

STORM DRAIN IMPROVEMENT PLANS

MAGNOLIA AVENUE EXTENSION

IN THE CITY OF RIVERSIDE, CALIFORNIA

GENERAL NOTES

- 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.
- QUANTITIES SHOWN ARE FOR INFORMATION ONLY AND THE CITY OF RIVERSIDE IS NOT RESPONSIBLE FOR THEIR ACCURACY.
- 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.
- 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.
- 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.
- 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.
- 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.
- THE DEVELOPER SHALL BE RESPONSIBLE FOR PRESERVING OR RE-ESTABLISHING AND REFERENCING SURVEY MONUMENTS DESTROYED, DISTURBED OR BURIED AS A RESULT OF CONSTRUCTION SHOWN HEREON.
- ALL EMBANKMENT FILL SHALL BE COMPACTED TO A MINIMUM OF 90% MAXIMUM DRY DENSITY AND SHALL BE OF AN APPROVED QUALITY.

NOTICE TO CONTRACTOR

THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES (UTILITY PIPES, STRUCTURES, ETC.) SHOWN ON THESE PLANS (MAIN LINES ONLY - NO SERVICE LATERALS) WERE ASCERTAINED BY A REVIEW OF RECORDS PROVIDED BY THESE MEMBER AGENCIES AND ARE APPROXIMATE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN.

THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. LOCATIONS OF UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.

CALL UNDERGROUND SERVICE ALERT (U.S.A.) 1-800-227-2600 AT LEAST 2 WORKING DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.

ENGINEER'S NOTES

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY OF DESIGN AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER CITY APPROVAL OR DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE PRIVATE ENGINEER FOR CLARIFICATION. THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE CITY.

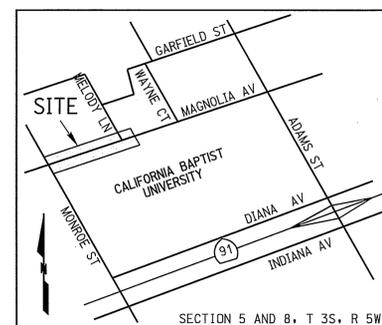
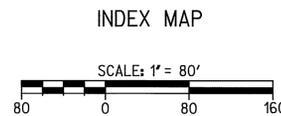
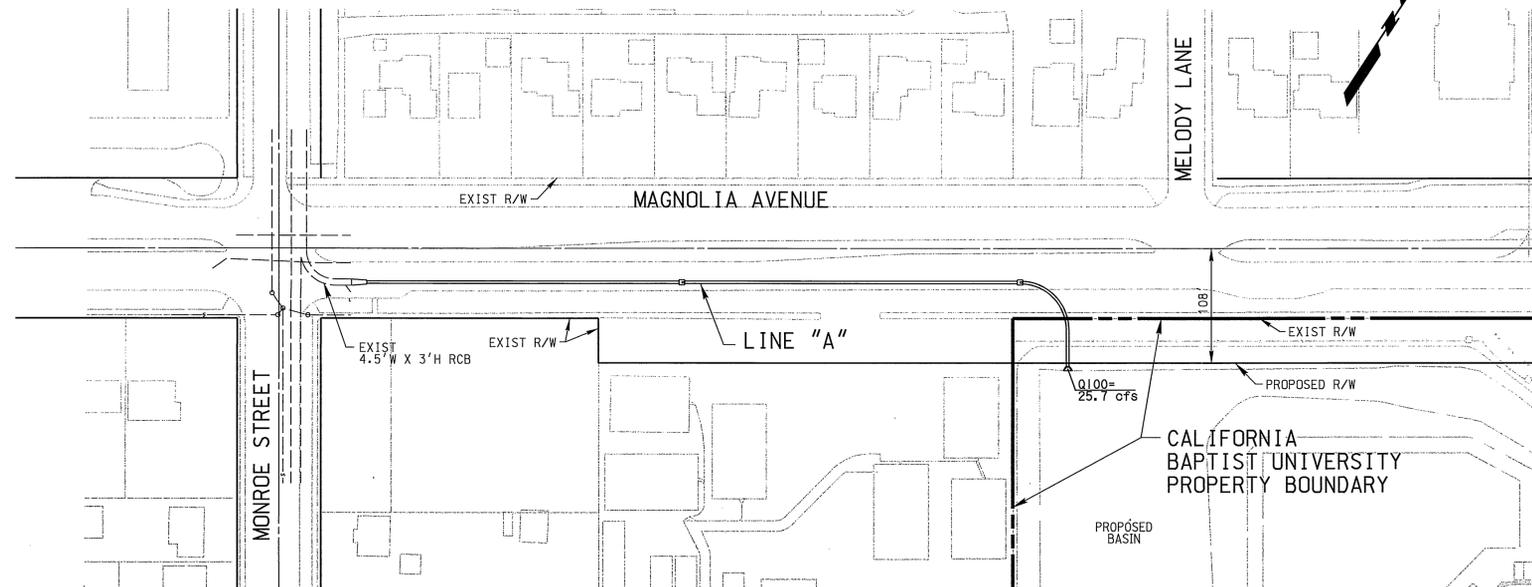
PRIVATE ENGINEER WILL NOT BE PROVIDING INSPECTION SERVICES OR CONSTRUCTION REVIEW. THESE FUNCTIONS ARE THE RESPONSIBILITY OF THE CITY AND/OR THE GENERAL CONTRACTOR. ENGINEER ACCEPTS NO LIABILITY FOR SUCH FUNCTIONS OR WORK THEREOF.

