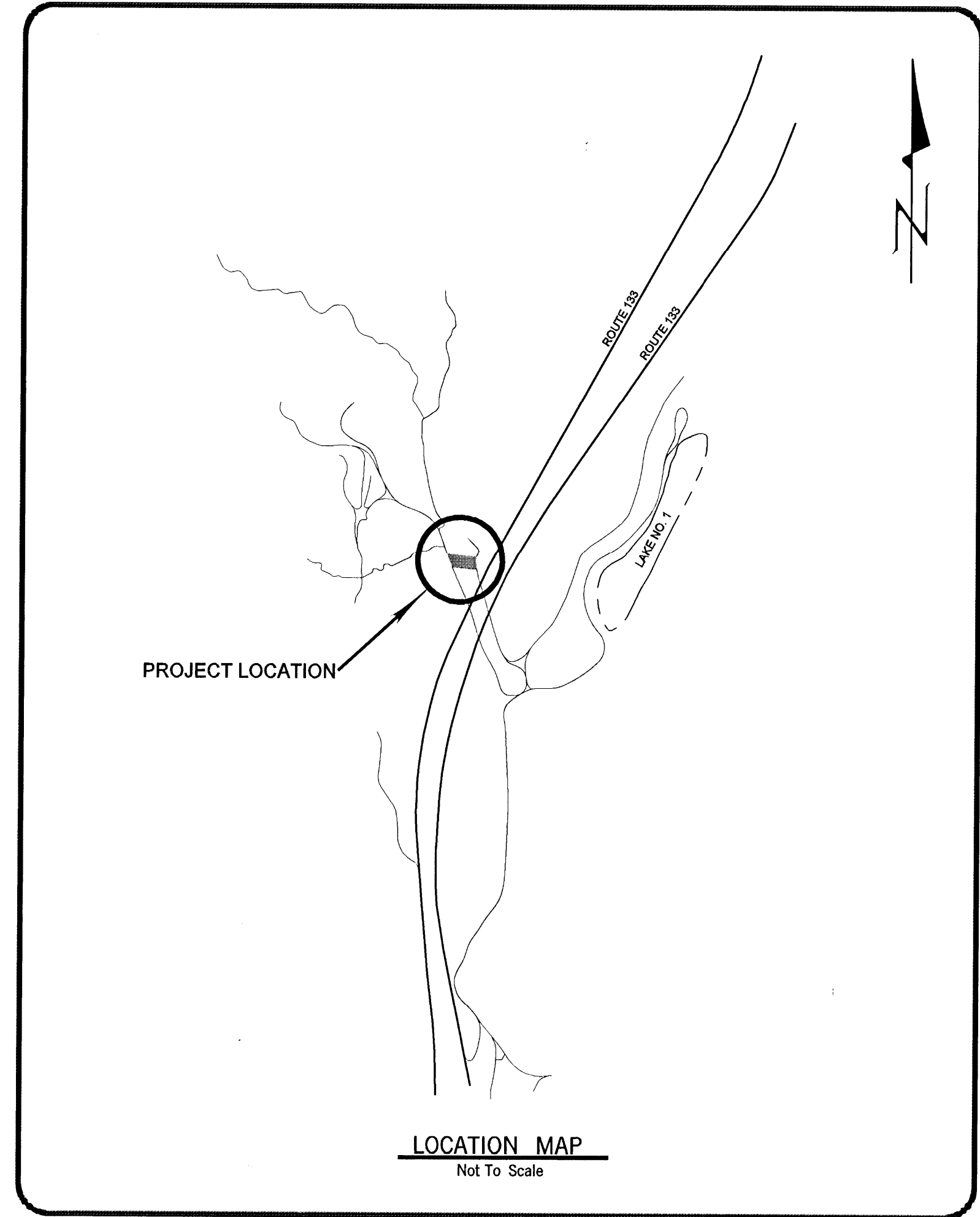
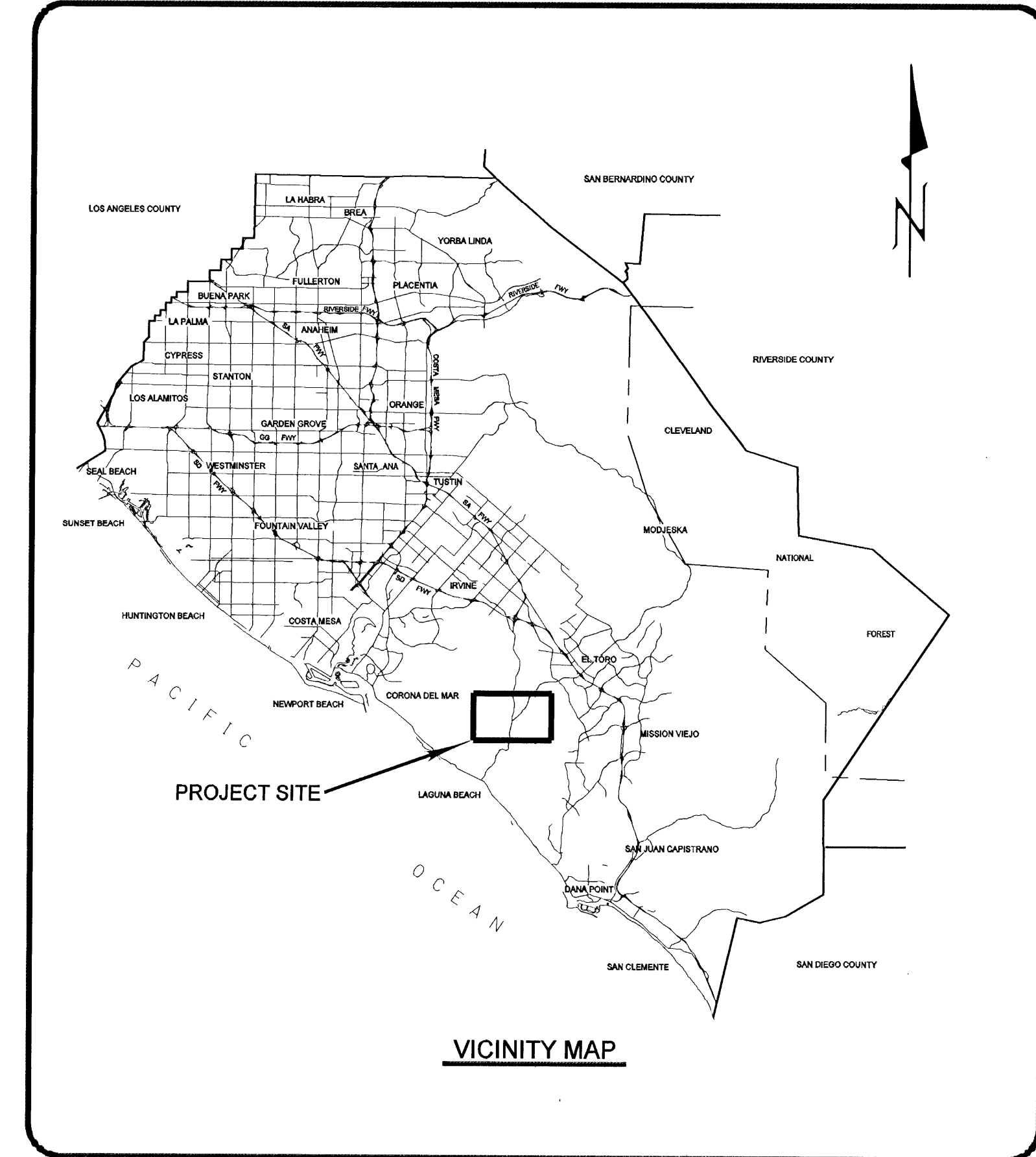


Date: 3/25/2005 Plotted by: \$USER\$ Dgnspc: S:\Inl532 SCE Br\Title.dgn



ORANGE COUNTY

RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT

SANTA ANA, CALIFORNIA
BRYAN SPEEGLE, DIRECTOR

PLANS FOR

CONSTRUCTION OF SOUTHERN CALIFORNIA EDISON (SCE) BRIDGE

AT

THE LAGUNA COAST WILDERNESS PARK

MARCH 25, 2005

FUNDED BY: COUNTY OF ORANGE ROAD FUNDS
MAINTAINED BY: SOUTHERN CALIFORNIA EDISON PER AGREEMENT No. D03-048

No As-Built Changes

AS BUILT

CORRECTION BY: M. PLATT, G.P.

CONTRACT NO. _____

DATE 5/21/07 ; 6/2/08

APPROVALS	
APPROVAL OF PLANS FOR CONSTRUCTION OF SCE BRIDGE	
APPROVED: <i>Mark B. Clark</i>	5-4-05
SOUTHERN CALIFORNIA EDISON DATE	
APPROVED FOR WORK WITHIN THE COUNTY OF ORANGE LEASED AREA	
APPROVED: <i>Edith</i>	5/16/05
RDMD / HB & P / DIRECTOR DATE	

RESOURCES & DEVELOPEMENT MANAGEMENT DEPARTMENT	
SUBMITTED: <i>Edward K. ...</i>	5/10/05
ROAD DIVISION/CAPITAL PROJECTS DIVISION DATE	
RECOMMENDED: <i>V.P. ...</i>	5/23/05
ROAD DIVISION MANAGER DATE	
APPROVED: <i>H. Nakasone</i>	8/3/05
CHIEF ENGINEER DATE	

PREPARED BY	
WILLDAN	2401 E. Katella Avenue, Suite 300 Anaheim, California 92806 Serving Public Agencies 714/940-6300 fax: 940-6399
PREPARED UNDER RESPONSIBLE CHARGE OF: <i>Peter L. Liu</i>	
PETER L. LIU C48409 4-6-05	
DATE	

INDEX OF SHEETS	
SHEET	DESCRIPTION
1.	TITLE SHEET
2.	PLAN, PROFILE AND TYPICAL SECTIONS
3.	GENERAL PLAN
4.	FOUNDATION PLAN
5.	ABUTMENT 1 LAYOUT
6.	ABUTMENT 2 LAYOUT
7.	WINGWALL PROFILE AND DETAILS
8.	LOG OF TEST BORINGS

UTILITY OWNER	PHONE NO.	CONTACT
SOUTHERN CALIFORNIA EDISON	714-796-9920	ARLN AVERYT

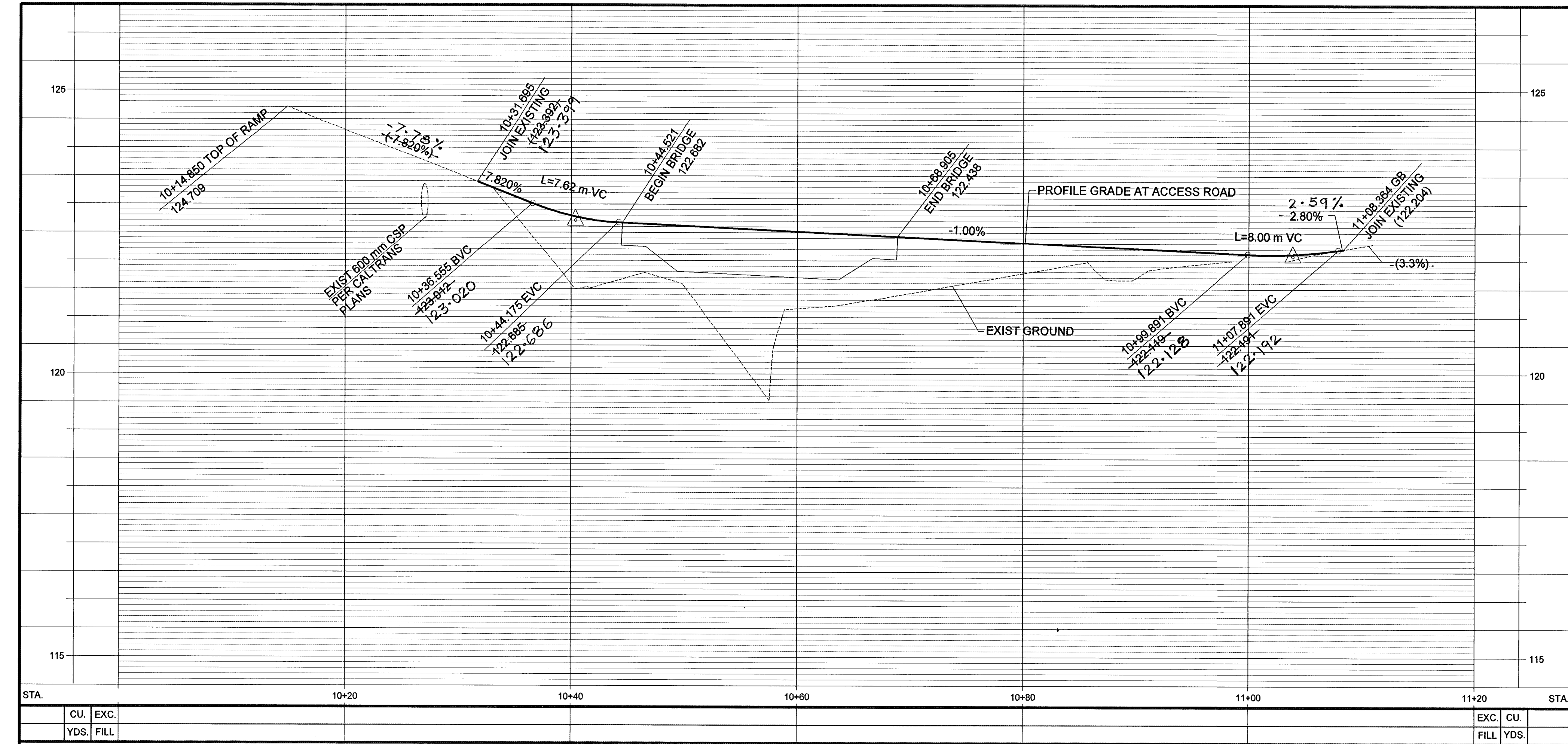
BENCH MARK:	BASIS OF BEARINGS:
O.C.S. BM #3F-93-70, ELEV = 81.872 m NGVD 1929 (1976 O.C.S. ADJUSTMENT)	THE BEARING OF N31°30'17"E BETWEEN STATION 135 AND 136 AS SHOWN ON RS 99-1072 FILED IN BOOK 184 PAGES 13 TO 32 OF RECORDS OF SURVEY

