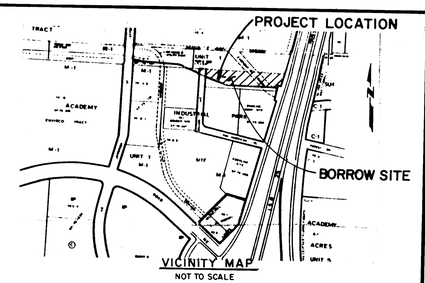
PINO ARROYO IMPROVEMENTS

JEFFERSON STREET TO INTERSTATE 25

INDEX



GENERAL NOTES

NOTICE TO CONTRACTORS

1. NEW MEXICO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION-1979 EDITION WILL BE REFERRED TO HEREON AS THE "STANDARD SPECIFICATION."
2. NO CONSTRUCTION WILL BE ALLOWED IN THE PINO ARROYO DURING THE MONTHS OF JULY, AUGUST, OR SEPTEMBER UNLESS THE CONTRACTOR PROVIDES AND OBTAINS APPROVAL OF AN EROSION CONTROL PLAN AND A PLAN FOR THE SAFE PASSAGE OF THE 10 YEAR DESIGN STORM RUNOFF.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR SURVEYOR SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. THE CONTRACTOR SHALL COORDINATE THE EARTHWORK SCHEDULING WITH THE ENGINEER IN ORDER TO FACILITATE THE RELOCATION OF P.N.M. POWER POLES.
6. THE BORROW SITE FOR EXCAVATION SHALL BE AS SHOWN IN THE VICINITY MAP.

THE FOLLOWING NOTES ALSO APPLY WHEN CHECKED

- ☐ ALL UTILITIES AND UTILITY SERVICE LINES SHALL BE INSTALLED PRIOR TO PAVING.
- ☐ BACKFILL COMPACTION SHALL BE ACCORDING TO SPECIFIED STREET USE.
- ☐ TACK COAT REQUIREMENTS SHALL BE DETERMINED BY THE CITY ENGINEER.
- ☐ SIDEWALKS AND WHEELCHAIR RAMPS WITHIN THE CURB RETURNS SHALL BE CONSTRUCTED WHEREVER A NEW CURB RETURN IS CONSTRUCTED.
- ☐ IF CURB IS DEPRESSED FOR A DRIVEPAD, THE DRIVEPAD SHALL BE CONSTRUCTED PRIOR TO ACCEPTANCE OF CURB AND GUTTER.
- ☒ ALL STORM DRAINAGE FACILITIES SHALL BE COMPLETED PRIOR TO FINAL ACCEPTANCE.
- ☐ THE REQUESTOR OR DEVELOPER SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ALL CURB AND GUTTER OR SIDEWALK DAMAGED AFTER APPROVAL BY THE CITY ENGINEER OF WORK COMPLETED BY THE CONTRACTOR.

LEGEND

- New Fence
- Existing Fence
- OHP — Overhead Power Lines
- Utility Pole
- Side Slopes
- Easement Lines
- R/W — Right-Of-Way
- W 12" — Existing Water Line

APPROVAL OF AS BUILT DRAWINGS
CHIEF CONSTRUCTION ENGINEER
DATE 6/15/87

1 2 3 4 5 6 7 8 9 10 11 12
2 6 1 8 5 3 0 1 8 7

REV	SHEETS	CITY ENGINEER	DATE	USER DEPT.	DATE	USER DEPT.	DATE

APPROVAL OF REVISIONS

WILLIAM L. VREELAND
NEW MEXICO
REGISTERED PROFESSIONAL ENGINEER

RECORD DRAWINGS
DATE 2-26-86

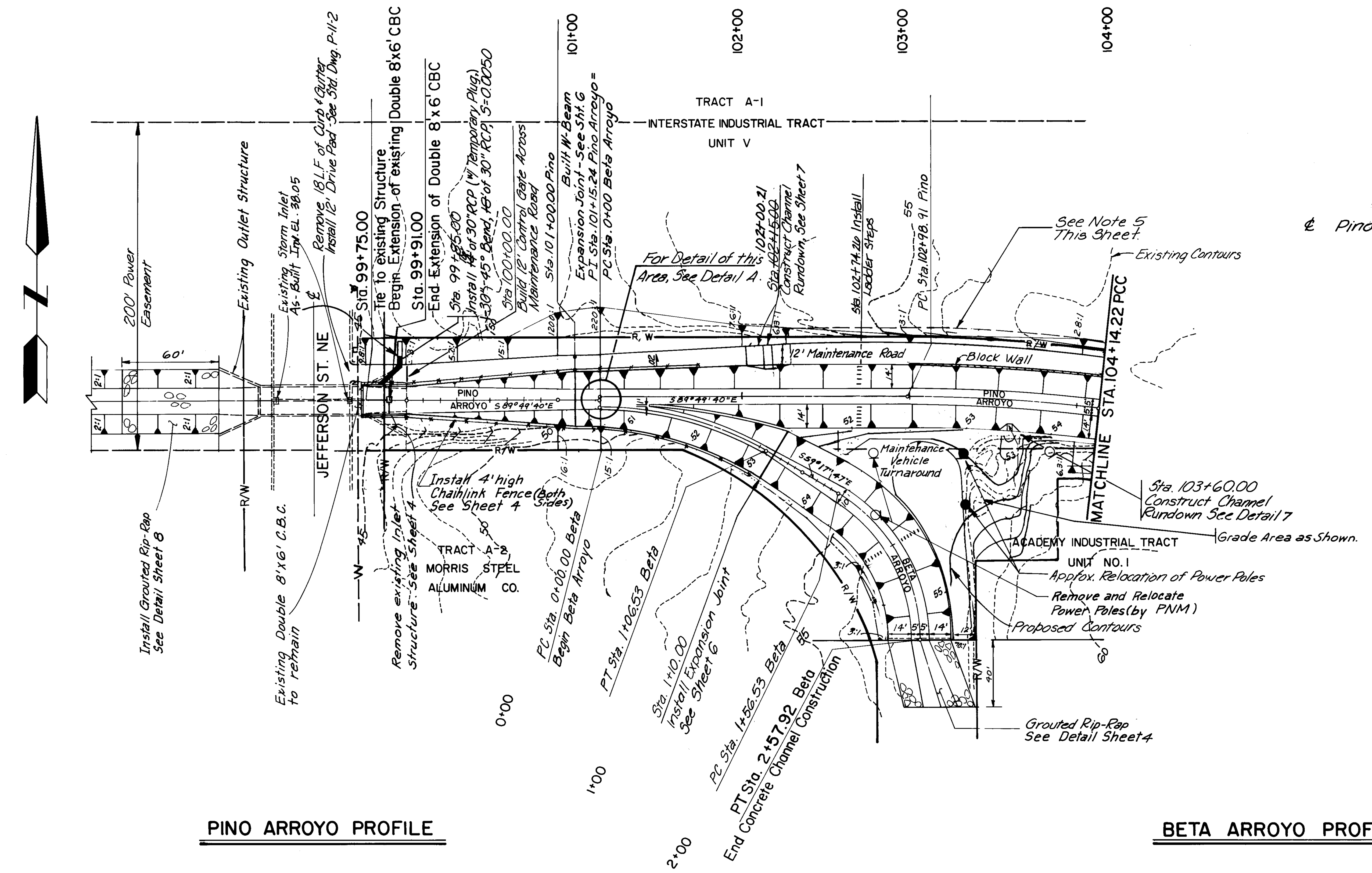
Howard C. Stan
10-18-84

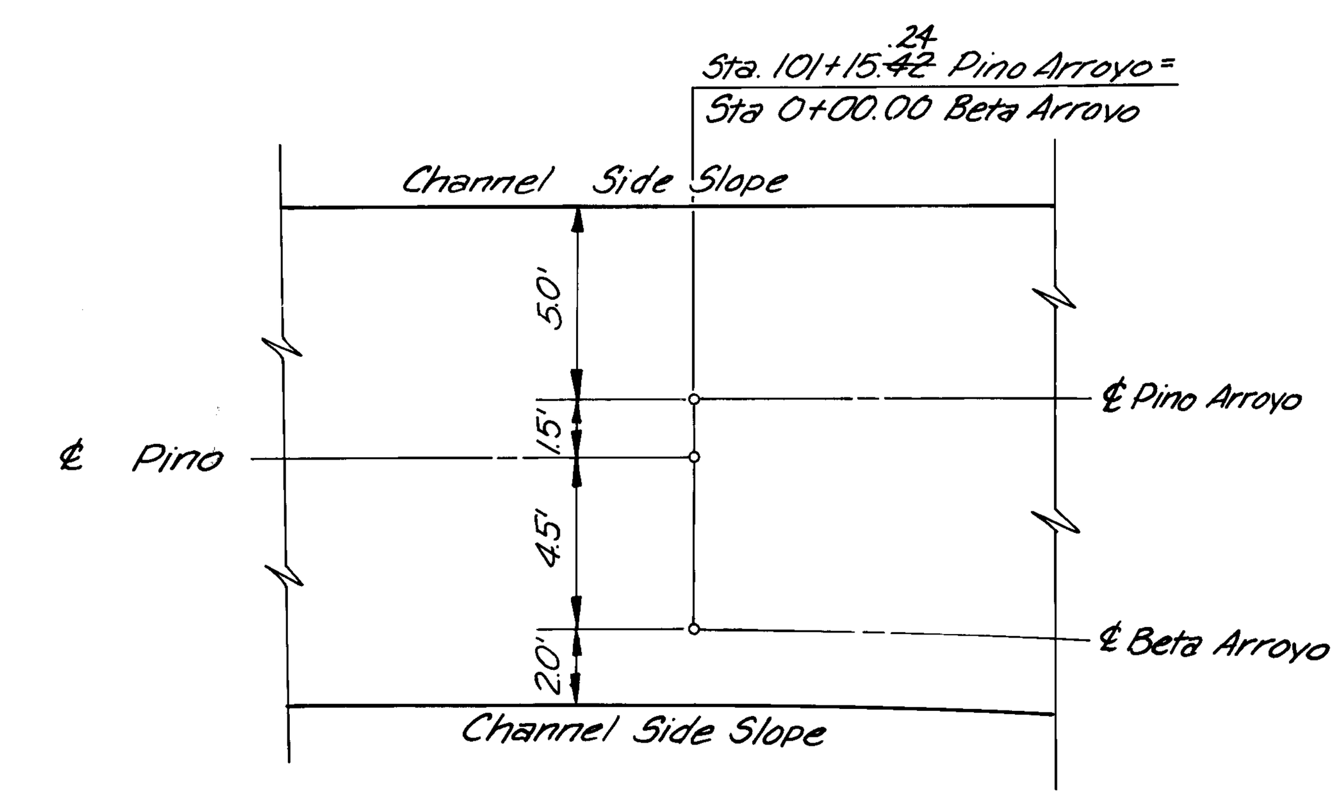
BOHANNAN · HUSTON INC.
ALBUQUERQUE · SANTA FE · EL PASO
ENGINEERS PLANNERS PHOTOGRAMMETRISTS

APPROVED FOR CONSTRUCTION
C.E.

PROJECT NUMBER
1853

SHEET 1 OF 16





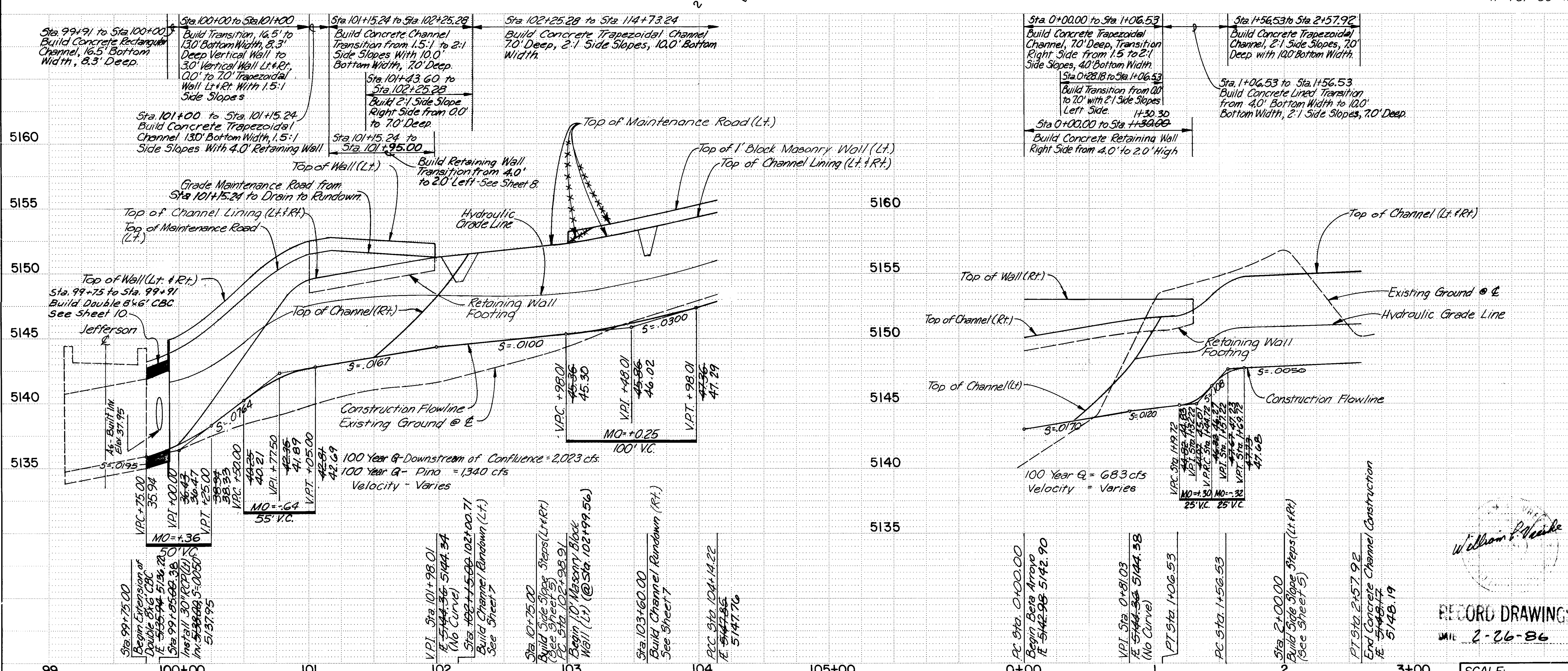
DETAIL A

℄ Curve Data Beta Arroyo		℄ Curve Data Pino Arroyo
PI Sta. 0+54.56	PI Sta. 2+12.18	PI Sta. 103+56.62
R = 199.91'	R = 98.93'	R = 1034.27'
T = 54.56'	T = 55.65'	T = 57.71'
Δ = 30°31'53"	Δ = 58°43'00"	Δ = 6°23'15"
D = 28°39'39"	D = 57°54'56"	D = 5°32'23"
L = 106.53'	L = 101.39'	L = 115.30'

NOTES:
1. For Retaining Wall Schedule, See Sheet 8.
2. For Rectangular to Trapezoidal Transition, See Sheet 4.
3. For Pino - Beta Confluence Details, See Sheet 4.
4. For Temporary End Plug Details, See Sheet 4.
5. For All Right-of-Way Survey Information, See Sheet 13.
6. For Typical Trapezoidal Channel Cross-Section, See Sheet 5.
7. For 30" RCP Connection to CBC, See Sheet 9.

PINO ARROYO PROFILE

BETA ARROYO PROFILE



26 1853 0287

William P. Verde (signature)

RECORD DRAWINGS
DATE 2-26-86

BRUNING 44-132 52753

PLAN		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	ALIGNMENT CHECKED		
	RT. OF WAY CHECKED		

PROFILE		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	GRADES CHECKED		
	B.M. NOTED		
	STRUCTURE NOTAT'NS CH'KD		

AS-BUILT INFORMATION
CONTRACTOR K.N.C. Inc.
WORK STAKED BY Bohannan-Huston Inc. DATE 8/86
INSPECTOR'S ACCEPTANCE BY Silas Guazo DATE 3/86
FIELD VERIFICATION BY Bohannan-Huston Inc. DATE 2/86
DRAWINGS CORRECTED BY Bohannan-Huston Inc. DATE 2/86

MICRO-FILM INFORMATION
RECORDED BY
DATE
NO.

BENCH MARKS
STATION IS A STANDARD ACS BRASS TABLET STAMPED "8-D17A", SET IN TOP OF A CONCRETE POST PROJECTING 0.2 FEET ABOVE STATION IS LOCATED APPROXIMATELY 300 FEET SOUTH OF ELLISON ST. CENTERLINE AND APPROXIMATELY 45 FEET WEST OF JEFFERSON ST. CENTERLINE.
ELEV. 5145.55

SURVEY INFORMATION

NO.	BY	DATE

REFERENCES
MAP NO. E-17-Z
EST. NO.
WO. NO.

NO.	DATE	REVISIONS REMARKS	BY

DESIGN
DESIGNED BY KRJ, HCS DATE 5/83
DRAWN BY UK DATE 5/83
CHECKED BY HCS DATE 10/84

PREPARED UNDER THE DIRECTION OF
Howard C. Stone (signature)
10-18-84

APPROVED FOR CONSTRUCTION

CITY ENGINEER DATE

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

TITLE: STA. 99+75.00 to STA. 104+14.22 PINO ARROYO
STA. 0+00.00 to STA. 2+57.92 BETA ARROYO
PINO ARROYO IMPROVEMENTS

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
City Engineer	(signature)	12/13/84	Liquid Waste	William Baker	12/13/84
A.C.E.-Design	(signature)	12/14/84	Traffic	WA Doh	12/14/84
A.C.E.-Hydrology	(signature)	12/13/84	Water	William Baker	12/13/84
Q.A.					

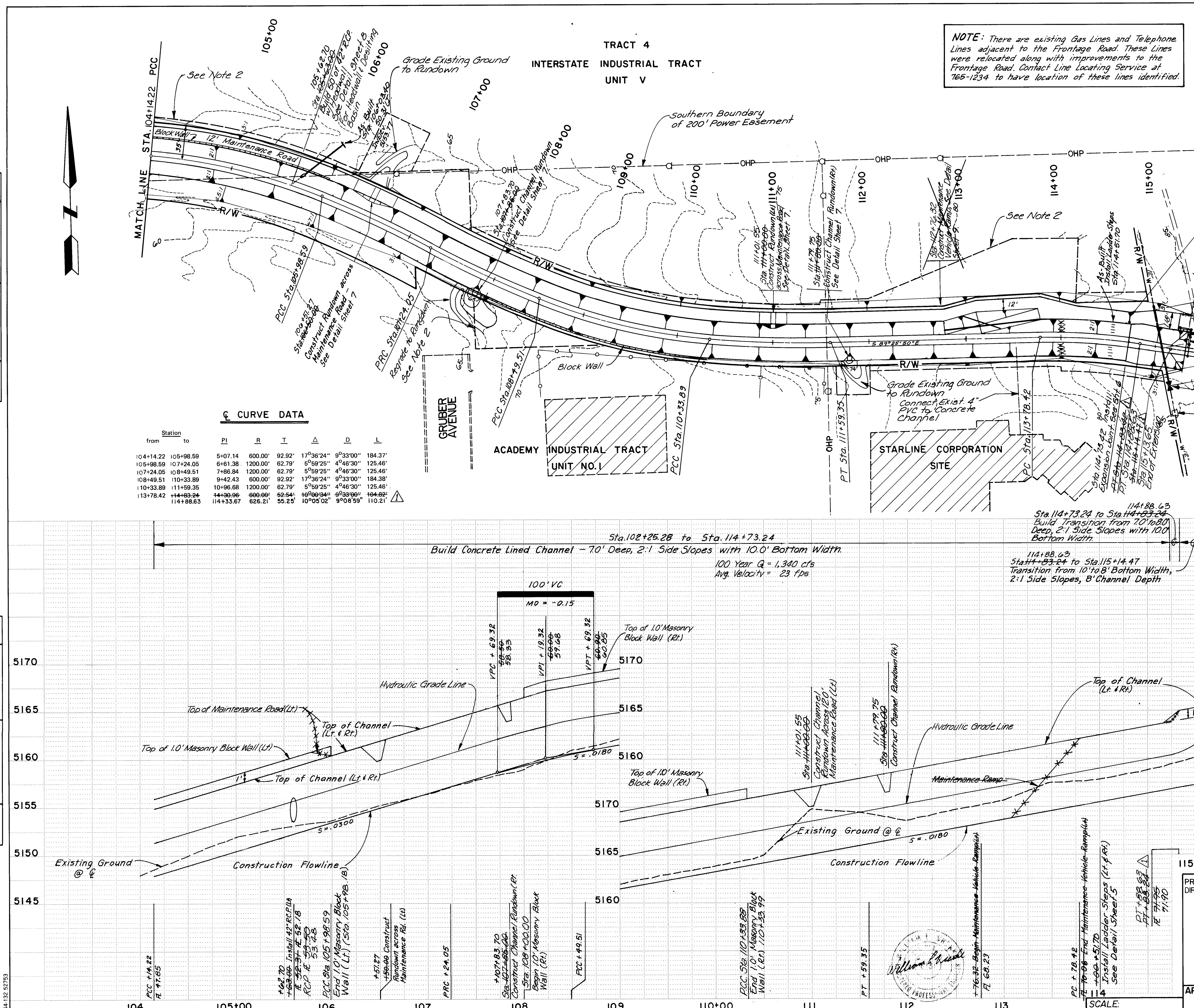
DRAWING NO. 1853

SHEET 2 OF 16

SCALE:
1" = 50' HORZ.
1" = 5' VERT.

JOB NO. 20596

PLATE 1 SINGLE PLAN - PROFILE - DOTTED
CHARLES BRUNING COMPANY
MADE IN U.S.A.



NOTE: There are existing Gas Lines and Telephone Lines adjacent to the Frontage Road. These Lines were relocated along with improvements to the Frontage Road. Contact Line Locating Service at 765-1234 to have location of these lines identified.

NOTE:

1. Existing Contours North of Channel from Sta. 114+00 to Sta. 115+00 are Only Approximate due to the Regrading by the I-25 Frontage Road Project.
2. See Sheet 12, For Easement and Rigth-of-Way Information.
3. Field Verify Location of Existing 12" Waterline. If cover over Channel is less than 4.0', Relocate Waterline as Shown and Install 12" Gate Valve.
4. Restrained Joints shall be Restrained Mechanical Joints with Flange or Retainer Gland.

℄ CURVE DATA

Station from	Station to	PI	R	T	Δ	D	L
104+14.22	105+98.59	5+07.14	600.00'	92.92'	17°36'24"	9°33'00"	184.37'
105+98.59	107+24.05	6+61.38	1200.00'	62.79'	5°59'25"	4°46'30"	125.46'
107+24.05	108+49.51	7+86.84	1200.00'	62.79'	5°59'25"	4°46'30"	125.46'
108+49.51	110+33.89	9+42.43	600.00'	92.92'	17°36'24"	9°33'00"	184.38'
110+33.89	111+59.35	10+96.68	1200.00'	62.79'	5°59'25"	4°46'30"	125.46'
113+78.42	~~114+83.24~~ 114+88.63	~~14+30.96~~ 114+33.67	~~600.00'~~ 626.21'	~~52.54'~~ 55.25'	~~10°00'34"~~ 10°05'02"	~~9°33'00"~~ 9°08'59"	~~104.82'~~ 110.21' ⚠1

BENCH MARKS

STATION IS A STANDARD ACS BRASS TABLET STAMPED "8-D17A", SET IN TOP OF A CONCRETE POST PROJECTING 0.2 FEET ABOVE STATION IS LOCATED APPROXIMATELY 300 FEET SOUTH OF ELLISON ST. CENTERLINE AND APPROXIMATELY 45 FEET WEST OF JEFFERSON ST. CENTERLINE. ELEV. 5145.55

AS-BUILT INFORMATION

CONTRACTOR K.N.C. Inc.
WORK STAKED BY Bohannan-Huston Inc. DATE 8/86
INSPECTOR'S ACCEPTANCE BY Silas Suazo DATE 3/86
FIELD VERIFICATION BY Bohannan-Huston Inc. DATE 2/86
DRAWINGS CORRECTED BY Bohannan-Huston Inc. DATE 2/86

MICRO-FILM INFORMATION

RECORDED BY DATE
NO.

REFERENCES

MAP NO. E-17-Z
EST. NO.
WO. NO.

REVISIONS

NO.	DATE	REMARKS	BY
⚠1	8/14/85	Change of Survey Curve Data	HCS

DESIGN
DESIGNED BY KRJ, HCS DATE 5/83
DRAWN BY UK DATE 5/83
CHECKED BY HCS DATE 10/84

PREPARED UNDER THE DIRECTION OF
Howard C. Stone
10-18-84

APPROVED FOR CONSTRUCTION
CITY ENGINEER DATE

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

TITLE: Sta. 104+14.22 to Sta. 115+30.47
PINO ARROYO
PINO ARROYO IMPROVEMENTS

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
City Engineer	[signature]	12/12/84	Liquid Waste	William Balch	12/12/84
A.C.E.-Design	K. Olsen	12/12/84	Traffic	NH DWH	12/12/84
A.C.E.-Hydrology	Dan Hogan	12/12/84	Water	William Balch	12/12/84
Q.A.					

