

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
**ATB - 531 (13.73-14.07)**  
ASHTABULA COUNTY  
ASHTABULA TOWNSHIP  
NORTH KINGSVILLE VILLAGE

FED. NO. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	H.I.F.	1952

1  
28

ASHTABULA COUNTY  
ATB-531-(13.73-14.07)

165

**CONVENTIONAL SIGNS**

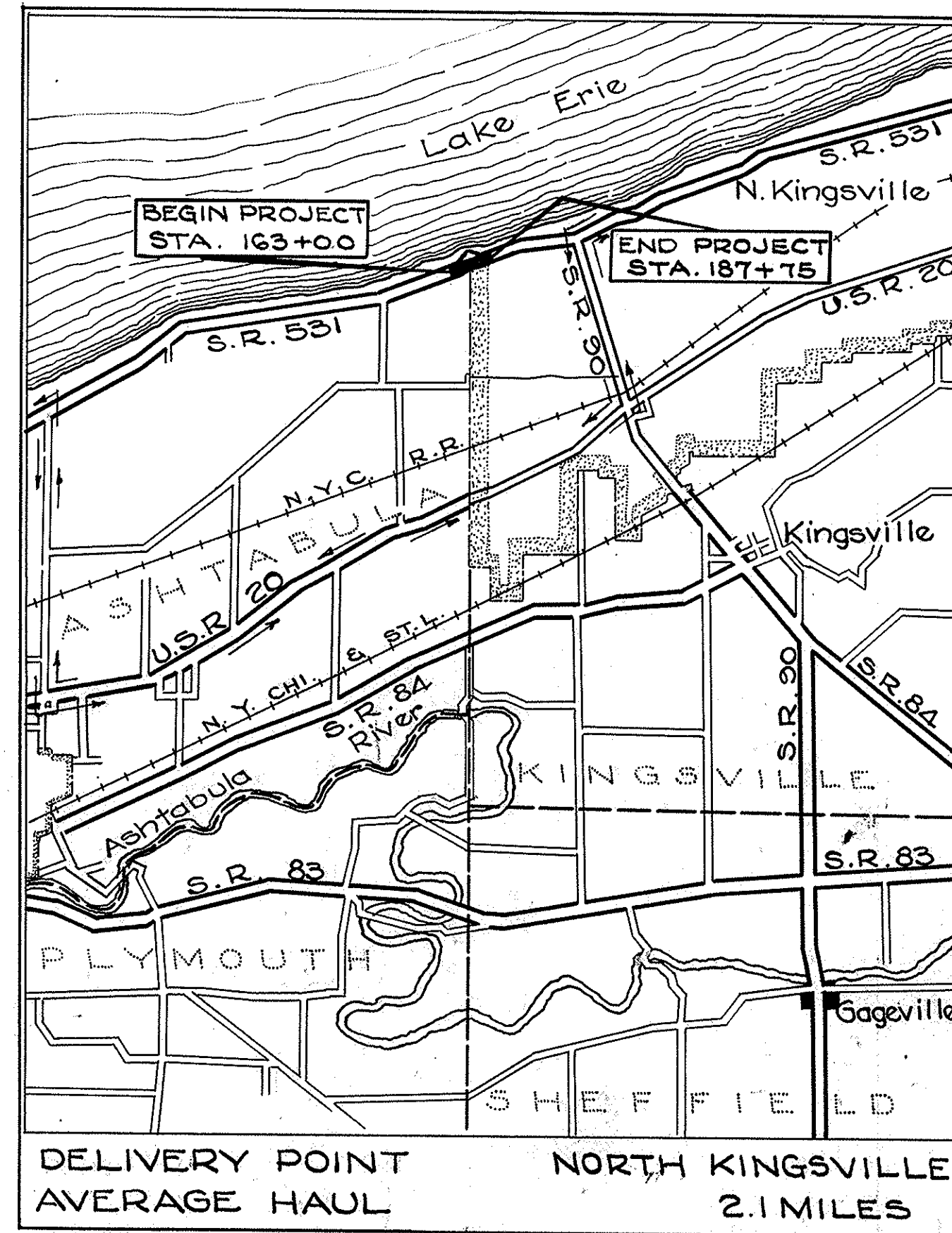
COUNTY LINE	-----
TOWNSHIP LINE	-----
CORPORATION LINE	-----
RAIL ROADS	-----
PROPERTY LINE	-----
CENTER LINE	-----
FENCE LINE	-----
GUARD RAIL EXISTING	-----
GUARD RAIL PROPOSED	-----

**INDEX OF SHEETS**

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**LINE DATA**

BEGIN PROJECT	STA. 163+00
END PROJECT	STA. 187+75
GROSS LENGTH	2475 LIN. FT.
NET LENGTH OF PROJECT	2475 LIN. FT.
	OR 0.468 MILES
BEGIN WORK	STA. 162+55
END WORK	STA. 188+20
GROSS LENGTH	2565 LIN. FT.
NET LENGTH OF WORK	2565 LIN. FT.
	OR 0.485 MILES



DELIVERY POINT NORTH KINGSVILLE  
AVERAGE HAUL 2.1 MILES  
**LOCATION PLAN**  
Scale 1" = 1 Mile

PORTION TO BE IMPROVED  
STATE HIGHWAYS  
OTHER ROADS  
DETOURS SHOW THUS

**SCALES**

PLAN 1" = 50'  
PROFILE HORIZONTAL 1" = 50'  
PROFILE VERTICAL 1" = 5'  
CROSS SECTIONS 1" = 10'

The Standard Specifications of the State of Ohio, Department of Highways, including changes and Supplemental Specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will require the closing of the highway to traffic for a limited time only and that a detour will be provided as indicated on the plans. Traffic shall be maintained during the time that the detour is not in effect. See note on Sheet 3.

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

Approved W. R. Turner  
Date 1-22-52 Division Deputy Director

Approved Arman M. Shike  
Date 4-22-52 Chief Engineer, Bureau of Planning and Programming

Approved Richard Orth  
Date 2-18-52 Chief Engineer, Bureau of Bridges & R.R. Crossings

Approved W. B. Peterson  
Date 4-22-52 Chief Engineer, Bureau of Location and Design

Approved V. J. Schaublin  
Date 4-22-52 First Asst. Director and Chief Engineer

Approved W. Miller  
Date 4-22-52 Director of Highways

CONSTRUCTION  
BUREAU  
SEP 20 1955  
GROUND PHOTOLAB

STANDARD DRAWINGS			
DRWG. NO.	DATE	DRWG. NO.	DATE
G-8.07	5-1-51	L-1	4-1-50
I-1,2,3,4&5	2-20-45	L-3	4-1-50
		L-3A	4-1-50
I-15 No. 2	6-17-49	AC 34	3-8-39
I-15 No. 8	2-1-47		
I-15 No. 1	3-1-47		

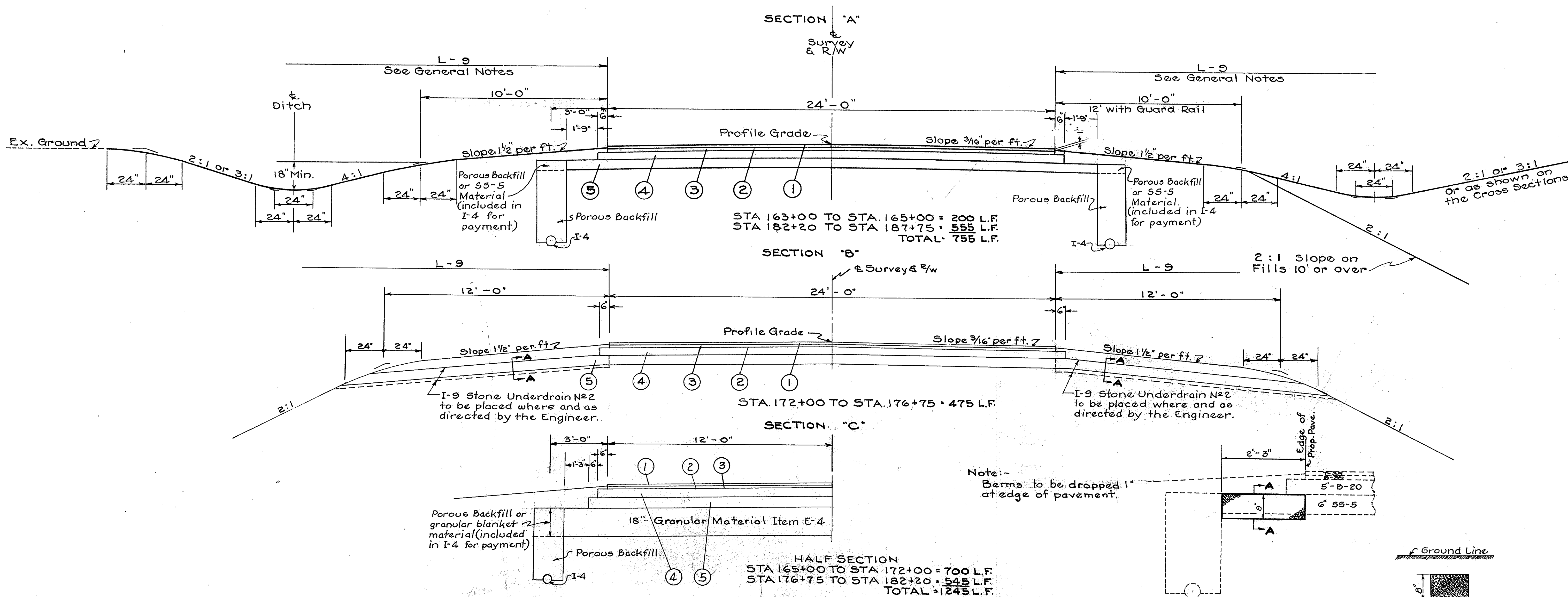
SUPPLEMENTAL SPECIFICATIONS			
SPECIF. NO.	DATE	SPECIF. NO.	DATE
5	5-28-48		
31	6-13-49		
T171.19 Rev.	7-31-50		

