STORM DRAIN IMPROVEMENT PLANS

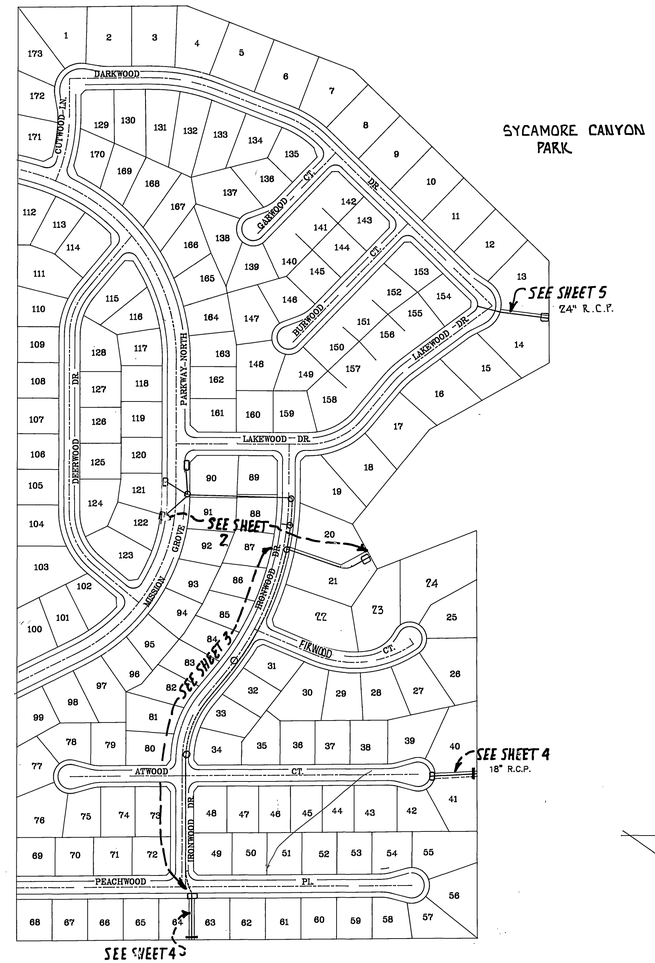
FOR

TRACT 21631

GENERAL NOTES:

1. 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.
2. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF RIVERSIDE DEPARTMENT OF PUBLIC WORKS STANDARD DRAWINGS, STANDARD DRAWING NO. 10 AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, ,CURRENT EDITON.
3. 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.
4. QUANTITIES SHOWN ARE FOR INFORMATION ONLY AND THE CITY OF RIVERSIDE IS NOT RESPONSIBLE FOR THEIR ACCURACY.
5. 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.
6. ALL FLAGGED ELEVATIONS SHALL BE STAKED IN THE FIELD BY THE PRIVATE ENGINEER.
7. THE CONTRACTOR SHALL CALL IN A LOCATION 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.
8. 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.

N



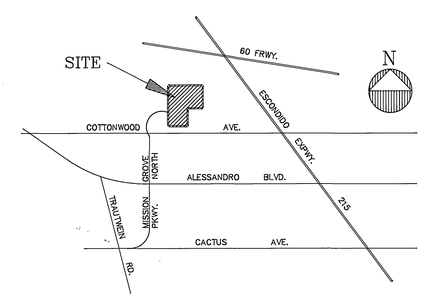
INDEX MAP

SCALE 1"=200'

CONSTRUCTION NOTES & QUANTITIES:

9 EA	1	CONST. CATCH BASIN PER CITY OF RIVERSIDE STD. 405 (SEE PLAN FOR W. & Y.)
4 EA	2	CONST. MANHOLE TYPE EZ PER CITY OF RIVERSIDE STD. 431
1487.22 LF	3	CONST. 18" R.C.P. (2000 D)
269.97 LF	4	CONST. 24" R.C.P. (1750 D)
376.13 LF	5	CONST. 30" R.C.P. (1750D)
291.20 LF	6	CONST. 42" R.C.P. (1500D)
2 EA	7	CONST. ENERGY DISSIPATOR PER DETAIL ON SHEET 5
2 EA	8	CONST. HEADWALL PER DETAIL ON SHEET 4
1 EA	9	CONST. CONCRETE COLLAR PER CITY OF RIVERSIDE STD. 424
3 EA	10	CONST. *10'X10'X2' GROUTED RIP RAP PAD (1/4 TON) (* 14'x10'x2' ON SHT 2)
2 EA	11	CONST. MANHOLE TYPE J M PER CITY OF RIVERSIDE STD. 432
3 EA	12	CONST. GRADED SWALE PER DETAIL ON SHT 2
1 EA.	13	CONST. JUNC. STRUCTURE PER CITY OF RIVERSID STD. 421 L=4'
1 EA.	14	CONST C&P INLET PER CITY OF RIVERSIDE STD. 412 W/18" R.C.P. (1750D) CONNECTOR PIPE

NOTE:
QUANTITIES SHOWN ARE FOR PERMIT OR BONDING PURPOSES ONLY AND ARE NOT TO BE USED FOR PAY PURPOSES.
CONTRACTOR IS TO DETERMINE HIS OWN QUANTITIES AND BID A COMPLETE JOB.



VICINITY MAP

NO SCALE

1. ROCK FOR GROUTED RIPRAP SHALL BE GOOD QUALITY RIVER RUN ROCK. THE SMALLEST DIMENSION MUST EXCEED 3 INCHES AND THE LARGEST DIMENSION MUST NOT EXCEED 18 INCHES. THE LARGEST DIMENSION SHALL NOT EXCEED 4 TIMES THE SMALLEST DIMENSION.
2. THERE SHALL BE A GROUT BED OF AT LEAST 2 INCHES BENEATH THE ROCK. ALL THE VOIDS BETWEEN THE ROCKS SHALL BE FILLED WITH GROUT. MAXIMUM SPACING BETWEEN THE ROCKS SHALL BE 8 INCHES. COLOR TO BE USED IN THE GROUT SHALL BE RIVERSIDE BUFF.
3. SURFACE ROCKS SHALL BE EMBEDDED FROM 1/2 TO 2/3 THEIR MAXIMUM DIMENSION.

