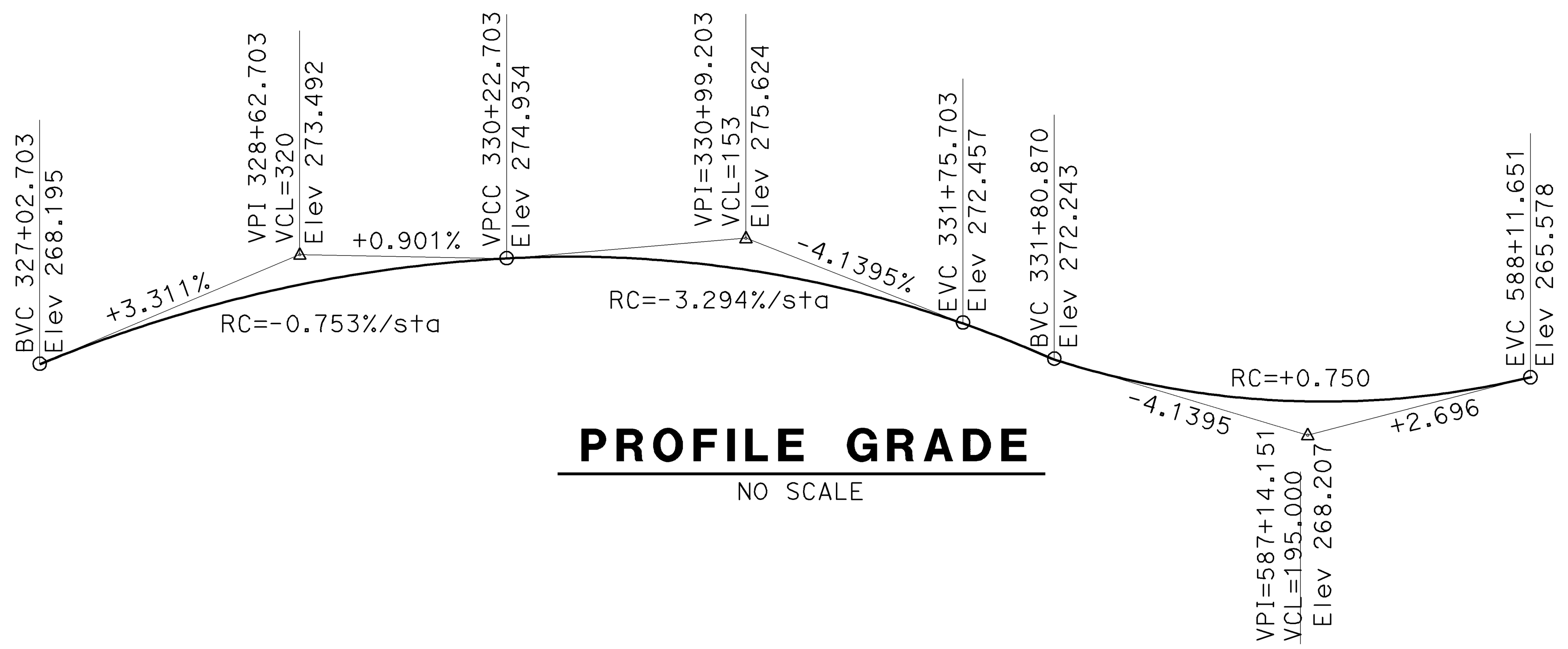


PROFILE GRADE

NO SCALE

NOTES:

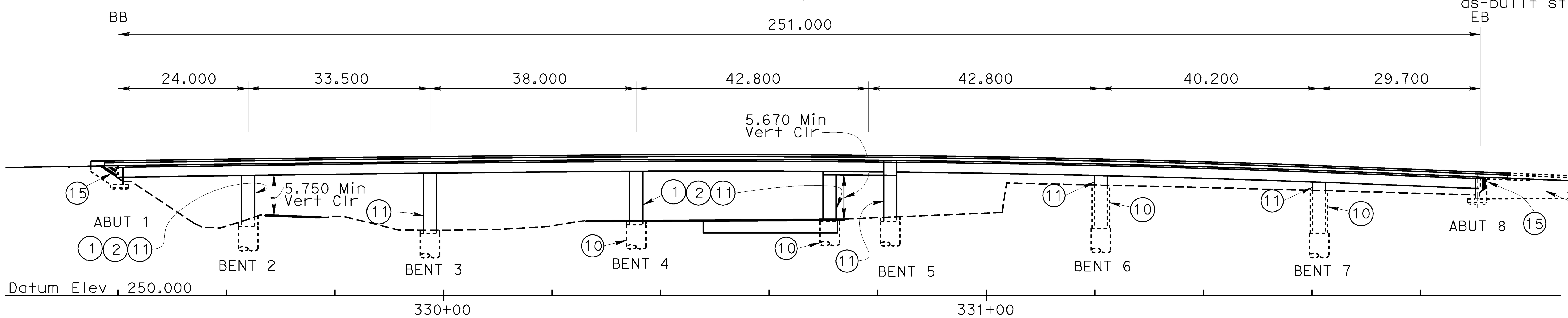
1. Paint "5-170 HOV CONNECTOR"
2. Paint "BRIDGE NO. 53-2977"
3. Structure Approach Type N(9S)
4. Concrete Barrier Type 60SA Mod
5. Concrete Barrier Type 732 Mod with aesthetics
6. Concrete Barrier Type 742 Mod with aesthetics
7. Exist pole-mounted sign to be removed, see "ROAD PLANS"
8. Exist bridge-mounted luminaire to be removed, see "ROAD PLANS"
9. MBGR, see "ROAD PLANS"
10. Column Isolation Casing
11. Paint Bent No.
12. Deck Drain Type D-3
13. Retaining Wall #331, see "RETAINING WALL NO. 331" plans
14. Retaining Wall #332, see "RETAINING WALL NO. 332" plans
15. Fractured Rib texture
16. Lighting standard, see "ROAD PLANS"
17. 53 mm ø conduit, see "ROAD PLANS"
18. Plans for falsework within exist Tujunga Channel R/W shall be submitted to LACFCD/LACDPW per permit requirements
19. Exist lateral utility connection
20. "WASH1" Line stationing in parentheses indicates original English Channel as-built stations

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1222	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

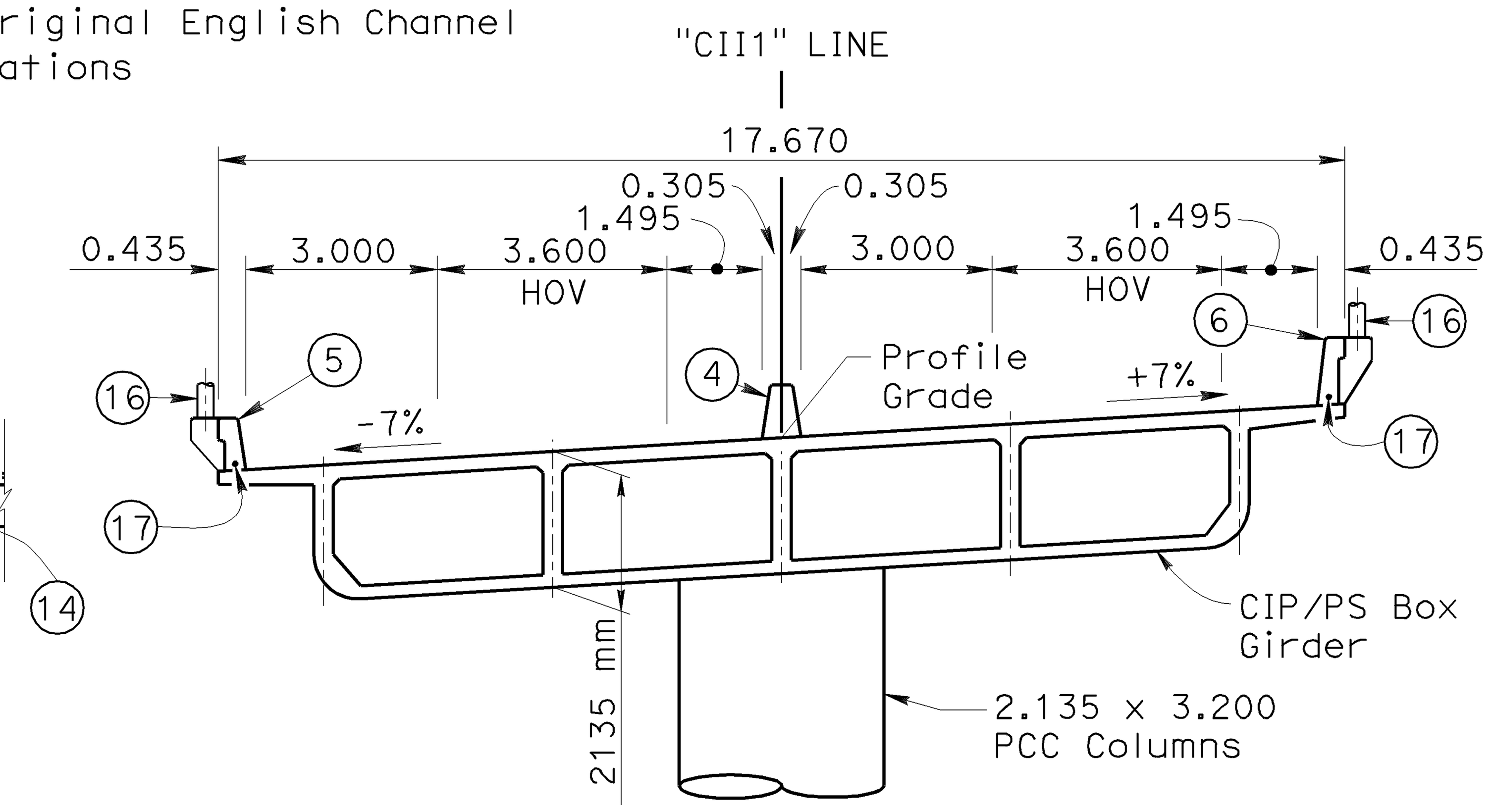
9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6-30-10 CIVIL STATE OF CALIFORNIA



DEVELOPED ELEVATION

1:500



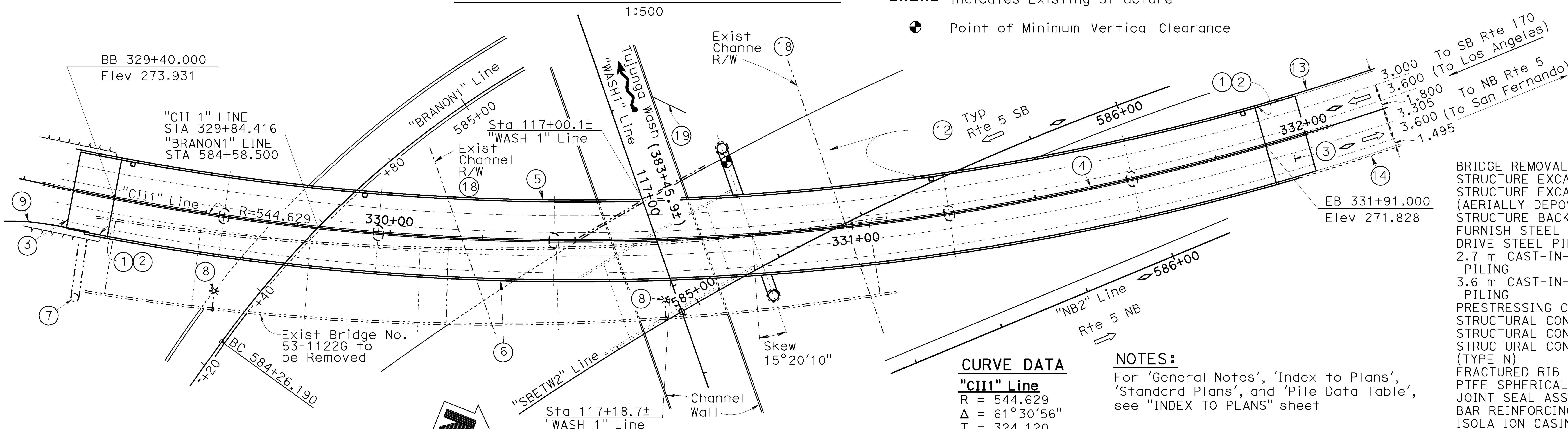
TYPICAL SECTION

1:100

LEGEND

-·-·-·- Indicates Existing Structure

Point of Minimum Vertical Clearance



PLAN

1:500

CURVE DATA

"CII1" Line

R = 544.629
Δ = 61°30'56"
T = 324.120
L = 584.739

NOTES:

For 'General Notes', 'Index to Plans', 'Standard Plans', and 'Pile Data Table', see "INDEX TO PLANS" sheet

QUANTITIES

BRIDGE REMOVAL	LUMP	SUM
STRUCTURE EXCAVATION (BRIDGE)	900	m^3
STRUCTURE EXCAVATION (TYPE Y-1) (AERIALLY DEPOSITED LEAD)	78	m^3
STRUCTURE BACKFILL (BRIDGE)	470	m^3
FURNISH STEEL PILING (HP 360 X 132)	945	m
DRIVE STEEL PILE (HP 360 X 132)	56	EA
2.7 m CAST-IN-DRILLED-HOLE CONCRETE PILING	49	m
3.6 m CAST-IN-DRILLED-HOLE CONCRETE PILING	128	m
PRESTRESSING CAST-IN-PLACE CONCRETE	LUMP	SUM
STRUCTURAL CONCRETE, BRIDGE FOOTING	76	m^3
STRUCTURAL CONCRETE, BRIDGE	3 710	m^3
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	97	m^3
FRACTURED RIB TEXTURE	28	m^2
PTFE SPHERICAL BEARING	6	EA
JOINT SEAL ASSEMBLY (MR 101 MM - 160 MM)	34	m
BAR REINFORCING STEEL (BRIDGE)	936 000	kg
ISOLATION CASING	6 530	kg
BRIDGE DECK DRAINAGE SYSTEM	1 270	kg
CONCRETE BARRIER (TYPE 732 MODIFIED)	254	m
CONCRETE BARRIER (TYPE 742 MODIFIED)	262	m
CONCRETE BARRIER (TYPE 60SA MODIFIED)	269	m

USERNAME => rrpierce DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:51

Caltrans Metric	RAMIN RASHEDI DESIGN ENGINEER	DESIGN BY J. POSEY	CHECKED A. LOGUS	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
		DETAILS BY L. CHARLOT	CHECKED A. LOGUS	LAYOUT BY J. POSEY	CHECKED A. LOGUS
		QUANTITIES BY T. BUI	CHECKED R. CORIA	SPECIFICATIONS BY M. PAN	PLANS AND SPECS COMPARED M. PAN

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 11

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
GENERAL PLAN

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY): 12/4/02, 9/05/08, 8/29/07, 10/10/07, 11/7/07, 1/9/08, 2/25/08, 3/19/08, 7/08/08

FILE => 53-2977-a-gp.dgn

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1223	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6-30-10 CIVIL STATE OF CALIFORNIA

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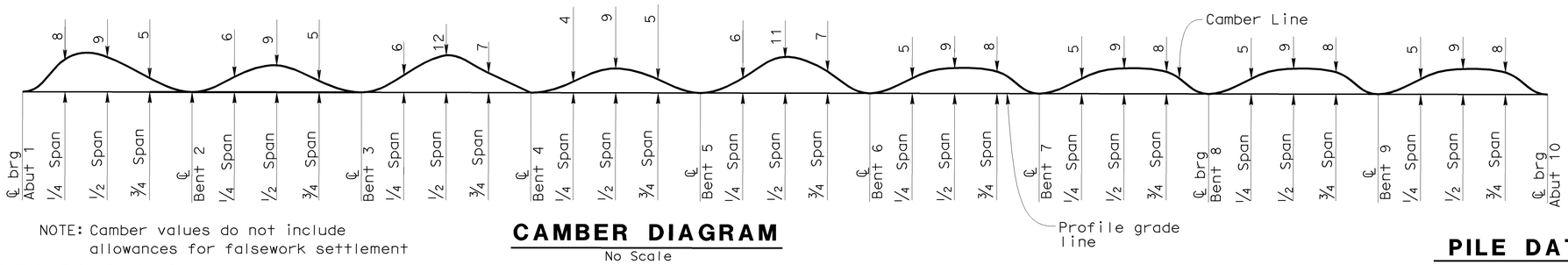


NOTE: Camber values do not include allowances for falsework settlement

CAMBER DIAGRAM

No Scale

INDEX TO PLANS

STANDARD PLANS Dated July 2004

	A10A	ACRONYMS AND ABBREVIATIONS (A-L)
	A10B	ACRONYMS AND ABBREVIATIONS (M-Z)
	A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE
	A76G	CONCRETE BARRIER TYPE 60S
	B0-1	BRIDGE DETAILS
	B0-3	BRIDGE DETAILS
	B0-5	BRIDGE DETAILS
	B0-13	BRIDGE DETAILS
	B7-1	BOX GIRDER DETAILS
	B7-6	DECK DRAINS TYPE D-1 AND D-2
	B7-7	DECK DRAIN TYPE D-3
	B7-8	DECK DRAINAGE DETAILS
RSP	B8-5	CAST-IN-PLACE PRESTRESSED GIRDER DETAILS
	B11-55	CONCRETE BARRIER TYPE 732
	B11-57	CONCRETE BARRIER TYPE 742

Standard Plan Sheet No.

Detail No.

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 1.4 June 2006)

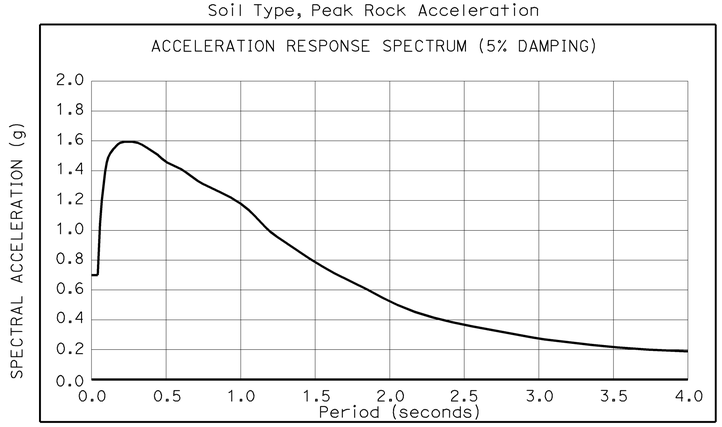
DEAD LOAD: Includes 1675 Pa for future wearing surface.

LIVE LOADING: HS20-44 and alternative and permit design load.

RAILING LOAD: 240 KN traffic collision load (LFD Loading) applied laterally at the top of barrier and distributed over a longitudinal distance of 3.048 meters.

SEISMIC LOADING: Site Specific Acceleration Response Spectrum:

Soil Type, Peak Rock Acceleration



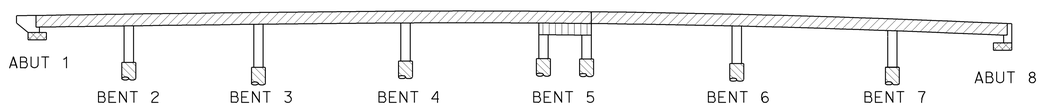
REINFORCED CONCRETE:
f_y = 414 MPa
f'_c = 25 MPa
n = 8
(Except as shown on Concrete Strength and Type Limits Diagram)
Transverse Deck Slabs (Working Stress Design)
f_s = 138 MPa
f_c = 8.3 MPa
n = 10

PRESTRESSED CONCRETE: See "Prestressing Notes" on "GIRDER LAYOUT" and "BENT 5 DETAILS NO. 2" sheets

PILE DATA TABLE

Location	Pile Type	Design Loading (kN)	Nominal Resistance		Cut-off Elevation	Design Tip Elevation (m)	Specified Tip Elevation (m)
			Compression (kN)	Tension			
Abut 1	HP 360 x 132	900	N/A	N/A	N/A	253.70 (1)	253.70
Bent 2	3600mm CIDH	N/A	23000	N/A	260.00	232.60 (1) 240.10 (2)	232.60
Bent 3	3600mm CIDH	N/A	25200	N/A	260.40	236.00 (1) 240.50 (2)	236.00
Bent 4	3600mm CIDH	N/A	28100	N/A	260.70	239.30 (1) 240.80 (2)	239.30
Bent 5L	2700mm CIDH	N/A	20400	N/A	259.60	235.20 (1) 241.30 (2)	235.20
Bent 5R	2700mm CIDH	N/A	24100	N/A	261.20	236.80 (1) 242.90 (2)	236.80
Bent 6	3600mm CIDH	N/A	28200	N/A	260.10	232.70 (1) 240.20 (2)	232.70
Bent 7	3600mm CIDH	N/A	26100	N/A	258.70	231.30 (1) 238.80 (2)	231.30
Abut 8	HP 360 x 132	900	N/A	N/A	N/A	247.80 (1)	247.80

Design Tip Elevation is controlled by the following demands:
(1) Compression
(2) Lateral Loads



Structural Concrete, Bridge (28 MPa at 28 days)

Structural Concrete, Bridge (35 MPa at 28 days)

Structural Concrete, Bridge (25 MPa at 28 days)

CIDH Pile Concrete

Structural Concrete, Bridge Footing

CONCRETE STRENGTH AND TYPE LIMITS

No Scale

DESIGN	BY J. POSEY	CHECKED A. LOGUS	
DETAILS	BY G. TEMPLETON/J. HUNTER	CHECKED A. LOGUS	
QUANTITIES	BY T. BUI	CHECKED R. CORIA	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
INDEX TO PLANS

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 7-05-05 | 6-19-07 | 7-26-07 | 8-8-07 | 10/16/07 | 11/14/07 | 1/2/08 | 2/29/08 | 7/25/08 | 12/5/08

SHEET 2 OF 34

FILE => 53-2977-b-itp.dgn

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

USERNAME => mtpierce DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:51

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1224	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MARK J. OKIMURA
No. 62908
Exp. 6-30-10
CIVIL
STATE OF CALIFORNIA

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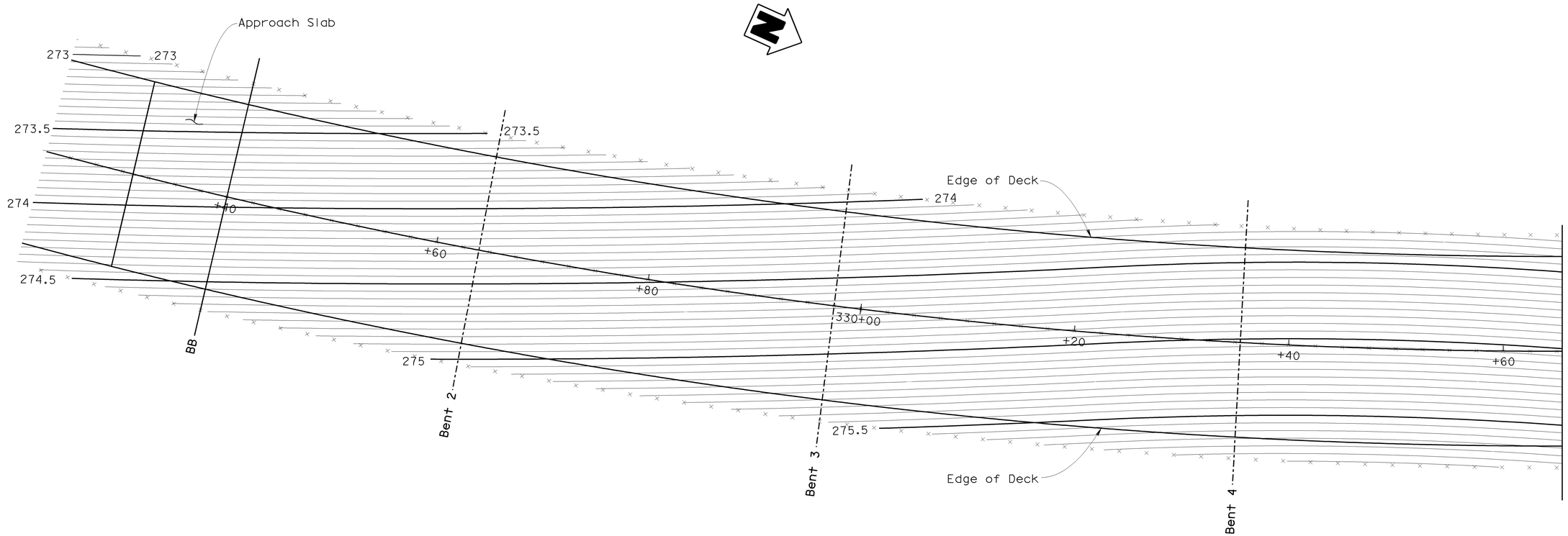

PLAN
1:200

NOTES

X Indicates 2.5 m intervals along station line.
Contours do not include camber
Contour interval = 50.0 mm

Caltrans Metric		DESIGN	BY J. POSEY	CHECKED A. LOGUS	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 11	BRIDGE NO. 53-2977 / KILOMETER POST 58.0/63.4	5-170 HOV CONNECTOR DECK CONTOURS NO. 1
		DETAILS	BY Jaime Ramirez	CHECKED A. LOGUS				
		QUANTITIES	BY T. BUI	CHECKED R. CORIA				

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 5/12/06 1/24/07

SHEET 3 OF 34

FILE => 53-2977-c-dc01.dgn

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

USERNAME => ttpierce DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:51

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1225	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MARK J. OKIMURA
No. 62908
Exp. 6-30-10
CIVIL
STATE OF CALIFORNIA

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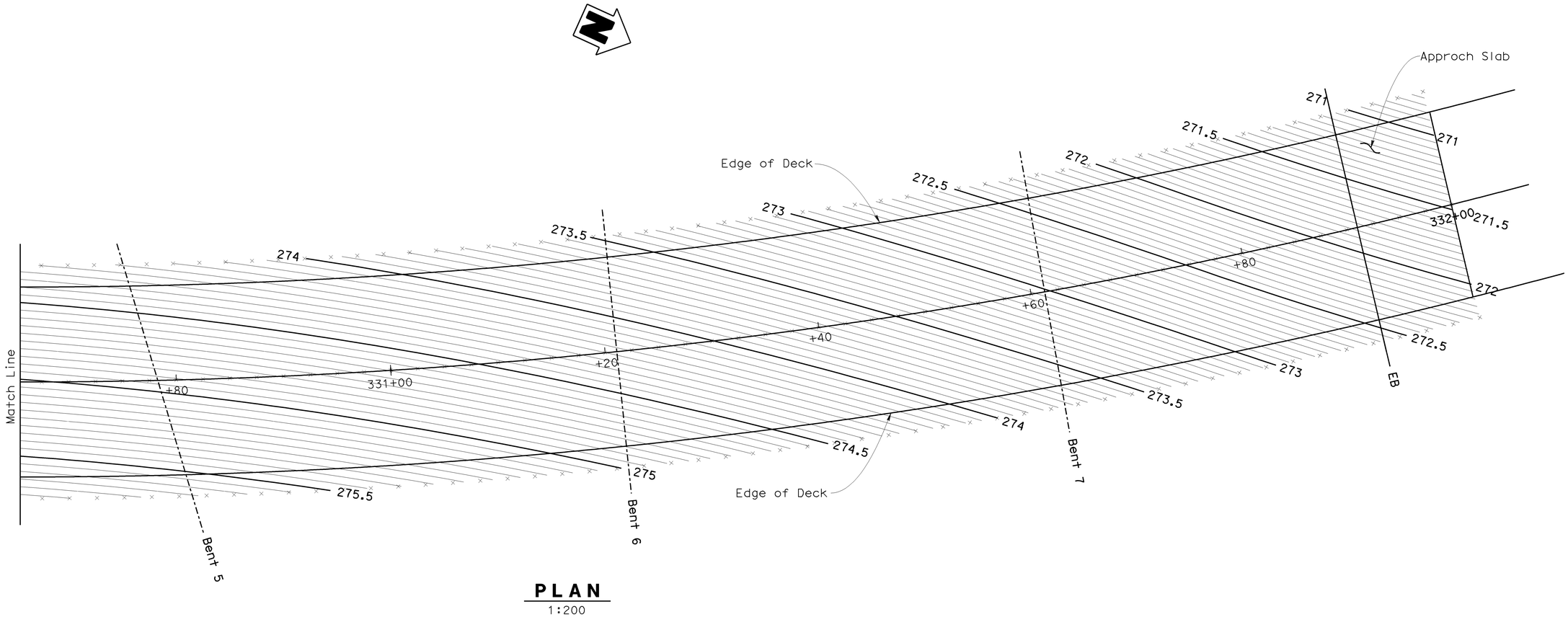

PLAN
1:200

NOTES

X Indicates 2.5 m intervals along station line.
Contours do not include camber
Contour interval = 50.0 mm

Caltrans Metric		DESIGN	BY J. POSEY	CHECKED A. LOGUS	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 11	BRIDGE NO. 53-2977 / KILOMETER POST 58.0/63.4	5-170 HOV CONNECTOR DECK CONTOURS NO. 2
		DETAILS	BY Jaime Ramirez	CHECKED A. LOGUS				
		QUANTITIES	BY T. BUI	CHECKED R. CORIA				

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES										SHEET	OF
5/11/06	5/12/06									4	34

FILE => 53-2977-c-dc02.dgn

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

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DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1226	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6-30-10 CIVIL STATE OF CALIFORNIA

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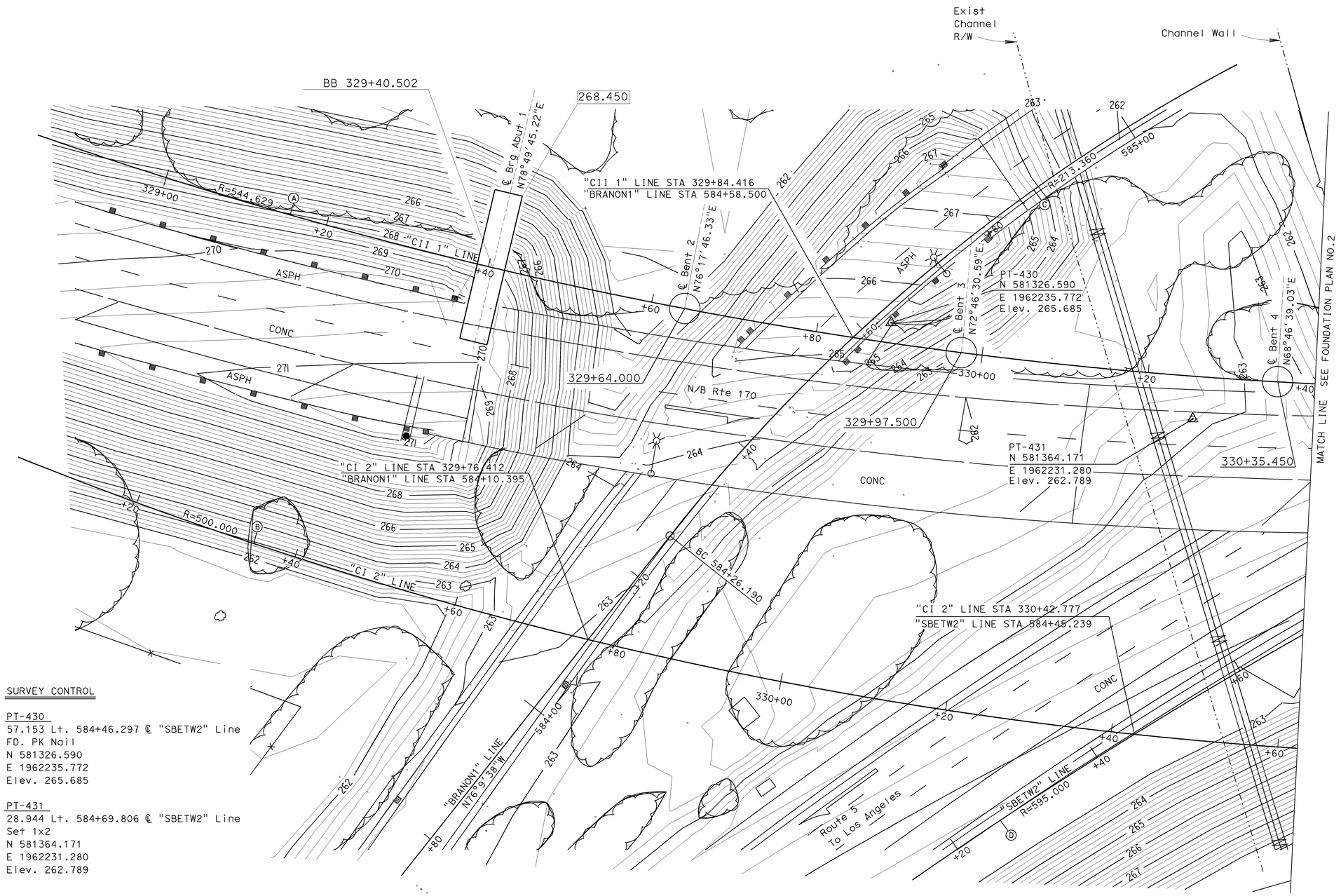
URS CORPORATION
1380 LEAD HILL ROAD, STE. 100
ROSEVILLE, CA 95661-2941