NO.	DESCRIPTION	SHT.	APPROVED	DATE
REVISIONS				

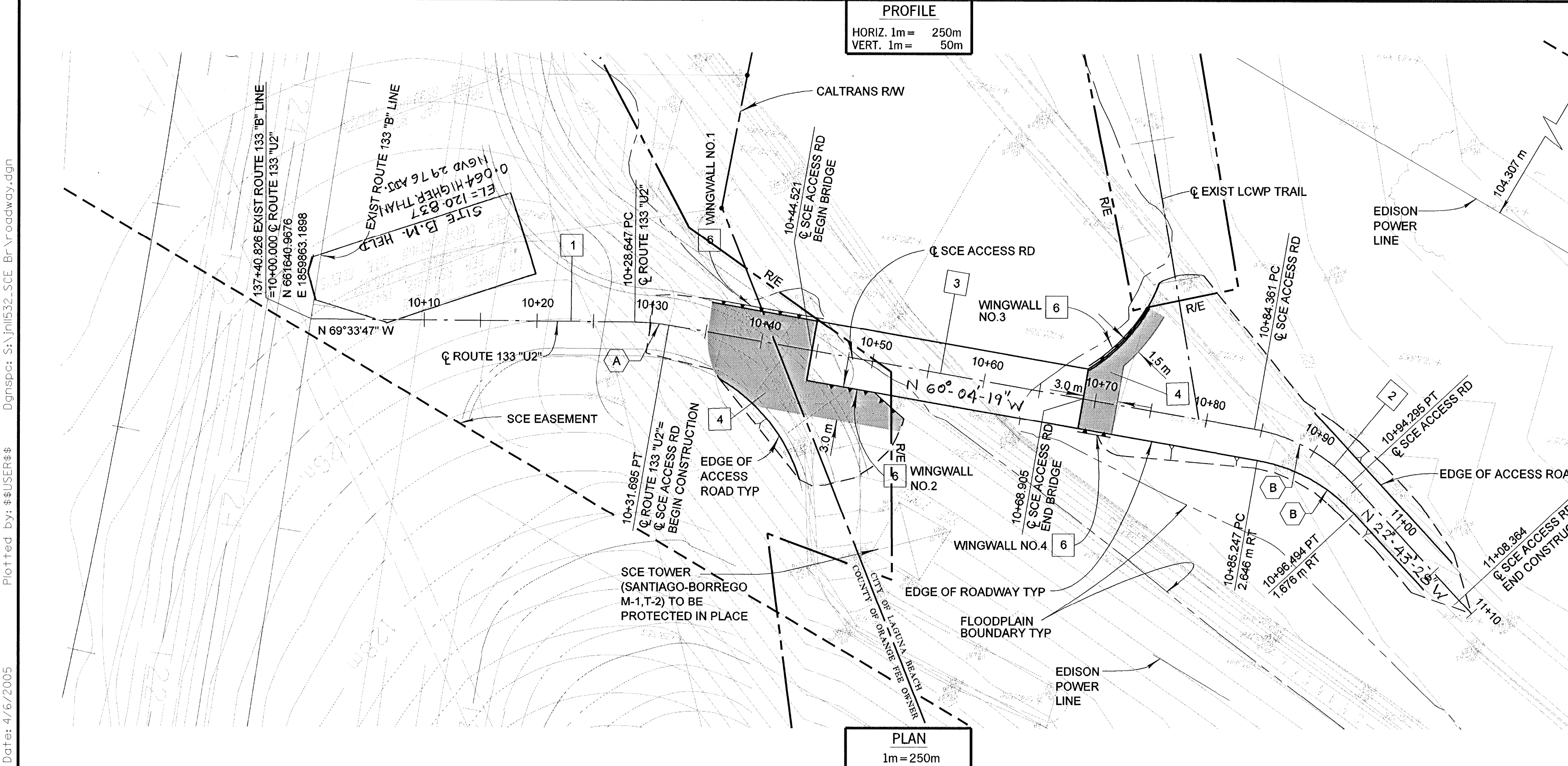
W. O. NO. ER20487
DWG. NO. _____

SHEET 1 OF 8

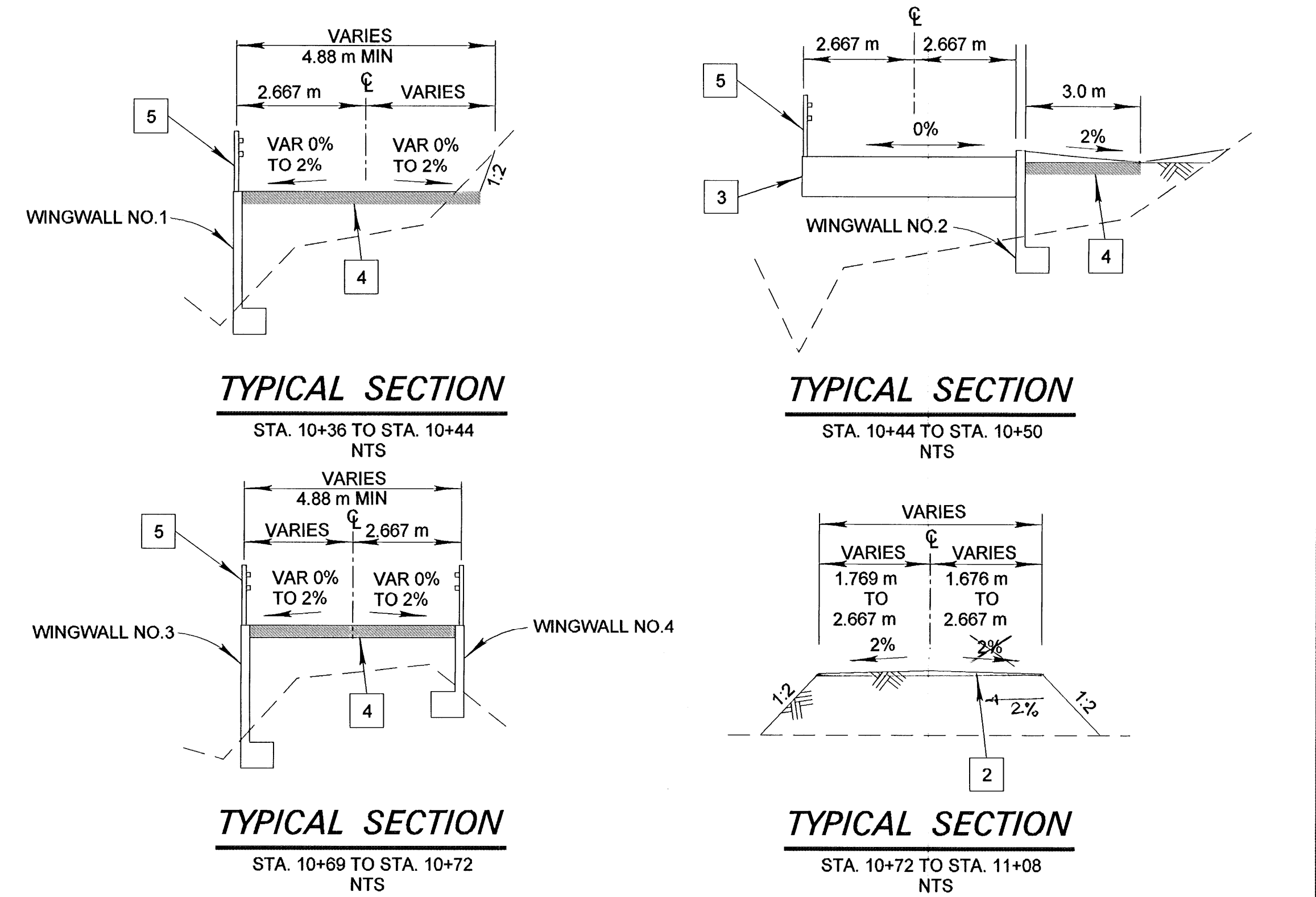
Date: 4/6/2005 Plotted by: \$AUSER\$ Dgnspc: S:\J11532_SCE Br-Roadway.dgn



PROFILE
HORIZ. 1m = 250m
VERT. 1m = 50m



PLAN
1m = 250m



- CONSTRUCTION NOTES**
1. PROTECT EXIST UTILITY ACCESS DIRT ROAD.
 2. CONSTRUCT DIRT ACCESS ROAD.
 3. RAILROAD FLAT CAR BRIDGE (SEE SHEETS 3-7).
 4. CONSTRUCT 0.15 m. DEPTH OF SOIL CEMENT TREATED SURFACE COURSE.
 5. STEEL RAIL PER SHEET 7.
 6. WINGWALL PER SHEETS 6 & 7.

UTILITIES		OWNER	CURVE DATA	
ELECTRICAL		SCE	A	B
			$\Delta = 9^{\circ}29'28''$	$\Delta = 37^{\circ}20'48''$
			R = 18.400 m	R = 15.240 m
			L = 3.048 m	L = 9.934 m
			T = 1.527 m	T = 5.151 m

LEGEND	
—	EDGE OF ACCESS ROAD
- - -	GRADING LIMITS
- - -	PARCEL BOUNDARY LINE
- - -	SCE EASEMENT LINE
- - -	CALTRANS RIGHT-OF-ENTRY LINE
- - -	100-YR EXPECTED VALUE FLOODPLAIN BOUNDARY
■	CEMENT TREATED SURFACE COURSE

