DISTRICT 11

MATERIALS INFORMATION BROCHURE (REVISED)

MATERIALS ENGINEERING BRANCH

11-SD-905
KP R9.5/R15.0
11-288801

CT

CALIFORNIA DEPARTMENT OF TRANSPORTATION

State of California

Business, Transportation and Housing Agency

Memorandum

To : LEON EDMONDS (332)
Office Engineer
District 11

Date: December 4, 2008

File: 11-SD-905
KP R9.5/R15.0
EA 288801

From : **DEPARTMENT OF TRANSPORTATION - DISTRICT 11**
Materials Engineering Branch

Subject:: Materials Information Brochure

Attached herewith for your consideration

MATERIALS INFORMATION

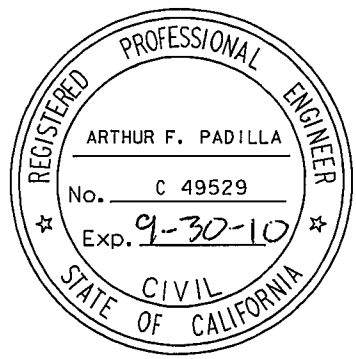
FOR PROPOSED PROJECT

IN SAN DIEGO COUNTY

STATE ROUTE 905

For construction of State Highway in San Diego County from 1.2 km east of the Route 905/805 separation to 0.8 km east of the Brittania Over-crossing

Arthur F. Padilla
District Materials Engineer



cc: G Vettesse **(330)**
E Hajj **(333)**
M Deyoe **(332)**
B Hinman **(63)**
Project File (mib 288801.doc)

MATERIALS INFORMATION

11-SD-905
KP R9.5/15.0
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NOTE: Information contained herein has been compiled in accordance with Section 2-1.03 of the Standard Specifications. Additional information is available for review at the District 11, Materials Laboratory, 7177 Opportunity Road, San Diego, California.

TABLE OF CONTENTS

MATERIALS INFORMATION

GROUND WATER

Perched groundwater was not encountered in any of the test pits excavated to a depth of 1.5 m. In the test borings performed by Geotechnical Roadway South, perched groundwater was encountered in some of the borings. The regional groundwater table is located at a significant depth and will not impact the proposed construction. For a detailed explanation, refer to the Geotechnical Design Report dated June 17, 2002.

R-VALUES

Existing soils within the general limits of the project were somewhat varied with R-values between 5 and 64.

GRADING FACTORS

The average relative compaction of existing basement soils is 82%. Removal and recompaction of those soils to 90%, as recommended in the Materials Design Report dated October 21, 2005 and as specified in subsection 19-5.04 of the Standard Specifications, will produce a grading factor of 0.91 or 9.4% shrinkage.

EMBANKMENT RECOMMENDATIONS

As per the Materials Design Report dated October 21, 2005, basement soils excavated during structural section construction should be placed in embankments. Imported borrow with an R-value of no less than 5 should be used to make up any deficiencies when constructing embankments.

CLASS 4 AGGREGATE SUBBASE

Material for aggregate subbase may be processed from project soils or obtained from commercial sources. Aggregate subbase shall be Class 4 and conform to the provisions in Section 25, "Aggregate Subbase," of the Standard Specifications, and Standard Special Provision 25-020, dated 07-30-99.

Class 4 aggregate subbase shall have a minimum R-value of 40 and a Sand Equivalent of 22.
The aggregate subbase shall conform to the following grading:

Sieve Sizes	Percentage Passing
100mm	100
4.75mm	30-100
600μm	0-65
75μm	0-20

EARTHWORK QUANTITIES

The following earthwork quantities are from the Engineer's Estimate:

Roadway Excavation	1,221,000 m^3
Roadway Embankment	453,000 m^3
Export	768,000 m^3
Class 2 Aggregate Base	123,795 m^3
Class 4 Aggregate Subbase	144,739 m^3

CORROSION ANALYSIS

Corrosion potential tests were performed on 8 near-surface soil samples. Based on this testing, the environment is rated as generally corrosive to metal and reinforced concrete and therefore a conservative design approach was taken for culvert design.

