

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS

FED. RD. DIST. NO.	STATE	PROJECT	FISCAL YEAR
	OHIO		1945

1  
21

BROWN COUNTY  
S.H. 494 SEC. D (PT.)

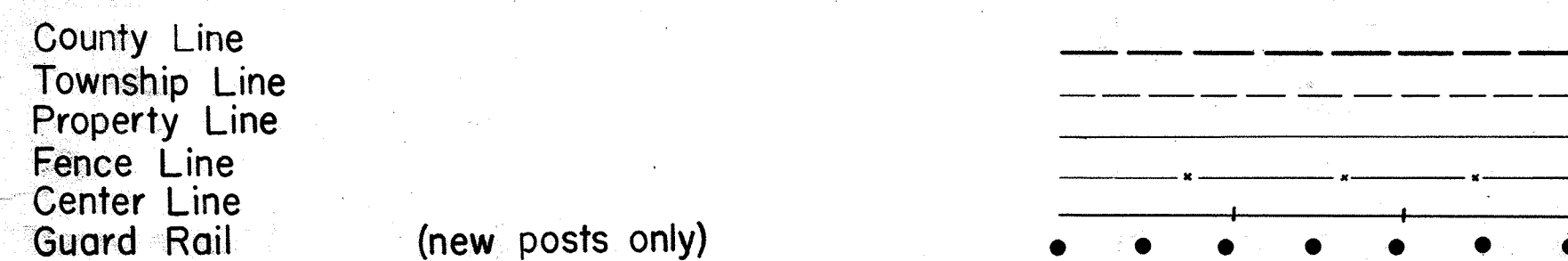
# MILFORD - VERA CRUZ ROAD

S.H. 494 SEC. D (PT.)

PERRY TOWNSHIP

# BROWN COUNTY

### CONVENTIONAL SIGNS

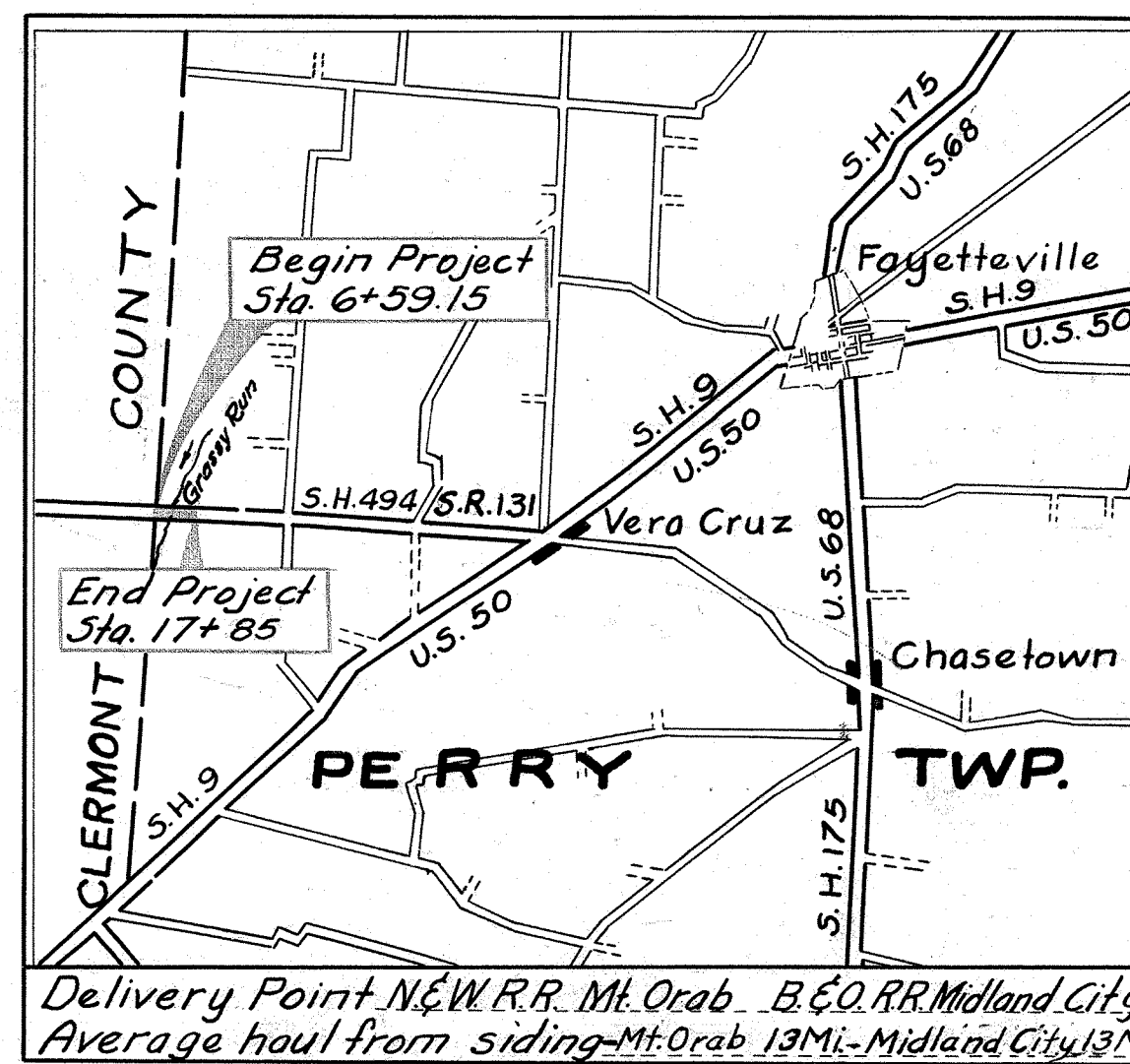


### INDEX OF SHEETS

Title Sheet	Sheet No.	1
Typical Section	"	2
General Notes	"	3 - 4
Summary	"	5
Plan Profile	"	6
Cross Sections	"	7 - 12
Driveway Detail	"	13
Structure (under 20' span)	"	14
Miscellaneous Details	"	15
Bridge Plans	"	16 - 21

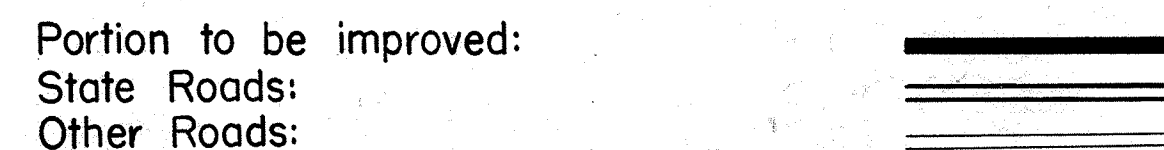
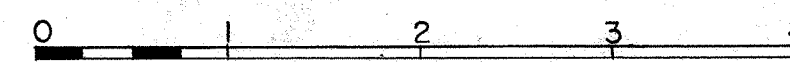
### LINE DATA

Begin Project	Sec. D (Pt.)	Sta. 6 + 59.15
End Project		Sta. 17 + 85
Length of Project		1125.85 Lin. Ft.
Net Length of Work		1125.85 Lin. Ft. or 0.213 Miles



LOCATION PLAN

### SCALE OF MILES



### SCALE

Plan	1" = 50'
Profile: Horizontal	1" = 50'
Profile: Vertical	1" = 5'
Cross Sections	1" = 5'

The standard specifications of the State of Ohio Department of Highways, including changes and supplemental specifications listed in the proposal shall govern this improvement.

The right of way necessary for this improvement will be provided by the State of Ohio.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved: *Joseph W. Doyle* P.E. 1209  
Date: 10-24-45 Division Deputy Director.

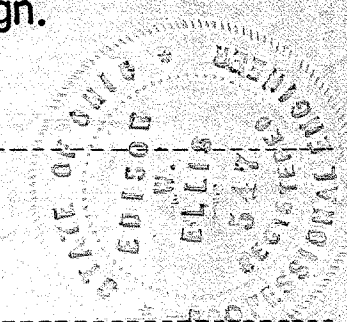
Approved: \_\_\_\_\_  
Date: \_\_\_\_\_ Chief Engineer, Bureau of Maintenance.

Approved: *Hubert Elbin*  
Date: 10-30-45 Chief Engineer, Bureau of Bridges & R. R. Crossings.

Approved: *P. E. Washburn*  
Date: 11-1-45 City Chief Engineer, Bureau of Location & Design.

Approved: *Ethel W. Ellis*  
Date: Nov. 1, 1945 First Ass't. Director and Chief Engineer.

Approved: *Perry T. Fardel*  
Date: Nov. 1, 1945 Director of Highways.



325

File No.	Brown County - S.H. 494 Sec. D (Pt.)
Date of Letting	194
Contract No.	

Supplemental Prints of Standard Construction Drawings			
S-27 P.C.3	2-20-45	BD-35	Rev. 8-12-39
G-707	6-1-42	I-15-N-8	3-10-42
A5-40	Rev. 7-30-40		
I-1,2,3,4,5	2-20-45		
B-32-35	Rev. 8-12-39		
MBD-40	App. 10-24-40		

Supplemental Specifications			
	178	Rev. 4-21-44	M-109.6(b) Rev. 3-14-44
E-305	Rev. 5-1-41	T-170.15	8-2-43 M-109.7(a) Rev. 3-14-44
112	Rev. 5-20-42	177	Rev. 4-21-44 M-109.7(b) Rev. 3-14-44
T-110	Rev. 8-3-36	M-109.1	Rev. 3-14-44 M-109.8 7-26-43
		M-109.2	Rev. 3-14-44
		M-109.6(a)	Rev. 3-14-44

CONSTRUCTION BUREAU  
AUG 14 1945  
GROUND PHOTOLAB

# TYPICAL SECTIONS

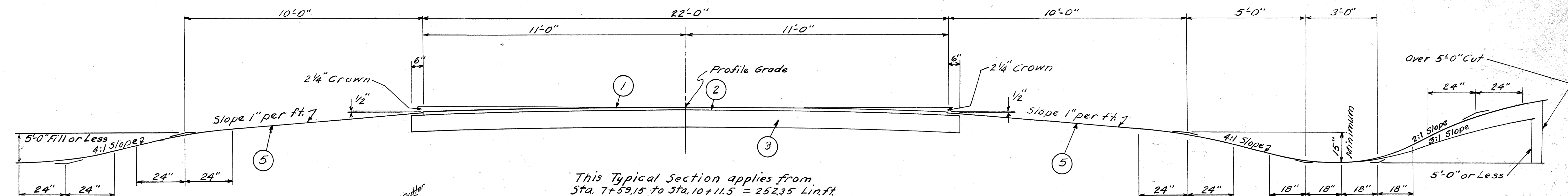
TYPE T-31

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

FED. RD. DIST. NO.	STATE	PROJECT	FISCAL YEAR
	OHIO		1945

2  
21

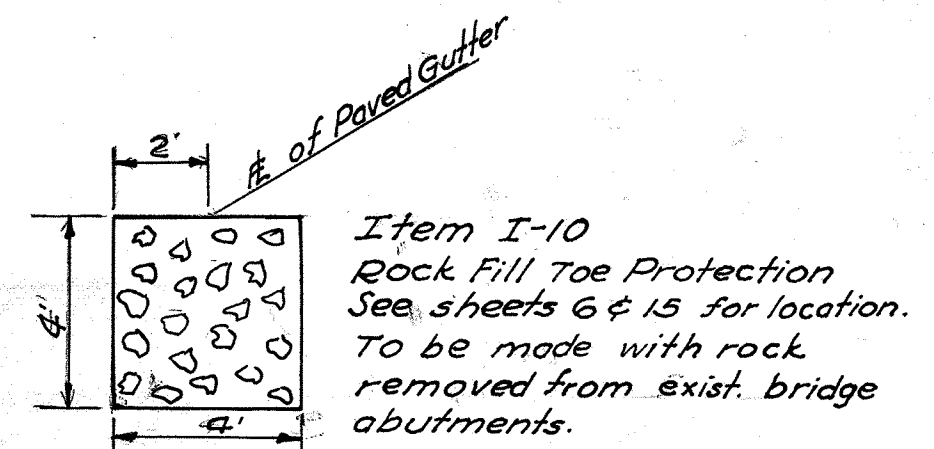
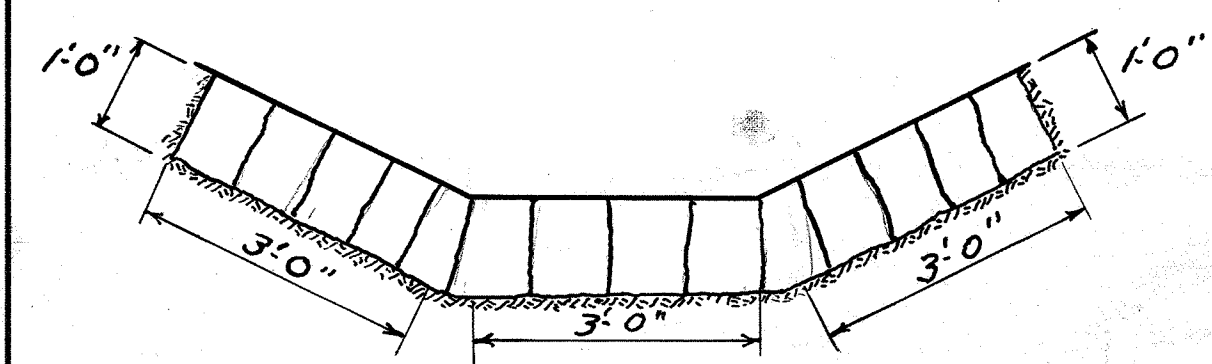
BROWN COUNTY  
S.H. 494 SEC. D (PT.)



## TYPE T-31 PAVEMENT

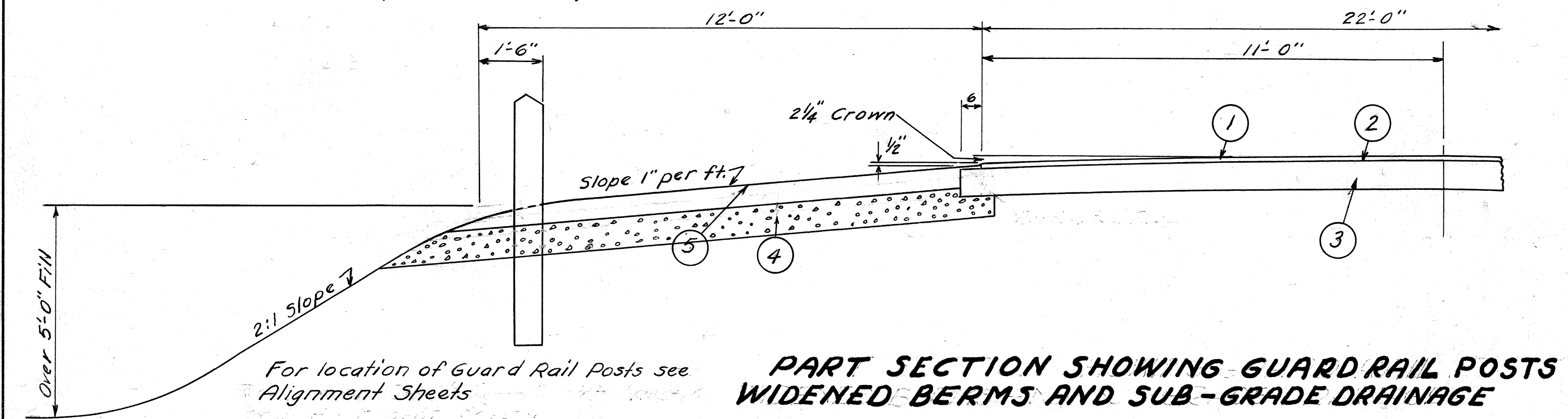
- ① Item T-31 No. 46 aggregate applied at the rate of 0.0292 cu. yd. per sq. yd. Bituminous material Sec. M-5.3 MC-4 or 5 applied at the rate of 0.65 to 0.75 Gal. per sq. yd.  
No. 9 choke aggregate applied at the rate of .00375 cu. yd. per sq. yd.; Bituminous material Sec. M-5.3 MC-4 or MC-5 applied at the rate of .25 gal. per sq. yd.; No. 6 cover aggregate applied at the rate of .0075 cu. yd. per sq. yd.
- ② Item T-30 Bituminous Prime Coat Sec. M-5.7 RT-2 applied at the rate of 0.50 Gal. per sq. yd.
- ③ Item 55-112 8" Classified Embankment (Crushed Limestone)
- ④ Item I-9 Stone Underdrain
- ⑤ Item E-305 Seeding and Protecting Roadway Areas

This Typical Section applies from  
Sta. 7+59.15 to Sta. 10+11.5 = 25235 Lin. ft.  
Sta. 10+76.5 to Sta. 16+60 = 5835 Lin. ft.  
Total 83385 Lin. ft.  
Flare Sta. 6+59.15 to 7+59.15  
Bridge and Approach Slabs Sta. 10+11.5  
to Sta. 10+76.5  
Flare Sta. 16+60 to Sta. 17+60



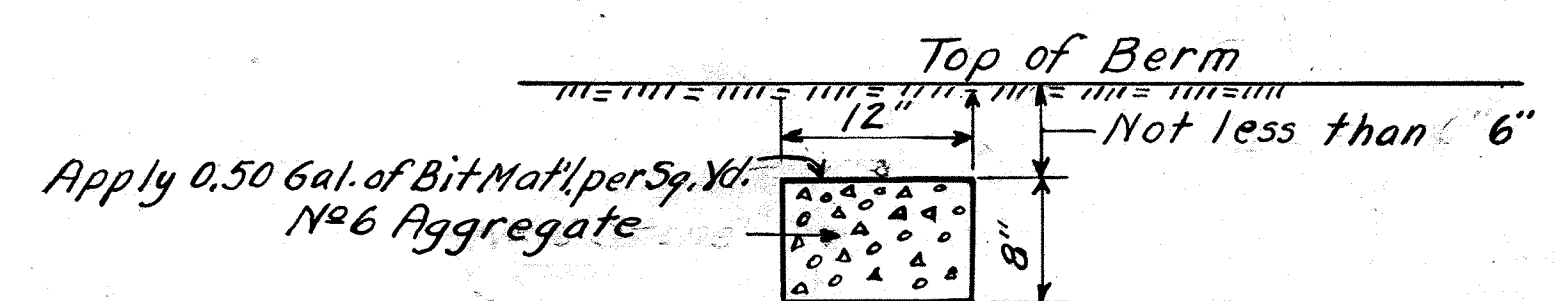
## DETAIL OF STONE PAVED GUTTER (GROUTED)

From Sta. 10+18 to Sta. 11+25 (See Cross Sections)



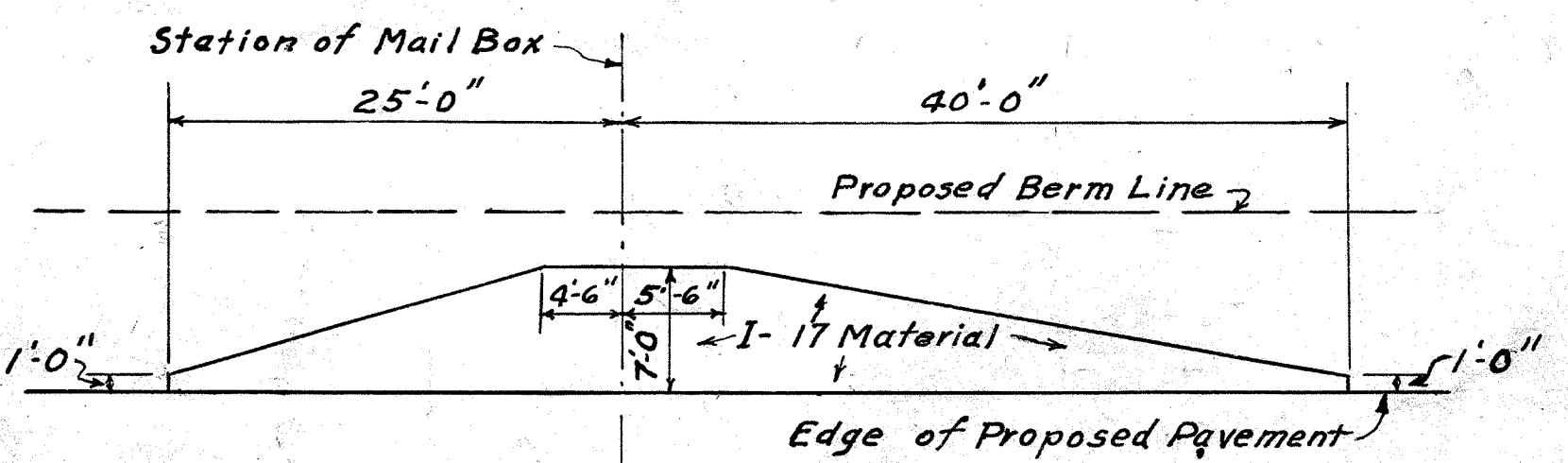
## PART SECTION SHOWING GUARD RAIL POSTS WIDENED BERMS AND SUB-GRADE DRAINAGE

For location of Guard Rail Posts see Alignment Sheets



Underdrains to be placed as directed by the Engineer  
In applying the Bituminous Material cover the surface the full width of trench forming an impervious mat. Omit the bituminous application on area under pavement.  
The Bituminous Material shall be the same kind and quality as used in the surface and is included in the price bid per Lin. Ft. of Stone Underdrain  
Handtamp lightly the No. 6 aggregate to a finished depth of 8" before placing the Bituminous Material.

