

## CALIFORNIA COASTAL COMMISSION

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## STAFF REPORT AND RECOMMENDATION

### ON CONSISTENCY CERTIFICATION

Consistency Certification No.	CC-020-10
Staff	LJS-SF
File Date:	4/16/2010
3 Months:	7/16/2010
6 Months:	10/16/2010
Commission Meeting:	10/15/2010

**APPLICANT:**

**San Diego Association of Governments  
(SANDAG)**

**PROJECT  
LOCATION:**

Between 15<sup>th</sup> Street and the intersection of South Camino Del Mar  
and Carmel Valley Road, Del Mar, San Diego Co. (**Exhibits 1-4**)

**PROJECT  
DESCRIPTION:**

Construction of Del Mar Bluffs Railroad Track Stabilization  
Project 3

**SUBSTANTIVE  
FILE DOCUMENTS:**

See Page 25

**STAFF RECOMMENDATION:** Concurrence Motion is on Page 8

## **EXECUTIVE SUMMARY**

The San Diego Association of Governments (SANDAG) has submitted a consistency certification for implementing the Del Mar Bluffs Railroad Track Stabilization Project 3 along a portion of the existing North County Transit District (NCTD) railroad right-of-way in the City of Del Mar. The purpose of the project is to stabilize and preserve support for the existing NCTD railroad tracks by installing approximately 134 soldier piles (30- to 60-foot-deep underground reinforced concrete columns anchored in a relatively stable geologic formation) at up to six separate areas (totaling 1,060 linear feet) along the ocean-facing side of the railroad right-of-way that were not stabilized during implementation of similar Phase 2 work concurred with by the Commission in 2006 under CC-048-04. Bluff stabilization measures would only be installed in areas where existing bluff instability or erosion could potentially affect operation of the existing railroad track. The project objectives are: (1) preserve trackbed support along the railroad alignment for at least a 20-year period; (2) provide minimum recommended factors of safety; (3) maintain uninterrupted rail operations; and (4) preserve natural bluff areas as much as possible. The proposed action is the latest element of a multi-year and multi-phase approach to preserving the existing railroad trackbed, including previous Commission approval of trackbed stabilization and drainage improvement projects. Construction is scheduled to begin in the spring/summer of 2011, would occur primarily at night and early morning hours when train traffic is reduced, and would last approximately nine months.

The proposed project is similar to and is an extension of the soldier pile trackbed stabilization project conditionally concurred with by the Commission in 2006 under consistency certification CC-048-04. The conditions of approval for CC-048-04 were accepted by NCTD and SANDAG and incorporated into that project. SANDAG has confirmed in writing to the Commission that those applicable conditions are also incorporated into the proposed Stabilization Project 3. The proposed project includes commitments by SANDAG for annual monitoring and reporting of the condition of the soldier piles and grade beams for a period of three years, and then each third year following the last annual report for the life of the project (estimated by SANDAG to be 20 years).

With these commitments, the project can be constructed without adversely affecting the stability of the bluffs, the public beach at the foot of the bluffs, or railroad operations through this area. In addition, project implementation will not lead to double-tracking of the railroad through the Del Mar Bluffs area or serve as a hurdle to the eventual inland relocation of the track away from the bluffs, as SANDAG reported that the 2007 *Final LOSSAN Program EIR/EIS* eliminated any double track alternative along the Del Mar Bluffs. The project is necessary to protect an existing facility (the railroad tracks) from bluff erosion, is the least environmentally damaging feasible alternative for an interim (20 years) approach, and provides for future Commission review of future project elements or current elements that may become exposed over time. The project is consistent with the shoreline structures and geologic hazards policies of the California Coastal Management Program (CCMP)(Coastal Act Sections 30235 and 30253).

Most of the project elements would not be visible in the short term once construction is complete. The project includes elements to protect the visual resources of the Del Mar Bluffs, including Commission staff review of plans for exposed features (including materials, colors, monitoring, and maintenance plans), monitoring and reporting plans, and staging and construction plans, and possible Commission review of future stabilization measures (including installation of lagging structures (wooden beams between soldier piles)) not specifically authorized in this concurrence. With these commitments, the project can be implemented without adversely affecting visual resources in the project area, in particular, the views towards the Del Mar Bluffs from the beach and other public viewing areas. The project is consistent with the view protection policy of the CCMP (Coastal Act Section 30251).

The project will occur entirely within the existing railroad right-of-way and will not affect existing public access to or recreational use of the adjacent beach areas. SANDAG has committed to coordinate with the City of Del Mar regarding community noise issues raised during project construction. The project is consistent with the public access and recreation policies of the CCMP (Coastal Act Sections 30210, 30212, and 30252).

The project would not take place within or affect nearby wetland habitat. The project would create approximately 0.1 acre of temporary impacts on disturbed coastal bluff scrub due to establishment of a construction laydown/staging area. This area will be restored to pre-project conditions by reseeding with a native plant seed mix. Sensitive habitat and species protection measures incorporated into the project will ensure that installation of the trackbed stabilization structures will not create adverse effects on adjacent sensitive habitat areas. The project is consistent with the environmentally sensitive habitat policy of the CCMP (Coastal Act Section 30240). The project includes water quality protection measures, including preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) and best management practices to address construction-related erosion, soil stabilization, pollutant control measures, and monitoring and reporting plans. SANDAG has agreed to submit the SWPPP to the Commission staff for its review and concurrence prior to the start of project construction. The project is consistent with the water quality policy of the CCMP (Coastal Act Section 30231).

## **STAFF SUMMARY AND RECOMMENDATION:**

### **I. STAFF SUMMARY.**

**A. Project Description.** The San Diego Association of Governments (SANDAG) proposes to implement the Del Mar Bluffs Railroad Track Stabilization Project 3 along a portion of the existing North County Transit District (NCTD) railroad right-of-way in the City of Del Mar (**Exhibits 1-4**). Within this reach, the NCTD rail alignment runs along the top of coastal bluffs, which are 50 to 70 feet high above the beach. The railroad right-of-way (ROW) in this area varies between approximately 100 feet and 235 feet in width and in some places extends onto the beach below. The purpose of the project is to stabilize and preserve support for the existing NCTD railroad tracks by installing concrete soldier piles at up to six separate areas (totaling 1,060 linear feet) along the right-of-way that were not stabilized during implementation of

similar Phase 2 work concurred with by the Commission in 2006 under CC-048-04 (**Table 1**, below, and **Exhibits 3-10**). While SANDAG has identified ten areas of the Del Mar Bluffs that require stabilization due to inadequate factors of safety for slope stability, funding restrictions limit the proposed action to no more than six specific areas; depending on contractor bids received, fewer than the six proposed areas may be stabilized. The proposed Phase 3 work is similar to the Phase 2 work concurred with by the Commission in 2006 and would again use soldier piles to stabilize the six railroad trackbed areas. The project objectives are: (1) preserve trackbed support along the railroad alignment for at least a 20-year period; (2) provide minimum recommended factors of safety; (3) maintain uninterrupted rail operations; and (4) preserve natural bluff areas as much as possible.

<b>Table 1</b>					
<b>Proposed Stabilization Areas</b>					
Implementation			Implementation		
<u>Ranking</u>	<u>Length</u>	<u>Designation*</u>	<u>Ranking</u>	<u>Length</u>	<u>Designation*</u>
1	55 feet	SA-1	3	100 feet	SA-7
2	205 feet	SA-2	4	405 feet	SA-6S
3	135 feet	SA-4	4	160 feet	SA-9
			TOTAL	1,060 feet	

\* Designations are from “Del Mar Bluffs Stabilization Project 3 – Preserving Trackbed Support’s “Type Selection Report (David Evans and Associates 2010) and “Geotechnical Evaluation Update and Determination of Areas for Stabilization” (Leighton and Associates 2010). More than one stabilization area may share a given “Implementation Ranking.” “SA” stands for “Stabilization Area.”

Summaries of each of the six proposed stabilization areas, taken from the April 2010 Type Selection Report for the Del Mar Bluffs Stabilization Project 3, are presented in **Exhibits 11-16**.

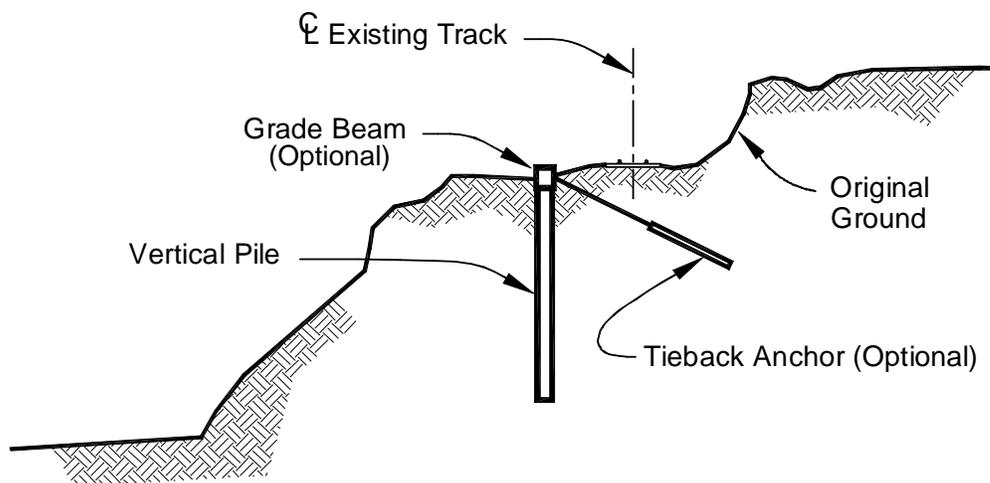
The soldier piles would typically be installed 11 to 15 feet from the centerline of the railroad track; neither expansion of the ROW nor construction outside the ROW would be necessary. This section of the ROW corresponds to NCTD railroad mileposts 244.1 to 245.7. Bluff stabilization measures would only be installed in areas where existing bluff instability or erosion could potentially affect operation of the existing railroad track. However, due to funding limitations and depending on SANDAG’s review of contractor bids for the project, less than 1,060 feet of bluff stabilization may be undertaken.

The consistency certification next describes the use of soldier piles to stabilize the trackbed:

*The proposed action would use soldier piles to improve bluff stability. Soldier piles are essentially underground, reinforced concrete columns. Spacing the soldier piles along a bluff provides improved support, provided that the soldier piles are anchored in a relatively*

*stable geological formation. For the proposed action, soldier piles, each approximately 30 to 36 inches wide, would be spaced approximately 10 feet on center (i.e., ten feet from the center of one pile to the center of the next) to create a “soldier pile wall.” The spacing of individual piles may vary by a few feet in either direction based on site-specific conditions (such as the need to avoid drilling through existing trackside facilities or drainage structures). Based on the extent of proposed bluff stabilization and the average 10-foot spacing, up to approximately 134 piles may be installed. For each of these areas, bluff stabilization would occur on the west (ocean-facing) side of the track.*

*The soldier piles would be 30 to 60 feet in depth, which would allow the piles to be anchored in the relatively stable Delmar geologic formation. Additional bluff stabilization may be provided through the installation of a grade beam at the top of the soldier pile wall. A grade beam is a beam that connects the top of one soldier pile to the next, creating a “cap” along the top of the wall. This grade beam would be constructed of reinforced concrete. In some locations it also may be necessary to further increase the stability provided by a soldier pile wall through the use of tie-backs, which anchor the grade beam and soldier pile into the slope with grouted steel bars. The extent of tie-backs that would be used would not be determined until final design. A typical cross-section of the proposed soldier piles, including a grade beam and tie-backs, is shown below.*



**Typical Cross Section**

The installation of the proposed soldier piles includes the following steps: (1) drill 30- or 36-inch diameter hole; (2) install steel reinforcement bars or beams into the holes; and (3) fill hole with concrete. SANDAG states that these steps would be repeated as necessary until the appropriate number of piles is installed and (if applicable) the piles are covered with a grade beam and/or tied-back to the bluff. Additional soldier pile installation tasks would include site preparation and clean-up. The selected contractor would be responsible for disposing of excavated material

off site at an appropriate location such as a landfill or construction site (it is probable that the excavated material will be suitable for use as construction fill).

SANDAG has determined that installation of soldier piles is most likely infeasible during periods of active rail use (daytime hours) and that most construction activity will occur at night and early morning hours when train traffic is much lower than during the day. In order to avoid rail traffic (e.g., freight trains, *Pacific Surfliner*, and the *Coaster*), installation would occur between 12:00 a.m. and 5:30 a.m. each weekday morning. If NCTD buses evening passengers around the Del Mar Bluffs, installation could start much earlier, extending from approximately 9:30 p.m. until 5:30 a.m. the following morning (with some minor interruptions for nighttime freight trains). Currently, SANDAG anticipates that if busing is used, it would occur on Monday, Wednesday, and Thursday evenings.

SANDAG estimates that up to three drill crews may be operating concurrently. It is projected that each drill crew could install at least one soldier pile per 5½-hour shift and at least two piles per 8-hour shift. For safety and constructability reasons, soldier pile holes would be filled each night (i.e., soldier pile holes would not be left open during the day). The progress of soldier pile installation could be affected by several factors such as subsurface geologic conditions, weather, equipment maintenance and repair requirements, and rail traffic levels.

SANDAG estimates that project construction would last approximately seven months, depending on whether busing is used to allow up to three 8-hour shifts per week. Up to one additional month of mobilization (e.g., bringing supplies and equipment to the site, setting up a construction trailer, placing temporary rubber track crossing panels across the railroad track) and up to one additional month of demobilization (e.g., site clean up, removing equipment) may be required. Locations of construction access, laydown, and staging areas are illustrated in **Exhibits 17-20**. Accordingly, the overall construction schedule is estimated at up to approximately nine months. This represents SANDAG's and NCTD's best estimate, and it may take the selected contractor slightly more or less time to install the soldier piles. If fewer than 134 piles are installed, there would be a corresponding reduction in the overall construction schedule. Project construction is currently scheduled to commence in the spring/summer of 2011.

