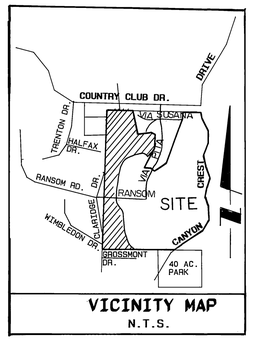
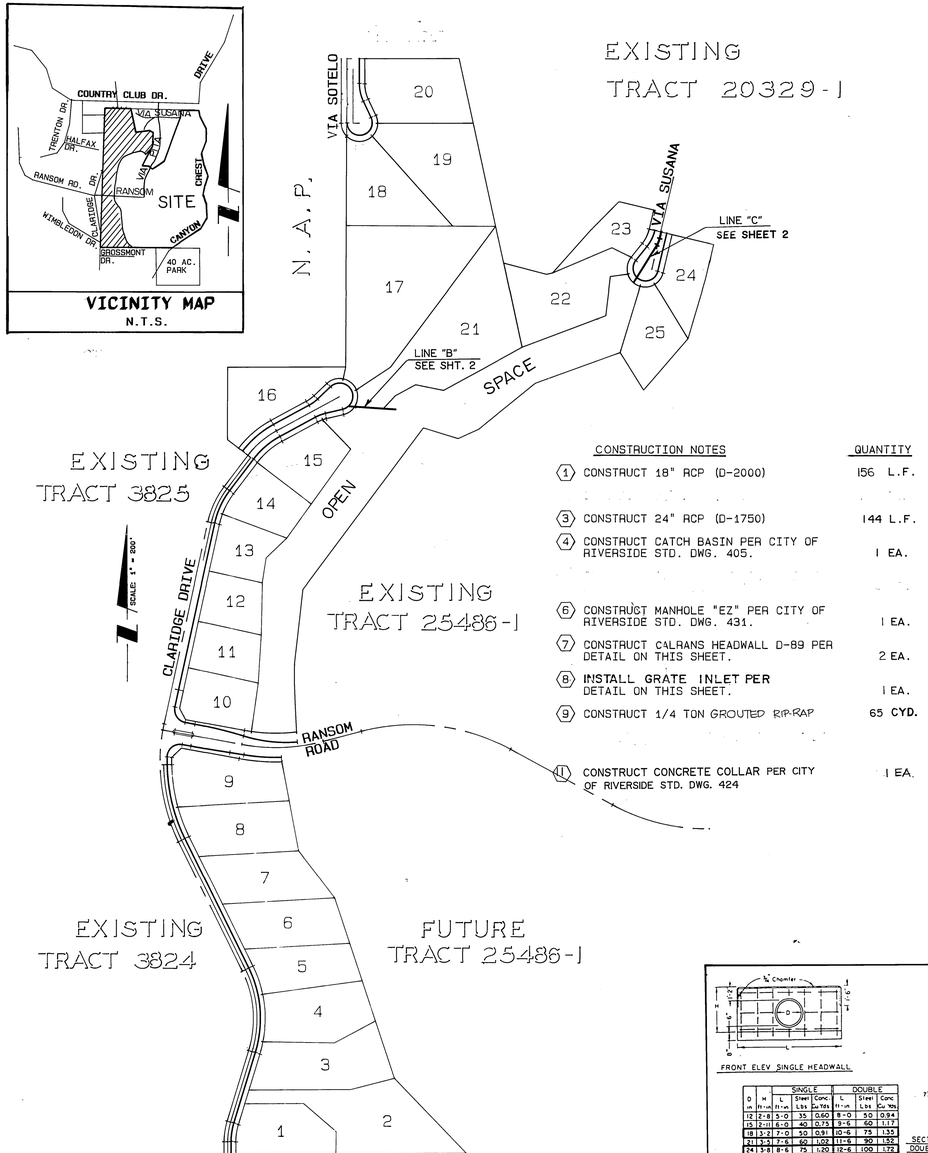
STORM DRAIN IMPROVEMENT PLANS

