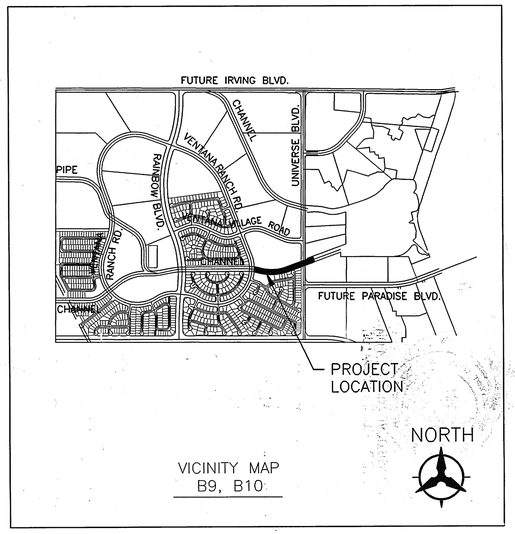
ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

RECORD DRAWINGS 2/00

CONSTRUCTION PLANS FOR VENTANA RANCH NORTH BRANCH PIEDRAS MARCADAS CHANNEL PHASE 3

L.V.D.F. NO. 1 TO VENTANA RANCH RD.



VICINITY MAP
B9, B10

REFERENCES :

1. SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL VOLUME 2, DESIGN CRITERIA FOR THE CITY OF ALBUQUERQUE, NEW MEXICO, JANUARY 1993.
2. "PIEDRAS MARCADAS DRAINAGE MANAGEMENT PLAN", MOLZEN-CORBIN & ASSOCIATES, MAY 1993
3. "LAS VENTANAS SUBDIVISION DRAINAGE MASTER PLAN", BOHANNAN HUSTON INC., APRIL 1995, UPDATED OCTOBER 1995
4. "DESIGN ANALYSIS REPORT FOR VENTANA RANCH SUBDIVISION DRAINAGE FACILITIES", BOHANNON HUSTON INC., OCTOBER 1995

INDEX

SHEET NUMBER	DESCRIPTION
1	TITLE SHEET
2	PLAN & PROFILE STA. 7+56 TO STA. 18+00
3	PLAN & PROFILE STA. 18+00 TO STA. 20+53.71
4	TYPICAL CHANNEL SECTIONS
5	RUN DOWN DETAILS
6	PIPE PENETRATION DETAILS
7	SERIAL CB-33
8	SERIAL CB-33
9	SERIAL CB-33-15
10	STRUCTURE LOCATION PLAN
11	CHANNEL CROSS SECTIONS
12	CHANNEL CROSS SECTIONS
13	CHANNEL CROSS SECTIONS

REV.	SHEETS
1	2,3,4,11,12 & 13

John Kelly 4/29/99
JOHN KELLY P.E.
CHIEF ENGINEER

APPROVAL OF AS BUILT DRAWINGS
CHIEF CONSTRUCTION ENGINEER
Peter Chang
DATE 4/13/00

APPROVED FOR CONSTRUCTION

Frank H. Martinez 11/12/98
FRANK H. MARTINEZ — DATE
EXECUTIVE DIRECTOR

RECOMMENDED:
John P. Kelly 11-9-98
JOHN KELLY P.E. — DATE
CHIEF ENGINEER

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

REV.	SHEETS	CITY ENGINEER	DATE	USER DEPARTMENT	DATE	USER DEPARTMENT	DATE

ENGINEERS STAMP & SIGNATURE	APPROVALS	ENGINEER	DATE
DANIEL J. GROCHOWSKI NEW MEXICO 8766 REGISTERED PROFESSIONAL ENGINEER 9/17/98	DRC Chairman	Billy J. Gordon	5-13-99
	Transportation	[illegible]	5-13-99
	Water/Wastewater	R.W. Lane	5-13-99
	Hydrology	[illegible]	5-13-99
	Parks		
	Const. Mngmt.		
	Const. Const.	[illegible]	5-18-99

APPROVED FOR CONSTRUCTION
[illegible] 5-18-99
City Engineer — Date

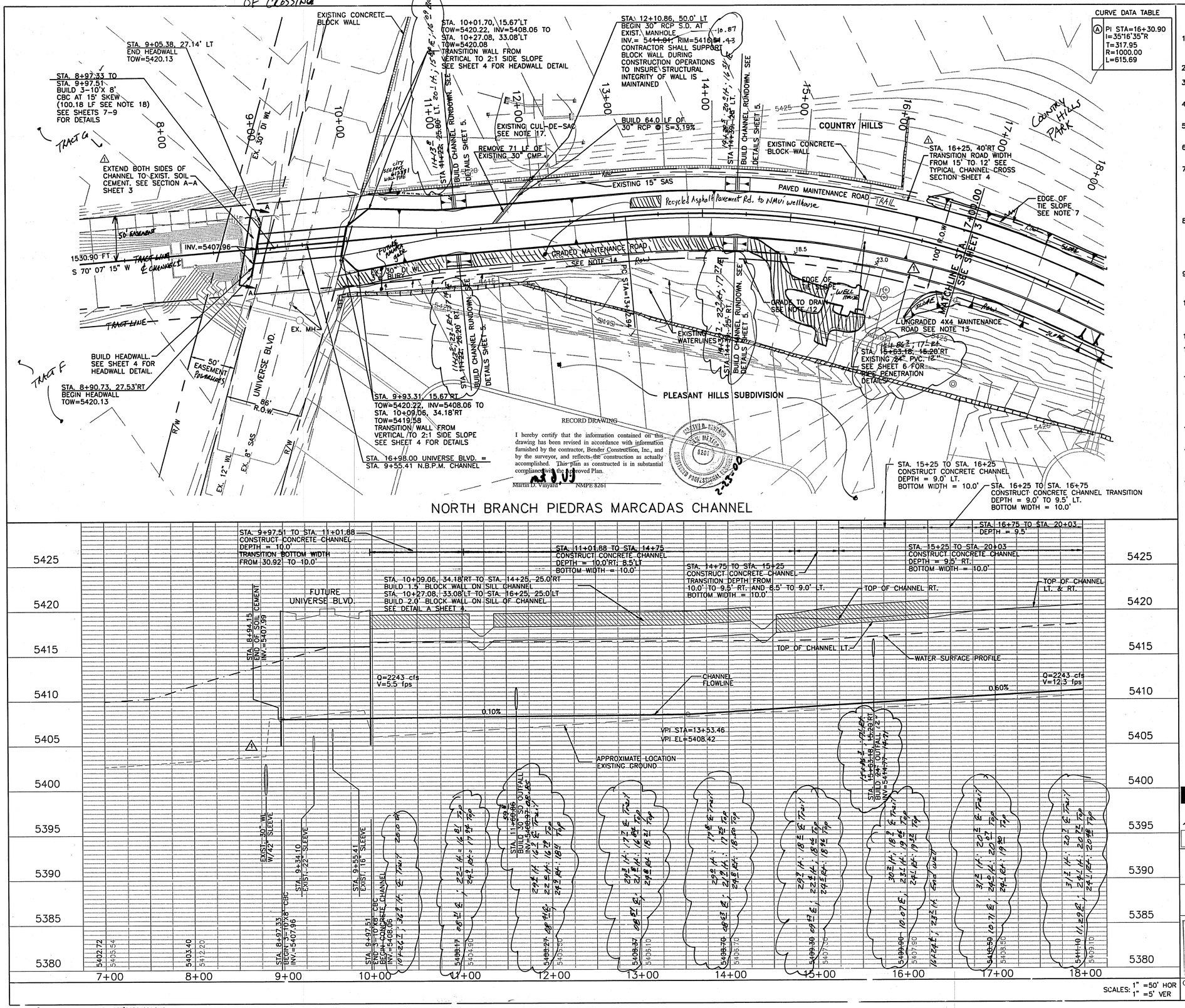
CITY PROJECT NO. 5978.81

SHEET 1 OF 13

Bohannan ▲ Huston
Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

USERNAME:BHI-MAIN:[95285.HYDRO.DESIGN.PHASE3]
FILENAME: COVER.DWG

SEE SHT 10 FOR BLOW-UP OF CROSSING



RECORD DRAWING

I hereby certify that the information contained on this drawing has been revised in accordance with information furnished by the contractor, Bender Construction, Inc., and by the surveyor, and reflects the construction as actually accomplished. This plan as constructed is in substantial compliance with the Approved Plan.

Martin D. Vinyard NMPE 8261

2-23-00

CURVE DATA TABLE

(A)	PI STA=16+30.90 I=35°16'35"R T=317.95 R=1000.00 L=615.69

NOTES:

1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
2. SEE SHEET 4 FOR TYPICAL CHANNEL SECTIONS.
3. CENTERLINE DATA SHOWN IS FOR CENTERLINE OF R.O.W..
4. SEE SHEET 5 FOR TYPICAL CHANNEL RUNDOWN DETAILS.
5. TOP OF CHANNEL IS FROM CENTERLINE OF CHANNEL ELEVATION.
6. BEARINGS AND DISTANCES ARE FROM POINT OF TANGENCY TO POINT OF CURVATURE.
7. EXISTING CONTOURS SHOWN COMPILED FROM 1994 DATA AND FIELD CONDITIONS VARY. THE CHANNEL WAS EXCAVATED AND BASALT ROCK REMOVED DURING PHASE 2 OF THIS PROJECT. EXISTING GROUND IN EXCAVATED CHANNEL VARIES FROM BASALT ROCK TO EARTH.
8. STA. 8+97.33 TO STA. 9+97.51 (INCLUDING CONCRETE BOX CULVERT AND TRANSITION SECTIONS) SECTIONS SHALL BE CONSTRUCTED UNDER CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 (WITH CURRENT UPDATES). SEE SHEETS 4,7-9.
9. END MAINTENANCE ROAD AT RIGHT OF WAY. DRIVE PAD AND UNIVERSE BLVD. TO BE BUILT WITH FUTURE PROJECT.
10. STATIONING FOR PIPE PENETRATIONS IS ALONG TANGENT TO TOE OF CHANNEL SLOPE. SEE SHEET 6 FOR DETAIL.
11. TOW - TOP OF WALL.
12. CONTRACTOR SHALL GRADE AREA EAST OF THE NMUI WELL HOUSE TO DRAIN TO THE CHANNEL RUNDOWN.
13. FROM APPROX. STA. 16+00 TO STA. 20+54 (EOP) BUILD 12 FT. UNGRADED MAINTENANCE ROAD ON NORTH SIDE OF CHANNEL. TIE SLOPE SHALL BE 2:1 IN ROCK AND 3:1 IN SOIL. ACCESS ROAD SHALL BE 4X4 ACCESSIBLE. SEE SHEET 12 AND 13 FOR CROSS SECTIONS.
14. FROM APPROX. STA. 9+90 TO STA. 16+00 BUILD 15 FT. GRADED MAINTENANCE ROAD.
15. BASALT ROCK WAS EXCAVATED ALONG ENTIRE LENGTH OF CHANNEL DURING PHASE II OF THIS PROJECT. CONTRACTOR SHALL REMOVE AND DISPOSE THIS BASALT ROCK.
16. ADDITIONAL ROCK EXCAVATION WILL BE PAID UNDER THE BID ITEM "ROCK EXCAVATION".
17. REMOVE AND REPLACE EXISTING ASPHALT PAVEMENT TRAIL FROM APPROXIMATELY STA. 10+00 TO STA. 12+25. THE NEW PAVED MAINTENANCE ROAD WILL TIE INTO THE EXISTING TRAIL AT THE CUL-DE-SAC AT STA. 12+25.
18. LENGTH OF CONCRETE BOX CULVERT(CBC) IS FROM FACE OF HEADWALL TO FACE OF HEADWALL.

* SEE SPECS FOR MEASUREMENT AND PAYMENT

AS-BUILT INFORMATION

CONTRACTOR	Sile Blader	DATE 11-00
WORK STAKED BY	Walker Surveying	DATE 99-00
INSPECTOR'S FIELD VERIFICATION BY	Vinyard	DATE 99-00
DRAWINGS CORRECTED BY	Vinyard	DATE 99-00

BENCH MARKS

AGS BRASS TABLET STAMPED "1-B10" (NAD 1927) N.M. STATE PLANE COORDINATES (CENTER ZONE) X = 357,526.69 Y = 1,525,168.35 $\Delta\alpha$= -00°16'30" NGVD 1929 ELEVATION = 5419.522	STATION IS LOCATED 0.90 MILES NW FROM THE CORNER OF PARADISE BLVD. AND PARK LANE TO THE CROSSING OF A PLAINS ELECT. CO-OP POWERLINE. THE STATION IS 225 FT. SOUTH OF THIS POINT BETWEEN THE POLES OF A PYLON. STA. MK. IS SET IN TOP OF A CONC. POST FLUSH W/ GROUND.

SURVEY INFORMATION

NO.	BY	DATE
"A" AND "B" LOCATION ONLY	CONTRACTOR	

FIELD NOTES

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
1	4/21/99	CROSS SECTIONS REVISIONS	DEB

REVISIONS

DESIGN

DESIGNED BY	D.E.B.	DATE 8-98
DRAWN BY	TONYM/SFG	DATE 8-98
CHECKED BY	D.J.G.	DATE 8-98

Bohannan ▲ Huston

Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

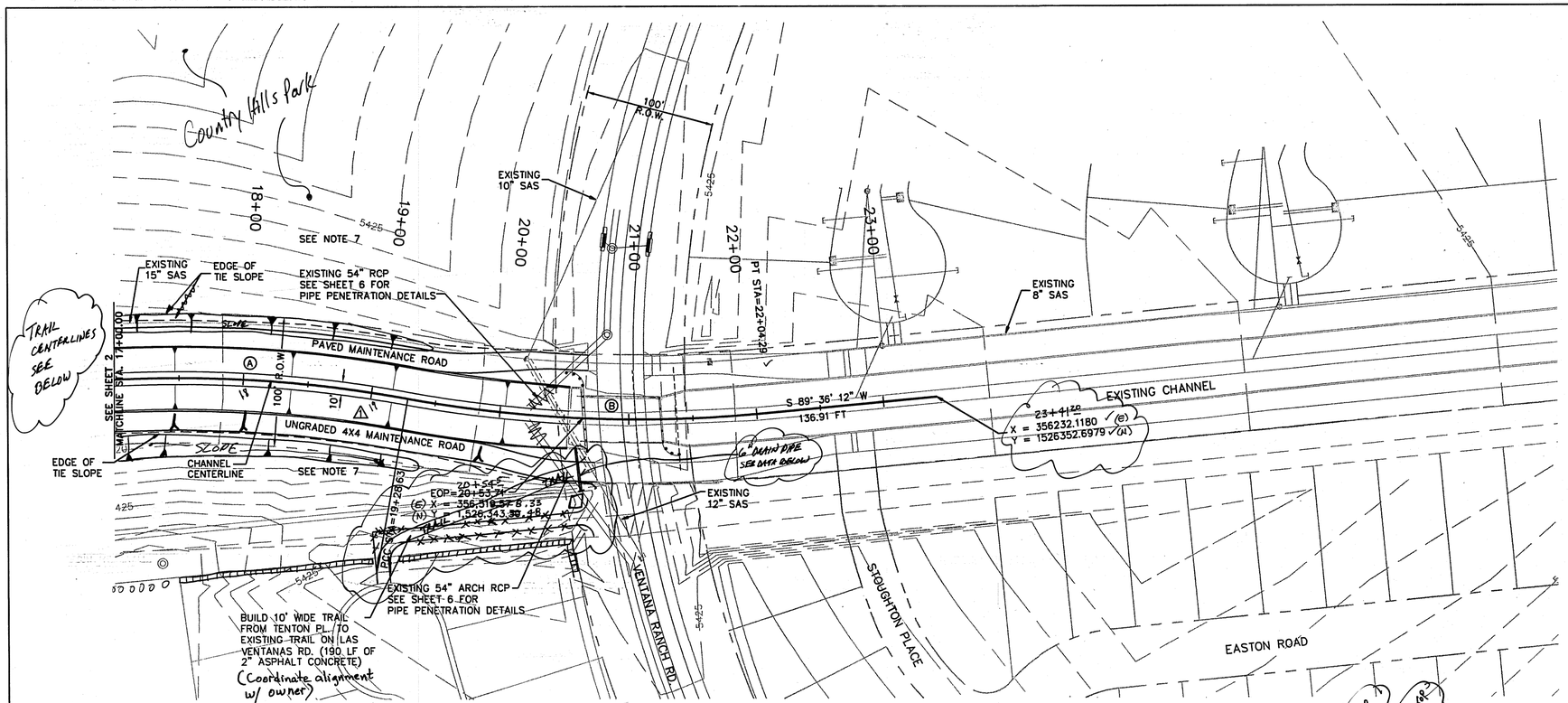
NORTH BRANCH PIEDRAS MARCADAS CHANNEL
PLAN & PROFILE STA. 7+56 TO STA 18+00

DESIGN REVIEW COMMITTEE | CITY ENGINEER APPROVAL | LAST DESIGN UPDATE | MO./DAY/YR. | MO./DAY/YR.