**B. Background.** SANDAG states in its consistency certification that:

*The coastal bluffs supporting NCTD's rail alignment in the City of Del Mar are subject to ongoing erosion and failures that could threaten the viability of rail service. It is critical that a means of stabilizing the bluffs and preserving the trackbed support be implemented in order to maintain the use of the existing railroad track. This track is part of the Los Angeles to San Diego (LOSSAN) rail corridor and represents the only operating rail link to southern San Diego County. The NCTD-owned and operated railroad tracks are used by commuters (on NCTD's Coaster), inter-city and long-distance travelers (on Amtrak's Pacific Surfliner) and freight trains (Burlington Northern and Santa Fe Railway). Loss of this rail link would*

*have devastating social and economic impacts to the region. Furthermore, NCTD is required by the terms of a Shared Use Agreement with Amtrak and Burlington Northern and Santa Fe Railway Company to “efficiently maintain its rail line for both interstate and intra-state rail traffic.”*

Approximately 46 passenger trains per day traverse the section of track within the project area and in terms of ridership, the LOSSAN corridor is Amtrak’s second busiest inter-city rail corridor in the nation. In addition to passenger rail, eight freight trains operated by Burlington Northern and Santa Fe Railway typically travel this section of track daily, carrying several million tons of freight each year.

The proposed action is the latest element of a multi-year and multi-phase approach to preserving the existing railroad trackbed. To date, SANDAG and NCTD have completed field investigations and geotechnical studies, characterized the nature and cause of bluff erosion, identified and prioritized areas in need of stabilization, developed stabilization alternatives, and completed several stabilization-related construction projects:

- In CDP 6-96-156, the Commission authorized the installation of 24 soldier piles at 13<sup>th</sup> Street, including visual treatment for the top of the exposed piles so that the project would blend in with the surrounding terrain.
- In 1998 approximately \$1.8 million in drainage improvements were constructed within the project limits.
- In CDP 6-01-081, the Commission authorized the installation of 12 soldier piles between 7<sup>th</sup> and 8<sup>th</sup> Streets, including conditions requiring erosion controls, best management practices, annual reporting, and Commission staff review of staging and construction plans, monitoring and maintenance plans, and the use of materials and colors.
- In 2003 additional surface and subsurface drainage improvements were made within the project limits and a landslide warning system was installed within designated “high priority” areas. These drainage improvements were part of the first Del Mar Bluffs Stabilization Project.
- In 2008 SANDAG completed the Del Mar Bluffs Stabilization Project 2 (CC-048-04), which included the installation of concrete soldier piles along approximately 1,326 feet of the bluffs.

**C. Procedures – Permitting Issues.** Subsequent to the issuance of the aforementioned CDP 6-01-081, NCTD took the procedural position that based on a decision by the federal Surface Transportation Board, NCTD is not required to obtain coastal development permits for track improvements and is only subject to federal consistency review for such projects. Accordingly, for the Del Mar Bluffs Stabilization Project 2, NCTD submitted a consistency certification (CC-048-04) to the Commission in 2004 for that project. The Commission concurred with the consistency certification in February 2006 but restated its contrary position that the project was

subject to the permitting requirements of the Coastal Act. SANDAG, which has assumed a number of responsibilities over NCTD activities, including the proposed Phase 3 of the Del Mar Bluffs Stabilization Project, currently holds to the same jurisdictional position previously taken and still held by NCTD.

Notwithstanding the jurisdictional position taken by SANDAG and NCTD, the Commission still holds to its long-standing position that railroad projects in the LOSSAN corridor sponsored by SANDAG and NCTD, including the proposed project, are subject to the permitting requirements of the Coastal Act. The Commission notes that the North County Transit District (NCTD, the applicant for previous phases of the Del Mar Bluffs Stabilization Project (see CC-048-04, CDP 6-01-081, and CDP 6-96-156)) has applied for a number of other coastal development permits for its rail improvement activities in other sections of the coast, including CDP's No.: 6-03-102-G (Agua Hedionda emergency repairs), 6-02-152 (San Luis Rey River bridge repair), 6-02-151 (Agua Hedionda bridge), 6-02-102 (Del Mar drainage outlets), 6-02-80 (Santa Margarita Bridge repair), 6-01-64 (Balboa Avenue), 6-01-108 (Tecolote Creek), 6-97-062 Del Mar drainage improvements), 6-93-60 (Del Mar), 6-94-207 (Solana Beach), 6-93-106 (Carlsbad), and 6-93-105 (Camp Pendleton).

All three agencies agree, however, that the proposed project triggers federal consistency review because it involves federal funding. Notwithstanding this disagreement about whether a coastal development permit is needed, the Commission concurs with this consistency certification because it is consistent with the Coastal Act.

**D. Applicant's Consistency Certification.** SANDAG has certified that the proposed activity complies with California's approved coastal management program and will be conducted in a manner consistent with such program.

## **II. STAFF RECOMMENDATION:**

The staff recommends that the Commission adopt the following motion:

**Motion:** I move that the Commission **concur** with SANDAG's consistency certification CC-020-10 that the project described therein is fully consistent with the enforceable policies of the California Coastal Management Program.

### **Staff Recommendation:**

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

### **Resolution to Concur with Consistency Certification:**

The Commission hereby **concurs** with the consistency certification made by SANDAG

for the proposed project, finding that the project is consistent with the enforceable policies of the California Coastal Management Program.

### **III. Findings and Declarations:**

The Commission finds and declares as follows:

**A. Shoreline Structures/Geologic Hazards.** Section 30235 of the Coastal Act provides, in part:

*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.*

Section 30253 provides that new development shall:

- (1) Minimize risks to life and property in areas of high geologic, flood and fire hazard.*
- (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.*

SANDAG reports that the coastal bluffs supporting the rail alignment in the project area have a history of landslides and surficial failures, and that the bluffs are subject to ongoing erosion and failures that could threaten the viability of railroad service. As noted previously in this report, several construction projects have been completed in a phased approach to stabilize the trackbed. Most recently, the Del Mar Bluffs Stabilization Project 2 was completed in 2008 and included installation of a soldier pile stabilization system in identified high-priority areas of the Del Mar Bluffs. The Commission concurred with this project in consistency certification CC-048-04 in February 2006. The proposed project, Del Mar Bluffs Stabilization Project 3, is a continuation of the work undertaken in Project 2, and includes the installation of similar stabilization measures in the project area intended to preserve trackbed support and maintain the viability of rail operations for the next 20 years. SANDAG identified ten stabilization areas to be considered for implementation in Project 3, but due to funding constraints is only proposing in this consistency certification to install stabilization measures at six areas (**Exhibits 3 and 4**).

SANDAG submitted with its consistency certification the *Geotechnical Evaluation Update and Determination of Areas for Stabilization* (Leighton, April 2010) which: (1) updated the geotechnical evaluation of the Del Mar Bluffs in those areas not mitigated by Project 2; (2) updated the previous geotechnical evaluation reports for the project area (published in 2001 and 2003); and (3) identified and prioritized ten distinct stabilization areas of the bluff that are currently in need of mitigation due to inadequate factors of safety for slope stability. This report

also identified three potential alternatives for the stabilization work, including a soldier pile wall, soil nail reinforcement, and soil cement buttress. SANDAG also submitted with its consistency certification the *Type Selection Report* (David Evans and Associates, April 2010) that documents the selection of an alternative to stabilize each of the existing high-priority areas and provides a preliminary cost estimate for the project.

The February 2006 Commission staff report and recommendation for the Phase 2 project (CC-048-04) reviewed NCTD's aforementioned 2001 *Geotechnical Study* which characterized the nature and cause of bluff erosion in the project area, identified and prioritized areas in need of stabilization, and reviewed stabilization alternatives. The study concluded that the bluffs are subject to failure due to inadequate lateral support, storm wave action, and significant seismic activity, with further contributions from groundwater seepage and inadequate surface drainage. The study recommended removing groundwater from the bluffs to improve their stability; however, the report noted that even under drained conditions, efforts to provide lateral support and protect the existing support would still be necessary.

The February 2006 CC-048-08 staff report noted that the Phase 2 project raised a number of questions about:

*. . . alternatives, long term plans (both in terms of the soldier piles themselves, and the tracks they have been designed to support), visual impact, sand supply, and several other issues. Most fundamentally, the inevitable continuing erosion of the bluffs may make retention of the rail line in this right-of-way infeasible in the long term, and will certainly result in further exposure of the piles in the intermediate term. Accordingly, significant questions raised by the project include:*

- (1) What will happen when the buried soldier piles become exposed?*
- (2) Will installing the piles into the bluff preclude options for long-term solution?*
- (3) In the event the long-term plan is to relocate the tracks, will the piles be removed?*
- (4) If so, when and how will they be removed, and can they be removed without further destabilizing the bluff?*

To address these questions, the Commission attached the following conditions to its concurrence with consistency certification CC-048-04, conditions which NCTD (and SANDAG, which was at that time assuming a number of responsibilities over NCTD projects) subsequently accepted and incorporated into the Phase 2 project:

***Future Soldier Pile/Grade Beam Exposure Plans.*** *In the event any project features initially proposed for burial but which subsequently become exposed to public view from the public beach below the site, NCTD shall submit plans to the Executive Director, for his review and concurrence, that provide for visual and aesthetic treatment plans similar to those required by the Commission in CDP 6-01-081 (see Exhibit 8). The aesthetic treatment shall provide that exposed materials match the surrounding terrain to the extent feasible and minimize visual impact of the exposed features. The review process shall provide for Commission staff review of materials, colors, monitoring, and maintenance plans.*

**Annual Reporting.** *NCTD shall provide for annual monitoring and reporting, consisting of an annual evaluation of the condition and performance of the soldier piles and grade beams, addressing whether any exposure and/or significant weathering or damage has occurred that would render them visible from the public beach or would adversely affect the future performance of the piles. This evaluation shall include an assessment of the color and texture of the soldier piles and grade beams, comparing the appearance of the structures to the surrounding native bluffs. The annual report shall be submitted to the Executive Director by May 1 of each year (beginning the first year after construction of the project is completed) for a period of three years, and then each third year following the last annual report, for the life of the project. In addition, reports shall be submitted in the Spring immediately following a major storm event or major earthquake (e.g., earthquake of magnitude 5.5 or greater with an epicenter in San Diego County or offshore).*

**Agreement with City of Del Mar.** *NCTD shall memorialize its agreement with the City of Del Mar by incorporating the measures agreed to in its letter dated December 2, 2005 (Exhibit 7), as modifications to the project for purposes of Coastal Commission federal consistency review. Briefly, these agreements include commitments that NCTD and SANDAG will: (1) continue to coordinate with the City and investigate any new stabilization technologies which may become available in any future stabilization effort; (2) further investigate alternatives (including the possible use of seawalls, and augmenting existing seawalls and re-compacting fill slope) in any future stabilization effort; (3) use colored concrete matching the surrounding bluffs; (4) apply the aesthetic treatment to exposed grade beams; (5) address encroachment permits and community noise issues raised by the City; and (6) based on a future study, agree to remove all visible concrete (which may include seawalls and/or pilings) when the tracks are relocated off the bluffs.*

**Future Lagging of Exposed Piles.** *NCTD understands and agrees that any future lagging proposals are not specifically authorized in this conditional concurrence, but rather will need to be submitted to the Commission staff for its review and concurrence prior to installation (or in the event of an emergency, as soon as possible after installation). NCTD further understands that Commission staff review may entail analysis of visual effects, alternatives, and possible effects on sand supply, and may, if the Commission staff believes warranted, entail additional Commission-level public hearings and review.*

**SANDAG.** *SANDAG shall agree to be a co-applicant with NCTD for purposes of compliance with the commitments and conditions described in this report.*

With these conditions, the Commission found that the Phase 2 project (necessary to protect an existing facility – the rail line – from bluff erosion) was the least environmentally damaging feasible alternative for an interim (20 year) approach to trackbed stabilization, provided for future Commission review of future project elements or current elements that may become exposed, and would be consistent with the shoreline structures and geologic hazards policies of the Coastal Act.

SANDAG states that the proposed Phase 3 project is a continuation of the Phase 2 stabilization work previously concurred with by the Commission, that the proposed project includes elements

and commitments contained in the aforementioned conditions from the Phase 2 consistency certification (CC-048-04), and that the updated geotechnical reports confirm that the proposed soldier piles continue to be the preferred and least environmentally damaging alternative to stabilize the trackbed. The April 2010 *Geotechnical Evaluation Update* report concluded that:

*The slope stability analysis included within this report demonstrates which areas of this critical link within the LOSSAN corridor do not currently meet the project criteria for factor of safety and where stabilization is warranted. The conceptual repair alternatives presented in Part 2 of the Geotechnical Survey (2001a) have been further evaluated to define which alternatives meet the project needs and objectives. Those alternatives that meet the project needs have been considered in the stabilization alternatives presented in Section 6 of this report.*

*Through a substantial amount of additional slope stability analysis, areas have now been grouped into Stabilization Areas of like soil and geologic conditions which have then been prioritized with an Implementation Ranking Number based on the calculated factor of safety. This additional analysis has reaffirmed the need for stabilization within the areas defined by the Geotechnical Study (2001a). The analysis also provides for the selection of improvements to the areas with the greatest need at this time. Options for the repair/stabilization of the areas that meet the goals of this project have been reviewed and suggested on a site specific basis.*

The April 2010 *Type Selection Report* evaluated the three potential trackbed stabilization alternatives – soldier piles, soil cement buttress, and soil nail reinforcement – for constructability, construction cost, and environmental considerations (including visual resources, noise, biological resources, recreation, and coastal processes). The report concluded that of the project alternatives evaluated:

*. . . the soldier pile wall alternative is rated “best” with regard to environmental considerations. The identification of this as the environmentally preferable alternative reflects the soldier pile walls’ comparatively low visibility and that it would have the smallest footprint of disturbance, would not alter the face of the bluffs, would neither require the use of the beach during construction nor result in a long-term reduction of usable beach area, and would not directly affect coastal processes . . .*

However, the Commission staff reviewed the consistency certification and associated documents submitted by SANDAG for the Phase 3 project, and subsequently provided SANDAG with a list of questions regarding the project. The following are those questions dealing with geologic hazards, the life of the project, and alternatives to trackbed stabilization and SANDAG’s responses (*in italics*):

- The life of the project is 20 years. What happens afterwards regarding trackbed stabilization?

*The answer to this question will depend on the status of the railroad tracks and associated regional transportation plans in 20 years. This is because the regional transportation plan calls for relocating the track inland into a tunnel, which would cancel the need for additional trackbed stabilizations. However, it is possible that the soldier piles may continue to provide bluff stabilization benefits beyond 20 years as design life precision is difficult in a dynamic environment affected by coastal erosion. It also may be possible to extend the life of the bluff stabilization, if such stabilization is required and warranted by the continued operation of rail service across the bluffs. This could be done by the addition of tiebacks to the project installed soldier piles or the installation of some other stabilization method. Design life is based on average bluff retreat and additional stabilization measures could be required if the track is to remain in service past the design limit.*

- No alternatives to stabilizing the trackbed in-place were examined, including relocating the track inland. Why not?

