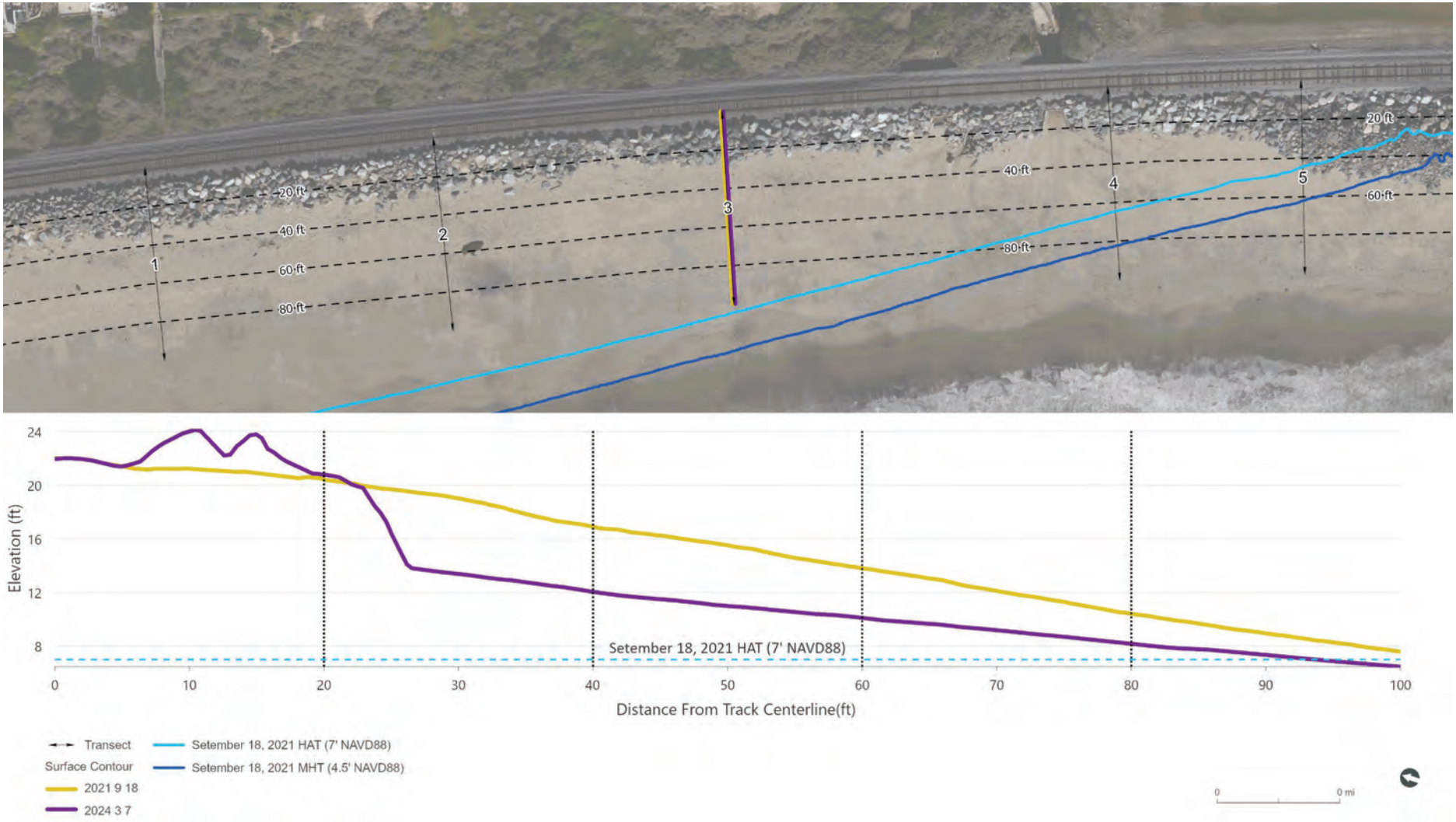

PLAN
PROFILE
SEAWALL TYPICAL SECTION - LIMITED ROW
ORANGE COUNTY TRANSPORTATION AUTH
COASTAL RAIL STABILIZATION PRIORITY PR
AREA 4 SHORELINE PROTECTION STRUC
PLAN, PROFILE, AND
TYPICAL SECTIONS

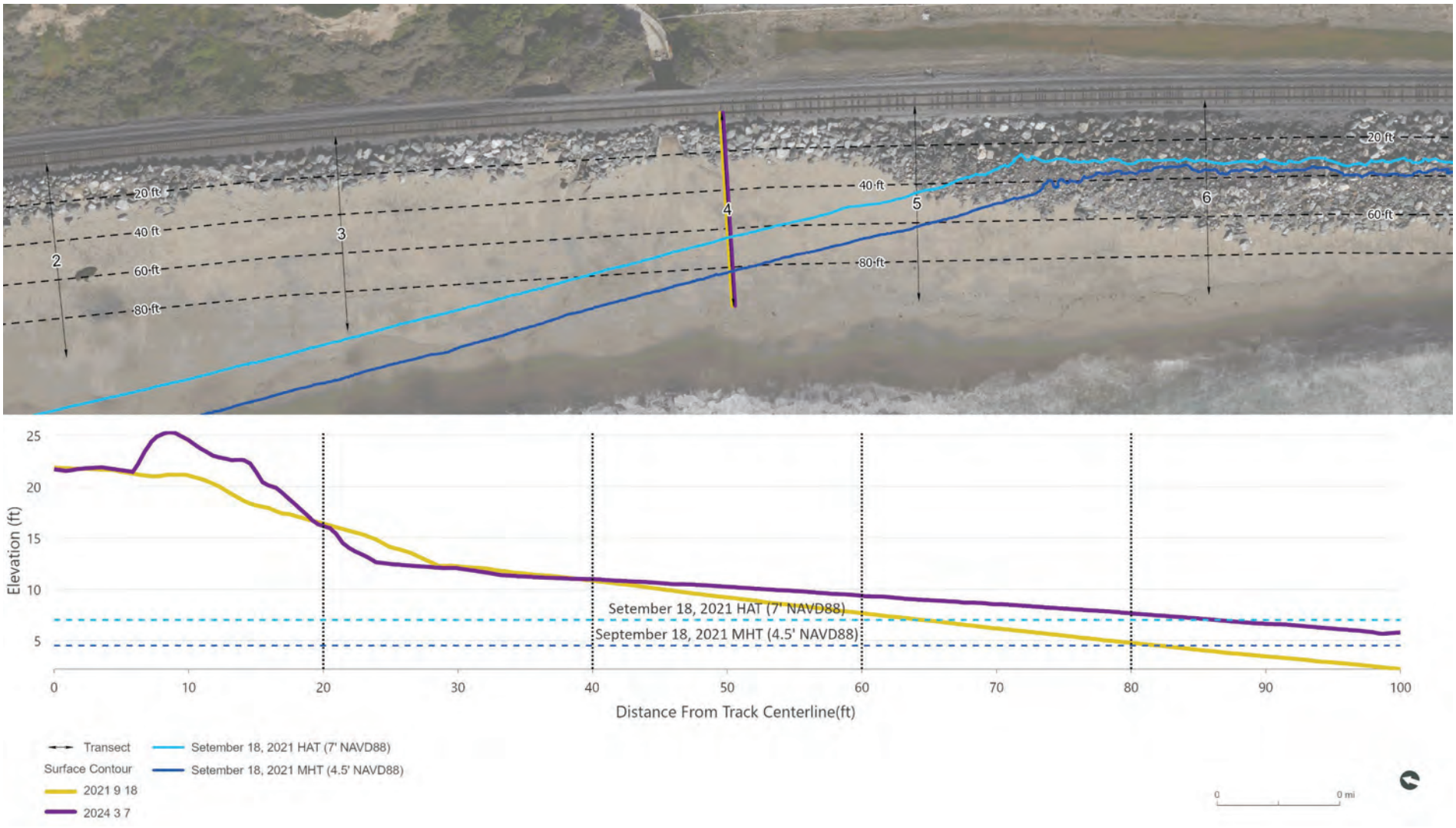
Cyprus Shore Revetment and Tieback As-Built Plan

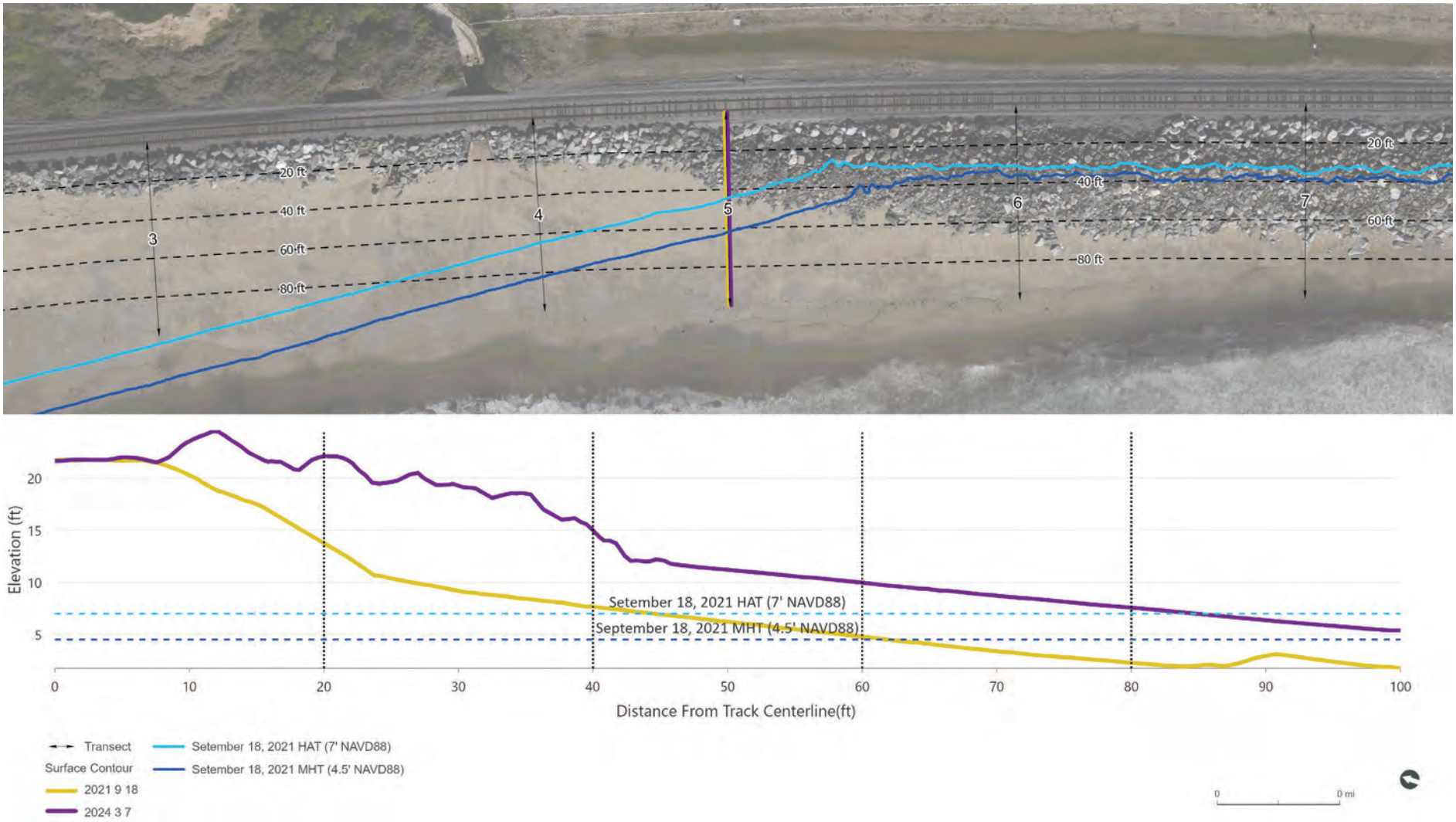

Calle Tiara
Calle Francesca
Calle Ariana
Calle Marlena
STA 5637+00
STA 5640+50
(MITIGATION START POINT)
STA 5644+00
Emergency Stabilization Limits
Railroad ROW
Post-Project Riprap
Pre-Project Riprap
Phase 1 RipRap Limits (0.208 Acres)
Phase 2 RipRap Limits (0.084 Acres)
Phase 3 RipRap Limits (0.318 Acres)
Approximate Limits of Recent Landslide
Cracking and/or Seperation
Limits of Old Landslide, Based on Original Topography
Original Grading Design Cut/Fill Line
0
100 Feet
1 inch equals 117 feet