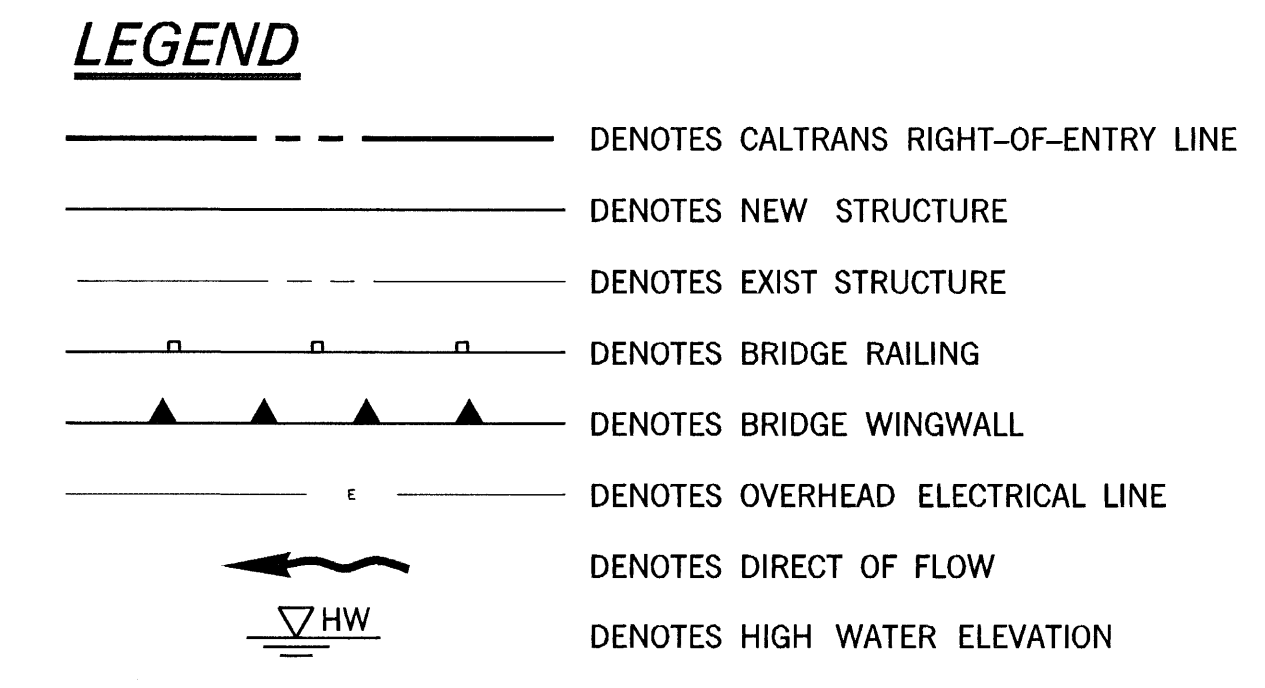
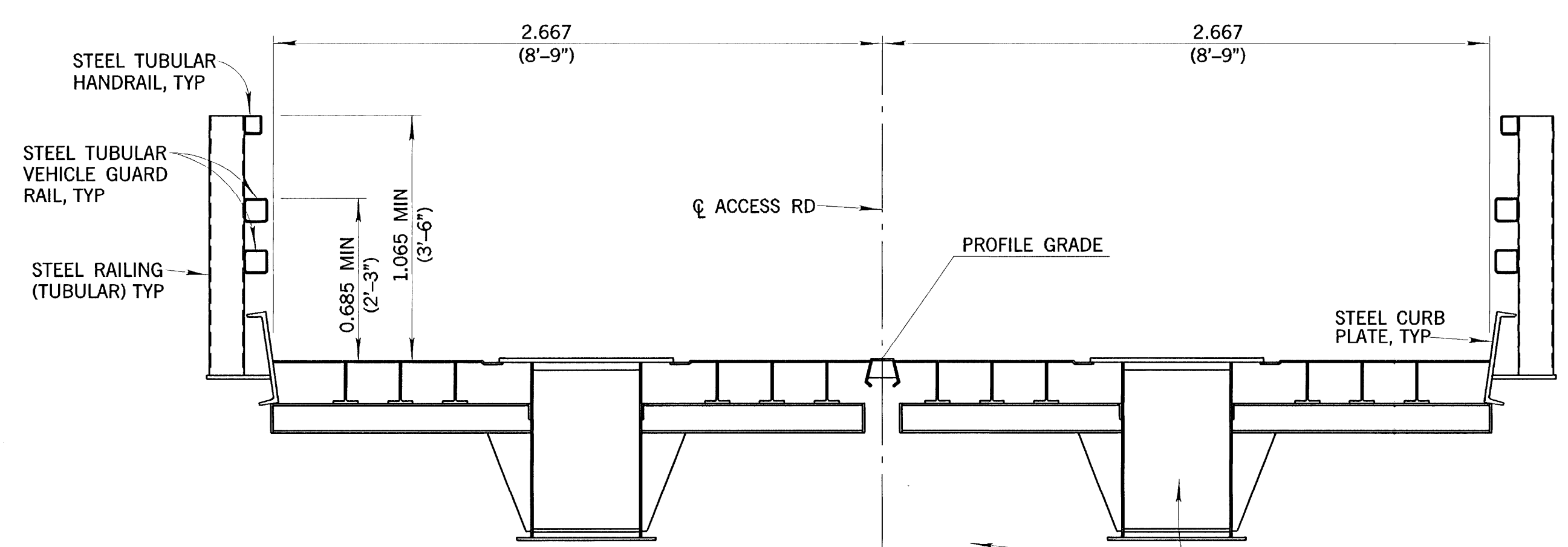
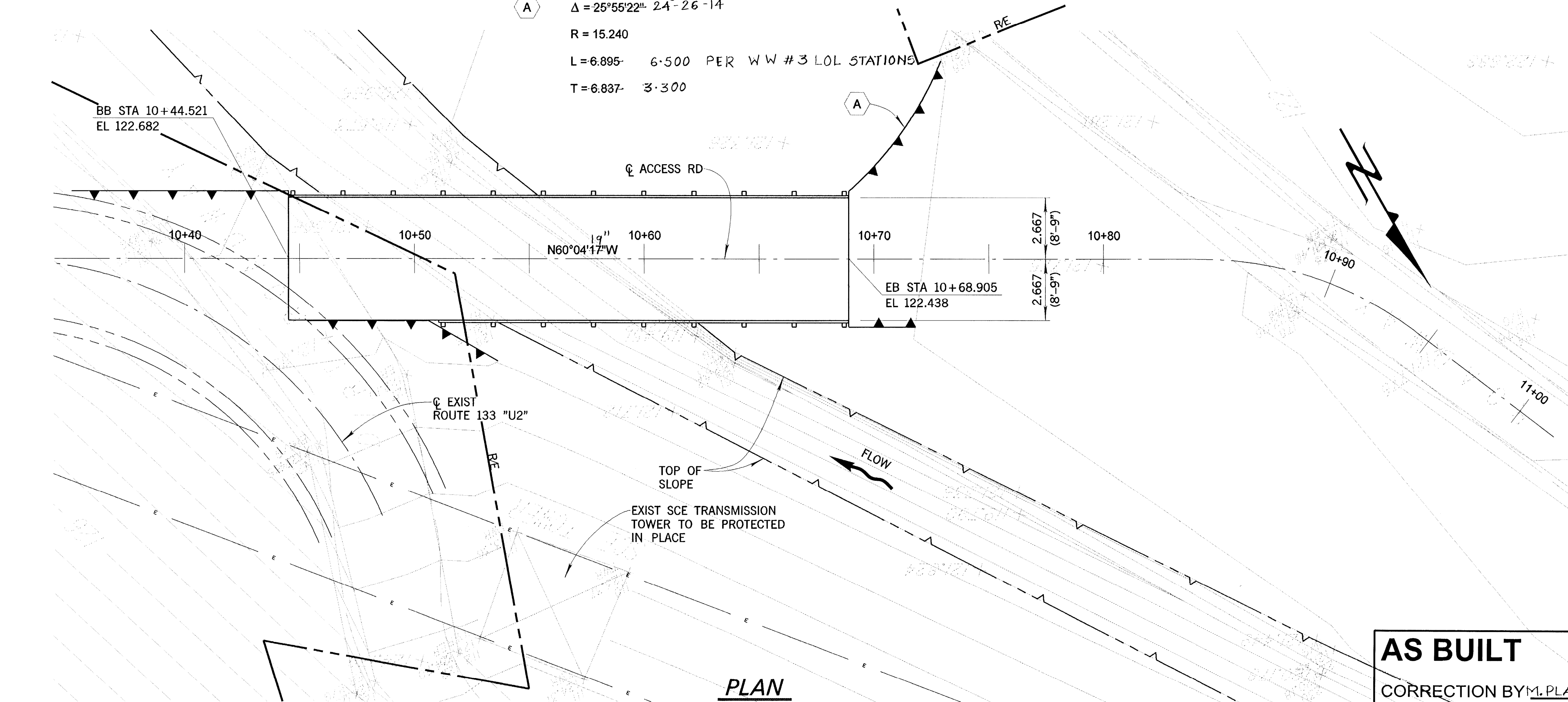
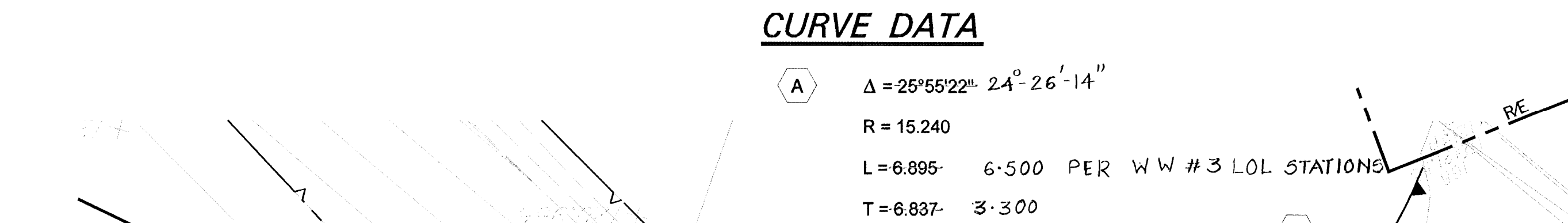
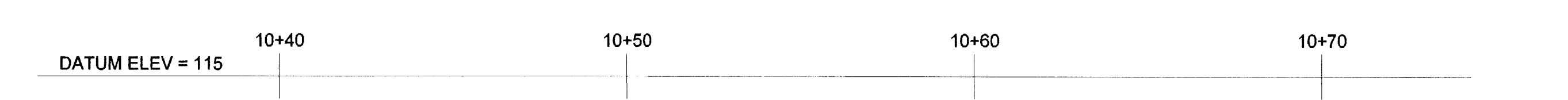
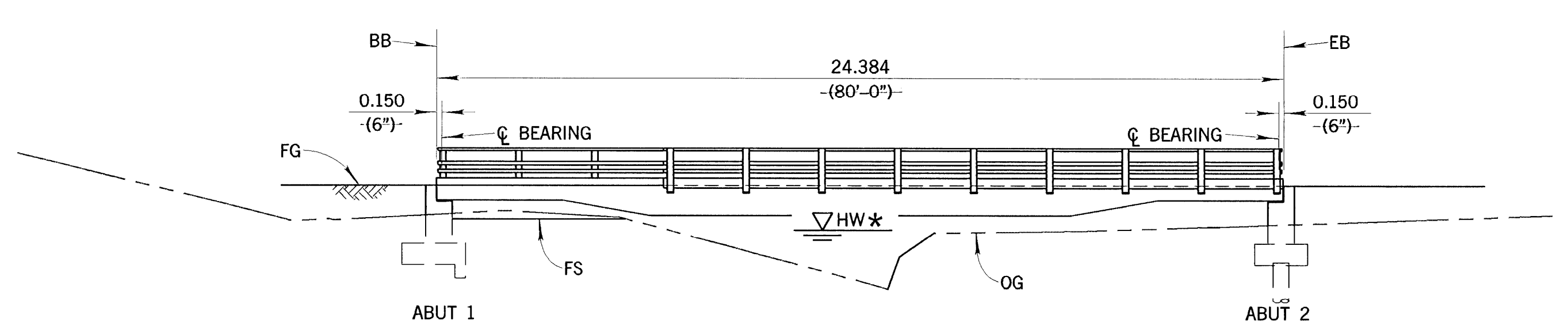
AS BUILT
CORRECTION BY M. PLATE, G.P.
CONTRACT NO.:
DATE 5/21/07, 6/2/08

WILLDAN
Serving Public Agencies
27042 Towne Center Dr., Suite 270
Foothill Ranch, California 92603
949/470-8840 Fax 170-9041

ORANGE COUNTY RESOURCES AND DEVELOPMENT MANAGEMENT DEPARTMENT	
SCE BRIDGE AT LAGUNA COAST WILDERNESS PARK	
ACCESS ROAD STA. 10+31.695 TO STA. 11+08.364	
PLAN, PROFILE AND TYPICAL SECTIONS	
DESIGNED: A. BALDENEGRO	SHEET
DRAWN: A. BALDENEGRO	2
CHECKED: K. STEELE	OF 8
SCALE: AS SHOWN	
DATE:	
DRAWING NO.:	

PETER L. LIU 04608
CIVIL
4-6-08

FOR REDUCED PLANS ORIGINAL
SCALE IS IN MILLIMETERS
0 20 40 60 80



INDEX TO BRIDGE PLANS

SHEET NO.	SHEET TITLE
3.	GENERAL PLAN
4.	FOUNDATION PLAN
5.	ABUTMENT 1 LAYOUT
6.	ABUTMENT 2 LAYOUT
7.	WINGWALL PROFILE AND DETAILS
8.	LOG OF TEST BORINGS

GENERAL NOTES
LOAD FACTOR DESIGN

DESIGN: CALTRANS BRIDGE DESIGN SPECIFICATIONS-APRIL 2000 (LFD) (1996 AASHTO WITH INTERIMS AND REVISIONS BY CALTRANS)

SEISMIC DESIGN: CALTRANS SEISMIC DESIGN CRITERIA (SDC), VERSION 1.2 DECEMBER 2001 WITH MODIFICATIONS

LIVE LOADING: LARGER OF 4 KPa (85 PSF) AND 355 KN (40-TON) 3-AXLE VEHICLE LOAD (AXLE LOAD DISTRIBUTION PROPORTIONAL TO HS20 TRUCKLOAD)

SEISMIC LOADING: PEAK ROCK ACCELERATION = 0.4g
ARS CURVE FOR SOIL TYPE C PER CALTRANS SDC WITH MODIFICATION FOR NEAR FAULT EFFECTS MAGNITUDE = 7.25 ± 0.25
EQUIVALENT TRANSVERSE SEISMIC FORCE = 1.0 TIMES BRIDGE SELF-WEIGHT.

