Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		1	86

INDEX OF PLANS

SHEET NO.	DESCRIPTION
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2	TYPICAL CROSS SECTIONS
3	KEY MAP AND LINE INDEX
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59-65	STAGE CONSTRUCTION, TRAFFIC HANDLING PLAN AND QUANTITIES
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70	SUMMARY OF QUANTITIES
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THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO CONTRACTORS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

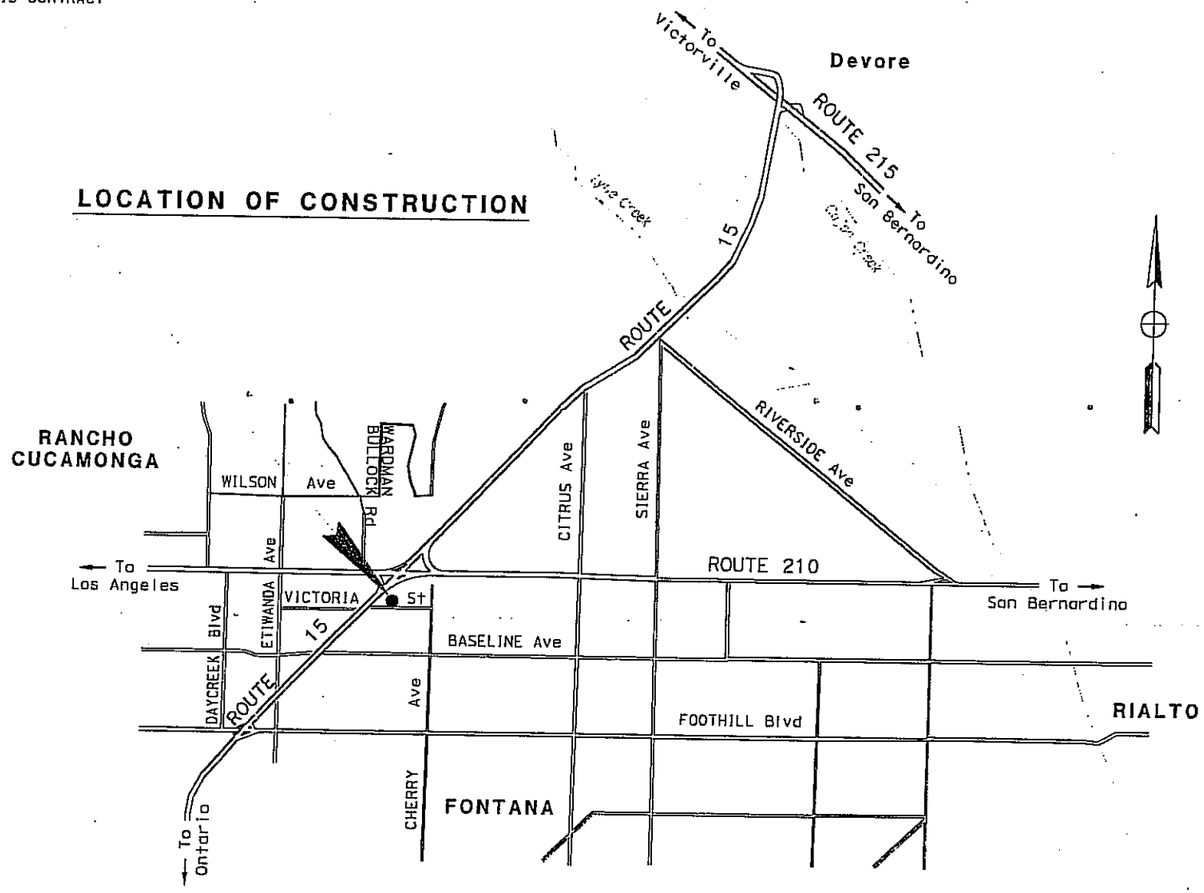
CMLN-6208(014)E

PROJECT PLANS FOR BUILDING CONSTRUCTION

IN SAN BERNARDINO COUNTY
IN FONTANA
AT THE LOCATION FOR
THE FUTURE SOUTHERN REGIONAL LABORATORY AND TRANSPORTATION MANAGEMENT CENTER
AT 13850, 13892 AND 13970 VICTORIA STREET

To be supplemented by Standard Plans dated May, 2006

LOCATION OF CONSTRUCTION



NO SCALE

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO CONTRACTORS."

APPROVED AS TO IMPACT ON STATE FACILITIES AND CONFORMANCE WITH APPLICABLE STATE STANDARDS AND PRACTICES AND THAT TECHNICAL OVERSIGHT WAS PERFORMED.

DESIGN OVERSIGHT APPROVAL	REGISTRATION NO.	LICENSE EXP DATE	DATE SIGNED
RICHARD DOYLE	60951	12-31-08	5/7/07
SERGIO AVILA			

5-07-07
PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

C. COSTELLO No. 60256 Exp 06/30/08 CIVIL

July 30, 2007
PLANS APPROVAL DATE

UNION LABEL

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

CONTRACT No. 08-377004

DATE PLOTTED = 31-JUL-2007

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		71	86

6-26-07
LICENSED LANDSCAPE ARCHITECT

7-30-07
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.

LICENSED LANDSCAPE ARCHITECT — KEVIN J. GESSELL — 11-30-07 — 06-26-07 — STATE OF CALIFORNIA

ABBREVIATIONS

AMEND — amendment
B & B — balled and burlapped
Dia — diameter
EA — each
lb — pound
oz. — ounce
Ft — foot/feet
SQFT — square feet
CF — cubic feet
Max — maximum
Min — minimum
NCN — no common name
No. — number
Pkt — packet
PLT ESTB — plant establishment
Pvmt — pavement
R/W — right of way
SF — state furnished
TRVD — traveled

APPLICABLE WHEN CIRCLED:

(1) - Quantities shown are "per plant" unless shown as SQFT or SQYD application rates.
(2) - Sufficient to receive root ball.
3 - Does not apply to mulch areas.
(4) - As shown on plans.
5 - Unless otherwise shown on plans.
(6) - See detail.
(7) - See Special Provisions.

NOTE:
Underlined portions of botanical name indicate abbreviations used on Planting Plans.

PLANT LIST AND PLANTING SPECIFICATIONS

PLANT GROUP	PLANT No.	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY EACH	HOLE SIZE (INCH) Dia	HOLE SIZE (INCH) DEPTH	BASIN TYPE	IRON SULFATE 1	SOIL AMEND (1)	COMMERCIAL FERTILIZER (1) PLANTING	COMMERCIAL FERTILIZER (1) PLT ESTB	BASIN MULCH	STAKING	PLANTING LIMITS MINIMUM DISTANCE (FT) FROM TRVD WAY	PVMT	FENCE	WALL	PAVED DITCH	EARTH DITCH	ON CENTER (FT)	REMARKS
A	1.		LANTANA MONTEVIDENSIS "NEW GOLD"	LANTANA	NO.1	1650	(2)		I	--	1/4CU FT	1/8 LB	.5 LB	0.5 YD3	-	-	-	-	-	-	-	1.5'	SHRUB
	2.		ALOE STRIATA	CORAL ALOE	NO.5	65	(2)		I	--	1/2CU FT	1/8 LB	.5 LB	0.5 YD3	-	-	-	-	-	-	-	(4)	SHRUB
B	3.		AGAVE AMERICANA	CENTURY PLANT	NO.5	87	(2)		I	--	1/2CU FT	1/8 LB	.5 LB	0.5 YD3	-	-	-	-	-	-	-	(4)	SHRUB
	4.		EUCALYPTUS MACULATA	SPOTTED GUM	NO.5	43	(2)		I	--	1/2CU FT	1/8 LB	.5 LB	0.5 YD3	-	-	-	-	-	-	-	(4)	TREE
	5.		LAVANDULA OFFICINALIS	ENGLISH LAVENDER	NO.5	215	(2)		I	--	1/2CU FT	1/8 LB	.5 LB	0.5 YD3	-	-	-	-	-	-	-	(4)	SHRUB
K	6.		CERCIDIUM FLORIDUM	BLUE PALO VERDE	24" BOX	6	(2)		I	--	1 1/2CU FT	1/2 LB	.5 LB	0.5 YD3	(6) (7)	-	-	-	-	-	-	(4)	TREE
	7.		LAGERSTROEMIA INDICA "WHITE"	CRAPE MYRTLE	24" BOX	15	(2)		I	--	1 1/2CU FT	1/2 LB	.5 LB	0.5 YD3	(6) (7)	-	-	-	-	-	-	(4)	TREE
	8.		PISTACIA CHINENSIS	CHINESE PISTACHE	24" BOX	23	(2)		I	--	1 1/2CU FT	1/2 LB	.5 LB	0.5 YD3	(6) (7)	-	-	-	-	-	-	(4)	TREE
	9.		PLATANUS ACERIFOLIA	LONDON PLANE TREE	24" BOX	22	(2)		I	--	1 1/2CU FT	1/2 LB	.5 LB	0.5 YD3	(6) (7)	-	-	-	-	-	-	(4)	TREE
	10.		PROSOPIS GLANDULOSA	HONEY MESQUITE	24" BOX	8	(2)		I	--	1 1/2CU FT	1/2 LB	.5 LB	0.5 YD3	(6) (7)	-	-	-	-	-	-	(4)	TREE
M	11.		CAREX PANSA	CALIFORNIA MEADOW SEDGE	(7) LINER	35000	(2)		I	--	1/4CU FT	1/8 LB	.5 LB	0.5 YD3	-	-	-	-	-	-	-	1'	GROUND COVER

LEGEND

MULCHED AREA

TURF (SOD)

PLANT LIST
PL-1

DATE REVISED | REVISED BY | DATE

CALCULATED/DESIGNED BY: | CHECKED BY:

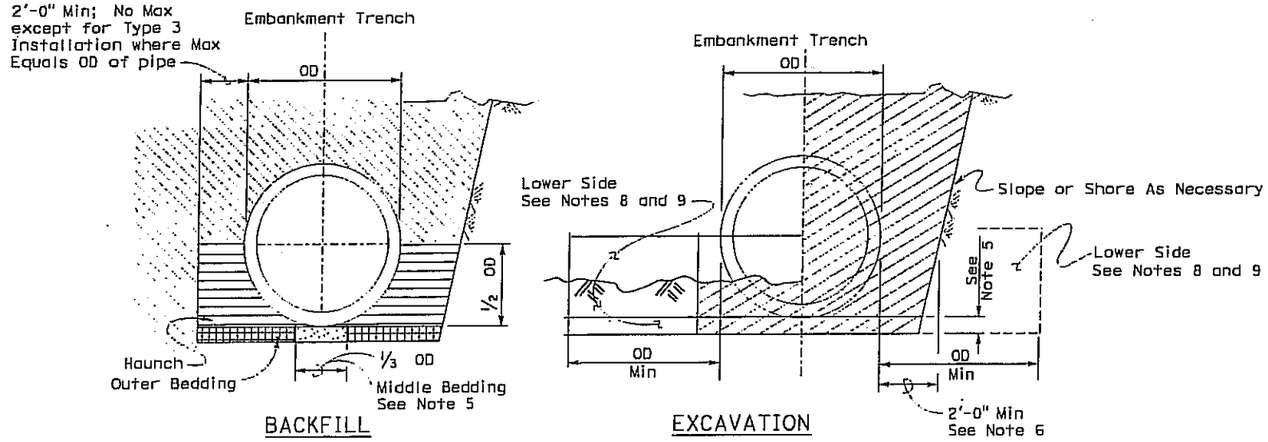
PROJECT LANDSCAPE ARCHITECT
CHARLES MOFFETT

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE

RELATIVE BORDER SCALE IS IN INCHES

CU 08341

EA 3770U1



Roadway Embankment

Structure Backfill (Culvert) See Note 6

Structure Backfill (Culvert) See Note 6

Loose Backfill

Excavation Structure (Culvert)

TYPE 1 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 30 and the maximum percentage passing the 75 μm sieve size shall be 12.

TYPE 2 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 25.

TYPE 3 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 85 percent relative compaction. 90 percent relative compaction will be required where the fill over the pipe is less than 4'-0" or ½ OD.

INSTALLATION TYPE 1

MINIMUM CLASS AND D-LOAD	COVER	
	108" Dia AND SMALLER	OVER 108" Dia
Class II 1000D	14.9'	12.9'
Class III 1350D	15.0' - 20.9'	13.0' - 18.9'
Class III Special 1700D	21.0' - 26.9'	19.0' - 24.9'
Class IV 2000D	27.0' - 31.9'	25.0' - 29.9'
Class IV Special 2500D	32.0' - 40.9'	30.0' - 38.9'
Class V 3000D	41.0' - 49.9'	39.0' - 46.9'
Class V Special 3600D	50.0' - 59.0'	47.0' - 58.0'

INSTALLATION TYPE 2

MINIMUM CLASS AND D-LOAD	COVER
Class II 1000D	9.9'
Class III 1350D	10.0'- 14.9'
Class III Special 1700D	15.0' - 19.9'
Class IV 2000D	20.0' - 24.9'
Class IV Special 2500D	25.0' - 31.9'
Class V 3000D	32.0' - 38.9'
Class V Special 3600D	39.0' - 47.0'

INSTALLATION TYPE 3

MINIMUM CLASS AND D-LOAD	COVER	
	48" Dia AND SMALLER	OVER 48" Dia
Class II 1000D	7.9'	5.9'
Class III 1350D	8.0' - 10.9'	6.0' - 8.9'
Class III Special 1700D	11.0' - 14.9'	9.0' - 12.9'
Class IV 2000D	15.0' - 17.9'	13.0' - 15.9'
Class IV Special 2500D	18.0' - 21.9'	16.0' - 19.9'
Class V 3000D	22.0' - 26.9'	20.0' - 24.9'
Class V Special 3600D	30.0' - 33.0'	25.0' - 31.0'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	5506		84	86

REGISTERED CIVIL ENGINEER

November 17, 2006
PLANS APPROVAL DATE

Dallas Forester No. C37765 Exp. 12-31-06 CIVIL
REGISTERED PROFESSIONAL ENGINEER
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.

To accompany plans dated 7-30-07

NOTES:

1. Unless otherwise shown on the plans or specified in the special provision, the Contractor shall have the option of selecting the class of RCP and the type of installation to be used, provided the height of cover does not exceed the value shown for the RCP selected.
   Example: 24" RCP culvert with maximum cover of 19'-0" the options are:
   a) Class III or stronger with Installation Type 1.
   b) Class III Special or stronger with Installation Type 2.
   c) Class IV Special or stronger with Installation Type 3.
   Cover is defined as the maximum vertical distance from top of the pipe to finished grade within the length of any given culvert.
2. The class of RCP and Installation Type selected shall be the same throughout the length of any given culvert.
3. The "length of any culvert" is defined as the culvert between:
   a) Successive drainage structure (inlets, junction boxes, headwalls, etc.).
   b) A drainage structure and the inlet or outlet end of the culvert.
   c) The inlet and outlet end of the culvert when there are no intervening drainage structures.
4. Oval and arch shaped RCP shall not be used.
5. 1/25 OD Min, not less than 3".
6. Slurry cement backfill may be substituted for backfill in the outer bedding and haunch areas. If slurry is used the outer and middle beddings shall be omitted. Prior to installation the soil under the middle ⅓ of the outside diameter of the pipe shall be softened by scarifying or other means to a minimum depth of 1/25 OD, but not less than 3". Where slurry cement backfill is used clear distance to trench wall may be reduced as set forth in Section 19-3.062 of the Standard Specifications.
7. Backfill shall be placed full width of excavation except where dimensions are shown for backfill width or thickness. Dimensions shown are minimums.
8. Lower side shall be suitable material as determined by the Engineer. Otherwise it shall be considered unsuitable as set forth in Section 19-2.02 of the Standard Specifications. See Note 9.
9. Where the pipe is placed in a trench, if the trench walls are sloped at 5 vertical to 1 horizontal or steeper for at least 90 percent of the trench height or up to not less than 12" from the grading plane, the firmness of the soil in the lower side need not be considered.
10. Non-reinforced precast concrete pipe sizes 3'-0" or smaller may be placed under installation Types 1, 2 or 3.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

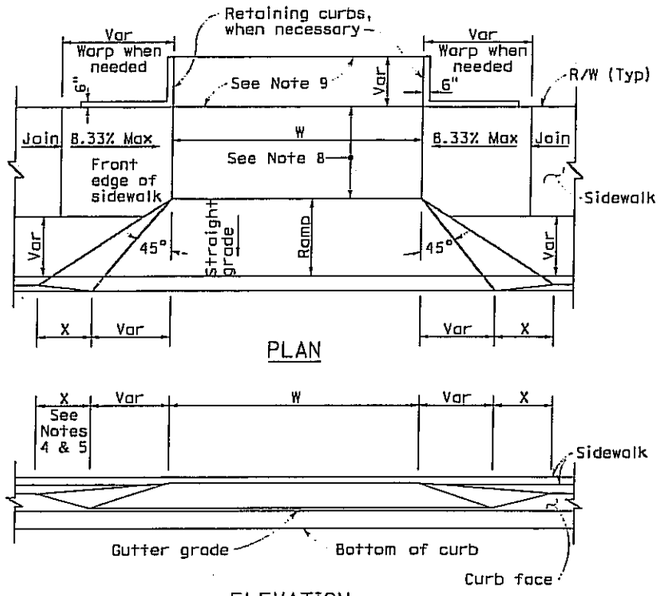
EXCAVATION AND BACKFILL CONCRETE PIPE CULVERTS

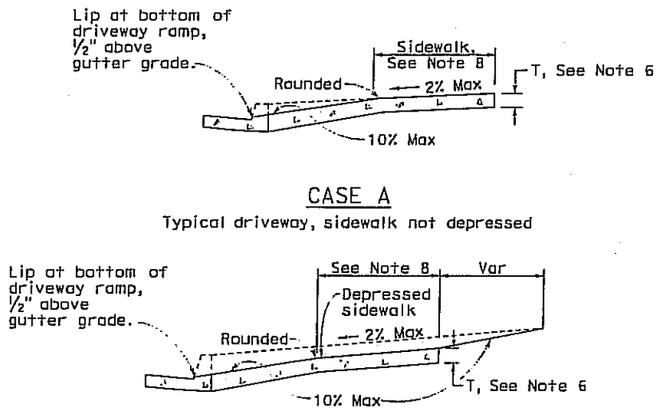
NO SCALE

RSP A62DA DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN A62DA DATED MAY 1, 2006 - PAGE 20 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A62DA

2006 REVISED STANDARD PLAN RSP A62DA





CURB QUANTITIES

TYPE	CUBIC YARDS PER LINEAR FOOT
A1-6	0.02585
A1-8	0.03084
A2-6	0.05903
A2-8	0.06379
A3-6	0.01036
A3-8	0.01435
B1-4	0.02185
B1-6	0.02930
B2-4	0.05515
B2-6	0.06171
B3-4	0.00641
B3-6	0.01074
B4	0.05709
D-4	0.04083
D-6	0.06804
E	0.06661

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	5506		85	86

REGISTERED CIVIL ENGINEER

November 17, 2006
PLANS APPROVAL DATE

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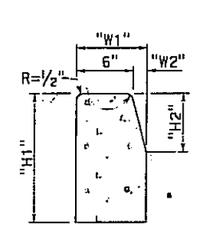
REGISTERED PROFESSIONAL ENGINEER — Michael Jansen — No. 47111 — Exp. 03-31-08 — CIVIL — STATE OF CALIFORNIA

To accompany plans dated 7-30-07

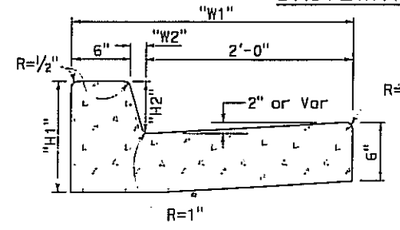
TABLE A

CURB TYPE	DIMENSIONS			
	"H1"	"H2"	"W1"	"W2"
A1-6	1'-2"	6"	7½"	1½"
A1-8	1'-4"	8"	8"	2"
A2-6	1'-0"	6"	2'-7½"	1½"
A2-8	1'-2"	8"	2'-8"	2"
A3-6	6"	5"	7¼"	1¼"
A3-8	8"	7"	7¾"	1¾"
B1-4	1'-0"	4"	7½"	2½"
B1-6	1'-2"	6"	9"	4"
B2-4	10"	4"	2'-7½"	2½"
B2-6	1'-0"	6"	2'-9"	4"
B3-4	4"	3"	7"	2"
B3-6	6"	5"	8½"	3½"
D-4	10"	4"	1'-6"	1'-1"
D-6	1'-0"	6"	2'-2"	1'-8"

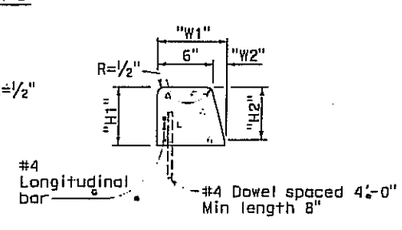
DRIVEWAYS



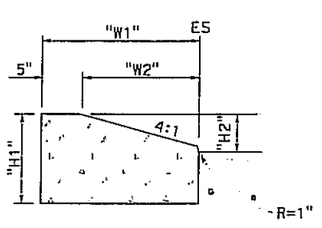
TYPE A1 CURBS
See Table A



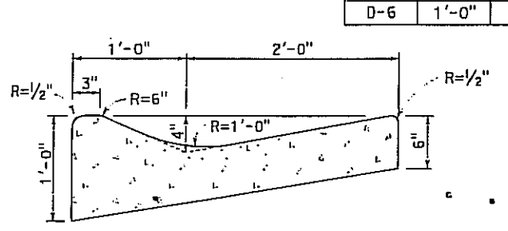
TYPE A2 CURBS
See Table A



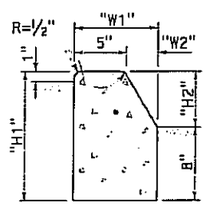
TYPE A3 CURBS
Superimposed on existing pavement
See Table A



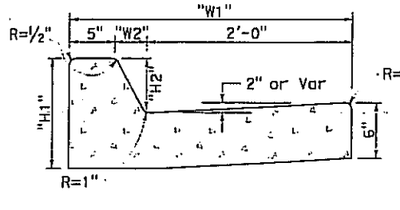
TYPE D CURBS
See Table A



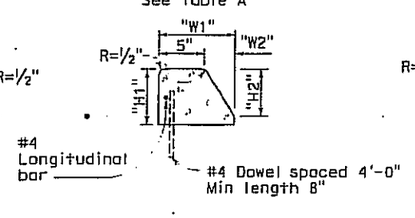
TYPE E CURB



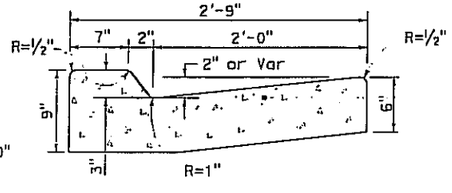
TYPE B1 CURBS
See Table A



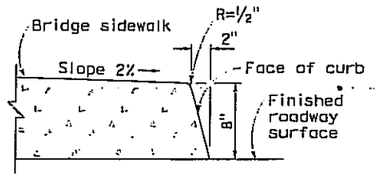
TYPE B2 CURBS
See Table A



TYPE B3 CURBS
Superimposed on existing pavement
See Table A



TYPE B4 CURBS



TYPE H CURB
On Bridges

CURBS

NOTES:

1. Case A driveway section typically applies.
2. Use Case B driveway section when ramp slopes would exceed 10% in Case A.
3. Use Case B driveway section when sidewalk cross slope would exceed 2% in Case A.
4. X=3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.
5. X is a variable when sidewalk is located where wheelchairs may traverse the surface. Slopes shall not exceed 8.33%.
6. Sidewalk and ramp thickness "T" at driveway shall be 4" for residental and 6" for commercial.
7. Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5'-0" from gutter line shall not exceed 15%. Reduce driveway ramp slope, not gutter slope, where required.
8. Minimum width of clear passageway for sidewalk shall be 4'-0".
9. Retaining curbs and acquisition of construction easement may be necessary for narrow sidewalks or curb heights in excess of 6".
10. Across the pedestrian route at curb ramp locations, the gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

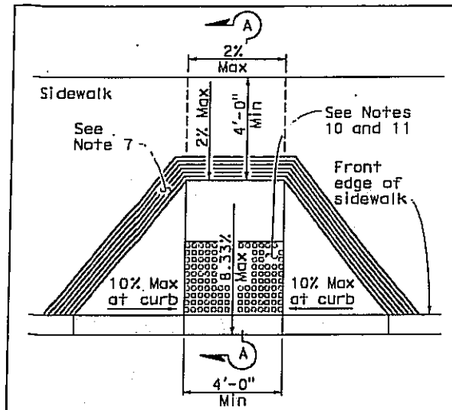
CURBS AND DRIVEWAYS

NO SCALE

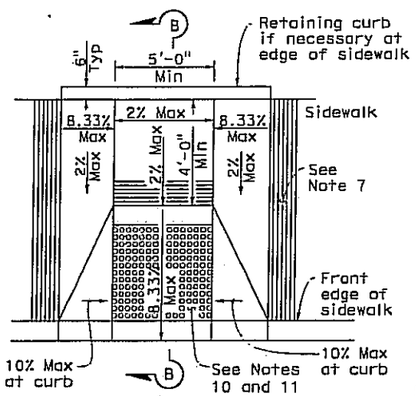
RSP A87A DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN A87A DATED MAY 1, 2006 - PAGE 113 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A87A

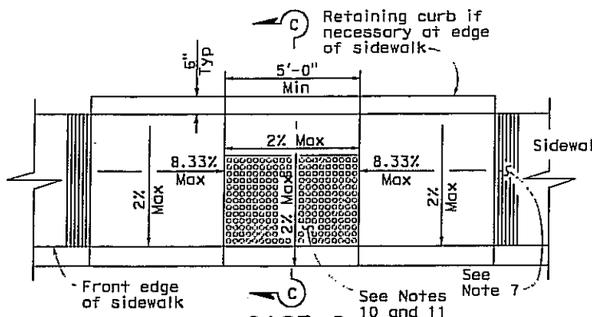
2006 REVISED STANDARD PLAN RSP A87A



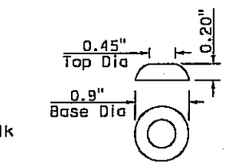
CASE A



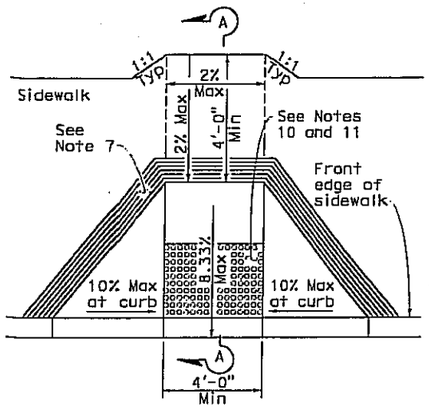
CASE B



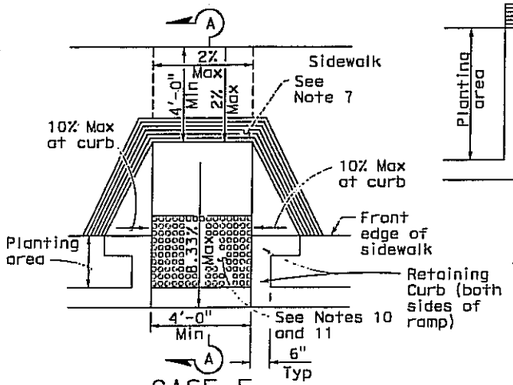
CASE C



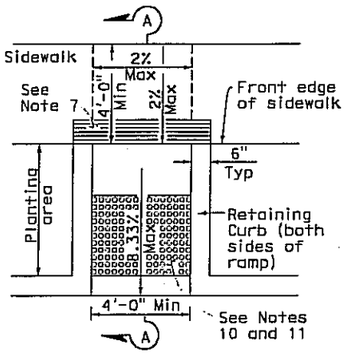
RAISED TRUNCATED DOME



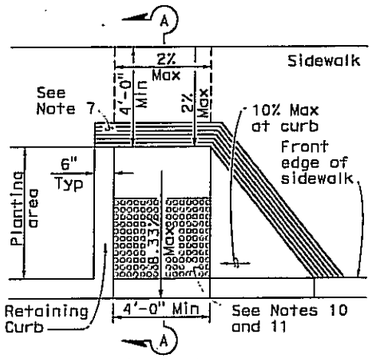
CASE D



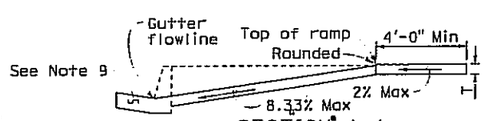
CASE E



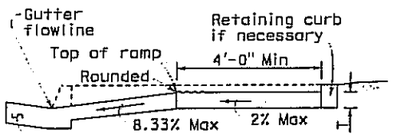
CASE F



CASE G
See Note 4

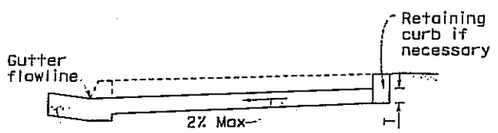


SECTION A-A

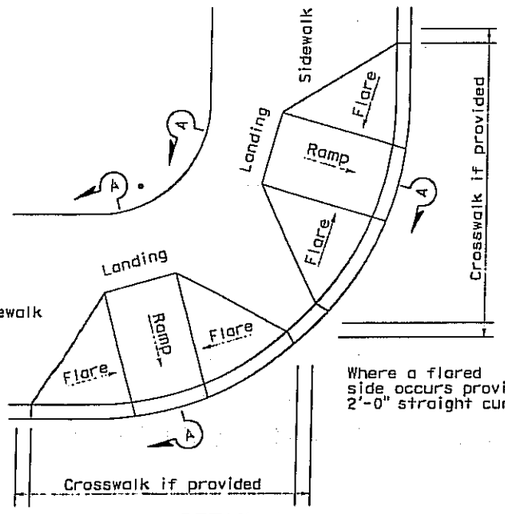


See Note 9 SECTION B-B

Depress entire sidewalk as required



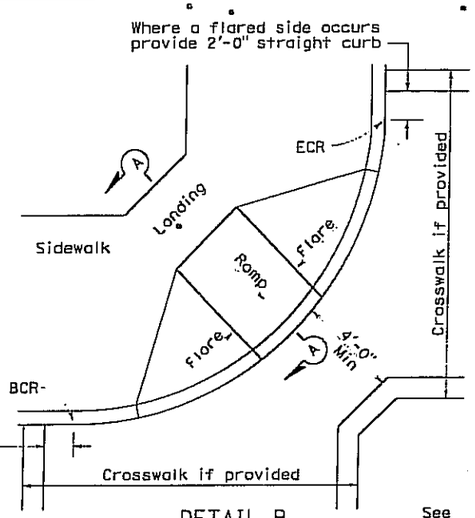
See Note 9 SECTION C-C



DETAIL A

TYPICAL TWO-RAMP CORNER INSTALLATION

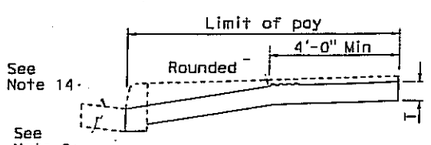
See Note 1



DETAIL B

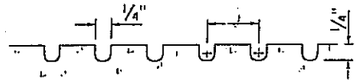
TYPICAL ONE-RAMP CORNER INSTALLATION

See Notes 1 and 3

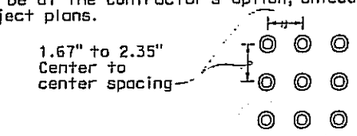


RETROFIT DETAIL

Existing curb and sidewalk



GROOVING DETAIL



RAISED TRUNCATED DOME PATTERN (IN-LINE)

DETECTABLE WARNING SURFACE

See Note 10

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	5506		86	86

H. David Cordova

REGISTERED CIVIL ENGINEER

September 1, 2006

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 — Hector David Cordova — No. C41957 — Exp. 3-31-08 — CIVIL — STATE OF CALIFORNIA

To accompany plans dated 7-30-07

NOTES:

1. As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate.
2. If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-0" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
3. When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
4. As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
5. If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'-0".
6. Side slope of ramp flares vary uniformly from a maximum of 10% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
7. The curb ramp shall be outlined, as shown, with a 1'-0" wide border with 1/4" grooves approximately 3/4" on center. See grooving detail.
8. Transitions from ramps and landing to walks, gutters or streets shall be flush and free of abrupt changes.
9. Maximum slopes of adjoining gutters, the road surface immediately adjacent to the curb ramp or accessible route shall not exceed 5 percent within 4'-0" of the top and bottom of the curb ramp.
10. Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable Warning Surfaces shall conform to the details on this plan and the requirements in the Special Provisions.
11. The edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
12. Sidewalk and ramp thickness, "T", shall be 3½" minimum.
13. Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
14. For retrofit conditions, removal and replacement of curb apron will be at the Contractor's option, unless otherwise shown on project plans.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

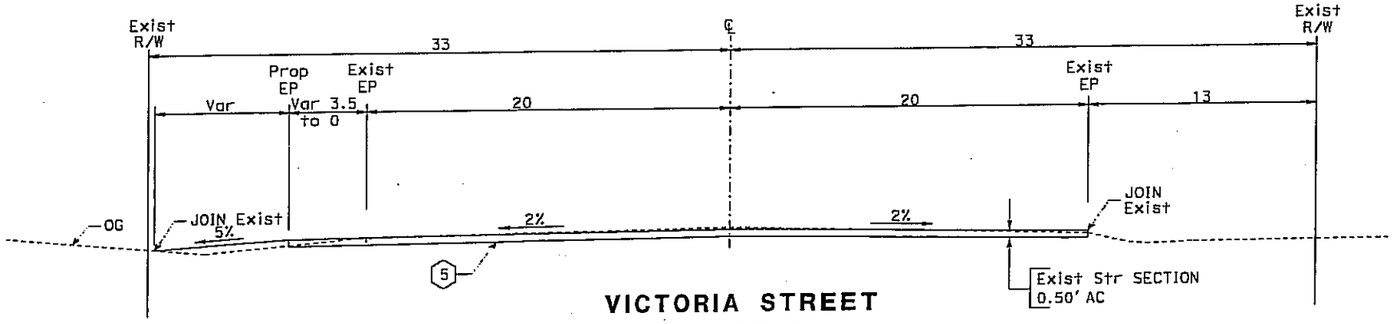
CURB RAMP DETAILS

NO SCALE

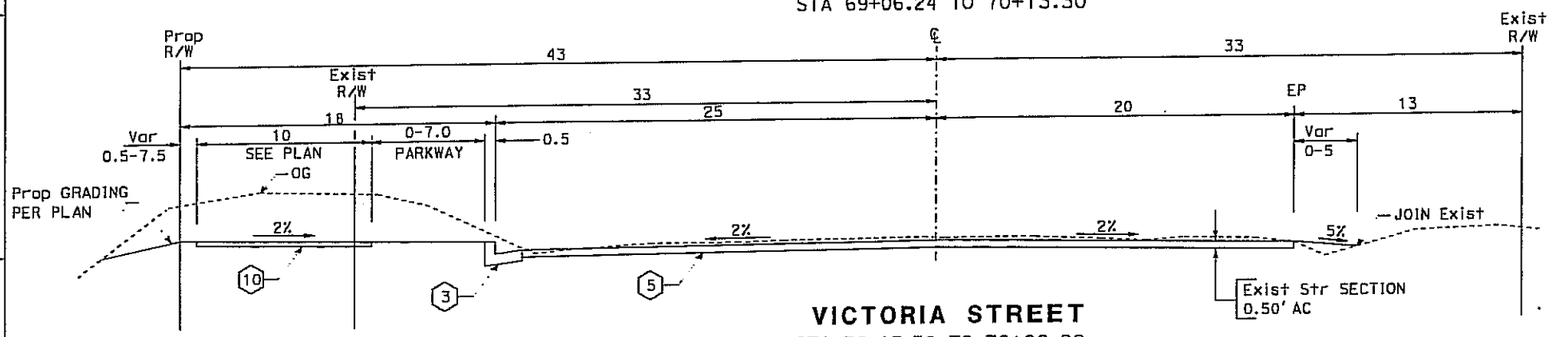
RSP A88A DATED SEPTEMBER 1, 2006 SUPERSEDES STANDARD PLAN A88A DATED MAY 1, 2006 - PAGE 115 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A88A

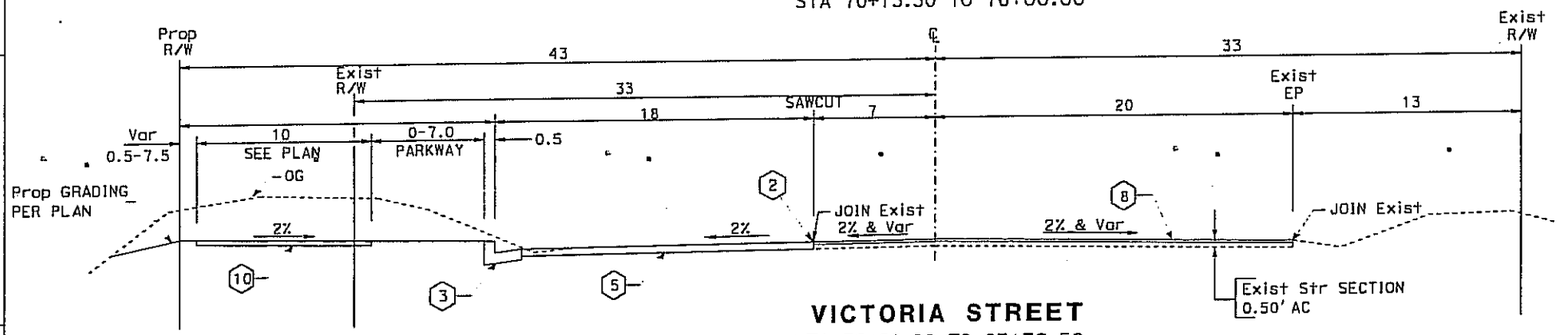
2006 REVISED STANDARD PLAN RSP A88A



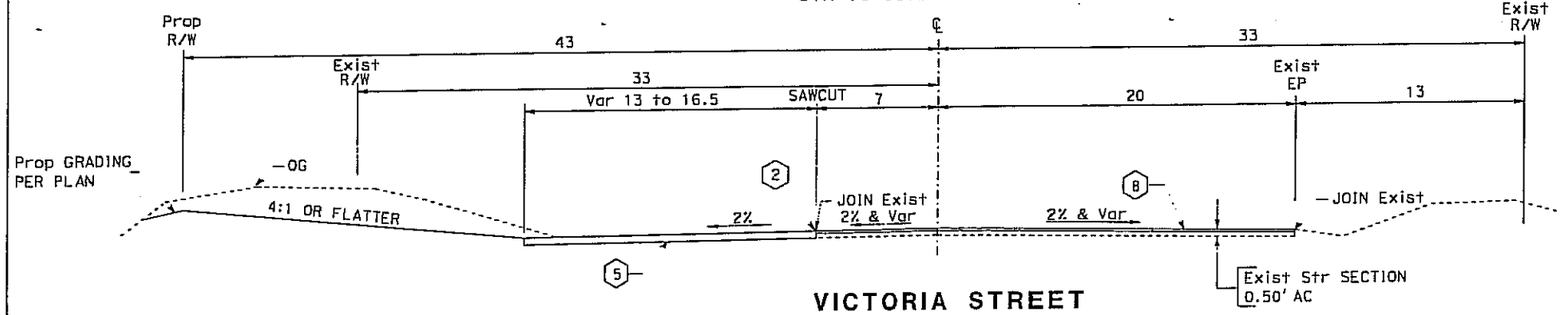
VICTORIA STREET
STA 69+06.24 TO 70+13.30



VICTORIA STREET
STA 70+13.30 TO 76+00.00



VICTORIA STREET
STA 76+00.00 TO 83+32.50



VICTORIA STREET
STA 83+32.50 TO 84+00.00

NOTES:

1. DIMENSIONS OF THE STRUCTURAL SECTIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATIONS AS SHOWN AS DIRECTED BY THE ENGINEER.

CONSTRUCTION NOTES

(2) SAWCUT Exist AC PAVEMENT.

(3) CONSTRUCT 8" CURB AND GUTTER PER Det ON SHEET C-4 (CITY OF FONTANA Std PLAN 1000).

(5) REMOVE Exist AC AND CONSTRUCT 0.50' AC (TYPE A) OVER NATIVE GROUND.

(8) COLD PLANE 0.15' AC PAVEMENT AND OVERLAY 0.15' AC (TYPE A).

(10) CONSTRUCT SW PER Det ON SHEET C-5 (CITY OF FONTANA Std PLAN 1006).

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

TYPICAL CROSS SECTIONS

NO SCALE

X-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		2	86

6-21-07
REGISTERED CIVIL ENGINEER DATE

C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL

7-30-07
PLANS APPROVAL DATE

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REVISED BY	DATE REVISED
J.W.	S.N.
CALCULATED-DESIGNED BY	CHECKED BY

DESIGN OVERSIGHT SERGIO AVILA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

06-21-07

CU 08230 | EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		3	86

REGISTERED CIVIL ENGINEER — DATE 5-07-07

PLANS APPROVAL DATE 7-30-07

REGISTERED PROFESSIONAL ENGINEER C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

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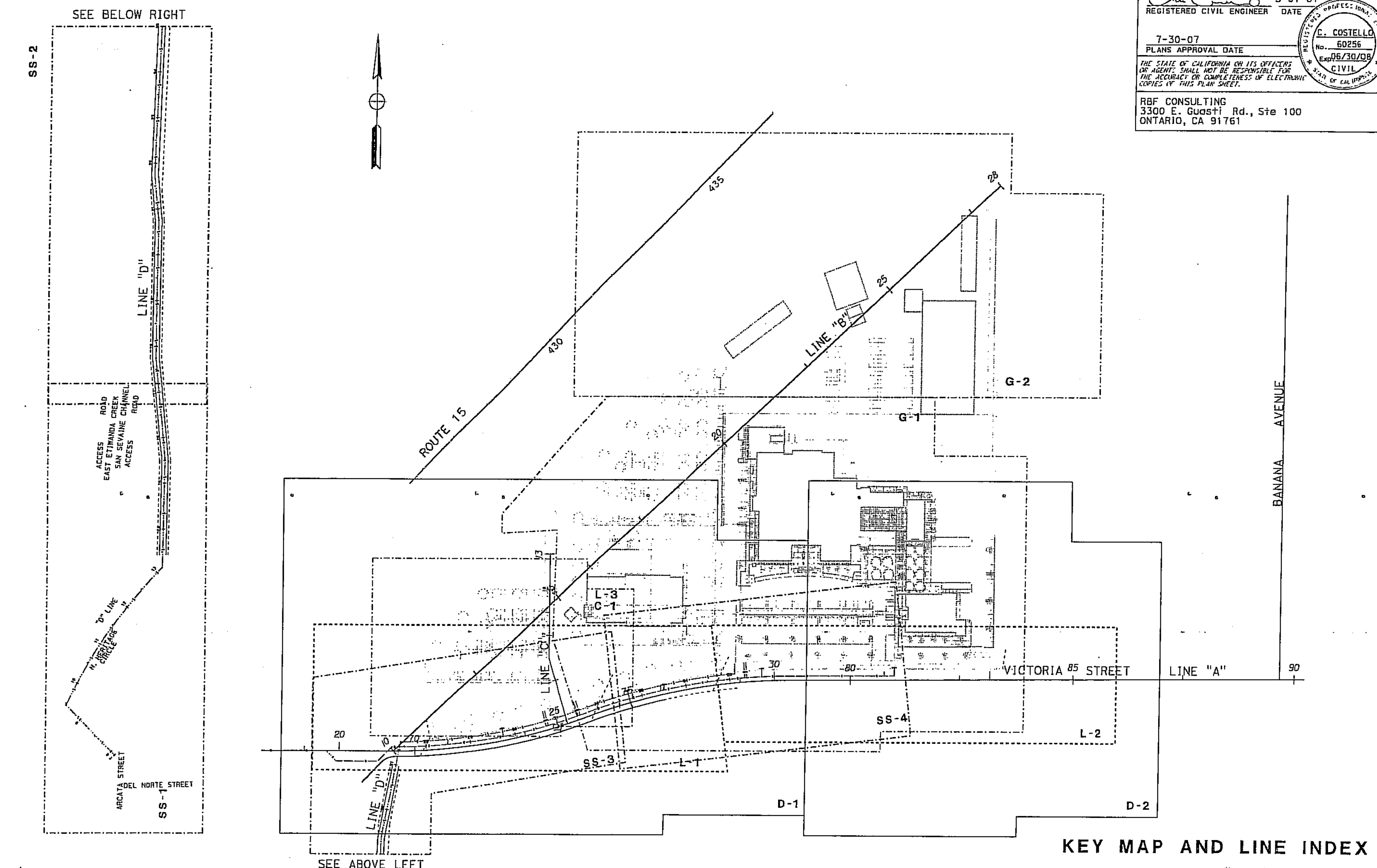

KEY MAP AND LINE INDEX

SCALE 1"=100'

THIS PLAN IS ACCURATE FOR SITE WORK ONLY

K-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN OVERSIGHT	CALCULATED-DESIGNED BY	J.W.	REVISED BY
SERGIO AVILA	CHECKED BY	S.N.	DATE REVISED

CU 08230 | EA 3770U1

05-03-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		4	86

6-21-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL

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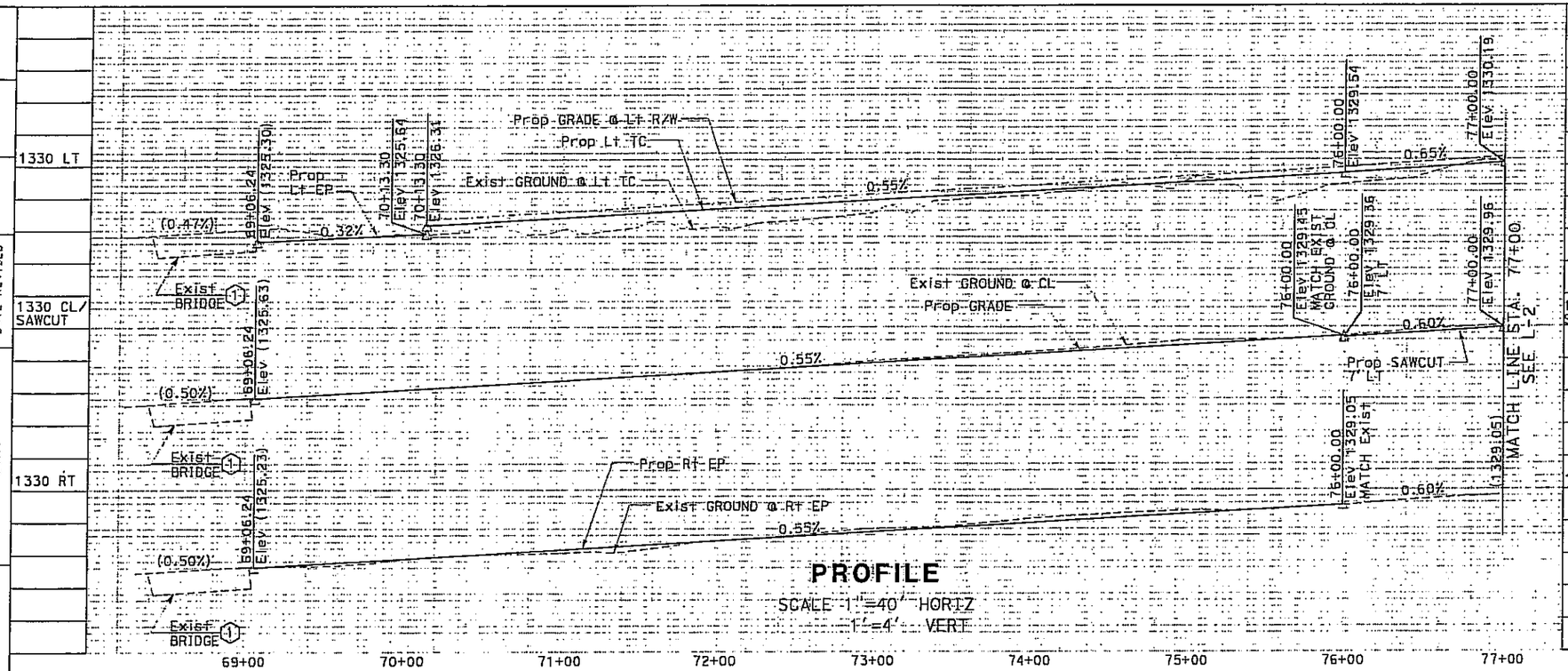
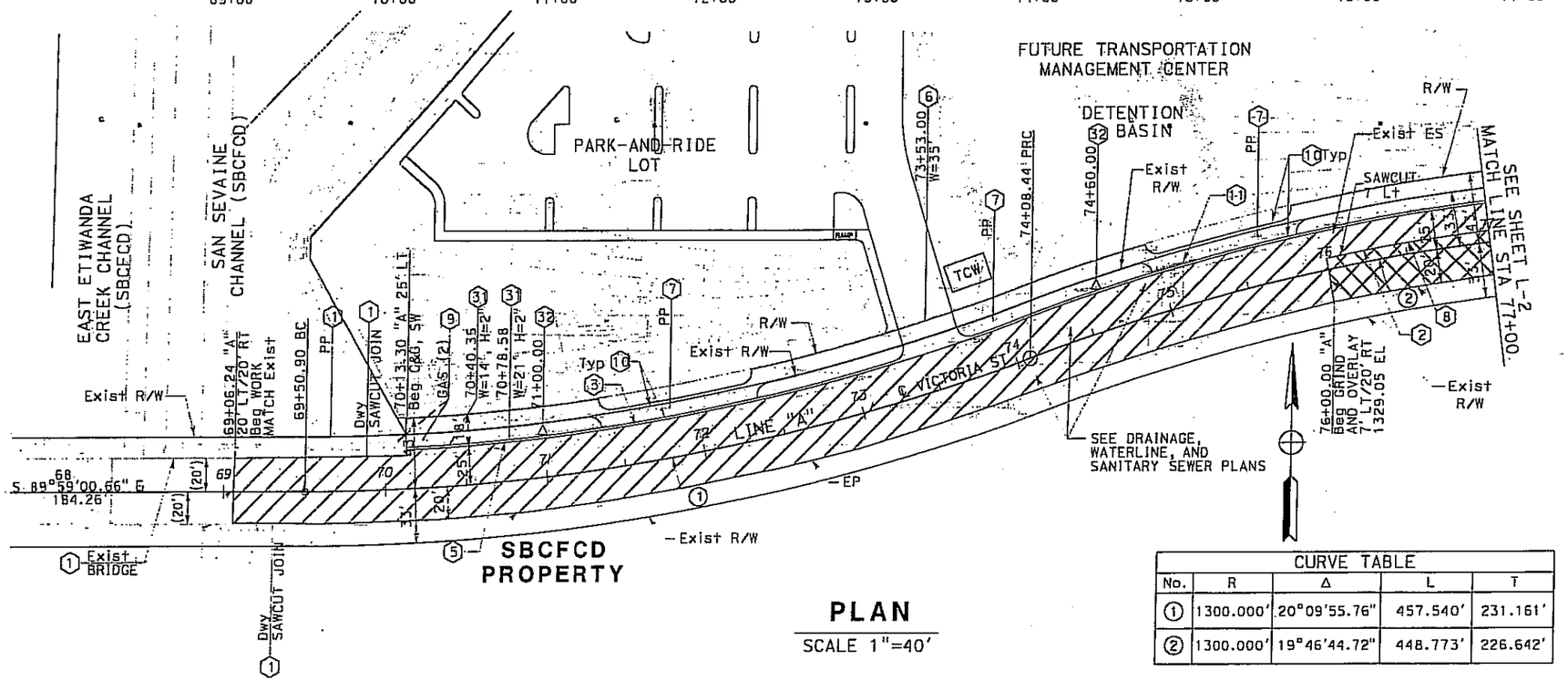
ONTARIO, CA 91761

REVISED BY | DATE REVISED
J.W. | S.N.
CALCULATED-DESIGNED BY | CHECKED BY



PROFILE

SCALE 1"=40' HORIZ
1"=4' VERT



PLAN

SCALE 1"=40'

CURVE TABLE				
No.	R	Δ	L	T
(1)	1300.000'	20°09'55.76"	457.540'	231.161'
(2)	1300.000'	19°46'44.72"	448.773'	226.642'

CONSTRUCTION NOTES

(1) PROTECT IN PLACE.
(2) SAWCUT Exist AC PAVEMENT.
(3) CONSTRUCT 8" CURB AND GUTTER PER Det ON SHEET C-4 (CITY OF FONTANA Std PLAN 1000).
(5) REMOVE Exist AC AND RECONSTRUCT 0.50' AC OVER NATIVE PER SPECS.
(6) CONSTRUCT COMMERCIAL Dwy PER Det ON SHEET C-4 (CITY OF FONTANA Std PLAN 1002).
(7) RELOCATE BY OTHERS.
(8) COLD PLANE Exist 0.15' AC PAVEMENT AND OVERLAY 0.15' AC PAVEMENT.
(9) Adj UTILITY COVER TO GRADE PER Det ON SHEET C-6 (CITY OF FONTANA Std PLAN 6000).
(10) CONSTRUCT SW PER Det ON SHEET C-5 (CITY OF FONTANA Std PLAN 1006).
(11) REMOVE DRAINAGE FACILITY (TRIPLE 36" CSP AND HEADWALLS).
(31) CONSTRUCT LOCAL DEPRESSION (CASE B) PER Det ON SHEET DD-1 (CITY OF FONTANA Std PLAN 3003).
(32) INSTALL 16000 LUMEN HPSV STREET LIGHT (150 WATT; #15) 30 FT LUMINAIRE HEIGHT (CITY OF FONTANA Std PLAN 404).

LEGEND

Δ STREET LIGHT FOUNDATION
COLD PLANE 0.15' AC AND OVERLAY
REMOVE Exist AC and PLACE 0.5' AC (TYPE A)
TCW TEMPORARY Conc WASHOUT FACILITY

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

LAYOUT

69+06.24 TO 77+00

SCALE AS SHOWN

L-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN OVERSIGHT: SERGIO AVILA
Caltrans

LAST REVISION 06-21-07

BORDER LAST REVISED 11-1-2006

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME = DGN FILE =

CU 08230 | EA 377001

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		5	86

6-21-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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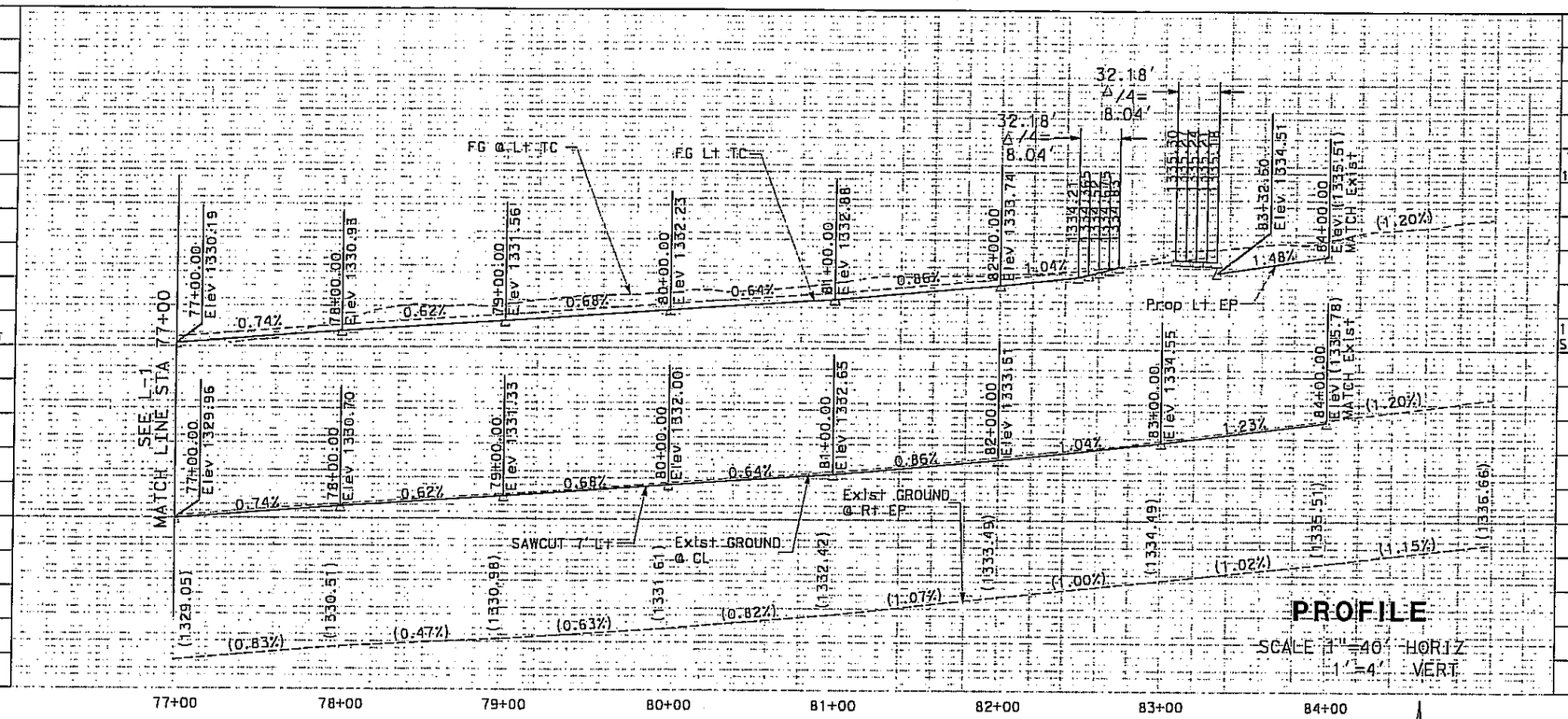
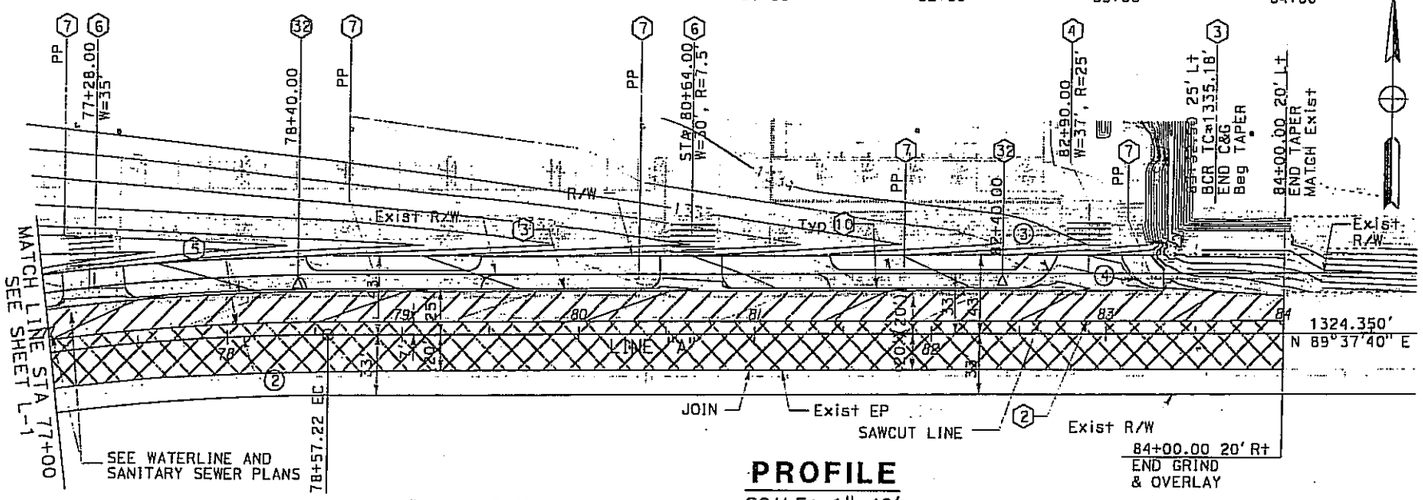
J.W. | S.N. | REVISED By: | DATE REVISED | CALCULATED-DESIGNED By: | CHECKED By:

DESIGN OVERSIGHT: SERGIO AVILA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

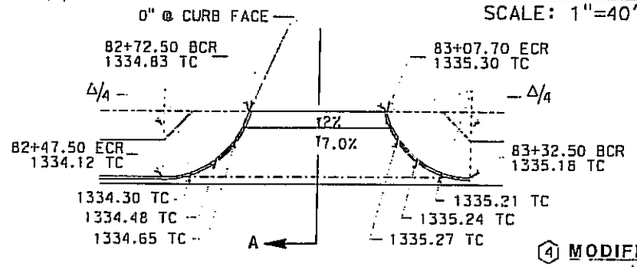


PROFILE
SCALE 1"=40' HORIZ
1"=4' VERT

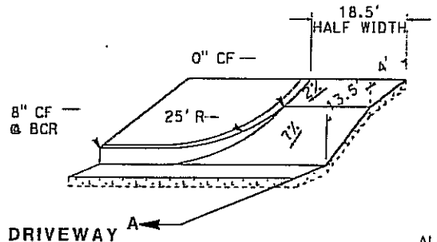


PROFILE
SCALE: 1"=40'

CURVE TABLE				
No.	R	Δ	L	T
②	1300.000'	19°46'44.72"	448.773'	226.642'
③	25.00'	73°44'23.26"	32.175'	18.750'
④	25.00'	73°44'23.26"	32.175'	18.750'



④ MODIFIED DRIVEWAY
NO SCALE



CONSTRUCTION NOTES

(2) SAWCUT Exist AC PAVEMENT.

(3) CONSTRUCT 8" CURB AND GUTTER PER Det ON SHEET C-4 (CITY OF FONTANA Std PLAN 1000).

(4) CONSTRUCT MODIFIED DRIVEWAY PER DETAIL THIS SHEET.

(5) REMOVE Exist AC AND CONSTRUCT 0.50' AC (TYPE A).

(6) CONSTRUCT COMMERCIAL Dwy PER Det ON SHEET C-4 (CITY OF FONTANA Std PLAN 1002).

(7) RELOCATE BY OTHERS.

(10) CONSTRUCT SW PER Det ON SHEET C-5 (CITY OF FONTANA Std PLAN 1006).

(32) INSTALL 16000 LUMEN HPSV STREET LIGHT (150 WATT; #15) 30 FT LUMINAIRE HEIGHT (CITY OF FONTANA Std PLAN 404).

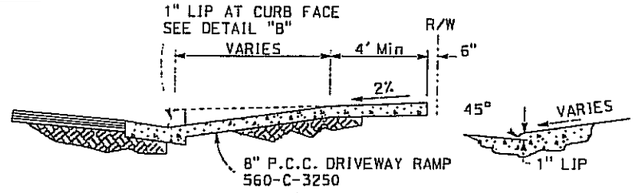
LEGEND

Δ STREET LIGHT FOUNDATION

COLD PLANE 0.15' AC AND OVERLAY

REMOVE Exist AC AND PLACE 0.5' AC (TYPE A)

TEMPORARY Const ENTRANCE



SECTION A-A
NO SCALE

DETAIL B
NO SCALE

LAYOUT
77+00 TO 84+00
SCALE AS SHOWN

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

L-2

CU 08230 | EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		6	86

REGISTERED CIVIL ENGINEER 6-21-07 DATE

7-30-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

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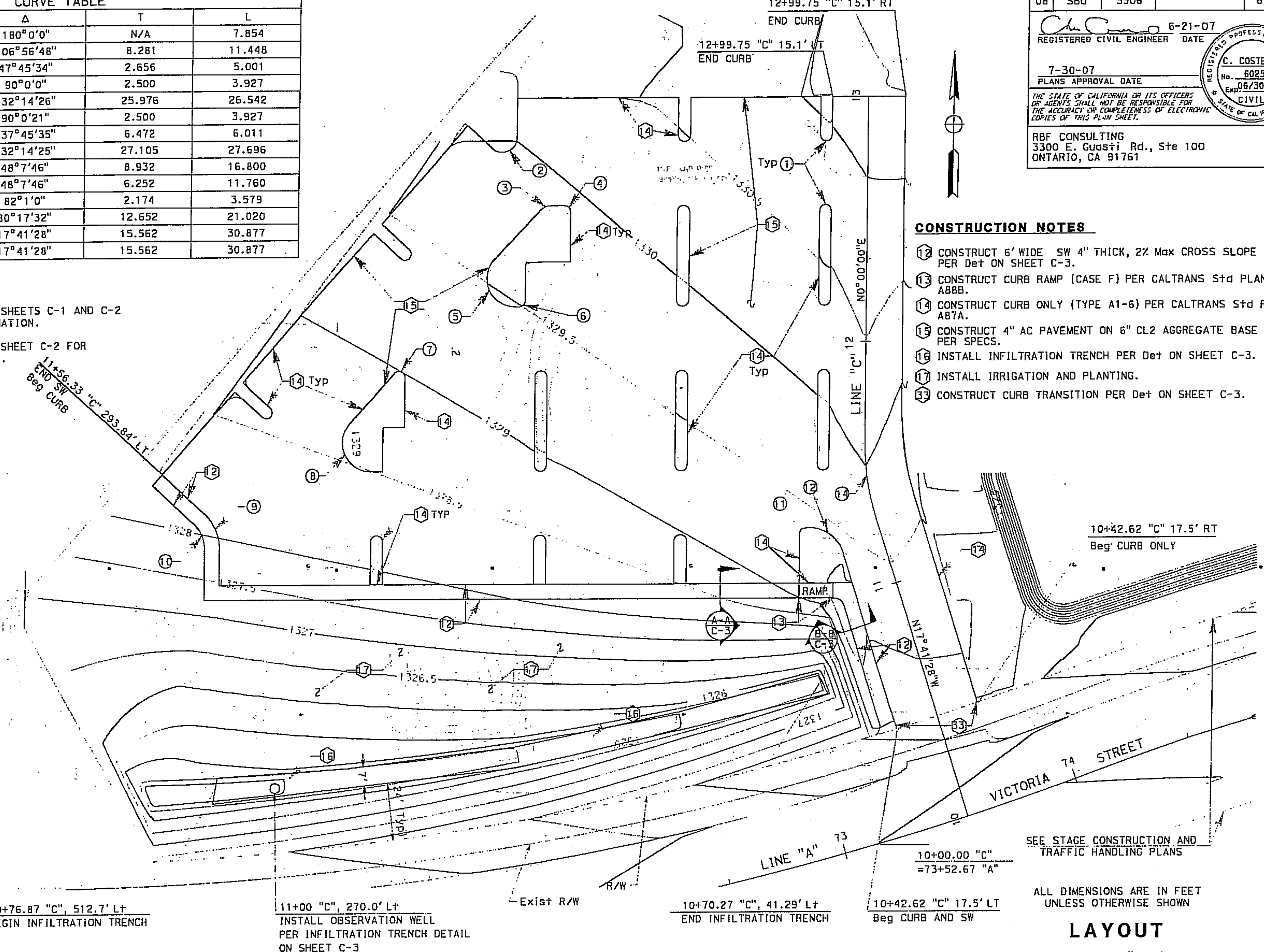
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

CURVE TABLE

No.	R	Δ	T	L
1	2.500	180°0'0"	N/A	7.854
2	6.133	106°56'48"	8.281	11.448
3	6.000	47°45'34"	2.656	5.001
4	2.500	90°0'0"	2.500	3.927
5	11.500	132°14'26"	25.976	26.542
6	2.500	90°0'21"	2.500	3.927
7	2.500	137°45'35"	6.472	6.011
8	12.000	132°14'25"	27.105	27.696
9	20.000	48°7'46"	8.932	16.800
10	14.000	48°7'46"	6.252	11.760
11	2.500	82°1'0"	2.174	3.579
12	15.000	80°17'32"	12.652	21.020
13	100.000	17°41'28"	15.562	30.877
14	100.000	17°41'28"	15.562	30.877

NOTES:

1. SEE CONSTRUCTION DETAIL SHEETS C-1 AND C-2 FOR CONTROL POINT INFORMATION.
2. SEE CONSTRUCTION DETEAL SHEET C-2 FOR STREET IMPROVEMENT NOTES.



CONSTRUCTION NOTES

- (12) CONSTRUCT 6' WIDE SW 4" THICK, 2% Max CROSS SLOPE PER Det ON SHEET C-3.
- (13) CONSTRUCT CURB RAMP (CASE F) PER CALTRANS Std PLAN A88B.
- (14) CONSTRUCT CURB ONLY (TYPE A1-6) PER CALTRANS Std PLAN A87A.
- (15) CONSTRUCT 4" AC PAVEMENT ON 6" CL2 AGGREGATE BASE PER SPECS.
- (16) INSTALL INFILTRATION TRENCH PER Det ON SHEET C-3.
- (17) INSTALL IRRIGATION AND PLANTING.
- (33) CONSTRUCT CURB TRANSITION PER Det ON SHEET C-3.

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

LAYOUT

SCALE 1"=20'

L-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT SERGIO AVILA
CALCULATED-DESIGNED BY J.W. CHECKED BY S.N.
REVISED BY DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		7	86

5-07-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER C. COSTELLO No. 60256 Exp. 06/30/06 CIVIL STATE OF CALIFORNIA

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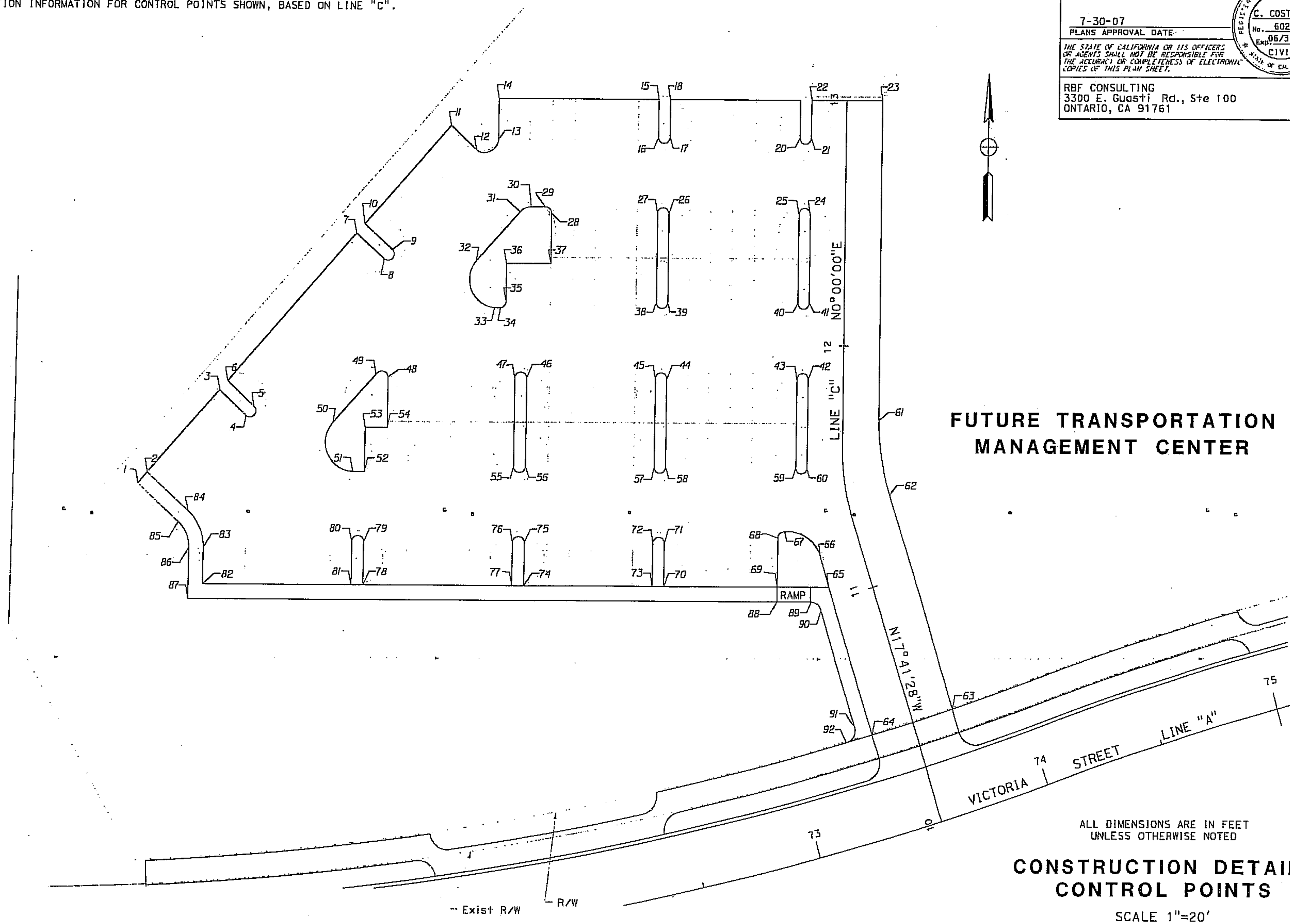
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

NOTE:

1. SEE CONSTRUCTION DETAIL SHEET C-2 FOR STATION/OFFSET, COORDINATE AND ELEVATION INFORMATION FOR CONTROL POINTS SHOWN, BASED ON LINE "C".



ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED

CONSTRUCTION DETAILS CONTROL POINTS

SCALE 1"=20'

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN OVERSIGHT	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
SERGIO AVILA	J.W.	S.N.		