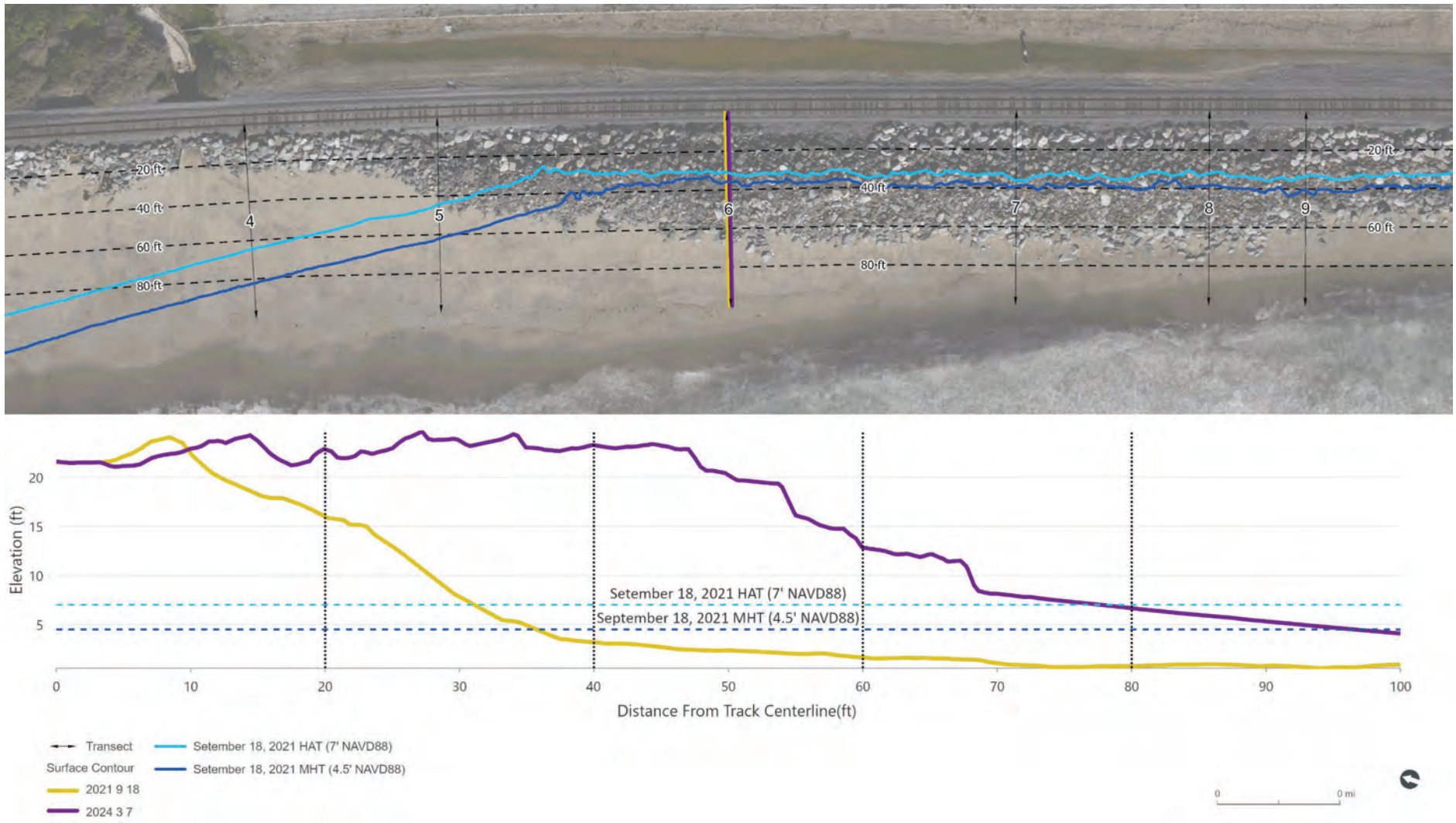

20 ft
40 ft
60 ft
80 ft
1
2
3
Elevation (ft)
20
16
12
8
Setember 18, 2021 HAT (7' NAVD88)
0
10
20
30
40
50
60
70
80
90
100
Distance From Track Centerline(ft)
Transect
Surface Contour
2021 9 18
2024 3 7
Setember 18, 2021 HAT (7' NAVD88)
Setember 18, 2021 MHT (4.5' NAVD88)
0
0 mi

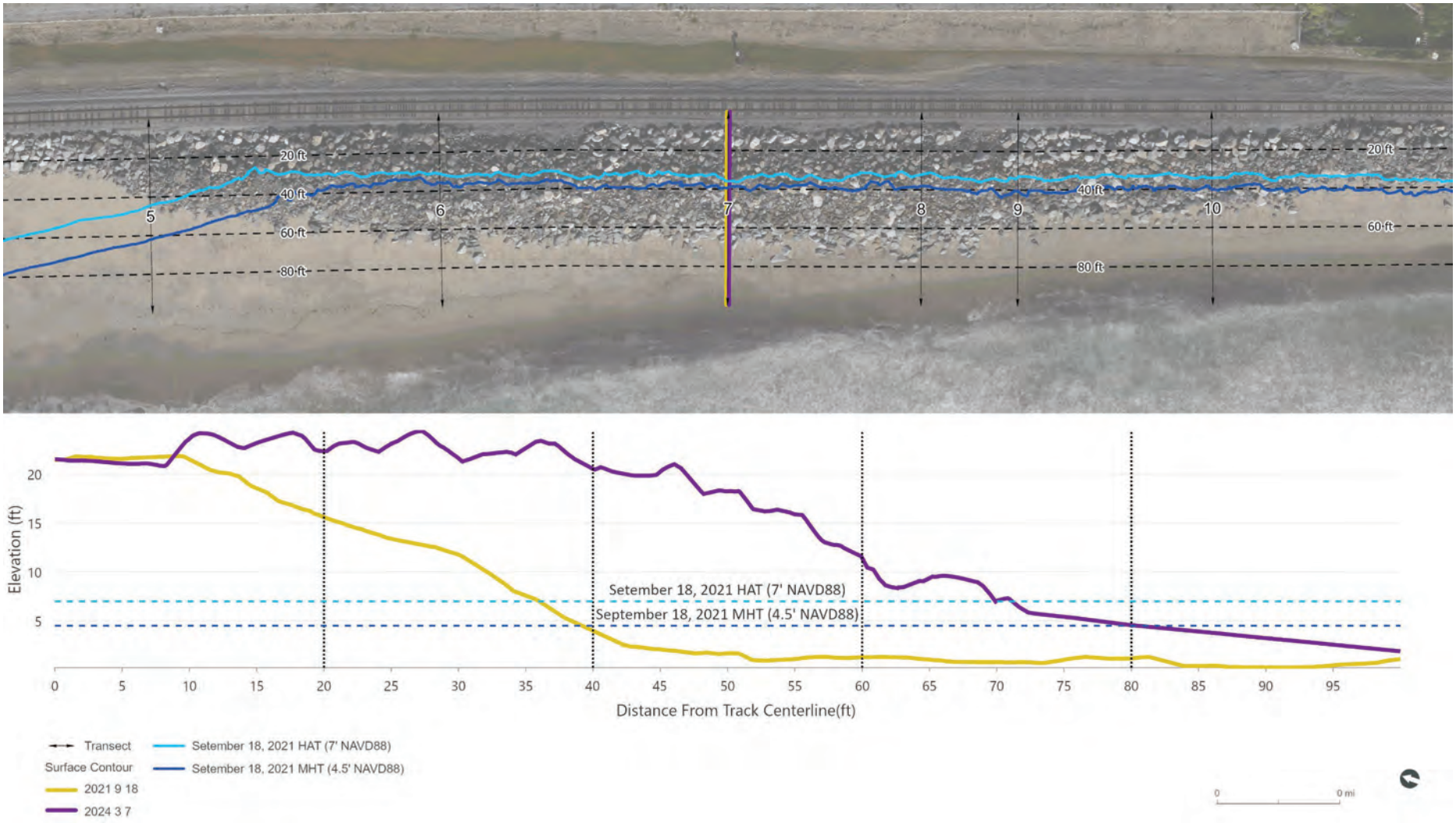

20 ft
40 ft
60 ft
80 ft
1
2
3
4
Elevation (ft)
20
16
12
8
Setember 18, 2021 HAT (7' NAVD88)
0
10
20
30
40
50
60
70
80
90
100
Distance From Track Centerline(ft)
Transect
Surface Contour
2021 9 18
2024 3 7
Setember 18, 2021 HAT (7' NAVD88)
Setember 18, 2021 MHT (4.5' NAVD88)
0
0 mi

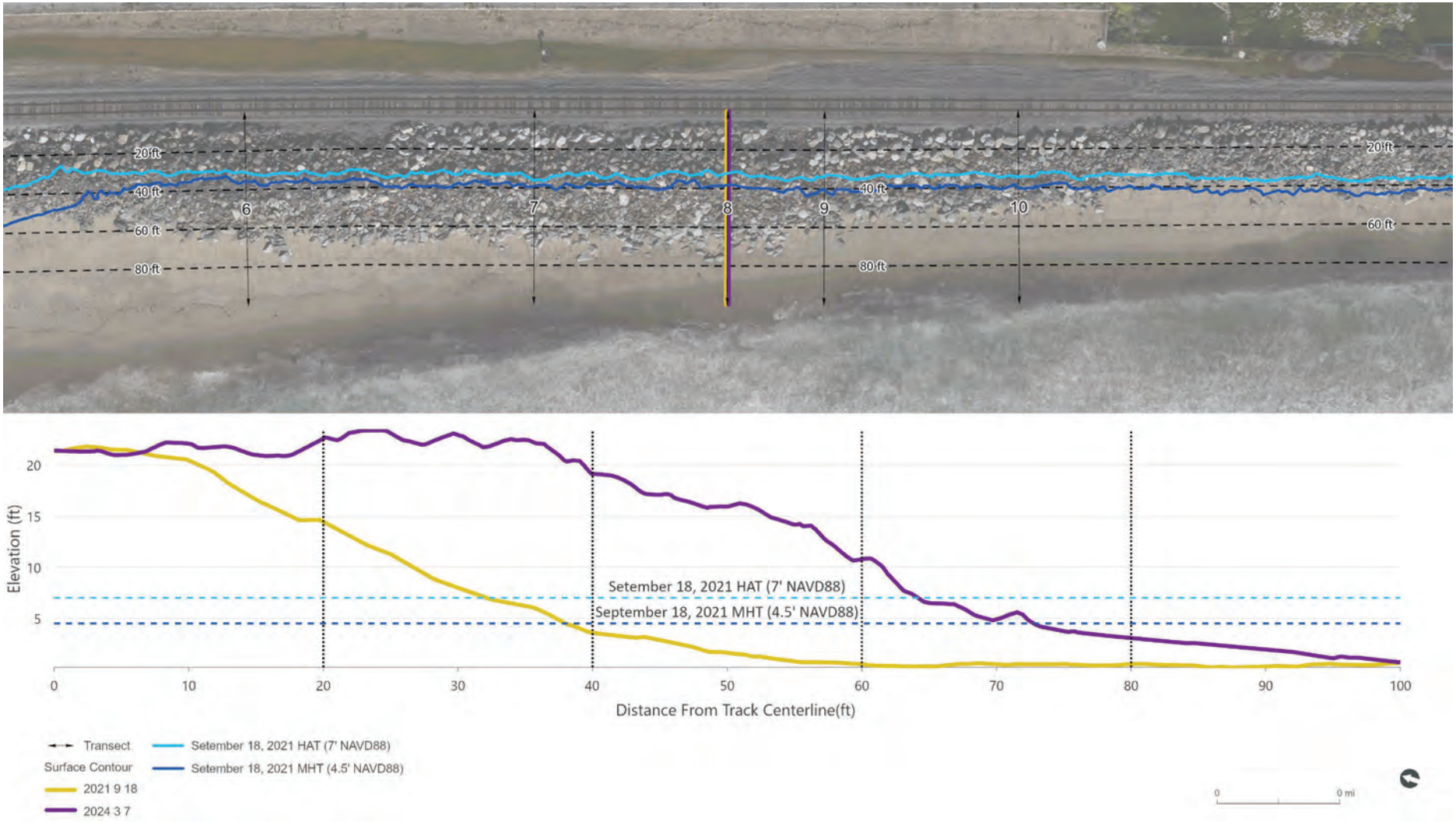

20 ft
40 ft
60 ft
80 ft
1
2
3
4
5
Elevation (ft)
24
20
16
12
8
0
10
20
30
40
50
60
70
80
90
100
Distance From Track Centerline(ft)
September 18, 2021 HAT (7' NAVD88)
Transect
Surface Contour
2021 9 18
2024 3 7
September 18, 2021 HAT (7' NAVD88)
September 18, 2021 MHT (4.5' NAVD88)
0
0 mi

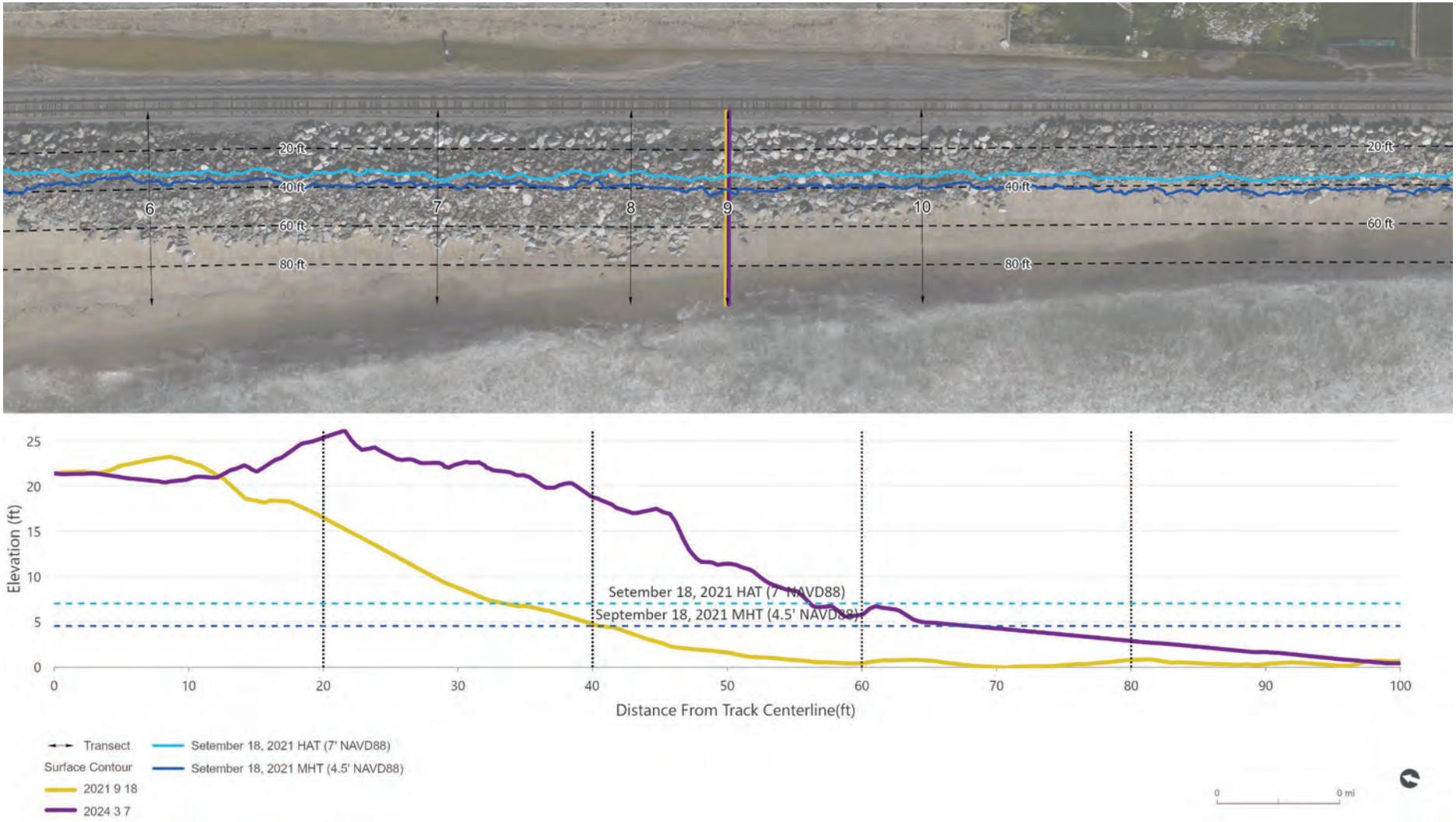

20 ft
40 ft
60 ft
80 ft
2
3
4
5
6
Elevation (ft)
25
20
15
10
5
0
10
20
30
40
50
60
70
80
90
100
Distance From Track Centerline(ft)
September 18, 2021 HAT (7' NAVD88)
September 18, 2021 MHT (4.5' NAVD88)
Transect
Surface Contour
2021 9 18
2024 3 7
Setember 18, 2021 HAT (7' NAVD88)
Setember 18, 2021 MHT (4.5' NAVD88)
0
0 mi

