

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
HAMILTON-MIDDLETOWN ROAD
S.H.(I.C.H.) NO. 179 SEC. A & D. PET. NO. 7241
BUTLER COUNTY

FAIRFIELD & LIBERTY TOWNSHIPS APRIL-1931

10 BLACK
1-53

FED. AID DIST. NO.	STATE	FED. AID PROJECT YEAR	FISCAL YEAR
10	OHIO	581E	1931

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SH. (I.C.H.) NO. 179 SEC. A & D
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The Standard Specifications of the STATE OF OHIO, Department of Highways, in force on date of contract will govern this improvement.

I hereby approve these plans and declare that the making of the improvement will require the closing to traffic of the highway from Sta. 0+00 to Sta. 260+85; that detours will be provided as shown on plans and that the highway between Sta. 260+85 and Sta. 291+38 will be built one-half at a time. Detour No. 1 to be used while constructing between Sta. 72+00 to Sta. 260+85. Detour No. 2 to be used while constructing between Sta. 0+00 and Sta. 72+00. R/W has been provided.

Approved Ed W. Hammerle
Date 4-28-31 Resident District
Deputy Director

Approved Luke Brannon
Date 5-10-31 Resident Division
Deputy Director

Approved Elmer Hilty
Date 5/14-31 Deputy Director
Bureau of Construction

Approved _____
Date _____ Deputy Director
Bureau of Maintenance

Approved _____
Date _____ Deputy Director
Bureau of Bridges

Approved H.P. Chapman
Date 5-21-31 Chief Engineer & First Assistant Director

Approved Olw Merrell
Date 5-21-31 Director of Highways

Recommended for Approval _____
Date _____ District Engineer
Bureau of Public Roads

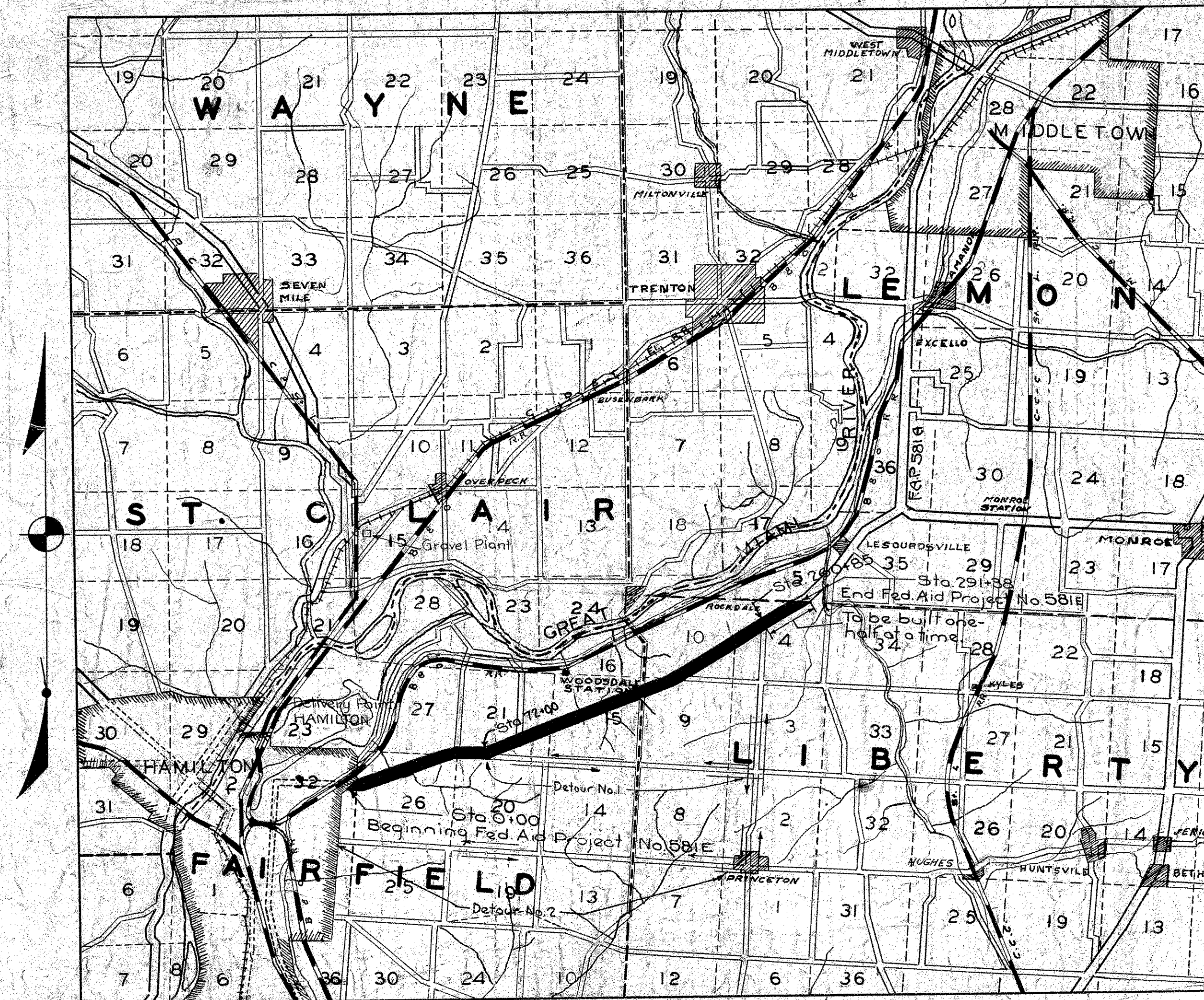
Recommended for Approval _____
Date _____ Chief Engineer
Bureau of Public Roads

Approved _____
Date _____ Chief of Bureau

CONSTRUCTION
BUREAU
JUN 22 1931
GROUND PHOTOLAB

CONVENTIONAL SIGNS

STATE LINE	-----
COUNTY LINE	-----
TOWNSHIP LINE	-----
SECTION LINE	-----
PROPERTY LINE NOT FENCED	-----
CENTER LINE	-----
CITY OR VILLAGE LINE	-----
TELEPHONE OR TELEGRAPH	TTTTTT
STEAM RAILROAD	-----
ELECTRIC LINE	-----
GUARD RAIL	-----
FENCE	-----
DRAIN PIPE NEW	-----
DRAIN PIPE OLD	-----



LOCATION PLAN

SCALE OF MILES

PORTION TO BE IMPROVED
DETOURS SHOWN THUS
IMPROVED ROADS
LENGTH OF PROP. NO. 1 = 5.503 MI.
LENGTH OF PROP. NO. 2 = 0.0138 MI.

INDEX OF SHEETS	PAGE
TITLE PAGE	1
TYPICAL CROSS SECTION	2-2a
PLANS AND PROFILE	3-12
CROSS SECTIONS	14-33
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ROAD APPROACHES	34-39
STRUCTURAL PLANS	40-51
SUMMARY SHEET	52-53-53a

SCALES	
PLAN	1" = 100'
PROFILE VERTICAL	1" = 10'
PROFILE HORIZ.	1" = 100'
CROSS SECTIONS	1" = 5'

SUPPLEMENTAL PRINTS OF STRUCTURAL STANDARDS
DRAWINGS NO. 300, BC-A, BCB, CWA, 44, 129, 56-A, 105, 305

Butler 179-A+D

1931 Contract No. 179-1
Letting Date 6-3-31

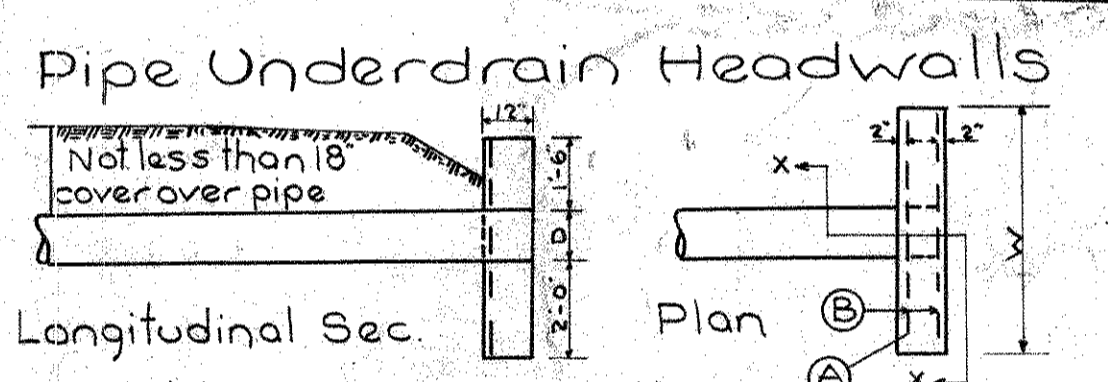
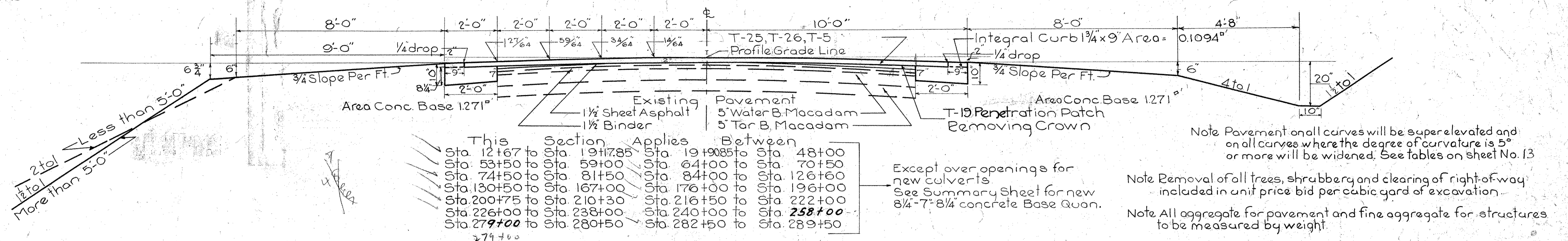
Note: The section between Sta. 260+85 & Sta. 291+38 will be constructed under traffic and the contractor will plan & conduct his operations so that one-way traffic will be maintained at all times. Wherever traffic is routed over a one-way lane the contractor will provide guards or signalmen at each end of every one-way lane during all the hours of the day & night. The guards or signalmen at one end of a one-way lane shall be in telephonic communication with the guards or signalmen at the other end of that lane. The length & location of all one-way lanes will be determined by the engineer. Structures will be constructed in sections so that one-way traffic will be maintained at all times. If the contractor does not desire to construct structures in sections he will be required to construct temporary bridges, 16ft. wide, 10 ton capacity at his own expense.

The contractor will so plan & conduct his work that from Sta. 0+00 to Sta. 72+00 the road shall be kept open to traffic until the section between Sta. 72+00 & Sta. 260+85 is paved & ready for traffic.

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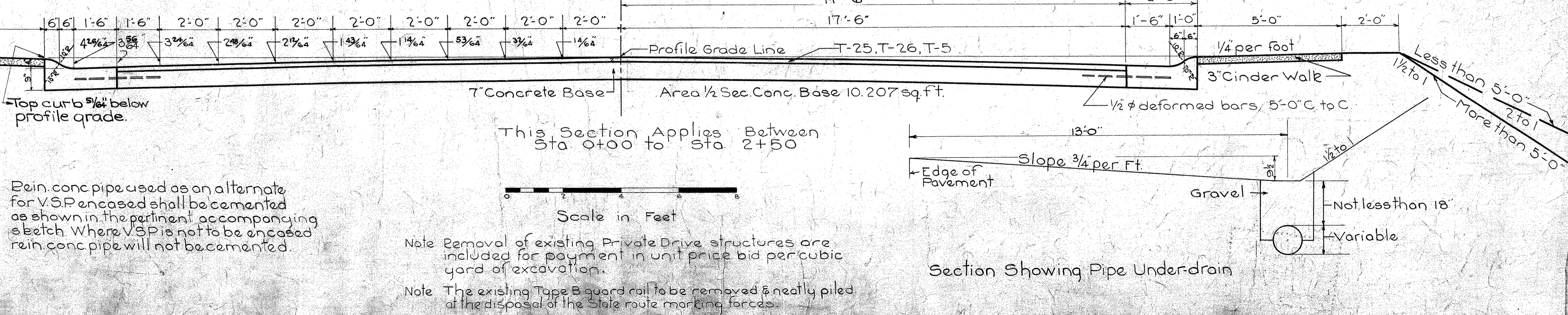
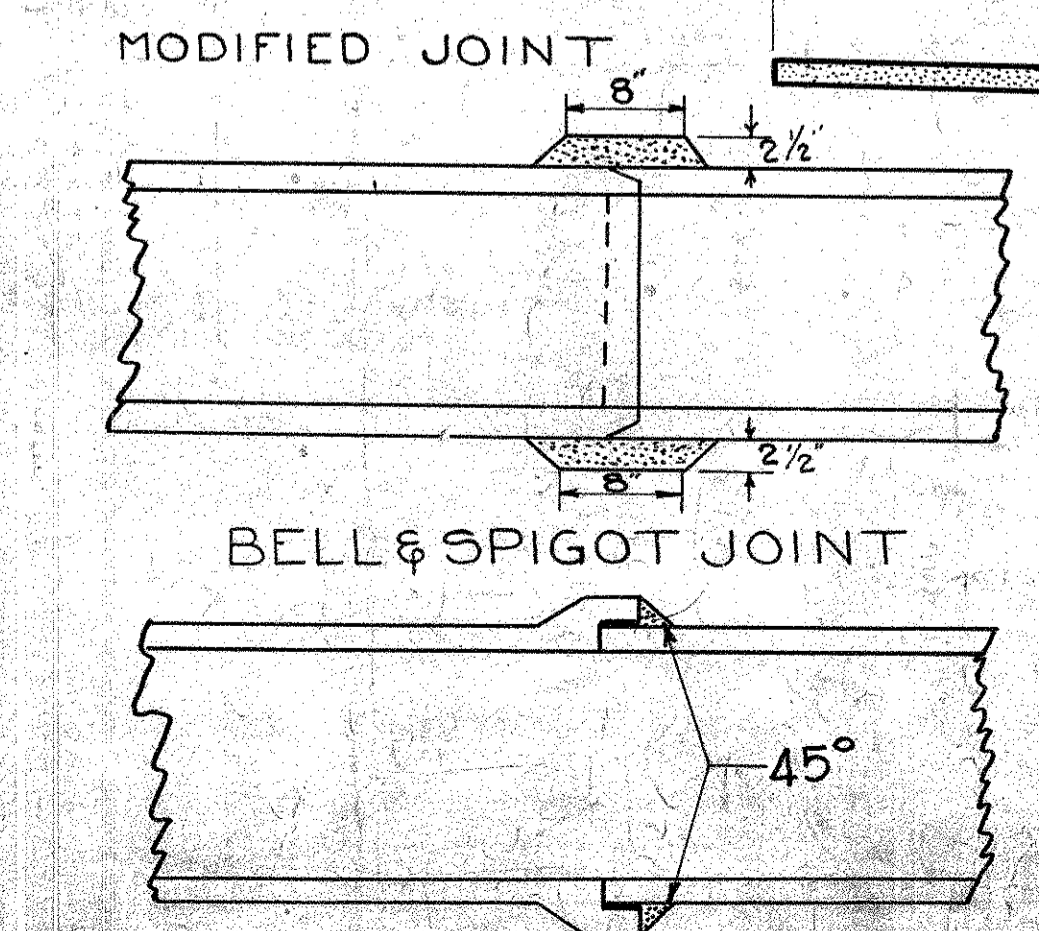
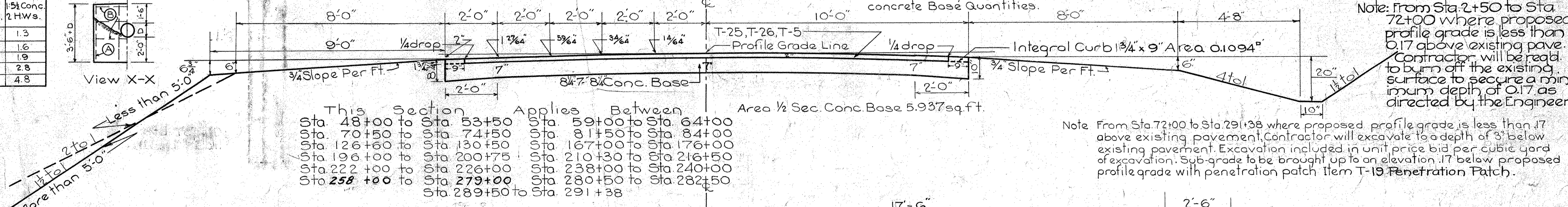
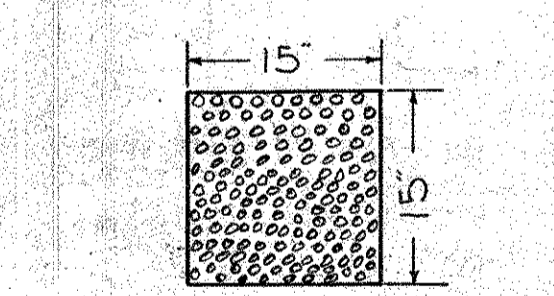
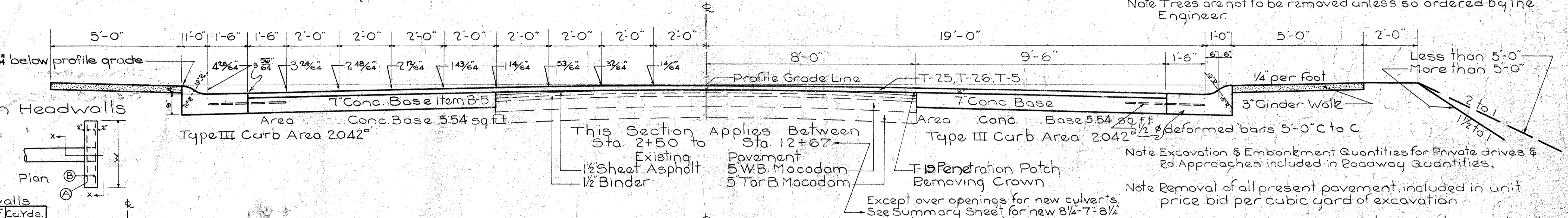
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TYPICAL SECTIONS



Quantities in Headwalls

Dia. Pipe	W. Width H.W.	A Bars No.	B Bars No.	Reinf. Steel Lbs.	Ca. Yds. 15" Conc.	Ca. Yds. 2 H.W.s.	
12"	4'-0"	8	4'-0"	8	3'-6"	40	1.3
15"	4'-6"	8	4'-3"	8	4'-0"	45	1.6
18"	5'-6"	8	4'-6"	8	5'-0"	50	1.9
24"	7'-6"	8	5'-0"	8	7'-0"	65	2.8
36"	11'-0"	8	6'-0"	8	10'-6"	90	4.8



Scale in Feet

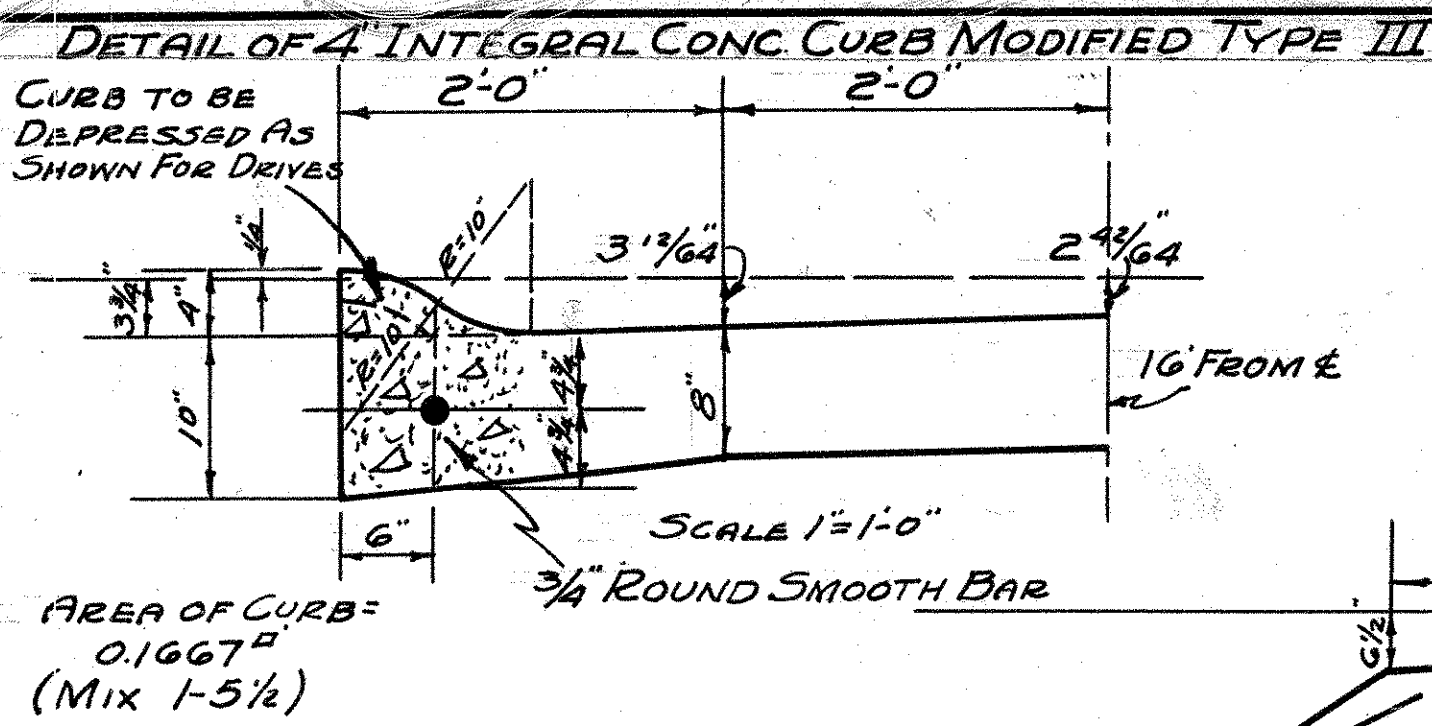
TYPICAL SECTIONS

TYPE-C ITEM ST-7, T-8

Construction & Drawing 98 or 100

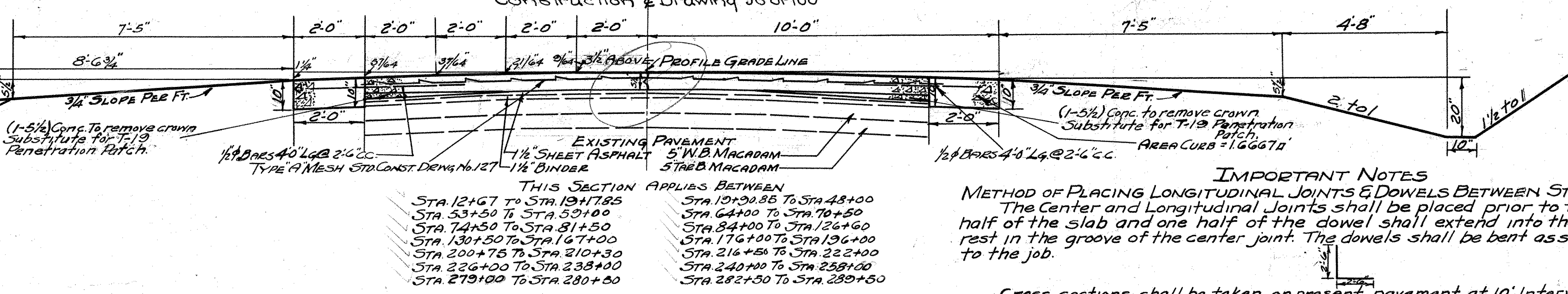
FED. AID DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
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S.H.(I.C.H.) N^o 179 Sec. A & D
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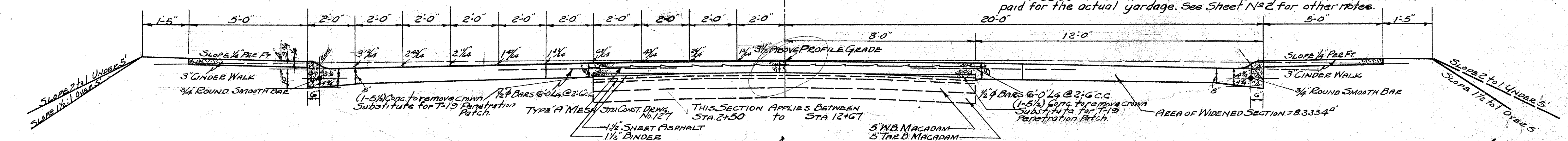
F2 TO 1 LESS THAN 5"
1 1/2" TO 5"
MORE THAN 5"

NOTE: - CONTRACTION AND EXPANSION JOINTS TO EXTEND THRU CURB.



IMPORTANT NOTES
METHOD OF PLACING LONGITUDINAL JOINTS & DOWELS BETWEEN STA 260+85 & STA 291+38.
The Center and Longitudinal Joints shall be placed prior to the pouring of the first half of the slab and one half of the dowel shall extend into the slab, the other half shall rest in the groove of the center joint. The dowels shall be bent as shown before being delivered to the job.

Cross sections shall be taken on present pavement at 10' intervals preceding laying of new concrete base or pavement to accurately determine thickness of new concrete.
Cross sections were figured for 2" Item T-5, T-25 or T-26. For Concrete Type T-8 Raise profile grade 3/4" ditch grade to remain the same. Differentials were figured for Type C Item T-8. See Summary Sheet.
Cross sections will be taken after the completion of the work and the contractor will be paid for the actual yardage. See Sheet N^o 2 for other notes.

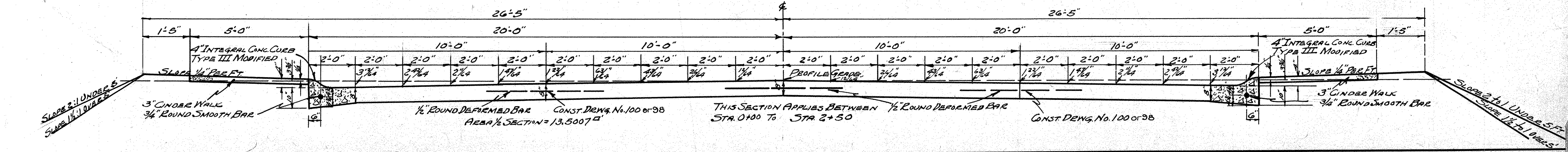


CONSTRUCTION OF STRUCTURES
Structures will be constructed in sections between Sta. 260+85 to 291+38, so that one-way traffic will be maintained at all times. If the contractor does not desire to construct structures, in sections he will be required to construct temporary bridges 16' wide, 10-ton capacity at his own expense. In addition to the above notes any work that is deemed necessary to insure the safety and travel of traffic, by the Engineer in charge, must be done.

THIS PROJECT WILL BE CONSTRUCTED UNDER TRAFFIC BETWEEN STA. 260+85 TO STA. 291+38. THE FOLLOWING NOTES WILL BE FOLLOWED.
The contractor will plan and conduct his operations so that one-way traffic will be maintained at all times.
Whenever traffic is routed over a one-way lane the contractor will provide guards or signalmen at each end of every one-way lane. At least one guard or signalman shall be on duty at each end of every one-way lane at all hours of the day and night. The guards or signalman at one end of a one-way lane shall be in telephonic communication with the guards or signalmen at the other end of that lane.
Equipment operating upon this project between Sta. 260+85 to Sta. 291+38 shall be governed by the following: - Vehicles using one-way traffic lane shall move in the direction of the general traffic. VIZ: - Trucks after the delivery of materials shall wait and return with the traffic. Any VIOLATION of the above note will be sufficient cause for the Engineer to dismiss the operator or anyone directing such equipment.

NOTE: - Grades are to be adjusted to meet existing pavement at the beginning and end of project, and at Bridge at Sta. 19+785 and Sta. 19+90.55.

HALF SECTION OF PAVEMENT TO BE BUILT AT A TIME BETWEEN STA. 260+85 & STA. 291+38, SHOWING LONGITUDINAL JOINT & DOWEL TO BE USED FOR EACH SECTION.

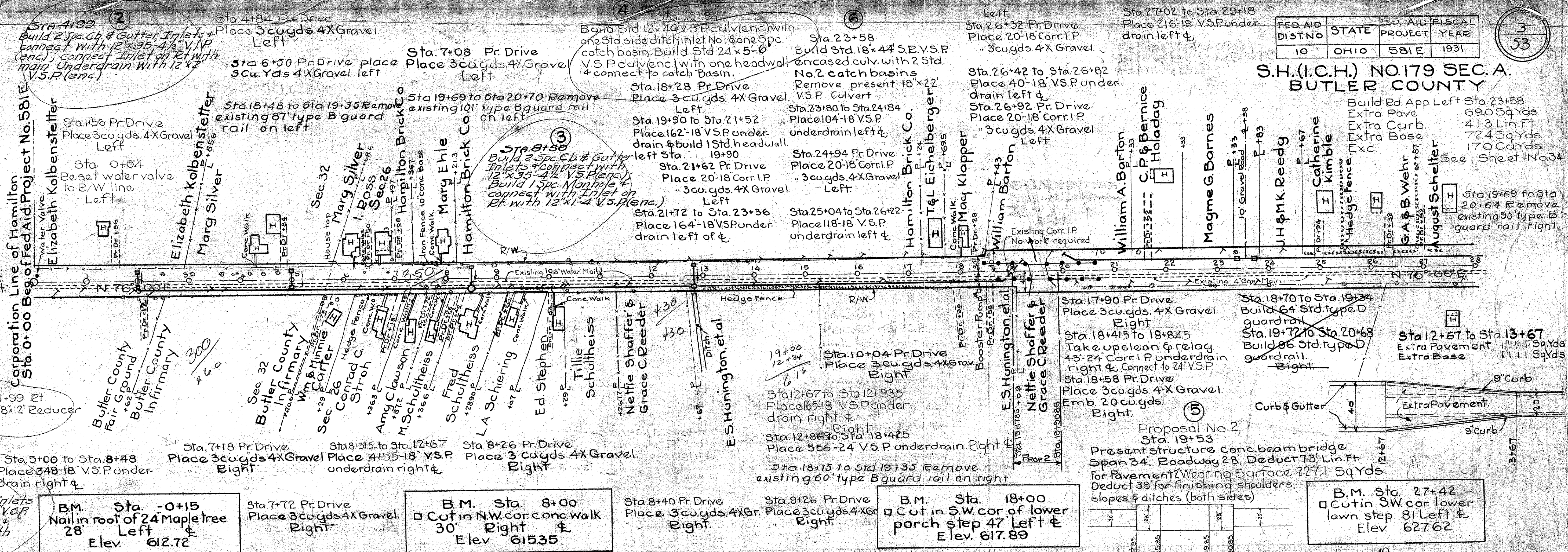


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Build Ed App Left	Sta 23+58
Extra Pave	690 Sq Yds
Extra Curb	413 Lin Ft
Extra Base	7245 Sq Yds
Excav	170 Cu Yds
See Sheet No 34	



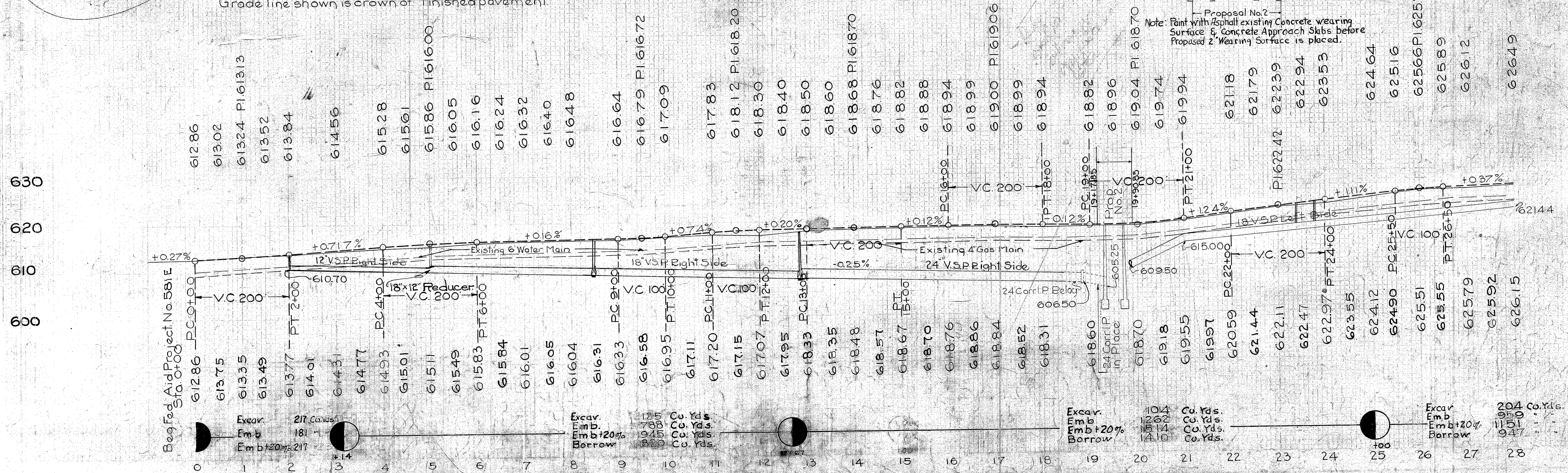
B.M. Sta. -0+15
Nail in root of 24 Maple tree
Elev. 612.72

B.M. Sta. 8+00
Cut in N.W. cor. conc. walk
Right
Elev. 615.35

B.M. Sta. 18+00
Cut in S.W. cor. of lower porch step 47 Left
Elev. 617.89

B.M. Sta. 27+42
Cut in S.W. cor. lower lawn step 81 Left
Elev. 627.62

Grade line shown is crown of finished pavement



Note: Paint with Asphalt existing Concrete wearing surface & concrete approach slabs before Proposed 2" Wearing Surface is placed.

Build Rd Approach
 Left Sta. 29+40
 Extra Pavement 69.0 Sq.Yds.
 Extra Curb 41.3 Lin.Ft.
 Extra Base 72.4 Sq.Yds.
 Excavation 17.0 Cu.Yds.
 See Sheet No.34.

Sta. 29+40
 Remove existing 18" 20VSP
 Build Std 18" 44" S.P.V.S.P
 encas culv. with 2 Std No.2
 catch basins

Sta. 29+62 to Sta. 30+94
 Place 132" 12" VSP under
 drain left &

Sta. 31+14 to Sta. 32+40
 Place 126" 12" VSP under
 drain & build 15th head
 wall left Sta. 32+40

Sta. 31+04 Pr. Drive Left
 Place 20" 12" Corr. I.P.
 3 cu yds. 4X Gravel
 Remove present 16" 0" 12" V.S.P.

Sta. 33+56 Pr. Drive Left
 Place 20" 36" Corr. I.P.
 3 cu yds. 4X Gravel
 Remove present 16" 0" 12" V.S.P.

Sta. 35+56 Pr. Drive Left
 Place 20" 36" Corr. I.P.
 3 cu yds. 4X Gravel
 Remove present 16" 0" 12" V.S.P.

Sta. 51+62 Pr. Drive
 Place 3 cu yds. 4X Gravel
 Excavation 20 cu yds.
 Left

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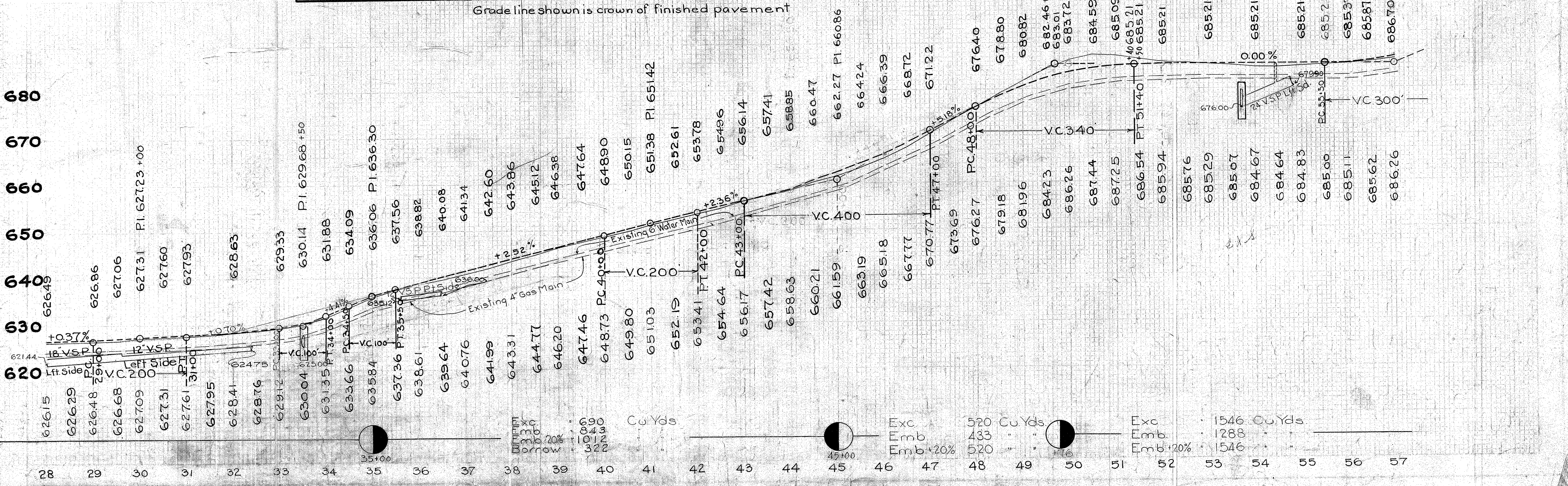
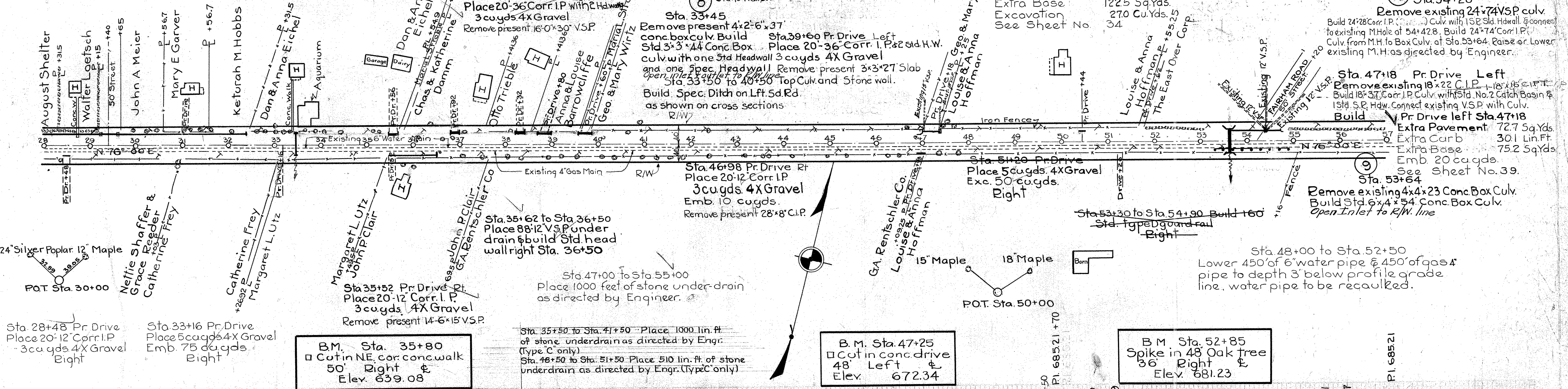
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Sta. 54+20
 Remove existing 24" 74" VSP culv.
 Build 24" 28" Corr. I.P. Culv. with 15" S.P. Std. Hdwall. & connect
 to existing M.Hole at Sta. 42+8. Build 24" 74" Corr. I.P.
 Culv. from M.H. to Box Culv. at Sta. 53+64. Raise or Lower
 existing M.H. as directed by Engineer.

Sta. 47+18 Pr. Drive Left
 Remove existing 18" x 22" C.I.P. 18" x 15" C.I.P.
 Build 18" 37" Corr. I.P. Culv. with Std. No. 2 Catch Basin &
 15" S.P. Hdwall. Connect existing V.S.P. with Culv.
 Build Pr. Drive left Sta. 47+18
 Extra Pavement 72.7 Sq.Yds.
 Extra Curb 301 Lin.Ft.
 Extra Base 122.5 Sq.Yds.
 Emb 20 cu yds.
 See Sheet No. 39.

Sta. 53+64
 Remove existing 4x4x23 Conc. Box Culv.
 Build Std. 6x4x54 Conc. Box Culv.
 Open Inlet to R/W. line

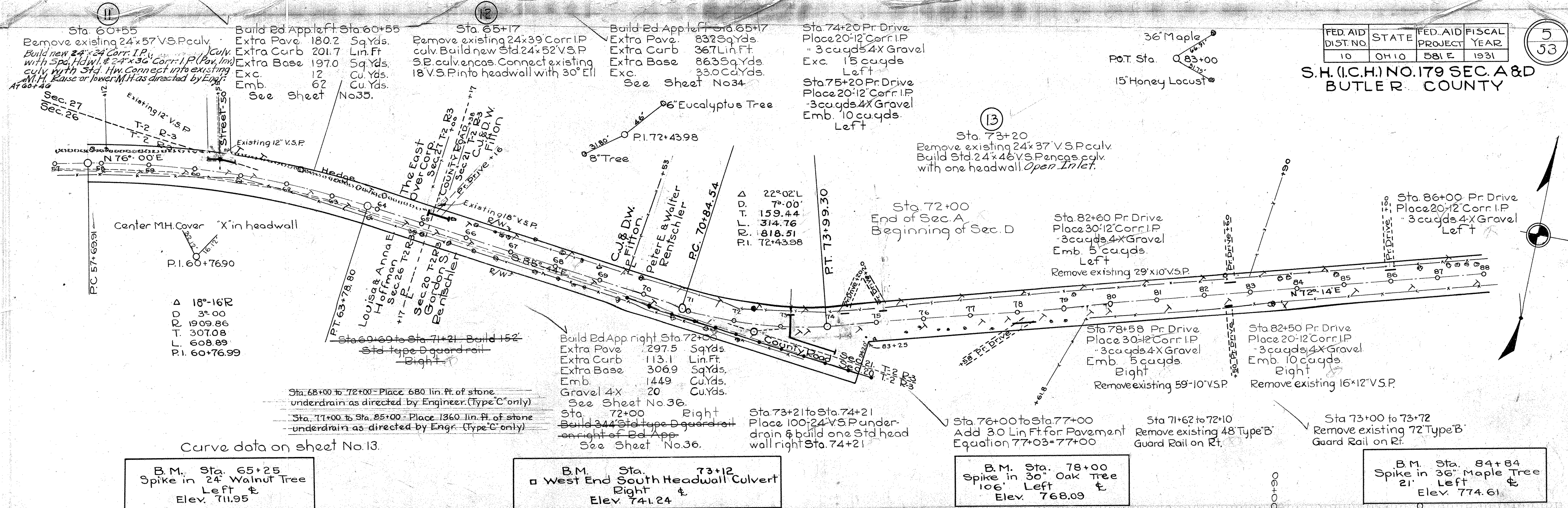
Sta. 48+00 to Sta. 52+50
 Lower 450' of 6" water pipe & 450' of gas 4"
 pipe to depth 3' below profile grade.
 line. water pipe to be recaulked.



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Curve data on sheet No. 13.

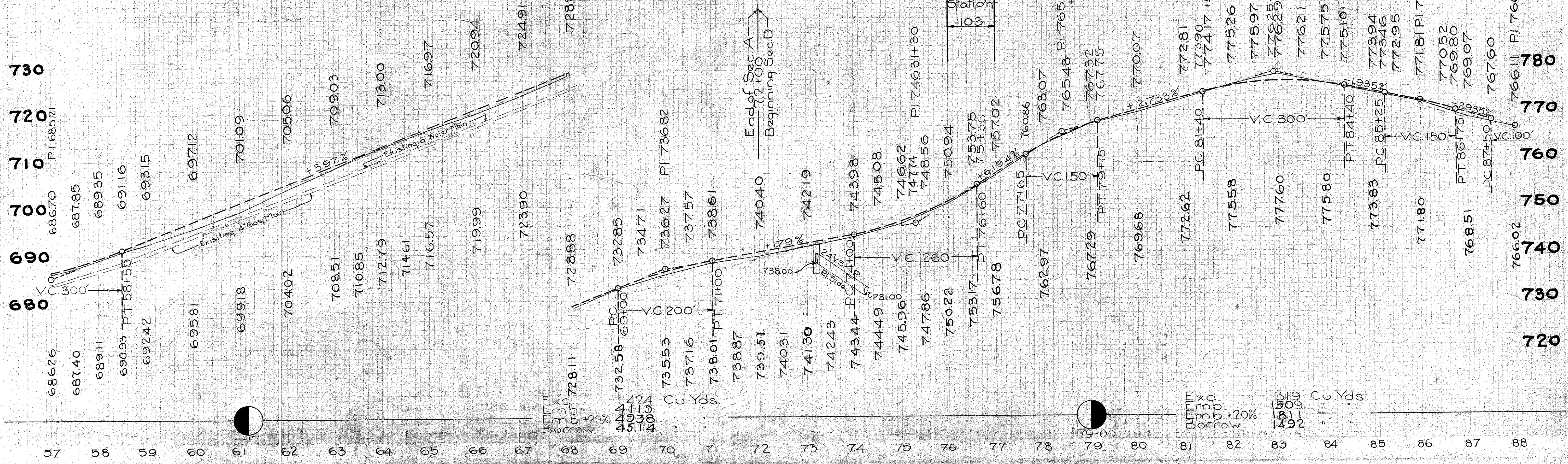
B.M. Sta. 65+25
Spike in 24' Walnut Tree
Left
Elev. 711.95

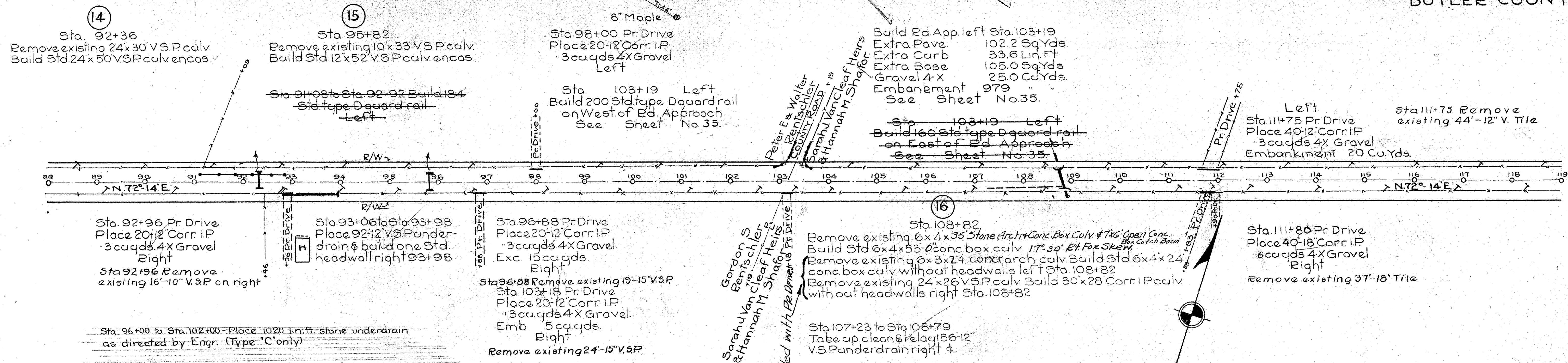
B.M. Sta. 73+12
West End South Headwall Culvert
Right
Elev. 741.24

B.M. Sta. 78+00
Spike in 30' Oak Tree
Left
Elev. 768.09

B.M. Sta. 84+84
Spike in 36' Maple Tree
Left
Elev. 774.61

Grade line shown is crown of finished pavement



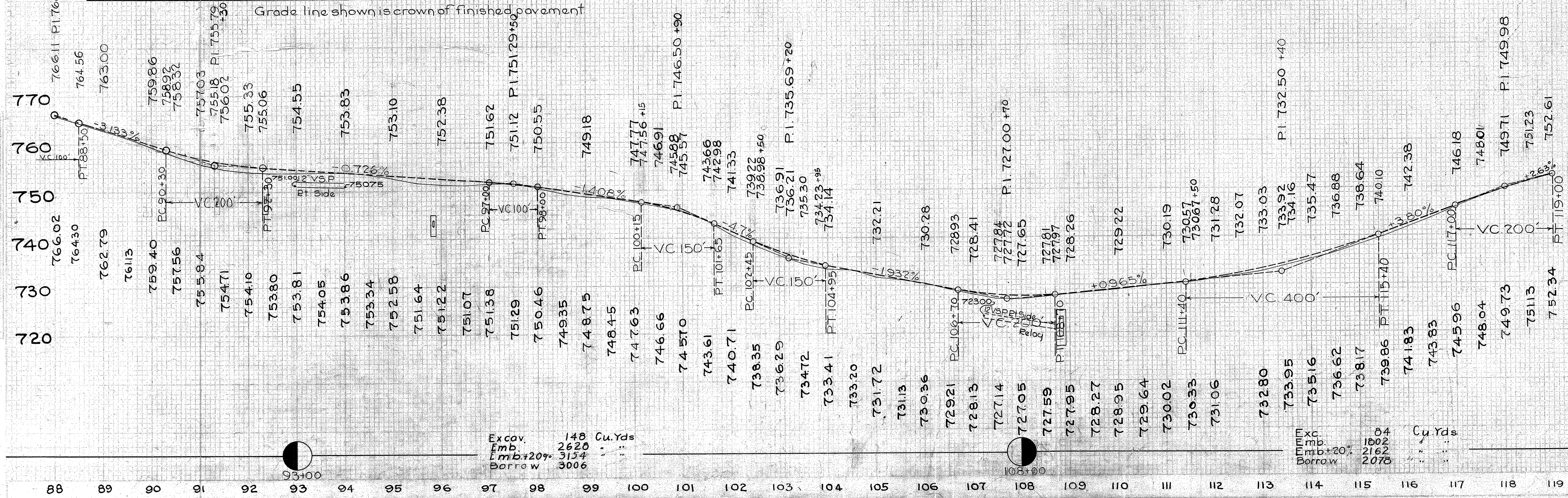


B.M. Sta. 91+21
□ Cut top S.E. cor. conc. fence post 40' Left
Elev. 759.09

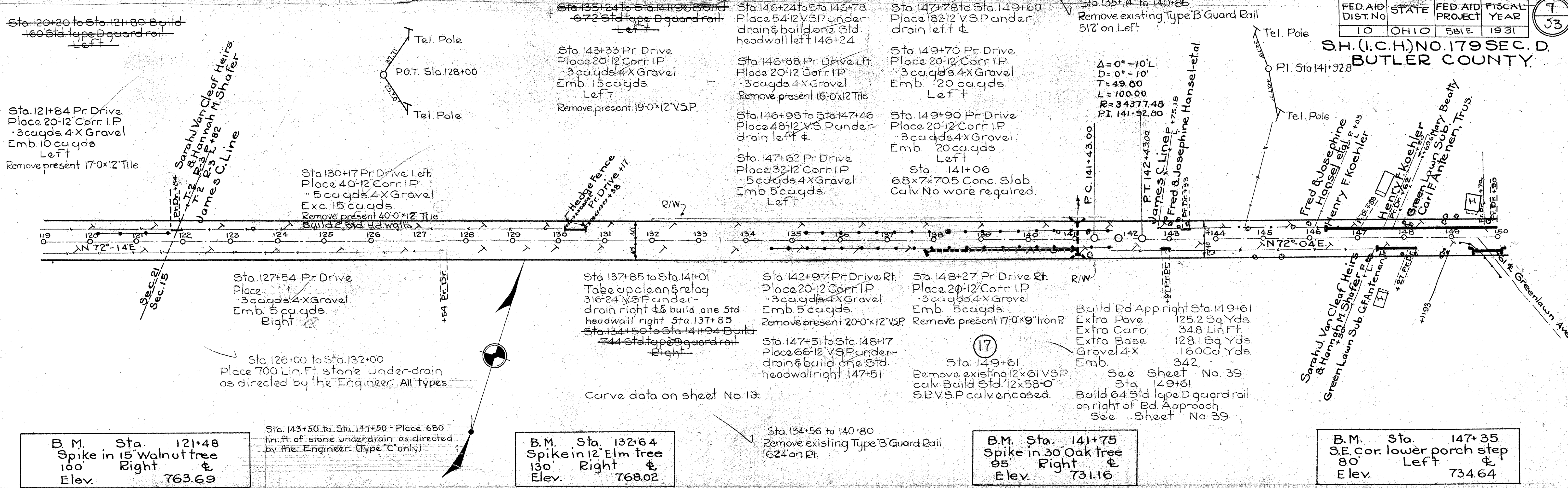
B.M. Sta. 99+00
□ Spike in 36" Oak Tree. 62' Right
Elev. 750.83

B.M. Sta. 107+25
□ Cut Conc. Wall S. Side Road 25' Right
Elev. 727.08

B.M. Sta. 118+35
□ Cut N.W. Cor. Conc. Wall S. Side Road 25' Right
Elev. 749.77



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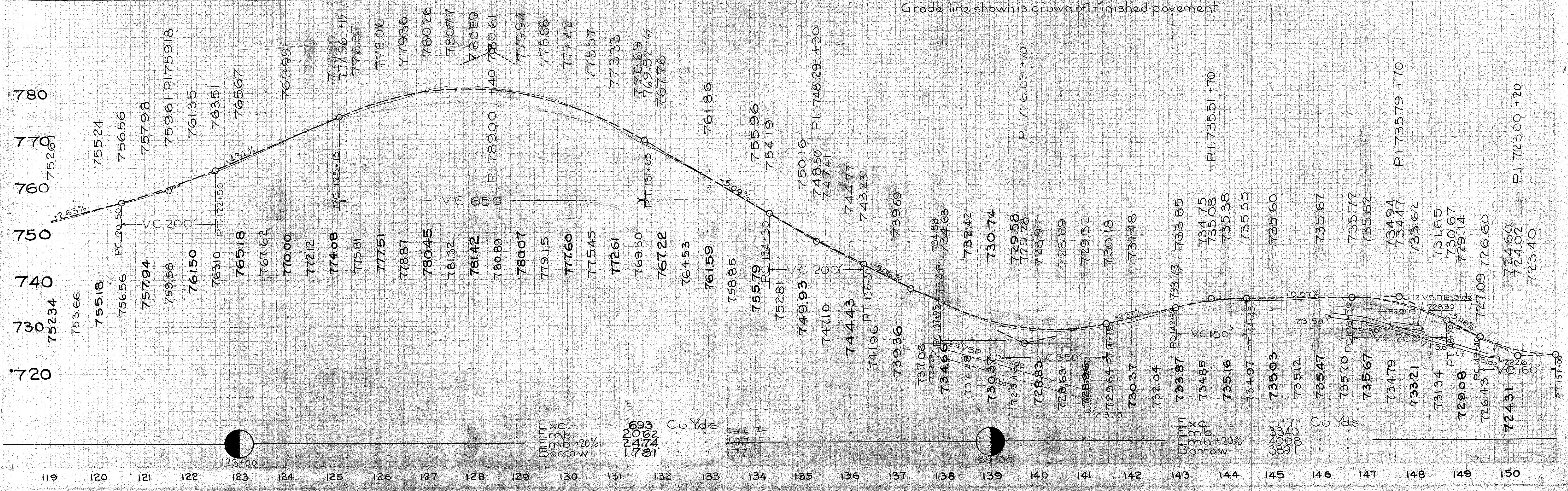


B.M. Sta. 121+48
Spike in 15' Walnut tree
100' Right
Elev. 763.69

B.M. Sta. 132+64
Spike in 12' Elm tree
130' Right
Elev. 768.02

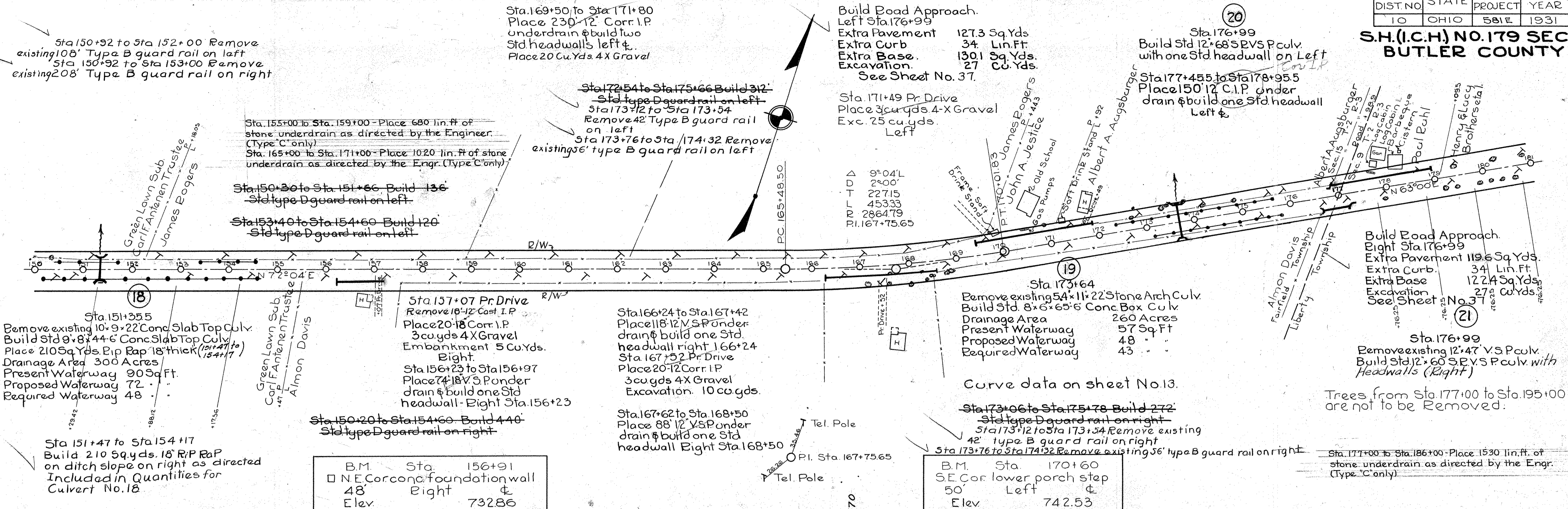
B.M. Sta. 141+75
Spike in 30' Oak tree
95' Right
Elev. 731.16

B.M. Sta. 147+35
S.E. cor. lower porch step
80' Left
Elev. 734.64



Grade line shown is crown of finished pavement

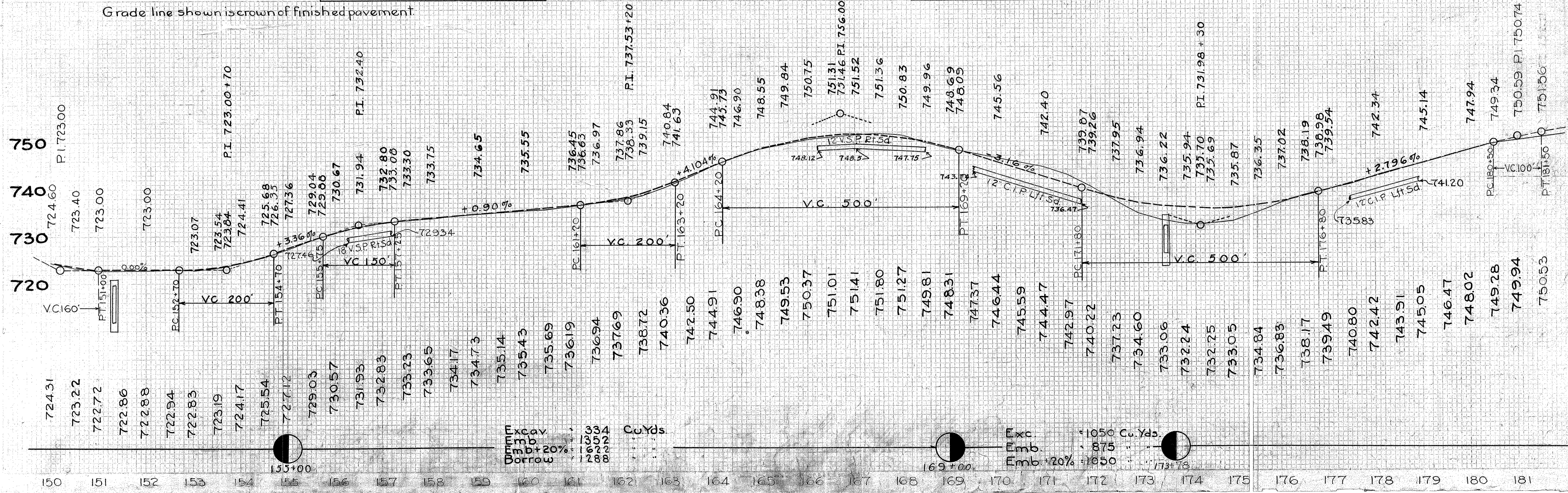
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B.M.	Sta.	156+91
□	N.E. Cor. conc. foundation wall	
48	Eight	¢
Elev.		732.86

B.M.	Sta.	170+60
□	S.E. Cor. lower porch step	
50	Left	¢
Elev.		742.53

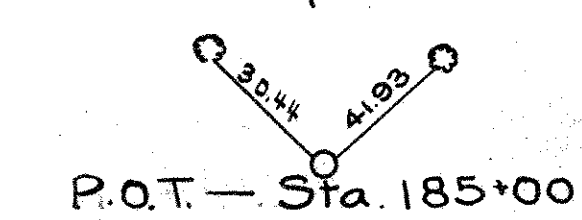
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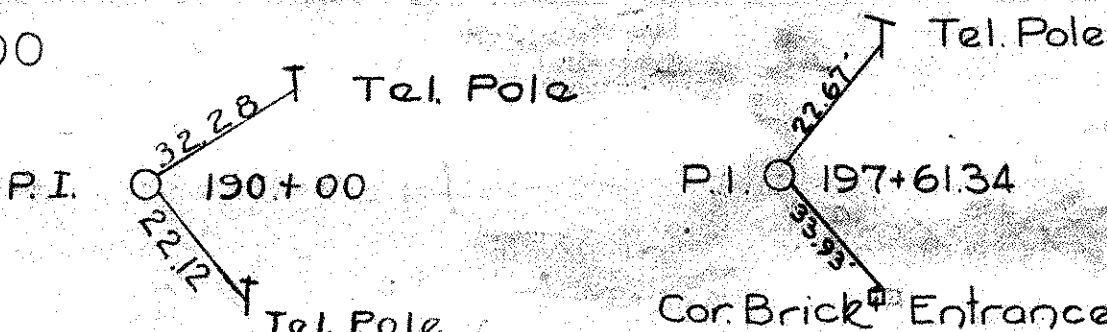
36" Silver Poplar 27" Silver Poplar

22

Trees from Sta. 177+00 to Sta. 195+00 are not to be Removed.