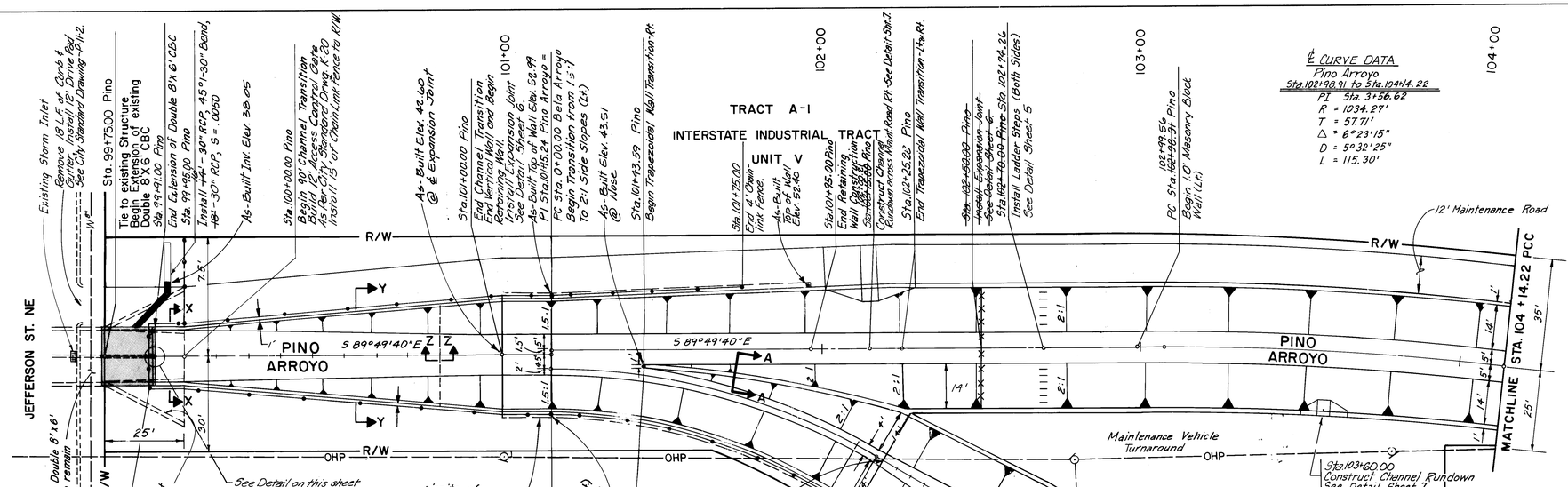
DRAWING NO. 1853
SHEET 3 OF 16

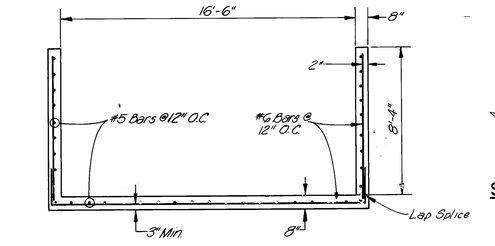
SCALE: 1" = 50' HORZ. 1" = 5' VERT.

JOB NO. 20596

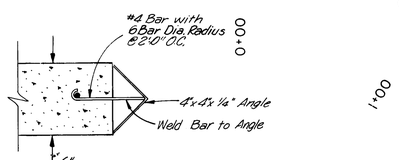
26 185.0387

RECORD DRAWINGS 2-26-86



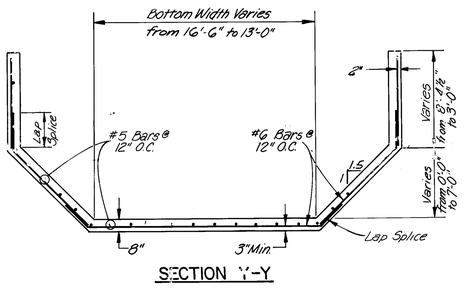


SECTION X-X



SPLITTER WALL DETAIL

℄ CURVE DATA
Beta Arroyo
Sta. 0+00.00 to 1+06.53
PI — Sta. 0+54.56
R = 199.91'
T = 54.56'
Δ = 30°31'53"
D = 28°39'39"
L = 106.53'



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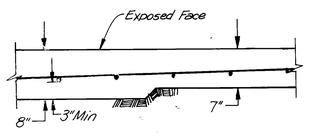
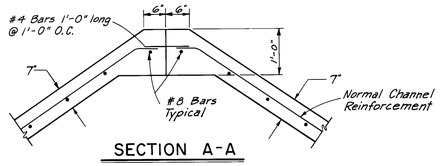
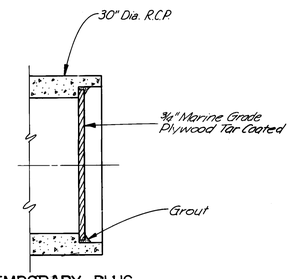


SECTION Z-Z
STA. 100+80.00



SECTION A-A



TEMPORARY PLUG
NO SCALE

NOTE: Detailed Sections are not to Scale.
For #6 Bars Minimum Lap Splice is 2'-8"

RECORD DRAWINGS
DATE: 2-26-86

JOB NO. 20596
SCALE: 1" = 20'

APPROVED FOR CONSTRUCTION
CITY ENGINEER DATE

PREPARED UNDER THE DIRECTION OF
Howard C. Mann
10-18-84

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

TITLE: CONFLUENCE — PINO AND BETA ARROYOS
PINO ARROYO IMPROVEMENTS

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
City Engineer	C.D. Mann	12/12/84	Liquid Waste	William Baker	12/12/84
A.C.E. Design	[illegible]	12/12/84	Traffic	MA Dutt	[illegible]
A.C.E. Hydrology	[illegible]	12/12/84	Water	William Baker	12/12/84
Q. A.					

DRAWING NO. 1853
SHEET 4 OF 16

AS-BUILT INFORMATION
CONTRACTOR K.V.C. Inc
WORK INSPECTED BY Bateman-Hunker Inc DATE 6/86
INSPECTORS ACCEPTANCE BY Silas Sueco DATE 3/86
LOCATED APPROXIMATELY 300 FEET SOUTH OF ELLISON ST. CENTERLINE AND APPROXIMATELY 45 FEET WEST OF JEFFERSON ST. CENTERLINE. ELEV. 5145.55
VERIFICATION BY Bateman-Hunker Inc DATE 2/86
DRAWINGS REVISED BY Bateman-Hunker Inc DATE 2/86
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS
STATION IS A STANDARD ACS BRASS TABLET STAMPED "8-D17A", SET IN TOP OF A CONCRETE POST PROJECTING 0.2 FEET ABOVE STATION IS LOCATED APPROXIMATELY 300 FEET SOUTH OF ELLISON ST. CENTERLINE AND APPROXIMATELY 45 FEET WEST OF JEFFERSON ST. CENTERLINE. ELEV. 5145.55

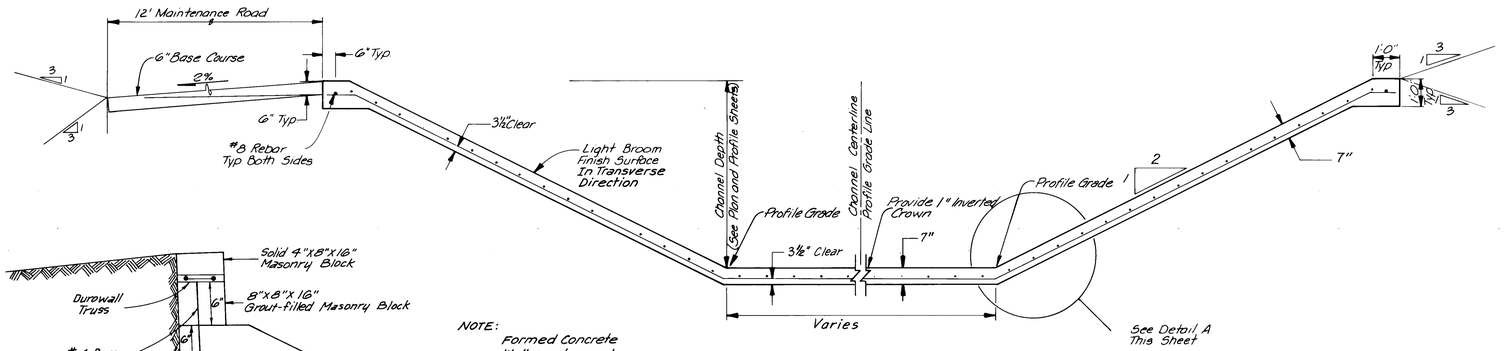
SURVEY INFORMATION
NO. | BY | DATE

REFERENCES
MAP NO. E-17-Z
EST. NO.
W.O. NO.

REVISIONS
NO. | DATE | REMARKS | BY
DESIGN
DESIGNED BY KRJ, HCS DATE 5/83
DRAWN BY U.K. DATE 5/83
CHECKED BY HCS DATE 10/84

26 18530487

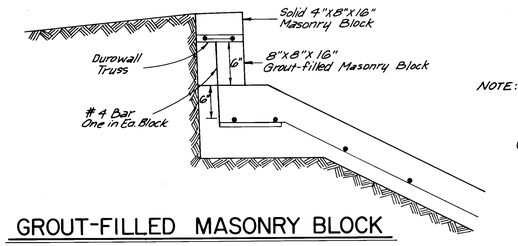
BRUNING 44-132-52753



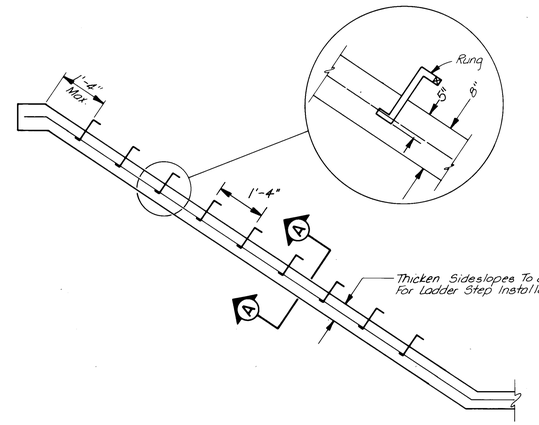
NOTE: Formed Concrete Wall may be used as an Alternate (at same unit price) to Masonry Block Wall.

TYPICAL CHANNEL CROSS SECTION

Note: Reinforce with No 5 bars @ 1'-0" O.C. transverse and No 6 bars @ 1'-0" O.C. longitudinal.

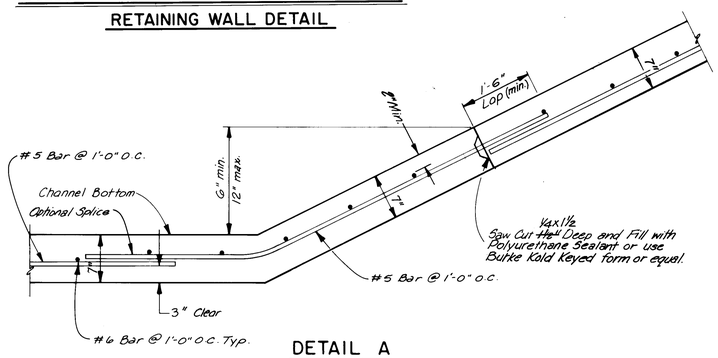


GROUT-FILLED MASONRY BLOCK RETAINING WALL DETAIL

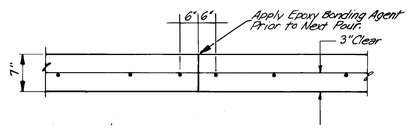


CHANNEL SIDESLOPE LADDER DETAILS

Sta. 2+00.00 Beta Arroyo
Sta. 102+70.00, 114+00.00 Pino Arroyo

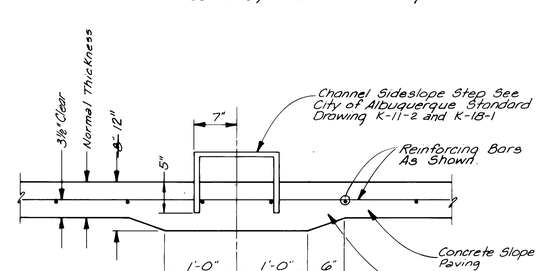


DETAIL A

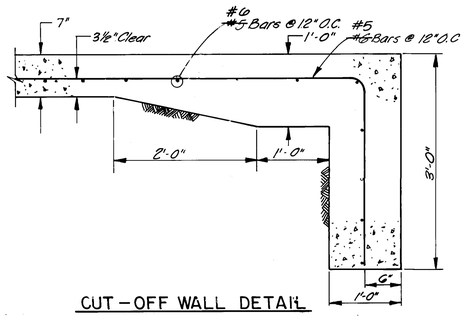


CONSTRUCTION JOINT DETAIL

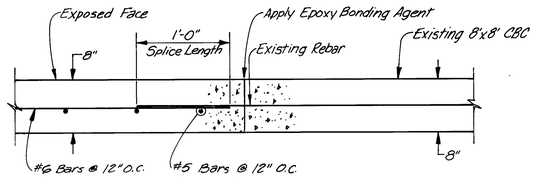
AS REQUIRED BY CHANNEL CONSTRUCTION



SECTION A-A

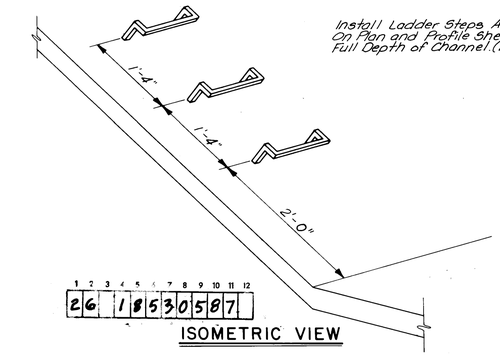


CUT-OFF WALL DETAIL



TIE TO EXISTING C.B.C. STRUCTURE

STA. 115+30.47



ISOMETRIC VIEW

NOTES:

1. Concrete shall be 3000 p.s.i. 28 day strength with maximum aggregate size as stated in the specifications.
2. All steel shall be Grade 60 deformed bars unless noted otherwise.
3. Splices in rebar in typical Channel section shall be 1'-0" or greater for No. 3 and No. 4 bars, 1'-3" for No. 5 bars and 1'-8" for No. 6 Bars, and 2'-10" for No. 8 Bars.
4. All steel spacings are given to the centerline of the bar.
5. All exposed edges shall have a ¾" chamfer, except as Noted.
6. All rebar shall be supported on 3½" sand chairs at a maximum spacing of 5' perpendicular to the channel centerline.
7. Place ladder steps as shown on plan and profile sheets on both sides of channel.
8. Subgrade minimum compaction 90% per ASTM D-1557
9. Maintenance road shall be surfaced with 6" Class I Crushed Gravel Base as stated in the Specifications.

RECORD DRAWINGS
DATE 2-26-86

JOB NO. 20596

SCALE: NO SCALE

APPROVED FOR CONSTRUCTION
CITY ENGINEER DATE

PREPARED UNDER THE DIRECTION OF
Howard C. Stan
10-18-89

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

TITLE: TYPICAL CHANNEL SECTIONS
PINO ARROYO IMPROVEMENTS

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
City Engineer		12/26/89	Liquid Waste	William Burke	12/26/89
A.C.E.-Design		12/26/89	Traffic	N/A Dwtt	12/26/89
A.C.E.-Hydrology		12/26/89	Water	William Burke	12/26/89
Q.A.					

DRAWING NO. 1853 SHEET 5 OF 16

AS-BUILT INFORMATION
CONTRACTOR K.V.C. Inc.
WORK STAKED BY Bohannan-Huston Inc. DATE 9/86
INSPECTORS Bob Sparo DATE 5/86
ACCEPTANCE BY Bohannan-Huston Inc. DATE 2/86
RECORDED BY VERIFICATION BY Bohannan-Huston Inc. DATE 2/86
DRAWINGS CORRECTED BY Bohannan-Huston Inc. DATE 2/86
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS
NO. DATE BY

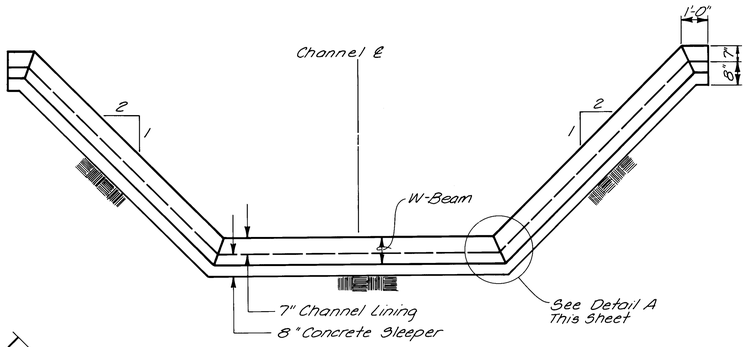
SURVEY INFORMATION
NO. BY DATE

REFERENCES
MAP NO. E-17-Z
W.O. NO.
EST. NO.

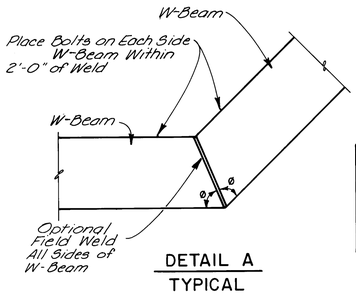
REVISIONS
NO. DATE BY REMARKS
DESIGN
DESIGNED BY KRJ, HCS DATE 5/83
DRAWN BY UK DATE 5/83
CHECKED BY HCS DATE 10/84

26 18530587

BRUNING 44-132.52753

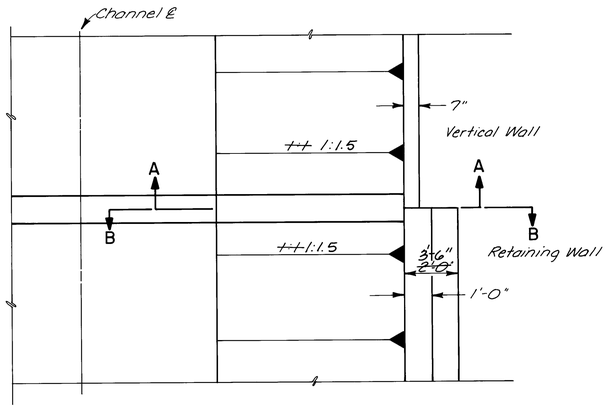


TYPICAL W-BEAM JOINT DETAIL

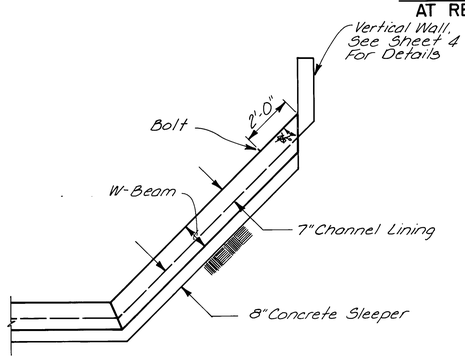


DETAIL A
TYPICAL

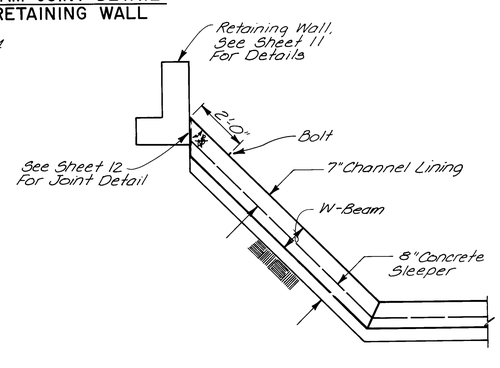
TABLE I		
SIDE SLOPE	Ø	
2:1	~~18.3°~~	76.71°
++ 1:1.5	~~29.5°~~	73.15°



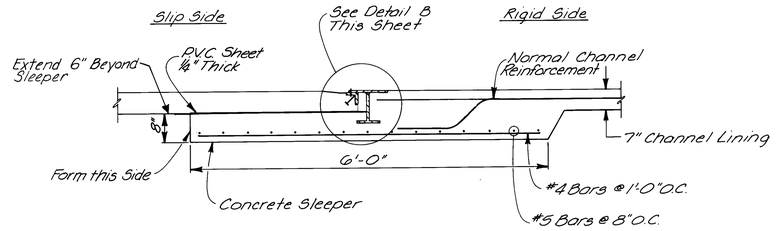
W-BEAM JOINT DETAIL
AT RETAINING WALL



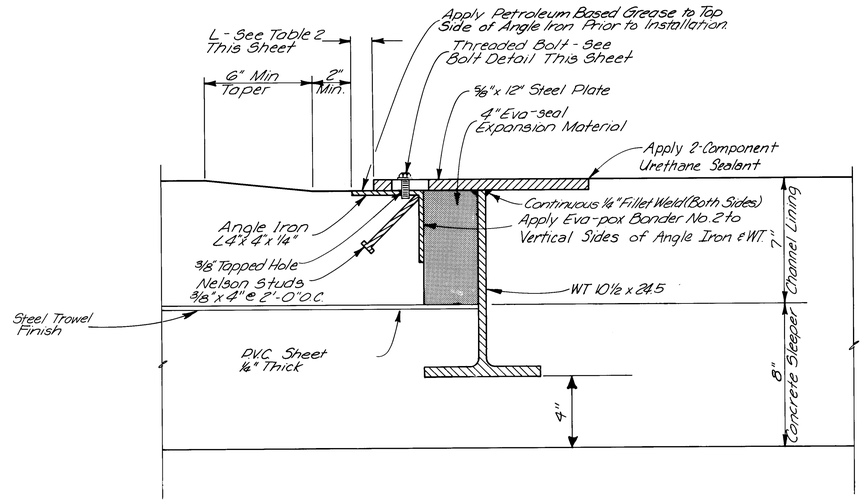
SECTION A–A



SECTION B–B



W–BEAM EXPANSION
JOINT DETAIL



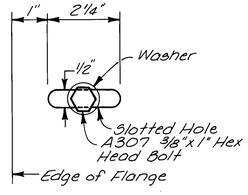
DETAIL B

ORIENTATION OF W-BEAM EXPANSION JOINT	
Station	Location of Rigid Side
114+73.24 (Pino)	Upstream
101+00.00 (Pino)	Downstream
1+10.00 (Beta)	Downstream

TABLE 2	
Average Daily Maximum Temperature (°F)	L (Inches)
90°	0.9
70°	1.3
50°	1.5

Note:
On same day as concrete pour, Bonder No. 2 shall be applied to angle iron and Eva-seal. And angle iron shall be installed as directed on Table 2.

Bolt Requirements
2 on Bottom
2 on Each Side Slope
1 on Top Sill



BOLT DETAIL
PLAN

NOTE:
1. EVA-POX BONDER NO. 2 AND EVA-SEAL MANUFACTURED BY E-POXY INDUSTRIES MAY BE SUBSTITUTED WITH ENGINEER APPROVED EQUAL.
2. ANGLE IRON BOLTS MUST BE REMOVED BETWEEN 24-36 HOURS AFTER CONCRETE POUR.
3. AFTER REMOVAL OF ANGLE IRON BOLTS, COVER SLOTTED HOLE WITH ⅛" METAL PLATE AND WELD.
4. INSTALLATION OF E-POXY MATERIALS MUST BE PER MANUFACTURER'S INSTRUCTIONS.

RECOMMENDED
2-26-86

JOB NO. 20596
SCALE: NO SCALE

AS-BUILT INFORMATION
CONTRACTOR K.N.I. Inc.
WORK STAKED BY Bohannan-Huston Inc. DATE 8/84
INSPECTORS
ACCEPTANCE BY Silas Guzzo DATE 3/86
FIELD VERIFICATION BY Bohannan-Huston Inc. DATE 2/86
DRAWINGS PREPARED BY Bohannan-Huston Inc. DATE 2/86
CORRECTED BY
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS

SURVEY INFORMATION
DATE | NO. | BY

REFERENCES
MAP NO. | W.O. NO.
EST. NO.