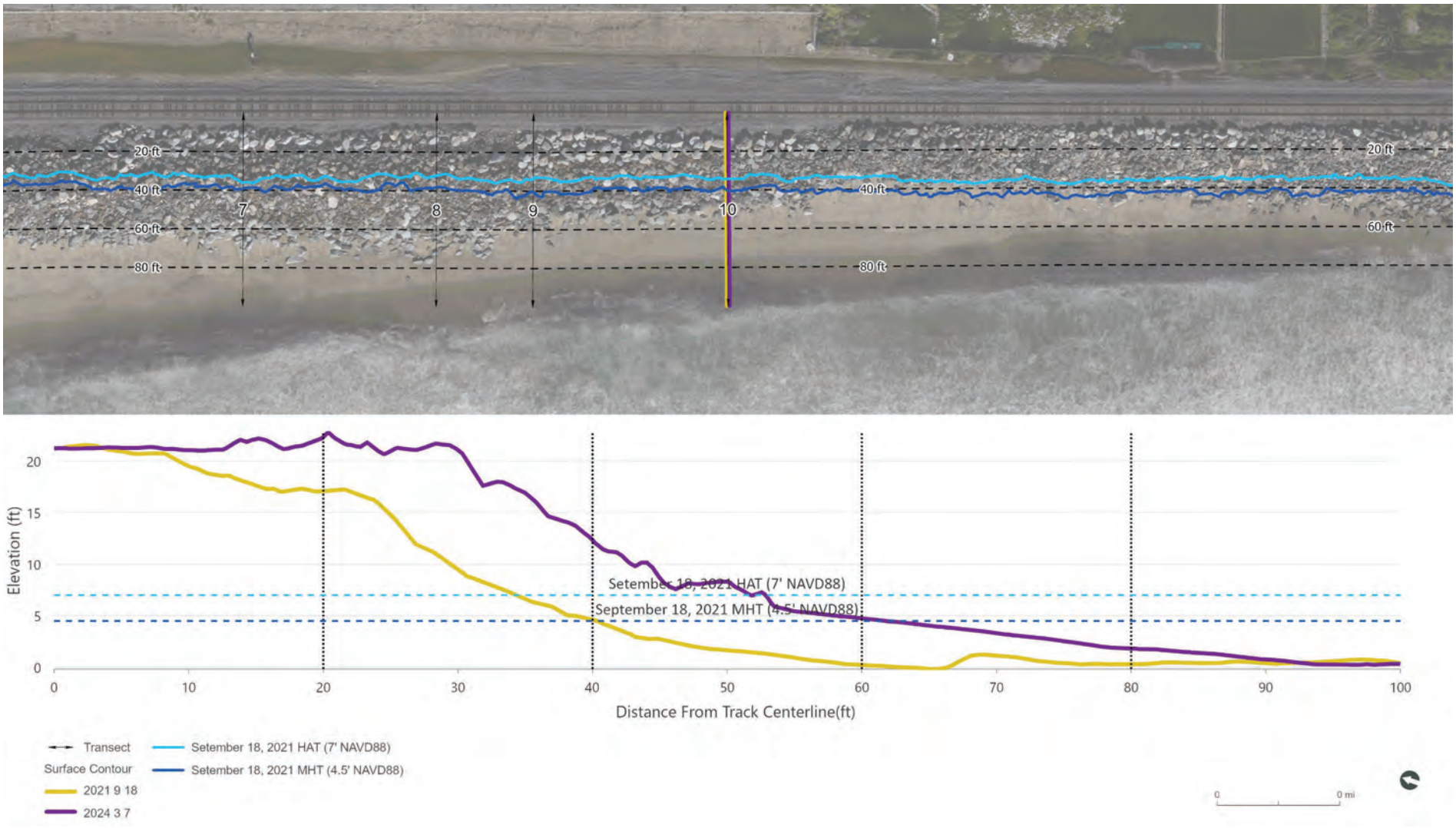

20 ft
40 ft
60 ft
80 ft
3
4
5
6
7
Elevation (ft)
Distance From Track Centerline(ft)
Setember 18, 2021 HAT (7' NAVD88)
September 18, 2021 MHT (4.5' NAVD88)
Transect
Surface Contour
2021 9 18
2024 3 7
Setember 18, 2021 HAT (7' NAVD88)
Setember 18, 2021 MHT (4.5' NAVD88)
0
0 mi

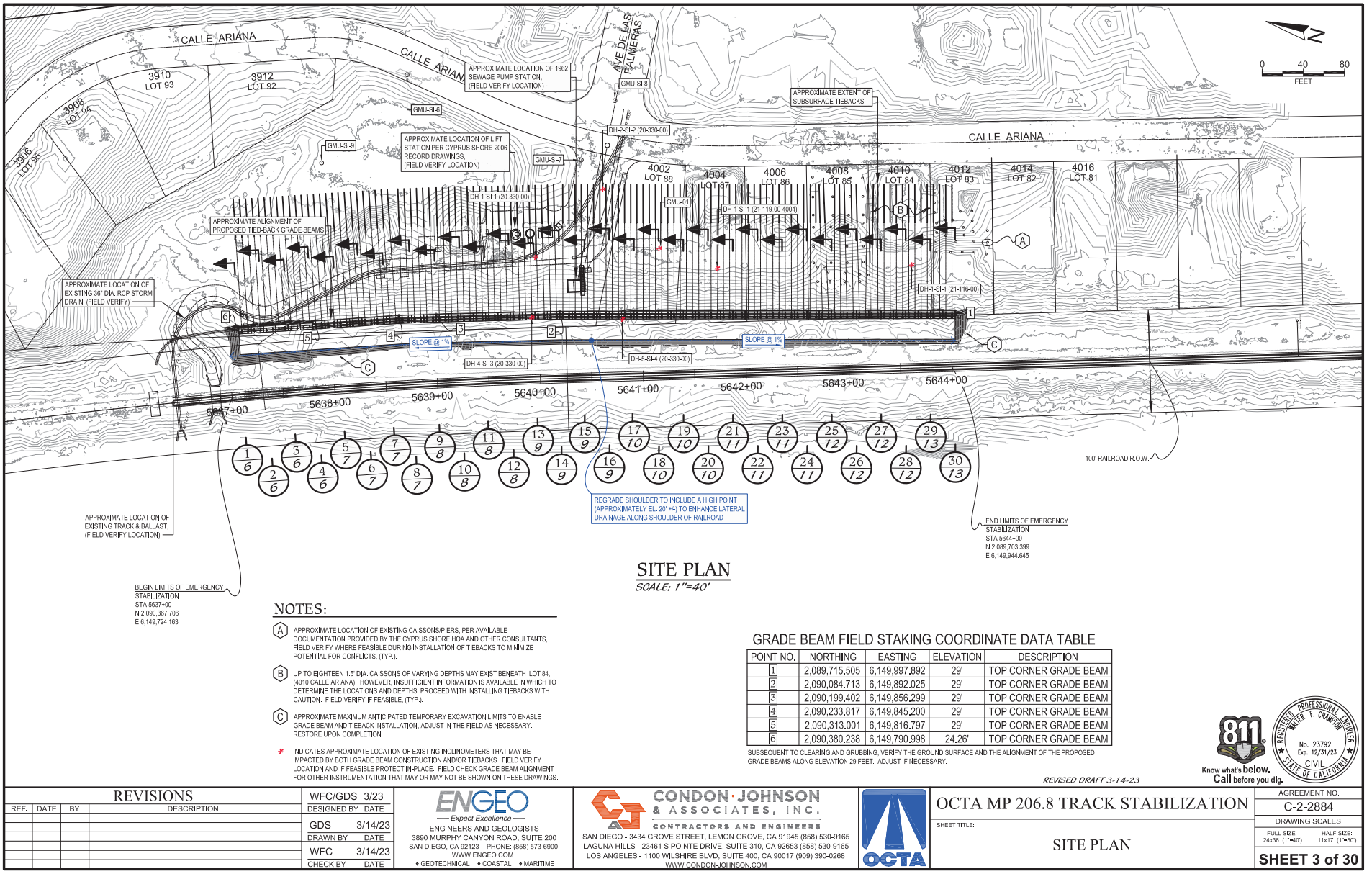

20 ft
40 ft
60 ft
80 ft
4
5
6
7
8
9
Elevation (ft)
20
15
10
5
Setember 18, 2021 HAT (7' NAVD88)
September 18, 2021 MHT (4.5' NAVD88)
0
10
20
30
40
50
60
70
80
90
100
Distance From Track Centerline(ft)
Transect
Surface Contour
2021 9 18
2024 3 7
Setember 18, 2021 HAT (7' NAVD88)
Setember 18, 2021 MHT (4.5' NAVD88)
0
0 mi


20 ft
40 ft
60 ft
80 ft
5
6
7
8
9
10
Elevation (ft)
Distance From Track Centerline(ft)
Setember 18, 2021 HAT (7' NAVD88)
September 18, 2021 MHT (4.5' NAVD88)
Transect
Surface Contour
2021 9 18
2024 3 7
Setember 18, 2021 HAT (7' NAVD88)
Setember 18, 2021 MHT (4.5' NAVD88)


20 ft
40 ft
60 ft
80 ft
6
7
8
9
10
Elevation (ft)
Distance From Track Centerline(ft)
Setember 18, 2021 HAT (7' NAVD88)
September 18, 2021 MHT (4.5' NAVD88)
Transect
Surface Contour
2021 9 18
2024 3 7
0 mi


20 ft
40 ft
60 ft
80 ft
6
7
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10
Elevation (ft)
Distance From Track Centerline(ft)
September 18, 2021 HAT (7' NAVD88)
September 18, 2021 MHT (4.5' NAVD88)
Transect
Surface Contour
2021 9 18
2024 3 7
0 mi


20 ft
40 ft
60 ft
80 ft
7
8
9
10
Elevation (ft)
Distance From Track Centerline(ft)
Setember 18, 2021 HAT (7' NAVD88)
September 18, 2021 MHT (4.5' NAVD88)
Transect
Surface Contour
2021 9 18
2024 3 7
0 mi



BEGIN LIMITS OF EMERGENCY STABILIZATION
STA 5637+00
N 2,090,367.706
E 6,149,724.163

END LIMITS OF EMERGENCY STABILIZATION
STA 5644+00
N 2,089,703.399
E 6,149,944.645

SITE PLAN

SCALE: 1"=40'

NOTES:

A. APPROXIMATE LOCATION OF EXISTING CAISSONS/PIERS, PER AVAILABLE DOCUMENTATION PROVIDED BY THE CYPRUS SHORE HOA AND OTHER CONSULTANTS. FIELD VERIFY WHERE FEASIBLE DURING INSTALLATION OF TIEBACKS TO MINIMIZE POTENTIAL FOR CONFLICTS. (TYP.).

B. UP TO EIGHTEEN 1.5' DIA. CAISSONS OF VARYING DEPTHS MAY EXIST BENEATH LOT 84, (4010 CALLE ARIANA). HOWEVER, INSUFFICIENT INFORMATION IS AVAILABLE IN WHICH TO DETERMINE THE LOCATIONS AND DEPTHS. PROCEED WITH INSTALLING TIEBACKS WITH CAUTION. FIELD VERIFY IF FEASIBLE. (TYP.).

C. APPROXIMATE MAXIMUM ANTICIPATED TEMPORARY EXCAVATION LIMITS TO ENABLE GRADE BEAM AND TIEBACK INSTALLATION. ADJUST IN THE FIELD AS NECESSARY. RESTORE UPON COMPLETION.

* INDICATES APPROXIMATE LOCATION OF EXISTING INCLINOMETERS THAT MAY BE IMPACTED BY BOTH GRADE BEAM CONSTRUCTION AND/OR TIEBACKS. FIELD VERIFY LOCATION AND IF FEASIBLE PROTECT IN-PLACE. FIELD CHECK GRADE BEAM ALIGNMENT FOR OTHER INSTRUMENTATION THAT MAY OR MAY NOT BE SHOWN ON THESE DRAWINGS.

GRADE BEAM FIELD STAKING COORDINATE DATA TABLE

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	2,089,715.505	6,149,997.892	29'	TOP CORNER GRADE BEAM
2	2,090,084.713	6,149,892.025	29'	TOP CORNER GRADE BEAM
3	2,090,199.402	6,149,856.299	29'	TOP CORNER GRADE BEAM
4	2,090,233.817	6,149,845.200	29'	TOP CORNER GRADE BEAM
5	2,090,313.001	6,149,816.797	29'	TOP CORNER GRADE BEAM
6	2,090,380.238	6,149,790,998	24.26'	TOP CORNER GRADE BEAM

SUBSEQUENT TO CLEARING AND GRUBBING, VERIFY THE GROUND SURFACE AND THE ALIGNMENT OF THE PROPOSED GRADE BEAMS ALONG ELEVATION 29 FEET. ADJUST IF NECESSARY.