ABBREVIATIONS

TC	- TOP OF CURB
FL	- FLOW LINE
IE	- INVERT ELEVATION
R/W	- RIGHT OF WAY
SD	- STORM DRAIN
BT	- BOTTOM
LAT	- LATERAL
MH	- MANHOLE

LEGEND

EXIST CONTOUR 780
PROPOSED CONTOUR	————— 780 —————
4:1 SLOPE	
STORM DRAIN	
PROPERTY BOUNDARY	—————



VICINITY MAP
N.T.S.

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 WORK CONSTRUCTION ("GREEN BOOK").

PRIVATE ENGINEER'S NOTE TO CONTRACTOR

ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK SHOWN 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 CONTRACTOR'S AND SUBCONTRACTOR'S 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 CIVIL ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTION 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 LOCATIONS OF ALL LINES AFFECTING THIS WORK, WHETHER OR NOT SHOWN HEREON, AND FOR ANY DAMAGE OR PROTECTION TO THESE LINES.

CIVIL ENGINEER

RTCK ENGINEERING COMPANY
1223 UNIVERSITY AVENUE, SUITE 240
RIVERSIDE, CA 92507
ATTN: MARTEN L. ANDERSON, RCE
(909) 782-0707

GEOTECHNICAL ENGINEER

JOHN R. BYERLY, INC.
2257 SOUTH LILAC AVE.
BLOOMINGTON, CA 92316-2907
ATTN: GLENN S. FRASER
(909) 783-1910

CONSTRUCTION NOTES AND QUANTITIES

- PLACE 30" RCP (D-LOAD PER PLAN) WITH BEDDING PER CITY OF RIVERSIDE STD DWG NO. 452 (CASE 1).....745 LF
- CONSTRUCT MODIFIED TRANSITION STRUCTURE NO 1 PER RCFC&WCD STD DWG NO. TS301 (SEE DETAIL ON SHT 3)..... 14 LF
- CONSTRUCT MANHOLE "EZ" PER CITY OF RIVERSIDE STD DWG NO. 431.....2 EA
- CONSTRUCT WING TYPE HEADWALL PER SAN DIEGO REGIONAL STANDARD DWG NO. D-34 (SEE DETAIL ON SHT 3).....1 EA
- REMOVE EXISTING CONCRETE BULKHEAD.....1 EA
- CONSTRUCT TRASH RACK (INCLINED) PER APWA STD 361-0 (SEE DETAIL ON SHT 3).....1 EA
- PLACE TRENCH BACKFILL PER CITY OF RIVERSIDE STD DWG NO. 453 (CASE 1).....750 LF

*AS-BUILT PER PLANS 9-28-05 LHM

CITY OF RIVERSIDE (FOR SHTS 1-3) *ab*
PUBLIC UTILITIES DEPARTMENT
WATER DIVISION
FOR NON-INTERFERENCE COMPLIANCE
X3
APPROVED BY _____ DATE *2/19/03*

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
ROBERT A. STOCKTON
No. C033591
Exp. 6-30-06
CIVIL
STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF
Robert A. Stockton
ROBERT A. STOCKTON
REGISTERED CIVIL ENGINEER No. 33591
EXPIRATION DATE 6-30-06

