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Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
997.600	1426.790	6.210	1433.000	483.00	9.81	1.49	1434.49	.00	4.89	8.00			1	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.240	.0036					.0022	.05	6.21	.70	5.090	.013			IR-COV
1019.840	1426.870	6.148	1433.018	483.00	9.91	1.53	1434.54	.31	4.89	8.00			1	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35.340	.0034					.0026	.09	6.46	.71	5.512	.014			IR-COV
1055.180	1426.990	6.092	1433.082	483.00	10.00	1.55	1434.64	.00	4.89	8.00			1	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44.640	.0038					.0023	.10	6.09	.72	4.978	.013			IR-COV
1099.820	1427.160	5.951	1433.111	483.00	10.24	1.63	1434.74	.33	4.89	8.00			1	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54.260	.0035					.0028	.15	6.28	.74	5.447	.014			IR-COV
1154.080	1427.350	5.869	1433.219	483.00	10.39	1.67	1434.89	.00	4.89	8.00			1	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
109.250	.0035					.0025	.27	5.87	.76	5.155	.013			IR-COV
1263.330	1427.730	5.631	1433.361	483.00	10.83	1.82	1435.18	.00	4.89	8.00			1	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JUNCT STR	.0000					.0020	.00	5.63	.81		.013			IR-COV
----- WARNING - Junction Analysis - Irregular Channel -----														
1263.330	1427.740	6.144	1433.884	461.90	9.48	1.40	1435.28	.00	4.75	8.00			1	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.000	.0017					.0020	.02	6.14	.68	6.729	.013			IR-COV
1275.330	1427.760	6.152	1433.912	461.90	9.47	1.39	1435.31	.00	4.75	8.00			1	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JUNCT STR	.0000					.0017	.00	6.15	.68		.013			IR-COV
----- WARNING - Junction Analysis - Irregular Channel -----														



WATER SURFACE PROFILE LISTING  
LINE A-B HYDRAULIC MODEL - ORIGINAL TRIBUTARIES  
FN:LINEABORIGINAL.WSW

Date: 1-27-2020 Time:10:17:40

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
- | - | - | - | - | - | - | - | - | - | - | - | - | ZL | -
L/Elem | Ch Slope | | | | | | | | | | | | | | ZR | Type Ch
***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | *****
1771.510 | 1429.500 | 5.738 | 1435.238 | 425.80 | 9.37 | 1.36 | 1436.60 | .00 | 4.50 | 8.00 | | | 1 | 0 .0
- | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
JUNCT STR .0833 | | | | | | | | | | | | | | | | IR-COV
----- WARNING - Junction Analysis - Irregular Channel -----
1777.510 | 1430.000 | 4.966 | 1434.966 | 413.00 | 10.51 | 1.72 | 1436.68 | .00 | 4.41 | 8.00 | | | 7 | 0 .0
- | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
64.380 | .0030 | | | | | | | | | | | | | | | | IR-COV
1841.890 | 1430.190 | 4.939 | 1435.129 | 413.00 | 10.57 | 1.74 | 1436.86 | .00 | 4.41 | 8.00 | | | 7 | 0 .0
- | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
JUNCT STR .0000 | | | | | | | | | | | | | | | | IR-COV
----- WARNING - Junction Analysis - Irregular Channel -----
1841.890 | 1430.200 | 5.010 | 1435.210 | 411.00 | 10.37 | 1.67 | 1436.88 | .00 | 4.40 | 8.00 | | | 7 | 0 .0
- | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
372.403 | .0030 | | | | | | | | | | | | | | | | IR-COV
2214.293 | 1431.314 | 4.824 | 1436.138 | 411.00 | 10.78 | 1.80 | 1437.94 | .00 | 4.40 | 8.00 | | | 7 | 0 .0
- | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
21.917 | .0030 | | | | | | | | | | | | | | | | IR-COV
2236.210 | 1431.380 | 4.824 | 1436.204 | 411.00 | 10.78 | 1.80 | 1438.01 | .00 | 4.40 | 8.00 | | | 7 | 0 .0
- | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
JUNCT STR .0000 | | | | | | | | | | | | | | | | IR-COV
----- WARNING - Junction Analysis - Irregular Channel -----

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WATER SURFACE PROFILE LISTING  
 LINE A-B HYDRAULIC MODEL - ORIGINAL TRIBUTARIES  
 FN:LINEABORIGINAL.WSW

Date: 1-27-2020 Time:10:17:40

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*****
Station  | Invert  | Depth  | Water  | Q      | Vel    | Vel    | Energy | Super | Critical | Flow Top | Height/ | Base Wt |   |   |
          | Elev    | (FT)   | Elev   | (CFS)  | (FPS)  | Head   | Grd.El. | Elev  | Depth   | Width   | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem   | Ch Slope |         |         |         |         | SF Ave | HF      | SE Dpth | Froude N | Norm Dp | "N"     | X-Fall  | ZR | Type Ch
***** | ***** |         |         |         |         |         |         |         |         |         |         |         |     |
2236.210 | 1431.390 | 5.733 | 1437.123 | 378.30 | 8.36   | 1.09   | 1438.21 | .00    | 4.17    | 7.19    |         |       | 7  | 0 .0
          |         |         |         |         |         |         |         |         |         |         |         |         |     |
          | 13.200 | .0023 |         |         |         |         | .0017   | .02    | 5.73    | .59     | 5.029   | .013    |     | IR-COV
2249.410 | 1431.420 | 5.721 | 1437.141 | 378.30 | 8.38   | 1.09   | 1438.23 | .00    | 4.17    | 7.22    |         |       | 7  | 0 .0
          |         |         |         |         |         |         |         |         |         |         |         |         |     |
JUNCT STR | .0000   |         |         |         |         |         | .0015   | .00    | 5.72    | .59     | .013    |         |     | IR-COV
          |         |         |         |         |         |         |         |         |         |         |         |         |     |
          |----- WARNING - Junction Analysis - Irregular Channel -----|
2249.410 | 1431.430 | 5.862 | 1437.292 | 367.00 | 7.95   | .98    | 1438.27 | .00    | 4.08    | 6.94    |         |       | 7  | 0 .0
          |         |         |         |         |         |         |         |         |         |         |         |         |     |
          | 145.077 | .0030 |         |         |         |         | .0015   | .22    | 5.86    | .54     | 4.436   | .013    |     | IR-COV
2394.487 | 1431.861 | 5.565 | 1437.426 | 367.00 | 8.34   | 1.08   | 1438.51 | .00    | 4.08    | 7.53    |         |       | 7  | 0 .0
          |         |         |         |         |         |         |         |         |         |         |         |         |     |
          | 129.256 | .0030 |         |         |         |         | .0017   | .22    | 5.57    | .61     | 4.436   | .013    |     | IR-COV
2523.743 | 1432.246 | 5.302 | 1437.548 | 367.00 | 8.74   | 1.19   | 1438.73 | .00    | 4.08    | 8.00    |         |       | 7  | 0 .0
          |         |         |         |         |         |         |         |         |         |         |         |         |     |
          | 127.201 | .0030 |         |         |         |         | .0019   | .24    | 5.30    | .67     | 4.436   | .013    |     | IR-COV
2650.944 | 1432.624 | 5.058 | 1437.682 | 367.00 | 9.17   | 1.31   | 1438.99 | .00    | 4.08    | 8.00    |         |       | 7  | 0 .0
          |         |         |         |         |         |         |         |         |         |         |         |         |     |
          | 39.056 | .0030 |         |         |         |         | .0021   | .08    | 5.06    | .72     | 4.436   | .013    |     | IR-COV
2690.000 | 1432.740 | 4.989 | 1437.729 | 367.00 | 9.30   | 1.34   | 1439.07 | .00    | 4.08    | 8.00    |         |       | 7  | 0 .0
          |         |         |         |         |         |         |         |         |         |         |         |         |     |
JUNCT STR | .0000   |         |         |         |         |         | .0018   | .00    | 4.99    | .74     | .013    |         |     | IR-COV
          |----- WARNING - Junction Analysis - Irregular Channel -----|
    
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LINEABREVISED.WSW

T1 LINE A-B HYDRAULIC MODEL - REVISED TRIBUTARIES  
 T2 FN:LINEABREVISED.WSW

SO	997.6001426.790	1				1433.000							
R	1019.8401426.870	1	.013				.000	.000	0				
R	1055.1801426.990	1	.014				45.000	.000	0				
R	1099.8201427.160	1	.013				.000	.000	0				
R	1154.0801427.350	1	.014				-69.080	.000	0				
R	1263.3301427.730	1	.013				.000	.000	1				
JX	1263.3301427.740	1	3	.013	21.100	1428.810	-45.0		0.000				
REM	TRIBUTARY TO LATERAL AB-1												
R	1275.3301427.760	1	.013				.000	.000	0				
JX	1275.3301427.770	1	2	.013	87.000	1428.840	45.0		0.000				
REM	REVISED TRIBUTARY TO LATERAL AB-2 FROM RIDER II DISTRIBUTION CENTER,												
REM	NO DISCHARGE FROM LATERAL AB-3 AND AB-6												
R	1771.5101429.500	1	.013				.000	.000	1				
JX	1777.5101430.000	7	2	.013	25.000	1430.000	-45.0		0.000				
REM	REVISED TRIBUTARY TO LATERAL AB-4 FROM CORE 5 RIDER INDUSTRIAL,												
REM	NO DISCHARGE FROM LATERAL AB-5 AND AB-7												
R	2500.0001432.170	7	.013				.000	.000	0				
JX	2510.0001432.180	7	2	.013	35.000	1432.800	-45.0		0.000				
REM	TRIBUTARY TO LATERAL AB-7.5 AND TOTAL RUNOFF FROM FIRST RIDER INDUSTRIAL PROJECT,												
REM	NO DISCHARGE FROM LATERAL AB-8												
R	3083.4901433.930	7	.013				.000	.000	1				
JX	3093.9301433.960	4	9	.013	8.000	1434.520	45.0		0.000				
REM	THE FLOW RATE FOR LATERAL AB-9 HAS BEEN CHANGED TO ACCOUNT FOR PUMPED FLOW LEAVING RIDER 3 SITE												
R	3116.4701434.030	4	.013				.000	.000	0				
JX	3116.4701434.040	4	2	.013	48.000	1434.620	45.0		0.000				
REM	REVISED TRIBUTARY TO LATERAL AB-10 FROM AREA BETWEEN RIDER I DISTRIBUTION CENTER AND												
REM	PROPOSED MID-COUNTY-PARKWAY IMPACT AREA												
R	3271.3701434.490	4	.013				.000	.000	1				
SH	3271.3701434.490	4				1434.490							
CD	1	6	0	.000	.00	.00	.00	.00	.00	.00	.00	.00	.00
CD	4	6	0	.000	.00	.00	.00	.00	.00	.00	.00	.00	.00
CD	7	6	0	.000	.00	.00	.00	.00	.00	.00	.00	.00	.00
CD	8	4	1	.000	1.500	.000	.000	.000	.00				
CD	2	4	1	.000	2.000	.000	.000	.000	.00				
CD	3	4	1	.000	2.500	.000	.000	.000	.00				
CD	6	4	1	.000	3.000	.000	.000	.000	.00				
CD	9	4	2	.000	2.000	.000	.000	.000	.00				
PTS	1	8	1.000	7.330	1.000	1.670	1.670	1.000	8.330	1.000	9.000	1.670	
PTS			9.000	7.330	8.330	8.000	1.670	8.000					
PTS	4	8	1.000	5.330	1.000	1.670	1.670	1.000	7.330	1.000	8.000	1.670	
PTS			8.000	5.330	7.330	6.000	1.670	6.000					
PTS	7	8	1.000	6.330	1.000	1.670	1.670	1.000	8.330	1.000	9.000	1.670	
PTS			9.000	6.330	8.330	7.000	1.670	7.000					
Q			282.000	.0									

FILE: LINEABREVISED.WSW  
 Date: 1-28-2020 Time: 2:52:36

LINEABREVISED.EDT  
 W S P G W - EDIT LISTING - Version 14.06

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD Y(6)	SECT Y(7)	CHN Y(8)	NO OF Y(9)	AVE PIER Y(10)	PIER	HEIGHT 1	BASE	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)
CODE	NO	TYPE	PIER/PIP	WIDTH		DIAMETER	WIDTH			DROP					
CD	1	6	0			.000									
CD	4	6	0			.000									
CD	7	6	0			.000									
CD	8	4	1			1.500									
CD	2	4	1			2.000									
CD	3	4	1			2.500									
CD	6	4	1			3.000									
CD	9	4	2			2.000									

FILE:  
 Date: 1-28-2020 Time: 2:52:36

W S P G W - EDIT LISTING - Version 14.06

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD , Y(6)	SECT X(7)	NO OF POINTS	X(1), Y(1)	X(2), Y(2)	X(3), Y(3)	X(4), Y(4)	X(5), Y(5)	X(6)
CODE	NO		X(8), Y(8)	X(9), Y(9)	X(10), Y(10)	X(11), Y(11)	X(N), Y(N)	
PTS	1	8	1.000 7.330	1.000 1.670	1.670 1.670	1.000 8.330	1.000 9.000	
1.670	9.000	7.330	8.330 8.000	1.670 8.000				
PTS	4	8	1.000 5.330	1.000 1.670	1.670 1.670	1.000 7.330	1.000 8.000	
1.670	8.000	5.330	7.330 6.000	1.670 6.000				
PTS	7	8	1.000 6.330	1.000 1.670	1.670 1.670	1.000 8.330	1.000 9.000	
1.670	9.000	6.330	8.330 7.000	1.670 7.000				
PTS								

W S P G W

PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

LINE A-B HYDRAULIC MODEL - REVISED TRIBUTARIES

HEADING LINE NO 2 IS -

FN:LINEABREVISED.WSW

HEADING LINE NO 3 IS -

W S P G W

PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	1	IS	A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV
						997.600	1426.790	1	1433.000
ELEMENT NO	2	IS	A	REACH	U/S DATA	STATION	INVERT	SECT	
ANGLE	ANG	PT	MAN	H		1019.840	1426.870	1	
.000	.000	0							N
									RADIUS
									.013
									.000
ELEMENT NO	3	IS	A	REACH	U/S DATA	STATION	INVERT	SECT	
ANGLE	ANG	PT	MAN	H		1055.180	1426.990	1	
45.000	.000	0							N
									RADIUS
									.014
									44.996
ELEMENT NO	4	IS	A	REACH	U/S DATA	STATION	INVERT	SECT	
ANGLE	ANG	PT	MAN	H		1099.820	1427.160	1	
.000	.000	0							N
									RADIUS
									.013
									.000
ELEMENT NO	5	IS	A	REACH	U/S DATA	STATION	INVERT	SECT	
ANGLE	ANG	PT	MAN	H		1154.080	1427.350	1	
-69.080	.000	0							N
									RADIUS
									.014
									45.004
ELEMENT NO	6	IS	A	REACH	U/S DATA	STATION	INVERT	SECT	
ANGLE	ANG	PT	MAN	H		1263.330	1427.730	1	
.000	.000	0							N
									RADIUS
									.013
									.000
ELEMENT NO	7	IS	A	JUNCTION	U/S DATA	STATION	INVERT	SECT	
									N
									Q3
									Q4
									INVERT-3
INVERT-4	PHI 3	PHI 4				1263.330	1427.740	1	3
								0	.013
									21.100
									.000
									1428.810

.000 -45.000 .000 RADIUS  
 ANGLE .000  
 .000  
 REMARKS: TRIBUTARY TO LATERAL AB-1  
 ELEMENT NO 8 IS A REACH \* \* \*  
 U/S DATA STATION INVERT SECT N RADIUS  
 ANGLE ANG PT MAN H 1275.330 1427.760 1 .013 .000  
 .000 .000 0  
 ELEMENT NO 9 IS A JUNCTION \* \* \* \* \*  
 U/S DATA STATION INVERT SECT LAT-1 LAT-2 N Q3 Q4 INVERT-3  
 INVERT-4 PHI 3 PHI 4 1275.330 1427.770 1 2 0 .013 87.000 .000 1428.840  
 .000 45.000 .000 RADIUS  
 ANGLE .000

W S P G W

PAGE NO 3

WATER SURFACE PROFILE - ELEMENT CARD LISTING

REMARKS: REVISED TRIBUTARY TO LATERAL AB-2 FROM RIDER II DISTRIBUTION CENTER,  
 REMARKS: NO DISCHARGE FROM LATERAL AB-3 AND AB-6  
 ELEMENT NO 10 IS A REACH \* \* \*  
 U/S DATA STATION INVERT SECT N RADIUS  
 ANGLE ANG PT MAN H 1771.510 1429.500 1 .013 .000  
 .000 .000 1  
 ELEMENT NO 11 IS A JUNCTION \* \* \* \* \*  
 U/S DATA STATION INVERT SECT LAT-1 LAT-2 N Q3 Q4 INVERT-3  
 INVERT-4 PHI 3 PHI 4 1777.510 1430.000 7 2 0 .013 25.000 .000 1430.000  
 .000 -45.000 .000 RADIUS  
 ANGLE .000  
 .000  
 REMARKS: REVISED TRIBUTARY TO LATERAL AB-4 FROM CORE 5 RIDER INDUSTRIAL,  
 REMARKS: NO DISCHARGE FROM LATERAL AB-5 AND AB-7  
 ELEMENT NO 12 IS A REACH \* \* \*  
 U/S DATA STATION INVERT SECT N RADIUS  
 ANGLE ANG PT MAN H 2500.000 1432.170 7 .013 .000  
 .000 .000 0  
 ELEMENT NO 13 IS A JUNCTION \* \* \* \* \*  
 U/S DATA STATION INVERT SECT LAT-1 LAT-2 N Q3 Q4 INVERT-3  
 INVERT-4 PHI 3 PHI 4 2510.000 1432.180 7 2 0 .013 35.000 .000 1432.800  
 .000 -45.000 .000 RADIUS  
 ANGLE .000  
 .000  
 REMARKS: TRIBUTARY TO LATERAL AB-7.5 AND TOTAL RUNOFF FROM FIRST RIDER INDUSTRIAL PROJECT,  
 REMARKS: NO DISCHARGE FROM LATERAL AB-8

W S P G W

PAGE NO 4

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 14 IS A REACH \* \* \*  
 U/S DATA STATION INVERT SECT N RADIUS  
 ANGLE ANG PT MAN H 3083.490 1433.930 7 .013 .000  
 .000 .000 1  
 ELEMENT NO 15 IS A JUNCTION \* \* \* \* \*  
 U/S DATA STATION INVERT SECT LAT-1 LAT-2 N Q3 Q4 INVERT-3  
 INVERT-4 PHI 3 PHI 4

LINEABREVISED.EDT

.000	45.000	.000	3093.930	1433.960	4	9	0	.013	8.000	.000	1434.520	
ANGLE											RADIUS	
											.000	
REMARKS: THE FLOW RATE FOR LATERAL AB-9 HAS BEEN CHANGED TO ACCOUNT FOR PUMPED FLOW LEAVING RIDER 3												
SITE												
ELEMENT NO	16	IS A	REACH	*	*	*						
			U/S DATA	STATION	INVERT	SECT			N		RADIUS	
ANGLE	ANG PT	MAN H		3116.470	1434.030	4			.013		.000	
.000	.000	0										
ELEMENT NO	17	IS A	JUNCTION	*	*	*	*		*		*	
	*											
INVERT-4	PHI 3	PHI 4	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3
				3116.470	1434.040	4	2	0	.013	48.000	.000	1434.620
.000	45.000	.000										
ANGLE											RADIUS	
											.000	
REMARKS: REVISED TRIBUTARY TO LATERAL AB-10 FROM AREA BETWEEN RIDER I DISTRIBUTION CENTER AND												
REMARKS: PROPOSED MID-COUNTY-PARKWAY IMPACT AREA												
ELEMENT NO	18	IS A	REACH	*	*	*						
			U/S DATA	STATION	INVERT	SECT			N		RADIUS	
ANGLE	ANG PT	MAN H		3271.370	1434.490	4			.013		.000	
.000	.000	1										
ELEMENT NO	19	IS A	SYSTEM HEADWORKS	*		*			*			
			U/S DATA	STATION	INVERT	SECT					W S ELEV	
				3271.370	1434.490	4					1434.490	

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
997.600	1426.790	6.210	1433.000	506.10	10.28	1.64	1434.64	.00	5.05	8.00		1		0 .0
22.240	.0036					.0024	.05	6.21	.73	5.277	.013			IR-COV
1019.840	1426.870	6.153	1433.023	506.10	10.38	1.67	1434.69	.34	5.05	8.00		1		0 .0
35.340	.0034					.0028	.10	6.49	.74	5.717	.014			IR-COV
1055.180	1426.990	6.109	1433.099	506.10	10.45	1.70	1434.80	.00	5.05	8.00		1		0 .0
44.640	.0038					.0025	.11	6.11	.75	5.160	.013			IR-COV
1099.820	1427.160	5.976	1433.136	506.10	10.69	1.77	1434.91	.36	5.05	8.00		1		0 .0
54.260	.0035					.0030	.16	6.34	.77	5.650	.014			IR-COV
1154.080	1427.350	5.917	1433.267	506.10	10.79	1.81	1435.08	.00	5.05	8.00		1		0 .0
109.250	.0035					.0027	.29	5.92	.79	5.345	.013			IR-COV
1263.330	1427.730	5.708	1433.438	506.10	11.19	1.95	1435.38	.00	5.05	8.00		1		0 .0
JUNCT STR	.0000					.0021	.00	5.71	.83		.013			IR-COV
----- WARNING - Junction Analysis - Irregular Channel -----														
1263.330	1427.740	6.263	1434.003	485.00	9.77	1.48	1435.48	.00	4.91	8.00		1		0 .0
12.000	.0017					.0021	.03	6.26	.69	7.000	.013			IR-COV
1275.330	1427.760	6.274	1434.034	485.00	9.75	1.48	1435.51	.00	4.91	8.00		1		0 .0
JUNCT STR	.0000					.0012	.00	6.27	.69		.013			IR-COV
----- WARNING - Junction Analysis - Irregular Channel -----														



WATER SURFACE PROFILE LISTING  
LINE A-B HYDRAULIC MODEL - REVISED TRIBUTARIES  
FN:LINEABREVISED.WSW

Date: 1-28-2020 Time: 2:52:38

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1938.818	1430.484	4.714	1435.199	373.00	10.01	1.56	1436.75	.00	4.13	8.00		7		0 .0
	281.505	.0030				.0026	.74	4.71	.82	4.474	.013			IR-COV
2220.323	1431.330	4.498	1435.828	373.00	10.50	1.71	1437.54	.00	4.13	8.00		7		0 .0
	227.137	.0030				.0030	.67	4.50	.88	4.474	.013			IR-COV
2447.460	1432.012	4.474	1436.486	373.00	10.55	1.73	1438.22	.00	4.13	8.00		7		0 .0
	52.540	.0030				.0030	.16	4.47	.88	4.474	.013			IR-COV
2500.000	1432.170	4.474	1436.644	373.00	10.55	1.73	1438.37	.00	4.13	8.00		7		0 .0
JUNCT STR	.0010					.0017	.02	4.47	.88		.013			IR-COV
----- WARNING - Junction Analysis - Irregular Channel -----														
2510.000	1432.180	5.209	1437.389	338.00	8.20	1.04	1438.43	.00	3.87	8.00		7		0 .0
	105.844	.0031				.0017	.18	5.21	.64	4.129	.013			IR-COV
2615.844	1432.503	4.968	1437.471	338.00	8.60	1.15	1438.62	.00	3.87	8.00		7		0 .0
	107.234	.0031				.0019	.20	4.97	.68	4.129	.013			IR-COV
2723.078	1432.830	4.740	1437.570	338.00	9.02	1.26	1438.83	.00	3.87	8.00		7		0 .0
	115.552	.0031				.0021	.24	4.74	.73	4.129	.013			IR-COV
2838.630	1433.183	4.522	1437.705	338.00	9.46	1.39	1439.09	.00	3.87	8.00		7		0 .0
	139.380	.0031				.0024	.33	4.52	.79	4.129	.013			IR-COV

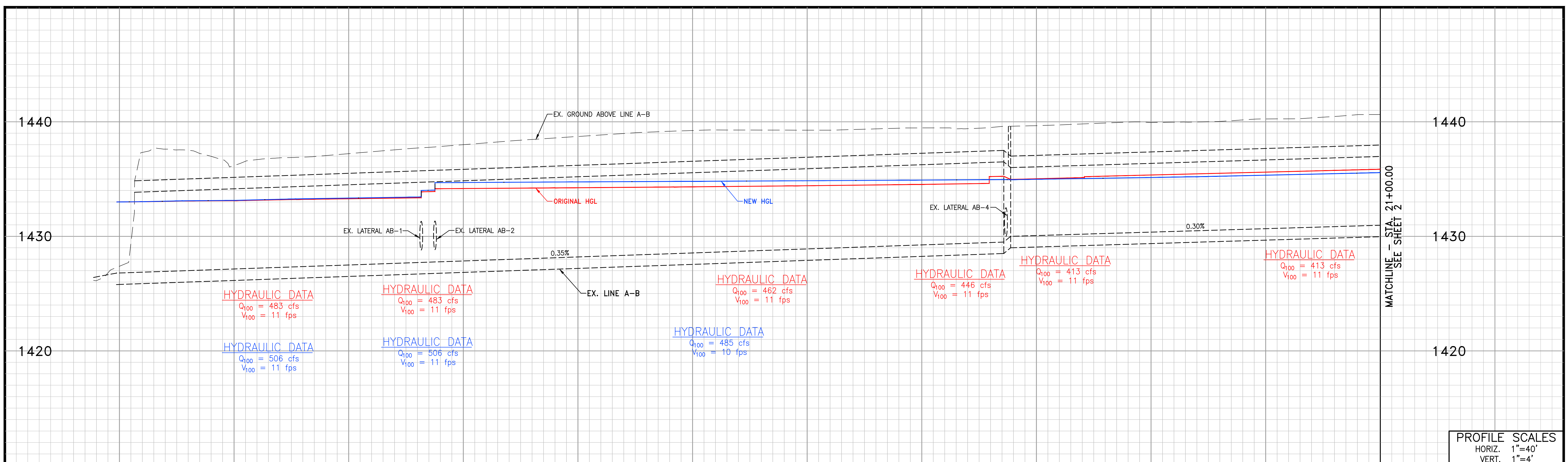
WATER SURFACE PROFILE LISTING  
LINE A-B HYDRAULIC MODEL - REVISED TRIBUTARIES  
FN:LINEABREVISED.WSW

Date: 1-28-2020 Time: 2:52:38

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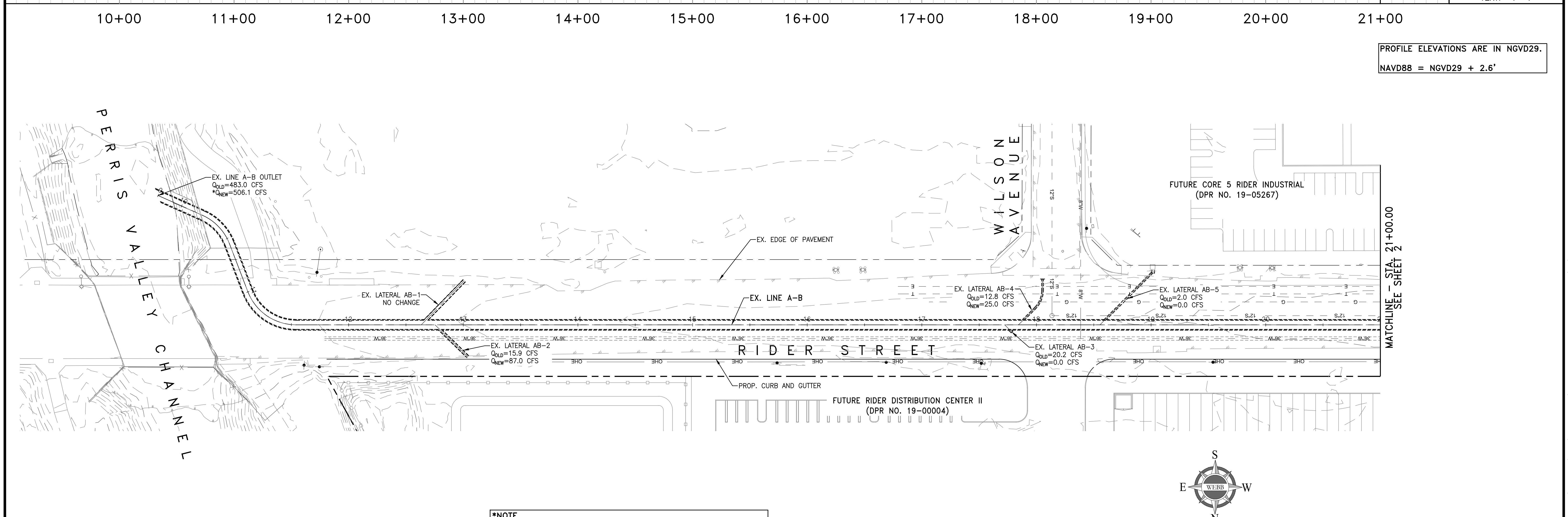
Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
2978.010	1433.608	4.314	1437.922	338.00	9.92	1.53	1439.45	.00	3.87	8.00		7		0 .0
15.157	.0031					.0027	.04	4.31	.85	4.129	.013			IR-COV
2993.167	1433.655	4.300	1437.954	338.00	9.96	1.54	1439.49	.00	3.87	8.00		7		0 .0
HYDRAULIC JUMP														
2993.167	1433.655	3.467	1437.122	338.00	12.39	2.38	1439.50	.00	3.87	8.00		7		0 .0
14.318	.0031					.0050	.07	3.47	1.18	4.129	.013			IR-COV
3007.486	1433.698	3.408	1437.106	338.00	12.60	2.47	1439.57	.00	3.87	8.00		7		0 .0
37.368	.0031					.0055	.20	3.41	1.21	4.129	.013			IR-COV
3044.853	1433.812	3.252	1437.064	338.00	13.22	2.71	1439.78	.00	3.87	8.00		7		0 .0
38.637	.0031					.0062	.24	3.25	1.30	4.129	.013			IR-COV
3083.490	1433.930	3.104	1437.034	338.00	13.86	2.98	1440.02	.00	3.87	8.00		7		0 .0
JUNCT STR	.0029					.0054	.06	3.10	1.40		.013			IR-COV
----- WARNING - Junction Analysis - Irregular Channel -----														
3093.930	1433.960	4.166	1438.126	330.00	11.49	2.05	1440.18	.00	4.17	7.00		4		0 .0
18.333	.0031					.0036	.07	4.17	1.00	4.698	.013			IR-COV
3112.263	1434.017	4.366	1438.383	330.00	10.96	1.86	1440.25	.00	4.17	6.93		4		0 .0
4.207	.0031					.0036	.02	4.37	.93	4.698	.013			IR-COV





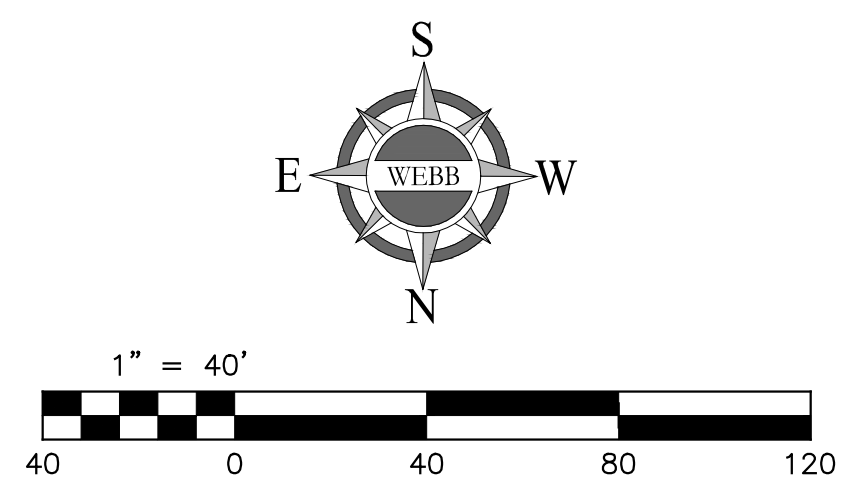
**PROFILE SCALES**  
 HORIZ. 1"=40'  
 VERT. 1"=4'

PROFILE ELEVATIONS ARE IN NGVD29.  
 NAVD88 = NGVD29 + 2.6'



**\*NOTE**  
 NEW OUTLET FLOWRATE IS GREATER THAN OLD OUTLET FLOWRATE BECAUSE OF AREA-YIELD FLOW REALLOCATION METHOD. THIS WAS DONE TO BE MORE CONSERVATIVE IN THE REVISED HYDRAULIC MODEL EVALUATION. THE AREA-YIELD METHOD IS MORE CONSERVATIVE BECAUSE IT IGNORES STREAM CONFLUENCES WHICH CAN LOWER THE TRIBUTARY FLOWRATES.

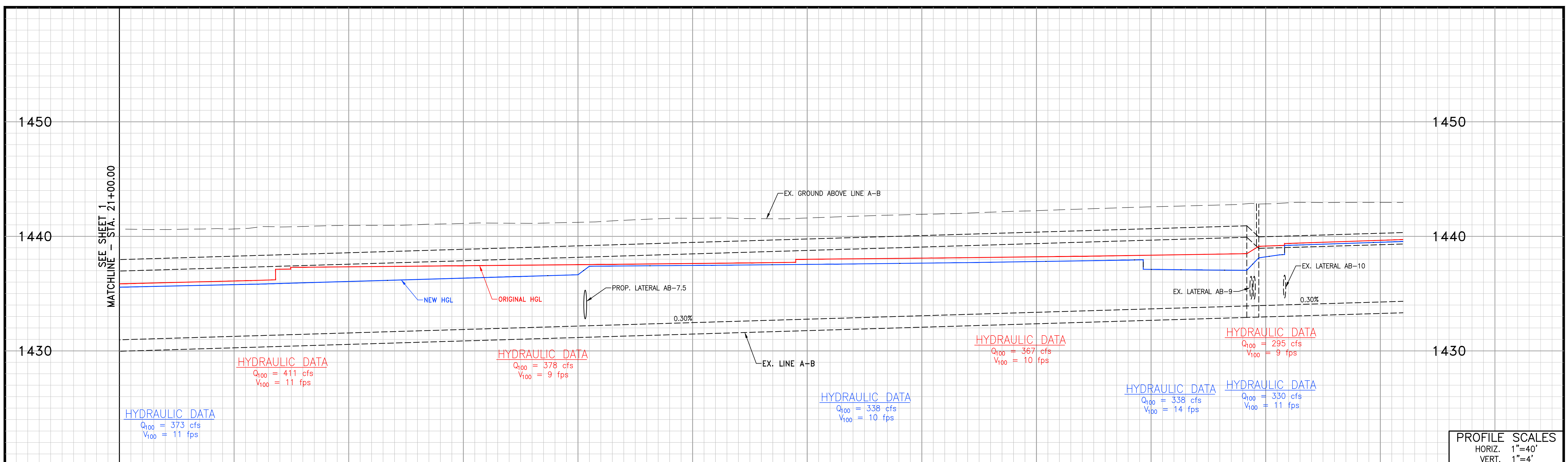
**LINE A-B PLAN AND PROFILE**



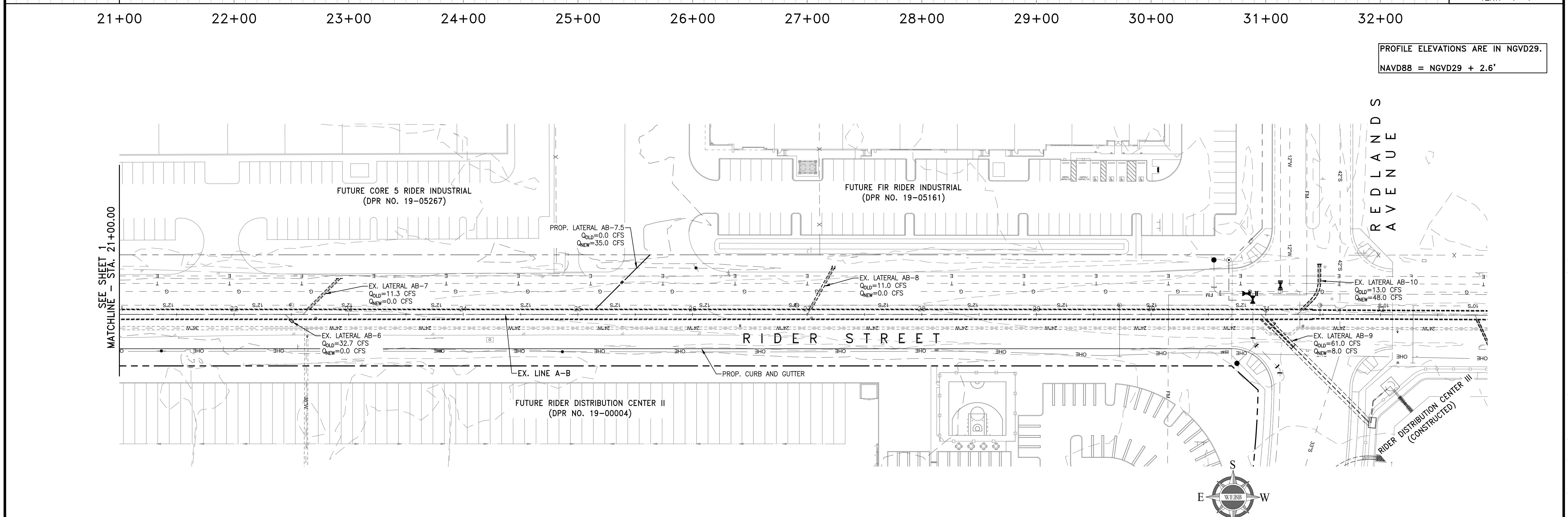
**ALBERT A. WEBB ASSOCIATES**  
 ENGINEERING CONSULTANTS  
 3788 McCRAY STREET  
 RIVERSIDE, CA. 92506  
 PH. (951) 686-1070  
 FAX (951) 788-1256

W.O. SHEET **1** OF 2 SHEETS

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PROFILE ELEVATIONS ARE IN NGVD29.  
 NAVD88 = NGVD29 + 2.6'



**LINE A-B PLAN AND PROFILE**

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W.O. SHEET 2 OF 2 SHEETS

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**Appendix C: Line A-C Hydraulics, Plan and Profile**

T1 LINE A-C HYDRAULIC MODEL										
T2 FN:LINEAC.WSW										
SO	1000.000	1428.040	1					1432.600		
R	1133.470	1428.440	1		.013				.000	.000
JX	1133.470	1428.440	1	1	.013	31.200		1428.440	-30.0	0.000
R	1143.470	1428.480	1		.013				.000	.000
R	1176.300	1428.570	1		.013				.000	.000
JX	1176.300	1428.570	2	2	.013	19.200		1428.570	30.0	0.000
R	1186.300	1429.070	2		.013				.000	.000
R	2100.000	1431.810	2		.013				.000	.000
SH	2100.000	1431.810	2					1431.810		1
CD	1	4	1		.000	3.500	.000	.000	.000	.00
CD	2	4	1		.000	3.000	.000	.000	.000	.00
CD	3	4	1		.000	2.500	.000	.000	.000	.00
Q		22.200			.0					

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD Y(6)	SECT Y(7)	CHN Y(8)	NO Y(9)	OF Y(10)	AVE PIER	HEIGHT 1	BASE	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)
CODE	NO	TYPE	PIER/PIP	WIDTH	DIAMETER	WIDTH				DROP					
CD	1	4	1			3.500									
CD	2	4	1			3.000									
CD	3	4	1			2.500									

W S P G W

PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -  
 HEADING LINE NO 2 IS -  
 HEADING LINE NO 3 IS -

LINE A-C HYDRAULIC MODEL  
 FN:LINEAC.WSW

W S P G W

PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT				W S ELEV			
					1000.000	1428.040	1				1432.600			
ELEMENT NO	2	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			RADIUS			
ANGLE	ANG	PT		MAN H		1133.470	1428.440	1		.013	.000			
.000	.000			0										
ELEMENT NO	3	IS	A	JUNCTION							*			
INVERT-4	PHI	3	PHI	4	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3
.000	-30.000			.000		1133.470	1428.440	1	1	0	.013	31.200	.000	1428.440
														RADIUS
ANGLE														.000
.000														
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING														
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING														
ELEMENT NO	4	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			RADIUS			
ANGLE	ANG	PT		MAN H		1143.470	1428.480	1		.013	.000			
.000	.000			0										
ELEMENT NO	5	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			RADIUS			
ANGLE	ANG	PT		MAN H		1176.300	1428.570	1		.013	.000			
.000	.000			1										
ELEMENT NO	6	IS	A	JUNCTION							*			
INVERT-4	PHI	3	PHI	4	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3
.000	30.000			.000		1176.300	1428.570	2	2	0	.013	19.200	.000	1428.570
														RADIUS
ANGLE														.000
.000														
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING														
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING														
ELEMENT NO	7	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			RADIUS			
ANGLE	ANG	PT		MAN H		1186.300	1429.070	2		.013	.000			
.000	.000			0										
ELEMENT NO	8	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			RADIUS			
ANGLE	ANG	PT		MAN H		2100.000	1431.810	2		.013	.000			
.000	.000			1										
ELEMENT NO	9	IS	A	SYSTEM HEADWORKS	U/S DATA	STATION	INVERT	SECT			W S ELEV			
						2100.000	1431.810	2			1431.810			

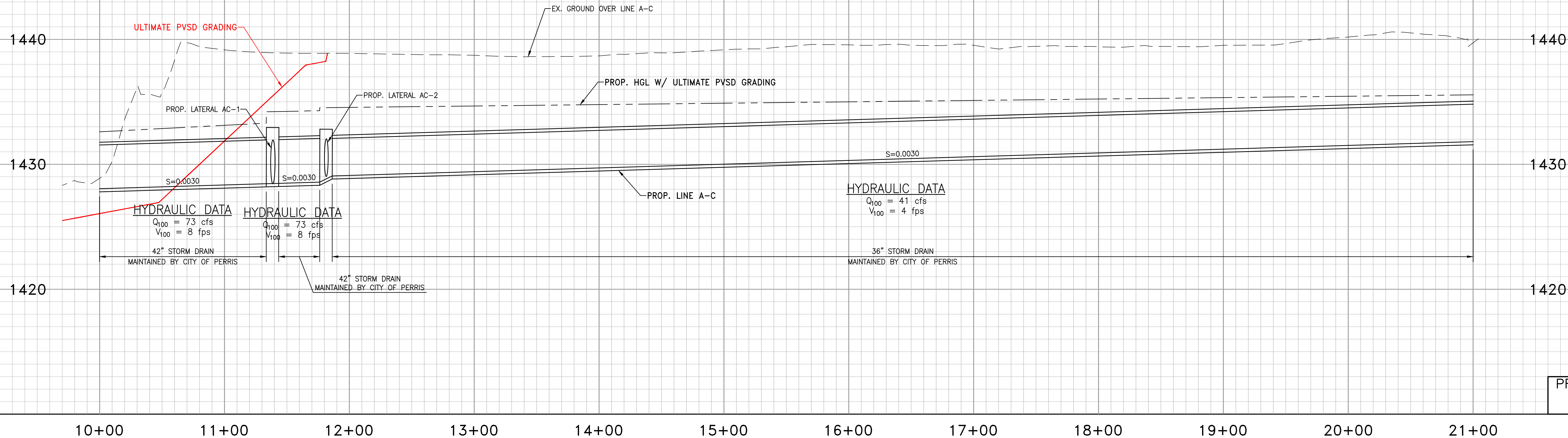
W S P G W

PAGE NO 3

LINEAC.EDT

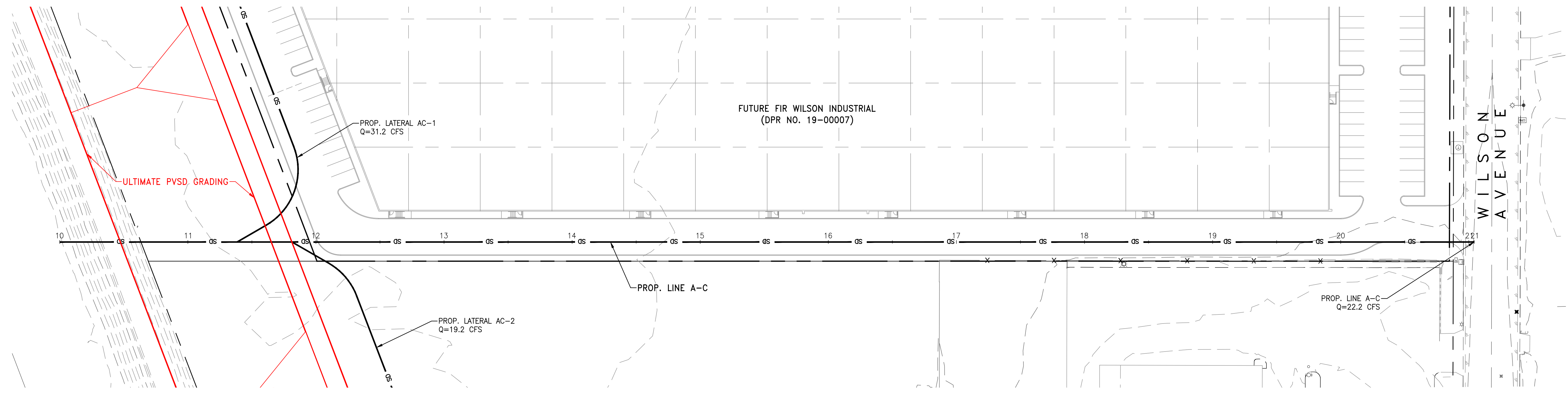
WATER SURFACE PROFILE - ELEMENT CARD LISTING



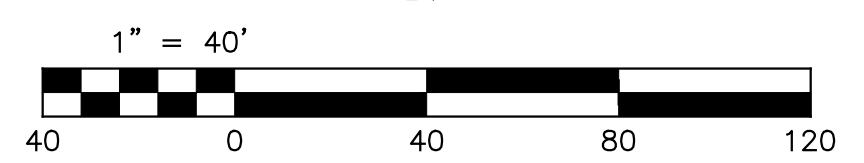
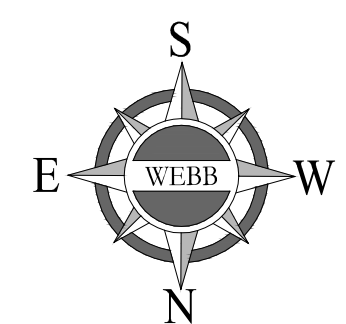


PROFILE SCALES  
 HORIZ. 1"=40'  
 VERT. 1"=4'

PROFILE ELEVATIONS ARE IN NAVD88.  
 NGVD29 = NAVD88 - 2.6'



**LINE A-C PLAN AND PROFILE**



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 ENGINEERING CONSULTANTS  
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 RIVERSIDE, CA. 92506  
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W.O. SHEET  
 1  
 OF 2 SHEETS

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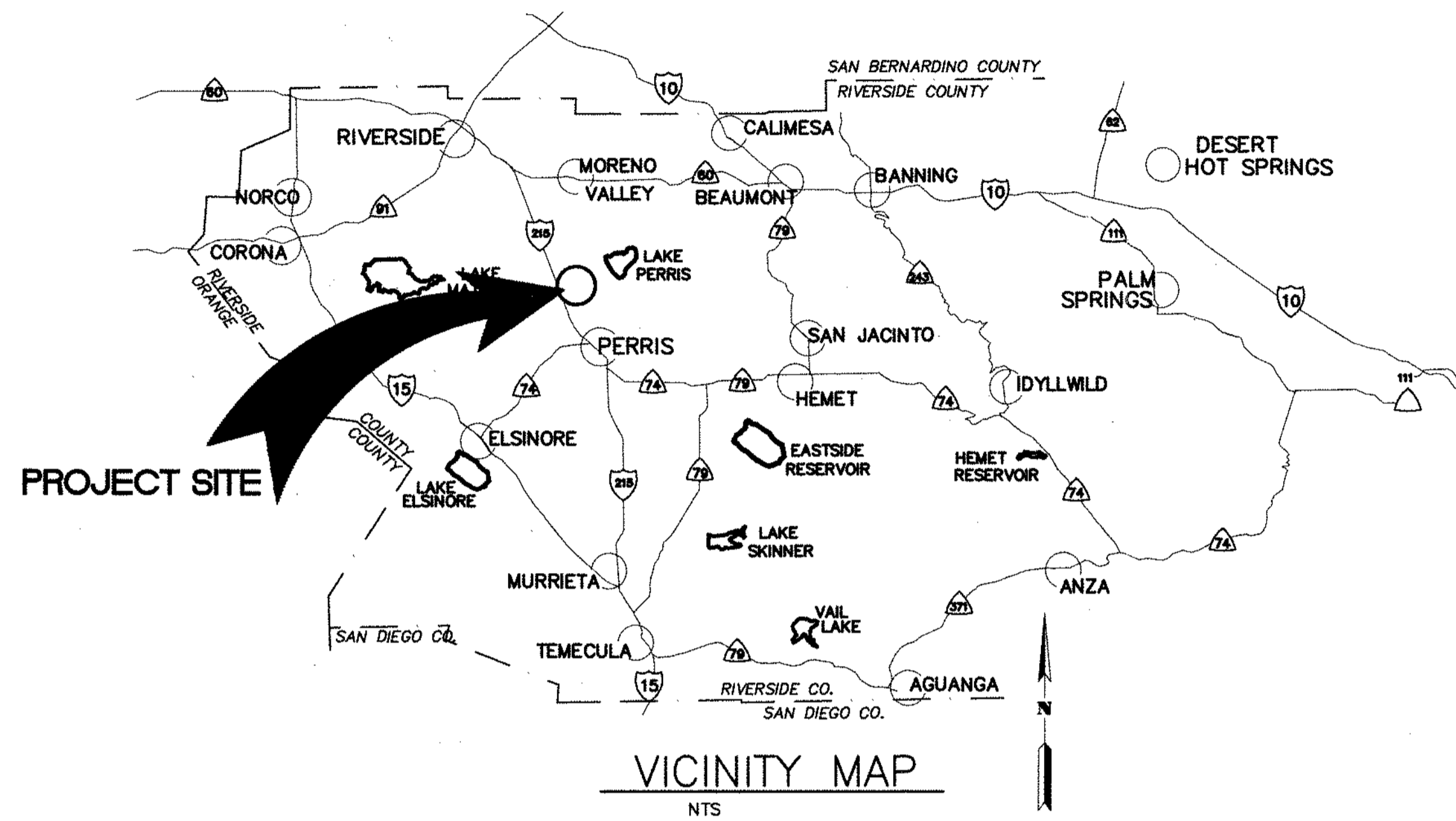
# Appendix D: Line A-B As-Built Plans

# RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

## INDEX

SHEET NO.:

TITLE SHEET	1
PLAN & PROFILES	2-13
LATERAL PROFILES	14-17
DETAILS	18



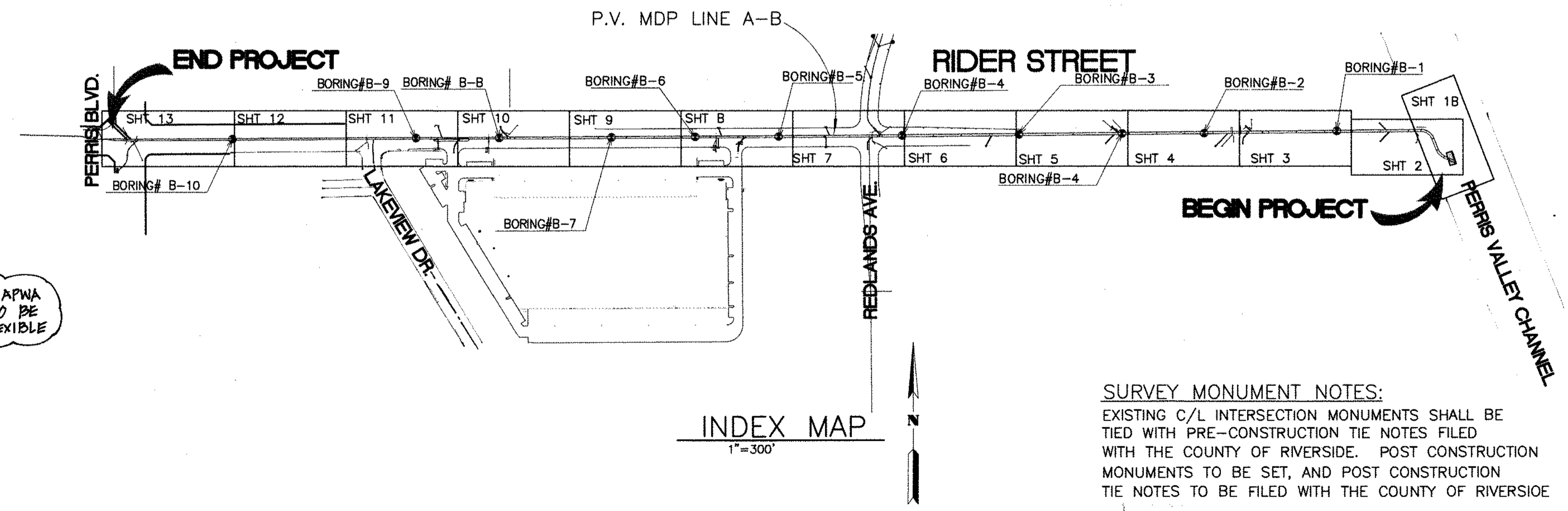
THE ULTIMATE H.C.L. IS BASED ON THE ADOPTED MOP WATER SURFACE ELEVATION OF 1433 IN THE PERRIS VALLEY STORM CHANNEL (PVSC) AT RIDER STREET, AND ASSUMES THAT FULL CHANNEL IMPROVEMENTS HAVE BEEN CONSTRUCTED PER THE ADOPTED MOP. FOR ALL WATER SURFACE ELEVATIONS BETWEEN 1433 AND THE 100-YEAR FLOOD ELEVATION FOR PVSC (1437.5), LINE "A-B" WILL NOT HAVE CAPACITY FOR LOCAL 100-YEAR FLOWS.

### LEGEND:

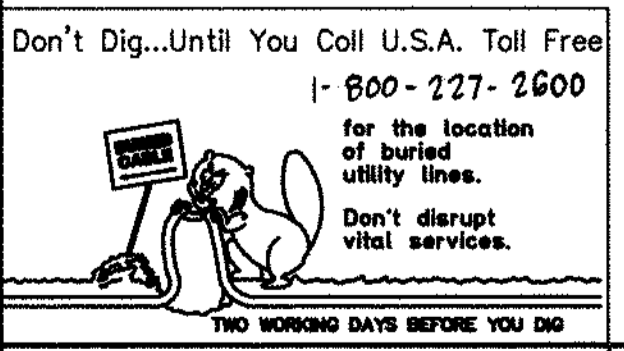
R	—PROPERTY LINE	F.P.	—FINISHED PAVEMENT
R/W	—RIGHT OF WAY	S.F.O.W	—SOUTH FACE OF WALL
CL	—CENTERLINE	N.F.O.W	—NORTH FACE OF WALL
T.C.	—TOP OF CURB	E.F.O.W	—EAST FACE OF WALL
F.L.	—FLOW LINE	W.F.O.W	—WEST FACE OF WALL
F.S.	—FINISH SURFACE	T.P.	—TOP OF PIPE
H.P.	—HIGH POINT	(0.00)	—EXISTING ELEVATION
F.F.	—FINISH FLOOR	B.O.W.	—BOTTOM OF WALL
R.C.P.	—REINFORCED CONCRETE PIPE	T.C.	—TOP OF CRATE
INV.	—INVERT	N.C.	—NATURAL GRADE
S =	—SLOPE	TOP	—TOP OF SLOPE
F.G.	—FINISH GRADE	TOE	—TOE OF SLOPE
S.D.	—STORM DRAIN	E.P.	—EDGE OF PAVEMENT
ST.LT.	—STREET LIGHT	A.C.	—ASPHALT CONCRETE
G.B.	—GRADE BREAK	C.L.F.	—CHAIN LINK FENCE
H.P.	—HIGH POINT	CONC.	—CONCRETE
E.C.	—EDGE OF CONCRETE	PKWY DRAIN	—PARKWAY DRAIN
C.A.	—GUY ANCHOR	EXIST.	—EXISTING
A.B.	—ACCRETION BASE	EMH	—EOLSON MANHOLE
F.H.	—FIRE HYDRANT	M.H.	—MANHOLE
P.P.	—POWER POLE	T.B.	—TOP OF BERM
C.B.	—CATCH BASIN	E.T.W.	—EDGE OF TRAVELWAY
R =	—RATE OF GRADE	B.W.	—BACK OF WALK
B.C.R.	—BEGIN OF CURB RETURN	TC-TX	—TOP OF CURB@DRIVEWAY
E.C.R.	—END OF CURB RETURN	TC-BX	—BOT. OF CURB@DRIVEWAY
L.P.	—LOW POINT	⊙	—BORING LOCATION
T.O.P.	—TOP OF PIPE	⚠	—REVISION SYMBOL AND NUMBER PER EMWD REQUIREMENT
B.O.P.	—BOTTOM OF PIPE	1	—RCFC & WCD REVISION
R	—RATE OF GRADE		
T.F.	—TOP OF FOOTING		
T.W.	—TOP OF WALL		
S.F.	—SQUARE FEET		
C.F.	—CURB FACE		

### GENERAL NOTES

- THE CONTRACTOR SHALL CONSTRUCT THE FLOOD CONTROL IMPROVEMENTS SHOWN ON THE DRAWINGS IN CONFORMANCE WITH THE REQUIREMENTS OF THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT'S M.O.U. STANDARD SPECIFICATIONS DATED JUNE 24, 2008, AND RCFC&WCD STANDARD MANUAL. FOR THE LATEST DRAWINGS OF THE STANDARD MANUAL, PLEASE REFER TO THE "PUBLICATIONS AND RECORDS" PAGE FOUND ON THE DISTRICT'S WEBSITE.
- CONTACT THE ENCROACHMENT PERMIT ENGINEER AT 951.955.1266 IF AN ENCROACHMENT PERMIT IS REQUIRED FROM RIVERSIDE COUNTY FLOOD CONTROL. AFTER THE PERMIT IS ISSUED THE DISTRICT MUST BE NOTIFIED ONE WEEK PRIOR TO CONSTRUCTION.
- CONTACT CONTRACT ADMINISTRATION AT 951.955.1288 IF CONSTRUCTION INSPECTION WILL BE PERFORMED BY RIVERSIDE COUNTY FLOOD CONTROL. THE DISTRICT MUST BE NOTIFIED TWENTY DAYS (2D) PRIOR TO CONSTRUCTION.
- ALL STATIONING REFERS TO CENTERLINE OF CONSTRUCTION UNLESS OTHERWISE NOTED.
- STATIONING FOR LATERALS AND CONNECTOR PIPE REFER TO THE CENTERLINE INTERSECTION STATIONS.
- FORTY-EIGHT HOURS BEFORE EXCAVATION, CALL UNDERGROUND SERVICE ALERT 1.800.227.2600.
- ALL ELEVATIONS SHOWN ARE IN FEET AND DECIMALS THEREOF BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD 1929).
- ALL COORDINATES ARE SHOWN IN FEET AND DECIMALS THEREOF BASED ON THE NORTH AMERICAN DATUM (NAD 83), CALIFORNIA COORDINATE SYSTEM (CCS), ZONE 6 AND EPOCH 2011.00.
- ALL CROSS SECTIONS ARE TAKEN LOOKING DOWNSTREAM.
- ELEVATIONS OF UTILITIES ARE APPROXIMATE UNLESS OTHERWISE NOTED.
- UNLESS OTHERWISE SPECIFIED, MINIMUM STREET RECONSTRUCTION SHALL BE 4" TYPE "B" HOT MIX ASPHALT OVER 6" CLASS 2 AGGREGATE BASE OR AS SPECIFIED BY THE ENGINEER.
- OPENINGS RESULTING FROM THE CUTTING OR PARTIAL REMOVAL OF EXISTING CULVERTS, PIPES OR SIMILAR STRUCTURES TO BE ABANDONED SHALL BE SEALED WITH 6" OF CLASS "B" CONCRETE.
- PIPE CONNECTED TO THE MAINLINE PIPE SHALL CONFORM TO JUNCTION STRUCTURE NO. 4 (JS 229) UNLESS OTHERWISE NOTED.
- PIPE BEDDING SHALL CONFORM TO RCFC&WCD STD. OWC. NO. M815 EXCEPT FOR COVER < 2 FEET. FOR COVER < 2 FEET, CONCRETE SLURRY (2000 PSI - 2 SACK) SHALL BE USED. THE ENTIRE TRENCH SHALL BE SLURRY EXTENDING 4 INCHES MINIMUM AND 12 INCHES MAXIMUM ABOVE THE TOP OF THE PIPE.
- BH-1 INDICATES SOIL BORING LOCATIONS BASED ON THE SOILS REPORT DATED 11-19-2009. LOCATIONS SHOWN ARE APPROXIMATE.
- "V" IS THE DEPTH OF CATCH BASINS MEASURED FROM THE TOP OF CURB TO INVERT OF CONNECTOR PIPE.
- CATCH BASINS SHALL BE LOCATED SO THAT LOCAL DEPRESSION SHALL BEGIN AT EXISTING CURB RETURN JOINT, UNLESS OTHERWISE SPECIFIED.
- ALL CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS AND OTHER EXISTING IMPROVEMENTS TO BE RECONSTRUCTED IN KIND AND AT THE SAME ELEVATION AND LOCATION AS THE EXISTING IMPROVEMENTS UNLESS OTHERWISE NOTED.
- STANDARD DRAWINGS CALLED FOR ON THE PLAN AND PROFILE SHALL CONFORM TO DISTRICT STANDARD DRAWINGS UNLESS NOTED OTHERWISE.
- THE CONTRACTOR IS REQUIRED TO CALL ALL UTILITY AGENCIES REGARDING TEMPORARY SHORING AND SUPPORT REQUIREMENTS FOR THE VARIOUS UTILITY LINES SHOWN ON THESE PLANS.
- URING ROUGH GRADING OPERATIONS AND PRIOR TO CONSTRUCTION OF PERMANENT DRAINAGE STRUCTURES, TEMPORARY DRAINAGE CONTROL SHOULD BE PROVIDED TO PREVENT PONDING WATER AND DAMAGE TO ADJACENT PROPERTIES.
- APPROVAL OF THESE PLANS BY THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT DOES NOT RELIEVE THE DEVELOPER'S ENGINEER OF RESPONSIBILITY FOR THE ENGINEERING DESIGN. IF FIELD CHANGES ARE REQUIRED, IT WILL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER TO MAKE THE NECESSARY CORRECTIONS.
- THE CONTRACTOR OR DEVELOPER SHALL SECURE ALL REQUIRED ENCROACHMENT AND/OR STATE AND FEDERAL REGULATORY PERMITS PRIOR TO THE COMMENCEMENT OF ANY WORK.
- THE CONCRETE COATING ON THE INSIDE OF ALL REINFORCED CONCRETE PIPES MUST BE INCREASED TO PROVIDE A MINIMUM OF 1-1/2 INCHES OVER THE REINFORCING AND INCREASED TO A MINIMUM OF 3-1/2 INCHES OVER REINFORCING FOR BOX CULVERT, WHEN DESIGN VELOCITIES EXCEED 20 FEET PER SECOND. THE CONCRETE DESIGN STRENGTH IN THESE REACHES SHALL BE F'c=5,000 PSI FOR VELOCITIES EXCEEDING 20 FEET PER SECOND AND F'c=6,000 PSI FOR VELOCITIES EXCEEDING 30 FEET PER SECOND.
- CONSTRUCTION JOINTS FOR CALTRANS STANDARD REINFORCED CONCRETE BOX SHALL BE PLACED ACCORDING TO RCFC&WCD STANDARD DRAWING NO. BOX 401.



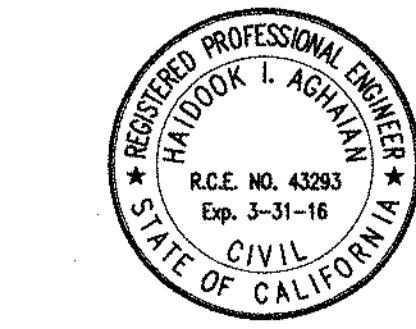
NOTE:  
FOR PRE-CAST ROB, USE JOINT SEALANT PER APWA STD PLAN 390.0 ALL PRE-CAST ROB JOINTS TO BE SEALED WITH RUBBER BASED PRE-FORMED FLEXIBLE JOINT SEALANT AND CEMENT MORTAR.



BENCH MARK  
COUNTY OF RIVERSIDE BENCHMARK NO. "M-31"  
COUNTY OF RIVERSIDE BENCHMARK - 3 1/4" ALUMINUM DISK MARKED M-31, LOCATED FLUSH AT THE SOUTH WEST CORNER OF BRIDGE ON TOP OF SIDEWALK NEAR FACE OF CURB LOCATED AT THE CROSSING OF PERRIS BLVD. AND RIV. CO. FLOOD CONTROL CHANNEL (PERRIS LATERAL) 72.43 FT. WEST OF CENTERLINE OF PERRIS BLVD. AND 4.5 FT. EAST OF CONCRETE BRIDGE BARRIER. (EDGE OF BRIDGE) MARKED R-102 D.W.R. IN TOP OF CONC. POST FLUSH W/ GROUND ELEVATION = 1474.874' (MVD 1929)

REF.	DESCRIPTION	APPR.	DATE	APPR.	DATE
1	CHANGED CLP ROB TO PRE-CAST ROB PER APWA 390.0	H.I.A.	2/3/16	OK	2/23/16
2	NEW 10" B. CHANNELS 42' WAT TO 24' WAT, ADDED	H.I.A.	2/3/16	OK	2/23/16
3	EX. UTILITIES, RELOCATE UTILITIES, REV. 2D.	H.I.A.	2/3/16	OK	2/23/16

DESIGNED BY: **BW**  
DRAWN BY: **ET**  
DATE DRAWN:  
APPROVED BY: **Thienes Engineering, Inc.**  
CIVIL ENGINEERING & LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90638  
PH. (714) 521-4811 FAX (714) 521-4173  
*Seidman K. Agayan* Date: 11/18/14  
HAIDOOK I. AGHAJAN RCE NO. 43293

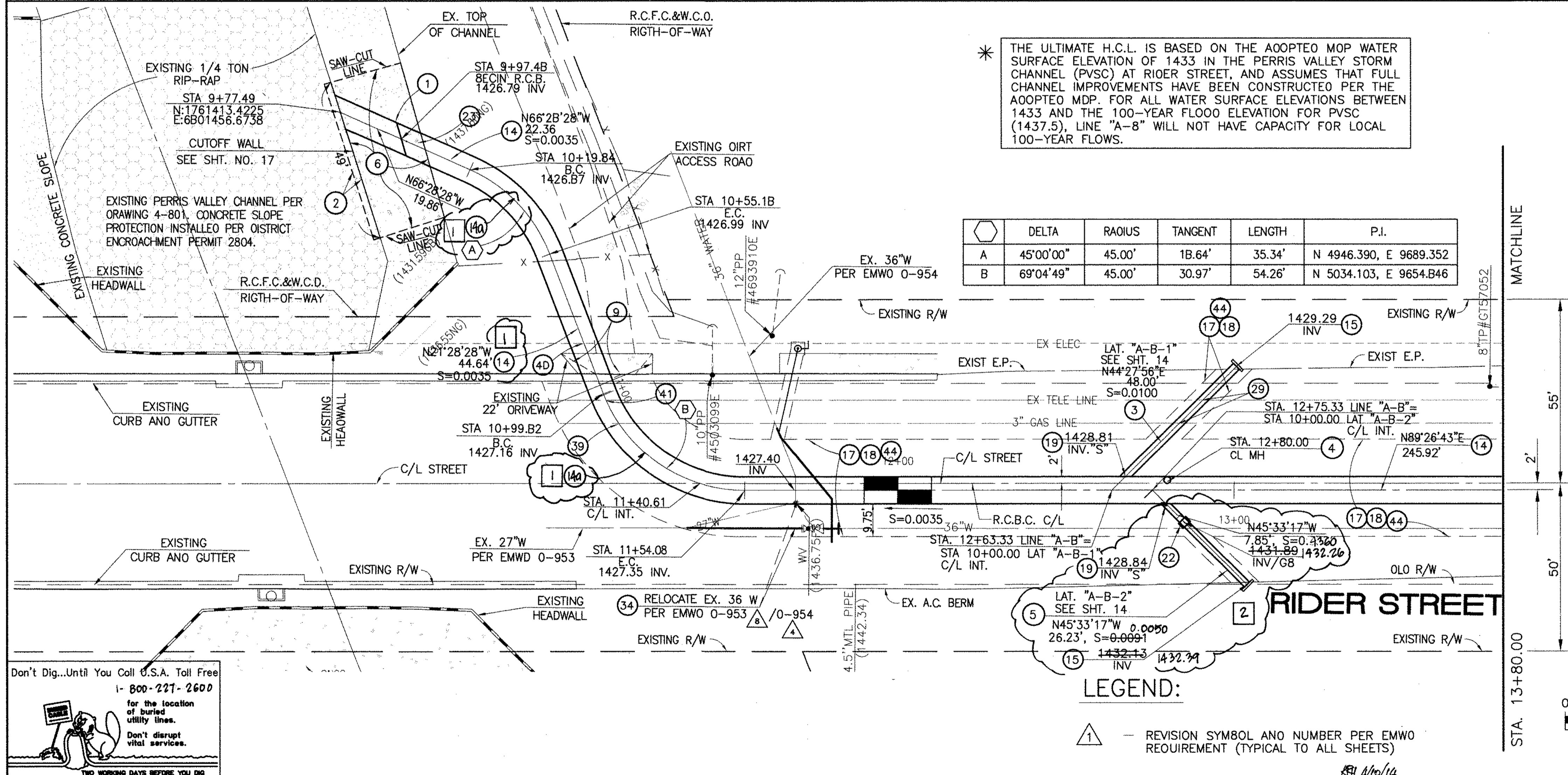
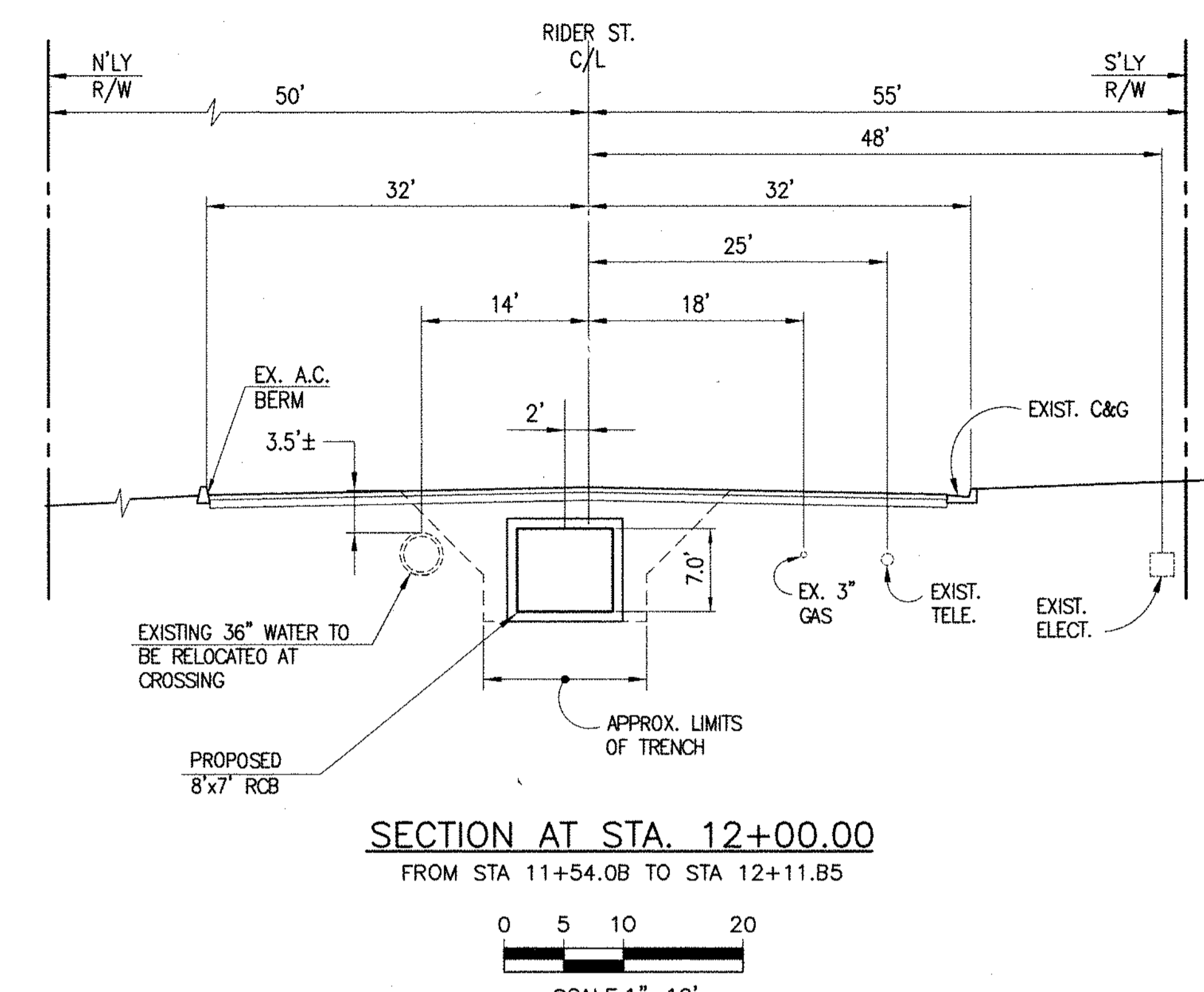
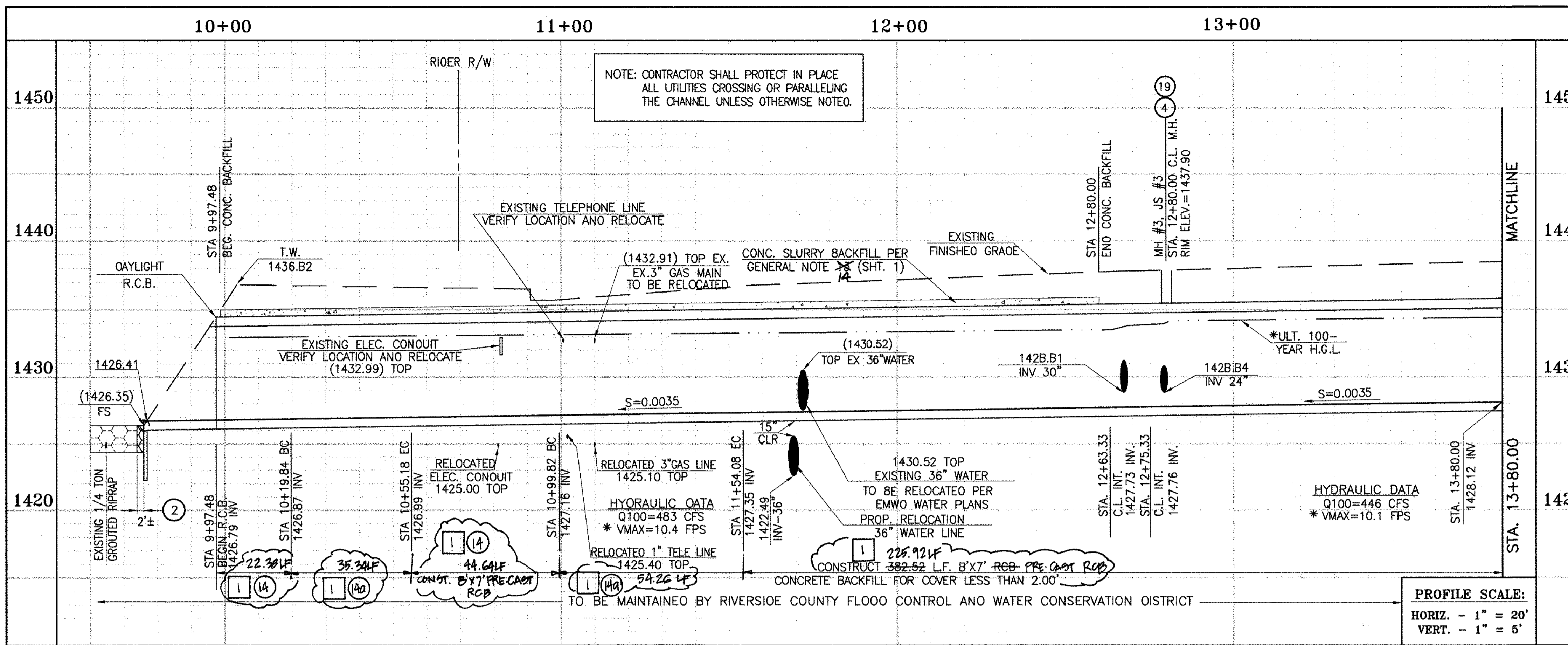


RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
RECOMMENDED FOR APPROVAL BY: *Mark A. Willey*  
PLANNING ENGINEER  
DATE: 1/20/2015  
APPROVED BY: *William D. Smith*  
CHIEF ENGINEER  
DATE: 1/20/15

CITY OF PERRIS APPROVED BY: *[Signature]*  
CITY ENGINEER  
DATE: 12-15-14

PERRIS VALLEY MDP LINE "A-B"

