

# ORANGE COUNTY

## RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT

SANTA ANA, CALIFORNIA  
BRYAN SPEEGLE, DIRECTOR

### PLANS FOR CONSTRUCTION OF MULTI-USE TRAIL PROJECT

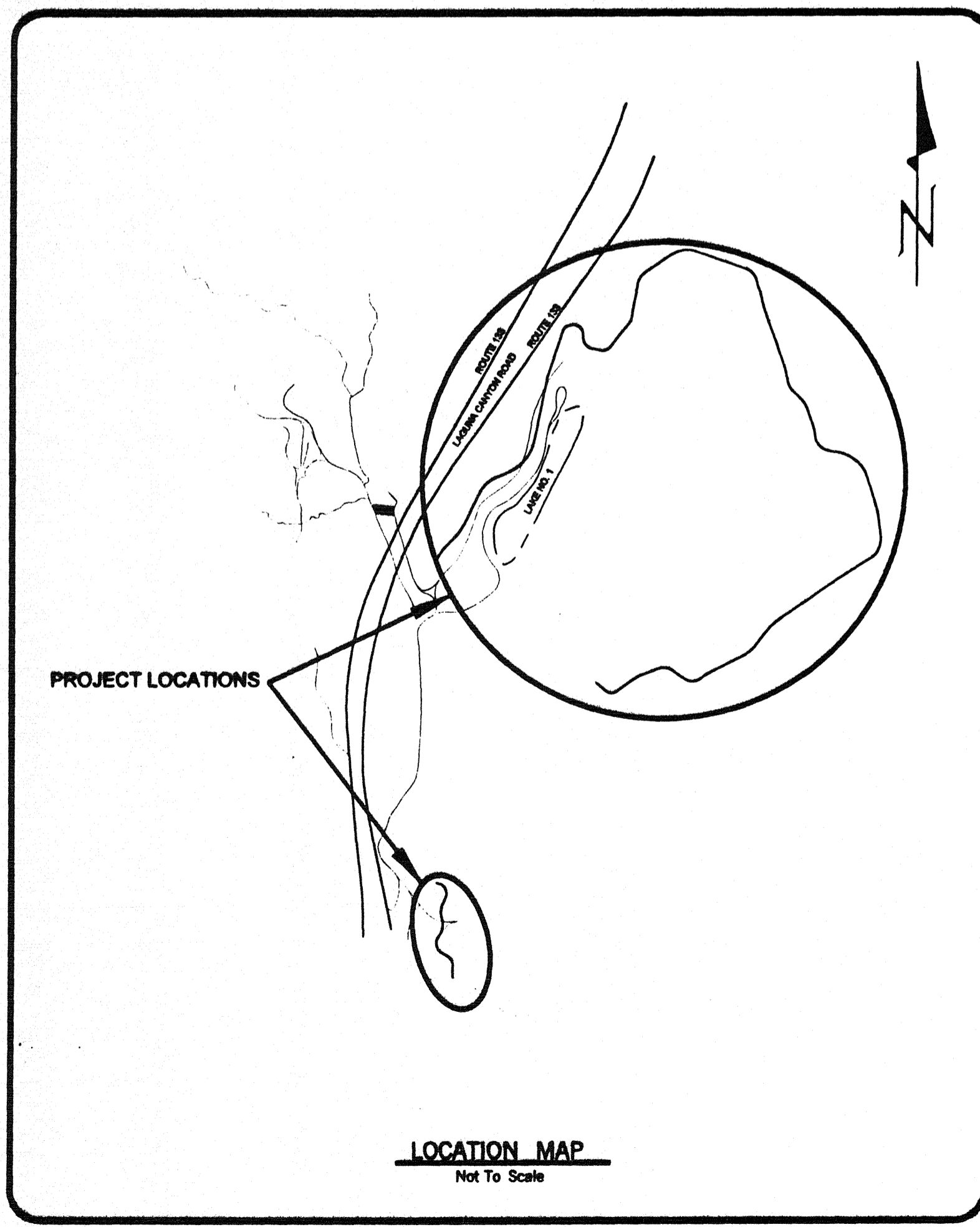
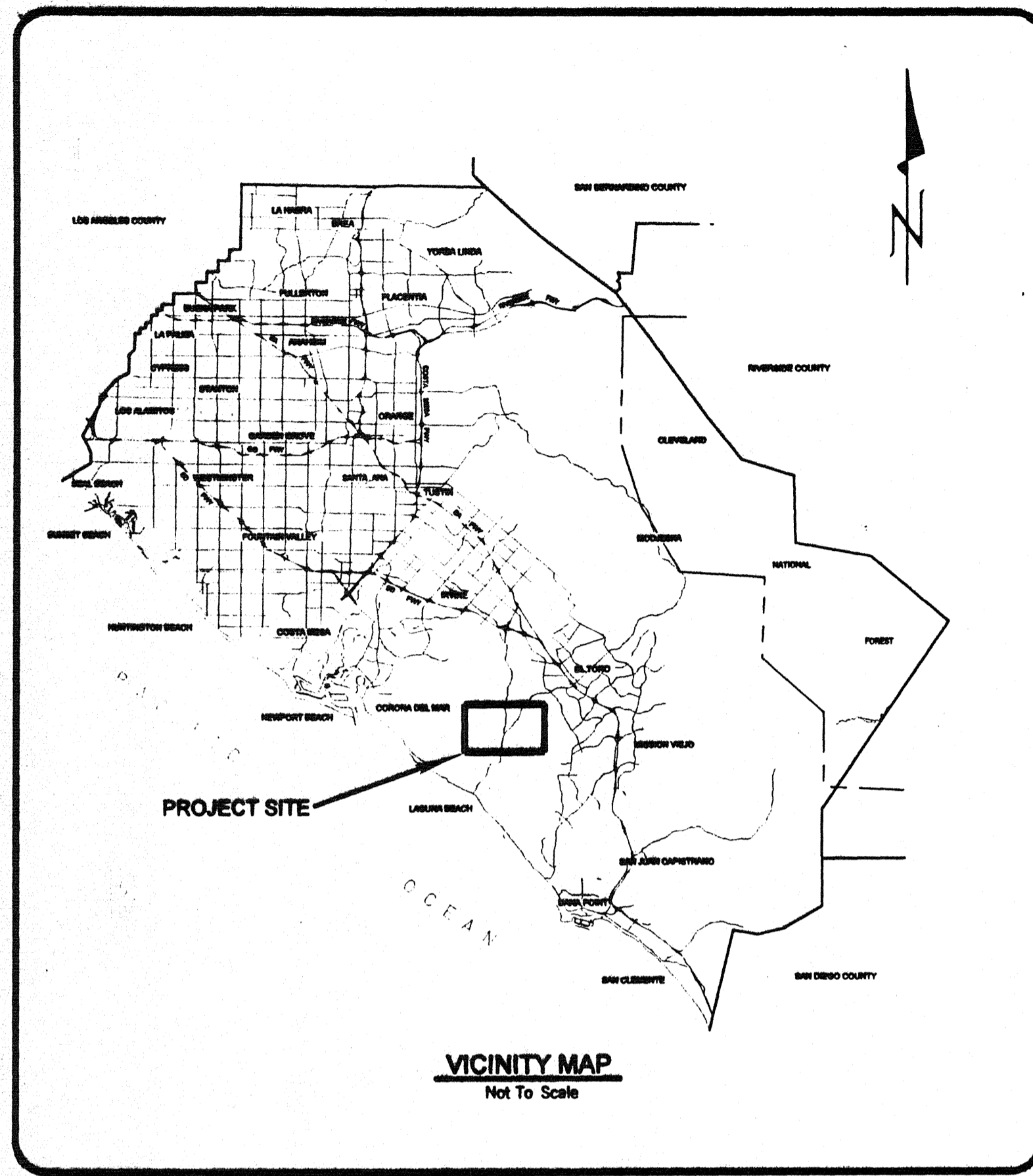
AT