REVISED DRAFT 3-14-23

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DESIGNED BY	DATE
GDS	3/14/23
DRAWN BY	DATE
WFC	3/14/23
CHECK BY	DATE

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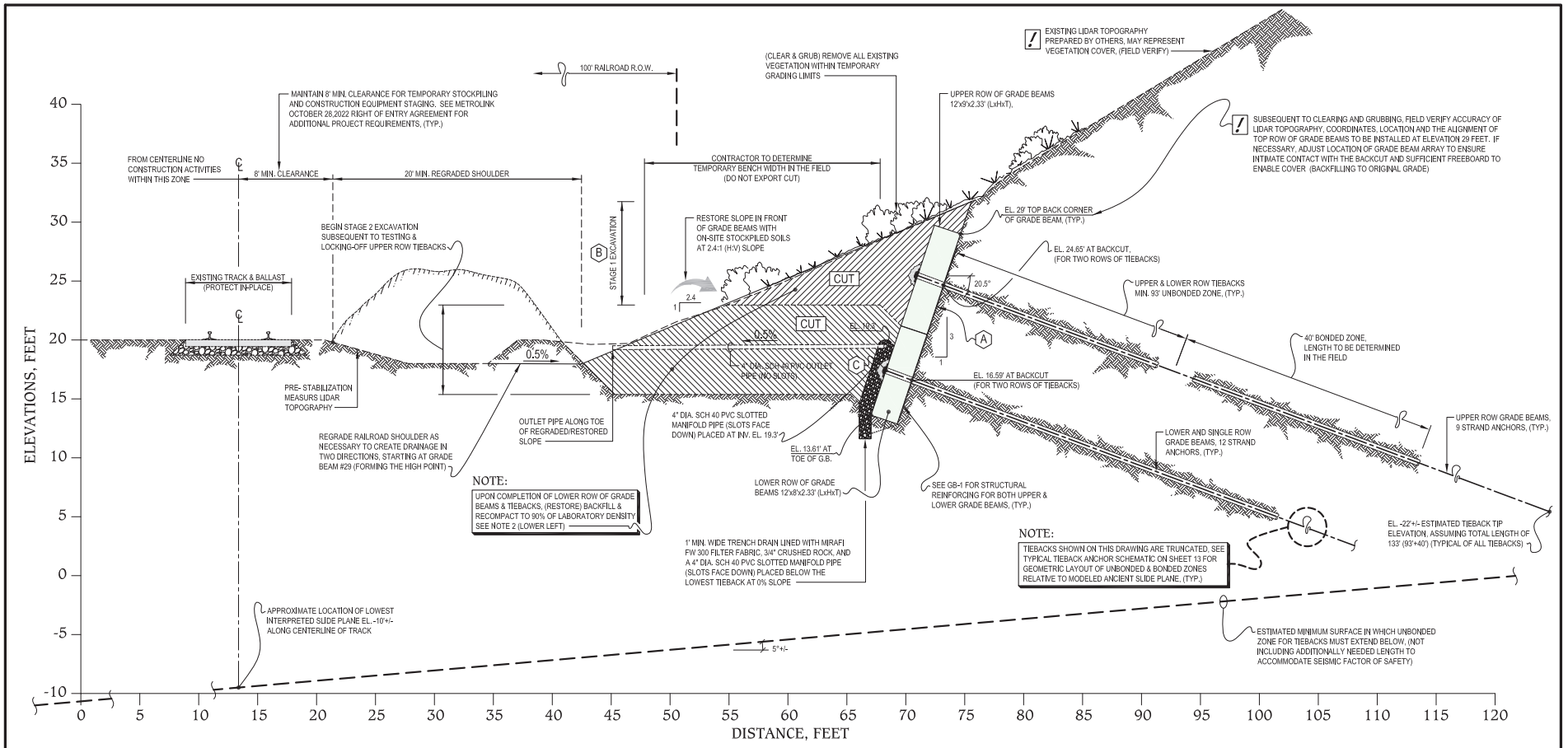
OCTA MP 206.8 TRACK STABILIZATION

SHEET TITLE: SITE PLAN

AGREEMENT NO. C-2-2884

DRAWING SCALES: FULL SIZE: 24x36 (1"=40') HALF SIZE: 11x17 (1"=80')

SHEET 3 of 30



TYPICAL GRADE BEAM LAYOUT CROSS SECTION 19
SCALE: 1"=4'

NOTES:

1. EXCEPT FOR OBJECTIONABLE & DELETERIOUS MATERIALS RESULTING FROM CLEARING & GRUBBING, ALL EXCAVATED SOILS TO REMAIN ON-SITE FOR BACKFILLING (NO EXPORT).
2. SUBSEQUENT TO COMPLETION OF STABILIZATION MEASURES, RESTORE SLOPE FACE BY MOISTURE CONDITIONING AND RECOMPACTING THE APPROVED STOCKPILED SOILS TO A MINIMUM OF 90% OF THE MAXIMUM DRY DENSITY, AS DETERMINED BY THE MOST RECENT VERSION OF ASTM D-1557 OR AN APPROVED ALTERNATIVE STANDARD.

(A) STARTING 12" BELOW TOP OF GRADE BEAM, PLACE 4' WIDE STRIP OF GEOCOMPOSITE DRAIN BOARD CENTERED BEHIND GRADE BEAM, 1 PANEL PER GRADE BEAM, CONNECTED TO TRENCH DRAIN, SEE TYPICAL GRADE BEAM DRAIN DETAIL ON SHEET 13 OF 15, (TYP.).

(B) TO THE MAXIMUM EXTENT PRACTICABLE, MINIMIZE THE EXTENT AND DEPTH OF THE NECESSARY INITIAL STAGE 1 CUT. DO NOT ADVANCE STAGE 2 EXCAVATION UNTIL UPPER ROW OF GRADE BEAMS ARE LOCKED-OFF.

(C) ALL TIEBACKS ARE CENTERED ON THE OUTSIDE FACE OF THE GRADE BEAMS, (TYP.)

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REVISED DRAFT 3-14-23

REVISIONS			
REF.	DATE	BY	DESCRIPTION

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DRAWN BY DATE
WFC 3/14/23
CHECK BY DATE

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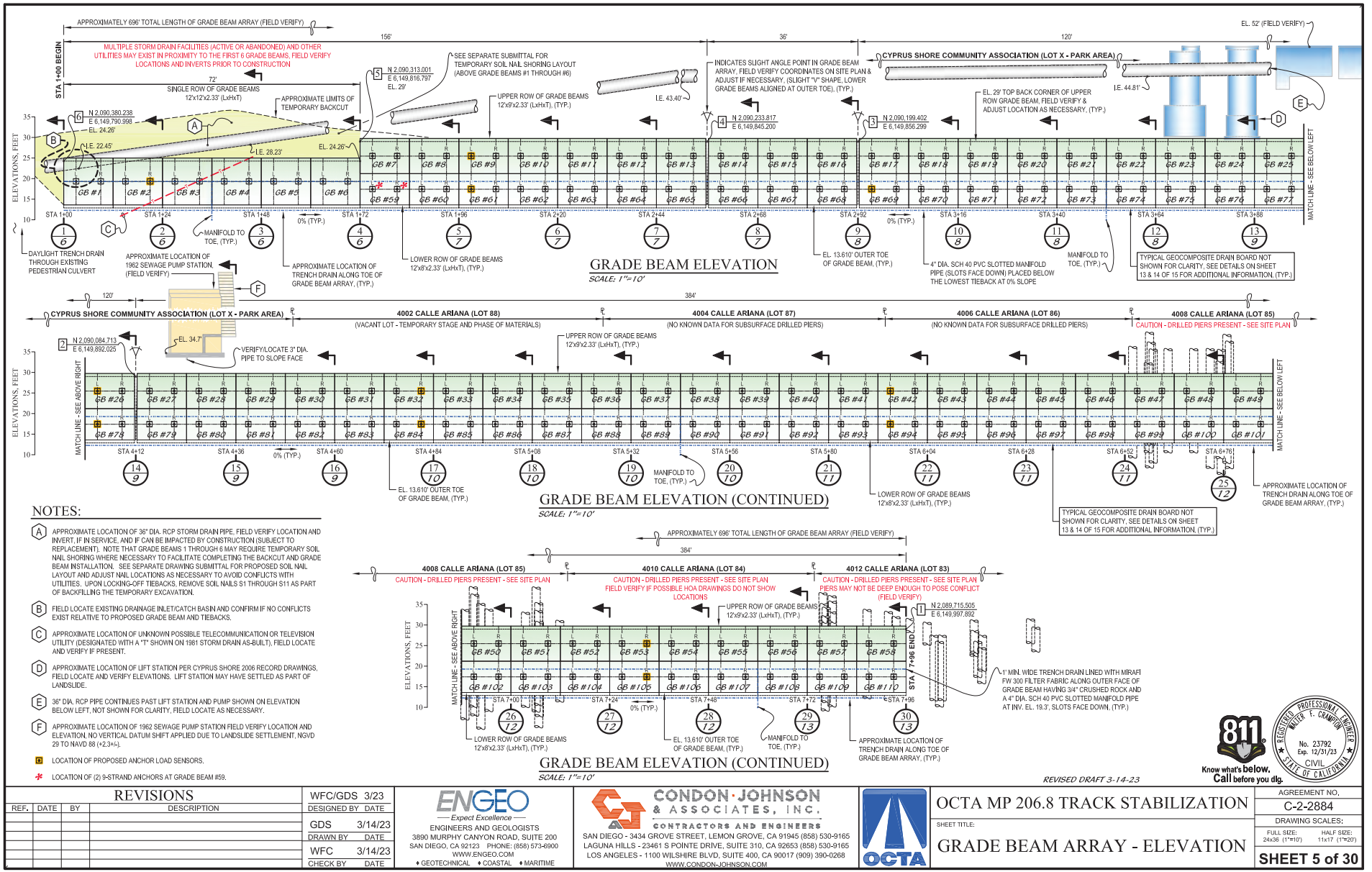
OCTA

OCTA MP 206.8 TRACK STABILIZATION

SHEET TITLE:
TYPICAL GRADE BEAM LAYOUT CROSS SECTION

AGREEMENT NO. C-2-2884
DRAWING SCALES: FULL SIZE: 24x36 (1"=4') HALF SIZE: 11x17 (1"=8')

SHEET 4 of 30



NOTES:

(A) APPROXIMATE LOCATION OF 36" DIA. RCP STORM DRAIN PIPE, FIELD VERIFY LOCATION AND INVERT, IF IN SERVICE, AND IF CAN BE IMPACTED BY CONSTRUCTION (SUBJECT TO REPLACEMENT). NOTE THAT GRADE BEAMS 1 THROUGH 6 MAY REQUIRE TEMPORARY SOIL NAIL SHORING WHERE NECESSARY TO FACILITATE COMPLETING THE BACKCUT AND GRADE BEAM INSTALLATION. SEE SEPARATE DRAWING SUBMITTAL FOR PROPOSED SOIL NAIL LAYOUT AND ADJUST NAIL LOCATIONS AS NECESSARY TO AVOID CONFLICTS WITH UTILITIES. UPON LOCKING-OFF TIEBACKS, REMOVE SOIL NAILS S1 THROUGH S11 AS PART OF BACKFILLING THE TEMPORARY EXCAVATION.

(B) FIELD LOCATE EXISTING DRAINAGE INLET/CATCH BASIN AND CONFIRM IF NO CONFLICTS EXIST RELATIVE TO PROPOSED GRADE BEAM AND TIEBACKS.

(C) APPROXIMATE LOCATION OF UNKNOWN POSSIBLE TELECOMMUNICATION OR TELEVISION UTILITY (DESIGNATED WITH A "T" SHOWN ON 1981 STORM DRAIN AS-BUILT), FIELD LOCATE AND VERIFY IF PRESENT.

(D) APPROXIMATE LOCATION OF LIFT STATION PER CYPRUS SHORE 2006 RECORD DRAWINGS, FIELD LOCATE AND VERIFY ELEVATIONS. LIFT STATION MAY HAVE SETTLED AS PART OF LANDSLIDE.

(E) 36" DIA. RCP PIPE CONTINUES PAST LIFT STATION AND PUMP SHOWN ON ELEVATION BELOW LEFT, NOT SHOWN FOR CLARITY, FIELD LOCATE AS NECESSARY.

(F) APPROXIMATE LOCATION OF 1962 SEWAGE PUMP STATION FIELD VERIFY LOCATION AND ELEVATION, NO VERTICAL DATUM SHIFT APPLIED DUE TO LANDSLIDE SETTLEMENT, NGVD 29 TO NAVD 88 (+2.3+/-).

LOCATION OF PROPOSED ANCHOR LOAD SENSORS.

LOCATION OF (2) 9-STRAND ANCHORS AT GRADE BEAM #59.

Know what's below. Call before you dig.

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REVISIONS			
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GDS 3/14/23
DRAWN BY DATE
WFC 3/14/23
CHECK BY DATE

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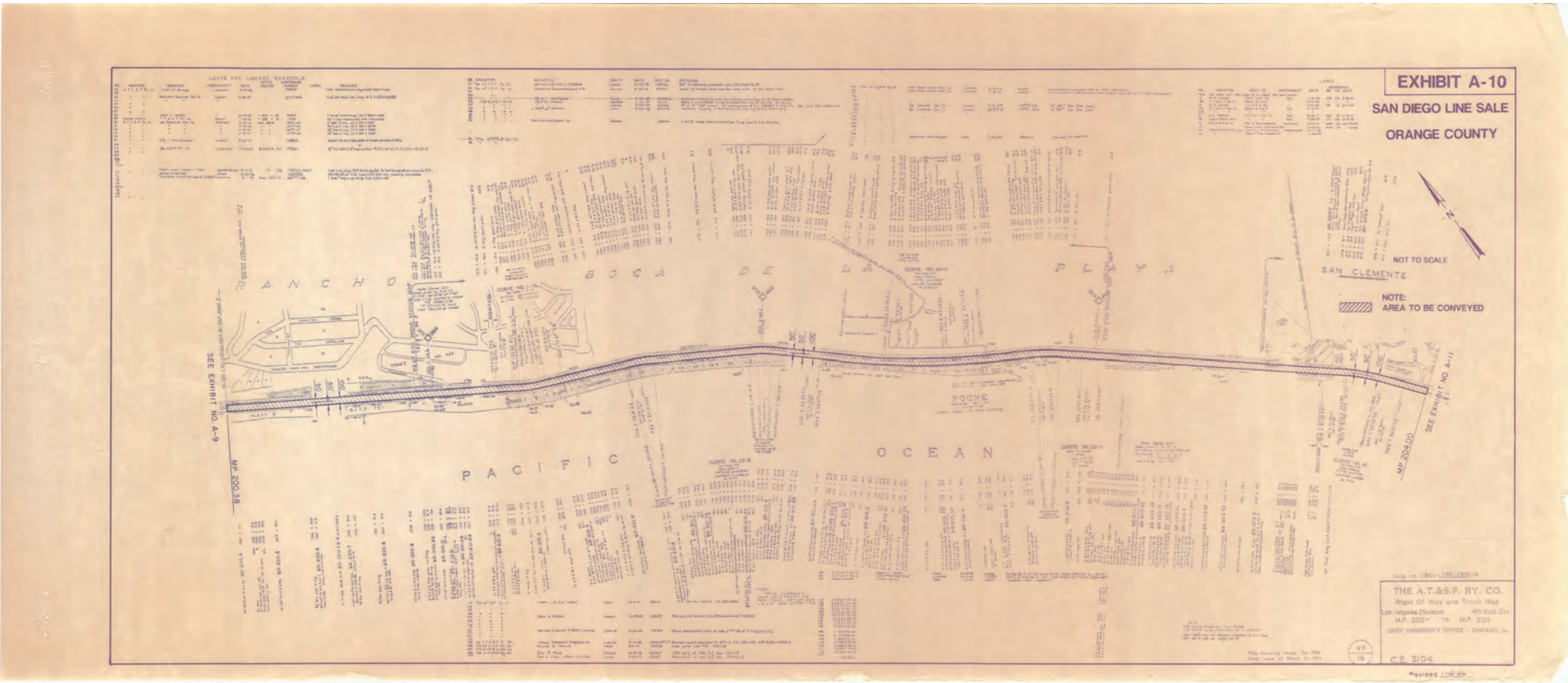
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CONTRACTORS AND ENGINEERS
SAN DIEGO - 3434 GROVE STREET, LEMON GROVE, CA 91945 (858) 530-9165
LAGUNA HILLS - 23461 S POINTE DRIVE, SUITE 310, CA 92653 (858) 530-9165
LOS ANGELES - 1100 WILSHIRE BLVD, SUITE 400, CA 90017 (909) 390-0268
WWW.CONDON-JOHNSON.COM