## DETAIL OF STONE UNDERDRAIN



## TYPICAL PLAN OF MAIL BOX APPROACH

## ALTERNATE PAVEMENT TYPE T-35

- ① Item T-35 1 3/8" Asphaltic Concrete Surface Course using medium curing liquid asphalt Sec. M-5.3 MC-5 in lieu of asphalt cement Sec. M-5.1, Type A
- ② Item T-30 Bituminous Prime Coat, Sec. M-5.7 RT-2 applied at the rate of 0.50 Gal. per sq. yd.
- ③ Item 55-112 8" Classified Embankment (Crushed Limestone)

# NOTES

FED. RD. DIST. NO.	STATE	PROJECT	FISCAL YEAR
	OHIO		1945

BROWN COUNTY  
S. H. 494 Sec. D (Pt.)

## GENERAL

### FIELD OFFICE

The contractor shall provide a suitable "Field Office" for the exclusive use of the engineer and inspectors assigned to this project. This office shall have a minimum of 140 sq. ft. of floor space and so arranged, equipped and lighted that the State employees will have a convenient place for making the necessary records, etc., and have a safe place for storage of equipment, plans and necessary supplies. The contractor shall have a telephone installed and maintained during construction of this project. When the work is in progress during cold weather, the office shall be heated to a temperature of at least seventy (70°) degrees Fahrenheit (see Section 5-0.01 (b) of the Construction and Material Specifications).

### TRAFFIC

Two-way traffic shall be maintained at all times to the satisfaction of the engineer. Temporary roadways (exclusive of the temporary run-around bridge and approaches Item 5-15) deemed necessary by the engineer, shall be constructed, maintained and removed by the contractor.

During the paving operations one-way traffic will be permitted and the one-way traffic zones shall be consistent with the requirements of the general specifications.

In addition to the requirements of Sec. 6-8.07, Barricades, Danger and Warning Signs, the contractor shall display one "PLEASE-MEN WORKING ON ROAD" sign furnished by the State at each end of each one way zone and in such a position as to be visible to traffic approaching the one-way zone.

The contractor shall be responsible for the preservation of these signs, shall advance the signs as work progresses and shall return the signs to the State at the completion of the work.

The item of "Maintaining Traffic" shall include furnishing lights, signs, (other than those mentioned above) barricades and watchmen, plus the displaying and advancing of the "PLEASE-MEN WORKING ON ROAD" signs to secure the flow of traffic twenty-four (24) hours daily.

Traffic Compacted Surface Course, Item T-110 and Calcium Chloride, Item M-10, estimated and paid for under Item T-110 and M-10, shall be applied as directed and in the amounts requested by the Engineer.

All of the above except Traffic Compacted Surface Course, Item T-110 and Calcium Chloride, Item M-10, is included in the lump sum bid for Maintaining Traffic.

In addition to the above Sec. 6-4.05 (Maintenance of Local Traffic) of the Construction and Materials Specifications, will be in force during the entire life of the Contract.

### UTILITY ADJUSTMENT

Any and all work required for the adjustment of Public or Private Utilities shall be done by and at the expense of their respective owners unless otherwise indicated in these plans.

### WINTER CONSTRUCTION

Construction operations shall not be suspended for inclement weather. Winter Concrete Construction will be required and structure operations shall be in accordance with Sec. 5-1.19 of the Construction & Materials Specifications.

### ASPHALTIC CONCRETE SURFACE COURSE (ALTERNATE PAVT)

Medium curing liquid asphaltic Sec. M-5.3 MC-5 shall be used in lieu of asphalt cement Sec. M-5.1 specified in Sec. T-35.02 of the specifications.

## ROADWAY

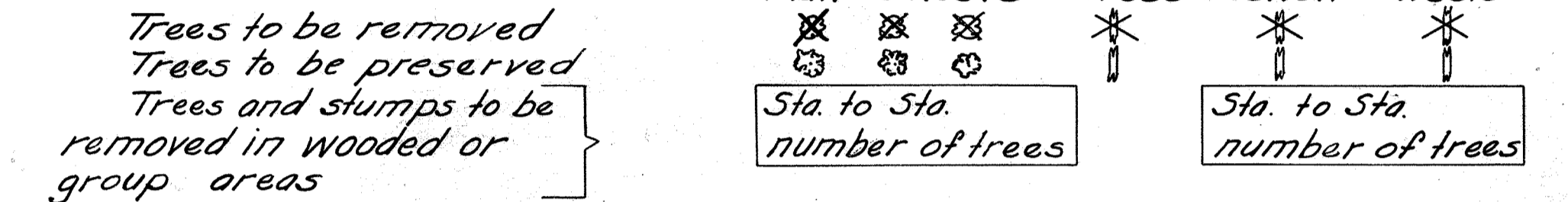
### REMOVAL OF TREES AND STUMPS

The removal of trees and stumps, the diameters of which are over twelve (12) inches (measured four (4) foot above the ground) shall be in accordance with Specifications, Item E-9.

All stumps within the limits of the right-of-way shall be disposed of as specified in paragraph E-1.02 of the Construction and Material Specifications.

Trees shall not be removed, regardless of size, until specifically and conspicuously marked by the Engineer.

Trees in areas where the proposed contour of the ground differs from the existing contour shall be removed or preserved as indicated on the plans by the following symbols:-



The number of trees to be removed as indicated by the above symbols is approximate and the State of Ohio reserves the right to order the removal of additional trees even though these trees are not indicated on the plans or are indicated to be preserved.

Payment for the removal of these additional trees is included in the lump sum bid for removal of trees and stumps.

### REMOVAL OF REFUSE AND DEBRIS

Any existing refuse, debris, or any other unsuitable material shall be removed and disposed of by the contractor, outside the limits of the right-of-way or easement lines.

The yardage of refuse or debris, or other unsuitable material removed and disposed of will be determined by final cross-sections and the yardage so determined will be paid for at the contract unit price bid for Roadway Excavation Item E-1.

### EMBANKMENT

The moisture content of all embankment material shall be less than optimum at the time of compaction.

Embankment material placed on fill containing or exceeding optimum moisture whether caused by rain or from the state of the material as it is received shall be aerated by discing or other approved method for the full depth of the course to reduce the moisture content to below optimum at the time of compaction.

Soil used in the upper three (3) feet of all embankments shall contain less than 50% silt, determined by the State Highway Testing Laboratory testing procedure and have a maximum dry weight peak of not less than 100 pounds per cubic foot.

### REMOVAL & STORING OF EXISTING PIPE

Pipe listed for removing and Storing under item E-12 shall be stored on the right-of-way at the disposal of the Highway Department.

### LOCATION AND SIZE OF EXISTING PIPE

The location, type, depth, and size of all existing pipes are shown as near exact as the available information will permit. The State of Ohio will not be responsible for any variations found during construction.

Payment for pipe removed will be made according to the listing shown on these plans.

### PIPE REMOVAL

The removal and disposal of any existing pipe (not listed for removal and storing) lying within the limits of proposed excavation of either Item E-1, E-2 or E-3, is classified and paid for as excavation and shall be removed and disposed of by the contractor.

### EMBANKMENT

In lieu of the requirements for full width construction under E-1.05 the embankment, where traffic is maintained, may be placed in part width construction.

# NOTES

FED. RD. DIST. NO.	STATE	PROJECT	FISCAL YEAR
	OHIO		1945

4  
21

BROWN COUNTY  
S. H. 494 SEC. D (PT.)

## ROADWAY

GUARD RAIL

The guard rail shall be installed at 5' x 4" and set in pits dug 18" deep in the subgrade. The guard rail shall be spaced at 10' intervals.

### ESTIMATED SEEDING

The estimated quantities of seeding are approximate and the actual limits of seeding will be determined by the Engineer during construction. The number of square yards of seeding to be paid for shall be the actual number of square yards of seeding placed, as determined by final measurements.

Quantities for Seeding Item E-305 are calculated for the soil areas between lines ten (10') feet outside the work limits as shown on the cross sections or to the Right-of-Way line if such line is less than ten (10') feet from the work limits.

All areas outside these limits where the vegetative growth has been injuriously disturbed or destroyed by contractor, shall be restored and seeded in accordance with the provisions of Item E-305 by the contractor at his own expense.

The mixture of seed outlined under Item E-305 shall be deleted and the following mixture substituted.

Berms	Slopes
50% Kentucky Blue Grass	20% Yellow Blossom Sweet Clover
15% Meadow Fescue	20% Alsike
20% Alsike	15% Kentucky Blue Grass
15% Perennial Rye Grass	15% Meadow Fescue
	15% Perennial Rye Grass
	15% Hairy Vetch

All legumes shall be inoculated.

The rate of seeding as specified under Item E-305 shall be deleted and four (4) pounds per one thousand (1000) square feet shall be substituted for all areas.

### FERTILIZING AREAS TO BE SEEDED

All areas to be seeded in accordance with Item E-305 and Item L-10 respectively shall have commercial fertilizer (10-6-4 Mix.), or any formula approved by the Director, applied at the rate of 20 pounds per 1000 square feet.

### AGRICULTURAL LIMESTONE

Agricultural ground limestone shall be of a fineness that 99% will pass a ten (10) mesh sieve, with 40% passing a one hundred (100) mesh sieve and with a minimum total neutralizing power of 95%. Agricultural ground limestone shall be applied at the rate of one hundred fifty (150) pounds per one thousand (1000) square feet. Limestone may be applied and disced in at the same time as the fertilizer.

Agricultural ground limestone shall be applied to all seeded areas.

### MULCHING AREAS TO BE SEEDED

Within 48 hours after any areas have been seeded such areas shall be covered with a mulch as outlined under Item E-305 which shall be held in place throughout the life of the contract.

### COMPACTION OF SUBGRADE

Loosening and watering of subgrade in cuts according to Section E-108 will not be required if density requirements can be met by additional rolling. However, if at any time the subgrade contains an excess of moisture as indicated by distortion under the roller, the subgrade shall be treated by discing or other suitable means until the moisture content has been reduced sufficiently to permit recompaction to the density required by the specifications.

## TREE PROTECTION

The 9" Ash tree at station 15+10 (rt) and The 14" Ash tree at station 15+30 (rt) are to be saved. Grading around these trees may be altered so that one half of the tree roots on the slope side will be saved.

# SUMMARY OF QUANTITIES

**ALTERNATE PAVEMENT CALCULATIONS TYPE T-35**  
T-35 1 3/4" Asphaltic Concrete Surface Course, Type A as per plan  
2487.6 x 1.1875 ÷ 36 = 82.06 Use 82 Cu.Yd.

## GENERAL SUMMARY

ITEM No.	QUANTITY	UNIT	DESCRIPTION
<b>ROADWAY</b>			
E-1	5228	Cu.Yd.	Roadway Excavation (Unclassified)
E-8	27	Sq. Ft.	Remove and Dispose Existing Sidewalk
E-11	20	M. Gal.	Water
E-12	6	Lin. Ft.	8" Pipe Removed and Disposed of
E-12	32	Lin. Ft.	18" Pipe Removed and Stored
E-9	Lump	Lump	Removal of Trees and Stumps
E-305	8637	Sq. Yd.	Seeding and Protecting Roadway Areas
I-3	65	Lin. Ft.	12" Pipe for Roadway Drainage
I-9	200	Lin. Ft.	Stone Underdrain (As per plan)
I-10	53	Sq. Yd.	Riprap (Type "A" Grouted)
I-10	8	Cu. Yd.	Rock Fill Toe Protection
I-14	108	Lin. Ft.	Stone Paved Gutter (As per plan, Grouted)
I-13	44	Lin. Ft.	Concrete Steps (6" Rise - 12" Tread) (With buttress wall)
I-15	24	Each	Guard Rail (Posts only)
I-17	22	Cu. Yd.	Side Approaches, Mailbox Turnouts and Berm Material
S-24	Lump	Lump	Removal of Existing Structures
SS-112	580	Cu. Yd.	Classified Embankment as per plan
L-9	1,555	Lbs.	Commercial Fertilizer (10-6-4)
L-9	11,660	Lbs.	Agricultural Ground Limestone
M-10	11	Ton	Calcium Chloride (For Temporary Roadways)
T-110	555	Cu. Yd.	Traffic Compacted Surface Course (For Temporary Roadways)
<b>PAVEMENT</b>			
T-30	1301	Gal.	Bituminous Prime Coat M-5.7 RT-2
T-31	1741	Gal.	Surface Treatment Bituminous Material, Sec. M-5.3 MC-4 or MC-5
T-31	73	Cu. Yd.	N <sup>o</sup> 46 Aggregate for Surface Treatment
T-31	10	Cu. Yd.	N <sup>o</sup> 9 Aggregate for Choke
T-31	622	Gal.	Seal Coat Bituminous Material, Sec. M-5.3 MC-4 or MC-5
T-31	19	Cu. Yd.	N <sup>o</sup> 6 Aggregate for Cover
S-5	88	Sq. Yd.	9" Reinforced Concrete Approach Slabs.
<b>STRUCTURES - 20 FT. SPAN AND UNDER</b>			
E-2	41	Cu. Yd.	Excavation for Structures
E-3	10	Cu. Yd.	Channel Excavation
S-22	Lump	Lump	Removal of Portions of Existing Structures
S-27	128	Lin. Ft.	18" Pipe for Roadway Culverts
<b>STRUCTURES OVER 20 FT. SPAN</b>			
For Summary of Quantities see sheet No. 17			
<b>ALTERNATE PAVEMENT</b>			
T-30	1301	Gals	Bituminous Prime Coat, Sec. M-5.7 RT-2
T-35	82	Cu. Yds	Asphaltic Concrete Surface Course, Type A as per plan
S-5	88	Sq. Yds	9" Reinforced Concrete Approach Slabs
Special	Lump	Lump	Maintaining Traffic (See Note on Sheet No. 3)

EXCAVATION & EMBANKMENT			
Station	Excavation	Embankment	Emb. +20%
	Cu. Yd.	Cu. Yd.	Cu. Yd.
6+59.15-17+85	5228	2576	3091
Total	5228	2576	3091

APPROACH SLABS	
Sheet No.	9" Reinforced Concrete Approach Slabs (Std. Dr. AS-40 Rev. 7-30-40) Item S-5
	Sq. Yd.
15	88.0
Total	88.0

DRIVES & APPROACHES	
Sheet No.	Side Approaches, Mailbox Turnouts & Berm Material Item I-17
	Cu. Yd.
6	22
Total	22

CLASS. EMB	
Location	Classified Embankment Item SS-112
	Cu. Yd.
Typ. Sec. 104175	1076
835.85 x 23 x 1/9 x 8 x 1/6	476
Flares	109
Total	580

REMOVALS			
Sheet No.	8" V.S.P. Removed and Disposed of Item E-12	Remove and Dispose Existing Sidewalk Item E-8	Remove and Dispose Existing Headwalls Item S-24
	Lin. Ft. <td>Sq. Ft. <td>Lump</td> </td>	Sq. Ft. <td>Lump</td>	Lump
6	6	27	Lump
Totals	6	27	Lump

EROSION CONTROL			
Sheet No.	Seeding and Protecting Roadway Areas Item E-305	Commercial Fertilizer (10-6-4) Item L-9	Agricultural Ground Limestone Item L-9
	Sq. Yd.	Lb.	Lb.
6	8637		
Total	8637	1555	11,660

GUARD RAIL	
Sheet No.	Guard Rail (Posts only) Item I-15
	Each
6	24
Total	24

DRAINAGE	
Sheet No.	12" Pipe for Roadway Drainage Item I-3
	Lin. Ft.
6	65
Total	65

**REMOVAL OF TREES & STUMPS ITEM E-109**  
See Note on Sheet No. 3  
Lump Sum

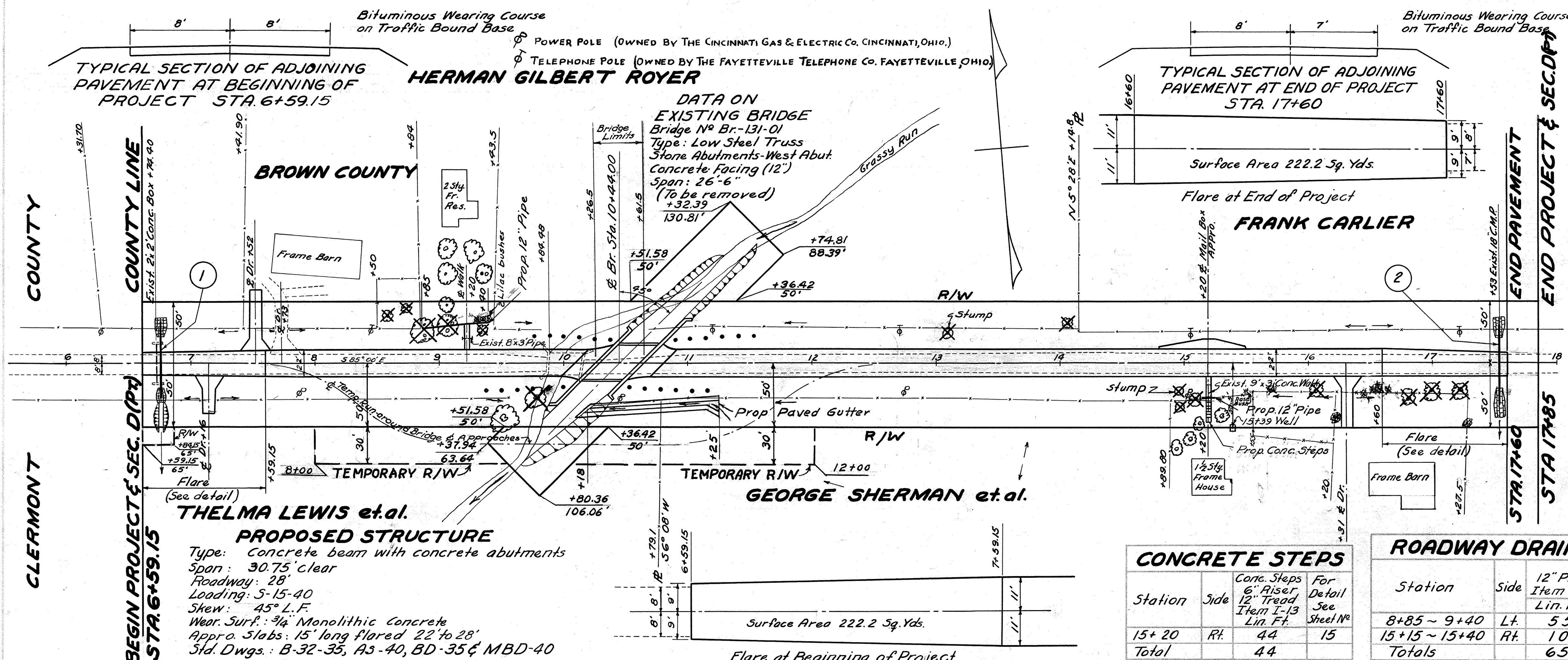
PAVED GUTTER		
Sheet No.	Stone Paved Gutter (As per plan) Item I-14	Rock Fill Item I-10
	Lin. Ft.	Cu. Yd.
6	108	8
Total	108	8