Caltrans Metric

CURVE DATA

No.	R	Δ	T	L
Ⓐ	544.629	61°30'56"	324.120	584.739
Ⓑ	500.000	64°48'14"	317.334	565.521
Ⓒ	213.360	41°21'11"	80.522	153.992
Ⓓ	595.000	36°39'22"	197.100	380.662



SURVEY CONTROL

PT-430
57.153 Lt. 584+46.297 ℄ "SBETW2" Line
FD. PK Nail
N 581326.590
E 1962235.772
Elev. 265.685

PT-431
28.944 Lt. 584+69.806 ℄ "SBETW2" Line
Set 1x2
N 581364.171
E 1962231.280
Elev. 262.789

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

SCALE 1:250	VERT. DATUM NAVD 88	PHOTOGRAMMETRY AS OF:12-02			DESIGN	BY J. POSEY	CHECKED M. OKIMURA
	HORZ. DATUM NAD 83	SURVEYED BY CBC URS CORP		DRAFTED BY PGB URS CORP	DETAILS	BY J. HUNTER	CHECKED J. POSEY
ALIGNMENT TIES		FIELD CHECKED BY CBC URS CORP		CHECKED BY PGB URS CORP	QUANTITIES	BY T. BUI	CHECKED R. CORIA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF STRUCTURES
STRUCTURE DESIGN 11

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5/170 HOV CONNECTOR
FOUNDATION PLAN NO. 1

STRUCTURES FOUNDATION PLAN SHEET (METRIC) (REV.12-1-01)

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 10/17/06 | 3/26/07 | 4/18/07 | 3/19/08

SHEET 5 OF 34

FILE => 53-2977-d-fp01.dgn

USERNAME = trpierce DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:51

CURVE DATA

No.	R	Δ	T	L
Ⓔ	609.600	33°38′33″	184.296	357.941
Ⓕ	536.229	6°56′25″	32.517	64.955
Ⓖ	553.028	0°56′0″	4.504	9.008

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1227	1471

Mark Okimura 11-18-08
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9-14-09
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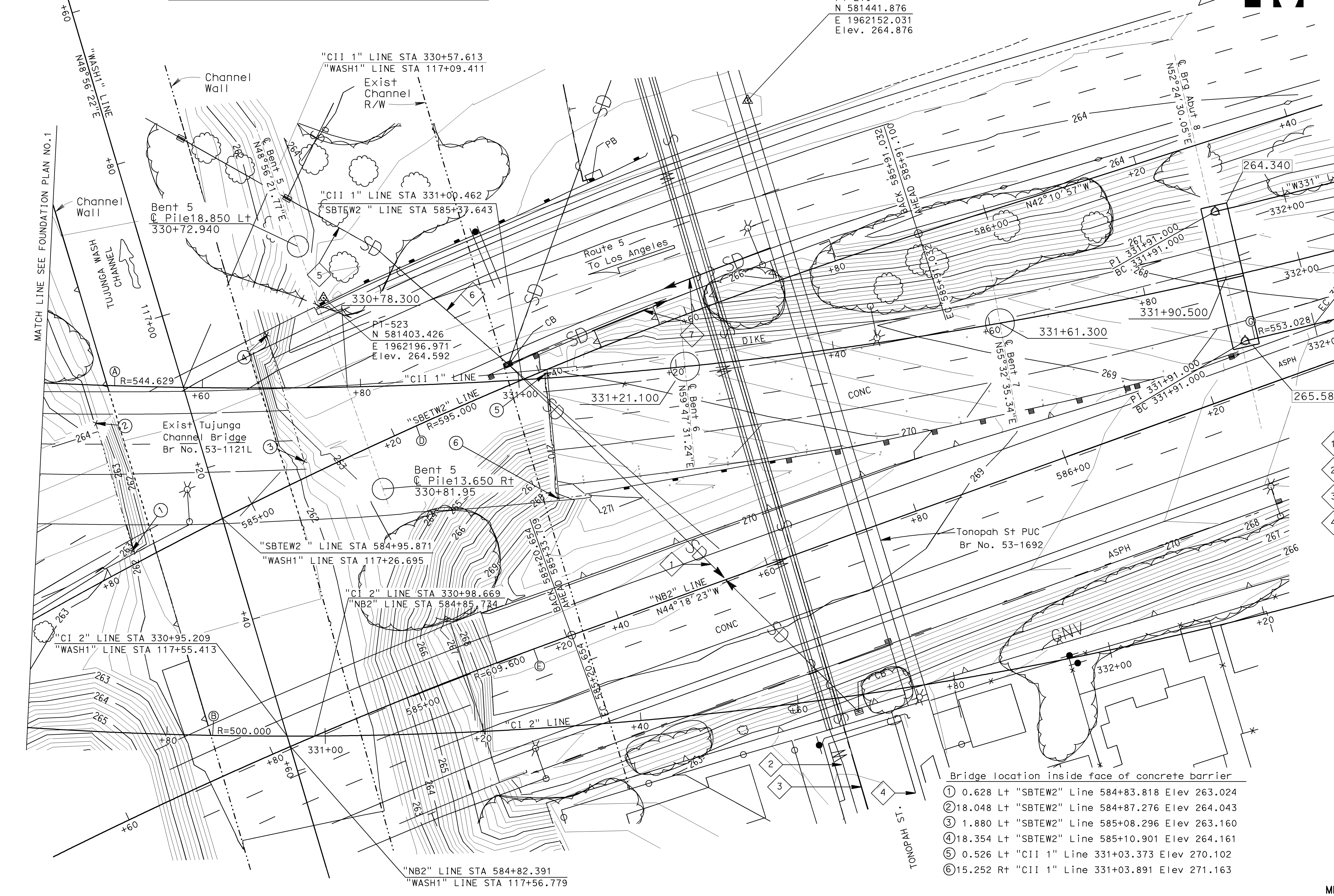
REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp 6-30-10 CIVIL STATE OF CALIFORNIA

URS CORPORATION
1380 LEAD HILL ROAD, STE. 100
ROSEVILLE, CA 95661-2941

Caltrans Metric



UTILITIES

1 0.813 RCP	5 0.914 RCP
2 0.152 x 0.11 DEL CL	6 0.838 RCP
3 0.203 Clay Pipe	7 0.305 CMP SD
4 0.051 Gas	

Bridge location inside face of concrete barrier

1. 0.628 Lt "SBTEW2" Line 584+83.818 Elev 263.024
2. 18.048 Lt "SBTEW2" Line 584+87.276 Elev 264.043
3. 1.880 Lt "SBTEW2" Line 585+08.296 Elev 263.160
4. 18.354 Lt "SBTEW2" Line 585+10.901 Elev 264.161
5. 0.526 Lt "CII 1" Line 331+03.373 Elev 270.102
6. 15.252 Rt "CII 1" Line 331+03.891 Elev 271.163

SURVEY CONTROL

PT-270
22.778 Lt. 585+76.150 ℄ "SBETW2" Line
FD L&T
N 581441.876
E1962152.031
Elev 264.876

PT-523
19.588 Lt. 585+19.100 ℄ "SBTEW2" Line
Set "+"
N581403.426
E1962196.971
Elev 264.592

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

SCALE 1:250	VERT. DATUM NAVD 88
	HORZ. DATUM NAD 83
ALIGNMENT TIES	
PHOTOGRAMMETRY AS OF: 12-02	
SURVEYED BY CBC URS CORP	DRAFTED BY PGB URS CORP
FIELD CHECKED BY CBC URS CORP	CHECKED BY PGB URS CORP

	BY	CHECKED
DESIGN	J. Posey	M. Okimura
DETAILS	J. Hunter	J.Posey
QUANTITIES	T. BUI	R. CORIA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF STRUCTURES
STRUCTURE DESIGN 11

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5/170 HOV CONNECTOR
FOUNDATION PLAN NO. 2

CU 07274
EA 1219U1

STRUCTURES FOUNDATION PLAN SHEET (METRIC) (REV.12-1-01)

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

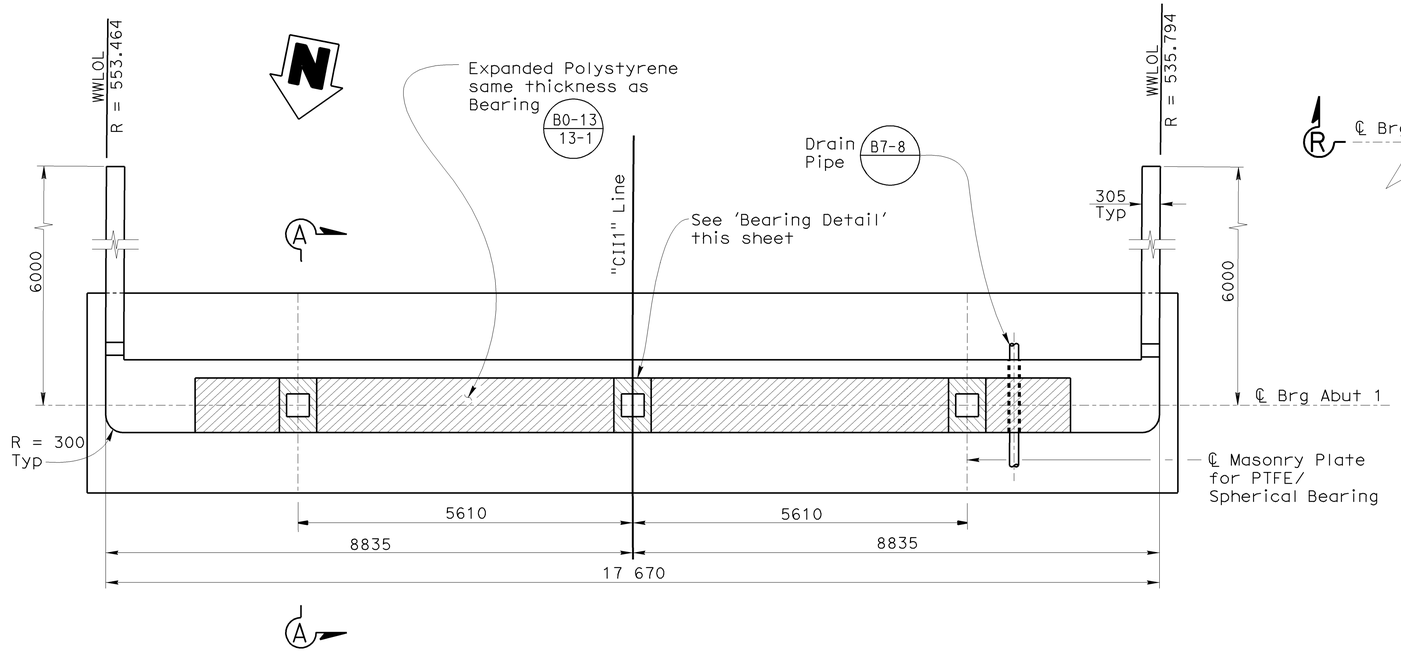
DISREGARD PRINTS BEARING EARLIER REVISION DATES

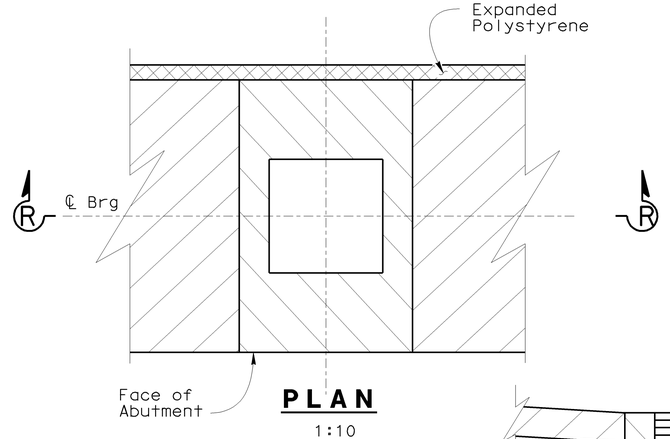
REVISION DATES (PRELIMINARY STAGE ONLY) 10/17/06 4/18/07

FILE => 53-2977-d-fp02.dgn

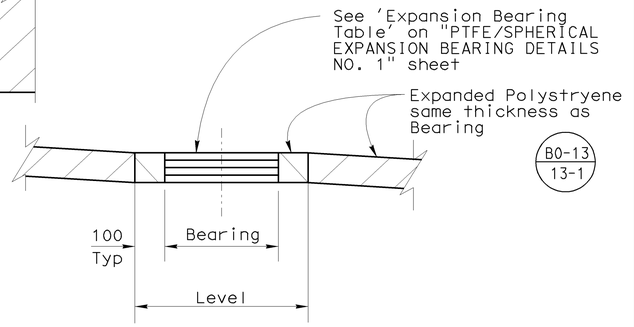
USERNAME => trpierce DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:52

NOTE:
For 'Section A-A', see
"ABUTMENT DETAILS NO. 1" sheet





PLAN
1:10



SECTION R-R

NOTE: Details typical at all Bearing

BEARING DETAIL B0-13
1:10

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1228	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MARK J. OKIMURA
No. 62908
Exp. 6-30-10
CIVIL
STATE OF CALIFORNIA

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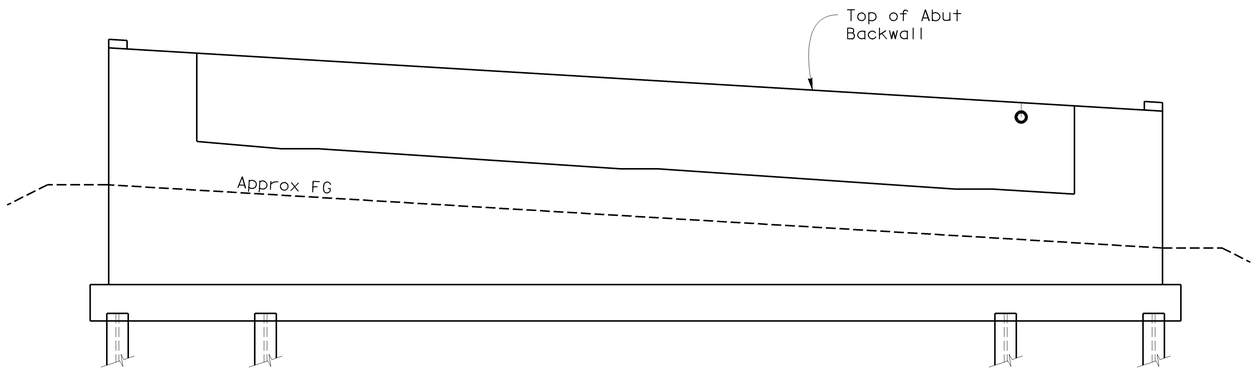
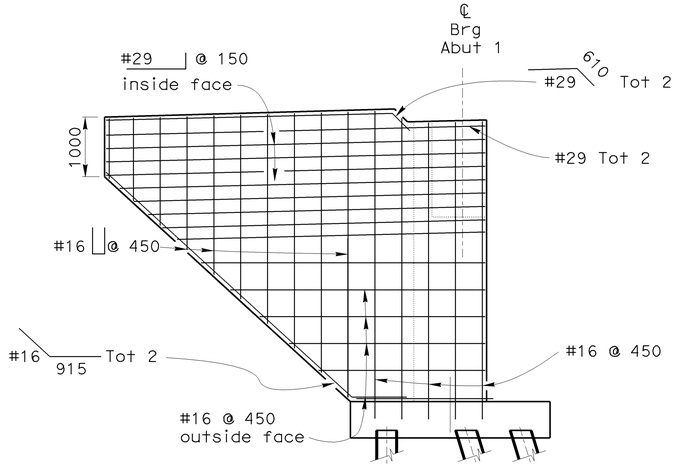
PLAN B0-13 B7-8
1:50



NOTE:
All piles not shown

ELEVATION
1:50



NOTE:
Approach Slab and Concrete Barrier not shown

WINGWALL ELEVATION
1:50

Caltrans Metric		DESIGN	BY J. POSEY	CHECKED A. LOGUS	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 11	BRIDGE NO. 53-2977 / KILOMETER POST 58.0/63.4	5-170 HOV CONNECTOR ABUTMENT 1 LAYOUT
		DETAILS	BY L. CHARLOT/J. HUNTER	CHECKED A. LOGUS				
		QUANTITIES	BY T. BUI	CHECKED R. CORIA				

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 3-29-05 | 10/10/07 | 11/18/08 | 2-14-06 | 3-21-06 | 5/19/06 | 12/15/06 | 7-26-07 | 8-30-07

SHEET 7 OF 34

FILE => 53-2977-e-abut01lyt.dgn

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

USERNAME => ttpierce DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:52

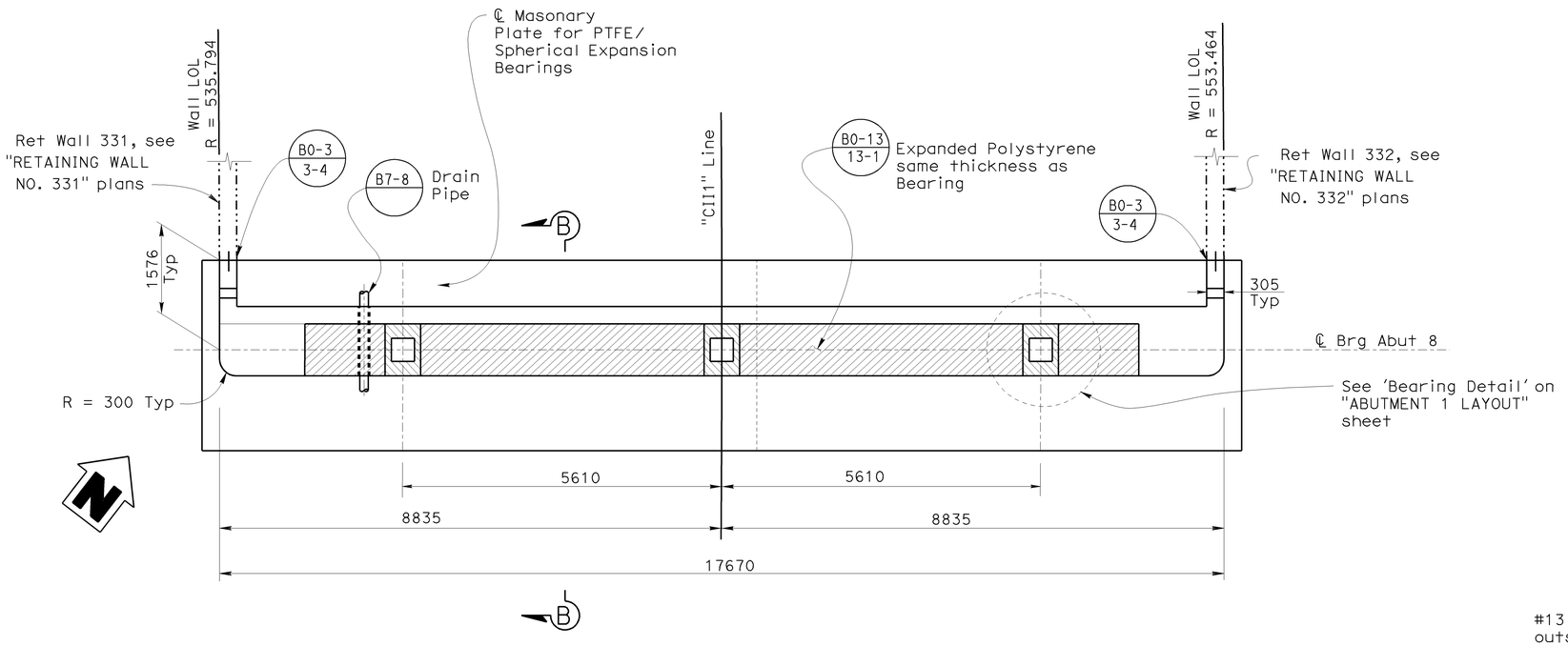
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1229	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

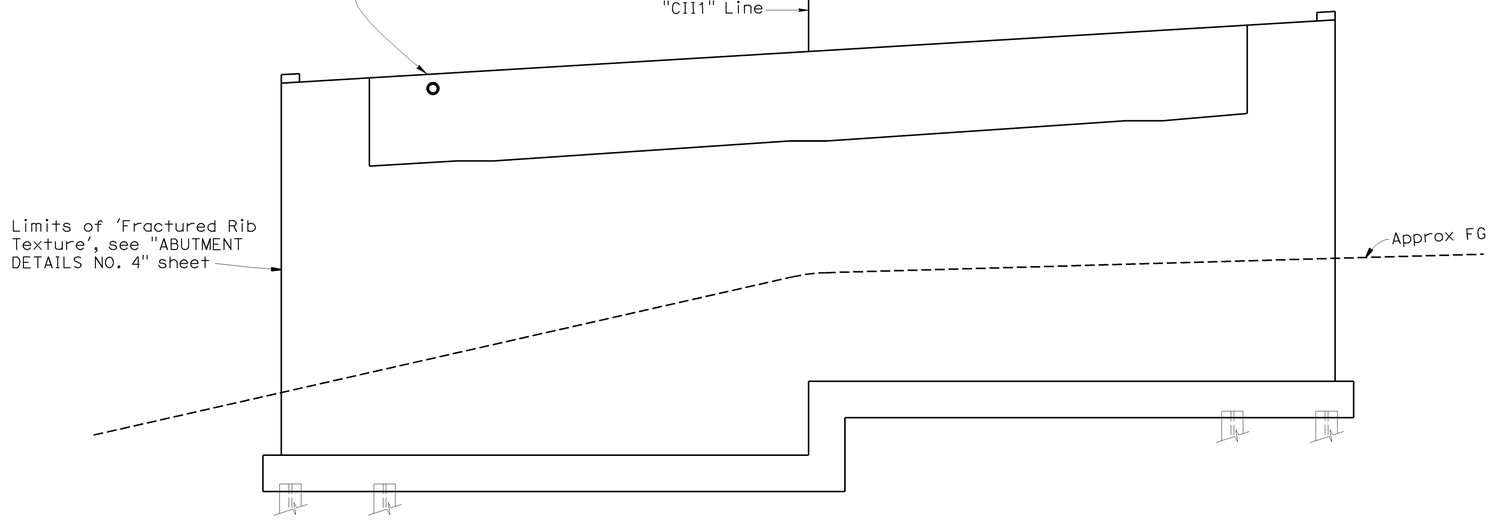
9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6-30-10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



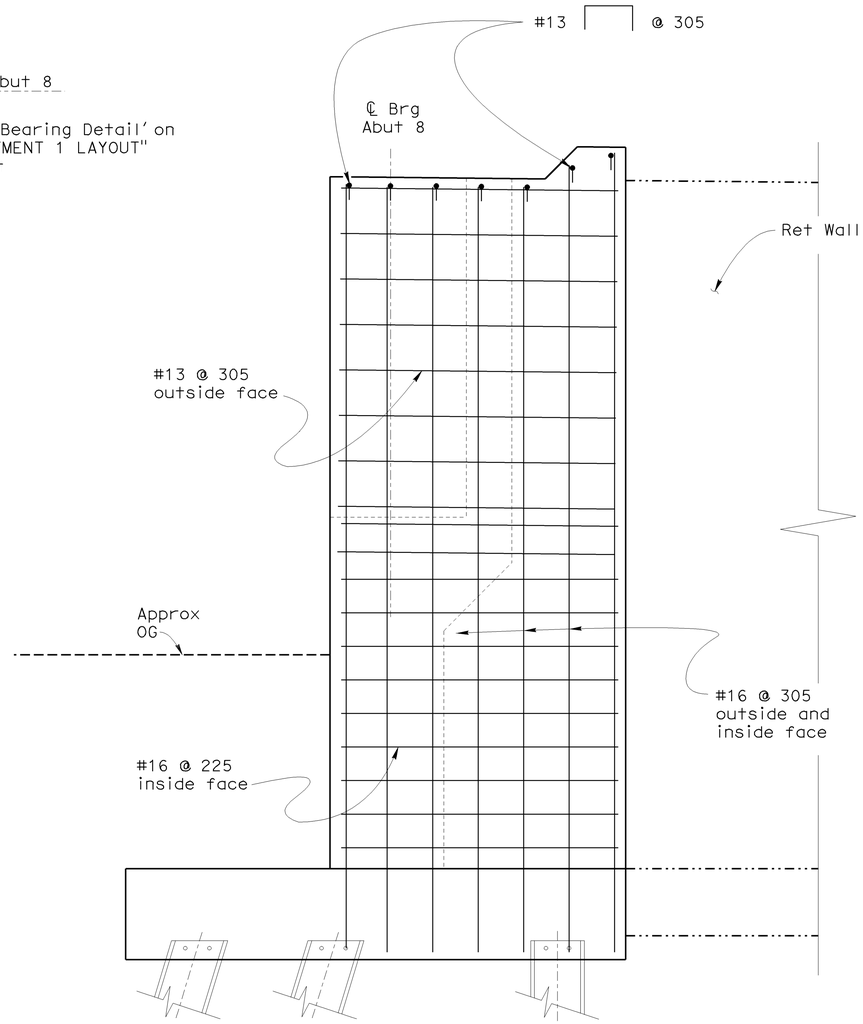
PLAN
1:50 B0-3 B0-13 B7-8



NOTE:
All piles not shown

ELEVATION
1:50

NOTE:
For 'Section 'B-B', see "ABUTMENT DETAILS NO. 2 sheet



RETURN WALL SIDE ELEVATION
1:20

DESIGN	BY J. POSEY	CHECKED A. LOGUS	
DETAILS	BY L. CHARLOT/J. HUNTER 1/29/09	CHECKED A. LOGUS	
QUANTITIES	BY T. BUI	CHECKED R. CORIA	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
ABUTMENT 8 LAYOUT

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 3-30-05 | 7-26-07 | 11-17-08 | | | 3-28-06 | 5/19/06 | 7/5/06 | 12/5/06 | 3/14/07

SHEET 8 OF 34

FILE => 53-2977-e-abut08lyt.dgn

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

USERNAME => rtplerce DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:52

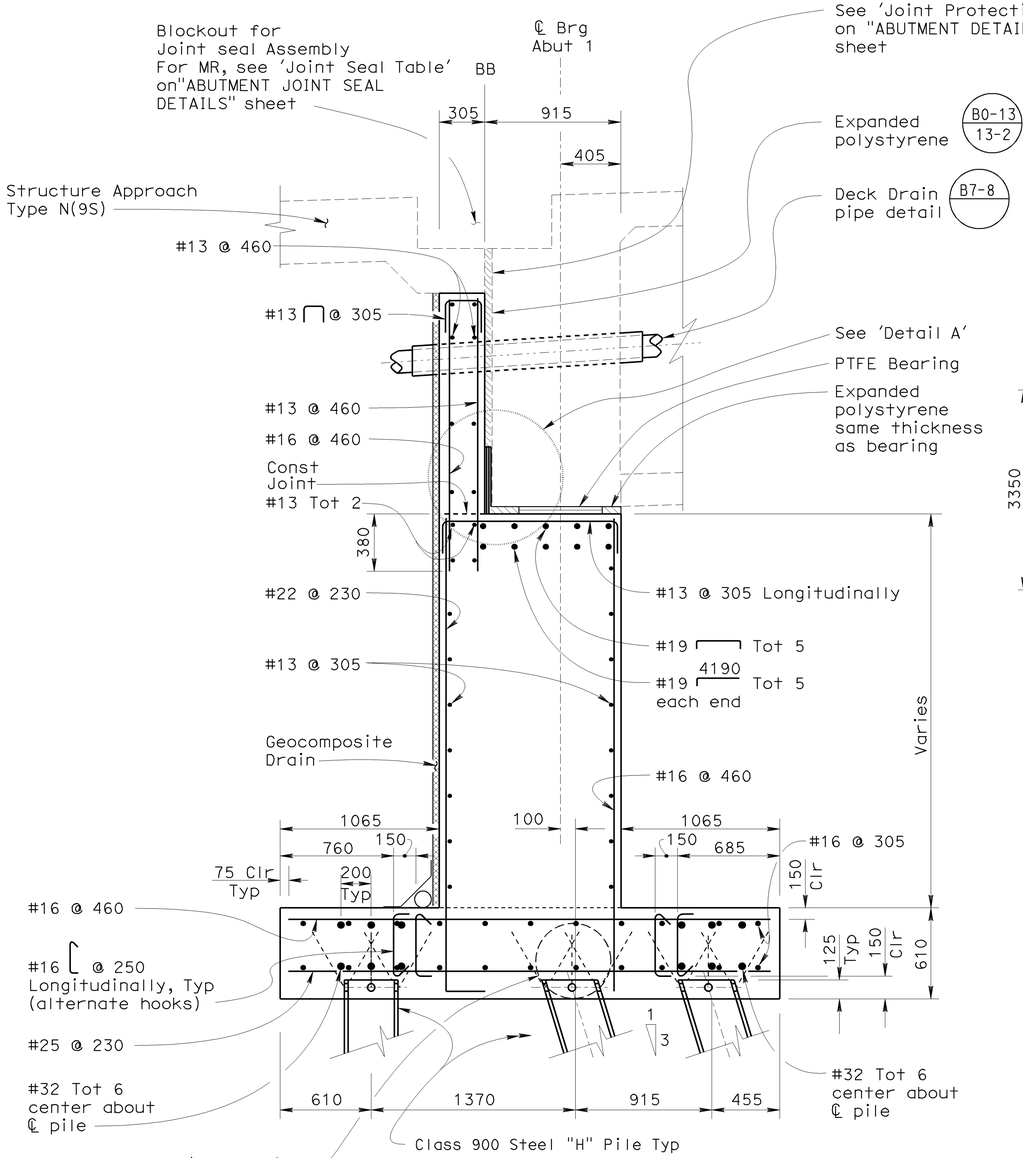
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1230	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MARK J. OKIMURA — No. 62908 — Exp. 6-30-10 — CIVIL — STATE OF CALIFORNIA