OCTA

OCTA MP 206.8 TRACK STABILIZATION

SHEET TITLE:
GRADE BEAM ARRAY - ELEVATION

AGREEMENT NO. C-2-2884
DRAWING SCALES: FULL SIZE: 24x36 (1"=10') HALF SIZE: 11x17 (1"=20')
SHEET 5 of 30



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Exhibit 3
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EXHIBIT A-11
SAN DIEGO LINE SALE
ORANGE COUNTY
NOT TO SCALE
NOTE:
AREA TO BE CONVEYED
ADJOINING LINE SALE
SEE EXHIBIT NO. A-10
MP 204.00
SAN CLEM
MP 204.28
MP 204.33
PACIFIC OCEAN
MP 206.22
MP 206.87
MP 207.22
END SAN DIEGO (ORANGE CO.) LINE SALE
MP 207.41
TO SAN DIEGO
SAN DIEGO (SAN DIEGO CO.) LINE SALE
SEE EXHIBIT NO. A-1
SEE MISC. SALES
SAN ONOFRE STATION GROUNDS
THE A.T. & S.F. RY. CO.
Right Of Way and Track Map
Los Angeles Div. Fourth Subdiv.
M.P. 204 to M.P. 208
C.E. 3104
Revised

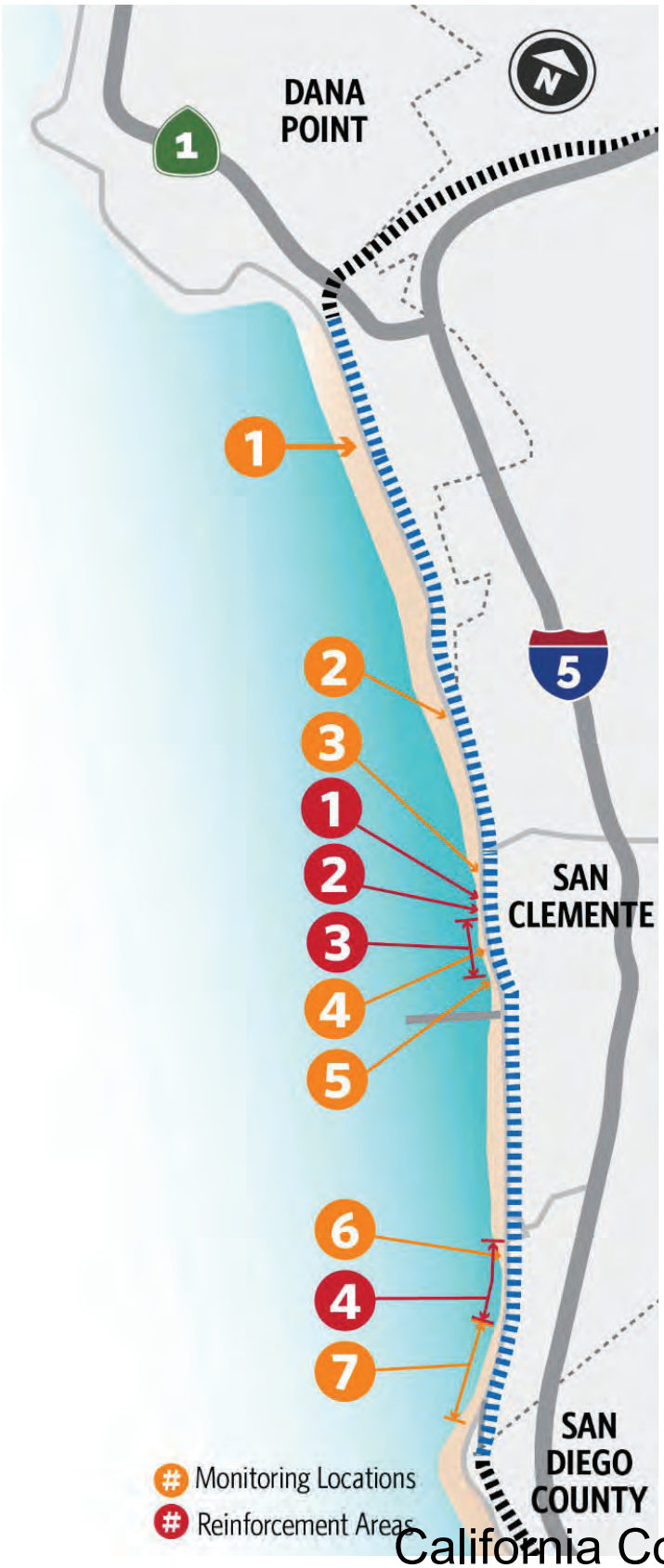


Figure 5. Summary of Monitoring Locations and Reinforcement Areas

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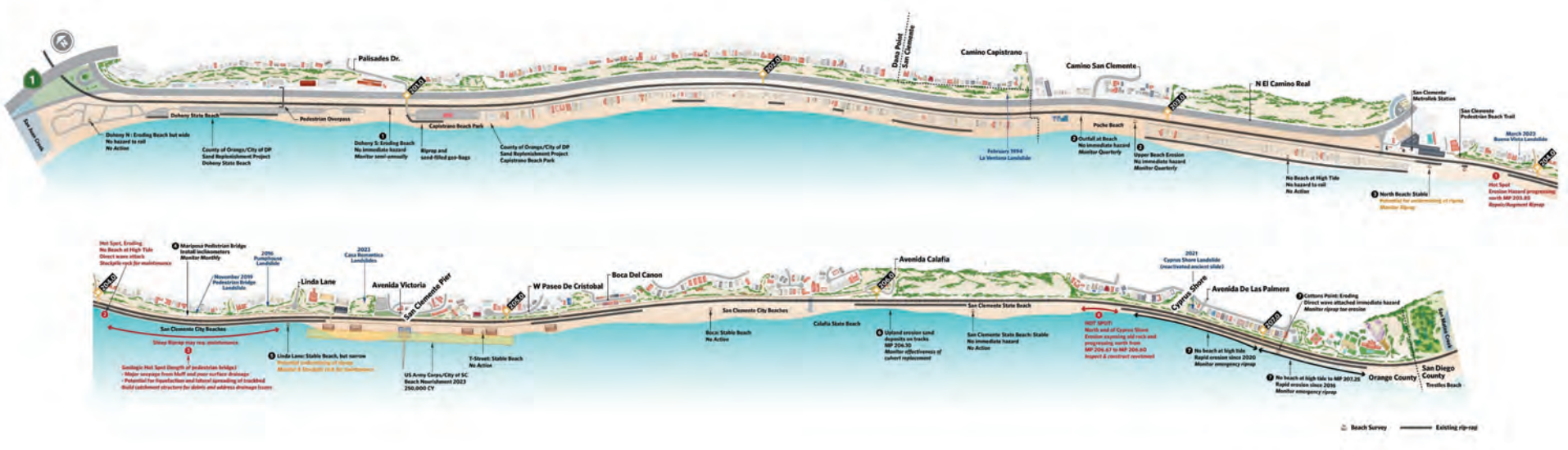
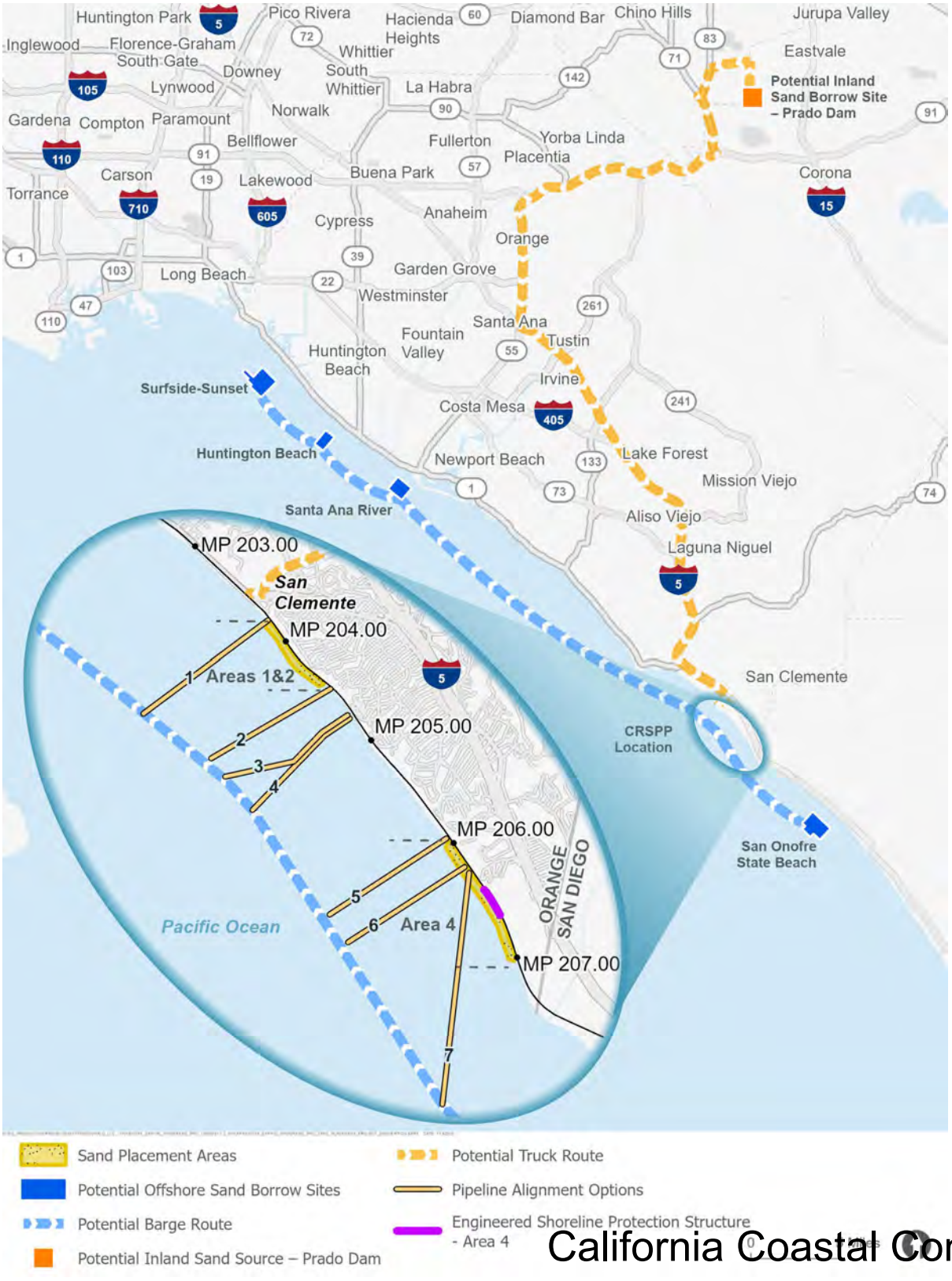


Figure 2 MP 200.00–MP 207.40, Dana Point and San Clemente Monitoring and Potential Reinforcement Area Locations

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Figure 2. Coastal Rail Infrastructure Resiliency Project: Near-Term Sand Placement with Engineered Shoreline Protection Structure and Riprap Repairs - Overview Map



Short-Listed Concepts

Two Rail Concepts Carried Forward:

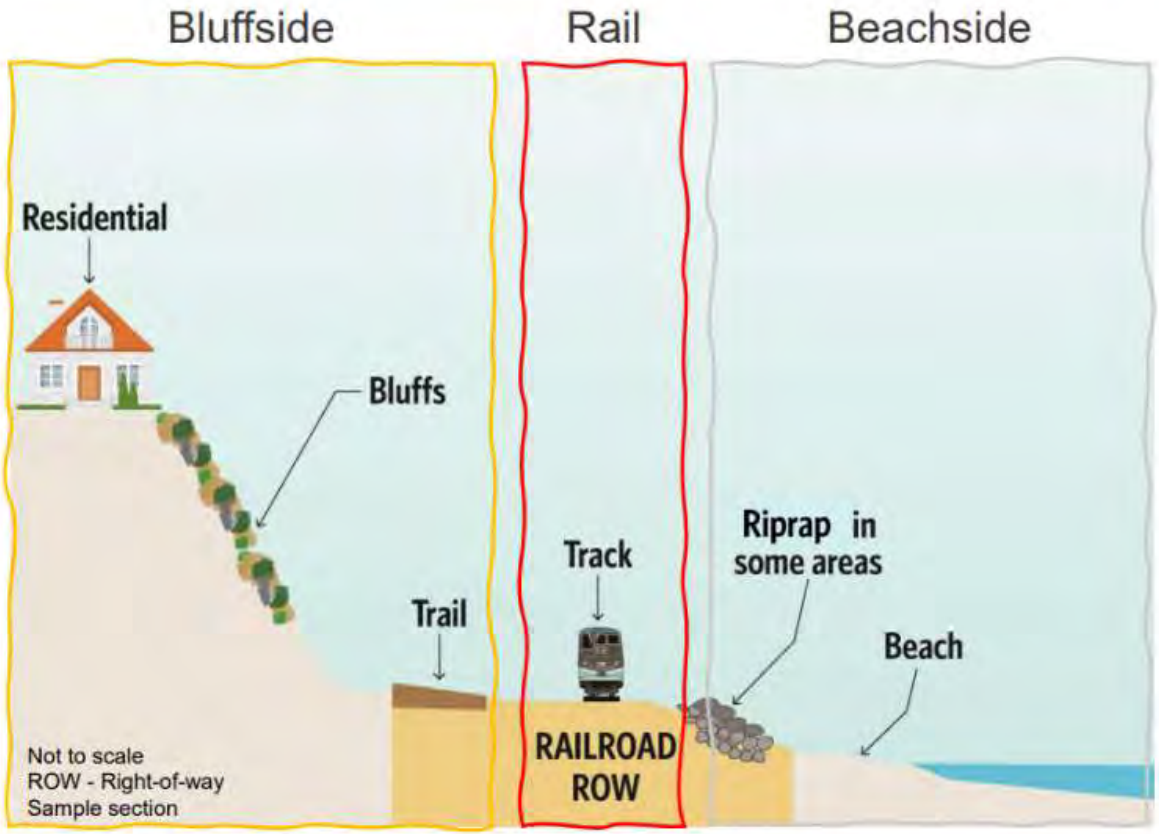
- Alternative materials for critical railroad infrastructure to reduce lifecycle costs
- Ground improvement