REGISTERED CIVIL ENGINEER 5-07-07 DATE

PLANS APPROVAL DATE 7-30-07

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REGISTERED PROFESSIONAL ENGINEER C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

STREET IMPROVEMENT NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THESE PLANS, THE CITY OF FONTANA STANDARD PLANS, THE CONTRACT PROVISIONS AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREEN BOOK"). ALL REFERENCE SPECIFICATIONS AND STANDARDS SHALL BE THE LATEST EDITION UNLESS OTHERWISE NOTED.
2. WHEN A TECHNICAL CONFLICT IS FOUND TO EXIST IN THE CONTRACT DOCUMENTS THAT CAN NOT BE RESOLVED BY REFERENCE TO PRECEDENCE PROVISIONS IN THE "GREEN BOOK", THE CONTRACTOR SHALL IMMEDIATELY REPORT SAID CONFLICT TO THE ENGINEER FOR RESOLUTION.
3. ALL MATERIALS AND METHODS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.
4. CONSTRUCTION PERMITS SHALL BE OBTAINED FROM THE CITY OF FONTANA COMMUNITY DEVELOPMENT DEPARTMENT, ENGINEERING DIVISION PRIOR TO THE START OF ANY WORK. INSPECTION COORDINATION SHALL BE REQUESTED AT LEAST TWO WORKING DAYS PRIOR TO THE START OF ANY WORK IN PUBLIC RIGHT-OF-WAY WITHIN THE CITY LIMITS. CALL (909) 350-7610.
5. THE CONTRACTOR SHALL CONFORM TO ALL TRAFFIC CONTROL POLICIES, METHODS AND PROCEDURES DESCRIBED IN THE STATE OF CALIFORNIA MANUAL OF TRAFFIC CONTROLS, LATEST NON-METRIC EDITION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN BARRICADES, DELINEATORS OR OTHER TRAFFIC CONTROL DEVICES AT ALL TIMES.
7. THE CONTRACTOR SHALL OBTAIN A PERMIT TO PERFORM EXCAVATION OR TRENCH WORK FOR TRENCHES 5 FEET OR GREATER IN DEPTH FROM THE CALIFORNIA STATE DIVISION OF INDUSTRIAL SAFETY.
8. THE WALLS AND FACES OF ALL EXCAVATIONS GREATER THAN FIVE (5) FEET IN DEPTH SHALL BE GUARDED BY SHORING, SLOPING OF THE GROUND OR OTHER APPROVED MEANS PURSUANT TO THE REQUIREMENTS OF THE DIVISION OF INDUSTRIAL SAFETY OF THE STATE OF CALIFORNIA. TRENCHES LESS THAN FIVE (5) FEET SHALL ALSO BE GUARDED WHEN THE POTENTIAL EXISTS FOR GROUND MOVEMENT.
9. NO MATERIAL OR EQUIPMENT SHALL BE STORED IN THE PUBLIC RIGHT OF WAY WITHOUT OBTAINING A SEPARATE PERMIT FOR THAT PURPOSE.
10. THE LOCATIONS OF UTILITIES SHOWN HAVE BEEN DETERMINED FROM AVAILABLE INFORMATION, HOWEVER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE, IN THE FIELD, THE TRUE LOCATION AND ELEVATION OF ANY EXISTING UTILITIES, AND TO EXERCISE PROPER PRECAUTION TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT AT 1-800-227-2600 TWO WORKING DAYS BEFORE EXCAVATION.
11. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION WITH ALL UTILITY COMPANIES INCLUDING, BUT NOT LIMITED TO, GAS, TELEPHONE, ELECTRIC, CABLE TELEVISION, LANDSCAPING, LANDSCAPE IRRIGATION, DOMESTIC WATER, RECLAIMED WATER, SEWER, STORM DRAIN, FLOOD CONTROL AND CALTRANS. ALL UTILITY COMPANIES SHALL BE GIVEN TWO WORKING DAYS NOTICE PRIOR TO WORK AROUND THEIR FACILITIES.
12. THE CONTRACTOR SHALL NOT OPERATE ANY FIRE HYDRANT OR WATER MAIN VALVES WITHOUT APPROPRIATE AGENCY AUTHORIZATION. CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE WATER COMPANY FOR VALVE OPERATION AND WATER REQUIREMENTS.
13. CURVE DATA REFERS TO THE FACE OF CURB.
14. STATIONING REFERS TO THE CENTERLINE OF STREETS EXCEPT WHERE OTHERWISE NOTED.
15. ADEQUATE CONSTRUCTION CONTROL STAKES SHALL BE SET BY THE ENGINEER TO ENABLE THE CONTRACTOR TO CONSTRUCT THE WORK TO THE PLAN GRADES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF BENCHMARKS AND CONSTRUCTION CONTROL STAKING DURING CONSTRUCTION.
16. THE CONTRACTOR SHALL NOT DISTURB EXISTING SURVEY MONUMENTS, MONUMENT TIES OR BENCH MARKS WITHOUT PRIOR NOTIFICATION TO THE ENGINEER.
17. REMOVAL AND REPLACEMENT OF EXISTING SURVEY CONTROL, INCLUDING SURVEY MONUMENTS, MONUMENT TIES AND BENCH MARKS, SHALL BE DONE BY A REGISTERED CIVIL ENGINEER OR LICENSED LAND SURVEYOR. SURVEY MONUMENTS THAT WILL BE DESTROYED AS A RESULT OF THIS CONSTRUCTION SHALL BE REPLACED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER ONE WEEK PRIOR TO CONSTRUCTION SO THAT TIES TO MONUMENTS CAN BE ESTABLISHED FOR LATER REPLACEMENT OF THE MONUMENT.
18. THE CONTRACTOR SHALL MAINTAIN ACCESS FOR LOCAL RESIDENTS AND BUSINESSES AT ALL TIMES. A MINIMUM 12 FOOT LANE SHALL BE MAINTAINED AT ALL TIMES IN THE CONSTRUCTION AREA FOR RESIDENTS AND EMERGENCY VEHICLES.
19. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AN EFFECTIVE MEANS OF DUST CONTROL, INCLUDING ADEQUATE WATERING, AT ALL TIMES.
20. ALL GRADING OPERATIONS SHALL BE DISCONTINUED WHEN SUSTAINED WIND VELOCITIES EXCEED 25 MILES PER HOUR.
21. THE CONTRACTOR SHALL NOT CAUSE ANY EXCAVATED MATERIAL, MUD, SILT OR DEBRIS TO BE DEPOSITED ONTO PUBLIC OR PRIVATE PROPERTY ADJACENT TO THE RIGHT OF WAY DURING CONSTRUCTION WITHOUT PRIOR WRITTEN APPROVAL.
22. NO TRENCH BACKFILL SHALL TAKE PLACE WITHOUT PRIOR APPROVAL OF THE INSPECTOR.
23. A GEOTECHNICAL ENGINEER SHALL CERTIFY ALL BACKFILL COMPACTION. FAILURE TO OBTAIN THE REQUIRED DENSITY SHALL REQUIRE RE-WORKING OF THAT PORTION OF THE WORK UNTIL THE SPECIFIED DENSITY IS OBTAINED.
24. CARE SHOULD BE TAKEN TO PREVENT GRADES, DITCHES, AND SWALES FROM UNDERMINING STREET IMPROVEMENTS. UPON INSPECTION OF THE SITE, THE ENGINEER MAY REQUIRE TEMPORARY NON-ERODEABLE SWALES ENTERING OR LEAVING IMPROVEMENTS.
25. THE FINAL LOCATION AND WIDTH OF DRIVEWAY APPROACH APRONS SHALL BE APPROVED AT THE TIME OF CONSTRUCTION AND SHALL CONFORM TO THE CITY OF FONTANA STANDARD DETAILS.
26. ALL EXPOSED CONCRETE SURFACES SHALL CONFORM IN GRADE, COLOR AND FINISH TO MATCH EXISTING CONCRETE.
27. THE SEWER CONTRACTOR SHALL STAMP AN "S" IN THE FACE OF THE CURB AT THE LOCATION OF THE SEWER LATERAL.

STREET IMPROVEMENT NOTES (Cont)

28. NO CONCRETE SHALL BE PLACED UNTIL THE FORMS AND REINFORCING STEEL HAVE BEEN PLACED, INSPECTED AND APPROVED.
29. ALL UNDERGROUND UTILITIES SHALL BE INSTALLED, TESTED AND APPROVED PRIOR TO PAVING OF STREETS.
30. APPROVED SOIL STERILANT IS REQUIRED UNDER ALL NEW ASPHALT PAVEMENT PRIOR TO PLACEMENT.
31. PAVEMENT STRUCTURAL SECTIONS SHOWN ARE MINIMUM AND SUBJECT TO REVISION AND APPROVAL OF THE ENGINEER AS DETERMINED BY SOILS TESTS TAKEN AFTER COMPLETION OF ROUGH GRADING.
32. ACTUAL THICKNESS OF A.C. PAVEMENT AND/OR BASE COURSE MATERIAL FOR STRUCTURAL STREET SECTIONS SHALL BE RECOMMENDED BY A GEOTECHNICAL REPORT AND SUBMITTED TO THE CITY OF FONTANA FOR APPROVAL UPON COMPLETION OF ROUGH GRADING.
33. ALL MANHOLES, CLEANOUT FRAMES, COVERS AND VALVE BOXES SHALL BE RAISED TO FINISHED GRADE BY THE PAVING CONTRACTOR UPON COMPLETION OF PAVING.
34. UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL RESTORE ALL SIGNING, STRIPING, BARRICADES, AND OTHER TRAFFIC CONTROL DEVICES TO THE SATISFACTION OF THE ENGINEER.
35. CONTRACTOR SHALL RELOCATE AND/OR REPLACE LANDSCAPING, SPRINKLERS AND SIDEWALKS AFFECTED BY THE CONSTRUCTION TO THE SATISFACTION OF THE ENGINEER.
36. AS-BUILT DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER OF RECORD, WHO SHALL PROVIDE RECORD DRAWINGS TO THE ENGINEER.

Offset Point	LINE "C" Station	- - - - - - Offset Point - - - Offset	Elevation	Description
1	11+55.24	LT 298.0112	1328.1555	FS
2	11+56.33	LT 293.8445	1328.2079	FL
3	11+80.61	LT 263.6203	1328.6133	FL
4	11+70.27	LT 252.0728	1328.5550	FL
5	11+73.99	LT 248.7358	1328.6010	FL
6	11+84.34	LT 260.2777	1328.6580	FL
7	12+44.63	LT 206.2396	1329.4028	FL
8	12+34.31	LT 194.6718	1329.3700	FL
9	12+38.03	LT 191.3348	1329.4160	FL
10	12+48.33	LT 202.8229	1329.4492	FL
11	12+88.59	LT 166.8338	1330.1110	FL
12	12+78.70	LT 155.8018	1329.9340	FL
13	12+83.03	LT 146.5808	1330.0140	FL
14	12+99.75	LT 146.5806	1330.3220	FL
15	12+99.75	LT 79.5951	1330.6040	FL
16	12+84.25	LT 79.5948	1330.4700	FL
17	12+84.25	LT 74.5951	1330.5100	FL
18	12+99.75	LT 74.5948	1330.6420	FL
20	12+84.23	LT 20.1014	1330.9282	FL
21	12+84.25	LT 15.1026	1330.9690	FL
22	12+99.75	LT 14.9988	1331.1070	FL
23	12+99.75	RT 15.1018	1331.4050	FL
24	12+53.25	LT 15.1026	1330.6950	FL
25	12+53.25	LT 20.1026	1330.6568	FL
26	12+53.25	LT 74.5951	1330.2602	FL
27	12+53.48	LT 79.5850	1330.2270	FL
28	12+53.25	LT 124.5904	1329.9274	FL
29	12+55.75	LT 127.0904	1329.9304	FL
30	12+55.75	LT 132.6739	1329.8995	FL
31	12+53.79	LT 137.1432	1329.8590	FL
32	12+33.69	LT 155.3844	1329.6190	FL
33	12+14.78	LT 147.4020	1329.4700	FL
34	12+14.76	LT 144.9766	1329.4900	FL
35	12+17.30	LT 142.5888	1329.5400	FL
36	12+32.75	LT 142.5888	1329.6850	FL
37	12+32.75	LT 124.5925	1329.7850	FL
38	12+17.25	LT 79.5948	1329.9290	FL
39	12+17.25	LT 74.5948	1329.9570	FL
40	12+17.25	LT 20.1028	1330.3410	FL
41	12+17.25	LT 15.1026	1330.3771	FL
42	11+86.25	LT 15.1026	1330.1031	FL
43	11+86.25	LT 20.1026	1330.0679	FL
44	11+86.25	LT 74.5951	1329.7062	FL
45	11+86.25	LT 79.5951	1329.6690	FL
46	11+86.25	LT 133.5888	1329.2560	FL
47	11+86.37	LT 138.5837	1329.2352	FL
48	11+86.25	LT 192.5888	1328.9590	FL
49	11+87.40	LT 197.4205	1328.9124	FL
50	11+67.82	LT 215.2028	1328.6540	FL

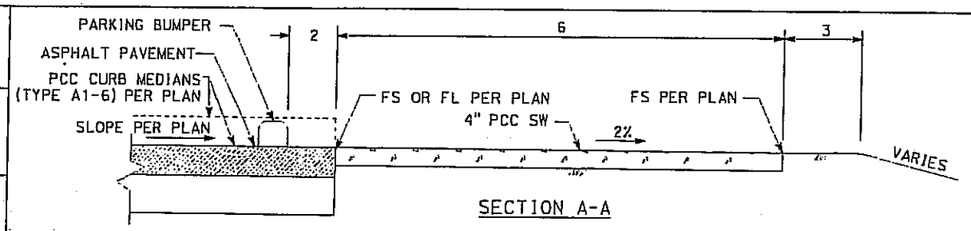
Offset Point	LINE "C" Station	- - - - - - Offset Point - - - Offset	Elevation	Description
51	11+55.65	LT 206.7490	1328.4950	FL
52	11+55.59	LT 201.8164	1328.5140	FL
53	11+65.75	LT 201.5888	1328.6800	FL
54	11+65.75	LT 192.5888	1328.7100	FL
55	11+55.61	LT 138.7668	1328.7790	FL
56	11+55.53	LT 133.7706	1328.8640	FL
57	11+54.34	LT 79.8312	1329.2400	FL
58	11+54.20	LT 74.8380	1329.2820	FL
59	11+51.95	LT 20.4429	1329.7225	FL
60	11+51.29	LT 15.4994	1329.7540	FL
61	11+69.71	RT 15.1018	1329.8700	FL
62	11+34.85	RT 17.3381	1329.6030	FL
63	10+42.62	RT 17.4998	1328.8100	FS
64	10+42.62	LT 17.5002	1328.5900	FS
65	11+05.49	LT 17.4999	1329.2410	FL
66	11+18.22	LT 17.5003	1329.8730	FL
67	11+31.91	LT 29.4442	1329.8790	FL
68	11+30.62	LT 32.8034	1329.8235	FL
69	11+12.29	LT 38.8349	1329.0785	FL
70	11+26.68	LT 83.9332	1328.5075	FL
71	11+36.96	LT 79.1834	1329.4270	FL
72	11+37.51	LT 84.0703	1329.3385	FL
73	11+28.20	LT 88.6967	1328.4817	FL
74	11+35.25	LT 140.6143	1328.1460	FL
75	11+42.42	LT 137.0260	1328.9520	FL
76	11+42.77	LT 141.9548	1328.9210	FL
77	11+35.74	LT 145.4712	1328.1146	FL
78	11+40.56	LT 207.0624	1327.8364	FL
79	11+46.21	LT 204.2587	1328.6200	FL
80	11+46.43	LT 209.2156	1328.6100	FL
81	11+40.86	LT 211.9747	1327.8050	FL
82	11+43.98	LT 274.0687	1327.4536	FS
83	11+47.93	LT 272.0662	1327.8625	FS
84	11+52.05	LT 277.2781	1328.0889	FS
85	11+50.96	LT 281.6257	1328.0365	FS
86	11+48.11	LT 278.0269	1327.8247	FS
87	11+42.67	LT 280.9555	1327.2092	FS
88	11+06.58	LT 40.6582	1329.0018	FS
89	11+02.09	LT 26.6300	1329.6852	FS
90	10+97.45	LT 23.5002	1329.7630	FS
91	10+47.83	LT 23.5002	1329.2630	FS
92	10+42.83	LT 28.5831	1328.5162	FS

CONSTRUCTION DETAILS
CONTROL POINTS

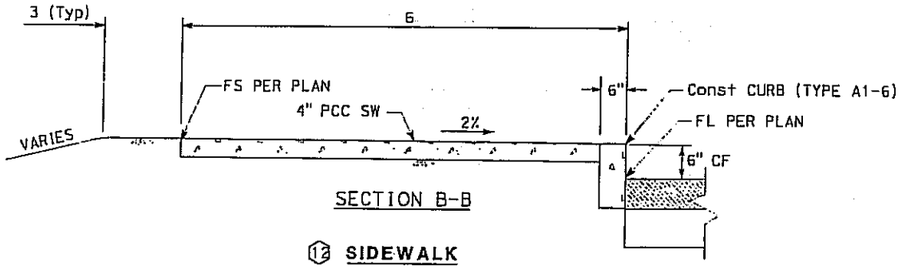
C-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT: SERGIO AVILA
CALCULATED-DESIGNED BY: J.W.
CHECKED BY: S.N.
REVISED BY
DATE REVISED

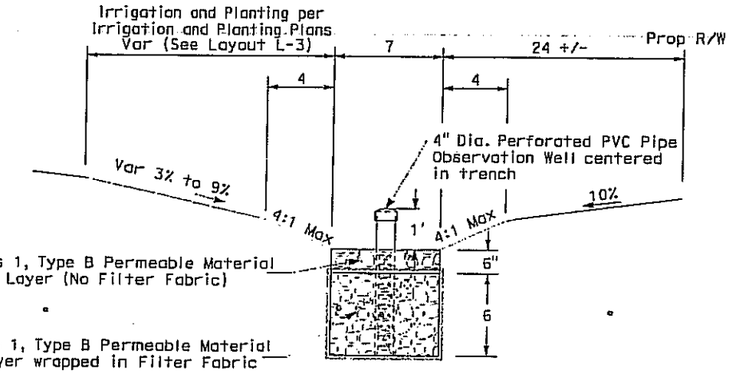


SECTION A-A

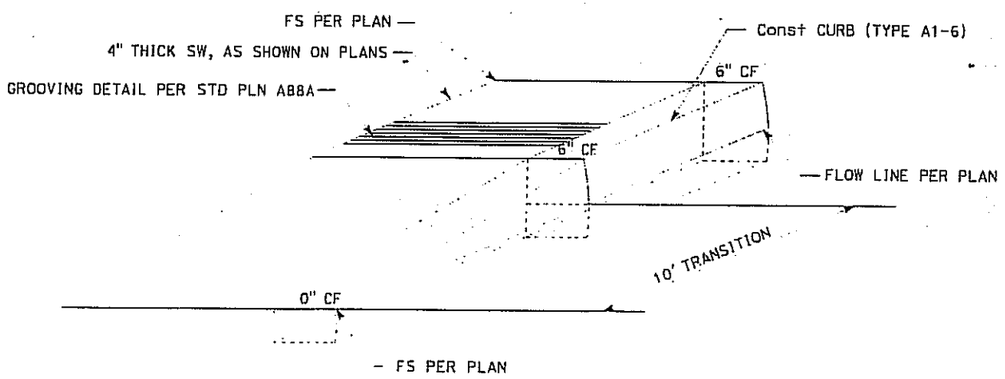


SECTION B-B

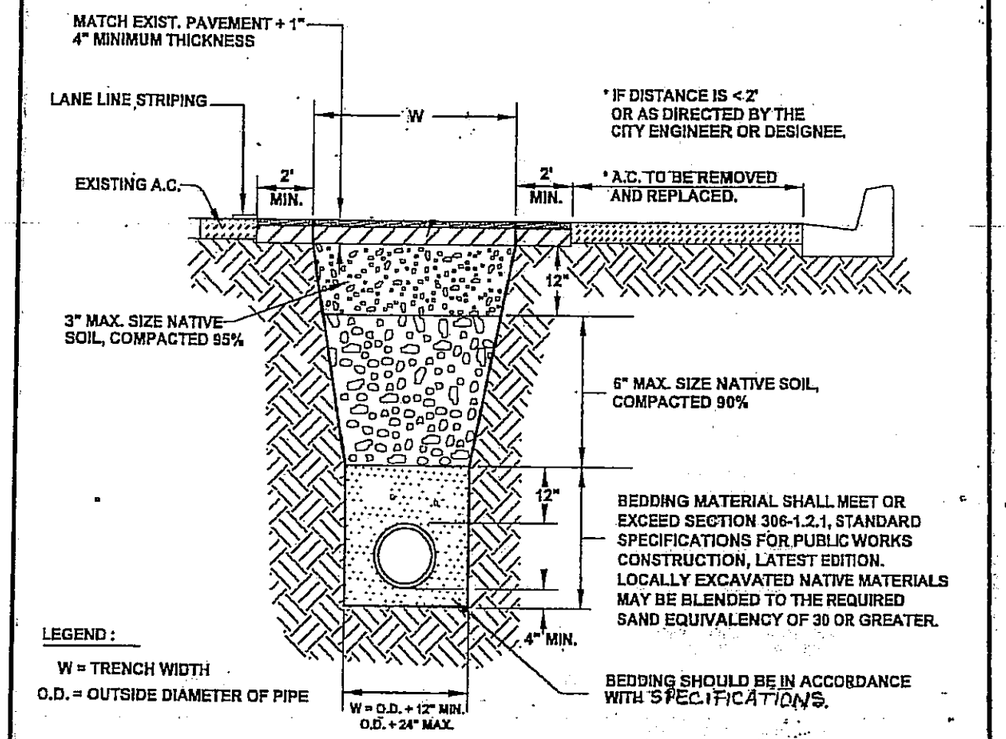
(12) **SIDEWALK**



(18) **INFILTRATION TRENCH**



(33) **CURB TRANSITION**



LEGEND:

W = TRENCH WIDTH

O.D. = OUTSIDE DIAMETER OF PIPE

REGISTERED PROFESSIONAL ENGINEER RICARDO SANDOVAL No. 51152 EXP. 9/30/09 CIVIL STATE OF CALIFORNIA

APPROVED BY: _____ DATE 6/26/06

CITY ENGINEER
RICARDO SANDOVAL

DRAWN BY: TAM / DS

REVISION NUMBER: 1 6/26/06

CITY OF FONTANA

STANDARD TRENCH REPAIR

1008

STD. PLAN NO. ~~1831~~ | SHT 1 OF 2

CONSTRUCTION DETAILS

NO SCALE

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

C-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		9	86

5-07-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER C. COSTELLO No. 60256 Exp 06/30/08 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.

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

REVISED BY	DATE REVISED
J.W.	S.N.

CALCULATED-DESIGNED BY | CHECKED BY

DESIGN OVERSIGHT: SERGIO AVILA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

05-04-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		10	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

RBF CONSULTING
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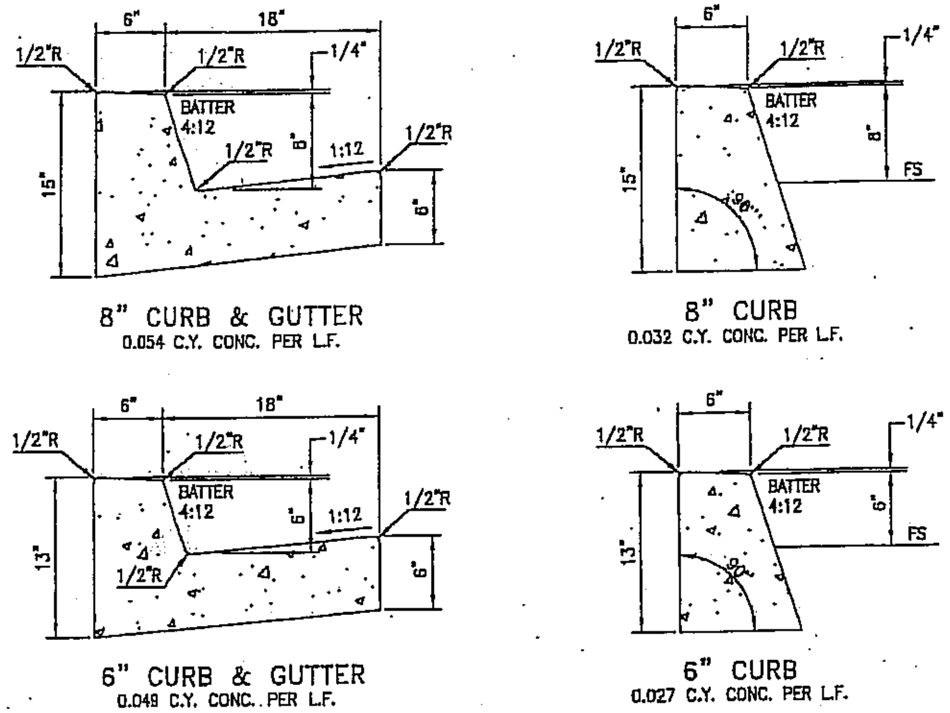
ONTARIO, CA 91761



NOTES:

1. RELATIVE COMPACTION REQUIREMENT FOR TOP 12" OF SUBGRADE IS 95%. WHEN CLASS II BASE IS USED UNDER STREET PAVEMENT, CLASS II BASE SHALL ALSO BE PLACED UNDER CURB AND GUTTER.
2. NO FORMS SHALL BE PLACED UNTIL THE RELATIVE COMPACTION HAS BEEN TESTED AND APPROVED, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
3. ALL FORMWORK SHALL BE INSPECTED AND APPROVED PRIOR TO PLACEMENT OF CONCRETE.
4. THE CONTRACTOR SHALL USE 520-C-2500 CONCRETE UNLESS OTHERWISE APPROVED.
5. THE CONTRACTOR SHALL LOCATE EXPANSION AND WEAKENED PLANE JOINTS PER CITY STANDARD PLAN FOR SIDEWALKS.
6. IMMEDIATELY AFTER FINISHING OPERATIONS ARE COMPLETE, THE CONTRACTOR SHALL PROVIDE BROOM FINISH AND APPLY CURING COMPOUND.
7. THE CONTRACTOR SHALL PROTECT THE CONCRETE WORK FROM ALL TRAFFIC AND CONSTRUCTION EQUIPMENT FOR AT LEAST SEVEN DAYS UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
8. FOR ABRUPT CURB TERMINATIONS, 3 FT. CURB TRANSITIONS SHALL BE PROVIDED, SEPARATED WITH A WEAKENED PLANE JOINT.

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER RICARDO SANDOVAL No. 51152 EXP. 9/30/07 CIVIL STATE OF CALIFORNIA

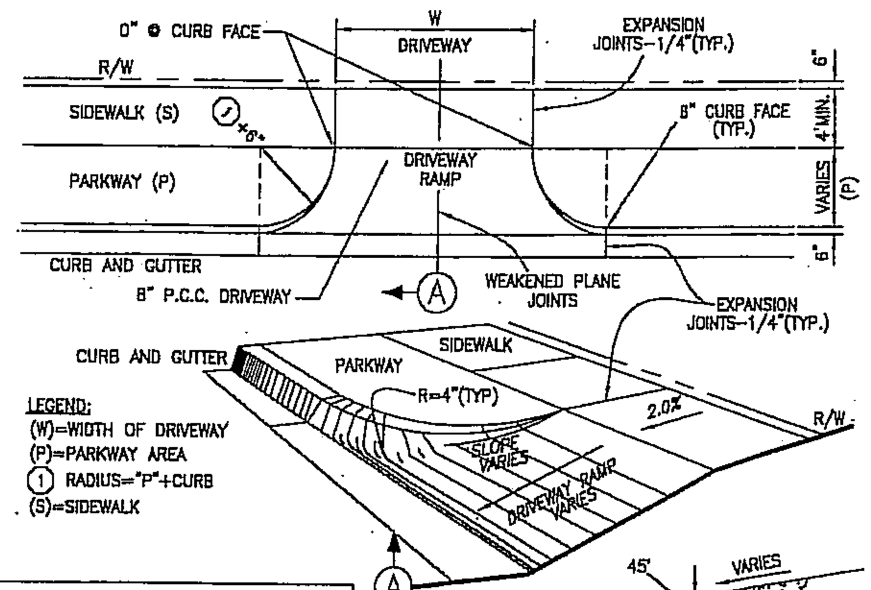
APPROVED BY: 10.18.06
CITY ENGINEER DATE
RICARDO SANDOVAL
REVIEWED BY:
DATE OF LAST REVISION:

CITY OF FONTANA

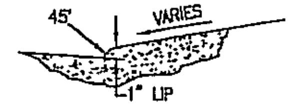
CURB AND GUTTER

07/10/06

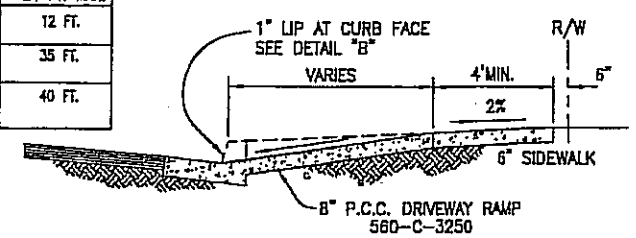
STD. PLAN NO. 1000 | SHT 1 OF 1



DRIVEWAY APPROACH DIMENSIONS	
LAND USE & DRIVEWAY TYPE	A
SINGLE-FAMILY DWELLING OR DUPLEX	12 FT. TO 24 FT. MAX.
DETACHED GARAGE LOCATED IN REAR YARD FOR SINGLE FAMILY DWELLING	12 FT.
TWO-WAY TRUCK ACCESS FOR COMMERCIAL SITES	35 FT.
TWO-WAY TRUCK ACCESS FOR INDUSTRIAL SITES	40 FT.



DETAIL "B"



SECTION A-A

NOTES:

1. DRIVEWAY WIDTH SHALL PROVIDE FOR ADEQUATE TRUCK TURNING MOVEMENT.
2. NO PORTION OF A DRIVEWAY SHALL EXTEND IN FRONT OF AN ADJOINING LOT.
3. PROVIDE BROOM FINISH ON RAMP AND SIDEWALK.
4. IMMEDIATELY AFTER FINISHING OPERATIONS ARE COMPLETE, CURING COMPOUND SHALL BE APPLIED.

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER RICARDO SANDOVAL No. 51152 EXP. 9/30/07 CIVIL STATE OF CALIFORNIA

APPROVED BY: 10.18.06
CITY ENGINEER DATE
RICARDO SANDOVAL
REVIEWED BY:
DATE OF LAST REVISION:

CITY OF FONTANA

RESIDENTIAL / COMMERCIAL / INDUSTRIAL DRIVEWAY WITH PARKWAY SIDEWALKS

07/10/06

STD. PLAN NO. 1002 | SHT 2 OF 2

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

CONSTRUCTION DETAILS

NO SCALE

C-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT SERGIO AVILA

CALCULATED-DESIGNED BY J.W. CHECKED BY S.N.

REVISED BY DATE REVISED

05-04-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		11	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07
PLANS APPROVAL DATE

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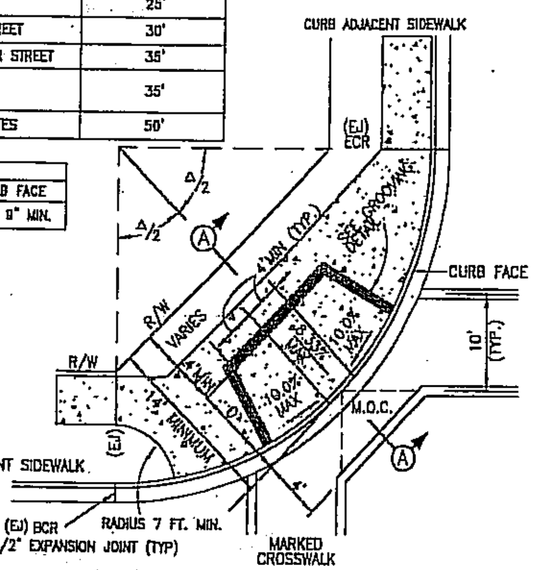
REGISTERED PROFESSIONAL ENGINEER C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

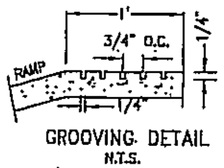
RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

CURB RETURN RADII

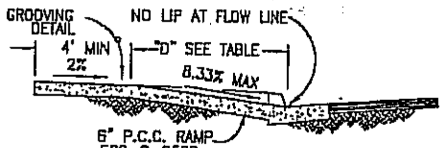
INTERSECTION OF:	MINIMUM RADIUS:
LOCAL STREET AND LOCAL STREET	25'
LOCAL STREET AND COLLECTOR STREET	30'
COLLECTOR STREET AND COLLECTOR STREET	35'
ANY STREET WITH A SECONDARY CLASSIFICATION OR ABOVE	35'
ANY TWO ESTABLISHED TRUCK ROUTES	50'

DEPTH OF RAMP "D"		
	6" CURB FACE	8" CURB FACE
"D"	7'- 4" MIN.	9'- 9" MIN.

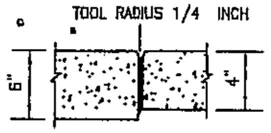




GROOVING DETAIL
N.T.S.



SECTION "A-A"
N.T.S.



1/2 INCH EXPANSION JOINT (EJ) WITH FILLER MATERIAL

NOTES:

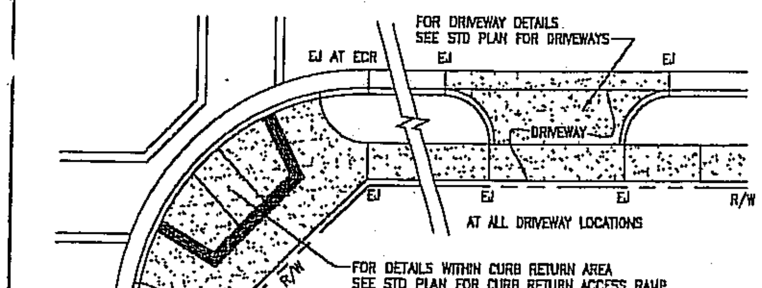
1. RAMP SHALL HAVE A 12" WIDE BORDER ON FLAT SURFACE WITH 1/4" GROOVES APPROXIMATELY 3/4" O.C. AS SHOWN IN GROOVING DETAIL.
2. RAMPS SHALL HAVE TRANSVERSE BROOM FINISH TEXTURE ROUGHER THAN THE SURROUNDING SIDEWALK.
3. RAMP GRADES SHALL BE STAKED FOR INSPECTION PRIOR TO PLACEMENT OF CONCRETE.
4. MINIMUM CURB RETURN RADII SHALL BE PER TABLE SHOWN ABOVE UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
5. CONCRETE THICKNESS SHALL BE 6 INCHES FROM ECR TO BCR UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

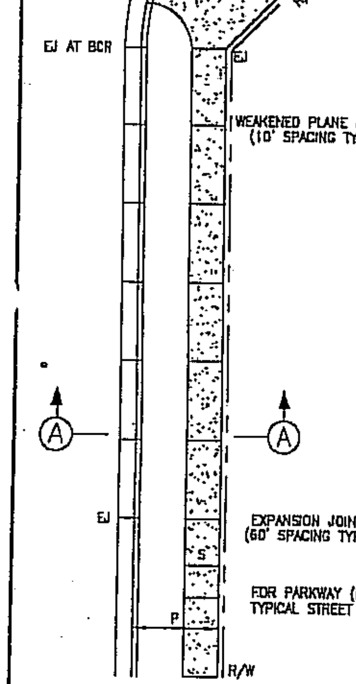
NOT TO SCALE

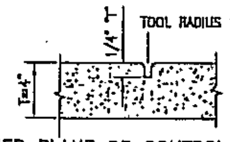
REGISTERED PROFESSIONAL ENGINEER RICARDO SANDOVAL No. 51152 EXP. 9/30/07 CIVIL STATE OF CALIFORNIA

APPROVED BY: 10-18-06
CITY ENGINEER DATE
RICARDO SANDOVAL
REVIEWED BY: DG
DATE OF LAST REVISION:

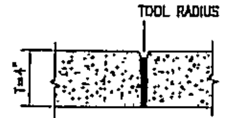
CITY OF FONTANA
STANDARD CURB RETURN ACCESS RAMP
STD. PLAN NO. 1003 | SHT 1 OF 1



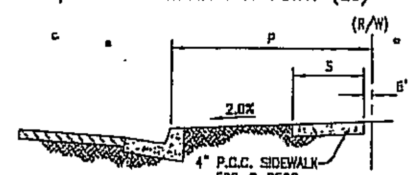




WEAKENED PLANE OR CONTROL JOINT (WPJ)



1/2 INCH EXPANSION JOINT (EJ)



SECTION "A-A"

FOR PARKWAY (P) AND SIDEWALK (S) DIMENSIONS SEE TYPICAL STREET SECTIONS STANDARD DESIGN PLANS 400 AND 401

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER RICARDO SANDOVAL No. 51152 EXP. 9/30/07 CIVIL STATE OF CALIFORNIA

APPROVED BY: 10-18-06
CITY ENGINEER DATE
RICARDO SANDOVAL
REVIEWED BY: DG
DATE OF LAST REVISION:

CITY OF FONTANA
SIDEWALKS
STD. PLAN NO. 1006 | SHT 1 OF 2

SIDEWALK CONSTRUCTION NOTES

ALL SIDEWALKS SHALL BE CONSTRUCTED AS SPECIFIED IN THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK), UNLESS OTHERWISE NOTED.

2. ALL SUBGRADE SHALL BE CONSTRUCTED TO GRADE AND CROSS SECTION PER CITY STANDARD PLANS FOR APPLICABLE STREET SECTION. TOLERANCES FOR SIDEALKS AND CURBS AND GUTTERS SHALL BE PER THE GREEN BOOK.
3. SUBGRADE SHALL BE SCARIFIED AND COMPACTED TO A MINIMUM DEPTH OF 12 INCHES. 90% COMPACTION IS REQUIRED BEHIND THE CURB AND IN PARKWAY AREA. AFTER COMPACTION, THE SUBGRADE SHALL BE FREE OF UNSUITABLE MATERIALS.
4. ALL CONCRETE SHALL BE 520-C-2500 UNLESS OTHERWISE SPECIFIED.
5. CONCRETE SHALL BE OF THE SPECIFIED SLUMP AND WITHIN THE REQUIRED WATER/CEMENT RATIO.
6. THE CONTRACTOR SHALL VIBRATE ALL CONCRETE ADEQUATELY TO INSURE CONSOLIDATION FREE OF VOIDS.
7. ALL SIDEWALKS, CURBS AND CURB AND GUTTERS SHALL HAVE WEAKENED PLANE JOINTS SPACED AT 10 FOOT MAXIMUM INTERVALS. EXPANSION JOINTS SHALL BE PLACED AT 60 FOOT INTERVALS UTILIZING 1/2 INCH EXPANSION JOINT MATERIAL.
8. A NORMAL EXPANSION JOINT MAY BE OMITTED IF IT FALLS WITHIN 10 FEET OF AN ADDITIONAL EXPANSION JOINT.
9. WEAKENED PLANE JOINTS SHALL BE 1/4 OF THE DEPTH OF THE CONCRETE BUT NOT LESS THAN 1 INCH. CURBS AND GUTTERS SHALL HAVE WEAKENED PLANE JOINTS OF 2 INCH MINIMUM DEPTH.

TRANSIT MIXED CONCRETE DELIVERY TICKETS SHALL BE PROVIDED TO THE INSPECTOR PRIOR TO PLACING CONCRETE TO INSURE THAT THE CONCRETE MEETS SPECIFICATIONS.

11. ALL SURFACES SHALL BE TRUE AND STRAIGHT AND OF UNIFORM WIDTH, FREE OF HUMPS, SAGS, IRREGULARITIES AND IMPERFECTIONS. UNIFORM SURFACES SHALL NOT VARY MORE THAN 0.01 FOOT WHEN MEASURED WITH A 10 FOOT STRAIGHT EDGE.
12. ALL SURFACES SHALL RECEIVE A BROOM FINISH.
13. UPON COMPLETION OF FINISHING OPERATIONS ALL SURFACES SHALL BE SPRAYED WITH CURING COMPOUND.
14. CONCRETE REPAIRS SHALL BE MADE BY SAW CUTTING AND REMOVING THE ENTIRE UNIT BETWEEN WEAKENED PLANE JOINTS.
15. SIDEWALKS WITHIN DRIVEWAYS SHALL BE CONSTRUCTED PER CITY STANDARD PLANS FOR DRIVEWAYS.

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER RICARDO SANDOVAL No. 51152 EXP. 9/30/07 CIVIL STATE OF CALIFORNIA

APPROVED BY: 10-18-06
CITY ENGINEER DATE
RICARDO SANDOVAL
REVIEWED BY: DG
DATE OF LAST REVISION:

CITY OF FONTANA
SIDEWALKS
STD. PLAN NO. 1006 | SHT 2 OF 2

CONSTRUCTION DETAILS

NO SCALE

ALL DIMENSIONS ARE IN FEET
UNLESS OTHERWISE NOTED

C-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT: SERGIO AVILA
CALCULATED-DESIGNED BY: J.W.
CHECKED BY: S.N.
REVISED BY
DATE REVISED

LAST REVISION 05-04-07

CU 08230 | EA 3770U1

REGISTERED CIVIL ENGINEER 5-07-07 DATE

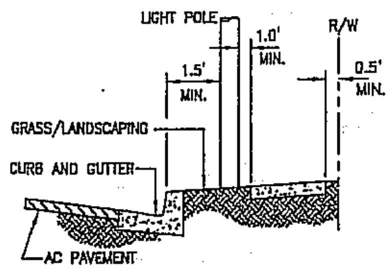
7-30-07
PLANS APPROVAL DATE

C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

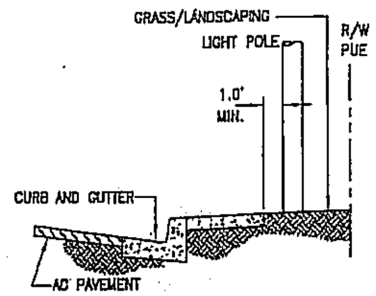
RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

STREET LIGHT IMPROVEMENT NOTES (ALONG VICTORIA STREET ONLY)

1. ORNAMENTAL STREET LIGHT POLES SHALL BE MARBLELITE OF APPROVED EQUAL.
2. THE LUMINARE SHALL CONSIST OF COBRA HEAD CUT-OFF LENS ON A 6 FT OR 8 FT MAST ARM. 15 FT MAST ARM REQUIRED FOR STREET LIGHTS ON TRAFFIC SIGNAL POLE INSTALLATIONS.
3. ANY CHANGE IN LOCATION OF STREET LIGHTS FROM THE APPROVED PLANS IS SUBJECT TO APPROVAL BY THE ENGINEER.
4. SIDEWALK WIDTHS TO BE PER APPROVED STREET IMPROVEMENT PLANS. A MINIMUM OF 4 FEET UNOBSTRUCTED SIDEWALK CLEARANCE IS REQUIRED BEHIND STREET LIGHT POLE.
5. ALL STREET LIGHTS SHALL BE INSTALLED PER CITY OF FONTANA STANDARD PLAN NO 404.



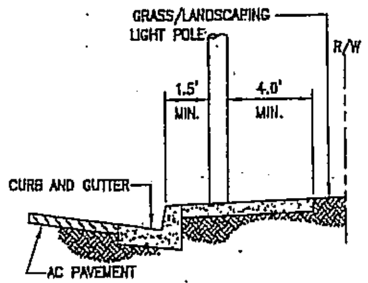
LANDSCAPING ADJACENT TO CURB
INSTALL 6/8 FT. MAST ARM (SEE TABLE)
CASE 1



SIDEWALK ADJACENT TO CURB
INSTALL 8 FT. MAST ARM
CASE 2

LEGEND FOR STREET LIGHT PLANS

- INDICATES 5800 LUMEN HPSV STREET LIGHT (70 WATT; #7) 25FT. LUMINAIRE HEIGHT.
- INDICATES FUTURE 5800 LUMEN HPSV STREET LIGHT (70 WATT; #7) 25FT. LUMINAIRE HEIGHT.
- INDICATES 9500 LUMEN HPSV STREET LIGHT (100 WATT; #10) 25FT. LUMINAIRE HEIGHT
- INDICATES FUTURE 9500 LUMEN HPSV STREET LIGHT (100 WATT; #10) 25FT. LUMINAIRE HEIGHT.
- INDICATES 16000 LUMEN HPSV STREET LIGHT (150 WATT; #15) 30FT. LUMINAIRE HEIGHT.
- INDICATES FUTURE 16000 LUMEN HPSV STREET LIGHT (150 WATT; #15) 30FT. LUMINAIRE HEIGHT.
- INDICATES 22000 LUMEN HPSV STREET LIGHT (200 WATT; #20) 30FT. LUMINAIRE HEIGHT.
- INDICATES FUTURE STREET LIGHT LOCATION (22000 LUMEN HPSV; 200 WATT; #20)
- INDICATES 27500 LUMEN HPSV STREET LIGHT (250 WATT; #25) MOUNTED ON TRAFFIC SIGNAL POLE.



SIDEWALK ADJACENT TO CURB
INSTALL 6/8 FT. MAST ARM (SEE TABLE)
CASE 3

GENERAL NOTES FOR STREET LIGHT PLANS

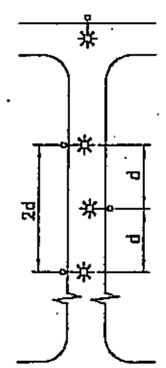
1. ORNAMENTAL STREET LIGHT POLES SHALL BE MARBLELITE OR APPROVED EQUAL.
2. THE LUMINAIRE SHALL CONSIST OF COBRA HEAD CUT-OFF LENS ON A 6 FT OR 8 FT MAST ARM. 15 FT MAST ARM REQUIRED FOR STREET LIGHTS ON TRAFFIC SIGNAL POLE INSTALLATIONS.
3. ANY CHANGE IN LOCATION OF STREET LIGHTS FROM THE APPROVED PLANS IS SUBJECT TO APPROVAL BY THE CITY ENGINEER.
4. SIDEWALK WIDTHS TO BE PER APPROVED STREET IMPROVEMENT PLANS. A MINIMUM OF 4 FEET UNOBSTRUCTED SIDEWALK CLEARANCE REQUIRED BEHIND STREET LIGHT POLE.

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER RICARDO SANDOVAL No. 51152 EXP. 9/30/07 CIVIL STATE OF CALIFORNIA

APPROVED BY: 10-18-06
CITY ENGINEER RICARDO SANDOVAL DATE
REVIEWED BY: DG
DATE OF LAST REVISION:

CITY OF FONTANA
STREET LIGHTS
STD. PLAN NO. 404 SHT 1 OF 2



STAGGERED SPACING PER TABLE

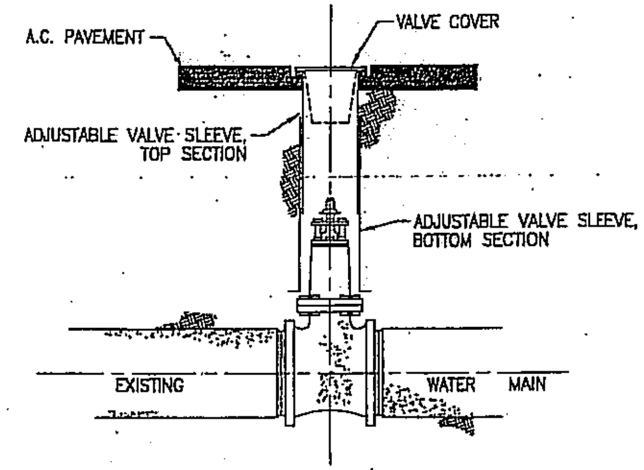
	STREET CLASSIFICATION: MAJOR HIGHWAY	PRIMARY HIGHWAY	SECONDARY HIGHWAY	COLLECTOR	LOCAL	INDUSTRIAL COLLECTOR
SPACING (d)	100 FT. – 150 FT. 100 FT. MAXIMUM FOR COMMERCIAL ZONES			200 FT. – 300 FT.		
PREFERRED LOCATION	CASE 1 IN PARKWAY FOR PARKWAY SIDEWALKS; CASE 2 BEHIND SIDEWALK FOR CURB ADJACENT SIDEWALK; CASE 3 WITHIN SIDEWALK FOR FULL WIDTH SIDEWALK MINIMUM WIDTH 6'					
LUMINAIRE	5800 LUMEN HPSV 200 WATT #20		1600 LUMEN HPSV 150 WATT #15	9500 LUMEN HPSV 100 WATT #10	5800 LUMEN HPSV 70 WATT #7	9500 LUMEN HPSV 100 WATT #10
LUMINAIRE MOUNTING HEIGHT	30 FT	30 FT	30 FT	27 FT	25 FT	27 FT
MAST ARM LENGTH — CASE 1: IN PARKWAY FOR PARKWAY SIDEWALK	8 FT	8 FT	8 FT	8 FT	6 FT	8 FT
MAST ARM LENGTH — CASE 2: BEHIND SIDEWALK FOR CURB ADJ. SIDEWALK	8 FT	8 FT	8 FT	8 FT	8 FT	8 FT
MAST ARM LENGTH — CASE 3: WITHIN SIDEWALK FOR FULL WIDTH SIDEWALK MINIMUM WIDTH 6'	8 FT	8 FT	8 FT	6 FT	6 FT	6 FT

1. LIGHTING LAYOUT SHALL COMMENCE AT STREET INTERSECTIONS. STREET LIGHT SPACING BETWEEN INTERSECTIONS SHALL BE AS SPECIFIED IN THE ABOVE TABLE AND LOCATED AT THE PROLONGATION OF PROPERTY LINES. STREET LIGHT LAYOUTS SHALL BE REVIEWED FOR CONFLICTS WITH OTHER UTILITIES. (CATCH BASINS, FIRE HYDRANTS, TRANSFORMERS, MAIL BOXES, ETC.)
2. AT SIGNALIZED INTERSECTIONS STREET LIGHTS SHALL CONSIST OF 250 WATT HPSV (#25) MOUNTED ON A 15 FT. MAST ARM.
3. IN RURAL OR UNDEVELOPED AREAS, LIGHTING REQUIREMENTS SHALL BE AS APPROVED BY THE CITY ENGINEER.

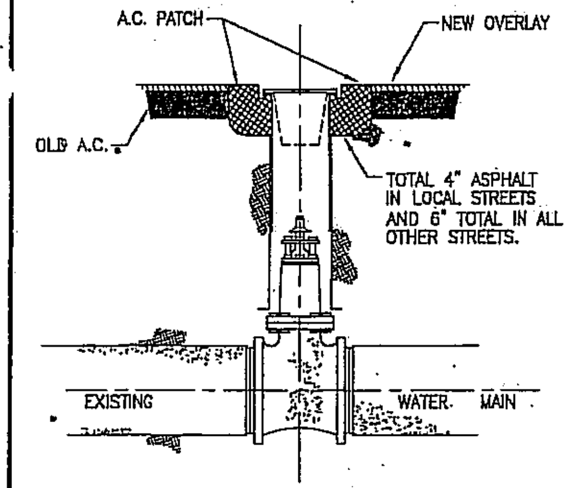
REGISTERED PROFESSIONAL ENGINEER RICARDO SANDOVAL No. 51152 EXP. 9/30/07 CIVIL STATE OF CALIFORNIA

APPROVED BY: 10-18-06
CITY ENGINEER RICARDO SANDOVAL DATE
REVIEWED BY: DG
DATE OF LAST REVISION:

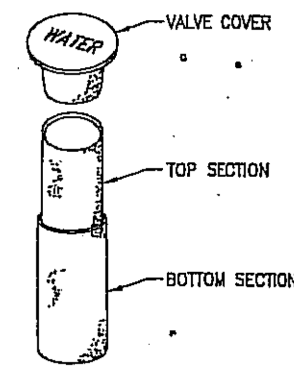
CITY OF FONTANA
STREET LIGHTS
STD. PLAN NO. 404 SHT 2 OF 2



NEW CONSTRUCTION



OVERLAY CONSTRUCTION



ADJUSTABLE VALVE SLEEVE

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER RICARDO SANDOVAL No. 51152 EXP. 9/30/07 CIVIL STATE OF CALIFORNIA

APPROVED BY: 10-18-06
CITY ENGINEER RICARDO SANDOVAL DATE
REVIEWED BY:
DATE OF LAST REVISION:

CITY OF FONTANA
TYPICAL GATE VALVE ADJUSTMENTS
STD. PLAN NO. 6000 SHT 1 OF 1

CONSTRUCTION DETAILS

NO SCALE

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED

C-6

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN OVERSIGHT SERGIO AVILA
CALCULATED-DESIGNED BY J.W. CHECKED BY S.N.
REVISED BY DATE REVISED
LAST REVISION 05-04-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		16	86

6-21-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
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.

PROFESSIONAL ENGINEER — C. COSTELLO — No. 60256 — Exp. 06/30/08 — CIVIL — STATE OF CALIFORNIA

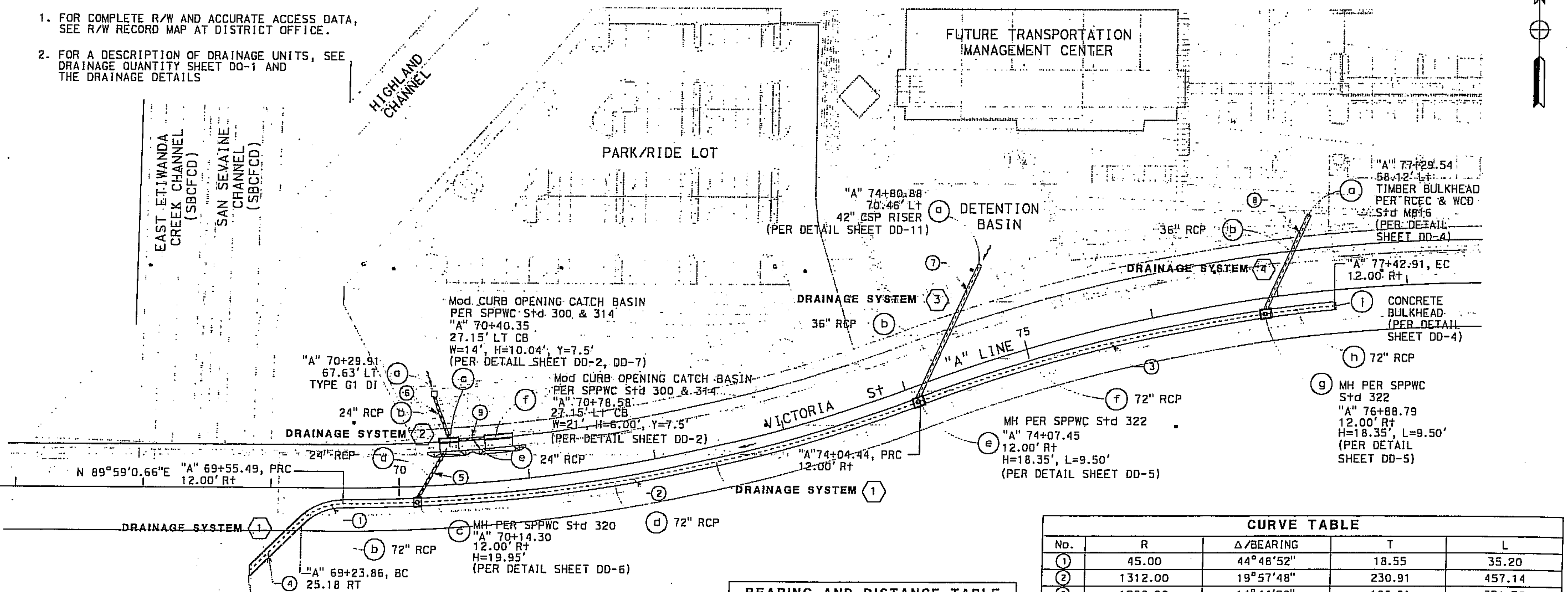
RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

STORM DRAIN IMPROVEMENT NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THESE PLANS, CALTRANS AND THE CITY OF FONTANA STANDARD PLANS, THE CONTRACT SPECIAL PROVISIONS AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREEN BOOK"). ALL REFERENCE SPECIFICATIONS AND STANDARDS SHALL BE THE LATEST EDITION UNLESS OTHERWISE NOTED.
2. WHEN A TECHNICAL CONFLICT IS FOUND TO EXIST IN THE CONTRACT DOCUMENTS THAT CAN NOT BE RESOLVED BY REFERENCE TO PRECEDENCE PROVISIONS IN THE SPECIAL PROVISIONS, THE CONTRACTOR SHALL IMMEDIATELY REPORT SAID CONFLICT TO THE ENGINEER FOR RESOLUTION.
3. ALL MATERIALS AND METHODS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.
4. ADVANCE CONSTRUCTION SIGNING INDICATING DURATION OF PROJECT SHALL BE IN PLACE ONE WEEK PRIOR TO IMPLEMENTING DETOURS.
5. CONSTRUCTION PERMITS SHALL BE OBTAINED FROM THE CITY OF FONTANA COMMUNITY DEVELOPMENT DEPARTMENT, ENGINEERING DIVISION PRIOR TO THE START OF ANY WORK. INSPECTION COORDINATION SHALL BE REQUESTED AT LEAST TWO WORKING DAYS PRIOR TO THE START OF ANY WORK IN PUBLIC RIGHT-OF-WAY WITHIN THE CITY LIMITS. CALL (909) 350-7610.
6. THE CONTRACTOR SHALL CONFORM TO ALL TRAFFIC CONTROL POLICIES, METHODS AND PROCEDURES DESCRIBED IN THE STATE OF CALIFORNIA MANUAL OF TRAFFIC CONTROLS, LATEST NON-METRIC EDITION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
7. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN BARRICADES, DELINEATORS OR OTHER TRAFFIC CONTROL DEVICES AT ALL TIMES.
8. THE CONTRACTOR SHALL OBTAIN A PERMIT TO PERFORM EXCAVATION OR TRENCH WORK FOR TRENCHES 5 FEET OR GREATER IN DEPTH FROM THE CALIFORNIA STATE DIVISION OF INDUSTRIAL SAFETY.
9. THE WALLS AND FACES OF ALL EXCAVATIONS GREATER THAN FIVE (5) FEET IN DEPTH SHALL BE GUARDED BY SHORING, SLOPING OF THE GROUND OR OTHER APPROVED MEANS PURSUANT TO THE REQUIREMENTS OF THE DIVISION OF INDUSTRIAL SAFETY OF THE STATE OF CALIFORNIA. TRENCHES LESS THAN FIVE (5) FEET SHALL ALSO BE GUARDED WHEN THE POTENTIAL EXISTS FOR GROUND MOVEMENT.
10. NO MATERIAL OR EQUIPMENT SHALL BE STORED IN THE PUBLIC RIGHT OF WAY WITHOUT OBTAINING A SEPARATE PERMIT FOR THAT PURPOSE.
11. THE LOCATIONS OF UTILITIES SHOWN HAVE BEEN DETERMINED FROM AVAILABLE INFORMATION, HOWEVER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE, IN THE FIELD, THE TRUE LOCATION AND ELEVATION OF ANY EXISTING UTILITIES, AND TO EXERCISE PROPER PRECAUTION TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT AT 1-800-227-2600 TWO WORKING DAYS BEFORE EXCAVATION.
12. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION WITH ALL UTILITY COMPANIES INCLUDING, BUT NOT LIMITED TO, GAS, TELEPHONE, ELECTRIC, CABLE TELEVISION, LANDSCAPING, LANDSCAPE IRRIGATION, DOMESTIC WATER, RECLAIMED WATER, SEWER, STORM DRAIN, FLOOD CONTROL AND CALTRANS. ALL UTILITY COMPANIES SHALL BE GIVEN TWO WORKING DAYS NOTICE PRIOR TO WORK AROUND THEIR FACILITIES.
13. THE CONTRACTOR SHALL NOT OPERATE ANY FIRE HYDRANT OR WATER MAIN VALVES WITHOUT APPROPRIATE AGENCY AUTHORIZATION. CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE WATER COMPANY FOR VALVE OPERATION AND WATER REQUIREMENTS.
14. STATIONING REFERS TO THE CENTERLINE OF VICTORIA STREET EXCEPT WHERE OTHERWISE NOTED.
15. ADEQUATE CONSTRUCTION CONTROL STAKES SHALL BE SET BY THE ENGINEER TO ENABLE THE CONTRACTOR TO CONSTRUCT THE WORK TO THE PLAN GRADES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF BENCHMARKS AND CONSTRUCTION CONTROL STAKING DURING CONSTRUCTION.
16. THE CONTRACTOR SHALL NOT DISTURB EXISTING SURVEY MONUMENTS, MONUMENT TIES OR BENCH MARKS WITHOUT PRIOR NOTIFICATION TO THE ENGINEER.

NOTES:

1. FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAP AT DISTRICT OFFICE.
2. FOR A DESCRIPTION OF DRAINAGE UNITS, SEE DRAINAGE QUANTITY SHEET DQ-1 AND THE DRAINAGE DETAILS



LEGEND

- (#) DRAINAGE SYSTEM No.
- (x) DRAINAGE UNIT No.
- (#) CURVE DATA

BEARING AND DISTANCE TABLE		
No.	BEARING	L
4	N45°00'00"E	55.10
5	S29°34'50"W	45.47
6	S13°15'16"E	42.01
7	S24°51'04"W	113.59
8	S24°51'04"W	82.48
9	N85°13'51"E	19.94

CURVE TABLE				
No.	R	Δ/BEARING	T	L
1	45.00	44°48'52"	18.55	35.20
2	1312.00	19°57'48"	230.91	457.14
3	1288.00	14°44'28"	166.61	331.38

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DRAINAGE PLAN

SCALE: 1"=40'

D-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans — DESIGN OVERSIGHT — SERGIO AVILA — CALCULATED-DESIGNED BY J.W. — CHECKED BY S.N. — REVISED BY — DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		17	86

6-21-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL

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.

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

STORM DRAIN IMPROVEMENT NOTES (CONT.)

17 REMOVAL AND REPLACEMENT OF EXISTING SURVEY CONTROL, INCLUDING SURVEY MONUMENTS, MONUMENT TIES AND BENCH MARKS, SHALL BE DONE BY A REGISTERED CIVIL ENGINEER OR LICENSED LAND SURVEYOR. SURVEY MONUMENTS THAT WILL BE DESTROYED AS A RESULT OF THIS CONSTRUCTION SHALL BE REPLACED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER ONE WEEK PRIOR TO CONSTRUCTION SO THAT TIES TO MONUMENTS CAN BE ESTABLISHED FOR LATER REPLACEMENT OF THE MONUMENT.

18 THE CONTRACTOR SHALL MAINTAIN ACCESS FOR LOCAL RESIDENTS AND BUSINESSES AT ALL TIMES. A MINIMUM 12 FOOT LANE SHALL BE MAINTAINED AT ALL TIMES IN THE CONSTRUCTION AREA FOR RESIDENTS AND EMERGENCY VEHICLES.

19 THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AN EFFECTIVE MEANS OF DUST CONTROL, INCLUDING ADEQUATE WATERING, AT ALL TIMES.

20 THE CONTRACTOR SHALL NOT CAUSE ANY EXCAVATED MATERIAL, MUD, SILT OR DEBRIS TO BE DEPOSITED ONTO PUBLIC OR PRIVATE PROPERTY ADJACENT TO THE RIGHT OF WAY DURING CONSTRUCTION WITHOUT PRIOR WRITTEN APPROVAL.

21 NO TRENCH BACKFILL SHALL TAKE PLACE WITHOUT PRIOR APPROVAL OF THE INSPECTOR.

22 A GEOTECHNICAL ENGINEER SHALL CERTIFY ALL BACKFILL COMPACTION. FAILURE TO OBTAIN THE REQUIRED DENSITY SHALL REQUIRE RE-WORKING OF THAT PORTION OF THE WORK UNTIL THE SPECIFIED DENSITY IS OBTAINED.

23 CARE SHOULD BE TAKEN TO PREVENT GRADES, DITCHES, AND SWALES FROM UNDERMINING STREET IMPROVEMENTS. UPON INSPECTION OF THE SITE, THE ENGINEER MAY REQUIRE TEMPORARY NON-ERODEABLE SWALES ENTERING OR LEAVING IMPROVEMENTS.

24 ALL EXPOSED CONCRETE SURFACES SHALL CONFORM IN GRADE, COLOR AND FINISH TO MATCH EXISTING CONCRETE.

25 NO OPEN TRENCH SHALL BE ALLOWED AT THE END OF THE DAY WITHOUT PRIOR APPROVAL OF THE ENGINEER.

26 PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXPOSE EXISTING FACILITIES, AND VERIFY ELEVATION AND LOCATION OF CONNECTIONS. CITY APPROVAL OF CONNECTIONS TO EXISTING FACILITIES DOES NOT IMPLY CORRECTNESS OF ELEVATIONS OR LOCATIONS SHOWN ON THE PLANS.

27 IF EXISTING UTILITIES OR ANY OTHER FACILITIES CONFLICT WITH THE PROPOSED IMPROVEMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND ALL AFFECTED AGENCIES IMMEDIATELY.

28 NO CONCRETE SHALL BE PLACED UNTIL THE FORMS AND REINFORCING STEEL HAVE PLACED, INSPECTED AND APPROVED.

29 ALL UNDERGROUND UTILITIES SHALL BE INSTALLED, TESTED AND APPROVED PRIOR TO PLACEMENT.

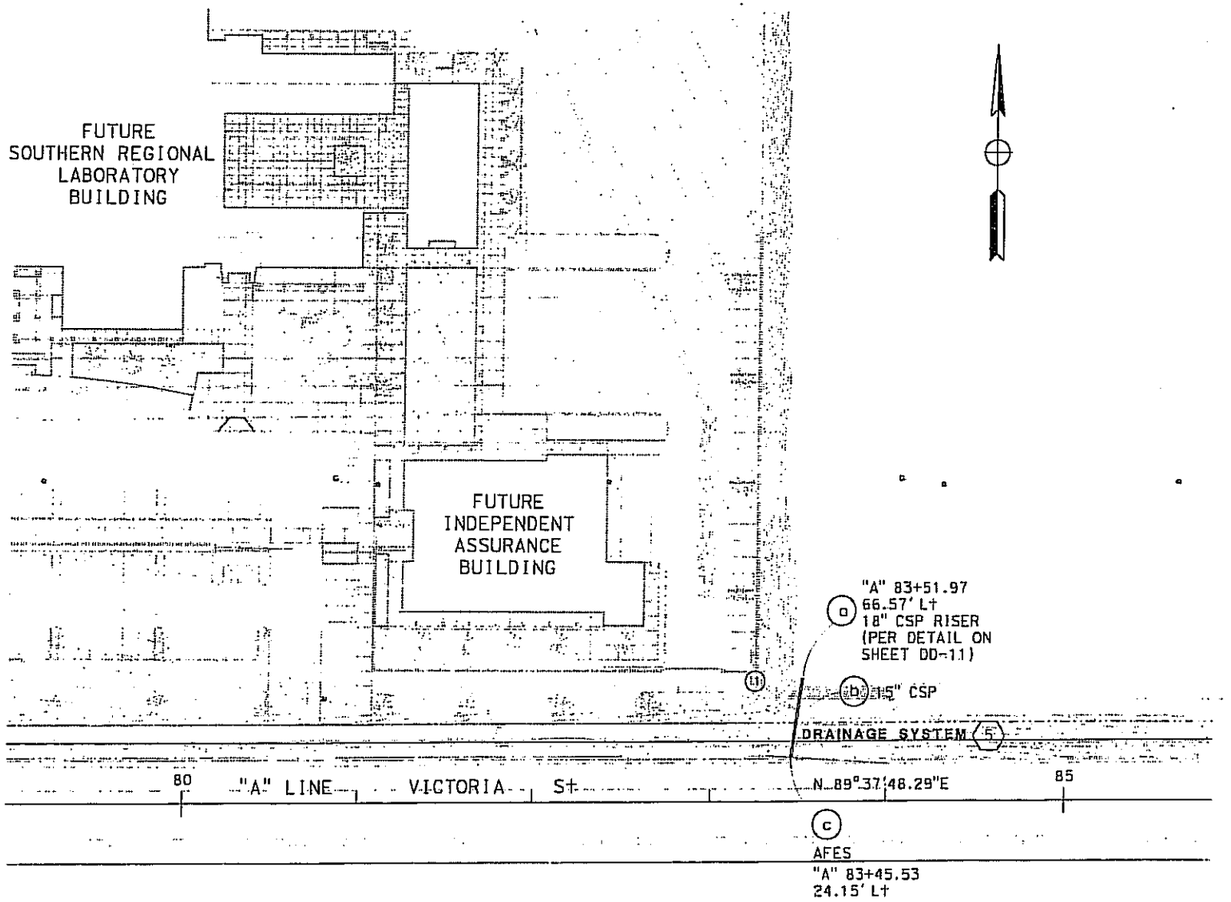
30 APPROVED SOIL STERILANT IS REQUIRED UNDER ALL NEW ASPHALT PAVING PRIOR TO PLACEMENT.

31 ALL MANHOLES, CLEANOUT FRAMES, COVERS AND VALVE BOXES SHALL BE RAISED TO FINISHED GRADE BY THE PAVING CONTRACTOR UPON COMPLETION OF PAVING.

32 UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL RESTORE ALL SIGNING, STRIPING, BARRICADES, AND OTHER TRAFFIC CONTROL DEVICES TO THE SATISFACTION OF THE ENGINEER.

33 AS-BUILT DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER OF RECORD, WHO SHALL PROVIDE RECORD DRAWINGS TO THE ENGINEER.

BEARING AND DISTANCE TABLE		
No.	BEARING	L
(1)	N 8°15'13" E	42.16'



ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DRAINAGE PLAN

SCALE: 1"=40'

D-2

REVISED BY	DATE REVISED
J.W.	S.N.

CALCULATED-DESIGNED BY
CHECKED BY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN OVERSIGHT
SERGIO AVILA

06-21-07

CU 08230 EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		13	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07
PLANS APPROVAL DATE

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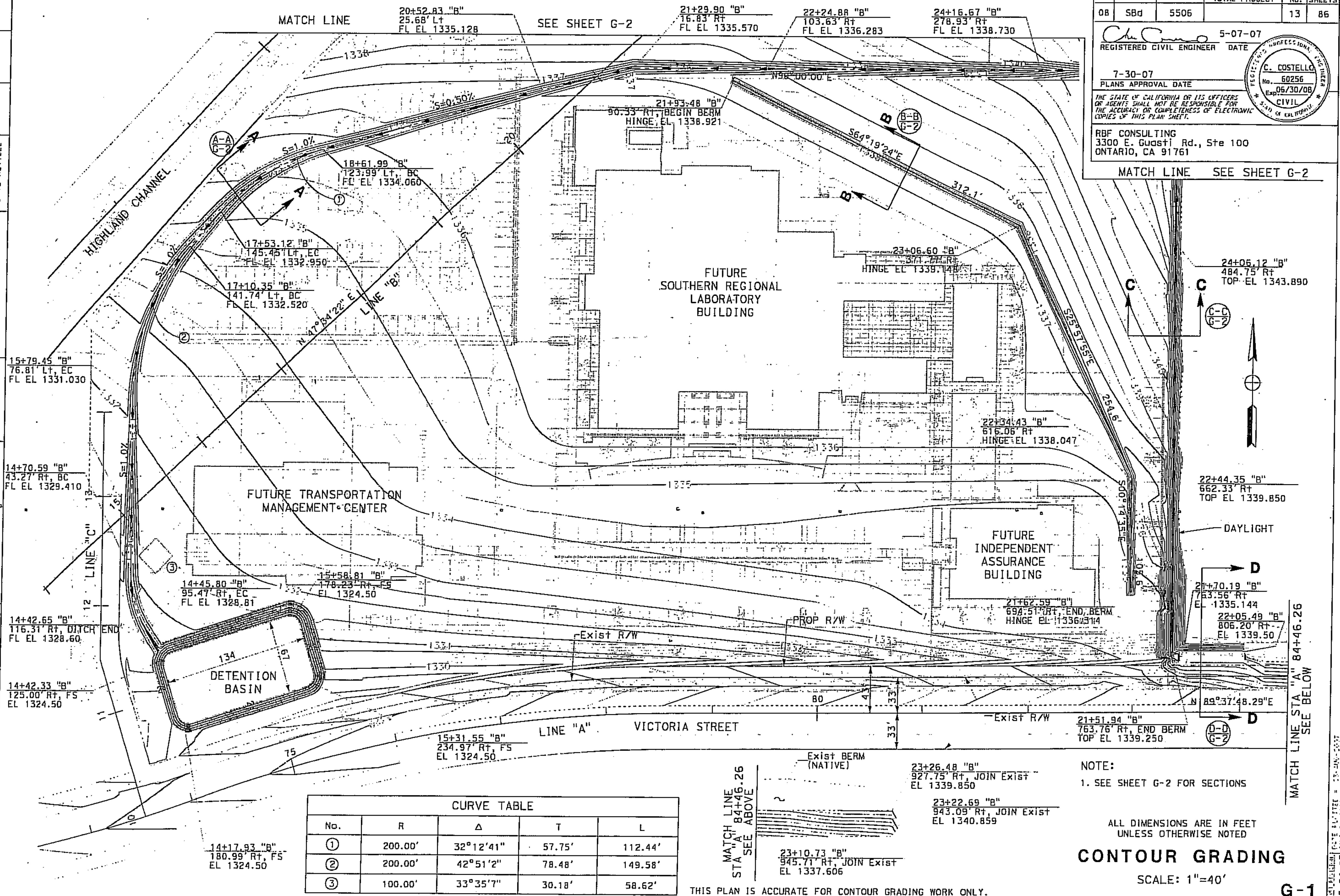
REGISTERED PROFESSIONAL ENGINEER C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761



MATCH LINE SEE SHEET G-2
20+52.83 "B" 25.68' Lt FL EL 1335.128
21+29.90 "B" 16.83' Rt FL EL 1335.570
22+24.88 "B" 103.63' Rt FL EL 1336.283
24+16.67 "B" 278.93' Rt FL EL 1338.730
N90°00'00"E
21+93.48 "B" 90.33' Rt, BEGIN BERM HINGE EL 1338.921
S64°19'24"E
312.1'
S=0.50%
S=1.0%
A-A G-2
B-B G-2
18+61.99 "B" 123.99' Lt, BC FL EL 1334.060
HIGHLAND CHANNEL
17+53.12 "B" 145.45' Lt, EC FL EL 1332.950
17+10.35 "B" 141.74' Lt, BC FL EL 1332.520
N 47°34'22" E
LINE "B"
FUTURE SOUTHERN REGIONAL LABORATORY BUILDING
23+06.60 "B" 371.77' Rt HINGE EL 1339.148
24+06.12 "B" 484.75' Rt TOP EL 1343.890
C-C G-2
S25°57'55"E
254.6'
15+79.45 "B" 76.81' Lt, EC FL EL 1331.030
22+34.43 "B" 616.06' Rt HINGE EL 1338.047
14+70.59 "B" 43.27' Rt, BC FL EL 1329.410
S=1.0%
22+44.35 "B" 662.33' Rt TOP EL 1339.850
FUTURE TRANSPORTATION MANAGEMENT CENTER
S00°14'35"E
107.6'
DAYLIGHT
LINE "C"
FUTURE INDEPENDENT ASSURANCE BUILDING
14+45.80 "B" 95.47' Rt, EC FL EL 1328.81
15+58.81 "B" 178.23' Rt, FS EL 1324.50
21+70.19 "B" 763.56' Rt EL 1335.144
21+62.59 "B" 694.51' Rt, END BERM HINGE EL 1336.314
14+42.65 "B" 116.31' Rt, DITCH END FL EL 1328.60
PROP R/W
Exist R/W
22+05.49 "B" 806.20' Rt EL 1339.50
134
67
DETENTION BASIN
14+42.33 "B" 125.00' Rt, FS EL 1324.50
80
33'
N 89°37'48.29"E
Exist R/W
LINE "A" VICTORIA STREET
21+51.94 "B" 763.76' Rt, END BERM TOP EL 1339.250
D-D G-2
MATCH LINE STA "A" 84+46.26 SEE BELOW
15+31.55 "B" 234.97' Rt, FS EL 1324.50
Exist BERM (NATIVE)
23+26.48 "B" 927.75' Rt, JOIN Exist EL 1339.850
23+22.69 "B" 943.09' Rt, JOIN Exist EL 1340.859
MATCH LINE STA "A" 84+46.26 SEE ABOVE
23+10.73 "B" 945.71' Rt, JOIN Exist EL 1337.606
14+17.93 "B" 180.99' Rt, FS EL 1324.50

CURVE TABLE

No.	R	Δ	T	L
1	200.00'	32°12'41"	57.75'	112.44'
2	200.00'	42°51'2"	78.48'	149.58'
3	100.00'	33°35'7"	30.18'	58.62'

THIS PLAN IS ACCURATE FOR CONTOUR GRADING WORK ONLY.