### THE LAGUNA COAST WILDERNESS PARK

W. O. NO. ER08946

JUNE 2007

FUNDED BY: COUNTY OF ORANGE ROAD FUNDS  
SHEET PILE MAINTAINED BY: SOUTHERN CALIFORNIA EDISON  
PER AGREEMENT No. D05-009



NO AS BUILT CHANGES

**AS BUILT**

CORRECTION BY: MTH  
CONTRACT NO.: ER08946  
DATE: 09/16/2009

INDEX OF SHEETS	
SHEET	DESCRIPTION
1	TITLE SHEET
2	STEEL SHEET PILE RETAINING WALL GENERAL PLAN
3	LOG OF TEST BORINGS

UTILITY OWNER	PHONE NO.	CONTACT
SOUTHERN CALIFORNIA EDISON	714-973-5427	MARK CLARK
LAGUNA BEACH COUNTY WATER DIST.	949-494-1041	JAMES NESTOR
TRANSPORTATION CORRIDOR AGENCY	949-754-3488	DAVID LOWE
COX CABLE	949-548-2802	MARTY ZUPANCIC
UNDERGROUND SERVICE ALERT	1-800-422-4133	

**BENCH MARK:**  
O.C.S. BM #3F-93-70,  
ELEV =288.81 ft(81.872 m)  
NGVD 1929 (1976 O.C.S. ADJUSTMENT)

**BASIS OF BEARINGS:**  
THE BEARING OF N31°30'17"E  
BETWEEN POINT 135 AND  
136 AS SHOWN ON RS 98-1072  
FILED IN BOOK 184 PAGES 13  
TO 32 OF RECORDS OF SURVEY

APPROVALS	
APPROVAL OF PLANS FOR MULTI-USE TRAIL AND STEEL SHEET PILE RETAINING WALL:	
APPROVED: <u>M. B. Ell</u> <u>6-29-06</u>	DATE
SOUTHERN CALIFORNIA EDISON	
APPROVED FOR WORK WITHIN THE COUNTY OF ORANGE LEASED AREA	
APPROVED: <u>Paul H. Hamer</u> <u>5-03-07</u>	DATE
RDMD / HB & P / DIRECTOR	

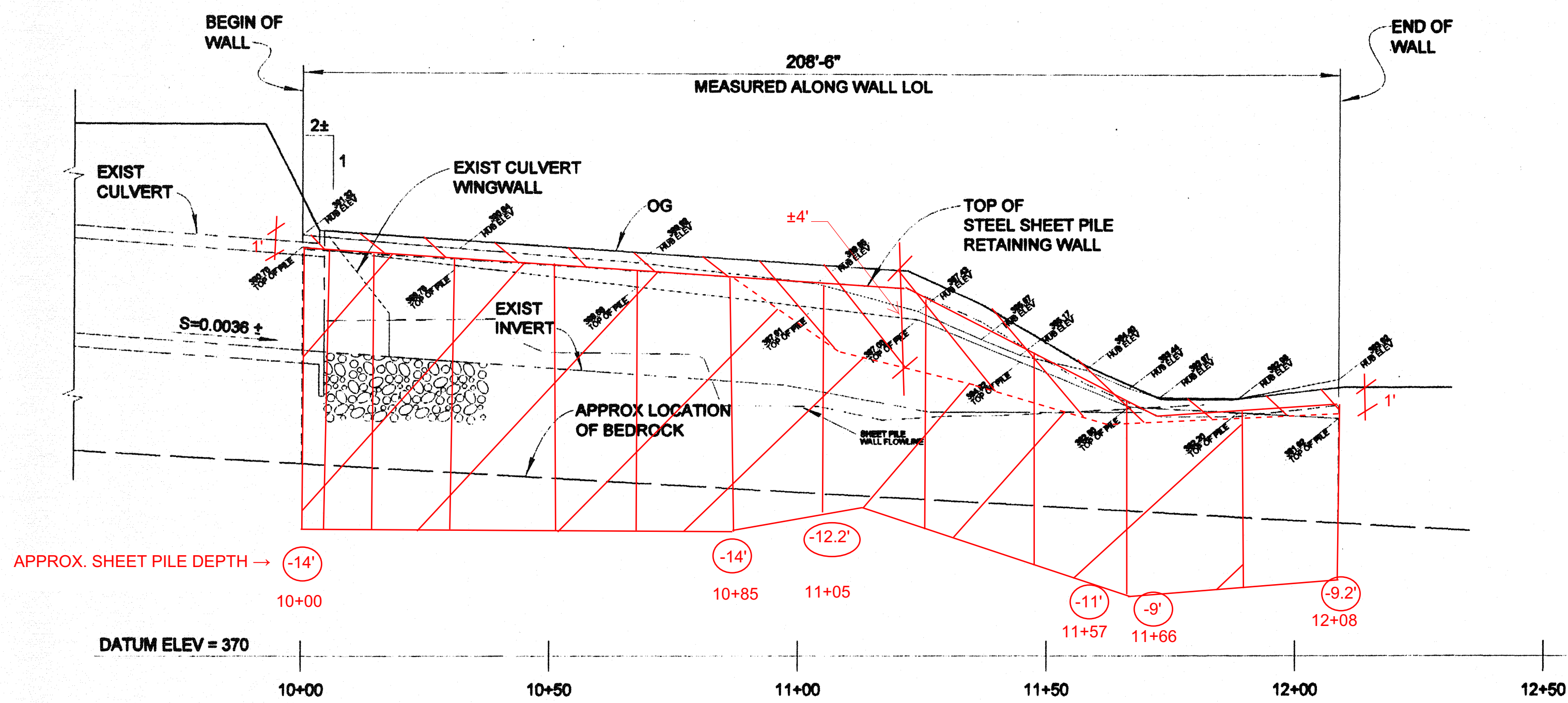
RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT	
APPROVED FOR CONTRACT ADMINISTRATION PURPOSES:	
SUBMITTED: <u>[Signature]</u> <u>5/2/07</u>	DATE
ROAD DIVISION DESIGN	
RECOMMENDED: <u>[Signature]</u> <u>5/2/07</u>	DATE
ROAD DIVISION MANAGER	
APPROVED: <u>[Signature]</u> <u>5/3/07</u>	DATE
DIRECTOR PUBLIC WORKS/CHIEF ENGINEER	