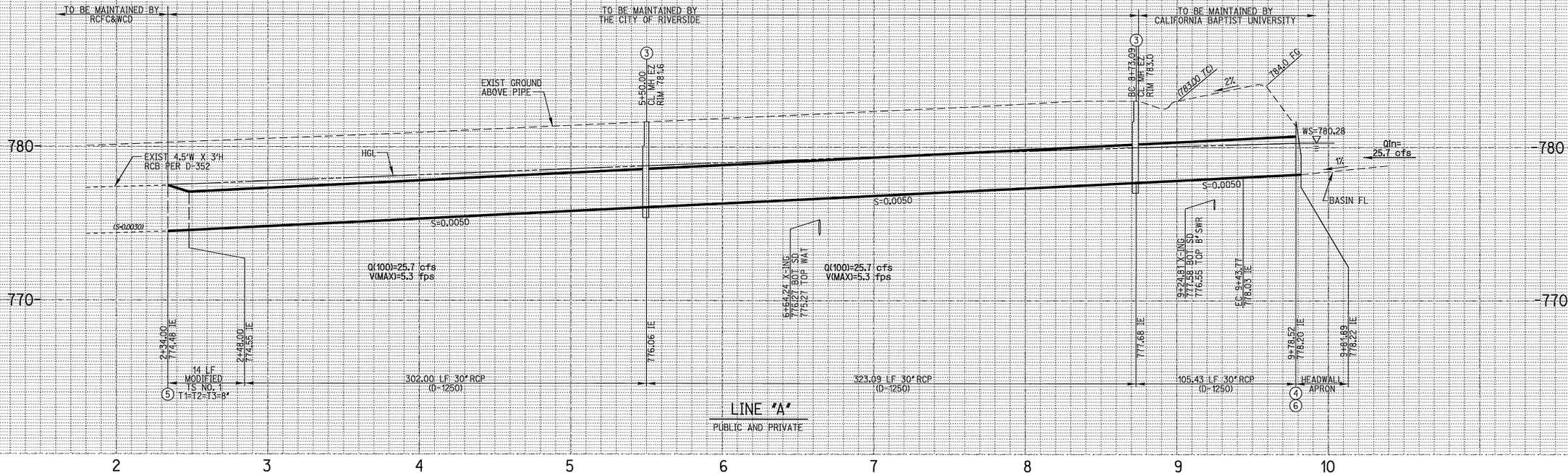
RTCK ENGINEERING COMPANY
San Diego Riverside Orange Phoenix Tucson
1223 University Ave., Ste. 240 - Riverside, CA 92507-9418 - (909) 782-0707 - FAX (909) 782-0723 - www.rickeng.com
CITY BUSINESS TAX CERTIFICATE NO. 35225 EXP. DATE 7/20/03
BENCH MARK:
CITY OF RIVERSIDE BENCHMARK G5-A2, ELEVATION=797.89'. BRASS DISK
STAMPED "65-A" IN A MONUMENT WELL AT THE INTERSECTION OF ADAMS
STREET AND MAGNOLIA AVENUE.