NOTE:
1. SEE SHEET G-2 FOR SECTIONS

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED

CONTOUR GRADING

SCALE: 1"=40'

G-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT SERGIO AVILA
CALCULATED-DESIGNED BY J.W.
CHECKED BY S.N.
REVISED BY / DATE REVISED

05-04-07

CU 08230 | EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		14	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

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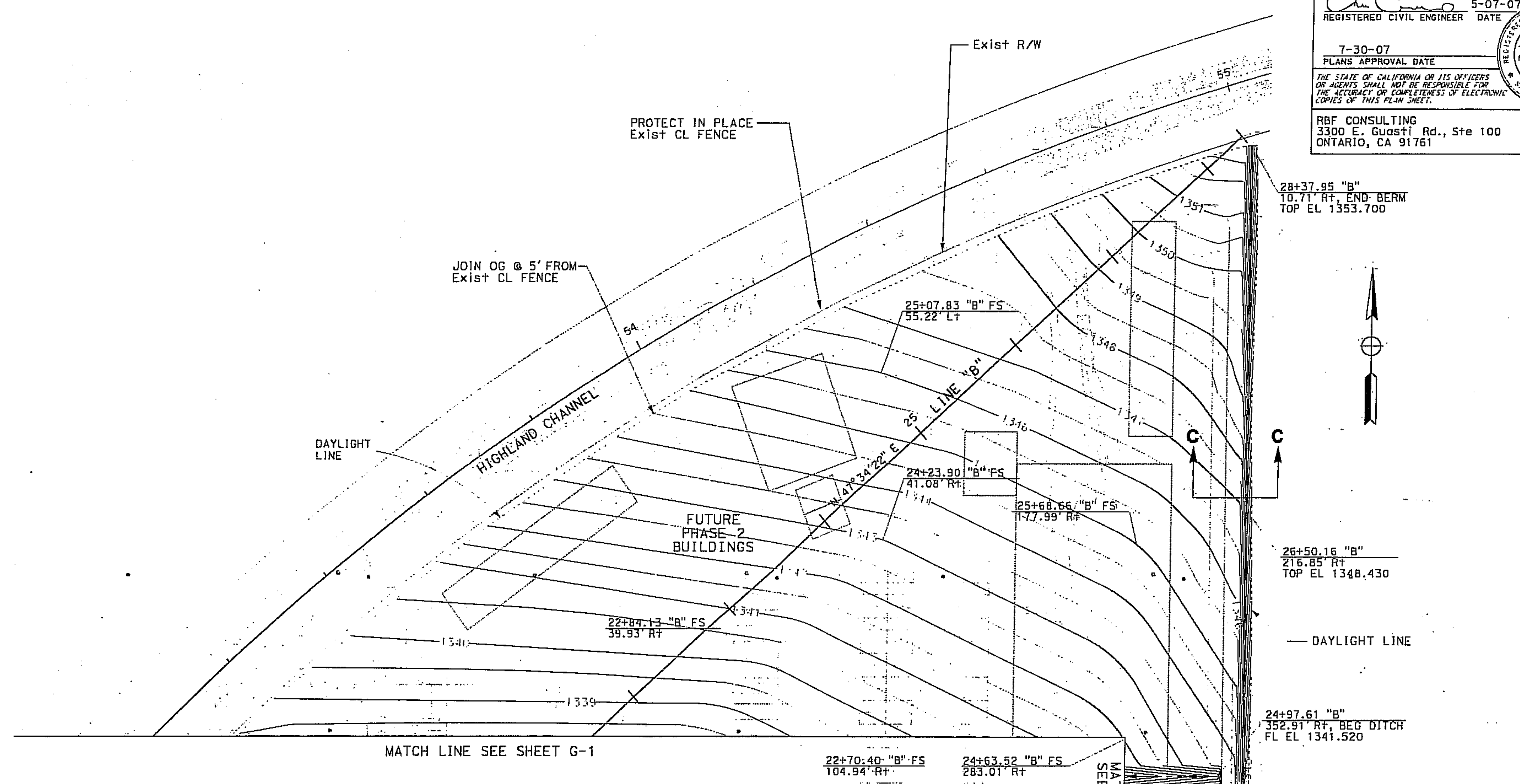
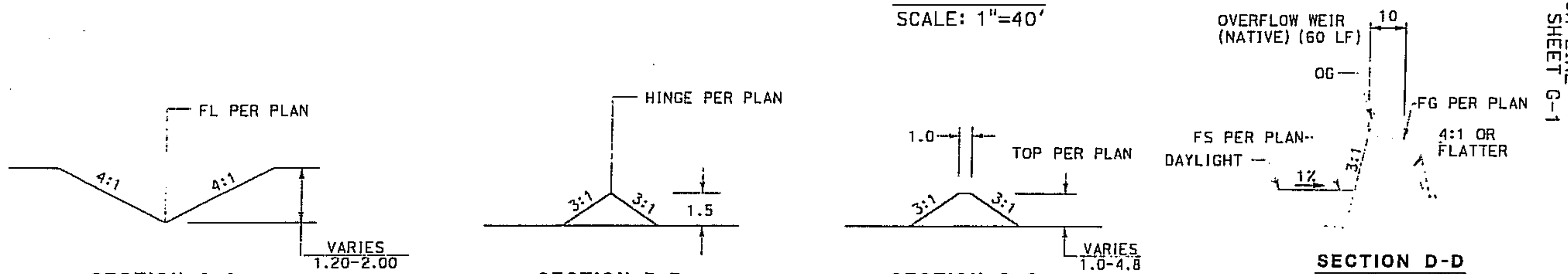


SCALE: 1"=40'



SECTION A-A
NO SCALE

SECTION B-B
NO SCALE

SECTION C-C
NO SCALE

SECTION D-D
NO SCALE

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED

CONTOUR GRADING

SCALE AS SHOWN

G-2

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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DESIGN OVERSIGHT: SERGIO AVILA

CALCULATED-DESIGNED BY: J.W. | CHECKED BY: S.N. | REVISED BY | DATE REVISED

LAST REVISION 05-04-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		15	86

6-21-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

C. COSTELLO
No. 60256
Exp. 06/30/08
CIVIL
STATE OF CALIFORNIA
REGISTERED PROFESSIONAL ENGINEER

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HIGHLAND CHANNEL

LINE "B"

N 47°34'22" E

20+72.96 "B"
0.77' Lt, EL 1336.52

20+64.24 "B"
9.65' Rt, EL 1329.70

21+33.75 "B"
54.85' Rt, EL 1336.52

20+55.43 "B"
0.06' Rt, EL 1336.27

21+33.79 "B"
72.44' Rt, EL 1336.25

21+09.12 "B"
100.89' Rt, EL 1336.20

21+83.34 "B"
167.91' Rt, EL 1336.50

21+23.75 "B"
64.04' Rt,
EL 1329.70

21+83.98 "B"
186.92' Rt, EL 1336.35

20+07.44 "B"
52.57' Rt, EL 1336.18

20+16.74 "B"
60.72' Rt,
EL 1329.70

21+52.63 "B"
220.79' Rt, EL 1336.20

20+89.97 "B"
101.00' Rt, EL 1329.70

22+04.98 "B"
270.77' Rt, EL 1336.20

22+07.26 "B"
283.56' Rt, EL 1336.20

21+74.17 "B"
177.95' Rt, EL 1329.70

21+95.18 "B"
302.29' Rt, EL 1336.20

22+77.21 "B"
375.40' Rt, EL 1336.78

20+07.37 "B"
70.42' Rt, EL 1336.20

21+33.28 "B"
222.68' Rt, EL 1329.70

20+25.89 "B"
69.43' Rt, EL 1329.70

21+74.81 "B"
301.28' Rt, EL 1329.70

22+76.32 "B"
395.94' Rt, EL 1336.73

22+66.58 "B"
385.46' Rt, EL 1329.70

E

E

20+64.72 "B"
358.68' Rt, EL 1329.70

21+87.86 "B"
471.29' Rt, EL 1329.70

20+41.77 "B"
383.80' Rt, EL 1329.70

21+97.70 "B"
480.28' Rt, EL 1336.31

18+76.56 "B"
232.80' Rt, EL 1329.70

21+80.42 "B"
481.93' Rt, EL 1336.20

20+65.55 "B"
377.05' Rt, EL 1336.20

18+66.97 "B"
224.03' Rt, EL 1336.20

20+50.56 "B"
393.37' Rt, EL 1336.20

21+80.96 "B"
591.99' Rt, EL 1334.64

20+34.02 "B"
393.92' Rt, EL 1336.05

20+94.08 "B"
512.54' Rt, EL 1334.65

21+81.92 "B"
602.68' Rt, EL 1334.50

18+67.57 "B"
241.72' Rt, EL 1336.06

21+47.23 "B"
641.02' Rt, EL 1334.50

20+83.11 "B"
513.77' Rt, EL 1334.48

21+75.37 "B"
598.10' Rt, EL 1330.50

21+57.90 "B"
650.88' Rt, EL 1334.50

21+35.79 "B"
641.14' Rt, EL 1330.50

20+58.33 "B"
661.03' Rt, EL 1334.62

20+26.04 "B"
588.06' Rt, EL 1330.50

21+28.39 "B"
681.61' Rt,
EL 1330.50

F

F

20+19.77 "B"
583.26' Rt, EL 1334.45

21+34.69 "B"
686.76' Rt, EL 1334.56

20+20.33 "B"
593.30' Rt, EL 1334.37

21+23.62 "B"
687.85' Rt, EL 1334.43

FUTURE TRANSPORTATION MANAGEMENT CENTER
(STRUCTURE EXCAVATION AND BACKFILL BY OTHERS)

DETENTION BASIN

R/W

80

43'

33'

33'

N 89°37'48.29"E

Exist R/W

LINE "A"

VICTORIA STREET

15

75

SCALE: 1"=40'

FS

OG

2:1

BASE EL 1329.70

SECTION E-E ·STRUCTURE EXCAVATION
NO SCALE

FS

2:1

OG

BASE EL 1330.50

·STRUCTURE EXCAVATION

SECTION F-F
NO SCALE

ALL DIMENSIONS ARE IN FEET
UNLESS OTHERWISE NOTED

CONTOUR GRADING

SCALE AS SHOWN

THIS PLAN IS ACCURATE FOR CONTOUR GRADING WORK ONLY.

G-3

REVISED BY	DATE REVISED
J.W.	S.N.

CALCULATED-DESIGNED BY
CHECKED BY

DESIGN OVERSIGHT
SERGIO AVILA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

06-21-07

CU 08230 | EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		20	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

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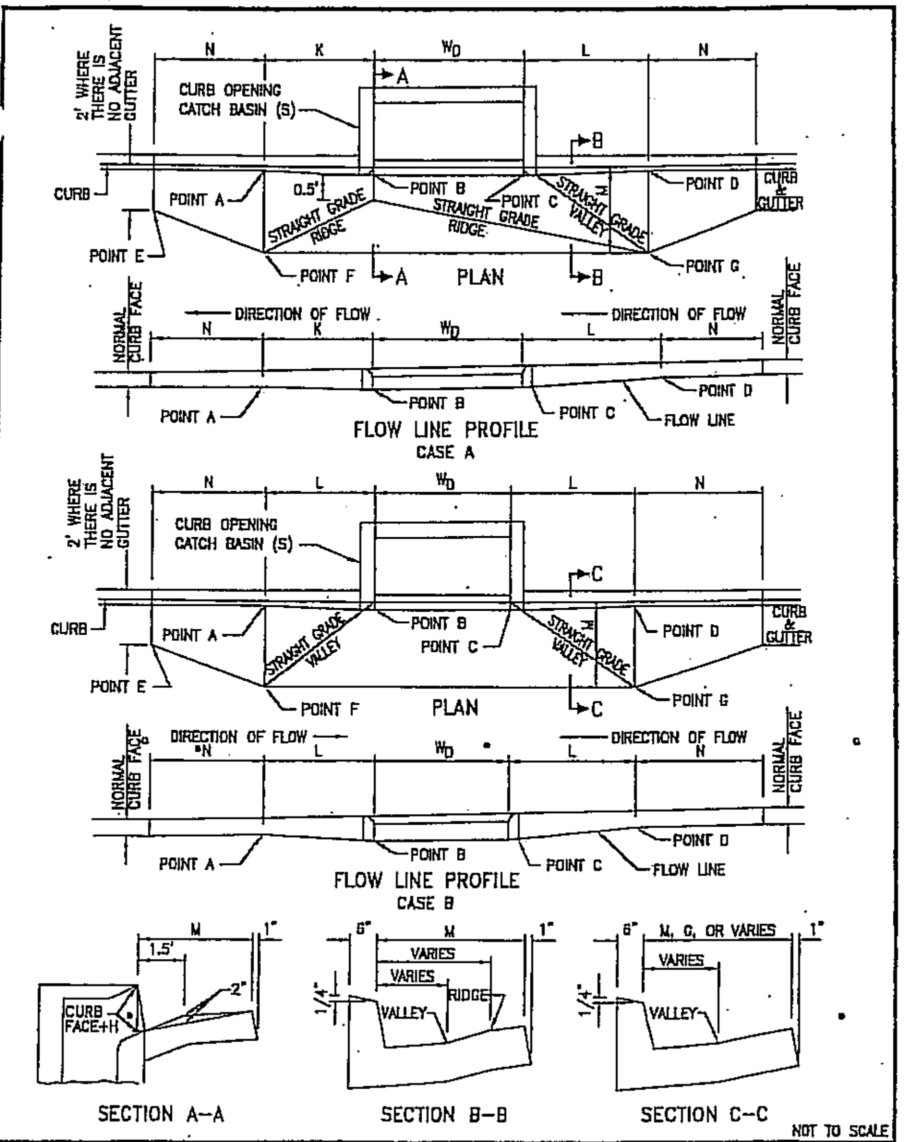


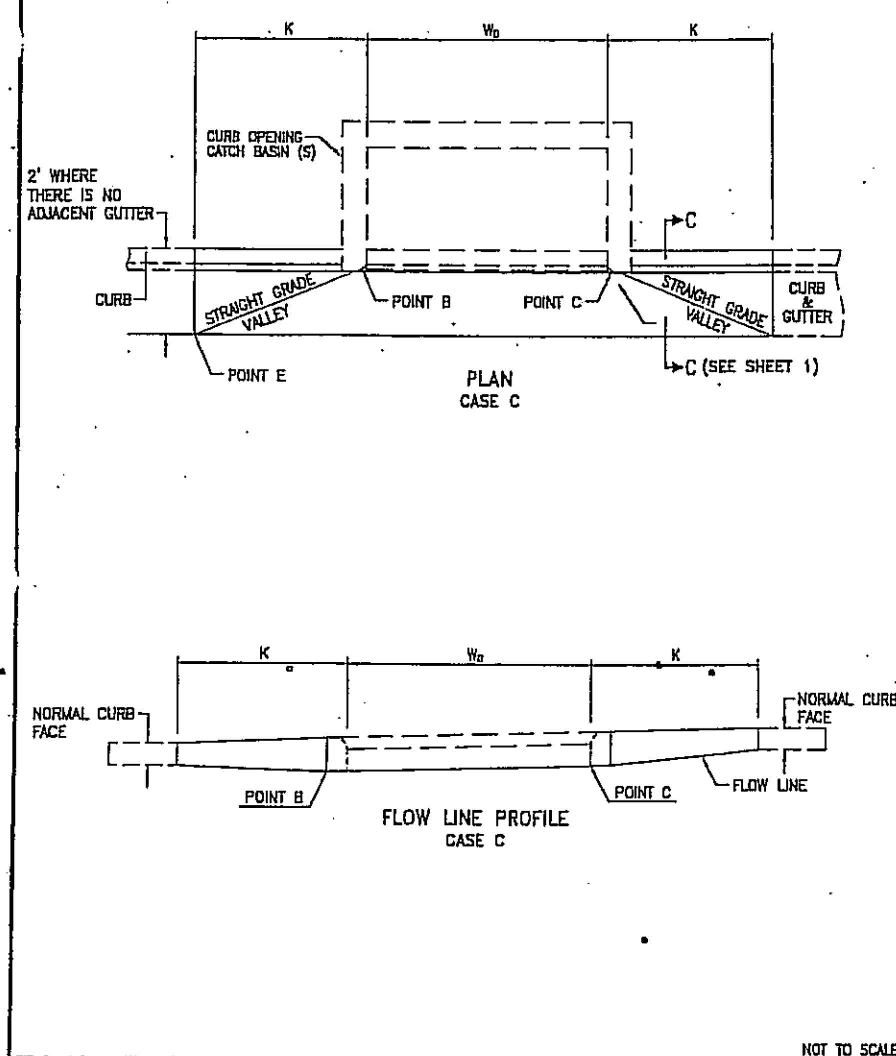
REGISTERED PROFESSIONAL ENGINEER RICARDO SANDOVAL No. 51152 EXP. 9/30/07 CIVIL STATE OF CALIFORNIA

APPROVED BY: 10-18-06
CITY ENGINEER DATE
RICARDO SANDOVAL
REVIEWED BY: DG
DATE OF LAST REVISION:

CITY OF FONTANA

LOCAL DEPRESSIONS AT CATCH BASINS

STD. PLAN NO. 3003 SHT 1 OF 3



REGISTERED PROFESSIONAL ENGINEER RICARDO SANDOVAL No. 51152 EXP. 9/30/07 CIVIL STATE OF CALIFORNIA

APPROVED BY: 10-18-06
CITY ENGINEER DATE
RICARDO SANDOVAL
REVIEWED BY: DG
DATE OF LAST REVISION:

CITY OF FONTANA

LOCAL DEPRESSIONS AT CATCH BASINS

STD. PLAN NO. 3003 SHT 2 OF 3

NOTES

1. ALL EXPOSED EDGES SHALL BE ROUNDED TO A HALF INCH RADIUS.
2. THE CURB FACE AT POINTS A AND D SHALL BE THE NORMAL CURB FACE OF THE ADJACENT CURB. THE CURB FACE AT POINTS B AND C SHALL BE THE NORMAL CURB FACE OF THE ADJACENT CURB PLUS H (SEE APPLICABLE CATCH BASIN STANDARD PLAN).
3. IN EXISTING STREETS WHERE NO PAVEMENT REMODELING IS INDICATED, THE ELEVATION OF THE OUTER EDGE OF THE LOCAL DEPRESSION SHALL MEET THE FINISHED STREET SURFACE.
4. IN NEW STREETS, OR IN EXISTING STREETS WHERE PAVEMENT REMODELING IS INDICATED:

   THE ELEVATIONS OF POINTS F AND G SHALL BE SET H1 HIGHER THAN THE GUTTER FLOW LINE ELEVATIONS AT POINTS A AND D, RESPECTIVELY.

   THE ELEVATIONS OF POINT S SHALL BE SET H2 HIGHER THAN THE ELEVATION AT THE NEAREST GUTTER FLOW LINE.

   WHERE THERE IS NO GUTTER ADJACENT TO THE LOCAL DEPRESSION, THE ELEVATION OF POINT E SHALL BE SET H3 HIGHER THAN THE ELEVATION AT THE NEAREST TOE OF CURB.
5. DIMENSIONS:

   H = NOTED ON THE PROJECT PLANS.
   H1 = NOTED ON THE PROJECT PLANS.
   H2 = NOTED ON THE PROJECT PLANS.
   H3 = NOTED ON THE PROJECT PLANS.
   G = 2 FEET
   K = 5 FEET
   L = 6 FEET
   M = 4 FEET
   N = 5 FEET
   W0 = CATCH BASIN W FOR ONE CATCH BASIN OR DISTANCE BETWEEN EXTREME END WALLS FOR MULTIPLE CATCH BASINS.
   THE THICKNESS OF THE LOCAL DEPRESSION SHALL BE 8 INCHES.
6. DIMENSIONS SHOWN ON THIS PLAN ARE NOT EXACTLY EQUAL VALUES.

REGISTERED PROFESSIONAL ENGINEER RICARDO SANDOVAL No. 51152 EXP. 9/30/07 CIVIL STATE OF CALIFORNIA

APPROVED BY: 10-18-06
CITY ENGINEER DATE
RICARDO SANDOVAL
REVIEWED BY: DG
DATE OF LAST REVISION:

CITY OF FONTANA

LOCAL DEPRESSIONS AT CATCH BASINS

STD. PLAN NO. 3003 SHT 3 OF 3

DRAINAGE DETAILS

NO SCALE

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DD-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN OVERSIGHT: SERGIO AVILA

CALCULATED-DESIGNED BY: J.W.
CHECKED BY: S.N.
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DATE REVISED

BORDER LAST REVISED 11-1-2006

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

CU 08230 | EA 377001

05-04-07

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07 PLANS APPROVAL DATE

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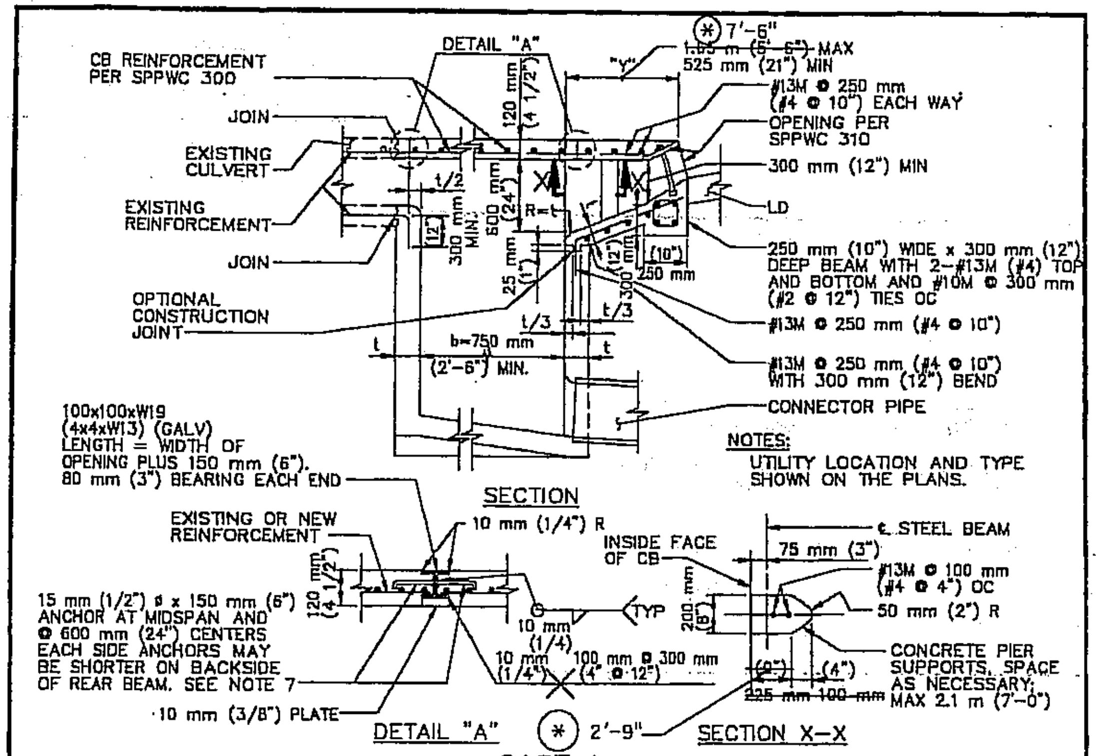
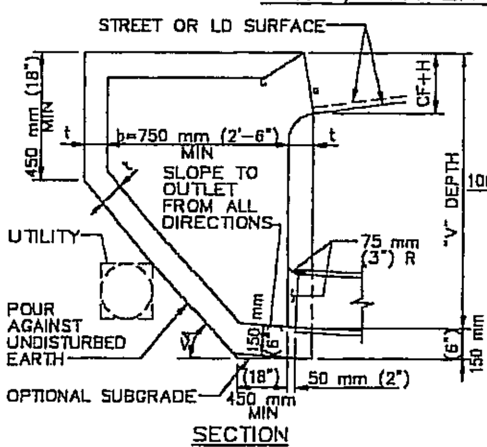
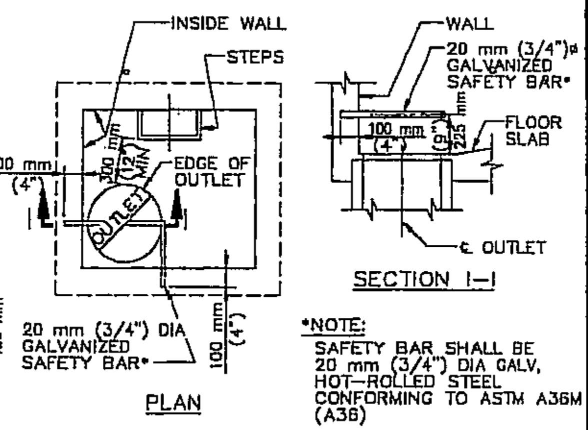


CASE 1
CATCH BASIN MODIFICATION WITH REAR CULVERT ENTRANCE AND / OR ENTRANCE PROJECTION



CASE 2
CATCH BASIN MODIFICATION TO AVOID EXISTING UTILITY



*NOTE:
SAFETY BAR SHALL BE 20 mm (3/4") DIA GALV, HOT-ROLLED STEEL CONFORMING TO ASTM A36M (A36)

CASE 3
SAFETY BAR FOR DROP OUTLET CATCH BASIN

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1992 REV. 1993, 1996

MODIFICATIONS FOR SIDE OPENING CATCH BASIN

STANDARD PLAN METRIC 314-2 SHEET 1 OF 2

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

(*) MODIFIED FOR PROJECT-SPECIFIC REQUIREMENTS.

NOTES

1. MODIFICATIONS ARE TO BE USED AS REQUIRED BY THE PLANS. ANY ADDITIONAL CHANGES ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.
2. DETAILS NOT SHOWN SHALL BE PER THE APPLICABLE CATCH BASIN STANDARD PLANS.
3. REFER TO THE PLANS FOR DETAILS OF THE UTILITY AND CULVERT.
4. INTERFERING PORTIONS OF EXISTING CULVERTS SHALL BE REMOVED ON A LINE NORMAL TO THE CULVERT CENTER LINE AND A PORTION OF THE CULVERT RECONSTRUCTED IF REQUIRED. SAWCUTTING SHALL BE USED TO PROVIDE A NEAT JOINT ON THE EXPOSED SURFACE AND TRANSVERSE STEEL SHALL BE RETAINED.
5. PLACE STEPS IN END WALL OF CATCH BASIN UNLESS OTHERWISE SHOWN.
6. WHEN REINFORCEMENT IS REQUIRED BY SPPWC 309, IT SHALL BE PLACED TO THE CONFIGURATION OF THE MODIFIED BASIN. IF ANGLE A EXCEEDS 45° THE SLOPING PORTION OF THE INVERT SHALL BE REINFORCED AS THE REAR WALL. LENGTH OF BARS SHALL BE INCREASED AS NECESSARY.
7. ELECTRICALLY WELDED STUDS 15 mm x 200 mm (1/2" x 8"), NELSON H4F OR EQUAL MAY BE USED IN LIEU OF THE DEFORMED BAR ANCHORS. IF THE TOP SLABS OF THE CATCH BASIN AND THE CULVERT ARE NOT IN THE SAME PLANE THE ANCHORS ON THE CULVERT SIDE SHALL BE OMITTED.
8. THE FOLLOWING SPPWC ARE INCORPORATED HEREIN:

300 CURB OPENING CATCH BASIN
308 MONOLITHIC CATCH BASIN CONNECTION
309* CATCH BASIN REINFORCEMENT
310 CATCH BASIN FACE PLATE ASSEMBLY AND PROTECTION BAR
312 CATCH BASIN MANHOLE FRAME AND COVER
635 STEEL STEP
~~636 POLYPROPYLENE PLASTIC STEP~~

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

MODIFICATIONS FOR SIDE OPENING CATCH BASIN

STANDARD PLAN METRIC 314-2 SHEET 2 OF 2

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DRAINAGE DETAILS

NO SCALE

DD-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

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CALCULATED-DESIGNED BY J.W. CHECKED BY S.N.
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		22	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

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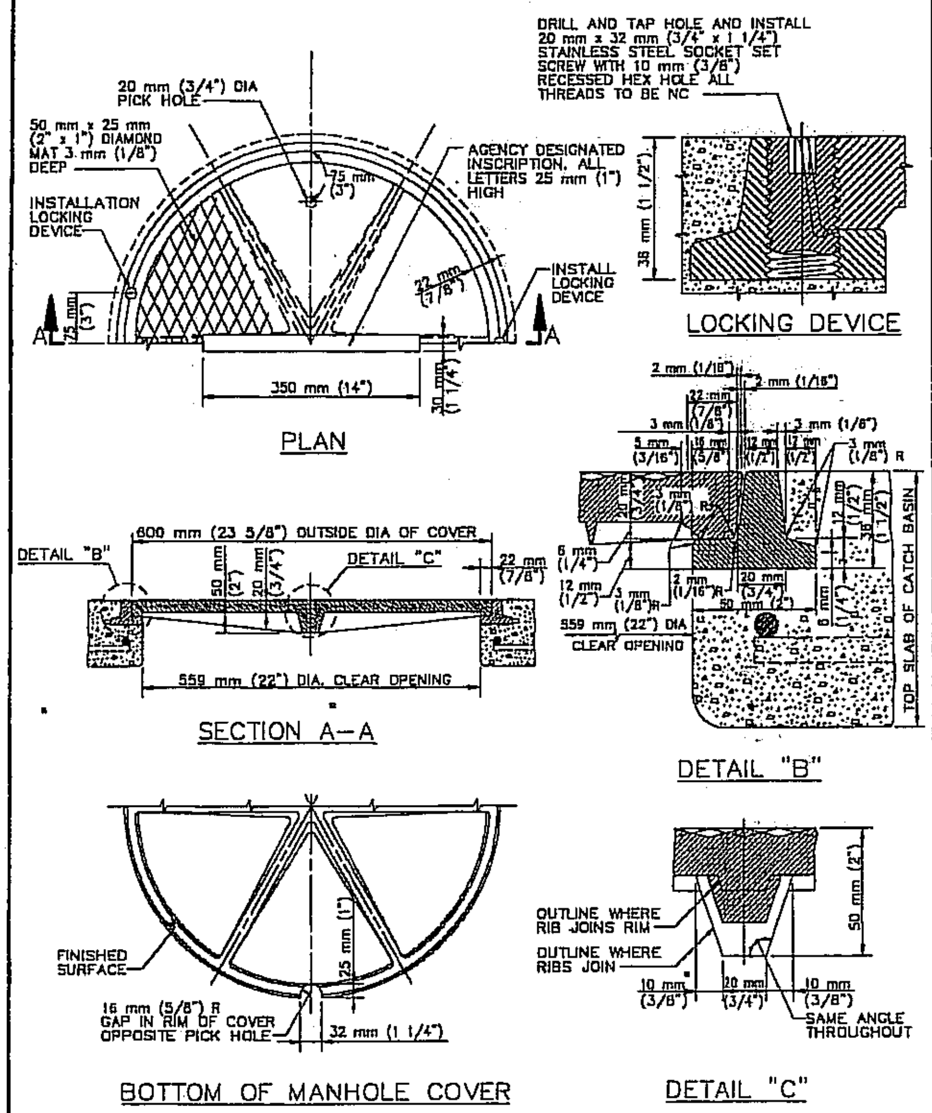

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1984 REV. 1983, 1990

CATCH BASIN MANHOLE FRAME AND COVER

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN METRIC 312-2 SHEET 1 OF 2

NOTES

1. THE CAST IRON USED SHALL CONFORM TO ASTM A48M CLASS 35B.
2. THE FRAME AND COVER SHALL BE COATED WITH ASPHALTUM OR BITUMINOUS PAINT AFTER TESTING AND INSPECTION.
3. FOUNDRY IDENTIFYING MARK, HEAT AND DATE SHALL BE CAST ON THE BOTTOM OF THE COVER AND ON THE INSIDE OF THE FRAME.
4. IMPORTED COVERS AND FRAMES SHALL HAVE THE COUNTRY OF ORIGIN MARKING IN COMPLIANCE WITH FEDERAL REGULATIONS.
5. WEIGHT OF FRAME SHALL BE 15 Kg (30 POUNDS). WEIGHT OF COVER SHALL BE 40 kg (85 POUNDS). ACTUAL WEIGHTS SHALL BE WITHIN A RANGE OF 95% TO 110%.
6. THE MANHOLE FRAME AND COVER SHALL BE INSPECTED BY THE ENGINEER PRIOR TO SHIPMENT TO THE WORK SITE. ACCEPTANCE WILL BE INDICATED BY THE AGENCY'S MARK.
7. THE PROOF-LOAD FOR TEST METHOD B OF SSPWC 206-3.2 IS 127 kN (28,600 POUNDS).
8. AGENCY INSCRIPTION SHALL BE AS SPECIFIED ON THE PLANS OR SPECIAL PROVISIONS.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

CATCH BASIN MANHOLE FRAME AND COVER

STANDARD PLAN METRIC 312-2 SHEET 2 OF 2

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DRAINAGE DETAILS

NO SCALE

DD-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION Caltrans

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CALCULATED-DESIGNED BY J.W. CHECKED BY S.N.

REVISED BY DATE REVISED

LAST REVISION 05-04-07

BORDER LAST REVISED 11 1 2006

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

CU 08230

EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		23	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07
PLANS APPROVAL DATE

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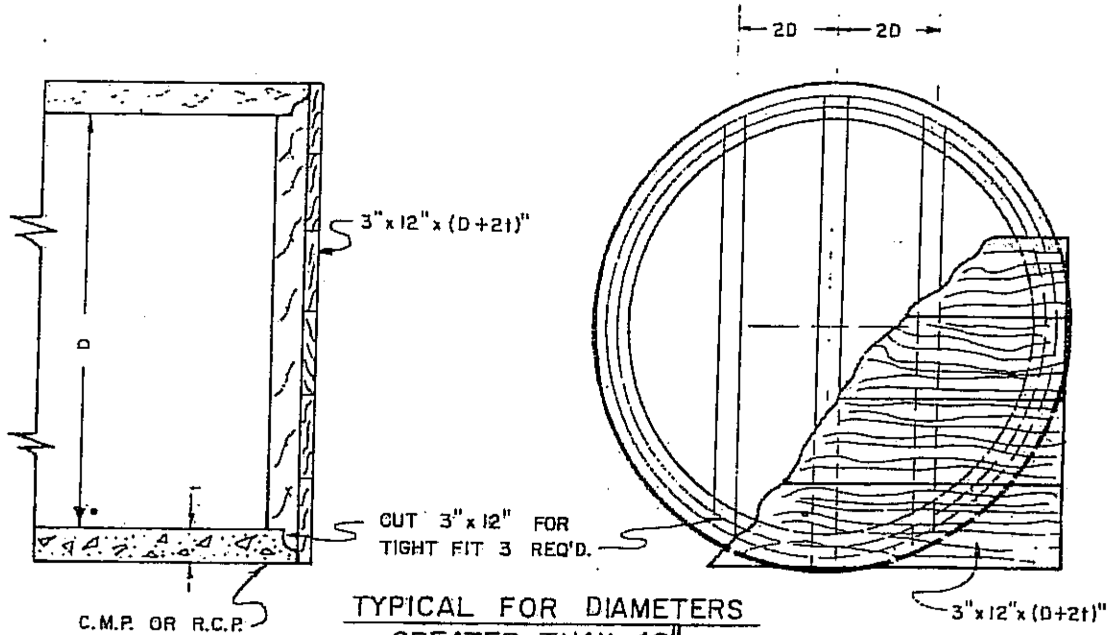
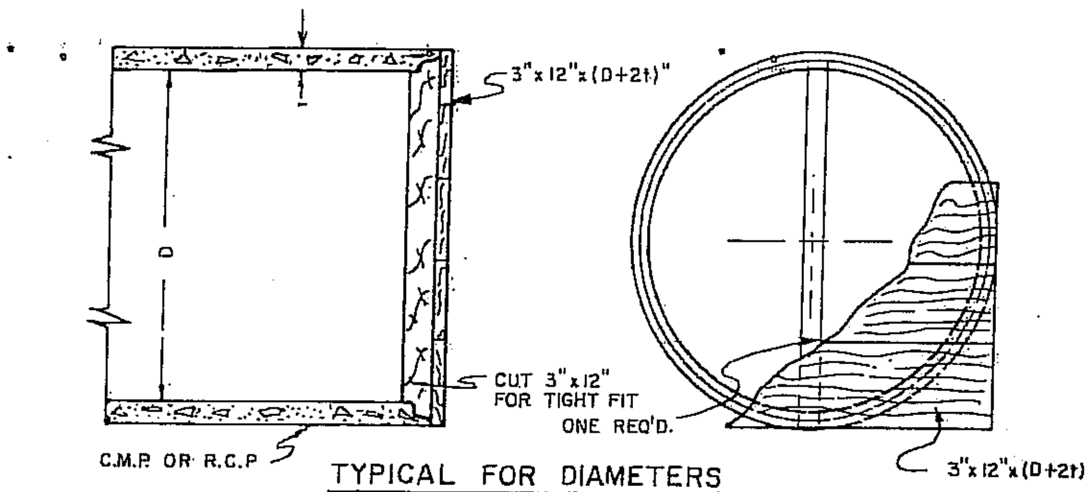


TYPICAL FOR DIAMETERS GREATER THAN 48"

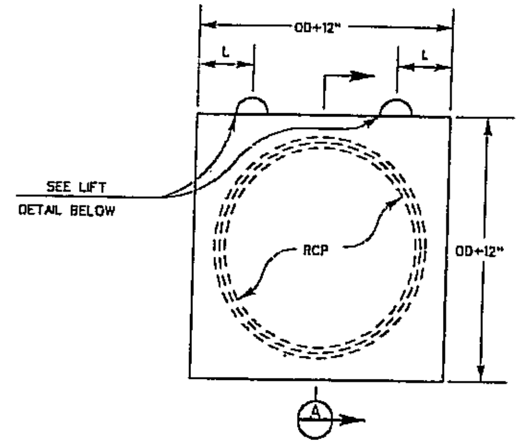


TYPICAL FOR DIAMETERS 48" AND LESS

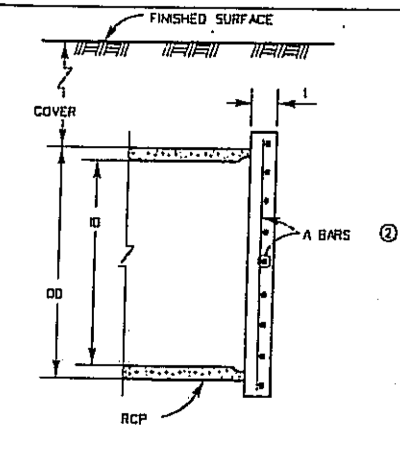
NOTES:

1. NAIL 3"x 12" TO VERTICAL SUPPORTS WITH 40d GALV. NAILS 3" %.
2. ALL LUMBER SHALL BE CREOSOTED DOUGLAS FIR, 1500 f CONSTRUCTION GRADE.

TIMBER BULKHEAD

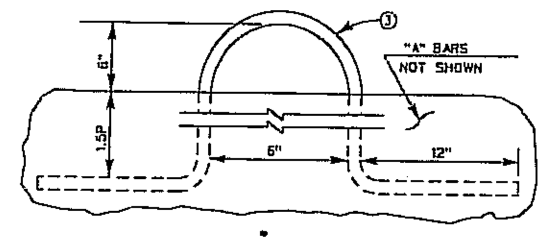


FRONT VIEW

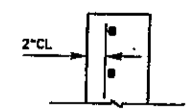


SECTION A

ID (IN)	MAX COVER (FT)	t (IN)	A BARS	L, P
46	5	4	4 @ 9	1'-6"
	10	4	4 @ 6	
	15	5	4 @ 6	
60	5	4	4 @ 6	1'-8"
	10	5	4 @ 6	
	15	5	5 @ 6	
66	5	5	4 @ 6	1'-10"
	10	5	5 @ 6	
	15	5	5 @ 6	
72	5	5	4 @ 6	2'-0"
	10	5	5 @ 6	
	15	5	6 @ 6	
78	5	5	5 @ 6	2'-2"
	10	5	6 @ 6	
	15	6	6 @ 6.	
84	5	5	5 @ 6	2'-4"
	10	5	6 @ 6.	
	15	6	6 @ 5	
90	5	5	6 @ 6	2'-5"
	10	6	6 @ 6	
	15	6	6 @ 5	
96	5	5	6 @ 6	2'-7"
	10	6	6 @ 5	
	15	6	7 @ 6	



LIFT DETAIL



DETAIL

NOTES

1. CONCRETE SHALL BE CLASS 'A'.

② ALL REINFORCING STEEL SHALL BE CENTERED IN BULKHEAD EXCEPT FOR PIPE DIAMETER GREATER THAN 96". VERTICAL "A" BARS SHALL BE PLACED AT 2" CLEAR FROM THE INSIDE FACE OF THE BULKHEAD. HORIZONTAL "A" BARS SHALL BE PLACED TOWARDS OUTSIDE FACE OF BULKHEAD PER DETAIL.

③ LIFTS SHALL BE WOVEN STEEL CABLE WITH SAME MINIMUM DIAMETER (d) AS "A" BARS. WEAVE CABLE THROUGH HORIZONTAL "A" BARS. COAT EXPOSED PORTION OF CABLE LIFTS WITH AN APPROVED BITUMINOUS PAINT PRIOR TO BACKFILLING TRENCH.

REGISTERED PROFESSIONAL ENGINEER No. 32338 Exp. 12-31-04 CIVIL STATE OF CALIFORNIA

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
APPROVED BY:
CHIEF ENGINEER
DATE: April 5, 2004 R.C.E. NO. 32338

CONCRETE BULKHEAD

STANDARD DRAWING NUMBER M816

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DRAINAGE DETAILS

NO SCALE

DD-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT: SERGIO AVILA

CALCULATED-DESIGNED BY	J.W.	REVISED BY
CHECKED BY	S.N.	DATE REVISED

LAST REVISION 05-04-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		24	86

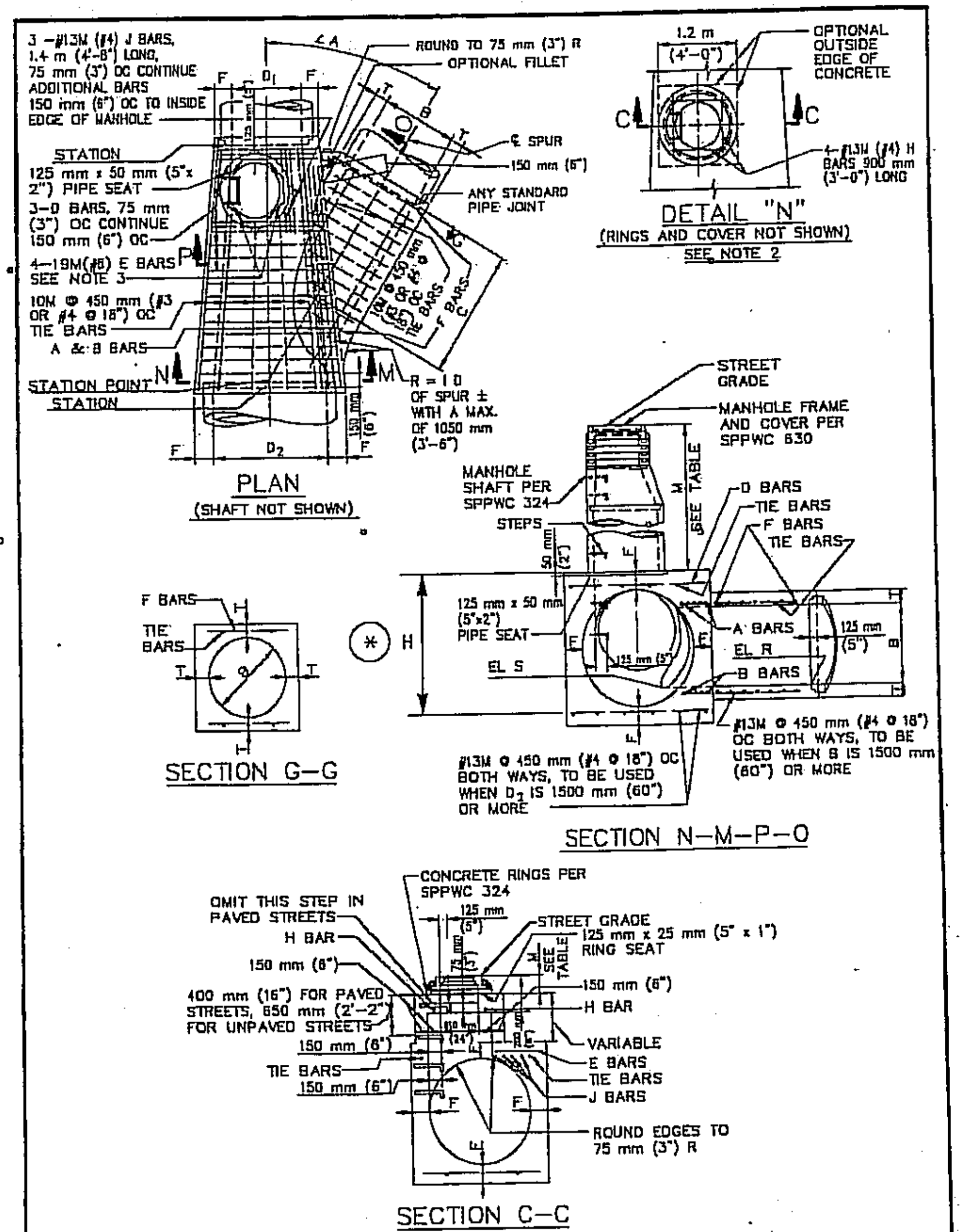
REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07
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 C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761



STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1992 REV. 1998

MANHOLE PIPE TO PIPE (LARGE SIDE INLET)

STANDARD PLAN METRIC 322-1 SHEET 1 OF 4

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

(*) MODIFIED FOR PROJECT-SPECIFIC REQUIREMENTS.

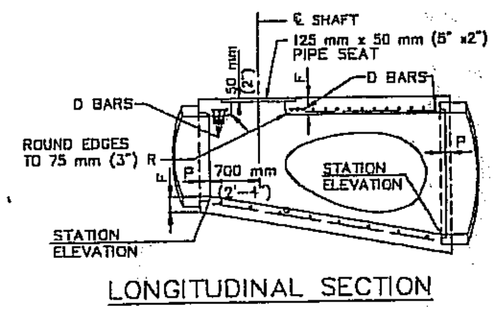


TABLE OF BARS SIZES		
D_2 OR B	A & B	D OR F
300 mm (12")-975 mm (39")	#16M @ 75 mm (#5 @ 3")	#13M @ 150 mm (#4 @ 6")
1050 mm (42")-2100 mm (84")	#19M @ 75 mm (#6 @ 3")	#16M @ 150 mm (#5 @ 6")
2250 mm (90")-3600 mm (144")	#22M @ 75 mm (#7 @ 3")	#19M @ 150 mm (#6 @ 6")

TABLE OF VALUES FOR M (SEE NOTE 2)				
SECTION	PAVED STREET		UNPAVED STREET	
	MAX	MIN	MAX	MIN
N-M-P-O		867 mm (2'-10 1/2")		1060 mm (3'-6")
C-C	282 mm (11")	217 mm (8 1/2")	410 mm (16")	380 mm (15")

TABLE OF VALUES FOR F	
D_2	F
900 mm (36")	165 mm (6 1/2")
975 mm (39")	180 mm (7")
1050 mm (42")	190 mm (7 1/2")
1125 mm (45")	195 mm (7 3/4")
1200 mm (48")	205 mm (8")
1275 mm (51")	215 mm (8 1/2")
1350 mm (54")	230 mm (9")
1425 mm (57")	235 mm (9 1/4")
1500 mm (60")	240 mm (9 1/2")
1575 mm (63")	255 mm (10")
1650 mm (66")	260 mm (10 1/4")
1725 mm (69")	275 mm (10 3/4")
1800 mm (72")	280 mm (11")
1950 mm (78")	300 mm (11 3/4")
2100 mm (84")	320 mm (12 1/2")
2250 mm (90")	335 mm (13 1/4")
2400 mm (96")	355 mm (14")
2550 mm (102")	395 mm (15 1/2")
2700 mm (108")	405 mm (16")
2850 mm (114")	420 mm (16 1/2")
3000 mm (120")	430 mm (17")
3150 mm (126")	430 mm (17")
3300 mm (132")	445 mm (17 1/2")
3450 mm (138")	445 mm (17 1/2")
3600 mm (144")	455 mm (18")

TABLE OF VALUES FOR T	
B	T
300 mm (12")	100 mm (4")
375 mm (15")	110 mm (4 1/4")
450 mm (18")	115 mm (4 1/2")
525 mm (21")	125 mm (5")
600 mm (24")	135 mm (5 1/4")
675 mm (27")	140 mm (5 1/2")
750 mm (30")	150 mm (6")
825 mm (33")	160 mm (6 1/4")
900 mm (36")	165 mm (6 1/2")
975 mm (39")	180 mm (7")
1050 mm (42")	190 mm (7 1/2")
1125 mm (45")	195 mm (7 3/4")
1200 mm (48")	205 mm (8")
1275 mm (51")	215 mm (8 1/2")
1350 mm (54")	230 mm (9")
1425 mm (57")	235 mm (9 1/4")
1500 mm (60")	240 mm (9 1/2")
1575 mm (63")	255 mm (10")
1650 mm (66")	260 mm (10 1/4")
1725 mm (69")	275 mm (10 3/4")
1800 mm (72")	280 mm (11")
1950 mm (78")	300 mm (11 3/4")
2100 mm (84")	320 mm (12 1/2")
2250 mm (90")	335 mm (13 1/4")
2400 mm (96")	355 mm (14")
2550 mm (102")	395 mm (15 1/2")
2700 mm (108")	405 mm (16")
2850 mm (114")	420 mm (16 1/2")
3000 mm (120")	430 mm (17")
3150 mm (126")	430 mm (17")
3300 mm (132")	445 mm (17 1/2")
3450 mm (138")	445 mm (17 1/2")
3600 mm (144")	465 mm (18")

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

MANHOLE PIPE TO PIPE (LARGE SIDE INLET)

STANDARD PLAN METRIC 322-1 SHEET 2 OF 4

NOTES

1. VALUES FOR A, B, C, D_1, D_2 ELEVATION R AND ELEVATION S ARE SHOWN ON THE PLANS. ELEVATION S APPLIES AT INSIDE WALL OF STRUCTURE.
2. WHEN DEPTH M FROM STREET GRADE TO THE TOP OF THE BOX IS LESS THAN 867 mm (2'-10 1/2") FOR PAVED STREETS OR 1060 mm (3'-6") FOR UNPAVED STREETS, CONSTRUCT MONOLITHIC SHAFT PER SECTION C-C AND DETAIL "N". SHAFT FOR ANY DEPTH OF MANHOLE MAY BE CONSTRUCTED PER SECTION C-C. WHEN DIAMETER D_1 IS 1200 mm (48") OR LESS, CENTER OF SHAFT MAY BE LOCATED PER NOTE 3.
3. CENTER OF MANHOLE SHAFT SHALL BE LOCATED OVER CENTERLINE OF STORM DRAIN WHEN DIAMETER D_1 IS 1200 mm (48") OR LESS, IN WHICH CASE PLACE E BARS SYMMETRICALLY AROUND SHAFT AT 45° WITH CENTERLINE.
4. LENGTH OF MANHOLE MAY BE INCREASED AT OPTION TO MEET PIPE ENDS, BUT ANY CHANGE IN LOCATION OF SPUR MUST BE APPROVED BY THE ENGINEER.
5. P SHALL BE 125 mm (5") FOR D_2=2400 mm (96") OR LESS AND 200 mm (8") FOR D_2 OVER 2400 mm (96").
6. *REINFORCEMENT SHALL CONFORM TO ASTM A 615M, GRADE 300 (ASTM A 615, GRADE 40), AND SHALL TERMINATE 40 mm (1 1/2") CLEAR OF CONCRETE SURFACES UNLESS OTHERWISE SHOWN.
7. FLOOR OF MANHOLE SHALL BE STEEL TROWELED TO SPRING LINE.
8. BODY OF MANHOLE SHALL BE POURED IN ONE CONTINUOUS OPERATION EXCEPT THAT A CONSTRUCTION JOINT WITH A LONGITUDINAL KEYWAY MAY BE PLACED AT SPRING LINE.
9. THICKNESS OF THE DECK SHALL VARY WHEN NECESSARY TO PROVIDE A LEVEL SEAT BUT SHALL NOT BE LESS THAN THE TABULAR VALUES OF F SHOWN ON TABLE, SHEET 1.
10. IF LATERALS ENTER ON BOTH SIDES OF MANHOLE, SHAFT SHALL BE LOCATED ON SIDE RECEIVING THE SMALLER LATERAL.
11. STEPS SHALL CONFORM TO SPPWC 635 ~~OR 636, UNLESS OTHERWISE SHOWN~~, STEPS SHALL BE UNIFORMLY SPACED 350 mm (14") TO 375 mm (15") OC. THE LOWEST STEP SHALL NOT BE MORE THAN 600 mm (24") ABOVE THE INVERT.
12. THE FOLLOWING CRITERIA SHALL BE USED FOR THIS MANHOLE:
    A. THIS STANDARD PLAN IS USED WHEN SPPWC 320 IS INADEQUATE. MAIN LINE = 900 mm (36") INSIDE DIAMETER OR LARGER.
    B. LATERAL = 300 mm (12") TO 3600 mm (144") INSIDE DIAMETER; HOWEVER, THE INSIDE DIAMETER SHALL NOT EXCEED THE INSIDE DIAMETER OF THE MAIN LINE.
13. MANHOLE FRAME AND COVER SHALL CONFORM TO SPPWC 630 UNLESS OTHERWISE SHOWN.
14. MANHOLE SHAFT SHALL CONFORM TO SPPWC 324 UNLESS OTHERWISE SHOWN.
15. WHERE A MANHOLE SHAFT – 900 mm (36") WITHOUT REDUCER IS SPECIFIED REFER TO SPPWC 326.
16. WHERE A PRESSURE MANHOLE SHAFT – WITH ECCENTRIC REDUCER IS SPECIFIED REFER TO SPPWC 328.
17. WHERE A PRESSURE MANHOLE SHAFT – 914 mm (36") WITHOUT REDUCER IS SPECIFIED REFER TO SPPWC 329.
18. THE FOLLOWING SPPWC ARE INCORPORATED HEREIN:

    324 MANHOLE SHAFT – WITH ECCENTRIC REDUCER
    ~~326 MANHOLE SHAFT – 900 mm (36") WITHOUT REDUCER~~
    ~~328 PRESSURE MANHOLE SHAFT – WITH ECCENTRIC~~
    ~~329 PRESSURE MANHOLE SHAFT – 914 mm (36") WITHOUT REDUCER~~
    630 610 mm (24") MANHOLE FRAME AND COVER
    ~~633 914 mm (36") MANHOLE FRAME AND COVER~~
    635 STEEL STEP
    ~~636 POLYPROPYLENE PLASTIC STEP~~

DRAINAGE DETAILS

NO SCALE

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DD-5

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		25	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07
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 C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

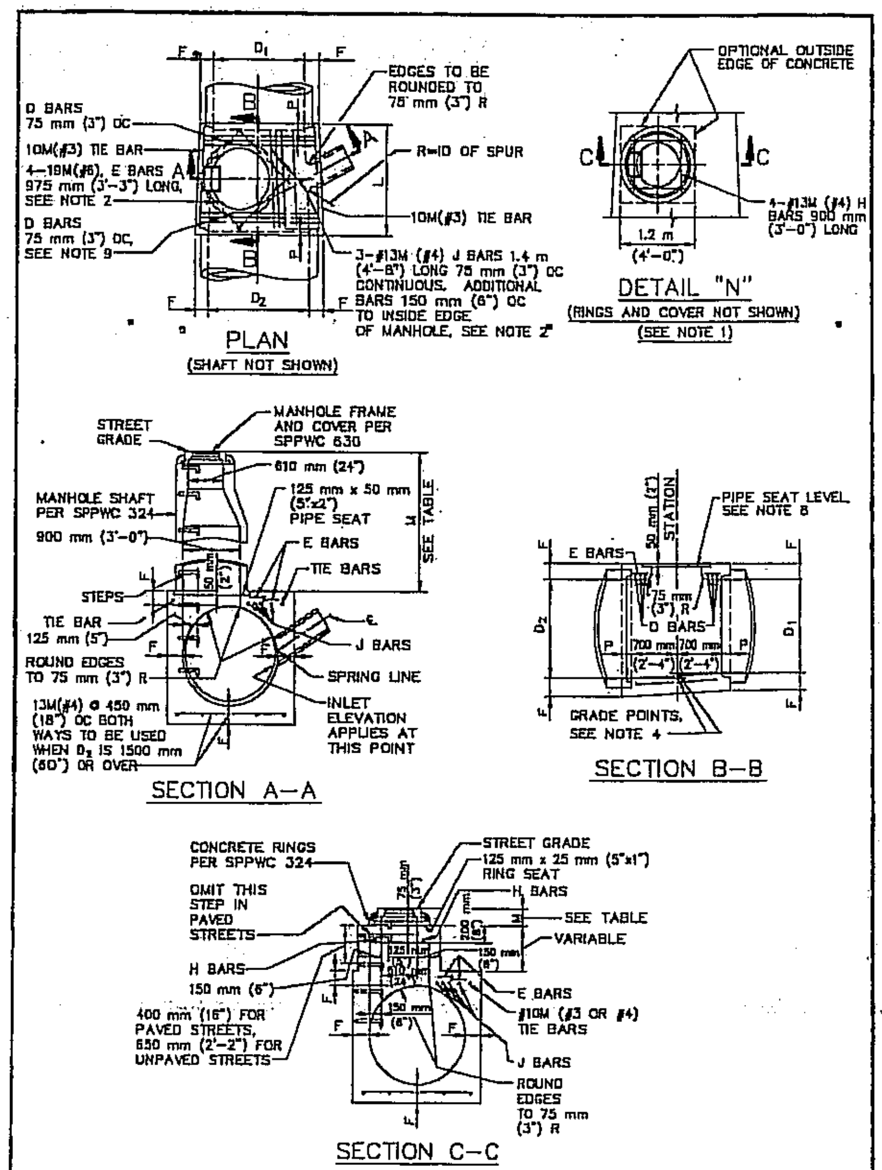
RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

TABLE OF VALUES FOR M (SEE NOTE 1)

SECTION	PAVED STREET		UNPAVED STREET	
	MAX	MIN	MAX	MIN
A–A		867 mm (2'–10 1/2")		1060 mm (3'–6")
C–C	282 mm (11")	217 mm (8 1/2")	410 mm (16")	380 mm (15")

TABLE OF VALUES FOR F

D_2	F
900 mm (36")	165 mm (6 1/2")
975 mm (39")	180 mm (7")
1050 mm (42")	190 mm (7 1/2")
1125 mm (45")	195 mm (7 3/4")
1200 mm (48")	205 mm (8")
1275 mm (51")	215 mm (8 1/2")
1350 mm (54")	230 mm (9")
1425 mm (57")	235 mm (9 1/4")
1500 mm (60")	240 mm (9 1/2")
1575 mm (63")	255 mm (10")
1650 mm (66")	260 mm (10 1/4")
1725 mm (69")	275 mm (10 3/4")
1800 mm (72")	280 mm (11")
1950 mm (78")	300 mm (11 3/4")
2100 mm (84")	320 mm (12 1/2")
2250 mm (90")	335 mm (13 1/4")
2400 mm (96")	355 mm (14")
2550 mm (102")	395 mm (15 1/2")
2700 mm (108")	405 mm (16")
2850 mm (114")	420 mm (16 1/2")
3000 mm (120")	430 mm (17")
3150 mm (126")	430 mm (17")
3300 mm (132")	445 mm (17 1/2")
3450 mm (138")	445 mm (17 1/2")
3600 mm (144")	455 mm (18")



STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1992 REV. 1998

MANHOLE PIPE TO PIPE
MAIN LINE ID=900 mm (36") OR LARGER

STANDARD PLAN METRIC 320–1
SHEET 1 OF 4

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

NOTES

1. WHEN DEPTH M FROM STREET GRADE TO THE TOP OF THE BOX IS LESS THAN 867 mm (2'–10 1/2") FOR PAVED STREETS OR 1060 mm (3'–6") FOR UNPAVED STREETS, CONSTRUCT MONOLITHIC SHAFT PER SECTION C–C AND DETAIL "N". SHAFT FOR ANY DEPTH OF MANHOLE MAY BE CONSTRUCTED PER SECTION C–C. WHEN DIAMETER D_1 IS 1200 mm (48") OR LESS, CENTER OF SHAFT MAY BE LOCATED PER NOTE 2.
2. CENTER OF MANHOLE SHAFT SHALL BE LOCATED OVER CENTER LINE OF STORM DRAIN WHEN DIAMETER D_1 IS 1200 mm (48") OR LESS, IN WHICH CASE PLACE E BARS SYMMETRICALLY AROUND SHAFT AT 45° WITH CENTERLINE AND OMIT J BARS.
3. L AND P SHALL HAVE THE FOLLOWING VALUES UNLESS OTHERWISE SHOWN ON THE PROJECT DRAWINGS:
   A. D_2=2400 mm (96") OR LESS, L=1.7 m (5'–6"), P=130 mm (5")
   B. D_2 OVER 2400 mm (96"), L=1.8 m (6'–0"), P=210 mm (8")
   L MAY BE INCREASED OR LOCATION OF MANHOLE SHIFTED TO MEET PIPE ENDS. WHEN L GREATER THAN THAT SHOWN ABOVE IS SPECIFIED, D BARS SHALL BE CONTINUED 150 mm (6") OC.
4. STATIONS OF MANHOLES SHOWN ON PLANS APPLY AT CENTERLINE OF SHAFT. ELEVATIONS ARE SHOWN AT CENTERLINE OF SHAFT AND REFER TO THE PROLONGED INVERT GRADE LINES.
5. REINFORCEMENT SHALL CONFORM TO ASTM A 615M, GRADE 300 (ASTM A 615, GRADE 40), AND SHALL TERMINATE 40 mm (1 1/2") CLEAR OF CONCRETE SURFACES UNLESS OTHERWISE SHOWN.
6. FLOOR OF MANHOLE SHALL BE STEEL TROWELED TO SPRING LINE.
7. BODY OF MANHOLE SHALL BE POURED IN ONE CONTINUOUS OPERATION EXCEPT THAT A CONSTRUCTION JOINT WITH A LONGITUDINAL KEYWAY MAY BE PLACED AT SPRING LINE.
8. THICKNESS OF THE DECK SHALL VARY WHEN NECESSARY TO PROVIDE A LEVEL SEAT BUT SHALL NOT BE LESS THAN THE TABULAR VALUES FOR F SHOWN ON SHEET 2.
9. D BARS SHALL BE #13M (#4) FOR D_2=975 mm (39") OR LESS, #16M (#5) FOR D_2= 1050 mm (42") TO 2100 mm (84") INCLUSIVE AND #19M (#6) FOR D_2 = 2250 mm (90") OR OVER.
10. CENTERLINE OF INLET PIPE SHALL INTERSECT INSIDE FACE OF CONE AT SPRING LINE UNLESS OTHERWISE SHOWN.
11. STEPS SHALL CONFORM TO SPPWC 635 ~~OR 636. UNLESS OTHERWISE SHOWN,~~ STEPS SHALL BE UNIFORMLY SPACED 350 mm (14") TO 375 mm (15") OC. THE LOWEST STEP SHALL NOT BE MORE THAN 600 mm (24") ABOVE THE INVERT.
12. THE FOLLOWING CRITERIA SHALL BE USED FOR THIS MANHOLE:
   A. MAIN LINE = 900 mm (36") INSIDE DIAMETER OR LARGER. EXCEPT IF THE MAIN LINE RCP DOWNSTREAM OF MANHOLE IS 900 mm (36") TO 1050 mm (42") INSIDE DIAMETER AND THE MAIN LINE RCP UPSTREAM IS 825 mm (33") OR LESS SPPWC 321 SHALL BE USED.
   B. THE OUTSIDE DIAMETER OF THE LATERAL MUST BE LESS THAN OR EQUAL TO 1/2 THE INSIDE DIAMETER OF THE MAIN LINE. IF THE UPSTREAM AND DOWNSTREAM DIAMETERS OF THE MANHOLE ARE NOT THE SAME, THE GOVERNING INSIDE DIAMETER OF THE MAIN LINE SHALL BE CONSIDERED TO BE THAT WHERE THE EXTENDED CENTERLINE OF THE LATERAL ENTERS THE MANHOLE.
   C. IN NO INSTANCE SHALL THE INSIDE DIAMETER OF THE LATERAL TO THE MANHOLE BE GREATER THAN 750 mm (30").
13. MANHOLE FRAME AND COVER SHALL CONFORM TO SPPWC 630 UNLESS OTHERWISE SHOWN.
14. MANHOLE SHAFT SHALL CONFORM TO SPPWC 324 UNLESS OTHERWISE SHOWN.
15. WHERE A MANHOLE SHAFT – 900 mm (36") WITHOUT REDUCER IS SPECIFIED REFER TO SPPWC 326.
16. WHERE A PRESSURE MANHOLE SHAFT – WITH ECCENTRIC REDUCER IS SPECIFIED REFER TO SPPWC 328.
17. WHERE A PRESSURE MANHOLE SHAFT – 914 mm (36") WITHOUT REDUCER IS SPECIFIED REFER TO SPPWC 329.
18. THE FOLLOWING SPPWC ARE INCORPORATED HEREIN:
   324 MANHOLE SHAFT – WITH ECCENTRIC REDUCER
   ~~326 MANHOLE SHAFT – 900 mm (36") WITHOUT REDUCER~~
   ~~328 PRESSURE MANHOLE SHAFT – WITH ECCENTRIC~~
   ~~329 PRESSURE MANHOLE SHAFT 914 mm (36") WITHOUT REDUCER~~
   630 610 mm (24") MANHOLE FRAME AND COVER
   ~~633 914 mm (36") MANHOLE FRAME AND COVER~~
   635 STEEL STEP
   ~~636 POLYPROPYLENE PLASTIC STEP~~

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DRAINAGE DETAILS

NO SCALE

DD-6

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT SERGIO AVILA

CALCULATED-DESIGNED BY J.W. CHECKED BY S.N.

REVISED BY DATE REVISED

LAST REVISION 05-04-07 DATE PLOTTED => 07-AUG-2007 TIME PLOTTED => 13:51

BORDER LAST REVISED 11-1-2000

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => trmiles1
DGN FILE => 837700ue006.dgn

CU 08230

EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		26	86

7-12-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL

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.

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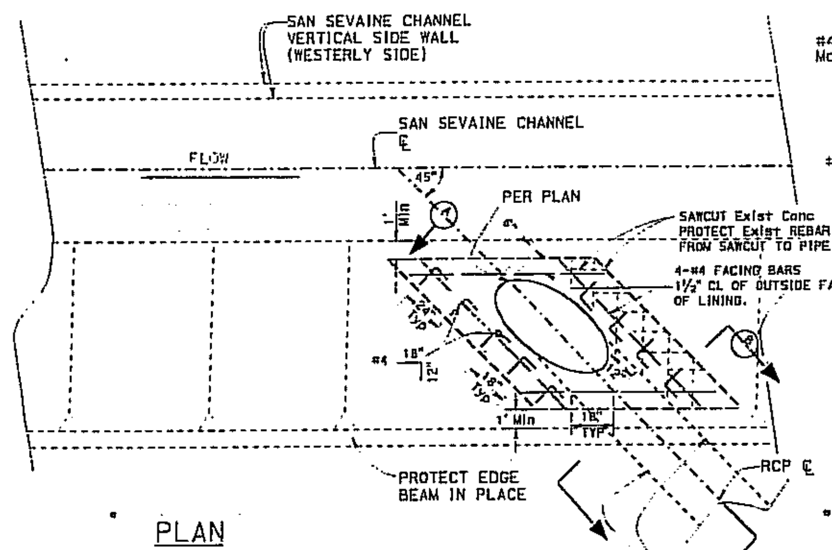
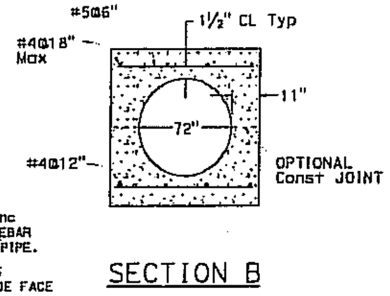
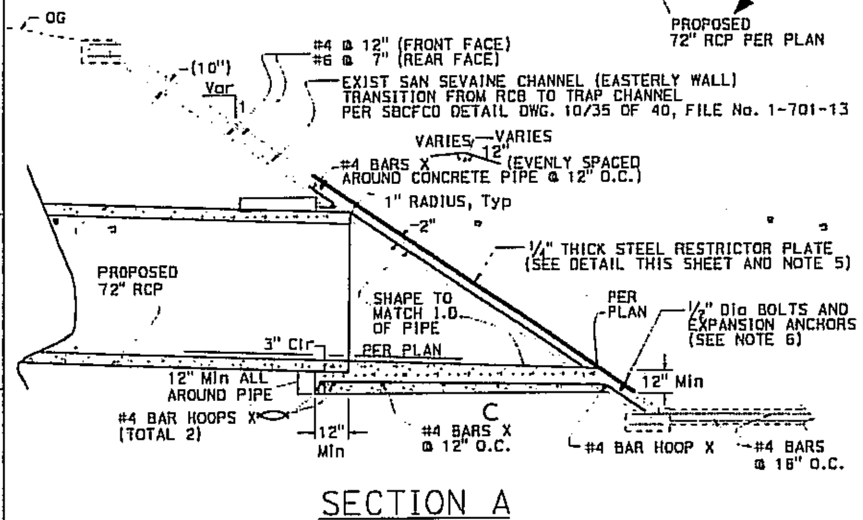
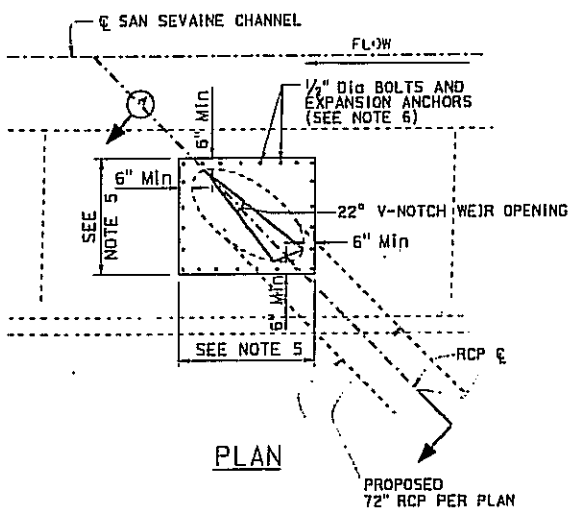
ONTARIO, CA 91761







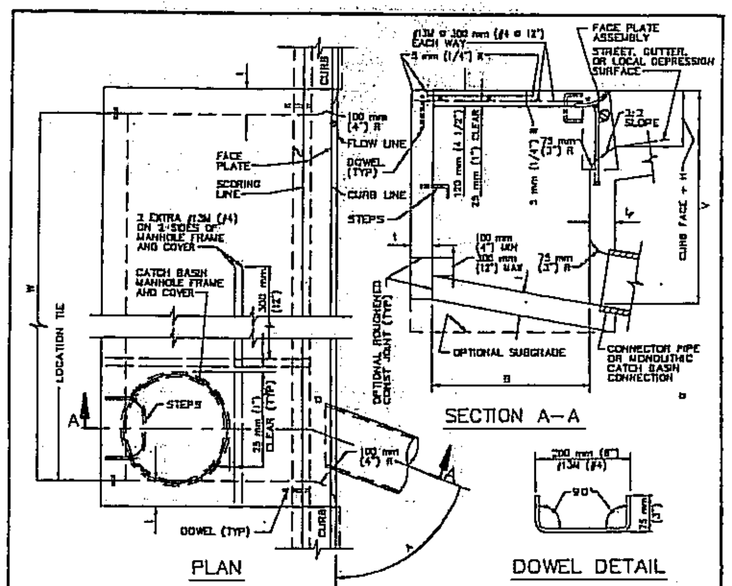
CONCRETE PIPE CONNECTION DETAIL



STEEL RESTRICTOR PLATE DETAIL

NOTES:

1. REINFORCING BARS SHALL BE PLACED 1½" CLEAR FROM FACE OF CONCRETE.
2. CONCRETE SHALL BE CLASS "A".
3. PLACE #4-12"x18" BARS WITH SHORT LEG HORIZONTAL IN VERTICAL J.S WALL. ROTATE LONGER LEG INTO CENTER OF SLOPE PAVING.
4. REINFORCEMENT SHALL BE PROVIDED IN ALL PORTIONS OF THE JUNCTION STRUCTURE AS INDICATED ON DRAWINGS REGARDLESS OF BAR LENGTH MODIFICATION REQUIRED TO ACHIEVE PROPER CLEARANCES.
5. CONTRACTOR SHALL VERIFY CONTROLLING FIELD DIMENSIONS BEFORE FABRICATING RESTRICTOR PLATE.
6. RESTRICTOR PLATE BOLTS AND ½" EXPANSION ANCHORS SHALL BE EVENLY SPACED AROUND THE PERIMETER OF THE STEEL PLATE AT 18" MAXIMUM AND 2" CLEAR OF THE EDGE OF PLATE.



STRUCTURAL DATA							
WALL AND SLAB DIMENSIONS AND REINFORCEMENT REQUIREMENTS							
MAX W	MAX V	t	t_F	REINFORCEMENT REQUIRED IN: FRONT WALL	REAR WALL	BOTTOM SLAB*	END WALL
1.0 m (3.5')	2.4 m (8')	150 mm (6")	150 mm (6")			(*) #4 @ 12" O.C.	
1.0 m (3.5')	3.5 m (12')	200 mm (8")	200 mm (8")				
2.0 m (7')	1.8 m (6')	150 mm (6")	150 mm (6")				
2.0 m (7')	3.5 m (12')	200 mm (8")	200 mm (8")				
4.0 m (14')	1.2 m (4')	150 mm (6")	150 mm (6")	REINFORCEMENT			
	2.4 m (8')	150 mm (6")	200 mm (8")				
4.0 m (14')	3.5 m (12')	200 mm (8")	250 mm (10")				
6 m (20') AND 9 m (28')	1.2 m (4')	150 mm (6")	150 mm (6")			REQUIRED	
	1.8 m (6')	150 mm (6")	200 mm (8")				
	2.4 m (8')	200 mm (8")	200 mm (8")				
	3.0 m (10')	200 mm (8")	250 mm (10")				
	3.5 m (12')	200 mm (8")	250 mm (10")				

FOR W > 9 m (28'), V > 3.5 m (12') OR B > 1.2 m (4') SEE PLANS

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
CURB OPENING CATCH BASIN — STANDARD PLAN METRIC 300–2, SHEET 1 OF 2
USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

(*) MODIFIED FOR PROJECT-SPECIFIC REQUIREMENTS.