PREPARED BY	
<b>WILLDAN</b> 240 E. Katella Avenue, Suite 450 Anaheim, California 92806-6073 Serving Public Agencies 714/378-8200 Fax 714/378-8299	
PREPARED UNDER RESPONSIBLE CHARGE OF: <u>[Signature]</u> <u>6/7/06</u>	DATE
KENNETH T. STEELE C37247	

REVISIONS			
NO.	DESCRIPTION	SHT.	APPROVED DATE
1	REVISED SHEET PILE EMBEDMENT DEPTH SEE SHEET 15-A		<u>[Signature]</u> 4/1/06
2	ADDED RW LINES		<u>[Signature]</u> 4/1/06
3	INSTALLATION OF CELLULAR CONFINEMENT SYSTEM	7	<u>[Signature]</u> 6/15/07
4	TYPICAL SECTION REVISION	4	<u>[Signature]</u> 6/15/07

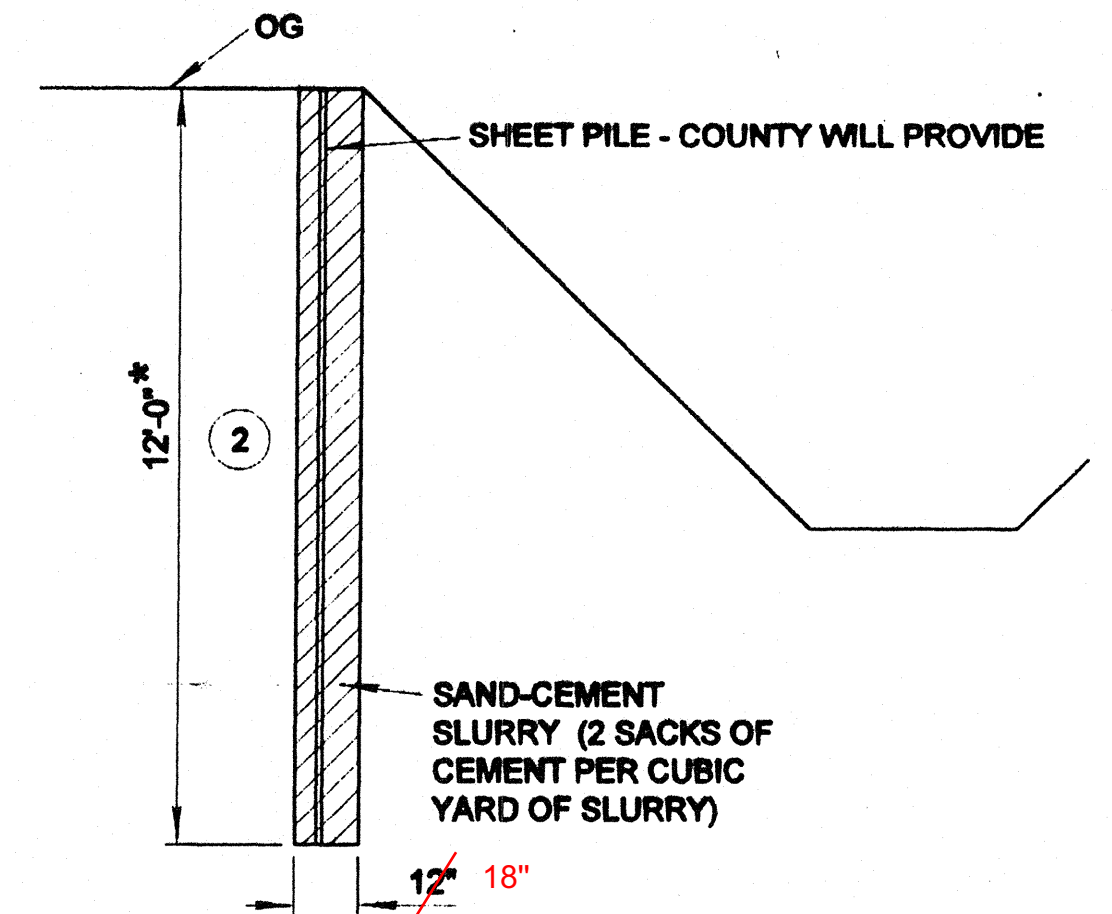
W. O. NO. ER08946  
DWG. NO. \_\_\_\_\_

**SHEET 1 OF 3**



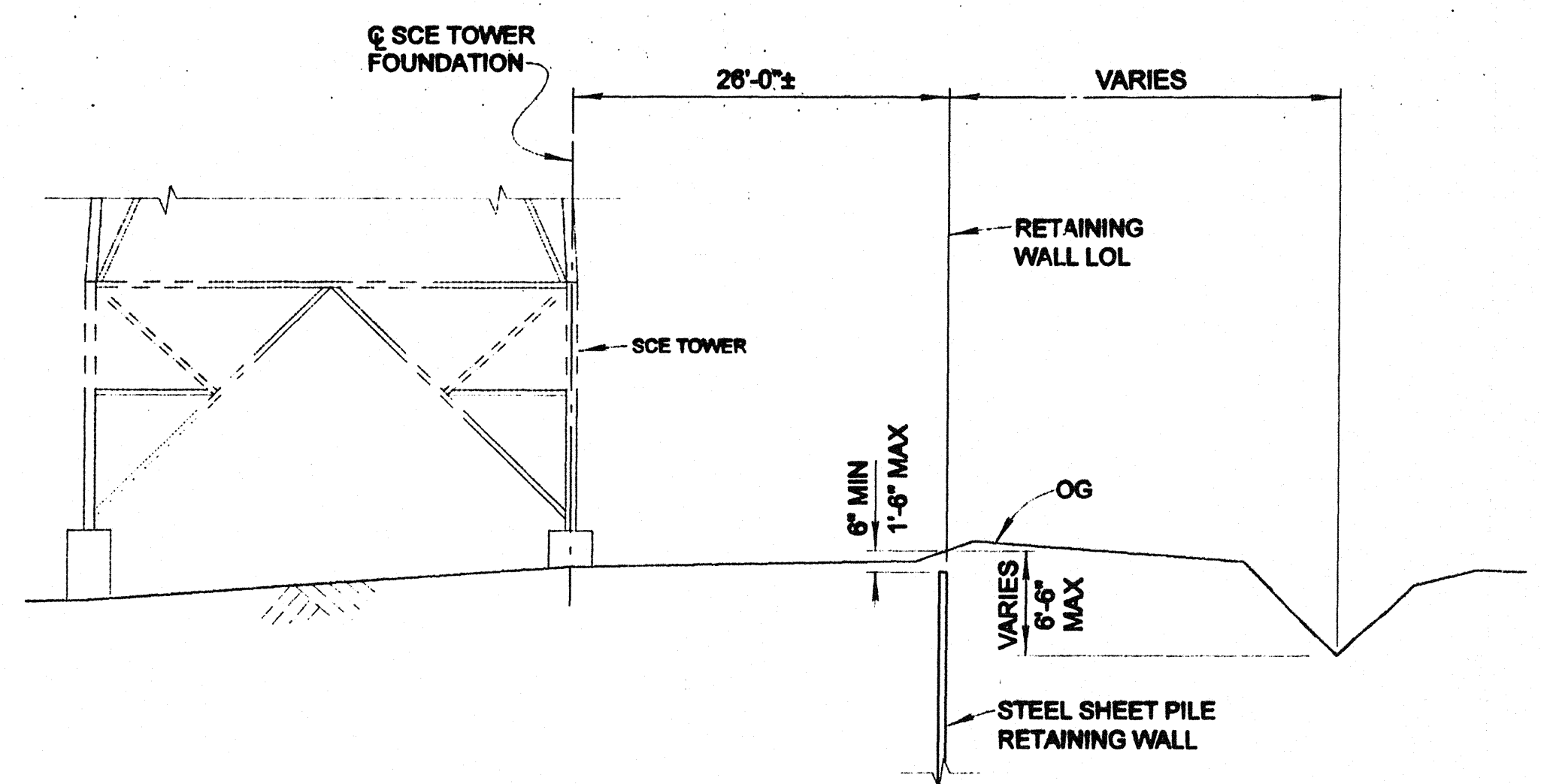
- = SHEET PILE
- = CEMENT SAND SLURRY
- = NATIVE BACKFILL (90% RC)