Sta. 186+48
Remove existing 56'x77'x22.4' Stone Arch Culv.
Build Std. 7'5" x 6'1" Conc. Slab Top Culv.
Drainage Area 160 Acres
Present Waterway 40 Sq. Ft.
Proposed Waterway 35 " "
Required Waterway 30 " "



25

Sta. 198+78
Remove existing 63'x6.5'x46' Stone arch & Conc. box culv.
Build Std. 6'5" x 7'8" Conc. Box Culv.
Drainage Area 130 Acres
Present Waterway 38 Sq. Ft.
Proposed Waterway 30 " "
Required Waterway 25.7 " "

Sta. 196+60 to 199+40
Remove existing 280' Type B Guard Rail on Left

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Sta. 182+93.5 Pr. Dr.
Place 20'x12' Corr. I.P.
3 cu. yds. 4-X Gravel
Emb. - 5 Cu. Yds.
Left
Remove existing 35'x6' V.S.P.

Sta. 187+67 Pr. Drive
Place 20'x12' Corr. I.P.
3 cu. yds. 4-X Gravel
Left

Sta. 185+95 to 186+35
Remove existing 40' Type B Guard Rail Left.

Sta. 193+76 Pr. Drive
Place 20'x12' Corr. I.P.
3 cu. yds. 4-X Gravel
Emb. - 5 cu. yds.
Left

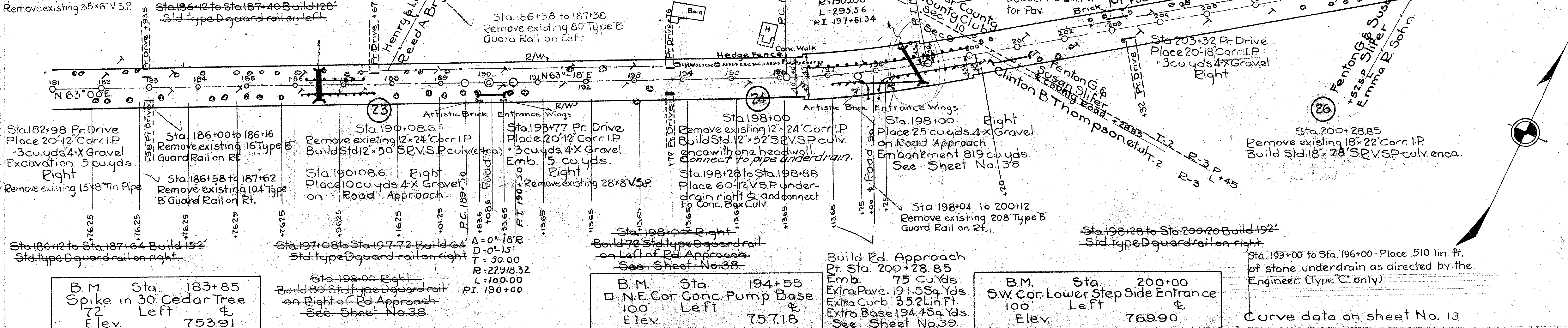
Sta. 196+60 to Sta. 199+96
Build 336' Std. Type D Guard Rail Left
 $\Delta = 8^\circ - 52' L$
 $D = 3' - 00"$
 $T = 148.09$
 $R = 1903.86$
 $L = 295.56$
 $P.I. 197+61.34$

Short Station 200+00 to 201+00
99 Feet
Deduct 1'-0" Lin. Ft. for Pav.

Sta. 203+175 Pr. Drive
Build Paved Pr. Drive
Extra Pavement 82.3 Sq. Yds.
Extra Base 85.7 " "
Extra Curb 41.3 Lin. Ft.
Place 40'x12' Corr. I.P.
Excav. 20 Cu. Yds.
See Sheet No. 39

Sta. 205+32 Pr. Drive
Place 20'x18' Corr. I.P.
3 cu. yds. 4-X Gravel
Right

Sta. 200+28.85
Remove existing 18'x22' Corr. I.P.
Build Std. 18'x78' SRVSP culv. enca.



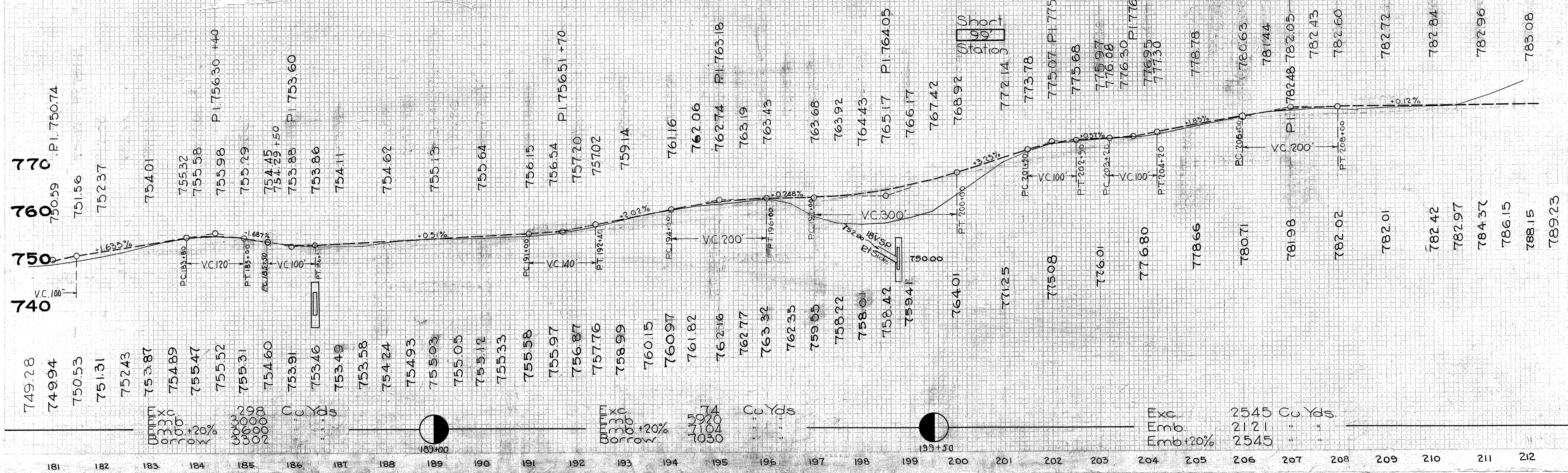
B.M. Sta. 183+85
Spike in 30' Cedar Tree
72' Left
Elev. 753.91

B.M. Sta. 194+55
N.E. Cor. Conc. Pump Base
100' Left
Elev. 757.18

B.M. Sta. 200+00
S.W. Cor. Lower Step Side Entrance
100' Left
Elev. 769.90

Curve data on sheet No. 13

Grade line shown is crown of finished pavement.



Exc. 2545 Cu. Yds.
Emb. 2121 " "
Emb. +20% 2545 " "

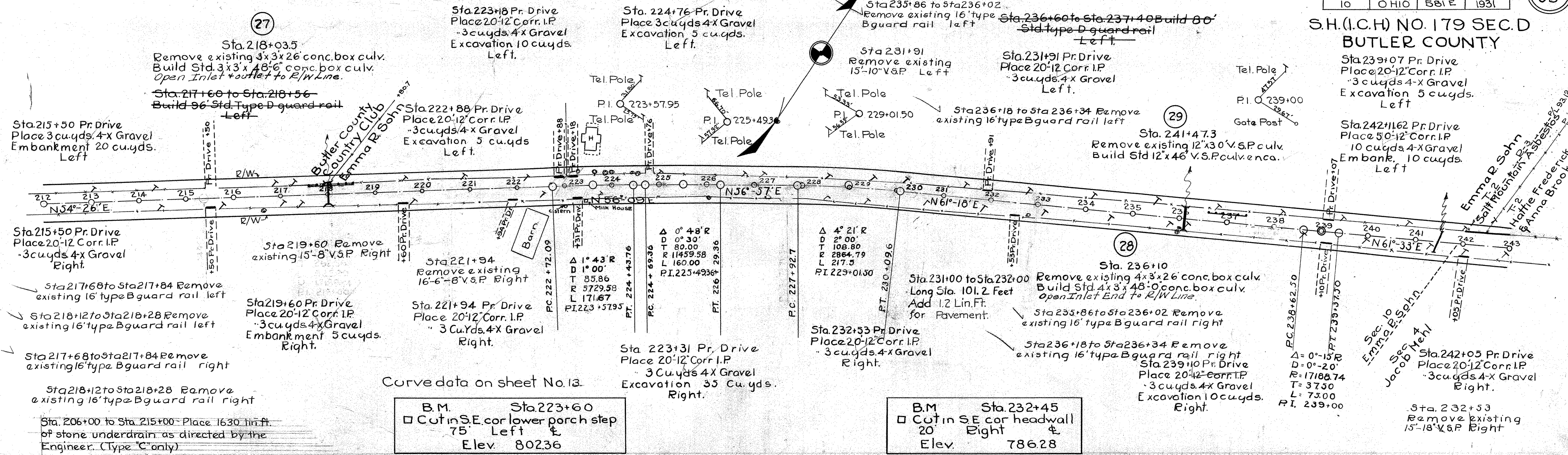
Sta. 221+00 to Sta. 225+00 Place 680 lin. ft. of stone underdrain as directed by the Engr. - Sta. 229+00 to Sta. 233+00 Place 680 lin. ft. of stone underdrain as directed by the Engineer. (Type 'C' only)

Sta. 238+50 to Sta. 242+50 Place 680 lin. ft. of stone underdrain as directed by the Engr. (Type 'C' only)

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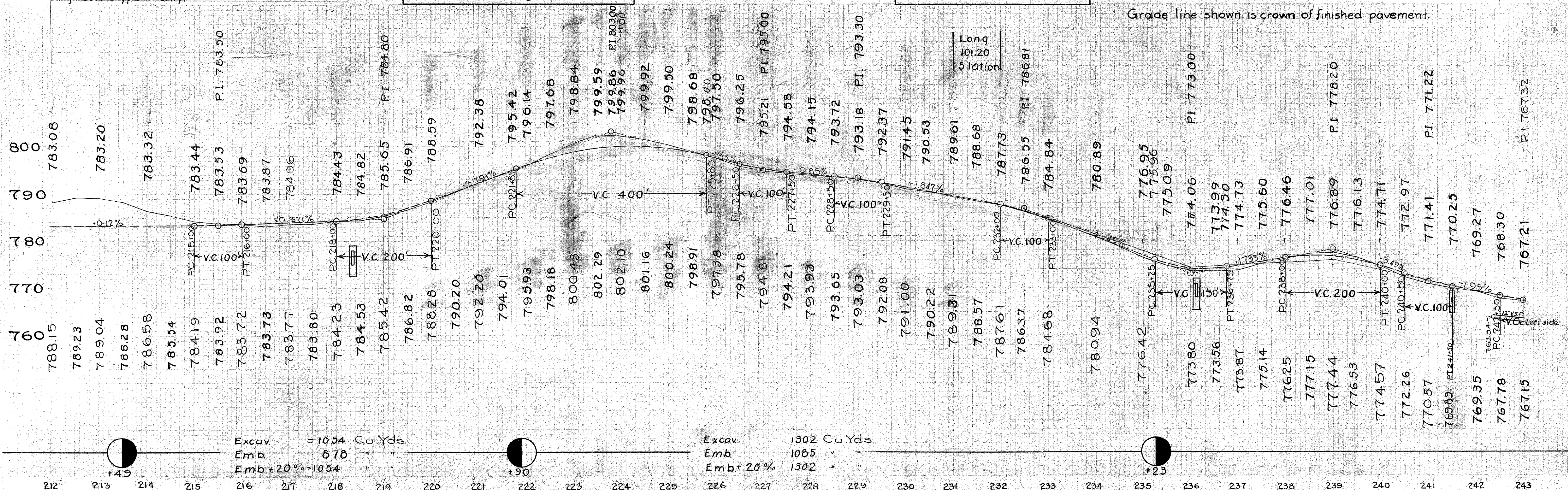


Curved data on sheet No. 13

B.M. Sta. 223+60
□ Cut in S.E. cor lower porch step
75' Left
Elev. 802.36

B.M. Sta. 232+45
□ Cut in S.E. cor headwall
Right
Elev. 786.28

Grade line shown is crown of finished pavement.



Excav. = 1054 Cu. Yds
Emb. = 878
Emb. + 20% = 1054

Excav. = 1302 Cu. Yds
Emb. = 1065
Emb. + 20% = 1302

212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243

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Sta 242+36.62 to Sta 243+90.62
Place 15'-12" V.S.P underdrain
with one Std. headwall left
Sta. 243+90.62

Sta. 250+25 Pr. Drive
Place 3 cu yds 4X Gravel.
Embankment 20 cu yds.
Left

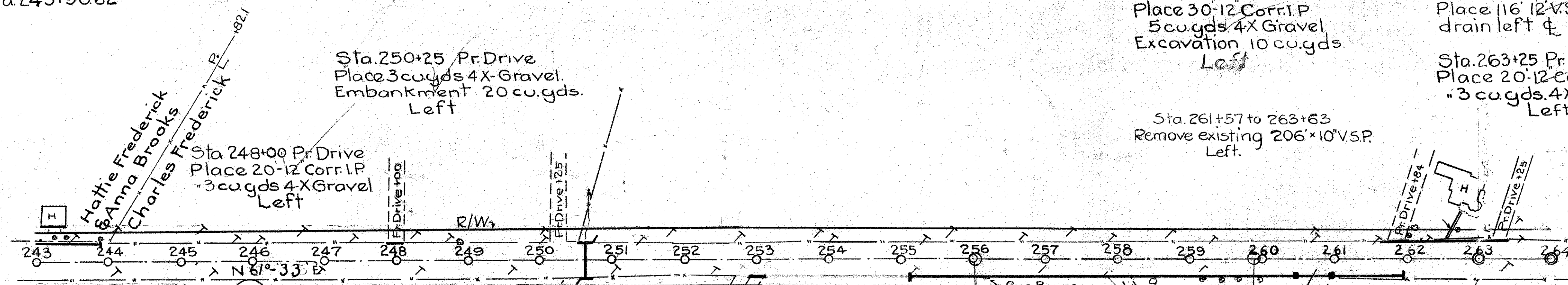
Sta 248+00 Pr Drive
Place 20'-12" Corr. I.P
3 cu yds 4X Gravel
Left

Sta 261+84 Pr Drive
Place 30'-12" Corr. I.P
5 cu yds 4X Gravel.
Excavation 10 cu yds.
Left

Sta. 261+99 to Sta. 263+15
Place 16'-12" V.S.P under
drain left &

Sta. 263+25 Pr Drive
Place 20'-12" Corr. I.P
3 cu yds 4X Gravel.
Left.

Sta. 261+57 to 263+63
Remove existing 206'x10" V.S.P.
Left.



Sta. 250+65
Remove existing 18'x38' & 36'x38' Corr. I.P
Build Std 3'x3'x44'-6" Conc. Box Culv

Sta 253+13 Pr Drive
Place 3 cu yds. Gravel.
20'-12" Corr. I.P.
Right

$\Delta = 1^{\circ}55' R$
 $D = 0^{\circ}30'$
 $T = 191.68$
 $L = 383.33$
 $R = 11459.16$
 $PI. = 258+00$

Build Road Approach
Right Sta 260+86
Extra Curb. 33.8 Lin. Ft
Extra Pavement 122.7 Sq. Yds.
Extra Base 1255
Excavation 260 Cu. Yds.
See Sheet No. 34.

Sta 261+24 to Sta 262+00
Place 76'-18" V.S.P underdrain
& build one Std headwall
right Sta 262+00

Sta 255+10 to Sta 257+00
Place 190'-12" Corr. I.P under
drain with one Std. headwall
right. Sta. 255+10
Sta 257+00 to Sta 258+02
Place 102'-12" V.S.P under-
drain right &

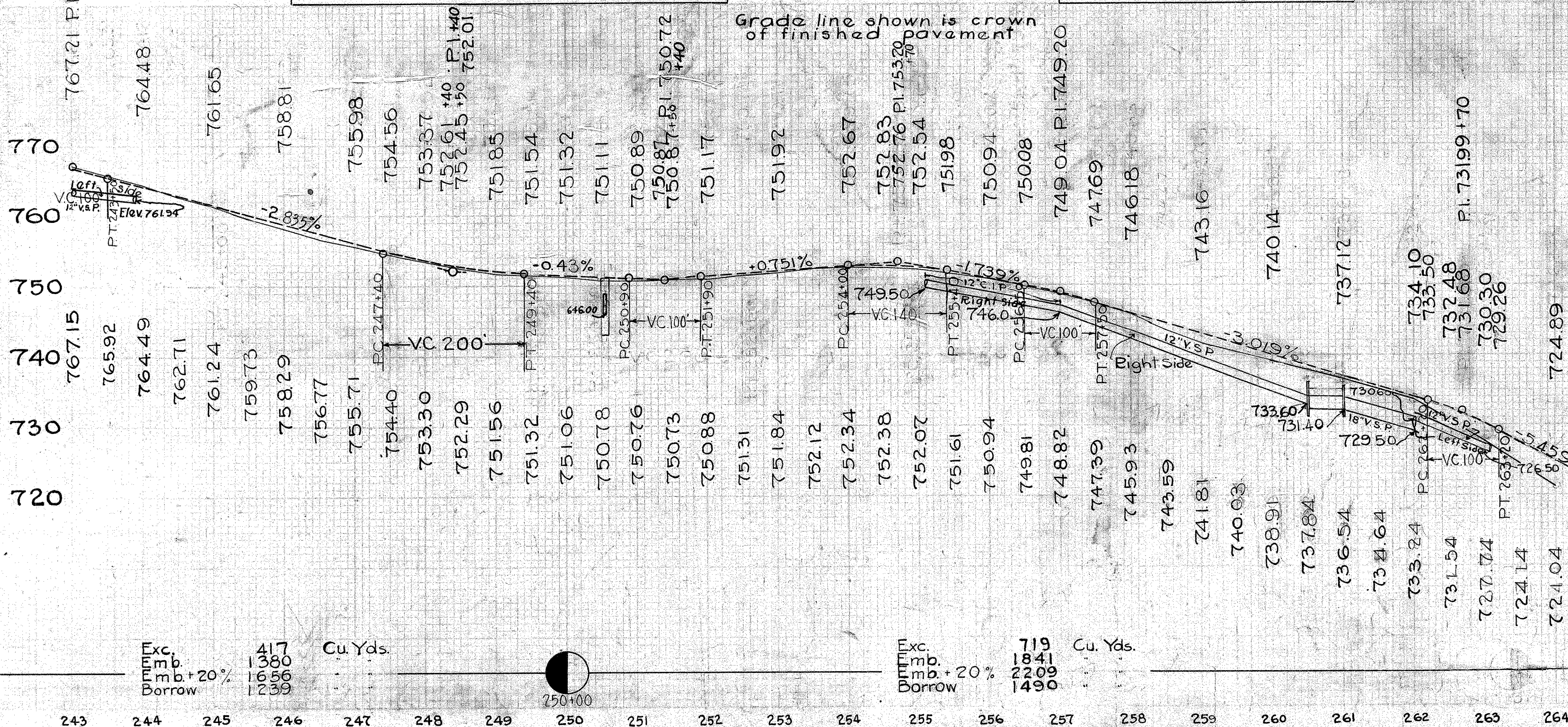
Sta 258+12 Pr Drive
Place 20'-12" Corr. I.P
3 cu yds 4X Gravel.
Remove existing 28'x18" V.S.P.
drain right &

Sta 260+86
Remove existing 12'x46'-0" Corr. I.P
Build Std 18'x84" S.V.S.P culv. (enc)
with one Std No 1 catch basin &
one Std. No 2 catch basin.

Sta 255+10 to 257+00
Remove existing 190'x10" Tile
Right.

B.M. Sta. 250+75
Cut in S.E. cor. south culv headwall
20' Right
Elev. 750.62

B.M. Sta. 261+40
N.E. cor. conc. porch floor
100' Left
Elev. 741.96



Exc. 417
Emb. 1380
Emb. + 20% 1656
Borrow 1239
Cu. Yds.

Exc. 719
Emb. 1841
Emb. + 20% 2209
Borrow 1490
Cu. Yds.

Sta. 268+72 to Sta. 269+36 Place 64'-12" V.S.P. Under-drain & Build one std. Hdwall left Sta. 268+72

Sta. 269+56 to Sta. 270+04 Place 48' Lin Ft 12" V.S.P. Under-drain & Build one Std. Hdwall. Left Sta. 270+04

Δ 12° 45' Lt.
D 1° 00'
T 640.13
L 1275.00
P 5729.58
PI 271+65.88

Sta. 273+40 to Sta. 273+60 Place 20'-12" V.S.P. Under-drain & build one Std. headwall left 273+40

Sta. 273+70 Pr Drive Place 20'-12" Corr. I.P. 3 cu yds 4X Grav. Exc. 5 cu yds. Left.

Sta. 273+80 to Sta. 274+10 Place 30'-12" V.S.P. Under-drain & build one Std. headwall left 274+10

Sta. 281+59 Pr Drive Place 20'-12" Corr. I.P. 3 cu yds. 4X Gravel Left.

Sta. 281+69 to Sta. 283+33 Place 164'-12" V.S.P. Under-drain & build one Std. headwall left 283+33

Sta. 281+59 Remove existing 16'-12" Stone Box Left

Sta. 282+23 to Sta. 283+32 Remove 109'-12" Stone Box Left

Sta. 288+96 Remove existing 14'-15" C.I.P. Left

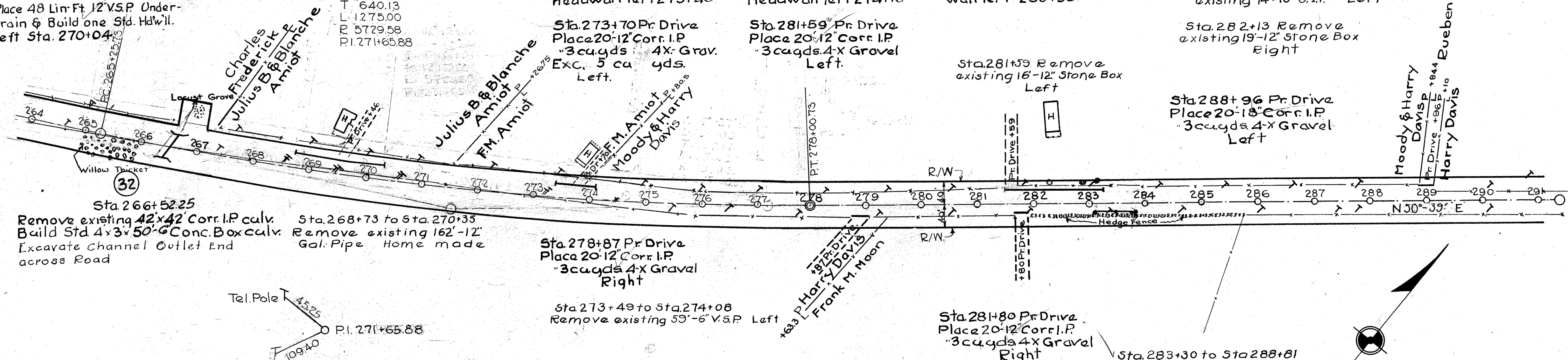
Sta. 282+13 Remove existing 19'-12" Stone Box Right

Sta. 288+96 Pr Drive Place 20'-18" Corr. I.P. 3 cu yds. 4X Gravel Left

FED. AID DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	581E	1931

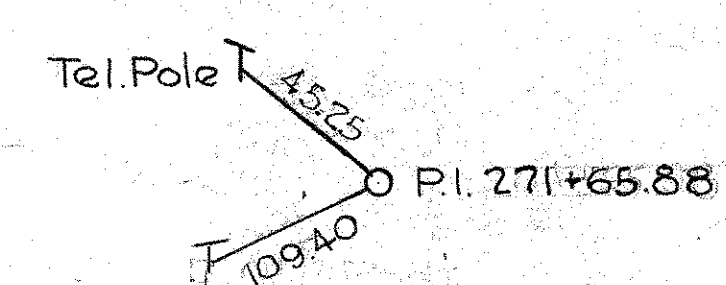
12
53

S.H. (I.C.H.) NO. 179 SEC. D
BUTLER COUNTY



End of Fed. Aid Project No. 581E
Sta. 291+38

Sta. 291+38 End of FAP No. 581E
Beginning of FAP No. 581A
Existing 20' Brick Pavement



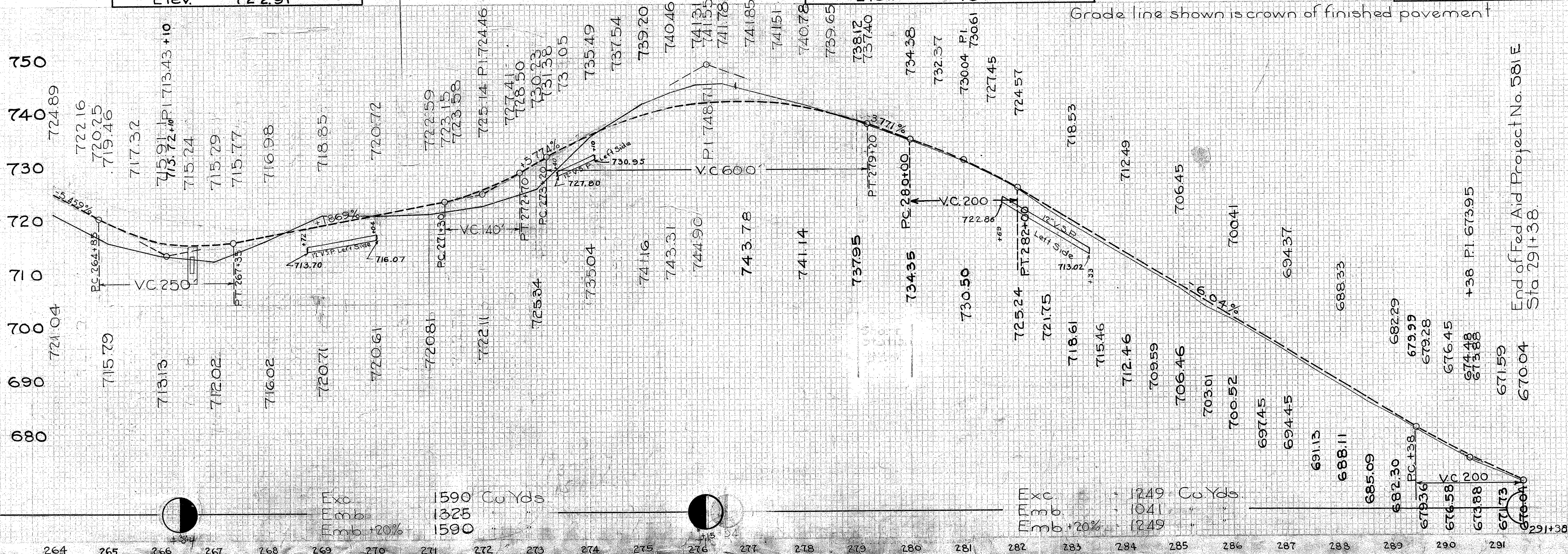
Curve data on sheet No. 13.

B.M. Sta. 269+70
NE. cor. conc. coping of post
50' Left
Elev. 722.91

Sta. 274+00 to Sta. 282+00 - Place 1360 lin. ft. of stone underdrain as directed by Engr. (Type C only)

B.M. Sta. 282+00
S.E. Cor. stone step west side house
130' Left
Elev. 731.06

B.M. Sta. 291+38
Top of conc. monument
35' Right
Elev. 668.35



Exc 1590 Cu Yds
Emb +20% 1325
Emb +20% 1590

Exc 1249 Cu Yds
Emb +20% 1041
Emb +20% 1249

End of Fed. Aid Project No. 581E
Sta. 291+38

S.H.(I.C.H.) NO. 179 SEC. A & D BUTLER COUNTY

PC. 57+69.91 D=3°-00' RT. PT. 63+78.80

LEFT				RIGHT		
Edge	Width	Station	Grade Elev.	Width	Edge	
685.99	10'	56+69.91	686.16	10'	685.99	
686.09		56+75	686.24		686.07	
686.67		57+00	686.70		686.53	
687.32		57+25	687.23		687.06	
688.06		57+50	688.35		687.68	
688.89		57+75	688.95		688.39	
689.18		58+00	689.35		689.18	
689.58		58+25	689.81		689.86	
690.58		58+50	690.03		690.04	
690.76		58+75	691.16		691.99	
691.71		59+00	692.16		692.98	
692.71		59+25	693.15		693.97	
693.70		59+50	694.14		694.96	
694.69		59+75	695.13		695.96	
695.68		60+00	696.13		696.95	
696.68		60+25	697.11		697.94	
697.67		60+50	698.11		698.93	
698.66		61+00	699.10		699.93	
699.65		61+25	700.09		700.92	
700.65		61+50	701.08		701.91	
701.64		61+75	702.07		702.90	
702.63		62+00	703.07		704.89	
703.62		62+25	704.07		705.88	
704.62		62+50	705.06		706.87	
705.61		62+75	706.05		707.87	
706.60		63+00	707.04		708.86	
707.59		63+25	708.04		709.85	
708.58		63+50	709.03		710.84	
709.57		63+75	710.02		711.83	
710.56		64+00	711.01		712.82	
711.55		64+25	712.01		713.81	
712.54		64+50	713.00		714.81	
713.53		64+75	714.00		715.81	
714.52		65+00	715.00		716.80	
715.51		65+25	716.00			
716.50		65+50				
717.49		65+75				

No Extra Pavement

PC. 165+48.50 D=3°-00' RT. PT. 170+01.83

LEFT				RIGHT		
Edge	Width	Station	Grade Elev.	Width	Edge	
746.67	10'	164+48.50	746.84	10'	746.67	
747.56		164+75	747.73		747.73	
748.38		165+00	748.55		748.56	
749.07		165+25	749.24		749.34	
749.67		165+50	749.24		750.03	
750.18		165+75	750.35		750.63	
750.59		166+00	750.76		751.13	
751.03		166+25	751.20		751.57	
751.14		166+50	751.13		751.68	
751.31		166+75	751.48		751.85	
751.85		167+00	751.52		751.89	
751.33		167+25	751.50		751.87	
751.19		167+50	751.36		751.73	
750.97		167+75	751.14		751.51	
750.66		168+00	750.83		751.20	
750.28		168+25	750.45		750.82	
749.79		168+50	749.96		750.33	
749.20		168+75	749.37		749.74	
748.52		169+00	748.69		749.06	
747.76		169+25	747.93		748.30	
746.91		169+50	747.08		747.45	
746.18		169+75	746.30		746.64	
745.39		170+00	745.56		745.76	
744.60		170+25	744.77		744.88	
743.81		170+50	743.98		744.00	
743.02		170+75	743.19		743.12	
742.17		171+01.83	742.34		742.17	

No Extra Pavement

PC. 222+72.09 D1=1°00' RT. D2=0°30' RT. PT. 226+29.30

LEFT				RIGHT		
Edge	Width	Station	Grade Elev.	Width	Edge	
794.94	10'	221+72.09	795.11	10'	794.94	
796.04		222+00	796.14		795.97	
796.93		222+25	796.97		796.80	
797.70		222+50	797.68		797.51	
798.42		222+75	798.33		798.17	
798.98		223+00	798.84		798.67	
799.42		223+25	799.23		799.06	
799.46		223+50	799.27		799.10	
799.78		223+75	799.59		799.42	
800.02		224+00	799.83		799.66	
800.18		224+25	799.99		799.82	
800.14		224+50	799.96		799.79	
800.16		224+75	799.98		799.81	
800.07		225+00	799.92		799.75	
800.09		225+25	799.76		799.79	
799.61		225+50	799.50		799.33	
799.33		225+75	799.23		799.06	
799.24		226+00	799.14		798.97	
799.78		226+25	798.68		798.51	
798.22		226+50	798.12		797.95	
798.21		226+75	797.11		797.94	
797.54		227+00	796.50		797.33	
796.86		227+25	796.88		796.71	
796.16		227+50	796.25		796.08	
795.52		227+75	795.68		795.51	
795.27		228+00	795.44		795.27	

No Extra Pavement

PC. 265+25.73 D 1°-00' PT. 278+00.73

LEFT				RIGHT		
Edge	Width	Station	Grade Elev.	Width	Edge	
723.32	10'	264+25.73	723.49	10'	723.32	
721.99		264+50	722.16		722.05	
720.61		+75	720.78		720.73	
719.29		265+00	719.46		719.47	
717.95		+25	718.12		718.19	
717.15		+50	717.32		717.45	
716.34		+75	716.54		716.70	
715.74		266+00	715.91		716.10	
715.31		+25	715.48		715.67	
715.07		+50	715.24		715.43	
714.99		+75	715.16		715.35	
715.12		267+00	715.29		715.48	
715.42		+25	715.59		716.78	
715.87		+50	716.04		716.23	
716.34		+75	716.51		716.70	
716.81		268+00	716.98		717.17	
717.28		+25	717.45		717.64	
717.74		+50	717.91		718.10	
718.21		+75	718.38		718.57	
718.68		269+00	718.85		719.04	
719.19		+25	719.36		719.55	
719.61		+50	719.78		719.97	
720.08		+75	720.25		720.44	
720.55		270+00	720.72		720.91	
721.01		+25	721.18		721.37	
721.48		+50	721.65		721.84	
721.95		+75	722.12		722.31	
722.42		271+00	722.59		722.78	
722.89		+25	723.06		722.25	
723.41		+50	723.58		723.77	
724.10		+75	724.27		724.46	
724.97		272+00	725.14		725.33	
726.01		+25	726.18		726.37	
727.24		+50	727.41		727.60	
728.62		+75	728.79		728.98	
730.06		273+00	730.23		730.42	
731.51		+25	731.68		731.87	
732.88		+50	733.05		733.24	
733.15		+75	733.32		733.51	
735.32		274+00	735.49		735.68	
736.40		+25	736.57		736.76	
737.34		+50	737.54		737.73	
738.26		+75	738.43		738.62	
739.03		275+00	739.20		739.39	
739.71		+25	739.88		740.07	
740.29		+50	740.46		740.65	
740.77		+75	740.74		741.13	
741.14		276+00	741.31		741.50	
740.43		+25	740.60		740.79	
741.61		+50	741.78		741.97	
741.59		+75	741.86		741.95	
741.67		277+00	741.84		742.03	
741.66		+25	741.83		742.02	
741.34		+50	741.51		741.70	
741.30		+75	741.47		741.66	
741.02		278+00	741.19		741.32	
740.61		+25	740.78		740.85	
740.09		+50	740.26		740.27	
739.48		+75	739.65		739.60	
738.76		279+00	738.93		738.82	
737.95		+25	738.12		737.95	
737.92		+50	738.09		737.92	

No Extra Pavement

PC. 70+84.54 D=7°-00' LT. PT. 73+99.36

LEFT				RIGHT		
Edge	Width	Station	Grade Elev.	Width	Edge	
735.64	10.00	69+84.54	735.81	10.00	735.64	
736.10	10.03	70+00	736.27		736.25	
736.79	10.19	70+25	736.96		737.18	
737.40	10.57	70+50	737.57		738.02	
737.96	11.01	70+75	738.13		738.82	
738.44	11.69	71+00	738.61		739.54	
738.89	12.11	71+25	739.06		740.22	
739.06	12.17	71+50	739.23		740.48	
739.33	12.17	71+75	739.50		740.75	
739.78	12.17	72+00	739.95		741.20	
740.23	12.17	72+25	740.40		741.65	
740.68	12.17	72+50	740.55		742.10	
741.12	12.17	72+75	741.29		742.54	
741.57	12.17	73+00	741.74		742.99	
742.02	12.17	73+25	742.19		743.44	
742.46	12.17	73+50	742.63		743.88	
742.90	12.17	73+75	743.07		744.32	
743.36	11.90	74+00	743.53		744.54	
743.81	11.30	74+25	743.98		744.75	
744.31	10.70	74+50	744.48		745.01	
744.91	10.31	74+75	745.08		745.38	
745.64	10.08	75+00	745.81		745.87	
746.43	10.00	75+25	746.60		746.43	

Extra Pavement 80.5 Sq. Yds.

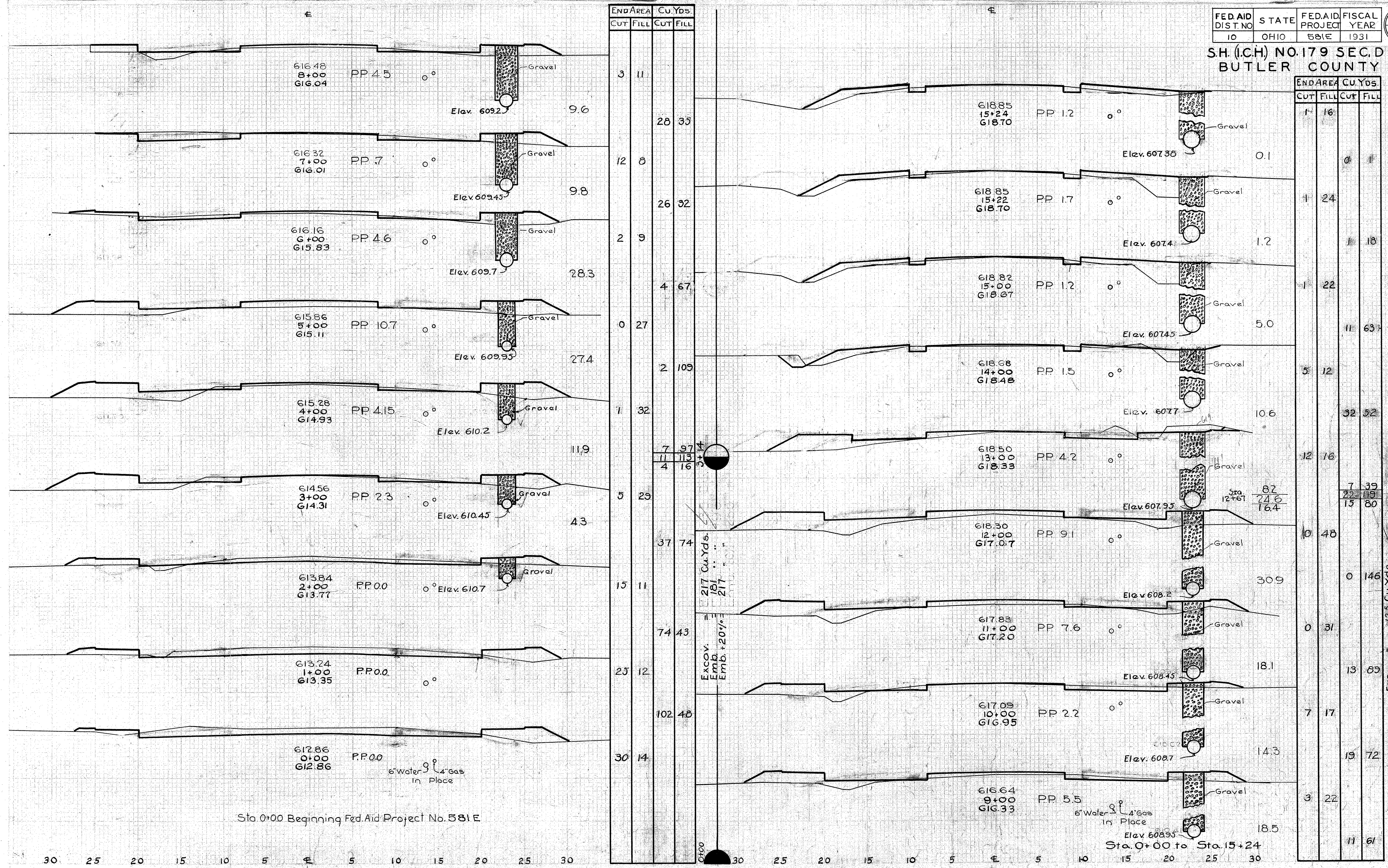
PC. 196+13.25 D=3°00' LT. PT. 199+08.18

LEFT				RIGHT		
Edge	Width	Station	Grade Elev.	Width	Edge	
762.71	10'	195+13.25	762.88	10'	762.71	
762.82		195+25	762.99		762.88	
763.02		195+50	763.19		763.20	
763.17		195+75	763.34		763.47	
763.26		196+00	763.43		763.68	
763.32		196+25	763.49		763.86	
763.38		196+50	763.55		764.04	
763.41		196+75	763.58		764.13	
763.44		197+00	763.61		764.16	

FED.AID DIST. NO.	STATE	FED.AID PROJECT	FISCAL YEAR
10	OHIO	581E	1931

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S.H. (I.C.H.) NO. 179 SEC. D
BUTLER COUNTY



T-10 Pen Patch - 3008.9 CU. YDS.
From Sta. 12+67 to Sta. 291+38

T-10 Pen Patch - 189.5 CU. YDS.

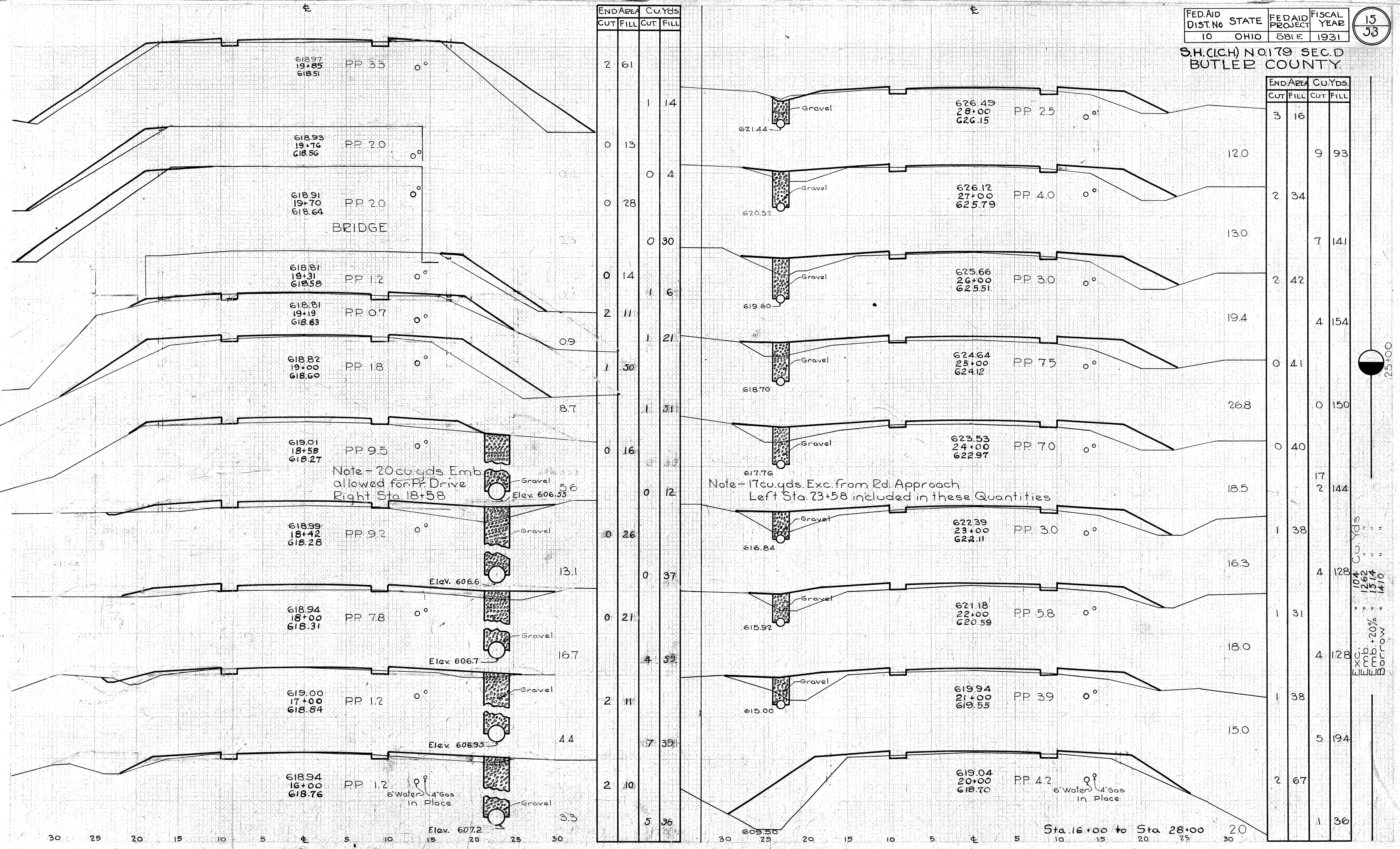
Exc. b. = 125 Cu. Yds.
Emb. = 788 Cu. Yds.
Emb. + 20% = 945 Cu. Yds.
Borrow = 620 Cu. Yds.

30 25 20 15 10 5 5 10 15 20 25 30

30 25 20 15 10 5 5 10 15 20 25 30

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
1	16		
		0	11
1	24		
		1	18
1	22		
		1	63
5	12		
		32	52
12	16		
		7	39
		22	19
		15	80
10	48		
		0	146
0	31		
		13	89
7	17		
		19	72
3	22		
		11	61

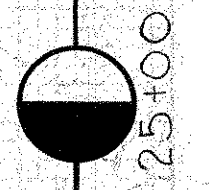
S.H. (C.H.) NO. 179 SEC. D
BUTLER COUNTY.



Note - 20 cu. yds Emb. allowed for PP Drive Right Sta. 18+58

Note - 17 cu. yds. Exc. from Rd. Approach Left Sta. 23+58 included in these Quantities

104 CU. YDS
1262
1514
1410
CU. YDS
+20%
BORROW

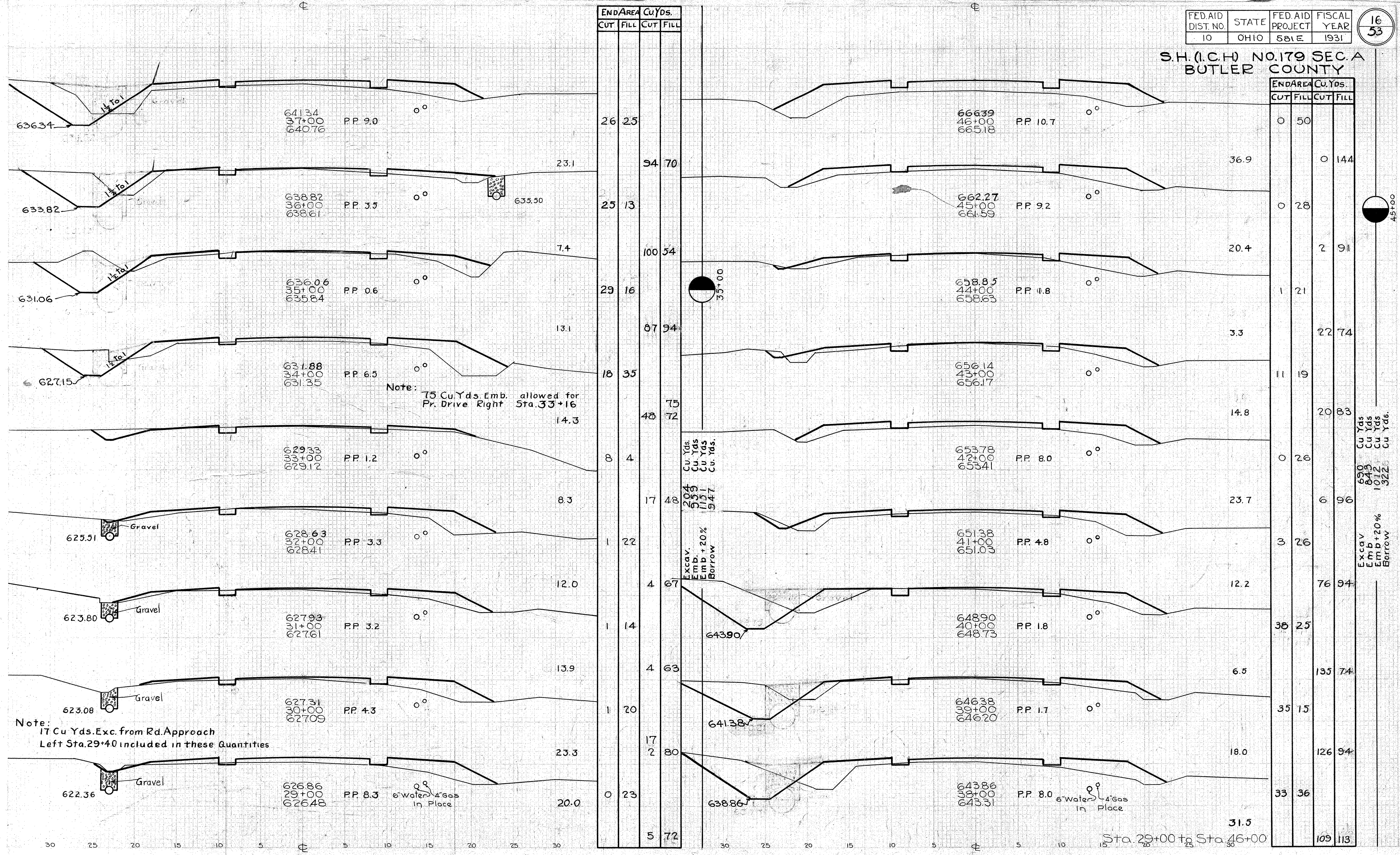


25.00

30 25 20 15 10 5 5 10 15 20 25 30
Elev. 607.2

Sta. 16+00 to Sta. 28+00 20

S.H. (I.C.H.) NO. 179 SEC. A
BUTLER COUNTY



END AREA		Cu Yds.	
CUT	FILL	CUT	FILL
26	25		
25	13		
29	16		
18	35		
8	4		
1	22		
4	67		
1	14		
1	20		
17	2		
0	23		
5	72		

END AREA		Cu Yds.	
CUT	FILL	CUT	FILL
0	50		
0	28		
1	21		
11	19		
0	26		
3	26		
36	25		
35	15		
33	36		
109	113		

Excav. Emb. + 20% Borrow

Excav Emb + 20% Borrow

Note: 75 Cu Yds. Emb. allowed for Pr. Drive Right Sta. 33+16

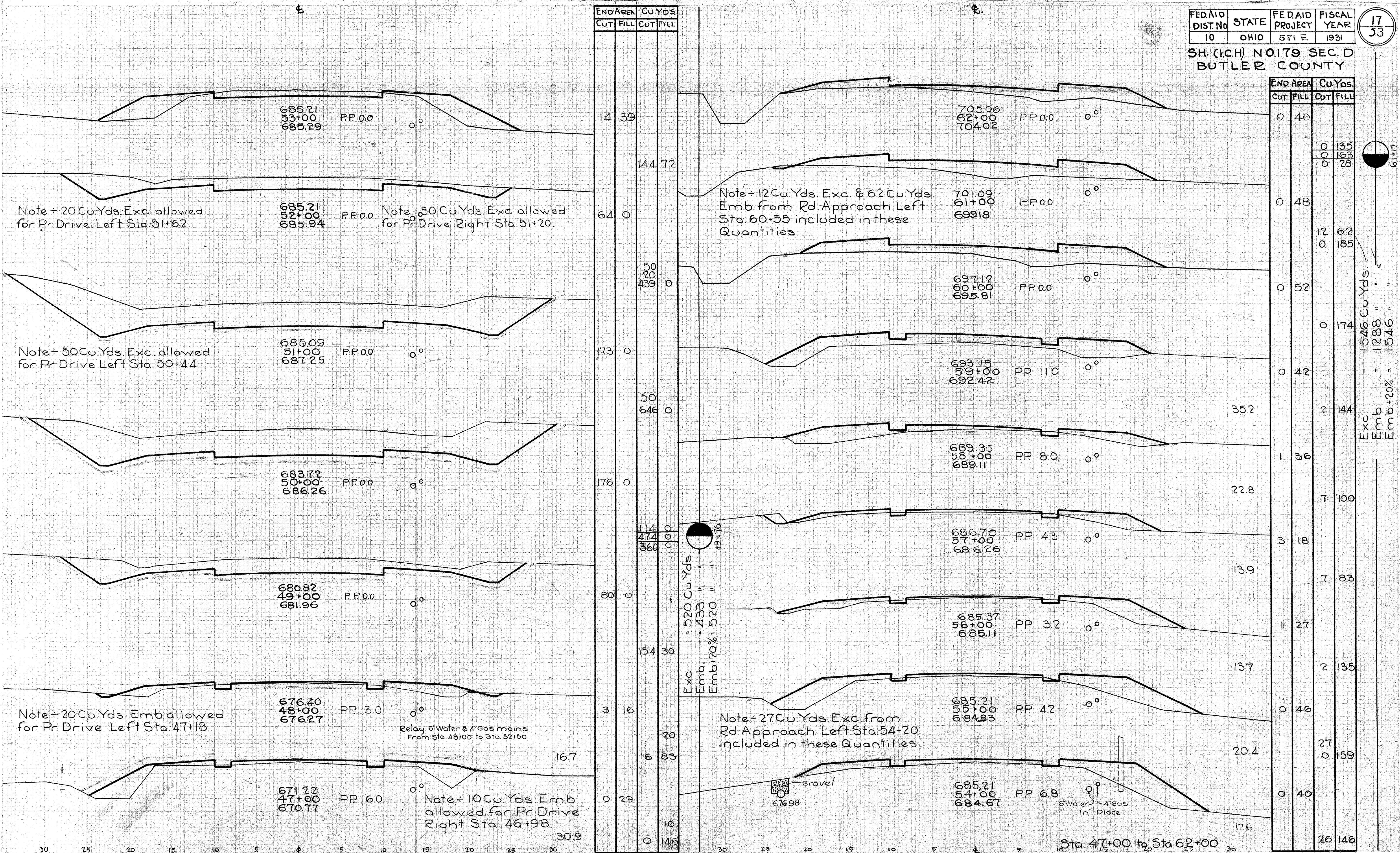
Note: 17 Cu Yds. Exc. from Rd. Approach Left Sta. 29+40 included in these Quantities

Sta. 29+00 to Sta. 46+00

30 25 20 15 10 5 5 10 15 20 25 30

30 25 20 15 10 5 5 10 15 20 25 30

SH. (I.C.H.) NO. 179 SEC. D
BUTLER COUNTY



END AREA		Cu. Yds.	
CUT	FILL	CUT	FILL
0	40		
0	135		
0	163		
0	28		
0	48		
12	62		
0	185		
0	52		
0	174		
0	42		
2	144		
1	36		
7	100		
3	18		
7	83		
1	27		
2	135		
0	46		
27	0		
0	159		
0	40		
26	146		

Exc. = 1546 Cu. Yds.
Emb. = 1288 " "
Emb. + 20% = 1546 "

Exc. = 520 Cu. Yds.
Emb. = 433 " "
Emb. + 20% = 520 " "

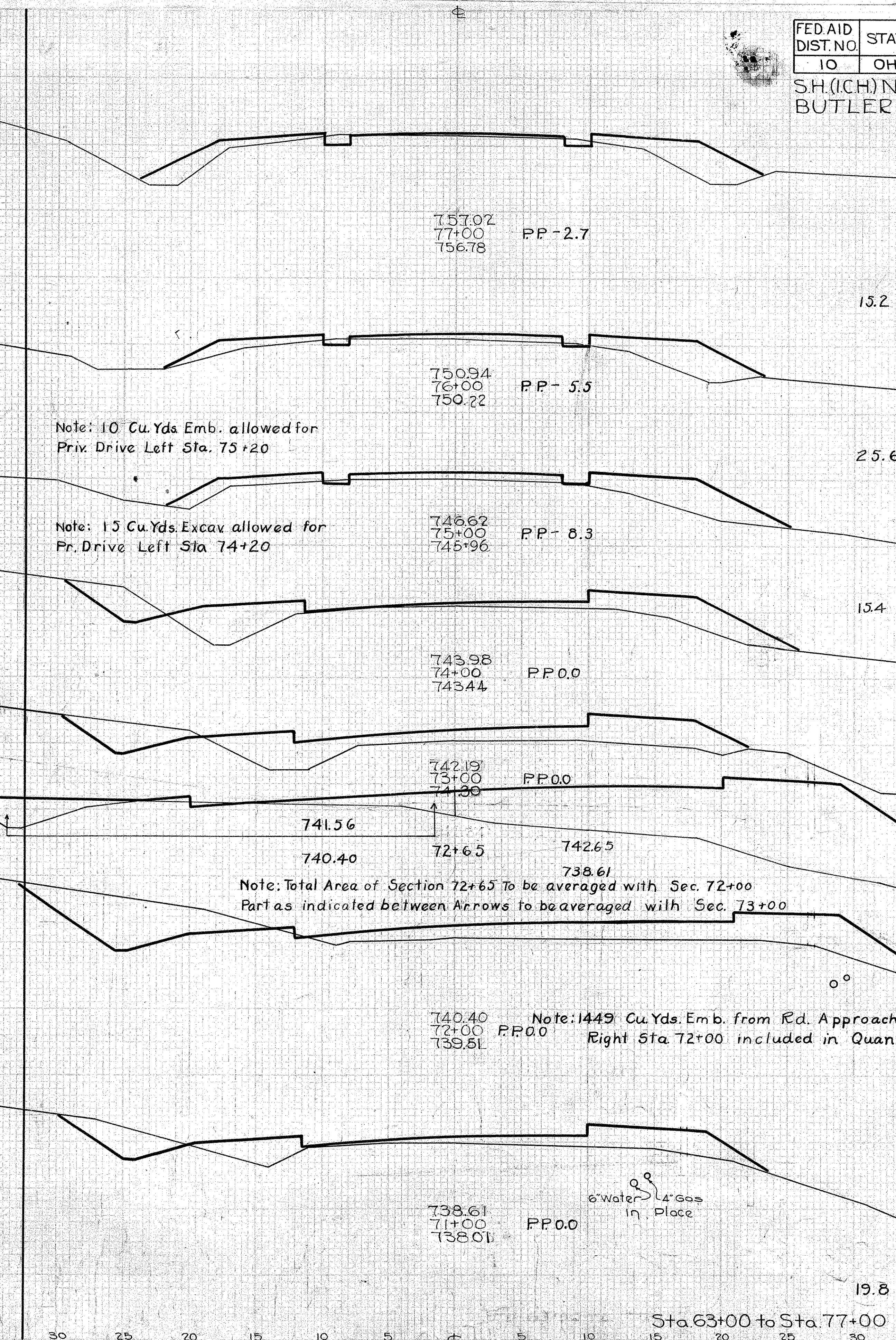
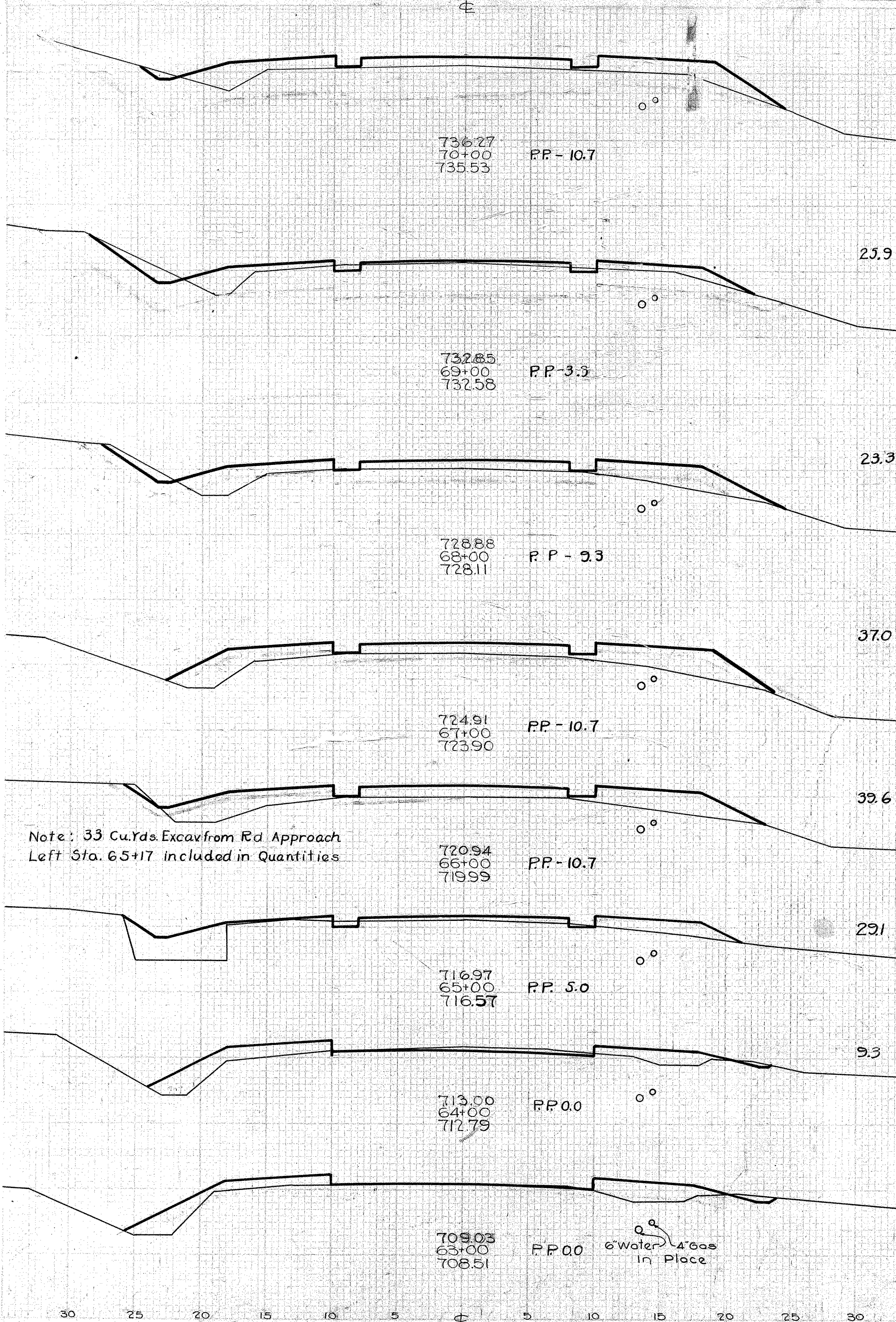
Sta. 47+00 to Sta. 62+00

S.H.(ICH) NO. 179 SEC. D
BUTLER COUNTY

END AREA		Cu Yds.	
CUT	FILL	CUT	FILL
0	28		
23.9	7	82	
4	16		
23.3	13	89	
3	32		
37.0	6	135	
0	41		
39.6	0	144	
29.1	33	2	117
9.3	1	26	
0	25		
0	94		
0	26		
0	122		

END AREA		Cu Yds.	
CUT	FILL	CUT	FILL
2	29		
15.2	4	104	
0	27		
25.6	0	10	109
0	32		
15.4	15	19	156
10	52		
41	202		
12	57		
14	15	48	133
14	174		
58	459		
1449			
39	74		
94	211		
12	40		
19.8			
22	126		

Cu Yds.
424
415
4938
4514
Exc. emb. + 20% Borrow



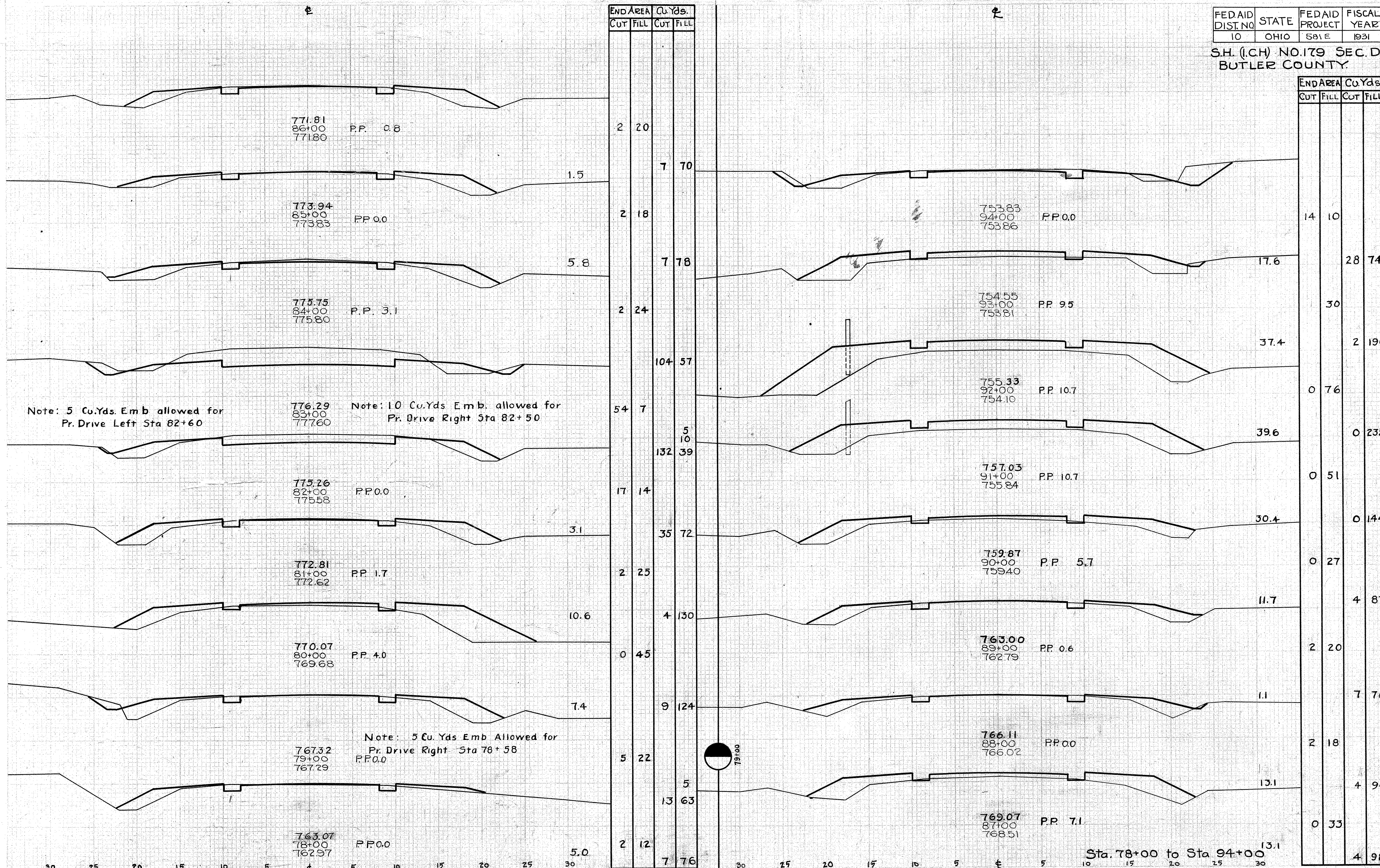
30 25 20 15 10 5 0 5 10 15 20 25 30

30 25 20 15 10 5 0 5 10 15 20 25 30

FEDAID DIST. NO.	STATE	FEDAID PROJECT	FISCAL YEAR
10	OHIO	581 E	1931

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S.H. (I.C.H) NO. 179 SEC. D
BUTLER COUNTY.