Two Bluffside Concepts Carried Forward:

- Catchment walls
- Tieback/soil nail/pin-pile walls

Four Beachside Concepts Carried Forward:

- One-time beach nourishment with shoreline protection structure:
  - Riprap
  - Engineered rock revetment
  - Seawall
  - Combination (seawall and rock)





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Exhibit 7

Figure 2. Project Location and Characteristics

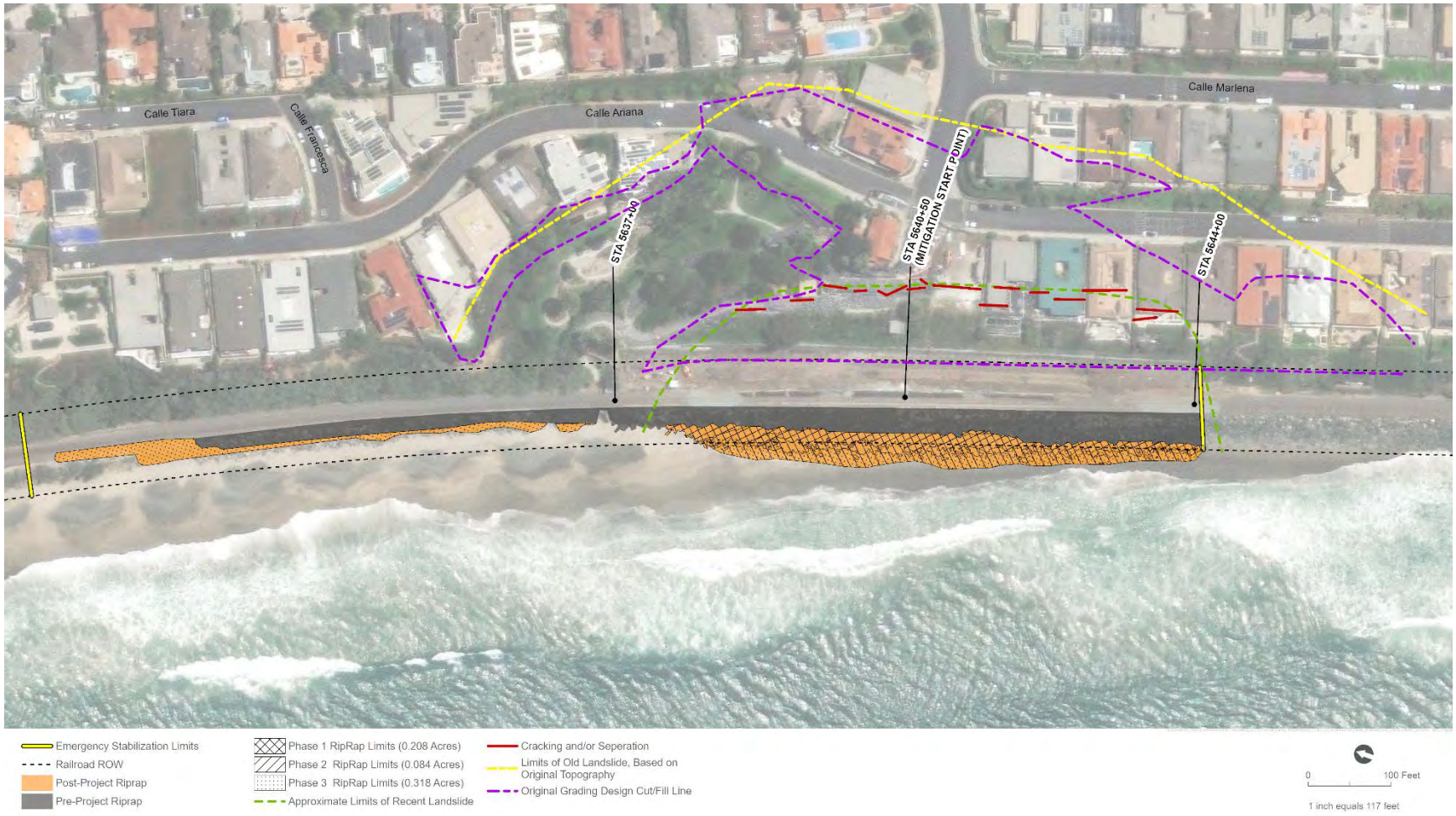


Figure 8. Areas 1 & 2 – Key Project Components and Limits of Disturbance (Map 1 of 5)

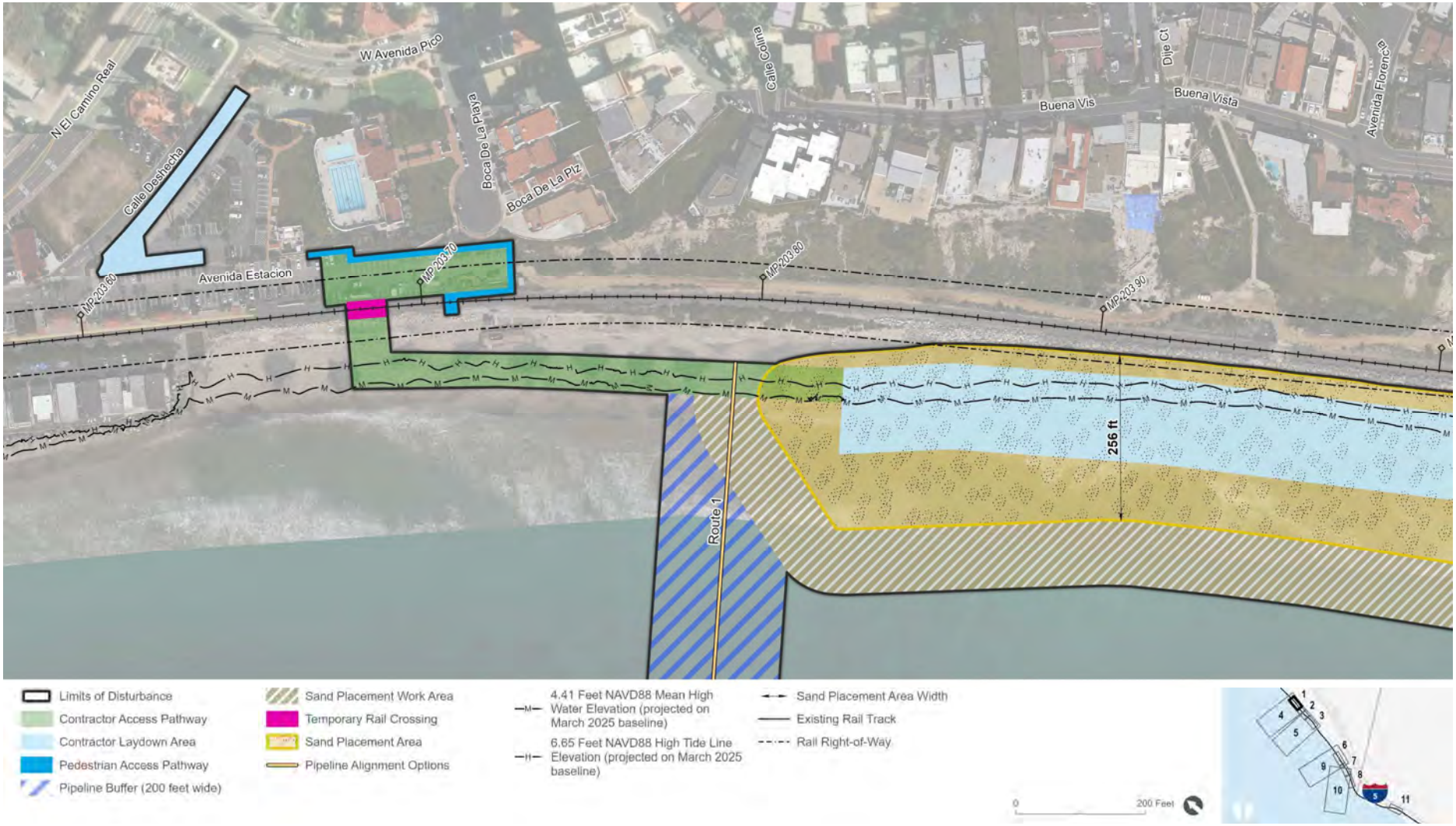


Figure 9. Areas 1 & 2 – Key Project Components and Limits of Disturbance (Map 2 of 5)

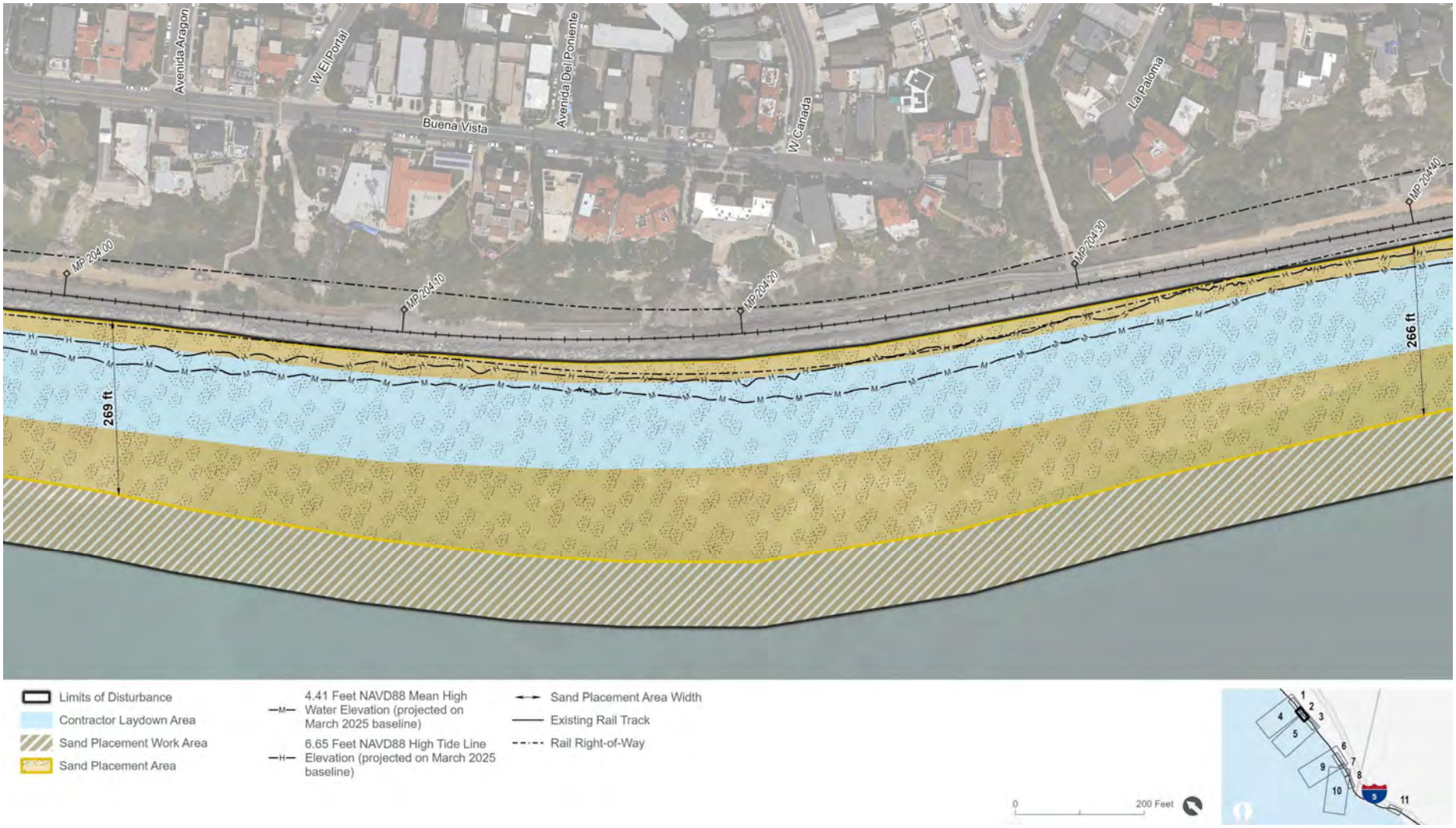


Figure 10. Areas 1 & 2 – Key Project Components and Limits of Disturbance (Map 3 of 5)