*Relocating the track inland is part of the long-term plan in SANDAG's 2030 regional transportation plan; however, there is an immediate need to stabilize the bluffs that underlie the railroad track across the Del Mar Bluffs (see comment/response No. 5, below). Relocating the tracks inland will be an enormously complex and expensive undertaking and will take many years to design, evaluate, permit, fund, and construct. Given the lengthy timelines involved, plans to ultimately relocate the tracks inland would not alleviate the immediate need to provide trackbed support through the stabilization of the Del Mar Bluffs.*

- Can the soldier pilings be removed if/when the rail line is relocated inland?

*Yes, the soldier piles could be removed if and when the rail line is relocated inland. Note that as part of the conditions for CC-048-04, SANDAG and NCTD agreed that when the environmental document for the removal of the tracks along the Del Mar Bluffs is prepared, as a portion of the project, the document will examine the removal of all visible concrete piling and in-fill walls.*

- While we understand there is a general pattern of bluff erosion here, is there an imminent threat of trackbed failure?

*Bluff instability is an ongoing problem that could affect rail service at any time. The coastal bluffs supporting the trail alignment have a documented history of landslides and surficial failures; however, there is no accurate method to predict when bluff failures will occur. The bluffs are subject to continuous erosion and recurrent failures. These bluff failures threaten the viability of the rail alignment. Consequently, slope stability analysis has been performed for the bluffs supporting the rail to determine a factor of safety. Those areas having less than the minimum acceptable factor of safety are identified as in need of trackbed support.*

- Document the success of Phase 1 drainage improvements and explain why an expanded drainage improvement program is not a viable alternative to additional soldier pilings.

*The success of Project 1 drainage improvements is documented by the (unquantified) volumes of storm water and groundwater that can be observed discharging from the Project 1 facilities. Note that drainage improvements alone do not provide the needed bluff stabilization. As part of the evaluation of Del Mar Bluffs Stabilization Project 2, the geotechnical engineers for the project evaluated the stability of the bluffs using the assumption that all groundwater was effectively eliminated by the Project 1 improvements. Even making that unrealistically optimistic assumption, the identified bluff stabilization was still required.*

- Analyze potential future impacts to the beach (e.g., beach erosional supply and sand nourishment) that might result from a hardening of the bluffs via the proposed stabilization project.

*The soldier piles only support the bluff/tracked to the east. As such, there would be essentially no hardening of the bluffs to the west and the bluffs would likely continue to erode at a rate that would occur in the absence of the bluff stabilization project. Consequently, until the bluff erosion reaches the soldier piles, there would be no effect to beach erosional sand supply. It should be noted that for 520 feet of the total 1,060 feet of the proposed action, the projected limits of 20-year erosion of the bluff will not reach the soldier piles. Of the remainder, the limit of erosion is not expected to extend east of 405 feet of the proposed soldier piles.*

*In addition, though the relative contributions of bluff erosion attributed to weathering of the bluff, geotechnical instability of the bluff, and wave-induced erosion at the toe are unknown, it is assumed that the largest contribution of bluff erosion is due to weathering and wave-induced erosion. Since construction of the soldier pile alternative would not affect the bluff face, weathering and wave-induced erosion of the bluff would continue as a natural process.*

*Also, the position of the shoreline would not be fixed under the soldier pile alternative, so no substantial passive erosion effects would be anticipated to occur. Since the bluff face would not be altered, modification of the near shore wave environment and impacts attributed to active erosion would also not be anticipated to occur under this alternative.*

- Are there plans to double track the rail line along the current alignment and/or is SANDAG pursuing tunnel options as an alternative to double tracking in this area?

*The Final LOSSAN Program EIR/EIS 2007 document eliminated any alternative to double track the alignment along the bluffs. Two tunnel options are being evaluated, both along new alignments: 1) under Camino del Mar, and 2) under Interstate 5. As such, SANDAG is not pursuing double-tracking across the bluffs. Any tunneling to bypass the bluffs would be associated with the long-term relocation of the tracks (see comment/response No. 2); if a tunnel is ultimately constructed, it would likely be under Camino del Mar or Interstate 5.*

The proposed project is similar to and is an extension of the soldier pile trackbed stabilization project conditionally concurred with by the Commission in 2006 under consistency certification

CC-048-04. The conditions of approval for CC-048-04 were accepted by NCTD and SANDAG and incorporated into that project. SANDAG has confirmed in writing to the Commission that those applicable conditions are also incorporated into the proposed Stabilization Project 3. The proposed project includes commitments by SANDAG for annual monitoring and reporting of the condition of the soldier piles and grade beams for a period of three years, and then each third year following the last annual report for the life of the project (estimated by SANDAG to be 20 years).

SANDAG has also committed to examine, in the monitoring report that would be prepared at the end of year 18, the issue of what will happen to the various project structures at the end of their project life. If at that time the aforementioned railroad track inland relocation project is progressing towards near-term implementation, then the monitoring report would discuss plans for removal of soldier piles and other track structures from the bluffs. However, if at that time it is clear that the relocation project will not be constructed in the foreseeable future, then the report would discuss continued maintenance of the trackbed and support structures beyond the end of the 20-year period, possible future stabilization work that may be needed at this location, and the need for federal consistency and/or coastal development permit action by the Commission for additional trackbed stabilization work. The objective would be to provide the Commission with solid information about the bluff structures approved under this consistency certification as they approach the end of their currently-predicted project life.

In addition, should any project features proposed for burial become exposed to public view from the beach, SANDAG has agreed to submit treatment plans to the Executive Director that will include provisions for Commission staff review of treatment materials to be used and of follow-up monitoring and maintenance plans. Any future proposals by SANDAG for stabilization structures not specifically described in this consistency certification – including new structures that are determined necessary to maintain the proposed structures – will require Commission approval of a new consistency certification or coastal development permit prior to implementation.

With these commitments, the project can be constructed without adversely affecting the stability of the bluffs, the public beach at the foot of the bluffs, or railroad operations through this area. In addition, project implementation will not lead to double-tracking of the railroad through the Del Mar Bluffs area or serve as a hurdle to the eventual inland relocation of the track away from the bluffs as SANDAG reported that the 2007 *Final LOSSAN Program EIR/EIS* eliminated any double track alternative along the Del Mar Bluffs. The Commission concludes that the project is necessary to protect an existing facility (the railroad tracks) from bluff erosion, is the least environmentally damaging feasible alternative for an interim (20 years) approach, provides for future Commission review of future project elements or current elements that may become exposed, and would be consistent with the shoreline structures and geologic hazards policies of the CCMP (Coastal Act Sections 30235 and 30253).

**B. Public Views.** Section 30251 of the Coastal Act provides:

*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 protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.*

SANDAG examined in the consistency certification the potential impacts to visual resources from installation of the proposed soldier pile stabilization project:

*The proposed action would consist of structural elements installed almost completely below grade (i.e., underground), with limited surface visibility. In addition, concrete would be colored to help match the color of the existing bluffs, and native material would be used to backfill holes and trenches not filled with concrete, further helping to minimize the visibility of the soldier piles and grade beams. The portion of a soldier pile wall that might be visible would be the tops of the piles or the grade beam. In most areas, these would be at or close to the existing ground level, leaving only the very top of the piles or grade beam exposed. In some locations, up to approximately three feet of the concrete grade beam might be exposed on its west side.*

*Views to the top of the soldier pile wall from inland areas (such as public streets or private yards) would be intermittent. Although the tops of the piles or grade beam could be potentially visible from these areas, they would not draw viewers' attention because the soldier pile wall would be parallel to the existing railroad tracks (which include the rails, ties, and ballast rock) and because most views would be directed toward the beach and/or ocean, not the NCTD ROW. Views to the top of the soldier pile wall from residences/back yards inland of the ROW would, for the most part, be obstructed by intervening topography. Views from these residences/back yards would also primarily be directed toward to ocean, not the railroad ROW.*

*The tops of the piles or the grade beam may be visible by passengers on passing trains (such as Pacific Surfliner or the Coaster), but only for extremely short periods of time for any given passenger and probably only for passengers on the trains' lower levels. With regard to beach-goers, the potential for views to soldier pile walls would depend on the specific stabilization site and the bluff topography between that site and the beach. In general, however, views from the beach to the top of the soldier pile wall would be obstructed by topography.*

*If no future actions are taken to prevent erosion, it is probable that some portion of the soldier piles ultimately would be exposed. Given the variability of factors involved in erosion, it would be highly speculative to state when and where sections of the soldier piles could be exposed in the future. The specific actions that would be taken should a section of soldier piles be exposed by erosion would be determined when and if the piles are exposed, taking into account the location, nature, and extent of the exposure. As noted above,*

*coloring would be added to the concrete during soldier pile construction to help any exposed piles better blend in with the surrounding native bluff material. Other measures that might be considered when soldier pile walls become exposed could include attaching a sandstone facing (similar in appearance to the native Bay Point and/or Delmar geologic formations, as applicable) to the piles.*

*Based on these factors, it is expected that the proposed action's visual impacts would be consistent with Coastal Act policies (Section 30251) calling for permitted development to be sited and designed "to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas."*

After reviewing the consistency certification and associated documents submitted by SANDAG for the Phase 3 project, the Commission staff asked SANDAG for additional information on visual impact mitigation (beyond coloring the concrete during installation of pilings) should the soldier piles become exposed over time due to bluff erosion or failure. SANDAG responded as follows:

*In the event that the soldier piles become exposed over time (e.g., erosion), it likely will be necessary to install lagging between the exposed piles in order to preserve trackbed support. In such an event, the visual impact of the lagging would be assessed and, if warranted, aesthetic treatments would be applied to minimize visual impacts.*

*The visual effect of the exposed soldier piles also would be addressed at such time. Given the speculative nature of any future soldier pile exposure (e.g., location, extent), it is not possible to describe how the exposure would look and what effect, if any, it would have on views to the bluffs from the beach, offshore or inland viewpoints. Barring a major slope failure and/or substantial erosion seaward of the piles, however, the exposed piles would be expected to have a relatively minor visual effect due to the following:*

- *The concrete used to construct the soldier piles will be colored to approximately match the natural sandstone of the bluffs. This will not be an exact match, in large part because of the natural variations in sandstone color along the bluffs. Nonetheless, the use of colored concrete will help minimize contrasts between exposed piles and the bluff, especially when viewed from a distance.*
- *The concrete will be poured into holes drilled into the sandstone without the use of forms. As a result, the concrete will not be smooth; rather, it will have an irregular (and therefore somewhat more natural-appearing) surface. Additionally, the wet concrete should, to a degree, bond with and absorb some of the color of the surrounding sandstone.*
- *The exposed piles would be near the top of the bluff, along the railroad right of way. Pile exposures in this location may be difficult to see from the beach below or from inland locations (due to topography). From offshore, exposed piles would be viewed*

*together with the extensive development along the bluff top and the existing manmade features along the bluff base (e.g., seawalls and drainage structures), thereby minimizing the extent to which the piles would contrast with their surroundings.*

*In summary, soldier piles exposed in the future would be evaluated and, if necessary, given aesthetic treatment concurrently with any necessary lagging. For the reasons described above, however, SANDAG envisions that the visual effects of the exposed piles may be minor and not require special treatment.*

The Commission agrees with SANDAG that most of the project elements would not be visible in the short term, once construction is complete. The proposed project is similar to and is an extension of the soldier pile trackbed stabilization project conditionally concurred with by the Commission in 2006 under SANDAG's consistency certification CC-048-04. The conditions of approval for CC-048-04 were accepted by NCTD and SANDAG and incorporated into that project. SANDAG has confirmed in writing that those applicable conditions are also incorporated into the proposed Stabilization Project 3, including conditions specifically addressing protection of visual resources. Those conditions required Commission staff review of plans for exposed features (including materials, colors, monitoring, and maintenance plans), monitoring and reporting plans, and staging and construction plans, and possible Commission review of future stabilization measures (including installation of lagging structures (wooden beams between soldier piles)) not specifically authorized in this concurrence. With this commitment, the project can be implemented without adversely affecting visual resources in the project area, in particular, the views towards the Del Mar Bluffs from the beach and other public viewing areas.

With the aforementioned project elements and commitments made by SANDAG, the Commission finds that the project provides for future Commission review of future project elements or current elements that may become exposed, to enable appropriate aesthetic treatment, and would minimize alteration of natural landforms, protect public views, be compatible with the surrounding area, and would thus be consistent with the view protection policy of the CCMP (Coastal Act Section 30251).

**C. Public Access and Recreation.** Section 30210 of the Coastal Act provides:

*Section 30210. 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 30212 provides that access should not be provided where it would be inconsistent with public safety, military security needs, or the protection of fragile coastal resources. Section 30252 encourages public transit and identifies reducing traffic congestion as a coastal access benefit, providing, in part, that:

*The location and amount of new development should maintain and enhance public access to the coast by (1) facilitating the provision or extension of transit service . . .*

Concerning public access and recreation, the consistency certification states that:

*The proposed action conforms to the public access objectives of the California Coastal Act because it would occur within an existing ROW and would not affect the beach access. Legal access routes to the beach would be maintained during construction. NCTD's existing, safety-driven prohibition on public access along its ROW may be more strictly enforced during soldier pile construction because of the increased presence of NCTD staff during this period. This temporary change would not have a significant effect on, or be inconsistent with Coastal Act policies regarding, beach access.*

*The proposed action would occur within an existing ROW and would not directly affect the nearby beach. Construction noise impacts would be relatively short term, and would not significantly affect recreational use of the beach. As discussed in Section 3 of this document, it is assumed that most of the construction activities would occur at night or in the early morning. This time of day generally represents a low use period for recreational uses. In addition, beach users also would have the flexibility in selecting a section of beach away from active, bluff-top construction.*

In addition, SANDAG has committed to coordinate with the City of Del Mar regarding community noise issues raised during project construction. Given the analysis in the consistency certification, and with project elements assuring that construction activities and staging areas will not affect public access and will minimize visual impacts (which have the potential to adversely affect the quality of the recreational experience at the beach), the Commission agrees with SANDAG and finds that the project would not adversely affect public access and recreation and would be consistent with the public access and recreation policies of the CCMP (Coastal Act Sections 30210, 30212, and 30252).