END AREA		Cu. Yds.	
CUT	FILL	CUT	FILL
2	20		
		7	70
2	18		
		7	78
2	24		
		104	57
54	7		
		5	10
		132	39
17	14		
		35	72
2	25		
		4	130
0	45		
		9	124
5	22		
		5	
		13	63
2	12		
		7	76

END AREA		Cu. Yds.	
CUT	FILL	CUT	FILL
14	10		
		28	74
		30	
		2	196
0	76		
		0	235
0	51		
		0	144
0	27		
		4	87
2	20		
		7	70
2	18		
		4	94
0	33		
		4	98

93+00
94+00
Excav
Emb + 20%
Borrow
31.9
15.0
18.1
149.2
Cu. Yds
Cu. Yds
Cu. Yds
Cu. Yds

Note: 5 Cu.Yds. Emb allowed for Pr. Drive Left Sta 82+60

Note: 10 Cu.Yds Emb. allowed for Pr. Drive Right Sta 82+50

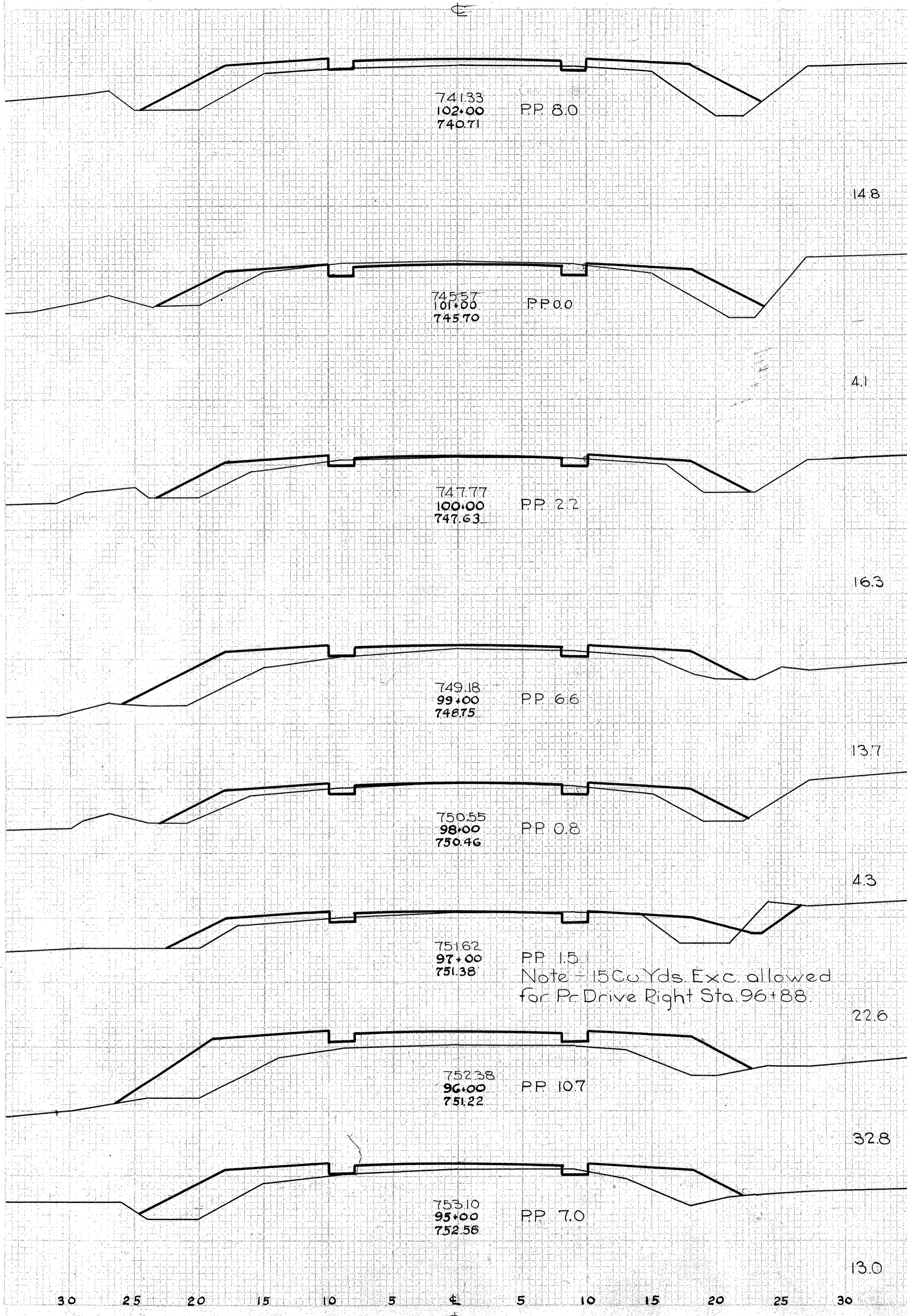
Note: 5 Cu. Yds Emb Allowed for Pr. Drive Right Sta 78+58

Sta. 78+00 to Sta 94+00 13.1

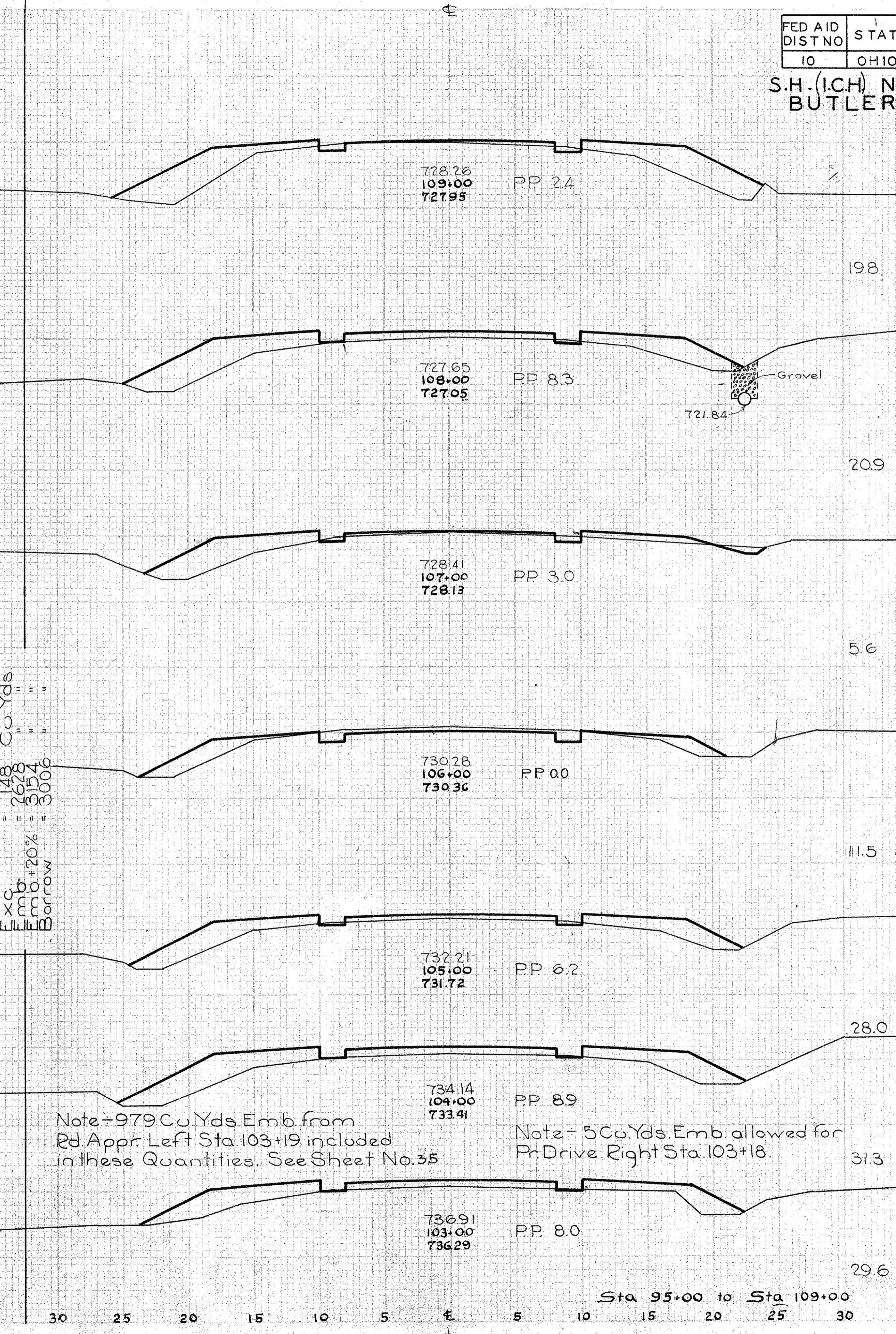
FED AID DIST NO	STATE	FED AID PROJECT	FISCAL YEAR
10	OHIO	581E	1931

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S.H. (I.C.H) NO. 179 SEC. D.
BUTLER COUNTY



END AREA	CU Yds	
	CUT	FILL
0	39	
6	119	
3	25	
7	87	
1	22	
4	109	
1	37	
6	109	
2	22	
15	76	
6	19	
11	152	
0	63	
2	193	
1	41	
28	94	



END AREA	CU Yds	
	CUT	FILL
1	45	
		2 154
0	38	
		6 115
3	24	
		11 74
3	16	
		7 83
1	29	
		2 122
0	37	
		31.3
0	26	
		29.6
0	120	

148 Cu Yds
 emb + 20% borrow
 = 177.6
 177.6 - 148 = 29.6
 29.6 Cu Yds

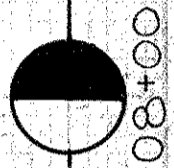
Note = 979 Cu Yds Emb from Rd Appr Left Sta. 103+19 included in these Quantities. See Sheet No. 35

Note = 5 Cu Yds Emb allowed for Pr. Drive Right Sta. 103+18.

Sta 95+00 to Sta 109+00

ORIGINAL SURVEY
 BUTLER COUNTY
 ENGINEER
 1931

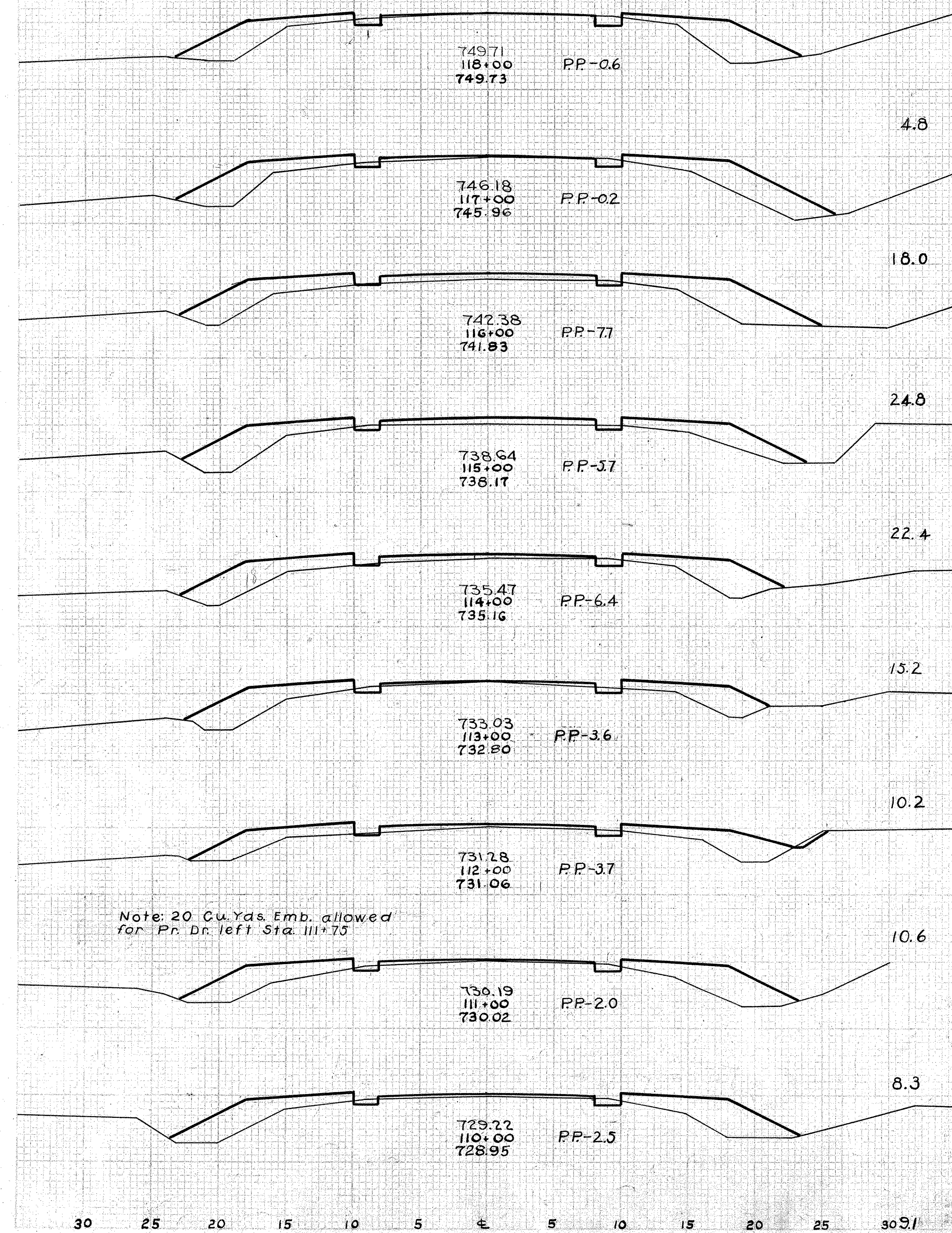
ORIGINAL SURVEY
 BUTLER COUNTY
 ENGINEER
 1931



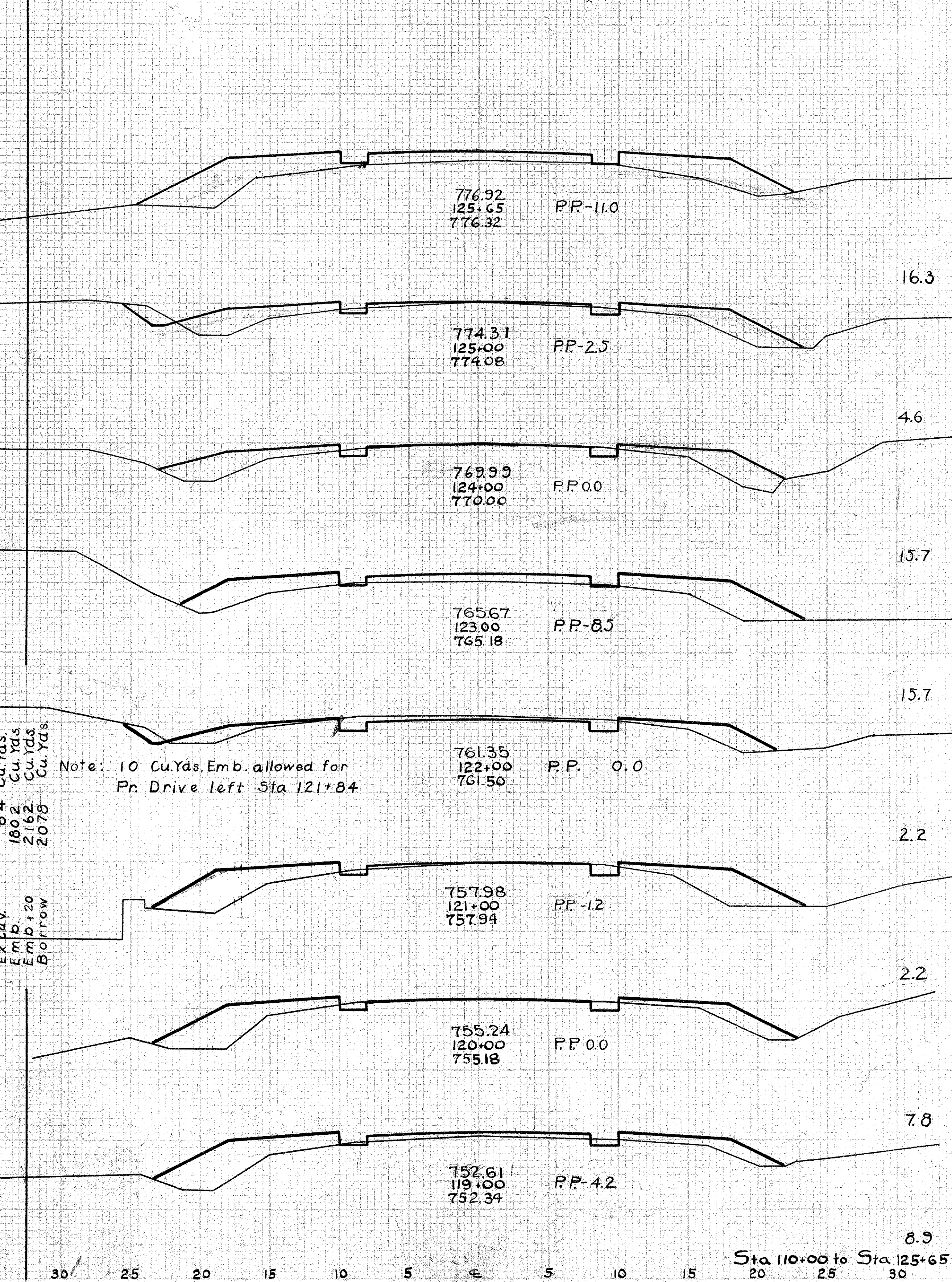
FED. AID DIST NO	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	581 E	1931

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SH. (CH) NO. 179 SEC. D
BUTLER COUNTY



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
2	34		
		7	133
2	38		
		6	141
1	38		
		4	128
1	31		
		4	119
1	33		
		4	113
1	28		
		4	98
1	25		
		4	111
1	35		
		4	130
1	35		
		4	148

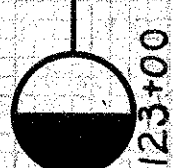


END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	40		
		7	120
4	25		
		11	93
2	25		
		9	102
0	30		
		7	80
4	13		
		13	108
3	33		
		9	111
2	27		
		6	104
1	29		
		6	117

Note: 20 Cu. Yds. Emb. allowed for Pr. Dr. left Sta. 111+75

Note: 10 Cu. Yds. Emb. allowed for Pr. Drive left Sta. 121+84

Sta. 110+00 to Sta. 125+65



ORIGINAL SURVEY MAP

ORIGINAL SURVEY MAP

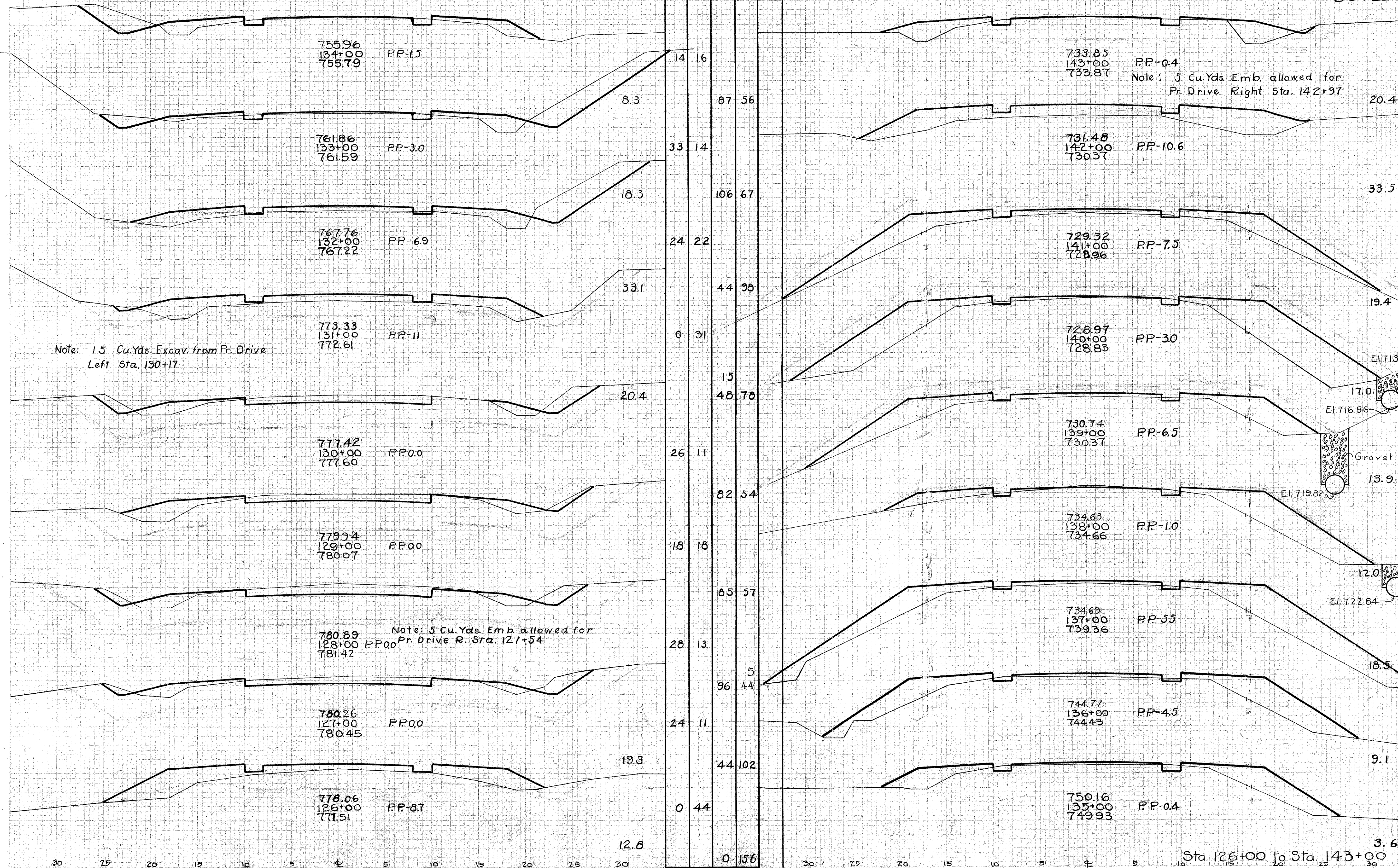
FED.AID DIST. NO.	STATE	FED.AID PROJECT	FISCAL YEAR
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S.H. (C.H.) NO. 179 SEC. D
BUTLER COUNTY

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
14	16		
87	56		
33	14		
106	67		
24	22		
44	98		
0	31		
15	48		
26	11		
82	54		
18	18		
85	57		
28	13		
96	44		
24	11		
44	102		
0	44		
0	156		

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
2	24		5
4	139		
0	51		
0	202		
0	58		
4	311		
6	296		
1	50		
6	194		
2	55		
6	269		
1	90		
6	278		
2	60		
9	185		
3	40		
32	104		



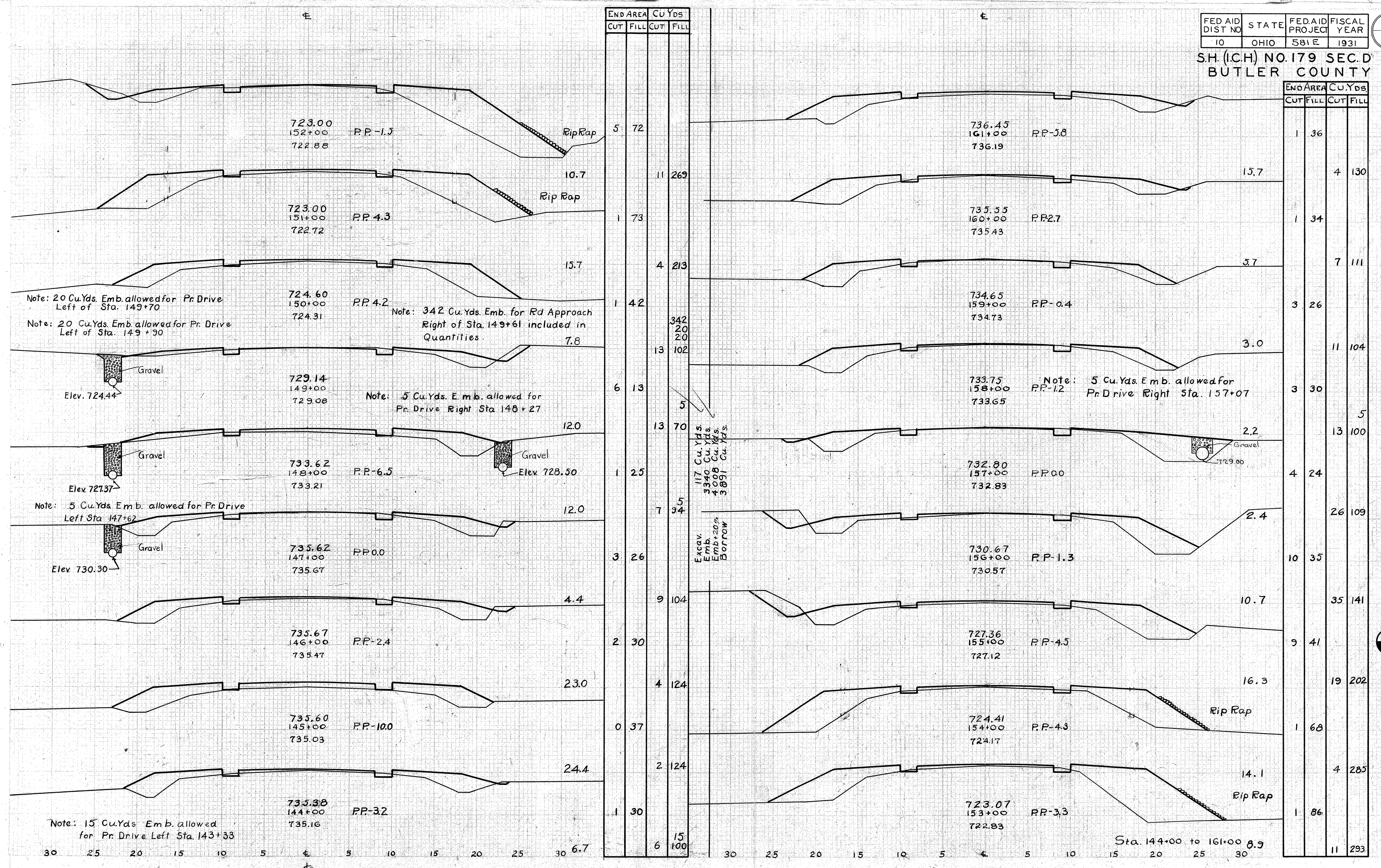
30 25 20 15 10 5 0 5 10 15 20 25 30

Sta. 126+00 to Sta. 143+00

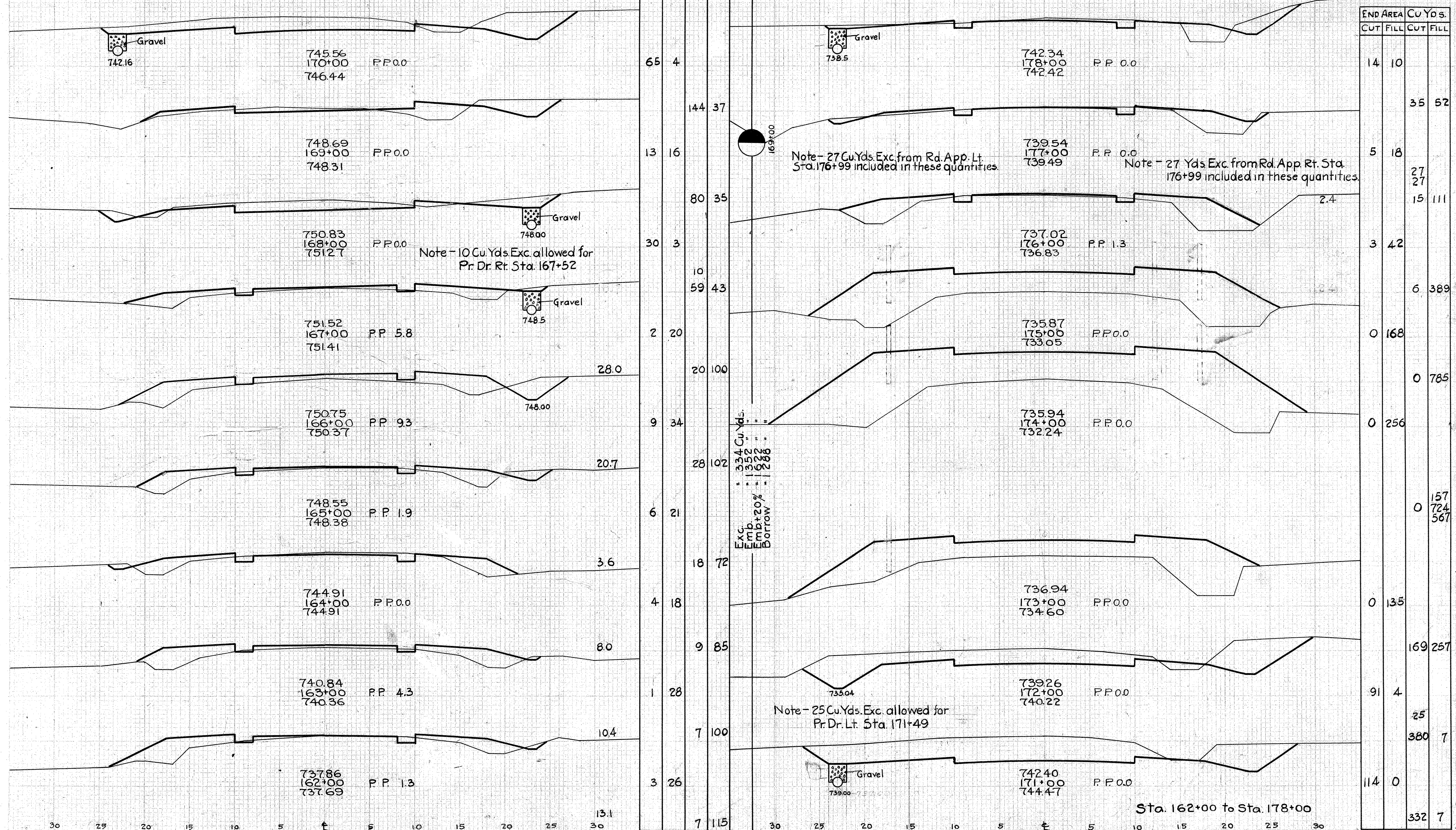
Excav
Emb
Emb+20'
Borrow

693 Cu. Yds.
2062 Cu. Yds.
2474 Cu. Yds.
1718 Cu. Yds.

SH. (I.C.H.) NO. 179 SEC. D
BUTLER COUNTY



S.H. (I.C.H) NO. 179 SEC. D
BUTLER COUNTY



END AREA		Cu. Yds.	
CUT	FILL	CUT	FILL
65	4		
144	37		
13	16		
80	35		
30	3		
10			
59	43		
2	20		
28.0			
20	100		
9	34		
28.7	102		
6	21		
3.6			
18	72		
4	18		
9	85		
8.0			
1	28		
10.4			
7	100		
3	26		
13.1			
7	115		

END AREA		Cu. Yds.	
CUT	FILL	CUT	FILL
14	10		
		35	52
5	18		
		27	27
		15	111
3	42		
		6	389
0	168		
		0	785
0	256		
		0	157
		0	724
			567
0	135		
		169	257
91	4		
		25	
		380	7
114	0		
		332	7

Exc. = 334 Cu. Yds.
Emb. = 1352
Emb + 20% = 1622
Borrow = 288

Note - 27 Cu. Yds. Exc. from Rd. App. Lt. Sta. 176+99 included in these quantities.

Note - 27 Yds. Exc. from Rd. App. Rt. Sta. 176+99 included in these quantities.

Note - 10 Cu. Yds. Exc. allowed for Pr. Dr. Rt. Sta. 167+52

Note - 25 Cu. Yds. Exc. allowed for Pr. Dr. Lt. Sta. 171+49

Sta. 162+00 to Sta. 178+00

Exc. = 1050 Cu. Yds.
Emb. = 875
Emb + 20% = 1050

30 25 20 15 10 5 5 10 15 20 25 30

30 25 20 15 10 5 5 10 15 20 25 30

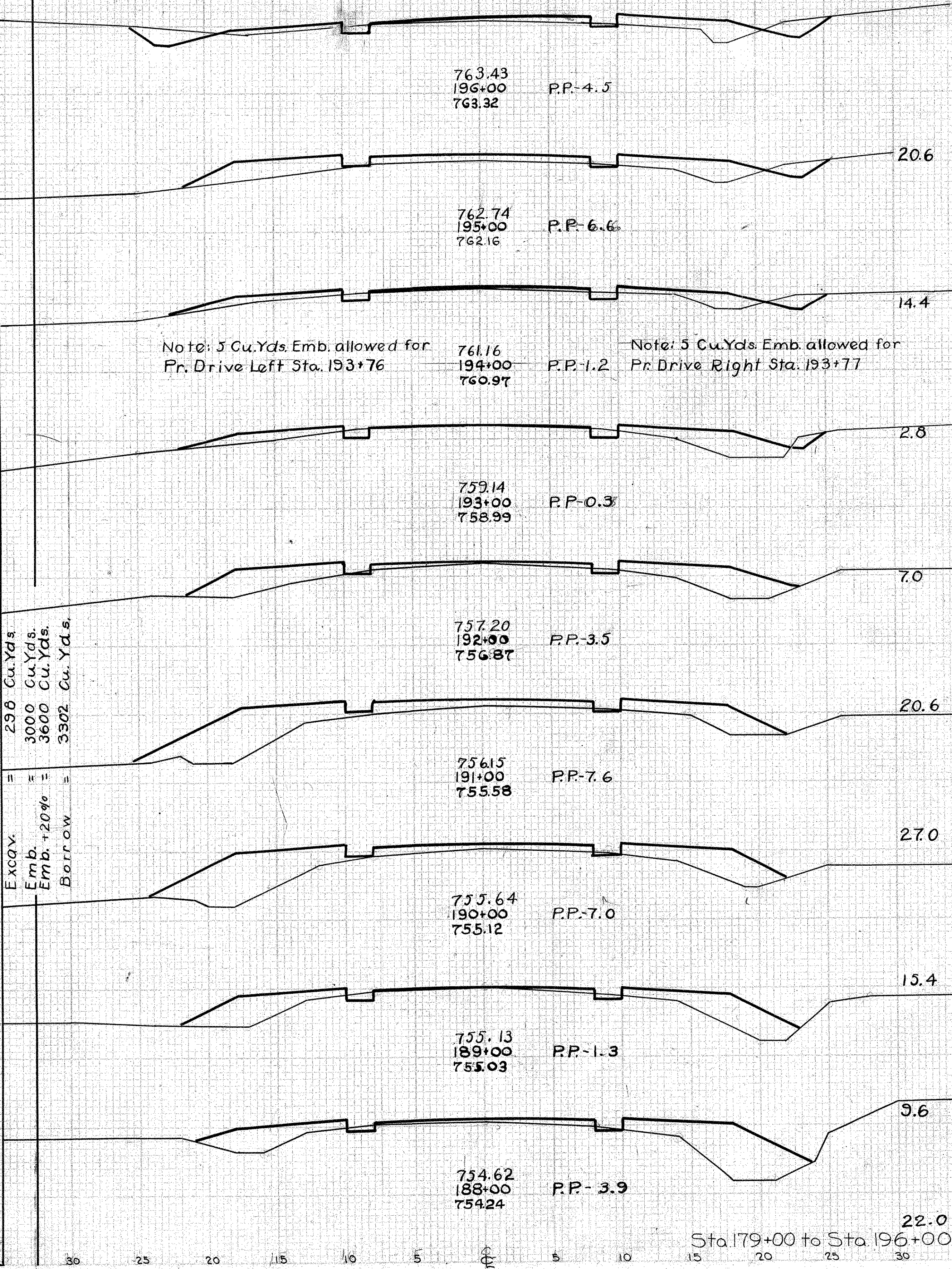
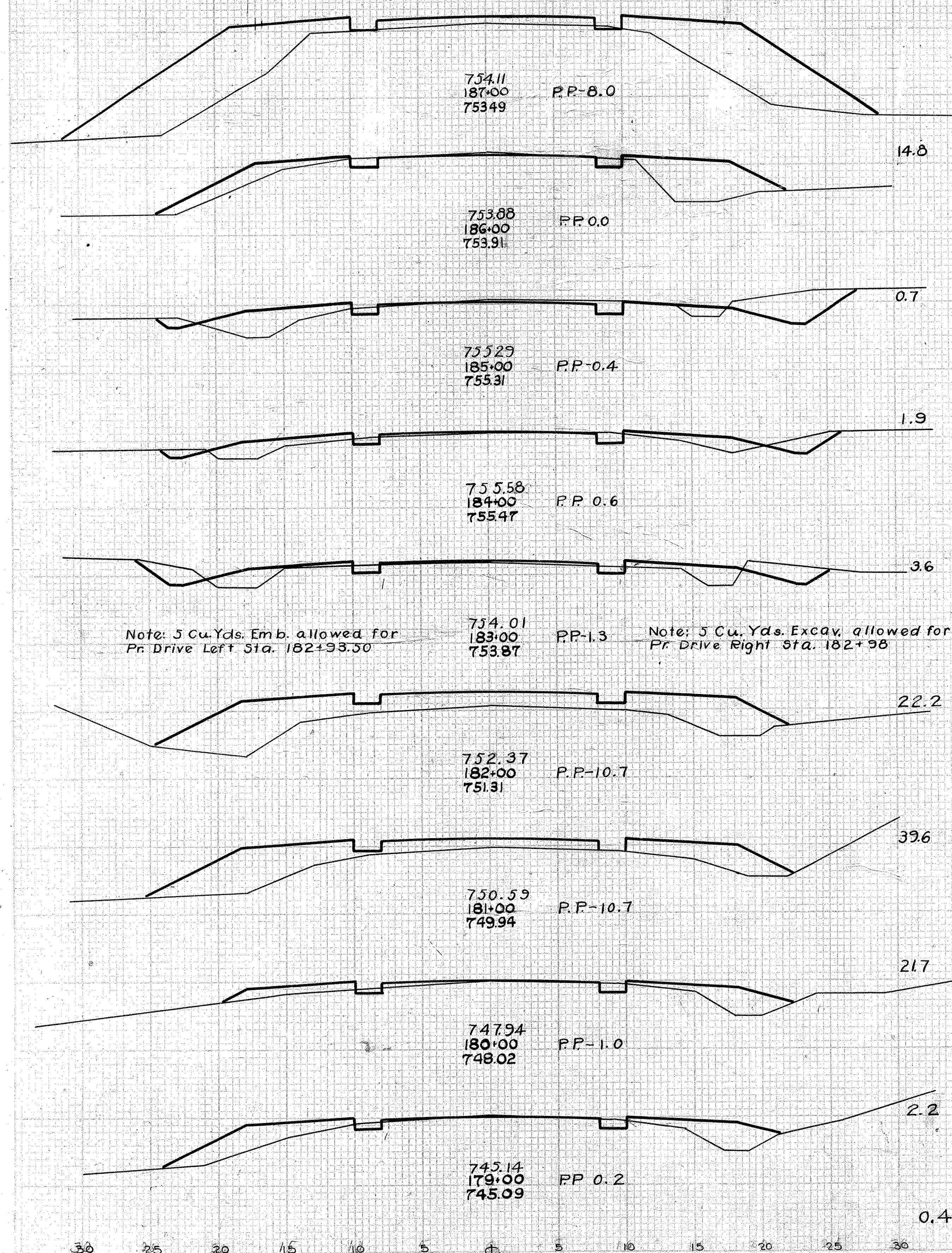
FED AID DIST NO	STATE	FED AID PROJECT	FISCAL YEAR
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S.H.(I.C.H.) NO. 179 SEC. D
BUTLER COUNTY

END AREA		CU Yds	
CUT	FILL	CUT	FILL
0	116		
4	280		
2	35		
32	93		
15	15		
41	54		
7	14		
35	48		
12	12		
5	5		
22	126		
0	56		
0	193		
0	48		
4	122		
2	18		
7	85		
2	28		
30	70		

END AREA		CU Yds	
CUT	FILL	CUT	FILL
9	12		
20	67		
2	24		
11	67		
4	12		
		5	5
13	60		
3	20		
7	94		
1	31		
2	141		
0	45		
0	170		
0	47		
4	150		
2	34		
6	139		
1	41		
2	291		



Excav. 296 Cu.Yds.
Emb. 3000 Cu.Yds.
Emb. +20% 3600 Cu.Yds.
Borrow 3302 Cu.Yds.

Note: 5 Cu.Yds. Emb. allowed for Pr. Drive Left Sta. 193+76

Note: 5 Cu.Yds. Emb. allowed for Pr. Drive Right Sta. 193+77

Note: 5 Cu.Yds. Emb. allowed for Pr. Drive Left Sta. 182+93.50

Note: 5 Cu.Yds. Excav. allowed for Pr. Drive Right Sta. 182+98

Sta. 179+00 to Sta. 196+00

165700

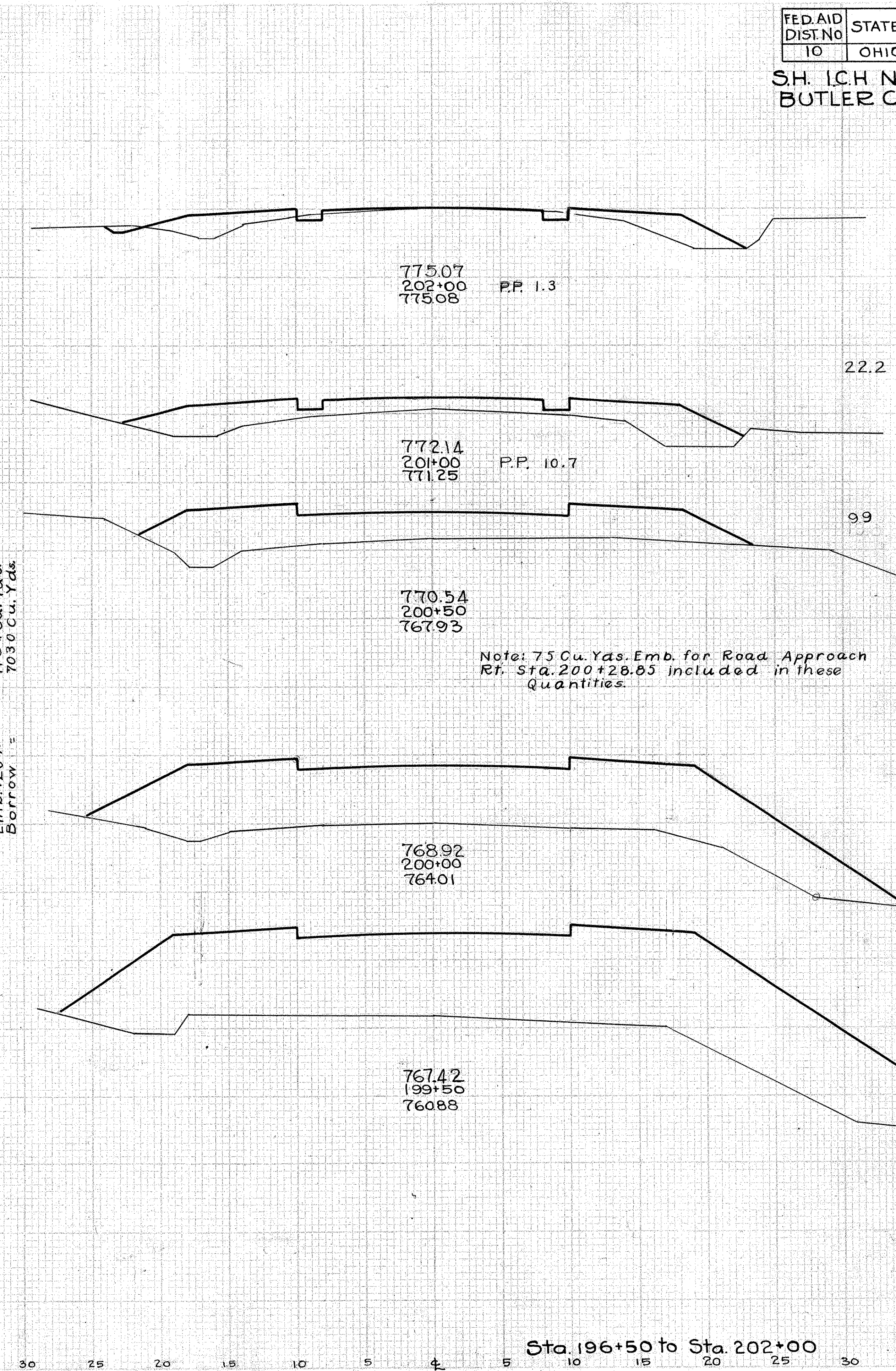
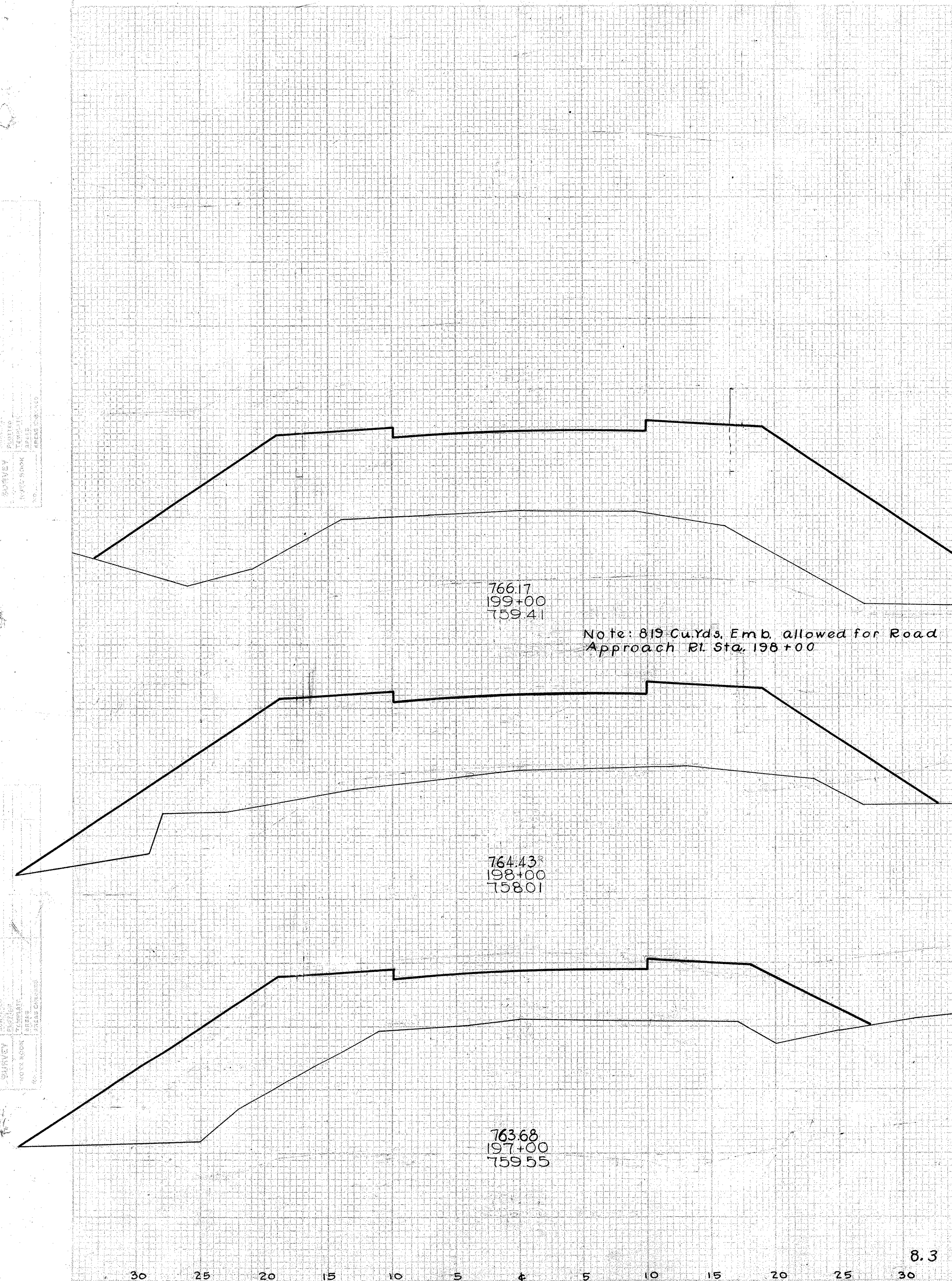
FED. AID DIST. NO.	STATE	FED. AID PROJECT YEAR	FISCAL YEAR
10	OHIO	581 E	1931

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SH. ICH NO 179 SEC. D
BUTLER COUNTY

END AREA		Cu. Yds.	
CUT	FILL	CUT	FILL
0	481		
0	1606	819	
0	386		
0	1311		
0	322		
8.3		17	619

END AREA		Cu. Yds.	
CUT	FILL	CUT	FILL
2	25		
		4	130
0	45		
		0	136
0	102		
		0	323
0	247		
		0	589
0	389		
0	806		



74 Cu. Yds.
5920 Cu. Yds.
7104 Cu. Yds.
7030 Cu. Yds.

Excav. =
Emb. =
Emb. + 20% =
Borrow =

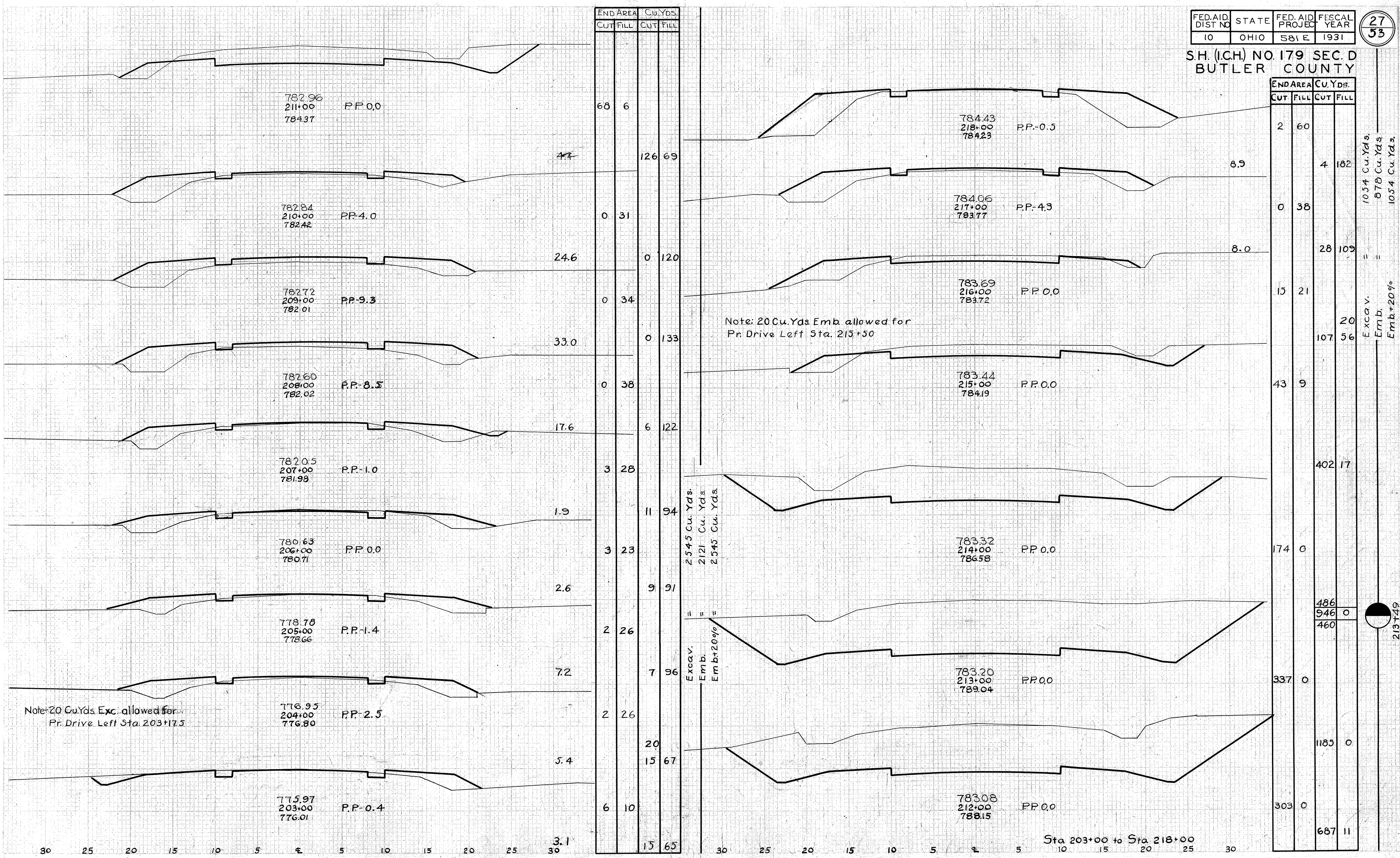
Sta. 196+50 to Sta. 202+00

199+50

FED. AID DIST NO	STATE	FED. AID PROJEC	FISCAL YEAR
10	OHIO	581 E	1931

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SH. (I.C.H.) NO. 179 SEC. D
BUTLER COUNTY



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
68	6		
126	69		
0	31		
0	120		
0	34		
0	133		
0	38		
6	122		
3	28		
11	94		
3	23		
9	91		
2	26		
7	96		
2	26		
20	67		
6	10		
15	65		

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
2	60		
4	182		
0	38		
28	109		
15	21		
107	56		
43	9		
402	17		
174	0		
486	0		
946	0		
460	0		
337	0		
1183	0		
303	0		
687	11		

Excav. 2545 Cu. Yds.
Emb. 2121 Cu. Yds.
Emb.+20% 2545 Cu. Yds.

Excav. 1054 Cu. Yds.
Emb. 878 Cu. Yds.
Emb.+20% 1054 Cu. Yds.

Excav. 2545 Cu. Yds.
Emb. 2121 Cu. Yds.
Emb.+20% 2545 Cu. Yds.