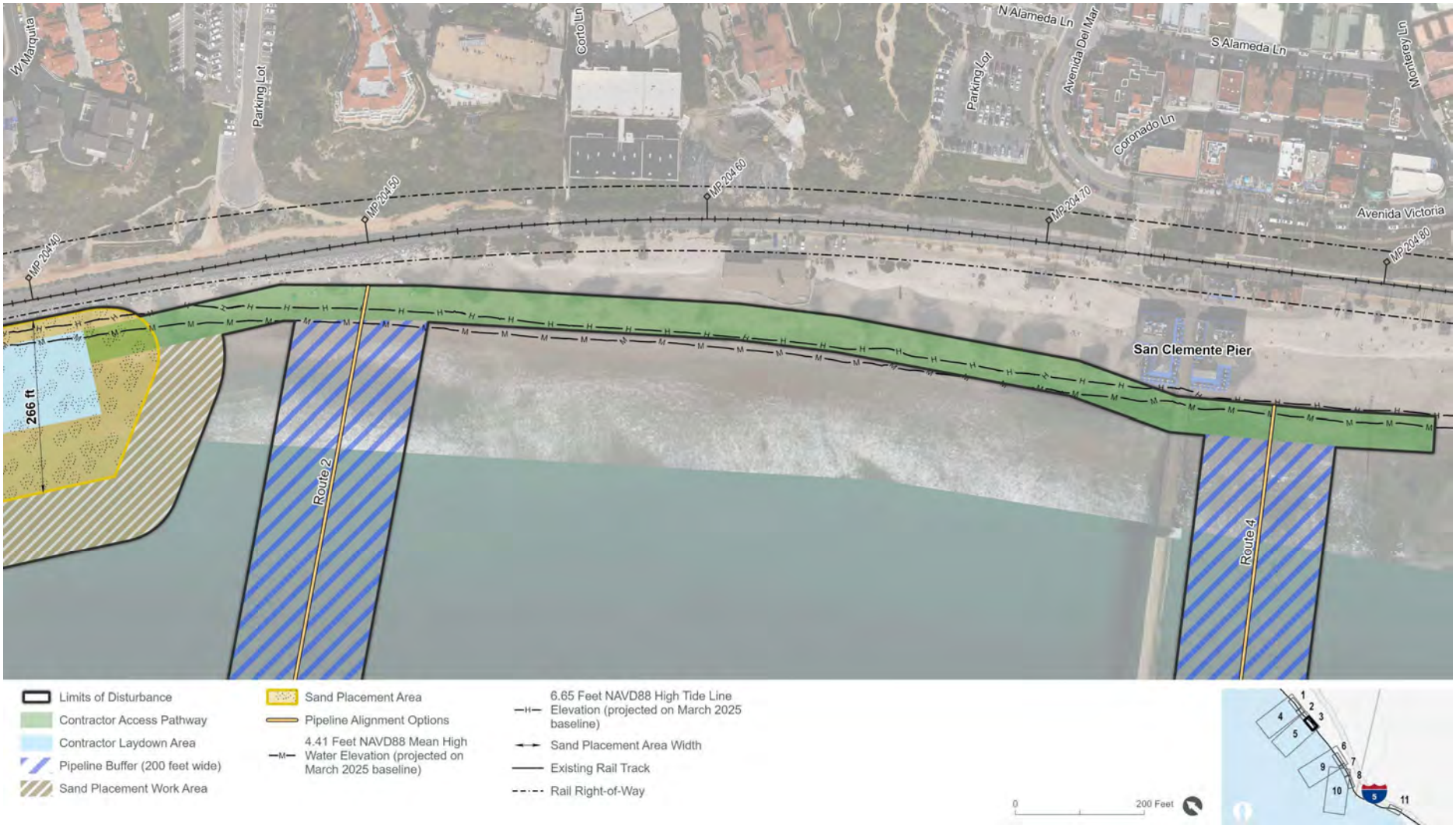


Figure 13. Area 4 – Key Project Components and Limits of Disturbance (Map 1 of 5)

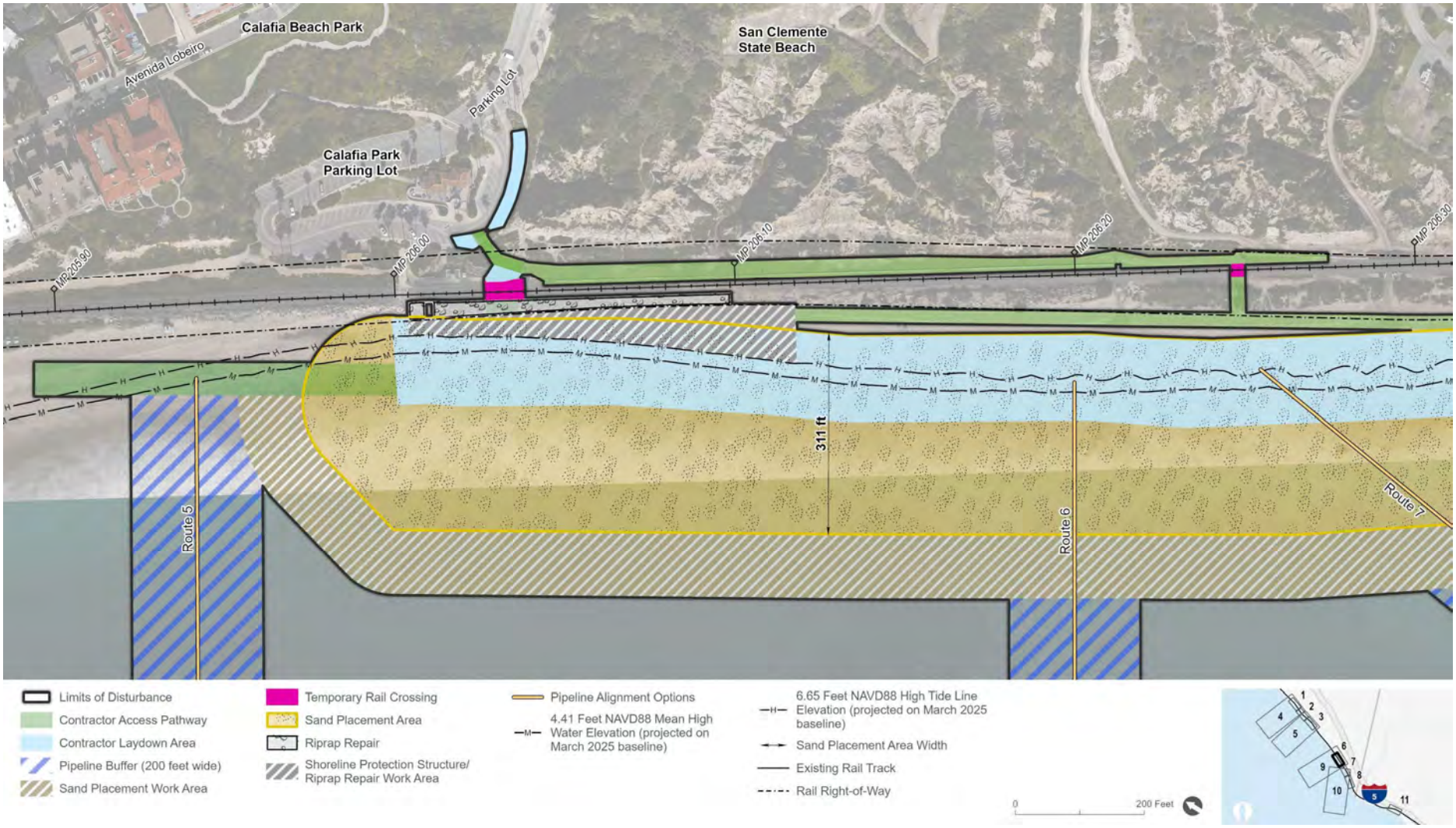


Figure 14. Area 4 – Key Project Components and Limits of Disturbance (Map 2 of 5)

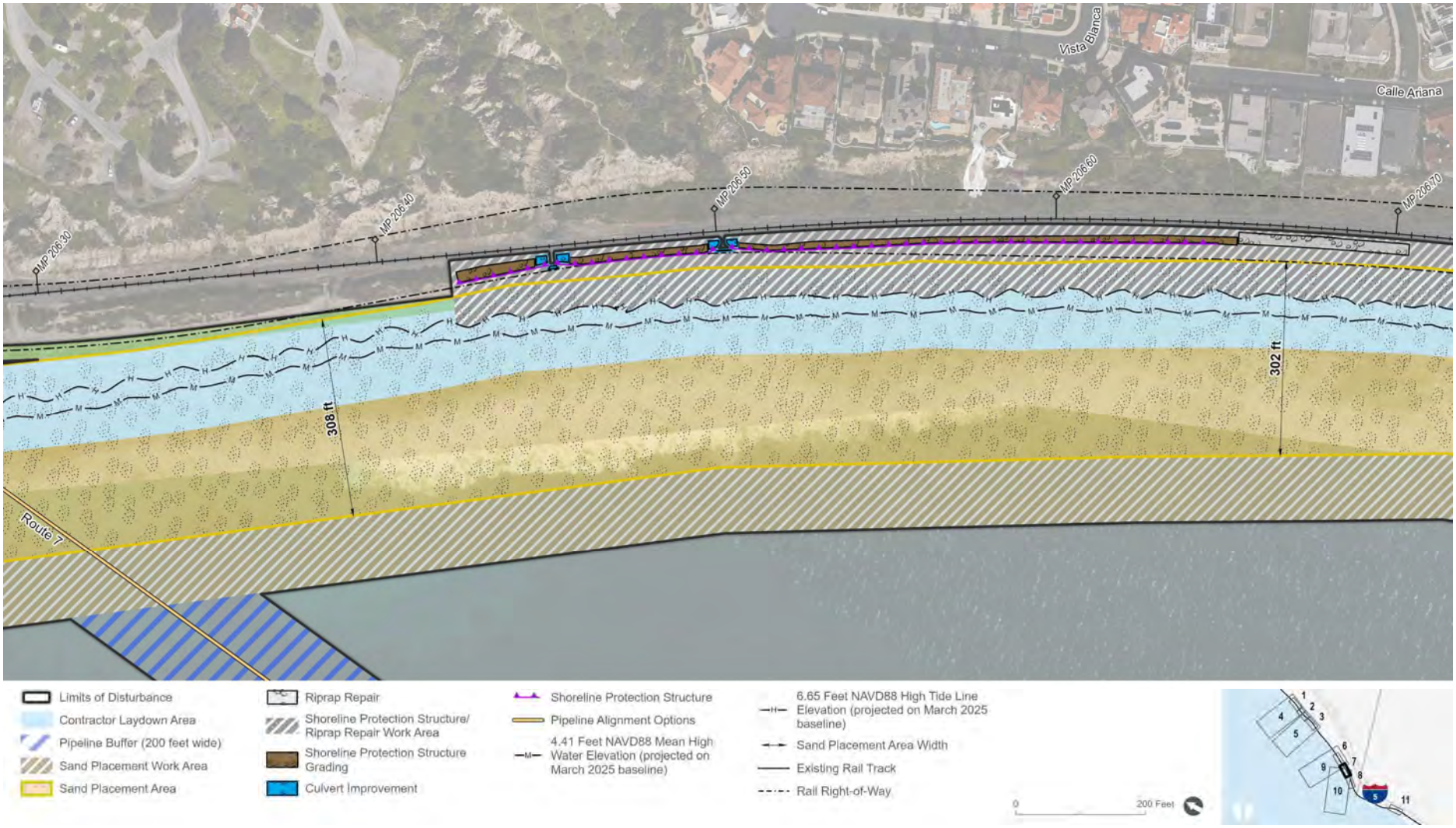


Figure 15. Area 4 – Key Project Components and Limits of Disturbance (Map 3 of 5)



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Figure 18. Basilone Yard (Area 4 Riprap Source Location)



STATE OF CALIFORNIA -- THE RESOURCES AGENCY
GRAY DAVIS, Governor
CALIFORNIA COASTAL COMMISSION
45 FREMONT STREET, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5200

F 17b

STAFF REPORT AND RECOMMENDATION

ON CONSISTENCY CERTIFICATION

Consistency Certification No	CC-033-03
Staff	JRR-SF
File Date	4/11/2003
3 Months	7/11/2003
6 Months	10/11/2003
Commission Meeting	6/13/2003

APPLICANT: Southern California Regional Rail Authority

DEVELOPMENT LOCATION: San Clemente Shoreline, Orange County (Exhibit 1)

DEVELOPMENT DESCRIPTION: Maintenance of an existing rock revetment protecting railroad tracks

EXECUTIVE SUMMARY

The Southern California Regional Rail Authority (SCRRA) proposes to maintain an existing revetment protecting its railroad tracks within the City of San Clemente. Specifically, the SCRRA proposes to add new rock to four areas where erosion is threatening the tracks. To address concerns raised by the Commission, the applicant has modified its project to provide for development of a maintenance plan and commitments to provide long-term improvements for managing erosion. The project is a permissible shoreline structure because it is necessary to protect an existing structure, and, as modified, will mitigate for long-term cumulative impacts to sand supply. Therefore, the project is consistent with the shoreline structure policy (Section 30235) of the CCMP. As modified, the project also minimizes impacts to recreational resources and is consistent with the recreational policies (Sections 30210 and 30220) of the CCMP. Finally, the project will not affect habitat or visual resources of the coastal zone and is consistent with those policies (Sections 30230, 30240, and 30251) of the CCMP.

SUBSTANTIVE FILE DOCUMENTS: (See Page 10)

STAFF SUMMARY AND RECOMMENDATION:

I. Project Description

The SCRRA proposes maintenance of an existing revetment at four locations within the rail right-of-way in the City of San Clemente. The SCRRA proposes to add new

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rock to areas where erosion is threatening the tracks. The project will protect railroad tracks that provide the sole rail connection for passengers and freight between San Diego and Los Angeles. The proposed project includes the following elements:

1. SCRRA will add new rocks to the revetment at the following locations: (1) Cottons Point (Milepost 204.3); (2) Calafia (Milepost 205.5); (3) Linda Lane (Milepost 204.5); and (4) Mariposa Point (Milepost 204.3);

2. SCCRA will place the minimum amount of rock necessary to protect the track bed;

3. SCRRA will implement a pilot project at Calafia consisting of a beachside application of strategically placed rock, in order to reduce the footprint of the revetment at this location;

4. SCRRA will establish a limit line for future revetment maintenance activities in San Clemente; and

5. SCRRA will participate in the Army Corps of Engineers' evaluation of sand replenishment and other potential methods for future protection of public and private properties within San Clemente.

II. Status of Local Coastal Program

The standard of review for federal consistency determinations is the policies of Chapter 3 of the Coastal Act, and not the Local Coastal Program (LCP) of the affected area. If an LCP that the Commission has certified and incorporated into the California Coastal Management Program (CCMP) provides development standards that are applicable to the project site, the LCP can provide guidance in applying Chapter 3 policies in light of local circumstances. If the Commission has not incorporated the LCP into the CCMP, it cannot guide the Commission's decision, but it can provide background information. The Commission has not incorporated the San Clemente LCP into the CCMP.

III. Applicant's Consistency Certification

The Southern California Regional Rail Authority certifies the proposed activity complies with the federally approved California Coastal Management Program and will be conducted in a manner consistent with such program.