PAVEMENT AREAS							
Location	Bituminous Prime Coat Item T-30			Bituminous Surface Treatment Item T-31			Stone Underdrain Item I-9
	Width	Calculations	Sq. Yd.	Width	Calculations	Sq. Yd.	Lin. Ft.
Typical Section 835.85 Lin. Ft.	23.0'	835.85 x 23 x 1/9	2136	22.0'	835.85 x 22 x 1/9	2043.2	
Flare (Sta. 6+59.15-7+59.15) 100'			233.3			222.2	
Flare (Sta. 16+60-17+60) 100'			233.3			222.2	
Project (Estimated - Place as directed)							200
Totals			2602.6			2487.6	200

STEPS	
Sheet No.	Concrete Steps (6" Rise 12" Tread) Item I-13
	Lin. Ft.
6	44
Total	44

PAVEMENT QUANTITIES T-31					
Item No.	Material	Rate	Sq. Yd.	Calculation	Quantity
T-30 Prime Coat	M-5.7 RT-2	0.50 Gal. per Sq. Yd.	2602.6	2602.6 x 0.50	1301 Gal.
T-31 Surface Treatment	M-5.3 MC-4 or MC-5	0.70 Gal. per Sq. Yd.	2486.7	2486.7 x 0.70	1741 Gal.
T-31 Surface Treatment	N <sup>o</sup> 46 Aggregate	0.0292 Cu. Yd. per Sq. Yd.	2486.7	2486.7 x 0.0292	73 Cu. Yd.
T-31 Surface Treatment	N <sup>o</sup> 9 Aggregate	0.00375 Cu. Yd. per Sq. Yd.	2486.7	2486.7 x 0.00375	10 Cu. Yd.
T-31 Seal Coat	M-5.3 MC-4 or MC-5	0.25 Gal. per Sq. Yd.	2486.7	2486.7 x 0.25	622 Gal.
T-31 Cover	N <sup>o</sup> 6 Aggregate	0.0075 Cu. Yd. per Sq. Yd.	2486.7	2486.7 x 0.0075	19 Cu. Yd.

STRUCTURES - 20 FT. SPAN AND UNDER											
Structure No.	Station	Type	Size	Channel Excavation	Excavation for Structures	18" Pipe for Roadway Culverts	18" C.M.P. Removed and Stored	Removal of Portion of Exist. Structure	Riprap (Type "A" Grouted)	See Sheet No.	
				Item E-3	Item E-2	Item S-27	Item E-12	Item S-22	Item I-10	Cu. Yd.	Cu. Yd.
1	6+76	Pipe	18"	10	22	62				14	
	17+53	Pipe	18"		19	66	32			14	
Total				10	41	128	32	Lump	53		



**SIDE APPROACHES**

Station	Description	Side	Side Approaches Mailbox Turnout & Berm Mat'l. Item I-17 Cu. Yds.	See Sh. No.
7+16	Drive	Rt.	4	
7+52	Drive	Lt.	7	13
9+20	Walk	Lt.	1	
15+20	Walk	Rt.	1	
15+20	Mailbox Appro.	Lt.	3	
16+31	Drive	Rt.	6	13
Total			22	

**STRUCTURES 20 FT. SPAN & UNDER**

Structure No.	Station	Existing Structure		Proposed Structure		Riprap Item I-15 Sq. Yds.	See Shed No.
		Type	Size	Type	Size		
1	6+76	Conc. Box	2' x 2'	Pipe	18"	62	21
2	17+53	C.M.P.	18"	Pipe	18"	68	32
Totals						130	53

**REMOVALS**

Station	Side	Remove & Dispose Existing		Remove & Dispose Existing Headwalls Item S-24 Lump
		Item E-12 Lin. Ft.	Item E-8 Sq. Ft.	
9+20	Lt.	3		Lump
15+20	Rt.	3	27	Lump
Total		6	27	Lump

**CONCRETE STEPS**

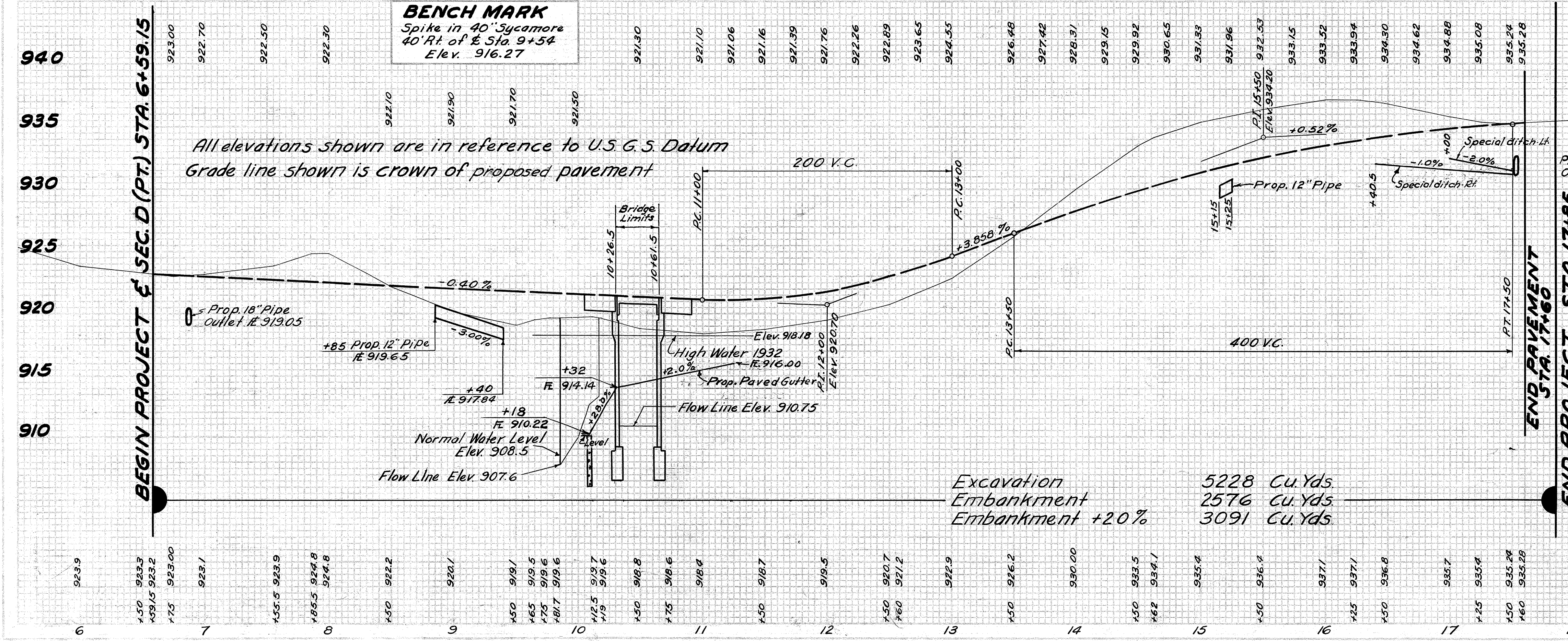
Station	Side	Conc. Steps 6" Riser, 12" Tread Item I-13 Lin. Ft.	For Detail See Sheet No.
15+20	Rt.	44	15
Total		44	

**ROADWAY DRAINAGE**

Station	Side	12" Pipe Item I-3 Lin. Ft.
8+85 ~ 9+40	Lt.	55
15+15 ~ 15+40	Rt.	10
Totals		65

**PROPOSED STRUCTURE**  
Type: Concrete beam with concrete abutments  
Span: 30.75' clear  
Roadway: 28'  
Loading: 5-15-40  
Skew: 45° L.F.  
Wear. Surf.: 3/4 Monolithic concrete  
Appro. Slabs: 15' long flared 22 to 28'  
Std. Dwg.: B-32-35, A3-40, BD-35 & MBD-40

**BENCH MARK**  
Spike in 40' Sycamore  
40' Rt. of Sta. 9+54  
Elev. 916.27



**PAVED GUTTER**

Station	see Sheet No.	Stone Paved Gutter	
		Item I-14 Lin. Ft.	Item I-10 C.Y.
10+18 ~ 11+25	15	108	18
Total		108	8

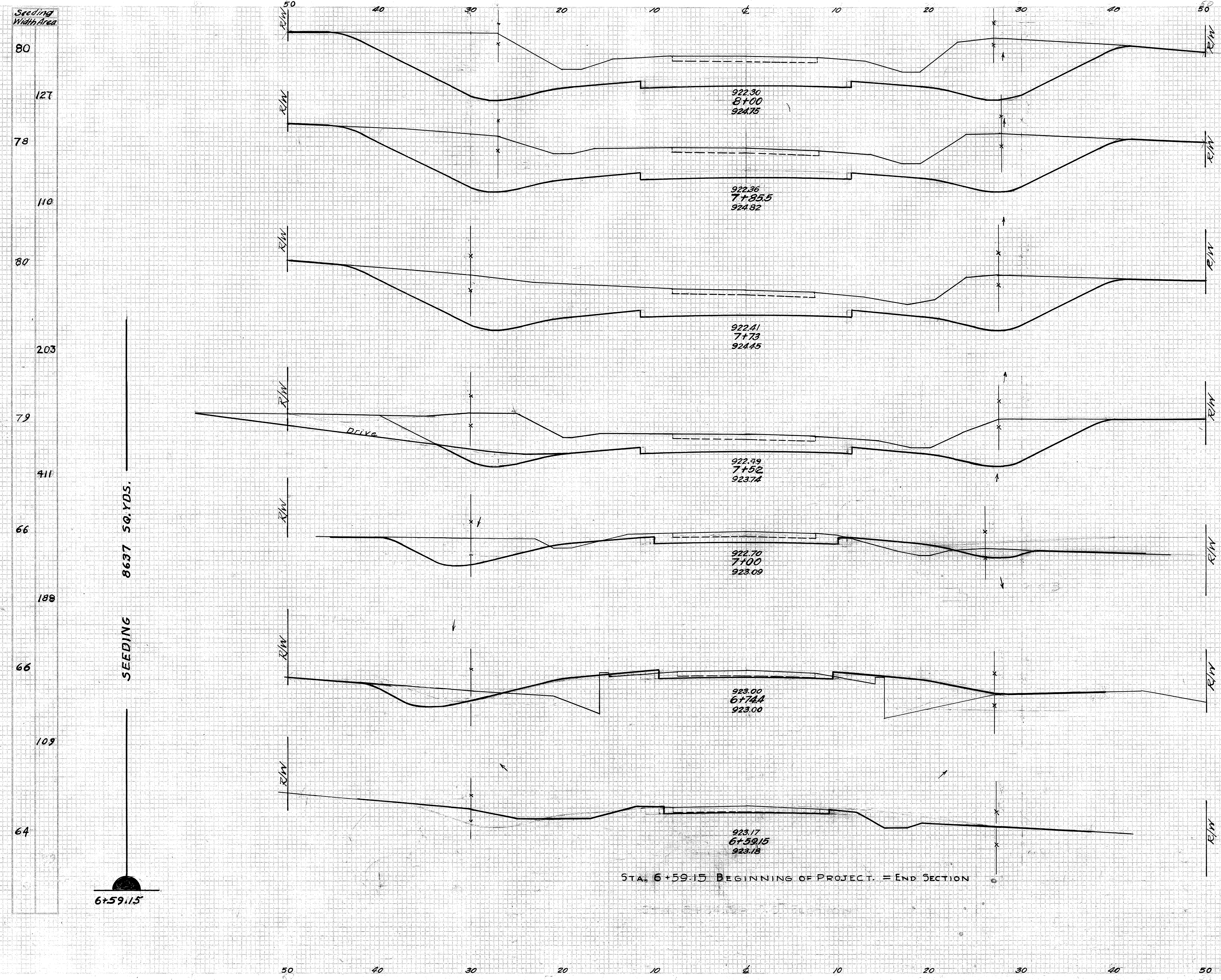
**EROSION CONTROL**

Station	Seeding Item E-305 Sq. Yds.
6+59.15 ~ 17+60	8637
Total	8637

**GUARD RAIL**

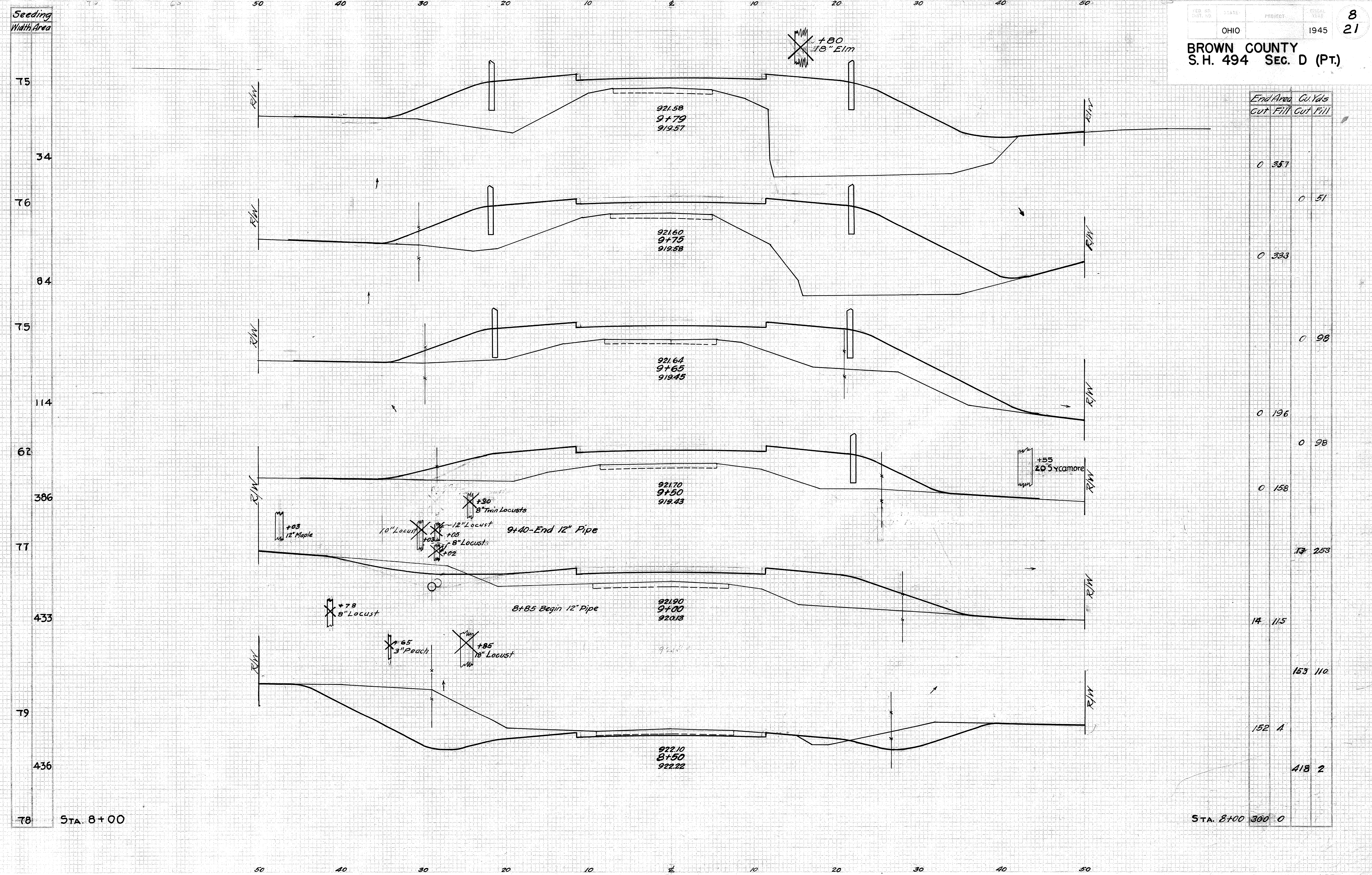
Station	Side	Guard Rail Posts only Item I-15 Each
9+36.5 ~ 9+99	Rt.	6
9+74 ~ 10+36.5	Lt.	6
10+51.5 ~ 11+14.0	Rt.	6
10+88.5 ~ 11+51.0	Lt.	6
Total		24

Excavation 5228 Cu. Yds  
Embankment 2576 Cu. Yds  
Embankment +20% 3091 Cu. Yds



End Area		Cu Yds.	
Cut	Fill	Cut	Fill
300	0		
		157	0
286	0		
		128	0
268	0		
		180	0
196	0		
		41	0
		0	0
		324	10
64	11		
		45	29
32	51		
		12	14
10	0		
		10	0
		31	12

DRIVE 7+52 Lt.  
 DRIVE 7+16 Rt.  
 EXCAVATION 5228 Cu Yds.  
 EMBANKMENT 2576 Cu Yds.  
 EMBANKMENT +20% 3091 Cu Yds.



