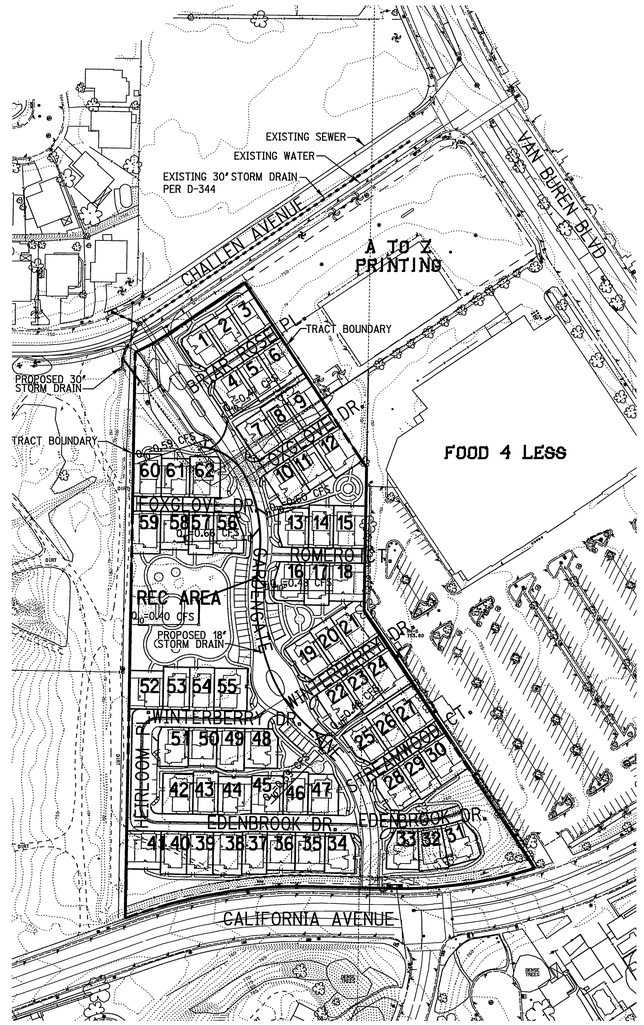
IN THE CITY OF RIVERSIDE, CALIFORNIA

STORM DRAIN IMPROVEMENT PLANS

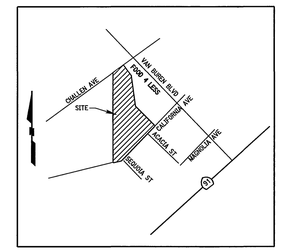
TRACT NO. 31553

GENERAL NOTES

1. NO PERSON SHALL PERFORM ANY CONSTRUCTION ACTIVITY OR INSTALL ANY OBJECTS WITHIN THE PUBLIC RIGHTS-OF-WAY OR EASEMENTS OF THE CITY OF RIVERSIDE WITHOUT A VALID CONSTRUCTION PERMIT OR, A STREET OPENING PERMIT OR AN ENCROACHMENT PERMIT ISSUED BY THE CITY'S PUBLIC WORKS DEPARTMENT.
2. QUANTITIES SHOWN ARE FOR INFORMATION ONLY AND THE CITY OF RIVERSIDE IS NOT RESPONSIBLE FOR THEIR ACCURACY.
3. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF RIVERSIDE DEPARTMENT OF PUBLIC WORKS, STANDARD DRAWINGS, ITS SUPPLEMENTAL NOTES AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CURRENT EDITION.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAR THE RIGHT OF WAY IN ACCORDANCE WITH THE PROVISIONS OF LAW AS IT AFFECTS EACH UTILITY INCLUDING IRRIGATION LINES AND APPURTENANCES AND AT NO COST TO THE CITY.
5. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE THERE ARE NO EXISTING UTILITIES EXCEPT AS SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.
6. THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE WORK HEREON. IN THE EVENT OF DISCREPANCIES ARISING DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE CITY.
7. THE CONTRACTOR SHALL CALL IN A LOCATION REQUEST TO UNDERGROUND SERVICE ALERT (U.S.A.) PHONE NO. 1-800-227-2600, TWO WORKING DAYS BEFORE DIGGING. NO CONSTRUCTION PERMIT WILL BE ISSUED BY THE PUBLIC WORKS DEPARTMENT INVOLVING EXCAVATION FOR UNDERGROUND FACILITIES UNLESS THE APPLICANT HAS BEEN PROVIDED AN INQUIRY IDENTIFICATION NUMBER BY U.S.A.
8. THE DEVELOPER SHALL BE RESPONSIBLE FOR PRESERVING OR RE-ESTABLISHING AND REFERENCING SURVEY MONUMENTS DESTROYED, DISTURBED OR BURIED AS A RESULT OF CONSTRUCTION SHOWN HERON.
9. ALL EMBANKMENT FILL SHALL BE COMPACTED TO A MINIMUM OF 90% MAXIMUM DRY DENSITY AND SHALL BE OF AN APPROVED QUALITY.
10. BEFORE THE RIP RAP IS ACCEPTED BY THE CITY, AS PLACED, AT THE OUTLET OF ANY DRAINAGE STRUCTURE, IT SHALL BE TESTED UNDER FLOWS AS CLOSE AS POSSIBLE TO DESIGN CONDITIONS WITH WATER OBTAINED FROM FIRE HYDRANTS IN THE IMMEDIATE AREA.
11. ALL FLAGGED ELEVATIONS SHALL BE STAKED IN THE FIELD BY THE PRIVATE ENGINEER.
12. THE CONTRACTOR SHALL COORDINATE TRENCHING FOR CABLE TELEVISION WITH OTHER TRENCHING WITHIN THE SUBDIVISION.
13. CONTRACTOR IS TO VERIFY EXISTING STORM DRAIN ELEVATION PRIOR TO CONSTRUCTION.