- Soil pH = 6.2
- Soil Minimum Resistivity = 213 Ohms-cm
- Sulfates = 1500mg/kg
- Chlorides = 780 mg/kg
- Non-abrasive flow conditions
- Flow Velocities < 5 m/s

RECOMMENDED CULVERT ALTERNATIVES

1. Reinforced Concrete Pipe (RCP) may be used utilizing 6 sack Cement (Type II Modified or Type 5) with 1" cover to reinforcing steel.

2. Thick wall Plastic Pipes satisfy design criteria. The pipe should be fabricated from either High Density Polyethylene (HDPE) or Polyvinyl Chloride (PVC).

3. 18 ga (0.052") Polymeric Sheet Coated Steel pipe may be used. 16 ga Composite Steel Spiral Ribbed Pipe may be used.

Any imported backfill material will need to be representatively sampled and tested to ensure it satisfies the pH and resistivity requirements found in figure 854.3B of the Highway Design Manual.

OPTIONAL DISPOSAL SITE

At the Contractor's option, the off-site location found in the exhibits on pages 6-12 of this report may be used for exported material of up to 770,000 m^3. If this area is used as a disposal site the Contractor shall submit plans to the Engineer showing temporary water pollution control and traffic handling. The Engineer will review and provide comments to the Contractor. The Contractor will re-submit the plans and the Engineer will approve them prior to the use of this site.

MATERIALS SOURCES

A current list of mining operations eligible to sell materials such as aggregates to the State of California in San Diego County, can be found at the following California Office of Mine Reclamation website:

www.consrv.ca.gov/omr/ab_list/index.htm

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

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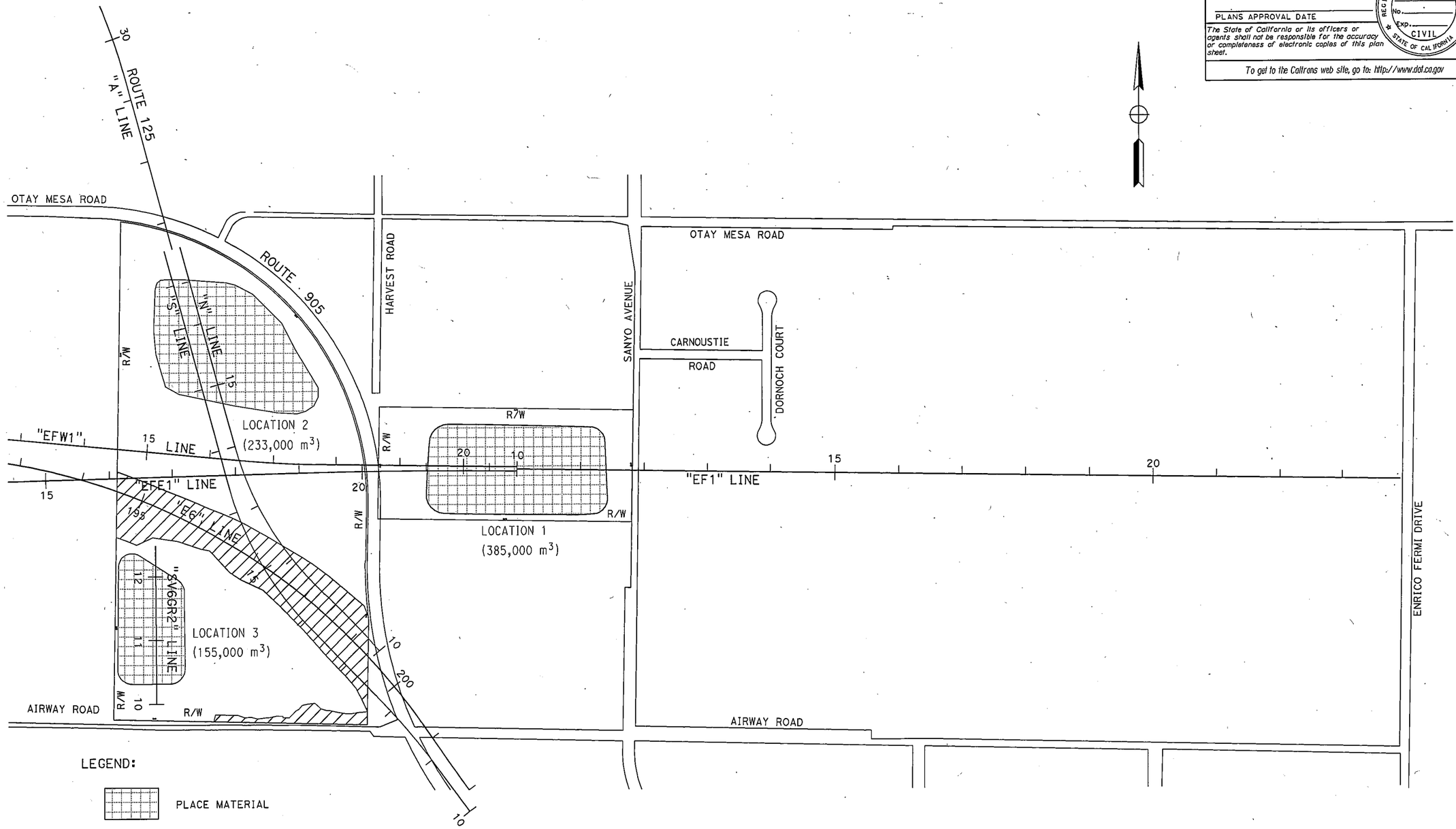
To get to the Caltrans web site, go to: http://www.dot.ca.gov