GROUTED RIP-RAP

NO SCALE

AS BUILT 7/1/93 RJM

BENCH MARK:

CITY OF RIVERSIDE B.M. F8-B P.K. NAIL AND TAG IN CONC. RETAINING WALL SE'LY OF INTERSECTION OF ALESSANDRO BLVD. AND TRAUTWEIN RD.

ELEVATION = 1607.635

B.E. BLANK CIVIL ENGINEERS
P.O. BOX 6302, ANAHEIM, CA. 92816
PREPARED UNDER THE SUPERVISION OF:

Bruce E. Blank 10-6-88
BRUCE E. BLANK R.C.E. 26492 EXP 3-31-92 DATE

MARK	REVISION	APPR.	DATE

DESIGNED BY B.E.B. DRAWN BY CAD. CHECKED BY B.E.B.

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3-1-89	
PARK DEPARTMENT	12/16/88	
TRAFFIC DIVISION	—	
CHIEF P.W. ENGINEER	6-9	
	3/3/89	

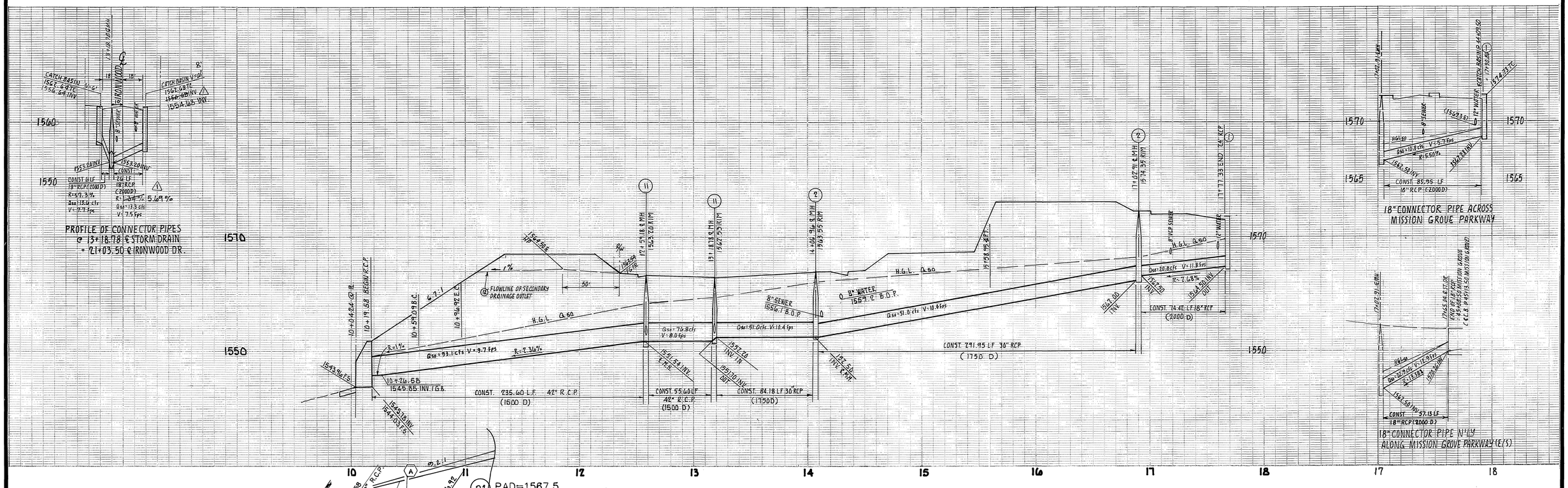
APPROVED BY Barry Beck
PUBLIC WORKS DIRECTOR
DATE: 6/9/89

