

STORM DRAIN PLANS IN TRACT NO. 43341 M.T.D. 1165

BENCH MARK
CG 2710
 CSBM IN 2ND LIGHT STD. OF MT. SAC
 PARKING LOT 75 FT. E. + 900 FT. N. C/L
 INT. GRAND AVE. + TEMPLE AVE. M.K.D.
 (B.M. 17-31 1963)
 COVINA (1975) ELEV. 732.057

GENERAL NOTES (Cont'd)

23. A SOILS ENGINEER SHALL CERTIFY THAT ALL FILLS AND BACKFILLS OVER UNDERGROUND STORM DRAINS OUTSIDE OF ST. R/W HAVE BEEN COMPACTED OR CONSOLIDATED TO A 90% DENSITY. THIS CERTIFICATION SHALL BE SUBMITTED TO THE CITY ENGINEER PRIOR TO ACCEPTANCE OF THE WORK.
24. THE CONTRACTOR'S ATTENTION IS DIRECTED TO SECTION 7-10. 4.1 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION IN REGARD TO SAFETY ORDERS.
25. THE CONTRACTOR SHALL CONFORM TO THE "MINIMUM PUBLIC SAFETY REQUIREMENTS" AS SHOWN ON L.A. COUNTY ENGINEER STANDARD S-2.
26. ALL PIPE SHALL BE PLACED IN A TRENCH IN NATURAL GROUND AND/OR COMPACTED FILL. THE GROUND LEVEL BEFORE THE TRENCHING SHALL BE AT LEAST 3 FEET ABOVE TOP OF PIPE ELEVATION. OR AT FINISH SURFACE ELEVATION, WHICHEVER IS LESS. ALL BACKFILL IN EASEMENTS SHALL BE COMPACTED TO THE DENSITY REQUIRED BY THE GRADING PLAN.
27. THE INSPECTOR MAY HAVE THE OPTION TO REQUIRE CONCRETE BACKFILL DURING CONSTRUCTION WHEN THE PIPE HAS LESS THAN ONE FOOT OF COVER AND IS SUBJECTED TO HEAVY EQUIPMENT TRAFFIC. THE CONCRETE BACKFILL SHALL CONSIST OF 1:3:5 MIX CEMENT CONCRETE POURED FROM WALL TO WALL OF TRENCH AND FROM BOTTOM OF TRENCH TO A MINIMUM DEPTH OF 4 INCHES OVER TOP OF PIPE.
28. THE CONTRACTOR SHALL NOTIFY THE LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION DIVISION BY TELEPHONE AT (213) 369-1000 AT LEAST 24 HOURS BEFORE STARTING ANY WORK UNDER THIS CONTRACT.
29. MAIN LINE STORM DRAIN R.C. PIPE, WHERE INDICATED IN THE PROFILE SHALL BE MANUFACTURED WITH 1" OR 1 1/2" ADDITIONAL THICKNESS OF CONCRETE OVER THE INVERT REINFORCING.
30. A PERMIT SHALL BE OBTAINED FROM THE LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS PRIOR TO COMMENCING ANY CONSTRUCTION WORK UNDER THIS CONTRACT. CONTACT THE DEPT. BY TELEPHONE AT 226-4208 TO OBTAIN AN INSPECTION AND CONNECTION PERMIT AND TO MAKE DEPOSIT FOR CONSTRUCTION INSPECTION BY THE DEPARTMENT.
31. LONGITUDINAL STEEL SHALL BE CONTINUOUS AND EXTEND THROUGH ALL CONSTRUCTION JOINTS EXCEPT TRANSVERSE JOINTS IN RECTANGULAR CHANNELS AND AROUND ALL CORNERS UNLESS OTHERWISE SHOWN.
32. THE CONTRACTOR SHALL PROVIDE FOR CONTRIBUTORY DRAINAGE AT ALL TIMES UNTIL THIS STORM DRAIN SYSTEM IS OPERABLE.
33. ALL REFERENCES ON THIS PLAN TO THE COUNTY ENGINEER, ROAD DEPARTMENT, OR FLOOD CONTROL DISTRICT SHALL APPLY TO THOSE APPROPRIATE SECTIONS OF THE LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS.

GENERAL NOTES

1. ELEVATIONS ARE IN FEET ABOVE U.S.C. & G.S. MEAN SEA LEVEL DATUM OF 1929. ALL WORK SHALL BE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION 1985 EDITION", INCLUDING SUPPLEMENTS AND SHALL BE PROSECUTED ONLY IN THE PRESENCE OF THE CITY ENGINEER.
2. APPROVAL OF THIS PLAN BY THE COUNTY OF LOS ANGELES DOES NOT CONSTITUTE A REPRESENTATION AS TO THE ACCURACY OF THE LOCATION, OR THE EXISTENCE OR NON-EXISTENCE OF ANY UNDERGROUND UTILITY, PIPE OR STRUCTURE WITHIN THE LIMITS OF THIS PROJECT. THIS NOTE APPLIES TO ALL SHEETS.
3. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER BY TELEPHONE, (213) 394-3762 AT LEAST 24 HOURS BEFORE STARTING ANY WORK UNDER THIS CONTRACT. THE CONTRACTOR SHALL SUBMIT A DEPOSIT FOR CONSTRUCTION INSPECTION TO THE CITY ENGINEER, CITY OF WALNUT, AT LEAST 24 HOURS BEFORE STARTING ANY WORK UNDER THIS CONTRACT.
4. ALL CONSTRUCTION JOINTS IN THE FOOTING OF SLABS AND WALLS SHALL BE IN THE SAME PLANE. NO STAGGERING OF JOINTS WILL BE PERMITTED.
5. NO CONCRETE SHALL BE PLACED UNTIL THE FORMS AND REINFORCING STEEL HAS BEEN PLACED, INSPECTED AND APPROVED.
6. TRANSVERSE REINFORCEMENT AND TRANSVERSE JOINTS SHALL BE PLACED AT RIGHT ANGLES (OR RADIAL) TO CONDUIT CENTERLINE EXCEPT AS OTHERWISE SHOWN ON THE DRAWINGS.
7. ALL CONCRETE SHALL BE PORTLAND CEMENT CONCRETE WITH AN MINIMUM 28 DAYS COMPRESSIVE STRENGTH OF 3250 PSI.
8. ALL EXPOSED EDGES SHALL BE FINISHED WITH A 3/4" CHAMFER.
9. ALL STEEL ADJACENT TO FACE OF CONCRETE SHALL HAVE 2 1/2" CLEARANCE UNLESS OTHERWISE SPECIFIED.
10. REINFORCEMENT SHALL BE DEFORMED BARS OF INTERMEDIATE GRADE STEEL AS PER A.S.T.M. A-615 GRADE 60.
11. ALL BAR BENDS AND HOOKS SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "MANUAL OF STANDARD PRACTICE".
12. DIMENSIONS FROM FACE OF CONCRETE TO STEEL ARE TO CENTERLINE OF STEEL UNLESS OTHERWISE NOTED.
13. ALL BACKFILLS AND FILLS TO BE USED AS SUBGRADE SHALL BE COMPACTED TO A RELATIVE DENSITY OF 90% UNLESS OTHERWISE SPECIFIED.
14. ALL STEEL THAT IS TO BE CONTINUOUS SHALL HAVE A MINIMUM LAP OF 30 BAR DIAMETERS OR 18", WHICHEVER IS GREATER.
15. ALL CATCH BASINS AND CONNECTOR PIPES BETWEEN CATCH BASINS TO BE INSPECTED BY THE CITY.
16. PIPE SHALL BE EMBEDDED 5 INCHES INTO ALL STRUCTURES INCLUDING INLET & HEADWALLS, UNLESS OTHERWISE SPECIFIED.
17. WHERE PIPE IS TO BE PLACED IN FILL, THE FILL SHALL BE COMPACTED TO A MINIMUM DEPTH OF 3 FEET ABOVE THE TOP OF PIPE PRIOR TO TRENCHING.
18. ALL BACKFILL AND FILL AROUND CLOSED CONDUIT IN STREET RIGHTS OF WAY SHALL BE BROUGHT UP TO SUBGRADE OF THE ROAD OR TO 2 FEET ABOVE THE TOP OF THE CONDUIT, WHICHEVER IS LESS. THE DEPARTMENT SHALL INSPECT ALL BACKFILL AND FILL ABOVE AFOREMENTIONED LIMITS. APPLICATION FOR AN ENGINEER OR INSPECTOR IN CONNECTION WITH THE WORK, SHALL BE MADE BY THE CONTRACTOR AT LEAST 24 HOURS BEFORE HIS SERVICE IS REQUIRED.
19. A PERMIT SHALL BE OBTAINED FROM THE ROAD DEPARTMENT AND SHALL BE SUBMITTED TO THE INSPECTOR PRIOR TO COMMENCING CONSTRUCTION WITHIN THEIR RIGHTS OF WAY.
20. ALL REINFORCED CONCRETE PIPE SHALL BE BEDDED IN ACCORDANCE WITH LOS ANGELES COUNTY ENGINEER CASE AND BEDDING PER STANDARD DRAWING D-54 UNLESS OTHERWISE NOTED. THE BEDDING MATERIAL PLACED FROM THE BOTTOM OF THE PIPE TO 1 FOOT OVER THE TOP OF THE PIPE SHALL BE SAND, CRUSHED AGGREGATE, OR NATIVE, FREE-DRAINING GRANULAR MATERIAL AND SHALL HAVE A SAND EQUIVALENT OF 20 OR GREATER.
21. UNLESS OTHERWISE SHOWN, CONCRETE DIMENSIONS SHALL BE MEASURED VERTICALLY OR HORIZONTALLY AND PARALLEL OR AT RIGHT ANGLES (OR RADIAL) TO THE CENTER LINE OF CONSTRUCTION.
22. THIS STORM DRAIN WILL NOT BE ACCEPTED FOR MAINTENANCE UNTIL THE STREETS HAVE BEEN PAVED, MANHOLES BROUGHT TO GRADE, AND THE SYSTEM IS CLEANED TO THE SATISFACTION OF CITY ENGINEER.