NOTES:

1. WHERE THE BASIN IS TO BE CONSTRUCTED WITHIN THE LIMITS OF EXISTING OR PROPOSED SIDEWALK OR IS CONTIGUOUS TO SUCH SIDEWALK, THE TOP SLAB OF THE BASIN MAY BE POURED EITHER MONOLITHIC WITH THE SIDEWALK OR SEPARATELY, USING THE SAME CLASS OF CONCRETE AS IN THE BASIN. WHEN POURED MONOLITHICALLY, THE SIDEWALK SHALL BE PROVIDED WITH A WEAKENED PLANE OR A 25 mm (1") DEEP SAWCUT CONTINUOUSLY AROUND THE EXTERNAL PERIMETER OF THE CATCH BASIN WALLS, INCLUDING ACROSS THE FULL WIDTH OF THE SIDEWALK. SURFACE OF ALL EXPOSED CONCRETE SHALL CONFORM IN SLOPE, GRADE, COLOR, FINISH, AND SCORING TO EXISTING OR PROPOSED CURB AND WALK ADJACENT TO THE BASIN.
2. ALL CURVED CONCRETE SURFACES SHALL BE FORMED BY CURVED FORMS, AND SHALL NOT BE SHAPED BY PLASTERING.
3. FLOOR OF BASIN SHALL BE GIVEN A STEEL TROWEL FINISH AND SHALL HAVE A LONGITUDINAL AND LATERAL SLOPE OF 1:12 MINIMUM AND 1:3 MAXIMUM, EXCEPT WHERE THE GUTTER GRADE EXCEEDS 8%, IN WHICH CASE THE LONGITUDINAL SLOPE OF THE FLOOR SHALL BE THE SAME AS THE GUTTER GRADE. SLOPE FLOOR FROM ALL DIRECTIONS TO THE OUTLET.
4. DIMENSIONS:
   - B = 970 mm (3'-2")
   - V = THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE CURB AND THE INVERT OF THE CATCH BASIN AT THE OUTLET = 1.35 m (4.5').
   - V_u = THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE CURB AND THE INVERT AT THE UPSTREAM END OF THE BASIN, AND SHALL BE DETERMINED BY THE REQUIREMENTS OF NOTE 3, BUT SHALL NOT BE LESS THAN CURB FACE PLUS 300 mm (12").
   - V_i = THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE CURB AND THE INVERT OF THE INLET, NOTED ON THE PLANS.
   - H = NOTED ON THE PLANS.
   - W = NOTED ON THE PLANS.
   - A = THE ANGLE, IN DEGREES, INTERCEPTED BY THE CENTERLINE OF THE CONNECTOR PIPE AND THE CATCH BASIN WALL TO WHICH THE CONNECTOR PIPE IS ATTACHED.
5. PLACE CONNECTOR PIPES AS INDICATED ON THE PLANS. UNLESS OTHERWISE SPECIFIED, THE CONNECTOR PIPE SHALL BE LOCATED AT THE DOWNSTREAM END OF THE BASIN. WHERE THE CONNECTOR PIPE IS SHOWN AT A CORNER, THE CENTERLINE OF THE PIPE SHALL INTERSECT THE INSIDE CORNER OF THE BASIN. THE PIPE MAY BE CUT AND TRIMMED AT A SKEW NECESSARY TO INSURE MINIMUM 80 mm (3") PIPE EMBEDMENT, ALL AROUND, WITHIN THE CATCH BASIN WALL, AND 75 mm (3") RADIUS OF ROUNDING OF STRUCTURE CONCRETE, ALL AROUND, ADJACENT TO PIPE ENDS. A MONOLITHIC CATCH BASIN CONNECTION SHALL BE USED TO JOIN THE CONNECTOR PIPE TO THE CATCH BASIN WHENEVER ANGLE "A" IS LESS THAN 70° OR GREATER THAN 110°, OR WHENEVER THE CONNECTOR PIPE IS LOCATED IN A CORNER. THE OPTIONAL USE OF A MONOLITHIC CATCH BASIN CONNECTION IN ANY CASE IS PERMITTED. MONOLITHIC CATCH BASIN CONNECTIONS MAY BE CONSTRUCTED TO AVOID CUTTING STANDARD LENGTHS OF PIPE.
6. STEPS SHALL BE LOCATED AS SHOWN. IF THE CONNECTOR PIPE INTERFERES WITH THE STEPS, THEY SHALL BE LOCATED AT THE CENTERLINE OF THE DOWNSTREAM END WALL. STEPS SHALL BE SPACED 300 mm (12") APART. THE TOP STEP SHALL BE 175 mm (7") BELOW THE TOP OF THE MANHOLE AND PROJECT 65 mm (2-1/2"). ALL OTHER STEPS SHALL PROJECT 130 mm (5").
7. DOWELS ARE REQUIRED AT EACH CORNER AND AT 2 m (7') ON CENTER (MAXIMUM) ALONG THE BACKWALL.
8. THE FOLLOWING SPPWC ARE INCORPORATED HEREIN:
   - 308 MONOLITHIC CATCH BASIN CONNECTION
   - 309 CATCH BASIN REINFORCEMENT
   - 310 CATCH BASIN FACE PLATE ASSEMBLY AND PROTECTION BAR
   - 312 CATCH BASIN MANHOLE FRAME AND COVER
   - 635 STEEL STEP
   - ~~636 POLYPROPYLENE PLASTIC STEP~~

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
CURB OPENING CATCH BASIN — STANDARD PLAN METRIC 300–2, SHEET 2 OF 2

DRAINAGE DETAILS

NO SCALE

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DD-7

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION — Caltrans
DESIGN OVERSIGHT: SERGIO AVILA
CALCULATED-DESIGNED BY: J.W. — CHECKED BY: S.N.
REVISED BY / DATE REVISED

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: J.W.
CHECKED BY: S.N.

DESIGN OVERSIGHT: SERGIO AVILA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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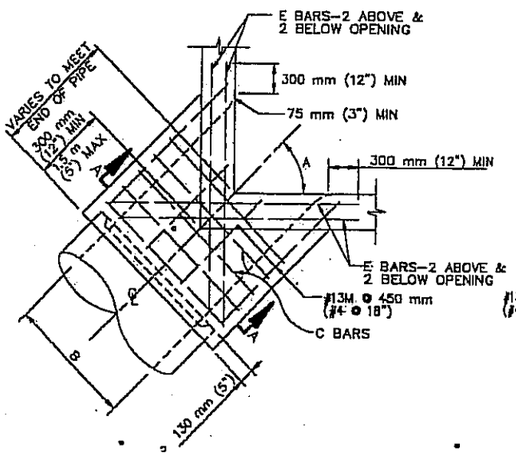
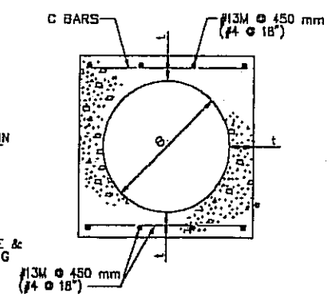
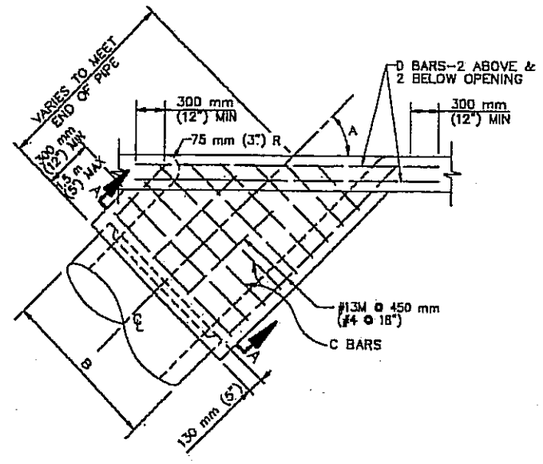


PLAN
CORNER CONNECTION



SECTION A–A



PLAN
SIDE CONNECTION

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION		
PROMULGATED BY THE PUBLIC WORKS STANDARDS, INC. GREENBOOK COMMITTEE 1994 REV. 1996	MONOLITHIC CATCH BASIN CONNECTION USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION	STANDARD PLAN METRIC 308–1 SHEET 1 OF 2

STRUCTURAL DATA							
B	t	C BARS	D&E BARS	B	t	C BARS	D&E BARS
300 mm (12")	115 mm (4")	#13M @ 150 mm (#4 @ 6")	#16M (#5)	1050 mm (42")	190 mm (7 1/2")	#16M @ 150 mm (#5 @ 6")	#19M (#6)
375 mm (15")	115 mm (4 1/4")			1125 mm (45")	190 mm (7 3/4")		
450 mm (18")	115 mm (4 1/2")			1200 mm (48")	215 mm (8")		
525 mm (21")	140 mm (5")			1275 mm (51")	215 mm (8 1/2")		
600 mm (24")	140 mm (5 1/4")			1350 mm (54")	240 mm (9")		
675 mm (27")	140 mm (5 1/2")			1425 mm (57")	240 mm (9 1/4")		
750 mm (30")	165 mm (6")			1500 mm (60")	240 mm (9 1/2")		
825 mm (33")	165 mm (6 1/4")			1575 mm (63")	260 mm (10")		
900 mm (36")	165 mm (6 1/2")			1650 mm (66")	260 mm (10 1/4")		
975 mm (39")	190 mm (7")			1725 mm (69")	280 mm (10 3/4")		
				1800 mm (72")	280 mm (11")		
FOR B GREATER THAN 1800 mm (72") SEE PLANS							

NOTES

1. REINFORCING STEEL SHALL BE 40 mm (1–1/2") CLEAR FROM FACE OF CONCRETE UNLESS OTHERWISE SHOWN.
2. REINFORCING STEEL FOR INSIDE FACE OF CATCH BASIN SHALL BE CUT AT CENTER OF OPENING AND BENT INTO WALLS OF MONOLITHIC CATCH BASIN CONNECTION. REINFORCING STEEL FOR OUTSIDE FACE OF CATCH BASIN SHALL BE CUT 50 mm (2") CLEAR OF OPENING.
3. CONNECTION SHALL BE PLACED MONOLITHIC WITH CATCH BASIN. THE ROUNDED EDGE OF OUTLET SHALL BE CONSTRUCTED BY PLACING CONCRETE WITH THE SAME CLASS OF CONCRETE AS THE CATCH BASIN AGAINST A CURVED FORM WITH A RADIUS OF 75 mm (3").
4. CONNECTIONS SHALL BE CONSTRUCTED WHEN:
   (A) PIPES INLET OR OUTLET THROUGH CORNER OF CATCH BASIN
   (B) ANGLE A FOR PIPES THROUGH 750 mm (30") IN DIAMETER IS LESS THAN 70° OR GREATER THAN 110°.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION		
MONOLITHIC CATCH BASIN CONNECTION		STANDARD PLAN METRIC 308–1 SHEET 2 OF 2

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DRAINAGE DETAILS

NO SCALE

DD-8

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		27	86

5-07-07
REGISTERED CIVIL ENGINEER — DATE

7-30-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — C. COSTELLO — No. 60256 — Exp. 06/30/08 — CIVIL — STATE OF CALIFORNIA

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LAST REVISION 05-04-07 — DATE PLOTTED = 25-AUG-2007 — TIME PLOTTED = 11:51

BORDER LAST REVISED 11/1/2006 — RELATIVE BORDER SCALE IS IN INCHES — USERNAME = rmil461 — DGN FILE = 8377dtlc608.dgn — CU 08230 — EA 377001

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		28	86

5-07-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — C. COSTELLO — No. 60256 — Exp. 06/30/08 — CIVIL — STATE OF CALIFORNIA

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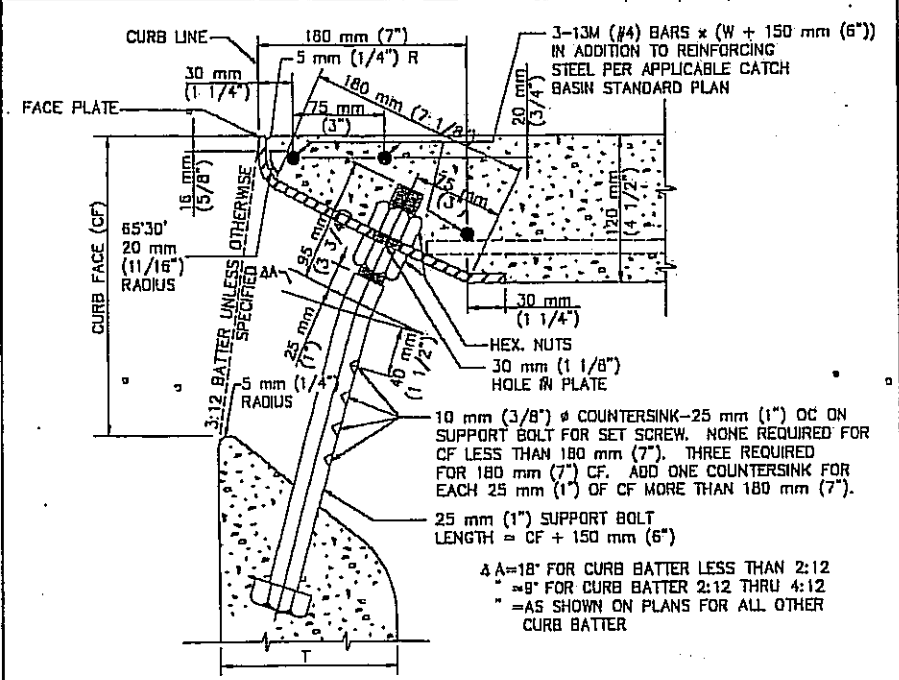
SUPPORT BOLT AND FACE PLATE 120 mm (4 1/2") TOP SLAB



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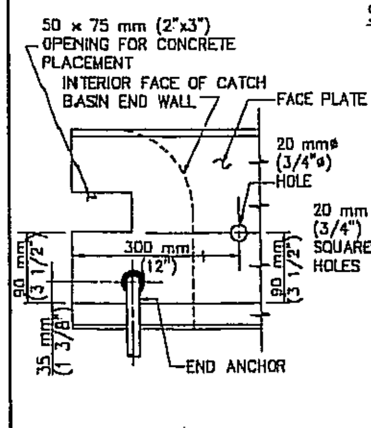

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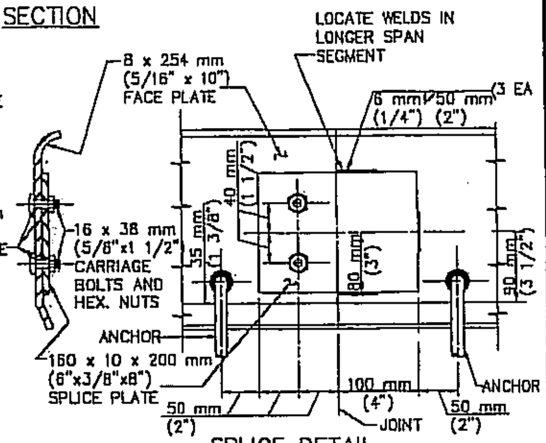
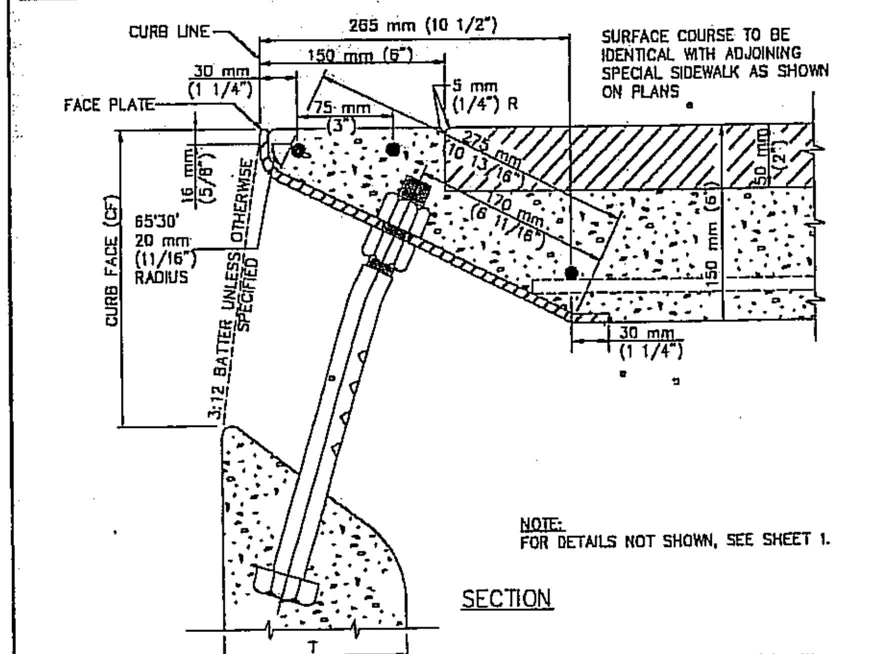


SPLICE DETAIL

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION		
PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1984 REV. 1996, 2005	CATCH BASIN FACE PLATE ASSEMBLY AND PROTECTION BAR	STANDARD PLAN METRIC 310–2 SHEET 1 OF 6
	USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION	

SUPPORT BOLT AND FACE PLATE 150 mm (6") TOP SLAB



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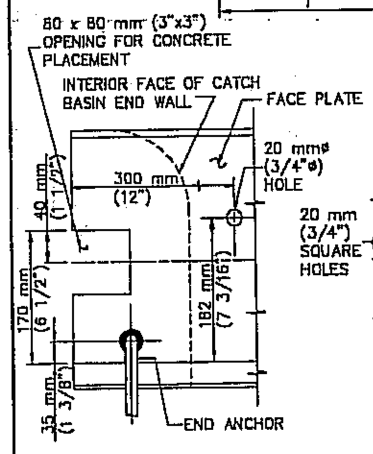

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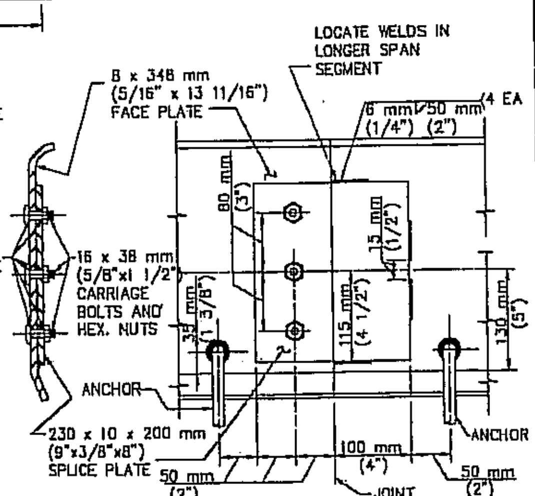
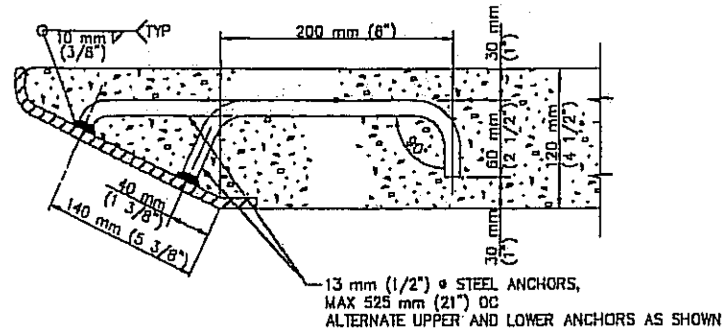


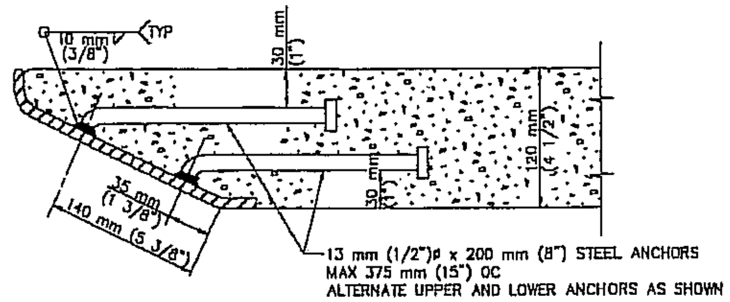
SPLICE DETAIL

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION	STANDARD PLAN METRIC 310–2 SHEET 2 OF 6
CATCH BASIN FACE PLATE ASSEMBLY AND PROTECTION BAR	

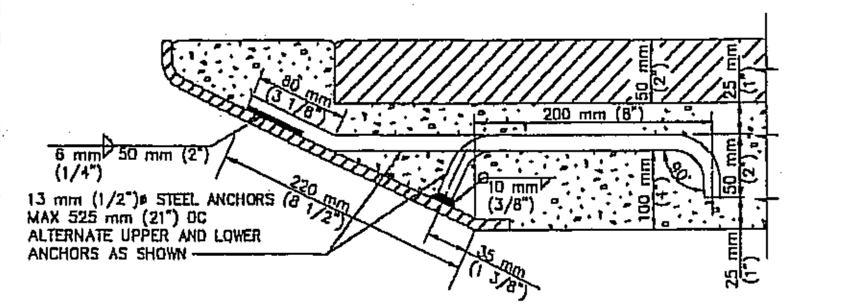
FACE PLATE ANCHORS



HOOK ANCHOR – 120 mm (4 1/2") TOP SLAB



ROUND HEAD ANCHOR – 120 mm (4 1/2") TOP SLAB



HOOK ANCHOR – 150 mm (6") TOP SLAB

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION	STANDARD PLAN METRIC 310–2 SHEET 3 OF 6
CATCH BASIN FACE PLATE ASSEMBLY AND PROTECTION BAR	

DRAINAGE DETAILS

NO SCALE

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DD-9

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION
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DATE REVISED

LAST REVISION 05-04-07

BORDER LAST REVISED 11 1 2000

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

CU 08230

EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		29	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07
PLANS APPROVAL DATE

C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL

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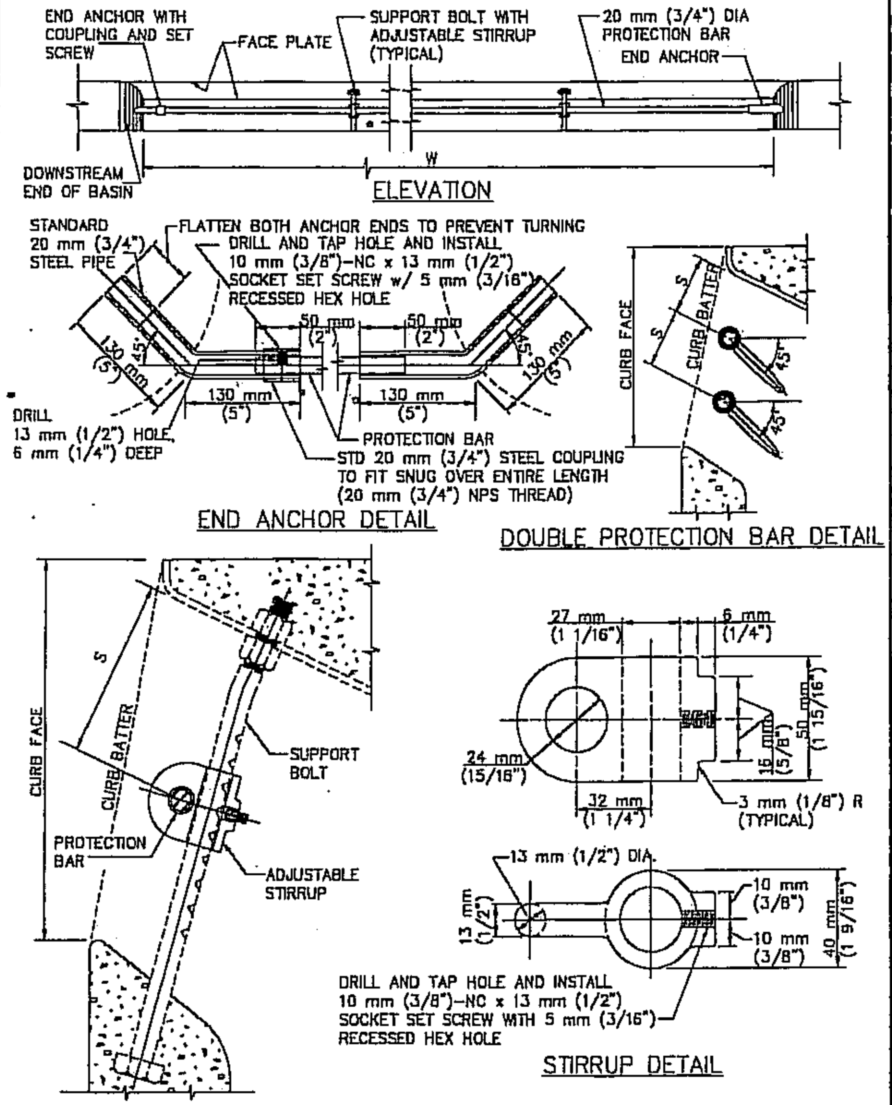
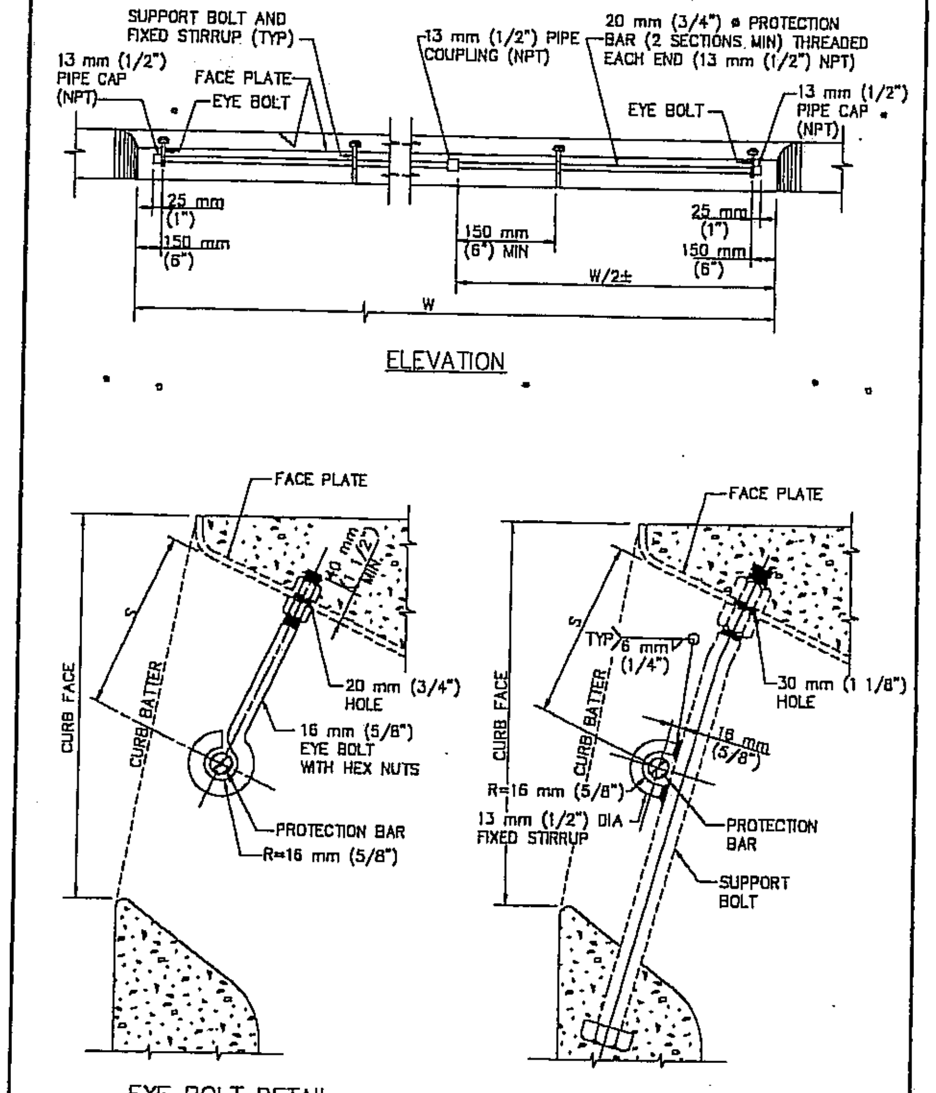
PROTECTION BAR AND SUPPORT BOLT(S) WITH ADJUSTABLE STIRRUP(S) – (TYPE A)



STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION	STANDARD PLAN METRIC
CATCH BASIN FACE PLATE ASSEMBLY AND PROTECTION BAR	310-2 SHEET 4 OF 6

PROTECTION BAR AND SUPPORT BOLT(S) WITH FIXED STIRRUP(S) – (TYPE B)



STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION	STANDARD PLAN METRIC
CATCH BASIN FACE PLATE ASSEMBLY AND PROTECTION BAR	310-2 SHEET 5 OF 6

NOTES:

GENERAL

1. ALL PARTS SHALL BE STEEL, EXCEPT SET SCREWS, WHICH SHALL BE STAINLESS STEEL OR BRASS.
2. EXCLUDING SET SCREWS, ALL EXPOSED METAL PARTS SHALL BE GALVANIZED AFTER FABRICATION.
3. CURB FACE SHALL BE AS NOTED ON THE PLANS.
4. CURB BATTER SHALL BE 3:12 UNLESS OTHERWISE SPECIFIED.

FACE PLATE

5. FACE PLATE LENGTHS SHALL BE CATCH BASIN W PLUS 300 mm (12") EXCEPT AS MODIFIED FOR A "CURB OPENING CATCH BASIN AT DRIVEWAY".
6. WHEN THE LENGTH OF THE FACE PLATE IS BETWEEN 6.5 m (22') AND 13 m (43'), TWO SECTIONS MAY BE USED. WHEN THE LENGTH EXCEEDS 13 m (43'), THREE SECTIONS MAY BE USED. SECTIONS SHALL BE SPLICED ACCORDING TO THE APPLICABLE SPLICE DETAIL. SPLICE SHALL BE PLACED 300 mm (1') FROM A SUPPORT BOLT.
7. WHERE CATCH BASINS ARE TO BE CONSTRUCTED ON CURVES, THE MAXIMUM CHORD LENGTH FOR THE FACE PLATE SHALL BE SUCH THAT THE MAXIMUM PERPENDICULAR DISTANCE TO THE TRUE CURVE SHALL NOT EXCEED 25 mm (1"). WHERE MORE THAN ONE CHORD IS REQUIRED, CHORD LENGTHS SHALL BE EQUAL. CHORD SECTIONS SHALL BE SPLICED ACCORDING TO THE APPLICABLE SPLICE DETAIL (MODIFIED TO FIT THE CHORD DEFLECTION) AND A SUPPORT BOLT SHALL BE PLACED 300 mm (1') FROM THE SPLICE.
8. ROUND HEAD ANCHORS FOR THE FACE PLATE SHALL BE NELSON H-4F SHEAR CONNECTOR, KSN WELDING SYSTEMS DIVISION SHEAR CONNECTOR OR EQUAL.

SUPPORT BOLT

9. SUPPORT BOLTS ARE REQUIRED WHEN THE LENGTH OF THE CATCH BASIN OPENING IS 2 m (7') OR GREATER, AND SHALL BE EVENLY SPACED ACROSS THE OPENING. SPACING SHALL NOT BE LESS THAN 1 m (3'-6") ON CENTER NOR GREATER THAN 1.5 m (5') ON CENTER.

STIRRUP

10. FOR TYPE A; MATERIAL SHALL BE CAST STEEL.

PROTECTION BAR

11. TYPE A SHALL BE USED UNLESS OTHERWISE SPECIFIED.
12. FOR TYPE A, THE BAR SHALL BE CUT TO FIT IN THE FIELD. WHEN "W" IS OVER 6 m (21'), THE PROTECTION BAR SHALL CONSIST OF 2 OR MORE SECTIONS. A SPECIAL CONNECTOR BETWEEN THE PROTECTION BAR PIECES SHALL CONSIST OF A 125 mm (5") LENGTH OF STANDARD 20 mm (3/4") PIPE WITH STANDARD COUPLINGS FULLY THREADED ONTO EACH END DRILLED AND TAPPED FOR A SOCKET SET SCREW AS DETAILED FOR THE DOWNSTREAM END ANCHOR.
13. FOR TYPE B, THE BAR SHALL BE TWO PIECES. TWO EYE BOLTS AND A WELDED STIRRUP ON EACH SUPPORT BOLT ARE REQUIRED.
14. NUMBER OF PROTECTION BARS AND LOCATIONS ARE AS FOLLOWS:

CURB BATTER	MAXIMUM CURB FACE, mm (INCHES): 150 (6")	175 (7")	200 (8")	225 (9")	250 (10")	275 (11")	300 (12")	325 (13")	350 (14")	375 (15")	400 (16")	425 (17")	450 (18")
0:12	0	0	90 (3.5")	90 (3.5")	115 (4.5")	115 (4.5")	115 (4.5")	140 (5.5")	90 (3.5")	90 (3.5")	115 (4.5")	115 (4.5")	115 (4.5")
1:12	0	0	90 (3.5")	90 (3.5")	115 (4.5")	115 (4.5")	115 (4.5")	140 (5.5")	90 (3.5")	90 (3.5")	115 (4.5")	115 (4.5")	140 (5.5")
2:12	0	0	90 (3.5")	90 (3.5")	115 (4.5")	115 (4.5")	140 (5.5")	90 (3.5")	90 (3.5")	115 (4.5")	115 (4.5")	140 (5.5")	140 (5.5")
3:12	0	0	90 (3.5")	90 (3.5")	115 (4.6")	115 (4.5")	140 (5.5")	90 (3.5")	115 (4.5")	115 (4.5")	140 (5.5")	140 (5.5")	115 (4.5")
4:12	0	90 (3.5")	90 (3.5")	115 (4.5")	115 (4.5")	140 (5.5")	90 (3.5")	90 (3.5")	115 (4.5")	115 (4.5")	140 (5.5")	115 (4.5")	115 (4.5")
NUMBER OF PROTECTION BARS	0	1					2*					3*	

S DIMENSION

FOR OTHER CURB FACE OR BATTER SEE PLANS
* TYPE A PROTECTION BAR ONLY

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION	STANDARD PLAN METRIC
CATCH BASIN FACE PLATE ASSEMBLY AND PROTECTION BAR	310-2 SHEET 6 OF 6

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DRAINAGE DETAILS

NO SCALE

DD-10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		30	86

REGISTERED CIVIL ENGINEER — DATE 5-07-07

PLANS APPROVAL DATE 7-30-07

C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL

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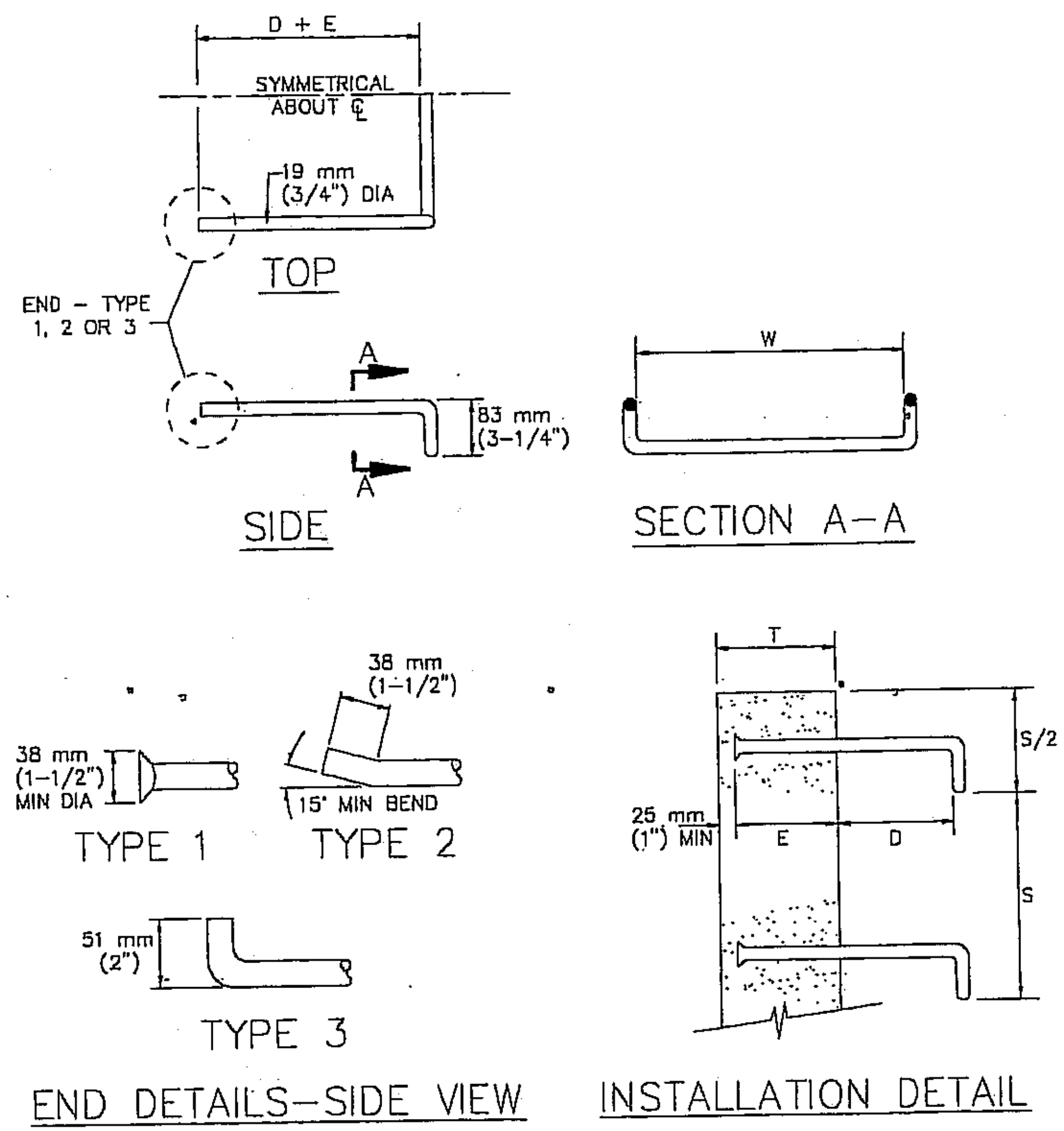


UNLESS OTHERWISE NOTED:

D = 175 mm (7")
E = 150 mm (6") OR T – 25 mm (1"), WHICHEVER IS LESS
MINIMUM E IS 75 mm (3")
S = 300 mm (12") MAX, EVENLY SPACED
W = 400 mm (16") MIN

FOR MANHOLES AND UNDERGROUND VAULTS:
S = 400 mm (16") MAX, EVENLY SPACED
W = 350 mm (14") MIN

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1984 REV. 1993, 1998

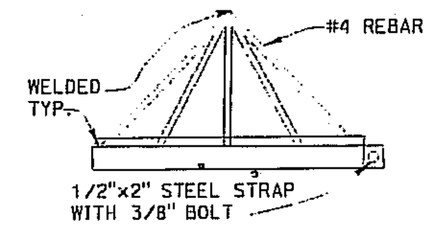
STEEL STEP

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

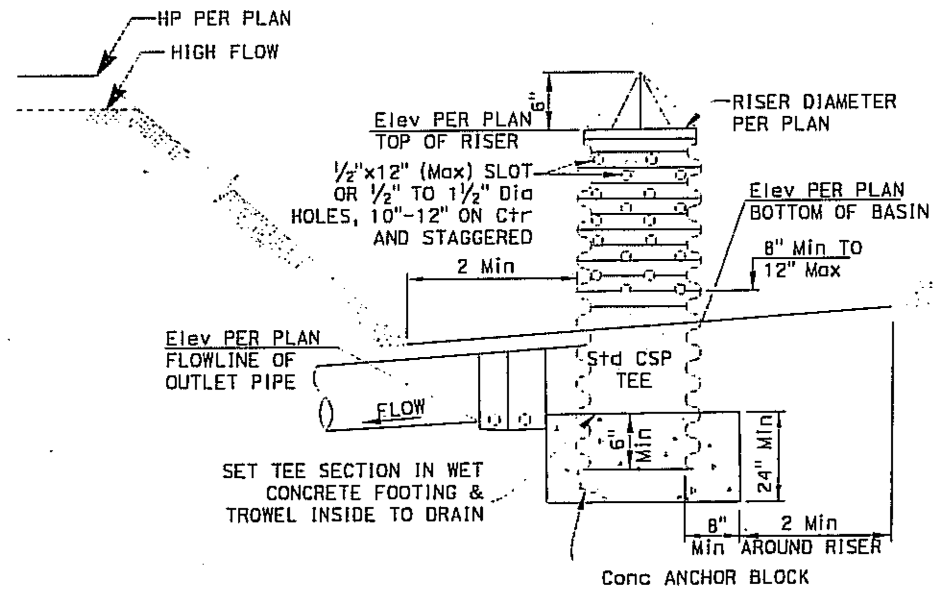
STANDARD PLAN METRIC 635–2 SHEET 1 OF 2

NOTES:

1. STEPS SHALL BE STEEL CONFORMING TO ASTM A307 AND SHALL BE GALVANIZED AFTER FABRICATION.
2. IF STAINLESS STEEL STEPS ARE REQUIRED, THE MATERIAL SHALL CONFORM TO ASTM A276, 300 SERIES.
3. STEP ENDS MAY BE TYPE 1, 2 OR 3, AS SHOWN.
4. BOTTOM STEP SHALL BE A MAXIMUM OF 600 mm (2') ABOVE FLOOR OR SHELF.
5. STEPS WITH TYPE 1 OR 2 ENDS MAY BE CAST IN PLACE, OR PLACED IN THE CENTER OF 40 mm (1-1/2") MIN DIA DRILLED OR FORMED HOLES AND SET WITH HIGH STRENGTH NON-SHRINK GROUT, 40 MPa (6000 PSI) MIN. STEPS WITH TYPE 3 ENDS SHALL BE CAST IN PLACE.



GRATE ASSEMBLY DETAIL



RISER DETAIL

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DRAINAGE DETAILS

NO SCALE

DD-11

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION — Caltrans

DESIGN OVERSIGHT SERGIO AVILA — CALCULATED-DESIGNED BY J.W. — CHECKED BY S.N. — REVISED BY — DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		31	86

5-07-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

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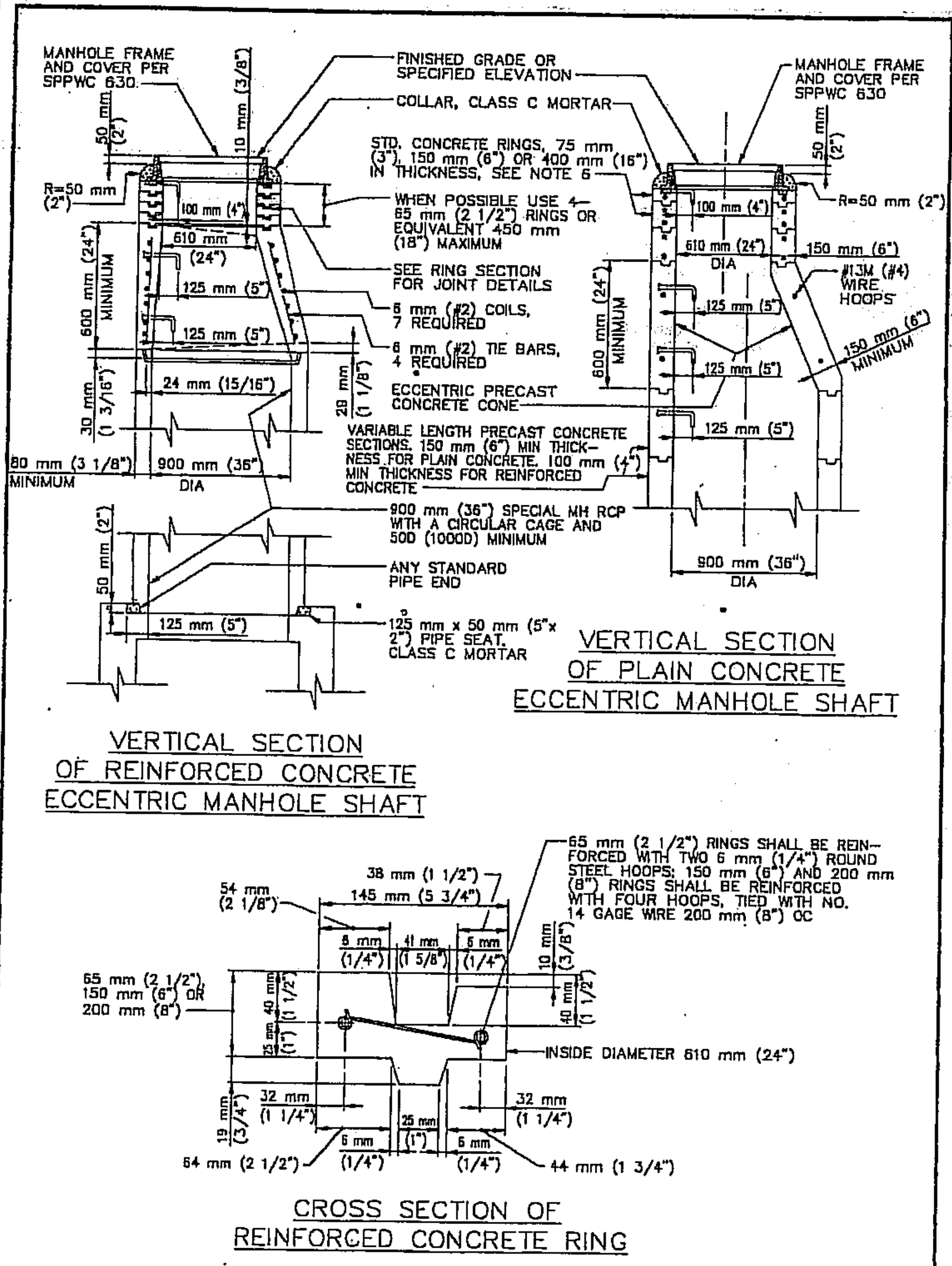

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1992 REV. 1998

MANHOLE SHAFT WITH ECCENTRIC REDUCER

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN METRIC 324–1 SHEET 1 OF 2

NOTES

1. UNLESS OTHERWISE INDICATED THIS STRUCTURE SHALL CONFORM TO ASTM C 478M (ASTM C 478) AND ALL CONCRETE SHALL BE PER SSPWC 201–1.2.
2. MANHOLE FRAME AND COVER SHALL CONFORM TO SPPWC 630.
3. ALL JOINTS SHALL BE SEALED BY FILLING THE ANNULAR SPACES WITH CLASS C MORTAR. THE INSIDE OF THE SHAFT AT EACH JOINT SHALL BE WIPED CLEAN OF EXCESS MORTAR.
4. PROTECTIVE PLASTIC LINER (T LOCK) OR ENGINEER–APPROVED COATINGS WHERE REQUIRED BY THE PLANS SHALL BE IN ACCORDANCE WITH SSPWC AND THE MANUFACTURER'S DIRECTIONS.
5. STEPS SHALL CONFORM TO SPPWC 635 OR 636. THE TOP STEP SHALL BE PLACED DIRECTLY BENEATH THE MANHOLE FRAME. UNLESS OTHERWISE SHOWN, STEPS SHALL BE UNIFORMLY SPACED 350 mm (14") TO 375 mm (15") OC.
6. THE ECCENTRIC MANHOLE SHAFT REDUCER AND RINGS MAY BE PLAIN CONCRETE. FOR PLAIN CONCRETE SECTIONS THE MINIMUM THICKNESS SHALL BE 150 mm (6").
7. THE PRECAST CONCRETE MANHOLE STRUCTURES WILL BE INSPECTED BY THE ENGINEER WHO WILL INDICATE ACCEPTANCE FOR SHIPMENT TO THE JOB BY MARKING THE STRUCTURES WITH THE AGENCY'S STAMP.
8. THE VERTICAL SIDES OF THE MANHOLE SHAFT AND THE ECCENTRIC REDUCER SHALL BE LOCATED ABOVE AND IN LINE WITH THE SIDE OF THE STORM DRAIN CONDUIT.
9. CONSTRUCT MANHOLE SAFETY LEDGE PER SPPWC 330 IF DEPTH OF MANHOLE TO INVERT IS GREATER THAN 6 m (20'). AND MANHOLE SHAFT IS GREATER THAN 3 m (10'). WHEN SAFETY LEDGE IS REQUIRED AND MANHOLE SHAFT IS LESS THAN 4 m (12') SPPWC 326 MUST BE USED.
10. THE FOLLOWING SPPWC ARE INCORPORATED HEREIN:

630 610 mm (24") MANHOLE FRAME AND COVER
635 STEEL STEP
~~636 POLYPROPYLENE PLASTIC STEP~~

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

MANHOLE SHAFT WITH ECCENTRIC REDUCER

STANDARD PLAN METRIC 324–1 SHEET 2 OF 2

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DRAINAGE DETAILS

NO SCALE

DD-12

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

DESIGN OVERSIGHT SERGIO AVILA

CALCULATED-DESIGNED BY J.W. CHECKED BY S.N. REVISED BY DATE REVISED

BORDER LAST REVISED 11/1/2006 — RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 — CU 08230 — EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		32	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07 PLANS APPROVAL DATE

C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL

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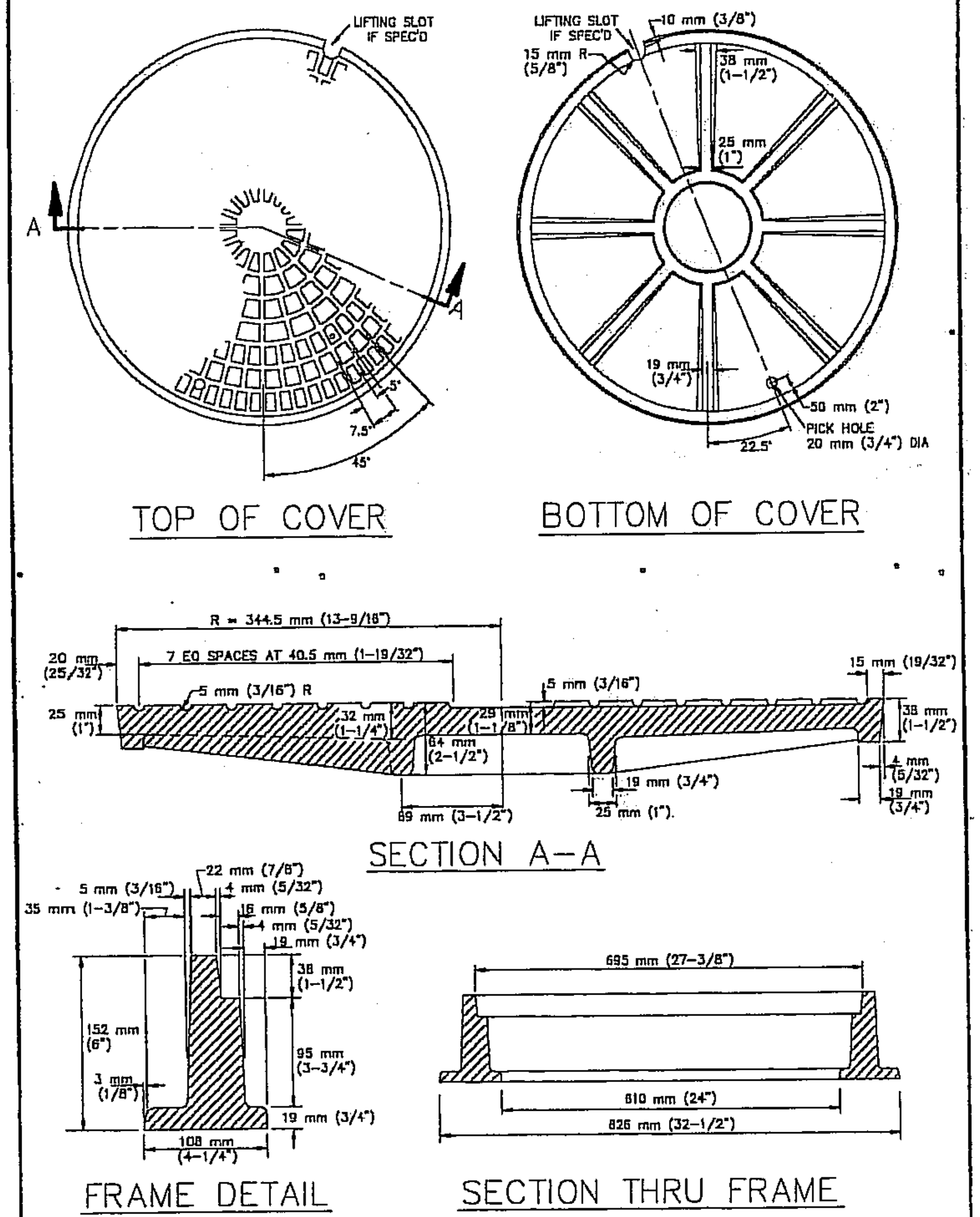

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1984 REV. 1996

610 mm (24") MANHOLE FRAME AND COVER

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN METRIC 630-2 SHEET 1 OF 2

NOTES:

1. THE CAST IRON USED SHALL CONFORM TO ASTM A-48 CLASS 35B.
2. COVERS SHALL BE CAST WITH THE LETTER "D" FOR STORM DRAINS AND "S" FOR SEWERS, AND THE AGENCY'S IDENTIFICATION IN ACCORDANCE WITH INSTRUCTIONS FURNISHED BY THE AGENCY. THE LETTER "D" OR "S" SHALL BE APPROXIMATELY 65 mm (2-1/2") HIGH WITH 15 mm (1/2") LINE WIDTH, AND PLACED IN THE CENTER OF THE COVER. ALL LETTERS SHALL BE FLUSH WITH THE FINISHED SURFACE OF THE COVER.
3. FOUNDRY IDENTIFYING MARK, HEAT AND DATE SHALL BE CAST ON THE BOTTOM OF THE COVER AND ON THE INSIDE OF THE FRAME.
4. IMPORTED COVERS AND FRAMES SHALL HAVE THE COUNTRY OF ORIGIN MARKING IN COMPLIANCE WITH FEDERAL REGULATIONS.
5. WEIGHT OF FRAME SHALL BE 118 kg (260 LBS). WEIGHT OF COVER SHALL BE 79 kg (175 LBS). ACTUAL WEIGHTS SHALL BE WITHIN A RANGE OF 95% TO 110%.
6. THE MANHOLE FRAME AND COVER SHALL BE INSPECTED BY THE ENGINEER PRIOR TO SHIPMENT TO THE JOB SITE. ACCEPTANCE WILL BE INDICATED BY THE AGENCY'S MARK.
7. THE PROOF-LOAD FOR TEST METHOD B OF SSPWC 206-3.2 IS 180 kN (40,700 LBS).
8. COVERS FOR MANHOLES LOCATED IN EASEMENTS, ALLEYS, PARKWAYS AND ALL PLACES OTHER THAN PAVED STREETS SHALL BE PROVIDED WITH SOCKET-SET SCREW LOCKING DEVICES. DRILL AND TAP TWO HOLES TO A DEPTH OF 25 mm (1") AT 90 DEGREES TO PICK HOLE AND INSTALL 20 mm x 20 mm (3/4" x 3/4") STAINLESS STEEL SOCKET-SET SCREWS WITH 10 mm (3/8") RECESSED HEX HEAD. ALL THREADS SHALL BE N.C.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

610 mm (24") MANHOLE FRAME & COVER

STANDARD PLAN METRIC 630-2 SHEET 2 OF 2

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DRAINAGE DETAILS

NO SCALE

DD-13

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05-04-07

CU 08230 | EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		33	86

5-07-07
REGISTERED CIVIL ENGINEER — DATE

7-30-07
PLANS APPROVAL DATE

C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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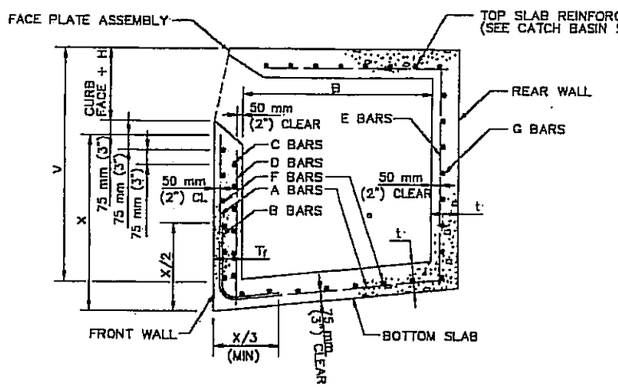
DATE REVISED	REVISED BY

J.W. — CALCULATED-DESIGNED BY
S.N. — CHECKED BY
SERGIO AVILA — DESIGN OVERSIGHT

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

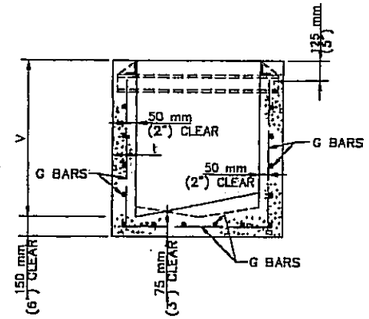


TYPICAL REINFORCEMENT DETAILS

MAX. W	MAX. V	t	tf	A & B BARS	C BARS	D BARS	E BARS	F BARS	G BARS
1 m (3.5')	2.4 m (8')	150 mm (6")	150 mm (6")	—	—	—	—	—	—
1 m (3.5')	3.5 m (12')	200 mm (8")	200 mm (8")	—	—	—	—	—	—
2 m (7')	1.8 m (6')	150 mm (6")	150 mm (6")	—	—	—	—	—	—
2 m (7')	3.5 m (12')	200 mm (8")	200 mm (8")	—	—	—	—	—	—
4 m (14')	1.2 m (4')	150 mm (6")	150 mm (6")	—	13M @ 300 mm (#4 @ 12")	13M @ 450 mm (#4 @ 18")	—	—	—
4 m (14')	2.4 m (8')	150 mm (6")	200 mm (8")	—	13M @ 300 mm (#4 @ 12")	13M @ 450 mm (#4 @ 18")	—	—	—
4 m (14')	3.5 m (12')	200 mm (8")	250 mm (10")	—	13M @ 150 mm (#4 @ 6")	13M @ 450 mm (#4 @ 18")	—	—	—
9 m (28')	1.2 m (4')	150 mm (6")	150 mm (6")	13M @ 600 mm (#4 @ 24")	—	—	—	13M @ 450 mm (#4 @ 18")	—
9 m (28')	1.5 m (5')	150 mm (6")	200 mm (8")	13M @ 600 mm (#4 @ 24")	—	—	—	13M @ 450 mm (#4 @ 18")	—
9 m (28')	1.8 m (6')	150 mm (6")	200 mm (8")	13M @ 450 mm (#4 @ 18")	—	—	—	13M @ 450 mm (#4 @ 18")	—
9 m (28')	2.1 m (7')	200 mm (8")	200 mm (8")	13M @ 425 mm (#4 @ 17")	—	—	—	13M @ 450 mm (#4 @ 18")	—
9 m (28')	2.4 m (8')	200 mm (8")	200 mm (8")	13M @ 325 mm (#4 @ 13")	—	—	—	13M @ 450 mm (#4 @ 18")	—
9 m (28')	2.7 m (9')	200 mm (8")	250 mm (10")	13M @ 375 mm (#4 @ 15")	—	—	—	13M @ 450 mm (#4 @ 18")	—
9 m (28')	3.0 m (10')	200 mm (8")	250 mm (10")	13M @ 300 mm (#4 @ 12")	—	—	—	13M @ 450 mm (#4 @ 18")	—
9 m (28')	3.3 m (11')	200 mm (8")	250 mm (10")	16M @ 375 mm (#5 @ 15")	—	—	13M @ 250 mm (#4 @ 10")	13M @ 450 mm (#4 @ 18")	13M @ 450 mm (#4 @ 18")
9 m (28')	3.6 m (12')	200 mm (8")	250 mm (10")	19M @ 450 mm (#6 @ 18")	—	—	13M @ 225 mm (#4 @ 9")	13M @ 450 mm (#4 @ 18")	13M @ 450 mm (#4 @ 18")
FOR W > 9 m (28') OR B > 1200 mm (4') SEE PLANS									

CURB OPENING CATCH BASIN REINFORCEMENT

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION		
PROMULGATED BY THE PUBLIC WORKS STANDARDS, INC., GREENBOOK COMMITTEE 1984 REV. 1996	CATCH BASIN REINFORCEMENT USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION	STANDARD PLAN METRIC 309-1 SHEET 1 OF 2



TYPICAL REINFORCEMENT DETAILS

V MAX	t	SIDE AND END WALL STEEL G BARS
1.2 m (4')	150 mm (6")	#13M @ 250 mm (#4 @ 10")
2.4 m (8')	200 mm (8")	#13M @ 150 mm (#4 @ 6")
3.5 m (12')	250 mm (10")	#16M @ 150 mm (#5 @ 6")
FOR V > 3.5 m (12') SEE PLANS		

GRATING CATCH BASIN REINFORCEMENT

NOTE

UNLESS OTHERWISE SPECIFIED, REINFORCEMENT FOR CURB OPENINGS AND GRATING CATCH BASINS SHALL TERMINATE 50 mm (2") FROM FACE OF CONCRETE.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION	
CATCH BASIN REINFORCEMENT	STANDARD PLAN METRIC 309-1 SHEET 2 OF 2

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DRAINAGE DETAILS

NO SCALE

DD-14

LAST REVISION 05-04-07 — DATE PLOTTED = 15-AUG-2007 TIME PLOTTED = 13:41

BORDER LAST REVISED 11/1/2006

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME = tmallst
DGN FILE = 427001c014.dgn

CU 08230 | EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		18	86

REGISTERED CIVIL ENGINEER 6-21-07 DATE

7-30-07
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

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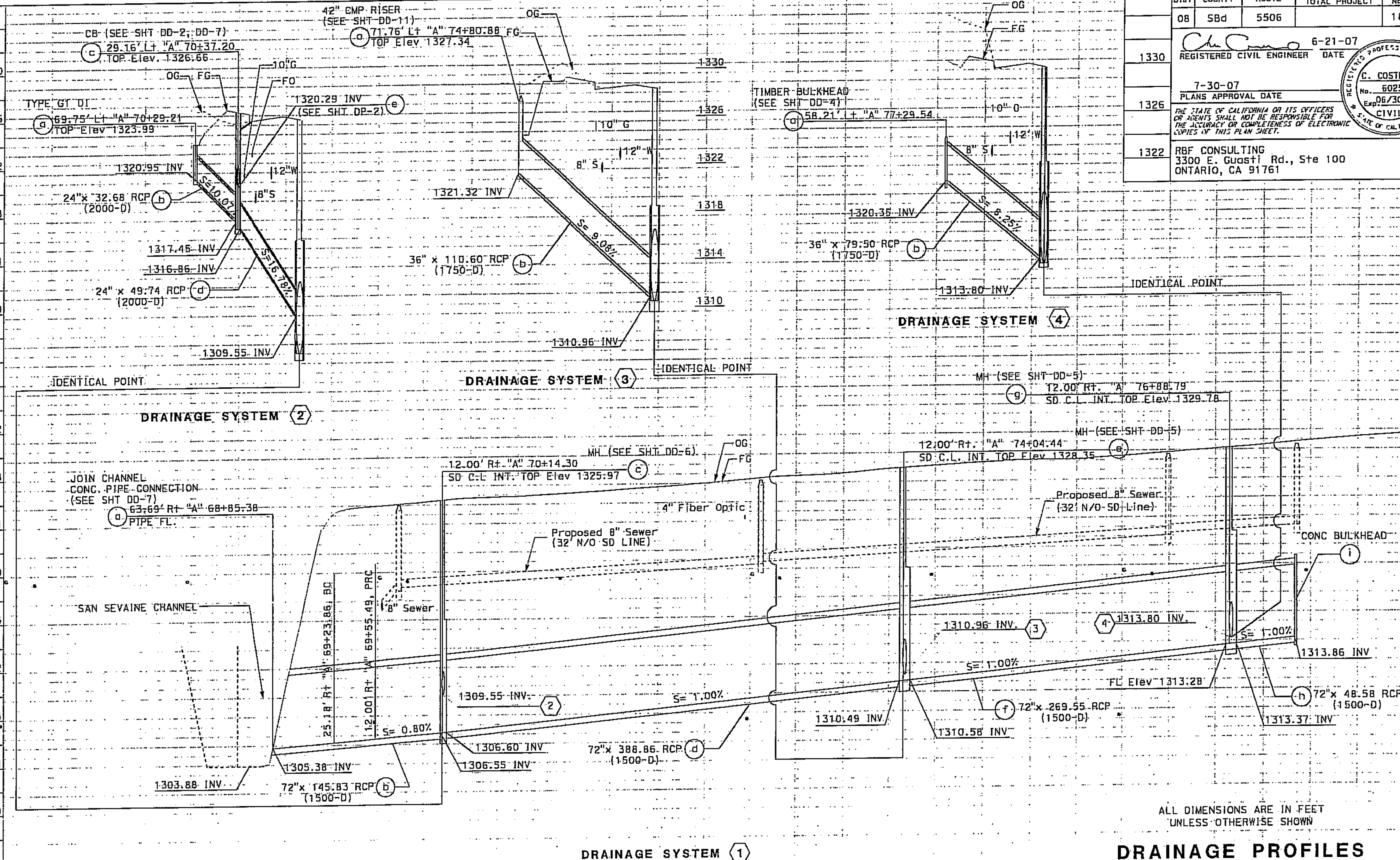

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DRAINAGE PROFILES

SCALE: 1"=40' HORIZ
1'=5" VERT

DP-1

REVISED BY | DATE REVISED | J.W. | S.N. | CALCULATED-DESIGNED BY | CHECKED BY | DESIGN OVERSIGHT SERGIO AVILA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION Caltrans

STATION | E | Emb | TOTAL

LAST REVISION 06-21-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		19	86

5-07-07
REGISTERED CIVIL ENGINEER DATE

C. COSTELLO
No. 60256
Exp. 06/30/08
CIVIL

7-30-07
PLANS APPROVAL DATE

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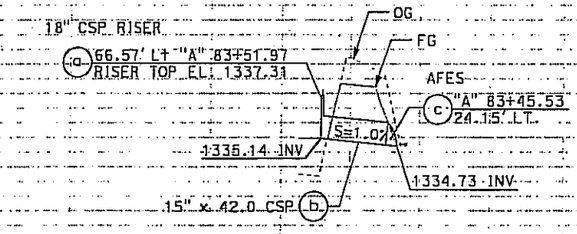
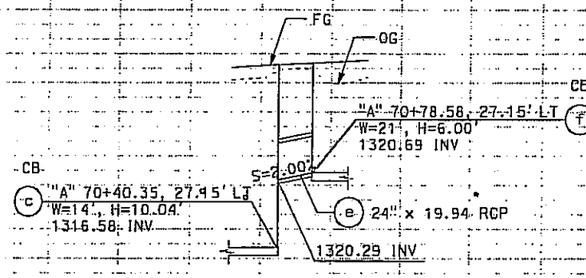


DRAINAGE SYSTEM (5)
(LOW-FLOW-OUTLET PIPE)



DRAINAGE SYSTEM (2)
(CATCH BASIN LATERAL CONNECTION)

ALL DIMENSIONS ARE IN FEET
UNLESS OTHERWISE SHOWN

DRAINAGE PROFILES

SCALE: 1"=40' HORIZ
1'=5' VERT

DP-2

STATION:
E
END

TOTAL

CU 08230 | EA 3770U1

05-04-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER — DATE 5-07-07

PLANS APPROVAL DATE 7-30-07

C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL

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NOTES:

1. SCOPE

Pipelines included under these specifications are those instaled to carry steam, water or any non-flammable substance which from its nature or pressure, might cause damage if escaping on or in the vicinity of railway property.

2. GENERAL REQUIREMENTS

a. Pipelines under railway tracks and across railway rights-of-way shall be encased in a larger pipe or conduit caled the casing pipe as indicated in Figure 1. Exception may be granted on case by case basis for non-pressure pipeline.
b. Pipelines shallbe designed to carry Cooper's E-80 railroad live loading with diesel impact factor as per AREMA.
c. Pipelines shallbe located, where practicable, to cross tracks at approximately right angles but preferably at no less than 45 degrees and shall not be placed within culverts nor under railway bridges.
d. Test boring or other soil investigations, approved by SCRRA shall be made, to determine the nature of the underlying material for all pipelines with sizes equal or greater than 48 inches in diameter. The test boring should be made on the centerline of the pipe near the end of tie (if possible) on each side of the tracks and as deep as the bottom of the bore.
e. Exception to any design, construction, location or specifications contained in this standard must be authorized by SCRRA. Requests for exceptions willbe considered only where it is shown that extreme hardship and/or unusual conditions provide justifications and where alternate measures can be used in keeping with the intent of this standard. All requests for exceptions shall be fully documented with design data, calculations, cost comparisons and other pertinent information.
f. All pipelines shallbe prominently marked by signs or markers (maintained by owner) located over the pipe.

3. CARRIER PIPE

a. Carrier line pipe and joints shallbe of accepted material and construction as approved by the SCRRA Director of Engineering and Construction. Joints for carrier line pipe operating under pressure shall be mechanical or welded type. The pipe shallbe laid with sufficient slack so that it is not in tension.
b. Carrier pipes shallbe manufactured in accordance with the following standards and specifications:

   A. Steel pipe - ASTM or API.
   B. Ductile iron pipe - ANSI A21.51/AWWA C151, Class 56.
   C. Reinforced concrete pipe - ASTM C76, Class V, wall B pipe. Minimum of Class II RCP is acceptable for longitudinal pipe located 45 feet or more from the centerline of the nearest track.
   D: Vitrified clay pipe - ASTM C700.
   E. PVC plastic pipe - ASTM D1784, minimum schedule 40 pipe.
   F. High density polyethylene (HDPE) solid wall pipe - ASTM D1248.

4. CASING PIPE

a. Casing pipe and joints shallbe of steel and leak proof construction, capable of withstanding railway loading (Cooper E-80) and having specified minimum yield strength of at least 35,000 psi. The inside diameter of the casing pipe shallbe sufficient to allow the carrier pipe to be removed subsequently without disturbing the casing pipe or roadbed.
b. Table 1 indicates a minimum thickness base upon superimposed loads only and it is the responsibility of the licensee and/or the instaler to provide a casing which is adequate for the loads that result during installation. The wall thickness shall be decreased by 0.063 inch; if the casing is installed with a protective coating and is cathodically protected, except for diameters under 14 inches.
c. Casing pipe under railroad tracks and across railroad right-of-way shall extend the greater of the following distances, measured at right angle to centerline of track. If additional tracks are constructed in the future, the casing shall be extended at the licensee's expense.
   a. Across the entire width of the railroad right-of-way.
   b. Three feet beyond the ditch line.
   c. Two feet beyond the toe of slope.
   d. A minimum distance of 25 feet from each side of the centerline of outside track when casing is sealed at both ends and,
   e. A minimum distance of 45 feet from each side of the centerline of outside track when casing is open at both ends.
d. The depth of the casing shallbe as shown in figure 1. The minimum depth of pipe shallbe 12 feet under the track and for a distance of 20 feet on each side of the centerline of the track for horizontal directional drilling.

5. CONSTRUCTION

a. Casing pipe shallbe constructed as to prevent leakage of any substance from the casing throughout its length, except at ends. Casing shall be instaled as to prevent the formation of a waterway under the railway, and with an even bearing throughout its length, and shall slope to one end (except for longitudinal occupancy).
b. The faces of all pits (jacking and receiving) shall be located a minimum of 25 feet from the centerline of the nearest track, measured at right angles to track. Shoring, if required, shall meet SCRRA's shoring requirements.
c. For all pipelines with sizes equal or greater than 48 inches, rail elevations over the work must be monitored at intervals prescribed by SCRRA to detect any track movement. Movements over 1/4" vertically shallbe immediately reported to SCRRA. SCRRA will surface the track several times in one year if there is any movement at licensee and/or instaler's cost.
d. The method of construction shall meet all current AREMA and "Green Book" specifications and requirements.
e. The boring, tunneling or jacking operation shall be progressed on a 24 hour basis without stoppage when the casing is 20 feet from the centerline of the nearest track.
f. The boring, tunneling or jacking installation shall have a bored hole diameter essentially the same as the outside diameter of the pipe plus the thickness of the protective coating. If voids should develope or if the bored hole diameter is greater than the outside diameter of the pipe (including coating) by more than approximately 1 inch, the space shall be filled by grouting or other remedial measures as approved by SCRRA shall be taken.
g. The bore and jack method (pushing pipe into the earth with a boring auger rotating within pipe to remove spoil) is acceptable.
h. Jacking method (pushing sections of pipe into position with jacks placed against a backstop and excavation performed by hand from within the jacking shield at the head of the pipe) is acceptable. Immediately after completion of jacking operation, the instalation shall be pressure grouted.
i. Tunneling method (placing rings of liner plate within the tailsection of a tunneling shield or tunneling machine) is acceptable. Tunneling shall not be considered where less than six feet of cover exists or where excessively sandy, loose or rocky soils are anticipated.
j. Horizontal directional drilling method (boring a small diameter pilot hole on a desired vertical and horizontal alignment using a cutting head with bentonite slurry and pulling a pipe with a reamer) is acceptable.
k. Pipe ramming method (pushing a solid steel rod under the railroad, attaching a cone shaped expander to the end of the rod, attaching a casing pipe to the expander and pulling back the rod) is not acceptable.
l. The use of water jetting to facilitate casing placement and spoil removal is not permitted.

6. SEALS AND SUPPORTS

The ends of casing are to be suitably sealed against the entrance of foreign material, but are not to be tightly sealed. All supports, insulation's and centering devices for the carrier pipe shallbe so designed and constructed that no loads from the roadbed, traffic or casing pipe itself are transmitted to carrier pipe. The spacing of such supports longitudinally shall not be greater than ten feet. Void between casing and carrier pipe shallbe filled with sand. They shall be filled by pressure grouting or by other approved methods which will provide proper support.

7. SHUT-OFF VALVES

Accessible emergency shut-off valves shall be instaled within effective distances each side of the railway as mutually agreed to by SCRRA and the pipeline company. Where pipelines are provided with automatic control stations at locations and within distances approved by SCRRA Director of Engineering and Construction, no additional valves shallbe required. Shut-off valves on railroad right-of-way should be avoided.

8. LONGITUDINAL PIPELINES

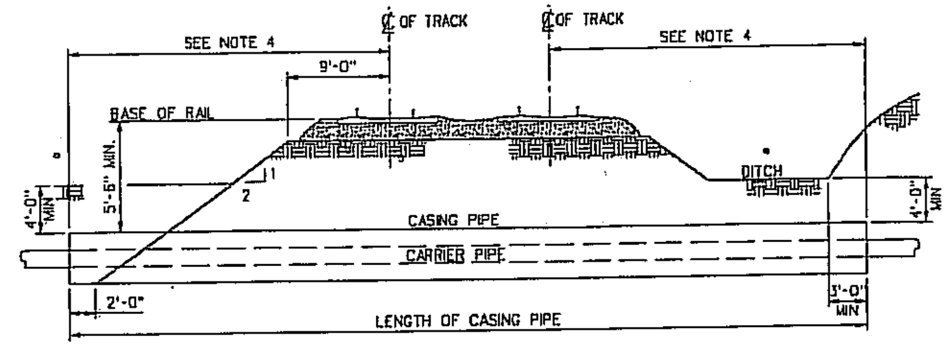
Pipelines laid longitudinally on railway right-of-way shallbe located as far as practicable from any tracks or other important structures and as close to the railroad property line as possible. If located within 25 feet of the centerline of any track or where there is danger of damage to any bridge, building or structure, the carrier pipe shallbe encased or of special design as approved by SCRRA Director of Engineering and Construction. Pipelines shallbe buried not less than four (4) feet from the ground surface to the top of the pipe.

9. APPROVAL OF PLANS

SCRRA's Right-of-Way Encroachment Application, plan review fees, and plans for proposed installation shall be submitted to SCRRA for approval prior to construction. Plans shall be drawn to scale showing the relation of the proposed pipeline to railway tracks, angle of crossing, location of valves, railway survey station, right-of-way lines and general layout of tracks and railway facilities. Plans should also show a cross section (or sections) from field survey, showing pipe in relation to actual profile of ground and tracks. Additional information on approval processes and requirements are available on SCRRA's website at www.metrolinktrains.com.

10. EXECUTION OF WORK

The pipeline real estate agreement and SCRRA's Temporary Right-of-Entry agreement (SCRRA Form No. 6) shall be fully executed before any work will be allowed on SCRRA right-of-way. The execution of work on railway rights-of-way, including the supporting of tracks, shall be subject to the inspection and direction of SCRRA Right-of-Way Engineer or his/her authorized representative. The installer shall perform the construction or maintenance work in such a manner and at such times as shall not endanger or interfere with SCRRA's operations, including relation to the proper manner of protecting the tracks, signals, fiber optic cables, pipelines, other property and tenants or licensees at or in the vicinity of the work during the period of construction.