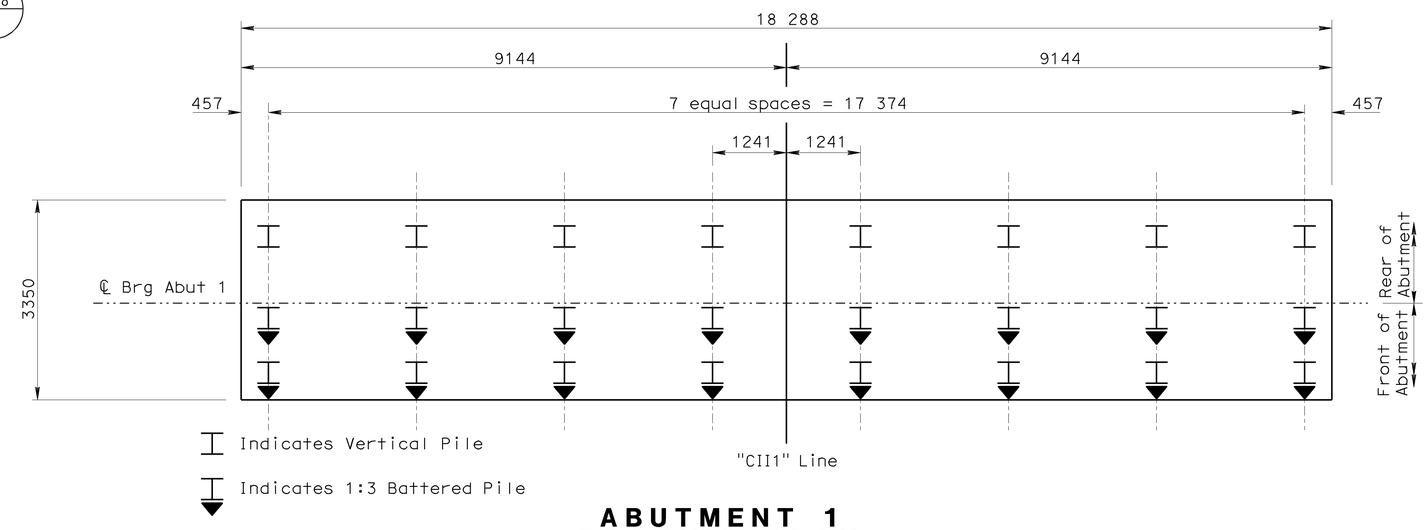
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



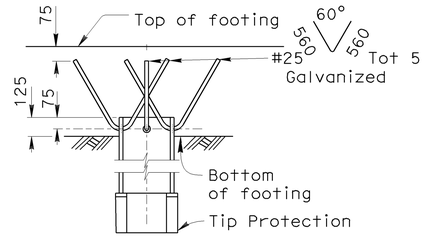
SECTION A-A
1:20

B0-13 B7-8

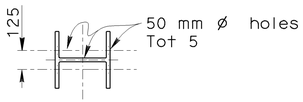
NOTE:
For location of 'Section A-A', see "ABUTMENT 1 LAYOUT" sheet



ABUTMENT 1 FOOTING PLAN
1:50

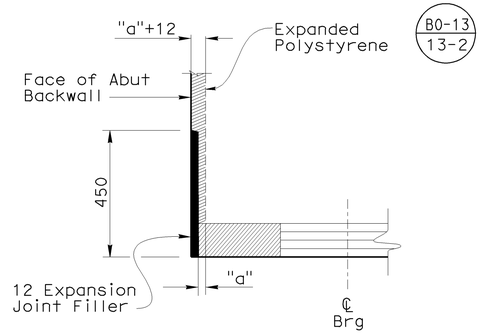


ELEVATION



PLAN
(900 kN Pile)

STEEL PILE ANCHOR
NO SCALE



DETAIL A
NO SCALE

DESIGN	BY J. POSEY	CHECKED A. Logus	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
DETAILS	BY G. TEMPLETON/J. HUNTER	CHECKED A. Logus	
QUANTITIES	BY T. BUI	CHECKED R. CORIA	

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN
DESIGN BRANCH 11

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
ABUTMENT DETAILS NO. 1

Caltrans Metric

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

FILE => 53-2977-f-abutdt01.dgn

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 3-29-05 | 7-26-07 | 8-29-07 | 8-30-07 | 10/19/07 | 7/25/08 | | 5/12/06 | 8/28/06 | 12/5/06

SHEET 9 OF 34

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

USERNAME => \\tpiprce DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:52

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1231	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6-30-10 CIVIL STATE OF CALIFORNIA

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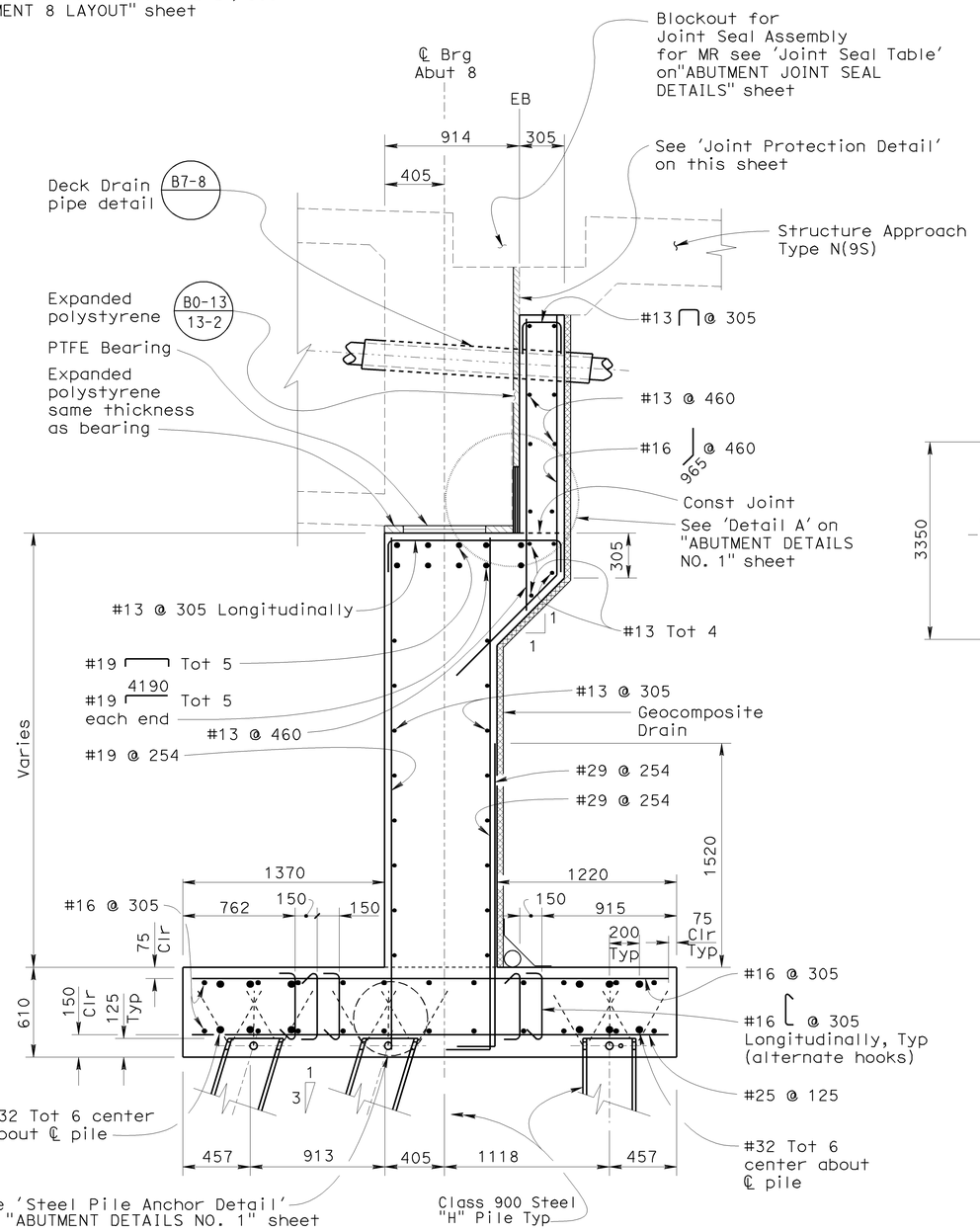
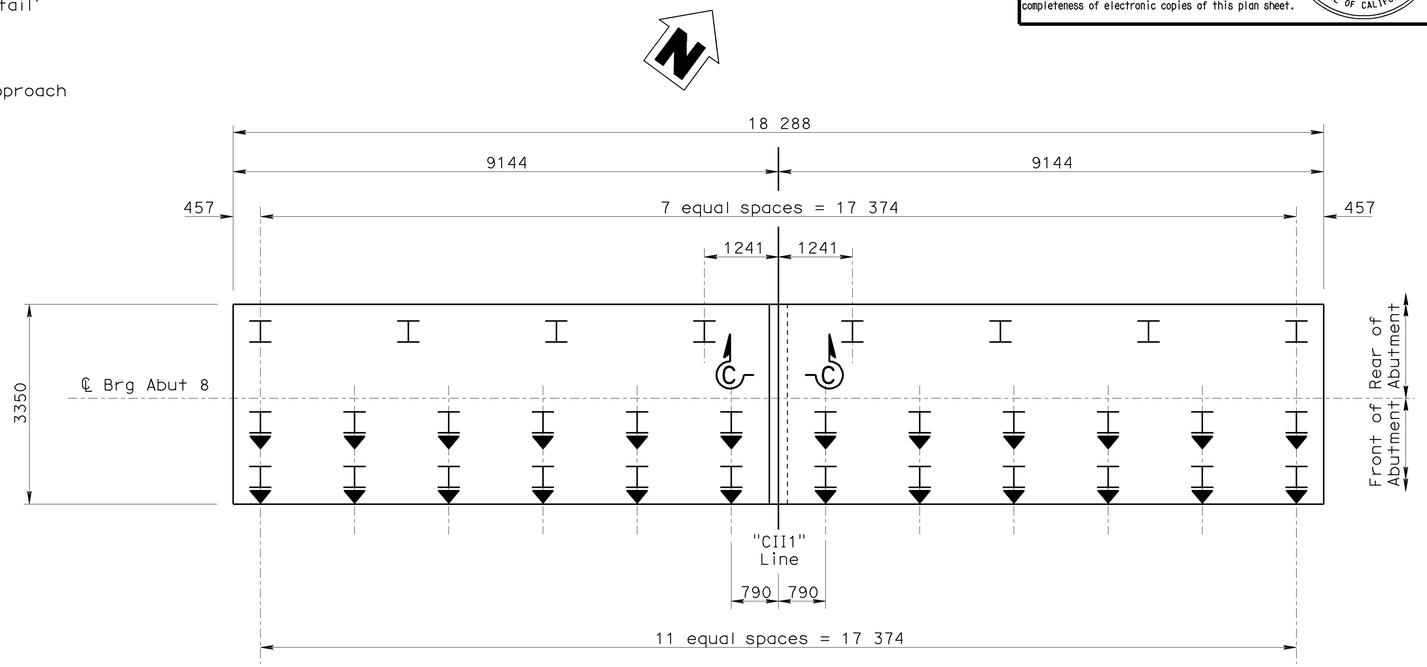
NOTE:
For location of 'Section B-B', see "ABUTMENT 8 LAYOUT" sheet



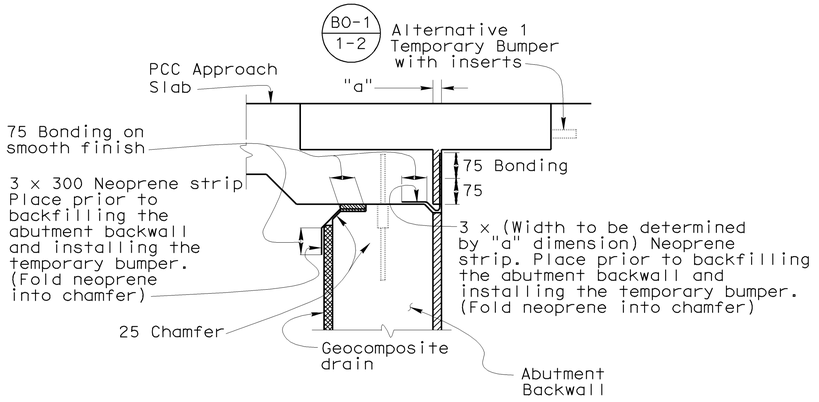
SECTION B-B
B0-13 B7-8
1:20



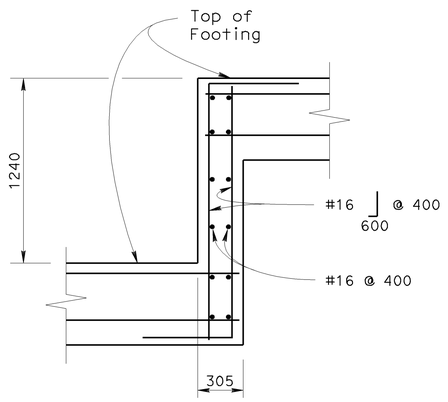
ABUTMENT 8 FOOTING PLAN
1:50

Indicates Vertical Pile

Indicates 1:3 Battered Pile



JOINT PROTECTION DETAIL
B0-1
No Scale



SECTION C-C
1:20

DESIGN	BY J. POSEY	CHECKED A. LOGUS	
DETAILS	BY G. TEMPLETON/J. HUNTER	CHECKED A. LOGUS	
QUANTITIES	BY T. BUI	CHECKED R. CORIA	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

CU 07274
EA 1219U1

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
ABUTMENT DETAILS NO. 2

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 3-29-05 | 7-25-08 | 7-13-05 | 2-06-06 | 4/7/06 | 5/19/06 | 8/25/06 | 12/5/06 | 3/26/07 | 10-11-07

SHEET 10 OF 34

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

FILE => 53-2977-f-abutdt02.dgn

USERNAME = trpierce DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:52

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1232	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6-30-10 CIVIL STATE OF CALIFORNIA

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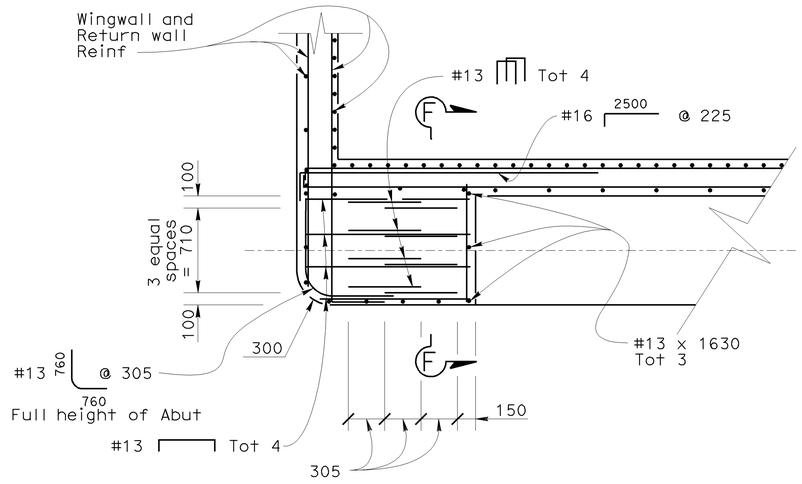
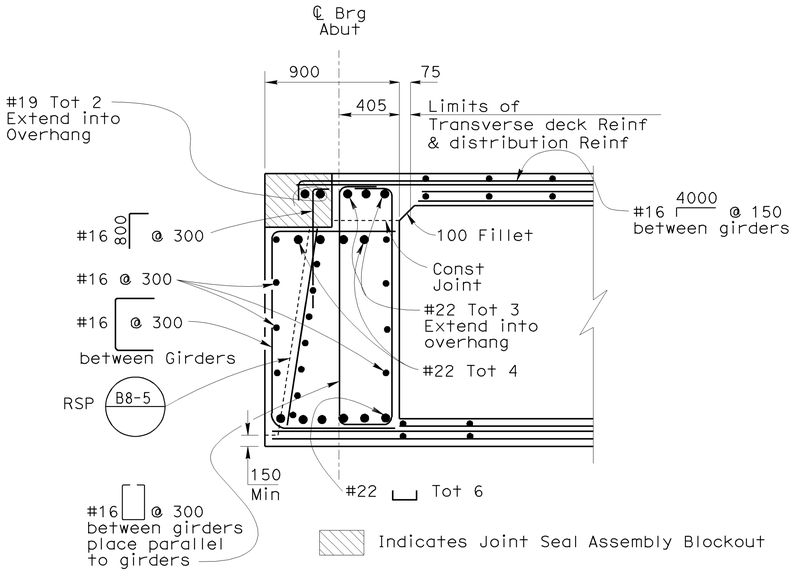
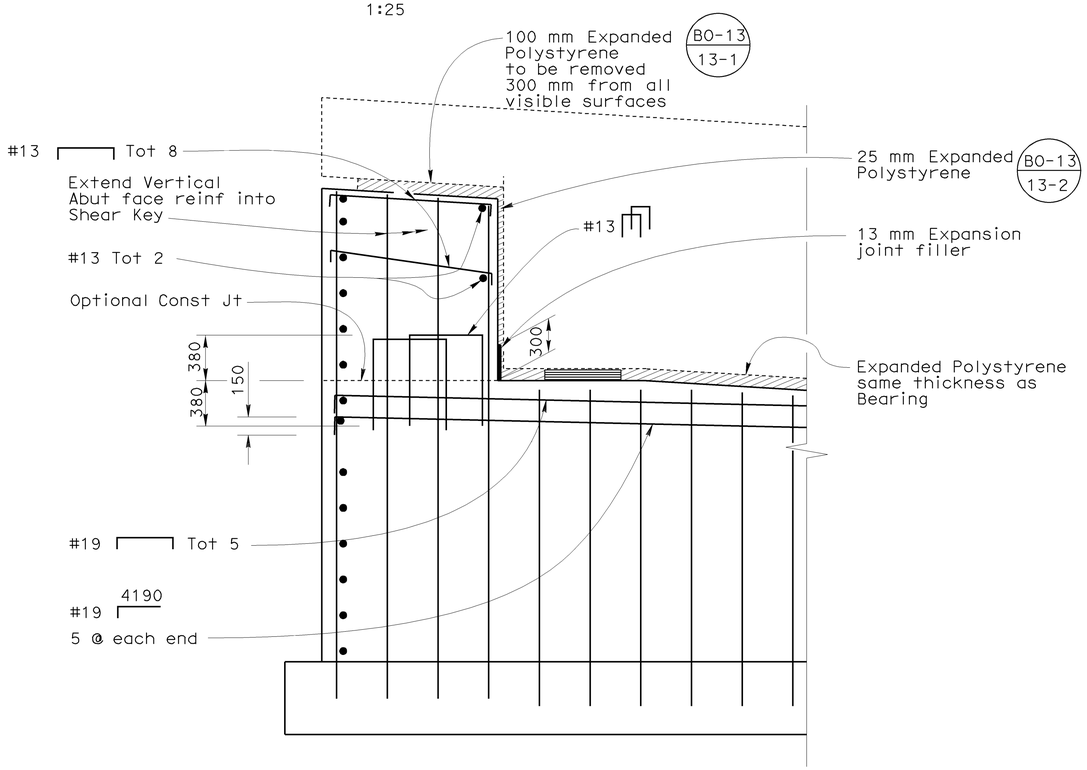


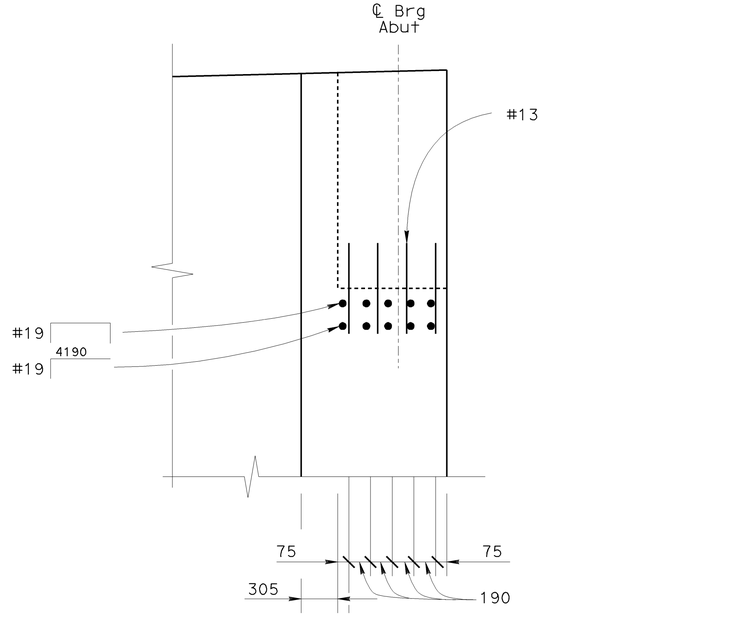
PLAN
1:25



END DIAPHRAGM
1:20 B8-5 RSP



ELEVATION
1:25 B0-13



SECTION F-F

EXTERNAL SHEAR KEY TYPICAL
1:20

Caltrans Metric		DESIGN	BY J. POSEY	CHECKED A. LOGUS	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
		DETAILS	BY G. TEMPLETON/J. HUNTER	CHECKED A. LOGUS	
		QUANTITIES	BY T. BUI	CHECKED R. CORIA	

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN
DESIGN BRANCH 11

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
ABUTMENT DETAILS NO. 3

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 1-29-05 | 3/28/07 | 7-26-07 | 10-24-07 | 11/13/07 | 7/25/08 | 9/12/08 | 11/30/08 | 12/5/08

SHEET 11 OF 34

FILE => 53-2977-f-abutdt03.dgn

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

USERNAME => trpierce DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:52

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1233	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MARK J. OKIMURA
No. 62908
Exp. 6-30-10
CIVIL
STATE OF CALIFORNIA

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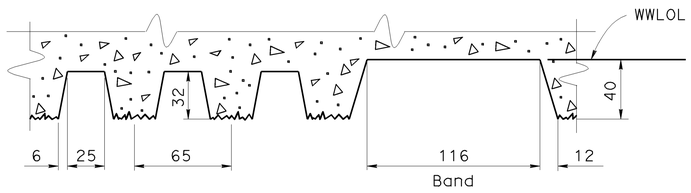
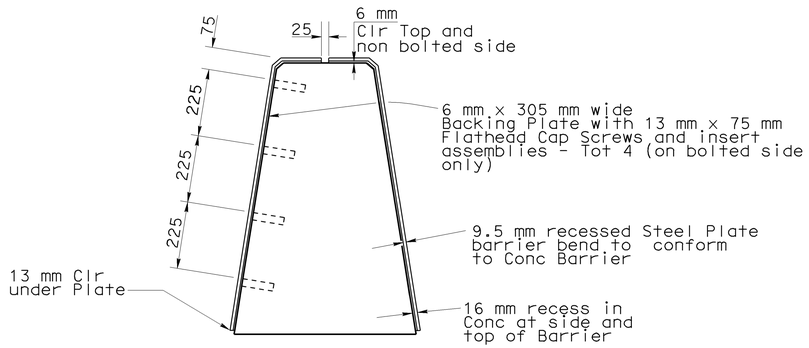


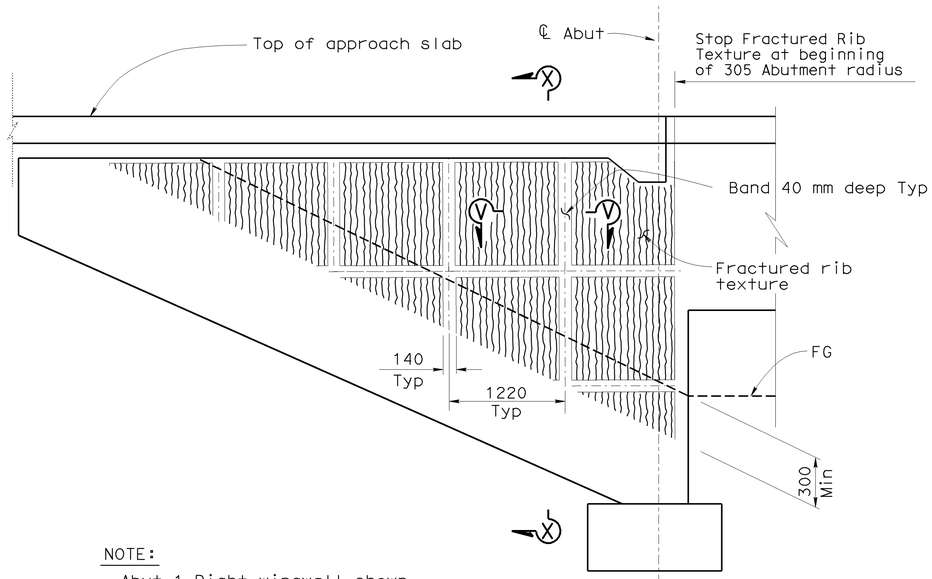
SECTION V-V

1:2



SECTION A-A

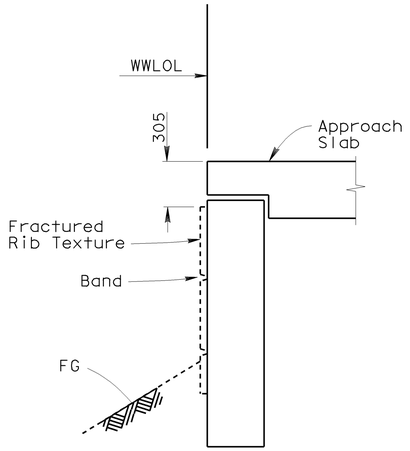
1:10



NOTE:
Abut 1 Right wingwall shown,
left wingwall & Abut 8 Return Walls similar

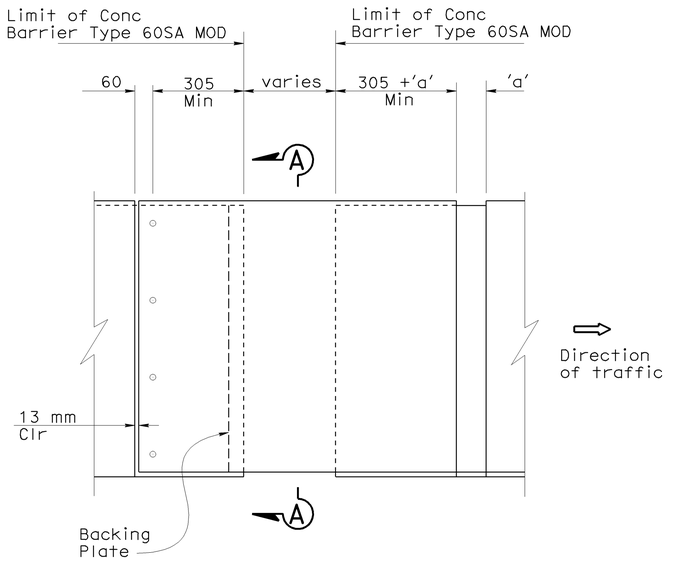
LIMITS OF FRACTURED RIB TEXTURE

No Scale



SECTION X-X

1:20



CONCRETE BARRIER TYPE 60SA MOD AT JOINT SEAL

1:10

DESIGN	BY J. POSEY	CHECKED A. LOGUS	
DETAILS	BY J. HUNTER 11/28/05	CHECKED A. LOGAS	
QUANTITIES	BY T. BUI	CHECKED R. CORIA	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

CU 07274
EA 1219U1

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
ABUTMENT DETAILS NO. 4

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 11-28-05 | 2-29-08 | 6-19-06 | 12-15-06 | 1-28-02 | 8-8-02 | 8-29-02 | 11-14-02 | 11-18-02

SHEET 12 OF 34

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

FILE => 53-2977-f-abutdt04.dgn

USERNAME => tromndo DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 09:55

RELEASED 4-9-97

DIST.	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1234	1471

Mark Okimura 11-18-08
REGISTERED ENGINEER - CIVIL

9-14-09
PLANS APPROVAL DATE

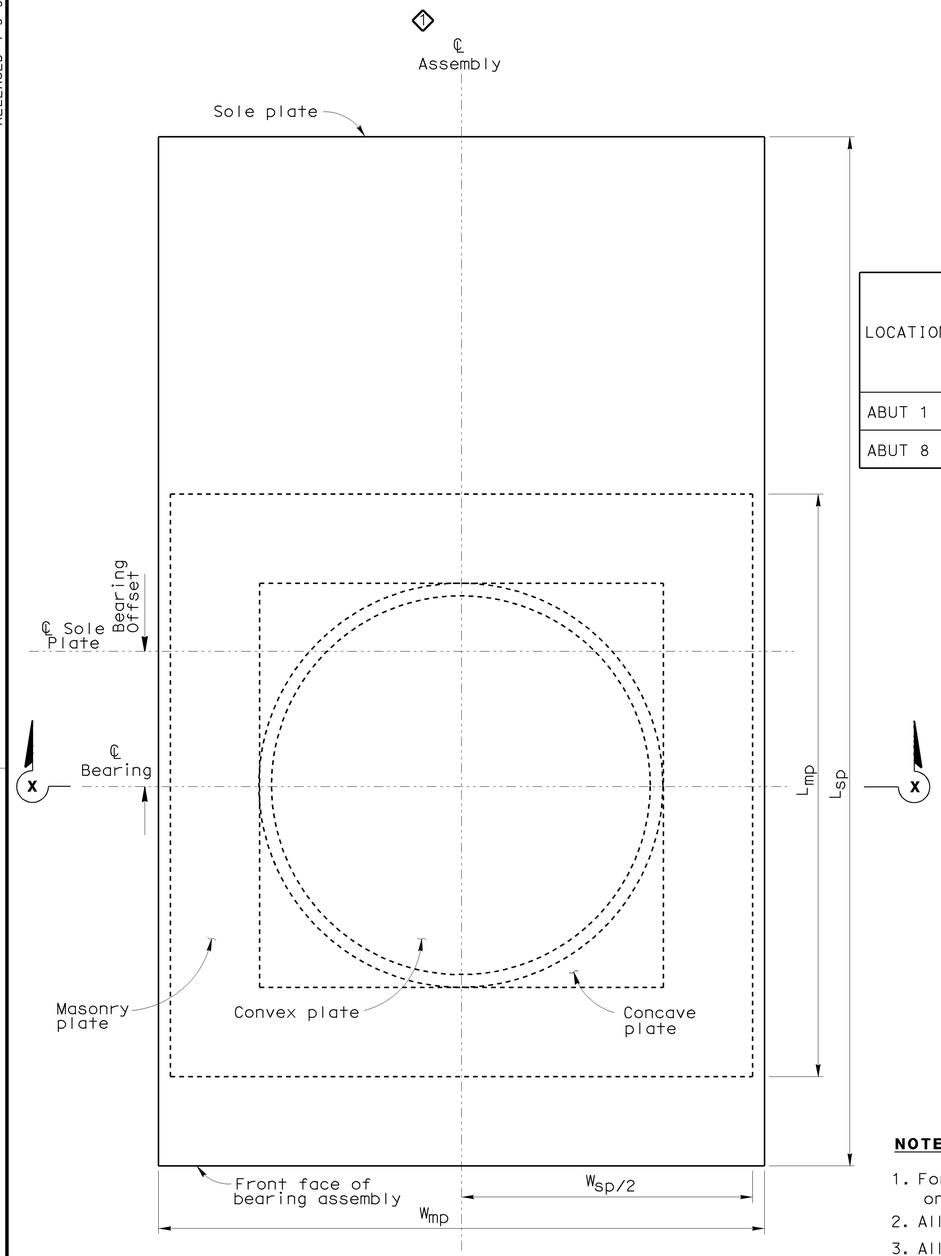
REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6/30/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

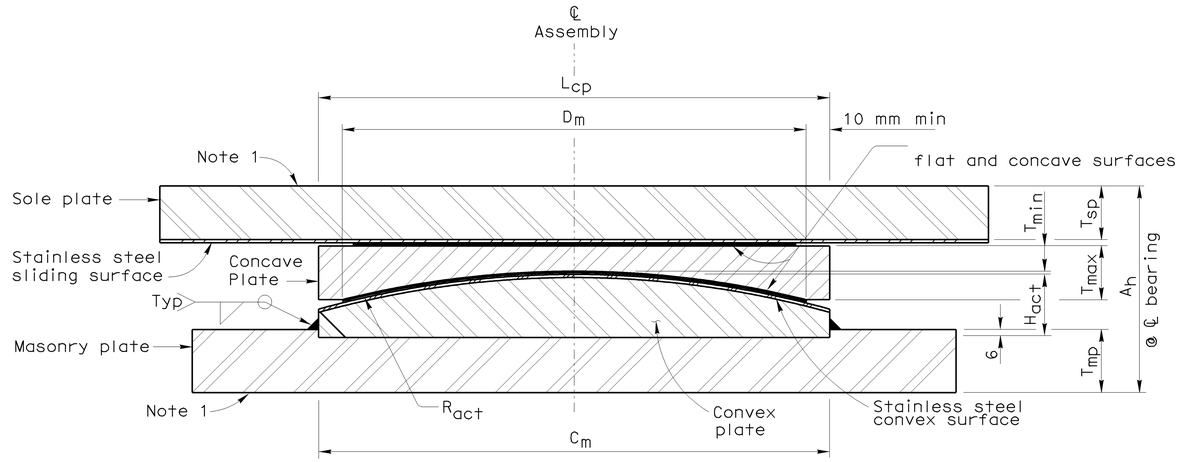
EXPANSION BEARING TABLE

LOCATION	MAXIMUM VERTICAL LOAD (kN)	MINIMUM DEAD LOAD (kN)	DESIGN ROTATION (Degrees)	CONCAVE PLATE						CONVEX PLATE		MASONRY PLATE			SOLE PLATE			ASSEMBLY HEIGHT	BEARING OFFSET
				WIDTH / LENGTH	FLAT PTFE AREA (mm^2)	DIAMETER	SPHERICAL RADIUS	MINIMUM THICKNESS	MAXIMUM THICKNESS	DIAMETER	MAXIMUM THICKNESS	WIDTH	LENGTH	THICKNESS	WIDTH	LENGTH	THICKNESS		
				L_{cp}	A_{PTFE}	D_m	R_{act}	T_{min}	T_{max}	C_m	H_{act}	W_{mp}	L_{mp}	T_{mp}	W_{sp}	L_{sp}	T_{sp}	A_h	
ABUT 1	1374	921	2.0	308	56774	279	607	19	40.64	310	39	381	381	25	410	857	45	127	127
ABUT 8	1624	812	2.0	333	67097	305	662	19	40.64	338	41	431	431	31	435	904	45	127	123

NOTE:
Contractor shall verify all controlling field dimensions before ordering or fabricating any material.