VICINITY MAP
PAGE 6
NO SCALE

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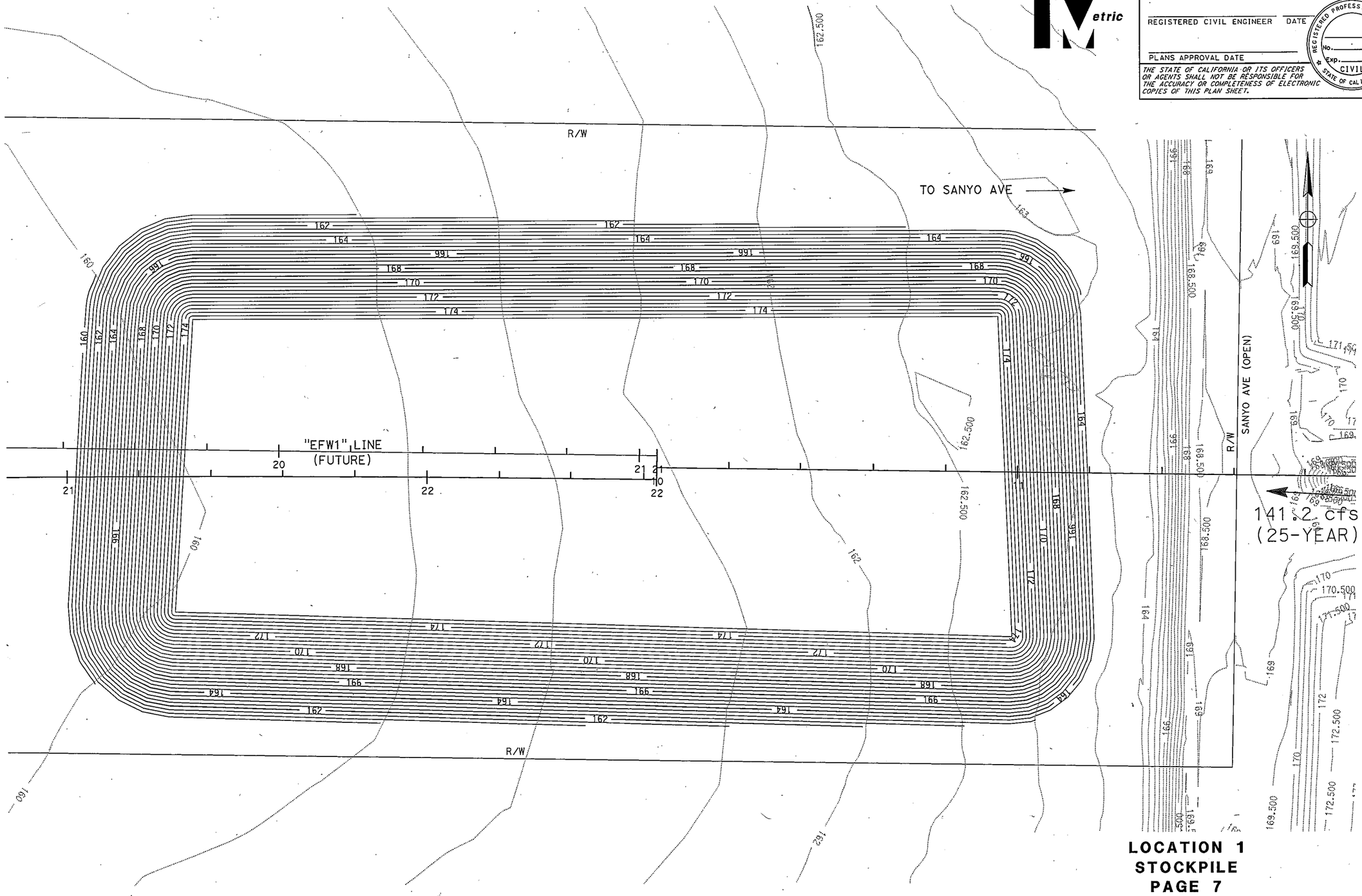

