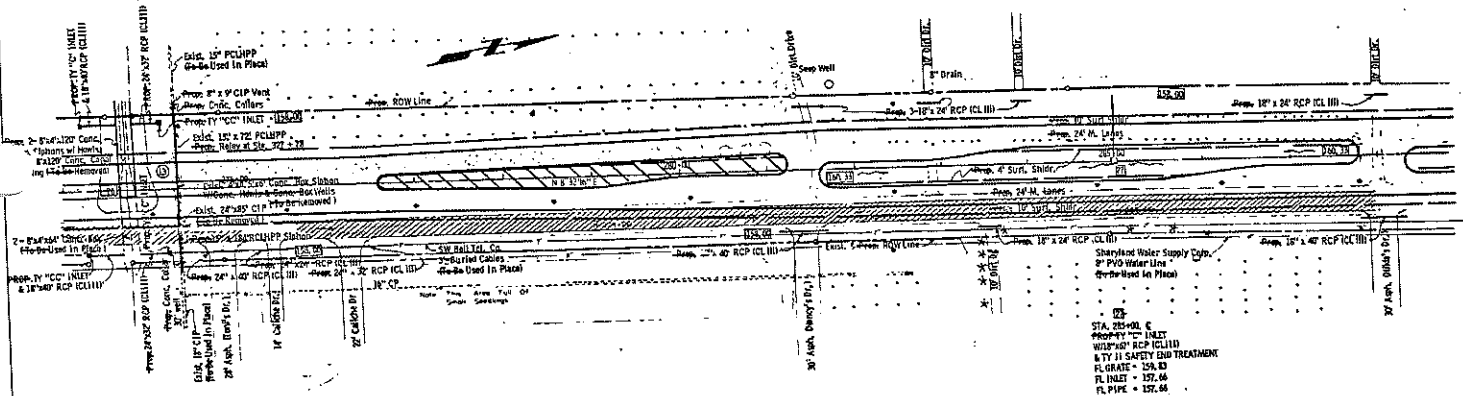


Sta. 274+31,
15"x18" CLHPP Siphon
See Sheet 80 For Irrigation Details



Sta. 273+75, 26
 Approx. 2 - 8"x4"x20' Conc. Box Culvert
 1x/4 - Ty "CC" Inlets
 See Sheet 93 For Details

STA. 285+00, E
PROPERTY INLET
W/18" RCP (CL11)
& TY II SAFETY END TREATMENT
FL GRATE = 159.83
FL INLET = 157.66
FL PIPE = 157.66

ROADWAY, DRAINAGE AND IRRIGATION DETAILS
SHEET 14 OF 24 SHEETS

ISS IN DATE	6-10-66	PROJECT NO.		DATE
%	70%	R5 1601		60
ISS IN DATE	6-10-66	OWNER	CONTRACT NO.	DATE
21	HIDALGO	528	1	54 107



STATE	COUNTY	PRECINCT	SECTION	LOT	BLK	TRCT
TX	HIDALGO	328	1	47	SH	

31
STA. 310+00.0
PROPERTY "C" INLET
W/16" RCP (CLJ11)
& TY 11 SAFETY END TREATMENT
FL GRATE = 162.31
FL INLET = 160.34
FL PIPE = 160.34

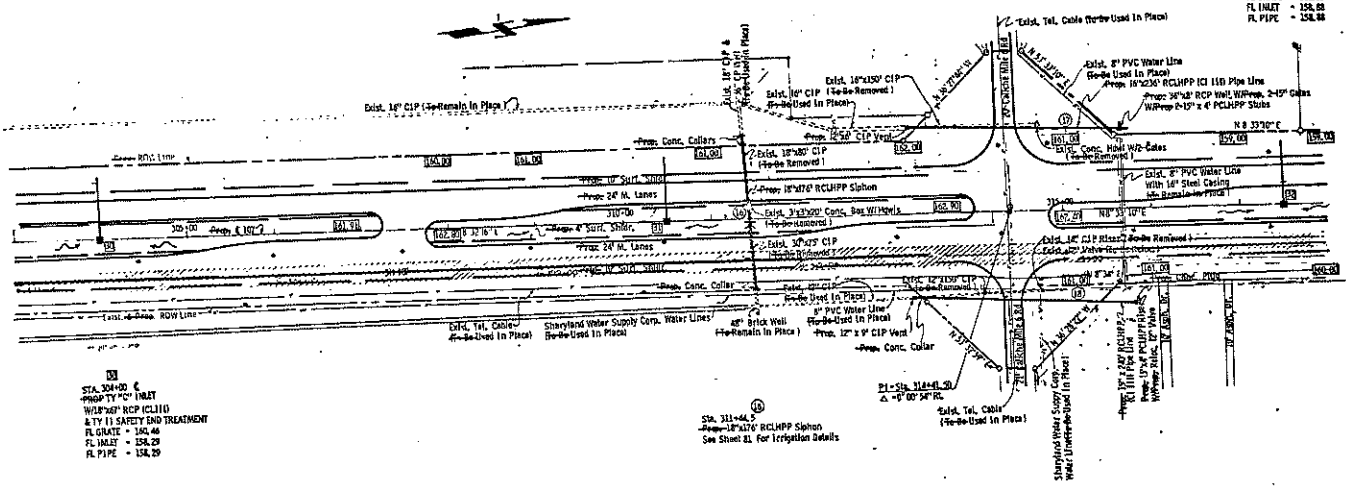
32
Sta. 313+28 To 315+43, LL
Prop. 18" RCP
See Sheet 85 for Irrigation Details

33
STA. 317+50.0
PROPERTY "C" INLET
W/16" RCP (CLJ11)
& TY 11 SAFETY END TREATMENT
FL GRATE = 161.85
FL INLET = 159.88
FL PIPE = 159.88

34
STA. 324+00.0
PROPERTY "C" INLET
W/16" RCP (CLJ11)
& TY 11 SAFETY END TREATMENT
FL GRATE = 160.46
FL INLET = 158.29
FL PIPE = 158.29

35
Sta. 311+44.5
Prop. 18" RCP
See Sheet 81 for Irrigation Details

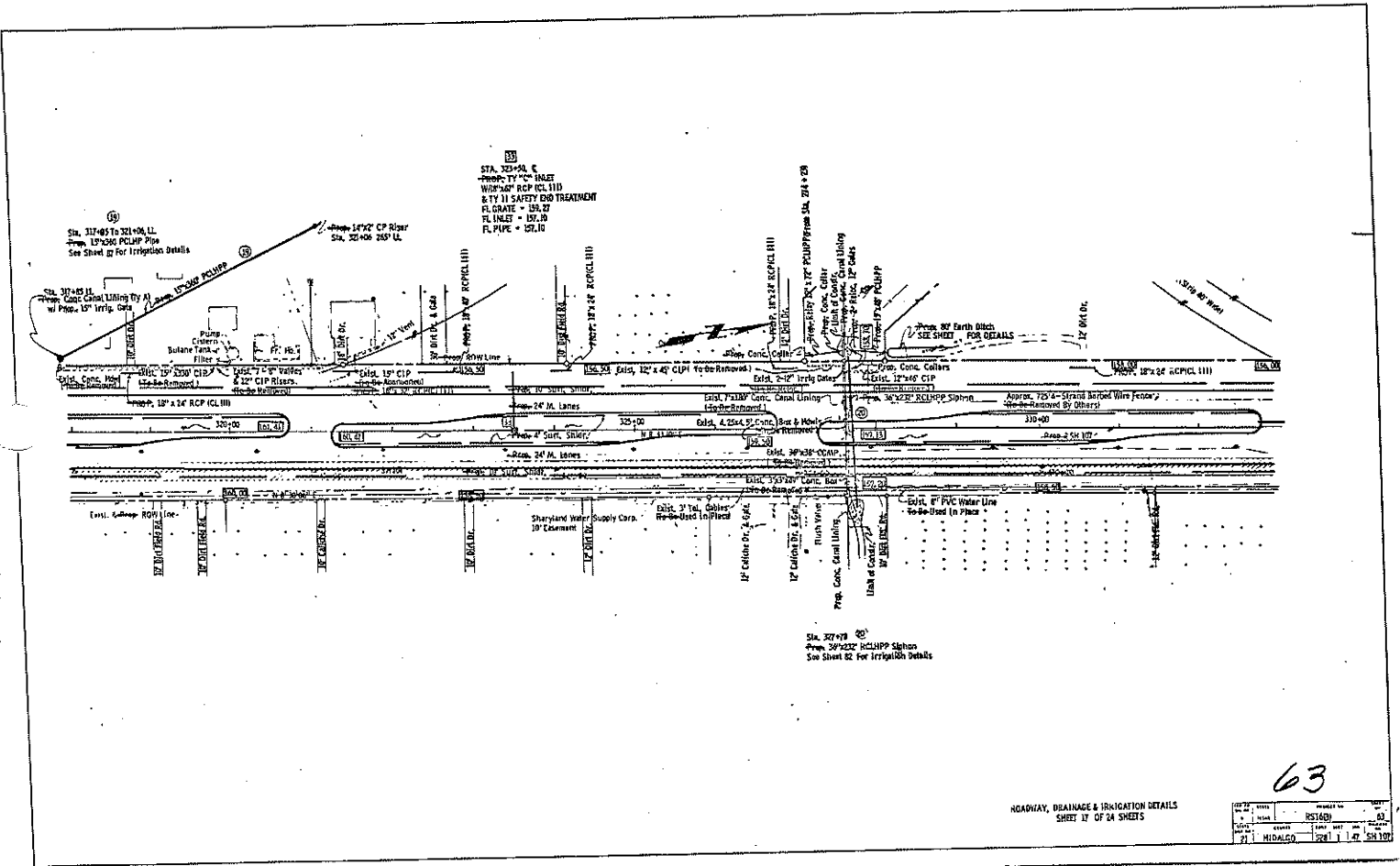
36
Sta. 313+29 To 315+75, RL
Prop. 18" RCP
See Sheet 86 for Irrigation Details



ROADWAY, DRAINAGE & IRRIGATION DETAILS
SHEET 18 OF 24 SHEETS

DATE	2/1/80	DESIGNED BY	RS
DRAWN BY	RS	CHECKED BY	RS
IN CHARGE	RS	APPROVED BY	RS

62

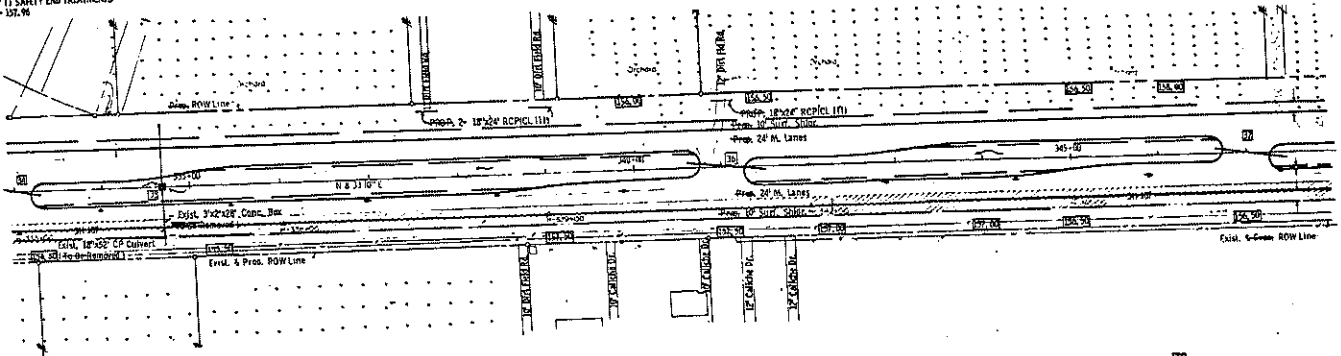


ROADWAY, DRAINAGE & IRRIGATION DETAILS
SHEET 17 OF 24 SHEETS

63

NO.	DATE	BY	CHECKED BY	REVISION
1	11/14/00	RS1400		63
2	11/14/00	RS1400		63
3	11/14/00	RS1400		63
4	11/14/00	RS1400		63
5	11/14/00	RS1400		63
6	11/14/00	RS1400		63
7	11/14/00	RS1400		63
8	11/14/00	RS1400		63
9	11/14/00	RS1400		63
10	11/14/00	RS1400		63
11	11/14/00	RS1400		63
12	11/14/00	RS1400		63
13	11/14/00	RS1400		63
14	11/14/00	RS1400		63
15	11/14/00	RS1400		63
16	11/14/00	RS1400		63
17	11/14/00	RS1400		63
18	11/14/00	RS1400		63
19	11/14/00	RS1400		63
20	11/14/00	RS1400		63
21	11/14/00	RS1400		63
22	11/14/00	RS1400		63
23	11/14/00	RS1400		63
24	11/14/00	RS1400		63
25	11/14/00	RS1400		63
26	11/14/00	RS1400		63
27	11/14/00	RS1400		63
28	11/14/00	RS1400		63
29	11/14/00	RS1400		63
30	11/14/00	RS1400		63
31	11/14/00	RS1400		63
32	11/14/00	RS1400		63
33	11/14/00	RS1400		63
34	11/14/00	RS1400		63
35	11/14/00	RS1400		63
36	11/14/00	RS1400		63
37	11/14/00	RS1400		63
38	11/14/00	RS1400		63
39	11/14/00	RS1400		63
40	11/14/00	RS1400		63
41	11/14/00	RS1400		63
42	11/14/00	RS1400		63
43	11/14/00	RS1400		63
44	11/14/00	RS1400		63
45	11/14/00	RS1400		63
46	11/14/00	RS1400		63
47	11/14/00	RS1400		63
48	11/14/00	RS1400		63
49	11/14/00	RS1400		63
50	11/14/00	RS1400		63
51	11/14/00	RS1400		63
52	11/14/00	RS1400		63
53	11/14/00	RS1400		63
54	11/14/00	RS1400		63
55	11/14/00	RS1400		63
56	11/14/00	RS1400		63
57	11/14/00	RS1400		63
58	11/14/00	RS1400		63
59	11/14/00	RS1400		63
60	11/14/00	RS1400		63
61	11/14/00	RS1400		63
62	11/14/00	RS1400		63
63	11/14/00	RS1400		63
64	11/14/00	RS1400		63
65	11/14/00	RS1400		63
66	11/14/00	RS1400		63
67	11/14/00	RS1400		63
68	11/14/00	RS1400		63
69	11/14/00	RS1400		63
70	11/14/00	RS1400		63
71	11/14/00	RS1400		63
72	11/14/00	RS1400		63
73	11/14/00	RS1400		63
74	11/14/00	RS1400		63
75	11/14/00	RS1400		63
76	11/14/00	RS1400		63
77	11/14/00	RS1400		63
78	11/14/00	RS1400		63
79	11/14/00	RS1400		63
80	11/14/00	RS1400		63
81	11/14/00	RS1400		63
82	11/14/00	RS1400		63
83	11/14/00	RS1400		63
84	11/14/00	RS1400		63
85	11/14/00	RS1400		63
86	11/14/00	RS1400		63
87	11/14/00	RS1400		63
88	11/14/00	RS1400		63
89	11/14/00	RS1400		63
90	11/14/00	RS1400		63
91	11/14/00	RS1400		63
92	11/14/00	RS1400		63
93	11/14/00	RS1400		63
94	11/14/00	RS1400		63
95	11/14/00	RS1400		63
96	11/14/00	RS1400		63
97	11/14/00	RS1400		63
98	11/14/00	RS1400		63
99	11/14/00	RS1400		63
100	11/14/00	RS1400		63

STA. 332+00.0
 PROP. 18" RCP (111) W/
 W/2-TY II SAFETY END TREATMENTS
 FL PIPE = 132.76



STA. 334+00.0
 PROP. TY "C" INLET
 W/2-TY II SAFETY END TREATMENTS
 FL GRATE = 132.50
 FL INLET = 133.00
 FL PIPE WEST = 133.00
 FL PIPE EAST = 133.00

STA. 341+00.0
 PROP. 18" RCP (111)
 W/2-TY II SAFETY END TREATMENTS
 FL PIPE NORTH = 132.80
 FL PIPE SOUTH = 132.80

STA. 347+00.0
 PROP. 18" RCP (111)
 W/2-TY II SAFETY END TREATMENTS
 FL PIPE NORTH = 132.80
 FL PIPE SOUTH = 132.80

ROADWAY, DRAINAGE & IRRIGATION DETAILS
 SHEET 18 OF 24 SHEETS

DATE	2/1/20	PROJECT	RD 100
DRAWN BY	21	CHECKED BY	21
SCALE	1" = 40'	DATE	2/1/20

64

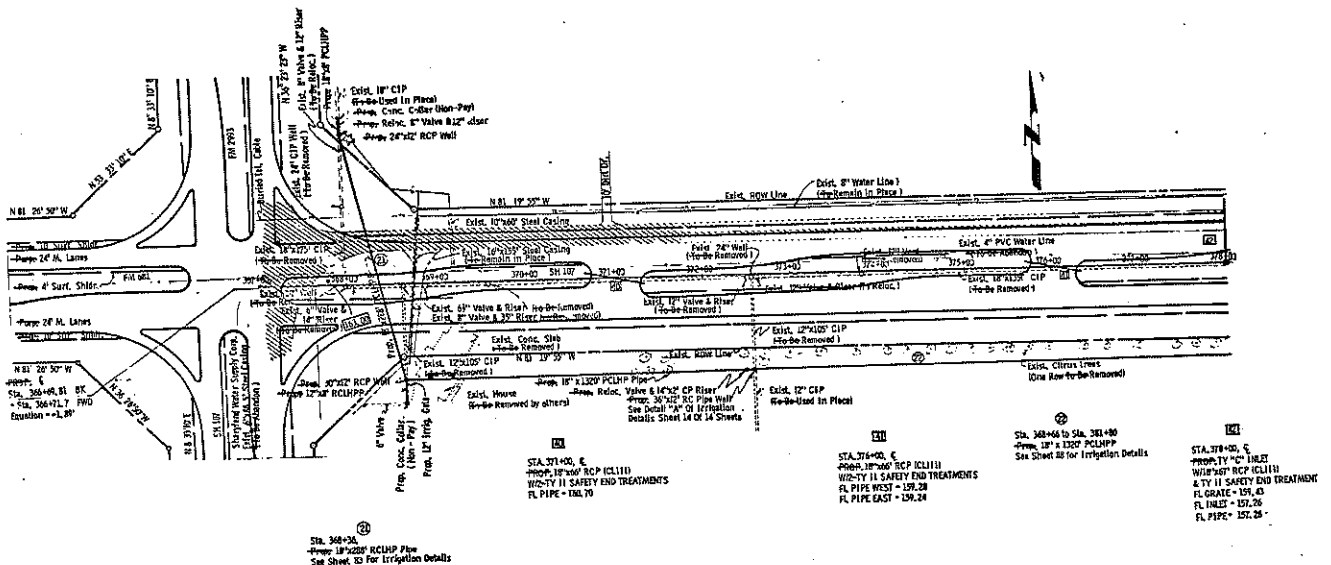
STA. 354+00.0
 PROPERTY "C" INLET
 18" DIA. RCP ICL 11.11 WEST
 18" DIA. RCP ICL 11.11 EAST
 2-1/2" 11" SAFETY END TREATMENTS
 FL GRATE = 154.71
 FL INLET = 154.48
 FL PIPE WEST = 154.93
 FL PIPE EAST = 152.00

STA. 354+00.0
 18" DIA. RCP ICL 11.11
 2-1/2" 11" SAFETY END TREATMENTS
 FL PIPE = 154.71

ROADWAY, DRAINAGE & IRRIGATION DETAILS
 SHEET 19 OF 24 SHEETS

65

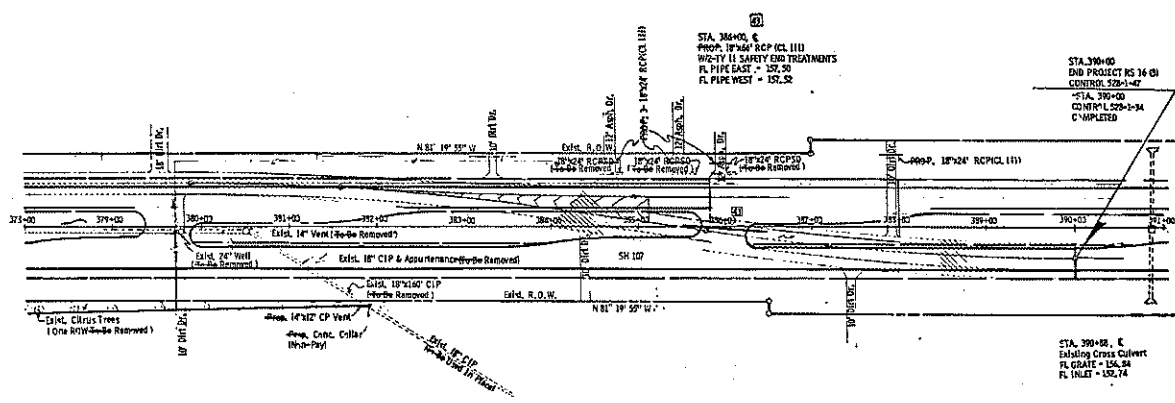
DATE	BY	CHECKED	APPROVED
11/10/00	RS/BOH		
11/10/00	11/10/00	11/10/00	11/10/00
11/10/00	11/10/00	11/10/00	11/10/00



ROADWAY, DRAINAGE & IRRIGATION DETAILS
SHEET 20 OF 24 SHEETS

DATE	BY	CHKD	APP'D	PROJECT NO.	SHEET NO.
11/11/01	W. J. HIGLEY	W. J. HIGLEY	W. J. HIGLEY	85-1901	20

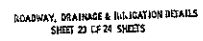
66



ROADWAY, DRAINAGE & IRRIGATION DETAILS
SHEET 21 OF 24 SHEETS

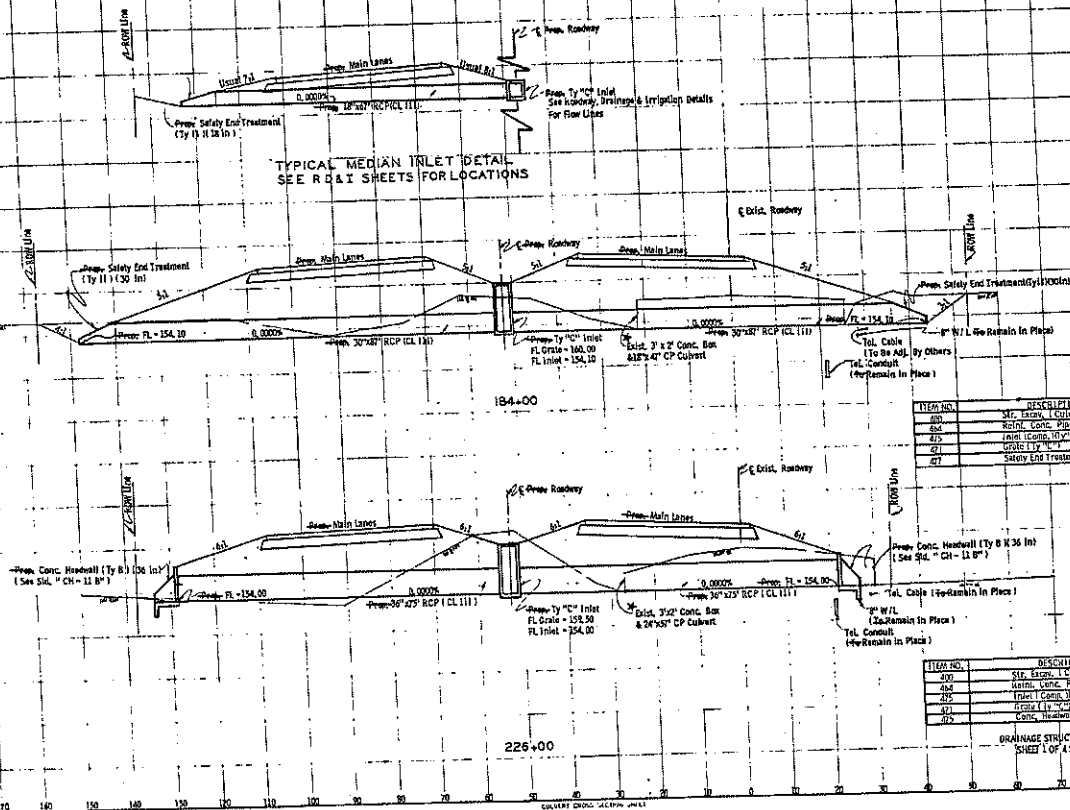
DATE	11/11/00	PROJECT NO.	RS 1403
BY	11/11/00	DESIGNED BY	11/11/00
CHECKED BY	11/11/00	APPROVED BY	11/11/00
21	11/11/00	21	11/11/00

67



State	City	Zip	Phone	Rate
6	Mesa	RS 1603		69
State	City	Zip	Phone	Rate
21	HIDALGO	528	1	47 SH107

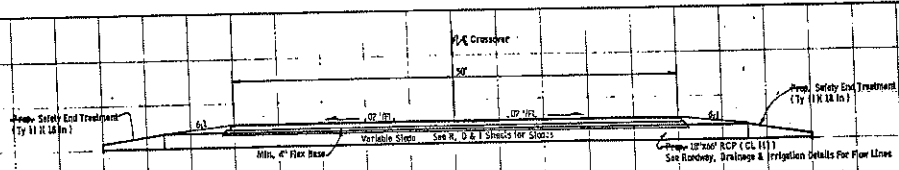
TYPICAL MEDIAN INLET DETAIL
SEE R&I SHEETS FOR LOCATIONS



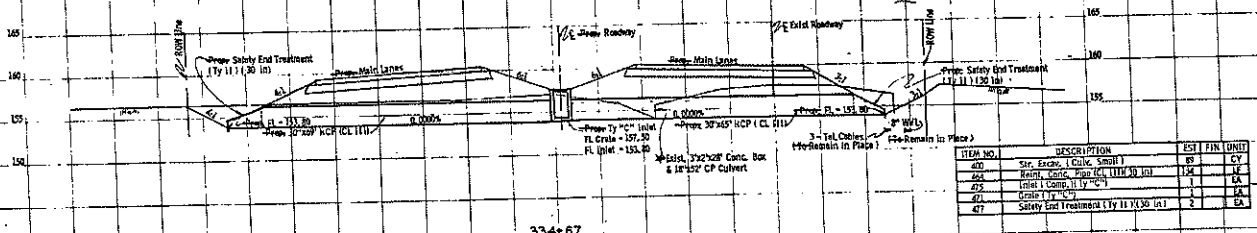
ITEM NO.	DESCRIPTION	QTY	UNIT
200	1/2" x 1/2" x 1/2" (Cable, Small)	77	GY
201	Reinft. Conc. Pipe 12" ID x 10' L	174	LF
202	Joint Comp. 10' x 10'	1	EA
203	Grout 10' x 10'	1	EA
204	Safety End Treatment (10' x 10')	2	EA

ITEM NO.	DESCRIPTION	QTY	UNIT
400	SUP. EXCISE, L.C.H., Small	40	CF
484	NATL. CONC. PIPE (CL 111) 30 in	150	LY
475	INLET CONC. 15" C	1	EA
471	INLET 15" C	1	EA
475	CONC. HEADWALL (CH-118) 30 in	2	EA

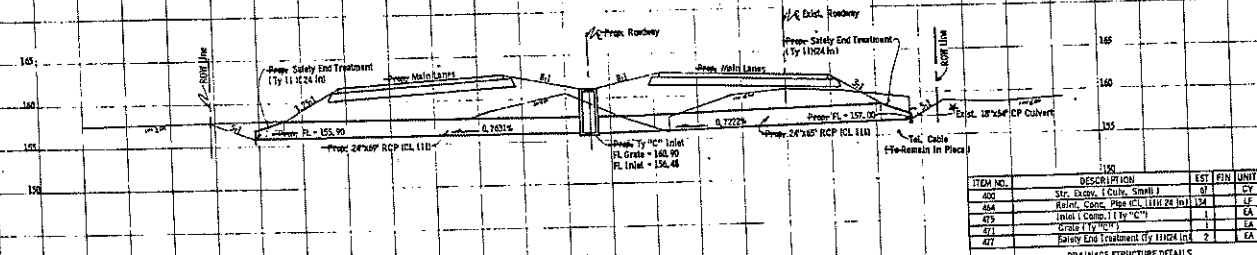
7/1



TYPICAL CROSSOVER W/ PIPE DETAILS
SEE R.D.I SHEETS FOR LOCATIONS



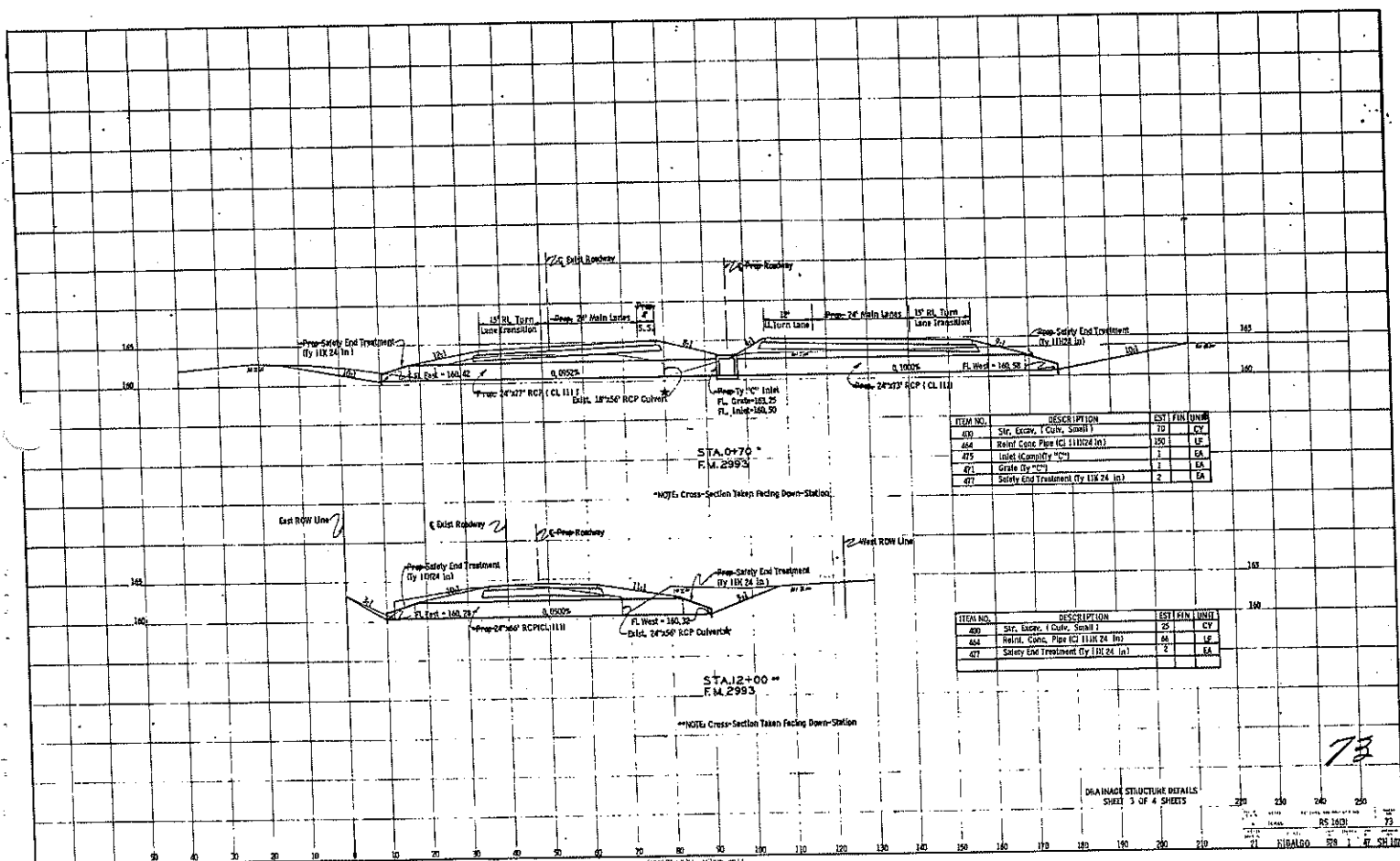
ITEM NO.	DESCRIPTION	EST	FIN	UNIT
400	Spr. Excd. (Culv. Smb.)	89		CY
404	Reinf. Conc. Pipe (CL 111) 30 In.	154		LF
405	Inlet (Comp. II Ty 11 R 18 In.)	1		EA
406	Grate (Ty 11 R 18 In.)	1		EA
407	Safety End Treatment (Ty 11 R 18 In.)	2		EA

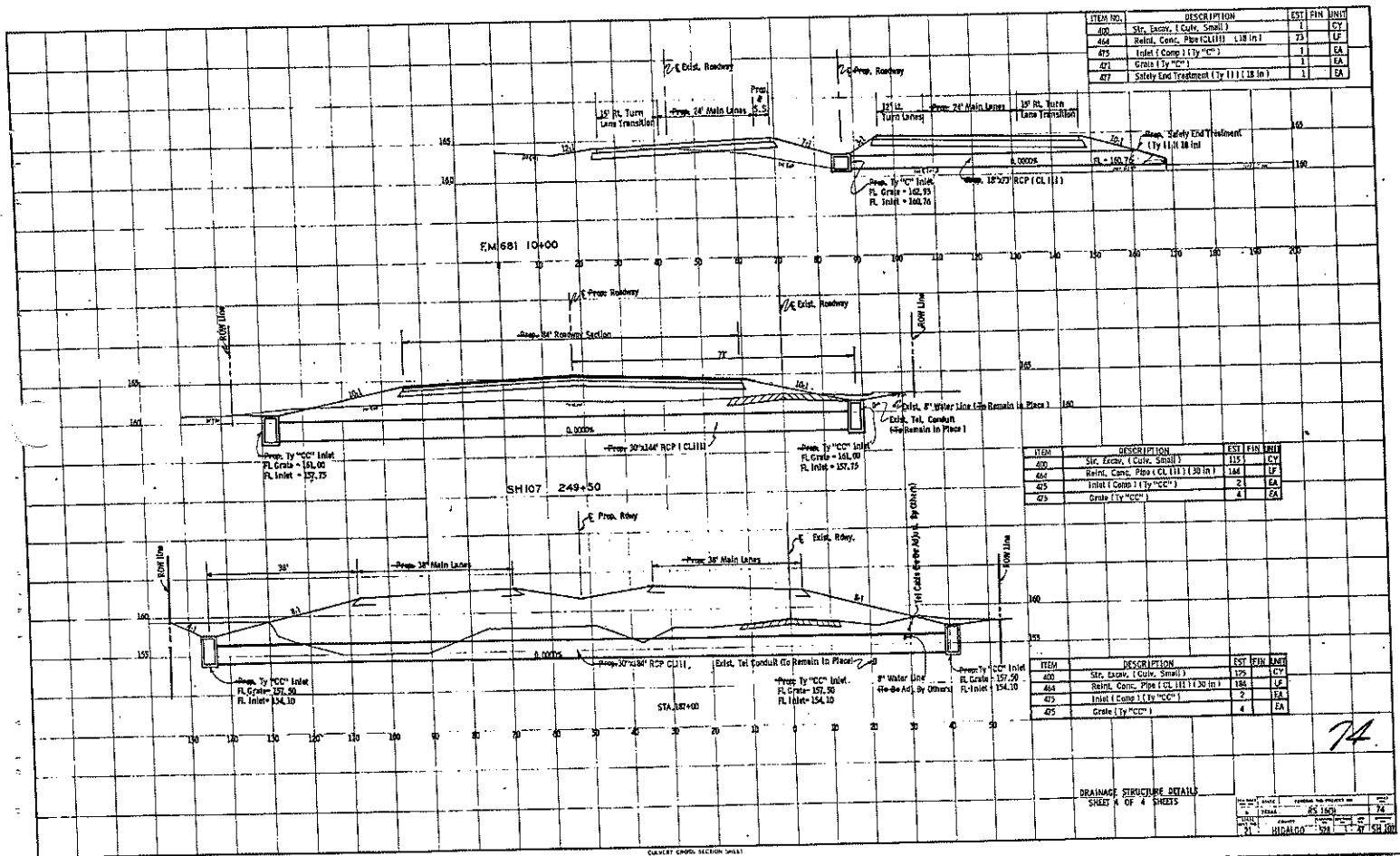


ITEM NO.	DESCRIPTION	EST	FIN	UNIT
400	Spr. Excd. (Culv. Smb.)	97		CY
404	Reinf. Conc. Pipe (CL 111) 30 In.	154		LF
405	Inlet (Comp. II Ty 11 R 18 In.)	1		EA
406	Grate (Ty 11 R 18 In.)	1		EA
407	Safety End Treatment (Ty 11 R 18 In.)	2		EA

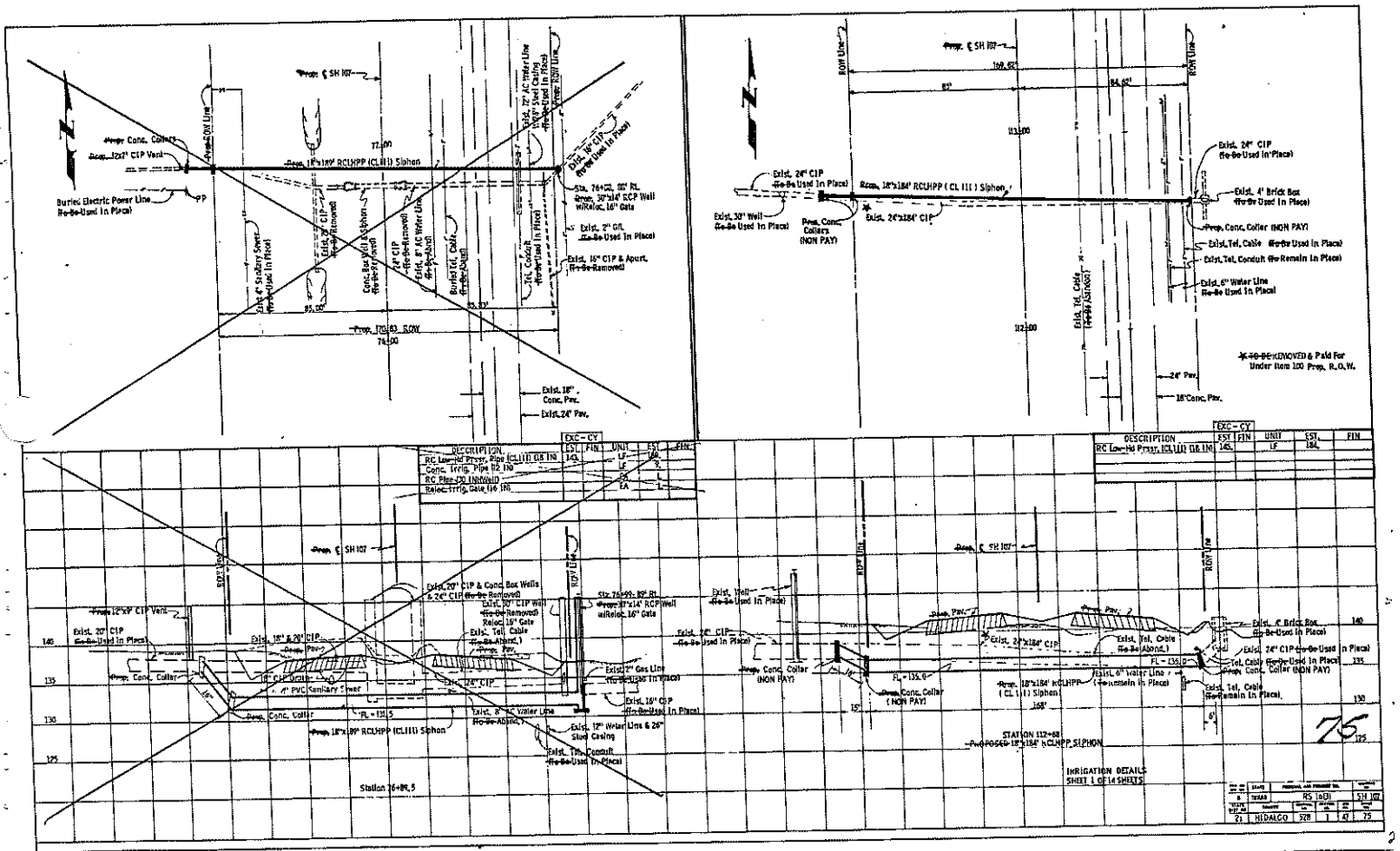
DRAINAGE STRUCTURE DETAILS
SHEET 2 OF 4 SHEETS

DATE	7/2/80	DESIGNED BY	72
TEAM	72	CHECKED BY	72
PROJECT	72	APPROVED BY	72
SHEET	2	TOTAL SHEETS	4

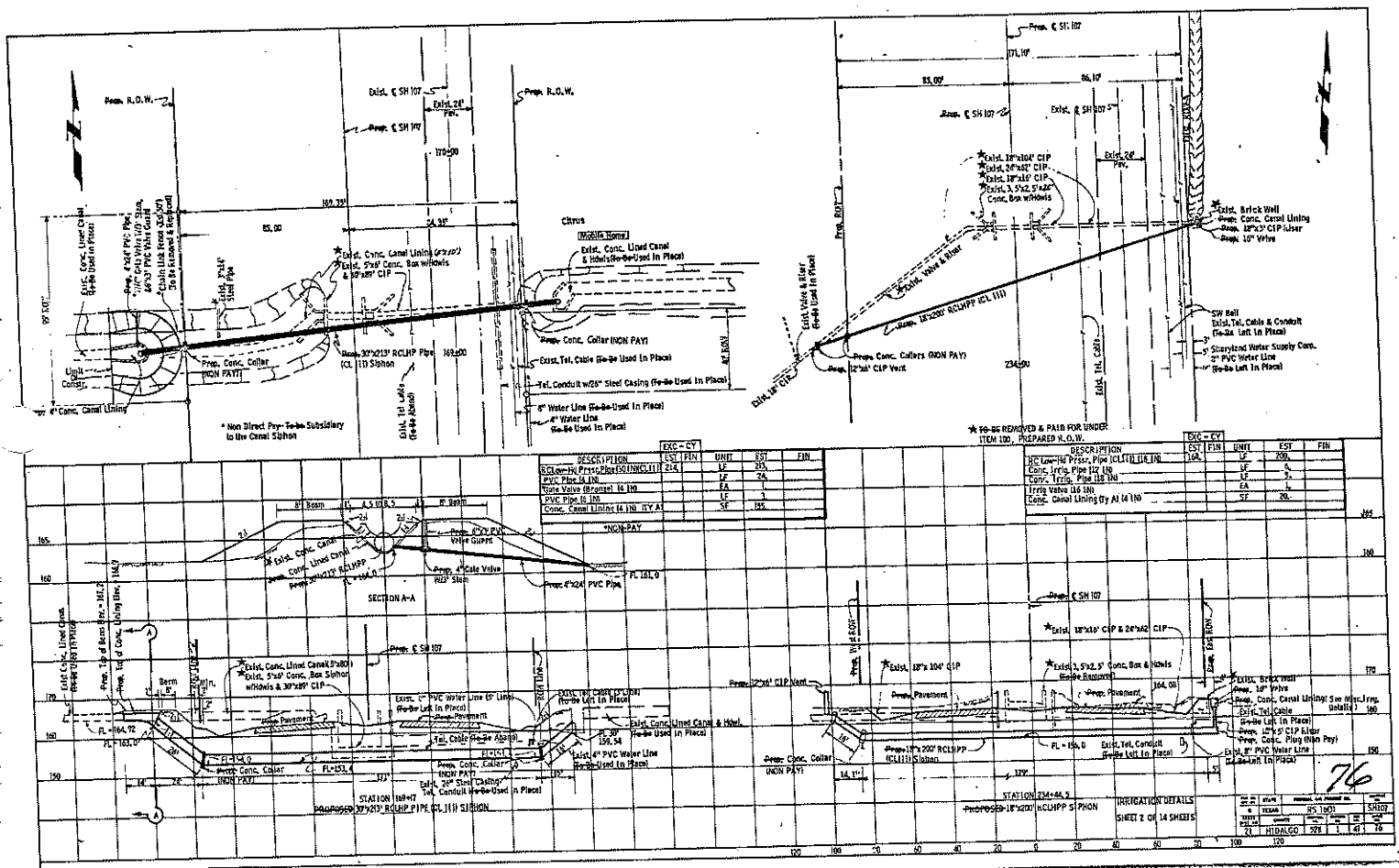




74



75

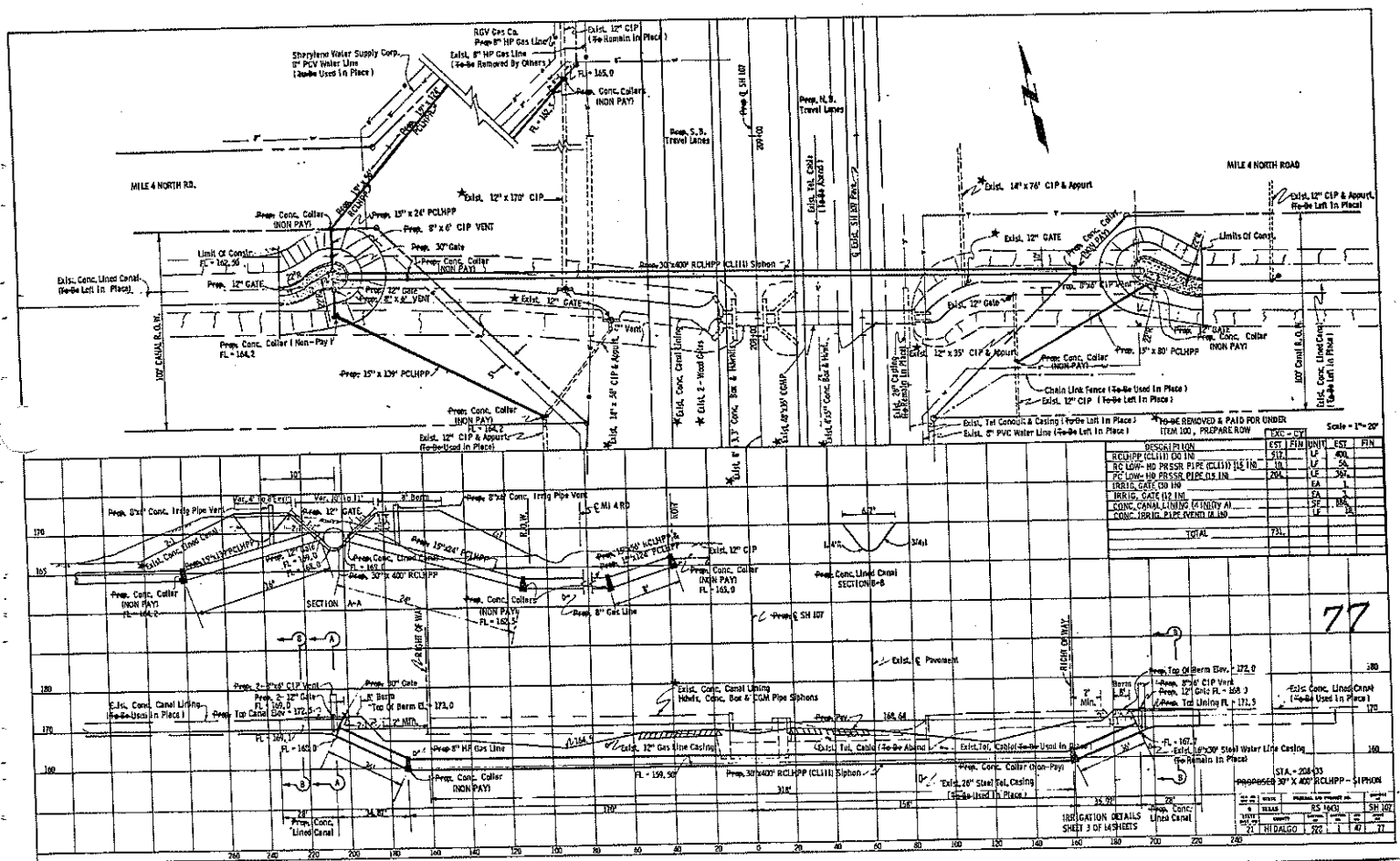


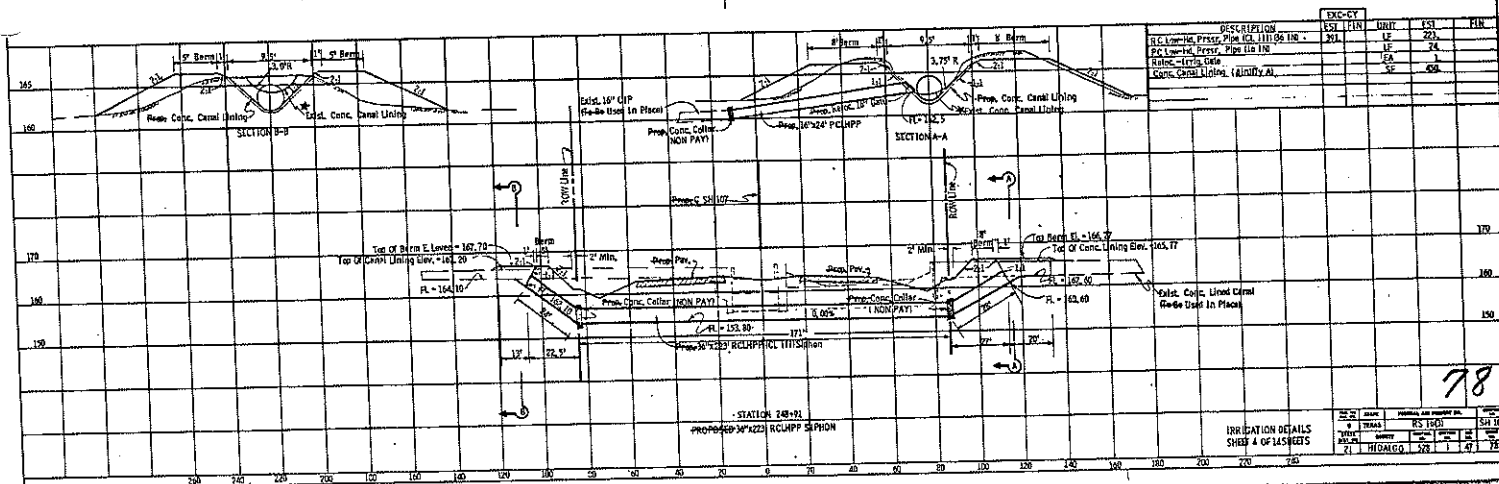
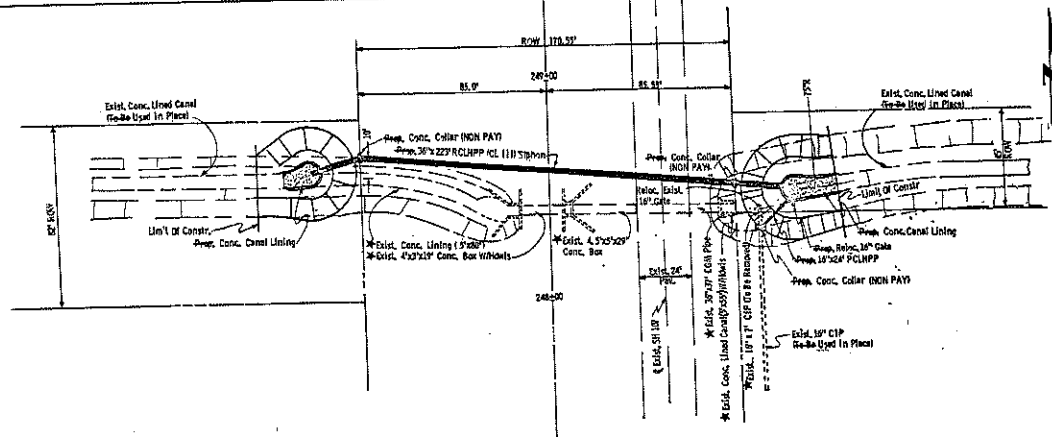
DESCRIPTION	EST	FIN	UNIT	EST	FIN
SCREW-IN PRESSURE LUGS (111) 214	12	24	LF	24	
PVC PIPE 12" DIA	12	24	LF	24	
PIPE VALVE BRACKET 16 IN	1	1	EA	1	
PVC PIPE 12" DIA	1	1	EA	1	
CONC. CANAL LINING 14 IN DIA	1	1	EA	1	

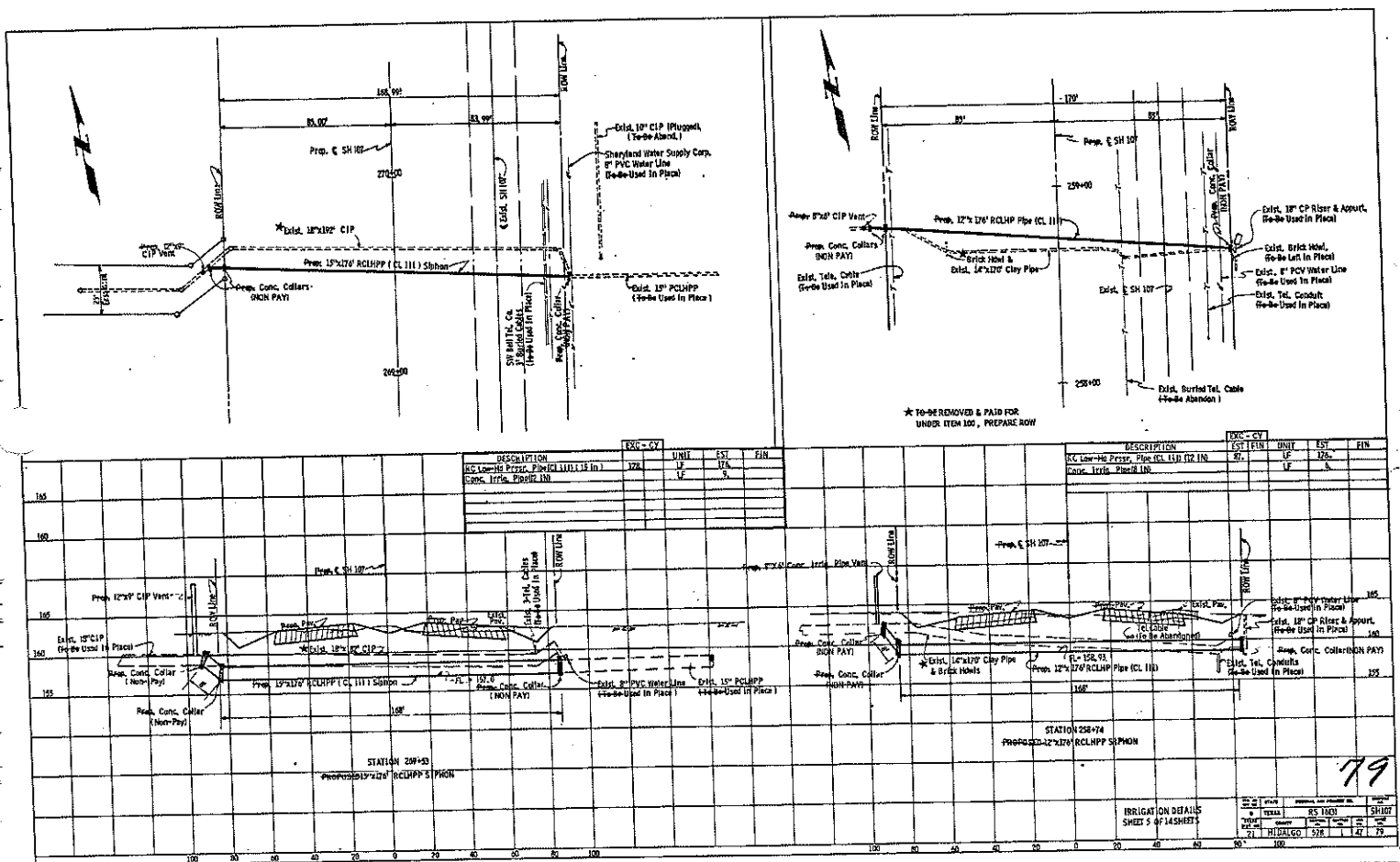
DESCRIPTION	EST	FIN	UNIT	EST	FIN
12" CONC. PIPE 12" DIA	12	24	LF	24	
CONC. PIPE 12" DIA	12	24	LF	24	
CONC. PIPE 12" DIA	12	24	LF	24	
CONC. PIPE 12" DIA	12	24	LF	24	
CONC. PIPE 12" DIA	12	24	LF	24	

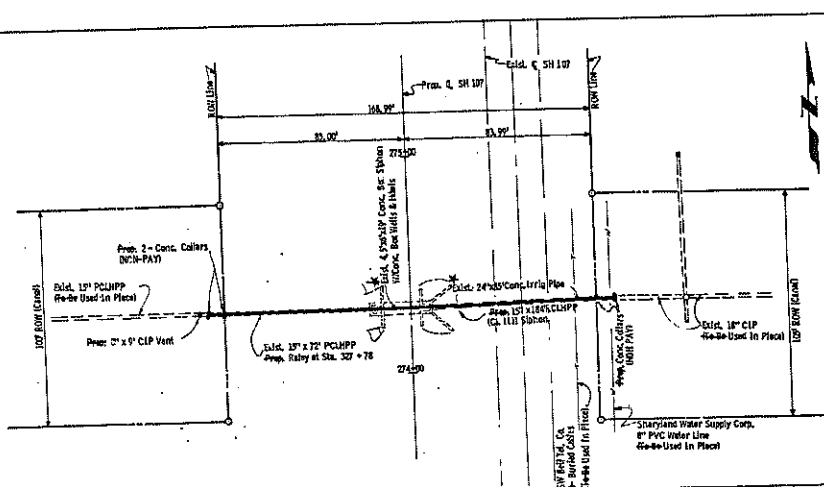
76

NO.	DATE	BY	CHKD	APPD
1	10/10/10	J. L. H.	J. L. H.	J. L. H.
2	10/10/10	J. L. H.	J. L. H.	J. L. H.
3	10/10/10	J. L. H.	J. L. H.	J. L. H.
4	10/10/10	J. L. H.	J. L. H.	J. L. H.
5	10/10/10	J. L. H.	J. L. H.	J. L. H.



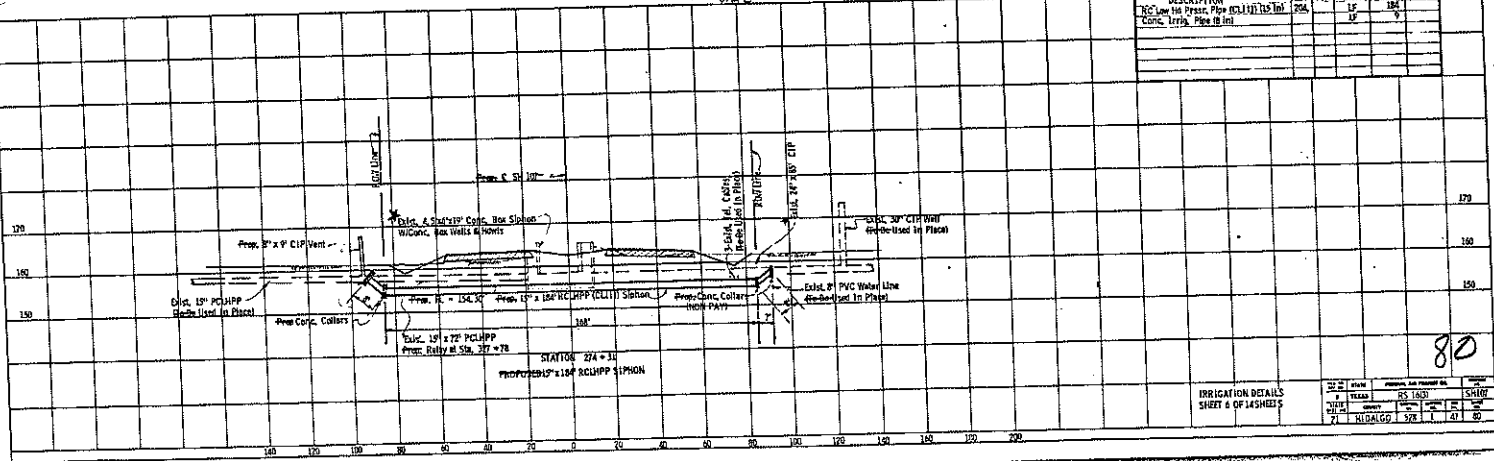






★ TO BE REMOVED & PAID FOR
UNDER ITEM 101, PREPARE ROW

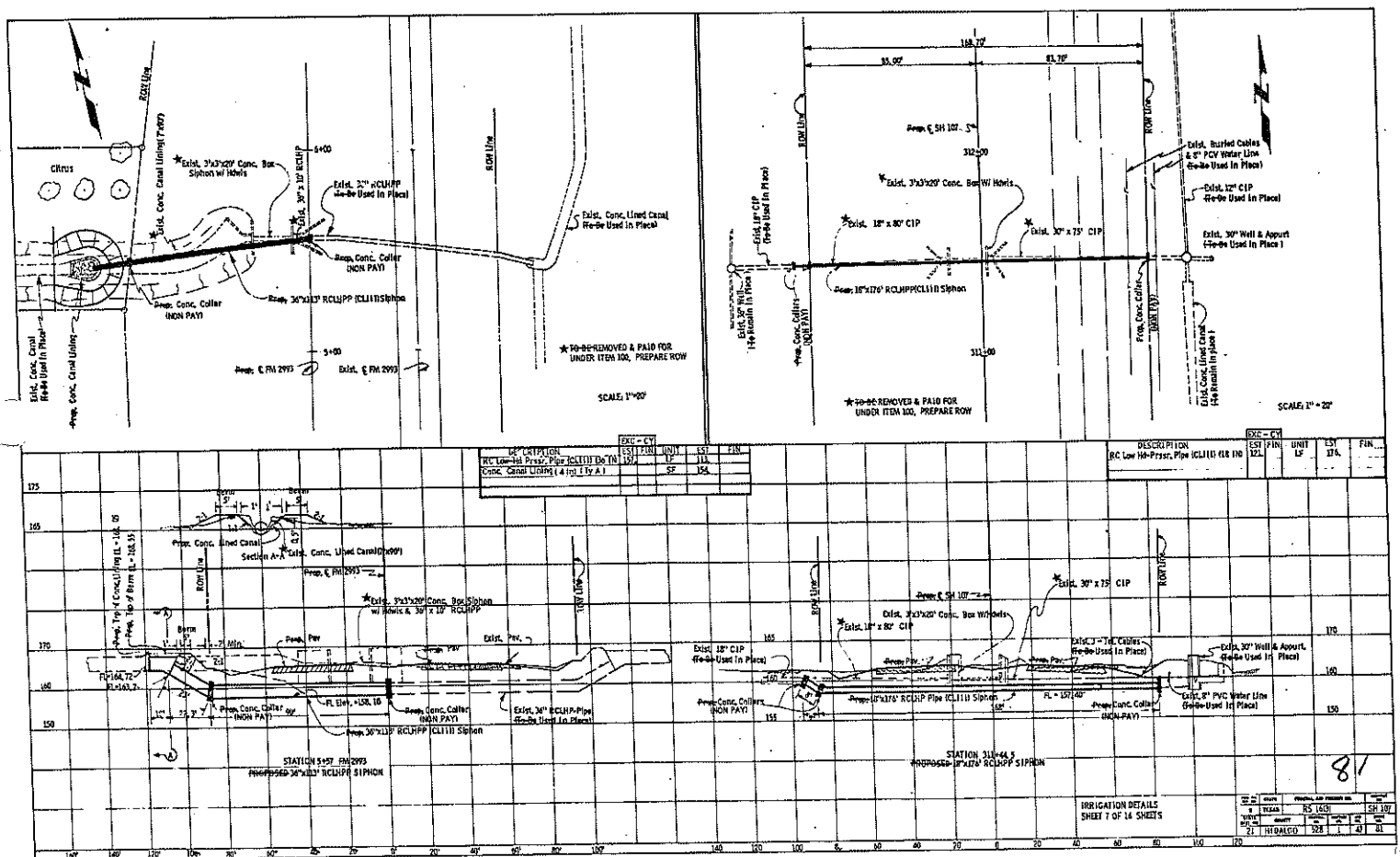
		EXC - CY			
DESCRIPTION	EST	FIN	UNIT	EST	FIN
10' Low No Press. Pipe (24" x 12.5 in)	204		LF	184	
Conc. Irrig. Pipe (8 in)			LF	9	

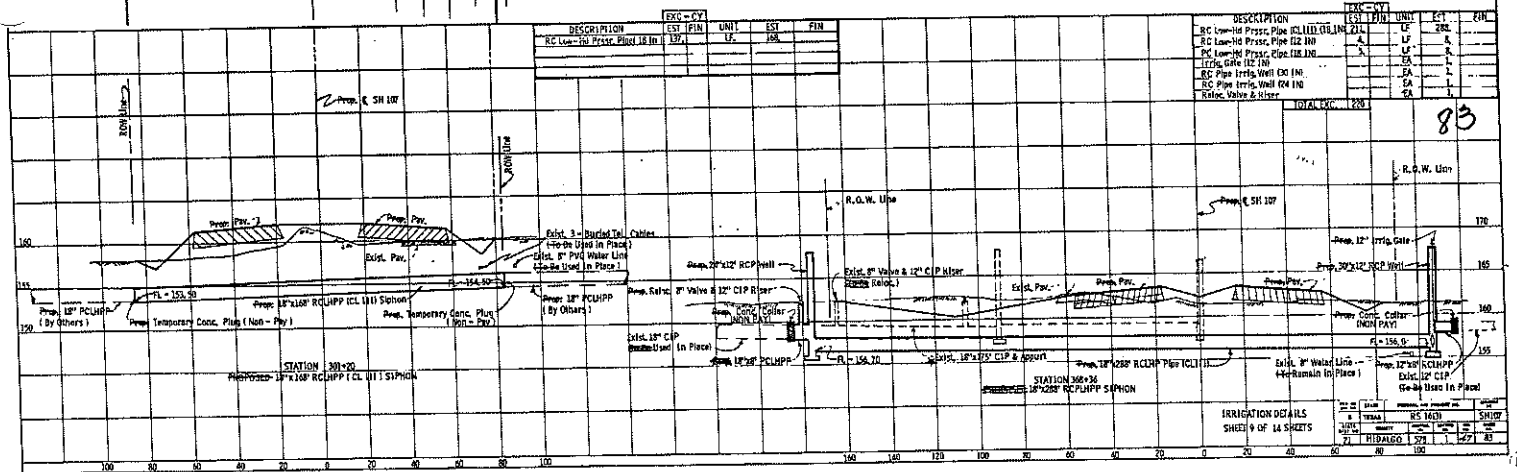


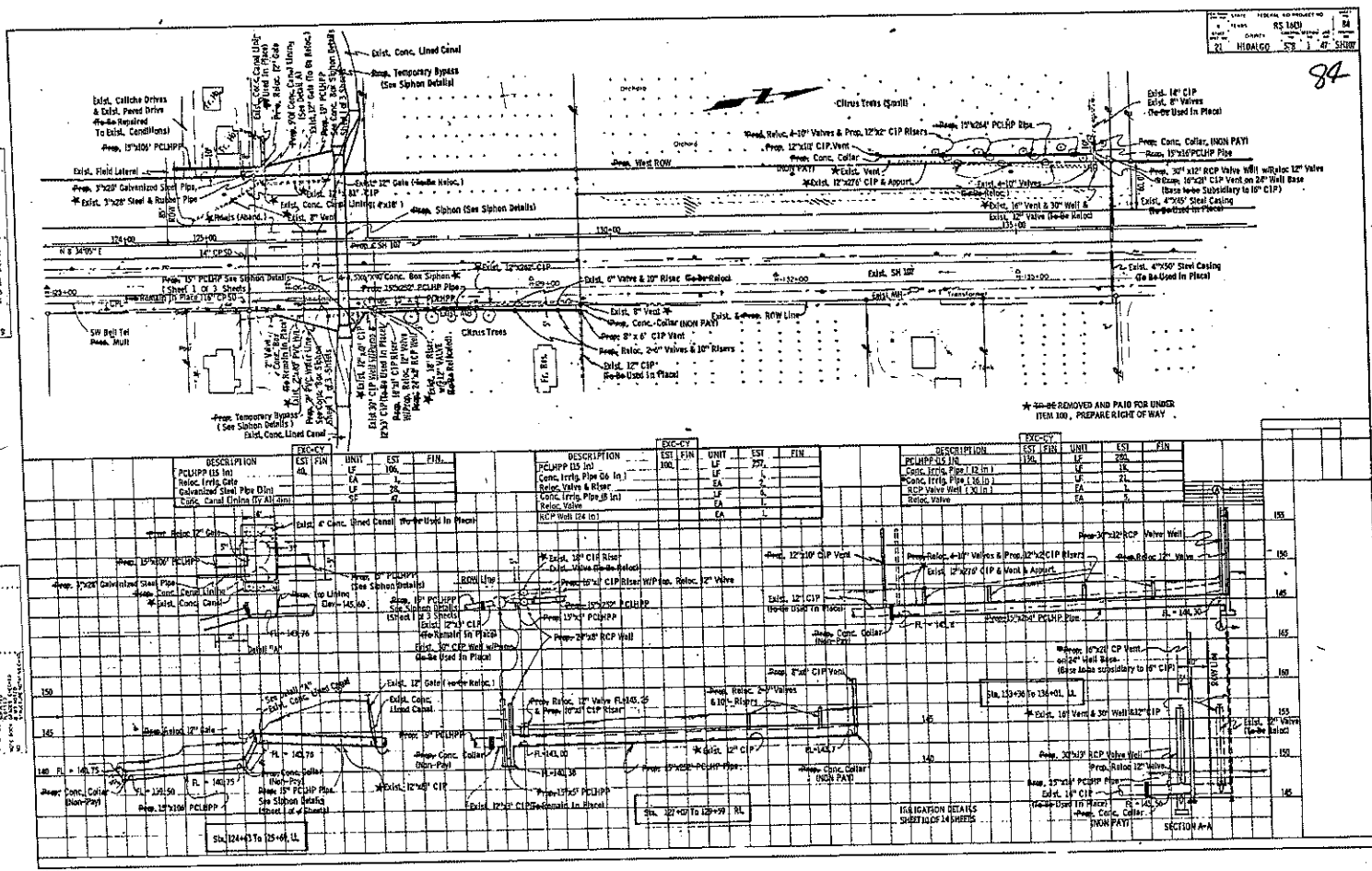
IRRIGATION DETAILS
SHEET 6 OF 14 SHEETS

2023	10/10/23	10/10/23	10/10/23	10/10/23	10/10/23
10/10/23	10/10/23	10/10/23	10/10/23	10/10/23	10/10/23
10/10/23	10/10/23	10/10/23	10/10/23	10/10/23	10/10/23

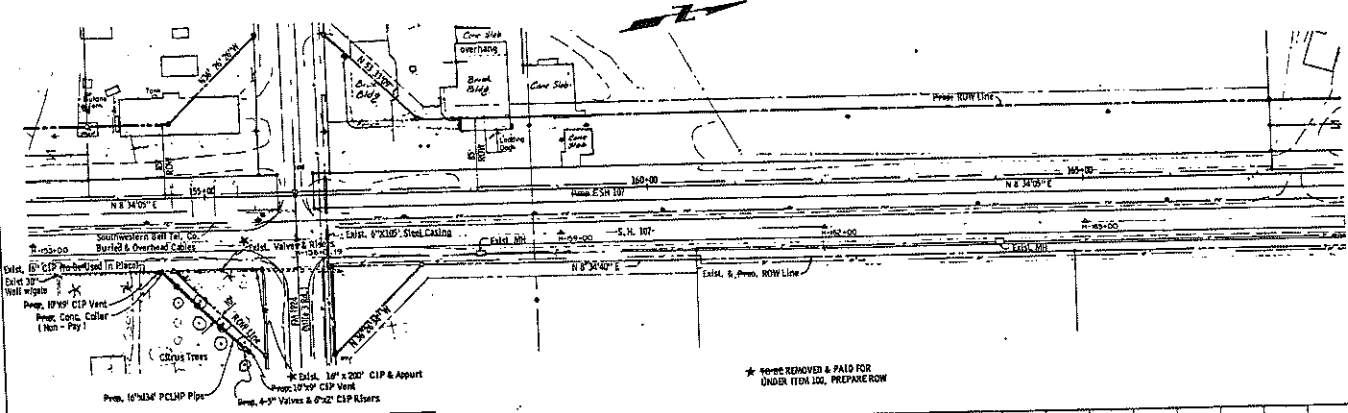
80





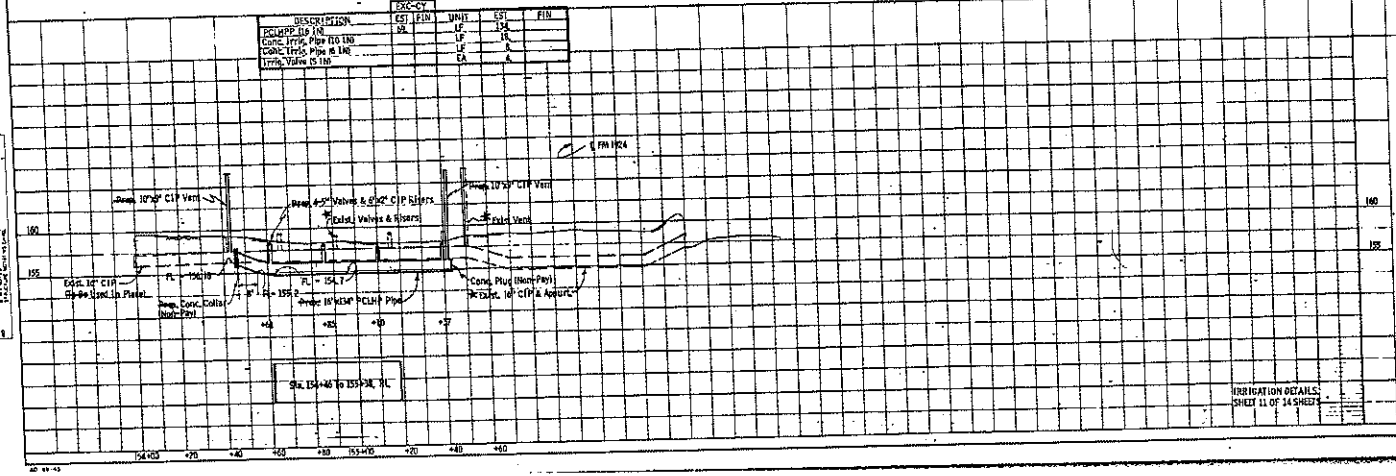


85

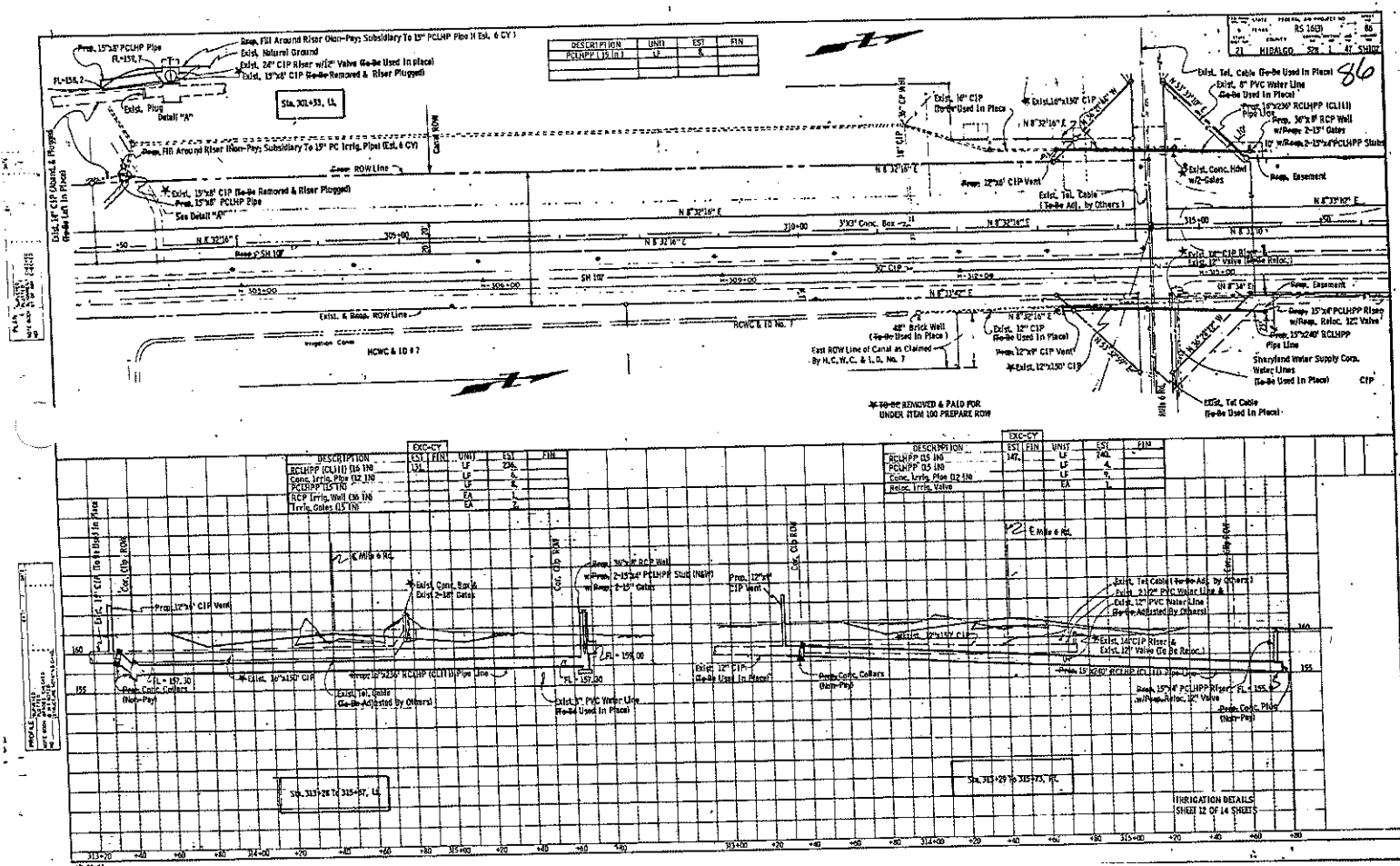


* Trees REMOVED & PAID FOR UNDER ITION 101, PREPARE ROW

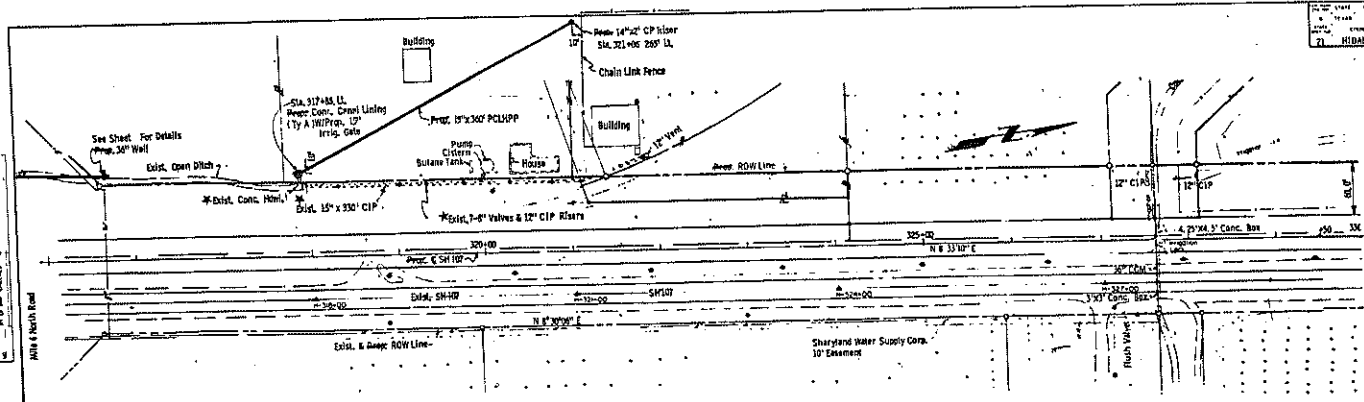
DESCRIPTION	EXC-CY		UNIT	EST	FIN
	EXC	FIN			
PCMLPP 110 IN	52		LF	134	
110" 110" Pipe 110 IN			LF	18	
110" 110" Pipe 110 IN			LF	8	
110" Valve 110 IN			EA	4	



IRRIGATION DETAILS
 SHEET 11 OF 14 SHEETS

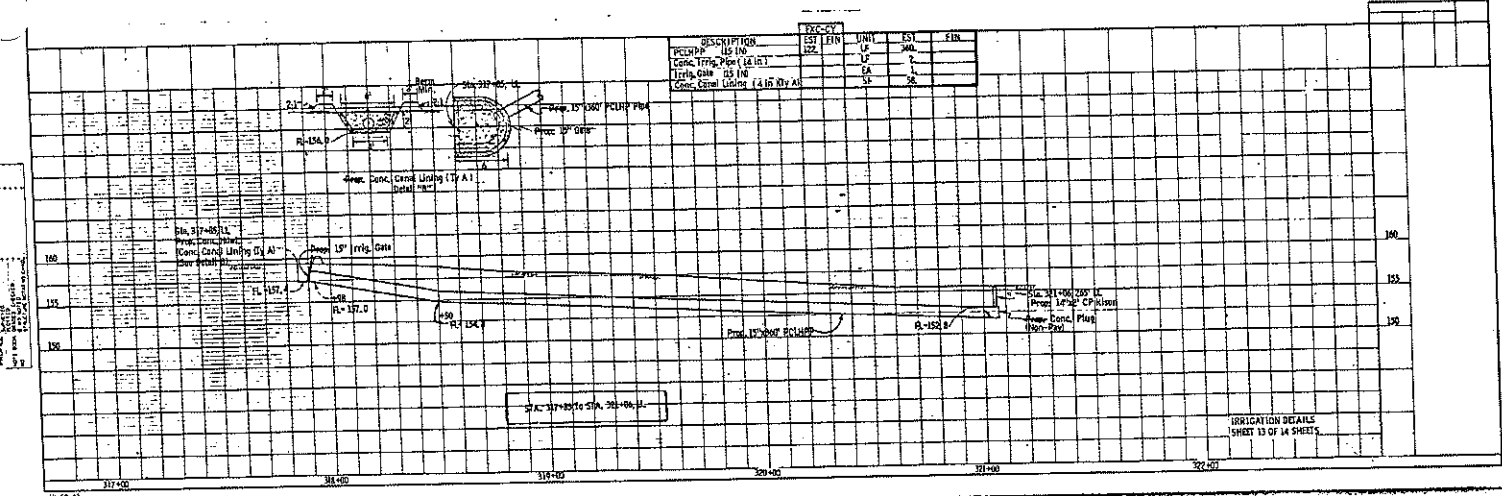


87

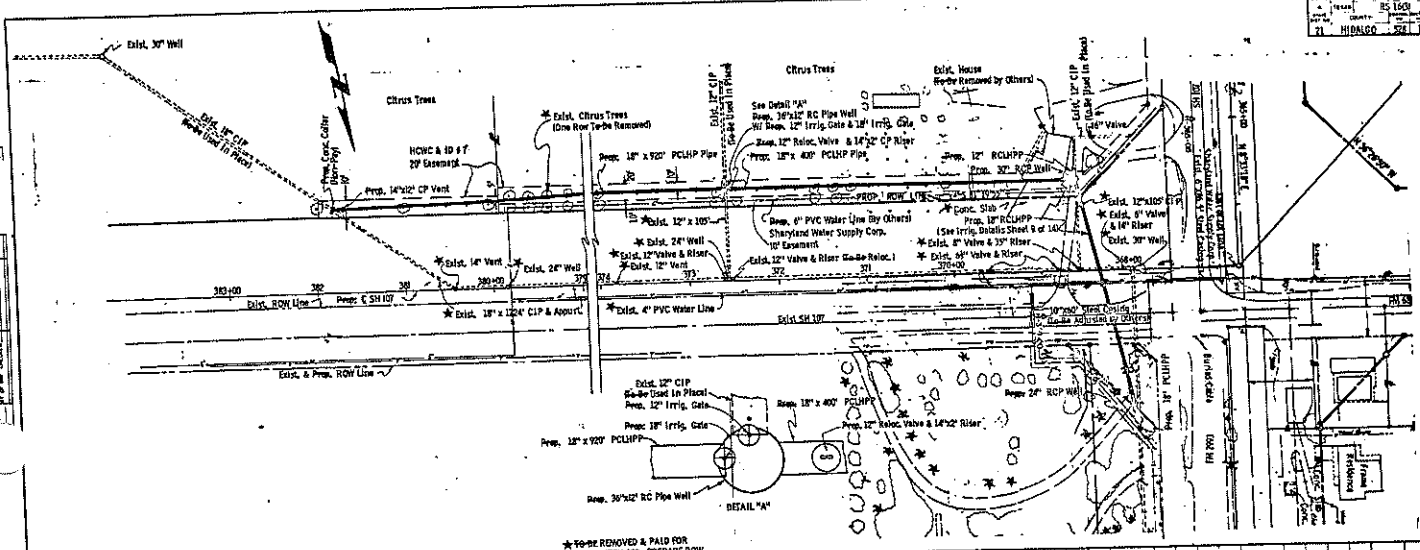


★ TO BE REMOVED & PAID FOR UNDER ITEM 102, PREPARE ROW

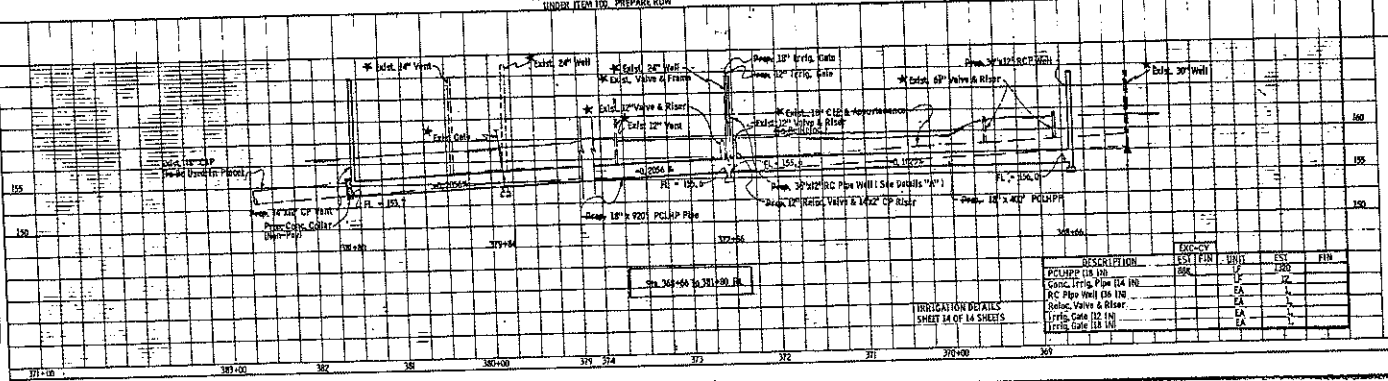
		PCC-CY			
DESCRIPTION	EST	FIN	UNIT	EST	FIN
PCU/PP	102		LF	344.	
Conc. Tiring Pipe (2 in)			LF	2.	
Tiring Gate	05 IN		EA	1.	
Conc. Canal Lining (4 in x 4 in)			SA	28.	



IRRIGATION DETAILS
SHEET 13 OF 14 SHEETS

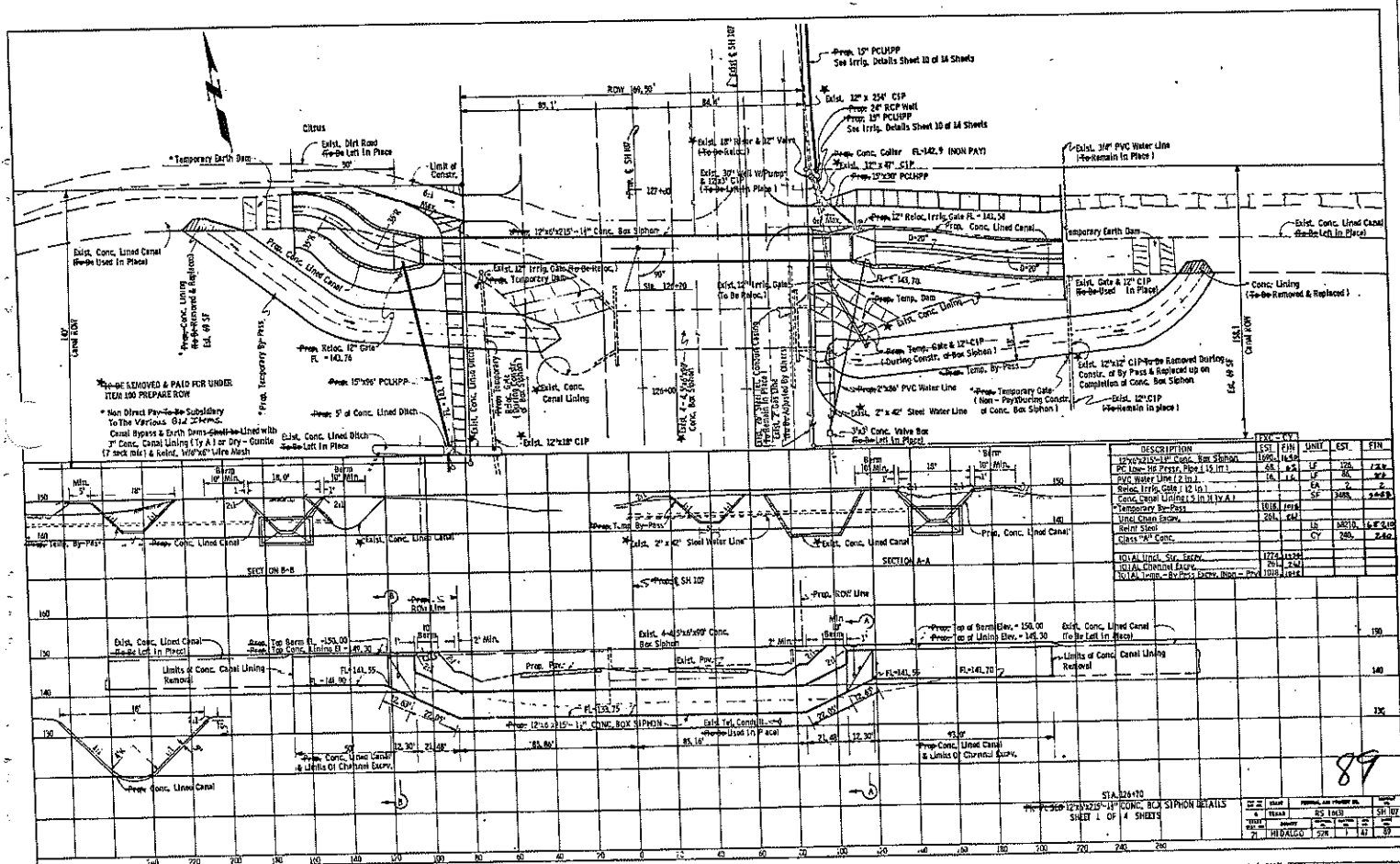


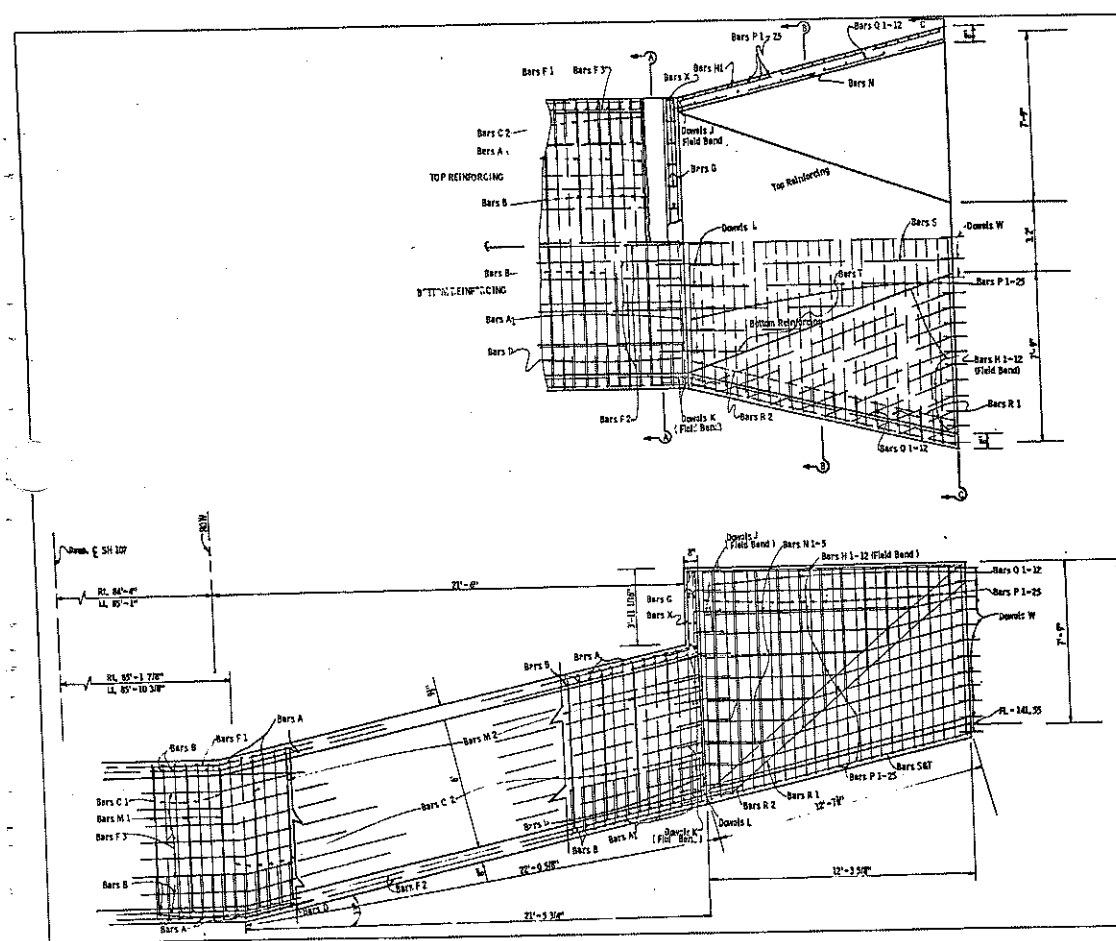
* TO BE REMOVED & PAID FOR
 UNDER ITEM 100. PREPARE ROW



DESCRIPTION	EXC-CY		UNIT	EST	FIN
	FSH	FAN			
PCUHP (18 IN)	500		EA	1	1
6" Conc. Irrig. Pipe (14 IN)			LF	120	
R/C Pipe Wall (36 IN)			EA	1	1
Below Valve & Riser			EA	1	1
Irrig. Gate (12 IN)			EA	1	1
Irrig. Gate (12 IN)			EA	1	1

IRRIGATION DETAILS
 SHEET 14 OF 14 SHEETS

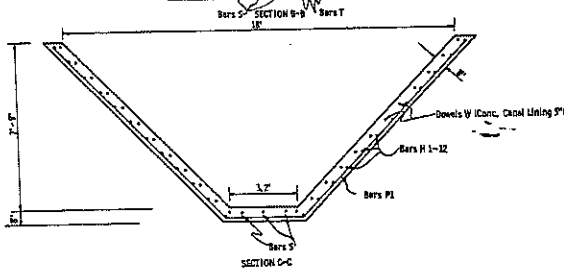
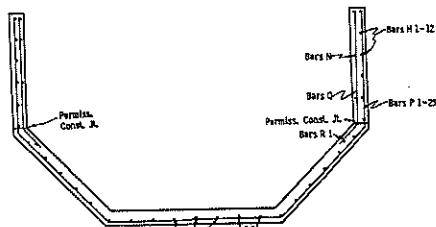
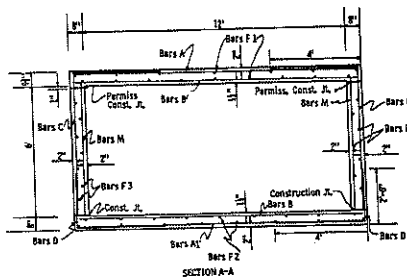




PROPE 12'x6'x12'-14" CONC. BOX SIPHON
STATION 10+70
SHEET 2 OF 4 SHEETS

12' x 6' x 12'-14"	12' x 6' x 12'-14"	12' x 6' x 12'-14"	12' x 6' x 12'-14"
12' x 6' x 12'-14"	12' x 6' x 12'-14"	12' x 6' x 12'-14"	12' x 6' x 12'-14"
12' x 6' x 12'-14"	12' x 6' x 12'-14"	12' x 6' x 12'-14"	12' x 6' x 12'-14"
12' x 6' x 12'-14"	12' x 6' x 12'-14"	12' x 6' x 12'-14"	12' x 6' x 12'-14"

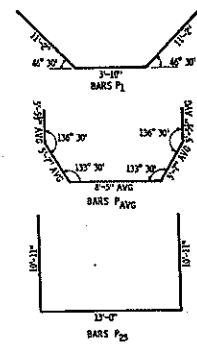
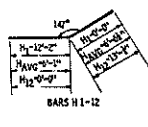
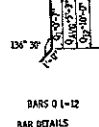
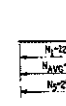
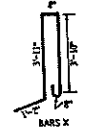
90



**BILL OF REINFORCING STEEL
FOR ONE 24" CONC. BOX SIPHON**

BAR	NO.	SIZE	SPACE	LENGTH	WEIGHT
A	801	6	6"	13'9"	16792
B	800	6	6"	13'9"	16792
C 1	882	6	6"	10'-3"	10713
C 2	176	6	6"	10'-3"	2007
D	880	6	6"	0'0"	7966
F 1	16	4	~	216'-2"	572
F 2	17	4	~	216'-2"	2678
F 3	14	4	~	216'-2"	2000
G	16	5	~	13'0"	237
H 1-12	48	4	12"	12' 7 1/2" AVG	404
J	24	6	~	2'0"	40
K	48	6	~	2'0"	73
L	24	4	12"	2'0"	40
M 1	276	4	18"	0'0"	979
M 2	56	4	18"	0'0"	227
N 1-12	20	4	~	3'7" AVG	88
P 1-25	52	6	6"	3'0" AVG	2291
Q 1-12	48	5	12"	6'3" AVG	313
R 1	4	6	~	13'9"	37
R 2	4	6	~	17"	4
S	6	4	12"	12'-4"	49
T 1-12	16	4	12"	8'11" AVG	74
W	54	4	12"	1'0"	36
X	28	4	12"	7'11"	185
Y 1	144	4	18"	13'9"	1200
Reinforcing Steel				LB	6620
Class "A" Concrete				CY	780

* Includes 3 1/2" x 1 laps



GENERAL NOTES:
 All Concrete shall be Class "A".
 Chamfer all exposed corners 3/4".
 All dimensions relating to reinforcing steel are to centers of bars.
 All reinforcing bar laps shall be in accordance with Item 102.
 Construction joint shown at flow line may be raised a maximum of 6". Bars M may be raised or cut off.
 All transverse construction joints shall be made permanently water tight by the use of an approved flexible joint material installed along the centers of walls and top and bottom slabs.
 Steel cover to be 2" clear from outside layer of steel to face of concrete unless otherwise noted.
 Class "B" Conc. Riprap shall be reinforced with 6"x6" # 6 wire mesh placed 1 1/2" below surface of lining.

91

-PROG. 12"X24"X14" CONC. BOX SIPHON
 STATION 12+70
 SHEET 3 OF 4 SHEETS

DATE	BY	CHECKED	APPROVED
10/1/01	RS	RS	RS
10/1/01	RS	RS	RS
10/1/01	RS	RS	RS

EAST R.O.W.

5/8" Tel. Co.
3' Buried Tel. Cable
(To Remain in Place)

Exist. HDCF (8'-0" x 8'-0")
(To Be Removed And Salvaged
By State Forces)

Prop. 12" x 12" Inlet
Top Grade = 154.00
FL Inlet = 153.50

Prop. 18" x 18" RCP (CL 111)

Exist. 18" x 18" RCP (CL 111)

FL CL 111 = 153.00

FL CL 111 = 152.50

Prop. 24" x 24" RCP (CL 111)

Exist. 24" x 24" RCP (CL 111)

Prop. 12" x 12" Inlet
Top Grade = 157.50
FL Inlet = 154.50

Exist. 12" x 12" RCP (CL 111)

Exist. 12" x 12" RCP (CL 111)

Exist. 12" x 12" RCP (CL 111)

Exist. 12" x 12" RCP (CL 111)

Exist. 12" x 12" RCP (CL 111)

Exist. 12" x 12" RCP (CL 111)

Exist. 12" x 12" RCP (CL 111)

Exist. 12" x 12" RCP (CL 111)

Exist. 12" x 12" RCP (CL 111)

Exist. 12" x 12" RCP (CL 111)

Exist. 12" x 12" RCP (CL 111)

Exist. 12" x 12" RCP (CL 111)

Exist. 12" x 12" RCP (CL 111)

EST. QUANTITIES FOR FLARED WINGWALL (MICH-FI 84-4)

ITEM	DESCRIPTION	EST. QTY	CONC. QTY (CY)	PRELIM. (LB)
405	Wingwall	1	2.12	250.3
405	Wingwall	1	6.43	76.5
TOTAL		2	8.55	326.8

* For Contractors
Information Only.
Non-Pay Item

HYDRAULIC DATA
Q_{max} = 313 CFS
S = 0.15%
R = 203 FC

HYDRAULIC DATA WAS SUPPLIED BY CITY
OF ALTON

SUMMARY OF PROPOSED INLETS

ITEM NO.	DESCRIPTION	EST. QTY	UNIT
400	12" x 12" Inlet (Culvert)	2	CY
401	12" x 12" Inlet (Culvert)	2	CY
402	12" x 12" Inlet (Culvert)	2	CY
403	12" x 12" Inlet (Culvert)	2	CY
404	12" x 12" Inlet (Culvert)	2	CY
405	12" x 12" Inlet (Culvert)	2	CY
406	12" x 12" Inlet (Culvert)	2	CY
407	12" x 12" Inlet (Culvert)	2	CY
408	12" x 12" Inlet (Culvert)	2	CY
409	12" x 12" Inlet (Culvert)	2	CY
410	12" x 12" Inlet (Culvert)	2	CY
411	12" x 12" Inlet (Culvert)	2	CY
412	12" x 12" Inlet (Culvert)	2	CY
413	12" x 12" Inlet (Culvert)	2	CY
414	12" x 12" Inlet (Culvert)	2	CY
415	12" x 12" Inlet (Culvert)	2	CY
416	12" x 12" Inlet (Culvert)	2	CY
417	12" x 12" Inlet (Culvert)	2	CY
418	12" x 12" Inlet (Culvert)	2	CY
419	12" x 12" Inlet (Culvert)	2	CY
420	12" x 12" Inlet (Culvert)	2	CY
421	12" x 12" Inlet (Culvert)	2	CY
422	12" x 12" Inlet (Culvert)	2	CY
423	12" x 12" Inlet (Culvert)	2	CY
424	12" x 12" Inlet (Culvert)	2	CY
425	12" x 12" Inlet (Culvert)	2	CY
426	12" x 12" Inlet (Culvert)	2	CY
427	12" x 12" Inlet (Culvert)	2	CY
428	12" x 12" Inlet (Culvert)	2	CY
429	12" x 12" Inlet (Culvert)	2	CY
430	12" x 12" Inlet (Culvert)	2	CY
431	12" x 12" Inlet (Culvert)	2	CY
432	12" x 12" Inlet (Culvert)	2	CY
433	12" x 12" Inlet (Culvert)	2	CY
434	12" x 12" Inlet (Culvert)	2	CY
435	12" x 12" Inlet (Culvert)	2	CY
436	12" x 12" Inlet (Culvert)	2	CY
437	12" x 12" Inlet (Culvert)	2	CY
438	12" x 12" Inlet (Culvert)	2	CY
439	12" x 12" Inlet (Culvert)	2	CY
440	12" x 12" Inlet (Culvert)	2	CY
441	12" x 12" Inlet (Culvert)	2	CY
442	12" x 12" Inlet (Culvert)	2	CY
443	12" x 12" Inlet (Culvert)	2	CY
444	12" x 12" Inlet (Culvert)	2	CY
445	12" x 12" Inlet (Culvert)	2	CY
446	12" x 12" Inlet (Culvert)	2	CY
447	12" x 12" Inlet (Culvert)	2	CY
448	12" x 12" Inlet (Culvert)	2	CY
449	12" x 12" Inlet (Culvert)	2	CY
450	12" x 12" Inlet (Culvert)	2	CY
451	12" x 12" Inlet (Culvert)	2	CY
452	12" x 12" Inlet (Culvert)	2	CY
453	12" x 12" Inlet (Culvert)	2	CY
454	12" x 12" Inlet (Culvert)	2	CY
455	12" x 12" Inlet (Culvert)	2	CY
456	12" x 12" Inlet (Culvert)	2	CY
457	12" x 12" Inlet (Culvert)	2	CY
458	12" x 12" Inlet (Culvert)	2	CY
459	12" x 12" Inlet (Culvert)	2	CY
460	12" x 12" Inlet (Culvert)	2	CY
461	12" x 12" Inlet (Culvert)	2	CY
462	12" x 12" Inlet (Culvert)	2	CY
463	12" x 12" Inlet (Culvert)	2	CY
464	12" x 12" Inlet (Culvert)	2	CY
465	12" x 12" Inlet (Culvert)	2	CY
466	12" x 12" Inlet (Culvert)	2	CY
467	12" x 12" Inlet (Culvert)	2	CY
468	12" x 12" Inlet (Culvert)	2	CY
469	12" x 12" Inlet (Culvert)	2	CY
470	12" x 12" Inlet (Culvert)	2	CY
471	12" x 12" Inlet (Culvert)	2	CY
472	12" x 12" Inlet (Culvert)	2	CY
473	12" x 12" Inlet (Culvert)	2	CY
474	12" x 12" Inlet (Culvert)	2	CY
475	12" x 12" Inlet (Culvert)	2	CY
476	12" x 12" Inlet (Culvert)	2	CY
477	12" x 12" Inlet (Culvert)	2	CY
478	12" x 12" Inlet (Culvert)	2	CY
479	12" x 12" Inlet (Culvert)	2	CY
480	12" x 12" Inlet (Culvert)	2	CY
481	12" x 12" Inlet (Culvert)	2	CY
482	12" x 12" Inlet (Culvert)	2	CY
483	12" x 12" Inlet (Culvert)	2	CY
484	12" x 12" Inlet (Culvert)	2	CY
485	12" x 12" Inlet (Culvert)	2	CY
486	12" x 12" Inlet (Culvert)	2	CY
487	12" x 12" Inlet (Culvert)	2	CY
488	12" x 12" Inlet (Culvert)	2	CY
489	12" x 12" Inlet (Culvert)	2	CY
490	12" x 12" Inlet (Culvert)	2	CY
491	12" x 12" Inlet (Culvert)	2	CY
492	12" x 12" Inlet (Culvert)	2	CY
493	12" x 12" Inlet (Culvert)	2	CY
494	12" x 12" Inlet (Culvert)	2	CY
495	12" x 12" Inlet (Culvert)	2	CY
496	12" x 12" Inlet (Culvert)	2	CY
497	12" x 12" Inlet (Culvert)	2	CY
498	12" x 12" Inlet (Culvert)	2	CY
499	12" x 12" Inlet (Culvert)	2	CY
500	12" x 12" Inlet (Culvert)	2	CY

SUMMARY OF PROPOSED CONC. BOX CULV.

ITEM	QUANTITY	UNIT
24" x 24" CONC. BOX CULV.	72	CY
18" x 18" CONC. BOX CULV.	288	CY
12" x 12" CONC. BOX CULV.	32	CY

* CEMENT STABILIZED BACKFILL SHALL BE
CONSIDERED SUBSIDIARY TO THE UNIT PRICE
BID FOR CONCRETE BOX.

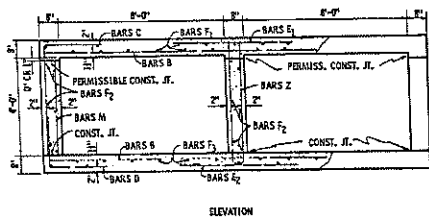
STA. 273+75

PROPOSED 24" x 24" CONC. BOX CULV. WITH 18" FLARED WINGWALL (11)

MULTIPLE BOX CULVERT DETAILS
SHEET 1 OF 4 SHEETS

ITEM	QUANTITY	UNIT
24" x 24" CONC. BOX CULV.	72	CY
18" x 18" CONC. BOX CULV.	288	CY
12" x 12" CONC. BOX CULV.	32	CY

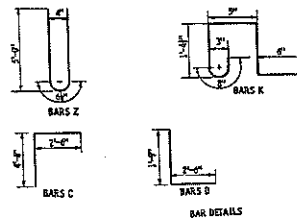
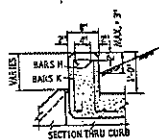
93



BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	360	5/8	8"	17'8"	5633
C	480	1/4	6"	17'0"	2245
D	600	3/8	6"	4'3"	1363
E	240	3/8	6"	5'8"	2049
F	240	4/8	6"	5'8"	2742
G	21	3/4	14"	12'11"	1680
H	18	3/4	14"	12'11"	1572
I	2	4/5	17"	17'-8"	24
J	18	4/8	12"	4'2"	50
M	162	4/8	18"	11'1"	424
N	120	4/8	12"	12'2"	315
REINFORCING STEEL ***				LB	20458
CONCRETE ***				CU-YD	140

***ALWAYS FOR 2 (1'-0" LAPS AND 1 (1'-0" LAP) IN THE ONE PRECAST CONG. BKG.

***FOR ESTIMATING PURPOSES ONLY/IN CASE



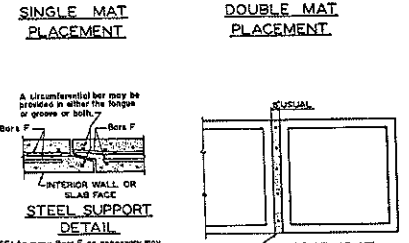
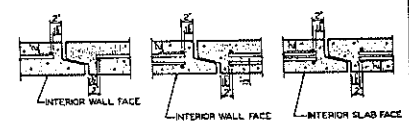
GENERAL NOTES:
Chamber exposed corners 3/4"
All dimensions related to reinforcing steel
are centers of bars.
All reinforcing bar laps shall be in accordance
with Item 404.
Construction joint shown at the flow line may
be raised a maximum of 6" at the contractors
option. Bars A may be cut off or raised, bars C
and bars D may be reversed.

FOGA, 8' X 4' X 120' TWO SPAN
CONC. BOX CULVERT
STATION 273+73

MULTIPLE BOX CULVERT DETAILS
SHEET 2 OF 4 SHEETS

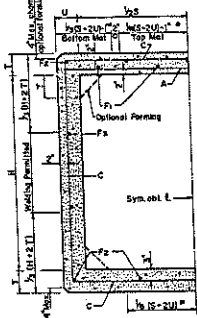
IN TR	DATE	TIME	NO
5	1951	RS (60)	94
IN TR	DATE	TIME	NO
21	HIDALGO	570	47 SHIOZ

BILL OF REINFORCING STEEL FOR L=8'										LIFT.	
CULV. SIZE	TYPE	DIMEN- SIONS	MAX. FILL	TOTAL QUANTITIES FOR L=8' BARREL	PL. OF CONCRETE	QUANTITIES PL. OF CONCRETE	QUANTITIES PL. OF CONCRETE	QUANTITIES PL. OF CONCRETE	QUANTITIES PL. OF CONCRETE	WEIGHT LBS.	WEIGHT LBS.
S	M	Y	U	NO. OF BARS	SIZE	LG.	WT.	NO. OF BARS	SIZE	LG.	WT.
3	2	1	0	1,778	245	2222	30.63	12	4	8	32.0
3	2	1	0	2,074	279	2552	34.88	12	4	8	32.0
3	2	1	0	2,074	323	2592	36.83	11	5	8	32.0
3	2	1	0	2,370	437	2963	34.63	12	4	8	32.0
3	2	1	0	2,687	470	3333	38.75	12	4	8	32.0
3	2	1	0	2,770	466	2963	35.88	12	4	8	32.0
3	2	1	0	2,667	490	3333	36.12	12	4	8	32.0
3	2	1	0	2,963	501	3704	42.63	14	6	8	32.0
3	2	1	0	3,358	623	4450	77.89	12	4	8	32.0
3	2	1	0	3,963	639	5704	78.88	16	6	8	32.0
3	2	1	0	3,239	648	4974	81.00	16	6	8	32.0
3	2	1	0	3,892	732	4813	94.00	16	6	8	32.0
3	2	1	0	4,198	821	5743	100.63	11	5	8	32.0
3	2	1	0	4,457	875	4521	102.38	14	6	8	32.0
3	2	1	0	3,703	941	4651	117.63	14	6	8	32.0
3	2	1	0	4,350	938	5038	107.90	13	6	8	32.0
3	2	1	0	4,692	1,087	4959	125.88	10	7	8	32.0
3	2	1	0	5,041	1,142	6320	142.75	13	6	8	32.0
3	2	1	0	4,674	1,314	5023	164.25	15	7	8	32.0
3	2	1	0	4,671	1,310	5038	163.75	12	7	8	32.0
3	2	1	0	5,017	1,397	6271	174.63	12	7	8	32.0
3	2	1	0	5,362	1,498	6122	189.50	13	7	8	32.0
3	2	1	0	6,127	1,461	1749	185.63	15	7	8	32.0
3	2	1	0	5,342	1,602	6553	200.98	16	7	8	32.0
3	2	1	0	5,589	1,717	6998	214.83	15	7	8	32.0
3	2	1	0	5,934	1,793	17417	261.15	15	7	8	32.0
3	2	1	0	6,733	1,846	8416	250.75	14	7	8	32.0
3	2	1	0	7,128	1,923	8309	242.38	14	7	8	32.0
3	2	1	0	5,348	2,067	18883	258.38	12	7	8	32.0
3	2	1	0	5,934	2,156	17417	269.50	17	7	8	32.0
3	2	1	0	6,272	2,243	17849	299.04	17	7	8	32.0
3	2	1	0	7,078	2,313	18848	299.18	17	7	8	32.0
3	2	1	0	7,473	2,401	9342	300.13	18	7	8	32.0
3	2	1	0	7,868	2,482	19835	322.75	18	7	8	32.0

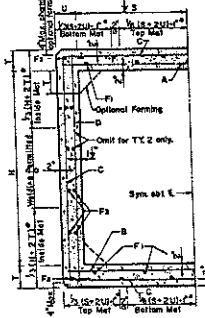


NOTE: As many Bars F as necessary may be extended to end of box to support steel during manufacture. Bars may be slightly bent to clear slope on groove lip as shown in detail. Alternatively the steel may be supported by bar extensions welded to Bars F.

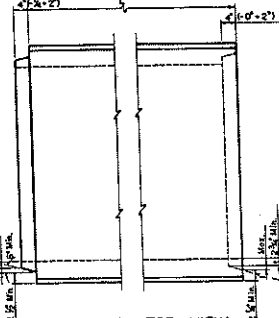
GENERAL NOTES:
 General Reinforced Bar(s) shall be considered subsidiary to the unit price bid for Concrete Box.
 All welding to be done by qualified welder.
 Gross sectional area of passat material shall not be less than 3.25 sq. in.
 Additional splices in reinforcing steel of shown herein, must be submitted in the Bridge Division for approval prior to fabrication.
 Steel by applying 82 % of the area of steel per Unit foot shown in the Tables for Bars A, B, C and D.
 Longitudinal steel need not be at least as much area as Bars F and shall be spaced at 18" C.C. maximum.
 These sections are suitable for 42.50 live loading and any fill from 2'-0" to the maximum shown in the tables.



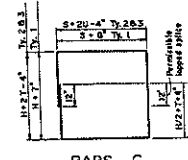
HALF SECTION TYPE 1



HALF SECTION TYPES 2 & 3



SIDE AND TOP VIEW



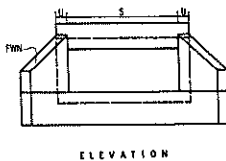
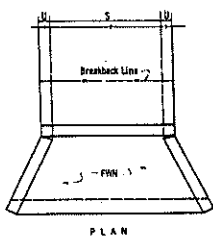
BARS C

MULTIPLE BOX CULVERT DETAILS
 SHEET 3 OF 4 SHEETS

95

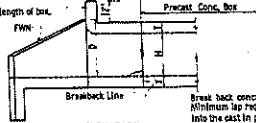
TEXAS HIGHWAY DEPARTMENT
 BRIDGE DIVISION
 PRECAST CONCRETE
 BOX CULVERTS
 PC-2^{max}

DESIGNED BY	DATE	APPROVED BY	DATE
BY: [Signature]	10-1-55	BY: [Signature]	10-1-55
CHECKED BY	DATE	APPROVED BY	DATE
BY: [Signature]	10-1-55	BY: [Signature]	10-1-55



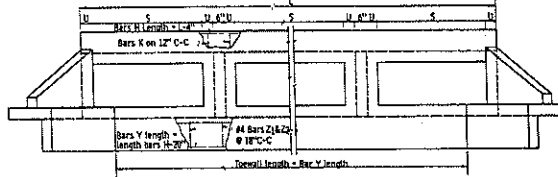
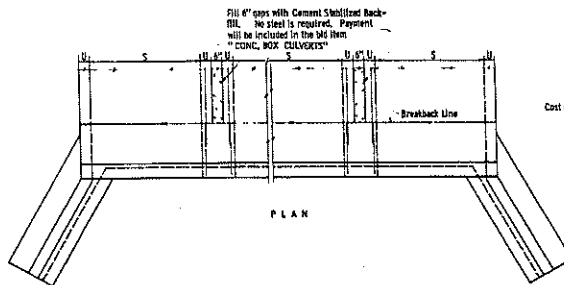
This section of Conc. Box shall be cast in place. Quantities & placement of Reinf. steel shall conform to the SC-NA, SC-NB, SC-NC, or SCL Box Culvert Standard Details. Cast in place conc. shall be Class "A".

Cost of curb is included in the length of box.

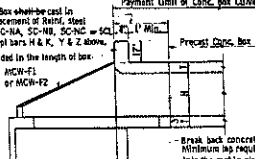


DETAIL OF FRONT CONNECTION TO PRECAST CONC. BOX CULVERT
SINGLE BOX CULVERT
(SC SERIES)

Break back concrete of Precast Conc. Box. Minimum lap requirements of reinforcing bars into the cast in place section shall conform to the Item 440.6



This section of Conc. Box shall be cast in place. Quantities & placement of Reinf. steel shall conform to the SC-NA, SC-NB, SC-NC, or SCL Box Culvert Standard Details, except bars H & K, Y & Z above. Cost of curb is included in the length of box.

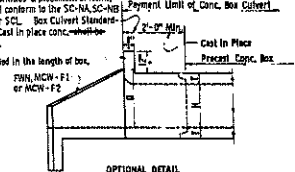


DETAIL OF WINGWALL CONNECTION TO PRECAST CONC. BOX CULVERTS
MULTIPLE BOX CULVERT
(MC SERIES)

Break back concrete of Precast Conc. Box. Minimum lap requirements of reinforcing bars into the cast in place section shall conform to the Item 440.6

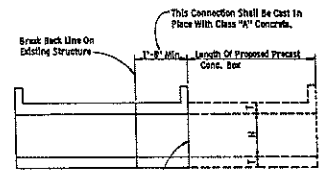
This section of Conc. Box shall be cast in place. Quantities & placement of Reinf. steel shall conform to the SC-NA, SC-NB, SC-NC, or SCL Box Culvert Standard Details. Cast in place conc. shall be Class "A".

Cost of curb is included in the length of box.



SHOWING WINGWALL CONNECTION TO PRECAST CONC. BOX CULVERT

* Use Modified Curb When Applicable



DETAIL OF PROPOSED PRECAST CONC. BOX CONNECTION TO EXISTING CONC. BOX

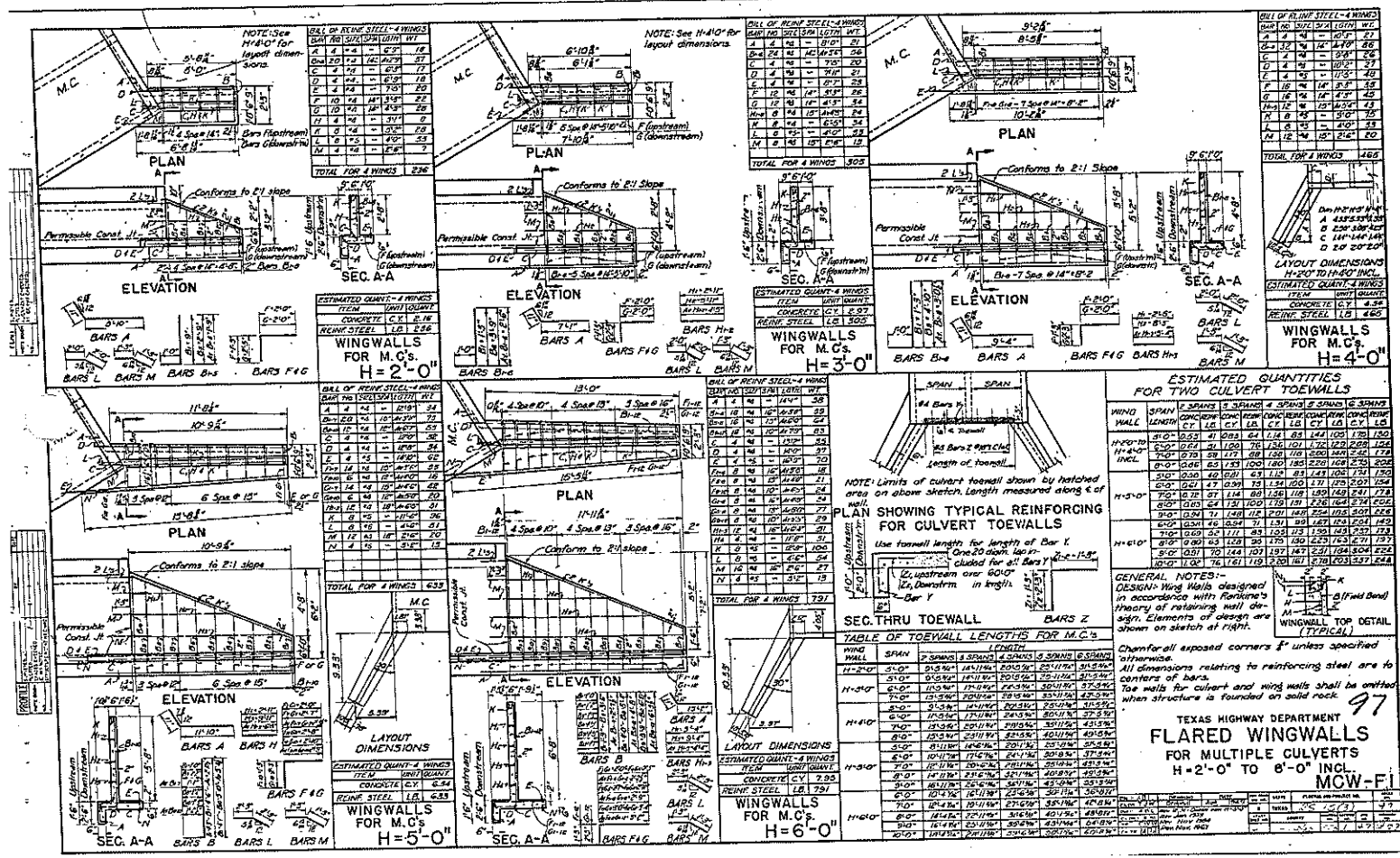
Break Back Concrete of Precast Conc. Box. Minimum lap requirements of reinforcing bars into the cast in place section shall conform to the Item 440.6

MULTIPLE BOX CULVERT DETAILS
SHEET 4 OF 4 SHEETS

REVISED 8/04

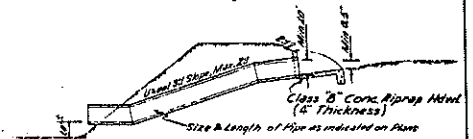
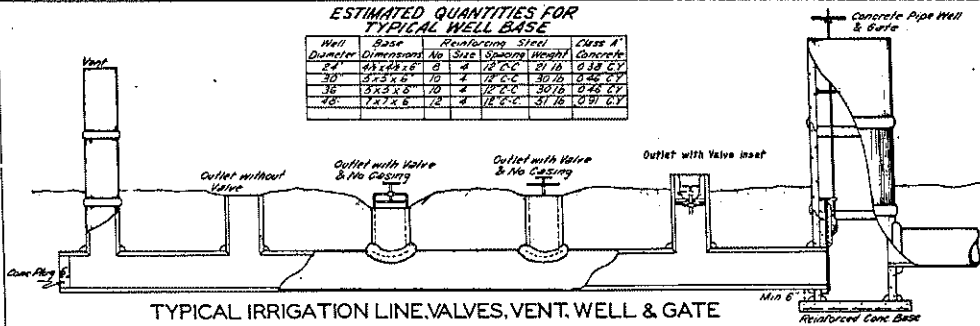
PRECAST CONC. BOX CULVERT
CURB & WINGWALL DETAILS

DATE	BY	CHKD	APP'D	PROJECT NO.	SHEET NO.
10/1/04	W. J. H.	W. J. H.	W. J. H.	2004-01-01	4
10/1/04	W. J. H.	W. J. H.	W. J. H.	2004-01-01	4
10/1/04	W. J. H.	W. J. H.	W. J. H.	2004-01-01	4



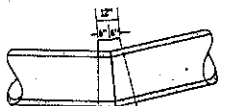
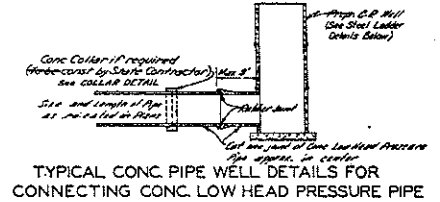
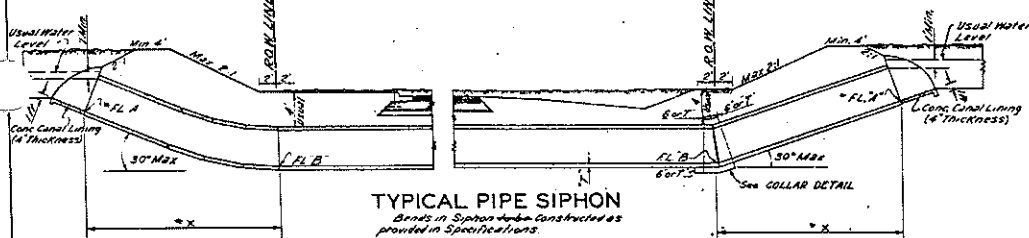
ESTIMATED QUANTITIES FOR TYPICAL WELL BASE

Well Diameter	Base Dimensions (ft)	Reinforcing Steel Size	Class A Concrete
24"	4' x 4' x 8"	4 # 12 CC	8' 10" 0.38 CY
30"	5' x 5' x 8"	4 # 12 CC	30' 10" 0.46 CY
36"	6' x 6' x 8"	4 # 12 CC	30' 10" 0.46 CY
42"	7' x 7' x 8"	4 # 12 CC	30' 10" 0.46 CY



ESTIMATED QUANTITIES FOR ONE CONC. RIPRAP HEADWALL

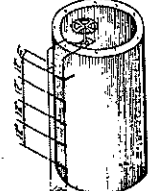
Pipe Diameter	Class B Concrete
18"	0.25 CY
24"	0.31 CY
30"	0.38 CY



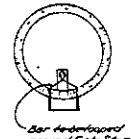
* Ladder to be constructed of #4 Reinforcing Steel. The parallel rungs spaced 12" apart to be hooked over top of well and stand off 1/2" inside of the rung, of the main and bottom rungs to be welded to rungs at 12" intervals. The first rung to be 2" from natural ground.

Steel Ladder to be paid for as subsidiary to price of well.

* NOTE: Commercial fabricated or Cast Metal Steps may be used if approved by the Engineer under the Water District involved.



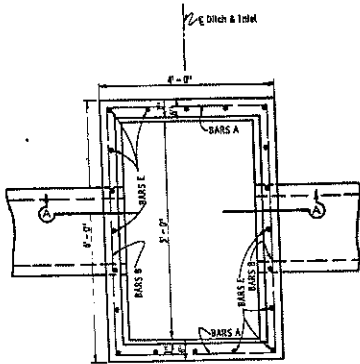
STEEL LADDER DETAILS
To be used on all wells with Collars when the distance from Natural Ground to Top of Well is 6' or more.



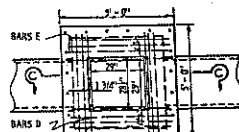
GENERAL NOTES
Height of relocated wells and vertical clearance equivalent to that of existing structures or as required for proper operation.
Concrete required for plugs or caps without design for directly but shall be considered as subsidiary to the various bid items of this contract.
In general the particular type or design of the existing facility shall be extended or relocated shall be duplicated.

MISCELLANEOUS DETAILS FOR IRRIGATION AND DRAINAGE STRUCTURES

NO.	DATE	REVISION	BY
1	10/1/71	REVISED	10/1/71



TOP VIEW OF INLET

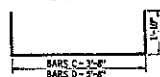


TOP VIEW OF INLET

SHOWING TOP REINFORCING
Notes: All Steel Reinforcing, 4 Bars on
12" Spacing in Both Directions



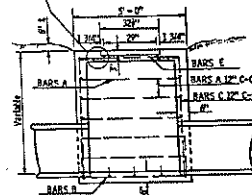
BARS A & B



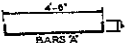
BARS C & D

REINFORCING STEEL DETAILS

Note: All Steel Reinforcing, 4 Bars on
12" Spacing in Both Directions



SECTION C-C
INLET TYPE C



BARS A & B

BARS B

STEEL DETAIL

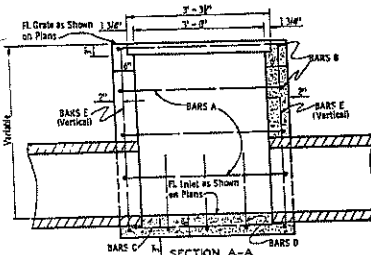


SECTION D-D

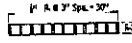


PLAN

WELDED STEEL INLET GRATE (7Y C)

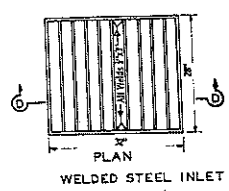
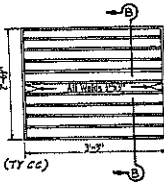


SECTION A-A
INLET TYPE C



SECTION B-B

WELDED STEEL INLET GRATE (7Y C)
(1 TWO GRATES PER INLET)



WELDED STEEL INLET GRATE (7Y C)

INLET DETAILS
SHEET 1 OF 1 SHEET

DATE	BY	CHECKED	APPROVED	SCALE
10/1/00	RS	RS	RS	1/4" = 1'-0"
10/1/00	RS	RS	RS	1/4" = 1'-0"
10/1/00	RS	RS	RS	1/4" = 1'-0"
10/1/00	RS	RS	RS	1/4" = 1'-0"

99