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
5978.81	B9,R10	2	13

BHI-MAIN:[H95285.HYDRO.DESIGN.PHASE3]RCP01001.DWG

COPYRIGHT BOHANNAN-HUSTON, INC.
DATE:03/31/98



NORTH BRANCH PIEDRAS MARCADAS CHANNEL

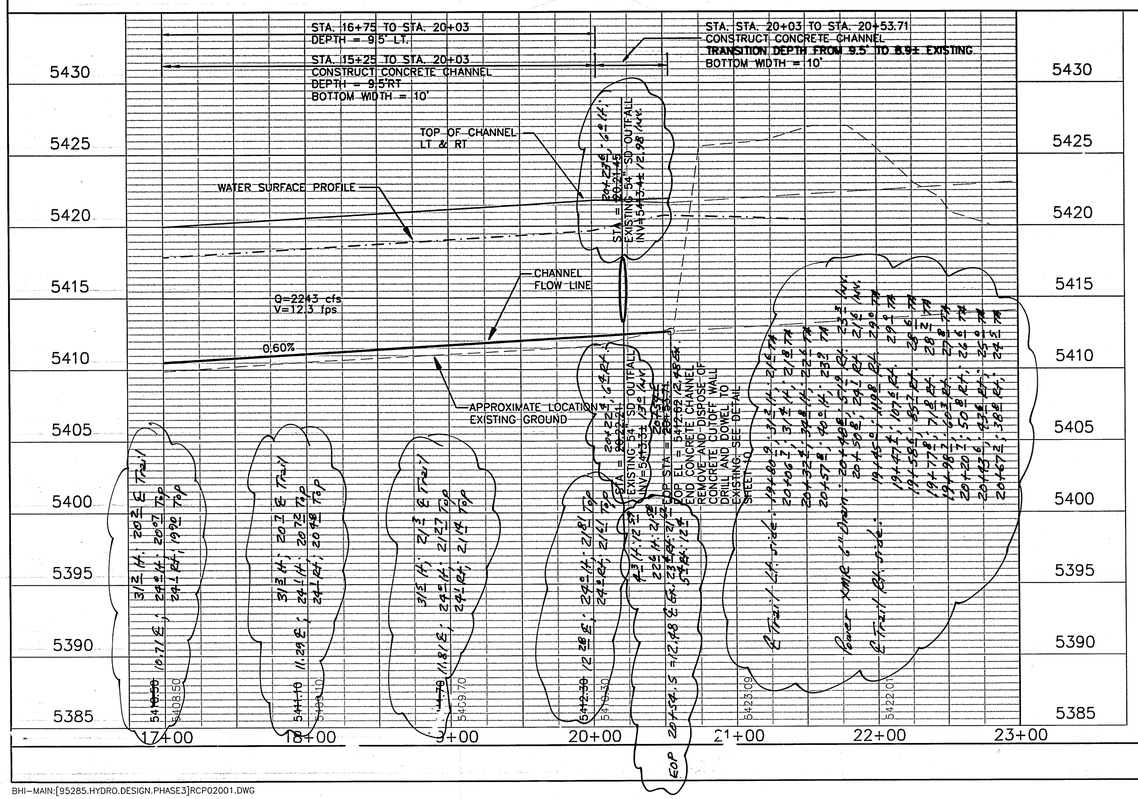
CURVE DATA TABLE

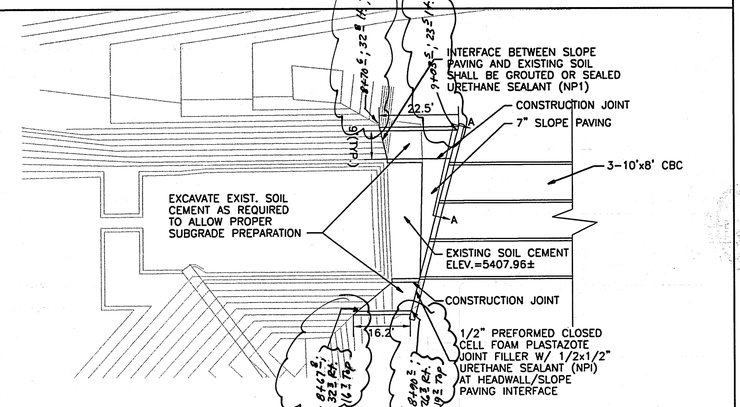
(A)	PI STA=16+30.90 I= 35°16'35"L T=317.95 R=1000.00 L=615.69
(B)	PI STA=20+67.34 I= 15°47'38"L T=138.71 R=1000.00 L=275.66

NOTES:

1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
2. SEE SHEET 4 FOR TYPICAL CHANNEL SECTIONS.
3. CENTERLINE DATA SHOWN IS FOR CENTERLINE OF R.O.W..
4. SEE SHEET 5 FOR TYPICAL CHANNEL RUNDOWN DETAILS.
5. TOP OF CHANNEL IS FROM CENTERLINE OF CHANNEL ELEVATION.
6. BEARINGS AND DISTANCES ARE FROM POINT OF TANGENCY TO POINT OF CURVATURE.
7. EXISTING CONTOURS SHOWN COMPILED FROM 1994 DATA AND FIELD CONDITIONS VARY. THE CHANNEL WAS EXCAVATED AND BASALT ROCK REMOVED DURING PHASE 2 OF THIS PROJECT. EXISTING GROUND IN EXCAVATED CHANNEL VARIES FROM BASALT ROCK TO EARTH.
8. STATIONING FOR PIPE PENETRATIONS IS ALONG TANGENT TO TOE OF CHANNEL SLOPE. SEE SHEET 6 FOR DETAIL.
9. FROM APPROX. STA. 16+00 TO STA. 20+54 (EOP) BUILD 12 FT. UNGRADED MAINTENANCE ROAD ON NORTH SIDE OF CHANNEL. TIE SLOPE SHALL BE 2:1 IN ROCK AND 3:1 IN SOIL. ACCESS ROAD SHALL BE 4X4 ACCESSIBLE. SEE SHEET 12 AND 13 FOR CROSS SECTIONS.
10. BASALT ROCK WAS EXCAVATED ALONG ENTIRE LENGTH OF CHANNEL DURING PHASE II OF THIS PROJECT. CONTRACTOR SHALL REMOVE AND DISPOSE THIS BASALT ROCK.
11. ADDITIONAL ROCK EXCAVATION WILL BE PAID UNDER THE BID ITEM "ROCK EXCAVATION".

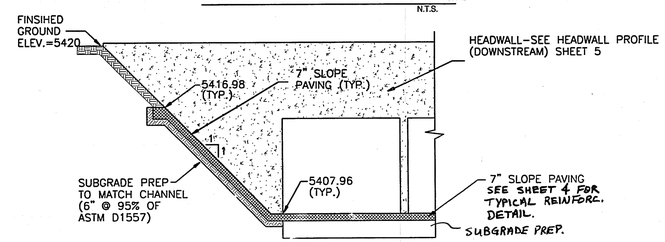
* SEE SPECS FOR MEASUREMENT AND PAYMENT.





HEADWALL INTERFACE PLAN VIEW

N.T.S.



SECTION A-A - SLOPE PAVING / HEADWALL INTERFACE

N.T.S.

RECORD DRAWING

I hereby certify that the information contained on this drawing has been revised in accordance with information furnished by the contractor, Bender Construction, Inc., and by the surveyor, and reflects the construction as actually accomplished. This plan as constructed is in substantial compliance with the Approved Plan.

Martin D. Vinyard NMPE 8261

2-23-00

ENGINEER'S SEAL

AS-BUILT INFORMATION

CONTRACTOR	Sale Blader	DATE 99-00
WORK STAKED BY	Walter Energy	DATE 99-00
INSPECTOR'S ACCEPTANCE BY	Vinyard	DATE 99-00
VERIFICATION BY	Vinyard	DATE 99-00
DRAWINGS CORRECTED BY	Vinyard	DATE 99-00

MICRO-FILM INFORMATION

RECORDED BY	
DATE	
NO.	

City Inspector's Signature

BENCH MARKS

ACS BRASS TABLET STAMPED "1-B10" GEOGRAPHIC POSITION (NAD 1927) N.M. STATE PLANE COORDINATES (CENTER ZONE)
X = 357,526.69 Y = 1,525,168.35 Δα = -00°16'30"
NGVD 1929 ELEVATION = 5419.522
STATION IS LOCATED 0.90 MILES NW FROM THE CORNER OF PARADISE BLVD. AND PARK LANE TO THE CROSSING OF A PLAINS ELECT. CO-OP POWERLINE. THE STATION IS 225 FT. SOUTH OF THIS POINT BETWEEN THE POLES OF A PYLON.
STA. MK. IS SET IN TOP OF A CONC. POST FLUSH W/ GROUND.

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

~~AS-BUILT (HORIZONTAL~~ AND VERTICAL) LOCATION (DM) Y1

NO.	DATE	REMARKS	BY
1	4-20-98	CROSS SECTION REVISIONS	DEB

REVISIONS

DESIGN

DESIGNED BY D.E.B. DATE 8-98
DRAWN BY TONYM/SFG DATE 8-98
CHECKED BY D.J.G. DATE 8-98

Bohannan ▲ Huston

Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

NORTH BRANCH PIEDRAS MARCADAS CHANNEL
PLAN & PROFILE STA. 18+00 TO 20+53.71

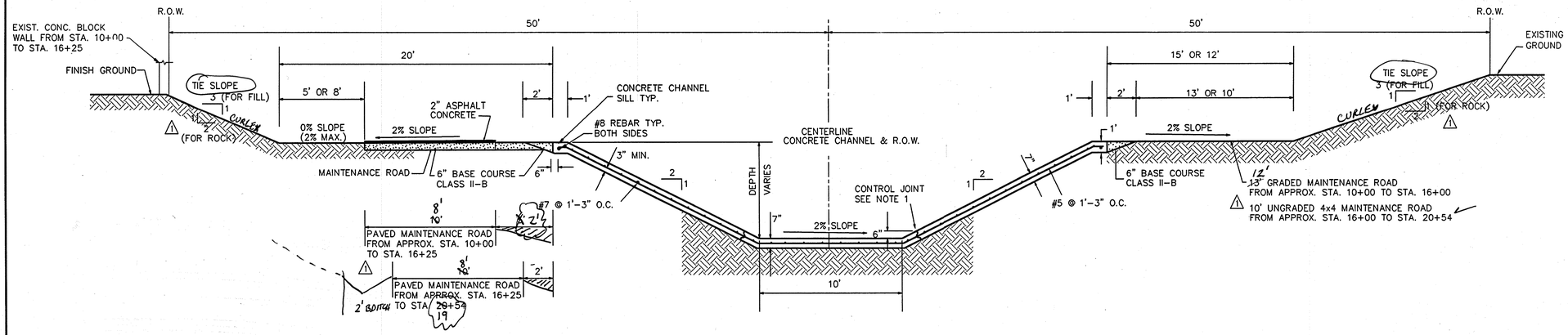
DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.
APPROVED MAR 13 1998 DESIGN REVIEW COMMITTEE				

SCALES: 1" =50' HOR
1" =5' VER

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
5978.81	B9.B10	3	13

BHI-MAIN:[95285.HYDRO.DESIGN.PHASE3]RCP02001.DWG

COPYRIGHT BOHANNAN-HUSTON, INC.
DATE:01/31/98



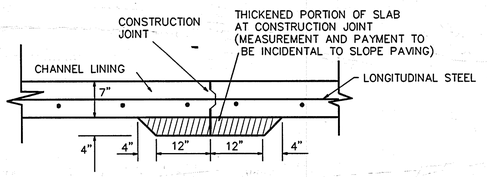
TYPICAL CHANNEL CROSS SECTION

NOT TO SCALE

NOTE:

1. SAW CUT CONTROL JOINT 1/4 " WIDE, 2" DEEP AND APPLY POLYURETHANE SEALANT OR USE COLD KEY JOINT OR ENGINEER APPROVED EQUAL, (CONTRACTOR'S OPTION) TYPICAL BOTH SIDES.
2. CONCRETE SLOPE PAVING SHALL BE FINISHED WITH A DOUBLE TINE FINISH, I.E., BRIDGE TINE FINISH WITH TWO PASSES TRANSVERSE TO FLOW.
3. LIMITS OF SEEDING:
   SOUTH SIDE OF CHANNEL – FROM R.O.W. TO EDGE OF MAINTENANCE ROAD. THE ENTIRE LENGTH OF THE PROJECT.
   NORTH SIDE OF CHANNEL – FROM R.O.W. TO BASE COURSE AT SILL OF CHANNEL. THE ENTIRE LENGTH OF THE PROJECT.
4. LIMITS OF GRAVEL MULCH:
   GRAVEL MULCH SHALL BE USED WITHIN THE LIMITS OF SEEDING WHEN THE SLOPE IS ~~3:1 OR GREATER~~ GREATER THAN 3:1.

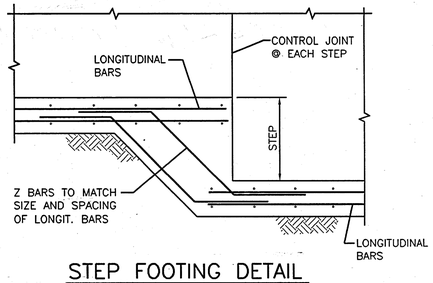
SEE LANDSCAPING PLAN ATTACHED



(CONSTRUCTION JOINT TO BE USED AT EACH INTERRUPTION IN CONCRETE PLACEMENT.)

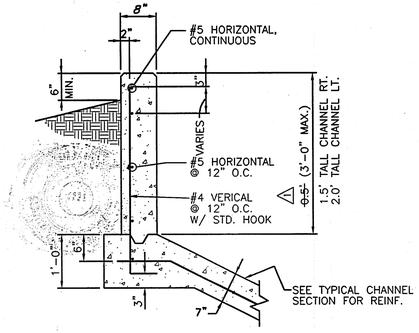
TYPICAL CONSTRUCTION JOINT DETAIL

NOT TO SCALE



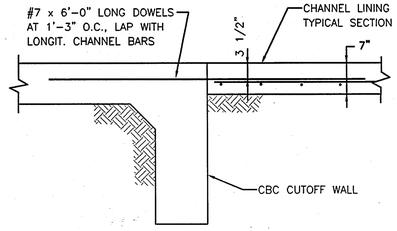
STEP FOOTING DETAIL

NOT TO SCALE



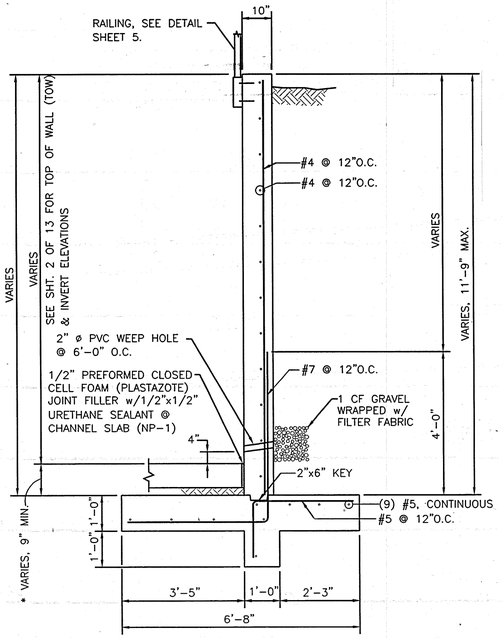
SILL WALL SECTION (LESS THAN 3'-0")

A/2 4 SCALE: 3/4"=1'-0"



CBC TO CHANNEL CONNECTION DETAIL

SCALE: 3/4"=1'-0"



* CONTRACTOR MAY STEP FOOTING WHEN THIS DIMENSION EXCEEDS 3'-0". SEE DETAIL THIS SHEET.

HEADWALL DETAIL

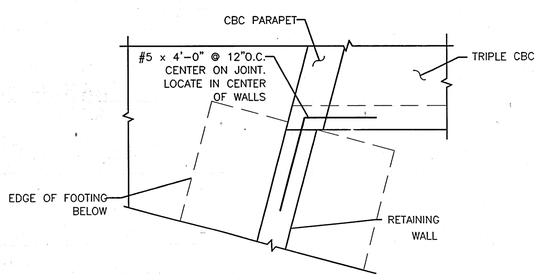
NOT TO SCALE

RECORD DRAWING

I hereby certify that the information contained on this drawing has been revised in accordance with information furnished by the contractor, Bender Construction, Inc., and by the surveyor, and reflects the construction as actually accomplished. This plan as constructed is in substantial compliance with the Approved Plan.

