RIVERSIDE HIGH SCHOOL DETENTION BASIN

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 EDITION.
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. FOR COMPLETE RIGHT OF WAY TOPO DATA REFER TO BOUNDARY AND TOPOGRAPHIC SURVEY MAP PREPARED BY THIENES ENGINEERING FOR RIVERSIDE UNIFIED SCHOOL DISTRICT DATED NOVEMBER 30, 1996.
5. FOR LOGS OF BORINGS AND SOIL CONDITIONS SEE SOILS REPORT BY EBERHART AND STONE, INC. DATED JANUARY 24, 1994, AND REPORT DATED JAN 20, 1997.
6. THE DEVELOPER SHALL BE RESPONSIBLE FOR PRESERVING OR RE-ESTABLISHING AND REFERENCING SURVEY MONUMENTS DESTROYED, OR BURIED AS A RESULT OF CONSTRUCTION SHOWN HEREON.
7. ALL FLAGGED ELEVATIONS SHALL BE STAKED IN THE FIELD BY THE PRIVATE ENGINEER.
8. ANY TRAFFIC CONTROL STRIPING OBLITERATED AND/OR BADLY WORN DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR WITHIN FIVE DAYS AFTER NOTIFICATION FROM THE CITY INSPECTORS.
9. THE CONTRACTOR SHALL CALL IN A LOCATION REQUEST TO UNDERGROUND SERVICE ALERT (U.S.A.), PHONE # 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.
10. 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.

NOTE TO CONTRACTORS

1. CONTRACTOR SHALL REMOVE AND REPLACE AC PAVEMENT TO MATCH EXISTING FOR SEWER AND STORM DRAIN CONSTRUCTION.
2. CONTRACTOR SHALL PROVIDE AND PROCESS DETOURING PLANS FOR VAN BUREN AVENUE FOR SEWER, STREET, SIGNAL, UTILITY AND STORM DRAIN CONSTRUCTION.
3. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE FOURTEEN FOOT WIDE TRAVEL LANES IN EACH DIRECTION AND ACCESS TO ALL ADJACENT PROPERTIES DURING AND AFTER WORKING HOURS ON VAN BUREN AVENUE.
4. AT THE END OF WORK DAY, EXCAVATIONS SHALL BE FENCED AND BARRICADED. TRENCHES SHALL BE FILLED, PAVED AND BARRICADED TO ALLOW SAFE MOVEMENT OF TRAFFIC.
5. THE CONTRACTOR SHALL MAINTAIN ON A 24 HOUR BASIS ALL SIGNS AND DELINEATION BARRICADES TO INSURE PROPER FLOW AND SAFETY OF TRAFFIC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT OF ANY ADDITIONAL DEVICES NECESSARY TO ASSURE SAFETY TO THE PUBLIC AT ALL TIME DURING CONSTRUCTION.
6. THE CONTRACTOR SHALL BE REQUIRED TO REPLACE STRIPING, SIGNS AND TRAFFIC SIGNAL LOOP SENSORS TO ITS ORIGINAL STATE AFTER COMPLETION OF CONSTRUCTION.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING ALL NECESSARY CALCULATIONS PLANS AND DETAILS FOR ALL SHORING REQUIRED. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR PROCESSING SHORING PLANS THRU THE LOCAL AGENCY FOR APPROVAL.
8. CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND SHALL REPORT DISCREPANCIES TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

CONSTRUCTION NOTES:

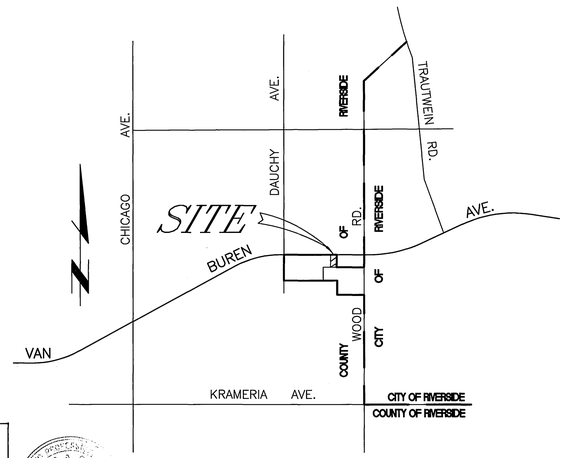
1. CONSTRUCT 54" RCP – 1500D.
2. CONSTRUCT HEADWALL AND CONC. CHANNEL (INLET) PER DETAIL ON SHT. 4.
3. INSTALL 3' THICK 1/4 TON RIP-RAP EMBEDDED INTO CONCRETE..
4. CONSTRUCT CUTOFF WALL PER DETAIL ON SHT. 5.
5. CONSTRUCT 8" CURB PER SECTION "E-E" ON SHT. NO. 5.
6. CONSTRUCT 6" THICK CONC. PER SPILLWAY PLAN ON SHT. 5.
7. CONSTRUCT 4" THICK CONC. PER SPILLWAY PLAN ON SHT. 5.
8. CONSTRUCT ARTICULATED JOINT PER DETAIL ON SHT. 5.
9. CONSTRUCT 2 1/2" THICK AGGREGATE BASE.
10. CONSTRUCT LOW FLOW CHANNEL PER DETAIL ON SHT. 4.
11. CONSTRUCT HEADWALL (OUTLET) PER DETAIL ON SHT. 5.
12. CONSTRUCT 18" RCP – 2000D.
13. CONSTRUCT 24" RCP – 2250D.
14. CONSTRUCT 36" RCP – 1750D.
15. CONSTRUCT JUNCTION STRUCTURE "B" PER CITY OF RIVERSIDE STD. DWG. NO. 421.
16. CONSTRUCT JUNCTION STRUCTURE "C" PER CITY OF RIVERSIDE STD. DWG. NO. 422.
17. CONSTRUCT CATCH BASIN PER APWA STD. PLAN NO. 302-1, SEE DETAIL ON SHEET NO. 4
18. CONSTRUCT CATCH BASIN PER APWA STD. PLAN NO. 304-1, SEE DETAIL ON SHEET NO. 4
19. CONSTRUCT C.S.P. INLET PER CITY RIVERSIDE STD. DWG. NO. 412.
20. CONSTRUCT RETAINING WALL PER DETAIL ON SHT. 3.
21. CONSTRUCT A.C. BERM PER CITY OF RIVERSIDE STD. DWG. NO. 250, TYPE I.
22. REMOVE EXISTING CURB AND GUTTER.
23. SAWCUT EXISTING A.C. PAVEMENT.
24. CONSTRUCT 4" A.C. PAVEMENT OVER 12" A.B.
25. REMOVE EXISTING 42" R.C.P.
26. INSTALL SLOPED PROTECTION BARRIER PER A.P.W.A. STD. DWG. NO. 360-0, Wh = 9.0', Wf = 9.5', h = 8.0', SEE DETAIL ON SHEET NO. 4.
27. INSTALL CHAIN LINK FENCE AND GATE PER R.C.F.C.D. STD. DWG. NO. M801.
28. CONSTRUCT 3 1/2" A.C. PAVEMENT OVER 6" A.B.
29. CONSTRUCT 2' V-DITCH PER DETAIL ON SHT. 3.
30. POWER POLES TO BE RELOCATED BY OTHERS.
31. FLUSH INSIDE OF EXISTING BOX CULVERT.
32. INSTALL 12" PVC SDR35
33. INSTALL 24" CSP INLET PER CITY RIV. STD. DWG. NO. 412.
34. CONSTRUCT CONCRETE COLLAR PER CITY RIVERSIDE STD. DWG. NO. 424.
35. INSTALL GEOFABRIC WITHIN PAVEMENT SUBGRADE PER SOILS REPORT.
36. PROTECT IN PLACE

HOLD HARMLESS INDEMNIFICATION CLAUSE:

THE CONTRACTOR AGREES THAT HE SHALL 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 APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE CITY OF RIVERSIDE, THE OWNER, AND THE PRIVATE ENGINEERS HARMLESS FOR 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 ENGINEER.

EXISTING UNDERGROUND STRUCTURES:

ALL UNDERGROUND UTILITIES OR STRUCTURE, REPORTED OR FOUND ON PUBLIC RECORDS, ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE OWNER, BY ACCEPTING THESE PLANS OR PROCEEDING WITH THE IMPROVEMENTS HEREON, AGREES TO ASSUME LIABILITY AND TO HOLD THE ENGINEER HARMLESS FOR ANY DAMAGES RESULTING FROM THE EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED OR INDICATED ON PUBLIC RECORDS, OR THOSE CONSTRUCTED AT VARIANCE WITH REPORTED ORE RECORD LOCATIONS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHERS FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF ALL UTILITIES STRUCTURES CONCERNED BEFORE STARTING WORK.



VICINITY MAP

N.T.S.

RECOMMENDED FOR APPROVAL
Thomas Boyd
Boyle Engineering
DATE 5/20/97
CHECKED BY TJB
DATE 5/97

APPROVED BY: DATE: 5/29/97
FOR TRANSPORTATION DEPT., RIVERSIDE COUNTY CALIFORNIA
R.C.E. NO. 33950 EXP. DATE 6/30/98

NOTE: Reviewed & Approved By RCTD For The Connection Only With The Existing Box Culvert Under Van Buren Blvd On The County Side. Otherwise All Project is Within The City Limits.

APPROVED BY EDISON CO.
SEE LETTER FROM EDISON CO.
DATED MAY 12, 1997
DATE

NOTE:

PRIVATE DETENTION BASIN AND STORM DRAIN SYSTEM ON THIS PLAN TO BE MAINTAINED BY RIVERSIDE UNIFIED SCHOOL DISTRICT.