CITY OF PERRIS FILE NO. PB-1013
PROJECT NO. 4-0-00537
DRAWING NO. 4-1063
SHEET NO. 1 OF 18



- STORM DRAIN CONSTRUCTION NOTES:**
- DAYLIGHT R.C.B. ROOF PARALLEL TO TOP OF SLOPE. TAPER DOWN R.C.B. SIDEWALLS WITH SLOPE FACE. SEE DETAILS ON SHT. NO. 1B.
  - REMOVE AND REPLACE APPROXIMATELY 2' WIDE 1/4 TON GROUDED RIPRAP, MATCH EXISTING THICKNESS.
  - CONSTRUCT 30" R.C.P. 0-LOAD PER PLAN.
  - CONSTRUCT MANHOLE NO. 3 PER R.C.F.C.&W.C.O. STO OWC. MH253
  - CONSTRUCT 24" R.C.P. 0-LOAD PER PLAN.
  - SAWCUT AND REMOVE EXISTING CONCRETE SLOPE. SALVAGE 30" MINIMUM LONGITUDINAL AND/OR TRANSVERSE REBAR FROM EXISTING SLOPE PROTECTION AT ALL SAWCUT LOCATIONS. SPLICE SALVAGED REBAR TO NEW CONCRETE REINFORCING PER CURRENT ACI CODE. REPLACEMENT CONCRETE TO MATCH EXISTING THICKNESS, OR MINIMUM 6" THICK, WHICHEVER IS GREATER WITH #4 BARS @ 18" ON CENTER EACH WAY.
  - REMOVE AND REPLACE APPROACH EXISTING DRIVEWAY (SEE SHEET NO. 1B).
  - CONSTRUCT 8' x 7' RCB PER CALTRANS STD PLAN NO. 080. ON 45' RADIUS CURVED SECTIONS, INSIDE WALL (41' RADIUS) MUST BE SMOOTH CURVED AND OUTSIDE WALL (49' RADIUS) MUST HAVE MAXIMUM WALL CHORD LENGTH OF 8.0'
  - CONSTRUCT CONCRETE BULKHEAD PER R.C.F.C.&W.C.O. STO. OWG. MB16
  - SAWCUT AND REMOVE EXISTING A.C. PAVEMENT.
  - UTILITY TRENCH AND SURFACE REPAIR PER CITY STANDARD ON SHT. NO. 1B, MODIFIED TO ACCOMMODATE SLURRY BACKFILL WHERE BOX COVER IS LESS THAN 2.0'.
  - CONSTRUCT JUNCTION STRUCTURE NO. 3 PER R.C.F.C.&W.C.O. STO. OWG. JS228.
  - CONSTRUCT CONCRETE COLLAR PER R.C.F.C.&W.C.O. STO OWG. MB03.
  - CONSTRUCT SLOPE PROTECTION BARRIER PER A.P.W.A. STO. PLAN NO. 360-0.
  - PROTECT IN PLACE EXISTING UTILITY
  - RELOCATE EXISTING WATER LINE PER E.M.W.O. PLANS.
  - RELOCATE EXISTING GAS LINE.
  - RELOCATE EXISTING ELECTRICAL LINE.
  - RELOCATE EXISTING TELEPHONE LINE.
  - SAWCUT, REMOVE AND REPLACE A.C. PAVEMENT SURFACE REPAIR PER CITY STD. ON SHEET 1B. SEE SEPARATE PAVING PLAN.
  - CONSTRUCT 8'x7' PRE-CAST RCB PER APWA STD PLAN 390-0 SEE JOINT SEALANT NOTE ON SHT. 1

Don't Dig...Until You Call U.S.A. Toll Free 1-800-227-2600 for the location of buried utility lines. Don't disrupt vital services. TWO WORKING DAYS BEFORE YOU DIG

REF.	DESCRIPTION	APPR.	DATE	APPR.	DATE
1	CHANGED SLOPE TO 0.0035, ADDED MH, ADDED NEW 10" CHANGED 40" LAT TO 24" LAT, ADDED EX UTILITIES, RELOCATED UTILITIES, REVISED SP.	H.I.A.	2/3/14	J.S.	2/3/14
2	CHANGED C.P. RCB TO PRE-CAST RCB PER APWA STD PLAN 390-0	H.I.A.	2/3/14	J.S.	2/3/14

DESIGNED BY: **BN**  
 DRAWN BY: **ET**  
 DATE DRAWN: **11/18/14**

APPROVED BY: **THIENES ENGINEERING, INC.**  
 CIVIL ENGINEERING • LAND SURVEYING  
 14349 FIRESTONE BOULEVARD  
 LA MIRADA, CALIFORNIA 90638  
 PH: (714) 521-4811 FAX: (714) 521-4173

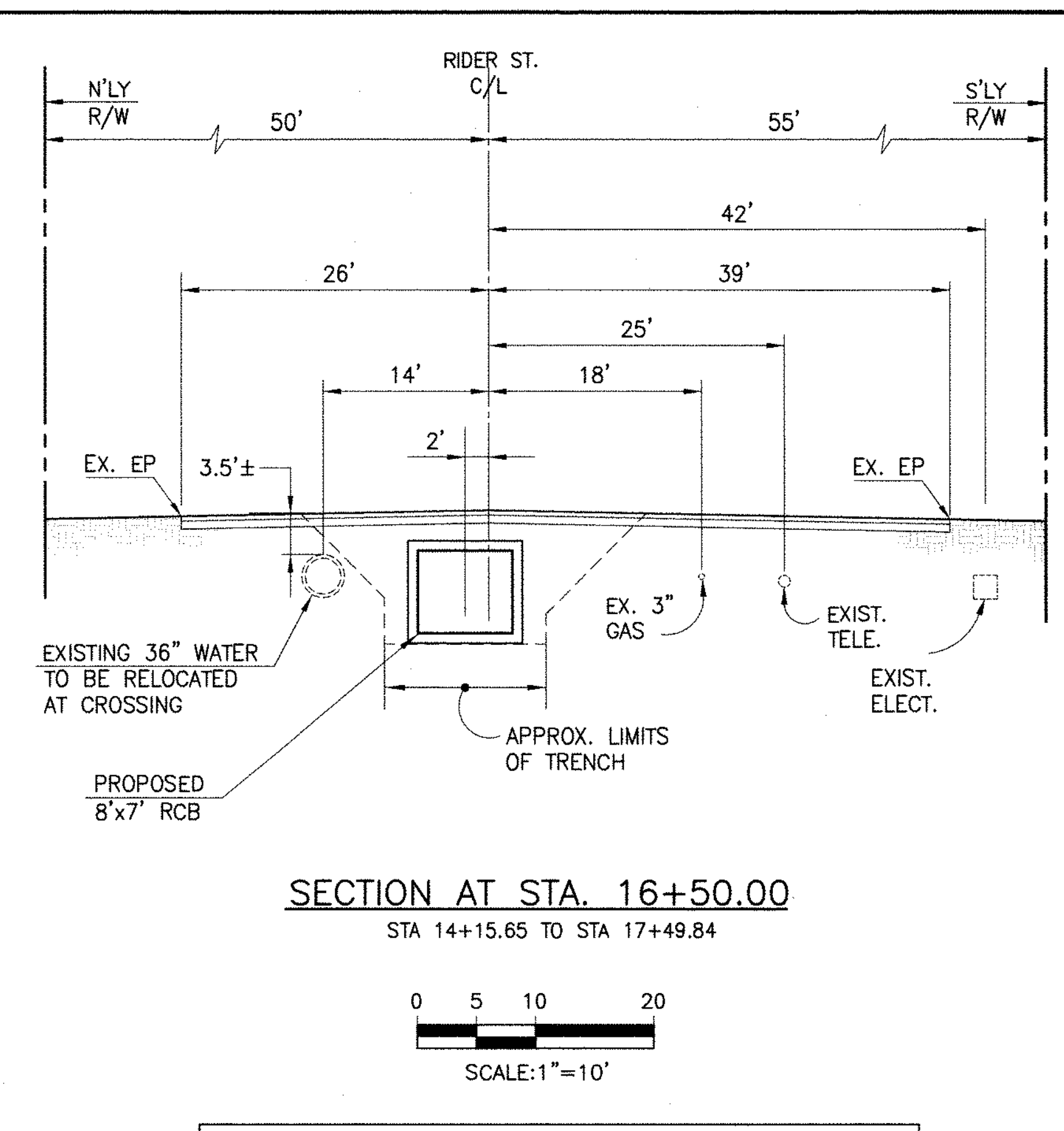
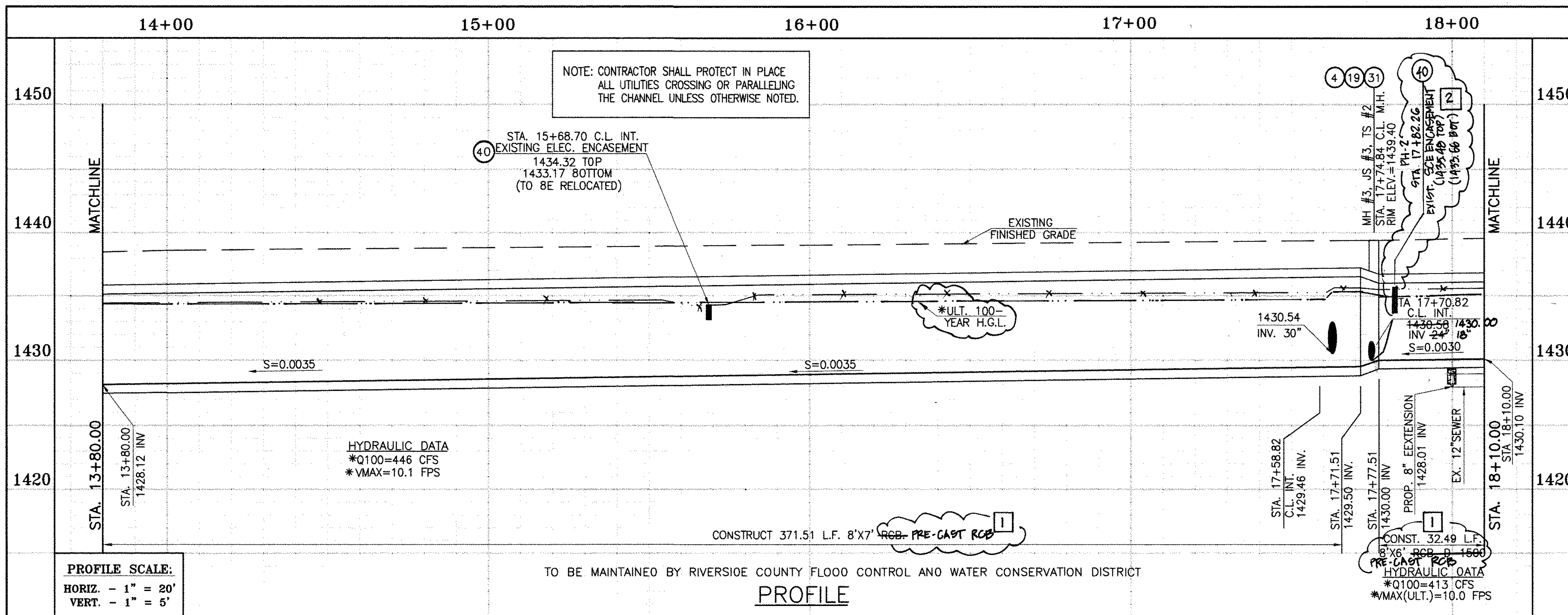
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
 RECOMMENDED FOR APPROVAL BY: **[Signature]**  
 DATE: **1/20/2015**

APPROVED BY: **[Signature]**  
 DATE: **1/20/2015**

CITY OF PERRIS  
 APPROVED BY: **[Signature]**  
 DATE: **12-15-14**

**PERRIS VALLEY MDP**  
**LINE "A-B"**  
 FROM STA. 9+97.48 TO STA. 13+80

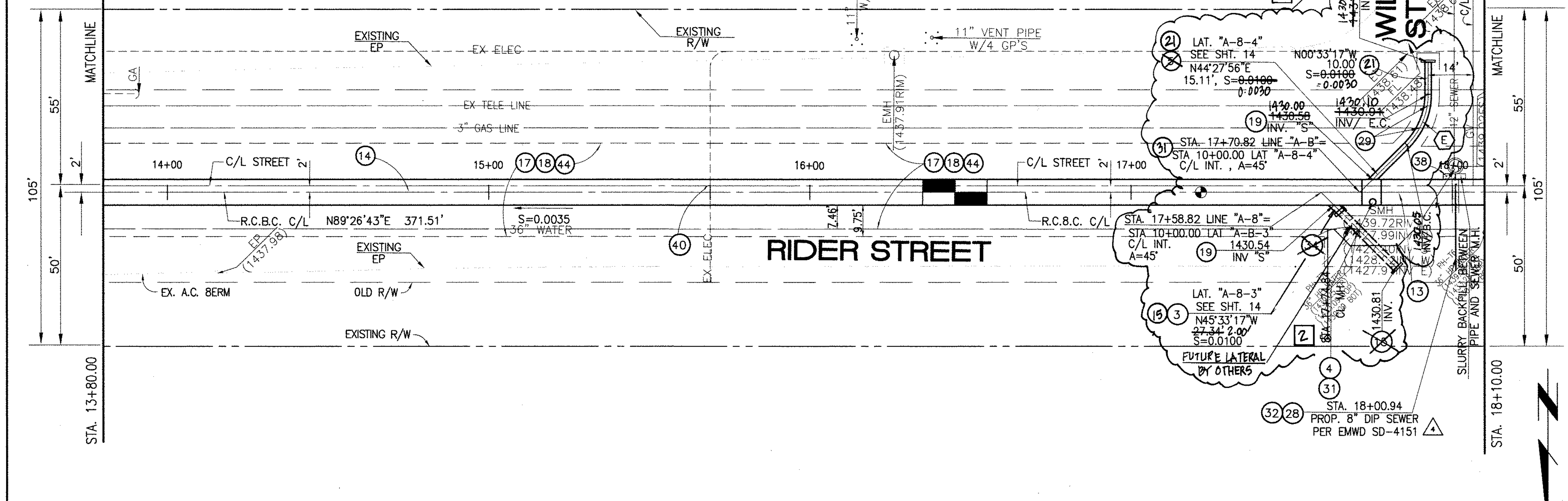
PROJECT NO. **4-0-00537**  
 DRAWING NO. **4-1063**  
 SHEET NO. **2 OF 18**



\* THE ULTIMATE H.G.L. IS BASED ON THE ADOPTED MOP WATER SURFACE ELEVATION OF 1433 IN THE PERRIS VALLEY STORM CHANNEL (PVSC) AT RIDER STREET, AND ASSUMES THAT FULL CHANNEL IMPROVEMENTS HAVE BEEN CONSTRUCTED PER THE ADOPTED MOP. FOR ALL WATER SURFACE ELEVATIONS BETWEEN 1433 AND THE 100-YEAR FLOOD ELEVATION FOR PVSC (1437.5), LINE "A-B" WILL NOT HAVE CAPACITY FOR LOCAL 100-YEAR FLOWS.

CAUTION:  
PROPOSED WORK IS IN PROXIMITY OF HIGH PRESSURE GAS LINES

DELTA	RADIUS	TANGENT	LENGTH	P.I.
E 45°01'13"	22.50'	9.32'	17.68'	N 5006.356, E 8986.091



**STORM DRAIN CONSTRUCTION NOTES:**

- 3) CONSTRUCT 30" R.C.P., 0-LOAD PER PLAN.
- 4) CONSTRUCT MANHOLE NO. 3 PER R.C.F.C.&W.C.D. STD DWG. MH253
- 5) CONSTRUCT 24" R.C.P., 0-LOAD PER PLAN.
- 13) CONSTRUCT 8' X 6' RCB PER CALTRANS STD PLAN NO. D80 OR APPROVED EQUAL. SEE JOINT SEALANT NOTE ON SHT. 1.
- 14) CONSTRUCT 8' X 7' RCB PER CALTRANS STD PLAN NO. D80 OR APPROVED EQUAL. SEE JOINT SEALANT NOTE ON SHT. 1.
- 15) CONSTRUCT CONCRETE BULKHEAD PER R.C.F.C.&W.C.D. STD DWG. M816.
- 17) SAWCUT AND REMOVE EXISTING A.C. PAVEMENT.
- 18) UTILITY TRENCH AND SURFACE REPAIR PER CITY STANDARD ON SHT. NO. 18, MODIFIED TO ACCOMMODATE SLURRY BACKFILL WHERE BOX COVER IS LESS THAN 2.0'.
- 19) CONSTRUCT JUNCTION STRUCTURE NO. 3 PER R.C.F.C.&W.C.O. STD. DWG. JS228.
- 28) CONSTRUCT SEWER PROTECTION PER R.C.F.C.&W.C.O. STD. DWG. M807.
- 29) PROTECT IN PLACE EXISTING UTILITIES.
- 31) CONSTRUCT MODIFIED TRANSITION STRUCTURE NO.2 PER R.C.F.C.&W.C.O. STD. DWG. TS302.
- 32) INSTALL 8" OIP SEWER, ENCASED WITH 2500 PSI CONCRETE PER CALTRANS STD PLAN NO. 080.
- 34) RELOCATE EXISTING WATER LINE PER EMWD PLANS (36" WATER LINE).
- 38) SLURRY BACKFILL BETWEEN RCB AND MANHOLE.
- 40) RELOCATE EXISTING ELECTRICAL LINE.
- 44) SAWCUT, REMOVE AND REPLACE A.C. PAVEMENT SURFACE REPAIR PER CITY STD. ON SHEET 18.
- 21) CONSTRUCT 18" R.C.P., D-LOAD PER PLAN.

Don't Dig...Until You Call U.S.A. Toll Free  
1-800-277-2600  
for the location of buried utility lines.  
Don't disrupt vital services.  
TWO WORKING DAYS BEFORE YOU DIG

BENCH MARK  
COUNTY OF RIVERSIDE BENCHMARK NO. "M-31"  
COUNTY OF RIVERSIDE BENCHMARK - 3 1/4" ALUMINUM DISK MARKED M-31, LOCATED FLUSH AT THE SOUTH WEST CORNER OF BRIDGE ON TOP OF SIDEWALK NEAR FACE OF CURB LOCATED AT THE CROSSING OF PERRIS BLVD. AND HWY. CO. FLOOD CONTROL CHANNEL (PERRIS LATERAL "A", 43 FT. WEST OF CENTERLINE OF PERRIS BLVD. AND 4.5 FT. EAST OF CONCRETE BRIDGE BARRIER (EDGE OF BRIDGE) MARKED M-102 D.W.R. IN TOP OF CONC. POST FLUSH W/ GROUND ELEVATION = 1476.674' (MVD 1829)

REVISIONS	ENGINEER	RCFC/	DESIGNED BY:	APPROVED BY:
2) CHANGED SLOPE TO 0.0035, ADDED MH, ADDED NEW DIPS, CHANGED A2' LAT TO 24' LAT, ADDED EX. UTILITIES, RELOCATE UTILITIES, REVISED S-D.	H.A.	2/3/16	BW	THIENES ENGINEERING, INC.
1) CHANGED C.P. RCB TO PRE-CAST RCB PER PLAN 390-D	H.A.	2/3/16	ET	HAIDOOK I. AGHAIAN

DESIGNED BY: BW  
DRAWN BY: ET  
DATE DRAWN:

APPROVED BY: **Thienes Engineering, Inc.**  
CIVIL ENGINEERING • LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90638  
PH: (714) 521-4811 FAX: (714) 521-4173

HAIDOOK I. AGHAIAN Date: 11/18/14 RCE NO. 43293

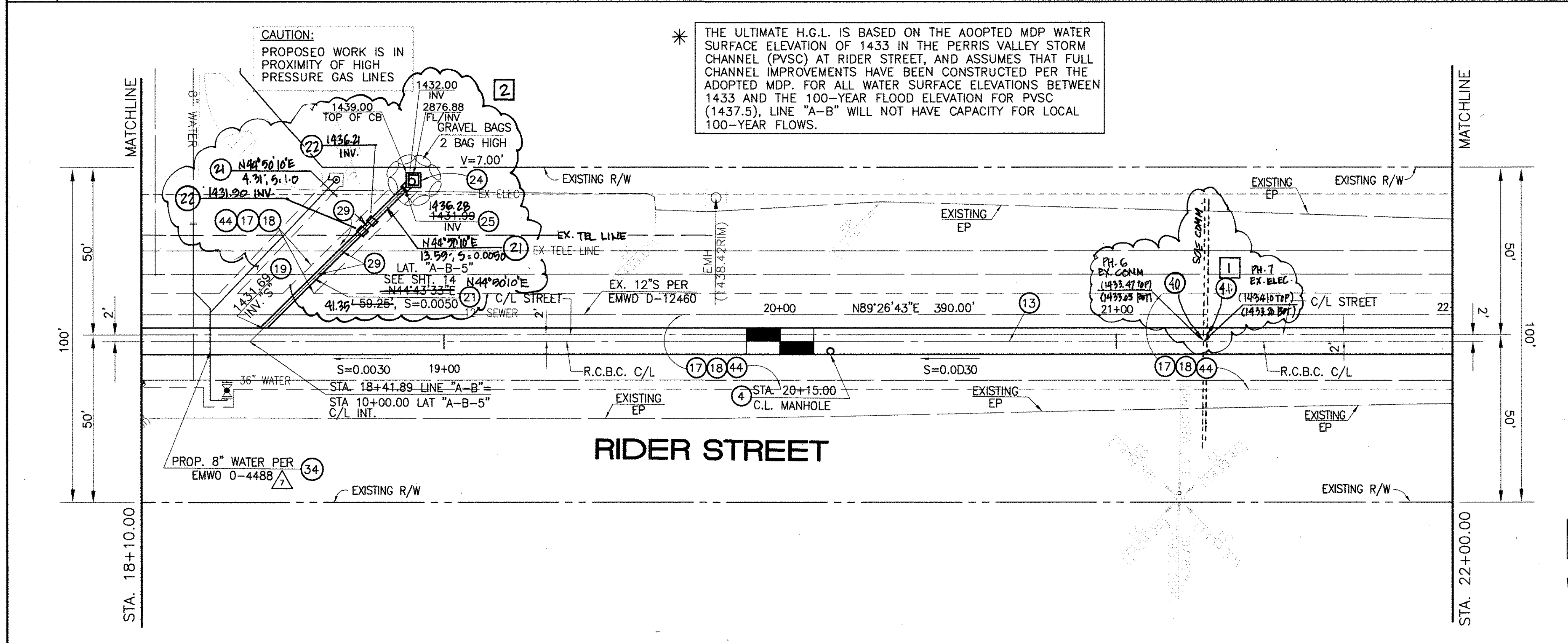
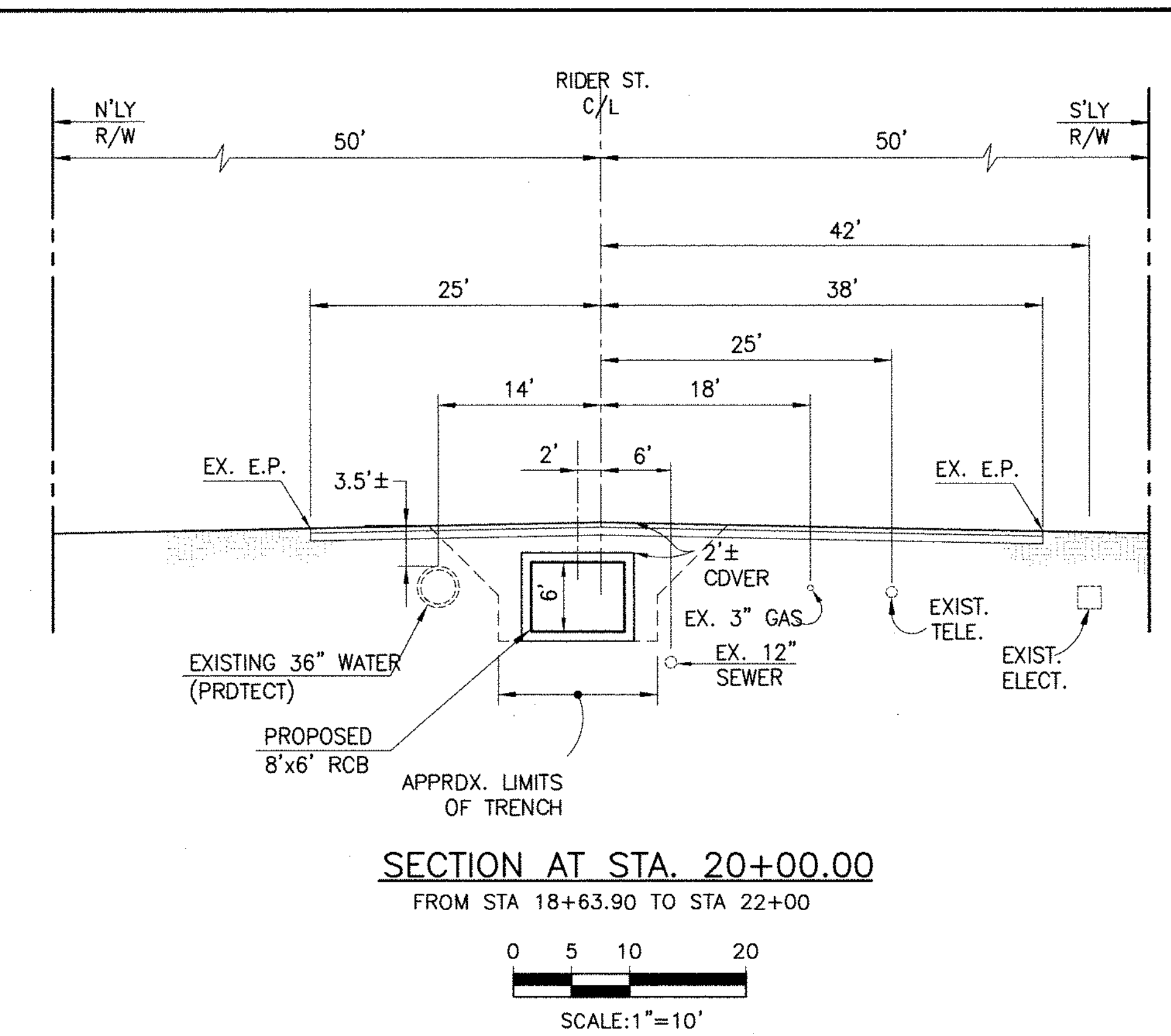
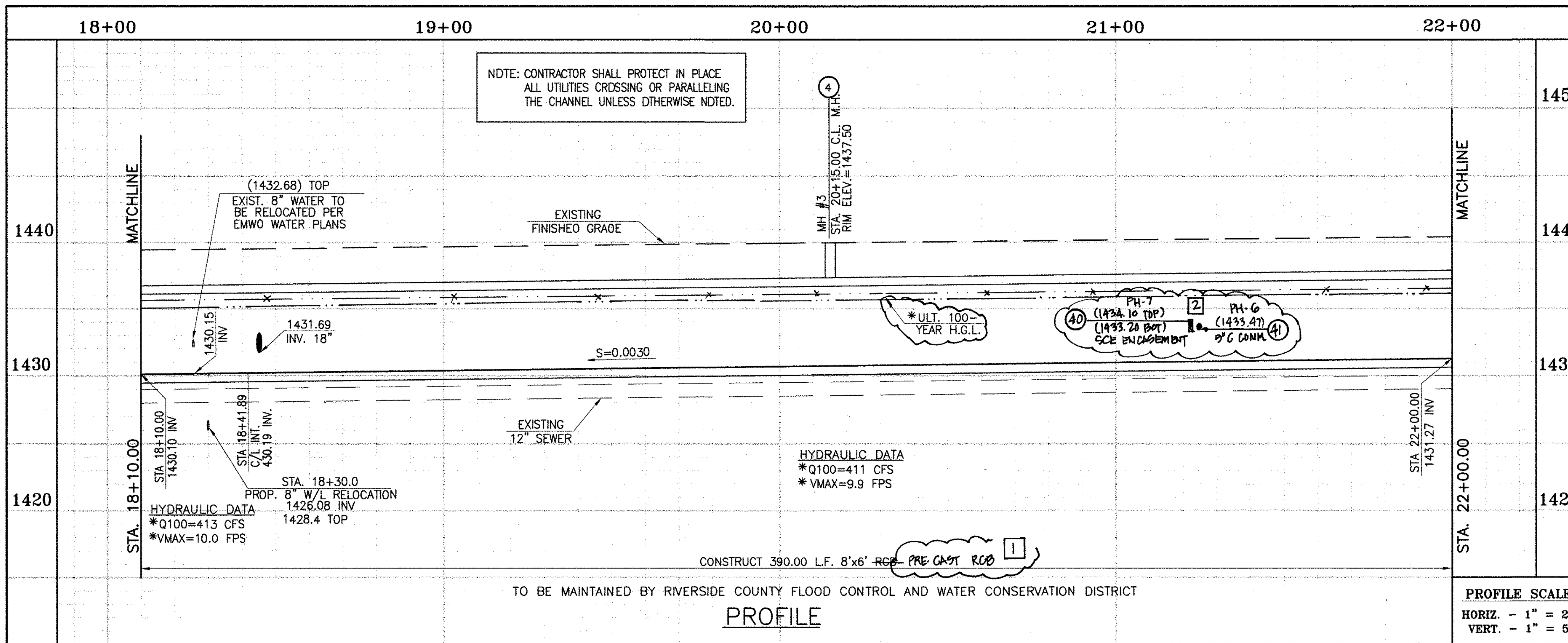
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

RECOMMENDED FOR APPROVAL BY: *[Signature]*  
APPROVED BY: *Mark H. Wilks*  
DATE: 1/20/2015 DATE: 1/20/2015

CITY OF PERRIS APPROVED BY: *[Signature]*  
DATE: 12-15-14

PERRIS VALLEY MDP  
LINE "A-B"  
FROM STA. 13+80 TO STA. 18+10

CITY OF PERRIS FILE NO. P8-1013
PROJECT NO. 4-0-00537
DRAWING NO. 4-1063
SHEET NO. 3 OF 18



- STORM DRAIN CONSTRUCTION NOTES:**
- ④ CONSTRUCT MANHOLE NO. 3 PER R.C.F.C.&W.C.O. STO DWG. MH253
  - ①⑬ CONSTRUCT 8' X 6' RCB PER CALTRANS STD PLAN NO. 688 OR APPROVED EQUAL. SEE JOINT SEALANT NOTE ON SHT. 1.
  - ⑰ SAWCUT AND REMOVE EXISTING A.C. PAVEMENT.
  - ⑱ UTILITY TRENCH AND SURFACE REPAIR PER CITY STANDARO ON SHT. NO. 18, MODIFIED TO ACCOMMOADATE SLURRY BACKFILL WHERE BOX COVER IS LESS THAN 2.0'.
  - ⑲ CONSTRUCT JUNCTION STRUCTURE NO. 3 PER R.C.F.C.&W.C.O. STO. DWG. JS228.
  - ⑳ CONSTRUCT 18" R.C.P. 0-LOAD PER SHEET #14.
  - ㉑ CONSTRUCT CONCRETE ORDP INLET PER R.C.F.C.&W.C.O. STO DWG. CB110
  - ㉒ CONSTRUCT SPECIAL CONNECTION PER R.C.F.C.&W.C.O. STO DWG. CB109
  - ㉓ PROTECT IN PLACE EXISTING UTILITIES.
  - ㉔ RELOCATE EXISTING WATER LINE PER E.M.W.O. PLANS.
  - ㉕ SAWCUT, REMOVE AND REPLACE A.C. PAVEMENT SURFACE REPAIR PER CITY STO. ON SHEET 18. SEE SEPARATE PAVING PLANS.
  - ㉖ CONSTRUCT CONCRETE COLLAR PER R.C.F.C.&W.C.O. STD DWG M803.
  - ㉗ RELOCATE EXISTING ELECTRICAL LINE.
  - ㉘ RELOCATE EXISTING TELEPHONE LINE.

Don't Dig...Until You Call U.S.A. Toll Free  
1-800-227-2600  
for the location of buried utility lines.  
Don't disrupt vital services.  
TWO WORKING DAYS BEFORE YOU DIG

**BENCH MARK**  
COUNTY OF RIVERSIDE BENCHMARK NO. 74-31"  
COUNTY OF RIVERSIDE BENCHMARK - 3 1/4" ALUMINUM DISK MARKED M-31, LOCATED FLUSH AT THE SOUTH WEST CORNER OF BRIDGE ON TOP OF SIDEWALK NEAR FACE OF CURB LOCATED AT THE CROSSING OF PERRIS BLVD. AND HWY. CO. FLOOD CONTROL CHANNEL (PERRIS LATERAL) AT 43 FT. WEST OF CENTERLINE OF PERRIS BLVD. AND 4.5 FT. EAST OF CONCRETE BRIDGE BARRIER. (TOP OF BRIDGE) MARKED R-102 D.W.R. IN TOP OF CONC. POST FLUSH W/ GROUND ELEVATION = 1474.874' (MVD 1929)

REVISIONS	ENGINEER	RCFC/	DESIGNED BY:	APPROVED BY:
2	CHANGED SLOPE TO 0.0015 ADDED MH, DOORID NEW 10'S, CHANGED 42" LAT TO 24" LAT, ADDED EX UTILITIES, RELOCATE UTILITIES, REV. S.D.	H.I.A.	2/9/16	2/23/16
1	CHANGED CLP RCB TO PRE-CAST RCB APWA STD PLAN 390-0	H.I.A.	2/9/16	2/23/16

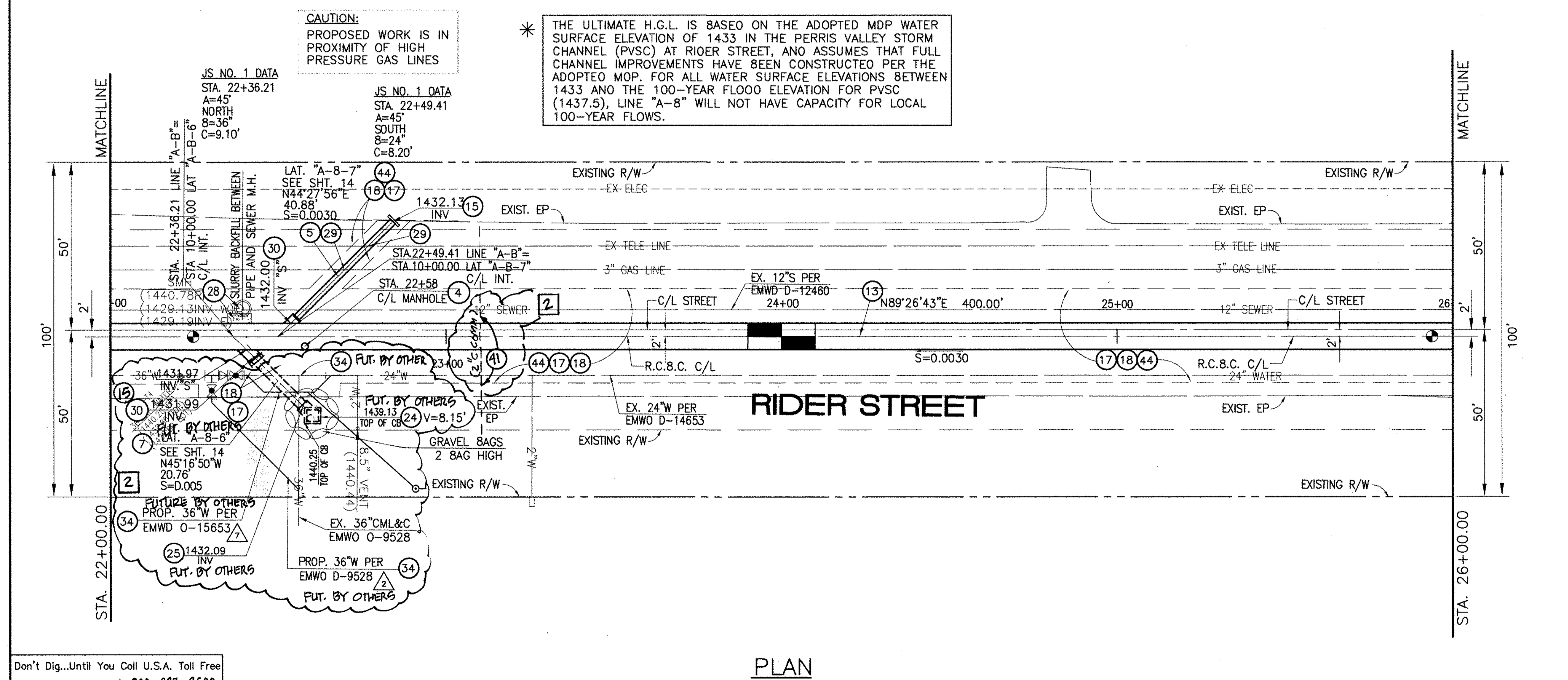
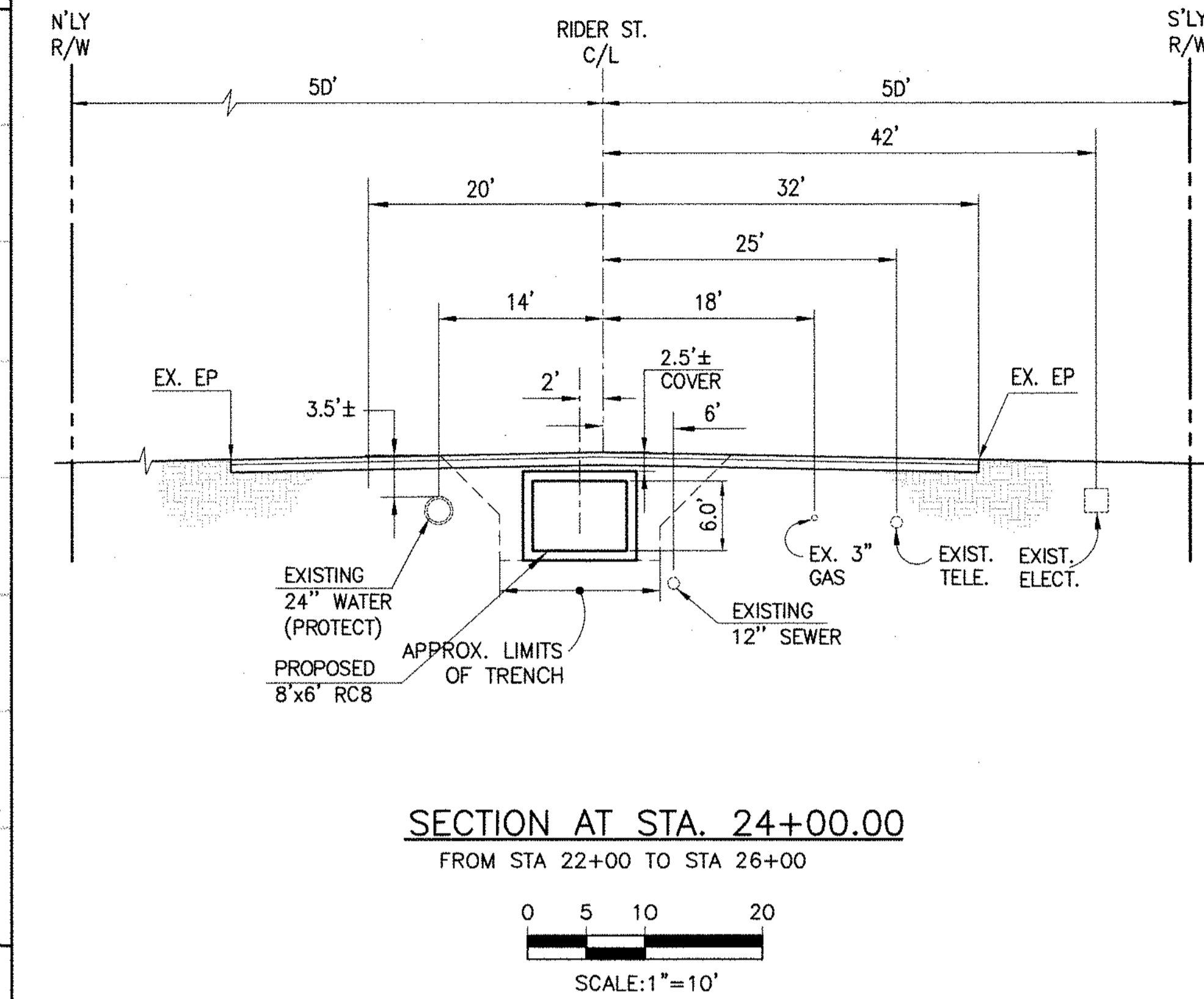
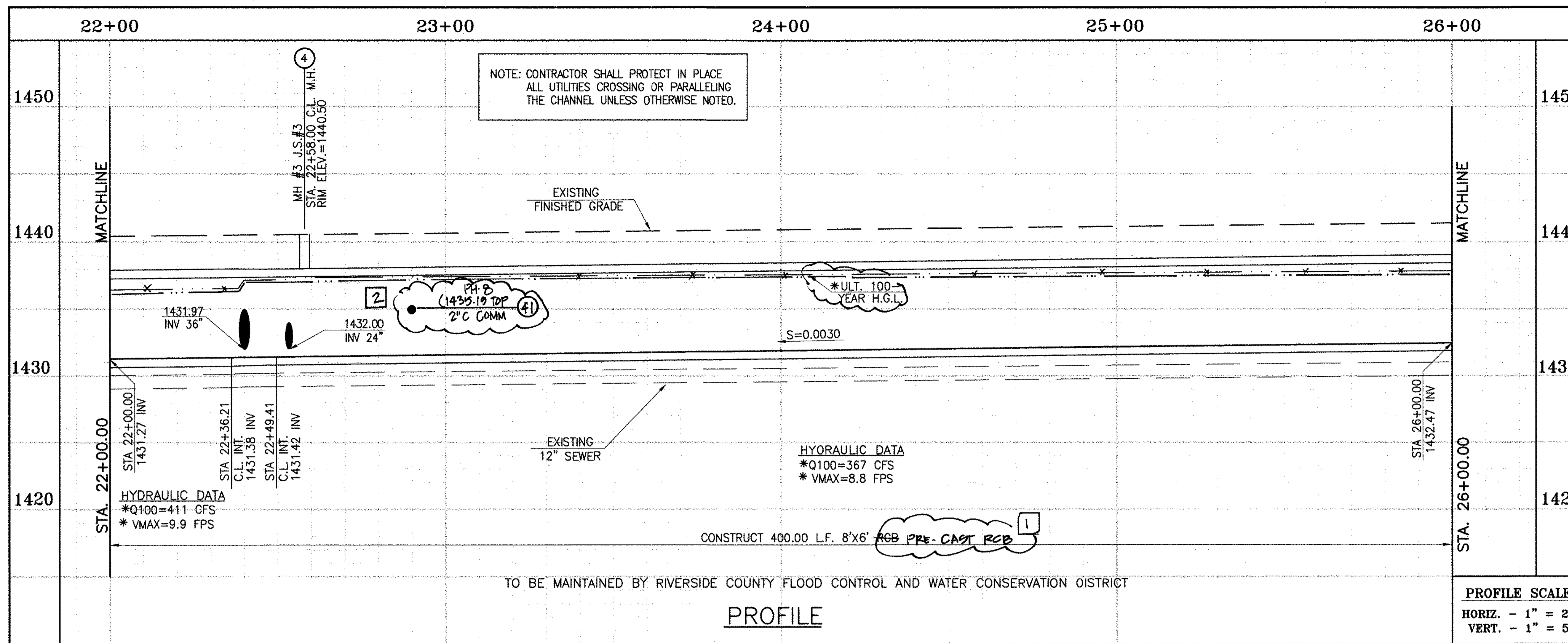
DESIGNED BY: **BN**  
DRAWN BY: **ET**  
DATE DRAWN:  
APPROVED BY: **Thienes Engineering, Inc.**  
CIVIL ENGINEERING • LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90638  
PH: (714) 521-4811 FAX: (714) 521-4173  
**Haidook Aglan** Date: 11/18/14  
HAIDOOK I. AGHAIAN RCE NO. 43293

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
RECOMMENDED FOR APPROVAL BY: **Allen**  
DATE: 1/24/2015  
APPROVED BY: **Mark H. Wills**  
DATE: 1/20/2015  
CITY ENGINEER

CITY OF PERRIS APPROVED BY: **[Signature]**  
DATE: 12-15-14  
RECOMMENDED DATE:

PERRIS VALLEY MDP LINE "A-B"  
FROM STA. 18+10 TO STA. 22+00

CITY OF PERRIS FILE NO. P8-1013  
PROJECT NO. 4-0-00537  
DRAWING NO. 4-1063  
SHEET NO. 4 OF 18



**STORM DRAIN CONSTRUCTION NOTES:**

- 4 CONSTRUCT MANHOLE NO. 3 PER R.C.F.C.&W.C.D. STD. OWG. MH253
- 5 CONSTRUCT 24" R.C.P., 0-LOAO PER PLAN.
- 7 CONSTRUCT 36" R.C.P., 0-LOAO PER PLAN.
- 13 CONSTRUCT 8' X 6' RCB PER APNA STD PLAN 390-0 OR APPROVED EQUAL. PRE-CAST RCB PER CALTRANS STD PLAN NO. 080 OR APPROVED EQUAL. SEE JOINT GEALANT NOTE ON SHT. 1.
- 15 CONSTRUCT CONCRETE BULKHEAD PER R.C.F.C.&W.C.O. STD. OWG. M816.
- 17 SAWCUT AND REMOVE EXISTING A.C. PAVEMENT.
- 18 UTILITY TRENCH AND SURFACE REPAIR PER CITY STANOARO ON SHT. NO. 18, MODIFIED TO ACCOMMOADATE SLURRY BACKFILL WHERE BOX COVER IS LESS THAN 2.0'.
- 24 CONSTRUCT CONCRETE DROP INLET PER R.C.F.C.&W.C.O. STO. OWG. CB110 W=3.50'
- 25 CONSTRUCT SPECIAL CONNECTION PER R.C.F.C.&W.C.O. STO. OWG. CB109
- 28 CONSTRUCT SEWER PROTECTION PER R.C.F.C.&W.C.O. STO. DWG. M807. OR CONCRETE ENCASMENT NO. 2 PER EMWD STD. NO. S8-157.
- 29 PROTECT IN PLACE EXISTING UTILITIES.
- 30 CONSTRUCT JUNCTION STRUCTURE NO.1 PER R.C.F.C.&W.C.O. STO. OWG. JS226.
- 34 RELOCATE EXISTING WATER LINE PER E.M.W.O. PLANS.
- 44 SAWCUT, REMOVE AND REPLACE A.C. PAVEMENT SURFACE REPAIR PER CITY STO. ON SHEET 18. SEE SEPARATE PAVING PLANS.
- 41 RELOCATE EXISTING TELEPHONE LINE.



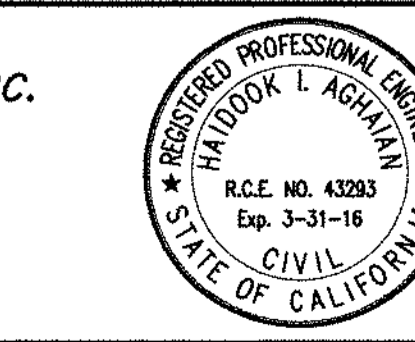
BENCH MARK  
COUNTY OF RIVERSIDE BENCHMARK NO. 24-31  
COUNTY OF RIVERSIDE BENCHMARK - 3 1/4" ALUMINUM DISK MARKED M-31, LOCATED FLUSH AT THE SOUTH WEST CORNER OF BRIDGE ON TOP OF SIDEWALK NEAR FACE OF CURB LOCATED AT THE CROSSING OF PERRIS BLVD. AND RIV. CO. FLOOD CONTROL CHANNEL (PERRIS LATERAL 2), 43 FT. WEST OF CENTERLINE OF PERRIS BLVD. AND 43 FT. EAST OF CONCRETE BRIDGE BARRIER (EDGE OF BRIDGE) MARKED R-102 D.W.R. IN TOP OF CONC. POST FLUSH W/ ELEVATION = 1474.674' (DWD 1829)

REV.	DESCRIPTION	APPR.	DATE	APPR.	DATE
2	CHANGED SLOPE TO 0.0015, ADDED MH. ADDED NEW 10'S CHANNEL 4" LAY TO 24" LAY, ADDED EX.	H.A.	2/9/16	JL	2/11/16
1	UTILITIES, RELOCATING UTILITIES, REV. 5-D.	H.A.	2/11/16	JL	2/11/16
1	CHANGED CLP RCB TO PRE-CAST RCB PER PLAN 390-0	H.A.	2/11/16	JL	2/11/16

DESIGNED BY: BW  
DRAWN BY: ET  
DATE DRAWN:

APPROVED BY:  
**Thienes Engineering, Inc.**  
CIVIL ENGINEERING • LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90638  
PH: (714) 521-4811 FAX: (714) 521-4173

HAIDOOK I. AGHAIAN Date: 11/18/14 RCE NO. 43293



RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

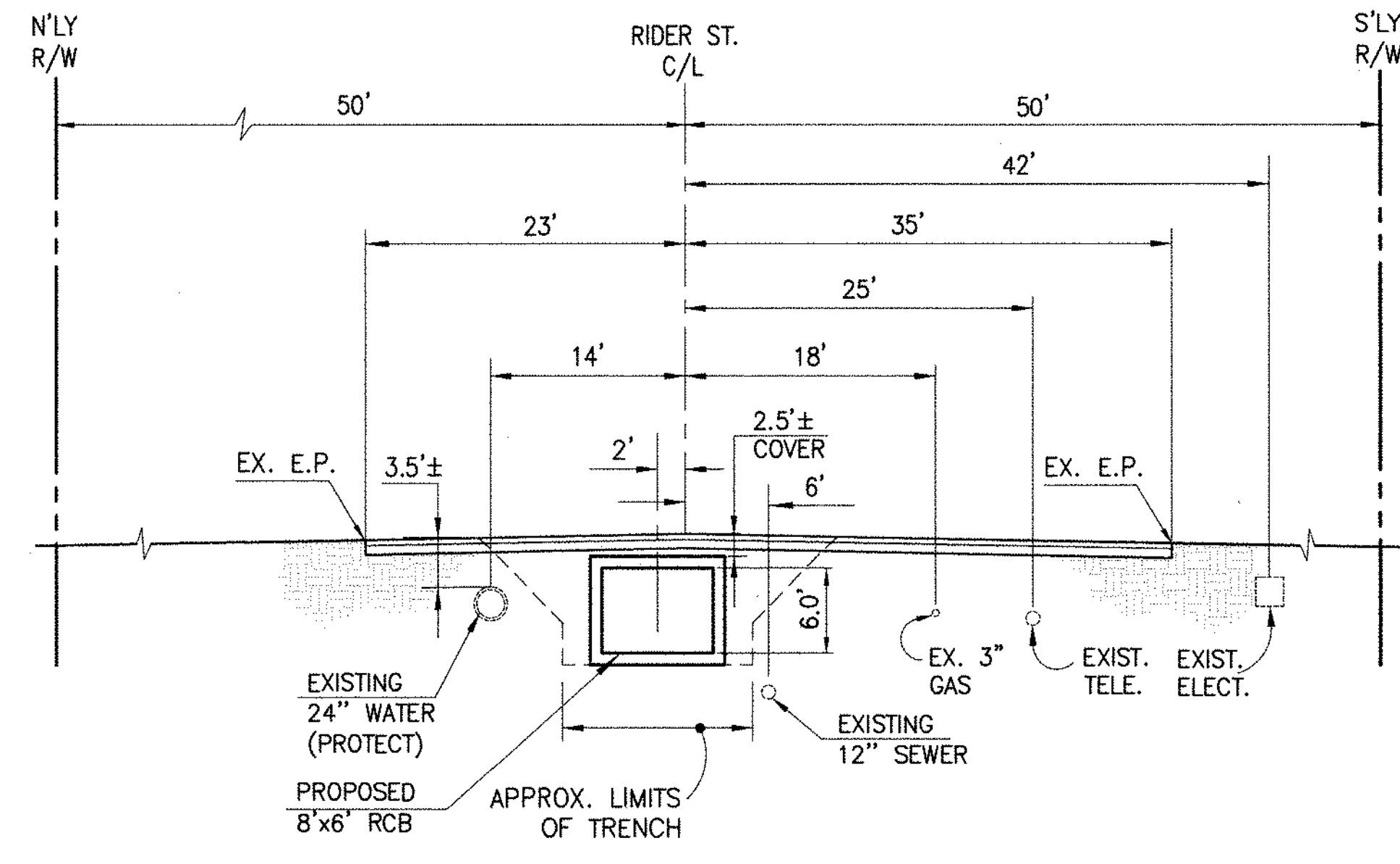
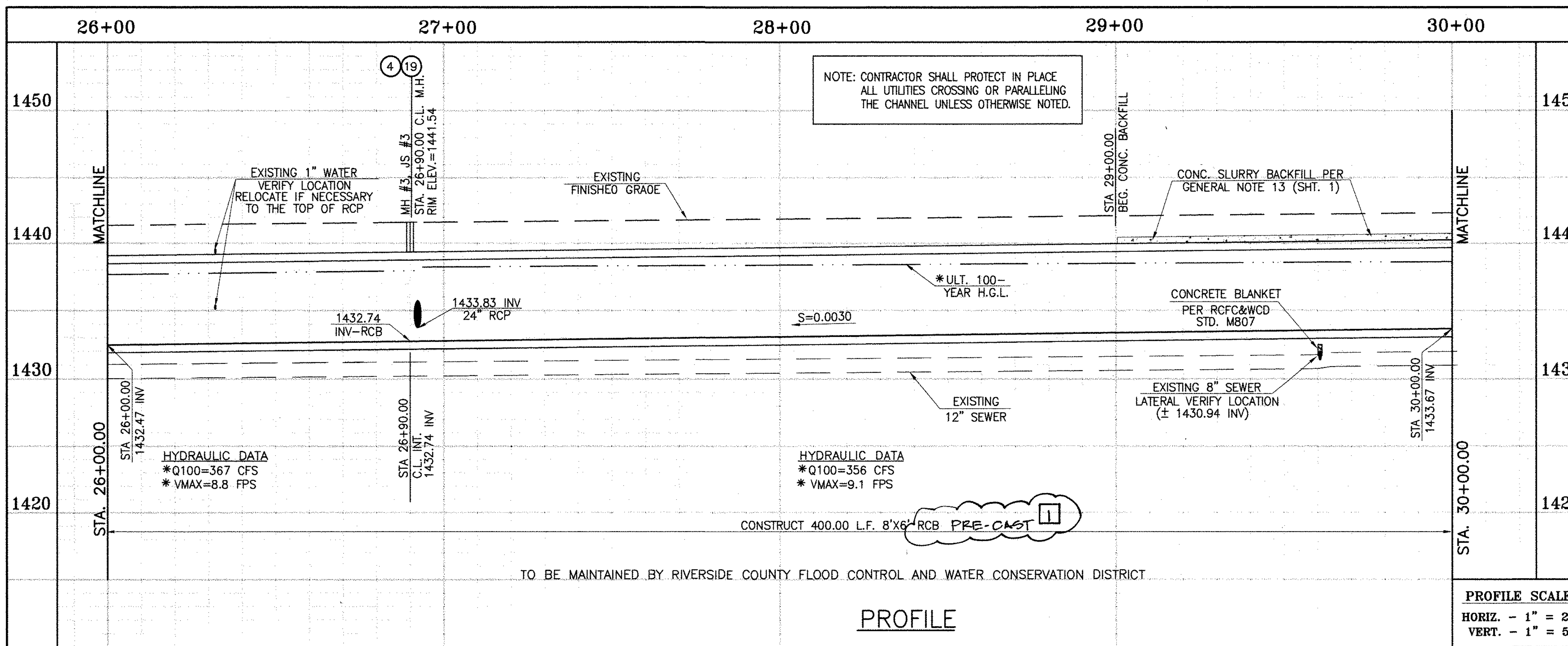
RECOMMENDED FOR APPROVAL BY: [Signature]  
DATE: 4/24/2015

APPROVED BY: Mark H. Wille  
DATE: 1/20/2015

CITY OF PERRIS APPROVED BY: [Signature]  
DATE: 12-15-14

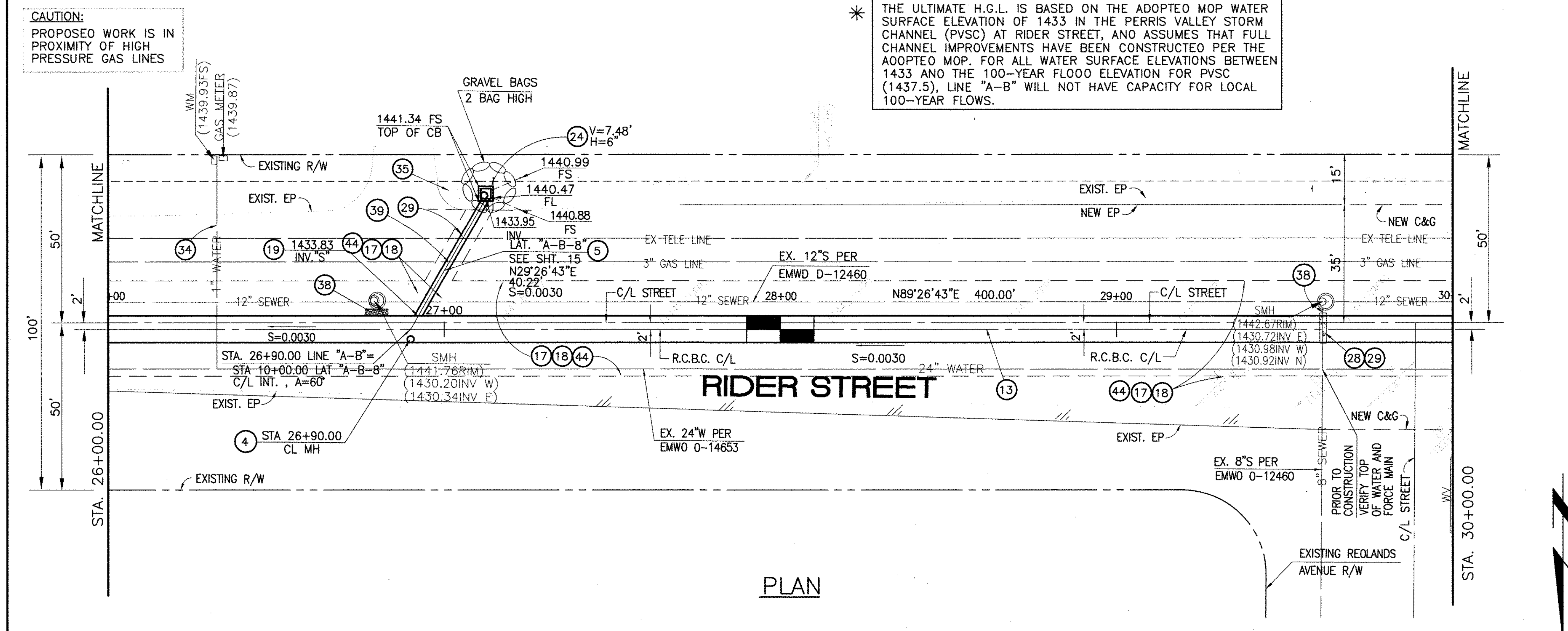
PERRIS VALLEY MDP  
LINE "A-B"  
FROM STA. 22+00 TO STA. 26+00

CITY OF PERRIS  
FILE NO. P8-1013  
PROJECT NO. 4-0-00537  
DRAWING NO. 4-1063  
SHEET NO. 5 OF 18



SECTION AT STA. 28+00.00  
FROM STA 26+00 TO STA 29+62.72

SCALE: 1" = 10'



- STORM DRAIN CONSTRUCTION NOTES:**
- 4 CONSTRUCT MANHOLE NO. 3 PER R.C.F.C.&W.C.D. STD DWG. MH253
  - 5 CONSTRUCT 24" R.C.P. 0-LOAD PER PLAN.
  - 13 CONSTRUCT 8' X 6' RCB PER CALTRANS STD PLAN NO. D80 OR APPROVED EQUAL. SEE JOINT SEALANT NOTE ON SHEET 17.
  - 17 SAWCUT AND REMOVE EXISTING A.C. PAVEMENT.
  - 18 UTILITY TRENCH AND SURFACE REPAIR PER CITY STANDARD ON SHT. NO. 18, MODIFIED TO ACCOMMODATE SLURRY BACKFILL WHERE BOX COVER IS LESS THAN 2.0'.
  - 19 CONSTRUCT JUNCTION STRUCTURE NO.3 PER R.C.F.C.&W.C.D. STD. DWG. JS228.
  - 24 CONSTRUCT CONCRETE DROP INLET PER R.C.F.C.&W.C.D. STD DWG. CB110
  - 28 CONSTRUCT SEWER PROTECTION PER R.C.F.C.&W.C.D. STD. DWG. M807.
  - 29 PROTECT IN PLACE EXISTING UTILITIES.
  - 34 RELOCATE EXISTING WATER LINE PER E.M.W.O. PLANS.
  - 35 CONSTRUCT 4" THICK AC PAVEMENT OVER NATIVE.
  - 38 SLURRY BACKFILL BETWEEN RCB AND MANHOLE.
  - 39 RELOCATE EXISTING GAS LINE.
  - 44 SAWCUT, REMOVE AND REPLACE A.C. PAVEMENT SURFACE REPAIR PER CITY STD. ON SHEET 18. SEE SEPARATE PAVING PLANS.

Don't Dig...Until You Call U.S.A. Toll Free  
1-800-227-2600

for the location of buried utility lines.  
Don't disrupt vital services.

TWO WORKING DAYS BEFORE YOU DIG

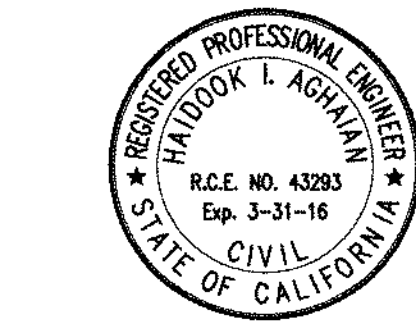
**BENCH MARK**  
COUNTY OF RIVERSIDE BENCHMARK NO. "M-31"  
COUNTY OF RIVERSIDE BENCHMARK - 3 1/4" ALUMINUM DISK  
MARKED M-31, LOCATED FLUSH AT THE SOUTH WEST CORNER  
OF BRIDGE ON TOP OF SIDEWALK NEAR FACE OF CURB  
LOCATED AT THE CROSSING OF PERRIS BLVD. AND INV. CO.  
FLOOD CONTROL CHANNEL, PERRIS LATERAL "A", 43 FT. WEST  
OF CENTERLINE OF PERRIS BLVD. AND 4.5 FT. EAST OF  
CONCRETE BRIDGE BARRIER. (EDGE OF BRIDGE)  
MARKED R-102 D.W.R. IN TOP OF CONC. POST FLUSH W/  
GROUND  
ELEVATION = 1476.874' (NVD 1928)

REF.	DESCRIPTION	APPR.	DATE	APPR.	DATE
1	CHANGED C.P. RCB TO PRE-CAST RCB PER PLAN 390-0	H.I.A.	7/5	7/5	7/5/16

DESIGNED BY: **BN**  
DRAWN BY: **ET**  
DATE DRAWN:

APPROVED BY: **Thienes Engineering, Inc.**  
CIVIL ENGINEERING • LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90638  
PH. (714) 521-4811 FAX (714) 521-4173

*Handwritten Signature* Date: 11/18/14  
HAIDOOK I. AGHAJAN RCE NO. 43293



RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

RECOMMENDED FOR APPROVAL BY: *[Signature]*  
DATE: 1/20/2015

APPROVED BY: *[Signature]*  
DATE: 1/20/2015

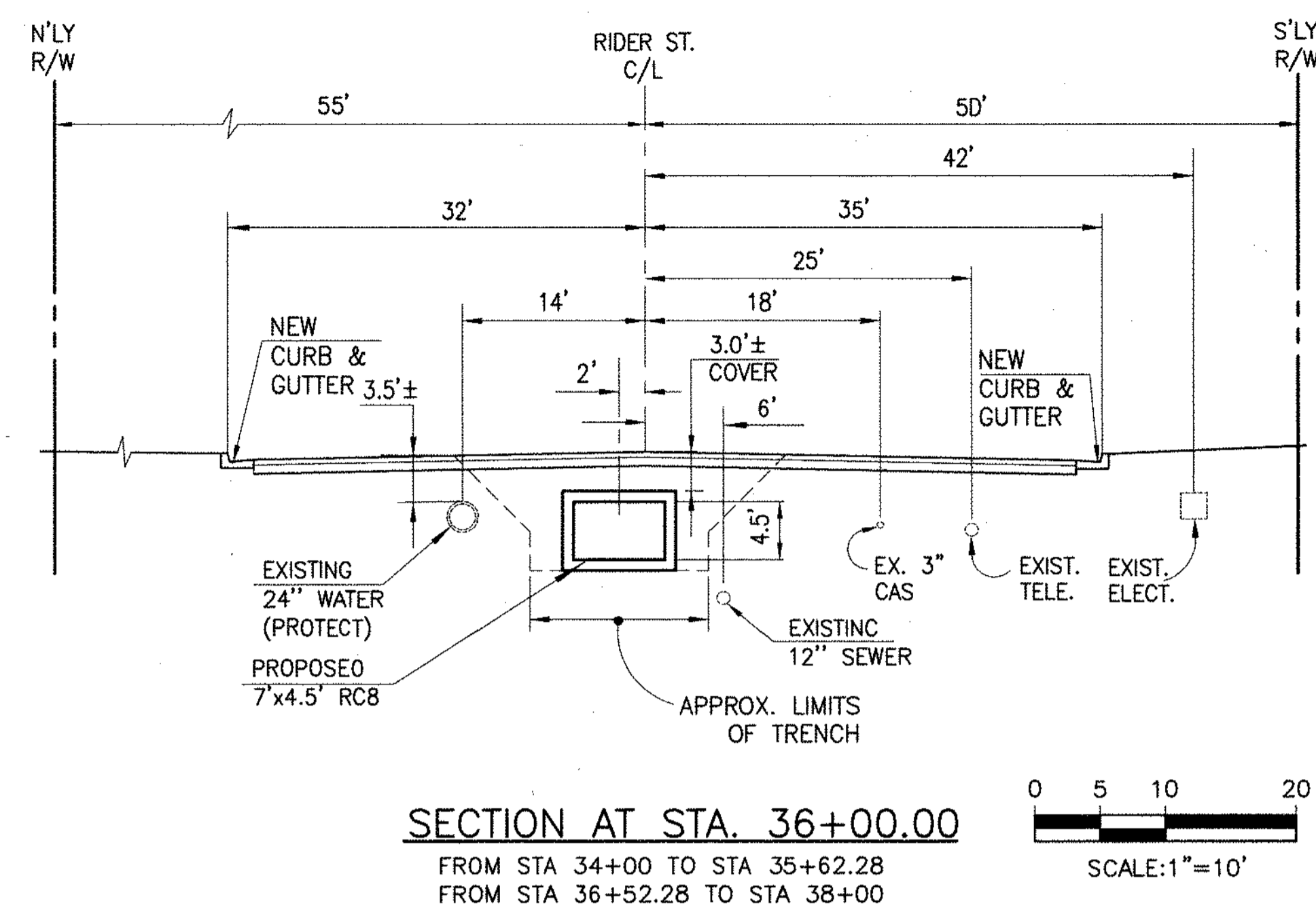
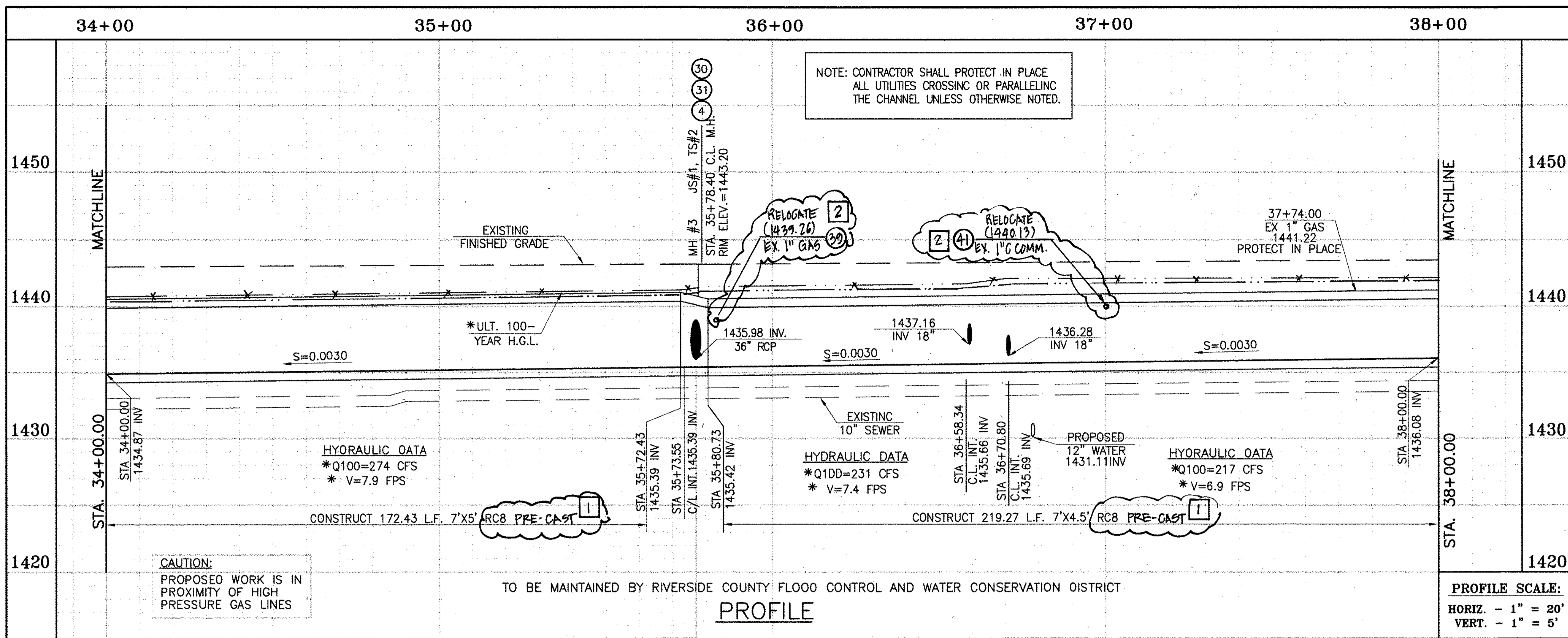
CITY OF PERRIS APPROVED BY: *[Signature]*  
DATE: 1-15-14

PERRIS VALLEY MDP LINE "A-B"  
FROM STA. 26+00 TO STA. 30+00

CITY OF PERRIS FILE NO. P8-1013

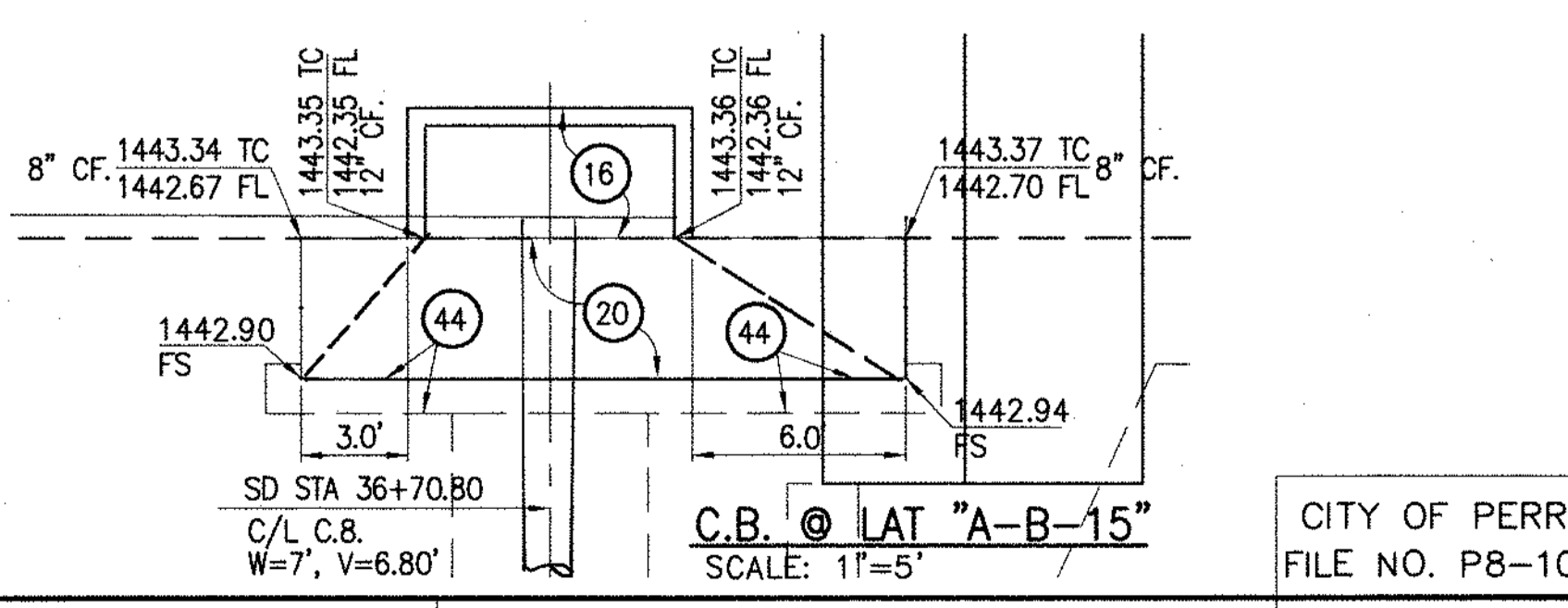
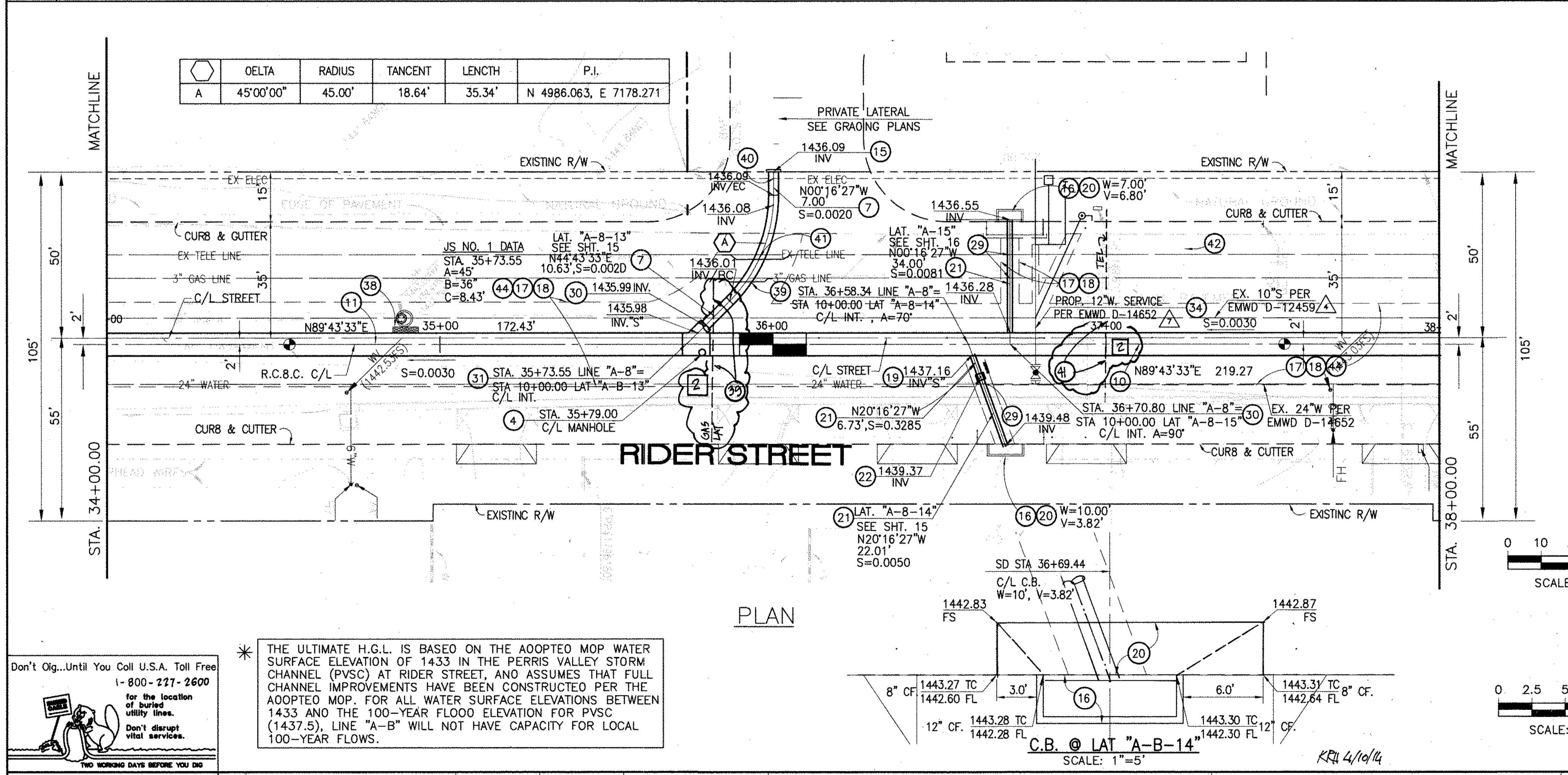
PROJECT NO. 4-0-00537  
DRAWING NO. 4-1063  
SHEET NO. 6 OF 18





**STORM DRAIN CONSTRUCTION NOTES:**

- 4 CONSTRUCT MANHOLE NO. 3 PER R.C.F.C.&W.C.D. STD DWC. MH253
- 7 CONSTRUCT 36" R.C.P. D-LOAD PER PLAN.
- 10 CONSTRUCT 7' x 4.5' PRE-CAST RC8 PER CALTRANS STD PLAN 800 OR APPROVED EQUAL. SEE JOINT SEALANT NOTE ON SHT. 1. PRE-CAST RC8 ALPHA STD PLAN 390-0
- 11 CONSTRUCT 7' x 5' RC8 PER CALTRANS STD PLAN 800 OR APPROVED EQUAL. SEE JOINT SEALANT ON SHT. 1. PRE-CAST RC8 ALPHA STD PLAN 390-0
- 15 CONSTRUCT CONCRETE BULKHEAD PER R.C.F.C.&W.C.D. STD DWC. MB16.
- 16 CONSTRUCT CATCH BASIN NO.1 PER R.C.F.C.&W.C.D. STD. DWC. C8100
- 17 SAWCUT AND REMOVE EXISTING AC. PAVEMENT.
- 18 UTILITY TRENCH AND SURFACE REPAIR PER CITY STANDARD ON SHT. NO. 18, MODIFIED TO ACCOMMODATE SLURRY BACKFILL WHERE BOX COVER IS LESS THAN 2.0'.
- 19 CONSTRUCT JUNCTION STRUCTURE NO. 3 PER R.C.F.C.&W.C.D. STD. DWC. JS228.
- 20 CONSTRUCT LOCAL DEPRESSION #2 CASE "B" PER R.C.F.C.&W.C.D. STD. DWC. LD201.
- 21 CONSTRUCT 18" R.C.P. D-LOAD PER PLAN.
- 22 CONSTRUCT CONCRETE COLLAR PER R.C.F.C.&W.C.D. STD DWC. M803.
- 29 PROTECT IN PLACE EXISTING UTILITIES.
- 30 CONSTRUCT JUNCTION STRUCTURE NO. 1 PER R.C.F.C.&W.C.D. STD. DWC. JS226.
- 31 CONSTRUCT TRANSITION STRUCTURE NO. 2 PER R.C.F.C.&W.C.D. STD. DWC. TS302.
- 34 RELOCATE EXISTING WATER LINE PER E.M.W.D. PLANS.
- 38 SLURRY BACKFILL BETWEEN RC8 AND MANHOLE.
- 39 RELOCATE EXISTING GAS LINE.
- 40 RELOCATE EXISTING ELECTRICAL LINE.
- 41 RELOCATE EXISTING TELEPHONE LINE.
- 42 INSTALL NEW SEWER LATERAL PER E.M.W.D. PLANS.
- 44 SAWCUT, REMOVE AND REPLACE A.C. PAVEMENT SURFACE REPAIR PER CITY STD. ON SHEET 18. SEE SEPARATE PAVING PLANS.