IV. Staff Recommendation

The staff recommends that the Commission adopt the following motion:

A. Motion. I move that the Commission concur with consistency certification CC-033-03 that the project described therein is consistent with the enforceable policies of the California Coastal Management Program (CCMP).

The staff recommends a **YES** vote on this motion. Passage of this motion will result in a concurrence in the certification and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

B. Resolution for Concurrence with Consistency Certification. The Commission hereby concurs with the consistency certification made by the Southern California Regional Rail Authority, on the grounds that the project described therein is consistent with the enforceable policies of the CCMP.

V. Findings and Declarations

The Commission finds and declares as follows:

A. Background. The Atchison, Topeka, and Santa Fe Railway built these railroad tracks in 1888 and constructed the rock revetment in the 1930's. The current owner of the right-of-way is the Orange County Transportation Authority (OCTA), which purchased this right-of-way in 1993. The SCRRA operates the Metrolink commuter rail service and maintains this right-of-way on behalf of the OCTA. The SCRRA maintains the rock revetment as erosion exposes the underlying sandy soil. The SCRRA conducted the most recent maintenance activity in 1999 following the El Niño storms of 1998.

The SCRRA planned a larger-scale maintenance operation in early 2003 at various locations of the existing revetment along the right-of-way in San Clemente. Interested parties expressed opposition to this project because it would result in an expansion seaward of the existing revetment. In response to these concerns, SCRRA met with representatives of the City of San Clemente, the City's Coastal Advisory Committee, the Surfrider Foundation, and the County of Orange on March 18, 2003. The result of these discussions was a modification of SCRRA's plan to the proposed project.

The SCRRA has submitted the proposed project to the Army Corps of Engineers, the National Marine Fisheries Service, the United States Environmental Protection Agency, the United States Fish and Wildlife Service, the California Department of Fish and Game, and the San Diego Regional Water Quality Control Board for their review. These agencies have approved this project provided the Corps' permit includes conditions for biological surveying, monitoring, and reporting. The Corps' authorization is included in Exhibit 2 and incorporated by reference.

The SCCRA's consistency certification included a request for emergency authorization to go forward with the project in advance of the Commission's review of the project. Although the federal consistency procedures do not provide for an emergency authorization, the Commission staff has, on occasion administratively authorized a project where warranted based on its coastal zone effects and the

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nature of the emergency. In this case, the Commission staff was not completely convinced of the emergency, but considering the potential magnitude of an accident resulting from damage to the railroad tracks and the need to protect mass transit resources, the Commission staff provided an emergency authorization allowing the project to proceed (and with the applicant's understanding and the Corps' condition) that the Commission's final action would be determinative (Exhibit 3).

B. Shoreline Structures. Section 30235 of the Coastal Act provides, in part, that:

> *Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply....*

The applicant proposes to add new rock to an existing revetment in order to fill in gaps in the structure. The additional rock is necessary to protect the existing railroad tracks. The applicant describes the current situation as follows:

> *The existing revetment is there solely to protect the operating railroad. At the four subject locations, the railroad is in immediate danger from existing and continuing erosion. It is the professional opinion of SCRRA's Director of Engineering and Construction that the next large storm, combined with high tides, could result in destabilization of the track. SCRRA has consistently operated well within margins of safety for track and structures, consistent with federal regulations, preferring to prevent emergencies rather than react to them. In the case of these specific locations, that margin of safety is nearing its lower limit.*[1]

Section 30235 of the Coastal Act provides two tests for evaluating the construction of revetments. First, the seawall must be necessary to protect an existing structure threatened by erosion. Second, the project must mitigate for impacts to local sand supply. In this case, it is clear that the proposed project is necessary to protect an existing structure. As described above, the purpose of the project is to protect the existing railroad tracks from waves and erosion. These tracks are located on the beach and are within the area where waves could reach and damage the tracks. According to the applicant, when the railroad company originally built the tracks, the beach was much wider and subsequent erosion has narrowed the beach. In the 1930s, the railroad company constructed the revetment. Although the applicant did not provide an analysis of alternatives, it is clear that relocation of the tracks to an area off the beach is not feasible at this time, because it would require the acquisition of an entirely new right-of-way and the reconstruction of several miles of new track. The cost of such an alternative is likely to be very expensive and could result in significant environmental impacts. Regardless, such an alternative is

[1] Consistency Certification Submittal, April 11, 2003, p. 4.

beyond the scope of this project, which is for the placement of new rock to fill in the gaps on the existing revetment. Without the project, the existing tracks could be subject to erosion from wave energy. Therefore, the Commission finds that the proposed project is required to protect an existing structure.

With respect to this project, the more complex question is that of mitigation for impacts to local sand supply. On its face, the proposed project will not significantly affect beach resources. However, the SCRRA regularly conducts these maintenance operations and these activities could have cumulative effects on sand resources. The SCRRA has not documented the fate of the rocks after it places them on the revetment. The rocks are either spreading laterally across the beach or washing offshore. In either situation, the rocks are covering beach sand. Part of the problem is that this revetment is not an engineered seawall, but a pile of dumped rock that the SCRRA maintains by dumping new rock. It appears there are several feasible mitigation measures that would minimize the project's effects on sand supply. These mitigation measures include using the displaced rocks whenever possible and replacing the existing structure with an engineered revetment, which would reduce the maintenance requirements.

In its consistency certification, SCRRA offers several commitments to reduce the project's adverse effects. These commitments include the following:

1. Limit the maintenance activities to four specific locations requiring immediate maintenance (Cottons Point (Milepost 204.3), Calafia (Milepost 205.5), Linda Lane (Milepost 204.5), and Mariposa Point (Milepost 204.3));

2. Place the minimum amount of rock at these locations necessary to establish sufficient levels of protection of the track bed;

3. Implement a pilot project at one specific location (Calafia), consisting of a beachside application of strategically placed rock, thereby further reducing the footprint of the revetment at this location;

4. Establish a limit line for future revetment maintenance activities in San Clemente; and

5. Participate in studies currently underway by the Army Corps of Engineers to evaluate sand replenishment and other potential methods for future protection of public and private properties within San Clemente.

Although these measures go a long way to resolving the cumulative impacts from the proposed project, they do not completely resolve the Commission's concerns. The Commission believes that additional measures are necessary to minimize the cumulative effects from the repair and maintenance of this revetment. Primarily, the Commission believes that the SCRRA should conduct routine maintenance of the revetment that emphasizes the re-use of rock that it previously placed on the structure. Additionally, the applicant could investigate a redesign of the revetment to minimize maintenance needs. The Commission suspects that an adequately engineered structure would have substantially less maintenance requirements and

provide better protection for the railroad tracks. Alternatively, it may be feasible to replace the riprap with sand, as part of a regional beach nourishment project.

The Commission notes that the U.S. Army Corps of Engineers is investigating shoreline erosion issues in San Clemente. It is working with the SCRRA, the City of San Clemente, and Orange County to analyze the erosion problem and various solutions. The Commission believes that the Corps is considering beach replenishment as one of its alternatives to the erosion problem in this area. However, the Corps is in the early stages of its investigation and has not determined if there is a federal interest for a project or if it is feasible.

In response to concerns raised by the Commission, the SCRRA has modified its project to address these issues. The modifications include the development of a maintenance plan that provides the following commitments:

1. Limit the placement of new rocks to those areas where the shoreline structure is no longer providing sufficient protection to the existing tracks.

2. Develop a seaward limit line for the revetment and do not place any rocks seaward of that line.

3. Whenever feasible, remove existing rock from the beach and replace it on the revetment.

4. Pre-project notice to the Commission, other relevant regulatory and resource agencies, City of San Clemente, and interested members of the public.

5. Annual monitoring of the maintenance activities that includes information on the amount and location of maintenance activities and reports on SCCRA compliance with above-described requirements.

6. Apply for a permit for a multi-year maintenance program that includes the above elements.

In addition, the SCRRA has agreed to investigate long-term projects such as beach nourishment or engineered revetment as methods to address erosion problems in this area while reducing the maintenance needs of the existing structure. With these modifications, the SCRRA will reduce the long-term cumulative impacts on sand supply from its regular maintenance activities.

In conclusion, the Commission finds that the proposed project is necessary to protect an existing structure threatened by erosion. Additionally, the Commission finds that the applicant will mitigate for impacts to sand supply by developing a short-term and long-term plan to address cumulative impacts associated with repeated maintenance activities. Therefore, the Commission finds that the project, as modified, is consistent with the shoreline structure policy of the CCMP, specifically Section 30235 of the Coastal Act.

C. Recreational Resources. Section 30210 of the Coastal Act provides that:

> *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Section 30210 of the Coastal Act provides that:

> *Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

As described above, the SCRRA proposes to add new rock to an existing revetment to maintain protection of existing railroad tracks. The SCRRA and the previous owners of the rail right-of-way have implemented several similar maintenance activities in the past. The Commission is concerned that these repeated maintenance activities are adversely affecting recreational resources of the area. However, as described below, the applicant has modified the project to address cumulative impacts from its maintenance activities and, as modified, the project is consistent with the recreation policies of the CCMP.

This area of the coast is an important recreational resource. In its LCP, the City of San Clemente describes recreational resources of this area as follows:

> *San Clemente is a well-known surfing area and is the home of many of the world's past present and future* [sic] *surfing professionals. The surf areas located within or near the City's Coastal Zone are valuable recreational resources that are enjoyed year around* [sic]. *There are a total of eight established surfing areas within the City's boundaries. Perhaps the most well known surfing beaches in the area are Trestles and San Onofre, located just south of the San Clemente city limits.*[2]

In addition, the public uses San Clemente beaches for other recreational uses including sun bathing, swimming, picnicking, and other relevant recreational uses.

The proposed project has the potential to affect the recreational resources of the area. Although the individual effect from the project may not be significant, the Commission is concerned about the cumulative effects from regular maintenance activities of this revetment. The Commission believes that these cumulative impacts to recreational use could be significant. The applicant's repeated placement of rocks has result in an expansion of the footprint of the structure. Additionally, rocks that fall off the revetment could move into nearshore waters and present a hazard to surfers and swimmers.

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[2] San Clemente Coastal Element, January 18, 1995, p. 2-50.

In order to resolve these potential impacts, the SCRRA proposes to develop a maintenance plan and seek multi-year approvals for that plan. The SCRRA has committed to including within that plan provisions for minimizing the amount of rock placed on the beach and re-using rock that is no longer on the revetment. The SCRRA's commitment also includes provisions for a limit line beyond which it will not place any new rock and an investigation into the fate of rocks previously dumped on the revetment. Additionally, the SCRRA agreed to investigate long-term solutions to the regular maintenance activities. This commitment includes provisions for cooperating with the U.S. Army Corps of Engineers in its study for regional solutions to erosion issues along the San Clemente coast or, if that process should not proceed, investigating other measures that the SCRRA could use to protect its tracks. The measures that both the Corps and the SCRRA will investigate include a regional beach nourishment program, which would likely have significant benefits to recreational resources. Regardless of the final coastal protection project selected, both the long-term solution and the short-term maintenance plan will reduce the maintenance requirements for this revetment and will reduce the amount of rock that the SCRRA needs to use to protect its tracks. Therefore, as modified, the project will reduce the cumulative effects from regular maintenance activities on recreational resources. In conclusion, the Commission finds that the project is consistent with the recreational policies of the CCMP, specifically Sections 30210 and 30220 of the Coastal Act.

D. Habitat Resources. Section 30230 of the Coastal Act provides that:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

In addition, Section 30240 of the Coastal Act provides that:

> *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*
>
> *(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

The beaches in this area have the potential to provide habitat for the western snowy plover, a federally listed threatened species, and the California grunion, a biologically important fish that spawns on sandy beaches. Pursuant to requests from the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, the applicant

investigated the habitat values of the project areas. With respect to snowy plovers, the SCRRA concluded the following:

> *Project repairs to the riprap along the railway will not impact the western snowy plover or their nesting activities. No plovers were observed during the survey and no evidence of nesting activity was found. Due to the daily high tide line, high levels of human activity, and presence of dogs on the beaches, it is highly unlikely that western snowy plovers utilize this area for nesting.*[3] *(Exhibit 3)*

The applicant also surveyed for California grunion. In that survey, the SCRRA concluded the following:

> *It is my professional opinion that work to reinforce the rip-rap along the Metrolink ROW will not significantly impact any grunion egg masses at three of the four site locations. The fourth site location at Miraposa Point did show positive signs of grunion egg masses, although these eggs were found between 15 and 20 ft. from the existing toe of the rip-rap. According to the manner in which this work will be done, I also don't believe that this work will bring any grunion egg masses into jeopardy. The plan for the reinforcement work is to push some of the existing rip-rap outward 3 – 5 ft. then additional rock will be piled on top of that. With that in mind, the only way any grunion egg masses could be affected would be if any of the rip-rap traveled 15 – 20 ft. onto the beach.*[4] (Exhibit 4)

Based on these surveys, it does not appear that the project site contains any environmentally sensitive habitat areas. Additionally, it is unlikely that the proposed project will affect any biologically important marine species. Therefore, the Commission finds that the project is consistent with Habitat Policies of the CCMP, specifically Sections 30230 and 30240 of the Coastal Act.

E. <u>Visual Resources</u>. Section 30251 of the Coastal Act provides, in part, that:

> *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed … to be visually compatible with the character of surrounding areas ….*

The proposed project provides for the placement of new rock on an existing revetment to cover areas where the revetment is no longer providing protection for existing railroad tracks. The revetment is located on sandy beaches that are accessible to the public. As described above, the railroad company constructed

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[3] Results of Western Snowy Plover Survey for Repairs to Riprap along the Metrolink Railway in San Clemente, California (undated), p. 2.
[4] Untitled report describing grunion survey, April 10, 2003, p. 2.

these tracks in the late 1800s and constructed the revetment in the early 1900s. Thus, both the tracks and the revetment have been part of the visual landscape for many years. The proposed project will add a small amount of new rock to the existing revetment and will not change the visual character of the area. Therefore, the Commission finds that the project is consistent with the Visual Policy of the CCMP, specifically Section 30251 of the Coastal Act.

VI. Substantive File Documents

1. San Clemente Coastal Element, January 18, 1995.
2. Results of Western Snowy Plover Survey for Repairs to Riprap along the Metrolink Railway in San Clemente, California (undated).
3. Untitled report describing grunion survey, April 10, 2003.
4. Letter of approval from the U.S. Army Corps of Engineers, April 18, 2003.