HYDRAULIC ELEMENTS - 25 YR. FREQUENCY

LINE	STATION	STATION	PIPE SIZE	Q (CFS)	V (FPS)	D _r (FT)
"A"	1+10.05	1+37.00	36"	94.1	30.4	1.14'
	1+37.00	1+60.71	36"	93.1	30.4	1.13'
	1+60.71	2+37.00	36"	82.8	31.1	1.06'
	2+37.00	2+45.00	36"	68.6	19.5	0.96'
	2+45.00	2+53.00	36"	68.6	16.6	1.07'
	2+53.00	2+63.00	36"	68.6	12.2	1.71'
	2+73.67	6+57.66	36"	68.6	14.6	3.00'
	6+62.33	6+80.05	36"	47.4	18.7	1.06'
6+80.05	7+11.81	36"	41.9	14.8	0.98'	
LAT. A-1	0+00.00	0+51.39	24"	21.2	11.8	0.89'
LAT. A-2	0+00.00	0+42.46	18"	14.2	14.7	0.60'
LAT. A-3	0+00.00	0+46.37	18"	10.3	25.3	0.90'
"	0+46.37	0+86.65	18"	6.3	5.2	0.53'
LAT. A-5	0+00.00	0+25.63	18"	17.5	13.3	0.89'
"B"	2+15.35	5+39.70	45"	135.2	14.2	2.61'
	5+39.70	5+82.69	36"	96.4	13.8	3.00'
	5+82.69	6+53.92	36"	91.3	12.9	3.00'
	6+53.92	8+40.00	36"	88.4	12.5	3.00'
	8+40.00	10+11.21	36"	88.4	21.1	1.87'
	LAT. B-1	0+00.00	0+28.86	18"	5.1	4.8
LAT. B-2	0+00.00	0+12.00	18"	2.9	1.6	0.28'
"C"	0+86.41	1+62.00	30"	44.1	11.7	1.78'
	1+62.00	1+94.18	30"	42.1	13.4	1.78'
	1+94.18	2+50.00	24"	27.9	20.4	0.93'
	2+50.00	3+30.00	24"	27.9	20.5	0.89'
	3+30.00	4+11.00	24"	27.9	20.3	0.84'
	4+11.00	4+32.93	24"	23.7	15.8	0.76'
	4+32.93	4+50.43	24"	16.0	16.2	0.62'
	4+50.43	4+77.92	24"	15.0	15.1	0.60'
	4+77.92	5+08.48	18"	8.0	5.8	0.52'
	LAT. C-1	0+00.00	0+57.13	18"	11.0	18.4
"	0+57.13	0+78.13	18"	5.1	13.6	0.61'
"	0+78.13	1+11.33	18"	5.1	13.6	0.87'
LAT. C-2	0+00.00	0+15.12	18"	1.0	11.1	0.14'
LAT. C-3	0+00.00	0+29.20	18"	4.2	13.3	0.32'
LAT. C-4	0+00.00	0+09.61	18"	14.6	10.0	0.65'
LAT. C-5	0+00.00	0+10.00	18"	2.0	1.1	0.37'
"	0+10.00	0+30.78	18"	2.0	3.6	0.25'

LIST OF STANDARD PLANS

LOS ANGELES COUNTY FLOOD CONTROL DIST.

STANDARD DROP STEP	2 - D96
MANHOLE NO. 1	2 - D102
CONC. RINGS, REDUCER & PIPE FOR M.H. SHAFT	2 - D107
JUNCTION STRUCTURE NO. 2	2 - D112
MANHOLE NO. 4	2 - D113
M.H. FRAME & COVER FOR C.B.	2 - D156
C.B. REINFORCEMENT FOR ROUND M.H.	2 - D157
C.B. NO. 1	2 - D160
C.B. NO. 2	2 - D162
C.B. NO. 3	2 - D163
STANDARD A-615 REINFORCING BARS	2 - D171
C.B. REINFORCEMENT	2 - D172
REMOVABLE PROTECTION BAR FOR C.B.	2 - D175
TYPICAL FENCE FOR CHANNEL R/W	2 - D178
TYPICAL FENCE FOR CHANNEL WALLS	2 - D180
MANHOLE NO. 2	2 - D184
TRANSITION STRUCTURE NO. 3	2 - D188
JUNCTION STRUCTURE NO. 4	2 - D199
CONNECTION TO C.B.	2 - D224
DETAIL OF C.B. OPENING	2 - D232
TRANSITION STRUCTURE NO. 1	2 - D236
STANDARD DOUBLE PIPE & WIRE REVETMENT	2 - D253
PROTECTION BARRIER	2 - D261.1-3
ADJUSTABLE PROTECTION BAR STIRRUP	2 - D264
STANDARD 24" M.H. FRAME & COVER	2 - D472
TRASH RACK	2 - DTR1.1-2
CONC. COLLAR	2 - D393
CATCH BASIN No. 6	2 - D109
FRAME AND GRATING FOR C.B.	2 - D227

LOS ANGELES COUNTY ENGINEER

PIPE BEDDING	D - 54
CONCRETE PIPE ANCHORS	D - 55
MINIMUM PUBLIC SAFETY REQUIREMENTS	S - 2

LOS ANGELES COUNTY ROAD DEPARTMENT

CURB & GUTTER TRANSITION	66 - 03
LOCAL DEPRESSION NO. 1	68 - 01
HANDRAIL	88 - 02



LIND & HILLERUD INC.
 2065 HUNTINGTON DRIVE
 SAN MARINO CALIF. 91088
 (213) 449-3161
 BY WESLEY R. LIND
 SIGNATURE: *Wesley R. Lind* RCE NO. 16362

RIPRAP NOTES

1. ROCKS FOR GROUTED RIPRAP SHALL BE GOOD QUALITY BROKEN CONCRETE AND/OR RIVER RUN ROCK. THE SMALLEST DIMENSION SHALL EXCEED 3 INCHES AND THE LARGEST DIMENSION SHALL NOT EXCEED 18 INCHES. THE LARGEST DIMENSION SHALL NOT EXCEED TIMES THE SMALLEST DIMENSION.
2. THERE SHALL BE A GROUT BED OF AT LEAST 2 INCHES BENEATH THE FIRST LAYER OF ROCK. ALL THE VOIDS BETWEEN THE ROCKS SHALL BE FILLED WITH GROUT. MAXIMUM SPACING BETWEEN ROCKS SHALL BE 2 INCHES.
3. SURFACE ROCKS SHALL BE IMBEDDED FROM 1/2 TO 2/3 OF THEIR MAXIMUM DIMENSION.

NOTE: CONCRETE MAY BE SUBSTITUTED FOR THE GROUT.

PRIVATE ENGINEERS NOTICE TO CONTRACTORS

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE THERE ARE NO EXISTING UTILITIES EXCEPT AS SHOWN ON THIS MAP.
 THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES NOT OF RECORD OR NOT SHOWN ON THIS DRAWING.