213+49

Note: 20 Cu. Yds. Exc. allowed for Pr. Drive Left Sta. 203+17.5

Note: 20 Cu. Yds. Emb. allowed for Pr. Drive Left Sta. 215+50

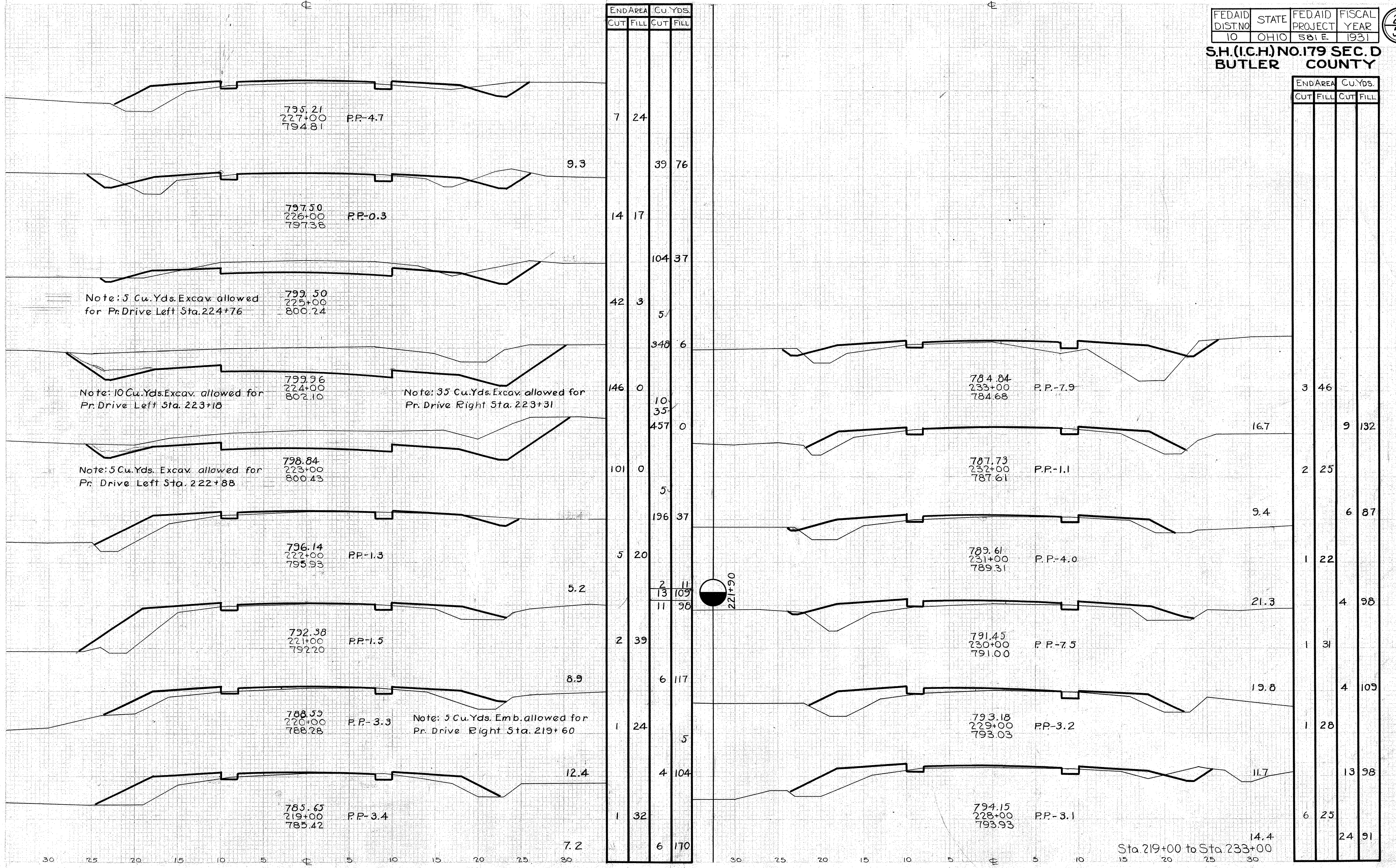
Sta 203+00 to Sta 218+00

30 25 20 15 10 5 0 5 10 15 20 25 30 30 25 20 15 10 5 0 5 10 15 20 25 30

FEDAID DISTNO	STATE	FEDAID PROJECT	FISCAL YEAR
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S.H.(I.C.H.) NO.179 SEC. D
BUTLER COUNTY



ORIGINAL PLAN
 SURVEYED BY
 DATE
 CHECKED BY
 DATE
 APPROVED BY
 DATE

Sta. 219+00 to Sta. 233+00

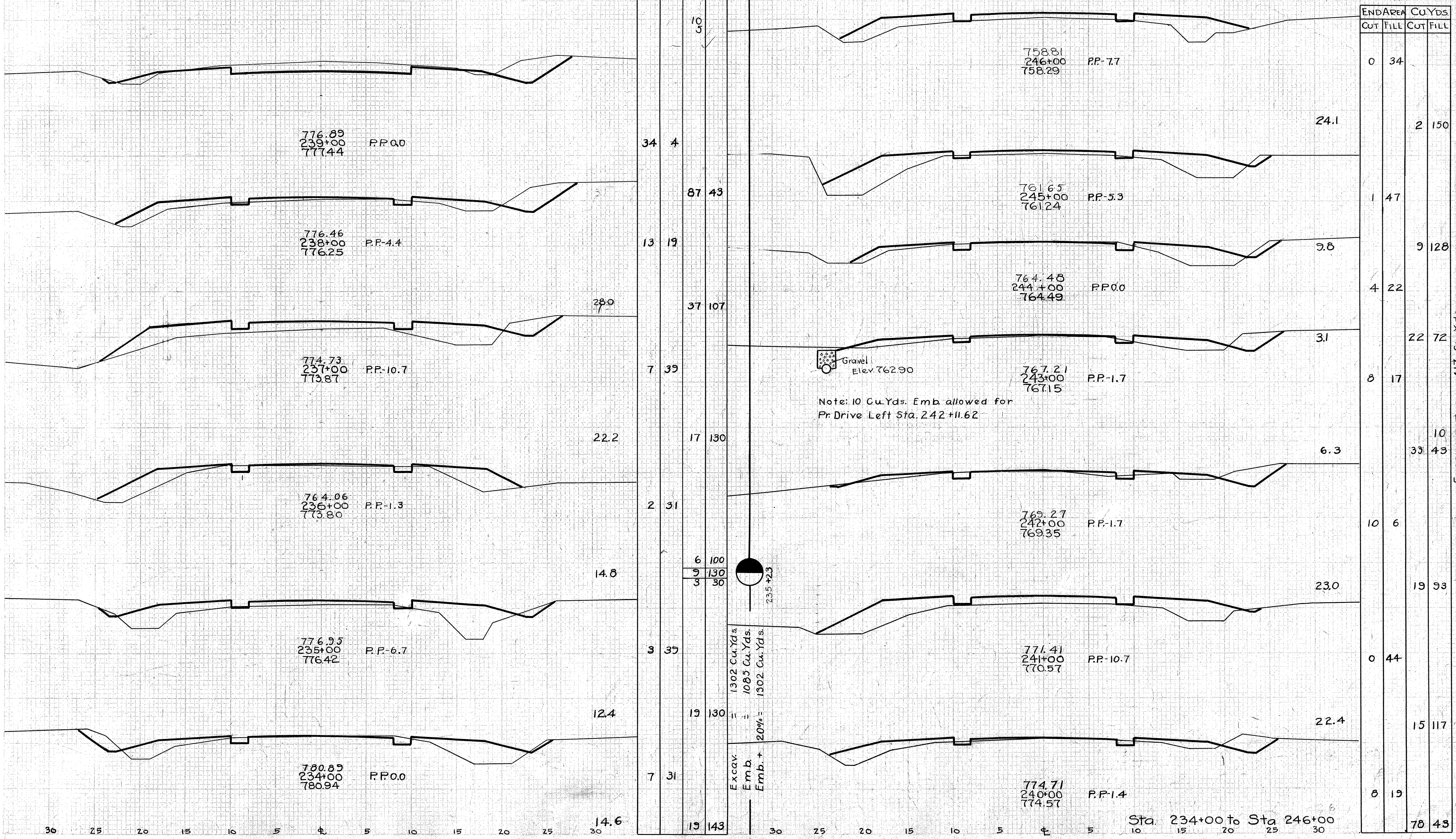
FEDAID DIST. NO	STATE	FEDAID PROJECT	FISCAL YEAR
10	OHIO	581 E	1931

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S.H. (I.C.H.) NO. 179 SEC. D
BUTLER COUNTY

Note: 5 Cu. Yds. Excav. allowed for
Pr. Drive Left Sta. 239+07

Note: 10 Cu. Yds. Exc. allowed for
Pr. Drive Right Sta. 239+10



END AREA		Cu. Yds.	
CUT	FILL	CUT	FILL
		10	5
34	4		
87	43		
13	19		
37	107		
7	39		
17	130		
2	31		
6	100		
9	130		
3	30		
3	39		
19	130		
7	31		
19	143		

END AREA		Cu. Yds.	
CUT	FILL	CUT	FILL
0	34		
		24.1	
1	47		2 150
		9.8	
4	22		9 128
		3.1	
8	17		22 72
		6.3	
10	6		10
10	6		33 43
		23.0	
		22.4	
8	19		15 117
		78.4	
		43	

Excav. = 417 Cu. Yds.
Emb. = 1380 Cu. Yds.
Emb. + 20% = 1656 Cu. Yds.
Borrow = 1239 Cu. Yds.

Excav. = 1302 Cu. Yds.
Emb. = 1085 Cu. Yds.
Emb. + 20% = 1302 Cu. Yds.

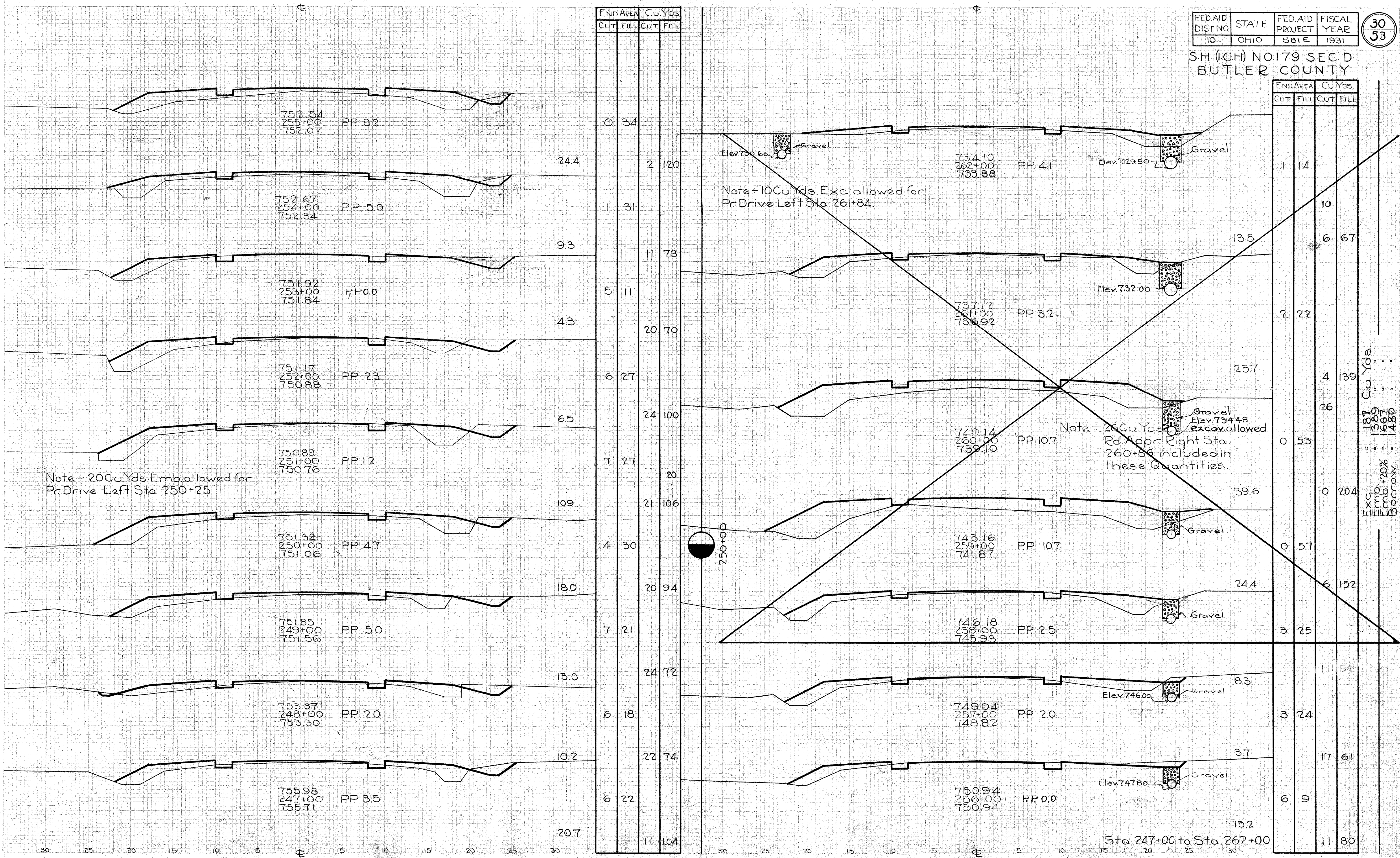
Sta. 234+00 to Sta. 246+00

ORIGINAL
SCALE
DATE
BY
CHECKED
DATE
BY

FED.AID DIST.NO.	STATE	FED.AID PROJECT	FISCAL YEAR
10	OHIO	581E	1931

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S.H. (ICH) NO. 179 SEC. D
BUTLER COUNTY



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	34		
2	120		
1	31		
11	78		
5	11		
20	70		
6	27		
24	100		
7	27		
20			
21	106		
4	30		
20	94		
7	21		
24	72		
6	18		
22	74		
6	22		
11	104		

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
1	14		
			10
		6	67
2	22		
			257
			26
0	53		
			39.6
0	57		
		6	152
3	25		
			11 91
3	24		
			37
6	9		
			15.2
		11	80

Exc. = 187 Cu. Yds.
Emb. + 20% = 1389
Borrow = 1667

Note - 20 Cu. Yds. Emb. allowed for Pr. Drive Left Sta. 250+25.

Note - 10 Cu. Yds. Exc. allowed for Pr. Drive Left Sta. 261+84.

Note - 26 Cu. Yds. Exc. allowed Rd. Appr. Right Sta. 260+86 included in these Quantities.

Sta. 247+00 to Sta. 262+00

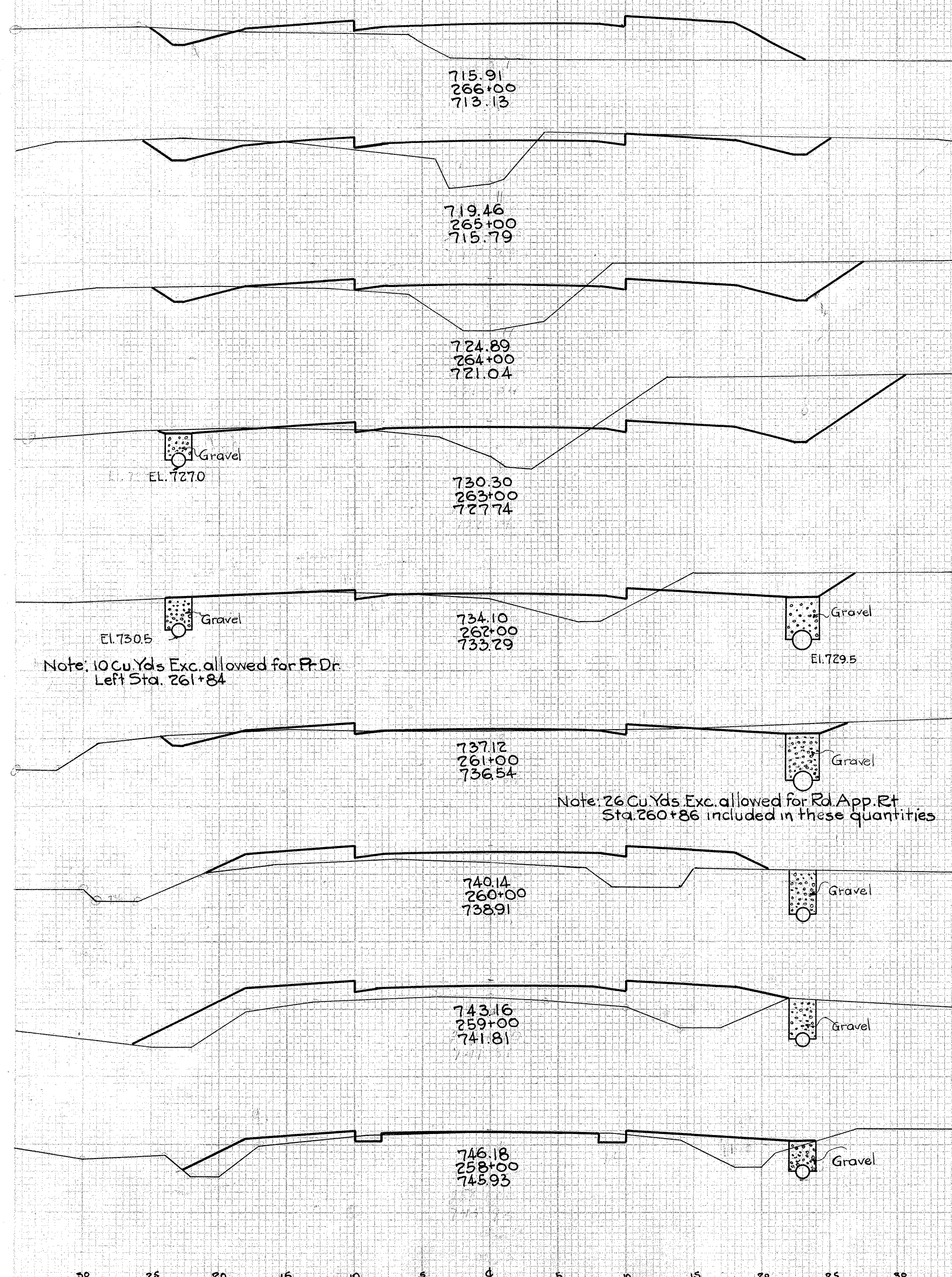
FED.AID DIST.NO.	STATE	FED.AID PROJECT	FISCAL YEAR
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SH.(I.C.H.) NO. 179 SEC. D.
BUTLER COUNTY

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
4	72		
	41	185	
18	28		
	98	117	
35	35		
	193	109	
69	24		
	163	74	
19	16		
	10	50	37
8	4		
	26	15	91
0	45		
	0	222	
0	75		
	4	176	
2	20		
	9	82	

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
20	40		
		5	257
7	99		
		19	332
3	80		
		9	250
2	55		
		28	126
13	13		
		189	39
89	8		
		206	70
22	30		
		48	196
4	76		
		11	181
15	274		
4	93		



Exc. Emb. + 20% Borrow
719 Cu. Yds.
184
2209
1490

Cu. Yds.
1590
1590
Exc. Emb. + 20%

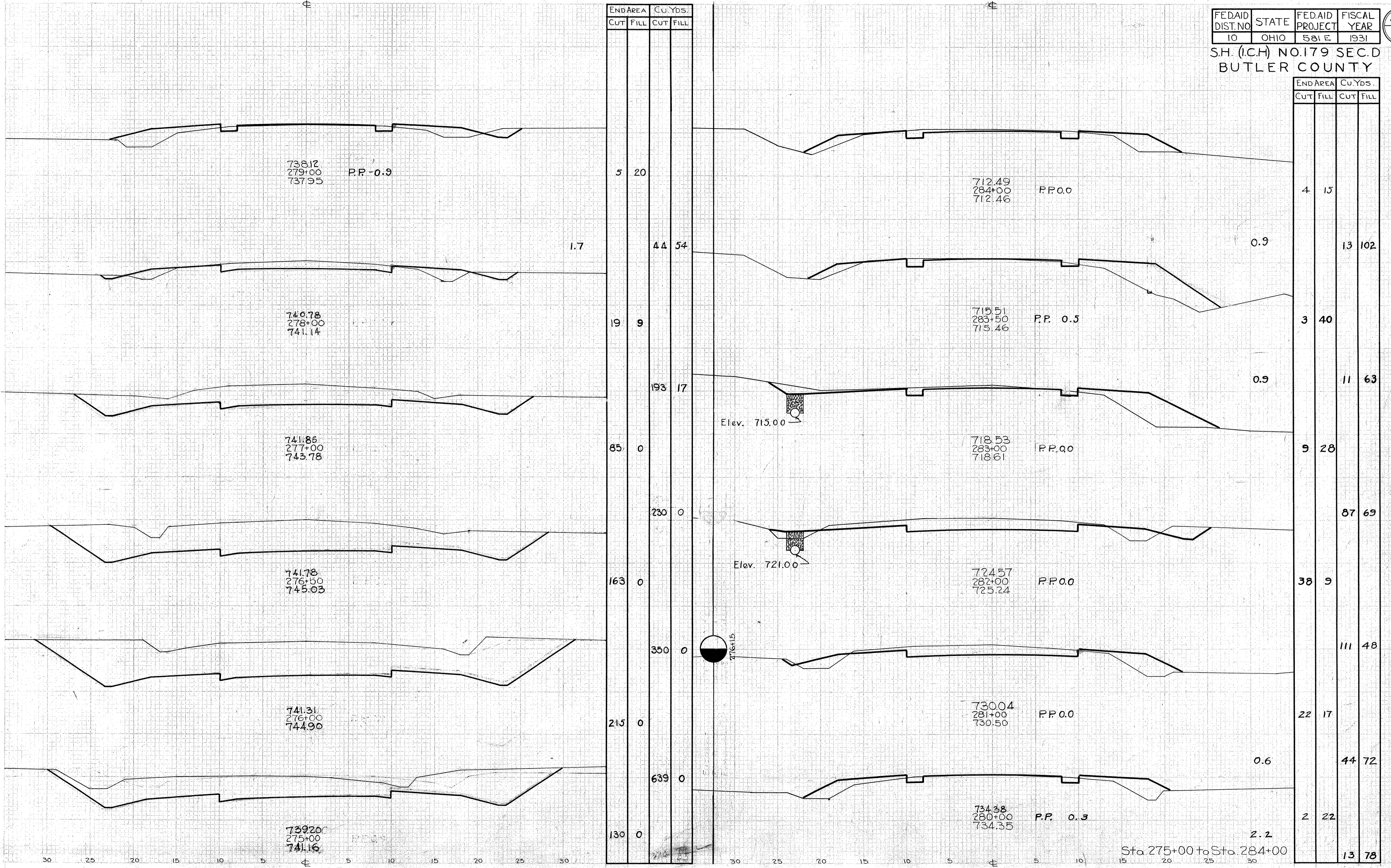
Sta 258+00 to Sta. 274+00

266+34

FED.AID DIST.NO.	STATE	FED.AID PROJECT	FISCAL YEAR
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S.H. (I.C.H) NO.179 SEC.D
BUTLER COUNTY



END AREA		Cu. Yds.	
CUT	FILL	CUT	FILL
5	20		
44	54		
19	9		
193	17		
85	0		
730	0		
163	0		
350	0		
215	0		
639	0		
130	0		

END AREA		Cu. Yds.	
CUT	FILL	CUT	FILL
4	15		
13	102		
3	40		
11	63		
9	28		
87	69		
38	9		
111	48		
22	17		
44	72		
2	22		
13	78		

Sta. 275+00 to Sta. 284+00

738.12
279+00
737.95
P.P. -0.9

712.49
284+00
712.46
P.P. 0.0

740.78
278+00
741.14

715.51
283+50
715.46
P.P. 0.5

741.85
277+00
743.78

Elev. 715.00

718.53
283+00
718.61
P.P. 0.0

741.78
276+50
745.03

Elev. 721.00

724.57
282+00
725.24
P.P. 0.0

741.31
276+00
744.90

730.04
281+00
730.50
P.P. 0.0

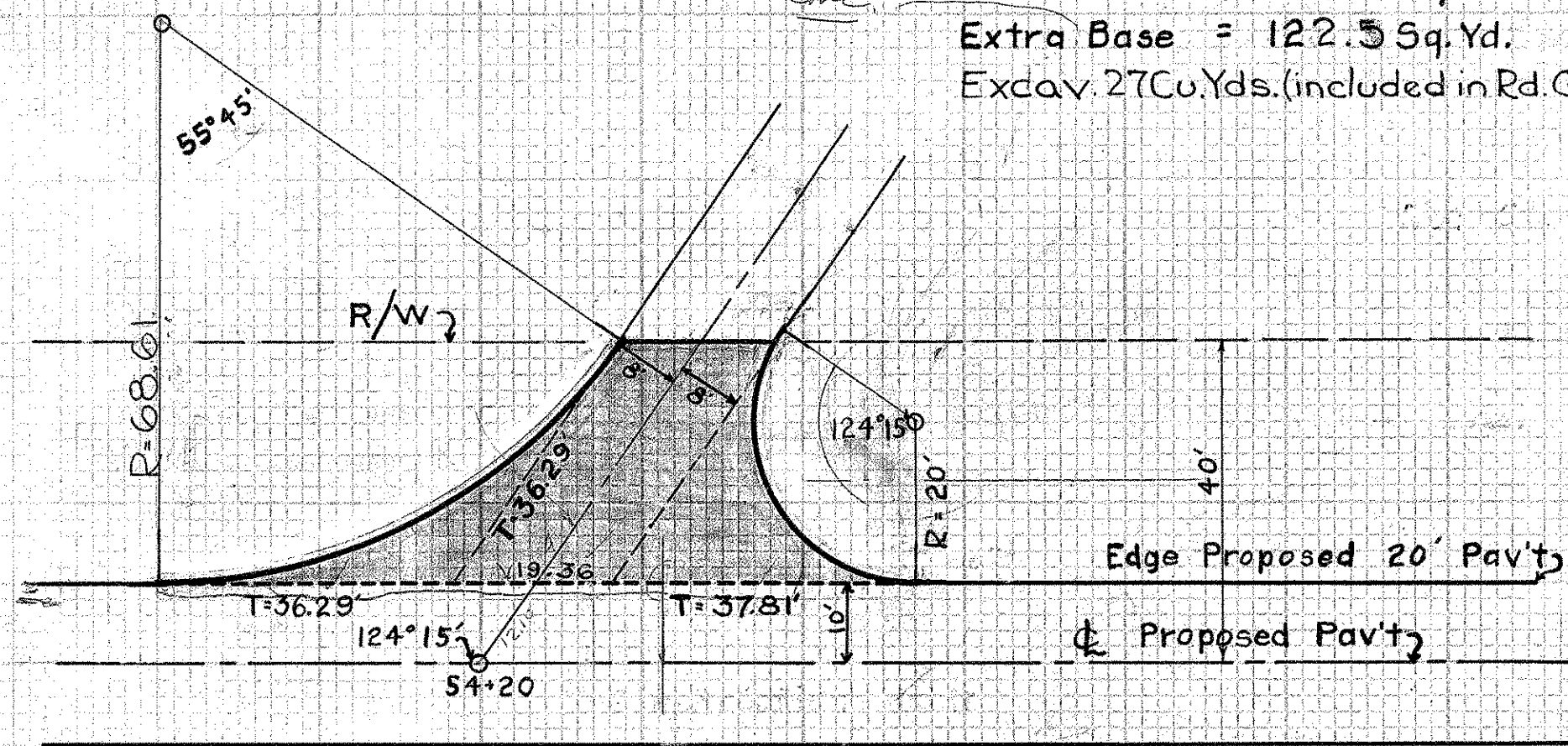
739.20
275+00
741.16

734.38
280+00
734.35
P.P. 0.3

2.2

**ROAD APPROACH
FAIRHAM ROAD
STA. 54+20 LEFT**

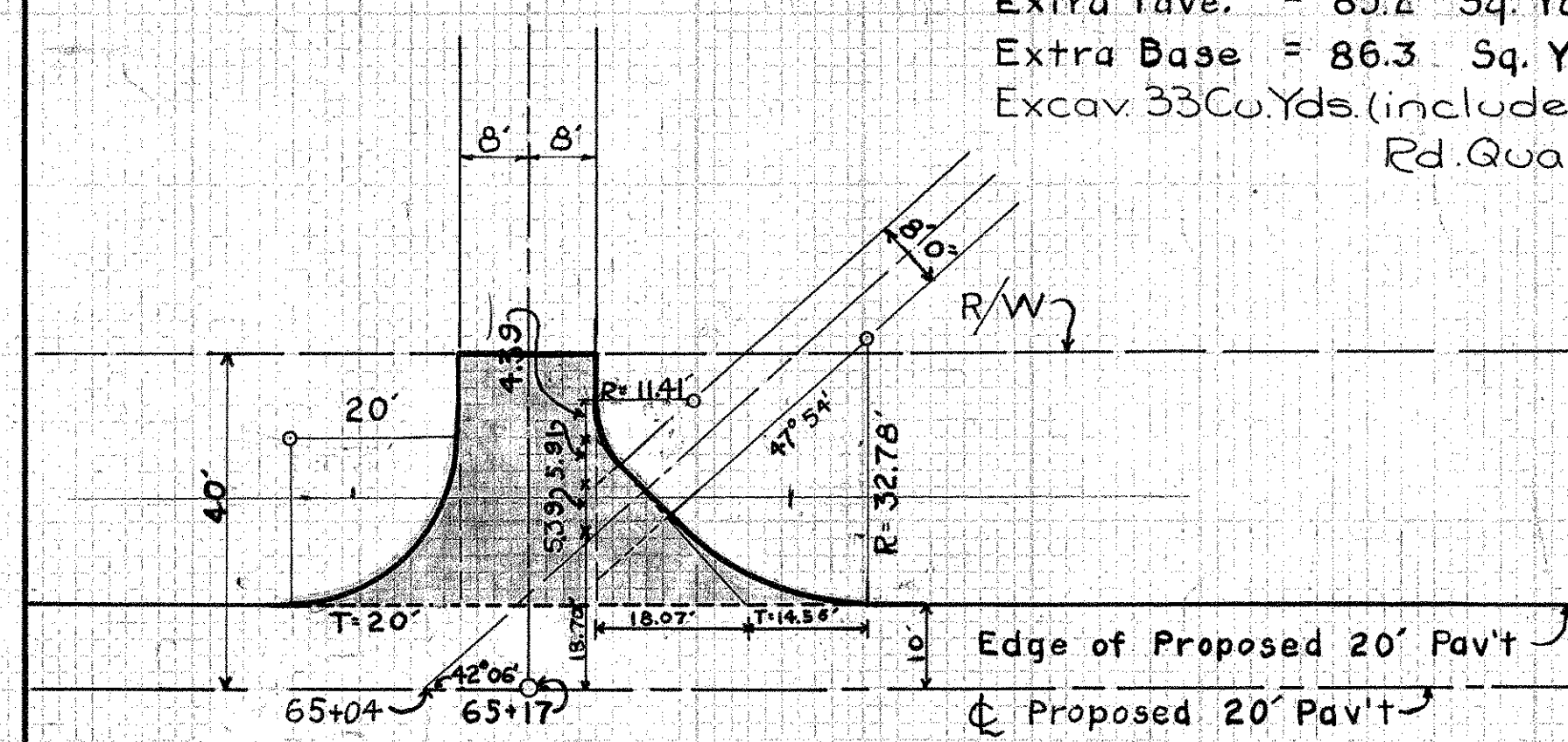
Estimated Quantities
 Extra Curb = 34.5 Lin. Ft.
 Extra Pave. = 119.6 Sq. Yd.
 Extra Base = 122.5 Sq. Yd.
 Excav. 27 Cu. Yds. (included in Rd. Quan.)



Note - Old Pavement to be removed.

**ROAD APPROACH
COUNTY ROAD
STA. 65+17 LEFT**

Estimated Quantities
 Extra Curb = 36.7 Lin. Ft.
 Extra Pave. = 83.2 Sq. Yds.
 Extra Base = 86.3 Sq. Yds.
 Excav. 33 Cu. Yds. (included in Rd. Quan.)

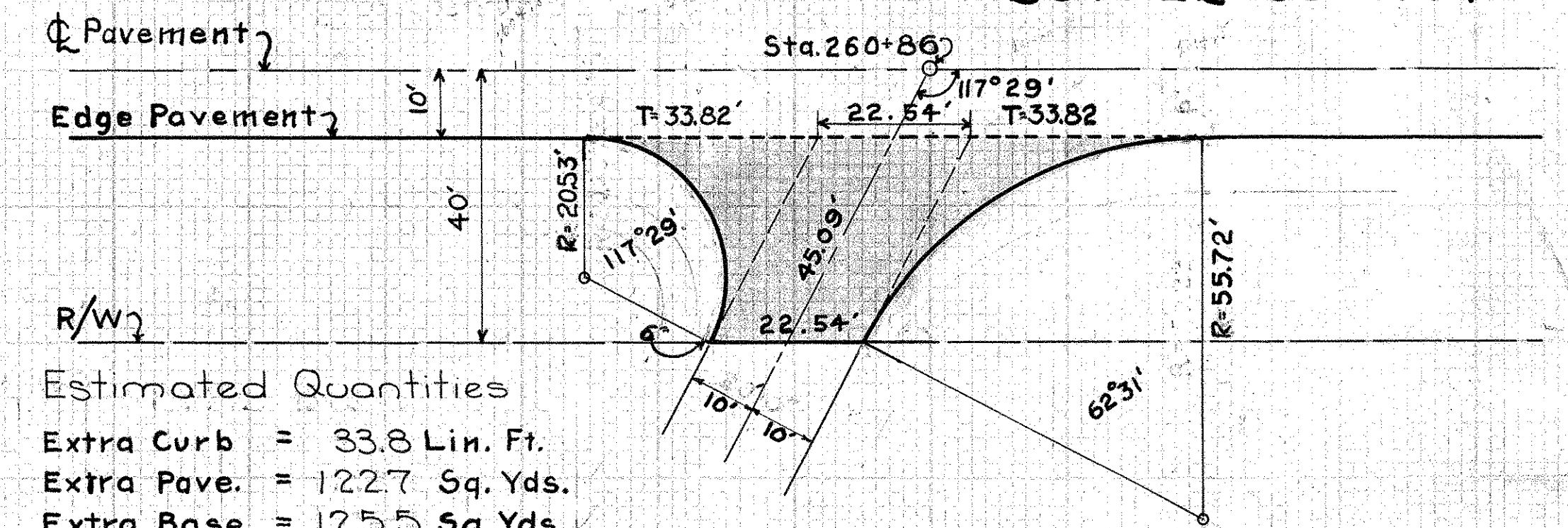


**ROAD APPROACH
COUNTY ROAD
STA. 260+80 RIGHT**

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34
53

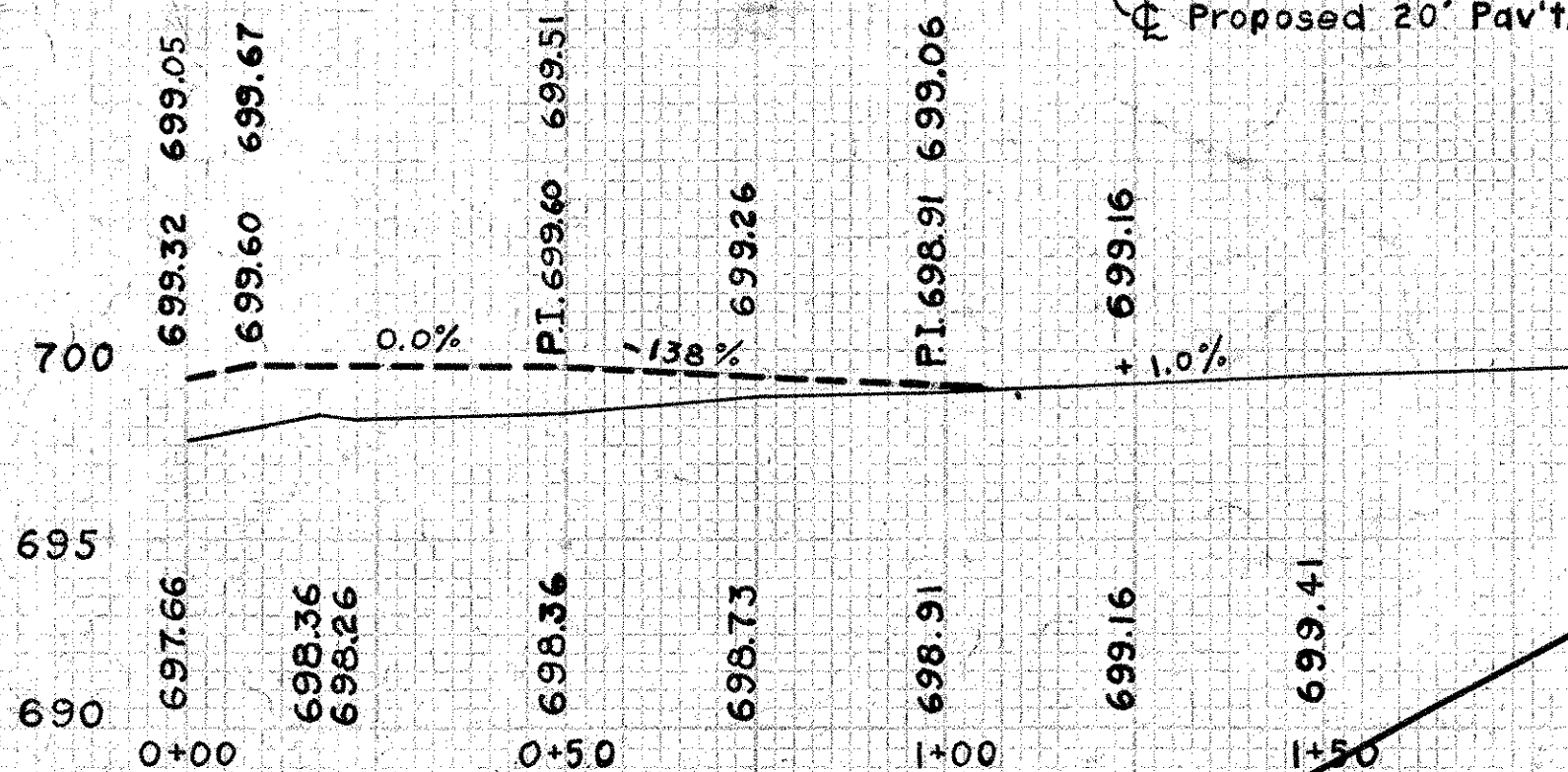
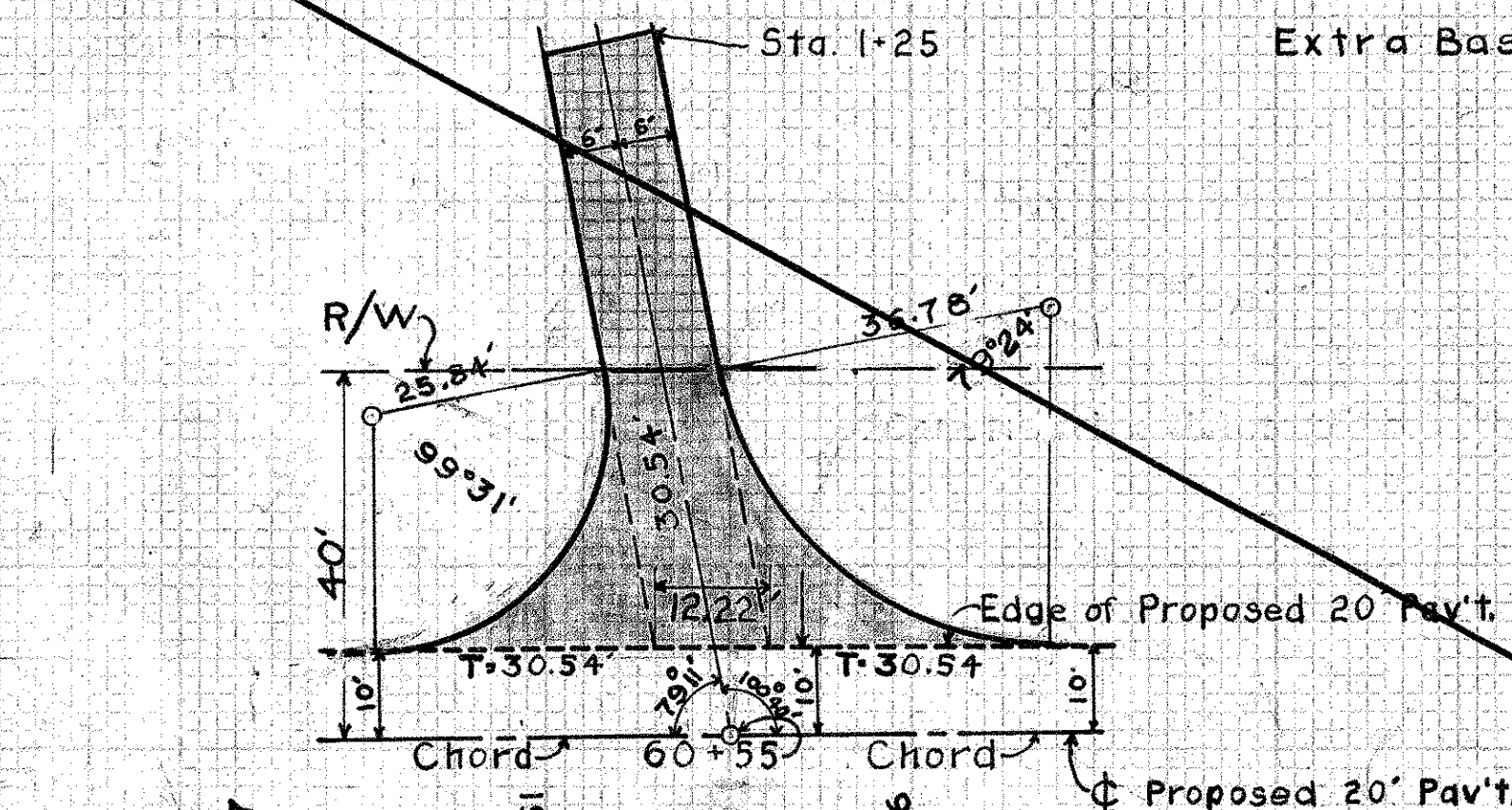
S.H. (I.C.H.) NO. 179 SEC. A & D
BUTLER COUNTY



Estimated Quantities
 Extra Curb = 33.8 Lin. Ft.
 Extra Pave. = 122.7 Sq. Yds.
 Extra Base = 125.5 Sq. Yds.
 Excav. = 26.0 Cu. Yds. (included in Rd. Quan.)

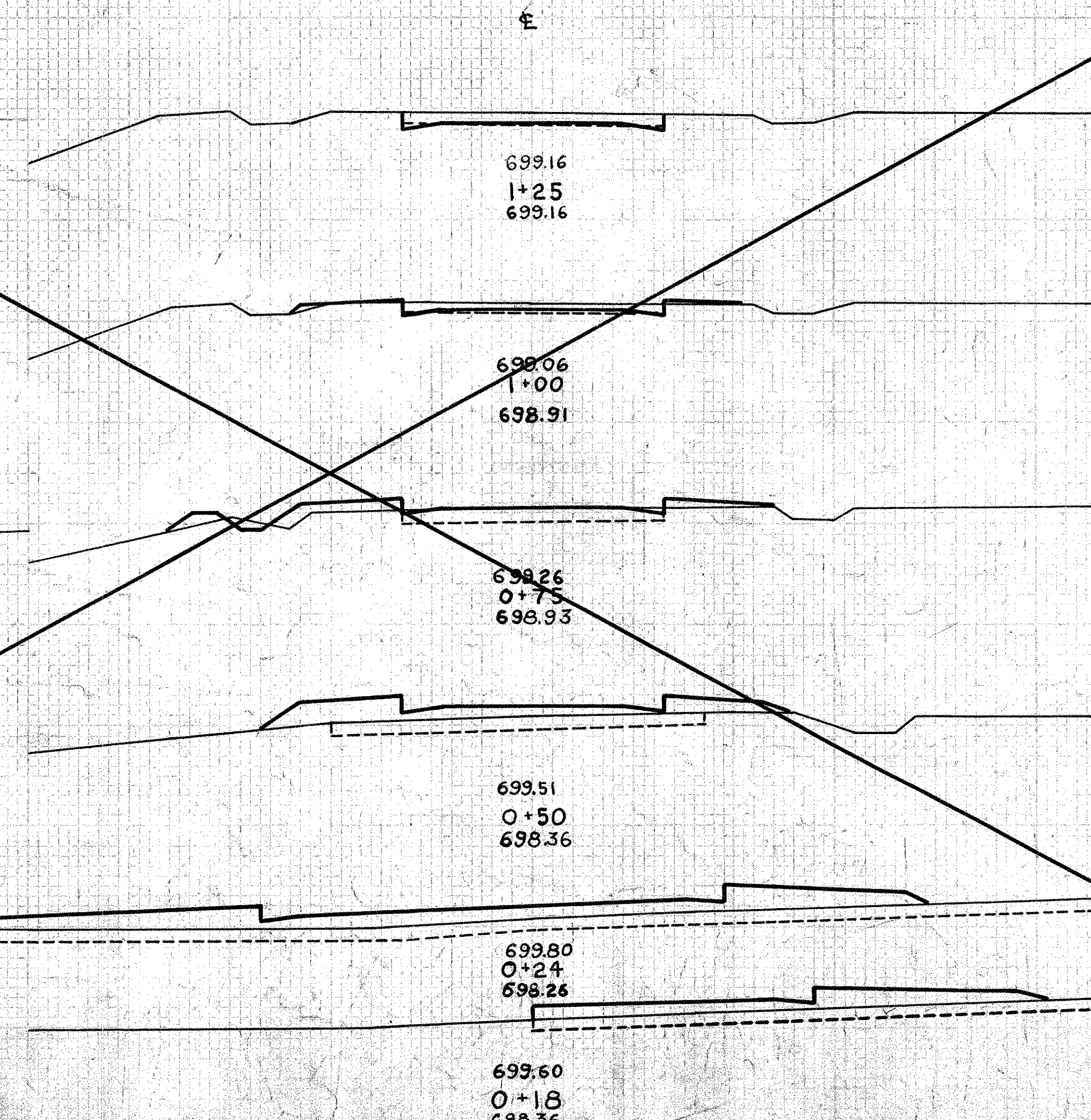
**ROAD APPROACH
STA. 60+55 LEFT**

TYPE B₄
 Extra Curb = 20.1 Lin. Ft.
 Extra Pave. = 213.4 Sq. Yds.
 Extra Base = 216.1 Sq. Yds.



Estimated Quantities
 Excavation 49 Cu. Yds. (Included in Roadway Quantities)
 Embankment 96 Cu. Yds. (" " " ")
 Concrete Paving 216.1 Sq. Yds.

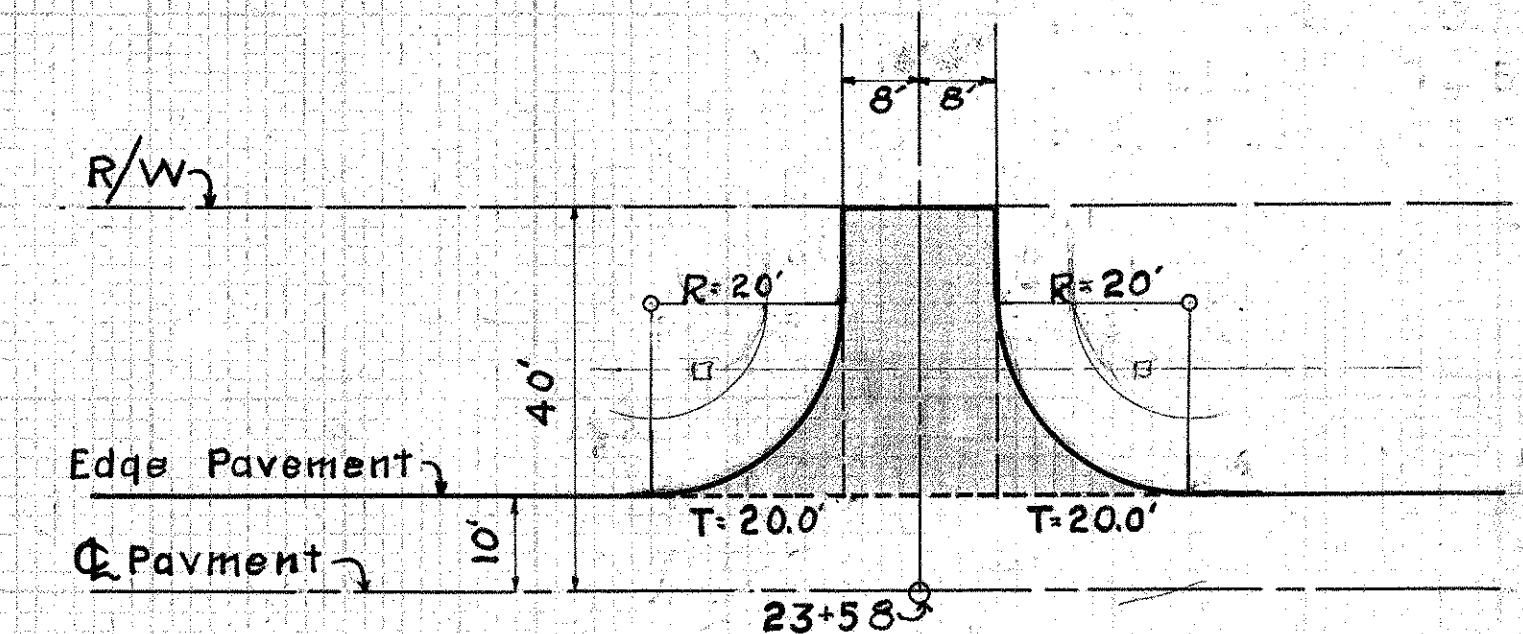
Note - Old Pavement to be removed.



STATION	END AREA		Cu. Yds.	
	CUT	FILL	CUT	FILL
0+25	8	1		
1+00	6	4	7	2
1+50			7	9
0+75	9	15		
0+50	10	20	9	20
0+24	33	77	20	52
0+18	20	38	6	13

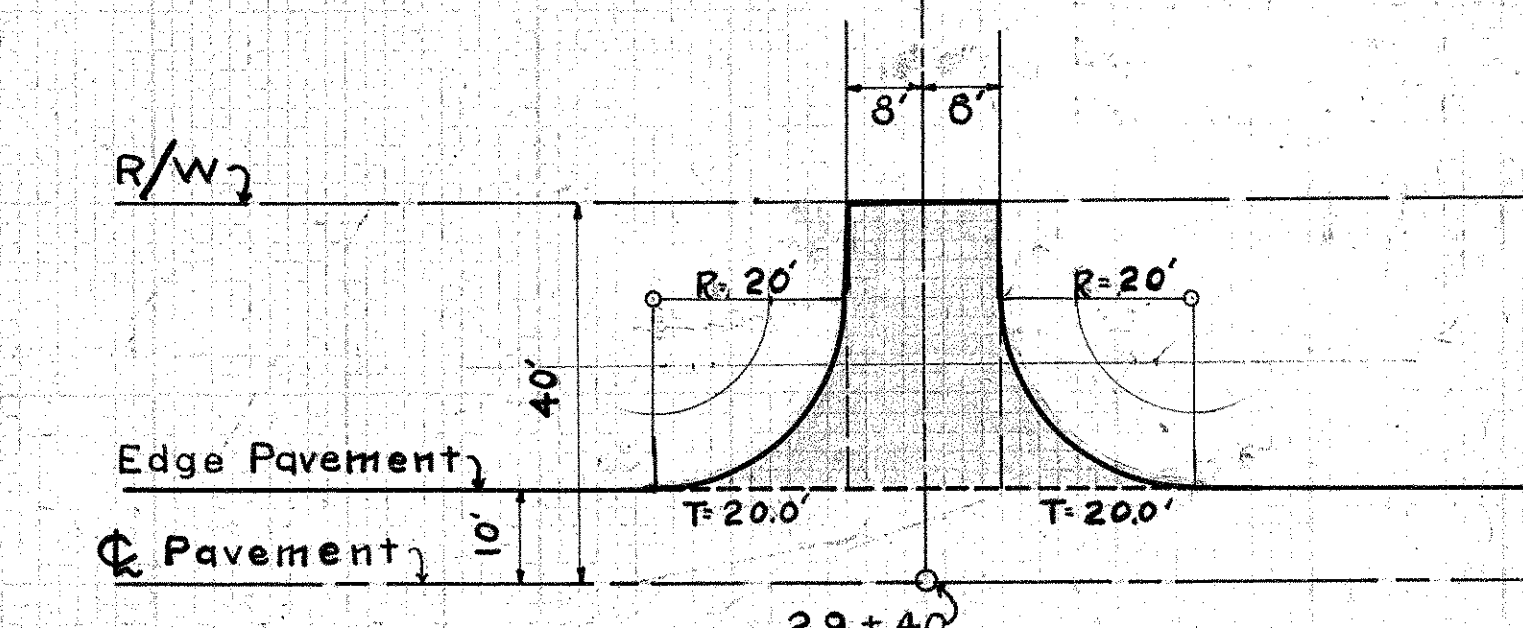
Embankment 96 Cu. Yds.
Excavation 49 Cu. Yds.

**ROAD APPROACH
STA. 23+58 LEFT**



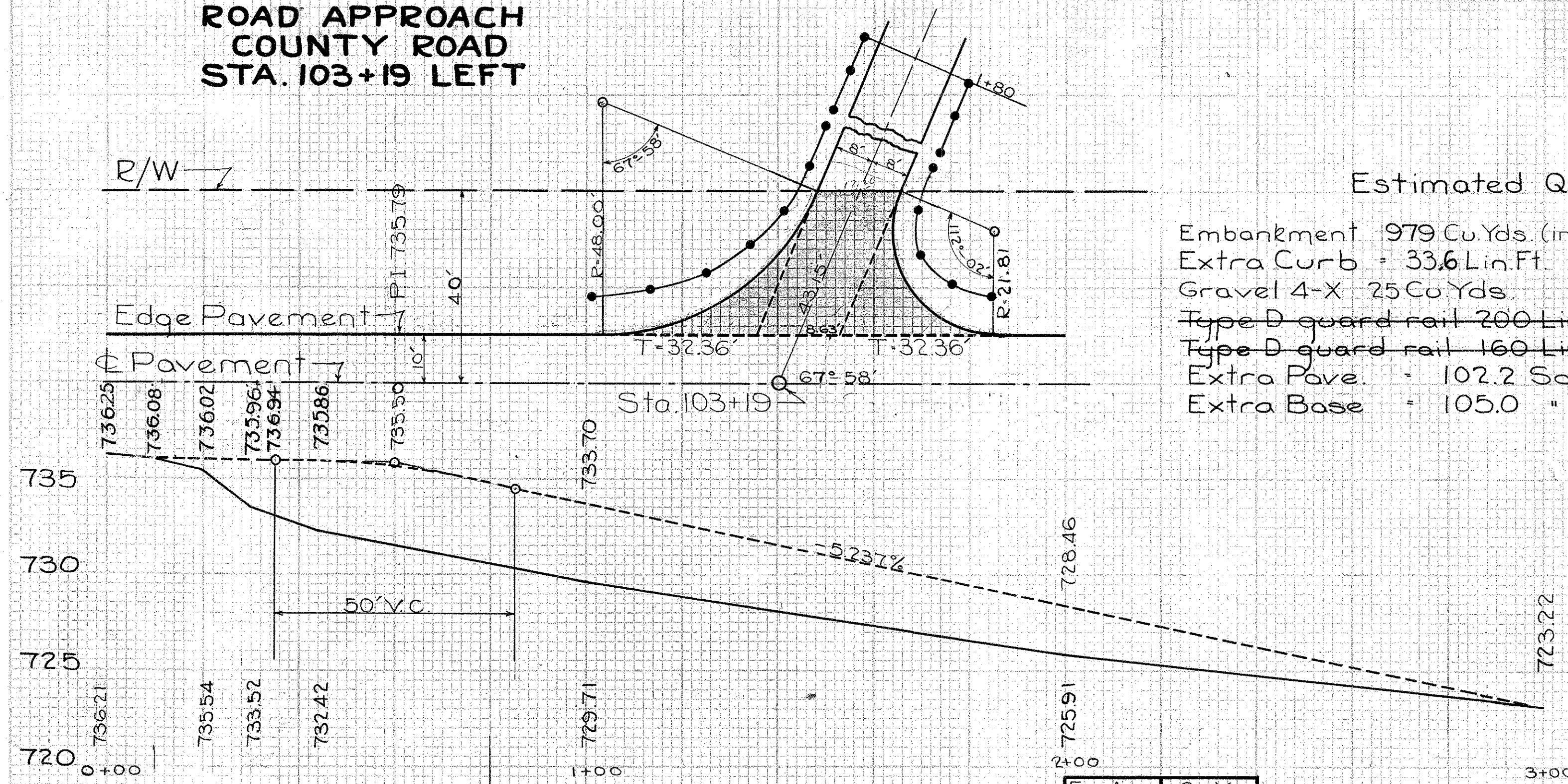
Estimated Quantities
 Extra Curb = 41.3 Lin. Ft.
 Extra Pave. = 69.0 Sq. Yds.
 Extra Base = 72.4 " " "
 Excavation = 17.0 Cu. Yds. (included in Rd. Quan.)

**ROAD APPROACH
STA. 29+40 LEFT**



Estimated Quantities
 Extra Curb = 41.3 Lin. Ft.
 Extra Pave. = 69.0 Sq. Yds.
 Extra Base = 72.4 " " "
 Excavation = 17.0 Cu. Yds. (included in Rd. Quan.)