COUNTY OF RIVERSIDE
MS 3705

IMPORTANT NOTICE
SECTION 4216/4217 OF THE GOVERNMENT CODE REQUIRES A DIG ALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID FOR YOUR DIG ALERT I.D. NUMBER CALL UNDERGROUND SERVICE ALERT
TOLL FREE 1-800-227-2600
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
Haidook I. Aghaian
R.C.E. NO. 043293
Exp. 3-31-00
STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF:
Haidook Aghaian 5/7/97
HAIDOOK I. AGHAIAN DATE
R.C.E. 043293 – EXP. 3/31/00

APPROVED BY:

NOT TO SCALE
DATE

THIENES ENGINEERING
CIVIL ENGINEERING • LAND SURVEYING
16800 VALLEYVIEW AVENUE
LA MIRADA, CALIFORNIA 90639
(714) 521-4811

BENCHMARK:
BM – P.K. NAIL & TAG E'LY SIDE OF TRAUTWEIN ROAD, 100'± N'LY OF VAN BUREN BOULEVARD, N'LY WALL OF CATCH BASIN, 2' E'LY OF CURB FACE IN S/W.
ELEV=1074.985 ADJ. LL 43/PG. 10

MARK	REVISIONS	APPR.	DATE

DESIGNED BY H.I.A. DRAWN BY P.F.M. CHECKED BY H.I.A

CITY OF RIVERSIDE, CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER		6/6/97
PARK DEPARTMENT		
TRAFFIC DIVISION		
DEPUTY P.W. DIR.		6/10/97
STREET SERVICES		6/16/97

APPROVED BY
DIRECTOR OF PUBLIC WORKS
DATE 6/13/97

RIVERSIDE HIGH SCHOOL DETENTION BASIN
TITLE SHEET

HORIZ. SCALE: NTS VERT. SCALE: NTS

PROJECT NO. D-649
SHEET 1 OF 5
FILE NO.

Last Update: 6/30/97
E:\1375\1375RET1

INDEXED 6-18-97

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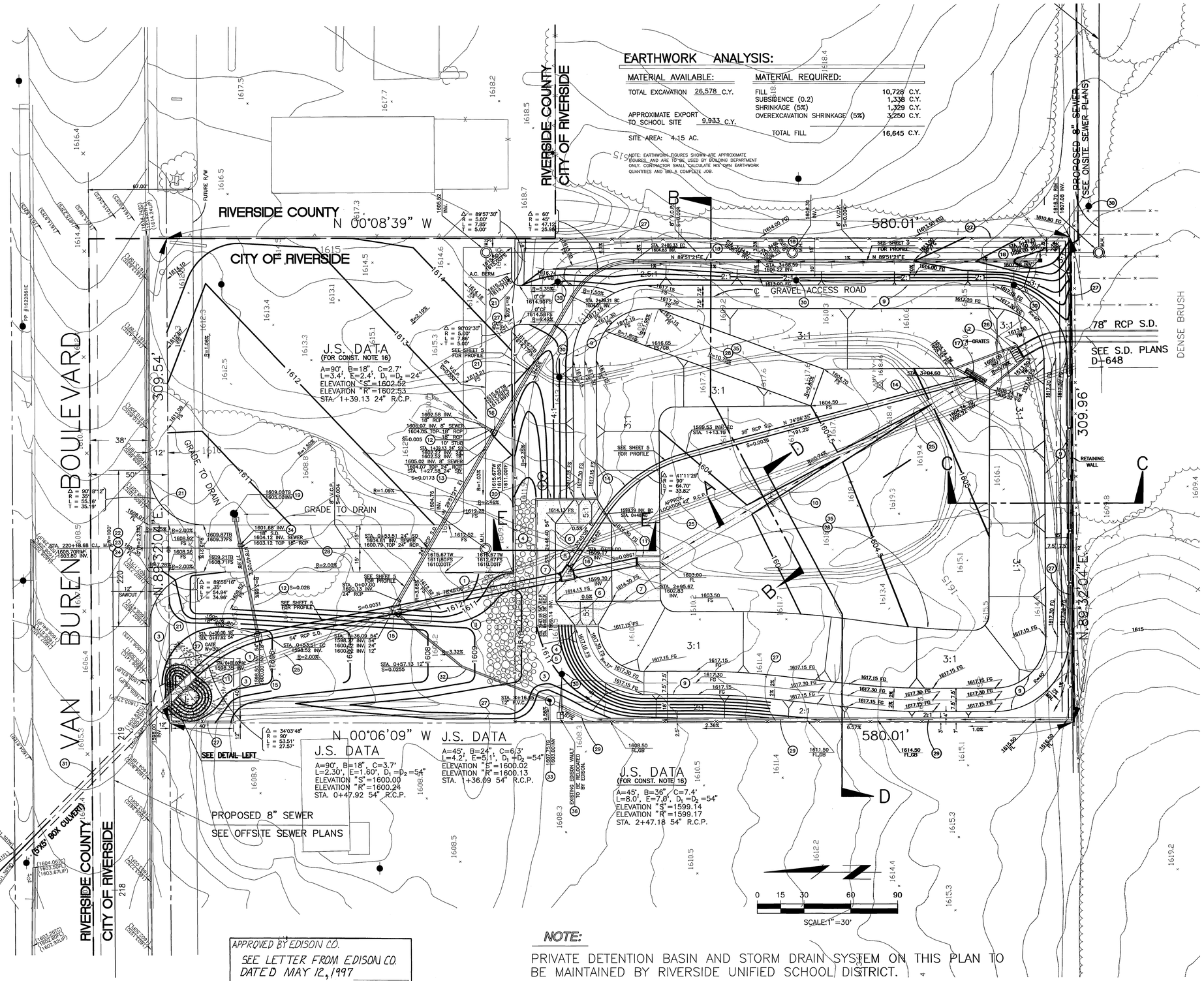

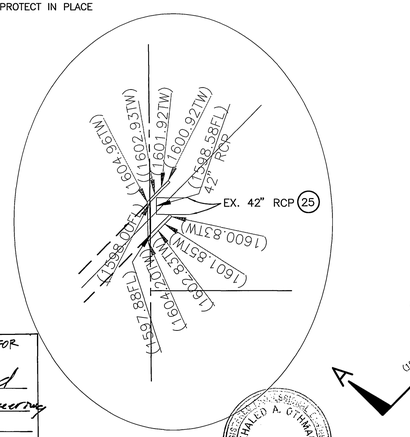

DETAIL

NOTE: See Sheet 1 For County Portion

RECOMMENDED FOR APPROVAL
Thom Bard
Boyle Engineering
DATE 5/20/97
CHECKED BY JB
DATE 5/97

APPROVED BY: DATE: 5/29/97
FOR TRANSPORTATION DEPT., RIVERSIDE COUNTY CALIFORNIA
33950 6/30/98
R.C.E. NO. EXP. DATE

REGISTERED PROFESSIONAL ENGINEER KHALED A. OTHMAN No. 33950 EXP. 6-30-98 CIVIL STATE OF CALIFORNIA

APPROVED BY EDISON CO.
SEE LETTER FROM EDISON CO. DATED MAY 12, 1997
DATE

NOTE:

PRIVATE DETENTION BASIN AND STORM DRAIN SYSTEM ON THIS PLAN TO BE MAINTAINED BY RIVERSIDE UNIFIED SCHOOL DISTRICT.

IMPORTANT NOTICE
SECTION 4216/4217 OF THE GOVERNMENT CODE REQUIRES A DIG ALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID FOR YOUR DIG ALERT I.D. NUMBER CALL UNDERGROUND SERVICE ALERT
TOLL FREE 1–800–227–2600
TWO WORKING DAYS BEFORE YOU DIG.

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REGISTERED PROFESSIONAL ENGINEER Haidook I. Aghaian R.C.E. NO. 043293 Exp. 3-31-00 STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF:
Haidook Aghaian 5/7/97
HAIDOOK I. AGHAIAN DATE
R.C.E. 043293 – EXP. 3/31/00

APPROVED BY:

1" = 30'
DATE

BENCHMARK:
BM – P.K. NAIL & TAG E'LY SIDE OF TRAUTWEIN ROAD, 100'± N'LY OF VAN BUREN BOULEVARD, W'LY WALL OF CATCH BASIN, 2' E'LY OF CURB FACE IN S/W.
ELEV=1674.985 ADJ.

THIENES ENGINEERING
CIVIL ENGINEERING•LAND SURVEYING
16800 VALLEYVIEW AVENUE
LA MIRADA, CALIFORNIA 90639
(714) 521–4811

MARK	REVISIONS	APPR.	DATE

DESIGNED BY H.I.A. DRAWN BY P.F.M. CHECKED BY H.I.A.

CITY OF RIVERSIDE, CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER		6/4/97
PARK DEPARTMENT	—	—
TRAFFIC DIVISION	—	—
DEPUTY P.W. DIR.		6/6/97
STREET SERVICES		6/9/97

APPROVED BY: DIRECTOR OF PUBLIC WORKS
DATE 6/13/97

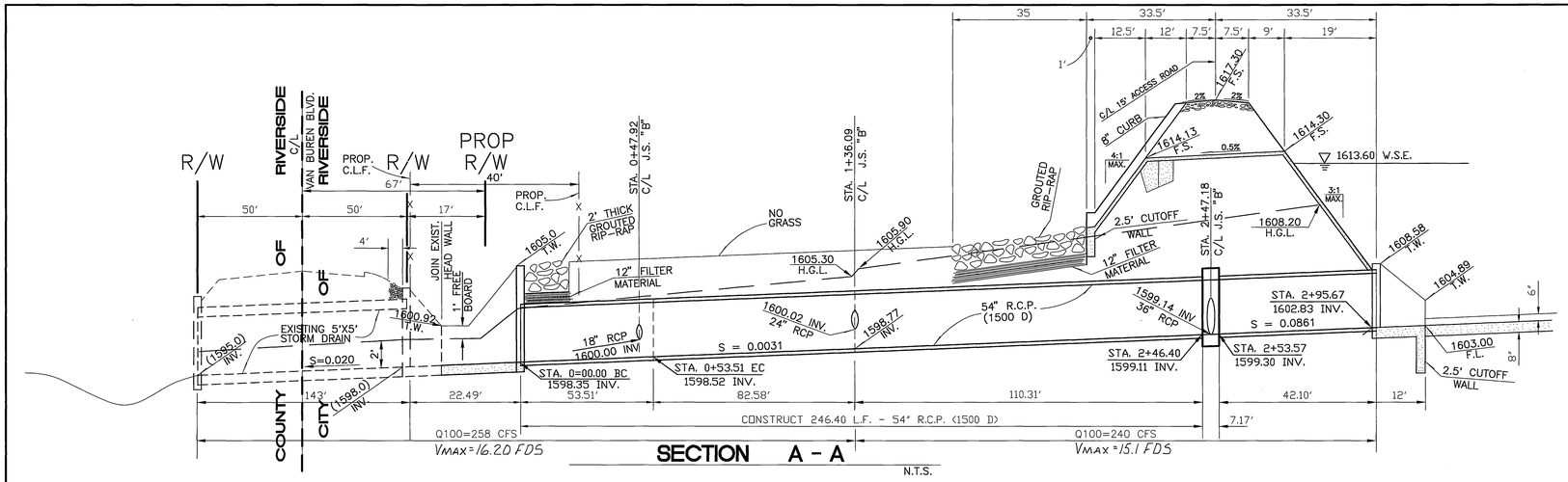
RIVERSIDE HIGH SCHOOL DETENTION BASIN
GRADING PLAN

HORIZ. SCALE: 1" = 30'

PROJECT NO. D-649
SHEET 2 OF 5
FILE NO.