**D. Environmentally Sensitive Habitat Areas.** 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.*

SANDAG states in its consistency certification that within the railroad ROW, the area below and immediately adjacent to the railroad tracks has low biological resource sensitivity. For operational and safety reasons, the train tracks are laid on a bed of crushed rock that nearly

excludes all plant growth, and the area directly adjacent to the tracks is maintained to be kept free of weeds. Further from the tracks, however, the ROW supports a variety of habitat types and vegetation communities. The project area has been the subject of two previous biological resource studies: *Del Mar Bluff Stabilization Project 1 Biological Report* (MEC Analytical Systems, Inc., 2001), and *Del Mar Bluffs Stabilization Project 2 – Preserving Trackbed Support, Biological Resources Report* (Helix Environmental Planning, Inc., 2004). SANDAG submitted with its consistency certification a *Biological Resources Technical Report Update* prepared in December 2009 by Helix Environmental Planning, Inc., which provides updated information on biological resources in the project area and the sensitivity of those resources to potential project impacts.

The consistency certification, which includes measures that SANDAG has incorporated into the proposed project to separate construction activities from nearby sensitive habitats, contains the following discussion of habitat issues:

*The update to the biology technical report prepared for the proposed action (Helix 2009) identified 15 habitat types in the vicinity of the proposed bluff stabilization areas, some of which also exist as disturbed phases: salt grass grassland, coastal bluff scrub (including disturbed), non-native vegetation, Diegan coastal sage scrub (including disturbed), Torrey pines forest, freshwater marsh (including disturbed), mule fat scrub, beach, giant reed<sup>1</sup>, unvegetated bluff, cismontane alkali marsh (including disturbed), disturbed wetland, tamarisk scrub, disturbed habitat, and developed.*

*Of these habitats, 10 are considered sensitive: salt grass grassland, coastal bluff scrub (including disturbed), Diegan coastal sage scrub (including disturbed), Torrey pines forest, freshwater marsh (including disturbed) mule fat scrub, cismontane alkali marsh (including disturbed), tamarisk scrub, disturbed wetland, and giant reed area. Saltgrass grassland, coastal bluff scrub, Diegan coastal sage scrub, and Torrey pines forest are considered sensitive because they are highly restricted in extent and support sensitive plant and animal species. Freshwater marsh and cismontane alkali marsh are considered the most sensitive wetland communities, followed by mule fat scrub (see discussion under Article 4, above, regarding wetlands). In addition, tamarisk scrub, disturbed wetland, and giant reed area, while dominated by non-native species, are often associated with wetlands or waters of the United States that are subject to the jurisdiction of the U.S. Army Corps of Engineers pursuant to Section 404 of the federal Clean Water Act.*

*One sensitive plant species, southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), was observed in the study area and is supported by the cismontane alkali marsh community. No other sensitive plants were observed in NCTD's ROW, and it is likely that the highly*

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<sup>1</sup> The giant reed (*Arundo donax*) stands within the ROW are being actively eradicated by NCTD as part of an exotic species removal plan as mitigation for Del Mar Bluffs Project 1.

*disturbed nature of the proposed stabilization areas precludes the presence of other sensitive plant species.*

*Similarly, although sensitive wildlife species such as the federal-listed endangered California brown pelican (*Pelecanus occidentalis californicus*) have been observed in the area, no sensitive wildlife species are expected to utilize the areas that would be directly affected by construction of the proposed action due to their disturbed nature. Coastal California gnatcatcher (*Poliopitila californica californica*) may be present in Diegan coastal sage scrub habitat located near SA-7 and SA-9, and raptors may nest in trees along or adjacent to much of the ROW.*

*Construction of the proposed action would occur on the western side of the ROW between the tracks and the beach. Construction would directly affect up to approximately 0.1 acre of native habitat and up to approximately 2.1 acres of non-native, disturbed, or developed habitat, for an approximate total impact of up to 2.2 acres. An unquantified amount of disturbed and developed habitat would be traversed by construction traffic.*

*The proposed action incorporates measures that would avoid or minimize effects to sensitive habitats. These measures include avoiding impacts to wetland habitat and the Diegan coastal sage scrub habitat located near the southern end of the study area. Impacts to coastal bluff scrub also would be avoided, except for a minimal amount during tie-back installation and at one of the construction laydown areas, as described below. With these exceptions, sensitive habitat communities would be flagged by a biologist familiar with these habitats and avoided during construction.*

*Although impacts to coastal bluff scrub would be minimized, it may not be feasible to install the tie-backs (if used) without some minor intrusion into (and effects on) this habitat. Additionally, a minor (approximately 0.1-acre) impact to disturbed coastal bluff scrub would occur at one of the proposed laydown areas. The proposed action's minor direct impacts to coastal bluff scrub would not conflict with Coastal Act policies because the habitat areas are too disturbed and isolated to be expected to support sensitive species, and the direct impact areas would be relatively small. In addition, the affected areas would be seeded with a native seed mix following construction. Impacts to disturbed and developed habitats would not be inconsistent with Coastal Act policies because they are not considered sensitive vegetation communities and do not support sensitive species.*

*Except as noted above, sensitive habitat would be flagged or fenced with plastic snow fencing or other clearly identifiable fencing to prevent damage from construction equipment. The specific areas to be flagged/fenced will be determined in the field by a biologist experienced in identifying the above-listed habitat types. The biologist also will inspect the flagging/fencing prior to start of construction. In the unforeseen event that any*

*of these habitat types are adversely affected by construction despite the protective flagging/fencing, in-kind, on-site restoration (seeding or planting) would be conducted by SANDAG to offset the impact. No other measures are required to avoid or minimize direct impacts to vegetation.*

*No sensitive animal species were observed at any of the proposed stabilization areas or at any of the proposed construction laydown areas. Other sensitive species are generally not expected to occur at any of the proposed stabilization areas or at proposed construction laydown areas due to the disturbances present at those locations. The coastal California gnatcatcher could potentially occur near SA-7 and SA-9. The coastal California gnatcatcher is a listed federal-threatened species and is afforded protection under the federal Endangered Species Act. Although coastal bluff scrub is a potential habitat for coastal California gnatcatcher, the areas of coastal bluff scrub that would be affected by the proposed action have a very low potential for gnatcatchers because they are located in an area of high human use (e.g., beachgoers, trains) and occur in relatively small, isolated patches. Also, only approximately 0.1 acre of disturbed coastal bluff scrub would be directly affected by construction.*

*Because the proposed action is expected to be implemented in Spring/Summer 2011, it is probable that construction would occur during the coastal California gnatcatcher breeding season (February 15 to August 31). In the event that SANDAG determines construction is necessary during this period, a USFWS-protocol survey for coastal California gnatcatcher would be conducted in the Diegan coastal sage scrub areas in the southern part of the study area within 300 feet of proposed stabilization areas SA-7 and SA-9 prior to construction at those areas. If a gnatcatcher pair is located within 300 feet of SA-7 and/or SA9, construction at those locations would be postponed until after the breeding season (August 31), unless other measures are agreed to through an informal consultation with the USFWS. Similarly, the use of any construction laydown areas within 300 feet of mapped Diegan coastal sage scrub also would require pre-construction protocol surveys and related measures.*

*Indirect impacts to nesting raptors may occur if the proposed action is constructed during December through July. Although raptor nests were not detected during the general wildlife surveys of the project area, it is possible that raptor nests may be located along the ROW by the time construction starts (e.g., 2011). Project construction could result in indirect noise impacts to nesting raptors, if present, during the raptor breeding season extending from December 15 to July 31. If construction would begin during this breeding season, a pre-construction survey for nesting raptors would be conducted to identify active raptor nests in mature trees within 300 feet of the proposed stabilization areas and/or construction laydown areas. The survey would be conducted 30 days or fewer prior to the start of construction (but not before December 15). If construction begins outside the breeding season but would*

*extend into the season, the survey for active raptor nests would be conducted at the start of the breeding season (i.e., the second half of December). No monitoring is recommended if construction occurs completely between August 1 and December 15 or if the results of the raptor nest survey are negative.*

*If active raptor nests are found within 300 feet of any proposed stabilization area or proposed construction laydown area, weekly biological monitoring of the nests would be conducted during the breeding season when construction is ongoing to ensure that nesting raptors are not adversely affected by construction. If adverse effects are noted (e.g., as indicated by the bird leaving its nest in definite response to construction vehicle presence), construction activities will be pulled back to 300 feet away from the nest until the nest is vacated naturally.*

*With the implementation of the above measures, which are incorporated into the proposed action as project design features, the proposed action would be consistent with Coastal Act policies regarding environmentally sensitive habitat areas.*

Subsequent to receipt of the consistency certification and supporting documents, the Commission staff requested that SANDAG provide additional information that would clarify the nature of potential project impacts on sensitive habitat. SANDAG reported that:

*The installation of soldier pile walls would avoid these [wetland] jurisdictional areas . . . and avoid other areas mapped as “disturbed wetland” habitat within the study area.*

*The project would not impact wetlands. Because impacts to environmentally sensitive habitat areas would be limited to approximately 0.1 acre of temporary impact to disturbed coastal bluff scrub, reseeding with a native seed mix is considered appropriate mitigation for the project’s limited impact.*

The proposed project would not take place within or affect nearby wetland habitat. The project would create approximately 0.1 acre of temporary impacts on disturbed coastal bluff scrub due to establishment of a construction laydown/staging area. This specific area is not ESHA due to its level of disturbance, location adjacent to the trackbed, and isolation from other sensitive habitat areas. Nevertheless, this disturbed coastal bluff scrub area affected by the project will be restored to pre-project conditions by reseeding with a native plant seed mix. This 1:1 restoration work is consistent with the Commission’s previous concurrence with Stabilization Project 2 in this area, work that also created only a temporary impact to native plant habitat.

Given the above discussion, and with the aforementioned habitat and species protection measures incorporated into the trackbed stabilization project (including Commission staff review of staging and construction plans), the Commission finds that the project would avoid and protect nearby environmentally sensitive habitat areas, and would therefore be consistent with the environmentally sensitive habitat policy of the CCMP (Coastal Act Section 30240).

**E. Water Quality.** The Coastal Act provides the following:

*Section 30231. The biological productivity of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

*Section 30232. Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.*

NCTD has included commitments for water quality protection in its consistency certification, stating:

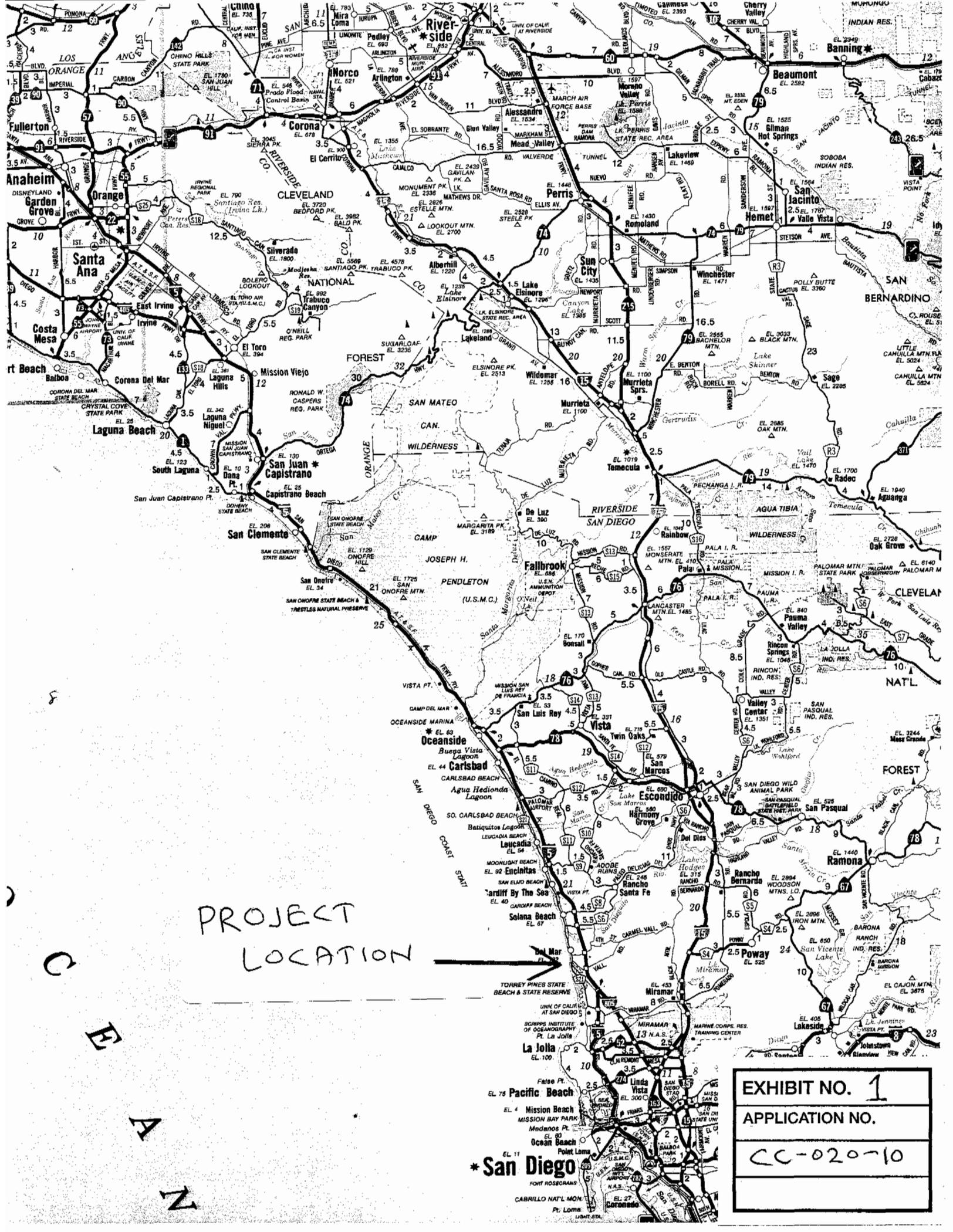
*Implementation of the proposed action would not substantially alter existing on-site drainage patterns, nor would it increase runoff volumes and velocities. Upon implementation of the proposed action, runoff on the bluffs would continue to flow west, down to the beach and ocean. Drainage improvements implemented as part of Del Mar Bluffs Stabilization Project I will help reduce the extent to which current drainage patterns erode the bluffs and undermine its stability.*

*Installation of the proposed action would be subject to a Storm Water Pollution Prevention Plan (SWPPP), to be prepared by NCTD prior to the start of construction. The SWPPP would address construction-related erosion and sediment control measures, soil stabilization, pollutant control measures for hazardous construction materials (such as fuels and lubricants), a best management practices (BMPs) inspection and maintenance plan, and a monitoring program and reporting plan. Implementation of the proposed action would not, therefore, generate substantial additional sources of polluted runoff.*

SANDAG has also agreed to submit the SWPPP to the Commission staff for its review and concurrence prior to the start of project construction. With the above measures, the project will not cause significant water quality impacts, and the Commission finds the proposed project consistent with the water quality policy of the CCMP (Coastal Act Section 30231).