INDEX MAP



VICINITY MAP

N.T.S.

SCALE: 1" = 100'

100 0 100 200

WORK TO BE DONE

THESE IMPROVEMENTS CONSIST OF THE FOLLOWING WORK TO BE DONE ACCORDING TO THESE PLANS, THE CURRENT CITY OF RIVERSIDE STANDARDS AND SPECIFICATIONS, AND THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK").

PRIVATE ENGINEER'S NOTE

ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK ON OR RELATED TO THESE PLANS SHALL CONDUCT THEIR OPERATIONS SO THAT ALL EMPLOYEES ARE PROVIDED A SAFE PLACE TO WORK AND THE PUBLIC IS PROTECTED. ALL CONTRACTORS AND SUBCONTRACTORS SHALL COMPLY WITH THE "OCCUPATIONAL SAFETY AND HEALTH REGULATIONS" OF THE U.S. DEPARTMENT OF LABOR AND THE STATE OF CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS "CONSTRUCTION SAFETY ORDERS." THE CIVIL ENGINEER SHALL NOT BE RESPONSIBLE IN ANY WAY FOR THE CONTRACTORS AND SUBCONTRACTORS COMPLIANCE WITH SAID REGULATIONS AND ORDERS.

CONTRACTOR FURTHER AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB-SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE CIVIL ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.

THE EXISTENCE AND APPROXIMATE LOCATIONS OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS, THE CIVIL ENGINEER ASSUMES NO LIABILITY AS TO THE EXACT LOCATION OF SAID LINES NOR FOR UTILITY OR IRRIGATION LINES WHOSE LOCATIONS ARE NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY AND IRRIGATION COMPANIES PRIOR TO WORK OR EXCAVATION TO DETERMINE THE EXACT LOCATION OF ALL LINES AFFECTING THIS WORK, WHETHER OR NOT SHOWN HERON, AND FOR ANY DAMAGE OR PROTECTION TO THESE LINES.

OWNER/DEVELOPER

MBK HOMES
175 TECHNOLOGY DRIVE
IRVINE, CA 92618
ATTN: RUSS KHOURI
(949) 789-8372

CIVIL ENGINEER

RICK ENGINEERING COMPANY
1223 UNIVERSITY AVENUE, SUITE 240
RIVERSIDE, CA 92507
ATTN: MARTEN L. ANDERSON, RCE 51313
(951)782-0707

GEOTECHNICAL ENGINEER

LOR GEOTECHNICAL GROUP, INC.
6121 QUAIL VALLEY COURT
RIVERSIDE, CA 92507
ATTN: ANDREW A. TARDIE
(909) 653-1760

LEGEND

PROPOSED STORM DRAIN
EXISTING STORM DRAIN
PROPOSED CATCH BASIN AND LOCAL DEPRESSION
BLADED SWALE (BIOSWALE)

PW04-0888

DIG ALERT
CALL BEFORE YOU DIG!
1-800-227-2600
UNDERGROUND SERVICE ALERT
Call at least 2 working days prior to excavating.

REGISTERED PROFESSIONAL ENGINEER MARTEN L. ANDERSON No. 51313 Exp.6-30-06 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF
MARTEN L. ANDERSON
REGISTERED CIVIL ENGINEER NO. 51313
EXPIRATION DATE 6-30-06

CITY OF RIVERSIDE WATER DEPARTMENT
APPROVED BY
DATE 3/17/05

RICK ENGINEERING COMPANY
1223 UNIVERSITY AVENUE - SUITE 240
RIVERSIDE, CA 92507
951.782.0707
(FAX)951.782.0723
Riverside San Diego Orange Sacramento Phoenix Tucson
rickengineering.com

CITY BUSINESS TAX CERTIFICATE NO. 35225 EXP. DATE 7/20/05

BENCH MARK: F3-D2
PK NAIL IN THE NORTHERLY CURB RETURN OF VAN BUREN BOULEVARD AND CALIFORNIA AVENUE. ELEVATION = 758.317

MARK	REVISIONS	APPR	DATE
1A	ADDED SHEET 4A	RJZ	2/8/05

DESIGNED BY JRG DRAWN BY JRG CHECKED BY MLA

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER		
PARK DEPARTMENT		
TRAFFIC DIVISION		
STREET SERVICES		3/16/05

APPROVED BY
CITY ENGINEER
DATE 4/8/05

STORM DRAIN IMPROVEMENT PLANS
TRACT NO. 31553
TITLE SHEET

HORIZ.SCALE SEE ABOVE VERT.SCALE N/A

PROJECT NO. D-774
SHEET 1 OF 4
FILE NO.

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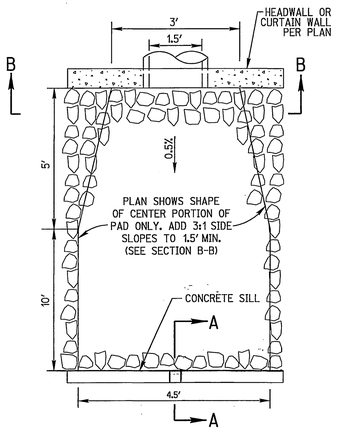
RJZ

INDEXED 4-14-05 LJH

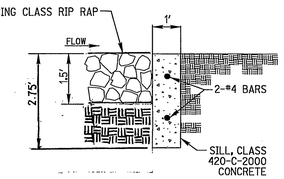
G:\d_14546\14546sd01.dgn

PLOT DATE: 04-MAR-2005 JN 14546B

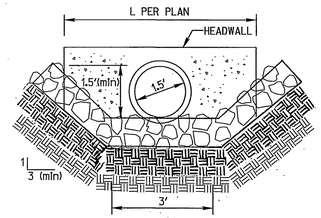
NOTE:
⚠ 1. SEE CALTRANS STANDARD SPECIFICATIONS 72-5 FOR PLACEMENT OF CONCRETED ROCK, USE METHOD A PLACEMENT



RIP RAP ENERGY DISSIPATOR DETAIL (14)
N.T.S.