STORM DRAIN NOTES

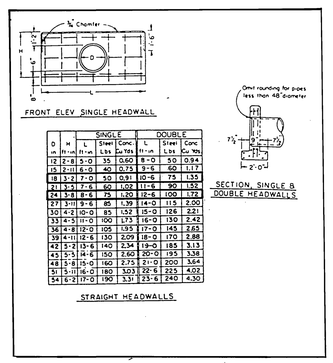
1. Quantities shown are for information only and the City of Riverside is not responsible for their accuracy.
2. Construction shall be in accordance with the City of Riverside Dept. of Public Works, Std. Dwgs., Std. Dwg. No. 10 and the Standard Specifications for Public Works Construction, Current Edition.
3. 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.
4. Notice to contractor. The existence and location of any underground utility pipes or structures shown on these plans were obtained by a search of the available records. To the best of our knowledge there are no existing utilities exept 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.
5. 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.
6. The contractor shall call in a locations request to UNDERGROUND SERVICE ALERT (USA), Phone No. 1-800-422-4133, 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.
7. 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.
8. All embankment fill shall be compacted to minimum of 90% maximum dry density and shall be of an approved quality.
9. Before the Rip-Rap is accepted, 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.
10. All flagged elevations shall be staked in the field by the private engineer.
11. Contractor 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 engineer harmless from any and all liability, real or alleged, in connection with performance of work on this project, excepting for liability arising from the sole negligence of the owner or the engineer.
12. The concrete cover on the inside of all concrete pipe must be increased to provide a min. of 1.5" over the reinforcing when the design velocities exceed 20 fps. The aconcrete design strength in these reaches shall be:
    fc = 5000 psi. for velocities exceeding 20 fps. and
    fc = 6000 psi. for velocities exceeding 30 fps.
13. All rip rap will be natural river-rock, not blasted rock.
14. Grout will be color treated to blend into the natural surrounding terrain.
15. All drainage features including grates, trash racks, headwalls, etc. will be color treated to blend in with the natural surrounding terrain.



VICINITY MAP
N.T.S.



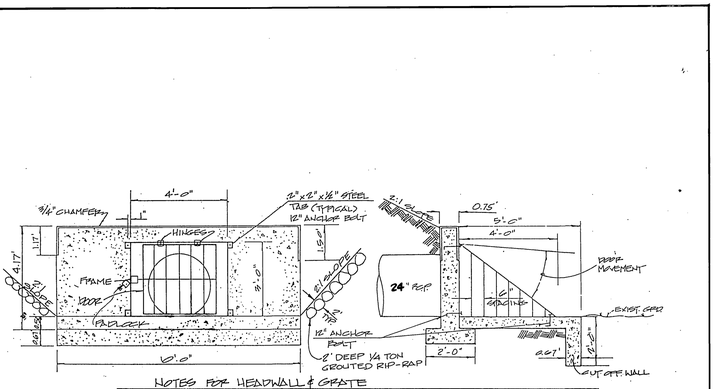
CONSTRUCTION NOTES	QUANTITY
(1) CONSTRUCT 18" RCP (D-2000)	156 L.F.
(3) CONSTRUCT 24" RCP (D-1750)	144 L.F.
(4) CONSTRUCT CATCH BASIN PER CITY OF RIVERSIDE STD. DWG. 405.	1 EA.
(6) CONSTRUCT MANHOLE "EZ" PER CITY OF RIVERSIDE STD. DWG. 431.	1 EA.
(7) CONSTRUCT CALTRANS HEADWALL D-89 PER DETAIL ON THIS SHEET.	2 EA.
(8) INSTALL GRATE INLET PER DETAIL ON THIS SHEET.	1 EA.
(9) CONSTRUCT 1/4 TON GROUTED RIP-RAP	65 CYD.
(11) CONSTRUCT CONCRETE COLLAR PER CITY OF RIVERSIDE STD. DWG. 424	1 EA.