FILE NO.	ASHTABULA COUNTY
	ATB - 531 (13.73 - 14.07)
	DATE OF LETTING _____ 195
	CONTRACT NUMBER _____

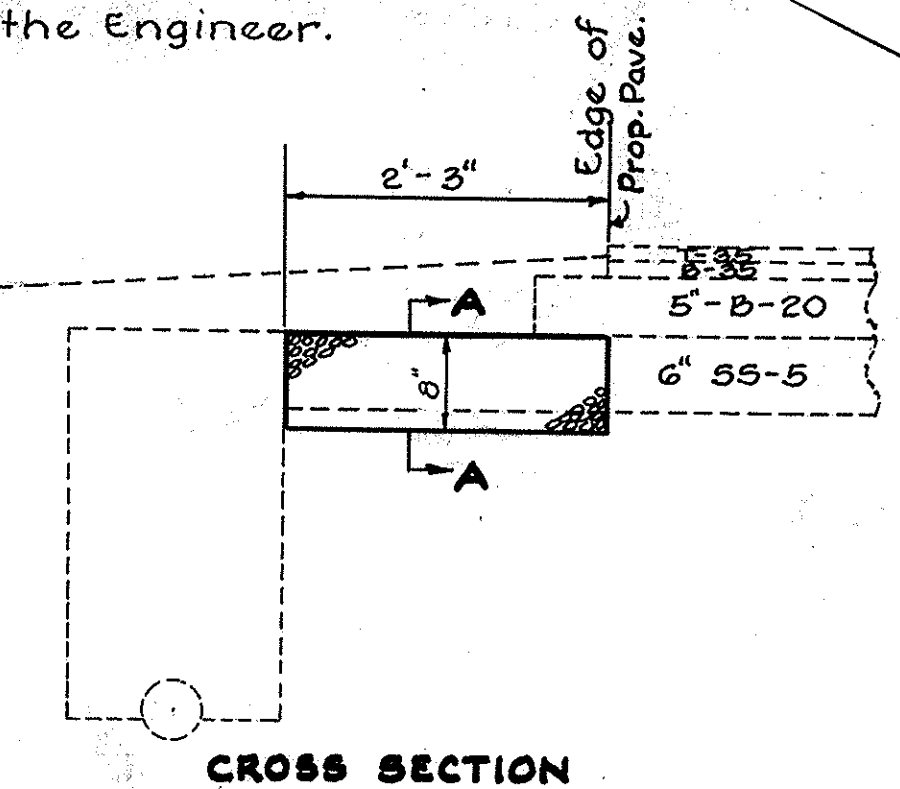
# TYPICAL SECTION TYPE T-35

Scale 3/8" = 1'

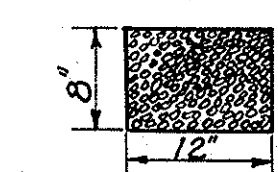
DESIGN SPEED 60 M.P.H.



Note:-  
Berms to be dropped 1" at edge of pavement.



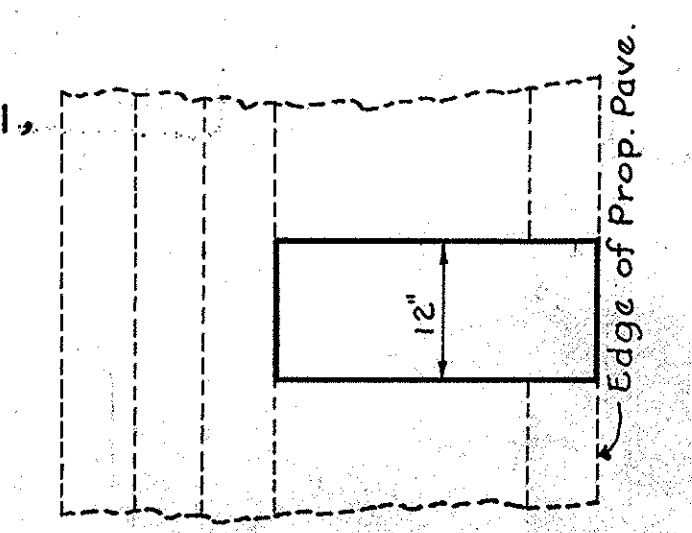
Ground Line



SEC-AA

### LEGEND

- ① T-35 1 1/4" Asphaltic Concrete Surface Course Type "A"
- ② T-30 Bituminous Prime Coat Sec. 5.2 RC-1 or RC-2, Sec. 5.3 MC-0 or MC-1, Sec. 5.7 RT-2 or RT-3 (0.35 Gal. per Sq. Yd.)
- ③ B-35 1 1/4" Asphaltic Concrete Leveling Course
- ④ B-20 5" Waterbound Macadam Base Course
- ⑤ SS-5 6" Classified Embankment Material Blanket Course



PLAN

**STONE UNDERDRAINS No 2**  
Underdrains to be placed where and as directed by the Engineer.

Estimated Quantity 500 Lin. Ft.

Note:-  
I-9 Stone Underdrain is to be used at the direction of the Engineer, only if the SS-5 material furnished is too dense to afford adequate drainage for the waterbound macadam.

# GENERAL NOTES

## UTILITY ADJUSTMENTS :-

Any and all work required for Public or Private Utilities will be done by and at the expense of their respective owners unless otherwise noted on the plans.

## BERMS AND SLOPES :-

Berms and slopes shall be finished in accordance with the typical section except where otherwise shown on the cross sections. While the cross sections as drawn show straight lines and angles, the work shall be so constructed that all corners be rounded as shown on the Typical Section.

All transitions from cut to fill slopes shall be blended with the surrounding terrain as directed by the Engineer.

## PROPERTY MARKERS :-

All iron pins or markers within the limits of the project shall be saved and adjusted to the new grade by the Contractor as directed by the Engineer. Cost of adjusting or resetting markers shall be included in the price bid for E-1 Roadway Excavation.

## TREE REMOVAL

Unit price bid for E-1 shall include the removal of all trees marked for removal on this project. Also all pavement unless otherwise noted.

## ITEM L-9 SEEDING & PROTECTING, TYPE A L-9 10-6-4 COMMERCIAL FERTILIZER AND L-9 AGRICULTURAL GROUND LIMESTONE :-

Quantities for these items are calculated for the soil areas between lines ten feet (10') outside the work limits as shown on the cross sections or to the R/W line if such line is less than ten feet from the work limits.

## ITEM L-10 SODDING :-

Areas to be sodded shall be loosened to a depth of 2" just prior to laying the sod. This work shall be included for payment in the price bid per sq. yd. of sodding.

## 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 200 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.

When the work is in progress during cold weather, the office shall be heated to a temperature of at least (70°) degrees fahrenheit.

## PIPE SPECIALS :-

Deductions for these pipe specials shown on this plan are as follows :-

SIZE	PIPE (ROUND)		CURVES
	MAIN LINE	SPUR	
6"			30°- 1'

## SILT :-

Excavated material and borrow of which the grain size of 50% or more is between 0.074 mm and 0.005 mm ( State Highway Testing Laboratory method of testing) shall be placed at least 3' below the pavement when used in embankment.

## SPECIAL NOTES :-

See sheets No. 2, 4, 5, 8 & 25, 28.

## GRANULAR MATERIAL :-

Granular Material as referred to on this plan shall be as defined under E-1.05 Embankment except that at least 85 per cent by weight of the grains or particles shall be larger than a No. 200 sieve.

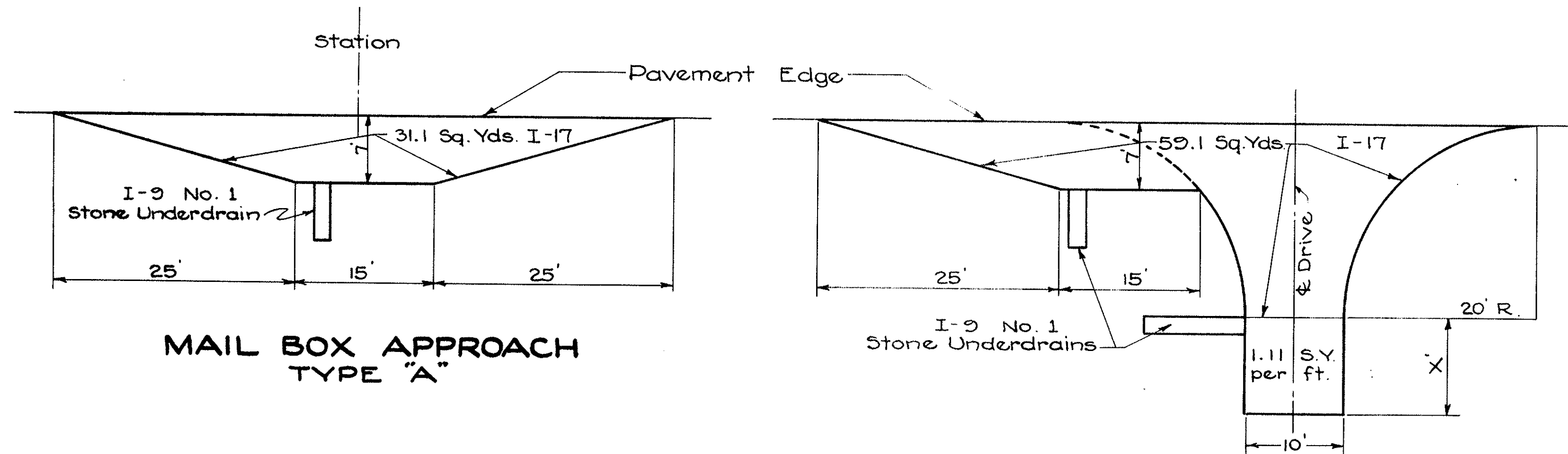
## MOISTURE CONTENT OF EMBANKMENT :-

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.

## MAINTAINING TRAFFIC

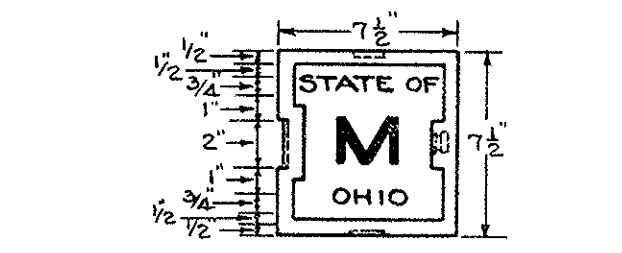
Traffic shall be maintained on the existing pavement and structure until the arch culvert is approximately 90 percent completed. The road will then be closed to traffic when necessary to permit the completion of the work and a detour established. The project shall be opened to traffic after the pavement is completed and the remainder of the work shall be done with traffic maintained.

If it is apparent that the pavement items cannot be completed by October 31, 1952 the highway will not be closed to traffic until the spring of 1953. The State will maintain the existing pavement and structure until the highway is closed to traffic except that the contractor shall repair any damage to the existing pavement or structure caused by his equipment.