REVISIONS			
NO.	DATE	REMARKS	BY
DESIGNED BY HCS		DESIGN	DATE 9/84
DRAWN BY PMT			DATE 9/84
CHECKED BY HCS			DATE 9/84

216 185 306 87

PREPARED UNDER THE DIRECTION OF
Howard C. Stiles
10-18-89

APPROVED FOR CONSTRUCTION
CITY ENGINEER DATE

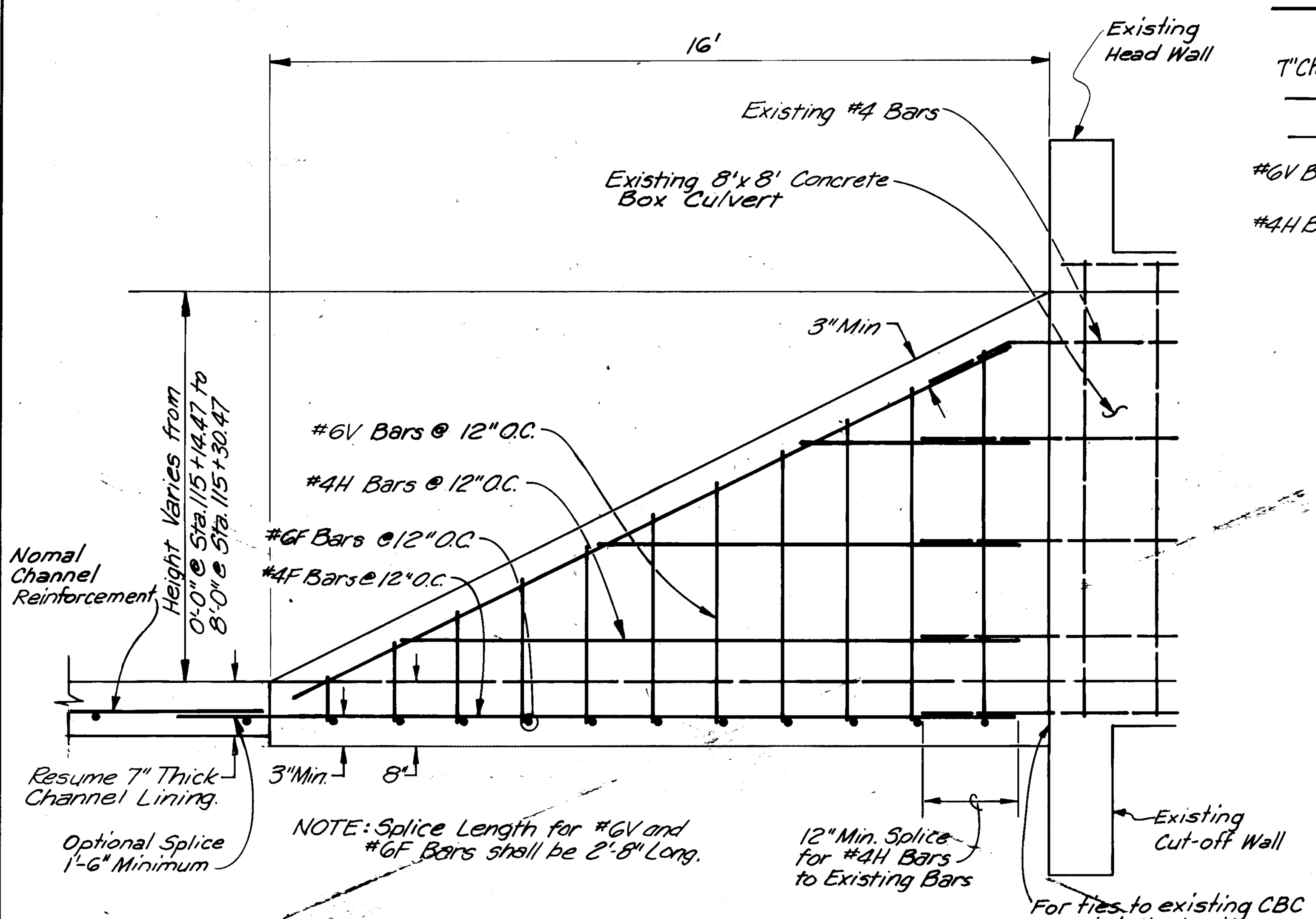
CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

TITLE: EXPANSION JOINT DETAILS
W-BEAM TRANSVERSE JOINT
PINO ARROYO IMPROVEMENTS

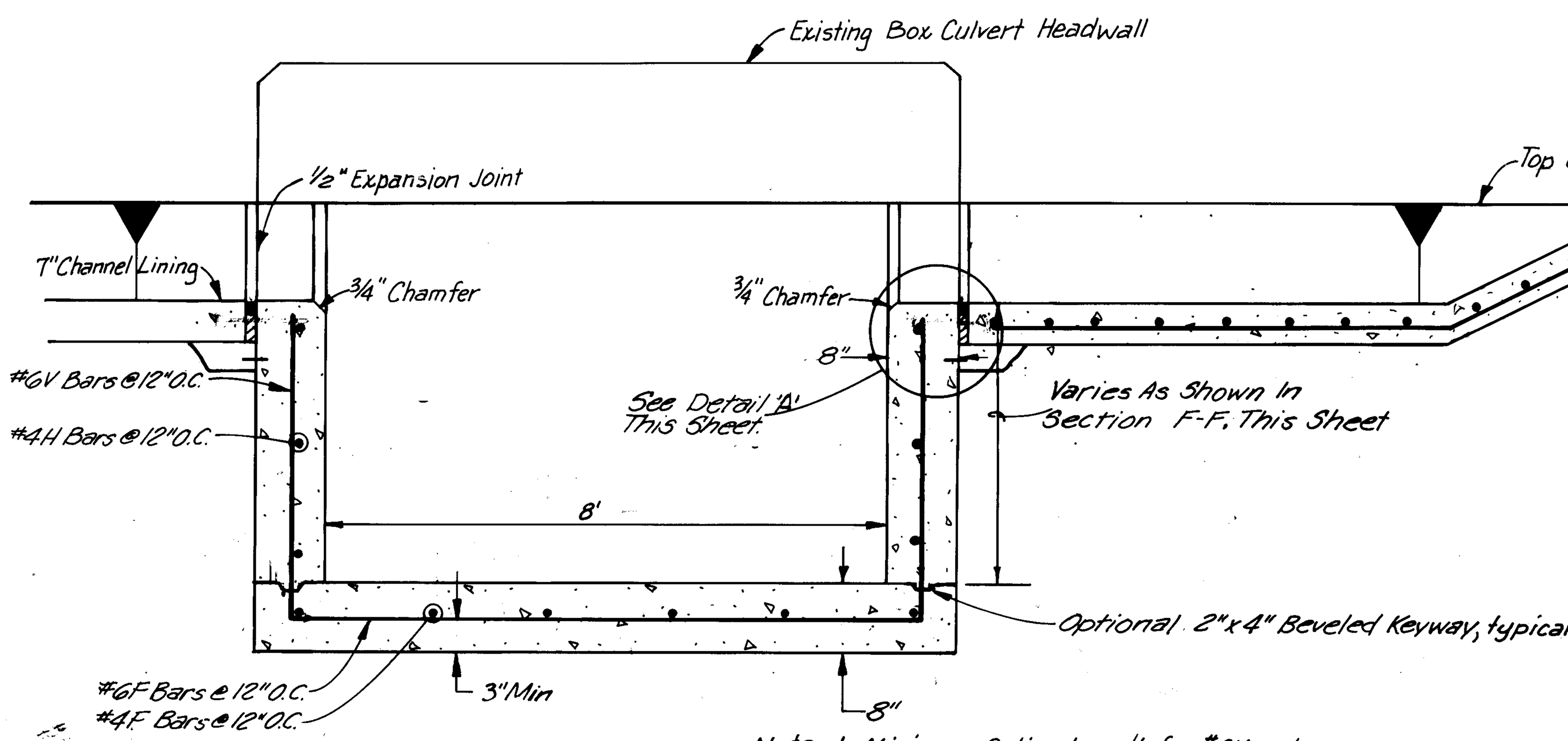
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
City Engineer			Liquid Waste		
A.C.E.-Design		12/12/89	Traffic		
A.C.E.-Hydrology		12/12/89	Water		
Q.A.					

DRAWING NO. 1853 SHEET 6 OF 16

BRUNING 44-132 59583

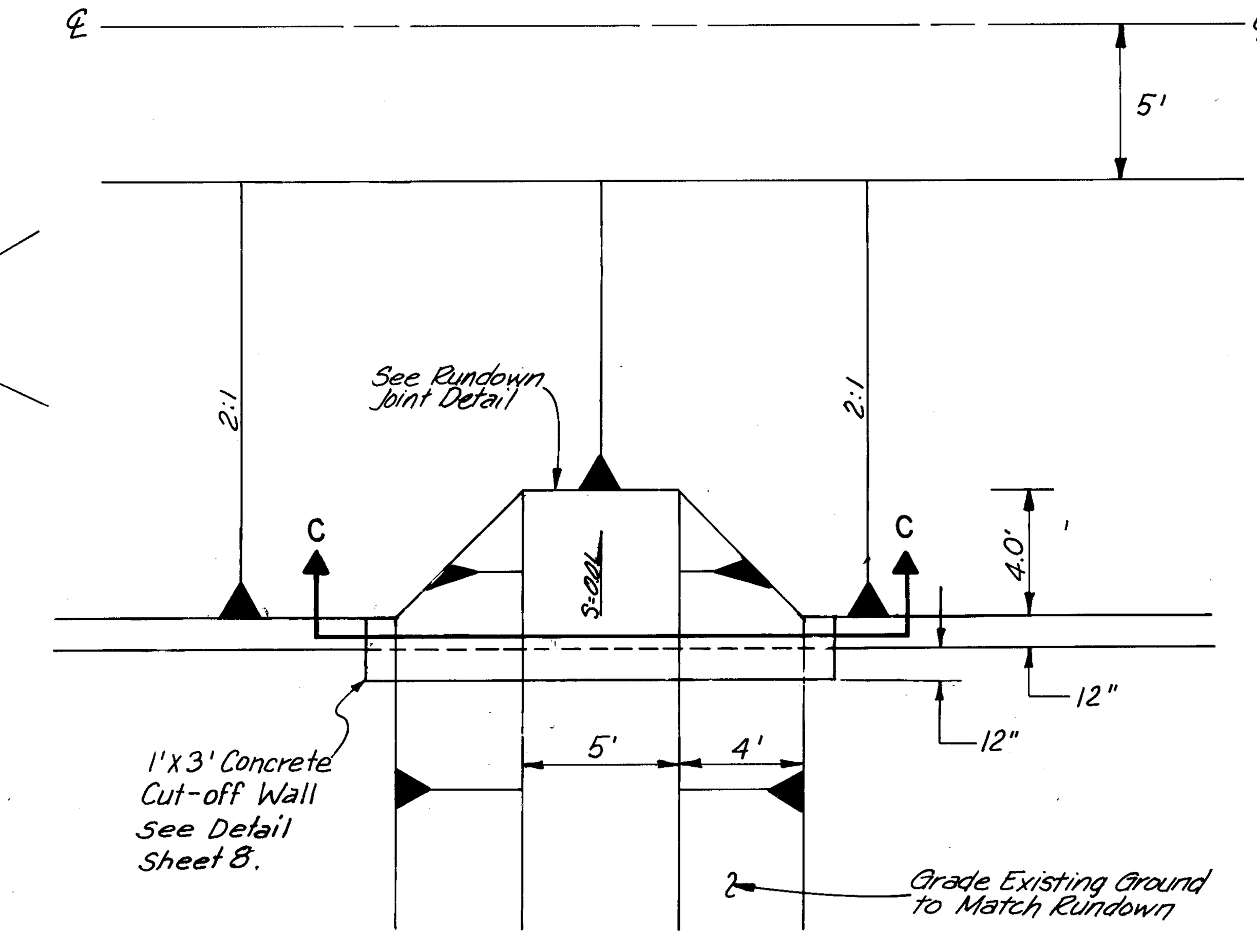


SECTION F-F
NO SCALE

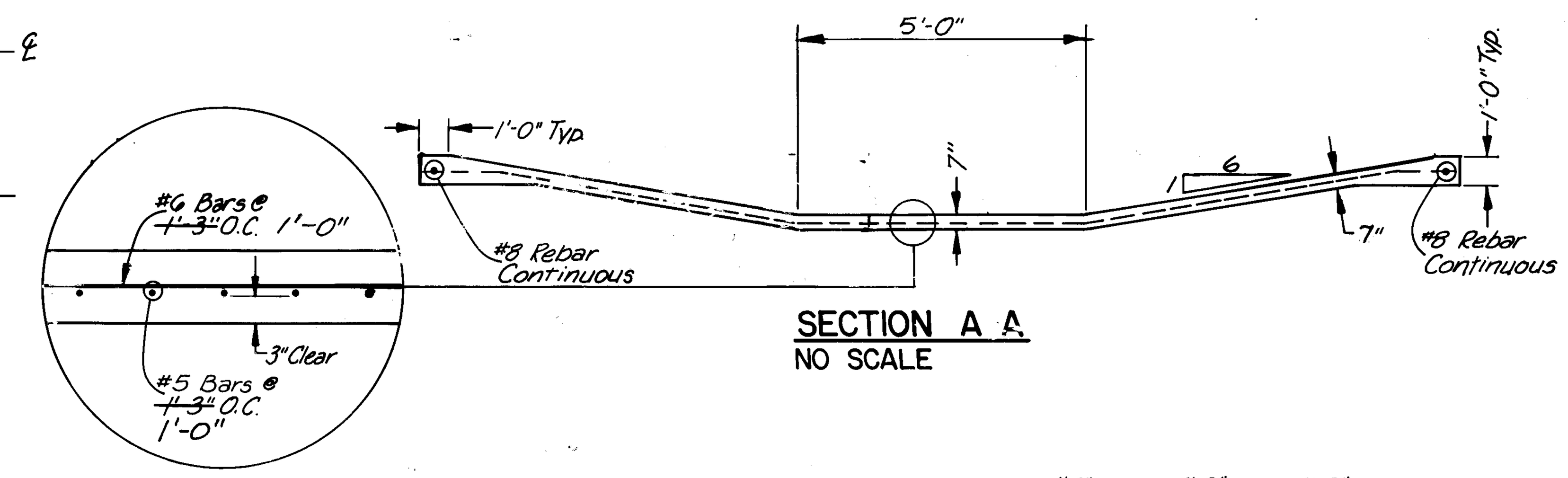


SECTION E-E
NO SCALE

Note: 1. Minimum Splice Length for #6V and #6F Bars shall be 2'-8" Long.
2. Minimum Splice Length for #4H Bars shall be 1'-0"



CHANNEL RUNDOWN DETAIL
NO SCALE



SECTION A-A
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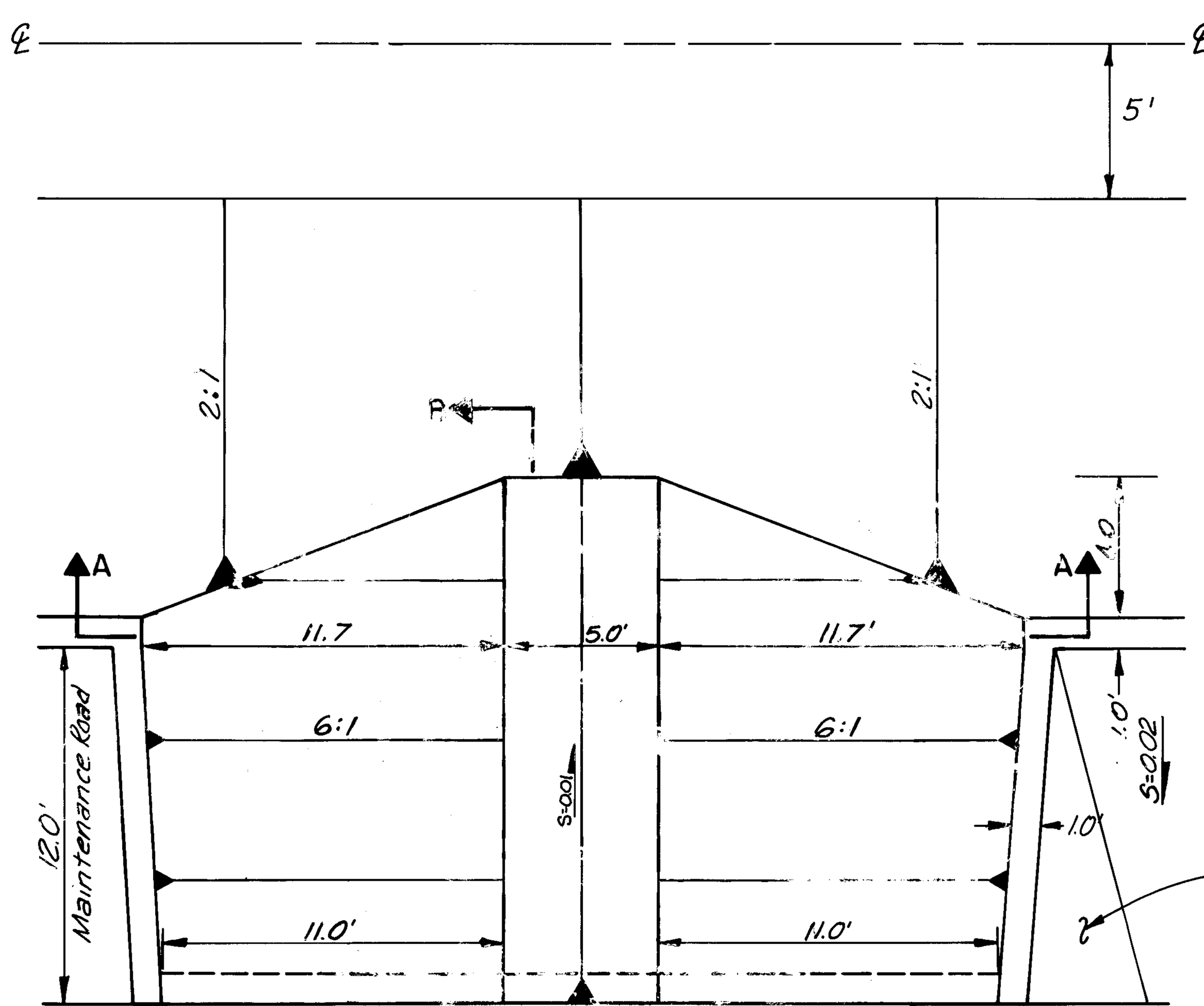
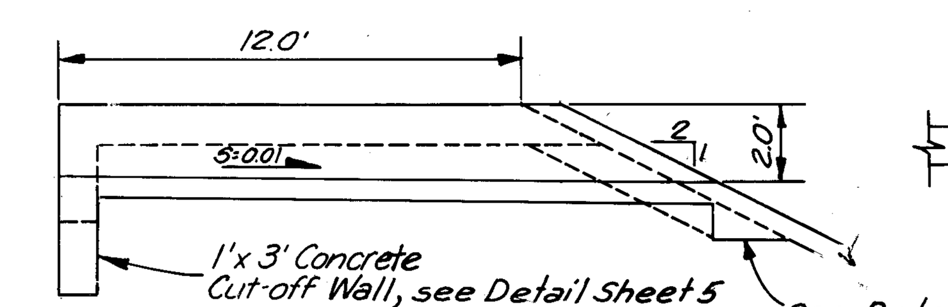
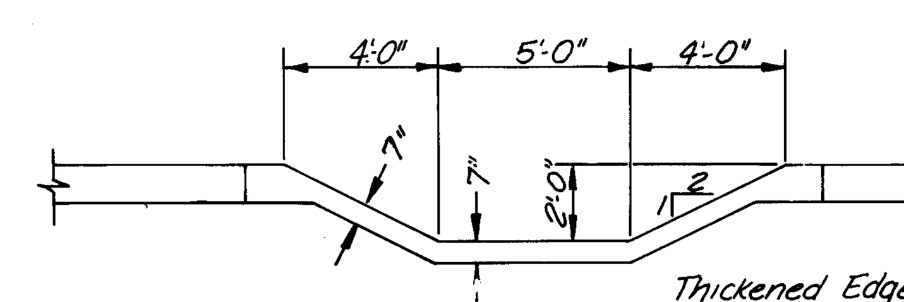


RUNDOWN ACROSS MAINTENANCE ROAD
SCALE 1" = 5'

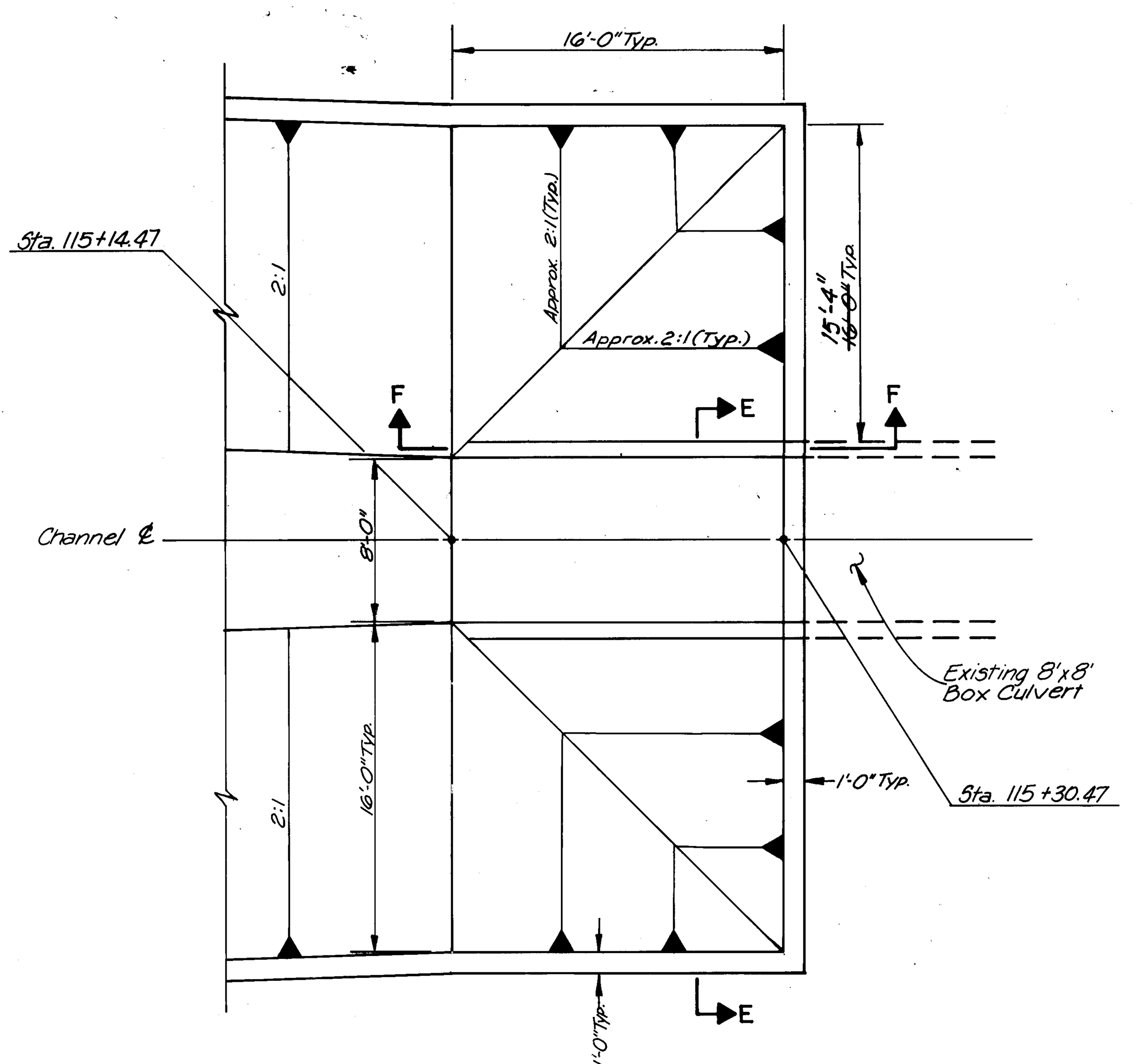
1'x3' Concrete Cut-off Wall, see Detail Sheet 5.



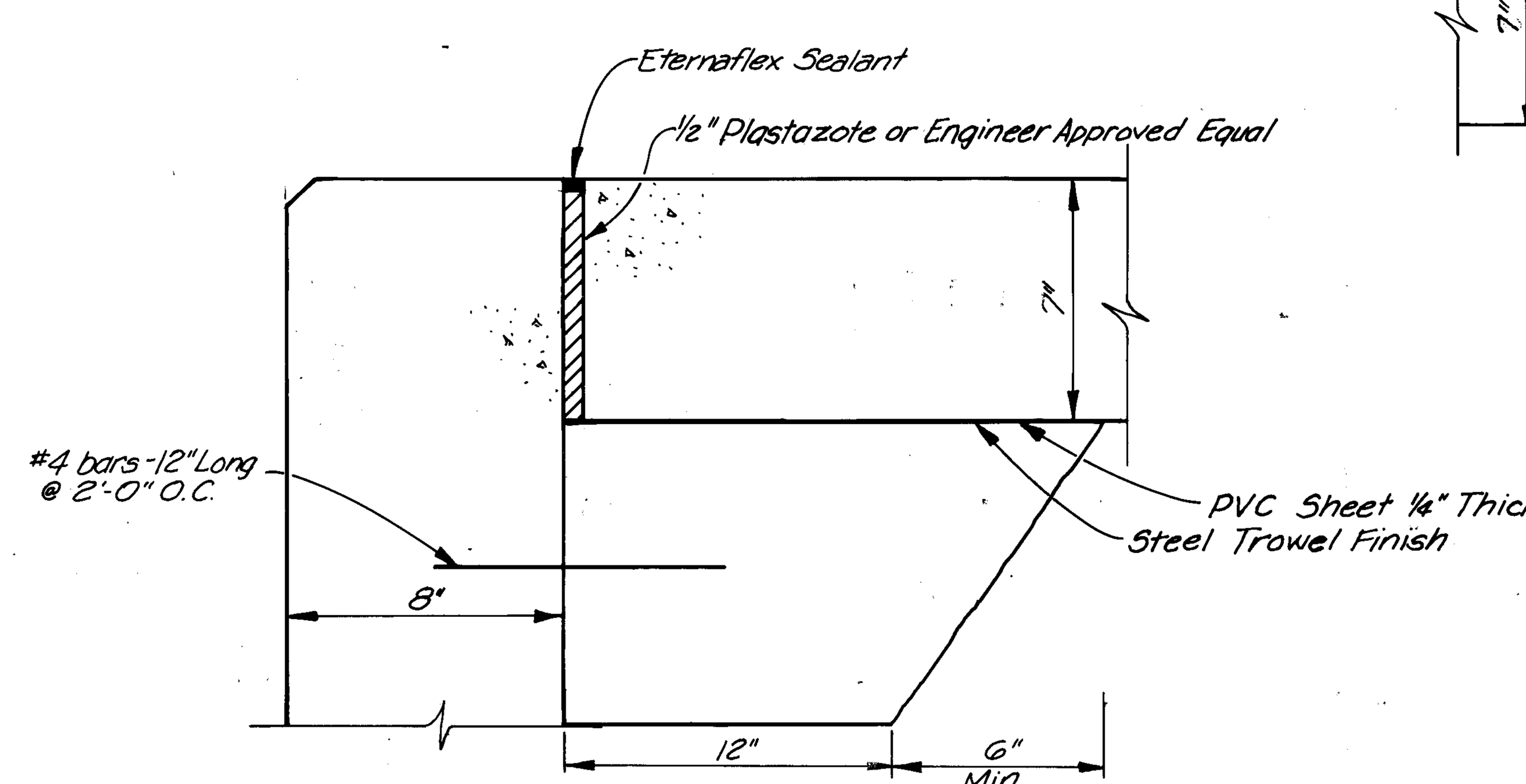
SECTION B-B
NO SCALE



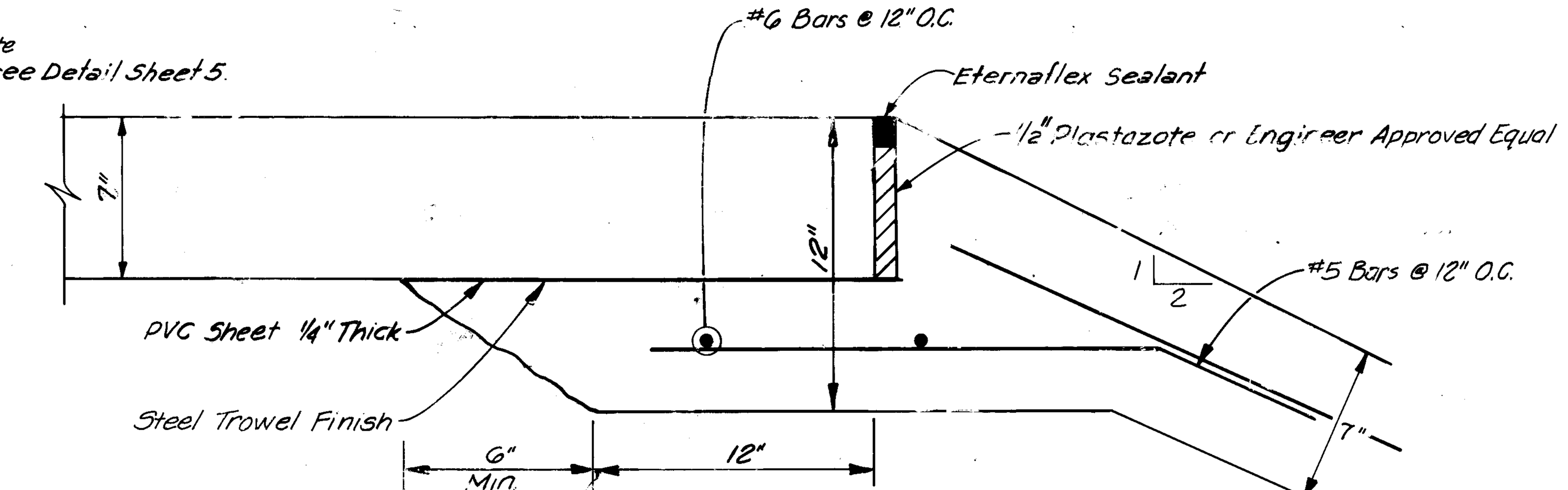
SECTION C-C
NO SCALE



CHANNEL TERMINUS AT I-25 FRONTAGE ROAD
PLAN VIEW SCALE: 1" = 6'



DETAIL A
NO SCALE



RUNDOWN JOINT DETAIL

1	2	3	4	5	6	7	8	9	10	11	12
2	6		1	8	5	3	0	7	8	7	

AS-BUILT INFORMATION
CONTRACTOR K.N.C. Inc.
WORK STAKED BY Bohannan-Huston Inc. DATE 2/86
INSPECTOR'S ACCEPTANCE BY Silas Suazo DATE 3/86
FIELD VERIFICATION BY Bohannan-Huston Inc. DATE 2/86
DRAWINGS CORRECTED BY Bohannan-Huston Inc. DATE 2/86

MICRO-FILM INFORMATION
RECORDED BY / DATE / NO.