INDEXED 6-18-97 HH

Last Update: 4/30/97 E:\1375\1375REST



SECTION A - A

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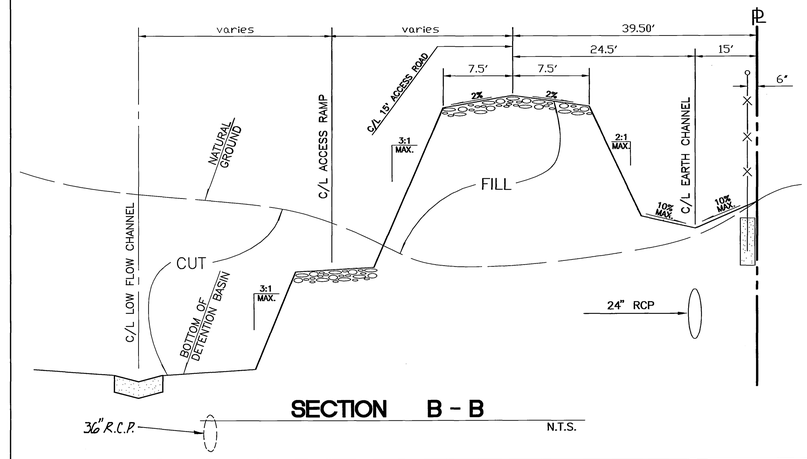

SECTION B - B

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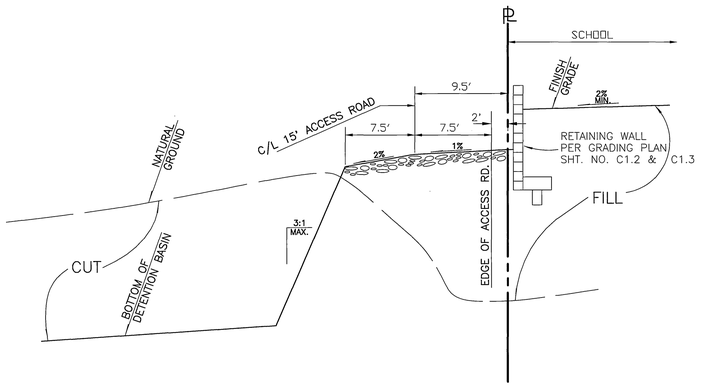

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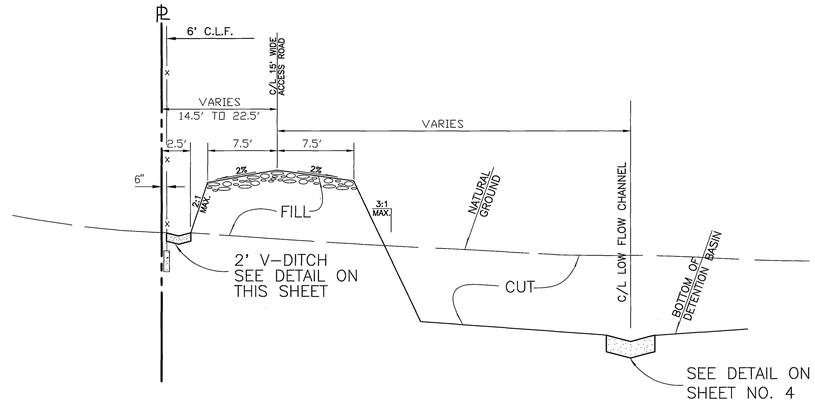

SECTION D - D

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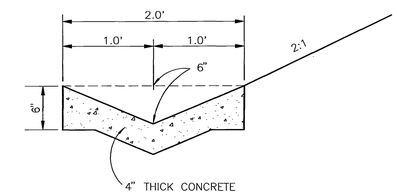
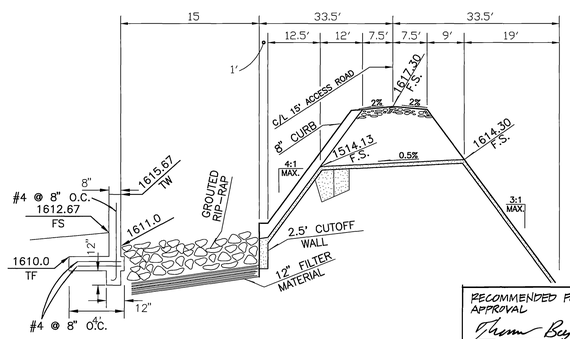


2' V-DITCH

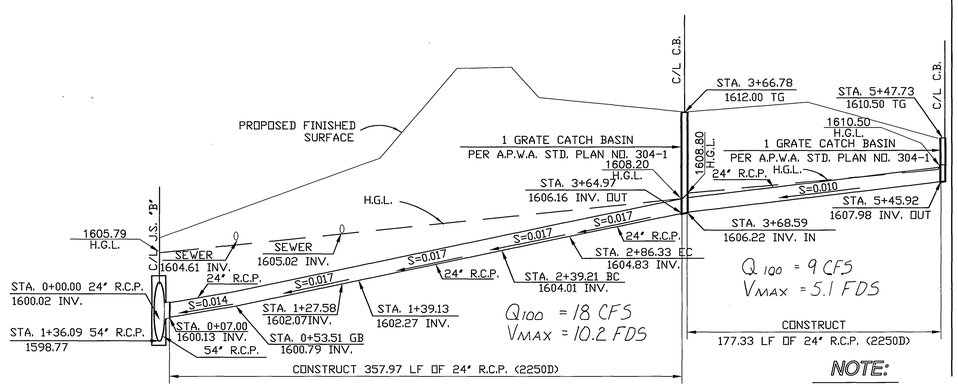
N.T.S.



SECTION E - E

N.T.S.

RECOMMENDED FOR APPROVAL
Thomas Boyd
Boyle Engineering
DATE 5/29/97
CHECKED BY TDB
DATE 5/97

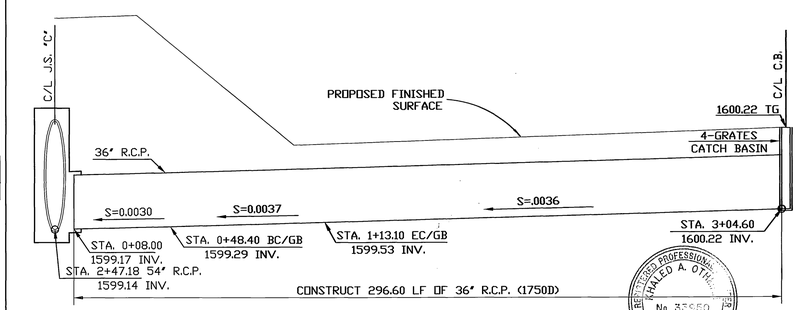


24" R.C.P. PROFILE

N.T.S.

NOTE:

PRIVATE DETENTION BASIN AND STORM DRAIN SYSTEM ON THIS PLAN TO BE MAINTAINED BY RIVERSIDE UNIFIED SCHOOL DISTRICT.



36" R.C.P. PROFILE
LOW FLOW SYSTEM

N.T.S.

REGISTERED PROFESSIONAL ENGINEER KALLED A. OTHMAN No. 33950 EXP. 6/30/98 STATE OF CALIFORNIA

Not Part of For County Portion.

APPROVED BY: DATE: 5/29/97
FOR TRANSPORTATION DEPT., RIVERSIDE COUNTY CALIFORNIA
R.C.E. NO. 33950 EXP. DATE 6/30/98

IMPORTANT NOTICE
SECTION 4216/4217 OF THE GOVERNMENT CODE REQUIRES A DIG ALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID FOR YOUR DIG ALERT I.D. NUMBER CALL UNDERGROUND SERVICE ALERT
TOLL FREE 1-800-227-2600
TWO WORKING DAYS BEFORE YOU DIG

PRIVATE ENGINEERING NOTE

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REGISTERED PROFESSIONAL ENGINEER Haidook I. Aghaian R.C.E. NO. 043293 Exp. 3-31-00 STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF:
Haidook Aghaian 5/7/97
HAIDOOK I. AGHAIAN DATE
R.C.E. 043293 – EXP. 3/31/00

APPROVED BY:

AS NOTED
DATE

THIENES ENGINEERING
CIVIL ENGINEERING • LAND SURVEYING
16800 VALLEYVIEW AVENUE
LA MIRADA, CALIFORNIA 90639
(714) 521-4811

BENCHMARK:
BM – P.K. NAIL & TAG E'LY SIDE OF TRAUTWEIN ROAD, 100'± N'LY OF VAN BUREN BOULEVARD, N'LY WALL OF CATCH BASIN, 2' E'LY OF CURB FACE IN S/W.
ELEV=1674.985 ADJ.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY H.I.A. DRAWN BY P.F.M. CHECKED BY H.I.A.

CITY OF RIVERSIDE, CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER		6/6/97
PARK DEPARTMENT		
TRAFFIC DIVISION		
DEPUTY P.W. DIR.		6/11/97
STREET SERVICES		6/9/97

APPROVED BY
DIRECTOR OF PUBLIC WORKS
DATE 6/13/97

RIVERSIDE HIGH SCHOOL DETENTION BASIN
DETAIL SHEET

SCALE: AS NOTED

PROJECT NO. D-649
SHEET 3 OF 5
FILE NO.

INDEXED 6-18-97 GH

Last Update: 4/30/97
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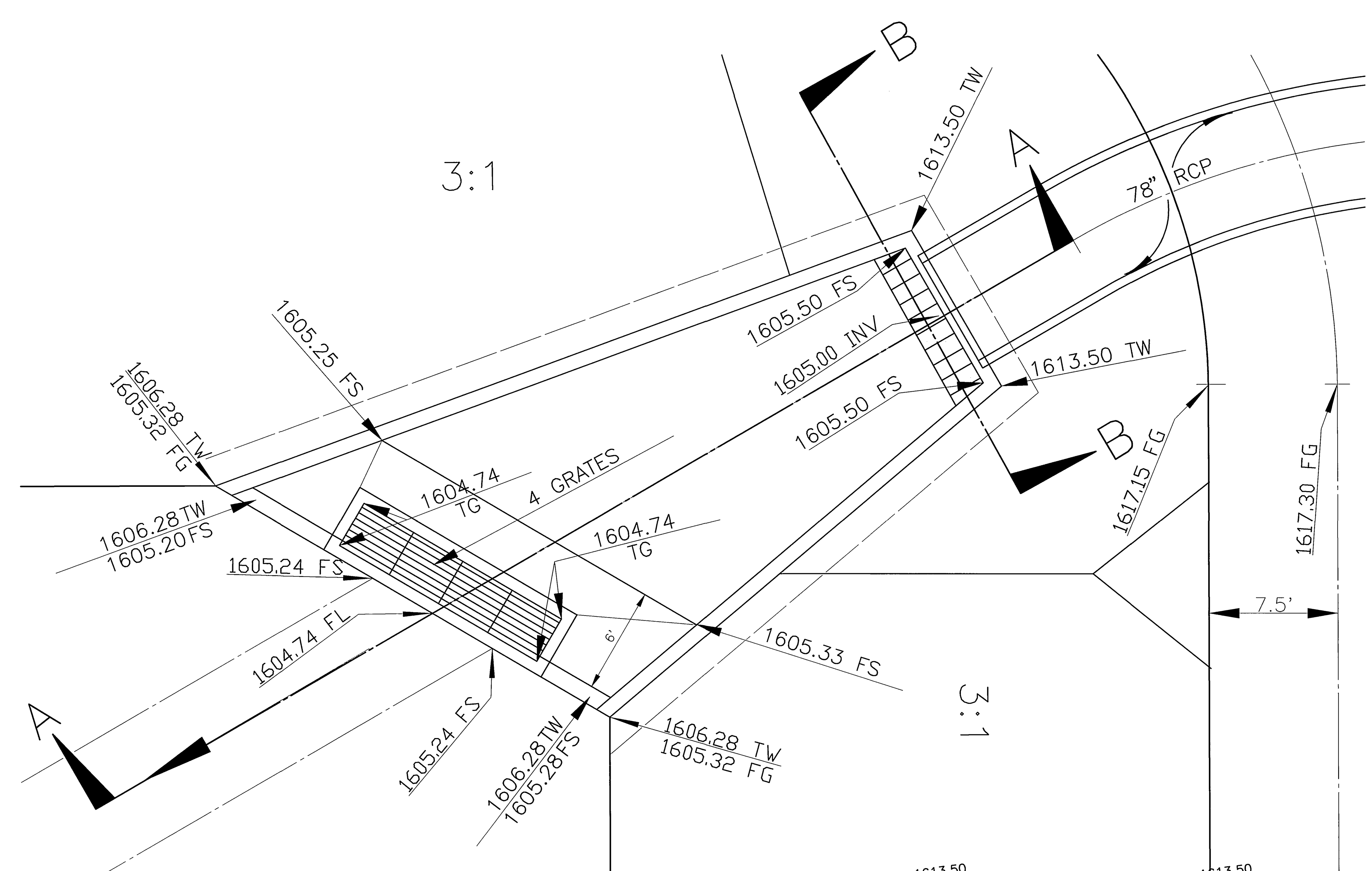
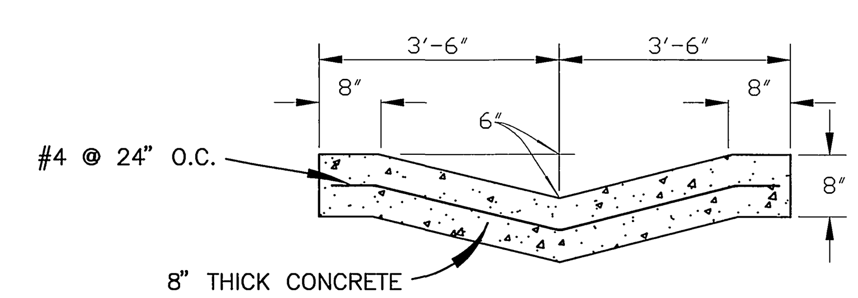


PLAN VIEW

DETENTION BASIN INLET STRUCTURE

SCALE 1" = 5'



LOW FLOW CHANNEL

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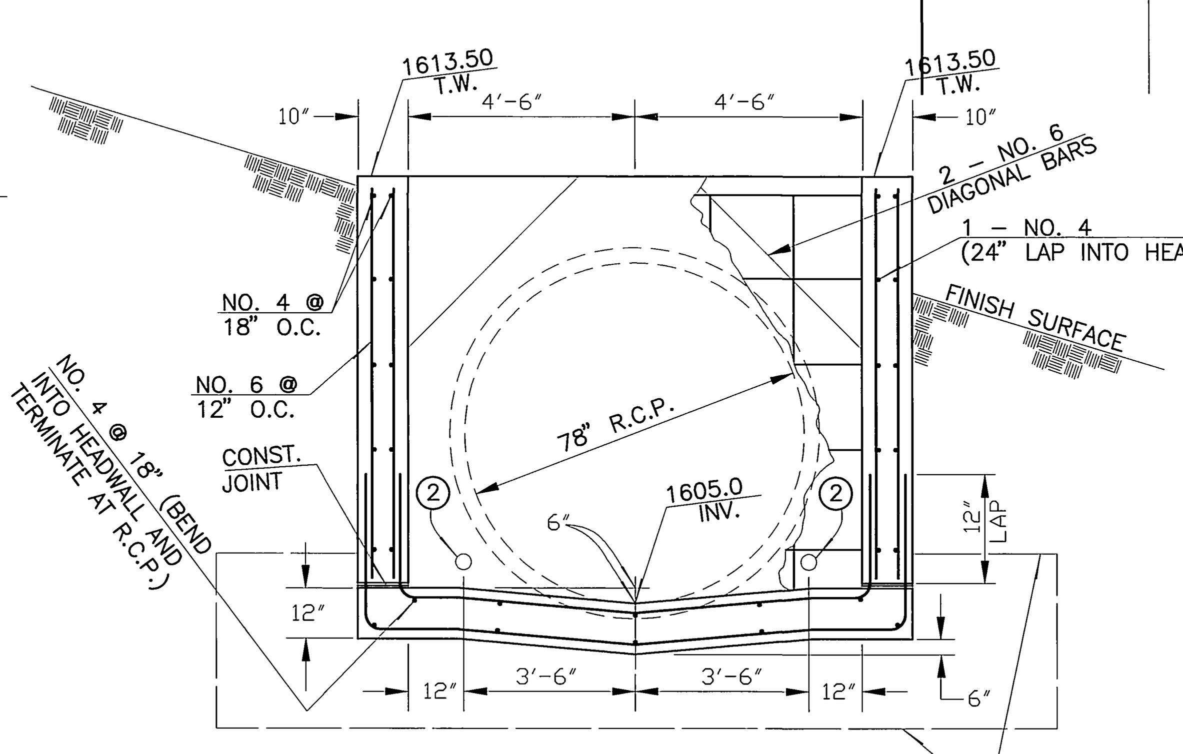

SECTION "B-B"

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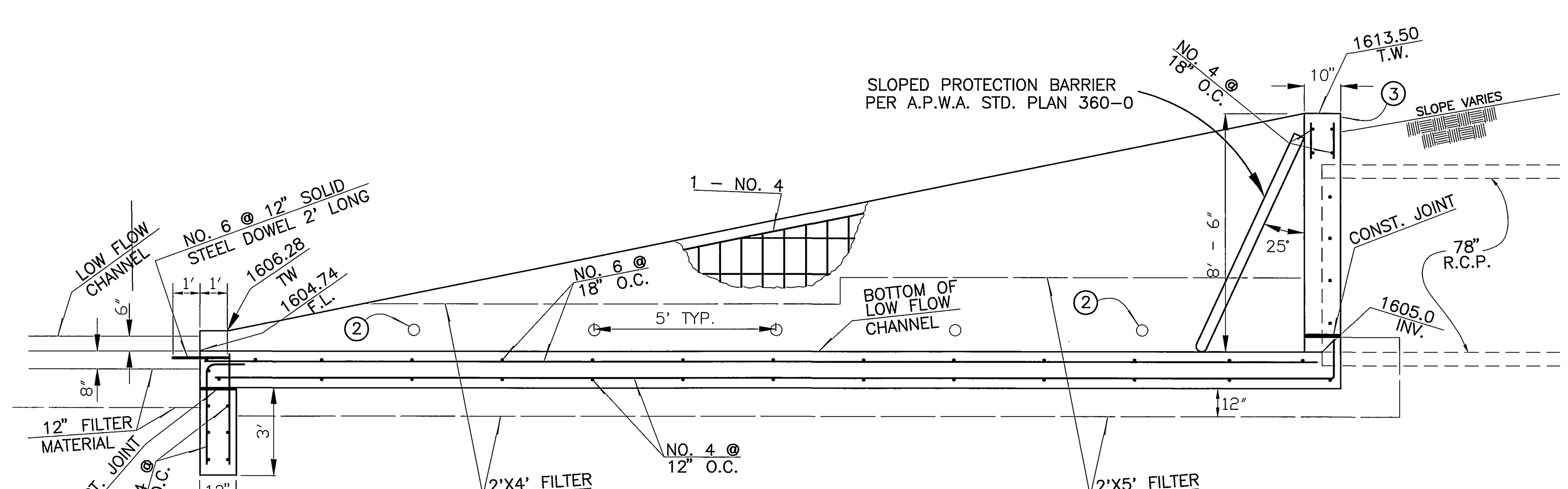

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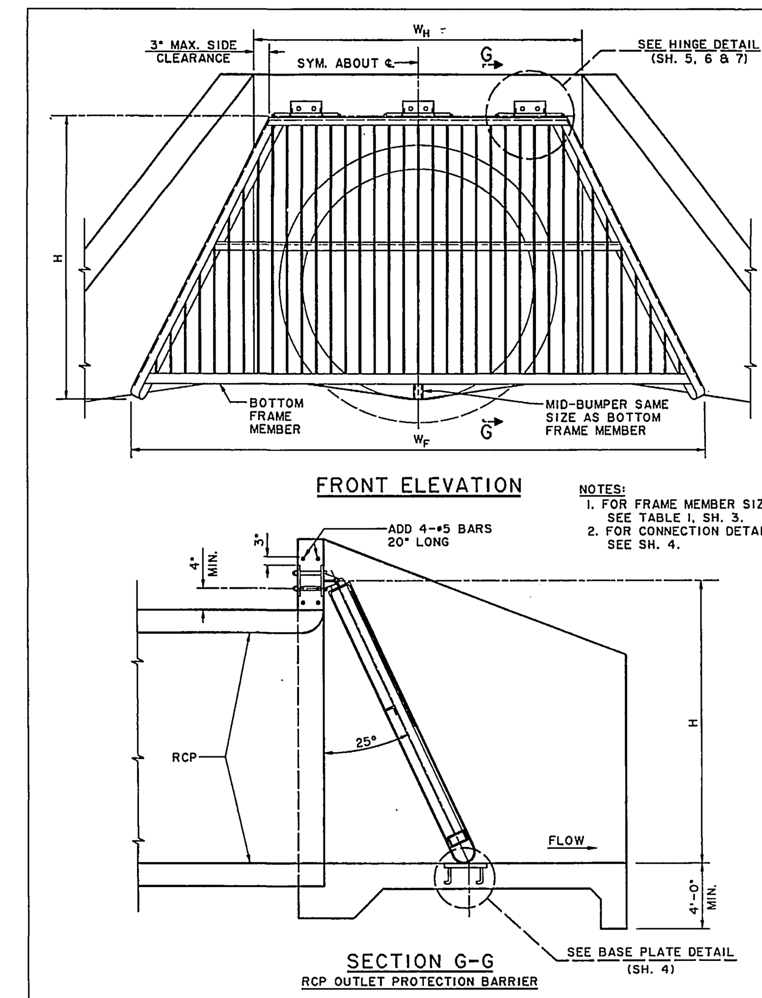


NOTES:
1. FOR FRAME MEMBER SIZE, SEE TABLE I, SH. 3.
2. FOR CONNECTION DETAILS SEE SH. 4.

AMERICAN PUBLIC WORKS ASSOCIATION – SOUTHERN CALIFORNIA CHAPTER

SLOPED PROTECTION BARRIER — STANDARD PLAN **360-0** — SHEET 2 OF 8

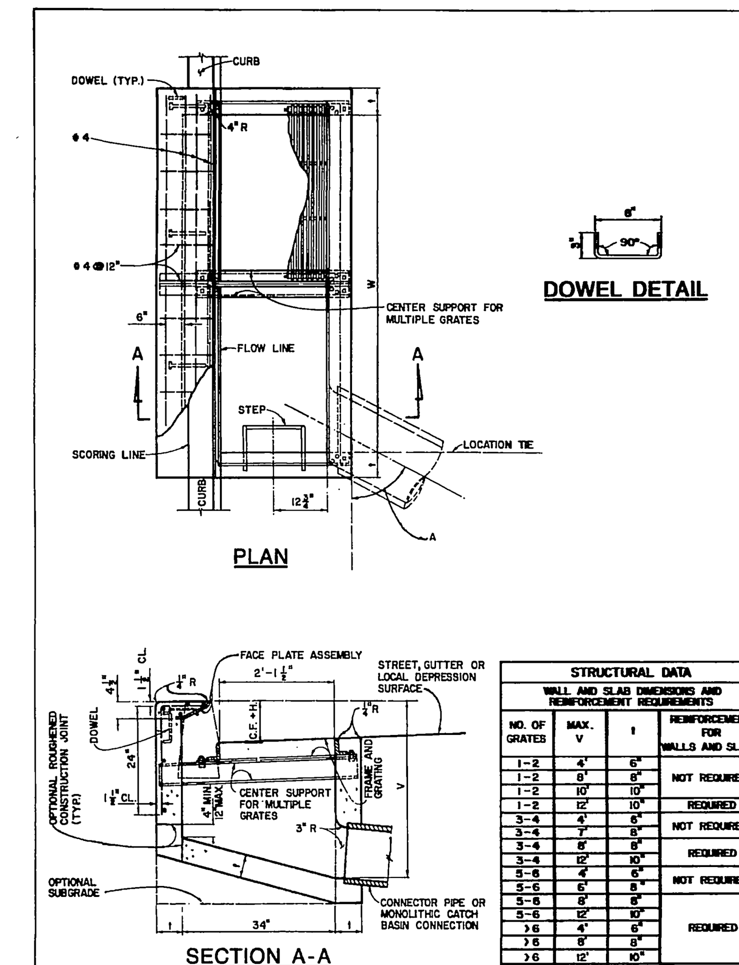
TABLE I: INLET/OUTLET SLOPED PROTECTION BARRIER

TABLE 1: STANDARD INLET/OUTLET, BOX OR PIPE, RECTANGULAR OR TRAPEZOIDAL SHAPED PROTECTION BARRIERS.

NOTE 1: FOR TRAPEZOIDAL SHAPED PROTECTION BARRIERS, USE W_H TO DETERMINE NUMBER AND SIZE OF HINGES, AND USE W_F TO DETERMINE REQUIRED FRAME MEMBER SIZES. (FOR W_H AND W_F, SEE SH. 2)

BOX SIZE W X H (FT.)	NO. OF HINGES	HINGE SIZE	VERTICAL BAR SIZE (INCHES)	TOP FRAME MEMBER SIZE	SIDE FRAME MEMBER SIZE	BOTTOM FRAME MEMBER SIZE
4X4	2	12"	1X1/2	C 4 X 7.25	C 4 X 7.25	TS 2X2X.250
4X6	2	12"	3X1/2	C 4 X 7.25	C 4 X 7.25	TS 2X2X.250
4X8	2	12"	3X1/2	C 5 X 9	C 5 X 9	TS 3X3X.250
6x4	2	18"	1X1/2	C 4 X 7.25	C 4 X 7.25	TS 2X2X.250
6x6	2	18"	2X1/2	C 4 X 7.25	C 4 X 7.25	TS 2.5X2.5X.250
6x8	2	18"	3X1/2	C 5 X 9	C 5 X 9	TS 3.5X3.5X.250
6x10	2	18"	4 1/2x1/2	C 6 X 10.5	C 6 X 10.5	TS 4.5X4.5X.250
8x4	3	12"	1X1/2	C 4 X 7.25	C 4 X 7.25	TS 2X2X.250
8x6	3	12"	2X1/2	C 4 X 7.25	C 4 X 7.25	TS 2.5X2.5X.250
8x8	3	12"	3X1/2	C 5 X 9	C 5 X 9	TS 3X3X.250
8x10	3	12"	4 1/2X1/2	C 6 X 10.5	C 6 X 10.5	TS 4.5X4.5X.250
10x6	3	18"	2X1/2	C 4 X 7.25	C 4 X 7.25	TS 2.5X2.5X.250
10x8	3	18"	3X1/2	C 5 X 9	C 5 X 9	TS 3.5X3.5X.250
10x10	3	18"	4 1/2X1/2	C 6 X 10.5	C 6 X 10.5	TS 4.5X4.5X.250
12x6	3	24"	2X1/2	C 5 X 9	C 5 X 9	TS 3X3X.250
12x8	3	24"	2X1/2	C 5 X 9	C 5 X 9	TS 3.5X3.5X.250
12x10	3	24"	3X1/2	C 6 X 10.5	C 6 X 10.5	TS 4.5X4.5X.250
14x6	3	24"	2X1/2	C 5 X 9	C 5 X 9	TS 3X3X.250
14x8	3	24"	3X1/2	C 6 X 10.5	C 6 X 10.5	TS 4X4X.250
14x10	3	24"	4 1/2X1/2	C 7 X 12.25	C 7 X 12.25	TS 5X5X.250

NOTES
1. WHENEVER RCB SIZE FALLS BETWEEN SIZES SHOWN ON TME TABLE, THE NEXT LARGER SIZE SHALL BE USED.
2. ALL FRAME MEMBERS SHALL BE ASTM A 36 STEEL OR BETTER.
3. ALL HINGE ASSEMBLIES AND BASE PLATES SHALL BE STAINLESS STEEL.
4. THE CONTRACTOR SHALL MAKE ANY NECESSARY MODIFICATIONS TO ALLOW FOR THE SIMPLE REMOVAL OR INSERTION OF HINGE PINS IN ORDER TO INSTALL OR REMOVE THE PROTECTION BARRIER. ENDS OF HINGE PINS SHALL BE THREADED IN ORDER THAT NUTS AND LOCK WASHERS WILL BE FLUSH WITH THE HINGE PIPE. THREADS BEYOND THE NUT FACE SHALL BE DAMAGED TO PREVENT REMOVAL.
5. ALL FRAME MEMBERS SHALL BE GALVANIZED AFTER FABRICATION.
6. IF FIELD WELDS ARE NECESSARY, GALVICON, GALVALLOY OR AGENCY APPROVED EQUAL SHALL BE USED FOR COATING.
7. MID-BUMPER SHALL BE USED FOR 3 HINGED BARRIERS.
8. ANY DEVIATIONS OR MODIFICATIONS TO THIS STANDARD SHALL BE APPROVED BY THE AGENCY.
9. AT OCEAN OUTLETS OR WHEREVER THE TOP SLAB SERVES AS A PUBLIC WALKWAY, THE TOP SLAB THICKNESS SHALL BE INCREASED BY 3" IN ORDER TO PROVIDE A RECESS FOR THE HINGE TOP PLATE. THE RECESS SHALL BE BACKFILLED WITH GROUT AND SMOOTHED AS SHOWN.
10. PROTECTION BARRIERS FOR RCB CONDUITS SHALL BE SLOPED TO SWING OPEN IN THE DIRECTION OF FLOW.
11. MEMBERS SHALL BE SELECTED FROM TABLE I UNLESS OTHERWISE NOTED.
12. DESIGN LOADS:
    A. INLET/OUTLET: BULKED EFD = 85 PCF
    B. OCEAN OUTLETS:
        1. 1800 PSF @ SAND PLATE AREA
        2. 600 PSF @ LOWER OPEN AREA



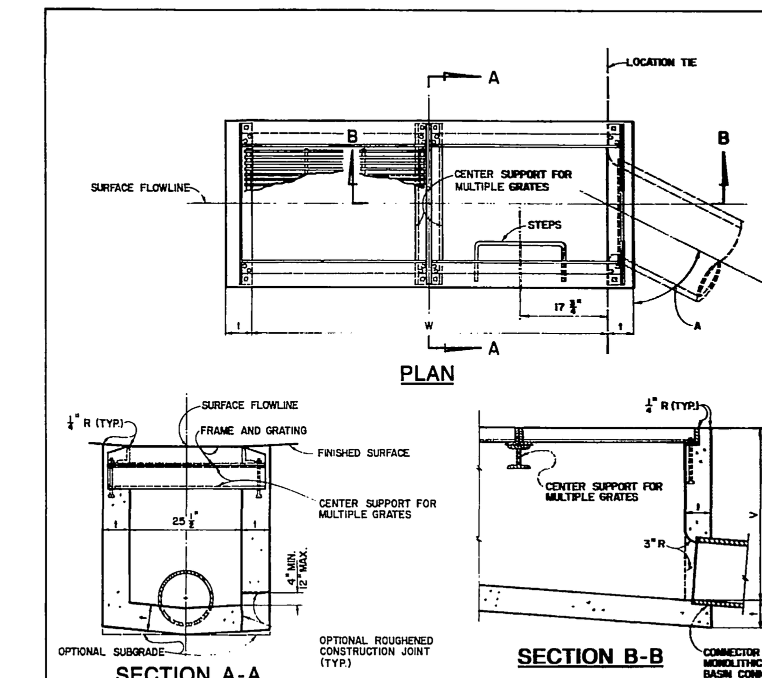
STRUCTURAL DATA			
WALL AND SLAB DIMENSIONS AND REINFORCEMENT REQUIREMENTS			
NO. OF GRATES	MAX. V	t	REINFORCEMENT FOR WALLS AND SLABS
1-2	4'	6"	NOT REQUIRED
1-2	8'	8"	
1-2	10'	10"	
1-2	12'	10"	REQUIRED
3-4	4'	6"	NOT REQUIRED
3-4	7'	8"	
3-4	8'	8"	REQUIRED
3-4	12'	10"	
5-6	4'	6"	NOT REQUIRED
5-6	6'	8"	
5-6	8'	8"	REQUIRED
5-6	12'	10"	
>6	4'	6"	
>6	8'	8"	
>6	12'	10"	

AMERICAN PUBLIC WORKS ASSOCIATION – SOUTHERN CALIFORNIA CHAPTER

PROMULGATED BY THE APWA-AGC JOINT COOPERATIVE COMMITTEE 1984 REV. 1992

CURB OPENING CATCH BASIN WITH GRATING(S) — STANDARD PLAN **302-1** — SHEET 1 OF 2

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION



STRUCTURAL DATA			
WALL AND SLAB DIMENSIONS AND REINFORCEMENT REQUIREMENTS			
NO. OF GRATES	MAX. V	t	REINFORCEMENT FOR WALLS AND SLABS
1-2	4'	6"	NOT REQUIRED
1-2	8'	8"	
1-2	10'	10"	
1-2	12'	10"	REQUIRED
3-4	4'	6"	NOT REQUIRED
3-4	7'	8"	
3-4	8'	8"	REQUIRED
3-4	12'	10"	
5-6	4'	6"	NOT REQUIRED
5-6	6'	8"	
5-6	8'	8"	REQUIRED
5-6	12'	10"	
>6	4'	6"	
>6	8'	8"	
>6	12'	10"	

AMERICAN PUBLIC WORKS ASSOCIATION – SOUTHERN CALIFORNIA CHAPTER

PROMULGATED BY THE APWA-AGC JOINT COOPERATIVE COMMITTEE 1984 REV. 1992

GRATING CATCH BASIN — ALLEY (LONGITUDINAL) — STANDARD PLAN **304-1** — SHEET 1 OF 2

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

NOTES:

1. WHERE THE BASIN IS TO BE CONSTRUCTED WITHIN THE LIMITS OF EXISTING OR PROPOSED SIDEWALK OR IS CONTIGUOUS TO SUCH SIDEWALK, THE TOP SLAB OF THE BASIN MAY BE POURED EITHER MONOLITHIC WITH THE SIDEWALK OR SEPARATELY, USING THE SAME CLASS OF CONCRETE AS IN THE BASIN. WHEN POURED MONOLITHICALLY, THE SIDEWALK SHALL BE PROVIDED WITH A WEAKENED PLANE OR A 1 -INCH DEEP SAWCUT CONTINUOUSLY AROUND THE EXTERNAL PERIMETER OF THE CATCH BASIN WALLS, INCLUDING ACROSS THE FULL WIDTH OF THE SIDEWALK. SURFACE OF ALL EXPOSED CONCRETE SHALL CONFORM IN SLOPE, GRADE, COLOR, FINISH, AND SCORING TO EXISTING OR PROPOSED CURB AND WALK ADJACENT TO THE BASIN.
2. ALL CURVED CONCRETE SURFACES SHALL BE FORMED BY CURVED FORMS, AND SHALL NOT BE SHAPED BY PLASTERING.
3. ONE GRATING IS REQUIRED UNLESS OTHERWISE SHOWN ON THE PROJECT PLAN.
4. FLOOR OF BASIN SHALL BE GIVEN A STEEL TROWEL FINISH AND SHALL HAVE A LONGITUDINAL AND LATERAL SLOPE OF 1:12 MINIMUM AND 1:3 MAXIMUM, EXCEPT WHERE THE GUTTER GRADE EXCEEDS 8 PERCENT, IN WHICH CASE THE LONGITUDINAL SLOPE OF THE FLOOR SHALL BE THE SAME AS THE GUTTER GRADE. SLOPE FLOOR FROM ALL DIRECTIONS TO THE OUTLET.
5. DIMENSIONS:

   V = THE DIFFERENCE IN ELEVATION FROM THE TOP OF THE CURB AND THE INVERT OF THE CATCH BASIN AT THE OUTLET – 4.5 FEET.
   V_u = THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE CURB AND THE INVERT AT THE UPSTREAM END OF THE BASIN, AND SHALL BE DETERMINED BY THE REQUIREMENTS OF NOTE 4, BUT SHALL NOT BE LESS THAN CURB FACE PLUS 12 INCHES.
   V_i = THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE CURB AND THE INVERT OF THE INLET. NOTED ON THE PROJECT PLANS.
   H = NOTED ON THE PROJECT PLANS.
   W = 2 FEET 11-3/8 INCHES FOR ONE GRATING; ADD 3 FEET 5-3/8 INCHES FOR EACH ADDITIONAL GRATING.
   A = THE ANGLE, IN DEGREES, INTERCEPTED BY THE CENTERLINE OF THE CONNECTOR PIPE AND THE CATCH BASIN WALL TO WHICH THE CONNECTOR PIPE IS ATTACHED.
6. PLACE CONNECTOR PIPES AS INDICATED ON THE PROJECT PLANS. UNLESS OTHERWISE SPECIFIED, THE CONNECTOR PIPE SHALL BE LOCATED AT THE DOWNSTREAM END OF THE BASIN. WHERE THE CONNECTOR PIPE IS SHOWN AT A CORNER, THE CENTERLINE OF THE PIPE SHALL INTERSECT THE INSIDE CORNER OF THE BASIN. THE PIPE MAY BE CUT AND TRIMMED AT A SKEW NECESSARY TO INSURE MINIMUM 3-INCH PIPE EMBEDMENT, ALL AROUND, WITHIN THE CATCH BASIN WALL, AND 3-INCH RADIUS OF ROUNDING OF STRUCTURE CONCRETE, ALL AROUND, ADJACENT TO PIPE ENDS. A MONOLITHIC CATCH BASIN CONNECTION SHALL BE USED TO JOIN THE CONNECTOR PIPE TO THE CATCH BASIN WHENEVER ANGLE "A" IS LESS THAN 70 DEGREES OR GREATER THAN 110 DEGREES, OR WHENEVER THE CONNECTOR PIPE IS LOCATED IN A CORNER. THE OPTIONAL USE OF A MONOLITHIC CATCH BASIN CONNECTION IN ANY CASE IS PERMITTED. MONOLITHIC CATCH BASIN CONNECTIONS MAY BE CONSTRUCTED TO AVOID CUTTING STANDARD LENGTHS OF PIPE.
7. STEPS SHALL BE LOCATED AS SHOWN. IF THE CONNECTOR PIPE INTERFERES WITH THE STEPS, THEY SHALL BE LOCATED ON THE FRONT WALL AT THE CENTERLINE OF THE DOWNSTREAM GRATING. STEPS SHALL BE SPACED 12 INCHES APART. THE TOP STEP SHALL BE 7 INCHES BELOW THE TOP OF THE GRATING AND PROJECT 2-1/2 INCHES. ALL OTHER STEPS SHALL PROJECT 5 INCHES.
8. DOWELS ARE REQUIRED AT EACH CORNER AND AT 7 FEET ON CENTER (MAXIMUM) ALONG THE BACKWALL.
9. THE FOLLOWING STANDARD PLANS ARE INCORPORATED HEREIN:

   308 MONOLITHIC CATCH BASIN CONNECTION
   309 CATCH BASIN REINFORCEMENT
   310 CATCH BASIN FACE PLATE ASSEMBLY AND PROTECTION BAR
   311 FRAME AND GRATING FOR CATCH BASINS
   635 STEEL STEP
   636 POLYPROPYLENE PLASTIC STEP

NOTES:

1. ALL CURVED CONCRETE SURFACES SHALL BE FORMED BY CURVED FORMS AND SHALL NOT BE SHAPED BY PLASTERING.
2. ONE GRATING IS REQUIRED UNLESS OTHERWISE SHOWN ON THE PROJECT PLANS.
3. FLOOR OF BASIN SHALL BE GIVEN A STEEL TROWEL FINISH AND SHALL FIAVE A LONGITUDINAL AND LATERAL SLOPE OF 1:12 MINIMUM AND 1:3 MAXIMUM, EXCEPT WHERE THE SURFACE GRADE EXCEEDS 8 PERCENT, IN WHICH CASE THE LONGITUDINAL SLOPE OF THE FLOOR SHALL BE THE SAME AS THE SURFACE GRADE. SLOPE FLOOR FROM ALL DIRECTIONS TO THE OUTLET.
4. DIMENSIONS:

   V = 3.5 FEET.
   V_u = THE DEPTH AT THE UPSTREAM END OF THE BASIN AND SHALL BE DETERMINED BY THE REQUIREMENTS OF NOTE 3, BUT SHALL NOT BE LESS THAN 2.5 FEET.
   V_i = THE DEPTH AT THE INVERT OF THE INLET. NOTED ON THE PROJECT PLANS.
   W = 2 FEET 11-3/8 INCHES FOR ONE GRATING; ADD 3 FEET 5-3/8 INCHES FOR EACH ADDITIONAL GRATING.
   A = THE ANGLE, IN DEGREES, INTERCEPTED BY THE CENTERLINE OF THE CONNECTOR PIPE AND THE CATCH BASIN WALL TO WHICH THE CONNECTOR PIPE IS ATTACHED.
5. PLACE CONNECTOR PIPES AS INDICATED ON THE PROJECT PLANS. UNLESS OTHERWISE SPECIFIED, THE CONNECTOR PIPE SHALL BE LOCATED AT THE DOWNSTREAM END OF THE BASIN. WHERE THE CONNECTOR PIPE IS SHOWN AT A CORNER, THE CENTERLINE OF THE PIPE SHALL INTERSECT THE INSIDE CORNER OF THE BASIN. THE PIPE MAY BE CUT AND TRIMMED AT A SKEW NECESSARY TO INSURE MINIMUM 3-INCH PIPE EMBEDMENT, ALL AROUND, WITHIN THE CATCH BASIN WALL, AND 3-INCH RADIUS OF ROUNDING OF STRUCTURE CONCRETE, ALL AROUND, ADJACENT TO PIPE ENDS. A MONOLITHIC CATCH BASIN CONNECTION SHALL BE USED TO JOIN THE CONNECTOR PIPE TO THE CATCH BASIN WHENEVER ANGLE "A" IS LESS THAN 70 DEGREES OR GREATER THAN 110 DEGREES, OR WHENEVER THE CONNECTOR PIPE IS LOCATED IN A CORNER. THE OPTIONAL USE OF A MONOLITHIC CATCH BASIN CONNECTION IN ANY CASE IS PERMITTED. MONOLITHIC CATCH BASIN CONNECTIONS MAY BE CONSTRUCTED TO AVOID CUTTING STANDARD LENGTHS OF PIPE.
6. STEPS SHALL BE LOCATED AS SHOWN. IF THE CONNECTOR PIPE INTERFERES WITH THE STEPS, THEY SHALL BE LOCATED ON THE OPPOSITE WALL AT THE CENTERLINE OF THE DOWNSTREAM GRATING. STEPS SHALL BE SPACED 12 INCHES APART. THE TOP STEP SHALL BE 7 INCHES BELOW THE TOP OF THE GRATING AND PROJECT 2-1/2 INCHES. ALL OTHER STEPS SHALL PROJECT 5 INCHES.
7. THE FOLLOWING STANDARD PLANS ARE INCORPORATED HEREIN:

   308 MONOLITHIC CATCH BASIN CONNECTION
   309 CATCH BASIN REINFORCEMENT
   311 FRAME AND GRATING FOR CATCH BASINS
   635 STEEL STEP
   636 POLYPROPYLENE PLASTIC STEP

NOTES:

① ALL STEEL SHALL HAVE 2" CLEAR COVER ON INSIDE FACE OF WALLS & SLAB, 2" CLEAR COVER ON OUTSIDE FACE OF WALLS & 3" CLEAR COVER ON BOTTOM FACE OF SLAB. 24" LAPON ALL CORNERS.

② CONSTRUCT 2.5" DIA. WEEPHOLES 6" ABOVE INVERT.(SEE SPECIFICATION)

③ FINISHED GRADE TO BE 2.5" LOWER THAN BACK OF WALL AND ALONG WINGWALL.

NOTE:

PRIVATE DETENTION BASIN AND STORM DRAIN SYSTEM ON THIS PLAN TO BE MAINTAINED BY RIVERSIDE UNIFIED SCHOOL DISTRICT.

IMPORTANT NOTICE
SECTION 4216/4217 OF THE GOVERNMENT CODE REQUIRES A DIG ALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID FOR YOUR DIG ALERT I.D. NUMBER CALL UNDERGROUND SERVICE ALERT
TOLL FREE 1-800-227-2600
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 — Haidook I. Aghaian — R.C.E. NO. 043293 — Exp. 3-31-00 — STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF:
Haidook Aghaian 5/7/97
HAIDOOK I. AGHAIAN DATE
R.C.E. 043293 – EXP. 3/31/00

APPROVED BY:

AS NOTED

DATE

THIENES ENGINEERING
CIVIL ENGINEERING•LAND SURVEYING
16800 VALLEYVIEW AVENUE
LA MIRADA, CALIFORNIA 90639
(714) 521-4811

BENCHMARK:
BM – P.K. NAIL & TAG E'LY SIDE OF TRAUTWEIN ROAD. 100'± N'LY OF VAN BUREN BOULEVARD, N'LY WALL OF CATCH BASIN, 2' E'LY OF CURB FACE IN S/W. LL 43/PG. 10
ELEV=1674.985 ADJ.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY H.I.A. DRAWN BY P.F.M. CHECKED BY H.I.A.

CITY OF RIVERSIDE, CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER	[signature]	6/2/97
PARK DEPARTMENT	—	—
TRAFFIC DIVISION	—	—
DEPUTY P.W. DIR.	RHG	6/10/97
STREET SERVICES	RL	5/30/97

APPROVED BY
DIRECTOR OF PUBLIC WORKS
DATE 6/13/97

RIVERSIDE HIGH SCHOOL DETENTION BASIN

DETAIL SHEET

SCALE: AS NOTED

PROJECT NO. D-649

SHEET 4 OF 5

FILE NO.

Last Update: 4/30/97
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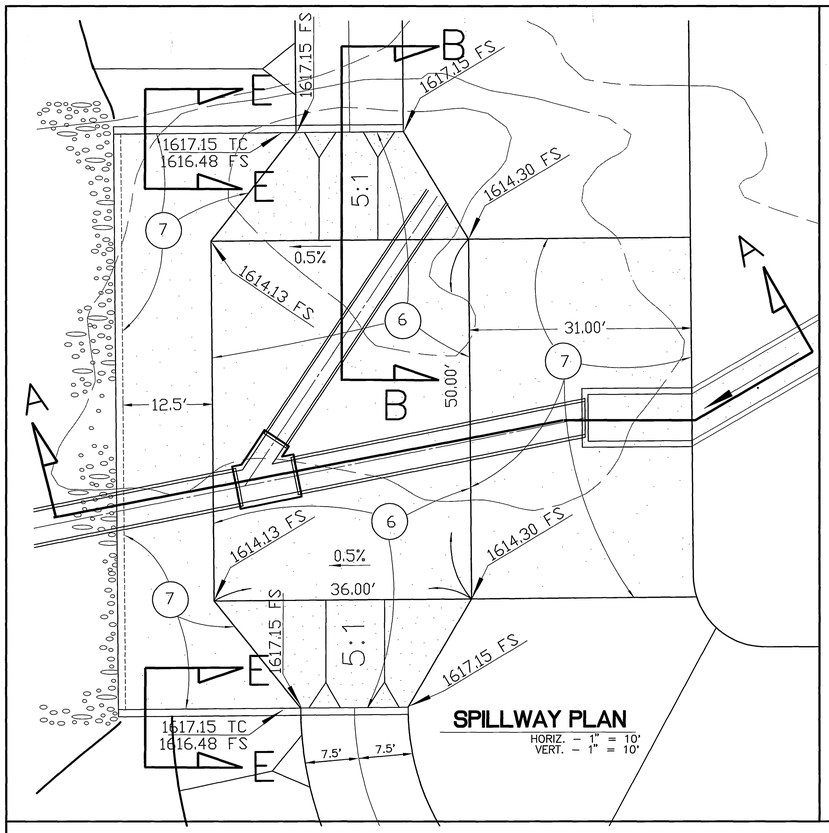
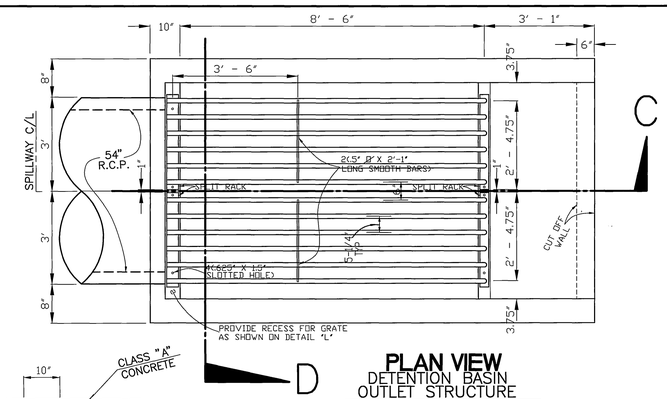
INDEXED 6-18-97 FH