**PROFILE**  
 HORIZ. 1" = 20'-0"  
 VERT. 1" = 5'-0"



\* 5' OR 3' BELOW COMPETENT BEDROCK;  
 COMPETENT BEDROCK TO BE DETERMINED  
 BY GEOTECHNICAL ENGINEER.

**SHEET PILE DETAIL**  
 NO SCALE



**TYPICAL SECTION**  
 1" = 10'-0"

**CURVE DATA**

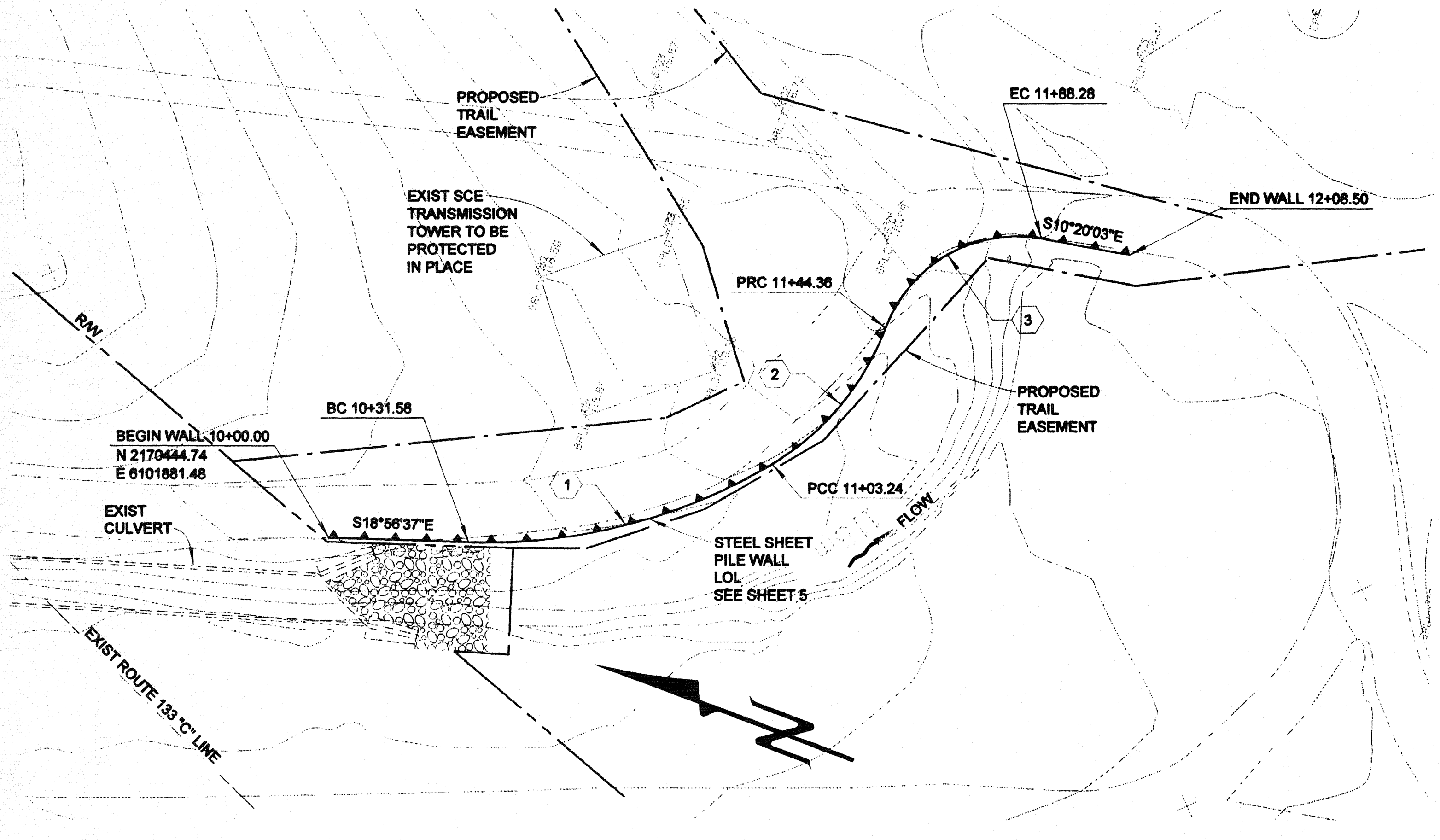
1	2	3
Δ = 33°22'49"	Δ = 39°16'16"	Δ = 81°10'31"
R = 123.00'	R = 60.00'	R = 31.00'
L = 71.66'	L = 41.12'	L = 43.92'
T = 36.88'	T = 21.41'	T = 26.56'