SECTION A-A



SECTION B-B

CATCH BASIN STENCILING DETAIL
N.T.S.

(A) STENCILS TO HAVE 2' LETTERS AS FOLLOWS
NO DUMPING
DRAINS TO RIVER

(B) PLACE BOTH STENCILS CENTERED WITHIN THE CATCH BASIN OPENING AND WITHIN THE TOP OF CURB.

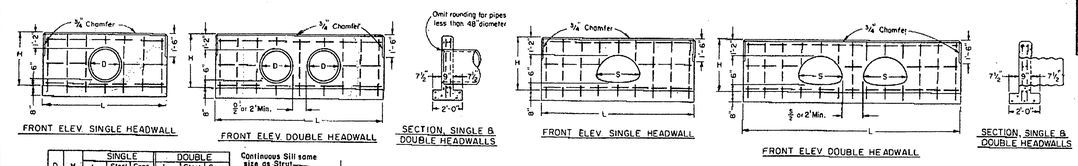
(C) SPRAY BOTH STENCILS WITH WHITE PAINT.

(D) REMOVE STENCILS WHEN PAINT IS DRY.

DGT	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS

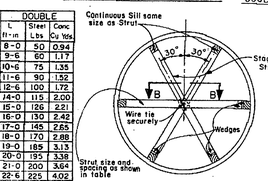
CHIEF OFFICE OF PROJECT PLANNING AND DESIGN
REGISTERED CIVIL ENGINEER
January 4, 1988
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER R. DeRosa No. 17767 Exp. 3-31-89 CIVIL STATE OF CALIFORNIA

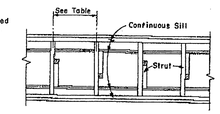


D in	H ft-in	L ft-in	SINGLE Steel Lbs	SINGLE Conc Cu Yds	DOUBLE L ft-in	DOUBLE Steel Lbs	DOUBLE Conc Cu Yds
12	2-8	5-0	35	0.60	8-0	50	0.94
15	2-11	6-0	40	0.75	9-6	60	1.17
18	3-2	7-0	50	0.91	10-6	75	1.35
21	3-5	7-6	60	1.02	11-6	90	1.52
24	3-8	8-6	75	1.20	12-6	100	1.72
27	3-11	9-6	85	1.39	14-0	115	2.00
30	4-2	10-0	95	1.52	15-0	126	2.21
33	4-5	11-0	100	1.73	16-0	130	2.42
36	4-8	12-0	105	1.95	17-0	145	2.65
39	4-11	12-6	130	2.09	18-0	170	2.88
42	5-2	13-6	140	2.34	19-0	185	3.13
45	5-5	14-6	150	2.60	20-0	195	3.38
48	5-8	15-0	160	2.75	21-0	200	3.64
51	5-11	16-0	180	3.03	22-6	225	4.02
54	6-2	17-0	190	3.31	23-6	240	4.30

STRAIGHT HEADWALLS



TYPICAL SECTION



SECTION B-B

C.M.P. ARCH SIZE	H	L	SINGLE Steel Lbs	SINGLE Conc Cu Yds	L	DOUBLE Steel Lbs	DOUBLE Conc Cu Yds
21"x15"	2'-11"	6'-6"	45	0.80	10'-0"	60	1.22
24"x18"	3'-2"	7'-6"	50	0.95	11'-6"	70	1.45
28"x20"	3'-4"	8'-6"	60	1.12	13'-6"	90	1.76
35"x24"	3'-8"	10'-6"	85	1.47	15'-6"	120	2.16
42"x29"	4'-1"	12'-6"	110	1.76	18'-0"	145	2.57
49"x33"	4'-5"	14'-6"	130	2.26	21'-0"	170	3.13
57"x38"	4'-10"	17'-0"	155	2.81	24'-6"	210	3.86
64"x43"	5'-3"	19'-0"	175	3.31	27'-0"	230	4.42
71"x47"	5'-7"	21'-0"	195	3.81	30'-0"	255	5.09

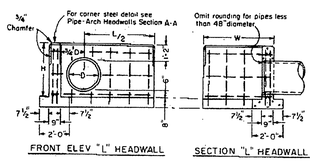
STRAIGHT HEADWALLS

GENERAL NOTES

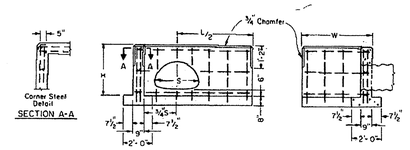
1. No deduction made in quantities for thickness of pipe walls
2. All reinforcing steel #4 bars. All vertical and horizontal tie bars 18" maximum spacing.
3. Length of wall "W" may be varied to suit conditions encountered in the field, and straight line interpolation may be used to calculate quantities.
4. Quantities are for design purposes only.