CASING REQUIREMENTS - FIGURE 1

TABLE 1

STEEL CASING (UNCOATED AND UNPROTECTED)			
NOMINAL DIAMETER (INCHES)	MIN. WALL THICKNESS (INCHES)	NOMINAL DIAMETER (INCHES)	MIN. WALL THICKNESS (INCHES)
14" & UNDER	0.250" (1/4")	44" & 46"	0.656" (21/32")
16"	0.281" (9/32")	48"	0.688" (11/16")
18"	0.312" (5/16")	50"	0.719" (23/32")
20" & 22"	0.344" (11/32")	52"	0.750" (3/4")
24"	0.375" (3/8")	54"	0.781" (25/32")
26"	0.406" (13/32")	56" & 58"	0.812" (13/16")
28"	0.438" (7/16")	60"	0.844" (27/32")
30"	0.469" (15/32")	62"	0.875" (7/8")
32"	0.500" (1/2")	64"	0.906" (29/32")
34" & 36"	0.531" (17/32")	66" & 68"	0.938" (15/16")
38"	0.562" (9/16")	70"	0.969" (31/32")
40"	0.594" (19/32")	72"	1.000" (1")
42"	0.625" (5/8")	OVER 72" MUST BE APPROVED BY SCRRA	

ALL DIMENSIONS ARE IN FEET
UNLESS OTHERWISE SHOWN

SEWER CASING REQUIREMENT (WITHIN SANBAG PROPERTY)

(SCRRA-METROLINK STD PLAN No. ES2201)

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

SANITARY SEWER DETAILS

NO SCALE

SSD-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

DESIGN OVERSIGHT: SERGIO AVILA

CALCULATED-DESIGNED BY: J.W. — CHECKED BY: S.N. — REVISED BY — DATE REVISED

LAST REVISION 05-04-07

CU 08230 — EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		41	86

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REGISTERED CIVIL ENGINEER — DATE

7-30-07
PLANS APPROVAL DATE

C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

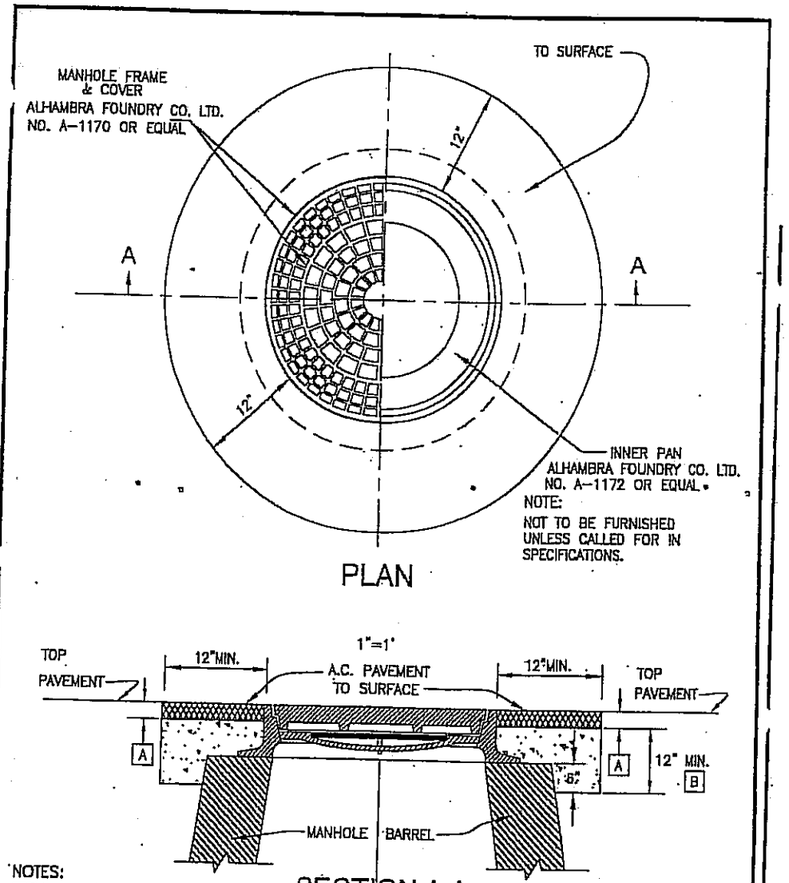
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: J.W.
CHECKED BY: S.N.
DESIGN OVERSIGHT: SERGIO AVILA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans



NOTES:
A SAME AS EXISTING – 1" MIN.
B NO MORE THAN 12" OF GRADE RINGS ALLOWED FOR A MAXIMUM OF 18" FROM TOP OF MANHOLE BARREL. CONCRETE SHALL BE PLACED FROM 2" BELOW GRADE RING TO 2" BELOW MANHOLE BARRELL AND SHALL ENCAPSULATE ALL GRADE RINGS.

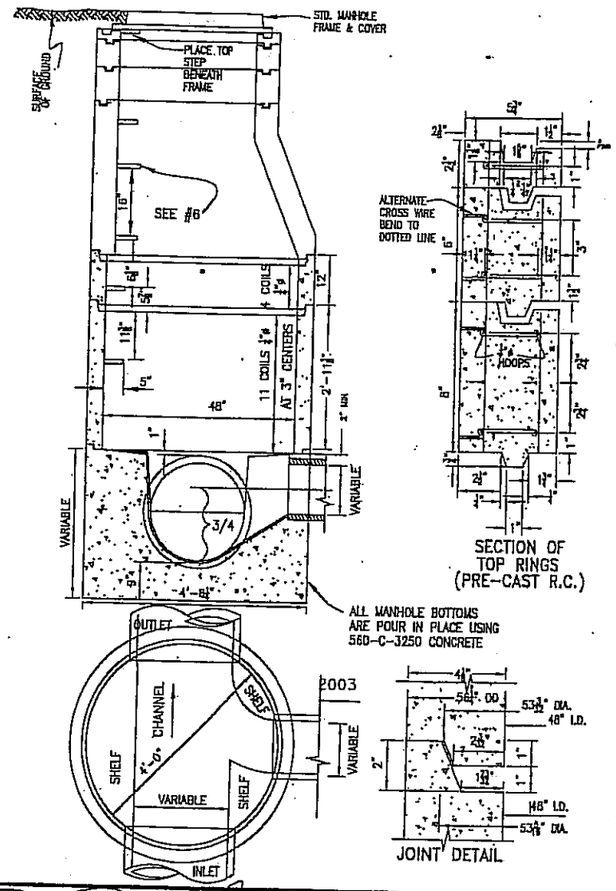
REGISTERED PROFESSIONAL ENGINEER RICARDO SANDOVAL No. 51152 EXP. 9/30/07 CIVIL STATE OF CALIFORNIA

APPROVED BY: 10-18-06
CITY ENGINEER — DATE
RICARDO SANDOVAL
REVIEWED BY: DG
REVISION NUMBER: ____

CITY OF FONTANA
STD. MANHOLE FRAME & COVER AND REINFORCED CONCRETE COLLAR
07/15/06
STD. PLAN NO. 2000 | SHT 1 OF 1

NOTES:

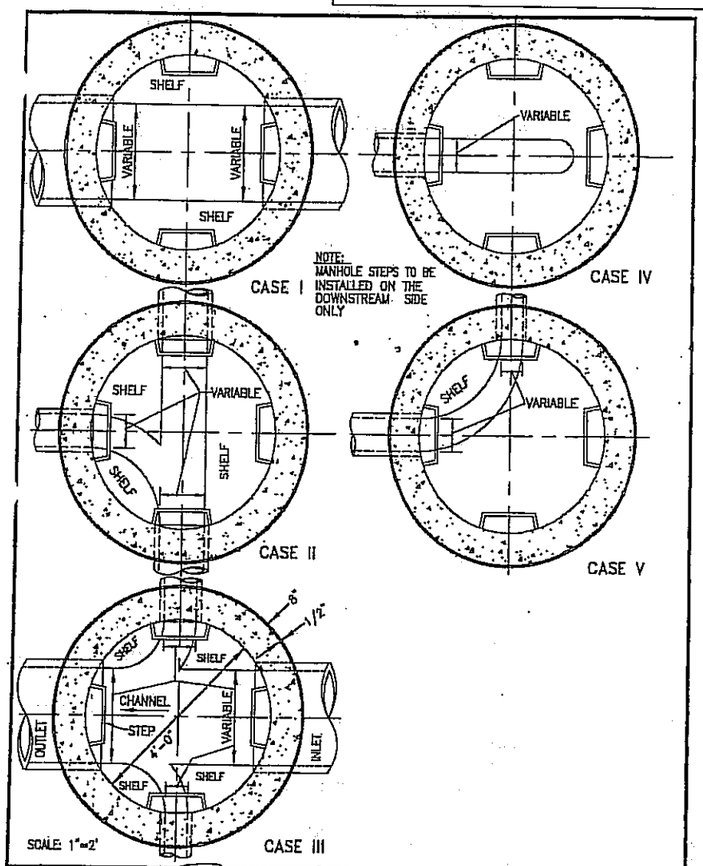
1. SEE STANDARD DETAILS NOS. ~~2001 & 2007~~ 2003 FOR ~~DROP~~ TYPICAL SEWER MANHOLE BASES DETAILS.
2. ECCENTRIC CONE MAY BE USED IN LIEU OF CONCENTRIC CONES.
3. THE LOWEST MANHOLE STEP SHALL BE PLACED NOT LESS THAN 16", NOT MORE THAN 24" ABOVE SHELF.
4. THE UPPER MANHOLE STEP SHALL BE PLACED BETWEEN THE TOP OF THE MANHOLE AND THE MANHOLE COVER FRAME AND SHALL PROJECT NOT MORE THAN 3" INSIDE MANHOLE.
5. ALL JOINTS SHALL BE MORTARED.
6. 3/4" DIAMETER GALVANIZED IRON STEP OR PLASTIC STEPS PER ASTM A-82, ASTM C-478, ASTM TYPE II GRADE 43758.



REGISTERED PROFESSIONAL ENGINEER RICARDO SANDOVAL No. 51152 EXP. 9/30/07 CIVIL STATE OF CALIFORNIA

APPROVED BY: 10-18-06
CITY ENGINEER — DATE
RICARDO SANDOVAL
REVIEWED BY: DG
REVISION NUMBER: ____

CITY OF FONTANA
STANDARD CAST IN PLACE MANHOLE FOR SEWER
07/15/06
STD. PLAN NO. 2001 | SHT 1 OF 2



REGISTERED PROFESSIONAL ENGINEER RICARDO SANDOVAL No. 51152 EXP. 9/30/07 CIVIL STATE OF CALIFORNIA

APPROVED BY: 10-18-06
CITY ENGINEER — DATE
RICARDO SANDOVAL
REVIEWED BY: DG
REVISION NUMBER: ____

CITY OF FONTANA
TYPICAL SEWER MANHOLE BASES
07/15/06
STD. PLAN NO. 2003 | SHT 1 OF 1

ALL DIMENSIONS ARE IN FEET
UNLESS OTHERWISE SHOWN

SANITARY SEWER DETAILS

NO SCALE

SSD-2

BORDER LAST REVISED 11/1/2006

RELATIVE BORDER SCALE 0 1 2 3

USERNAME = tmiller

LAST REVISION 06-21-07
DATE PLOTTED = 07-AUG-2007
TIME PLOTTED = 13:33

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		34	86

6-21-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
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 C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

NOTES:

1. (F) - FINAL PAY ITEM.
2. FOR MINIMUM ALLOWABLE CLASS AND BACKFILL METHOD FOR RCP SEE STANDARD PLAN A62-D.
3. THE PRECISE DETERMINATION OF THE FOLLOWING ITEMS WILL BE MADE BY THE ENGINEER IN THE FIELD: STATION, SKEW, LENGTH, FL ELEVATION, AND DEPTH OF INLET "H".
4. ALL CSP SHALL BE .079" THICK.
5. ALL PIPE JOINTS SHALL BE POSITIVE JOINTS.

DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT No.	(F) MINOR CONCRETE (MINOR STRUCTURE)	15" CSP	24" RCP	36" RCP	72" RCP	72" CONC. PIPE CONNECTION	(N) MANHOLE W/FRAME & COVER	(N) 36" PRECAST CONCRETE PIPE MANHOLE	18" CSP RISER	42" CSP RISER	TIMBER BULKHEAD	CONCRETE BULKHEAD	MISCELLANEOUS IRON AND STEEL	15" AFES	(N) H (HEIGHT OF INLET)	STATION	DESCRIPTION	DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT
			CY	LF	LF	LF	LF	EA	EA	LF	LF	LF	EA	EA	LB	EA	LF					
D-1	1	a						1										68+85.38	PER DETAIL SHT DD-7	D-1	1	a
		b					146												72" RCP			b
		c	3.84						1	9.94					115		19.40	70+14.30	APWA STD PLAN 320-1 SHT DD-6			c
		d					389												72" RCP			d
		e	3.55						1	8.35					115		17.87	74+07.45	APWA STD PLAN 322-1 SHT DD-5			e
		f					270												72" RCP			f
		g	3.29						1	7.00					115		16.50	76+88.79	APWA STD PLAN 322-1 SHT DD-5			g
		h					49												72" RCP			h
	1	i												1				77+42.91	RCFCWCD Std DRAWING NO. M816 SHT DD-4		1	i
D-1	2	a	1.04												238			70+29.91	TYPE G1 DI PER CALTRANS STD PLAN D73	D-1	2	a
		b	8.5		33														24" RCP			b
		c																70+40.35	Mod APWA Std PLAN 314-2 SHT DD-2			c
		d	8.5		49														24" RCP			d
		e			20														24" RCP			e
	2	f																70+78.58	Mod APWA Std PLAN 314-2 SHT DD-2		2	f
D-1	3	a										6.8						74+80.88	PER DETAIL SHEET DD-11	D-1	3	a
	3	b				111													36" RCP		3	b
D-1	4	a											1					77+29.54	PER DETAIL SHEET DD-4	D-1	4	a
	4	b				80													36" RCP		4	b
D-2	5	a									2.7							83+51.97	PER DETAIL SHEET DD-11	D-2	5	a
	5	b		42															15" CSP		5	b
	5	c														1		83+45.53	AFES		5	c
			28.72	42	102	191	854	1			2.7	6.8	1	1	583	1			PROJECT TOTAL			

(N) - NOT A SEPERATE PAY ITEM; FOR INFORMATION ONLY

DESIGN OVERSIGHT: SERGIO AVILA

CALCULATED-DESIGNED BY: J.W. | CHECKED BY: S.N. | REVISED BY | DATE REVISED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DRAINAGE QUANTITIES

DQ-1

LAST REVISION 06-21-07 | DATE PLOTTED => 13-JUL-2007 | TIME PLOTTED => 11:52

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		35	86

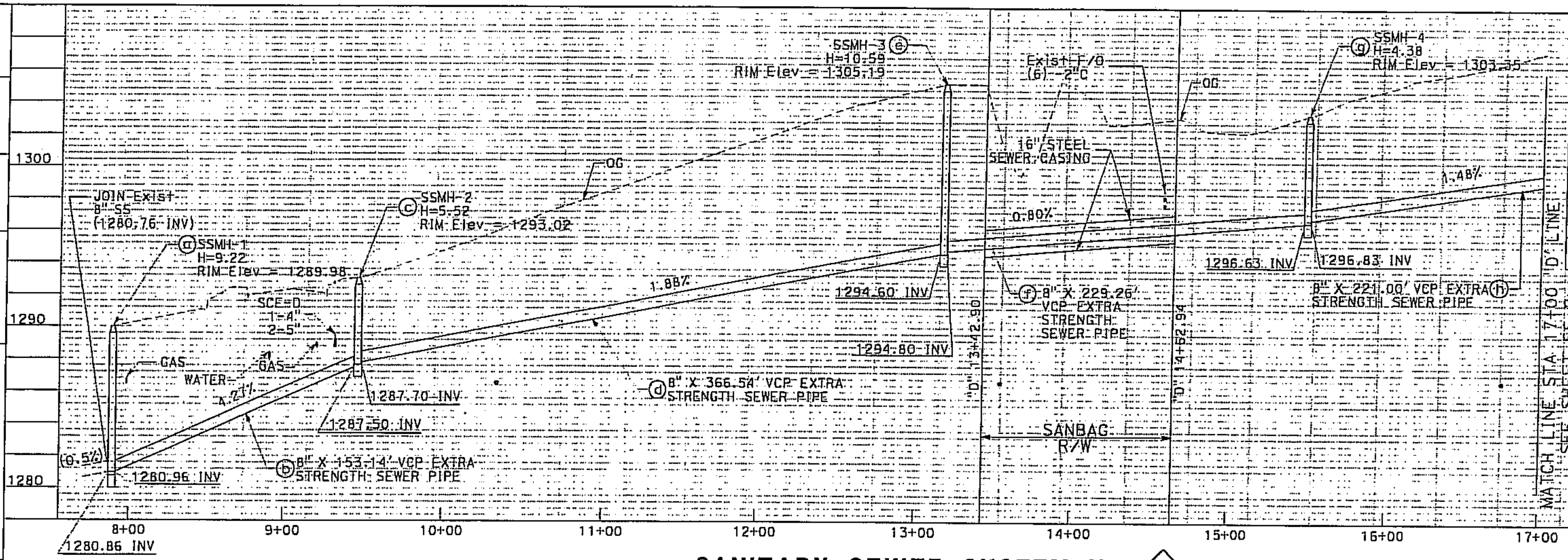
6-21-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
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.

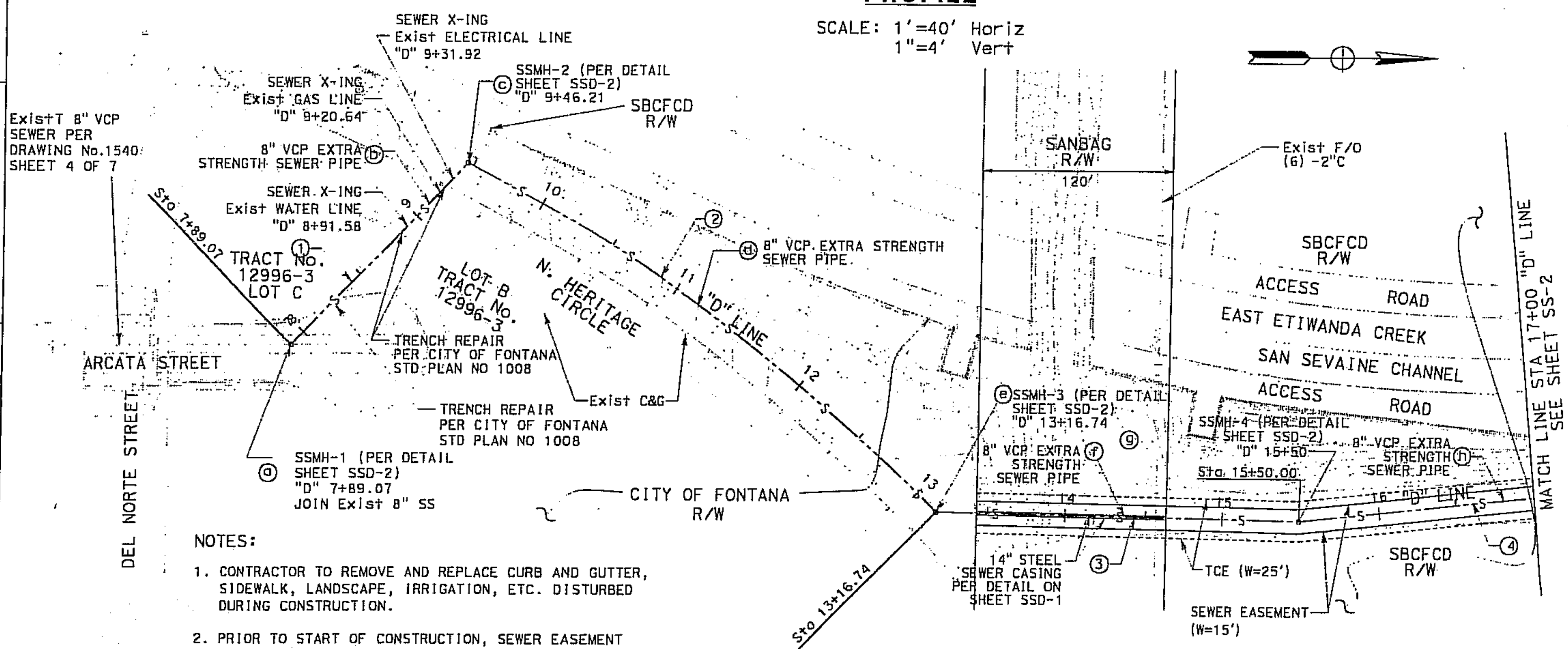
REGISTERED PROFESSIONAL ENGINEER C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761



SANITARY SEWER SYSTEM No. 1
PROFILE

SCALE: 1'=40' Horiz
1"=4' Vert



NOTES:

1. CONTRACTOR TO REMOVE AND REPLACE CURB AND GUTTER, SIDEWALK, LANDSCAPE, IRRIGATION, ETC. DISTURBED DURING CONSTRUCTION.
2. PRIOR TO START OF CONSTRUCTION, SEWER EASEMENT MUST RECORD AND NEED APPROVAL DOCUMENTATION FROM SANBAG AND SBCFCD.

SANITARY SEWER SYSTEM No. 1
PLAN

SCALE: 1"=40'

THIS PLAN IS ACCURATE FOR SEWER WORK ONLY

LEGEND

SSMH	-	SANITARY SEWER MANHOLE
TCE	-	TEMPORARY CONSTRUCTION EASEMENT
	-	Exist UTILITY
—— XX ——	-	Prop UTILITY
ⓧ	-	DRAINAGE UNIT
ⓗ	-	LINE/CURVE DATA

BEARING AND DISTANCE TABLE

No.	BEARING	L
1	N45°33'42"W	157.14
3	N01°05'29"E	233.26
4	N05°58'32"E	225.00

CURVE TABLE

No.	R	Δ/BEARING	T	L
2	1173.22'	18°5'44"	186.82	370.54

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED

SANITARY SEWER PLAN AND PROFILE

SCALE AS SHOWN

SS-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN OVERSIGHT SERGIO AVILA
CALCULATED-DESIGNED BY / CHECKED BY J.W. / S.N.
REVISED BY / DATE REVISED
LAST REVISION 06-21-07

BORDER LAST REVISED 11-1-2006 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME = rmihes | DGN FILE = 83770uj0001.dgn | CU 08230 | EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		36	86

REGISTERED CIVIL ENGINEER 6-21-07 DATE

7-30-07
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

RBF CONSULTING
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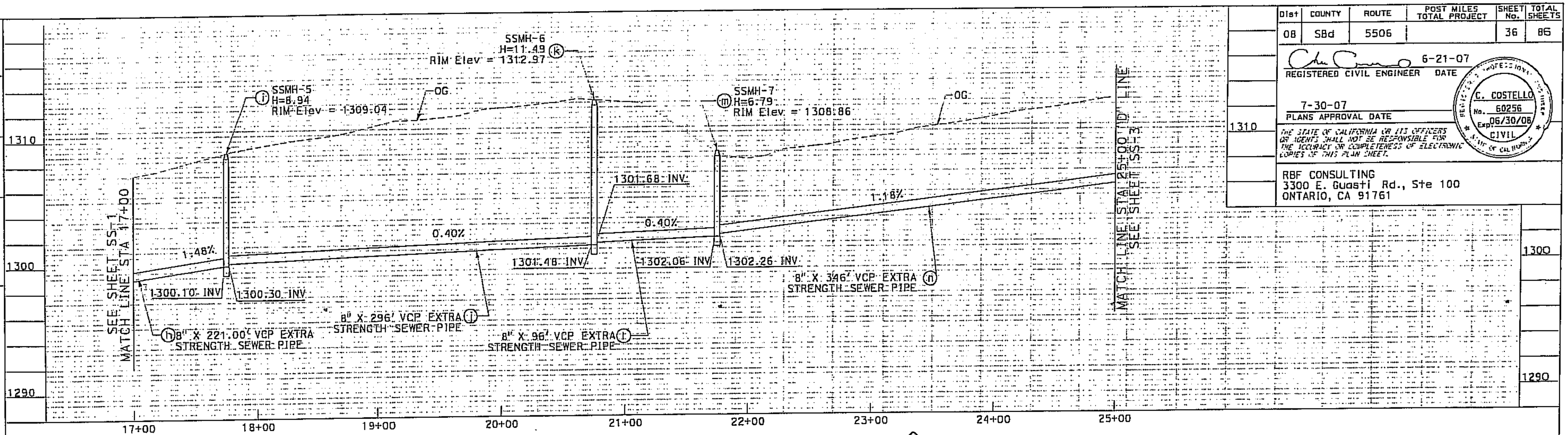
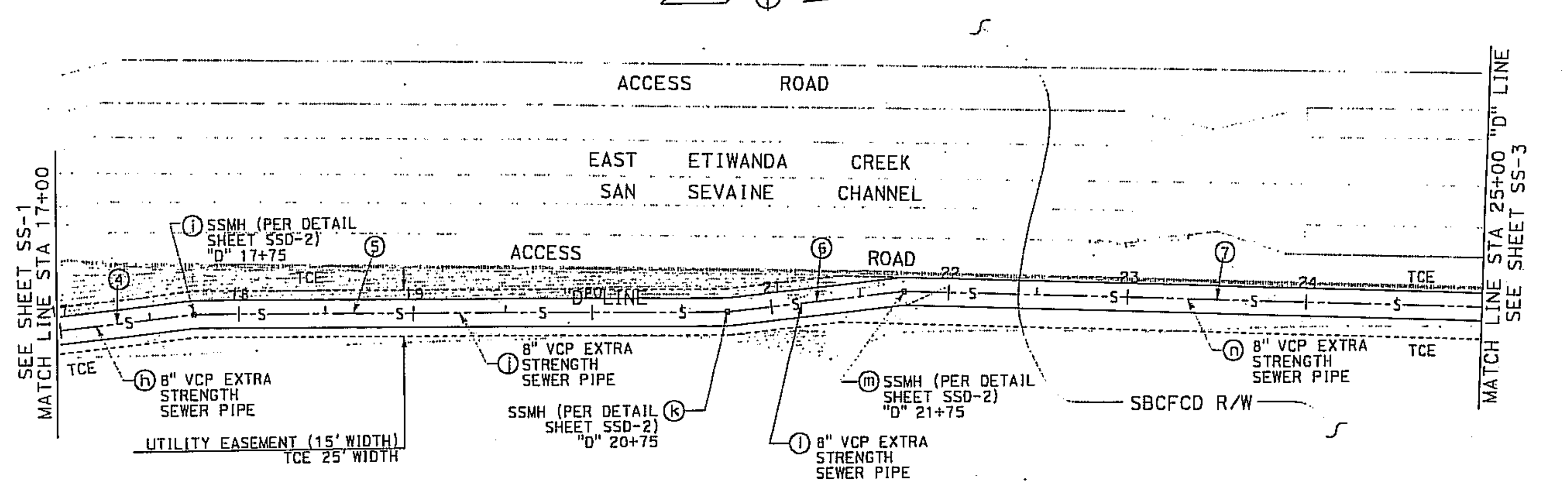
ONTARIO, CA 91761



SANITARY SEWER SYSTEM No. 1
PROFILE

SCALE: 1"=40' Horiz
1"=4' Vert



LEGEND

SSMH - SANITARY SEWER MANHOLE
TCE - TEMPORARY CONSTRUCTION EASEMENT
SD - STORM DRAIN
SS - SANITARY SEWER
CLR - CLEARANCE
- Exist UTILITY
XX - Prop UTILITY
(x) - DRAINAGE UNIT
(#) - LINE/CURVE DATA

BEARING AND DISTANCE TABLE

No.	BEARING	LENGTH
4	N5°58'32"E	225.00
5	N0°29'19"E	300.00
6	N5°48'54"W	100.00
7	N1°56'31"E	350.00

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED

SANITARY SEWER SYSTEM No. 1
PLAN

SCALE: 1"=40'

THIS PLAN IS ACCURATE FOR SEWER WORK ONLY

SANITARY SEWER PLAN AND PROFILE

SCALE AS SHOWN

SS-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN OVERSIGHT SERGIO AVILA

CALCULATED-DESIGNED BY J.W. CHECKED BY S.N.

REVISED BY DATE REVISED

CU 08230 EA 3770U1

LAST REVISION 06-21-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		37	86

6-21-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

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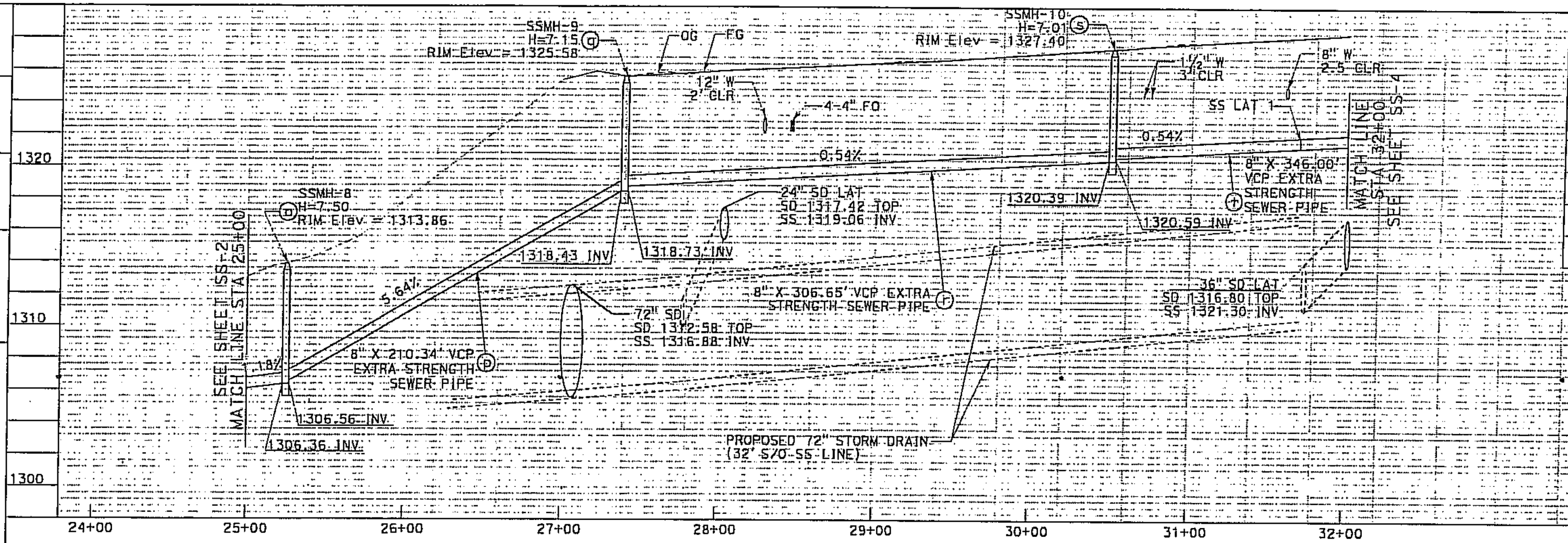
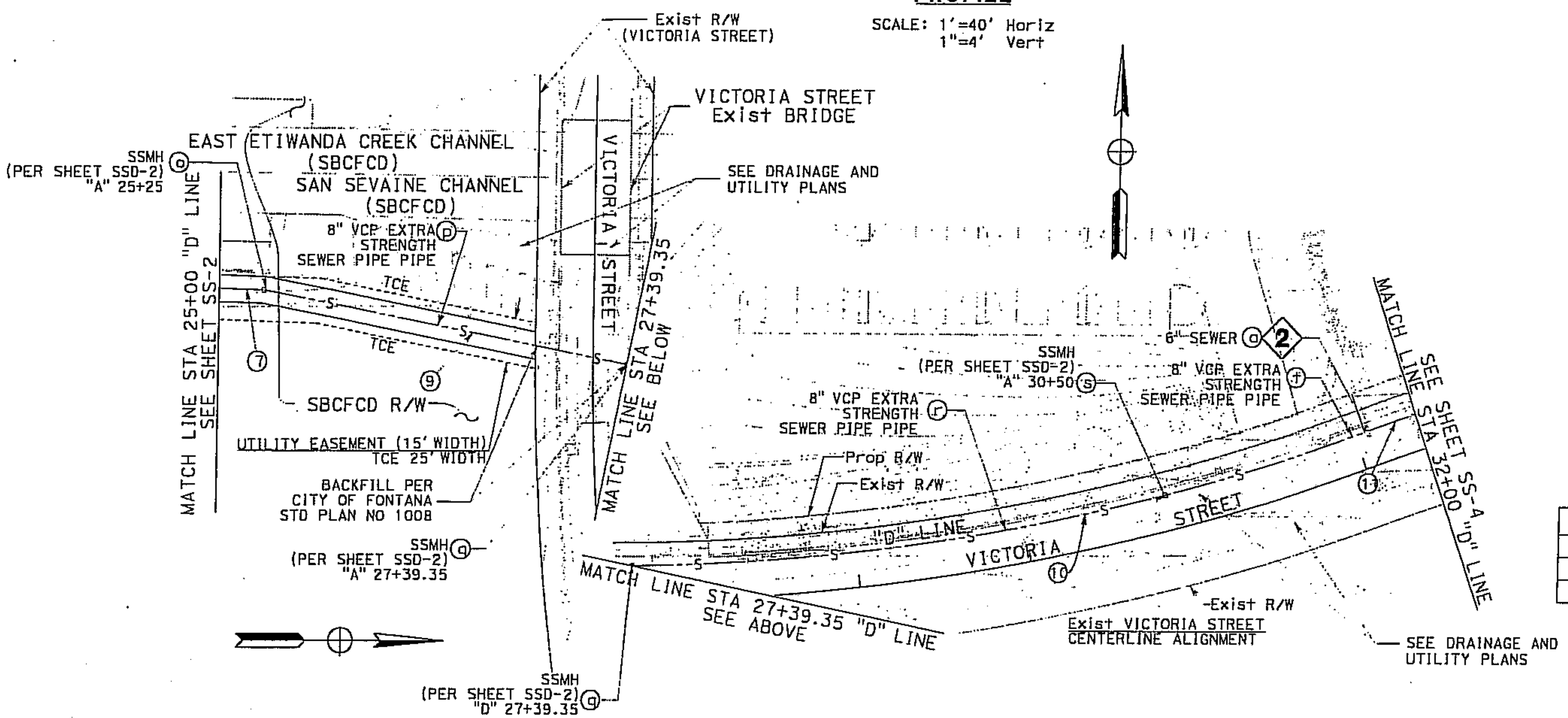
REGISTERED PROFESSIONAL ENGINEER — C. COSTELLO — No. 60256 — Exp. 06/30/08 — CIVIL — STATE OF CALIFORNIA

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761



SANITARY SEWER SYSTEM No. ①
PROFILE

SCALE: 1'=40' Horiz
1"=4' Vert



SANITARY SEWER SYSTEM Nos. ① & ②
PLAN

SCALE: 1"=40'

THIS PLAN IS ACCURATE FOR SEWER WORK ONLY

LEGEND

SSMH	-	SANITARY SEWER MANHOLE
TCE	-	TEMPORARY CONSTRUCTION EASEMENT
SD	-	STORM DRAIN
SS	-	SANITARY SEWER
CLR	-	CLEARANCE
------	-	Exist UTILITY
— XX —	-	Prop UTILITY
ⓧ	-	DRAINAGE UNIT
ⓘ	-	LINE/CURVE DATA

BEARING AND DISTANCE TABLE

No.	BEARING	L
7	N1°56'31"E	350.00
9	N11°2'54"E	214.34

CURVE TABLE

No.	R	Δ/BEARING	T	L
10	1280.000	19°25'7.949"	219.011	310.660
11	1320.000	19°46'44.722"	230.129	350.000

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED

SANITARY SEWER PLAN AND PROFILE

SCALE AS SHOWN

SS-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

DESIGN OVERSIGHT: SERGIO AVILA

CALCULATED-DESIGNED BY / CHECKED BY / REVISED BY: J.W. / DATE REVISED: S.N.

LAST REVISION 06-21-07 | DATE PLOTTED => 03-AUG-2007 | TIME PLOTTED => 13:13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		38	86

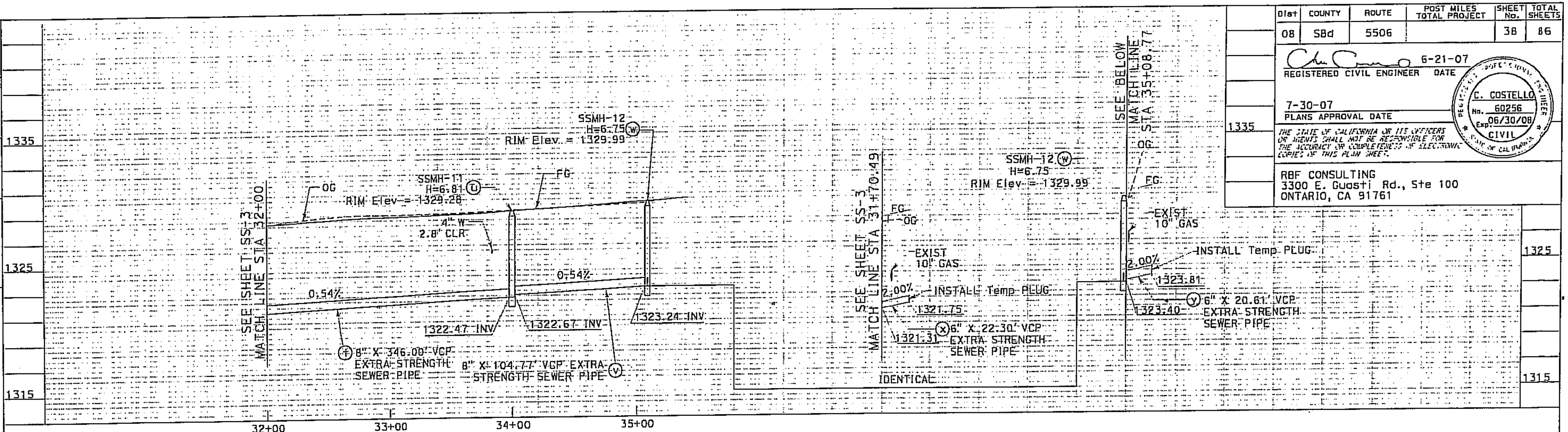
6-21-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
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.

C. COSTELLO
No. 60256
Exp. 06/30/08
CIVIL
STATE OF CALIFORNIA

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761



SANITARY SEWER SYSTEM No. 1

SANITARY SEWER LATERAL 2

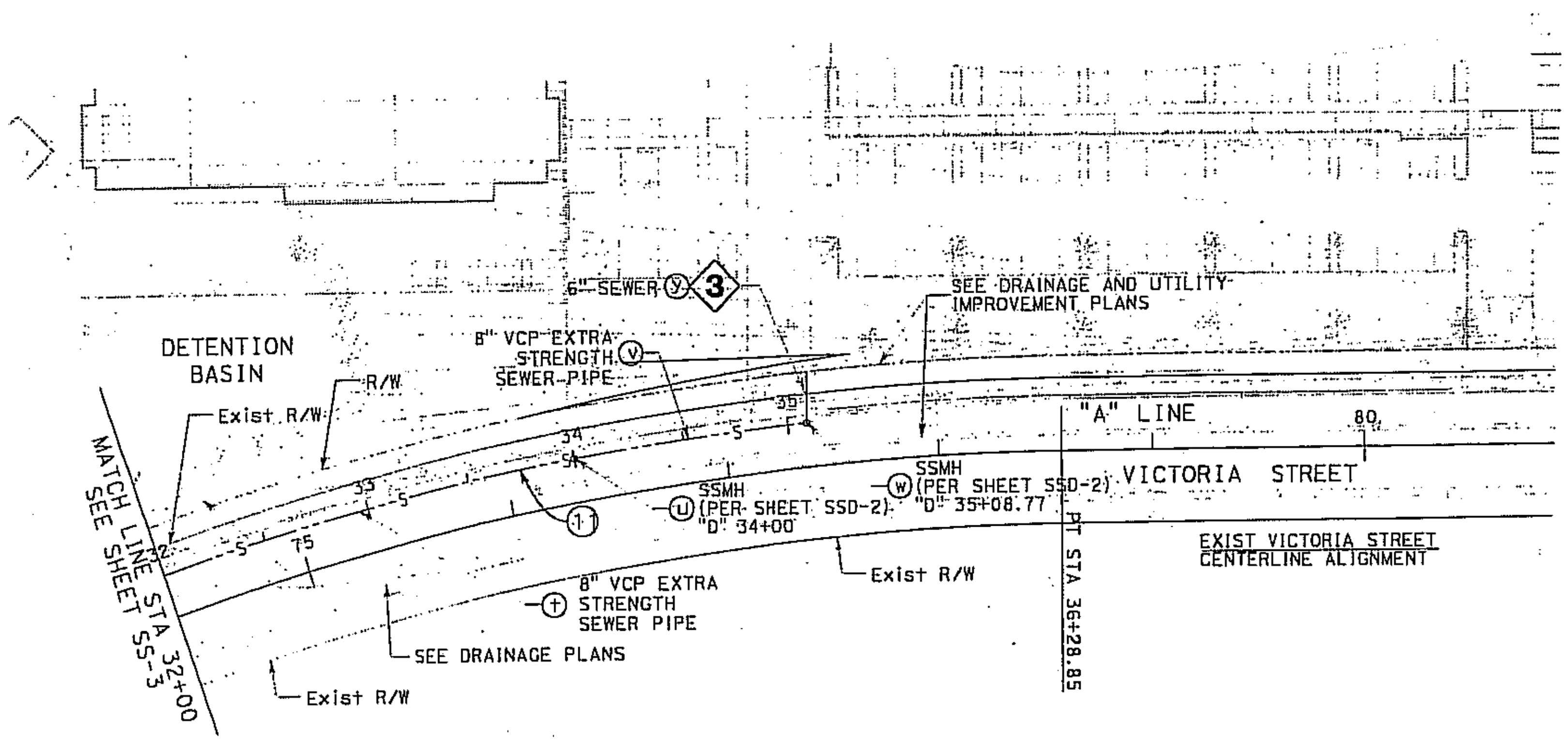
SANITARY SEWER LATERAL 3

PROFILE

SCALE: 1'=40' Horiz
1"=4' Vert

LEGEND

SSMH	-	SANITARY SEWER MANHOLE
TCE	-	TEMPORARY CONSTRUCTION EASEMENT
SD	-	STORM DRAIN
SS	-	SANITARY SEWER
CLR	-	CLEARANCE
	-	Exist UTILITY
— XX —	-	Prop UTILITY
(x)	-	DRAINAGE UNIT
(#)	-	LINE/CURVE DATA



CURVE TABLE

No.	RADIUS	DELTA/BEARING	TANGENT	LENGTH
1	1320.000	19°46'44.722"	230.129	455.678

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

SANITARY SEWER SYSTEM Nos. 1 & 3

PLAN

SCALE: 1"=40'

THIS PLAN IS ACCURATE FOR SEWER WORK ONLY

SANITARY SEWER PLAN AND PROFILE

SCALE AS SHOWN

SS-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT SERGIO AVILA
CALCULATED-DESIGNED BY
CHECKED BY
J.W. S.N.
REVISED BY DATE REVISED

LAST REVISION 06-21-07

CU 08230 EA 3770U1

BORDER LAST REVISED 11-1-2006

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		39	86

5-07-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL

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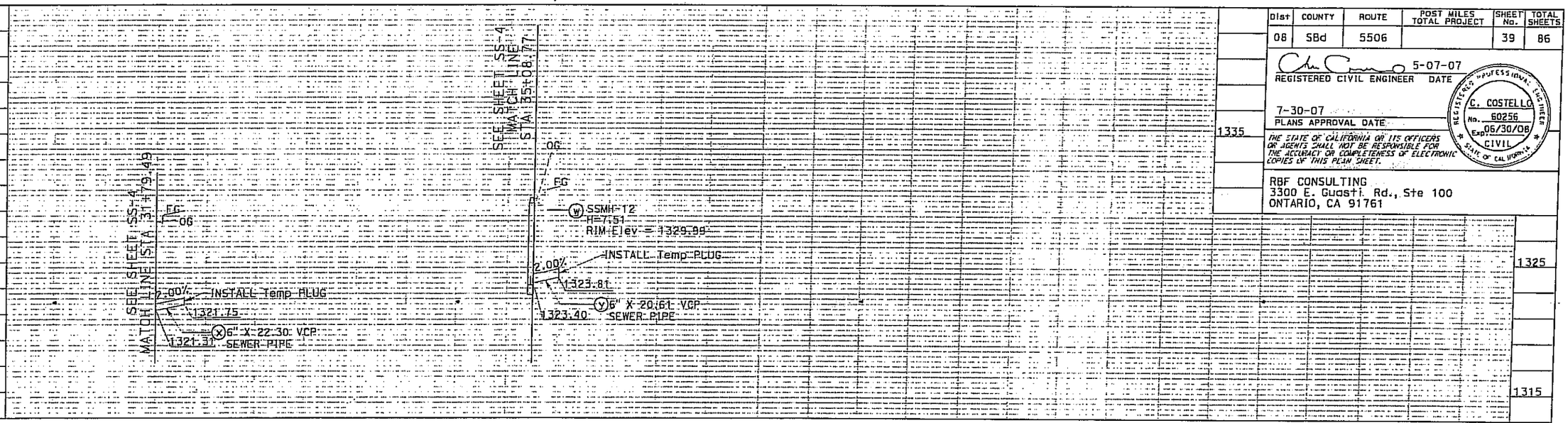
RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

REVISED BY | DATE REVISED
J.W. | S.N.
CALCULATED-DESIGNED BY
CHECKED BY
DESIGN OVERSIGHT: SERGIO AVILA
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

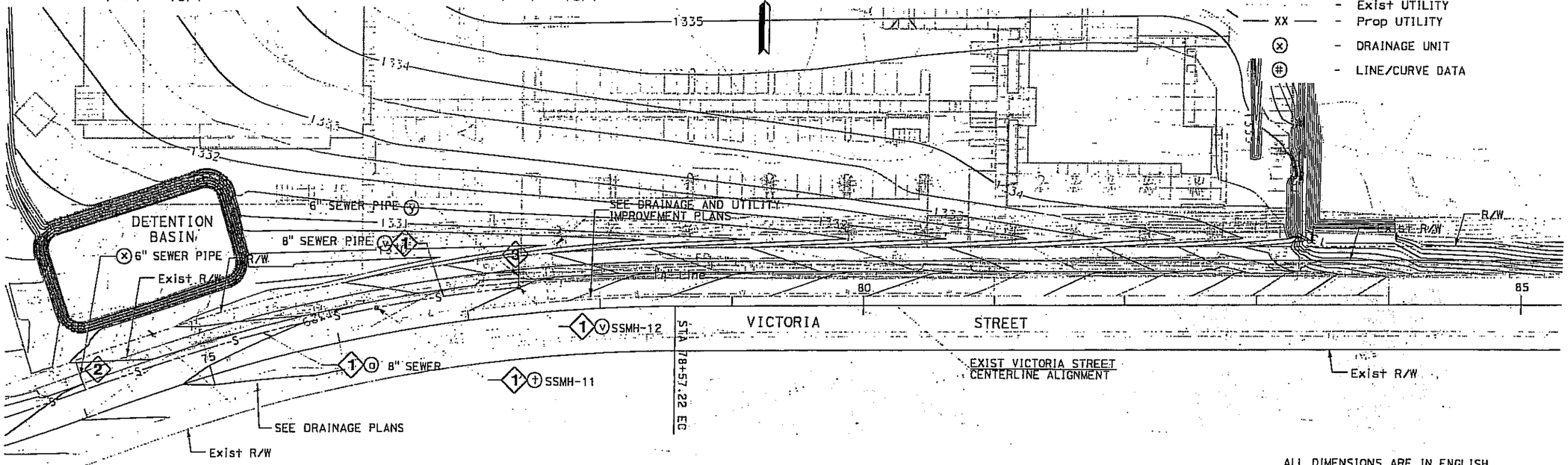


SANITARY SEWER SYSTEM No. 2
PROFILE

SCALE: 1'=40' Horiz
1"=4' Vert

SANITARY SEWER SYSTEM No. 3
PROFILE

SCALE: 1'=40' Horiz
1"=4' Vert



LEGEND

SSMH	-	SANITARY SEWER MANHOLE
TCE	-	TEMPORARY CONSTRUCTION EASEMENT
SD	-	STORM DRAIN
SS	-	SANITARY SEWER
CLR	-	CLEARANCE
	-	Exist UTILITY
XX	-	Prop UTILITY
⊗	-	DRAINAGE UNIT
⊕	-	LINE/CURVE DATA

SANITARY SEWER SYSTEM No. 2 & 3
PLAN

SCALE: 1"=40'

THIS PLAN IS ACCURATE FOR SEWER WORK ONLY

ALL DIMENSIONS ARE IN ENGLISH UNLESS OTHERWISE SHOWN

SANITARY SEWER PLAN AND PROFILE

SCALE AS SHOWN

SS-5

LAST REVISION 05-04-07 | DATE PLOTTED = 03-AUG-2007 TIME PLOTTED = 11:55

BORDER LAST REVISED 11-1-2006 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME = tmallest DGN FILE = 08770uj-005.dgn | CU 08230 | EA 377001

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		65	86

REGISTERED CIVIL ENGINEER 6-21-07 DATE

7-30-07 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 C. SCHNEIDER No. 56353 Exp. 3/31/09 CIVIL STATE OF CALIFORNIA

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

NOTE:

1. SEE SC-1 FOR GENERAL NOTES, AND LEGEND.

CONSTRUCTION AREA SIGNS (STATIONARY MOUNTED)

SIGN NUMBER	SIGN TYPE	SIGN MESSAGE	PANEL SIZE (In)	NUMBER OF POSTS AND SIZE In x In x Ft	EACH (N)
1-1	W20-1	ROAD WORK AHEAD	36x36	(ONE) 4x4x12	1
1-2	W1-4R	REVERSE CURVE	30x30	(ONE) 4x4x12	2
1-3	C12(CA)	ROAD NARROWS	36x36	(ONE) 4x4x12	1
1-4	G20-2	END ROAD WORK	36x18	(ONE) 4x4x12	1
2-1	W20-1	ROAD WORK AHEAD	36x36	(ONE) 4x4x12	1
2-2	W1-4L	REVERSE CURVE	30x30	(ONE) 4x4x12	2
2-3	C12(CA)	ROAD NARROWS	36x36	(ONE) 4x4x12	1
2-4	G20-2	END ROAD WORK	36x36	(ONE) 4x4x12	1
2-5	W1-6(LT)	ONE DIRECTION LARGE ARROW	48x24	(ONE) 4x4x12	2
2-6	C30(CA)	LANE CLOSED	30x30	(ONE) 4x4x12	2
3-1	W20-1	ROAD WORK AHEAD	30x30	(ONE) 4x4x12	1
3-2	G20-2	END ROAD WORK	36x18	(ONE) 4x4x12	1
3-3	W1-4L	REVERSE CURVE	30x30	(ONE) 4x4x12	2
3-4	C12(CA)	ROAD NARROWS	36x36	(ONE) 4x4x12	1
3-5	W1-6(LT)	ONE DIRECTION LARGE ARROW	48x24	(ONE) 4x4x12	2
3-6	C30(CA)	REVERSE CURVE	30x30	(ONE) 4x4x12	2
4-1	W20-1	ROAD WORK AHEAD	30x30	(ONE) 4x4x12	1
4-2	W1-4R	REVERSE CURVE	30x30	(ONE) 4x4x12	2
4-3	C12(CA)	ROAD NARROWS	36x36	(ONE) 4x4x12	1
4-4	G20-2	END ROAD WORK	36x18	(ONE) 4x4x12	1
5-1	W20-1	ROAD WORK AHEAD	30x30	(ONE) 4x4x12	1
5-2	G20-2	END ROAD WORK	36x18	(ONE) 4x4x12	1
5-3	W1-4R	REVERSE CURVE	30x30	(ONE) 4x4x12	1
5-4	C12(CA)	ROAD NARROWS	36x36	(ONE) 4x4x12	1
5-5	W1-4L	REVERSE CURVE	30x30	(ONE) 4x4x12	1
5-6	W1-6(RT)	ONE DIRECTION LARGE ARROW	48x24	(ONE) 4x4x12	2
5-7	R4-7A	KEEP RIGHT	24x30	(ONE) 4x4x12	2
5-8	R4-7	KEEP RIGHT	24x30	(ONE) 4x4x12	1
6-1	W20-1	ROAD WORK AHEAD	30x30	(ONE) 4x4x12	1
6-2	W1-4R	REVERSE CURVE	30x30	(ONE) 4x4x12	1
6-3	C12(CA)	ROAD NARROWS	36x36	(ONE) 4x4x12	1
6-4	G20-2	END ROAD WORK	36x18	(ONE) 4x4x12	1
6-5	W1-6(RT)	ONE DIRECTION LARGE ARROW	48x24	(ONE) 4x4x12	3
6-6	R4-7A	KEEP RIGHT	24x30	(ONE) 4x4x12	1
6-7	R4-7	KEEP RIGHT	24x30	(ONE) 4x4x12	1
6-8	W1-4L	REVERSE CURVE	30x30	(ONE) 4x4x12	1

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

TEMPORARY STAGE CONSTRUCTION QUANTITIES

SHEET NUMBER	STATION / LOCATION	DIRECTION	CHANNELIZER (SURFACE MOUNTED)	PAVEMENT DELINEATION DETAIL No.	TEMPORARY TRAFFIC STRIPE (PAINT)	TEMPORARY RAILING (TYPE K)	TEMPORARY RAILING (TYPE K) RELOCATED	TEMPORARY CRASH CUSHION MODULE ARRAY TS14	TYPE III BARRICADE
			EA		LF	LF	LF	EA	EA
	STAGE 1								
SC-1	"Victoria" 65+50 TO "Victoria" 77+00	EB,WB	46	22	1150				
SC-1	"Victoria" 65+50 TO "Victoria" 77+00	WB	17	27B	1150				
SC-1	"Victoria" 69+12 TO "Victoria" 77+00	WB				788			
SC-2	"Victoria" 77+00 TO "Victoria" 89+00	EB,WB	49	22	1200				
SC-2	"Victoria" 77+00 TO "Victoria" 89+00	WB	20	27B	1200				3
SC-2	"Victoria" 77+00 TO "Victoria" 85+04	WB				804			
SC-2	"Victoria" 85+04	WB						1	
	STAGE 2								
SC-3	"Victoria" 64+30 TO "Victoria" 77+00	EB,WB	51	22	1270				
SC-3	"Victoria" 64+30 TO "Victoria" 68+25	EB	19	27B	1270				2
SC-3	"Victoria" 68+23	EB						1	
SC-3	"Victoria" 68+23 TO "Victoria" 77+00	EB					877		
SC-4	"Victoria" 77+00 TO "Victoria" 89+00	EB,WB	44	22	1100				
SC-4	"Victoria" 84+07 TO "Victoria" 89+00	EB	19	27B	1100				
SC-4	"Victoria" 77+00 TO "Victoria" 84+45	EB,WB					745		
	STAGE 3								
SC-5	"Victoria" 64+20 TO "Victoria" 77+00	EB,WB	116						2
SC-6	"Victoria" 77+00 TO "Victoria" 88+90	EB,WB	79						3
	TOTALS		460		9440	1592	*1622	2	10

* - TEMPORARY RAILING (TYPE K) RELOCATED WILL BE PAID FOR AS TEMPORARY RAILING (TYPE K)

STAGE CONSTRUCTION QUANTITIES

NO SCALE

SCQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN OVERSIGHT SERGIO AVILA

CALCULATED-DESIGNED BY J.W.

CHECKED BY S.N.

REVISED BY

DATE REVISED

LAST REVISION 06-21-07

BORDER LAST REVISED 11-1-2006

RELATIVE BORDER SCALE IS IN INCHES

CU 08230

EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		42	86

REGISTERED CIVIL ENGINEER 6-21-07 DATE

7-30-07
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 C. COSTELLO No. 60256 Exp 06/30/08 CIVIL STATE OF CALIFORNIA

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

SANITARY SEWER IMPROVEMENT NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THESE PLANS, THE CITY OF FONTANA STANDARD PLANS, THE CONTRACT PROVISIONS AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREEN BOOK"). ALL REFERENCE SPECIFICATIONS AND STANDARDS SHALL BE THE LATEST EDITION UNLESS OTHERWISE NOTED.
2. WHEN A TECHNICAL CONFLICT IS FOUND TO EXIST IN THE CONTRACT DOCUMENTS THAT CAN NOT BE RESOLVED BY REFERENCE TO PRECEDENCE PROVISIONS IN THE "GREEN BOOK", THE CONTRACTOR SHALL IMMEDIATELY REPORT SAID CONFLICT TO THE ENGINEER FOR RESOLUTION.
3. ALL MATERIALS AND METHODS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.
4. CONSTRUCTION PERMITS SHALL BE OBTAINED FROM THE CITY OF FONTANA COMMUNITY DEVELOPMENT DEPARTMENT, ENGINEERING DIVISION PRIOR TO THE START OF ANY WORK. INSPECTION COORDINATION SHALL BE REQUESTED AT LEAST TWO WORKING DAYS PRIOR TO THE START OF ANY WORK IN PUBLIC RIGHT-OF-WAY WITHIN THE CITY LIMITS. CALL (909) 350-7610.
5. THE CONTRACTOR SHALL CONFORM TO ALL TRAFFIC CONTROL POLICIES, METHODS AND PROCEDURES DESCRIBED IN THE STATE OF CALIFORNIA MANUAL OF TRAFFIC CONTROLS, LATEST NON-METRIC EDITION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN BARRICADES, DELINEATORS OR OTHER TRAFFIC CONTROL DEVICES AT ALL TIMES.
7. THE CONTRACTOR SHALL OBTAIN A PERMIT TO PERFORM EXCAVATION OR TRENCH WORK FOR TRENCHES 5 FEET OR GREATER IN DEPTH FROM THE CALIFORNIA STATE DIVISION OF INDUSTRIAL SAFETY.
8. THE WALLS AND FACES OF ALL EXCAVATIONS GREATER THAN FIVE (5) FEET IN DEPTH SHALL BE GUARDED BY SHORING, SLOPING OF THE GROUND OR OTHER APPROVED MEANS PURSUANT TO THE REQUIREMENTS OF THE DIVISION OF INDUSTRIAL SAFETY OF THE STATE OF CALIFORNIA. TRENCHES LESS THAN FIVE (5) FEET SHALL ALSO BE GUARDED WHEN THE POTENTIAL EXISTS FOR GROUND MOVEMENT.
9. NO MATERIAL OR EQUIPMENT SHALL BE STORED IN THE PUBLIC RIGHT OF WAY WITHOUT OBTAINING A SEPARATE PERMIT FOR THAT PURPOSE.
10. THE LOCATIONS OF UTILITIES SHOWN HAVE BEEN DETERMINED FROM AVAILABLE INFORMATION, HOWEVER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE, IN THE FIELD, THE TRUE LOCATION AND ELEVATION OF ANY EXISTING UTILITIES, AND TO EXERCISE PROPER PRECAUTION TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT AT 1-800-227-2600 TWO WORKING DAYS BEFORE EXCAVATION.
11. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION WITH ALL UTILITY COMPANIES INCLUDING, BUT NOT LIMITED TO, GAS, TELEPHONE, ELECTRIC, CABLE TELEVISION, LANDSCAPING, LANDSCAPE IRRIGATION, DOMESTIC WATER, RECLAIMED WATER, SEWER, STORM DRAIN, FLOOD CONTROL AND CALTRANS. ALL UTILITY COMPANIES SHALL BE GIVEN TWO WORKING DAYS NOTICE PRIOR TO WORK AROUND THEIR FACILITIES.
12. THE CONTRACTOR SHALL NOT OPERATE ANY FIRE HYDRANT OR WATER MAIN VALVES WITHOUT APPROPRIATE AGENCY AUTHORIZATION. CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE WATER COMPANY FOR VALVE OPERATION AND WATER REQUIREMENTS.
13. STATIONING REFERS TO THE CENTERLINE OF SEWER EXCEPT WHERE OTHERWISE NOTED.
14. ADEQUATE CONSTRUCTION CONTROL STAKES SHALL BE SET BY THE ENGINEER TO ENABLE THE CONTRACTOR TO CONSTRUCT THE WORK TO THE PLAN GRADES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF BENCHMARKS AND CONSTRUCTION CONTROL STAKING DURING CONSTRUCTION.
15. THE CONTRACTOR SHALL NOT DISTURB EXISTING SURVEY MONUMENTS, MONUMENT TIES OR BENCH MARKS WITHOUT PRIOR NOTIFICATION TO THE ENGINEER.
16. REMOVAL AND REPLACEMENT OF EXISTING SURVEYCONTROL, INCLUDING SURVEY MONUMENTS, MONUMENT TIES AND BENCH MARKS, SHALL BE DONE BY A REGISTERED CIVIL ENGINEER OR LICENSED LAND SURVEYOR. SURVEY MONUMENTS THAT WILL BE DESTROYED AS A RESULT OF THIS CONSTRUCTION SHALL BE REPLACED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER ONE WEEK PRIOR TO CONSTRUCTION SO THAT TIES TO MONUMENTS CAN BE ESTABLISHED FOR LATER REPLACEMENT OF THE MONUMENT.
17. THE CONTRACTOR SHALL MAINTAIN ACCESS FOR LOCAL RESIDENTS AND BUSINESSES AT ALL TIMES. A MINIMUM 12 FOOT LANE SHALL BE MAINTAINED AT ALL TIMES IN THE CONSTRUCTION AREA FOR RESIDENTS AND EMERGENCY VEHICLES.
18. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AN EFFECTIVE MEANS OF DUST CONTROL, INCLUDING ADEQUATE WATERING, AT ALL TIMES.
19. THE CONTRACTOR SHALL NOT CAUSE ANY EXCAVATED MATERIAL, MUD, SILT OR DEBRIS TO BE DEPOSITED ONTO PUBLIC OR PRIVATE PROPERTY ADJACENT TO THE RIGHT OF WAY DURING CONSTRUCTION WITHOUT PRIOR WRITTEN APPROVAL.
20. NO TRENCH BACKFILL SHALL TAKE PLACE WITHOUT PRIOR APPROVAL OF THE INSPECTOR.
21. A GEOTECHNICAL ENGINEER SHALL CERTIFY ALL BACKFILL COMPACTION. FAILURE TO OBTAIN THE REQUIRED DENSITY SHALL REQUIRE RE-WORKING OF THAT PORTION OF THE WORK UNTIL THE SPECIFIED DENSITY IS OBTAINED.
22. CARE SHOULD BE TAKEN TO PREVENT GRADES, DITCHES, AND SWALES FROM UNDERMINING STREET IMPROVEMENTS. UPON INSPECTION OF THE SITE, THE CITY ENGINEER MAY REQUIRE TEMPORARY NON-ERODEABLE SWALES ENTERING OR LEAVING IMPROVEMENTS.
23. ALL EXPOSED CONCRETE SURFACES SHALL CONFORM IN GRADE, COLOR AND FINISH TO MATCH EXISTING CONCRETE.
24. IF SEWER CONSTRUCTION IS TO BE DONE IN PHASES, THE CONTRACTOR SHALL PROVIDE A TERMINAL CLEANOUT AT THE PHASE BOUNDARY, NOT MORE THAN 150 FEET FROM THE DOWNSTREAM MANHOLE, SEE CITY OF FONTANA STANDARD DETAIL FOR TERMINAL CLEANOUT.
25. SANITARY SEWER LINES SHALL BE CONSTRUCTED OF BELL AND SPIGOT OR BAND SEAL TYPE VITRIFIED CLAY PIPE (V.C.P.) EXTRA STRENGTH CLASS AND SHALL CONFORM TO THE PROVISIONS OF THE ASTM DESIGNATION C700 FOR V.C.P.
26. NO OPEN TRENCH SHALL BE ALLOWED AT THE END OF THE DAY WITHOUT PRIOR APPROVAL OF THE ENGINEER.

SANITARY SEWER IMPROVEMENT NOTES (Cont)

27. SHORT VCP STUBS WITH FLEXIBLE COMPRESSION JOINTS SHALL BE USED AT MANHOLE WALLS TO ALLOW FOR MINOR DEFLECTIONS IN ALIGNMENT.
28. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXPOSE EXISTING FACILITIES, AND VERIFY ELEVATION AND LOCATION OF CONNECTIONS. ENGINEER APPROVAL OF CONNECTIONS TO EXISTING FACILITIES DOES NOT IMPLY CORRECTNESS OF ELEVATIONS OR LOCATIONS SHOWN ON THE PLANS.
29. ALL 4" HOUSE LATERALS SHALL BE INSTALLED AT A 2% MINIMUM GRADE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
30. TERMINATE ALL 4" HOUSE SEWER LATERALS 3 FEET INSIDE THE LOT WITH A PLUG 12" BELOW THE GROUND SURFACE. WHEN PUBLIC UTILITY EASEMENTS EXIST NEXT TO THE STREET RIGHT OF WAY, THE LATERAL SHALL TERMINATE 3 FEET INSIDE THE LOT AS MEASURED FROM THE UTILITY EASEMENT.
31. THE SEWER CONTRACTOR SHALL STAMP AN "S" IN THE FACE OF THE CURB AT THE LOCATION OF THE SEWER LATERAL.
32. IF EXISTING UTILITIES OR ANY OTHER FACILITIES CONFLICT WITH THE PROPOSED IMPROVEMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND ALL AFFECTED AGENCIES IMMEDIATELY.
33. NO CONCRETE SHALL BE PLACED UNTIL THE FORMS AND REINFORCING STEEL HAVE PLACED, INSPECTED AND APPROVED.
34. ALL UNDERGROUND UTILITIES SHALL BE INSTALLED, TESTED AND APPROVED PRIOR TO PLACEMENT.
35. APPROVED SOIL STERILANT IS REQUIRED UNDER ALL NEW ASPHALT PAVING PRIOR TO PLACEMENT.
36. ALL MANHOLES, CLEANOUT FRAMES, COVERS AND VALVE BOXES SHALL BE RAISED TO FINISHED GRADE BY THE PAVING CONTRACTOR UPON COMPLETION OF PAVING.
37. UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL RESTORE ALL SIGNING, STRIPING, BARRICADES, AND OTHER TRAFFIC CONTROL DEVICES TO THE SATISFACTION OF THE ENGINEER.
38. AS-BUILT DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER OF RECORD, WHO SHALL PROVIDE RECORD DRAWINGS TO THE ENGINEER.

LEGEND

SSMH - SANITARY SEWER MANHOLE
JS - JUNCTION STRUCTURE

SANITARY SEWER QUANTITIES

SEWER PLAN SHEET No.	SYSTEM No. ◇	SEWER UNIT No. ○	8" EXTRA STRENGTH VCPSEWER PIPE	6" EXTRA STRENGTH VCP SEWER PIPE	48" SANITARY SEWER MANHOLE	48" SANITARY SEWER MANHOLE (N)	MISCELLANEOUS IRON AND STEEL (FRAME AND GRATE)	DESCRIPTION	STATION/OFFSET (FOR MANHOLES ONLY)	SYSTEM No. ◇	UNIT No. ○
			LF	LF	EA	LF	LB				
SS-1	1	a			1	9.02	435	INSTALL SSMH PER CITY OF FONTANA Std Det 2002 ON SHEET SSD-2	"D"7+89.07 0.00 Rt	1	a
		b	154					INSTALL 8" EXTRA STRENGTH VCP SEWER PIPE			b
		c			1	5.52	435	INSTALL SSMH PER CITY OF FONTANA Std Det 2002 ON SHEET SSD-2	"D"9+46.21 0.00 Rt		c
		d	367					INSTALL 8" EXTRA STRENGTH VCP SEWER PIPE			d
		e			1	10.59	435	INSTALL SSMH PER CITY OF FONTANA Std Det 2002 ON SHEET SSD-2	"D"13+16.74 0.00 Rt		e
		f	230					INSTALL 8" EXTRA STRENGTH VCP SEWER PIPE			f
		g			1	6.72	435	INSTALL SSMH PER CITY OF FONTANA Std Det 2002 ON SHEET SSD-2	"D"15+50 0.00 Rt		g
		h	221					INSTALL 8" EXTRA STRENGTH VCP SEWER PIPE			h
SS-2		i			1	8.94	435	INSTALL SSMH PER CITY OF FONTANA Std Det 2002 ON SHEET SSD-2	"D"17+75 0.00 Rt		i
		j	296					INSTALL 8" EXTRA STRENGTH VCP SEWER PIPE			j
		k			1	11.49	435	INSTALL SSMH PER CITY OF FONTANA Std Det 2002 ON SHEET SSD-2	"D"20+75 0.00 Rt		k
		l	96					INSTALL 8" EXTRA STRENGTH VCP SEWER PIPE			l
		m			1	6.80	435	INSTALL SSMH PER CITY OF FONTANA Std Det 2002 ON SHEET SSD-2	"D"21+75 0.00 Rt		m
		n	346					INSTALL 8" EXTRA STRENGTH VCP SEWER PIPE			n
SS-3		o			1	7.51	435	INSTALL SSMH PER CITY OF FONTANA Std Det 2002 ON SHEET SSD-2	"D"25+25 0.00 Rt		o
		p	211					INSTALL 8" EXTRA STRENGTH VCP SEWER PIPE			p
		q			1	7.15	435	INSTALL SSMH PER CITY OF FONTANA Std Det 2002 ON SHEET SSD-2	"D"27+39.35 0.00 Rt		q
		r	307					INSTALL 8" EXTRA STRENGTH VCP SEWER PIPE			r
		s			1	7.01	435	INSTALL SSMH PER CITY OF FONTANA Std Det 2002 ON SHEET SSD-2	"D"30+50 0.00 Rt		s
		t	346					INSTALL 8" EXTRA STRENGTH VCP SEWER PIPE			t
SS-4		u			1	6.81	435	INSTALL SSMH PER CITY OF FONTANA Std Det 2002 ON SHEET SSD-2	"D"34+00 0.00 Rt		u
		v	105					INSTALL 8" EXTRA STRENGTH VCP SEWER PIPE			v
	1	w			1	6.75	435	INSTALL SSMH PER CITY OF FONTANA Std Det 2002 ON SHEET SSD-2	"D"35+08.77 0.00 Rt	1	w
SS-5	2	x		23				INSTALL 6" EXTRA STRENGTH VCP SEWER PIPE		2	x
	3	y		23				INSTALL 6" EXTRA STRENGTH VCP SEWER PIPE		3	y
TOTAL			2679	46	12	94.31	5220	PROJECT TOTAL			

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

THIS PLAN ACCURATE FOR SANITARY SEWER WORK ONLY.