Don't Dig...Until You Call U.S.A. Toll Free 1-800-277-2600 for the location of buried utility lines. Don't disrupt vital services. TWO WORKING DAYS BEFORE YOU DIG

\* THE ULTIMATE H.G.L. IS BASED ON THE ADOPTED MOP WATER SURFACE ELEVATION OF 1433 IN THE PERRIS VALLEY STORM CHANNEL (PVSC) AT RIDER STREET, AND ASSUMES THAT FULL CHANNEL IMPROVEMENTS HAVE BEEN CONSTRUCTED PER THE ADOPTED MOP. FOR ALL WATER SURFACE ELEVATIONS BETWEEN 1433 AND THE 100-YEAR FLOOD ELEVATION FOR PVSC (1437.5), LINE "A-B" WILL NOT HAVE CAPACITY FOR LOCAL 100-YEAR FLOWS.

BENCH MARK  
COUNTY OF RIVERSIDE BENCHMARK NO. 74-31  
COUNTY OF RIVERSIDE BENCHMARK - 3 1/4" ALUMINUM DISK MARKED M-31, LOCATED FLUSH AT THE SOUTH WEST CORNER OF BRIDGE ON TOP OF SIDEWALK NEAR FACE OF CURB LOCATED AT THE CROSSING OF PERRIS BLVD. AND RIV. CO. FLOOD CONTROL CHANNEL (PERRIS LATERAL) 27.43 FT. WEST OF CENTERLINE OF PERRIS BLVD. AND 43 FT. EAST OF CONCRETE BRIDGE MARKERS (EDGE OF BRIDGE) MARKED R-102 D.I.M.R. IN TOP OF CONC. POST FLUSH W/ BRIDGE ELEVATION = 1474.674' (MWD 1828)

REVISIONS	ENGINEER	RCFC/	DESIGNED BY:	APPROVED BY:
12 CHANGED SLOPE TO 0.005, ADDED MH ADDED			BW	
10'S CHANGED 42' LAT TO 24' LAT, ADDED EX			ET	
UTILITIES, RELOCATE UTILITIES, REV. S.D.	H.I.A	2/6/16		
CHANGED C.L.P. RC8 TO PRE-CAST RC8 PER CALTRANS	H.I.A	2/6/16		

THIENES ENGINEERING, INC.  
CIVIL ENGINEERING & LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90638  
PH: (714) 921-4811 FAX: (714) 921-4173

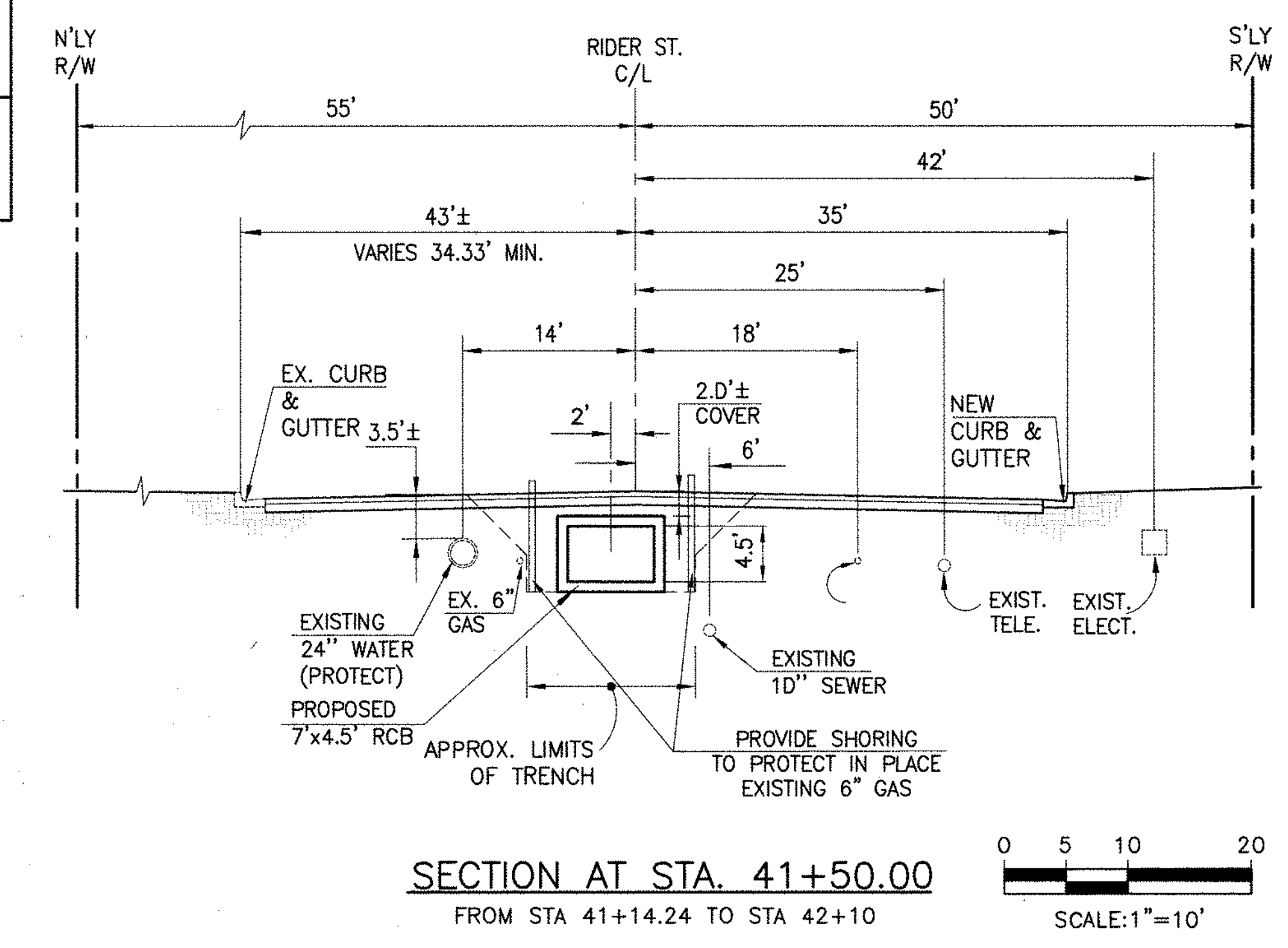
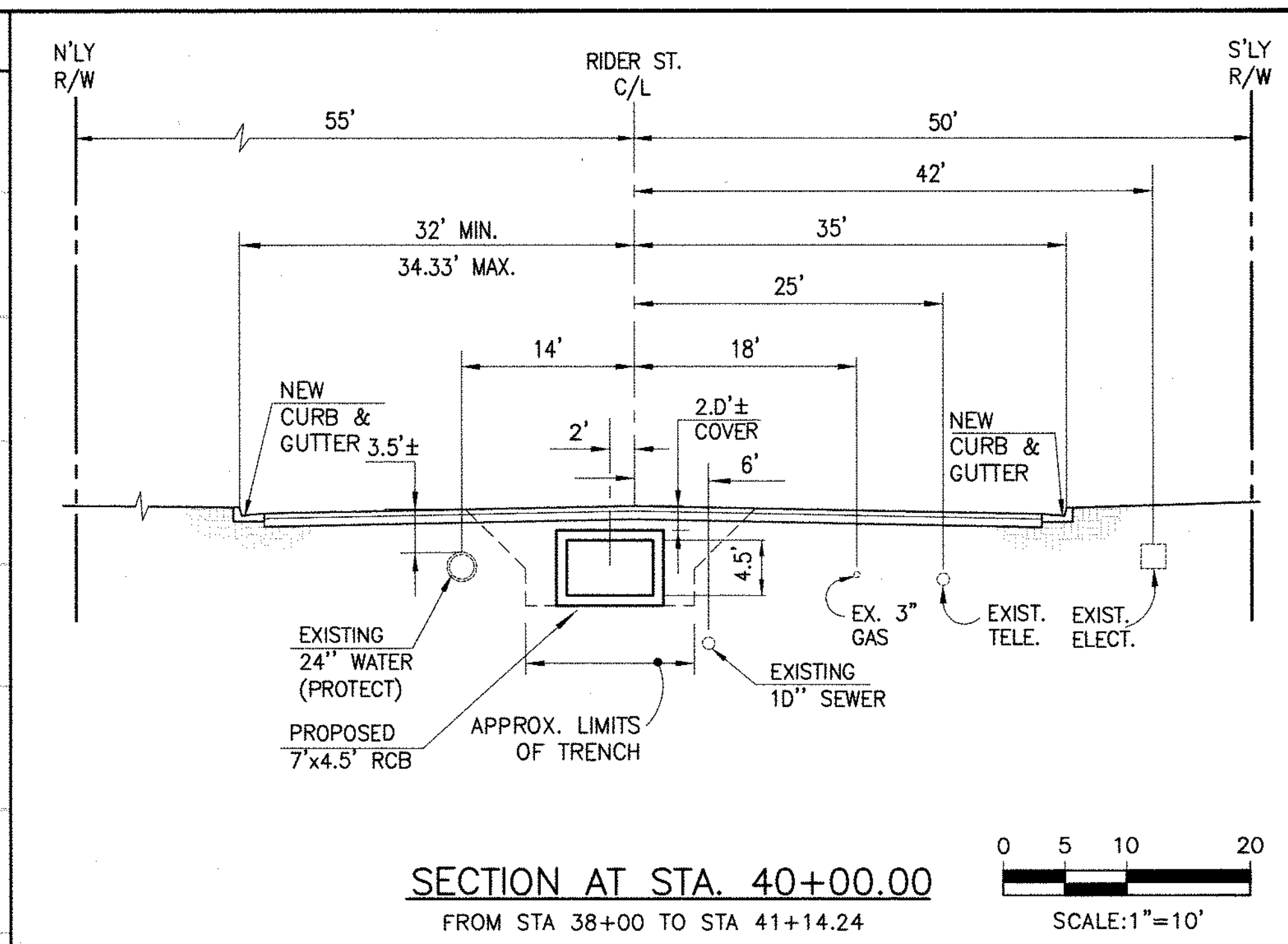
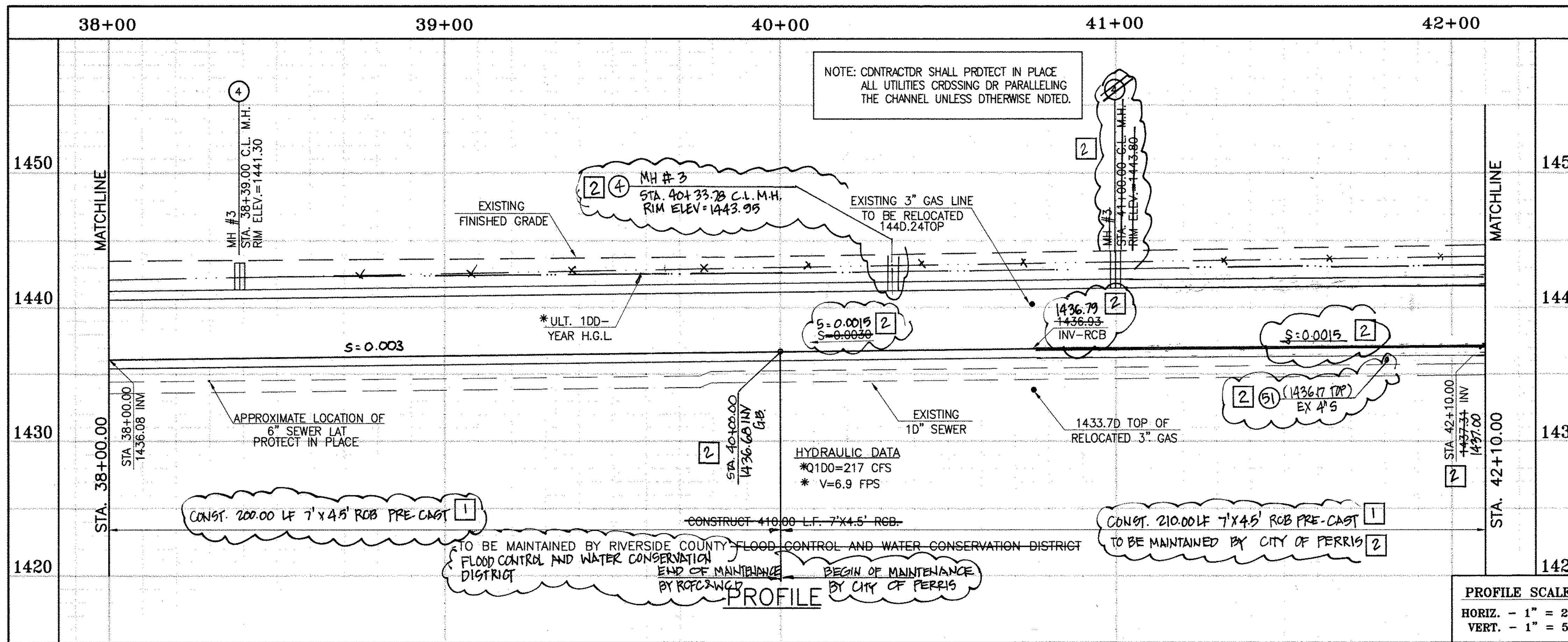
REGISTERED PROFESSIONAL ENGINEER  
HAIDOOK I. AGHAJAN  
R.C.E. NO. 43293  
Exp. 3-31-18  
CIVIL  
STATE OF CALIFORNIA

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
RECOMMENDED FOR APPROVAL BY: [Signature]  
APPROVED BY: [Signature]  
DATE: 1/20/2015

CITY OF PERRIS  
APPROVED BY: [Signature]  
DATE: 12-15-14

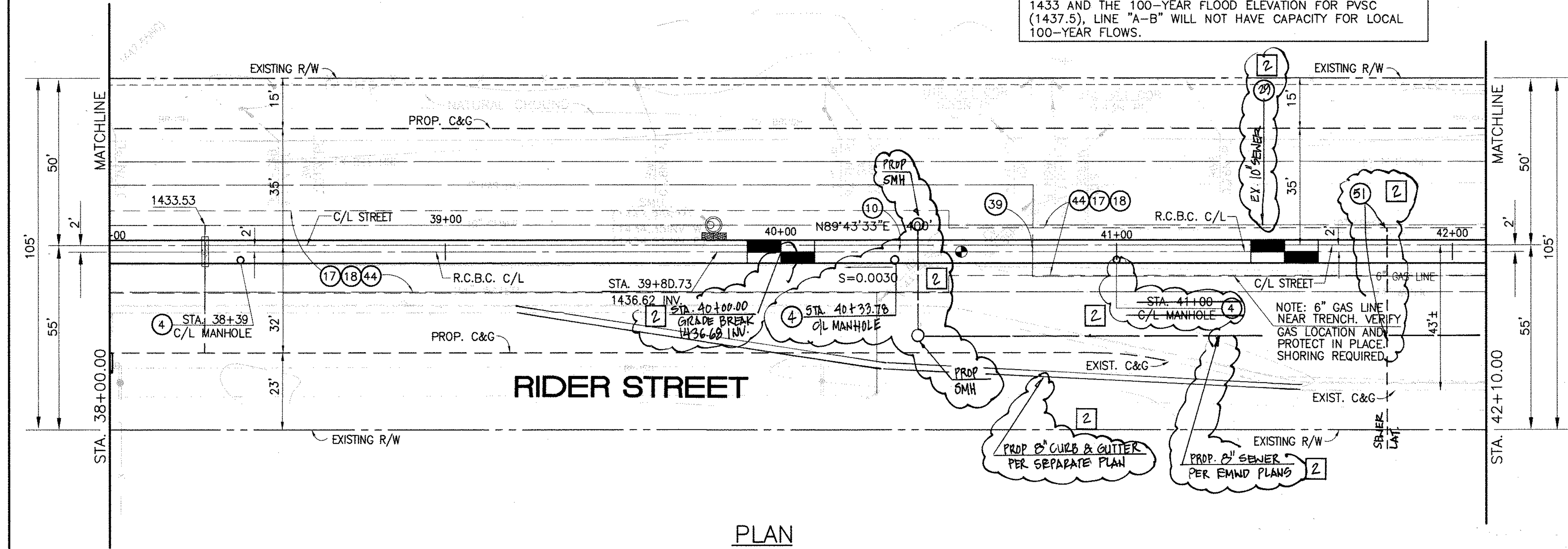
PERRIS VALLEY MDP  
LINE "A-B"  
FROM STA. 34+00 TO STA. 38+00

PROJECT NO. 4-0-00537  
DRAWING NO. 4-1063  
SHEET NO. 8 OF 18

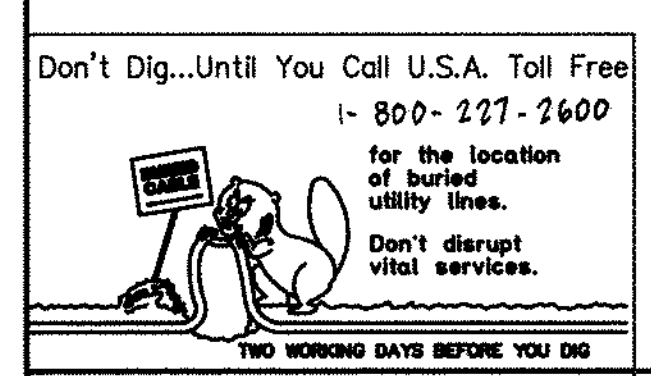


**CAUTION:**  
PROPOSED WORK IS IN PROXIMITY OF HIGH PRESSURE GAS LINES

\* THE ULTIMATE H.G.L. IS BASED ON THE ADOPTED MDP WATER SURFACE ELEVATION OF 1433 IN THE PERRIS VALLEY STORM CHANNEL (PVSC) AT RIDER STREET, AND ASSUMES THAT FULL CHANNEL IMPROVEMENTS HAVE BEEN CONSTRUCTED PER THE ADOPTED MDP. FOR ALL WATER SURFACE ELEVATIONS BETWEEN 1433 AND THE 100-YEAR FLOOD ELEVATION FOR PVSC (1437.5), LINE "A-B" WILL NOT HAVE CAPACITY FOR LOCAL 100-YEAR FLOWS.



- STORM DRAIN CONSTRUCTION NOTES:**
- ④ CONSTRUCT MANHOLE #3 PER R.C.F.C.&W.C.D. STD. DWG. MH253.
  - ⑩ CONSTRUCT 7' X 4.5' RCB PER CALTRANS STD PLAN 390-0 OR APPROVED EQUAL. SEE JOINT SEALANT NOTE ON SHT. 1.
  - ⑰ SAWCUT AND REMOVE EXISTING A.C. PAVEMENT.
  - ⑱ UTILITY TRENCH AND SURFACE REPAIR PER CITY STANDARD ON SHT. NO. 18, MODIFIED TO ACCOMMODATE SLURRY BACKFILL WHERE BOX COVER IS LESS THAN 2.0'.
  - ⑳ CONSTRUCT SEWER PROTECTION PER R.C.F.C.&W.C.D. STD. DWG. M8D7.
  - ④④ SAWCUT, REMOVE AND REPLACE A.C. PAVEMENT SURFACE REPAIR PER CITY STD. ON SHEET 18. SEE SEPARATE PAVING PLANS.
  - ⑤① PROTECT IN PLACE EXISTING UTILITIES.
  - ⑤② REMOVE EXISTING SEWER LATERALS PER EMWD PLANS



**BENCH MARK**  
COUNTY OF RIVERSIDE BENCHMARK NO. "M-31"  
COUNTY OF RIVERSIDE BENCHMARK - 3 1/4" ALUMINUM DISK MARKED M-31, LOCATED FLUSH AT THE SOUTH WEST CORNER OF BRIDGE ON TOP OF SIDEWALK NEAR FACE OF CURB LOCATED AT THE CROSSING OF PERRIS BLVD. AND HWY. CO. FLOOD CONTROL CHANNEL (PERRIS LATERAL) AT 4.5 FT. WEST OF CENTERLINE OF PERRIS BLVD. AND 4.5 FT. EAST OF CONCRETE BRIDGE BARRIER. (EDGE OF BRIDGE) MARKED R-102 D.I.R. IN TOP OF CONC. POST FLUSH W/ GROUND ELEVATION = 1476.674' (MWD 1829)

REF.	DESCRIPTION	APPR.	DATE	APPR.	DATE
②	CHANGED SLOPE TO 0.003, ADDED MH, MOVED NEW 10" CHANGED 2" LAT TO 2" LAT, ADDED EX. UTILITIES, RELOCATED UTILITIES, REV. S.D.	H.I.A.	2/3/16	O/S	2/23/16
①	CHANGED C.T.P. RCB TO PRE-CAST RCB PER PLAN 390-0	H.I.A.	2/3/16	O/S	2/23/16

DESIGNED BY: **BN**  
DRAWN BY: **ET**  
DATE DRAWN:

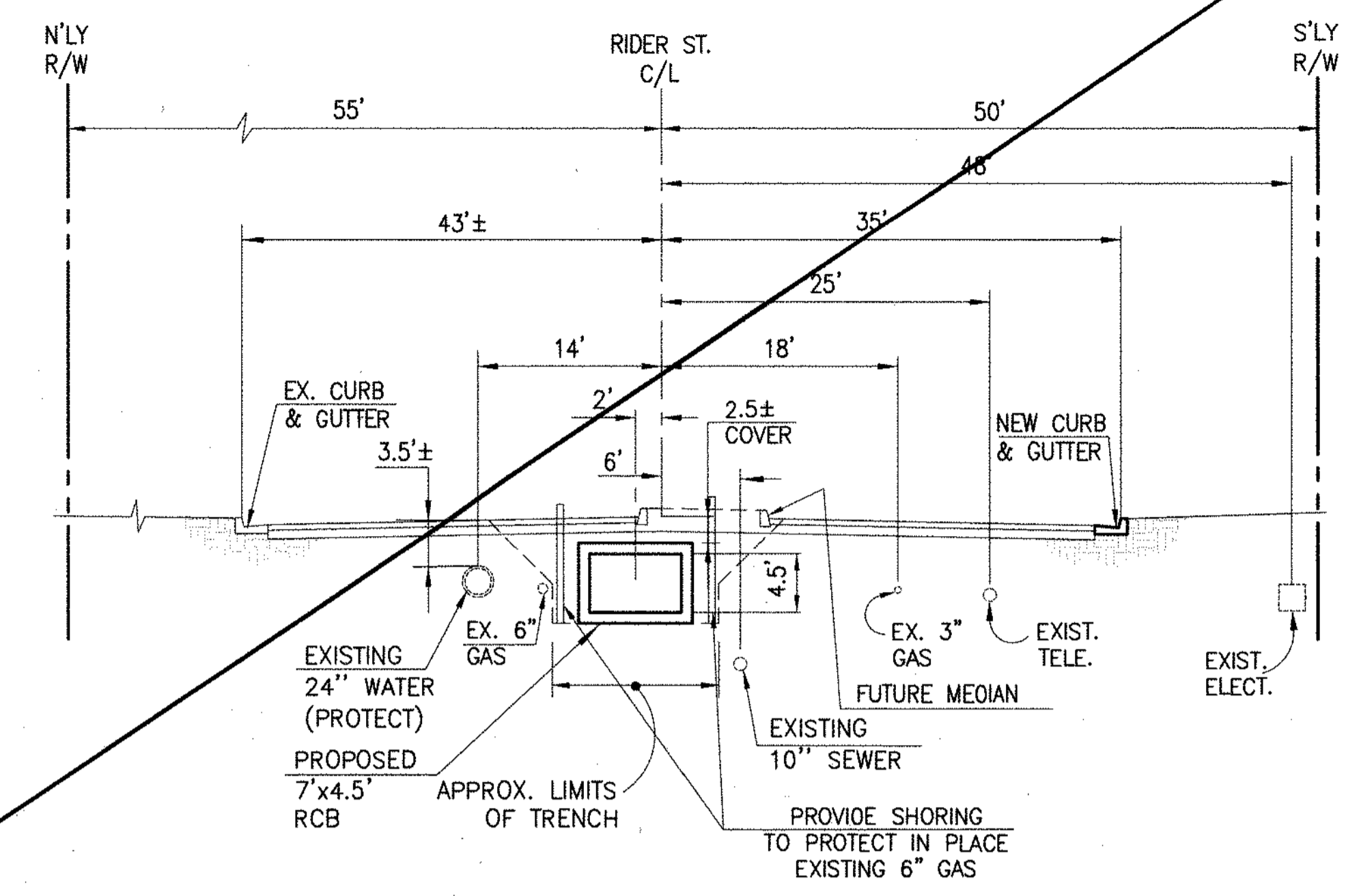
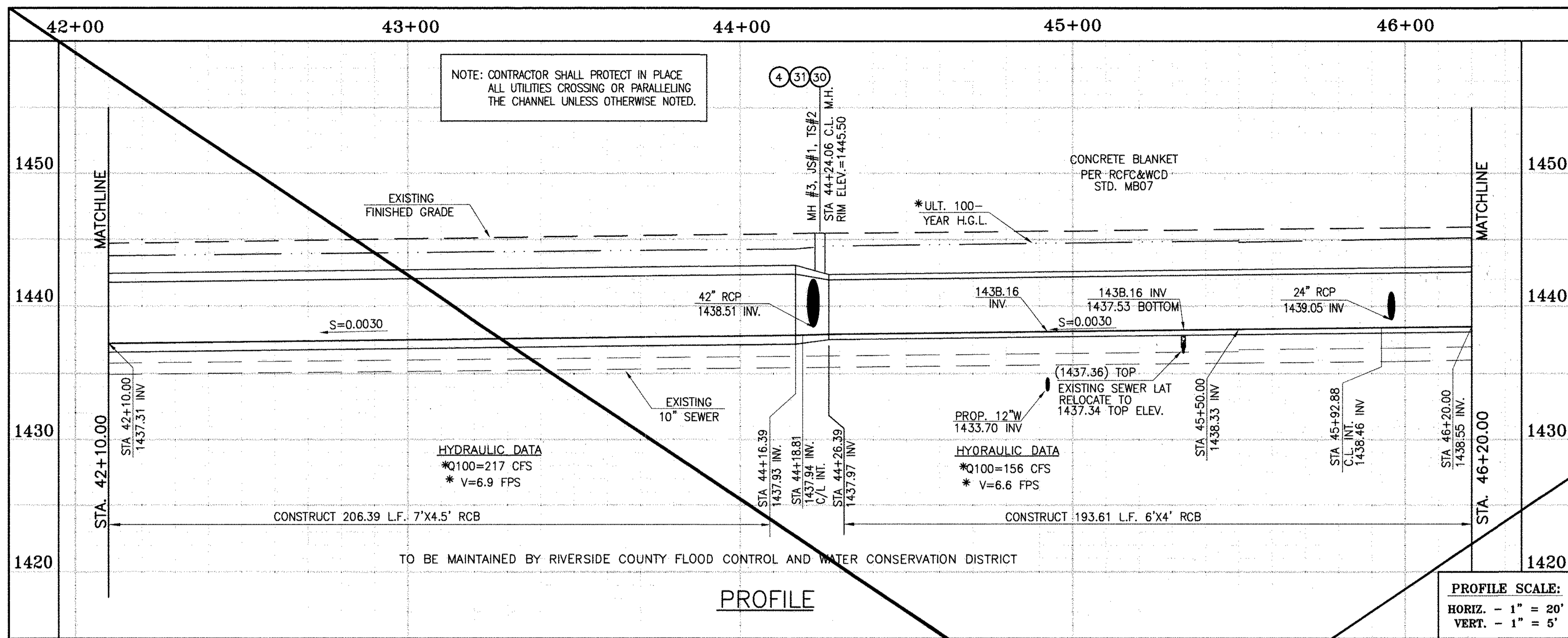
APPROVED BY: **Thienes Engineering, Inc.**  
CIVIL ENGINEERING • LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90638  
PH. (714) 521-4811 FAX (714) 521-4173  
Date: 11/18/14  
HAIDOOK I. AGHAJANI R.C.E. NO. 43293

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
RECOMMENDED FOR APPROVAL BY: *[Signature]*  
DATE: 1/24/2015  
APPROVED BY: *[Signature]*  
DATE: 1/20/2015

CITY OF PERRIS APPROVED BY: *[Signature]*  
DATE: 12-15-14

PERRIS VALLEY MDP LINE "A-B"  
FROM STA. 38+00 TO STA. 42+00

CITY OF PERRIS FILE NO. P8-1013  
PROJECT NO. 4-0-00537  
DRAWING NO. 4-1063  
SHEET NO. 9 OF 18

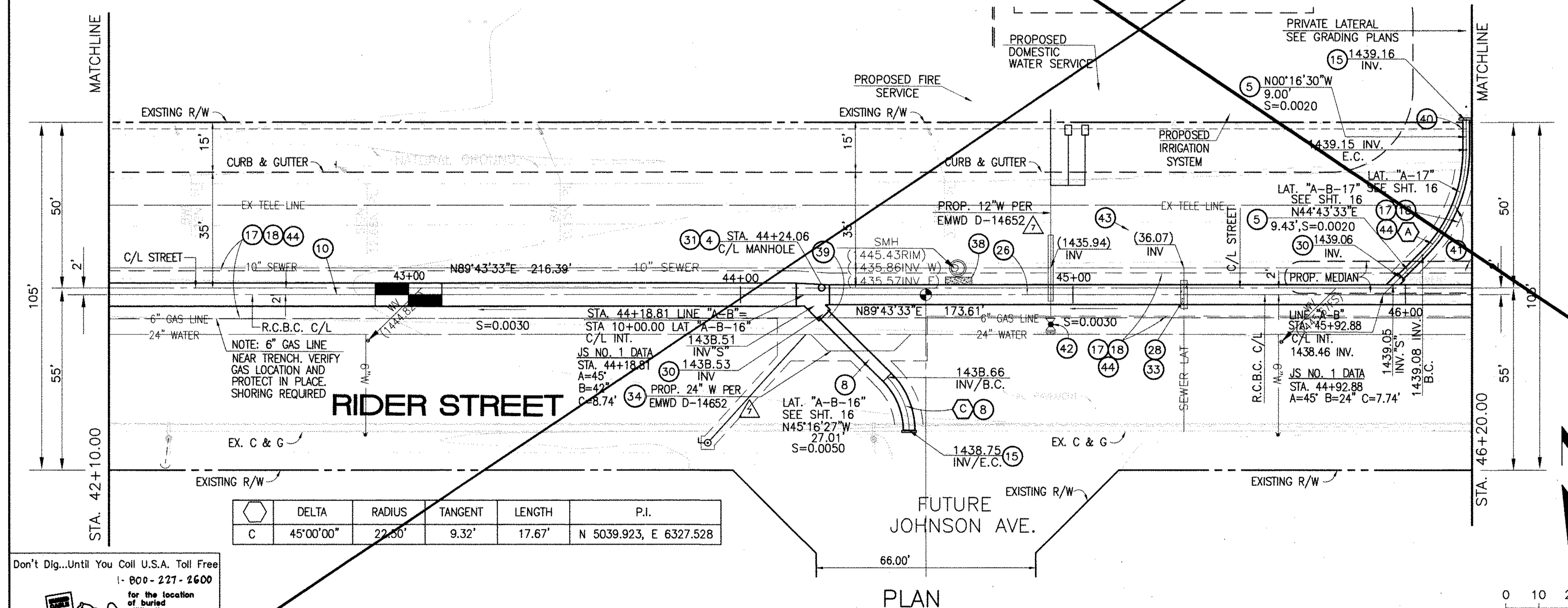


\* THE ULTIMATE H.G.L. IS BASED ON THE ADOPTED MDP WATER SURFACE ELEVATION OF 1433 IN THE PERRIS VALLEY STORM CHANNEL (PVSC) AT RIDER STREET, AND ASSUMES THAT FULL CHANNEL IMPROVEMENTS HAVE BEEN CONSTRUCTED PER THE ADOPTED MOP. FOR ALL WATER SURFACE ELEVATIONS BETWEEN 1433 AND THE 100-YEAR FLOOD ELEVATION FOR PVSC (1437.5), LINE "A-B" WILL NOT HAVE CAPACITY FOR LOCAL 100-YEAR FLOWS.

**STORM DRAIN CONSTRUCTION NOTES:**

- ④ CONSTRUCT MANHOLE NO. 3 PER R.C.F.C.&W.C.O. STO OWG. MH253
- ⑤ CONSTRUCT 24" R.C.P, D-LOAD PER PLAN.
- ⑦ CONSTRUCT 36" R.C.P, D-LOAD PER PLAN.
- ⑧ CONSTRUCT 42" R.C.P, D-LOAD PER PLAN.
- ⑩ CONSTRUCT 7' x 4.5' RCB PER CALTRANS STO PLAN NO. DBO OR APPROVED EQUAL.
- ⑮ CONSTRUCT CONCRETE BULKHEAD PER R.C.F.C.&W.C.O. STO OWG. M816.
- ⑰ SAWCUT AND REMOVE EXISTING A.C. PAVEMENT.
- ⑱ UTILITY TRENCH AND SURFACE REPAIR PER CITY STANDARD ON SHIT. NO. 1B, MODIFIED TO ACCOMMODATE SLURRY BACKFILL WHERE BOX COVER IS LESS THAN 2.0'.
- ⑳ CONSTRUCT 6' x 4' RCB PER CALTRANS STD PLAN NO. DBO. OR APPROVED EQUAL.
- ㉔ CONSTRUCT SEWER PROTECTION PER R.C.F.C.&W.C.O. STO. OWG. M807.
- ㉚ CONSTRUCT JUNCTION STRUCTURE NO.1 PER R.C.F.C.&W.C.D. STD. DWG. JS226.
- ㉛ CONSTRUCT TRANSITION STRUCTURE NO. 2 PER R.C.F.C.&W.C.D. STD. DWG. TS302.
- ㉜ RELOCATE EXISTING 6" SEWER LAT. PER E.M.W.O. PLANS
- ㉝ RELOCATE EXISTING WATER LINE PER E.M.W.D. PLANS.
- ㉞ SLURRY BACKFILL BETWEEN RCB AND MANHOLE.
- ㉟ RELOCATE EXISTING GAS LINE.
- ㊱ RELOCATE EXISTING ELECTRICAL LINE.
- ㊲ RELOCATE EXISTING TELEPHONE LINE.
- ㊳ CONSTRUCT PROPOSED 12" WATER MAIN, PER E.M.W.D. PLANS.
- ㊴ CONSTRUCT PROPOSED 6" SEWER LATERAL, PER E.M.W.D. PLANS.
- ㊵ SAWCUT, REMOVE AND REPLACE A.C. PAVEMENT SURFACE REPAIR PER CITY STO. ON SHEET 18. SEE SEPARATE PAVING PLANS.

CAUTION:  
PROPOSED WORK IS IN PROXIMITY OF HIGH PRESSURE GAS LINES



Δ	DELTA	RADIUS	TANGENT	LENGTH	P.I.
C	45°00'00"	22.50'	9.32'	17.67'	N 5039.923, E 6327.528

Don't Dig...Until You Call U.S.A. Toll Free  
1-800-277-2600  
for the location of buried utility lines.  
Don't disrupt vital services.  
TWO WORKING DAYS BEFORE YOU DIG

BENCH MARK  
COUNTY OF RIVERSIDE BENCHMARK NO. 24-31  
COUNTY OF RIVERSIDE BENCHMARK NO. 24-31  
MARKED M-31, LOCATED FLUSH TO THE SOUTH WEST CORNER OF BRIDGE ON TOP OF SLOPE NEAR FACE OF CURB LOCATED AT THE CROSSING OF PERRIS BLVD AND RIV. CO. FLOOD CONTROL CHANNEL (PERRIS LATERAL 7'), 43 FT. WEST OF CENTERLINE PERRIS BLVD AND 43 FT. EAST OF CONCRETE BULKHEAD BARRIER, EDGE OF BRIDGE MARKED BY 102 D.W.A. IN TOP OF CONC. POST FLUSH W/ GROUND  
ELEVATION = 1474.674' (MWD 1829)

REF.	DESCRIPTION	APPR.	DATE	APPR.	DATE
	SHEET SUPERSEDED BY 10A				

DESIGNED BY: BW  
DRAWN BY: ET  
DATE DRAWN:

APPROVED BY: **Thienes Engineering, Inc.**  
CIVIL ENGINEERING & LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90638  
PH. (714) 521-4811 FAX (714) 521-4173  
Date: 11/18/14  
RCE NO. 43293

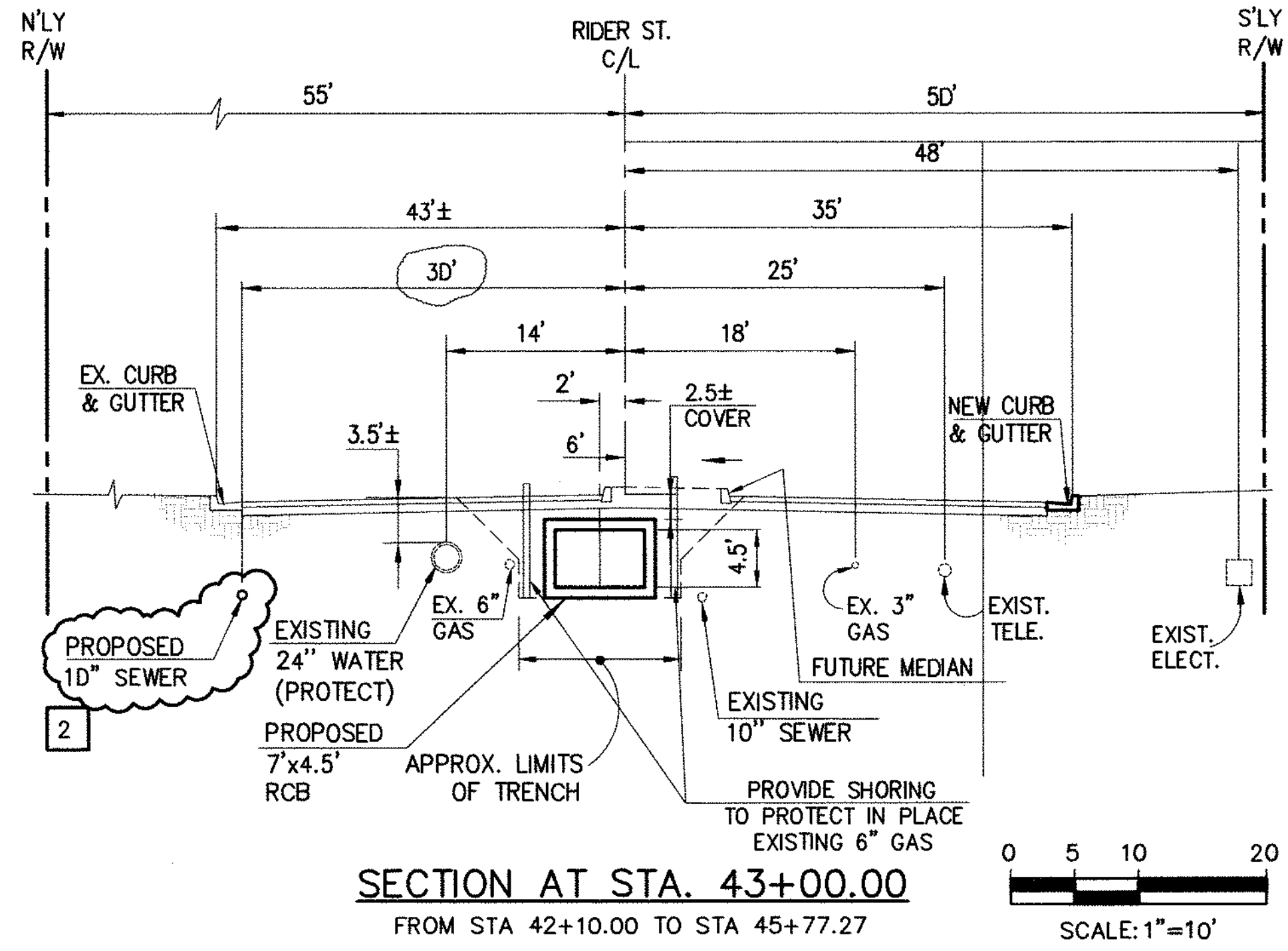
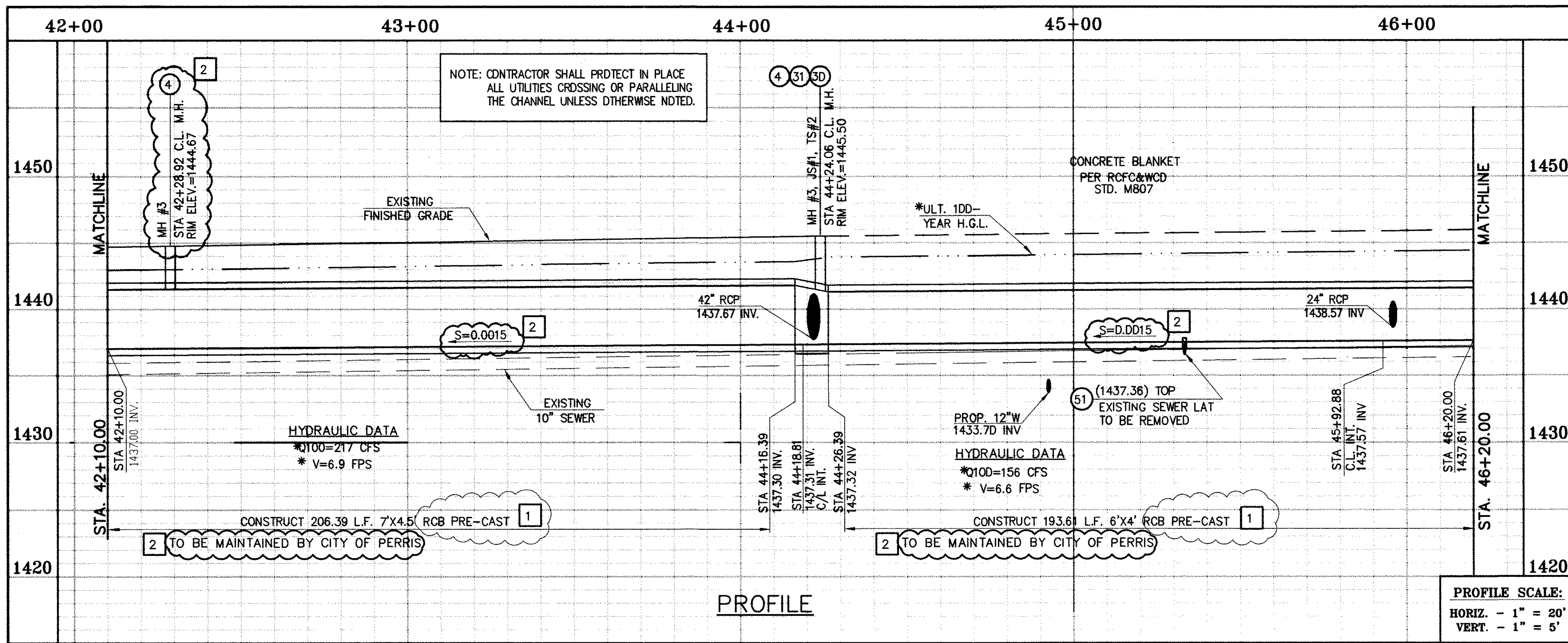
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
RECOMMENDED FOR APPROVAL BY: *[Signature]*  
DATE: 1/20/2015

APPROVED BY: *[Signature]*  
DATE: 1/20/2015

CITY OF PERRIS  
APPROVED BY: *[Signature]*  
DATE: 1-15-14

PERRIS VALLEY MDP  
LINE "A-B"  
FROM STA. 42+10 TO STA. 46+20

CITY OF PERRIS FILE NO. P8-1013
PROJECT NO. 4-0-00537
DRAWING NO. 4-1063
SHEET NO. 10 OF 18

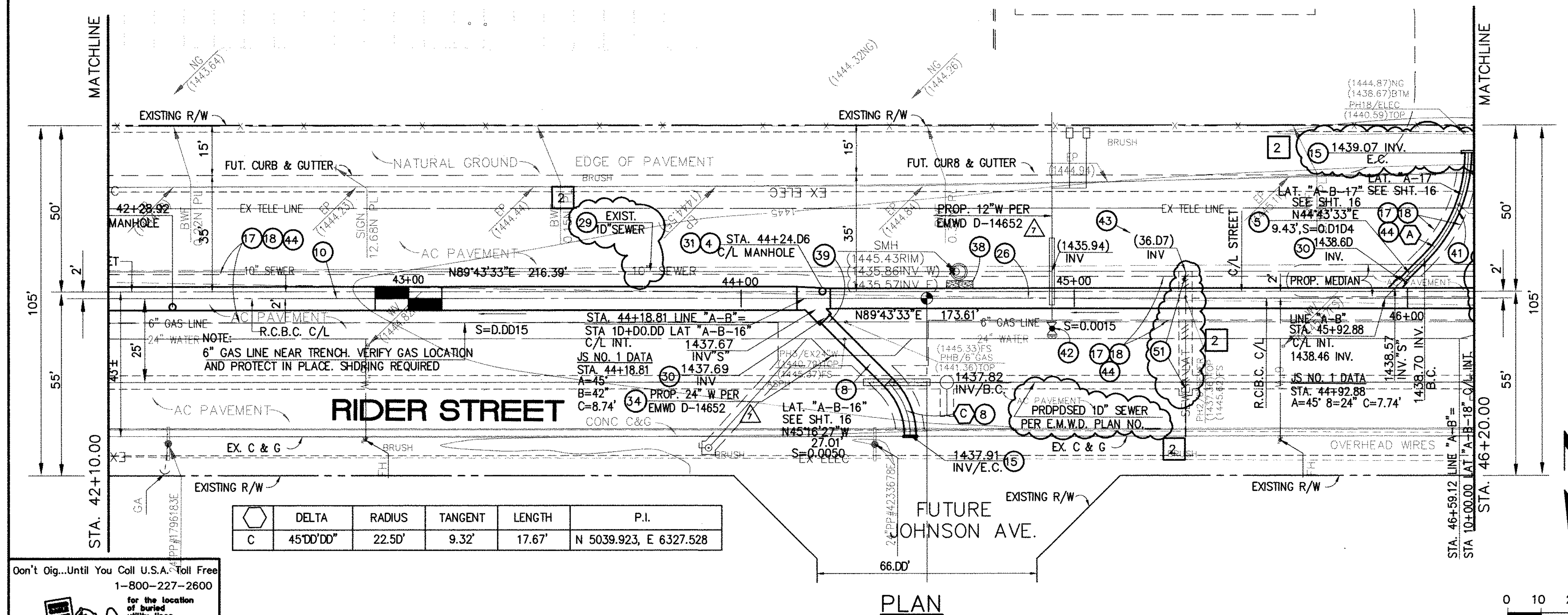


\* THE ULTIMATE H.G.L. IS BASED ON THE ADOPTED MOP WATER SURFACE ELEVATION OF 1433 IN THE PERRIS VALLEY STORM CHANNEL (P.V.S.C.) AT RIDER STREET, AND ASSUMES THAT FULL CHANNEL IMPROVEMENTS HAVE BEEN CONSTRUCTED PER THE ADOPTED MOP. FOR ALL WATER SURFACE ELEVATIONS BETWEEN 1433 AND THE 100-YEAR FLOOD ELEVATION FOR P.V.S.C. (1437.5), LINE "A-B" WILL NOT HAVE CAPACITY FOR LOCAL 100-YEAR FLOWS.

**STORM DRAIN CONSTRUCTION NOTES:**

- ④ CONSTRUCT MANHOLE NO. 3 PER R.C.F.C.&W.C.D. STD DWG. MH253
- ⑤ CONSTRUCT 24" R.C.P, D-LOAD PER PLAN.
- ⑦ CONSTRUCT 36" R.C.P, D-LOAD PER PLAN.
- ⑧ CONSTRUCT 42" R.C.P, D-LOAD PER PLAN.
- ⑩ CONSTRUCT 7' X 4.5' PRE-CAST RCB APWA STD PLAN 39D-D OR APPROVED EQUAL. SEE JOINT SEALANT NOTE ON SHEET #1.
- ⑮ CONSTRUCT CONCRETE BULKHEAD PER R.C.F.C.&W.C.D. STD DWG. M816.
- ⑰ SAWCUT AND REMOVE EXISTING A.C. PAVEMENT.
- ⑱ UTILITY TRENCH AND SURFACE REPAIR PER CITY STANDARD ON SHT. NO. 18, MODIFIED TO ACCOMMODATE SLURRY BACKFILL WHERE BOX COVER IS LESS THAN 2.0'
- ⑳ CONSTRUCT 6' X 4' PRE-CAST RCB APWA STD PLAN 39D-D OR APPROVED EQUAL. SEE JOINT SEALANT NOTE ON SHEET #1.
- ㉒ CONSTRUCT SEWER PROTECTION PER R.C.F.C.&W.C.D. STD. DWG. M8D7.
- ㉔ PROTECT IN PLACE EXISTING UTILITIES
- ㉖ CONSTRUCT JUNCTION STRUCTURE NO.1 PER R.C.F.C.&W.C.D. STD. DWG. JS226.
- ㉘ CONSTRUCT TRANSITION STRUCTURE NO. 2 PER R.C.F.C.&W.C.D. STD. DWG. TS320.
- ㉚ RELOCATE EXISTING 6" SEWER LAT. PER E.M.W.D. PLANS
- ㉜ RELOCATE EXISTING WATER LINE PER E.M.W.D. PLANS.
- ㉞ SLURRY BACKFILL BETWEEN RCB AND MANHOLE.
- ㉠ RELOCATE EXISTING GAS LINE.
- ㉡ RELOCATE EXISTING ELECTRICAL LINE.
- ㉣ RELOCATE EXISTING TELEPHONE LINE.
- ㉥ CONSTRUCT PROPOSED 12" WATER MAIN, PER E.M.W.D. PLANS.
- ㉦ CONSTRUCT PROPOSED 6" SEWER LATERAL, PER E.M.W.D. PLANS.
- ㉧ SAWCUT, REMOVE AND REPLACE A.C. PAVEMENT SURFACE REPAIR PER CITY STD. ON SHEET 18. SEE SEPARATE PAVING PLANS.
- ㉩ REMOVE EXISTING SEWER LATERALS PER E.M.W.D. PLANS.

**CAUTION:**  
PROPOSED WORK IS IN PROXIMITY OF HIGH PRESSURE GAS LINES



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Don't disrupt vital services.  
TWO WORKING DAYS BEFORE YOU DIG

**BENCH MARK**  
COUNTY OF RIVERSIDE BENCHMARK NO. 74-31  
COUNTY OF RIVERSIDE BENCHMARK - 3 1/4" ALUMINUM DISK  
MARKED M-31, LOCATED FLUSH AT THE SOUTH WEST CORNER  
OF BRIDGE ON TOP OF ROCKY HILLS NEAR FACE OF CURB  
LOCATED AT THE CROSSING OF PERRIS BLVD. AND RIV. CO.  
FLOOD CONTROL CHANNEL (PERRIS LATERAL "A"), 43 FT. WEST  
OF CENTERLINE OF PERRIS BLVD. AND 4.5 FT. EAST OF  
CONCRETE BRIDGE BARRIER (EDGE OF BRIDGE)  
MARKED R-102 D.I.M.R. IN TOP OF CONC. POST FLUSH W/  
GROUND  
ELEVATION = 1474.674' (NAVD 1929)

REVISIONS	ENGINEER	RCFC/	DESIGNED BY:
2	H.L.A.	2/28/16	2/6
1	H.L.A.	2/28/16	2/6

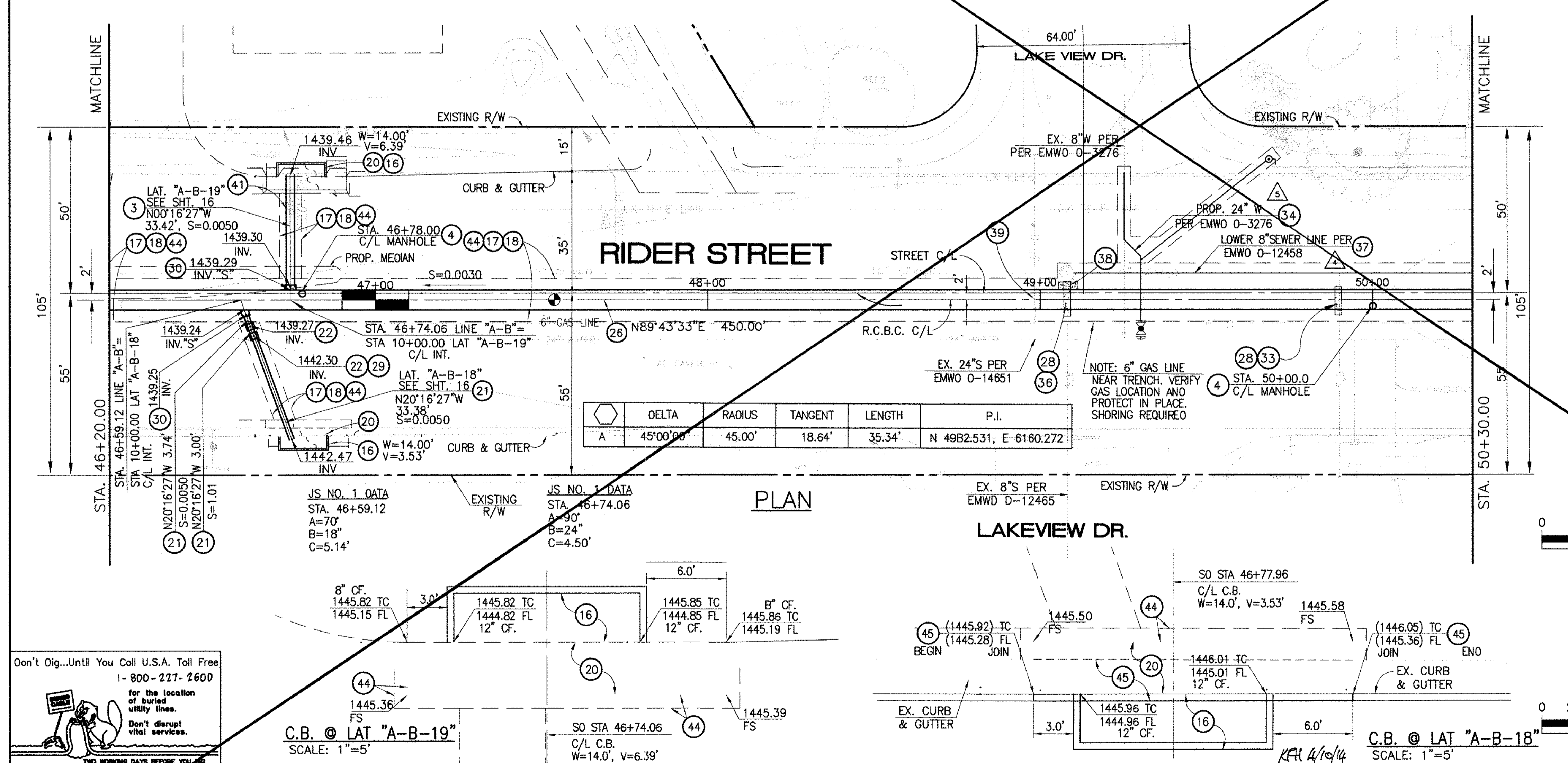
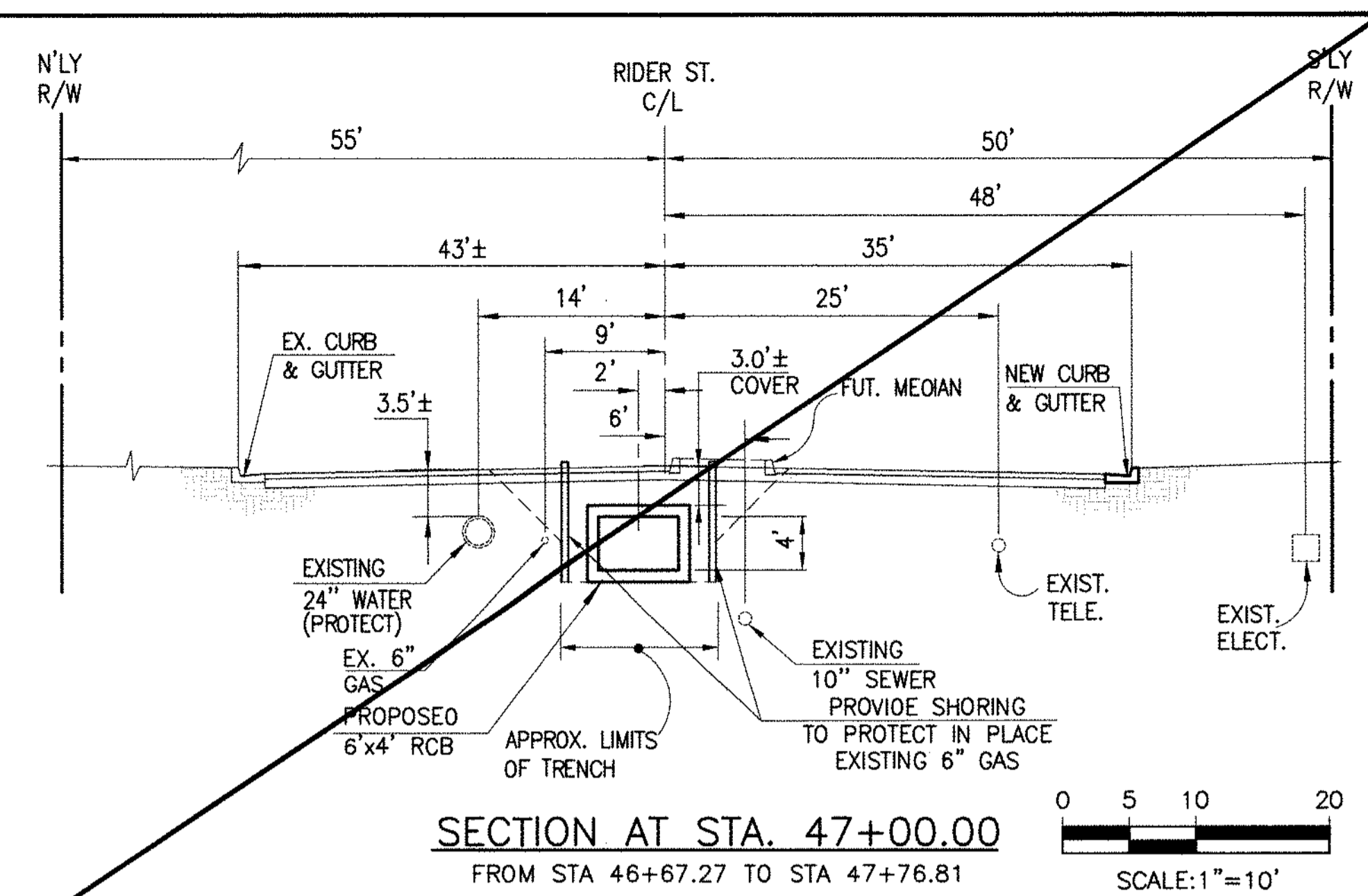
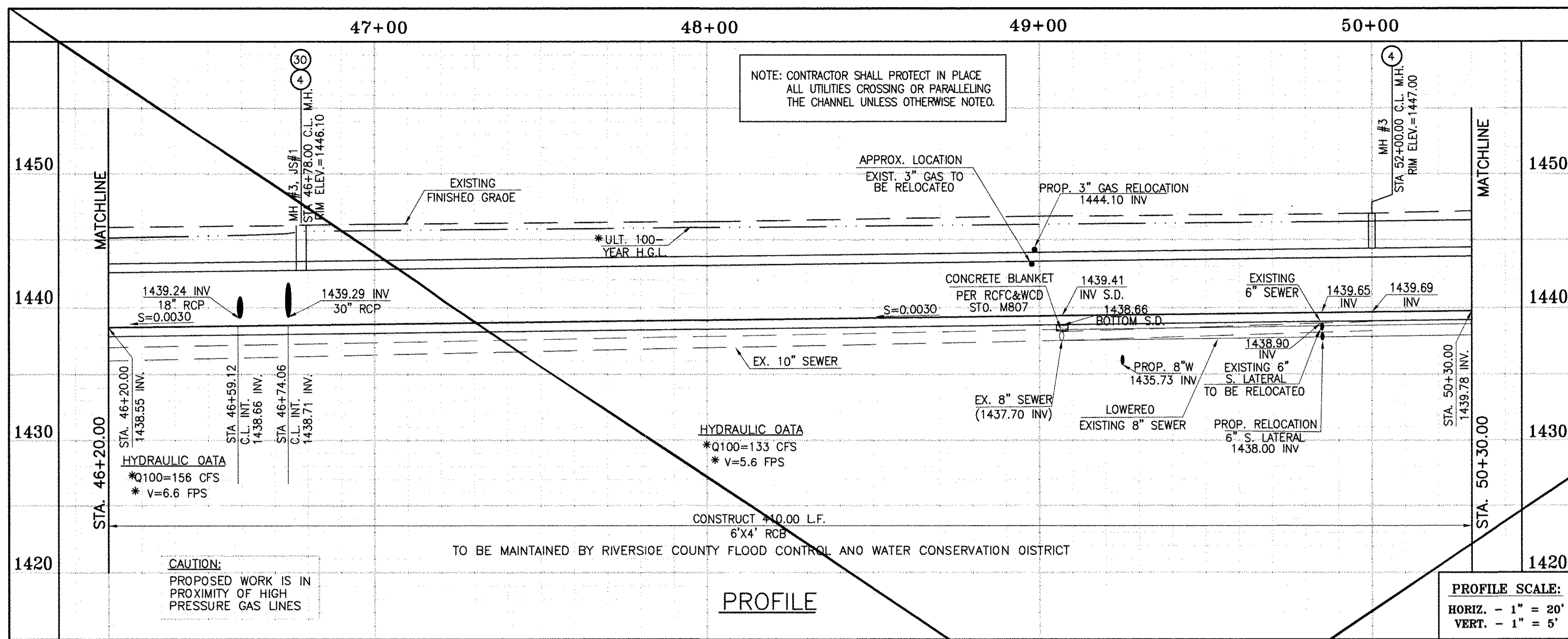
APPROVED BY:  
**Thienes Engineering, Inc.**  
CIVIL ENGINEERING • LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90638  
PH: (714) 521-4811 FAX: (714) 521-4173  
Date: 2/11/16  
RCE No. 43293

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
RECOMMENDED FOR APPROVAL BY: \_\_\_\_\_  
APPROVED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_ DATE: \_\_\_\_\_

CITY OF PERRIS  
APPROVED BY: \_\_\_\_\_  
DATE: 2-9-16

PERRIS VALLEY MDP  
LINE "A-B"  
FROM STA. 42+10 TO STA. 46+20

CITY OF PERRIS  
FILE NO. P8-1013  
PROJECT NO. 4-0-00537  
DRAWING NO. 4-1063  
SHEET NO. 10A OF 18



**STORM DRAIN CONSTRUCTION NOTES:**

- 3) CONSTRUCT 30" R.C.P. 0-LOAD PER PLAN.
- 4) CONSTRUCT MANHOLE NO.3 PER R.C.F.C.&W.C.O. STO OWG. MH253
- 16) CONSTRUCT CATCH BASIN NO.1 PER R.C.F.C.&W.C.O. STO. OWG. CB100
- 17) SAWCUT AND REMOVE EXISTING A.C. PAVEMENT.
- 18) UTILITY TRENCH AND SURFACE REPAIR PER CITY STANDARD ON SHT. NO. 18, MODIFIED TO ACCOMMODATE SLURRY BACKFILL WHERE BOX COVER IS LESS THAN 2.0'.
- 20) CONSTRUCT LOCAL DEPRESSION NO. 2 CASE "B" PER R.C.F.C.&W.C.O. STO. OWG. L0201.
- 21) CONSTRUCT 18" R.C.P. 0-LOAD PER PLAN.
- 22) CONSTRUCT CONCRETE COLLAR PER R.C.F.C.&W.C.O. STO OWG. M803.
- 26) CONSTRUCT 6' X 4' RCB PER CALTRANS STO PLAN NO. 080. OR APPROVED EQUAL
- 28) CONSTRUCT SEWER PROTECTION PER R.C.F.C.&W.C.O. STO. OWG. M807.
- 29) PROTECT IN PLACE EXISTING UTILITY
- 30) CONSTRUCT JUNCTION STRUCTURE NO.1 PER R.C.F.C.&W.C.O. STO. OWG. JS226.
- 33) RELOCATE EXISTING SEWER LATERALS PER E.M.W.O. PLANS.
- 34) RELOCATE EXISTING WATER LINE PER E.M.W.O. PLANS.
- 36) INSTALL NEW SEWER LATERAL PER E.M.W.O. PLANS.
- 37) LOWER EXISTING SEWER MAIN PER E.M.W.O. PLANS.
- 38) SLURRY BACKFILL BETWEEN RCB AND MANHOLE.
- 39) RELOCATE EXISTING GAS LINE.
- 41) RELOCATE EXISTING TELEPHONE LINE.
- 44) SAWCUT, REMOVE AND REPLACE A.C. PAVEMENT SURFACE REPAIR PER CITY STO. ON SHEET 18. SEE SEPARATE PAVING PLANS.
- 45) REMOVE EXISTING CONCRETE CURB AND GUTTER.

Don't Dig...Until You Call U.S.A. Toll Free 1-800-271-2600

for the location of buried utility lines. Don't disrupt vital services.

TWO WORKING DAYS BEFORE YOU DIG

**C.B. @ LAT "A-B-19"**  
SCALE: 1" = 5'

SO STA 46+74.06  
C/L C.B.  
W=14.0', V=6.39'

**C.B. @ LAT "A-B-18"**  
SCALE: 1" = 5'

SO STA 46+77.96  
C/L C.B.  
W=14.0', V=3.53'

DESIGNED BY: **BW**  
DRAWN BY: **ET**  
DATE DRAWN:

APPROVED BY: **THIENES ENGINEERING, INC.**  
HAIDOOK I. ASHMAN RCE NO. 43293

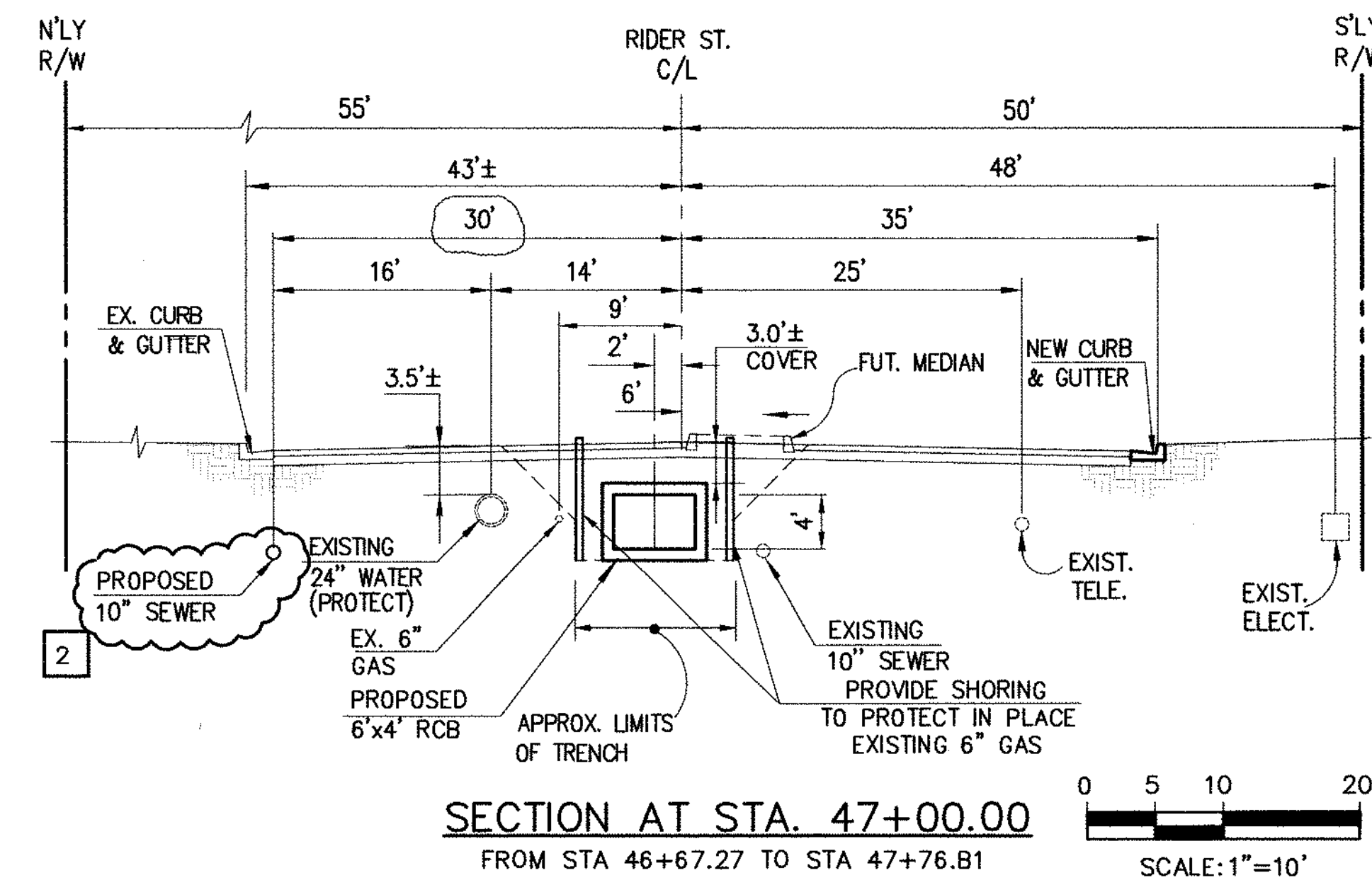
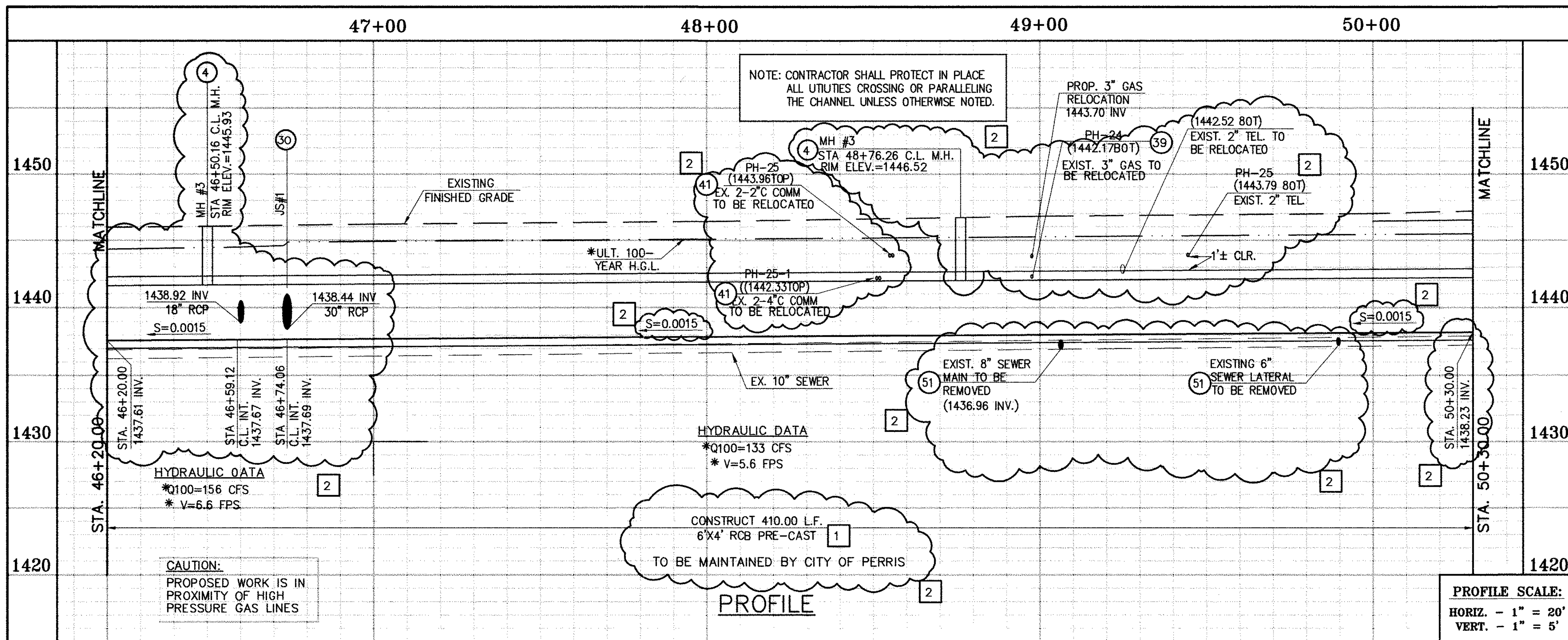
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

RECOMMENDED FOR APPROVAL BY: **[Signature]**  
DATE: 4/20/2015

CITY OF PERRIS APPROVED BY: **[Signature]**  
DATE: 12-15-14

**PERRIS VALLEY MDP LINE "A-B"**  
FROM STA. 46+20 TO STA. 50+30

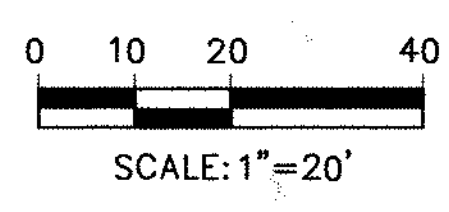
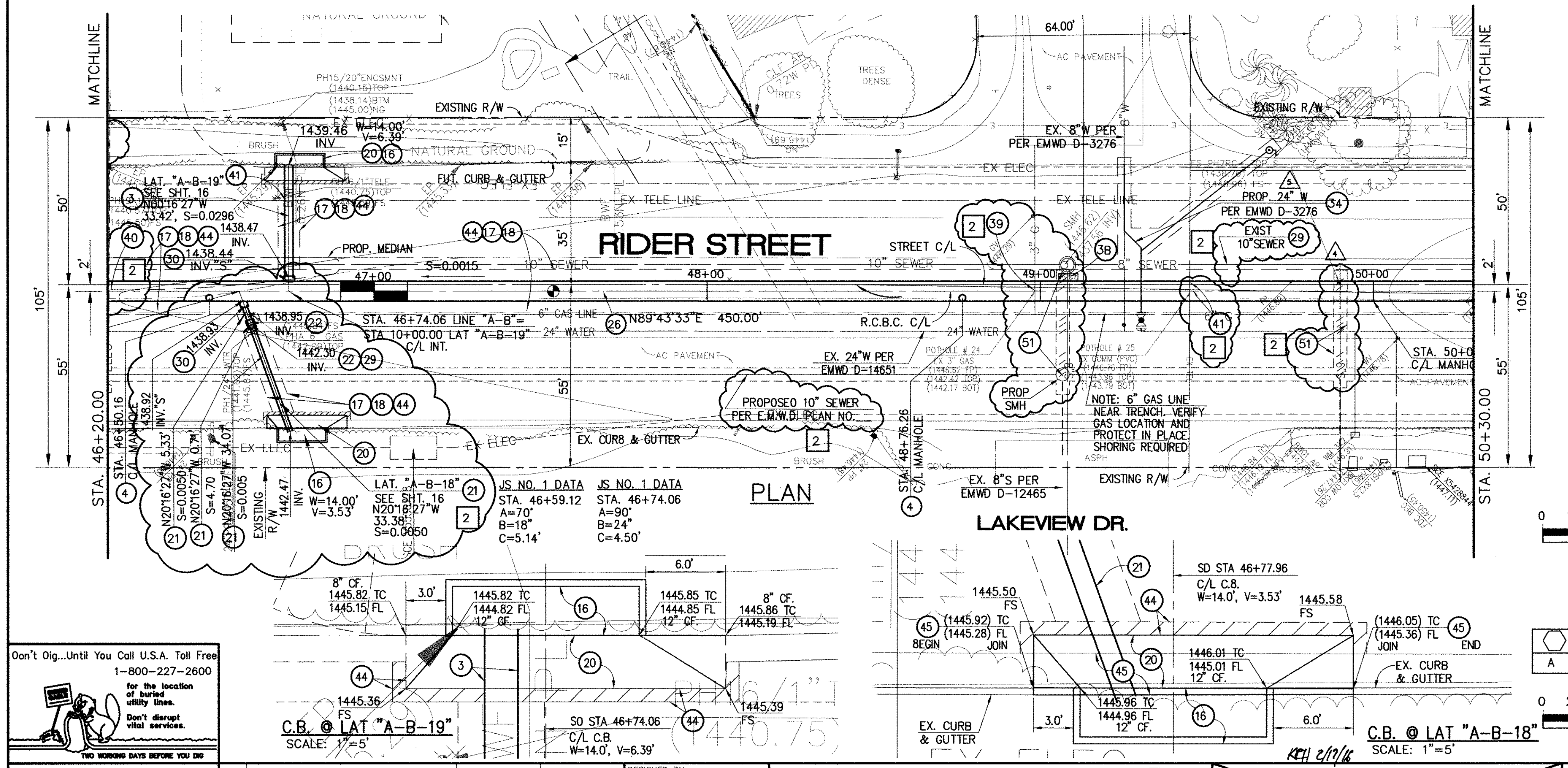
CITY OF PERRIS FILE NO. P8-1013
PROJECT NO. 4-0-00537
DRAWING NO. 4-1063
SHEET NO. 11 OF 18



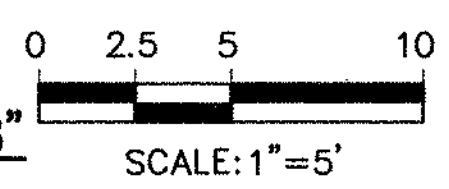
\* THE ULTIMATE H.G.L. IS BASED ON THE ADOPTED MOP WATER SURFACE ELEVATION OF 1433 IN THE PERRIS VALLEY STORM CHANNEL (PVSC) AT RIDER STREET, AND ASSUMES THAT FULL CHANNEL IMPROVEMENTS HAVE BEEN CONSTRUCTED PER THE ADOPTED MOP. FOR ALL WATER SURFACE ELEVATIONS BETWEEN 1433 AND THE 100-YEAR FLOOD ELEVATION FOR PVSC (1437.5), LINE "A-B" WILL NOT HAVE CAPACITY FOR LOCAL 100-YEAR FLOWS.