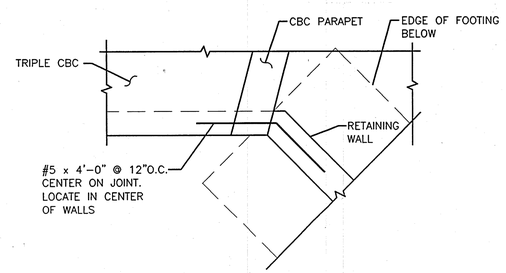
Martin D. Vinyard NMPE 8261

2-23-00



CBC CORNER DETAIL DOWNSTREAM (BOTH SIDES OF CHANNEL)

SCALE: 1/2"=1'-0"



CBC CORNER DETAIL UPSTREAM (BOTH SIDES OF CHANNEL)

SCALE: 1/2"=1'-0"

AS-BUILT INFORMATION
CONTRACTOR Sells/Brazos DATE 4-20-99
WORK STAKED BY Howard Cooley DATE 4-20-99
ACCEPTANCE BY Vinyard DATE 4-21-99
VERIFICATION BY Vinyard DATE 4-21-99
DRAWINGS CORRECTED BY Vinyard DATE 4-21-99
MICRO-FILM INFORMATION
RECORDED BY DATE
NO. DATE
A PLANS ELECT. CO-OP POWERLINE. THE STATION IS 225 FT. SOUTH OF THIS POINT BETWEEN THE POLES OF A PYLON.
STA. MK. IS SET IN TOP OF A CONC. POST FLUSH W/ GROUND.
C.T. Torpatrick Sr. Steward

BENCH MARKS
ACS BRASS TABLET STAMPED "1-B10" GEOGRAPHIC POSITION (NAD 1927) N.M. STATE PLANE COORDINATES (CENTER ZONE) X = 357,526.69 Y = 1,525,168.35 Δα = -00°16'30"
NGVD 1929 ELEVATION = 5419.522
STATION IS LOCATED 0.90 MILES NW FROM THE CORNER OF PARADISE BLVD. AND PARK LANE TO THE CROSSING OF

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
1	2/3/99	CROSS SECTIONS REVISIONS	DEB

REVISIONS
DESIGN
DESIGNED BY L.M.M. DATE 8-98
DRAWN BY TONYM/SFG DATE 8-98
CHECKED BY D.J.G. DATE 8-98

Bohannan ▲ Huston
Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

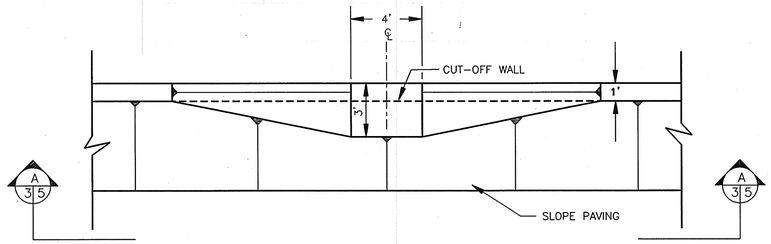
NORTH BRANCH PIEDRAS MARCADAS CHANNEL
TYPICAL CHANNEL SECTIONS

DESIGN REVIEW COMMITTEE: APPROVED — DESIGN REVIEW COMMITTEE
CITY ENGINEER APPROVAL
LAST DESIGN UPDATE MO./DAY/YR. MO./DAY/YR.

CITY PROJECT NO. 5978.81 | ZONE MAP NO. 69, 510 | SHEET 4 OF 13

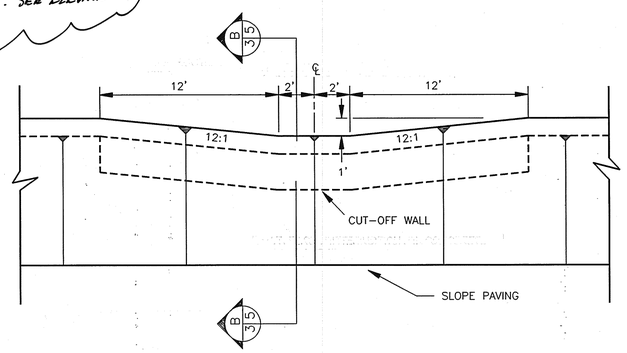
BHI PROJ. NO. 95285A242121
FILENAME:BHI-MAIN:[H95285.HYDRO.DESIGN.PHASE3]CHANXSEC.DWG
4/99

COPYRIGHT BOHANNAN-HUSTON, INC. 1/15/97

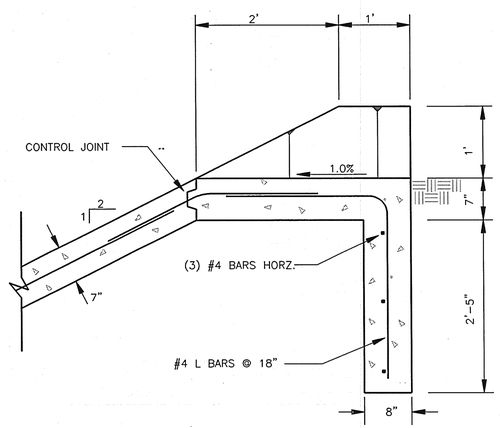


RUNDOWN DETAIL
PLAN VIEW
NOT TO SCALE

RUNDOWNS CORNERS LOWERED OR RAISED IN ORDER TO PICK-UP BORROW DITCH FLOWS. SEE ELEVATIONS ON P&P'S

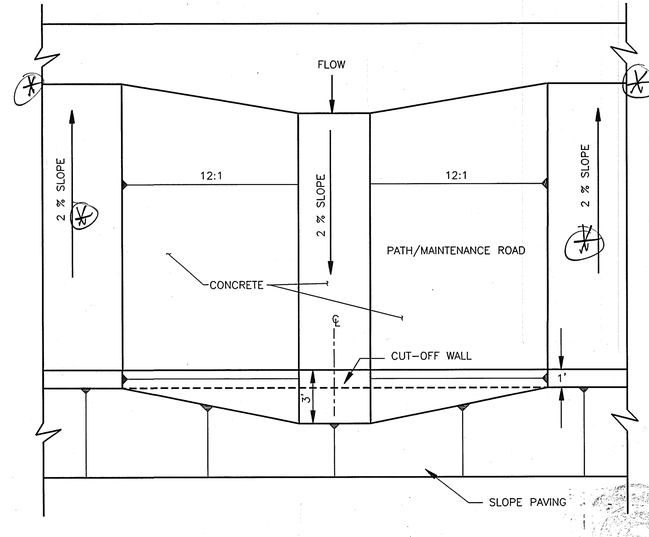


A 3 5 RUNDOWN DETAIL
PROFILE VIEW
NOT TO SCALE



SEE SHEET 3 FOR LOCATIONS

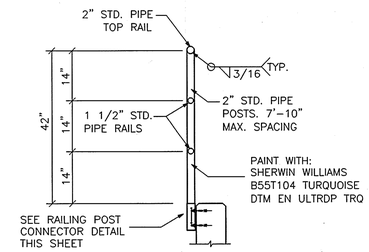
B 3 5 CUT-OFF WALL
NOT TO SCALE



CHANNEL RUNDOWN AT PATH DETAIL
NOT TO SCALE

NOTES:

1. RUNDOWNS SHALL BE CONSTRUCTED OF 6" THICK CONCRETE WITH #4 BARS AT 12" O.C.
2. CONCRETE SECTION OF THE PATH/MAINTENANCE ROAD SHALL BE FINISHED WITH A LIGHT BROOM FINISH.



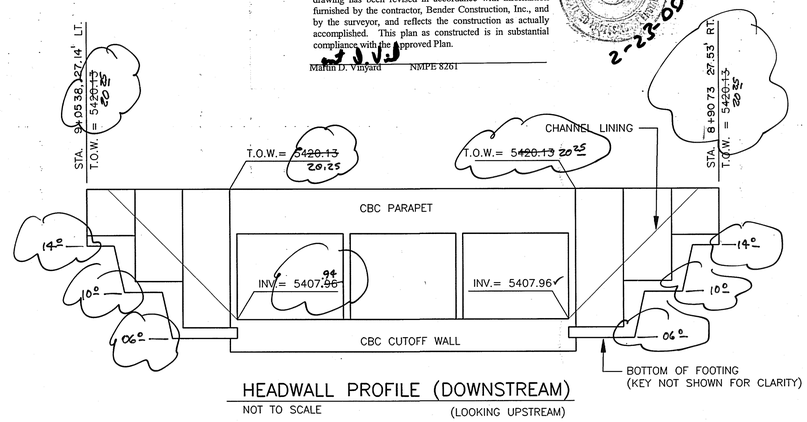
RAILING TYPICAL SECTION
NO SCALE

RECORD DRAWING

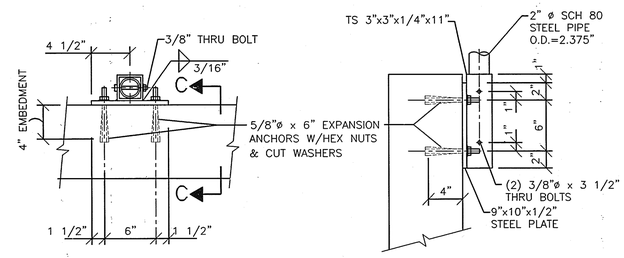
I hereby certify that the information contained on this drawing has been revised in accordance with information furnished by the contractor, Bender Construction, Inc., and by the surveyor, and reflects the construction as actually accomplished. This plan as constructed is in substantial compliance with the approved Plan.

Milton D. Vinyard NMPE 8261

2-23-00



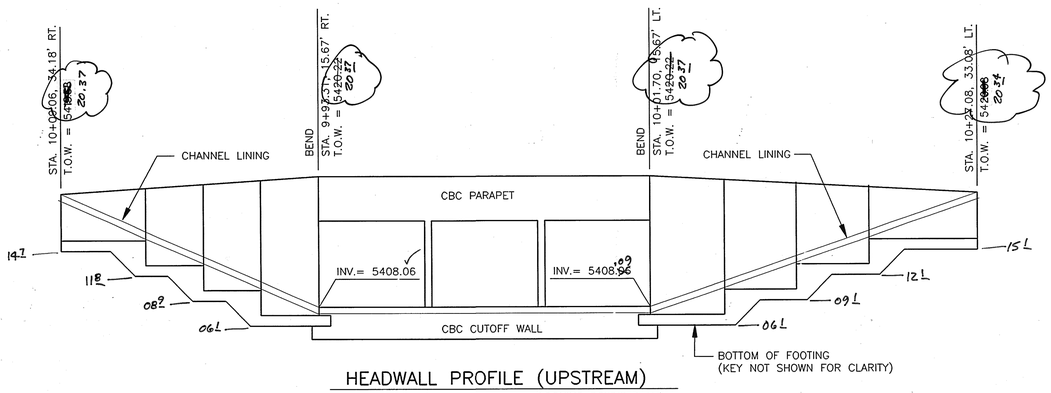
HEADWALL PROFILE (DOWNSTREAM)
NOT TO SCALE (LOOKING UPSTREAM)



PLAN

SECTION C-C

RAILING POST CONNECTOR DETAILS
NO SCALE



HEADWALL PROFILE (UPSTREAM)
NOT TO SCALE (LOOKING DOWNSTREAM)

AS-BUILT INFORMATION

CONTRACTOR	Sells Tender	DATE 09-00
WORK STAKED BY	Fisher Langley	DATE 09-00
INSPECTORS ACCEPTANCE BY	Vinyard	DATE 09-00
FIELD VERIFICATION BY	Vinyard	DATE 09-00
DRAWINGS CORRECTED BY	Vinyard	DATE 09-00
MICRO-FILM INFORMATION		DATE
RECORDED BY		
NO.		

SURVEY INFORMATION			BENCH MARKS	AS-BUILT INFORMATION
FIELD NOTES			ACS BRASS TABLET STAMPED "1-B10" GEOGRAPHIC POSITION (NAD 1927) N.M. STATE PLANE COORDINATES (CENTER ZONE) X = 357,526.69 Y = 1,525,168.35 Δ<= -00°16'30" NGVD 1929 ELEVATION = 5419.522 STATION IS LOCATEDED 0.90 MILES NW FROM THE CORNER OF PARADISE BLVD. AND PARK LANE TO THE CROSSING OF A PLAINS ELECT. CO-OP POWERLINE. THE STATION IS 225 FT. SOUTH OF THIS POINT BETWEEN THE POLES OF A PYLON. STA. MK. IS SET IN TOP OF A CONC. POST FLUSH W/ GROUND.	
NO.	BY	DATE		
"AS-BUILT" (HORIZONTAL AND VERTICAL LOCATION ONLY)				

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY	
		REVISIONS		
		DESIGN		
		DESIGNED BY L.M.M.		DATE 8-98
		DRAWN BY TONYM/SFG		DATE 8-98
		CHECKED BY D.J.G.		DATE 8-98

Bohannan ▲ Huston

Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

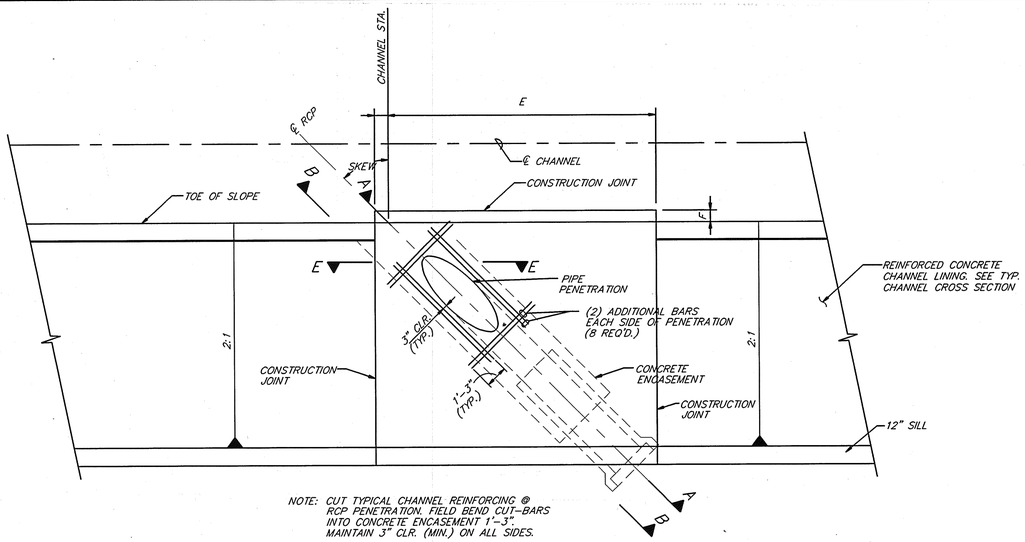
NORTH BRANCH PIEDRAS MARCADAS CHANNEL
RUNDOWN DETAILS

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.
APPROVED MAY 13 1999 DESIGN REVIEW COMMITTEE				

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
5978.81	B9, B10	5	13

BHI PROJ. NO. H95285A242121
FILENAME:BHI-MAIN:[H95285.HYDRO.DESIGN.PHASE3]RUNDOWN.DWG
8/98

COPYRIGHT BOHANNAN-HUSTON, INC.
1/15/97



NOTE: CUT TYPICAL CHANNEL REINFORCING @ RCP PENETRATION. FIELD BEND CUT-BARS INTO CONCRETE ENCASEMENT 1'-3". MAINTAIN 3" CLR. (MIN.) ON ALL SIDES.