PLAN



SECTION X-X

NOTES:

1. For anchorage details see Detail A on "PTFE/SPHERICAL EXPANSION BEARING DETAILS NO. 2" sheet.
2. All units in millimeters unless otherwise noted.
3. All dimensions shown are steel only unless otherwise noted.
4. H_{act} includes stainless steel.
5. A_h includes PTFE, substratum and stainless steel, (Varies).
6. R_{act} is to sliding surface.

SPECIAL DETAILS
NO SCALE

STANDARD DRAWING				
FILE NO. XS 12-80	DESIGN	BY ROBERTO LACALLE	CHECKED ROD SIMMONS	APPROVAL RECOMMENDED BY
DRAWING DATE REVISED	DETAILS	BY R.YEE	CHECKED ROD SIMMONS	
	SUBMITTED BY ROBERTO LACALLE			DESIGN SUPERVISOR

1 Modified Detail
2 Revised Note

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF STRUCTURES
STRUCTURE DESIGN 11

CU 07274
EA 1219U1

BRIDGE NO.	5-170 HOV CONNECTOR
53-2977	
KILOMETER POST 58.0/63.4	PTFE/SPHERICAL EXPANSION BEARING DETAILS NO. 1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY): 1-16-06 | 2-01-06 | 2-07-06 | 5/19/06 | 11/15/06 | 12/5/06 | 7-26-0

SHEET 13 OF 34

DS OSD 2147A (METRIC) (REV. 2/25/97)

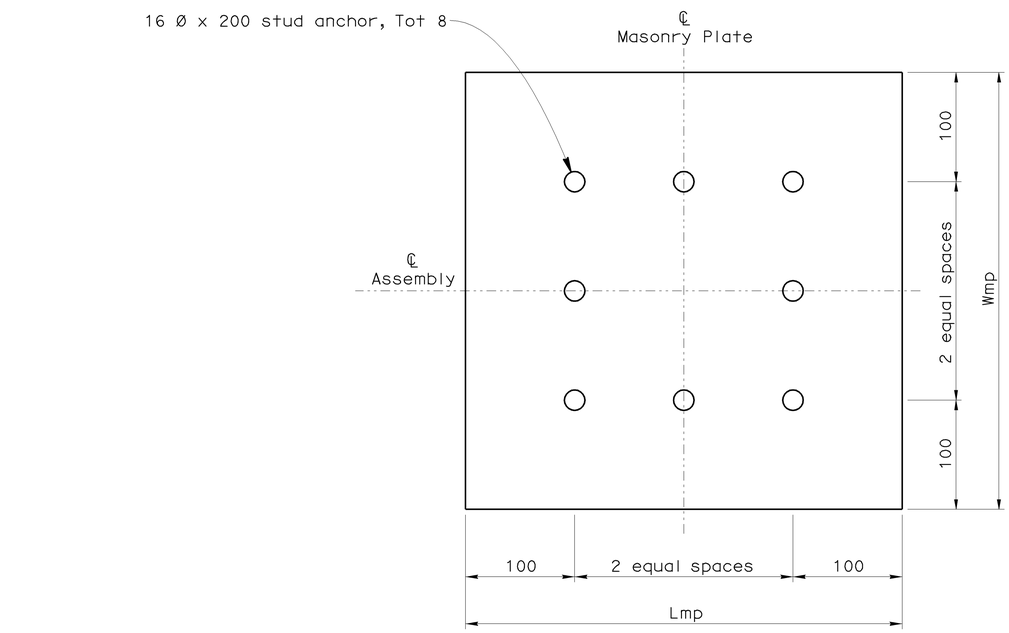
ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

USERNAME => trannda

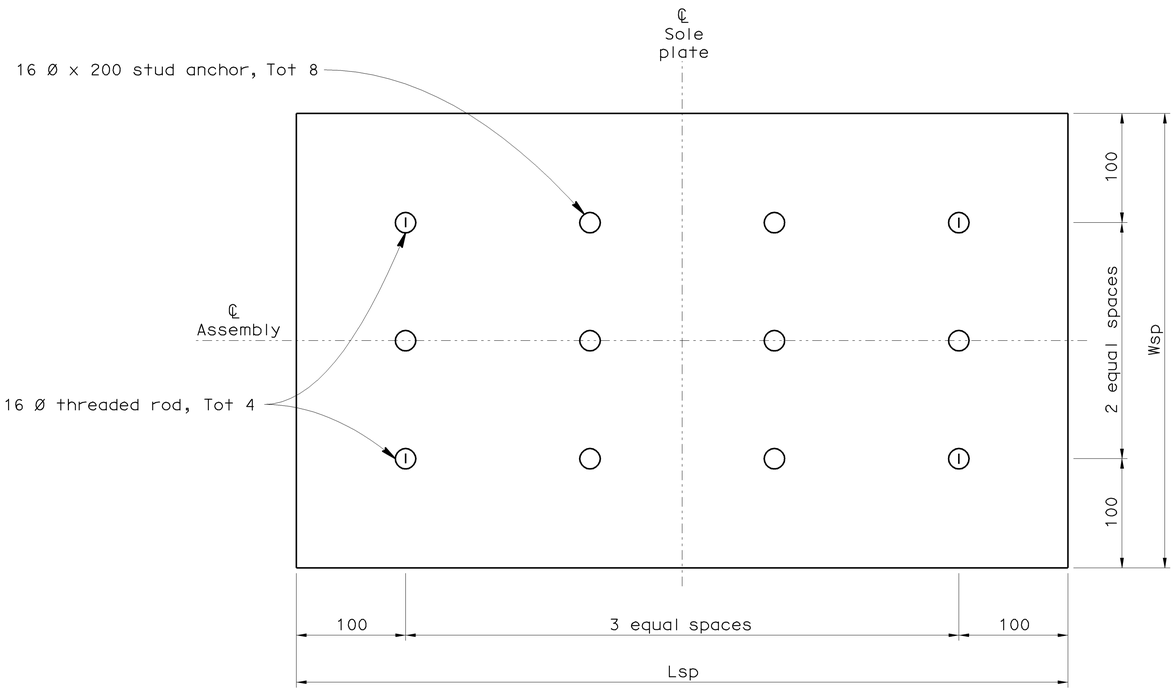
53-2977-f-ptfe01.dgn

XS1280.DGN

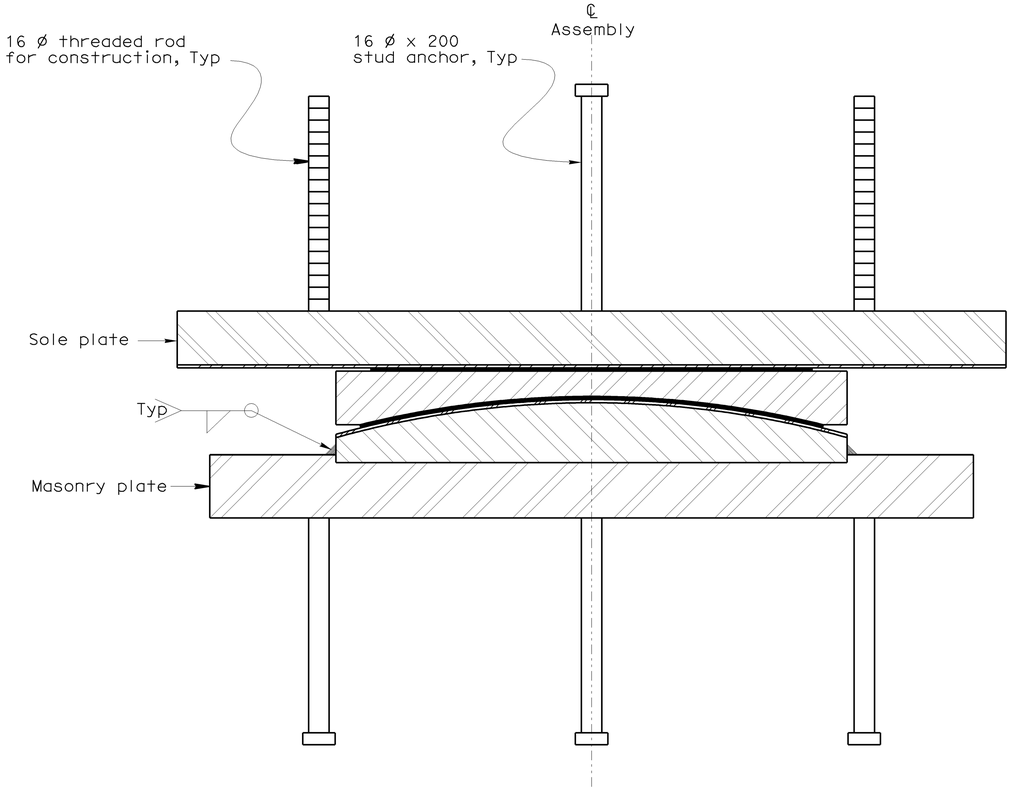
DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 09:51



PLAN-MASONRY PLATE



PLAN-SOLE PLATE



DETAIL A

NO SCALE

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1235	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MARK J. OKIMURA — No. 62908 — Exp. 6-30-10 — CIVIL — STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

Caltrans Metric

	BY	CHECKED
DESIGN	J. POSEY	A. LOGUS
DETAILS	J. HUNTER 3-29-05	A. LOGUS
QUANTITIES	T. BUI	R. CORIA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR

PTFE/SPHERICAL EXPANSION BEARING DETAILS NO. 2

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

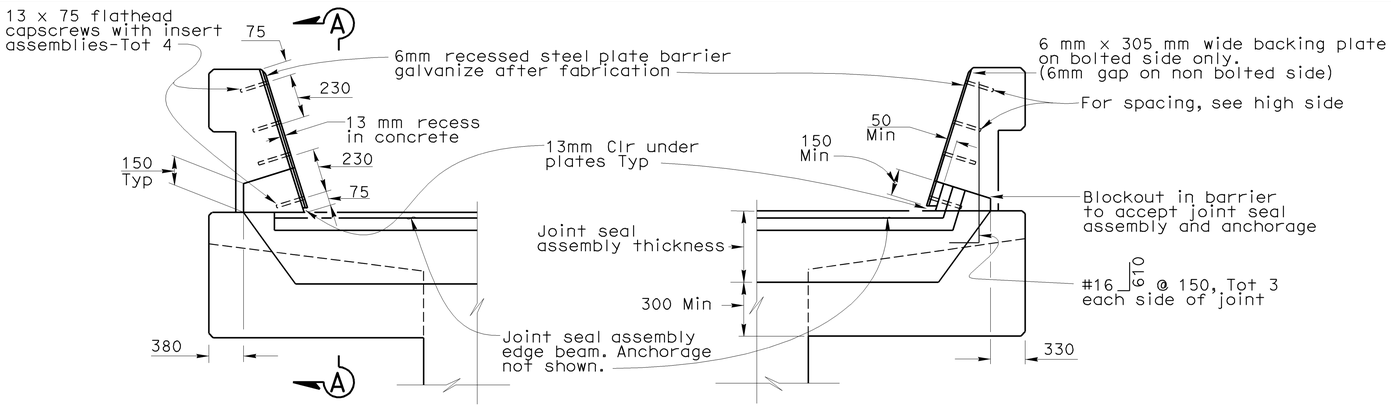
REVISION DATES: 1-9-06 | 2-01-06 | 5-12-06 | 7-26-07

SHEET 14 OF 34

FILE => 53-2977-f-ptfe02.dgn

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

USERNAME => rromano DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 09:51



HIGH SIDE OF DECK **LOW SIDE OF DECK**

SEAL INSTALLATION

NOTES:
1) Reinf shown is in addition to slab and B11-55 B11-56
2) For details not shown, see Abutment sheets

Indicates Joint Seal Assembly Blockout

Indicates Polystyrene

JOINT INFORMATION		"a" DIMENSIONS			
LOCATION	MOVEMENT RATING (M.R)	SKEW	WINTER	SPRING & FALL	SUMMER
ABUTMENT 1	150	0°	63	39	32
ABUTMENT 8	140	0°	65	48	33

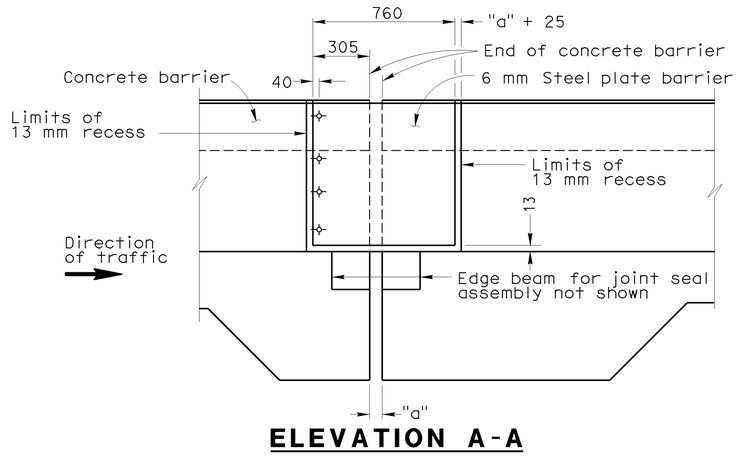
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1236	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

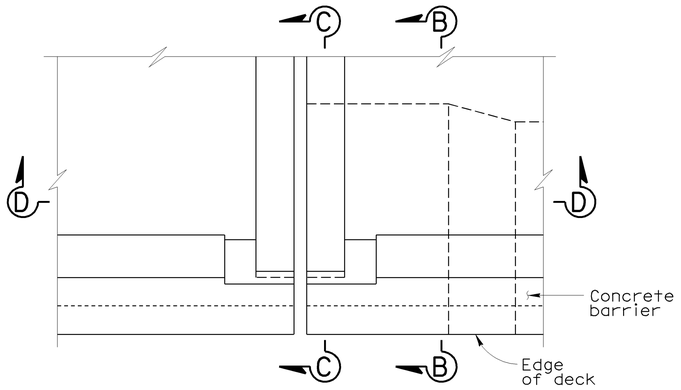
9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6-30-10 CIVIL STATE OF CALIFORNIA

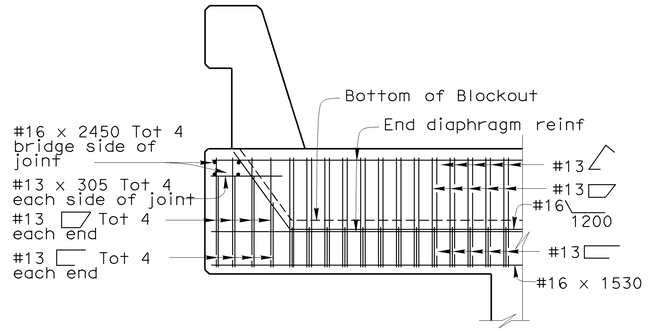
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



ELEVATION A-A

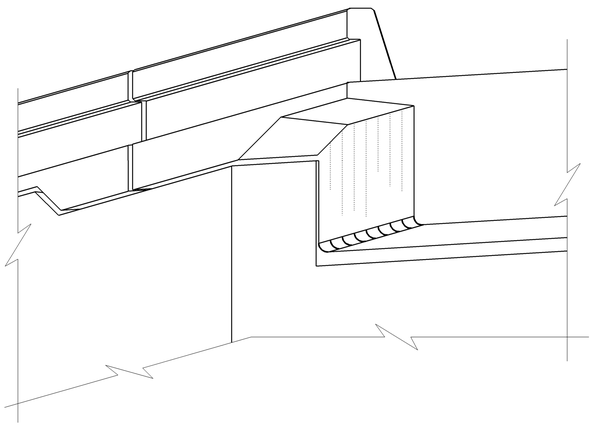


PLAN - DECK JOINT

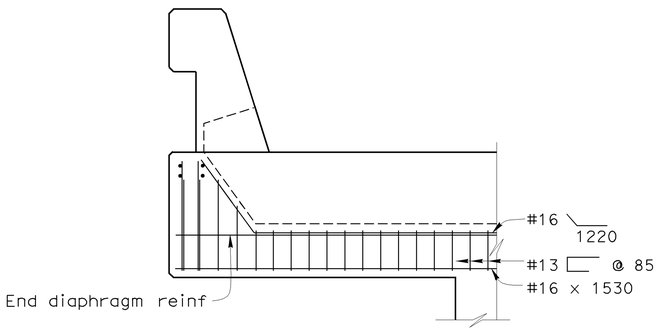


SECTION B-B

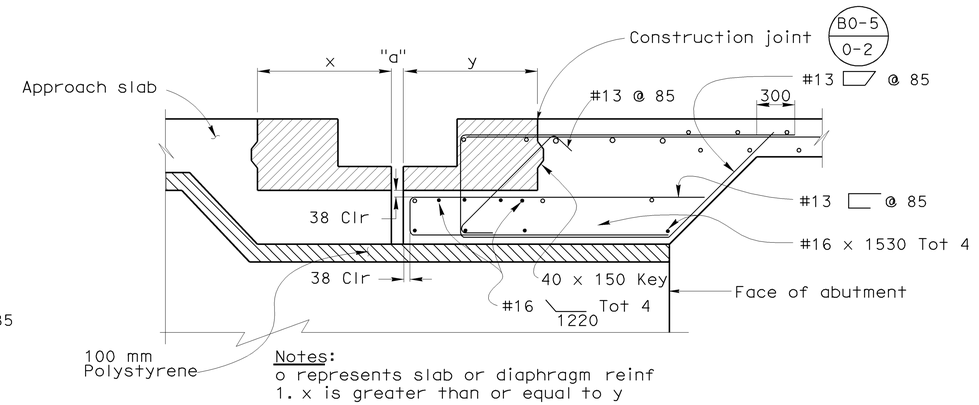
Note: reinf shown is in addition to slab reinf



DECK OVERHANG AT ABUTMENT



SECTION C-C



Notes:
o represents slab or diaphragm reinf
1. x is greater than or equal to y

SECTION D-D B0-5

NO SCALE
ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

Caltrans Metric		DESIGN	BY J. POSEY	CHECKED A. LOGUS	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 11
		DETAILS	BY J. HUNTER 12/05/05	CHECKED A. LOGUS		
		QUANTITIES	BY T. BUI	CHECKED R. CORIA		

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
ABUTMENT JOINT SEAL DETAILS

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN
ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 12/05/05 | 1-18-06 | 4-12-06 | 5-12-06 | 6-19-06 | 12-15-06 | 7-26-07 | 10-11-07 | 11-7-07 | 11/13/07

SHEET 15 OF 34

FILE => 53-2977-g-jtseal.dgn

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

USERNAME = fromodo DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 08:51

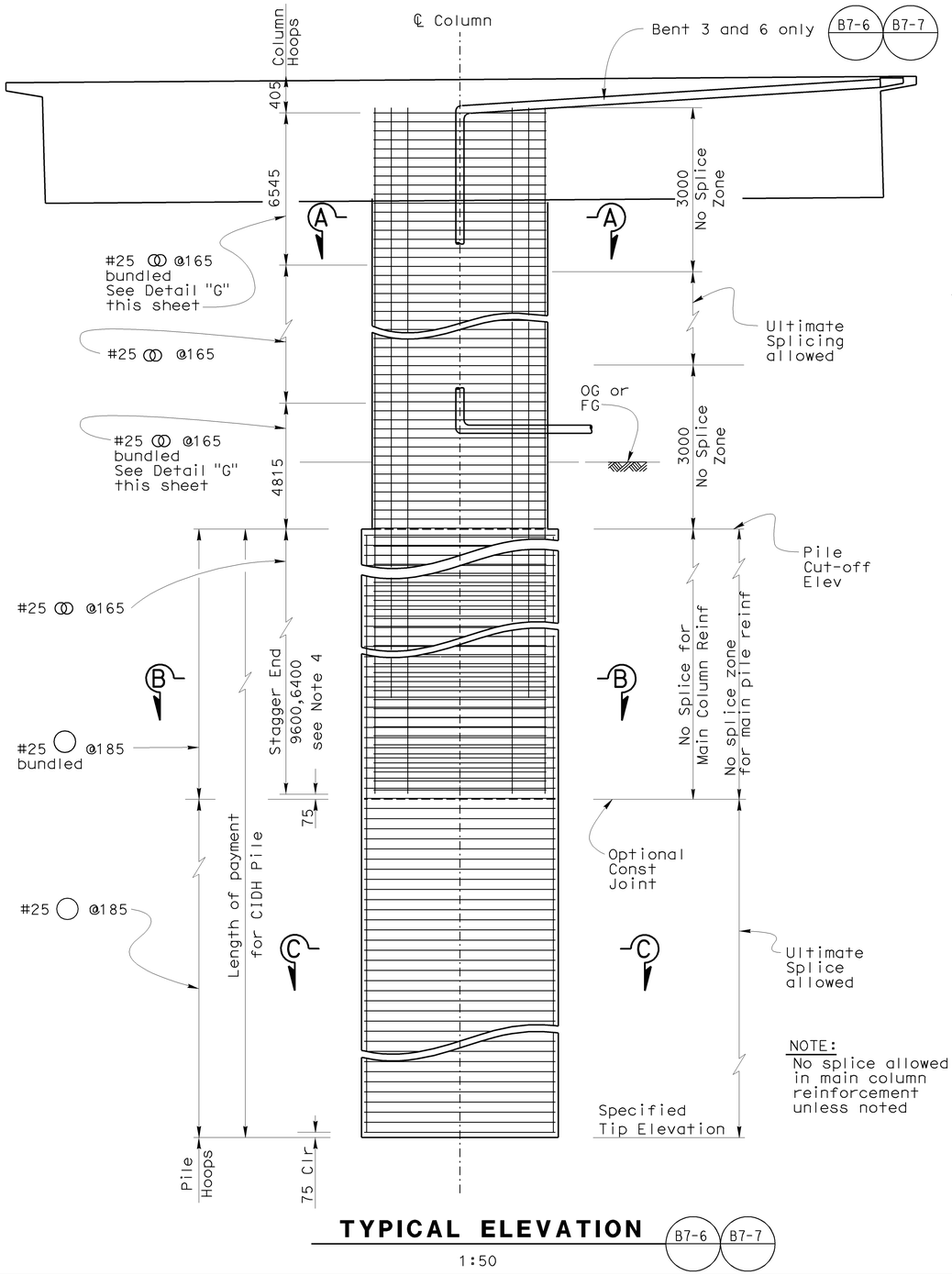
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1237	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6-30-10 CIVIL STATE OF CALIFORNIA

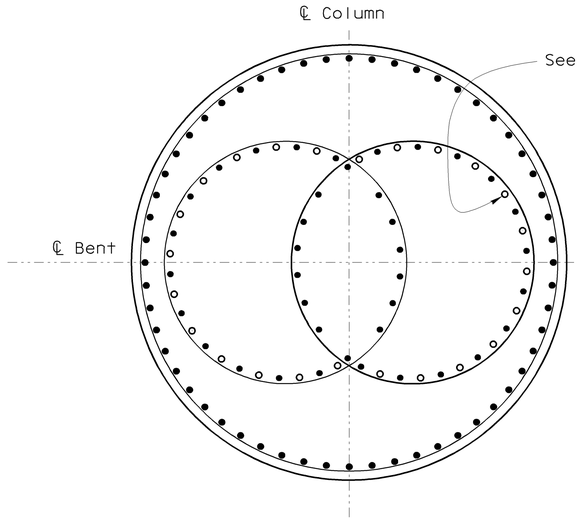
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



TYPICAL ELEVATION

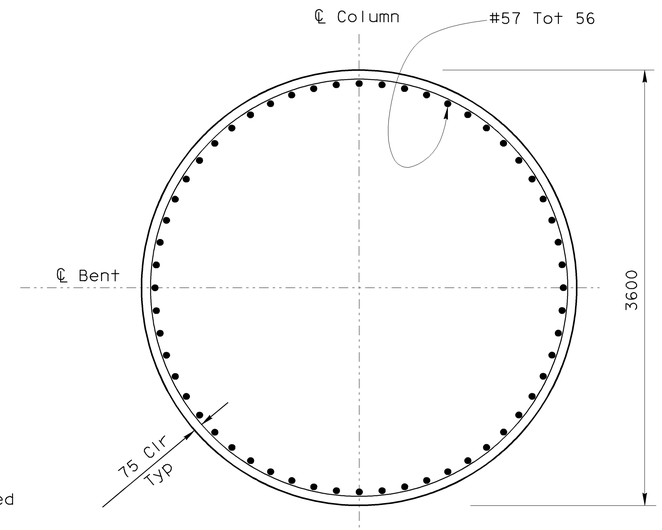
B7-6 B7-7

1:50



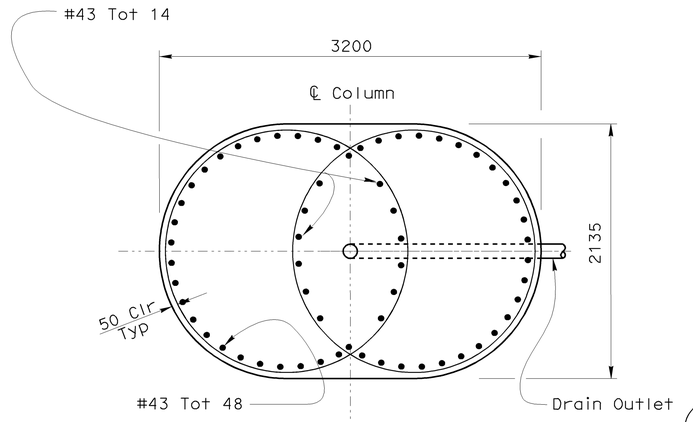
SECTIONS B-B

1:25



SECTIONS C-C

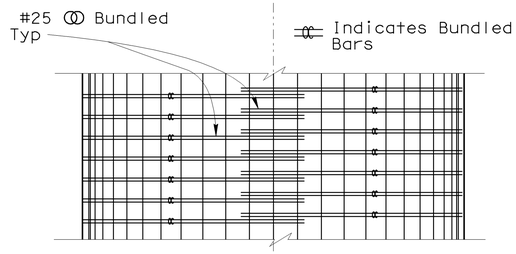
1:25



B7-8

SECTIONS A-A

1:25



COLUMN DETAIL G

1:25

Notes:

1. For Pile Data Table, see "INDEX TO PLANS" sheet.
2. Main Column reinf and column hoop reinf may be manipulated as necessary to accommodate drain pipes as directed by the Engineer.
3. All splices and hoops in columns and piles shall conform to ultimate splice specifications.
4. o Indicates #43 Main Column reinf to end 6.4 m below Pile cutoff Elev. Remaining Main Column reinf to end 9.6 m below Pile cutoff
5. For isolation casing locations and details, see "COLUMN ISOLATION CASING DETAILS" sheet

Caltrans Metric

	BY	CHECKED
DESIGN	J. POSEY	A. LOGUS
DETAILS	J. HUNTER	A. LOGUS
QUANTITIES	T. BUI	R. CORIA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
COLUMN DETAILS NO. 1

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 10-28-05 | 8-28-07 | 10-11-07 | 4-24-06 | 5-12-06 | 6-19-06 | 8-15-06 | 8-22-06 | 12-5-06 | 7-26-07

SHEET 16 OF 34

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

FILE => 53-2977-h-coldet01.dgn

USERNAME => tromdo DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 09:51

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1238	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6-30-10 CIVIL STATE OF CALIFORNIA