BENCH MARKS

SURVEY INFORMATION
NO. | BY | DATE

REFERENCES
MAP NO. E-17-Z | EST. NO. | W.O. NO.

REVISIONS
NO. | DATE | REMARKS | BY

DESIGN
DESIGNED BY KRJ,HCS DATE 6/83
DRAWN BY PE DATE 6/83
CHECKED BY HCS DATE 10/84

PREPARED UNDER THE DIRECTION OF
Howard C. [signature]
10-18-84

APPROVED FOR CONSTRUCTION
CITY ENGINEER DATE

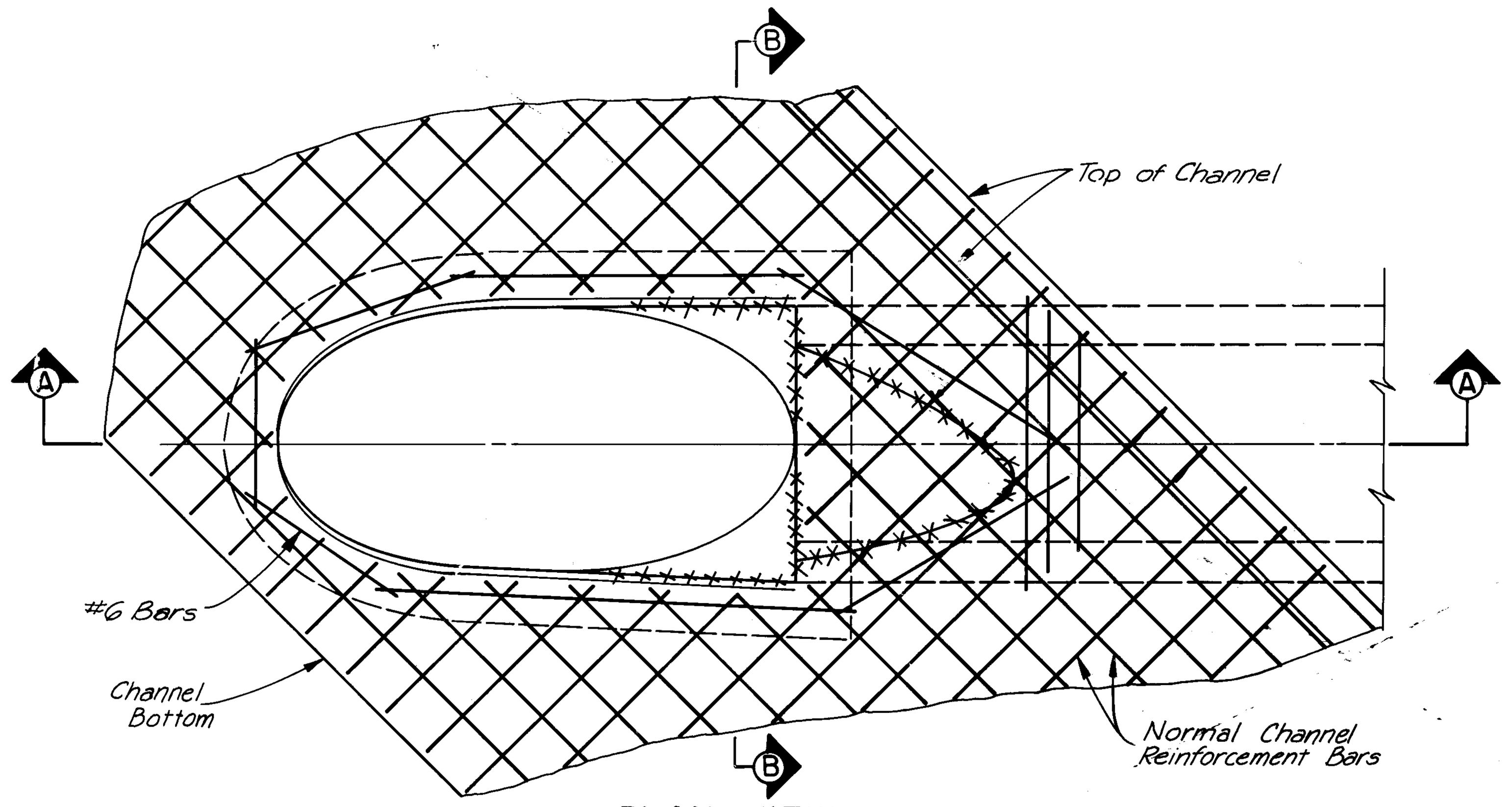
CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

TITLE: MISCELLANEOUS CONSTRUCTION DETAILS
PINO ARROYO IMPROVEMENTS

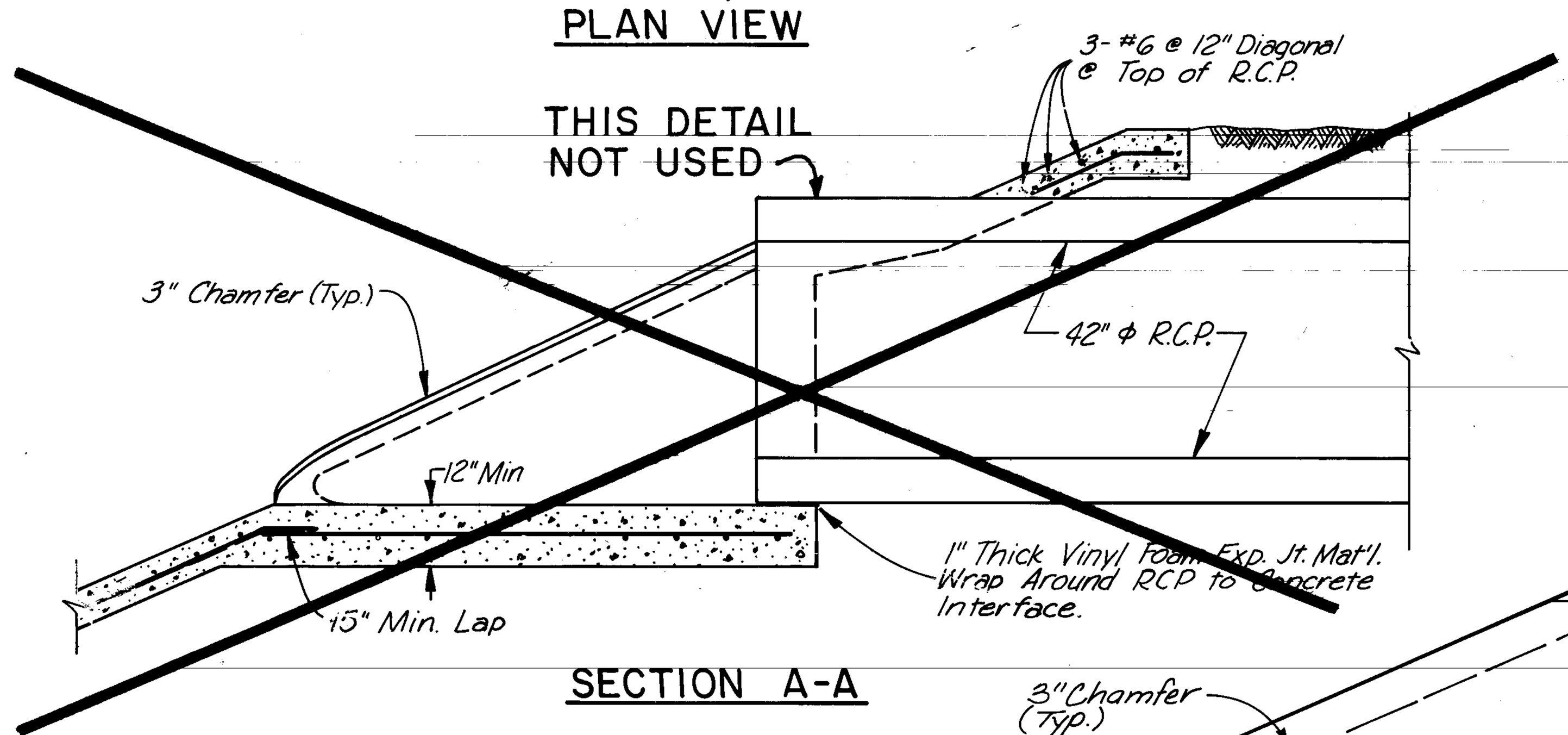
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
C.W. [signature]	[signature]	12/17/84	[signature]	William Balch	12/18/84
	[signature]	12/12/84	Traffic Eng	NA DWH	12/13/84
ACE Hydrology	Dan Hogan	12/17/84	Water Resources	William Balch	12/18/84

JOB No. 20596
SCALE: AS SHOWN
RECORD DRAWINGS DATE 2-26-86
DRAWING NO. 1853
SHEET 7 OF 16

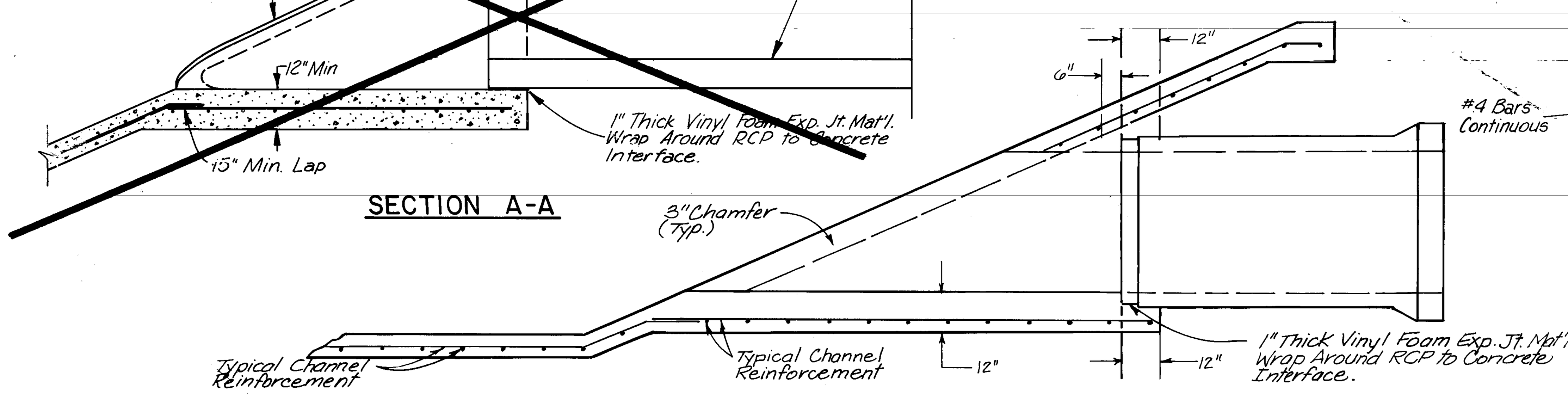
BRUNING 44-132 52753



PLAN VIEW



SECTION A-A

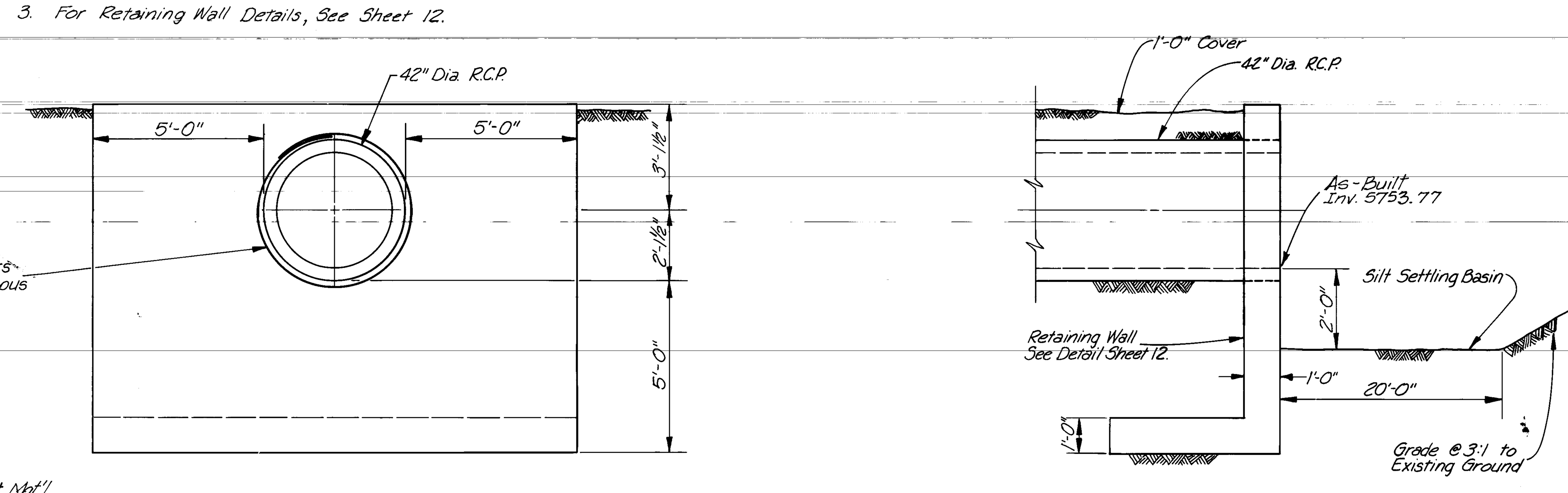


TYPICAL PIPE TO CHANNEL CONNECTION
NO SCALE

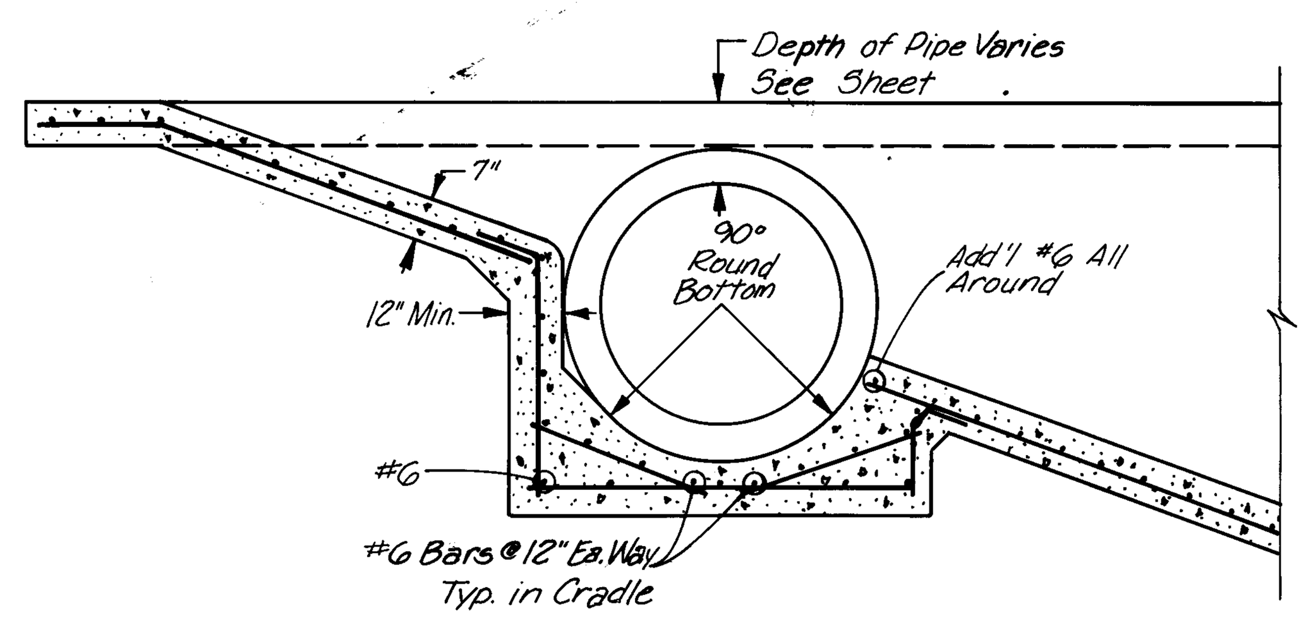
RETAINING WALL SCHEDULE

LOCATION	BEGINNING STA.	ELEV. TOP WALL	ELEV. BOTTOM FOOT.	ENDING STA.	ELEV. TOP WALL	ELEV. BOTTOM FOOT.		WALL NO.
Pino Arroyo	Sta. 101+00.00-17.0' Lt.	5152.71	5148.71	Sta. 101+15.24 - 15.5' Lt.	5152.98	5148.98		
	Sta. 101+00.00-17.0' Rt.	5152.71	5148.71	Sta. 101+15.24 - 18.5' Rt.	5152.98	5148.98		
	Sta. 101+15.24 - 15.5 Lt.	5152.98	5148.98	Sta. 101+95.00-18.08' Lt.	5152.31	5150.31		
Beta Arroyo	Sta. 0+00.00-12.5 Rt.	5152.98	5148.98	Sta. 1+30.00-17.41' Rt.	5153.14	5151.14		

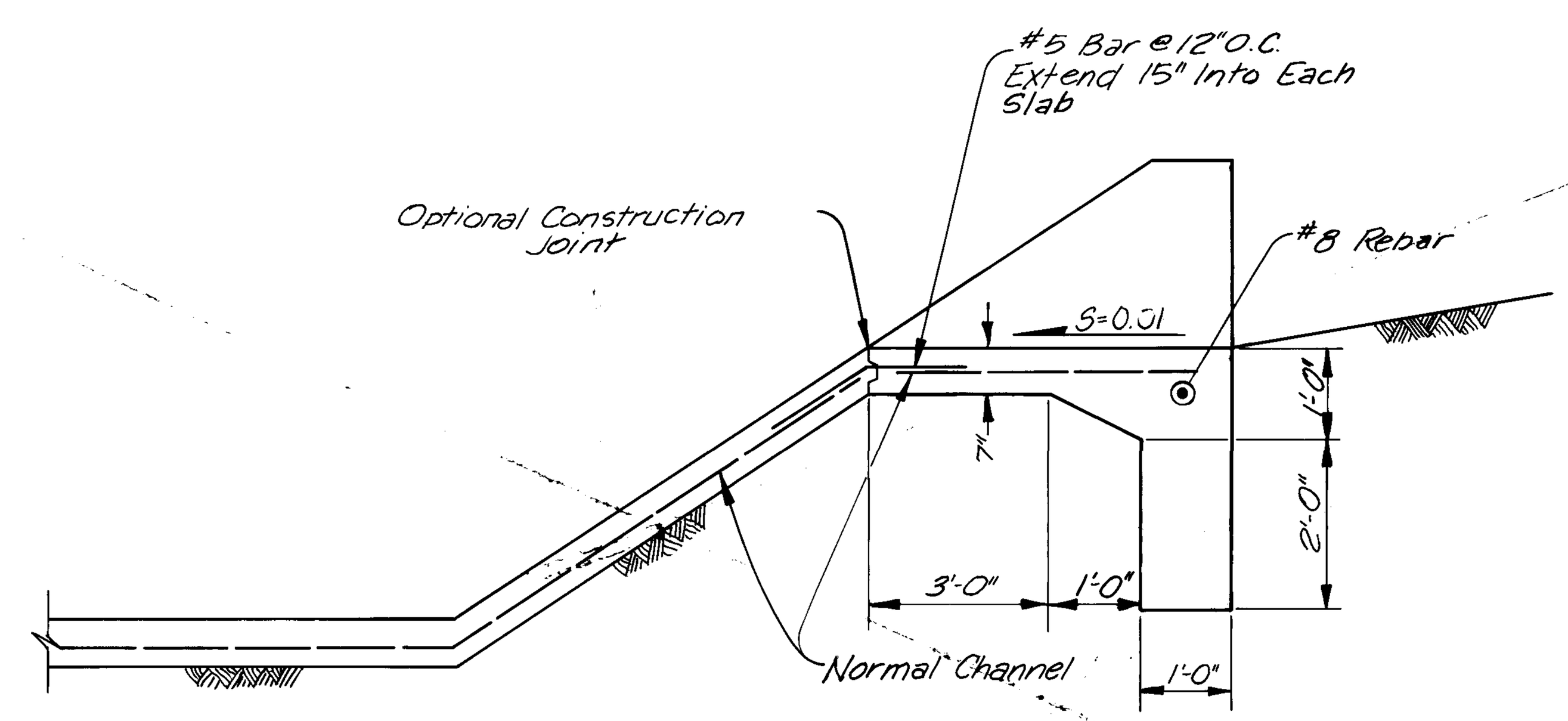
NOTE:
1. Distances Lt. & Rt. from ℄ are to inside face of vertical wall.
2. All wall height transitions are linear with respect to channel ℄ Profile Elevations.
3. For Retaining Wall Details, See Sheet 12.