Wesley R. Lind
 REGISTERED CIVIL ENGINEER NO. 16362

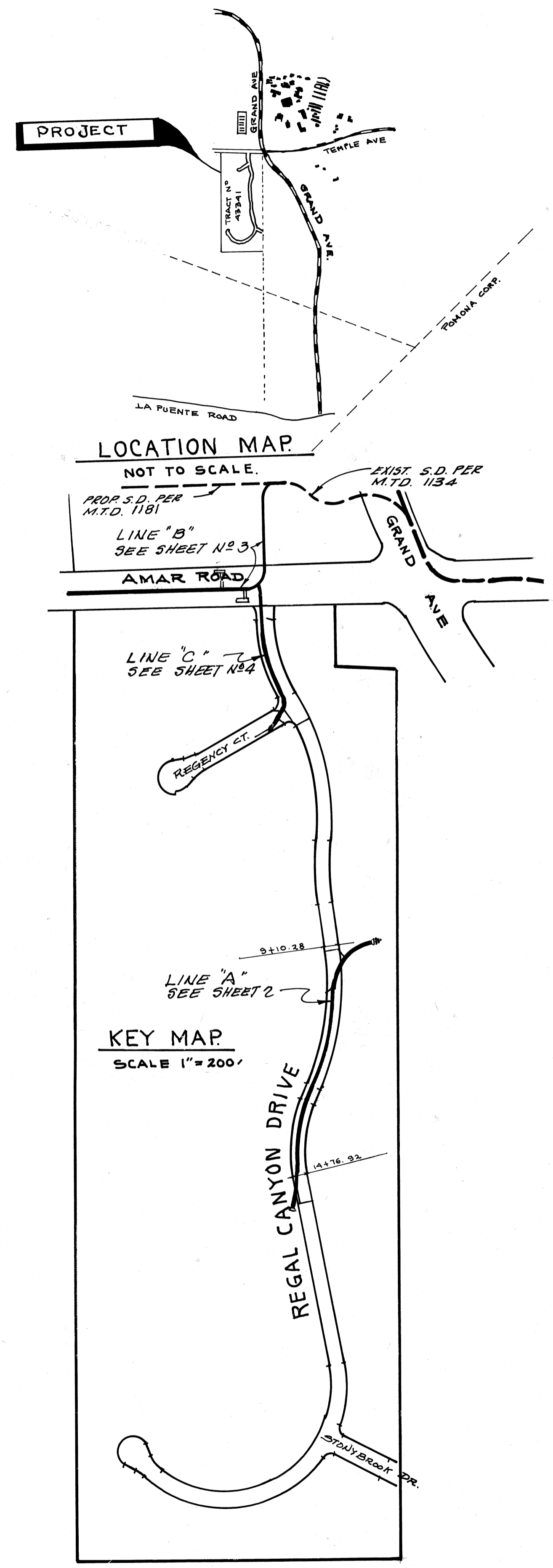
9-24-86
 DATE

M.T.D. NO. 1165

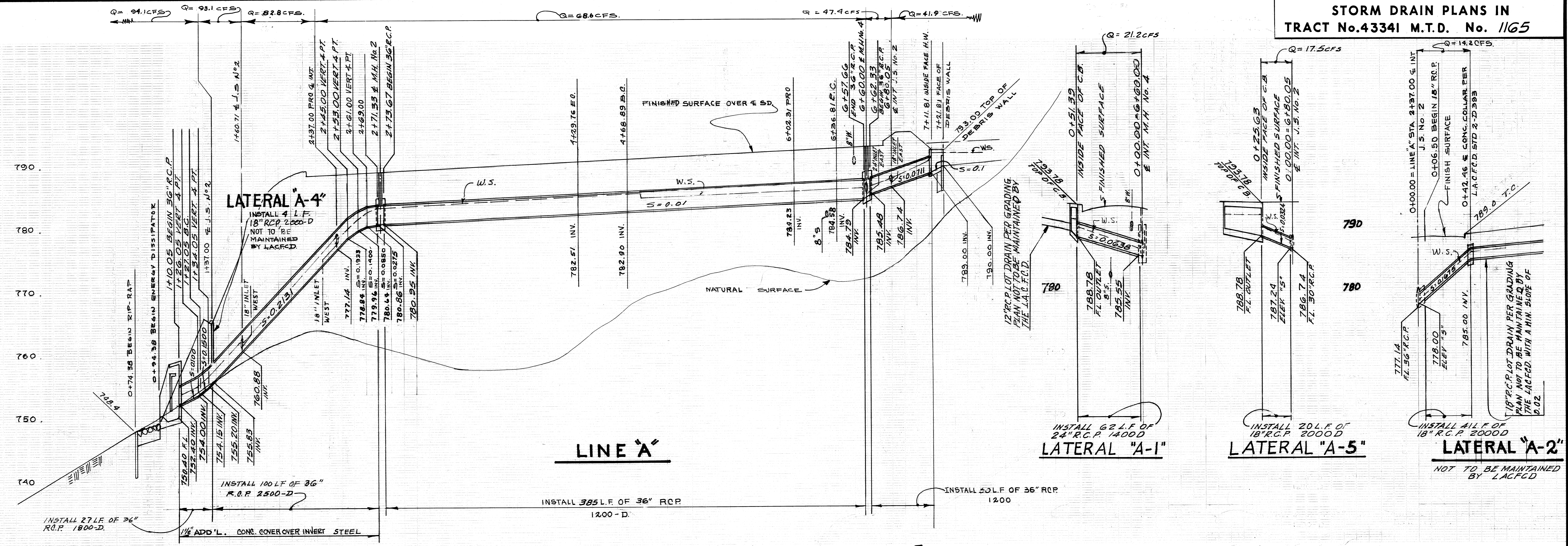
CITY OF WALNUT
 RONALD L. KRANZER, CITY ENGINEER.

APPROVED BY: *Ronald L. Kranzer* DATE: 1-20-88
 RONALD L. KRANZER RCE18503

DESIGNED BY:
 DRAWN BY:

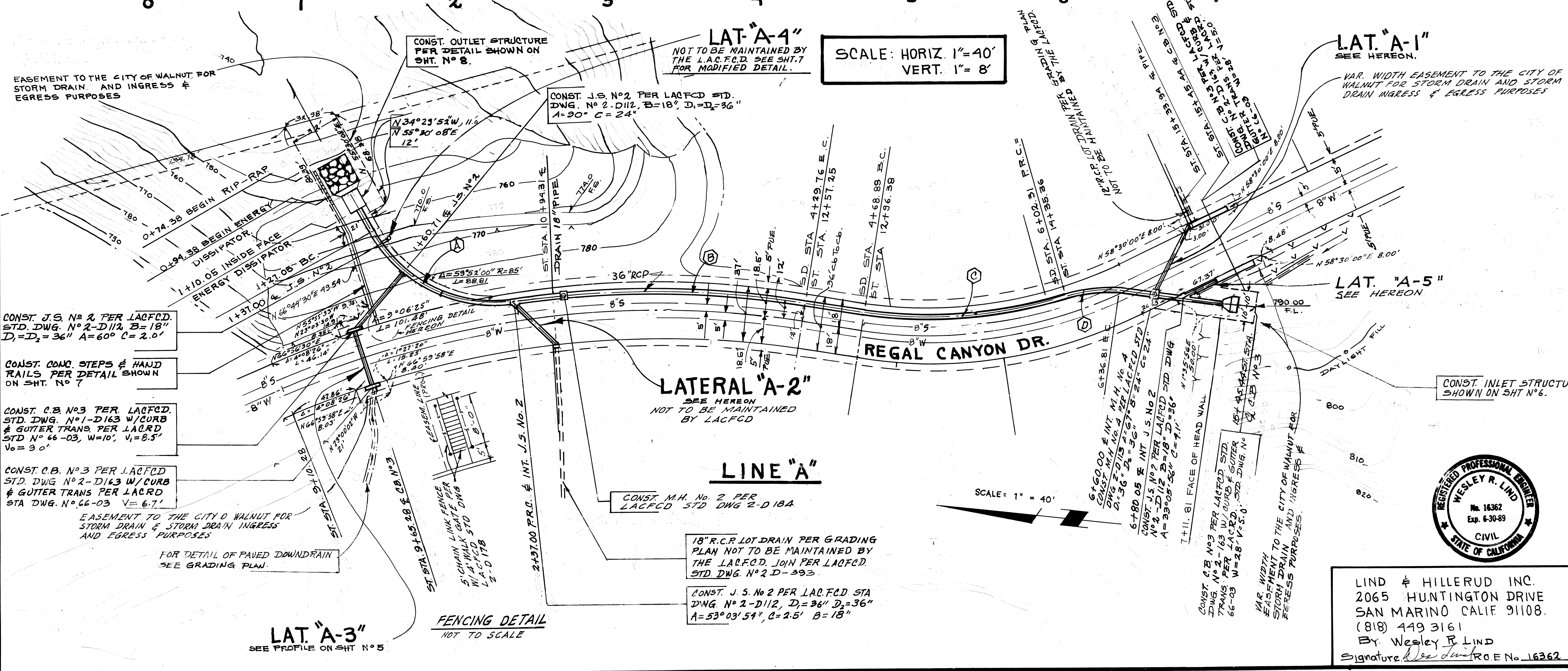


NO.	REVISION	REVISED BY	APPROVED BY	DATE



STORM DRAIN CURVE DATA:

Station	Δ	R	L	T
1	60°50'47"	90.00'	109.05'	63.01'
2	17°28'31"	632.00'	192.76'	97.13'