STRUT DETAILS

SPACING IN FEET OF TIMBER STRUTS FOR STRUCTURAL STEEL PLATE PIPE									
PIPE DIA	STRUT SIZE	HEIGHT OF FILL IN FEET 0-20	30	40	50	60	70	80	100+
240 Thru 252	8x8	5.0	3.0	3.0	3.0	3.0			
	10x10	8.0	4.5	4.5	4.5	4.5			



FRONT ELEV "L" HEADWALL
SECTION "L" HEADWALL



FRONT ELEV "L" HEADWALL
SECTION "L" HEADWALL

D in	H ft-in	L/2 ft-in	LENGTH OF W 3'-4" Steel Lbs	3'-4" Conc Cu Yds	4'-10" Steel Lbs	4'-10" Conc Cu Yds	6'-4" Steel Lbs	6'-4" Conc Cu Yds	7'-10" Steel Lbs	7'-10" Conc Cu Yds	9'-4" Steel Lbs	9'-4" Conc Cu Yds
12	2-8	2-6	50	.79	60	.98						
15	2-11	3-0	55	.91	65	1.11						
18	3-2	3-6	65	1.04	75	1.25						
21	3-5	3-9	75	1.15	90	1.36						
24	3-8	4-3	85	1.29	100	1.51	110	1.74				
27	3-11	4-9	90	1.44	105	1.67	115	1.91				
30	4-2	5-0	95	1.55	110	1.80	120	2.05	135	2.29		
33	4-5	5-6	105	1.71	120	1.97	135	2.23	150	2.48		
36	4-8	6-0	110	1.88	125	2.15	140	2.41	155	2.68	170	2.95
39	4-11	6-3			150	2.28	170	2.56	185	2.84	200	3.12
42	5-2	6-9			155	2.42	175	2.76	190	3.05	210	3.34
45	5-5	7-3					180	2.97	200	3.27	215	3.57
48	5-8	7-6					190	3.13	216	3.44	230	3.75
51	5-11	8-0							220	3.67	235	3.99
54	6-2	8-6							235	3.91	250	4.24

"L" HEADWALLS

CIRCULAR PIPE CULVERT HEADWALLS

C.M.P. ARCH SIZE	H	L/2	LENGTH OF W 3'-4" Steel Lbs	3'-4" Conc Cu Yds	4'-10" Steel Lbs	4'-10" Conc Cu Yds	6'-4" Steel Lbs	6'-4" Conc Cu Yds	7'-10" Steel Lbs	7'-10" Conc Cu Yds	9'-4" Steel Lbs	9'-4" Conc Cu Yds
21"x15"	2'-11"	3'-3"	60	1.00	65	1.18	75	1.38	90	1.58	100	1.77
24"x18"	3'-2"	3'-9"	60	1.07	70	1.32	80	1.53	95	1.74	110	1.94
28"x20"	3'-4"	4'-3"	70	1.26	80	1.47	90	1.68	100	1.90	115	2.11
35"x24"	3'-8"	5'-3"	100	1.51	110	1.74	120	1.97	140	2.20	155	2.42
42"x29"	4'-1"	6'-3"	115	1.82	130	2.06	140	2.31	155	2.55	170	2.83
49"x33"	4'-5"	7'-3"	130	2.12	145	2.37	155	2.64	170	2.90	185	3.15
57"x38"	4'-10"	8'-6"	145	2.52	160	2.79	175	3.07	190	3.35	205	3.61
64"x43"	5'-3"	9'-6"	185	2.89	200	3.11	215	3.48	235	3.77	250	4.06
71"x47"	5'-7"	10'-6"	200	3.25	215	3.56	235	3.86	250	4.17	270	4.48

"L" HEADWALLS

CORRUGATED METAL PIPE-ARCH CULVERT HEADWALLS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PIPE HEADWALLS AND STRUT DETAILS

D89

CONSTRUCTION NOTES AND QUANTITIES

(1) PLACE 24" RCP STORM DRAIN (D-LOAD = 1350) WITH BEDDING PER CITY OF RIVERSIDE STANDARD NO. 452 (CASE I)..... 40 LF
(2) PLACE 30" RCP STORM DRAIN (D-LOAD = 2000) WITH BEDDING PER CITY OF RIVERSIDE STANDARD NO. 452 (CASE I)..... 30 LF
(3) CONSTRUCT JUNCTION STRUCTURE B PER CITY OF RIVERSIDE STD. NO. 421 (MODIFIED TO ALIGN INVERTS)..... 1 EA
(4) INSTALL 18" HDPE WYE OR APPROVED EQUAL..... 1 EA
(5) CONSTRUCT MANHOLE EZ PER CITY OF RIVERSIDE STD. NO. 431..... 1 EA
(6) 24" X 24" BROOKS BOX OR EQUAL..... 2 EA
(7) CONSTRUCT CONCRETE COLLAR PER CITY OF RIVERSIDE STANDARD NO. 424..... 1 EA
(8) CONSTRUCT CATCH BASIN PER CITY OF RIVERSIDE STANDARD NO. 405....7 EA
(9) CONSTRUCT HEADWALL PER CALTRANS STANDARD PLAN D89 ..... 3 EA
(10) CONSTRUCT TRASH RACK (INCLINED) CASE B PER APWA STANDARD 361-0..... 2 EA
(11) PLACE 18" HDPE N-12 PIPE OR APPROVED EQUAL WITH BEDDING PER CITY OF RIVERSIDE STANDARD NO. 452 (CASE I).....270 LF
(12) INSTALL 18" x 24" HDPE TEE OR APPROVED EQUAL ..... 1 EA
(13) CONSTRUCT SLOPED PROTECTION BARRIER PER APWA STANDARD 360-0..... 1 EA
(14) PLACE FACING CLASS RIP RAP PAD PER DETAIL ON THIS SHEET..... 1 EA
(15) INSTALL 18" x 24" HDPE WYE OR APPROVED EQUAL..... 3 EA
(16) PLACE 24" HDPE N-12 PIPE OR APPROVED EQUAL WITH BEDDING PER CITY OF RIVERSIDE STANDARD NO. 452 (CASE I)..... 224 LF
(17) PLACE 15' RCP STORM DRAIN (D-LOAD=2000 WITH BEDDING PER CITY OF RIVERSIDE STANDARD NO. 452 (CASE I) ..... 60 LF

PW04-0888

DIG ALERT
CALL BEFORE YOU DIG!
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UNDERGROUND SERVICE ALERT
Call at least 2 working days prior to excavating.