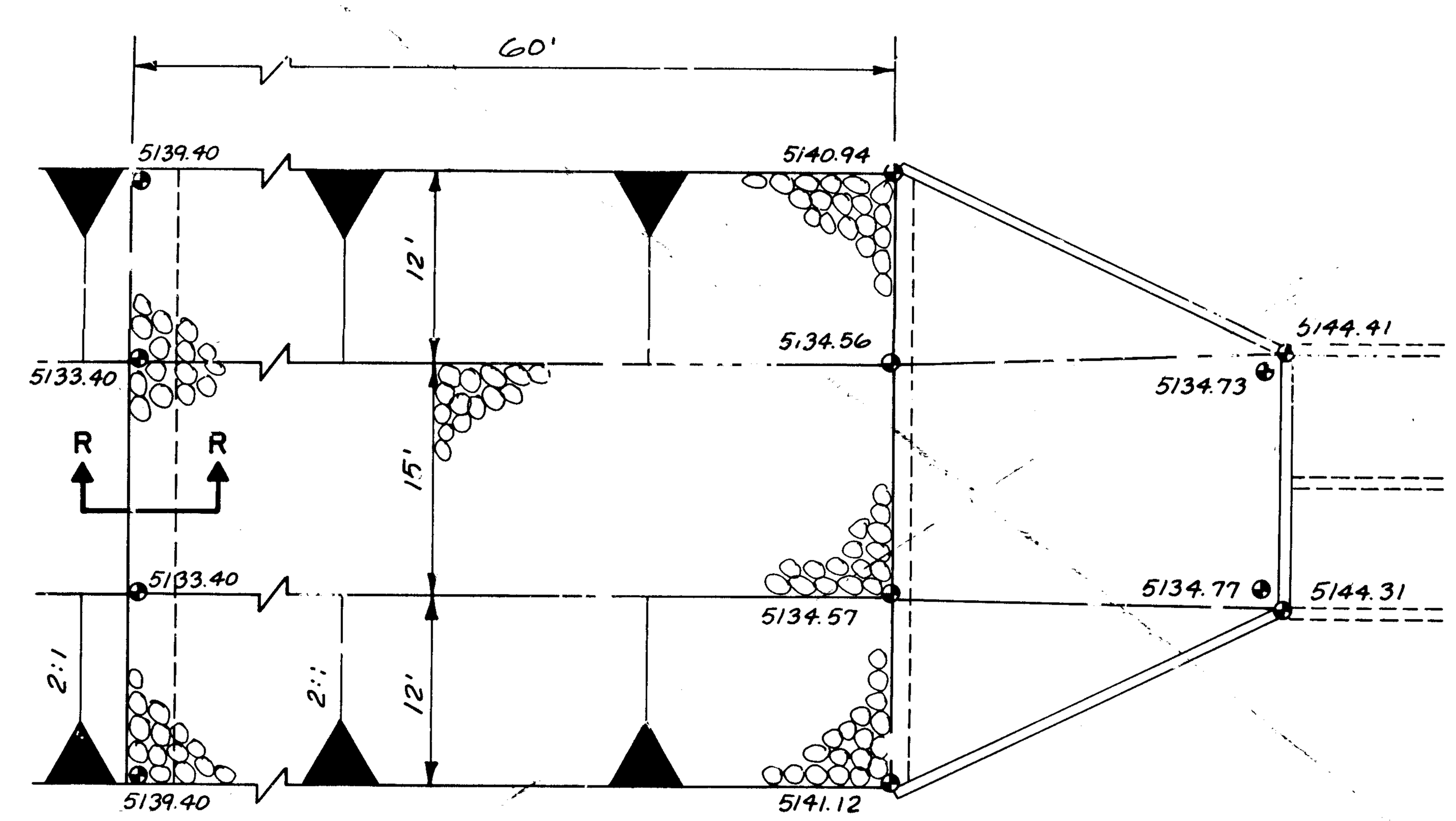
42" DIA. R.C.P. EXTENSION W/ HEADWALL
STA. 105+63.00 NO SCALE



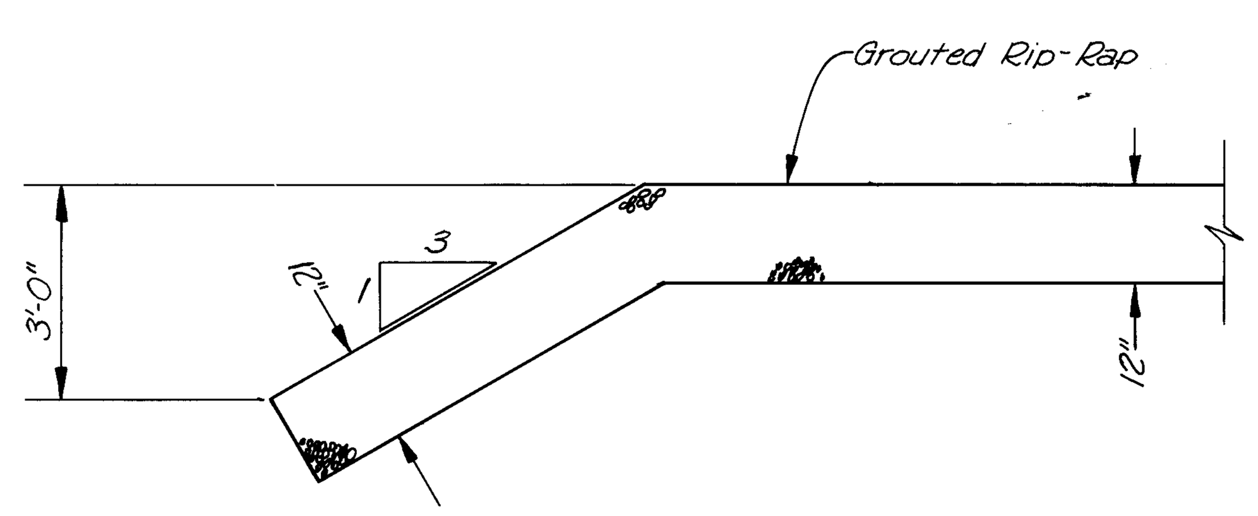
SECTION B-B



CHANNEL RUNDOWN DETAIL
NO SCALE



GROUTED RIP RAP OUTLET DETAIL
SCALE: 1"=10'



SECTION R-R
GROUTED RIP-RAP END DETAIL

26 18530887

PREPARED UNDER THE DIRECTION OF
Howard C. Ston
10-18-84

APPROVED FOR CONSTRUCTION

CITY ENGINEER DATE

RECORD DRAWING
2-26-86

JOB No. 20596
SCALE: AS SHOWN

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

TITLE: MISCELLANEOUS CONSTRUCTION DETAILS
PINO ARROYO IMPROVEMENTS

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
C.W. Shepard	12/17/84		Water Resources	William Baker	12/12/84
ACE-D	K.R. Olson	12/12/84	Traffic	DA DwH	12/12/84
ACE Hydrology	Dan Hogan	12/12/84	Water Resources	William Baker	12/12/84

DRAWING NO. 1853

SHEET 8 OF 16

AS-BUILT INFORMATION
CONTRACTOR K.N.C. Inc.
WORK STAKED BY Bohannan-Huston Inc. DATE 2/86
INSPECTOR'S ACCEPTANCE BY Bilas Suazo DATE 3/86
FIELD VERIFICATION BY Bohannan-Huston Inc. DATE 2/86
DRAWINGS CORRECTED BY Bohannan-Huston Inc. DATE 2/86
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS

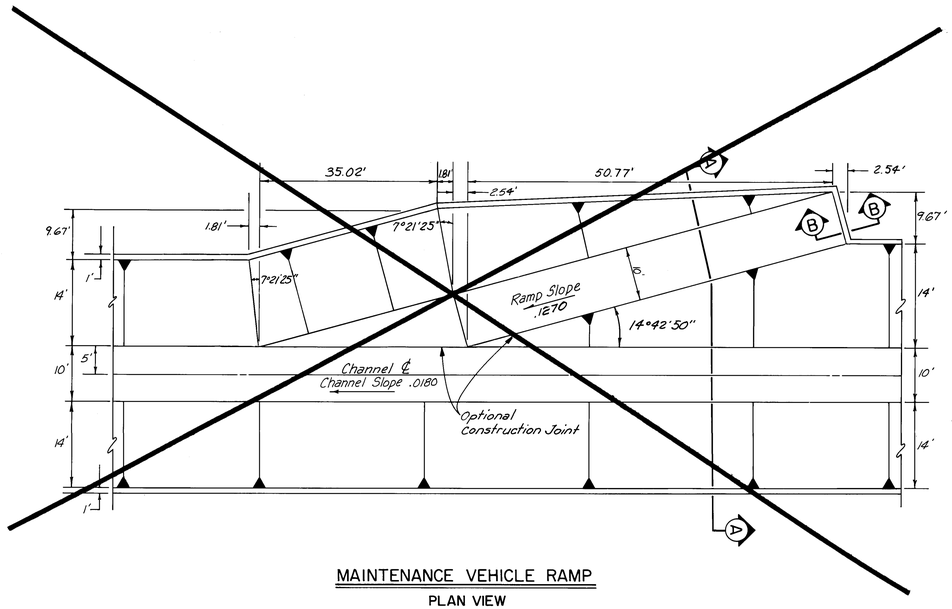
SURVEY INFORMATION
NO. BY DATE

REFERENCES
MAP NO. EST. NO. W.O. NO.

REVISIONS
NO. DATE REMARKS BY

DESIGN
DESIGNED BY HCS DATE 10-84
DRAWN BY NAW DATE 10-84
CHECKED BY HCS DATE 10-84

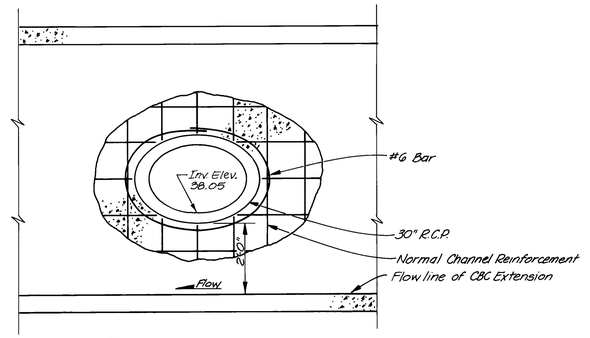
BRUNING 44.132 59583



MAINTENANCE VEHICLE RAMP

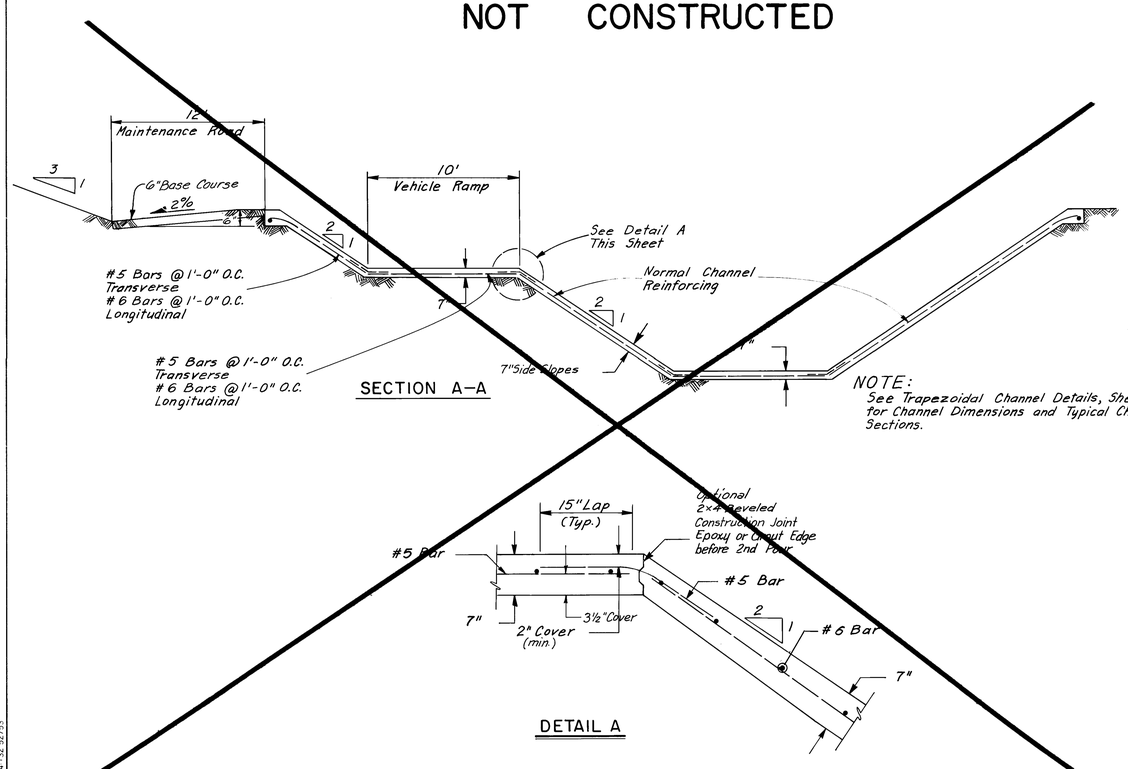
PLAN VIEW

NO SCALE



30" R.C.P. CONNECTION TO C.B.C. EXTENSION

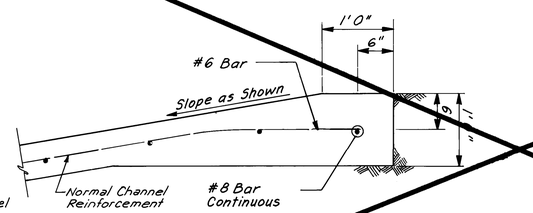
NOT CONSTRUCTED



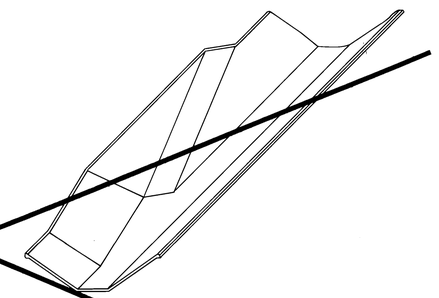
SECTION A–A

NOTE:
See Trapezoidal Channel Details, Sheet for Channel Dimensions and Typical Channel Sections.

DETAIL A



SECTION B–B



ISOMETRIC VIEW

RECORDED DRAWING
DATE 2-26-86

JOB No. 20596

SCALE: NO SCALE

APPROVED FOR CONSTRUCTION

CITY ENGINEER DATE

PREPARED UNDER THE DIRECTION OF

Howard C. Ston
10-18-89

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

TITLE: MAINTENANCE VEHICLE RAMP DETAILS
PINO ARROYO IMPROVEMENTS

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
City Engineer			Liquid Waste	William Baker	12/12/89
A.C.E.–Design		12/12/89	Traffic		12/12/89
A.C.E.–Hydrology		12/12/89	Water	William Baker	12/12/89

DRAWING No. 1853

SHEET 9 OF 16

26 18530987

AS-BUILT INFORMATION
CONTRACTOR K.V.C. Inc.
WORK STAKED BY Bohannan-Huston Inc. DATE 5/86
WATER WORKS ACCEPTANCE BY Sid Gurule DATE 9/86
FIELD VERIFICATION BY Bohannan-Huston Inc. DATE 2/86
DRAWINGS CORRECTED BY Bohannan-Huston Inc. DATE 5/86
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS

SURVEY INFORMATION
NO. BY

REFERENCES
MAP NO. E-17-Z
EST. NO. W.O. NO.

REVISIONS
NO. DATE REMARKS BY
DESIGNED BY KRJ, DMYM DATE 5/83
DRAWN BY UK DATE 5/83
CHECKED BY HCS DATE 10/84

BRUNING 44-132 82753

REVISIONS
2-6-61
2-10-61
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2-23-61
3-7-61
3-25-61
5-31-61
5-29-62
8-25-67
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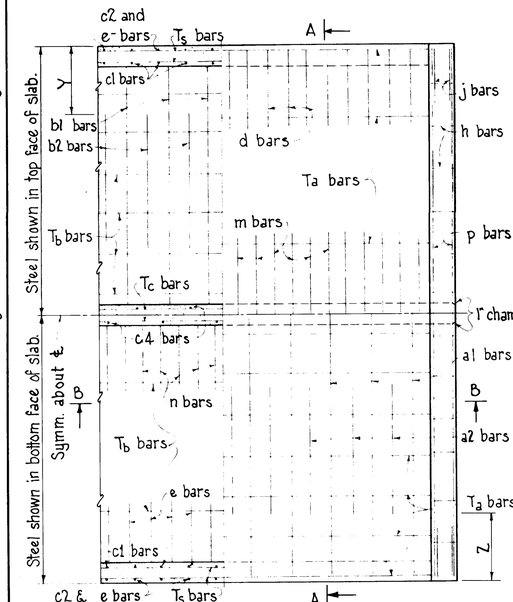
FED. ROAD DIV. NO.	STATE		FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	NEW MEXICO				

CLEAR SPAN	CLEAR HEIGHT	DIMENSIONS TT	TS	TB	SO	HO	Y	Z	QUANTITIES Per Linear Ft. Reinf. Steel Lbs./Lin.Ft.	Concrete Cu.Yds./Lin.Ft.	At One End* Reinforcing Steel-Lbs	Concrete Cu. Yds.
4	2	6½"	6"	7"	9'-6"	3'-1½"	—	—	77.2	0.507	239	1.99
	3	7"	6"	7"	9'-6"	4'-2"	—	—	80.9	0.577	245	2.05
	4	7"	6"	7"	9'-6"	5'-2"	—	—	86.4	0.633	241	2.10
6	2	7½"	6"	7½"	13'-6"	3'-3"	1'-4"	—	116.2	0.736	316	2.78
	3	7½"	6"	7½"	13'-6"	4'-3"	1'-4"	—	120.3	0.792	322	2.84
	4	7½"	6"	7½"	13'-6"	5'-3"	1'-4"	—	123.4	0.847	331	2.89
	5	7½"	6"	7½"	13'-6"	6'-3"	1'-4"	—	132.5	0.903	340	2.95
	6	7½"	6"	7½"	13'-6"	7'-3"	1'-4"	—	138.4	0.958	374	3.01
8	4	8"	6"	8½"	17'-6"	5'-4½"	1'-6"	1'-3"	176.5	1.113	553	3.68
	5	8"	6"	8½"	17'-6"	6'-4½"	1'-4"	0'-9"	193.7	1.169	559	3.74
	6	8"	6"	8½"	17'-6"	7'-4½"	1'-4"	—	2083	1.225	571	3.80
	7	8"	7"	8½"	17'-9"	8'-4½"	1'-6"	1'-0"	224.5	1.358	608	3.97
	8	8"	8"	9"	18'-0"	9'-5	1'-8	1'-5	229.3	1.537	626	4.16
10	4	9"	6½"	10"	21'-7½"	5'-7"	1'-8"	1'-6"	240.9	1.509	796	4.51
	5	9"	6"	10"	21'-6"	6'-7"	1'-6"	1'-6"	252.9	1.539	828	4.53
	6	9"	6"	10"	21'-6"	7'-7	1'-6"	1'-6"	251.9	1.594	827	4.59
	7	9"	7"	10"	21'-9"	8'-7	1'-6"	1'-0"	285.4	1.729	855	4.76
	8	9"	8"	10"	22'-0"	9'-7"	1'-6"	—	289.8	1.883	881	4.94
	9	9"	8"	10"	22'-0"	10'-7"	1'-6"	—	312.2	1.957	915	5.04
	10	9"	9"	10"	22'-3"	11'-7"	1'-6"	—	325.9	2.138	884	5.23
	11	9"	9"	10"	22'-3"	12'-7"	1'-6"	1'-0"	332.7	2.221	953	5.39
	12	9½"	9"	10"	22'-3"	13'-7½"	1'-6"	1'-9"	373.2	2.339	954	5.54
12	6	10½"	6½"	11½"	25'-7½"	7'-10"	2'-2"	1'-9"	304.7	2.101	1127	5.43
	8	10½"	8"	11½"	26'-0"	9'-10"	2'-2"	1'-11"	342.6	2.358	1203	5.74
	10	10½"	9"	11½"	26'-3"	11'-10"	2'-0"	2'-0"	372.5	2.616	1254	6.05
	12	10½"	9"	11½"	26'-3"	13'-10"	1'-10"	2'-0"	423.4	2.782	1360	6.33
14	8	12½"	8"	13"	30'-0"	10'-1½"	3'-1"	2'-2"	428.9	2.954	1686	6.53
	10	12"	9"	13"	30'-3"	12'-1"	3'-1"	2'-2"	456.1	3.167	1729	6.84
	12	12"	9"	13"	30'-3"	14'-1"	3'-1"	2'-2"	499.9	3.334	1777	7.12
	14	12"	10"	13"	30'-6"	16'-1"	3'-1"	2'-2"	553.1	3.650	1833	7.59

CLEAR SPAN	CLEAR HEIGHT	REINFORCING a1 Size	a1 Length	a1 Spacing	a2 Size	a2 Length	a2 Spacing	b1 Size	b1 Length	b1 Spacing	b2 Size	b2 Length	b2 Spacing	c1 Size	c1 Spacing	c2 Size	c2 Spacing	c3 Size	c3 Length	c3 Spacing	c4 Size	c4 Length	c4 Spacing	m Size	m Length	m Spacing	n Size	n Length	n Spacing	d Size	d Length	d X	d Spacing	e Size	e Length	e X	e Spacing
4	2	6	9'-3"	9"	—	none	—	4	9'-3"	12"	—	none	—	—	none	—	none	4	2'-3"	12"	4	2'-3"	12"	5	4'-6"	9"	5	4'-6"	12"	5	3'-9"	1'-7"	12"	4	1'-3"	1'-6"	12"
	3	6	9'-3"	9"	—	none	—	4	9'-3"	12"	—	none	—	—	none	—	none	4	2'-9"	12"	4	2'-9"	12"	5	4'-6"	9"	5	4'-6"	12"	5	4'-3"	1'-7"	12"	4	1'-9"	1'-6"	12"
	4	6	9'-3"	9"	—	none	—	4	9'-3"	12"	—	none	—	—	none	none	none	4	3'-3"	12"	4	3'-3"	12"	5	4'-6"	9"	5	4'-6"	12"	5	4'-3"	1'-7"	12"	4	1'-9"	1'-6"	12"
6	2	7	13'-3"	7½"	—	none	—	4	13'-3"	13"	4	4'-3"	13"	none	none	5	2'-6"	14"	5	2'-6"	14"	5	4'-3"	9½"	5	5'-6"	6½"	5	4'-3"	1'-9"	9½"	4	4'-0"	1'-8"	9½"
	3	7	13'-3"	7½"	—	none	—	4	13'-3"	13"	4	4'-3"	13"	none	none	5	3'-3"	14"	5	2'-9"	14"	6	4'-3"	9½"	5	5'-6"	6½"	5	4'-3"	1'-9"	9½"	4	4'-0"	1'-8"	9½"
	4	7	13'-3"	7½"	—	none	—	4	13'-3"	13"	4	4'-3"	13"	none	none	5	3'-3"	15"	5	3'-0"	15"	6	4'-3"	10"	5	5'-6"	6½"	5	4'-9"	1'-9"	10"	4	4'-6"	1'-8½"	10"
	5	7	13'-3"	7"	—	none	—	4	13'-3"	13"	4	4'-3"	13"	none	none	5	3'-3"	15"	5	3'-0"	15"	6	4'-3"	10"	5	5'-6"	6½"	5	4'-9"	1'-9"	10"	4	4'-6"	1'-8½"	10"
	6	7	13'-3"	7"	—	none	—	4	13'-3"	13"	4	4'-3"	13"	none	none	5	3'-3"	15"	5	3'-0"	15"	6	4'-3"	10"	5	5'-6"	6½"	5	5'-3"	1'-9"	10"	4	5'-3"	1'-9"	10"
8	4	8	17'-3"	11"	8	6'-6"	18"	4	17'-3"	11"	4	6'-0"	11"	none	none	6	3'-9"	16"	6	3'-9"	16"	6	5'-6"	7"	6	6'-9"	7"	6	5'-6"	1'-11"	11"	5	4'-6"	1'-10"	11"
	5	8	17'-3"	14"	7	7'-6"	14"	4	17'-3"	14"	5	6'-3"	14"	none	none	5	5'-0"	16"	5	3'-0"	16"	6	6'-3"	7½"	6	7'-9"	7"	6	5'-9"	2'-0"	11"	5	5'-9"	2'-0"	11"
	6	8	17'-6"	10"	8	—	—	4	17'-3"	10"	4	6'-6"	10"	none	4	10½	5	6'-0"	16"	5	3'-0"	16"	6	7'-0"	8"	6	7'-9"	7"	6	4'-6"	2'-1"	10½	5	4'-0"	1'-10"	10½
	7	8	17'-9"	18"	7	7'-6"	14	4	17'-6"	14"	5	6'-3"	14"	4	18"	5	15"	5	7'-0"	15"	5	3'-0"	15"	6	7'-0"	7½"	7	7'-9"	9	6	5'-3"	2'-6"	11"	6	5'-3"	2'-6"	15
	8	8	18'-0"	18"	7	6'-6"	18"	4	17'-9"	12"	4	6'-0"	12"	4	18"	5	15"	5	8'-3"	12"	5	3'-0"	12"	6	7'-3"	7½"	6	6'-9"	7½"	6	6'-3"	2'-11"		6	6'-3"	2'-11"	15
10	4	9	21'-3"	8½"	5	8'-0"	8½"	4	21'-3"	12"	5	7'-9"	12	none	none	6	4'-9"	16"	6	3'-0"	16"	6	5'-3"	10"	6	8'-6"	10"	6	5'-3"	2'-0"		5	5'-3"	2'-0"	10"
	5	9	21'-3"	12"	6	8'-0"	12"	4	21'-3"	12"	5	8'-0"	12	none	none	5	5'-6"	11½"	5	3'-0"	11½"	7	8'-3"	7½"	7	8'-3"	8"	7	6'-0"	2'-3"		6	6'-0"	2'-3"	12"
	6	9	21'-6"	10½"	6	8'-0"	10½"	4	21'-3"	12"	5	8'-0"	12	none	none	4	6'-0"	7½"	4	3'-0"	7½"	7	8'-3"	7½"	7	8'-3"	7½"	7	5'-3"	2'-5"	12"	6	8'-3"	2'-6"	12"
	7	9	21'-9"	16"	7	8'-9"	14	5	21'-6"	14"	5	8'-0"	14	none	4	12"	5	7'-3"	8½"	5	3'-0"	8½"	7	8'-9"	7½"	7	7'-9"	7½"	7	7'-0"	3'-0"	12"	6	6'-0"	2'-9"	12"
	8	9	21'-9"	9"	—	none	—	5	21'-9"	18"	6	7'-9"	18	4	18"	4	12"	4	8'-0"	8"	4	3'-0"	8	7	9'-0"	8"	7	7'-0"	8"	7	7'-6"	3'-6"	12"	6	6'-0"	2'-9"	12"
	9	9	22'-0"	10"	—	none	—	5	21'-9"	15"	5	8'-3"	15"	4	17"	4	13	5	9'-3"	12"	5	3'-0"	12	7	9'-3"	8"	7	7'-0"	8"	7	7'-6"	3'-6"	13"	6	6'-0"	2'-9"	13"
	10	9	22'-3"	11'-7"	—	none	—	5	22'-0"	18"	6	8'-6"	18	4	15"	4	10"	4	10'-0"	9"	4	3'-0"	9	8	9'-6"	10½"	8	8'-6"	9½"	6	8'-0"	3'-9"	9"	6	7'-0"	3'-3"	10"
	11	9	22'-3"	12'-7"	11	8'-9"	11	5	22'-0"	14"	5	8'-3"	14	4	12"	4	12	5	11'-3"	15"	5	3'-0"	15"	7	10'-0"	7½"	7	8'-3"	7"	7	7'-6"	3'-6"	12"	7	6'-9"	3'-3"	12
	12	9½	9"	10"	22'-3"	13'-7½"	1'-6"	1'-9"	373.2	2.339	954	5.54	5	22'-0"	14"	7	8'-0"	14"	4	22'-0"	15"	6	8'-3"	15	5	14"	4	8	13'-0"	14"	7	3'-3"	4	7	10'-3"	8"	7	8'-3"	7"	6	7'-3"	3'-4"	8"
12	6	10½	6½	11½	25'-7½"	7'-10"	2'-2"	1'-9"	304.7	2.101	1127	5.43	4	25'-3"	9"	6	9'-6"	9"	5	25'-3"	12"	5	8'-9"	12"	none	none	6	6'-9"	16"	6	3'-3"	16"	8	9'-6"	8½"	6	6'-3"	2'-1"	8"	5	6'-6"	2'-0"	8"
	8	10½	8	11½	26'-0"	9'-10"	2'-2"	1'-11"	342.6	2.358	1203	5.74	5	25'-9"	13"	7	9'-6"	13"	5	25'-9"	12"	5	9'-0"	12	4	18"	none	5	8'-6"	10"	5	3'-3"	10"	7	9'-3"	6½"	7	9'-3"	6½"	7	7'-9"	2'-8"	11"
	10	10½	9"	11½	26'-3"	11'-10"	2'-0"	2'-0"	372.5	2.616	1254	6.05	5	26'-0"	13"	7	9'-6"	13	5	26'-0"	12"	5	9'-3"	12	4	12"	5	12	10'-6"	13"	5	3'-3"	13	7	9'-3"	6½"	7	9'-3"	6½"	7	7'-6"	3'-3"	11"
	12	10½	9"	11½	26'-3"	13'-10"	1'-10"	2'-0"	423.4	2.782	1360	6.33	5	26'-0"	13"	7	9'-6"	13	5	26'-0"	18"	7	9'-9"	18	5	16"	5	13	12'-9"	10"	6	3'-3"	10	7	9'-3"	6½"	7	9'-3"	6½"	8	7'-9"	3'-9"	13
14	8	12½	8"	13"	30'-0"	10'-1½"	3'-1"	2'-2"	428.9	2.954	1686	6.53	5	29'-9"	12"	7	11'-3	12	5	29'-9"	13"	6	9'-3"	13"	4	18"	none	5	8'-9"	14	5	3'-3"	14"	8	12'-0"	7	8	12'-0"	7½	8	10'-3"	4'-0"	13"
	10	12	9"	13"	30'-3"	12'-1"	3'-1"	2'-2"	456.1	3.167	1729	6.84	5	30'-0"	12"	7	11'-3"	12"	5	30'-0"	12"	6	9'-3"	12"	4	18"	6	11½	5	10'-9"	14	5	3'-3"	14	8	11'-0"	7	8	10'-6"	7	8	8'-3"	4'-3"	13"
	12	12	9"	13"	30'-3"	14'-1"	3'-1"	2'-2"	499.9	3.334	1777	7.12	5	30'-0"	12"	7	11'-3"	12"	5	30'-0"	10½	5	9'-3"	10½	4	11"	6	10½	5	12'-9	14"	5	3'-3"	14	8	11'-0"	7	8	10'-6"	7	8	8'-6"	4'-6"	12
	14	12	10"	13"	30'-6"	16'-1"	3'-1"	2'-2"	553.1	3.650	1833	7.59	4	30'-3"	10½	7	11'-3"	10½	5	30'-3"	10½	5	9'-3"	10½	5	12"	6	10½	5	14'-9"	10½	5	3'-3"	10½	8	11'-0"	7	8	10'-6"	7	8	8'-9"	4'-9"	10½