**Substantive File Documents:**

1. CC-048-04, SANDAG, Del Mar Bluffs Stabilization Project 2.
2. Biological Resources Technical Report Update, December 14, 2009, HELIX Environmental Planning.
3. Type Selection Report, Del Mar Bluffs Stabilization Project 3 – Preserving Trackbed Support, April 2010, David Evans and Associates.
4. Geotechnical Evaluation Update and Determination of Areas for Stabilization, Del Mar Bluffs Stabilization Project 3 – Preserving Trackbed Support, April 9, 2010, Leighton Consulting Group, Inc.
5. NCTD Coastal Development Permits 6-03-102-G (Agua Hedionda emergency repairs), 6-02-152 (San Luis Rey River bridge repair), 6-02-151 (Agua Hedionda bridge), 6-02-102 (Del Mar drainage outlets), 6-02-80 (Santa Margarita Bridge repair), 6-01-108 (Tecolote Creek), 6-01-081 (Del Mar Bluffs soldier piles), 6-01-64 (Balboa Avenue), 6-97-062 (Del Mar drainage improvements), 6-96-156 (Del Mar Bluffs soldier piles), 6-94-207 (Solana Beach), 6-93-106 (Carlsbad), 6-93-105 (Camp Pendleton), and 6-93-60 (Del Mar).



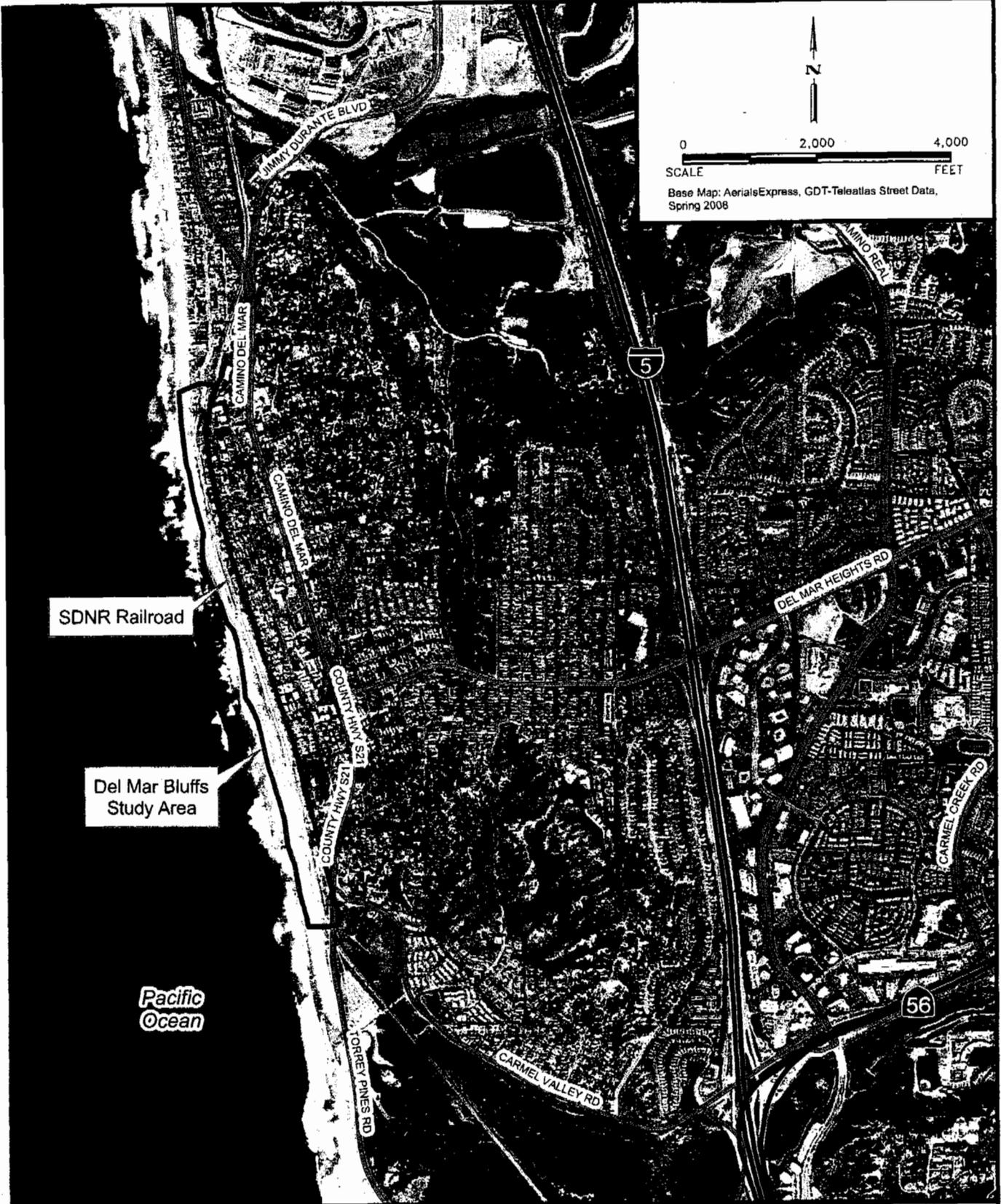
PROJECT  
LOCATION



EXHIBIT NO. 1
APPLICATION NO.
CC-020-10

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A  
Z

\* San Diego



SDNR Railroad

Del Mar Bluffs Study Area

Pacific Ocean

**Del Mar Bluffs  
Del Mar, California**

**SITE LOCATION  
MAP**

Project No.  
602576-001

Date  
April 2

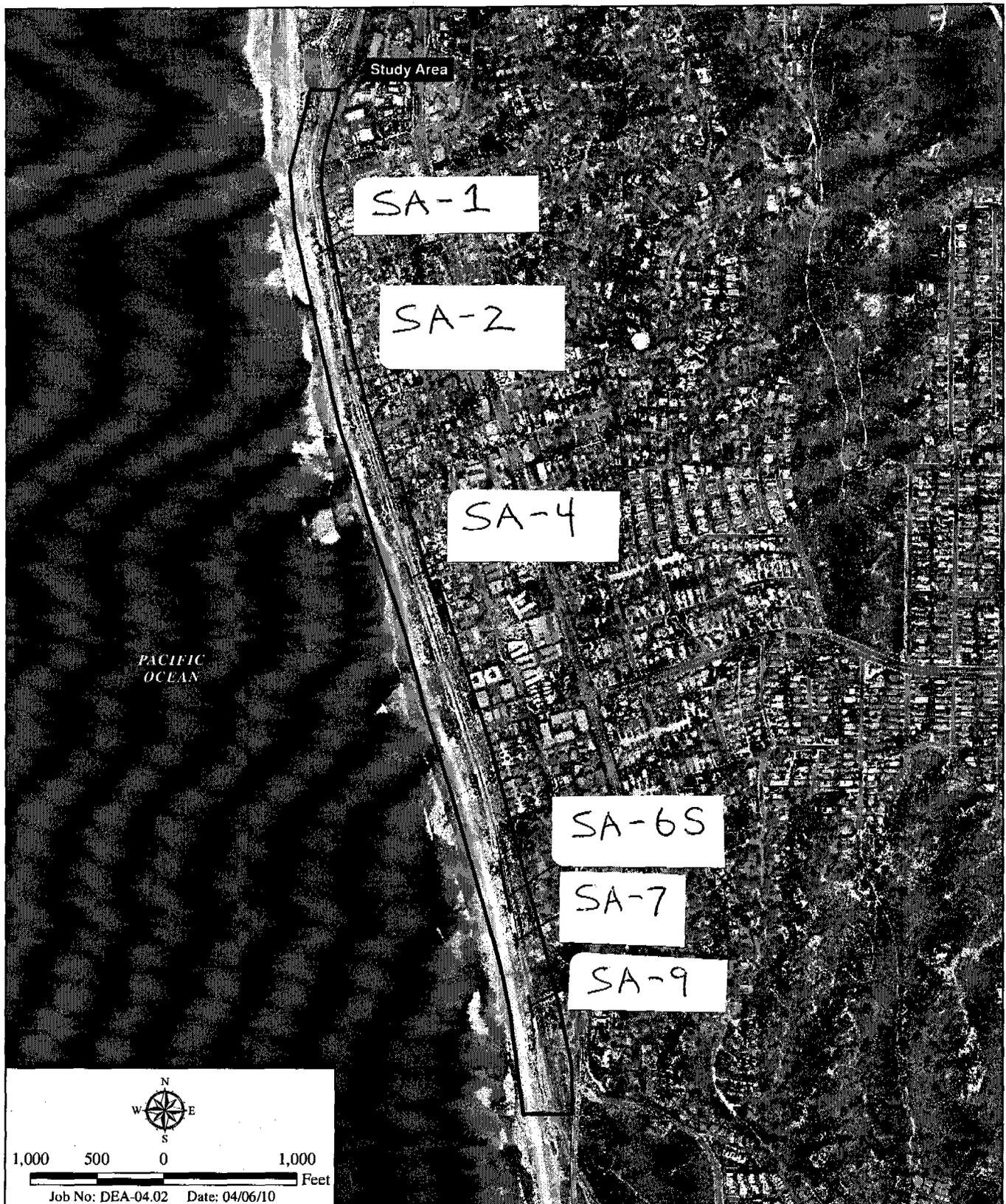
**EXHIBIT NO. 2**

APPLICATION NO.

CC-020-10

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PACIFIC OCEAN

Study Area

SA-1

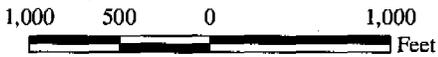
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Job No: DEA-04.02 Date: 04/06/10

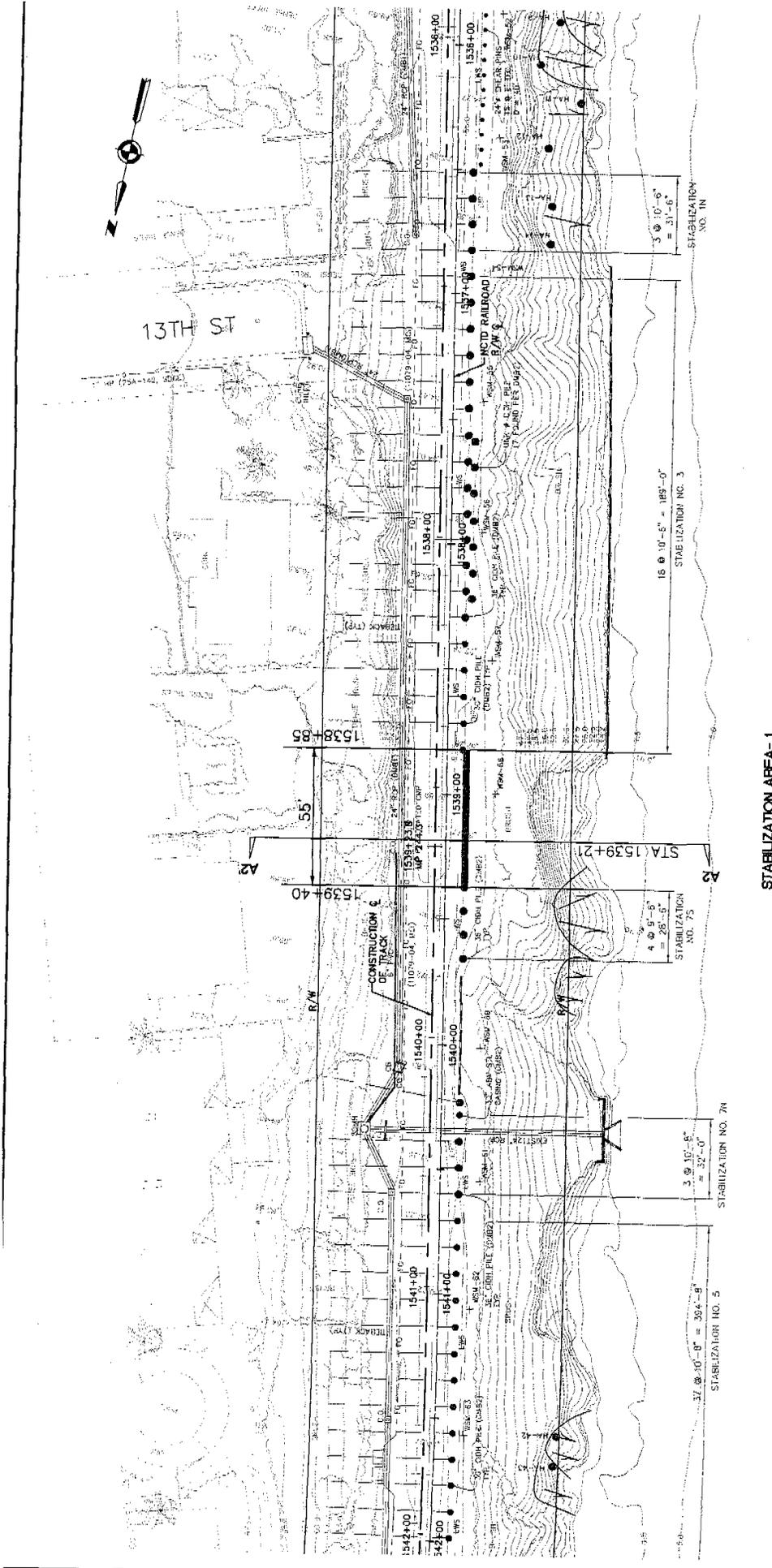
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**Bluff Stabilization Areas**