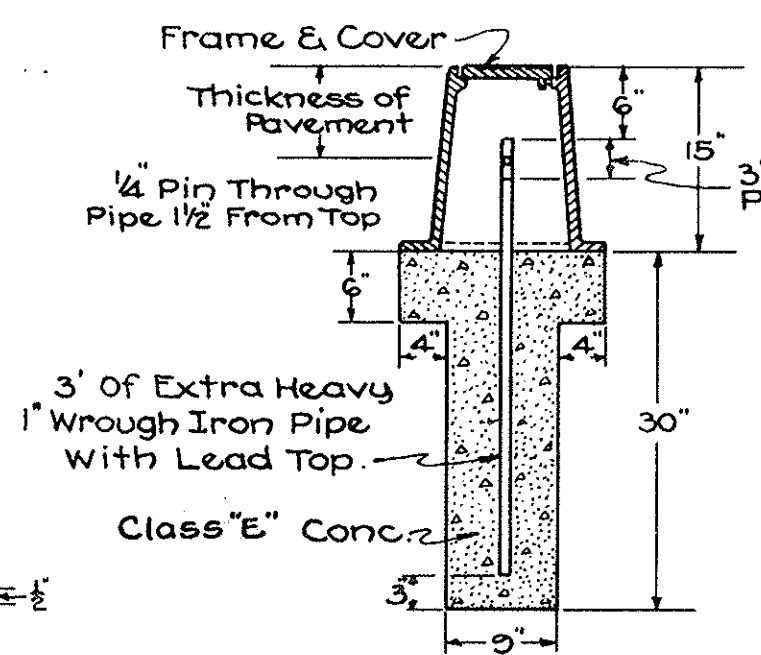


**MAIL BOX APPROACH  
TYPE "A"**

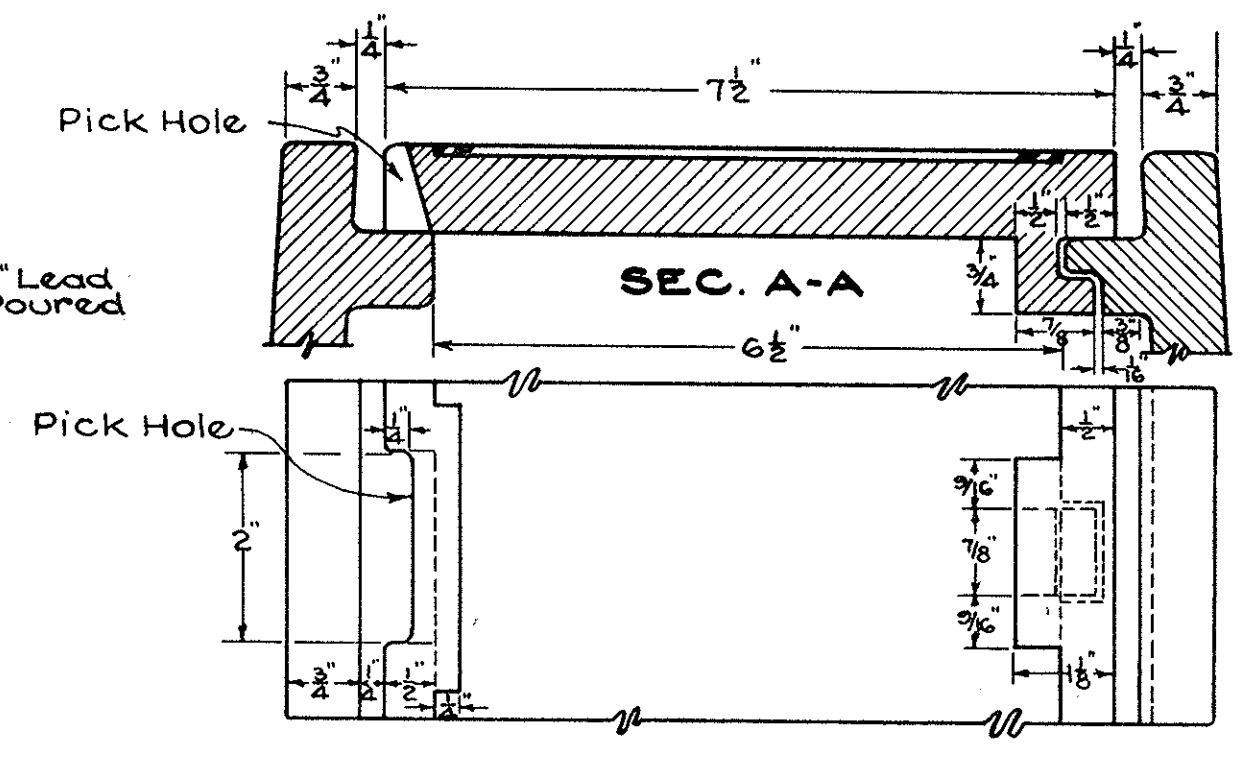
**COMBINED MAIL BOX  
& DRIVE APPROACH  
TYPE "C"**



**MONUMENT BOX  
FRAME & COVER  
Scale 1/2" = 1'-0"**

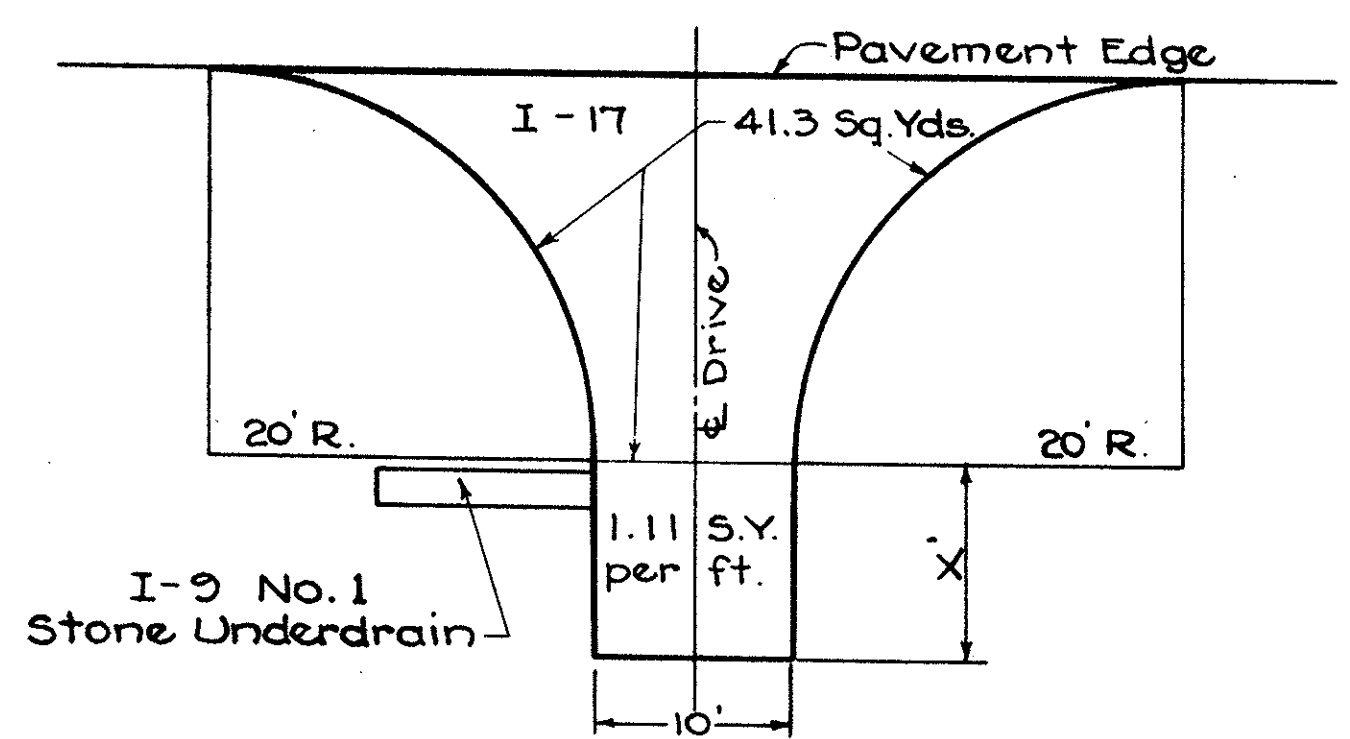
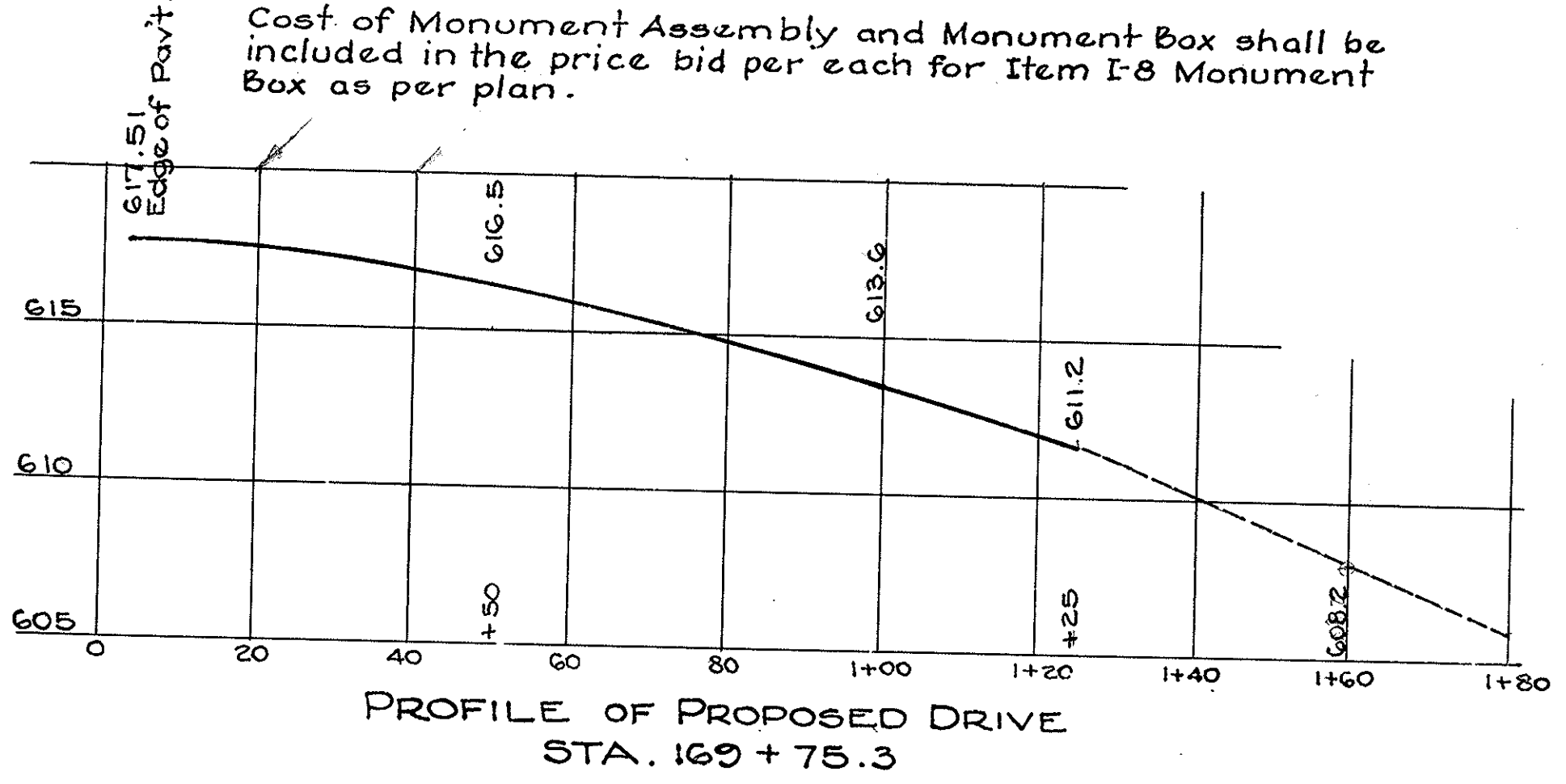


**DETAIL OF  
MONUMENT ASSEMBLY  
Scale 3/4" = 1'-0"**

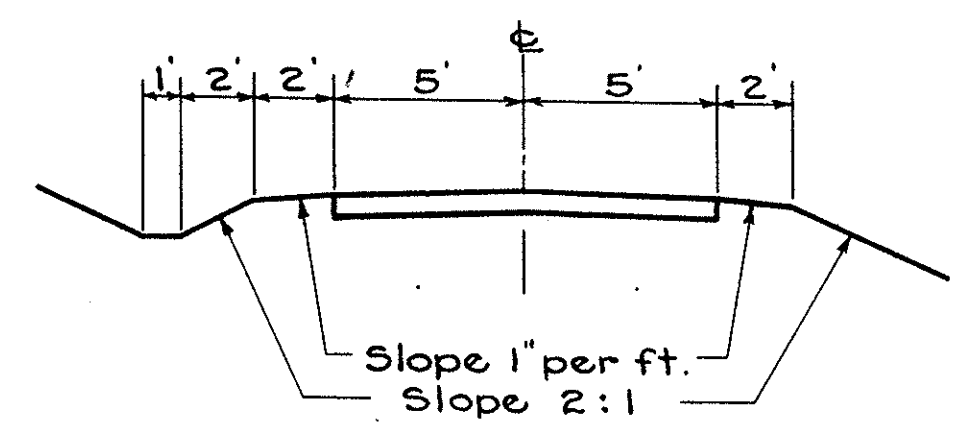


**PART PLAN  
Scale 1/2" = 1'**

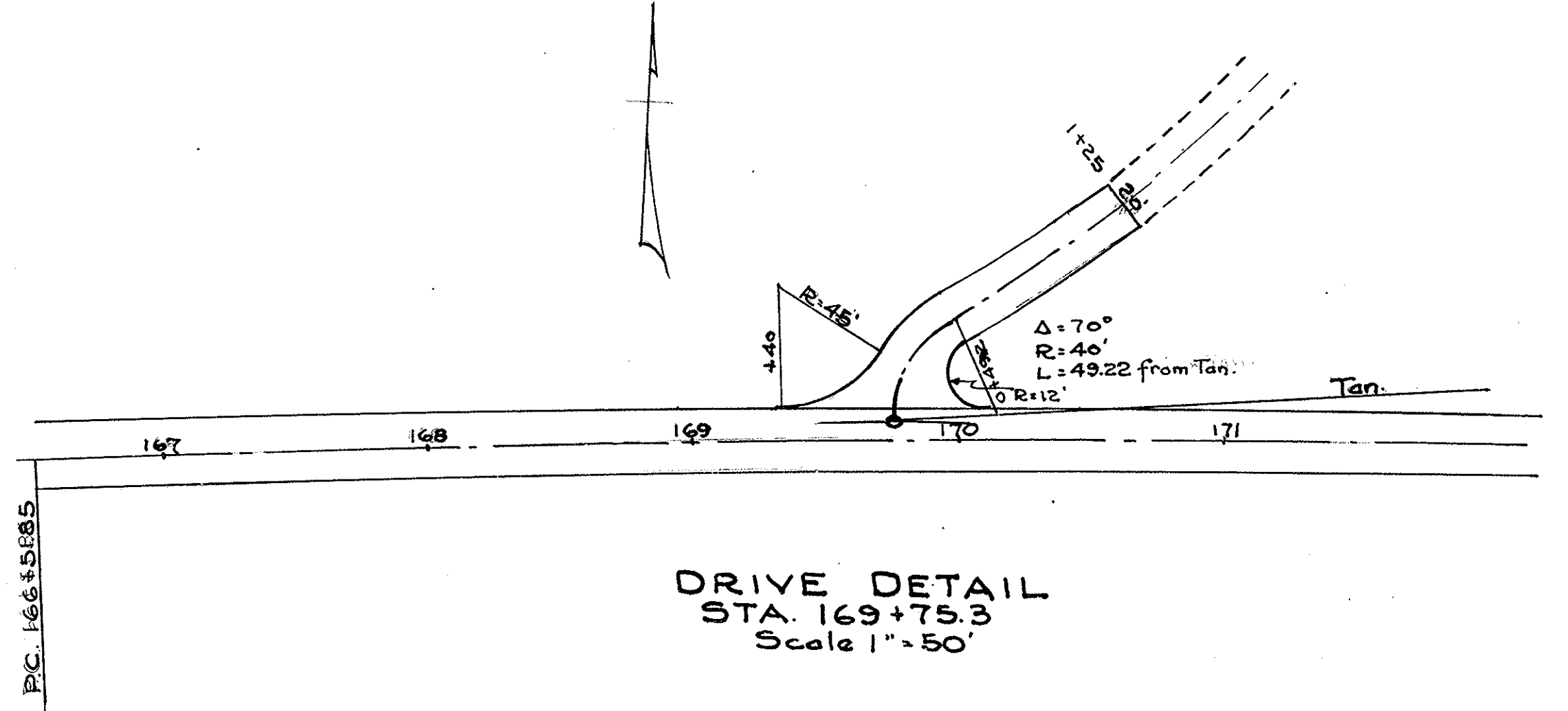
STATION	SIDE	TYPE	X LENGTH IN FEET	I-17 SQ. YDS.	I-9 LIN. FT.	STATION	SIDE	TYPE	X LENGTH IN FEET	I-17 SQ. YDS.	I-9 LIN. FT.



**DRIVE APPROACH  
TYPE "B"**



**TYPICAL SECTION  
FOR DRIVES**



**DRIVE DETAIL  
STA. 169 + 75.3  
Scale 1" = 50'**

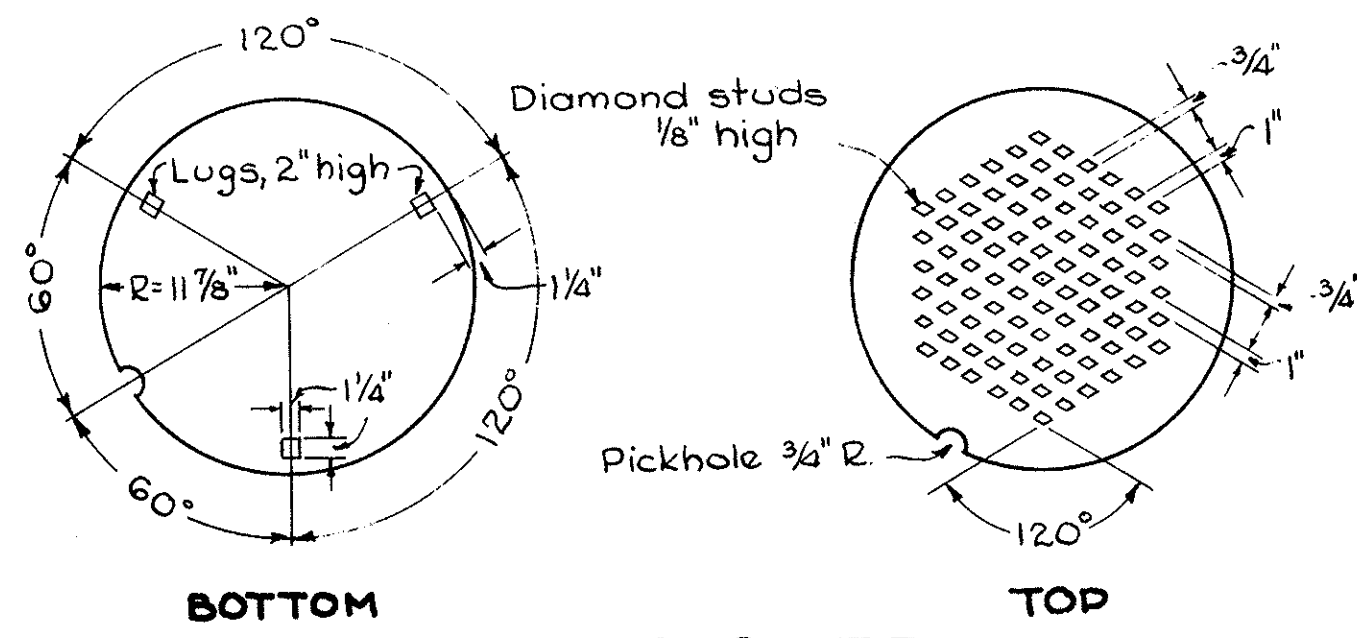
Note - Quantities are on Line and Cross Section sheets.