TYPICAL PIPE PENETRATION (PLAN VIEW)

SCALE: 1/4" = 1'-0"

TABLE OF DIMENSIONS

LOCATION	CHANNEL STATION	PIPE DIAMETER	SLOPE	SKEW	CHANNEL DEPTH	INVERT TO INVERT A	B	C	D	E	F
CUL-DE-SAC	11+60.86	30	3.19	45.0	10.0	9.00	1.73	5.60	4.67	24.00	4.00
NORTH-WELL SITE **	15+63.00	~~24~~ 12"	2.00 *	0.0	9.5	8.76	1.69	4.12	4.17	0.0	4.00
VENTANA RANCH ROAD	20+22.21	54	2.51 *	49.9	9.5	6.00	1.41	12.73	3.00	30.00	4.60
VENTANA RANCH ROAD	20+21.45	54	2.48 *	46.5	9.5	6.00	1.41	12.73	3.00	30.00	4.60
		INCHES	PERCENT	DEGREES	FEET	INCHES	FEET	FEET	FEET	FEET	INCHES

* MATCH EXISTING

** NMUI WILL PROVIDE A FLAP GATE TO BE INSTALLED

NOTES:

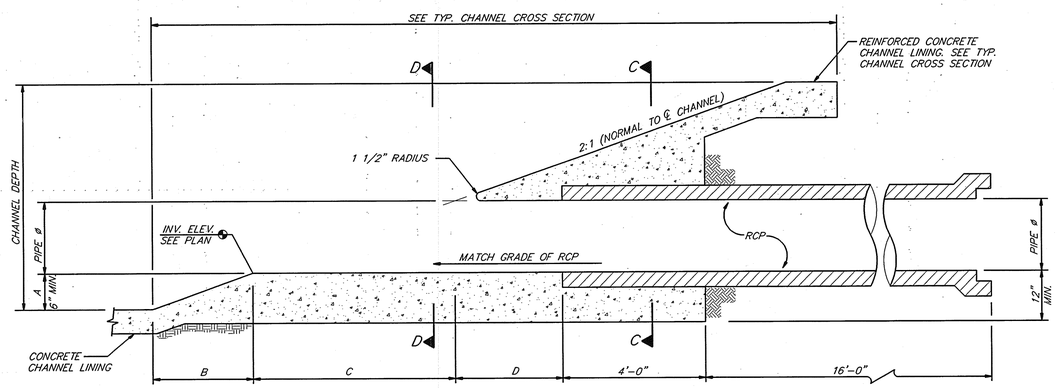
1. THE PIPE PENETRATION DETAILED HEREIN SHALL BE PAID FOR UNDER PIPE PENETRATION, (EACH) AND SHALL BE COMPENSATION FOR THE PENETRATION COMPLETE AND IN PLACE. INCLUDED IN THIS WORK (BUT NOT LIMITED TO) IS GRADING, SUBGRADE PREPARATION, REINFORCED CONCRETE, CONSTRUCTION JOINTS, CONCRETE PLACEMENT AND FINISHING. NOTE THE MEASUREMENT FOR CONCRETE CHANNEL LINING IS CONTINUOUS AND UNINTERRUPTED AT THE PENETRATION LOCATION.
2. THE TYPICAL TRANSVERSE AND LONGITUDINAL REINFORCEMENT SHALL BE CONTINUOUS THRU THE CONSTRUCTION JOINT LAPPED BAR SPLICES ADJACENT TO THE JOINT IS PERMITTED.
   #8 BAR LAP = 4'-2"
   #7 BAR LAP = 3'-2"
   #5 BAR LAP = 2'-2"

RECORD DRAWING

I hereby certify that the information contained on this drawing has been revised in accordance with information furnished by the contractor, Bender Construction, Inc., and by the surveyor, and reflects the construction as actually accomplished. This plan as constructed is in substantial compliance with the Approved Plan.

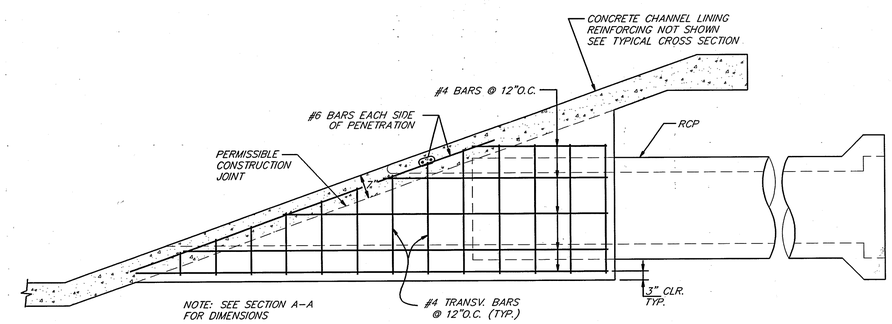
Martin D. Vinyard NMPE 8261

2-23-00



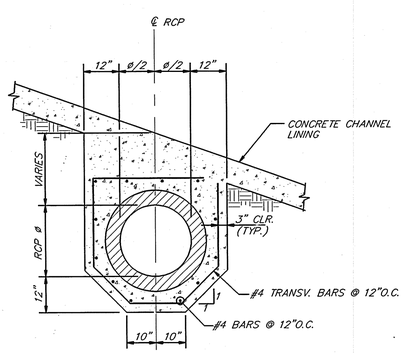
SECTION A-A

SCALE: 1/2" = 1'-0"



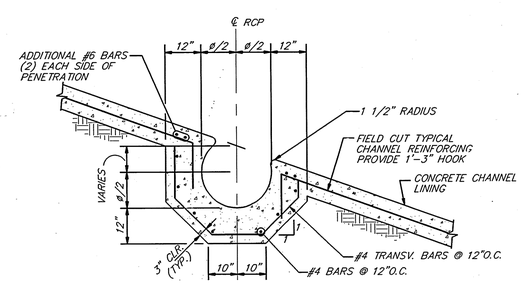
SECTION B-B

SCALE: 1/2" = 1'-0"



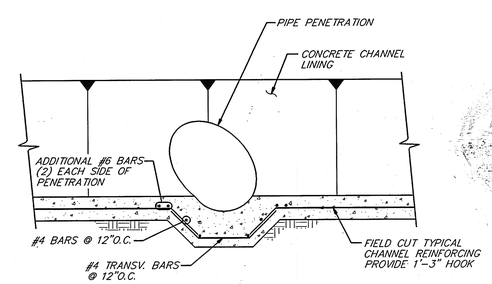
SECTION C-C

SCALE: 1/2" = 1'-0"



SECTION D-D

SCALE: 1/2" = 1'-0"



SECTION E-E

SCALE: 1/2" = 1'-0"

AS-BUILT INFORMATION

CONTRACTOR	Bender	DATE 8-98
WORK STAKED BY	Hanscomb	DATE 8-98
WORK ACCEPTANCE BY	Vinyard	DATE 8-98
FIELD VERIFICATION BY	Vinyard	DATE 8-98
DRAWINGS CORRECTED BY	Vinyard	DATE 8-98

BENCH MARKS

ACS BRASS TABLET STAMPED "1-B10" (NAD 1927) N.M. STATE PLANE COORDINATES (CENTER ZONE) X = 357,526.69 Y = 1,525,168.35 Δα= -00°16'30"

NGVD 1929 ELEVATION = 5419.522

STATION IS LOCATED 0.90 MILES NW FROM THE CORNER OF PARADISE BLVD. AND PARK LANE TO THE CROSSING OF A PLAINS ELECT. CO-OP POWERLINE. THE STATION IS 225 FT. SOUTH OF THIS POINT BETWEEN THE POLES OF A PYLON.

STA. MK. IS SET IN TOP OF A CONC. POST FLUSH W/ GROUND.

RECORDED BY	
NO.	

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	

DESIGNED BY J.V.F. DATE 8-98

DRAWN BY TONYM/SFG DATE 8-98

CHECKED BY D.M.B. DATE 8-98

Bohannan ▲ Huston

Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

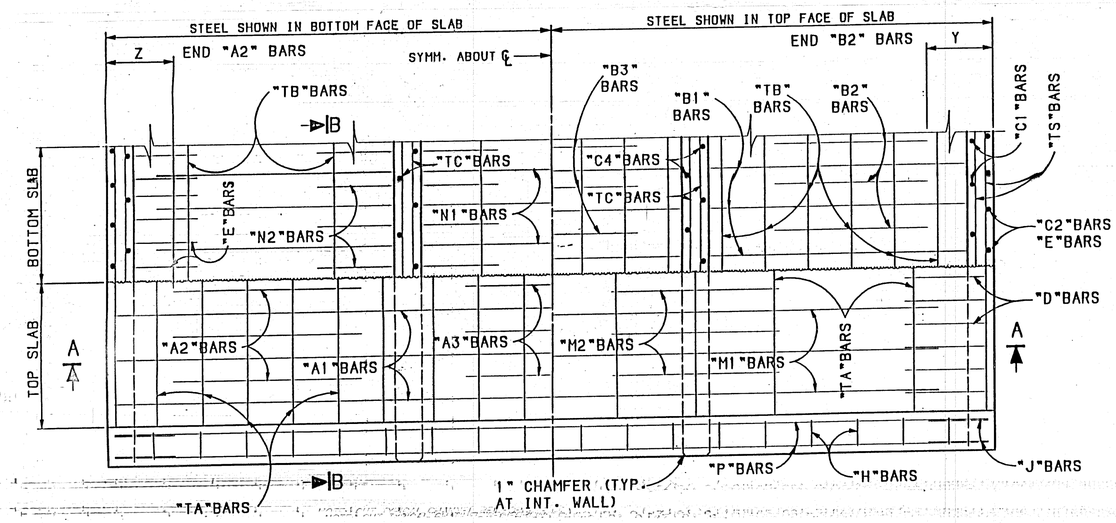
ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

NORTH BRANCH PIEDRAS MARCADAS CHANNEL PIPE PENETRATION DETAILS

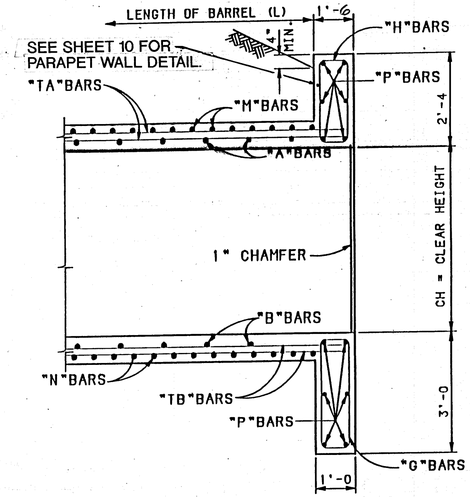
DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.
APPROVED MAY 13 1999 DESIGN REVIEW COMMITTEE				

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
5978.81	B9, B10	6	13

BHI-MAIN:[95285.HYDRO.DESIGN.PHASE3]VRPPEN1.DWG



PART PLAN AND PART SECTION C-C

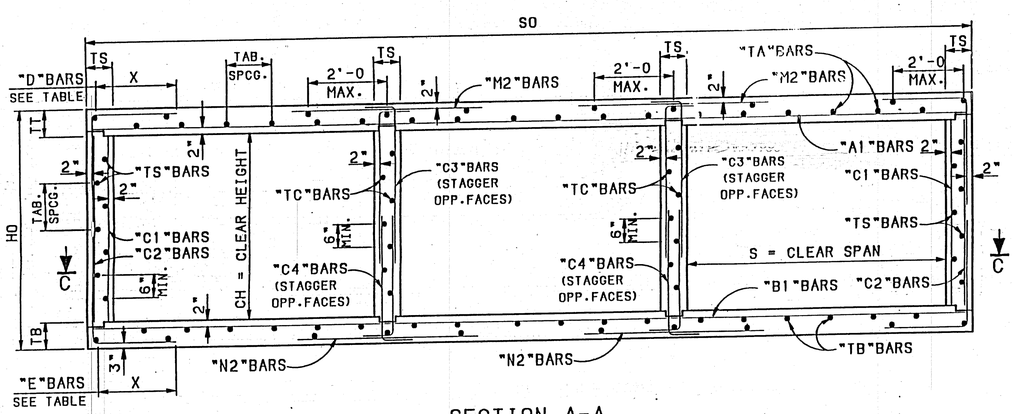


PART SECTION B-B

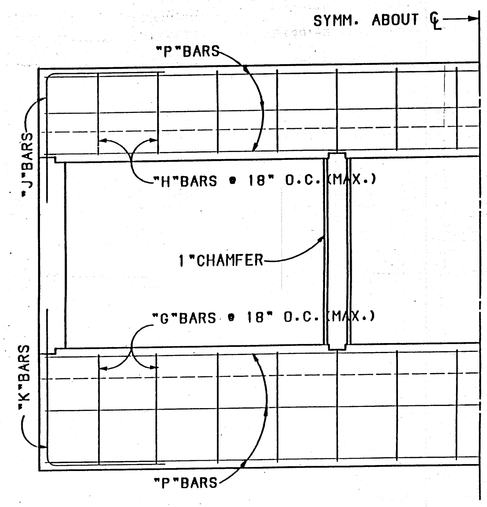
SEE SHEET 10 FOR GENERAL NOTES.

GENERAL NOTES

1. ALL CONCRETE SHALL BE CLASS "A". CHAMFER ALL THE EXPOSED EDGES 3/4".
2. ⚠1 ALL REINFORCING STEEL TO BE DEFORMED BARS, CONFORMING TO AASHTO M-31, GRADE 60. ALL DIMENSIONS REFER TO THE CENTERLINE OF BAR.
3. WHEN NECESSARY, "T" BARS MAY BE SPLICED BY LAPPING AT LEAST 20 BAR DIAMETERS. PAY WEIGHT FOR REINFORCING STEEL DOES NOT INCLUDE SPLICES. THE COST OF THE SPLICE MATERIAL IS TO BE INCLUDED IN THE UNIT PRICE BID FOR REINFORCING STEEL.
4. VOLUME OF CONCRETE = (L) x (CONCRETE QUANTITY/LIN. FT.) PLUS CONCRETE AT ENDS.
5. WEIGHT OF REINFORCING STEEL = (L) x (WEIGHT OF REINF./LIN.FT.) PLUS WEIGHT AT ENDS.
6. PLACE "TA" BARS ON "A" BARS AND "TB" BARS UNDER "B" BARS, SPACED AS SHOWN IN THE TABLE. THE REMAINING "TA" BARS, AND "TB" BARS ARE TO BE PLACED ADJACENT TO THE "D", "E", "M", AND "N" BARS AS INDICATED IN "SECTION A-A", AT 2'-0 MAX.
7. PLACE "TS" BARS NEXT TO "C1" BARS, SPACED AS SHOWN IN THE TABLE; THE REMAINING "TS" BARS SHALL BE PLACED IN SIDEWALL NEXT TO "C2", "D", AND "E" BARS. WHEN "C1" BARS ARE NOT REQUIRED, PLACE ALL "TS" BARS NEXT TO "C2", "D", AND "E" BARS.
8. PLACE "A1", "A3", "B1", "B3", "M1", AND "N1" BARS SYMMETRICAL TO THE CENTERLINE OF THE BOX. PLACE "M2" AND "N2" BARS SYMMETRICAL TO THE CENTERLINE OF THE WALLS.
9. "COVER" IS HEIGHT OF FILL FROM TOP OF THE BOX TO THE FINISHED GRADE.



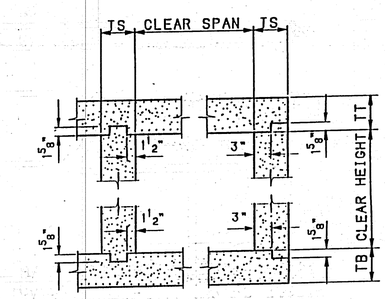
SECTION A-A



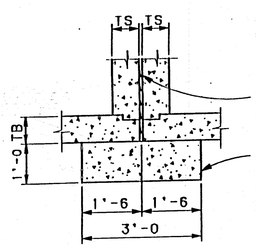
PART END ELEVATION

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: f'c = 3000 psi, fc = 1200 psi.
fs = 20,000 psi, n = 10.



CONSTRUCTION JOINT DETAIL



½" PREFORMED BITUMINOUS JOINT FILLER SHALL BE USED BETWEEN ADJACENT UNITS AND IT SHALL EXTEND BETWEEN BARRELS, PARAPETS, AND CUT-OFF WALLS.

THE FOUNDATION BLOCK SHALL BE PLACED IN NEAT EXCAVATION AND EXTENDED FOR THE ENTIRE LENGTH OF BARREL UNDER JOINT BETWEEN UNITS. PLACE ONE LAYER OF TAR PAPER OVER THE ENTIRE TOP SURFACE OF THE FOUNDATION BLOCK. CONCRETE QUANTITY = 0.111 CU. YDS. PER LIN. FT. OF BLOCK.

JOINT DETAIL FOR MULTIPLE UNIT BOXES

RECORD DRAWING

I hereby certify that the information contained on this drawing has been revised in accordance with information furnished by the contractor, Bender Construction, Inc., and by the surveyor, and reflects the construction as actually accomplished. This plan as constructed is in substantial compliance with the Approved Plan.

Martin D. Vilyard NMPE 8261

2-23-00

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
3			
2			
1	REVISED NOTE #2	6-8-94	PH

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONCRETE BOX CULVERT BARRELS
TRIPLE OPENING - NORMAL
ALL DESIGNS

GENERAL DATA

LAYOUT BY / DRAWN BY / CHECKED BY — APPROVAL RECOMMENDED: BRIDGE ENGINEER — DATE 11/1/94
APPROVED: BRIDGE BUREAU CHIEF — DATE 2-22-94

SERIAL CB-33 SHEET 7 OF 13

DESIGNED BY: H.T. 10/60 CHECKED BY: S.J.M. 10/93
DETAILED BY: J.A.K. 10/93 CHECKED BY: R.A. 10/93
PLOT DATE: 10/28/93

BRIDGE#1/STANDARDS/BRIDGE/STANDARDS$16

[redacted] CPN.597881... SHEET.....