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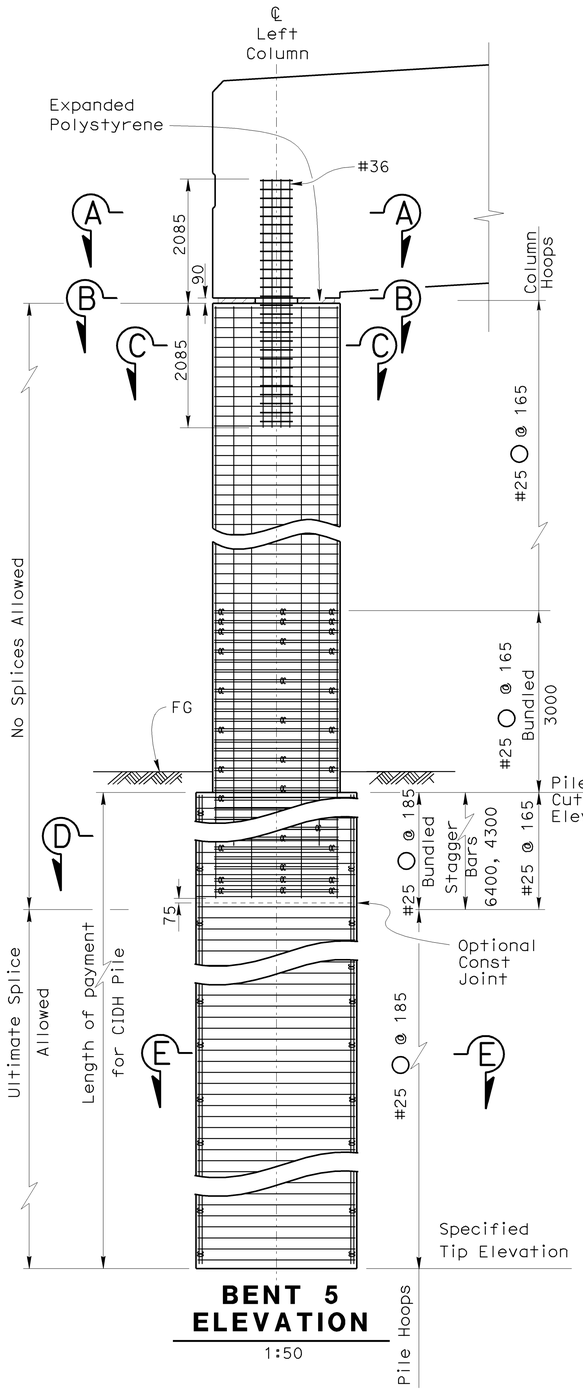
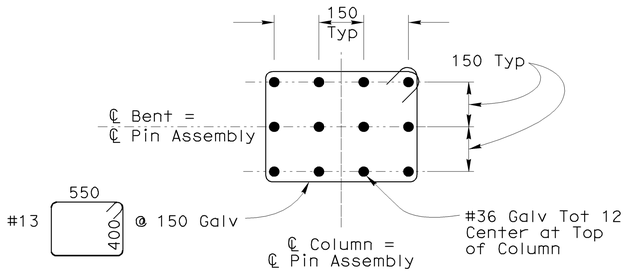
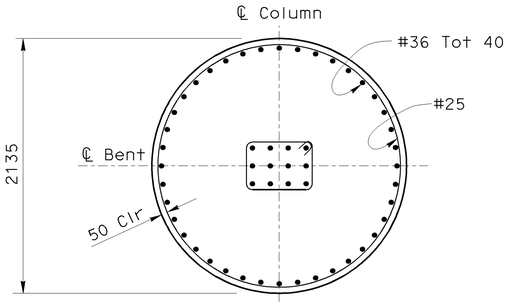


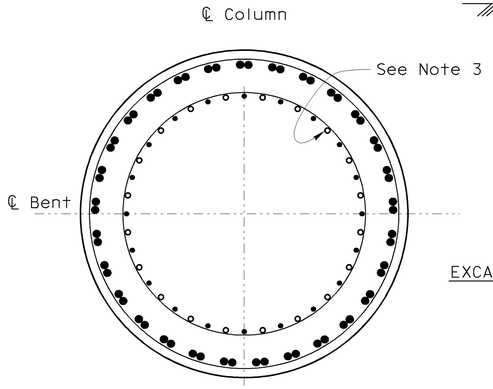
BENT 5 ELEVATION
1:50



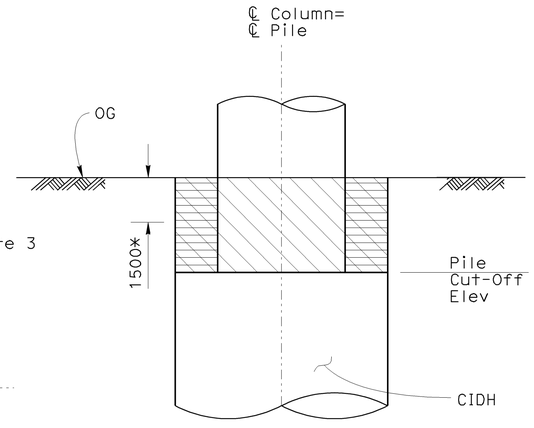
PIN ASSEMBLY SECTION A-A
1:10



SECTION C-C
1:25



SECTION D-D
1:25



EXCAVATION LEGEND:

Structure Excavation (Bridge)

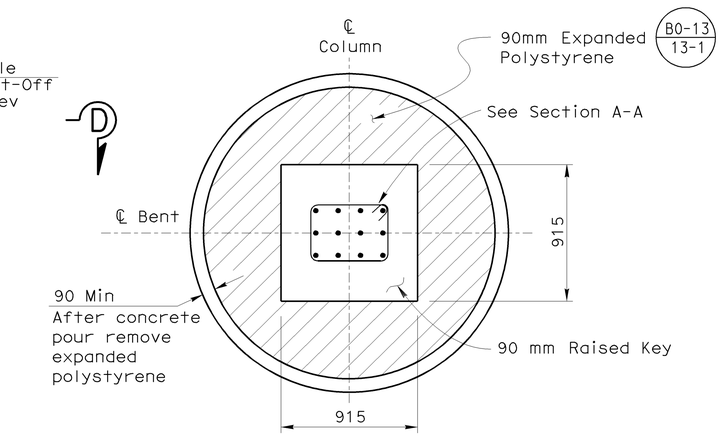
Structure Backfill (Bridge)

* At Bents 2,3,& 5R, the excavation is: (Aerially Deposited Lead)(Type Y-1)

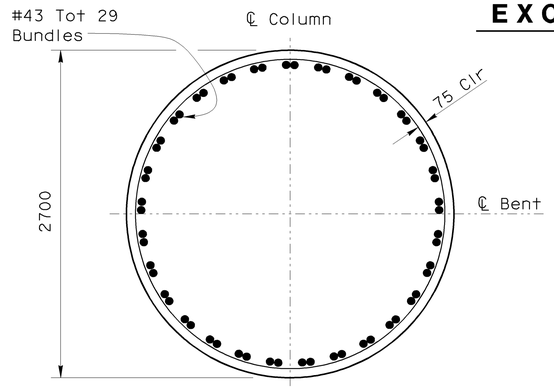
LIMITS OF PAYMENT FOR STRUCTURE EXCAVATION AND BACKFILL
No Scale

NOTE:

For details not shown, see A 62 C



SECTION B-B
B0-13
1:20



SECTION E-E
1:25

NOTES:

1. All reinforcement splices and hoop fabrication in Columns and Piles shall conform to Ultimate Splice Requirements
2. Left Column shown, Right Column similar
3. ○ End alternating bars of main column reinf 4.300 m below pile cut off Elev Remaining main column reinf to end at 6.400 m below pile cut off Elev
4. See "COLUMN ISOLATION CASING DETAILS" Sheet for additional details

Caltrans Metric

	BY	CHECKED
DESIGN	J. POSEY	A. LOGUS
DETAILS	J. HUNTER	A. LOGUS
QUANTITIES	T. BUI	R. CORIA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

CU 07274
EA 1219U1

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
COLUMN DETAILS NO. 2

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 10/31/05 | 8-29-07 | 11/1/07 | | 5/18/06 | 6/19/06 | 8/18/06 | 12/6/06 | 3/26/07 | 1-26-07

SHEET 17 OF 34

FILE => 53-2977-h-coldet02.dgn

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

USERNAME => ftromndo DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 09:51

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5, 170	58.0/63.4, R32.3/R33.1	1239	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MARK J. OKIMURA
No. 62908
Exp. 6-30-10
CIVIL
STATE OF CALIFORNIA

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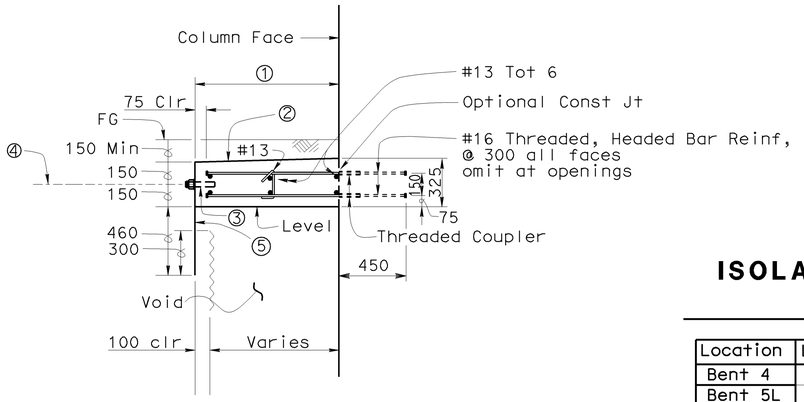
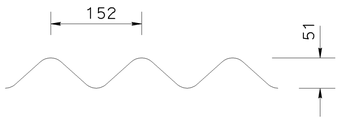


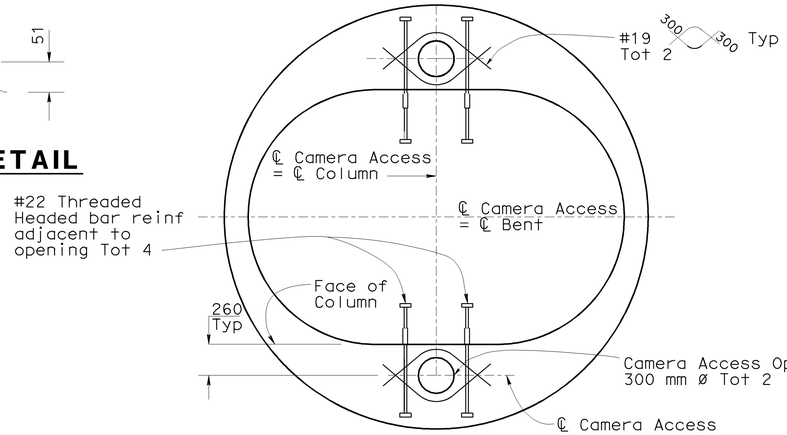
SKIRT DETAIL
1:20



CORRUGATION DETAIL
No Scale

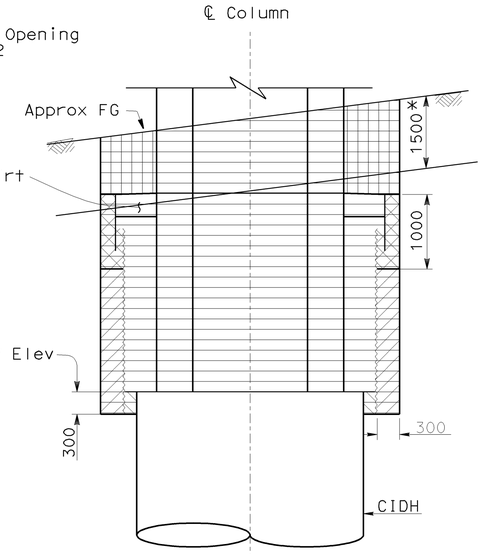
ISOLATION CASING TABLE

Location	Length of Payment (mm)
Bent 4	3020
Bent 5L	4090
Bent 6	3620
Bent 7	8520



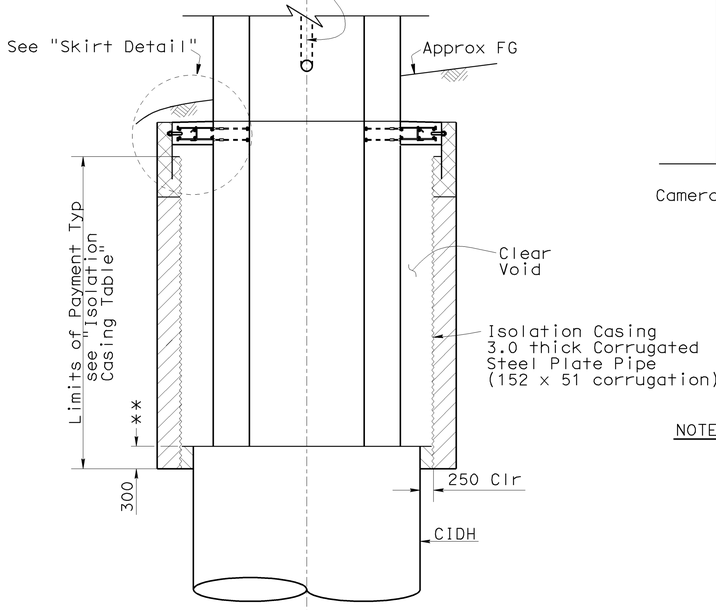
PLAN AT SKIRT SINGLE COLUMN BENT
NO SCALE

NOTE: See 'Skirt Detail' for additional reinforcement.



*(Type Y-1)(Aerially Deposited Lead) at Bents 4, and 5L

LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL
No Scale

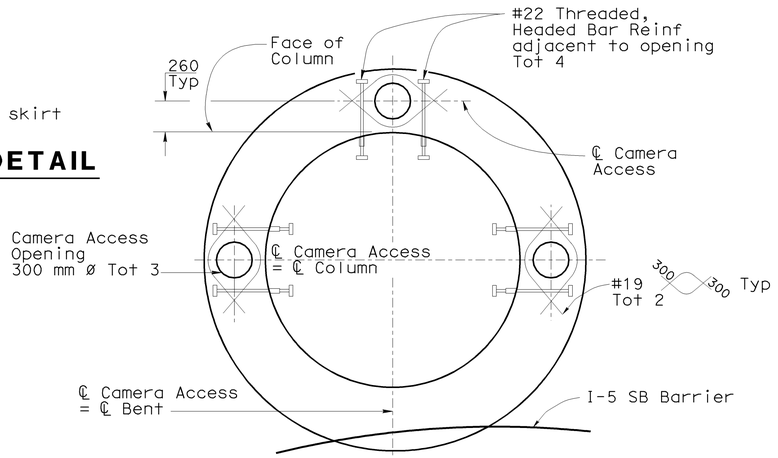


** Pile Cutoff Elev

ISOLATION CASING
1:40

COVER PLATE DETAIL
1:5

NOTES:
① Varies 965 Max
② Structure Conc Skirt
③ 9.5 ø Inserts @ 300 max OC around skirt
④ ℄ Inserts = ℄ 3.15 x 100 Galvanized cover strap
⑤ Bonded 12.7 Neoprene Strip continuous around skirt



PLAN AT SKIRT COLUMN 5L
NO SCALE

LEGEND

- Structure Excavation (Bridge)
- Structure Backfill 90% Compaction
- Structure Backfill (Bridge)
- Minor concrete
- Pea gravel

Caltrans Metric		DESIGN	BY J. POSEY	CHECKED A. LOGUS	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
		DETAILS	BY J. RAMIREZ	CHECKED A. LOGUS	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN
		QUANTITIES	BY T. BUI	CHECKED R. CORIA	DESIGN BRANCH 11

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
ISOLATION CASING DETAILS

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 8-8-07 | 8-24-07 | 8-30-07 | 11-7-07 | 12-11-07 | 1-23-08 | 3-3-08 | 7-25-08 | 7-30-08

SHEET 18 OF 34

FILE => 53-2977-j-isocsg.dgn

USERNAME = tromdo DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 09:51

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1240	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MARK J. OKIMURA
No. 62908
Exp. 6-30-10
CIVIL
STATE OF CALIFORNIA

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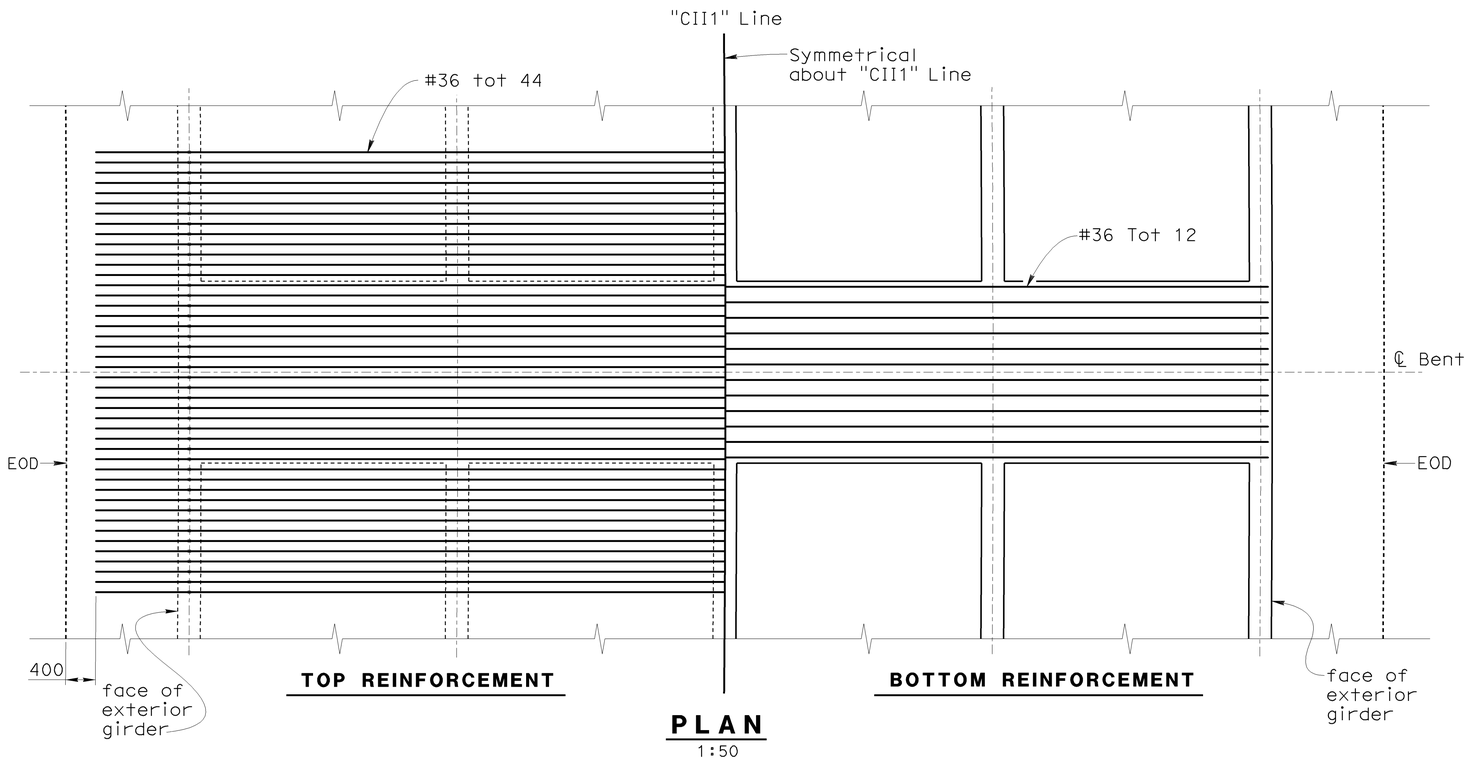
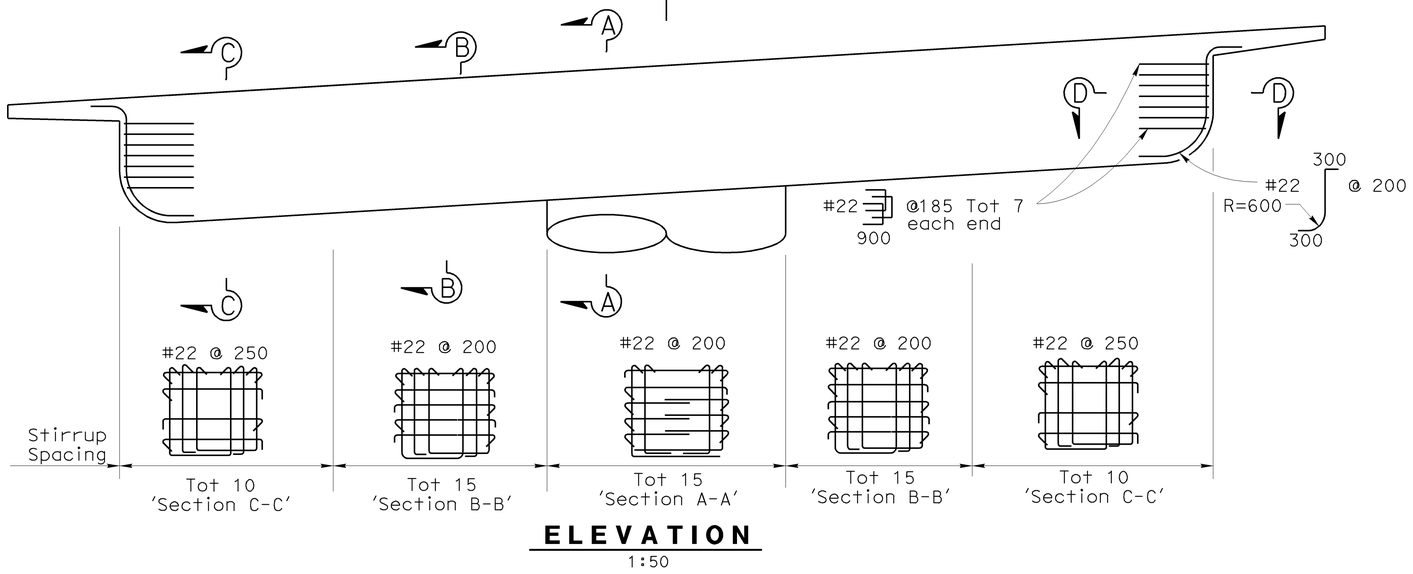


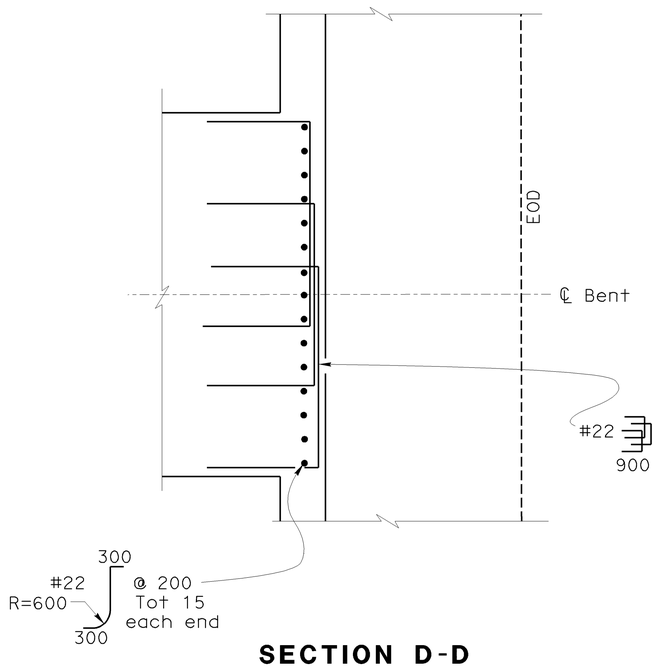
PLAN
1:50

NOTE:
Conc Barriers not shown



ELEVATION
1:50

NOTES:
For Sections 'A-A','B-B' and 'C-C' see "SINGLE COLUMN BENT DETAILS NO. 1" sheet



SECTION D-D
1:25

Caltrans Metric		DESIGN	BY J. POSEY	CHECKED A. LOGUS	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
		DETAILS	BY L. CHARLOT/J. HUNTER	CHECKED A. LOGUS	
		QUANTITIES	BY T. BUI	CHECKED R. CORIA	

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

CU 07274
EA 1219U1

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
SINGLE COLUMN BENT LAYOUT

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES										SHEET	OF
4-14-05	11-03-05	5-12-06	7-5-06	12-6-06	3-20-07					19	34

FILE => 53-2977-k-bntlyt.dgn

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

USERNAME => tromndo DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 09:51

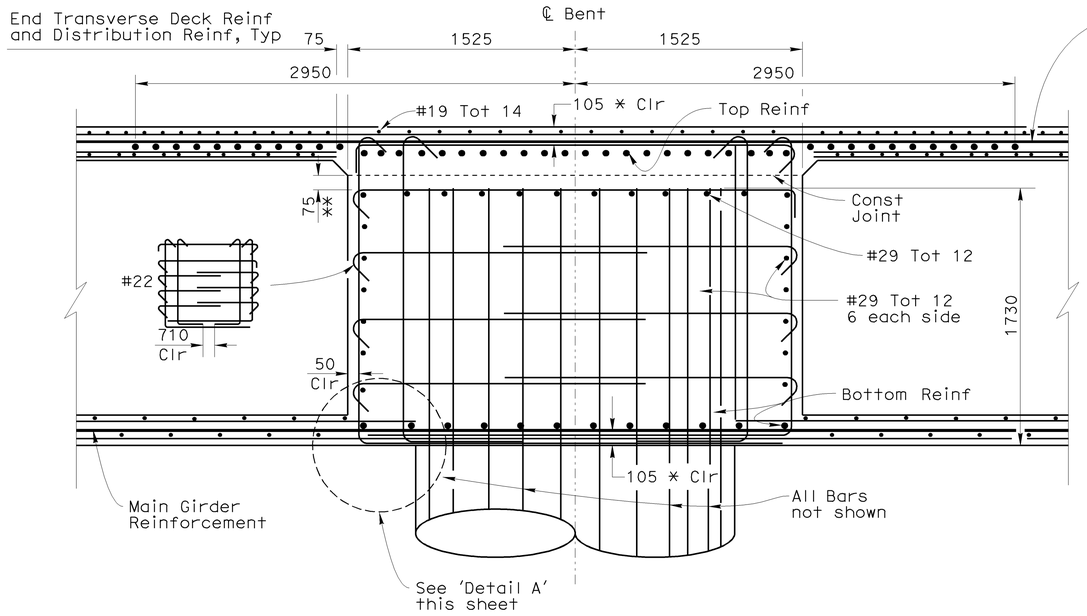
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1241	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

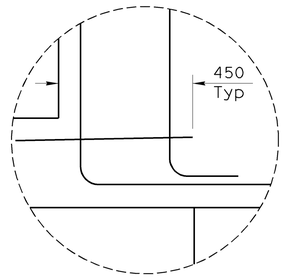
REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6-30-10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



SECTION A-A

1:20



DETAIL A

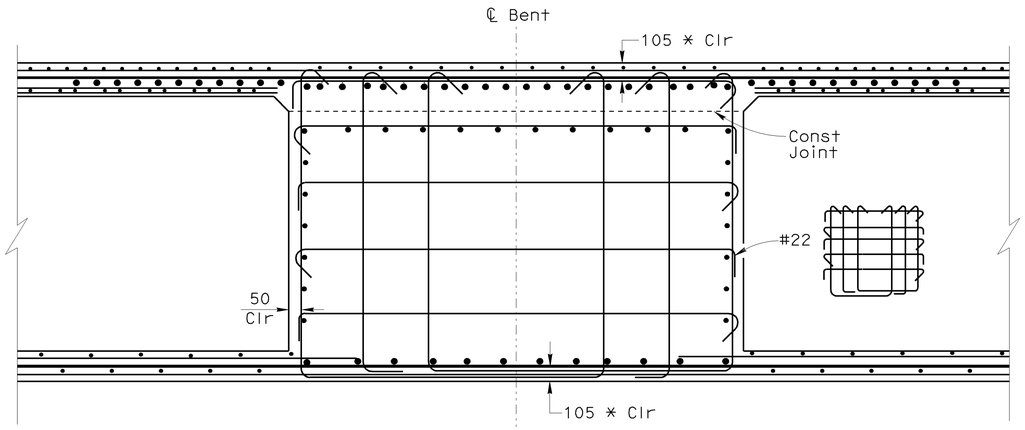
NO SCALE

NOTES:

1. For location of Sections "A-A", "B-B" and 'C-C', see "SINGLE COLUMN BENT LAYOUT" sheet.
2. For Top and Bottom Reinf, see "SINGLE COLUMN BENT LAYOUT" sheet

* Clearance to main cap reinforcement.