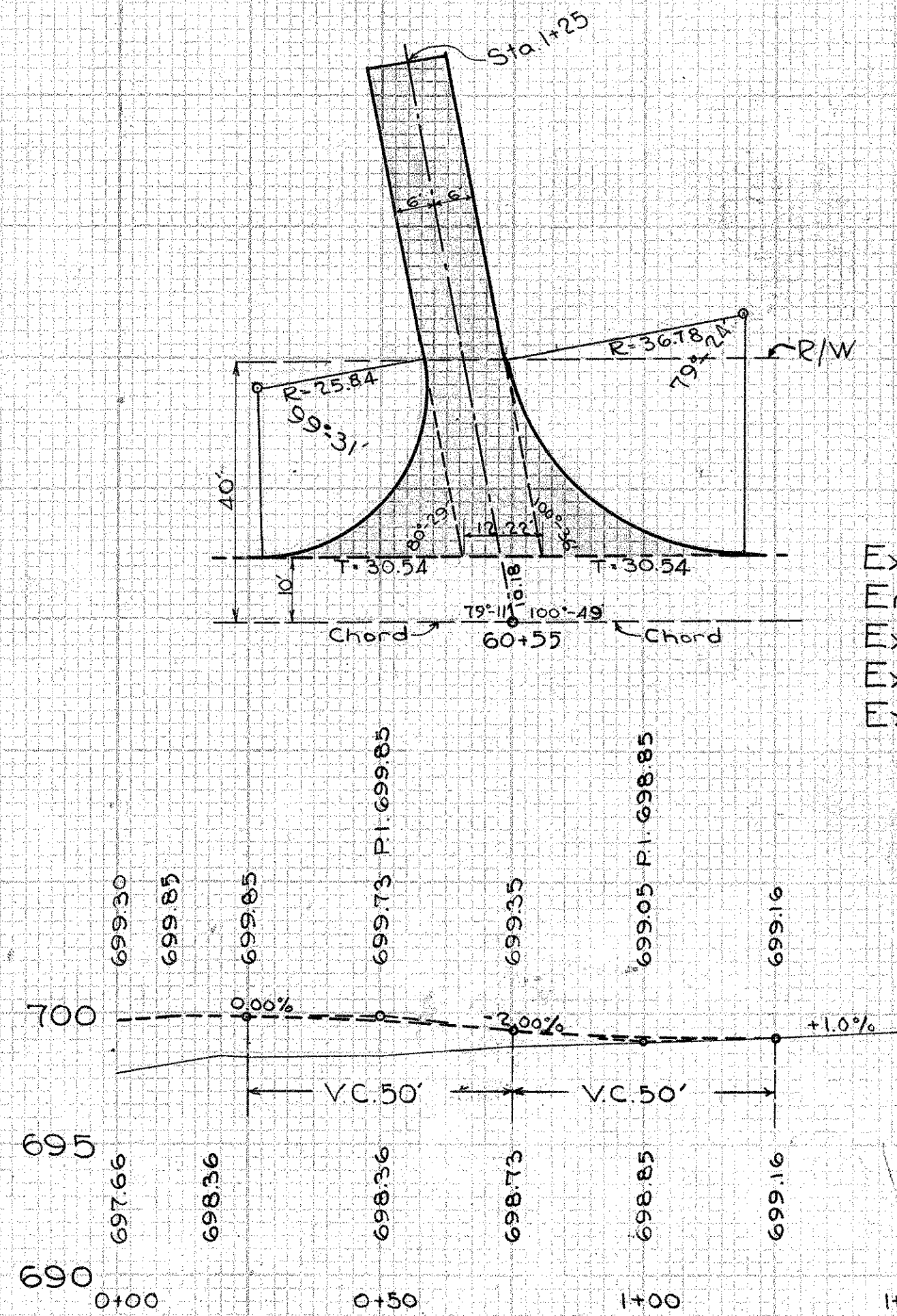
**ROAD APPROACH
COUNTY ROAD
STA. 103+19 LEFT**



Estimated Quantities

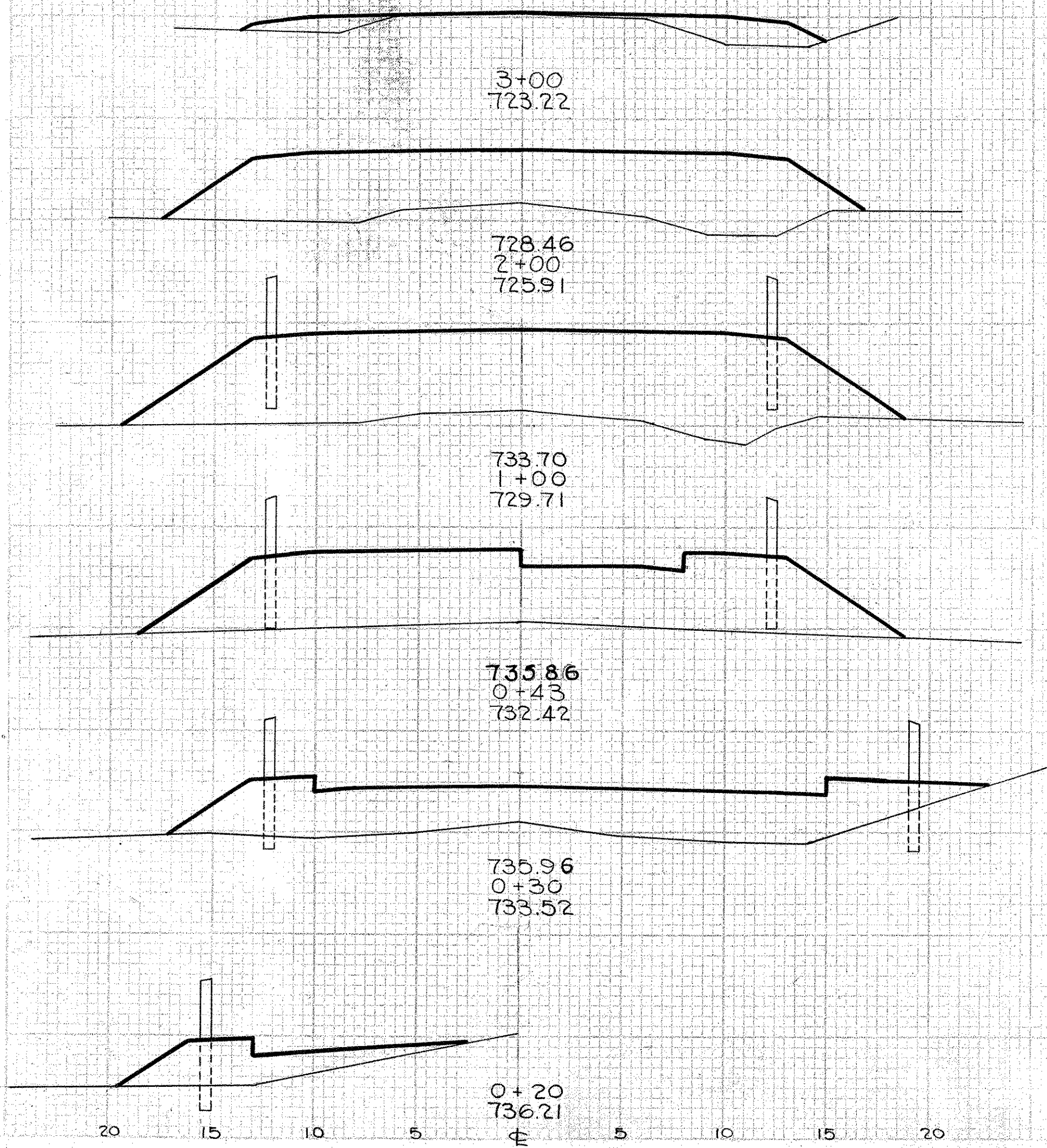
Embankment 979 Cu.Yds. (included in Roadway Quantities)
 Extra Curb = 33.6 Lin.Ft.
 Gravel 4-X 25 Cu.Yds.
 Type D guard rail 200 Lin.Ft. West Side.
 Type D guard rail 160 Lin.Ft. East Side.
 Extra Pave. = 102.2 Sq.Yds.
 Extra Base = 105.0 " "

**ROAD APPROACH
STA. 60+55 LEFT**



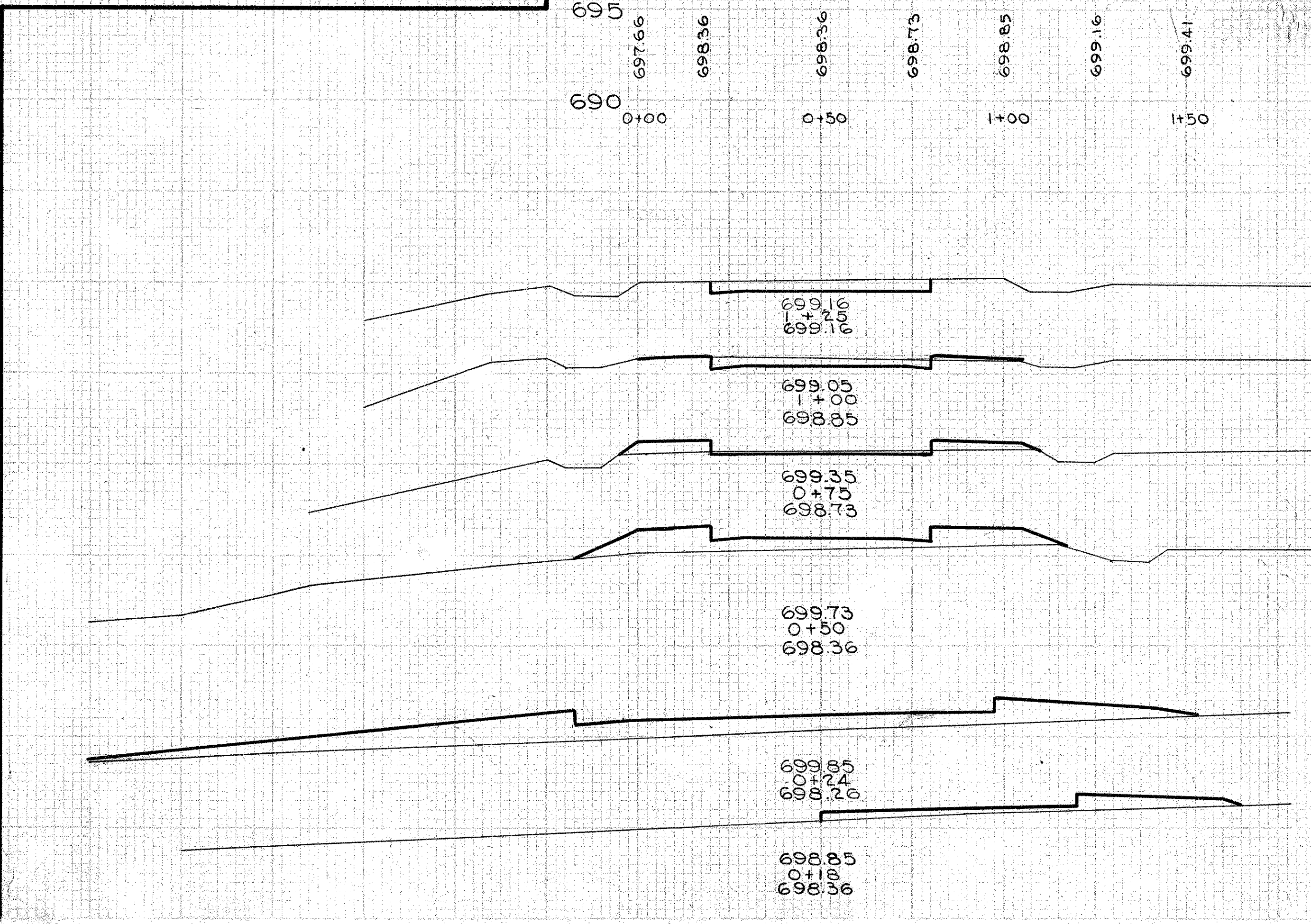
Estimated Quantities

Excav. 12 Cu.Yds. (included in Rd.Quan)
 Emb 62 " "
 Extra Curb 201.7 Lin.Ft.
 Extra Pave. 180.2 Sq.Yds.
 Extra Base 197.0 " "



END AREA	Cu.Yds.	
	CUT	FILL
0	12	
0	99	206
0	140	443
0	111	265
0	46	
0	85	
0	19	
0	18	

Emb. 979 Cu.Yds.
 Gravel 4-X 25 " "



END AREA	Cu.Yds.	
	CUT	FILL
8	0	
6	1	6
3	8	4
0	22	14
0	56	37
0	12	7

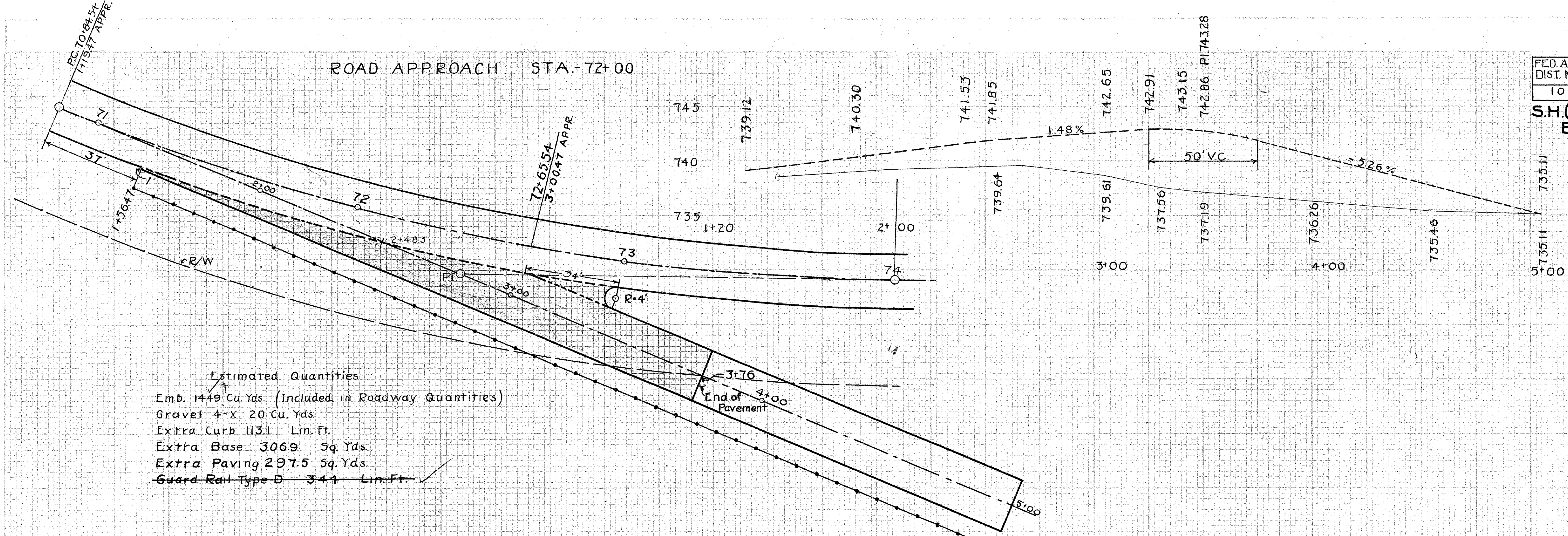
Exc. 12 Cu.Yds.
 Emb 62 " "

ROAD APPROACH STA.-72+00

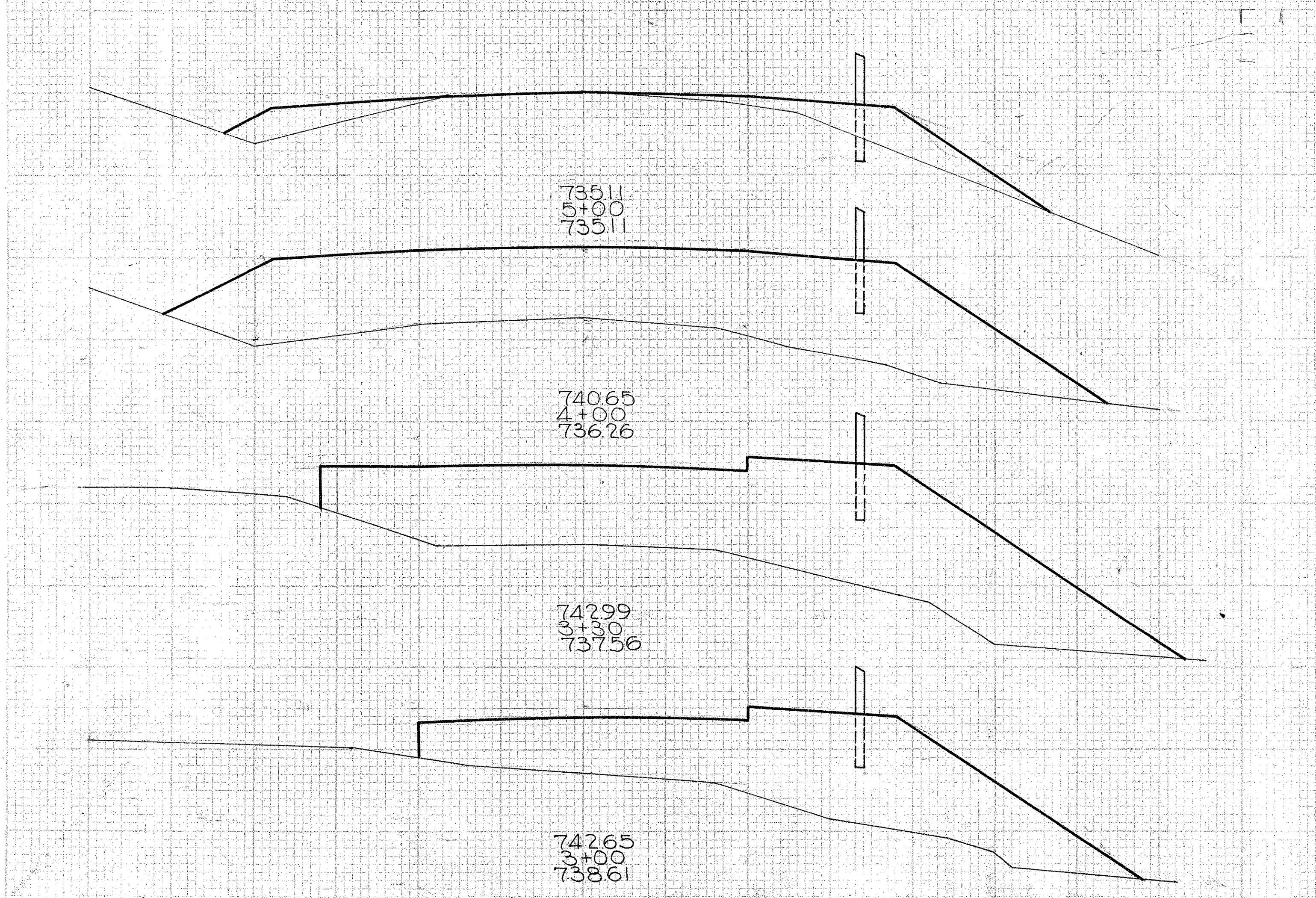
FED.AID. DIST. NO.	STATE	FED.AID. PROJECT	FISCAL YEAR
10	OHIO	581 E	1931

S.H.(I.C.H.) NO. 179 SEC. A & D
BUTLER COUNTY

36
53



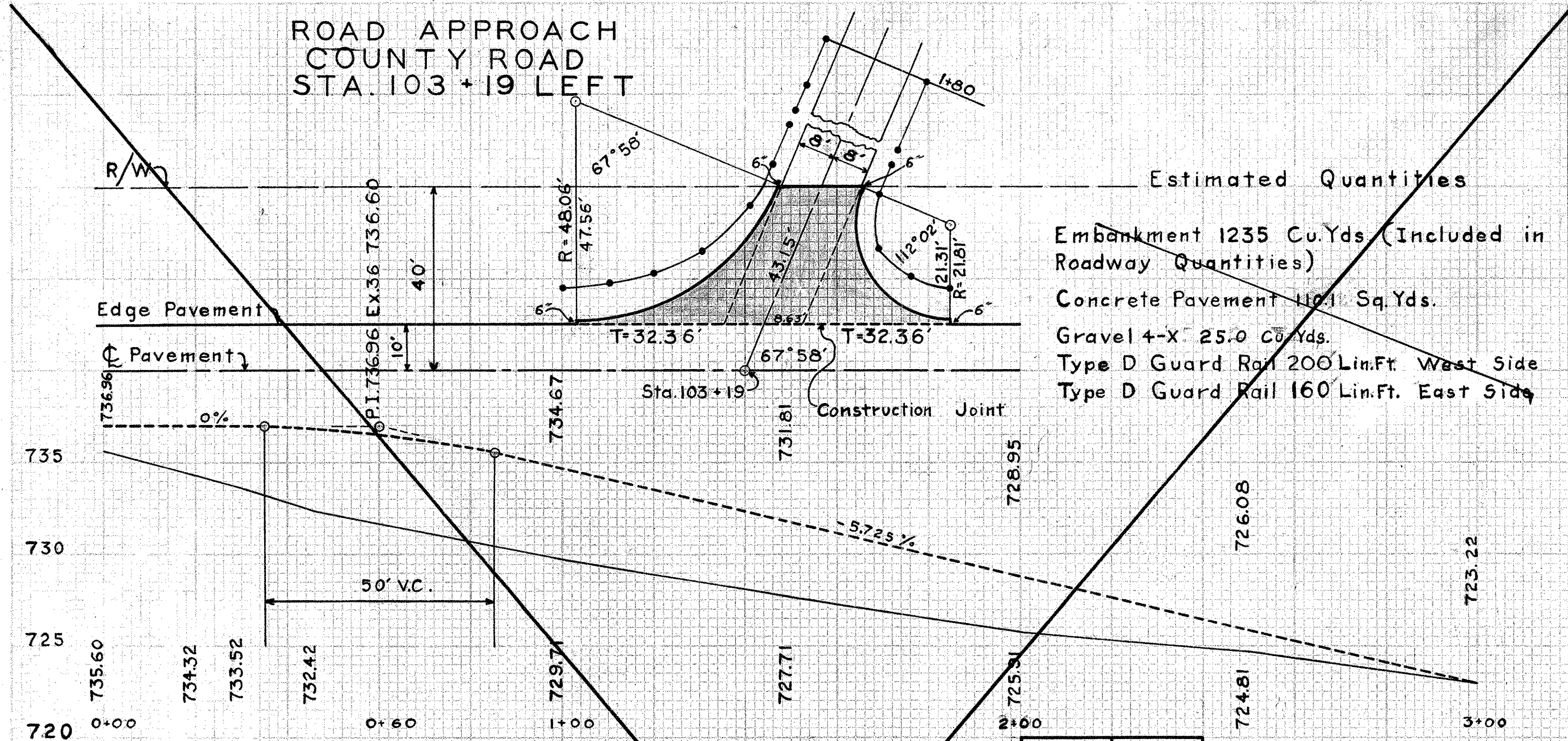
Estimated Quantities
 Emb. 1449 Cu. Yds. (Included in Roadway Quantities)
 Gravel 4-X 20 Cu. Yds.
 Extra Curb 113.1 Lin. Ft.
 Extra Base 306.9 Sq. Yds.
 Extra Paving 297.5 Sq. Yds.
~~Guard Rail Type D 344 Lin. Ft.~~



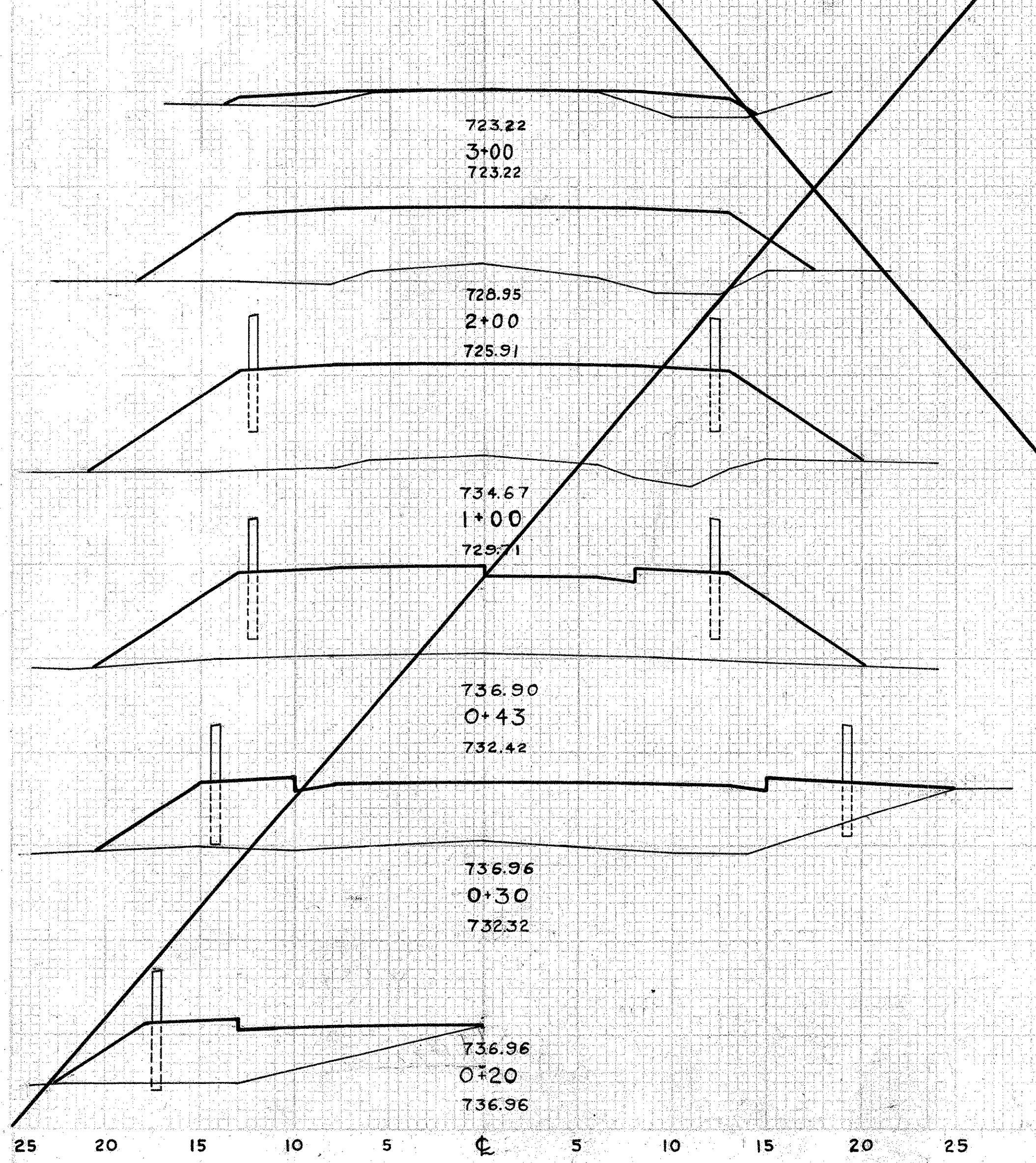
END AREA	CUT	FILL	CUT	FILL
735.11 5+00 735.11	0	40		
740.65 4+00 736.26	0	251		539
742.99 3+30 737.56	0	263		666
742.65 3+00 738.61	0	177		244

Emb = 1449 Cu. Yds.

ROAD APPROACH
COUNTY ROAD
STA. 103+19 LEFT



Estimated Quantities
 Embankment 1235 Cu.Yds. (Included in Roadway Quantities)
 Concrete Pavement 110.1 Sq.Yds.
 Gravel 4-X 25.0 Cu.Yds.
 Type D Guard Rail 200 Lin.Ft. West Side
 Type D Guard Rail 160 Lin.Ft. East Side



END AREA	Cu.Yds.	
	Cut	Fill
0	11	
0		233
0	115	
0		548
0	181	
0		352
0	152	
0		69
0	134	
0		33
0	45	

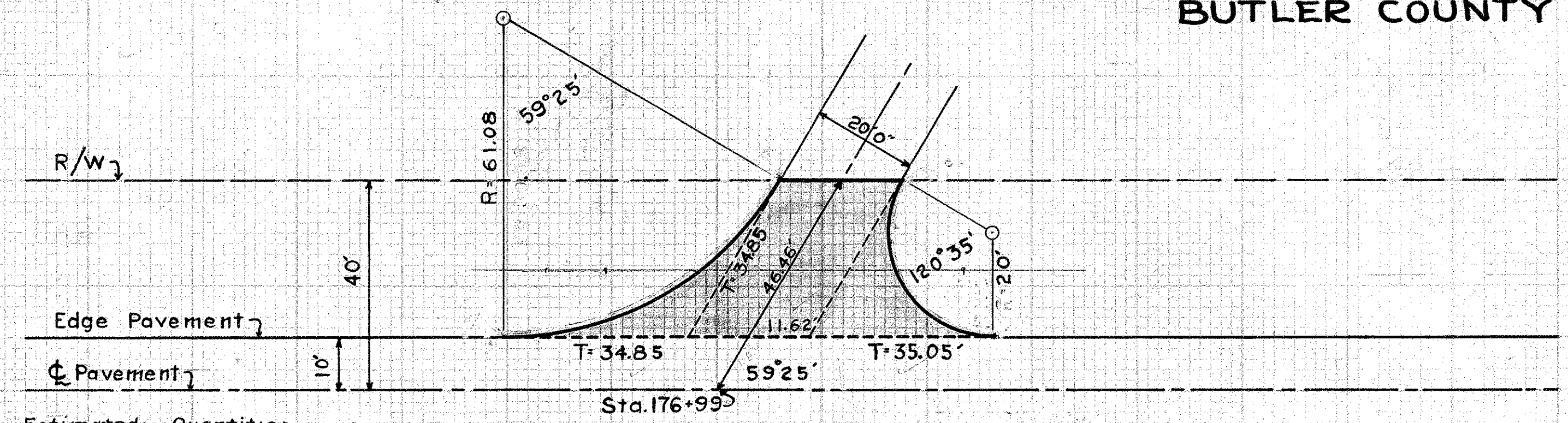
Estimated Quantities
 Type B &
 Extra Curb 32.9 Lin.Ft.
 Extra Pavement 107.4 Sq.Yds.
 Extra Base 110.1 Sq.Yds.

Embankment 1235 Cu.Yds.
 Gravel 25 Cu.Yds.

ROAD APPROACH
STA. 176+99 LEFT

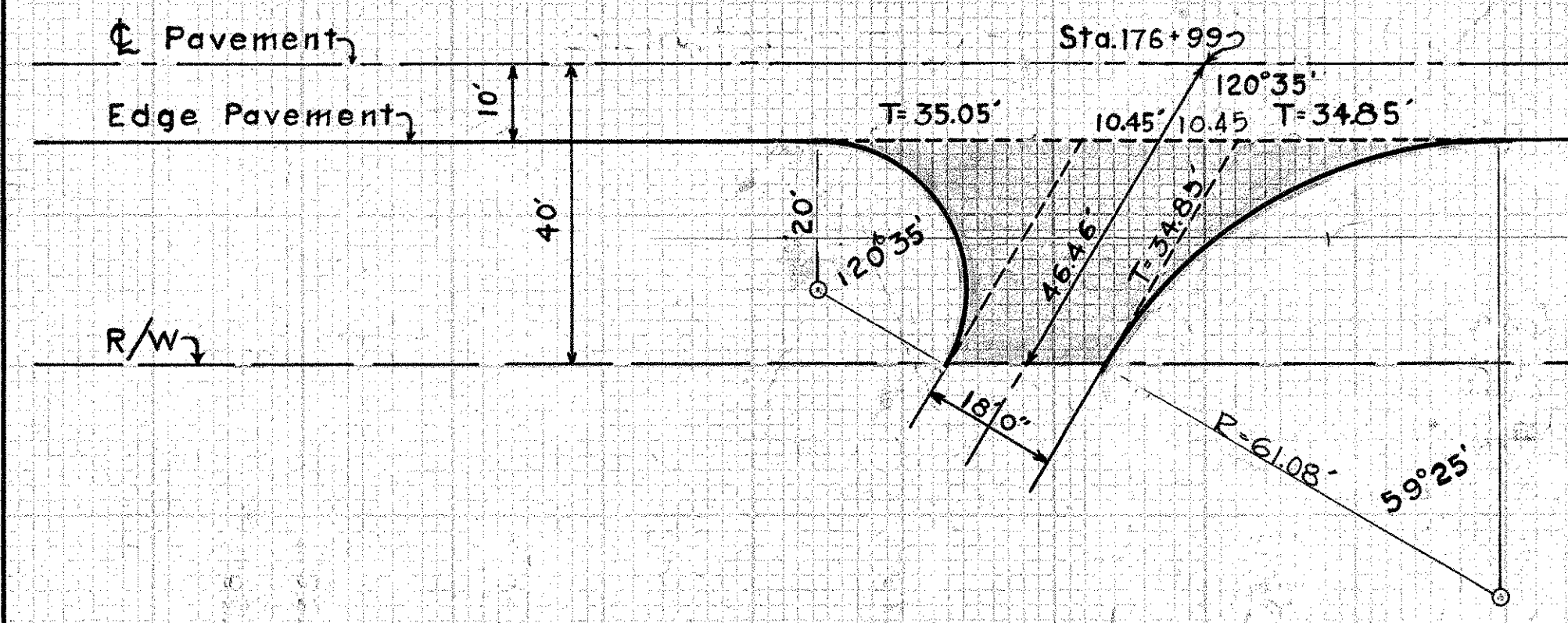
FED.AID DIST.NO.	STATE	FED.AID PROJECT	FISCAL YEAR	37/53
10	OHIO	581 E	1931	

S.H.(I.C.H.) NO.179 SEC.D
BUTLER COUNTY



Estimated Quantities
 Extra Curb 34.0 Lin. Ft.
 Extra Pavement 127.3 Sq.Yds.
 Extra Base 130.1 Sq.Yds.
 Excavation 27.0 Cu.Yds. (incl. in Rdwy. Quan.)

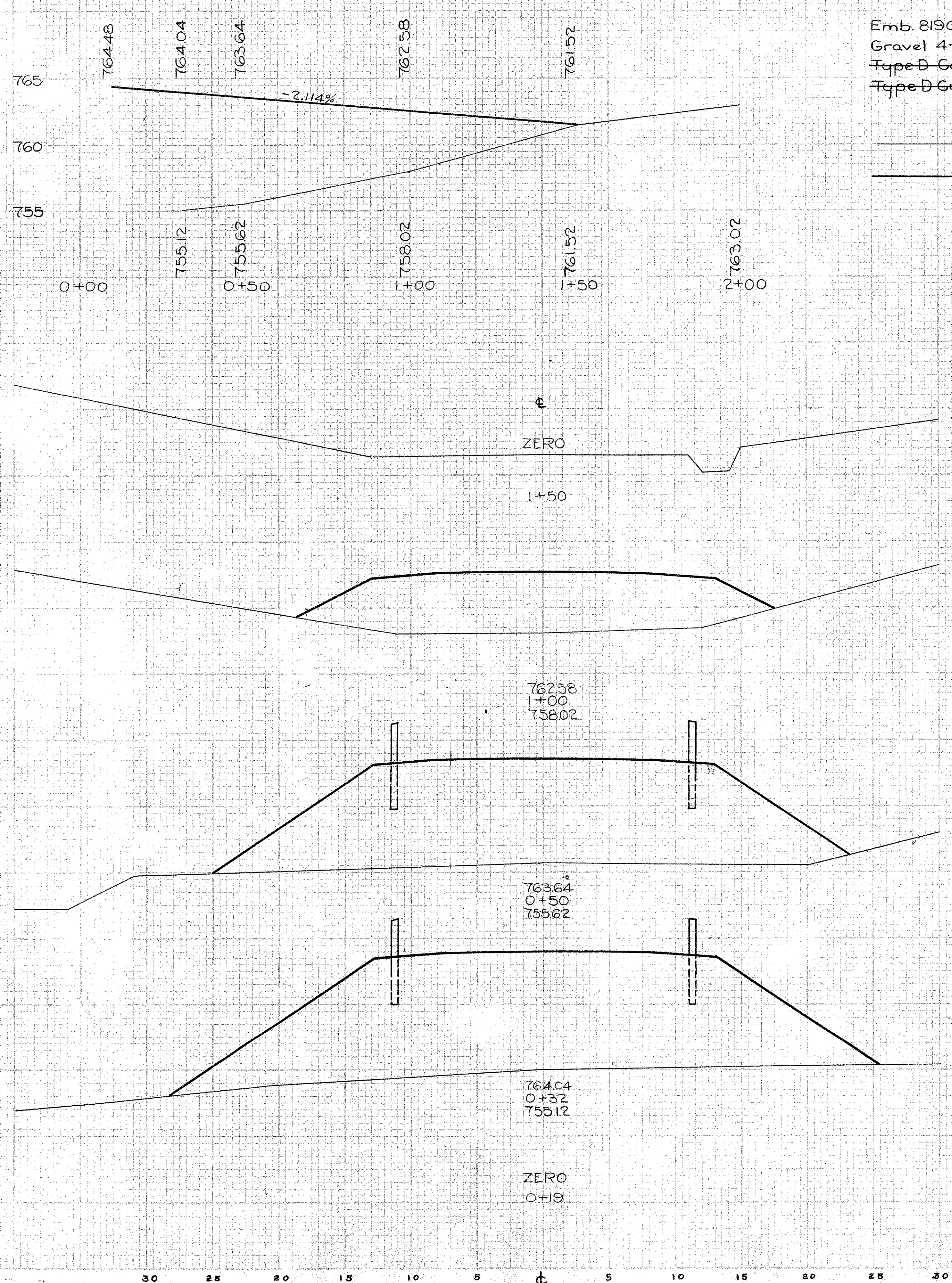
ROAD APPROACH
STA. 176+99 RIGHT



Estimated Quantities
 Extra Curb 34.0 Lin. Ft.
 Extra Pavement 119.6 Sq.Yds.
 Extra Base 122.4 Sq.Yds.
 Excavation 27.0 Cu.Yds. (incl. in Rdwy. Quan.)

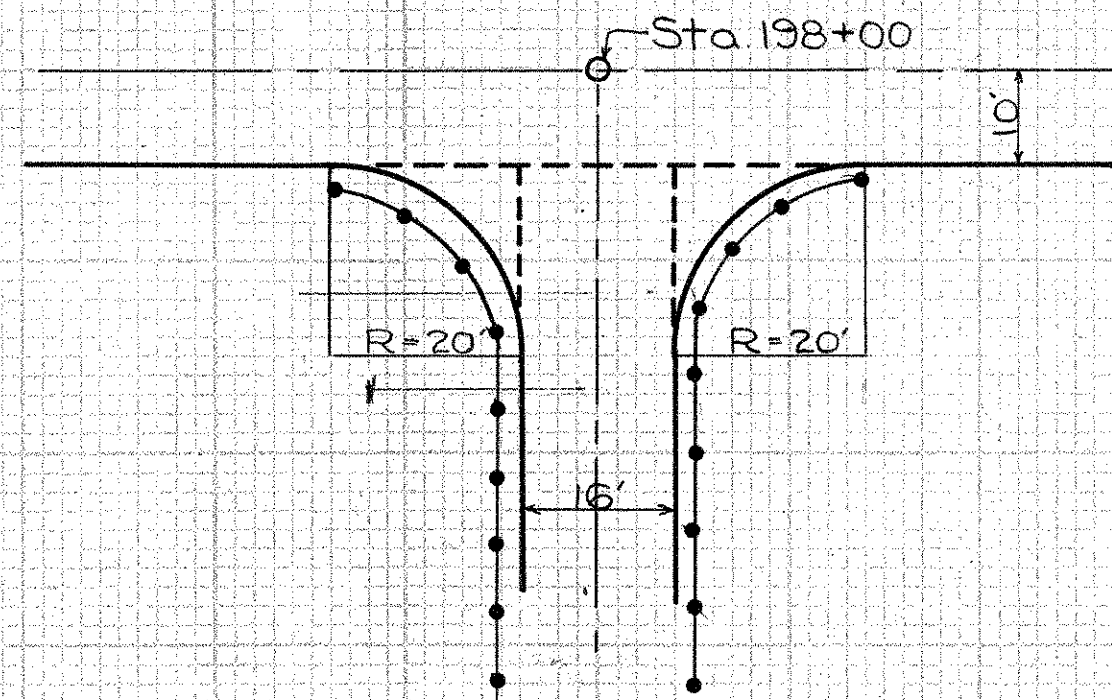
764.91 P.S. 24
P.W.S.

ROAD APPROACH
Sta. 198+00 RIGHT



Estimated Quantities

Emb. 819 Cu.Yds. (included in Roadway Quantities)
Gravel 4-X 25 Cu.Yds.
Type D Guard Rail (Rt. Side) 80 Lin. Ft.
Type D Guard Rail (Lft. Side) 72 Lin. Ft.



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	0	0	121
0	131	0	396
0	297	0	217
0	354	0	85
0	0	0	0

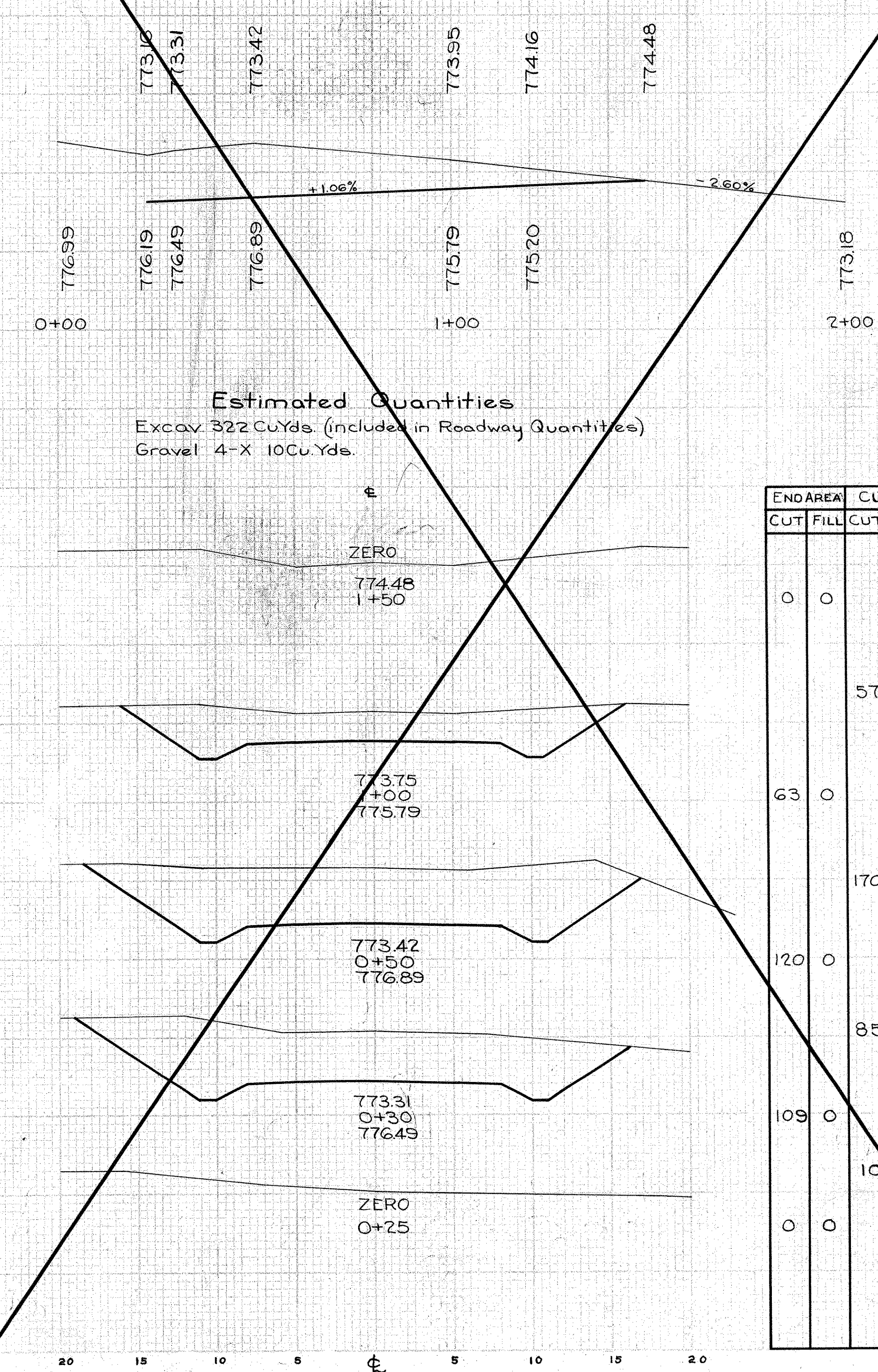
Emb. 819 Cu. Yds.
Gravel 25 Cu. Yds.

FED. AID DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	581 E	1931

38
53

S.H. (I.C.H.) NO. 179 SEC. D
BUTLER COUNTY

PRIVATE DRIVE
Sta. 130+17 LEFT



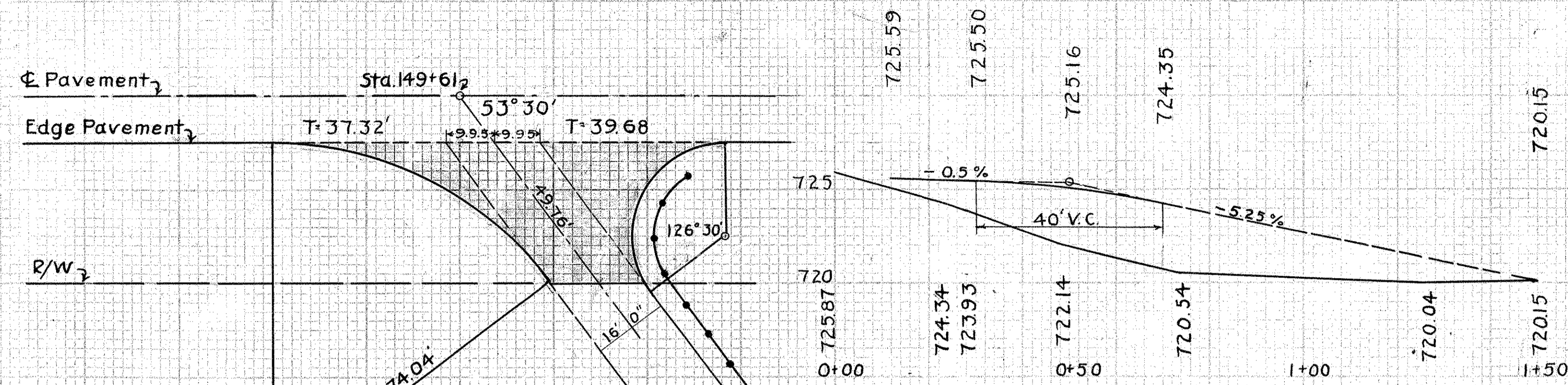
Estimated Quantities

Excav. 322 Cu.Yds. (included in Roadway Quantities)
Gravel 4-X 10 Cu.Yds.

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	0	0	0
0	0	57	0
63	0	170	0
120	0	85	0
109	0	10	0
0	0	0	0

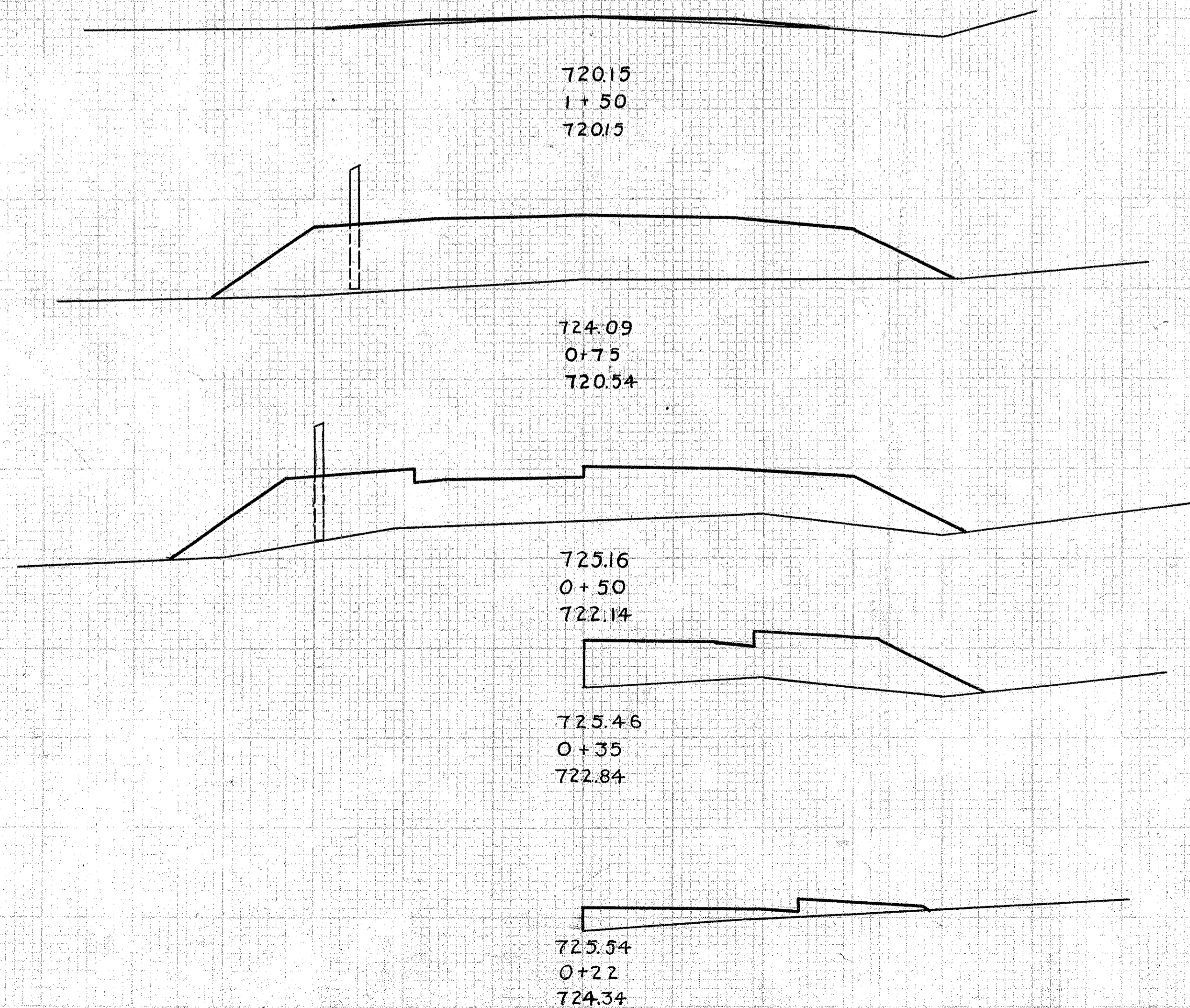
Excav. 322 Cu. Yds.
Gravel 10 Cu. Yds.

ROAD APPROACH
STA. 149+61 RIGHT



ESTIMATED QUANTITIES

Emb. 342 Cu.Yds. (included in Rd. Quan.)
 Extra Pave. 125.2 Sq. Yds.
 Extra Base 28.1 " "
 Extra Curb 34.8 Lin. Ft.
 Type D Guard Rail 64.0 Lin. Ft.
 Gravel 4X 16.0 Cu.Yds.



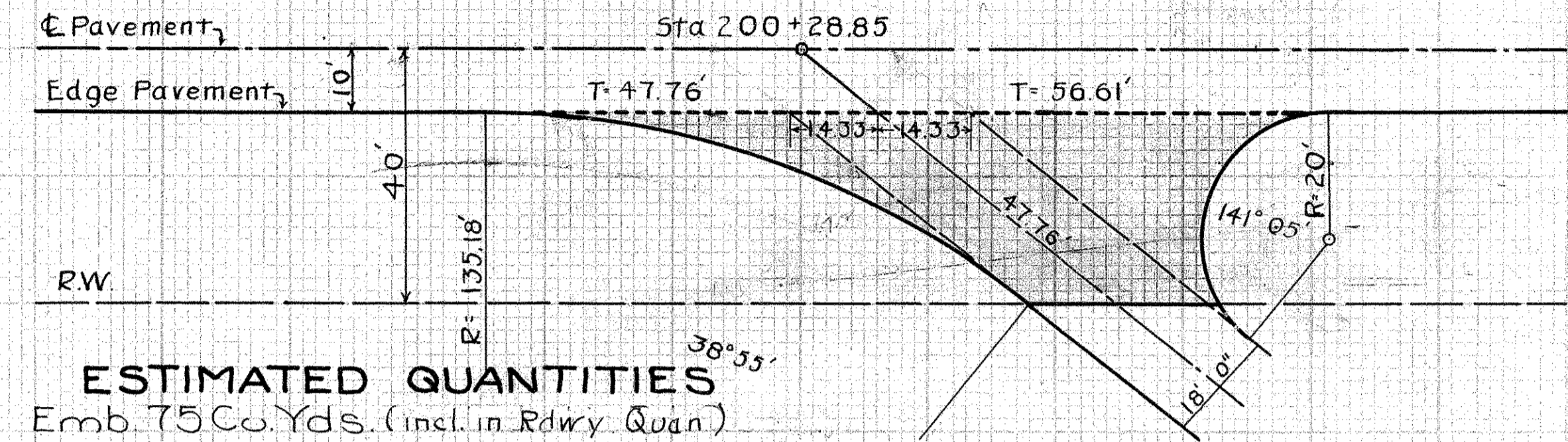
END AREA		Cu. Yds.	
CUT	FILL	CUT	FILL
0	3		
		0	175
		0	123
		0	108
		0	111
		0	44
		0	49
		0	15
		0	14

Emb = 342 Cu Yds.

ROAD APPROACH
COUNTY ROAD
STA. 200+28.85

FED. AID DIST. NO. 10 STATE OHIO PROJECT 581 E. FISCAL YEAR 1931 S.H. (I.C.H.) NO. 179 SEC. A & D BUTLER COUNTY

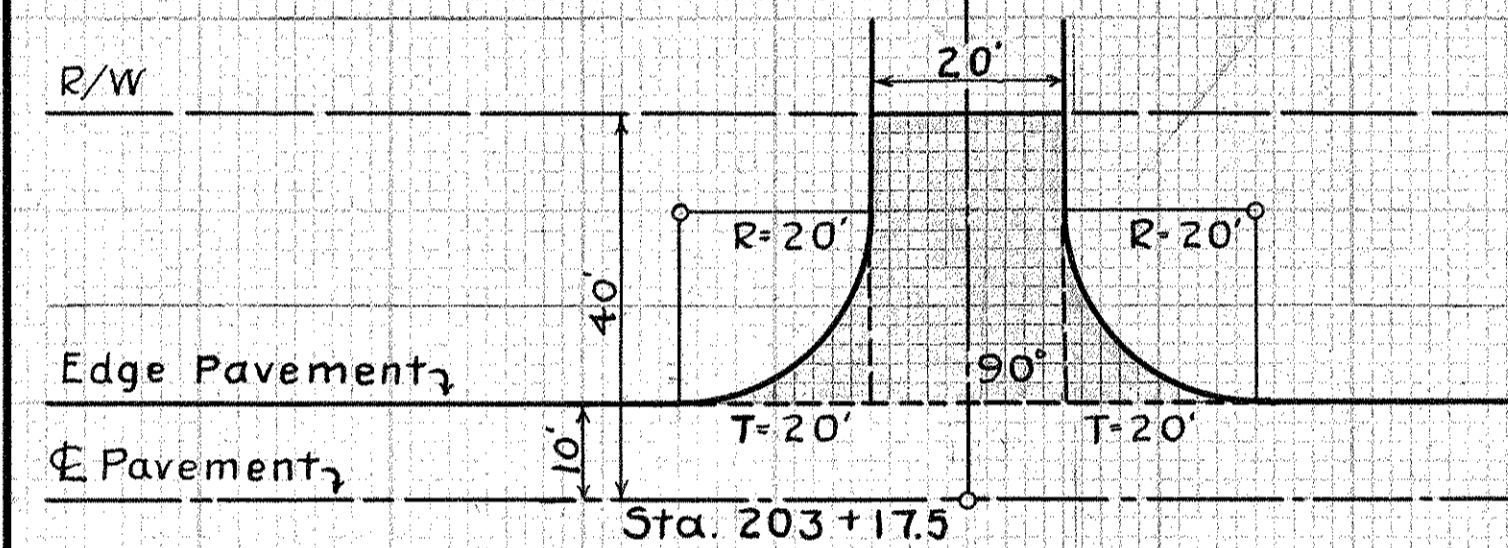
39
53



ESTIMATED QUANTITIES

Emb. 75 Cu.Yds. (incl. in Rdwy. Quan.)
 Extra Base 194.4 Sq. Yds.
 Extra Pave. 191.5 " "
 Extra Curb 35.2 Lin. Ft.

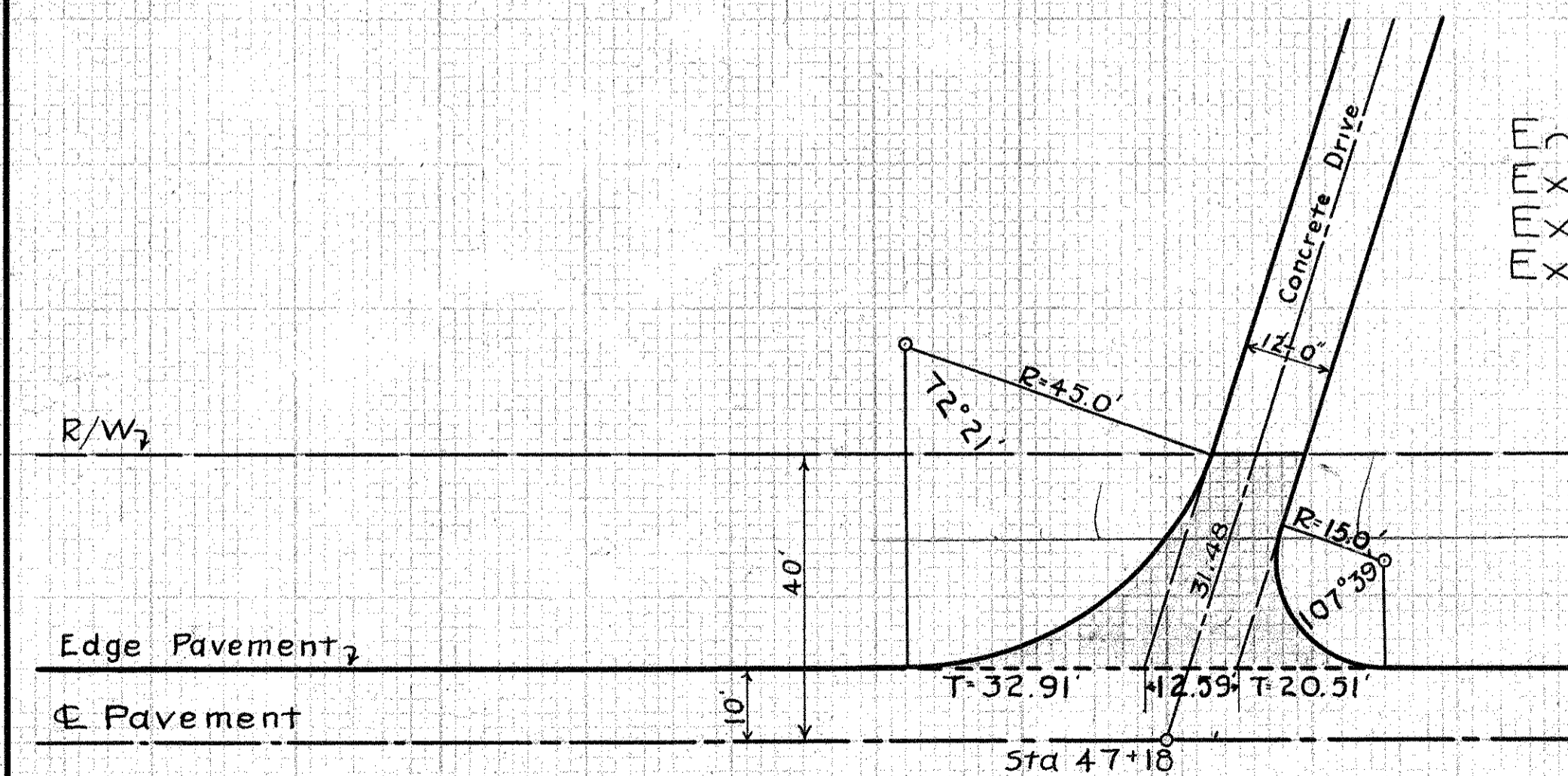
PRIVATE DRIVE
COUNTRY CLUB DRIVE
STA. 203+17.50 LEFT



ESTIMATED QUANTITIES

Exc. 20 Cu.Yds. (incl. in Rdwy. Quan.)
 Extra Pave. 82.3 Sq. Yds.
 Extra Base 85.7 " "
 Extra Curb 41.3 Lin. Ft.

PRIVATE DRIVE
STA. 47+18 LEFT



ESTIMATED QUANTITIES

Emb. 20 Cu.Yds. (incl. in Rdwy. Quan.)
 Extra Pave. 72.7 Sq. Yds.
 Extra Base 75.2 " "
 Extra Curb 30.1 Lin. Ft.

S.H.I.C.H. NO. 179 A&D.
BUTLER COUNTY

ESTIMATED QUANTITIES

Excav.	52 Cu. Yds
Concr. 1-5 1/2	1.8 Cu. Yds.
Concr. 1-6 1/2	57 Cu. Yds.
Reinf. Steel	53 Lbs.
12" V.S.P.	46 Lin. Ft.
24" V.S.P.	6 Lin. Ft.
Side Ditch Inlet	1 Only
Spec. Catch Basin	1 Only

Drawn by
Checked by E.E.D.
Date

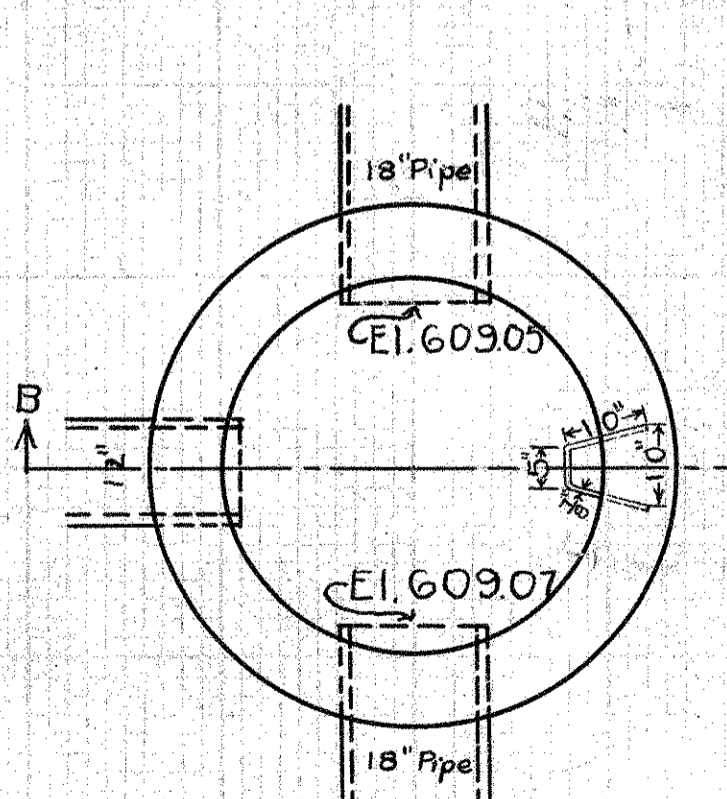
STA. 12+84

CULVERT DATA

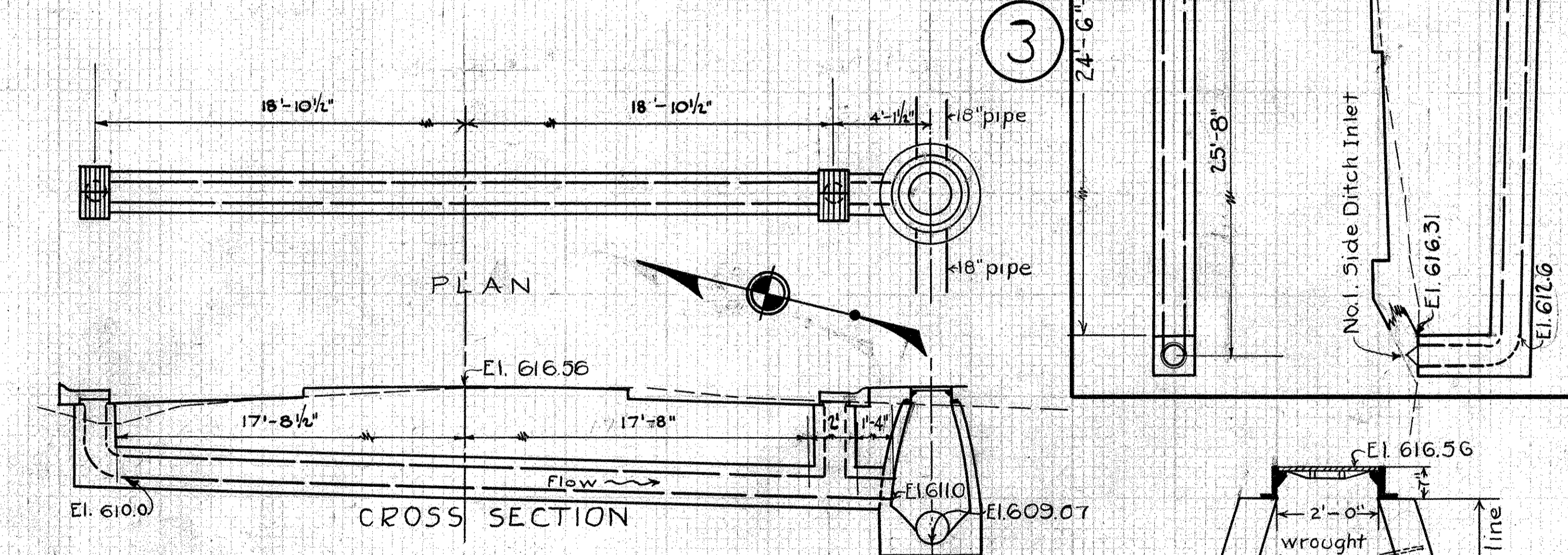
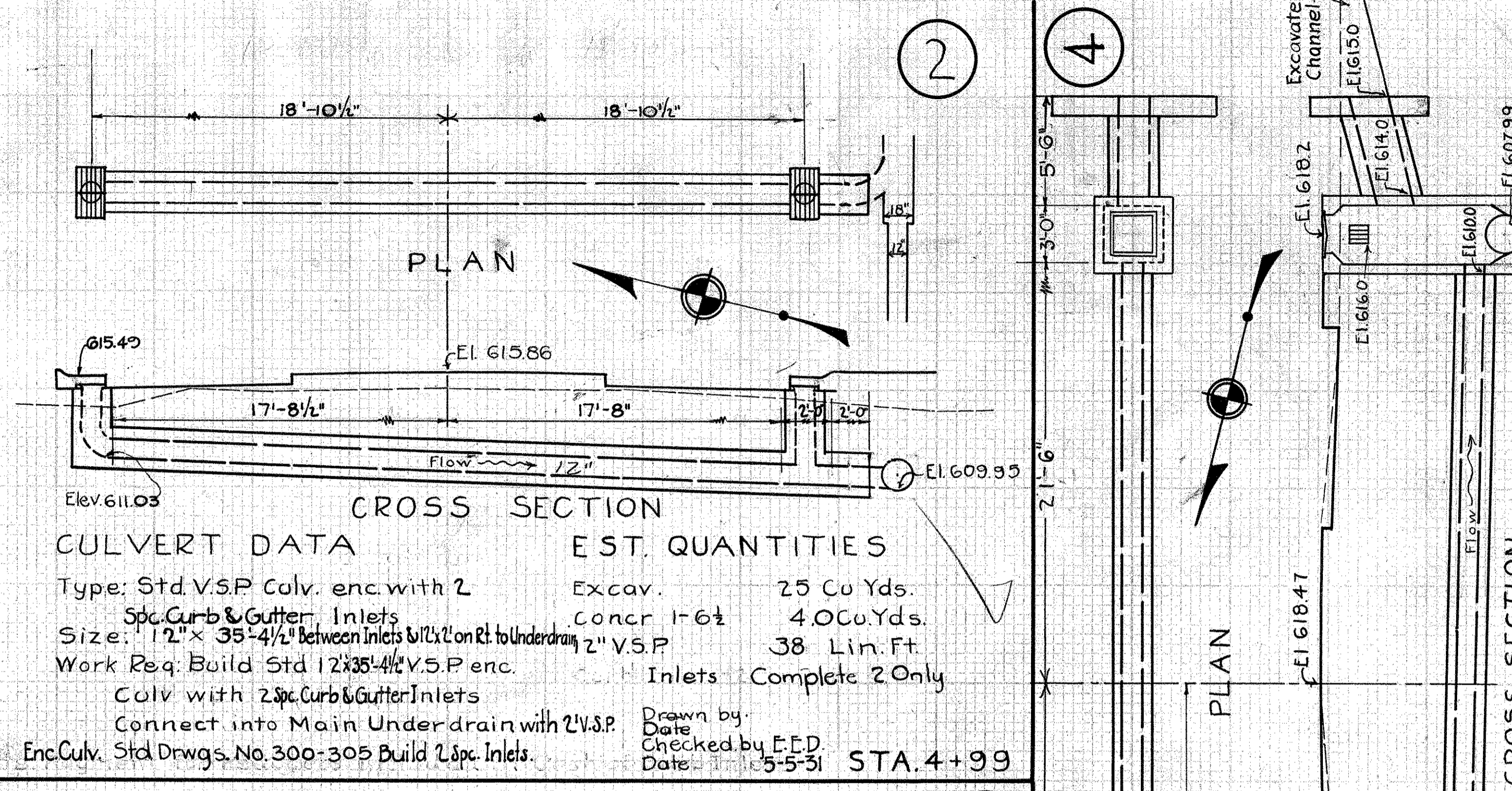
Type: Std. V.S.P. enc. Culv. with Std. No. 1 Side Ditch Inlet & 1 Spec. Catch Basin
 Size: 12" x 35'-4 1/2" between inlets & 12" x 4'-6" V.S.P. enc. Culv. with One Std. No. 1 Side Ditch Inlet and one Spec. Catch Basin
 Work Req. Build Std. 12" x 35'-4 1/2" V.S.P. enc. Culv. with one Heavy Wall & Connect to Catch Basin
 Std. Drawgs. No. 300-305

EST. QUANTITIES

Excav.	27 Cu. Yds
Concr. 1-6 1/2	4.0 Cu. Yds
12" V.S.P.	38 Lin. Ft.
Spec. Curb & Gutter Inlets	2 Only
Spec. Manhole	1 Only



MANHOLE DETAILS
Std. Except for Castings
See Std. Drawg. D-8E.



CULVERT DATA

Type: Std. V.S.P. (Enc.) Culv. Connect to Spec. Inlets & Manhole. Std. Drawgs. 300 & 305 & D-8E.
 Size: 12" x 35'-4 1/2" between inlets & 12" x 4'-6" between inlet & Manhole on Rt.
 Work Req. Build Std. 12" x 35'-4 1/2" V.S.P. Culv. Connecting gutter inlets. Build Std. 12" x 4'-6" V.S.P. Culv. connecting Inlet & Manhole on Rt. Build 2 Spec. Curb & Gutter Inlets & 1 Manhole Std. except for castings.

EST. QUANTITIES

Excav.	27 Cu. Yds
Concr. 1-6 1/2	4.0 Cu. Yds
12" V.S.P.	38 Lin. Ft.
Spec. Curb & Gutter Inlets	2 Only
Spec. Manhole	1 Only

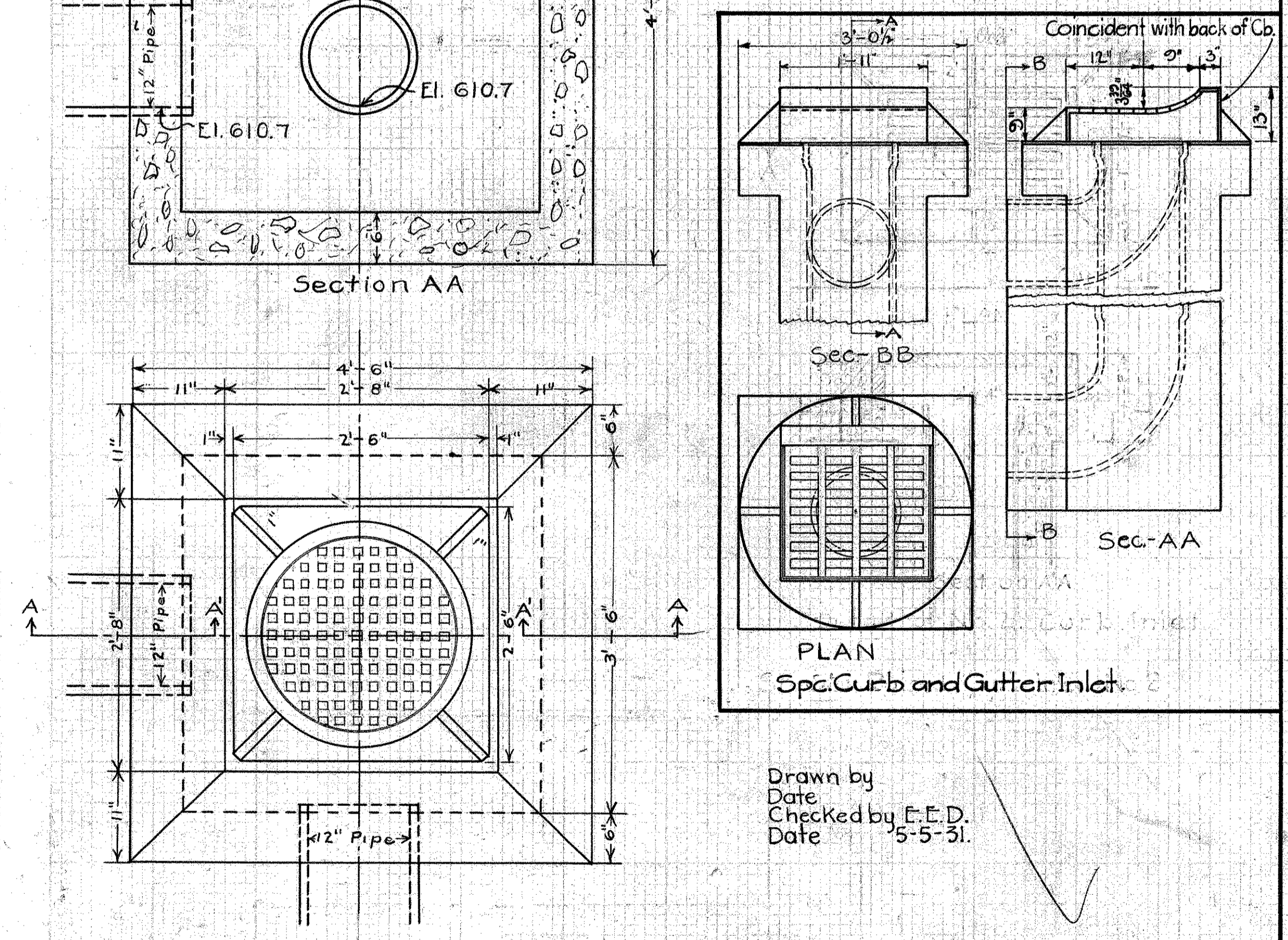
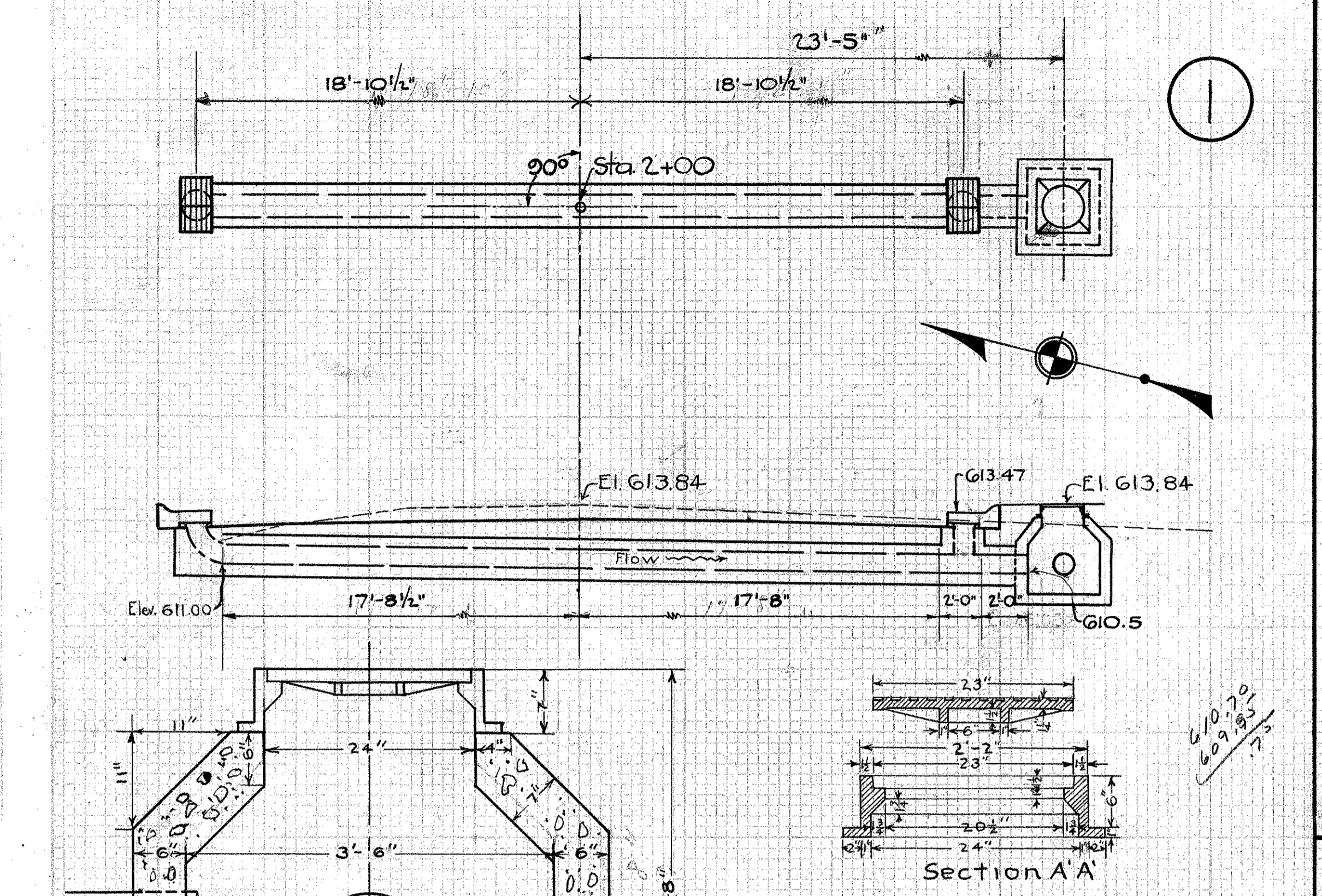
Drawn by
Date
Checked by E.E.D.
Date 5-5-31.

110 x 40
106 x 38
3 x 52

609.95
609.07
88

609.07
607.97
1.08

STA. 8+50



CULVERT DATA

Type: Std. V.S.P. (enc.) Culv. with 2 Spec. Curb & Gutter Inlets and one special manhole
 Size: 12" x 35'-4 1/2" between inlets & 12" x 4'-6" between inlet & Manhole on Rt.
 Work Req. Build Std. 12" x 35'-4 1/2" V.S.P. (enc.) Culv. between inlets & 12" x 4'-6" V.S.P. (enc.) Culv. between Inlet on Rt. & Spec. Manhole. Build Spec. M.H. & 2 Spec. Curb & Gutter Inlets & connect to V.S.P. Culv. Std. Drawg. 300 & 305.

EST. QUANTITIES

Excav.	27 Cu. Yds.
Concr. 1-6 1/2	4.0 Cu. Yds.
12" V.S.P.	38 Lin. Ft.
Spec. Curb & Gutter Inlet	2 Only
Spec. Manhole	1 Only

Drawn by
Date
Checked by E.E.D.
Date 5-5-31.

STA. 2+00

S.H. (I.C.H) NO. 179 SEC. A
BUTLER COUNTY

PLAN

CROSS SECTION

Note: For Detail of Inlets refer to Sta. Dr. #305
V-1 & V-2 bars - Vertical Steel spaced 1' ctrs.
h bars - Horizontal Steel spaced 1' ctrs.
Payment is made for Inlets Complete in place.

Drawn by: J.K.P. Date: 2-2-31
Checked by: E.E.D. Date:

Mark	Size	Length	No.	Weight
V-1	3/8"	5'-0"	6	14*
V-2	3/8"	5'-9"	6	17*
h	3/8"	2'-9"	47	62*
Total Wt.				93 Lb.

CULVERT DATA
Type - Spec. V.S.P. Conc. Culv. with 2 No. 2 Catch Basins Dr. #300 & 305
Size - 18" x 43'-0"
Work Req. - Build Std. 18" V.S.P. Conc. Culvert with two No. 2 Catch Basins.

EST. QUANTITIES
Excav. = 43 Cu. Yds.
Conc. 1-6 1/2 = 6.6 Cu. Yds.
18" V.S.P. = 43 Lin. Ft.
Side Inlet Catch Basin = 2 Inlets.

Sta. 8+51

PLAN

CROSS SECTION

CULVERT DATA
Type - Std. Concrete Box Culv. with one Std. Headwall & one Special headwall
Size - 3' x 3' x 44'-0"
Work Req. - Remove present 4' x 2'-6" x 37' Conc. Box Build Std. 3' x 3' x 44'-0" Conc. Box Culv. with one Std. Headwall & one Special Headwall. Clean outlet to R/W Line.

EST. QUANTITIES
Excav. = 45.0 Cu. Yds.
Conc. 1-5 1/2 = 23.1 Cu. Yds.
Reinf. Steel = 1641.0 Lbs.

Sta. 33+45

Mark	Size	Shape	No.	Length	Weight
W2a	1/2"	Bent	8	6'-6"	35
W2b	1/2"	"	6	5'-9"	23
W2c	1/2"	"	4	6'-0"	16
W2d	1/2"	Str.	6	5'-0"	22
W2e	1/2"	"	16	7'-0"	75
W2f	1/2"	Bent	9	5'-0"	30
V2a	1/2"	Str.	88	3'-9"	220
T2a	1/2"	"	24	22'-9"	365
S3a	1/2"	"	234	4'-1"	812
Total Lbs. Steel					1641

PLAN

CROSS SECTION

Drawn by: J.K.P. Date: 2-2-31
Checked by: E.E.D. Date:

CULVERT DATA
Type - Std. V.S.P. (enc) S.R. Culv. with No. 2 Catch Basins Dr. #300 & 305
Size - 18" x 44'-0"
Work Req. - Remove present 18" x 22" V.S.P. Clean & Pile. Build Std. 18" x 44" V.S.P. (enc) Culv. Side Road & Connect with 2 Std. No. 2 Catch Basins.

EST. QUANTITIES
Excav. = 34.0 Cu. Yds.
Conc. 1-6 1/2 = 6.6 Cu. Yds.
18" V.S.P. = 44.0 Lin. Ft.
Std. No. 2 Catch Basin (Complete) = 2 Only

Sta. 23+58

PLAN

CROSS SECTION

Bar Bending Diagrams

CULVERT DATA
Type - Std. Box Culv. Dwg. # BC-A
Size - 6' x 4' x 54'-0"
Work Req. - Remove old 4' x 4' x 23' Conc. Box Culv. Build Std. 6' x 4' x 54' conc. box Culv. Clean out inlet end to R/W Line.

EST. QUANTITIES
Excav. = 102 Cu. Yds.
Conc. 1-5 1/2 = 41 Cu. Yds.
Reinf. Steel = 3877 Lb.

Sta. 53+64

Mark	Size	Shape	No.	Length	Weight
W2a	1/2"	Bent	16	9'-3"	99
W2b	1/2"	Bent	16	7'-0"	75
W2c	1/2"	Str.	12	6'-0"	48
W2d	1/2"	Str.	4	8'-0"	21
W2e	1/2"	Bent	16	5'-0"	53
S3a	3/4"	Str.	226	7'-3"	2461
V2a	1/2"	Str.	108	5'-3"	379
T2a	1/2"	Str.	40	27'-9"	741
Total Wt.					3877 Lb.

PLAN

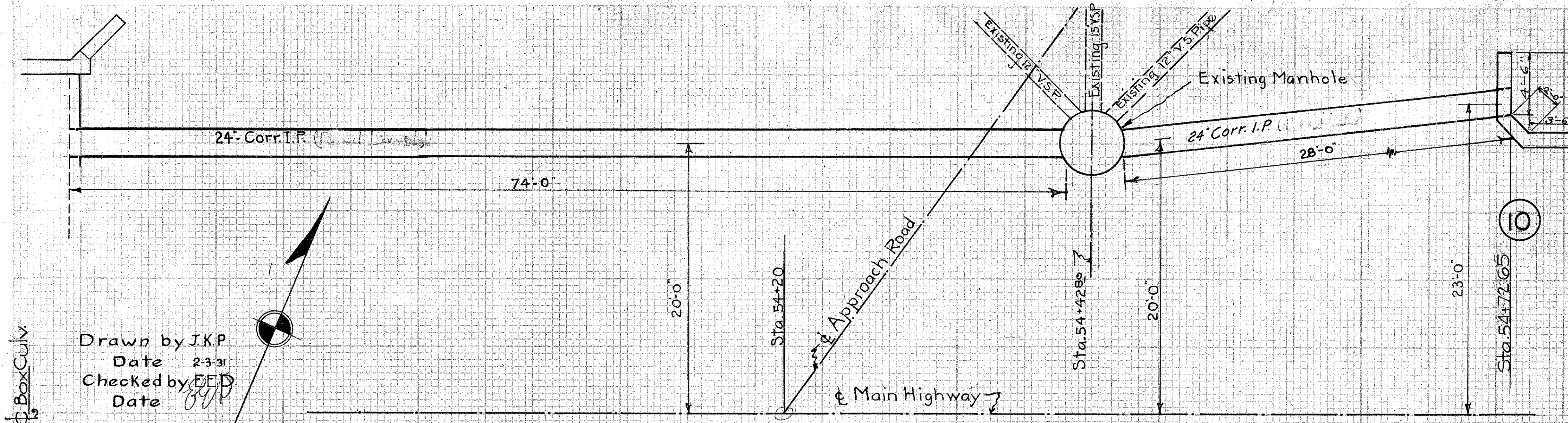
CROSS SECTION

Drawn by: J.K.P. Date: 2-2-31
Checked by: E.E.D. Date:

CULVERT DATA
Type - Std. V.S.P. (enc) S.R. Culv. with No. 2 Catch Basins Dr. #300 & 305
Size - 18" x 44'
Work Req. - Remove present 18" x 20" V.S.P. Clean & Pile. Build Std. 18" x 44" S.R. V.S.P. (enc) Culv. with 2 Std. No. 2 Catch Basins.

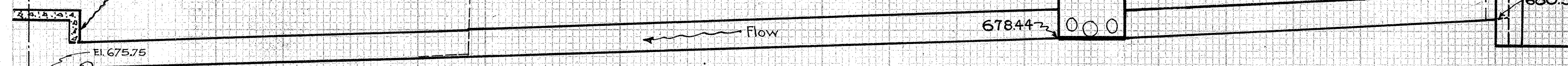
EST. QUANTITIES
Excav. = 25 Cu. Yds.
Conc. 1-6 1/2 = 6.6 Cu. Yds.
18" V.S.P. = 44 Lin. Ft.
Std. No. 2 Catch Basin (Complete) = 2 Only

Sta. 29+40



Drawn by J.K.P.
Date 2-3-31
Checked by E.E.D.
Date 6/2/31

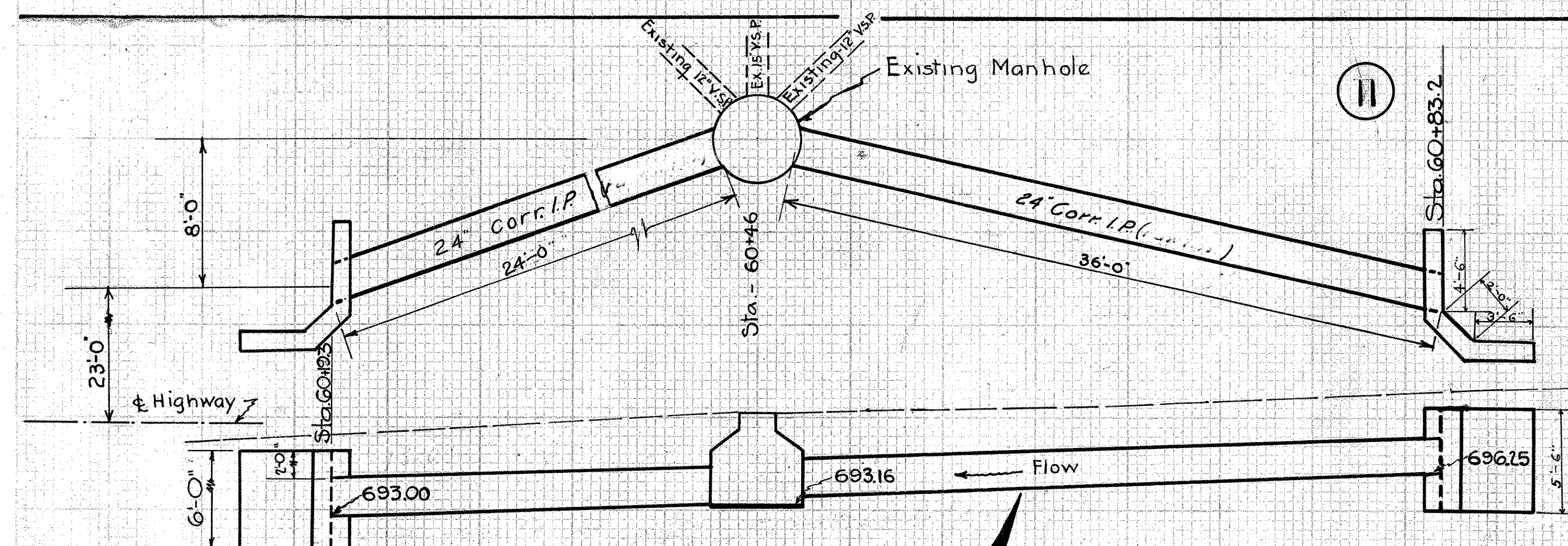
Connect into 6' x 4' Conc. Box



CULVERT DATA
Type: Spec. Corr.I.P. S. Road Culv. with one Std. Headwall. Dwg. #300
Size: 24" x 74' Manhole to Box Culv. & 24" x 28' Hd. Wall to M.H.
Work Req. Build 24" x 28' Corr.I.P. Culv. with one Side Road Culv. Headwall & Connect to Existing M.H. Build 24" x 74' Corr.I.P. Culv. from M.H. to Box Culv. @ Sta. 53+64. Raise or lower Manhole as directed by the Engineer. - Remove present 24" x 74' V.S.P. Culv. - Clean & Pile V.S.P.

EST. QUANTITIES
Excav. 67 Cu.Yds.
Concrete 1-5 1/2 Cu.Yds.
24" Corr.I.P. 102.0 Lin.Ft
Reinf. Steel 42 Lbs.

Sta. 54+20

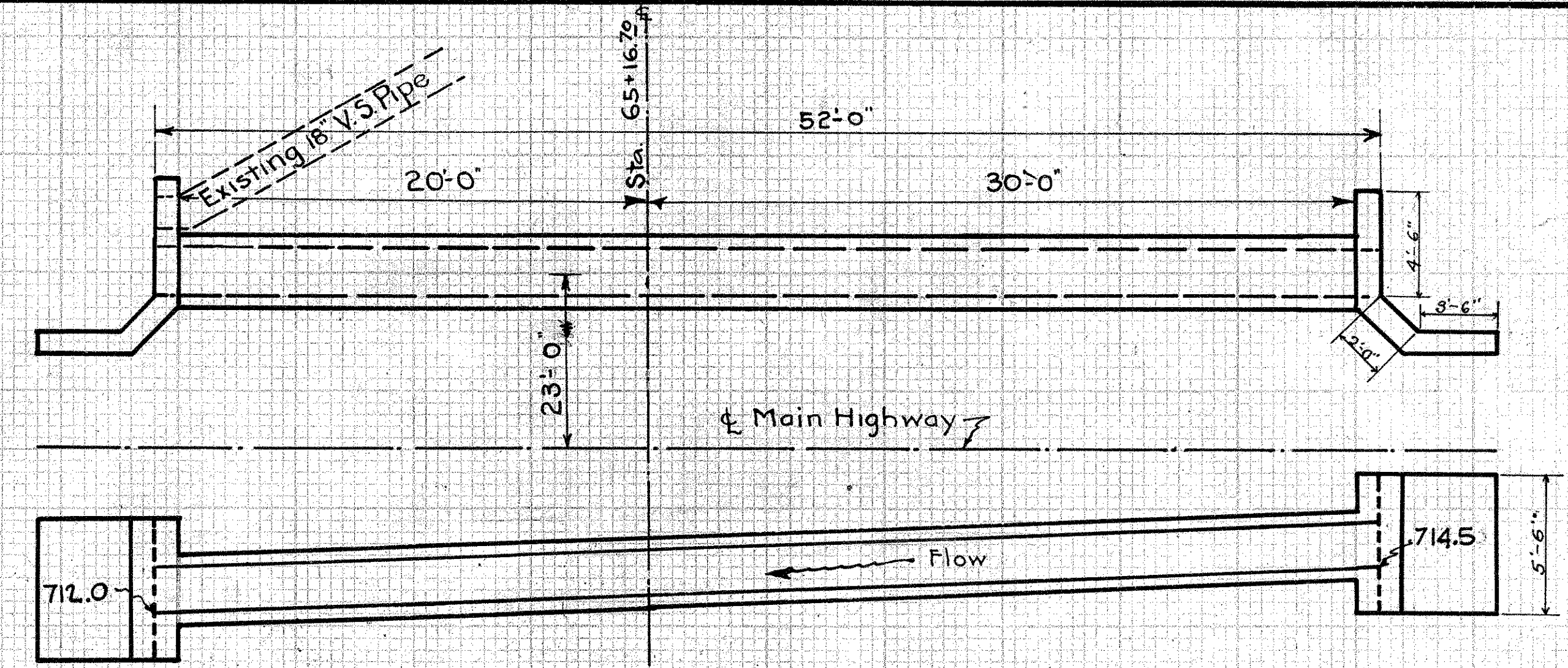


CULVERT DATA
Type: Spec. Corr.I.P. Side Road Culvert Std. Dwg #300
Size: 24" x 24'-0" & 24" x 36'
Work Req: Remove Present 24" x 57'-0" V.S.Pipe - Clean & Pile V.S.P. Build New 24" x 24' Corr.I.P. (Inverted) Culv. with Spc. H.W. & 24" x 36' Corr.I.P. (Inverted) Culv. with Std. Hd. Wall. Connect into Manhole & raise or lower Manhole as directed by the Engineer. Clean out ditch both ends.

EST. QUANTITIES
Excav. 40 Cu.Yds.
Conc. 1-5 1/2 Cu.Yds.
24" Corr.I.P. 60 Lin.Ft
Reinf. Steel 85 Lbs.

Drawn by J.K.P.
Date 2-4-31
Checked by E.E.D.
Date 6/2/31

Sta. 60+55



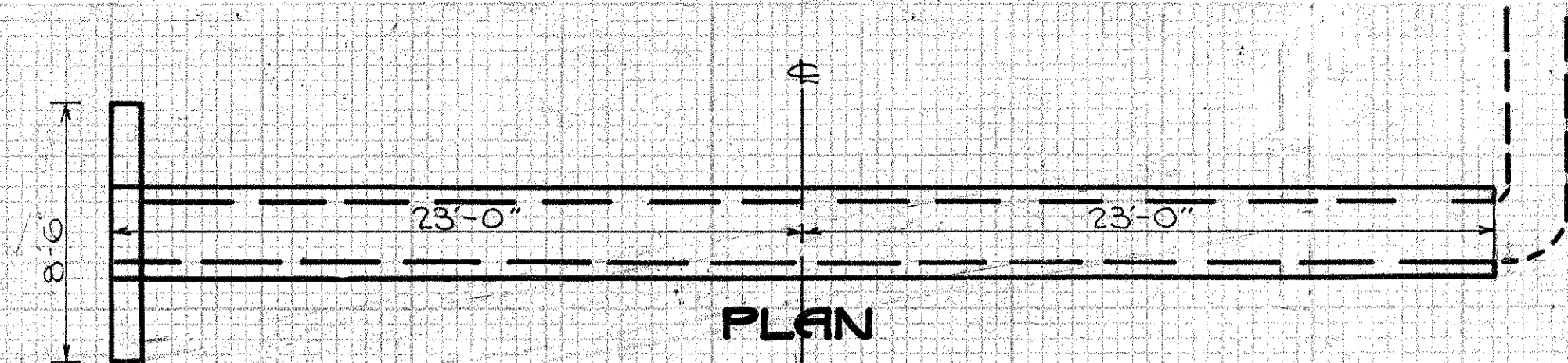
CULVERT DATA
Type Std. V.S.P. (enc) Side Road Culvert
Size: 24" x 52'
Work Required: Remove Present 24" x 39' Corr.I.P. Culvert Clean & Pile. Build 24" x 52' V.S.P. (Enc) Side Road Culvert. - Connect existing 18" V.S.P. into Headwall with 30° El. Std. Dwg. #300.

EST. QUANTITIES
Excav. 42 Cu.Yds.
Conc 1-5 1/2 Cu.Yds.
Conc. 1-6 1/2 10.3 Cu.Yds.
24" V.S.Pipe 52 Lin. Ft
30° El-18" V.S.P. 1 Pc.
Reinf. Steel 85 Lbs

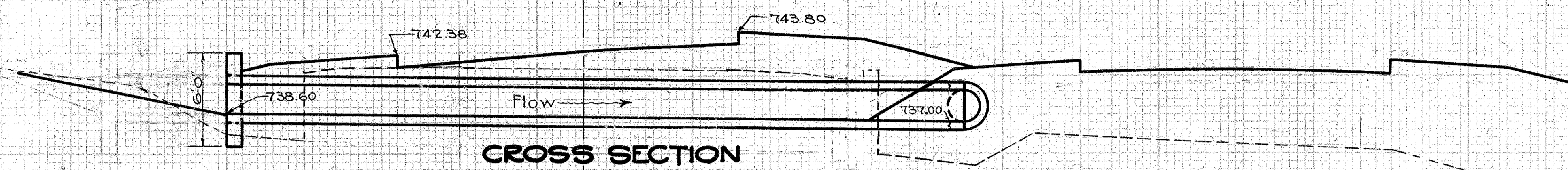
Drawn by J.K.P.
Date 2-3-31
Checked by E.E.D.
Date

Sta. 65+17

S.H. I.C.H. NO. 179 SEC. A&D
BUTLER COUNTY



PLAN



CROSS SECTION

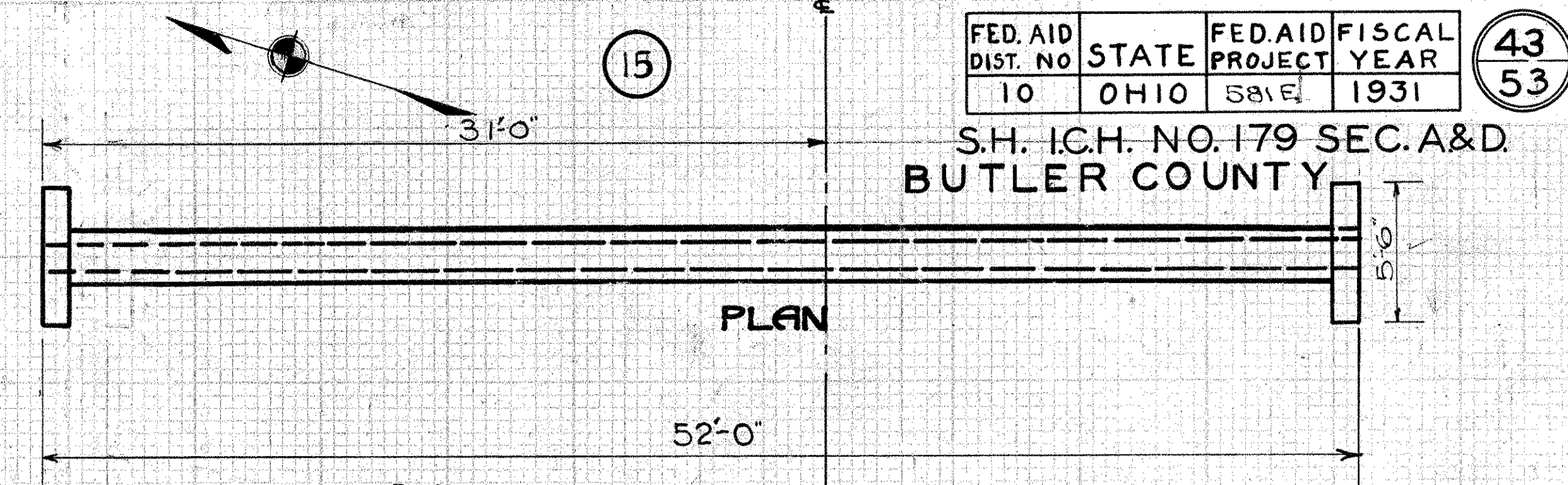
CULVERT DATA
Type: Std. V.S.P. enc. Culvert Dwg. #300 One Hd. Wall
Size: 24' x 46'-0"
Work Req'd. Remove present 24' x 37' V.S.P.
Build 24' x 46'-0" V.S.P. (enc) Culvert with 1 Std. H.W.
Clean out Channel inlet end.

EST. QUANTITIES

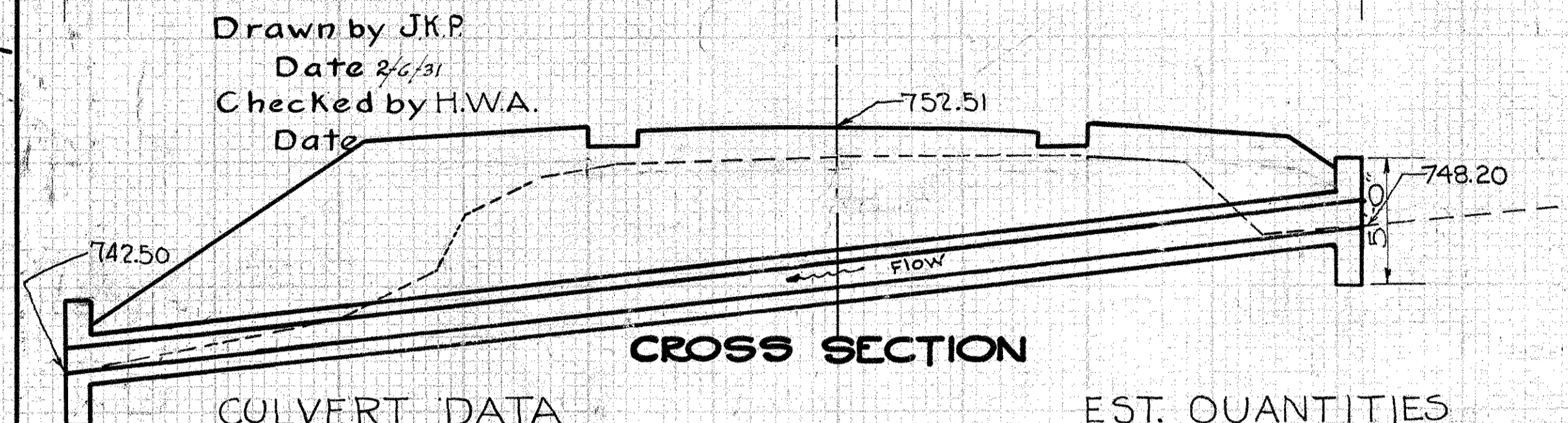
Excav.	30	Cu. Yds.
Concr. 1-5 1/2	1.8	Cu. Yds.
Concr. 1-6 1/2	9.3	Cu. Yds.
Reinf. Steel	53	Lbs.
24" V.S.P.	46	Lin. Ft.
24"-90° E1.	1	Pcs.

Drawn by J.K.P.
Date 2/5/31
Checked by H.W.A.
Date

Sta. 73+20



PLAN



CROSS SECTION

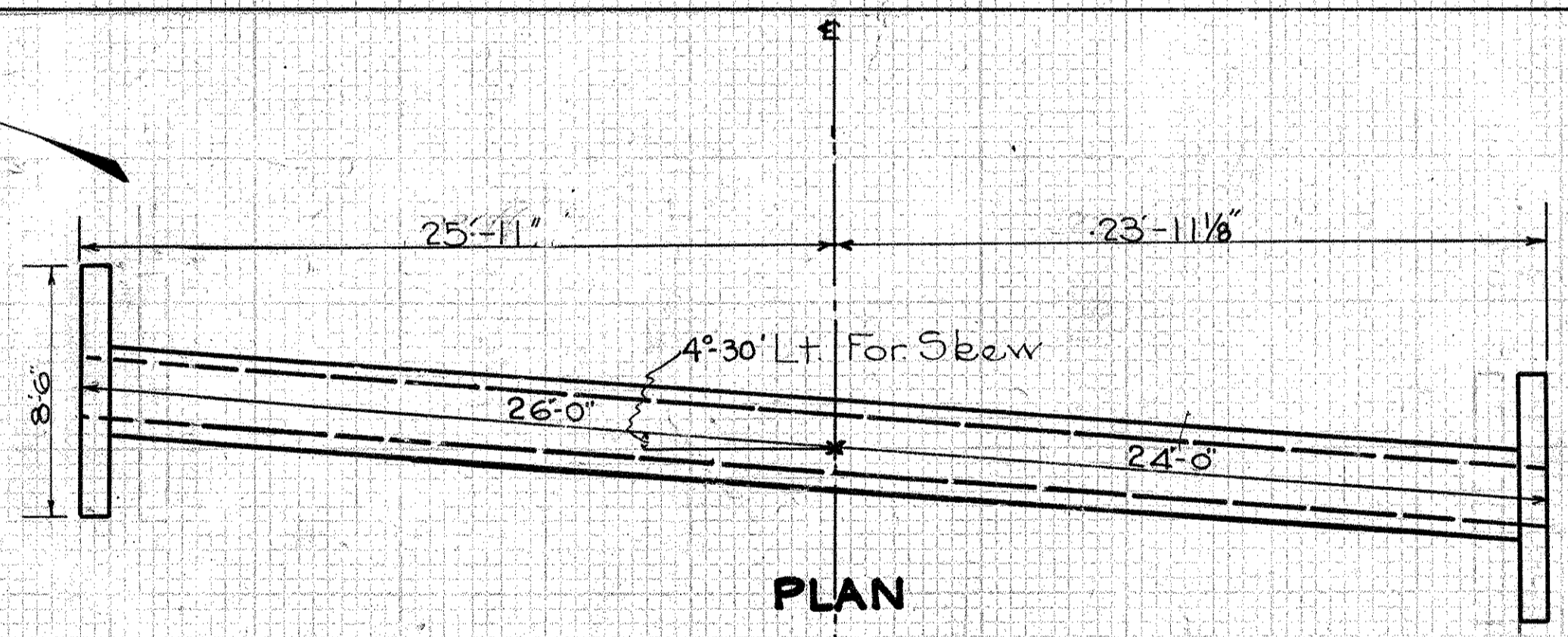
Drawn by J.K.P.
Date 2/6/31
Checked by H.W.A.
Date

CULVERT DATA
Type: Std. V.S.P. (enc) Culvert Dwg #300
Size: 12' x 52'-0"
Work Req'd: Remove Existing 10' x 33' V.S.P. Clean & Pile
Build Std. 12' x 52' V.S.P. (enc) Culvert Dwg #300

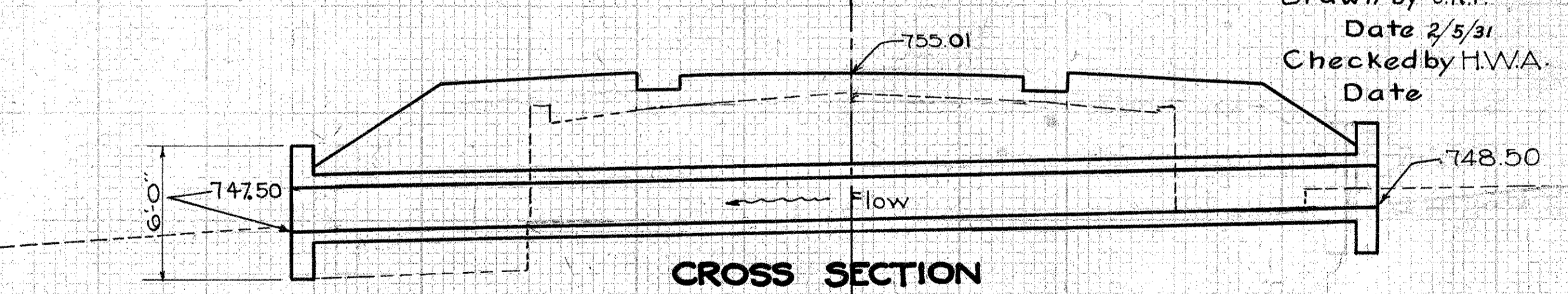
EST. QUANTITIES

Excav.	35	Cu. Yds.
Concr. 1-5 1/2	2.0	Cu. Yds.
Concr. 1-6 1/2	5.4	Cu. Yds.
12" V.S.P.	52	Lin. Ft.
Reinf. Steel	65.0	Lbs.

Sta. 95+82



PLAN



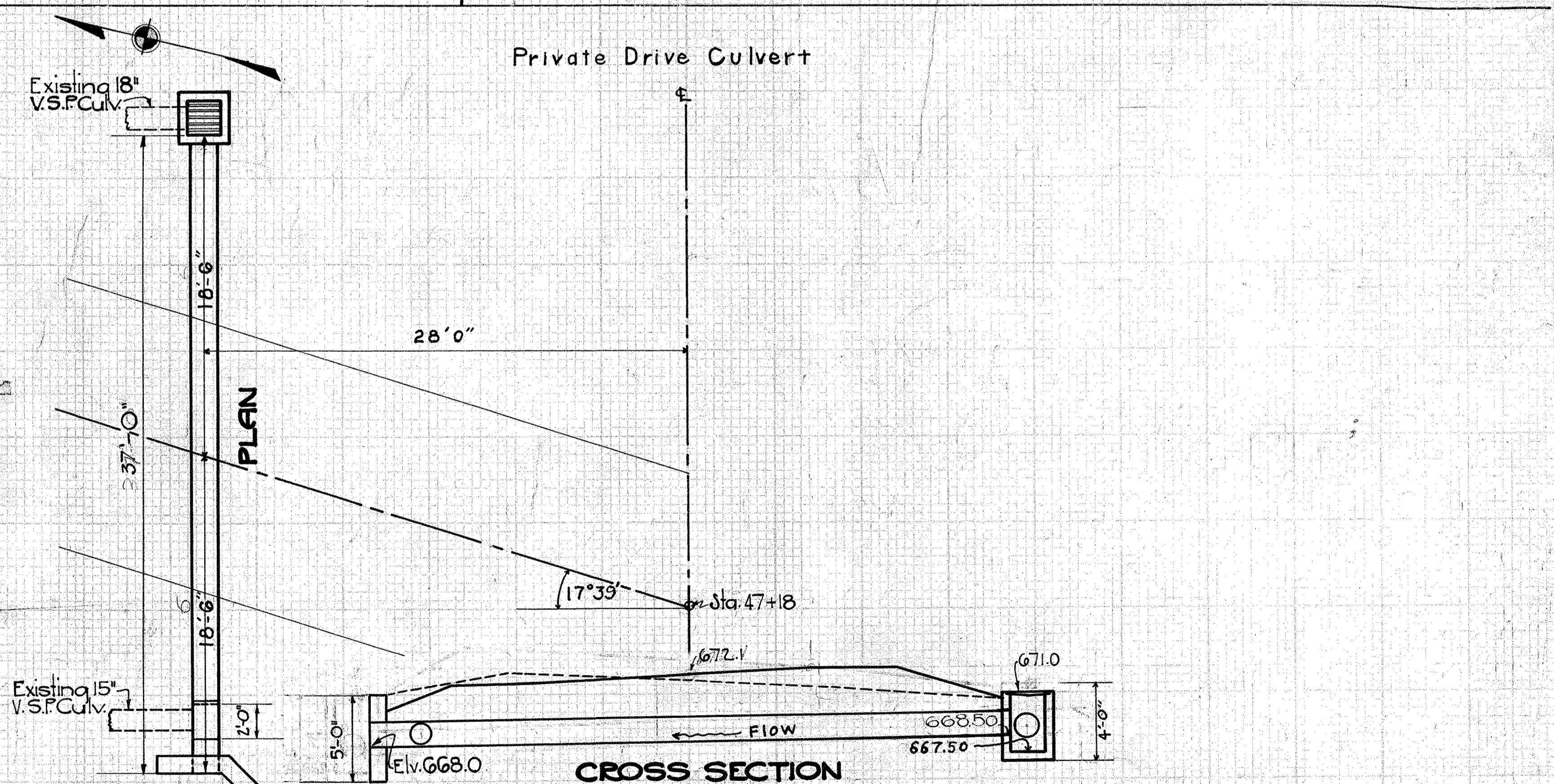
CROSS SECTION

CULVERT DATA
Type: Std. V.S.P. (enc) Culvert Dwg #300
Size: 24' x 50'-0"
Work Req'd: Remove Existing 24' x 30' V.S.P. Culvert - Clean & Pile.
Build Std. 24' x 50'-0" V.S.P. (enc) Culvert. Clean out Channel inlet end.

EST. QUANTITIES

Excav.	35	Cu. Yds.
Concr. 1-5 1/2	3.5	Cu. Yds.
Concr. 1-6 1/2	9.9	Cu. Yds.
Reinf. Steel	105.0	Lbs.
24" V.S.P.	50	Lin. Ft.

Sta. 92+36



PLAN

CROSS SECTION

Drawn by J.K.P.
Date 2/4/31
Checked by E.E.D.
Date

CULVERT DATA
Type: Corr. Pvt. Drive Std. Dwg 300 & 305
Size: 18" x 37'-0"
Work Req'd. Remove Existing 18" x 22' Corr. I.P.
2' x 2' x 12' Conc. Box & Hd. Walls. Build 18" x 31'-0" Corr. I.P.
Culv. & Std. No. 2 Catch Basins 1 Std. S.R.
H.W. Connect Exist. V.S.P. with Culv.

EST. QUANTITIES

18" Corr. I.P.	35	Lin. Ft.
No. 2 Catch Basin (Complete)	1	Only
18" Corr. I.P. with 15" Spur	1	Only
Conc. (1-5 1/2)	1.7	Cu. Yd.
Reinf. Steel	35	Lb.

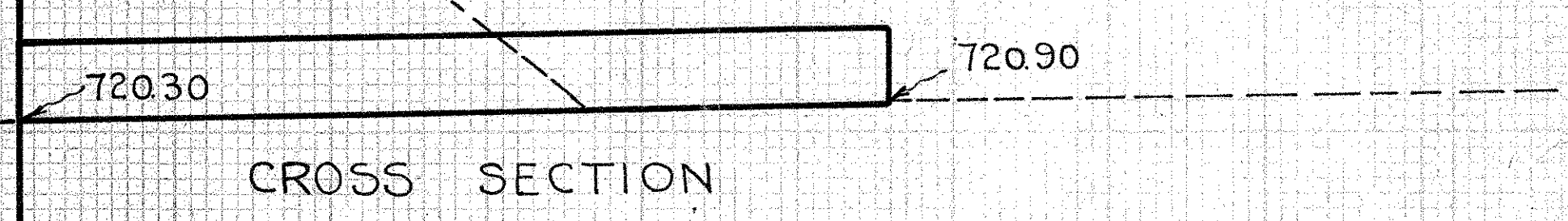
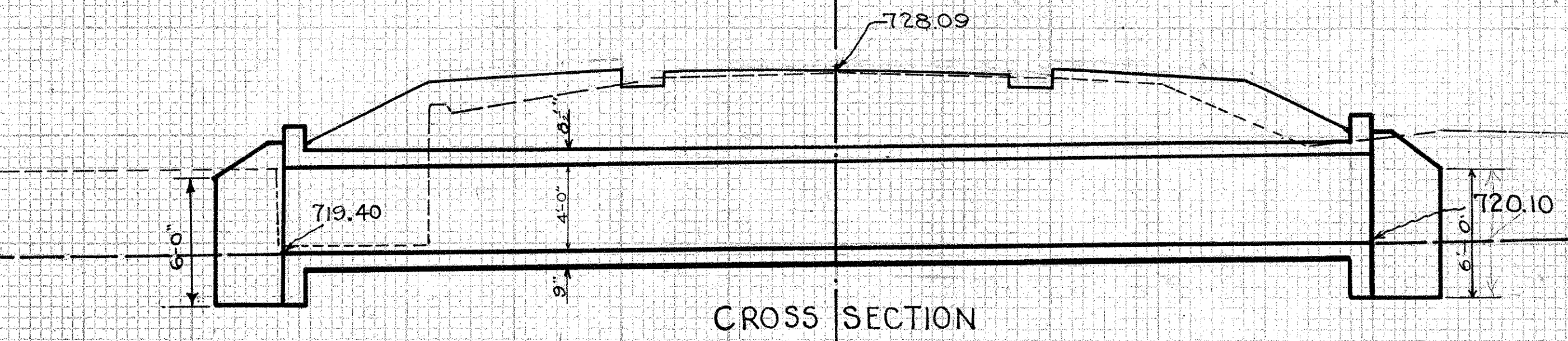
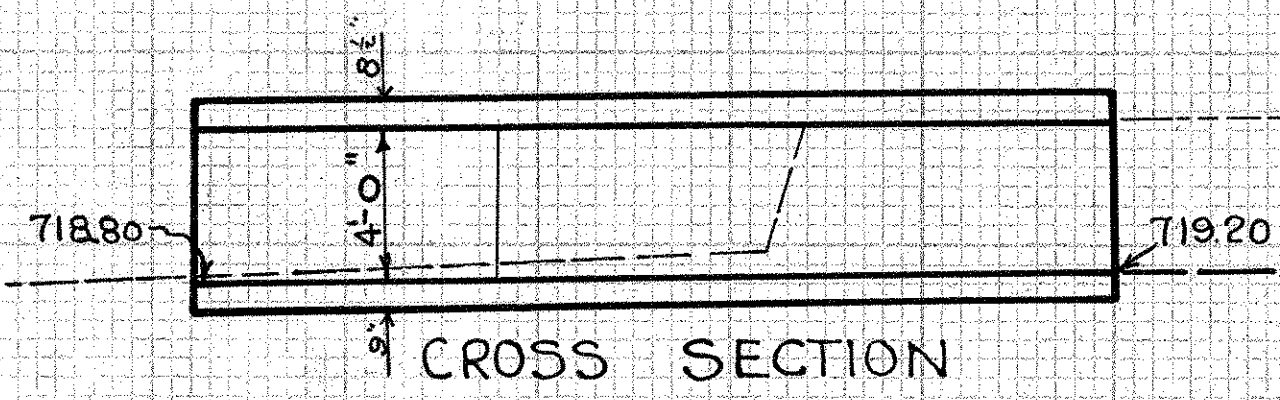
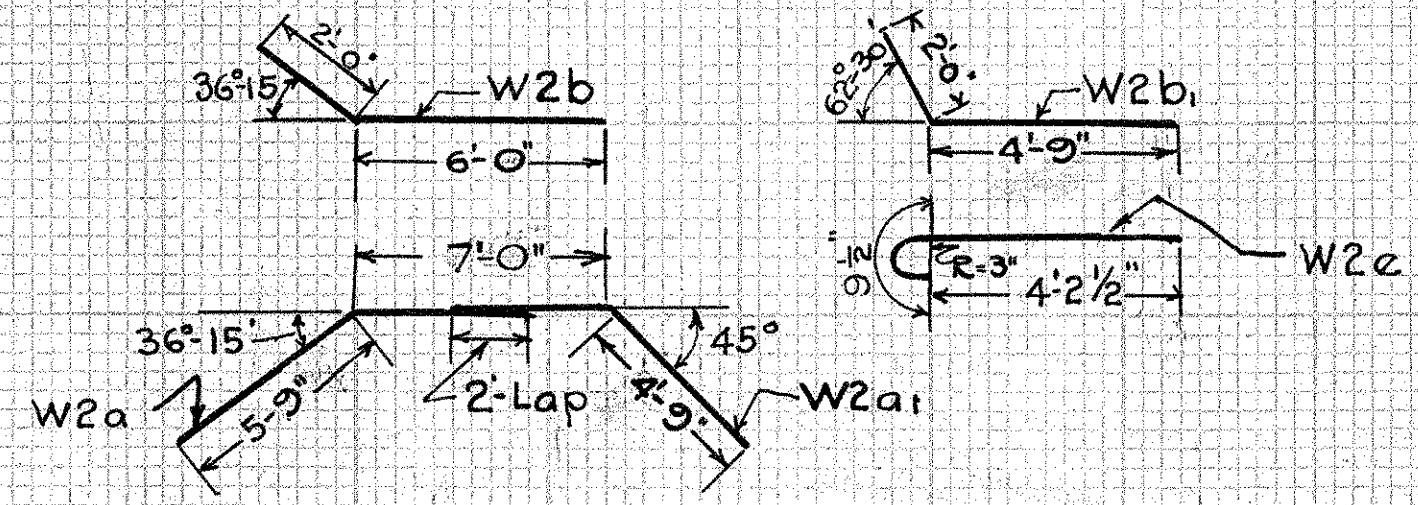
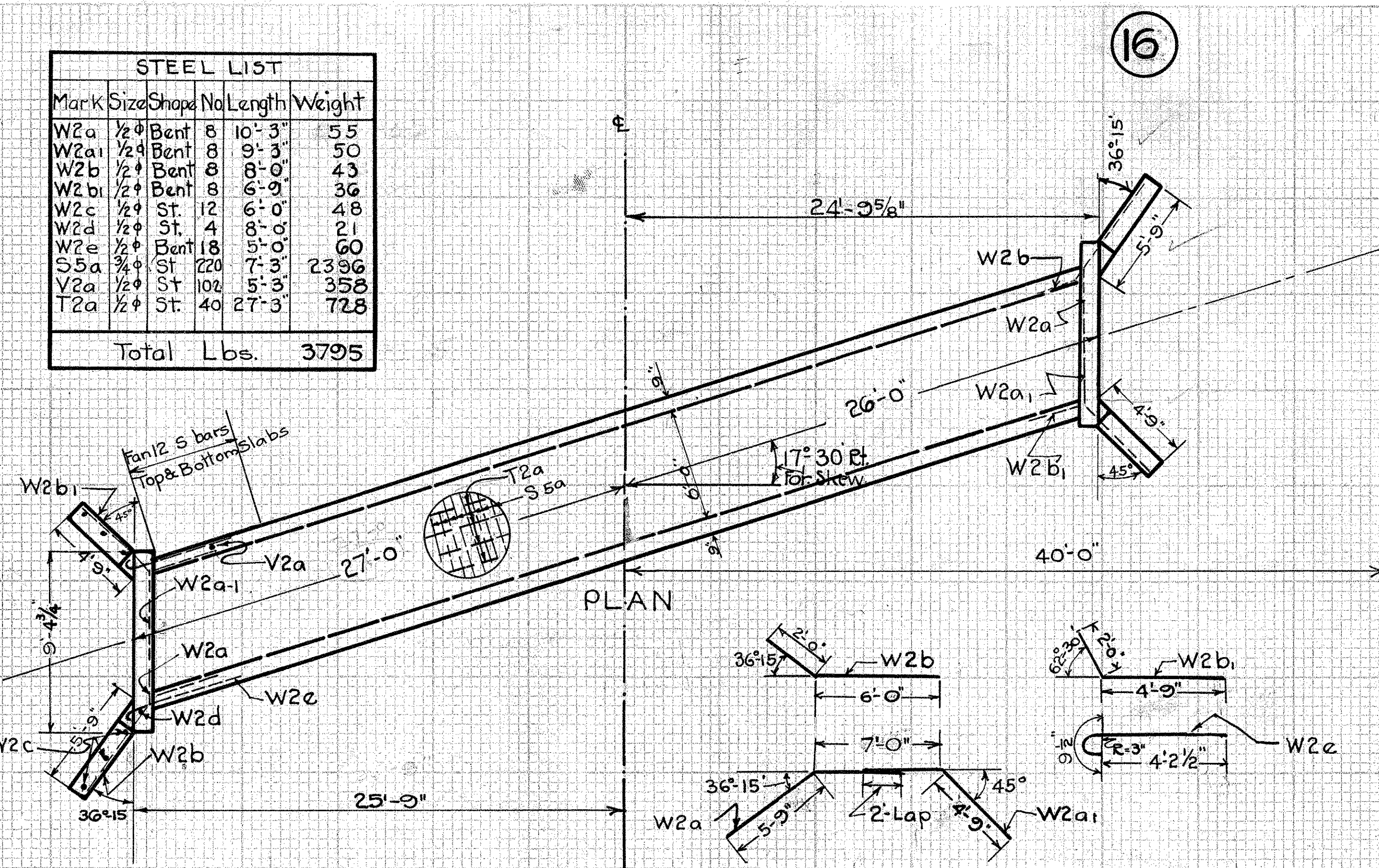
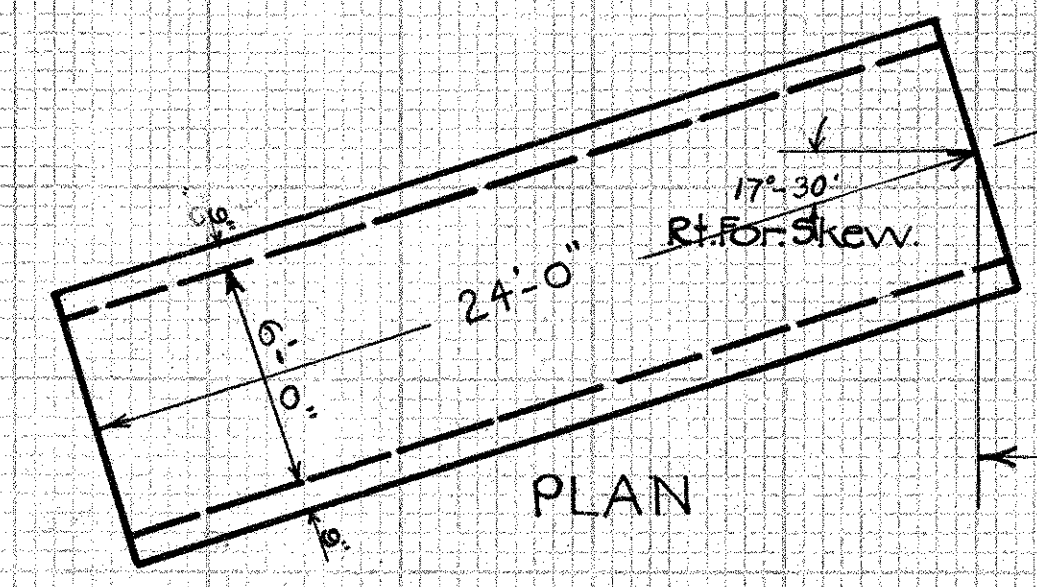
Sta. 47+18

S.H. I.C.H. NO.179 SEC.A.
BUTLER COUNTY

PRIVATE DRIVES

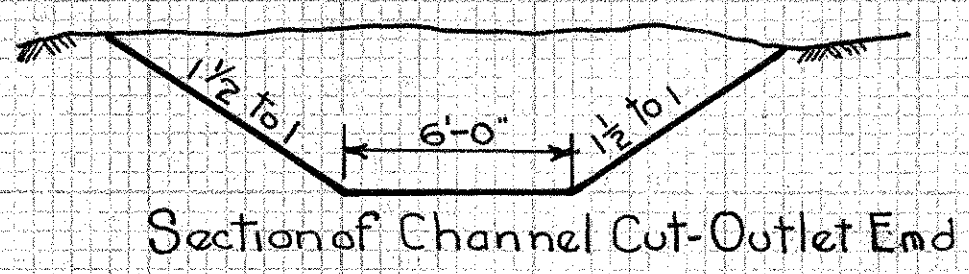
Mark	Size	Shape	No	Length	Weight
S-5a	3/4"	St.	100	7'-3"	1089
V-2a	1/2"	St.	48	5'-3"	168
T-2a	1/2"	St.	20	23'-9"	317
Total					Lbs. 1574

Mark	Size	Shape	No	Length	Weight
W2a	1/2"	Bent	8	10'-3"	55
W2a1	1/2"	Bent	8	9'-3"	50
W2b	1/2"	Bent	8	8'-0"	43
W2b1	1/2"	Bent	8	6'-9"	36
W2c	1/2"	St.	12	6'-0"	48
W2d	1/2"	St.	4	8'-0"	21
W2e	1/2"	Bent	18	5'-0"	60
S-5a	3/4"	St.	220	7'-3"	2396
V-2a	1/2"	St.	102	5'-3"	358
T-2a	1/2"	St.	40	27'-3"	728
Total					Lbs. 3795

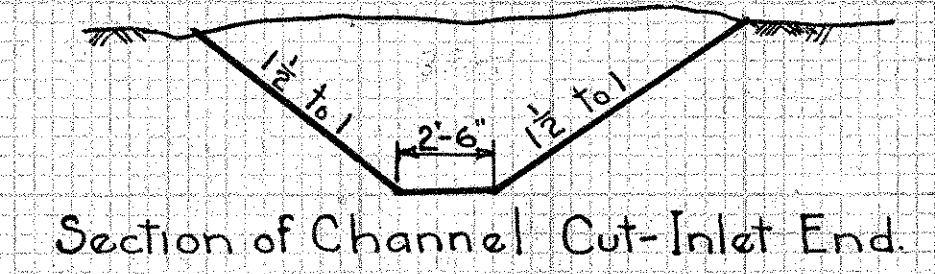


CULVERT DATA
Type: Spec. Box Culv. Dr. BCA
Size: 6'x4'x24'-0"
Work Req'd: Remove present 6'x3'x24' Conc. Arch Culvert
Build Std. 6'x4'x24' Conc. Box Culvert without Headwalls
Excavate Channel as Shown on Right

EST. QUANTITIES
Excav. 30 Cu. Yds.
Concr. (1-5 1/2) 15.1 Cu. Yds.
Reinf. Steel 1574 Lbs.



CULVERT DATA
Type: Std. Box Culvert Drwg. BCA
Size: 6'x4'x53'-0"
Work Req'd: Remove present 6'x4'x33' Conc. Box & Stone Arch Culv.; & 7'x6' Open Conc. Box C Basin
Build Std. 6'x4'x53'-0' Conc. Box Culv. 17° 30' Rt Forward Skew-Excavate Channel as shown to Right of Way Line



EST. QUANTITIES
Excav. 175.0 Cu. Yds.
Concr. - 1-5 1/2 4.1 Cu. Yds.
Reinf. Steel 3795 Lbs.

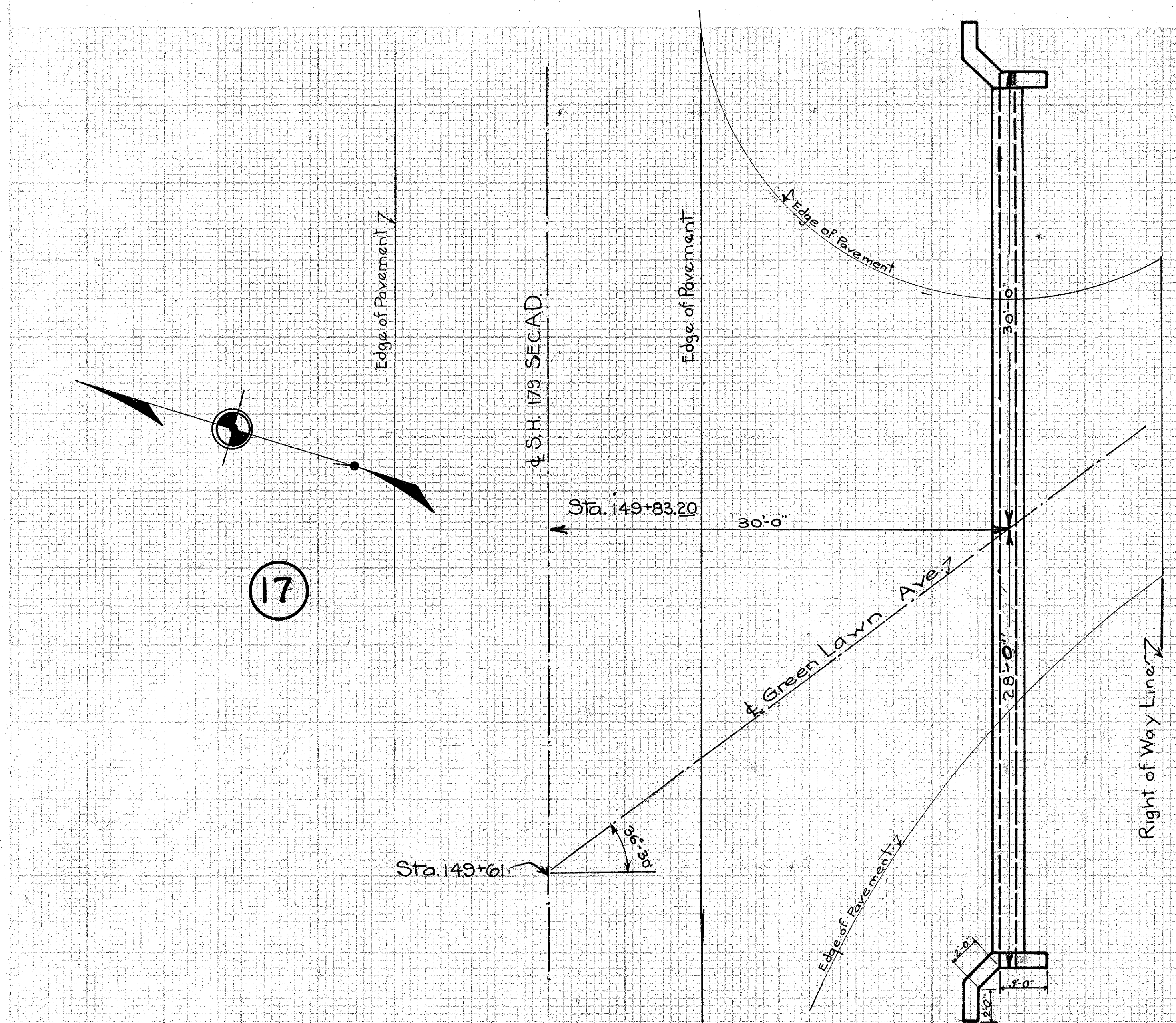
Note: Removal of Existing Structure Included in Excav. Quantities

CULVERT DATA
Type: Corr. I.P. Culvert
Size: 30'x28'
Work Req'd: Remove present 24'x26' V.S.P. Culvert
Build 30'x28' Corr. I.P. Culv.
Excav. Outlet as shown on left.