CLEAR SPAN	CLEAR HEIGHT	DIMENSIONS TT	TS	TB	SO	HO	Y	Z	QUANTITIES PER L.F. OF BARREL: REINFORCING STEEL POUNDS PER L.F.	CONCRETE CU. YDS. PER L.F.	AT ONE END ✱: REINFORCING STEEL POUNDS	CONCRETE CU. YDS.
4	2	7"	6"	6½"	14'-0	3'-1½	----	----	115.8	0.731	337	2.91
	3	7"	6"	6½"	14'-0	4'-1½	----	----	122.8	0.806	347	2.99
	4	7"	6"	6½"	14'-0	5'-1½	----	----	124.3	0.880	355	3.06
6	2	7½"	6"	7"	20'-0	3'-2½	1'-0	2"	185.4	1.043	472	4.10
	3	7½"	6"	7"	20'-0	4'-2½	1'-0	2"	191.0	1.117	460	4.17
	4	7½"	6"	7"	20'-0	5'-2½	1'-0	2"	197.6	1.191	493	4.25
	5	7½"	6"	7"	20'-0	6'-2½	1'-0	2"	210.4	1.285	505	4.32
	6	7½"	6"	7"	20'-0	7'-2½	1'-0	2"	227.9	1.339	550	4.40
8	4	8"	6"	8½"	26'-0	5'-4½	1'-0	2"	292.4	1.620	790	5.43
	5	8"	6"	8½"	26'-0	6'-4½	1'-0	2"	314.7	1.694	804	5.51
	6	8"	6"	8½"	26'-0	7'-4½	1'-0	2"	333.4	1.769	816	5.59
	7	8"	7"	8½"	26'-4	8'-4½	1'-0	2"	347.3	1.946	882	5.82
	8	8"	8"	8½"	26'-8	9'-4½	1'-0	2"	359.3	2.148	905	6.07
10	4	9"	6½"	9½"	32'-2	5'-6½	1'-3	2"	370.3	2.158	1144	6.68
	5	9"	6½"	9½"	32'-2	6'-6½	1'-3	2"	382.5	2.238	1157	6.76
	6	9"	6"	9½"	32'-0	7'-6½	1'-3	2"	385.0	2.272	1201	6.77
	7	9"	7"	9½"	32'-4	8'-6½	1'-3	2"	411.6	2.451	1223	7.00
	8	9"	8"	9½"	32'-8	9'-6½	1'-3	2"	430.0	2.655	1262	7.26
	9	9"	8"	10"	32'-8	10'-7	1'-3	2"	455.1	2.804	1294	7.37
	10	9"	9"	10"	33'-0	11'-7	1'-3	-2"-	466.0	3.046	1318	7.66
	11	9"	9"	10"	33'-0	12'-7	1'-3	2"	487.3	3.157	1338	7.82
	12	9"	9"	10"	33'-0	13'-7	1'-3	2"	516.1	3.268	1363	8.00
12	6	10"	6½"	11"	38'-2	7'-9	2"	2"	480.7	2.955	1720	8.02
	8	10"	8"	11"	38'-8	9'-9	2"	2"	524.6	3.296	1803	8.44
	10	10"	9"	11"	39'-0	11'-9	2"	2"	574.9	3.639	1834	8.85
	12	10"	9"	11"	39'-0	13'-9	2"	2"	609.6	3.861	1898	9.18
14	8	11½"	8"	12"	44'-8	9'-11½	2"	2"	711.1	4.030	2464	9.63
	10	11½"	9"	12"	45'-0	11'-11½	2"	2"	730.2	4.375	2519	10.03
	12	11½"	9"	12½"	45'-0	14'-0	2"	2"	809.9	4.667	2521	10.37
	14	11½"	10"	12½"	45'-4	16'-0	2"	2"	846.8	5.086	2646	10.96

REINFORCING BARS

CLEAR SPAN	CLEAR HEIGHT	"A" BARS A1 SIZE	A1 LENGTH	A2 SIZE	A2 LENGTH	A3 SIZE	A3 LENGTH	SPACING	"B" BARS B1 SIZE	B1 LENGTH	B2 SIZE	B2 LENGTH	B3 SIZE	B3 LENGTH	SPACING
4	2	#5	13'-9	--	NONE	--	NONE	6"	#4	13'-9	--	NONE	--	NONE	12"
	3	#5	13'-9	--	NONE	--	NONE	6"	#4	13'-9	--	NONE	--	NONE	12"
	4	#5	13'-9	--	NONE	--	NONE	6"	#4	13'-9	--	NONE	--	NONE	13"
6	2	#5	18'-6	#6	5'-9	#5	5'-0	12"	#4	19'-9	#4	5'-0	--	NONE	14"
	3	#5	18'-6	#6	5'-9	#5	5'-0	12"	#4	19'-9	#4	5'-0	--	NONE	14"
	4	#5	18'-6	#6	5'-9	#5	5'-0	12"	#4	19'-9	#4	5'-0	--	NONE	14"
	5	#5	18'-6	#6	5'-9	#5	5'-6	12"	#4	19'-9	#4	5'-6	--	NONE	13"
	6	#5	18'-6	#6	5'-9	#5	5'-9	11"	#4	19'-9	#4	5'-9	--	NONE	12"
8	4	#5	25'-9	#7	7'-9	#6	6'-3	12"	#4	25'-9	#4	6'-6	--	NONE	11"
	5	#5	25'-9	#7	7'-9	#6	6'-3	12"	#4	25'-9	#4	6'-6	--	NONE	10½"
	6	#5	25'-9	#7	7'-9	#6	6'-3	11½"	#4	25'-9	#4	6'-6	--	NONE	10"
	7	#5	26'-0	#7	8'-0	#6	6'-6	12"	#5	26'-0	#4	6'-6	--	NONE	14"
	8	#5	26'-3	#8	8'-0	#7	6'-6	15"	#5	26'-3	#4	6'-6	--	NONE	14"
10	4	#6	29'-6	#6	9'-6	#5	7'-3	12"	#4	32'-0	#4	6'-9	--	NONE	9"
	5	#6	29'-6	#6	9'-6	#5	7'-6	12"	#4	32'-0	#4	7'-0	--	NONE	9"
	6	#6	29'-6	#7	9'-6	#6	8'-0	14"	#4	31'-9	#5	7'-6	--	NONE	9"
	7	#6	30'-0	#6	9'-6	#5	8'-0	12"	#5	32'-0	#5	7'-0	--	NONE	14"
	8	#6	30'-3	#6	9'-6	#5	8'-0	12"	#5	32'-3	#4	7'-0	--	NONE	12"
	9	#6	30'-3	#6	9'-6	#5	8'-0	12"	#5	32'-3	#4	7'-0	--	NONE	12"
	10	#6	30'-6	#6	9'-6	#5	8'-0	12"	#5	32'-9	#4	7'-0	--	NONE	12"
	11	#6	30'-6	#6	9'-6	#5	8'-0	12"	#5	32'-9	#4	7'-0	--	NONE	11½"
	12	#6	30'-6	#5	9'-6	#5	8'-0	11"	#5	32'-9	#4	7'-0	--	NONE	11"
12	6	#5	33'-0	#8	11'-9	#7	10'-0	14"	#4	30'-6	#7	11'-6	#4	6'-0	14"
	8	#5	32'-6	#8	13'-0	#7	10'-3	14"	#4	30'-6	#7	11'-6	#4	6'-3	14"
	10	#5	32'-0	#8	13'-0	#7	10'-6	14"	#4	30'-9	#7	11'-6	#5	6'-6	14"
	12	#5	31'-9	#8	13'-0	#7	10'-6	14"	#4	30'-9	#7	11'-6	#5	6'-9	14"
14	8	#5	40'-0	#6	13'-0	#5	10'-6	9"	#5	40'-0	#5	12'-0	--	NONE	9"
	10	#5	40'-0	#6	13'-3	#5	10'-9	9"	#5	40'-0	#5	12'-0	--	NONE	9"
	12	#5	39'-9	#6	13'-6	#5	11'-0	9"	#6	40'-0	#5	12'-0	--	NONE	12"
	14	#5	39'-6	#6	14'-0	#5	11'-3	9"	#6	40'-0	#5	12'-0	--	NONE	10½"

CLEAR SPAN	CLEAR HEIGHT	"C" BARS C1 SIZE	C1 SPACING	C2 SIZE	C2 SPACING	C3 SIZE	C3 LENGTH	C4 LENGTH	SPACING	"M" BARS M1 SIZE	M1 LENGTH	M2 SIZE	M2 LENGTH	SPACING
4	2	NONE	NONE	#4	2'-3	2'-3	12"	#4	12'-6	#4	3'-9	12"	#4	12'-6
	3	NONE	NONE	#4	2'-9	2'-9	12"	#4	12'-6	#4	3'-9	12"	#4	12'-6
	4	NONE	NONE	#4	3'-3	3'-3	13"	#4	12'-6	#4	3'-9	13"	#4	12'-6
6	2	NONE	NONE	#4	2'-3	2'-3	9"	#4	18'-6	#6	5'-0	18"	#4	18'-6
	3	NONE	NONE	#4	2'-9	2'-9	9"	#4	18'-6	#6	5'-0	18"	#4	18'-6
	4	NONE	NONE	#4	3'-3	3'-3	9"	#4	18'-6	#6	5'-0	18"	#4	18'-6
	5	NONE	NONE	#4	4'-3	3'-3	9"	#4	18'-6	#6	5'-3	18"	#4	18'-6
	6	NONE	NONE	#4	5'-3	3'-3	9"	#4	18'-6	#6	5'-6	18"	#4	18'-6
8	4	NONE	NONE	#5	4'-3	3'-0	10"	#4	24'-0	#6	6'-3	12"	#4	24'-0
	5	NONE	NONE	#5	5'-3	3'-0	10"	#4	25'-6	#6	6'-9	12"	#4	25'-6
	6	NONE	NONE	#5	6'-3	3'-0	10"	#4	25'-6	#6	7'-9	12"	#4	25'-6
	7	#4 18"	NONE	#5	7'-3	3'-0	12"	#4	25'-6	#6	8'-6	12"	#4	25'-6
	8	#4 18"	#5 13"	#5	8'-3	3'-0	14"	#4	25'-6	#7	9'-6	13"	#4	25'-6
10	4	NONE	NONE	#5	4'-3	3'-0	10½"	#5	30'-0	#6	7'-0	10½"	#5	30'-0
	5	NONE	NONE	#5	5'-0	3'-3	10½"	#5	30'-0	#6	7'-0	10½"	#5	30'-0
	6	NONE	NONE	#5	5'-9	3'-6	12"	#4	30'-0	#7	7'-6	12"	#4	30'-0
	7	NONE	NONE	#5	7'-3	3'-0	12"	#5	30'-0	#7	7'-3	12"	#5	30'-0
	8	NONE	#5 13"	#5	8'-3	3'-0	12"	#5	29'-6	#7	7'-3	12"	#5	29'-3
	9	#4 13"	#5 13"	#5	9'-3	3'-0	12"	#5	29'-0	#7	7'-3	12"	#5	28'-3
	10	#4 13"	#5 12"	#5	10'-3	3'-0	15"	#5	28'-9	#7	7'-3	12"	#5	27'-9
	11	#4 12"	#5 12"	#5	11'-3	3'-0	15"	#5	28'-9	#7	7'-3	12"	#5	27'-9
	12	#5 14"	#5 11"	#5	12'-3	3'-0	11"	#4	28'-9	#7	7'-3	11"	#4	27'-3
12	6	NONE	NONE	#5	6'-0	3'-6	12"	#5	37'-3	#8	7'-6	12"	#4	37'-3
	8	#4 18"	#6 15"	#5	8'-0	3'-6	12"	#5	37'-3	#8	7'-6	12"	#4	37'-3
	10	#4 15"	#6 12"	#5	10'-0	3'-6	12"	#5	37'-0	#8	7'-6	12"	#5	37'-0
	12	#5 18"	#6 12"	#5	12'-0	3'-6	12"	#5	36'-9	#8	7'-6	12"	#5	36'-9
14	8	#4 18"	NONE	#6	8'-9	3'-6	15"	#6	40'-0	#8	8'-3	12"	#7	40'-0
	10	#4 18"	#5 11"	#6	10'-9	3'-6	11"	#5	40'-0	#8	8'-3	11"	#6	40'-0
	12	#4 12"	#5 9"	#6	12'-9	3'-6	9"	#5	40'-0	#7	8'-3	9"	#5	40'-0
	14	#5 12"	#6 10½"	#6	14'-9	3'-6	10½"	#5	40'-0	#8	8'-3	10½"	#5	40'-0

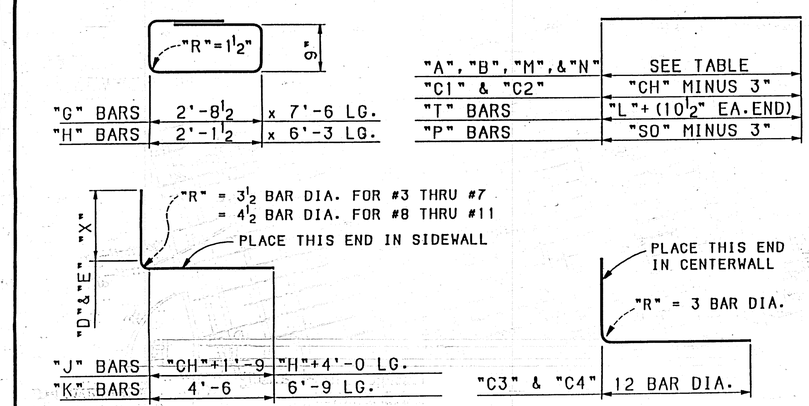
CLEAR SPAN	CLEAR HEIGHT	"N" BARS N1 SIZE	N1 LENGTH	N2 SIZE	N2 LENGTH	SPACING	"D" SIZE	LENGTH	"X"	SPACING	"E" SIZE	LENGTH	"X"	SPACING
4	2	#4	12'-6	#4	3'-3	18"	#5	3'-6	1'-6	12"	#4	3'-6	1'-6	12"
	3	#4	12'-6	#4	3'-3	18"	#5	4'-0	1'-6	12"	#4	4'-0	1'-6	12"
	4	#4	12'-6	#4	3'-3	18"	#5	4'-6	1'-6	13"	#4	4'-6	1'-6	13"
6	2	#4	18'-6	#6	7'-0	12"	#6	3'-9	1'-6	13"	#5	3'-6	1'-6	15"
	3	#4	18'-6	#6	7'-0	12"	#5	4'-3	1'-6	12"	#4	4'-0	1'-6	12"
	4	#4	18'-6	#6	7'-0	12"	#6	5'-0	1'-6	18"	#5	4'-3	1'-6	18"
	5	#4	18'-6	#6	7'-0	13"	#6	5'-6	1'-6	15"	#5	4'-6	1'-6	15"
	6	#4	18'-6	#6	7'-3	14"	#7	6'-3	1'-6	18"	#6	5'-0	1'-6	18"
8	4	#4	24'-0	#6	6'-0	11"	#6	4'-3	1'-6	11"	#5	5'-3	1'-6	11"
	5	#4	25'-6	#6	6'-9	10½"	#6	4'-8	1'-6	10½"	#5	6'-0	1'-6	10½"
	6	#4	25'-6	#6	7'-9	11"	#6	5'-6	1'-6	10½"	#5	5'-6	1'-6	10½"
	7	#4	25'-6	#7	8'-6	14"	#7	6'-9	1'-6	14"	#6	5'-6	1'-6	14"
	8	#4	25'-6	#7	9'-6	13"	#7	4'-6	1'-6	13"	#6	4'-3	1'-6	13"
10	4	#5	30'-0	#6	6'-0	10½"	#6	4'-3	1'-6	10"	#5	5'-3	1'-6	10"
	5	#5	30'-0	#6	6'-0	10½"	#6	4'-6	1'-6	10"	#5	6'-0	1'-6	10"
	6	#4	30'-0	#7	6'-3	12"	#7	5'-6	1'-6	12"	#6	6'-3	1'-6	12"
	7	#5	30'-0	#7	6'-3	12"	#7	6'-9	1'-9	12"	#6	6'-9	1'-9	12"
	8	#5	29'-3	#7	6'-3	12"	#7	6'-0	2'-3	12"	#7	6'-0	2'-3	15"
	9	#5	28'-3	#7	6'-6	12"	#7	6'-3	2'-6	12"	#7	6'-6	2'-9	15"
	10	#5	27'-9	#7	6'-6	12"	#7	6'-6	2'-9	12"	#7	7'-0	3'-3	12"
	11	#5	27'-9	#7	6'-9	12"	#7	6'-6	2'-9	12"	#7	7'-0	3'-3	12"
	12	#4	27'-3	#7	6'-9	11"	#7	6'-6	2'-9	11"	#7	7'-3	3'-6	11"
12	6	#4	37'-3	#8	5'-9	12"	#8	5'-6	1'-6	13"	#7	6'-0	1'-6	13"
	8	#4	37'-3	#8	6'-0	12"	#8	4'-9	1'-8	15"	#8	4'-9	1'-8	15"
	10	#5	37'-0	#8	6'-0	12"	#8	5'-0	1'-11	12"	#7	5'-0	1'-11	12"
	12	#5	36'-9	#8	6'-0	12"	#8	5'-3	2'-2	12"	#8	5'-3	2'-2	12"
14	8	#6	40'-0	#8	7'-3	12"	#8	9'-6	3'-0	12"	#7	8'-3	3'-3	12"
	10	#6	40'-0	#8	7'-3	11"	#8	9'-0	3'-3	11"	#7	9'-0	3'-3	11"
	12	#5	40'-0	#7	7'-3	9"	#7	7'-0	3'-3	9"	#7	7'-3	3'-3	9"
	14	#5	40'-0	#8	7'-3	10½"	#8	7'-0	3'-3	10½"	#8	7'-0	3'-3	10½"