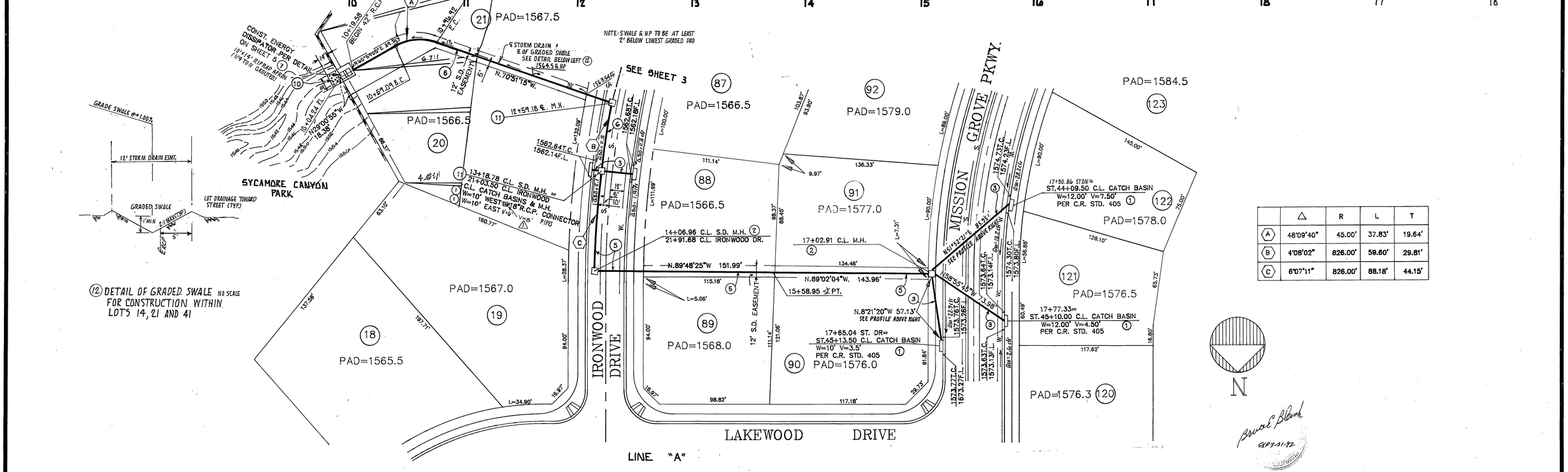
TITLE SHEET
STORM DRAIN IMPROVEMENT PLAN
FOR
TRACT 21631

HORZ. SCALE 1"= AS SHOWN VERT. SCALE 1"= AS SHOWN

ACCOUNT NO.
D-562
SHEET 1 OF 5

INDEXED 8-11-89 JN 274





(12) DETAIL OF GRADED SWALE NO SCALE
FOR CONSTRUCTION WITHIN LOTS 14, 21 AND 41

	Δ	R	L	T
(A)	48°09'40"	45.00'	37.83'	19.64'
(B)	4°08'02"	826.00'	59.60'	29.81'
(C)	6°07'11"	826.00'	88.18'	44.15'

Bruce E. Blank
EXP 3-31-92

BENCH MARK:
CITY OF RIVERSIDE B.M. F8-B P.K. NAIL AND TAG IN CONC. RETAINING WALL S'ELY OF INTERSECTION OF ALESSANDRO BLVD. AND TRAUTWEIN RD.

ELEVATION = 1607.635

B.E. BLANK ENGINEERS
P.O. BOX 6302 ANAHEIM, CA. 92816
(714) 639-9870
PREPARED UNDER THE SUPERVISION OF
Bruce E. Blank EXP 3-31-92 10-6-88
BRUCE E. BLANK R.C.E. 26492 DATE

MARK	REVISIONS	APPR.	DATE
1	REVISED LATERAL GRADE & ELEVS.		9/13/91

DESIGNED BY B.E.B. DRAWN BY CAD CHECKED BY B.E.B.

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

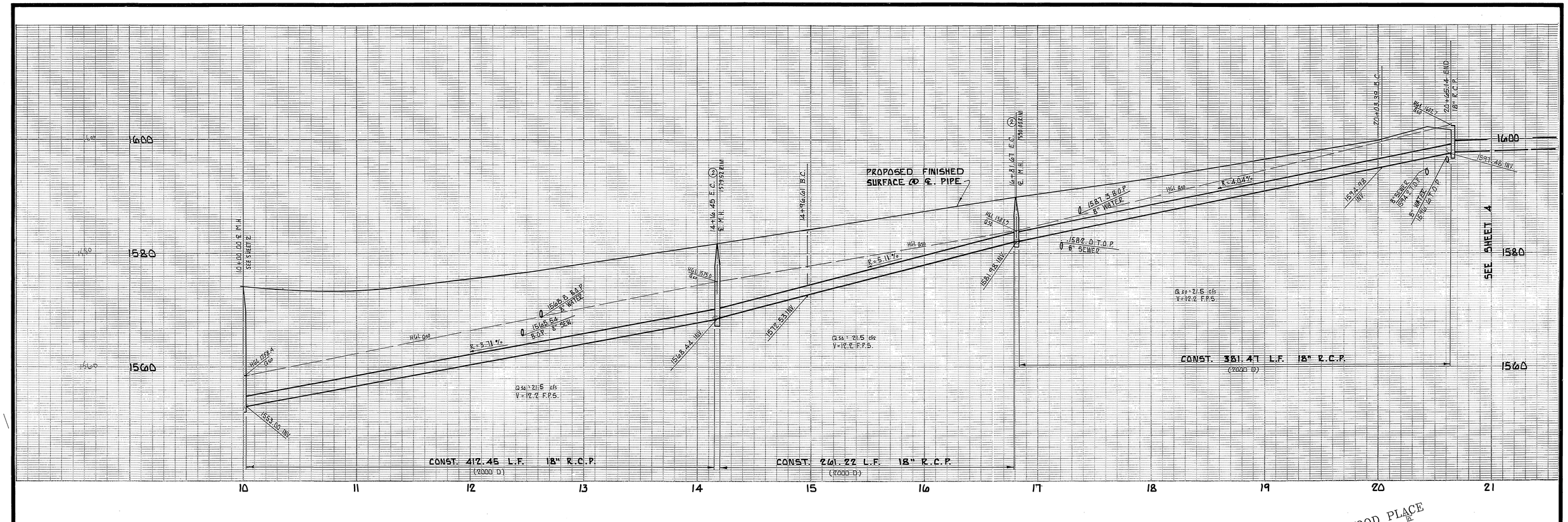
APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3-1-89	
PARK DEPARTMENT	12/6/88	
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER	3/3/89	