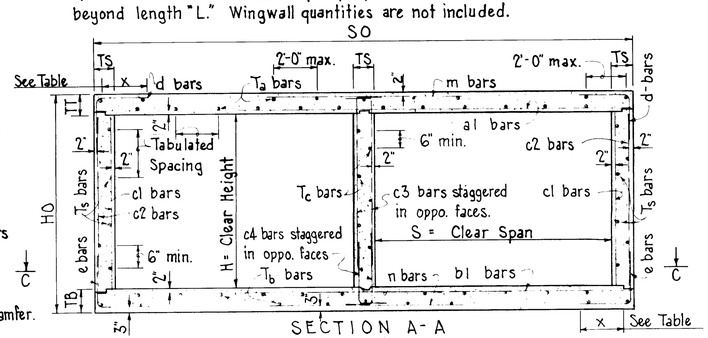
CLEAR SPAN	CLEAR HEIGHT	REINFORCING m Size	m Length	m Spacing	n Size	n Length	n Spacing	d Size	d Length	d X	d Spacing	e Size	e Length	e X	e Spacing	Ta No.	Ta Size	Ta Spacing	Tb No.	Tb Size	Tb Spacing	Tc No.	Tc Size	Tc Spacing	Ts No.	Ts Size	Ts Spacing	g.s. No. of ea at 1 end
4	2	5	4'-6"	9"	5	4'-6"	12"	5	3'-9"	1'-7"	12"	4	1'-3"	1'-6"	12"	13	4	18"	13	4	18"	3	4	18"	4	4	18"	6
	3	5	4'-6"	9"	5	4'-6"	12"	5	4'-3"	1'-7"	12	4	1'-6"	1'-6"	12"	13	4	18"	13	4	18"	4	4	18"	4	4	18"	6
	4	5	4'-6"	9	5	4'-6"	12	5	4'-3"	1'-7"	12	4	1'-6"	1'-6"	12"	13	4	18"	13	4	18"	5	4	18"	6	4	18"	6
6	2	6	4'-3"	9½"	5	4'-3"	12"	5	4'-3"	1'-9"	9"	4	3'-6"	1'-8"	9½"	16	4	18"	16	4	18"	3	4	18"	4	4	18"	8
	3	6	4'-3"	9½"	5	4'-3"	12"	5	4'-3"	1'-9"	9"	4	4'-0"	1'-8"	9½"	16	4	18"	16	4	18"	4	4	18"	4	4	22"	8
	4	6	4'-3"	9½"	5	4'-3"	12"	5	4'-3"	1'-9"	9"	4	4'-6"	1'-8½"	10"	16	4	18"	16	4	18"	4	4	18"	4	4	22"	8
	5	6	4'-3"	10"	5	5'-6"	6½"	5	4'-3"	1'-9"	10"	4	4'-6"	1'-8½"	10"	16	4	18"	16	4	18"	5	4	18"	6	4	18"	8
	6	6	4'-3"	10"	5	5'-6"	6½"	5	5'-3"	1'-9"	10"	4	5'-3"	1'-9"	10"	16	4	18"	16	4	18"	7	4	18"	8	4	18"	8
8	4	6	5'-6"	7"	6	6'-9"	7"	6	5'-6"	1'-11"	11"	5	4'-6"	1'-10"	11"	24	4	15"	22	4	15"	5	4	18"	6	4	15"	12
	5	6	5'-9"	7"	6	7'-9"	7"	6	5'-9"	2'-0"	11"	5	5'-9"	2'-0"	11"	27	4	15"	25	4	15"	6	4	18"	7	4	15"	12
	6	6	6'-3"	7½"	7	7'-9"	7"	6	6'-3"	2'-1"	10½"	5	4'-0"	1'-10"	10½"	29	4	14"	25	4	16"	9"	4	18"	10	4	18"	12
	7	6	7'-0"	8"	6	7'-9"	7"	6	5'-3"	2'-6"	11"	6	5'-3"	2'-6"	15"	29	4	14"	25	4	16"	9"	4	18"	16	4	18"	12
	8	6	7'-3"	7½"	6	6'-9"	7½"	6	6'-3"	2'-11"		6	6'-3"	2'-11"	15"	29	4	14"	25	4	18"	11"	4	18"	20	4	18"	12
10	4	6	8'-6"	10"	6	5'-3"	2'-0"		5	5'-3"	2'-0"	10"	5	4'-0"	12"	32	4	12"	32	4	12"	5	4	18"	8	4	18"	14
	5	6	8'-3"	7½"	7	8'-3"	8"	7	6'-0"	2'-3"		6	6'-0"	2'-3"	12"	32	4	12"	32	4	12"	7	4	18"	8	4	18"	14
	6	6	8'-3"	7½"	7	8'-3"	7½"	7	5'-3"	2'-5"	12"	6	8'-3"	2'-6"	12"	29	4	14"	25	4	18"	9	4	18"	10	4	18"	14
	7	6	8'-9"	7½"	7	7'-9"	7½"	7	7'-0"	3'-0"	12"	6	6'-0"	2'-9"	12"	24	5	18"	24	4	18"	9	4	18"	10	4	18"	14
	8	6	9'-0"	8"	7	7'-0"	8"	7	7'-6"	3'-6"	12"	6	6'-0"	2'-9"	12"	25	5	16"	24	4	18"	11	4	18"	20	4	18"	14
	9	6	9'-3"	8"	7	7'-9"	7½"	7	7'-6"	3'-6	11½"	7	6'-6"	3'-0"	13"	25	5	18"	24	4	18"	12	4	18"	24	4	18"	14
	10	6	9'-6"	10½"	8	8'-6"	9½"	6	8'-0"	3'-9"	9"	6	7'-0"	3'-3"	10"	25	5	18"	24	4	16"	13	4	18"	28	4	18"	14
	11	6	9'-9"	12"	8	9'-0"	10"	6	8'-3"	3'-9"	8"	6	7'-3"	3'-3"	11"	25	5	18"	24	4	18"	15	4	18"	30	4	18"	14
	12	6	10'-0"	13"	8	9'-3"	10½"	6	8'-6"	3'-9"	8"	6	7'-3"	3'-4"	8"	30	4	14"	25	4	18"	15	4	16"	30	4	18"	14
12	6	6	6'-9"	16"	6	6'-3"	16"	8	9'-6"	8½"	6	6	6'-6"	2'-0"	8"	36	4	12"	32	4	14"	7	4	18"	8	4	18"	16
	8	6	8'-9"	10"	6	8'-3"	10"	7	9'-3"	6½"	7	7	9'-3"	6½"	7	36	4	12"	32	4	14"	11	4	18"	20	4	18"	16
	10	6	9'-3"	12"	6	8'-6"	12"	7	9'-3"	6½"	7	7	9'-3"	6½"	7	36	4	12"	32	4	14"	13	4	18"	26	4	18"	16
	12	6	9'-3"	16"	6	8'-9"	10½"	7	9'-3"	6½"	7	7	9'-3"	6½"	7	36	4	12"	32	4	14"	15	4	18"	30	4	18"	16
14	8	6	9'-3"	13"	6	8'-9"	14"	8	12'-0"	7	8	7	8'-9"	3'-9"	13"	32	5	17"	38	4	14"	11	4	18"	20	4	18"	20
	10	6	9'-3"	12"	6	8'-9"	12"	8	12'-0"	7	8	7	8'-9"	3'-9"	13"	32	5	17"	38	4	14"	13	4	18"	26	4	18"	20
	12	6	9'-3"	12"	6	8'-9"	12"	8	12'-0"	7	8	7	8'-9"	3'-9"	13"	32	5	17"	38	4	14"	15	4	18"	30	4	18"	20
	14	6	9'-3"	10½"	6	8'-9"	10½"	8	12'-0"	7	8	7	8'-9"	3'-9"	13"	32	5	17"	38	4	14"	19	4	18"	38	4	18"	20

* Quantities "at one end" include parapet, cut off and barrel beyond length "L." Wingwall quantities are not included.

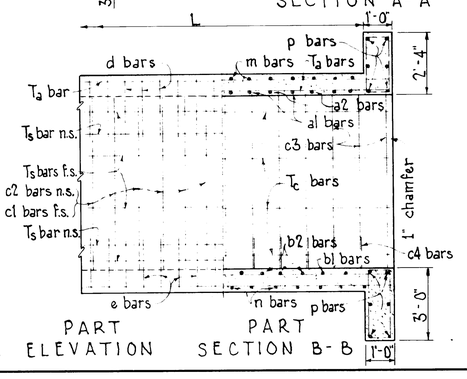


PART SECTION C-C

PART PLAN TOP SLAB

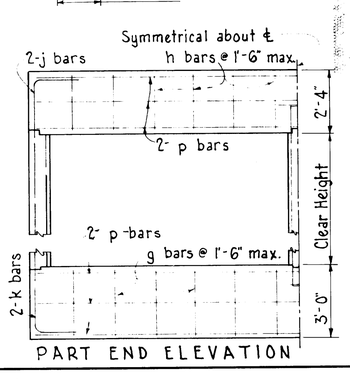


SECTION A-A

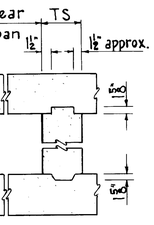


PART ELEVATION

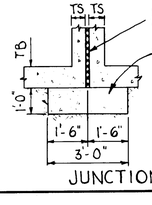
PART SECTION B-B



PART END ELEVATION



DETAIL OF CONSTRUCTION JOINTS



½" Preformed bit. joint filler between adjacent units and extending between barrels, parapets and cutoffs.
Foundation block to be placed in neat excavation, extend for entire length of barrel under joint between units. Place one layer of tar paper over entire top surface of foundation block. Conc. quant.= 0.111 cu. yds. per lin. ft. of block.

JUNCTION DETAIL FOR MULTIPLE UNIT BOXES

R. L. ORD DRAWINGS
DATE 2-26-86

BAR DETAILS

j-bars same size as d bars.
k-bars " " e bars.
R = Place this end in sidewall.

j	H + 1'-9"	H+4'-0" Long
k	4'-6"	6'-9" Long

Place this end in sidewall.
d & e bars
X

R= 3½ bar dia. for 3♦ to 7♦
R= 4½ bar dia for 8♦ to 11♦

c1, c2	H minus 3"
a, b, m & n	Tabulated length
T- bars	L+ (10½" at each end)
p bars	SO minus 3"

12" Rad.
4♦ h 2'-1½" 6'-3" Long
4♦ g 2'-8½" 7'-6" "
c3 & c4 bars
Place this end in centerwall.
R= 3 bar dia.
12 bar dia.

NUMBER OF BARS REQUIRED
a2, b2, c2, d & e bars : 24L ÷ Spacing.
a1, b1, m & n bars : 12L ÷ Spacing
p bars: 12 for cutoff & parapet at each end.
c1, c3 & C4 bars: (24L ÷ Spa) plus 2 at each end.
j & k bars: 4 of each for cutoff and parapet at each end.
Other bars: see table.
L = Length of Barrel in feet.

p- bars

Clear Span	4'	6'	8'	10'	12'	14'
Size	5♦	5♦	6♦	7♦	8♦	9♦

GENERAL NOTES

1. Workmanship and materials shall conform to New Mexico State Highway Commission Specifications.
2. All concrete to be Class "A". Chamfer all exposed edges ¾ inch except as noted.
3. All reinforcing bars shall conform to ASTM Specifications A 615, Grade 40
   All dimensions refer to ℄ of bar.
4. T- bars may be spliced, when necessary, by lapping at least 20 bar diameters. Pay weight for reinforcing steel does not include splices. Cost of splice material to be included in unit price bid for reinforcing steel.
5. Volume of concrete = (L) x (concrete quantity per lin. ft.) plus concrete at ends.
6. Weight of reinforcing steel = (L) x (wt. of reinf. steel/lin. ft.) plus weight at ends.
7. Place T_a- bars on a- bars and T_b- bars under b- bars, spaced as shown in the table. The remaining T_a- and T_b- bars are to be placed adjacent to d-, e-, m- and n- bars, as indicated in Section A-A.
8. Place T_s- bars next to cl bars, spaced as shown in the table. The remaining T_s- bars to be placed in sidewall next to c2, d- & e- bars. When cl bars are not required place all T_s bars next to c2, d- and e- bars.
9. "Cover" is height of fill from top of box to finished grade.
10. Extend Ts bars in sidewalls and Tb bars in bottom a minimum of 1'-8" into vertical wall channel.

DESIGN DATA

Design according to A.A.S.H.O. Specifications, 1957.
Live Load: H20-S16-44 & Interstate Alternate Loading.
Weight of fill on top of box: 84 #/ cu. ft.
Horizontal Earth Pressure = 30#/cu. ft., 2' surcharge.
Design Stresses: fc = 3000 p.s.i., fc = 1200 psi.
fs = 20,000 p.s.i., n = 10.

26 1853 0887

NEW MEXICO
STATE HIGHWAY DEPARTMENT

CONCRETE BOX CULVERT BARRELS
DOUBLE OPENING ~ NORMAL
DESIGN Nº. 1
0 TO 5' COVER

Sheet 1 of 4

1853 SERIAL CB-32

Designed by [illegible] Checked by
Detailed by [illegible] Checked by

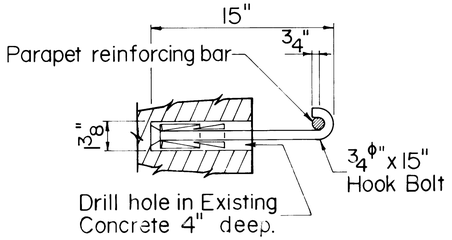
JOB NO. 20596

APPROVED:

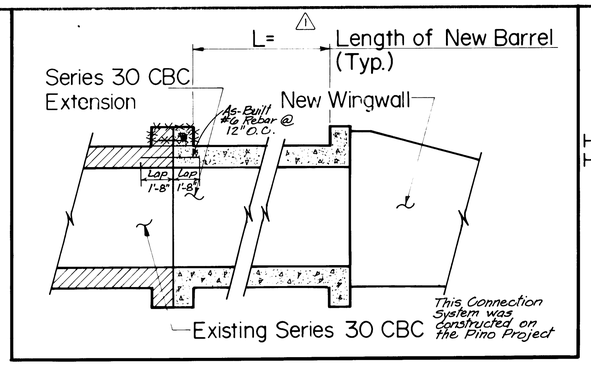
BRIDGE ENGINEER

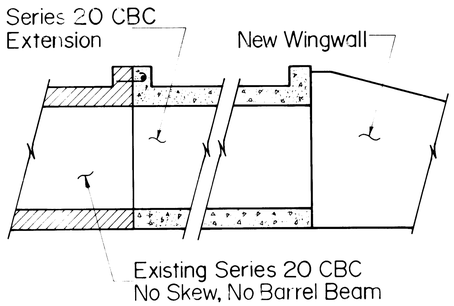
NO. 10 SHEET NO. 16

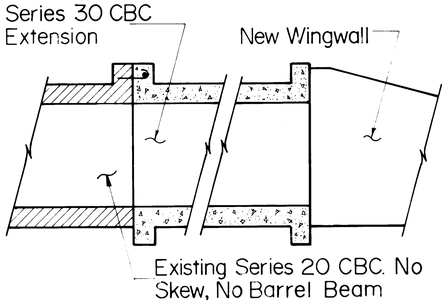
DIETZGEN 199H ABEPROOF

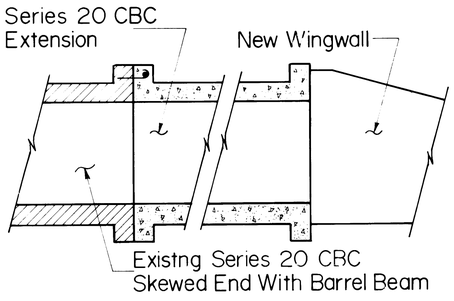


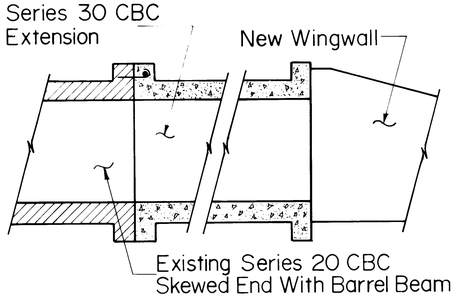
DETAIL OF EXPANSION HOOK BOLT



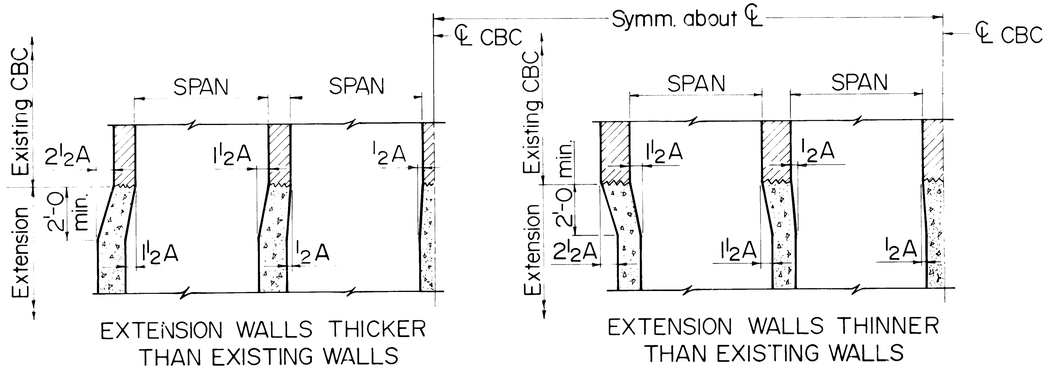




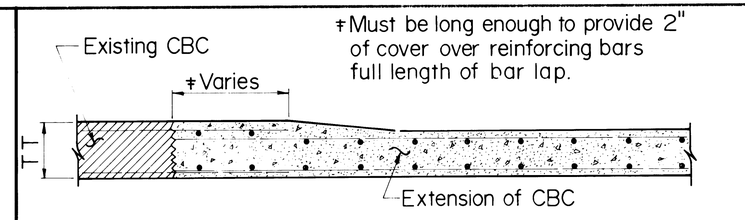




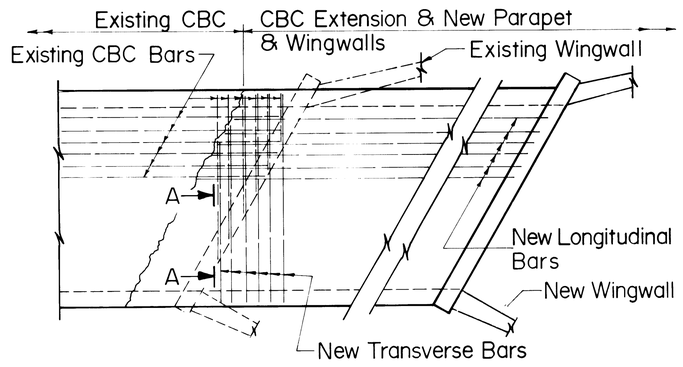
TYPE I CBC EXTENSIONS



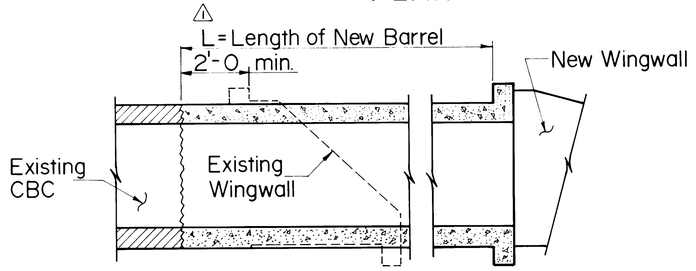
CBC WITH EVEN NUMBER OF OPENINGS



SECTION A-A

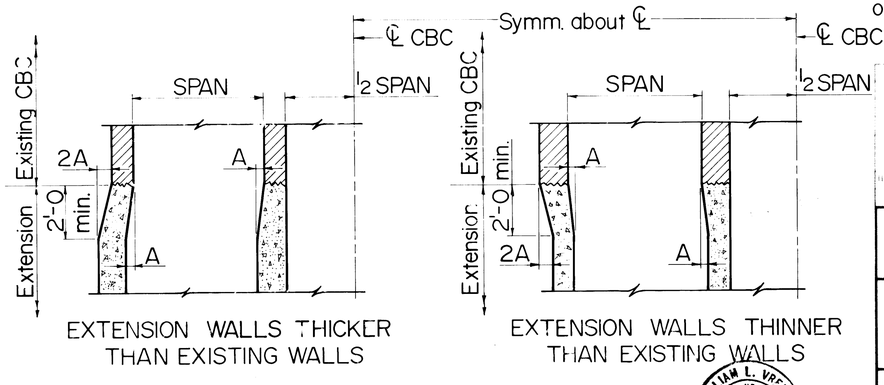


PLAN



PROFILE

TYPE II CBC EXTENSIONS



CBC WITH ODD NUMBER OF OPENINGS

WALL TRANSITION DETAILS

RECORD DRAWINGS
DATE 2-26-86

1853

GENERAL NOTES

1. Series 20 Type I CBC Extension is to be used when the span and rise of the Existing Series 20 CBC does not match any Series 30 CBC shown in the standards.
2. Remove wings and aprons (where present) from the existing CBC. Longitudinal bars exposed by removal of existing concrete are to be cleaned and straightened and bonded into CBC extension.
3. Hook bolts to be installed in existing parapet only of Type I CBC extensions (not in vertical walls or bottom slab) spaced at 1'-0 centers.
4. For Type II CBC Extension remove enough of existing CBC concrete to expose the larger of 2'-0 of longitudinal steel or a minimum length of transverse reinforcing near mid-span equal to the following:
   - #4 bars ~ 12"
   - #5 bars ~ 14"
   - #6 bars ~ 19"
   - #7 bars ~ 26"
   - #8 bars ~ 33"
   - #9 bars ~ 41"
5. There will not be a parapet or a cut off wall at the connection of the existing and the extended Type II CBC; the reinforcing for a parapet and cutoff wall can be omitted at the connection end of CBC. For estimated quantities the extended barrel length will be based on removing a minimum 2'-0 of existing CBC. Pay quantities will be based on the actual removal
6. Cost of Expansion Bolts is incidental to the completion of the work and no measuement or payment will be made therefor.