DEL MAR BLUFFS STABILIZ

EXHIBIT NO. 4
APPLICATION NO.
CC-020-10

**HELIX**



STABILIZATION AREA - I  
IR-1

EXHIBIT NO. 5  
APPLICATION NO.  
01-020-27

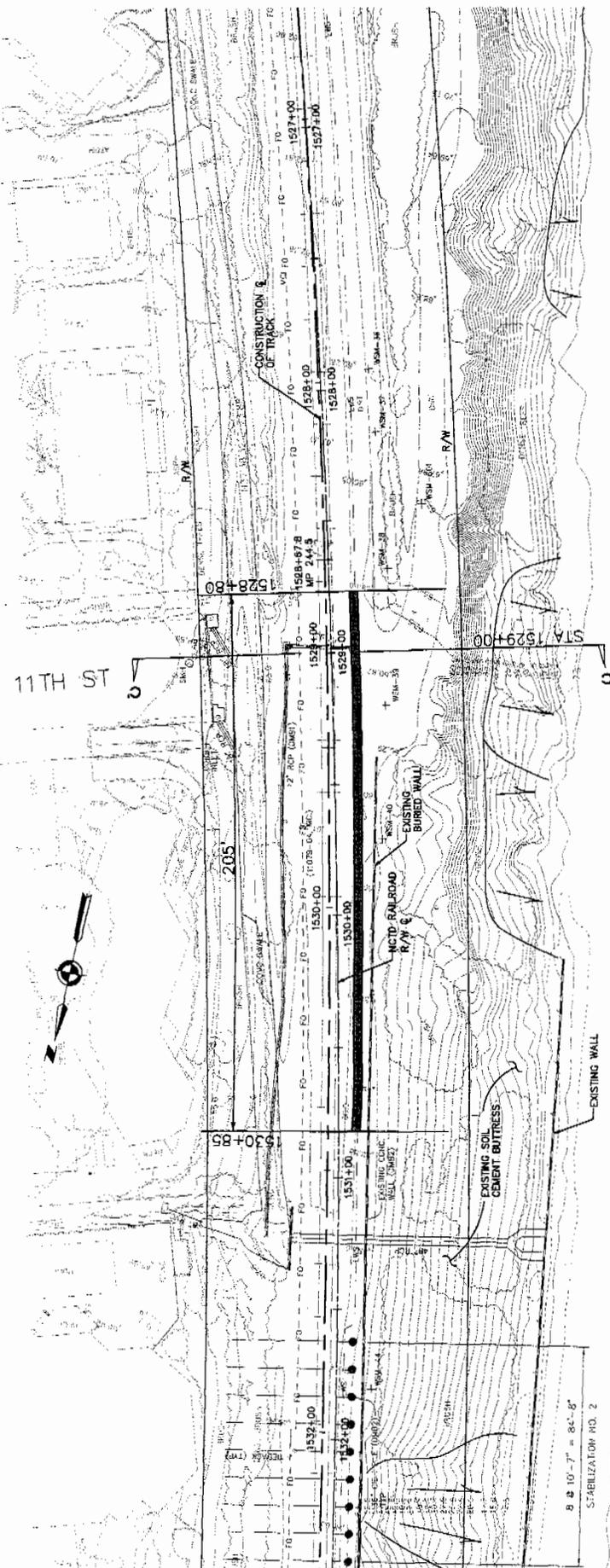


DEL MAR BLUFFS STABILIZATION PROJECT 3  
SCALE 1"=20'  
SANDAG CONTRACT NO. 5000931  
SHEET NO. 2 OF 34  
STABILIZATION AREA 1

DESIGNED BY	DATE	DATE
PAUL	02/10	02/10
AMJA/ANTO		
CHECKED BY		
PAUL		
SANDAG PRL ENG.		

DAVID EVANS  
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110 West A Street, Suite 100  
San Diego, CA 92101  
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STABILIZATION AREA - 2  
R-2



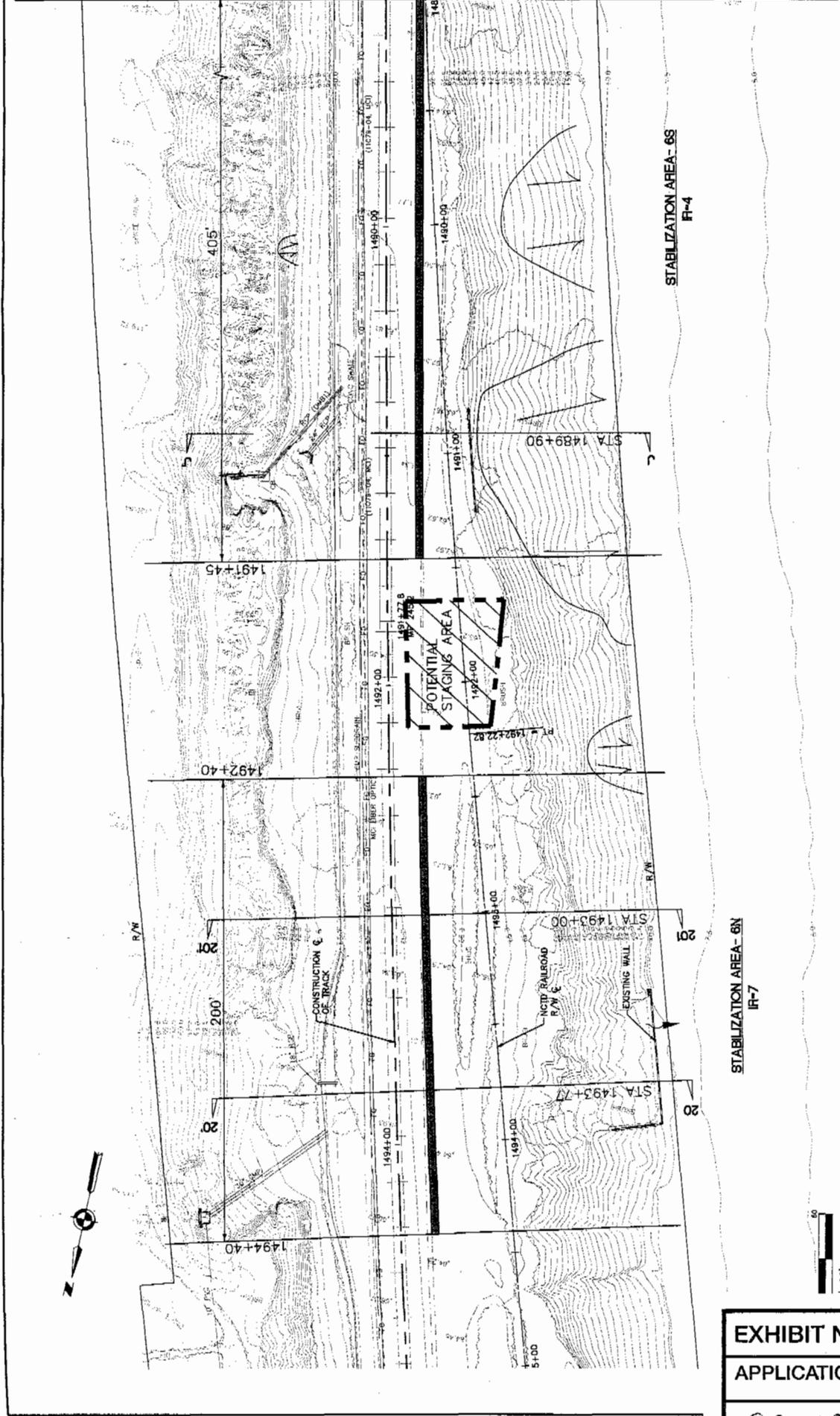
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DESIGNED BY PMM	DATE 02/10	DRAWN BY AJM/AJ/INTO	DATE 02/10	CHECKED BY AJM	DATE 02/10	SANDAG PROJ. ENG.
	DATE 02/10		DATE 02/10			
  <b>P&amp;T</b> PARSONS BRINCKERHOFF CONSULTANTS 110 West A Street, Suite 2700 San Diego, CA 92101 Phone: (619) 594-0000						
DEL MAR BLUFFS STABILIZATION PROJECT 3 STABILIZATION AREA 2				SCALE 1"=20' SANDAG CONTRACT NO. 8000381 SHEET NO. 3 OF 34		
BY: ORK/APPV						

EXHIBIT NO. 6
APPLICATION NO.
01-020-07





STABILIZATION AREA- 6N  
IF-7

STABILIZATION AREA- 6S  
IF-4

DATE	02/16	DESIGNED BY	PJM
DATE	02/16	DRAWN BY	JALJA/N/O
DATE	02/16	CHECKED BY	PJM
DATE	02/16	SANAG PRL. ENG.	SANAG PRL. ENG.
SCALE		1"=20'	
SANDAG CONTRACT NO.		9000081	
SHEET NO.		6	
OF		34	
DEL MAR BLUFFS STABILIZATION PROJECT 3			
STABILIZATION AREA 6N & 6S			

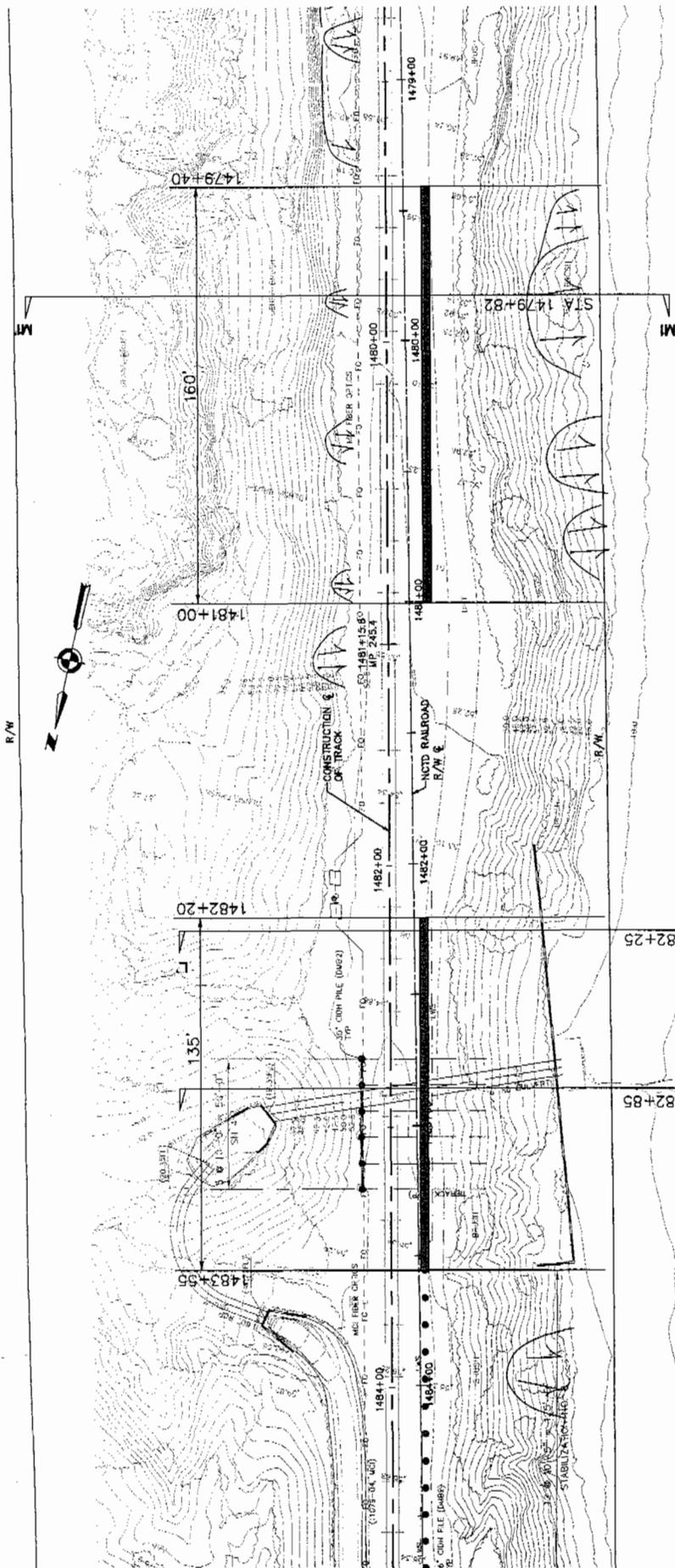


EXHIBIT NO. 8  
APPLICATION NO.  
01-020-00

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STABILIZATION AREA-9  
R-4

STABILIZATION AREA-8  
R-5



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DATE 04-15-2010 TIME 14:34 PM

EXHIBIT NO. 01  
APPLICATION NO.  
01-020-07

DEL MAR BLUFFS STABILIZATION PROJECT 3  
SCALE 1"=20'  
SANDAG CONTRACT NO. 0000931  
SHEET NO. B OF 34  
STABILIZATION AREAS 8 & 9



DESIGNED BY	DATE
PAIM	02/10
CHECKED BY	DATE
PAIM	02/10
SANDAG PRL ENG.	

**DE**  
**DAVID EVANS**  
**AND ASSOCIATES, INC.**  
10100 Jamboree Road, Suite 100  
San Diego, CA 92121  
Phone: 619-592-0000

BY: CHK JERRY

### 3.3.1 Stabilization Area 1 (SA-1)

Implementation Ranking Number: 1

Location: Station 1539+40 to Station 1538+85

Total Length: 55 feet

Low Static and Pseudo-Static Factors of Safety, based on Cross Section A2-A2'



Photo 1: SA-1 from top



Photo 2: SA-1 from Beach

SA-1 is located between the two areas previously stabilized as part of Project 2 construction, specifically:

Stabilization	End Station	Begin Station	Length	Stabilization Method
SN-3	1538+85	1536+90	195	Soldier Pile
SN-7S	1539+69	1539+40	29	Soldier Pile

An existing 24-inch storm drain, 8-inch subdrain and fiber optic line are located parallel to the track on the east side. An existing landslide warning system parallels the track approximately 10 feet west of the centerline.

The edge of the bluff is roughly 38 feet west of the track centerline at Station 1539+21 (Section A2-A2') with an elevation of approximately 51 feet mean sea level (msl). The existing right-of-way is approximately 54 feet west of the track centerline. The toe of the bluff is outside of the existing right-of-way. The bluff face is natural and near vertical at the upper portion of the bluff.

There are two stabilization alternatives recommended by the Geotechnical Evaluation:

- Soldier Pile Wall
- Soil Nail Reinforcement

EXHIBIT NO. 11
APPLICATION NO.
CC-020-10

### 3.3.2 Stabilization Area 2 (SA-2)

Implementation Ranking Number: 2

Location: Station 1530+85 to Station 1528+80

Total Length: 205 feet

Low Static and Pseudo-Static Factors of Safety, based on Cross Sections B-B' and C-C'



Photo 3: SA-2 from top



Photo 4: SA-2 from Beach

This area begins just south of 11<sup>th</sup> Street and ends immediately south of the existing soil cement buttress stabilization. There is an existing seawall at the toe of the slope north of station 1530+00. A buried 10-foot high gravity wall was uncovered near the bluff edge during Project 2. The approximate location of the wall is shown on Sheet No. 3, in Appendix B.