3	26°32'35"	288.00'	133.42'	67.93'
4	21°57'48"	90.00'	34.50'	17.46'



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1	60°50'47"	90.00'	109.05'	63.01'
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CITY OF WALNUT
 RONALD L. KRANZER
 CITY ENGINEER.

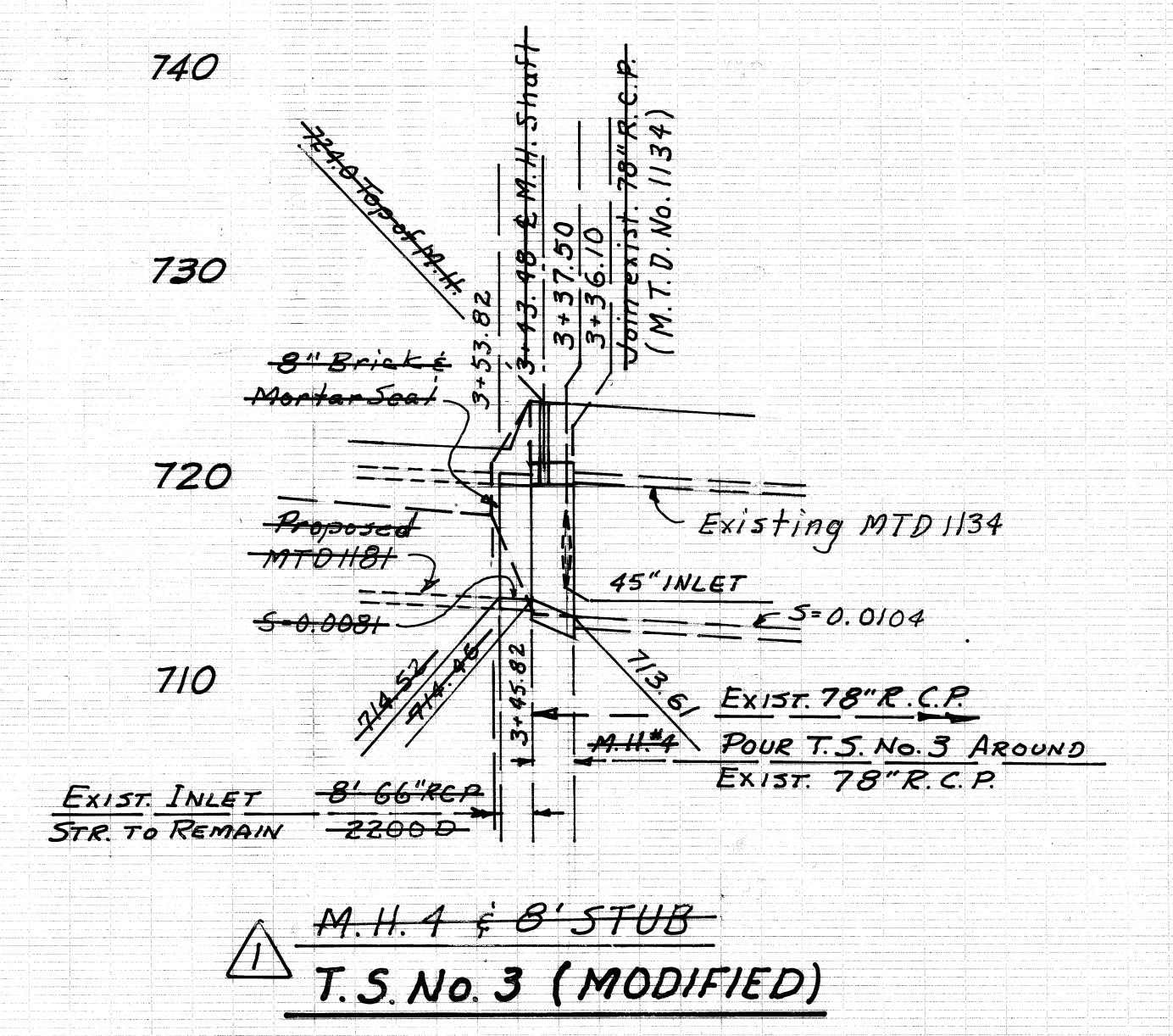
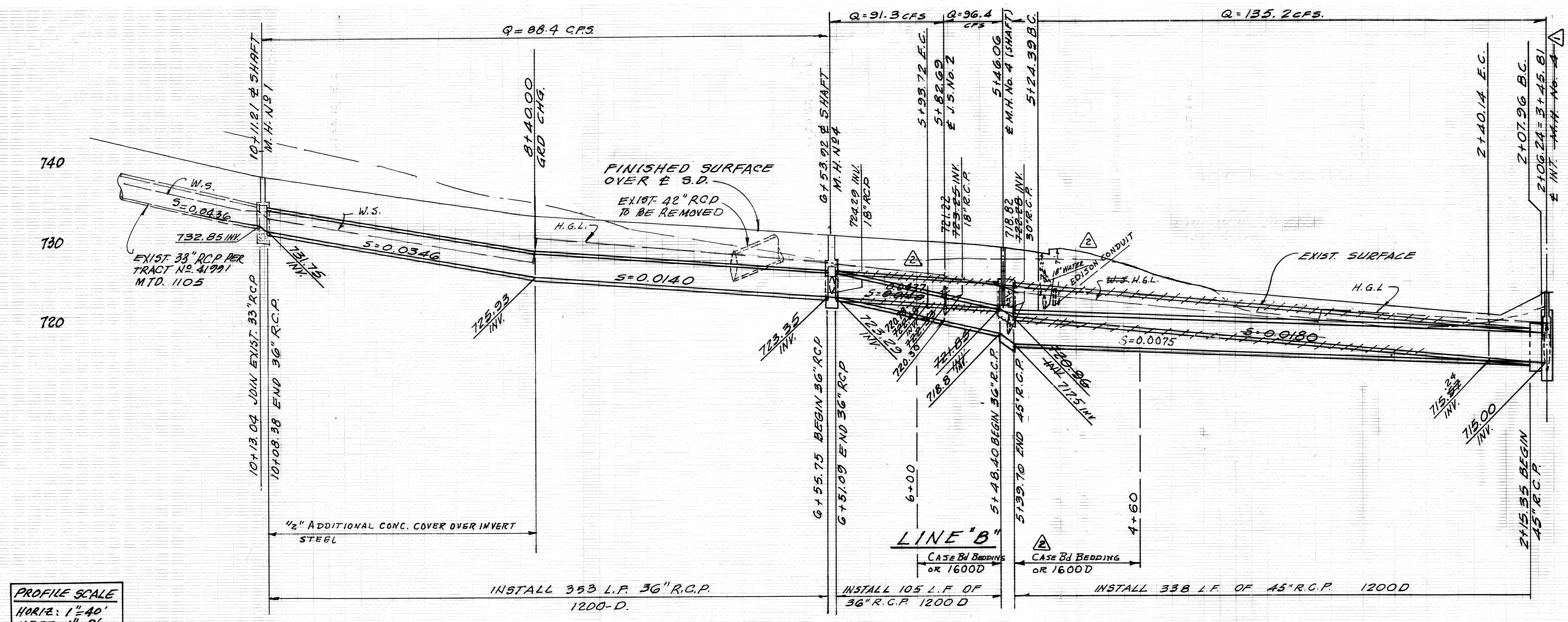
LIND & HILLERUD INC.
 2065 HUNTINGTON DRIVE
 SAN MARINO CALIF 91108.
 (818) 449 3161
 By: Wesley R. Lind
 Signature: [Signature] R.C.E. No. 16362