REGISTERED PROFESSIONAL ENGINEER MARTEN L. ANDERSON No. 51313 Exp. 6-30-06 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF
MARTEN L ANDERSON
REGISTERED CIVIL ENGINEER NO. 51313
EXPIRATION DATE 6-30-06
CITY OF RIVERSIDE WATER DEPARTMENT
APPROVED BY
DATE 3/17/05

RICK ENGINEERING COMPANY
Riverside San Diego Orange Sacramento Phoenix Tucson
1223 UNIVERSITY AVENUE - SUITE 240
RIVERSIDE, CA 92507
951.782.0707
(FAX)951.782.0723
rickengineering.com
CITY BUSINESS TAX CERTIFICATE NO. 35225 EXP. DATE 7/20/05

BENCH MARK: F3-D2
PK NAIL IN THE NORTHERLY CURB RETURN OF VAN BUREN BOULEVARD AND CALIFORNIA AVENUE. ELEVATION = 758.317

MARK	REVISIONS	APPR	DATE
⚠	ADDED CONSTRUCTION NOTE 17	KIZ	6-9-05
⚠	REVISED RIP RAP DETAIL		

DESIGNED BY JRG DRAWN BY JRG CHECKED BY MLA

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER		4/14/05
PARK DEPARTMENT		
TRAFFIC DIVISION		
STREET SERVICES		7/1/05

APPROVED BY
CITY ENGINEER
DATE 4/18/05

STORM DRAIN IMPROVEMENT PLANS
TRACT NO. 31553
DETAIL SHEET

HORIZ. SCALE SEE ABOVE VERT. SCALE N/A

PROJECT NO. D-774
SHEET 2 OF 4
FILE NO.

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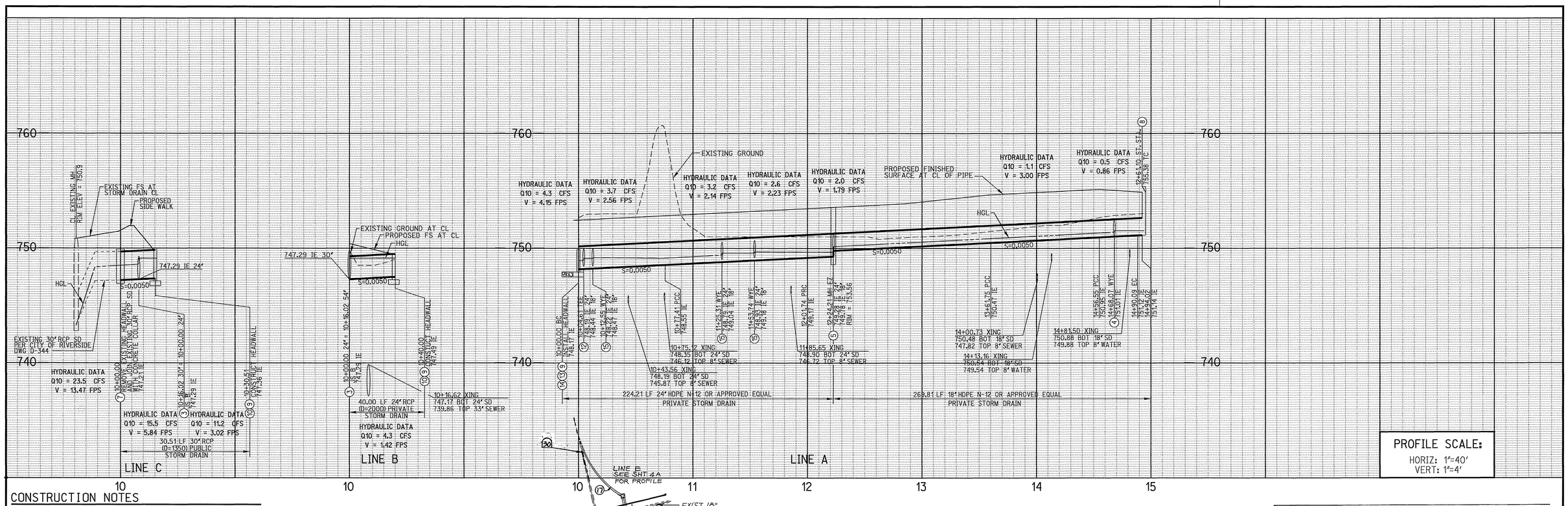
KIZ