CLEAR SPAN	CLEAR HEIGHT	"TA" NO.	SIZE	SPACING	"TB" NO.	SIZE	SPACING	"TC" NO.	SIZE	SPACING	"TS" NO.	SIZE	SPACING	G.H NO. OF EA. AT 1 END
4	2	19	#4	16"	19	#4	16"	6	#4	18"	4	#4	18"	9
	3	19	#4	16"	19	#4	16"	8	#4	18"	6	#4	15"	9
	4	19	#4	16"	19	#4	16"	10	#4	18"	6	#4	18"	9
6	2	31	#4	16"	25	#4	18"	6	#4	18"	4	#4	18"	12
	3	31	#4	16"	25	#4	18"	8	#4	18"	6	#4	15"	12
	4	31	#4	16"	25	#4	18"	10	#4	18"	6	#4	18"	12
	5	31	#4	16"	25	#4	18"	14	#4	18"	8	#4	18"	12
	6	31	#4	16"	25	#4	18"	16	#4	18"	10	#4	15"	12
8	4	43	#4	14"	34	#4	16"	10	#4	18"	6	#4	18"	18
	5	43	#4	14"	34	#4	16"	14	#4	18"	8	#4	16"	18
	6	43	#4	14"	34	#4	16"	16	#4	18"	10	#4	15"	18
	7	40	#4	17"	34	#4	16"	18	#4	18"	18	#4	18"	18
	8	37	#4	16"	34	#4	16"	22	#4	18"	22	#4	18"	18
10	4	49	#4	16"	43	#4	18"	10	#4	18"	6	#4	18"	21
	5	49	#4	16"	43	#4	18"	14	#4	18"	8	#4	16"	21
	6	49	#4	16"	43	#4	18"	18	#4	18"	10	#4	18"	21
	7	49	#4	16"	43	#4	18"	22	#4	12"	12	#4	12"	21
	8	49	#4	16"	43	#4	18"	24	#4	18"	24	#4	18"	21
	9	49	#4	16"	43	#4	18"	26	#4	18"	26	#4	18"	21
	10	49	#4	16"	46	#4	18"	30	#4	18"	30	#4	18"	21
	11	49	#4	16"	46	#4	18"	32	#4	18"	32	#4	18"	21
	12	64	#4	15"	52	#4	18"	16	#4	18"	10	#4	15"	24
12	6	64	#4	15"	52	#4	18"	22	#4	18"	22	#4	18"	24
	8	64	#4	15"	52	#4	18"	26	#4	18"	26	#4	18"	24
	10	61	#4	15"	52	#4	18"	32	#4	18"	32	#4	18"	24
	12	79	#4	13"	64	#4	16"	22	#4	18"	22	#4	18"	30
14	8	79	#4	13"	64	#4	16"	26	#4	18"	26	#4	18"	30
	10	79	#4	13"	64	#4	16"	32	#4	18"	32	#4	18"	30
	12	79	#4	13"	64	#4	16"	38	#4	18"	38	#4	18"	30
	14	79	#4	13"	64	#4	16"	38	#4	18"	38	#4	18"	30

✱ NOTE: QUANTITIES "AT ONE END" INCLUDE PARAPET, CUT-OFF WALL, AND BARREL BEYOND LENGTH "L". WINGWALL QUANTITIES ARE NOT INCLUDED.

"P" BARS

CLEAR SPAN	4'	6'	8'	10'	12'	14'
SIZE	#5	#5	#6	#7	#8	#9



NOTE: "J" BARS ARE THE SAME SIZE AS "D" BARS.
"K" BARS ARE THE SAME SIZE AS "E" BARS.

REINFORCING STEEL DIAGRAM

NUMBER OF BARS REQUIRED

"A1", "A3", "B1", "B3", "M1", & "N1" BARS: 12L ÷ SPACING
"A2", "B2", "C2", "D", "E", "M2", & "N2" BARS: 24L ÷ SPACING
"P" BARS: 12 FOR CUT-OFF & PARAPET AT EACH END
"C1" BARS: (24L ÷ SPACING) PLUS
2 AT EACH END
"C3" & "C4" BARS: (48L ÷ SPACING) PLUS
4 AT EACH END
"J" & "K" BARS: 4 OF EACH AT EACH END
(FOR PARAPET AND CUT-OFF WALL)

OTHER BARS: SEE TABLE
"L" = LENGTH OF BARREL IN FEET
"CH" = CLEAR HEIGHT

RECORD DRAWING

I hereby certify that the information contained on this drawing has been revised in accordance with information furnished by the contractor, Bender Construction, Inc., and by the surveyor, and reflects the construction as actually accomplished. This plan as constructed is in substantial compliance with the Approved Plan.

Martin D. Vinyard NMPE 8261

NEW MEXICO 8261 REGISTERED PROFESSIONAL ENGINEER

2-23-00

NOTE: REFER TO SERIAL CB-33 SHEET 1 OF 5 FOR CONCRETE BOX CULVERT DETAILS, DESIGN DATA, AND GENERAL NOTES.

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
3			
2			
1			

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONCRETE BOX CULVERT BARRELS
TRIPLE OPENING - NORMAL
DESIGN No. 1
0' TO 5' COVER

LAYOUT BY / DRAWN BY / CHECKED BY
APPROVAL RECOMMENDED — BRIDGE ENGINEER — 1/14/98 DATE
APPROVED — DESIGN BUREAU CHIEF — 2-22-99 DATE

SERIAL CB-33 SHEET 8 OF 13

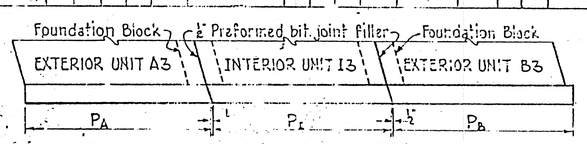
~~N.M.P.~~ CPN. 597881 . . . SHEET . . . .

DESIGNED BY: H.T. 1/61 CHECKED BY: S.J.M. 10/93
DETAILED BY: J.A.K. 10/93 CHECKED BY: R.A. 10/93
PLOT DATE: 10/28/93

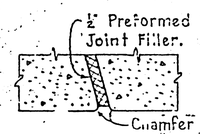
BRIDGE#1/STANDARDS/BRIDGE/STANDARDS$16A

FLD. ROAD DIV. NO.	STATE		FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	NEW MEXICO				

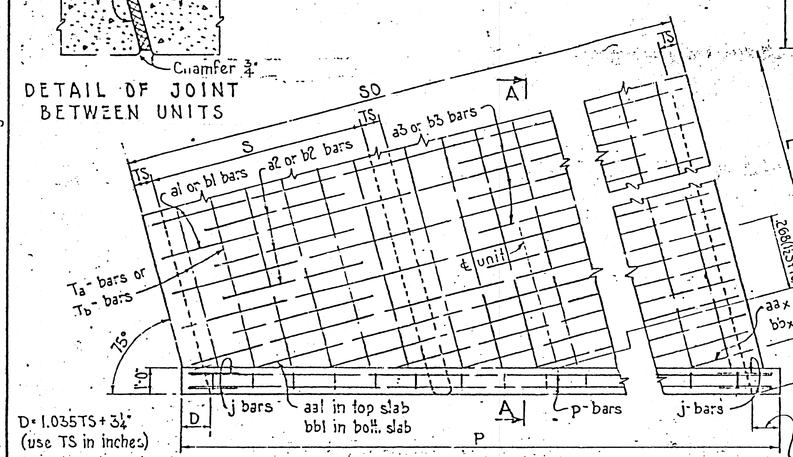
CLEAR SPAN	CLEAR HEIGHT A ; Q	DIMENSION	REINFORCING BARS ~ ONE SKEW END: aa & bb Size	aa & bb Size	aa & bb x	aa & bb B	aa & bb C	aa & bb Spacing	mm & nn Size	mm & nn Size	mm & nn x	mm & nn B	mm & nn C	mm & nn Spacing	p Size	p Length	g, h No. of ea.	DESIGN No. 1 0' TO 5' COVER: Reinforcing Steel - Lbs.	TRIPLE OPENING BOXES P	TRIPLE OPENING BOXES Conc. Cu.Yds.	FOR MULTIPLE UNIT BOXES Unit A3 P_A	Unit A3 Conc. Cu.Yds.	Unit I3 P_I	Unit I3 Conc. Cu.Yds.	Unit B3 P_B	Unit B3 Conc. Cu.Yds.	DESIGN No. 2 5' TO 10' COVER: Reinforcing Steel - Lbs.	TRIPLE OPENING BOXES P	TRIPLE OPENING BOXES Conc. Cu.Yds.	FOR MULTIPLE UNIT BOXES Unit A3 P_A	Unit A3 Conc. Cu.Yds.	Unit I3 P_I	Unit I3 Conc. Cu.Yds.	Unit B3 P_B	Unit B3 Conc. Cu.Yds.
4	2																																	
	3	1'-11"/2'-0"	5	4	6	15'-9"	1'-10½	6	5	5	4	15'-9"	2'-9½	9	5	14'-3	9	422	14'-11	3.22	14'-9"	3.17	14'-6"	3.09	14'-7¾	3.14	434	14'-11"	3.22	14'-9"	3.17	14'-6"	3.09	14'-7¾	3.14
	4																																	
6	2																																	
	3	1'-11"/1'-10"	7	5	6	19'-9"	2'-11½	9½"	6	6	7	19'-9"	2'-5¾	8'	5	20'-5½"	15	703	21'-1½"	4.45	20'-11¾	4.40	20'-8½"	4.32	20'-10¼	4.36	751	21'-1½"	4.45	20'-11¾	4.40	20'-8½	4.32	20'-10¼	4.36
	4	1'-11"/1'-11"	7	5	6	19'-9"	2'-11½	9½"	6	7	6	19'-9"	2'-11½	9½"	5	20'-6"	15	740	21'-1½"	4.54	20'-11¾	4.49	20'-8½"	4.40	20'-10¼	4.45	763	21'-1½"	4.54	20'-11¾	4.49	20'-8½	4.40	20'-10¼	4.45
	5	1'-10"/1'-11	6	5	6	19'-9"	2'-2	7'	6	6	7	19'-9"	2'-5¾	8	5	20'-5	15	760	21'-1½	4.63	20'-11¾	4.63	20'-8½	4.55	20'-10¼	4.58	787	21'-1½	4.63	20'-11¾	4.58	20'-8½	4.47	20'-10¼	4.53
	6	2'-2"/1'-11	7	5	6	19'-9"	2'-9¾	9'	6	6	7	19'-9"	2'-5¾	8	5	20'-9"	15	791	21'-2"	4.75	20'-11½	4.66	20'-8½	4.55	20'-11"	4.63	790	21'-2"	4.75	20'-11¾	4.66	20'-8½"	4.55	20'-11"	4.63
8	4	2'-2¾/2'-5⅜	7	6	9	25-9	2'-5⅞	8	7	7	8	25'-9"	2'-8⅝	8¾	6	26'-8"	18	1279	27'-4"	5.77	27'-2¼"	5.72	26'-11"	5.62	27'-0¾	5.67	1319	27'-4"	5.77	27'-2¼	5.72	26'-11	5.62	27'-0¾	5.67
	5																																	
	6	2'-5"/2'-3	8	6	8	25'-9"	2'-9½"	9"	8	7	7	25'-9"	3'-3¼"	10½	6	26'-8"	18	1270	28'-4¾	5.97	27'-2½"	5.89	26'-11"	5.78	27'-1½"	5.86	1356	28'-4¾	5.97	27'-2½"	5.89	26'-11"	5.78	27'-1½"	5.86
	7																																	
10	8	2'-1"/2'-3	8	6	7	26'-5"	3'-5"	11"	7	7	9	26'-5"	2'-6"	8"	6	27'-4½"	18	1339	28'-1½"	6.53	27'-10½"	6.40	27'-7½"	6.27	27'-10½"	6.39	1406	28'-1½"	6.53	27'-10½	6.40	27'-7¼"	6.27	27'-10½"	6.39
	4	2'-1"/2'-3	7	6	12	31'-9"	2'-4"	7½"	8	8	10	31'-9"	2'-9½"	9	7	32'-10½"	21	2041	33'-8"	7.04	33'-6¾	7.02	33'-3½"	6.91	33'-4¾	6.94	2000	33'-6½"	6.99	33'-4¾"	6.94	33'-1½"	6.85	33'-3¼"	6.90
	5	2'-1"/2'-3	7	6	12	31'-11"	2'-4"	7½"	8	8	10	31'-11"	2'-9½	9"	7	33'-0"	21	2041	33'-8"	7.13	33'-6¾	7.10	33'-3½"	6.99	33'-4¾	7.03	2029	33'-6½"	7.08	33'-4¾	7.03	33'-1½"	6.93	33'-3¼"	6.98
	6	1'-5⅝/2'-4	7	7	12	31'-9"	2'-5¾	8"	8	8	10	31'-9"	2'-0½	9"	7	32'-10½	21	2208	33'-7¼	7.20	33'-1½	7.11	33'-1½	7.00	33'-4	7.09	2092	33'-8¾	7.26	33'-3¾	7.19	33'-3½	7.08	33'-5½	7.14
	7	2'-3"/2'-5	7	6	12	32'-1"	2'-4"	7½"	8	8	10	32'-1"	2'-9½"	9"	7	33'-7"	21	2107	33'-11½"	7.46	33'-2"	7.36	33'-5⅜"	7.24	33'-8½"	7.30	2124	33'-11½"	7.46	33'-9"	7.36	33'-5¾	7.24	33'-8½"	7.34
	8	2'-4"/2'-5	7	6	12	32'-5"	2'-4"	7½"	8	8	10	32'-5"	2'-9½"	9"	7	33'-7"	21	2169	34'-4"	7.75	34'-1"	7.63	33'-9¾	7.49	34'-0¾"	7.62									
	9																																	
	10	1'-11"/1'-10	7	6	12	32'-9"	2'-5¾"	8"	8	8	11	32'-9"	2'-9½"	9"	7	33'-11"	21	2246	34'-9"	8.24	34'-5¼"	8.05	34'-2"	7.90	34'-6"	8.08	2264	34'-9"	8.24	34'-5¼"	8.05	34'-2"	7.90	34'-6"	8.08
	11																																	
	12	2'-6"/2'-6	7	7	10	32'-9"	2'-9½"	9"	8	8	10	32'-9"	2'-9½"	9"	7	33'-11"	21	2317	33'-11¾	8.35	34'-5¼"	8.30	34'-2"	8.13	34'-8½"	8.48	2230	34'-11¾	8.65	34'-5¼	8.30	34'-2"	8.13	34'-8½	8.48
12	6	2'-0"/2'-0	8	7	12	37'-11"	2'-11½	9½"	9	9	12	37'-11"	2'-11½	9½"	8	39'-3"	27	3305	39'-11¼"	8.43	39'-9½"	8.42	39'-6½"	8.30	39'-8"	8.37									
	8	2'-1"/2'-1	8	7	12	38'-5"	2'-11½	9½"	9	9	12	38'-5"	2'-11½	9½"	8	39'-9"	27	3412	40'-6½"	8.98	40'-3½"	8.86	40'-0¼"	8.72	40'-3½"	8.85									
	10	2'-6"/2'-2	8	8	11	38'-9	3'-1⅜	10"	9	9	12	38'-9"	2'-11½"	9½"	8	40'-1½"	27	3496	40'-11¾"	9.47	40'-7½"	9.28	40'-4½"	9.12	40'-6½"	9.31	3409	40'-11¾	9.47	40'-7½	9.28	40'-4½	9.12	40'-6½	9.31
	12																																	
14	8	2'-2"/1'-11	8	8	14	44'-5	2'-11½	9½	9	9	15	44'-5	2'-9⅜	9	9	46'-0	30	4460	46'-9	10.21	46'-6	10.08	46'-3	9.95	46'-5⅝	10.07	4279	46'-10⅝	10.27	46'-8 3/16	10.17	46'-5	10.04	46'-7 1/16	10.14
	10	2'-0"/2'-0	8	7	15	44'-9"	2'-9½"	9"	9	9	15	44'-9"	2'-9½"	9"	9	46'-4"	30	4524	47'-2¼"	10.69	46'-10¼"	10.50	46'-7"	10.35	46'-11"	10.54									
	12	2'-4"/2'-4	8	7	13	44'-8"	3'-1½"	10"	9	9	13	44'-8"	3'-1½"	10"	9	46'-4"	30	4075	47'-1"	10.90	46'-10¼	10.75	46'-7	10.53	46'-9¼	10.73									
	4																																	



KEY PLAN FOR MULTIPLE UNIT BOXES



DETAIL OF JOINT BETWEEN UNITS



SECTION A-A

PART PLAN

Showing position of aa & bb bars and reinforcing in parapet.

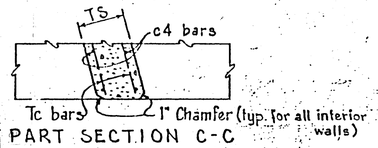
"One Skew End" includes parapet, cut-off and barrel beyond length "L". All quantities listed above are for one skew end. Reinforcing steel quantities also contain modification accounting for aa, bb, mm and nn bars near end of barrel.

RECORD DRAWING

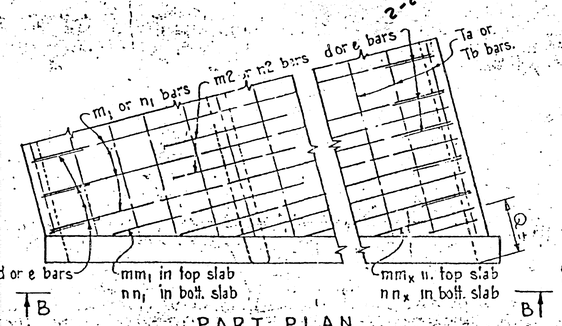
I hereby certify that the information contained on this drawing has been revised in accordance with information furnished by the contractor, Bender Construction, Inc., and by the surveyor, and reflects the construction as actually accomplished. This plan as constructed is in substantial compliance with the Approved Plan.

Martin D. Vinyard NMPE 8261

2-23-00

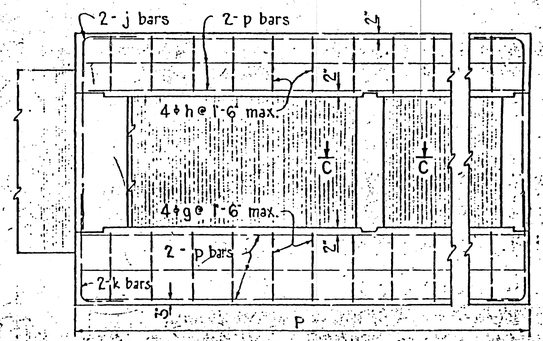


PART SECTION C-C



PART PLAN

Showing position of mm and nn bars



VIEW B-B

PLAN VIEWS ON THIS SHEET SHOW END FOR R.F. SKEW.
FOR PROPER DIRECTION OF SKEW SEE ROAD PLANS.

BAR DETAILS

aa1, bb1 / mm1, nn1	B — decrease in increments of "C" inches to B minus (x-1) C
aa_x, bb_x / mm_x, nn_x	
p	See table this sheet
T-bars	L+(10½" at ea. skew end) For size & spa. See Scr. CB-33

For other bars see Serial CB-33

NUMBER OF BARS REQUIRED FOR ENTIRE CULVERT

* a1, a3, b1, b3, m1 & n1 : 12 (L - R) ÷ Spacing.
* a2, b2, m2, n2 : 24 (L-R) ÷ Spacing.
- aa, bb, mm & nn : one of each at each skew end. Mark aa_1 to aa_x, bb_1 to bb_x etc.
* c1 : (24L ÷ Spacing) + 2 at each skew end.
- c2, d & e : (24L ÷ Spacing).
* c3 & c4 : (48L ÷ Spacing) + 4 at each skew end.
- p : 12 at each skew end.
* j & k : 4 of each at each skew end.
* 4 # g & h : See table on this sheet.
- T-bars : See Serial CB-33.
- L = Length of Barrel along axis of box in ft.
- R = 0.2680 (1½S + TS) for one skew end.
- R = 0.5360 (1½S + TS) for two skew ends.
* For details of bars not shown on this sheet See Serial CB-33.

⚠ ESTIMATED QUANTITIES

Calculate quantities from notes 4 and 5 on Serial CB-33 taking quantities per lin. ft. from Serial CB-33 & quantities for skew ends from this sheet.
For details of barrel, general notes and design data see Serial CB-33.

IDENT. NO.	DESCRIPTION	DATE	BY
2	EST. QTY. NOTE REFERENCE	6-17-94	PH
1			

REVISIONS (OR CHANGE NOTICES)

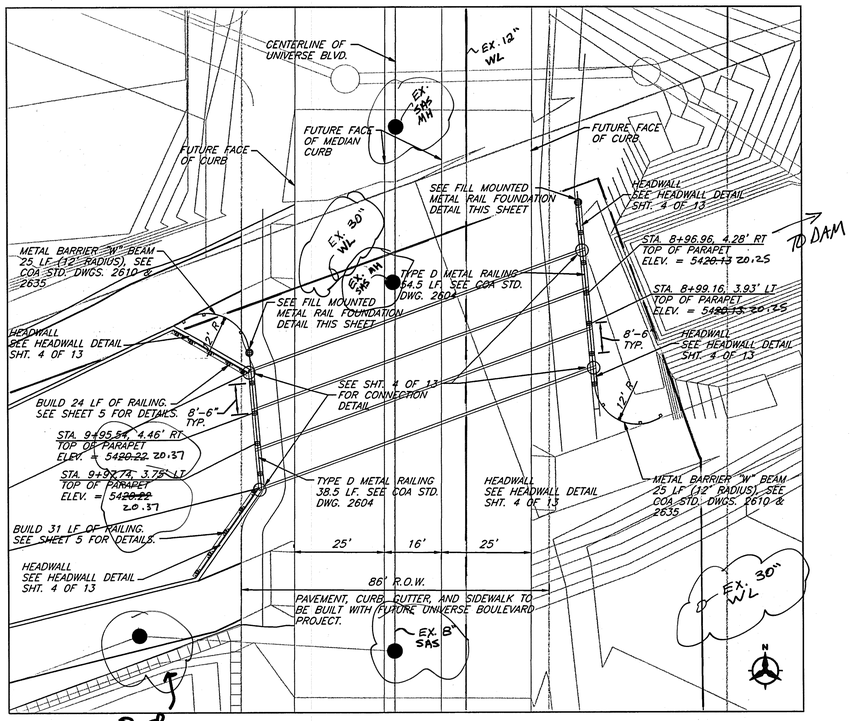
NEW MEXICO
STATE HIGHWAY DEPARTMENT
CONCRETE BOX CULVERT BARRELS
TRIPLE OPENING ~ 15° SKEW
DESIGN No. 1 & 2

Sheet 9 of 13
SERIAL CB-33-15

APPROVED: [signature] 12-20-60
BRIDGE ENGINEER

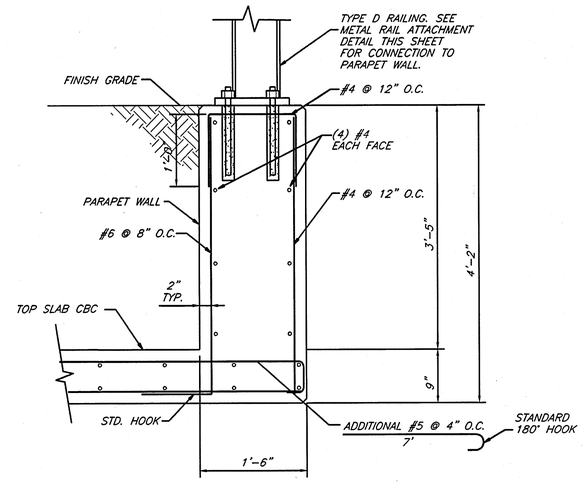
Designed by LMCS 12-60 Checked by LMC 12-60
Detailed by RH 12-60 Check'd by WJS 12-60

CPN 597881



PLAN VIEW

NOT TO SCALE

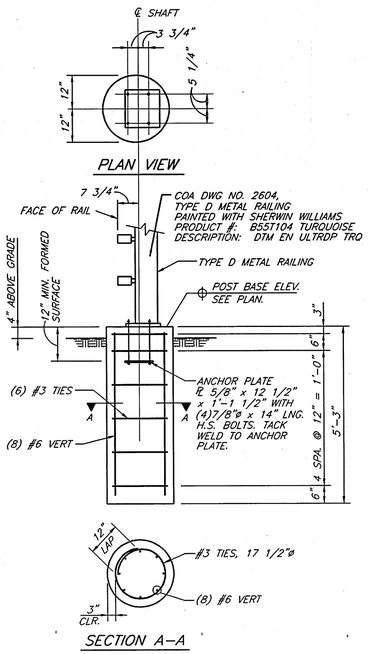


TYPICAL SECTION PARAPET WALL W/RAILING

NOT TO SCALE

NOTES:

1. WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986.
2. STRUCTURAL CAST IN PLACE CONCRETE.
   STRUCTURAL CAST IN PLACE CONCRETE SHALL BE IN ACCORDANCE WITH TABLE 101.C, CONCRETE FOR HYDRAULIC STRUCTURES.
3. REINFORCING STEEL.
   STEEL REINFORCEMENT AND PLACEMENT SHALL BE IN ACCORDANCE WITH SECTION 102-STEEL REINFORCEMENT AND SHALL BE GRADE 60.
   ALL LAP SPLICES SHALL BE CLASS B OR AS SHOWN ON THE PLANS.
4. SUBGRADE PREPARATION
   A) RETAINING WALLS
      PRIOR TO PLACING WINGWALL FOOTINGS, EXPOSED SOIL SHALL BE SCARIFIED TO A DEPTH OF TWELVE INCHES, MOISTENED TO A NEAR OPTIMUM MOISTURE CONTENT (±2%), AND COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-1557.
   B) CAST-IN-PLACE CONCRETE BOX CULVERTS
      SUBGRADE DIRECTLY UNDER CONCRETE BOX CULVERTS SHALL BE EXCAVATED TWO FEET BELOW BOTTOM OF BOTTOM SLAB ELEVATION, MOISTENED TO OPTIMUM MOISTURE (±2%), AND PLACED IN 8-INCH LOOSE LIFTS AND COMPACTED TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-1557, UNLESS BASALT ROCK IS ENCOUNTERED.
5. BACKFILL
   A) RETAINING WALLS
      BACKFILL SHALL NOT BE PLACED UNTIL CONCRETE HAS ATTAINED 80% OF DESIGN STRENGTH. BACKFILL SHALL BE PLACED IN LIFTS NO GREATER THAN 8 INCHES, MOISTURE CONDITIONED TO OPTIMUM MOISTURE CONTENT (±2%), AND COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-1557. HEAVY EQUIPMENT SHALL REMAIN A DISTANCE EQUAL TO THE HEIGHT OF THE WALL AWAY FROM THE RETAINED EARTH SIDE OF THE WALL.
   B) CAST-IN-PLACE CONCRETE BOX CULVERTS
      AFTER CONSTRUCTION OF THE CAST-IN-PLACE BOX, BACKFILL ADJACENT TO CBC SHALL BE MOISTENED TO OPTIMUM MOISTURE (±2%), PLACED IN 8" LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTMD-1557. A FIELD DENSITY TEST SHALL BE TAKEN ON ALTERNATE LIFTS, TO INSURE PROPER COMPACTION. FILL SHALL BE PLACED ON EACH SIDE OF THE CBC SUCH THAT EACH LIFT IS LEVEL AND WITHIN ONE FOOT OF THE FILL ELEVATION AT THE OPPOSITE SIDE OF THE CBC. HEAVY EQUIPMENT USED IN COMPACTION EFFORTS ABOVE THE CAST-IN-PLACE BOX SHALL NOT BE USED UNTIL 2 FEET OF COMPACTED SOIL LIES ABOVE THE BOX. IN NO CASE SHALL CONSTRUCTION EQUIPMENT GREATER THAN 32 TONS BE PLACED ON OR ABOVE THE STRUCTURE.
6. WORK SHALL BE DONE BETWEEN THE MONTHS OF SEPTEMBER THRU JUNE 15.
7. CONTRACTOR SHALL CLEAN ALL CONSTRUCTION DEBRIS FROM AREA.



FILL MOUNTED METAL RAIL FOUNDATION

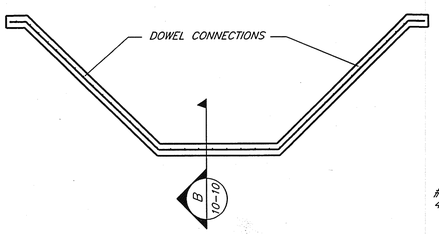
SCALE: 1/2" = 1'-0"

RECORD DRAWING

I hereby certify that the information contained on this drawing has been revised in accordance with information furnished by the contractor, Bender Construction, Inc., and by the surveyor, and reflects the construction as actually accomplished. This plan as constructed is in substantial compliance with the Approved Plan.

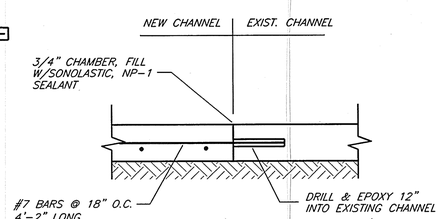
Mitch D. Vinyard NMPE 8261

2-23-00



EXISTING/NEW CHANNEL CONNECTIONS

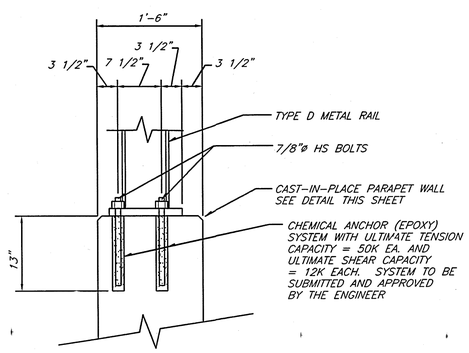
NOT TO SCALE



SECTION B-B

B / 10 10

NOT TO SCALE



METAL RAIL ATTACHMENT

NOT TO SCALE

AS-BUILT INFORMATION

CONTRACTOR Bender DATE 9-00
WORK STAKED BY Lopez & Sons DATE 9-00
INSPECTOR'S ACCEPTANCE BY Vinyard DATE 9-00
VERIFICATION BY Vinyard DATE 9-00
DIMENSIONS CHANGED BY Vinyard DATE 9-00

BENCH MARKS

ACS BRASS TABLET STAMPED "1-B10" GEOGRAPHIC POSITION (NAD 1927) N.M. STATE PLANE COORDINATES (CENTER ZONE)
X = 357,526.69 Y = 1,525,168.35 Δx=+ −00°16'30"
NGVD 1929 ELEVATION = 5419.522
STATION IS LOCATEDDED 0.90 MILES NW FROM THE CORNER OF PARADISE BLVD. AND PARK LANE TO THE CROSSING OF A PLAINS ELECT. CO-OP POWERLINE. THE STATION IS 225 FT. SOUTH OF THIS POINT BETWEEN THE POLES OF A PYLON.
STA. MK. IS SET IN TOP OF A CONC. POST FLUSH W/ GROUND.

MICRO-FILM INFORMATION

RECORDED BY
DATE
NO.

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	

DESIGNED BY L.M.M. DATE 8-98
DRAWN BY TONYM DATE 8-98
CHECKED BY D.J.G. DATE 8-98

Bohannan ▲ Huston

Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

NORTH BRANCH PIEDRAS MARCADAS CHANNEL HEADWALL PENETRATION DETAILS

DESIGN REVIEW COMMITTEE — APPROVED — DESIGN REVIEW COMMITTEE

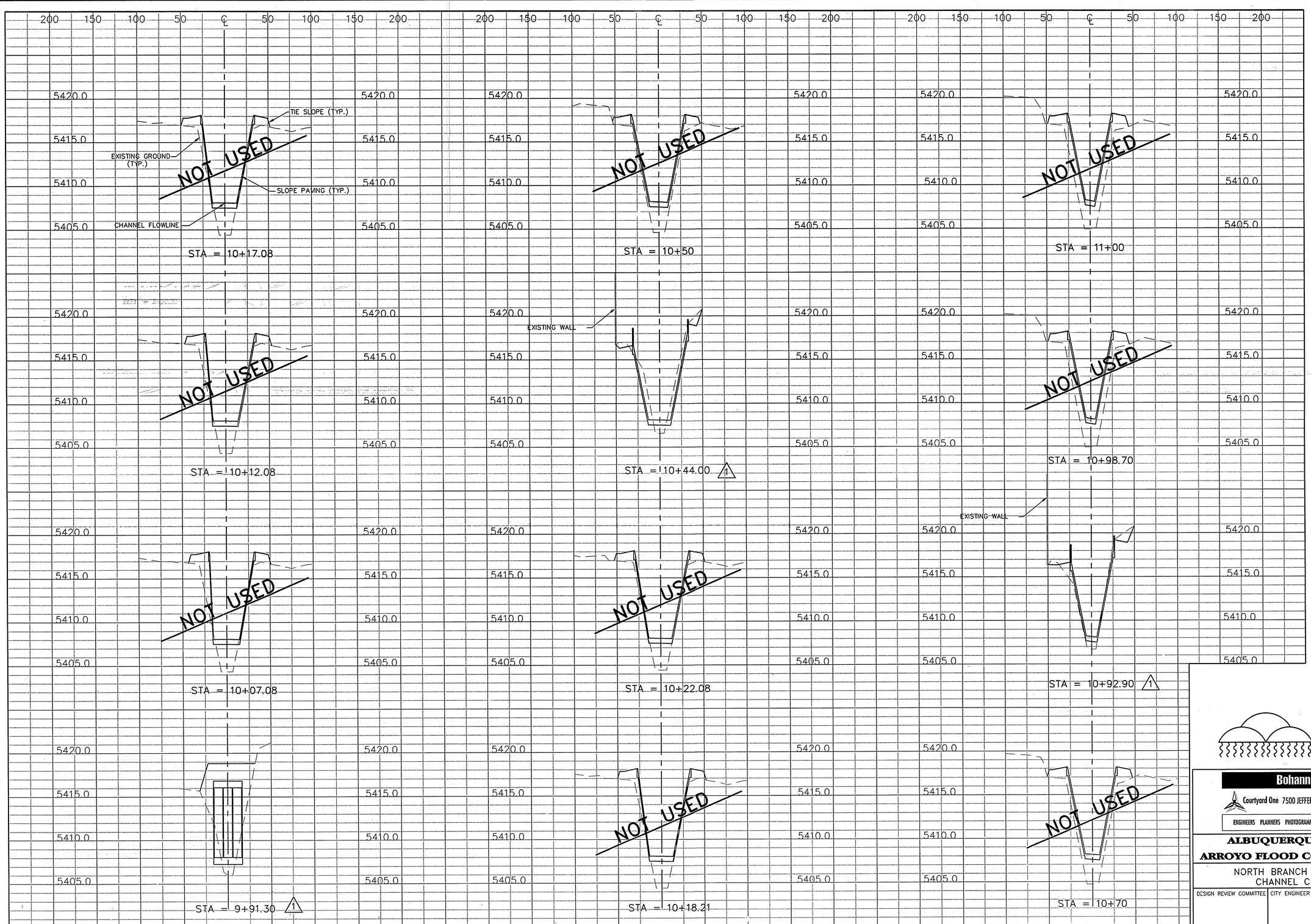
CITY ENGINEER APPROVAL

LAST DESIGN UPDATE | MO./DAY/YR. | MO./DAY/YR.

CITY PROJECT NO. 5978.81 | ZONE MAP NO. B9, B1C | SHEET 10 OF 13

BHI PROJ. NO. H95285A242121
FIL.NAME:BHI-MAIN:[H95285.HYDRO.DESIGN.PHASE3]HEAD-PEN.DWG
7/98

COPYRIGHT BOHANNAN-HUSTON, INC. 1/15/98



SCALE: 1"=50' Horizontal
1"=5' Vertical

AS-BUILT INFORMATION

CONTRACTOR	DATE
WORK STAKED BY	DATE
INSPECTOR'S ACCEPTANCE BY	DATE
FIELD VERIFICATION BY	DATE
DRAWINGS CORRECTED BY	DATE
MICRO-FILM INFORMATION	
RECORDED BY	DATE
NO.	

BENCH MARKS

ACS BRASS TABLET STAMPED "1-B10" GEOGRAPHIC POSITION (NAD 1927) N.M. STATE PLANE COORDINATES (CENTER ZONE)
X = 357,526.69 Y = 1,525,168.35 $\Delta c = -00°16'30"$
NGVD 1929 ELEVATION = 5419.522
STATION IS LOCATED 0.90 MILES NW FROM THE CORNER OF PARADISE BLVD. AND PARK LANE TO THE CROSSING OF A PLAINS ELECT. CO-OP POWERLINE. THE STATION IS 225 FT. SOUTH OF THIS POINT BETWEEN THE POLES OF A PYLON.
STA. MK. IS SET IN TOP OF A CONC. POST FLUSH W/ GROUND.

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
1	4-21-99	CROSS SECTION REVISIONS	DEB

REVISIONS

DESIGN

DESIGNED BY D.E.B. DATE 8-98
DRAWN BY TONYM/SFG DATE 8-98
CHECKED BY D.J.G. DATE 8-98

Bohannan ▲ Huston

Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

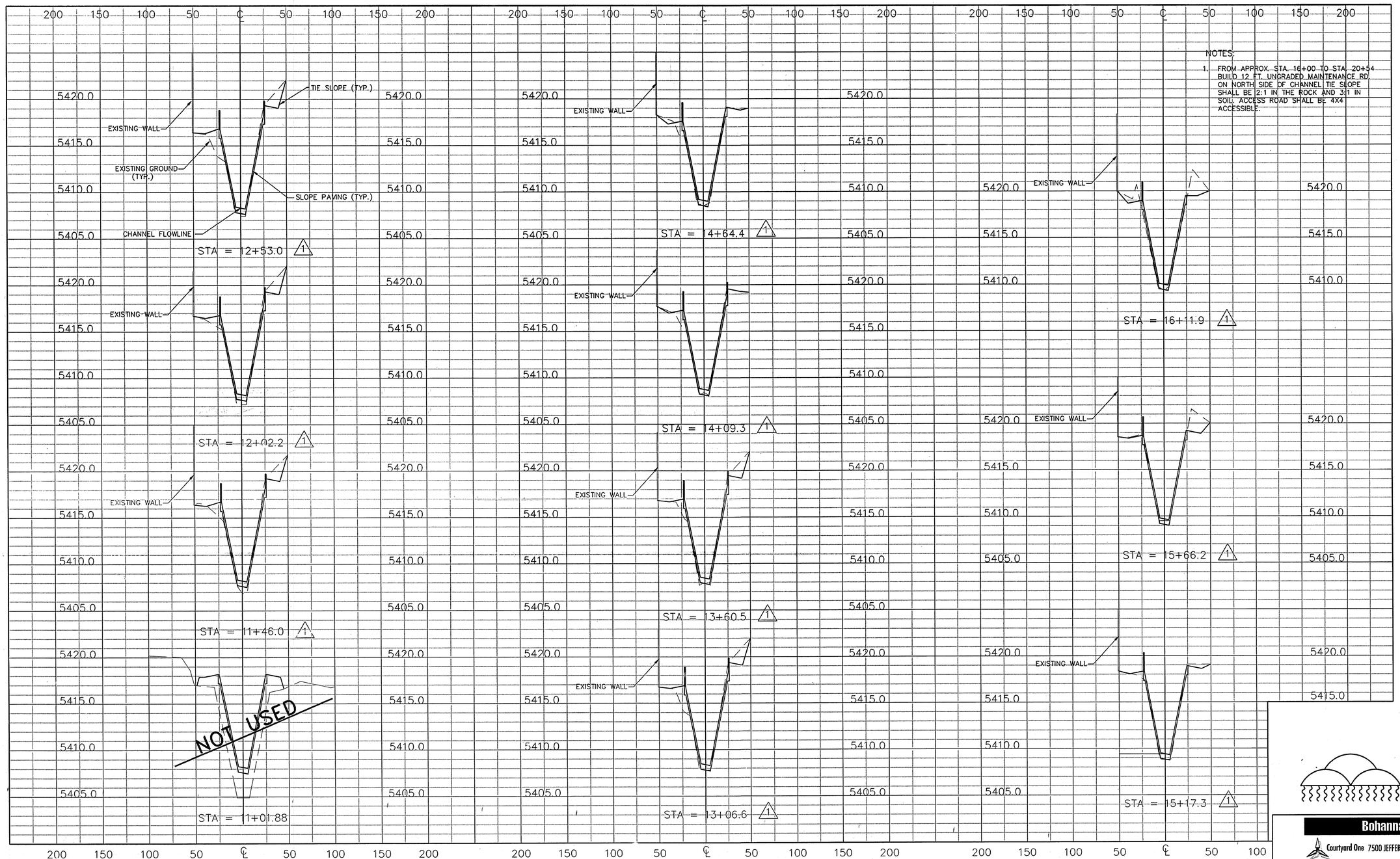
NORTH BRANCH PIEDRAS MARCADAS
CHANNEL CROSS SECTIONS

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
5978.81	B9, [illegible]	11	13

FILENAME: BHI-MAIN:[95285.HYDRO.DESIGN.PHASE3]DEBRC001001.DWG
4/99

COPYRIGHT BOHANNAN-HUSTON, INC.



NOTES:

1. FROM APPROX. STA. 16+00 TO STA. 20+54 BUILD 12 FT. UNGRADED MAINTENANCE RD. ON NORTH SIDE OF CHANNEL TIE SLOPE SHALL BE 2:1 IN THE ROCK AND 3:1 IN SOIL. ACCESS ROAD SHALL BE 4X4 ACCESSIBLE.

AS-BUILT INFORMATION

CONTRACTOR Bernalillo Const. DATE 8-98
WORK STAKED BY Wilmer Sandoval DATE 8-98
INSPECTOR ACCEPTANCE BY W. Lujan DATE 8-98
INSPECTOR VERIFICATION BY W. Lujan DATE 8-98
DRAWINGS CORRECTED BY W. Lujan DATE 8-98
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS

ACS BRASS TABLET STAMPED "1-B10" GEOGRAPHIC POSITION (NAD 1927) N.M. STATE PLANE COORDINATES (CENTER ZONE) X = 357,526.69 Y = 1,525,168.35 Δx= -00°16'30"
NGVD 1929 ELEVATION = 5419.522
STATION IS LOCATED 0.90 MILES NW FROM THE CORNER OF PARADISE BLVD. AND PARK LANE TO THE CROSSING OF A PLAINS ELECT. CO-OP POWERLINE. THE STATION IS 225 FT. SOUTH OF THIS POINT BETWEEN THE POLES OF A PYLON.
STA. MK. IS SET IN TOP OF A CONC. POST FLUSH W/ GROUND.

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
1	4-21-99	CROSS SECTION REVISIONS	DEB

REVISIONS

DESIGN

DESIGNED BY D.E.B. DATE 8-98
DRAWN BY TONYM/SFG DATE 8-98
CHECKED BY D.J.G. DATE -98

Bohannan ▲ Huston
Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

NORTH BRANCH PIEDRAS MARCADAS
CHANNEL CROSS SECTIONS

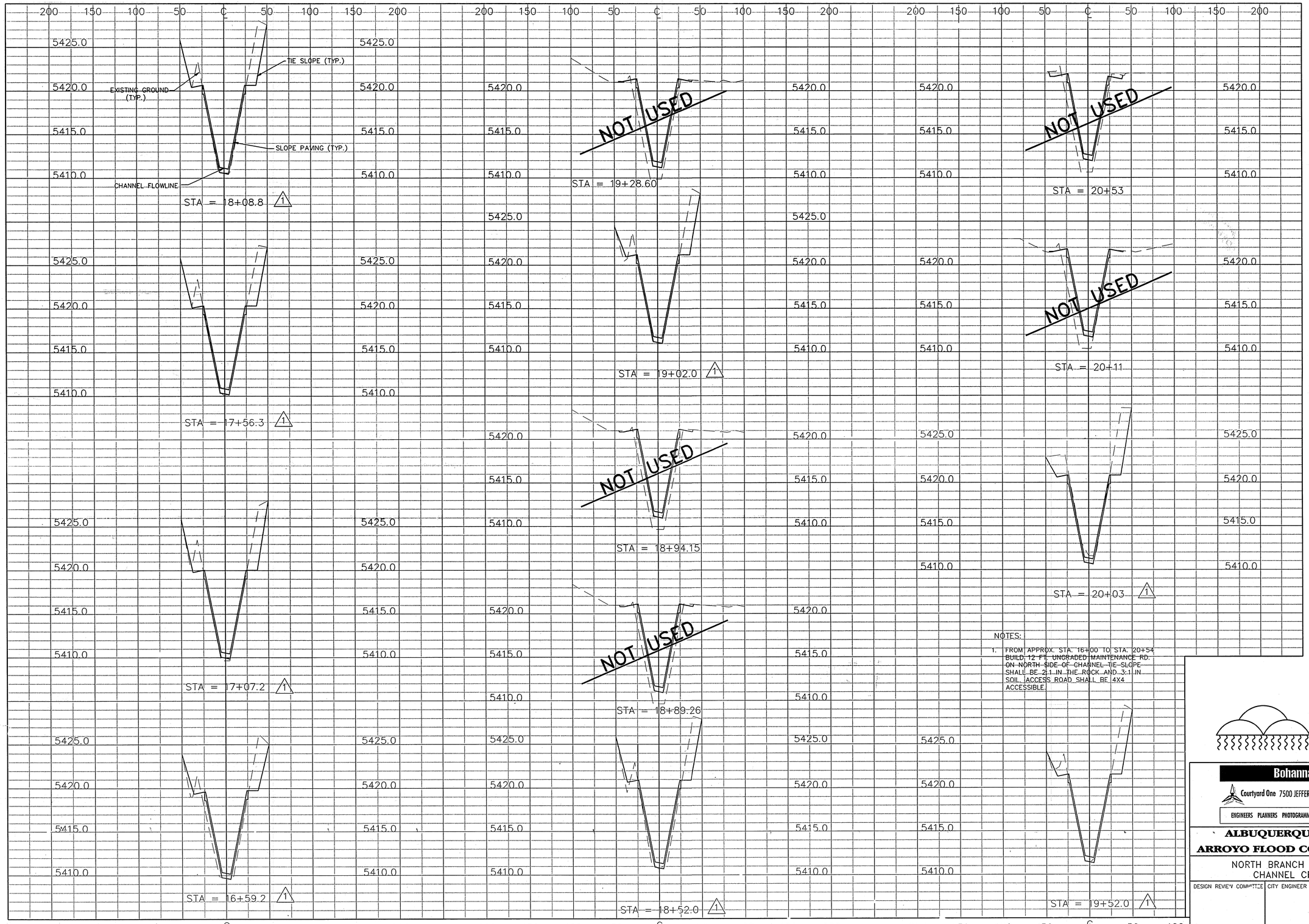
DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.

SCALE: 1"=50' Horizontal
1"=5' Vertical

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
5978.81	B9, B1[illegible]	12	13

FILENAME: BHI-MAIN:[95285.HYDRO.DESIGN.PHASE3]DEBRC002001.DWG
4/99

COPYRIGHT BOHANNAN-HUSTON, INC.
1/15/97



NOTES:

1. FROM APPROX. STA. 16+00 TO STA. 20+54 BUILD 12 FT. UNGRADED MAINTENANCE RD. ON NORTH SIDE OF CHANNEL. TIE SLOPE SHALL BE 2:1 IN THE ROCK AND 3:1 IN SOIL. ACCESS ROAD SHALL BE 4X4 ACCESSIBLE.

SCALE: 1"=50' Horizontal
1"=5' Vertical

AS-BUILT INFORMATION

CONTRACTOR Benoit DATE 8-98
WORK STAKED BY Andrews Survey DATE 8-98
WORK INSPECTED ACCEPTANCE BY Vinyard DATE 8-98
FIELD REVISION BY Vinyard DATE 8-98
DRAWINGS CORRECTED BY Vinyard DATE 8-98

MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS

ACS BRASS TABLET STAMPED "1-B10" GEOGRAPHIC POSITION (NAD 1927) N.M. STATE PLANE COORDINATES (CENTER ZONE) X = 357,526.69 Y = 1,525,166.35 $\Delta\alpha = -00°16'30''$
NGVD 1929 ELEVATION = 5419.522
STATION IS LOCATED 0.90 MILES NW FROM THE CORNER OF PARADISE BLVD. AND PARK LANE TO THE CROSSING OF A PLAINS ELECT. CO-OP POWERLINE. THE STATION IS 225 FT. SOUTH OF THIS POINT BETWEEN THE POLES OF A PYLON.
STA. MK. IS SET IN TOP OF A CONC. POST FLUSH W/ GROUND.

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
1	4-21-99	CROSS SECTION REVISIONS	DEB

REVISIONS
DESIGN

DESIGNED BY D.E.B. DATE 8-98
DRAWN BY TONYM/SFC DATE 8-98
CHECKED BY D.J.G. DATE 8-98

Bohannan ▲ Huston

Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

NORTH BRANCH PIEDRAS MARCADAS CHANNEL CROSS SECTIONS

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL		MO./DAY/YR.	MO./DAY/YR.
		LAST DRAWING UPDATE		

CITY PROJECT NO.	ZONE MAP	SHEET	OF
5978.81	B9, F 0	13	13

COPYRIGHT BOHANNAN-HUSTON, INC.
1/15/2

FILENAME: BHI MAIN:[95285.HYDRO.DESIGN.PHASE3]DEBRC003001.DWG
4/99