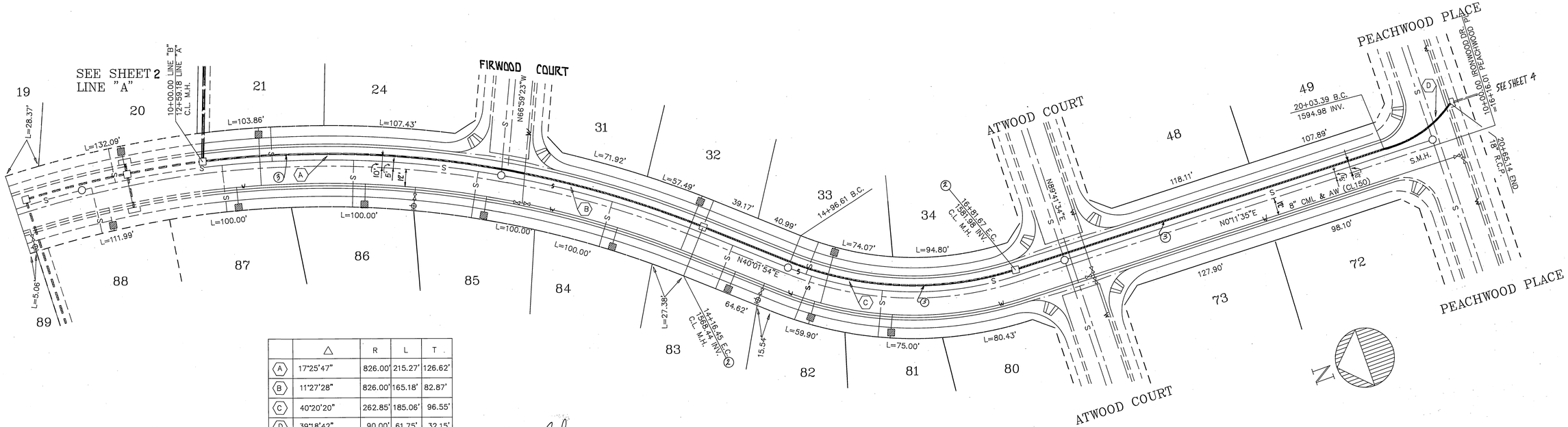
APPROVED BY Barry Beck
PUBLIC WORKS DIRECTOR
DATE 6/9/89

STORM DRAIN PLANS
FOR
TRACT No. 21631
LINE "A"
MISSION GROVE PKWY NORTH & IRONWOOD DR.
HORIZ. SCALE: 1" = 40' VERT. SCALE: 1" = 8'

AS BUILT 7/1/93 RJM
ACCOUNT NO.
D-562
SHEET 2 OF 5

INDEXED 8-16-89 JN 274





	Δ	R	L	T
A	17°25'47"	826.00'	215.27'	126.62'
B	11°27'28"	826.00'	165.18'	82.87'
C	40°20'20"	262.85'	185.06'	96.55'
D	39°18'42"	90.00'	61.75'	32.15'

Bruce E. Blank
EXP 3-31-92

IRONWOOD DRIVE LINE "B"

BENCH MARK:
CITY OF RIVERSIDE B.M. F8-B P.K. NAIL AND CITY TAG IN CONC. RETAINING WALL 5'ELY OF INTERSECTION OF ALESSANDRO BLVD. AND TRAUTWEIN RD.

ELEVATION = 1607.635

B.E. BLANK CIVIL ENGINEERS
P.O. BOX 6302 ANAHEIM CA. 92816
(714) 639-9070

PREPARED UNDER THE SUPERVISION OF
Bruce E. Blank
BRUCE E. BLANK RCE 26492 EXP 3-31-92 — 6 OCT 88 DATE

MARK	REVISIONS	APPR.	DATE

DESIGNED BY B.E.B. DRAWN BY CAD. CHECKED BY B.E.B.

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3-1-89	
PARK DEPARTMENT	12/6/88	
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER	3/3/89	

APPROVED BY Barry Beal
PUBLIC WORKS DIRECTOR
DATE 6/9/89

STORM DRAIN PLANS FOR
TRACT 21631
LINE "B"
IRONWOOD DR

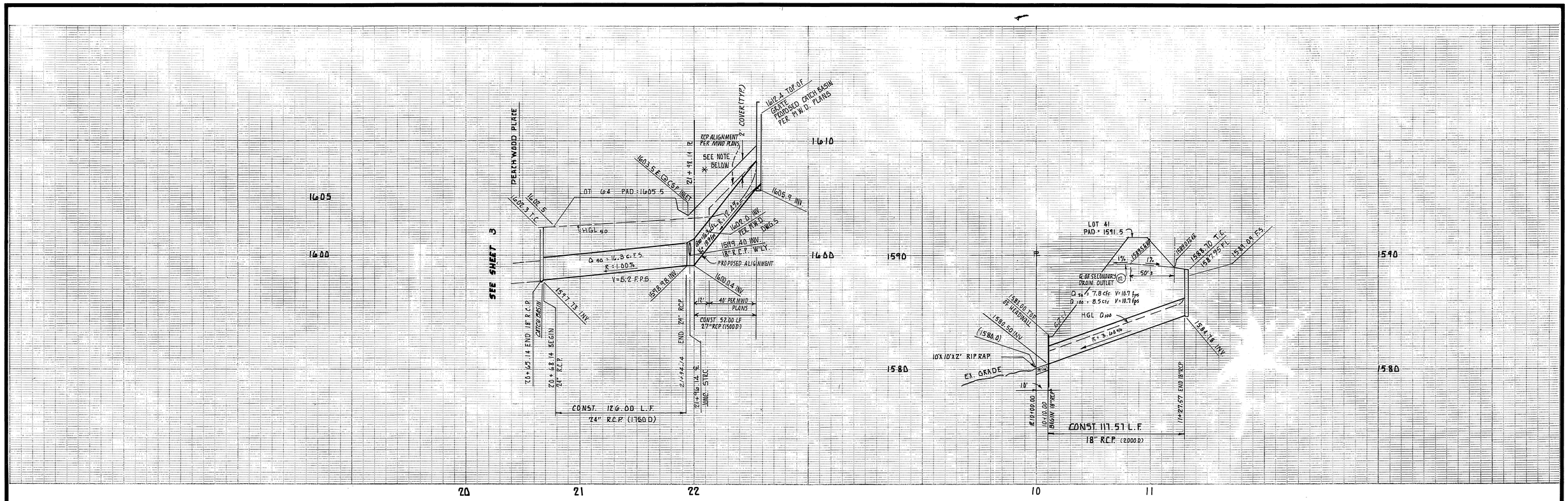
HORIZ. SCALE: 1" = 40' VERT. SCALE: 1" = 8'