REINFORCED CONCRETE: $f_y = 420$ MPa (60,000 psi)
 $f'_c = 25$ MPa (3,600 psi) (UNLESS OTHERWISE SPECIFIED)
 $n = 8$

STRUCTURAL STEEL: ASTM A588, $F_y = 350$ MPa (50 ksi) FOR SHAPES AND PLATES
ASTM A847, $F_y = 350$ MPa (50 ksi) FOR STRUCTURAL TUBING
ASTM A307, $F_y = 250$ MPa (36 ksi) FOR ANCHOR BOLTS

STANDARD PLANS DATED JULY 2002

A62-C	EXCAVATION AND BACKFILL - LIMITS OF PAYMENT (BRIDGE)
BO-1	BRIDGE DETAILS
BO-3	BRIDGE DETAILS
B2-3	400 mm CAST-IN-DRILLED HOLE CONCRETE PILES

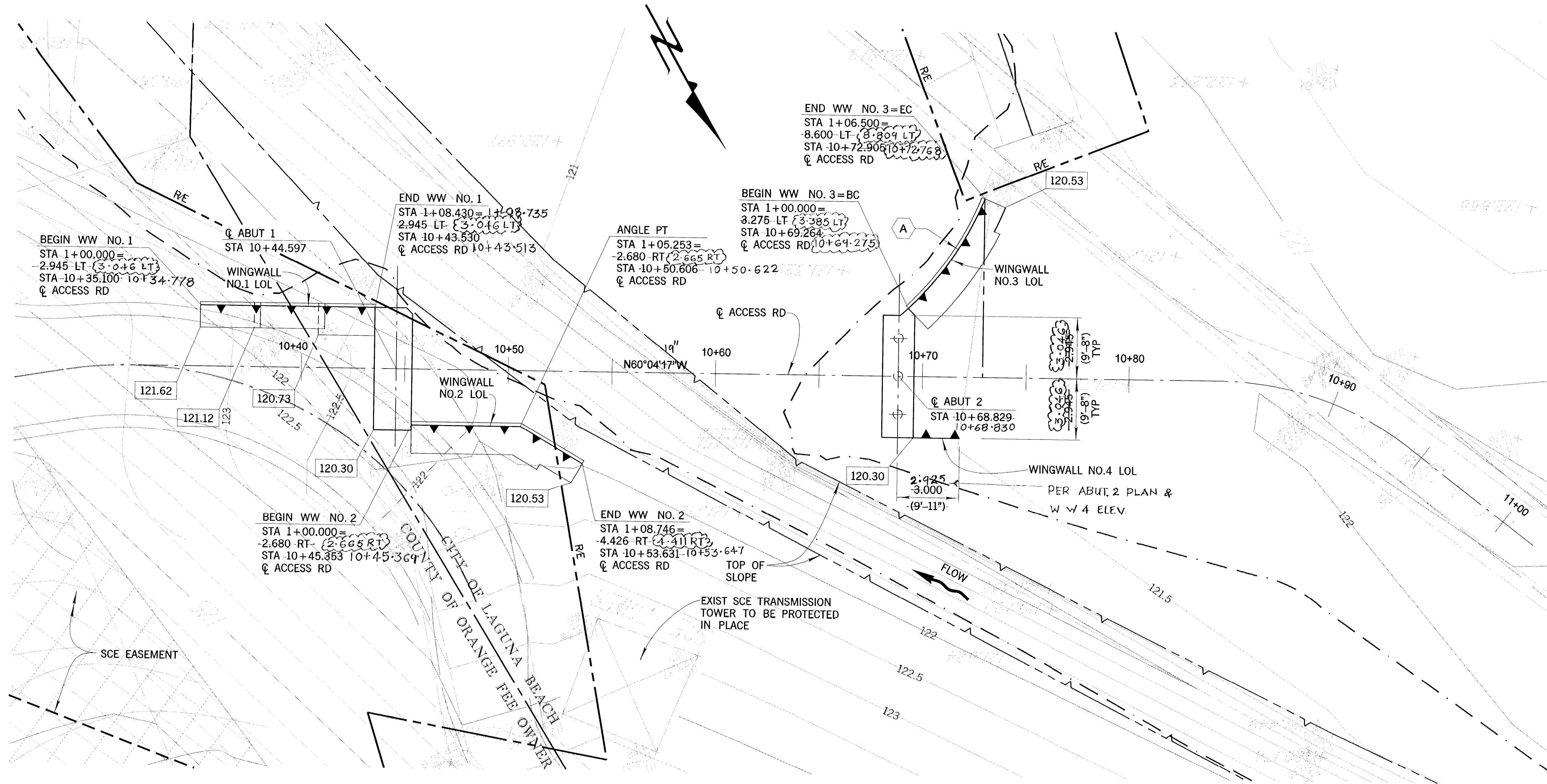
NOTE:

- FOR ACCESS ROAD DETAILS NOT SHOWN SEE "PLAN, PROFILE & TYPICAL SECTION SHEET".
- FOR PILE DATA SEE "FOUNDATION PLAN".
- THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

AS BUILT
CORRECTION BY M. PLATT, G.P.
CONTRACT NO: _____
DATE 5/21/07 ; 6/2/08

WILLDAN
Serving Public Agencies
2401 E. Katella Avenue, Suite 300
Anaheim, California 92806
Tel: 714/340-6300 Fax: 714/340-6399

ORANGE COUNTY RESOURCES AND DEVELOPMENT MANAGEMENT DEPARTMENT	
SCE BRIDGE AT LAGUNA COAST WILDERNESS PARK	
GENERAL PLAN	
DESIGNED: G. JIAO / L. LIU	SHEET 3
DRAWN: E. GRAY	CHECKED: L. HE
SCALE: AS SHOWN	DATE: 4-6-05
DRAWING NO.	
OF 8	



- LEGEND**
- DENOTES PARCEL BOUNDARY LINE
 - DENOTES SCE EASEMENT LINE
 - DENOTES CALTRANS RIGHT-OF-ENTRY LINE
 - DENOTES 100-YR EXP VALUE FLOODPLAIN BOUNDARY
 - DENOTES NEW STRUCTURE
 - DENOTES BOTTOM OF FOOTING ELEVATION
 - ⊕ DENOTES CIDH PILE

HYDROLOGIC SUMMARY

Drainage Area:	0.672 Square Kilometers
Frequency (year):	100
Discharge (Cubic Meter per Second):	8.18
Water Surface Elev at Bridge (Meter):	121.33

Flood Plain Data are based upon information available when the plans were prepared and are shown to meet Federal Requirements. The accuracy of said information is not warranted by the State, and interested or affected parties should make their own investigations.

CURVE DATA

Δ = 25°55'22" - 24°26'14"
R = 15.240
L = 6.895 - 6.500 PER WW #3 LOL STATIONS
T = 6.837 - 3.300

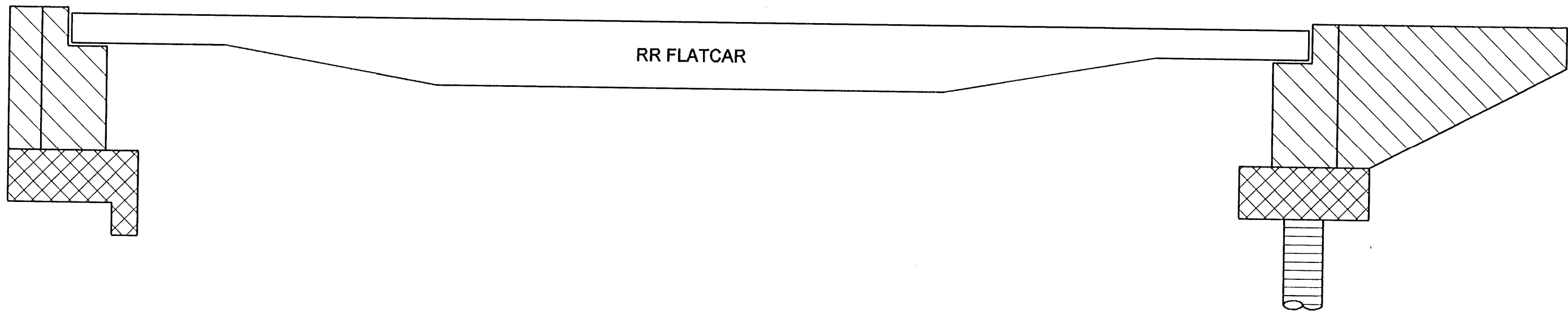
FOUNDATION PLAN

1m=125m

PILE DATA - 610 (24") CIDH PILES

Location	Pile Type	Design Loading	Nominal Resistance		Cut Off Elevation	Design Tip Elevation	Specified Tip Elevation
			Compression	Tension			
Abut 2	610 (24") Ø CIDH	190 kN (43 kips)	380 kN (86 kips)	0 kN (0 kips)	120.38 m (394.95 ft)	116.90 m (1) (383.50 ft) 114.80 m (2) (376.60 ft)	114.80 m (376.60 ft)

- NOTES:
- DESIGN TIP ELEVATION IS CONTROLLED BY THE FOLLOWING DEMANDS: (1) COMPRESSION; (2) SCOUR
 - CUT OFF ELEVATION IS BASED ON FINAL DESIGN PILE CAP ELEVATION.
 - THE SPECIFIED TIP ELEVATION SHOWN MAY BE ADJUSTED IN THE FIELD IF BEDROCK ELEVATION DIFFERS FROM THE SOIL REPORT. AS A MINIMUM, PILES SHALL BE EMBEDDED 600 mm INTO THE UNDERLYING BEDROCK.



CONCRETE STRENGTH AND TYPE LIMITS
NO SCALE

- STRUCTURAL CONCRETE BRIDGE (f_c = 25 MPa (3,600 psi))
- STRUCTURAL CONCRETE BRIDGE FOOTING (f_c = 25 MPa (3,600 psi))
- STRUCTURAL CONCRETE CAST-IN-DRILLED-HOLE PILE (f_c = 28 MPa (4,000 psi))