** Reinforcement may be adjusted as necessary to accommodate prestress ducts as directed by the Engineer.

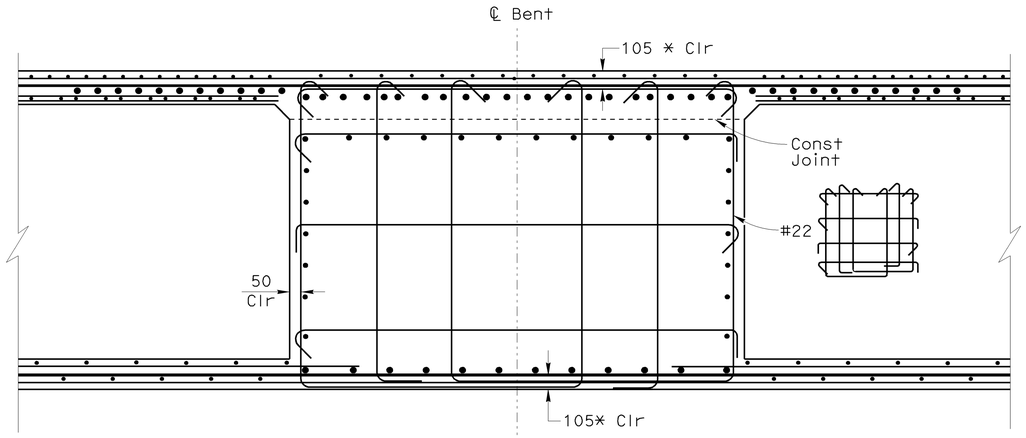


NOTE:

For additional bar labeling and dimensions - see 'Section A-A'

SECTION B-B

1:20



NOTE:

For additional bar labeling and dimensions - see 'Section A-A'

SECTION C-C

1:20

Caltrans Metric		DESIGN	BY J. POSEY	CHECKED A. LOGUS	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 11	BRIDGE NO. 53-2977
		DETAILS	BY L. CHARLOT/J. HUNTER	CHECKED A. LOGUS			KILOMETER POST 58.0/63.4
		QUANTITIES	BY T. BUI	CHECKED R. CORIA			
	ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN		ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100		CU 07274 EA 1219U1	DISREGARD PRINTS BEARING EARLIER REVISION DATES →	

5-170 HOV CONNECTOR

SINGLE COLUMN BENT DETAILS NO. 1

REVISION DATES: 4-5-05 | 1-20-06 | 5-12-06 | 6-19-06 | 9-15-06 | 12-6-06 | 7-10-07 | 7-26-07

SHEET 20 OF 34

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

FILE => 53-2977-m-bntdet.dgn

USERNAME => tromondo DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 09:51

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1242	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6-30-10 CIVIL STATE OF CALIFORNIA

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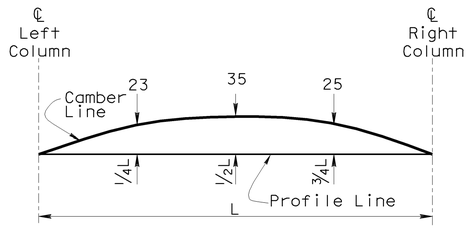
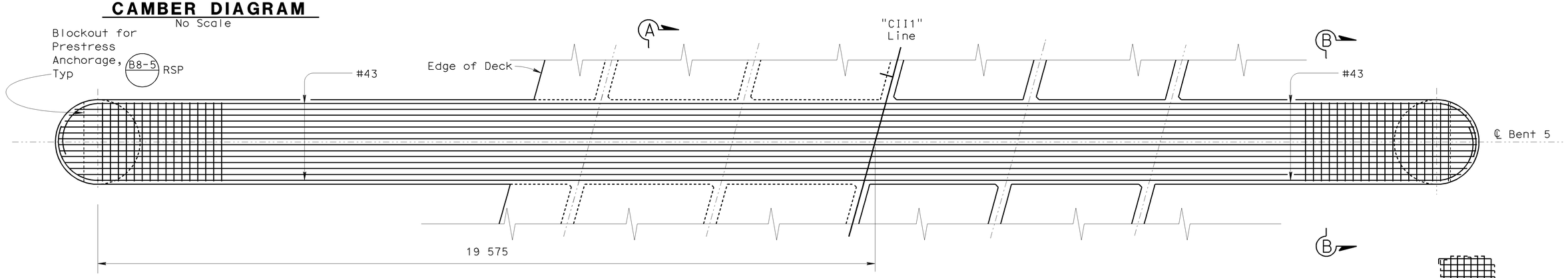


CAMBER DIAGRAM
No Scale

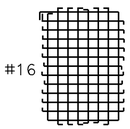
NOTES:
For Sections 'A-A' and 'B-B' & prestressing notes see "BENT 5 DETAILS NO. 1" sheet

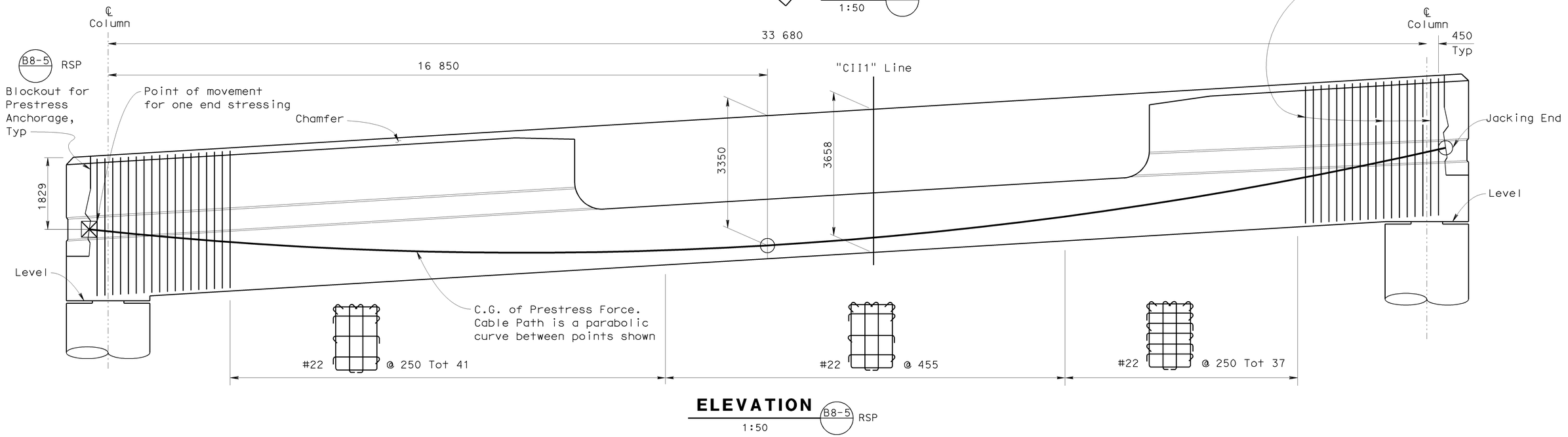


TOP MAIN REINFORCEMENT

PLAN
B8-5
1:50

BOTTOM MAIN REINFORCEMENT





ELEVATION
B8-5 RSP
1:50

Caltrans Metric		DESIGN	BY J. POSEY	CHECKED A. Logus	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 11	BRIDGE NO. 53-2977
		DETAILS	BY L. CHARLOT/J. HUNTER	CHECKED J. POSEY			KILOMETER POST 58.0/63.4
		QUANTITIES	BY T. BUI	CHECKED R. CORIA			

5-170 HOV CONNECTOR
BENT 5 LAYOUT

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES								SHEET	OF
4-6-05	4-14-05	11-16-05	2-06-06	5/18/06	9/14/06	12/6/06	7/18/07	21	34

FILE => 53-2977-n-bnt5lyt.dgn

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

USERNAME => tromndo DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 09:51

PRESTRESSING NOTES FOR OUTRIGGER BENT CAP

1. 1860 MPa Low Relaxation Strand:
   P_{jack} = 52310 kN
   Anchor Set = 10 mm
   Friction Curvature(μ) = 0.15 Wobble (k) = 0.00066 $\frac{1}{m}$
2. Concrete:
   f'_c = 35 MPa @ 28 days
   f'_{ci} = 25 MPa @ time of stressing
3. Stressing
   Bent Cap shall be fully prestressed to Pjack = 52 310 kN before superstructure has been prestressed. Jacking force shall be evenly distributed to all tendons.
4. Prestressing force shall be distributed uniformly across the entire width of the bent cap.
5. Stressing sequence shall start at ℄ of bent and proceed symmetrically about ℄ of bent.
6. Contractor shall submit elongation calculations based on initial stress of ☒= 0.927 times jacking stress.
7. One end stressing shall be performed from the indicated end.
8. Camber diagram does not include allowances for falsework settlement.
9. ☒=Indicates point of no movement for one-end stressing.
10. Bar reinforcement interfering with the prestress tendon alignment may be adjusted as approved by the Engineer.
11. Minimum horizontal clearance between prestress ducts shall be 65 mm.
12. Minimum edge distance for bearing plates=75 mm.
13. For vertical clearance between ducts see B8-5
14. Falsework in spans adjacent to the bent cap shall not be released until the bentcap is fully stressed and the concrete in the recess has attained a compressive strength of 20 MPa.
15. At no time during the stressing operation shall more than 1/6 the total prestressing force be applied eccentrically about the ℄ of bent.

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1243	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6/30/10 CIVIL STATE OF CALIFORNIA

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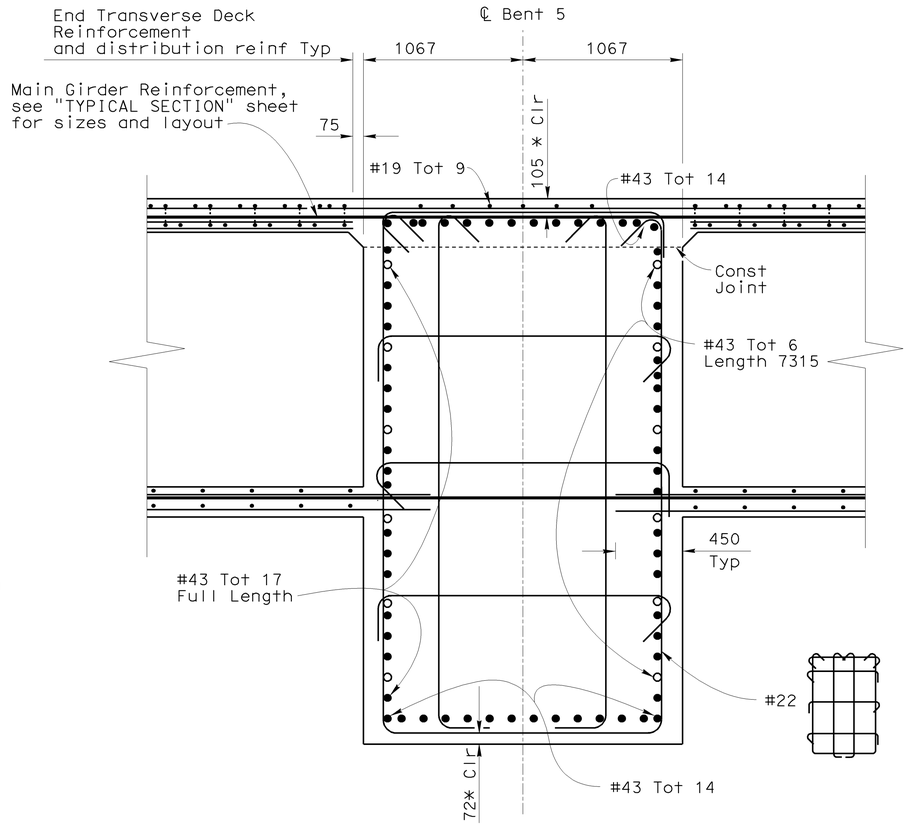
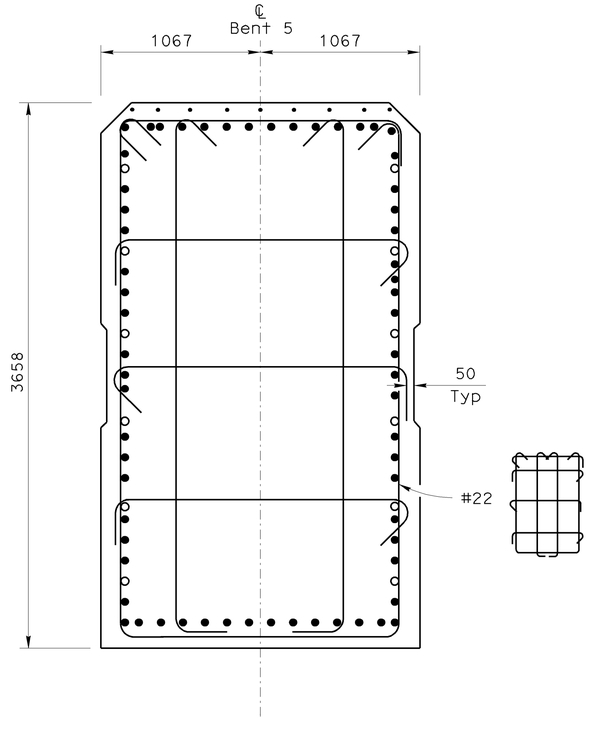


SECTION A-A

1:20



SECTION B-B

1:20

LEGEND:

- ● #43 full length-Splices shall conform to Service Splice Specifactions
- ○ #43 short

NOTES:

For location of Sections 'A-A' and 'B-B', see "BENT 5 LAYOUT" sheet

* Clearance to main cap reinforcement

DESIGN	BY J. POSEY	CHECKED A. LOGUS	
DETAILS	BY L. CHARLOT/J. HUNTER	CHECKED A.LOGUS	
QUANTITIES	BY T. BUI	CHECKED R. CORIA	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
BENT 5 DETAILS NO. 1

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 4-11-05 | 3-23-06 | 5/19/06 | 9/01/06 | 9/11/06 | 12/6/06 | 7/12/07 | 7-26-07 | 11/12/08

SHEET 22 OF 34

FILE => 53-2977-p-bnt5det01.dgn

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

USERNAME => ttrommdo DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 09:52

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1244	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6/30/10 CIVIL STATE OF CALIFORNIA

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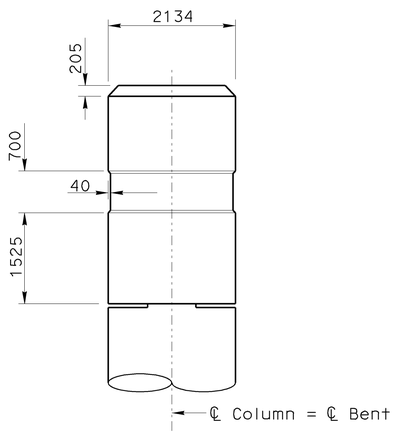
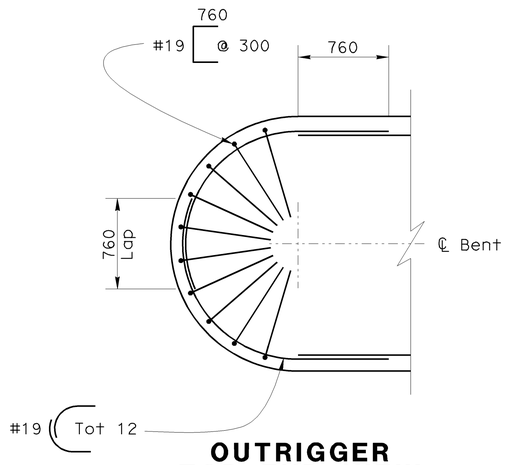


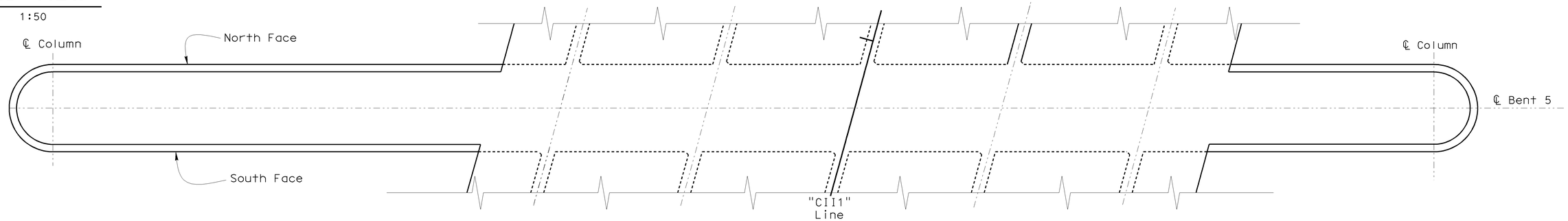
OUTRIGGER END VIEW

1:50



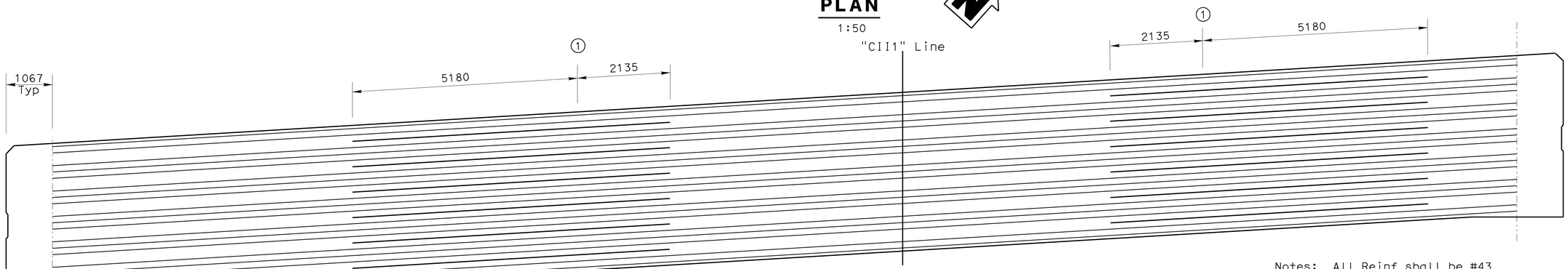
OUTRIGGER TOP END VIEW

1:25



PLAN

1:50



OUTRIGGER SIDE STEEL SOUTH ELEVATION

1:50

Notes: All Reinf shall be #43

① Represents where ℄ of Exterior Girder meets face of Bent.

North elevation similar

Caltrans Metric		DESIGN	BY J. POSEY	CHECKED A. LOGUS	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO. 53-2977
		DETAILS	BY J. HUNTER	CHECKED A. LOGUS		DESIGN BRANCH 11	KILOMETER POST 58.0/63.4
		QUANTITIES	BY T. BUI	CHECKED R. CORIA			

5-170 HOV CONNECTOR

BENT 5 DETAILS NO. 2

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 11-16-05 | 3-24-06 | 5-19-06 | 9-11-06 | 12-18-06 | 3-26-07 | 1-28-08 | 11-03-08 | 11/8/08

SHEET 23 OF 34

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

FILE => 53-2977-p-bnt5det02.dgn

USERNAME => tromdo DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 09:52

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07	LA	5,170	58.0/63.4, R32.3/R33.1	1245	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6/30/10 CIVIL STATE OF CALIFORNIA

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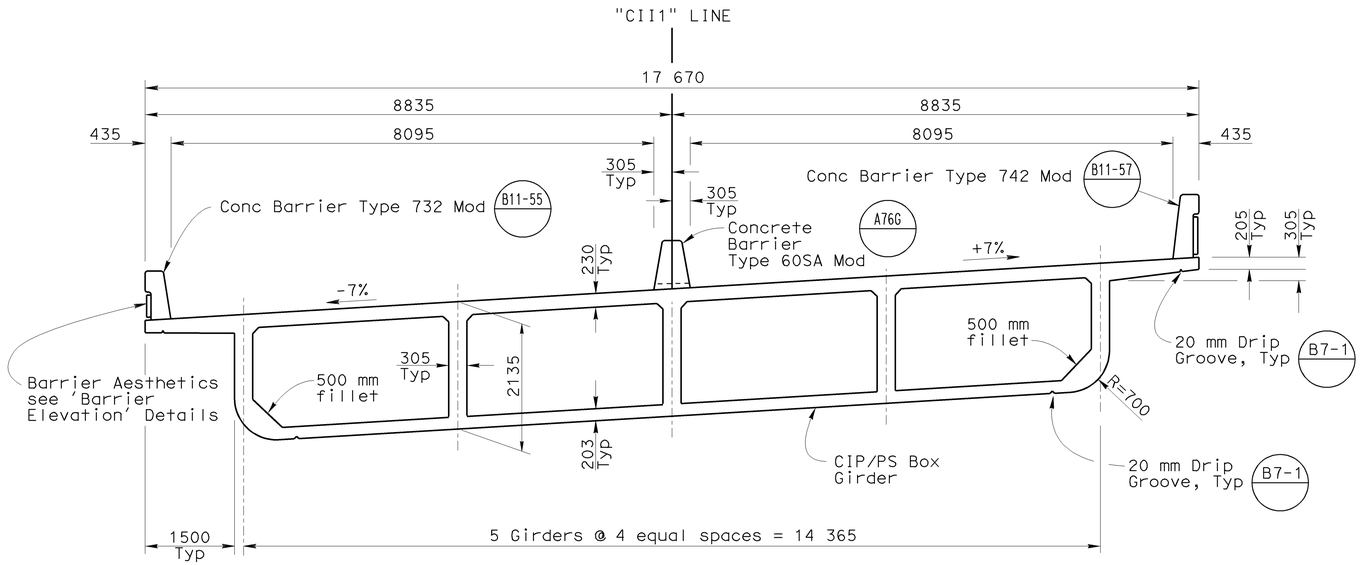
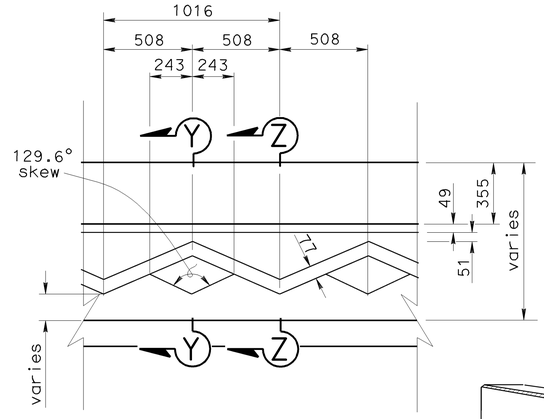


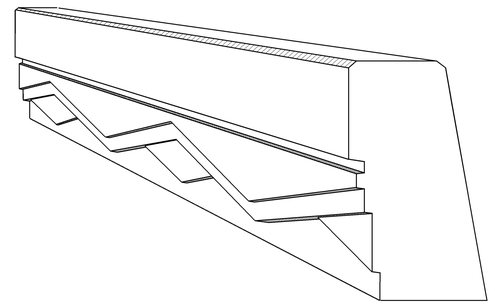
TYPICAL SECTION

1:50 B7-1 B11-55 B11-57



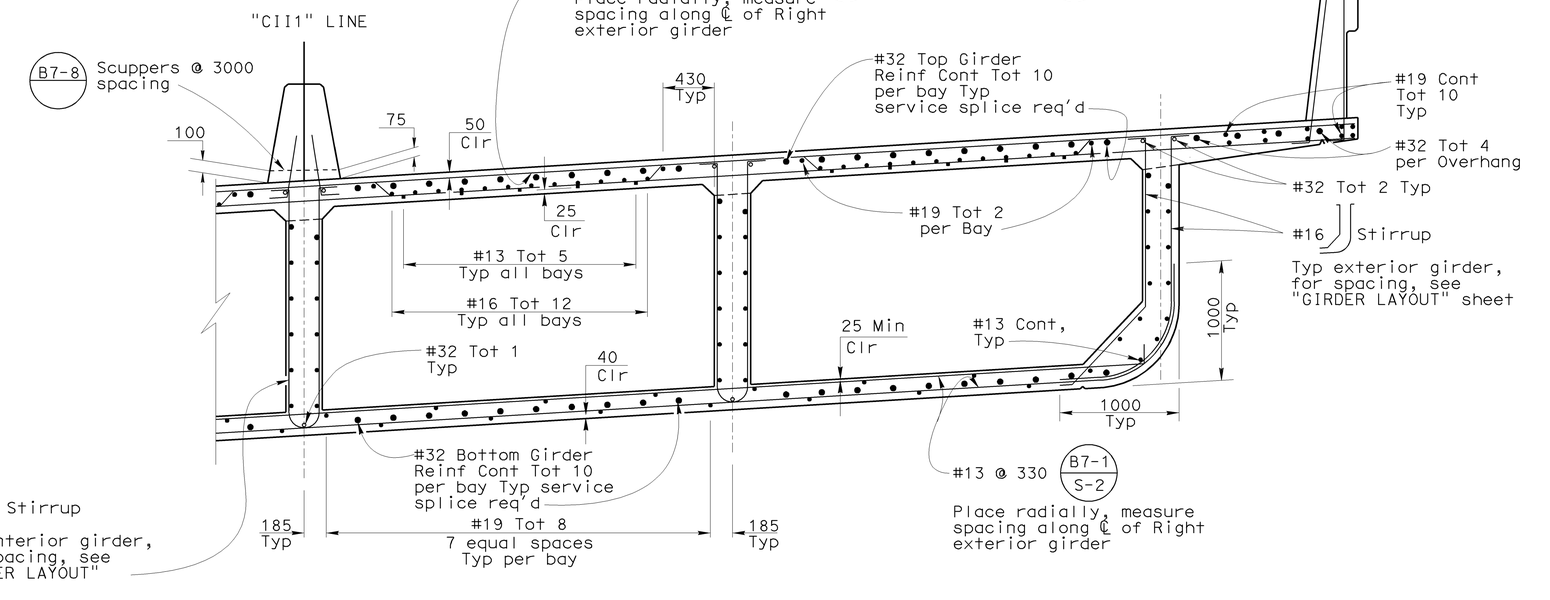
BARRIER ELEVATION

No scale



PERSPECTIVE VIEW

No scale

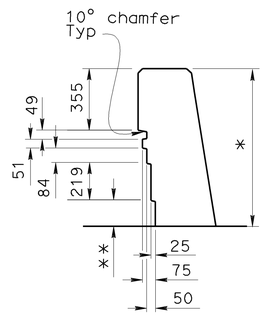


PARTIAL SECTION

1:25 B0-5 B7-1 B7-8 B11-55 B11-57

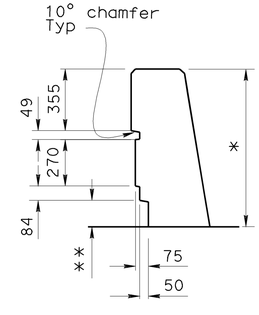
NOTE:

- For additional reinforcement, see "GIRDER REINFORCEMENT" sheet.



SECTION Y-Y

No scale



SECTION Z-Z

No scale

* 810 for Type 732 Mod; 1066 for Type 742 Mod
** 52 for Type 732 Mod; 308 for Type 742 Mod

DESIGN	BY J. POSEY	CHECKED A. LOGUS	
DETAILS	BY G. TEMPLETON/J. HUNTER	CHECKED A. LOGUS	
QUANTITIES	BY T. BUI	CHECKED R. CORIA	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

CU 07274
EA 1219U1

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
TYPICAL SECTION

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 11-28-04 | 10-14-05 | 11-17-07 | 5-19-06 | 3-15-08 | 11/18/08 | | 4-25-07 | 7-30-07 | 8-30-07

SHEET 24 OF 34

FILE => 53-2977-q-typ.dgn

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

USERNAME => tfsithk DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 09:59

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1246	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6/30/10 CIVIL STATE OF CALIFORNIA

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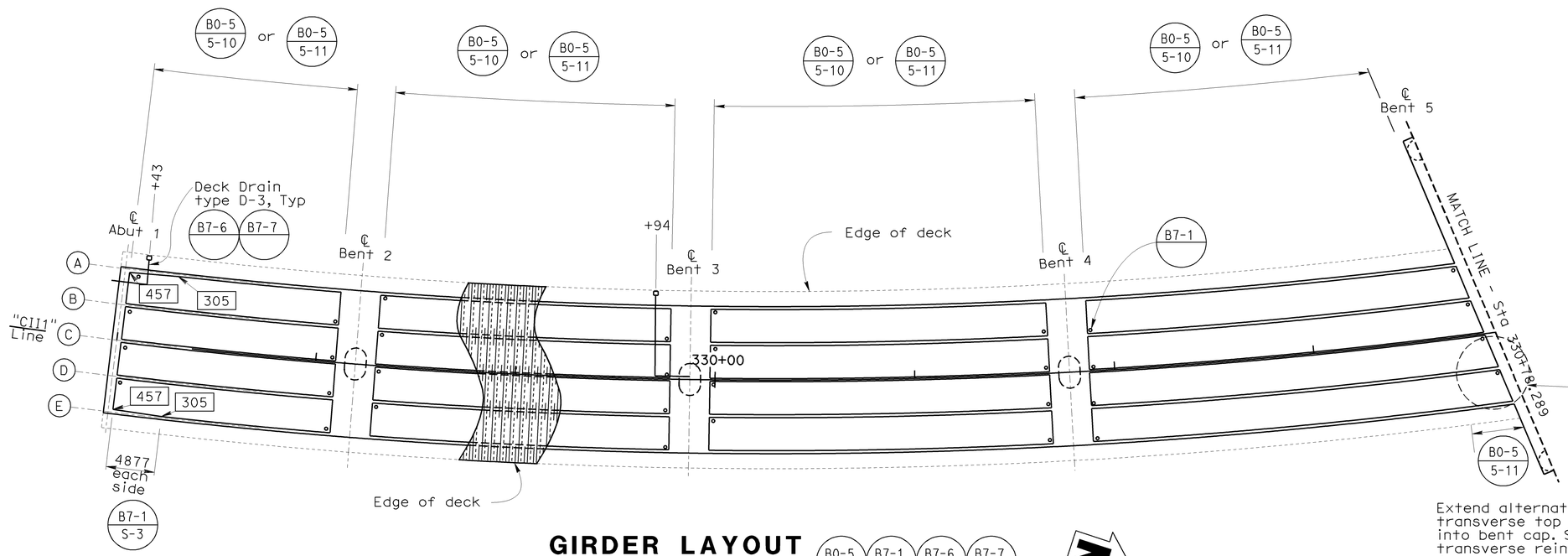
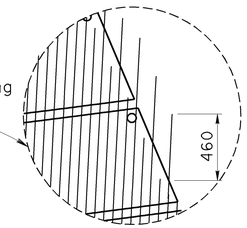


GIRDER LAYOUT

B0-5 B7-1 B7-6 B7-7

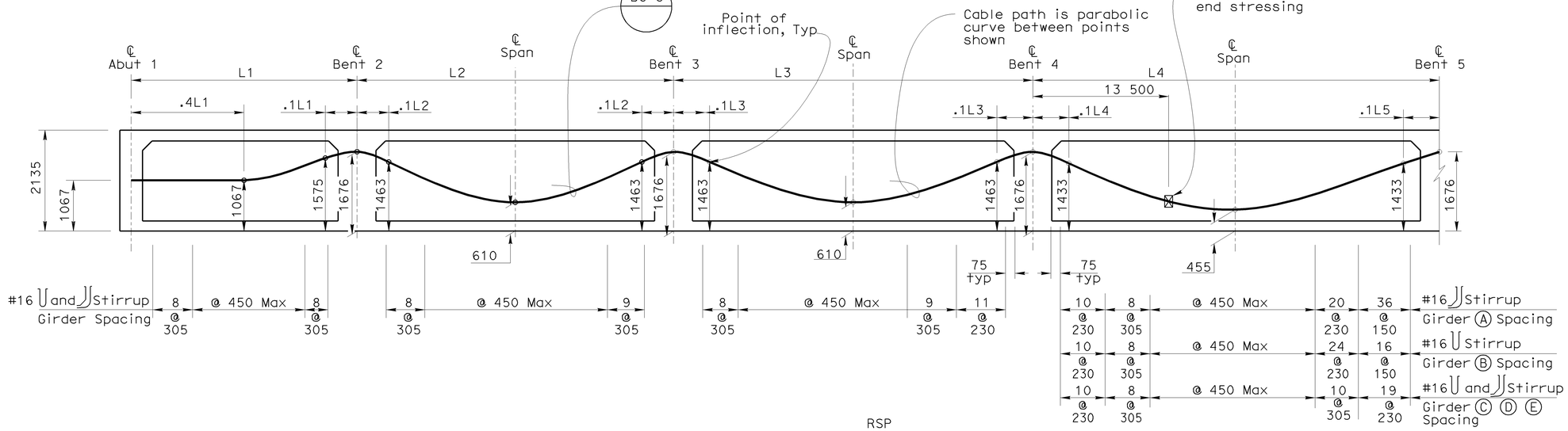
1:250

RSP B8-5



DETAIL A

No Scale



LONGITUDINAL SECTION

NO SCALE

RSP B8-5

Caltrans Metric		DESIGN	BY J. POSEY	CHECKED A. LOGUS	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 11	BRIDGE NO. 53-2977
		DETAILS	BY J. HUNTER	CHECKED A. LOGUS			KILOMETER POST 58.0/63.4
		QUANTITIES	BY T. BUI	CHECKED R. CORIA		CU 07274 EA 1219U1	

5-170 HOV CONNECTOR
GIRDER LAYOUT NO. 1

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 4-01-05 | 5-26-05 | 1-19-06 | 2-24-06 | 3-21-06 | 12/6/06 | 7-31-07 | 8-30-07

SHEET 25 OF 34

FILE => 53-2977-r-grlyt01.dgn

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

USERNAME => tfsmtk DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 09:59

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1247	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6/30/10 CIVIL STATE OF CALIFORNIA