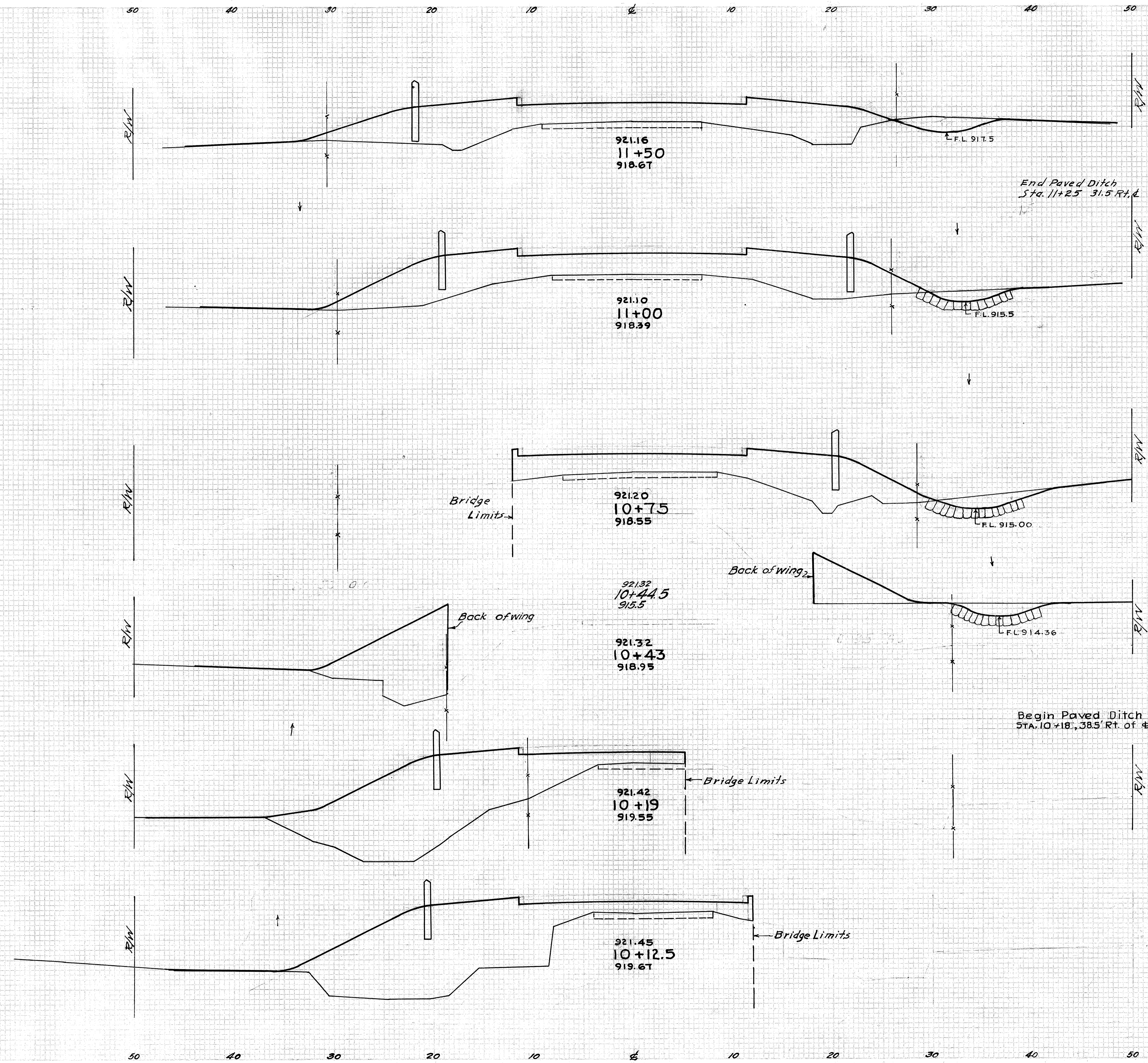
End Area		Cu. Yds	
Cut	Fill	Cut	Fill
0	357		
		0	51
0	333		
		0	98
0	196		
		0	98
0	158		
		13	253
14	115		
		153	110
152	1		
		418	2
STA. 8+00 300 0			



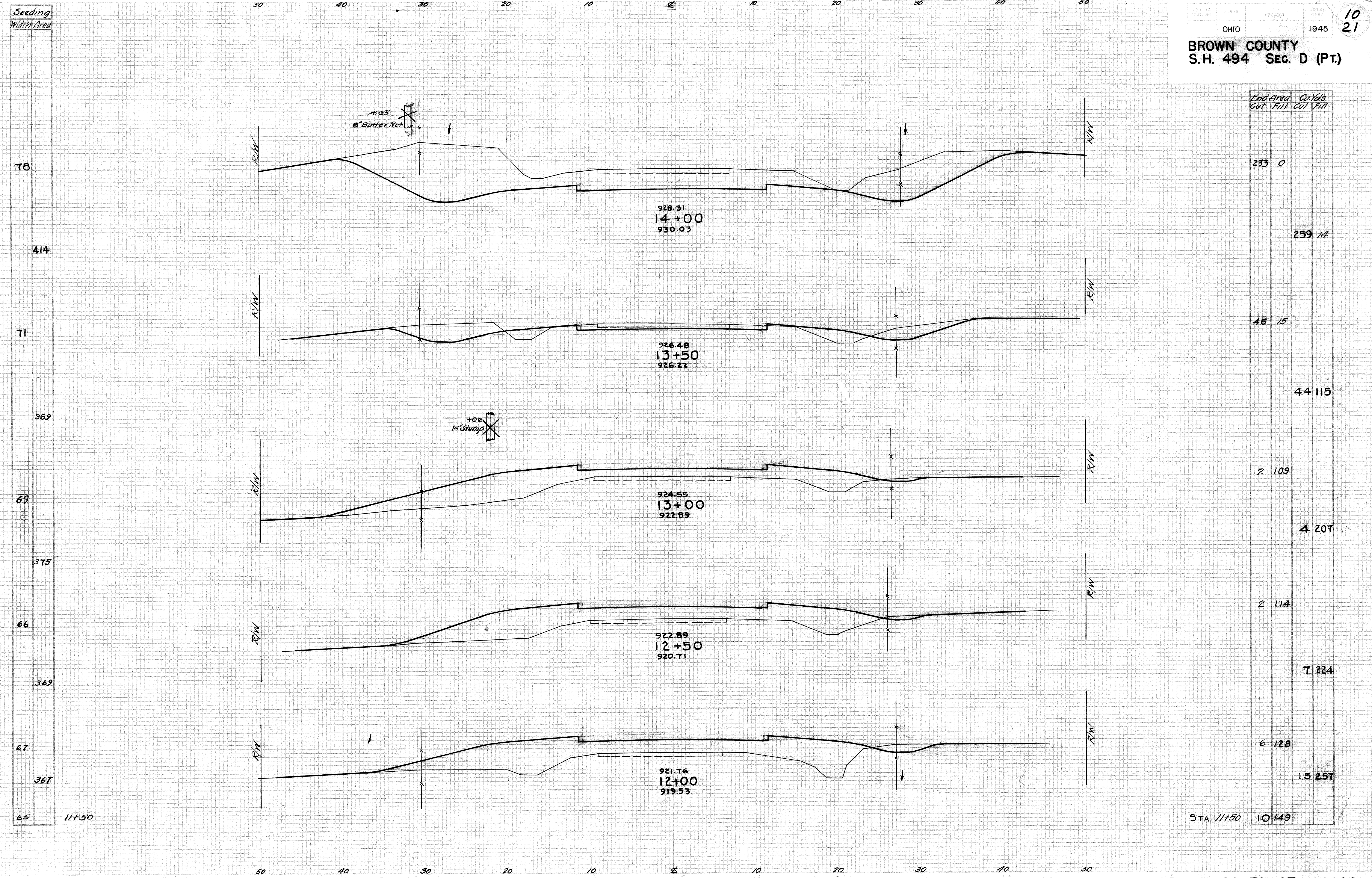
BROWN COUNTY  
S.H. 494 SEC. D (PT.)

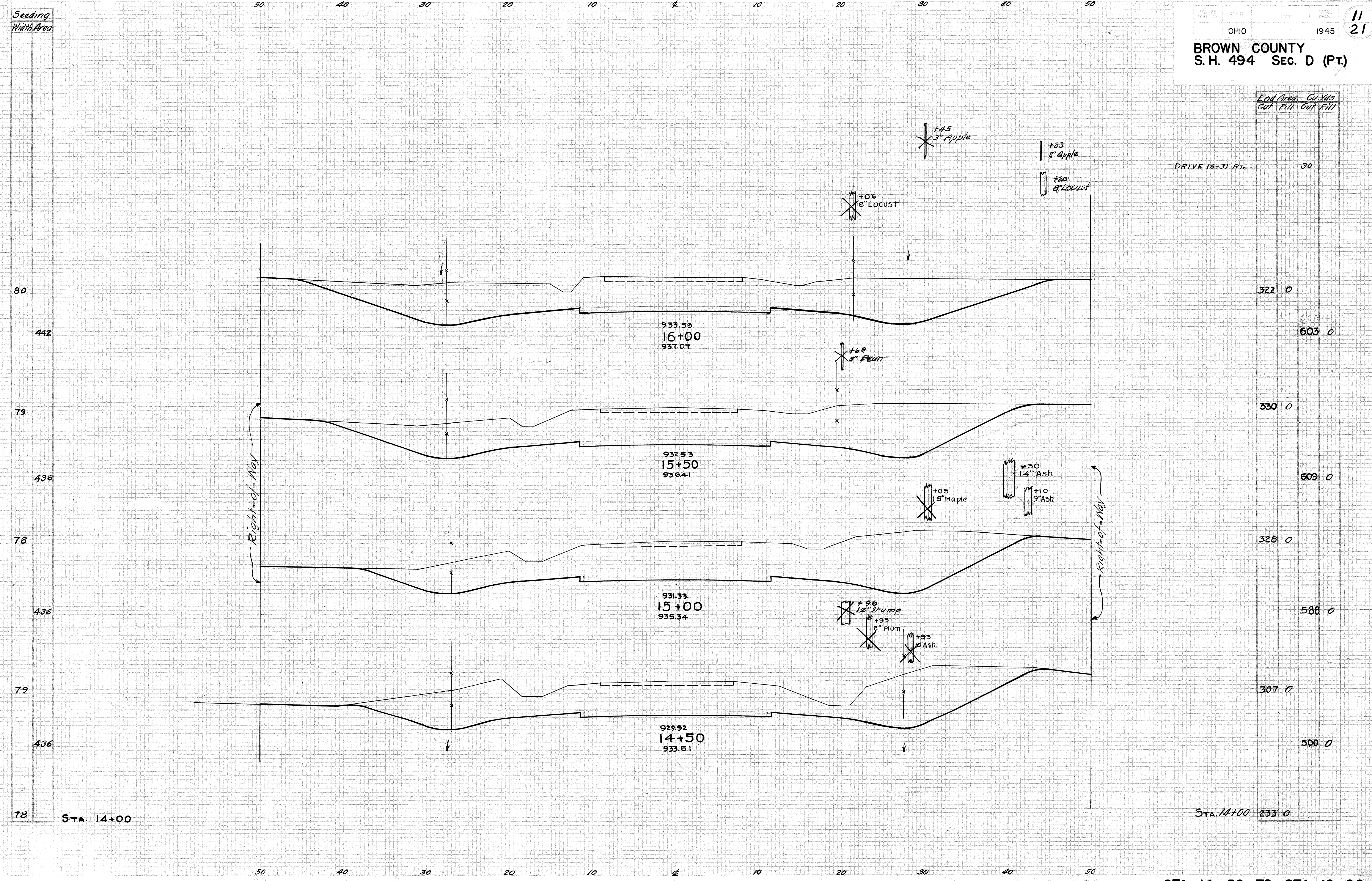
Seeding  
Width Area

65  
353  
62  
129  
31  
93  
24 15 +44.5 Rt.  
0 +35 Rt.  
0 15 +53 Lt.  
27 +43 Lt.  
87  
38  
27  
36  
207  
75 9+79



Sta.	End Area		Cu. Yds.	
	Cut	Fill	Cut	Fill
10	10	149		
			15	294
	6	168		
			7	130
	9	110		
			9	77
10 +35 Rt.	0	0	0	4
10 +53 Lt.	0	0	0	13
	0	68		
			3	
	0	0	0	115
			0	190
			0	17
	0	198		
			0	344
STA. 9+79	0	357		

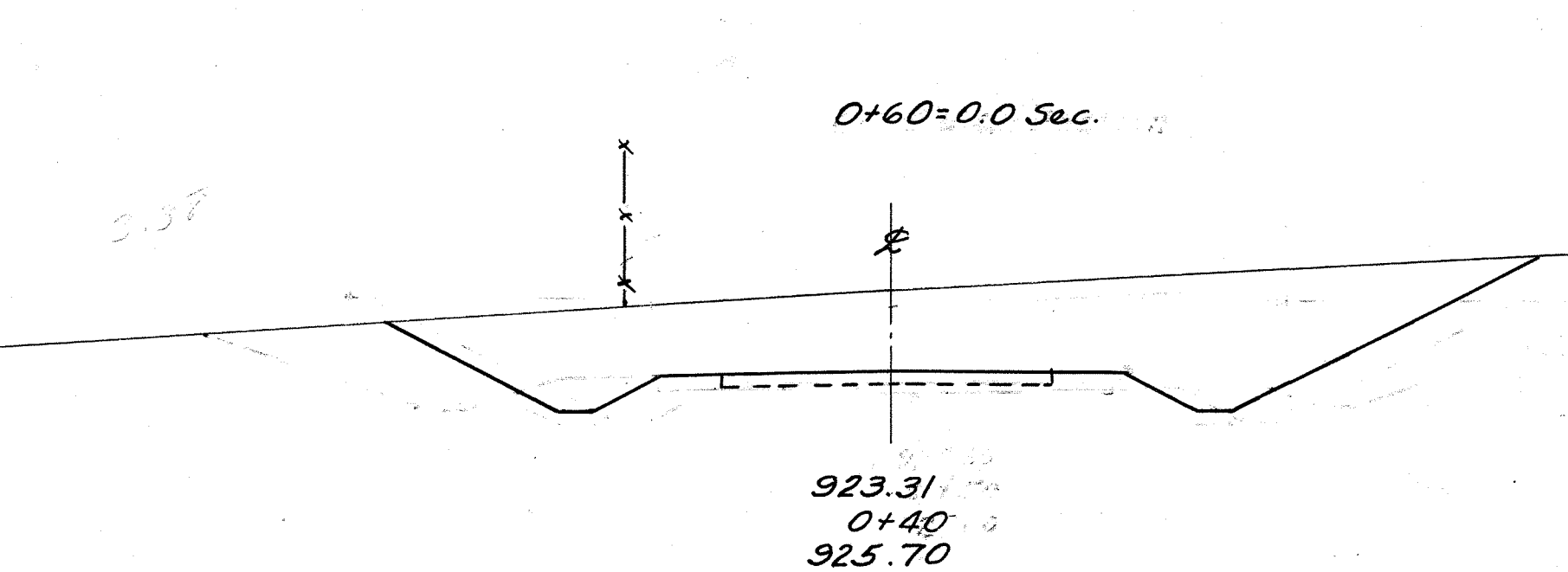
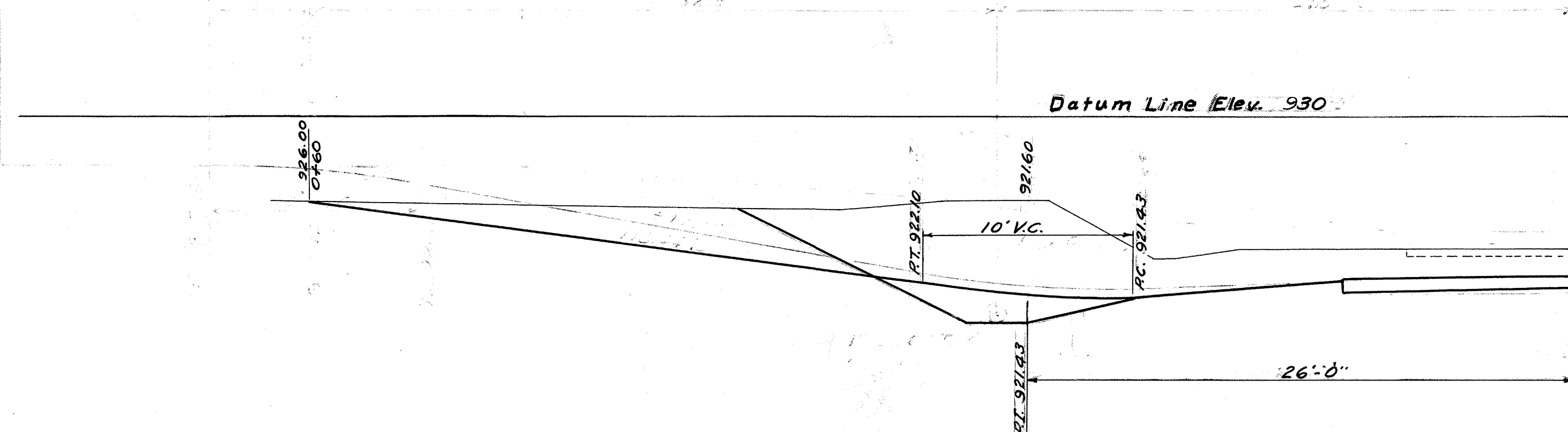
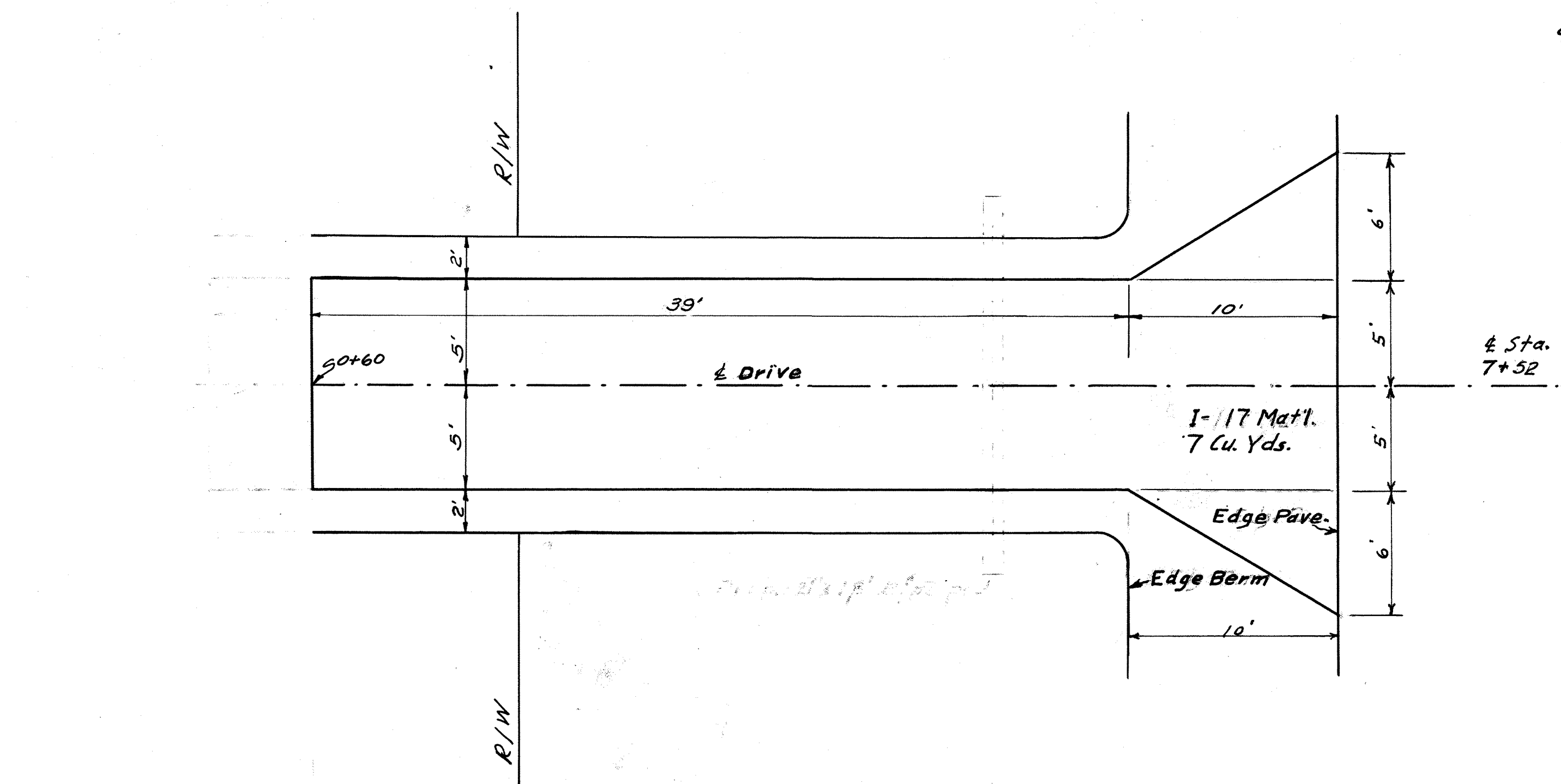




End Area	Cu. Yds.	
	Cut	Fill
322	0	0
603	0	0
330	0	0
609	0	0
328	0	0
588	0	0
307	0	0
500	0	0
233	0	0