FHWA Region No.	STATE		SHEET NO.	TOTAL SHEETS
6	NEW MEX.			

2 6 1 8 5 3 1 8 7

REVISIONS	DATE	BY
ADDED "L" DIMENSION	2-12-80	E.R.D.

NEW MEXICO
STATE HIGHWAY DEPARTMENT

CONCRETE BOX CULVERT EXTENSION

DESIGNED BY J.D.G.	APPROVAL	
DRAWN BY A.J.S.	RECOMMENDED: BRIDGE ENGINEER	DATE
CHECKED BY E.R.D.	APPROVED: DIRECTOR PROJ DEVELOPMENT DIVISION	DATE

SERIAL BCE-001-01

JOB NO. 20596

NO. 11 SHEET NO. 16

TANGENT DATA		
NR.	DISTANCE	BEARING
T1	5.00'	N00°10'20"E
T2	48.91'	S89°49'40"E
T3	25.88'	S65°14'09"E
T4	4.96'	N00°34'10"E
T5	10.16'	N09°31'34"W
T6	10.65'	N09°31'34"W
T7	30.67'	S79°25'16"E
T8	5.00'	N02°37'49"E
T9	5.00'	N00°34'10"E
T10	25.00'	N00°34'10"E
T11	35.00'	S89°25'50"E
T12	30.00'	N00°34'10"E
T13	5.66'	S89°25'24"E
T14	23.16'	N00°03'26"W
T15	5.71'	S00°03'57"E
T16	14.14'	N89°56'40"E
T17	38.14'	N76°08'57"E
T18	67.07'	S89°25'50"E
T19	38.16'	S75°47'20"E
T20	10.00'	N00°34'10"E
T21	10.02'	N03°54'42"E
T22	27.01'	S79°25'16"E
T23	63.35'	S89°49'40"E
T24	2.91'	S27°40'23"W
T25	4.64'	S59°57'24"E
T26	17.26'	S00°03'20"E

CURVE DATA					
NR.	RADIUS	ARC	CHORD	DELTA	TANGENT
C1	1235.35'	137.72'	137.65'	06°23'15"	68.93'
C2	640.00'	196.67'	195.89'	17°36'24"	99.11'
C3	1160.00'	94.47'	94.44'	04°39'58"	47.26'
C4	560.00'	172.08'	171.41'	17°36'24"	86.73'
C5	1160.00'	111.93'	111.88'	05°31'42"	56.01'
C6	565.00'	78.38'	78.32'	07°56'55"	39.25'
C7	570.00'	20.50'	20.50'	02°03'39"	10.25'
C8	1225.00'	128.07'	128.02'	05°59'25"	64.10'
C9	625.00'	112.30'	112.15'	10°17'41"	56.30'
C10	1225.00'	64.18'	64.17'	03°00'07"	32.10'
C11	625.00'	79.76'	79.71'	07°18'42"	39.93'
C12	1225.00'	63.89'	63.89'	02°59'18"	31.95'
C13	1155.00'	127.77'	127.70'	06°20'17"	63.95'
C14	555.00'	169.21'	168.55'	17°28'05"	85.26'
C15	575.00'	175.95'	175.26'	17°31'57"	88.67'
C16	1230.35'	137.16'	137.09'	06°23'15"	68.65'
C17	635.00'	195.13'	194.36'	17°36'24"	98.34'
C18	1165.00'	121.80'	121.75'	05°59'25"	60.96'
C19	565.00'	173.62'	172.94'	17°36'24"	87.50'
C20	575.00'	100.45'	100.32'	10°00'34"	50.35'
C21	192.00'	193.77'	185.65'	57°49'21"	106.04'

KEY

- Permanent Drainage Easement
- Temporary Drainage Easement
- Permanent Access Easement
- Temporary Construction & Slope Easement

SURVEY INFORMATION

NO	BY	DATE

REFERENCES

MAP NO
EST NO
W.O NO

BENCH MARKS

1-25-14 – Brass Cap is located N.E. of Intersection of the I-25 East Frontage Road and the NMSHD District № 3 Offices driveway. Elev. 5196.899

AS-BUILT INFORMATION

CONTRACTOR K.N.C. Inc.
WORK STARTED BY Bohannan-Huston Inc. DATE 6/86
WORK COMPLETED BY Globe Gunite DATE 9/86
ACCEPTANCE BY Bohannan-Huston Inc. DATE 2/87
FIELD VERIFICATION BY Bohannan-Huston Inc. DATE 2/87
DRAWINGS CORRECTED BY Bohannan-Huston Inc. DATE 2/87

MICRO-FILM INFORMATION

RECORDED BY
DATE
NO

REVISIONS			
NO.	DATE	REMARKS	BY

DESIGNED BY
DRAWN BY NAW DATE 10-84
CHECKED BY HCS DATE 10-84

26 1853.1387

PREPARED UNDER THE DIRECTION OF
Howard C. Stoe
10-18-84

APPROVED FOR CONSTRUCTION
CITY ENGINEER DATE

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

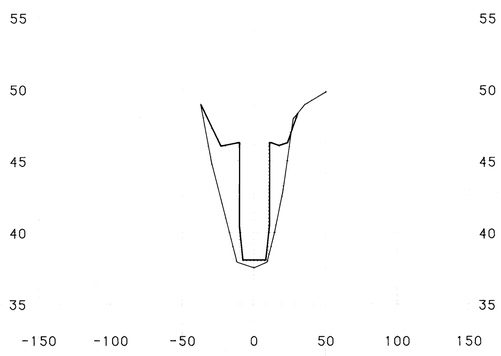
TITLE
SURVEY
RIGHT OF WAY MAP
PINO ARROYO IMPROVEMENTS

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
C.E. Thompson		12/27/84	WATER RESOURCES	William Baker	12/28/84
CCS-D		12/28/84	TRAFFIC	NA DWH	12/28/84
MCE Hydrology		12/28/84	WATER RESOURCES	William Baker	12/28/84

JOB NO. 20596
SCALE: 1" = 50'
DRAWING NO. 1853
SHEET 13 OF 16

William P. Trecke
2-26-86

BRUNING 44 1/2 5983



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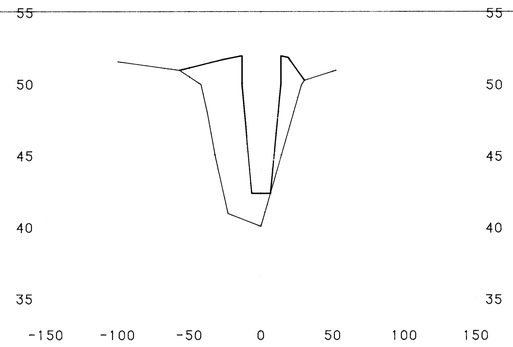

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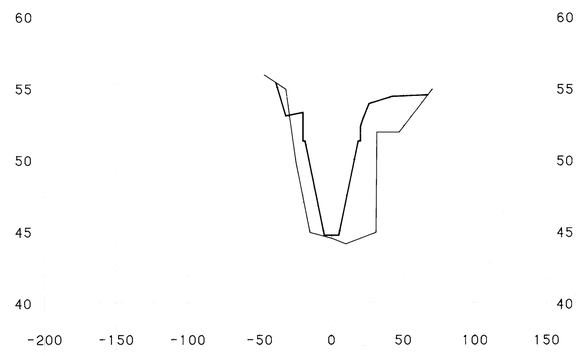

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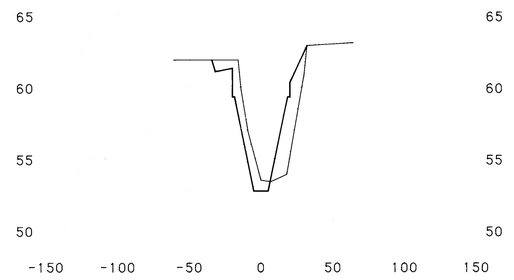

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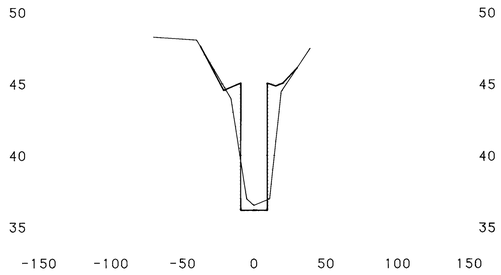

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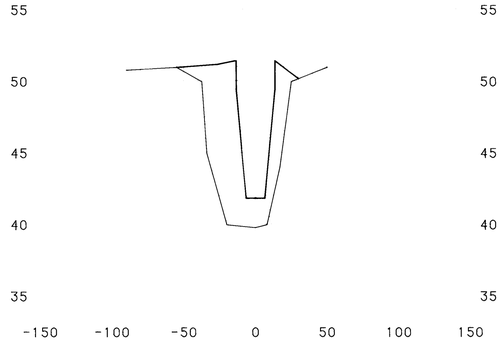

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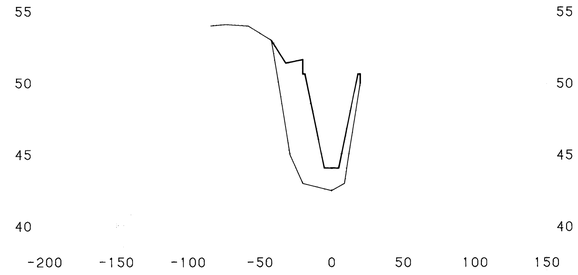

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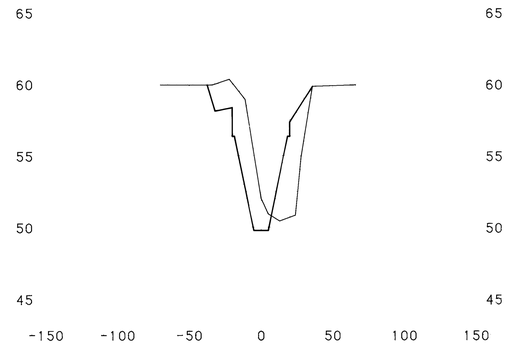

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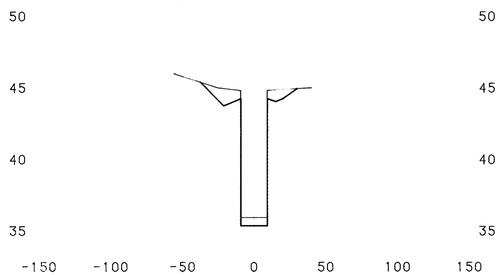

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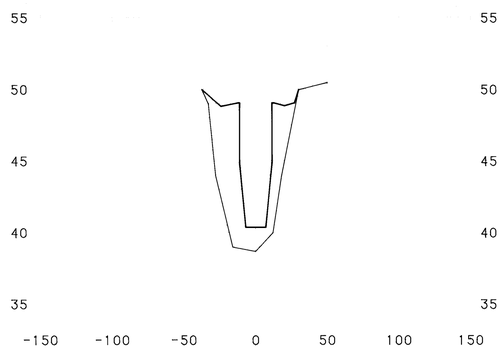

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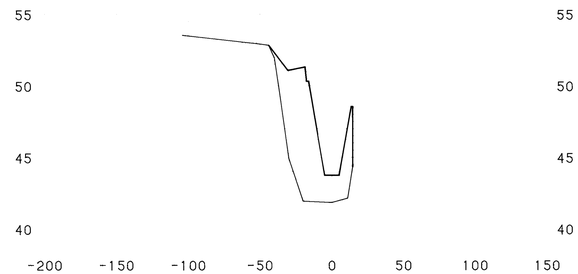

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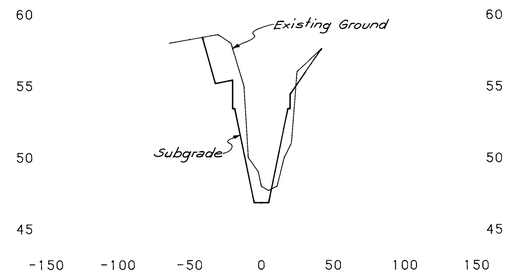

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FINAL SURVEY — SURVEYED / PLOTTED / MAPPED / AREAS / AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — SURVEYED / PLOTTED / MAPPED / AREAS / AREAS CHECKED — BY — DATE

PLATE 3 CROSS SECTION - DOTTED
CHARLES BRUNING COMPANY
MADE IN U.S.A.

RECOMMENDED: 2-26-86

Howard C. Ste 10-10-89

1853

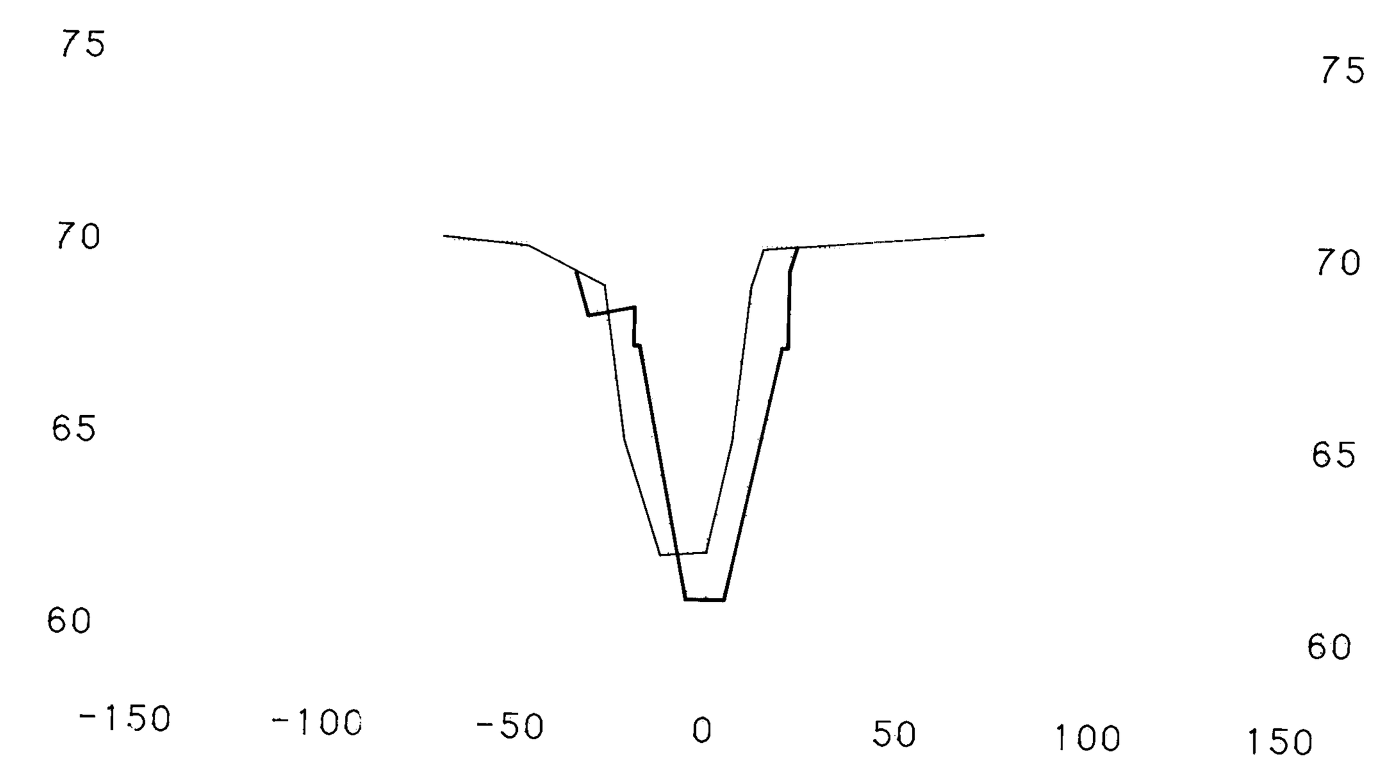
STA. 99+75.00 to STA. 106+00.00

PINO ARROYO

PINO ARROYO IMPROVEMENTS

JOB NO. 20596

Sheet 14 of 16



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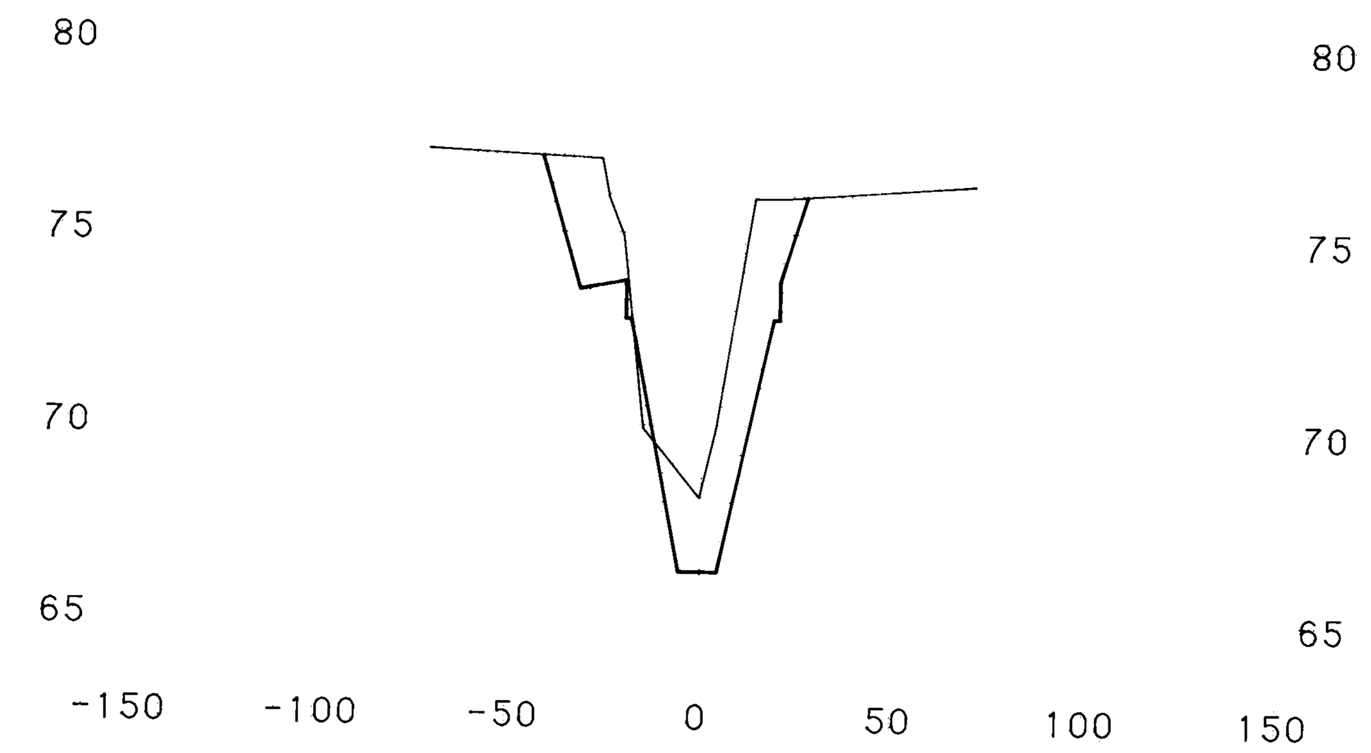

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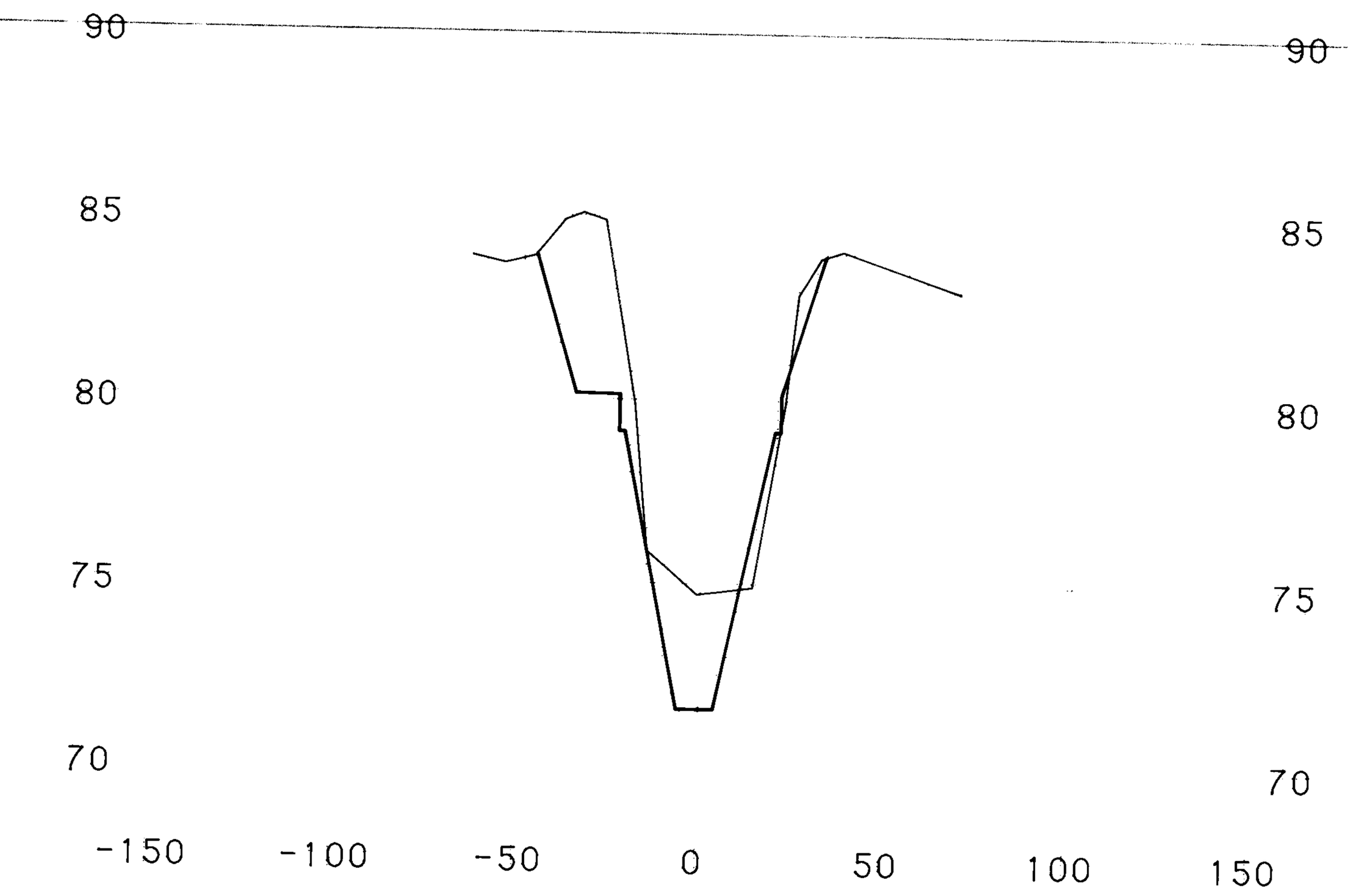

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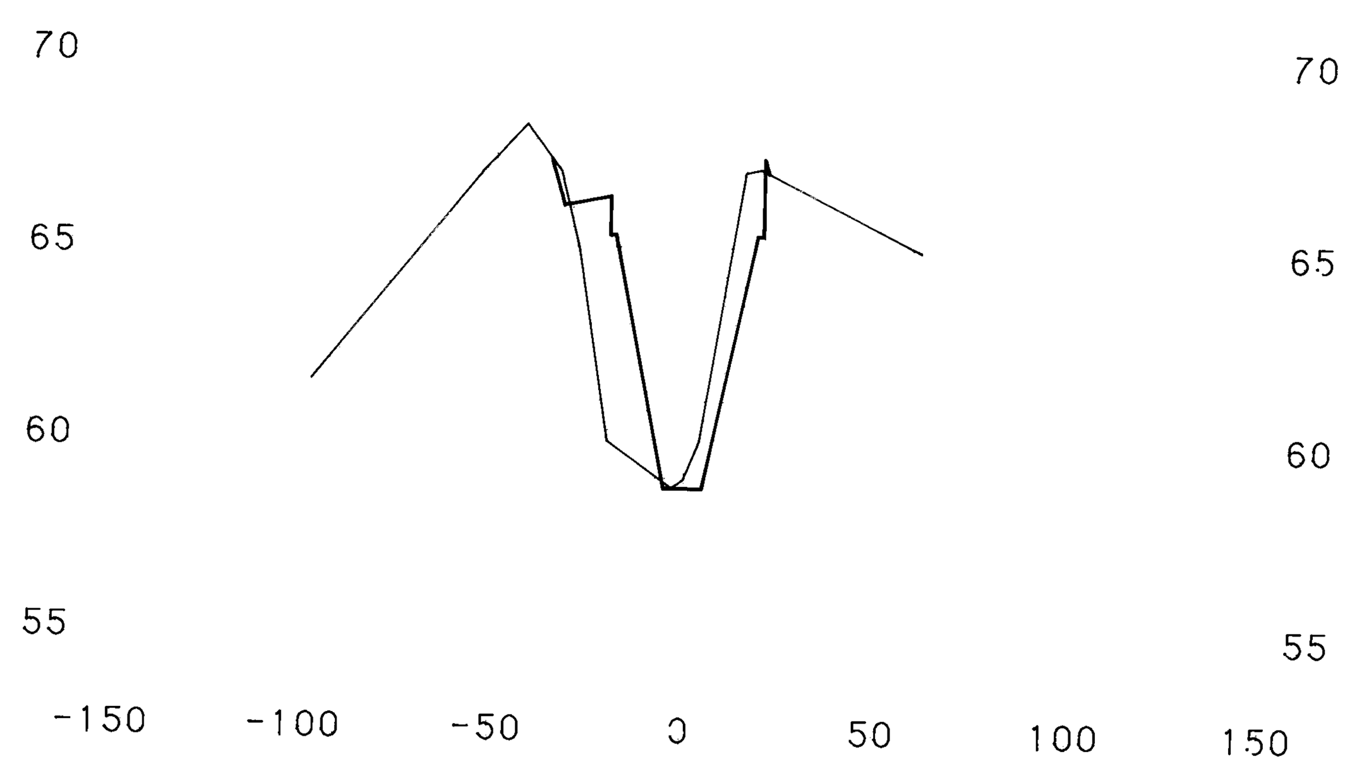