LOCATION 1
STOCKPILE
PAGE 7

SCALE 1:500

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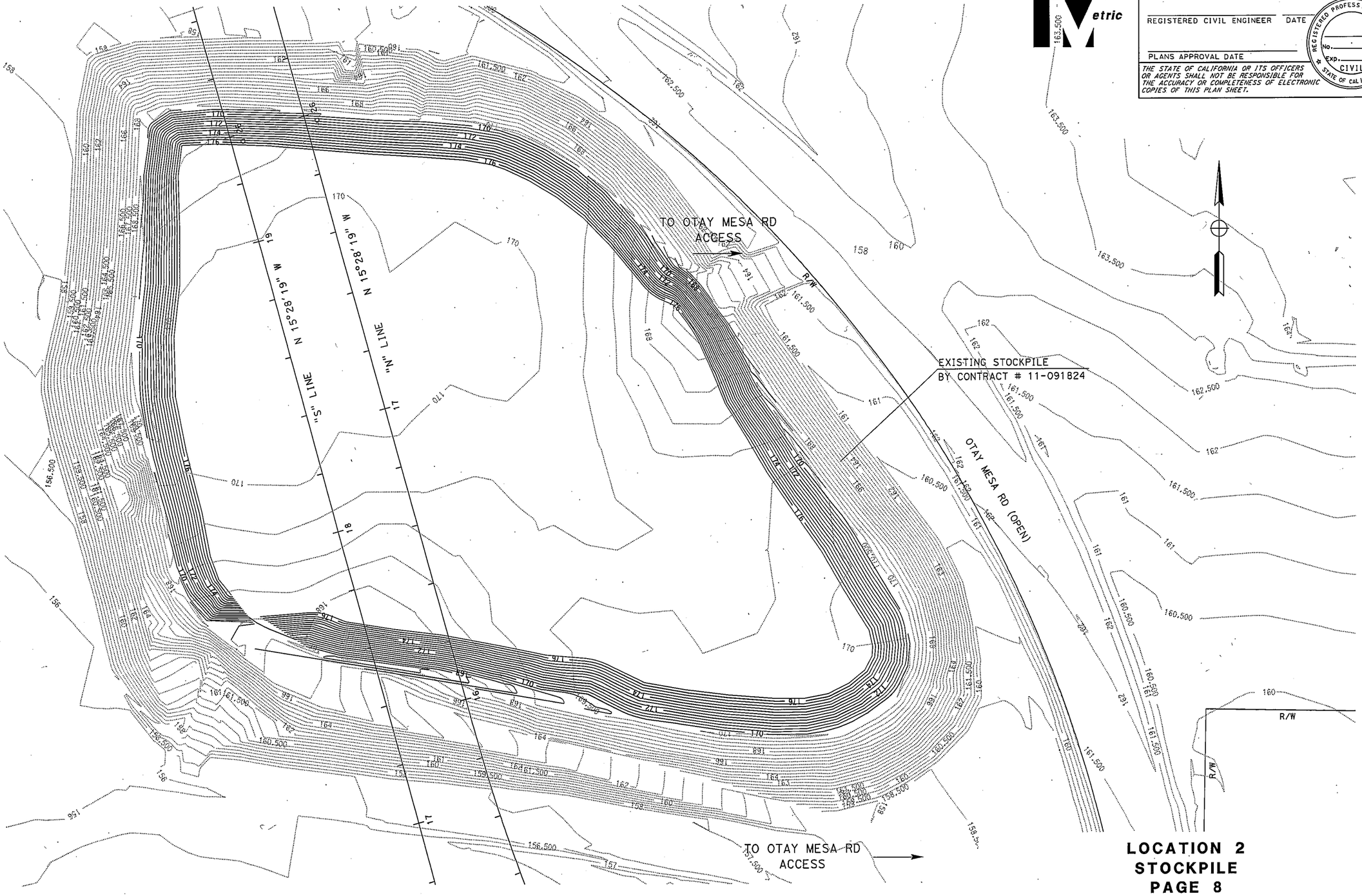

LOCATION 2
STOCKPILE
PAGE 8

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BROW DITCH
TO BE BUILT BY CONTRACT # 11-091824

CONTRACT # 11-091824
NO ACCESS ALLOWED

"SV6GR2" LINE

"SV6GR2" 10+00.000 POT

TO AIRWAY RD

FUTURE "S" LINE

"E6" LINE

FUTURE "N" LINE

POI 2+55.983

CONTRACT # 11-091824
NO ACCESS ALLOWED

R/W

AIRWAY RD (OPEN)

LOCATION 3
STOCKPILE
PAGE 9

SCALE 1:600

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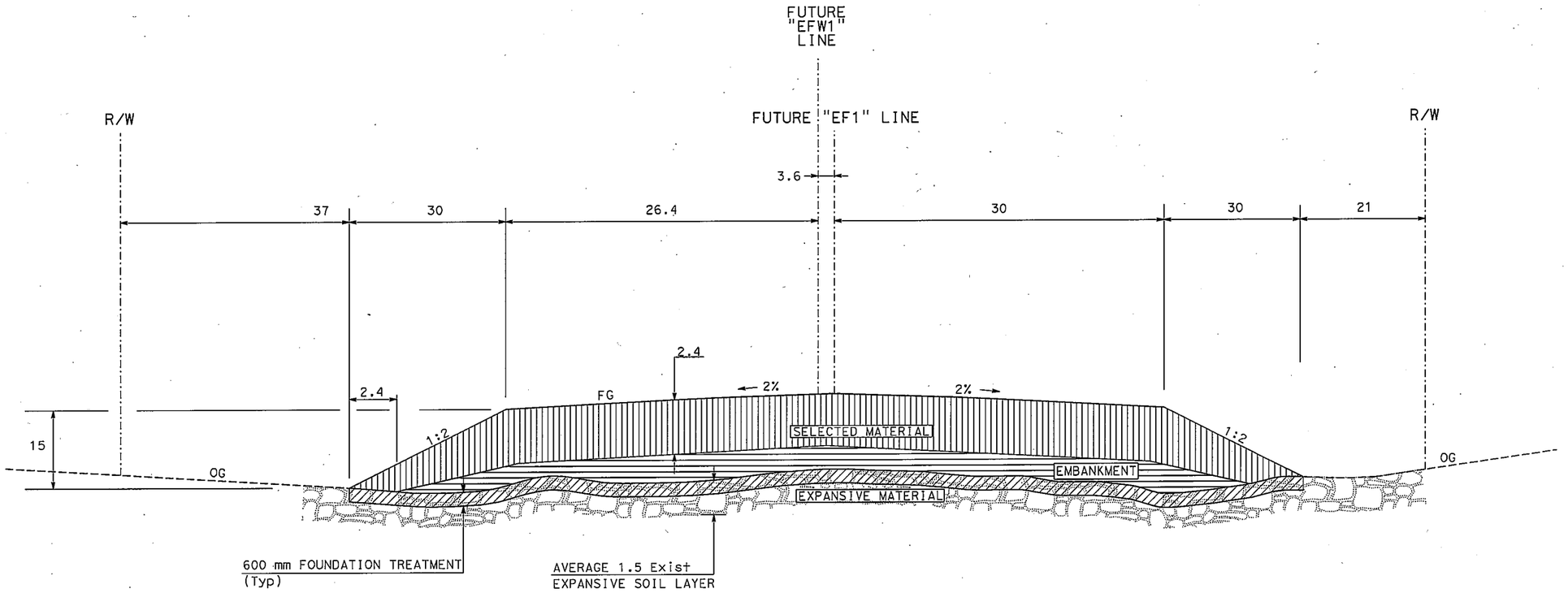

LOCATION 1

STA "EFW1" 19+40 TO STA 20+84
STA "EF1" 10+00 TO STA 11+40

X-SECTION
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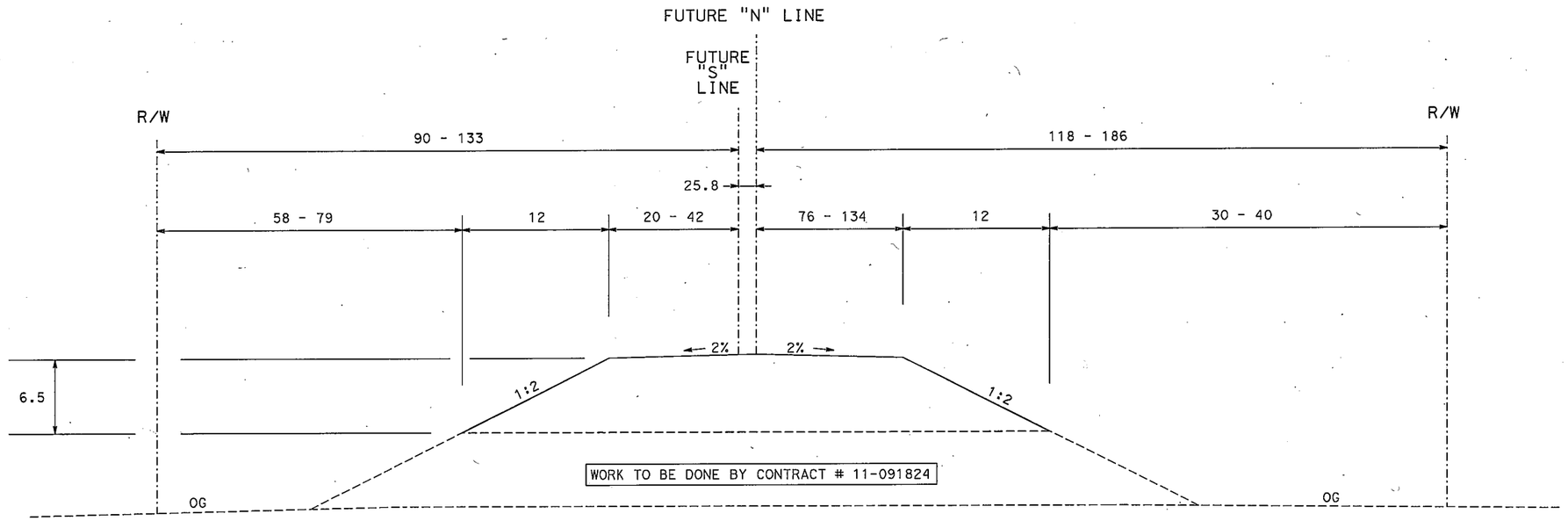