SANITARY SEWER QUANTITIES AND NOTES

SSQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN OVERSIGHT SERGIO AVILA
CALCULATED-DESIGNED BY J.W.
CHECKED BY S.N.
REVISED BY
DATE REVISED
LAST REVISION 06-21-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		43	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07
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 C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL STATE OF CALIFORNIA

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

LEGEND

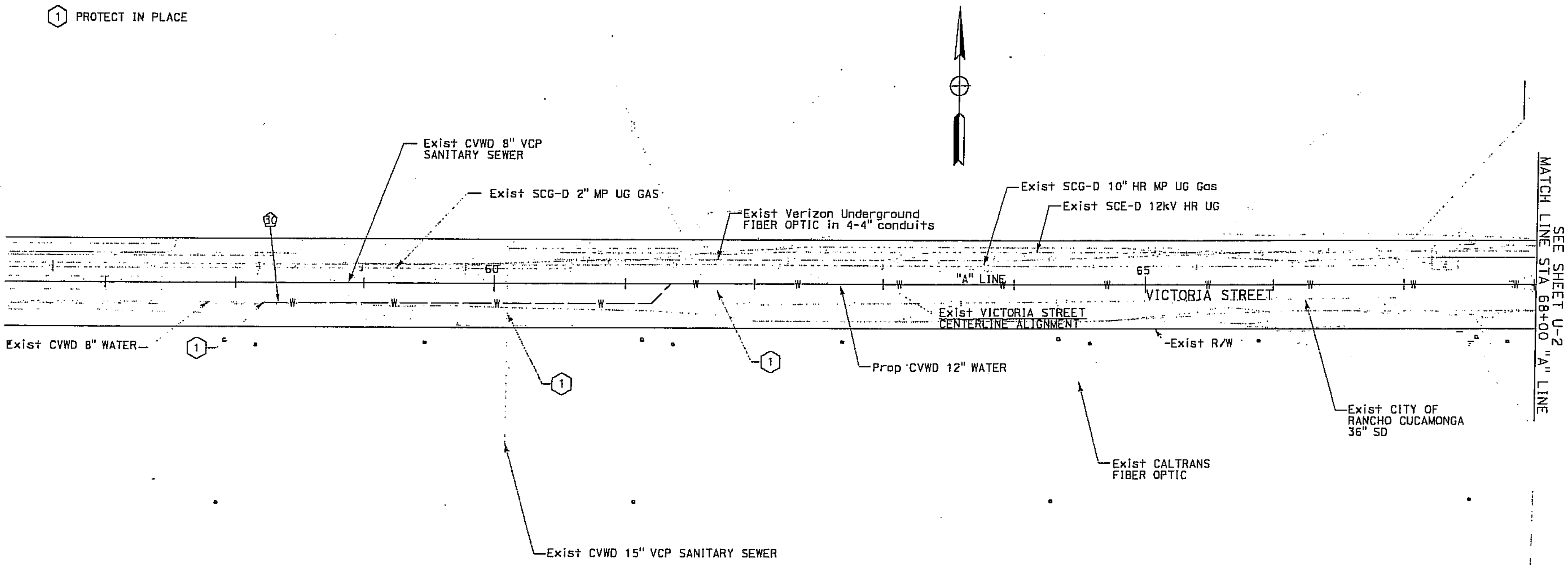
- MH - MANHOLE
- FO - FIBER OPTIC
- SD - STORM DRAIN
- PP - POWERPOLE
- OHE - OVERHEAD ELECTRIC
- UG - UNDERGROUND
- MP - MEDIUM PRESSURE
- HR - HIGH RISK
- SCG-D - SOUTHERN CALIFORNIA GAS DISTRIBUTION
- SCE-D - SOUTHERN CALIFORNIA ELECTRIC DISTRIBUTION
- CVWD - CUCAMONGA VALLEY WATER DISTRICT
- COF - CITY OF FONTANA
- ---- - Exist UTILITY
- —XX— - Prop UTILITY

POTHOLE LOCATION TABLE

No.	UTILITY	NORTHING	EASTING	ELEVATION	DEPTH
1	DELETED				
2	DELETED				
30	CVWD 8" Water	1869416.31	6710704.07	1331.01	3.90

CONSTRUCTION NOTES

(1) PROTECT IN PLACE



ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED

UTILITY PLAN

SCALE: 1"=40'

U-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT: SERGIO AVILA
CALCULATED-DESIGNED BY: J.W.
CHECKED BY: S.N.
REVISED BY
DATE REVISED

LAST REVISION 05-04-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		44	86

6-21-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
C. COSTELLO
No. 60256
Exp. 06/30/08
CIVIL
STATE OF CALIFORNIA

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RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

POTHOLE LOCATION TABLE

No.	UTILITY	NORTHING	EASTING	ELEVATION	DEPTH
3	SCG-D 10" MP GAS	1869459.62	6711812.36	1321.75	4.00
4	SCG-D 10" MP GAS	1869460.74	6711888.80	1321.70	4.30
5	VERIZON Fiber Optic	1869458.43	6711943.64	1322.88	2.76
6	DELETED				
7	SCG-D 10" MP GAS	1869466.10	6711981.07	1322.54	3.85
8	VERIZON Fiber Optic	1869456.97	6712079.10	1324.40	2.85
9	SCG-D 10" MP GAS	1869479.31	6712071.31	1323.19	3.00
10	VERIZON Fiber Optic	1869458.90	6712181.01	1324.25	3.17
11	SCG-D 10" MP GAS	1869502.26	6712166.06	1323.85	3.00
12	SCG-D 10" MP GAS	1869531.70	6712250.82	1324.25	4.15
13	SCG-D 10" MP GAS	1869561.04	6712330.68	1323.38	5.55
14	SCG-D 10" MP GAS	1869574.86	6712376.99	1322.57	4.85
15	SCG-D 10" MP GAS	1869587.65	6712444.49	1325.13	4.40
16	SCG-D 10" MP GAS	1869604.20	6712547.82	1326.85	3.95
17	SCG-D 10" MP GAS	1869612.09	6712652.97	1327.64	4.05
18	SCG-D 10" MP GAS	1869612.33	6712724.33	1327.64	4.15

LEGEND

- MH - MANHOLE
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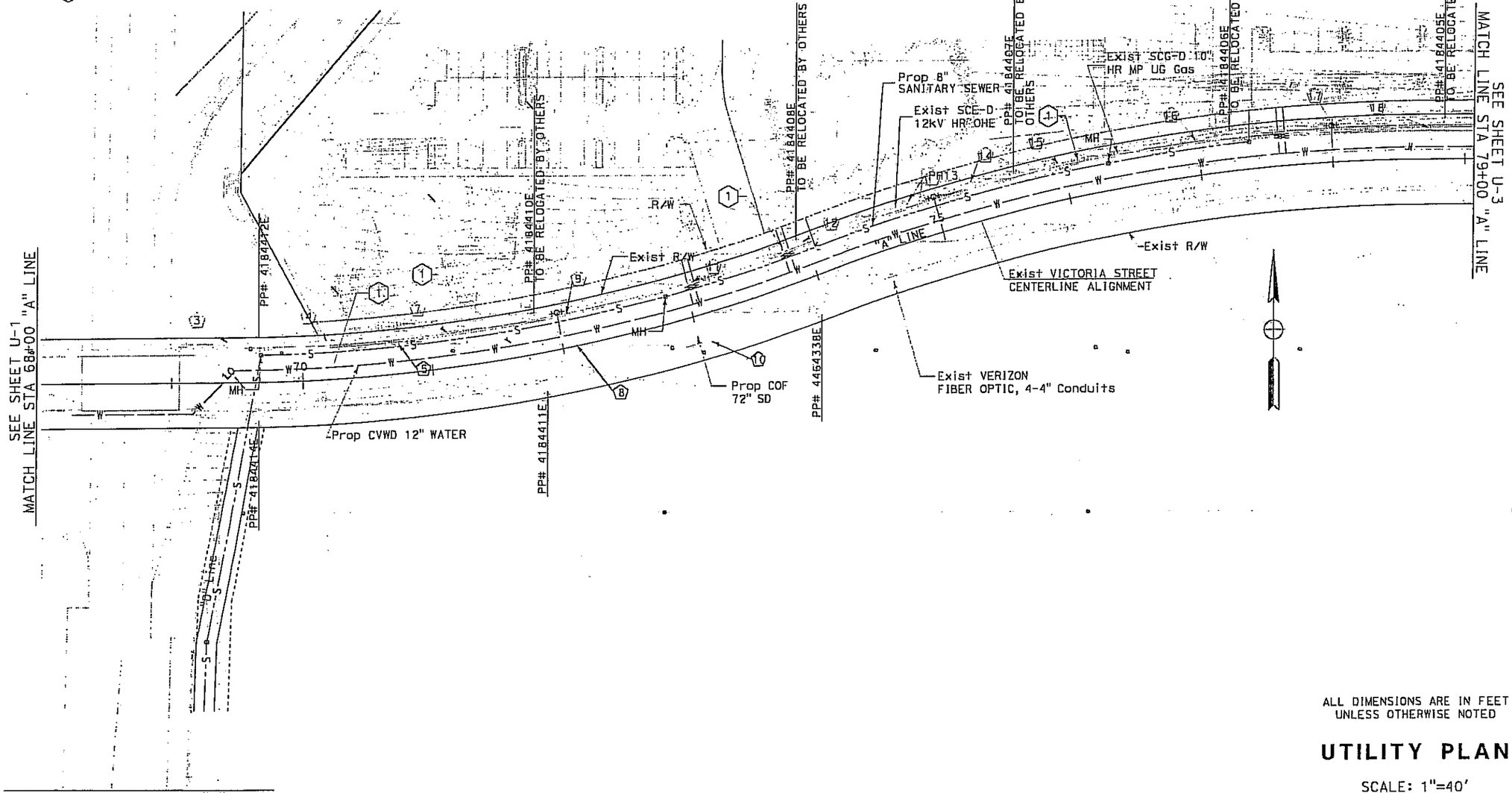
- ..... - Exist UTILITY
- ——XX—— - Prop UTILITY

CONSTRUCTION NOTES

(1) PROTECT IN PLACE



ALL DIMENSIONS ARE IN FEET
UNLESS OTHERWISE NOTED

UTILITY PLAN

SCALE: 1"=40'

U-2

CALCULATED-DESIGNED BY	J.W.
CHECKED BY	S.N.
DATE REVISED	
REVISED BY	

DESIGN OVERSIGHT: SERGIO AVILA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

CU 08230 | EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		45	86

6-21-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
C. COSTELLO
No. 60256
Exp. 06/30/08
CIVIL
STATE OF CALIFORNIA

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

LEGEND

- MH - MANHOLE
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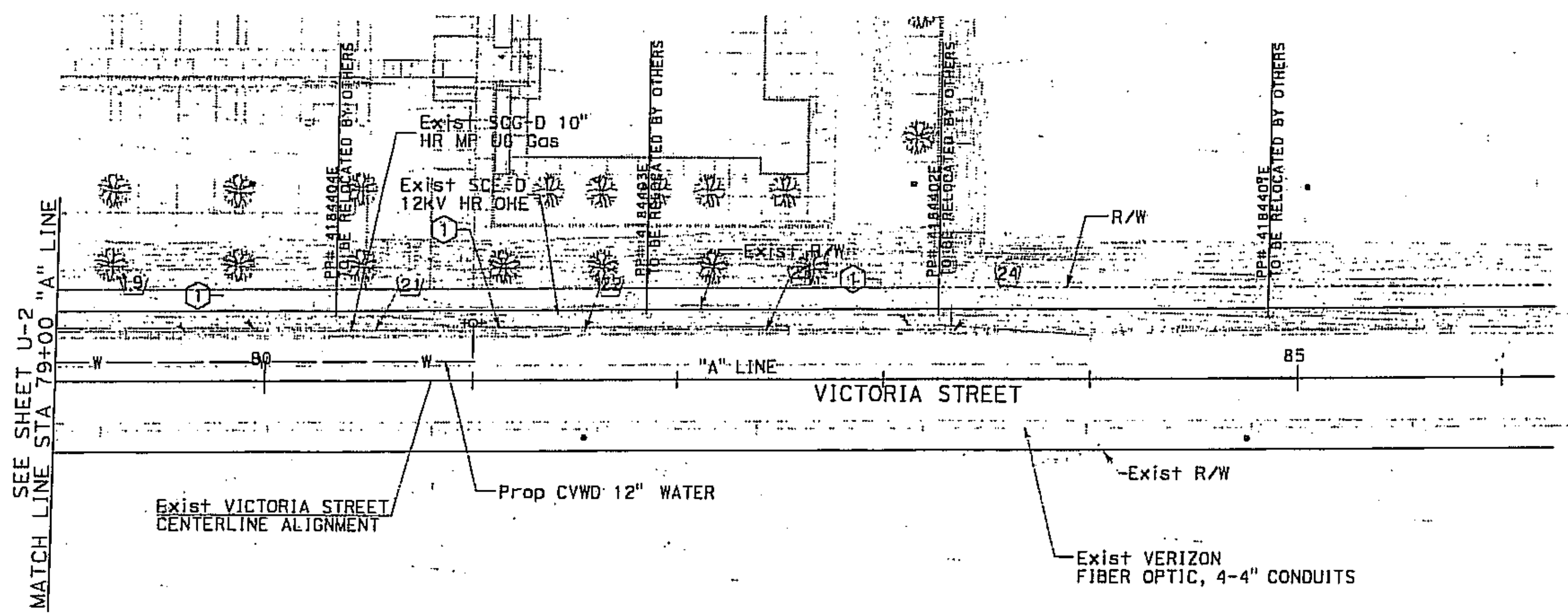
CONSTRUCTION NOTES

(1) PROTECT IN PLACE

POTHOLE LOCATION TABLE

No.	UTILITY	NORTHING	EASTING	ELEVATION	DEPTH
19	SCG-D 10" MP GAS	1869612.65	6712814.10	1328.50	4.00
20	DELETED				
21	SCG-D 10" MP GAS	1869613.91	6712905.31	1328.77	4.35
22	SCG-D 10" MP GAS	1869614.06	6713005.21	1329.78	3.80
23	SCG-D 10" MP GAS	1869614.73	6713095.41	1330.10	4.00
24	SCG-D 10" MP GAS	1869615.13	6713185.39	1331.53	3.75
25	DELETED				



ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED

UTILITY PLAN

SCALE: 1"=40'

U-3

DESIGN OVERSIGHT: SERGIO AVILA
CALCULATED-DESIGNED BY: J.W.
CHECKED BY
REVISED BY
DATE REVISED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 06-21-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		46	86

5-07-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEERS * C. COSTELLO No. 60256 Exp. 06/30/08 CIVIL * STATE OF CALIFORNIA

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ONTARIO, CA 91761

POTHOLE LOCATION TABLE

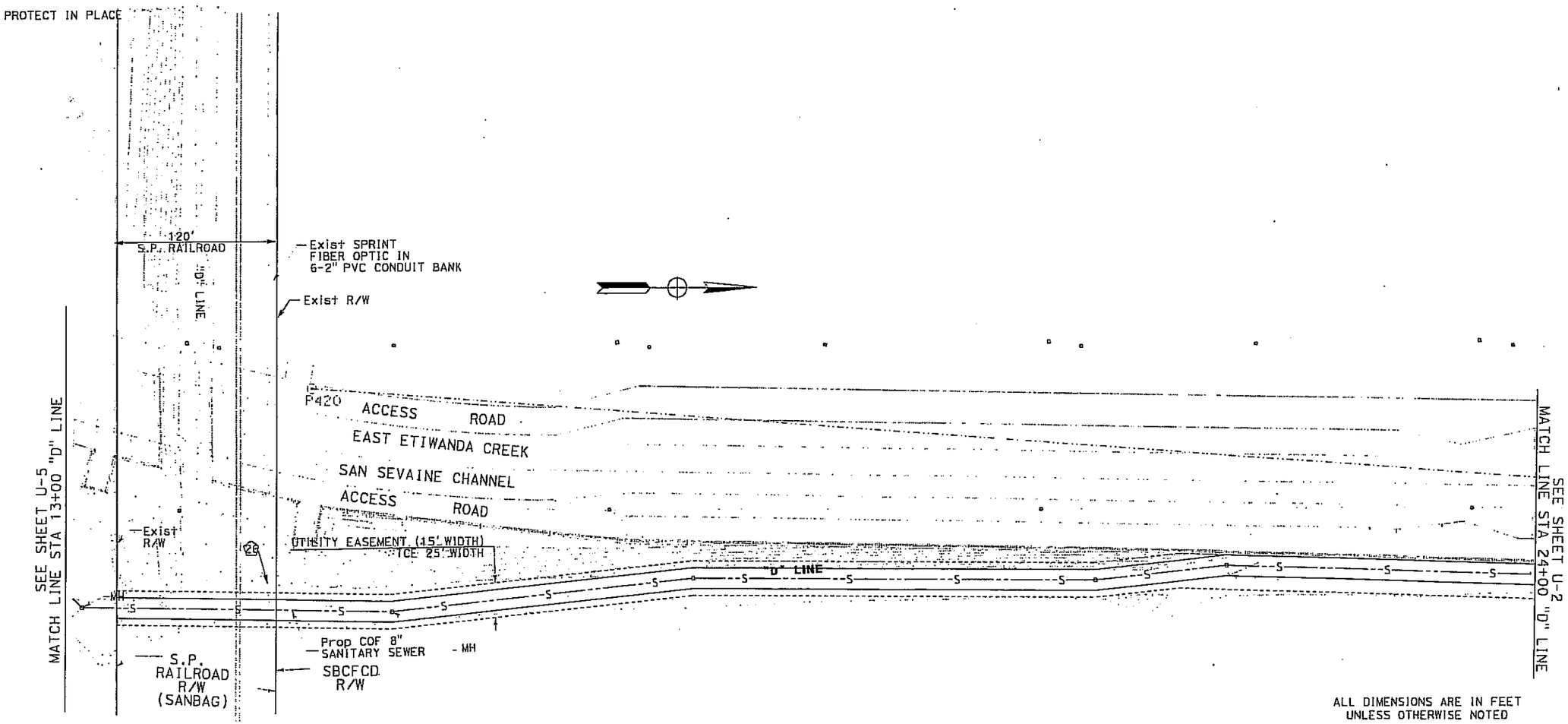
No.	UTILITY	NORTHING	EASTING	ELEVATION	DEPTH
26	SPRINT Fiber Optic	1868173.10	6711794.99	1298.57	4.51

LEGEND

- MH - MANHOLE
- FO - FIBER OPTIC
- SD - STORM DRAIN
- PP - POWERPOLE
- OHE - OVERHEAD ELECTRIC
- UG - UNDERGROUND
- MP - MEDIUM PRESSURE
- HR - HIGH RISK
- SCG-D - SOUTHERN CALIFORNIA GAS DISTRIBUTION
- SCE-D - SOUTHERN CALIFORNIA ELECTRIC DISTRIBUTION
- CVWD - CUCAMONGA VALLEY WATER DISTRICT
- COF - CITY OF FONTANA
- ..... - Exist UTILITY
- —XX— - Prop UTILITY

CONSTRUCTION NOTES

(1) PROTECT IN PLACE



ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED

UTILITY PLAN

SCALE: 1"=40'

U-4

CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
J.W.	S.N.		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN OVERSIGHT
SERGIO AVILA

LAST REVISED 05-04-07

CU 08230 | EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		47	86

5-07-07
REGISTERED CIVIL ENGINEER — DATE

7-30-07
PLANS APPROVAL DATE

C. COSTELLO
No. 60256
Exp. 06/30/08
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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ONTARIO, CA 91761

LEGEND

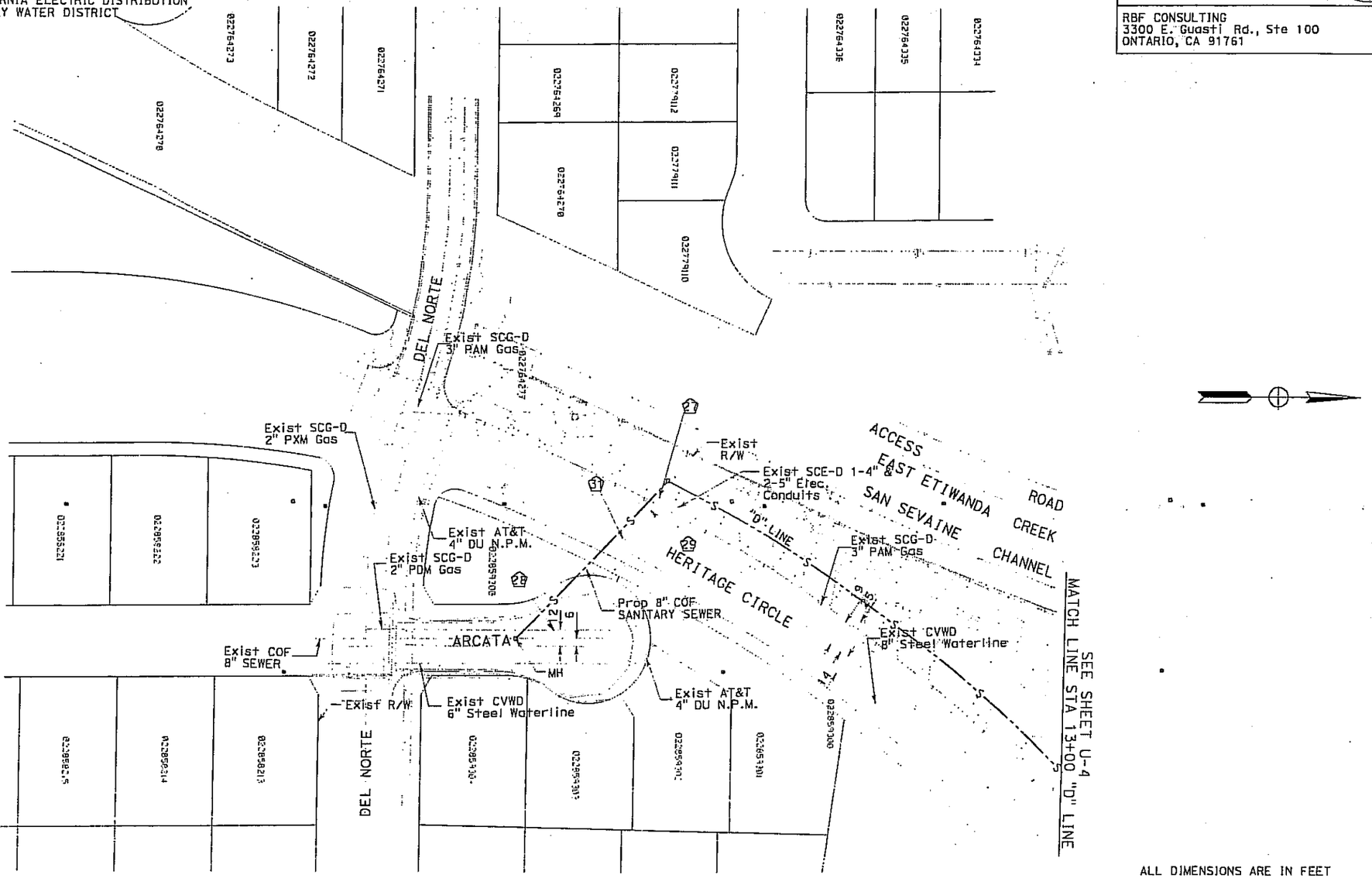
MH	-	MANHOLE
FO	-	FIBER OPTIC
SD	-	STORM DRAIN
PP	-	POWERPOLE
OHE	-	OVERHEAD ELECTRIC
UG	-	UNDERGROUND
MP	-	MEDIUM PRESSURE
HR	-	HIGH RISK
SCG-D	-	SOUTHERN CALIFORNIA GAS DISTRIBUTION
SCE-D	-	SOUTHERN CALIFORNIA ELECTRIC DISTRIBUTION
CVWD	-	CUCAMONGA VALLEY WATER DISTRICT
COF	-	CITY OF FONTANA
——/———	-	Exist UTILITY
——XX——	-	Prop UTILITY

CONSTRUCTION NOTES

(1) PROTECT IN PLACE

POTHOLE LOCATION TABLE

No.	UTILITY	NORTHING	EASTING	ELEVATION	DEPTH
(27)	SCE-D Electric	1867726.86	6711610.00	1289.53	3.46
(28)	SCG-D 2" Gas	1867650.67	6711704.07	1286.78	2.84
(29)	SCG-D 3" Gas	1867720.30	6711618.83	1289.03	3.27
(31)	CVWD 8" Water	1867700.07	6711639.12	1288.46	3.67



ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED

UTILITY PLAN

SCALE: 1"=40'

U-5

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: J.W.
CHECKED BY: S.N.

DESIGN OVERSIGHT: SERGIO AVILA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

BORDER LAST REVISED 11-1-2006

RELATIVE BORDER SCALE IS IN INCHES: 0 1 2 3

USERNAME = tmathes
DGN FILE = 3770U1u005.dgn

CU 08230 | EA 3770U1

05-04-07

WATER LINE IMPROVEMENT NOTES:

1. ALL WATER LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CUCAMONGA VALLEY WATER DISTRICT'S STANDARD SPECIFICATIONS AND THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR SECURING FROM THE CUCAMONGA VALLEY WATER DISTRICT COPIES OF THE LATEST STANDARD SPECIFICATIONS PRIOR TO START OF CONSTRUCTION.
3. ANY CONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE THEMSELVES WITH THE SITE AND SHALL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY, OR INDIRECTLY, FROM THEIR OPERATIONS, WHETHER OR NOT SAID FACILITIES ARE SHOWN ON THESE PLANS.
4. ALL 6-INCH WATER LINES SHALL BE 12 GAUGE STEEL; ALL 8-INCH THROUGH 16-INCH WATER LINES SHALL BE 10 GAUGE STEEL, CEMENT MORTAR LINED AND COATED IN ACCORDANCE WITH ANSI/AWWA SPECIFICATION C205-00.
5. THE APPROXIMATE MINIMUM AND MAXIMUM STATIC WATER PRESSURE AVAILABLE TO SERVE THE SUBJECT DEVELOPMENT IS 70 PSI AND 120 PSI, RESPECTIVELY.
6. ALL WATER METER SIZES:

STATION	SIZE	DESCRIPTION	Est PRESSURE
24+76.82	1-1/2"	IRRIGATION METER	66 PSI
24+81.82	1-1/2"	IRRIGATION METER	66 PSI
25+54.70	2"	IRRIGATION METER (FUTURE)	65 PSI
25+59.70	4"	DOMESTIC WATER METER (FUTURE)	65 PSI
29+41.78	4"	DOMESTIC WATER METER (FUTURE)	62 PSI
29+76.52	2"	IRRIGATION METER (FUTURE)	62 PSI

ACTUAL PRESSURE SHALL BE FIELD VERIFIED TO DETERMINE WHETHER PRESSURE REGULATOR IS REQUIRED (SEE NOTE 14).

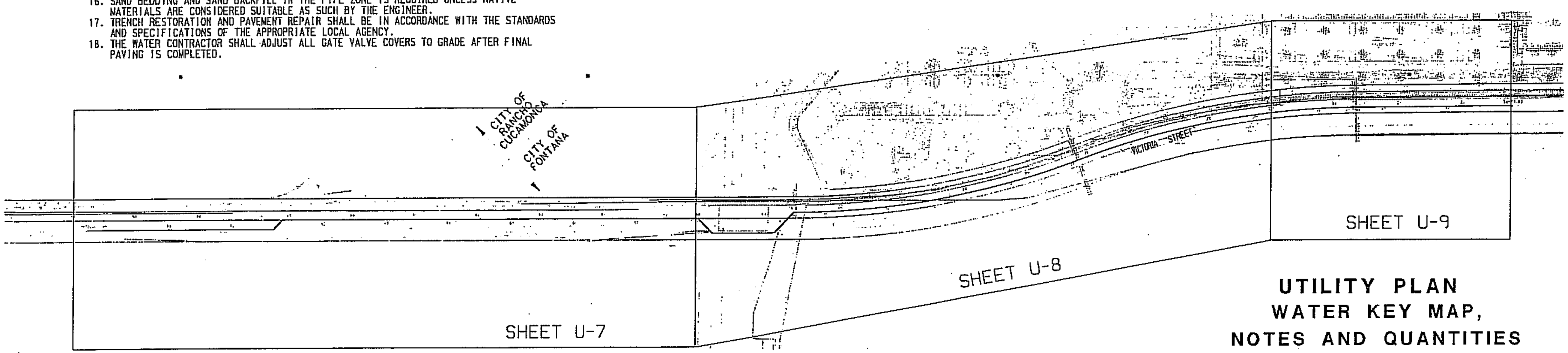
7. THE MINIMUM COVER FOR 6-INCH AND 8-INCH WATER LINES SHALL BE 30 INCHES, 10-INCH WATER LINES SHALL BE 36 INCHES, 12-INCH WATER LINES SHALL BE 42 INCHES, AND 16-INCH WATER LINES AND ABOVE SHALL BE 48 INCHES.
8. ALL FIRE HYDRANT LOCATIONS SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF THE CITY OF RANCHO CUCAMONGA FIRE PROTECTION DISTRICT.
9. THE DEVELOPER SHALL HAVE THEIR ENGINEER VERIFY THE ELEVATIONS OF ALL EXISTING WATER MAINS AT POINTS OF CONNECTION PRIOR TO ANY CONSTRUCTION OF FACILITIES. ANY NECESSARY CHANGES OF WATER LINE DEPTH DURING CONSTRUCTION SHALL BE REPORTED TO THE CUCAMONGA VALLEY WATER DISTRICT FOR REVIEW AND APPROVAL PRIOR TO CONTINUANCE OF CONSTRUCTION.
10. THE CONTRACTOR SHALL HAVE A CLASS C34 LICENSE.
11. THE CONTRACTOR SHALL BE REQUIRED TO OBTAIN THE NECESSARY PERMITS FROM THE APPROPRIATE LOCAL AGENCIES PRIOR TO ANY CONSTRUCTION WITHIN ANY STREET, RIGHT-OF-WAY, OR EASEMENT.
12. ALL WATER METER SERVICES FOR THE USE OF LANDSCAPE IRRIGATION OR PUBLIC DOMESTIC USE, OTHER THAN FOR RESIDENTIAL, SHALL HAVE INSTALLED AN APPROVED REDUCED PRESSURE PRINCIPAL BACKFLOW ASSEMBLY AS THE MINIMUM BACKFLOW PROTECTION REQUIREMENT.
13. THE WATER CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING DISTRICT FURNISHED METER BOXES.
14. PRESSURE REGULATING VALVES ARE REQUIRED FOR EACH SERVICE WHERE THE WATER SYSTEM PRESSURE EXCEEDS 80 PSI.
15. THE MINIMUM SEPARATION BETWEEN WATER LINES AND SANITARY SEWER LINES SHALL CONFORM TO THE STATE OF CALIFORNIA ENVIRONMENTAL HEALTH CODE, TITLE 22, SECTION 64630-C.
16. SAND BEDDING AND SAND BACKFILL IN THE PIPE ZONE IS REQUIRED UNLESS NATIVE MATERIALS ARE CONSIDERED SUITABLE AS SUCH BY THE ENGINEER.
17. TRENCH RESTORATION AND PAVEMENT REPAIR SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE APPROPRIATE LOCAL AGENCY.
18. THE WATER CONTRACTOR SHALL ADJUST ALL GATE VALVE COVERS TO GRADE AFTER FINAL PAVING IS COMPLETED.

WATER LINE IMPROVEMENT NOTES (Cont):

19. PRIOR TO THE ACTIVATION OF ANY NEWLY CONSTRUCTED WATER LINES, OR ANY CONNECTIONS TO EXISTING SYSTEMS, HYDROSTATIC TESTING AND DISINFECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE SECTION 7, TECHNICAL PROVISIONS, OF THE STANDARD SPECIFICATIONS OF THE CUCAMONGA VALLEY WATER DISTRICT.
20. THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY UNDERGROUND SERVICE ALERT (1-800-227-2600) AT LEAST TWO WORKING DAYS (48 HOURS) PRIOR TO START OF CONSTRUCTION.
21. FOR WATER SYSTEM INSPECTION ON THIS PROJECT, THE CONTRACTOR SHALL CONTACT THE CUCAMONGA VALLEY WATER DISTRICT AT (909)987-2591, TWO WORKING DAYS PRIOR TO THE REQUIRED INSPECTION DATE.
22. THE CONTRACTOR SHALL RETURN A LEGIBLE AND CLEAN SET OF "AS BUILT" DRAWINGS TO THE CUCAMONGA VALLEY WATER DISTRICT PRIOR TO FINAL ACCEPTANCE OF ANY SYSTEM.
23. APPROVAL OF THESE PLANS BY THE CUCAMONGA VALLEY WATER DISTRICT DOES NOT CONSTITUTE A REPRESENTATION OF THE ACCURACY OR EXISTENCE OF ANY EXISTING UNDERGROUND FACILITIES, WHETHER OR NOT SAID FACILITIES ARE SHOWN ON THESE PLANS.
24. LOCATION OF EXISTING UTILITIES IS BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR TO FIELD VERIFY LOCATION OF CROSSING UTILITIES PRIOR TO CONSTRUCTION. IF CONDITIONS DIFFER FROM THAT SHOWN ON THE PLANS, NOTIFY THE ENGINEER IMMEDIATELY SO THAT CONFLICTS CAN BE RESOLVED PRIOR TO ORDERING PIPE AND MATERIALS.
25. WATER SERVICE LINES CROSS EXISTING HIGH PRESSURE GAS LINE. CONTRACTOR SHALL CAREFULLY EXPOSE CROSSING GAS LINE AND PROVIDE MINIMUM ONE FOOT CLEARANCE TO NEW WATER SERVICE LINE. MAINTAIN MINIMUM 30" COVER OVER WATER SERVICE LINE.

WATER QUANTITIES

DESCRIPTION	UNIT	PROJECT TOTALS
INSTALL 12" CML&C STEEL PIPE.	LF	2190
INSTALL 2" REMOVABLE BLOW-OFF ASSEMBLY PER CVWD STD. DWG. NO. 118.	EA	1
INSTALL 2" AIR VACUUM RELEASE ASSEMBLY PER CVWD STD. DWG. NO. 120.	EA	1
INSTALL 6" FIRE HYDRANT ASSEMBLY PER CVWD STD. DWG. NO. 113	EA	5
INSTALL 2" SERVICE LINE W/ 1½" LANDSCAPE METER PER CVWD STD. DWG. NO. 103. SEE WATER GENERAL NOTE 25.	EA	2
INSTALL 4" SERVICE LINE W/ METER BOX ONLY PER CVWD STD. DWG. NO.106. SEE WATER GENERAL NOTE 25 (COORDINATE WITH DISTRICT)	EA	2
INSTALL 12" FLEXIBLE EXPANSION JOINT AT STA 20+34 . POSITION MIDWAY BETWEEN PIPE SUPPORTS.	EA	1
INSTALL 10" FIRE SERVICE LATERAL W/ 10" ABOVE GROUND DOUBLE DETECTOR CHECK ASSEMBLY PER CVWD STD. DWG. NO. 110.	EA	1.
TIE INTO Ex 8" W/ 8"x12" REDUCER CML&C FLANGED.	EA	1
INSTALL 12" GATE VALVE PER CVWD STD. DWG. NO. 115.	EA	1
INSTALL 45° CML&C FLANGED BEND.	EA	6
INSTALL REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY (SAME SIZE AS METER) PER CVWD STD. DWG. NO. 111.	EA	4
WELD JOINTS 80' FROM END OF LINE ON ALL CURVES AND 80' FROM ANGLE POINTS PER CVWD STD. DWG. NO. 121.	LF	996
CONSTRUCT TYPICAL TRENCH SECTION PER CVWD STD. DWG. NO. 301.	LF	2190'
SAWCUT, REMOVE & REPLACE Ex AC. FROM STA 9+72 TO STA 19+84 .CONSTRUCT TRENCH RESTORATION PER CITY OF RANCHO CUCAMONGA STD. PLAN 120 (SHOWN AS DETAIL 2 SHEET U-10).	LF	1012
INSTALL PIPE SUPPORT BRACKETS PER DETAIL 1 SHEET U-10.	EA	5
INSTALL 4" BLOW-OFF ASSEMBLY PER CVWD STD. DWG. NO. 119.	EA	2
INSTALL 12" CML & EPOXY COATED STEEL PIPE. PAINT PER SPECIFICATIONS	LF	116
INSTALL 2" SERVICE LINE W/ METER BOX ONLY PER CVWD STD. DWG. NO. 103. SEE WATER GENERAL NOTE 25. SET PIPING TO ACCOMODATE LAY LENGTH OF FUTURE METER. COORDINATE WITH DISTRICT.	EA	2



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		48	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07 PLANS APPROVAL DATE

MICHAEL R. MARQUIS No. 64586 Exp. 06/30/07 CIVIL — REGISTERED PROFESSIONAL ENGINEER, STATE OF CALIFORNIA

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UTILITY PLAN WATER KEY MAP, NOTES AND QUANTITIES

NO SCALE

U-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

DESIGN OVERSIGHT: SERGIO AVILA

CALCULATED-DESIGNED BY: J.W. — CHECKED BY: S.N.

REVISED BY — DATE REVISED

CU 08230 — EA 3770U1

05-04-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		49	86

REGISTERED CIVIL ENGINEER 6-21-07 DATE

7-30-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MICHAEL R. MARQUIS No. 64586 Exp. 06/30/07 CIVIL STATE OF CALIFORNIA

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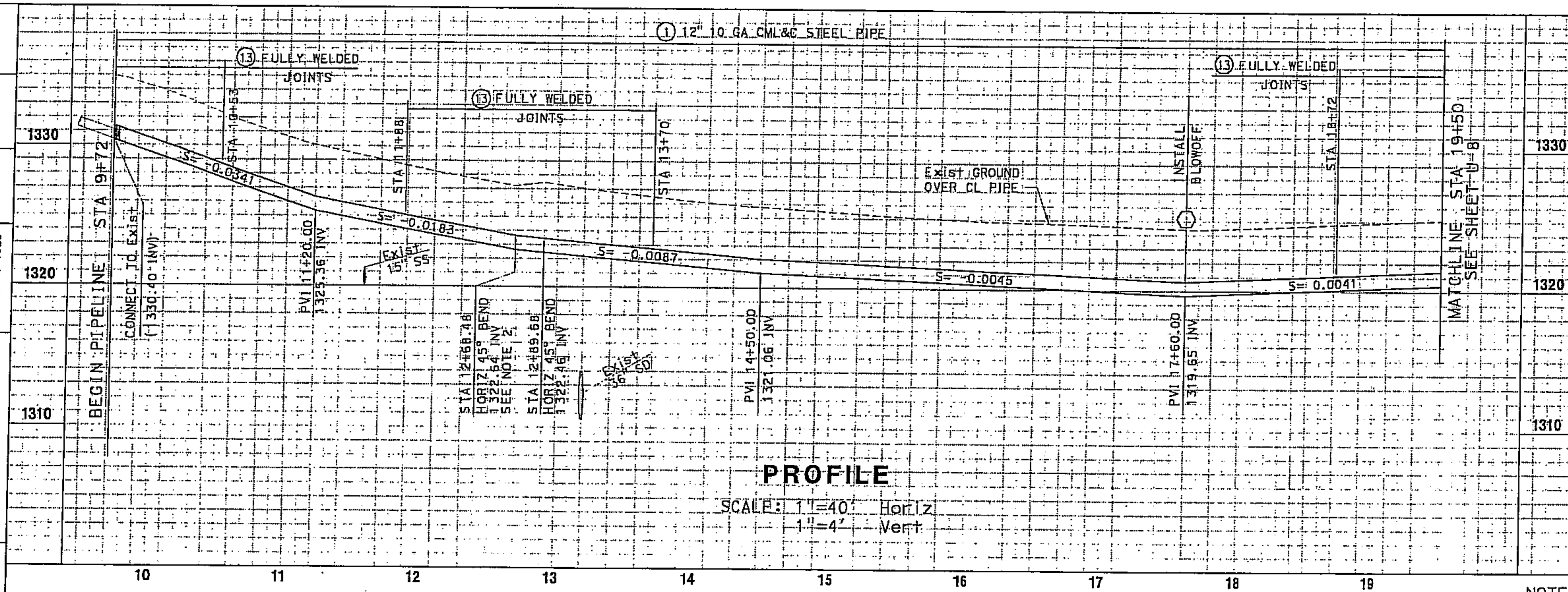
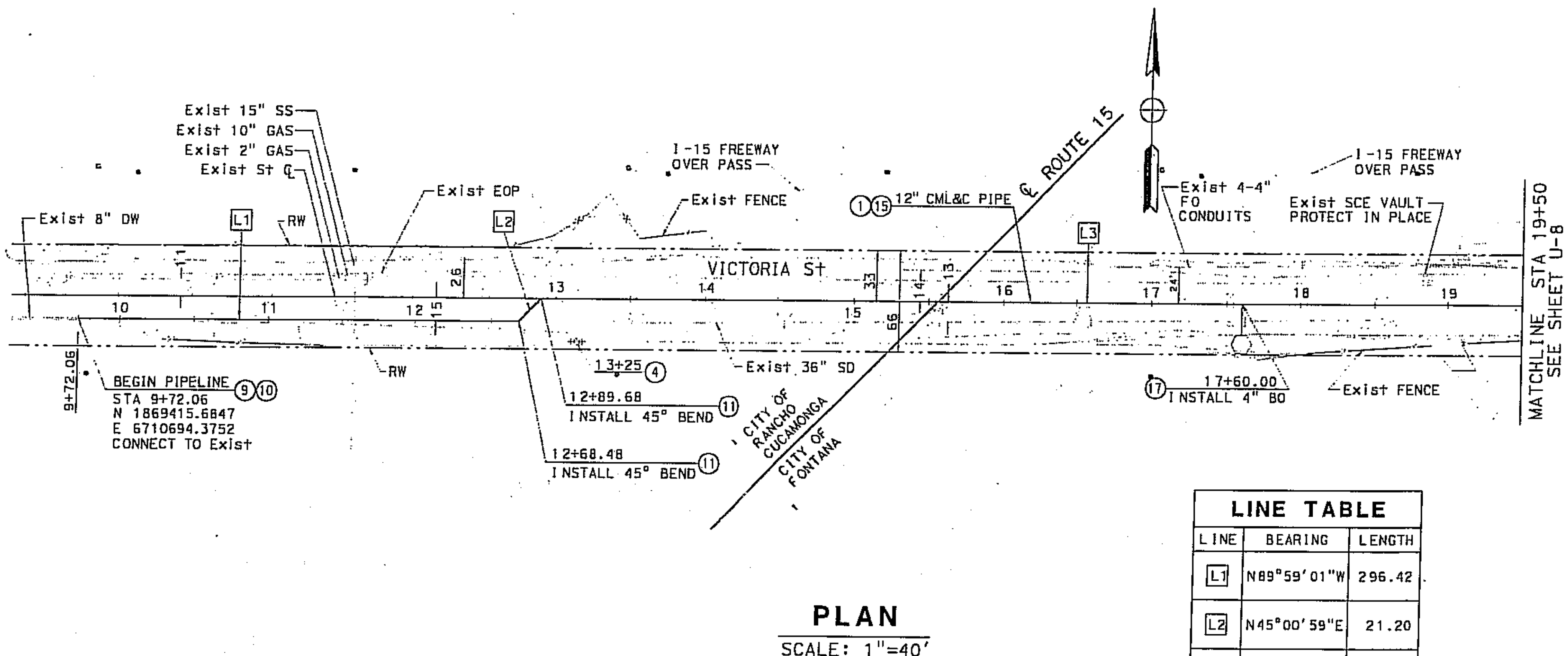


NOTES:

1. WHERE VERTICAL FITTINGS ARE NOT INDICATED, CONTRACTOR SHALL DEFLECT JOINTS TO APPROXIMATE THE ALIGNMENT SHOWN. DO NOT EXCEED MAXIMUM DEFLECTION AS RECOMMENDED BY THE PIPE MANUFACTURER.
2. HORIZONTAL BEND ROLLED TO MEET VERTICAL ALIGNMENT.



CONSTRUCTION NOTES

(1) INSTALL 12" CML&C STEEL PIPE.

(4) INSTALL 6" FIRE HYDRANT ASSEMBLY PER CVWD STD DWG No. 113.

(9) TIE INTO EX. 8" W/ 8" X 12" REDUCER CML&C FLANGED.

(10) INSTALL 12" GATE VALVE PER CVWD STD DWG No. 115.

(11) INSTALL 45° CML&C FLANGED BEND.

(13) WELD JOINTS 80' FROM END OF LINE ON ALL CURVES AND 80' FROM ANGLE POINTS PER CVWD STD DWG No. 121.

(14) CONSTRUCT TYPICAL TRENCH SECTION PER CVWD STD. DWG. NO. 301.

(15) SAWCUT, REMOVE AND REPLACE EXIST A.C. PAVEMENT FROM STA 9+72 TO STA 19+84±. CONSTRUCT TRENCH RESTORATION PER CITY OF RANCHO CUCAMONGA STD PLAN 120 (SHOWN AS DETAIL 2 ON SHEET U-10).

(17) INSTALL 4" BLOW-OFF ASSEMBLY PER CVWD STD DWG No. 119.

LINE TABLE

LINE	BEARING	LENGTH
L1	N89°59'01"W	296.42
L2	N45°00'59"E	21.20
L3	N89°59'01"W	662.83

UTILITY PLAN
DOMESTIC WATER PLAN AND PROFILE

SCALE AS SHOWN

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

U-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION Caltrans

DESIGN OVERSIGHT SERGIO AVILA

CALCULATED-DESIGNED BY J.W. CHECKED BY S.N.

REVISED BY DATE REVISED

BORDER LAST REVISED 11-1-2006

RELATIVE BORDER SCALE IS IN INCHES

CU 08230 EA 3770U1

06-21-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		50	86

REGISTERED CIVIL ENGINEER — 6-21-07 DATE

7-30-07
PLANS APPROVAL DATE

MICHAEL R. MARQUIS No. 64586 Exp. 06/30/07 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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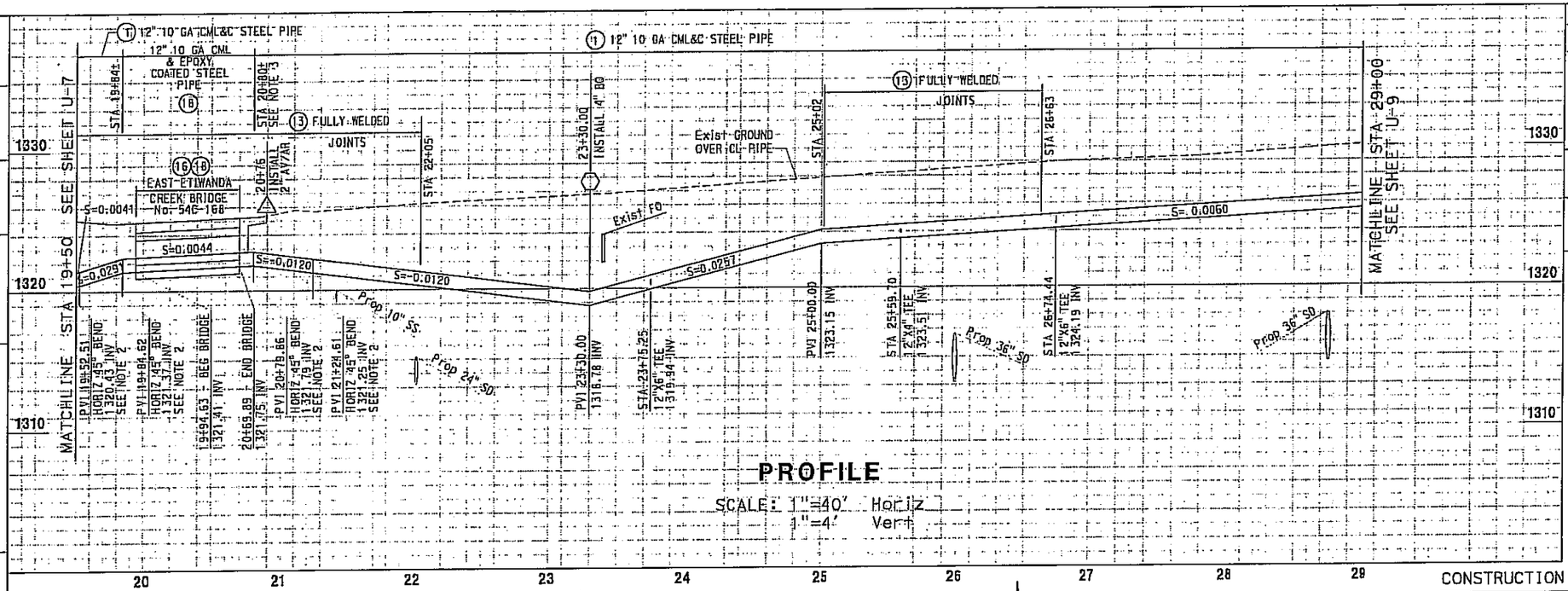
ONTARIO, CA 91761

PROFILE

SCALE: 1"=40' Horiz
1"=4' Vert

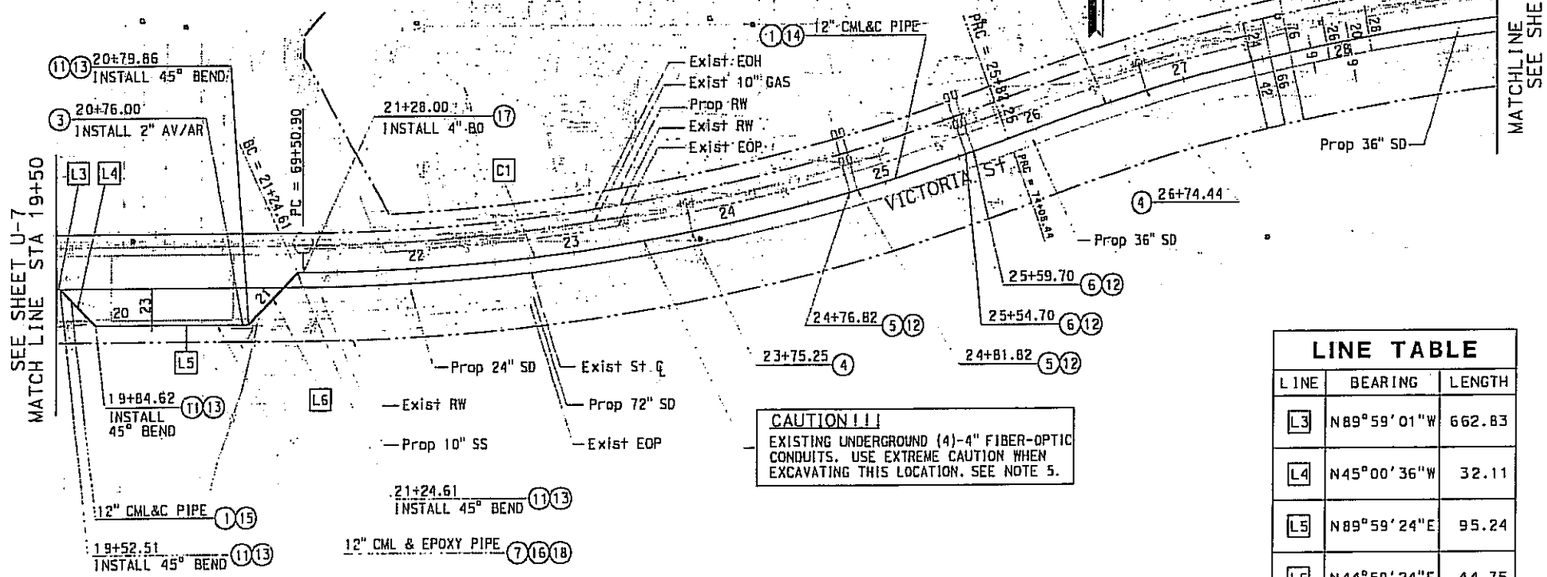


CURVE TABLE

CURVE	DELTA	RADIUS	LENGTH	TANGENT
C1	20°18'38"	1291.00'	457.64'	231.25'
C2	19°46'45"	1309.00'	451.88'	228.21'

PLAN

SCALE: 1"=40'



CAUTION!!!
EXISTING UNDERGROUND (4)-4" FIBER-OPTIC CONDUITS. USE EXTREME CAUTION WHEN EXCAVATING THIS LOCATION. SEE NOTE 5.

LINE TABLE

LINE	BEARING	LENGTH
L3	N89°59'01"W	662.83
L4	N45°00'36"W	32.11
L5	N89°59'24"E	95.24
L6	N44°59'24"E	44.75

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

NOTES:

1. WHERE VERTICAL FITTINGS ARE NOT INDICATED, CONTRACTOR SHALL DEFLECT JOINTS TO APPROXIMATE THE ALIGNMENT SHOWN. DO NOT EXCEED MAXIMUM DEFLECTION AS RECOMMENDED BY THE PIPE MANUFACTURER.
2. HORIZONTAL BEND ROLLED TO MEET VERTICAL ALIGNMENT.
3. EXPOSED PIPING AT THE BRIDGE CROSSING SHALL BE CEMENT MORTER LINED AND EPOXY COATED STEEL PIPE.
4. EXISTING AC PAVEMENT EAST OF THE BRIDGE SHALL BE REPLACED BY OTHERS.
5. CONTRACTOR TO POTHOLE EXISTING FIBER OPTIC LINE TO VERIFY CROSSING ELEVATION PRIOR TO WATER LINE CONSTRUCTION.

CONSTRUCTION NOTES

(1) INSTALL 12" CML&C STEEL PIPE.
(3) INSTALL 2" AIR VACUUM RELEASE ASSEMBLY PER CVWD STD DWG No. 120.
(4) INSTALL 6" FIRE HYDRANT ASSEMBLY PER CVWD STD DWG No. 113.
(5) INSTALL 2" SERVICE LINE W/ 1-1/2" LANDSCAPE METER PER CVWD STD DWG No. 103. SEE WATER GENERAL NOTE 25.
(6) INSTALL 4" SERVICE LINE W/ 4" DOMESTIC METER PER CVWD STD DWG No. 106. SEE WATER GENERAL NOTE 25.
(7) INSTALL 12" FLEXIBLE EXPANSION JOINT AT STA 20+34±. POSITION MIDWAY BETWEEN PIPE SUPPORTS.
(11) INSTALL 45° CML&C FLANGED BEND.
(12) INSTALL REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY (SAME SIZE AS METER) PER CVWD STD DWG No. 111.
(13) WELD JOINTS 80' FROM END OF LINE ON ALL CURVES AND 80' FROM ANGLE POINTS PER CVWD STD. DWG. NO. 121.
(14) CONSTRUCT TYPICAL TRENCH SECTION PER CVWD STD DWG No. 301.
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(16) INSTALL PIPE SUPPORT BRACKETS PER DETAIL 1 SHEET U-10.
(17) INSTALL 4" BLOW-OFF ASSEMBLY PER CVWD STD DWG No. 119.
(18) INSTALL 12" CML & EPOXY COATED STEEL PIPE. PAINT PER SPECIFICATIONS.
(19) INSTALL 2" SERVICE LINE W/ METER BOX ONLY PER CVWD STD DWG No. 103. SEE WATER GENERAL NOTE 25. SET PIPING TO ACCOMODATE LAY LENGTH OF FUTURE METER. COORDINATE WITH DISTRICT.

UTILITY PLAN
DOMESTIC WATER PLAN AND PROFILE

SCALE AS SHOWN

U-8

REVISED BY	DATE REVISED
J.W.	S.N.

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CHECKED BY

DESIGN OVERSIGHT
SERGIO AVILA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

06-21-07

CU 08230 EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		51	86

REGISTERED CIVIL ENGINEER 6-21-07 DATE

7-30-07
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER MICHAEL R. MARQUIS No. 64586 Exp 06/30/07 CIVIL STATE OF CALIFORNIA

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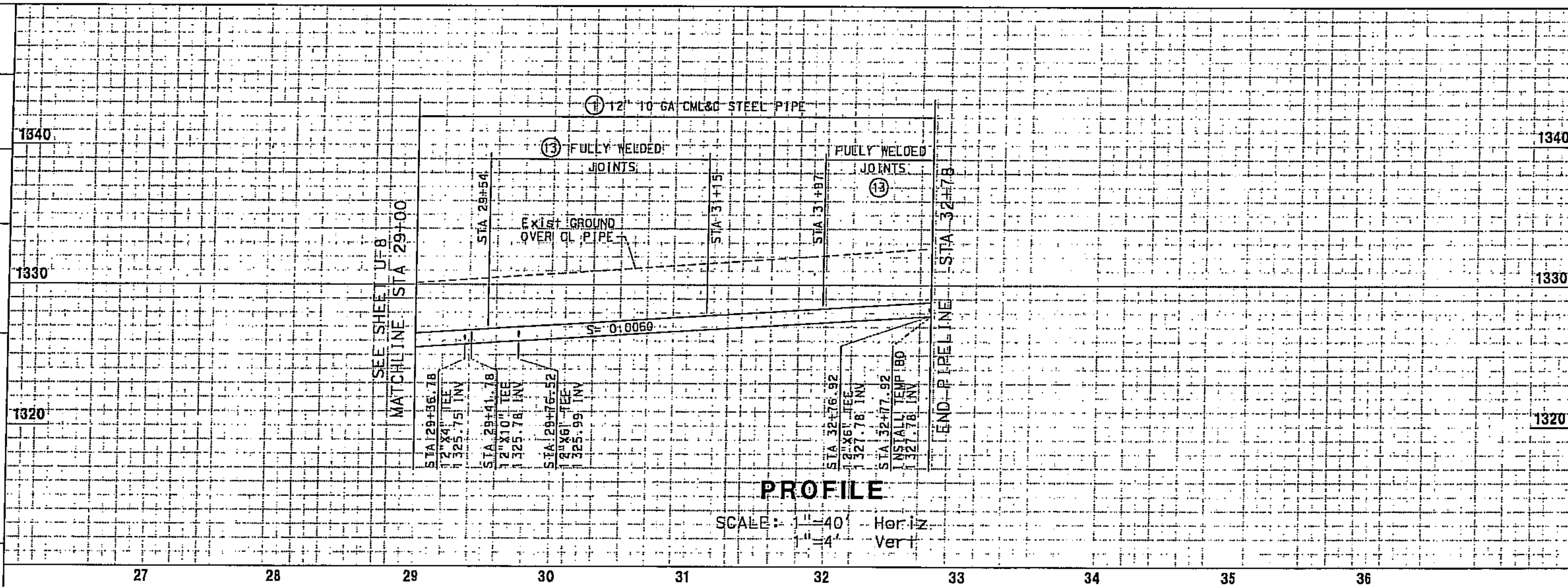

PROFILE
SCALE: 1"=40' Horiz
1"=4' Vert

NOTES:

1. WHERE VERTICAL FITTINGS ARE NOT INDICATED, CONTRACTOR SHALL DEFLECT JOINTS TO APPROXIMATE THE ALIGNMENT SHOWN. DO NOT EXCEED MAXIMUM DEFLECTION AS RECOMMENDED BY THE PIPE MANUFACTURER.
2. EXISTING AC PAVEMENT EAST OF THE BRIDGE SHALL BE REPLACED BY OTHERS.

CONSTRUCTION NOTES

(1) INSTALL 12" CML&C STEEL PIPE.
(2) INSTALL 2" REMOVABLE BLOW-OFF ASSEMBLY PER CVWD STD DWG No. 118.
(4) INSTALL 6" FIRE HYDRANT ASSEMBLY PER CVWD STD DWG No. 113.
(6) INSTALL 4" SERVICE LINE W/ 4" DOMESTIC METER PER CVWD STD DWG No. 106. SEE WATER GENERAL NOTE 25.
(8) INSTALL 10" FIRE SERVICE LATERAL WITH 10" ABOVE GROUND DOUBLE DETECTOR CHECK ASSEMBLY PER CVWD STD DWG No. 110.
(12) INSTALL REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY (SAME SIZE AS METER) PER CVWD STD DWG No. 111.
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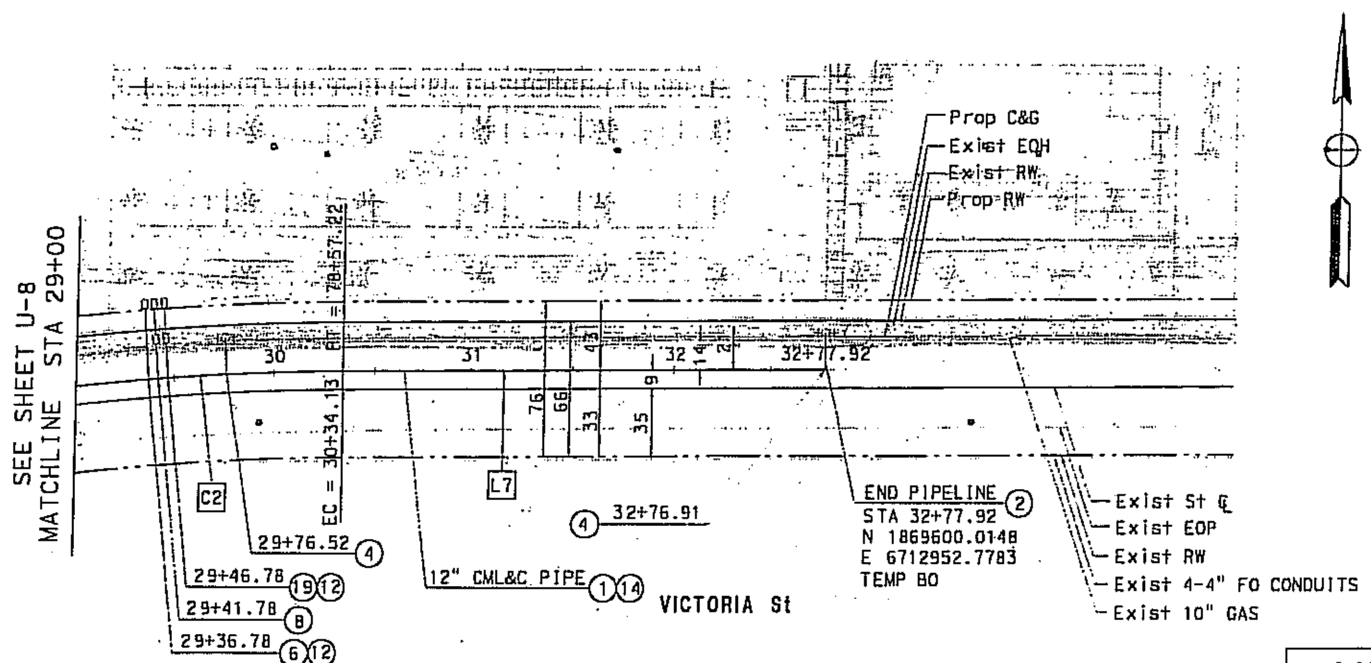


PLAN
SCALE: 1"=40'

CURVE TABLE

CURVE	DELTA	RADIUS	LENGTH	TANGENT
C2	19°46'45"	1309.00'	451.88'	228.21'

LINE TABLE

LINE	BEARING	LENGTH
L7	N89°37'48"E	243.78

UTILITY PLAN
DOMESTIC WATER PLAN AND PROFILE
SCALE AS SHOWN

U-9

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT: SERGIO AVILA
CALCULATED-DESIGNED BY: J.W.
CHECKED BY: S.N.
REVISED BY / DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		52	86

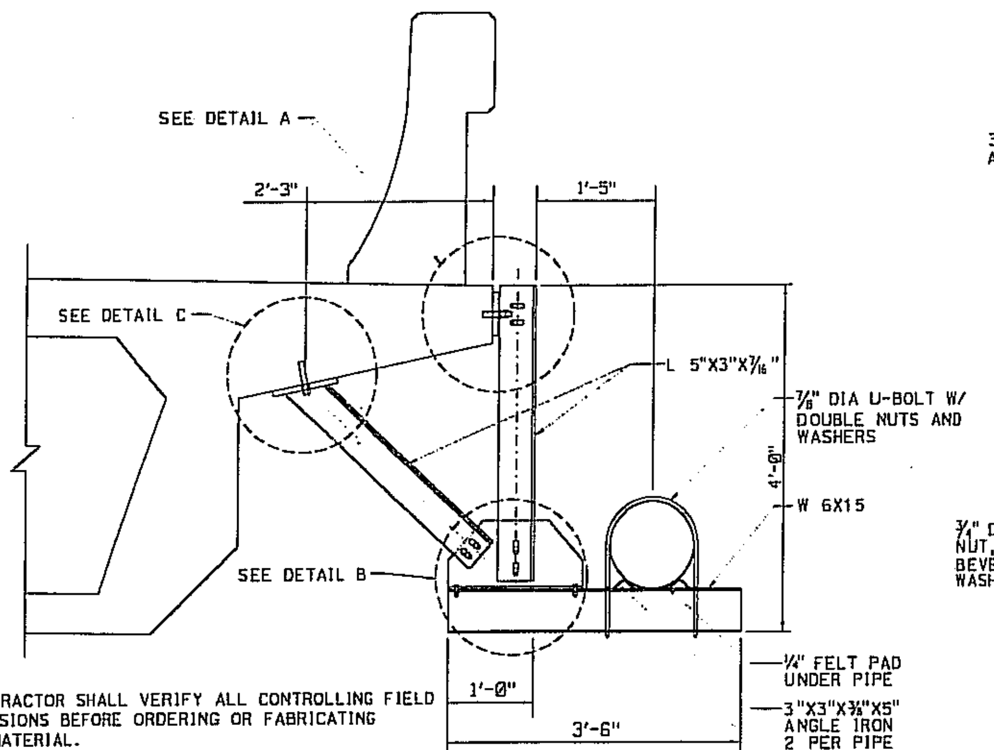
REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07
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 MICHAEL R. MARQUIS No. 64586 Exp. 06/30/07 CIVIL STATE OF CALIFORNIA

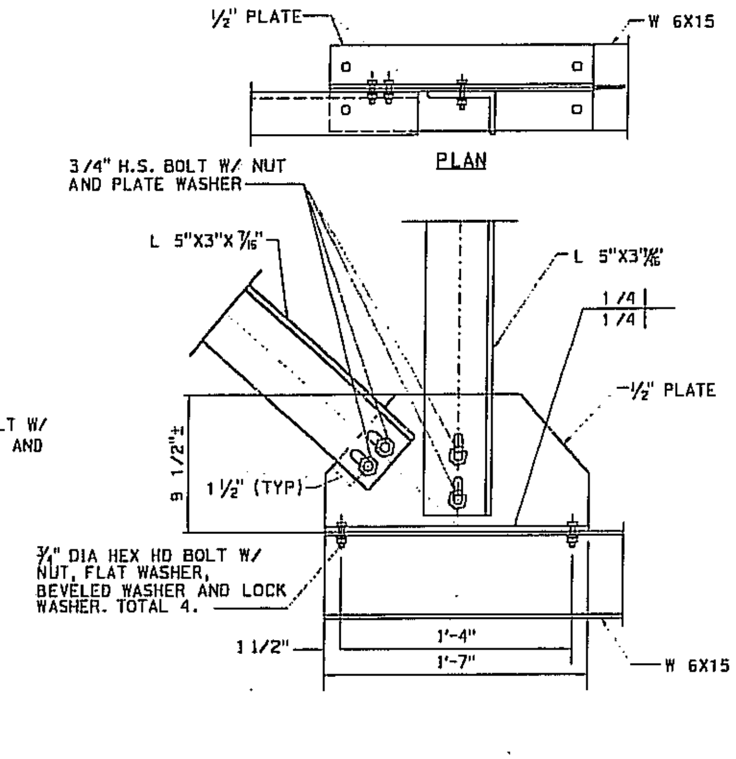
RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761



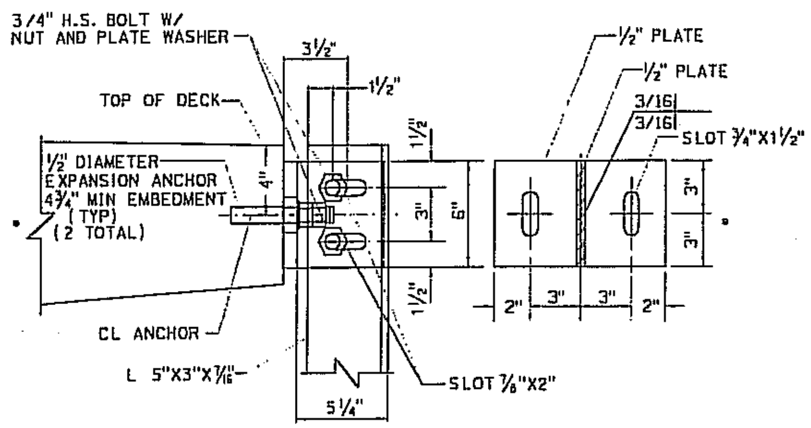
NOTES:

1. CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.
2. PROVIDE Min 5 BRACKETS EQUALLY SPACED ALONG THE LENGTH OF THE BRIDGE STARTING AND ENDING AT 4'-6' FROM BEGINNING AND ENDING OF BRIDGE.

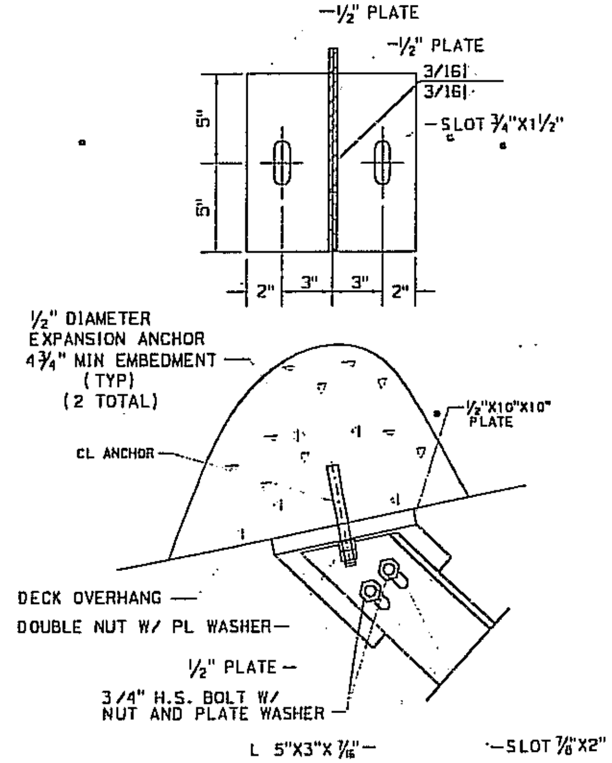
PIPE SUPPORT BRACKET DETAIL 1/3



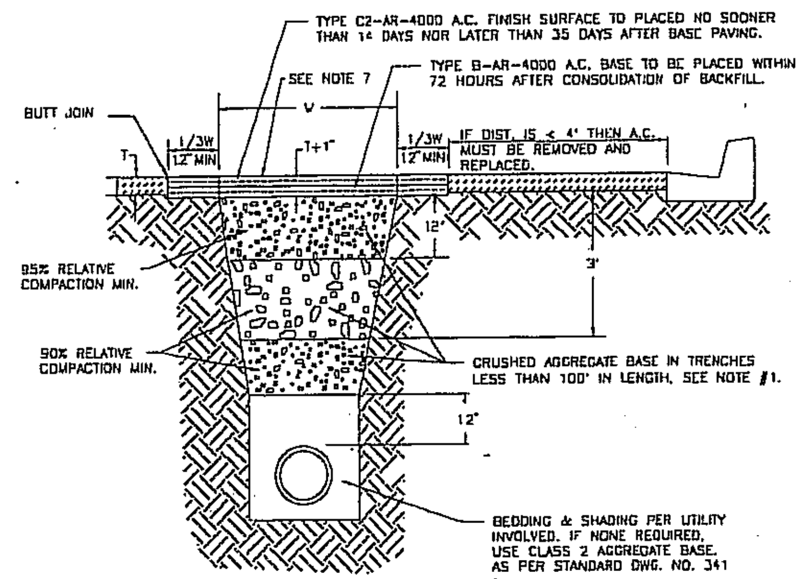
DETAIL B



DETAIL A



DETAIL C



NOTES:

1. All trenches 100' in length or longer shall be backfilled and consolidated per Sections 306-1.3.1 thru 306-1.3.4 of the Standard Specifications.
2. Spread Boxes may be employed for trench paving jobs less than 500 lin. ft.
3. All joints shall be vertical butt joints; lap or feathered joints are not acceptable.
4. Unless otherwise instructed by the City Engineer, trench patch shall be straight grade across width, and shall not be crowned at center.
5. Prior to placement of A.C., pavement edge shall be cut to a clean vertical and straight edge with tack coat on face of cut.
6. The entire traveled lane, 12' min., shall be overlayed with .10' min. C2-AR-4000 A.C. using a self propelled paving machine (BARBER GREEN, BLAW KNOX or equal) for all trenches 500' in length or longer.
7. Permanent A.C. patch, which shall be a minimum 0.25' thick or 0.10' thicker than existing – whichever is greater – as directed by the Engineer in the field.

TRENCH REPAIR DETAIL STA 9+72 – 19+84± 2/-

CRC STD. PLAN 120

UTILITY PLAN WATER DETAILS

NO SCALE

U-10

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN OVERSIGHT SERGIO AVILA

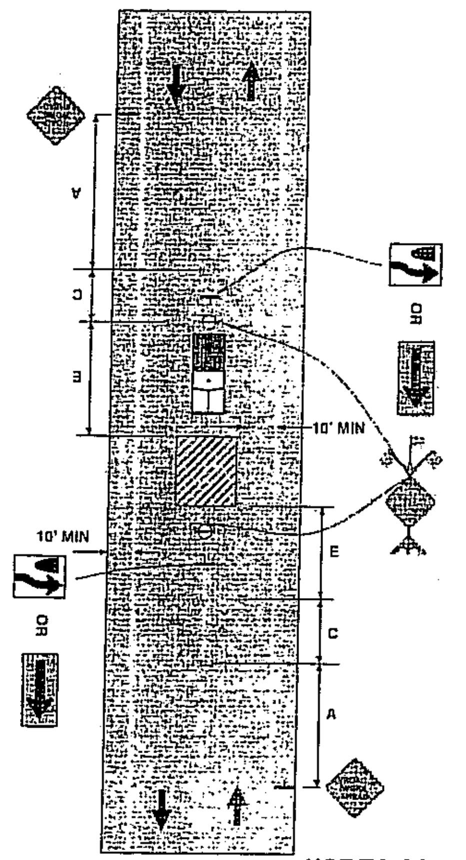
CALCULATED-DESIGNED BY J.W. CHECKED BY S.N.

REVISED BY DATE REVISED

05-04-07

CU 08230 EA 3770U1

Work on Minor Street



NOT TO SCALE

SPEED "S" MPH [2]	DIMENSION A SIGN SPACING		DIMENSION B MINIMUM MERGING TAPER L		DIMENSION C MINIMUM SHIFTING TAPER 1/2 L		DIMENSION D MINIMUM SHOULDER TAPER 1/3 L		DIMENSION E BUFFER SPACE [4]		MAXIMUM CHANNELIZER SPACING TAPER [3]		MAXIMUM CHANNELIZER SPACING TANGENT [3]	
	ft	(m)	ft	(m)	ft	(m)	ft	(m)	ft	(m)	ft	(m)	ft	(m)
25	125	(40)	125	(40)	63	(20)	42	(13)	158	(48)	25	(8)	50	(15)
30	180	(60)	180	(60)	90	(30)	60	(20)	205	(62)	30	(9)	60	(18)
35	245	(75)	245	(75)	123	(35)	82	(25)	257	(80)	35	(11)	70	(22)
40	320	(100)	320	(100)	160	(50)	107	(35)	315	(100)	40	(13)	80	(25)
45	540	(165)	540	(165)	270	(80)	180	(55)	378	(115)	48	(15)	98	(30)
50	600	(180)	600	(180)	300	(90)	200	(60)	446	(130)	48	(15)	98	(30)
55	660	(200)	660	(200)	330	(100)	220	(65)	520	(155)	48	(15)	98	(30)
60	720	(220)	720	(220)	360	(110)	240	(75)	598	(180)	48	(15)	98	(30)
65	780	(240)	780	(240)	390	(120)	260	(80)	682	(210)	48	(15)	98	(30)
Local Agency Freeways [4]	1000	(300)	1000	(300)	500	(150)	330	(100)	1000	(300)	48	(15)	98	(30)
Pedestrians	N/A	N/A	20	(6)	10	(3)	6	(2)	N/A	N/A	3	(1)	6	(2)
Bicyclists	Use Roadway Sign Spacing		75	(25)	38	(12)	25	(8)	N/A	N/A	12	(4)	25	(8)

Table: MINIMUM RECOMMENDED CHANNELIZER AND SIGN SPACING[1]

(1) Refer to specific State requirements for work on State Freeways and State Highways
(2) Posted Speed or observed operating speed (whichever is greater)
(3) Channelizer spacing shall be reduced in half at areas where work is taking place, on curves, or areas of head-on conflict.
(4) Buffer space may be inserted in low speed urban areas, should be inserted in high speed urban and rural areas, and shall be inserted in Local Agency Freeways. Buffer space, when inserted, should be increased on downgrades and should be kept clear of equipment and materials, except for a Shadow Vehicle

LANE CLOSURE DETAIL

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBD	5506		53	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MAROUIS
No. 64586
Exp. 06/30/07
CIVIL
STATE OF CALIFORNIA

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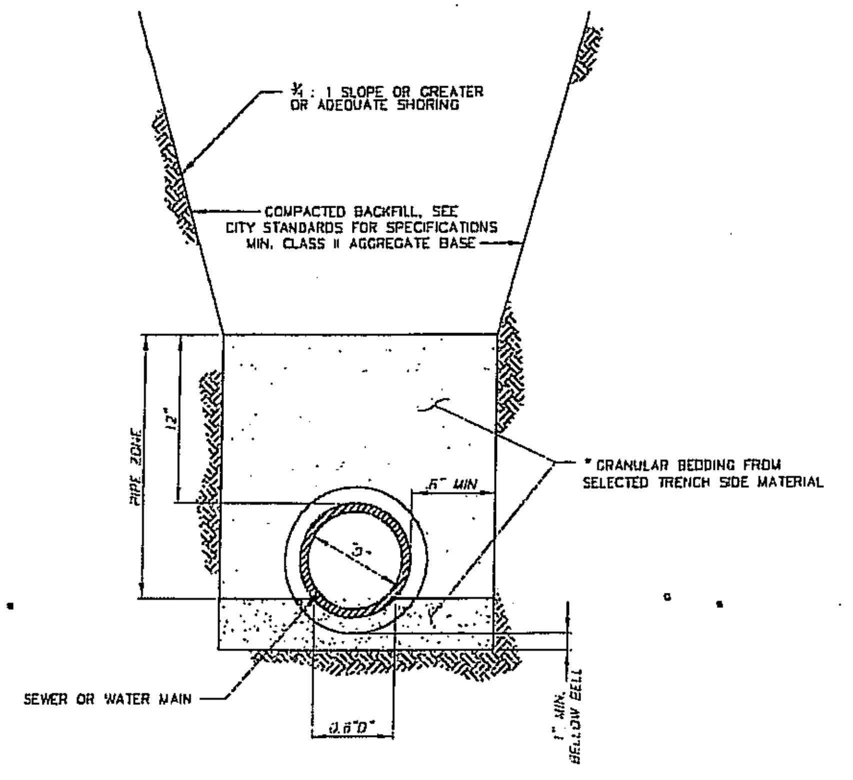

NOTES:

1. TRENCH WIDTH SHALL BE CONTROLLED TO TOP OF PIPE ZONE.
2. TRENCH DEPTHS OF GREATER THAN 5' SHALL HAVE ADEQUATE SHORING.
3. COMPACTION SHALL BE 90% IN ALL ZONES UNLESS OTHERWISE SPECIFIED.
4. TRENCH STABILITY TO CONFORM TO CAL-OSHA REQUIREMENTS

* IF EXISTING SOIL MATERIAL IS UNSATISFACTORY, AS DETERMINED BY INSPECTOR, SAND BEDDING SHALL BE IMPORTED FOR PIPE ZONE.

TYPICAL TRENCH SECTION

(CVWD Std Dwg 301)

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

UTILITY PLAN
WATER DETAILS

NO SCALE

U-11

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT SERGIO AVILA

CALCULATED-DESIGNED BY J.W.
CHECKED BY S.N.
REVISED BY
DATE REVISED

LAST REVISION 05-04-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		54	86

5-07-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MAROUIS
No. 64586
Exp. 06/30/07
CIVIL
STATE OF CALIFORNIA

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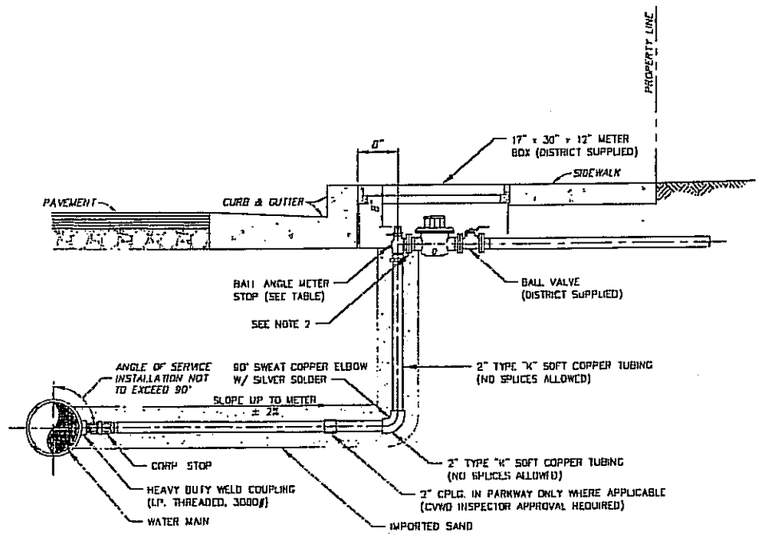


1½" AND 2" METERS

NOTES:

1. METER LOCATIONS AS SHOWN ON PLANS.
2. FOR 1 ½" METER USE 2" x 1 ½" REDUCING METER FLANGE.
3. FOR JUMPERS SEE STD. DWG. 105.

SERVICE INFORMATION TABLE

METER SIZE	FORD			JONES			AY McDONALD		
	BALL CORP. STOP	BALL ANGLE METER STOP	METER BUSHING	BALL CORP. STOP	BALL ANGLE METER STOP	METER BUSHING	BALL CORP. STOP	BALL ANGLE METER STOP	METER BUSHING
1 1/2", 2"	4704B22	014A43-777W	---	J-1935	J-1975W	---	4704B22	4602B22	10J34

Cucamonga Valley Water District

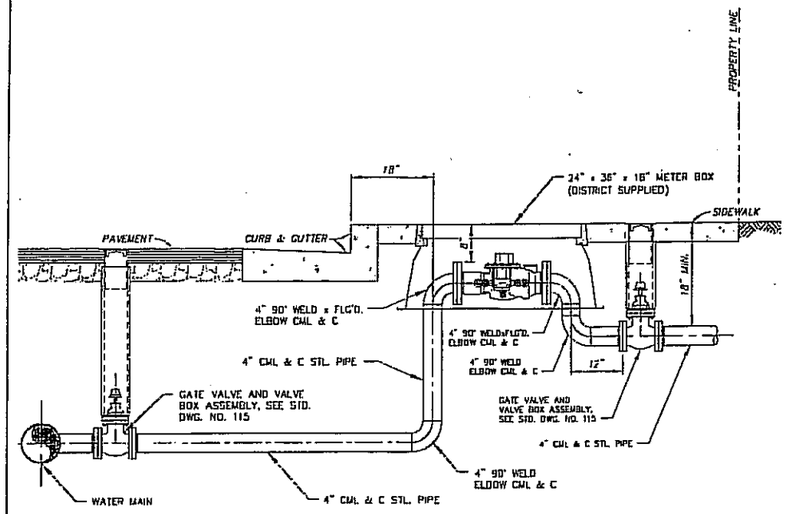
TYPICAL WATER SERVICE 1 1/2-INCH AND 2-INCH

Cucamonga Valley Water District

APPROVED BY: MARTIN ZVIRBULIS, ASSISTANT GENERAL MANAGER/COO — DATE 8/1/05

APPROVED BY: MAURICIO GUARDADO JR., MANAGER OF ENGINEERING — DATE 8-1-05

STD. DWG. 103 SHT 1 OF 1



NOTES:

1. FOR 3" SERVICE, USE 4" CWL & C STL. PIPE AND INSTALL BELL REDUCER AT METER.
2. METER AND METER BOX SUPPLIED BY CVWD.
3. FOR JUMPERS SEE STD. DWG. 105.

Cucamonga Valley Water District

TYPICAL 3 AND 4 INCH WATER SERVICE TURBINE OR COMPOUND

Cucamonga Valley Water District

APPROVED BY: MARTIN ZVIRBULIS, ASSISTANT GENERAL MANAGER/COO — DATE 8/1/05

APPROVED BY: MAURICIO GUARDADO JR., MANAGER OF ENGINEERING — DATE 8-1-05

STD DWG 106 SHT. 1 OF 1

DESIGN OVERLIGHT — SERGIO AVILA

STATE OF CALIFORNIA — DEPARTMENT OF TRANSPORTATION — Caltrans

CALCULATED-DESIGNED BY: J.W. | CHECKED BY: S.N. | REVISED BY | DATE REVISED

DESCRIPTION | DATE | APP'D | REV.

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

UTILITY PLAN
WATER DETAILS
NO SCALE

U-12

CU 08230 | EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		55	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07
PLANS APPROVAL DATE

PROFESSIONAL ENGINEER MICHAEL R. MARQUIS No. 64586 Exp. 06/30/07 CIVIL STATE OF CALIFORNIA

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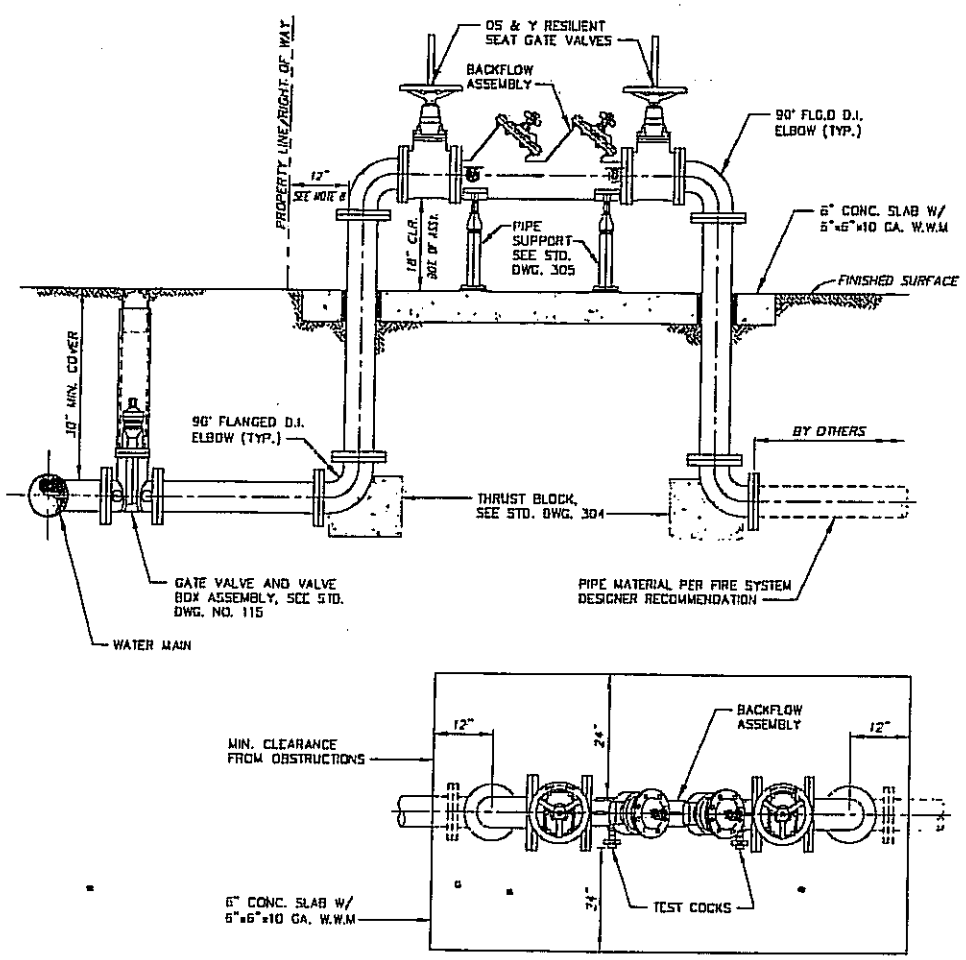


NOTES:

1. LOCATION, TYPE, AND INSTALLATION OF BACKFLOW ASSEMBLY SHALL BE APPROVED BY THE DISTRICT INSPECTOR
2. ALL PIPE SHALL BE CML & C STEEL W/ FLANGED D.I. FITTINGS
3. CONTRACTOR SHALL PAINT ALL ABOVE GROUND APPURTENANCES WITH ONE COAT OF PRIMER AND 2 COATS OF ALMOND RUST-OLEUM OR FIRE DEPARTMENT APPROVED COLOR.
4. RESILIENT SEATED GATE VALVES AND TEST COCKS REQUIRED.
5. GATE VALVES TO BE CHAINED AND LOCKED IN THE OPEN POSITION AT ALL TIMES WHEN THE SERVICE IS ACTIVATED.
6. PIPE SUPPORTS AS REQUIRED FOR 3" AND LARGER ASSEMBLY. PIPE SUPPORT SHALL BE GRINNEL # 264, OR APPROVED EQUAL.
7. ALL ASSEMBLIES USC, FCC & HR APPROVED.
8. ALL PIPING BETWEEN MAIN AND BACKFLOW ASSEMBLY TO BE FLUSHED BEFORE BACKFLOW IS INSTALLED AND WITNESSED BY DISTRICT INSPECTOR.

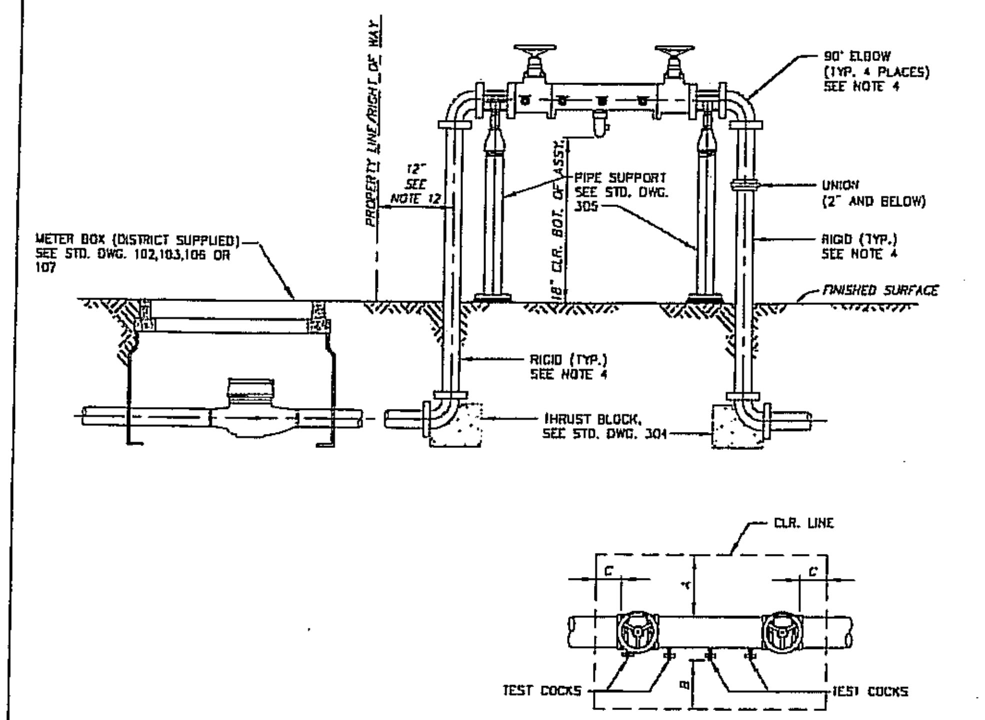
Cucamonga Valley Water District

FIRE SERVICE BACKFLOW ASSEMBLY

Cucamonga Valley Water District

APPROVED BY: MARTIN ZVIRBULIS, ASSISTANT GENERAL MANAGER/COO — DATE 8/1/05
APPROVED BY: MAURICIO GUARDADO JR., MANAGER OF ENGINEERING — DATE 8-1-05

STD. DWG. 110 — SHT. 1 OF 1



CLEARANCE			
SIZE	A	B	C
¾" – 2"	18"	18"	12"
2½" & UP	24"	24"	12"

NOTES:

1. LOCATION, TYPE, AND INSTALLATION OF BACKFLOW ASSEMBLY SHALL BE APPROVED BY THE DISTRICTS INSPECTOR.
2. DISTRICT TO INSTALL METER, DEVELOPER TO INSTALL ALL OTHER REQUIRED MATERIAL.
3. NO CONNECTIONS OR TEES SHALL BE ALLOWED BETWEEN METER AND ASSEMBLY.
4. ALL PIPE AND RELATED FITTINGS SHALL BE AS FOLLOWS:
   A. 3-INCH AND BELOW – COPPER TYPE K RIGID OR, BRASS.
   B. 4- INCH AND ABOVE – SCHEDULE 40 CEMENT LINED STANDARD STEEL, CML & C OR DUCTILE IRON.
5. ALL ABOVE GROUND APPURTENANCES SHALL BE PAINTED AS FOLLOWS:
   A. STEEL PIPE, DUCTILE IRON PIPE, ONE COAT OF PRIMER AND 2 COATS OF RUSTOLEUM–ALMOND.
6. RESILIENT SEATED SHUT-OFF VALVES AND TEST COCKS REQUIRED.
7. PRESSURE REGULATOR TO BE INSTALLED UPSTREAM OF BACKFLOW PREVENTOR IF REQUIRED BY PLUMBING CODE.
   A. IF PRESSURE REGULATION IS REQUIRED THEN DELETE DOWNSTREAM UNION IF APPLICABLE
8. BACKFLOW PREVENTORS TO BE SAME SIZE AS METER.
9. ALL ASSEMBLIES SHALL BE USC FCC & HR APPROVED.
10. PIPE SUPPORT AS REQUIRED ON 3" AND ABOVE.
11. ALL PIPING BETWEEN METER AND BACKFLOW ASSEMBLY TO BE FLUSHED BEFORE BACKFLOW IS INSTALLED AND MUST BE WITNESSED BY DISTRICT INSPECTOR.
12. IF BACKFLOW DEVICE IS ADJACENT TO SIDEWALK, THEN DISTANCE = 3'-0"

Cucamonga Valley Water District

TYPICAL BACKFLOW INSTALLATION FOR DOMESTIC AND LANDSCAPE USE

Cucamonga Valley Water District

APPROVED BY: MARTIN ZVIRBULIS, ASSISTANT GENERAL MANAGER/COO — DATE 8/1/05
APPROVED BY: MAURICIO GUARDADO JR., MANAGER OF ENGINEERING — DATE 8-1-05

STD. DWG 111 — SHT. 1 OF 1

REVISED BY | DATE REVISED | J.W. | S.N. | CALCULATED-DESIGNED BY | CHECKED BY | DESIGN OVERSIGHT | SERGIO AVILA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

UTILITY PLAN
WATER DETAILS

NO SCALE

U-13

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		56	86

REGISTERED CIVIL ENGINEER — DATE 5-07-07

MICHAEL R. MARQUIS No. 64586 Exp 06/30/07 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

7-30-07
PLANS APPROVAL DATE

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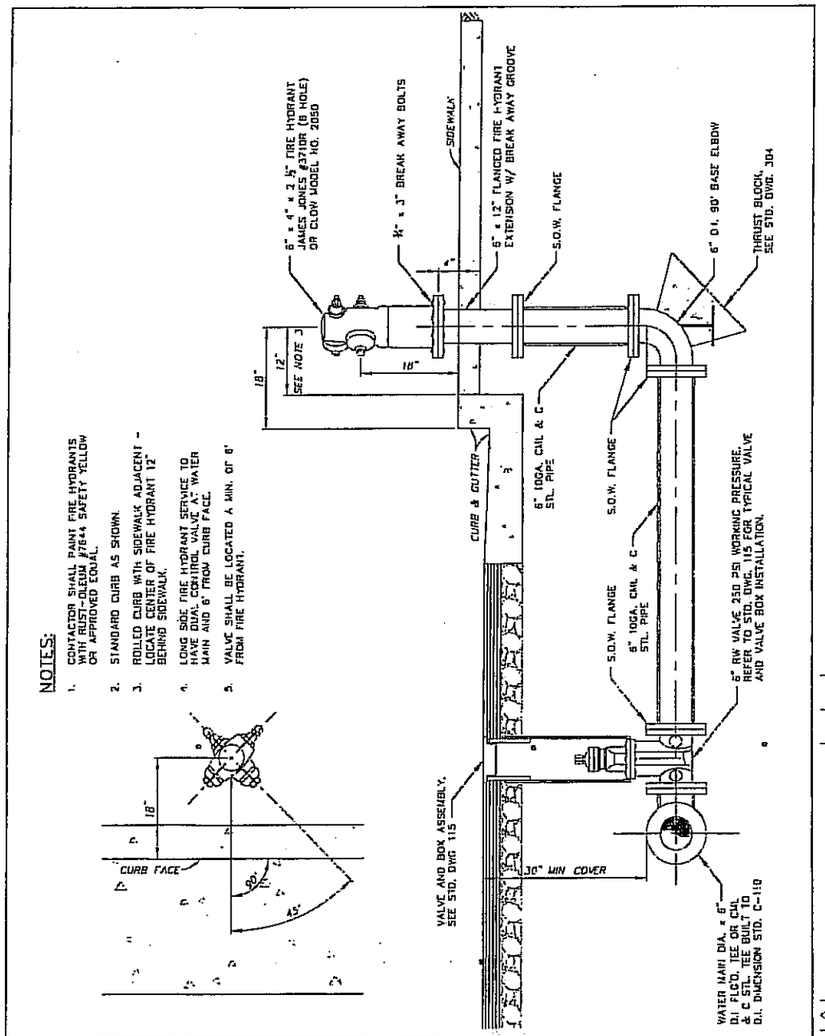

NOTES:

1. CONTRACTOR SHALL PAINT FIRE HYDRANTS WITH RUST-OLEUM #7644 SAFETY YELLOW OR APPROVED EQUAL.
2. STANDARD CURB AS SHOWN
3. ROLLED CURB WITH SIDEWALK ADJACENT - LOCATE CENTER OF FIRE BEHIND SIDEWALK.
4. LONG SIDE FIRE HYDRANT SERVICE TO HAVE DUAL CONTROL VALVE AT WATER MAIN AND 6' FROM CURB FACE.
5. VALVE SHALL BE LOCATED A MIN. OF 6' FROM FIRE HYDRANT.

REV.	DESCRIPTION	DATE	APP'D

Cucamonga Valley Water District

FIRE HYDRANT

Cucamonga Valley Water District

APPROVED BY: MARTIN ZVIRBULIS, ASSISTANT GENERAL MANAGER/COO — DATE 8/1/05
APPROVED BY: MAURICIO GUARDADO JR., MANAGER OF ENGINEERING — DATE 8-1-05

STD. DWG 113 — SHT. 1 OF 1

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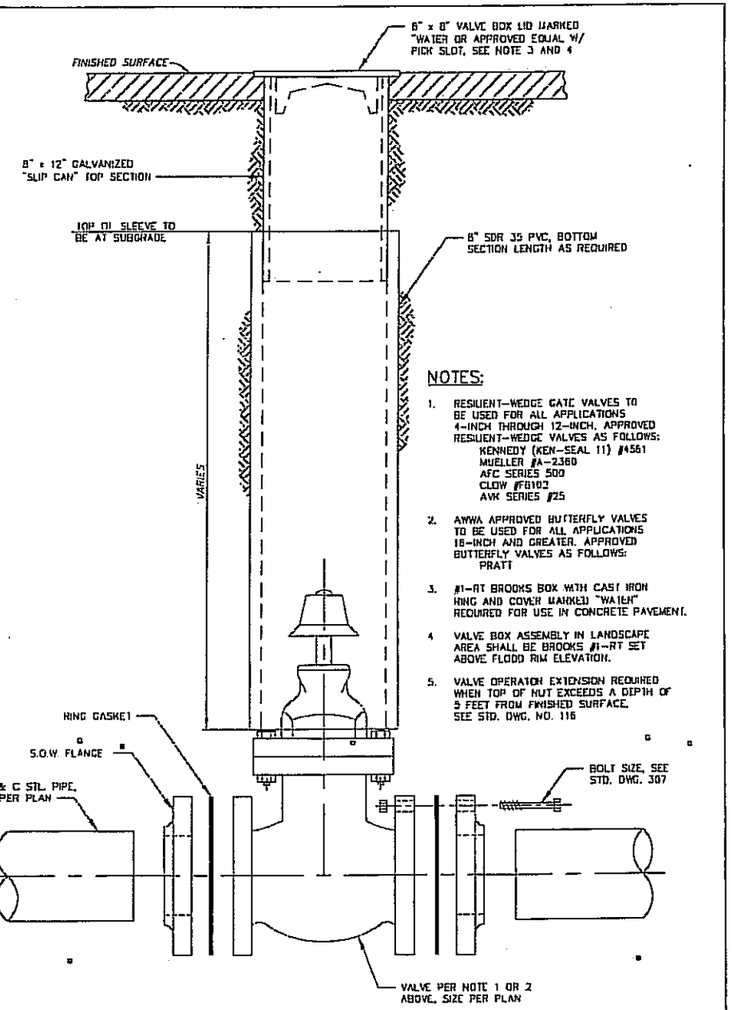

NOTES:

1. RESILIENT-WEDGE GATE VALVES TO BE USED FOR ALL APPLICATIONS 4-INCH THROUGH 12-INCH, APPROVED RESILIENT-WEDGE VALVES AS FOLLOWS:
   KENNEDY (KEN-SEAL II) #4561
   MUELLER #A-2360
   AFC SERIES 500
   CLOW #F6102
   AVK SERIES #25
2. AWWA APPROVED BUTTERFLY VALVES TO BE USED FOR ALL APPLICATIONS 16-INCH AND GREATER. APPROVED BUTTERFLY VALVES AS FOLLOWS:
   PRATT
3. #1-RT BROOKS BOX WITH CAST IRON RING AND COVER MARKED "WATER" REQUIRED FOR USE IN CONCRETE PAVEMENT.
4. VALVE BOX ASSEMBLY IN LANDSCAPE AREA SHALL BE BROOKS #1-RT SET ABOVE FLOOD RIM ELEVATION.
5. VALVE OPERATION EXTENSION REQUIRED WHEN TOP OF NUT EXCEEDS A DEPTH OF 5 FEET FROM FINISHED SURFACE. SEE STD. DWG. NO. 116

REV.	DESCRIPTION	DATE	APP'D

Cucamonga Valley Water District

VALVE AND BOX ASSEMBLY

Cucamonga Valley Water District

APPROVED BY: MARTIN ZVIRBULIS, ASSISTANT GENERAL MANAGER/COO — DATE 8/1/05
APPROVED BY: MAURICIO GUARDADO JR., MANAGER OF ENGINEERING — DATE 8-1-05

STD. DWG 115 — SHT. 1 OF 1

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CALCULATED-DESIGNED BY	J.W.	REVISED BY	
CHECKED BY	S.N.	DATE REVISED	

DESIGN OVERSIGHT — SERGIO AVILA

STATE OF CALIFORNIA — DEPARTMENT OF TRANSPORTATION — Caltrans

UTILITY PLAN
WATER DETAILS

NO SCALE **U-14**

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

05-04-07

CU 08230 | EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		57	86

REGISTERED CIVIL ENGINEER — DATE 5-07-07

PLANS APPROVAL DATE 7-30-07

REGISTERED PROFESSIONAL ENGINEER — MICHAEL R. MARQUIS — No. 64586 — Exp. 06/30/07 — CIVIL — STATE OF CALIFORNIA

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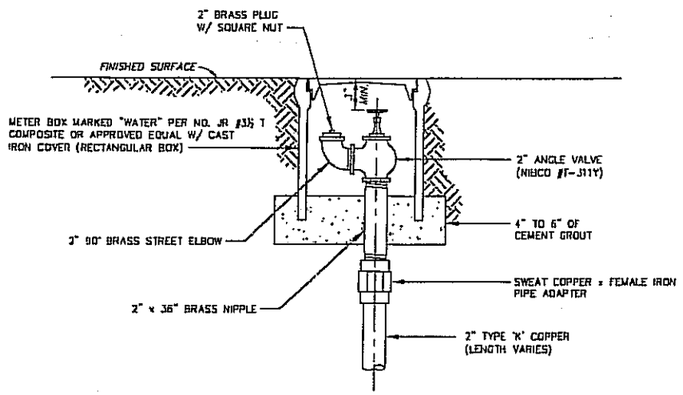


NOTE:

1. IF A VALVE IS TO BE SET AT THE END OF A LINE, THE REMOVABLE BLOW-OFF ASSEMBLY MAY BE BOLTED TO THE FLANGE ON THE VALVE.
2. IF BUTTERFLY VALVE, ADD 1' SPOOL BETWEEN BLIND FLANGE AND VALVE.

Cucamonga Valley Water District

REMOVABLE BLOW-OFF END OF MAINLINE

Cucamonga Valley Water District

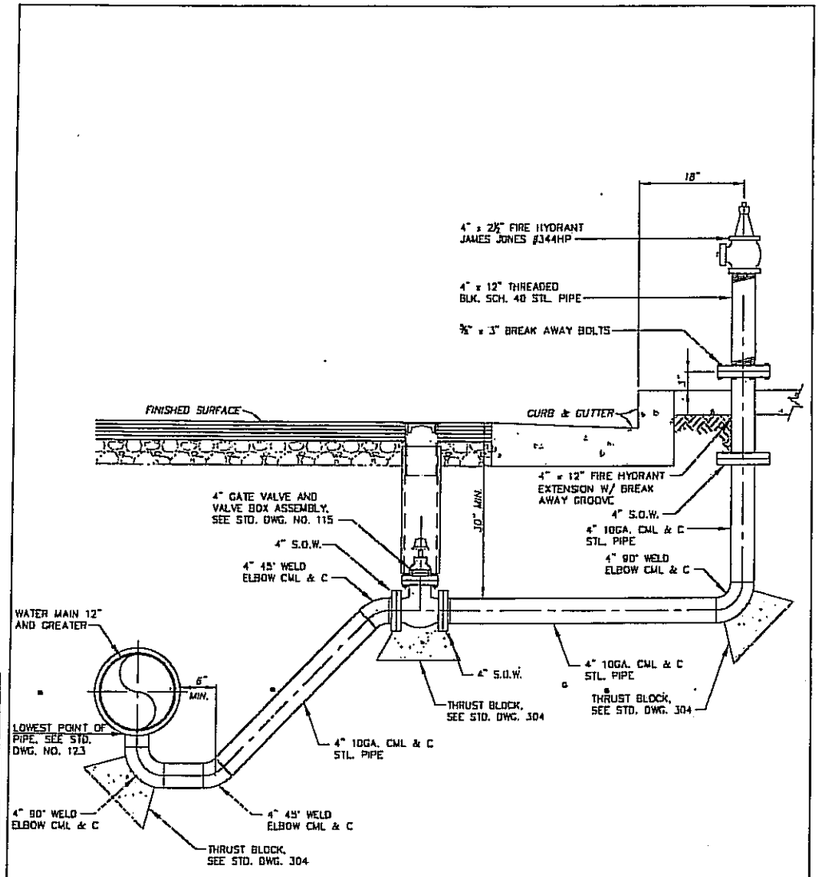
APPROVED BY: MARTIN ZVIRBULIS, ASSISTANT GENERAL MANAGER/COO — DATE 8/1/05

APPROVED BY: MAURICIO GUARDADO JR., MANAGER OF ENGINEERING — DATE 8-1-05

STD. DWG. 118

SHT. 1 OF 1

REV.	DESCRIPTION	DATE	APP'D



NOTE:

1 CONTACTOR IS RESPONSIBLE FOR THE PAINTING OF THE HYDRANTS. PAINT SHALL BE RUST-OLEUM #7544 SAFETY YELLOW OR APPROVED EQUAL.

Cucamonga Valley Water District

BLOW-OFF ASSEMBLY 4-INCH AND ABOVE

Cucamonga Valley Water District

APPROVED BY: MANISH ZVIRBULIS, ASSISTANT GENERAL MANAGER/COO — DATE 8/1/05

APPROVED BY: MAURICIO GUARDADO JR., MANAGER OF ENGINEERING — DATE 8-1-05

STD. DWG. 119

SHT. 1 OF 1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

DESIGN OVERSIGHT — SERGIO AVILA

CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
J.W.	S.N.		

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

UTILITY PLAN
WATER DETAILS

NO SCALE

U-15

DATE PLOTTED = 05-04-07

BORDER LAST REVISED 11-1-2006 — RELATIVE BORDER SCALE IS IN INCHES — USERNAME = — DGN FILE = — CU 08230 — EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		58	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07
PLANS APPROVAL DATE

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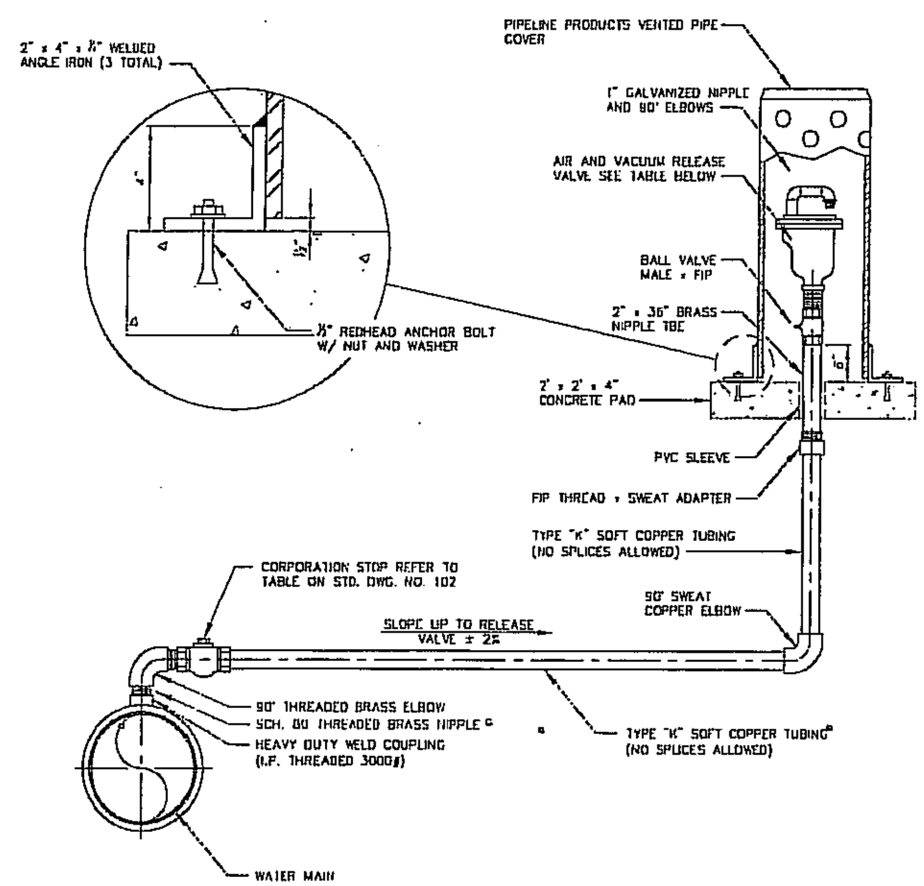
REGISTERED PROFESSIONAL ENGINEER MICHAEL R. MARQUIS No. 64586 Exp. 06/30/07 CIVIL STATE OF CALIFORNIA

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761



NOTE:

1. CRISPIN AIR/VAC UL SERIES OR APPROVED EQUAL

RELIEF VALVE SIZE			
PIPE DIA.	SIZE	AIR/VAC CAN	AIR/VAC
LESS THAN 8-INCH	1"	#CUCA1230	UL10
8-INCH OR GREATER	2"	#CUCA1630	UL20

Cucamonga Valley Water District

AIR VACCUM RELEASE VALVE

Cucamonga Valley Water District

APPROVED BY: 8/1/05 DATE
MARTIN ZVIRBULIS, ASSISTANT GENERAL MANAGER/COO

APPROVED BY: 8-1-05 DATE
MAURICIO GUARDADO JR., MANAGER OF ENGINEERING

STD. DWG. 120
SHT 1 OF 1

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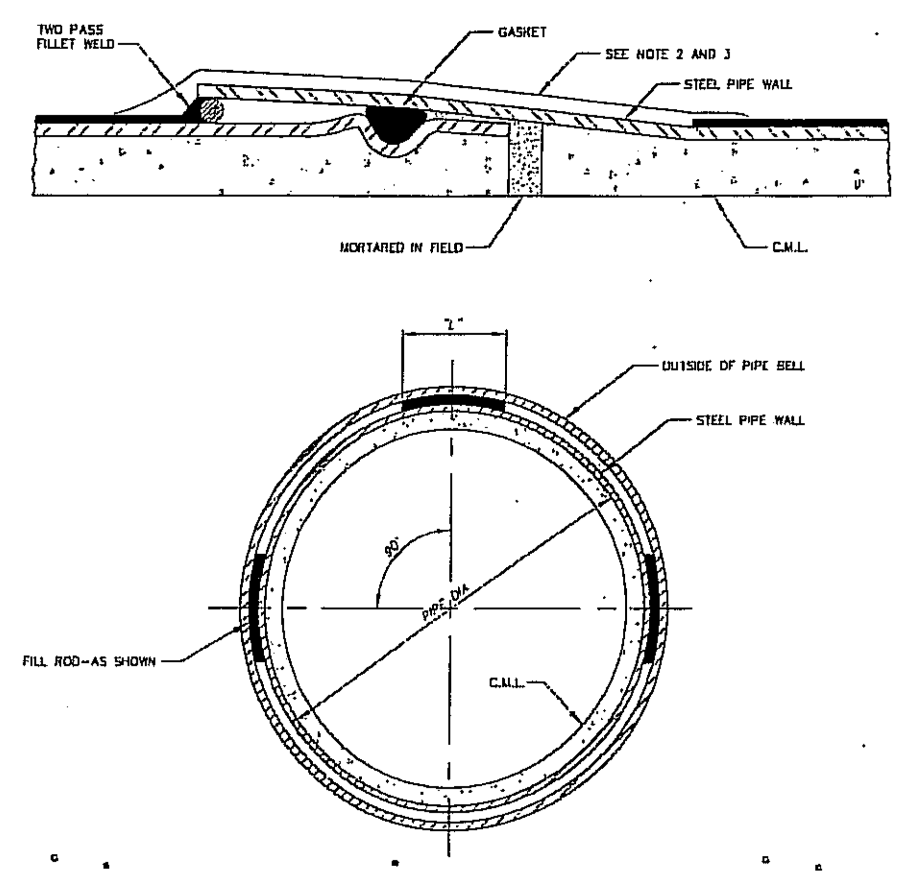


NOTES:

1. REINFORCING STEEL SHALL NOT BE USED AS FILL ROD. FILL ROD SHALL BE MILD STEEL ROUND STOCK.
2. OUTSIDE PIPE JOINTS TO BE COATED WITH CEMENT MORTAR TO THE SAME THICKNESS OF THE PIPE COATING.
3. PIPE JOINT DIAPERS MAY BE USED WHERE APPLICABLE, PER THE APPROVAL OF THE CVWD INSPECTOR.
4. HAMMER AND CHISEL SHALL BE USED TO REMOVE CEMENT COATING. POWER CUT-OFFS SAWS SHALL NOT BE USED TO REMOVE COATING. SCOURED OR DAMAGED STEEL SHALL BE REJECTED.

ROD LENGTH TABLE					
	"L"				
PIPE DIA.	3/16" ROD	1/4" ROD	5/16" ROD	3/8" ROD	1/2" ROD
4"	2"	2"	2"	2"	2"
6"	3½"	3"	3"	3"	3"
8"	5½"	5"	4"	4"	3½"
10"	7½"	6"	5½"	5"	4"
12"	10"	8"	7"	6"	5"
14"	–	–	8½"	7½"	6"
16"	–	–	–	9"	7½"

Cucamonga Valley Water District

JOINT RESTRAINT - FILL ROD

Cucamonga Valley Water District

APPROVED BY: 8/1/05 DATE
MARTIN ZVIRBULIS, ASSISTANT GENERAL MANAGER/COO

APPROVED BY: 8-1-05 DATE
MAURICIO GUARDADO JR., MANAGER OF ENGINEERING

STD. DWG 121
SHT. 1 OF 1

c:\cadd\cvwd cadd drawings\cvwd std dwg\dwg\cvwd_std_117

UTILITY PLAN
WATER DETAILS

NO SCALE

U-16

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

DESIGN OVERSIGHT: SERGIO AVILA
CALCULATED-DESIGNED BY: J.W.
CHECKED BY: S.N.
REVISED BY / DATE REVISED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		66	86

5-07-07
REGISTERED CIVIL ENGINEER — DATE

7-30-07
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 — C. SCHNEIDER — No. 56353 — Exp. 3/31/09 — CIVIL — STATE OF CALIFORNIA

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

GENERAL NOTES:

1. CONSTRUCTION PERMITS SHALL BE OBTAINED FROM THE CITY OF FONTANA COMMUNITY DEVELOPMENT DEPARTMENT, ENGINEERING DIVISION PRIOR TO THE START OF ANY WORK. INSPECTION COORDINATION SHALL BE REQUESTED AT LEAST TWO WORKING DAYS PRIOR TO THE START OF ANY WORK IN PUBLIC RIGHT-OF-WAY WITHIN THE CITY LIMITS. CALL (909) 350-7610.
2. THE CONTRACTOR SHALL CONFORM TO ALL TRAFFIC CONTROL POLICIES, METHODS, DETAILS, DIMENSIONS, AND PROCEDURES DESCRIBED IN THE STATE OF CALIFORNIA MANUAL OF TRAFFIC CONTROLS, LATEST EDITION.
3. CONTACT THE TRAFFIC ENGINEERING PROJECT MANAGER AT (909) 350-7610 TWO WORKING DAYS PRIOR TO REMOVAL OF TRAFFIC CONTROL DEVICES OR EQUIPMENT. STOP SIGNS SHALL ONLY BE REMOVED BY CITY PERSONNEL.
4. ALL WORK, MATERIALS AND EQUIPMENT FOR TRAFFIC SIGNING AND STRIPING SHALL CONFORM TO THESE PLANS, AND STANDARD SPECIFICATIONS FOR THE CITY OF FONTANA, THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS DATED, SEPTEMBER 2006.
5. 2 WORKING DAYS NOTICE SHALL BE GIVEN TO THE CITY TRAFFIC ENGINEER (909) 350-7610 FOR APPROVAL OF CONTROL POINTS OR "CAT TRACKING" PRIOR TO APPLICATION OF PAVEMENT STRIPING.
6. TRAFFIC SIGN SIZE SHALL BE FOR CONVENTIONAL ROADWAYS, UNLESS OTHERWISE SHOWN ON PLANS.
7. ALL SIGNS SHALL BE MOUNTED ON GALVANIZED STEEL POSTS, UNLESS OTHERWISE SHOWN ON THE PLANS, PER CITY STANDARD DETAIL 4003.
8. STENCILS USED FOR PAVEMENT MARKINGS SHALL MATCH CITY OF FONTANA STANDARD STENCILS.
9. ALL STRIPING AND PAVEMENT MARKINGS SHALL BE ALKYD THERMOPLASTIC UNLESS OTHERWISE NOTED.
10. CROSSWALKS SHALL HAVE 10' BETWEEN THE CENTERLINE OF THE 12" STRIPES UNLESS OTHERWISE SHOWN ON THE PLANS, PER CITY STANDARD DETAIL 1003.
11. AS-BUILT DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER OF RECORD, WHO SHALL PROVIDE RECORD DRAWINGS AND ELECTRONIC AUTODESK FILES, TO THE CITY TRAFFIC ENGINEER.
12. ALL CONFLICTING STRIPING, MARKINGS TO BE REMOVED, SHALL BE BY SANDBLASTING.
13. BLUE DOT MARKERS (BLUE R.R.P.M.) ARE TO BE INSTALLED AT ALL FIRE HYDRANT LOCATIONS PER STANDARD PLAN.

CONSTRUCTION NOTES:

1. INSTALL STRIPING DETAIL (INCLUDING PLACEMENT OF RASIED PAVEMENT MARKERS), ARROW OR LEGEND AS SHOWN.
2. INSTALL 12" WHITE CROSSWALK AND/OR LIMIT LINE.
3. INSTALL 4" WHITE LINE.
4. INSTALL SIGN AND/OR POST AS SHOWN.
5. RELOCATE SIGN AND POST AS SHOWN.
6. REMOVE SIGN AND POST.

NO DUMPING ALLOWED

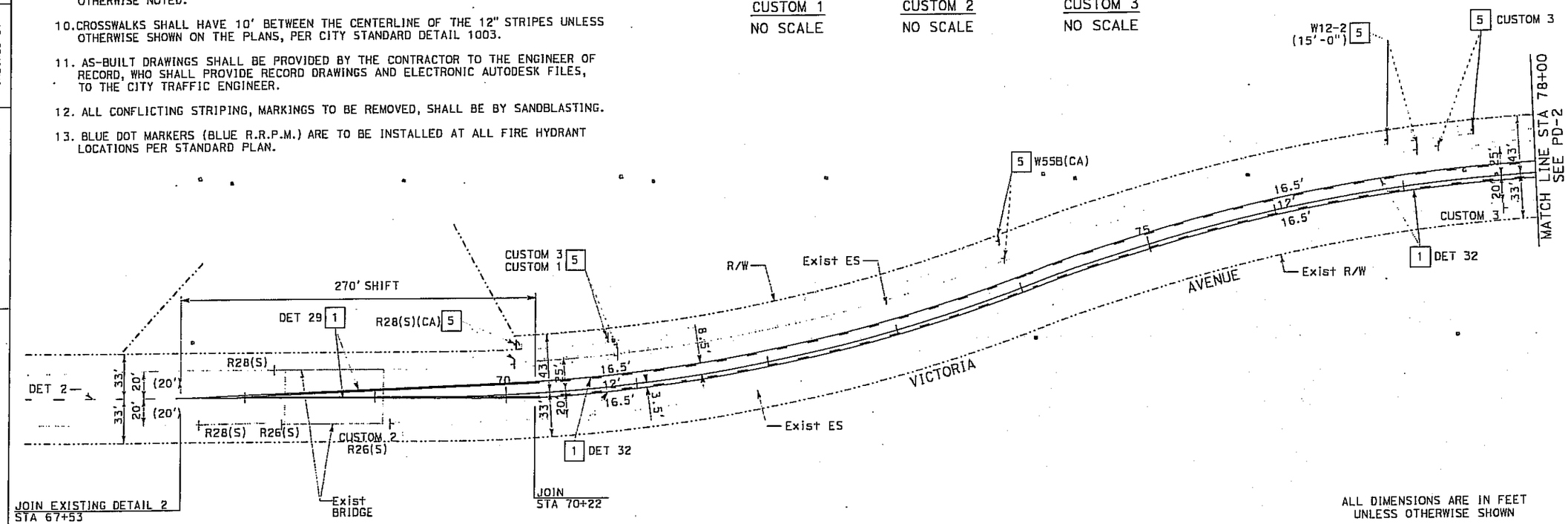
CUSTOM 1
NO SCALE

No parking of oversized vehicles. RVs or trailers on residential streets without valid permit for more than 4 Hrs.

CUSTOM 2
NO SCALE

UNAUTHORIZED VEHICLES PROHIBITED OFF ROAD

CUSTOM 3
NO SCALE



SCALE: 1"=40'

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

PAVEMENT DELINEATION AND SIGN PLAN

SCALE AS SHOWN

PD-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN OVERSIGHT: SERGIO ÁVILA
CALCULATED-DESIGNED BY: J.W.
CHECKED BY: S.N.
REVISED BY
DATE REVISED
05-04-07

CU 08230 | EA 377001

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		67	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07
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 C. SCHNEIDER No. 56353 Exp. 3/31/09 CIVIL STATE OF CALIFORNIA

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

CONSTRUCTION NOTES:

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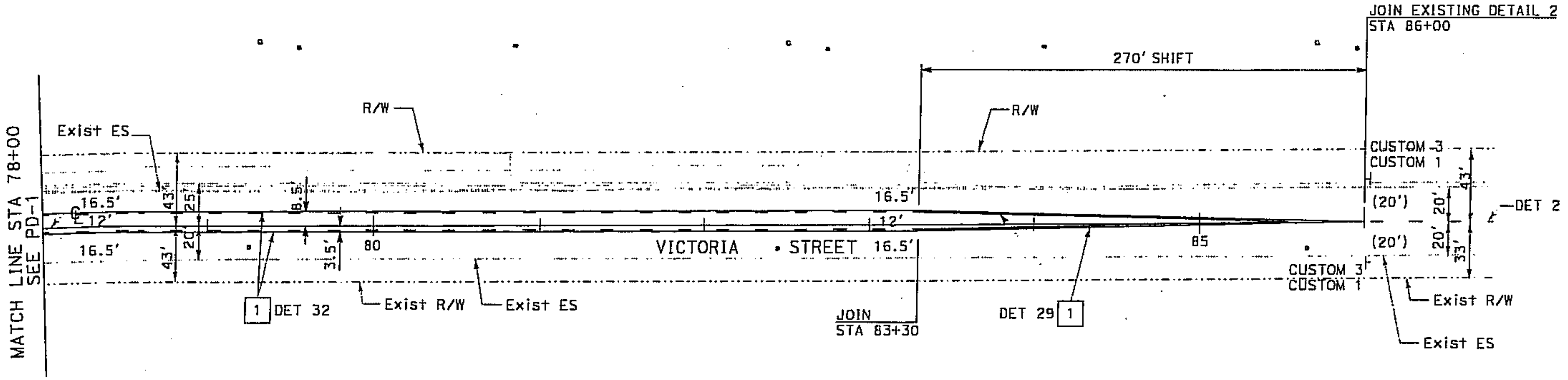

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

PAVEMENT DELINEATION AND SIGN PLAN

SCALE: 1"=40'

PD-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
SERGIO AVILA	J.W.	S.N.		

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		68	86

5-07-07
REGISTERED CIVIL ENGINEER DATE

C. SCHNEIDER No. 56353 Exp. 3/31/09 CIVIL

7-30-07
PLANS APPROVAL DATE

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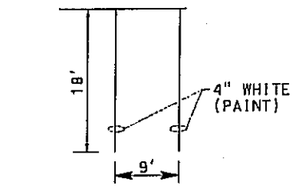
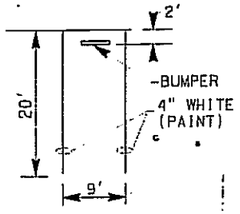
RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

LEGEND:

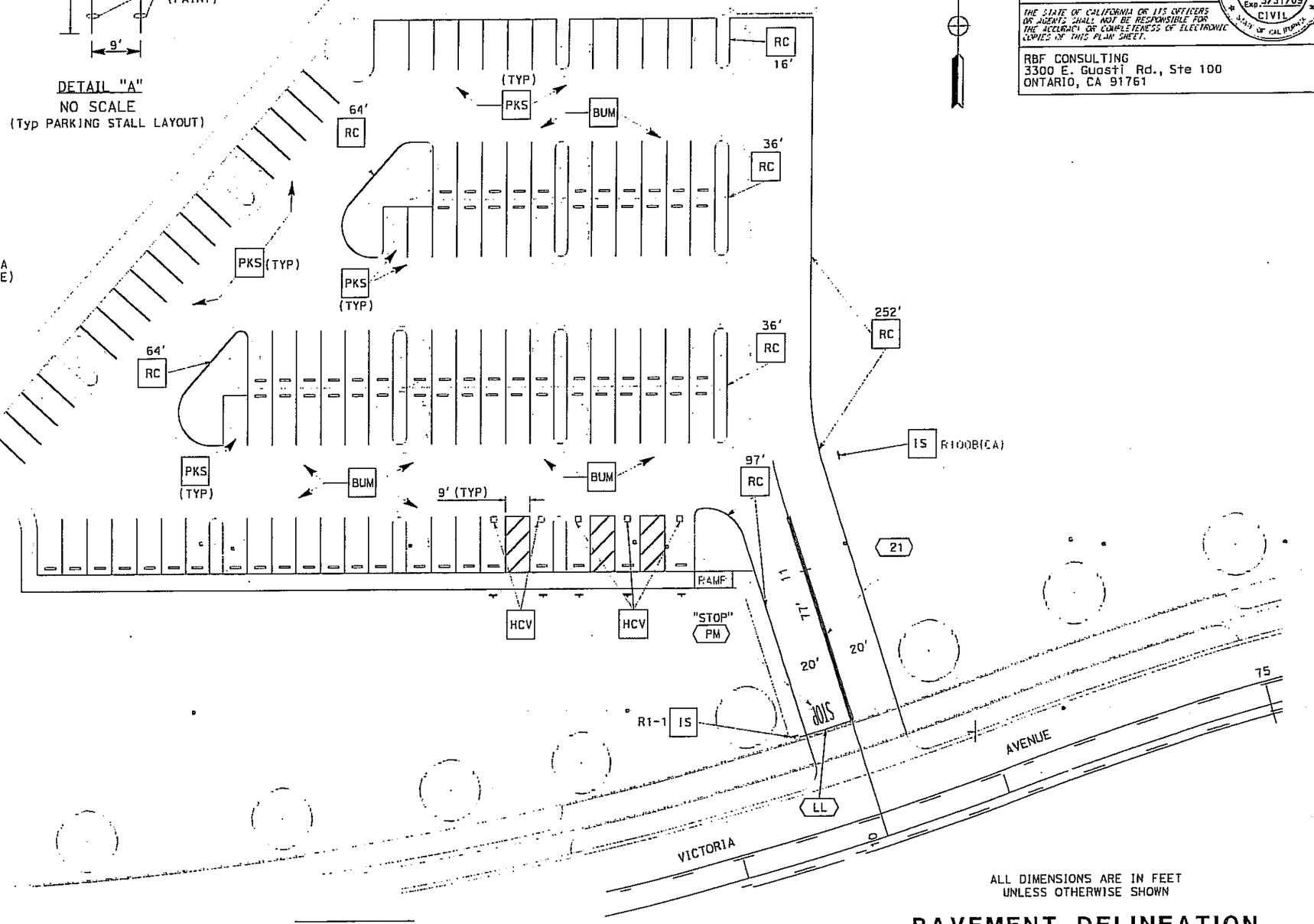
- NO. — PAVEMENT DELINEATION DETAIL NUMBER
- PM — PAVEMENT MARKING OR LEGEND AS SHOWN
- LL — 12" WHITE LIMIT LINE
- E — EXISTING TO BE PROTECTED
- (12') — EXISTING WIDTH
- 12' — PROPOSED WIDTH
- △ — ANGLE POINT
- ↑ — NEW ROADSIDE SIGN (WALL MOUNTED OR 1 POST)
- IS — INSTALL NEW SIGN AND POST
- RC — PAINT CURB RED AS NOTED ON PLAN
- HCV — INSTALL ISA LEGEND, STRIPING, AND SIGNING PER CALTRANS ACCESSIBLE PARKING STALL DETAIL ON STD PLAN A90A TO INCLUDE SIGN R7-8B (VAN ACCESSIBLE)
- PKS — INSTALL PARKING STALL STRIPING PER DETAIL "A"
- BUM — INSTALL PARKING STALL STRIPING PER DETAIL "B"



DETAIL "A"
NO SCALE
(Typ PARKING STALL LAYOUT)



DETAIL "B"
NO SCALE
(PARKING STALL LAYOUT)



SCALE: 1"=20'

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

PAVEMENT DELINEATION AND SIGN PLAN

SCALE AS SHOWN

PD-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT: SERGIO AVILA

CALCULATED-DESIGNED BY: J.W.
CHECKED BY: S.N.

REVISED BY | DATE REVISED

05-04-07

CU 08230 | EA 3770U1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		78	86

5-31-07
LICENSED LANDSCAPE ARCHITECT

7-30-07
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.

SPRINKLER SCHEDULE

SYMBOL	TYPE	DESCRIPTION	SPRAY PATTERN	OPERATING PRESSURE (PSI)	PRESSURE COMPENSATING	PLUS / MINUS 5% DISCHARGE: GALLONS PER SECOND (GPS)	GALLONS PER MINUTE (GPM)	GALLONS PER HOUR (GPH)	RADIUS (Ft)	WIDTH x LENGTH (Ft)	MATERIAL	NOZZLE SIZE (INCH)	INLET CONNECTION (NPT) (DN IN INCHES) (INCH)	POSITIVE-LOCKING ADJ ARC STOP	BACKSPLASH PREVENTER	DIFFUSER PIN	DISTANCE CONTROL FLAP	ADJ DISCHARGE	RISER: TYPE	MATERIAL: PLASTIC	GALVANIZED	SIZE (IPS INCH)	HEIGHT (INCH)	FLOW SHUTOFF DEVICE	⑤ SWING JOINT (TYPE)	RISER SUPPORT	SPRINKLER PROTECTOR (TYPE)	REMARKS
6 (square)	A-6	GEAR DRIVEN POP-UP	F	35	—	—	2.68	—	33'	—	PL	—	1"	—	—	—	—	X	III	X	—	—	—	—	1	—	—	
6 (circle)	A-6	GEAR DRIVEN POP-UP	H	35	—	—	1.38	—	30'	—	PL	—	1"	—	—	—	—	X	III	X	—	—	—	—	1	—	—	GPM AT 180 DEGREES
6 (circle in square)	A-6	GEAR DRIVEN POP-UP	H	35	—	—	1.38	—	30'	—	PL	—	1"	—	—	—	—	X	III	X	—	—	—	—	1	—	X	GPM AT 180 DEGREES
▲	B-2A	SHRUB SPRAY	F	30	—	—	2.60	—	12'	—	PL	—	3/4"	—	—	—	—	X	III	X	—	—	—	—	1	—	—	
(VAN symbol)	B-2A	SHRUB SPRAY	VAN	30	—	—	1.30	—	12'	—	PL	—	3/4"	—	—	—	—	X	III	X	—	—	—	—	1	—	—	GPM AT 180 DEGREES
(half symbol)	B-2A	SHRUB SPRAY	H	30	—	—	1.30	—	12'	—	PL	—	3/4"	—	—	—	—	X	III	X	—	—	—	—	1	—	—	
(quarter symbol)	B-2A	SHRUB SPRAY	Q	30	—	—	0.65	—	12'	—	PL	—	3/4"	—	—	—	—	X	III	X	—	—	—	—	1	—	—	
△	B-2B	SHRUB SPRAY	F	30	—	—	1.05	—	8'	—	PL	—	3/4"	—	—	—	—	X	III	X	—	—	—	—	1	—	—	
(VAN symbol)	B-2B	SHRUB SPRAY	VAN	30	—	—	1.19	—	8'	—	PL	—	3/4"	—	—	—	—	X	III	X	—	—	—	—	1	—	—	GPM AT 180 DEGREES
(half symbol)	B-2B	SHRUB SPRAY	H	30	—	—	0.52	—	8'	—	PL	—	3/4"	—	—	—	—	X	III	X	—	—	—	—	1	—	—	
(quarter symbol)	B-2B	SHRUB SPRAY	Q	30	—	—	0.26	—	8'	—	PL	—	3/4"	—	—	—	—	X	III	X	—	—	—	—	1	—	—	
O	C-2	FLOOD BUBBLER	—	30	—	—	1.00	—	—	—	PL	—	3/4"	—	—	—	—	—	III	X	—	—	—	—	1	—	—	

X IN BOX DENOTES REQUIREMENT

APPLICABLE WHEN CIRCLED BELOW:

1 - See Special Provisions.
2 - If a pressure compensating device is specified, the discharge and radii shown reflect its use.
3 - Arc Stop shall be fitted with a nut and bolt.
4 - Vinyl-coated cast iron housing.
⑤ - Swing Joints required adjacent to shoulders, curbs, sidewalks, and dikes.
6 - Unless otherwise shown on plans.

ABBREVIATIONS

Adj — adjustable
B/B — brass/bronze
B/B/PL — brass/bronze/plastic
B/PL — brass/plastic
CST — center strip
DN — diameter nominal
EST — end strip
F — full circle
F/P — full/part circle
H — half circle
IPS — iron pipe size
GPH — gallons per hour
GPM — gallons per minute
GPS — gallons per second
Ft — feet
NPT — national pipe thread
P — part circle
PL — plastic
Q — quarter circle
SST — side strip
T — third circle
TQ — three quarter circle
TT — two thirds circle

PIPE SIZING CHART (LATERAL LINE)

TYPE C-2 SPRINKLER

3/4"	1"	1 1/2"	2"	RCV
0-8 GPM 1-8 HEADS	9-12 GPM 9-12 (+) HEADS	13-38 GPM 13-38 (+) HEADS	39-50 GPM 39-50 HEADS	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE
CHARLES MOFFETT
PROJECT LANDSCAPE ARCHITECT
CALCULATED/DESIGNED BY
CHECKED BY
DATE | REVISED BY | DATE REVISED

SPRINKLER SCHEDULE

LD-1

RELATIVE BORDER SCALE IS IN INCHES

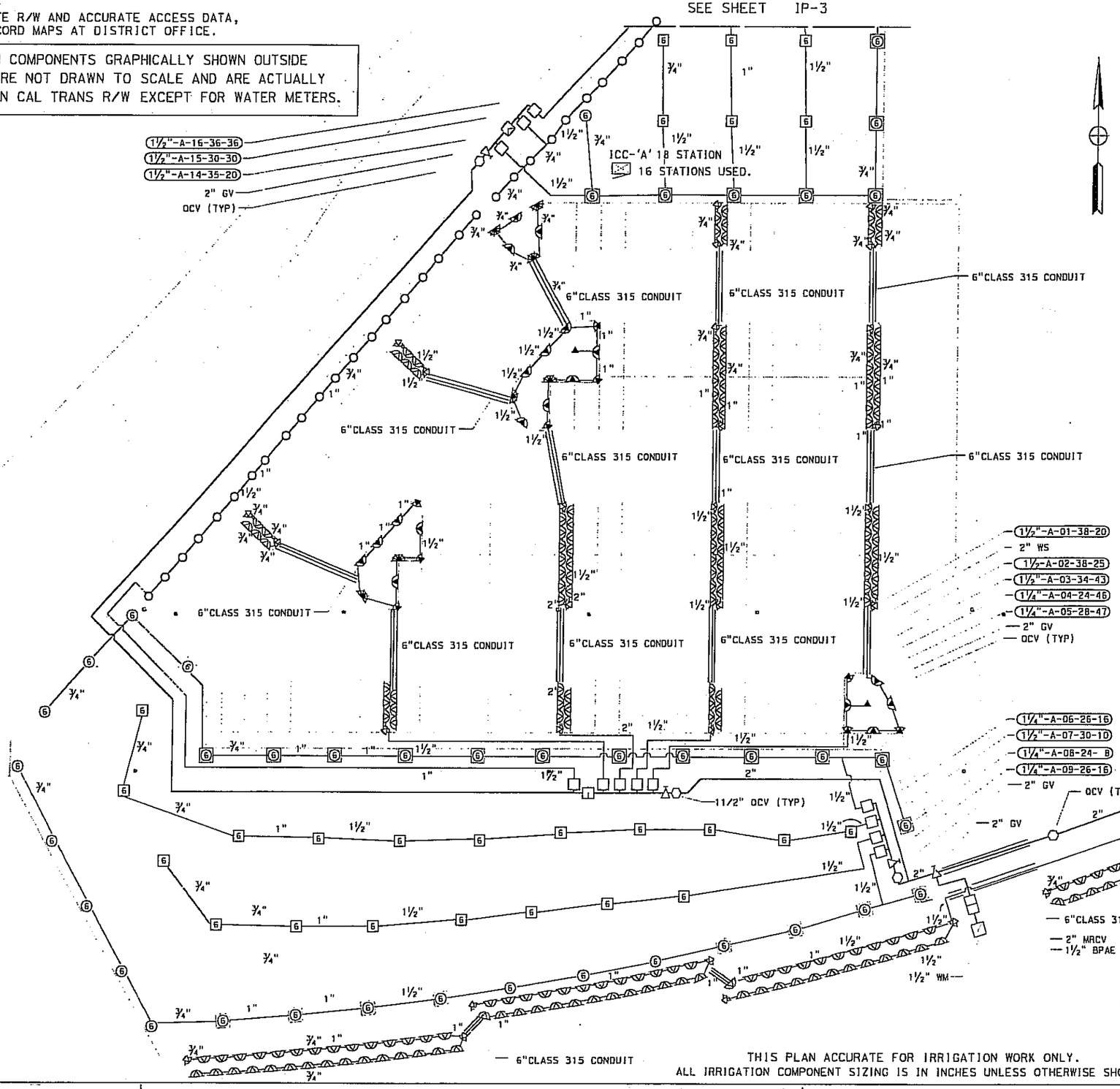
CU 08341 | EA 3770U1

05-31-07

NOTE:

1. FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT DISTRICT OFFICE.

ALL IRRIGATION COMPONENTS GRAPHICALLY SHOWN OUTSIDE OF THE R/W ARE NOT DRAWN TO SCALE AND ARE ACTUALLY LOCATED WITHIN CAL TRANS R/W EXCEPT FOR WATER METERS.



IRRIGATION PLAN

SCALE 1"=20'

THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY.
ALL IRRIGATION COMPONENT SIZING IS IN INCHES UNLESS OTHERWISE SHOWN.

IP-1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	5506		75	86

5-30-07
LICENSED LANDSCAPE ARCHITECT

7-30-07
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.

11-30-07
Renewal Date
05-30-07
Date
STATE OF CALIFORNIA

DATE	REVISED BY	DATE REVISED

CALCULATED/DESIGNED BY
CHECKED BY

STATE OF CALIFORNIA — DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE
PROJECT LANDSCAPE ARCHITECT
CHARLES MOFFETT

RELATIVE BORDER SCALE IS IN INCHES

CU 08341 | EA 3770U1

05-30-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	5506		76	86

5-30-07
LICENSED LANDSCAPE ARCHITECT

7-30-07
PLANS APPROVAL DATE

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NOTE:

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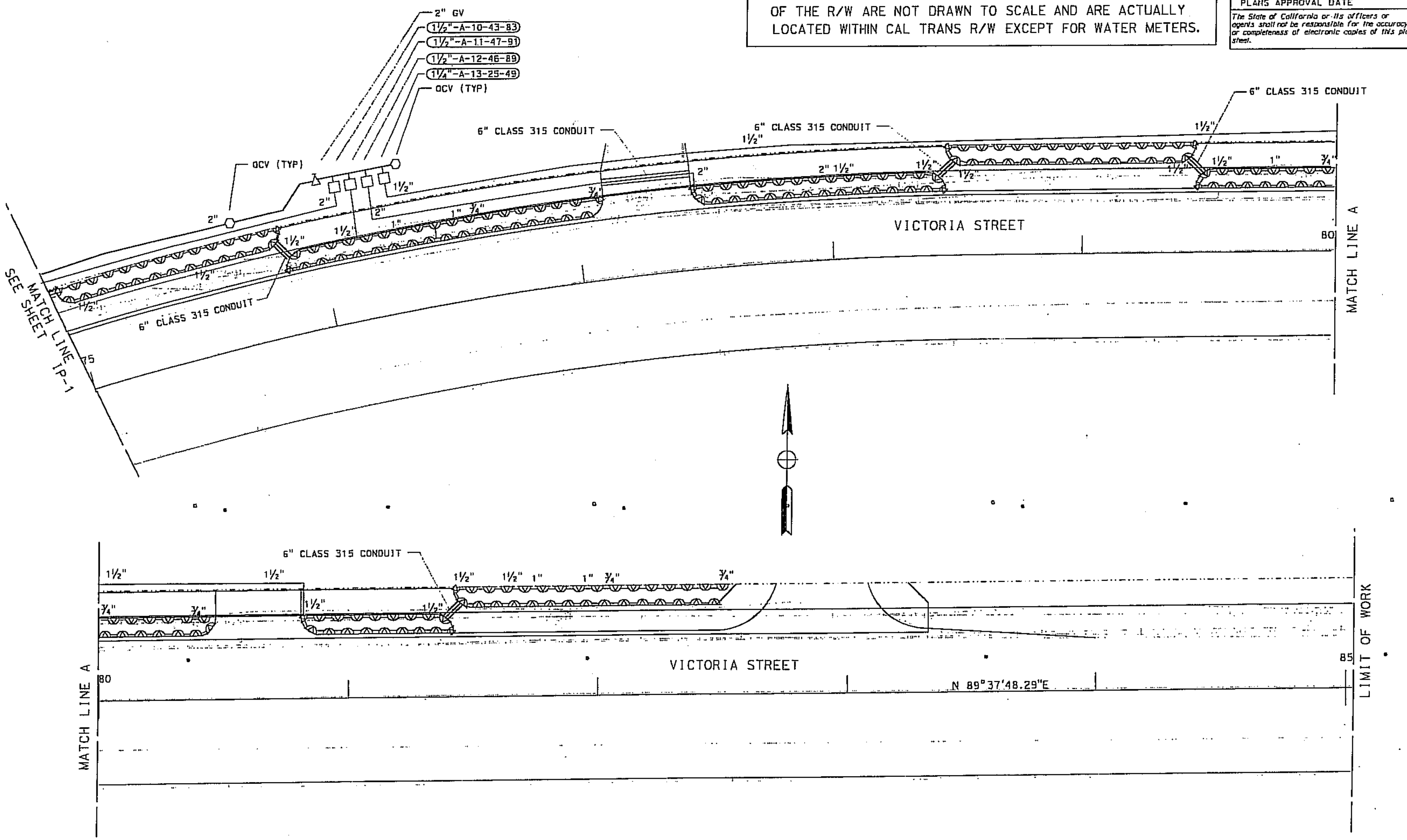

IRRIGATION PLAN

SCALE 1"=20'

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ALL IRRIGATION COMPONENT SIZING IS IN INCHES UNLESS OTHERWISE SHOWN.

IP-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE
PROJECT LANDSCAPE ARCHITECT: CHARLES MOFFETT
CALCULATED/DESIGNED BY | CHECKED BY | DATE | REVISED BY | DATE REVISED

RELATIVE BORDER SCALE IS IN INCHES

CU 08341 | EA 3770U1

05-30-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	5506		77	86

5-30-07
LICENSED LANDSCAPE ARCHITECT

7-30-07
PLANS APPROVAL DATE

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NOTE:

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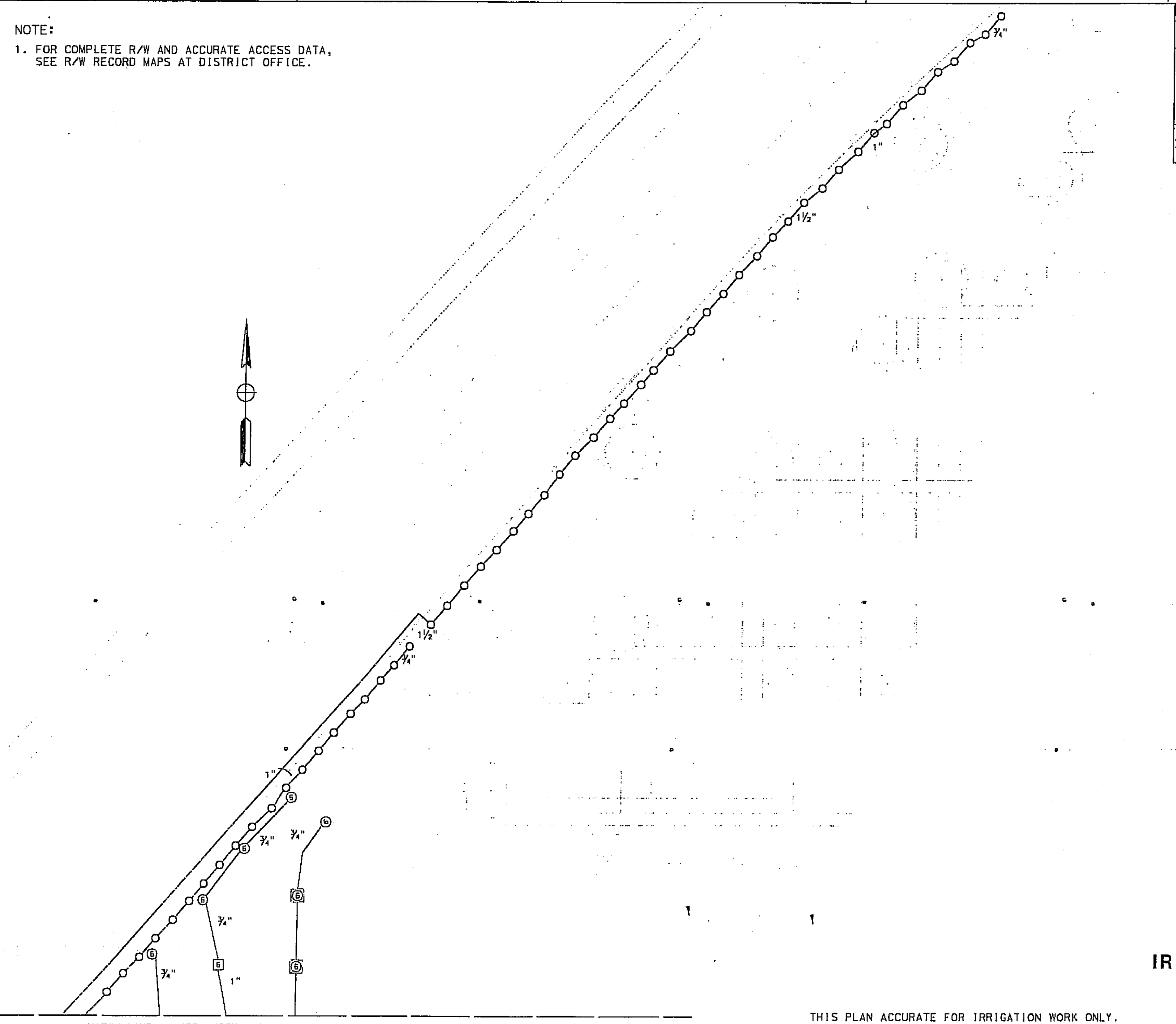

MATCH LINE SEE SHEET IP-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE
PROJECT LANDSCAPE ARCHITECT
CHARLES MOFFETT
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED

IRRIGATION PLAN

SCALE: 1"=20'

THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY.
ALL IRRIGATION COMPONENT SIZING IS IN INCHES UNLESS OTHERWISE SHOWN.

IP-3

RELATIVE BORDER SCALE IS IN INCHES

CU 08341 EA 3770U1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		72	86

6-21-07
LICENSED LANDSCAPE ARCHITECT

7-30-07
PLANS APPROVAL DATE

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NOTE:

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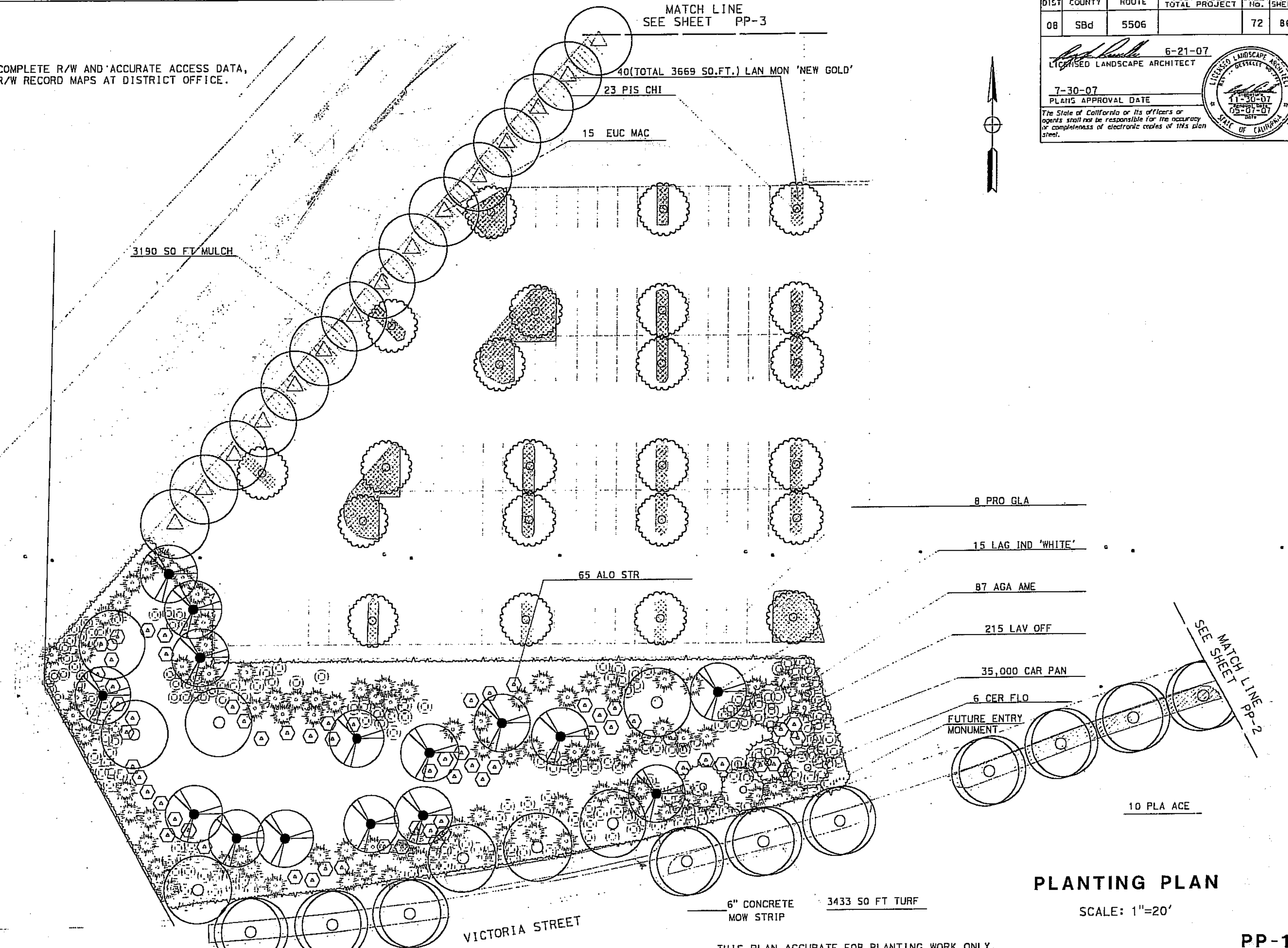


PLANTING PLAN

SCALE: 1"=20'

THIS PLAN ACCURATE FOR PLANTING WORK ONLY.

PP-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans LANDSCAPE ARCHITECTURE

PROJECT LANDSCAPE ARCHITECT: CHARLES MOFFETT

CALCULATED/DESIGNED BY | CHECKED BY

DATE | REVISED BY | DATE REVISED

06-21-07

RELATIVE BORDER SCALE IS IN INCHES

CU 08341 | EA 377011

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	5506		73	86

5-07-07
LICENSED LANDSCAPE ARCHITECT

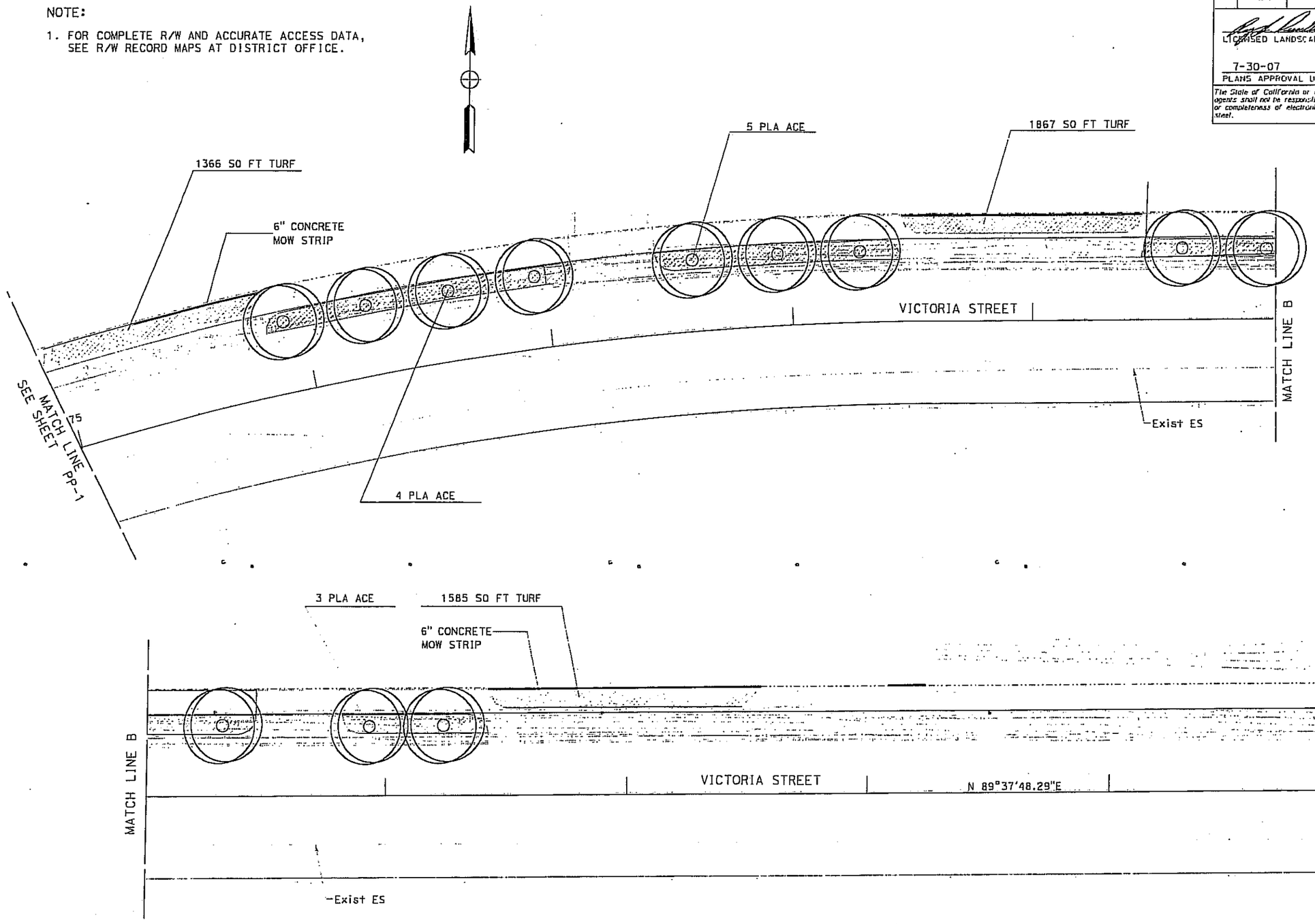
7-30-07
PLANS APPROVAL DATE

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.

LICENSED LANDSCAPE ARCHITECT — RENEWAL 11-30-07 — 05-07-07 — STATE OF CALIFORNIA

NOTE:

1. FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT DISTRICT OFFICE.



PLANTING PLAN

SCALE 1"=20'

THIS PLAN ACCURATE FOR PLANTING WORK ONLY.

PP-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE
PROJECT LANDSCAPE ARCHITECT: CHARLES MOFFETT
CALCULATED-DESIGNED BY
CHECKED BY

DATE	REVISED BY	DATE REVISED

RELATIVE BORDER SCALE IS IN INCHES

CU 08341

EA 3770U1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		74	86

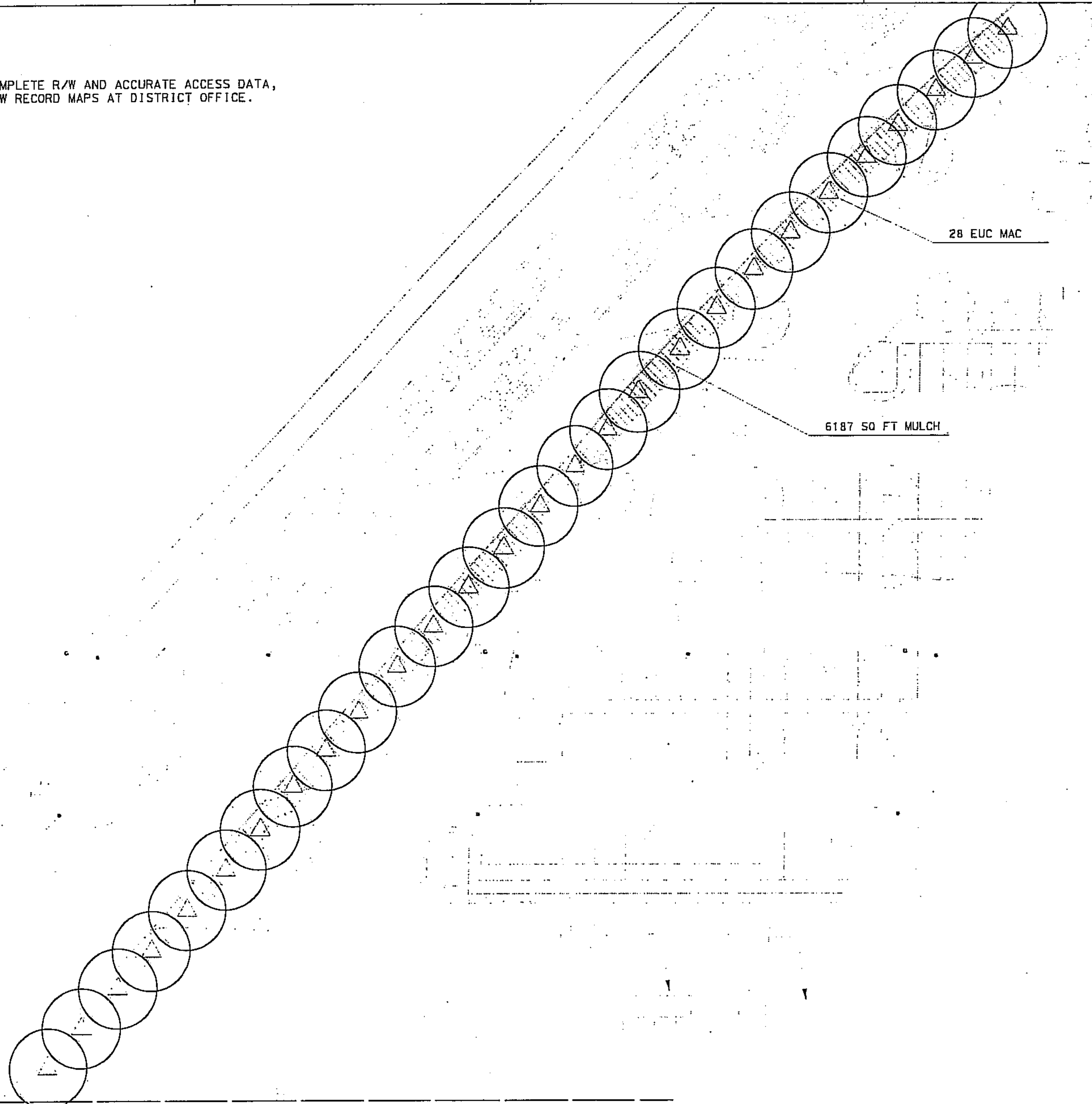
LICENSED LANDSCAPE ARCHITECT 5-31-07

7-30-07
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.

NOTE:

1. FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT DISTRICT OFFICE.



MATCH LINE SEE SHEET PP-1

THIS PLAN ACCURATE FOR PLANTING WORK ONLY.

PLANTING PLAN

SCALE 1"=20'

PP-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE
PROJECT LANDSCAPE ARCHITECT: CHARLES MOFFETT
CALCULATED/DESIGNED BY | CHECKED BY
DATE | REVISED BY | DATE REVISED

RELATIVE BORDER SCALE IS IN INCHES

CU 08341 | EA 3770U1

05-31-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		69	86

REGISTERED CIVIL ENGINEER 6-21-07 DATE

7-30-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER C. SCHNEIDER No. 56353 Exp. 3/31/09 CIVIL STATE OF CALIFORNIA

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PAVEMENT DELINEATION QUANTITIES

SHT No.	LOCATION	DETAIL No. OR PAVEMENT MARKING	PAVEMENT MARKERS RETRO-REFLECTIVE TYPE D (EA)	PAINT STALL LINES 4 In WHITE (Sq Ft)	PAINT CURB (2-COAT) 6 In RED (LF)	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) 4 In YELLOW (LF)	PAINT PAVEMENT MARKING (2-COAT) WHITE (Sq Ft)	PAINT PAVEMENT MARKING (2-COAT) BLUE (Sq Ft)
PD-1	VICTORIA Av	29	28			1080		
PD-1	VICTORIA Av	32	70			3112		
PD-2	VICTORIA Av	29	28			1080		
PD-2	VICTORIA Av	32	50			2120		
PD-3	PARKING	LIMIT LINE						
PD-3	PARKING	STOP					22	
PD-3	PARKING	6 In LINE(CURB)			1058			
PD-3	PARKING	4 In STALL LINE		650				
PD-3	PARKING	ISA SYMBOL					45	70
		SUBTOTAL	176	650		7392	67	70
		TOTAL	176	* 650	1058	7392	*137	

* PAID FOR AS PAINTED STALL LINES AND PAVEMENT MARKINGS

ROADSIDE SIGN PANELS

SHEET No.	SIGN CODE	PANEL SIZE (In x In)	SIGN AREA (Sq Ft)	SINGLE FACED	BACKGROUND SHEETING COLOR	BACKGROUND RETROREFLECTIVE ASTM TYPE	LEGEND SHEETING COLOR	LEGEND RETROREFLECTIVE ASTM TYPE	GRAFFITI FILM STANDARD	GRAFFITI FILM PREMIUM	SIGN PANEL SINGLE-SHEET UNFRAMED ALUMINUM 0.079 In	FURNISHED SIGN PANEL (Sq Ft)	QTY (EA)	DESCRIPTION (REMARKS)
PD-3	R1-1	30 x 30	6.25	x	R	III	W	Non		x	x	6.25	1	STOP
PD-3	R99(CA)	12 x 18	1.5	x	Blu	III	W	Non		x	x	7.5	5	ISA PARKING
PD-3	R99A(CA)	12 x 6	0.5	x	Blu	III	W	Non		x	x	2.5	5	VAN ACCESSIBLE
PD-3	R100B(CA)	24 x 18	3.0	x	Blk	III	W	Non		x	x	3.0	1	DISABLED TOW-AWAY
TOTAL												19.25		

NOTE: CONTRACTOR SHALL FURNISH A TOTAL OF 19.25 Sq Ft SINGLE SHEET ALLUMINUM SIGN (.079 INCH, UNFRAMED)

ROADSIDE SIGN QUANTITIES

SHEET No.	SIGN CODE	NUMBER OF POSTS SIZE (In) AND LENGTH (LF) (N)	RELOCATE ROADSIDE SIGN (EA)	ROADSIDE SIGN METAL POST (EA)	REMARKS
PD-1			5		RELOCATED SIGNS
PD-3	R1-1	(ONE) 4 x 6 x 14		1	
PD-3	R99(CA)	(ONE) 4 x 6 x 14		5	
PD-3	R99A(CA)				MOUNT ON POST WITH R99(CA)
PD-3	R100B(CA)			1	
	TOTAL		5	7	

(N) - NOT A CONTRACT ITEM, FOR INFORMATION ONLY.

LEGEND

FRP = FIBERGLASS REINFORCED PLASTIC
L = LENGTH OF SIGN
D = DEPTH OF SIGN
RSPF = REMOVABLE SIGN PANEL FRAME

NOTE: CALIFORNIA SIGN CODES ARE DESIGNATED BY (CA). OTHERWISE, FEDERAL SIGN CODES ARE SHOWN

Non= NONREFLECTIVE
Blk= BLACK
Blu= BLUE
G= GREEN
W= WHITE
R= RED
Y= YELLOW

PAVEMENT DELINEATION AND SIGN QUANTITIES

PDQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION Caltrans

DESIGN OVERSIGHT SERGIO AVILA

CALCULATED-DESIGNED BY J.W. CHECKED BY S.N.

REVISED BY DATE REVISED

06-21-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		70	86

6-21-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
C. COSTELLO
No. 60256
Exp. 06/30/08
CIVIL
STATE OF CALIFORNIA

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WATER POLLUTION CONTROL QUANTITIES

	TEMPORARY FIBER ROLL	TEMPORARY SILT FENCE	TEMPORARY GRAVEL BAG BERM	TEMPORARY CONCRETE WASHOUT FACILITY	TEMPORARY CONSTRUCTION ENTRANCE	TEMPORARY CHECK DAM	TEMPORARY DRAINAGE INLET PROTECTION	TEMPORARY HYDRAULIC MULCH (BONDED FIBER MATRIX)
	LF	LF	LF	EA	EA	LF	EA	SQYD
TOTAL	1000	1000	1500	2	3	500	3	89,300

SHEET No.	ROADWAY EXCAVATION	(N) EMBANKMENT	SITE EXCAVATION	(N) STRUCTURAL BACKFILL	STRUCTURAL EXCAVATION	ASPHALT CONCRETE (TYPE A)	MINOR CONCRETE (CURB RAMP)	MINOR CONCRETE (Misc CONSTRUCTION): MINOR CONCRETE (CURB AND GUTTER)	MINOR CONCRETE (Misc CONSTRUCTION): MINOR CONCRETE (CURB)	MINOR CONCRETE (Misc CONSTRUCTION): MINOR CONCRETE (SIDEWALK)	MINOR CONCRETE (Misc CONSTRUCTION): MINOR CONCRETE (DRIVEWAY)	LOCAL DEPRESSION (W=14') (FONTANA STD. PLAN No. 3003)	LOCAL DEPRESSION (W=21') (FONTANA STD PLAN No. 3003)	(N) SAWCUT AC PAVEMENT	COLD PLANE 0.15' AC	(N) REMOVE CSP	(N) REMOVE CONC HEADWALL	CLASS 2 AGGREGATE BASE
	CY	CY	CY	CY	CY	ton	CY	CY	CY	CY	CY	EA	EA	LF	SQYD	LF	CY	CY
L-1	169	611				1310		56		115	10	1	1	127	299	165	4	
L-2	1210	15				510		40		100	65			701	2073			
L-3		4887	2033			1252	1.0		40	35								949
G-1		18133	17937															
G-2		1400	7125															
G-3				22661	20395													
SUBTOTAL	1379	25046	27095	22661	20395	3072	1.0	96	40	250	75	1	1	828	2372	165	4	949
TOTAL	1379	25046	27095	22661	20395	3072	1.0	461				1	1	828	2372	165	4	949

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

SUMMARY OF QUANTITIES

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN OVERSIGHT: SERGIO AVILA
CALCULATED-DESIGNED BY: J.W.
CHECKED BY: S.N.
REVISED BY
DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		59	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER C. SCHNEIDER No. 56353 Exp. 3/31/09 CIVIL STATE OF CALIFORNIA

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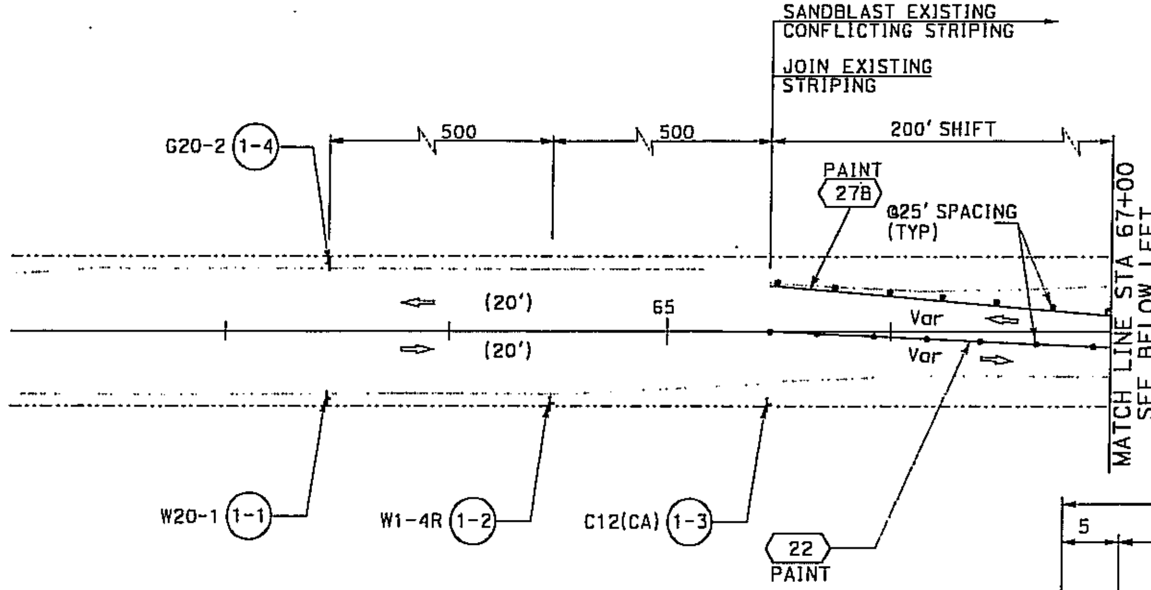
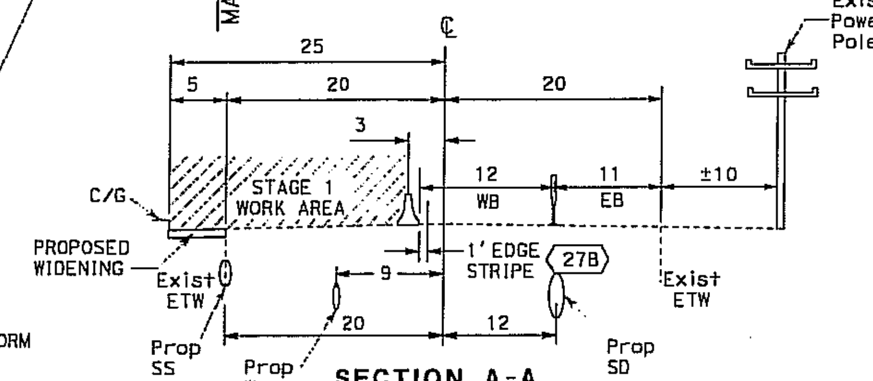
ONTARIO, CA 91761

LEGEND:

- DIRECTION OF TRAVEL
- CHANNELIZERS (SURFACE MOUNTED)
- CONSTRUCTION SIGN (1 POST)
- E — EXISTING TO REMAIN
- PM — PAVEMENT MARKING AS NOTED (PAINT-2 COAT)
- # — CONSTRUCTION AREA SIGN
- (12') EXISTING LANE DIMENSION
- 12' PROPOSED LANE DIMENSION
- CONSTRUCTION AREA THIS STAGE
- TRAFFIC BARRICADE TYPE III

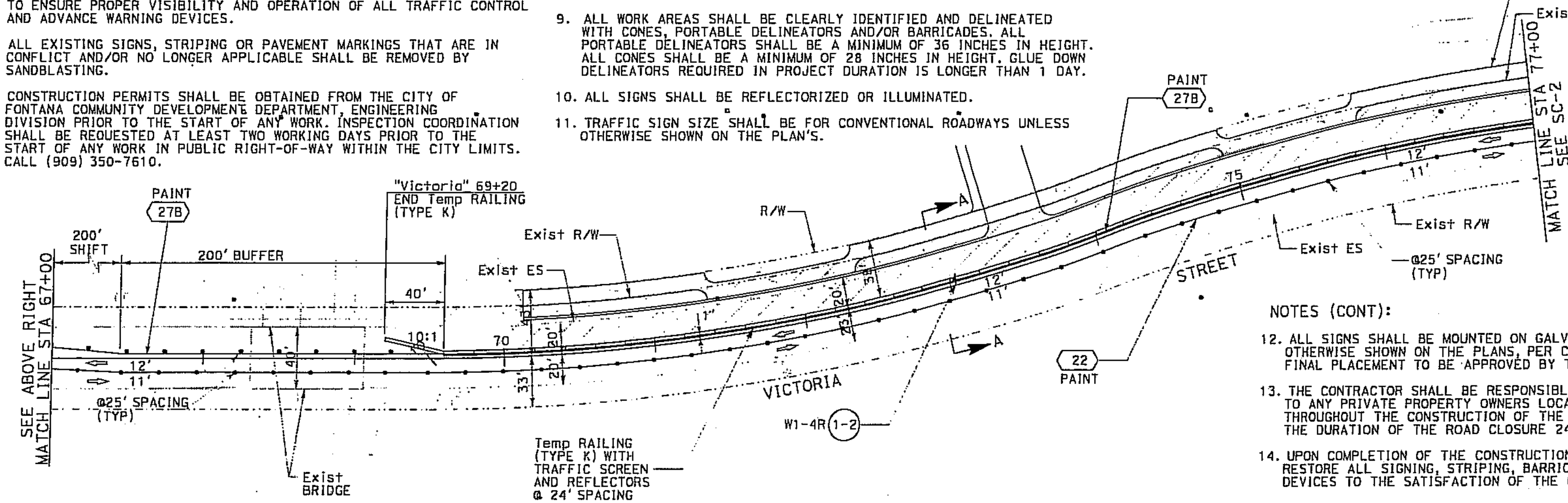




SECTION A-A
NO SCALE
*SEE UTILITY PLANS FOR EXACT LOCATION

NOTES:

1. THE CONTRACTOR SHALL COORDINATE WITH THE CITY ENGINEER FOR CLOSURE BEGINNING AND ENDING DATES.
2. THE CONTRACTOR SHALL FURNISH REFLECTOR/FLASHING LIGHTS AND INSTALL THEM ON WOODEN BARRICADES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL CLOSURE SIGNS, BARRICADES AND WARNING DEVICES FOR 24-HOURS PER DAY AND 7 DAYS A WEEK AND SHALL DESIGNATE A SINGLE POINT OF CONTACT RESPONSIBLE FOR THIS EFFORT.
4. THE WORK ZONE SHALL BE ROUTINELY INSPECTED AND MAINTAINED TO ENSURE PROPER VISIBILITY AND OPERATION OF ALL TRAFFIC CONTROL AND ADVANCE WARNING DEVICES.
5. ALL EXISTING SIGNS, STRIPING OR PAVEMENT MARKINGS THAT ARE IN CONFLICT AND/OR NO LONGER APPLICABLE SHALL BE REMOVED BY SANDBLASTING.
6. CONSTRUCTION PERMITS SHALL BE OBTAINED FROM THE CITY OF FONTANA COMMUNITY DEVELOPMENT DEPARTMENT, ENGINEERING DIVISION PRIOR TO THE START OF ANY WORK. INSPECTION COORDINATION SHALL BE REQUESTED AT LEAST TWO WORKING DAYS PRIOR TO THE START OF ANY WORK IN PUBLIC RIGHT-OF-WAY WITHIN THE CITY LIMITS. CALL (909) 350-7610.
7. THE CONTRACTOR SHALL CONFORM TO ALL TRAFFIC CONTROL POLICIES, METHODS, DETAILS, DIMENSIONS, AND PROCEDURES DESCRIBED IN THE CALIFORNIA MANUAL ON TRAFFIC CONTROL DEVICES (MUTCD), DATED SEPTEMBER 2006, UPON APPROVAL, THE W.A.T.C.H. MANUAL, LATEST EDITION MAY BE USED FOR MINOR PROJECTS OF SHORT DURATION. SIGN CODES SHALL COMPLY TO THE 2006 CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
8. THE EXACT LOCATION OF ALL TRAFFIC CONTROL DEVICES IS SUBJECT TO APPROVAL OF THE CITY TRAFFIC ENGINEER. ADDITIONAL WARNING, CONSTRUCTION SIGNS OR TRAFFIC SAFETY EQUIPMENT MAY BE REQUESTED BY THE CITY TRAFFIC ENGINEER AT ANY TIME.
9. ALL WORK AREAS SHALL BE CLEARLY IDENTIFIED AND DELINEATED WITH CONES, PORTABLE DELINEATORS AND/OR BARRICADES. ALL PORTABLE DELINEATORS SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT. ALL CONES SHALL BE A MINIMUM OF 28 INCHES IN HEIGHT. GLUE DOWN DELINEATORS REQUIRED IN PROJECT DURATION IS LONGER THAN 1 DAY.
10. ALL SIGNS SHALL BE REFLECTORIZED OR ILLUMINATED.
11. TRAFFIC SIGN SIZE SHALL BE FOR CONVENTIONAL ROADWAYS UNLESS OTHERWISE SHOWN ON THE PLAN'S.



NOTES (CONT):

12. ALL SIGNS SHALL BE MOUNTED ON GALVANIZED STEEL POSTS, UNLESS OTHERWISE SHOWN ON THE PLANS, PER CITY STANDARD DETAIL 4003. FINAL PLACEMENT TO BE APPROVED BY THE CITY TRAFFIC ENGINEER.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS TO ANY PRIVATE PROPERTY OWNERS LOCATED WITHIN THE ROAD CLOSURE THROUGHOUT THE CONSTRUCTION OF THE IMPROVEMENTS AND DURING THE DURATION OF THE ROAD CLOSURE 24-HOURS A DAY 7 DAYS A WEEK.
14. UPON COMPLETION OF THE CONSTRUCTION, THE CONTRACTOR SHALL RESTORE ALL SIGNING, STRIPING, BARRICADES AND OTHER TRAFFIC CONTROL DEVICES TO THE SATISFACTION OF THE CITY TRAFFIC ENGINEER.

SCALE: 1"=40'

STAGE 1
STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

SCALE AS SHOWN

SC-1

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | Caltrans | DESIGN OVERSIGHT: SERGIO AVILA | CALCULATED-DESIGNED BY: J.W. | CHECKED BY: S.N. | REVISED BY | DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		60	86

5-07-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

C. SCHNEIDER No. 56353 Exp. 3/31/08 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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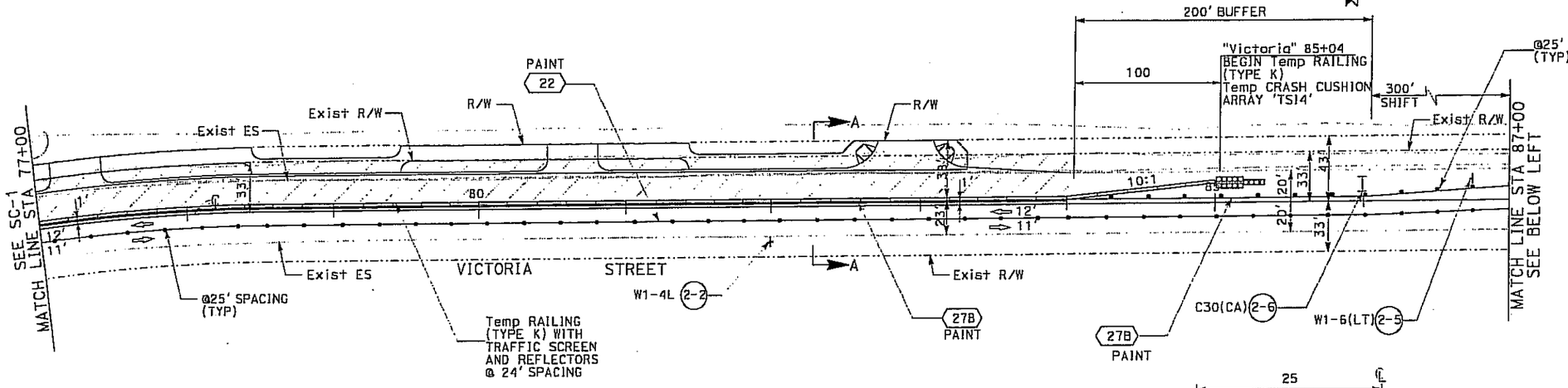
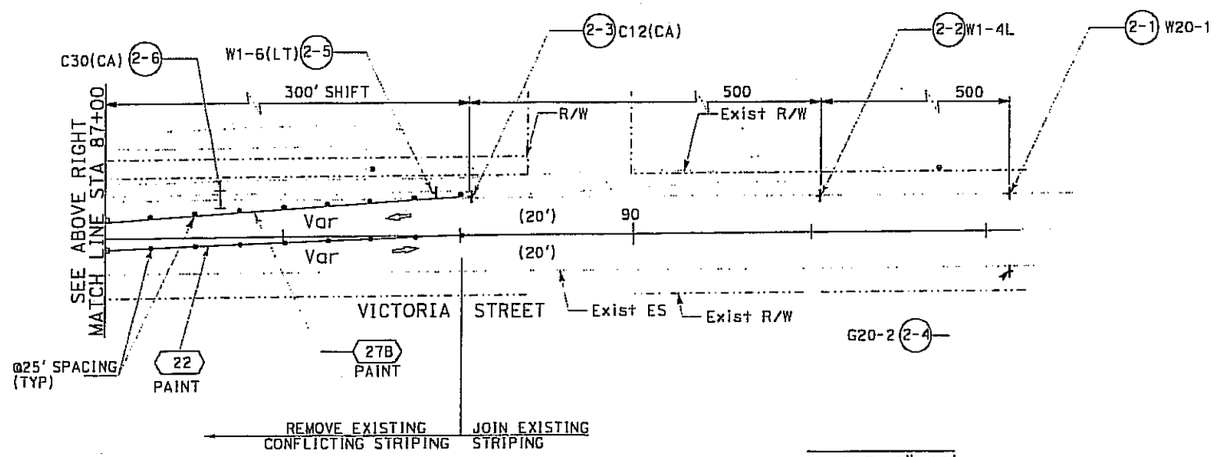
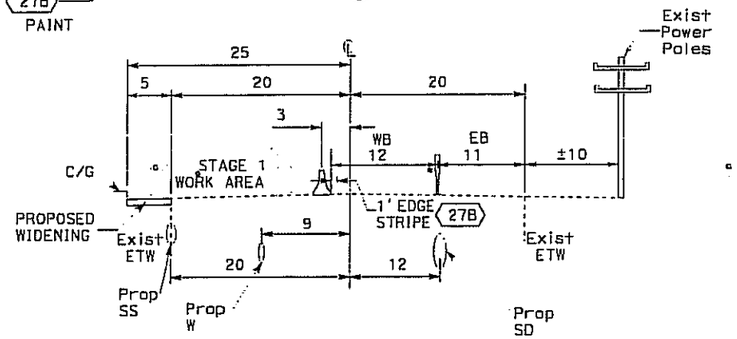
NOTE:

1. SEE SC-1 FOR GENERAL NOTES, AND LEGEND.





SCALE: 1"=40'



SECTION A-A
NO SCALE
*SEE UTILITY PLANS FOR EXACT LOCATION

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

STAGE 1
STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

SCALE AS SHOWN

SC-2

REVISED BY	DATE REVISED
J.W.	S.N.

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

05-07-07

CU 08230 EA 377001

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		61	86

5-07-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

C. SCHNEIDER No. 56353 Exp. 3/31/09 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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NOTE:

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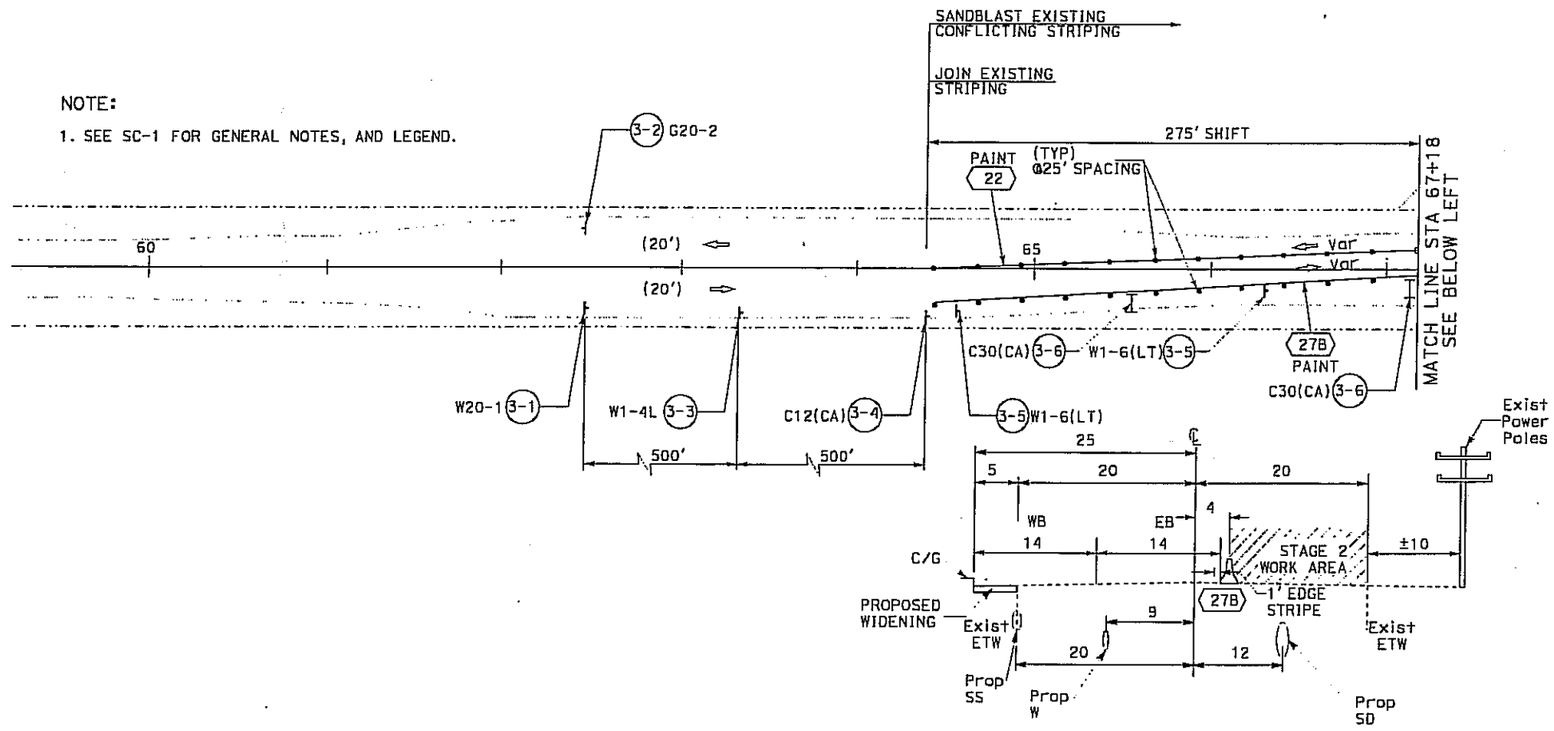
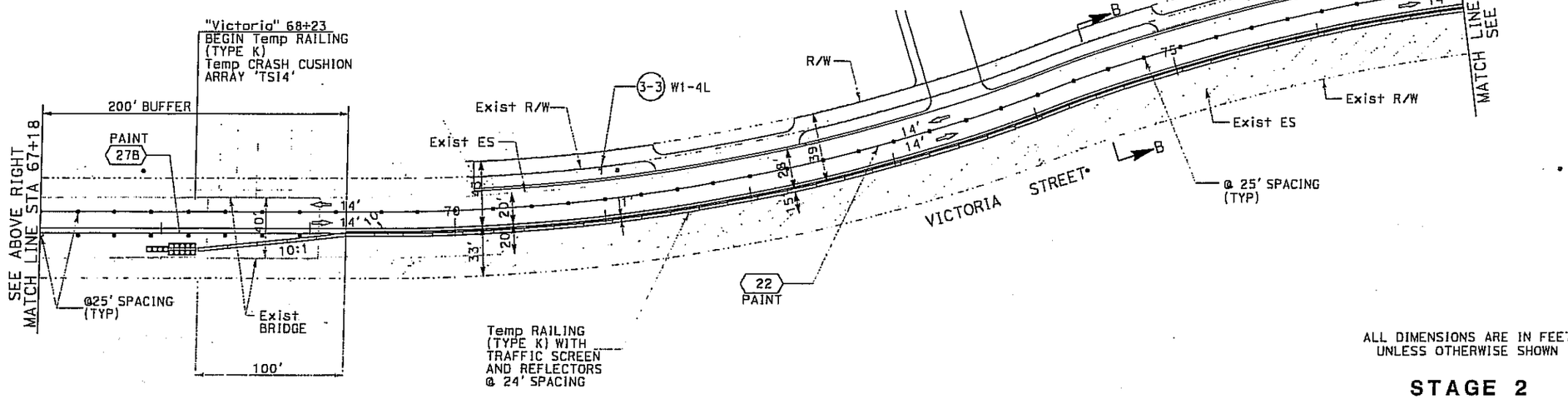


SECTION B-B
NO SCALE
*SEE UTILITY PLANS FOR EXACT LOCATION



SCALE: 1"=40'

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

STAGE 2
STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

SCALE AS SHOWN

SC-3

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: J.W.
CHECKED BY: S.N.
DESIGN OVERSIGHT: SERGIO AVILA

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Caltrans

BORDER LAST REVISED 11-1-2006 | RELATIVE BORDER SCALE IS 1 INCH = | USERNAME = | DGN FILE = | CU 08230 | EA 3770U1

PLOT DATE: 05-07-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		62	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07 PLANS APPROVAL DATE

C. SCHNEIDER No. 56353 Exp. 3/31/09 CIVIL STATE OF CALIFORNIA

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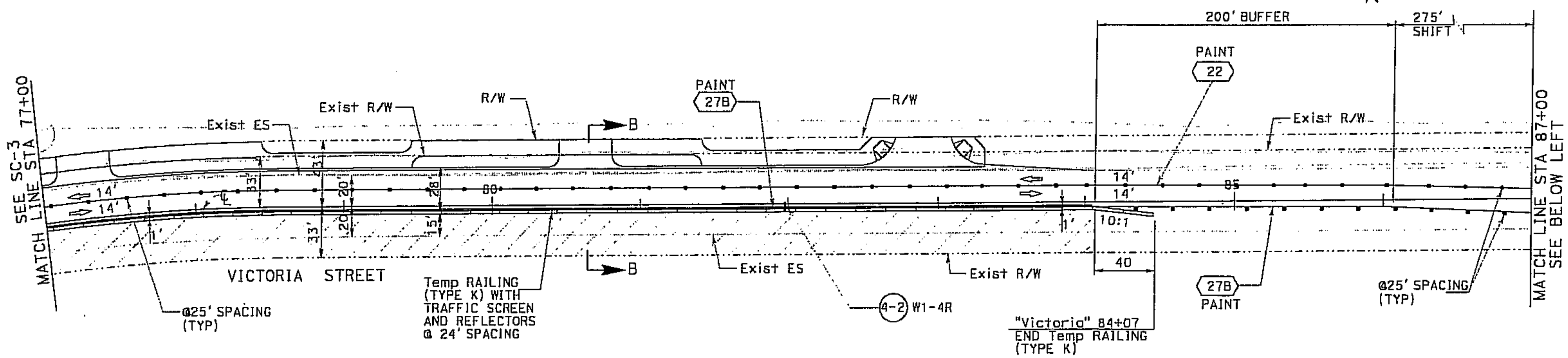
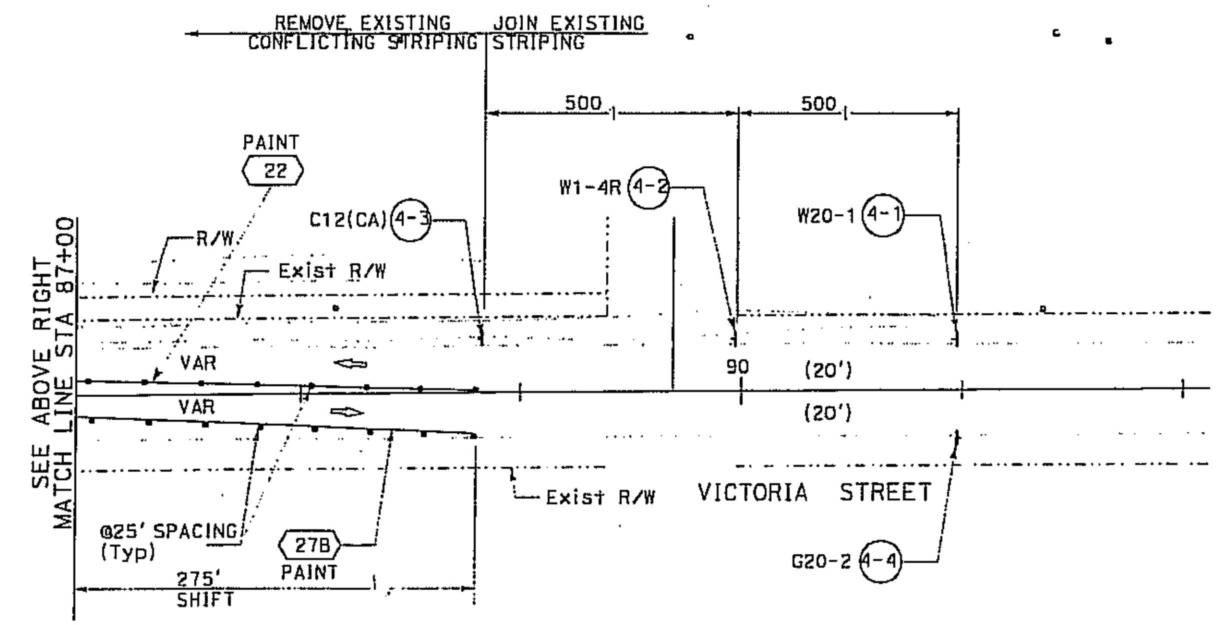
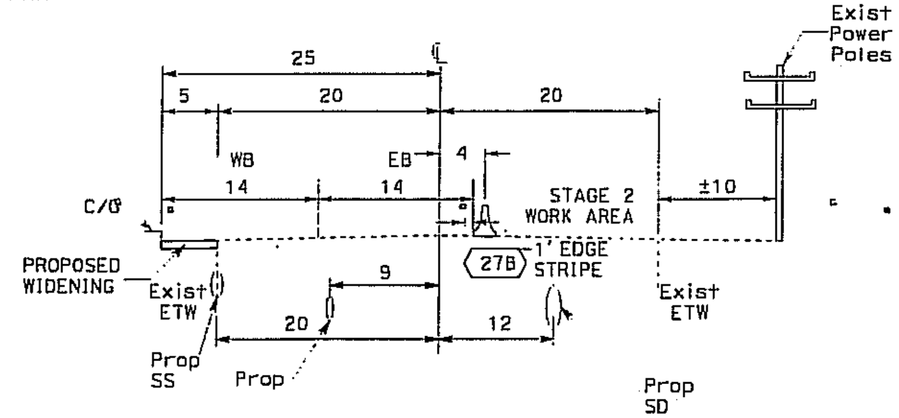
NOTE:

1. SEE SC-1 FOR GENERAL NOTES, AND LEGEND.





SCALE: 1"=40'



SECTION B-B

NO SCALE

*SEE UTILITY PLANS FOR EXACT LOCATION

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

STAGE 2
STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

SCALE AS SHOWN

SC-4

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

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CU 08230 | EA 3770U1

05-07-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		63	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07
PLANS APPROVAL DATE

C. SCHNEIDER No. 56353 Exp. 3/31/09 CIVIL

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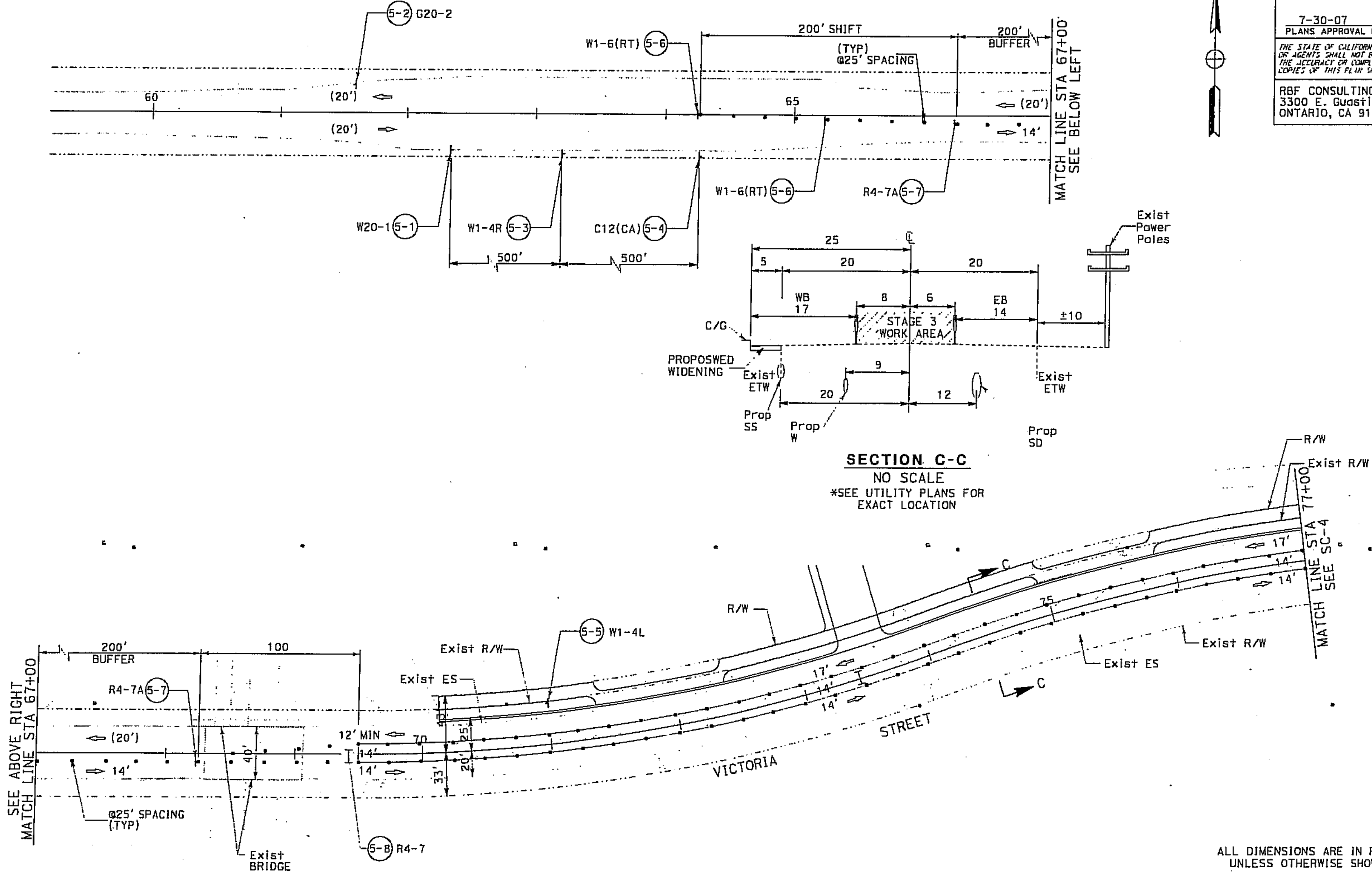
NOTE:

1. SEE SC-1 FOR GENERAL NOTES, AND LEGEND.



SCALE: 1"=40'

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

STAGE 3
STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

SCALE AS SHOWN

SC-5

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN OVERSIGHT SERGIO AVILA
CALCULATED-DESIGNED BY J.W. CHECKED BY S.N.
REVISED BY DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		64	86

REGISTERED CIVIL ENGINEER 5-07-07 DATE

7-30-07
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER C. SCHNEIDER No. 56353 Exp. 3/31/09 CIVIL STATE OF CALIFORNIA

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ONTARIO, CA 91761

NOTE:

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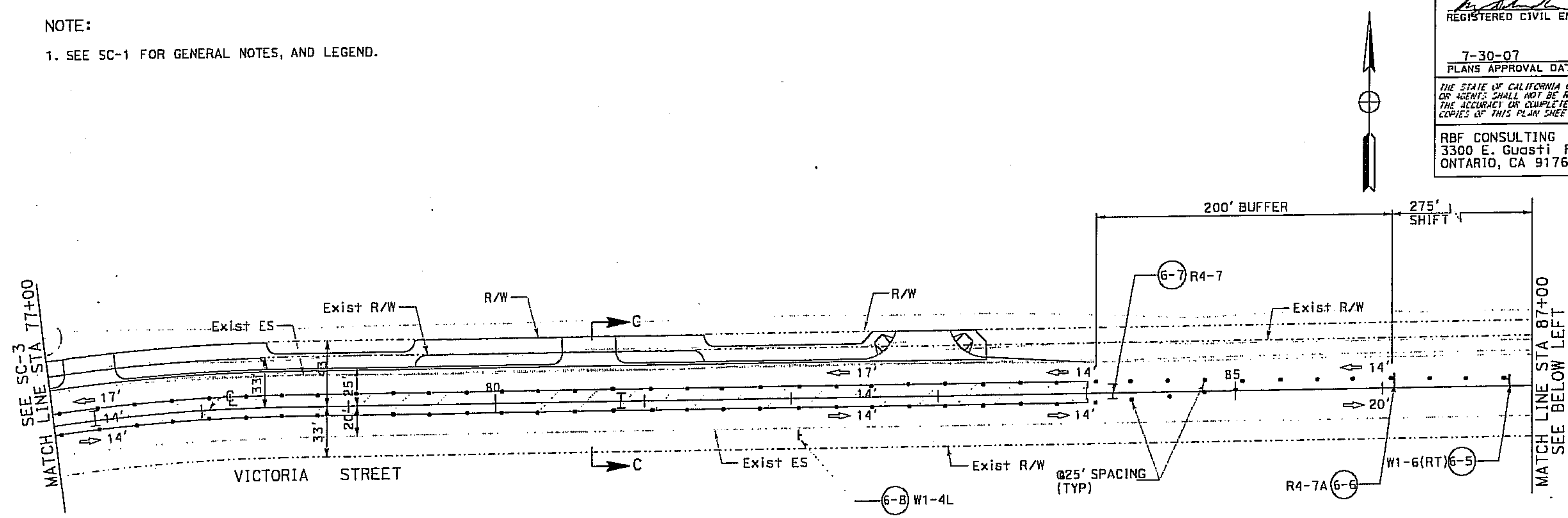
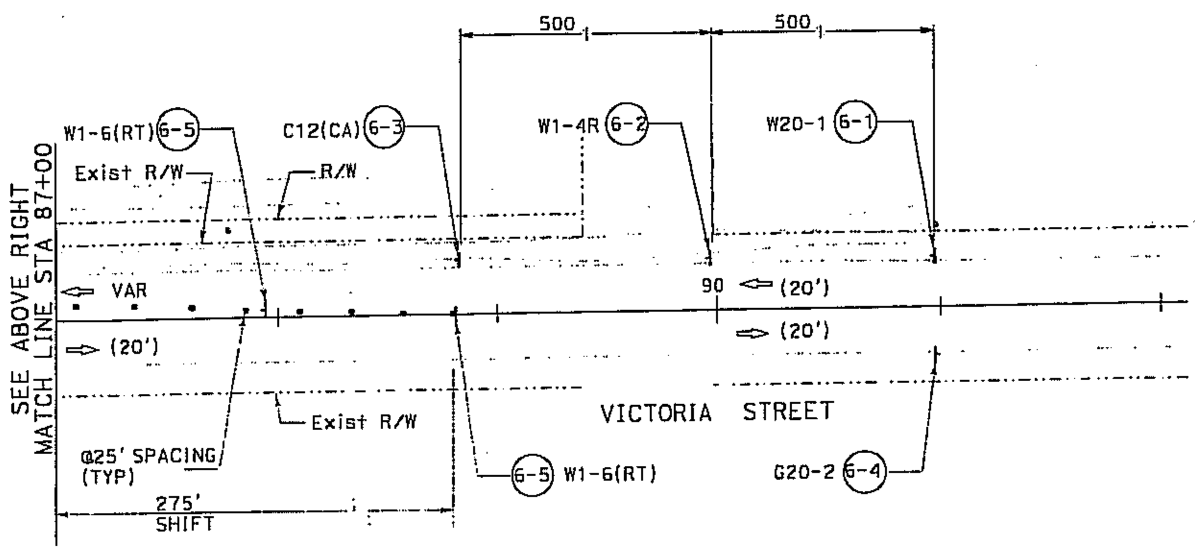
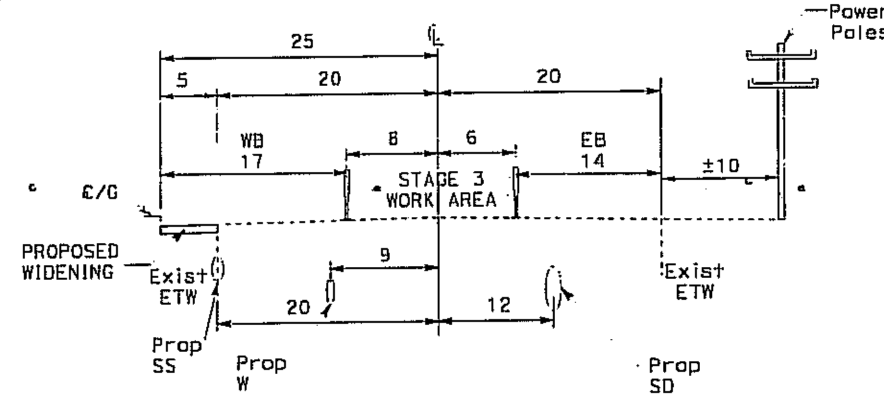




SCALE: 1"=40'



SECTION C-C
NO SCALE
*SEE UTILITY PLANS FOR EXACT LOCATION

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

STAGE 3
STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

SCALE AS SHOWN

SC-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

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CALCULATED-DESIGNED BY: J.W.
CHECKED BY: S.N.
REVISED BY
DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		79	86

7-12-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
C. SCHNEIDER
No. 56353
Exp. 3/31/09
CIVIL
STATE OF CALIFORNIA

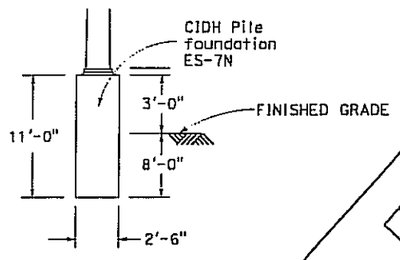
RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761

CONSTRUCTION NOTES:

1 INSTALL 120/240 V, 1-ø, 3 WIRE, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE WITH THE FOLLOWING CIRCUIT BREAKERS:

AMPERES	VOLTS	POLES	LOAD	METER	PHOTOELECRIC CONTROL TYPE
100	240	2	MAIN BREAKER	YES	—
30	240	2	PARKING LOT LIGHTING	YES	V
30	240	2	PARKING LOT LIGHTING	YES	V
20	120	1	IRRIGATION	YES	—

2 INSTALL TYPE 15 WITH 6' LUMINARE ARM, 250 W METAL HALIDE ON MODIFICATION FOUNDATION, SEE DETAIL "A".



DETAIL "A"
NO SCALE

SCALE: 1"=20'

CONSTRUCTION NOTES CONTINUED:

3 SEE SHEET IP-1.

4 INSTALL 44" BURD TRANSFORMER ENCLOSURE (PLASTIC) PER SOUTHERN CALIFORNIA EDISON REQUIREMENTS.

5 INSTALL SERVICE TO EXISTING VAULT (V5595193) AT STA 70+00 PER SOUTHERN CALIFORNIA EDISON REQUIREMENTS.

NOTES:

1. UNLESS OTHERWISE NOTED, ALL CONDUIT SHALL BE 1½"C, 2#8, 1#10(G).
2. CONDUIT BETWEEN PULL BOX TO LIGHTING STANDARD IS NOT SHOWN AND SHALL BE 1"C, 2#8, 1#12(G).
3. ALL POLE FOUNDATIONS SHALL BE INSTALLED 2' BEHIND THE FACE OF CURB.

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

LIGHTING (PARK AND RIDE)
ELECTRICAL SERVICE (IRRIGATION)

SCALE AS SHOWN

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

E-1

REVISED BY | DATE REVISED
J.W. | S.N.
CALCULATED-DESIGNED BY | CHECKED BY

DESIGN OVERSIGHT
SERGIO AVILA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

BORDER LAST REVISED 11-1-2006

CU 08230 | EA 3770U1

07-12-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	5506		80	86

REGISTERED CIVIL ENGINEER — 6-21-07

7-30-07
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — FERDINAND DE LA CRUZ — No. E 17215 — Exp. 6-30-08 — ELECTRICAL — STATE OF CALIFORNIA

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LEGEND

[V] EXISTING FIBER OPTIC SPLICE VAULT

[V] NEW FIBER OPTIC SPLICE VAULT

ABBREVIATIONS

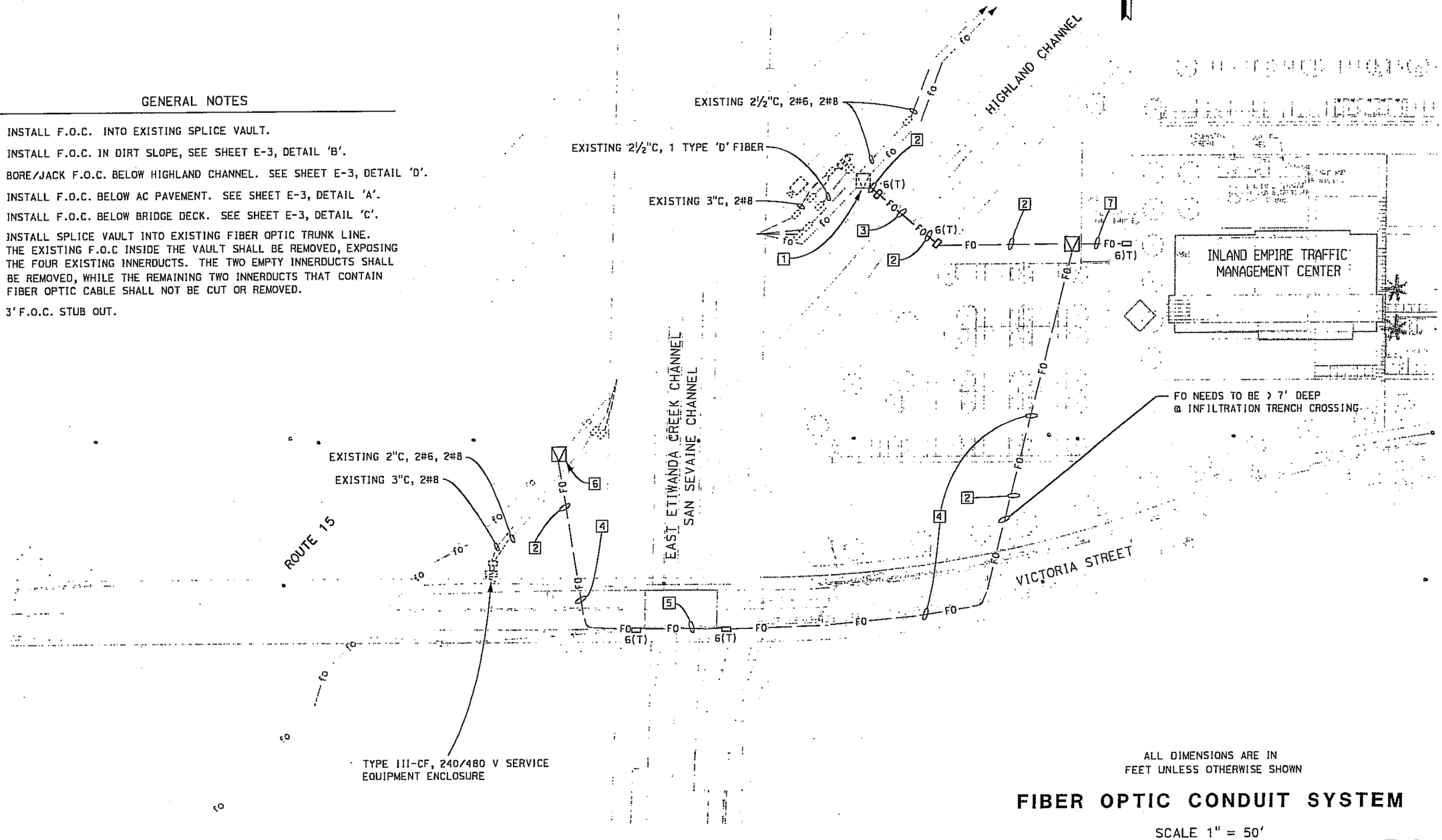
F.O.C FIBER OPTIC CONDUIT

FO 4" F.O.C. CONTAINING FOUR ONE-INCH INNERDUCTS.

fo EXISTING 4" F.O.C. CONTAINING FOUR ONE-INCH INNERDUCTS AND TWO FIBER OPTIC CABLES, ONE PER INNERDUCT.

GENERAL NOTES

1. INSTALL F.O.C. INTO EXISTING SPLICE VAULT.
2. INSTALL F.O.C. IN DIRT SLOPE, SEE SHEET E-3, DETAIL 'B'.
3. BORE/JACK F.O.C. BELOW HIGHLAND CHANNEL. SEE SHEET E-3, DETAIL 'D'.
4. INSTALL F.O.C. BELOW AC PAVEMENT. SEE SHEET E-3, DETAIL 'A'.
5. INSTALL F.O.C. BELOW BRIDGE DECK. SEE SHEET E-3, DETAIL 'C'.
6. INSTALL SPLICE VAULT INTO EXISTING FIBER OPTIC TRUNK LINE. THE EXISTING F.O.C INSIDE THE VAULT SHALL BE REMOVED, EXPOSING THE FOUR EXISTING INNERDUCTS. THE TWO EMPTY INNERDUCTS SHALL BE REMOVED, WHILE THE REMAINING TWO INNERDUCTS THAT CONTAIN FIBER OPTIC CABLE SHALL NOT BE CUT OR REMOVED.
7. 3' F.O.C. STUB OUT.



ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

FIBER OPTIC CONDUIT SYSTEM

SCALE 1" = 50'

E-2

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL ONLY

DATE	REVISED BY	DATE REVISED

CALCULATED/DESIGNED BY

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PROJECT ENGINEER — F. DE LA CRUZ

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans ELECTRICAL DESIGN A

LAST REVISED 06-21-07

RELATIVE BORDER SCALE IS IN INCHES

USERNAME = tmillest
DGN FILE = E3770u0002.dgn

CU 08395

EA 3770U1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	5506		81	86

6-21-07
REGISTERED CIVIL ENGINEER

FEERD INAND DE LA CRUZ
No. E 17215
Exp. 6-30-08
ELECTRICAL

7-30-07
PLANS APPROVAL DATE

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DATE	REVISED BY	DATE REVISED

CALCULATED/DESIGNED BY

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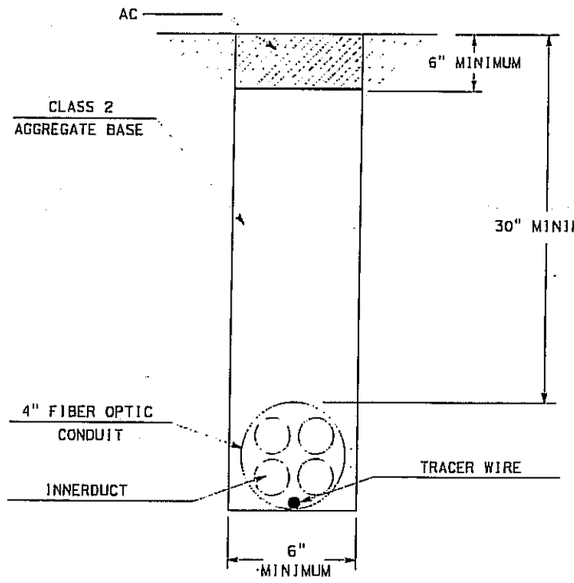
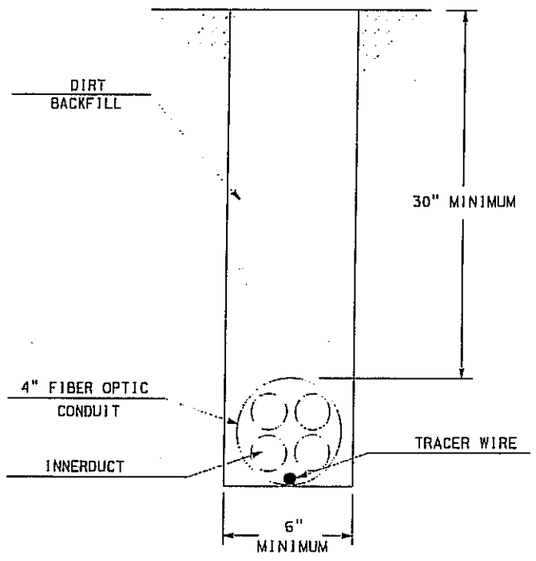
PROJECT ENGINEER F. DE LA CRUZ

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN A

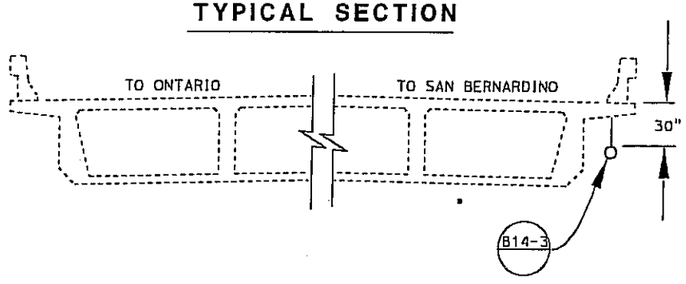


DETAIL 'A'
FIBER OPTIC CONDUIT INSTALLED
BELOW AC PAVEMENT



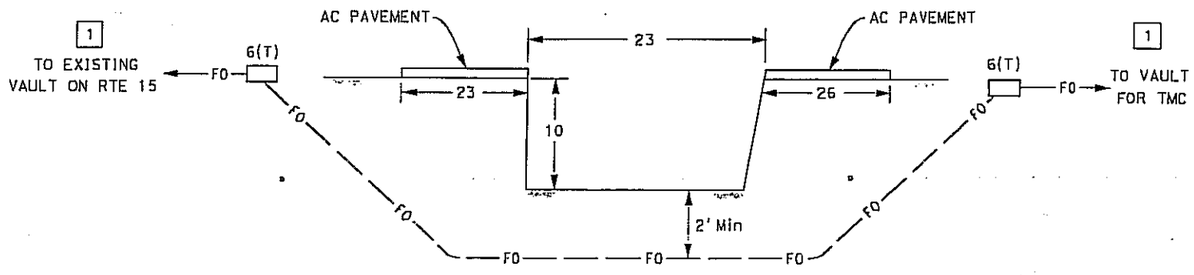
DETAIL 'B'
FIBER OPTIC CONDUIT INSTALLED
IN DIRT

TYPICAL SECTION



DETAIL 'C'
EAST ETIWANDA CREEK BRIDGE

ELEVATION



DETAIL 'D'
HIGHLAND CHANNEL
(ALL DIMENSIONS ARE APPROXIMATE)

NOTES-THIS SHEET ONLY

[1] SEE E-1 FOR CONTINUATION OF F.O.C.

ALL DIMENSIONS ARE IN
FEET UNLESS OTHERWISE SHOWN

FIBER OPTIC CONDUIT SYSTEM
(ELECTRICAL DETAILS)

NO SCALE

E-3

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL ONLY

RELATIVE BORDER SCALE
IS IN INCHES

CU 08395

EA 3770U1

06-21-07

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		82	86

REGISTERED CIVIL ENGINEER 7-12-07 DATE

7-30-07 PLANS APPROVAL DATE

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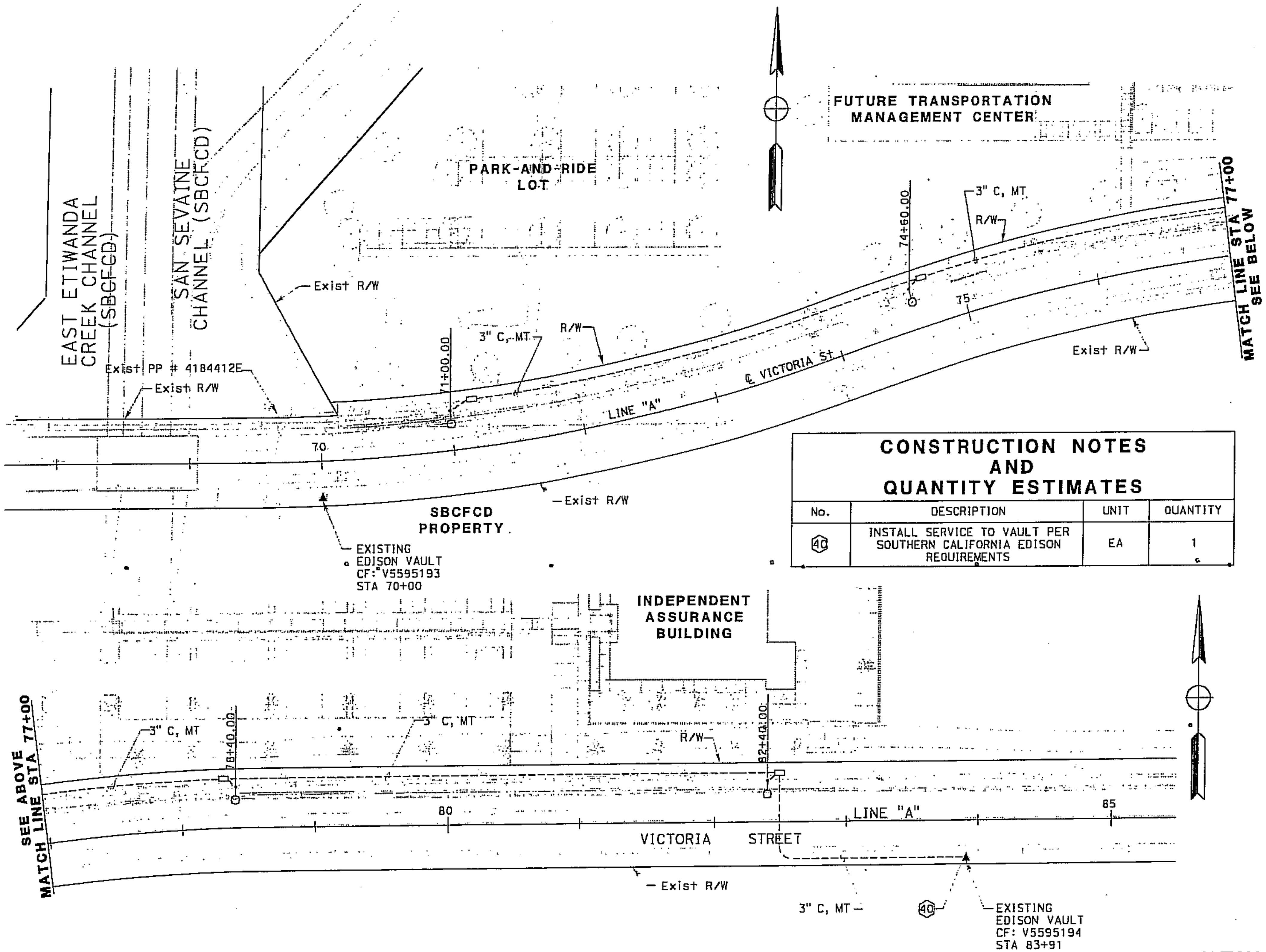
REGISTERED PROFESSIONAL ENGINEER C. SCHNEIDER No. 56353 Exp. 3/31/09 CIVIL STATE OF CALIFORNIA

RBF CONSULTING
3300 E. Guasti Rd., Ste 100
ONTARIO, CA 91761



CONSTRUCTION NOTES AND QUANTITY ESTIMATES

No.	DESCRIPTION	UNIT	QUANTITY
40	INSTALL SERVICE TO VAULT PER SOUTHERN CALIFORNIA EDISON REQUIREMENTS	EA	1

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

LIGHTING (VICTORIA STREET)

SCALE: 1"=40'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

E-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN OVERSIGHT SERGIO AVILA

CALCULATED-DESIGNED BY J.W. CHECKED BY S.N.

REVISED BY | DATE REVISED

LAST REVISION 07-12-07

BORDER LAST REVISED 11/1/2006

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

CU 08230

EA 3770U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	5506		83	86

7-25-07
REGISTERED CIVIL ENGINEER DATE

7-30-07
PLANS APPROVAL DATE

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C. D STELLO No. 6025 Exp 12/30/08 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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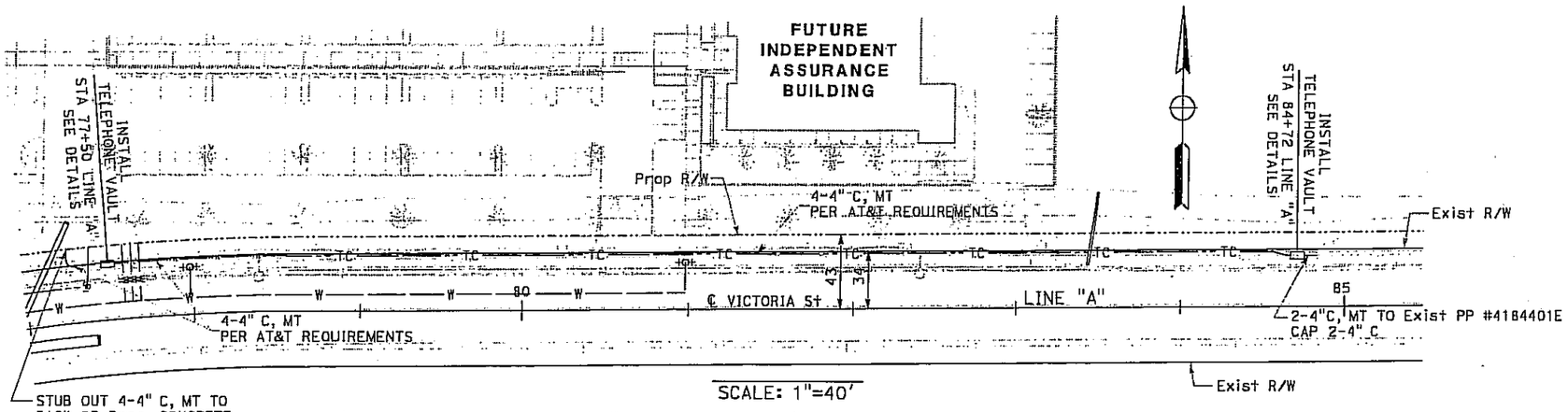
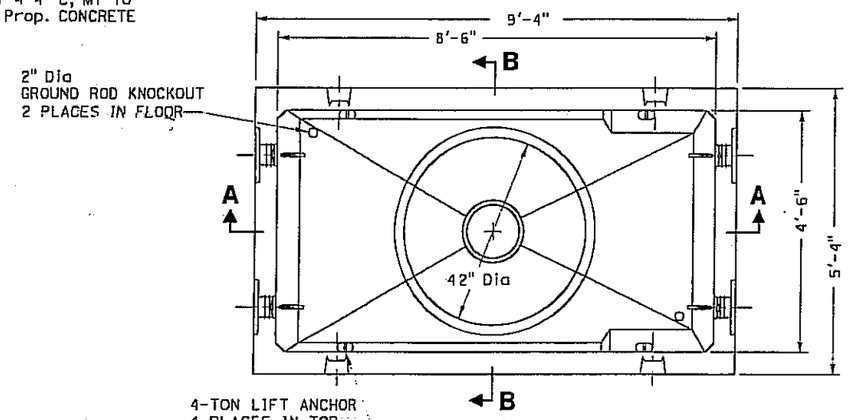
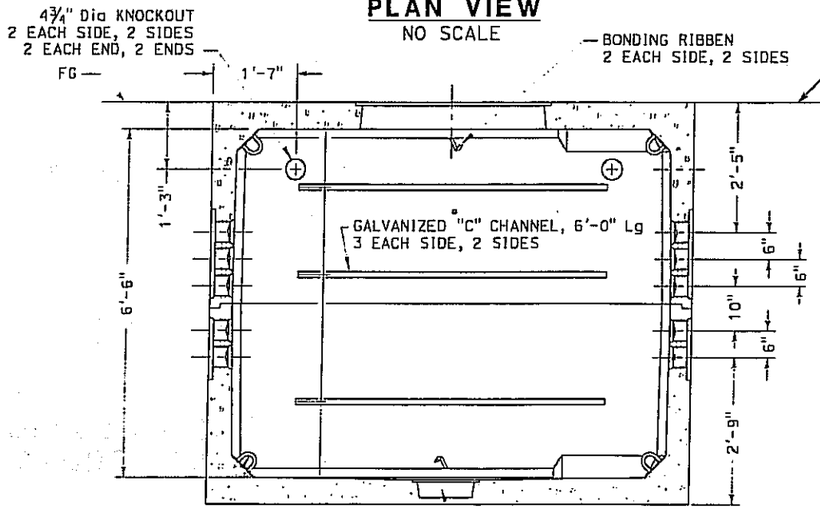
ONTARIO, CA 91761



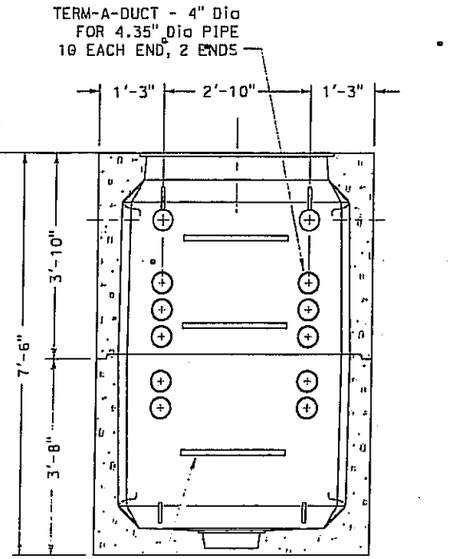
SCALE: 1"=40'



PLAN VIEW
NO SCALE



SECTION AA
NO SCALE



SECTION BB
NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

VICTORIA STREET COMMUNICATION PLAN

SCALE AS SHOWN

E-5

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY
CHECKED BY

DESIGN OVERSIGHT
SERGIO AVILA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

07-25-07

CU 08822 EA 3770U1