DESIGNED BY	SS	DRAWN BY	SS	CHECKED BY	MLA
MARK		REVISIONS		APPR. DATE	

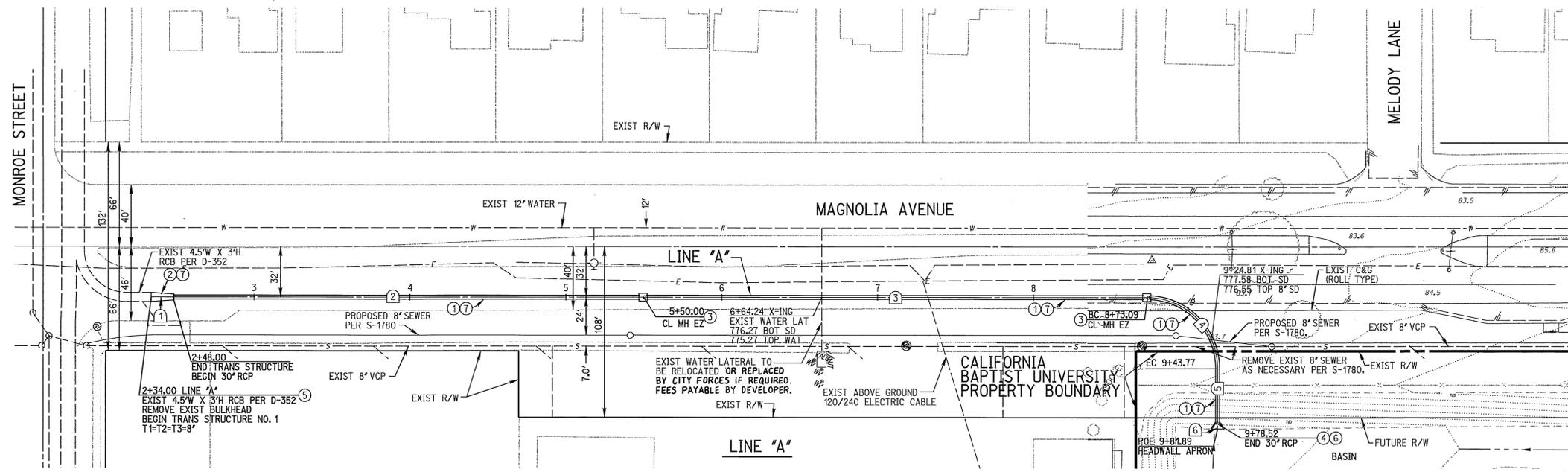
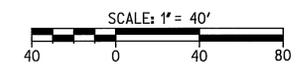
CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT
APPROVED BY _____ BY DATE _____
PRINCIPAL ENGINEER
TRAFFIC DIVISION
DEPUTY P.W. DIRECTOR
STREET SERVICES

STORM DRAIN IMPROVEMENT PLANS
CU-027-667
MAGNOLIA AVENUE
TITLE SHEET
HORIZ. SCALE 1"=80' VERT. SCALE N/A

PROJECT NO. D-716
SHEET 1 OF 3
FILE NO.



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



STORM DRAIN DATA				
NO.	DELTA OR BRG.	RADIUS	LENGTH	REMARK
1	N 56°23'16" E		14.00'	TRANS STRUCTURE
2	N 56°23'16" E		302.00'	30" RCP
3	N 56°23'16" E		323.09'	30" RCP
4	90°00'00"	45.00'	70.69'	30" RCP
5	N 33°36'44" W		34.75'	30" RCP
6	N 33°36'44" W		3.37'	HEADWALL APRON

CONSTRUCTION NOTES

- PLACE 30" RCP (D-LOAD PER PLAN) WITH BEDDING PER CITY OF RIVERSIDE STD DWG NO. 452 (CASE 1).
- CONSTRUCT MODIFIED TRANSITION STRUCTURE NO 1 PER RCFCD&WCD STD DWG NO. TS301 (SEE DETAIL ON SHT 3).
- CONSTRUCT MANHOLE 'EZ' PER CITY OF RIVERSIDE STD DWG NO. 431.
- CONSTRUCT WING TYPE HEADWALL PER SAN DIEGO REGIONAL STANDARD DWG NO. D-34 (SEE DETAIL ON SHT 3).
- REMOVE EXISTING CONCRETE BULKHEAD.
- CONSTRUCT TRASH RACK (INCLINED) PER APWA STD 361-0 (SEE DETAIL ON SHT 3).
- PLACE TRENCH BACKFILL PER CITY OF RIVERSIDE STD DWG NO. 453 (CASE 1).

CAUTION:
 EXACT LOCATION OF EXISTING UNDERGROUND FACILITIES IS UNKNOWN. CONTRACTOR TO VERIFY IN FIELD.

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
 ROBERT A. STOCKTON
 No. C033591
 Exp. 6-30-06
 CIVIL
 STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF
 REGISTERED CIVIL ENGINEER NO. 33591
 EXPIRATION DATE 6-30-06

RICK ENGINEERING COMPANY
 San Diego Riverside Orange Phoenix Tucson
 1223 University Ave., Ste. 210 • Riverside, CA 92507-9418 • (951)782-0707 • FAX: (951)782-0723 • www.rickeng.com
 CITY BUSINESS TAX CERTIFICATE NO. 35225 EXP. DATE 7/20/03