INDEXED 4-14-05

PLOT DATE: 04-MAR-2005 JN 14546B



CONSTRUCTION NOTES

1. PLACE 24" RCP STORM DRAIN (D-LOAD = 1350) WITH BEDDING PER CITY OF RIVERSIDE STANDARD NO. 452 (CASE I)
2. PLACE 30" RCP STORM DRAIN (D-LOAD = 2000) WITH BEDDING PER CITY OF RIVERSIDE STANDARD NO. 452 (CASE I)
3. CONSTRUCT JUNCTION STRUCTURE B PER CITY OF RIVERSIDE STD. NO. 421 (MODIFIED TO ALIGN INVERTS)
4. INSTALL 18" HDPE WYE OR APPROVED EQUAL
5. CONSTRUCT MANHOLE EZ PER CITY OF RIVERSIDE STD. NO. 431
6. 24" X 24" BROOKS BOX OR EQUAL
7. CONSTRUCT CONCRETE COLLAR PER CITY OF RIVERSIDE STANDARD NO. 424
8. CONSTRUCT CATCH BASIN PER CITY OF RIVERSIDE STANDARD NO. 405
9. CONSTRUCT HEADWALL PER CALTRANS STANDARD PLAN D89
10. CONSTRUCT TRASH RACK (INCLINED) CASE B PER APWA STANDARD 361-0
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12. INSTALL 18" x 24" HDPE TEE OR APPROVED EQUAL
13. CONSTRUCT SLOPED PROTECTION BARRIER PER APWA STANDARD 360-0
14. PLACE FACING CLASS RIP RAP PAD PER DETAIL ON SHEET I
15. INSTALL 18" x 24" HDPE WYE OR APPROVED EQUAL
16. PLACE 24" HDPE N-12 PIPE OR APPROVED EQUAL WITH BEDDING PER CITY OF RIVERSIDE STANDARD NO. 452 (CASE I)
17. PLACE 15" RCP STORM DRAIN (D-LOAD=1350) WITH BEDDING PER CITY OF RIVERSIDE STANDARD NO. 452 (CASE I)

STORM DRAIN DATA

NO.	DELTA OR BRG.	RADIUS	LENGTH	REMARK
27	N 33°28'42" W		219.33'	24" RCP
28	90°00'00"	45.00'	70.69'	24" RCP
29	N 56°31'18" E		110.34'	24" RCP
30	44°07'41"	90.00'	69.32'	15" RCP

STORM DRAIN DATA

NO.	DELTA OR BRG.	RADIUS	LENGTH	REMARK
1	20°24'00"	45.00'	16.02'	30" RCP
2	05°43'09"	45.00'	4.49'	30" RCP
3	N 2°19'15" E		10.00'	30" RCP
4	N 36°57'36" W		40.00'	18" HDPE
5	1°50'08"	75.00'	2.40'	18" HDPE
6	4°49'02"	75.00'	6.31'	18" HDPE
7	49°32'55"	75.00'	64.86'	18" HDPE
8	13°43'25"	200.00'	47.90'	18" HDPE
9	8°08'40"	200.00'	28.43'	18" HDPE
10	13°45'00"	200.00'	48.00'	18" HDPE
11	4°17'33"	300.00'	22.48'	18" HDPE
12	26°16'06"	300.00'	137.54'	18" HDPE
13	27°09'22"	200.00'	94.79'	18" HDPE
14	14°40'27"	45.00'	11.52'	18" HDPE
15	28°02'16"	45.00'	22.02'	18" HDPE
16	N 88°26'34" E		2.92'	18" HDPE
17	N 11°31'21" E		8.07'	18" HDPE
18	14°10'56"	45.00'	37.06'	18" HDPE
19	N 07°38'14" E		2.61'	18" HDPE
20	N 58°42'17" E		10.96'	18" HDPE
21	N 58°01'23" E		17.85'	18" HDPE
22	N 40°07'17" E		19.07'	18" HDPE
23	N 43°02'10" W		17.95'	18" HDPE
24	N 69°26'26" E		86.79'	18" HDPE
25	N 00°58'31" E		35.94'	18" HDPE
26	N 18°31'10" W		27.70'	18" HDPE

PW04-0888

DIG ALERT
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1-800-227-2600
UNDERGROUND SERVICE ALERT
Call at least 2 working days prior to excavating.

REGISTERED PROFESSIONAL ENGINEER MARTEN L. ANDERSON No. 51313 Exp.6-30-06 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF
MARTEN L ANDERSON
REGISTERED CIVIL ENGINEER NO. 51313
EXPIRATION DATE 6-30-06
CITY OF RIVERSIDE WATER DEPARTMENT
APPROVED BY
DATE 3/17/05

RICK ENGINEERING COMPANY
1223 UNIVERSITY AVENUE - SUITE 240
RIVERSIDE, CA 92507
951.782.0707
(FAX)951.782.0723
rickengineering.com
Riverside San Diego Orange Sacramento Phoenix Tucson
CITY BUSINESS TAX CERTIFICATE NO. 35225 EXP. DATE 7/20/05

BENCH MARK: F3-D2
PK NAIL IN THE NORTHERLY CURB RETURN OF VAN BUREN BOULEVARD AND CALIFORNIA AVENUE. ELEVATION = 758.317

MARK	REVISIONS	APPR	DATE
1	ADDED CONSTRUCTION NOTE 17 AND LINES D AND E	KVZ	6-9-05

DESIGNED BY JRG DRAWN BY JRG CHECKED BY MLA

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

	BY	DATE
APPROVED BY		
PRINCIPAL ENGINEER		
PARK DEPARTMENT		
TRAFFIC DIVISION		
STREET SERVICES		

APPROVED BY
CITY ENGINEER
DATE 4/8/05

STORM DRAIN IMPROVEMENT PLANS
TRACT NO. 31553
LINES "A" AND "B" (PRIVATE)
LINE "C" (PUBLIC)

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

PROJECT NO. D-774
SHEET 3 OF 4
FILE NO.