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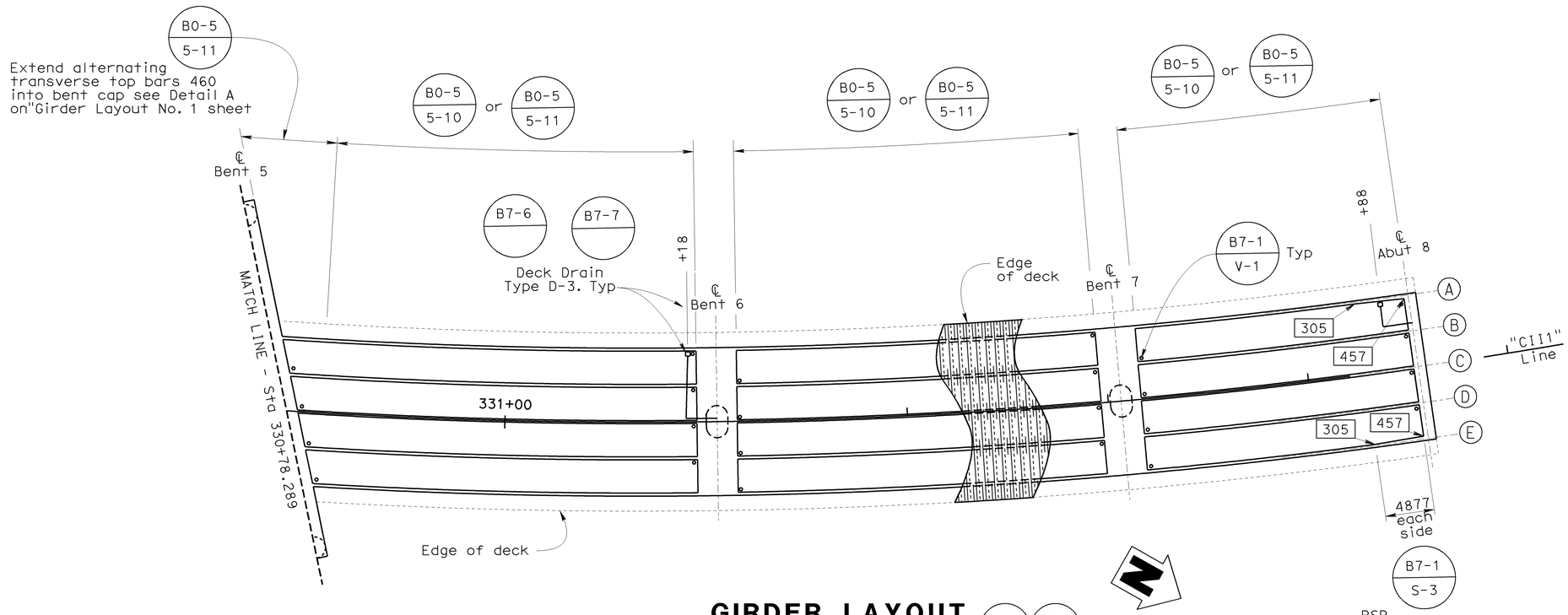
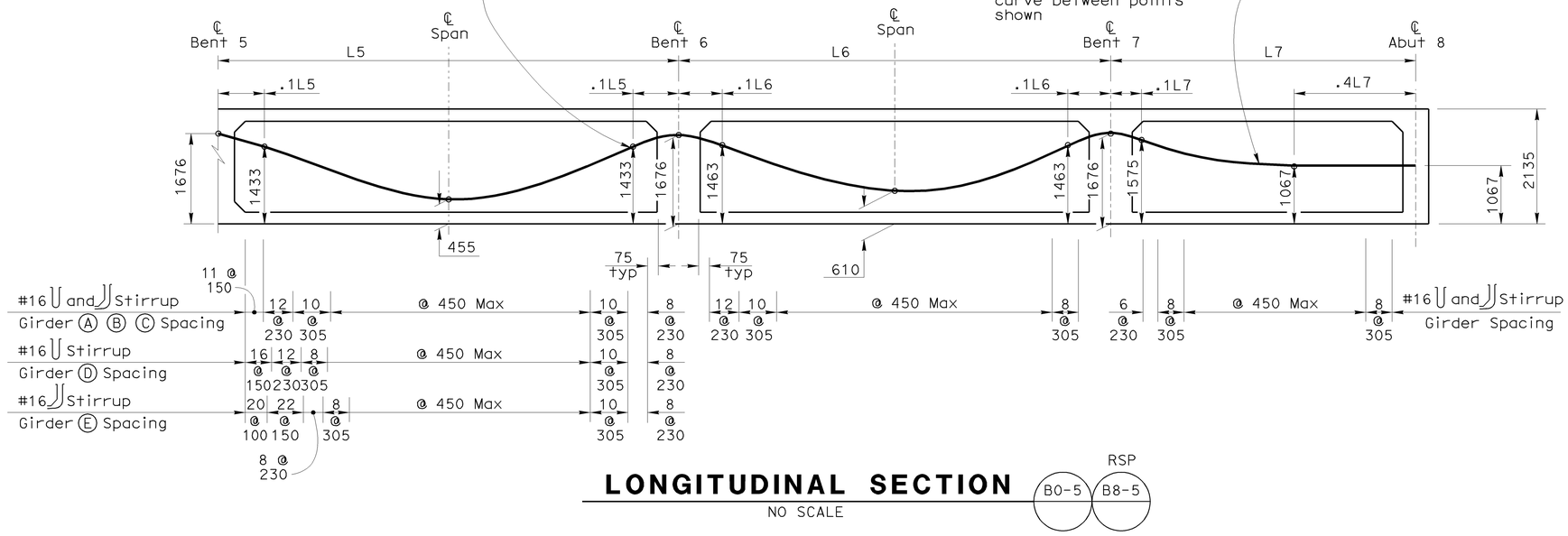


GIRDER LAYOUT

1:250 B0-5 B7-1



LONGITUDINAL SECTION

NO SCALE RSP B0-5 B8-5

NOTES:

For End Diaphragm Section, see "ABUTMENT DETAILS NO. 3" sheet

Denotes girder stem width in millimeters

L = Distance measured along ℄ Girder

All Girder Widths = 305 Except as noted

PRESTRESSING NOTES

1860 MPa Low Relaxation Strand:

P_{jack} = 33585 kN

Anchor Set = 10 mm

Total Number of Girders = 5

Distribution of prestress force (Pjack) between girders shall not exceed the ratio of 3:2. Maximum final force variation between girders shall not exceed 3200 kN.

Concrete: f'_c = 28 MPa @ 28 days

f'_{ci} = 25 MPa @ time of stressing

Contractor shall submit elongation calculations based on initial stress at

⊠ = 0.784 times jacking stress.

K Friction Wobble = 6.6×10^{-4} (1/m)

μ Friction Curvature = 0.200

Two end stressing shall be performed

	BY	CHECKED
DESIGN	J. POSEY	A. LOGUS
DETAILS	G. TEMPLETON/J. HUNTER	A. LOGUS
QUANTITIES	T. BUI	R. CORIA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

CU 07274
EA 1219U1

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
GIRDER LAYOUT NO. 2

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 4-01-05 | 5-26-05 | 1-15-06 | 4/15/06 | 9/5/06 | 12/6/06 | 7-31-07 | 8-30-07

SHEET 26 OF 34

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

FILE => 53-2977-r-grlyto2.dgn

DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 09:59:59
USERNAME => rtostrk

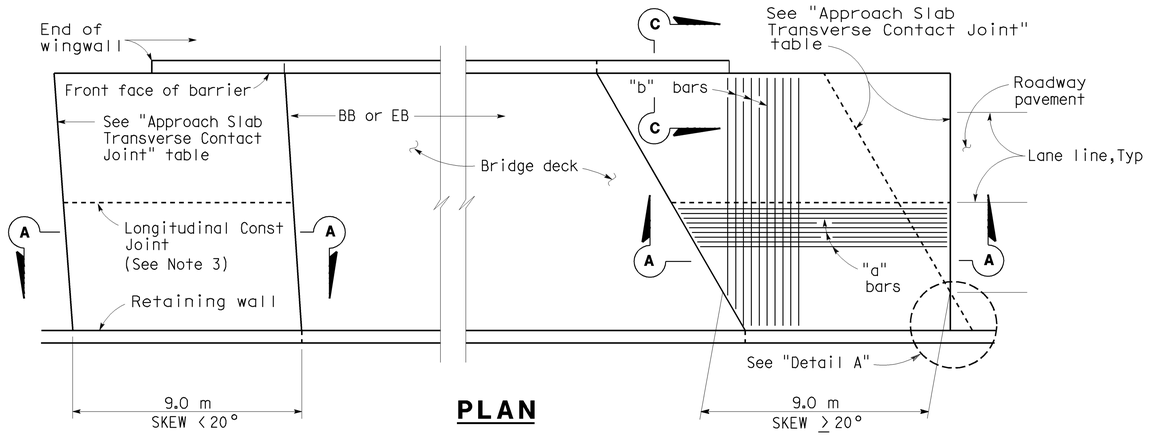
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1248	1471

Mark Okimura 11-18-08
REGISTERED CIVIL ENGINEER DATE

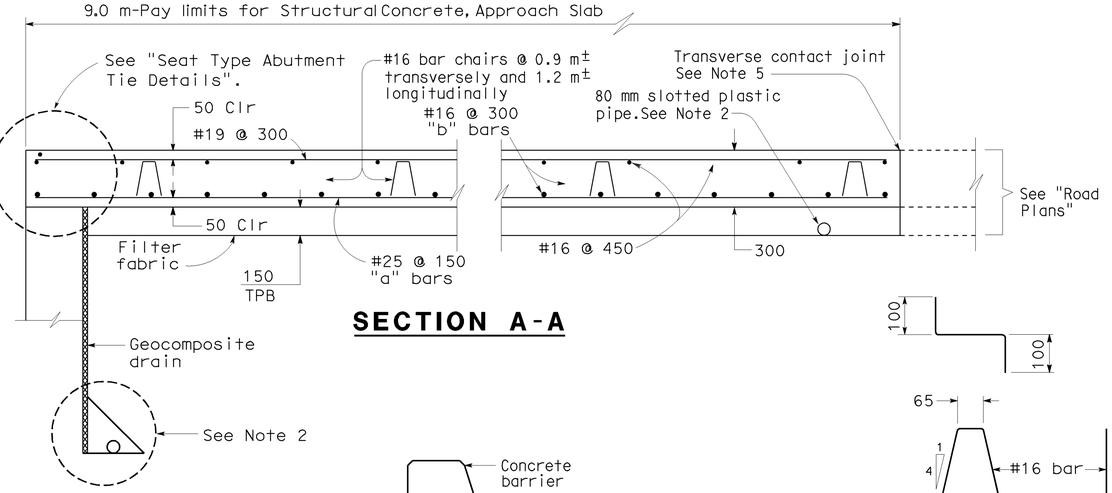
9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARK J. OKIMURA No. 62908 Exp. 6/30/10 CIVIL STATE OF CALIFORNIA

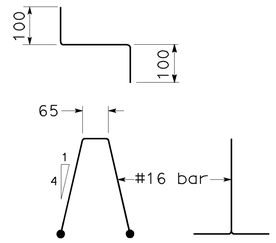
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



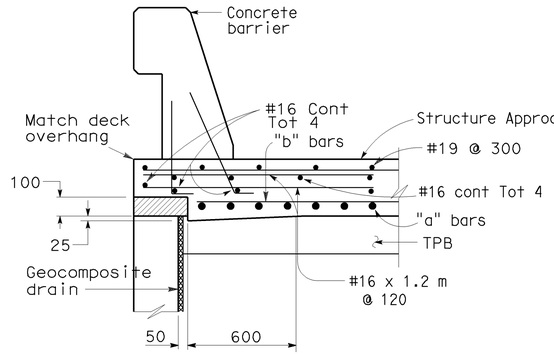
PLAN



SECTION A-A



BAR CHAIR DETAIL

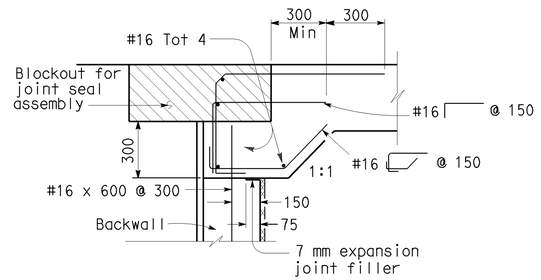


TYPE E-1

SECTION C-C

(Type E-1 to be used,unless otherwise shown on plans)

APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 20°	Parallel to face of paving notch	Parallel to face of paving notch
20°- 45°	Parallel to face of P N use (Detail A)	Stagger lines 7.2 m to 10.8 m apart.
> 45°	Parallel to face of P N use (Detail A)	Stagger at each lane line.



MR > 50 mm

SEAT TYPE ABUTMENT TIE DETAILS (SEE NOTE 1)

NOTES:

1. For details not shown,see Abutment Details sheets. For MR ≤ 50 mm,adjust bar reinforcement to clear a sawcut for sealed joint,when required.
2. For drainage details,see "Structure Approach Drainage Details" sheet.
3. Longitudinal construction joints,when permitted by the Engineer, shall be located on lane lines.
4. End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable.
5. For transverse contact joint with new PCC paving, refer to Standard Plan P10.
6. At the contractor's option, approach slab transverse reinforcement may be placed parallel to paving notch. Spacing of transverse reinforcement is measured along ℄ roadway.

▨ Remove all polystyrene.

Caltrans Metric

	BY	CHECKED
DESIGN	J. POSEY	A. LOGUS
DETAILS	Jaime Ramirez	A. LOGUS
QUANTITIES	T. BUI	R. CORIA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

CU 07274
EA 1219U1

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR

STRUCTURE APPROACH TYPE N(9S)

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 4-01-05 | 5-26-05 | 1-19-06 | 2-24-06 | 3-24-06 | 12/6/06 | 7-31-07 | 8-30-07

SHEET 27 OF 34

FILE => 53-2977-s-san9s.dgn

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

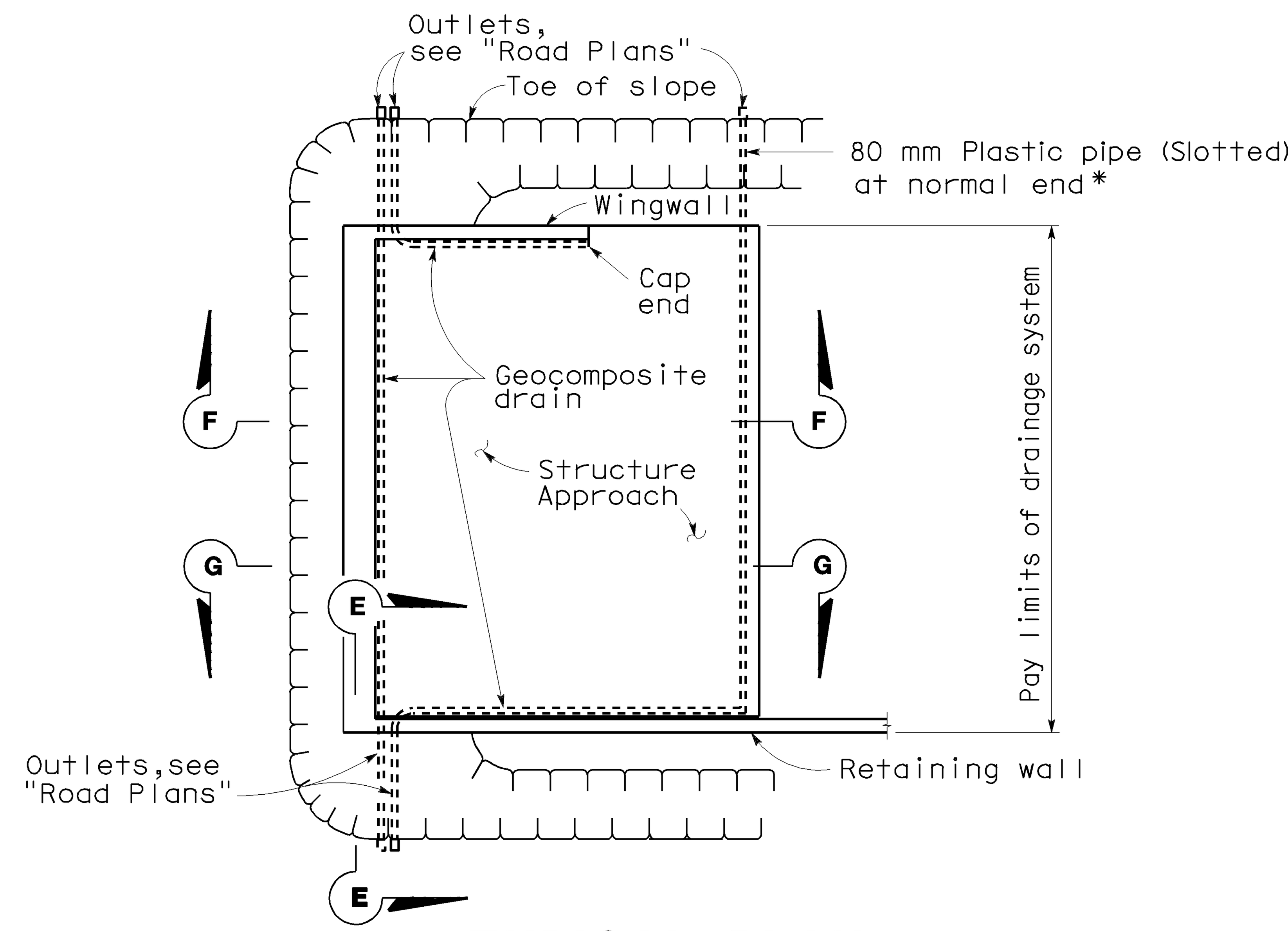
USERNAME => tyrstrk DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 08:59

DIST.	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1249	1471

Caltrans Metric

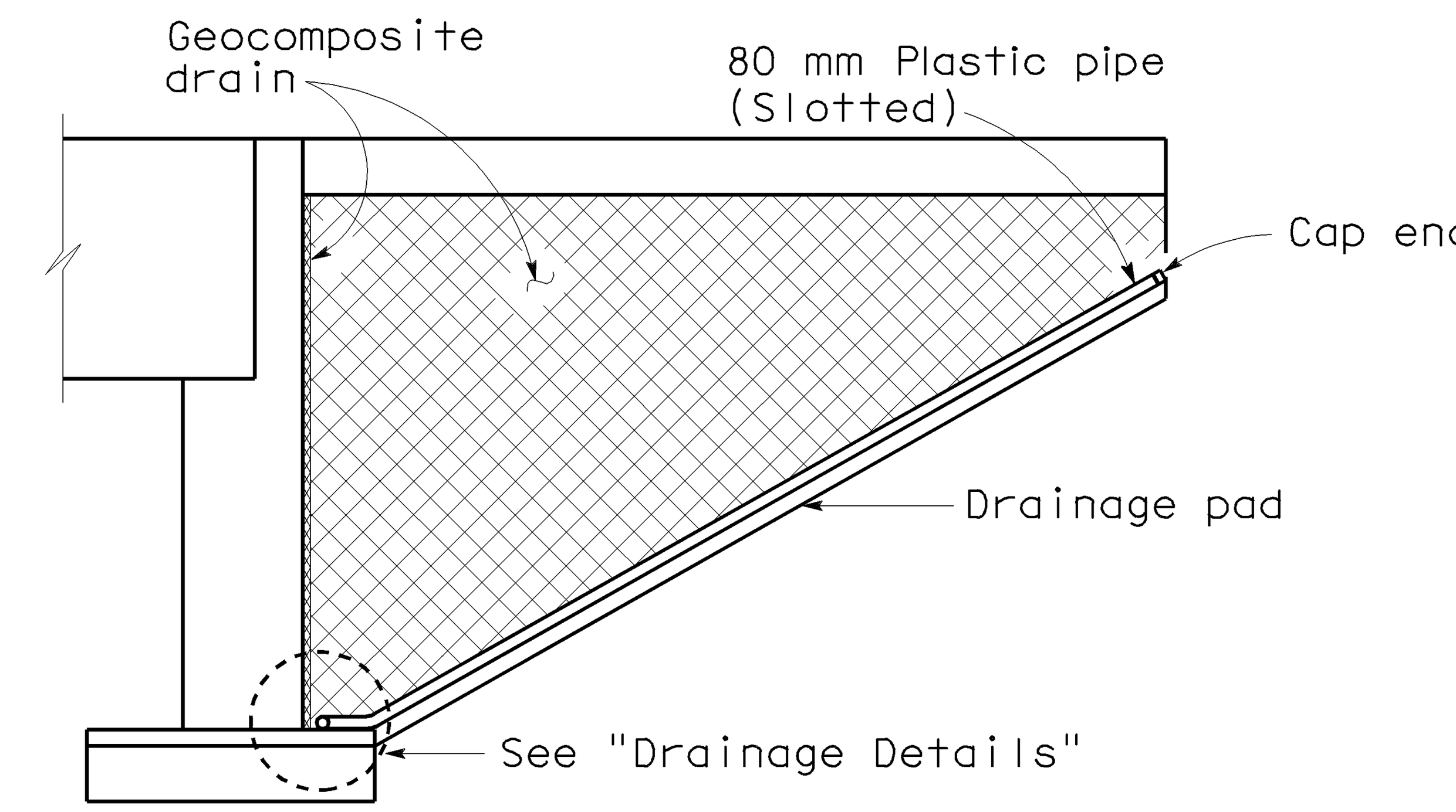
11-18-08
REGISTERED ENGINEER - CIVIL
9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MARK J. OKIMURA — No. 62908 — Exp. 6/30/10 — CIVIL — STATE OF CALIFORNIA

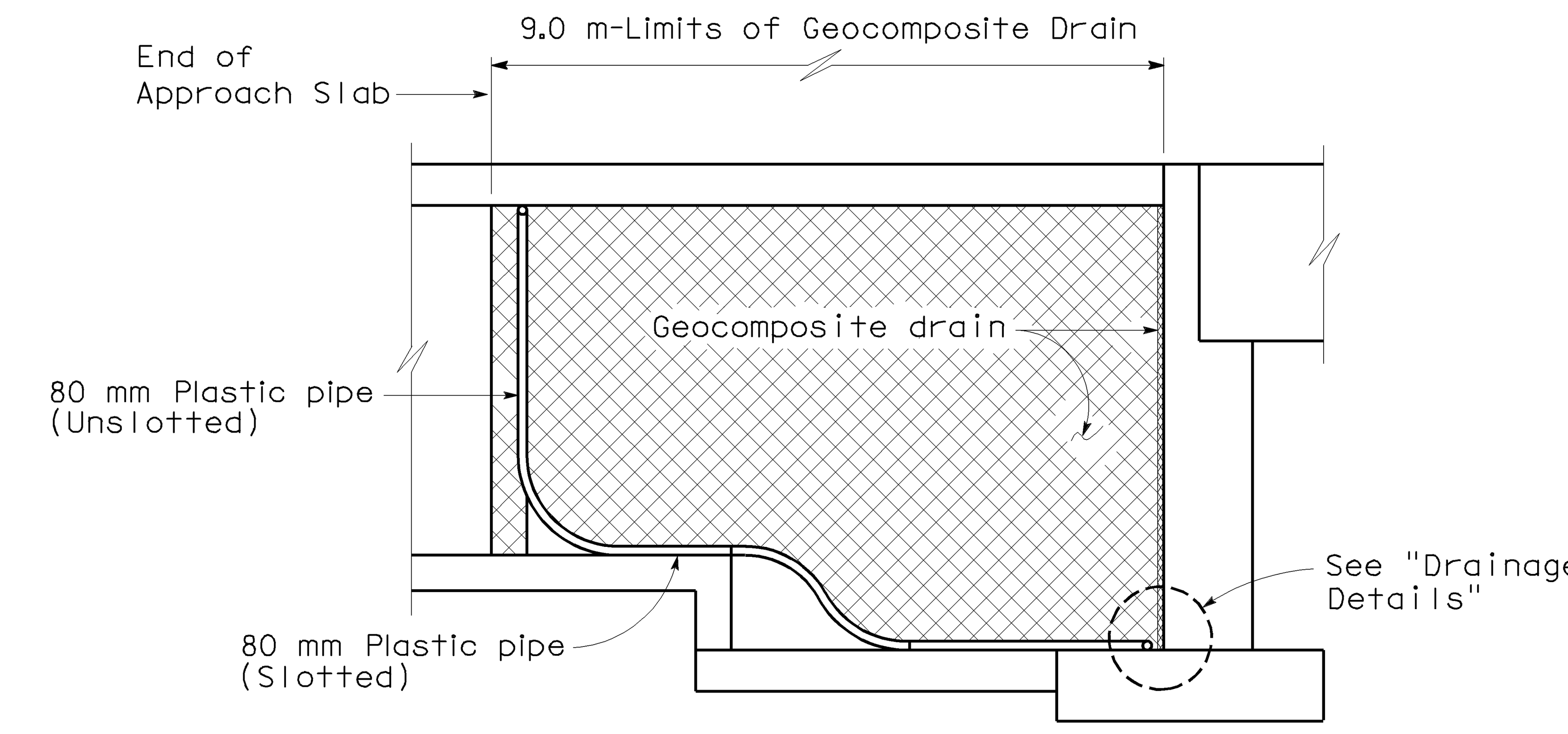


TYPICAL PLAN

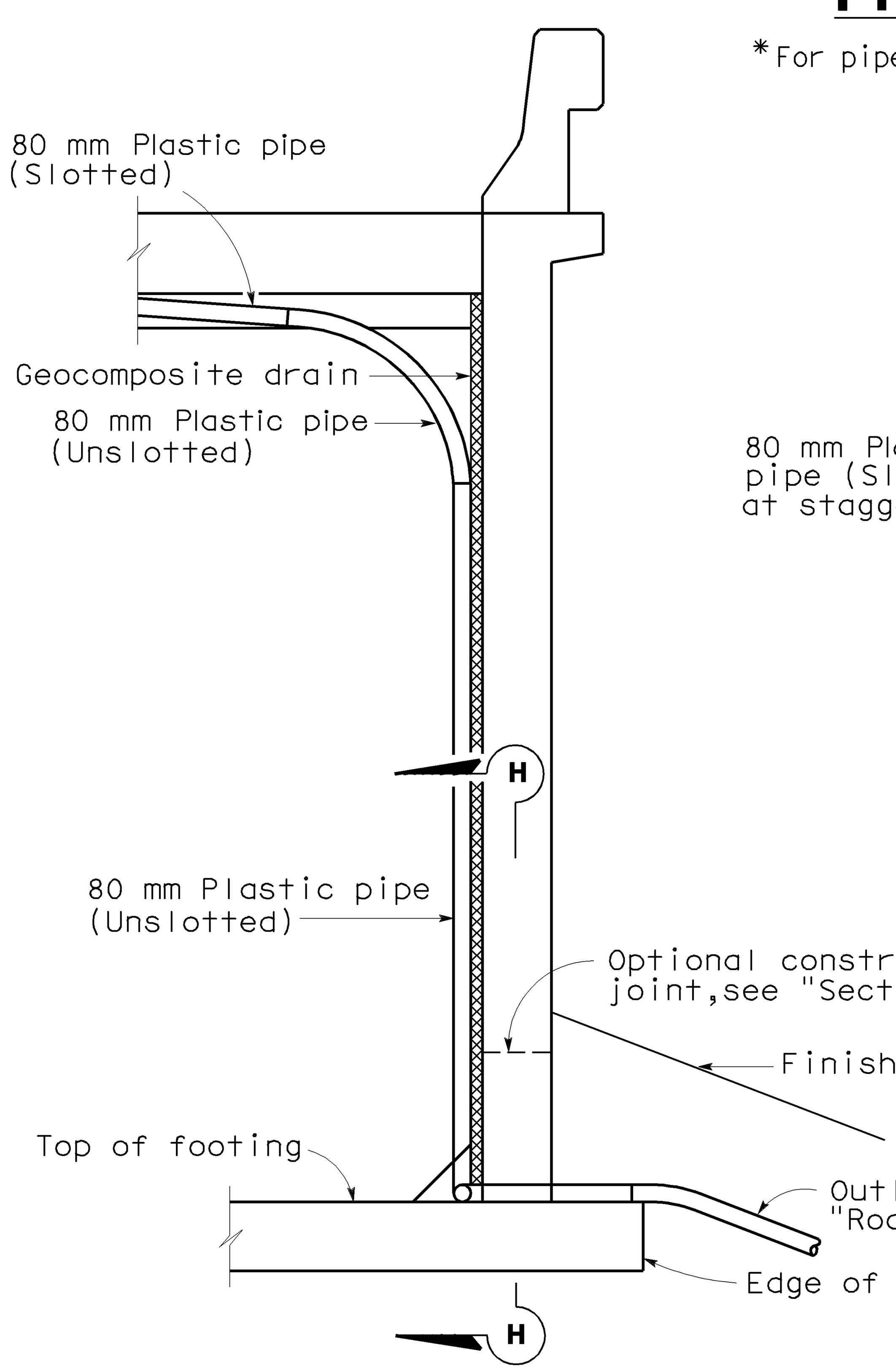
*For pipe layout at staggered end,see "Detail B".