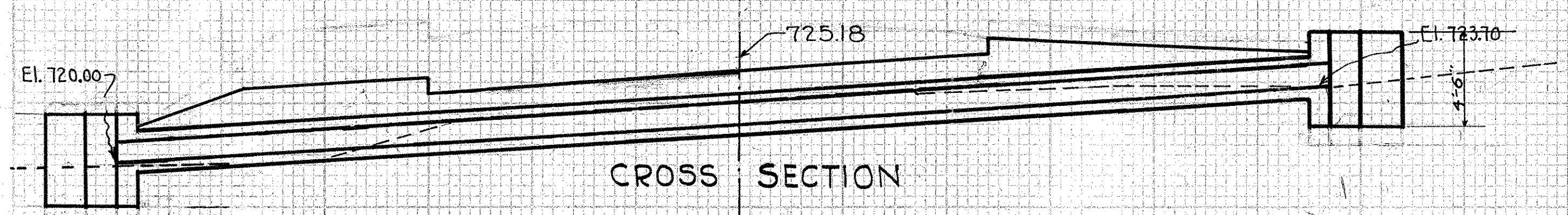
EST. QUANTITIES
Excav. 15.9 Cu. Yds.
30' Corr. I.P. 28 Lin. Ft.

Drawn by J.K.P.
Date 2/7/31
Checked by H.W.A.
Date

Mark	Size	Shape	No.	Length	Weight
W2a	1/2" φ	Bent	20	15'-0"	200.0
W2b	1/2" φ	Bent	32	11'-3"	240.0
W2c	1/2" φ	St.	40	8'-6"	227.0
W2d	1/2" φ	St.	4	12'-6"	33.0
W2e	1/2" φ	Bent	32	5'-0"	107.0
V2a	1/2" φ	St.	90	11'-0"	661.0
T2a	3/4" φ	St.	54	23'-0"	830.0
S5a	3/4" φ	St.	112	10'-6"	1766.0
Total Weight Lbs. =				4064.0	



PLAN



CROSS SECTION

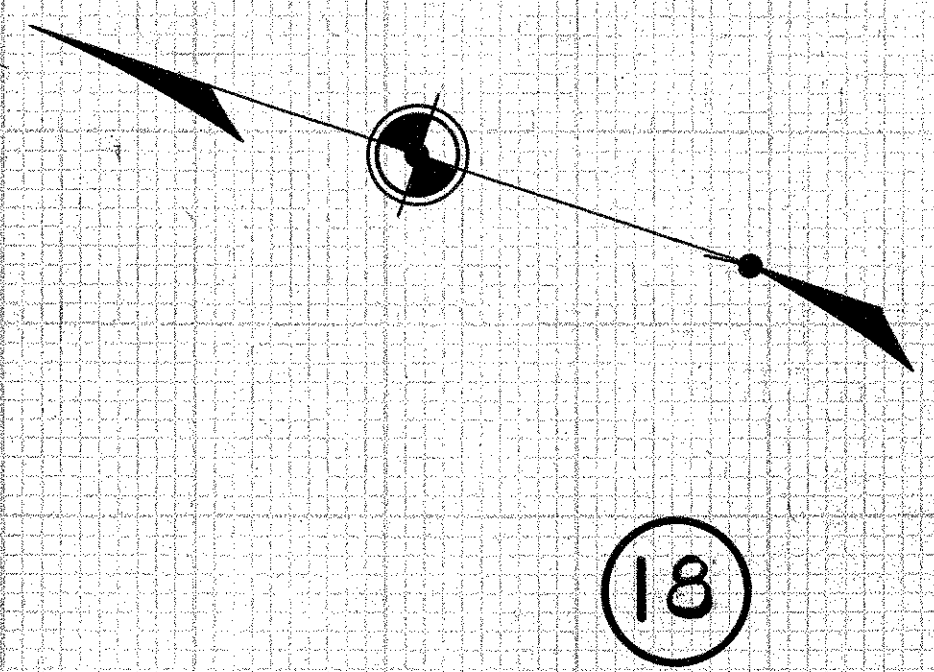
CULVERT DATA
 Type: Std. V.S.P. (enc) Side Road Culvert #300
 Size: 12' x 58'-0"
 Work Req'd: Remove existing 12' x 61' V.S.P. Culvert. Clean & Pile. Build Std. 12' x 58'-0" V.S.P. (enc) Side Road Culvert.

EST. QUANTITIES

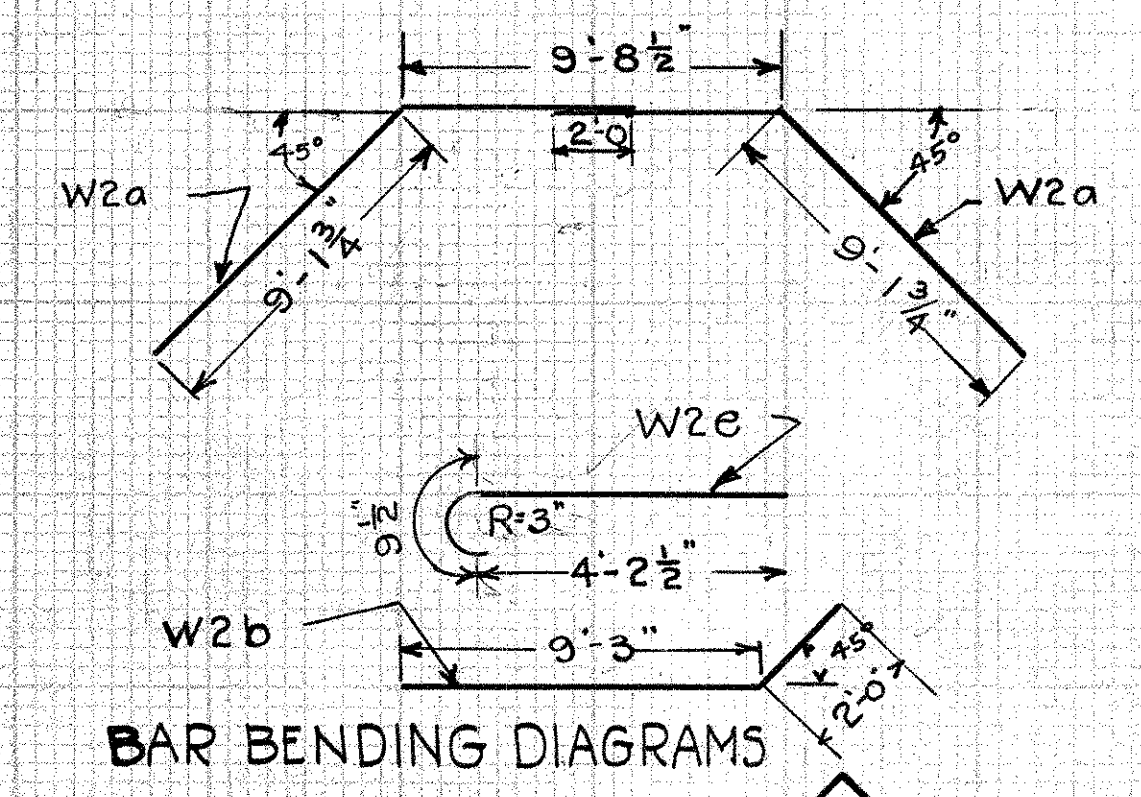
Excav.	15.0 Cu.Yds.
Concr. 1-5 1/2	2.6 Cu.Yds.
Concr. 1-6 1/2	6.1 Cu.Yds.
Reinf. Steel	60.0 Lbs.
12' V.S.P.	58 Lin.FT

Drawn by J.K.P.
 Date 2/9/31
 Checked by H.W.A.
 Date

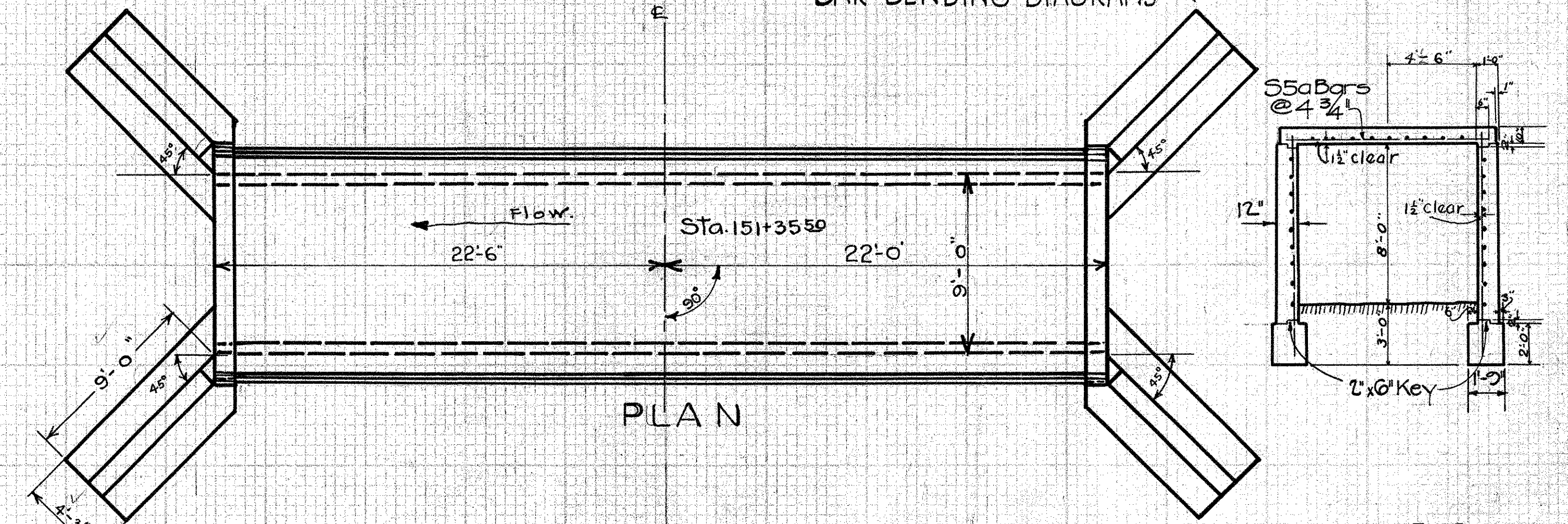
Sta. 149+61



(18)

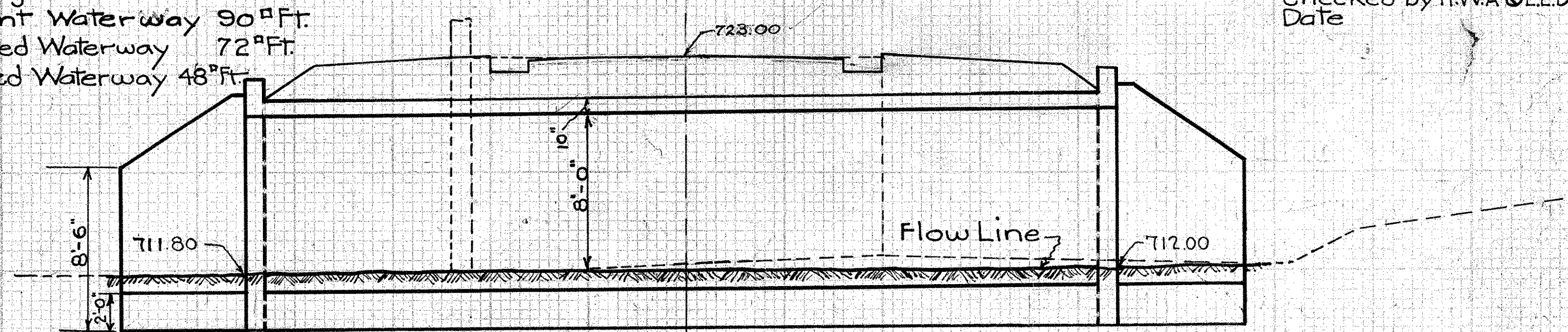


BAR BENDING DIAGRAMS



PLAN

Drainage Area 300 Acres
 Present Waterway 90^{sq} Ft.
 Proposed Waterway 72^{sq} Ft.
 Required Waterway 48^{sq} Ft.



CROSS SECTION

CULVERT DATA
 Type: Std Slab Top Culvert Dr. S.C.A
 Size: 9' x 8' x 44'-6"
 Work Req'd: Remove present 10' x 9' x 22' Slab Top Culvert. Build Std. 9' x 8' x 44'-6" Slab Top Culvert. Place 210 Sq.Yds. Rip Rap (18" Thick) Sta. 151+47 to 154+17. Place Rip Rap 7' High on Slope. Right

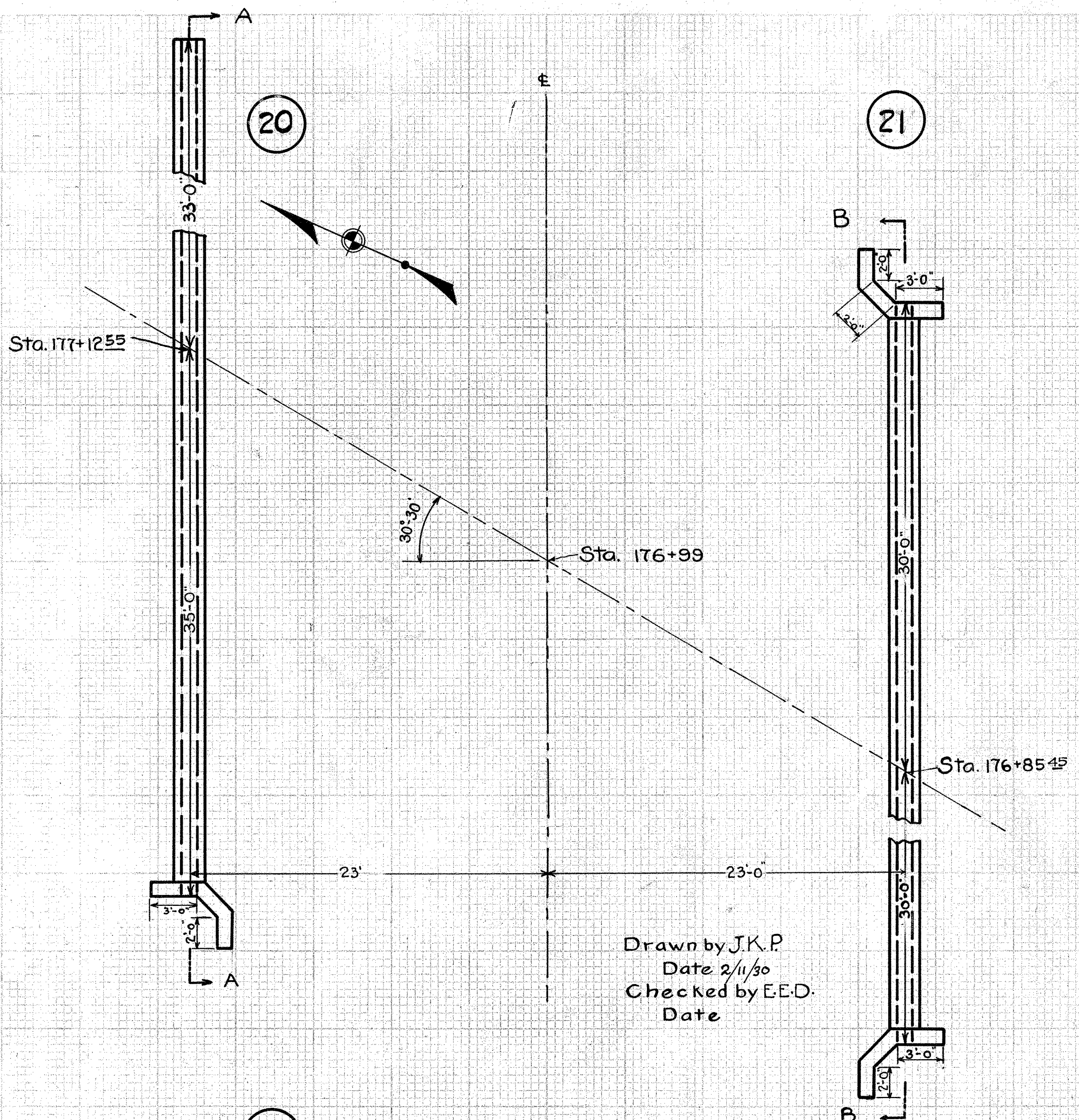
EST. QUANTITIES

Excav.	120 Cu.Yds.
Concr. 1-5 1/2	58.2 Cu.Yds.
Concr. 1-6 1/2	233 Cu.Yds.
Reinf. Steel	4064 Lbs.
Rip Rap (18" Thick)	210.0 Sq.Yds.

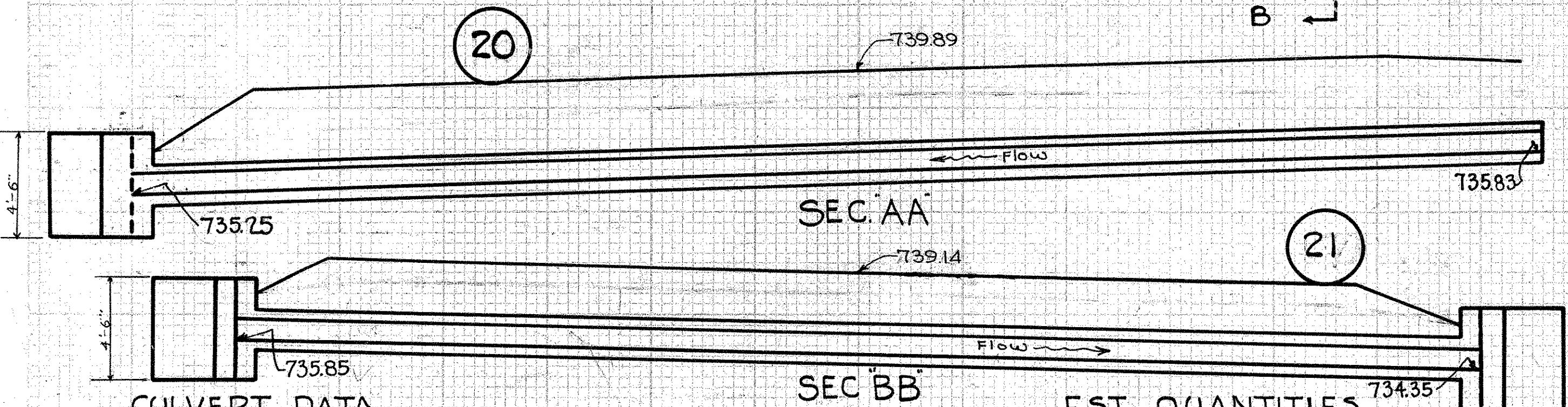
Note: See Sheet No. 23 for Detail of Rip Rap

Sta. 151+35.5

Drawn by J.K.P.
 Date 2/10/31
 Checked by H.W.A. & E.E.D.
 Date



Drawn by J.K.P.
Date 2/11/30
Checked by E.E.D.
Date



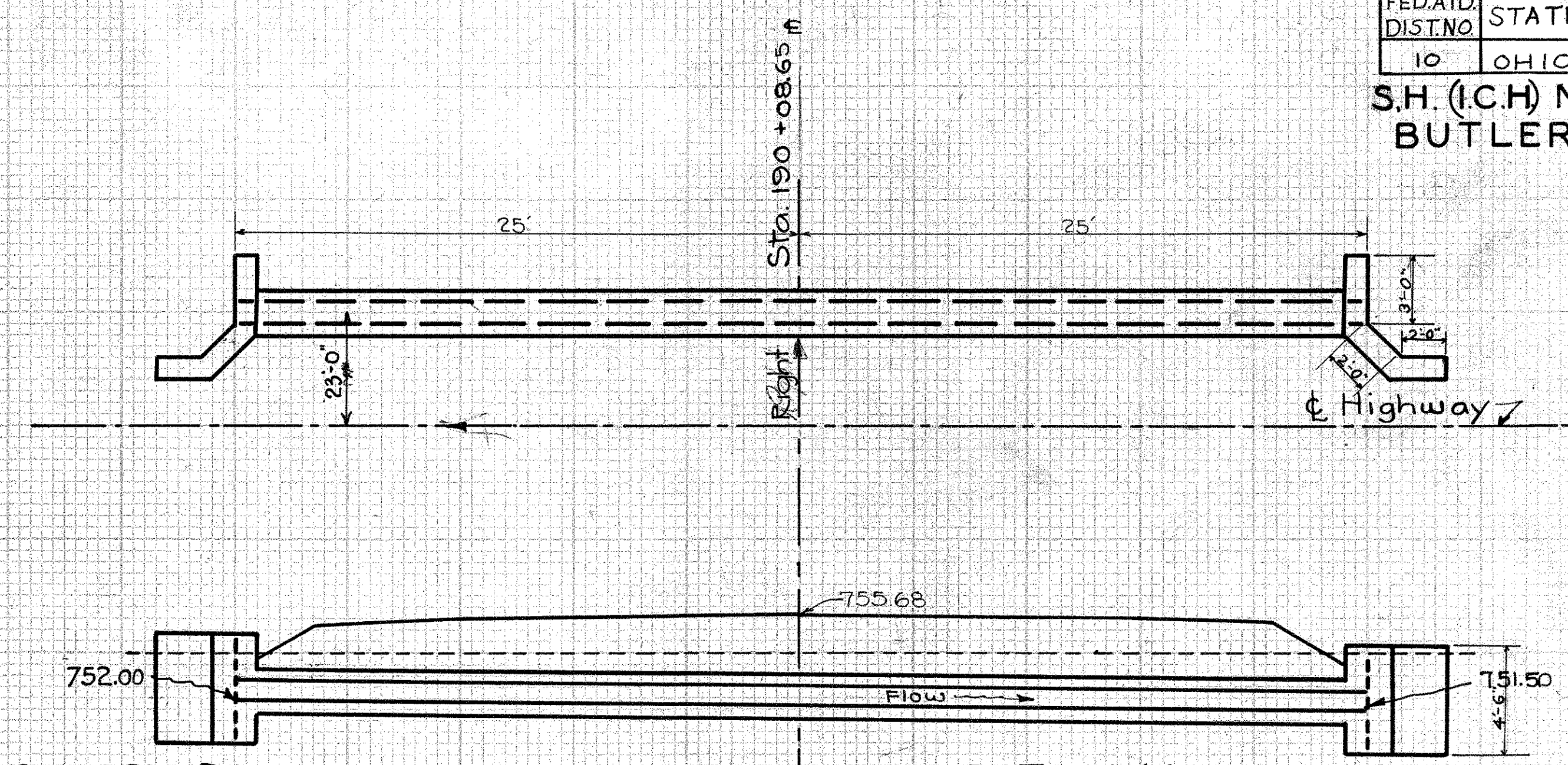
CULVERT DATA

Type Std: V.S.P(enc) Side Road Culvert. Drwg #300
Size: 1-12"x68" V.S.P(enc) One Headwall. 1-12"x60" V.S.P(enc) Two Hdws.
Work Req'd Remove Exist 12"x47" C.I.P & V.S.P Clean & Pile
Build: 1-Std 12"x68" V.S.P(enc) - 1 Headwall on Left
Build 1-12"x60" V.S.P(enc) Culv. (Side Road) on Right

EST. QUANTITIES

Excav.	58.	Cu.Yds.
Concr. 1-5 1/2	3.9	Cu.Yds.
Concr. 1-6 1/2	13.5	Cu.Yds.
Reinf. Steel	90	Lbs.
12" V.S.P.	128	Lin.Ft.

Sta. 176+99.

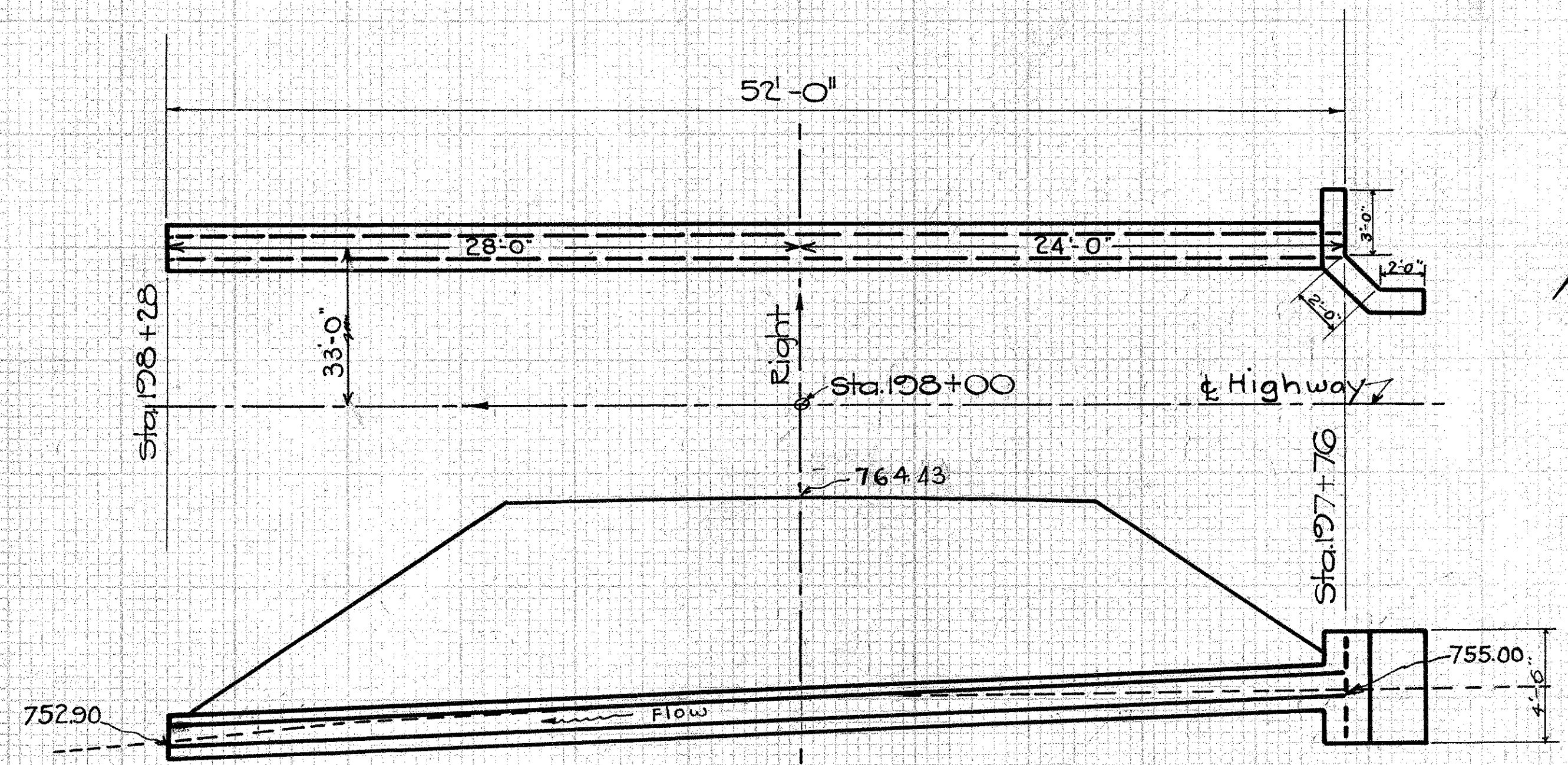


CULVERT DATA
Type Std. V.S.P. Side Road Culvert Drwg #300
Size 12' x 50'
Work Req'd: Remove Existing 12' x 24' C.I.P.
Build Std: 12' x 50' V.S.P(enc) Culvert Right

EST. QUANTITIES

Excav.	25	Cu.Yds.
Concr. 1-5 1/2	2.6	Cu.Yds.
Concr. 1-6 1/2	5.2	Cu.Yds.
Reinf. Steel	60	Lbs.
12" V.S.P.	50	Lin.Ft.

Drawn by J.K.P.
Date 2/12/30
Checked by E.E.D.
Date



CULVERT DATA

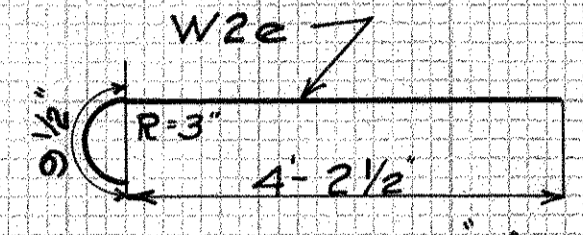
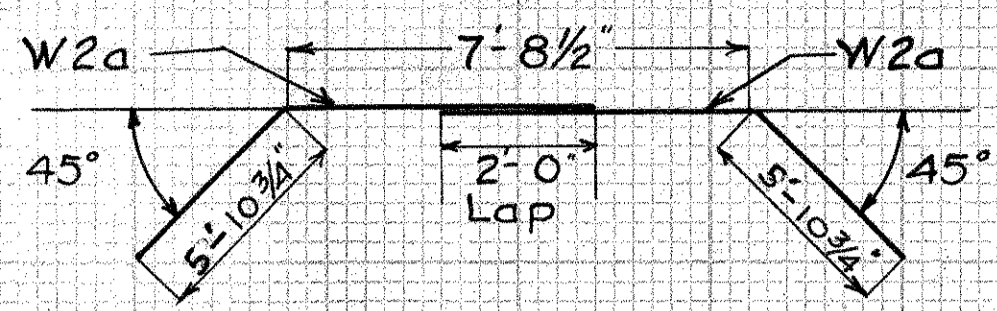
Type Std. V.S.P(enc) Side Road Culvert Drwg #300
Size 12' x 52' V.S.P(enc)
Work Req'd. Remove Existing 12' x 24' C.I. Pipe, Clean & Pile. Build Std. 12' x 52' V.S.P(enc) S.R.
Culvert with one Headwall.
Connect outlet end to pipe under drain at Sta. 198+25

EST. QUANTITIES

Excav.	16	Cu.Yds.
Concr. 1-5 1/2	1.3	Cu.Yds.
Concr. 1-6 1/2	5.5	Cu.Yds.
Reinf. Steel	30	Lbs.
12" V.S.P.	52	Lin.Ft.

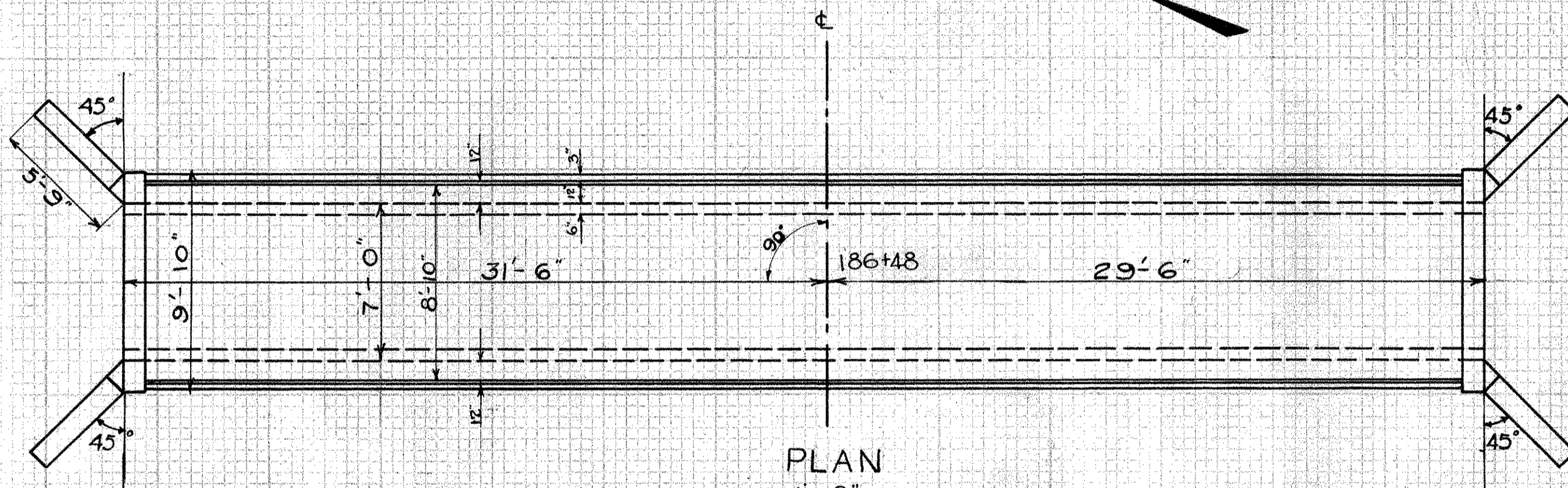
Drawn by J.K.P.
Date 2/12/30
Checked by E.E.D.
Date

Sta. 198+00



BAR BENDING DIAGRAMS

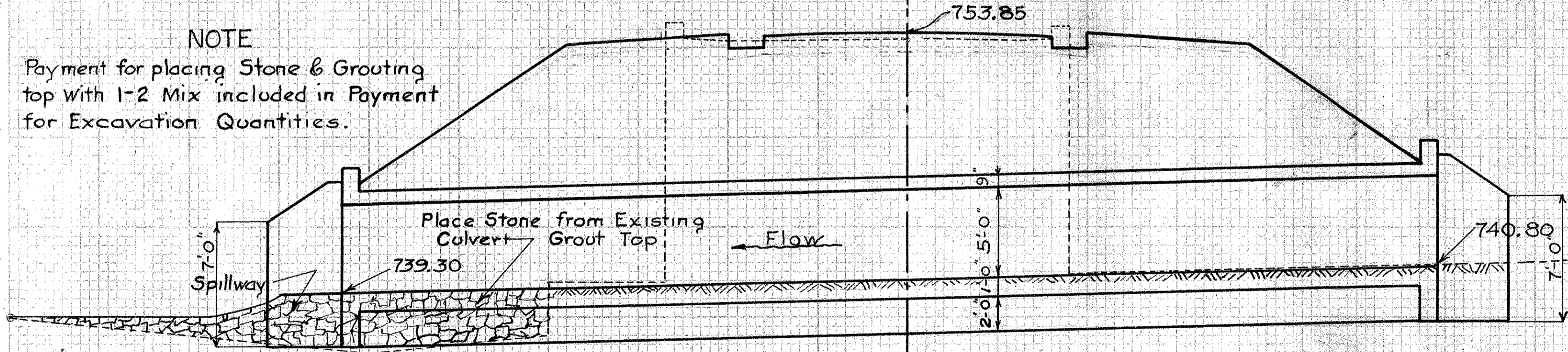
STEEL LIST					
MARK	SIZE	SHAPE	NO	LENGTH	WEIGHT
W2a	1/2"	Bent	20	10'-1"	144
W2b	1/2"	Bent	20	10'-1"	107
W2c	1/2"	St.	12	4	56
W2d	1/2"	St.	4	19-7	25
W2e	1/2"	Bent	20	5-9	67
T2a	1/2"	St.	122	5-9	652
T2b	1/2"	St.	38	6-0	793
S5a	3/4"	St.	139	8-6	1775
TOTAL STEEL \approx Lbs.					3619



PLAN

NOTE
 Drainage Area 160 Acres
 Present Waterway 40 Sq. Ft.
 Proposed " 35 Sq. Ft.
 Required " 30 Sq. Ft.

Drawn by: J.K.P.
 Date: 2/12/31
 Checked by: E.E.D.
 Date:



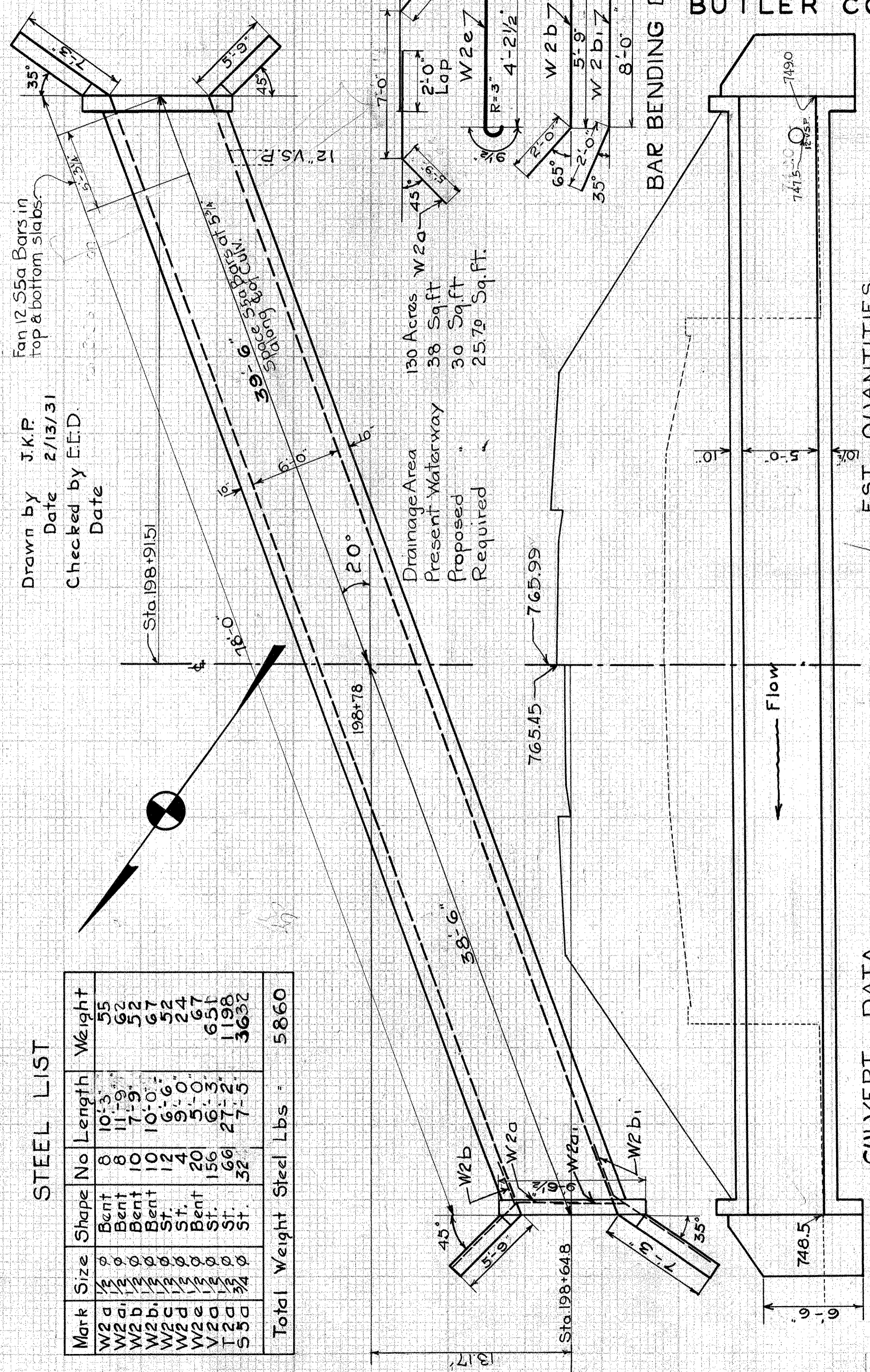
CROSS SECTION

CULVERT DATA
 Type: Std. Slab Top Colv. Dr. #5C-A
 Size: 7'-5" x 61'-0"
 Work Rea.: Remove existing 5.6' x 7.7' x 22.4' Stone Arch
 Build Std. 7'-5" x 61' Slab Top Colv. with Spillway
 made up of Stone taken from Existing Culvert.

EST. QUANTITIES
 Excavation 180 Cu. Yds.
 Concrete 1-5/2 50.9 Cu. Yds.
 Concrete 1-6/2 16.5 Cu. Yds.
 Reinforcing Steel 3619 Lbs.

FEDAID DIST. NO.	STATE	FEDAID PROJECT	FISCAL YEAR
10	OHIO	5812	1931

S.H. (I.C.H.) NO. 179 SEC. D.
 BUTLER COUNTY.



BAR BENDING DIAGRAMS

Drawn by: J.K.P.
 Date: 2/13/31
 Checked by: E.E.D.
 Date:

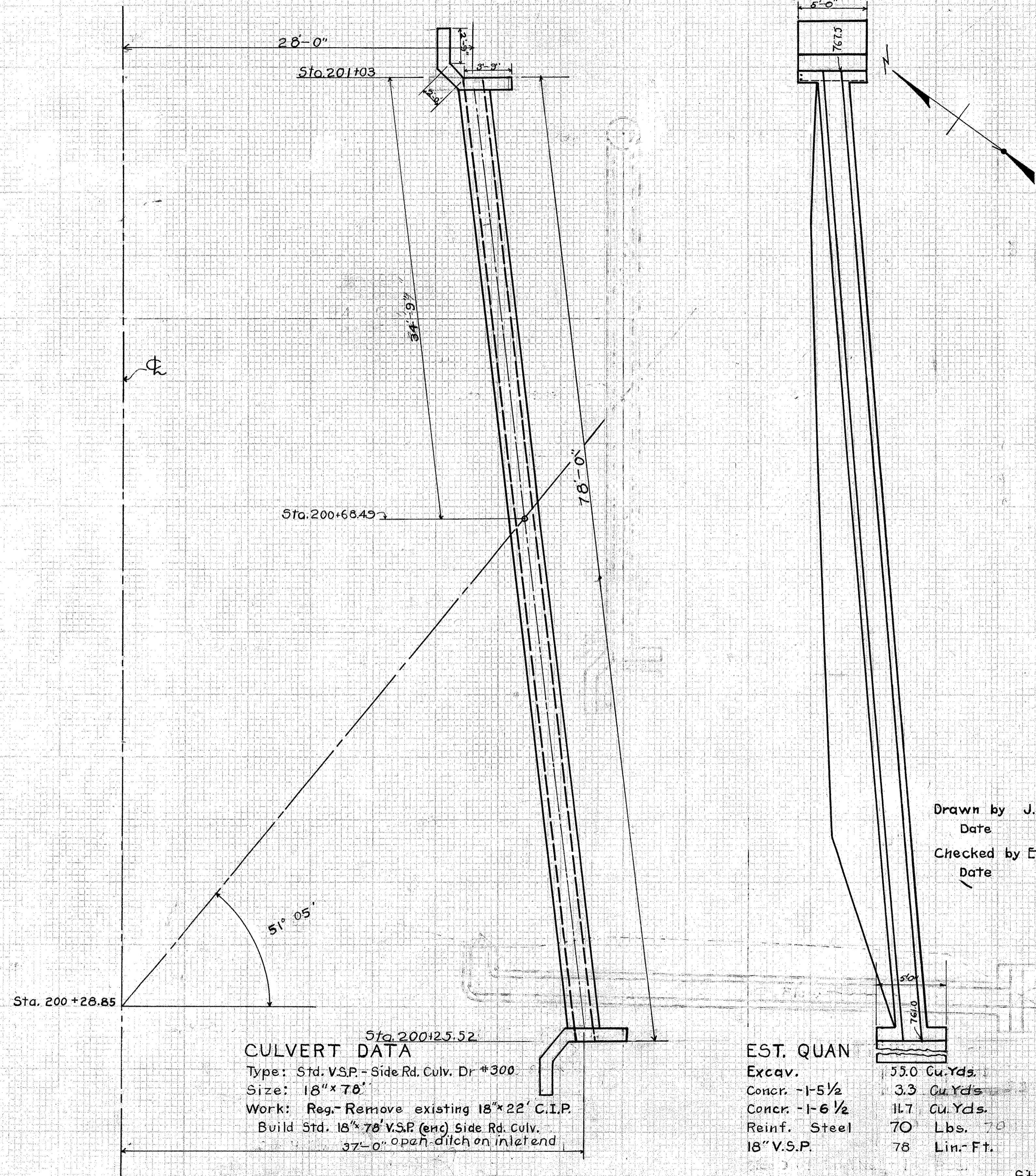
Drainage Area 130 Acres
 Present Waterway 38 Sq. Ft.
 Proposed " 30 Sq. Ft.
 Required " 25.79 Sq. Ft.

EST. QUANTITIES
 Excav. 180 Cu. Yds.
 Concr. 1-5/2 66.8 Cu. Yds.
 Reinf. Steel 5860 Lbs.

CULVERT DATA
 Type: Std. Box Culvert Dr. No. BC-A
 Size: 6'-5" x 78'-0" 20'-Rt Forward Skew.
 Work Rea.: Remove Existing 6.3' x 6.5' x 46' Stone Arch & Concr. Box at Sta. 198+75.2.
 Build Std. 6'-5" x 78' Concr. Box. Connect 12" V.S.P. into Culvert.

Mark	Size	Shape	No	Length	Weight
W2a	1/2"	Bent	8	10'-3"	55
W2b	1/2"	Bent	8	11'-9"	52
W2c	1/2"	Bent	10	10'-0"	67
W2d	1/2"	St.	12	6'-0"	24
W2e	1/2"	Bent	20	5'-0"	67
T2a	1/2"	St.	156	6'-3"	651
S5a	3/4"	St.	66	27'-5"	1198
Total Weight Steel Lbs.					5860

(27)



CULVERT DATA
 Type: Std. V.S.P. - Side Rd. Culv. Dr. #300
 Size: 18" x 78"
 Work: Reg. - Remove existing 18" x 22' C.I.P.
 Build Std. 18" x 78' V.S.P. (enc) Side Rd. Culv.
 37'-0" open ditch on inlet end

EST. QUAN
 Excav. 55.0 Cu. Yds.
 Concr. - 1-5 1/2 3.3 Cu. Yds.
 Concr. - 1-6 1/2 11.7 Cu. Yds.
 Reinf. Steel 70 Lbs.
 18" V.S.P. 78 Lin. Ft.

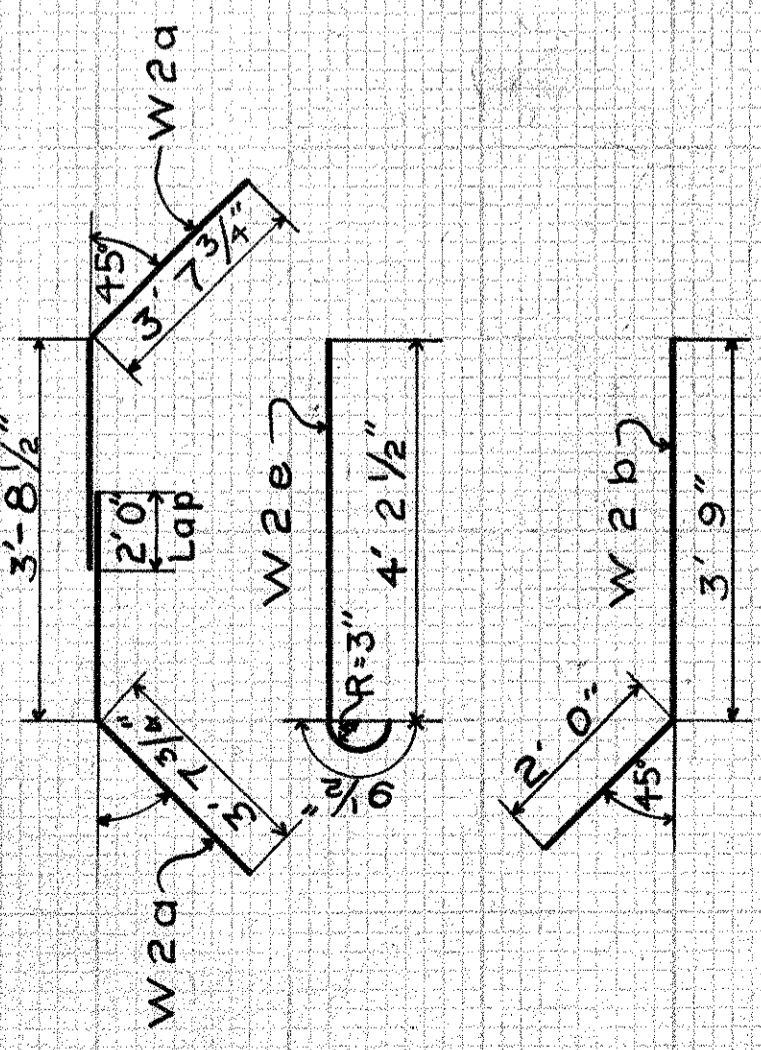
(26)

Drawn by J.K. Patterson
 Date 2/11/31
 Checked by E.E.D.
 Date //

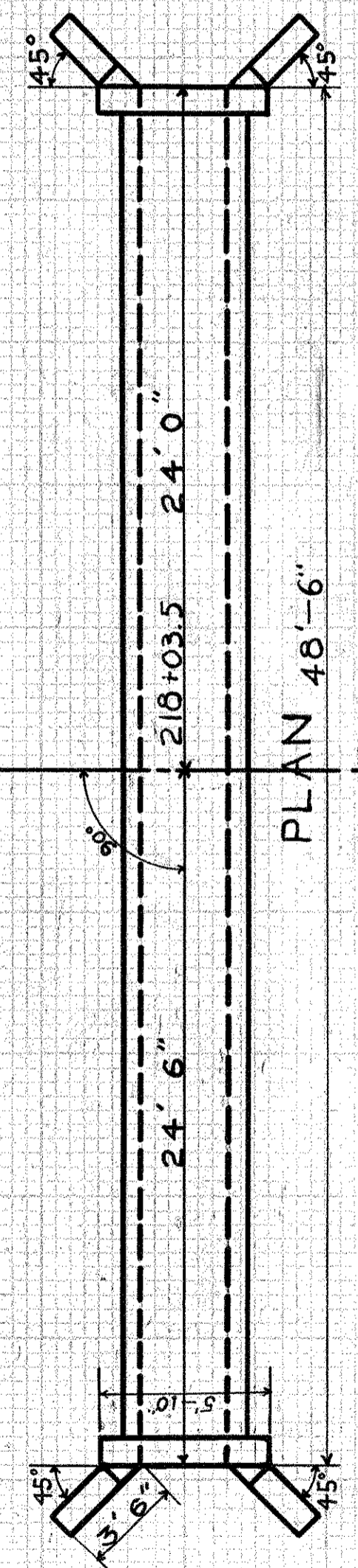
Sta. 200+28.85

Mark	Size	Shape	No	Length	Weight
W 2a	1/2"	Bent	16	6'-6"	69
W 2b	1/2"	Bent	12	5'-9"	46
W 2c	1/2"	St.	12	5'-6"	44
W 2e	1/2"	St.	4	7'-0"	19
V 2a	1/2"	Bent	12	5'-0"	40
T 2a	1/2"	St.	98	3'-9"	245
S 3a	1/2"	St.	24	25'-0"	401
S 3b	1/2"	St.	258	4'-1"	895
Total Lbs. Steel					= 1759

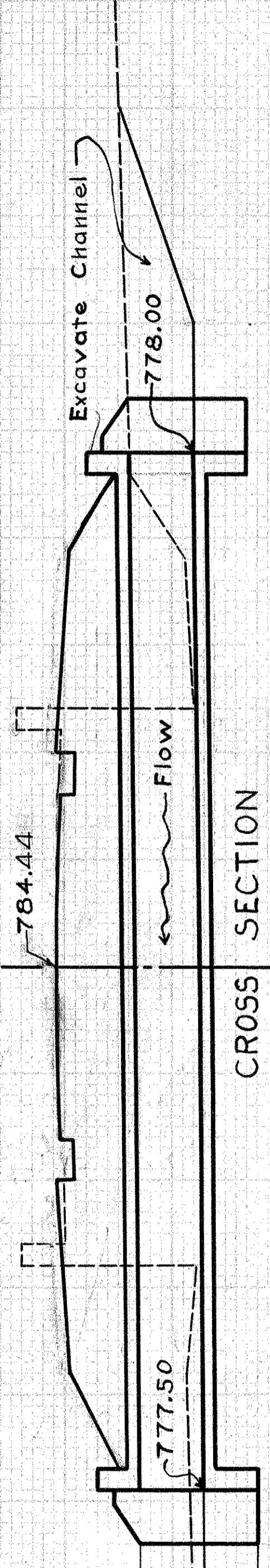
Drawn by: J.K.P.
 Date: 2/11/31
 Checked by: E.E.D.
 Date: //



BAR BENDING DIAGRAMS



PLAN 48'-6"

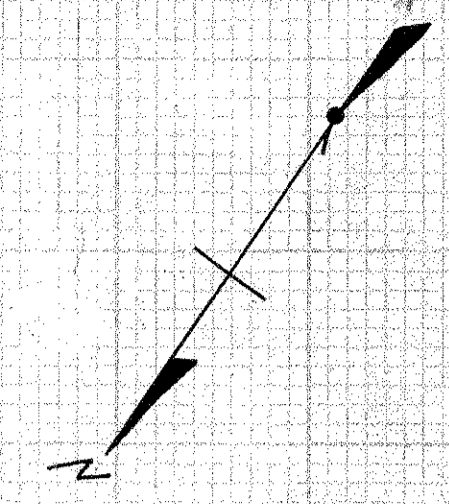


CROSS SECTION

EST. QUANTITIES
 Excav. 55 Cu. Yds.
 Concrete 1-5 1/2 20.6 Cu. Yds.
 Reinf. Steel 1759 Lbs.

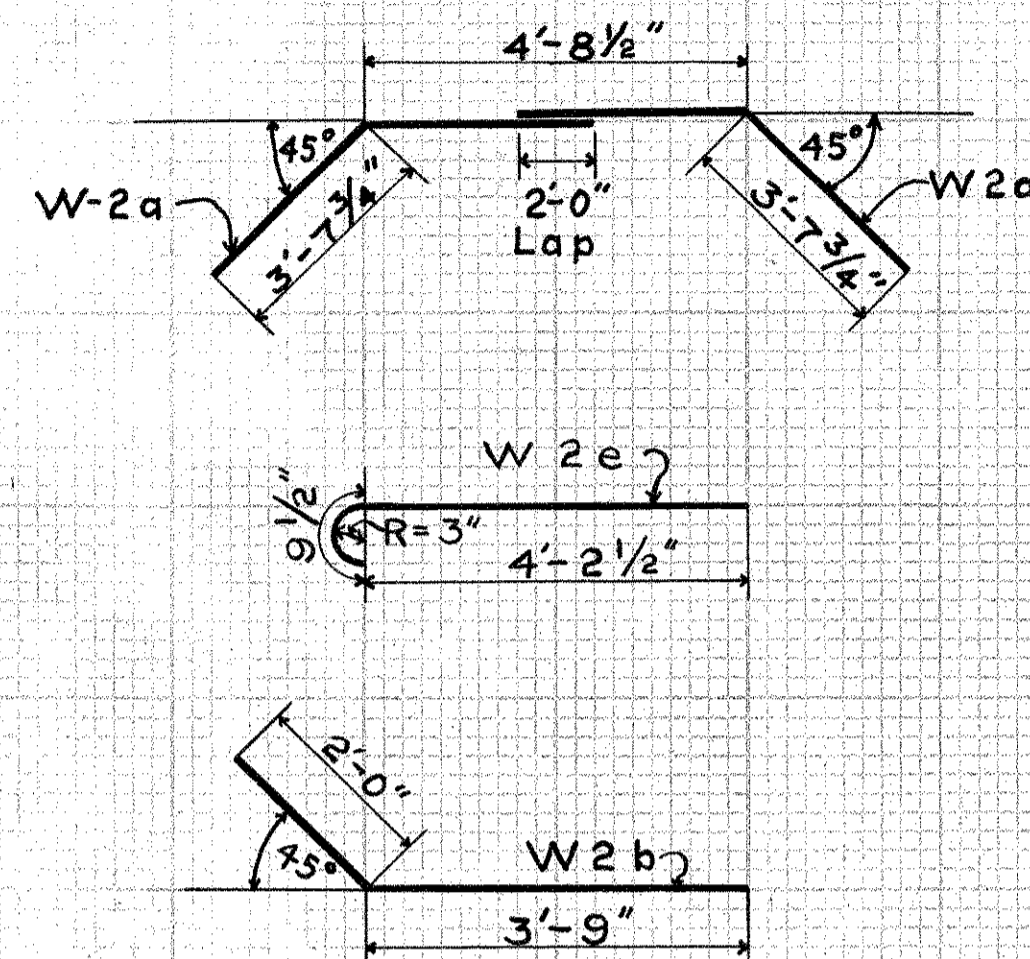
CULVERT DATA

Type: Std. Concr. Box Culv. Dr. #BC-7A
 Size: 3' x 3' x 48'-6"
 Work Reg. Remove existing 3' x 3' x 26' Concr. box.
 Build Std. 3' x 3' x 48'-6" Concrete Box Culvert.
 Clean out Channel both Inlet & Outlet.
 ends to R/W Line.



SH.(I.C.H.) NO 179 SEC. D.
BUTLER COUNTY

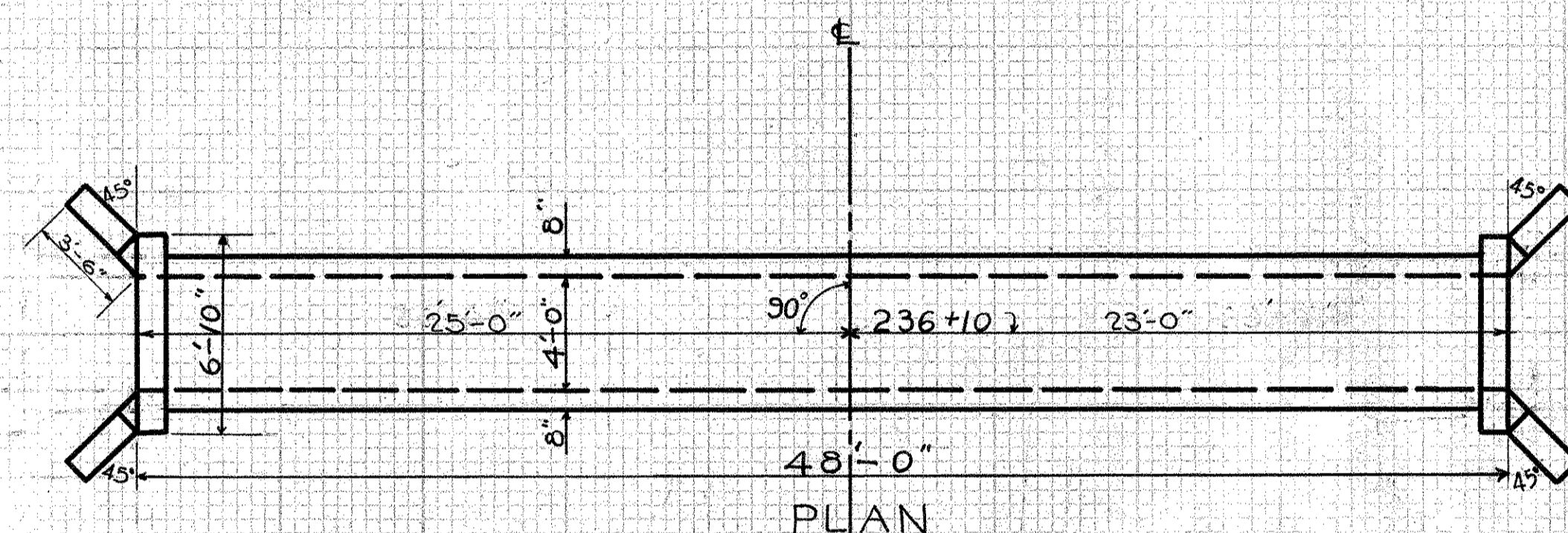
Draw by J.K.Patterson
Date 2/12/31
Checked by E.E.D.
Date / /



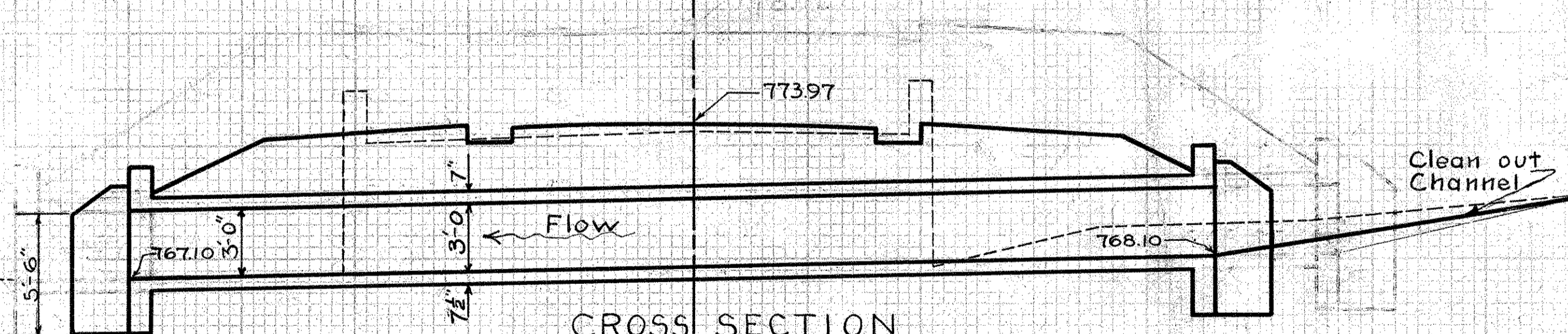
Mark	Size	Shape	No	Length	Weight
W2-a	1/2" φ	Bent	16	7'-0"	75
W2-b	1/2" φ	Bent	12	5'-9"	46
W2-c	1/2" φ	St.	12	5'-6"	44
W2-d	1/2" φ	St.	4	7'-0"	19
W2-e	1/2" φ	Bent	12	5'-0"	40
V2-a	1/2" φ	St.	96	4'-0"	257
T2-a	1/2" φ	St.	28	24'-9"	263
S4-a	3/8" φ	St.	230	5'-1"	1219
Total Steel in Lbs. =					2163

Drawn by : J.K.Patterson 2/11/31
Checked by: E.E.D.
Reviewed by:

BAR BENDING DIAGRAMS



PLAN



CROSS SECTION

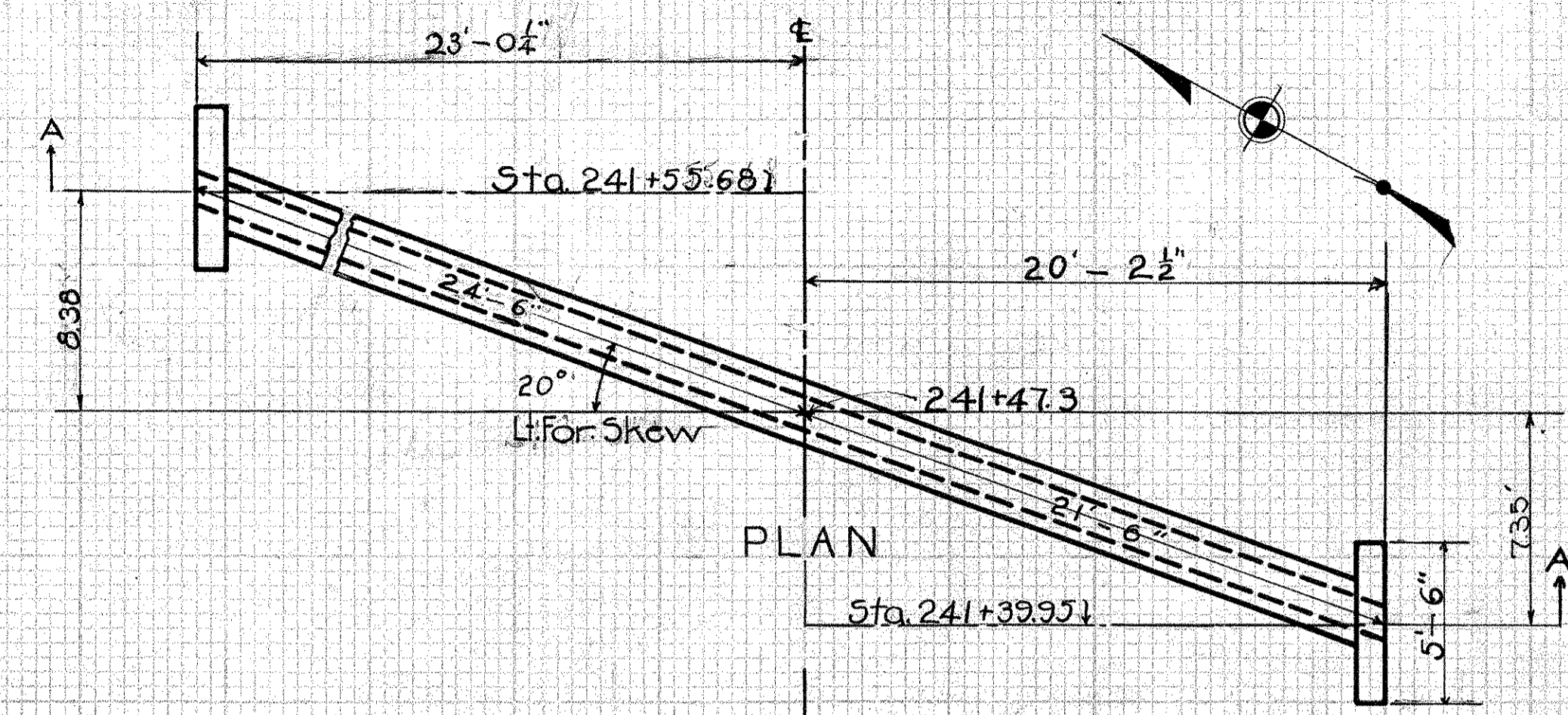
CULVERT DATA
Type : Std. Concr. Box Culvert Dr # BC-A
Size : 4'3" x 48'-0"
Work Reg: Remove existing 4'3" x 26'-0" Concrete box. Build Std. 4'3" x 48'-0" Concr. Box Culv.
Clean out Channel Inlet end to R/W Line.