APPROVED BY: *Ronald L. Kranzer* DATE: 1-20-88
 RONALD L. KRANZER R.C.E. 18503

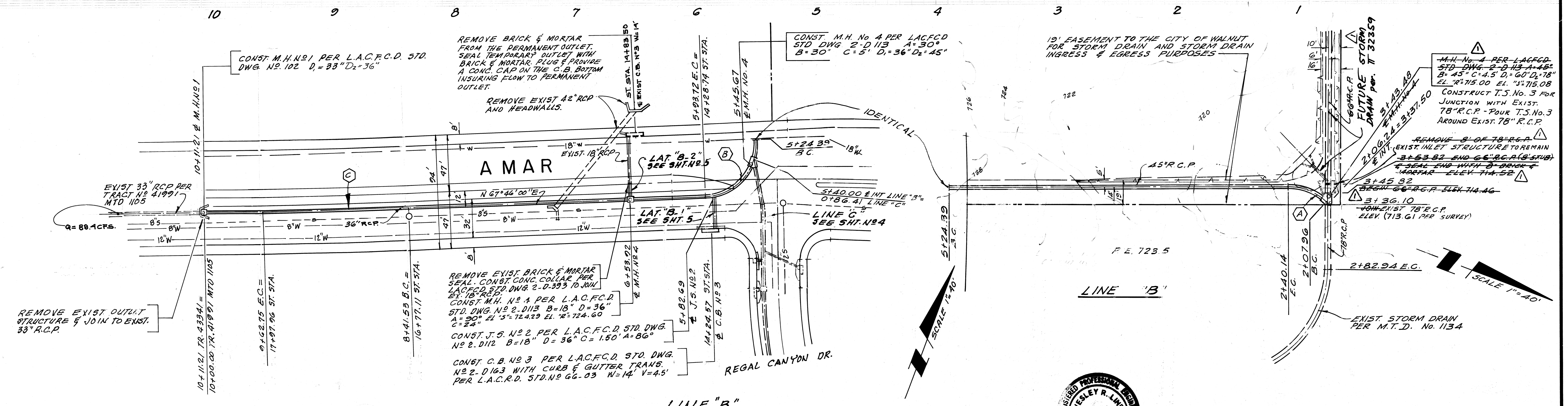
DESIGNED BY:	
DRAWN BY:	
DATE:	

STORM DRAIN PLANS IN TRACT No. 43341 M.T.D. 1165

* NOTE: CONTRACTOR IS TO VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION OF STORM DRAIN AND IS TO NOTIFY THE ENGINEER IF ADVERSE CONDITIONS EXIST.

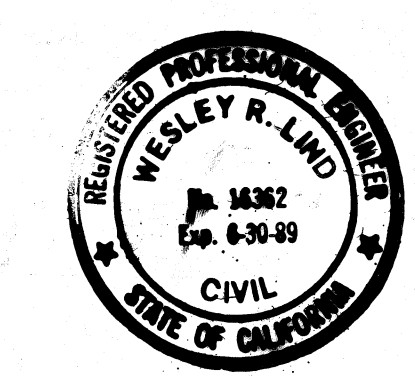


PROFILE SCALE
HORIZ: 1"=40'
VERT: 1"=8'



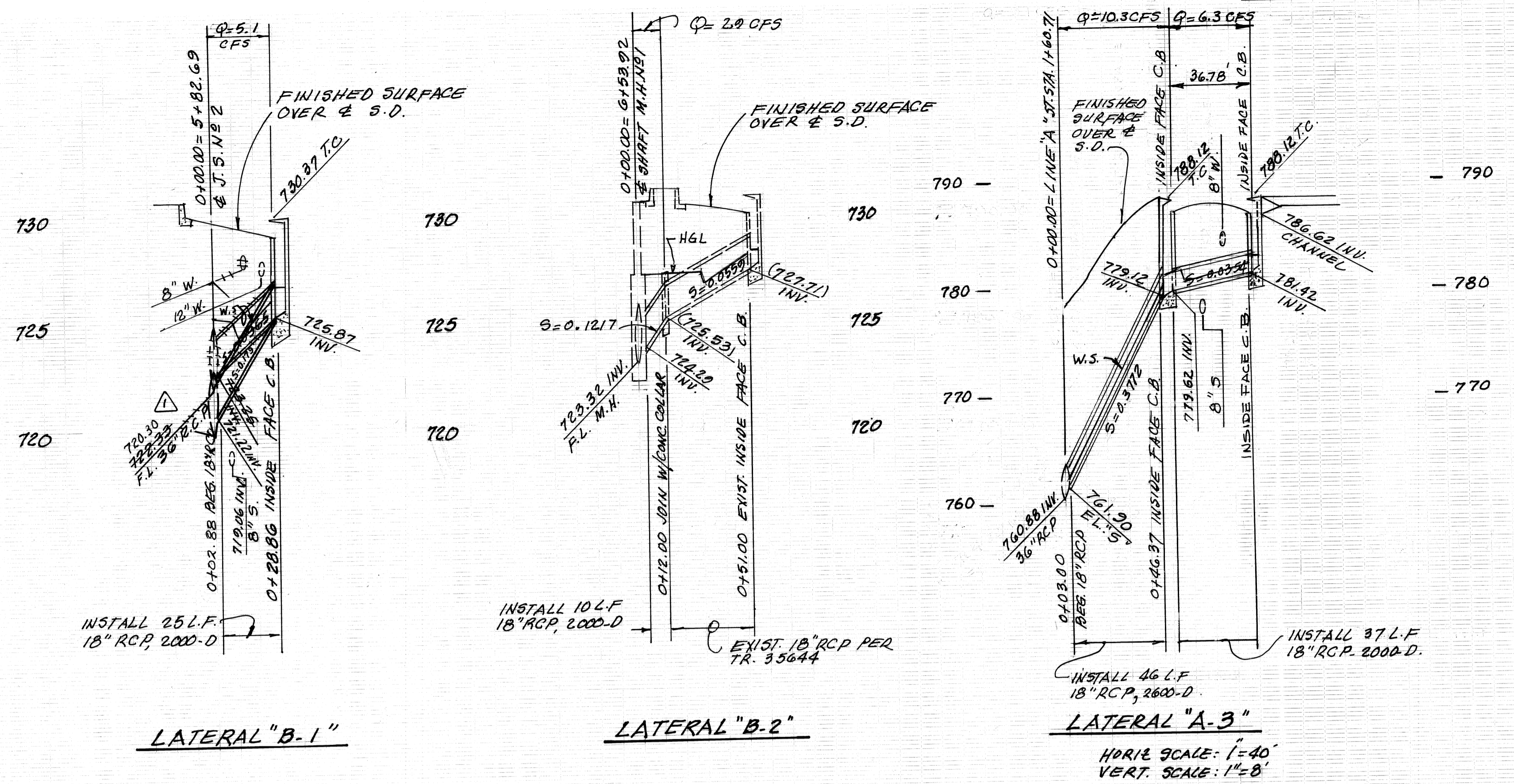
No	FROM STA. TO STA	X	R	L	T
(A)	2+07.90 2+40.14	40°58'09"	45'	32.18'	16.81'
(B)	5+24.39 5+39.72	88°18'08"	45'	69.33'	43.66'
(C)	8+41.53 9+62.75	1°43'52"	4012'	121.21'	60.61'