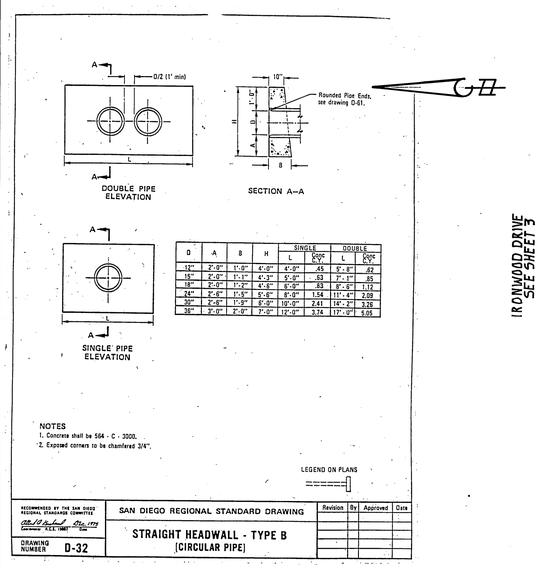
AS BUILT 7/1/93 RM

ACCOUNT NO. D-562

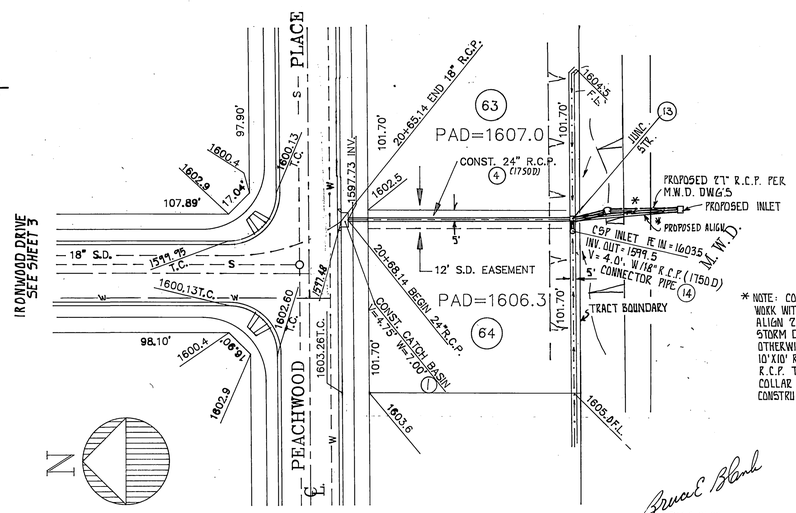
SHEET 3 OF 5

INDEXED 8-11-89 JN 274



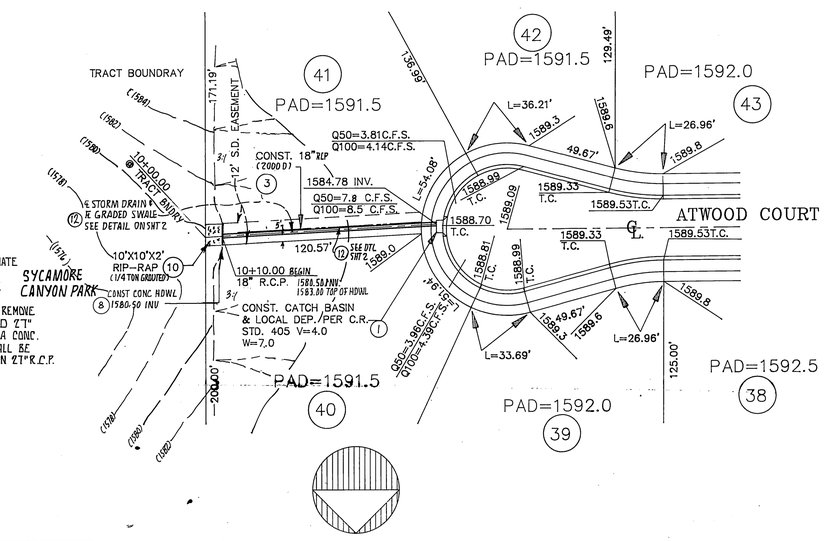


D	A	B	H	SINGLE L	SINGLE Apprx. Cu. Yd.	DOUBLE L	DOUBLE Apprx. Cu. Yd.
12"	2'-0"	1'-8"	4'-0"	4'-0"	.45	5'-8"	.62
15"	2'-0"	1'-11"	4'-3"	5'-0"	.53	7'-1"	.85
18"	2'-0"	1'-2"	4'-6"	6'-0"	.63	8'-6"	1.13
24"	2'-6"	1'-5"	5'-6"	8'-0"	1.54	11'-4"	2.09
30"	2'-6"	1'-9"	6'-0"	10'-0"	2.41	14'-2"	3.26
36"	2'-0"	2'-0"	7'-0"	12'-0"	3.74	17'-0"	5.05



* NOTE: CONTRACTOR SHALL COORDINATE WORK WITH M.W.D. CONTRACTOR TO ALIGN 27" R.C.P. TO JOIN ON-SITE STORM DRAIN, OTHERWISE CONTRACTOR SHALL REMOVE 10'X10' RIP-RAP PAD AND EXTEND 27" R.C.P. TO JUNCTION STRUCTURE. A CONC. COLLAR PER CITY STD. 424 SHALL BE CONSTRUCTED @ ANGLE POINT IN 27" R.C.P.

Bruce E. Blank
EXP 3-31-92



BENCH MARK:
CITY OF RIVERSIDE B.M. F8-B
P.K. NAIL AND TAG IN CONC. RETAINING WALL SE'LY OF INTERSECTION OF ALESSANDRO BLVD. AND TRAUTWEIN RD.