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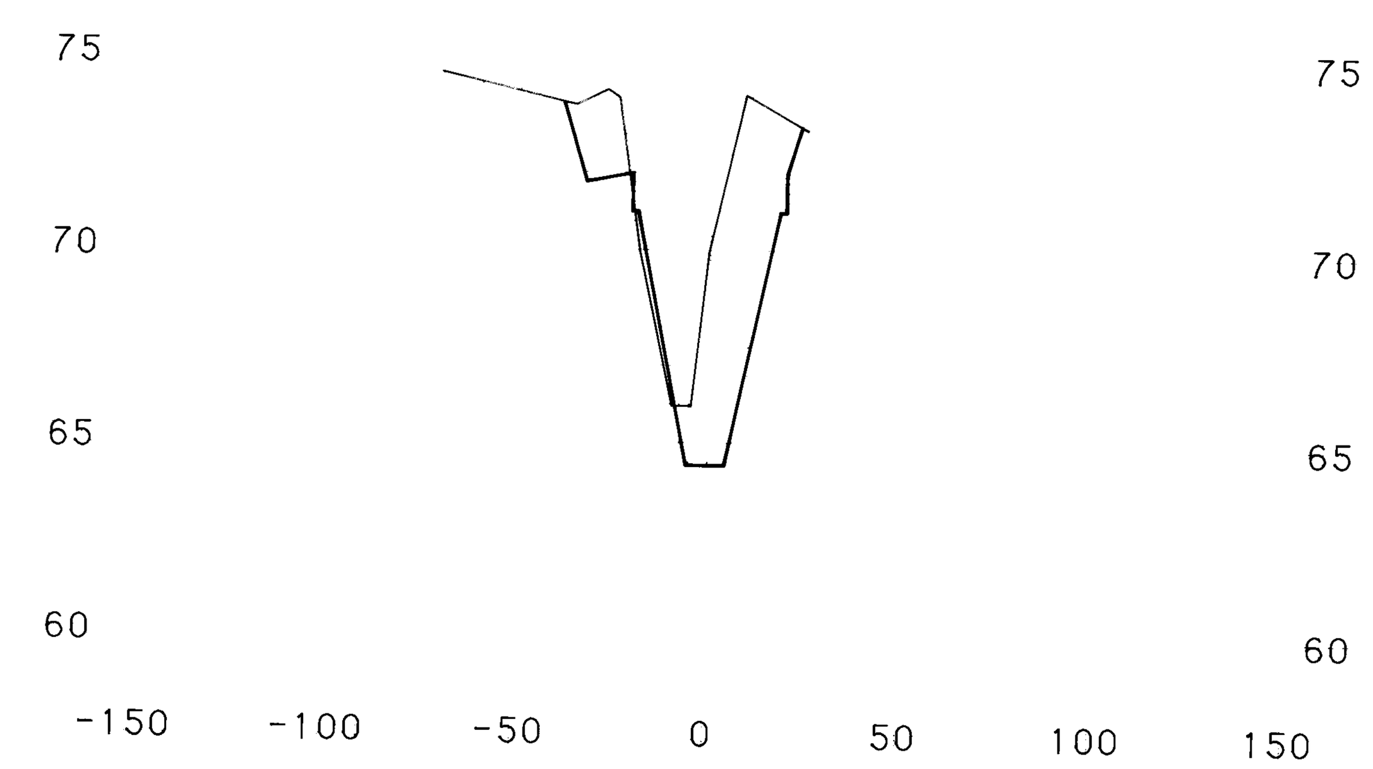

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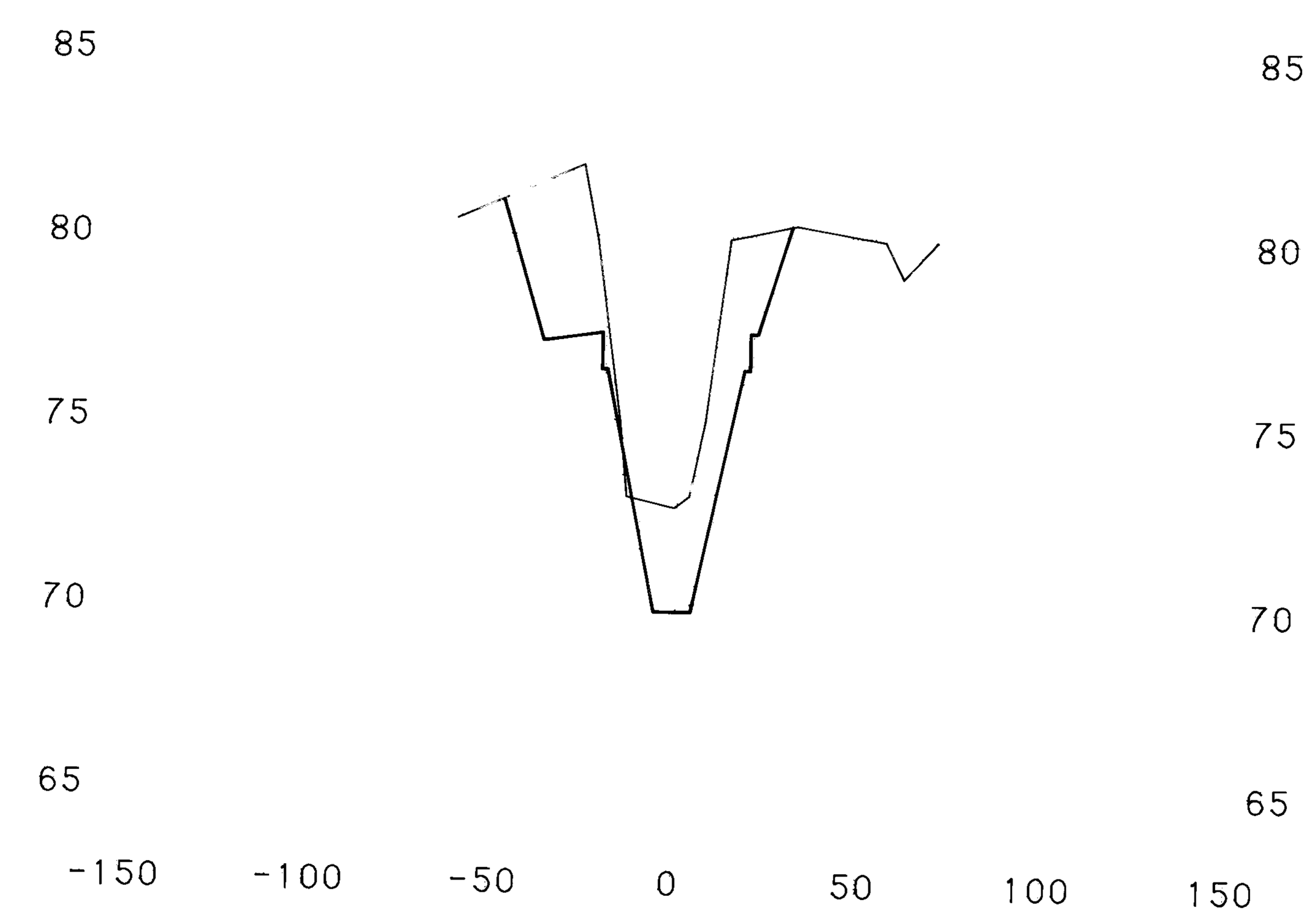

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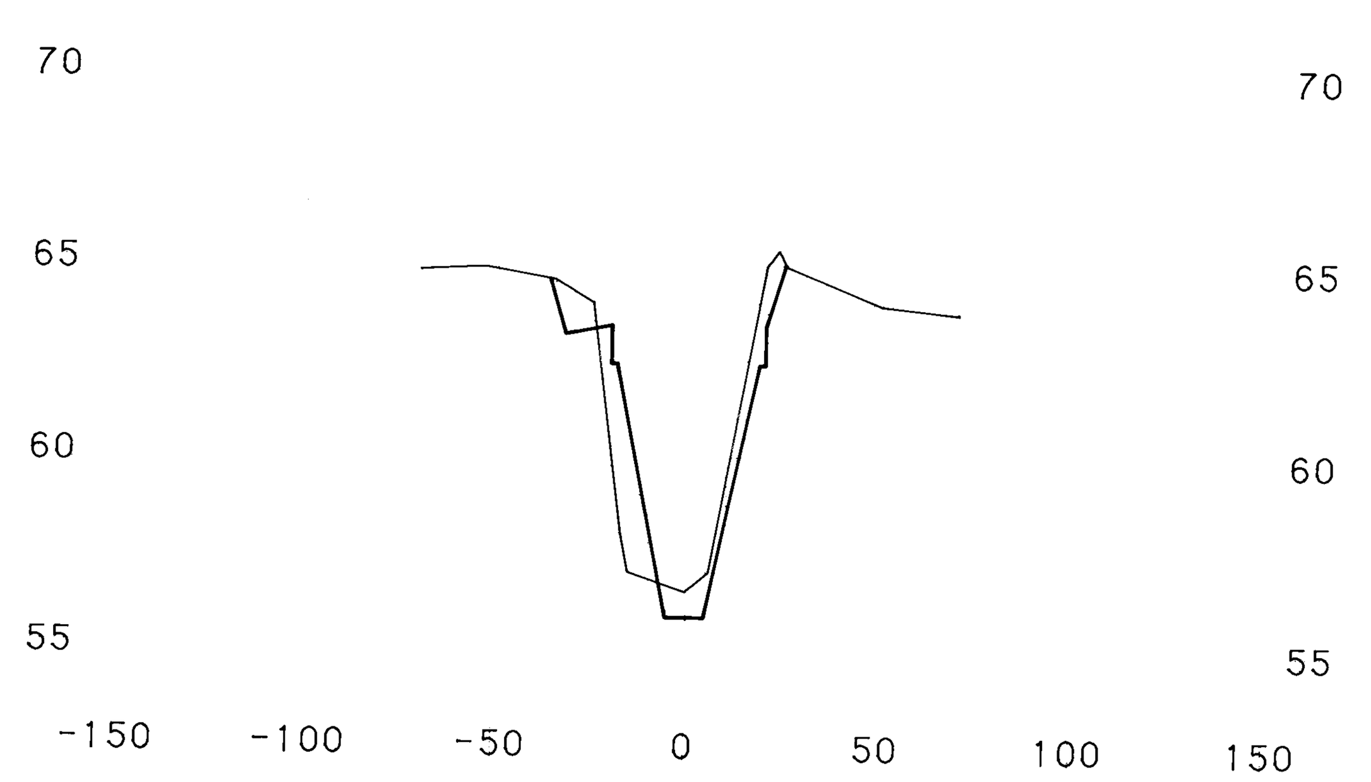

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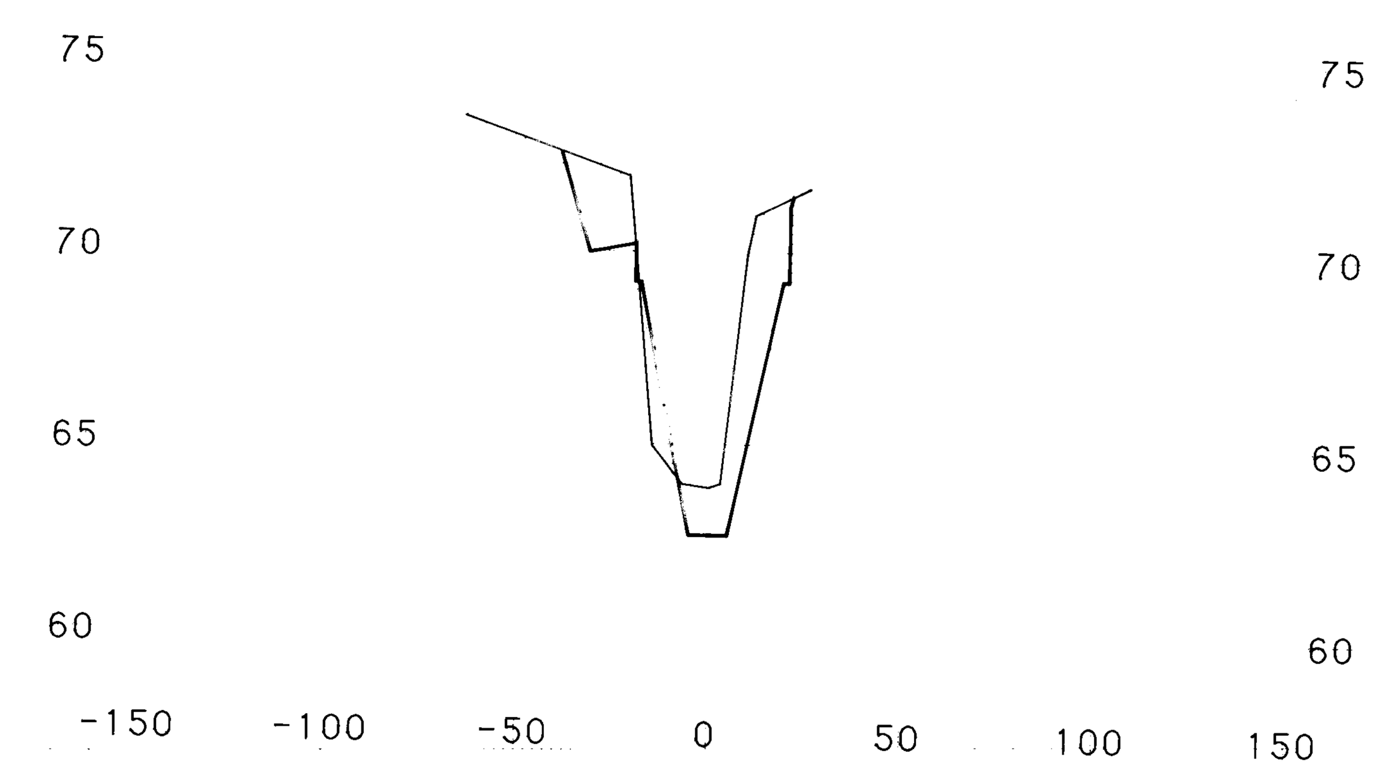

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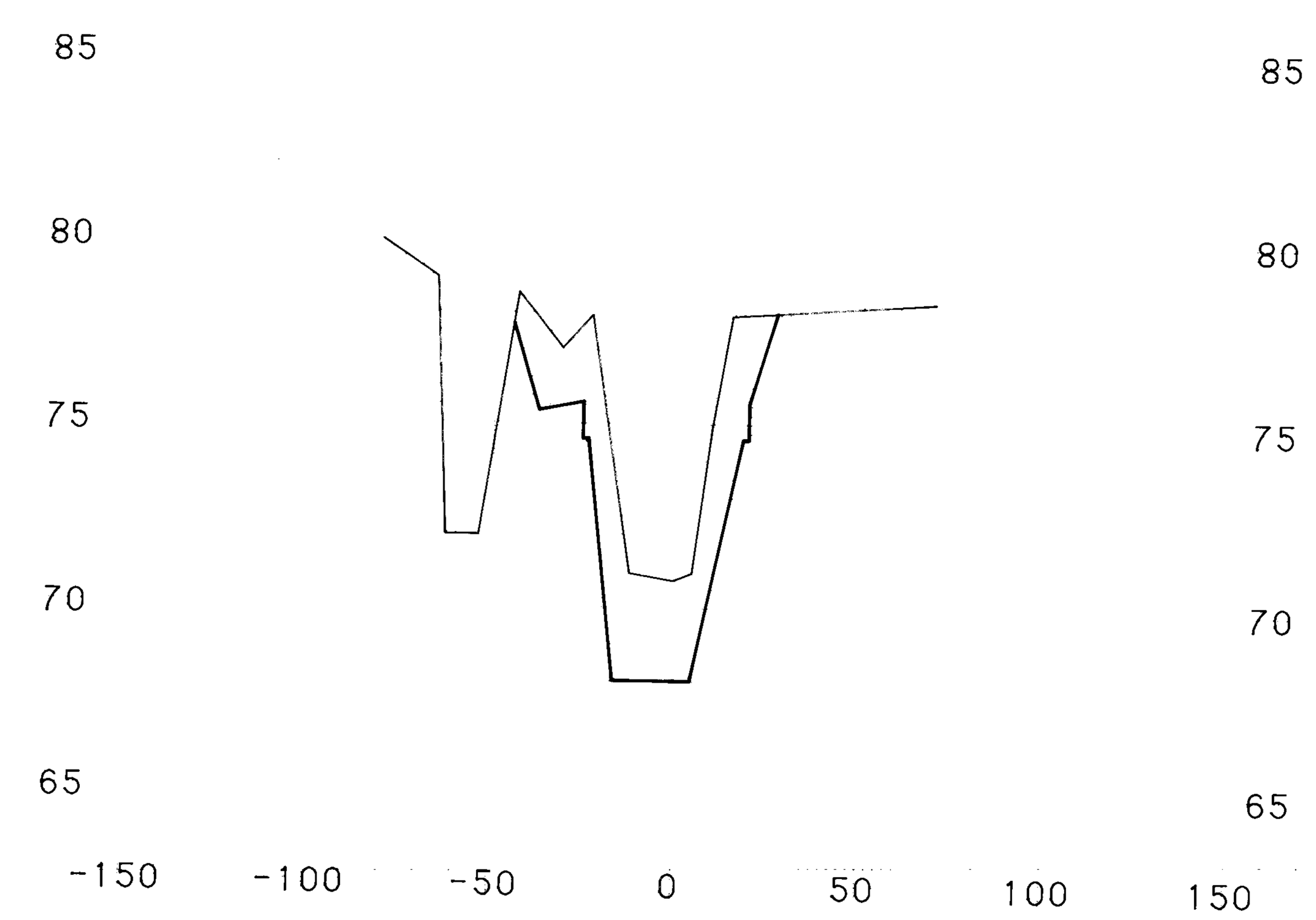

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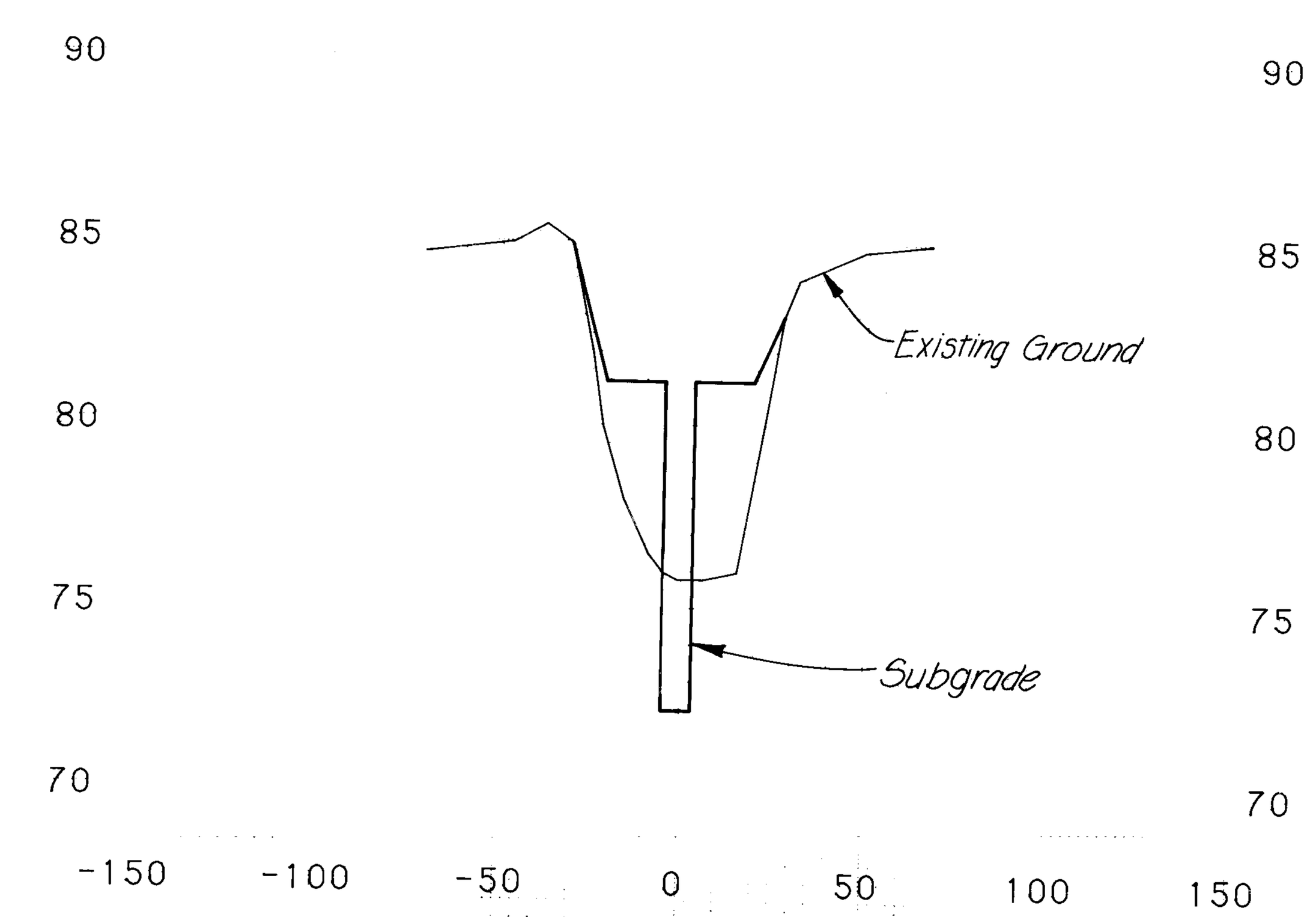

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FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED

ORIGINAL SURVEY

1853

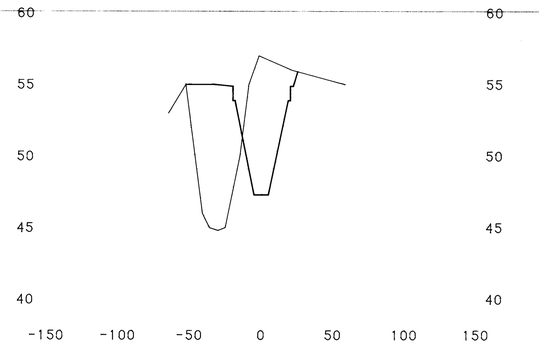
STA. 107+00.00 to STA. 115+30.47

PINO ARROYO

PINO ARROYO IMPROVEMENTS

JOB NO. 20596

Sheet 15 of 16



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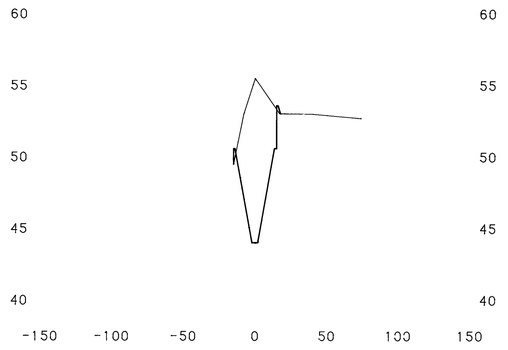

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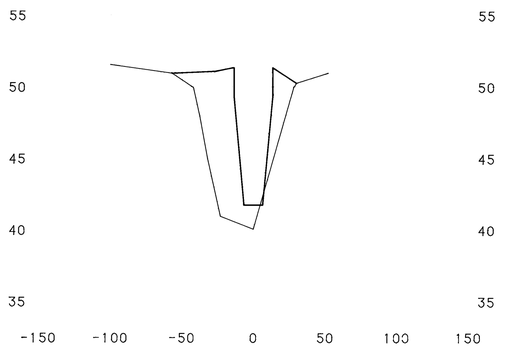

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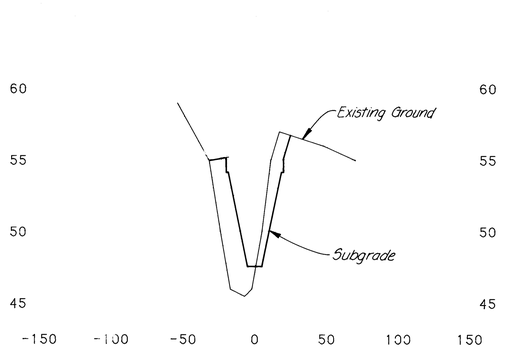

STATION 2+57.92

26-1853-689

DATE 2-26-86

Howard C. Stu
10-18-89

STA. 0+00.00 to STA. 2+57.92
BETA ARROYO
PINO ARROYO IMPROVEMENTS
JOB NO. 20596

1853

Sheet 16 of 16

PLATE 3 CROSS SECTION - DOTTED
CHARLES BRUNING COMPANY
MADE IN U.S.A.