NO.	REVISION	REVISED BY	APPROVED BY	DATE
1	DELETE PROP MTD 1161 REVISE MH 4 TO T.S. NO. 3	Wes Hillerud	[Signature]	6/24/85
2	LOWER DRAIN TO AVOID EXIST. UTILITIES	Wes Hillerud	[Signature]	6/20/85



LIND & HILLERUD, INC.
2065 HUNTINGTON DRIVE
SAN MARINO, CA 91108
(918) 440-3161
WESLEY R. LIND
SIGNATURE: [Signature] R.C.E. NO. 16362

CITY OF WALNUT
RONALD L. KRANZER CITY ENGINEER
APPROVED BY: [Signature] DATE 6-20-85
RONALD L. KRANZER, R.C.E. 19803



* NOTE:
CONTRACTOR TO VERIFY
LOCATION OF EXISTING UTILITIES
PRIOR TO CONSTRUCTION OF
STORM DRAIN AND IS TO NOTIFY
THE ENGINEER IF ADVERSE
CONDITION EXIST.

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

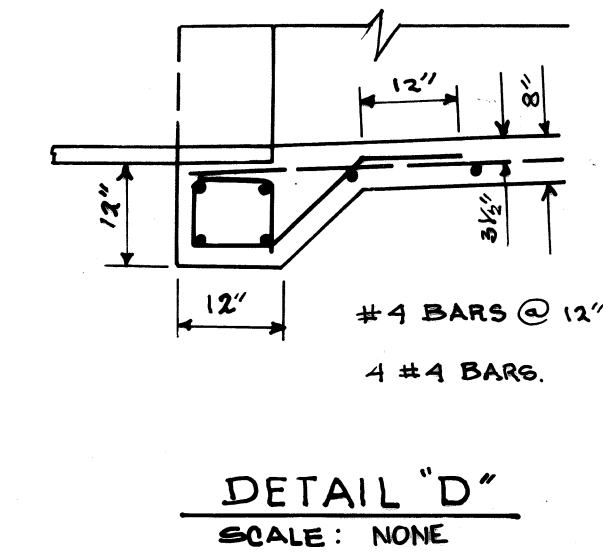
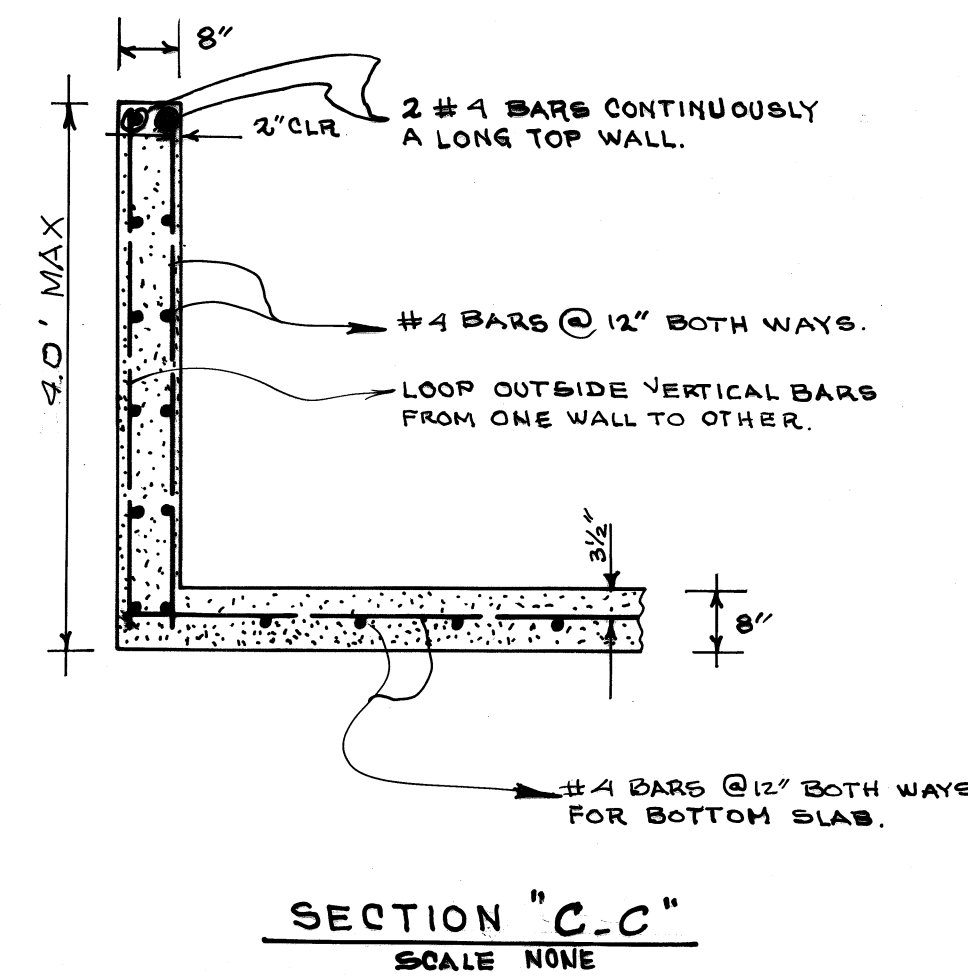
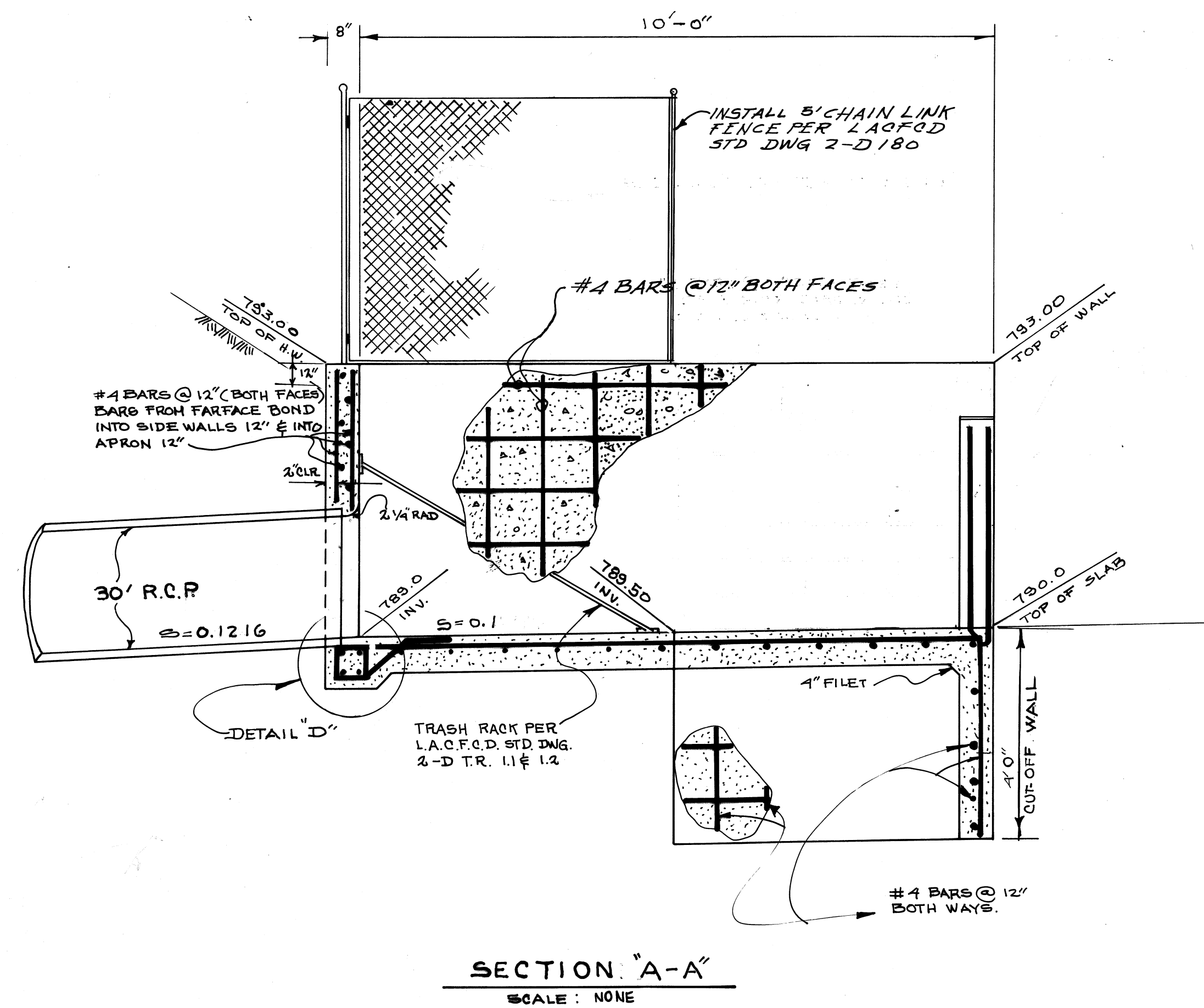
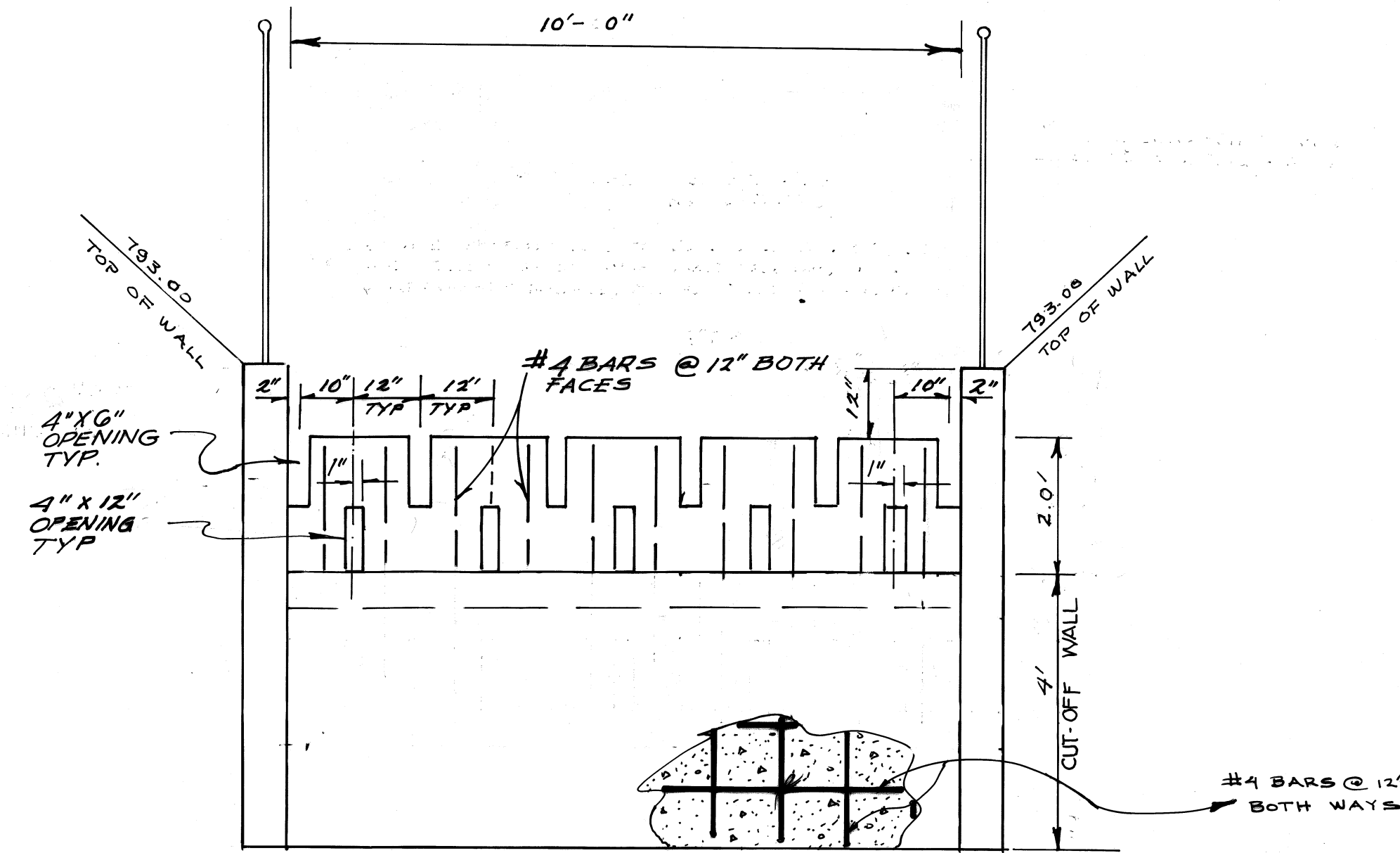
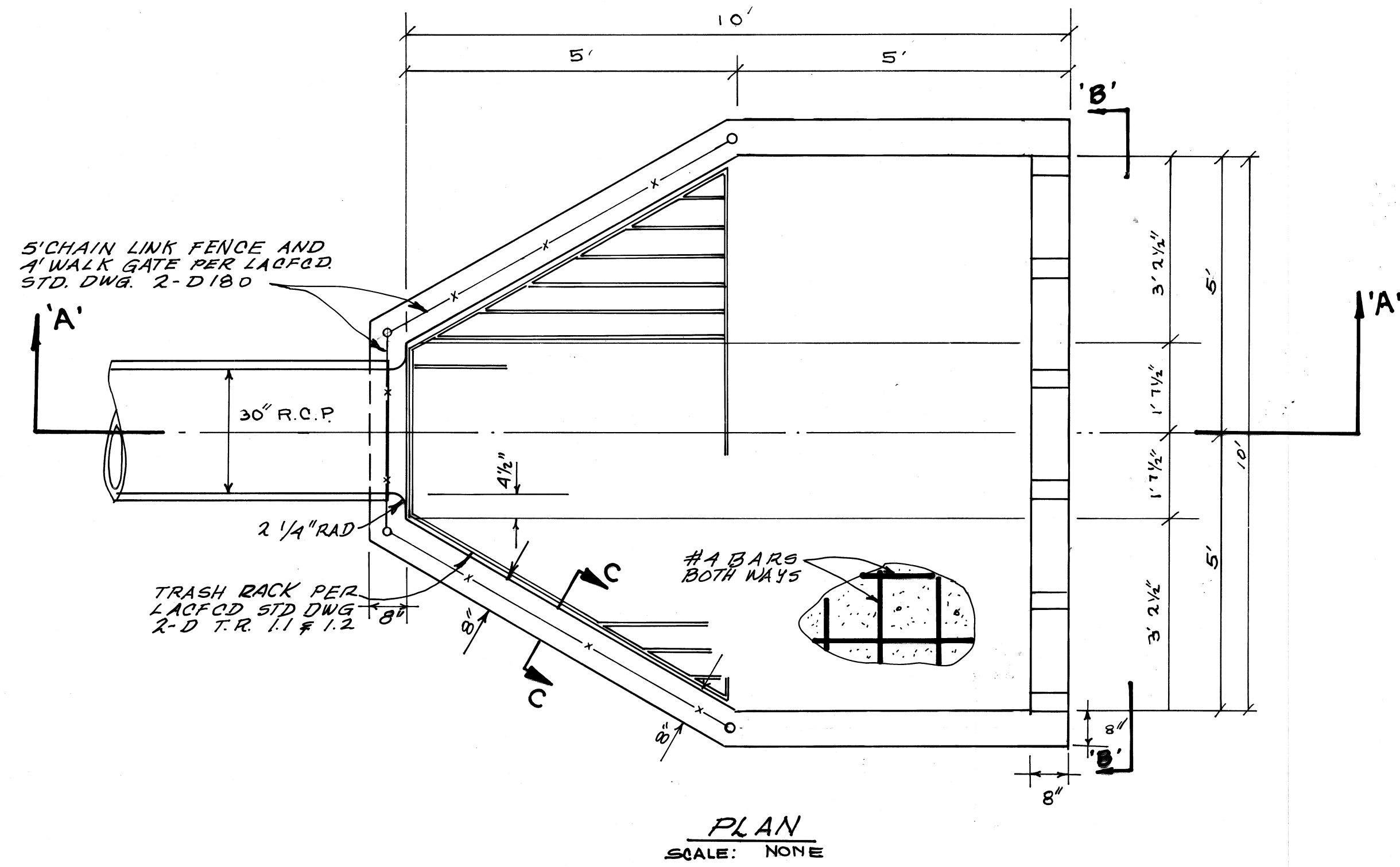
NOTE:
ALL VERT. SCALES ARE
1"=4' EXCEPT LAT. 'A-3'