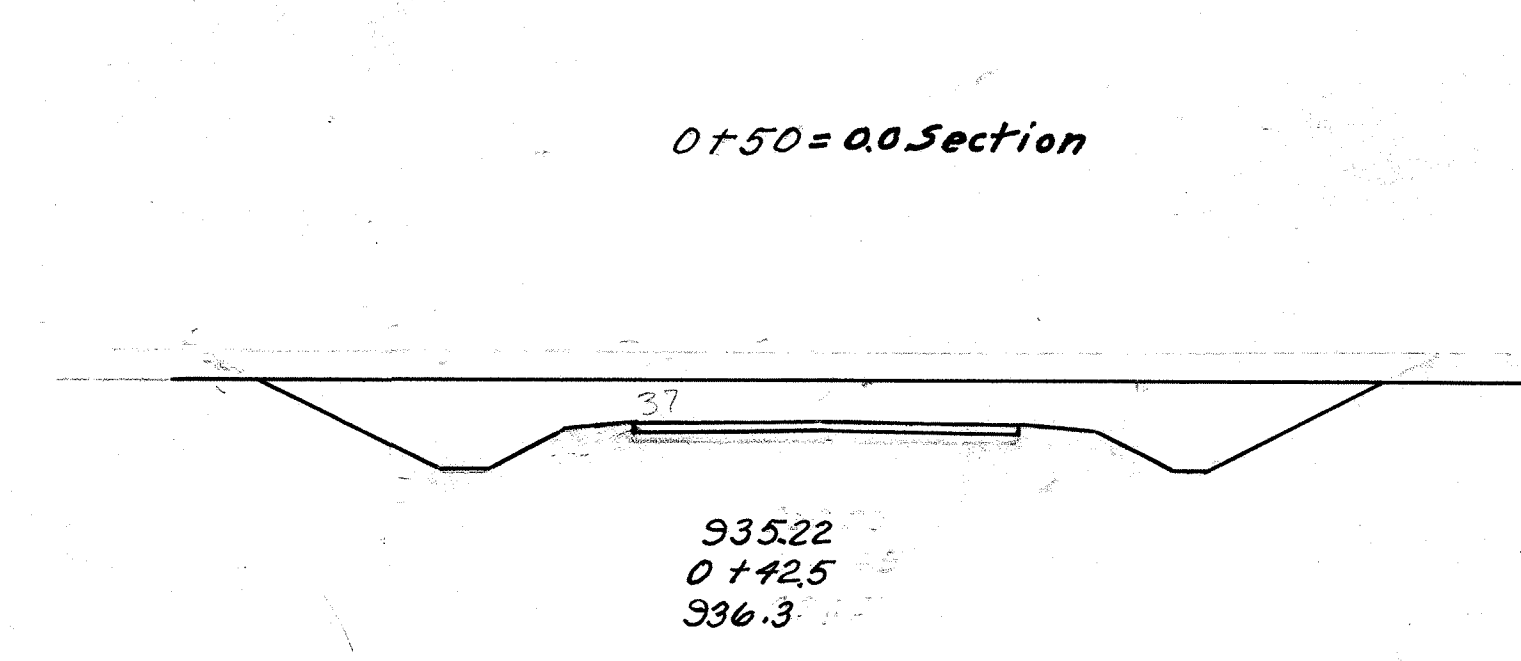
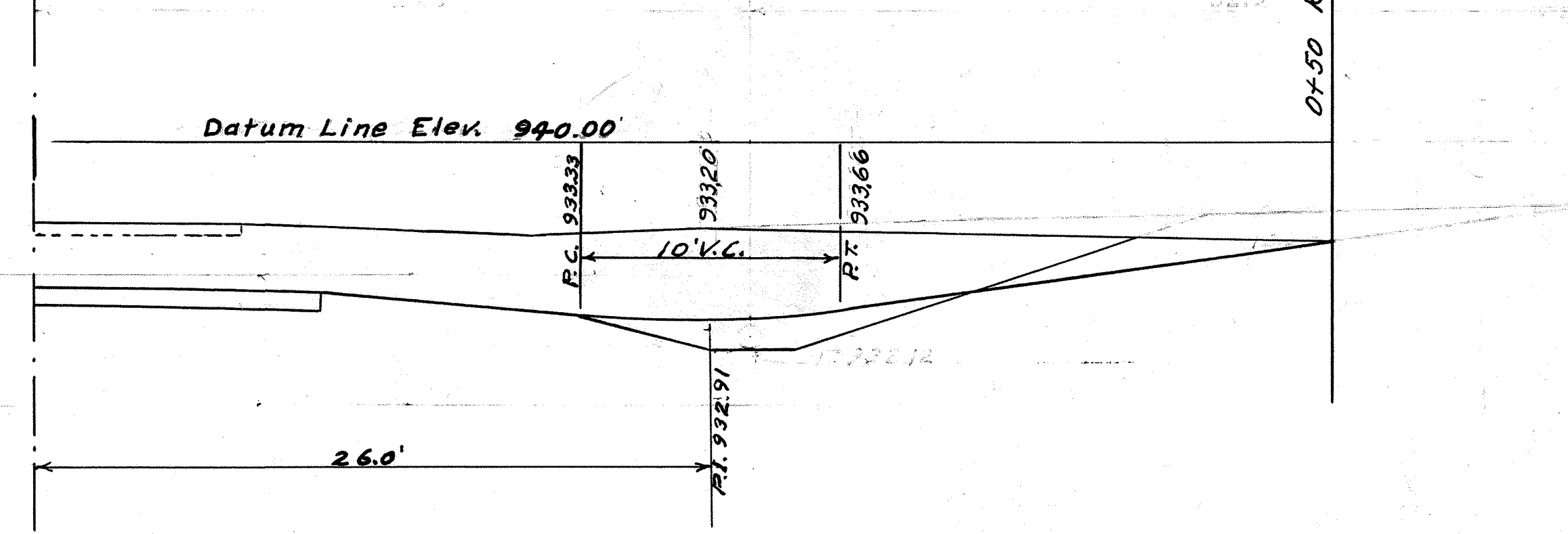
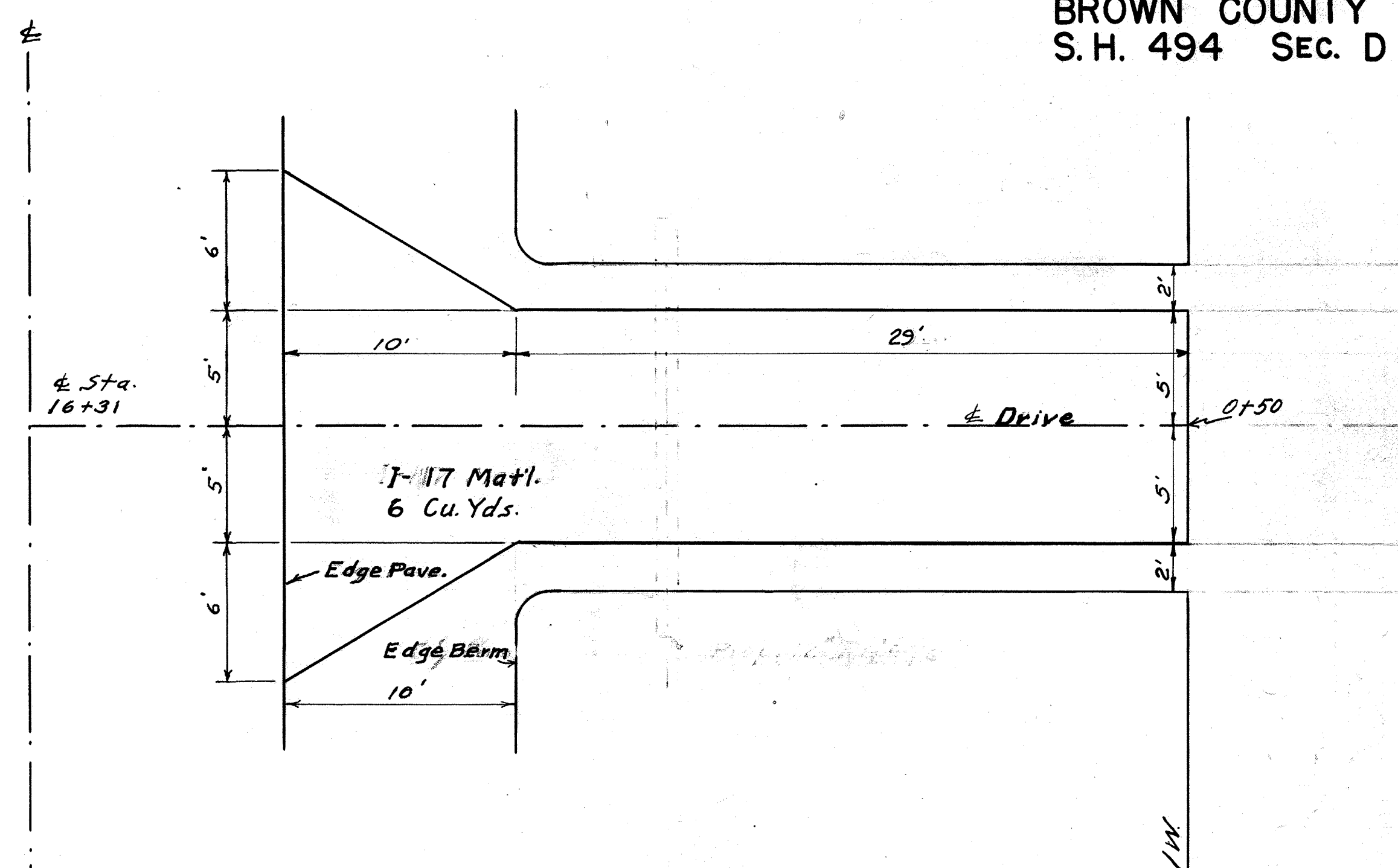
BROWN COUNTY  
S.H. 494 SEC. D (Pt.)



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	0		
84	0	31	0
0	0	10	0
Total		41	10

**ESTIMATED QUANTITIES**  
Excavation (Carried in Roadway Quantities) 41 Cu. Yds.  
Side Appra. - Mailbox Turnout - Berm Matl. 7 Cu. Yds. Item I-17

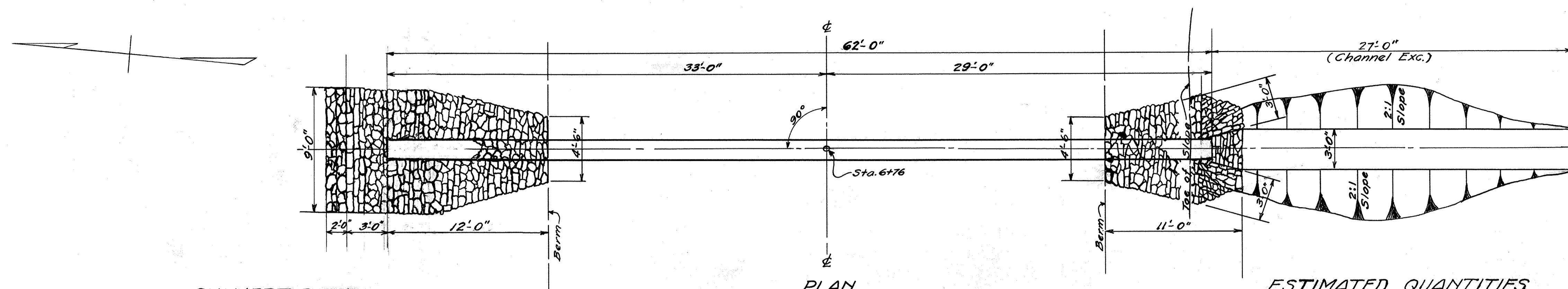
DRIVE STA. 7+52 LT. &



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	0		
37	0	5	0
0	0	5	0
Total		10	0

**ESTIMATED QUANTITIES**  
Excavation (Carried in Roadway Quantities) 10 Cu. Yds.  
Side appra. Mailbox Turnouts and Berm Matl. 6 Cu. Yds. Item I-17

DRIVE STA. 16+31 RT. &

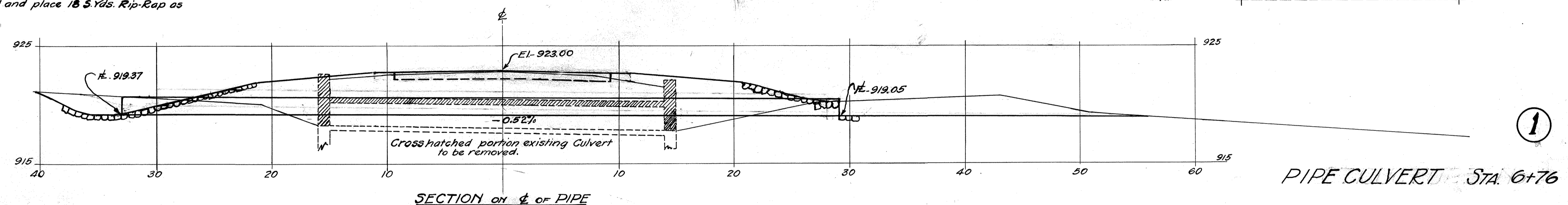


**CULVERT DATA**  
 Type: Pipe Std. Dwg. S-27 PC.3  
 Size 18"x58"  
 Work Read: Remove portion of existing 2'x2'x31' box culvert as shown. Build new Std. 18"x58' Pipe Culvert and excavate Channel and place 18 S.Yds. Rip-Rap as shown.

**PLAN**  
 18" PIPE CULVERT  
 STA. 6+76  
 Scale 1"=5'-0"

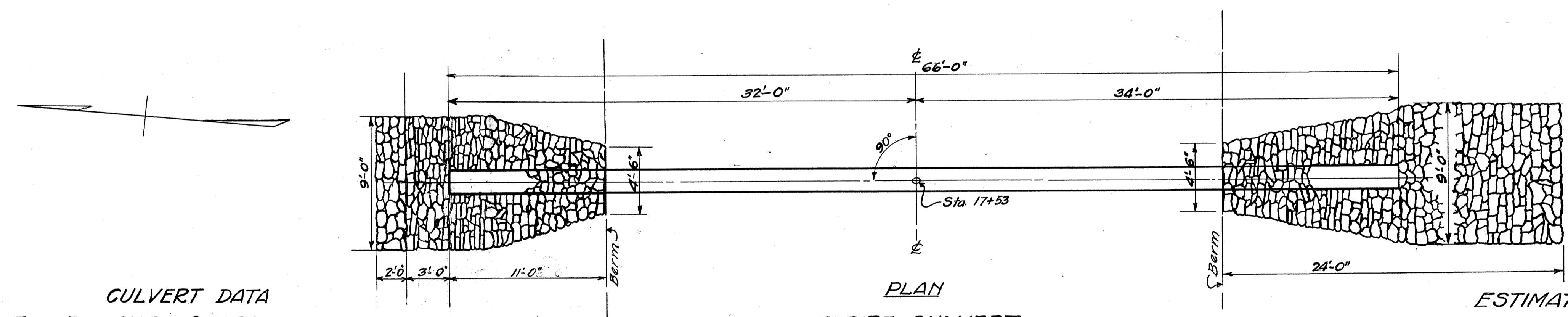
**ESTIMATED QUANTITIES**  
 Item S-27 18" Pipe 62 L.Ft.  
 Item I-10 Rip-Rap 21 S.Yd.  
 Item E-3 Channel Excavation 10 C.Yd.  
 Item S-22 Removal of portions of Existing Struc. Lump  
 Item E-2 Excavation for Structures 22 C.Yd.

DRAINAGE AREA - 50 ACRES



SECTION ON  $\phi$  OF PIPE

PIPE CULVERT STA. 6+76

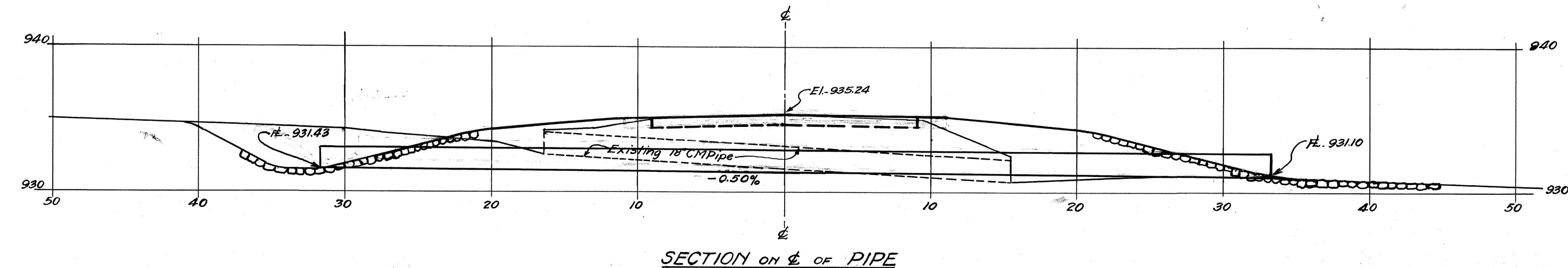


**CULVERT DATA**  
 Type: Pipe Std. Dwg. S-27 PC. 3  
 Size: 18"x62'  
 Work Read: Remove & Store existing 18"x32' C.M.P. & V.S.P. Culvert. Build new Std. 18"x62' Pipe Culvert and place 19 S.Yds. Rip-Rap as shown.

**PLAN**  
 18" PIPE CULVERT  
 STA. 17+53  
 Scale 1"=5'-0"

**ESTIMATED QUANTITIES**  
 Item S-27 18" Pipe 66 L.Ft.  
 Item I-10 Rip-Rap 32 S.Yd.  
 Item E-12 Remove & Store 18" C.M.P. & V.S.P. 32 L.Ft.  
 Item E-2 Excavation for Structures 19 C.Yd.

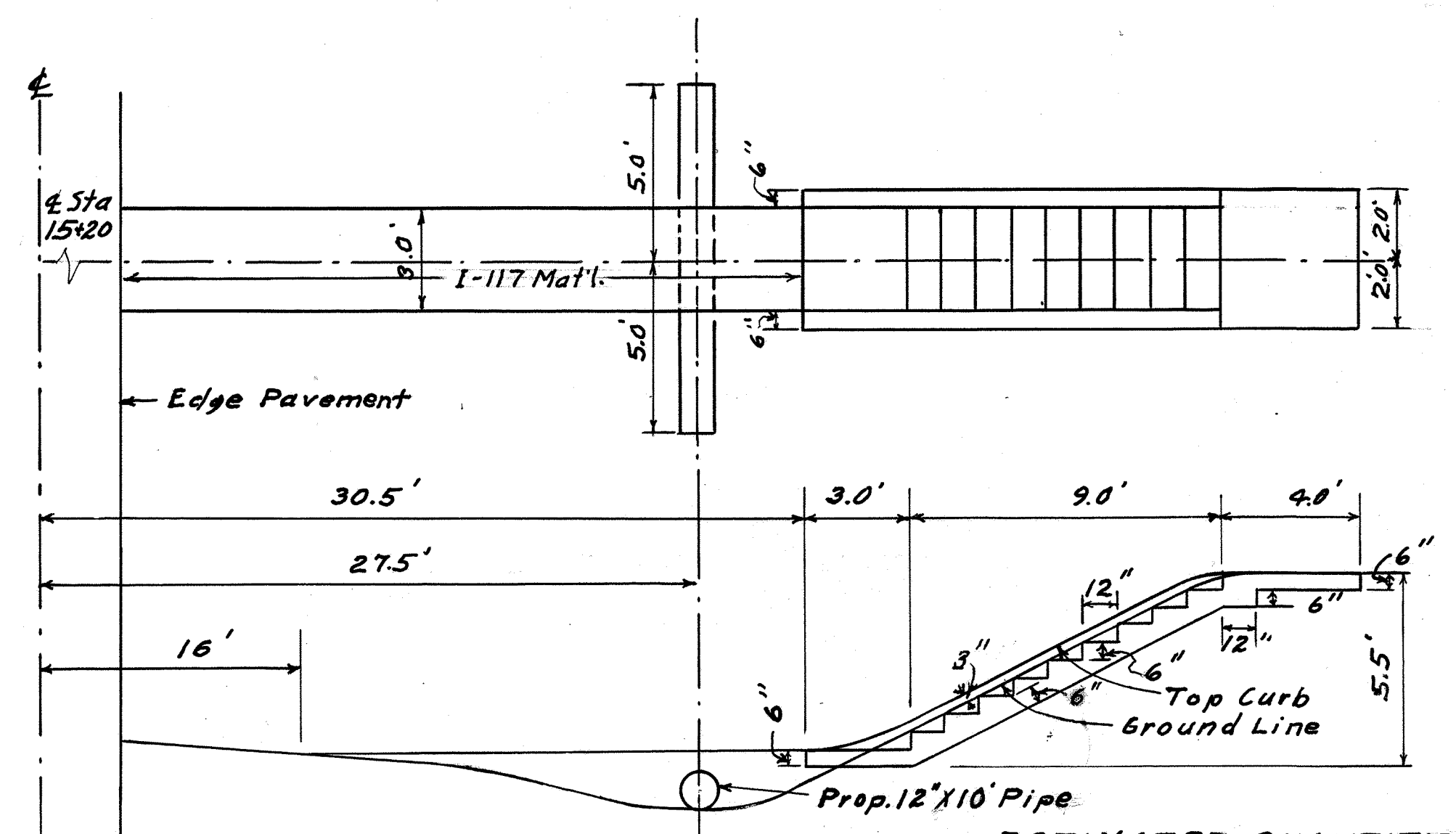
DRAINAGE AREA - 3.0 ACRES



SECTION ON  $\phi$  OF PIPE

PIPE CULVERT STA. 17+53

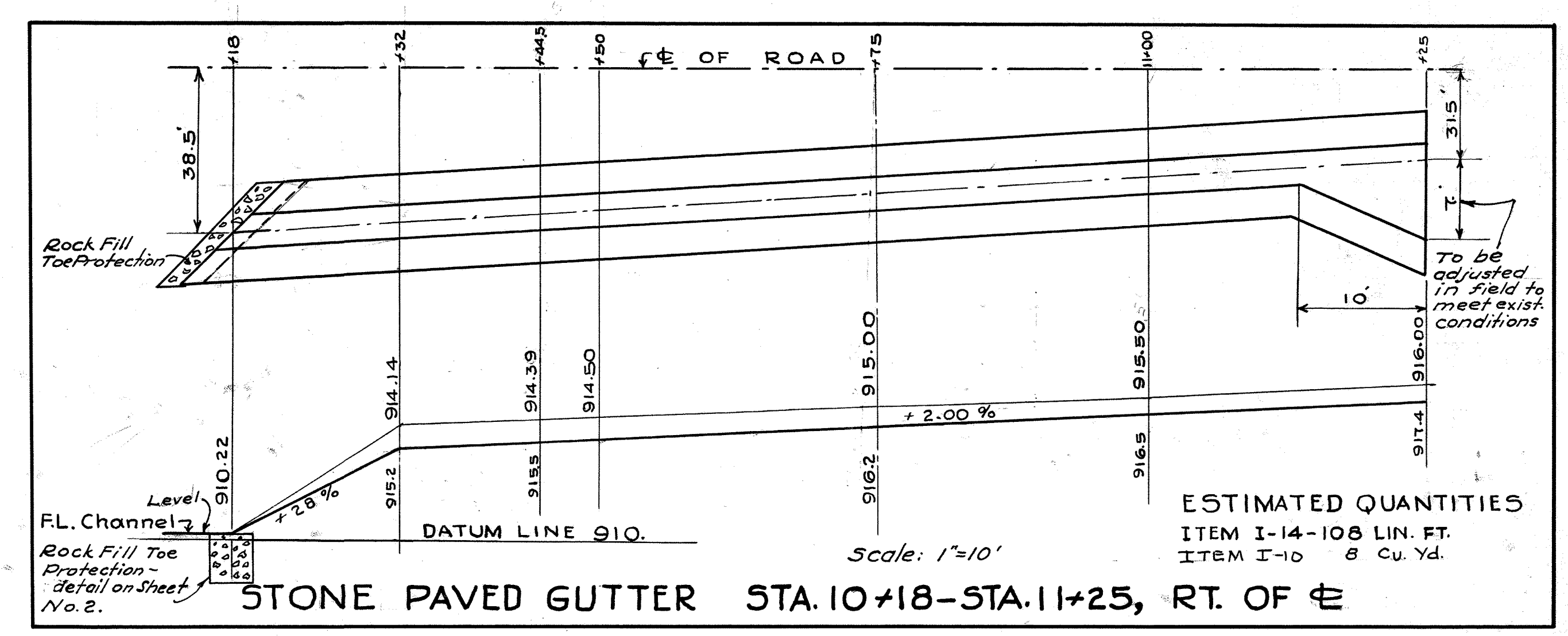
**BROWN COUNTY**  
S.H. 494 SEC. D (PT.)



Scale 1" = 2'  
NOTE: Location of Steps may be Adjusted by Engineer

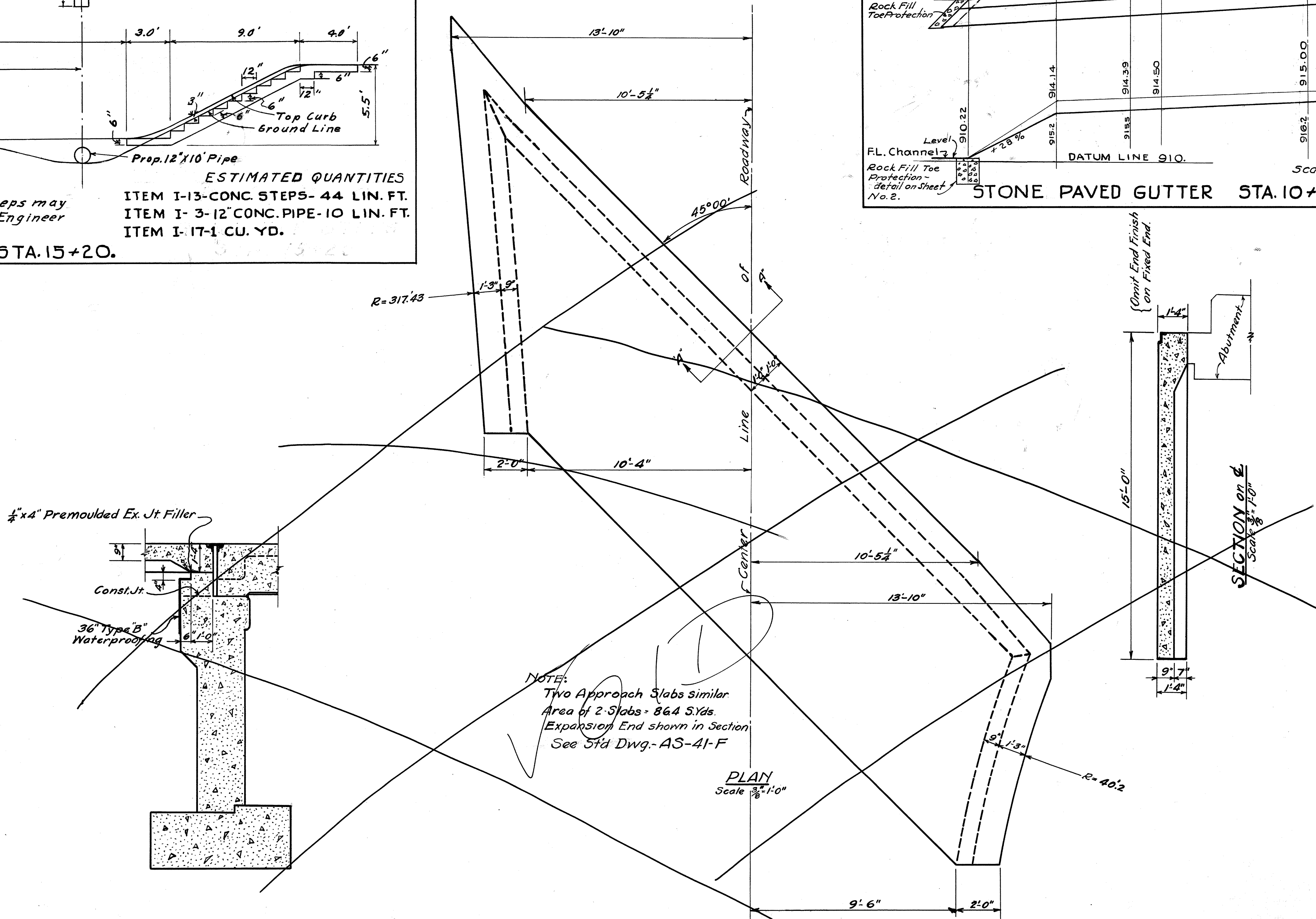
**ESTIMATED QUANTITIES**  
ITEM I-13-CONC. STEPS- 44 LIN. FT.  
ITEM I- 3-12" CONC. PIPE-10 LIN. FT.  
ITEM I-17-1 CU. YD.

CONCRETE STEPS- STA. 15+20.



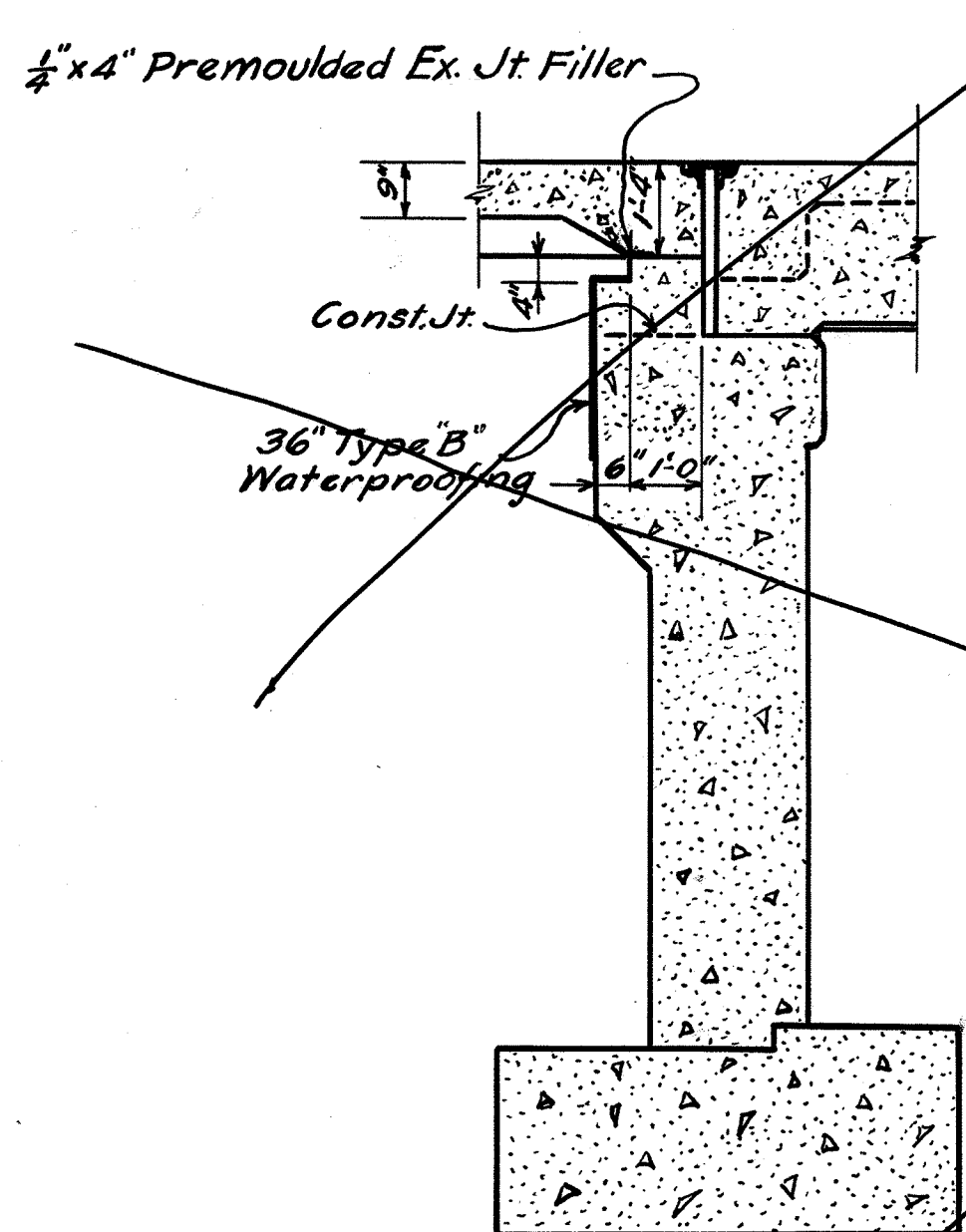
Scale: 1" = 10'  
**STONE PAVED GUTTER STA. 10+18-STA. 11+25, RT. OF C**

**ESTIMATED QUANTITIES**  
ITEM I-14-108 LIN. FT.  
ITEM I-10 8 CU. YD.

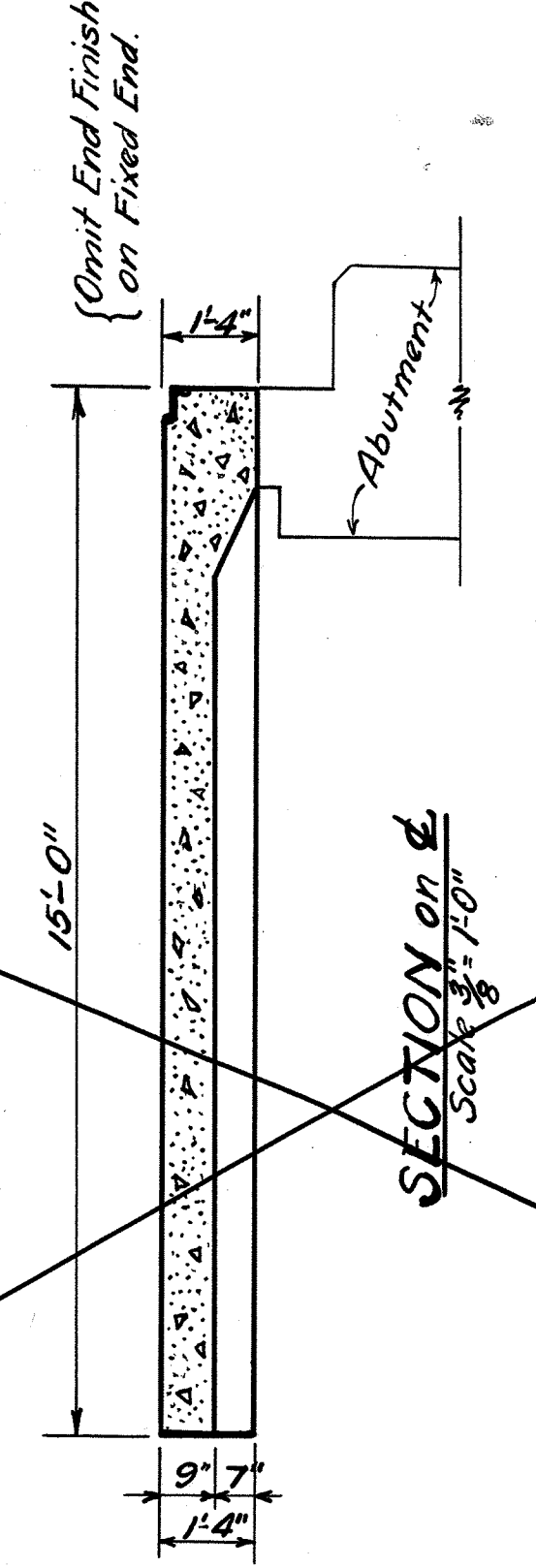


NOTE:  
Two Approach Slabs similar  
Area of 2 Slabs - 86.4 S.Yds.  
Expansion End shown in Section  
See Std Dwg.-AS-41-F

PLAN  
Scale 3/8" = 1'-0"



SECTION A-A  
Scale 3/8" = 1'-0"



SECTION on C  
Scale 3/8" = 1'-0"

~~CONCRETE APPROACH SLAB  
FOR  
BRIDGE OVER GRASSY RUN  
STA. 10+44  
BRIDGE No. BR-131-01~~

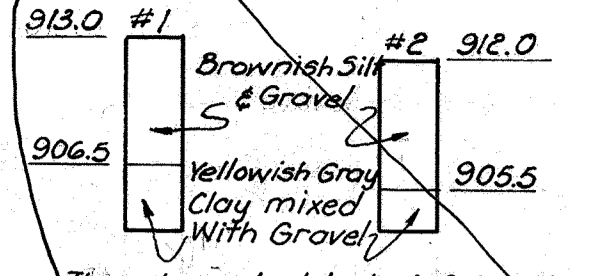
BROWN COUNTY S.H. 494 SEC. D (PT.)

**BROWN COUNTY  
S.H. 494. SEC. "D"**

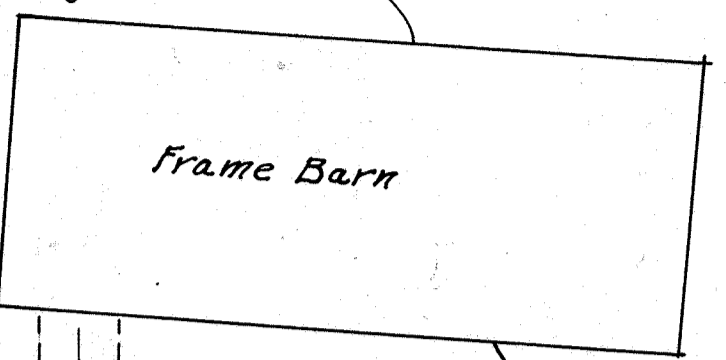
FED. DIV.	STATE	PROJECT	FISCAL YEAR
2	OHIO	STATE	1945

16  
21

**TEST HOLE DATA**



The above test hole information represents the best information obtainable but the State of Ohio does not guarantee its correctness.