# SPECIAL DITCH INLET

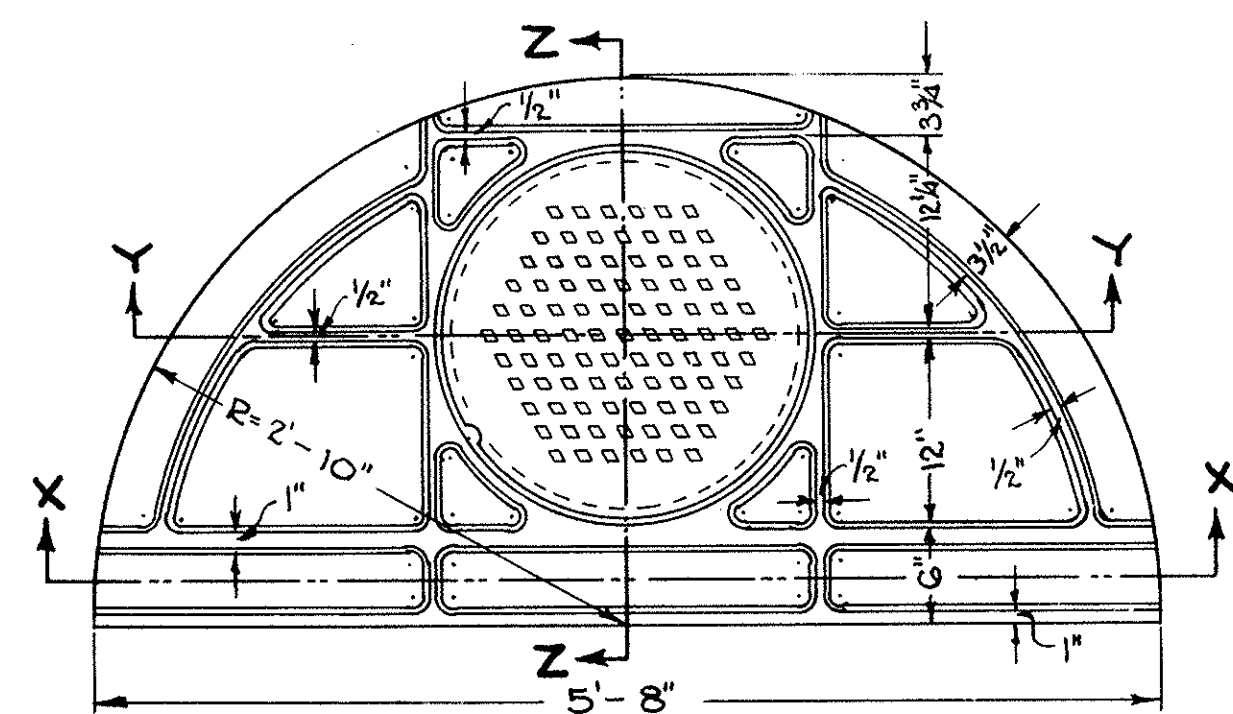
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
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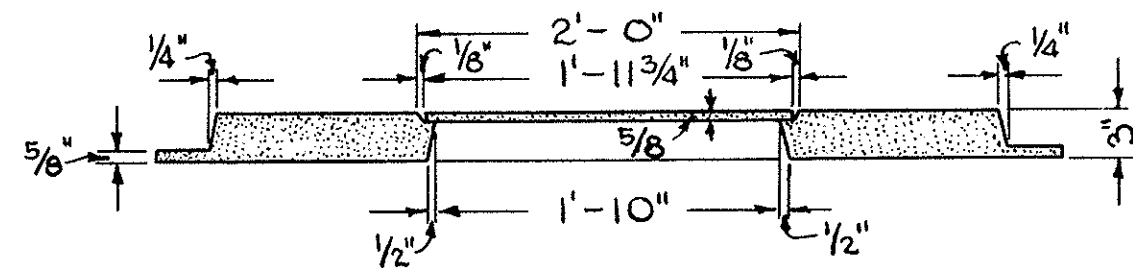
ASHTABULA COUNTY  
ATB-531 (13.73 - 14.07)



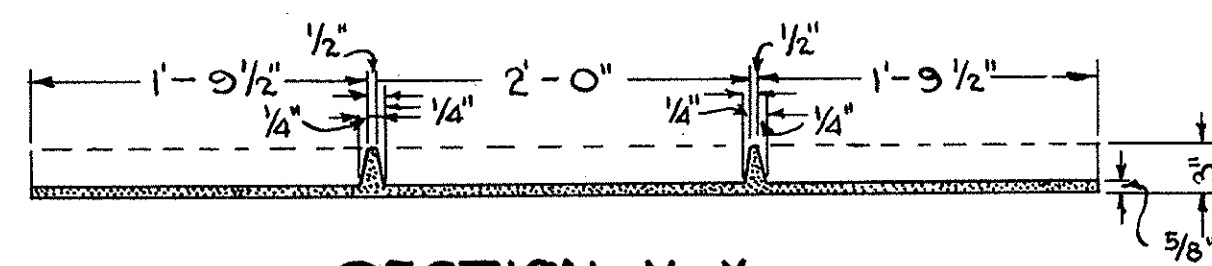
**DETAIL OF COVER**



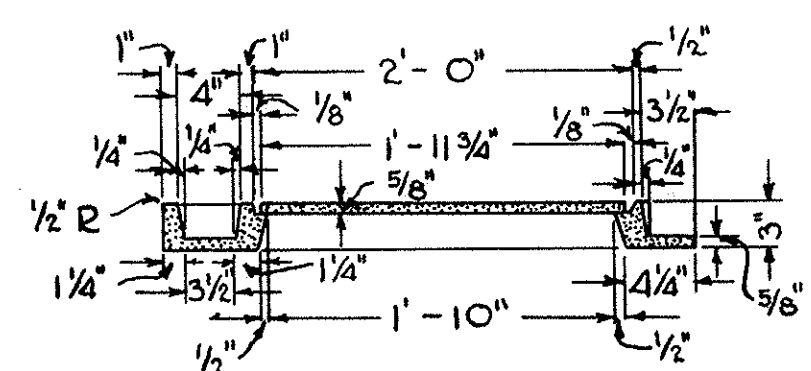
**PLAN OF CASTING**  
Approximate weight = 515#



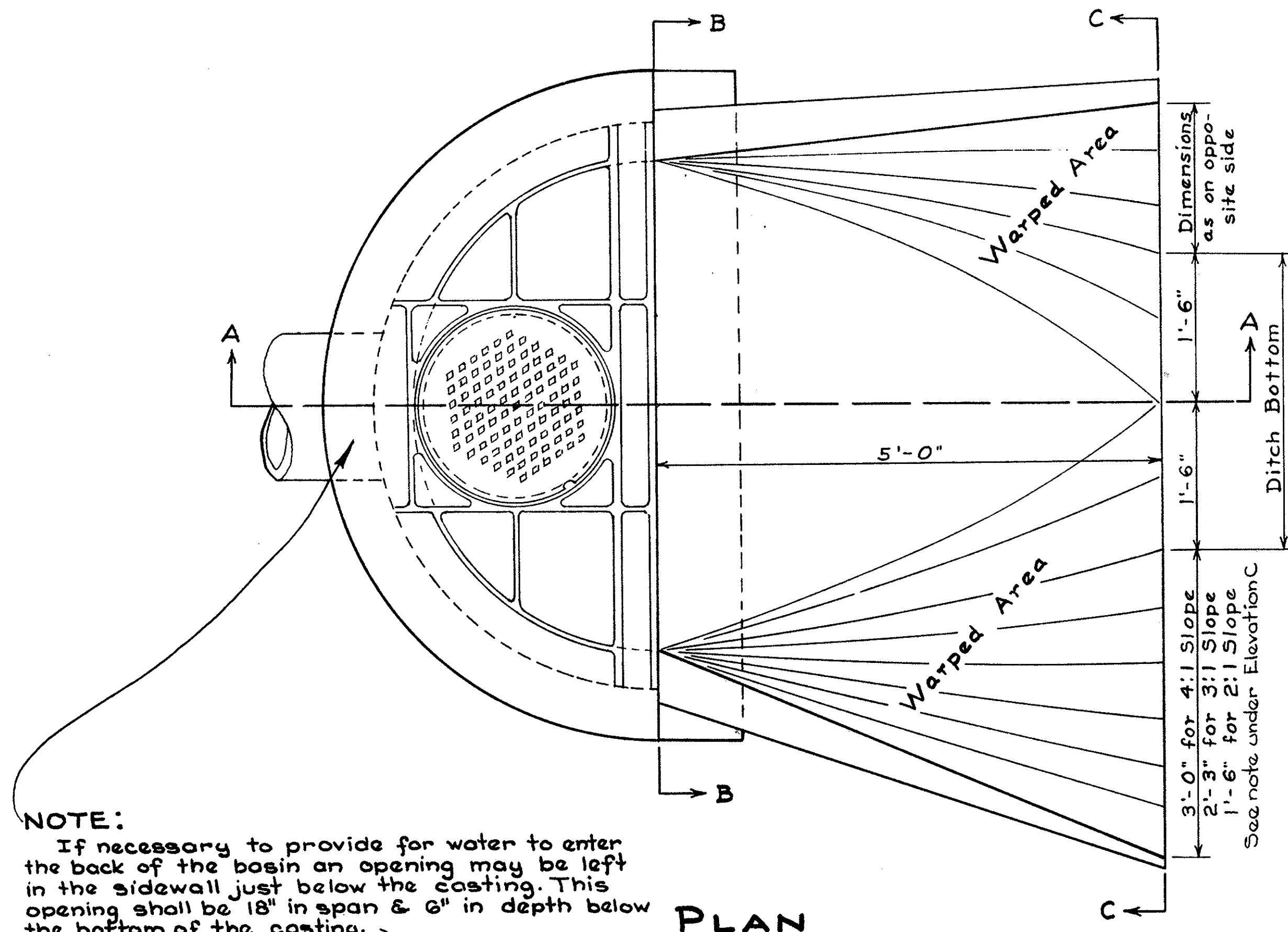
**SECTION Y-Y**



**SECTION X-X**

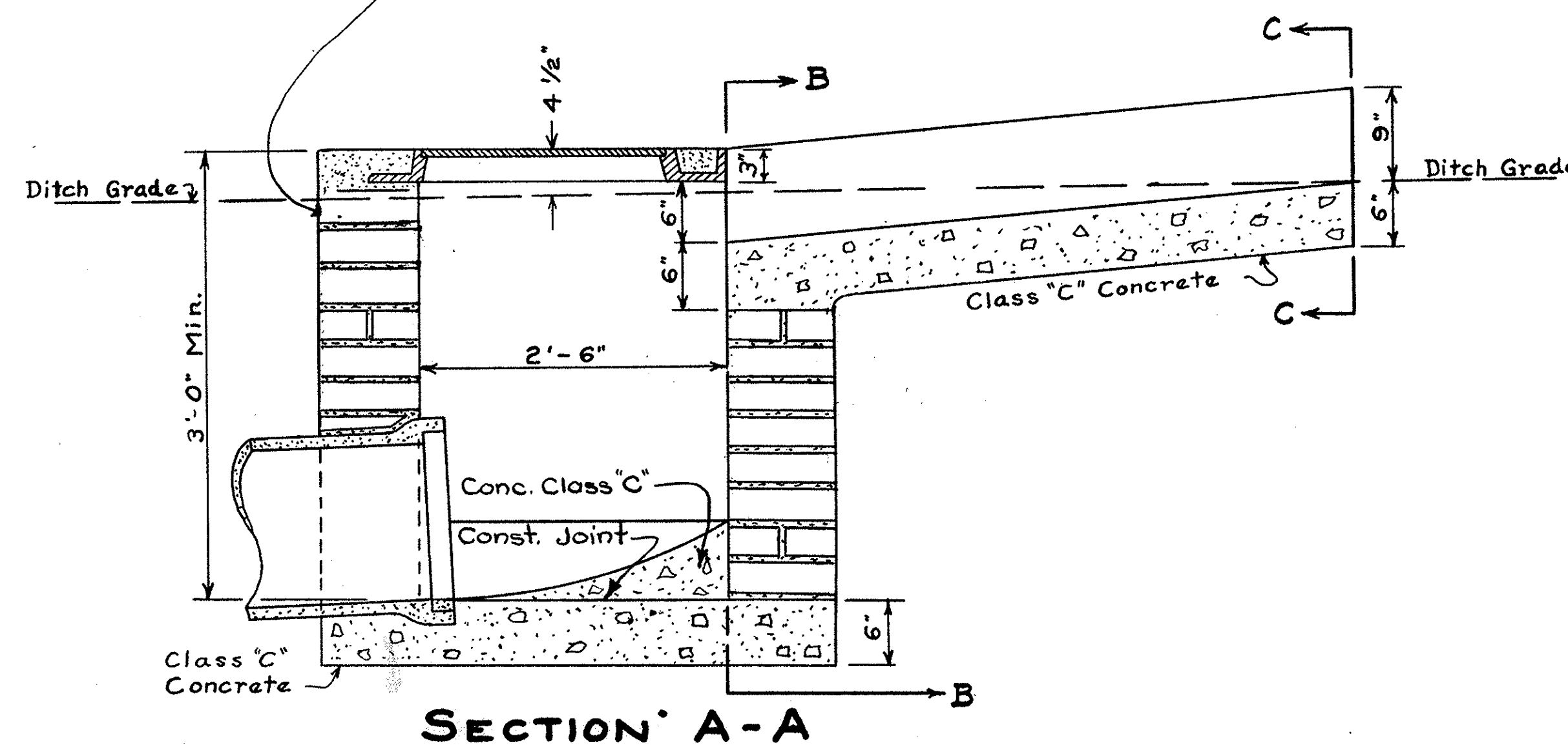


**SECTION Z-Z**

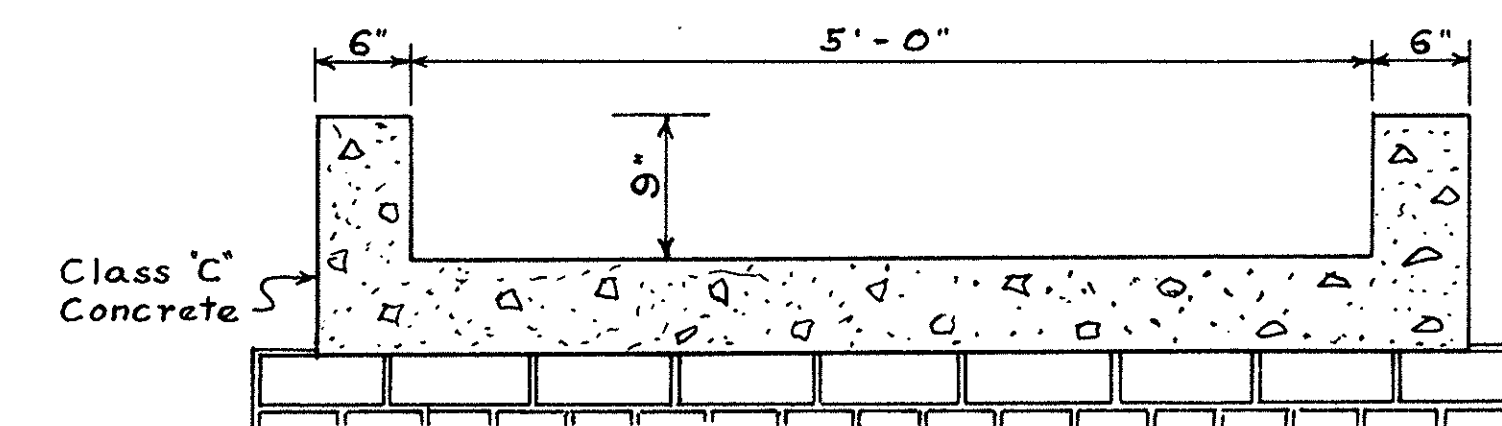


**PLAN**

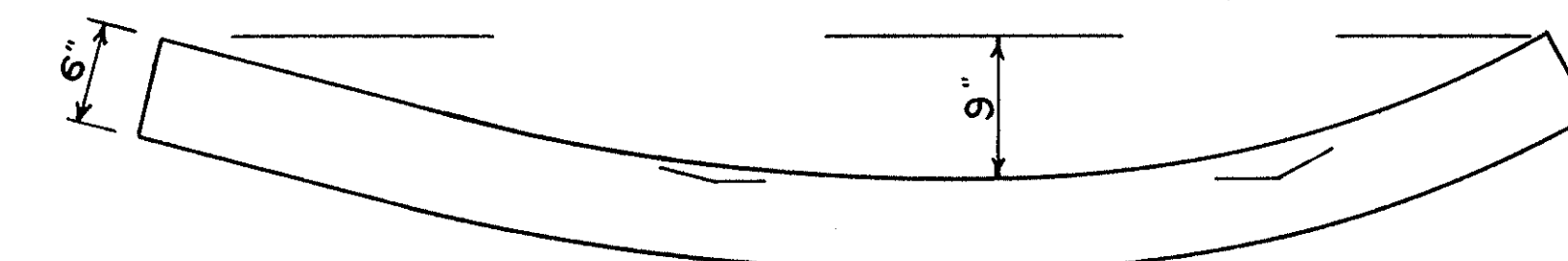
**NOTE:**  
If necessary to provide for water to enter the back of the basin an opening may be left in the sidewall just below the casting. This opening shall be 18" in span & 6" in depth below the bottom of the casting.



**SECTION A-A**



**SECTION B-B**



**ELEVATION C-C**

Approach at C-C shall be warped to fit the typical ditch or paved gutter section.

**NOTES**  
Castings shall be of cast iron in accordance with Material Details. The design shall be essentially the same and equally as strong as those shown hereon and shall be given one coat of asphaltum paint as per specifications. Casting weight shall be approximately 515 lbs. After casting has been set the space between the webs shall be filled with 1:2 cement mortar.  
Construction: Inlets shall be constructed of a 6" Class "C" concrete base and 8" brick sidewalls, laid in portland cement concrete mortar with every sixth course a stretcher course.

8" Class "C" concrete may be substituted for brick sidewall construction.  
In case of through pipe or side pipe connections, the bottom of the inlet shall be shaped accordingly.  
Cost of concrete apron in front of inlet shall be included in unit price bid for Item I-8.

SUMMARY OF QUANTITIES

SHEET NO.	E-12 15" & Under Pipe Rem. & Disp. of L.F.	I-4 6" Pipe L.F.	I-2 Under Pavement L.F.				I-2 M-6.4 (c) L.F.		I-15 Steel Beam Type (Deep) L.F.	I-5 for I-4 30° Bend EA.	L-10 Sodded Gutters S.Y.	I-8 Special Ditch Inlet EA.	I-15 Guard Rail Posts Only EA.	I-17 S.Y.	I-8 Mon. Box EA.	I-1 Pipe for Drives 12" 15" L.F. L.F.		I-10 Riprap Type A S.Y.	L-9 Seeding S.Y.	EARTHWORK		
			12"	15"	15"	12"	15"	18"								Exc. C.Y.	Emb. C.Y.					
8	106	1786	342	254	44	162			6	6	1101.8	6		299	1	20			8315	22740	39	
9		1346	129	582		108	250	230	969	6	1130.3	7		1			20		17587	43774	36976	
10		750									248.8			72		40			2871	2917	0	
25													19	220								
28																	20					
Total	106	3882	471	836	44	270	250	230	975	12	2480.9	13		19	591	2	20	40	40	28773	69431	37015

EARTHWORK		
Excavation	Embankment	Emb+25 %
69431	37015	
	* 2321	
	34694	43368

\* Deduct for Structure  
Excavation = 69431 C.Y.  
Embankment + 25 % = 43368 C.Y.  
Surplus = 26063 C.Y.

CALCULATIONS

T-35 1/4" ASPHALTIC CONCRETE SURFACE COURSE:-  
Sta. 162+55 To Sta. 163+00 = 45 L.F.  
45 x 3 Ave Width ÷ 9 = 15 S.Y.  
Sta. 163+00 To Sta. 187+75 = 2475 L.F.  
2475 x 24 ÷ 9 = 6600 S.Y.  
Sta. 187+75 To Sta. 188+20 = 45 L.F.  
45 x 3 Ave Width ÷ 9 = 15 S.Y.  
6630 S.Y.  
230.2 C.Y.  
Use 230 C.Y.

B-35 1/4" ASPHALTIC CONCRETE LEVELING COURSE:-  
Same as T-35 230.0 C.Y.  
Extra Leveling  
2475 L.F. ÷ 5280 x 200 = 93.7 C.Y.  
Total 323.7 C.Y.  
Use 324 C.Y.

B-20 5" WATERBOUND MACADAM BASE COURSE:-  
Sta. 162+55 To Sta. 163+00 = 45 L.F.  
45 x 4 Ave Width ÷ 9 = 20 S.Y.  
Sta. 163+00 To Sta. 187+75 = 2475 L.F.  
2475 x 25 ÷ 9 = 6875 S.Y.  
Sta. 187+75 To Sta. 188+20 = 45 L.F.  
45 x 4 Ave Width ÷ 9 = 20 S.Y.  
6915 S.Y.

SS-5 6" CLASSIFIED EMBANKMENT MATERIAL BLANKET COURSE:-  
Sta. 162+55 To Sta. 163+00 = 45 L.F.  
45 x 5 Ave Width ÷ 9 = 25 S.Y.  
Sta. 163+00 To Sta. 165+00 = 200 L.F.  
200 x 28.5 ÷ 9 = 633.33 S.Y.  
Sta. 165+00 To Sta. 172+00 = 700 L.F.  
700 x 26 ÷ 9 = 2022.22 S.Y.  
Sta. 172+00 To Sta. 176+75 = 475 L.F.  
475 x 51 ÷ 9 = 2691.66 S.Y.  
Sta. 176+75 To Sta. 182+20 = 545 L.F.  
545 x 26 ÷ 9 = 1574.44 S.Y.  
Sta. 182+20 To Sta. 187+75 = 555 L.F.  
555 x 28.5 ÷ 9 = 1757.50 S.Y.  
Sta. 187+75 To Sta. 188+20 = 45 L.F.  
45 x 5 Ave Width ÷ 9 = 25.00 S.Y.  
8729.15 S.Y.  
1454.85 C.Y.  
Use 1455 C.Y.

T-30 BITUMINOUS PRIME COAT:-  
Area same as B-20  
6915 x 0.35 Gals. per sq. yd. = 2420.25 S.Y.  
Use 2420 Gals.

E-4 GRANULAR BORROW:-  
Sta. 165+00 To Sta. 172+00 = 700 L.F.  
Sta. 176+75 To Sta. 182+20 = 545 L.F.  
1245 L.F.  
1245 x 28.5 x 1.5 ÷ 27 = 1971.25 C.Y.  
Use 1971 C.Y.

I-17 SIDE APPR. MAIL BOX TURNOUTS & BERM MATERIAL:-  
From Summary of Quantities 591 S.Y.  
591 x 6 ÷ 36 x 1.15 = 113.28 C.Y.  
Use 113 C.Y.

E-11 WATER:-  
Embankment from Summary 37015 C.Y.  
Subgrade in Cuts 1505 C.Y.  
38520 x 5 gals = 192,600 Gals.  
or 193 M.Gals.

L-9 SEEDING & PROTECTING TYPE "A"  
Seeding from Summary 28923 S.Y.

L-9 10-6-4 COMMERCIAL FERTILIZER @ 20\* PER 1000 S.Y.  
Sodding & Seeding from Summary 2481 + 28773 = 31254 S.Y.  
31254 x 9 ÷ 1000 x 20 = 5626 LBS.  
or 2.81 Tons.

L-9 AGRICULTURAL GROUND LIMESTONE @ 100# PER 1000 S.F.  
Sodding & Seeding from Summary 2481 + 28773 = 31254 S.Y.  
31254 x 9 ÷ 1000 x 100 = 26129 LBS.  
or 14.06 Tons.

GENERAL SUMMARY

ITEM	QUANTITY	UNIT	DESCRIPTION
ROADWAY			
E-1	69431	C.Y.	Roadway Excavation as per plan
E-4	1971	C.Y.	Borrow using Granular Material as per plan
E-11	193	M.Gals.	Water
E-12	106	L.F.	Pipe Removed and Disposed of 15" and under
I-8	2	Ea.	Monument Boxes as per plan
I-15	975	L.F.	Guard Rail, Steel Beam Type (Deep)
I-15	19	Ea.	Wood Guard Rail Posts, Complete in place
I-17	113	C.Y.	Side Approaches, Mail Box Turnouts and Berm Material
L-9	28773	S.Y.	Seeding and Protecting Type "A"
L-9	1	2.81 Tons	Commercial Fertilizer (10-6-4)
L-9	14.06	Tons	Agricultural Ground Limestone
I-9	500	L.F.	Stone Underdrains No. 2
DRAINAGE			
I-1	20	L.F.	12" Pipe for Driveways
I-1	40	L.F.	15" Pipe for Driveways
I-2	270	L.F.	12" Pipe for Storm Sewers under pavement
I-2	471	L.F.	12" Pipe for Storm Sewers
I-2	836	L.F.	15" Pipe for Storm Sewers
I-2	44	L.F.	15" Pipe for Storm Sewers under pavement
I-2	250	L.F.	15" Bituminous Coated Corr. Metal Pipe Sec. M-6.4 (c) for Storm Sewers
I-2	230	L.F.	18" Bituminous Coated Corr. Metal Pipe Sec. M-6.4 (c) for Storm Sewer
I-5	12	Ea.	6" Pipe Specials for Pipe Underdrains
I-8	13	Ea.	Special Ditch Inlets
I-10	40	S.Y.	12" Grout Filled Type "A" Riprap
L-10	2481	S.Y.	Sodding
I-4	3882	L.F.	6" Pipe Underdrains
PAVEMENT			
T-35	230	C.Y.	Asphaltic Concrete Surface Course, Type A (70-80)
T-30	2420	Gal.	Bituminous Prime Coat Sec. B-2 or B-1 or B-2 or B-3 Sec. B.3 MC-0 or MC-1
B-35	324	C.Y.	Asphaltic Concrete Leveling Course (70-80)
B-20	6915	S.Y.	5" Waterbound Macadam Base Course
SS-5	1455	C.Y.	Classified Embankment Material

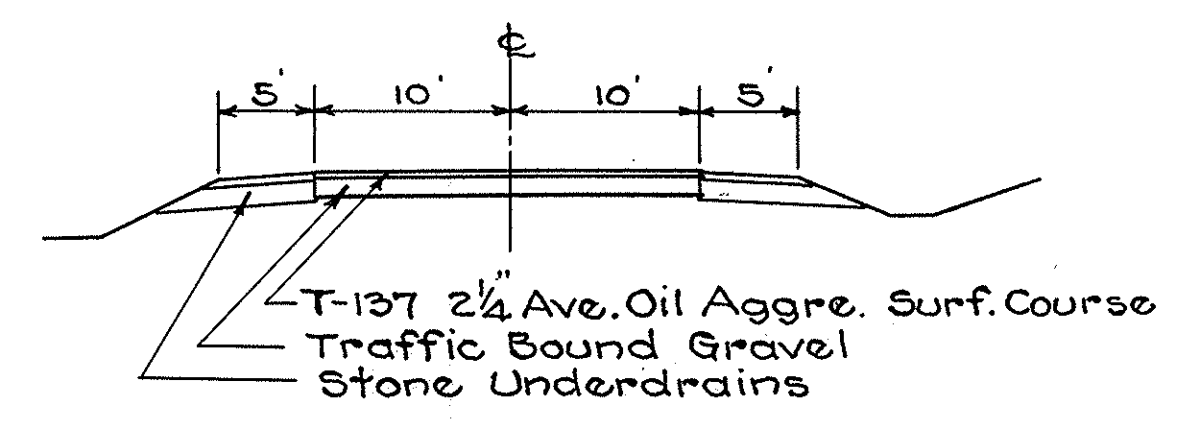
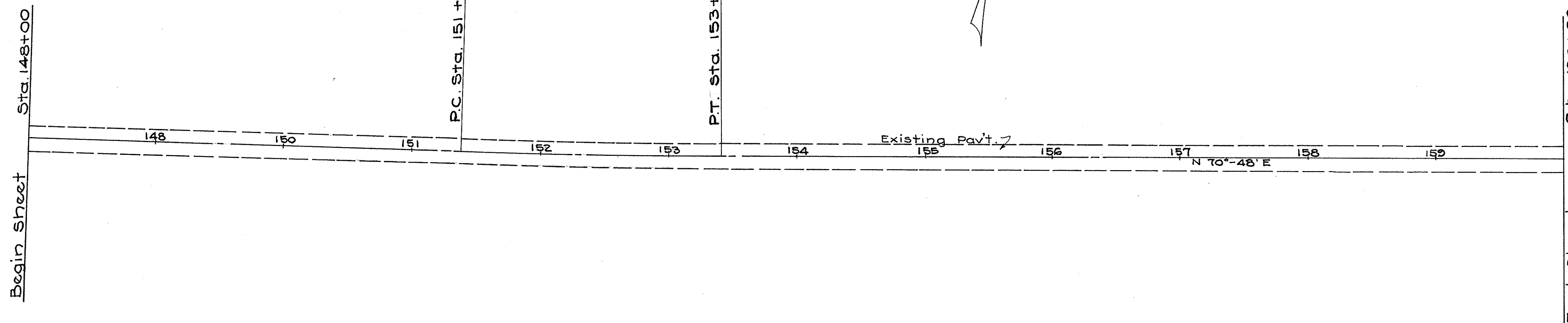
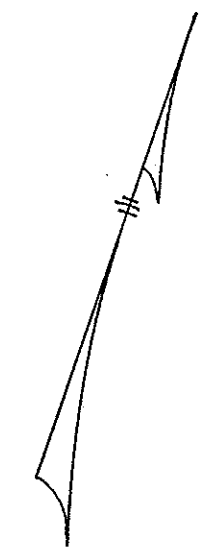
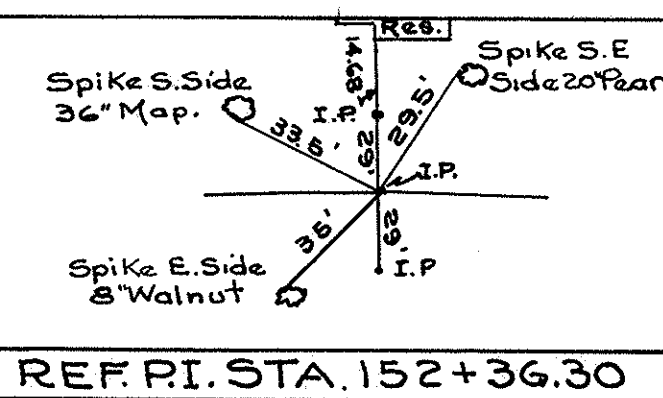
Quantities for Structure Over 20 Ft. Span see Sheet No. 27

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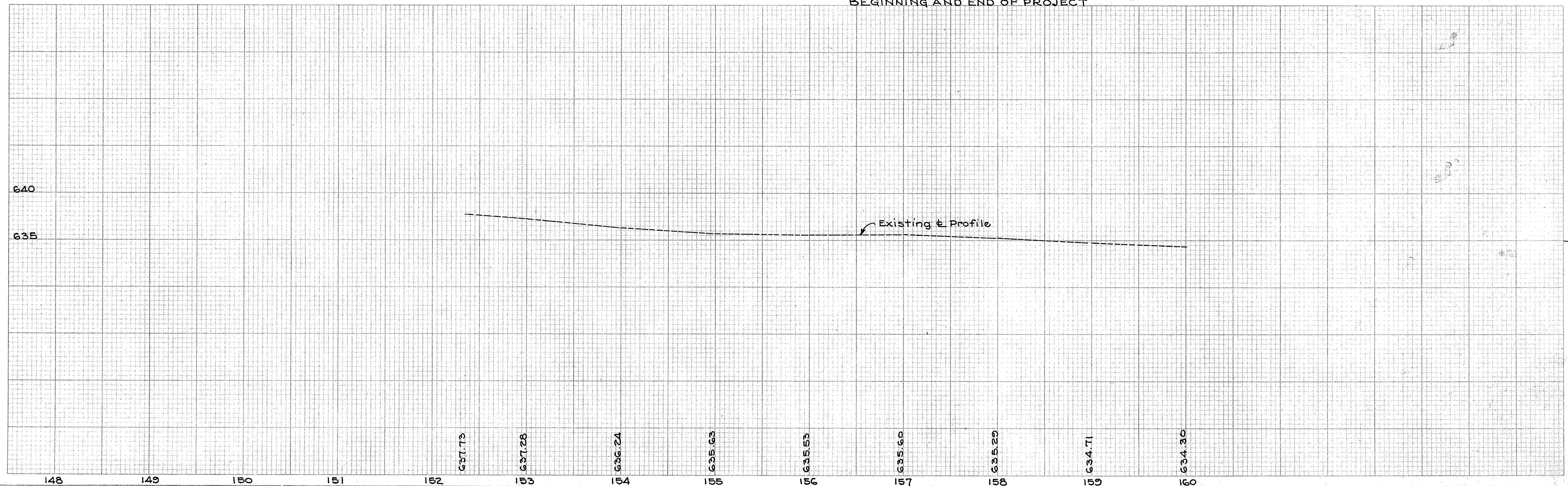
7  
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ASHTABULA COUNTY  
ATB-531 (13.73-14.07)

EXISTING CURVE DATA  
 P.I. = 152+36.30  
 Δ = 2°-03' Lt  
 L = 109.03'  
 T = 102.50'  
 M = 206.00'



TYPICAL SECTION ADJOINING PAV'T.  
BEGINNING AND END OF PROJECT



# LAKE ERIE

Spike in Trunk S.W. Side of Ash.  
Spike S. Side 20" Maple  
Spike N. Side 8" Pipe  
I.P. S.R. 531  
REF. P.I. STA. 169+75.38

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## ASHTABULA COUNTY ATB-531 (13.73.-14.07.)