An existing 12-inch storm drain parallels the track on the east side. A storm drain lateral connection collects drainage from the west side of the track at station 1529+00. An existing fiber optic line parallels the track approximately 10 feet east of centerline and a landslide warning system parallels the track approximately 10 feet west of the centerline. Hydro-augers are located at several locations along the bluff face.

The edge of the bluff is roughly 48 feet west of the track centerline at Station 1529+00 (Section C-C'). The majority of this area (Station 1529+40 to 1530+85) is much narrower with an average distance of approximately 16 feet between the top of the bluff and the track centerline. The elevation is approximately 61 feet mean sea level (msl). The existing right-of-way is approximately 55 feet west of the track centerline. The toe of the bluff is outside of the existing right-of-way. The bluff face in this area is natural and near vertical for the upper portion south of Station 1530+00. The bluff slope is flatter to the north above the existing seawall. Considering the natural topography of the bluff and the dense exposed bluff face south of Station 1530+00, there are two stabilization methods recommended by the Geotechnical Evaluation:

- Soldier Pile Wall
- Soil Nail Reinforcement (with soldier piles in the northern portion)

EXHIBIT NO. 12
APPLICATION NO.
CC-020-10

### 3.3.4 Stabilization Area 4 (SA-4)

Implementation Ranking Numbers: 3

Location: Station 1514+55 to Station 1513+20

Total Length: 135 feet

Length Recommended for Stabilization: 135 feet

Low Static and Pseudo-Static Factors of Safety, based on Cross Section G3-G3'



Photo 7: SA-4 from top

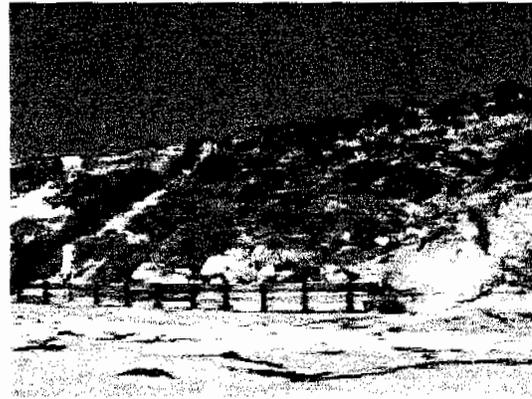


Photo 8: SA-4 from Beach

This area is located south of a previously stabilized area identified as the 8<sup>th</sup> Street Emergency Repair constructed in 2001. It should be noted that this area was also previously stabilized in 1978 with 18-inch diameter shear pins, reinforced with two 115 pound rails, installed at 5-foot centers with an approximate depth of 32 feet. The existing shear pins are located approximately 11 feet west of the track centerline. The existing slope face is fill.

Existing utilities have been constructed parallel to the track. A fiber optic line and subdrain are located east of the track and a landslide warning system is located west of the track.

The edge of the bluff is approximately 28 feet west of the track centerline. The elevation is approximately 66 feet mean sea level (msl). There is an existing seawall at the toe of slope north of Station 1513+90.

The existing right-of-way is approximately 76 feet west of the track centerline. The toe of the bluff is outside of the existing right-of-way. The bluff face is mostly fill with some signs of localized erosion.

There are two stabilization methods recommended by the Geotechnical Evaluation:

- Soldier Pile Wall
- Soil Cement Buttress

EXHIBIT NO. 13
APPLICATION NO.
CC-020-10

### 3.3.7 Stabilization Area 6 South (SA-6S)

Implementation Ranking Numbers: 4

Location: Station 1491+45 to Station 1487+40

Total Length: 405 feet

Low Static and Pseudo-Static Factors of Safety, based on Cross Sections J-J' and 22-22' from Project 2



Photo 13: SA-6S from top



Photo 14: SA-6S from Beach

This area is located 95 feet south of SA-6N and 400 feet north of Anderson Canyon. The edge of the bluff varies from 25 feet to 45 feet west of the track centerline with an elevation of approximately 62 feet mean sea level (msl). An existing gravity wall is located approximately 37 feet west of the track centerline as shown in Section J-J', Sheet No. 22, in Appendix B.

Existing utilities parallel the track. A fiber optic line, concrete channel and subdrain are located east of the track and a landslide warning system is located west of the track.

The existing right-of-way is approximately 98 feet west of the track centerline. The toe of the bluff is just inside the existing right-of-way. The bluff face is natural and near vertical at the top of the bluff. This long section of bluff has abundant recent landslides.

There are two stabilization methods recommended by the Geotechnical Evaluation:

- Soldier Pile Wall
- Soil Nail Reinforcement

EXHIBIT NO. 14

APPLICATION NO.

CC-020-10

3.3.8 Stabilization Area 7 (SA-7)

Implementation Ranking Numbers: 3

Location: Station 1485+80 to Station 1484+80

Total Length: 100 feet

Low Static and Pseudo-Static Factors of Safety, based on Cross Sections K1-K1'



Photo 15: SA-7 from top

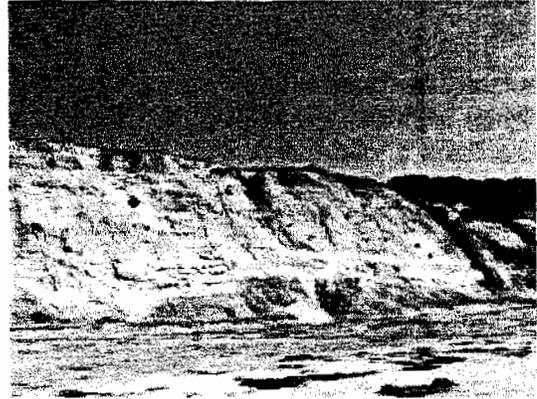


Photo 16: SA-7 from Beach

SA-7 is located just north of an area previously stabilized as part of Project 2 construction:

Stabilization	End Station	Begin Station	Length	Stabilization Method
SN-8	1484+80	1483+55	125	Soldier Pile

Existing utilities parallel the track. A fiber optic line, concrete channel and subdrain are located east of the track and a landslide warning system is located west of the track.

The edge of the bluff is roughly 45 feet west of the track centerline at Station 1485+15 (Section K1-K1') with an elevation of approximately 56 feet mean sea level (msl). The bluff face is natural and near vertical at the upper portion of the bluff. There are two stabilization methods recommended by the Geotechnical Evaluation:

- Soldier Pile Wall
- Soil Nail Reinforcement

EXHIBIT NO. 15
APPLICATION NO.
CC-020-10

3.3.10 Stabilization Area 9 (SA-9)

Implementation Ranking Numbers: 4

Location: Station 1481+00 to Station 1479+40

Total Length: 160 feet

Low Static and Pseudo-Static Factors of Safety, based on Cross Section M1-M1'



Photo 19: SA-9 from top



Photo 20: SA-9 from Beach

An existing fiber optic line parallels the track approximately 11 feet to the east.

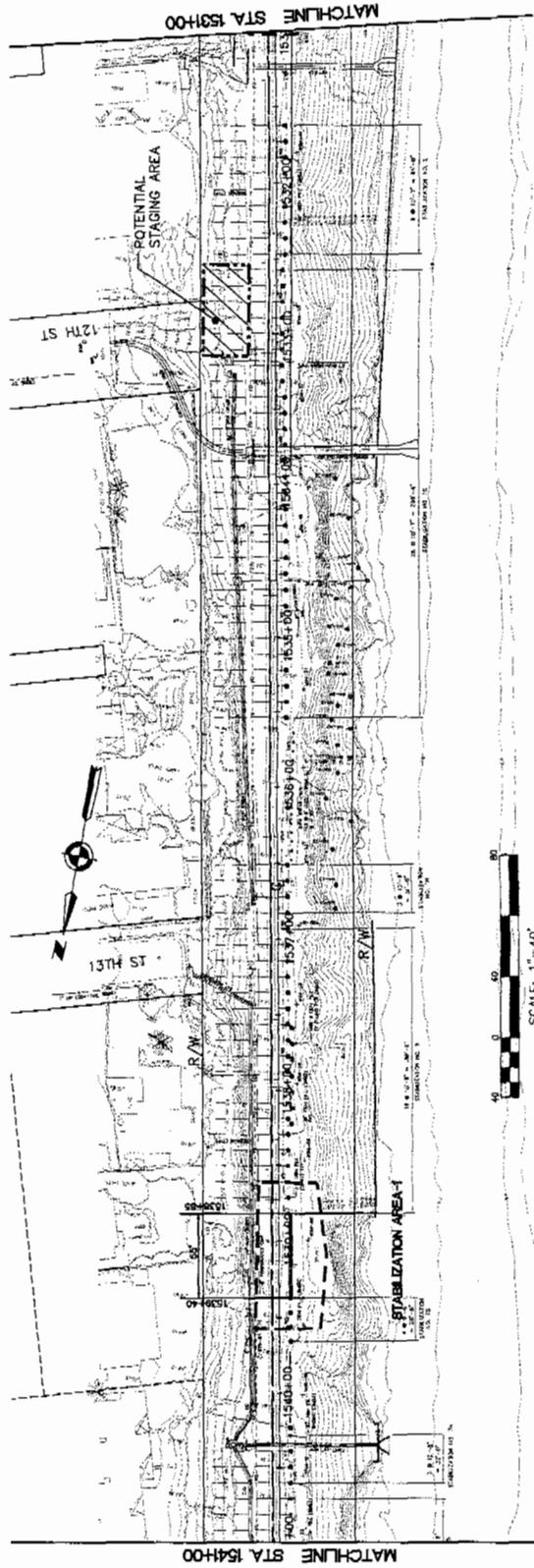
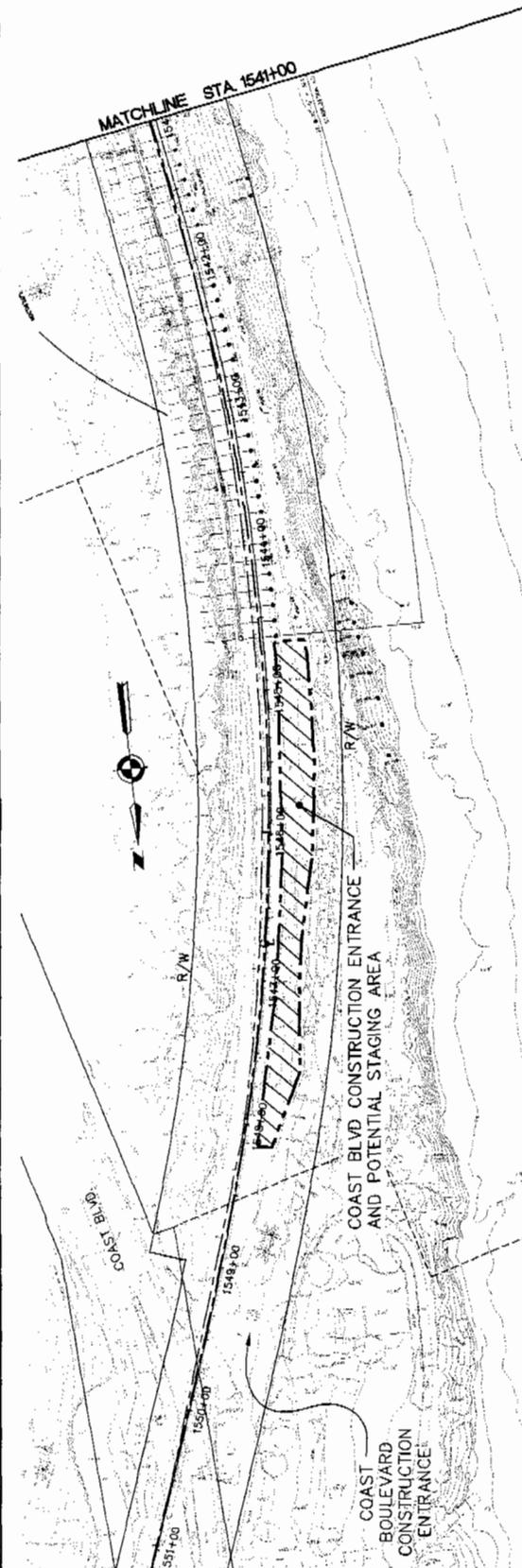
Since the work was complete in Project 2, there have been new landslides in this area. The edge of the bluff is roughly 35 feet west of the track centerline at Station 1479+82 (Section M1-M1') with an elevation of approximately 52 feet mean sea level (msl). The bluff face is natural with a general slope inclination of 1 to 1 (horizontal to vertical).

The existing right-of-way is approximately 82 feet west of the track centerline. The toe of the bluff is outside of the existing right-of-way. The bluff face in this area is natural and near vertical at the mid to lower portion of the bluff. Recent landslides have occurred at the toe of the bluff in this area.

EXHIBIT NO. 16

APPLICATION NO.