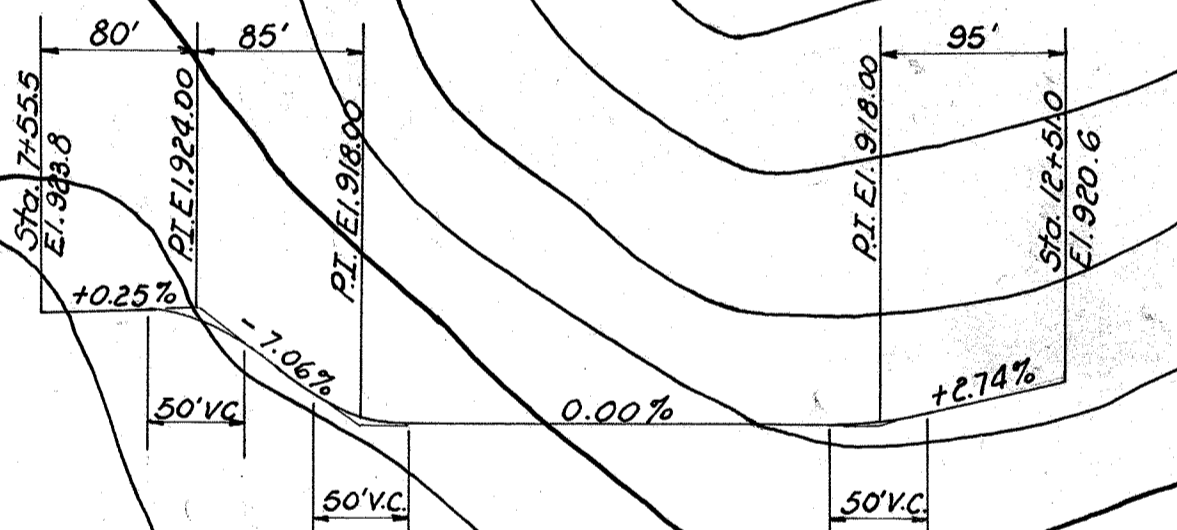
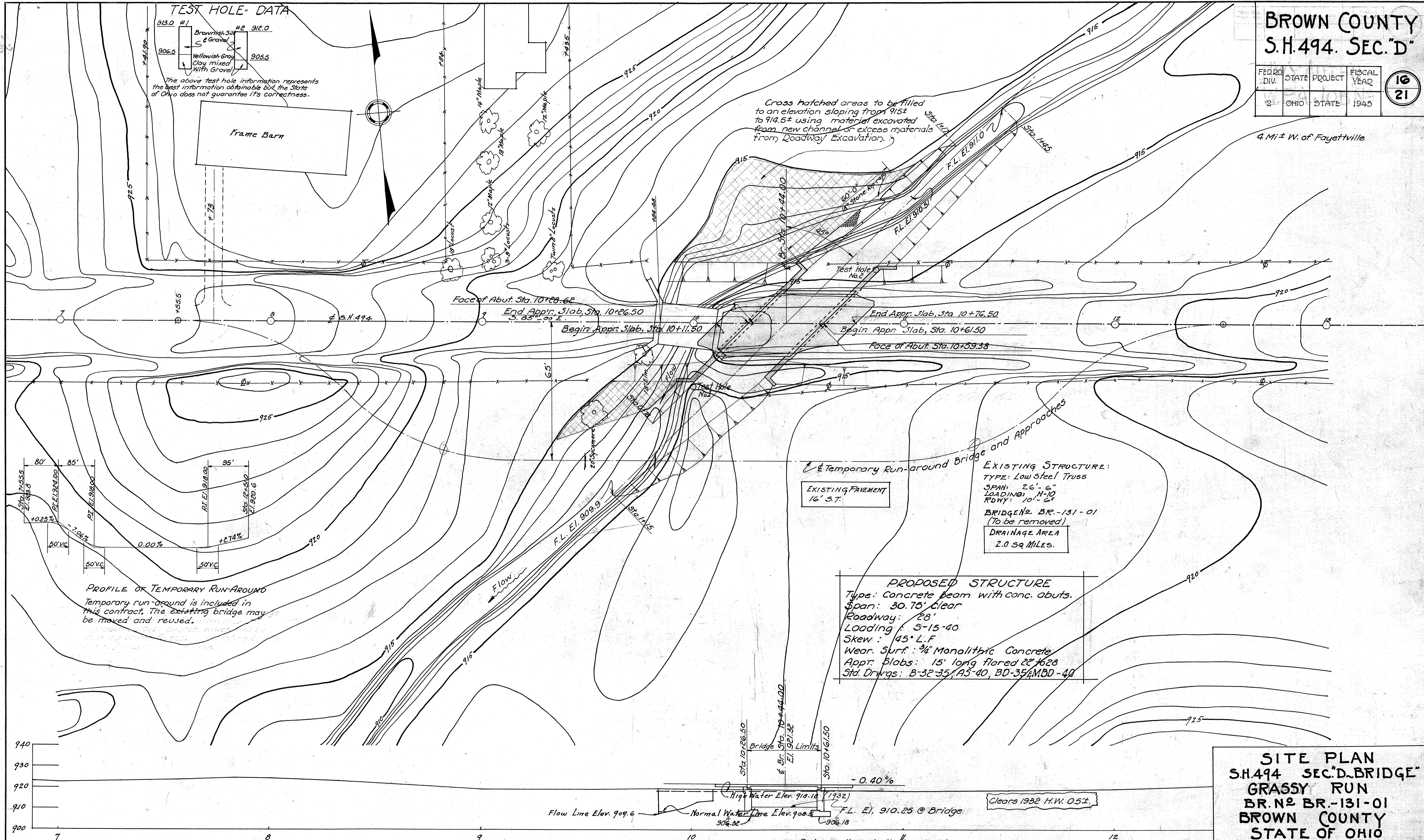


Frame Barn

Cross hatched areas to be filled to an elevation sloping from 915± to 914.5± using material excavated from new channel or excess materials from Roadway Excavation.

4 Mi ± W. of Fayetteville

End of Appr. Earthwork { 10+24.78  
 10+63.22  
 Appr. Pkt. 22' wide  
 Est. Cost, Structure + Channel + Piping = \$22,000.



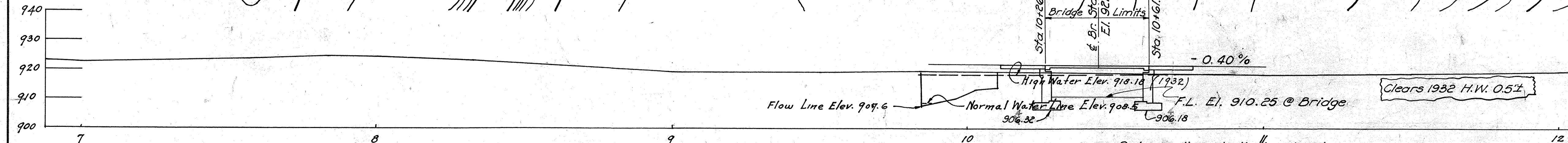
**PROFILE OF TEMPORARY RUN-AROUND**  
 Temporary run-around is included in this contract. The existing bridge may be moved and reused.

**EXISTING STRUCTURE:**  
 TYPE: Low Steel Truss  
 SPAN: 26'-6"  
 LOADING: H-10  
 ROW: 10'-6"  
 BRIDGE NO. BR.-131-01  
 (To be removed)  
 DRAINAGE AREA  
 2.0 SQ MILES.

**PROPOSED STRUCTURE**  
 Type: Concrete beam with conc. abuts.  
 Span: 30.75' Clear  
 Roadway: 28'  
 Loading: S-15-40  
 Skew: 45° L.F.  
 Wear Surf: 3/4" Monolithic Concrete  
 Appr. Slabs: 15' long flored 22'x28'  
 Std. Drawgs: B-32-35, A5-40, BD-35, MBD-40

EXISTING PAVEMENT  
 16' ST.

Temporary Run-around Bridge and Approaches



**PROFILE OF ROADWAY**

Rod soundings indicate a hard mixture of sand, gravel, and silt or clay suitable for spread footings with out piling.

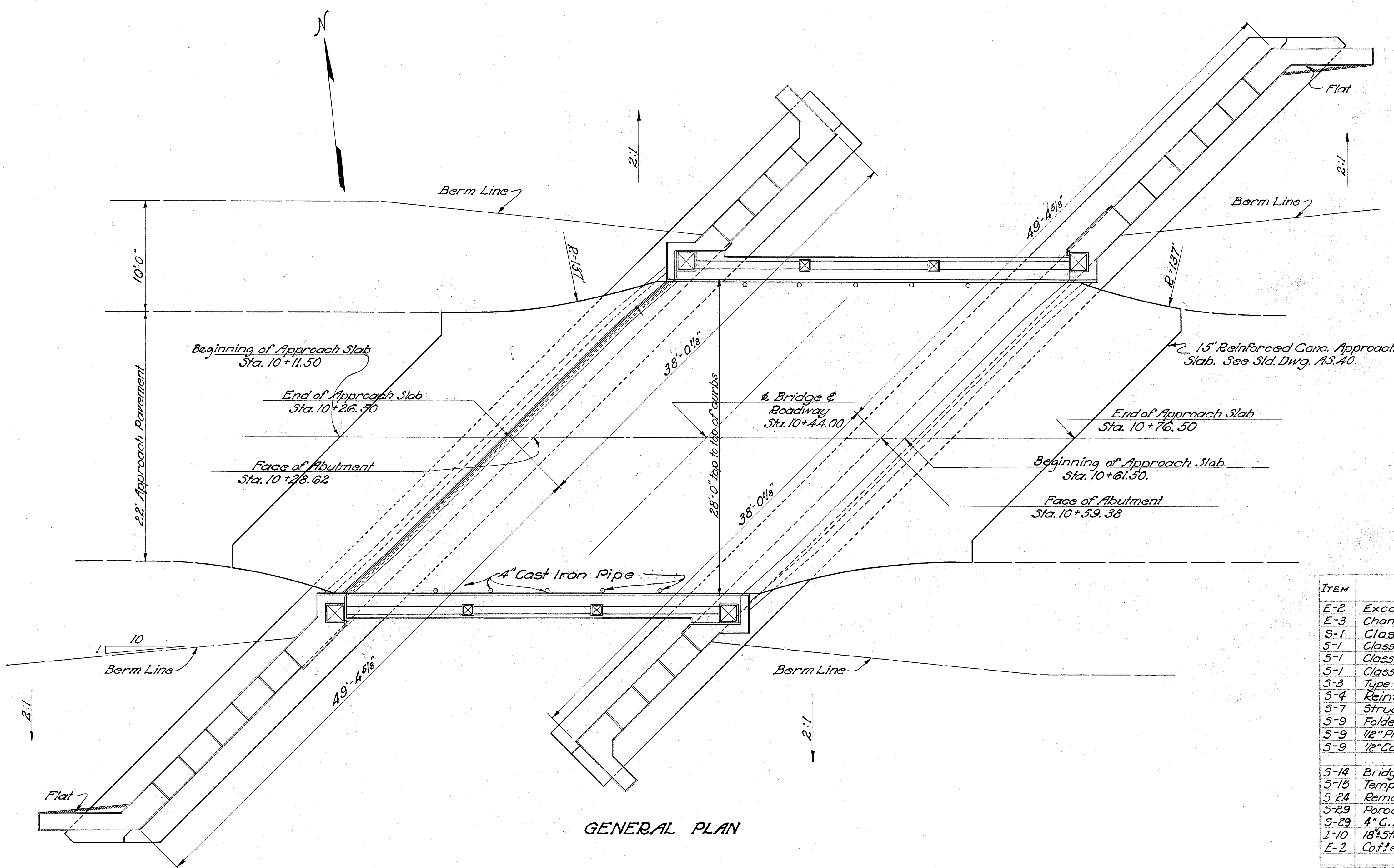
**SITE PLAN  
 S.H. 494 SEC. "D" BRIDGE  
 GRASSY RUN  
 BR. NO. BR.-131-01  
 BROWN COUNTY  
 STATE OF OHIO**

SCALE: 1" = 20'-0" STA. 10+44.00

PRES. TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DES.	DRN.	CKD.	REV.
		EN	CHA	WME	W.M.E.

Revised As Built BFG 10/22/47 6/11/47 Rev. 10-6-45 4/26/47





GENERAL PLAN

**GENERAL NOTES**

FOR DETAILS NOT SHOWN on these drawings reference shall be made to Std. Dwgs. B-32-35, revised 8-12-39; A5-40, revised 7-30-40; MBD-40 approved 10-24-40 and BD-35, revised 8-12-39.

EXISTING SUPERSTRUCTURE to be removed and delivered to the State Highway Garage at Hillsboro, Ohio when no longer needed to maintain traffic.

EXISTING SUBSTRUCTURE to be removed to 1' below finished ground and suitable materials used as bank protection and rip-rap.

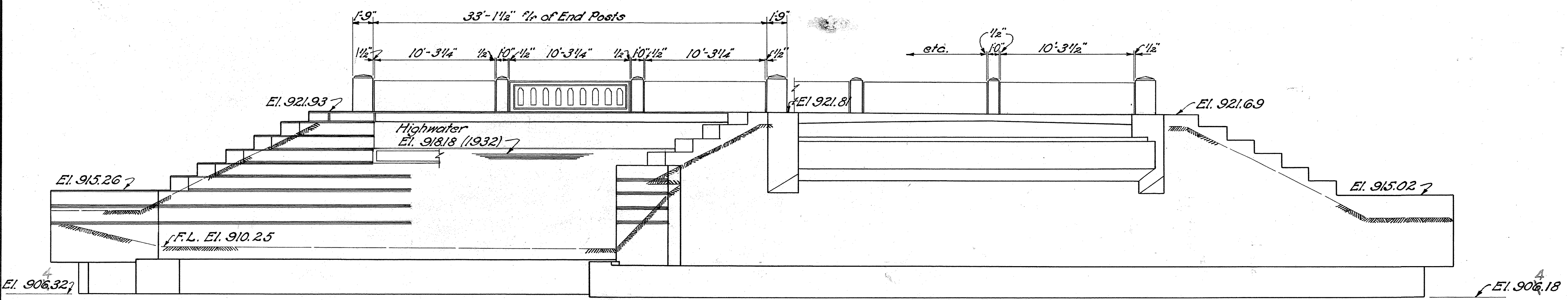
ALL WELDING shall be class "A"

ALL CONCRETE in abutments shall be class E.

FALSEWORK. Not less than 15 days before beginning construction of falsework, Contractor shall submit 3 sets of prints of falsework plan, to the Director for approval by the Bureau of Bridges.

**ESTIMATED QUANTITIES**

ITEM	DESCRIPTION	EAST ABUT.	WEST ABUT.	SUPER. STRUCT.	GENERAL	TOTAL	UNIT	CHANGE ORDER	AMOUNT
E-2	Excavation for structures, unclassified	159	155			314	Cu. Yds.	C-1 +25.8	462
E-3	Channel excavation				100.4	100.4	Cu. Yds.		
S-1	Class "E" concrete, rip-rap footings				10	10	Cu. Yds.		
S-1	Class "C" concrete, superstructure			55		55	Cu. Yds.		
S-1	Class "E" concrete, walls	86	86			172	Cu. Yds.	C-1 +28.2	201.2
S-1	Class "E" concrete, roofings	60	60			120	Cu. Yds.	C-1 +18.7	138.7
S-3	Type "B" Waterproofing (36" wide)	22	22			44	Sq. Yds.	C-1 +2.07	46.67
S-4	Reinforcing Steel	5380	5380	16,580	180	27,520	Lbs.	C-1 +960	28,480
S-7	Structural Steel			2,060		2,060	Lbs.		
S-9	Folded Copper Strip	20	20			40	Lin. Ft.	C-1 +8.0	48
S-9	1/2" Premolded Expansion Jt. Filler	16	12			28	Sq. Ft.		
S-9	1/2" Cast leaded bronze sliding plates			166		166	Lbs.		
S-14	Bridge railing (concrete)			72.24		72.24	Lin. Ft.		
S-15	Temporary Run-around bridge & Appr.				Lump	Lump	Lump Sum		
S-24	Removal of existing structure				Lump	Lump	Lump Sum		
S-29	Porous backfill	75	75			150	Cu. Yds.		
S-29	4" C.I. Pipe Scuppers			10		10	Each		
I-10	18" Stone Rip-rap (Grouted) Type "A"				43	43	Sq. Yds.		
E-2	Cofferdams and Pumping				Lump	Lump	Lump Sum		



GENERAL ELEVATION

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES

**GENERAL PLAN & ELEVATION,  
NOTES & ESTIMATED QUANTITIES**

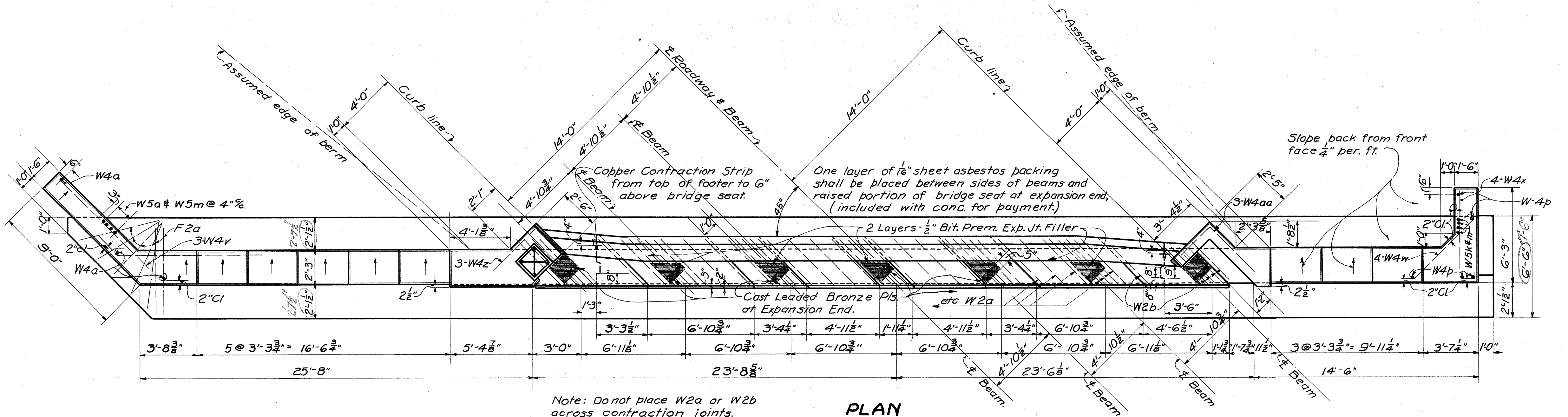
BRIDGE NO BR-131-01  
OVER GRASSY RUN

BROWN COUNTY S.H. 494  
SEC. D STA. 10+44.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
F.E.B.	F.E.B.	A.L.B.	J.H.B.	B.W.O.	M.H.R. 4/21/41	10-6-45

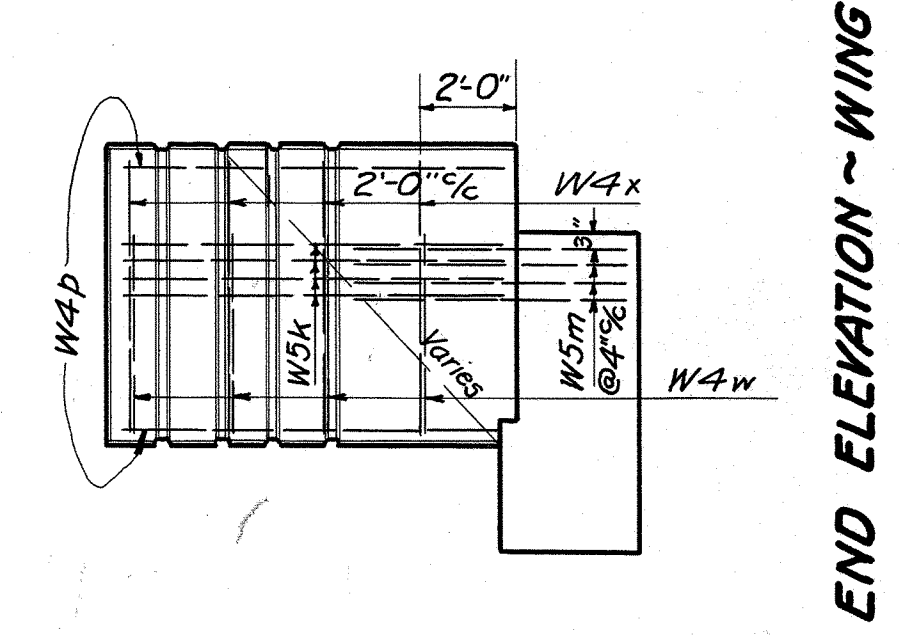
Revised As-Built  
10/22/41

**BROWN COUNTY**  
S. H. 494 SEC. D

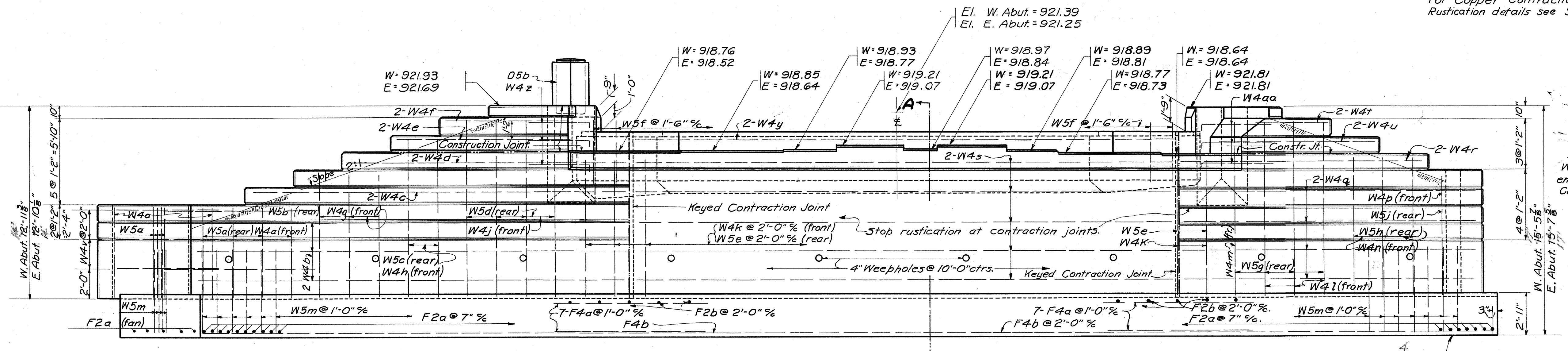


Note: Do not place W2a or W2b across contraction joints.