NO.	REVISION	REVISED BY	APPROVED BY	DATE
1	LOWER DRAIN TO AVOID EXIST. UTILITIES	Wesley R. Lind	[Signature]	6/2/92

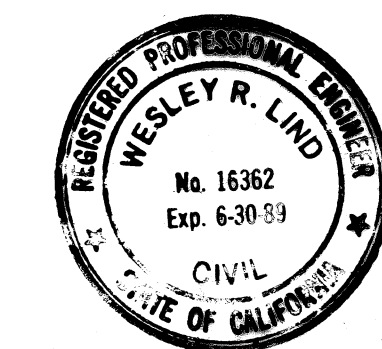


LIND & HILLERUD, INC.
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(818) 449-3161
WESLEY R. LIND.
SIGNATURE: [Signature] R.C.E. NO. 16362

CITY OF WALNUT
RONALD L. KRANZER CITY ENGINEER.
APPROVED BY: [Signature] DATE: _____
RONALD L. KRANZER RCE. 18503



DEBRIS BASIN INLET STRUCTURE DETAILS.
LINE "A"



LIND & HILLERUD, INC.
2065 HUNTINGTON DRIVE
SAN MARINO, CA. 91108
(818) 449-3161
WESLEY R. LIND

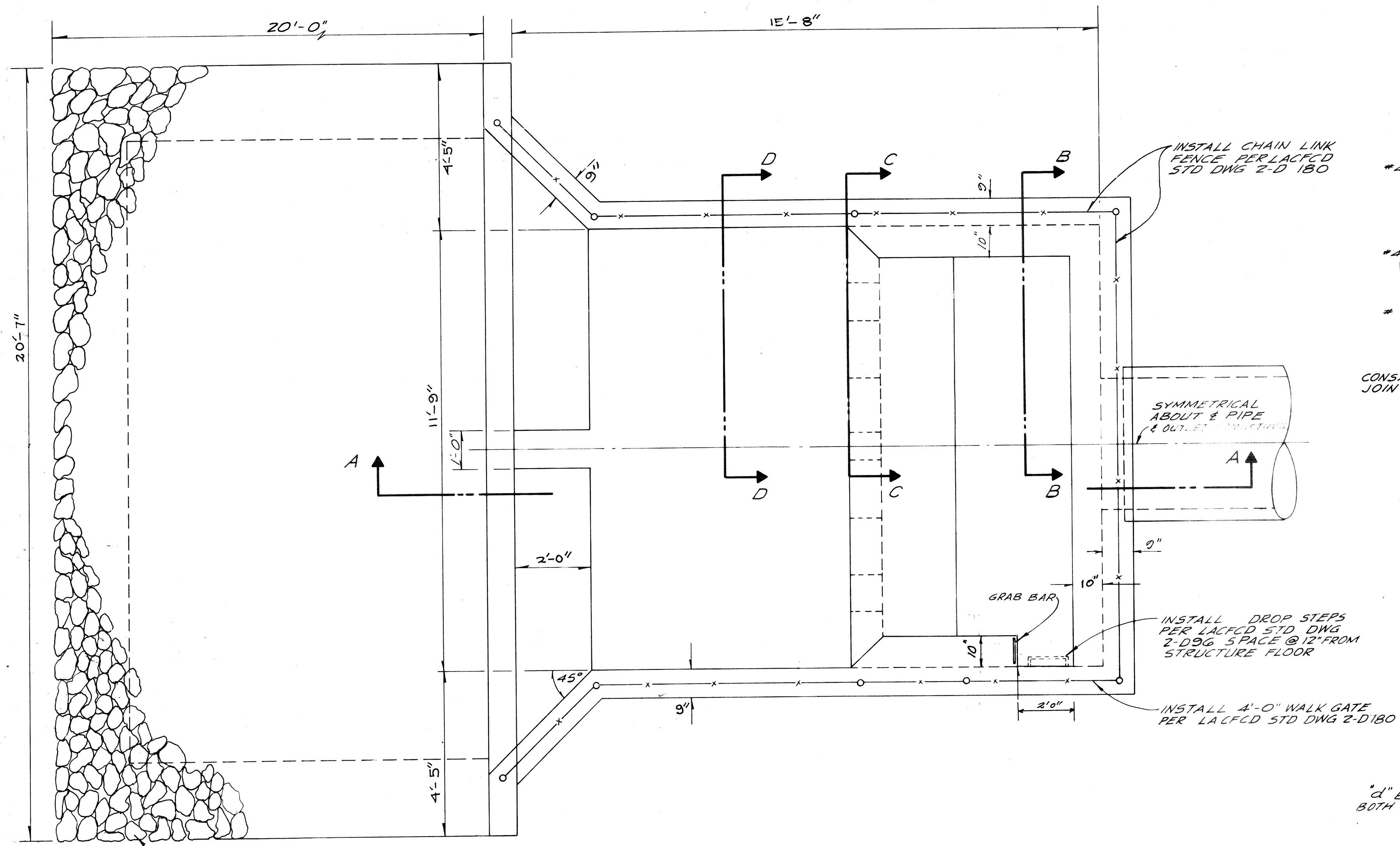
SIGNATURE: *Wes Lind* BCE NO. 16362

CITY OF WALNUT

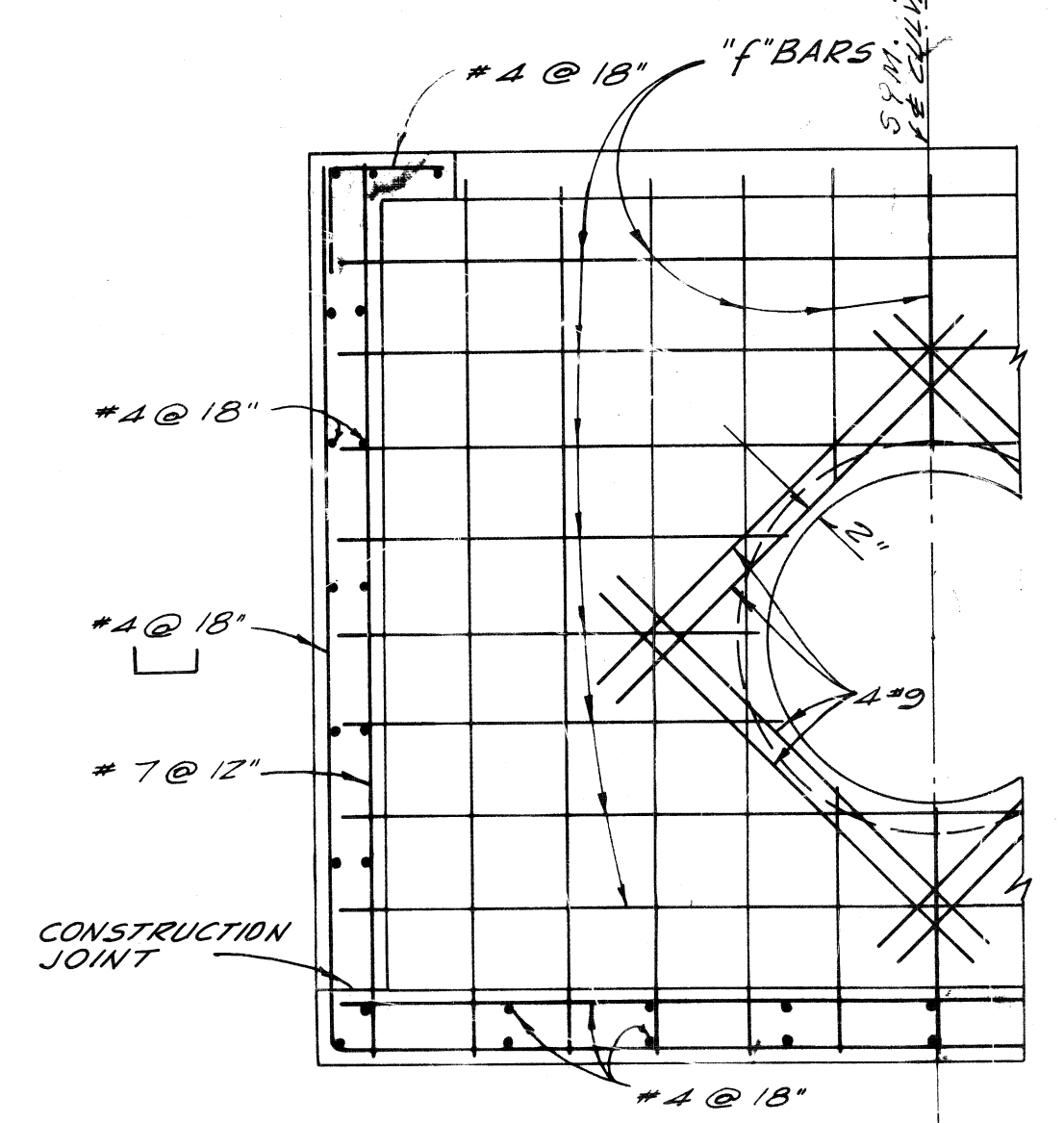
RONALD L. KRANZER CITY ENGINEER.