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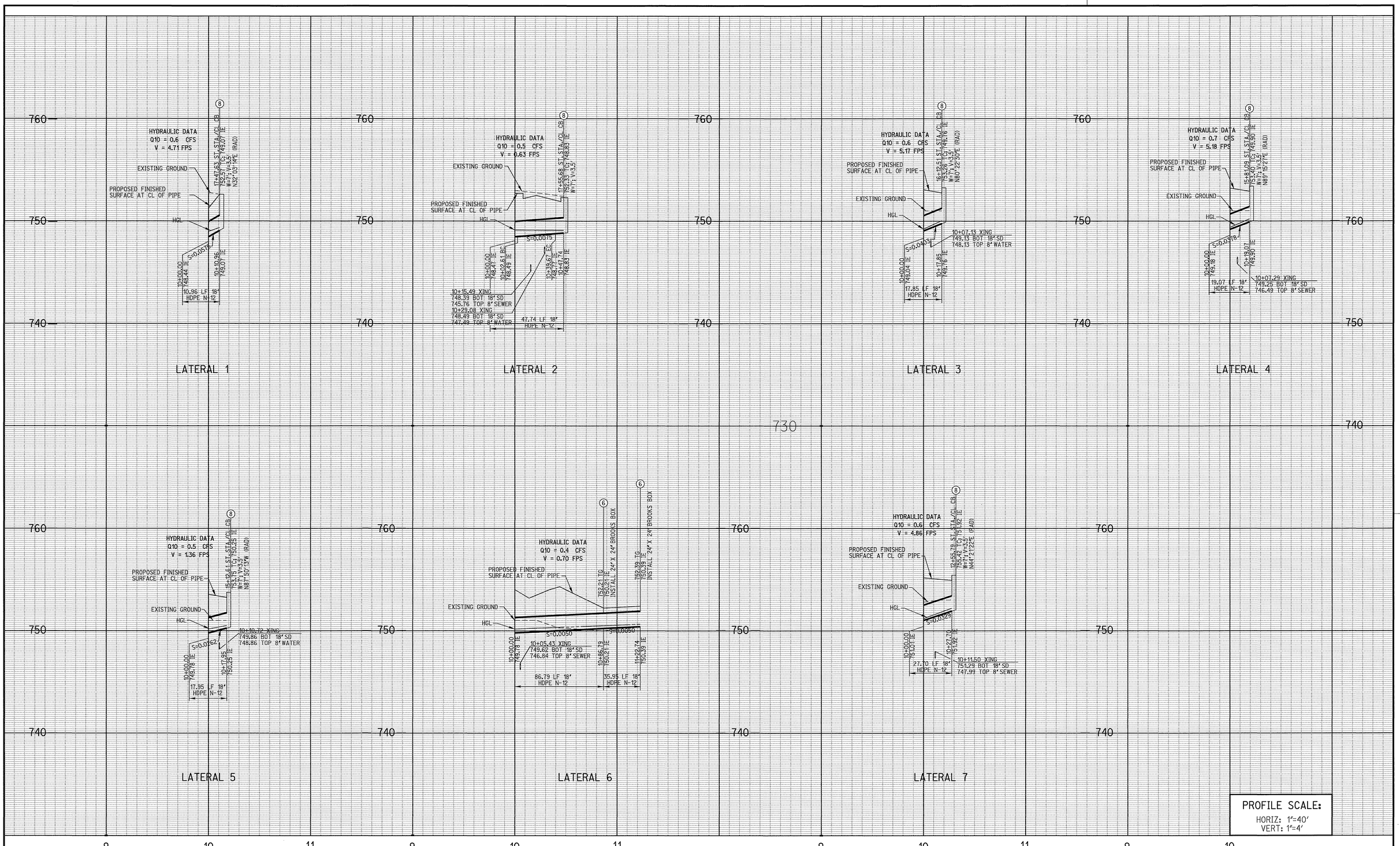
INDEXED 4-14-05 LH

PLOT DATE: 04-MAR-2005 JN 14546B



CONSTRUCTION NOTES

⑥ 24" X 24" BROOKS BOX OR EQUAL

⑧ CONSTRUCT CATCH BASIN PER CITY OF RIVERSIDE STANDARD NO. 405

DIG ALERT

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1-800-227-2600

UNDERGROUND SERVICE ALERT

Call at least 2 working days prior to excavating.

REGISTERED PROFESSIONAL ENGINEER MARTEN L. ANDERSON No. 51313 Exp.6-30-06 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF

MARTEN L ANDERSON

REGISTERED CIVIL ENGINEER NO. 51313

EXPIRATION DATE 6-30-06

CITY OF RIVERSIDE WATER DEPARTMENT

APPROVED BY

DATE 3/17/06

RICK ENGINEERING COMPANY

Riverside San Diego Orange Sacramento Phoenix Tucson

1223 UNIVERSITY AVENUE - SUITE 240
RIVERSIDE, CA 92507
951.782.0707
(FAX)951.782.0723
rickengineering.com

CITY BUSINESS TAX CERTIFICATE NO. 35225 EXP. DATE 7/20/05

BENCH MARK: F3-D2
PK NAIL IN THE NORTHERLY CURB RETURN OF VAN BUREN BOULEVARD AND CALIFORNIA AVENUE. ELEVATION = 758.317

MARK	REVISIONS	APPR	DATE

DESIGNED BY JRG DRAWN BY JRG CHECKED BY MLA

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER		4/18/05
PARK DEPARTMENT		
TRAFFIC DIVISION		
STREET SERVICES		4/18/05

APPROVED BY

CITY ENGINEER

DATE 4/18/05

STORM DRAIN IMPROVEMENT PLANS
TRACT NO. 31553
LATERALS 1-7 (PRIVATE)

PROJECT NO. D-774

SHEET 4 OF 4

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

FILE NO.