**PLAN**



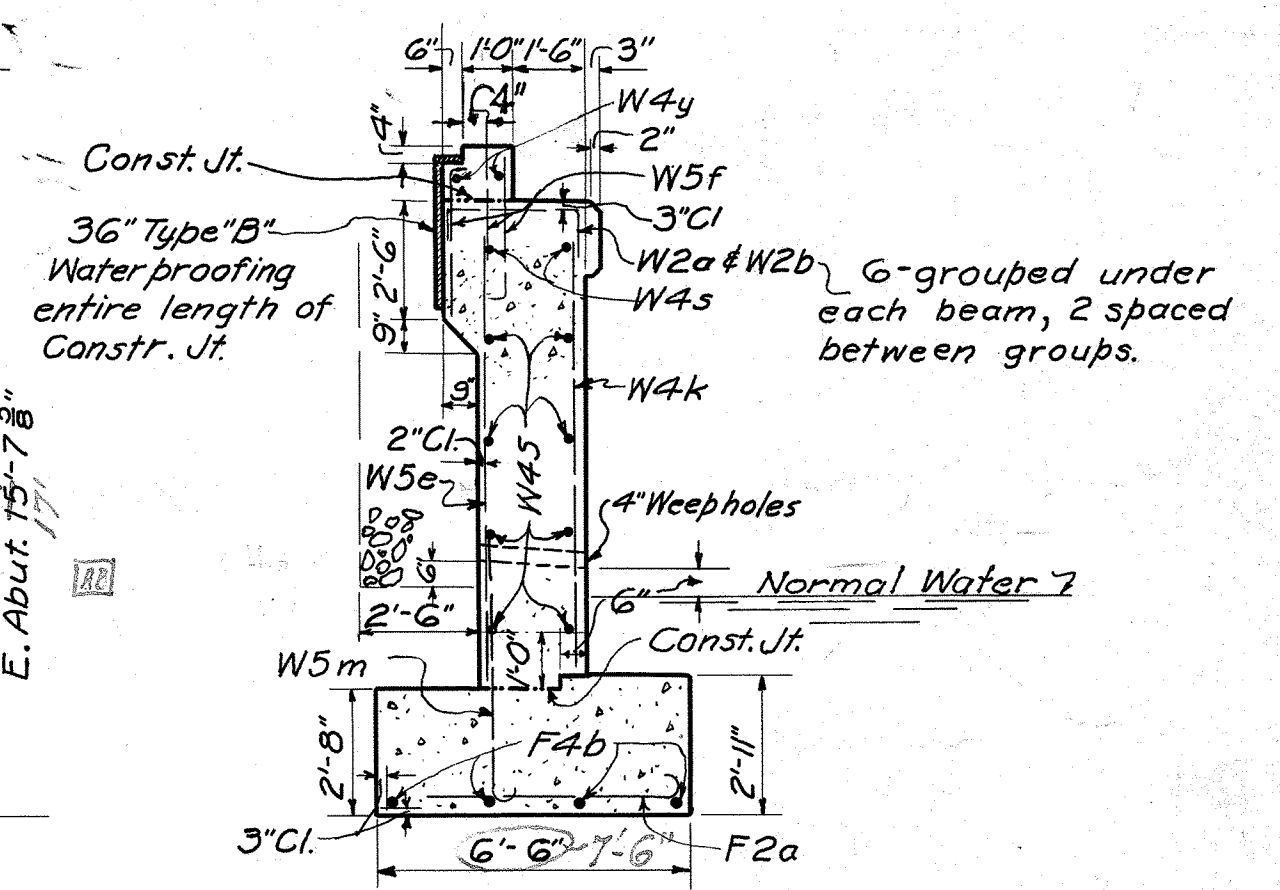
**END ELEVATION - WING**



**ELEVATION**

Concrete above bridge-seat construction-joint shall not be placed until after concrete deck is placed.

For Copper Contraction Jt. Strip and Rustication details see Std. Drwg. MBD-40.

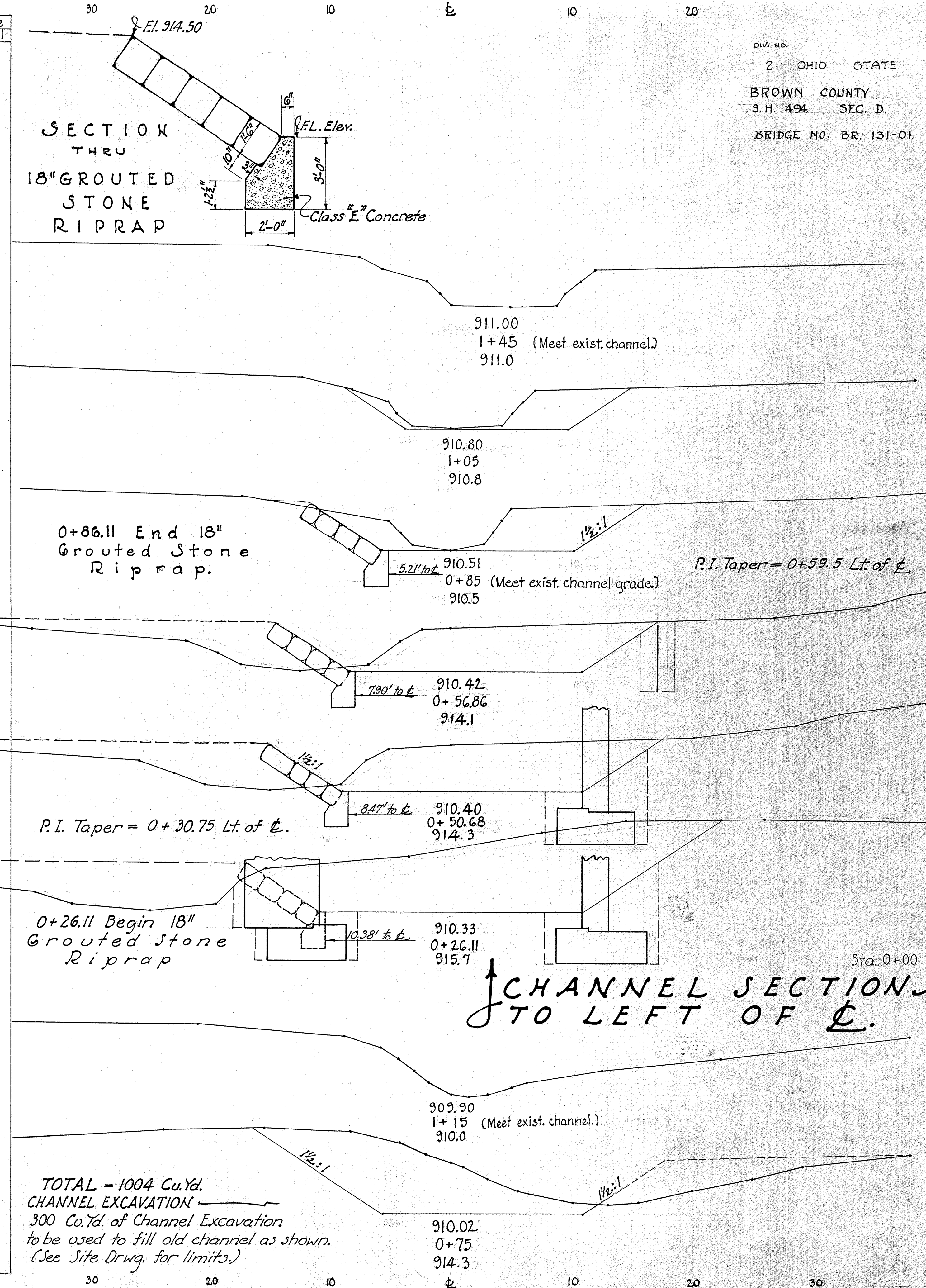
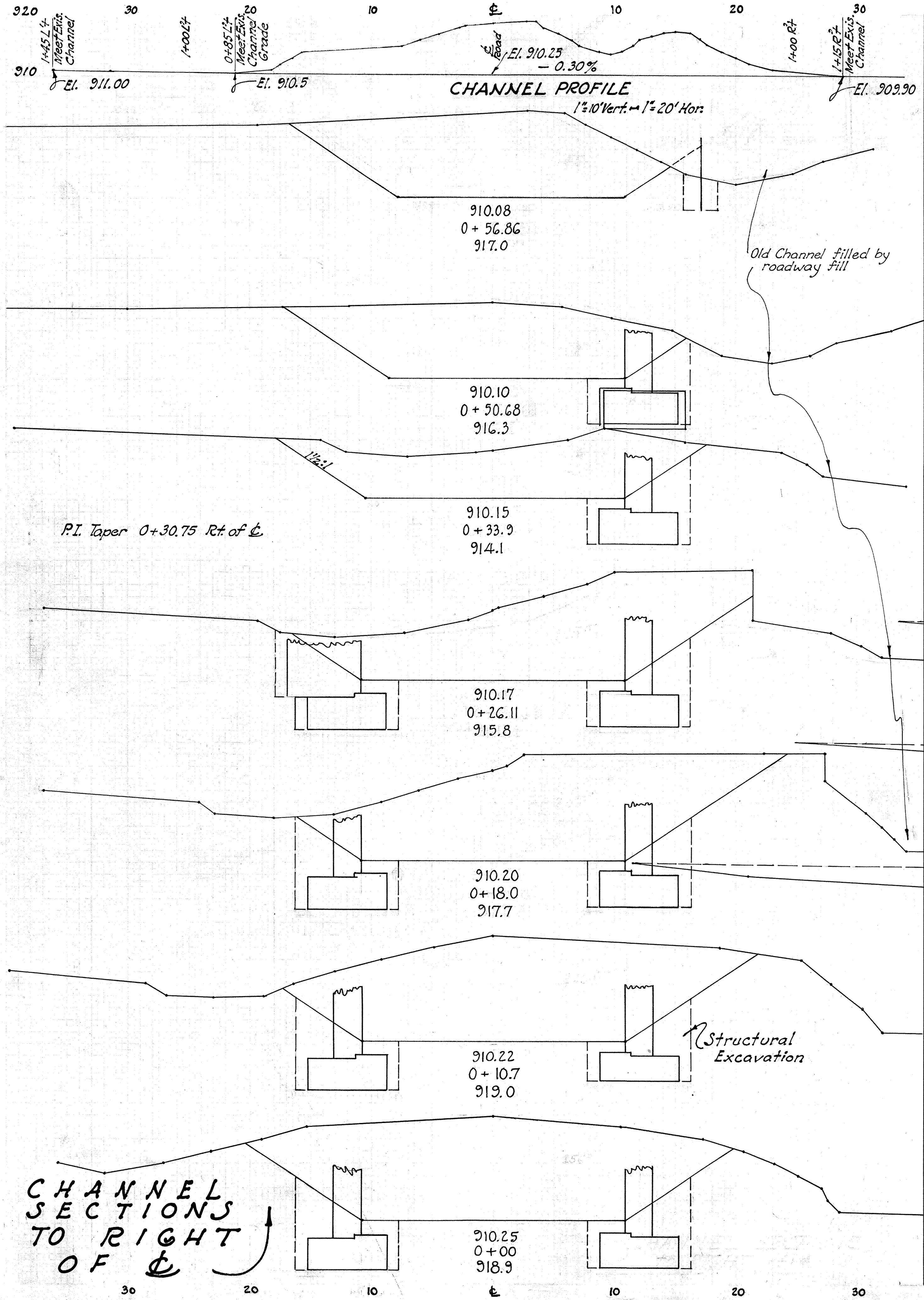


**SECTION "A-A"**

STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES					
<b>ABUTMENT DETAILS</b>					
BRIDGE N° BR-131-01 OVER GRASSY RUN					
BROWN CO. SEC. D			S.H. 494 STA. 10+44.00		
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
J.E.B.	J.E.B.	J.R.V.	J.H.B.	B.H.O.	11-11-45
Revised As-Built 11/27/47					REVISED 10-6-45







Station	End Area		Volume	
	Exc	Emb	Exc	Emb
0+00	0	0	0	0
0+10	35	0	35	0
0+20	86	0	51	0
0+30	124	0	38	0
0+40	149	0	25	0
0+50	195	0	46	0
0+60	230	0	35	0
0+70	243	0	13	0
0+80	243	0	0	0
0+90	256	0	13	0
0+100	256	0	0	0

Station	End Area		Volume	
	Exc	Emb	Exc	Emb
0+00	0	0	0	0
0+10	0	21	0	21
0+20	0	28	0	56
0+30	0	28	0	84
0+40	0	48	0	132
0+50	0	63	0	195
0+60	0	72	0	267
0+70	0	86	0	353
0+80	0	118	0	471
0+90	0	173	0	644
0+100	0	207	0	851
0+110	0	256	0	1107
0+120	0	256	0	1363
0+130	0	256	0	1619
0+140	0	256	0	1875
0+150	0	256	0	2131
0+160	0	256	0	2387
0+170	0	256	0	2643
0+180	0	256	0	2900
0+190	0	256	0	3156
0+200	0	256	0	3412
0+210	0	256	0	3668
0+220	0	256	0	3924
0+230	0	256	0	4180
0+240	0	256	0	4436
0+250	0	256	0	4692
0+260	0	256	0	4948
0+270	0	256	0	5204
0+280	0	256	0	5460
0+290	0	256	0	5716
0+300	0	256	0	5972
0+310	0	256	0	6228
0+320	0	256	0	6484
0+330	0	256	0	6740
0+340	0	256	0	6996
0+350	0	256	0	7252
0+360	0	256	0	7508
0+370	0	256	0	7764
0+380	0	256	0	8020
0+390	0	256	0	8276
0+400	0	256	0	8532
0+410	0	256	0	8788
0+420	0	256	0	9044
0+430	0	256	0	9300
0+440	0	256	0	9556
0+450	0	256	0	9812
0+460	0	256	0	10068
0+470	0	256	0	10324
0+480	0	256	0	10580
0+490	0	256	0	10836
0+500	0	256	0	11092
0+510	0	256	0	11348
0+520	0	256	0	11604
0+530	0	256	0	11860
0+540	0	256	0	12116
0+550	0	256	0	12372
0+560	0	256	0	12628
0+570	0	256	0	12884
0+580	0	256	0	13140
0+590	0	256	0	13396
0+600	0	256	0	13652
0+610	0	256	0	13908
0+620	0	256	0	14164
0+630	0	256	0	14420
0+640	0	256	0	14676
0+650	0	256	0	14932
0+660	0	256	0	15188
0+670	0	256	0	15444
0+680	0	256	0	15700
0+690	0	256	0	15956
0+700	0	256	0	16212
0+710	0	256	0	16468
0+720	0	256	0	16724
0+730	0	256	0	16980
0+740	0	256	0	17236
0+750	0	256	0	17492
0+760	0	256	0	17748
0+770	0	256	0	18004
0+780	0	256	0	18260
0+790	0	256	0	18516
0+800	0	256	0	18772
0+810	0	256	0	19028
0+820	0	256	0	19284
0+830	0	256	0	19540
0+840	0	256	0	19796
0+850	0	256	0	20052
0+860	0	256	0	20308
0+870	0	256	0	20564
0+880	0	256	0	20820
0+890	0	256	0	21076
0+900	0	256	0	21332
0+910	0	256	0	21588
0+920	0	256	0	21844
0+930	0	256	0	22100
0+940	0	256	0	22356
0+950	0	256	0	22612
0+960	0	256	0	22868
0+970	0	256	0	23124
0+980	0	256	0	23380
0+990	0	256	0	23636
1+000	0	256	0	23892
1+010	0	256	0	24148
1+020	0	256	0	24404
1+030	0	256	0	24660
1+040	0	256	0	24916
1+050	0	256	0	25172
1+060	0	256	0	25428
1+070	0	256	0	25684
1+080	0	256	0	25940
1+090	0	256	0	26196
1+100	0	256	0	26452
1+110	0	256	0	26708
1+120	0	256	0	26964
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1+140	0	256	0	27476
1+150	0	256	0	27732
1+160	0	256	0	27988
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1+180	0	256	0	28500
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1+280	0	256	0	31060
1+290	0	256	0	31316
1+300	0	256	0	31572
1+310	0	256	0	31828
1+320	0	256	0	32084
1+330	0	256	0	32340
1+340	0	256	0	32596
1+350	0	256	0	32852
1+360	0	256	0	33108
1+370	0	256	0	33364
1+380	0	256	0	33620
1+390	0	256	0	33876
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1+410	0	256	0	34388
1+420	0	256	0	34644
1+430	0	256	0	34900
1+440	0	256	0	35156
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1+460	0	256	0	35668
1+470	0	256	0	35924
1+480	0	256	0	36180
1+490	0	256	0	36436
1+500	0	256	0	36692
1+510	0	256	0	36948
1+520	0	256	0	37204
1+530	0	256	0	37460
1+540	0	256	0	37716
1+550	0	256	0	37972
1+560	0	256	0	38228
1+570	0	256	0	38484
1+580	0	256	0	38740
1+590	0	256	0	38996
1+600	0	256	0	39252
1+610	0	256	0	39508
1+620	0	256	0	39764
1+630	0	256	0	40020
1+640	0	256	0	40276
1+650	0	256	0	40532
1+660	0	256	0	40788
1+670	0	256	0	41044
1+680	0	256	0	41300
1+690	0	256	0	41556
1+700	0	256	0	41812
1+710	0	256	0	42068
1+720	0	256	0	42324
1+730	0	256	0	42580
1+740	0	256	0	42836
1+750	0	256	0	43092
1+760	0	256	0	43348
1+770	0	256	0	43604
1+780	0	256	0	43860
1+790	0	256	0	44116
1+800	0	256	0	44372
1+810	0	256	0	44628
1+820	0	256	0	44884
1+830	0	256	0	45140
1+840	0	256	0	45396
1+850	0	256	0	45652
1+860	0	256	0	45908
1+870	0	256	0	46164
1+880	0	256	0	46420
1+890	0	256	0	46676
1+900	0	256	0	46932
1+910	0	256	0	47188
1+920	0	256	0	47444
1+930	0	256	0	47700
1+940	0	256	0	47956
1+950	0	256	0	48212
1+960	0	256	0	48468
1+970	0	256	0	48724
1+980	0	256	0	48980
1+990	0	256	0	49236
2+000	0	256	0	49492

CHANNEL SECTIONS TO RIGHT OF C

CHANNEL SECTIONS TO LEFT OF C

BRIDGE NO. BR-131-01  
 DIV. NO. 21  
 OHIO STATE 1945  
 BROWN COUNTY  
 S.H. 494 SEC. D.  
 BRIDGE NO. BR-131-01