EST. QUANTITIES

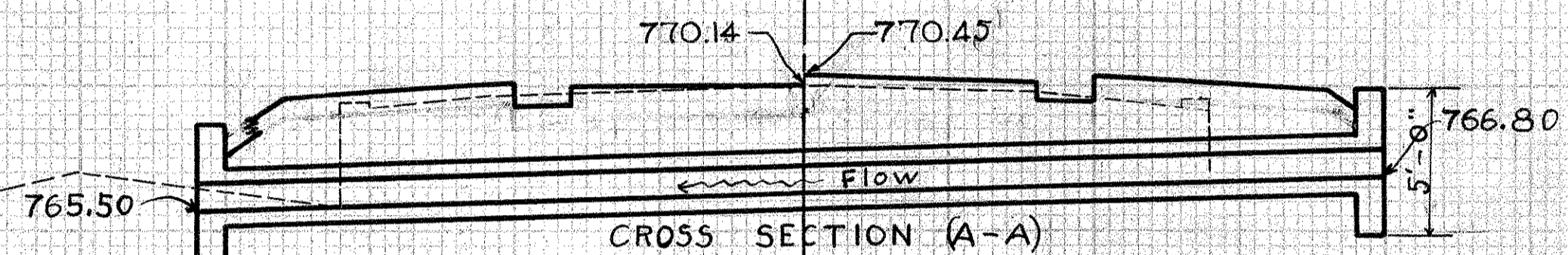
Excav.	=	55.0	Cu. Yds.
Concrete 1-5 1/2"	=	23.6	Cu. Yds.
Reinf.- Steel	=	2163.0	Lbs.

28

Sta. - 236+10



PLAN



CROSS SECTION (A-A)

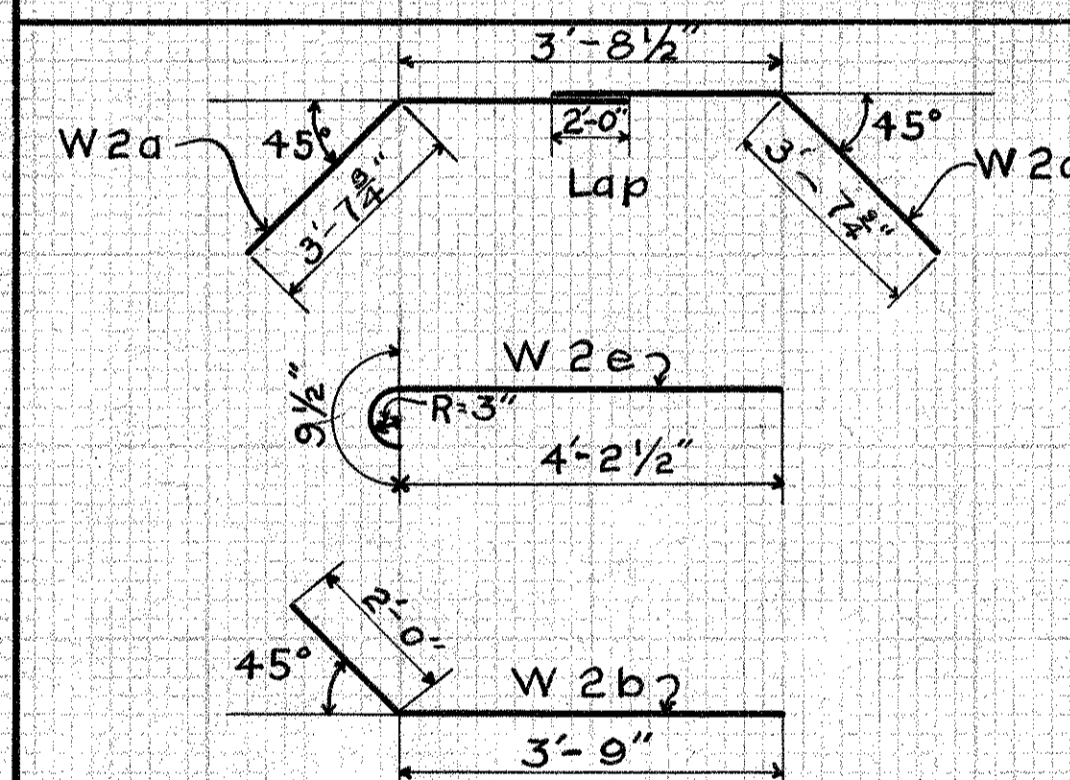
CULVERT DATA
Type : Std. V.S.P. (enc) Culvert Dr # 300
Size : 12" x 46'-0"
Work Reg. Remove existing 12" x 30" V.S.P. Culv. Clean & Pile. Build Std. 12" x 46" V.S.P. (enc) Culvert. Clean out Channel

EST. QUANTITIES

Excav.	=	25	Cu. Yds.
Concrete 1-5 1/2"	=	2.0	Cu. Yds.
Concrete 1-6 1/2"	=	4.7	Cu. Yds.
Reinf. Steel	=	65	Lbs.
12" V.S.P.	=	46	Lin. Ft.

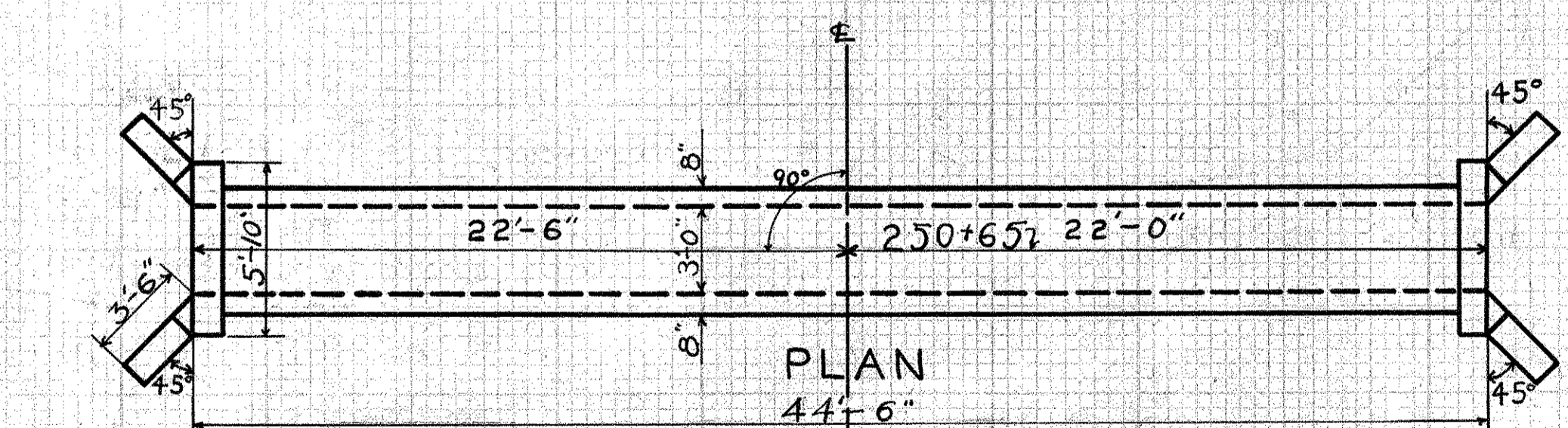
29

Sta. 241+47.3

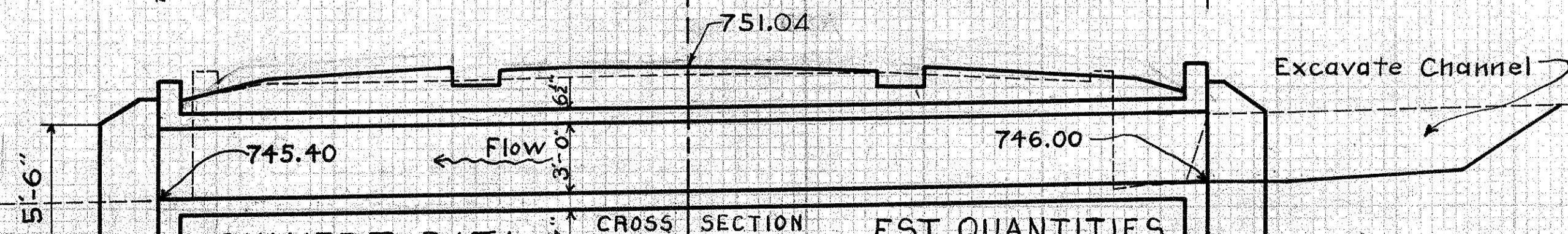


BAR BENDING DIAGRAMS

Mark	Size	Shape	No	Length	Weight
W2a	1/2" φ	Bent	16	6'-6"	69
W2b	1/2" φ	Bent	12	5'-9"	46
W2c	1/2" φ	St.	12	5'-6"	44
W2d	1/2" φ	St.	4	7'-0"	19
W2e	1/2" φ	Bent	12	5'-0"	40
V2-a	1/2" φ	St.	90	3'-9"	225
T2-a	1/2" φ	St.	24	23'-0"	369
S3-a	1/2" φ	St.	230	4'-1"	826
Total Lbs. Steel =					1638



PLAN



CROSS SECTION

CULVERT DATA
Type : Std Concrete Box Culv. Dr # BC-A
Size : 3'3" x 44'-6"
Work Reg: Remove existing 18" x 38' & 36" x 38' Corr. I.P. Culvert. Clean & Pile. Build Std. 3'3" x 44'-6" Concrete Box. Excavate Channel on Inlet end.

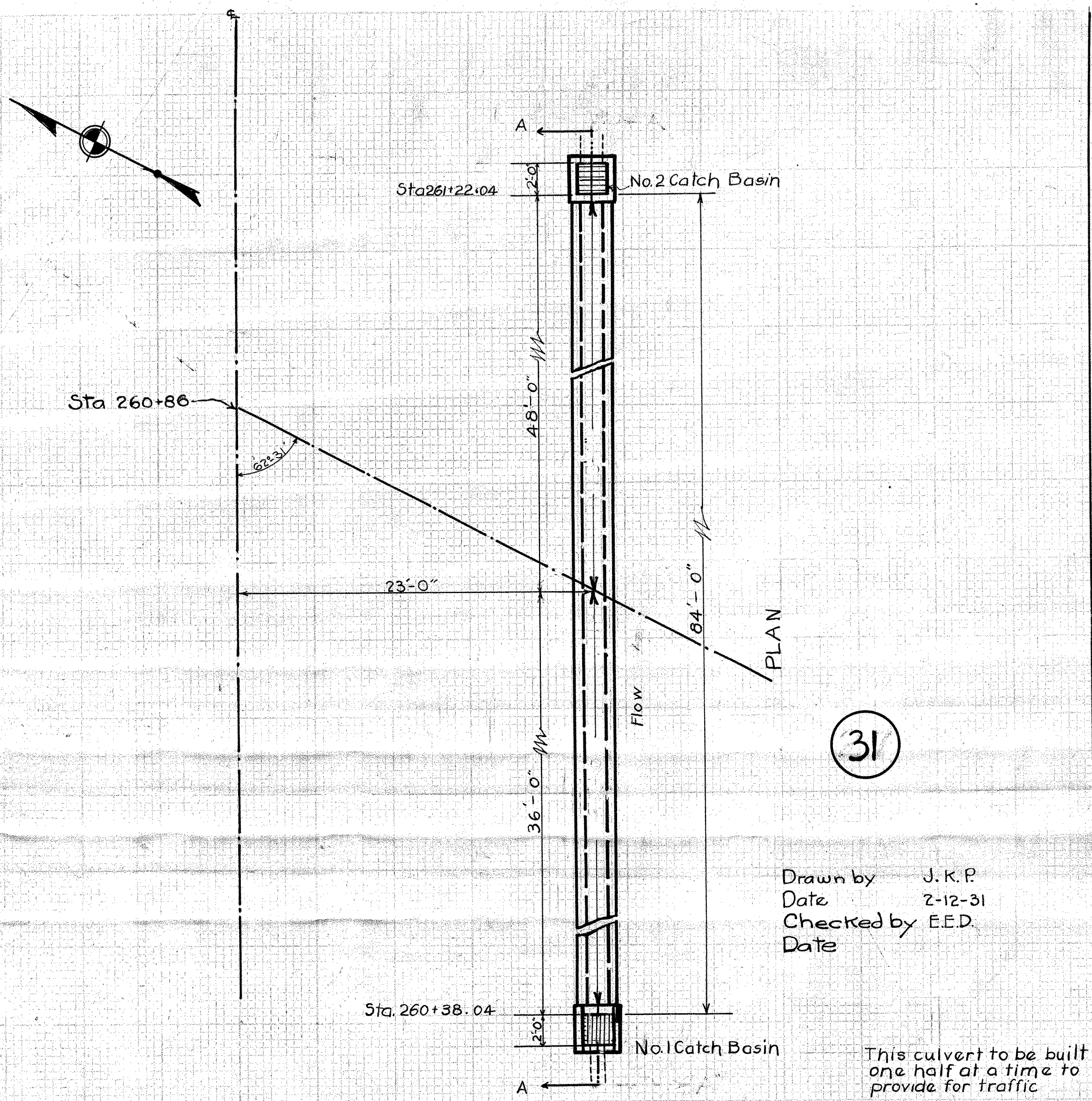
EST. QUANTITIES

Excav.	=	60	Cu. Yds.
Concrete 1-5 1/2"	=	19.3	Cu. Yds.
Reinf. Steel	=	1638	Lbs.

30

Sta. 250+65

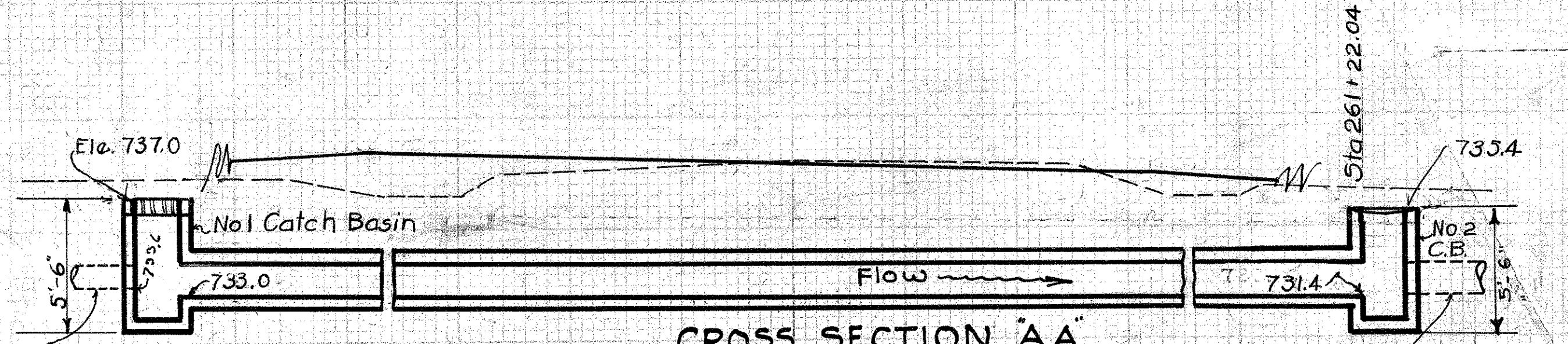
Drawn by J.K.Patterson
Date 2/12/31
Checked by E.E.D.
Date / /



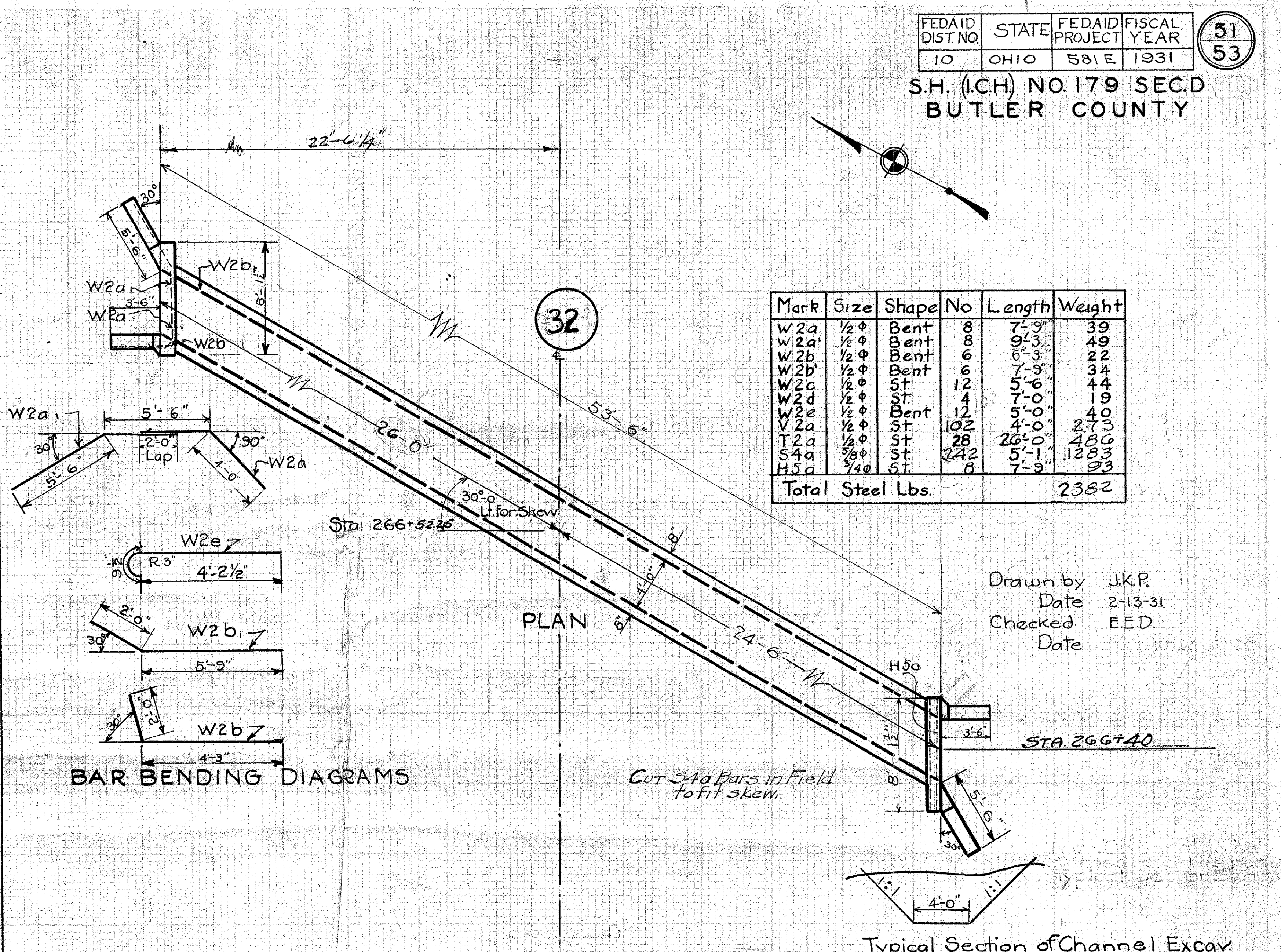
31

Drawn by J. K. P.
Date 2-12-31
Checked by E. E. D.
Date

This culvert to be built one half at a time to provide for traffic



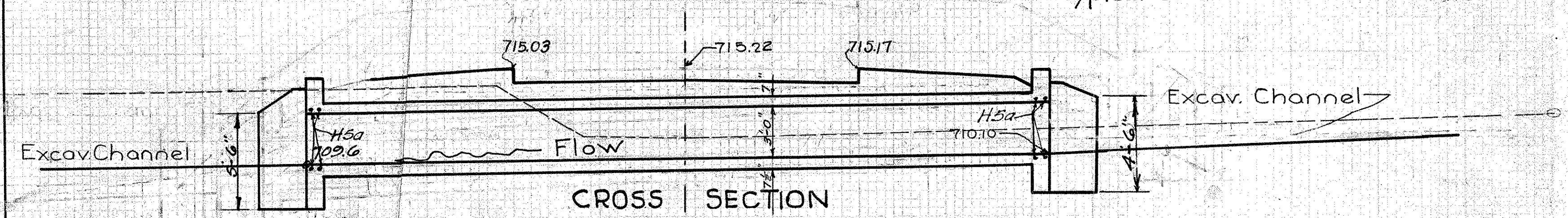
CULVERT DATA		EST. QUANTITIES	
Type: Spec. V.S.P. Conc. S.R. Culvert, Drwg # 300 & 305	Excav.	65	Cu. Yds.
Size: 18" x 84" - 05 R.V.S. (Penc)	Concr.	1-6 1/2	Cu. Yds.
Work Req: Remove Exist. 12" x 46" Corr.	18" V.S.P.	84	Lin. Ft.
Culvert: Clean & file. Build Std. No. 1 Catch Basins Complete in place.		1 only	
18" x 84" V.S.P. (Penc) Culvert & one Std. #1 Catch Basin @ one Std. #2 Catch Basin. No. 2 Catch Basin Complete in place.		1 only	
		1 only	
		Sta. 260+86	



32

Mark	Size	Shape	No	Length	Weight
W2a	1/2 φ	Bent	8	7'-9"	39
W2a'	1/2 φ	Bent	8	9'-3"	49
W2b	1/2 φ	Bent	6	6'-3"	22
W2b'	1/2 φ	Bent	6	7'-9"	34
W2c	1/2 φ	St	12	5'-6"	44
W2d	1/2 φ	St	4	7'-0"	19
W2e	1/2 φ	Bent	12	5'-0"	40
V2a	1/2 φ	St	102	4'-0"	273
T2a	1/2 φ	St	28	26'-0"	480
S4a	5/8 φ	St	242	5'-1"	1283
H5a	7/4 φ	St	8	7'-9"	93
Total Steel Lbs.					2382

Drawn by J. K. P.
Date 2-13-31
Checked E. E. D.
Date



CULVERT DATA		EST. QUANTITIES	
Type: Std. Conc. Box Culv. Drwg # BCA	Excav.	105	Cu. Yds.
Size: 4' x 50'-6" 30° Left Forward Skew.	Concr.	1-5 1/2	Cu. Yds.
Work Req: Remove Exist. 42" x 42" C.I.P.	Reinf. Steel	2382	Lbs.
Clean & file. Build Std. 4' x 3' x 50'-6" Conc. Box Culvert. Excavate Channel Outlet end across Road.			
This culvert to be built one half at a time to provide for traffic.			

Sta. - 266+52.25

SUMMARY OF QUANTITIES

FED AID DIST NO 10 STATE OHIO FED AID PROJ 581 E FISCAL YEAR 1931

52
53

SH. (I.C.H.) NO. 179 SEC. A & D
BUTLER COUNTY

No	Station	Type	Size	Length	Excavation Cu Yds	Concrete 1 1/2 Cu Yds	Concrete 1 1/2 Cu Yds	Rein Steel Lbs	V.S.P. Lin Ft	Corr. L.P. Lin Ft	Type B Water-Proof Sq Yds	Std Side Ditch Inlet No. 1-12	Spec Cb Inlet (Complete)	Spc Man Hole No.	Std. Catch Basin No.	Rip-Rap 18" Thick Sq Yds	V.S.P. E.I. 18" 30° Pcs	V.S.P. E.I. 24" 90° Pcs	Spc Catch Basin No.	Work Required	
STRUCTURES 20 FEET AND UNDER 40 FOOT PAVEMENT																					
1	2+00	V.S.P.	12"	35'-4 1/2"	27.0				4.0	38										Build Std. 12"x35" V.S.P. Culv. (enc.) & 2 Sps. Curb & Gutter Inlets & 1 Spc. M.H. Connect M.H. Inlet on Pt. with 12"x2" V.S.P. Culv. (enc.) Drwg. *300 & *305.	
2	4+99	V.S.P.	12"	35'-4 1/2"	25.0				4.0	38										Build Std. 12"x35" V.S.P. Culv. (enc.) & 2 Sps. Curb & Gutter Inlets & 1 Spc. M.H. Connect M.H. Inlet on Pt. with 12"x2" V.S.P. Culv. (enc.) Drwg. *300 & *305.	
3	8+50	V.S.P.	12"	35'-4 1/2"	27.0				4.0	38										Build Std. 12"x35" V.S.P. Culv. (enc.) & 2 Sps. Curb & Gutter Inlets & 1 Spc. M.H. Connect M.H. Inlet on Pt. with 12"x1" V.S.P. Culv. (enc.) Drwg. *300, *305 & D-8 E.	
					79.0				12.0	114											
20FOOT PAVEMENT																					
4	12+84	V.S.P.	12"	48'-8"	52.0	1.8			5.7	53	46									Build Std. 12"x46" V.S.P. Culv. (enc.) With 1 Std. No. 1 Side Ditch Inlet & 1 Spc. Catch Basin. Build Std. 24"x5'-6" V.S.P. Culv. (enc.) with one Headwall Drwg. *300 & *305	
6	23+58	SR.V.S.P.	18"	44'-0"	34.0				6.6		44									Remove present 18"x22" V.S.P. Build Std. 18"x44" V.S.P. (enc.) Culv. Side Road without Headwalls. Build 2 Std. No. 2 Catch Basins. Drwg. *300 & *305	
7	29+40	SR.V.S.P.	18"	44'-0"	25.0				6.6		44									Remove present 18"x20" V.S.P. Build Std. 18"x44" V.S.P. (enc.) Culv. Build 2 Std. No. 2 Catch Basins. Drwg. *300 & *305	
8	33+45	Conc. Box	3x3	44'-0"	45.0	23.1				164										Remove present 4x2'-6"x3'7" Conc. Box. Build Std. 3x3x44" Conc. Box Culv. with 1 Std. Headwall & 1 Spc. Headwall. Clean outlet end to R/W Line. Drwg. *BC-A	
9	53+64	Conc. Box	6x4	44'-0"	102.0	41.0				3877										Remove present 4x4x23" Box Culv. Build Std. 6x4x54" Conc. Box Culv. Clean outlet end to R/W Line. Drwg. *BC-A	
10	54+20	Corr. I.P.	24"	78'-8"	67.0	2.1				42										Remove present 24"x74" V.S.P. Build 24"x74" C.I.P. Culv. & 24"x28" C.I.P. with one Std. S.R. Headwall. Connect outlet end into 6x4" Box. Connect into M.H. & raise or lower as directed by the Engr. Drwg. *300	
11	60+55	Corr. I.P.	24"	38'-8"	40.0	4.5				85										Remove present 24"x57" V.S.P. Build 24"x74" C.I.P. Culv. with one headwall. Connect into Manholes & raise or lower as directed by the Engr. Drwg. *300	
12	65+17	SR.V.S.P.	24"	52'-0"	42.0	4.1			10.3	85										Remove present 24"x39" C.I.P. Culv. Build 24"x52" V.S.P. (enc.) Culv. Connect present 18" V.S.P. into headwall with 30" Elbow Drwg. *300	
13	73+20	V.S.P.	24"	46'-0"	30.0	1.8			9.3	53										Remove present 24"x37" V.S.P. Build 24"x46" V.S.P. (enc.) Culv. with one headwall. Cleanout channel inlet end. Drwg. *300	
14	92+36	V.S.P.	24"	50'-0"	35.0	3.5			9.9	105										Remove present 24"x30" V.S.P. Build Std. 24"x50" V.S.P. (enc.) Culv. Cleanout channel inlet end. Drwg. *300	
15	95+82	V.S.P.	12"	52'-0"	35.0	2.0			5.4	65	52									Remove present 10"x33" V.S.P. Build Std. 12"x52" V.S.P. (enc.) Culv. Drwg. *300	
16	108+82	Conc. Box	6x4	53'-0"	175.0	41.1				3795										Remove present 6x4x29" Conc. Box. & Stone Arch Culv. 6x3x21" Build Std. 6x4x53" Box Culv. 17'30" Pt. forward skew. Excav. channel as shown to R/W Line. Drwg. BC-A.	
17	149+61	SR.V.S.P.	12"	58'-0"	15.0	2.6			6.1	60	58									Remove present 12"x61" V.S.P. Build Std. 12"x58" V.S.P. (enc.) Culv. Drwg. *300	
18	151+35	Slab Top	9x8	44'-6"	120.0	58.2	23.3			4064										Remove present 10x9x27" Slab Top. Build Std. 9x8x44" Slab Top Culv. Place 210 Sq. Yds. Rip-Pap (18" thick). Drwg. SC-A	
19	173+64	Conc. Box	8x6	65'-6"	170.0	86.0				10510										Remove present 5'5" x 11'22" Stone Arch. Build Std. 8'6" x 6'5" Conc. Box Culv. Cleanout channel both ends. Drwg. BC-B & C-W-A	
20	176+99	SR.V.S.P.	12"	68'-0"	58.0	1.3			7.2	30	68									Build Std. 12"x68" V.S.P. with one headwall on left. Drwg. *300	
21	176+99	SR.V.S.P.	12"	60'-0"	2.6				6.3	60	60									Culv. No. 2 included in No. 20. Remove 12"x47" V.S.P. Build Std. 12"x60" V.S.P. (enc.) Culv. 2 headwalls. Drwg. *300	
22	186+48	Slab Top	7x5	61'-0"	180.0	50.9	16.5			3619										Remove present 5'7" x 7'8" x 22" Stone Arch. Build Std. 7'5" x 6'1" Slab Top Culv. with spillway made of stone from present Culv. Drwg. SC-A	
23	190+08	SR.V.S.P.	12"	50'-0"	25.0	2.6			5.2	60	50									Remove present 12"x24" C.I.P. Build Std. 12"x50" V.S.P. (enc.) Culv. Rt. Drwg. *300	
24	198+00	SR.V.S.P.	12"	52'-0"	16.0	1.3			5.5	30	52									Remove present 12"x24" C.I.P. Build Std. 12"x52" V.S.P. (enc.) Culv. with one headwall. Drwg. *300	
25	198+78	Conc. Box	6x5	78'-0"	180.0	66.8				5860										Remove present 6'3" x 6'6" x 46" Stone Arch & Conc. Box. Build Std. 6'5" x 7'8" Conc. Box. Connect 12" V.S.P. into Culv. Drwg. BC-A (20' Pt. for Skew)	
26	200+28	SR.V.S.P.	18"	78'-0"	55.0	3.3			11.7	70	78									Remove present 18"x22" C.I.P. Build Std. 18"x78" V.S.P. (enc.) Culv. Open Ditch on Inlet end. Drwg. *300	
27	218+03	Conc. Box	3x3	48'-6"	20.6					1759										Remove present 3'3" x 28" Conc. Box. Build Std. 3'3" x 48" Conc. Box. Cleanout channel both ends to R/W Line. Drwg. BC-A	
28	236+10	Conc. Box	4x3	48'-0"	55.0	23.6				2163										Remove present 4'x3x26" Conc. Box. Build Std. 4'x3x48" Conc. Box. Cleanout channel inlet end to R/W Line. Drwg. BC-A	
29	241+43	V.S.P.	12"	46'-0"	25.0	2.0			4.7	65	46									Remove present 12"x30" V.S.P. Build Std. 12"x46" V.S.P. (enc.) Culv. Cleanout channel. Drwg. *300	
30	250+65	Conc. Box	3x3	44'-6"	60.0	19.3				1638										Remove present 18"x38x36" C.I.P. Culv. Build Std. 3'3" x 44" Conc. Box. Excav. channel on inlet end. Drwg. BC-A	
31	260+86	SR.V.S.P.	18"	84'-0"	65.0				12.8		84									Remove present 12"x46" C.I.P. Culv. Build Std. 18"x84" V.S.P. (enc.) Culv. & 1 Std. No. 1 Catch Basin & 1 Std. No. 2 Catch Basin Drwgs. *300 - *305	
32	266+22	Conc. Box	4x3	50'-6"	105.0	26.0				2383										Remove present 4'x4" C.I.P. Culv. Build Std. 4'x3x50" Conc. Box Culv. Excav. channel outlet end across road. Drwg. BC-A (30' Lt. for Skew)	
Totals					1866.0	492.1	39.8	113.3	4217.1	432	250	154					36	162		56.3	

PROPOSAL NO. 2

Span Roadway		34'-0" 28'		Wearing Surface		2.7:1	
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From Station	To Station	Cubic Excavation	Yards Embankment	Borrow
0+00	3+14	217	181	217
3+14	12+67	125	788	945
12+67	25+00	104	1262	1514
25+00	35+00	204	959	1151
35+00	45+00	690	843	1012
45+00	49+76	520	433	520
49+76	61+17	1546	1283	1546
61+17	79+00	424	4115	4938
79+00	93+00	319	1509	1811
93+00	108+00	148	2628	3154
108+00	123+00	84	1802	2162
123+00	139+00	693	2474	2474
139+00	155+00	117	3340	4088
155+00	169+00	334	1352	1622
169+00	173+78	1050	875	1050
173+78	189+00	298	3000	3600
189+00	199+50	74	5920	7104
199+50	213+49	2545	2121	2545
213+49	221+90	1054	878	1054
221+90	235+23	1302	1085	1302
235+23	250+00	417	380	417
250+00	266+34	719	841	719
266+34	276+15	590	325	590
276+15	291+38	1249	1041	1249
Totals		342	15481	969

From Station	To Station	Side of Rd	Lin Ft.
18+42	19+30	L	88
18+40	19+34	R	64
19+08	20+64	R	96
19+72	20+68	R	96
53+30	54+90	R	160
69+69	71+21	R	152
Rd. App. Rt. Side	72+00	R	344
91+08	92+97	L	184
Rd. App. West Side	103+19	L	200
East	103+19	L	160
120+20	121+80	L	160
134+50	14+94	R	744
135+24	14+96	L	672
Rd. App. Rt. Side	19+61	R	64
150+20	154+00	R	440
150+30	151+86	L	156
153+40	154+80	L	120
172+54	175+66	L	312
173+06	175+78	R	272
186+12	187+40	L	128
186+12	187+64	R	152
196+69	199+96	R	336
197+08	197+72	R	64
Rd. App. Rt. Side	198+00	R	80
198+28	200+20	R	192
217+60	218+56	L	96
236+60	237+40	L	80
283+06	283+78	R	72
Total			5788

Station	For	Side of Rd	Curb Lin Ft.	Base Sq. Yds.	Pave. Sq. Yds.
12+67-13+67	Flare			111.1	111.1
23+58	Rd. App.	L	41.3	172.4	69.0
29+40	"	L	41.3	72.4	69.0
47+18	Pr. Dr.	L	30.1	75.2	72.7
54+20	Rd. App.	L	34.5	122.5	119.6
60+55	"	L	201.7	197.0	180.2
65+17	"	L	367	86.3	83.2
72+00	"	R	113.1	306.9	297.5
103+19	"	L	33.6	105.0	102.2
149+61	"	R	34.8	128.0	125.2
176+99	"	R	34.0	122.4	119.6
176+99	"	L	34.0	130.1	127.3
200+28	"	R	35.2	194.4	191.5
203+17	Pr. Dr.	L	41.3	85.7	82.3
260+86	Rd. App.	R	33.8	125.5	122.7
72+4398	Curve			80.5	80.5
Totals			7454	2015.5	1953.6

From Station	To Station	Cu Yds.	Width Pave.	Tons
7+50	12+67	189.5	40'	360.0
12+67	291+38	3008.9	20'	676.1
Total		3198.4		1036.1

From Station	To Station	Lin Feet
4+00	55+00	0.0
12+67	132+00	7.0
Total		7.0

Station	For	Side of Rd	Cu Yds.
72+00	Rd. App.	P	20
103+19	"		

SUMMARY OF PRIVATE DRIVES & PIPE UNDERDRAIN

Station	Excav. Concr. & Buckfill Cu. Yds.	Reinf. 1-1/2" Steel Lbs.	Pipe Underdrain		No. Pipes 2 Sec. 311 of C.B. Culverts Rd.
			V.S.P. Lin.- Ft.	Relaid I.P. 12" 18" 24" 36" 48"	
1+56					
2+12					
4+84					
5+00					
5+78					
6+50					
7+08					
7+18					
8+26					
8+40					
8+55					
9+26					
10+04					
11+99					
TOTALS					

Station	Excav. Concr. & Buckfill Cu. Yds.	Reinf. 1-1/2" Steel Lbs.	Pipe Underdrain		No. Pipes 2 Sec. 311 of C.B. Culverts Rd.
			V.S.P. Lin.- Ft.	Relaid I.P. 12" 18" 24" 36" 48"	
12+67					
12+85					
17+20					
18+28					
18+58					
19+90					
21+62					
21+72					
23+80					
24+94					
25+04					
26+32					
26+42					
27+02					
28+48					
29+62					
31+04					
31+14					
33+16					
35+52					
35+56					
35+62					
36+92					
38+32					
39+60					
46+98					
50+44					
51+70					
51+82					
74+20					
75+20					
78+58					
82+50					
82+60					
86+00					
92+96					
93+06					
96+88					
98+00					
103+18					
111+75					
111+80					
121+84					
130+11					
136+82					
142+97					
143+93					
146+24					
146+88					
146+98					
147+51					
147+62					
147+78					
149+70					
149+70					
149+90					
156+23					
156+24					
167+52					
169+90					
174+55					
182+93					
182+98					
187+67					
193+76					
193+77					
198+28					
203+75					
203+32					
215+50					
219+60					
221+94					
222+88					
223+18					
223+31					
224+76					
231+91					
TOTALS					

40 FOOT PAVEMENT

Beginning of Fed. Aid Proj. Sta. 0+00
 End of 40' Pavement Sta. 12+67
 Total Length of 40' Pavement 12 67 Lin. Ft.
 Concrete Base - 7 Pg. 52
 Extra 7' Conc. Base (over culv. opening) Pg. 52
 Total 7' Conc. Base
 2' Pavement 1267 x 35 x 1/4
 Conc. Carb. & Gaffer Type III 1 1/2 Mix 1267 x 2
 Cinder Wall 2 (5 x 1/2 x 1267) x 1/4
 Finishing Shoulders, Slopes & Ditches (both sides)
 Penetration Patch T-19 Pg. 52
 Water Valve rose
 Water stop box adjusted to grade - to establish unit price
 Water meter box adjusted to grade - to establish unit price
 Gas Curb box adjusted to grade - to establish unit price
 Beginning of 20 Foot Pavement Sta. 12+67
 End of Fed. Aid Project Sta. 291+58
 Gross Length of 20' Pavement 278 91 Lin. Ft.
 Deductions
 Sta. 19+78 to Sta. 19+98.85 Bridge Prop? 73 Lin. Ft.
 Sta. 200+00 to Sta. 201+00 (Short Sta) 1 Lin. Ft.
 Total Deductions 74 Lin. Ft.
 Additions
 Sta. 76+00 to Sta. 77+00 (Long Sta) 3 Lin. Ft.
 Sta. 231+00 to Sta. 232+00 (Long Sta) 42 Lin. Ft.
 Total Additions 69 9 Lin. Ft.
 Net Deduction 74 Lin. Ft.
 Net Length 20 Foot Pavement 278 91 Lin. Ft.
 Pavement Type 27801.2 x 18.5 x 1/4 Pg. 52
 Extra Pavement Type Pg. 52
 Total 2' Pavement Type Pg. 52 8 1/4 x 7 8 1/4
 Concrete Base (20 Foot) Pg. 52 8 1/4 x 7 8 1/4
 Extra Conc. Base (Intersections) Pg. 52 8 1/4 x 7 8 1/4
 Total Conc. Base 20' 8 1/4 x 7 8 1/4
 Concrete Base (4 Foot) Pg. 52 8 1/4 x 7 8 1/4
 Extra 7' Conc. Base (over culv. opening) Pg. 52
 Conc. Carb. (9 x 13 1/4) 2780 1.2 x 2
 Extra Conc. Carb. (9 x 13 1/4) Pg. 52
 Total Conc. Carb. (9 x 13 1/4)
 Gravel 4x Sec. 311 Dr. Drives Pg. 53
 Gravel 4x Sec. 311 Ed. Approaches Pg. 52
 Total Gravel 4x Sec. 311
 Penetration Patch - T-19 Pg. 52
 Water Main lowered
 Gas Main lowered
 Surface to be banded off (To establish unit price)
 Extra Penetration Patch T-19
 Water stop boxes adjusted to grade - To establish unit price
 Water meter boxes adjusted to grade - To establish unit price
 FINISHING SHOULDERS, SLOPES & DITCHES
 Gross Length of 20' Pavement 27871 Lin. Ft.
 Deductions
 Proposal No. 2 38 Lin. Ft.
 Sta. 200+00 Short Sta 1
 Total Deductions 39
 Additions 42
 Net Deductions 34.8
 Net Length 27836.2 Lin. Ft.
 Maintaining Traffic Sta. 260+85 to Sta. 291+58 Lump Sum

Station	Excav. Concr. & Buckfill Cu. Yds.	Reinf. 1-1/2" Steel Lbs.	V.S.P. Lin.- Ft.	Relaid I.P. 12" 18" 24" 36" 48"	No. Pipes 2 Sec. 311 of C.B. Culverts Rd.
255H101	2	2.65	20		
257H00					
258H12					
261H24					
261H84					
269H56					
269H95					
269H116					
269H160					
273H70					
273H80					
273H110					
278H87					
281H59					
281H80					
288H96					
291H49					
TOTALS					

Station	Excav. Concr. & Buckfill Cu. Yds.	Reinf. 1-1/2" Steel Lbs.	V.S.P. Lin.- Ft.	Relaid I.P. 12" 18" 24" 36" 48"	No. Pipes 2 Sec. 311 of C.B. Culverts Rd.
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258H12					
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273H80					
273H110					
278H87					
281H59					
281H80					
288H96					
291H49					
TOTALS					

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269H56					
269H95					
269H116					
269H160					
273H70					
273H80					
273H110					
278H87					
281H59					
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TOTALS					

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261H84					
269H56					
269H95					
269H116					
269H160					
273H70					
273H80					
273H110					
278H87					
281H59					
281H80					
288H96					
291H49					
TOTALS					

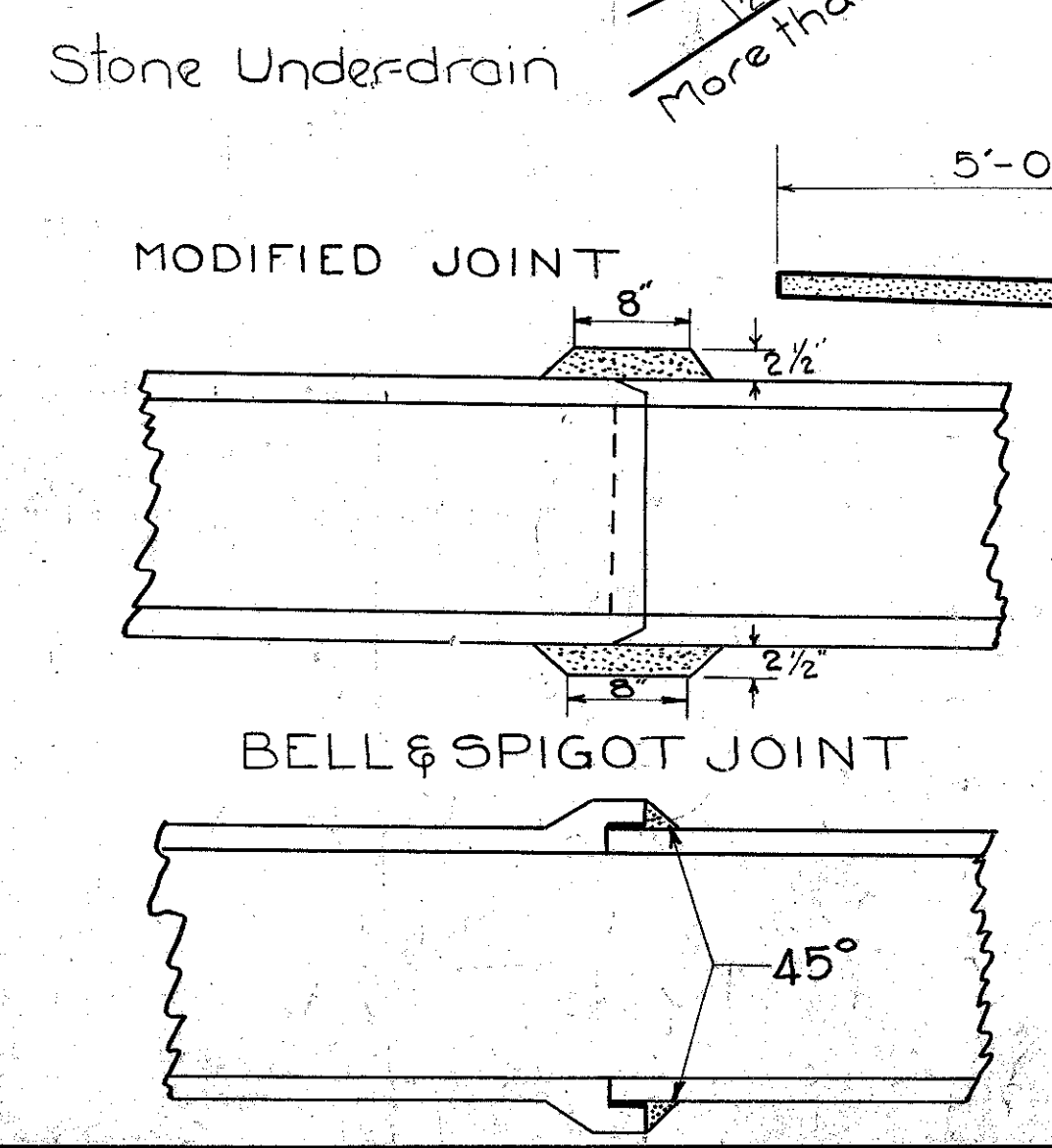
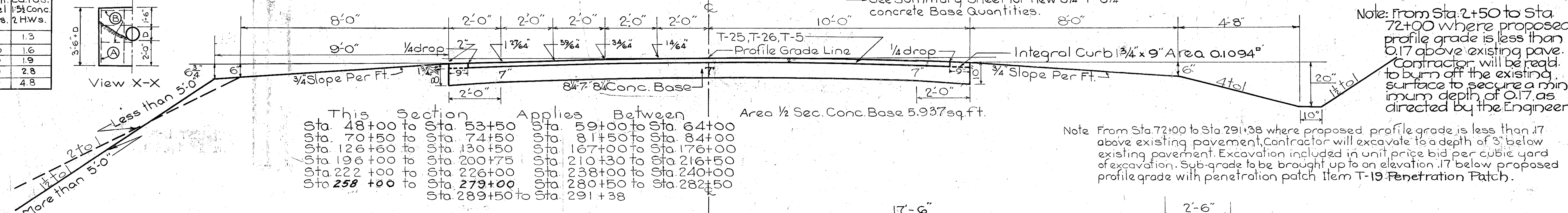
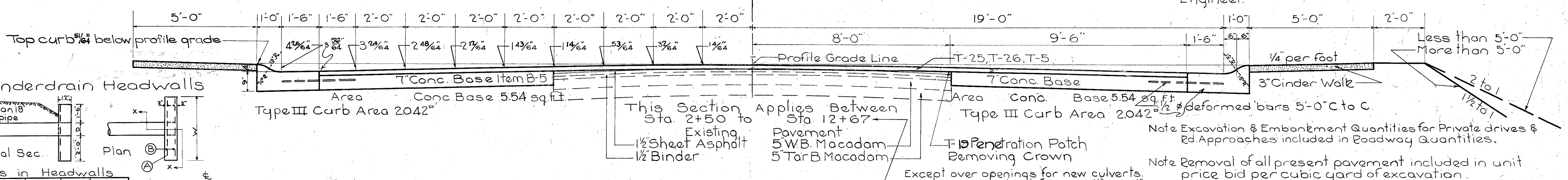
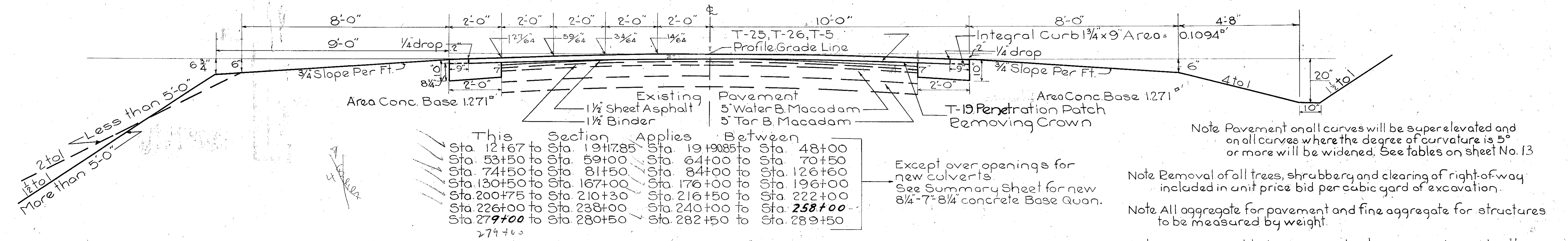
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 End of 40' Pavement Sta. 12+67
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 Penetration Patch T-19 Pg. 52
 Water Valve rose
 Water stop box adjusted to grade - to establish unit price
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 End of Fed. Aid Project Sta. 291+58
 Gross Length of 20' Pavement 278 91 Lin. Ft.
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 Sta. 200+00 to Sta. 201+00 (Short Sta) 1 Lin. Ft.
 Total Deductions 74 Lin. Ft.
 Additions
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 Gravel 4x Sec. 311 Ed. Approaches Pg. 52
 Total Gravel 4x Sec. 311
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 Water Main lowered
 Gas Main lowered
 Surface to be banded off (To establish unit price)
 Extra Penetration Patch T-19
 Water stop boxes adjusted to grade - To establish unit price
 Water meter boxes adjusted to grade - To establish unit price
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 Sta. 200+00 Short Sta 1
 Total Deductions 39
 Additions 42
 Net Deductions 34.8
 Net Length 27836.2 Lin. Ft.
 Maintaining Traffic Sta. 260+85 to Sta. 291+58 Lump Sum

Note The section between Sta. 260+85 & Sta. 291+38 will be constructed under traffic and the contractor will plan & conduct his operations so that one-way traffic will be maintained at all times. Wherever traffic is routed over a one-way lane the contractor will provide guards or signalmen at each end of every one-way lane during all the hours of the day & night. The guards or signalmen at one end of a one-way lane shall be in telephonic communication with the guards or signalmen at the other end of that lane. The length & location of all one-way lanes will be determined by the engineer. Structures will be constructed in sections so that one-way traffic will be maintained at all times. If the contractor does not desire to construct structures in sections he will be required to construct temporary bridges, 16ft. wide, 10 ton capacity, at his own expense.

The contractor will so plan & conduct his work that from Sta. 0+00 to Sta. 72+00 the road shall be kept open to traffic until the section between Sta. 72+00 & Sta. 260+85 is paved & ready for traffic.

TYPICAL SECTIONS



Rein. conc. pipe used as an alternate for V.S.P. encased shall be cemented as shown in the pertinent accompanying sketch. Where V.S.P. is not to be encased rein. conc. pipe will not be cemented.

Note Removal of existing Private Drive structures are included for payment in unit price bid per cubic yard of excavation.

Note The existing Type B guard rail to be removed & neatly piled at the disposal of the State route marking forces.

Section Showing Pipe Under-drain

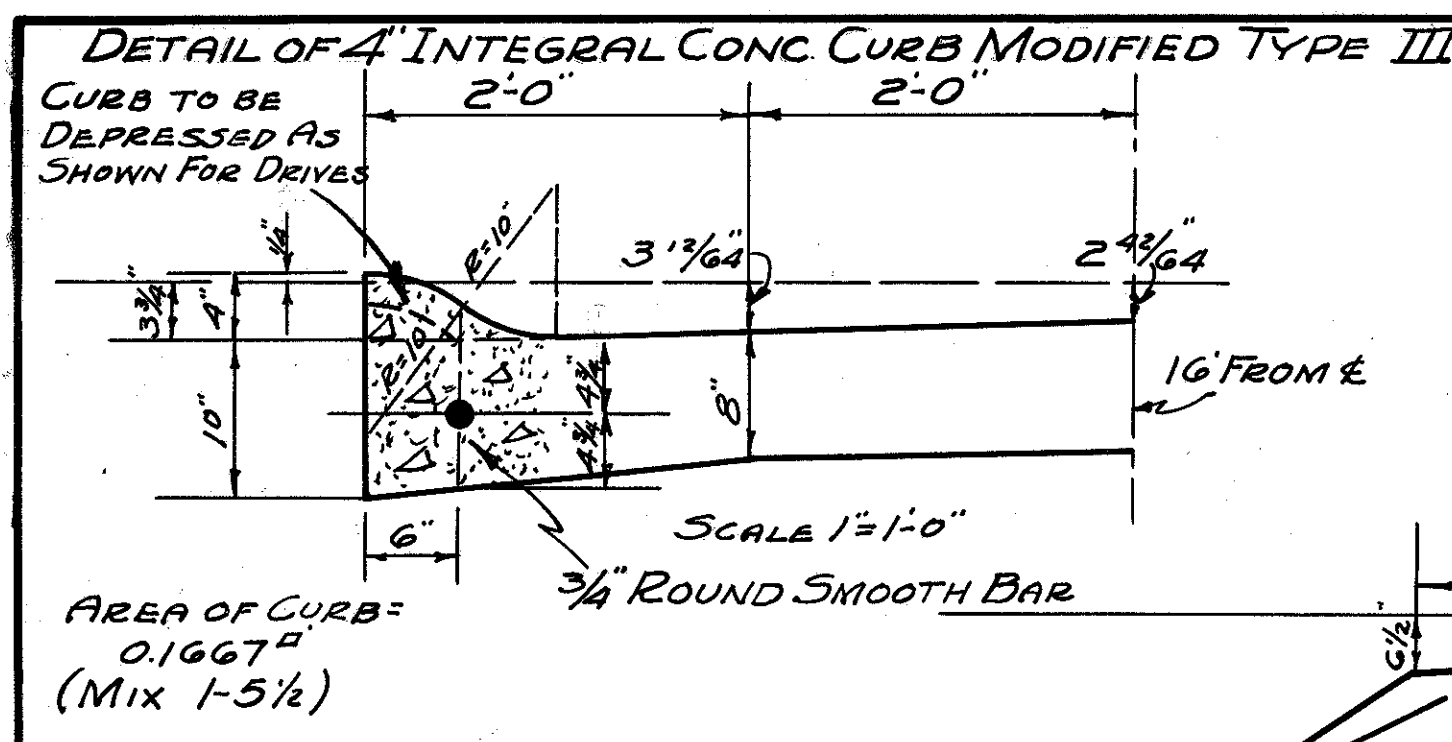
TYPICAL SECTIONS

TYPE-"C" ITEM ST-7, T-8

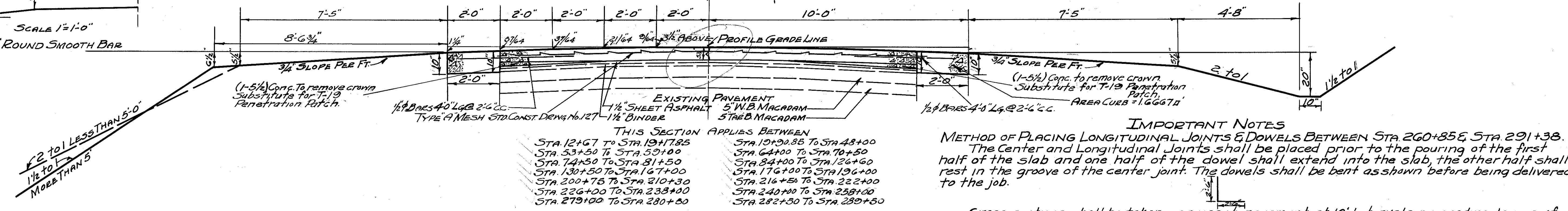
FED. AID DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	581E	1931

2A
53

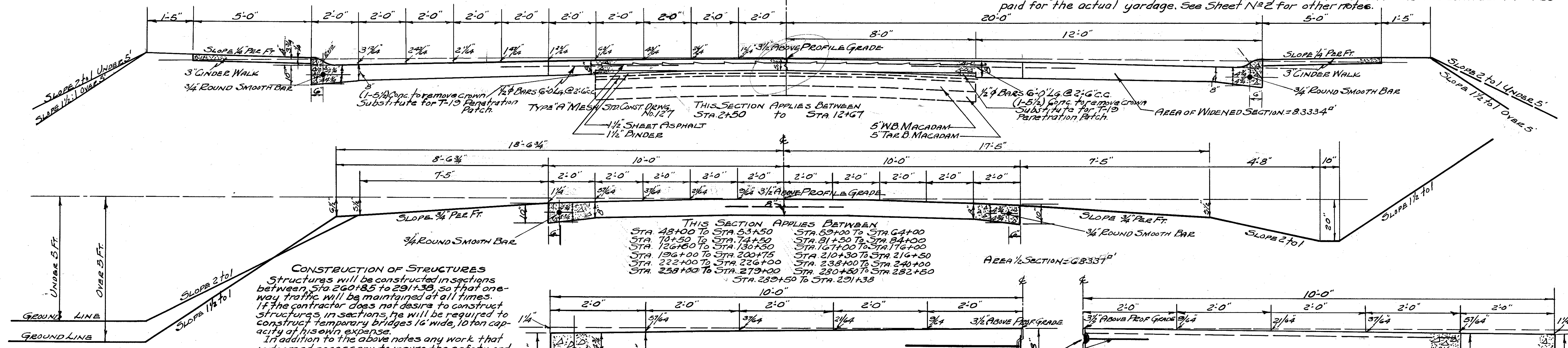
S.H.(I.C.H.) No. 179 Sec. A. & D.
BUTLER COUNTY



Construction & Drawing 98 or 100



NOTE: - CONTRACTION AND EXPANSION JOINTS TO EXTEND THRU CURB.



THIS PROJECT WILL BE CONSTRUCTED UNDER TRAFFIC BETWEEN STA. 260+85 TO STA. 291+38. THE FOLLOWING NOTES WILL BE FOLLOWED.
 The contractor will plan and conduct his operations so that one-way traffic will be maintained at all times.

Whenever traffic is routed over a one-way lane the Contractor will provide guards or signalmen at each end of every one-way lane. At least one guard or signalman shall be on duty at each end of every one-way lane at all hours of the day and night. The guards or signalman at one end of a one-way lane shall be in telephonic communication with the guards or signalmen at the other end of that lane.

Equipment operating upon this project between Sta. 260+85 to Sta. 291+38 shall be governed by the following: - Vehicles using one-way traffic lane shall move in the direction of the general traffic, viz. - Trucks after the delivery of materials shall wait and return with the traffic. Any VIOLATION of the above note will be sufficient cause for the Engineer in charge to dismiss the operator or anyone directing such equipment.

Note: - Grades are to be adjusted to meet existing pavement at the beginning and end of project and at bridge at Sta. 19+17.85 and Sta. 19+30.85.

HALF SECTION OF PAVEMENT TO BE BUILT AT A TIME BETWEEN STA. 260+85 & STA. 291+38, SHOWING LONGITUDINAL JOINT & DOWEL TO BE USED FOR EACH SECTION.