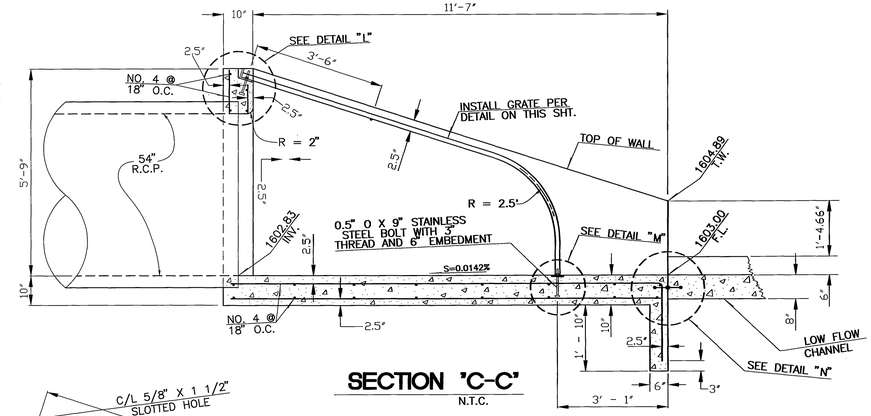
SPILLWAY PLAN

HORIZ. – 1" = 10'
VERT. – 1" = 10'



PLAN VIEW
DETENTION BASIN
OUTLET STRUCTURE

N.T.S.



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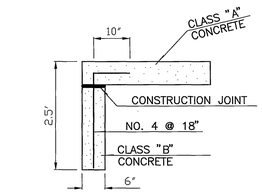

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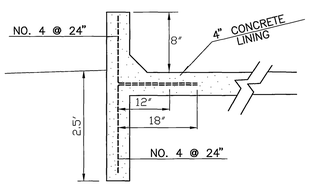

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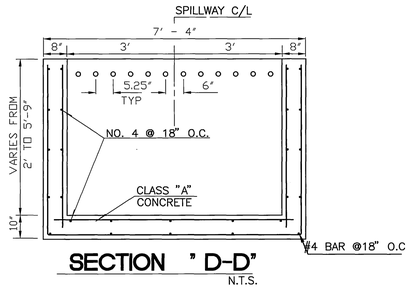

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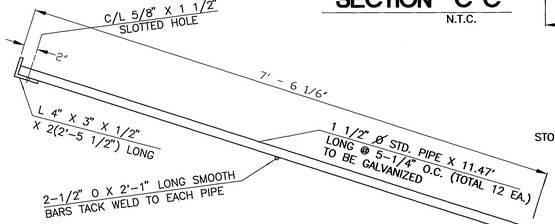

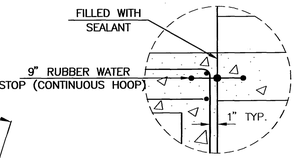

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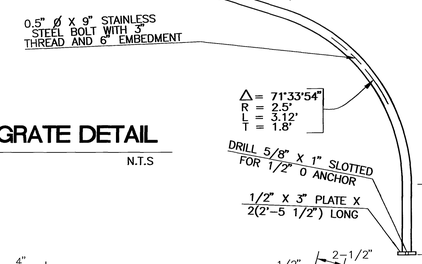

GRATE DETAIL

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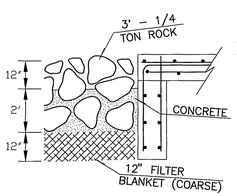

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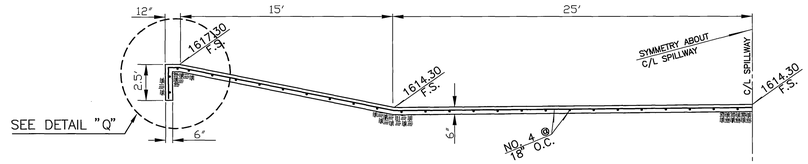

SECTION "B-B"

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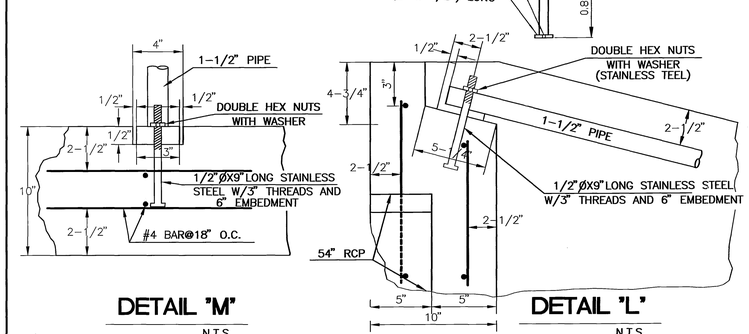
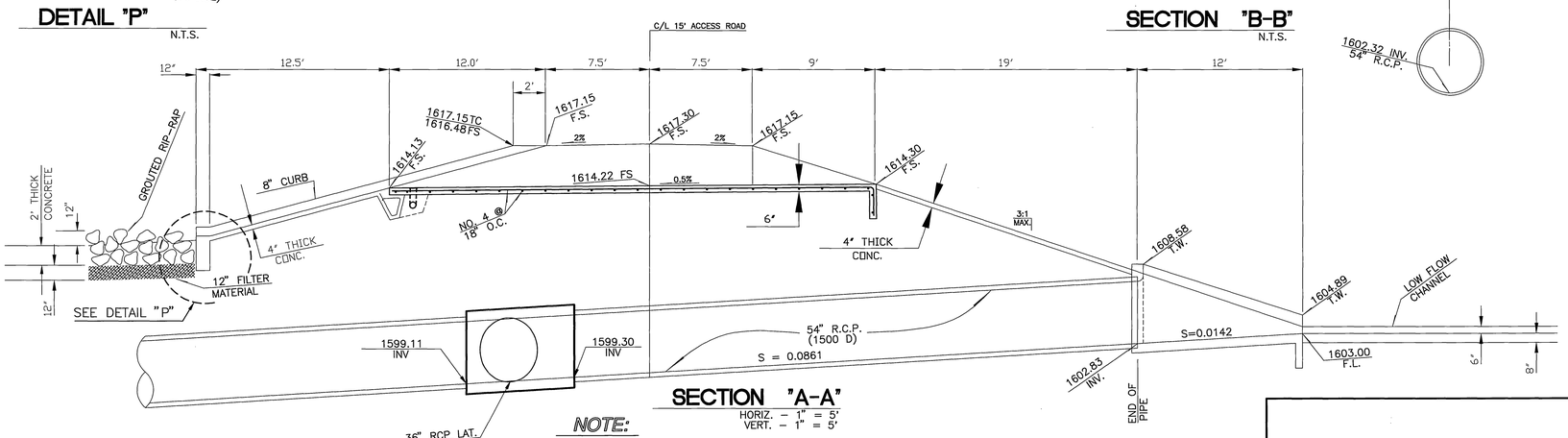


DETAIL "M"

N.T.S

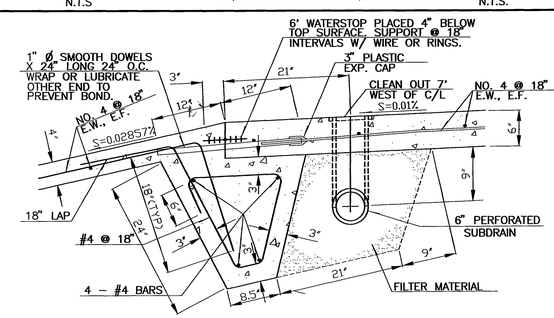
DETAIL "L"

N.T.S.



SECTION "A-A"

HORIZ. – 1" = 5'
VERT. – 1" = 5'



ARTICULATED JOINT

1" = 1'

NOTE:
PRIVATE DETENTION BASIN AND STORM DRAIN SYSTEM ON THIS PLAN TO BE MAINTAINED BY RIVERSIDE UNIFIED SCHOOL DISTRICT.

IMPORTANT NOTICE
SECTION 4216/4217 OF THE GOVERNMENT CODE REQUIRES A DIG ALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID FOR YOUR DIG ALERT I.D. NUMBER CALL UNDERGROUND SERVICE ALERT
TOLL FREE 1-800-227-2600
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
Haidook I. Aghaian
R.C.E. NO. 043293
Exp. 3-31-00
STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF:
Haidook Aghaian 5/7/97
HAIDOOK I. AGHAIAN
R.C.E. 043293 – EXP. 3/31/00
DATE

APPROVED BY:

AS NOTED
DATE

THIENES ENGINEERING
CIVIL ENGINEERING • LAND SURVEYING
16800 VALLEYVIEW AVENUE
LA MIRADA, CALIFORNIA 90639
(714) 521-4811

BENCHMARK:
BM – P.K. NAIL & TAG E'LY SIDE OF TRAUTWEIN ROAD, 100'± N'LY OF VAN BUREN BOULEVARD, N'LY WALL OF CATCH BASIN, 2' E'LY OF CURB FACE IN S/W.
ELEV=1674.985 ADJ.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY H.I.A. DRAWN BY P.F.M. CHECKED BY H.I.A.

CITY OF RIVERSIDE, CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER		6/4/97
PARK DEPARTMENT	—	—
TRAFFIC DIVISION	—	—
DEPUTY P.W. DIR.		6/9/97
STREET SERVICES		5/16/97

APPROVED BY
DIRECTOR OF PUBLIC WORKS
DATE 6/13/97

RIVERSIDE HIGH SCHOOL DETENTION BASIN
DETAIL SHEET

SCALE: AS NOTED

PROJECT NO. D-649
SHEET 5 OF 5
FILE NO.
Last Update: 4/30/97
E:\1370\1370SRE15

INDEXED 6-18-97