ELEVATION = 1607.635

B.E. BLANK ENGINEERS
P.O. BOX 6302 ANAHEIM, CA. 92816
(714) 639-9070

PREPARED UNDER THE SUPERVISION OF
Bruce E. Blank
BRUCE E. BLANK R.C.E. 26892 — 31 May 88 DATE

MARK	REVISIONS	APPR.	DATE

DESIGNED BY B.E.B. DRAWN BY CAD. CHECKED BY B.E.B.

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

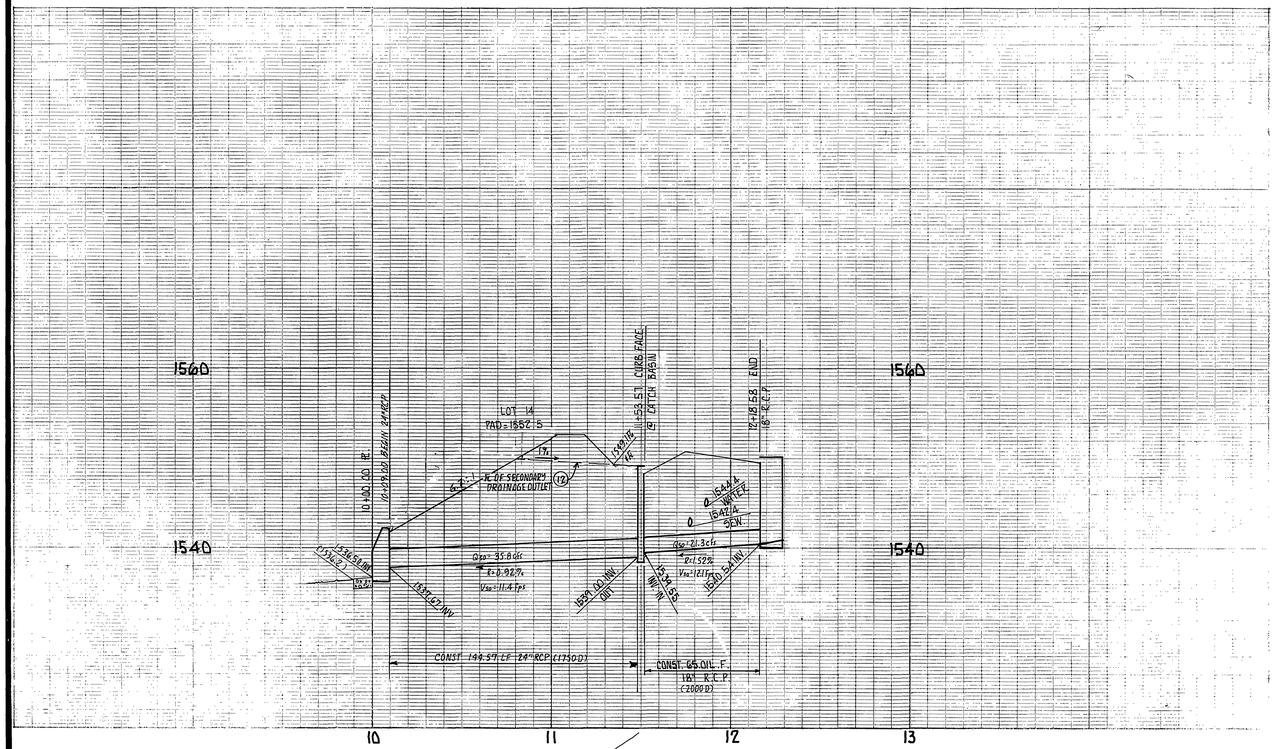
APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3-1-89	
PARK DEPARTMENT	2-28-89	
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER	6-3	
	3/13/89	

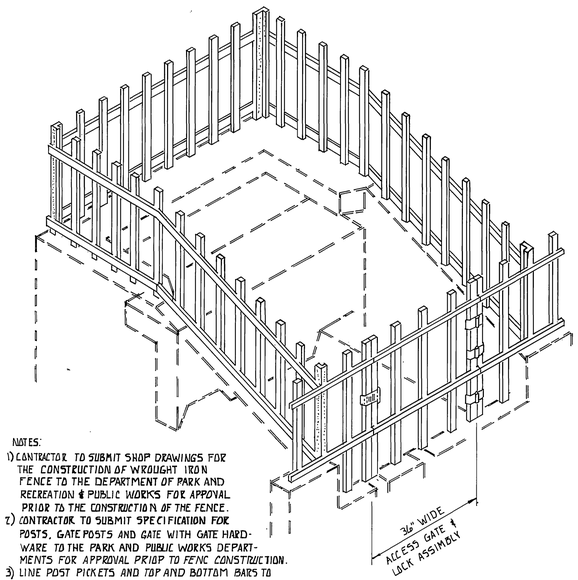
APPROVED BY Barry Bal
PUBLIC WORKS DIRECTOR
DATE 6/9/89

STORM DRAIN IMPROVEMENT PLANS FOR TRACT 21631
IRONWOOD DR & PEACHWOOD PL. ATWOOD COURT
HORIZ. SCALE: 1" = 40' VERT. SCALE: 1" = 4'