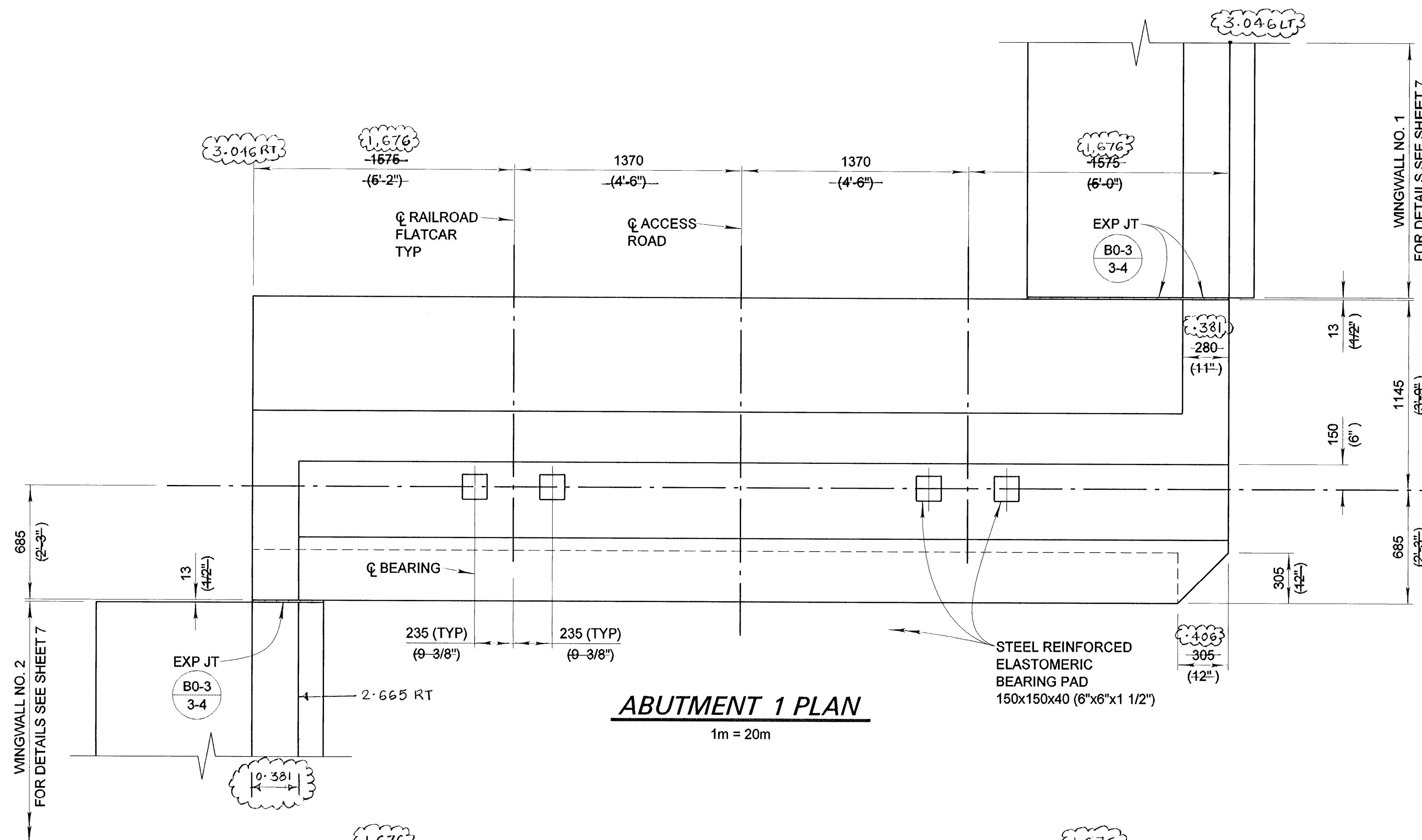
AS BUILT

CORRECTION BY M. PLATT; G.P.
CONTRACT NO. _____
DATE 5/21/07 - 6/12/08

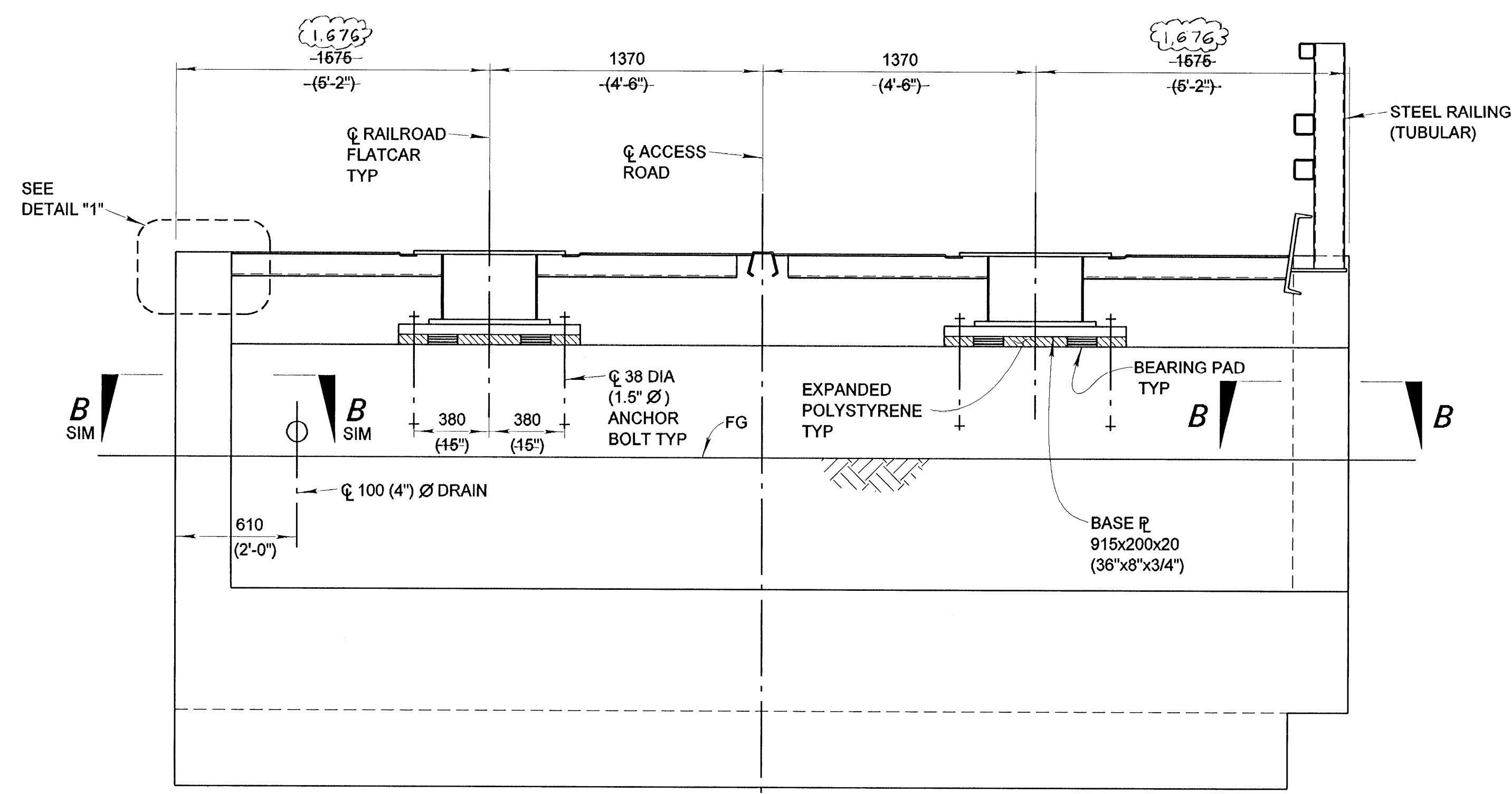
ORANGE COUNTY RESOURCES AND DEVELOPMENT MANAGEMENT DEPARTMENT	
SCE BRIDGE AT LAGUNA COAST WILDERNESS PARK	
FOUNDATION PLAN	
DESIGNED - O. JIAO / L. LIU	SHEET 4 OF 8
DRAWN - E. GRAY	CHECKED - L. HE
SCALE - AS SHOWN	DATE - 4-6-08

WILLDAN
2401 E. Katella Avenue, Suite 300
Anaheim, California 92806
714/940-6300 fax 940-6399