**AS BUILT**

CORRECTION BY: MTH

CONTRACT NO.: ER08946

DATE: 09/16/2009



**PLAN**  
 1" = 20'-0"

**LEGEND**

- RIGHT-OF-WAY
- TRAIL EASEMENT LINE
- ROAD CENTER LINE
- EXISTING STRUCTURE
- RETAINING WALL LAYOUT LINE
- FLOW DIRECTION
- EXIST RIPRAP SLOPE PROTECTION

**NOTE:**

- THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.
- TOPO CONTOUR LINES ARE IN METRIC. ALL OTHERS ARE IN ENGLISH UNITS.

**GENERAL NOTES**  
**SERVICE LOAD DESIGN**

- DESIGN: CALTRANS BRIDGE DESIGN SPECIFICATIONS-APRIL 2000 (LFD) (1996 AASHTO WITH INTERIMS AND REVISIONS BY CALTRANS)
- LIVE LOADING: 40-TON 3-AXLE VEHICLE LOAD (AXLE LOAD DISTRIBUTION PROPORTIONAL TO HS20 TRUCKLOAD)
- SEISMIC LOADING: EXPECTED PEAK ACCELERATION, A = 0.4g  
 HORIZONTAL ACCELERATION, Kh = 0.13g  
 VERTICAL ACCELERATION, Kv = 0g
- DESIGN PARAMETERS: SOIL DENSITY, r = 125 pcf (0'-12' DEEP) = 130 pcf (12+ DEEP)
- INTERNAL FRICTION ANGLE, φ = 36° (0'-12' DEEP), C = 200 PSF = 38° (12+ DEE'), C = 0 PSF
- ACTIVE PRESSURE, Pa = 33 pcf
- PASSIVE PRESSURE, Pp = 360 pcf (ALLOWABLE)
- STRUCTURAL STEEL: ASTM DESIGNATION A328, Fb=25 KSI
- WELDING: AWS 1.1 (LATEST EDITION)

**WILLDAN Engineering**  
 2481 EAST KATELLA AVENUE, SUITE 458  
 ANAHEIM, CALIFORNIA 92805-6873  
 714/978-8288 FAX 714/978-8299

ORANGE COUNTY  
 RESOURCES AND DEVELOPMENT MANAGEMENT DEPARTMENT

MULTI-USE TRAIL PROJECT  
 AT  
 THE LAGUNA COAST WILDERNESS PARK

STEEL SHEET PILE RETAINING WALL  
 (SHEET PILE PROTECTION SYSTEM)  
**GENERAL PLAN**

DESIGNED: \_\_\_\_\_ SHEET 2  
 DRAWN: \_\_\_\_\_ CHECKED: \_\_\_\_\_ OF 3

SCALE: \_\_\_\_\_ DATE: \_\_\_\_\_ DRAWING NO.: \_\_\_\_\_

AS SHOWN

APPROVED PROFESSIONAL ENGINEER  
 KENNETH T. STEELE  
 No. 37247  
 CIVIL  
 4/14/09