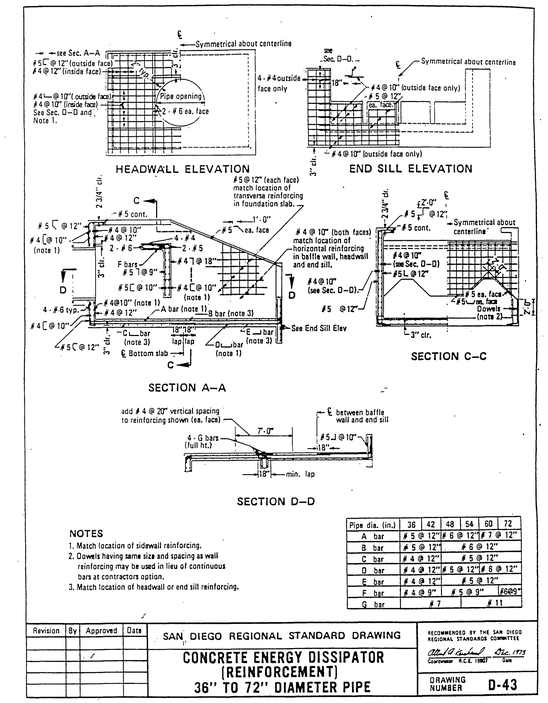
AS BUILT 7/1/93 RWM
ACCOUNT NO.
D-562
SHEET 4 OF 5

INDEXED 8-11-89 JN 274





NOTES:
1) CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR THE CONSTRUCTION OF WROUGHT IRON FENCE TO THE DEPARTMENT OF PARK AND RECREATION & PUBLIC WORKS FOR APPOVAL PRIOR TO THE CONSTRUCTION OF THE FENCE.
2) CONTRACTOR TO SUBMIT SPECIFICATION FOR POSTS, GATE POSTS AND GATE WITH GATE HARDWARE TO THE PARK AND PUBLIC WORK'S DEPARTMENTS FOR APPROVAL PRIOR TO FENC CONSTRUCTION.
3) LINE POST PICKETS AND TOP AND BOTTOM BARS TO MATCH SYCAMORE CANYON PARK WROUGHT IRON FENCING (SEE SHEET 4 OF ROUGH GRADING PLAN)



NOTES
1. Match location of sidewall reinforcing.
2. Dowels having same size and spacing as wall reinforcing may be used in lieu of continuous bars at contractors option.
3. Match location of headwall or end sill reinforcing.

Pipe dia. (in.)	36	42	48	54	60	72
A bar	#5 @ 12"	#5 @ 12"	#7 @ 12"			
B bar	#5 @ 12"	#6 @ 12"				
C bar	#4 @ 12"	#5 @ 12"				
D bar	#4 @ 12"	#5 @ 12"	#5 @ 12"	#6 @ 12"		
E bar	#4 @ 12"	#5 @ 12"				
F bar	#4 @ 9"	#5 @ 9"	#6@9"			
G bar	#7	#11				

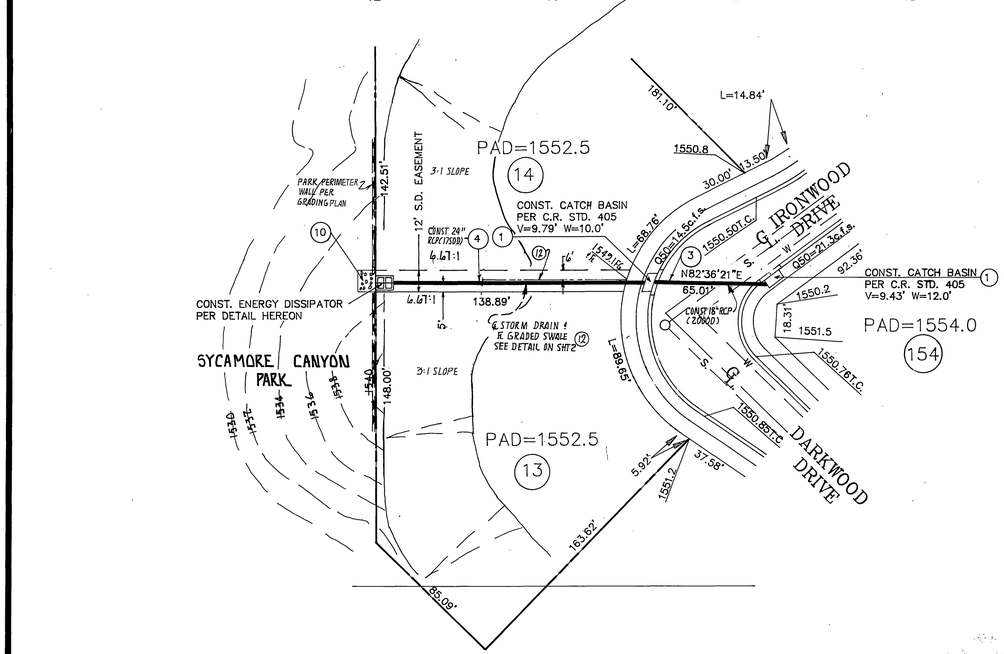
Revision	By	Approved	Date

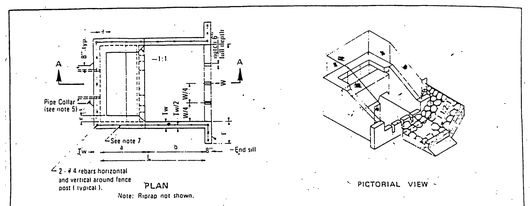
SAN DIEGO REGIONAL STANDARD DRAWING

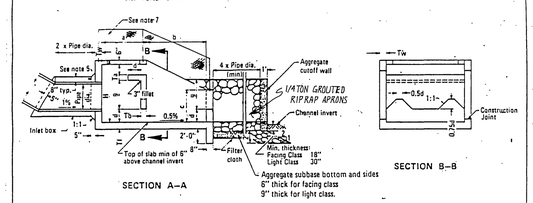
CONCRETE ENERGY DISSIPATOR [REINFORCEMENT] 36" TO 72" DIAMETER PIPE

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARD COMMITTEE
Dec. 1975
Coordinator R.C.E. 19807 Date

