TRANSPORTATION CORRIDOR AGENCIES

125 PACIFICA, SUITE 100, IRVINE CA 92618-3304 949/754-3400 FAX 949/754-3467

MEMORANDUM

June 6, 2007

To: Mark Delaplaine, California Coastal Commission

From: Paul Bopp, Transportation Corridor Agencies PAB

Subject: Water Quality Volume Along I-5 to be Treated by the Foothill Transportation Corridor-South Project

As part of the Foothill Transportation Corridor-South (FTC-S) project storm water runoff from approximately 2 miles of Interstate 5 (I-5), which presently flows untreated into San Onofre and San Mateo Creeks, will be collected and treated. The Transportation Corridor Agencies (TCA) will construct extended detention basins to treat the runoff from this existing portion of I-5 as well as from the new structures that connect the FTC-S to I-5.

Over one million gallons of runoff per design water quality storm event from the existing paved areas of I-5 would receive treatment with the FTC-S project. This volume of water is calculated as follows.

As shown on Exhibits BMP-01 and BMP-02, the areas draining to proposed Extended Detention Basin 1 (EDB1) and Extended Detention Basin 2 (EDB2) make up 62 acres and 41 acres, respectively. A component of these total areas is the paved portion of I-5 which consists of 39 paved acres that will drain to EDB1 (including 7,000 feet of I-5, 2 ramps at Basilone Road and a portion of Old Pacific Coast Highway west of I-5) and 23 paved acres to EDB2 (including 3,600 feet of I-5, 2 ramps at Basilone Road and Basilone Road east of I-5 including parking lot area). The existing paved areas that are proposed to be treated as part of the FTC-S project amount to a total of 62 acres. The water quality volume (WQV) per design storm event (0.8-inch) using a C-factor of 0.9 for paved areas is calculated as:

$$WQV = (0.9)(62 \text{ acres})(0.8 \text{ in})/12 \text{ in/ft} = 3.7 \text{ acre-ft}$$

This is approximately 1.2 million gallons of water per storm event. Conservatively, assuming in an average year the area will experience 4 to 5 design water quality storm events, the FTC-S project would treat approximately 5 million gallons of water each year that currently flows untreated from existing I-5 into San Onofre and San Mateo Creeks.

All BMP's proposed for the FTC-S project are designed to treat highway runoff to the maximum extent practicable (MEP) objectives set forth by Caltrans before discharging into receiving waters.

Caltrans has completed extensive studies characterizing the runoff from Department facilities. The Department's *Statewide Discharge Characterization Report* (CTSW-RT-03-065) and the *Project Planning and Design Guide* (PPDG), each describe the pollutants of concern and "targeted design constituents" that the Departments research has indicated are present in highway runoff at levels that could potentially impact the beneficial uses of receiving waters. The PPDG (Caltrans, 2003) list pollutants of concern as:

- Total suspended solids;
- Nutrients;
- Pesticides;
- Particulate metals;
- Dissolved metals;
- Pathogens;
- Litter;
- Biochemical oxygen demand;
- Total dissolved solids.

Pollutants of concern are those that the Department's research has shown are commonly found in highway runoff. A Targeted Design Constituent (TDC) is a pollutant that has been identified during Departmental runoff characterization studies to be discharging with a load or concentration that commonly exceeds allowable standards and which is considered treatable by currently available Department-approved Treatment BMPs. Targeted design constituents are discussed in Appendix B of the PPDG and include:

- Phosphorus;
- Nitrogen;
- Total and dissolved copper;
- Total and dissolved lead;
- Total and dissolved zinc;
- Sediments;
- Unspecified metals.

Per Department guidance, treatment BMPs must be considered in watersheds where a targeted design constituent has been identified as the cause of impairment for a 303(d) listing.

The PPDG recommends that infiltration devices be used as the preferred Department-approved BMP since they are capable of treating all of the targeted design constituents and pollutants of concern. However, infiltration devices are not feasible on the Foothill Corridor due to unsuitable soils.

Detention devices and vegetated controls were selected as the treatment BMPs for the Corridor. Detention devices remove litter, total suspended solids (TSS), and pollutants that are attached (adsorbed) to the settled particulate matter. The PPDG recommends including them with vegetated swales and strips where possible. Vegetated controls (swales and strips) remove constituents comparable to detention devices. Both vegetated controls and detention controls were shown to have substantial constituent load reduction through infiltration as well as sedimentation (see CTSW-RT-01-050, January, 2004).

If you have any questions concerning this subject matter please do not hesitate to contact me at 949-754-3427.

NOTE: FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	241	0.0/1.3	22	

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL CIVIL ENGINEER — NAME — NO. — Exp. DATE — CIVIL — STATE OF CALIFORNIA

FOOTHILL/EASTERN TRANSPORTATION CORRIDOR AGENCY
125 PACIFICA SUITE 100
IRVINE, CA, 92618

PARSONS TRANSPORTATION GROUP
2201 DUPONT DR.
SUITE 200
IRVINE, CA, 92612

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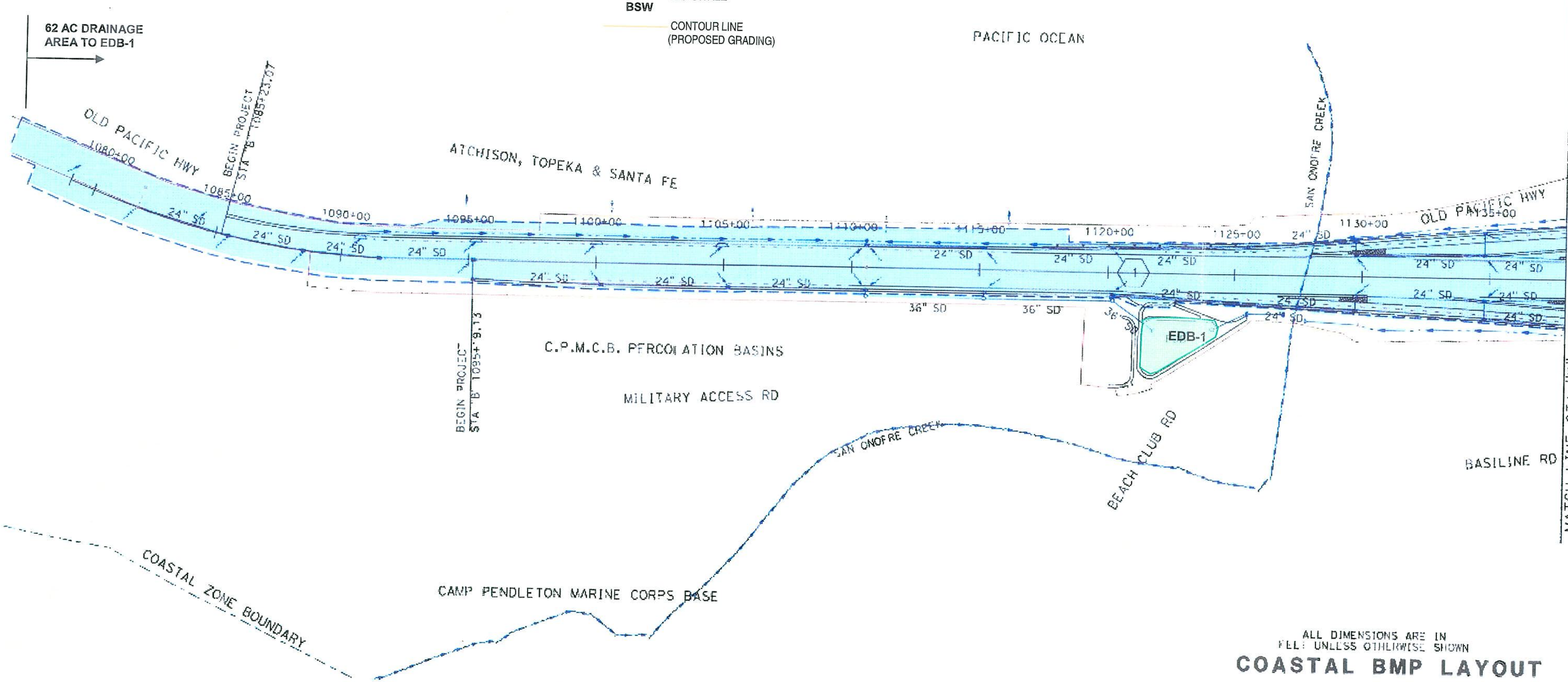
LEGEND

- FLOW DIRECTION
- DRAINAGE AREA TO BMP (NOTE: ONLY SHADED AREAS DRAIN TO BMPS)
- 24" SD PROPOSED STORM DRAIN
- PROPOSED JUNCTION STRUCTURE
- PROPOSED CATCH BASIN
- EXISTING STORM DRAIN
- EDB EXTENDED DETENTION BASIN
- DISTURBANCE LIMITS
- AC SPILLWAY
- DRAINAGE DITCH
- PIPE RISER
- RIP RAP ENERGY DISSIPATOR
- FLARED END SECTION
- 1 DRAINAGE SYSTEM
- BSW BIO-SWALE
- CONTOUR LINE (PROPOSED GRADING)



ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

COASTAL BMP LAYOUT

SCALE 1"=400'

BMP-01

PRELIMINARY - NOT FOR CONSTRUCTION, SUBJECT TO INDEPENDENT VERIFICATION PRIOR TO FINAL DESIGN

CALTRANS DESIGN OVERSIGHT | LISA RAMSEY | REGISTRATION NO. | DATE

TCA DESIGN MANAGER | MICHAEL E. ENDRES P.E.

CALCULATED/DESIGNED BY | CHECKED BY

REVISED BY | DATE REVISED 8/06 | DATE 8/06 | 9/06

Transportation Corridor Agencies

LAST REVISION | DATE PLOTTED => DATE

FILENAME: Coastal BMP01.dgn PLOT DATE: 3/1/2007 PLOT TIME: 6:04:37 PM

NOTE: FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	241	0.0/ .5	22	

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

FOOTHILL/EASTERN TRANSPORTATION CORRIDOR AGENCY
125 PACIFICA SUITE 100
IRVINE, CA. 92618

PARSONS TRANSPORTATION GROUP
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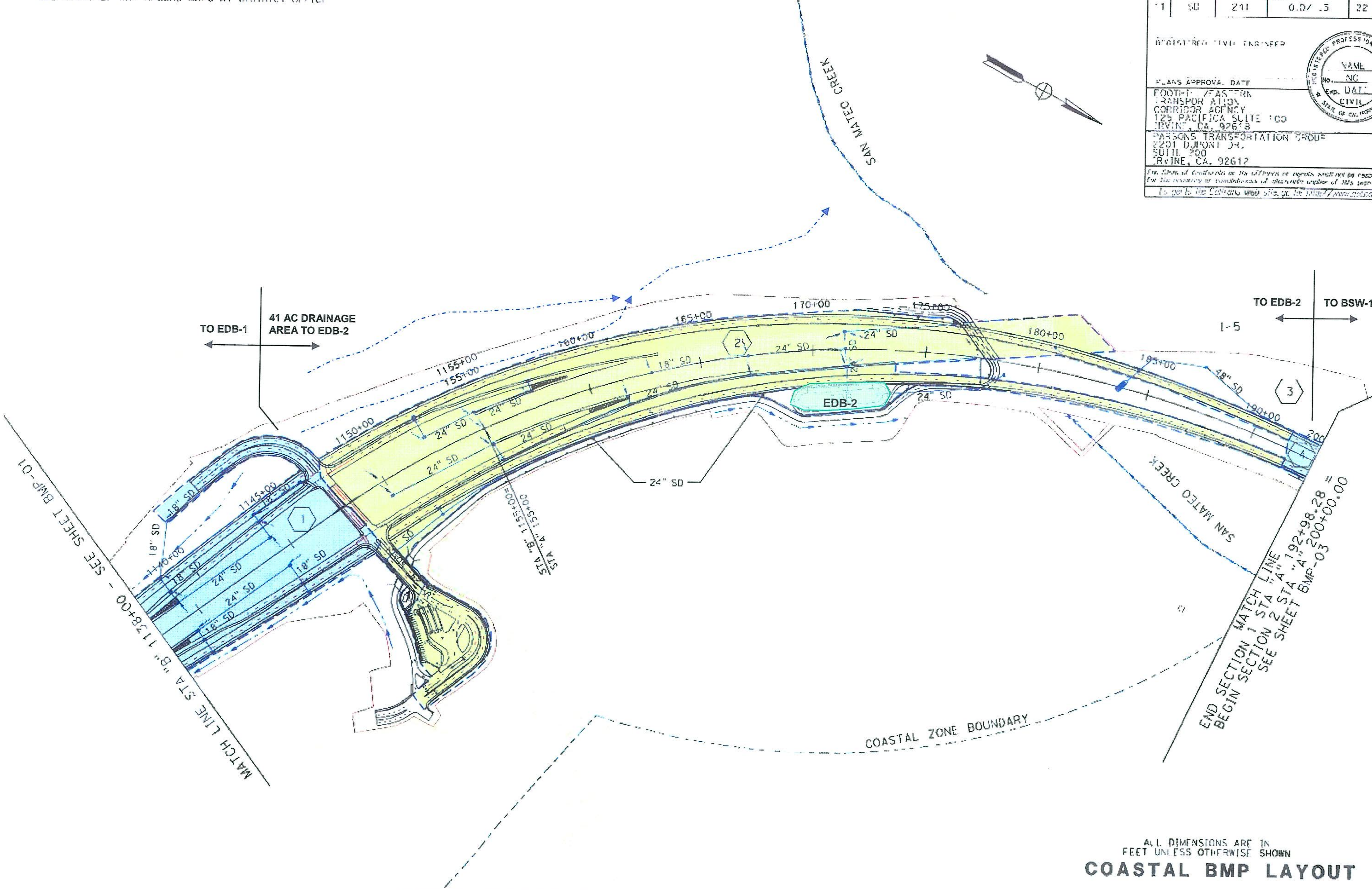

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

COASTAL BMP LAYOUT

SCALE 1"=400'

BMP-02

PRELIMINARY - NOT FOR CONSTRUCTION, SUBJECT TO INDEPENDENT VERIFICATION PRIOR TO FINAL DESIGN

CALTRANS DESIGN OVERSIGHT | TCA DESIGN MANAGER | CALCULATED/DESIGNED BY | CHECKED BY | DATE REVISED BY | DATE REVISED

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RELATIVE BORDER SCALE