CANTILEVER WINGWALL
SECTION F-F

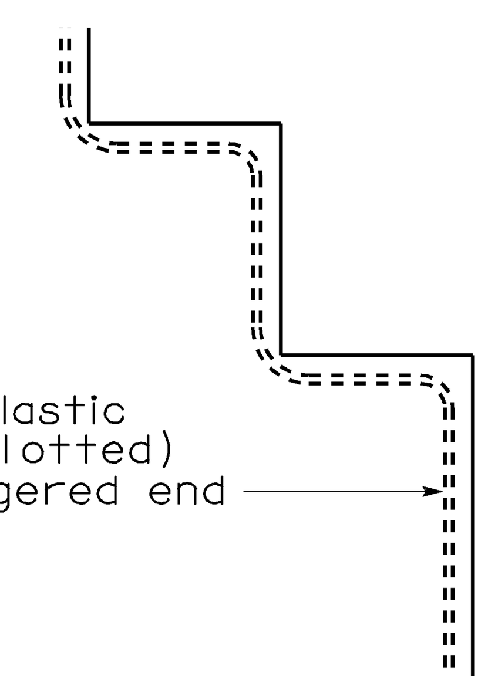


RETAINING WALL WINGWALL
SECTION G-G

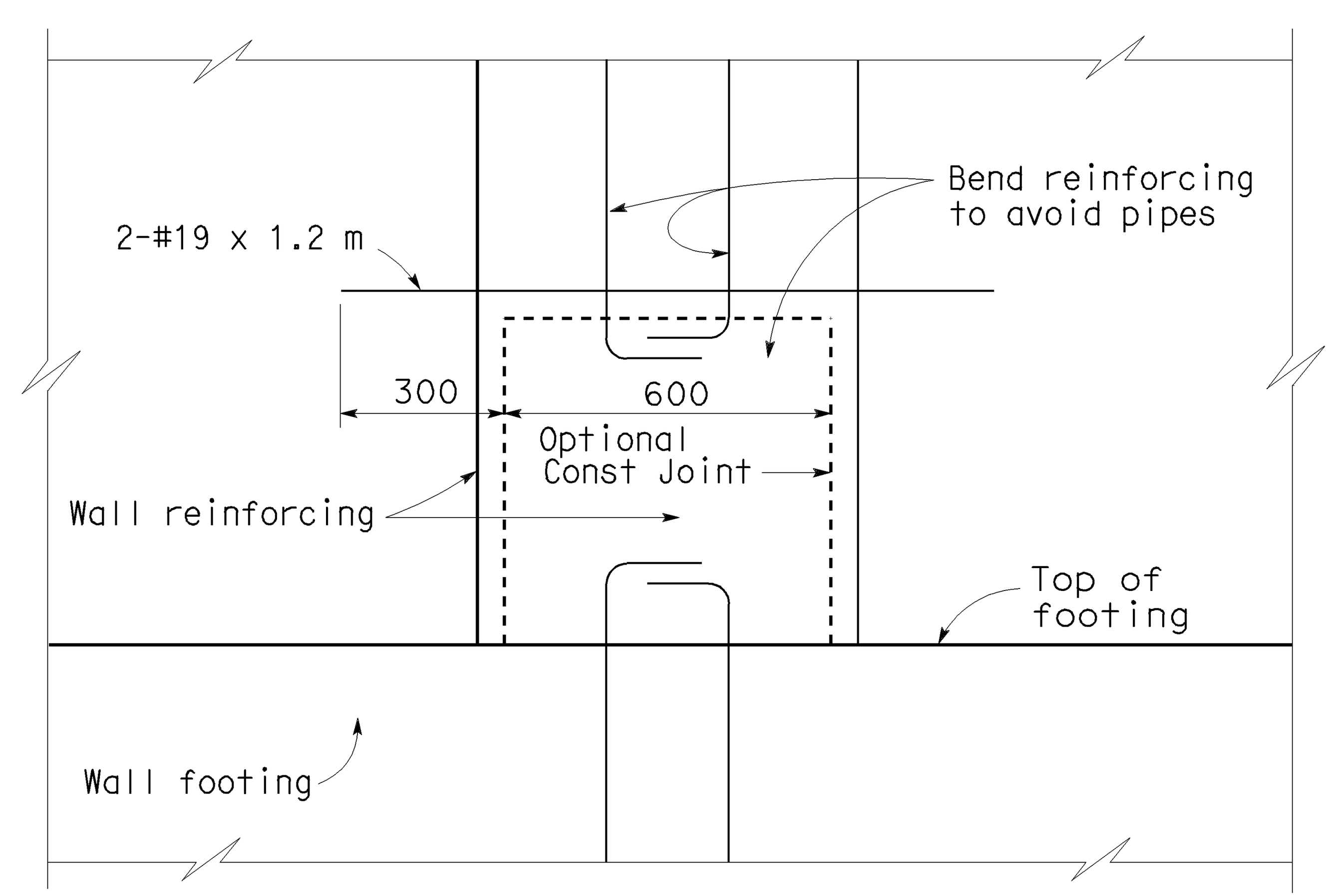


SECTION E-E

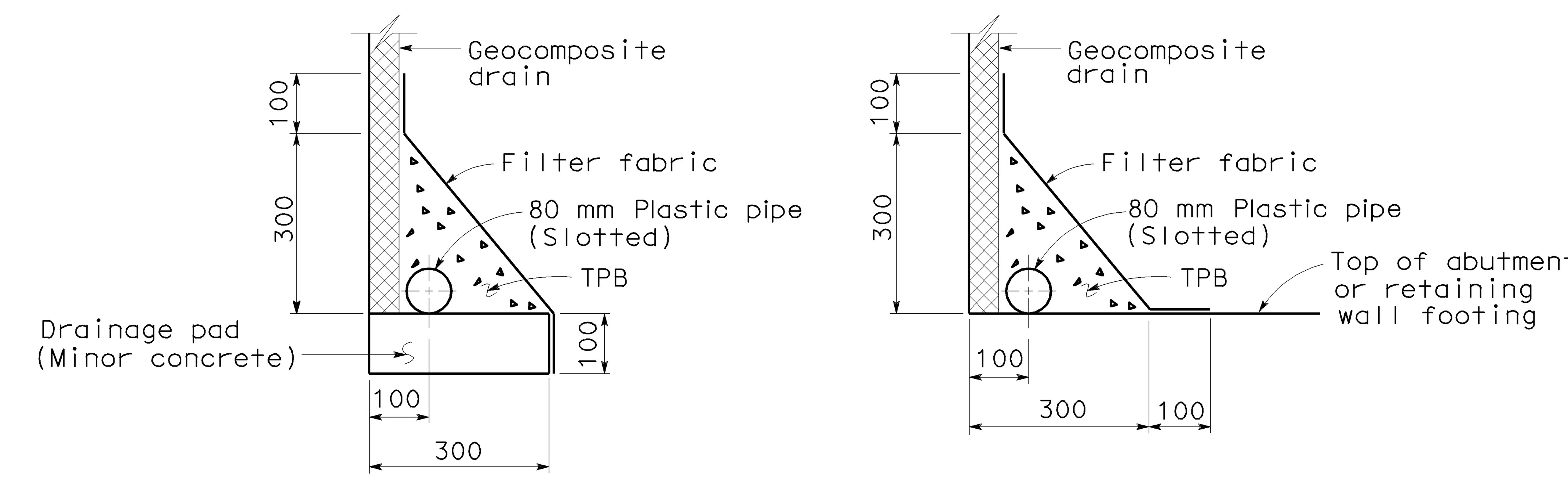
NOTE: Bends and junctions in 80 mm plastic pipe are 750 mm radius min.



DETAIL B



SECTION H-H



DRAINAGE DETAILS

NO SCALE

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

STANDARD DRAWING					
RELEASE DATE 4/23/98	DESIGN	BY M. TRAFFALIS	CHECKED E. THORKILDSEN	RELEASED BY	
FILE NO. xs3-110	DETAILS	BY R. YEE	CHECKED E. THORKILDSEN		
	SUBMITTED	BY M. HA	DRAWING DATE 4/98	OFFICE CHIEF	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN
DESIGN BRANCH 11

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
STRUCTURE APPROACH DRAINAGE DETAILS

DS OSD 2147A (METRIC) (REV. 2/25/97)

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 2-15-06 5/12/06 12/6/06 7-31-07

USERNAME => trstrk
53-2977-s-sadd.dgn

DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:00

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1250	1471

REGISTERED GEOTECHNICAL ENGINEER 07-10-07

9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Sam Sukiasian No. 2681 Exp. 6-30-10 GEOTECHNICAL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	FIELD INVESTIGATION BY:	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	5-170 HOV CONNECTOR
DRAWN BY	F. Nguyen 6/07	S. Sukiasian/ M. Ahmed/M. Islam		DESIGN BRANCH	53-2977	LOG OF TEST BORINGS 1 OF 6
CHECKED BY	S. Sukiasian				KILOMETER POST 58.0/63.4	

Caltrans Metric

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 06-22-07 06-28-07 07-06-07

OGS CIVIL LOG OF TEST BORINGS SHEET (METRIC) (REV. 4/04)

FILE => 53-2977-z-lotb01.dgn

USERNAME => trstrk DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:00

OSS CIVIL LOG OF TEST BORINGS (METRIC) (REV. 4/04)

CONSISTENCY CLASSIFICATION FOR SOILS

According to the Standard Penetration Test

SPT N-Value (Blows/0.3m)	Granular	SPT N-Value (Blows/0.3m)	Cohesive
0-4	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-30	Medium Dense	5-8	Firm
31-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very stiff
		>30	Hard

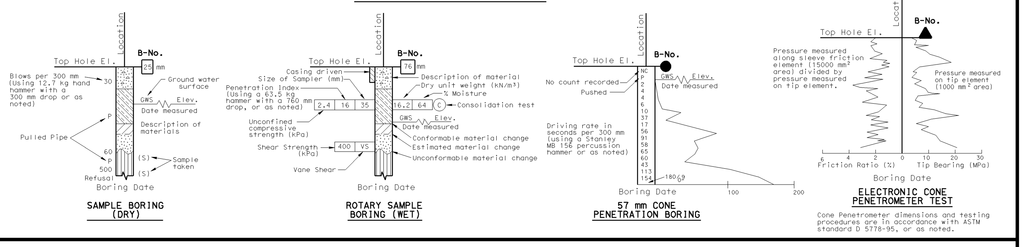
NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

LEGEND OF EARTH MATERIALS

GRAVEL, SAND, SILT, CLAY, SANDY CLAY or CLAYEY SAND, SANDY SILT or SILTY SAND, SILTY CLAY, CLAYEY SILT, PEAT and/or ORGANIC MATTER, COBBLES and/or BOULDERS, IGNEOUS ROCK, SEDIMENTARY ROCK, METAMORPHIC

LEGEND OF BORING OPERATIONS

57 mm CONE PENETRATION; SAMPLE BORING (DRY); ROTARY SAMPLE BORING (WET); AUGER BORING (DRY); TEST PIT; DIAMOND CORE BORING; JET BORING; ELECTRONIC CONE PENETROMETER



Caltrans etric

ENGINEERING SERVICES | GEOTECHNICAL SERVICES

DRAWN BY: F. Nguyen 6/07
CHECKED BY: S. Sukiasian

FIELD INVESTIGATION BY: S. Sukiasian/ M. Ahmed/M. Islam

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN

DESIGN BRANCH

CU 07274
EA 1219U1

FILE => 53-2977-z-101002.dgn

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)
09-24-07
10-16-07

5-170 HOV CONNECTOR

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

LOG OF TEST BORINGS 2 OF 6

SHEET 30 OF 34

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS" 1 OF 6

Note: No ground water encountered during field investigation.

76.88 m Lt Sta 584+31.195 "SBETW2" Line

77-B2

261.50

94 mm

SAND with GRAVEL (SP-GP), medium dense, with rounded COBBLES. (Fill)

26 35
25 35

GRAVEL (GP), medium dense, light gray, with fine to medium SAND. (Native)

27 35
41 35
31 35

SILT (ML), firm, light brown.

6 35

SAND and GRAVEL (SP-GP), medium dense to dense, with some COBBLES.
Medium dense.

>50 35
50 35

SILTY SAND (SM), dense, brown, coarse grained SAND.

34 35

SAND and GRAVEL (SP-GP), very dense, medium to coarse SAND and GRAVEL.

>50 35

GRAVEL (GP), very dense, coarse GRAVEL and coarse grained SAND with numerous COBBLES.

>50 35

SILT (ML), firm, brown.

SAND and GRAVEL (SP-GP), coarse grained SAND with COBBLES.

SILTY SAND (SM), brown, medium grained SAND.

GRAVEL (GP), with coarse SAND and COBBLES.

Light gray.

Coarse grained SAND.

08-10-05

262 m, 259 m, 256 m, 253 m, 250 m, 247 m, 244 m, 241 m, 238 m, 235 m, 232 m, 229 m, 226 m, 223 m, 220 m, 217 m

584+30 — 584+50

PROFILE
HOR. 1:100
VER. 1:100

Dan Sukiasian 07-10-07
REGISTERED GEOTECHNICAL ENGINEER

9-14-09
PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER * GEOTECHNICAL * STATE OF CALIFORNIA
No. 2681 Exp. 6-30-10 Dan Sukiasian

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
07	LA	5,170	58.0/63.4 R52.3/R53.1	1251	1471

USERNAME => trstrk DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:00

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5,170	58.0/63.4, R32.3/R33.1	1252	1471

REGISTERED GEOTECHNICAL ENGINEER 07-10-07

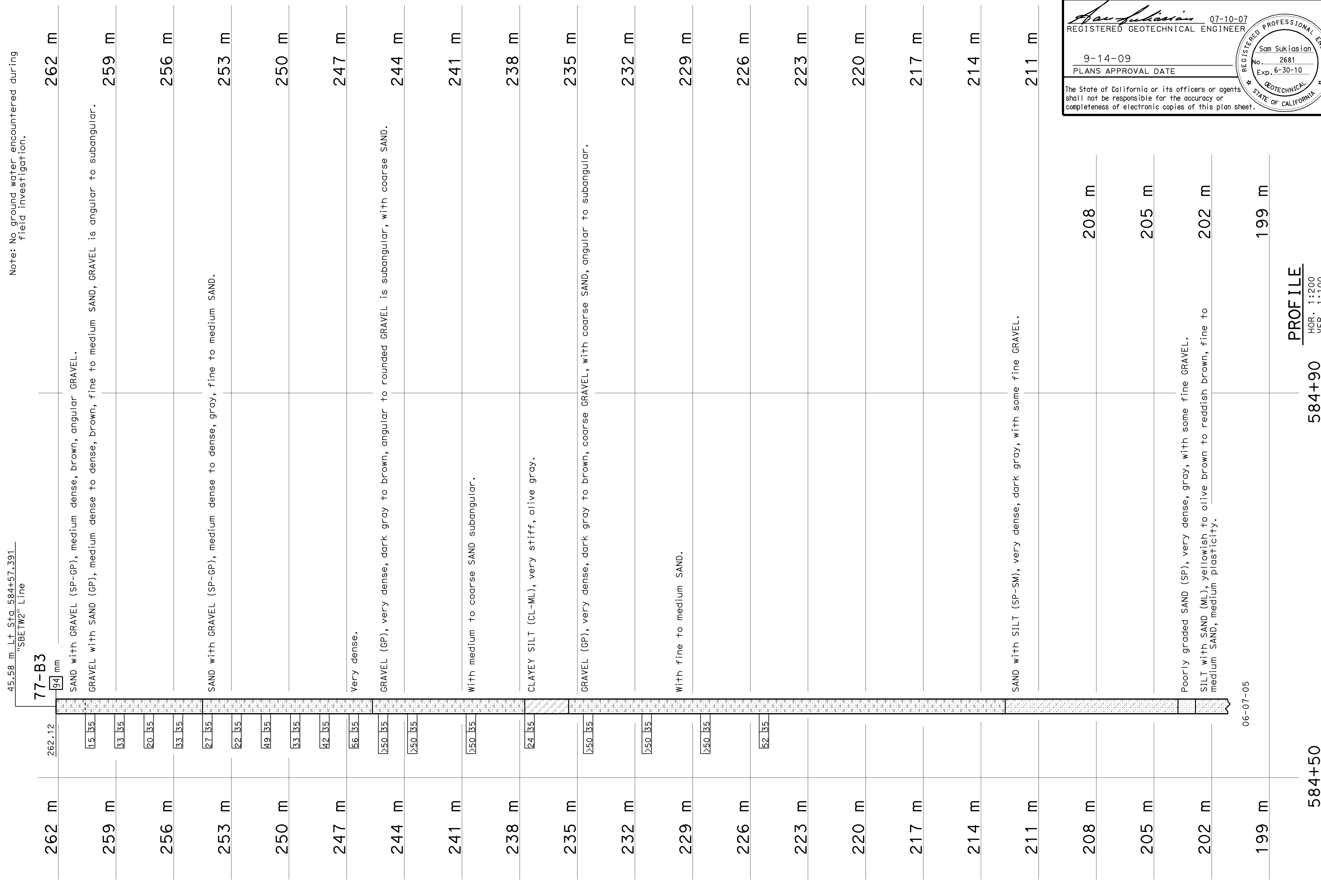
9-14-09
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Sam Sukiasian, No. 2681, Exp. 6-30-10, GEOTECHNICAL, STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

FOR PLAN VIEW, SEE "LOG OF TEST BORINGS" 1 OF 6

Note: No ground water encountered during field investigation.



LEGEND OF BORING OPERATIONS

SAMPLE BORING (DRY) — ROTARY SAMPLE BORING (WET) — 57 mm CONE PENETRATION BORING — ELECTRONIC CONE PENETROMETER TEST

57 mm CONE PENETRATION; SAMPLE BORING (DRY); ROTARY SAMPLE BORING (WET); AUGER BORING (DRY); TEST PIT; DIAMOND CORE BORING; JET BORING; ELECTRONIC CONE PENETROMETER

Cone Penetrometer dimensions and testing procedures are in accordance with ASTM Standard D 3441-94, or as noted.

LEGEND OF EARTH MATERIALS

GRAVEL; SAND; SILT; CLAY; SANDY CLAY or CLAYEY SAND; SANDY SILT or SILTY SAND; SILTY CLAY; CLAYEY SILT; PEAT and/or ORGANIC MATTER; COBBLES and/or BOULDERS; IGNEOUS ROCK; SEDIMENTARY ROCK; METAMORPHIC

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

CONSISTENCY CLASSIFICATION FOR SOILS

According to the Standard Penetration Test

N-Value (Blows/0.3m)	Granular	SPT N-Value (Blows/0.3m)	Cohesive
0-4	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-30	Medium Dense	5-8	Firm
31-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		>30	Hard

OGS CIVIL LOG OF TEST BORINGS SHEET (METRIC) (REV. 4/04)

Caltrans Metric

ENGINEERING SERVICES	GEOTECHNICAL SERVICES
DRAWN BY	F. Nguyen 6/07
CHECKED BY	S. Sukiasian

FIELD INVESTIGATION BY: S. Sukiasian/ M. Ahmed/M. Islam

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN
DESIGN BRANCH

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR
LOG OF TEST BORINGS 3 OF 6

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 06-22-07 06-28-07 07-06-07

FILE => 53-2977-z-lotb03.dgn

USERNAME => trstrk DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:00

OSS CIVIL LOG OF TEST BORINGS SHEET (METRIC) (REV. 4/04)

CONSISTENCY CLASSIFICATION FOR SOILS

According to the Standard Penetration Test

SPT N-Value (Blows/0.3m)	Granular	SPT N-Value (Blows/0.3m)	Cohesive
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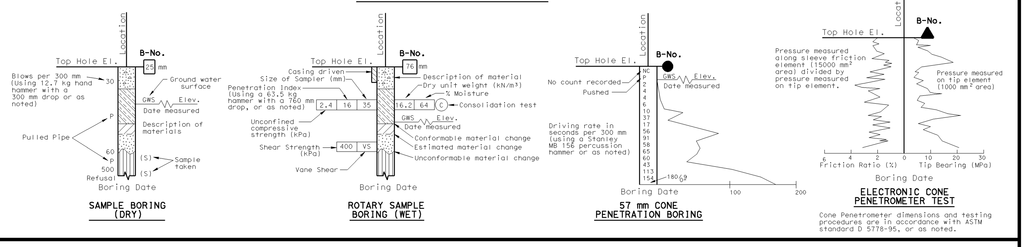
GRAVEL; SAND; SILT; CLAY; SANDY CLAY or CLAYEY SAND; SANDY SILT or SILTY SAND; SILTY CLAY; CLAYEY SILT; PEAT and/or ORGANIC MATTER; COBBLES and/or BOULDERS; IGNEOUS ROCK; SEDIMENTARY ROCK; METAMORPHIC

LEGEND OF BORING OPERATIONS

57 mm CONE PENETRATION; SAMPLE BORING (DRY); ROTARY SAMPLE BORING (WET); AUGER BORING (DRY); TEST PIT; DIAMOND CORE BORING; JET BORING; ELECTRONIC CONE PENETROMETER



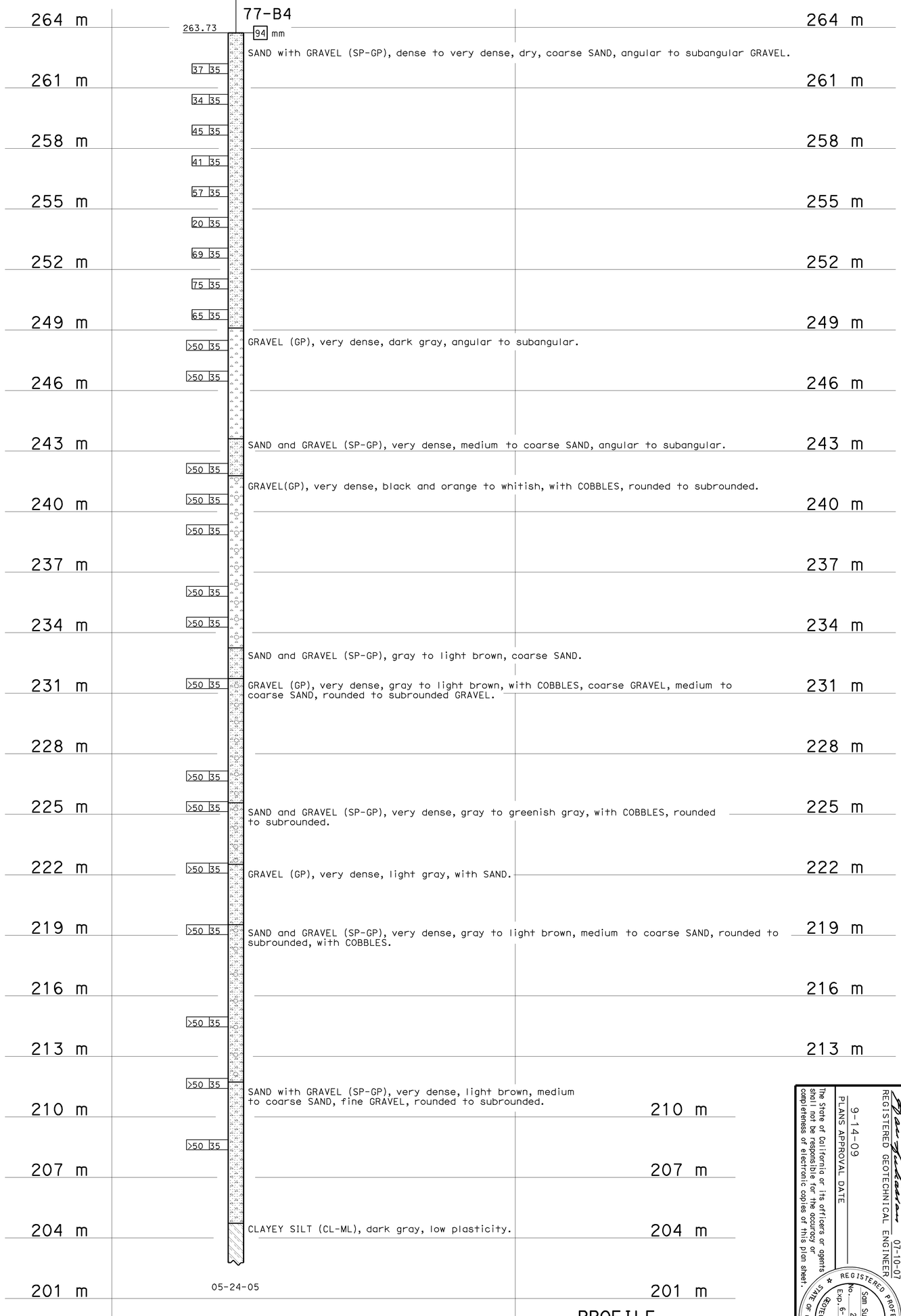
Cone Penetrometer dimensions and testing procedures are in accordance with ASTM standard D 5778-95, or as noted.

FOR PLAN VIEW, SEE "LOG OF TEST BORINGS" 1 OF 6

27.37 m Lt Sta 584+76.151. "SBETW2" Line

77-B4

Note: No ground water encountered during field investigation.



PROFILE
HOR. 1:100
VER. 1:100

Caltrans

ENGINEERING SERVICES | GEOTECHNICAL SERVICES

DRAWN BY: F. Nguyen 6/07
CHECKED BY: S. Sukiasian

FIELD INVESTIGATION BY: S. Sukiasian/ M. Ahmed/M. Islam

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN

DESIGN BRANCH

CU 07274
EA 1219U1

FILE => 53-2977-z-101004.dgn

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)
09-26-07
09-26-07
01-16-08

BRIDGE NO. 53-2977
KILOMETER POST 58.0/63.4

5-170 HOV CONNECTOR

LOG OF TEST BORINGS 4 OF 6

SHEET 32 OF 34

Registered Geotechnical Engineer — 07-10-07

PLANS APPROVAL DATE 9-14-09

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REGISTERED PROFESSIONAL ENGINEER — Sam Sukiasian — No. 2681 — Exp. 6-30-10 — GEOTECHNICAL — STATE OF CALIFORNIA

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
07	LA	5,170	58.0/63.4 R52.3/R53.1	1253	1471

USERNAME => trstrk DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:00

OSS CIVIL LOG OF TEST BORINGS (METRIC) (REV. 4/04)

CONSISTENCY CLASSIFICATION FOR SOILS

According to the Standard Penetration Test

SPT N-Value (Blows/0.3m)	Granular	SPT N-Value (Blows/0.3m)	Cohesive
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		>30	Hard

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

LEGEND OF EARTH MATERIALS

GRAVEL, SAND, SILT, CLAY, SANDY CLAY or CLAYEY SAND, SANDY SILT or SILTY SAND, SILTY CLAY, CLAYEY SILT, PEAT and/or ORGANIC MATTER, COBBLES and/or BOULDERS, IGNEOUS ROCK, SEDIMENTARY ROCK, METAMORPHIC

LEGEND OF BORING OPERATIONS

57 mm CONE PENETRATION
SAMPLE BORING (DRY)
ROTARY SAMPLE BORING (WET)
AUGER BORING (DRY)
TEST PIT
DIAMOND CORE BORING
JET BORING
ELECTRONIC CONE PENETROMETER

SAMPLE BORING (DRY) — ROTARY SAMPLE BORING (WET) — 57 mm CONE PENETRATION BORING — ELECTRONIC CONE PENETROMETER TEST

Cone Penetrometer dimensions and testing procedures are in accordance with ASTM standard D 5778-95, or as noted.

Caltrans etric

ENGINEERING SERVICES | GEOTECHNICAL SERVICES

DRAWN BY: F. Nguyen 6/07
CHECKED BY: S. Sukiasian

FIELD INVESTIGATION BY: S. Sukiasian/ M. Ahmed/M. Islam

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

BRIDGE NO.	KILOMETER POST
53-2977	58.0/63.4

5-170 HOV CONNECTOR

LOG OF TEST BORINGS 5 OF 6

SHEET 33 OF 34

FOR PLAN VIEW, SEE "LOG OF TEST BORINGS" 1 OF 6

Note: No ground water encountered during field investigation.

8.22 m Rt Sta 585+08.217 "CBE TW2" Line

77-B5R

262.11 — 94 mm

SAND with SILT (SP-SM), medium dense, light brown, with some fine GRAVEL.

15 35
23 35
26 35

CLAYEY SAND to SANDY CLAY (SC-CL), medium dense/stiff, brown to dark brown, moist.

25 35
12 35
26 35

SAND with GRAVEL (SP-GP), medium dense to very dense, dark brown, with fine to coarse GRAVEL.

43 35
44 35
58 35
66 35

GRAVEL (GP), white and black specked.

SANDY CLAY (CL), brown, moist.

GRAVEL (GP), dark brown, with fine SAND.

SANDY CLAY (CL), reddish brown, fine grained.

SILTY SAND with GRAVEL (SM), brown, fine to coarse SAND, with fine to coarse GRAVEL.

SANDY CLAY with GRAVEL (CL), dark grayish brown, fine SAND, with fine to coarse GRAVEL.

GRAVEL (GP), dark grayish brown, fine to coarse GRAVEL.

SAND with SILT (SP-SM), dark grayish brown, fine to coarse GRAVEL.

262 m, 259 m, 256 m, 253 m, 250 m, 247 m, 244 m, 241 m, 238 m, 235 m, 232 m, 229 m, 226 m, 223 m, 220 m, 217 m

11-17-05

PROFILE
HOR. 1:200
VER. 1:100

585+00 585+40

Dan Sukiasian 07-10-07
REGISTERED GEOTECHNICAL ENGINEER

9-14-09
PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER — No. 2681 — Exp. 6-30-10 — Sam Sukiasian — STATE OF CALIFORNIA — GEOTECHNICAL

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
07	LA	5,170	53.0/63.4 R52.3/R53.1	1254	1471

USERNAME => trstrk DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:00

FILE => 53-2977-Z-101005.dgn

OSS CIVIL LOG OF TEST BORINGS (METRIC) (REV. 4/04)

CONSISTENCY CLASSIFICATION FOR SOILS

According to the Standard Penetration Test

SPT N-Value (Blows/0.3m)	Granular	SPT N-Value (Blows/0.3m)	Cohesive
0-4	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-30	Medium Dense	5-8	Firm
31-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very stiff
		>30	Hard

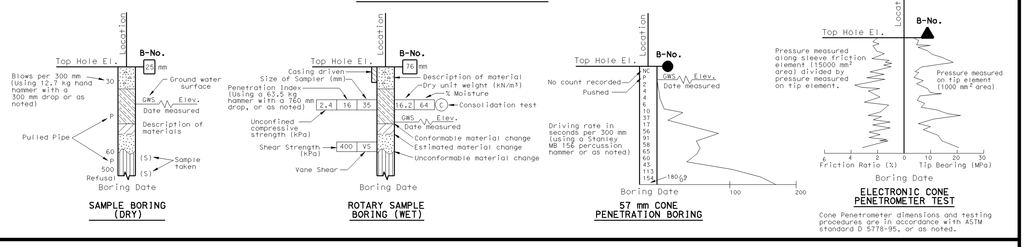
NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

LEGEND OF EARTH MATERIALS

GRAVEL, SAND, SILT, CLAY, SANDY CLAY or CLAYEY SAND, SANDY SILT or SILTY SAND, SILTY CLAY, CLAYEY SILT, PEAT and/or ORGANIC MATTER, COBBLES and/or BOULDERS, IGNEOUS ROCK, SEDIMENTARY ROCK, METAMORPHIC

57 mm CONE PENETRATION
SAMPLE BORING (DRY)
ROTARY SAMPLE BORING (WET)
AUGER BORING (DRY)
TEST PIT
DIAMOND CORE BORING
JET BORING
ELECTRONIC CONE PENETROMETER

LEGEND OF BORING OPERATIONS



Cone Penetrometer dimensions and testing procedures are in accordance with ASTM standard D 5778-95, or as noted.

Caltrans

ENGINEERING SERVICES | GEOTECHNICAL SERVICES

DRAWN BY: F. Nguyen 6/07
CHECKED BY: S. Sukiasian

FIELD INVESTIGATION BY: S. Sukiasian/ M. Ahmed/M. Islam

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH

CU 07274
EA 1219U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

BRIDGE NO.	KILOMETER POST
53-2977	58.0/63.4

5-170 HOV CONNECTOR

LOG OF TEST BORINGS 6 OF 6

SHEET	OF
34	34

FILE => 53-2977-z-10t006.dgn

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS" 1 OF 6

Note: No ground water encountered during field investigation.

21.44 m L+ Sta 585+26.352 "SBETW2" Line

77-B5L

264.43

94 mm

264 m — SAND with GRAVEL (SP), dense to very dense, olive gray, fine to medium SAND, fine GRAVEL.

34 | 35

261 m — >50 | 35

9 | 35 — SANDY CLAY (CL), firm to stiff, olive gray, fine to medium SAND.

258 m — 8 | 35

16 | 35 — SILTY SAND (SM), medium dense, olive gray, fine grained.

255 m — 30 | 35

15 | 35 — SAND with SILT (SP-SM), dense, olive brown, fine to medium SAND.

252 m — 31 | 35

41 | 35

249 m — 32 | 35 — SAND with GRAVEL (SP-GP), dense, grayish brown to brown, fine to coarse SAND, with COBBLES.

246 m

243 m

GRAVEL (GP), very dense, olive gray, with COBBLES and fine to coarse SAND.

240 m

237 m — 50 | 35 — SANDY SILT (ML), grayish brown, fine grained.

234 m

231 m — Poorly graded SAND (SP), brown to grayish brown, medium to coarse SAND.

SANDY CLAY (CL), reddish brown, fine grained.

228 m — SAND and GRAVEL (SP-GP), light brown to grayish brown, fine to coarse SAND, fine to coarse GRAVEL, with COBBLES.

225 m

222 m

SAND with GRAVEL (SP-GP), gray to dark gray, fine to coarse SAND with fine GRAVEL.

219 m

11-01-05

216 m

585+20 585+40

PROFILE
HOR. 1:100
VER. 1:100

Dan Sukiasian 07-10-07
REGISTERED GEOTECHNICAL ENGINEER

9-14-09
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER — Dan Sukiasian — No. 2681 — Exp. 6-30-10 — STATE OF CALIFORNIA — GEOTECHNICAL

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
07	LA	5,170	53.0/63.4 R52.3/R53.1	1255	1471

REVISION DATES (PRELIMINARY STAGE ONLY)
01-06-07

USERNAME => trstrk DATE PLOTTED => 16-SEP-2009 TIME PLOTTED => 10:00