DRAWING NUMBER D-43







NOTES
1. Design:
   Equivalent Fluid Pressure = 60 p.c.f.
   Maximum Outlet Velocity = 35 f.p.s.
2. Concrete shall be 564 - C - 3000.
3. Reinforcing shall conform to ASTM designation A615 and may be grade 40 or 60. Reinforcing shall be placed with 2" clear concrete cover unless noted otherwise. Splices shall not be permitted except as indicated on the plans.
4. For pipe grades not exceeding 20%, inlet box may be omitted.
5. If inlet box is omitted, construct pipe collar as shown.
6. Unless noted otherwise, all reinforcing bar bends shall be fabricated with standard hooks.
7. Five foot high chain link fencing, embed post 18" deep in walls and encase with Class B mortar.
8. In Sandy and Silty soil:
   a) Riprap and aggregate base cutoff wall required at the end of rock apron.
   b) Filter cloth (Polyfilter X or equivalent) shall be installed on native soil and base, minimum of 1 ft. overlaps at joints.
9. Rip rap and subbase classification shall be as shown on plans.

Pipe Dia (in)	18	24	30	36	42	48	54	60	72
Area (sq.ft.)	1.77	3.14	4.91	7.07	9.62	12.57	15.90	19.63	28.27
Max. Q (cfs)	21	38	59	85	115	151	191	235	339
W	5'-0"	6'-9"	8'-0"	9'-3"	10'-6"	11'-9"	13'-0"	14'-3"	16'-9"
H	4'-3"	5'-3"	6'-3"	7'-3"	8'-0"	9'-0"	9'-9"	10'-6"	12'-0"
L	7'-6"	9'-0"	10'-6"	12'-0"	14'-0"	15'-6"	16'-10"	18'-0"	20'-0"
a	3'-9"	3'-11"	4'-7"	5'-3"	5'-9"	6'-0"	6'-3"	7'-1"	8'-10"
b	4'-11"	5'-11"	6'-11"	7'-11"	8'-0"	8'-11"	10'-0"	10'-11"	12'-11"
c	2'-5"	2'-10"	3'-4"	3'-10"	4'-5"	4'-9"	5'-1"	5'-5"	6'-1"
d	0'-11"	1'-2"	1'-3"	1'-4"	1'-9"	2'-0"	2'-3"	2'-5"	3'-0"
e	0'-6"	0'-8"	0'-8"	0'-8"	0'-10"	1'-0"	1'-0"	0'-8"	1'-2"
f	0'-6"	0'-6"	0'-6"	0'-6"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"
g	1'-3"	2'-8"	3'-0"	3'-2"	3'-11"	4'-5"	4'-11"	5'-4"	6'-2"
Tf	8"			10"		12"			
Tb	7"			9 1/2"		10 1/2"			
Tw	7"			9 1/2"		10 1/2"			
Ts	7"			8"					

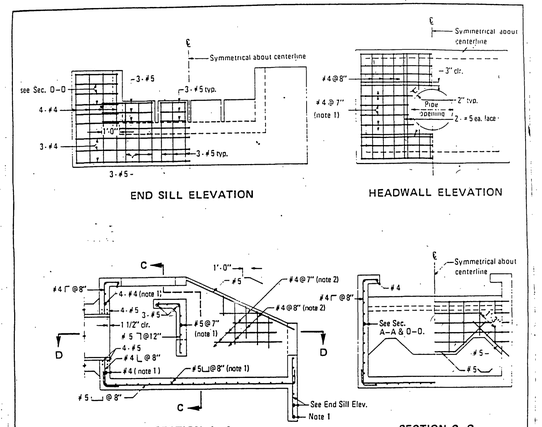
Revision	By	Approved	Date
Note 9			7-27

SAN DIEGO REGIONAL STANDARD DRAWING

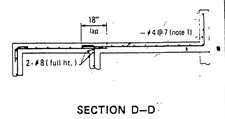
CONCRETE ENERGY DISSIPATOR

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE
Dec. 1975
Coordinator R.C.E. 19807 Date

DRAWING NUMBER D-41



NOTES
1. Place reinforcing, as noted, at center wall (or slab).
2. Match location of reinforcing with that in headwall, end sill and foundation slab.
3. All reinforcing shall be placed with 2" concrete cover, unless noted otherwise.



RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARD COMMITTEE
Dec. 1975
Coordinator R.C.E. 19807 Date

DRAWING NUMBER D-42

SAN DIEGO REGIONAL STANDARD DRAWING

CONCRETE ENERGY DISSIPATOR (REINFORCEMENT) 18" TO 30" DIAMETER PIPE

Revision	By	Approved	Date

Bruce E. Blank
EXP 3-31-92

BENCH MARK:
CITY OF RIVERSIDE B.M. F8-B P.K. NAIL AND TAG IN CONC. RETAINING WALL S'E'LY OF INTERSECTION OF ALESSANDRO BLVD. AND TRAUTWEIN RD.

ELEVATION = 1607.635

B.E. BLANK CIVIL ENGINEERS
P.O. BOX 6309 ANAHEIM, CA. 92816
(714) 639-9670

PREPARED UNDER THE SUPERVISION OF
Bruce E. Blank RCE 26492 5-31-88
BRUCE E. BLANK DATE

MARK	REVISIONS	APPR.	DATE

DESIGNED BY B.E.B. DRAWN BY CAD CHECKED BY B.E.B.

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

APPROVED BY	DATE	BY
PRINCIPAL ENGINEER	3-1-89	
PARK DEPARTMENT	2/6/89	
TRAFFIC DIVISION		
CHIEF P. W. ENGINEER	6-5 3/13/89	

APPROVED BY
PUBLIC WORKS DIRECTOR
DATE 6/9/89

STORM DRAIN IMPROVEMENT PLANS
FOR
TRACT 21631
LAKEWOOD DRIVE

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

AS BUILT 7/1/93 RWM

ACCOUNT NO. D-562

SHEET 5 OF 5

INDEXED 8-11-89 JN 274