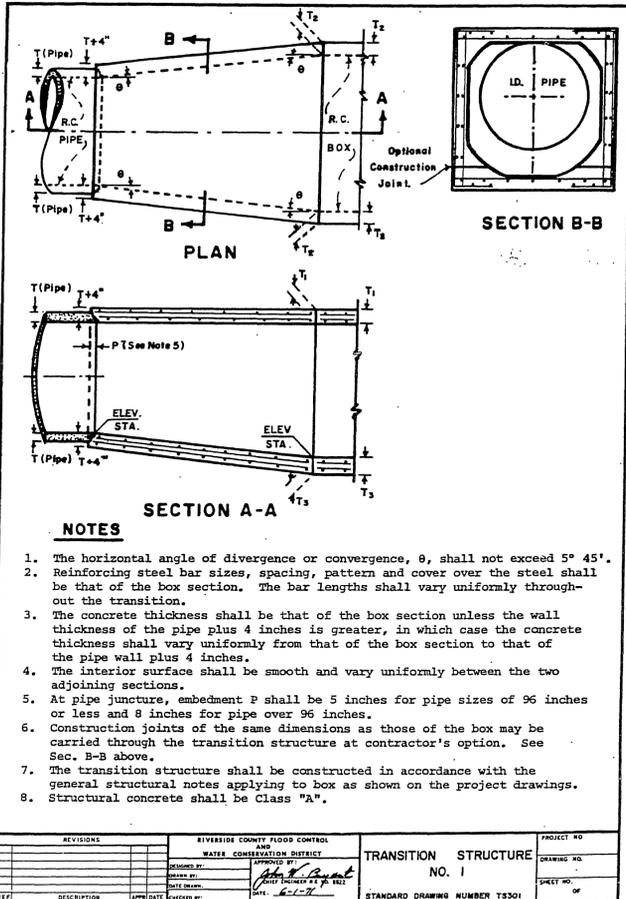
MARK	REVISIONS	APPR	DATE

CITY OF RIVERSIDE
 PUBLIC WORKS DEPARTMENT

APPROVED BY: [Signature]
 DATE: 3/17/03
 DEPUTY P.W. DIRECTOR

STORM DRAIN IMPROVEMENT PLANS
 CU-027-667
 MAGNOLIA AVENUE
 LINE "A"
 2+34.00 TO 9+78.52

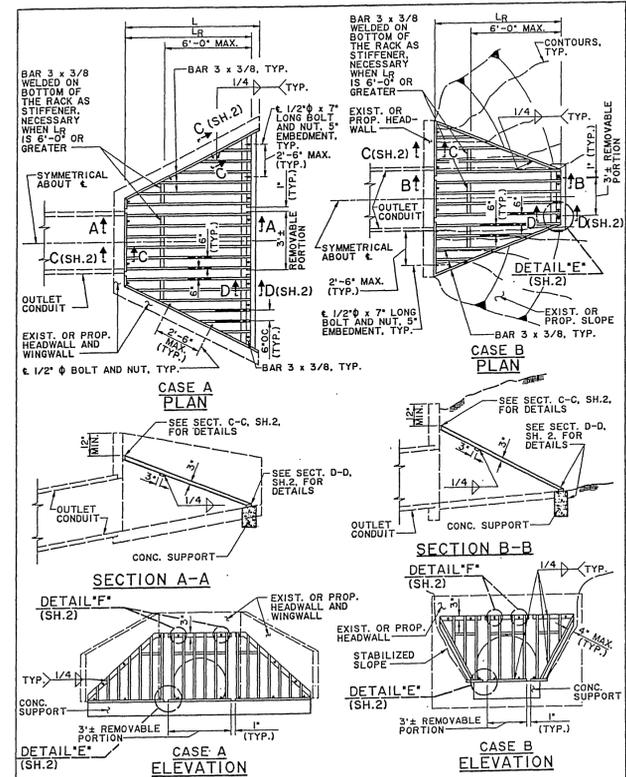
PROJECT NO. D-716
 SHEET 2 OF 3
 FILE NO.