CHECKED BY: *Ronald Kranzer* DATE: 1-20-88

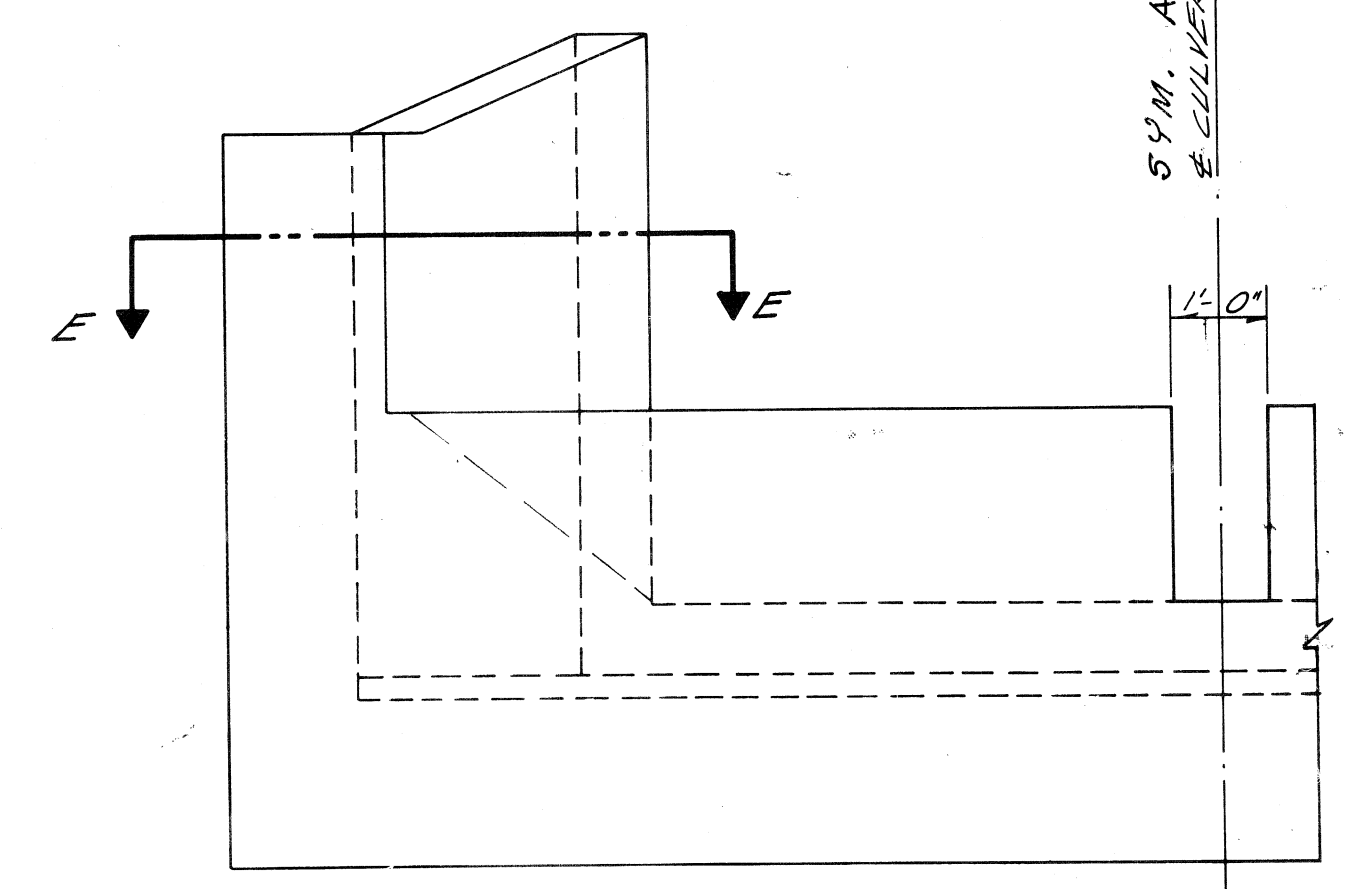
RONALD L. KRANZER RCE. 18503



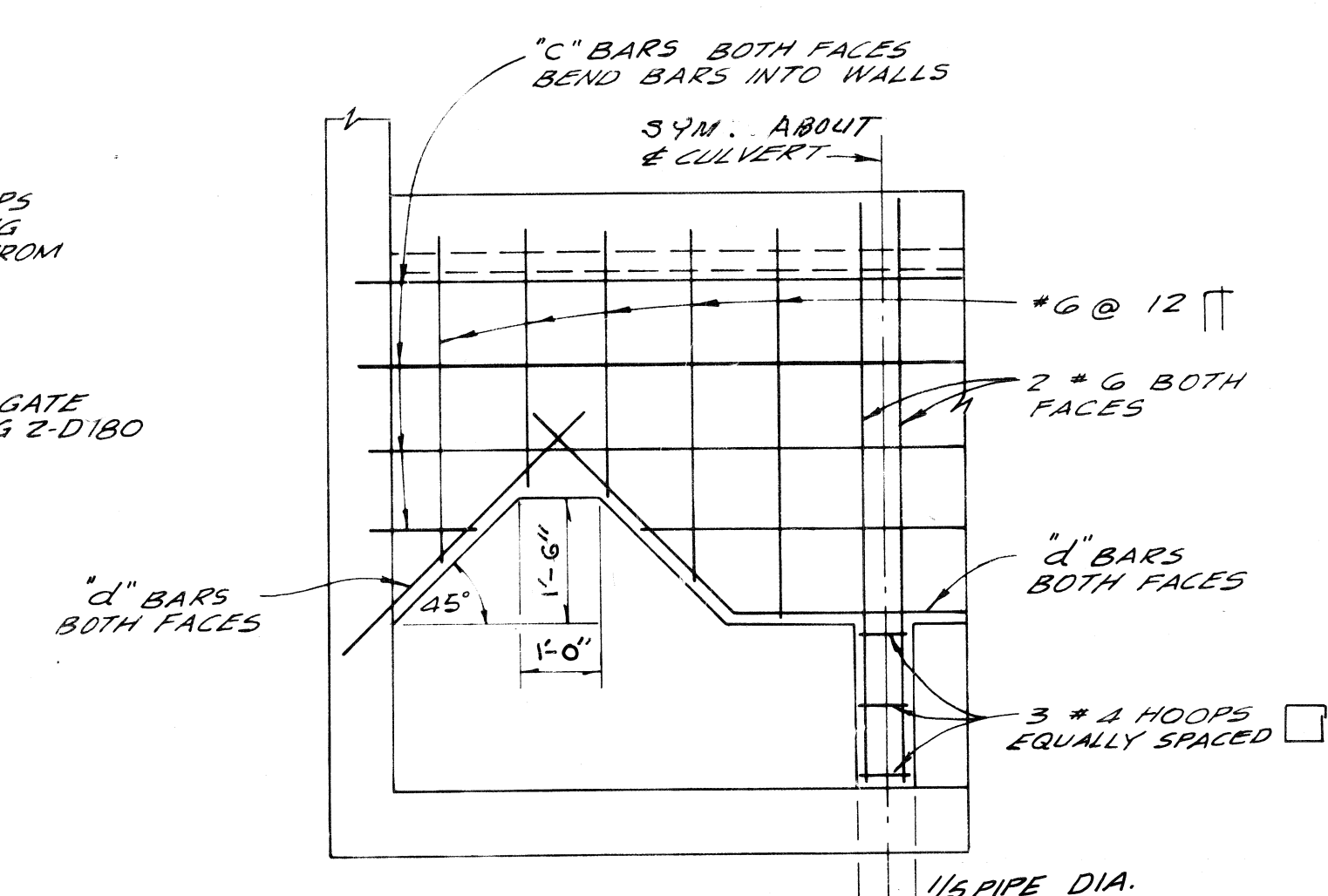
PLAN



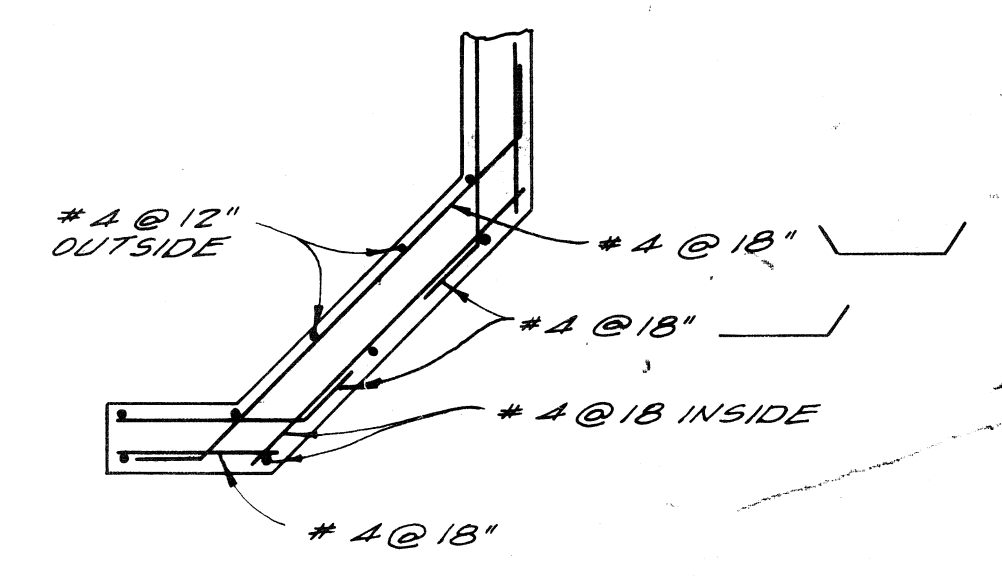
SECTION "B-B"



END ELEVATION

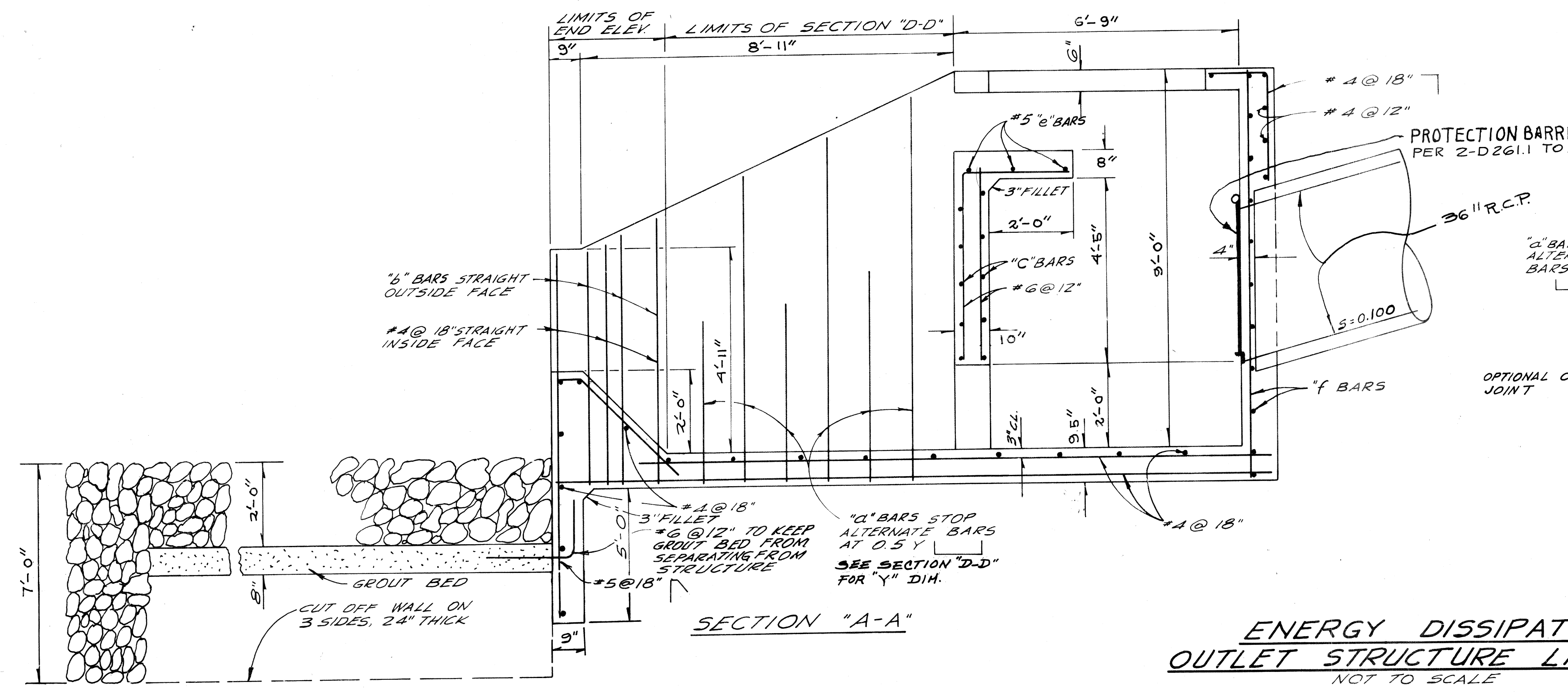


SECTION "C-C"



SECTION "E-E"

SEE RIPRAP NOTES ON SHEET No. 1



SECTION "A-A"

**ENERGY DISSIPATOR
OUTLET STRUCTURE LINE "A"**
NOT TO SCALE

STEEL REINFORCEMENT

"a"	"b"	"c"	"d"	"e" total	"f"	"g"
#8 @ 12"	#4 @ 12"	#3 @ 12"	#9	3	#8 @ 12"	#9



LIND & HILLERUD INC.
2065 HUNTINGTON DRIVE
SAN MARINO CALIF. 91108
(818) 449-3161
BY WESLEY R. LIND
SIGNATURE: *Wesley R. Lind* R.C.E. NO. 0362

CITY OF WALNUT, CALIFORNIA
RONALD L. KRANZER, CITY ENGINEER.

APPROVED BY: *Ronald L. Kranzer* DATE: 1-22-88
RONALD L. KRANZER, R.C.E. 18503

DESIGNED BY:
DRAWN BY: