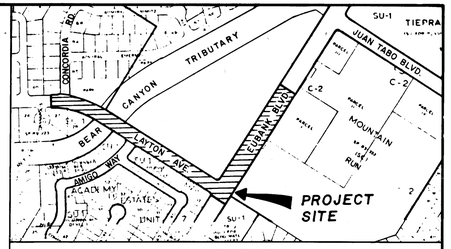
LAYTON & BEAR TRIBUTARY CROSSING STRUCTURE & STORM DRAIN

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LAYTON AVE. STREET PLAN & PROFILE
3	LAYTON AVE. STORM DRAIN PLAN & PROFILE
4	EUBANK BLVD. STORM DRAIN PLAN & PROFILE
5-10	DETAILS
11	TRAFFIC CONTROL SHEET



ZONE ATLAS MAP E-21
VICINITY MAP
NOT TO SCALE

GENERAL NOTES

1. All work detailed on these pages to be performed under contract shall, except as otherwise stated or provided for hereon, be constructed with the City of Albuquerque Standard Specifications for Public Works Construction - 1986 (referred to herein as the Standard Specifications).
2. Two (2) working days prior to any excavation, contractor must contact Line Locating Service, 260-1990 for location of existing utilities.
3. 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 minimum amount of delay.
4. All utilities and utility service lines shall be installed prior to paving.
5. Backfill compaction shall be according to specified street use.
6. Tack coat requirements shall be determined by the City Engineer.
7. Sidewalks and wheelchair ramps within the curb returns shall be constructed wherever a new curb is constructed.
8. If a curb is depressed for a drivepad or a wheelchair ramp, the drivepad or ramp shall be constructed prior to acceptance of the curb & gutter.
9. All storm drainage facilities shall be completed prior to final acceptance.
10. Contractor shall notify the ENGINEER not less than seven (7) days prior to starting work, in order that the ENGINEER may take necessary measures to insure the preservation of survey monuments. CONTRACTOR shall not disturb permanent survey monuments without the consent of the ENGINEER and shall notify the ENGINEER and bear the expense of replacing any that may be disturbed without permission. Replacement shall be done only by the ENGINEER. When a change is made in the finished elevation of the pavement of any roadway in which a permanent survey monument is located, CONTRACTOR shall, at his own expense, adjust the monument cover to the new grade unless otherwise specified.

APPROVAL OF AS BUILT DRAWINGS
CHIEF CONSTRUCTION ENGINEER
DATE 7/15/91

C of A PWD Maps & Records
1 2 3 4 5 6 7 8 9 10 11 12
2 6 3 5 9 8 0 1 9 1

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

APPROVAL OF REVISIONS

DANIEL J. CHAMPION 9766 REGISTERED PROFESSIONAL ENGINEER
3/26/90

BOHANNAN · HUSTON INC.
ALBUQUERQUE
ENGINEERS · PLANNERS · PHOTOGRAMMETRISTS

APPROVED FOR CONSTRUCTION
5-18-90 C.E.

PROJECT NUMBER
3598

SHEET 1 OF 11

BHI JOB NO. 89182

SEE SHEET'S 9 & 10 FOR INFORMATION REGARDING IRRIGATION ADJUSTMENT, TREE PROTECTION, & CO-ORDINATION W/PARK MGMT.

SCALE: 1"=50' HORIZ.
1"=10' VERT.

BEAR TRIBUTARY ARROYO

PARK

REMOVE EXISTING SIDEWALK & REPLACE W/SOD

BUILD 4' SIDEWALK TO COA SPECS.

SIDEWALK RELOCATED TO BACK OF CURB

LIMITS OF PAVEMENT & C&G REMOVAL

CONC. VALVE BOX

WATER METER

REMOVE EXISTING FENCE

ELEC BOX

CONCORDIA RD.

BUILD 6' SIDEWALK

8.2' S.W.

6' S.W.

6.3' S.W.

BUILT 6' SIDEWALK AS PART OF THIS PROJECT. (BACK OF CURB)

END NEW SIDEWALK

REMOVE EXISTING GUARD RAIL

FUTURE TRAIL

MAINT. RD (SEE SHEET 10)

ACADEMY ESTATES UNIT 7

CURVE DATA ℄ LAYTON
P.I. STA. 2+28.18
L = 252.56
R = 600.00'
T = 128.18
Δ = 24.118°

SEE SHEET 9 FOR DETAILS OF THE BEAR TRIB./ LAYTON AVE. INTERSECTION.

DRAINAGE R/W 200'

DRAINAGE R/W 150'

STA. 4+58.65 (24' LT.) TC=26.05
STA. 4+73.60 (24' LT.) TC=26.07
BUILD 2 SINGLE 'C' INLETS

STA. 6+44.67 LAYTON AVE = STA. 0+00.00 AMIGO WAY

STA. 4+90.80 (24' LT.) TC=26.14
BUILD 1 - TYPE 'A'

	TC	FL
1	28.50	27.83
2	28.29	27.62
3	28.09	27.42

PHONE BOX

ELEC BOXES

EE 28.70 TC

EE 29.70 TC

EE 29.48 TC

EE 27.98 TC

EE 27.75 TC

EE 29.43 TC

EE 29.09 TC

EE 28.85 TC

EL 28.40

EL 28.35

PT 26.93 TC

PT 3+52.56

NEW BOX CULVERTS

8' DIP

6" H.P.

24" CC.

8" VCP

12' C.I.

42" RCP

LAYTON AVE

STA. 5+00.00

T/W 27.11

T/W 27.02

T/W 29.42

38' RUNDOWN

HAND DISAP ACCESS R. 27.60

R. 21.76

R. 28.35

	TC	FL
1	28.02	27.35
2	28.30	27.63
3	28.57	27.90

4' S.W.

AMIGO WAY

REMOVE EXIST. CONC. SLOPE PAVING. GRADE TO SLOPE @ 2% TO NEW SIDEWALK.

LOT 43 SPRINKLER HEADS TO BE ADJUSTED AS REQUIRED FOR CONSTRUCTION

STA. 6+44.67 LAYTON AVE = STA. 0+00.00 AMIGO WAY

	TC	FL
1	29.10	28.43
2	29.14	28.47
3	29.23	28.56

6' S.W.

LIMITS OF PAVEMENT, C&G & SIDEWALK REMOVAL & REPLACEMENT

ACADEMY ESTATES UNIT 7

AMIGANTE DRIVE

STA. 11+75.00 (24' LT.) TC = 38.33
STA. 11+89.95 (24' LT.) TC = 38.64
BUILD 2 SINGLE 'C' INLETS

SPRING PARK APARTMENTS

STA. 8 + 50.00 (24' LT.) TC=32.38
STA. 8 + 64.05 (24' LT.) TC=32.69
STA. 8 + 79.90 (24' LT.) TC=32.98
BUILD 3 - SINGLE 'C' INLETS

STA. 10+12.50 (24' LT.) TC=35.35
STA. 10+27.45 (24' LT.) TC=35.63
STA. 10+42.40 (24' LT.) TC=35.90
BUILD 3 - SINGLE 'C' INLETS

STA. 12+07.15 (24' LT.)
BUILD 1 - TYPE 'A' INLET TC=39.01

	TC	FL
1	29.38	28.71
2	29.38	28.71
3	29.48	28.81

APPROX. LIMITS OF PVMT REMOVAL & REPLACEMT PER COA STD DWG #2465

TRASH BOX

CABLE TV PED.

6' S.W.

N57°00'00"W 292.11'

S 57°00'00" E

8" VCP

12" C.I.

LIMITS OF EXIST. PC. CONC. PAVEMT. (TO BE REMOVED)

STA. 12+22
NEW 4" SAS MH BUILT. (DEAD END)

SAS MH & 8" VCP ABANDON IN PLACE.

EXISTING 4' S.W. CONSTRUCT 6' S.W.

STA. 13+26.06
℄ INTERSECTION EUBANK BLVD & LAYTON AVE.
SEE DETAIL SHEET 10.

EUBANK BLVD.

6" C.I.

10" C.I.

6" VCP

SAS

MOUNTAIN RUN APARTMENTS

ACADEMY PLACE TRACT 'J'

KEYED NOTES

1. NO CROWN
2. ADJUST MH TO GRADE
3. ADJUST VALVE BOX TO GRADE & STEM
4. 4' S.W.
5. BUILD WHEELCHAIR RAMP
6. 6' S.W.
7. EXISTING PAVEMENT CUT
8. LOCATE & ADJUST MH TO GRADE

LEGEND

- ℄ OF RIGHT-OF-WAY
- PROPERTY LINE W/PC
- NEW STORM DRAIN W/MANHOLE
- NEW INLET
- BACK CURB W/LIP OF GUTTER (CBACK LIP)
- EXIST. GAS
- EXIST. UNDERGROUND ELEC.
- EXIST. UNDERGROUND PHONE
- EXIST. CABLE TV
- EXIST. BLOCK WALL
- EXIST. CONC. SLOPE
- NEW CONC. SLOPE
- NEW SPOT ELEVATION
- EXIST. SPRINKLER LINE
- EXIST. SPRINKLER FIXTURE
- EXIST. WATER VALVE
- EXIST. SAS LINE W/MH
- EXIST. TRAFFIC BOX

NOTES

1. ALL STATIONING IS BASED ON CENTERLINE OF RIGHT-OF-WAY.
2. ALL CURB RETURN RADII ARE 25' UNLESS OTHERWISE INDICATED.
3. WHEN INSTALLING INLETS OUTSIDE THE PAVEMENT REMOVAL LIMITS, REMOVE CURB & GUTTER AS REQUIRED FOR INLET INSTALLATION PER CITY STANDARD DRAWINGS. MATCH NEW CURB ELEVATIONS TO EXISTING.
4. REMOVAL OF EXISTING FENCE AND GUARD RAIL SHOWN ON THIS SHEET IS INCIDENTAL TO SIDEWALK REMOVAL AND NO SEPARATE PAYMENT WILL BE MADE.

101.87' @ 3.75% (LT.) | 183.00' @ -1.48% (LT.) | 137.99' @ 1.88% (LT.) | 34.66' @ 1.88% (LT.)
101.87' @ 3.75% (RT.) | 183.00' @ -1.48% (RT.) | 131.21' @ 1.68% (RT.) | 35.89 @ 1.88% (RT.)

183' VC | 183' VC

BEGIN CONSTRUCTION 24.60 TC
1+84.67 VPC 24.57 TC
1+95.04
2+86.54 (26.00) VPI 26.80 TC
3+26.25 HIGH POINT (27.41) 27.03 TC
3+78.04 VPRC 26.65 TC
4+39.65 3' TRANSITION TO RUNDOWN C&G (LT)
4+58.65 LOW POINT (25.45) 26.05 TC
4+69.54 (25.29) VPI 26.06 TC
4+77.65 3' TRANSITION TO STANDARD C&G (LT)
5+61.04 VPT 27.01 TC
6+00.75 ER (RT.) 27.76 TC
6+07.53 ER (LT.) 27.88 TC
6+91.11 ER (RT.) 29.46 TC
6+92.34 ER (LT.) 29.48 TC
7+27.00 END CONSTRUCTION 30.13 TC

EXISTING TOP OF PAVEMENT @ PAVEMENT ℄

RIM = 30.10, MH NOT FOUND
ELEV. as per AS-BUILTS

RIM = 35.69

INV = 29.00

RIM = 26.58; as per AS-BUILTS
MH NOT FOUND

EXIST RIM = 23.96

NEW RIM = 26.73

INV = 25.95

INV = 19.42

INV = 15.36

INV = 11.93

INV = 09.64

12" W | 24" W | SAS

5650 | 5640 | 5630 | 5620 | 5610

(24.75) 24.75 TC | (26.63) 26.20 TC | (27.80) 26.93 TC | (27.06) 26.95 TC | (26.32) 26.36 TC | (25.58) 26.05 TC | (25.86) 26.20 TC | (26.80) 25.81 TC | 27.74 TC | 28.68 TC | 29.62 TC

1+00 | 2+00 | 3+00 | 4+00 | 5+00 | 6+00 | 7+00 | 8+00 | 9+00 | 10+00 | 11+00 | 12+00 | 13+00

BENCH MARKS
AS BUILT INFORMATION
STATION IS A STANDARD A.C.S. BRASS TABLET STAMPED "1-E21-4", SET IN TOP OF THE WEST CURB ON EUBANK BLVD. STATION IS LOCATED APPROX. 380' NORTHEAST OF THE CENTERLINE OF MALAGUENA LANE. ELEV.= 5642.71
CONT. C&M
SURV. U.F.
PROJ. ACADEMY
SURVEY. PARK

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEER'S SEAL
12/6/90

MICRO-FILM INFORMATION

NO. DATE REMARKS BY
REVISIONS
DESIGN DJG 9/89
DESIGNED BY NM, DHG DATE 9/89
DRAWN BY DATE
CHECKED BY

C of A PWD Maps & Records
1 2 3 4 5 6 7 8 9 10 11 12
2 6 3 5 9 8 0 2 9 1

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: LAYTON--BEAR TRIBUTARY CROSSING STRUCTURE AND STORM DRAIN
LAYTON AVE. STREET PLAN & PROFILE

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN	Ron J Drew	5/9/90	WATER	R.W. Kane	5-8-90
TRANSPORTATION	[illegible]	5-8-90	WASTE WATER	R W. Kane	5-8-90
HYDROLOGY	[illegible]	5/3/90			
PARKS & REC.	Dan Stevens	5-4-90			

DRAWING NO. 3598 | MAP NO. E-21 | SHEET 2 OF 11

SEE SHEETS 9 & 10 FOR INFORMATION REGARDING IRRIGATION ADJUSTMENT, TREE PROTECTION, & CO-ORDINATION W/PARK MGMT.

BEAR TRIBUTARY ARROYO

200' R/W

PARK

SPRING PARK APARTMENTS

MOUNTAIN RUN APARTMENTS

ACADEMY PLACE TRACT 'J'

ACADEMY ESTATES UNIT 7

AMIGANTE DRIVE

AMIGO WAY

EUBANK BLVD.

LAYTON

MATCH LINE STA 13+28.06

SCALE: 1"=50' HORIZ. 1"=10' VERT.

STA 4+38.5 45.8' LT
POTHOLE TO LOCATE EXISTING TELEPHONE & ELECTRIC LINES

STA 4+58.00 24' LT
STA 4+72.50 24' LT
BUILD 2 SINGLE 'C' INLETS

12.00 LF 18" RCP CL. III @ S = 0.0300 ft/ft

12.00 LF 18" RCP CL III @ S = 0.0100 ft/ft

22.58 LF 24" RCP CL III @ S=0.0100 ft/ft

REMOVE & RECONSTRUCT 102 FT. OF LOW FLOW CHANNEL TO ALIGN W/ BOX CULVERTS

STA 4+87.50 10' RT
BUILD 1 TYPE 'A' INLET

STA. 6+44.67 LAYTON AVE. = STA. 0+00.00 AMIGO WAY

STA 8+49.7 24' LT
STA 8+64.2 24' LT
STA 8+79.2 24' LT
BUILD 3 SINGLE 'C' INLETS

45.25 LF 24" RCP CL. III @ S = 0.0100 ft/ft

STA 8+18.00 10' RT
BUILD TYPE 'E' MH 6' DIA

STA 9+80.50 10' RT
INSTALL 36"x24" PRECAST 45° WYE (INCIDENTAL TO RCP)

45.25 LF 24" RCP CL. III @ S = 0.0450 ft/ft

STA 10+15.5 24' LT
STA 10+30.2 24' LT
STA 10+45.2 24' LT
BUILD 3 SINGLE 'C' INLETS

STA 10+21 25' LT
POTHOLE TO LOCATE TELEPHONE & ELECTRIC LINES

45.25 LF 24" RCP CL. III @ S = 0.0360 ft/ft

STA 12+04.2 24' LT
BUILD 1 TYPE 'A' INLET

STA 24' LT
STA 24' LT
BUILD 2 SINGLE 'C' INLETS

SIDEWALK CULVERTS (11)

CONC. DRAIN

4-12" PVC DRAIN PIPES

STA. 13+26.06 ℄ INTERSECTION EUBANK BLVD. & LAYTON AVE.

ABANDONED MH & 8" VCP IN PLACE

STA 12+82.06 30.33' LT BACK = STA 13+56.39 44' LT AHEAD
INSTALL 24"x24" PRECAST 45° WYE (INCIDENTAL TO RCP)

STA 12+50.00 10' RT
BUILD TYPE 'E' MH 6' DIA.

STA. 12+22 NEW 4' SAS MH

APPROXIMATE LIMITS OF PAVEMENT REMOVAL & REPLACEMENT FOR STORM DRAIN INSTALLATION PER COA STD DWG #2465

EXISTING 4' S.W. CONSTRUCT 6' S.W.

STA. 11+43.00 10' RT
INSTALL 36"x24" PRECAST WYE (INCIDENTAL TO RCP)

CURVE DATA ℄ LAYTON
P.I. STA. 2+28.18
L = 252.56
R = 600.00
T = 128.18
Δ = 24.118°

STA. 4+20.5 18.5' RT
POT HOLE TO LOCATE EXISTING GAS LINE.

STA 4+54.03 10' RT
BUILD TYPE 'E' MH 6' DIA.

14.85 LF 42" RCP CL. III (FOR CONNECTION TO CBC, SEE DETAIL SHEET 9)

STA. 4+25.65
BUILD 2-TRIPLE 6'x4' BOX CULVERTS
SKEW 15° LEFT FRONT
INV. @ ℄ LAYTON = 19.00
S = 0.0040 ft/ft
EDGE of PARAPET: 32' LEFT, 43' RIGHT
SEE SHEETS 5-9 FOR DETAILS

SEE SHEET 9 FOR DETAILS OF THE BEAR TRIB./ LAYTON AVE. INTERSECTION.

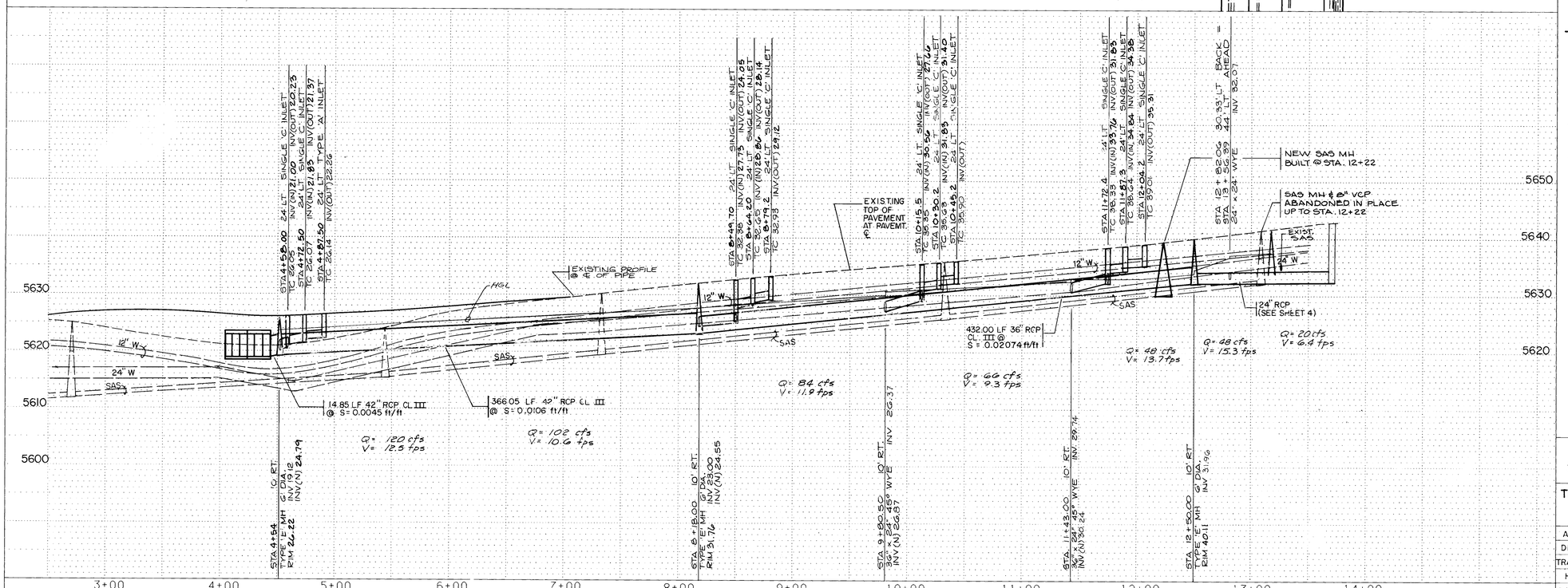
FUTURE TRAIL

150' R/W DRAINAGE E'SMT.

MAINTENANCE ROAD

LEGEND
- ℄ OF RIGHT-OF-WAY
- PROPERTY LINE W/PC
- NEW STORM DRAIN W/MANHOLE
- NEW INLET
- BACK CURB W/LIP OF GUTTER
- EXIST. GAS
- EXIST. UNDERGROUND ELEC.
- EXIST. UNDERGROUND PHONE
- EXIST. CABLE TV
- EXIST BLOCK WALL
- EXIST. CONC. SLOPE
- NEW CONC. SLOPE
- NEW SPOT ELEVATION
- EXIST. SPRINKLER LINE
- EXIST. SPRINKLER FIXTURE
- EXIST. WATER VALVE
- EXIST. SAS LINE W/MH
- EXIST. TRAFFIC BOX

NOTES
1. ALL STATIONING IS BASED ON CENTERLINE OF RIGHT-OF-WAY.
2. PIPE BEDDING SHALL BE CLASS C FOR ALL STORM DRAIN INSTALLATION.
3. LIMITS OF PAVEMENT REMOVAL FOR STORM DRAIN INSTALLATION ARE NOT SHOWN FOR STATIONS BEFORE STA. 7+27 OR FOR THE EUBANK/LAYTON INTERSECTION DUE TO THE COMPLETE REPLACEMENT OF PAVEMENT IN THOSE AREAS TO BE DONE WITH THIS PROJECT.



C of A PWD Maps & Records
1 2 3 4 5 6 7 8 9 10 11 12
2 6 | 3 5 9 8 0 3 9 4

AS BUILT INFORMATION

BENCH MARKS
STATION IS A STANDARD A.C.S. BRASS TABLET STAMPED "I-E21-A", SET IN TOP OF THE WEST CURB ON EUBANK BLVD. STATION IS LOCATED APPROX. 350' NORTHEAST OF THE CENTERLINE OF MALAGUENA LANE. ELEV.= 5642.71

SURVEY INFORMATION
CONTRACTOR - CSM
SURVEY - Jim Aguilar
1992 U.E.
FIELD NOTES
NO. BY DATE

MICRO-FILM INFORMATION

ENGINEER'S SEAL
2/26/90

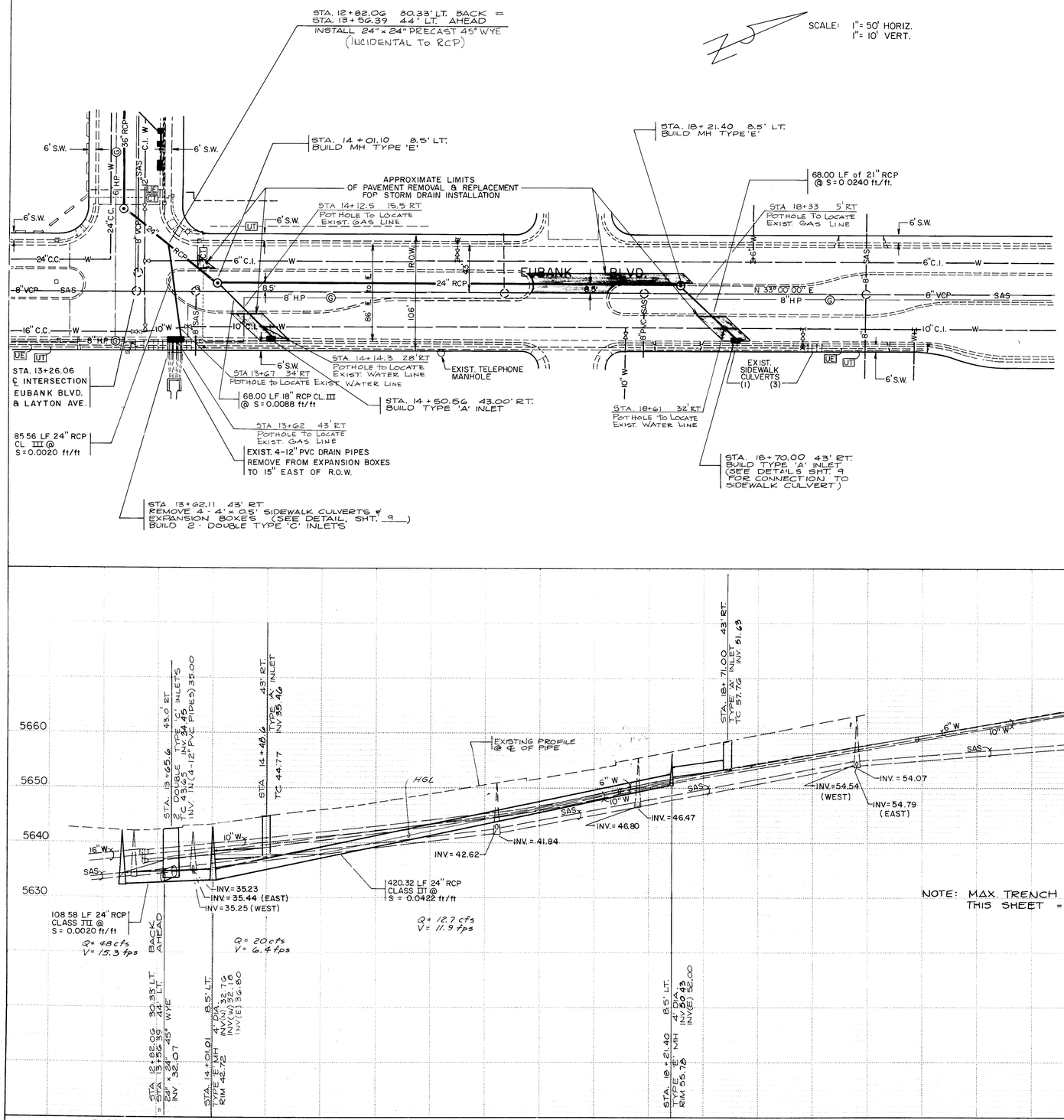
REVISIONS
NO. DATE REMARKS BY
DESIGN DJG DATE 9/89
DRAWN BY NM, DHG DATE 9/89
CHECKED BY DATE

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: LAYTON--BEAR TRIBUTARY CROSSING STRUCTURE AND STORM DRAIN
LAYTON AVE. STORM DRAIN PLAN & PROFILE

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEERS	DATE
DRC CHAIRMAN	Roger L Kane	5/9/90	WATER	R.W. Kane	5-8-90
TRANSPORTATION		5-8-90	WASTE WATER	R.W. Kane	5-8-90
HYDROLOGY		5/3/90			
PARKS & REC.		5-3-90			

DRAWING NO. 3598 | MAP NO. E-21 | SHEET 3 OF 11



NOTE: MAX. TRENCH WIDTH THIS SHEET = 20'

BHI JOB NO. 89182

BRUNING 44 232 622 16 C

LEGEND

- ℄ OF RIGHT-OF-WAY
- PROPERTY LINE W/PC
- NEW STORM DRAIN W/MANHOLE
- NEW INLET
- BACK CURB W/LIP OF GUTTER
- EXIST. GAS
- EXIST. UNDERGROUND ELEC.
- EXIST. UNDERGROUND PHONE
- EXIST. CABLE TV
- EXIST. BLOCK WALL
- EXIST. CONC. SLOPE
- NEW CONC. SLOPE
- NEW SPOT ELEVATION
- EXIST. SPRINKLER LINE
- EXIST. SPRINKLER FIXTURE
- EXIST. WATER VALVE
- EXIST. SAS LINE W/MH
- EXIST. TRAFFIC BOX

NOTES

1. ALL STATIONING IS BASED ON CENTERLINE OF RIGHT-OF-WAY.
2. PIPE BEDDING SHALL BE CLASS C FOR ALL STORM DRAIN.
3. LIMITS OF PAVEMENT REMOVAL FOR STORM DRAIN INSTALLATION ARE NOT SHOWN FOR STATIONS BEFORE STA. 7+27 OR FOR THE EUBANK/LAYTON INTERSECTION DUE TO THE COMPLETE REPLACEMENT OF PAVEMENT IN THOSE AREAS TO BE DONE WITH THIS PROJECT.
4. REMOVAL OF THE SIDEWALK CULVERTS & EXPANSION BOXES IS INCIDENTAL TO INSTALLATION OF THE PVC DRAIN PIPES AND NO SEPARATE PAYMENT WILL BE MADE.

C of A PWD Maps & Records
1 2 3 4 5 6 7 8 9 10 11 12
2 6 3 5 9 8 0 4 9 1

AS BUILT INFORMATION
CONTRACTOR CCM DATE
PLANS: BY Pete Abner DATE
INSPECTION BY L.U.E. DATE
AS BUILT SURVEY BY L.U.E. DATE
FIELD VERIFICATION BY L.U.E. DATE
CORRECTED BY Bohannan DATE
MICRO-FILM INFORMATION
RECORDED BY DATE
NO

BENCH MARKS
STATION IS A STANDARD A.C.S. BRASS TABLET STAMPED "1-E21-A", SET IN TOP OF THE WEST CURB ON EUBANK BLVD. STATION IS LOCATED APPROX. 380' NORTHEAST OF THE CENTERLINE OF MALAGUENA LANE. ELEV.= 5642.71

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEER'S SEAL
3/24/90

REVISIONS
NO. DATE BY REMARKS
DESIGN DATE 9/89
DESIGNED BY DJG
DRAWN BY NM , DHG DATE 9/89
CHECKED BY DATE

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: LAYTON--BEAR TRIBUTARY CROSSING STRUCTURE AND STORM DRAIN
EUBANK BLVD. STORM DRAIN PLAN & PROFILE

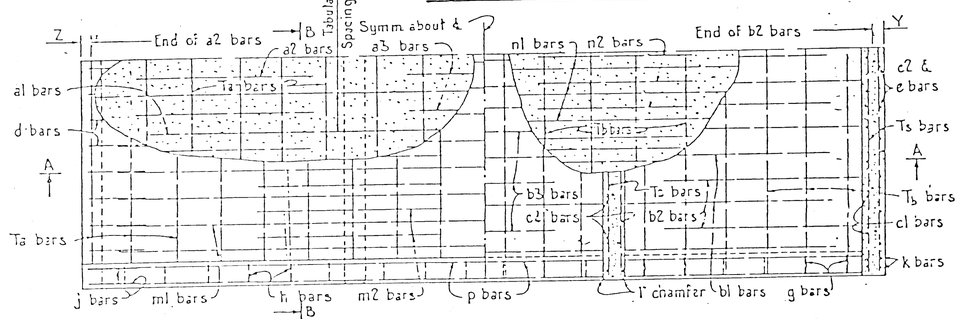
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN		5/9/90	WATER	R.W. Kane	5-8-90
TRANSPORTATION		5-5-90	WASTE WATER	R.W. Kane	5-8-90
Hydrology		5/3/90			
PARKS & REC		5-3-90			

DRAWING NO. 3598 | MAP NO. E-21 | SHEET 4 OF 11

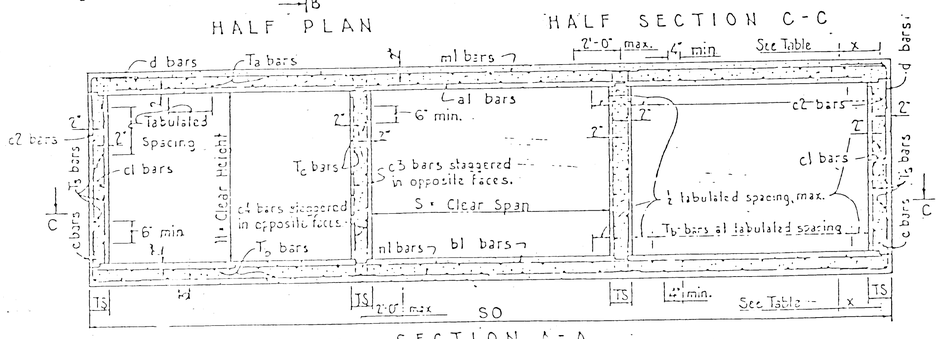
CLEAR SPAN	CLEAR HEIGHT	DIMENSIONS TT	TS	TB	SO	HO	Y	Z	QUANTITIES Per Lin. Ft. Paint Steel Lbs/Lin.Ft.	Concrete Cu.Yds./Lin.Ft.	CAI One End Reinforcing Steel Lbs.	Concrete Cu.Yds.
4	2	7"	6"	6½"	14'-0"	3'-1½"	—	—	115.8	0.731	337	2.91
	3	7"	6"	6½"	14'-0"	4'-1½"	—	—	122.5	0.805	347	2.99
	4	7"	6"	6½"	14'-0"	5'-1½"	—	—	124.3	0.880	355	3.06
6	2	7½"	6"	7"	20'-0"	3'-2½"	1'-0"	2"	183.4	1.043	472	4.13
	3	7½"	6"	7"	20'-0"	4'-2½"	1'-0"	2"	191.0	1.117	480	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	1.265	505	4.32
	6	7½"	6"	7½"	20'-0"	7'-2½"	1'-0"	2"	227.9	1.339	550	4.40
8	2	8"	6"	8½"	26'-0"	3'-4½"	1'-0"	2"	292.4	1.620	790	5.43
	3	8"	6"	8½"	26'-0"	4'-4½"	1'-0"	2"	314.7	1.694	804	5.51
	4	8"	6"	8½"	26'-0"	5'-4½"	1'-0"	2"	333.4	1.768	816	5.59
	5	8"	6"	8½"	26'-0"	6'-4½"	1'-0"	2"	347.3	1.842	882	5.68
	6	8"	7"	8½"	26'-4"	7'-4½"	1'-0"	2"	359.3	1.916	905	6.07
10	2	9"	6½"	9½"	32'-2"	3'-5½"	1'-3"	2"	310.5	2.158	1144	6.68
	3	9"	6½"	9½"	32'-2"	4'-5½"	1'-3"	2"	332.5	2.235	1157	6.76
	4	9"	6"	9½"	32'-0"	5'-6½"	1'-3"	2"	385.0	2.272	1201	6.77
	5	9"	7"	9½"	32'-4"	6'-6½"	1'-3"	2"	411.6	2.451	1223	7.00
	6	9"	8"	9½"	32'-8"	7'-6½"	1'-3"	2"	430.0	2.655	1262	7.26
	7	9"	8"	10"	32'-8"	8'-7"	1'-3"	2"	455.1	2.804	1294	7.37
12	2	9"	9"	10"	33'-0"	4'-7"	1'-3"	2"	466.0	3.043	1318	7.66
	3	9"	9"	10"	33'-0"	5'-7"	1'-3"	2"	487.3	3.157	1335	7.82
	4	9"	9"	10"	33'-0"	6'-7"	1'-3"	2"	516.1	3.268	1363	8.00
	5	10"	8½"	11"	38'-2"	7'-9"	2"	2"	480.7	2.955	1720	8.02
	6	10"	8"	11"	38'-8"	9'-9"	2"	2"	524.6	3.296	1803	8.44
	7	10"	9"	11"	39'-0"	11'-9"	2"	2"	574.9	3.639	1834	8.85
	8	10"	9"	11"	39'-0"	13'-9"	2"	2"	609.6	3.881	1898	9.18
14	2	11½"	8"	12"	44'-8"	5'-11½"	2"	2"	711.1	4.030	2464	9.63
	3	11½"	9"	12"	45'-0"	6'-11½"	2"	2"	730.2	4.375	2512	10.03
	4	11½"	9"	12"	45'-0"	8'-0"	2"	2"	809.9	4.667	2521	10.37
	5	11½"	10"	12½"	45'-4"	9'-0"	2"	2"	846.3	5.066	2646	10.96

CLEAR SPAN	CLEAR HEIGHT	REINFORCING a1, a2 & a3 a1 Size	a1 Length	a2 Size	a2 Length	a3 Size	a3 Length	a1, a2 & a3 Spacing	b1, b2 & b3 b1 Size	b1 Length	b2 Size	b2 Length	b3 Size	b3 Length	b1, b2 & b3 Spacing	c1 Size	c1 Spacing	c2 Size	c2 Spacing	c3 & c4 c3 Size	c3 Length	c4 Size	c4 Length	c3 & c4 Spacing	m1 & m2 m1 Size	m1 Length	m2 Size	m2 Length	m1 & m2 Spacing	n1 & n2 n1 Size	n1 Length	n2 Size	n2 Length	n1 & n2 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	P	C&H No. of Sets Reqd.
4	2	5	13'-9"	-	none	-	none	6"	4	13'-9"	-	none	-	none	12"	none	none	none	none	4	2'-3"	4	2'-3"	12"	4	12'-6"	4	3'-9"	12"	4	12'-6"	4	3'-3"	18"	5	3'-6"	1'-6"	12"	4	3'-6"	1'-6"	12"	4	4'-0"	1'-6"	12"	4	16"	13	4	16"	13	4	16"	5	9
	3	5	13'-9"	-	none	-	none	6"	4	13'-9"	-	none	-	none	12"	none	none	none	none	4	2'-9"	4	2'-9"	12"	4	12'-6"	4	3'-9"	12"	4	12'-6"	4	3'-3"	18"	5	3'-6"	1'-6"	12"	4	4'-0"	1'-6"	12"	4	4'-0"	1'-6"	12"	4	16"	13	4	16"	13	4	16"	5	9
	4	5	13'-9"	-	none	-	none	6"	4	13'-9"	-	none	-	none	12"	none	none	none	none	4	3'-3"	4	3'-3"	12"	4	12'-6"	4	3'-9"	12"	4	12'-6"	4	3'-3"	18"	5	3'-6"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	4'-6"	1'-6"	13"	4	16"	13	4	16"	13	4	16"	5	9
6	2	5	18'-6"	6	5'-9"	5	5'-0"	12"	4	19'-9"	4	5'-0"	-	none	12"	none	none	none	none	4	3'-3"	4	3'-3"	9"	4	15'-6"	6	5'-0"	18"	4	15'-6"	6	7'-0"	12"	6	5'-0"	1'-6"	18"	5	4'-3"	1'-6"	18"	4	4'-0"	1'-6"	12"	4	16"	25	4	16"	10	4	16"	6	12
	3	5	18'-6"	6	5'-9"	5	5'-0"	12"	4	19'-9"	4	5'-0"	-	none	12"	none	none	none	none	4	3'-3"	4	3'-3"	9"	4	15'-6"	6	5'-0"	18"	4	15'-6"	6	7'-0"	12"	6	5'-0"	1'-6"	18"	5	4'-3"	1'-6"	18"	4	4'-6"	1'-6"	13"	4	16"	25	4	16"	10	4	16"	6	12
	4	5	18'-6"	6	5'-9"	5	5'-0"	12"	4	19'-9"	4	5'-0"	-	none	12"	none	none	none	none	4	3'-3"	4	3'-3"	9"	4	15'-6"	6	5'-0"	18"	4	15'-6"	6	7'-0"	12"	6	5'-0"	1'-6"	18"	5	4'-3"	1'-6"	18"	4	4'-6"	1'-6"	13"	4	16"	25	4	16"	10	4	16"	6	12
	5	5	18'-6"	6	5'-9"	5	5'-0"	12"	4	19'-9"	4	5'-0"	-	none	12"	none	none	none	none	4	3'-3"	4	3'-3"	9"	4	15'-6"	6	5'-0"	18"	4	15'-6"	6	7'-0"	12"	6	5'-0"	1'-6"	18"	5	4'-3"	1'-6"	18"	4	4'-6"	1'-6"	13"	4	16"	25	4	16"	10	4	16"	6	12
	6	5	18'-6"	6	5'-9"	5	5'-0"	12"	4	19'-9"	4	5'-0"	-	none	12"	none	none	none	none	4	3'-3"	4	3'-3"	9"	4	15'-6"	6	5'-0"	18"	4	15'-6"	6	7'-0"	12"	6	5'-0"	1'-6"	18"	5	4'-3"	1'-6"	18"	4	4'-6"	1'-6"	13"	4	16"	25	4	16"	10	4	16"	6	12
8	2	5	25'-9"	7	7'-9"	6	6'-3"	12"	4	25'-9"	4	6'-6"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	24'-0"	6	6'-3"	12"	4	24'-0"	6	8'-0"	11"	6	6'-3"	1'-6"	10"	5	5'-6"	1'-6"	10"	4	4'-6"	1'-6"	13"	4	16"	34	4	16"	14	4	16"	8	14
	3	5	25'-9"	7	7'-9"	6	6'-3"	12"	4	25'-9"	4	6'-6"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	24'-0"	6	6'-3"	12"	4	24'-0"	6	8'-0"	11"	6	6'-3"	1'-6"	10"	5	5'-6"	1'-6"	10"	4	4'-6"	1'-6"	13"	4	16"	34	4	16"	14	4	16"	8	14
	4	5	25'-9"	7	7'-9"	6	6'-3"	12"	4	25'-9"	4	6'-6"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	24'-0"	6	6'-3"	12"	4	24'-0"	6	8'-0"	11"	6	6'-3"	1'-6"	10"	5	5'-6"	1'-6"	10"	4	4'-6"	1'-6"	13"	4	16"	34	4	16"	14	4	16"	8	14
	5	5	25'-9"	7	7'-9"	6	6'-3"	12"	4	25'-9"	4	6'-6"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	24'-0"	6	6'-3"	12"	4	24'-0"	6	8'-0"	11"	6	6'-3"	1'-6"	10"	5	5'-6"	1'-6"	10"	4	4'-6"	1'-6"	13"	4	16"	34	4	16"	14	4	16"	8	14
	6	5	25'-9"	7	7'-9"	6	6'-3"	12"	4	25'-9"	4	6'-6"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	24'-0"	6	6'-3"	12"	4	24'-0"	6	8'-0"	11"	6	6'-3"	1'-6"	10"	5	5'-6"	1'-6"	10"	4	4'-6"	1'-6"	13"	4	16"	34	4	16"	14	4	16"	8	14
10	2	5	32'-3"	7	9'-6"	5	8'-0"	12"	5	32'-3"	5	7'-0"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	30'-0"	7	7'-3"	12"	5	30'-0"	7	8'-3"	12"	7	6'-3"	2'-6"	12"	6	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	44	4	16"	18	4	16"	10	18
	3	5	32'-3"	7	9'-6"	5	8'-0"	12"	5	32'-3"	5	7'-0"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	30'-0"	7	7'-3"	12"	5	30'-0"	7	8'-3"	12"	7	6'-3"	2'-6"	12"	6	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	44	4	16"	18	4	16"	10	18
	4	5	32'-3"	7	9'-6"	5	8'-0"	12"	5	32'-3"	5	7'-0"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	30'-0"	7	7'-3"	12"	5	30'-0"	7	8'-3"	12"	7	6'-3"	2'-6"	12"	6	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	44	4	16"	18	4	16"	10	18
	5	5	32'-3"	7	9'-6"	5	8'-0"	12"	5	32'-3"	5	7'-0"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	30'-0"	7	7'-3"	12"	5	30'-0"	7	8'-3"	12"	7	6'-3"	2'-6"	12"	6	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	44	4	16"	18	4	16"	10	18
	6	5	32'-3"	7	9'-6"	5	8'-0"	12"	5	32'-3"	5	7'-0"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	30'-0"	7	7'-3"	12"	5	30'-0"	7	8'-3"	12"	7	6'-3"	2'-6"	12"	6	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	44	4	16"	18	4	16"	10	18
	7	5	32'-3"	7	9'-6"	5	8'-0"	12"	5	32'-3"	5	7'-0"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	30'-0"	7	7'-3"	12"	5	30'-0"	7	8'-3"	12"	7	6'-3"	2'-6"	12"	6	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	44	4	16"	18	4	16"	10	18
12	2	5	38'-3"	8	11'-6"	5	10'-0"	12"	5	38'-3"	6	8'-6"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	36'-0"	8	7'-6"	12"	5	36'-0"	8	8'-0"	12"	8	6'-3"	2'-6"	12"	7	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	52	4	16"	22	4	16"	12	24
	3	5	38'-3"	8	11'-6"	5	10'-0"	12"	5	38'-3"	6	8'-6"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	36'-0"	8	7'-6"	12"	5	36'-0"	8	8'-0"	12"	8	6'-3"	2'-6"	12"	7	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	52	4	16"	22	4	16"	12	24
	4	5	38'-3"	8	11'-6"	5	10'-0"	12"	5	38'-3"	6	8'-6"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	36'-0"	8	7'-6"	12"	5	36'-0"	8	8'-0"	12"	8	6'-3"	2'-6"	12"	7	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	52	4	16"	22	4	16"	12	24
	5	5	38'-3"	8	11'-6"	5	10'-0"	12"	5	38'-3"	6	8'-6"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	36'-0"	8	7'-6"	12"	5	36'-0"	8	8'-0"	12"	8	6'-3"	2'-6"	12"	7	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	52	4	16"	22	4	16"	12	24
	6	5	38'-3"	8	11'-6"	5	10'-0"	12"	5	38'-3"	6	8'-6"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	36'-0"	8	7'-6"	12"	5	36'-0"	8	8'-0"	12"	8	6'-3"	2'-6"	12"	7	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	52	4	16"	22	4	16"	12	24
	7	5	38'-3"	8	11'-6"	5	10'-0"	12"	5	38'-3"	6	8'-6"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	36'-0"	8	7'-6"	12"	5	36'-0"	8	8'-0"	12"	8	6'-3"	2'-6"	12"	7	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	52	4	16"	22	4	16"	12	24
	8	5	38'-3"	8	11'-6"	5	10'-0"	12"	5	38'-3"	6	8'-6"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	36'-0"	8	7'-6"	12"	5	36'-0"	8	8'-0"	12"	8	6'-3"	2'-6"	12"	7	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	52	4	16"	22	4	16"	12	24
14	2	5	44'-8"	9	13'-6"	6	12'-0"	12"	6	44'-8"	7	10'-3"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	42'-0"	9	8'-3"	12"	6	42'-0"	9	9'-0"	12"	9	6'-3"	2'-6"	12"	8	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	61	4	16"	26	4	16"	14	28
	3	5	44'-8"	9	13'-6"	6	12'-0"	12"	6	44'-8"	7	10'-3"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	42'-0"	9	8'-3"	12"	6	42'-0"	9	9'-0"	12"	9	6'-3"	2'-6"	12"	8	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	61	4	16"	26	4	16"	14	28
	4	5	44'-8"	9	13'-6"	6	12'-0"	12"	6	44'-8"	7	10'-3"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	42'-0"	9	8'-3"	12"	6	42'-0"	9	9'-0"	12"	9	6'-3"	2'-6"	12"	8	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	61	4	16"	26	4	16"	14	28
	5	5	44'-8"	9	13'-6"	6	12'-0"	12"	6	44'-8"	7	10'-3"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	42'-0"	9	8'-3"	12"	6	42'-0"	9	9'-0"	12"	9	6'-3"	2'-6"	12"	8	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	61	4	16"	26	4	16"	14	28
	6	5	44'-8"	9	13'-6"	6	12'-0"	12"	6	44'-8"	7	10'-3"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	42'-0"	9	8'-3"	12"	6	42'-0"	9	9'-0"	12"	9	6'-3"	2'-6"	12"	8	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	61	4	16"	26	4	16"	14	28
	7	5	44'-8"	9	13'-6"	6	12'-0"	12"	6	44'-8"	7	10'-3"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	42'-0"	9	8'-3"	12"	6	42'-0"	9	9'-0"	12"	9	6'-3"	2'-6"	12"	8	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	61	4	16"	26	4	16"	14	28
	8	5	44'-8"	9	13'-6"	6	12'-0"	12"	6	44'-8"	7	10'-3"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	42'-0"	9	8'-3"	12"	6	42'-0"	9	9'-0"	12"	9	6'-3"	2'-6"	12"	8	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	61	4	16"	26	4	16"	14	28
	10	5	44'-8"	9	13'-6"	6	12'-0"	12"	6	44'-8"	7	10'-3"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	42'-0"	9	8'-3"	12"	6	42'-0"	9	9'-0"	12"	9	6'-3"	2'-6"	12"	8	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	61	4	16"	26	4	16"	14	28
	12	5	44'-8"	9	13'-6"	6	12'-0"	12"	6	44'-8"	7	10'-3"	-	none	12"	none	none	none	none	5	3'-3"	5	3'-3"	10"	4	42'-0"	9	8'-3"	12"	6	42'-0"	9	9'-0"	12"	9	6'-3"	2'-6"	12"	8	6'-3"	1'-6"	12"	4	4'-6"	1'-6"	13"	4	16"	61	4	16"	26	4	16"	14	28

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

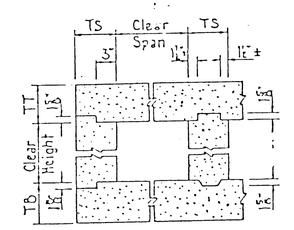


HALF PLAN

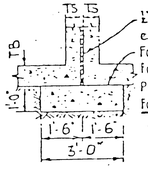


SECTION A-A

HALF SECTION C-C



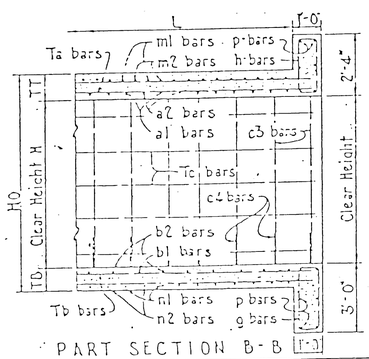
DETAIL OF CONSTRUCTION JOINTS



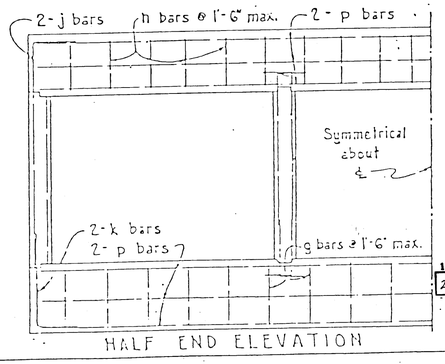
JUNCTION DETAIL FOR MULTIPLE UNIT BOXES

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: 64#/cu. ft.
Horizontal Earth Pressure = 30#/cu.ft., 2 Ft. surcharge.
Design Stresses: f'c = 3000 p.s.i., fc = 1200 p.s.i.
fs = 20000 p.s.i., n = 10.



PART SECTION B-B



HALF END ELEVATION

C of A PWD Maps & Records
1 2 3 4 5 6 7 8 9 10 11 12
2 6 3 5 9 8 0 5 9 7

GENERAL NOTES

1. Workmanship and materials shall conform to City of Albuquer. Specifications.
2. All concrete to be Class "F". Chamfer all exposed edges ¾" except as noted.
3. All reinforcing steel to be deformed bars, intermediate grade, conforming to A.S.T.M. Specification A-15 & A-305. All dimensions refer to ℄ of bar.
4. T-bars may be spliced, when necessary, by lapping at least 20 bar diameters.
5. Volume of concrete = (L)x (concrete quantity per Lf) plus conc. at ends.
6. Not Used.
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, at 2'-0" max.
8. Place T_s-bars next to c1 bars, spaced as shown in the table. The remaining T_s-bars to be placed in sidewall next to c2, d- and e-bars. When c1 bars are not required place all T_s bars next to c2, d & e bars.
9. Place al, a3, ml, nl, b1, b3 symm. about ℄ box, place m2, n2 symmetrical about ℄ walls.
10. "Cover" is height of fill from top of box to finished grade.

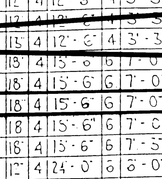
THIS SERIAL REVISED:

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

BAR DETAILS

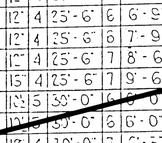
c1, c2	H minus 5"
a, b, m, n	Tabulated Length
P	SO minus 5"
T bars	L + (10" at each end)

SEE GEN. NOTE NO. 4



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

j- bars same size as d- bars
k- bars same size as e- bars



c3 & c4	12 bar dia.
3#	h 2'-1½" 6'-3" Long.
4# to 7#	g 2'-6" 7'-6" Long

NUMBER OF BARS REQUIRED

a1, a3, b1, b3, m1 & n1 : 12L ÷ Spacing.
a2, b2, c2, d, e, m2 & n2 : 24L ÷ Spacing.
c1 : (24L ÷ Spacing) + 2 at each end.
c3 & c4 : (48L ÷ Spacing) + 4 at ea. end.
j, k : 4 at ea. (for cutoff and parapet) at each end.
p : 12 (for cutoff + parapet) at each end.
Other bars : see table.
L = Length of Barrel in feet.

APPROVED: [illegible] BRIDGE ENGINEER.

NEW MEXICO
STATE HIGHWAY DEPARTMENT

CONCRETE BOX CULVERT BARRELS
TRIPLE OPENING ~ NORMAL
DESIGN No. 1
0' TO 5' COVER
Sheet 1 of 4
SERIAL CB-33

DRAWING NO. 3598 SHEET 5 OF 11

Designed by ST. 1-61 ---- Checked by W.C. 1-61
Detailed by SM. 1-61 ---- Checked by W.C. 1-61

CLEAR SPANS	CLEAR HEIGHT	DIMENSION	REINFORCING BARS ~ ONE SKEW END																DESIGN No. 1 0' TO 5' COVER								DESIGN No. 2 5' TO 10' COVER							
			aa & bb						mm & nn						p		g,h		TRIPLE OPENING BOXES		FOR MULTIPLE UNIT BOXES Unit A3		Unit I3		Unit B3			TRIPLE OPENING BOXES		FOR MULTIPLE UNIT BOXES Unit A5		Unit I5		Unit B5	
		J	aa Size	bb Size	X	B	C	Spacing	mm Size	nn Size	X	B	C	Spacing	Size	Length	No. of ea.	Reinforcing Steel - Lbs.	P	Conc. Cu.Yds.	P_A	Conc. Cu.Yds.	P_I	Conc. Cu.Yds.	P_B	Conc. Cu.Yds.	Reinforcing Steel - Lbs.	P	Conc. Cu.Yds.	P_A	Conc. Cu.Yds.	P_I	Conc. Cu.Yds.	P_B	Conc. Cu.Yds.
4	2																															
	3	1'-10"-1'-10"	5	4	6	18'-9"	2'-10½"	9½"	6	6	6	18'-9"	2'-5½"	8"	5	20'-5½"	15	722	14'-11"	3.22	14'-9"	3.17	14'-6"	3.09	14'-4"	3.12								
	4																															
6	2																															
	3	1'-10"-1'-10"	7	5	6	19'-9"	2'-11½"	9½"	6	6	7	19'-9"	2'-5½"	8"	5	20'-5½"	15	705	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"	4.59	20'-11¾"	4.49	20'-8½"	4.40	20'-10¼"	4.45
	5	1'-11"-1'-11"	6	5	6	19'-9"	2'-8½"	7"	6	6	7	19'-9"	2'-8½"	7"	5	20'-3½"	15	720	21'-1½"	4.65	20'-11¾"	4.58	20'-8½"	4.47	20'-10¼"	4.55	787	21'-1½"	4.65	20'-11¾"	4.58	20'-8½"	4.47	20'-10¼"	4.55
	6	2'-0"-1'-11"	7	5	6	19'-9"	2'-9½"	8"	6	6	7	19'-9"	2'-5½"	8"	5	20'-5½"	15	759	21'-1½"	4.66	20'-11¾"	4.61	20'-8½"	4.55	20'-10¼"	4.63	790	21'-2"	4.75	20'-11¾"	4.66	20'-8½"	4.55	20'-10¼"	4.63
8	4																															
	5																															
	6	2'-0"-2'-0"	8	6	8	25'-9"	2'-9½"	8"	6	7	7	25'-9"	2'-5½"	8"	6	26'-5"	18	1270	28'-1½"	5.97	27'-10½"	5.89	27'-7½"	5.78	27'-10½"	5.86	1356	28'-1½"	5.97	27'-10½"	5.89	27'-7½"	5.78	27'-10½"	5.86
	7																															
	8	2'-1"-2'-0"	8	6	7	22'-5"	3'-5"	11"	7	7	9	25'-5"	2'-8½"	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'-7½"	6.27	27'-10½"	6.39
10	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	35'-8"	7.04	33'-6¾"	7.02	33'-3½"	6.91	33'-4½"	6.94	2000	35'-6½"	6.99	33'-4½"	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	35'-8"	7.13	33'-6¾"	7.10	33'-3½"	6.99	33'-4½"	7.05	2029	35'-6½"	7.08	33'-4¾"	7.03	33'-1½"	6.95	33'-3¼"	6.98
	6	2'-1"-2'-4"	7	7	12	31'-9"	2'-5½"	8"	8	8	10	31'-9"	2'-9½"	9"	7	32'-10½"	21	2208	35'-7½"	7.20	33'-5½"	7.11	33'-2½"	7.00	33'-4"	7.05	2062	35'-6¾"	7.26	33'-5¾"	7.19	33'-3½"	7.08	33'-5½"	7.14
	7	2'-2"-2'-5"	7	6	12	32'-1"	2'-4"	7½"	8	8	10	32'-1"	2'-9½"	9"	7	33'-3"	21	2107	35'-11½"	7.26	33'-9"	7.36	33'-5½"	7.24	33'-8½"	7.34	2124	35'-11½"	7.26	35'-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	36'-4"	7.33	34'-0"	7.45	33'-9½"	7.33	34'-0½"	7.42								
	9																															
	10	1'-11"-1'-10"	7	6	12	32'-9"	2'-5½"	8"	8	8	11	32'-9"	2'-9½"	9"	7	33'-11"	21	2246	36'-3"	8.24	34'-5½"	8.05	34'-2"	7.90	34'-6"	8.08	2264	36'-2"	8.24	34'-5½"	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	36'-11½"	8.45	34'-5½"	8.30	34'-2"	8.13	34'-6½"	8.48	2290	36'-11¾"	8.45	34'-5½"	8.30	34'-2"	8.13	34'-6½"	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	38'-6"	27	3305	38'-11½"	8.48	38'-9½"	8.42	38'-6½"	8.30	38'-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'-0"	27	3342	40'-6½"	8.98	40'-3½"	8.86	40'-0½"	8.72	40'-3½"	8.85								
	10	2'-3"-2'-2"	8	8	11	38'-9"	3'-1½"	10"	9	9	12	38'-9"	2'-11½"	9½"	8	40'-1½"	27	3430	40'-11⅜"	9.47	40'-7¾"	9.28	40'-4½"	9.12	40'-6½"	9.3	3403	[illegible]	[illegible]	40'-7¾"	9.28	40'-4½"	9.12	40'-6½"	9.31
	12																															
14	10	2'-0"-2'-0"	8	7	13	44'-9"	2'-9½"	9"	9	9	15	44'-9"	2'-9½"	9"	9	46'-4"	30	4524	47'-2½"	10.69	46'-10½"	10.50	46'-7"	10.35	46'-9"	10.54								
	12	2'-1"-2'-1"	8	7	13	44'-5"	3'-1½"	10"	9	9	15	44'-8"	3'-5½"	10"	9	46'-9"	30	4578	47'-1"	10.80	46'-10½"	10.75	46'-7"	10.58	46'-8½"	10.72								
	14																															

'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.

Foundation Block — ½" Preformed bit joint filler — Foundation Block

EXTERIOR UNIT A3 | INTERIOR UNIT I3 | EXTERIOR UNIT B3

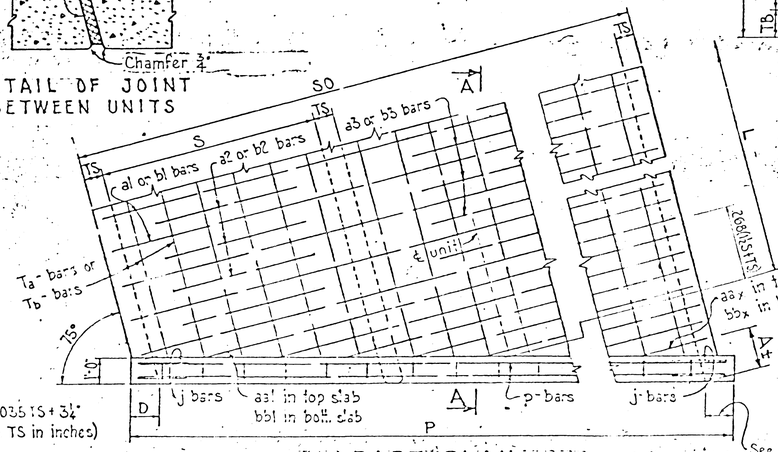
P_A — P_I — P_B

KEY PLAN FOR MULTIPLE UNIT BOXES

½" Preformed Bit. Joint Filler.

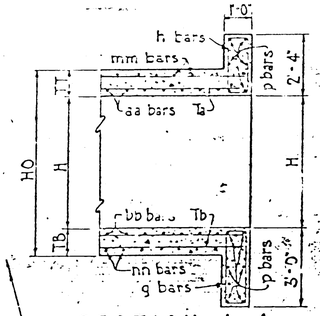
Chamfer ¾"

DETAIL OF JOINT BETWEEN UNITS

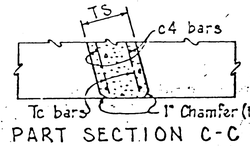


PART PLAN

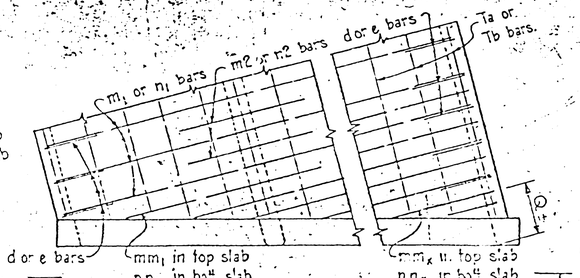
Showing position of aa & bb bars and reinforcing in parapet.



SECTION A-A

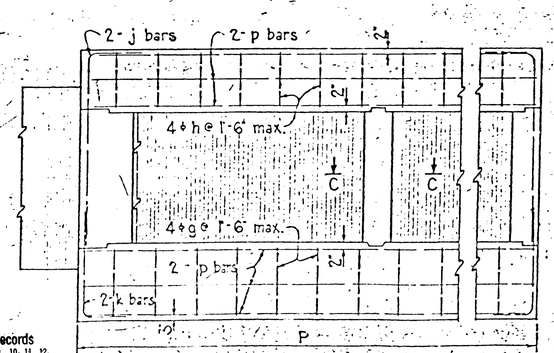


PART SECTION C-C



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.

THIS SERIAL REVISED:

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

Sheet 1 of 2
SERIAL CB-33-15

APPROVED: _____ BRIDGE ENGINEER

FED. ROAD DIV. No.	STATE				TOTAL SHEETS
9	NEW MEXICO				

BAR DETAILS

aa1, bb1	B
mm1, nn1	decrease in increments of "C" inches to B minus (x-1) ℄
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 Ser. 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 aa1 to aa_x
bb1 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.
* 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.

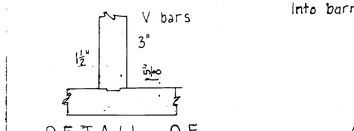
ESTIMATED QUANTITIES

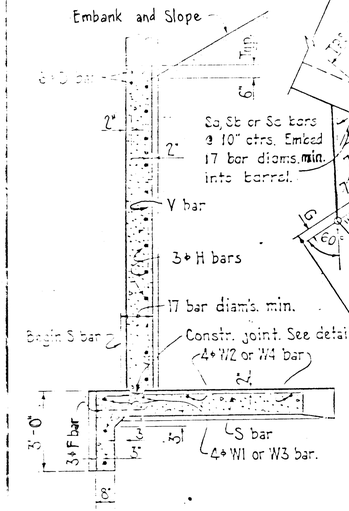
Calculate quantities from note 5 on Sheet 5, taking quantities per lin. ft. from Serial CB-33 & quantities for skew ends from this sheet.
For details of barrel, general notes and design data see Sheet 5.

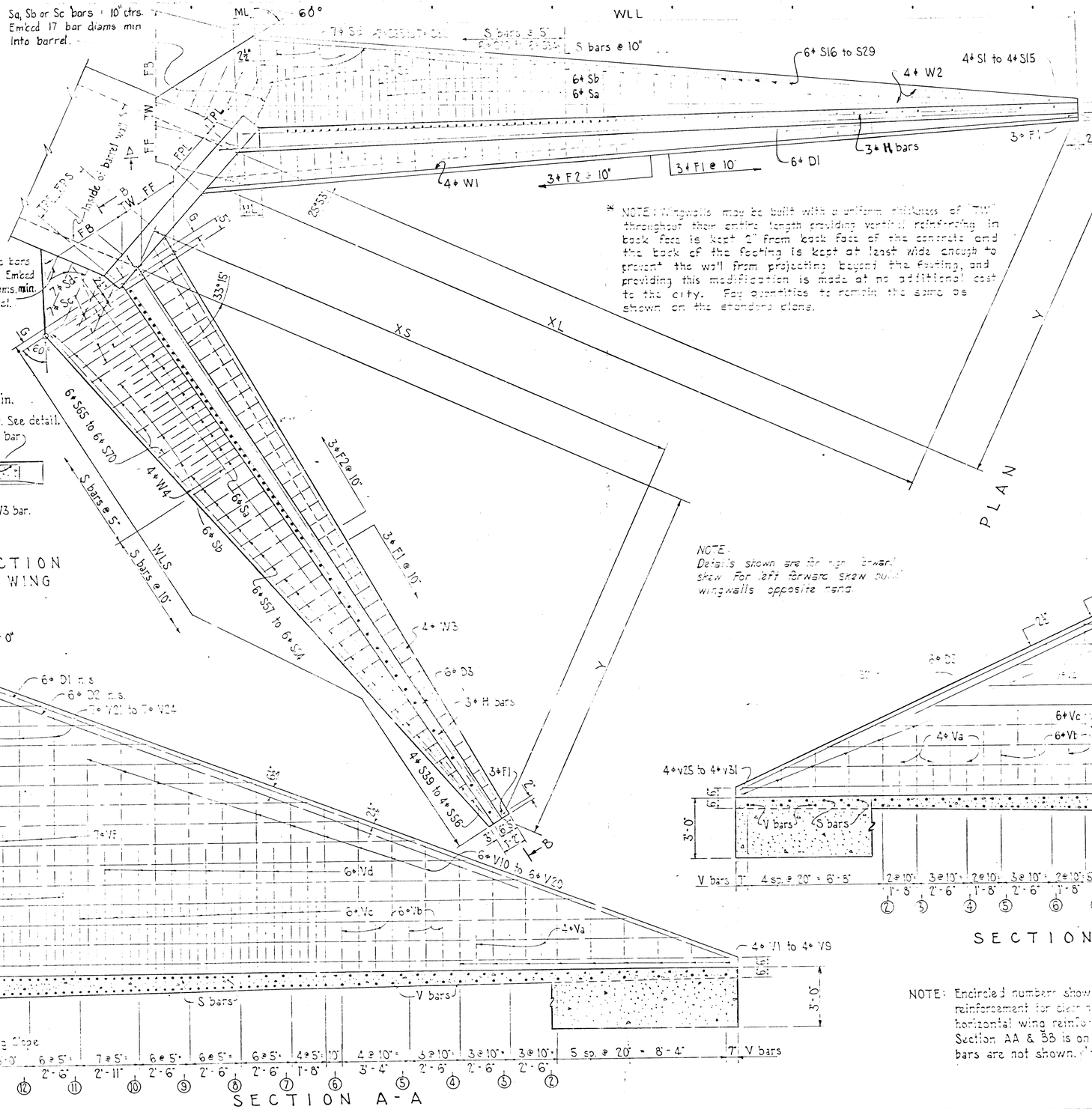
G of A PWD Maps & Records

Detailed by RH 12-60 Checked by WCC 12-60

DRAWING NO. 3598



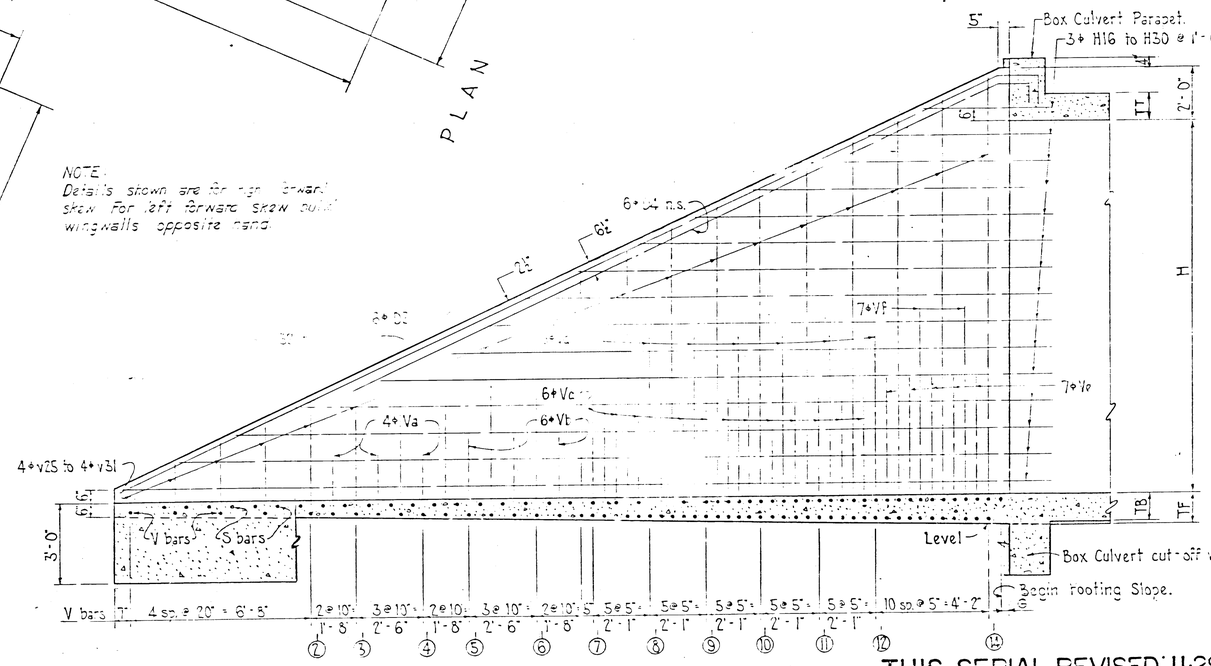




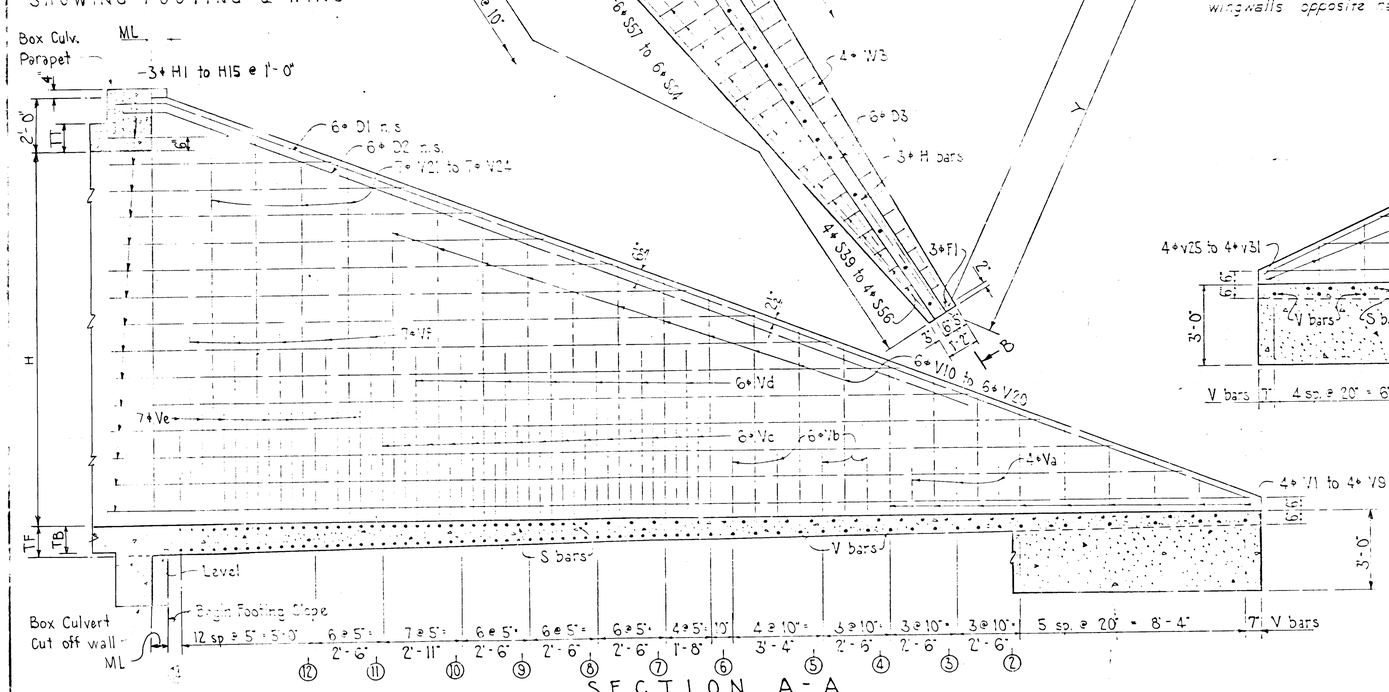
* NOTE: Wingwalls may be built with a uniform thickness of "TW" throughout their entire length providing vertical reinforcing in back face is kept 2" from back face of the concrete and the back of the footing is kept at least wide enough to prevent the wall from projecting beyond the footing, and providing this modification is made at no additional cost to the city. Pay quantities to remain the same as shown on the standard plans.

NOTE:
Details shown are for right forward skew. For left forward skew build wingwalls opposite hand.

WINGWALL DIMENSIONS														
H	2'	3'	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'
WLL	8'-6½"	12'-0"	14'-11⅜"	17'-7⅝"	20'-3½"	22'-11⅜"	25'-7¼"	28'-3"	30'-10⅞"	33'-6¾"	36'-2⅝"	38'-10½"	41'-6⅜"	44'-2¼"
XL	8'-2⅝"	11'-6⅝"	13'-5⅞"	15'-10⅞"	18'-4⅝"	20'-10⅝"	23'-4⅝"	25'-10⅝"	28'-4⅝"	30'-10⅝"	33'-4⅝"	35'-10⅝"	38'-4⅝"	40'-10⅝"
WL	0'-5⅜"	0'-7⅝"	0'-5⅞"	0'-5⅞"	0'-6¼"	0'-7⅜"	0'-7⅜"	0'-8⅝"	0'-9⅛"	0'-10⅜"	0'-10⅜"	0'-11⅝"	1'-0⅞"	1'-0⅞"
TPL	0'-7⅛"	0'-7⅛"	0'-7⅛"	0'-7⅛"	0'-8⅜"	0'-9⅝"	0'-10⅞"	0'-10⅞"	1'-0⅛"	1'-1⅜"	1'-1⅜"	1'-2⅝"	1'-3⅞"	1'-3⅞"
FPL	1'-0⅝"	1'-1⅛"	1'-3¼"	1'-4⅜"	1'-6⅛"	1'-7⅜"	1'-8½"	1'-9⅝"	1'-10⅞"	2'-0⅛"	2'-1⅜"	2'-2½"	2'-3⅝"	2'-4⅞"
WLS	7'-8⅝"	11'-1⅛"	14'-0⅝"	16'-11⅝"	19'-7¾"	22'-4⅝"	25'-1½"	27'-10⅜"	30'-7⅜"	33'-4⅜"	36'-1⅜"	38'-10⅜"	41'-7⅜"	44'-4⅜"
XS	6'-5⅜"	9'-2⅜"	11'-1½"	13'-6⅝"	15'-11⅝"	18'-4⅝"	20'-9⅝"	23'-2⅝"	25'-7⅝"	28'-0⅝"	30'-5⅝"	32'-10⅝"	35'-3⅝"	37'-8⅝"
G	0'-2"	0'-2"	0'-2"	0'-2"	0'-2"	0'-2"	0'-2"	0'-2"	0'-2"	0'-2"	0'-2"	0'-2"	0'-2"	0'-2"
TPS	0'-6⅝"	0'-6⅝"	0'-6⅝"	0'-6⅝"	0'-6⅝"	0'-7⅝"	0'-8⅝"	0'-9⅝"	0'-10⅝"	0'-11⅝"	1'-0⅝"	1'-1⅝"	1'-2⅝"	1'-3⅝"
FPS	0'-9⅝"	0'-10⅛"	0'-11⅝"	1'-0⅞"	1'-2⅛"	1'-3⅜"	1'-4⅝"	1'-5⅞"	1'-7⅛"	1'-8⅜"	1'-9⅝"	1'-10⅞"	2'-0⅛"	2'-1⅜"
Y	4'-7⅞"	5'-4⅝"	6'-6¼"	7'-8⅛"	8'-10¼"	10'-0⅜"	11'-2⅝"	12'-4⅞"	13'-7⅛"	14'-9⅜"	15'-11⅝"	17'-1⅞"	18'-4⅛"	19'-6⅜"
FB	1'-4½"	2'-0½"	2'-0½"	2'-7½"	3'-2½"	3'-7½"	4'-0½"	4'-5½"	4'-10½"	5'-3½"	5'-8½"	6'-1½"	6'-6½"	6'-11½"
* TW	0'-6"	0'-6"	0'-6"	0'-6"	0'-7½"	0'-8½"	0'-9½"	0'-10½"	0'-11½"	1'-0½"	1'-1½"	1'-2½"	1'-3½"	1'-4½"
FF	0'-9"	0'-10½"	0'-11"	1'-0"	1'-1½"	1'-2½"	1'-3½"	1'-4½"	1'-6"	1'-7"	1'-8"	1'-9"	1'-10"	1'-11"
TF	0'-7½"	0'-8½"	0'-8½"	0'-8½"	0'-9½"	0'-10½"	0'-10½"	0'-11½"	1'-0½"	1'-0½"	1'-1½"	1'-2½"	1'-3½"	1'-4½"



SECTION B-B



SECTION A-A

NOTE: Encircled numbers show stopping points of reinforcement for clear reading "H" vertical and horizontal wing reinforcement shown on Section AA & BB is on far side. F and W bars are not shown.

C of A PWD Maps & Records
1 2 3 4 5 6 7 8 9 10 11 12
2 6 3 5 9 8 0 7 9 1

THIS SERIAL REVISED: 11-29-67

NEW MEXICO
STATE HIGHWAY DEPARTMENT

WINGWALLS
FOR 15° SKEW CONC. BOX CULVERTS

Sheet 1 of 2

SERIAL WCB-15

APPROVED:

BRIDGE ENGINEER

DRAWING NO. 3598 7

SHEET NO 7 OF 11

REINFORCING STEEL REQUIREMENTS

		V_1 to V_x	Va	Vb	Vc	Vd	Ve	Vf	H_1 to H_x	D1	D2	D3	D4	S_1 to S_x	Sa	Sb	Sc	Sd	W1	W2	W3	W4	F1 N° Req'd	F2 N° Req'd	QUANTITIES Concrete C.Yds.	QUANTITIES Reinf. Steel lbs.	Clear Height of Culvert Opening
		25 to 32	3	-	-	-	-	-	1.6 to 8	/ 12'-6"	-																
		1 to 7	3	-	-	-	-	-	1 to 4	/ 12'-6"	-																
		25 to 32	3	-	-	-	-	-	1.6 to 8	/ 12'-6"	-																
4	L	1 to 9	3	-	-	-	-	-	1 to 5	/ 13'-0"	-			1 to 16	1 6	-	-	-	4 18'-0"	2 14'-3"			19	-	4.82	353	4
	S	25 to 31	3	-	-	-	-	-	1.6 to 20	/ 14'-9"	-			33 to 51"	1 6	-	-	-			4 14'-6"	2 11'-6"	15	-			
		1 to 8	3	2	-	-	-	-	1 to 6	/ 21'-6"	-				2 6	-	-	-					22	-			
		25 to 32	3	1	-	-	-	-	1.6 to 21	/ 17'-0"	-			33 to 55	2 6	-	-	-					15	-	8.02		
		1 to 15	3	4	-	-	-	-	1 to 7	/ 23'-6"	/ 18'-6"			1 to 32	2 6	-	-	-	4 23'-6"	2 18'-6"			25	-			
	S	25 to 34	3	2	-	-	-	-	1.6 to 22	/ 18'-6"	/ 15'-3"	33 to 51		2 6	-	-	-			4 18'-9"	2 15'-9"	20	-	7.92	666	6
7	L	1 to 12	3	4	2	1	-	-	1 to 8	/ 26'-6"	/ 20'-6"			1 to 26	3 6	-	-	-	4 26'-3"	2 22'-0"			25	4	10.09	850	7
	S	25 to 35	3	3	1	-	-	-	1.6 to 25	/ 21'-9"	/ 17'-0"	33 to 55		3 6	-	-	-			4 20'-9"	2 17'-9"	20	3			
	L	1 to 15	3	4	5	3	-	-	1 to 9	/ 29'-6"	/ 22'-3"			1 to 25	3 6	-			4 25'-9"	2 24'-6"			25	7			
8	S	25 to 36	3	3	3	2	-	-	1.6 to 24	/ 24'-0"	/ 18'-6"	33 to 61		3 6	-					4 23'-0"	2 19'-3"	20	5	8.82	1035	8
	L	1 to 17	3	4	8	4	-	-	1 to 10	/ 32'-0"	/ 24'-3"			1 to 30	3 4 2	-	-		4 31'-0"	2 27'-0"			25	10			
9	S	25 to 37	3	3	6	3	-	-	1.6 to 25	/ 26'-6"	/ 20'-6"	33 to 63		3 1 3 0	-	-				4 25'-6"	2 20'-0"	20	8	15.31	1995	9
	L	1 to 18	3	4	11	6	-	-	1 to 11	/ 34'-3"	/ 26'-3"			1 to 32	3 4 3	-	-		4 34'-3"	2 29'-9"			25	13			
10	S	25 to 33	3	3	8	4	-	-	1.6 to 26	/ 28'-9"	/ 22'-6"	33 to 65		3 5 2 1	-					4 27'-3"	2 24'-0"	20	13	18.87	1612	10
	L	1 to 20	3	4	15	7	-	-	1 to 12	/ 37'-6"	/ 28'-0"			1 to 33	3 10 5 5	-	-		4 37'-0"	2 32'-3"			25	16			
	S	25 to 40	3	3	11	5	-	-	1.6 to 27	/ 31'-0"	/ 24'-0"	33 to 66		3 6 4 2	-	-				4 29'-3"	2 25'-0"	20	18	22.49	1908	11
	L	1 to 21	3	4	18	7	3	2	1 to 13	/ 40'-6"	/ 31'-0"			1 to 35	3 6 5 1	-	4		4 39'-9"	2 34'-9"			25	20			
12	S	25 to 41	3	3	13	7	-	-	1.6 to 28	/ 33'-6"	/ 25'-9"	33 to 67		3 4 3 -	-					4 31'-6"	2 27'-3"	20	15	26.84	2232	12
	L	1 to 24	3	4	15	7	3	3	1 to 15	/ 45'-9"	/ 35'-0"			1 to 38	3 6 6 7	3	4		4 45'-3"	2 41'-0"			25	25			
	S	25 to 44	3	3	13	7	3	2	1.6 to 30	/ 38'-0"	/ 29'-0"	33 to 70		3 5 3 4	2					4 35'-6"	2 30'-6"	20	20	31.17	3035	14

Rad = 2" for 4#
Rad = 3" " 6#
Rad = 3½" " 7#

4#S1	7"	1'-4" Lg.
to	BY 3"	BY 3"
4#S15	8'-11"	6'-8" "
6#S16	3'-3"	7'-8" "
to	BY 5"	BY 6"
6#S20	13'-2"	14'-4" "
6#S21	13'-9"	15'-1" "
to	BY 5"	BY 5"
6#S24	15'-9"	17'-1" "
6#S25	8"	1'-5" "
to	BY 10"	BY 10"
6#S32	5'-8"	6'-5" "
	6'-4"	7'-6" "
	BY 16"	BY 16"
	16'-4"	17'-6" "
	2'-2"	3'-2"
	2'-9"	4'-0"
	4'-5"	6'-0"
	6'-10"	8'-3"
	5'-2"	7'-2" "
	7'-11"	10'-4"

5#S1	5'-5"
to	BY 2'-7½"
5#S15	29'-0"
5#S16	4'-6"
to	BY 2'-4½"
5#S20	32'-3"

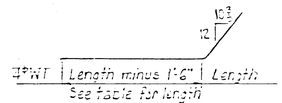
4#W2	Length
4#W3	"

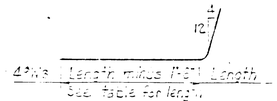
5#F1	2'-7" 3'-6" Lg.
5#F2	2'-7" 4'-6" Lg.

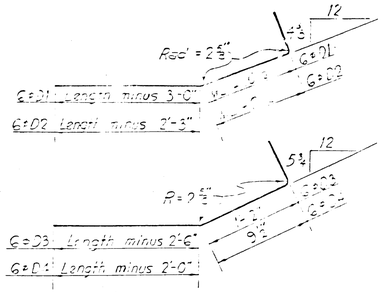
Place this end in cut off wall.
Rad = 1.5"

4#S1	1'-1"
to	BY 1'
4#S15	9'-3"
6#S16	2'-9"
to	BY 1"
6#S29	3'-10"
6#S30	4'-2"
to	BY 2"
6#S34	4'-10"
7#S35	5'-2"
to	BY 2"
7#S38	5'-2"
4#S39	1'-1"
to	BY 1⅞"
4#S56	3'-0"
6#S57	3'-6"
to	BY 1⅞"
6#S64	4'-1"
6#S65	4'-5"
to	BY 2⅜"
6#S70	5'-7"
6#Sa	3'-5"
6#Sb	4'-5"
7#Sc	4'-2"
7#Sd	5'-2"

Note: See table for lengths of bars not shown and number required.







BAR BENDING DIAGRAMS

GENERAL NOTE

1. Workmanship and materials shall conform to City of Albuq. Specifications.
2. All Concrete to be Class "F". Chamfer all exposed edges ¾"
3. All reinforcing steel to be deformed bars, intermediate grade, conforming to A.S.T.M. Spec's. A-15 and 305. All dimensions refer to ℄ of bar. Bars to be cut to the nearest one inch length, use shorter length when detailed length falls on ½" exact.
4. Reinforcing bars may be spliced where necessary to avoid excessive lengths of bars. Splices shall lap a minimum of 20 bar diameters.
5. Wingwalls are to be placed monolithic with barrel.

DESIGN DATA

Design according to AASHO Specifications 1957.
Allowable earth pressure determined from Rankine for
Weight of earth 100 #/ft³
Fill Slope 2:1 } for Rankine's formula
Angle of internal friction = 34°
Design stresses: Fc = 3000 psi, fs = 18000 psi, Fs = 20000 psi, n = 10
Maximum computed footing pressure = 2 tons per sq. ft.

THIS SERIAL REVISED: 1-30-68

NEW MEXICO
STATE HIGHWAY DEPARTMENT

WINGWALLS
FOR 15° SKEW CONC. BOX CULVERTS

Sheet 2 of 2

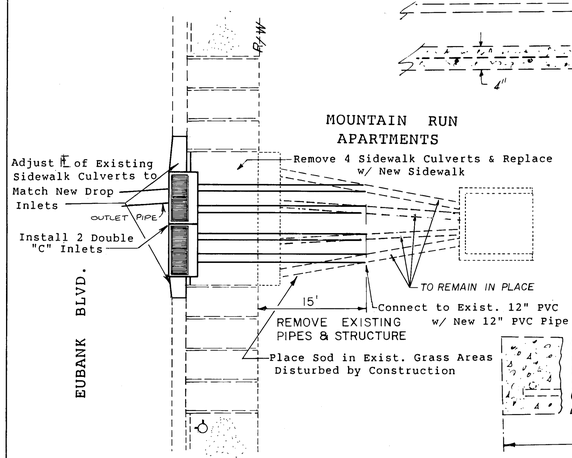
SERIAL WC2-15

APPROVED: _____
BRIDGE ENGINEER

NO. _____ SHEET NO. _____

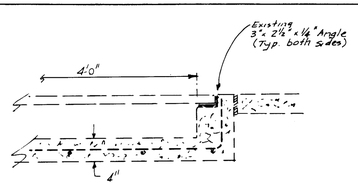
DRAWING NO. 3598 SHEET 8 OF 11

C of A PWD Maps & Records
1 2 3 4 5 6 7 8 9 10 11 12
2 6 3 5 9 8 0 8 9 1

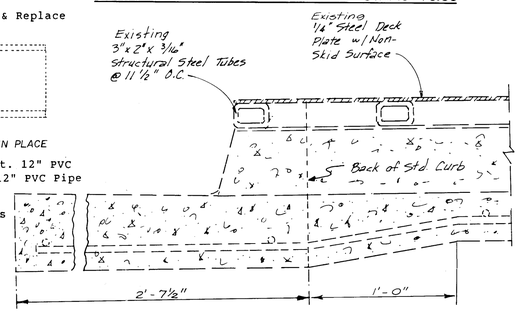


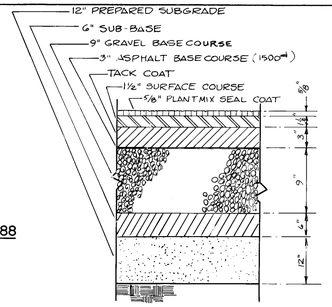
CATCH BASIN @ STA. 13+58.11 & 13+66.11 ON EUBANK BLVD.

NTS



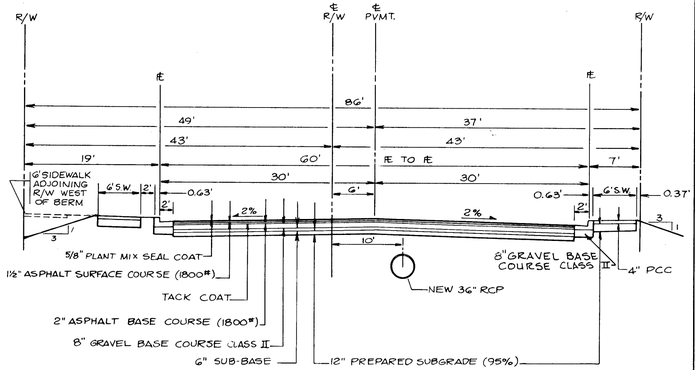
DETAILS OF EXIST. S.W. CULVERTS @ STA. 13+58.11 & STA. 13+66.11 & STA. 18+70.88





EUBANK PAVEMENT SECTION

NO SCALE

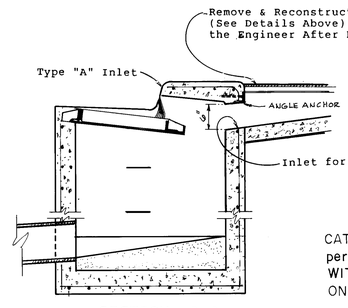


TYPICAL CROSS-SECTION LAYTON AVE.

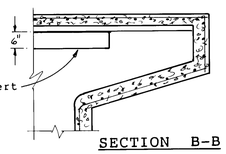
NOT TO SCALE

42" RCP CONNECTION TO C.B.C.

NOT TO SCALE

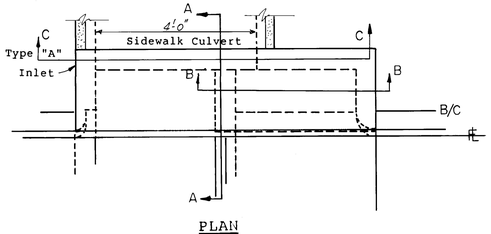


SECTION A-A

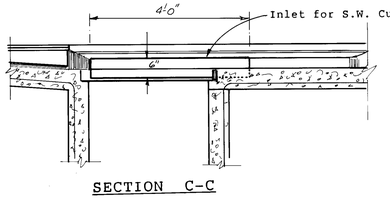


SECTION B-B

CATCH BASIN to be CONSTRUCTED per STD. DWGS. 2201 & 2202 WITH MODIFICATIONS as shown ON THESE DETAILS.



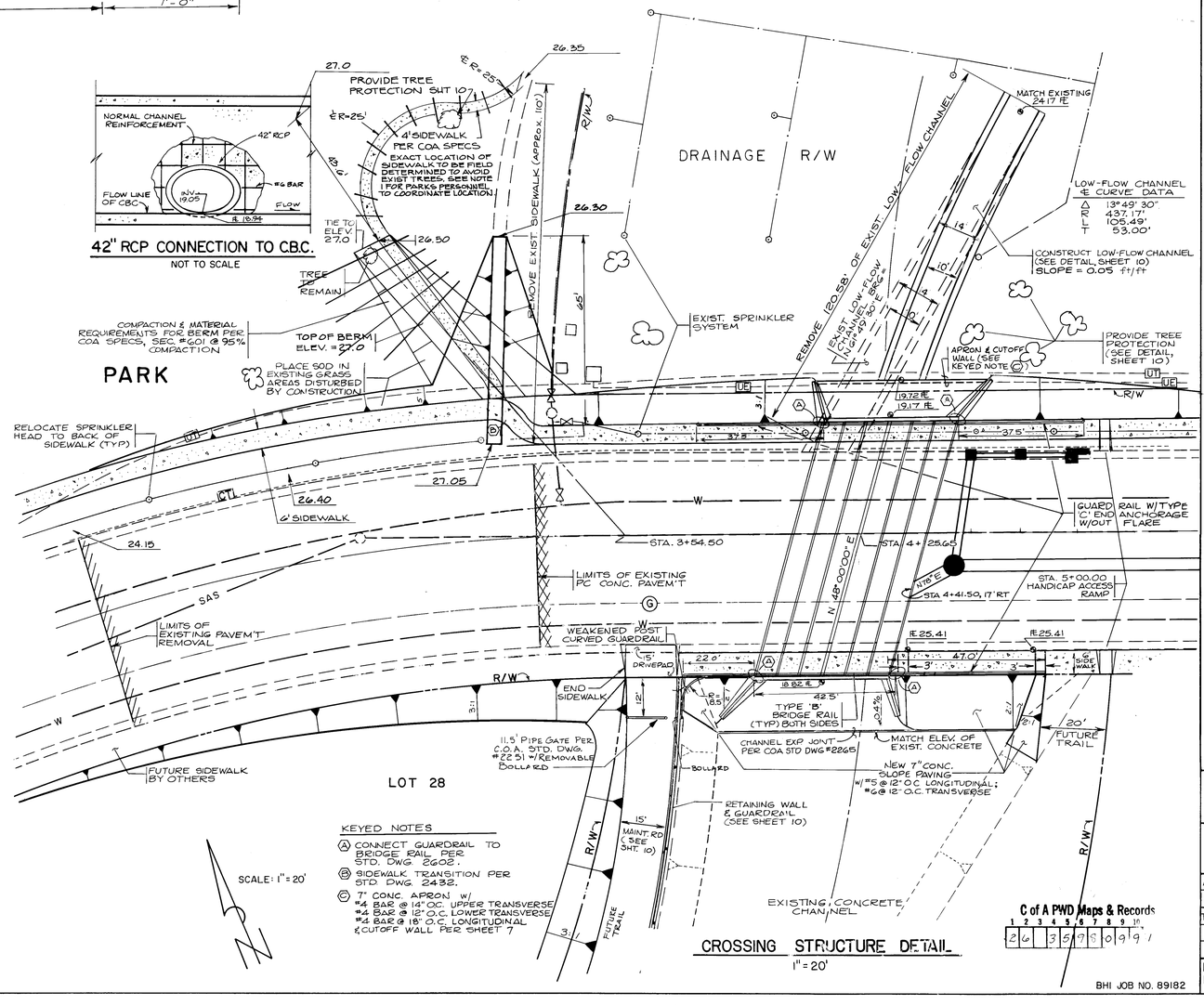
PLAN



SECTION C-C

CATCH BASIN @ STA. 18+70.88 ON EUBANK BLVD.

NTS



KEYED NOTES

Ⓐ CONNECT GUARDRAIL TO BRIDGE RAIL PER STD. DWG. 2602.

Ⓑ SIDEWALK TRANSITION PER STD. DWG. 2432.

Ⓒ 7' CONC. APRON w/ #4 BAR @ 14" OC. UPPER TRANSVERSE #4 BAR @ 12" O.C. LOWER TRANSVERSE #4 BAR @ 18" O.C. LONGITUDINAL & CUTOFF WALL PER SHEET 7

CROSSING STRUCTURE DETAIL

1" = 20'

BHI JOB NO. 89182

NOTES

1. COORDINATE IRRIGATION ALTERATION WITH PARK MANAGEMENT DIVISION: RALPH GARCIA OR JEFF HART AT 823-4062. CONTRACTOR SHALL GIVE 5 WORKING DAYS NOTICE PRIOR TO START OF CONSTRUCTION.
2. ALL DISTURBED AREAS IN THE PARK ARE TO BE SODDED, INCLUDING THE AREA WHERE THE LOW FLOW CHANNEL IS TO BE REMOVED.
3. REMOVAL OF THE SIDEWALK CULVERTS & EXPANSION BOXES IS INCIDENTAL TO INSTALLATION OF THE PVC DRAIN PIPES, AND NO SEPARATE PAYMENT WILL BE MADE.

LEGEND

- ℄ OF RIGHT-OF-WAY
- PROPERTY LINE W/PC
- NEW STORM DRAIN W/MANHOLE
- NEW INLET
- BACK CURB W/LIP OF GUTTER
- EXIST. GAS
- EXIST. UNDERGROUND ELEC.
- EXIST. UNDERGROUND PHONE
- EXIST. CABLE TV
- EXIST. BLOCK WALL
- EXIST. CONC. SLOPE
- NEW CONC. SLOPE
- NEW SPOT ELEVATION
- EXIST. SPRINKLER LINE
- EXIST. SPRINKLER FIXTURE
- EXIST. WATER VALVE
- EXIST. SAS LINE W/MH
- EXIST. TRAFFIC BOX

AS-BUILT INFORMATION
CONTRACTOR CCM
WORK STAKED BY RUE ARNOLD DATE
INSPECTORS DATE
ACCEPTANCE BY U.I.E. DATE
FIELD VERIFICATION BY U.I.E. DATE
DRAWINGS CORRECTED BY BOWMAN DATE
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEER'S SEAL
Thomas Gale 3/26/90

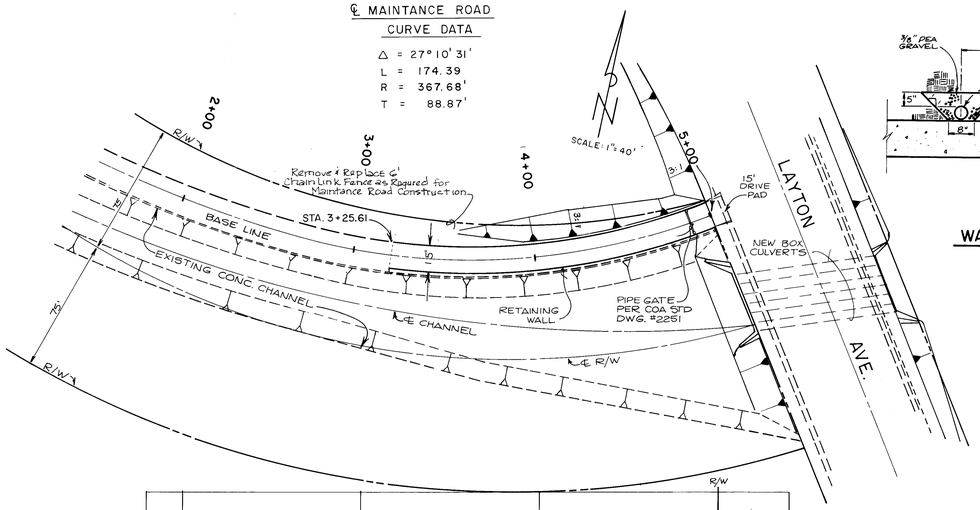
REVISIONS
NO. DATE BY REMARKS
DESIGN DATE 9/89 DESIGNED BY D.J.G
DATE 9/89 DRAWN BY D.H.G
DATE CHECKED BY

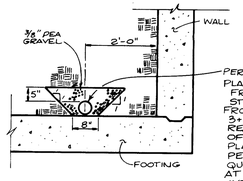
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: LAYTON -- BEAR TRIBUTARY CROSSING STRUCTURE AND STORM DRAIN DETAILS

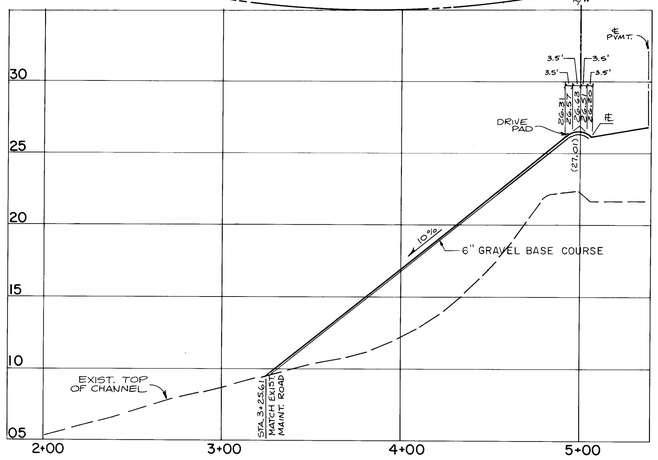
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN	Roger Shaw	5/9/90	WATER	R.W. Kane	5-8-90
TRANSPORTATION	[illegible]	5-3-90	WASTE WATER	R.W. Kane	5-8-90
Hydrology	[illegible]	5/3/90			
PARKS & REC	[illegible]	5-3-90			

DRAWING NO. 3598 | MAP NO. E-21 | SHEET 9 OF 11

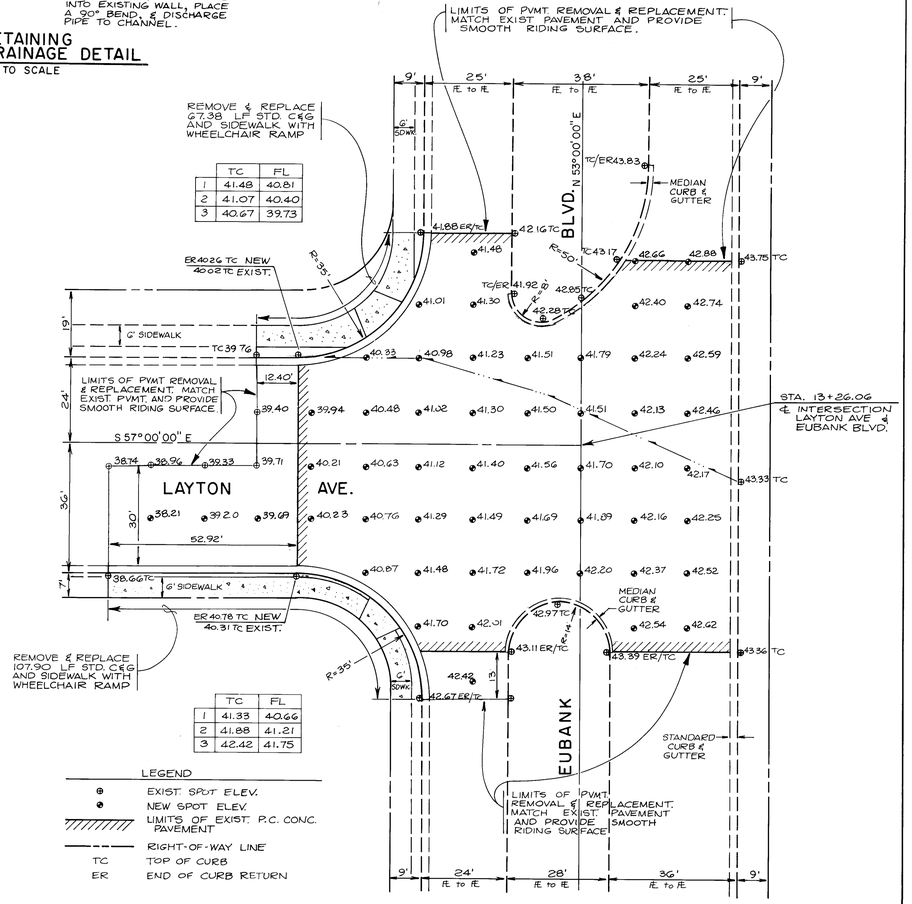




RETAINING WALL DRAINAGE DETAIL
NOT TO SCALE



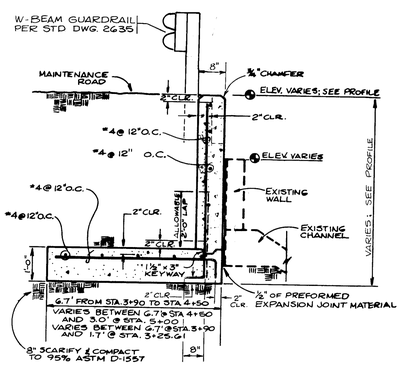
MAINTENANCE ROAD PLAN & PROFILE
SCALE: 1" = 40' HORIZ.
1" = 5' VERT.



	TC	FL
1	41.33	40.66
2	41.88	41.21
3	42.42	41.75

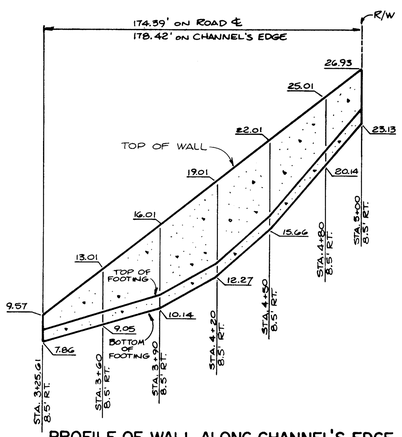
LEGEND
- ⊕ EXIST. SPOT ELEV.
- ● NEW SPOT ELEV.
- LIMITS OF EXIST. P.C. CONC. PAVEMENT
- RIGHT-OF-WAY LINE
- TC TOP OF CURB
- ER END OF CURB RETURN

EUBANK / LAYTON INTERSECTION DETAIL
SCALE 1" = 20'

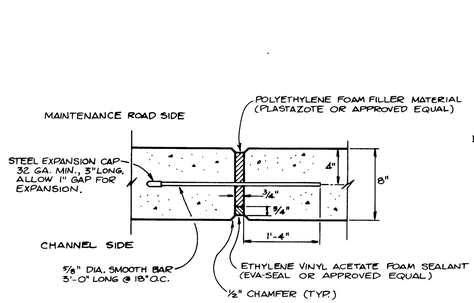


NOTES:
1. CONCRETE SHALL CONFORM TO ACI 301 LATEST EDITION f'c = 3000 PSI @ 28 DAYS
2. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60. SMOOTH DOWELS SHALL BE GRADE 40 OR GRADE A-307
3. MINIMUM LAP SHALL BE 2 FT.
4. THE CONTRACTOR SHALL VERIFY DIMENSIONS IN FIELD.
5. VERTICAL EXPANSION JOINTS FOR THE WALL SHALL NOT BE SPACED MORE THAN 30' APART. (SEE EXPANSION JOINT DETAIL).

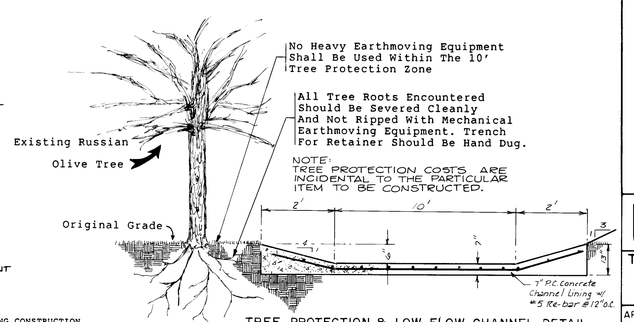
RETAINING WALL DETAIL
NOT TO SCALE



PROFILE OF WALL ALONG CHANNEL'S EDGE
SCALE: 1" = 40' HORIZ.
1" = 5' VERT.



VERTICAL EXPANSION JOINT DETAIL
NOT TO SCALE



TREE PROTECTION & LOW FLOW CHANNEL DETAIL
NO SCALE

DURING CONSTRUCTION
- Before any work begins and during construction operations, the general contractor shall erect suitable protective barriers around all trees to be preserved to a radius of 10' (feet), making sure that trunk, branches, and roots are not damaged by construction equipment.
- Light weight construction equipment shall be utilized within a 10' radius of the tree for root protection during general construction
- Dependent on construction time of year, periodic feeding or watering be necessary, coordinate with Dale Sokkary, Urban Forester, Park Management Division, at 823-4062.

BHI JOB NO. 89182

NOTES
1. REMOVAL & REPLACEMENT OF THE MAINTENANCE ROAD FENCE IS INCIDENTAL TO CONSTRUCTION OF THE MAINTENANCE ROAD AND NO SEPARATE PAYMENT SHALL BE MADE.
2. COST & INSTALLATION OF PIPE AND PEA GRAVEL FOR THE RETAINING WALL IS INCIDENTAL TO THE RETAINING WALL AND NO SEPARATE PAYMENT SHALL BE MADE.

C of A PWD Maps & Records
1 2 3 4 5 6 7 8 9 10 11
2 6 3 5 9 8 1 0 9 1

SURVEY INFORMATION
FIELD NOTES
NO. | BY | DATE

BENCH MARKS

AS-BUILT INFORMATION
CONTRACTOR C.C.M.
WORK ORDERED BY Bur Assur. DATE
INSPECTOR'S
ACCEPTANCE BY: U.F. DATE
FIELD VERIFICATION BY U.F. DATE
VERIFICATION BY DRAWINGS Bhavnani DATE
DRAWINGS CORRECTED BY Bhavnani DATE
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

ENGINEER'S SEAL
COMMONWEALTH OF PENNSYLVANIA — PROFESSIONAL ENGINEER
3/26/90

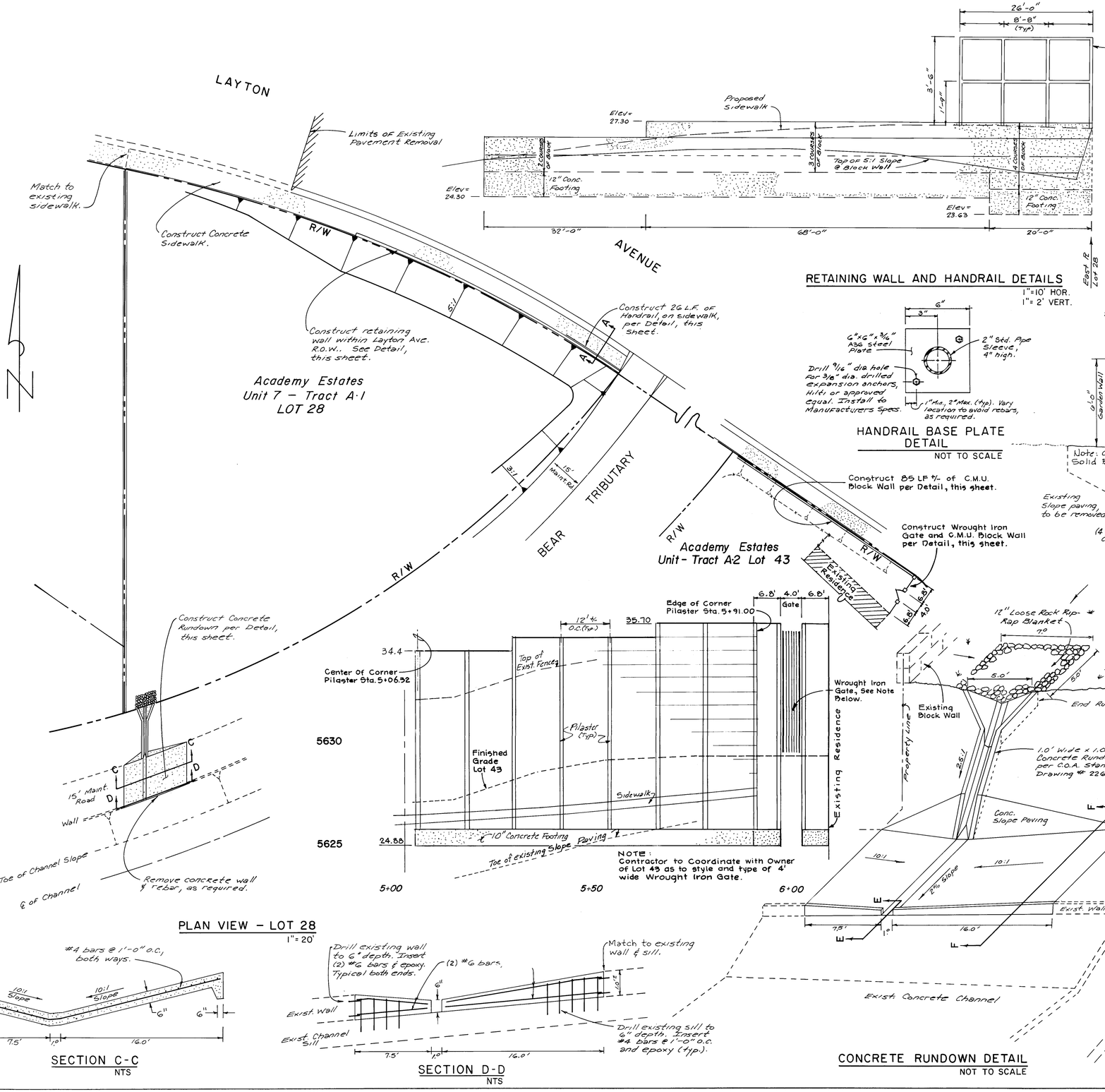
REVISIONS
NO. | DATE | REMARKS | BY
DESIGN DATE 11/89
DESIGNED BY DJG
DRAWN BY NM DATE 11/89
CHECKED BY DATE

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: LAYTON -- BEAR TRIBUTARY CROSSING STRUCTURE AND STORM DRAIN

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN	[signature]	5/9/90	WATER	R.W. Kane	5-8-90
TRANSPORTATION	[signature]	5-8-90	WASTE WATER	R.W. Kane	5-8-90
Hydrology	[signature]	5/8/90			
PARKS & REC.	[signature]	5-9-90			

DRAWING NO. 3598 | MAP NO. E-21 | SHEET 10 OF 11



AS-BUILT INFORMATION
CONTRACTOR CCM
WORK STARTED BY Ark Adams DATE
INSPECTOR'S ACCEPTANCE BY U.E. DATE
FIELD VERIFICATION BY U.E. DATE
DRAWING CORRECTED BY Sullivan DATE
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEER'S SEAL
Dennis D. Gallegos
12/5/90
NEW MEXICO 9796 REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	
		DESIGNED BY DBG	DATE 9/90
		DRAWN BY DBG	DATE 9/90
		CHECKED BY DJG	DATE 9/90

© of A PWD Maps & Records
1 2 3 4 5 6 7 8 9 10 11 12
2 6 3 5 9 8 1 0 9 1 A

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: LAYTON -- BEAR TRIBUTARY CROSSING STRUCTURE AND STORM DRAIN
MISCELLANEOUS DETAILS

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN			WATER		
TRANSPORTATION			WASTE WATER		
HYDROLOGY					
PARKS & REC.					

DRAWING NO. 3598 | MAP NO. E-21 | SHEET 10A OF 11

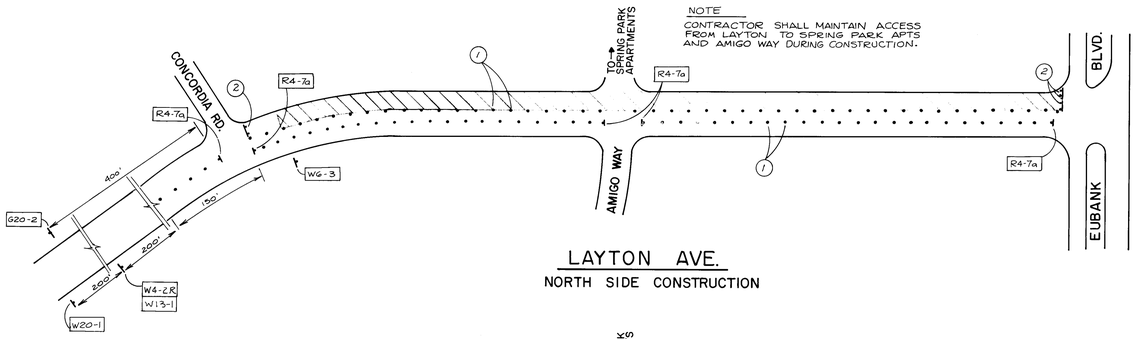
BRUNING

TRAFFIC CONTROL

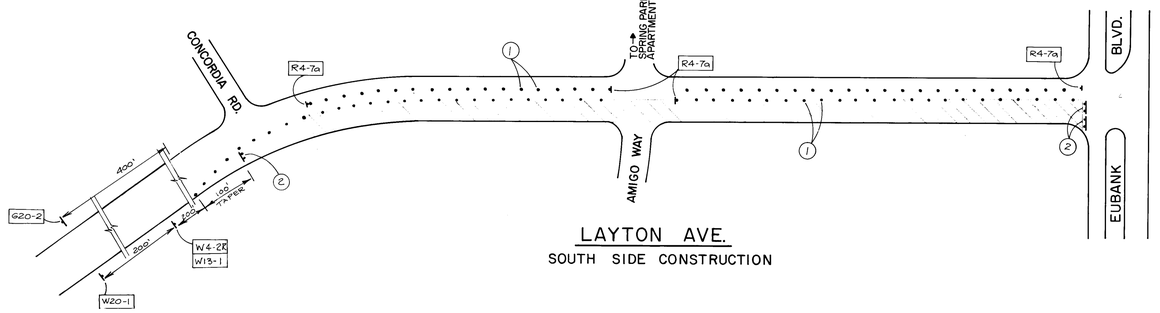
Three (3) working days prior to beginning construction the CONTRACTOR shall submit to the CONSTRUCTION CO-ORDINATION DIVISION a detailed construction schedule. Two (2) working days prior to construction the CONTRACTOR shall obtain a barricading permit from the CONSTRUCTION CO-ORDINATION DIVISION. CONTRACTOR shall notify BARRICADE ENGINEER (768-2551) prior to occupying an intersection.

All street striping altered or destroyed shall be replaced in kind by CONTRACTOR to location and in kind as existing. All striping, both temporary and final is incidental to Traffic Control and no additional payment will be made.

NOTE
CONTRACTOR SHALL MAINTAIN ACCESS FROM LAYTON TO SPRING PARK APTS AND AMIGO WAY DURING CONSTRUCTION.

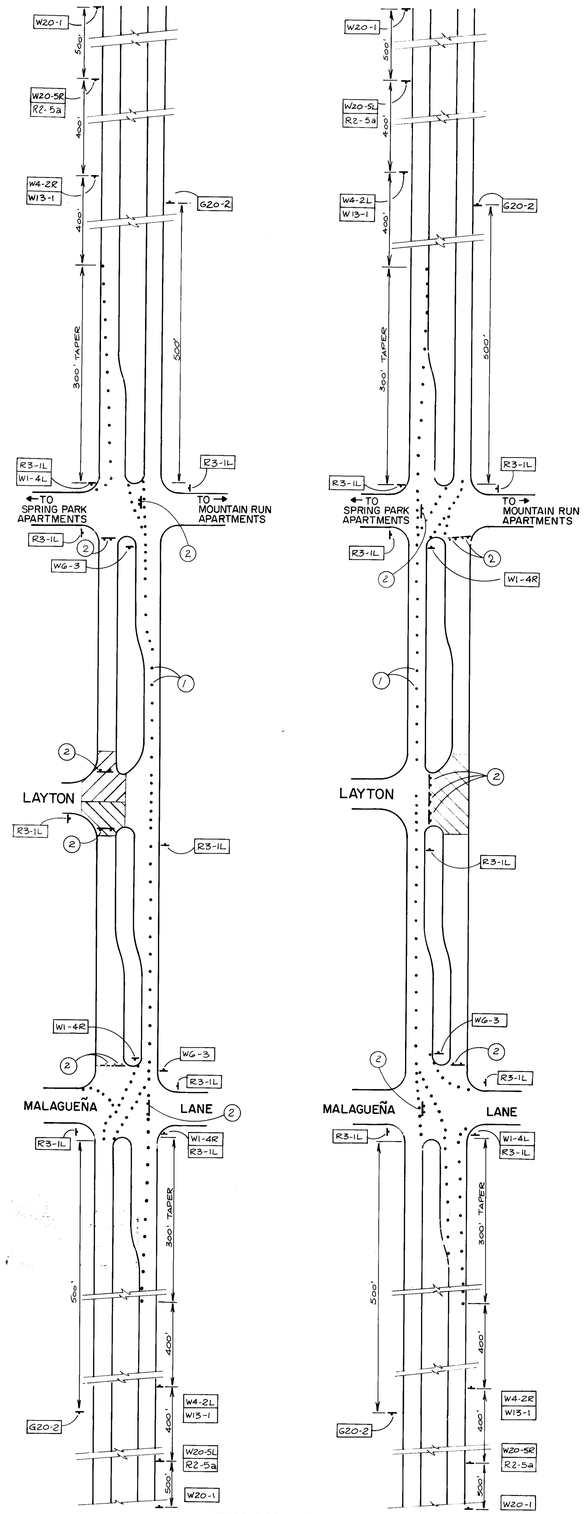


LAYTON AVE.
NORTH SIDE CONSTRUCTION



LAYTON AVE.
SOUTH SIDE CONSTRUCTION

SCALE: 1" = 100' APPROX.



CONSTRUCTION OF NW QUAD & SW QUAD EUBANK/LAYTON INTERSECTION

CONSTRUCTION OF EAST HALF EUBANK/LAYTON INTERSECTION

EUBANK BLVD.

PHASING

(1.) CLOSE THE NORTH SIDE OF LAYTON BUT MAINTAIN ACCESS TO SPRING PARK APARTMENTS. MAINTAIN 2-12' TRAFFIC LANES ON THE SOUTH SIDE OF LAYTON.

(2.) WHILE MAINTAINING (1), CLOSE WEST SIDE OF EUBANK BUT MAINTAIN RIGHT TURN ACCESS TO SPRING PARK & MOUNTAIN RUN APARTMENTS, AND LAYTON AND MALAGUEÑA.

(3.) CLOSE THE SOUTH SIDE OF LAYTON BUT MAINTAIN ACCESS TO AMIGO WAY. MAINTAIN 2-12' TRAFFIC LANES ON THE NORTH SIDE OF LAYTON.

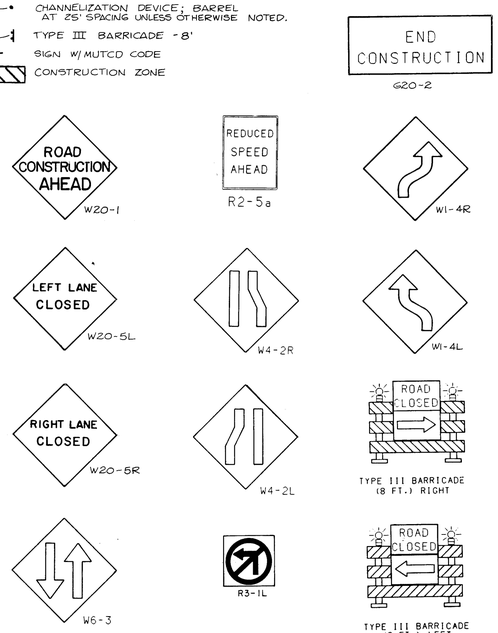
(4.) WHILE MAINTAINING (2), CLOSE WEST SIDE OF EUBANK BUT MAINTAIN RIGHT TURN ACCESS TO SPRING PARK & MOUNTAIN RUN APARTMENTS AND LAYTON AND MALAGUEÑA.

(5.) CLOSE THE EAST SIDE OF EUBANK BUT MAINTAIN RIGHT TURN ACCESS TO SPRING PARK & MOUNTAIN RUN APARTMENTS AND LAYTON AND MALAGUEÑA.

(6.) MINOR ADJUSTMENTS TO THIS PLAN MAY BE REQUIRED BY THE BARRICADE ENGINEER.

KEY LEGEND & SIGN FACE DETAILS

① CHANNELIZATION DEVICE; BARREL AT 25' SPACING UNLESS OTHERWISE NOTED.
② TYPE III BARRICADE - 8'
SIGN W/MUTCD CODE
CONSTRUCTION ZONE



AS-BUILT INFORMATION
CONTRACTOR C.C.M
WORK STAKED BY ART CHASE DATE
INSPECTOR'S ACCEPTANCE BY U.F. DATE
FIELD VERIFICATION BY DATE
DRAWINGS CORRECTED BY DATE
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEER'S SEAL
Jaime Sandoval 3/26/90

NO.	REVISIONS	BY	DATE
	DESIGN	DESIGNED BY DJG	DATE 12/89
		DRAWN BY NM	DATE 12/89
		CHECKED BY	DATE

Control Points & Coordinates
1 2 3 4 5 6 7 8 9 10 11 12
2G 3598 1811 91

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: LAYTON -- BEAR TRIBUTARY CROSSING STRUCTURE AND STORM DRAIN
TRAFFIC CONTROL SHEET

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN	Roger Moran	5/9/90	WATER	R.W. Kane	5-8-90
TRANSPORTATION	[illegible]	5-5-90	WASTE WATER	R.W. Kane	5-8-90
Hydrology	[illegible]	5/3/90			
PARKS & REC			BARRICADING	[illegible]	5/8/90

DRAWING NO. 3598 | MAP NO. E-21 | SHEET 11 OF 11