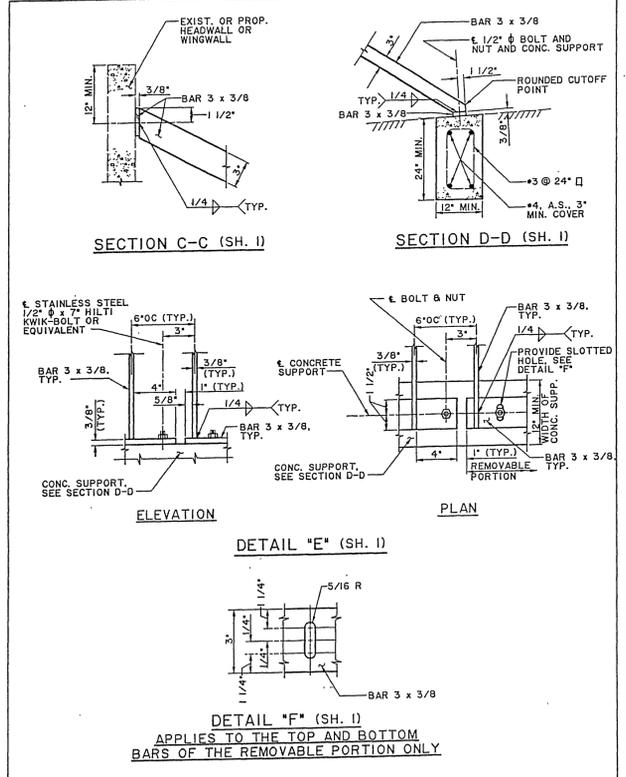
- NOTES**
- The horizontal angle of divergence or convergence, θ , shall not exceed $5^\circ 45'$.
 - Reinforcing steel bar sizes, spacing, pattern and cover over the steel shall be that of the box section. The bar lengths shall vary uniformly throughout the transition.
 - The concrete thickness shall be that of the box section unless the wall thickness of the pipe plus 4 inches is greater, in which case the concrete thickness shall vary uniformly from that of the box section to that of the pipe wall plus 4 inches.
 - The interior surface shall be smooth and vary uniformly between the two adjoining sections.
 - At pipe juncture, embedment P shall be 5 inches for pipe sizes of 96 inches or less and 8 inches for pipe over 96 inches.
 - Construction joints of the same dimensions as those of the box may be carried through the transition structure at contractor's option. See Sec. B-B above.
 - The transition structure shall be constructed in accordance with the general structural notes applying to box as shown on the project drawings.
 - Structural concrete shall be Class "A".

REVISIONS	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	TRANSITION STRUCTURE NO. 1	PROJECT NO.
DATE	APPROVED BY	DRAWING NO.	SHEET NO.
DESCRIPTION	CHECKED BY	STANDARD DRAWING NUMBER T3301	

TRANSITION STRUCTURE NO 1 DETAIL
NOT TO SCALE



AMERICAN PUBLIC WORKS ASSOCIATION - SOUTHERN CALIFORNIA CHAPTER		STANDARD PLAN
TRASH RACK (INCLINED)		361-0
USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION		SHEET 1 OF 3

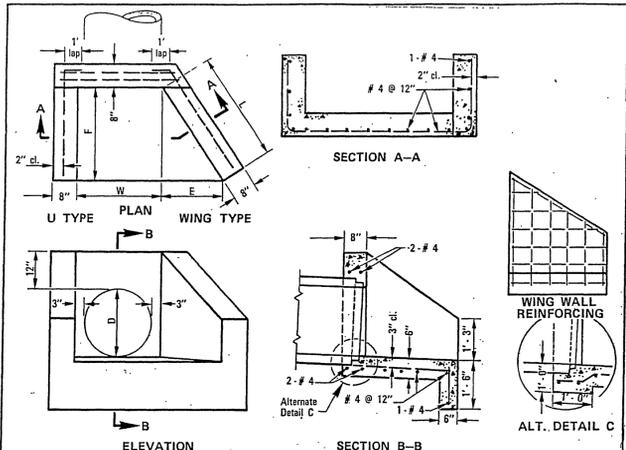


AMERICAN PUBLIC WORKS ASSOCIATION - SOUTHERN CALIFORNIA CHAPTER		STANDARD PLAN
TRASH RACK (INCLINED)		361-0
		SHEET 2 OF 3