D in	H ft-in	SINGLE 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	85	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	1.93	17'-0	145	2.63
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

HEADWALL DETAIL (7)



NOTES FOR HEADWALL & GRATE
1. ALL STEEL BARS TO BE USED SHALL BE #4 REBAR OR GREATER.
2. BAR SPACING TO BE 6" MAXIMUM - ON CENTER
3. TRIM ANCHOR BOLTS UPON COMPLETION.
4. REMOVE ALL RUST OFF GRATE AND PAINT BLACK USING CITY APPROVED PAINT.
5. HEADWALL TO BE CONST. PER CALTRANS STD D-89
A) ALL REINFORCING STEEL #4 BARS, HORIZ. & VERT. SPACING = 18" MAX.

(6) HEADWALL & GRATE DETAIL

GRATE DETAIL (8)

PACIFIC TELEPHONE CO.	CITY OF RIVERSIDE OVERHEAD & UNDERGROUND	CITY OF RIVERSIDE WATER SYSTEM	CITY OF RIVERSIDE PLANNING DEPARTMENT EPC-50-890 (NOTES 13-15)
APPROVED BY 6/2/92 DATE	APPROVED BY: 7/15/92 DATE	APPROVED 7-31-92 DATE	APPROVED BY 6/10/92 DATE

Underground Service Alert
CALL BEFORE YOU DIG
Call: TOLL FREE
1-800
422-4133
TWO WORKING DAYS BEFORE YOU DIG

PRIVATE ENGINEERING NOTE

CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL.

REGISTERED PROFESSIONAL ENGINEER JEFFREY D. SMITH No. 46212 12/31/94 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF:
REGISTERED CIVIL ENGINEER NO. 46212
EXPIRATION DATE: 12/31/94 DATE: 4/15/92
APPROVED BY:

JFD
CITY BUSINESS TAX CERT. NO. 4994 EXP. DATE 12-31-93
J.F. Davidson Associates, Inc.
ENGINEERING PLANNING SURVEYING ARCHITECTURE LANDSCAPE ARCHITECTURE
3880 Lemon Street, Suite 300, P.O. Box 493, Riverside, CA 92502, (714) 686-0844, FAX 714-686-9954
11200 S. Mt. Vernon Ave., Suite "D", Colton, CA 92324, (714) 825-1082
73-080 El Paseo, Suite 106, Palm Desert, CA 92260, (619) 346-5691, FAX 619-340-0529

SCALE: 1"=40'
DATE: JULY, 1991
BENCH MARK: P.K. NAIL @ TAG IN BASE OF LIGHT STANDARD IN MEDIAN STRIP OF COUNTRY CLUB DRIVE 60'+ WEST OF C/L CANYON CREST DRIVE. ELEV. = 1068.06

MARK	REVISIONS	APPR.	DATE

DESIGNED BY T.C.L. DRAWN BY D.P.P. CHECKED BY J.D.S.

CITY OF RIVERSIDE, CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER		7/14/93
PARK DEPARTMENT		
TRAFFIC DIVISION		
CHIEF P. W. ENGR.		7/21/93