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS

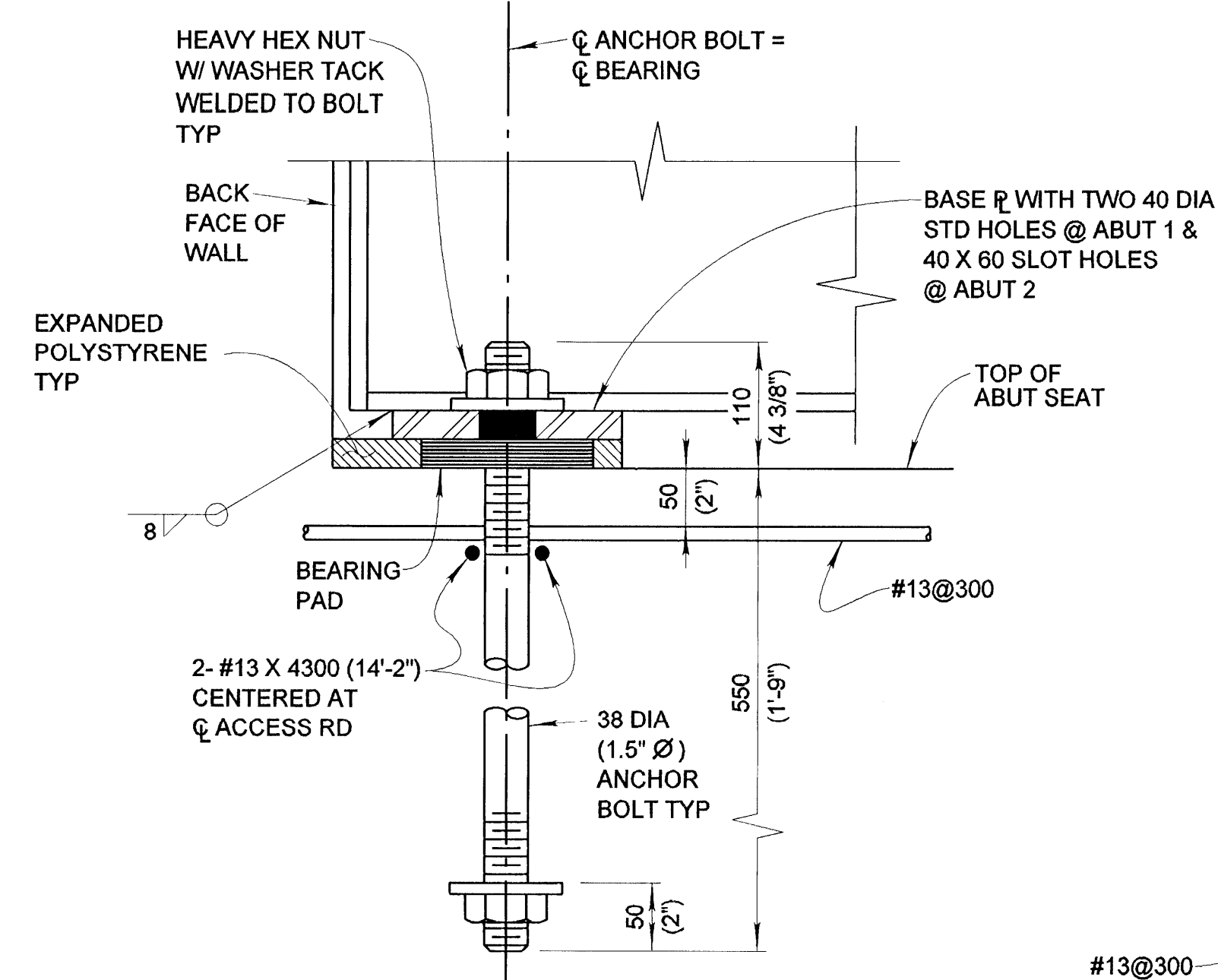


ABUTMENT 1 PLAN
1m = 20m

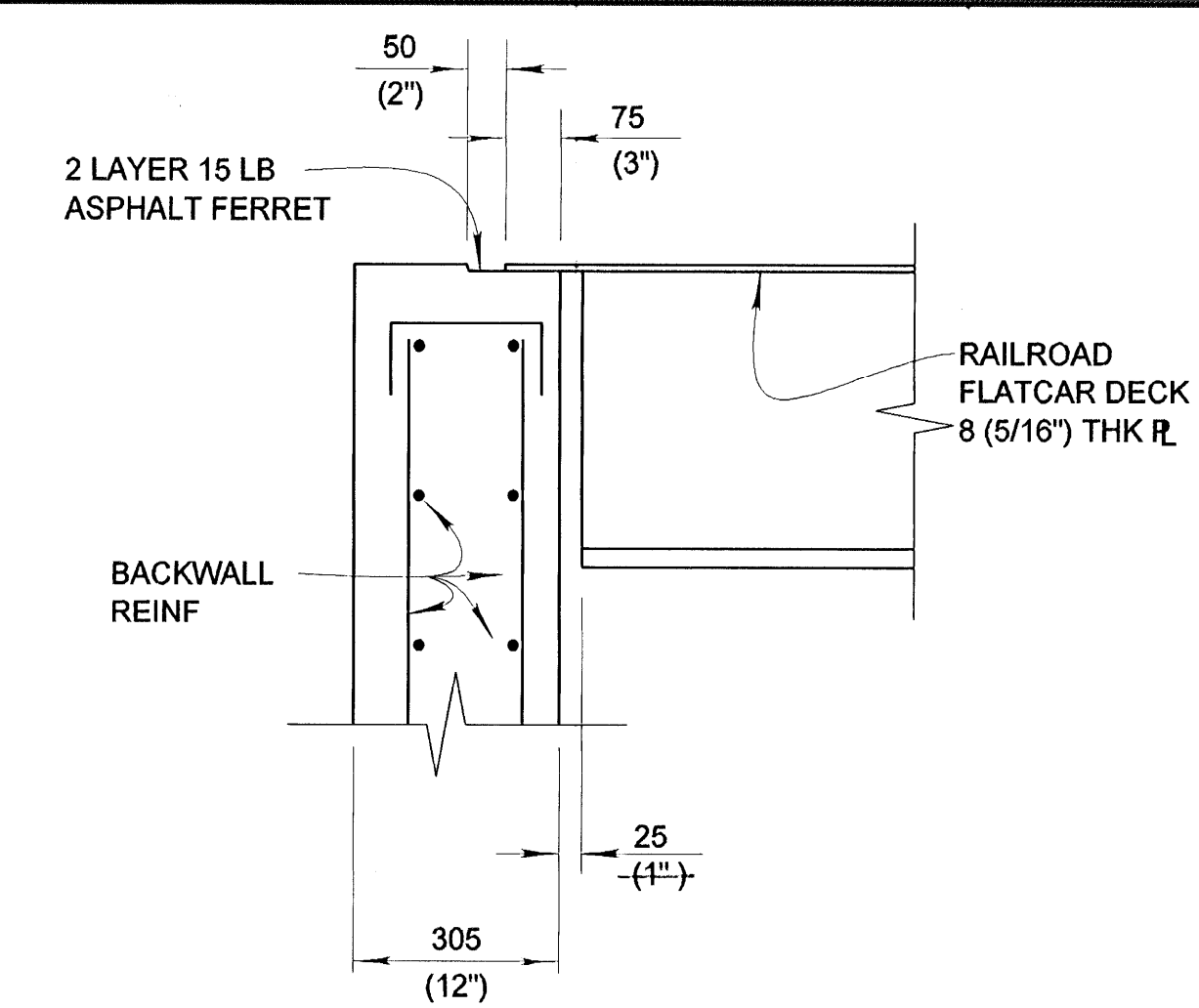


ABUTMENT 1 ELEVATION
1m = 20m

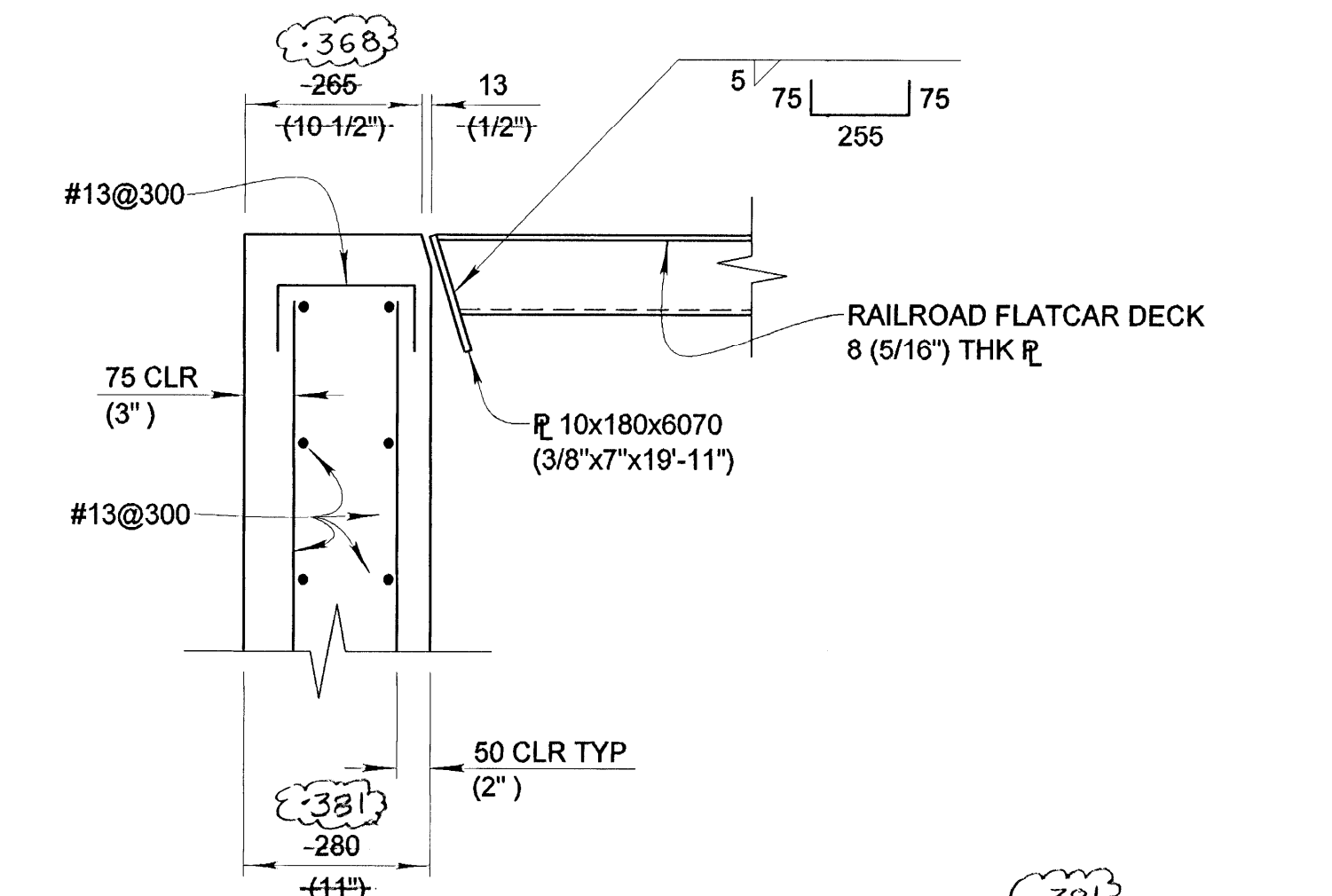
- NOTE:
1. FOR WINGWALL PROFILE AND DETAILS, SEE SHEET 7.
 2. FOR DETAILS OF WEEP HOLE AND PERVIOUS BACKFILL SEE CALTRANS STD PLAN B-03.
 3. STEEL RAILING TO BE SUPPLIED BY RAILROAD FLATCAR BRIDGE SUPPLIER.



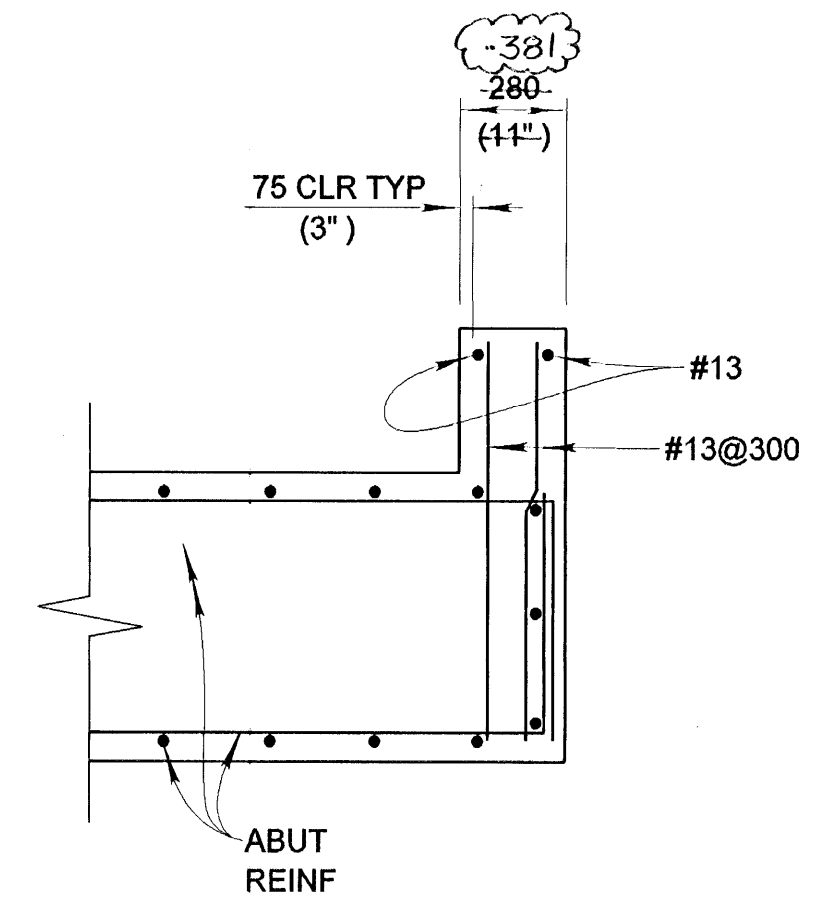
DETAIL 2
1m = 5m



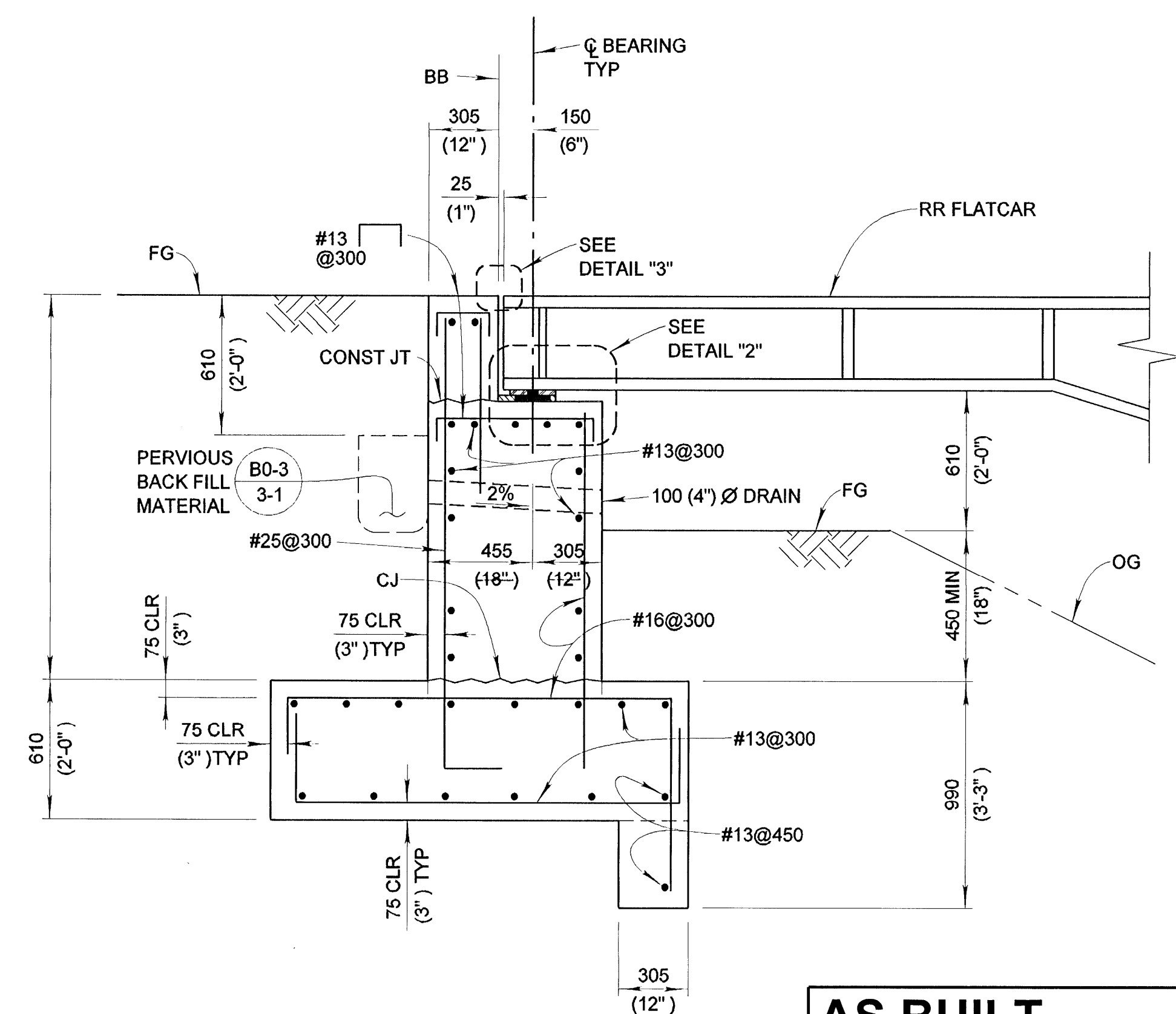
DETAIL 3
1m = 10m



DETAIL 1
1m = 10m



SECTION B-B
1m = 20m



ABUTMENT 1 TYPICAL SECTION
1m = 20m

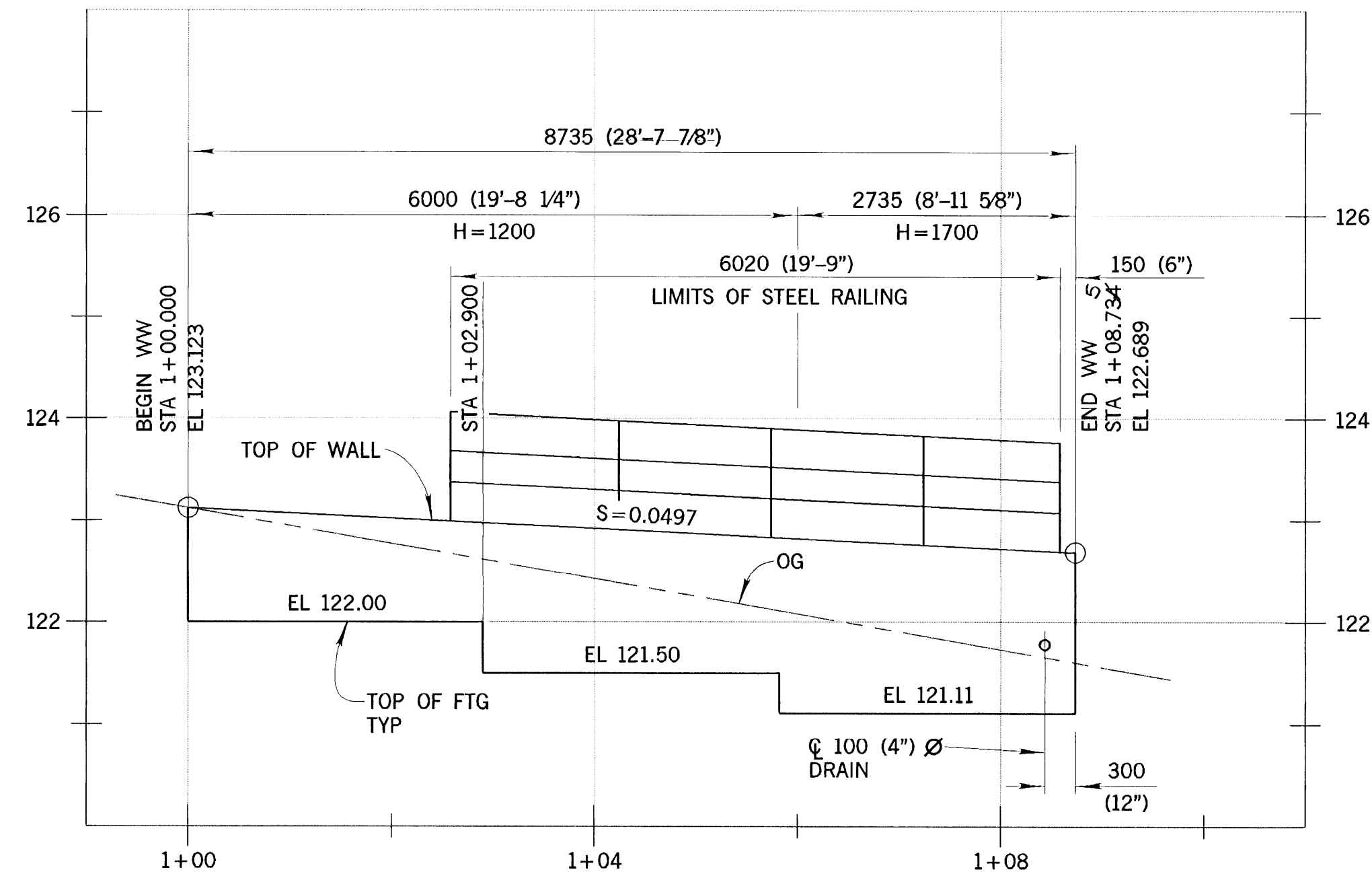
AS BUILT
CORRECTION BY M. PLATT; G.P.
CONTRACT NO. _____
DATE 5/21/07; 6/12/08

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Serving Public Agencies
2401 E. Katella Avenue, Suite 300
Anaheim, California 92806
714/940-6300 Fax 940-6399

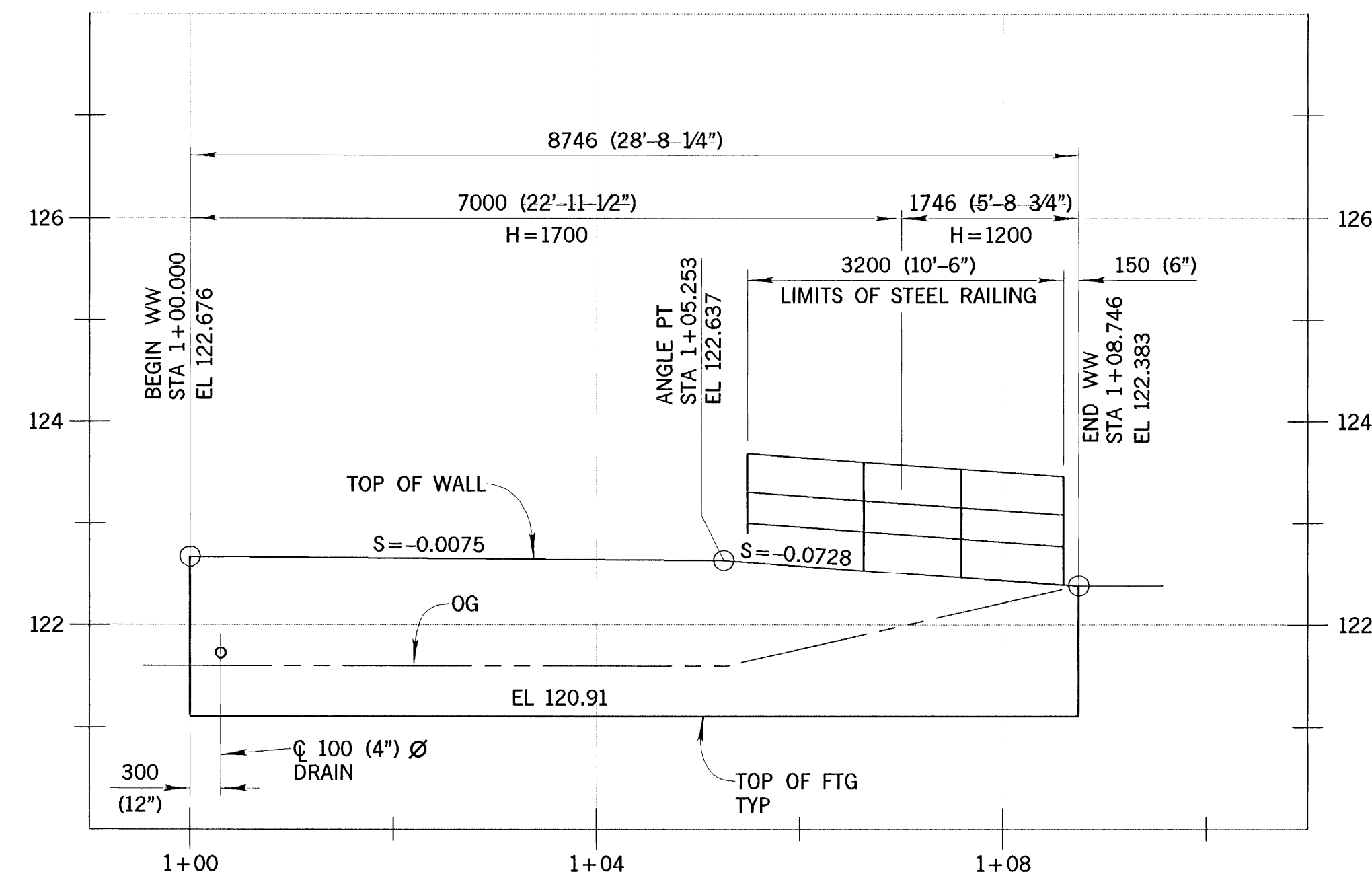
PER MEMO & RED LINED PLANS DATED 12/28/06		ORANGE COUNTY RESOURCES AND DEVELOPMENT MANAGEMENT DEPARTMENT	
SCHE BRIDGE AT LAGUNA COAST WILDERNESS PARK		ABUTMENT 1 LAYOUT	
DESIGNED: G. JIAO / L. LIU	CHECKED: L. HE	SHEET 5 OF 8	
SCALE: AS SHOWN	DATE: 4-6-05	DRAWING NO.	

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS

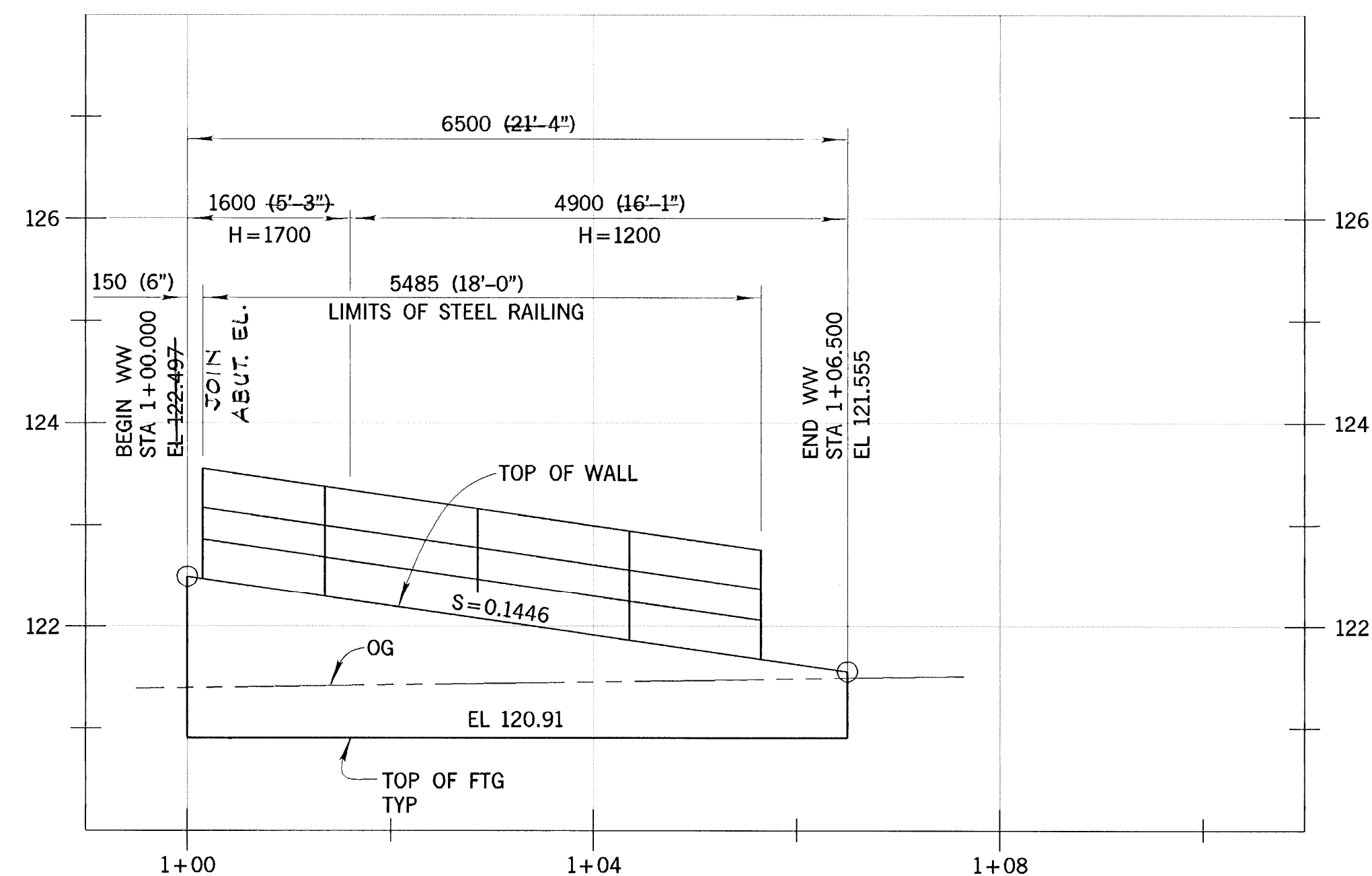
Plotted by: \$USER\$ Date: 3/25/2005 Dgnspc: S:\m1532.SCE Br\abut1.dgn



WINGWALL NO. 1 PROFILE
1m = 50m



WINGWALL NO. 2 PROFILE
1m = 50m



WINGWALL NO. 3 PROFILE
1m = 50m

WINGWALL DESIGN NOTES SERVICE LOAD DESIGN

DESIGN: CALTRANS BRIDGE DESIGN SPECIFICATIONS-APRIL 2000 (LFD)
(1996 AASHTO WITH INTERIMS AND REVISIONS BY CALTRANS)

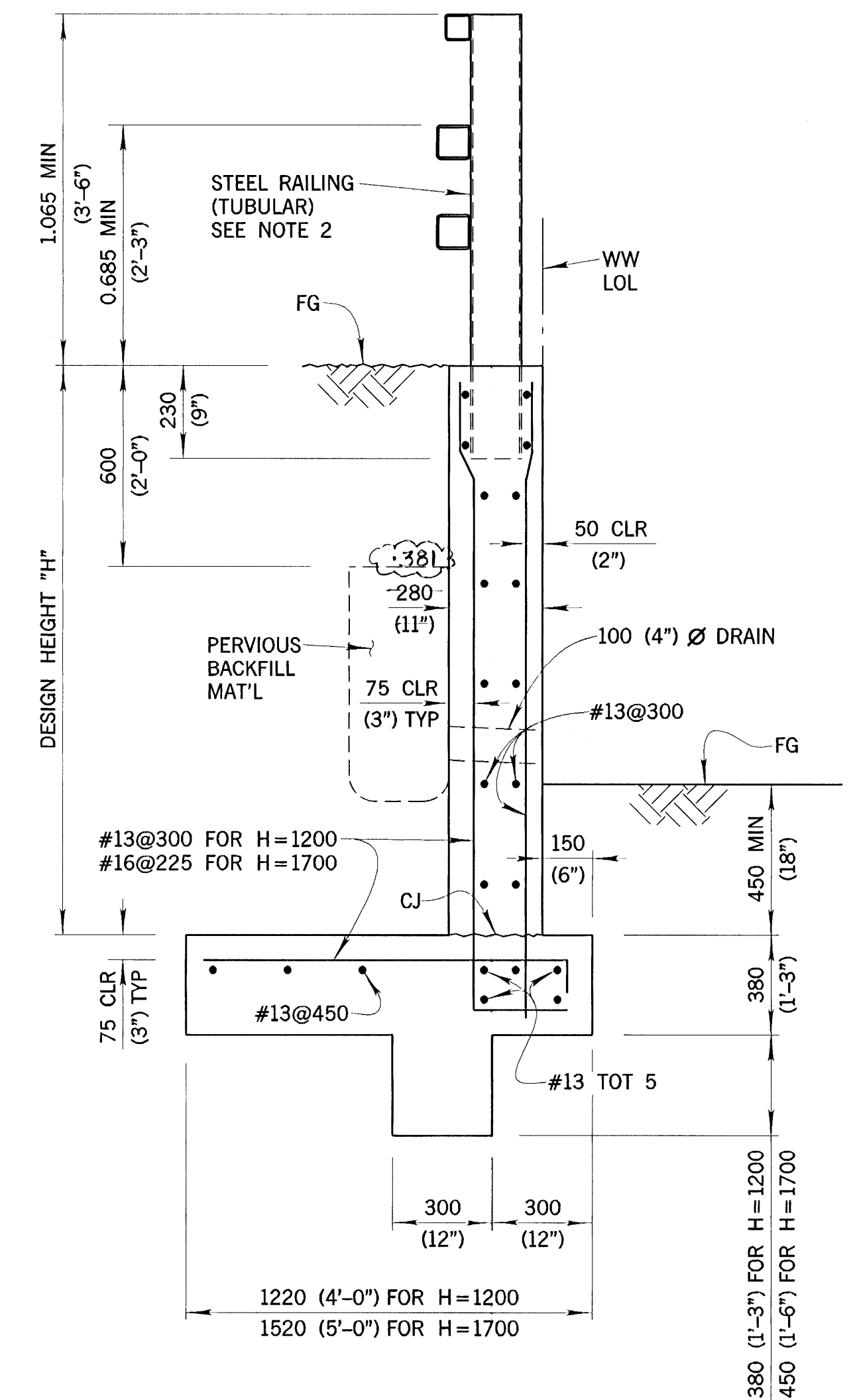
REINFORCED CONCRETE: $f_y = 420 \text{ MPa}$ (60,000 psi)
 $f_c = 25 \text{ MPa}$ (3,600 psi) (UNLESS OTHERWISE SPECIFIED)
 $n = 8$

STRUCTURAL STEEL: ASTM A847, $F_y = 350 \text{ MPa}$ (50 ksi) FOR STRUCTURAL TUBING

SOIL PARAMETERS: DENSITY, $r = 18 \text{ KN/m}^3$ (115 pcf)
INTERNAL FRICTION ANGLE, $\phi = 32^\circ$
EQUIVALENT FLUID PRESSURE, $q_a = 7.3 \text{ KPa / m}$ (47 psf / ft)
SURCHARGE, $q_s = 20 \text{ KPa}$ (425 psf)
MAX BEARING PRESSURE = 120 KPa (2,500 psf)

NOTE:

- FOR DETAILS OF WEEP HOLE AND PERVIOUS BACKFILL
SEE CALTRANS STD PLAN B-03.
- STEEL RAILING (TUBULAR) ON WALLS SHALL MATCH THE
STEEL RAILINGS INSTALLED ON RAILROAD FLATCAR BRIDGE.
- ALL EXPOSED CONCRETE SHALL BE HEAVY SANDBLASTED AND RECEIVE
PERMEON DESERT VARNISH (IRON MAGNESIUM) EARTH TONED APPLICATION.



**WINGWALL
TYPICAL SECTION**
NO SCALE

AS BUILT

CORRECTION BY M. PLATT, G.P.
CONTRACT NO: _____
DATE 5/21/07 & 6/2/08

WILLDAN 2401 E. Katella Avenue, Suite 300
Anaheim, California 92806
Serving Public Agencies 714/940-6300 Fax 940-6399

ORANGE COUNTY RESOURCES AND DEVELOPMENT MANAGEMENT DEPARTMENT	
SCE BRIDGE AT LAGUNA COAST WILDERNESS PARK	
WINGWALL PROFILE AND DETAILS	
DESIGNED <u>G. JIAO / L. LIU</u>	SHEET <u>7</u>
DRAWN <u>E. GRAY</u>	CHECKED <u>L. HE</u>
SCALE <u>AS SHOWN</u>	DRAWING NO. _____
DATE _____	OF <u>8</u>

FOR REDUCED PLANS ORIGINAL
SCALE IS IN MILLIMETERS

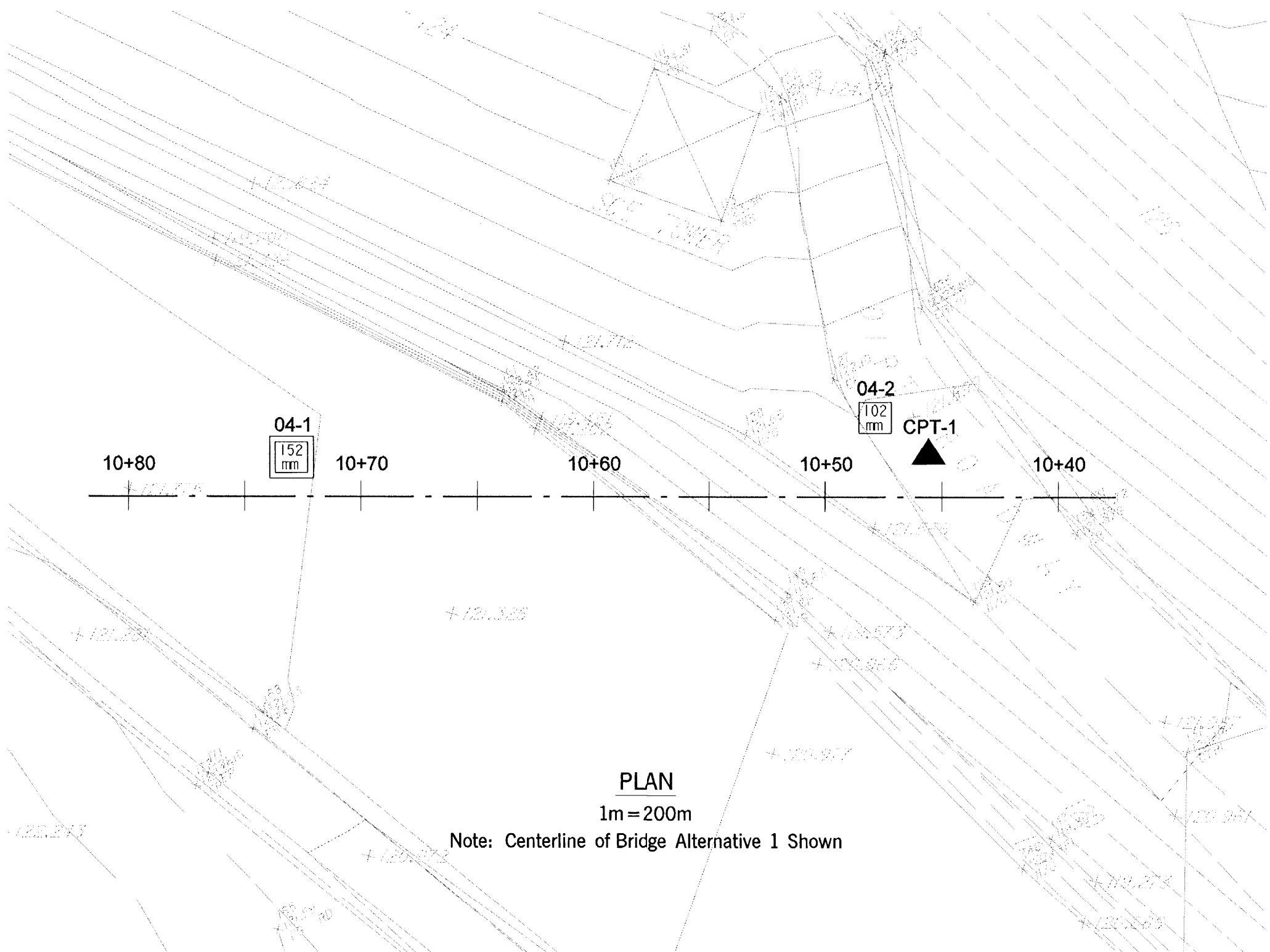
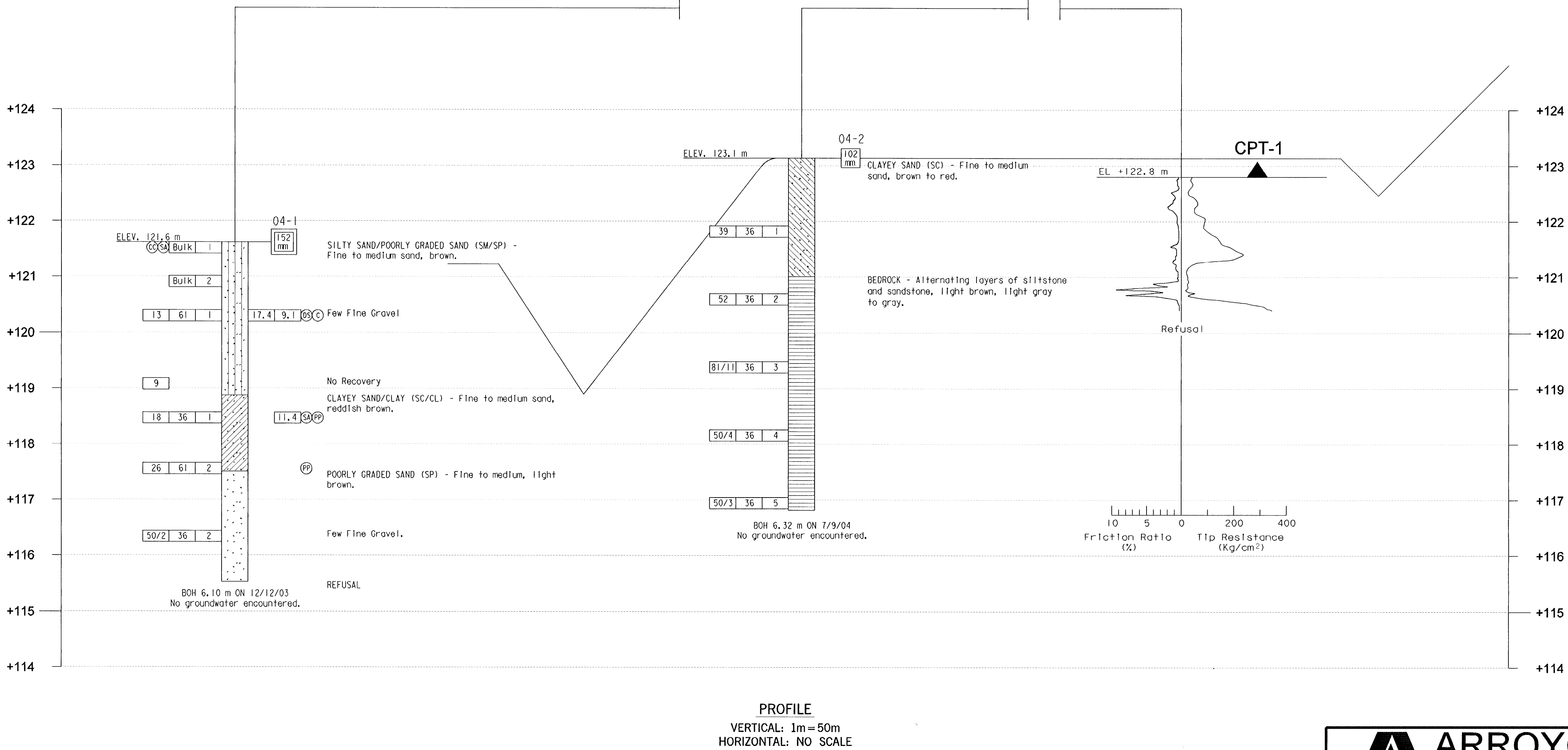
CONSISTENCY CLASSIFICATION FOR SOILS	
According to the Standard Penetration Test (ASTM D-1586)	
SPT N-Value (blows/0.3m)	Consistency
0-4	Very Loose
5-10	Loose
11-30	Medium Dense
31-50	Dense
>50	Very Dense

LEGEND OF EARTH MATERIALS (USCS)	
Based on ASTM D2487, D2488	
CLAY (CL or CH)	POORLY-GRADED SAND (SP)
SILT (ML or MH)	WELL-GRADED SAND (SW)
PEAT and/or ORGANIC MATTER	SILTY SAND (SM) or SANDY SILT (SL)
WELL-GRADED GRAVEL (GP)	CLAYEY SAND (SC) or SANDY CLAY (CL)
SILT (ML or MH)	COBBLES/BOLDBERS
GRAVEL (GW)	IGNEOUS ROCK
SAND (SW)	SEDIMENTARY ROCK
CLAY (CL or CH)	METAMORPHIC ROCK

TYPE OF BORINGS	
57 mm CONE PENETRATION	IN-SITU, LAB & FIELD TEST DESIGNATIONS
ROTARY WASH	(A) ATTERBERG LIMITS
POCKET PENETROMETER	(C) CHEMICAL ANALYSIS
TEST PIT	(D) CONSOLIDATION
BACKGROUND BORING	(E) UNGRAINED TRIAXIAL
SOIL TUBE	(F) MAX. DRY DENSITY
	(G) POCKET PENETROMETER
	(H) SIEVE ANALYSIS
	(I) TORVANE
	(J) UNCONSOLIDATED COMPRESSION
	(K) UNCONSOLIDATED TRIAXIAL
	(L) VANE SHEAR

LEGEND OF BORING OPERATIONS	
IN-SITU, LAB & FIELD TEST DESIGNATIONS	
57 mm CONE PENETRATION	ROTARY SAMPLE BORING (MET)
ROTARY WASH	POCKET PENETROMETER
POCKET PENETROMETER	TEST PIT
TEST PIT	BACKGROUND BORING
BACKGROUND BORING	SOIL TUBE
SOIL TUBE	

LEGEND OF BORING OPERATIONS	
IN-SITU, LAB & FIELD TEST DESIGNATIONS	
57 mm CONE PENETRATION	ROTARY SAMPLE BORING (MET)
ROTARY WASH	POCKET PENETROMETER
POCKET PENETROMETER	TEST PIT
TEST PIT	BACKGROUND BORING
BACKGROUND BORING	SOIL TUBE
SOIL TUBE	



ORANGE COUNTY RESOURCES AND DEVELOPMENT MANAGEMENT DEPARTMENT	
SCE BRIDGE AT LAGUNA COAST WILDERNESS PARK	
LOG OF TEST BORINGS	
DESIGNED: L. PARKS	SHEET 8 OF 8
DRAWN: E. GRAY	CHECKED: L. PARKS
SCALE: AS SHOWN	DATE: 2-18-2004
DRAWING NO. 1	

No As-Built Changes
AS BUILT
CORRECTION BY M. PLATT; G.P.
CONTRACT NO. _____
DATE 5/21/07 ; 6/2/08