**STORM DRAIN CONSTRUCTION NOTES:**

- 3) CONSTRUCT 30" R.C.P., D-LOAD PER PLAN.
- 4) CONSTRUCT MANHOLE NO.3 PER R.C.F.C.&W.C.D. STD DWG. MH253
- 16) CONSTRUCT CATCH BASIN NO.1 PER R.C.F.C.&W.C.O. STD. OWG. CB100
- 17) SAWCUT AND REMOVE EXISTING A.C. PAVEMENT.
- 18) UTILITY TRENCH AND SURFACE REPAIR PER CITY STANDARD ON SHT. NO. 18, MODIFIED TO ACCOMMODATE SLURRY BACKFILL WHERE BOX COVER IS LESS THAN 2.0'.
- 20) CONSTRUCT LOCAL DEPRESSION NO. 2 CASE "B" PER R.C.F.C.&W.C.D. STD. OWG. LD201.
- 21) CONSTRUCT 18" R.C.P., D-LOAD PER PLAN.
- 22) CONSTRUCT CONCRETE COLLAR PER R.C.F.C.&W.C.D. STD DWG. M803.
- 26) CONSTRUCT 6' X 4' PRE-CAST RCB APWA STD PLAN 390-0 OR APPROVED EQUAL. SEE JOINT SEALANT NOTE ON SHEET #1.
- 28) CONSTRUCT SEWER PROTECTION PER R.C.F.C.&W.C.O. STD. OWG. M807.
- 29) PROTECT IN PLACE EXISTING UTILITY
- 30) CONSTRUCT JUNCTION STRUCTURE NO.1 PER R.C.F.C.&W.C.D. STD. DWG. JS226.
- 33) RELOCATE EXISTING SEWER LATERALS PER E.M.W.D. PLANS.
- 34) RELOCATE EXISTING WATER LINE PER E.M.W.D. PLANS.
- 36) INSTALL NEW SEWER LATERAL PER E.M.W.D. PLANS.
- 37) LOWER EXISTING SEWER MAIN PER E.M.W.D. PLANS.
- 38) SLURRY BACKFILL BETWEEN RCB AND MANHOLE.
- 39) RELOCATE EXISTING GAS LINE.
- 41) RELOCATE EXISTING TELEPHONE LINE.
- 44) SAWCUT, REMOVE AND REPLACE A.C. PAVEMENT SURFACE REPAIR PER CITY STD. ON SHEET 18. SEE SEPARATE PAVING PLANS.
- 45) REMOVE EXISTING CONCRETE CURB AND GUTTER.
- 51) REMOVE EXISTING SEWER LATERALS PER E.M.W.D. PLANS.



DELTA	RAIUS	TANGENT	LENGTH	P.I.	
A	45'00"00"	45.00'	18.64'	35.34'	N 4982.531, E 6160.272



Don't Dig...Until You Call U.S.A. Toll Free  
1-800-227-2600  
for the location of buried utility lines.  
Don't disrupt vital services.  
TWO WORKING DAYS BEFORE YOU DIG

**BENCH MARK**  
COUNTY OF RIVERSIDE BENCHMARK NO. "A-B-19"  
COUNTY OF RIVERSIDE BENCHMARK - 3 1/4" ALUMINUM DISK  
MARKED "A-B-19" LOCATED AT THE SOUTH WEST CORNER  
OF BRIDGE ON TOP OF OVERPASS NEAR FACE OF CURB  
LOCATED AT THE CROSSING OF PERRIS BLVD. AND RIV. CO.  
FLOOD CONTROL CHANNEL (PERRIS LATERAL "A") 43 FT. WEST  
OF CENTERLINE OF PERRIS BLVD. AND 4.5 FT. EAST OF  
CONCRETE BRIDGE BARRIER (EDGE OF BRIDGE)  
MARKED R-102 D.W.R. IN TOP OF CONC. POST PUSH W/  
GROUND ELEVATION = 1476.674' (NAVD 1929)

REVISIONS	ENGINEER	RCFC/	DESIGNED BY:
2	H.I.A.	2/25/16	2/6
1	H.I.A.	2/25/16	2/6

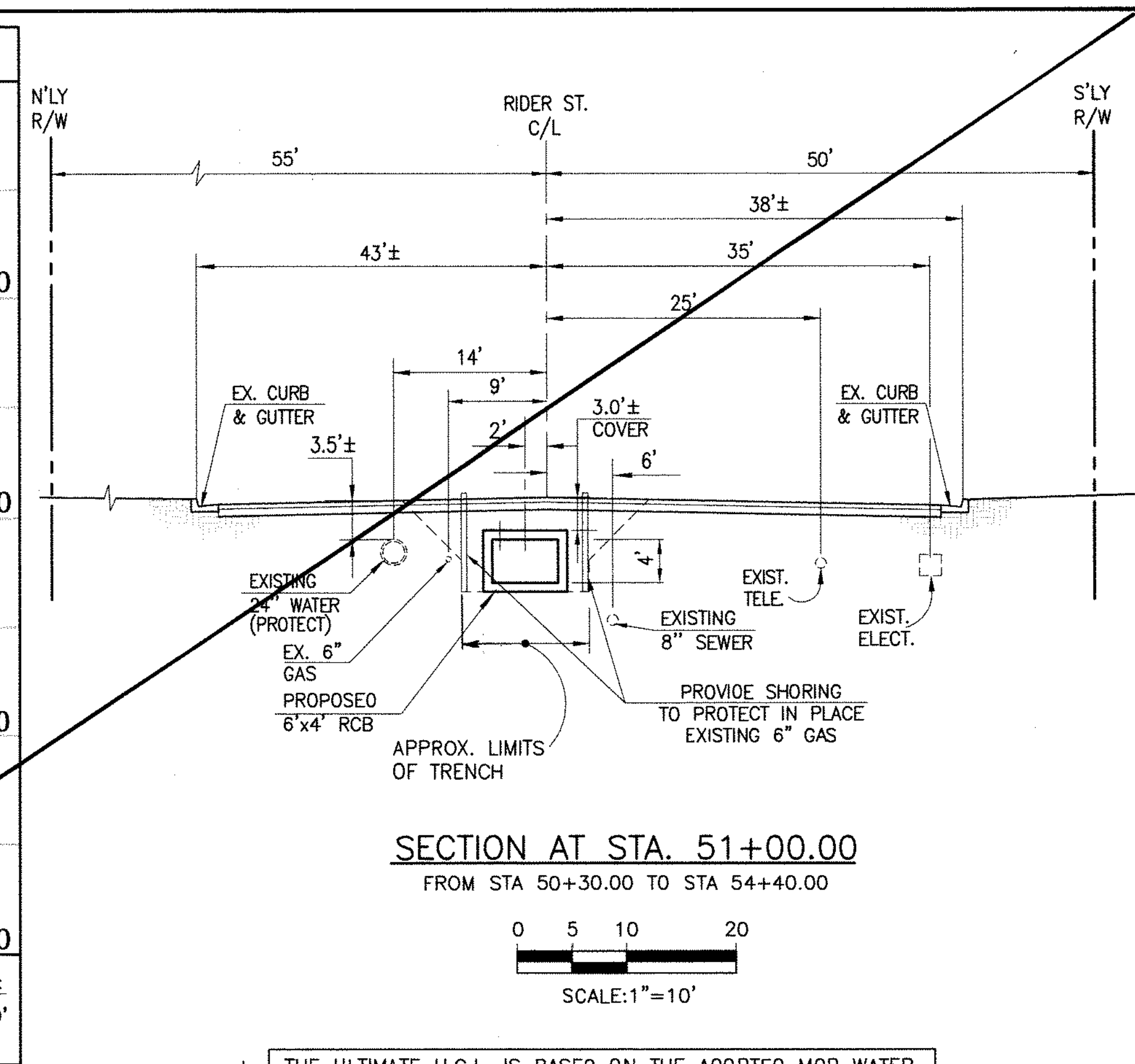
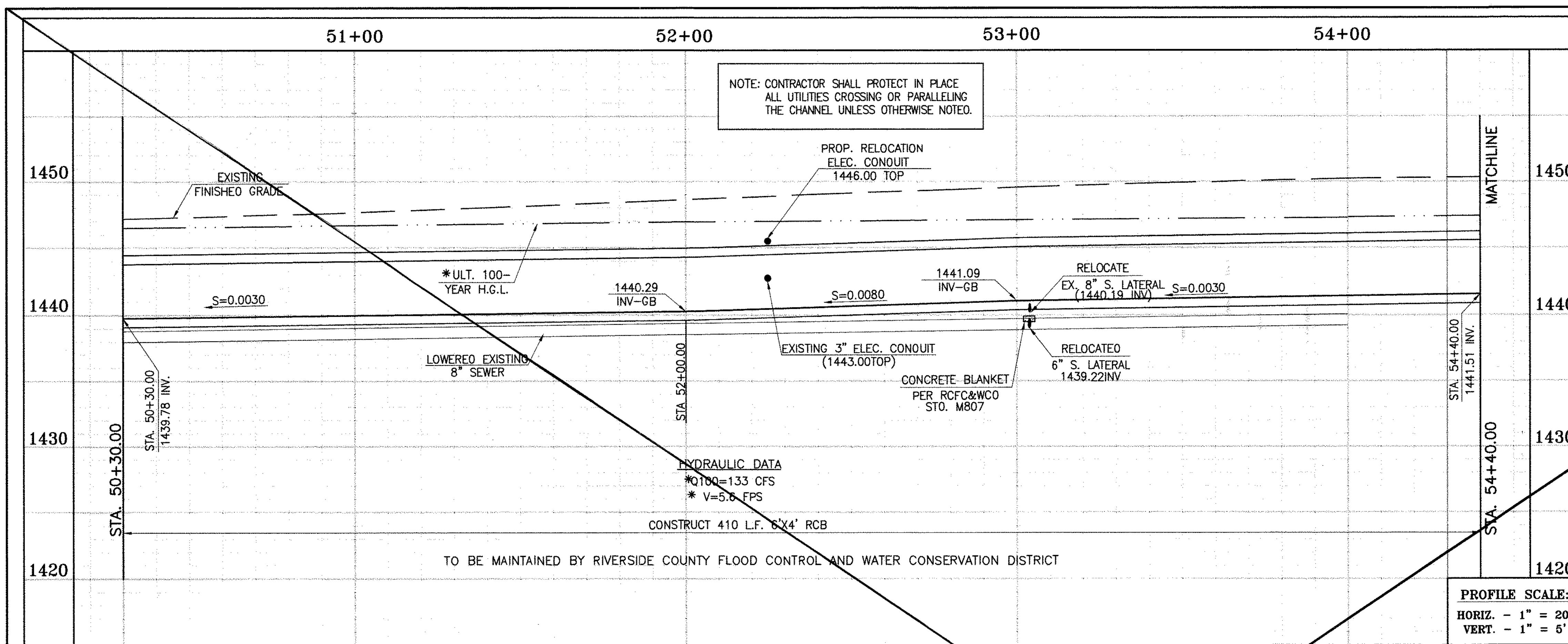
APPROVED BY:  
**Thienes Engineering, Inc.**  
CIVIL ENGINEERING - LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90639  
PH: (714) 521-4811 FAX: (714) 521-4173  
Date: 2/1/16  
HAIDOOK I. AGHAJAN RCE NO. 43293

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
RECOMMENDED FOR APPROVAL BY: [Signature]  
DATE: [Blank]

CITY OF PERRIS  
APPROVED BY: [Signature]  
DATE: 2-9-16

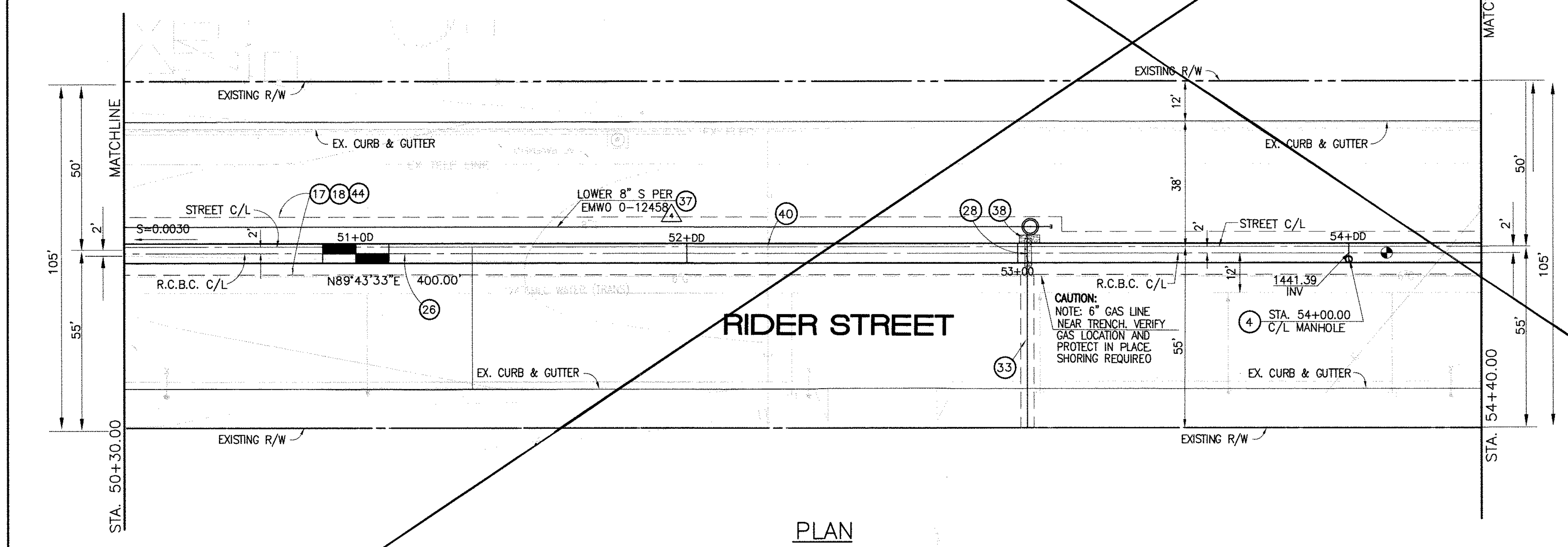
**PERRIS VALLEY MDP**  
**LINE "A-B"**  
FROM STA. 46+20 TO STA. 50+30

CITY OF PERRIS  
FILE NO. P8-1013  
PROJECT NO.  
**4-0-00537**  
DRAWING NO.  
**4-1063**  
SHEET NO.  
**11A** OF **18**



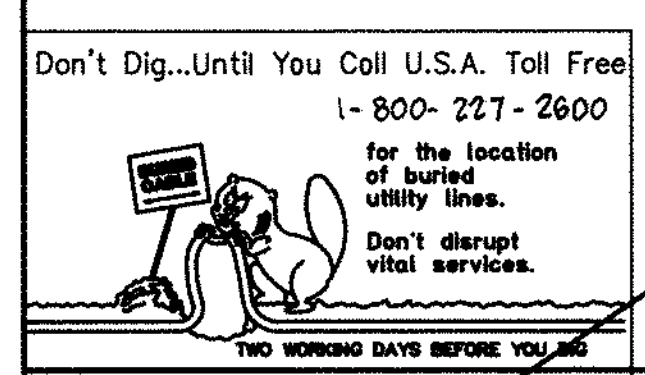
\* THE ULTIMATE H.G.L. IS BASED ON THE ADOPTED MOP WATER SURFACE ELEVATION OF 1433 IN THE PERRIS VALLEY STORM CHANNEL (PVSC) AT RIDER STREET, AND ASSUMES THAT FULL CHANNEL IMPROVEMENTS HAVE BEEN CONSTRUCTED PER THE ADOPTED MOP. FOR ALL WATER SURFACE ELEVATIONS BETWEEN 1433 AND THE 100-YEAR FLOOD ELEVATION FOR PVSC (1437.5), LINE "A-B" WILL NOT HAVE CAPACITY FOR LOCAL 100-YEAR FLOWS.

**CAUTION:**  
PROPOSED WORK IS IN PROXIMITY OF HIGH PRESSURE GAS LINES



**STORM DRAIN CONSTRUCTION NOTES:**

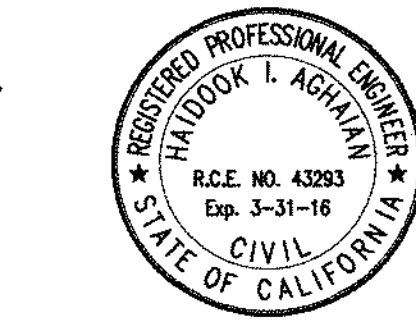
- ④ CONSTRUCT MANHOLE NO. 3 PER R.C.F.C.&W.C.O. STO. OWG. MH253
- ①⑦ SAWCUT AND REMOVE EXISTING A.C. PAVEMENT.
- ①⑧ UTILITY TRENCH AND SURFACE REPAIR PER CITY STANDARD ON SHT. NO. 18, MODIFIED TO ACCOMMODATE SLURRY BACKFILL WHERE BOX COVER IS LESS THAN 2.0'.
- ②⑥ CONSTRUCT 6' X 4' RCB PER CALTRANS STO. PLAN NO. 080 OR APPROVED EQUAL.
- ②⑧ CONSTRUCT SEWER PROTECTION PER R.C.F.C.&W.C.O. STO. OWG. M807.
- ③③ RELOCATE EXISTING 6" SEWER LATERAL PER E.M.W.O. PLANS.
- ③⑦ LOWER EXISTING 8" SEWER MAIN PER E.M.W.O. PLANS.
- ③⑧ SLURRY BACKFILL BETWEEN RCB AND MANHOLE.
- ③⑨ RELOCATE EXISTING GAS LINE.
- ④① RELOCATE EXISTING ELECTRICAL LINE.
- ④④ SAWCUT, REMOVE AND REPLACE A.C. PAVEMENT SURFACE REPAIR PER CITY STO. ON SHEET 18. SEE SEPARATE PAVING PLANS.



**BENCH MARK**  
COUNTY OF RIVERSIDE BENCHMARK NO. 24-31"  
COUNTY OF RIVERSIDE BENCHMARK 1/4" ALUMINUM DISK  
MARKED M-31, LOCATED FLUSH AT THE SOUTH WEST CORNER  
OF BRIDGE ON TOP OF SIDEWALK NEAR FACE OF CURB  
LOCATED AT THE CROSSING OF PERRIS BLVD. AND RIV. CO.  
FLOOD CONTROL CHANNEL (PERRIS LATERAL) 7.2' 43 FT. WEST  
OF CENTERLINE OF PERRIS BLVD. AND 4.5 FT. EAST OF  
CONCRETE BRIDGE BARRIER (EDGE OF BRIDGE)  
MARKED BY 102 D.I.R. IN TOP OF CONC. POST FLUSH W/  
GROUND  
ELEVATION = 1476.874' (NAD 1983)

REF.	DESCRIPTION	APPR.	DATE	APPR.	DATE
	REVISIONS				
	SUPERSEDED BY SHEET 12A				

DESIGNED BY: **DN**  
DRAWN BY: **ET**  
DATE DRAWN:  
APPROVED BY: **Thienes Engineering, Inc.**  
CIVIL ENGINEERING & LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90638  
PH. (714) 521-4811 FAX (714) 521-4173  
**Haideck I. Aghaian** Date: 11/18/14  
RCE NO. 43293

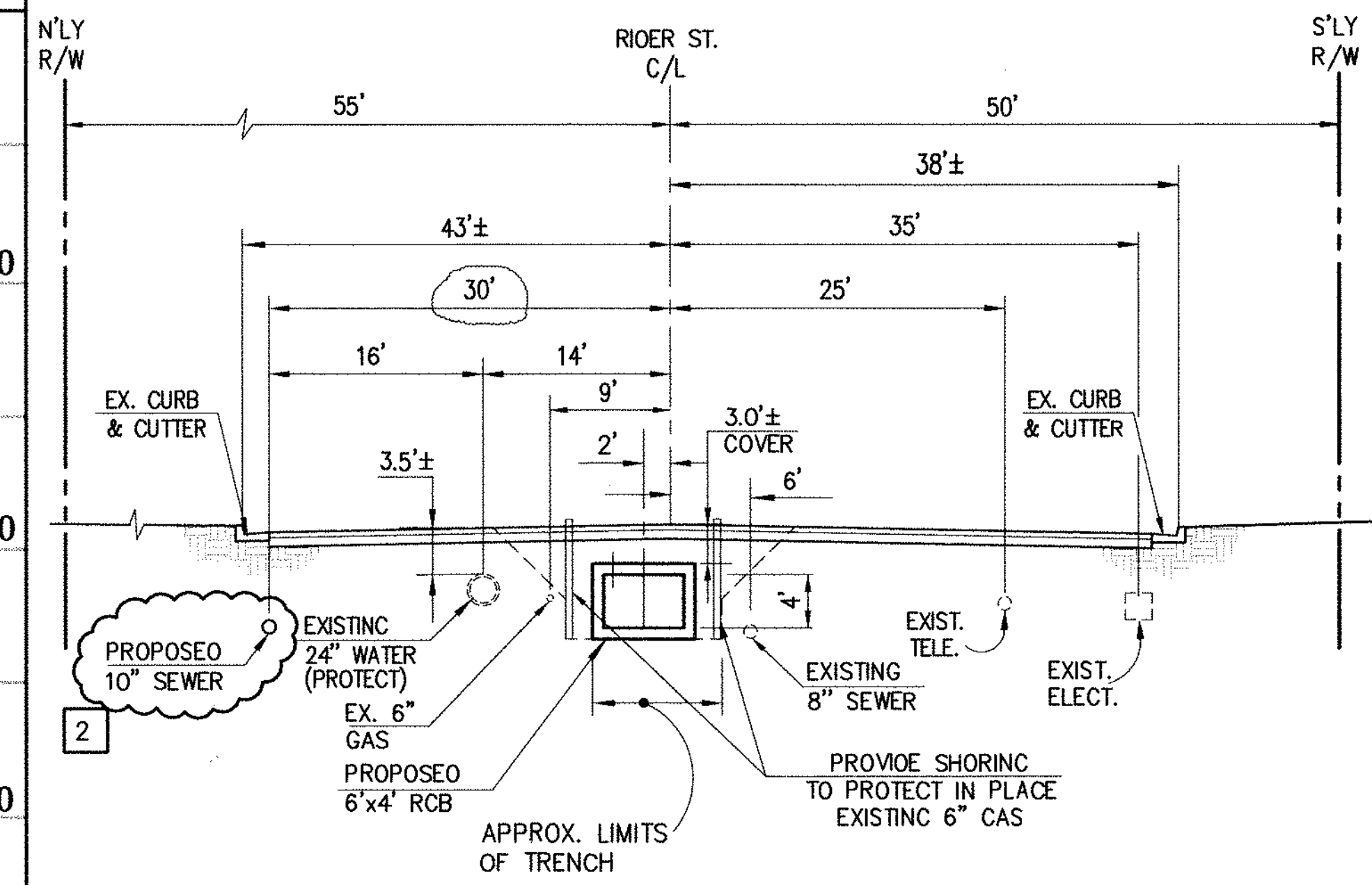
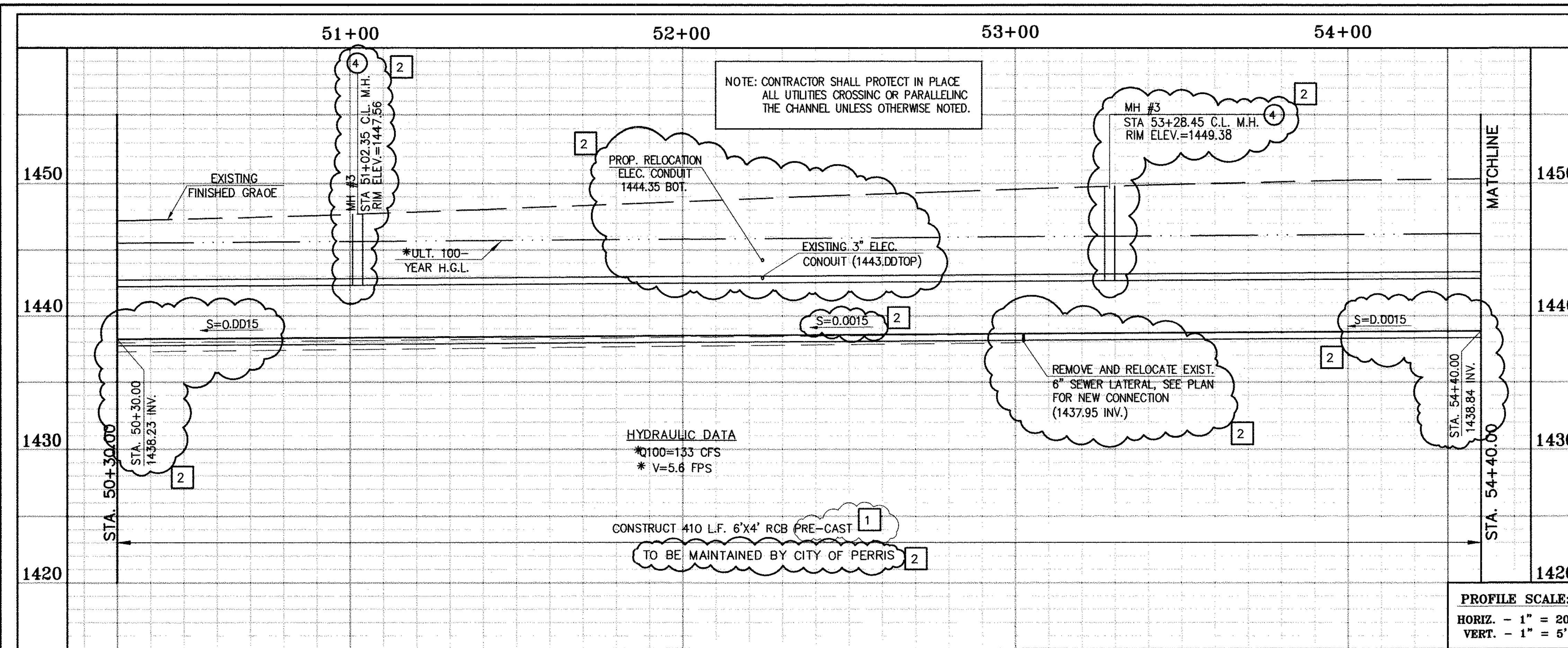


RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
RECOMMENDED FOR APPROVAL BY: **[Signature]**  
DATE: 1/20/2015  
APPROVED BY: **Mark A. Willk**  
DATE: 1/20/2015

CITY OF PERRIS APPROVED BY: **[Signature]**  
DATE: 12-15-14

PERRIS VALLEY MDP LINE "A-B"  
FROM STA. 50+30 TO STA. 54+40

CITY OF PERRIS FILE NO. P8-1013  
PROJECT NO. 4-0-00537  
DRAWING NO. 4-1063  
SHEET NO. 12 OF 18

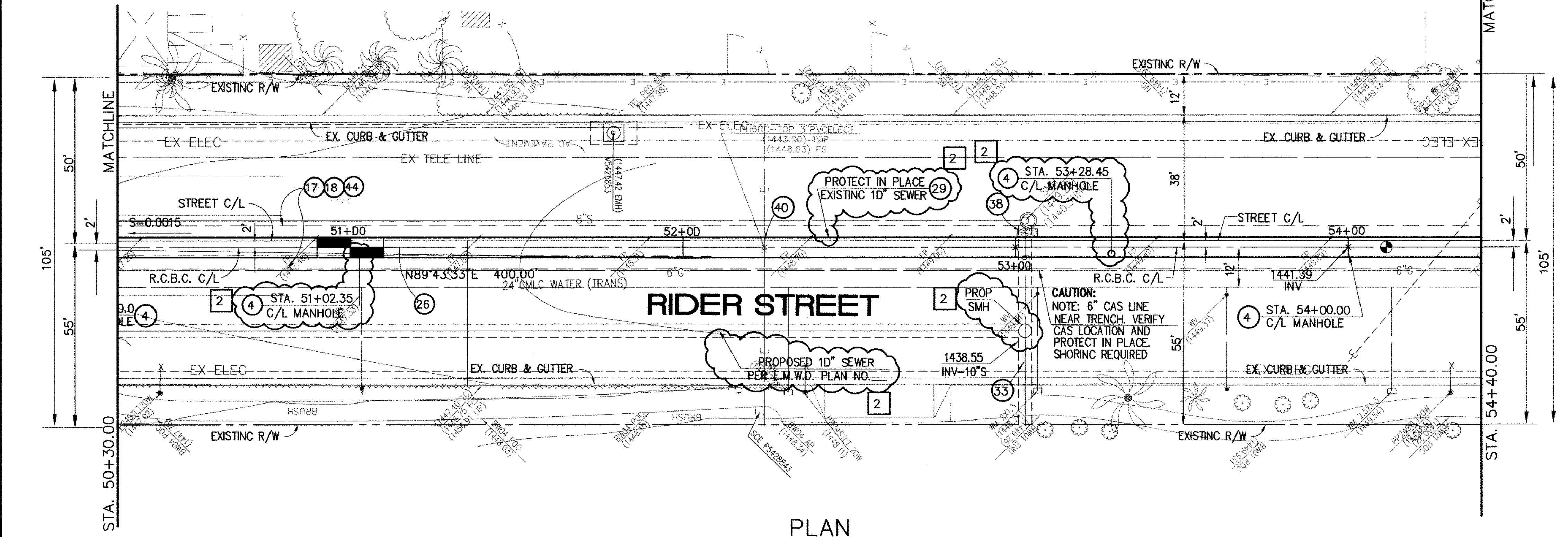


**SECTION AT STA. 51+00.00**  
FROM STA 50+30.00 TO STA 54+40.00

0 5 10 20  
SCALE: 1"=10'

\* THE ULTIMATE H.G.L. IS BASED ON THE ADOPTED MOP WATER SURFACE ELEVATION OF 1433 IN THE PERRIS VALLEY STORM CHANNEL (PVSC) AT RIVER STREET, AND ASSUMES THAT FULL CHANNEL IMPROVEMENTS HAVE BEEN CONSTRUCTED PER THE ADOPTED MOP. FOR ALL WATER SURFACE ELEVATIONS BETWEEN 1433 AND THE 100-YEAR FLOOD ELEVATION FOR PVSC (1437.5), LINE "A-B" WILL NOT HAVE CAPACITY FOR LOCAL 100-YEAR FLOWS.

**CAUTION:**  
PROPOSED WORK IS IN PROXIMITY OF HIGH PRESSURE GAS LINES



**STORM DRAIN CONSTRUCTION NOTES:**

- 4 CONSTRUCT MANHOLE NO. 3 PER R.C.F.C.&W.C.O. STD. D.W.C. MH253
- 17 SAWCUT AND REMOVE EXISTING A.C. PAVEMENT.
- 18 UTILITY TRENCH AND SURFACE REPAIR PER CITY STANDARD ON SHT. NO. 18, MODIFIED TO ACCOMMODATE SLURRY BACKFILL WHERE BOX COVER IS LESS THAN 2.0'
- 26 CONSTRUCT 6' X 4' PRE-CAST RCB APWA STD. PLAN 390-0 OR APPROVED EQUAL. SEE JOINT SEALANT NOTE ON SHEET #1.
- 28 CONSTRUCT SEWER PROTECTION PER R.C.F.C.&W.C.O. STD. O.W.G. M807.
- 29 PROTECT IN PLACE EXISTING UTILITY
- 33 RELOCATE EXISTING 6" SEWER LATERAL PER E.M.W.O. PLANS.
- 38 SLURRY BACKFILL BETWEEN RCB AND MANHOLE.
- 39 RELOCATE EXISTING GAS LINE.
- 40 RELOCATE EXISTING ELECTRICAL LINE.
- 44 SAWCUT, REMOVE AND REPLACE A.C. PAVEMENT SURFACE REPAIR PER CITY STD. ON SHEET 18. SEE SEPARATE PAVING PLANS.

Don't Dig...Until You Call U.S.A. Toll Free  
1-800-227-2600

for the location of buried utility lines.  
Don't disrupt vital services.  
TWO WORKING DAYS BEFORE YOU DIG

**BENCH MARK**  
COUNTY OF RIVERSIDE BENCHMARK NO. "26-31"  
COUNTY OF RIVERSIDE BENCHMARK - 3 1/4" ALUMINUM DISK  
MARKED "31", LOCATED FLUSH AT THE SOUTH WEST CORNER  
OF BRIDGE ON TOP OF SIDEWALK NEAR FACE OF CURB  
LOCATED AT THE CROSSING OF PERRIS BLVD. AND RIV. CO.  
FLOOD CONTROL CHANNEL (PERRIS LATERAL "A"). 43 FT. WEST  
OF CENTERLINE OF PERRIS BLVD. AND 4.5 FT. EAST OF  
CONCRETE BRIDGE BARRIER (EDGE OF BRIDGE)  
MARKED R-102 D.W.R. IN TOP OF CONC. POST FLUSH W/  
GROUND  
ELEVATION = 1474.674' (DAVID 1928)

REF.	REVISIONS	ENGINEER	RCFC/	DESIGNED BY:	APPROVED BY:
2	CHANGED SLOPE TO 0.0015, ADDED MH, ADDED NEW 10'S, CHANGED 42" LAT TO 24" LAT, ADDED EX. UTILITIES, RELOCATE UTILITIES, REVISED SD	H.I.A.	2/25/16	2/25/16	2/25/16
1	CHANGED CAST IN PLACE RCB TO PRE-CAST RCB PER APWA 390-0	H.I.A.	2/25/16	2/25/16	2/25/16

APPROVED BY:  
**Thienes Engineering, Inc.**  
CIVIL ENGINEERING • LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90638  
PH: (714) 521-4811 FAX: (714) 521-4173  
Date: 2/11/16  
RCE NO. 43293

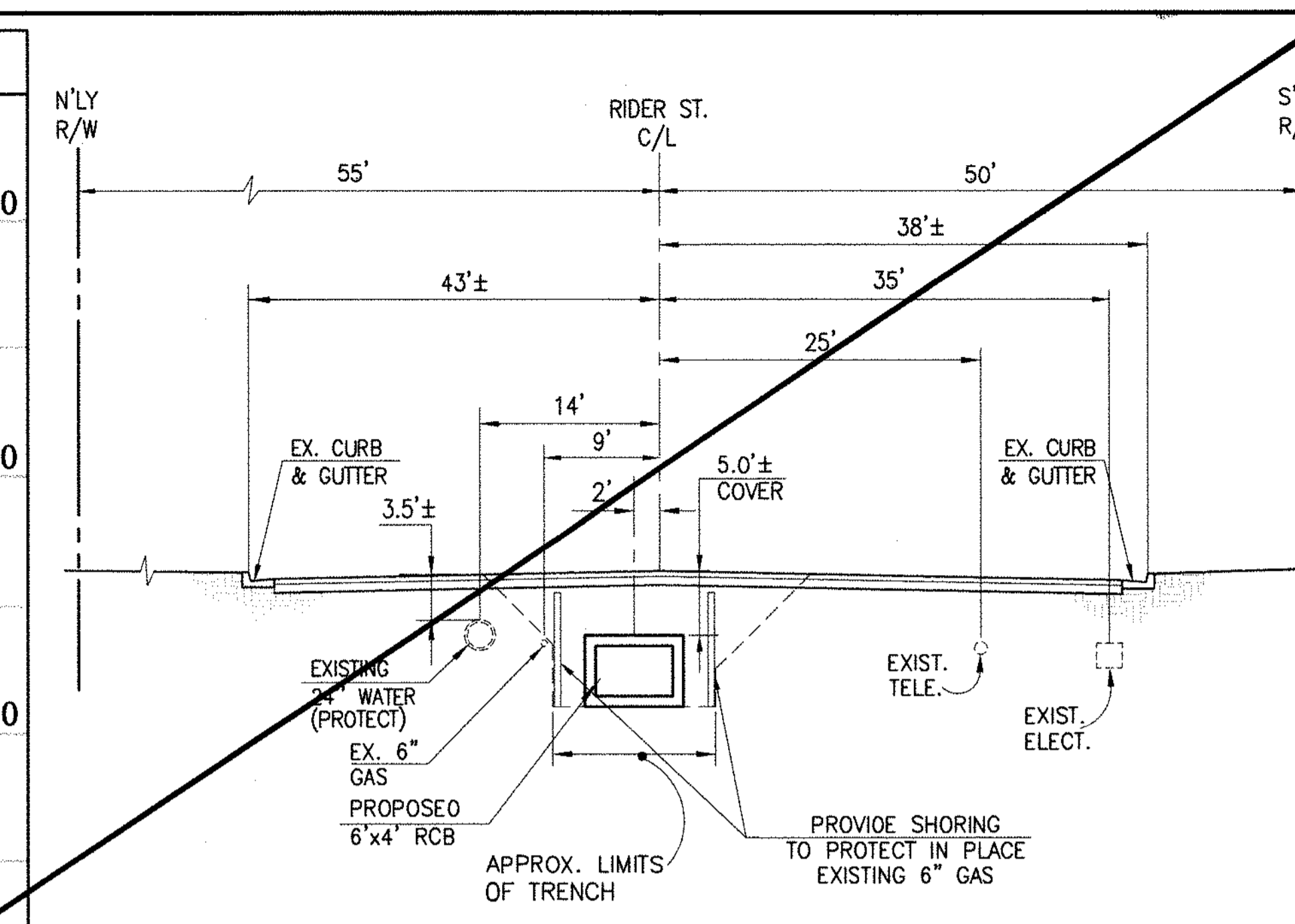
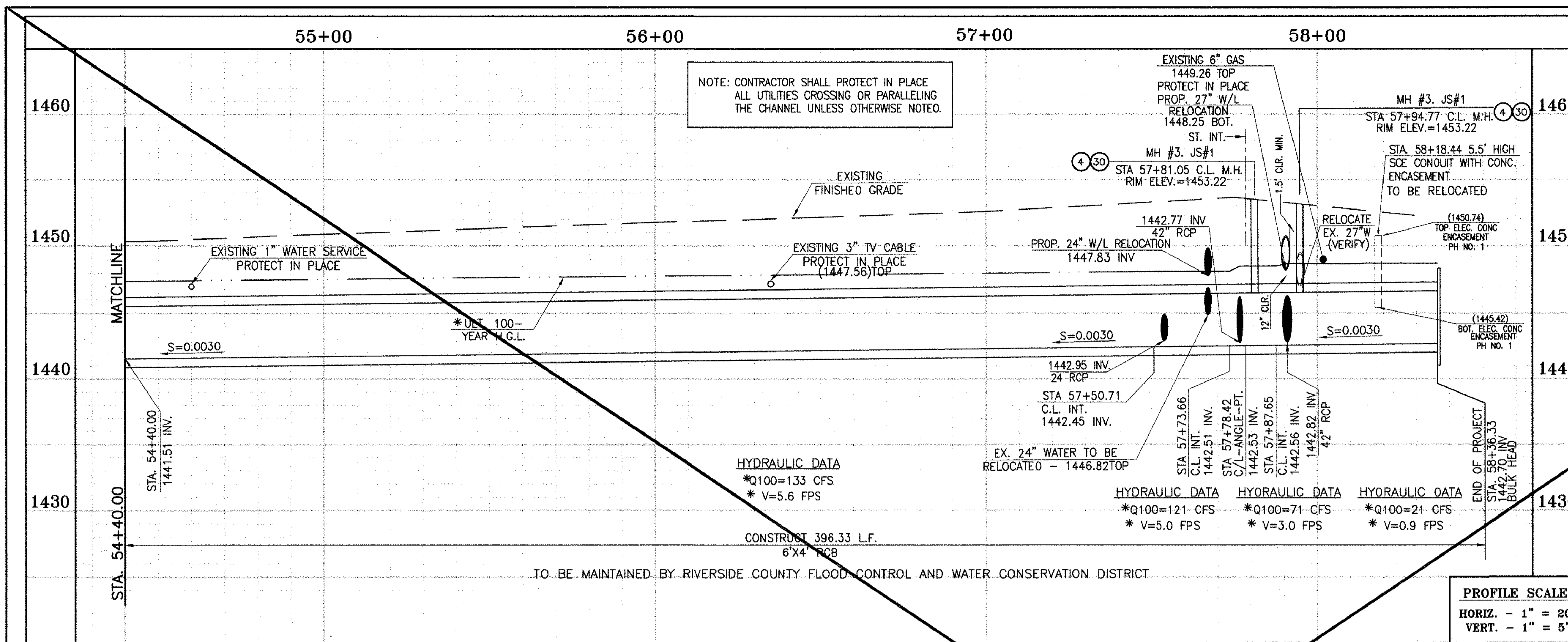
REGISTERED PROFESSIONAL ENGINEER  
HAIDOOK I. AGHAIAN  
R.C.E. NO. 43293  
Exp. 3-31-16  
STATE OF CALIFORNIA

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
RECOMMENDED FOR APPROVAL BY: \_\_\_\_\_  
APPROVED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_ DATE: \_\_\_\_\_

CITY OF PERRIS APPROVED BY:  
CITY ENGINEER: \_\_\_\_\_ DATE: 2-9-16  
RECOMMENDED: \_\_\_\_\_ DATE: \_\_\_\_\_

**PERRIS VALLEY MDP**  
**LINE "A-B"**  
FROM STA. 50+30 TO STA. 54+40

CITY OF PERRIS  
FILE NO. P8-1013  
PROJECT NO. 4-0-00537  
DRAWING NO. 4-1063  
SHEET NO. 12A OF 18

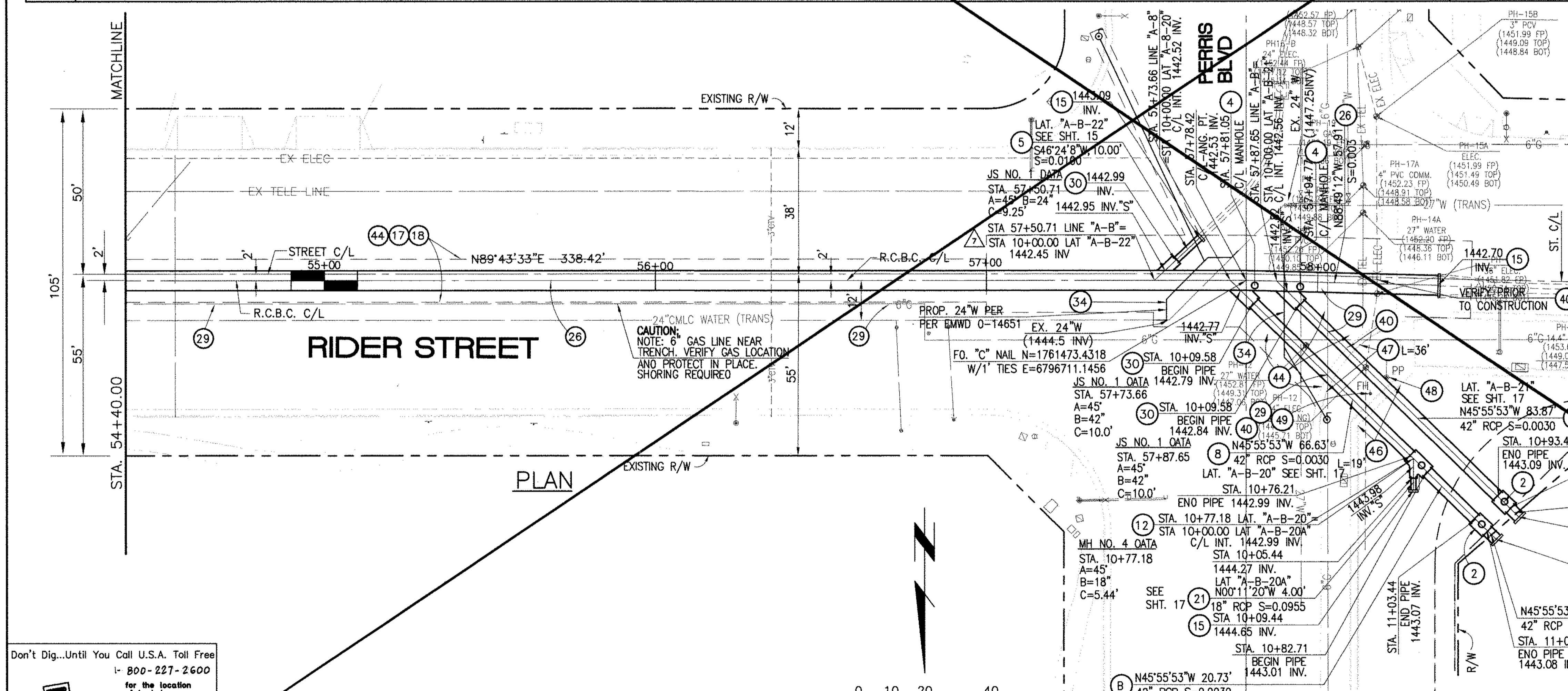


**SECTION AT STA. 55+00.00**  
FROM STA 54+40.00 TO STA 58+36.36

CAUTION:  
PROPOSED WORK IS IN PROXIMITY OF HIGH PRESSURE GAS LINES

SCALE: 1" = 10'

\* THE ULTIMATE H.G.L. IS BASED ON THE ADOPTED MOP WATER SURFACE ELEVATION OF 1433 IN THE PERRIS VALLEY STORM CHANNEL (PVSC) AT RIDER STREET, AND ASSUMES THAT FULL CHANNEL IMPROVEMENTS HAVE BEEN CONSTRUCTED PER THE ADOPTED MOP. FOR ALL WATER SURFACE ELEVATIONS BETWEEN 1433 AND THE 100-YEAR FLOOD ELEVATION FOR PVSC (1437.5), LINE "A-B" WILL NOT HAVE CAPACITY FOR LOCAL 100-YEAR FLOWS.



- STORM DRAIN CONSTRUCTION NOTES:**
- 2) CONSTRUCT MANHOLE #2 PER R.C.F.C.&W.C.O. STO DWG. MH252
  - 4) CONSTRUCT MANHOLE #3 PER R.C.F.C.&W.C.O. STO DWG. MH253
  - 5) CONSTRUCT 24" R.C.P. 0-LOAD PER PLAN.
  - 8) CONSTRUCT 42" R.C.P. 0-LOAD PER PLAN.
  - 12) CONSTRUCT MANHOLE #4 PER R.C.F.C.&W.C.O. STO DWG. MH254
  - 15) CONSTRUCT CONCRETE BULKHEAD PER R.C.F.C.&W.C.O. STO DWG. MB16.
  - 17) SAWCUT AND REMOVE EXISTING A.C. PAVEMENT.
  - 18) UTILITY TRENCH AND SURFACE REPAIR PER CITY STANDARD ON SHT. NO. 18, MODIFIED TO ACCOMMODATE SLURRY BACKFILL WHERE BOX COVER IS LESS THAN 2.0'.
  - 21) CONSTRUCT 18" R.C.P. 0-LOAD PER PLAN.
  - 26) CONSTRUCT 6' X 4' RCB PER CALTRANS STO. PLAN NO. OBO OR APPROVED EQUAL.
  - 29) PROTECT IN PLACE EXISTING UTILITIES.
  - 30) CONSTRUCT JUNCTION STRUCTURE NO. 1 PER R.C.F.C.&W.C.O. STO. DWG. JS226.
  - 34) RELOCATE EXISTING WATER LINE PER E.M.W.O. PLANS.
  - 40) RELOCATE EXISTING ELECTRICAL LINE.
  - 44) SAWCUT, REMOVE AND REPLACE A.C. PAVEMENT SURFACE REPAIR PER CITY STD. ON SHEET 18.
  - 46) SAWCUT, REMOVE AND REPLACE EXISTING 2"± WIDE CONCRETE GUTTER, LENGTH PER PLAN.
  - 47) SAWCUT, REMOVE AND REPLACE EXISTING CONCRETE CURB & GUTTER, LENGTH PER PLAN. SEE SEPARATE PAVING PLANS.
  - 48) EXISTING POWER POLE TO BE RELOCATED BY OTHERS.
  - 49) EXISTING FIRE HYDRANT TO BE RELOCATED BY OTHERS.

Don't Dig...Until You Call U.S.A. Toll Free  
1-800-227-2600  
for the location of buried utility lines.  
Don't disrupt vital services.  
TWO WORKING DAYS BEFORE YOU DIG

REF.	DESCRIPTION	APPR.	DATE	APPR.	DATE
	REVISIONS				
	SUPERSEDED BY SHEET 13A				

DESIGNED BY: BW  
DRAWN BY: ET  
DATE DRAWN:

APPROVED BY: *[Signature]*  
THIENES ENGINEERING, INC.  
CIVIL ENGINEERING & LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90638  
PH: (714) 521-4811 FAX: (714) 521-4173  
Date: 11/18/14  
RCE NO. 43293

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

RECOMMENDED FOR APPROVAL BY: *[Signature]*  
DATE: 1/20/2015

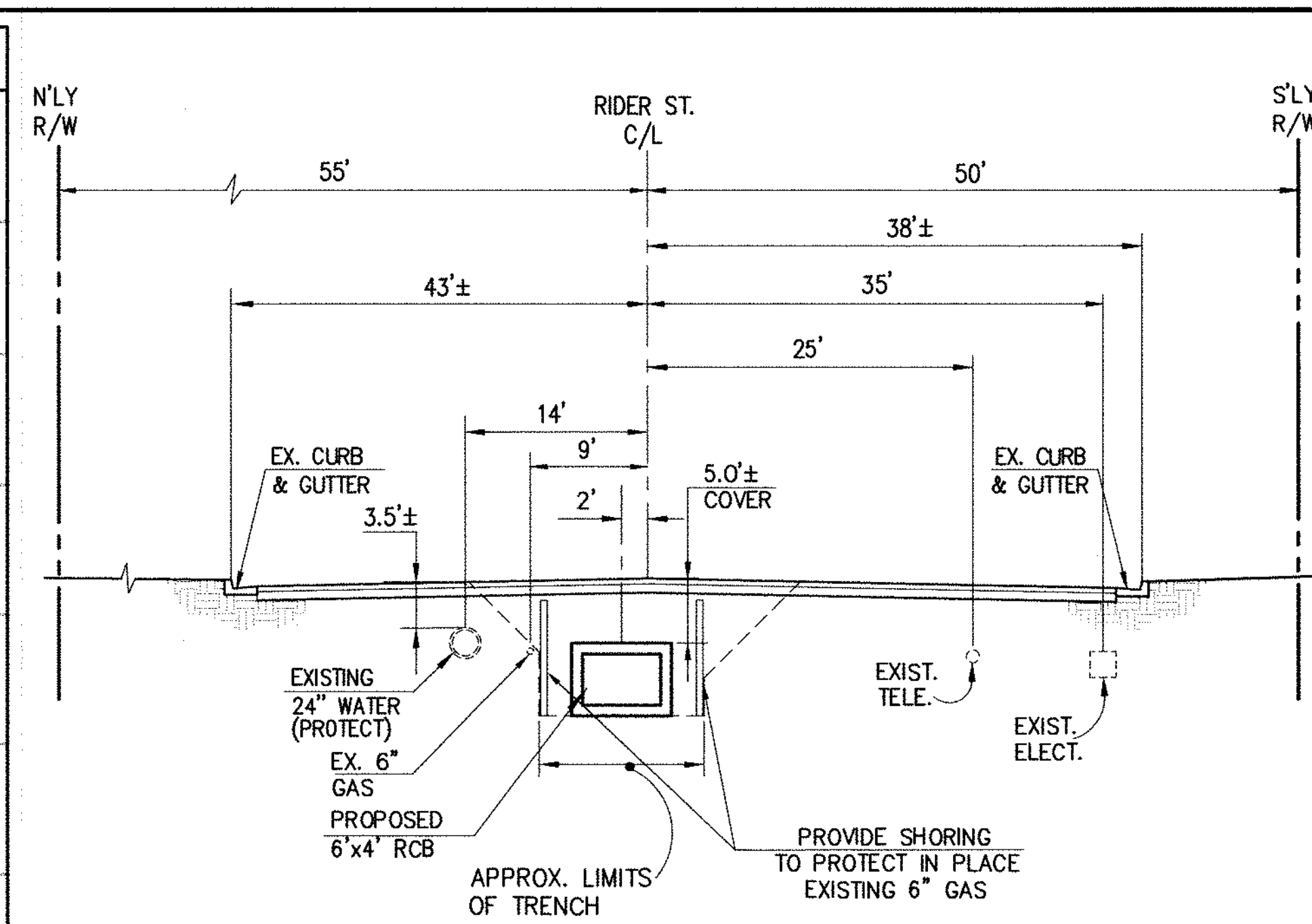
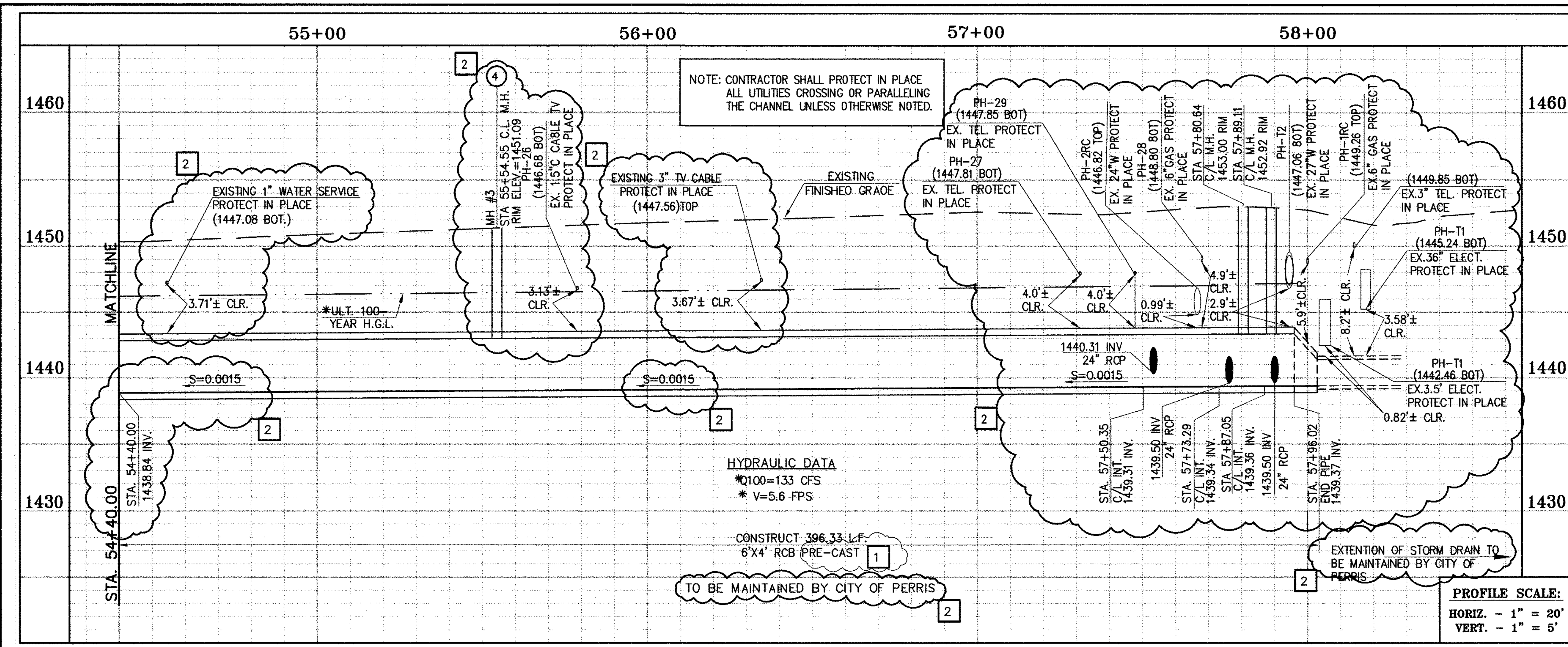
APPROVED BY: *[Signature]*  
DATE: 1/20/2015

CITY OF PERRIS APPROVED BY: *[Signature]*  
DATE: 12-15-14

CITY OF PERRIS  
FILE NO. P8-1013

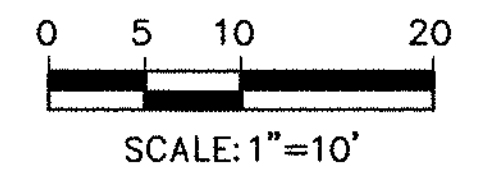
PERRIS VALLEY MDP  
LINE "A-B"  
FROM STA. 54+40 TO STA. 58+36

PROJECT NO. 4-0-00537  
DRAWING NO. 4-1063  
SHEET NO. 13 OF 18

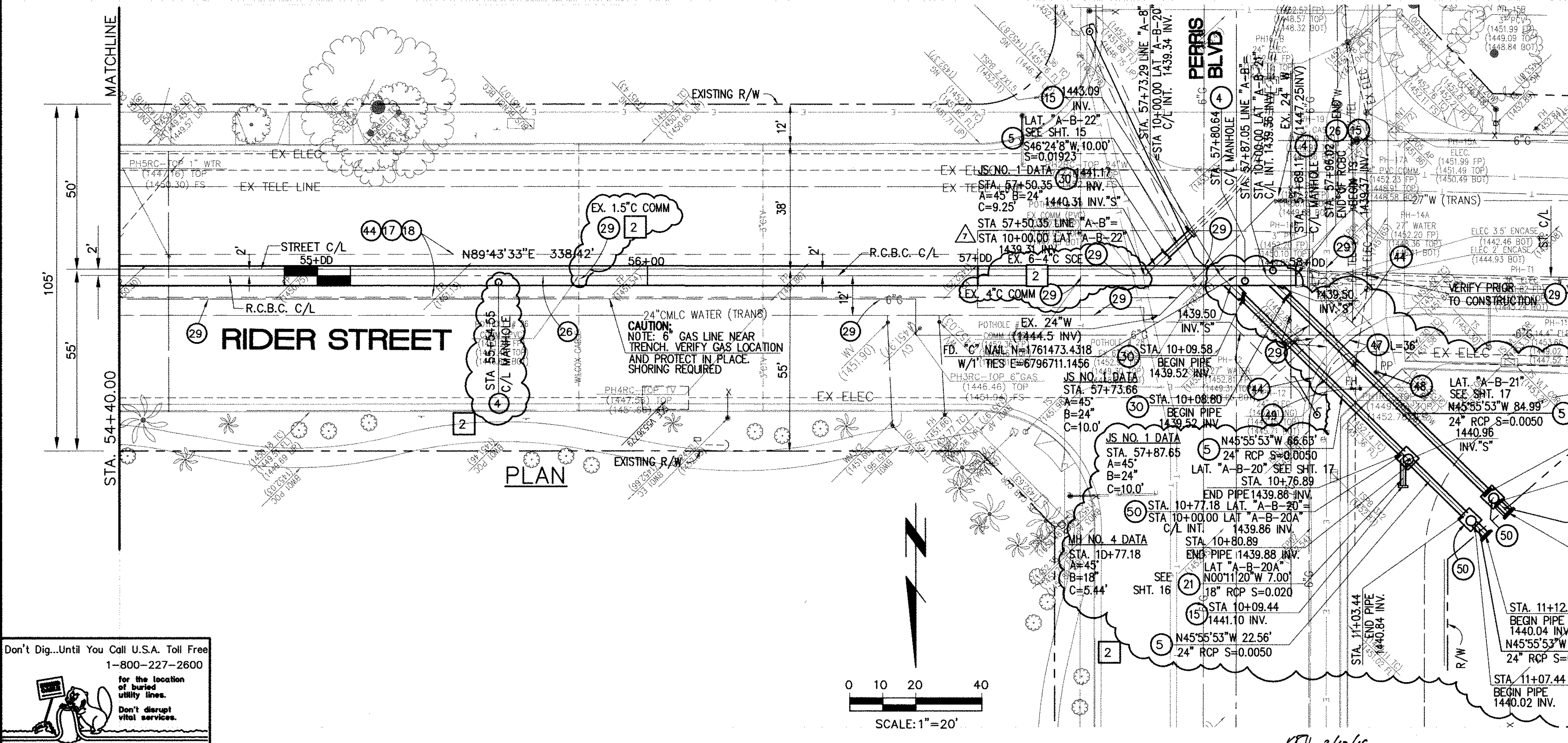


SECTION AT STA. 55+00.00  
FROM STA 54+40.00 TO STA 58+36.36

CAUTION:  
PROPOSED WORK IS IN  
PROXIMITY OF HIGH  
PRESSURE GAS LINES



\* THE ULTIMATE H.G.L. IS BASED ON THE ADOPTED MOP WATER SURFACE ELEVATION OF 1433 IN THE PERRIS VALLEY STORM CHANNEL (PVSC) AT RIDER STREET, AND ASSUMES THAT FULL CHANNEL IMPROVEMENTS HAVE BEEN CONSTRUCTED PER THE ADOPTED MOP. FOR ALL WATER SURFACE ELEVATIONS BETWEEN 1433 AND THE 100-YEAR FLOOD ELEVATION FOR PVSC (1437.5), LINE "A-B" WILL NOT HAVE CAPACITY FOR LOCAL 100-YEAR FLOWS.



**STORM DRAIN CONSTRUCTION NOTES:**

- 4 CONSTRUCT MANHOLE #3 PER R.C.F.C.&W.C.D. STD DWG. MH253
- 5 CONSTRUCT 24" R.C.P., D-LOAD PER PLAN.
- 8 CONSTRUCT 42" R.C.P., D-LOAD PER PLAN.
- 12 CONSTRUCT MANHOLE #4 PER R.C.F.C.&W.C.O. STD DWG. MH254
- 15 CONSTRUCT CONCRETE BULKHEAD PER R.C.F.C.&W.C.D. STD DWG. M816.
- 17 SAWCUT AND REMOVE EXISTING A.C. PAVEMENT.
- 18 UTILITY TRENCH AND SURFACE REPAIR PER CITY STANDARD ON SHT. NO. 18, MODIFIED TO ACCOMMODATE SLURRY BACKFILL WHERE BOX COVER IS LESS THAN 2.0'.
- 21 CONSTRUCT 18" R.C.P., D-LOAD PER PLAN.
- 26 CONSTRUCT 6' X 4' PRE-CAST RCB APWA STD PLAN 390-0 OR APPROVED EQUAL. SEE JOINT SEALANT NOTE ON SHEET #1.
- 29 PROTECT IN PLACE EXISTING UTILITIES.
- 30 CONSTRUCT JUNCTION STRUCTURE NO. 1 PER R.C.F.C.&W.C.D. STD. DWG. JS226.
- 34 RELOCATE EXISTING WATER LINE PER E.M.W.D. PLANS.
- 40 RELOCATE EXISTING ELECTRICAL LINE.
- 44 SAWCUT, REMOVE AND REPLACE A.C. PAVEMENT SURFACE REPAIR PER CITY STD. ON SHEET 18.
- 46 SAWCUT, REMOVE AND REPLACE EXISTING 2'± WIDE CONCRETE GUTTER, LENGTH PER PLAN.
- 47 SAWCUT, REMOVE AND REPLACE EXISTING CONCRETE CURB & GUTTER, LENGTH PER PLAN. SEE SEPARATE PAVING PLANS.
- 48 EXISTING POWER POLE TO BE RELOCATED BY OTHERS.
- 49 EXISTING FIRE HYDRANT TO BE RELOCATED BY OTHERS.
- 50 CONSTRUCT MANHOLE #1 PER R.C.F.C.&W.C.D. STD DWG. MH251

Don't Dig...Until You Call U.S.A. Toll Free  
1-800-227-2600  
for the location of buried utility lines.  
Don't disrupt vital services.  
TWO WORKING DAYS BEFORE YOU DIG

**BENCH MARK**  
COUNTY OF RIVERSIDE BENCHMARK NO. "26-31"  
COUNTY OF RIVERSIDE BENCHMARK - 3 1/4" ALUMINUM DISK  
MARKED "M-31", LOCATED FLUSH AT THE SOUTHWEST CORNER  
OF BRIDGE ON TOP OF OVERPASS NEAR FACE OF CURB  
LOCATED AT THE CROSSING OF PERRIS BLVD. AND RIV. CO.  
FLOOD CONTROL CHANNEL (PERRIS LARVAL "A" 43 FT. WEST  
OF CENTERLINE OF PERRIS BLVD. AND 4.5 FT. EAST OF  
CONCRETE BRIDGE BARRIER, EDGE OF BRIDGE)  
MARKED R-102 D.W.R. IN TOP OF CONC. POST FLUSH W/  
GROUND  
ELEVATION = 1474.674' (NAVD 1929)

REVISIONS	ENGINEER	RCFC/	DESIGNED BY:
2	H.L.A. 2/29/16	O.V.	2/17/16
1	H.L.A. 2/25/16	O.V.	2/22/16

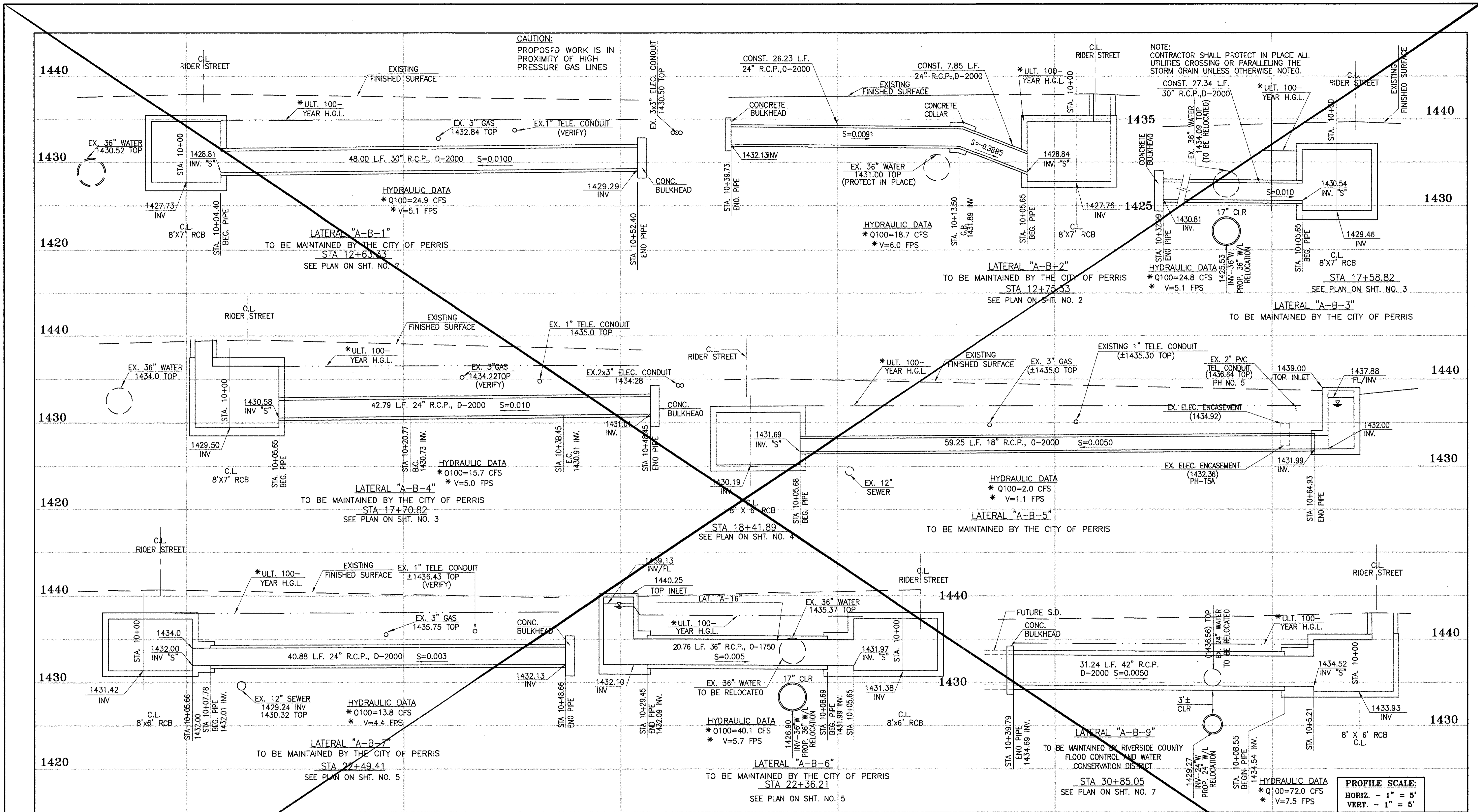
APPROVED BY:  
**THIENES ENGINEERING, INC.**  
CIVIL ENGINEERING • LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90639  
PH: (714) 821-4811 FAX: (714) 821-4173  
Date: 2/11/16  
RCE NO. 43293

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
RECOMMENDED FOR APPROVAL BY: \_\_\_\_\_  
APPROVED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_ DATE: \_\_\_\_\_

CITY OF PERRIS  
APPROVED BY: \_\_\_\_\_  
DATE: 2-9-16

**PERRIS VALLEY MDP**  
**LINE "A-B"**  
FROM STA. 54+40 TO STA. 58+36

PROJECT NO. 4-0-00537  
DRAWING NO. 4-1063  
SHEET NO. 13A OF 18



Don't Dig...Until You Call U.S.A. Toll Free  
1-800-277-2600  
for the location of buried utility lines.  
Don't disrupt vital services.  
TWO WORKING DAYS BEFORE YOU DIG

**CAUTION:**  
PROPOSED WORK IS IN PROXIMITY OF HIGH PRESSURE GAS LINES

\* THE ULTIMATE H.G.L. IS BASED ON THE ADOPTED MDP WATER SURFACE ELEVATION OF 1433 IN THE PERRIS VALLEY STORM CHANNEL (PVSC) AT RIDER STREET, AND ASSUMES THAT FULL CHANNEL IMPROVEMENTS HAVE BEEN CONSTRUCTED PER THE ADOPTED MDP. FOR ALL WATER SURFACE ELEVATIONS BETWEEN 1433 AND THE 100-YEAR FLOOD ELEVATION FOR PVSC (1437.5), LINE "A-B" WILL NOT HAVE CAPACITY FOR LOCAL 100-YEAR FLOWS.

**BENCH MARK**  
COUNTY OF RIVERSIDE BENCHMARK NO. 24-31  
COUNTY OF RIVERSIDE BENCHMARK NO. 24-31 ALUMINUM DISK  
MARKED M-31, LOCATED FLUSH TO THE SOUTH WEST CORNER  
OF BRIDGE ON TOP OF CROWNED NEAR FACE OF CURB  
LOCATED AT THE CROSSING OF PERRIS BLVD. AND RIV. CO.  
FLOOD CONTROL CHANNEL (PERRIS LATERAL 2), 43 FT. WEST  
OF CENTERLINE OF PERRIS BLVD. AND 4.3 FT. EAST OF  
CONCRETE BENCH MARKER (EDGE OF BRIDGE)  
MARKED BY 102 D.W.R. IN TOP OF CONC. POST FLUSH W/  
GROUND  
ELEVATION = 1474.674' (MWD 1829)

REF.	DESCRIPTION	APPR.	DATE	APPR.	DATE
	REVISIONS				
	SUPERSEDED BY SHEET 14A				

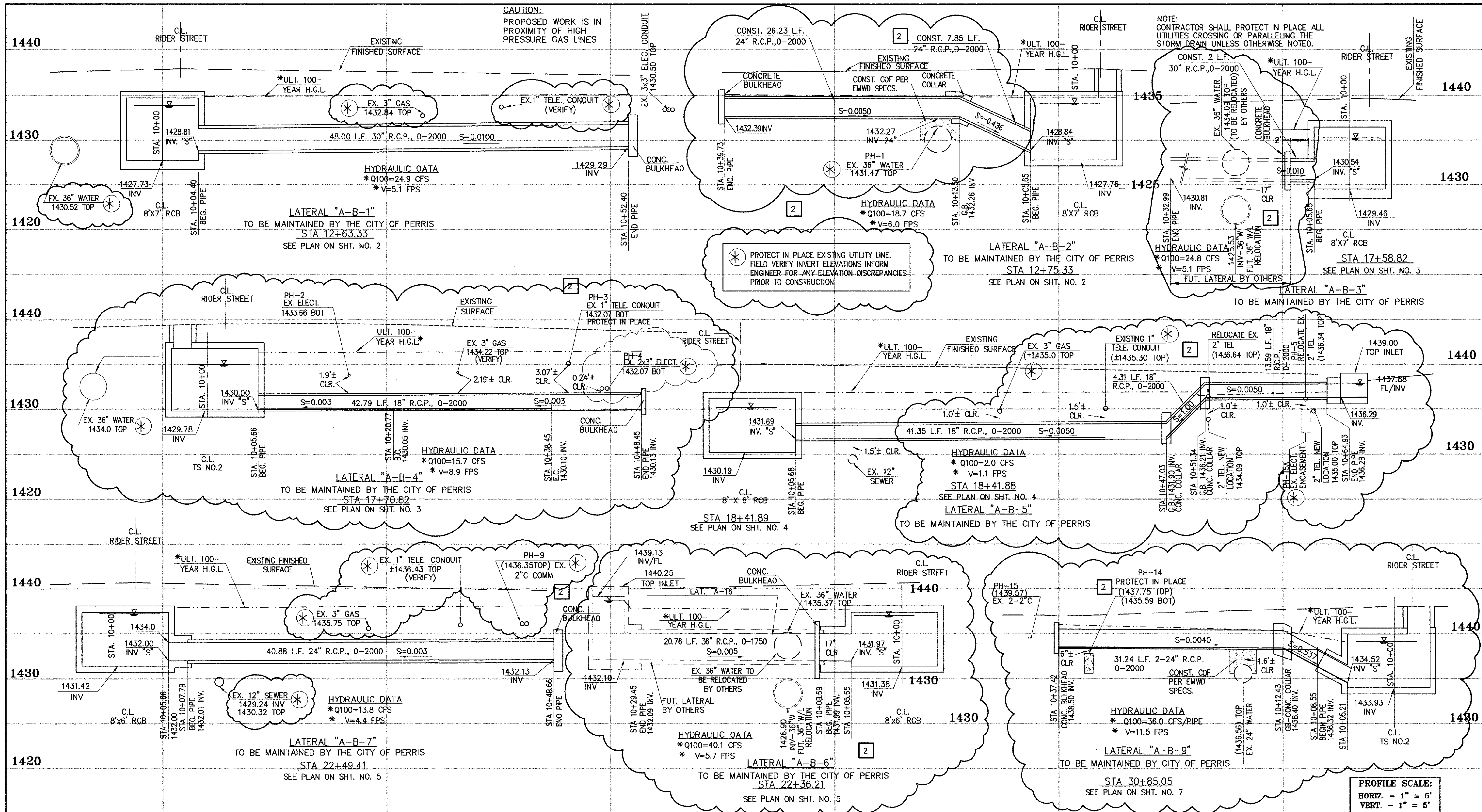
DESIGNED BY: BW  
DRAWN BY: ET  
DATE DRAWN:  
APPROVED BY:  
**Thienes Engineering, Inc.**  
CIVIL ENGINEERING • LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90638  
PH. (714) 521-4811 FAX (714) 521-4173  
Date: 11/18/14  
RCE NO. 43293  
HAIDOOK I. AGHAJANI

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
RECOMMENDED FOR APPROVAL BY: [Signature]  
DATE: 4/2/15  
APPROVED BY: [Signature]  
DATE: 1/20/2015

CITY OF PERRIS  
APPROVED BY: [Signature]  
DATE: 2-15-14

**PERRIS VALLEY MDP**  
LINE "A-B"

CITY OF PERRIS  
FILE NO. P8-1013  
PROJECT NO. 4-0-00537  
DRAWING NO. 4-1063  
SHEET NO. 14 OF 18



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1-800-227-2600

for the location of buried utility lines.  
Don't disrupt vital services.  
TWO WORKING DAYS BEFORE YOU DIG

**CAUTION:**  
PROPOSED WORK IS IN PROXIMITY OF HIGH PRESSURE GAS LINES

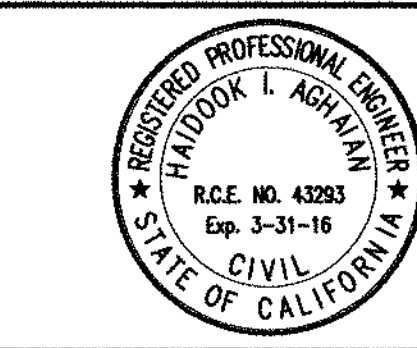
\* THE ULTIMATE H.G.L. IS BASED ON THE ADOPTED MOP WATER SURFACE ELEVATION OF 1433 IN THE PERRIS VALLEY STORM CHANNEL (PVSC) AT RIDER STREET, AND ASSUMES THAT FULL CHANNEL IMPROVEMENTS HAVE BEEN CONSTRUCTED PER THE ADOPTED MOP. FOR ALL WATER SURFACE ELEVATIONS BETWEEN 1433 AND THE 100-YEAR FLOOD ELEVATION FOR PVSC (1437.5), LINE "A-B" WILL NOT HAVE CAPACITY FOR LOCAL 100-YEAR FLOWS.

**BENCH MARK**  
COUNTY OF RIVERSIDE BENCHMARK NO. "21-31"  
COUNTY OF RIVERSIDE BENCHMARK - 3 1/4" ALUMINUM DISK  
MARKED W-31, LOCATED FLUSH AT THE SOUTH WEST CORNER  
OF BRIDGE ON TOP OF SIDEWALK NEAR FACE OF CURB  
LOCATED AT THE CROSSING OF PERRIS BLVD. AND RIV. CO.  
FLOOD CONTROL CHANNEL (PERRIS LATERAL "A-B" 43 FT. WEST  
OF CENTERLINE OF PERRIS BLVD. AND 4.5 FT. EAST OF  
CONCRETE BRIDGE BARRIER, EDGE OF BRIDGE)  
MARKED R-102 D.I.M.R. IN TOP OF CONC. POST FLUSH W/  
GROUND  
ELEVATION = 1474.674' (MAY 1929)

REVISIONS	ENGINEER	RCFC/	DESIGNED BY:
2	H.A.	2/25/16	2/25/16
1	H.A.	2/25/16	2/25/16

**APPROVED BY:**  
**THIENES Engineering, Inc.**  
CIVIL ENGINEERING • LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90638  
PH: (714) 521-4811 FAX: (714) 521-4173

Date: 2/1/16  
RCE NO. 43293



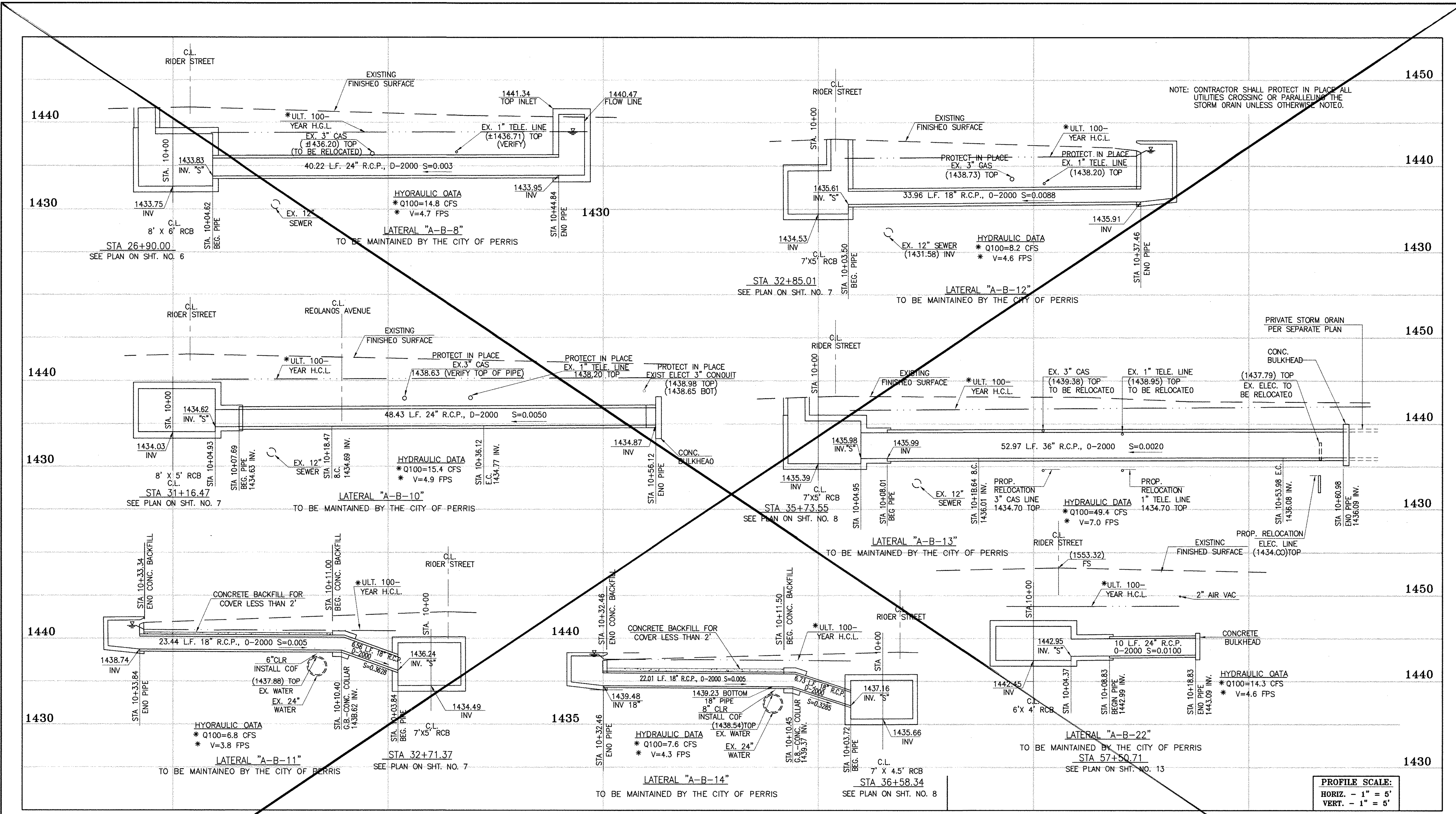
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

RECOMMENDED FOR APPROVAL BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

CITY OF PERRIS  
APPROVED BY: \_\_\_\_\_ DATE: 2-9-16

PERRIS VALLEY MDP  
LINE "A-B"

CITY OF PERRIS  
FILE NO. P8-1013  
PROJECT NO. 4-0-00537  
DRAWING NO. 4-1063  
SHEET NO. 14A OF 18



NOTE: CONTRACTOR SHALL PROTECT IN PLACE ALL UTILITIES CROSSING OR PARALLELING THE STORM DRAIN UNLESS OTHERWISE NOTED.

PROFILE SCALE:  
 HORIZ. - 1" = 5'  
 VERT. - 1" = 5'



**CAUTION:**  
 PROPOSED WORK IS IN PROXIMITY OF HIGH PRESSURE GAS LINES

\* THE ULTIMATE H.C.L. IS BASED ON THE ADOPTED MOP WATER SURFACE ELEVATION OF 1433 IN THE PERRIS VALLEY STORM CHANNEL (PVSC) AT RIOER STREET, AND ASSUMES THAT FULL CHANNEL IMPROVEMENTS HAVE BEEN CONSTRUCTED PER THE ADOPTED MOP. FOR ALL WATER SURFACE ELEVATIONS BETWEEN 1433 AND THE 100-YEAR FLOOD ELEVATION FOR PVSC (1437.5), LINE "A-B" WILL NOT HAVE CAPACITY FOR LOCAL 100-YEAR FLOWS.

**BENCH MARK**  
 COUNTY OF RIVERSIDE BENCHMARK NO. "M-31"  
 COUNTY OF RIVERSIDE BENCHMARK "M-31" ALLUMINUM DISK MARKED "M-31" LOCATED FLUSH AT THE SOUTH WEST CORNER OF BRIDGE ON TOP OF SIDEWALK NEAR FACE OF CURB LOCATED AT THE CROSSING OF PERRIS BLVD. AND RIV. CO. FLOOD CONTROL CHANNEL, PERRIS LATERAL "A-B" 4.3 FT. WEST OF CENTERLINE OF PERRIS BLVD. AND 4.5 FT. EAST OF CONCRETE BRIDGE BARRIER (EDGE OF BRIDGE) MARKED "M-31" IN TOP OF CONC. POST FLUSH W/ GRADE  
 ELEVATION = 1474.674' (NAD 1983)

REF.	DESCRIPTION	APPR.	DATE	APPR.	DATE
	REVISIONS				
	SUPERSEDED BY SHEET ISA				

DESIGNED BY: BW  
 DRAWN BY: ET  
 DATE DRAWN:  
 APPROVED BY: **Tai Thienes Engineering, Inc.**  
 CIVIL ENGINEERING • LAND SURVEYING  
 14349 FIRESTONE BOULEVARD  
 LA MIRADA, CALIFORNIA 90638  
 PH. (714)521-4811 FAX (714)521-4173  
 Date: 11/18/14  
 RCE NO. 43293

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
 RECOMMENDED FOR APPROVAL BY: *[Signature]*  
 DATE: 1/20/2015  
 APPROVED BY: *[Signature]*  
 DATE: 1/20/2015

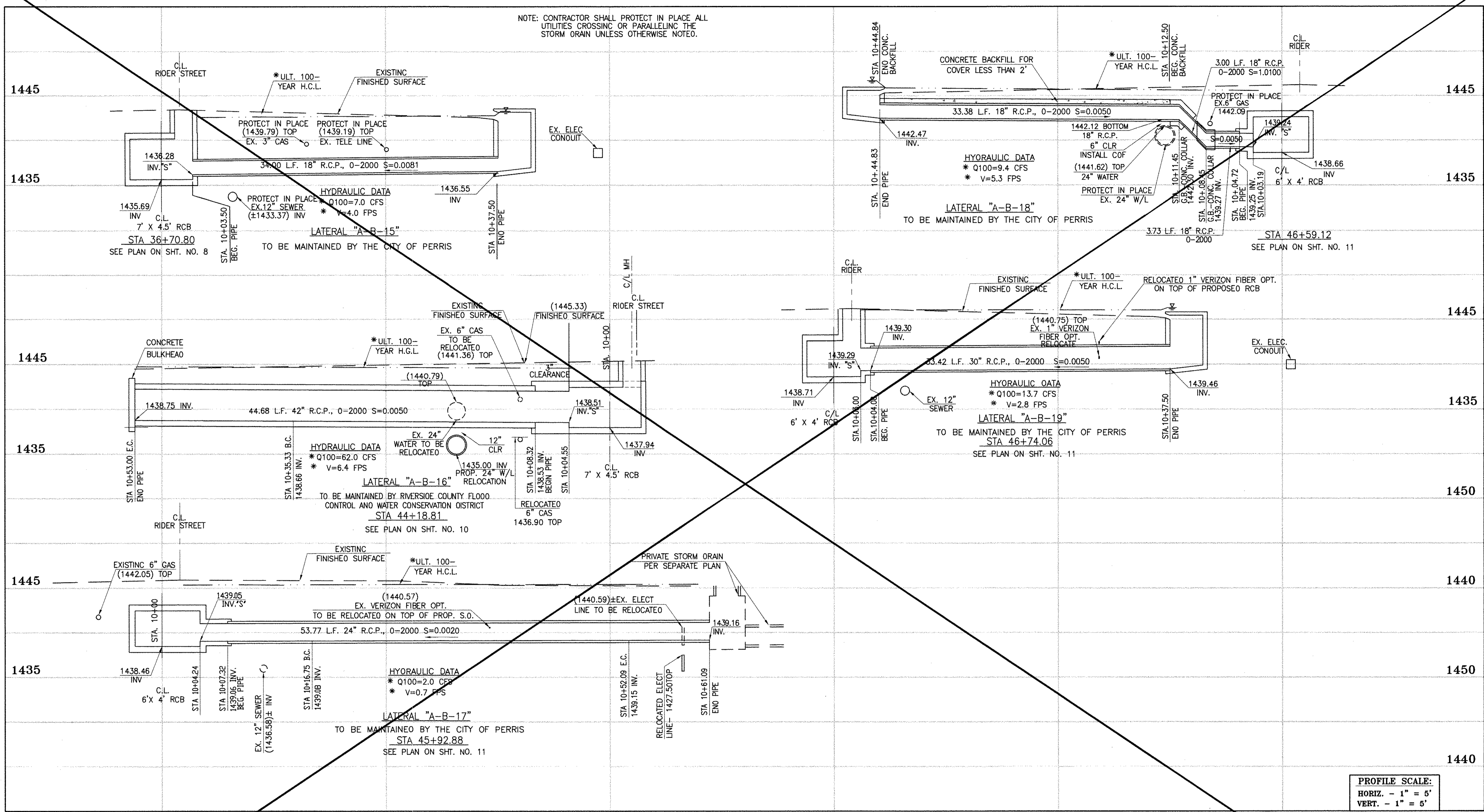
CITY OF PERRIS APPROVED BY: *[Signature]*  
 DATE: 12-15-14

PERRIS VALLEY MDP LINE "A-B"

CITY OF PERRIS FILE NO. P8-1013  
 PROJECT NO. 4-0-00537  
 DRAWING NO. 4-1063  
 SHEET NO. 15 OF 18



NOTE: CONTRACTOR SHALL PROTECT IN PLACE ALL UTILITIES CROSSING OR PARALLELING THE STORM DRAIN UNLESS OTHERWISE NOTED.



PROFILE SCALE:  
 HORIZ. - 1" = 5'  
 VERT. - 1" = 5'



**CAUTION:**  
 PROPOSED WORK IS IN PROXIMITY OF HIGH PRESSURE GAS LINES

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**BENCH MARK**  
 COUNTY OF RIVERSIDE BENCHMARK NO. 24-31\*  
 COUNTY OF RIVERSIDE BENCHMARK NO. 24-31\* ALUMINUM DISK MARKED "31" LOCATED FLUSH WITH THE SOUTH WEST CORNER OF BRIDGE ON TOP OF SIDEWALK NEAR FACE OF CURB LOCATED AT THE CROSSING OF PERRIS BLVD. AND RIV. CO. FLOOD CONTROL CHANNEL, PERRIS LATERAL 4.73' 4.5' WEST OF CENTERLINE OF PERRIS BLVD. AND 4.5' EAST OF CONCRETE BRIDGE BARRIER (EDGE OF BRIDGE) MARKED BY 102 D.W.R. IN TOP OF CONC. POST FLUSH W/ GROUND  
 ELEVATION = 1474.674' (NAD 1929)

REF.	DESCRIPTION	APPR.	DATE	APPR.	DATE
	REVISIONS				
	SUPERSEDED BY SHEET 16A				

DESIGNED BY: **ET**  
 DRAWN BY: **ET**  
 DATE DRAWN:  
 APPROVED BY: **Thienes Engineering, Inc.**  
 CIVIL ENGINEERING - LAND SURVEYING  
 14349 FIRESTONE BOULEVARD  
 LA MIRADA, CALIFORNIA 90638  
 PH. (714) 521-4811 FAX (714) 521-4173  
 Haidook I. Aghayan Date: 11/18/14 RCE NO. 43293

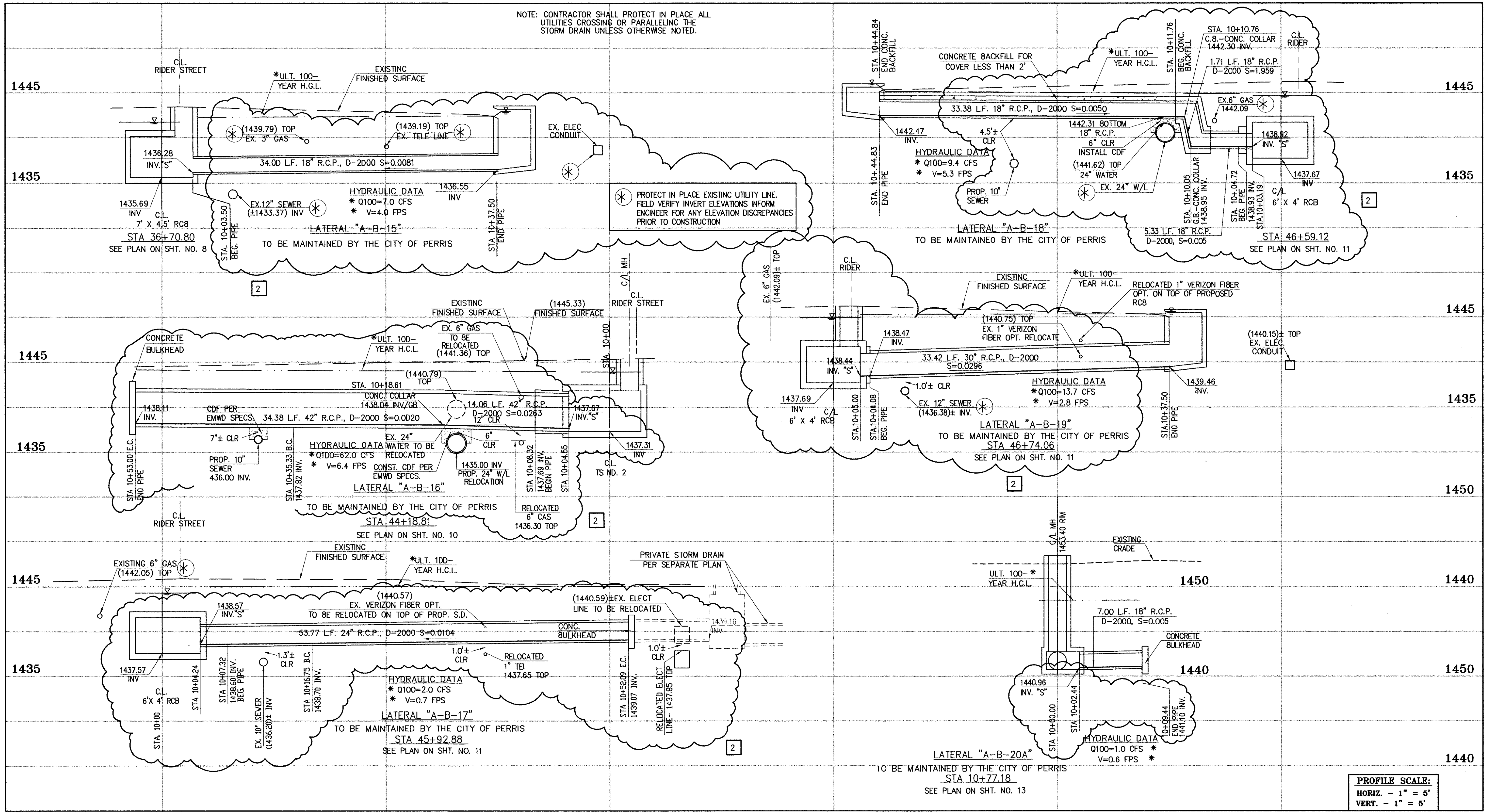
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
 RECOMMENDED FOR APPROVAL BY: **[Signature]** DATE: 1/20/2015  
 APPROVED BY: **[Signature]** DATE: 1/20/2015

CITY OF PERRIS APPROVED BY: **[Signature]** DATE: 12-15-14

PERRIS VALLEY MDP LINE "A-B"

CITY OF PERRIS FILE NO. P8-1013
PROJECT NO. 4-0-00537
DRAWING NO. 4-1063
SHEET NO. 16 OF 18

NOTE: CONTRACTOR SHALL PROTECT IN PLACE ALL UTILITIES CROSSING OR PARALLELING THE STORM DRAIN UNLESS OTHERWISE NOTED.



PROFILE SCALE:  
HORIZ. - 1" = 5'  
VERT. - 1" = 5'

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1-800-227-2600

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TWO WORKING DAYS BEFORE YOU DIG

**CAUTION:**  
PROPOSED WORK IS IN PROXIMITY OF HIGH PRESSURE GAS LINES

**BENCH MARK**  
COUNTY OF RIVERSIDE BENCHMARK NO. "A-37"  
COUNTY OF RIVERSIDE BENCHMARK - 3 1/4" ALUMINUM DISK MARKED M-31, LOCATED FLUSH AT THE SOUTH WEST CORNER OF BRIDGE ON TOP OF SIDEWALK NEAR FACE OF CURB LOCATED AT THE CROSSING OF PERRIS BLVD. AND RIV. CO. FLOOD CONTROL CHANNEL (PERRIS LATERAL "A"), 43 FT. WEST OF CENTERLINE OF PERRIS BLVD. AND 4.5 FT. EAST OF CONCRETE BRIDGE BARRIER (EDGE OF BRIDGE) MARKED R-102 D.I.M.R. IN TOP OF CONC. POST FLUSH W/ GROUND ELEVATION = 1474.874' (NAD 1929)

NO.	REVISIONS	ENGINEER	RCFC/	DESIGNED BY:
2	CHANGED SLOPE TO 0.0015, ADDED MH, ADDED NEW 10'S, CHANGED 42" LAT TO 24" LAT, ADDED EX. UTILITIES, RELOCATE UTILITIES, REVISED SD	H.L.A.	2/24/16	JLB
1	CHANGED CAST IN PLACE RCB TO PRE-CAST RCB PER APWA 390-0	H.L.A.	2/25/16	JLB

APPROVED BY:  
**THI** Thienes Engineering, Inc.  
CIVIL ENGINEERING • LAND SURVEYING  
14349 FIRESTONE BOULEVARD  
LA MIRADA, CALIFORNIA 90639  
PH: (714) 521-4811 FAX: (714) 521-4173  
Date: 2/1/16  
RCE NO. 43293

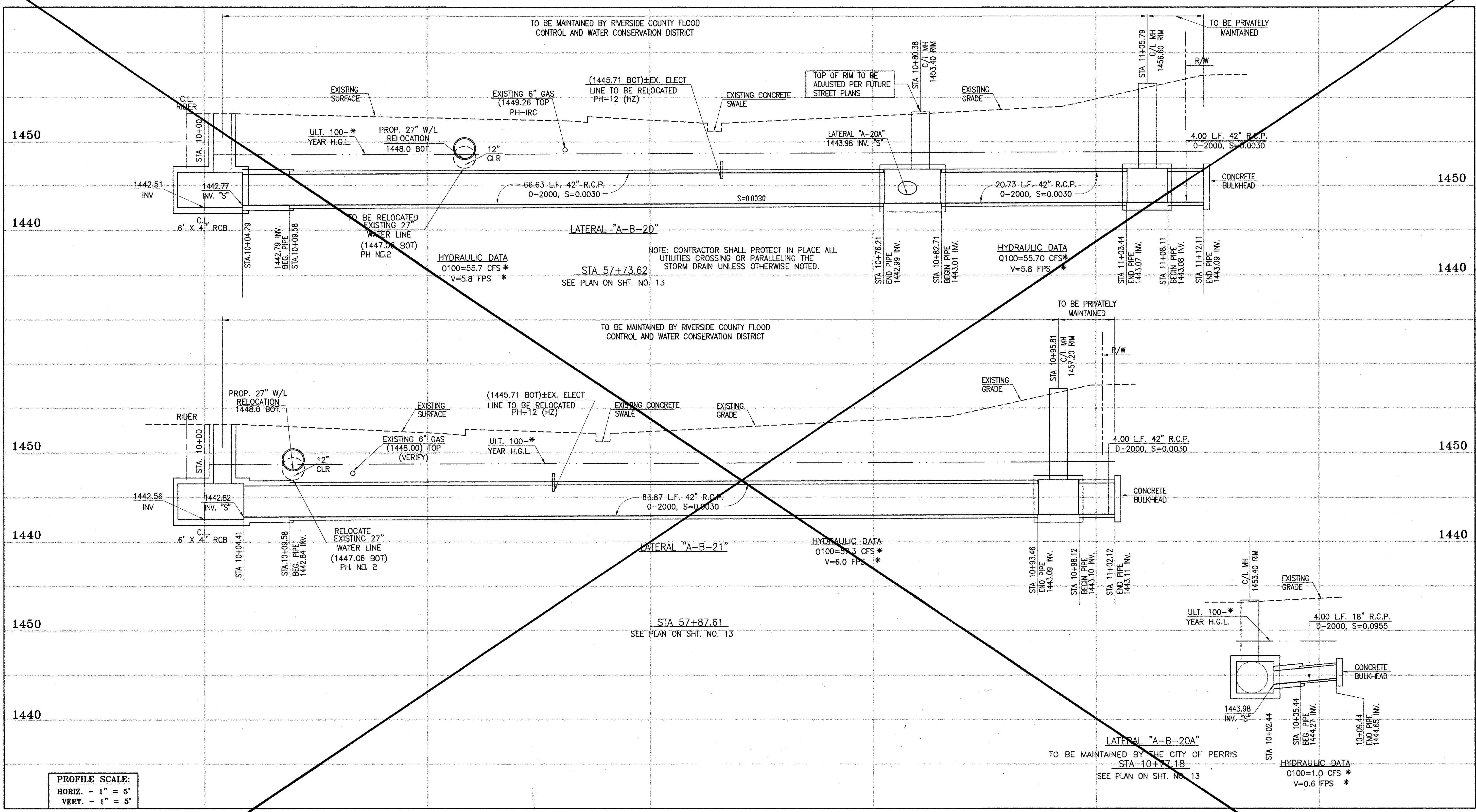
REGISTERED PROFESSIONAL ENGINEER  
HAIDOOK I. AGHAIAN  
RCE NO. 43293  
STATE OF CALIFORNIA

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
RECOMMENDED FOR APPROVAL BY: \_\_\_\_\_  
APPROVED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_ DATE: \_\_\_\_\_

CITY OF PERRIS  
APPROVED BY: \_\_\_\_\_  
DATE: 2-9-16

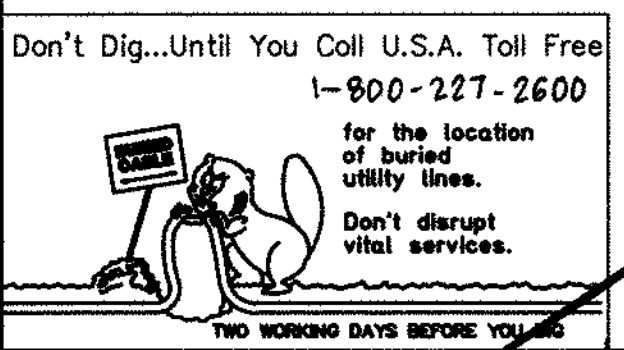
PERRIS VALLEY MDP  
LINE "A-B"

CITY OF PERRIS  
FILE NO. P8-1013  
PROJECT NO. 4-0-00537  
DRAWING NO. 4-1063  
SHEET NO. 16A OF 18



**PROFILE SCALE:**  
 HORIZ. - 1" = 5'  
 VERT. - 1" = 5'

\* THE ULTIMATE H.G.L. IS BASED ON THE ADOPTED MDP WATER SURFACE ELEVATION OF 1433 IN THE PERRIS VALLEY STORM CHANNEL (PVSC) AT RIDER STREET, AND ASSUMES THAT FULL CHANNEL IMPROVEMENTS HAVE BEEN CONSTRUCTED PER THE ADOPTED MDP. FOR ALL WATER SURFACE ELEVATIONS BETWEEN 1433 AND THE 100-YEAR FLOOD ELEVATION FOR PVSC (1437.5), LINE "A-B" WILL NOT HAVE CAPACITY FOR LOCAL 100-YEAR FLOWS.



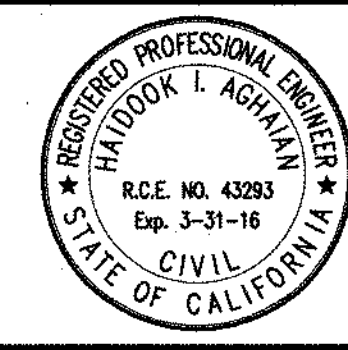
**CAUTION:**  
 PROPOSED WORK IS IN PROXIMITY OF HIGH PRESSURE GAS LINES

**BENCH MARK**  
 COUNTY OF RIVERSIDE BENCHMARK NO. 29-31\*  
 COUNTY OF RIVERSIDE BENCHMARK NO. 29-31\* ALUMINUM DISK MARKED "31" LOCATED FLUSH IN THE SOUTH WEST CORNER OF BRIDGE ON TOP OF SIDEWALK NEAR FACE OF CURB LOCATED AT THE CROSSING OF PERRIS BLVD. AND RR. CO. FLOOD CONTROL CHANNEL, PERRIS LATERAL 73.41 FT. WEST OF CENTERLINE OF PERRIS BLVD. AND 4.5 FT. EAST OF CONCRETE BRIDGE BARRIER (EDGE OF BRIDGE) MARKED BY 1/2\"/>

REF.	DESCRIPTION	APPR.	DATE	APPR.	DATE
	REVISIONS				
	SUPERSEDED BY SHEET 17A				

DESIGNED BY: **BW**  
 ET  
 DATE DRAWN:

APPROVED BY:  
**Thienes Engineering, Inc.**  
 CIVIL ENGINEERING - LAND SURVEYING  
 14349 FIRESTONE BOULEVARD  
 LA MIRADA, CALIFORNIA 90638  
 PH. (714)521-4811, FAX (714)521-4173  
 Haideok L. Aghaian Date: 11/18/14  
 RCE NO. 43293

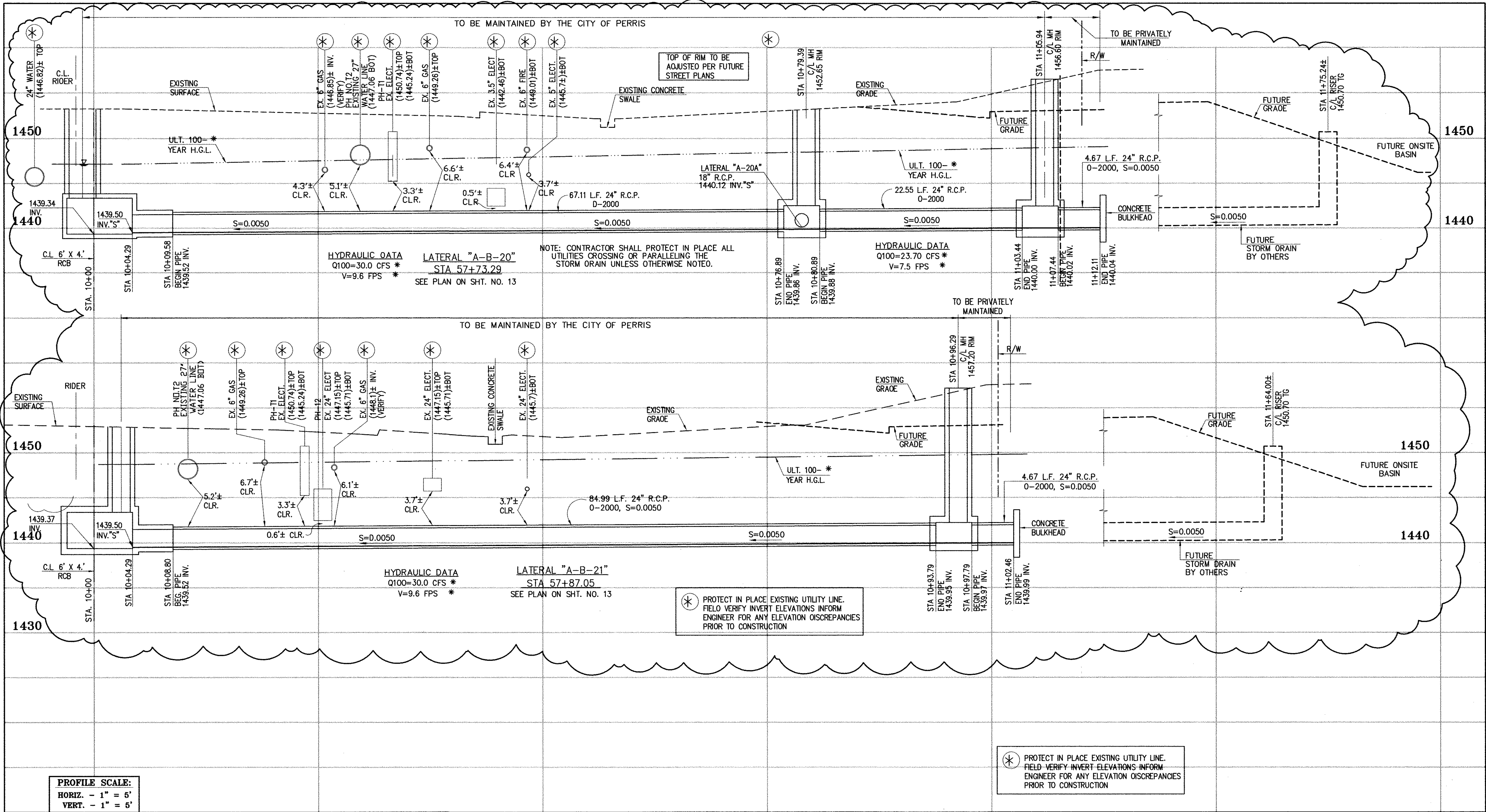


RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
 RECOMMENDED FOR APPROVAL BY: *[Signature]*  
 DATE: 1/20/15  
 APPROVED BY: *[Signature]*  
 DATE: 1/20/15

CITY OF PERRIS APPROVED BY:  
*[Signature]*  
 DATE: 12-15-14

**PERRIS VALLEY MDP LINE "A-B"**

CITY OF PERRIS FILE NO. P8-1013
PROJECT NO. 4-0-00537
DRAWING NO. 4-1063
SHEET NO. 17 OF 18



**PROFILE SCALE:**  
 HORIZ. - 1" = 5'  
 VERT. - 1" = 6'

**CAUTION:**  
 PROPOSED WORK IS IN PROXIMITY OF HIGH PRESSURE GAS LINES

⊛ PROTECT IN PLACE EXISTING UTILITY LINE. FIELD VERIFY INVERT ELEVATIONS INFORM ENGINEER FOR ANY ELEVATION DISCREPANCIES PRIOR TO CONSTRUCTION

⊛ PROTECT IN PLACE EXISTING UTILITY LINE. FIELD VERIFY INVERT ELEVATIONS INFORM ENGINEER FOR ANY ELEVATION DISCREPANCIES PRIOR TO CONSTRUCTION

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for the location of buried utility lines.  
 Don't disrupt vital services.  
 TWO WORKING DAYS BEFORE YOU DIG

**BENCH MARK**  
 COUNTY OF RIVERSIDE BENCHMARK NO. 24-37  
 COUNTY OF RIVERSIDE BENCHMARK - 3 1/4" ALUMINUM DISK  
 MARKED W-31, LOCATED FLUSH AT THE SOUTH WEST CORNER  
 OF BRIDGE ON TOP OF SERRANA NEAR FACE OF CURB  
 LOCATED AT THE CROSSING OF PERRIS BLVD. AND RIGER ST.  
 FLOOD CONTROL CHANNEL (PERRIS LATERAL "A"), 43 FT. WEST  
 OF CENTERLINE OF PERRIS BLVD. AND 43 FT. EAST OF  
 CONCRETE BRIDGE BARRIER (EDGE OF BRIDGE)  
 MARKED R-102 D.M.R. IN TOP OF CONC. POST FLUSH W/  
 GROUND  
 ELEVATION = 1474.674' (NAVD 1929)

REF.	REVISIONS	ENGINEER	RCFC/	DESIGNED BY:
2	CHANGED SLOPE TO 0.0015, ADDED MH, ADDED NEW 10" S, CHANGED 4" LAT TO 24" LAT	H.A.	2/25/16	2/25/16
1	ADDED EX. UTILITIES, RELOCATED UTILITIES, REVISED SD	H.A.	2/25/16	2/25/16
1	CHANGED CAST IN PLACE RCB TO PRE-CAST RCB PER APWA 390-0	H.A.	2/25/16	2/25/16

APPROVED BY:  
**THIENES ENGINEERING, INC.**  
 CIVIL ENGINEERING • LAND SURVEYING  
 14349 FIRESTONE BOULEVARD  
 LA MIRADA, CALIFORNIA 90638  
 PH. (714) 521-4811 FAX (714) 521-4173

DATE: 2/1/16  
 RCE NO. 43293

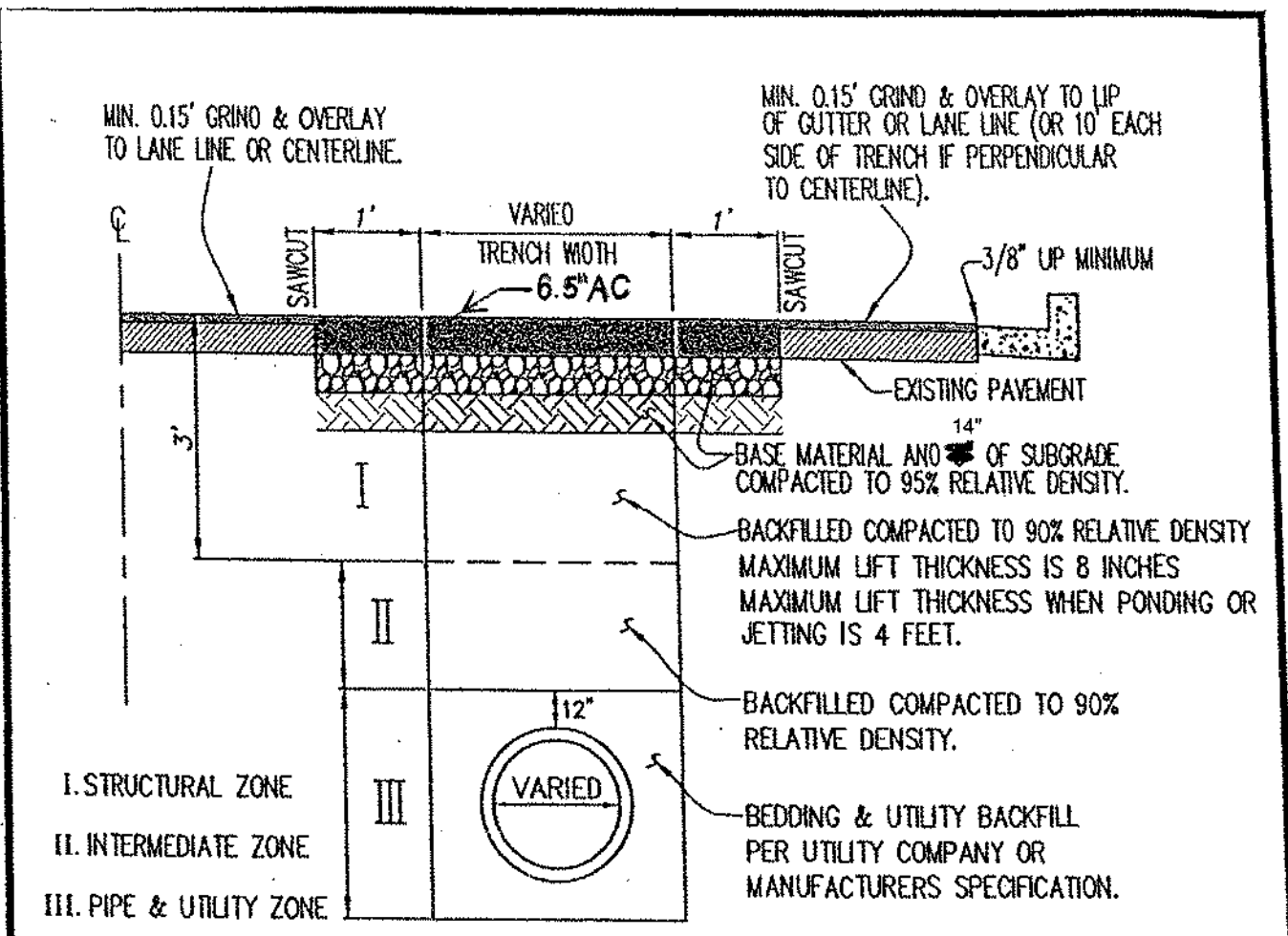
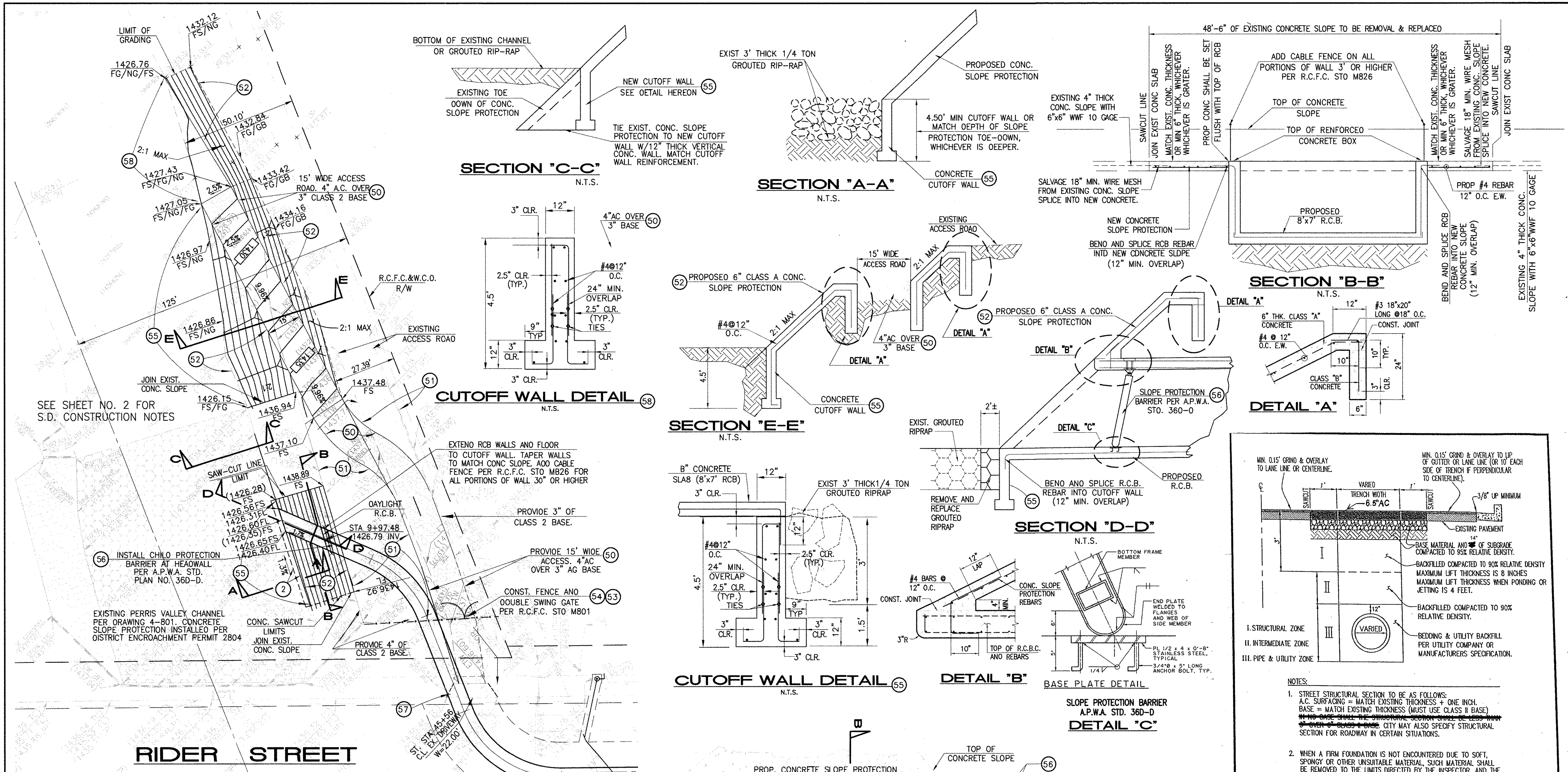
REGISTERED PROFESSIONAL ENGINEER  
 HAIDOOK I. AGHAWAN  
 STATE OF CALIFORNIA  
 CIVIL  
 R.C.E. NO. 43293  
 Exp. 3-31-16

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
 RECOMMENDED FOR APPROVAL BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_ DATE: \_\_\_\_\_

CITY OF PERRIS  
 APPROVED BY: \_\_\_\_\_  
 DATE: 2-9-16

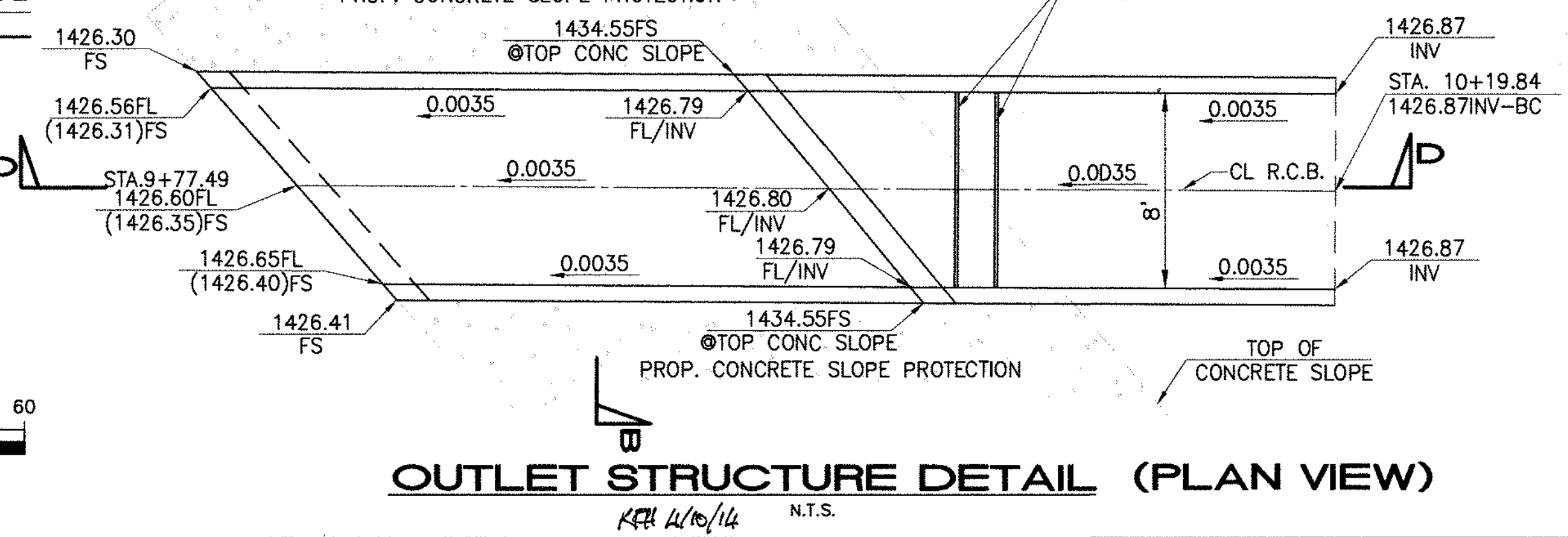
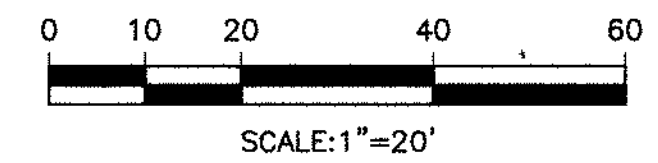
PERRIS VALLEY MDP  
 LINE "A-B"

CITY OF PERRIS  
 FILE NO. P8-1013  
 PROJECT NO. 4-0-00537  
 DRAWING NO. 4-1063  
 SHEET NO. 17A OF 18



- NOTES:**
- STREET STRUCTURAL SECTION TO BE AS FOLLOWS:  
A.C. SURFACING = MATCH EXISTING THICKNESS + ONE INCH.  
BASE = MATCH EXISTING THICKNESS (MUST USE CLASS II BASE)  
**NO BASE SHALL BE STRUCTURAL SECTION SHALL BE LESS THAN 6" OVER 6" BASES - THE CITY MAY ALSO SPECIFY STRUCTURAL SECTION FOR ROADWAY IN CERTAIN SITUATIONS.**
  - WHEN A FIRM FOUNDATION IS NOT ENCOUNTERED DUE TO SOFT, SPONGY OR OTHER UNSUITABLE MATERIAL, SUCH MATERIAL SHALL BE REMOVED TO THE LIMITS DIRECTED BY THE INSPECTOR, AND THE RESULTING EXCAVATION BACKFILLED WITH CLASS II BASE.
  - CONTRACTOR TO PROVIDE INSPECTOR COPY OF COMPACTION REPORTS PRIOR TO PAVING.

- STORM DRAIN CONSTRUCTION NOTES:**
- REMOVE AND REPLACE APPROXIMATELY 2' WIDE 1/4 TON GROUDED RIPRAP, MATCH EXISTING THICKNESS.
  - CONSTRUCT 4" AC OVER 3" AGGREGATE BASE, CLASS 2.
  - INSTALL 3" AGGREGATE BASE, CLASS 2.
  - CONSTRUCT 6" THK. CONCRETE SLOPE PROTECTION PER DETAIL ON THIS SHEET.
  - CONSTRUCT FENCE AND DOUBLE SWING GATE PER R.C.F.C. STO. M801.
  - REMOVE EXISTING FENCE AND GATE.
  - CONSTRUCT CUTOFF WALL PER DETAIL ON THIS SHEET.
  - INSTALL SLOPE PROTECTION BARRIER PER APWA STD. PLAN 360.
  - RECONSTRUCT EXISTING DRIVEWAY APPROACH.
  - CONSTRUCT CUTOFF WALL PER DETAIL ON THIS SHEET.



**CITY OF PERRIS**  
CITY STANDARD  
UTILITY TRENCH SURFACE REPAIR  
APPROVED BY: [Signature]  
CITY ENGINEER: [Signature] DATE: 7-12-16  
SCALE: NONE  
STD. NO. N/A

**TRENCH AND SURFACE REPAIR DETAIL**  
18  
CITY OF PERRIS  
PROJECT NO. 4-0-00537  
DRAWING NO. 4-1063  
SHEET NO. 18 OF 18

**BENCH MARK**  
COUNTY OF RIVERSIDE BENCHMARK NO. "M-31"  
COUNTY OF RIVERSIDE BENCHMARK - 3 1/4" ALUMINUM DISK MARKED M-31, LOCATED FLUSH AT THE SOUTH WEST CORNER OF BRIDGE ON TOP OF SIDEWALK NEAR FACE OF CURB LOCATED AT THE CROSSING OF PERRIS BLVD. AND INV. CO. FLOOD CONTROL CHANNEL, PERMS LATERAL "D", 43 FT. WEST OF CENTERLINE OF PERRIS BLVD. AND 4.5 FT. EAST OF CONCRETE BRIDGE BARRIER (EDGE OF BRIDGE) MARKED R-102 D.W.R. IN TOP OF CONC. PUST FLUSH W/ GROUND ELEVATION = 1474.874' (MVD 1829)

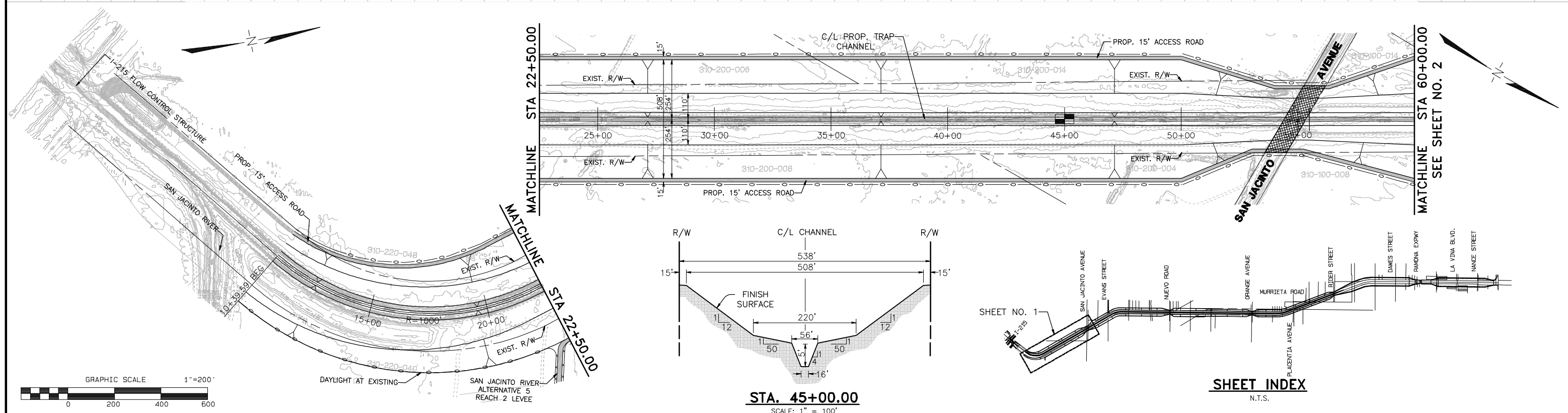
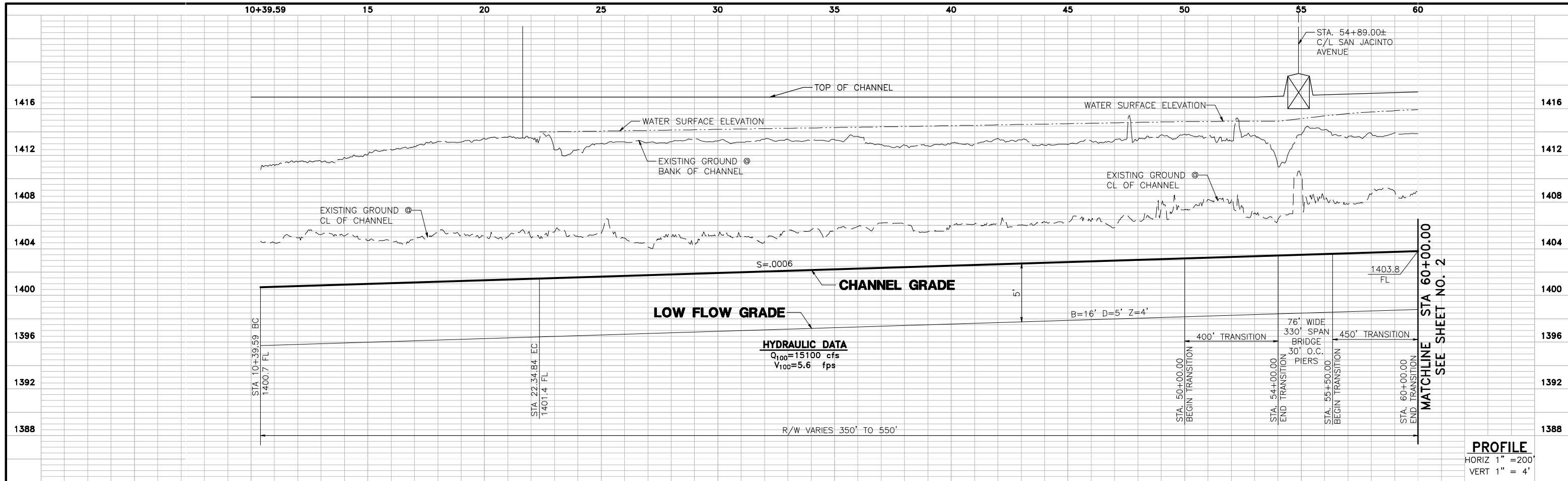
REF.	DESCRIPTION	APPR.	DATE	APPR.	DATE

DESIGNED BY: **TH**  
DRAWN BY: **ET**  
DATE DRAWN: **11/18/14**  
APPROVED BY: **Thienes Engineering, Inc.**  
HAIDOOK I. AGHAJAN RCE NO. 43293

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
RECOMMENDED FOR APPROVAL BY: [Signature]  
APPROVED BY: [Signature]  
DATE: 4/2/15

CITY OF PERRIS  
APPROVED BY: [Signature]  
CITY ENGINEER: [Signature] DATE: 2-15-14

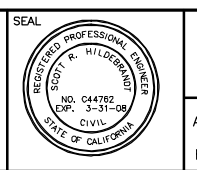
**Appendix E: Ultimate Perris Valley Storm Drain Channel Plans**



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**UNDERGROUND SERVICE ALERT**  
 CALL: TOLL FREE  
 1-800  
 227-2600  
 TWO WORKING DAYS BEFORE YOU DIG

# PERRIS VALLEY STORM DRAIN ALTERNATIVE 5



**ALBERT A. WEBB ASSOCIATES**  
 3788 McCRAY STREET, RIVERSIDE, CA 92506  
 PH. (951) 686-1070 FAX (951) 788-1256

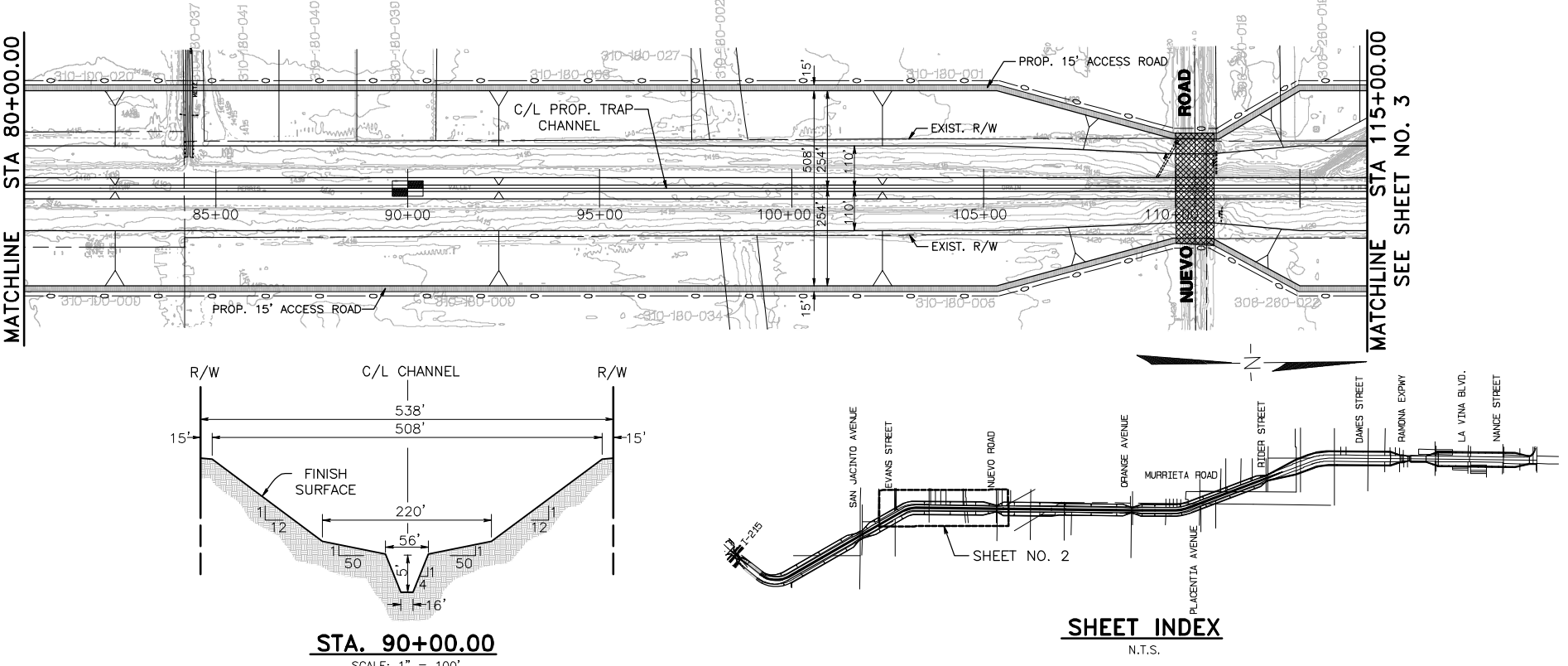
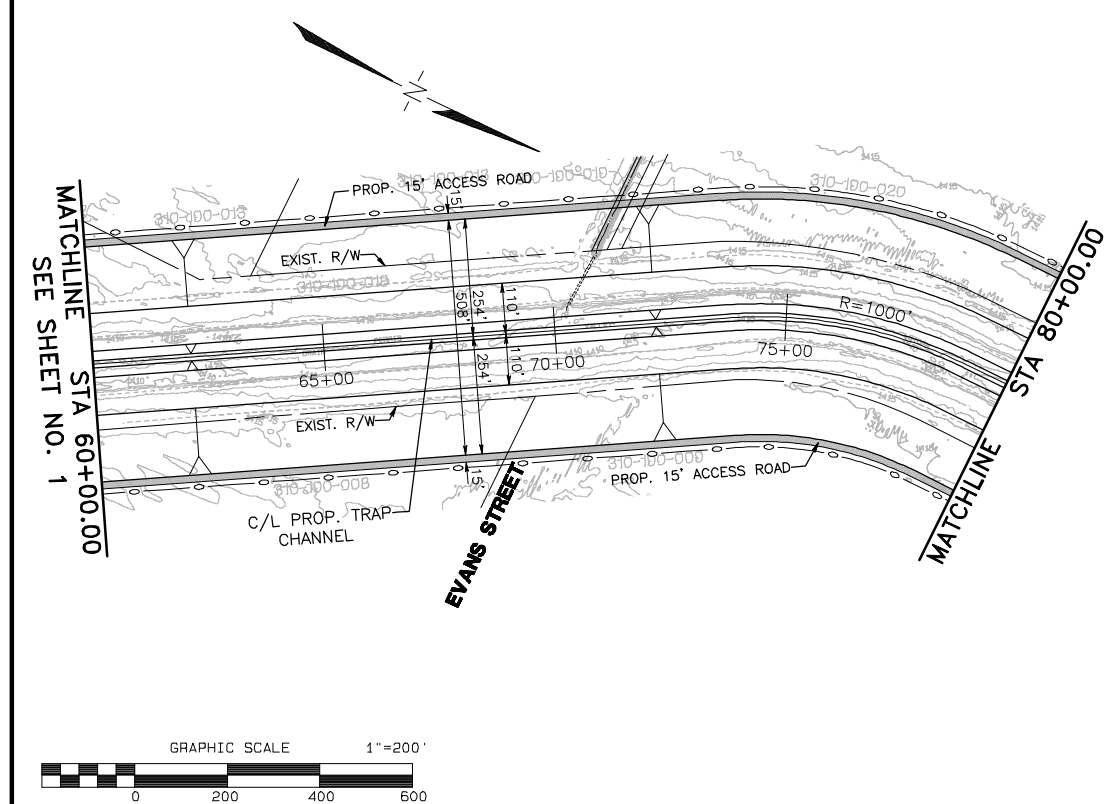
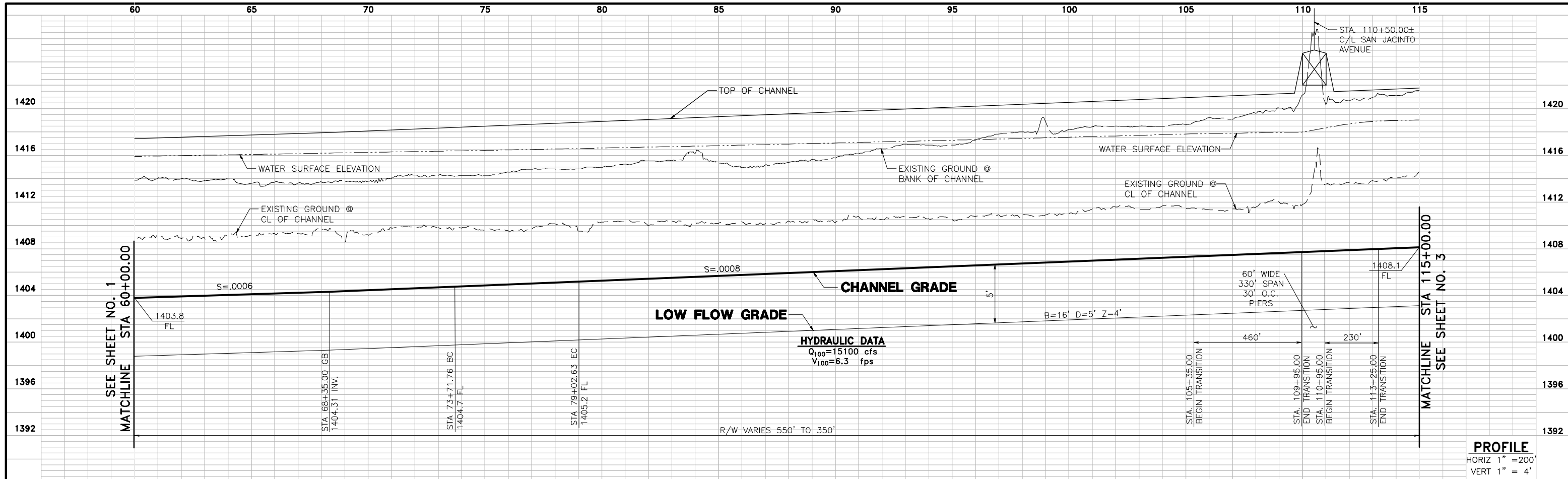
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 R.C.E. NO. C44762 EXP. DATE: 3-31-08

DESIGNED BY: \_\_\_\_\_  
 DRAWN BY: D.V.A.J.  
 CHECKED BY: SRH

REF.	DESCRIPTION	APPR.	DATE

**PRELIMINARY PROFILE  
 PERRIS VALLEY STORM DRAIN  
 ALTERNATIVE 5**

PROJECT NO. 03-0461  
 DRAWING NO. ALTERNATIVE 5  
 SHEET NO. 1 OF 6



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# PERRIS VALLEY STORM DRAIN ALTERNATIVE 5



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 3788 McCRAY STREET, RIVERSIDE, CA 92506  
 PH. (951) 686-1070 FAX (951) 788-1256

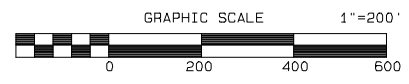
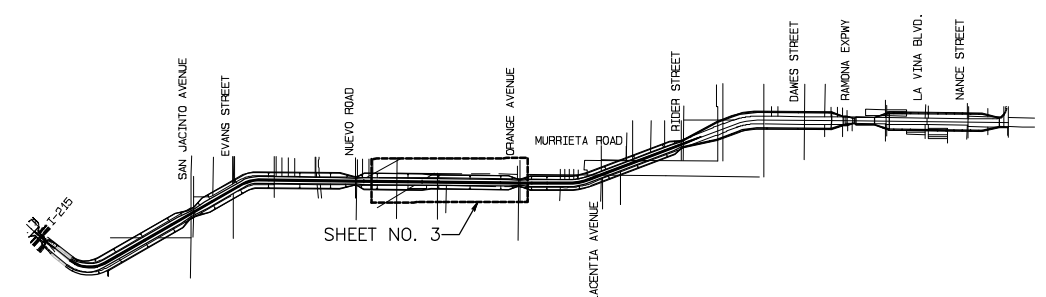
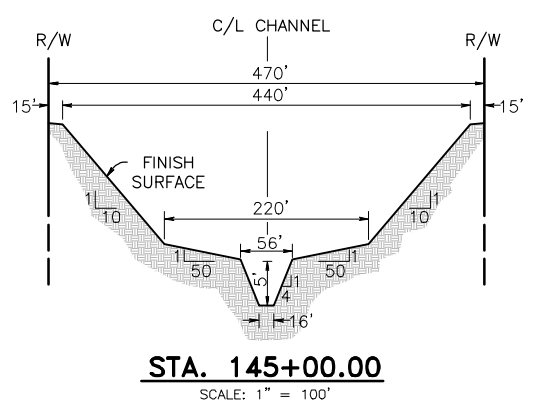
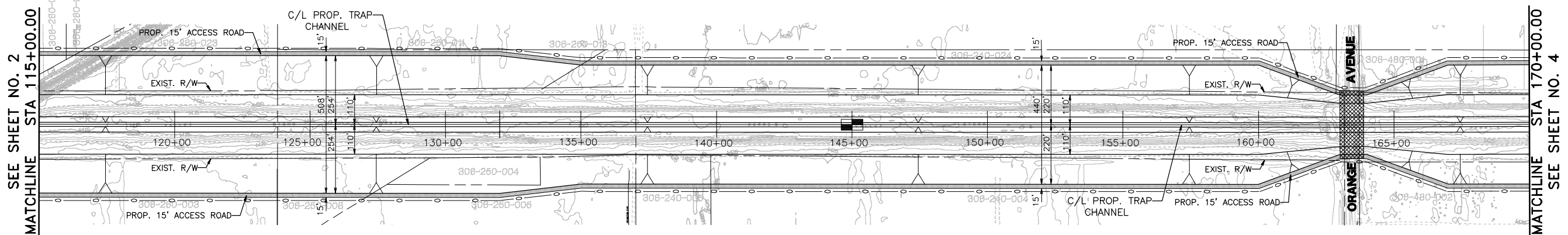
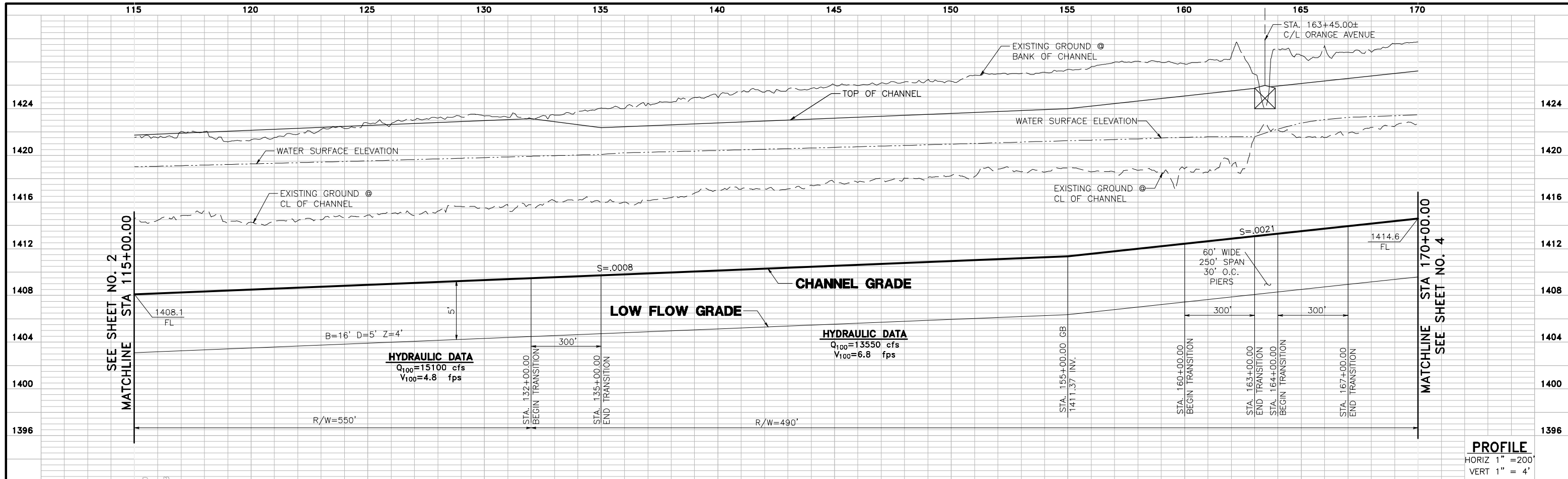
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 R.C.E. NO. C44762 EXP. DATE: 3-31-08

DESIGNED BY: \_\_\_\_\_  
 DRAWN BY: D.V.A.J.  
 CHECKED BY: SRH

REVISIONS		
REF.	DESCRIPTION	APPR. DATE

**PRELIMINARY PROFILE**  
**PERRIS VALLEY STORM DRAIN ALTERNATIVE 5**

PROJECT NO. 03-0461  
 DRAWING NO. ALTERNATIVE 5  
 SHEET NO. 2 OF 6



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 TWO WORKING DAYS BEFORE YOU DIG

# PERRIS VALLEY STORM DRAIN ALTERNATIVE 5



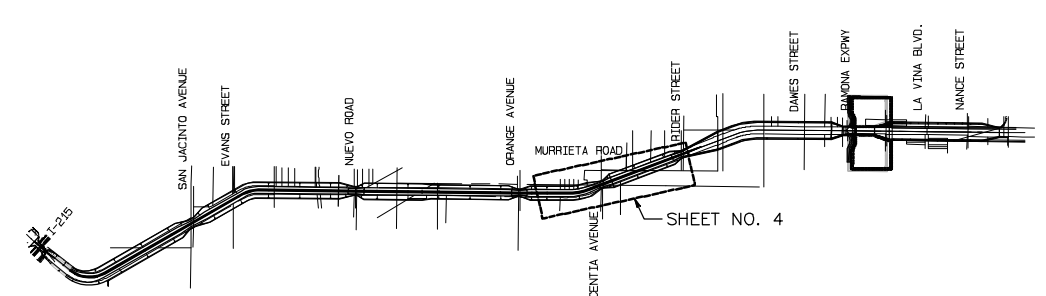
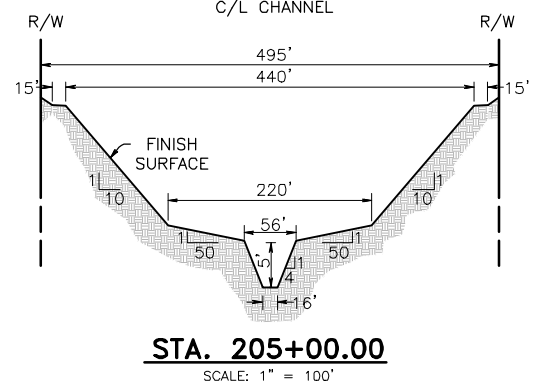
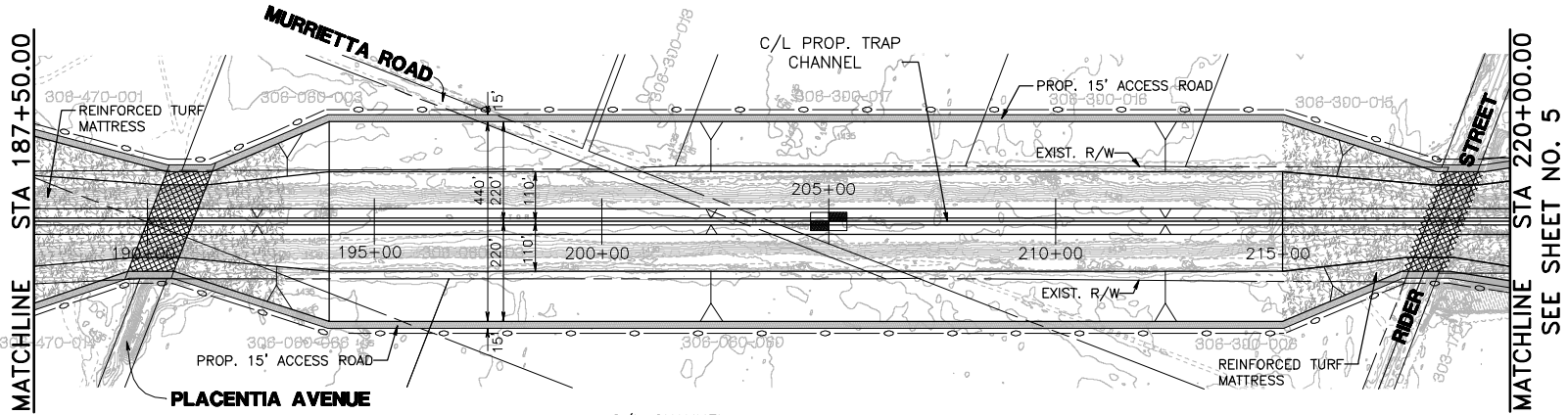
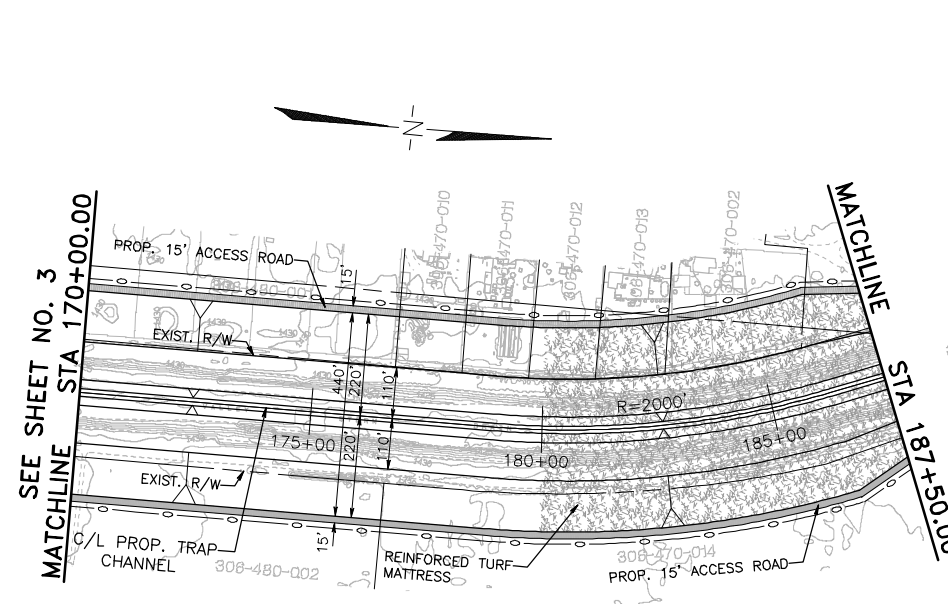
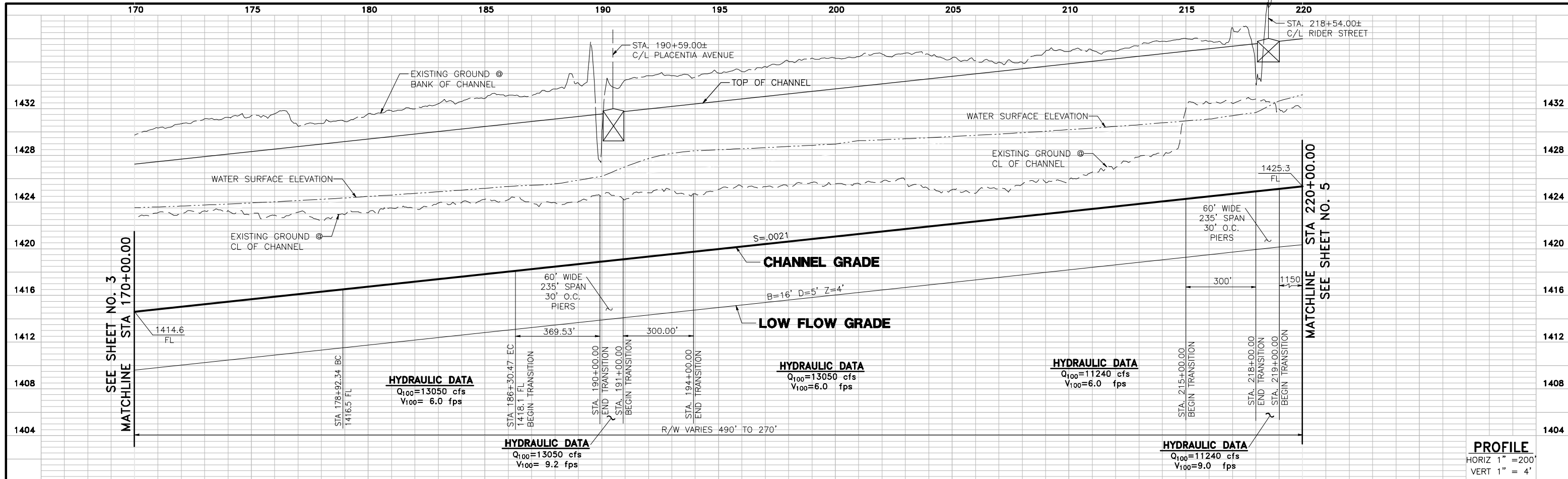
**ALBERT A. WEBB ASSOCIATES**  
 ENGINEERING CONSULTANTS  
 3788 McCRAY STREET, RIVERSIDE, CA 92506  
 PH. (951) 686-1070 FAX (951) 788-1256

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 R.C.E. NO. C44762 EXP. DATE: 3-31-08  
 DESIGNED BY: \_\_\_\_\_  
 DRAWN BY: D.V.A.J.  
 CHECKED BY: SRH

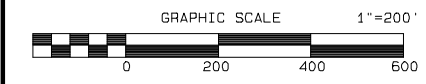
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**PRELIMINARY PROFILE  
 PERRIS VALLEY STORM DRAIN  
 ALTERNATIVE 5**

PROJECT NO. 03-0461  
 DRAWING NO. ALTERNATIVE 5  
 SHEET NO. 3 OF 6



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 TWO WORKING DAYS BEFORE YOU DIG

# PERRIS VALLEY STORM DRAIN ALTERNATIVE 5



**ALBERT A. WEBB ASSOCIATES**  
 3788 McCRAY STREET, RIVERSIDE, CA 92506  
 PH. (951) 686-1070 FAX (951) 788-1256

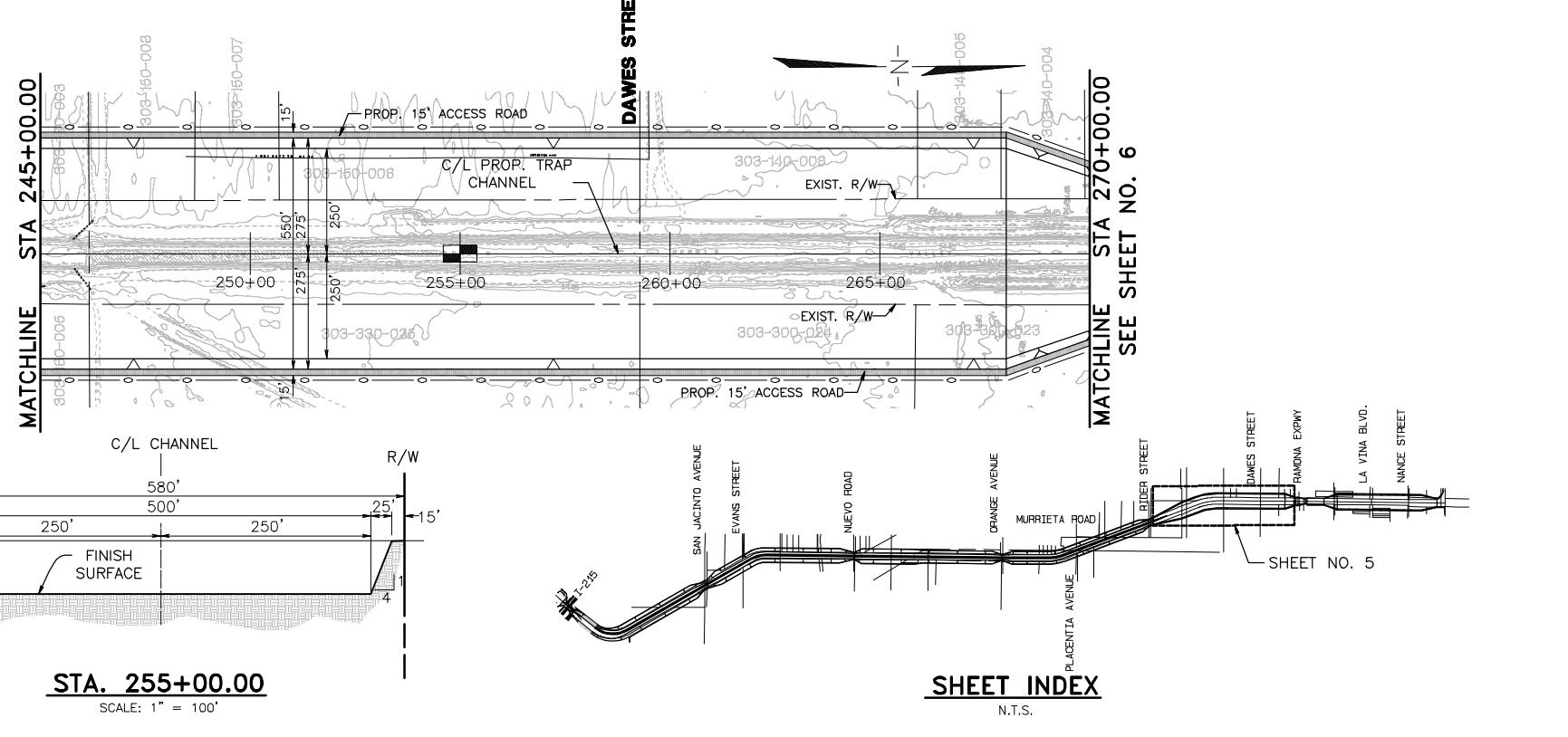
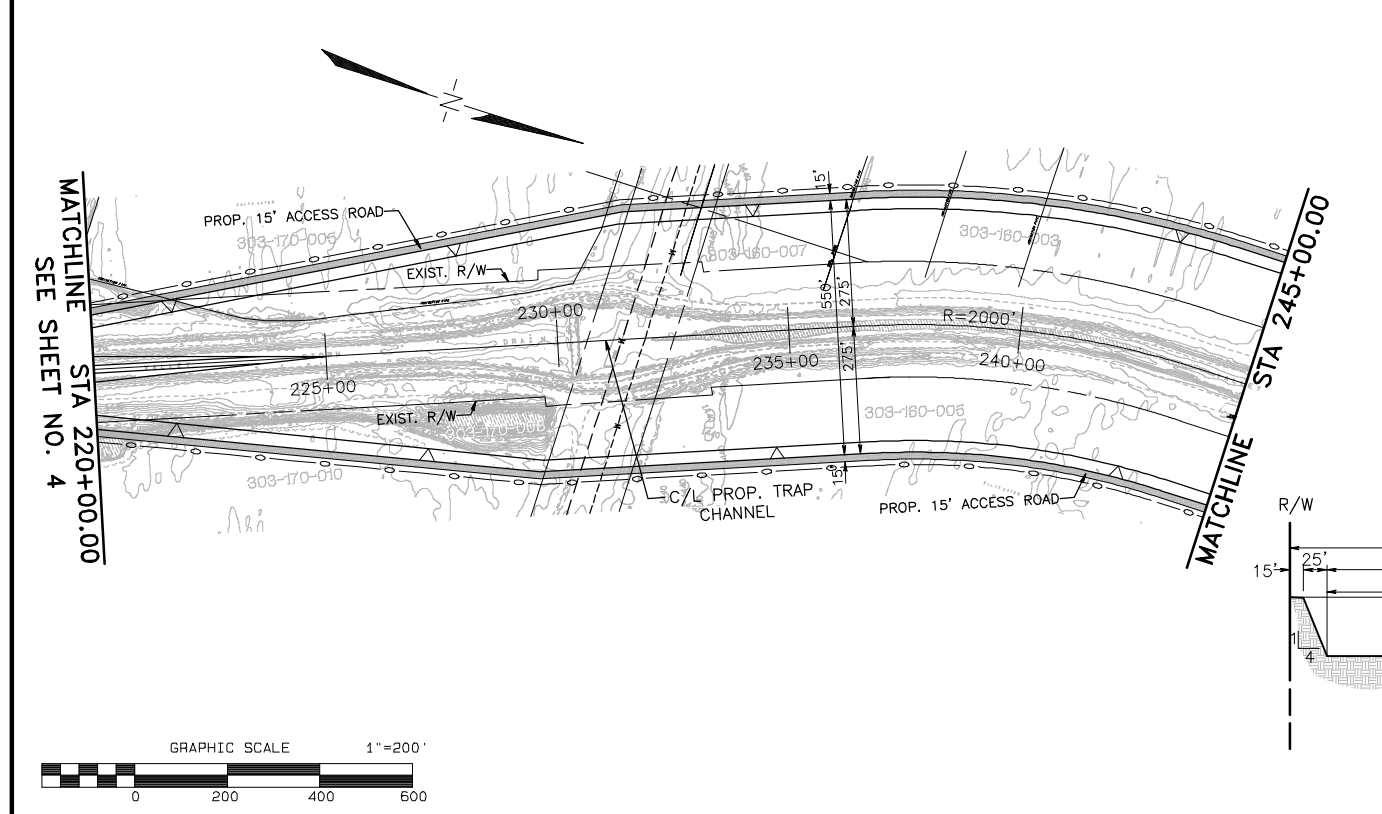
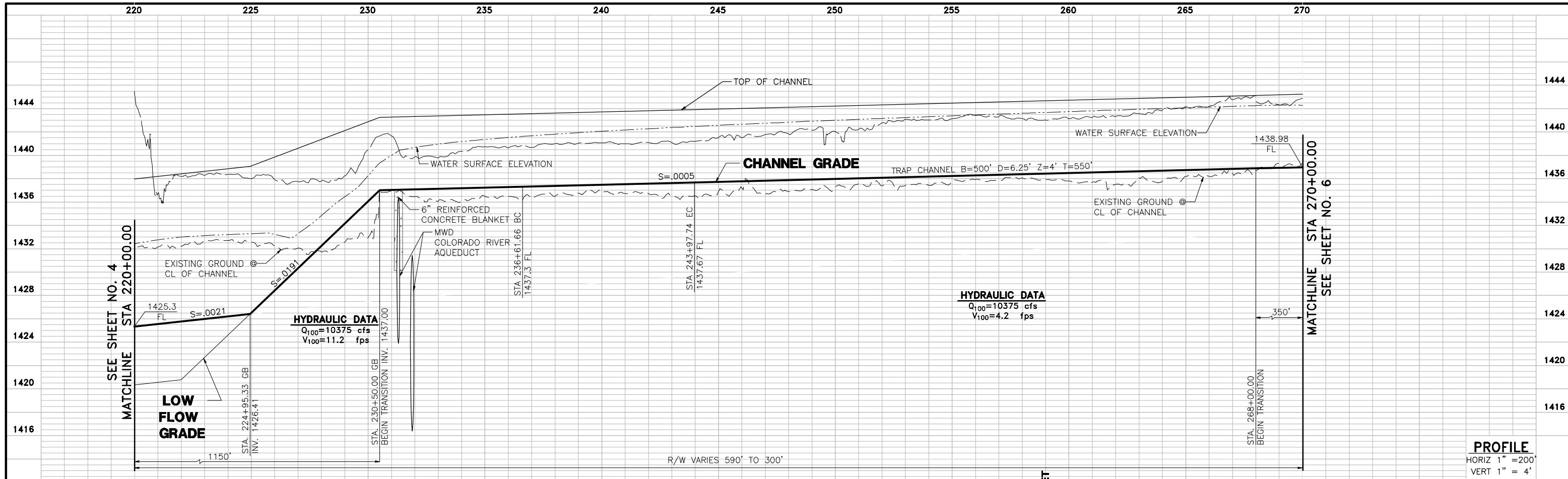
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DESIGNED BY: \_\_\_\_\_  
 DRAWN BY: D.V.A.J.  
 CHECKED BY: SRH

REVISIONS		
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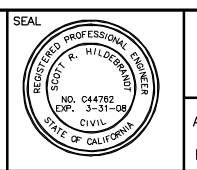
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**PERRIS VALLEY STORM DRAIN ALTERNATIVE 5**

PROJECT NO. 03-0461  
 DRAWING NO. ALTERNATIVE 5  
 SHEET NO. 4 OF 6



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227-2600  
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# PERRIS VALLEY STORM DRAIN ALTERNATIVE 5



**ALBERT A. WEBB ASSOCIATES**  
3788 McCray Street, Riverside, CA 92506  
PH. (951) 686-1070 FAX (951) 788-1256

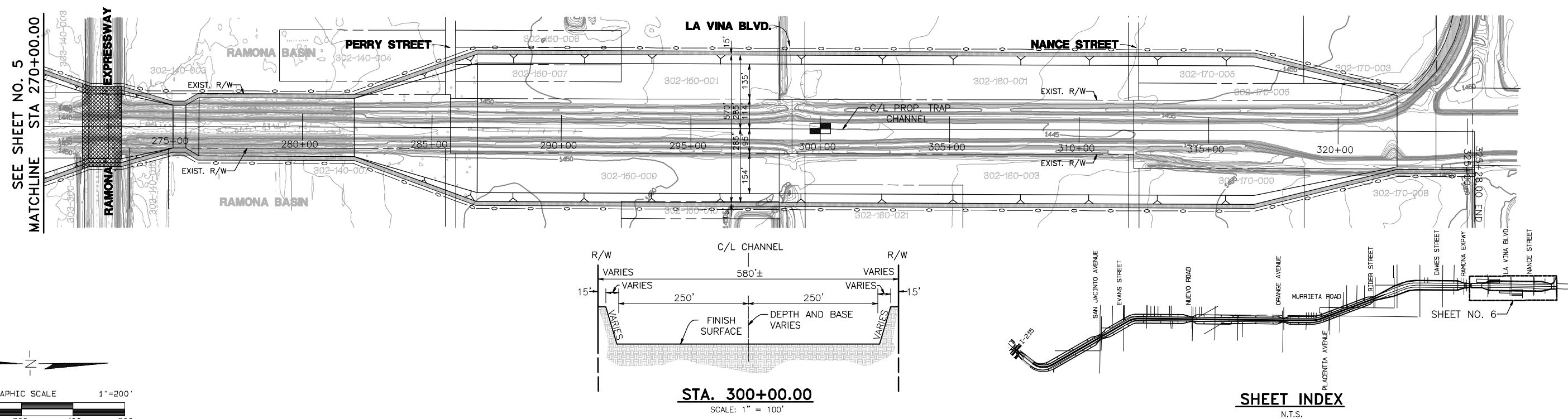
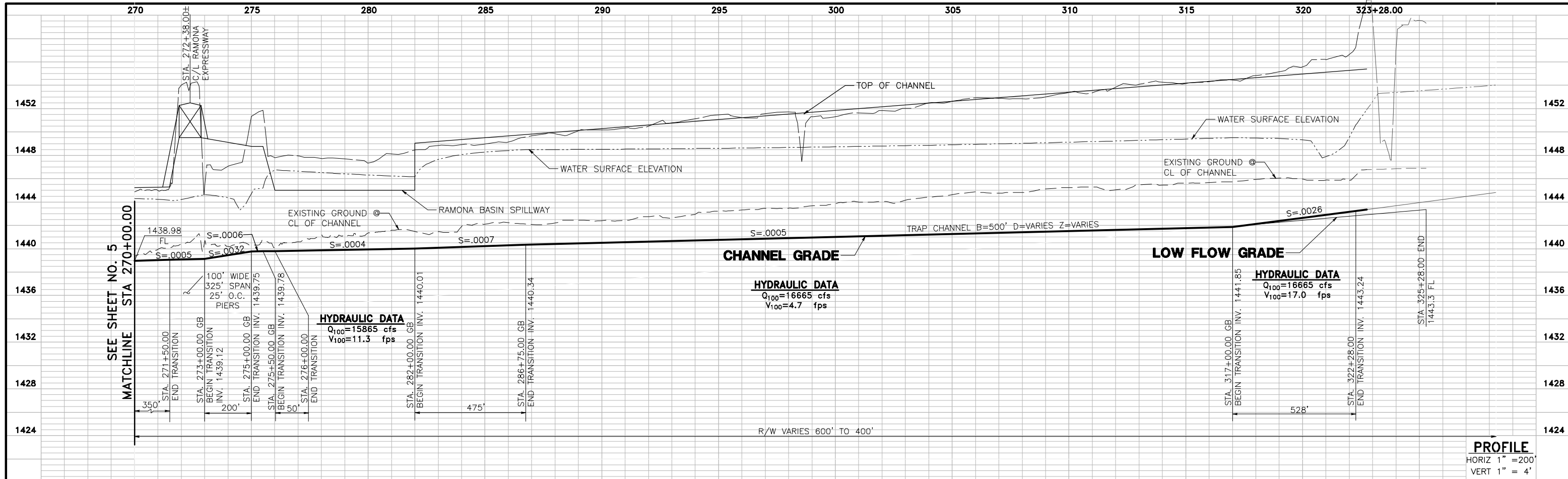
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DESIGNED BY: \_\_\_\_\_  
DRAWN BY: D.V.A.J.  
CHECKED BY: SRH

R.C.E. NO. C44762 EXP. DATE: 3-31-08

REVISIONS		
REF.	DESCRIPTION	APPR. DATE

**PRELIMINARY PROFILE  
PERRIS VALLEY STORM DRAIN  
ALTERNATIVE 5**

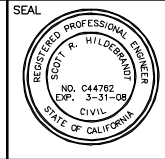
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SHEET NO. 5 OF 6



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 1-800  
 227-2600  
 TWO WORKING DAYS BEFORE YOU DIG

# PERRIS VALLEY STORM DRAIN ALTERNATIVE 5



**ALBERT A. WEBB ASSOCIATES**  
 3788 McCRAY STREET, RIVERSIDE, CA 92506  
 PH. (951) 686-1070 FAX (951) 788-1256

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 R.C.E. NO. C44762 EXP. DATE: 3-31-08

DESIGNED BY: \_\_\_\_\_  
 DRAWN BY: D.V.A.J.  
 CHECKED BY: SRH

REVISIONS		
REF.	DESCRIPTION	APPR. DATE

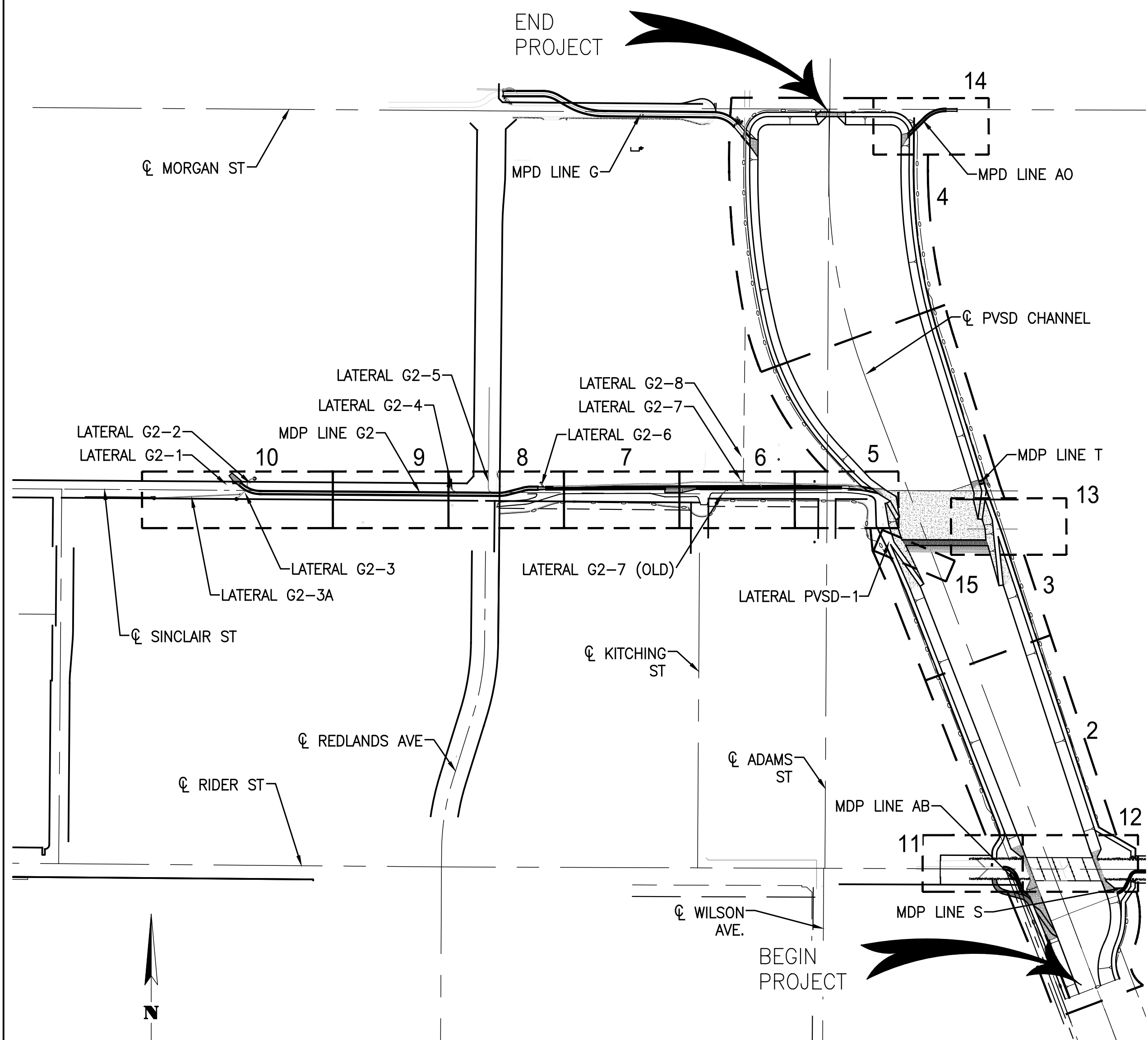
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**PERRIS VALLEY STORM DRAIN**  
**ALTERNATIVE 5**

PROJECT NO.  
03-0461  
 DRAWING NO.  
ALTERNATIVE 5  
 SHEET NO.  
6 OF 6

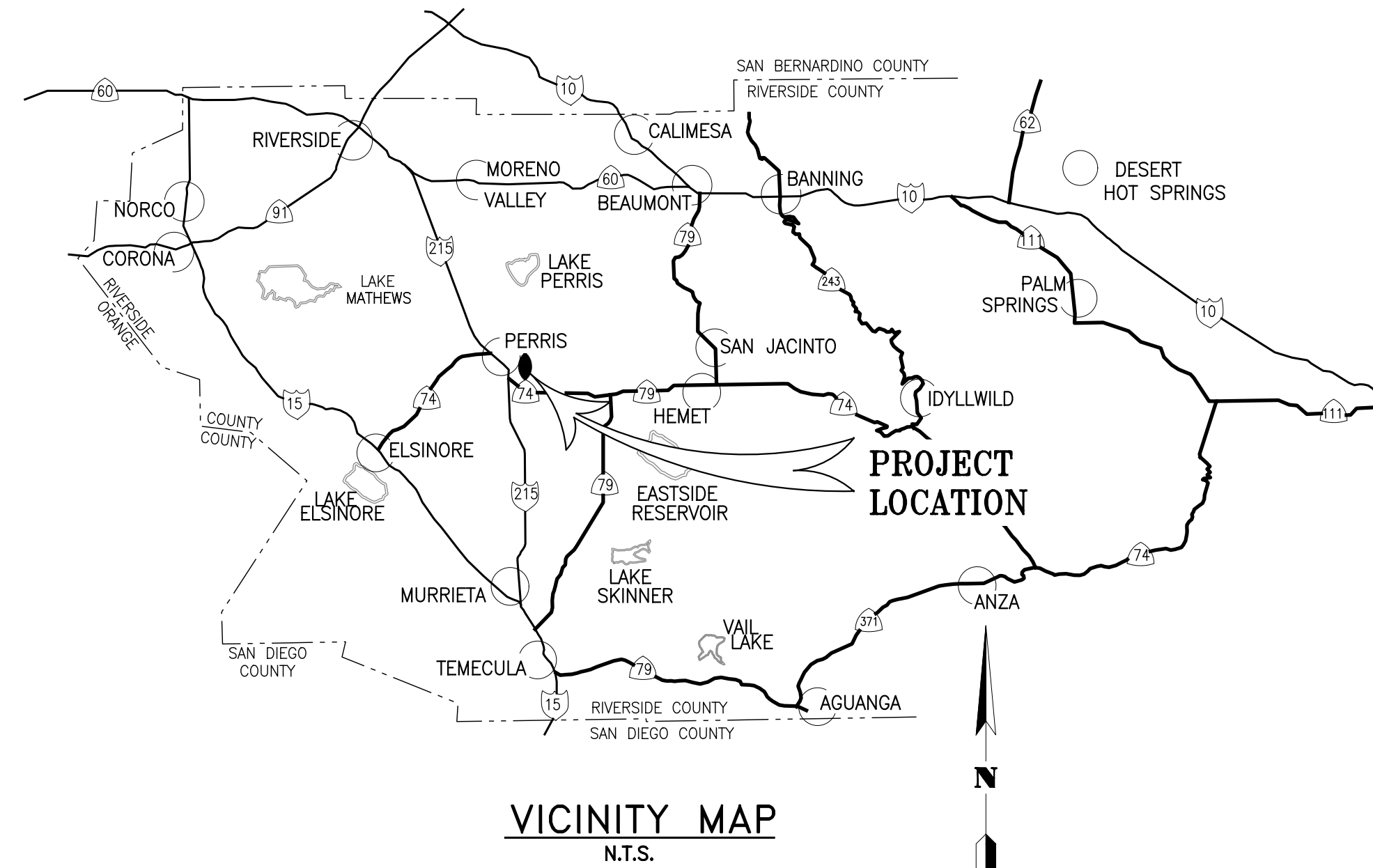
**OFFSITE STORM DRAIN PLANS**

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# RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT



INDEX MAP  
1" = 200'



VICINITY MAP  
N.T.S.

### R.C.F.C. & W.C.D. STANDARD DRAWINGS

- CB 103 MANHOLE FRAME AND COVER
- CB 110 CONCRETE DROP INLET
- CH 324 UNLINED CHANNEL
- CH 327 RECTANGULAR CHANNEL
- CH 331 MAINTENANCE RAMP FOR RECTANGULAR CHANNEL
- CH 334 MAINTENANCE RAMP FOR UNLINED CHANNEL
- JS 226 JUNCTION STRUCTURE NO. 1
- JS 227 JUNCTION STRUCTURE NO. 2
- JS 228 JUNCTION STRUCTURE NO. 3
- JS 231 JUNCTION STRUCTURE NO. 6
- JS 233 JUNCTION STRUCTURE NO. 8
- MH 252 MANHOLE NO. 2
- MH 253 MANHOLE NO. 3
- MH 255 MANHOLE FRAME & COVER NON-ROCKING
- MH 258 MANHOLE PRESSURE MANHOLE SHAFT
- MH 259 STANDARD DROP STEP
- MH 260 24" MANHOLE FRAME AND COVER
- TS 302 TRANSITION STRUCTURE NO. 2
- TS 303 TRANSITION STRUCTURE NO. 3
- M 801 CHAIN LINK FENCE
- M 814 ABBREVIATIONS AND SYMBOLS
- M 816 CONCRETE BULKHEAD
- M 827 VEHICULAR TURN AROUND AREA

### SPPWC STANDARD DRAWINGS

- STD 361-2 TRASH RACK

### CALTRANS STANDARD

- D80 CAST-IN-PLACE REINFORCE CONCRETE SINGLE BOX
- D81 CAST-IN-PLACE REINFORCE CONCRETE DOUBLE BOX
- D83A PRECAST REINFORCED CONCRETE BOX CULVERT
- D84 BOX CULVERT WINGWALLS
- D90 PIPE CULVERT HEADWALLS, ENDWALLS, AND WINGWALLS
- D93C RCP RISER INLET
- D94B CONCRETE FLARED END SECTION
- B11-47 CABLE RAILING

### SHEET INDEX

- TITLE SHEET 1
- PVSD CHANNEL STATION 22+00.00 TO 34+00.00 2
- PVSD CHANNEL STATION 34+00.00 TO 46+00.00 3
- PVSD CHANNEL STATION 46+00.00 TO 53+91.74 4
- LINE G2 STATION 10+00.00 TO 13+00.00 5
- LINE G2 STATION 13+00.00 TO 17+00.00 6
- LINE G2 STATION 17+00.00 TO 21+00.00 7
- LINE G2 STATION 21+00.00 TO 25+00.00 8
- LINE G2 STATION 25+00.00 TO 29+00.00 9
- LINE G2 STATION 29+00.00 TO 33+43.02 10
- MDP LINE AB PLAN AND PROFILE 11
- MDP LINE S PLAN AND PROFILE 12
- MDP LINE T PLAN AND PROFILE 13
- MDP LINE AO PLAN AND PROFILE 14
- LATERAL PVSD-1 PLAN AND PROFILE 15
- LATERAL G2-5 PLAN AND PROFILE 16
- CONNECTOR PIPES PROFILES 17-18
- PVSD CHANNEL GRADING PLAN 19-23
- DEMOLITION PLAN 24-27
- CONCRETE PAD DETAILS 28
- DROP STRUCTURE DETAILS 29-30
- DROP INLET DETAILS 31
- MISC. DETAILS 32-34
- PVSD CHANNEL CHANNEL SECTIONS 35

### BENCHMARK

USC & GS BENCHMARKS AND FROM W.O.# 2013-0159 & 2016-0160.

40Y (PID #DX2103) - 3" BRASS DISK, SET IN BOULDER.

STATION IS ABOUT 4-1/2 MILES W OF LAKEVIEW, ABOUT ONE MILE W OF THE PASS THROUGH THE BERNASCONI MOUNTAINS, ABOUT 200 FEET SW OF THE INTERSECTION OF BRADLEY ROAD AND WALNUT AVENUE, 70 FEET S OF CENTER LINE OF WALNUT AVENUE, IN A LARGE BOULDER, AND MARKED WITH A TEE. MARK IS A METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA STANDARD DISK STAMPED 40Y 1931.

ELEV. = 1494.66' (NAVD88)

### GENERAL NOTES

1. THE CONTRACTOR SHALL CONSTRUCT THE FLOOD CONTROL IMPROVEMENTS SHOWN ON THE DRAWINGS IN CONFORMANCE WITH THE REQUIREMENTS OF THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT'S M.O.U. STANDARD SPECIFICATIONS DATED MARCH 2020, AND RCF&WCD STANDARD MANUAL FOR THE LATEST DRAWINGS OF THE STANDARD MANUAL, PLEASE REFER TO THE "PUBLICATIONS AND RECORDS" PAGE FOUND ON THE DISTRICT'S WEBSITE.
2. CONTACT THE ENCROACHMENT PERMIT ENGINEER AT 951.955.1266 IF AN ENCROACHMENT PERMIT IS REQUIRED FROM RIVERSIDE COUNTY FLOOD CONTROL. AFTER THE PERMIT IS ISSUED THE DISTRICT MUST BE NOTIFIED ONE WEEK PRIOR TO CONSTRUCTION.
3. CONTACT CONTRACT ADMINISTRATION AT 951.955.1288 IF CONSTRUCTION INSPECTION WILL BE PERFORMED BY RIVERSIDE COUNTY FLOOD CONTROL. THE DISTRICT MUST BE NOTIFIED TWENTY DAYS (20) PRIOR TO CONSTRUCTION.
4. ALL STATIONING REFERS TO CENTERLINE OF CONSTRUCTION UNLESS OTHERWISE NOTED.
5. STATIONING FOR LATERALS AND CONNECTOR PIPE REFER TO THE CENTERLINE INTERSECTION STATIONS.
6. FORTY-EIGHT HOURS BEFORE EXCAVATION, CALL UNDERGROUND SERVICE ALERT 1.800.422.4133.
7. ALL ELEVATIONS SHOWN ARE IN FEET AND DECIMALS THEREOF BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD 88).
8. ALL COORDINATES ARE SHOWN IN FEET AND DECIMALS THEREOF BASED ON THE NORTH AMERICAN DATUM (NAD 83), CALIFORNIA COORDINATE SYSTEM (CCS), ZONE 6 AND EPOCH 2010.00.
9. ALL CROSS SECTIONS ARE TAKEN LOOKING DOWNSTREAM.
10. ELEVATIONS OF UTILITIES ARE APPROXIMATE UNLESS OTHERWISE NOTED.
11. UNLESS OTHERWISE SPECIFIED, MINIMUM STREET RECONSTRUCTION SHALL BE 4" TYPE "A" HOT MIX ASPHALT OVER 6" CLASS 2 AGGREGATE BASE OR AS SPECIFIED BY THE ENGINEER.
12. OPENINGS RESULTING FROM THE CUTTING OR PARTIAL REMOVAL OF EXISTING CULVERTS, PIPES OR SIMILAR STRUCTURES TO BE ABANDONED SHALL BE SEALED WITH 6" OF CLASS "B" CONCRETE.
13. PIPE CONNECTED TO THE MAINLINE PIPE SHALL CONFORM TO JUNCTION STRUCTURE NO.4 (JS229) UNLESS OTHERWISE NOTED.
14. PIPE BEDDING SHALL CONFORM TO RCF&WCD STD. DWG. NO. M815 EXCEPT FOR COVER <2 FEET. FOR COVER <2 FEET, CONCRETE SLURRY (2000 PSI-2 SACK) SHALL BE USED. THE ENTIRE TRENCH SHALL BE SLURRY EXTENDING 4 INCHES MINIMUM AND 12 INCHES MAXIMUM ABOVE THE TOP OF THE PIPE.
15. BH-1 INDICATES SOIL BORING LOCATIONS BASED ON THE SOILS REPORT DATED [REDACTED]. LOCATIONS SHOWN ARE APPROXIMATE.
16. "V" IS THE DEPTH OF CATCH BASINS MEASURED FROM THE TOP OF CURB TO INVERT OF CONNECTOR PIPE.
17. CATCH BASINS SHALL BE LOCATED SO THAT LOCAL DEPRESSIONS SHALL BEGIN AT EXISTING CURB RETURN JOINT, UNLESS OTHERWISE SPECIFIED.
18. ALL CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS AND OTHER EXISTING IMPROVEMENTS TO BE RECONSTRUCTED IN KIND AND AT THE SAME ELEVATION AND LOCATION AS THE EXISTING IMPROVEMENTS UNLESS OTHERWISE NOTED.
19. STANDARD DRAWINGS CALLED FOR ON THE PLAN AND PROFILE SHALL CONFORM TO DISTRICT STANDARD DRAWINGS UNLESS NOTED OTHERWISE.
20. THE CONTRACTOR IS REQUIRED TO CALL ALL UTILITY AGENCIES REGARDING TEMPORARY SHORING AND SUPPORT REQUIREMENTS FOR THE VARIOUS UTILITY LINES SHOWN ON THESE PLANS.
21. DURING ROUGH GRADING OPERATIONS AND PRIOR TO CONSTRUCTION OF PERMANENT DRAINAGE STRUCTURES, TEMPORARY DRAINAGE CONTROL SHOULD BE PROVIDED TO PREVENT PONDING WATER AND DAMAGE TO ADJACENT PROPERTIES.
22. APPROVAL OF THESE PLANS BY THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT DOES NOT RELIEVE THE DEVELOPER'S ENGINEER OF RESPONSIBILITY FOR THE ENGINEERING DESIGN. IF FIELD CHANGES ARE REQUIRED, IT WILL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER TO MAKE THE NECESSARY CORRECTIONS.
23. THE CONTRACTOR OR DEVELOPER SHALL SECURE ALL REQUIRED ENCROACHMENT AND/OR STATE AND FEDERAL REGULATORY PERMITS PRIOR TO THE COMMENCEMENT OF ANY WORK.
24. THE CONCRETE COATING ON THE INSIDE OF ALL REINFORCED CONCRETE PIPES MUST BE INCREASED TO PROVIDE A MINIMUM OF 1-1/2 INCHES OVER THE REINFORCING AND INCREASED TO A MINIMUM OF 3-1/2 INCHES OVER REINFORCING OF BOX CULVERT, WHEN DESIGN VELOCITIES EXCEED 20 FEET PER SECOND. THE CONCRETE DESIGN STRENGTH IN THESE REACHES SHALL BE F'C=5,000 PSI FOR VELOCITIES EXCEEDING 20 FEET PER SECOND AND F'C=6,000 PSI FOR VELOCITIES EXCEEDING 30 FEET PER SECOND.
25. CONSTRUCTION JOINTS FOR CALTRANS STANDARD REINFORCED CONCRETE BOX SHALL BE PLACED ACCORDING TO RCF&WCD STANDARD DRAWING NO. BOX 401.

### METROPOLITAN WATER DISTRICT NOTE

CONTRACTOR TO NOTIFY DANIEL DIXON OF METROPOLITAN WATER DISTRICT (MWD) AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING ANY WORK IN THE VICINITY OF MWD FACILITIES. TELEPHONE: (951) 710-5570

CITY OF PERRIS  
APPROVED BY: \_\_\_\_\_  
CITY ENGINEER DATE

**ALBERT A. WEBB ASSOCIATES**  
ENGINEERING CONSULTANTS  
3788 McCRAY STREET  
RIVERSIDE CA, 92506  
PH. (951) 686-1070  
FAX (951) 788-1256

REGISTERED PROFESSIONAL ENGINEER  
J. C. CALDWELL  
NO. C67239  
STATE OF CALIFORNIA  
CIVIL

JOSEPH C. CALDWELL, C67239 DATE: \_\_\_\_\_



Don't Dig...Until You Call:  
U.S.A. Toll Free: 1-800-422-4133  
for the location of buried utility lines.  
Don't disrupt vital services.  
TWO WORKING DAYS BEFORE YOU DIG

PERMANENT BENCH MARK:  
SEE ABOVE

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
DESIGNED BY: JJO	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DRAWN BY: AYS	CHIEF, PLANNING	GENERAL MANAGER-CHIEF ENGINEER
DATE DRAWN: Oct 20	DATE:	DATE:
CHECKED BY: JCC	DATE:	DATE:

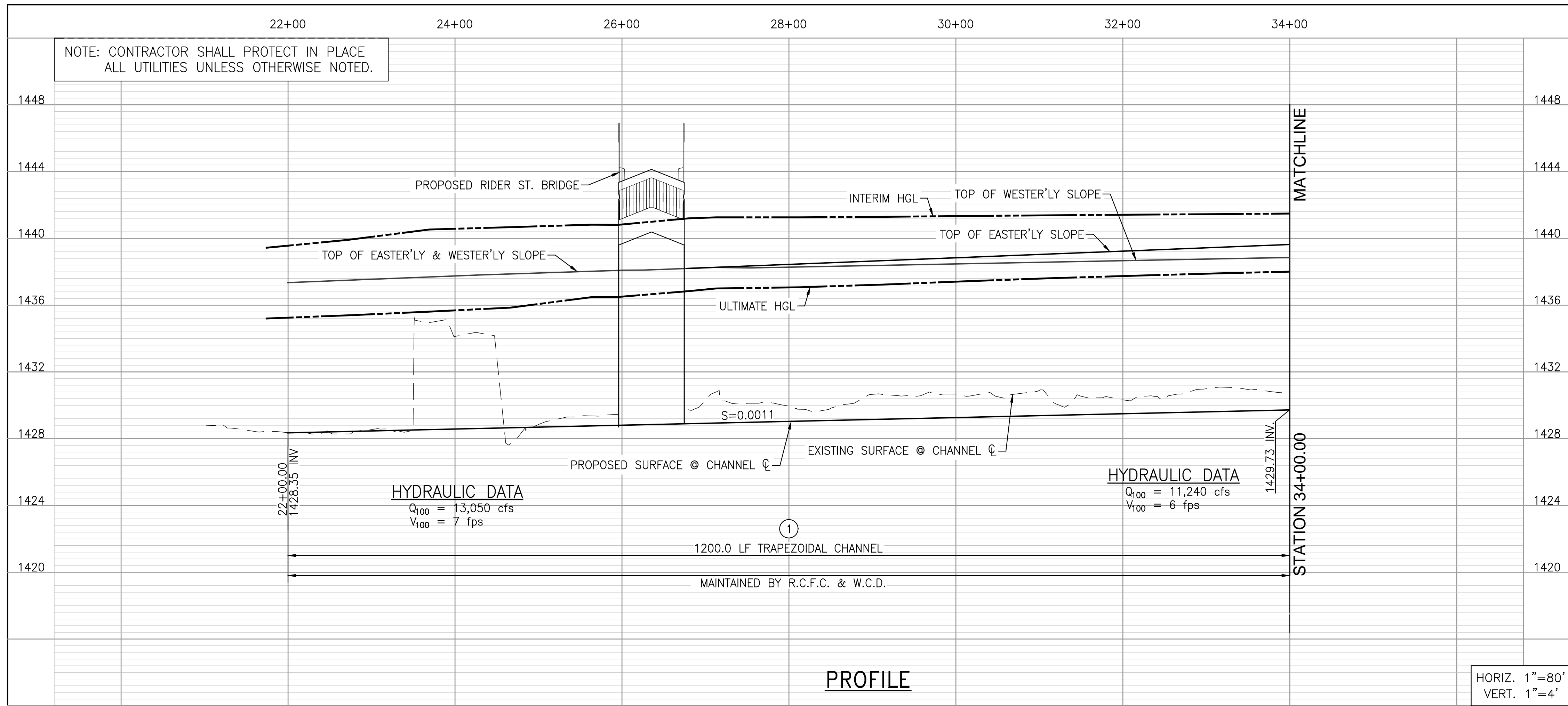
CITY FILE NO. PX-XXXX

PERRIS VALLEY  
STORM DRAIN CHANNEL

TITLE SHEET

PROJECT NO.	XX
DRAWING NO.	XX
SHEET NO.	1 OF 35

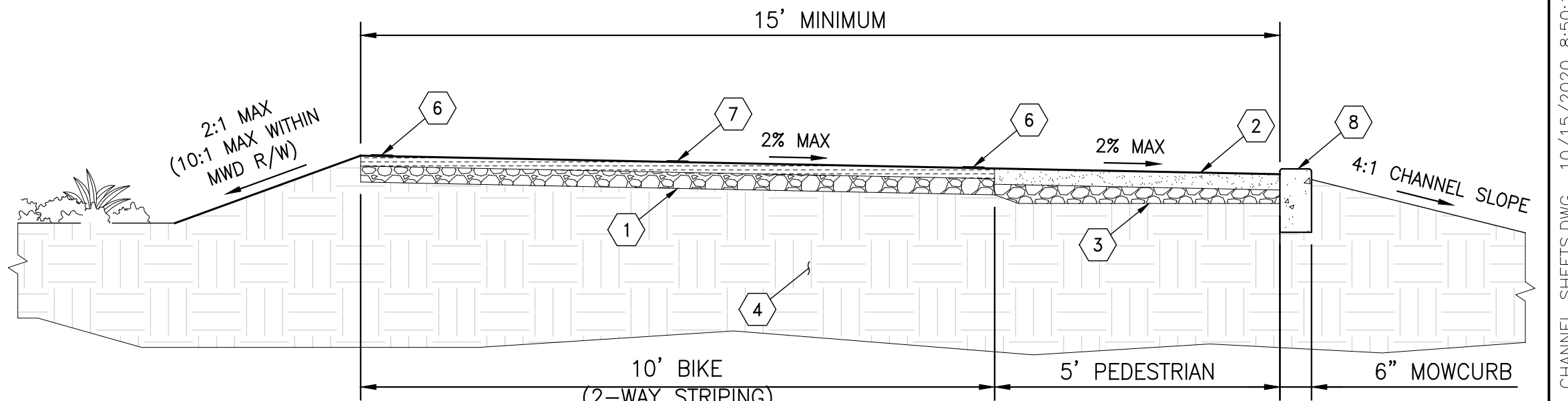
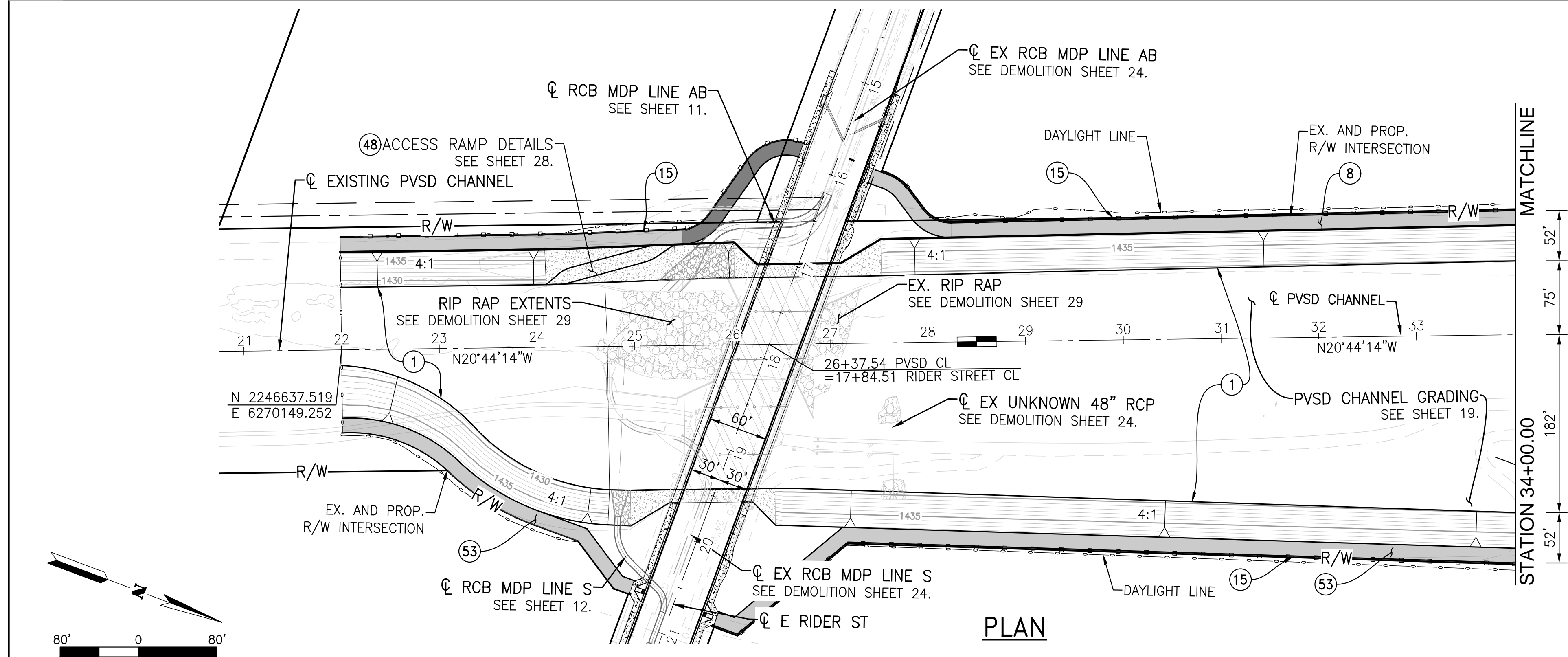
H:\2020\20-0039\DRAWINGS\PLAN SHEETS\MWD PLANSET\20-0039 - PVSD - TITLE & LINE G-2 SHEETS.DWG 10/15/2020 9:44:19 AM



NOTE: SEE TYPICAL SECTION AT STATION 28+50.00 ON SHEET 35.

**CONSTRUCTION NOTES**

- ① CONSTRUCT EARTHEN AND RIPRAP CHANNEL PER RCFC&WCD STD. DWG. NO. CH324, INV. PER PROFILE, WIDTH AND SS PER PLAN AND PER SECTIONS ON SHEET 37.
- ⑧ CONSTRUCT 3" THICK CLASS II BASE ACCESS ROAD PER DETAIL ON SHEET 2.
- ⑮ INSTALL CHAIN LINK FENCE PER RCFC&WCD STD. DWG. NO. M801.
- ④⑧ CONSTRUCT MAINTANCE RAMP PER RCFC&WCD STD. DWG. NO. CH334.
- ⑤③ CONSTRUCT 3" THICK CLASS II BASE ACCESS ROAD PER DETAIL ON SHEET 2.



**NOTE:**

- ① ASPHALT PAVING PER DETAILS 'A' & 'B', SHEET LG-37. 2" AC OVER 3" CLASS II BASE
- ② 3" MINIMUM DEPTH STABILIZED DECOMPOSED GRANITE SET 1/4" MAX BELOW BIKE PATH FINISH SURFACE. DECOMPOSED GRANITE SHALL BE SLIP RESISTANT
- ③ EXISTING CRUSHED AGGREGATE BASE OK TO USE UNDER D.G. (WHERE OCCURS)
- ④ 95% COMPACTED SUBGRADE TO 12" MINIMUM BELOW CLASS II BASE MATERIAL
- ⑤ STABILIZED DECOMPOSED GRANITE AT SHOULDER OF BIKE PATH; SET 1/4" MAX BELOW BIKE PATH FINISH SURFACE; EXTEND AT 4.99% MAX. GRADIENT TO ADJACENT GRADE
- ⑥ 4" WIDE SOLID WHITE STRIPES AT EDGES OF BIKE PATH
- ⑦ 4" WIDE DASHED WHITE STRIPE CENTERED ON BIKE PATH
- ⑧ 6"x12" CONCRETE MOWCURB NOTCHED AT 10' O.C. FOR DRAINAGE. SET 2" ABOVE SLOPE GRADE, 1" ABOVE TRAIL
- 9. PLANTING PER PLANTING PLAN (WHERE OCCURS)
- 10. AASHTO #57 GRAVEL SELF RETAINING AREA; SEE WQMP/SWPPP; K TO USE EXISTING CLEAN GRAVEL FROM PRE-CONSTRUCTION TRAIL SURFACE (WHERE OCCURS)

**⑤③ ACCESS ROAD**  
NOT TO SCALE

CITY FILE NO. PX-XXXX



**ALBERTA A. WEBB ASSOCIATES**  
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FAX (951) 788-1256

REGISTERED PROFESSIONAL ENGINEER  
JOSEPH C. CALDWELL  
NO. C67239  
CIVIL  
STATE OF CALIFORNIA

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TWO WORKING DAYS BEFORE YOU DIG

PERMANENT BENCH MARK:  
SEE SHEET 1

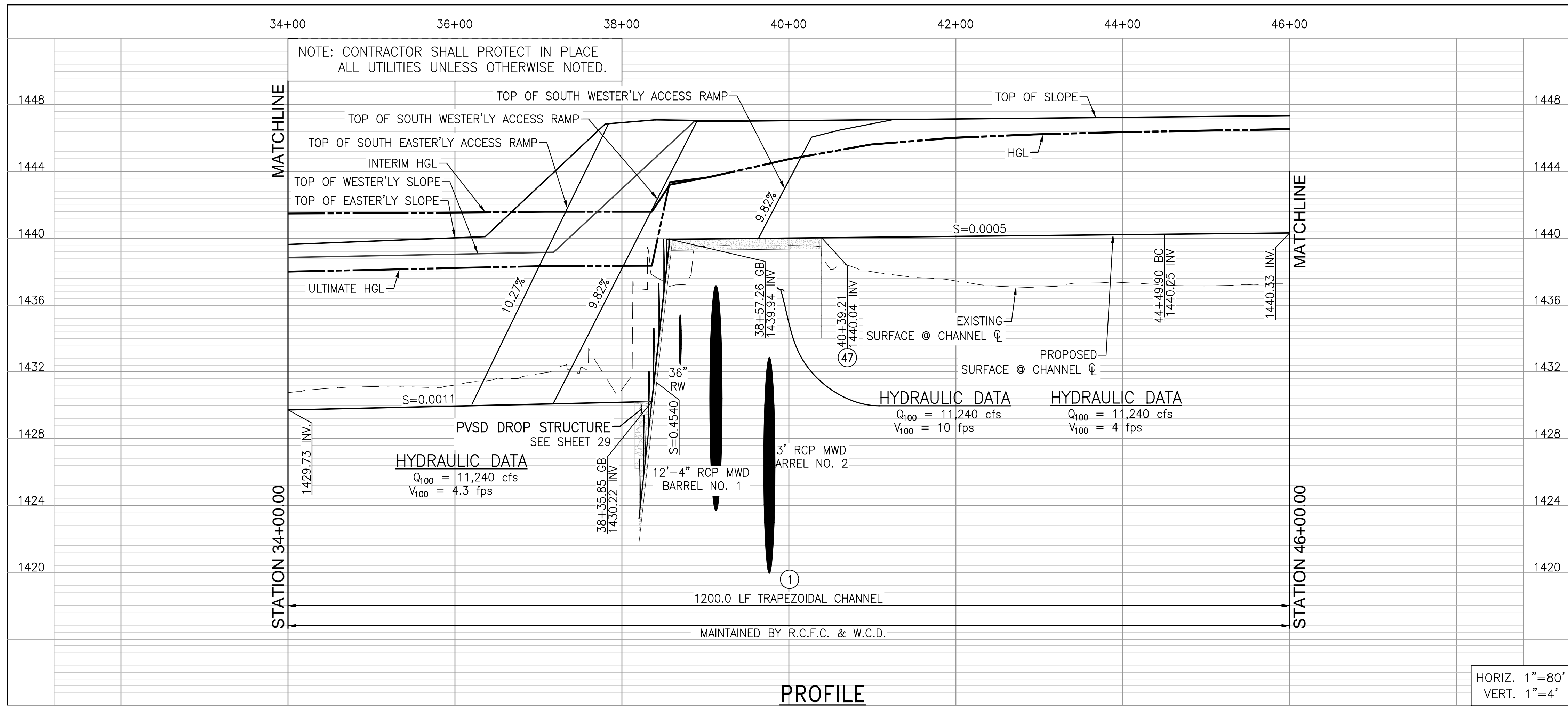
REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
DESIGNED BY: JJQ	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DRAWN BY: AYS		
DATE DRAWN: Oct 20		
CHECKED BY: JCC	DATE:	DATE:

**PERRIS VALLEY STORM DRAIN CHANNEL**  
PVSD CHANNEL  
STATION 22+00.00 TO 34+00.00

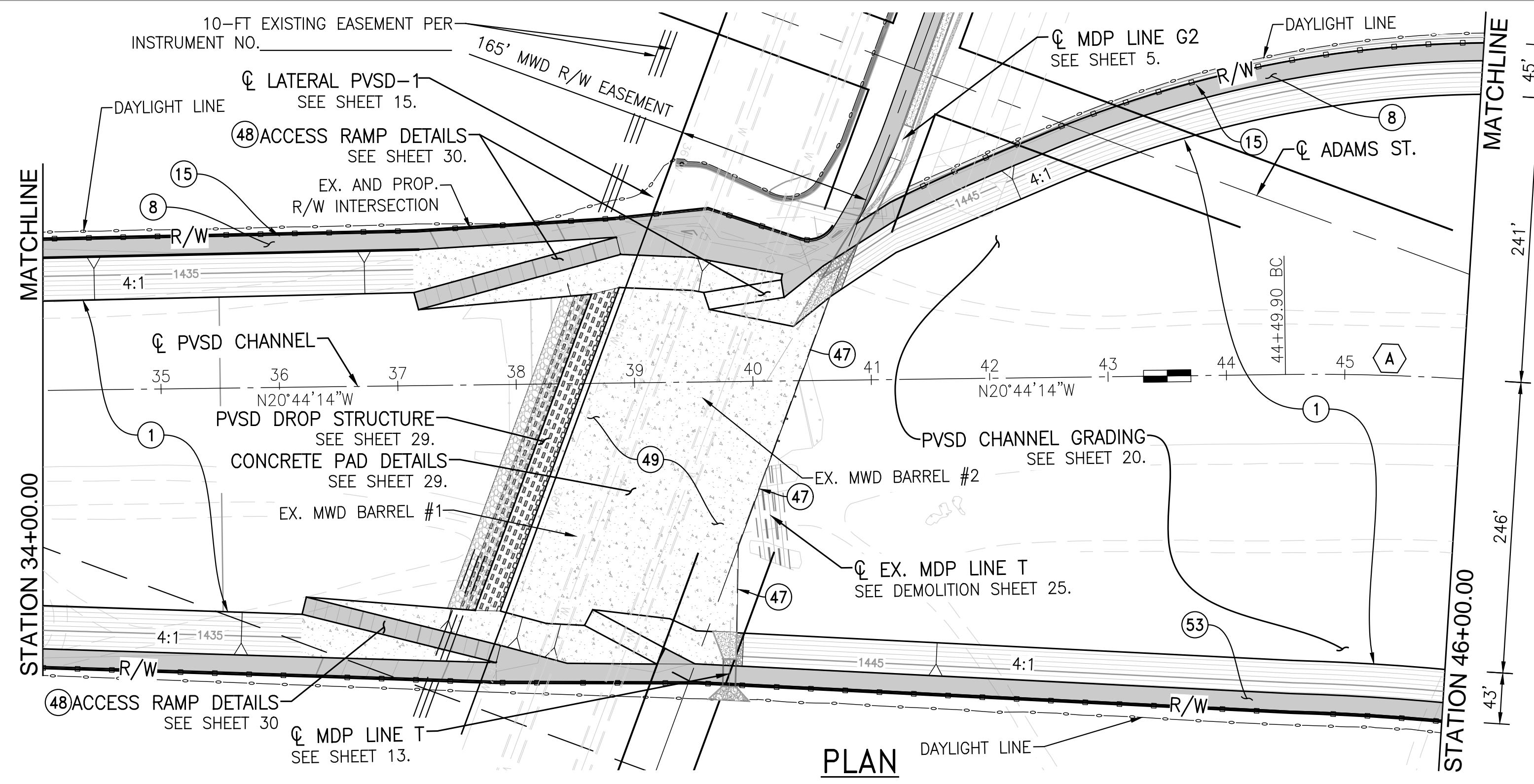
PROJECT NO.	XX
DRAWING NO.	XX
SHEET NO.	2 OF 35

H:\2020\20-0039\DRAWINGS\PLAN SHEETS\WCD PLANSET\20-0039 - PVSD - CHANNEL SHEETS.DWG 10/15/2020 8:50:15 AM



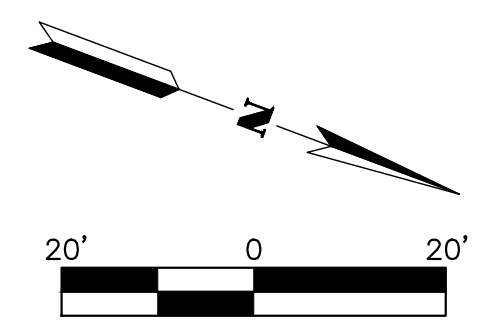
NOTE: SEE TYPICAL SECTION AT STATION 43+50.00 ON SHEET 35.

HORIZ. 1"=80'  
VERT. 1"=4'

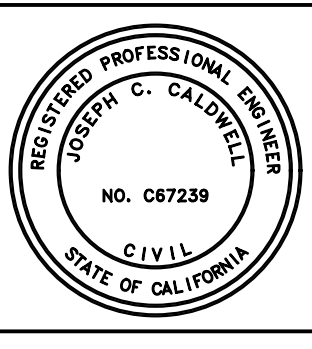


- CONSTRUCTION NOTES**
- ① CONSTRUCT EARTHEN AND RIPRAP CHANNEL PER RCFC&WCD STD. DWG. NO. CH324, INV. PER PROFILE, WIDTH AND SS PER PLAN AND PER SECTIONS ON SHEET 37.
  - ⑧ CONSTRUCT 3" THICK CLASS II BASE ACCESS ROAD PER DETAIL ON SHEET 2.
  - ⑮ INSTALL CHAIN LINK FENCE PER RCFC&WCD STD. DWG. NO. M801.
  - ④⑦ CONSTRUCT CHANNEL CUTOFF WALL PER DETAIL ON SHEET 35
  - ④⑧ CONSTRUCT MAINTANCE RAMP PER RCFC&WCD STD. DWG. NO. CH334.
  - ④⑨ CONSTRUCT MWD PROTECTION/DROP STRUCTURE PER DETAILS ON SHEET 32.
  - ⑤③ CONSTRUCT 3" THICK CLASS II BASE ACCESS ROAD PER DETAIL ON SHEET 2.

CURVE DATA		(A)
R	2000.00'	
$\Delta$	21°12'29"	
L	740.30'	
T	374.44'	
BC	STA. 44+49.90	
EC	STA. 51+90.20	
PI	NORTHING 2249091.837	
	EASTING 6269220.022	



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PERMANENT BENCH MARK:  
SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

DESIGNED BY: JJO  
DRAWN BY: AYS  
DATE DRAWN: Oct 20  
CHECKED BY: JCC

RECOMMENDED FOR APPROVAL BY: \_\_\_\_\_  
DATE: \_\_\_\_\_

APPROVED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_

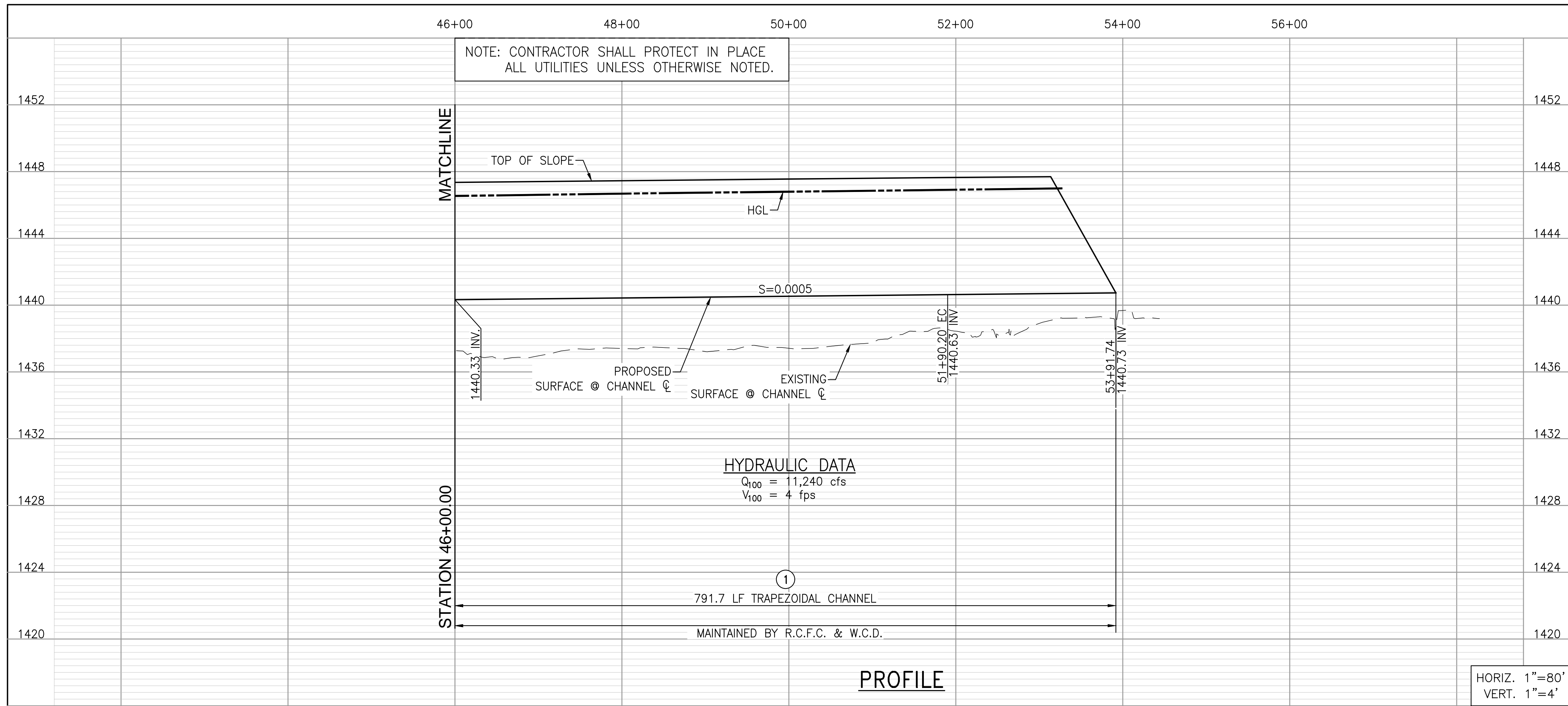
CITY FILE NO. PX-XXXX

PERRIS VALLEY STORM DRAIN CHANNEL

PVSD CHANNEL  
STATION 34+00.00 TO 46+00.00

PROJECT NO.	XX
DRAWING NO.	XX
SHEET NO.	3 OF 35

H:\2020\20-0039\DRAWINGS\PLAN SHEETS\MWD PLANSET\20-0039 - PVSD - CHANNEL SHEETS.DWG 10/15/2020 8:50:15 AM

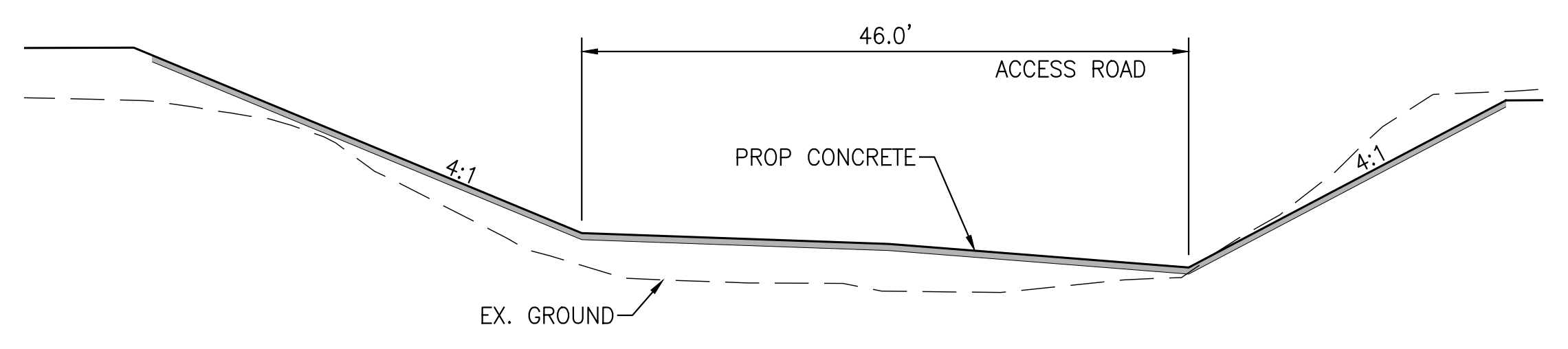
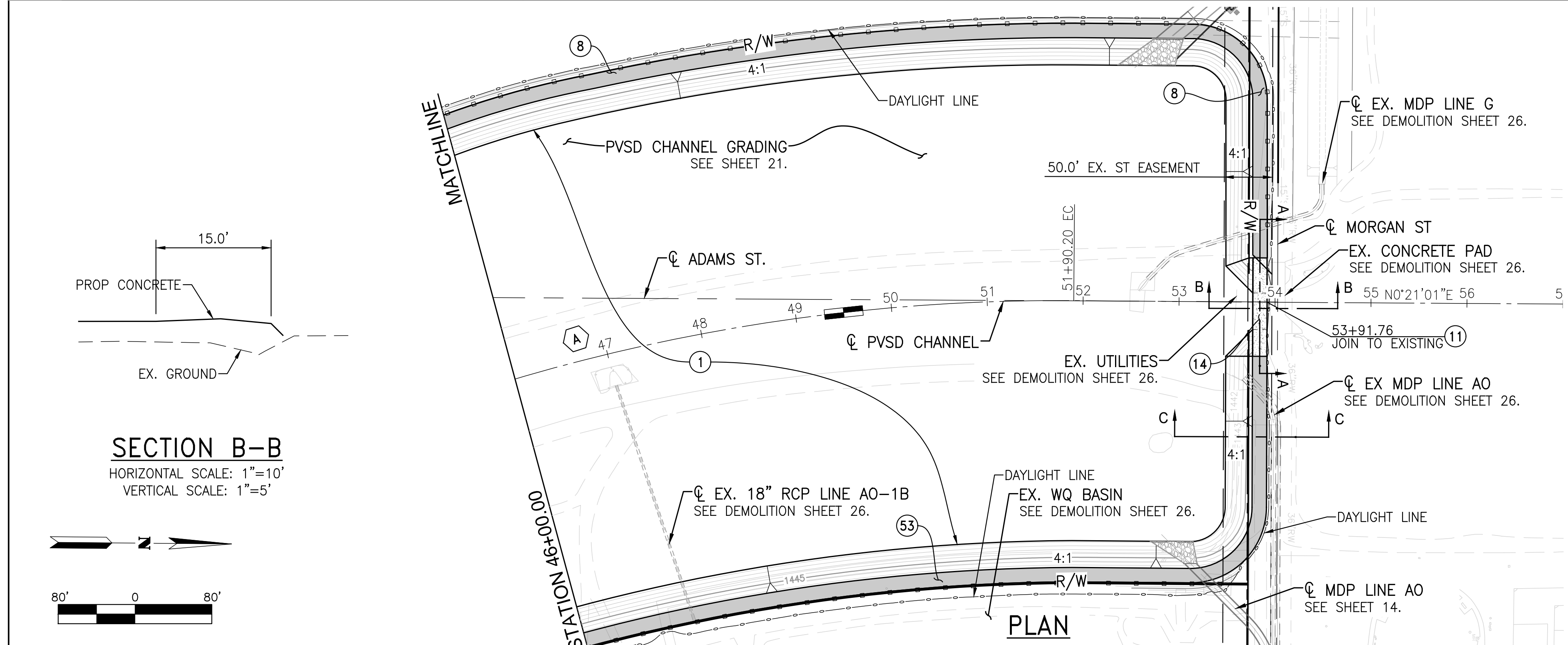


NOTE: SEE TYPICAL SECTION AT STATION 49+50.00 ON SHEET 35.

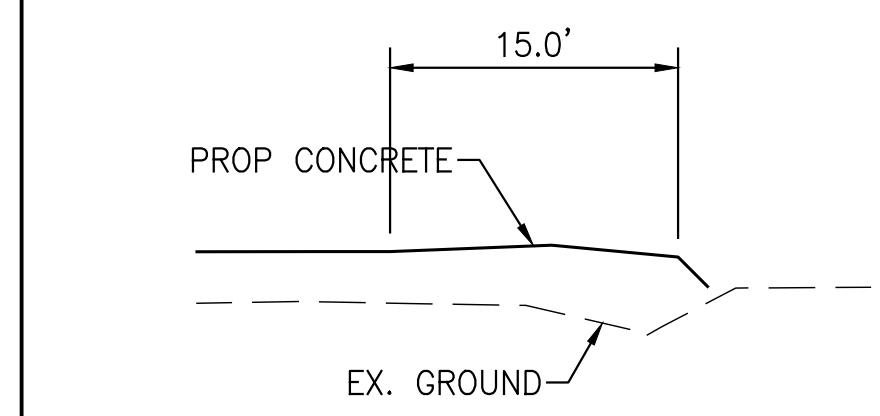
CURVE DATA		(A)
R		2000.00'
Δ		21°12'29"
L		740.30'
T		374.44'
BC	STA.	44+49.90
EC	STA.	51+90.20
PI	NORTHING	2249091.837
	EASTING	6269220.022

**CONSTRUCTION NOTES**

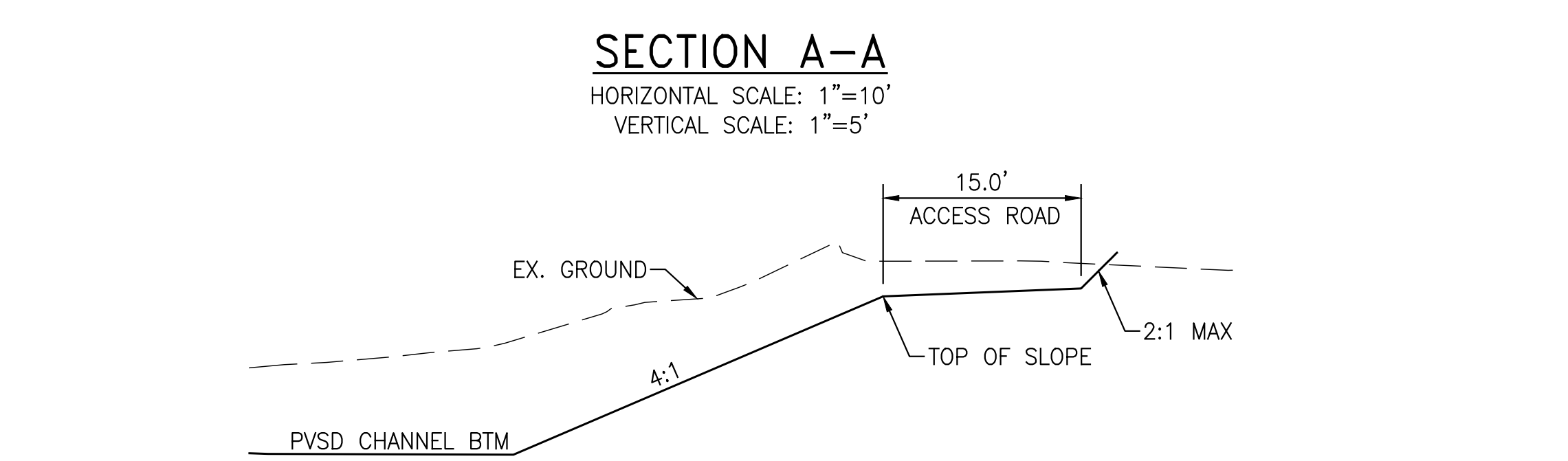
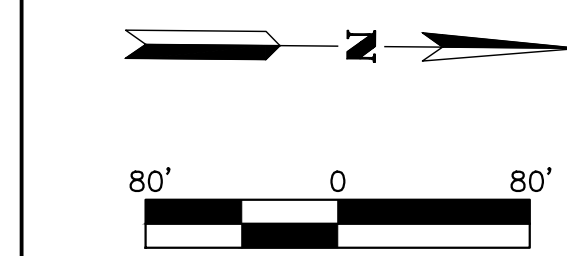
- ① CONSTRUCT EARTHEN AND RIPRAP CHANNEL PER RCFC&WCD STD. DWG. NO. CH324, INV. PER PROFILE, WIDTH AND SS PER PLAN AND PER SECTIONS ON SHEET 37.
- ⑧ CONSTRUCT 3" THICK CLASS II BASE ACCESS ROAD PER DETAIL ON SHEET 2.
- ⑪ JOIN TO EXISTING CHANNEL.
- ⑭ CONSTRUCT XX" THICK CLASS XX CONCRETE.
- ⑳ CONSTRUCT VEHICULAR TURN AROUND AREA PER RCFC&WCD STD. DWG. NO. M827
- ⑤③ CONSTRUCT 3" THICK CLASS II BASE ACCESS ROAD PER DETAIL ON SHEET 2.



**SECTION A-A**  
HORIZONTAL SCALE: 1"=10'  
VERTICAL SCALE: 1"=5'



**SECTION B-B**  
HORIZONTAL SCALE: 1"=10'  
VERTICAL SCALE: 1"=5'



**SECTION C-C**  
HORIZONTAL SCALE: 1"=10'  
VERTICAL SCALE: 1"=5'

CITY FILE NO. PX-XXXX

**ALBERT A. WEBB ASSOCIATES**  
ENGINEERING CONSULTANTS  
3788 McCRAY STREET  
RIVERSIDE CA, 92506  
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FAX (951) 788-1256



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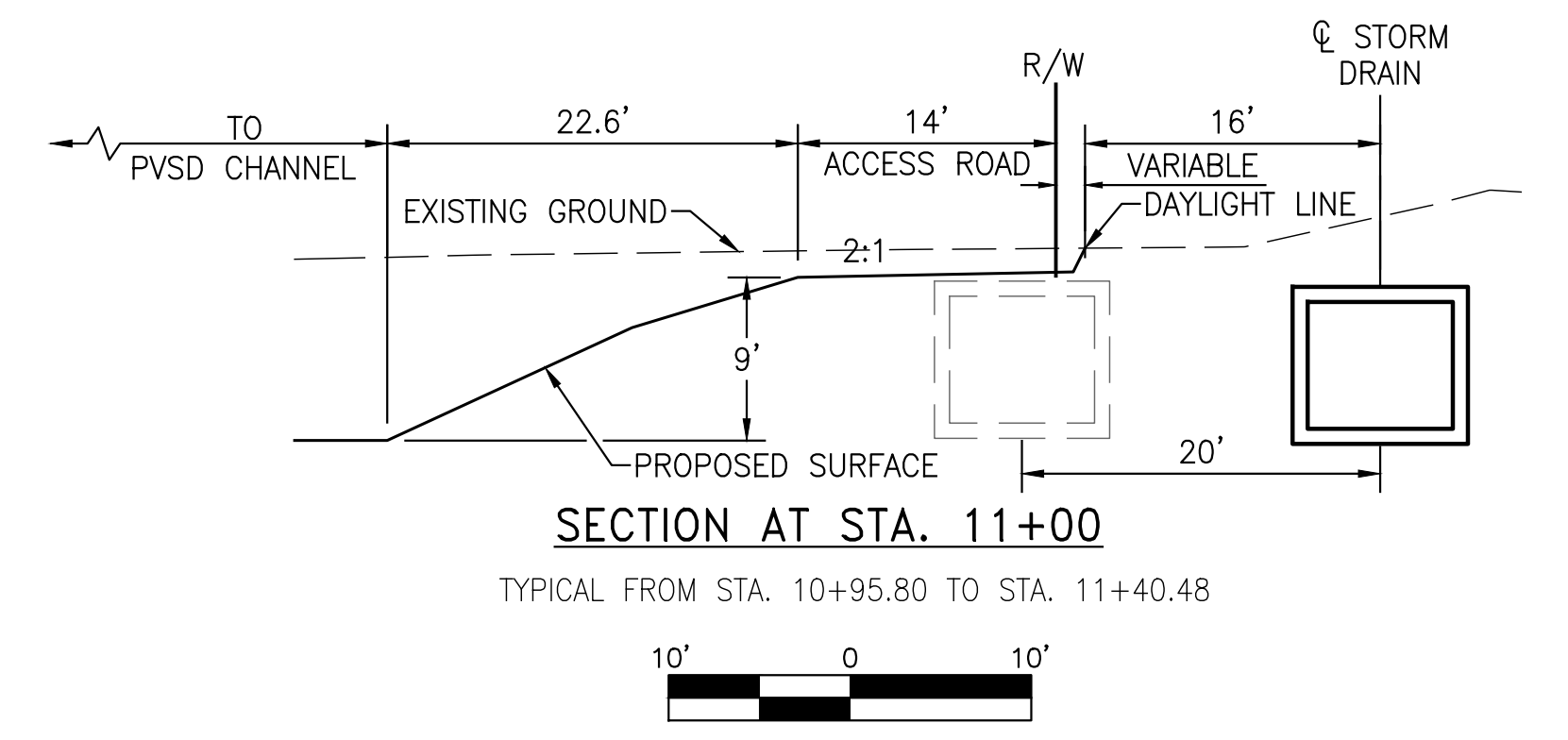
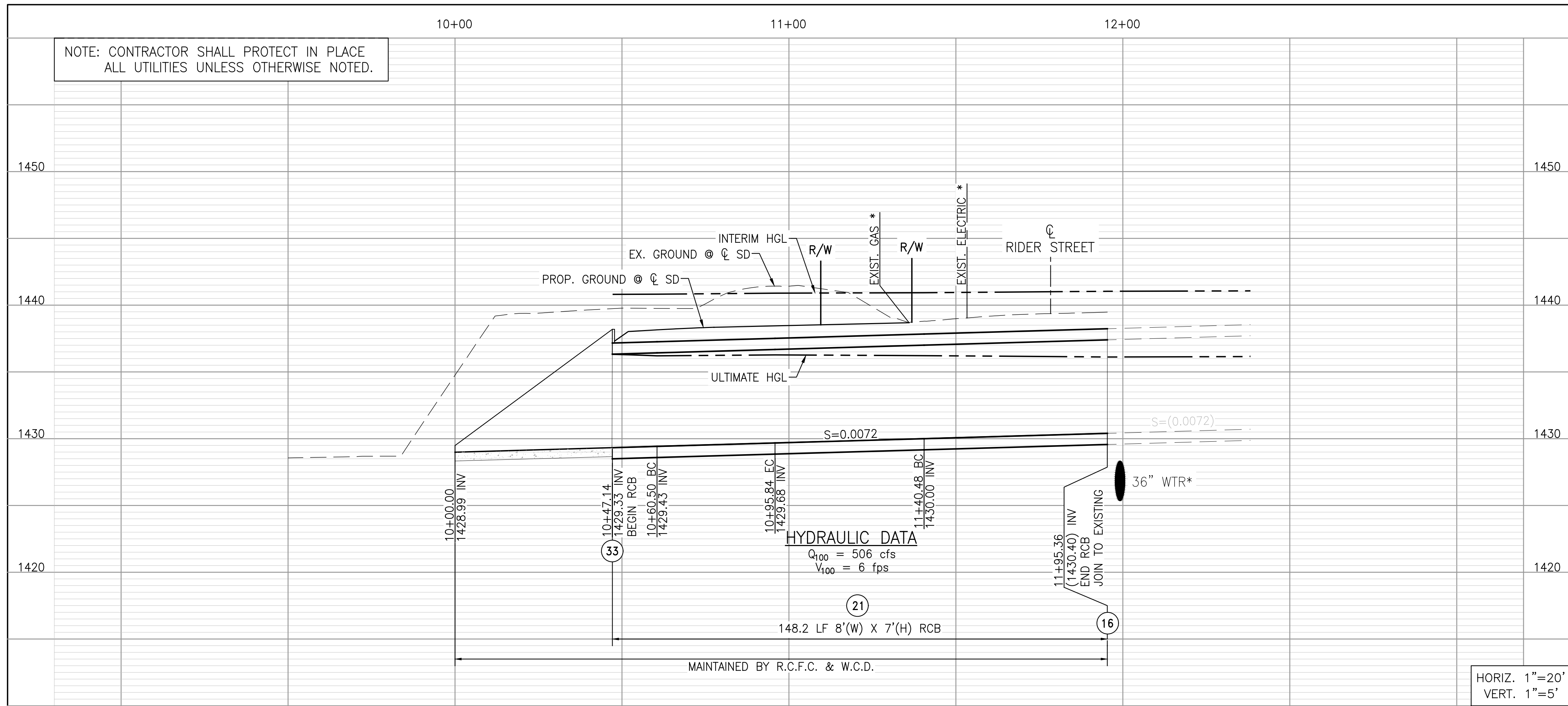
PERMANENT BENCH MARK:  
SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

DESIGNED BY: JJQ		
DRAWN BY: AYS	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DATE DRAWN: Oct 20	DATE:	DATE:
CHECKED BY: JCC	DATE:	DATE:

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
**PERRIS VALLEY STORM DRAIN CHANNEL**  
PVSD CHANNEL  
STATION 46+00.00 TO 53+91.74

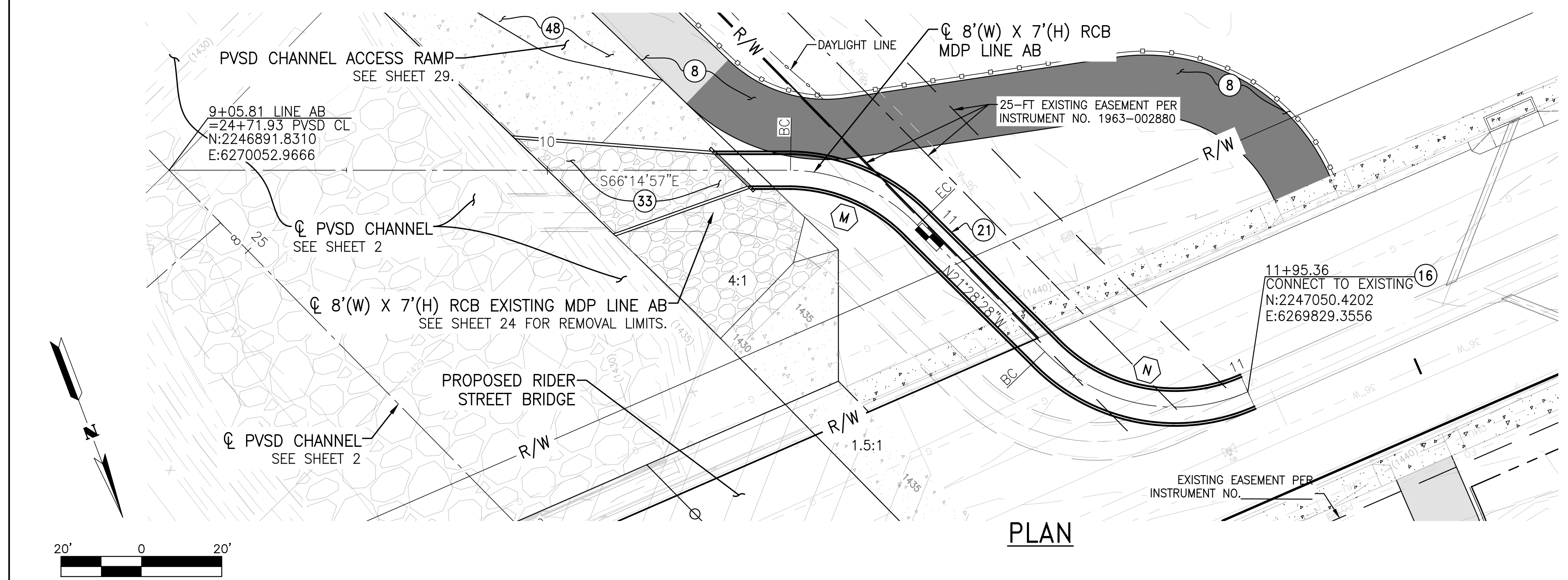
PROJECT NO.	XX
DRAWING NO.	XX
SHEET NO.	4 OF 35



\*NOTE: EXISTING LOCATION AND ELEVATION TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.

CURVE DATA	(M)	CURVE DATA	(N)
R	45.00'	R	45.00'
Δ	45°00'00"	Δ	69°51'58"
L	35.34'	L	54.87'
T	18.64'	T	31.43'
BC	STA. 10+60.50	BC	STA. 11+40.48
EC	STA. 10+95.84	EC	STA. 11+95.36
PI	NORTHING 2246961.902	PI	NORTHING 2247050.428
EASTING	6269894.441	EASTING	6269860.787

PROFILE



**CONSTRUCTION NOTES**

- (8) CONSTRUCT 3" THICK CLASS II BASE ACCESS ROAD PER DETAIL ON SHEET 2.
- (16) CONNECT TO EXISTING.
- (21) CONSTRUCT RCB PER CALTRANS D80 - 8' (W) X 5' (H) WITH FLAT INVERT.
- (33) CONSTRUCT OUTLET STRUCTURE PER DETAIL ON SHEET 36.
- (48) CONSTRUCT MAINTANCE RAMP PER RCF&WCD STD. DWG. NO. CH334.

PLAN

CITY FILE NO. PX-XXXX

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PERMANENT BENCH MARK:  
 SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

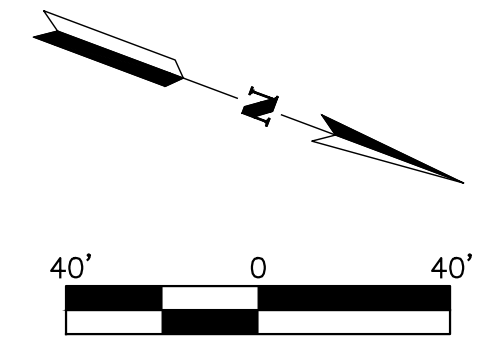
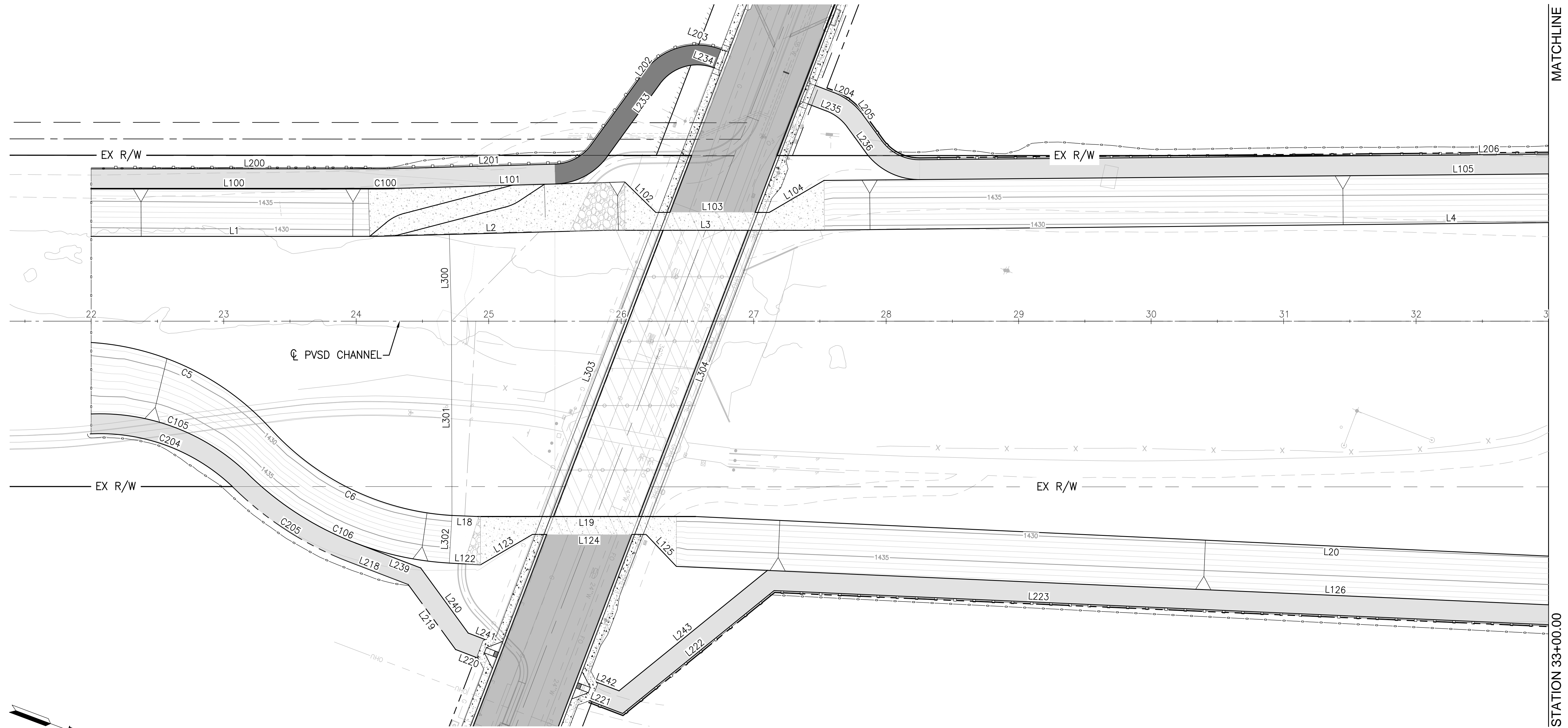
DESIGNED BY: JJQ  
 DRAWN BY: AYS  
 DATE DRAWN: Oct 20  
 CHECKED BY: JCC

RECOMMENDED FOR APPROVAL BY:  
 APPROVED BY:

PERRIS VALLEY STORM DRAIN CHANNEL  
 MDP LINE AB  
 PLAN AND PROFILE

PROJECT NO. XX  
 DRAWING NO. XX  
 SHEET NO. 11 OF 35

SEE SHEET 22-23 FOR LINE & CURVE TABLE.  
 GRADING POINTS TO BE ADDED ON NEXT SUBMITTAL.



CITY FILE NO. PX-XXXX

**ALBERT A. WEBB ASSOCIATES**  
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PERMANENT BENCH MARK:  
 SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

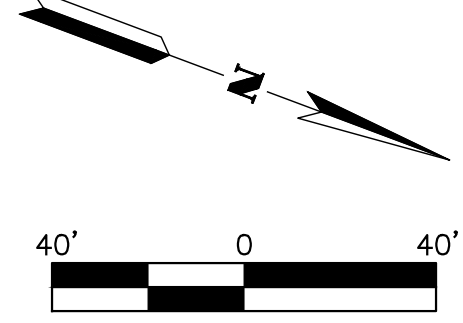
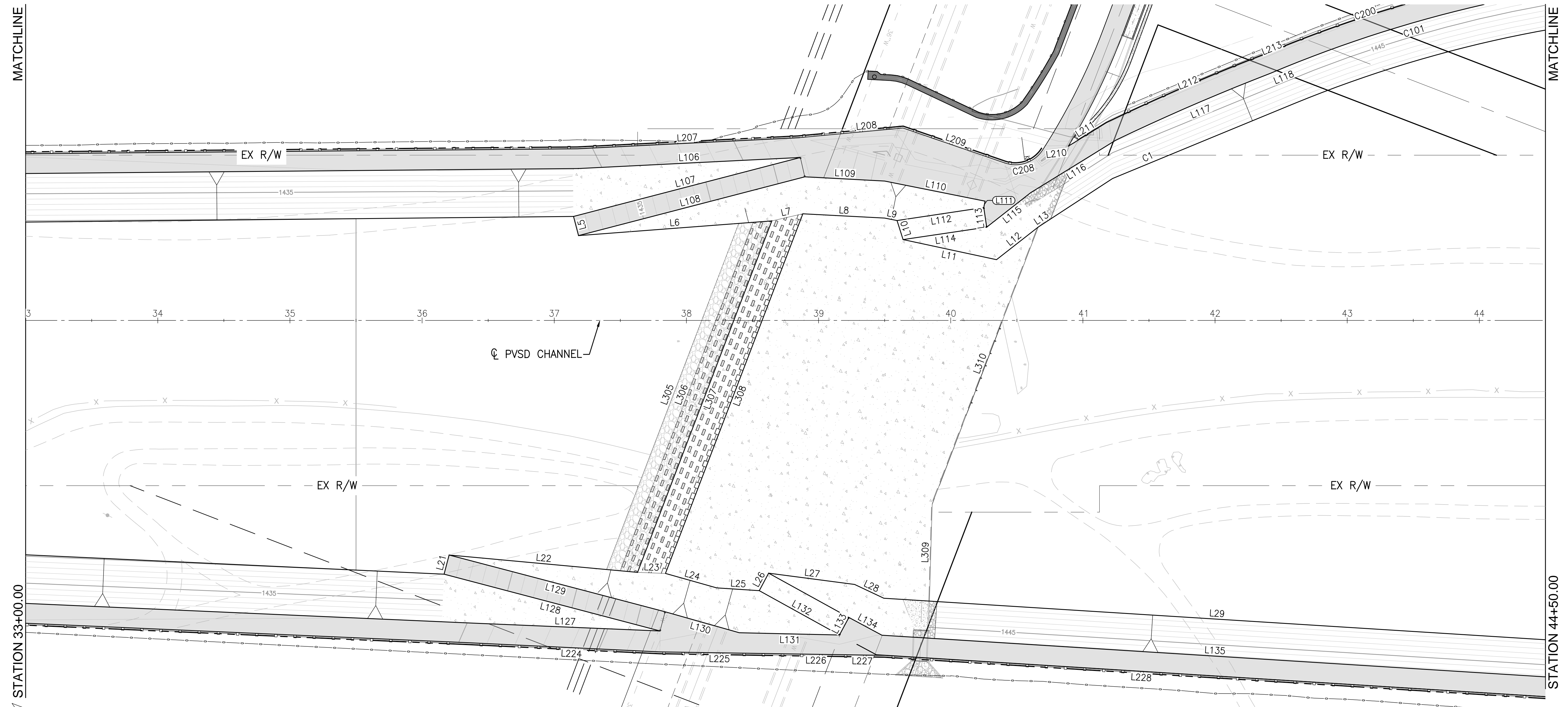
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
DESIGNED BY: JJQ	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DRAWN BY: AYS		
DATE DRAWN: Oct 20		
CHECKED BY: JCC	DATE: _____	DATE: _____

**PERRIS VALLEY STORM DRAIN CHANNEL**  
  
 PVSD CHANNEL  
 GRADING PLAN

PROJECT NO.	XX
DRAWING NO.	XX
SHEET NO.	19 OF 35

H:\2020\20-0039\DRAWINGS\PLAN SHEETS\WMD PLANSET\20-0039 - PVSD - GRADING SHEETS.DWG 10/14/2020 5:16:20 PM

SEE SHEET 22-23 FOR LINE & CURVE TABLE.  
GRADING POINTS TO BE ADDED ON NEXT SUBMITTAL.



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ENGINEERING CONSULTANTS  
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PERMANENT BENCH MARK:  
SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

REVISIONS		

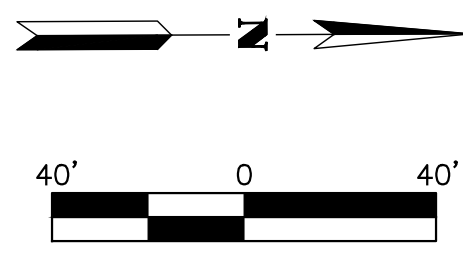
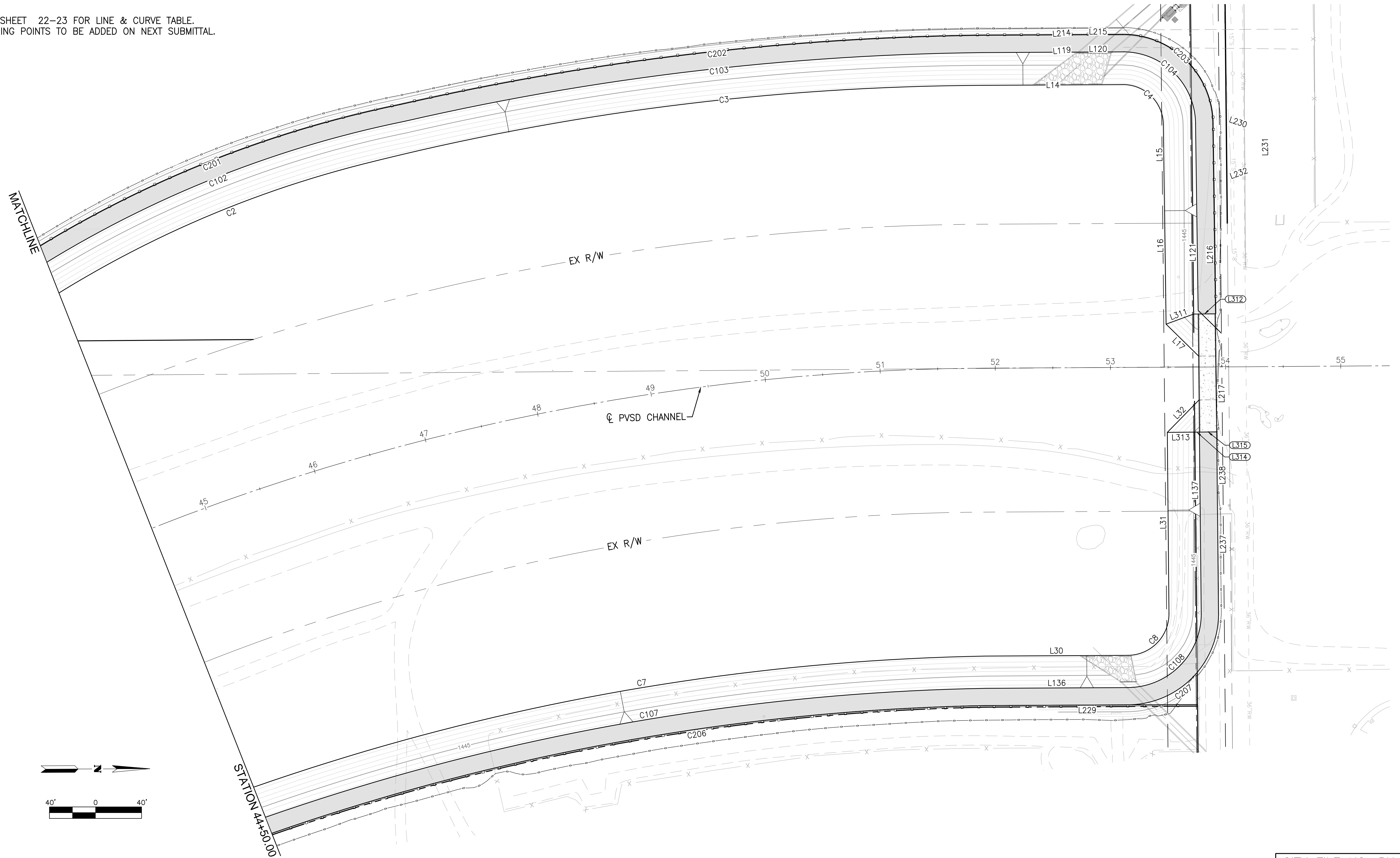
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
DESIGNED BY: JJO	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DRAWN BY: AYS		
DATE DRAWN: Oct 20		
CHECKED BY: JCC	DATE:	DATE:

**PERRIS VALLEY STORM DRAIN CHANNEL**  
PVS CHANNEL  
GRADING PLAN

CITY FILE NO. PX-XXXX

PROJECT NO.	XX
DRAWING NO.	XX
SHEET NO.	20 OF 35

SEE SHEET 22-23 FOR LINE & CURVE TABLE.  
 GRADING POINTS TO BE ADDED ON NEXT SUBMITTAL.



CITY FILE NO. PX-XXXX

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PERMANENT BENCH MARK:  
 SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
DESIGNED BY: JJQ	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DRAWN BY: AYS		
DATE DRAWN: Oct 20		
CHECKED BY: JCC	DATE:	DATE:

**PERRIS VALLEY STORM DRAIN CHANNEL**  
 PVSD CHANNEL GRADING PLAN

PROJECT NO. XX
DRAWING NO. XX
SHEET NO. 21 OF 35

SEE SHEET 19-21 FOR CHANNEL GRADING PLAN VIEW.  
GRADING POINTS TO BE ADDED ON NEXT SUBMITTAL.

LINE AND CURVE TABLE				
LINE #/CURVE #	LENGTH	RADIUS	BEARING/DELTA	TANGENT
C1	166.48	615.63	15°29'40"	83.75
C2	562.03	1057.27	30°27'28"	287.83
C3	506.48	2248.14	12°54'29"	254.32
C4	54.81	35.00	89°43'22"	34.83
C5	154.20	200.00	44°10'34"	81.16
C6	155.45	200.00	44°31'56"	81.89
C7	645.27	2036.36	18°09'20"	325.36
C8	56.69	36.00	90°13'45"	36.14
L1	215.07		N20°44'14"W	
L2	173.83		N22°15'13"W	
L3	149.91		N20°44'14"W	
L4	975.89		N21°19'45"W	
L5	15.00		N54°41'53"E	
L6	146.70		N25°05'44"W	
L7	24.07		N33°37'59"W	
L8	61.98		N17°45'09"W	
L9	9.55		N09°25'29"W	
L10	15.10		N51°37'50"E	
L11	72.32		N08°35'33"W	
L12	40.12		N58°45'53"W	
L13	11.44		N54°27'32"W	
L14	122.45		N00°28'15"E	
L15	61.20		S89°48'23"E	
L16	116.57		S89°48'23"E	
L17	39.60		N45°11'37"E	
L18	19.44		S18°18'24"E	
L19	164.31		S20°44'14"E	
L20	961.61		S18°04'59"E	
L21	15.00		N83°59'01"E	
L22	143.18		S15°28'50"E	

LINE AND CURVE TABLE				
LINE #/CURVE #	LENGTH	RADIUS	BEARING/DELTA	TANGENT
L23	21.12		S18°34'27"E	
L24	40.29		S04°57'53"E	
L25	32.29		S16°59'46"E	
L26	15.00		S82°37'59"E	
L27	65.62		S13°16'58"E	
L28	24.48		S04°29'34"W	
L29	504.62		S17°08'53"E	
L30	123.53		S00°28'15"W	
L31	157.26		S89°45'29"E	
L32	39.44		S44°50'36"E	

LINE AND CURVE TABLE				
LINE #/CURVE #	LENGTH	RADIUS	BEARING/DELTA	TANGENT
C100	12.83	464.00	1°35'05"	6.42
C101	208.15	1000.21	11°55'25"	104.45
C102	330.78	1019.27	18°35'39"	166.86
C103	565.39	2769.36	11°41'51"	283.68
C104	106.60	65.35	93°27'48"	69.42
C105	130.61	160.00	46°46'18"	69.19
C106	169.44	236.00	41°08'15"	88.56
C107	636.53	2008.36	18°09'33"	320.95
C108	100.80	64.00	90°14'31"	64.27
L100	215.65		S20°44'14"E	
L101	174.36		S22°19'19"E	
L102	32.71		S23°41'45"W	
L103	85.66		S20°44'14"E	
L104	47.89		S50°59'57"E	
L105	965.09		S21°15'07"E	
L106	168.22		S23°35'22"E	
L107	177.33		N35°18'07"W	
L108	176.89		N35°18'07"W	
L109	60.52		N17°43'00"W	
L110	77.48		N09°25'28"W	
L111	4.96		S80°35'55"W	
L112	66.37		S29°14'09"E	
L113	15.00		S60°50'43"W	
L114	63.95		S29°09'17"E	
L115	42.34		S58°48'23"E	
L116	75.74		S52°23'35"E	
L117	135.22		S43°09'33"E	
L118	0.78		S43°09'33"E	
L119	31.59		S04°28'08"E	
L120	32.22		S00°58'48"W	

LINE AND CURVE TABLE				
LINE #/CURVE #	LENGTH	RADIUS	BEARING/DELTA	TANGENT
L121	215.31		N89°48'23"W	
L122	23.53		N17°29'19"W	
L123	45.54		N50°59'57"W	
L124	85.66		N20°44'14"W	
L125	33.26		N25°46'59"E	
L126	995.65		N18°12'55"W	
L127	143.85		N18°20'13"W	
L128	168.98		S06°00'59"E	
L129	168.98		S06°00'59"E	
L130	58.34		S04°57'53"E	
L131	75.80		S19°26'51"E	
L132	69.54		N08°11'12"E	
L133	15.06		N82°30'34"W	
L134	28.36		N07°29'26"E	
L135	504.68		N17°08'53"W	
L136	123.34		N00°28'15"E	
L137	213.73		N89°48'23"W	

CITY FILE NO. PX-XXXX

**ALBERT A. WEBB ASSOCIATES**  
ENGINEERING CONSULTANTS  
3788 McCRAY STREET  
RIVERSIDE, CA, 92506  
PH. (951) 686-1070  
FAX (951) 788-1256



PERMANENT BENCH MARK:  
SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
DESIGNED BY: JJO	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DRAWN BY: AYS		
DATE DRAWN: Oct 20		
CHECKED BY: JCC	DATE:	DATE:

PERRIS VALLEY  
STORM DRAIN CHANNEL  
  
PVSD CHANNEL  
GRADING PLAN - CONTROL TABLE

PROJECT NO. XX  
DRAWING NO. XX  
SHEET NO. 22 OF 35

SEE SHEET 19-21 FOR CHANNEL GRADING PLAN VIEW.  
GRADING POINTS TO BE ADDED ON NEXT SUBMITTAL.

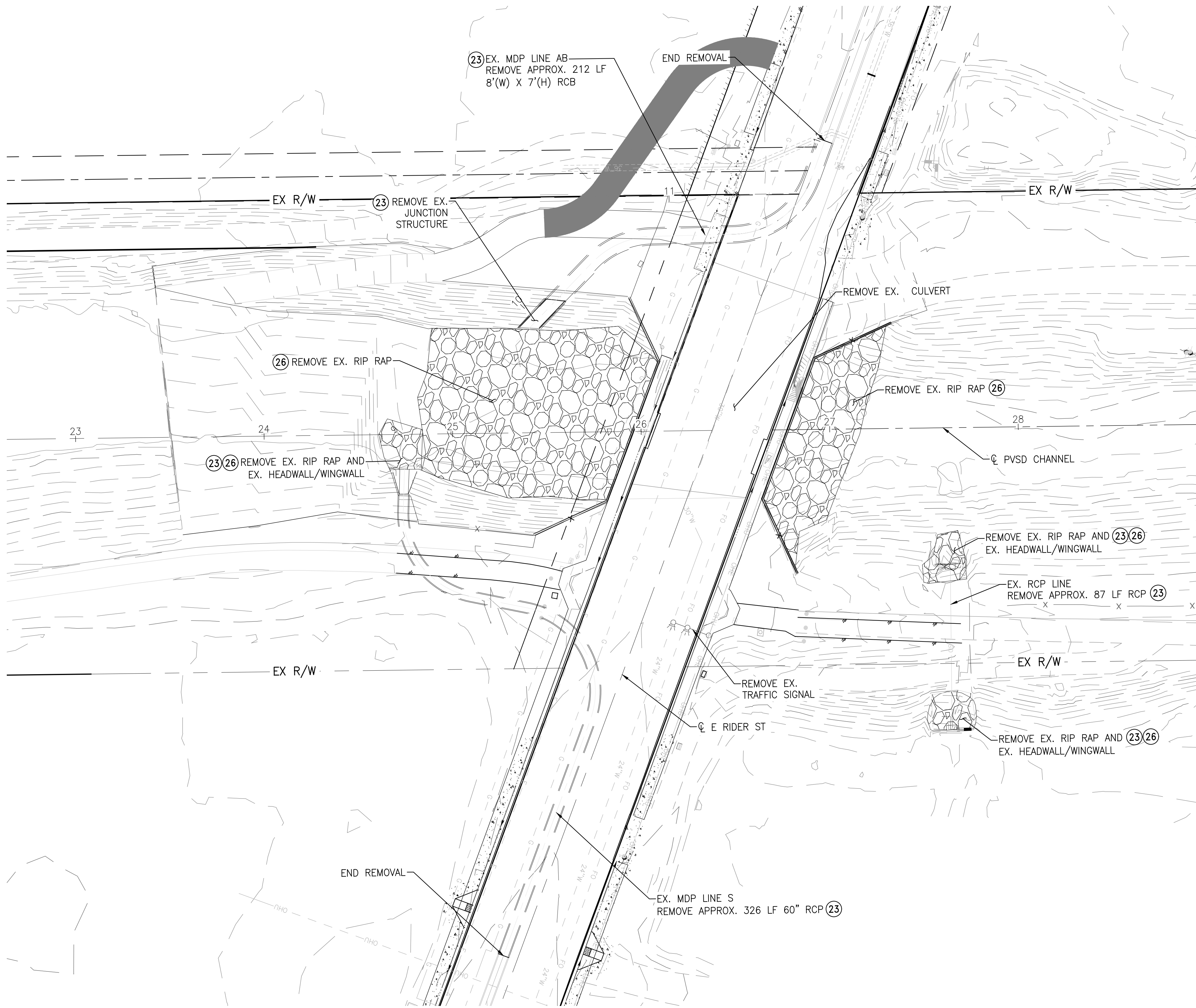
LINE AND CURVE TABLE				
LINE #/CURVE #	LENGTH	RADIUS	BEARING/DELTA	TANGENT
C200	211.28	1015.21	11°55'26"	106.02
C201	335.84	1034.27	18°36'16"	169.41
C202	568.62	2784.36	11°42'03"	285.30
C203	130.10	79.75	93°27'48"	84.73
C204	119.68	145.00	47°17'21"	63.48
C205	102.68	251.00	23°26'21"	52.07
C206	631.84	1993.36	18°09'40"	318.59
C207	124.41	79.00	90°13'45"	79.32
C208	33.01	25.00	75°39'20"	19.41
L200	215.65		S20°44'14"E	
L201	153.64		S22°16'15"E	
L202	122.45		S74°47'24"E	
L203	36.51		S00°12'36"W	
L204	29.43		N00°12'36"E	
L205	56.52		N33°08'39"E	
L206	910.19		S21°15'05"E	
L207	167.19		S23°35'22"E	
L208	79.79		S26°02'32"E	
L209	81.68		S01°48'09"E	
L210	19.19		S27°22'32"E	
L211	34.25		S52°23'35"E	
L212	136.43		S43°09'33"E	
L213	0.77		S43°09'33"E	
L214	31.59		S04°28'08"E	
L215	32.48		S00°58'59"W	
L216	167.83		N89°48'23"W	
L217	103.94		N89°52'47"W	
L218	48.49		N00°12'36"E	

LINE AND CURVE TABLE				
LINE #/CURVE #	LENGTH	RADIUS	BEARING/DELTA	TANGENT
L219	60.80		N33°08'39"E	
L220	25.00		N00°12'36"E	
L221	33.66		N00°12'36"E	
L222	147.18		N59°47'24"W	
L223	921.09		N18°12'56"W	
L224	144.25		N17°59'48"W	
L225	60.22		N19°51'21"W	
L226	75.65		N19°51'21"W	
L227	34.39		N19°51'21"W	
L228	501.86		N17°09'38"W	
L229	123.24		N00°28'15"E	
L230	42.38		N19°28'12"E	
L231	22.00		S89°49'12"E	
L232	42.38		S19°06'36"E	
L233	118.37		N74°47'24"W	
L234	25.00		N00°12'36"E	
L235	25.00		N00°12'36"E	
L236	59.79		N33°08'39"E	
L237	157.29		N89°45'29"W	
L238	157.29		N89°45'29"W	
L239	52.93		N00°12'36"E	
L240	60.80		N33°08'39"E	
L241	20.11		N00°12'36"E	
L242	25.00		N00°12'36"E	
L243	144.21		N59°47'24"W	

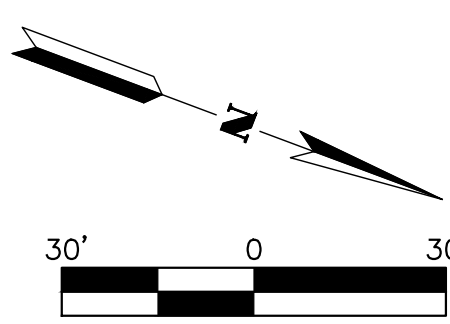
LINE AND CURVE TABLE				
LINE #/CURVE #	LENGTH	RADIUS	BEARING/DELTA	TANGENT
L300	65.51		S67°50'23"W	
L301	146.58		S69°06'30"W	
L302	36.00		S72°30'41"W	
L303	260.20		N89°47'24"W	
L304	260.20		N89°47'24"W	
L305	280.24		N89°49'12"W	
L306	282.16		N89°49'12"W	
L307	284.60		S89°49'12"E	
L308	291.21		S89°49'12"E	
L309	73.64		S70°54'37"W	
L310	224.20		N89°46'07"W	
L311	25.47		N19°21'12"W	
L312	19.00		N00°11'37"E	
L313	23.33		N00°11'57"E	
L314	4.63		N00°11'57"E	
L315	15.04		N00°09'25"E	

CITY FILE NO. PX-XXXX

		<p>Don't Dig...Until You Call: U.S.A. Toll Free: 1-800-422-4133 for the location of buried utility lines. Don't disrupt vital services. TWO WORKING DAYS BEFORE YOU DIG</p>	<p>PERMANENT BENCH MARK: SEE SHEET 1</p>	<p>REVISIONS</p> <table border="1"> <tr><th>REF.</th><th>DESCRIPTION</th><th>APPR.</th><th>DATE</th></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>	REF.	DESCRIPTION	APPR.	DATE																	<p>RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT</p> <p>DESIGNED BY: JJO DRAWN BY: AYS DATE DRAWN: Oct 20 CHECKED BY: JCC</p>	<p>RECOMMENDED FOR APPROVAL BY: _____ APPROVED BY: _____ DATE: _____</p>	<p>PERRIS VALLEY STORM DRAIN CHANNEL</p> <p>PVSD CHANNEL GRADING PLAN - CONTROL TABLE</p>	<p>PROJECT NO. XX DRAWING NO. XX SHEET NO. 23 OF 35</p>
					REF.	DESCRIPTION	APPR.	DATE																				
<p>JOSEPH C. CALDWELL, C67239 DATE: _____</p>																												



- CONSTRUCTION NOTES**
- (23) REMOVE EXISTING STORM DRAIN FACILITIES.
  - (26) REMOVE EXISTING RIP-RAP.



**PVSD CHANNEL**  
SCALE: 1" = 30'

CITY FILE NO. PX-XXXX

**ALBERT A. WEBB ASSOCIATES**  
ENGINEERING CONSULTANTS  
3788 McCRAY STREET  
RIVERSIDE, CA, 92506  
PH. (951) 686-1070  
FAX (951) 788-1256



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PERMANENT BENCH MARK:  
SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

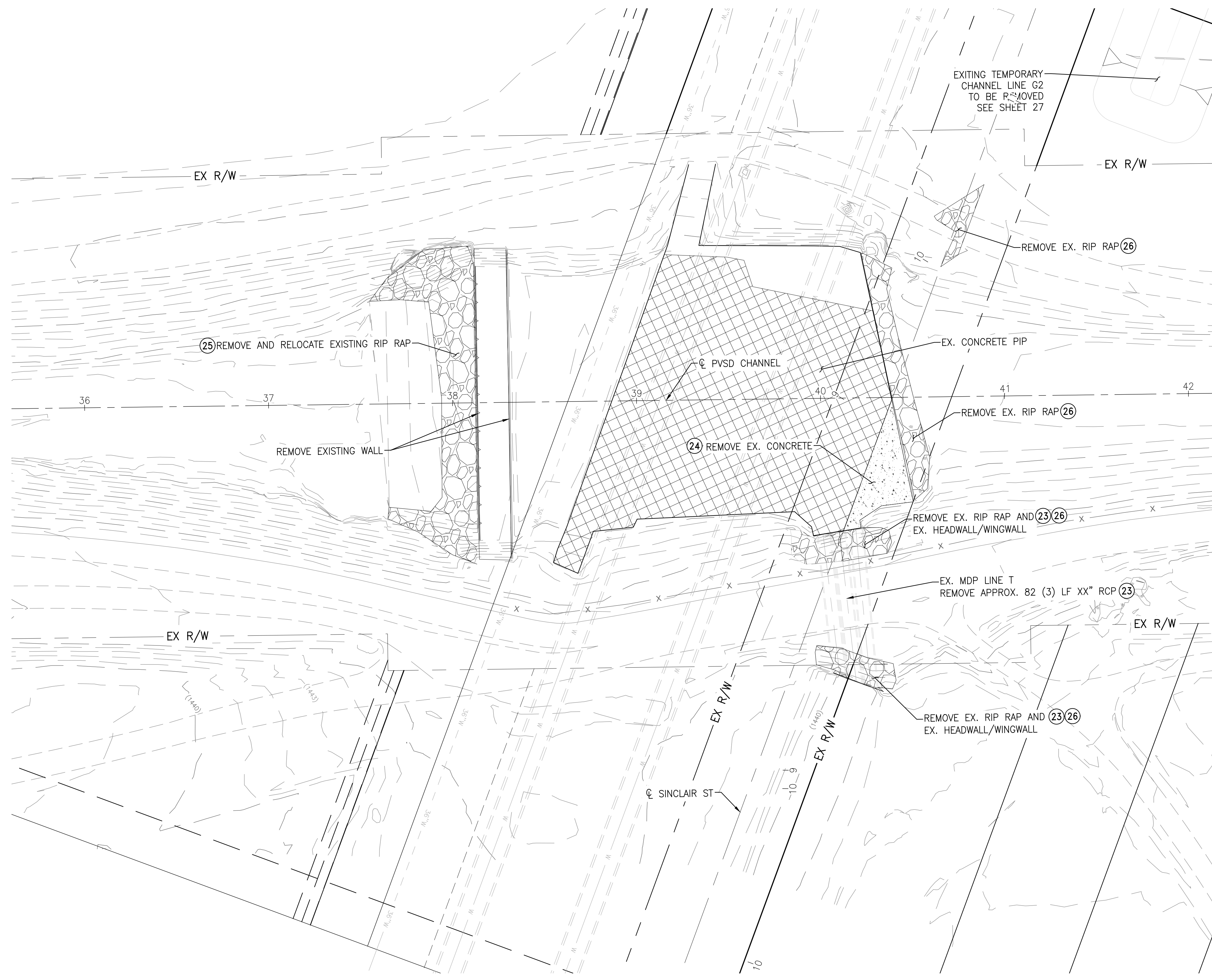
REVISIONS		

DESIGNED BY: JJQ		
DRAWN BY: AYS		
DATE DRAWN: Oct 20		
CHECKED BY: JCC	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DATE:	DATE:	DATE:

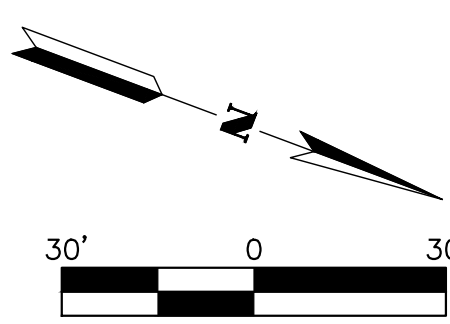
**PERRIS VALLEY STORM DRAIN CHANNEL**  
DEMOLITION PLAN

PROJECT NO.	XX
DRAWING NO.	XX
SHEET NO.	24 OF 35

H:\2020\20-0039\DRAWINGS\PLAN SHEETS\WMD PLANSET\20-0039 - PVSD - DEMO AND DETAIL SHEETS.DWG 10/14/2020 5:18:49 PM



- CONSTRUCTION NOTES**
- (23) REMOVE EXISTING STORM DRAIN FACILITIES.
  - (24) REMOVE EXISTING CONCRETE.
  - (25) REMOVE AND RELOCATE EXISTING ROCKS.
  - (26) REMOVE EXISTING RIP-RAP.



**PVSD CHANNEL**  
SCALE: 1" = 30'

CITY FILE NO. PX-XXXX

**ALBERT A. WEBB ASSOCIATES**  
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PERMANENT BENCH MARK:  
SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

REVISIONS		

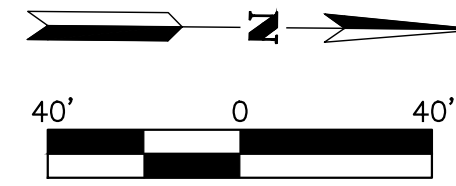
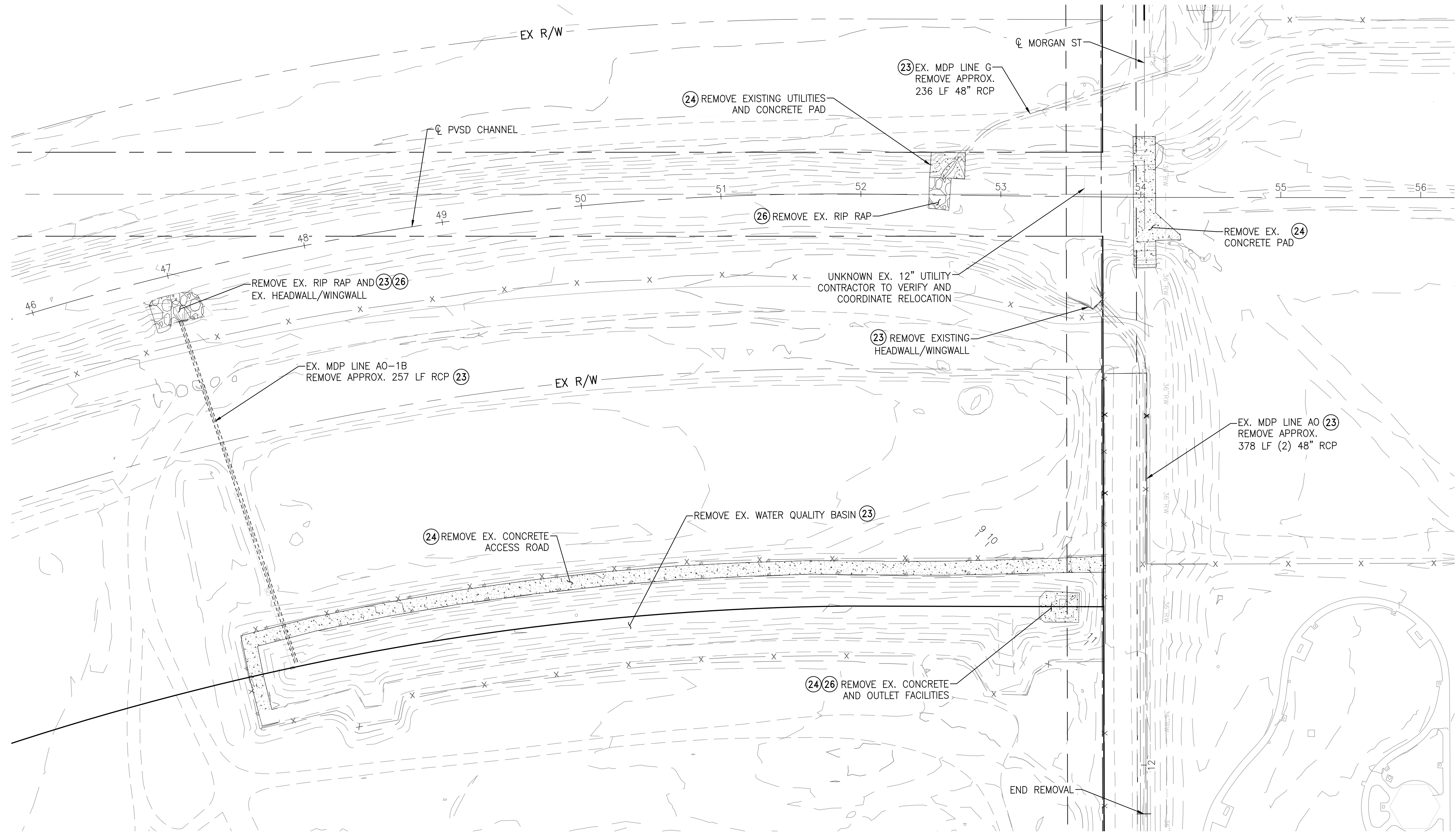
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
DESIGNED BY: JJQ	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DRAWN BY: AYS		
DATE DRAWN: Oct 20		
CHECKED BY: JCC	DATE:	DATE:

**PERRIS VALLEY STORM DRAIN CHANNEL**  
DEMOLITION PLAN

PROJECT NO.	XX
DRAWING NO.	XX
SHEET NO.	25 OF 35

**CONSTRUCTION NOTES**

- (23) REMOVE EXISTING STORM DRAIN FACILITIES.
- (24) REMOVE EXISTING CONCRETE.
- (26) REMOVE EXISTING RIP-RAP.



**PVSD CHANNEL**  
SCALE: 1" = 40'

CITY FILE NO. PX-XXXX

**ALBERT A. WEBB ASSOCIATES**  
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RIVERSIDE CA, 92506  
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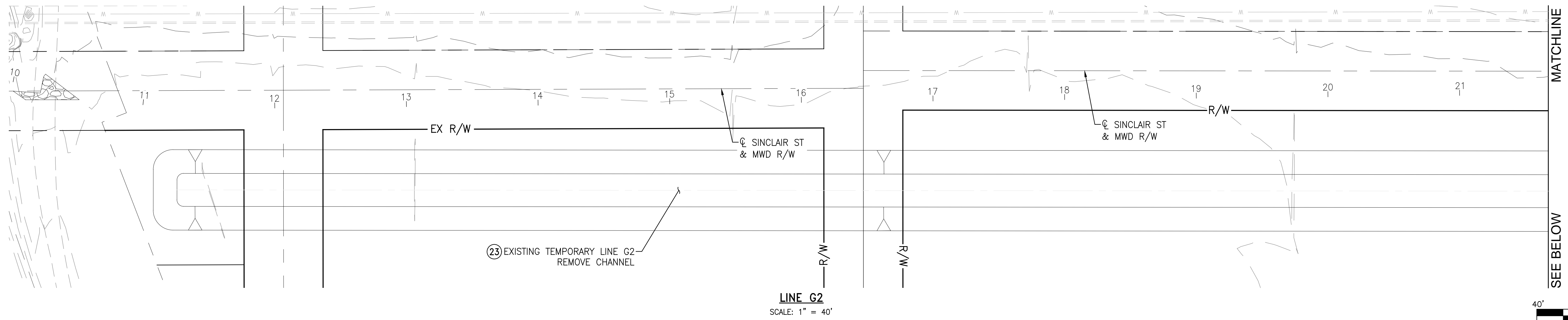
PERMANENT BENCH MARK:  
SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
DESIGNED BY: JJO	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
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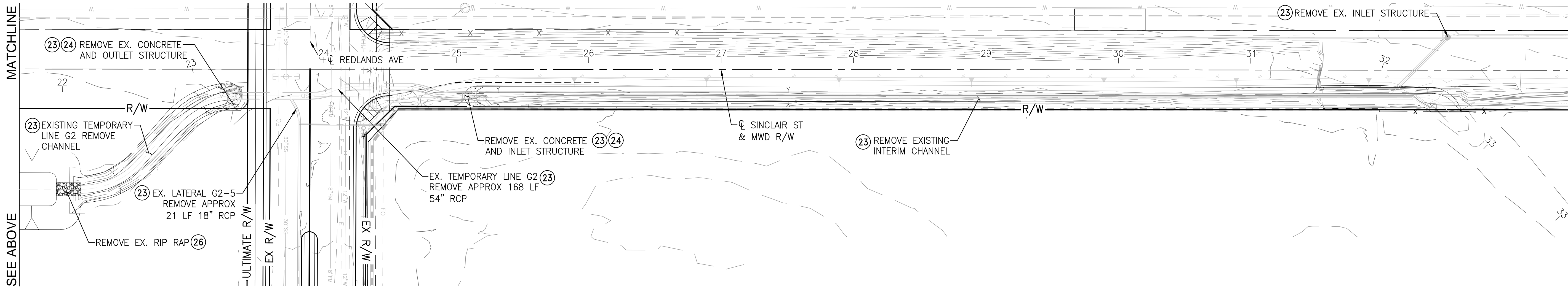
**PERRIS VALLEY STORM DRAIN CHANNEL**  
DEMOLITION PLAN

PROJECT NO.	XX
DRAWING NO.	XX
SHEET NO.	26 OF 35



MATCHLINE  
SEE BELOW

LINE G2  
SCALE: 1" = 40'



MATCHLINE  
SEE ABOVE

LINE G2  
SCALE: 1" = 40'



**CONSTRUCTION NOTES**

- (23) REMOVE EXISTING STORM DRAIN FACILITIES.
- (24) REMOVE EXISTING CONCRETE.
- (26) REMOVE EXISTING RIP-RAP.

CITY FILE NO. PX-XXXX

**ALBERT A. WEBB ASSOCIATES**  
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TWO WORKING DAYS BEFORE YOU DIG

PERMANENT BENCH MARK:  
SEE SHEET 1

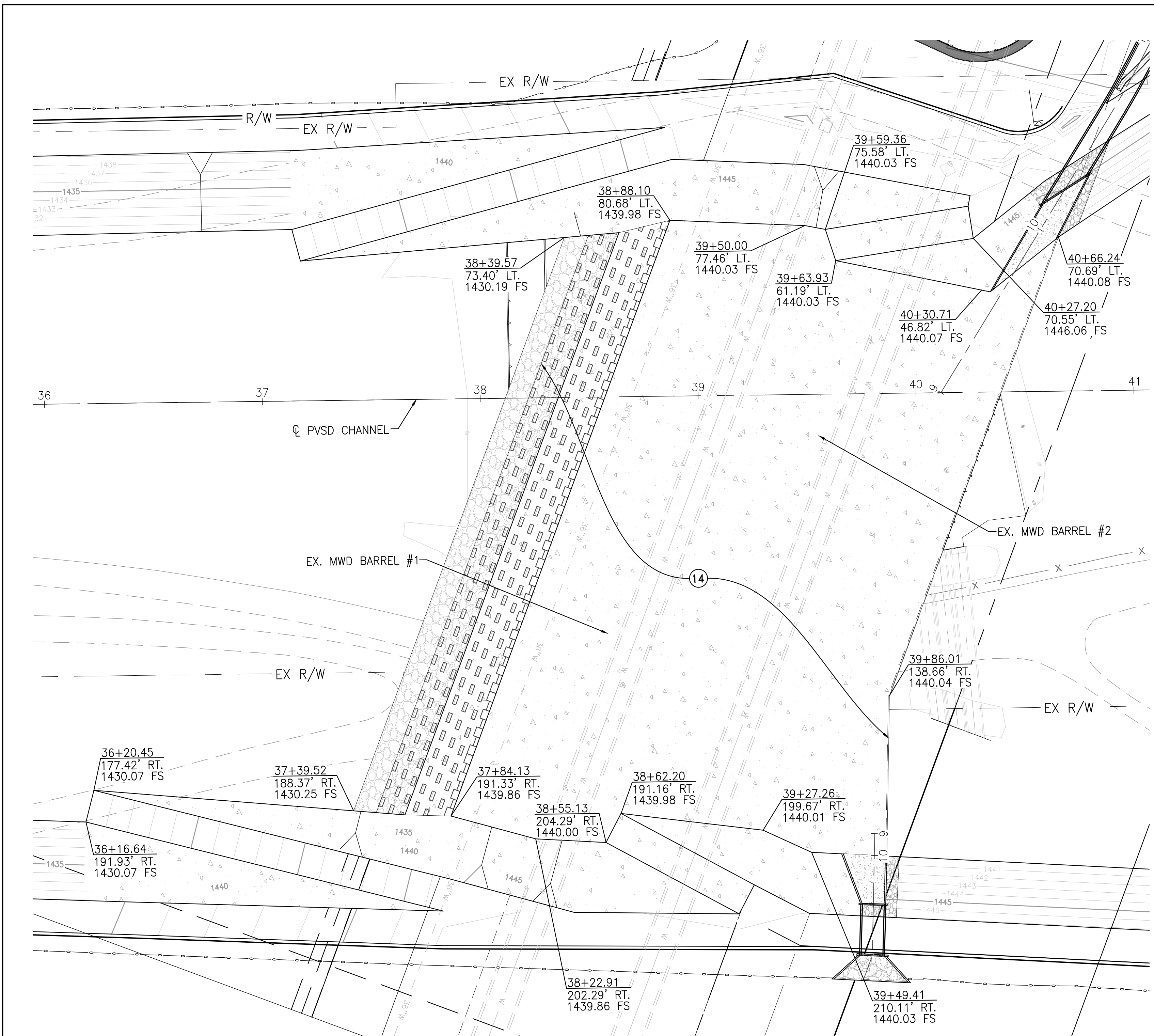
REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
DESIGNED BY: JJQ	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DRAWN BY: AYS		
DATE DRAWN: Oct 20		
CHECKED BY: JCC	DATE:	DATE:

**PERRIS VALLEY STORM DRAIN CHANNEL**  
DEMOLITION PLAN

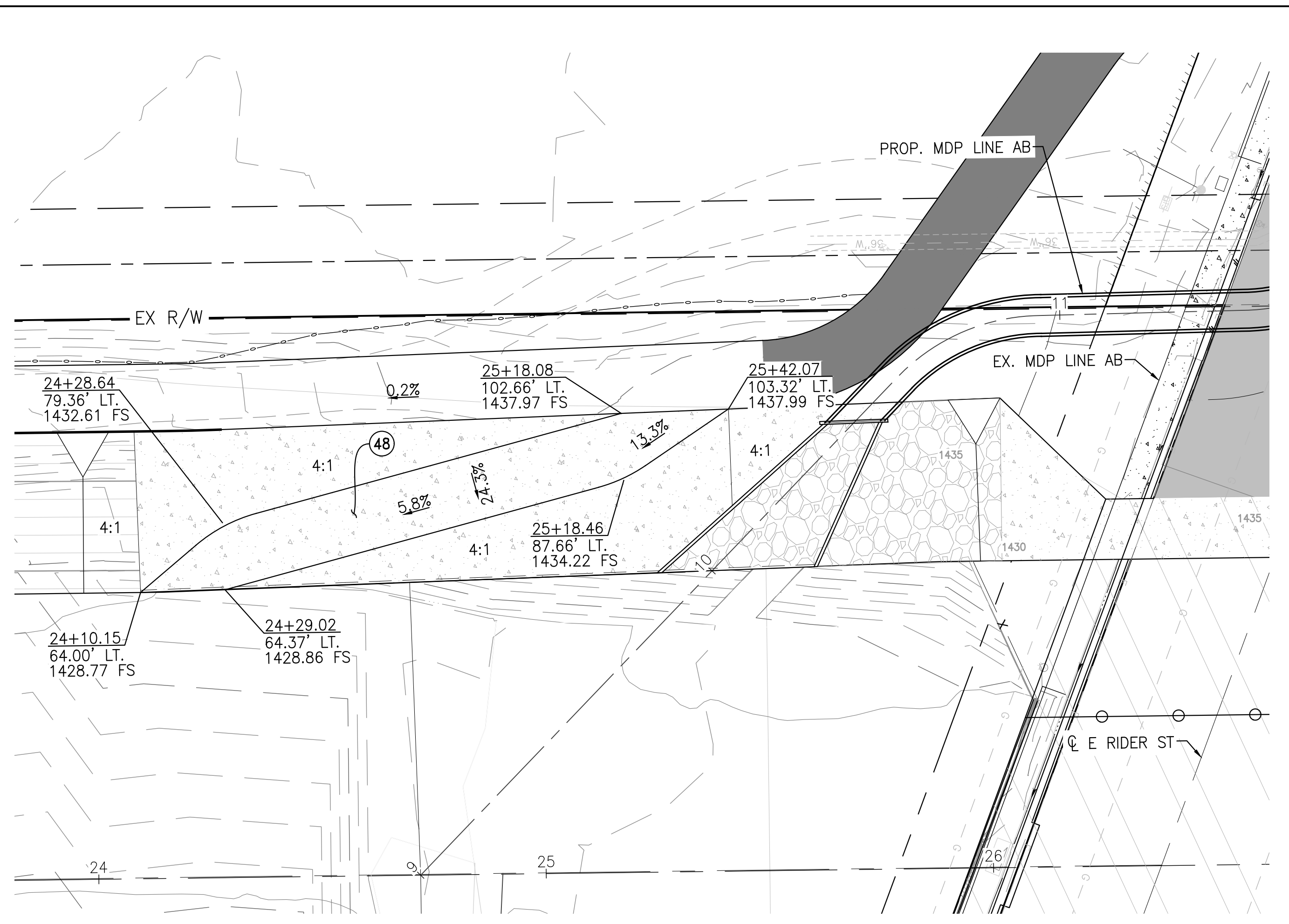
PROJECT NO. XX
DRAWING NO. XX
SHEET NO. 27 OF 35

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**PVSD CHANNEL CONCRETE PAD DETAIL**

SINCLAIR ST.  
SCALE: 1" = 30'



**ACCESS RAMP DETAIL**

STA. 24+10.15 TO 25+42.07  
SCALE: 1" = 20'

**CONSTRUCTION NOTES**

- (48) CONSTRUCT MAINTANCE RAMP PER RCFC&WCD STD. DWG. NO. CH334.

**ALBERTA A. WEBB ASSOCIATES**  
ENGINEERING CONSULTANTS  
3788 McCRAY STREET  
RIVERSIDE CA, 92506  
PH. (951) 686-1070  
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PERMANENT BENCH MARK:  
SEE SHEET 1

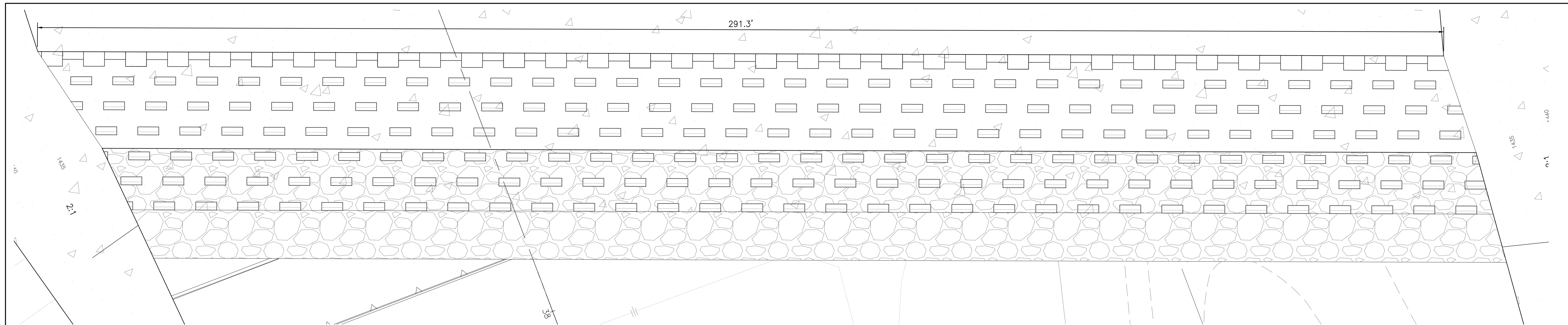
REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
DESIGNED BY: JJO	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DRAWN BY: AYS		
DATE DRAWN: Oct 20		
CHECKED BY: JCC	DATE:	DATE:

**PERRIS VALLEY STORM DRAIN CHANNEL**  
CONCRETE PAD DETAILS

PROJECT NO. XX
DRAWING NO. XX
SHEET NO. 28 OF 35

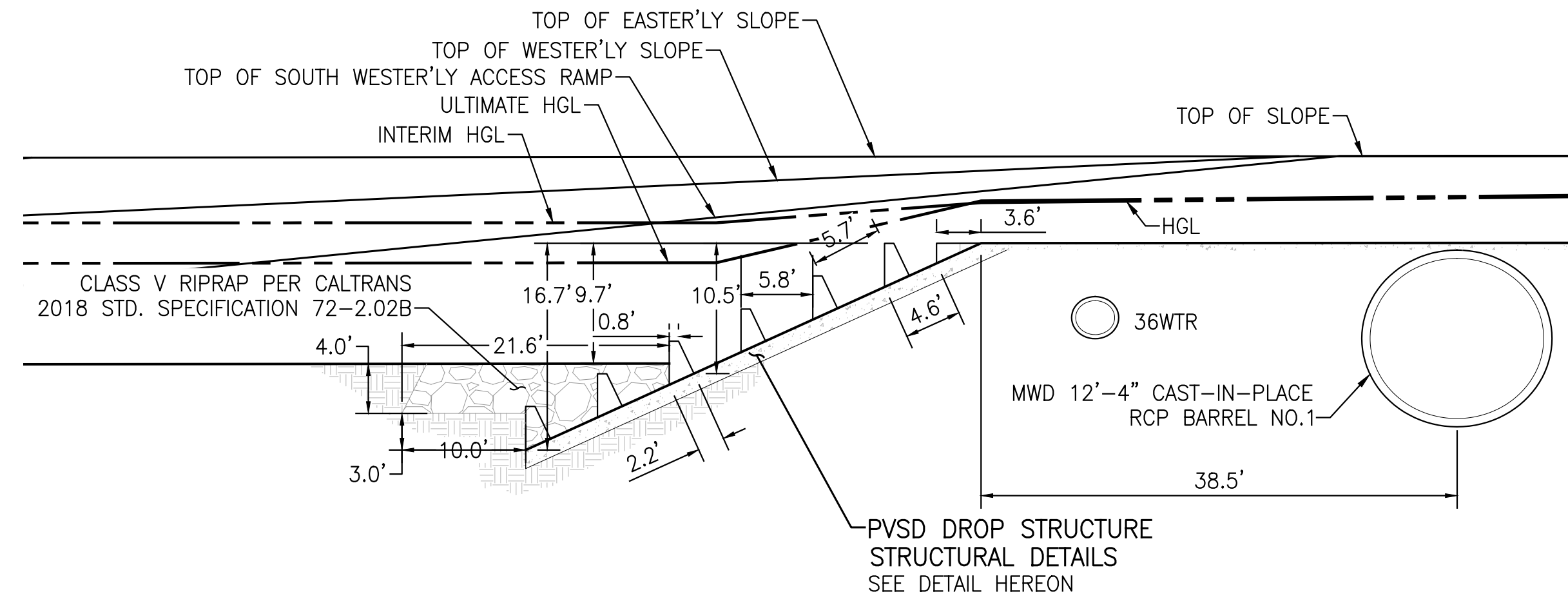
CITY FILE NO. PX-XXXX



**PVSD DROP STRUCTURE PLAN**

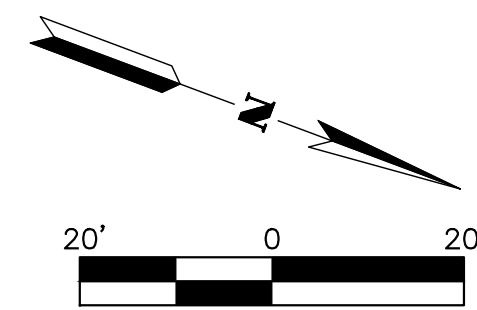
STA. 38+11.52 TO 38+57.25  
SCALE: 1"=10'

STRUCTURAL DETAILS TO BE INCLUDED WITH NEXT SUBMITTAL.



**PVSD CHANNEL DROP STRUCTURE SCHEMATIC DETAIL**

SINCLAIR ST.  
SCALE: 1"=10'



CITY FILE NO. PX-XXXX

**ALBERT A. WEBB ASSOCIATES**  
ENGINEERING CONSULTANTS  
3788 McCRAY STREET  
RIVERSIDE CA, 92506  
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FAX (951) 788-1256



JOSEPH C. CALDWELL, C67239 DATE:



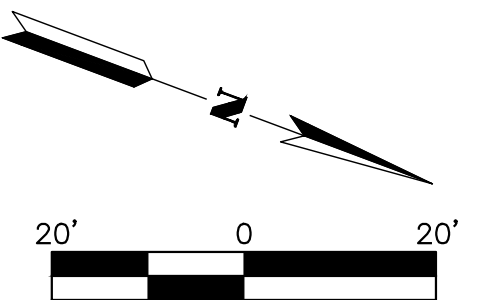
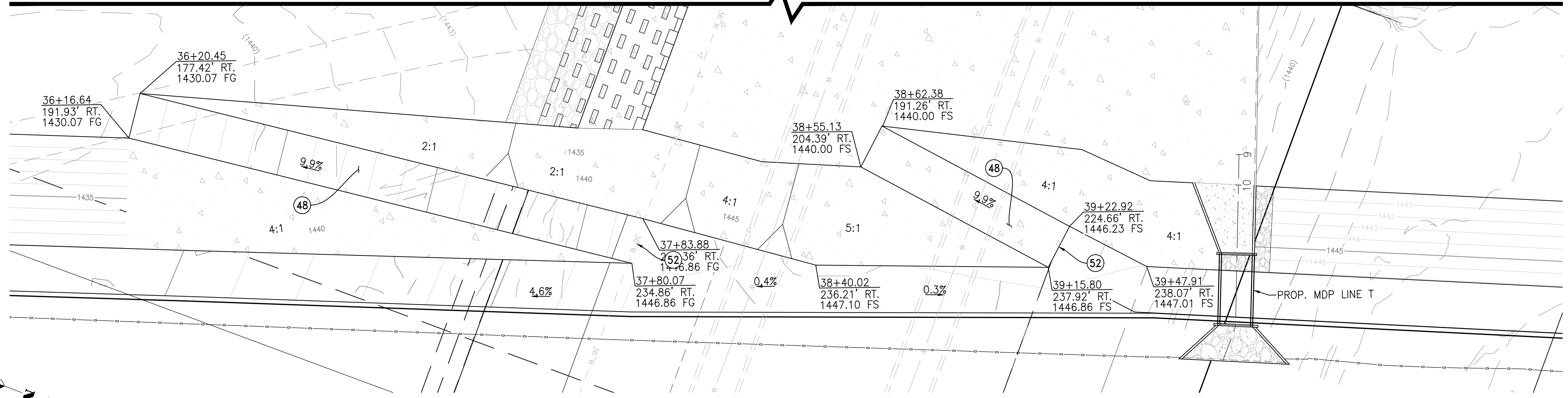
PERMANENT BENCH MARK:  
SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
DESIGNED BY: JJQ	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DRAWN BY: AYS		
DATE DRAWN: Oct 20		
CHECKED BY: JCC	DATE:	DATE:

**PERRIS VALLEY STORM DRAIN CHANNEL**  
DROP STRUCTURE DETAILS

PROJECT NO.	XX
DRAWING NO.	XX
SHEET NO.	29 OF 35



**ACCESS ROAD DETAIL**  
 STA. 36+16.64 TO 40+27.20  
 SCALE: 1" = 20'

**CONSTRUCTION NOTES**

- (48) CONSTRUCT MAINTANCE RAMP PER RCFC&WCD STD. DWG. NO. CH334.
- (52) INSTALL 14' WIDE DOUBLE DRIVE GATE PER RCFC&WCD STD. DWG. NO. M801.

CITY FILE NO. PX-XXXX

**ALBERT A. WEBB ASSOCIATES**  
 ENGINEERING CONSULTANTS  
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 RIVERSIDE CA, 92506  
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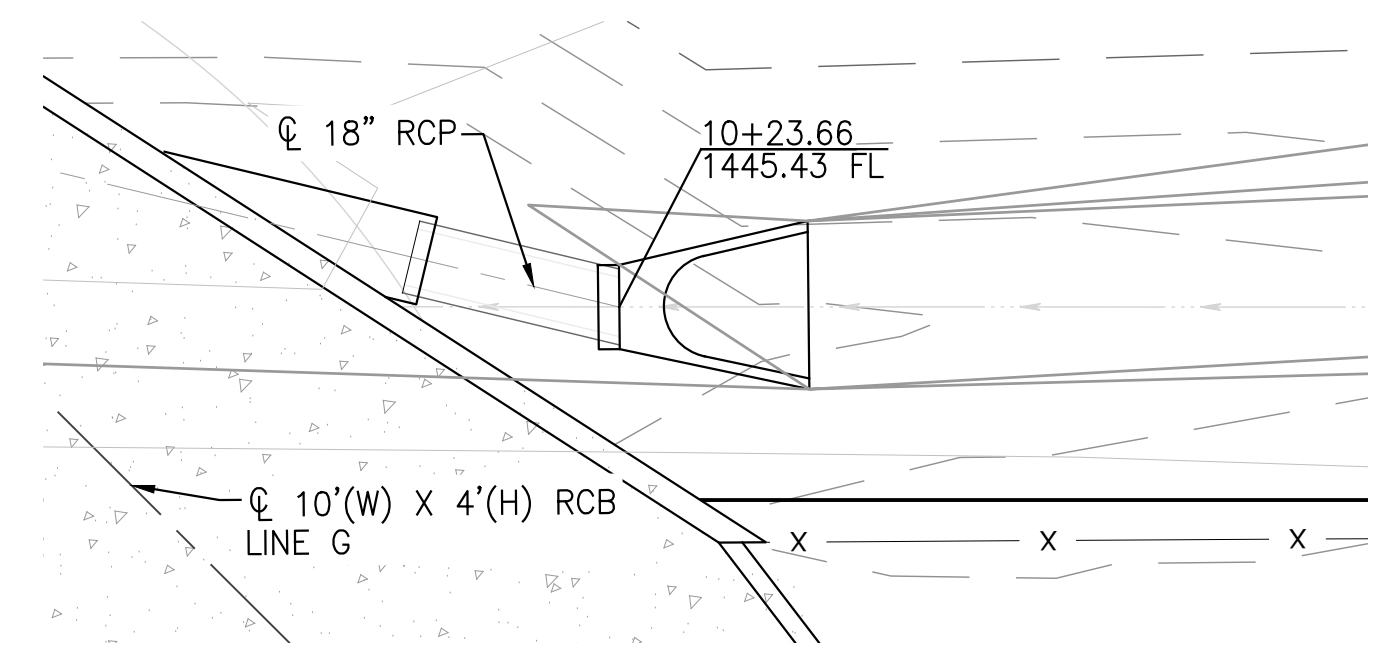
PERMANENT BENCH MARK:  
 SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
DESIGNED BY: JJO	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
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DATE DRAWN: Oct 20		
CHECKED BY: JCC	DATE:	DATE:

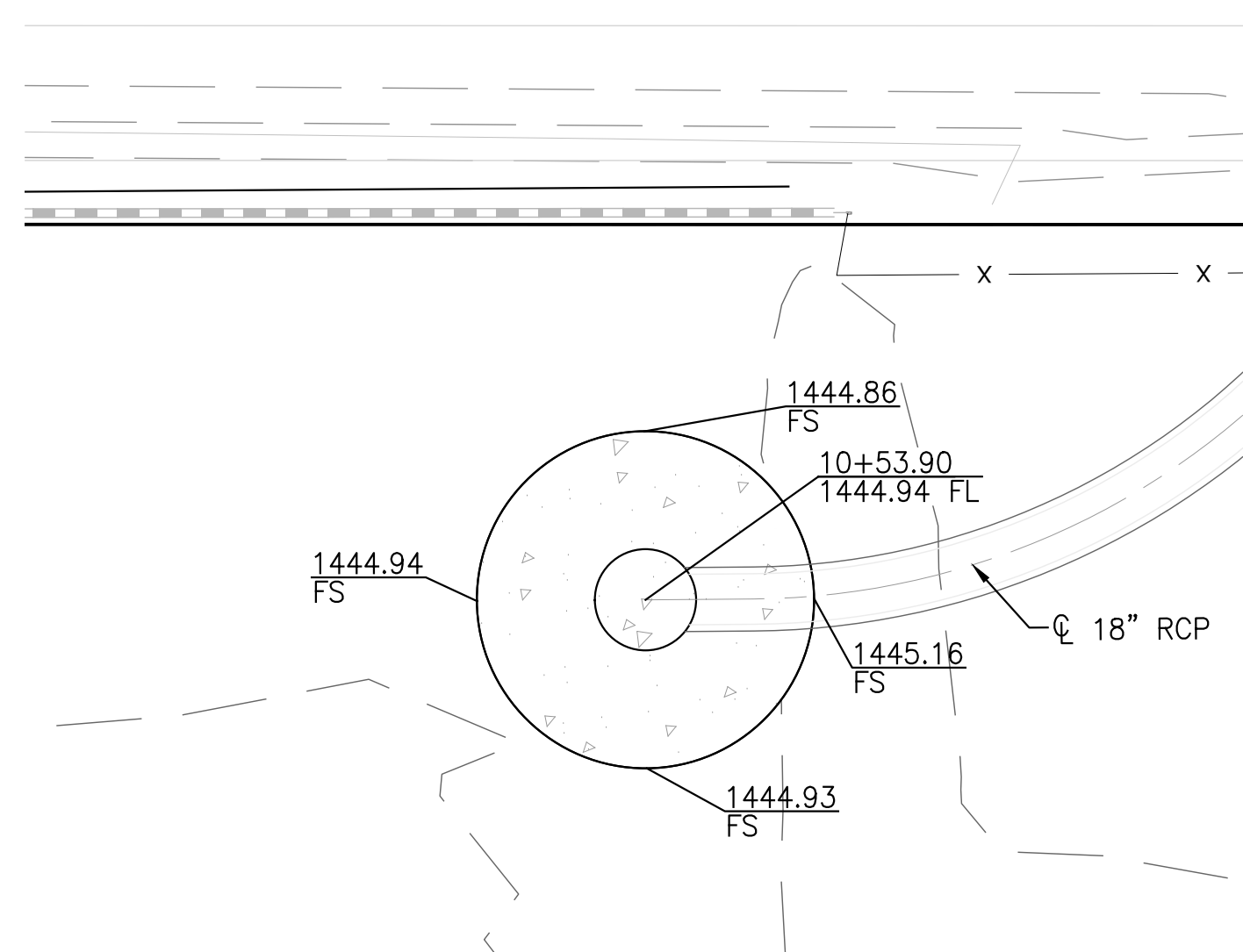
**PERRIS VALLEY STORM DRAIN CHANNEL**  
 ACCESS ROAD DETAILS

PROJECT NO.	XX
DRAWING NO.	XX
SHEET NO.	30 OF 35



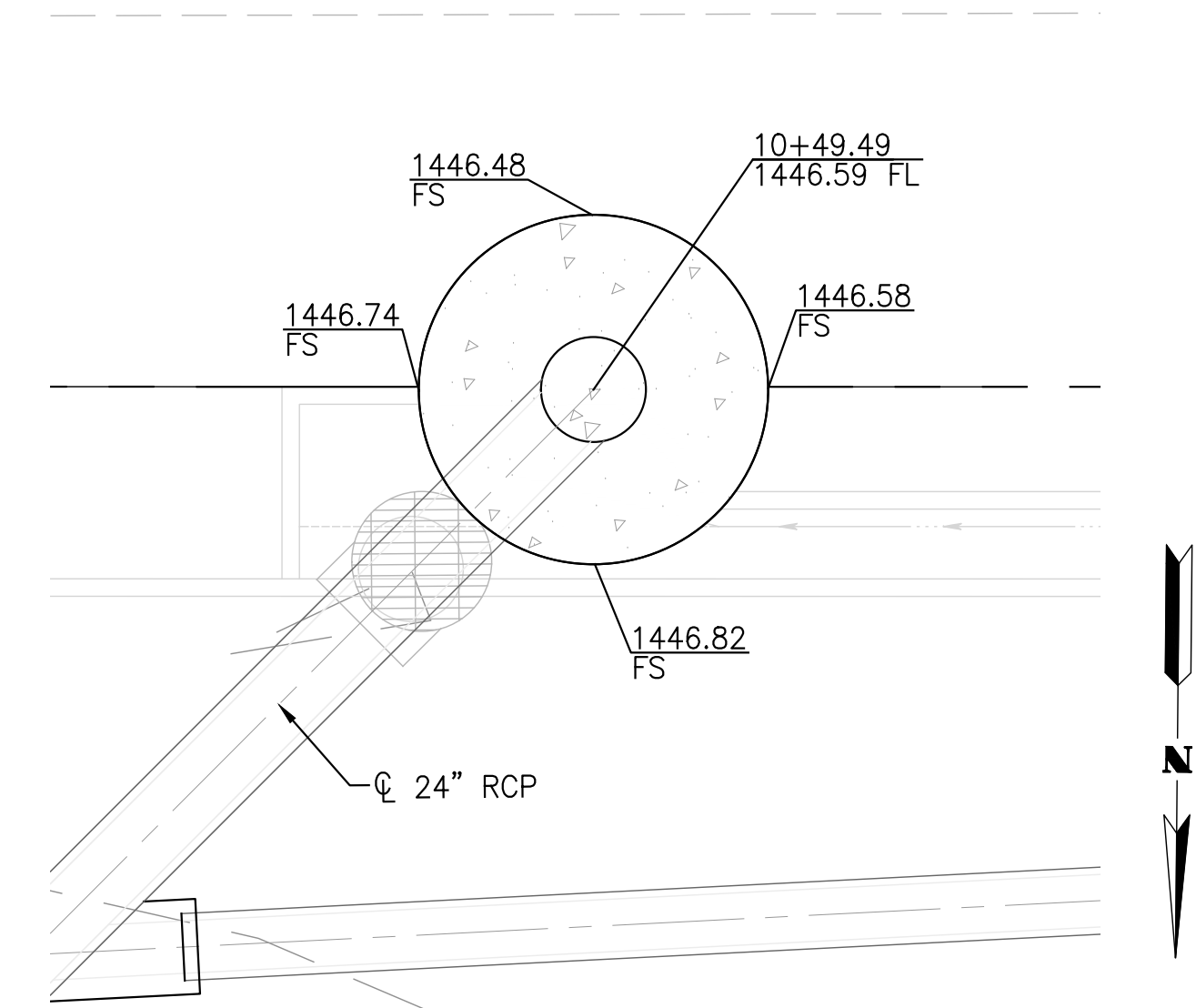
LATERAL G2-1 INLET DETAIL

SCALE: 1"=5'



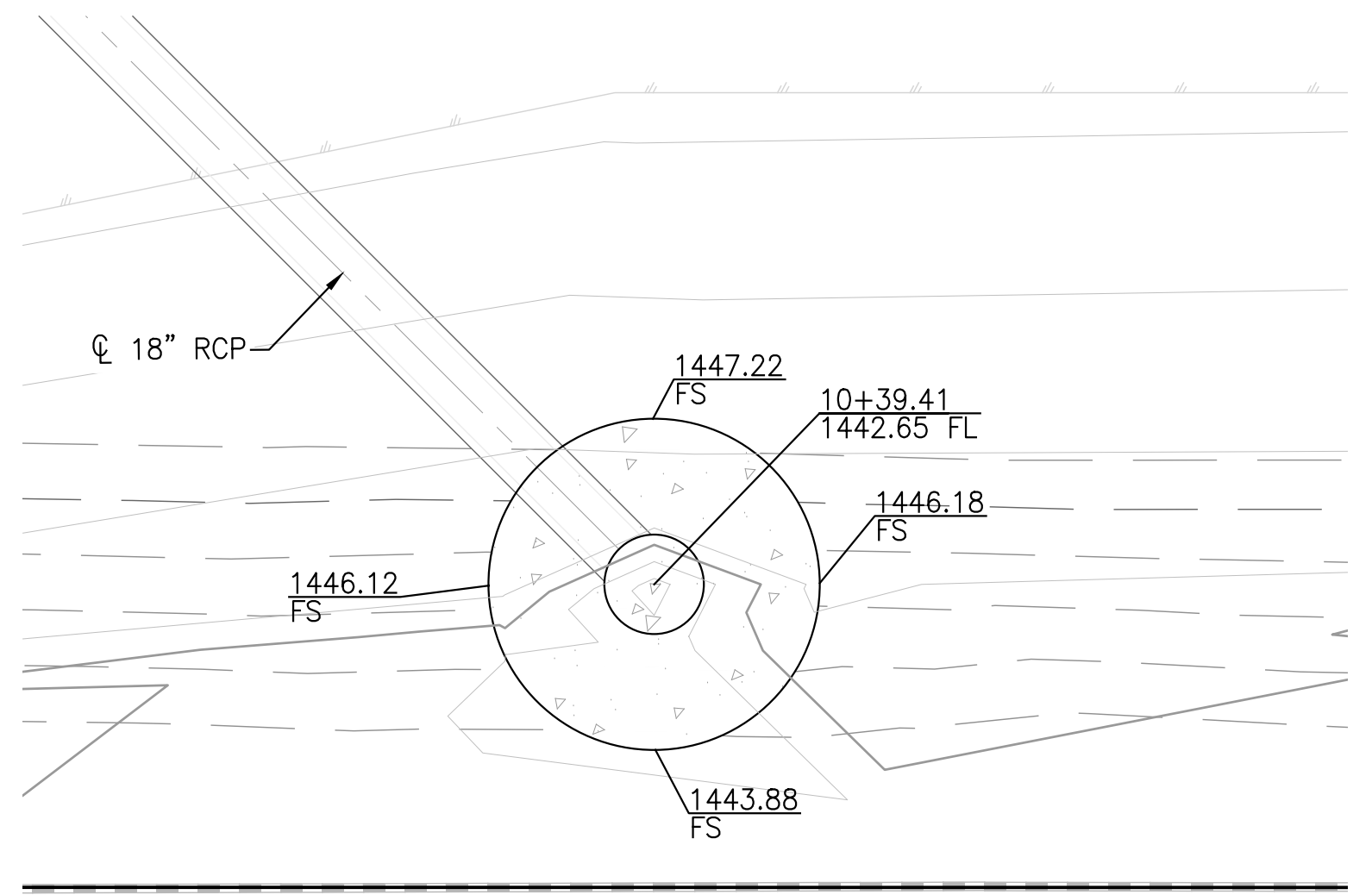
LATERAL G2-2 INLET DETAIL

SCALE: 1"=5'



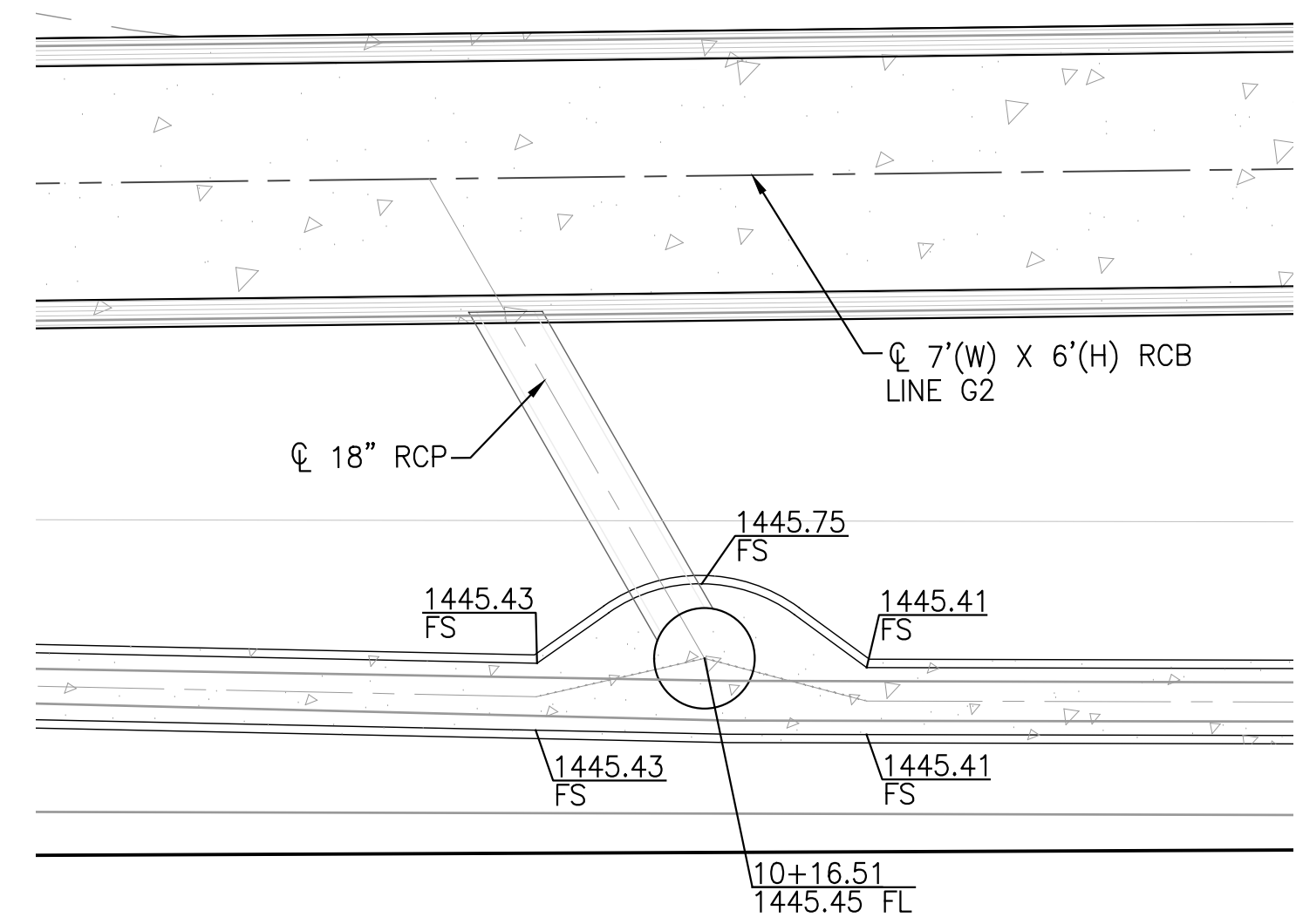
LATERAL G2-3 INLET DETAIL

SCALE: 1"=5'



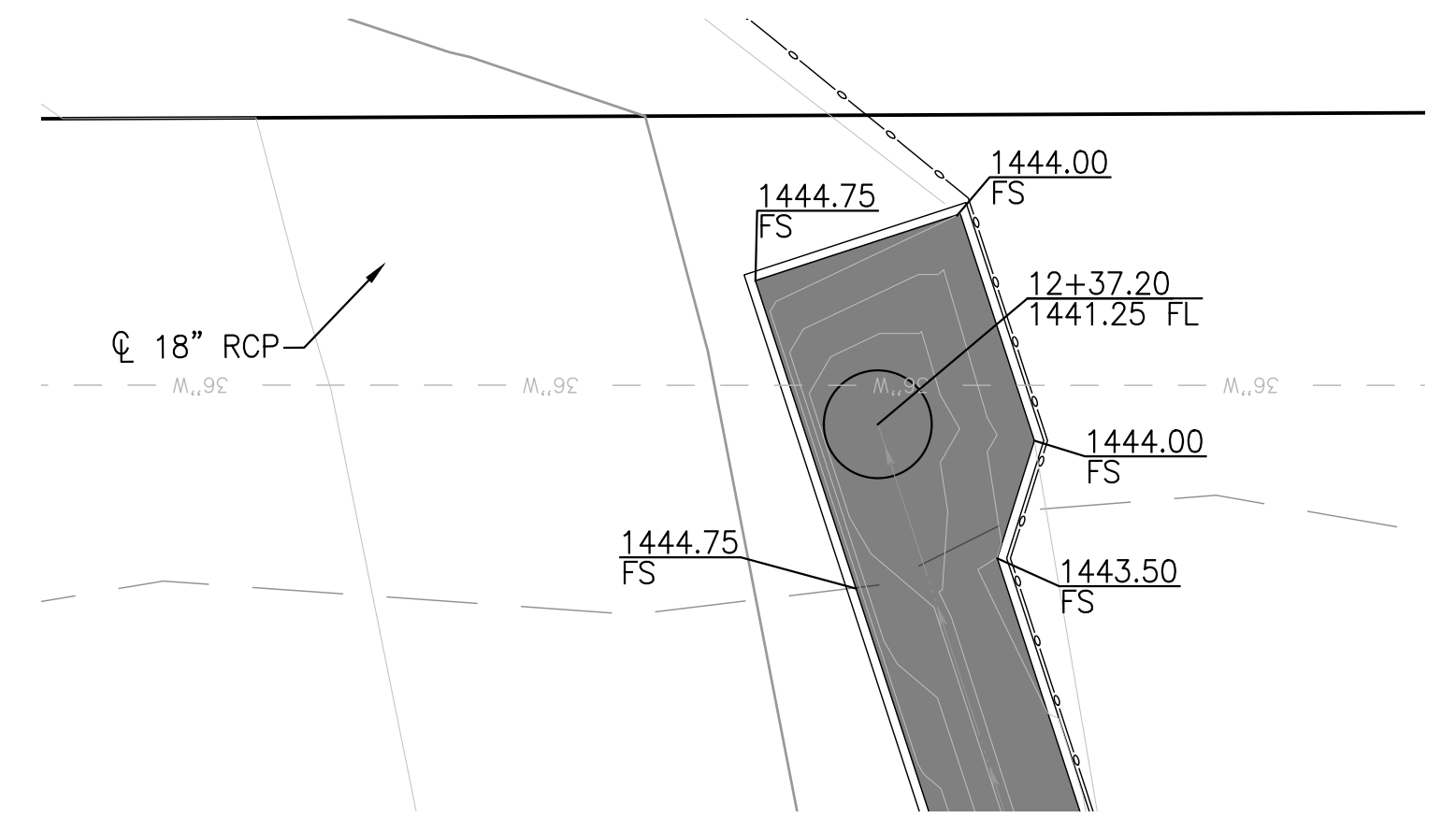
LATERAL G2-4 INLET DETAIL

SCALE: 1"=5'



LATERAL G2-8 INLET DETAIL

SCALE: 1"=5'



LATERAL PVSD-1 INLET DETAIL

SCALE: 1"=5'

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 ENGINEERING CONSULTANTS  
 3788 McCRAY STREET  
 RIVERSIDE, CA, 92506  
 PH. (951) 686-1070  
 FAX (951) 788-1256

REGISTERED PROFESSIONAL ENGINEER  
 JOSEPH C. CALDWELL  
 NO. C67239  
 CIVIL  
 STATE OF CALIFORNIA

JOSEPH C. CALDWELL, C67239 DATE:

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 of buried  
 utility lines.  
 Don't disrupt  
 vital services.  
 TWO WORKING DAYS BEFORE YOU DIG

PERMANENT BENCH MARK:  
 SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

DESIGNED BY: JJQ  
 DRAWN BY: AYS  
 DATE DRAWN: Oct 20  
 CHECKED BY: JCC

RECOMMENDED FOR APPROVAL BY:  
 DATE: \_\_\_\_\_

APPROVED BY:  
 DATE: \_\_\_\_\_

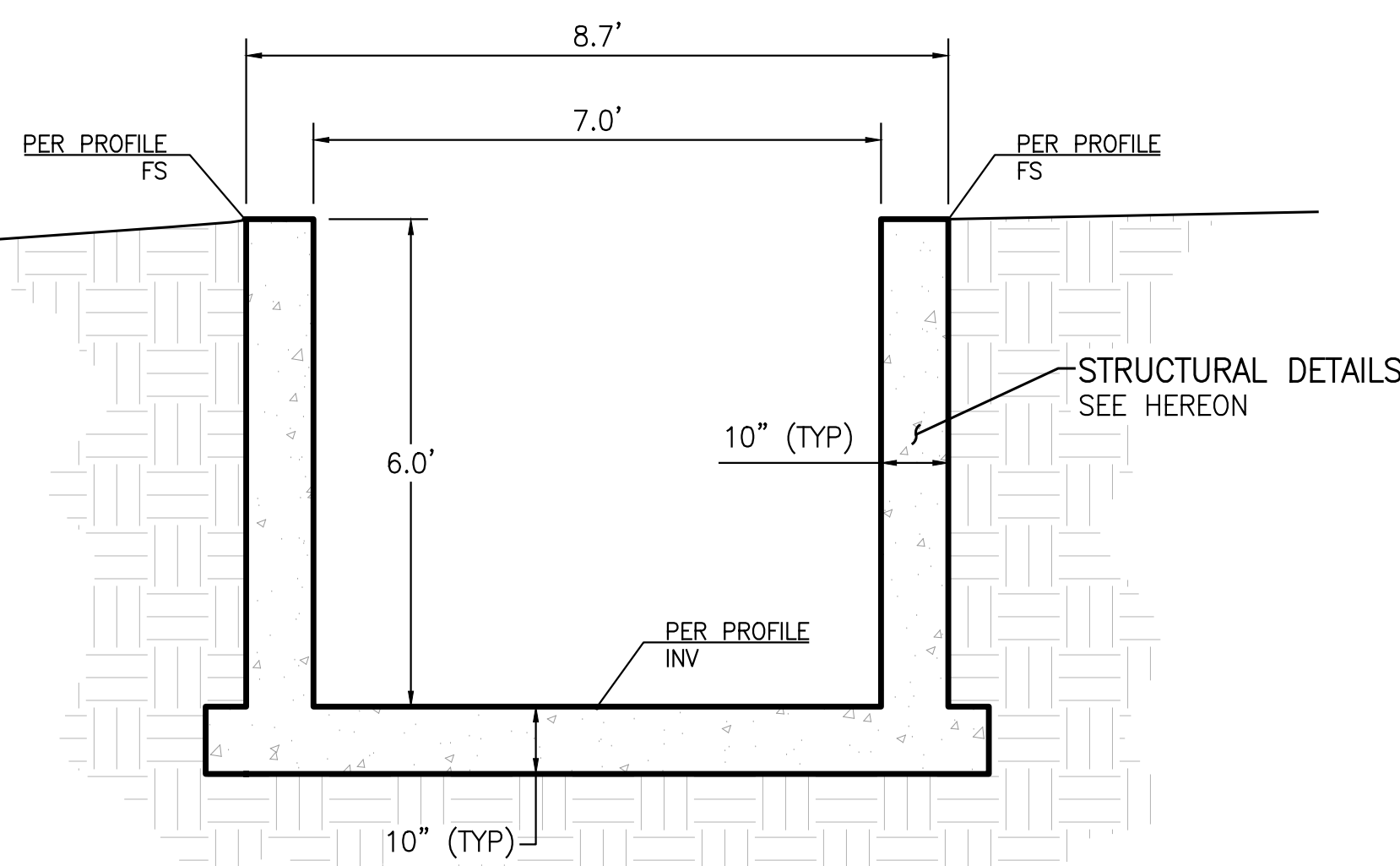
PERRIS VALLEY STORM DRAIN CHANNEL

DROP INLET DETAILS

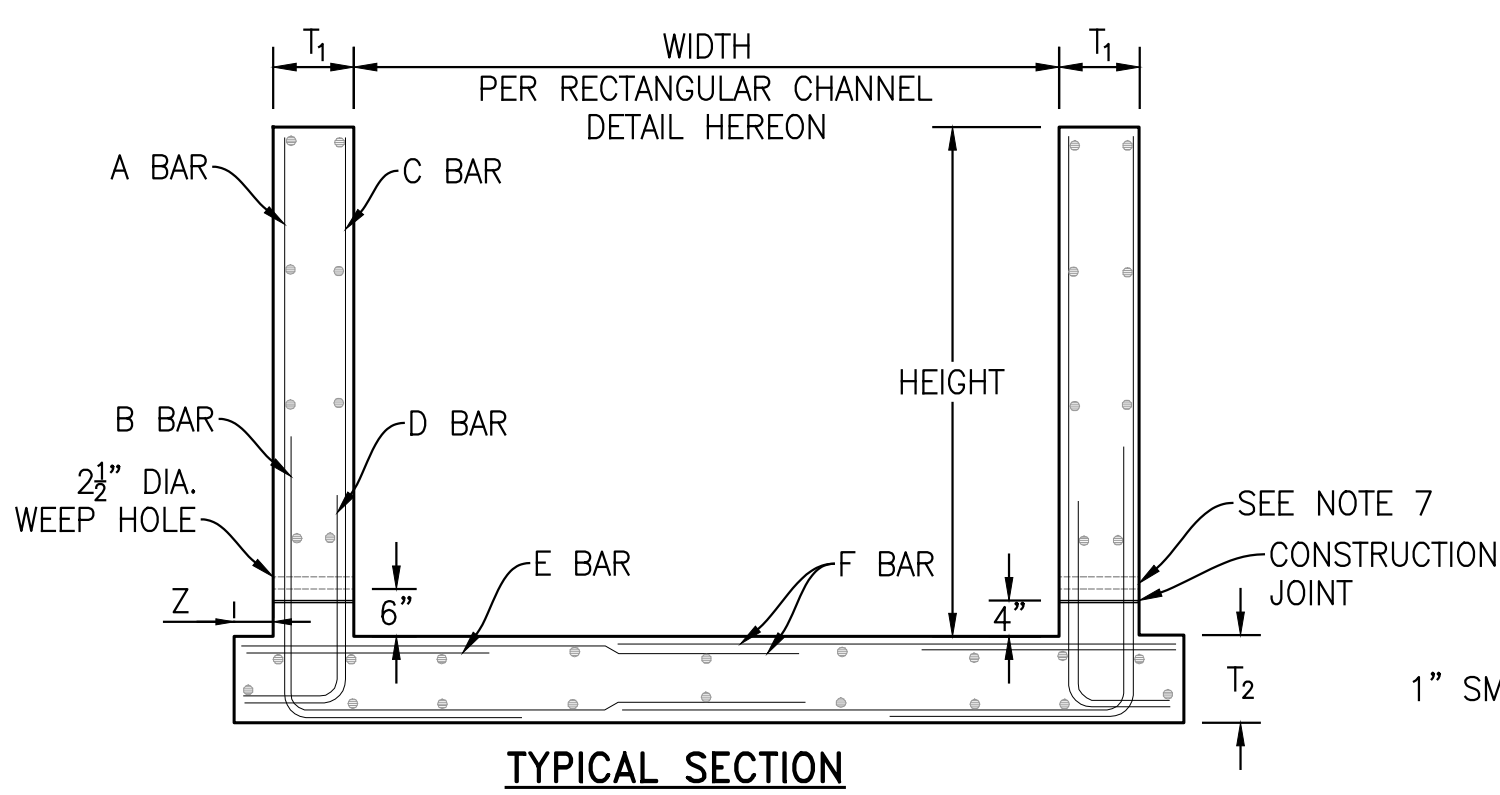
CITY FILE NO. PX-XXXX

PROJECT NO. XX  
 DRAWING NO. XX  
 SHEET NO. 31 OF 35

H:\2020\20-0039\DRAWINGS\PLAN SHEETS\WMD PLANSET\20-0039 - PVSD - DEMO AND DETAIL SHEETS.DWG 10/14/2020 5:18:49 PM

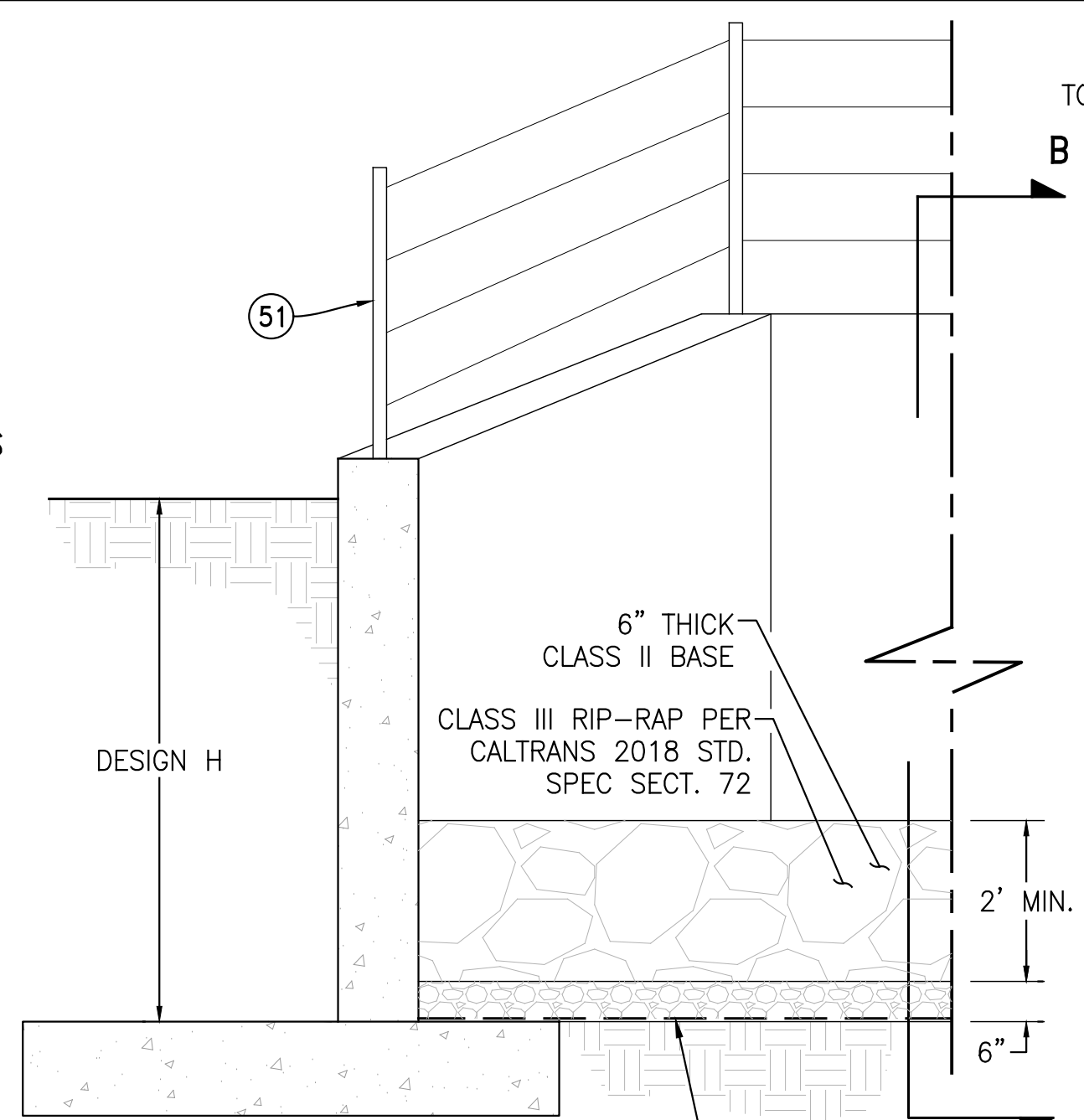


**CONCRETE RECTANGULAR CHANNEL**  
SCALE: 1"=2'

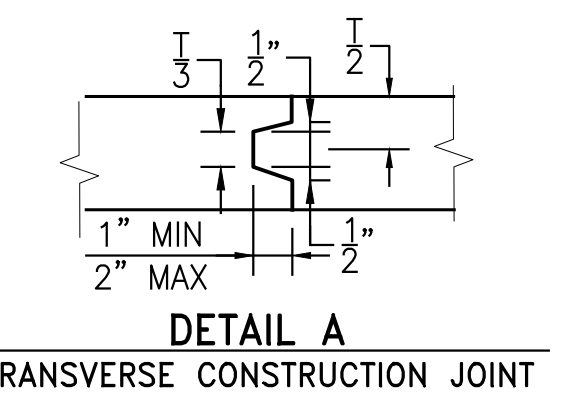


**TYPICAL SECTION**

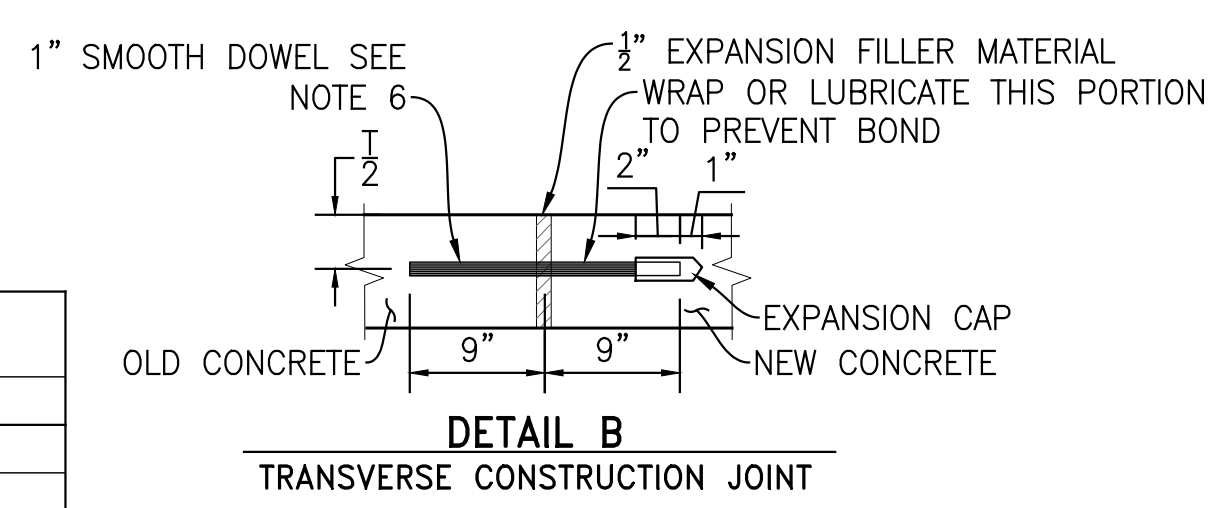
DATA:	DETAIL		SCHEDULE	
	A	B	C	D
WIDTH				
HEIGHT				
WALL T <sub>1</sub>				
BOTTOM SLAB T <sub>2</sub>				
HEEL Z				
A BARS				
HORIZ, LENGTH				
VERT, LENGTH				
B BARS				
HORIZ, LENGTH				
VERT, LENGTH				
C BARS				
HORIZ, LENGTH				
VERT, LENGTH				
D BARS				
HORIZ, LENGTH				
VERT, LENGTH				
E BARS				
HORIZ, LENGTH				
F BARS				
HORIZ, LENGTH				
CONCRETE				
REINFORCING				



**OUTLET SECTION A-A**  
N.T.S.



**DETAIL A**  
TRANSVERSE CONSTRUCTION JOINT



**DETAIL B**  
TRANSVERSE CONSTRUCTION JOINT

**LOCATION SCHEDULE:**

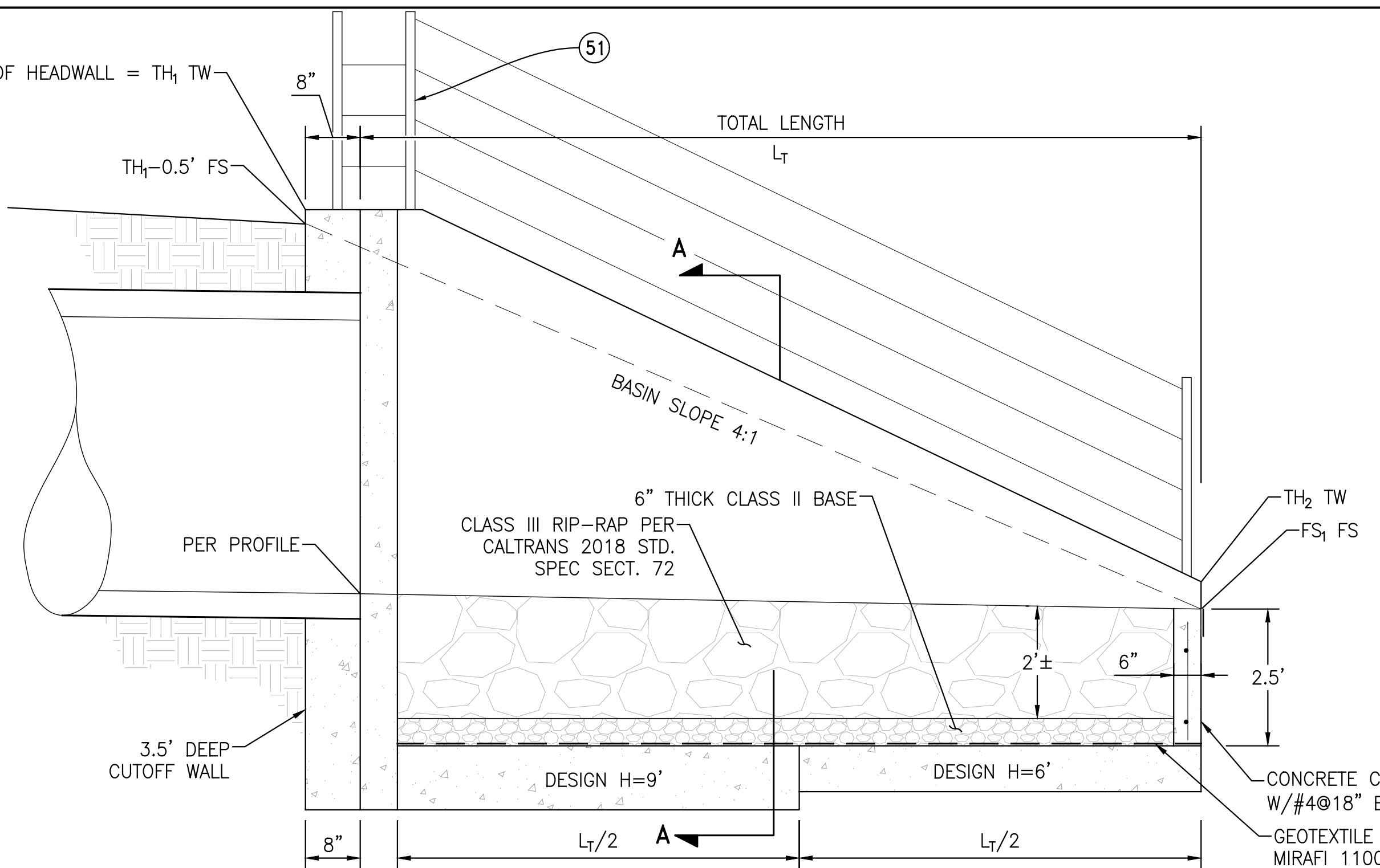
STATIONS		CHANNEL
FROM	TO	

**SPLICES:**

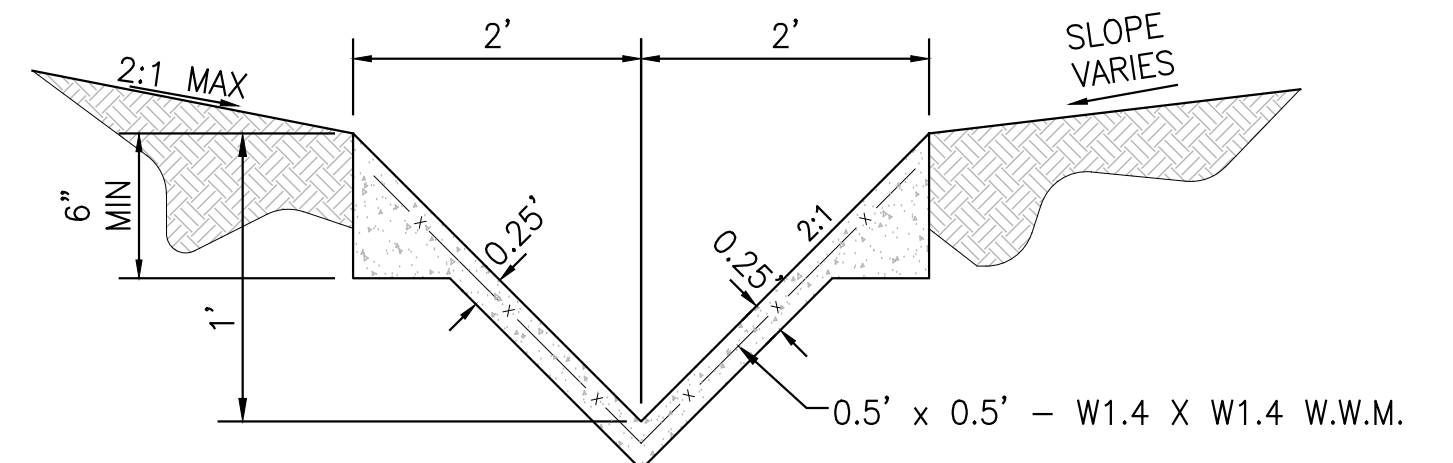
BAR	LENGTH	SEC	REMARKS

OUTLET SECTION DATA:	PROPOSED MDP CHANNEL CONNECTION					
	G	AO	G2	T	AB	S
L <sub>T</sub> [FT]						
TH <sub>1</sub> [ELEVATION]						
TH <sub>2</sub> [ELEVATION]						
FS <sub>1</sub> [ELEVATION]						

- RECTANGULAR CHANNEL NOTES:**
- STRUCTURAL CONCRETE SHALL BE CLASS "A".
  - ALL LONGITUDINAL BARS SHALL BE #4 O 18 INCHES UNLESS OTHERWISE NOTED. PLACE ALL BARS IN BOTTOM SLAB SYMMETRICALLY ABOUT CENTERLINE. PLACE BARS IN WALLS AND STARTING AT TOP WITH 2 INCHES OF CLEAR COVER.
  - CLEAR COVER FOR STEEL SHALL BE 2 INCHES FOR WALLS AND 3 INCHES EACH FACE FOR BOTTOM SLAB.
  - STEEL IS DIMENSIONED TO BACK OF BEND.
  - FOR CONSTRUCTION ON CURVES, STRAIGHT TRANSVERSE BARS SHALL BE ALIGNED RADIALLY WITH SPACING MEASURED AT FACE OF WALL FOR L-BARS IN WALLS. SPACING SHALL BE MEASURED BETWEEN THE VERTICAL LEGS OF BARS.
  - ALL TRANSVERSE CONSTRUCTION JOINTS SHALL BE IN A VERTICAL PLANE NORMAL TO THE CENTERLINE AND THE SPACING THEREOF SHALL NOT EXCEED 50 FEET OR BE LESS THAN 10 FEET. CONTINUOUS KEYWAYS SHALL BE CONSTRUCTED AS SHOWN IN DETAIL A. A COMPLETE CURTAIN OF TRANSVERSE STEEL SHALL BE PLACED 3 INCHES FROM EACH FACE OF THE JOINTS AND LONGITUDINAL STEEL WILL NOT BE CONTINUOUS THROUGH THE JOINTS. IN ADDITION, EXPANSION JOINTS SHALL BE CONSTRUCTED BETWEEN REINFORCED CONCRETE CHANNEL AND REINFORCED CONCRETE BOX SECTION AS SHOWN IN DETAIL B. DOWELS SHALL BE PLACED 12 INCHES SPACING CENTERED IN THE MIDDLE THIRD OF THE BOTTOM SLAB AND THE TOP THIRD OF SIDE WALLS. A MINIMUM OF 3 DOWELS PER SLAB AND WALLS SHALL BE PLACED.
  - WEEPHOLES SHALL BE FORMED AS SHOWN IN BOTH WALLS AT A SPACING OF 10 FEET WITH ONE CUBIC FOOT OF FILTER MATERIALS WRAPPED IN FILTER FABRIC PLACED AT EACH HOLE.
  - ALL QUANTITIES SHOWN ARE APPROXIMATE.
  - ALL SPLICES ARE SUBJECT TO APPROVAL BY THE ENGINEER.

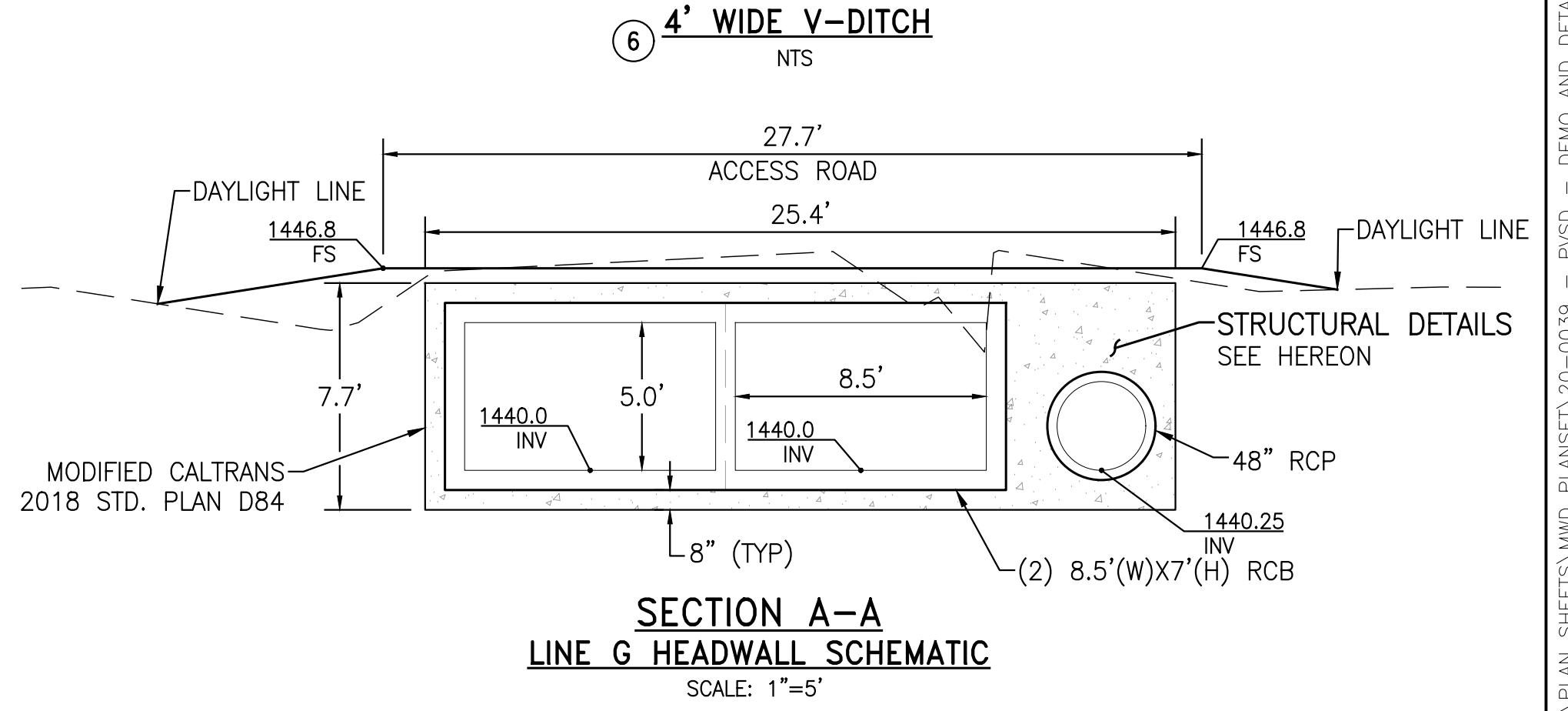


**OUTLET SECTION B-B**  
N.T.S.



**V-DITCH NOTES:**

- CONCRETE SHALL BE 560-C-3250. CONCRETE MAY BE PNEUMATICALLY PLACED AND SHALL CONFORM TO SECTION 2621 OF THE UNIFORM BUILDING CODE. CONCRETE COLOR SHALL BE MISSION OR APPROVED EQUAL.
- REINFORCING SHALL BE 0.5' X 0.5' - W1.4 X W1.4 WELDED WIRE MESH (W.W.M.) OR APPROVED EQUAL. REINFORCEMENT SHALL HAVE A MINIMUM OF 1-INCH CLEAR COVER AND SHALL BE PROPERLY FIXED AND SUPPORTED DURING PLACEMENT OF CONCRETE.
- GROUND SHALL BE PRE-WETTED TO THE SATISFACTION OF THE CITY ENGINEER PRIOR TO PLACEMENT OF CONCRETE. CURING COMPOUND/MOISTURE LOSS RETARDANT SHALL BE USED WHEN REQUIRED BY THE CITY ENGINEER.
- ANCHORS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DOWNDRAIN DETAIL WHEN SLOPE EQUALS OR EXCEEDS 2:1.



**SECTION A-A**  
**LINE G HEADWALL SCHEMATIC**  
SCALE: 1"=5'

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PERMANENT BENCH MARK:  
SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

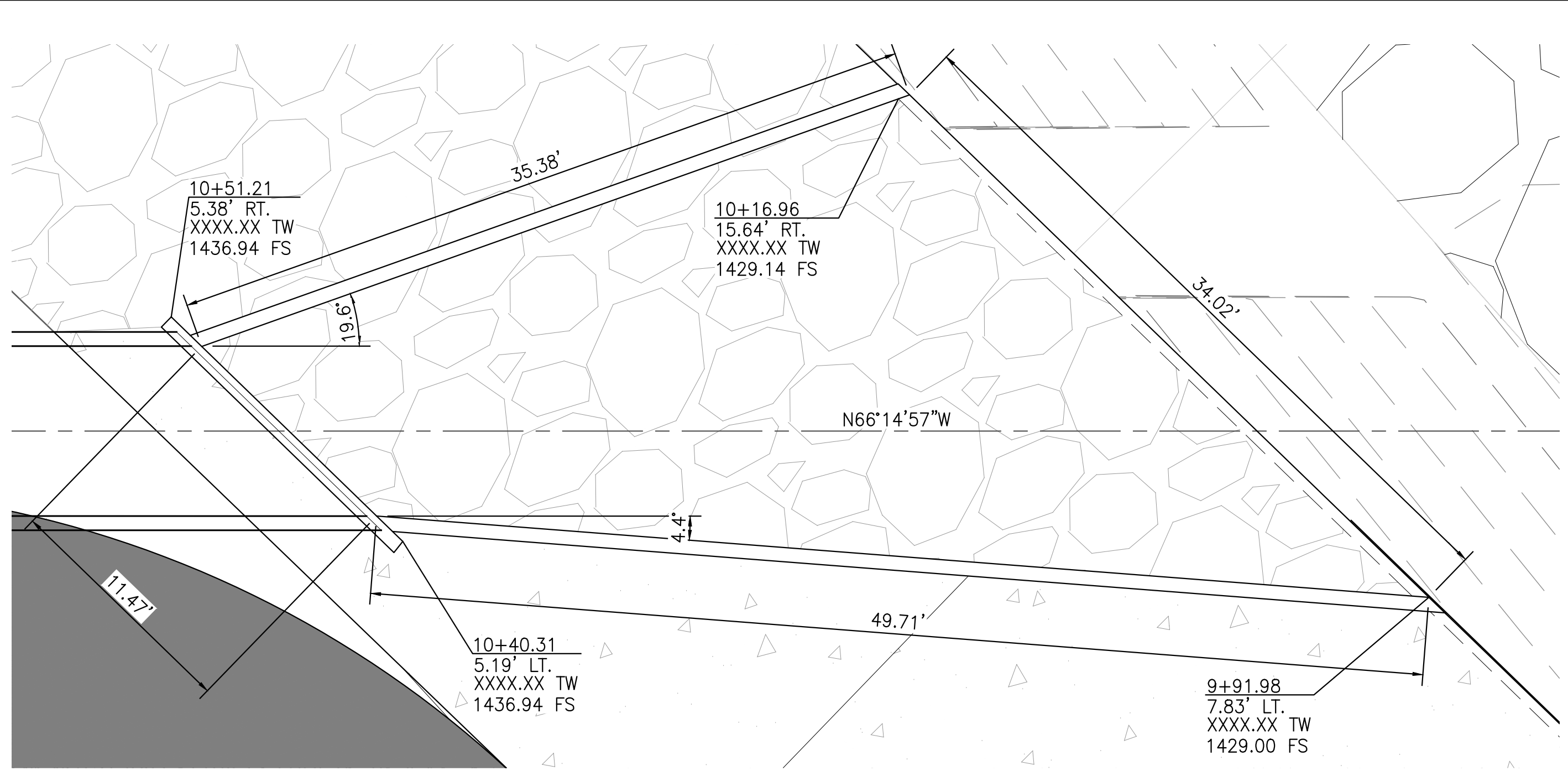
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
DESIGNED BY: JJO	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DRAWN BY: AYS		
DATE DRAWN: Oct 20		
CHECKED BY: JCC	DATE:	DATE:

**PERRIS VALLEY STORM DRAIN CHANNEL**  
DETAILS

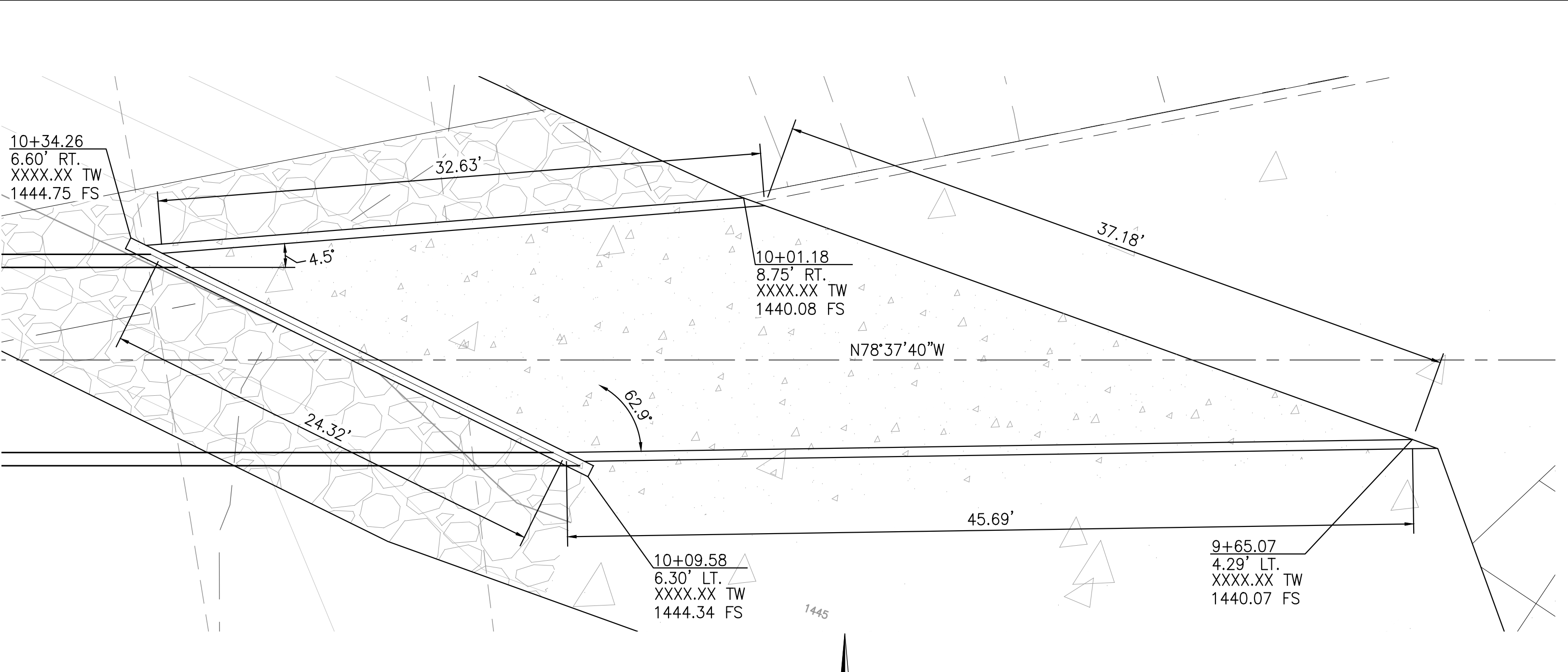
PROJECT NO. XX
DRAWING NO. XX
SHEET NO. 32 OF 35

CITY FILE NO. PX-XXXX

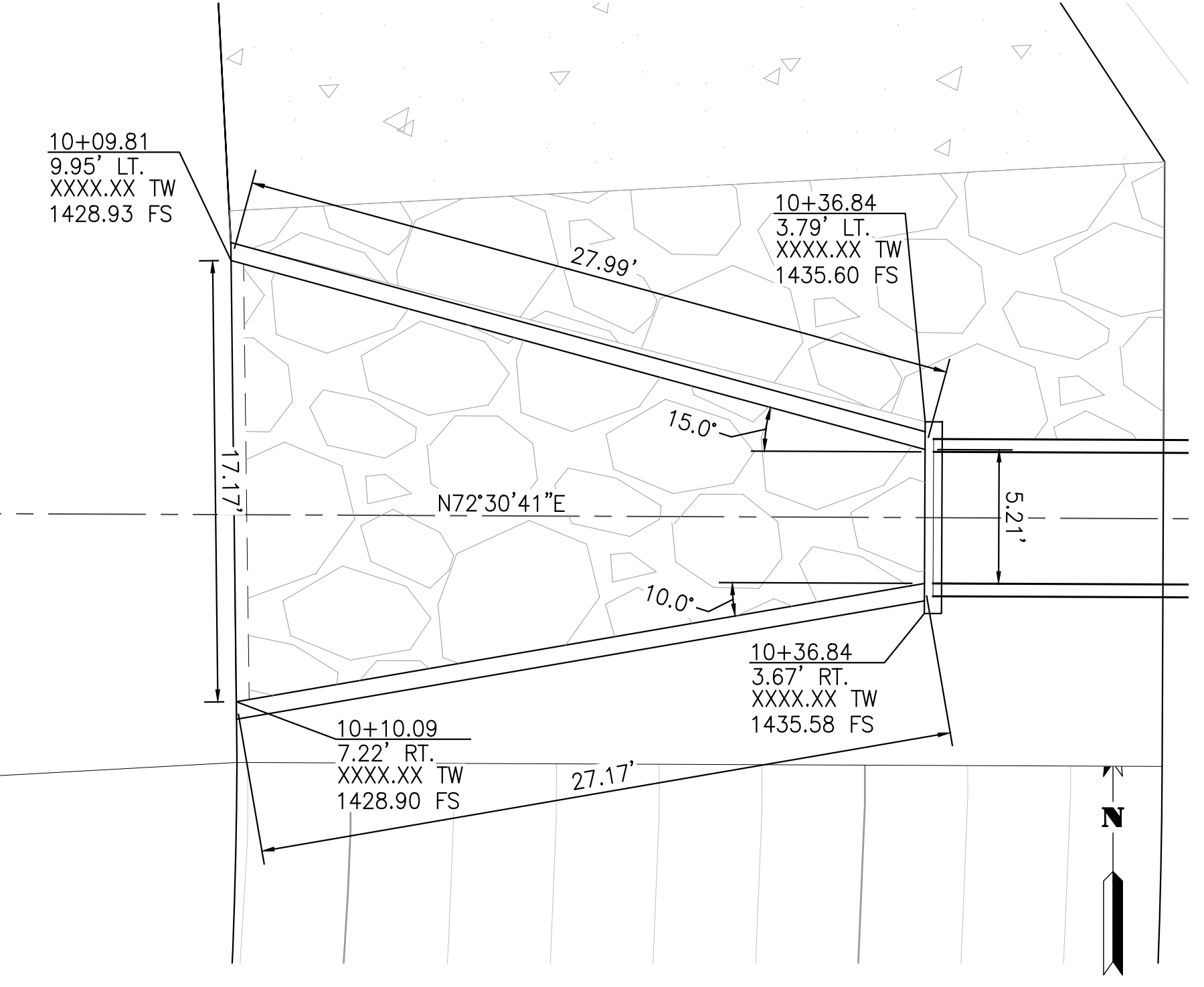
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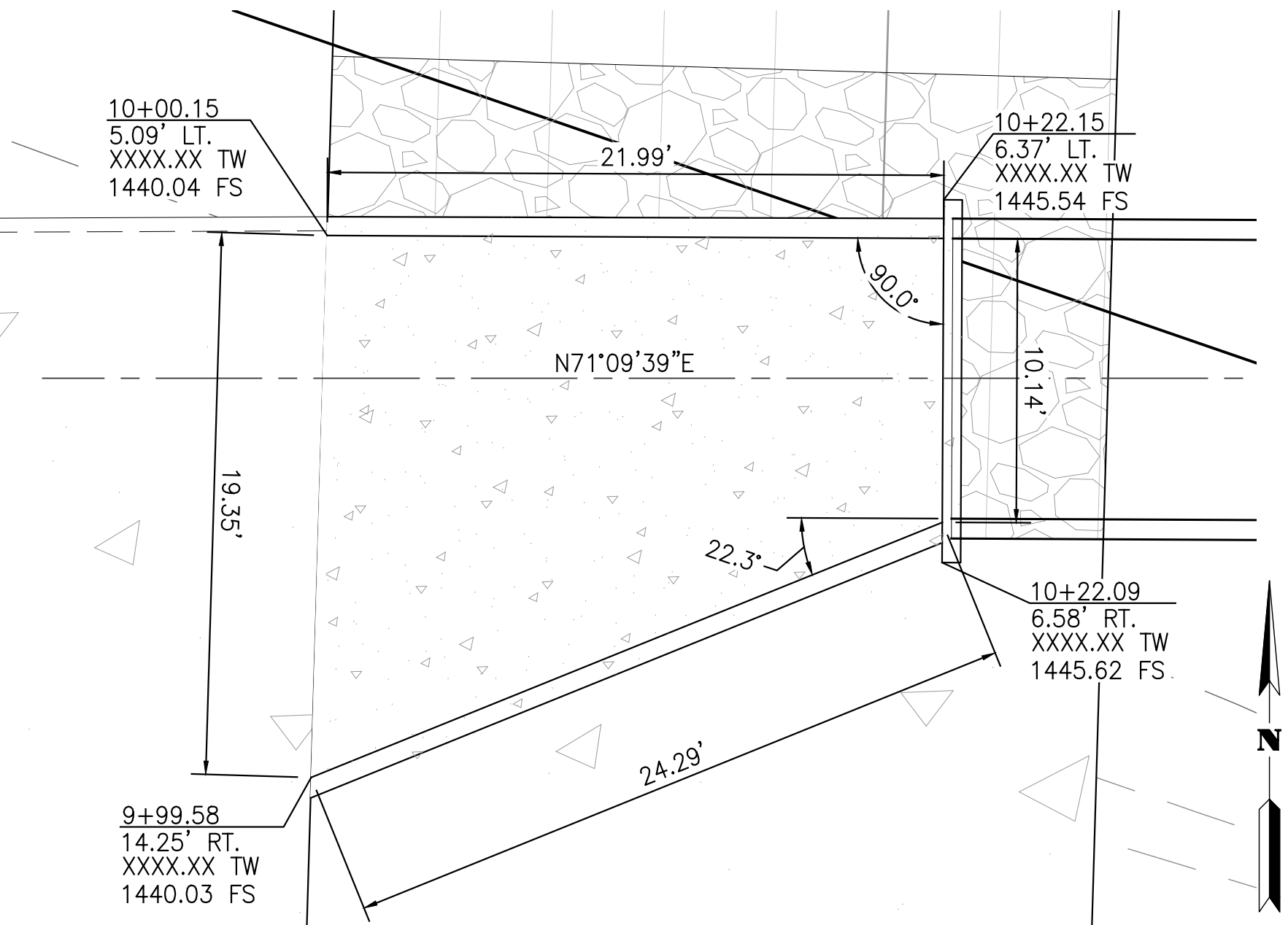
33 MDP LINE AB OUTLET DETAIL  
SCALE: 1" = 5'



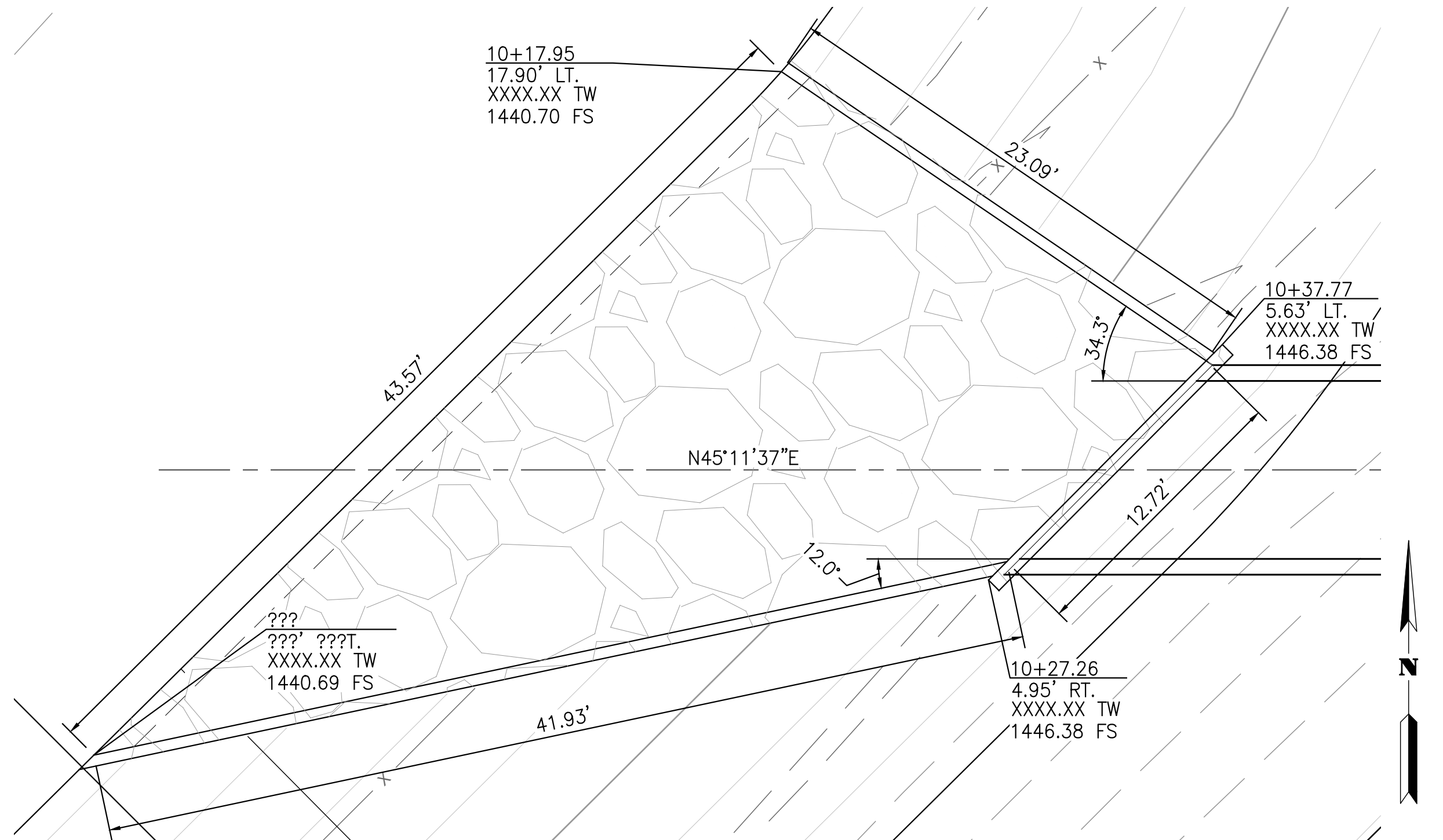
33 LINE G2 OUTLET DETAIL  
SCALE: 1" = 5'



33 MDP LINE S OUTLET DETAIL  
SCALE: 1" = 5'



33 MDP LINE T OUTLET DETAIL  
SCALE: 1" = 5'



33 MDP LINE AO OUTLET DETAIL  
SCALE: 1" = 5'

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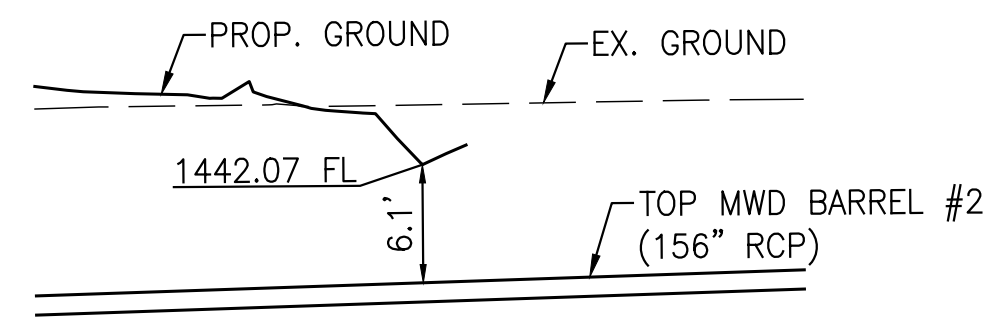
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REF.	DESCRIPTION	APPR.	DATE

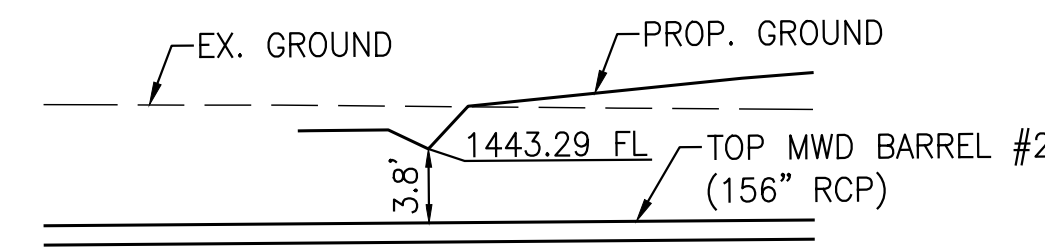
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
DESIGNED BY: JJQ	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DRAWN BY: AYS		
DATE DRAWN: Oct 20		
CHECKED BY: JCC	DATE:	DATE:

CITY FILE NO. PX-XXXXX  
PROJECT NO. XX  
DRAWING NO. XX  
SHEET NO. 33 OF 35  
OUTLET STRUCTURE DETAILS



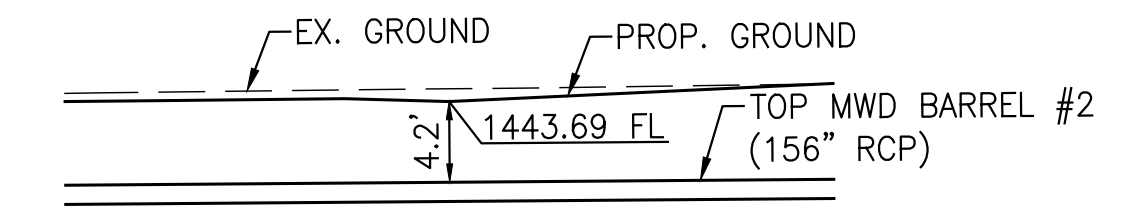
**MWD BARREL #2 CROSSING DETAIL 1**

LINE G2 STATION: XX+XX.XX  
SCALE: 1"=10'



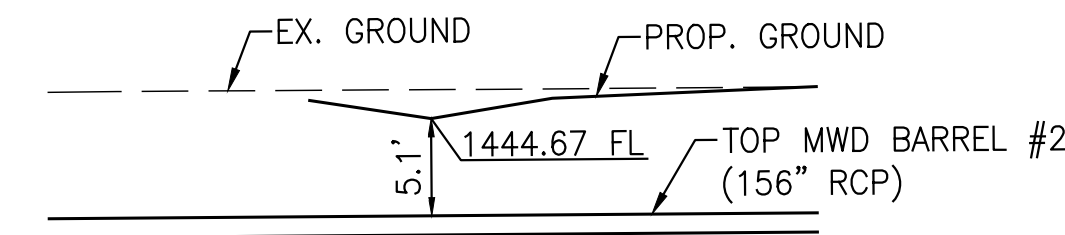
**MWD BARREL #2 CROSSING DETAIL 2**

LINE G2 STATION: XX+XX.XX  
SCALE: 1"=10'



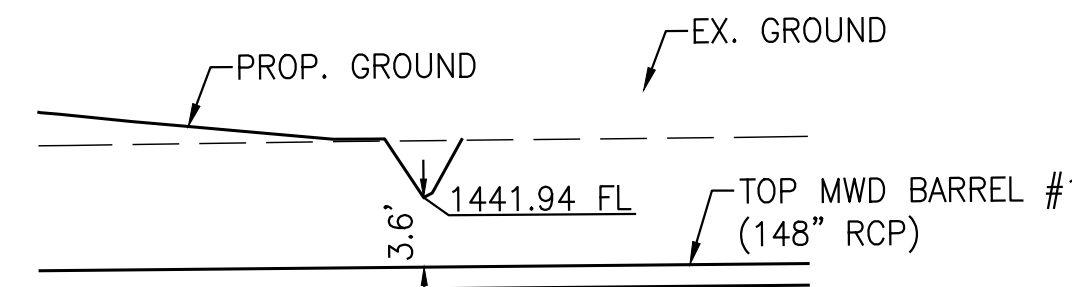
**MWD BARREL #2 CROSSING DETAIL 3**

LINE G2 STATION: XX+XX.XX  
SCALE: 1"=10'



**MWD BARREL #2 CROSSING DETAIL 4**

LINE G2 STATION: XX+XX.XX  
SCALE: 1"=10'



**MWD BARREL #1 CROSSING DETAIL 5**

LATERAL PVSD-1 STATION: XX+XX.XX  
SCALE: 1"=10'

CITY FILE NO. PX-XXXX

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PERMANENT BENCH MARK:  
SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

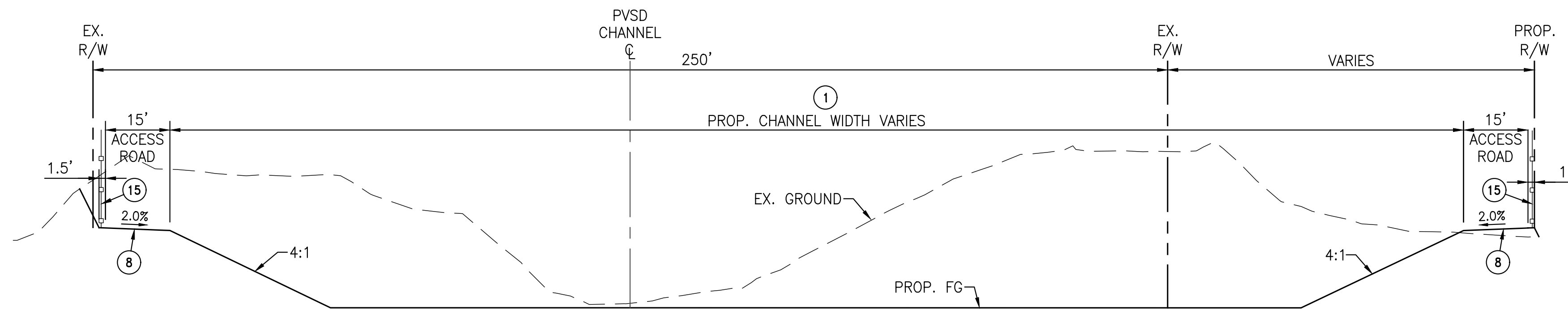
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

DESIGNED BY: JJQ	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
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DATE DRAWN: Oct 20		
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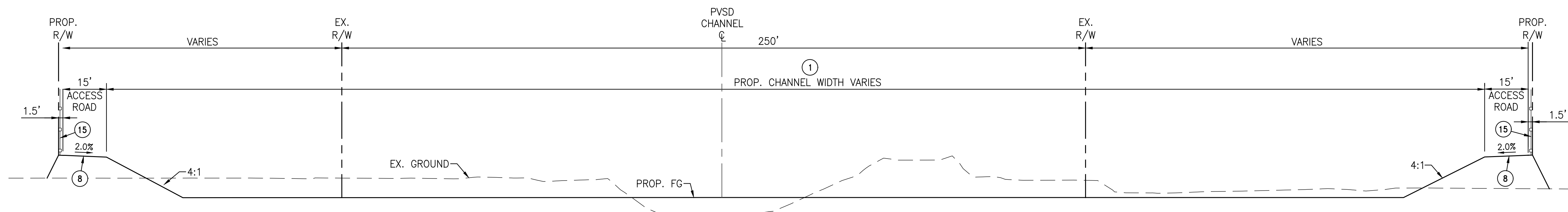
PERRIS VALLEY STORM DRAIN CHANNEL  
SLOPE DRAIN CROSSING DETAILS

PROJECT NO.	XX
DRAWING NO.	XX
SHEET NO.	34 OF 35

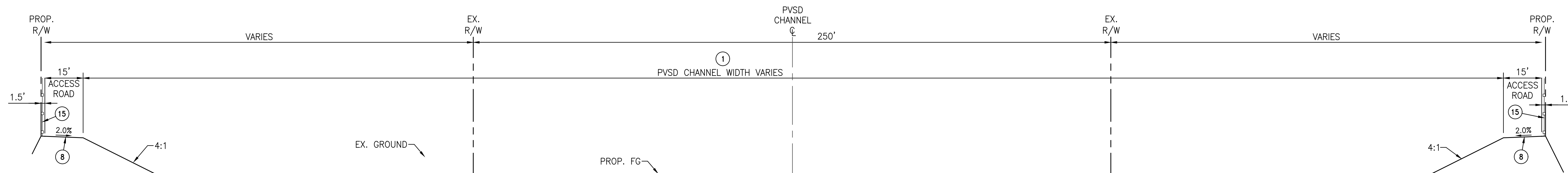
**INFORMATION NOTE**  
ALL X-SECTIONS TAKEN  
LOOKING DOWN STREAM



**STA. 28+50.00**  
SEE PLAN AND PROFILE SHEET 2  
HORIZ. SCALE: 1"=20'  
VERT. SCALE: 1"=10'



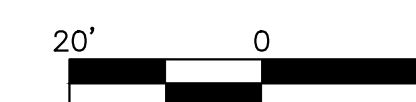
**STA. 43+50.00**  
SEE PLAN AND PROFILE SHEET 3  
HORIZ. SCALE: 1"=20'  
VERT. SCALE: 1"=10'



**STA. 49+50.00**  
SEE PLAN AND PROFILE SHEET 4  
HORIZ. SCALE: 1"=20'  
VERT. SCALE: 1"=10'

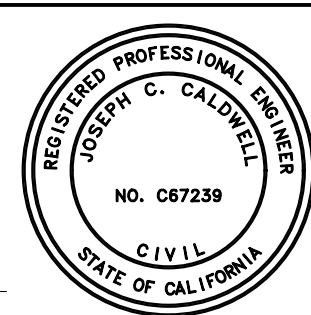
**CONSTRUCTION NOTES**

- ① CONSTRUCT EARTHEN AND RIPRAP CHANNEL PER RCFC&WCD STD. DWG. NO. CH324, INV. PER PROFILE, WIDTH AND SS PER PLAN AND PER SECTIONS ON SHEET 37.
- ⑧ CONSTRUCT 3" THICK CLASS II BASE ACCESS ROAD PER DETAIL ON SHEET 2.
- ⑮ INSTALL CHAIN LINK FENCE PER RCFC&WCD STD. DWG. NO. M801.



CITY FILE NO. PX-XXXX

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RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
DESIGNED BY: JJQ	RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DRAWN BY: AYS		
DATE DRAWN: Oct 20		
CHECKED BY: JCC	DATE:	DATE:

**PERRIS VALLEY STORM DRAIN CHANNEL**  
PVSD CHANNEL CHANNEL SECTIONS

PROJECT NO.	XX
DRAWING NO.	XX
SHEET NO.	35 OF 35

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