CC-020-10



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DATE: 04-18-2010  
TIME: 2:27:27 PM  
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BY: CHK JARRV	DESIGNED BY: PAM	DATE: 02/10	SCALE: 1" = 40'
	CHECKED BY: PAM	DATE: 02/10	
	DESIGNED BY: ANNA NYO	DATE: 02/10	
	CHECKED BY: PAM	DATE: 02/10	
	DESIGNED BY: SANDAG P.L. ENG.	DATE: 02/10	

**SANDAG**  
San Diego's Regional Planning Agency

DEL MAR BLUFFS STABILIZATION PROJECT 3

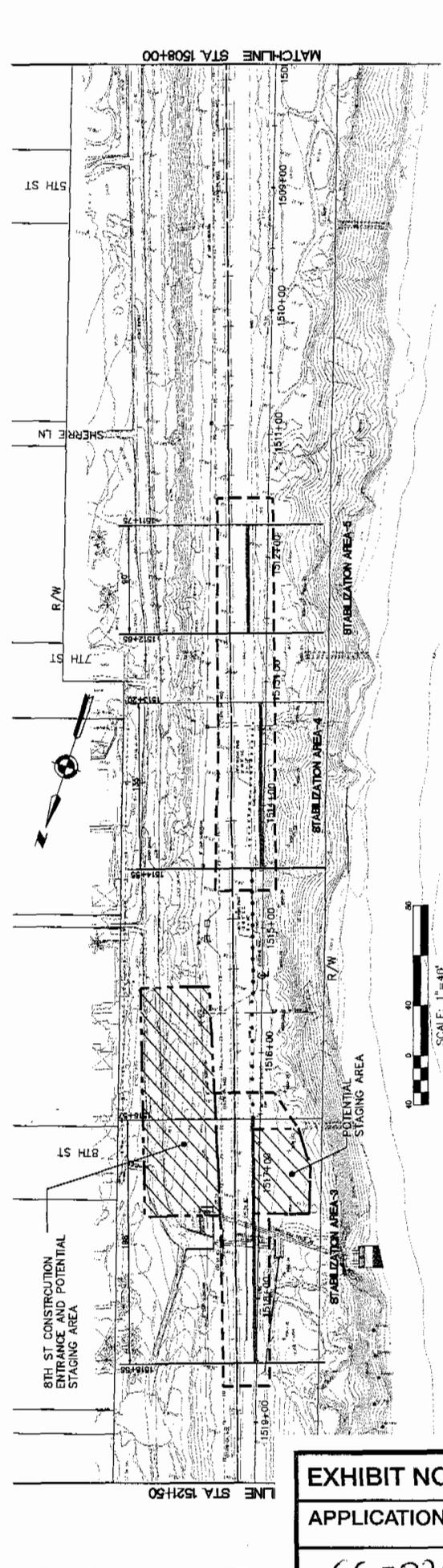
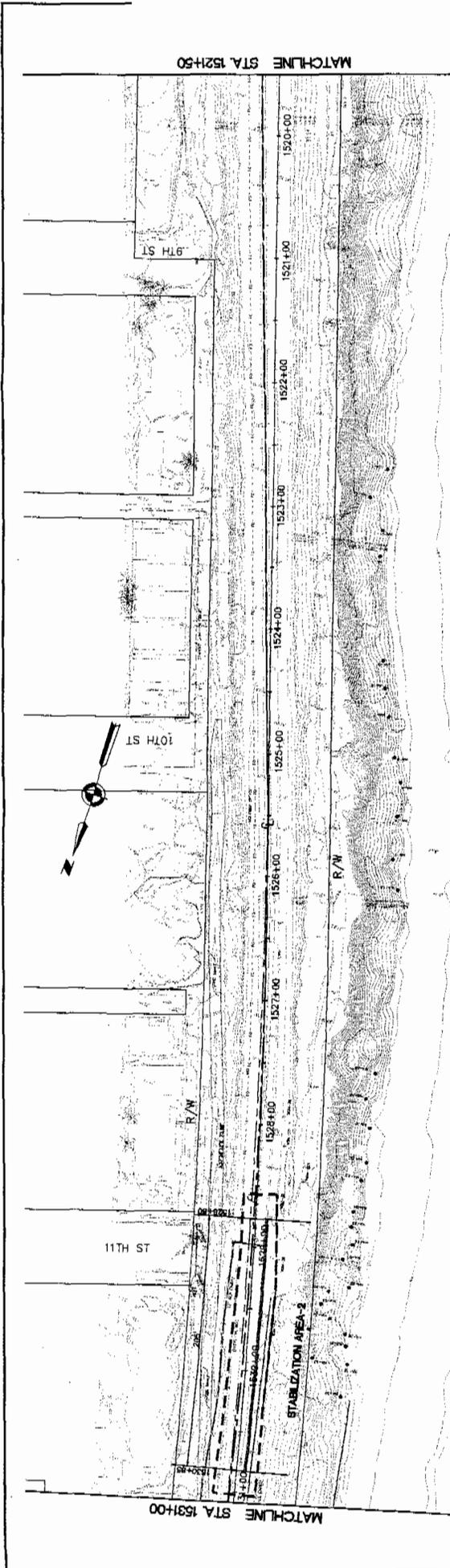
LAYDOWN AREA

SCALE 1" = 40'

SHEET NO. 31 OF 34

SANDAG CONTRACT NO. 8000831

EXHIBIT NO. 17	
APPLICATION NO.	01-020-77



MATCHLINE STA. 1521+50

MATCHLINE STA. 1508+00

MATCHLINE STA. 1534+00

LINE STA. 1521+50

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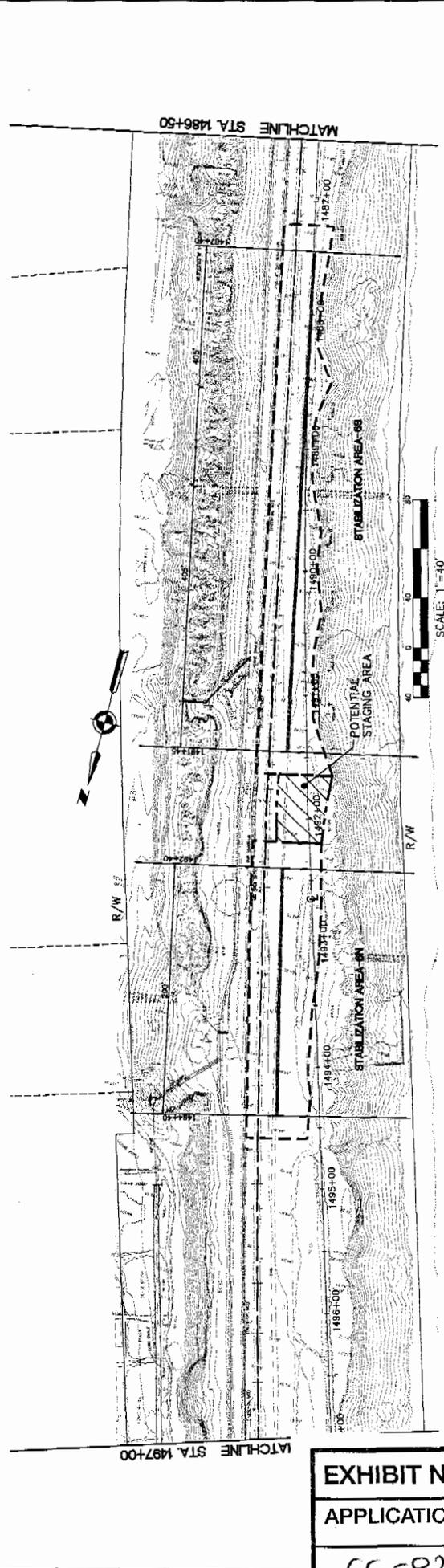
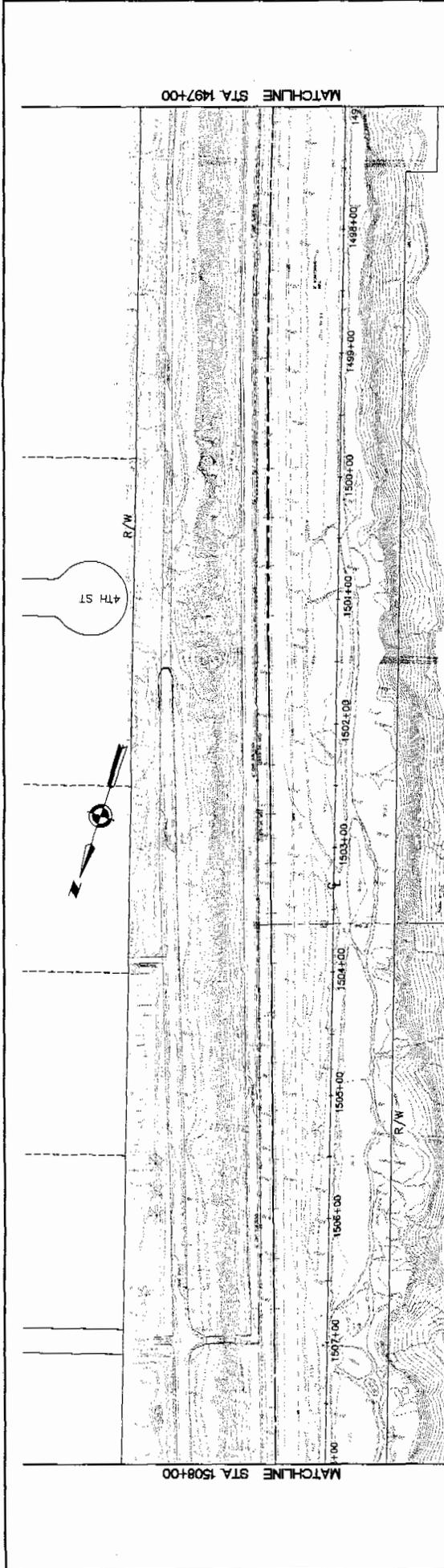
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EXHIBIT NO. 18

APPLICATION NO.

01-020-77

 San Diego's Regional Planning Agency	DEL MAR BLUFFS STABILIZATION PROJECT 3 LAYDOWN AREA		SCALE 1"=40' SANDAG CONTRACT NO. 5000931 SHEET NO. 32 OF 34
	DESIGNED BY P/M DRAWN BY A/M/A/N/O CHECKED BY P/M SANDAG P/L/B/C	DATE 02/10 DATE 02/10 DATE 02/10	BY C/K/K/R/V



MATCHLINE STA. 1497+00

MATCHLINE STA. 1486+50

MATCHLINE STA. 1508+00

MATCHLINE STA. 1497+00

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DATE: 04-15-2010 TIME: 2:28:16 PM

SCALE 1"=40'  
SANDAG CONTRACT NO. 500031  
SHEET NO. 33 OF 34

DEL MAR BLUFFS STABILIZATION PROJECT 3  
LAYDOWN AREA

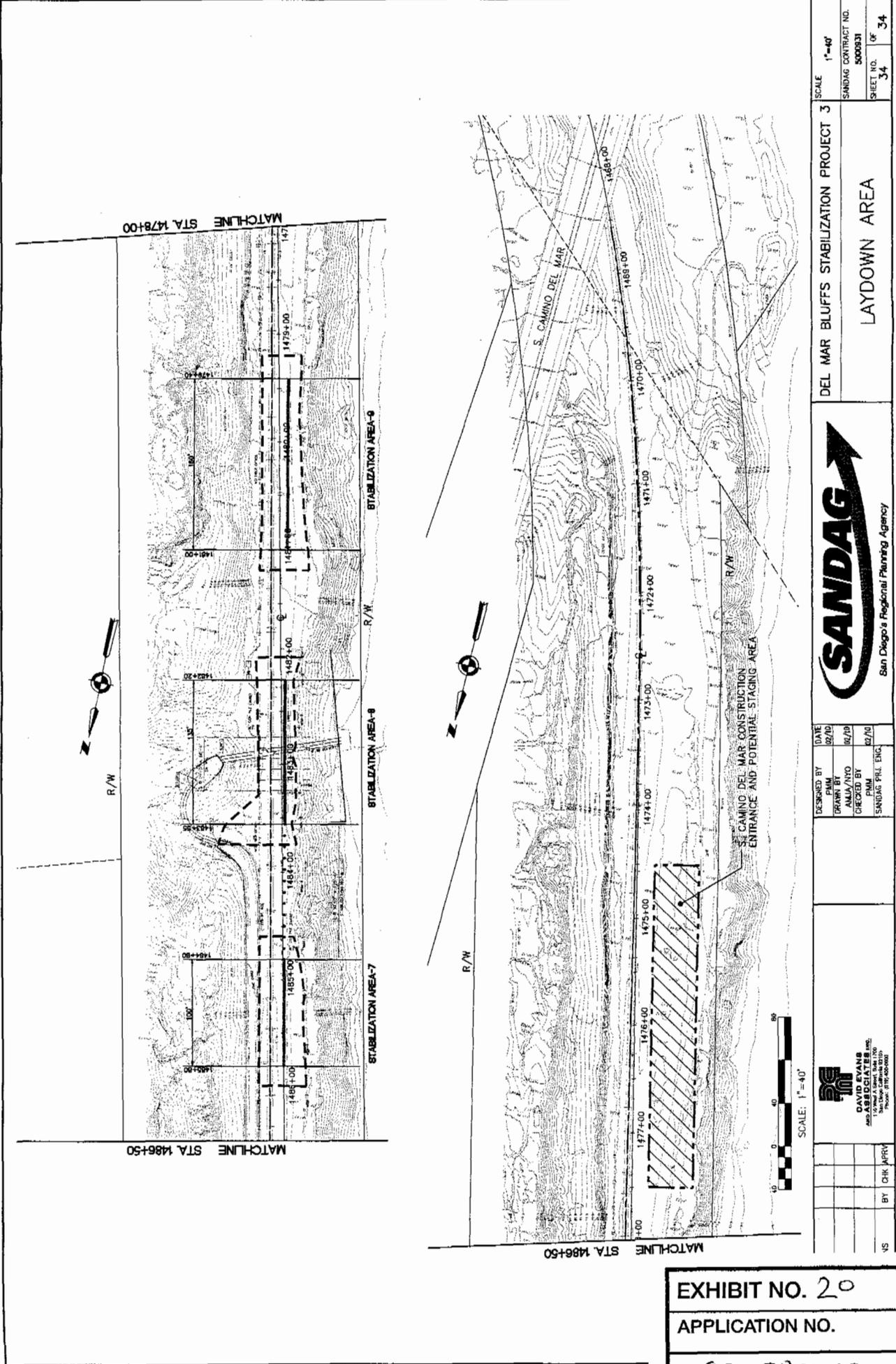


DESIGNED BY	DATE
PHM	02/10
DRAWN BY	02/10
AMR/MFO	
CHECKED BY	02/10
PHM	
SANDAG PRG. ENG.	

**PC**  
**TM**  
SANDAG ASSOCIATES, INC.  
110 W. A Street, Suite 1000  
San Diego, CA 92101  
Phone: 619.444.0000

BY CHK APRV

EXHIBIT NO. 19  
APPLICATION NO.  
01-020-00



DESIGNED BY	DAVE	06/10
DRAWN BY	PMM	06/10
CHECKED BY	AMJA/NTD	06/10
	PMM	02/10
	SANDAG PRL. ENG.	

SCALE 1"=40'  
 SANDAG CONTRACT NO. 5000931  
 SHEET NO. 34 OF 34

DEL MAR BLUFFS STABILIZATION PROJECT 3  
 LAYDOWN AREA



DESIGNED BY	DAVE	06/10
DRAWN BY	PMM	06/10
CHECKED BY	AMJA/NTD	06/10
	PMM	02/10
	SANDAG PRL. ENG.	

**DE**  
 DAVID EVANS  
 AND ASSOCIATES INC.  
 1000 LA JOLLA VILLAGE CENTER  
 SAN DIEGO, CALIFORNIA 92161  
 PHONE: (619) 594-0000

EXHIBIT NO. 20  
 APPLICATION NO.  
 01-070-07

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