LOCATION 2

STA "N" 16+00 TO STA 18+00

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X-SECTION PAGE 11

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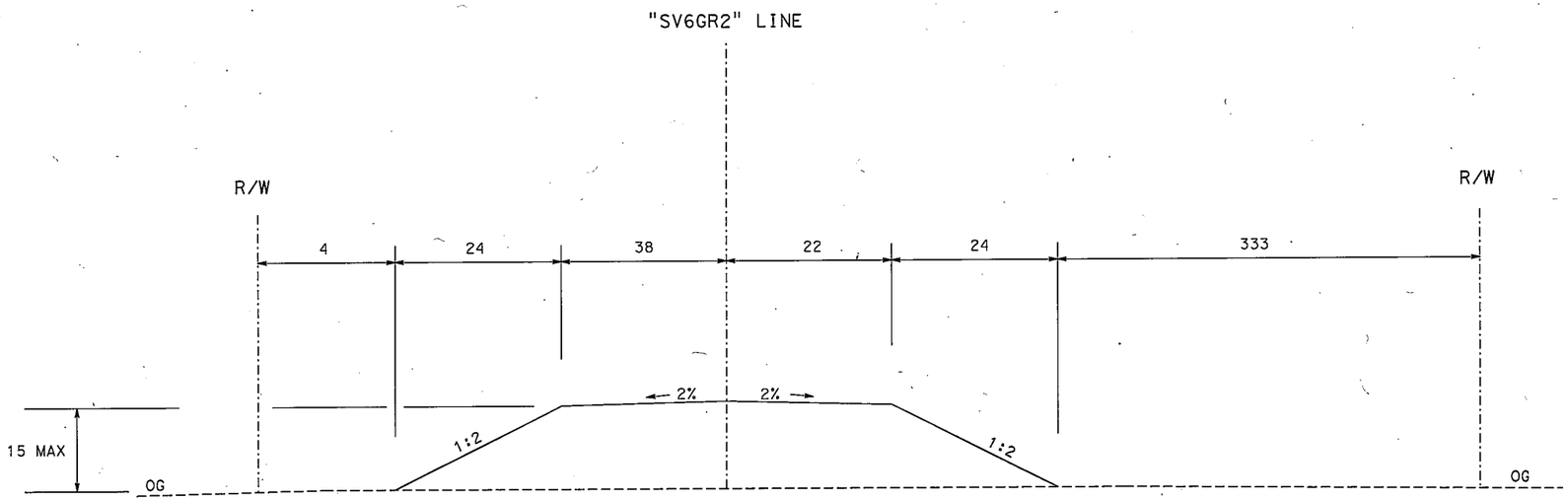

LOCATION 3

STA "SV6GR2" 10+30 TO STA 12+10

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X-SECTION PAGE 12

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