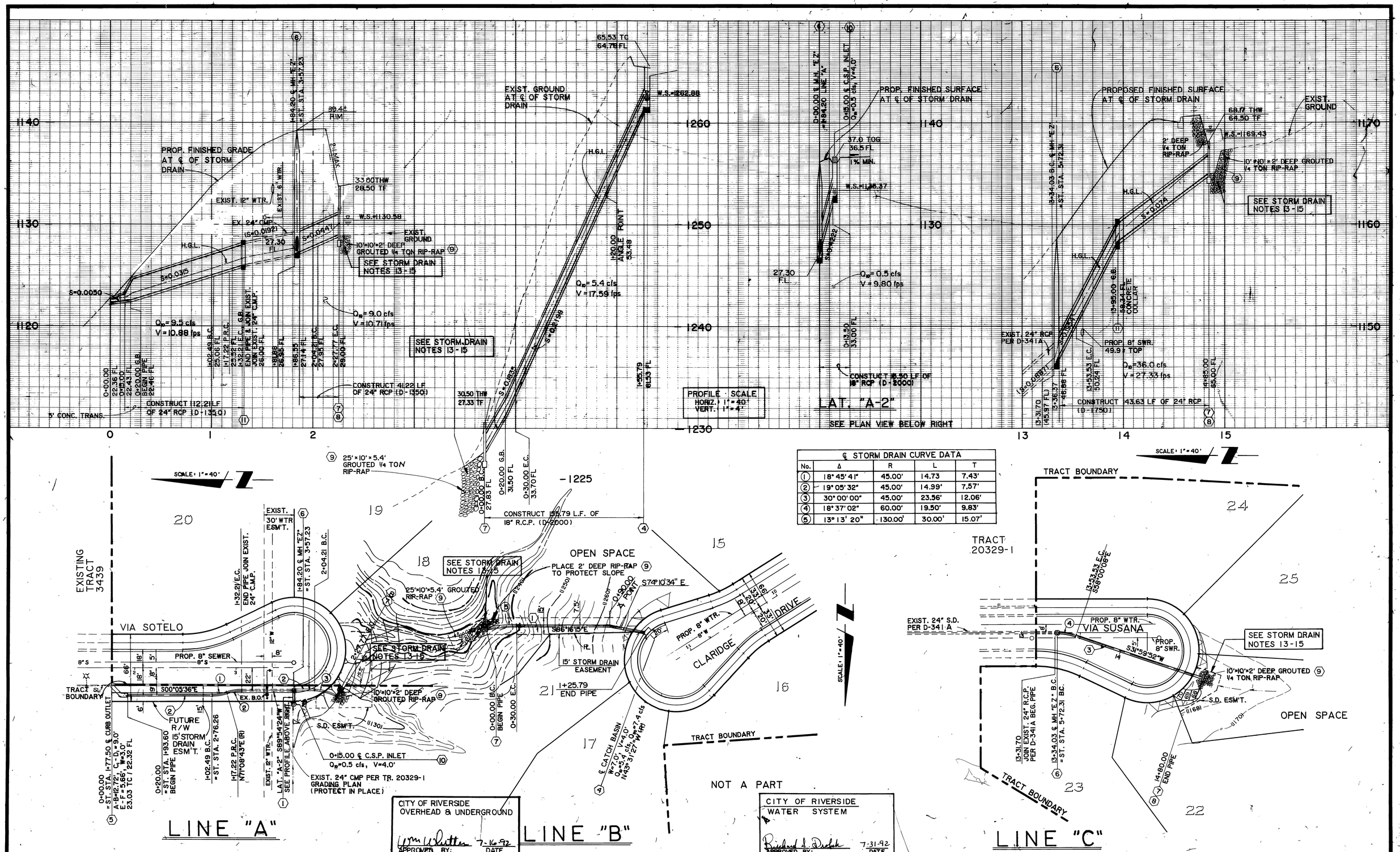
APPROVED BY
DIRECTOR OF PUBLIC WORKS
DATE 7/22/93

TRACT 25486-2
STORM DRAIN IMPROVEMENT PLAN
TITLE SHEET
FOR: CHRISTIAN BERGUM & ASSOCIATES

PROJECT NO. 9112517
D-616
SHEET 1 OF 2
FILE NO.: 9112517

FRED

INDEXED 9-1-93



℄ STORM DRAIN CURVE DATA				
No.	Δ	R	L	T
1	18° 45' 41"	45.00'	14.73	7.43'
2	19° 05' 32"	45.00'	14.99'	7.57'
3	30° 00' 00"	45.00'	23.56'	12.06'
4	18° 37' 02"	60.00'	19.50'	9.83'
5	13° 13' 20"	130.00'	30.00'	15.07'

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PREPARED UNDER THE DIRECTION OF: JDS
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CITY OF RIVERSIDE, CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER		
PARK DEPARTMENT		
TRAFFIC DIVISION		
CHIEF P. W. ENGR.		

APPROVED BY: DIRECTOR OF PUBLIC WORKS
DATE 7/22/93

TRACT 25486-2
STORM DRAIN IMPROVEMENT PLAN
LINE "A", LINE "B", LINE "C"
LATERAL "A-2"
FOR: CHRISTIAN BERGUM & ASSOCIATES

PROJECT NO. 9112517
D-616
SHEET 2 OF 2
FILE NO.: 9112517

INDEXED 9-1-93 GH