TRASH RACK DETAIL
NOT TO SCALE

- NOTES**
- MAXIMUM SIZE OF OUTLET TO BE USED WITH THIS RACK IS 48" PIPE OR 48" WIDE RCB. MAXIMUM LENGTH OF RACK L_R IS 10'-0".
 - L_R CAN BE ADJUSTED SO THAT THE SLOPE OF THE RACK IS APPROXIMATELY 2 HORIZONTAL TO 1 VERTICAL.
 - THE CONCRETE SUPPORT IS NOT NECESSARY IF EXISTING OR PROPOSED INLET STRUCTURE HAS ADEQUATE SUPPORT CUTOFF WALL. IT DOES NOT ELIMINATE THE NEED FOR A CUTOFF WALL BUT CAN BE INTEGRATED WITH ONE WHEN REQUIRED AT A PARTICULAR INSTALLATION.
 - GALVANIZE ALL EXPOSED FERROUS PARTS AFTER FABRICATION.
 - IF FIELD WELDS ARE NECESSARY, USE GALVICON, USE GALVALLOY OR AGENCY APPROVED EQUAL FOR COATING.
 - ALL BOLTS SHALL BE 1/2" IN DIAMETER AND 7" IN LENGTH, ON REMOVABLE PORTION OF THE RACK, USE 300 SERIES STAINLESS STEEL BOLTS AND NUTS. FOR WINGWALL BOLTS FOR CASE A, AND WHERE HEADWALL AND WINGWALL ARE EXISTING, HILTI KWIK-BOLT OR EQUIVALENT CAN BE USED.

AMERICAN PUBLIC WORKS ASSOCIATION - SOUTHERN CALIFORNIA CHAPTER		STANDARD PLAN
TRASH RACK (INCLINED)		361-0
		SHEET 3 OF 3



DIA OF PIPE	DIMENSIONS				SINGLE PIPE				DOUBLE PIPE			
	L	E	F	W	U TYPE CONCRETE	WING TYPE CONCRETE						
18"	2'-3 1/8"	1'-3"	1'-10 1/2"	2'-0"	0.55	35	0.53	43	0.82	53	0.90	61
24"	3'-1 7/8"	1'-8"	2'-7 1/2"	2'-6"	0.79	47	0.93	60	1.22	73	1.36	86
30"	4'-0 5/8"	2'-5"	3'-4 1/2"	3'-0"	1.05	71	1.29	85	1.68	109	1.92	123
36"	4'-11 1/2"	2'-9"	4'-1 1/2"	3'-6"	1.33	88	1.89	114	2.19	138	2.55	162

- NOTES:**
- Concrete shall be 560-C-3250
 - Exposed corners to be chamfered 3/4".
 - Multiple pipes to be set a distance of D/2, with a 1' minimum between outside diameters of pipes.
 - Top of headwall shall be placed approximately parallel to profile grade when the grade is 3% or more.
 - Skewed pipes: Dimension W to be increased in width or length due to skew or multiple pipes.
 - For pipe wall thickness greater than 3" use alternate Detail-C.



RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARD DRAWING COMMITTEE	SAN DIEGO REGIONAL STANDARD DRAWING	Revision	By	Approved	Date
		1	MLA	MLA	5-86

WING AND U TYPE HEADWALLS FOR 12" TO 36" PIPES

WING TYPE HEADWALL DETAIL
NOT TO SCALE

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

ROBERT A. STOCKTON

No. C03359H

Exp. 6-30-06

CIVIL

STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF

ROBERT A. STOCKTON

REGISTERED CIVIL ENGINEER NO. 33591

EXPIRATION DATE 6-30-06

RICK ENGINEERING COMPANY

San Diego Riverside Orange Phoenix Tucson

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CITY BUSINESS TAX CERTIFICATE NO. 35225 EXP. DATE 7/20/03

BENCH MARK: CITY OF RIVERSIDE BENCHMARK GS-A2, ELEVATION=797.89'. BRASS DISK STAMPED "GS-A2" IN A MONUMENT WELL AT THE INTERSECTION OF ADAMS STREET AND MAGNOLIA AVENUE.

DESIGNED BY	SS	DRAWN BY	SS	CHECKED BY	MLA
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CITY OF RIVERSIDE

PUBLIC WORKS DEPARTMENT

APPROVED BY

PRINCIPAL ENGINEER

TRAFFIC DIVISION

DEPUTY P.W. DIRECTOR

STREET SERVICES

DATE 3/1/03

STORM DRAIN IMPROVEMENT PLANS

CU-027-667

MAGNOLIA AVENUE

DETAIL SHEET

PROJECT NO.	D-716
SHEET	3 OF 3

*AS-BUILT PER PLANS 9-28-05 4H