PW04-0888

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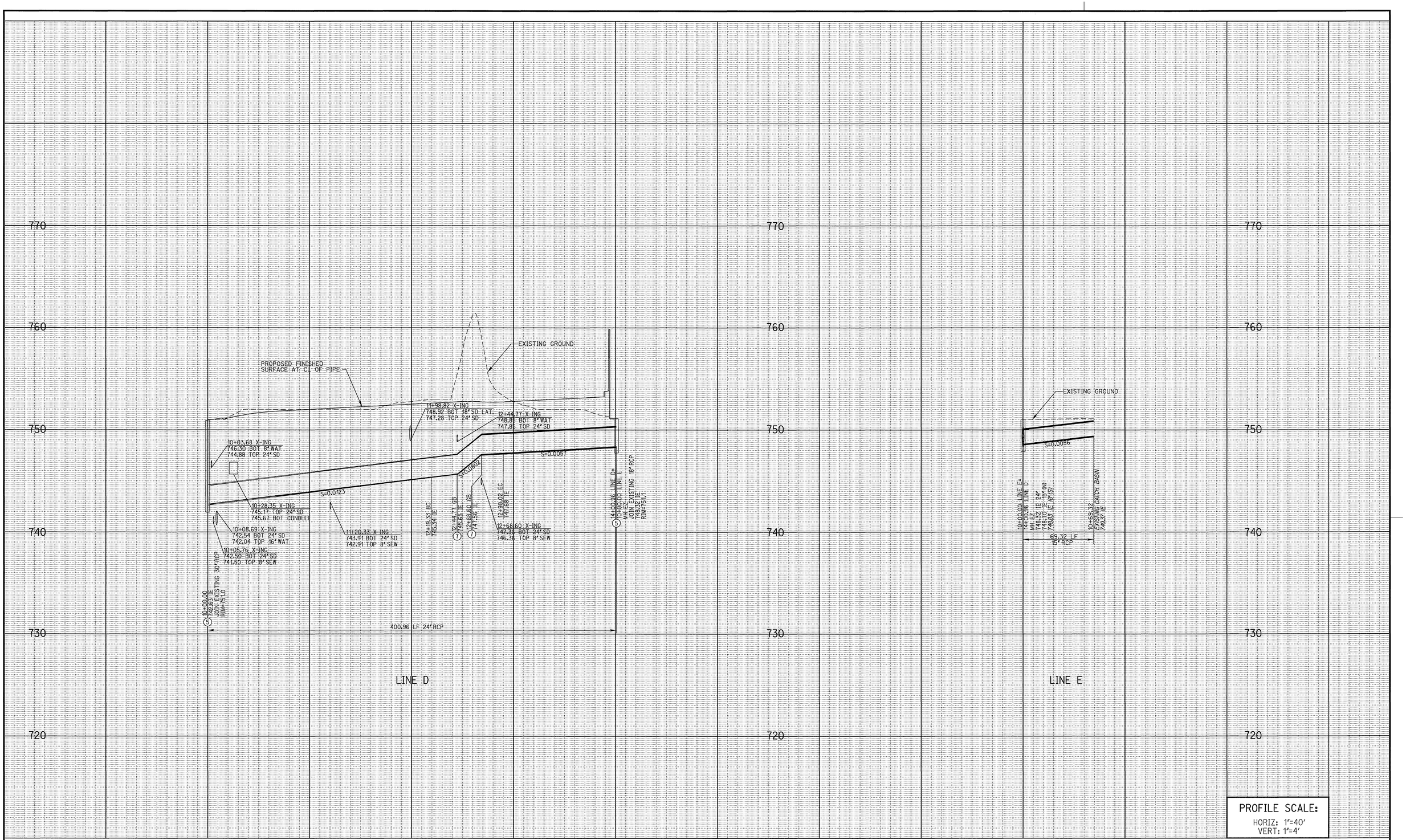
INDEXED 4-14-05 LH

PLOT DATE: 07-MAR-2005 JN 14546B



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

PW04-0888

CONSTRUCTION NOTES

(5) CONSTRUCT MANHOLE EZ PER CITY OF RIVERSIDE STD. NO. 431

(7) CONSTRUCT CONCRETE COLLAR PER CITY OF RIVERSIDE STANDARD NO. 424

DIG ALERT
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UNDERGROUND SERVICE ALERT
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REGISTERED PROFESSIONAL ENGINEER
MARTEN L. ANDERSON
No. 51313
Exp. 6-30-06
CIVIL
STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF
MARTEN L. ANDERSON
REGISTERED CIVIL ENGINEER NO. 51313
EXPIRATION DATE 6-30-06
CITY OF RIVERSIDE WATER DEPARTMENT
APPROVED BY
DATE

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Riverside San Diego Orange Sacramento Phoenix Tucson
CITY BUSINESS TAX CERTIFICATE NO. 35225 EXP. DATE 7/20/05

BENCH MARK: F3-D2
PK NAIL IN THE NORTHERLY CURB RETURN OF VAN BUREN BOULEVARD AND CALIFORNIA AVENUE. ELEVATION = 758.317

MARK	REVISIONS	APPR	DATE

DESIGNED BY JRG DRAWN BY JRG CHECKED BY MLA

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER	PB	10/24/05
PARK DEPARTMENT		
TRAFFIC DIVISION		
STREET SERVICES		

APPROVED BY
CITY ENGINEER
DATE 10/24/05

STORM DRAIN IMPROVEMENT PLANS
TRACT NO. 31553
LINES "D" AND "E"

PROJECT NO. D-774
SHEET 4A OF 4
HORIZ. SCALE 1"=40' VERT. SCALE 1"=4'
FILE NO.

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PLOT DATE: 20-OCT-2005 JN 14546B