REMOVAL				
STATION FROM	STATION TO	SIDE	E-12 PIPE REMOV'L & DISPOSED OF 15" & UNDER	
169+56	170+60	L	106	
Total			106	

I-4 DRAINS					
STATION FROM	STATION TO	SIDE	DIST. L.F.	6" PIPE L.F.	I-5 FOR I-4 6'-30" BEND
163+00	166+00	L	15'	304	1
163+00	165+90	R	15'	294	1
166+00	169+00	L	15	302	1
166+00	165+90	R	15	292	1
169+00	172+00	L	15	302	1
169+00	171+90	R	15	292	1
Total				1786	6

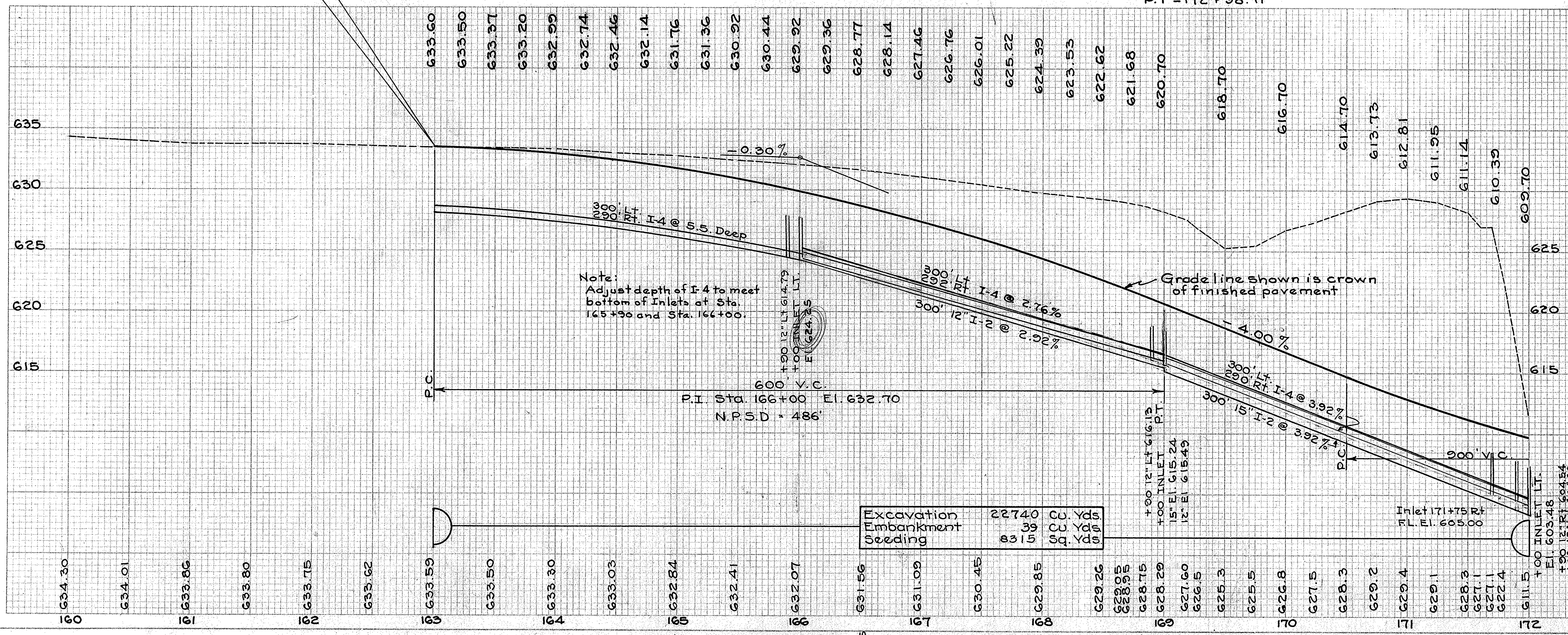
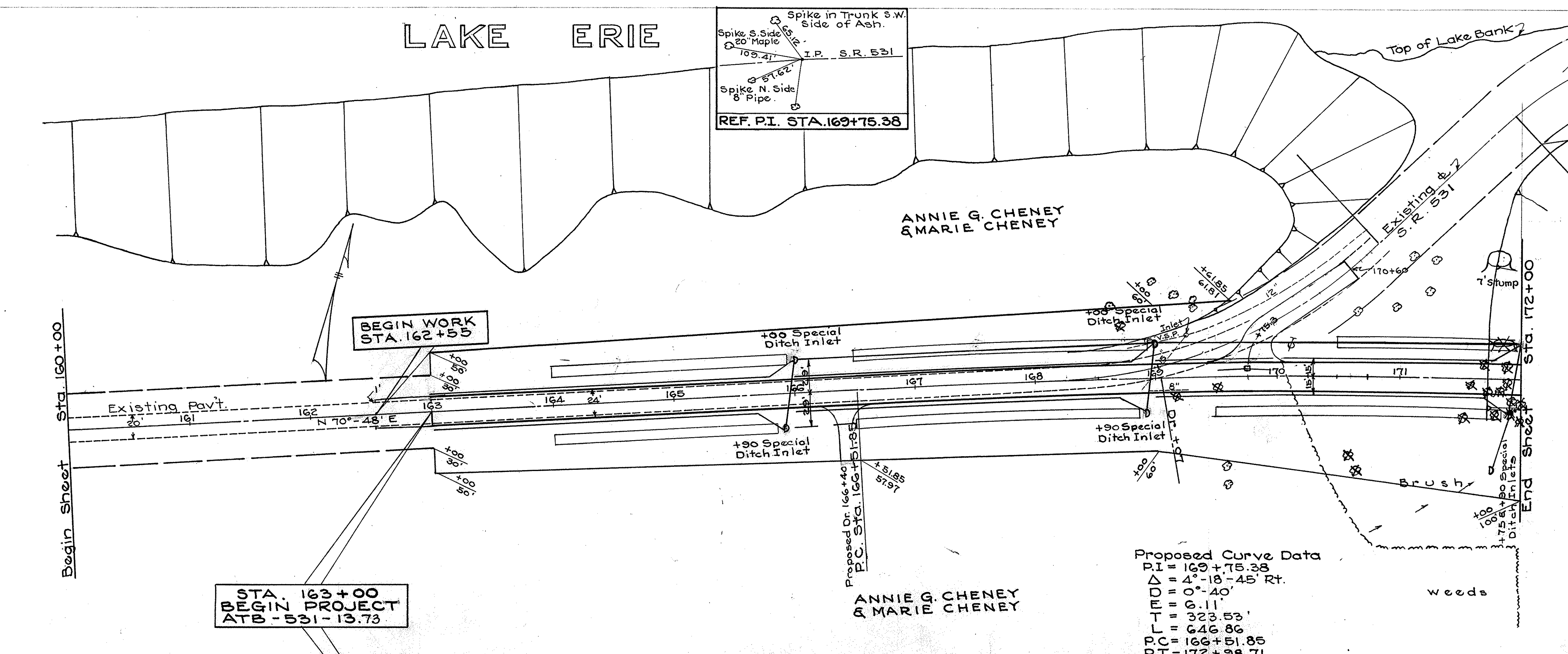
DRAINAGE						
STATION FROM	STATION TO	SIDE	I-2 12" L.F.	I-2 15" UNDER PAVEMENT L.F.	I-2 15" L.F.	I-8 SPEC. DITCH INLET EA.
165+90	166+00	R&L			54	1
166+00	169+00	L	298			1
168+90	169+00	R&L			54	1
169+00	169+64	L		62		1
169+64	170+08	L		44		
170+08	172+00	L	192			
171+90	172+00	R&L			54	1
171+75	171+90	R	44			1
Total			342	254	44	162

GUTTERS				
STATION FROM	STATION TO	SIDE	L-10 WIDTH	S.Y.
164+00	165+95	L	8	173.3
164+00	165+85	R	8	164.4
166+50	168+95	L	8	217.7
166+50	168+85	R	8	208.8
170+50	171+95	L	8	128.8
169+50	171+85	R	8	208.8
Total				1101.8

I-8 MONUMENT BOX		
STATION	EACH	
169+75.38	1	
Total		1

GUARD RAIL				
Station From	Station To	SIDE	STEEL BEAM TYPE (DEEP)	L.F.
171+94	172+00	R	6	
Total			6	

APPROACHES				
STATION	SIDE	I-1 12" Pipe for Dr. L.F.	I-17 S.Y.	
166+40	R.	20	64	
169+75.3	L		235	Detailed Sh. No. 4
Total		20	299	

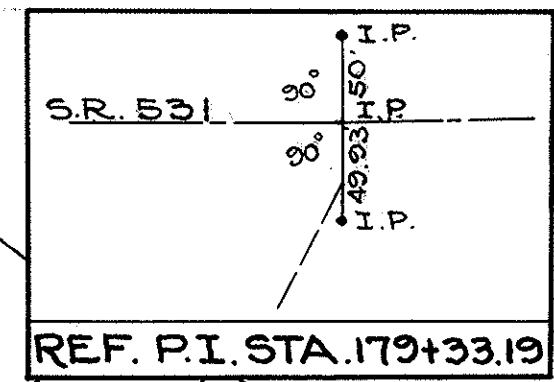




**ASHTABULA COUNTY**  
ATB-531 (13.73-14.07)

**EXISTING BRIDGE 275' NORTH**  
 TYPE Plate Girder  
 SPAN 45 (Length of Girder 48.25')  
 ROADWAY 16.25'  
 SKEW None  
 DATE BUILT 1909  
 CONDITION Superstructure Fair  
 Sandstone Substructure Fair

**PROPOSED STRUCTURE**  
 TYPE Concrete arch culv. 176.74'  
 SPAN 24 ft.  
 ROADWAY 48'-0" out to out berms  
 LOADING S-15-46  
 SKEW 15° R.F.



I-4 DRAINS					
STATION FROM	STATION TO	SIDE	DIST. OUT	6" PIPE L.F.	I-5 EA. FOR I-4 6" 90° BEND
177+24	180+00	L	15	278	1
177+14	179+95	R	15	278	1
180+10	183+00	L	15	290	1
180+00	182+95	R	15	298	1
183+10	184+00	L	15	98	1
183+00	184+00	R	15	104	1
Total				1346	6

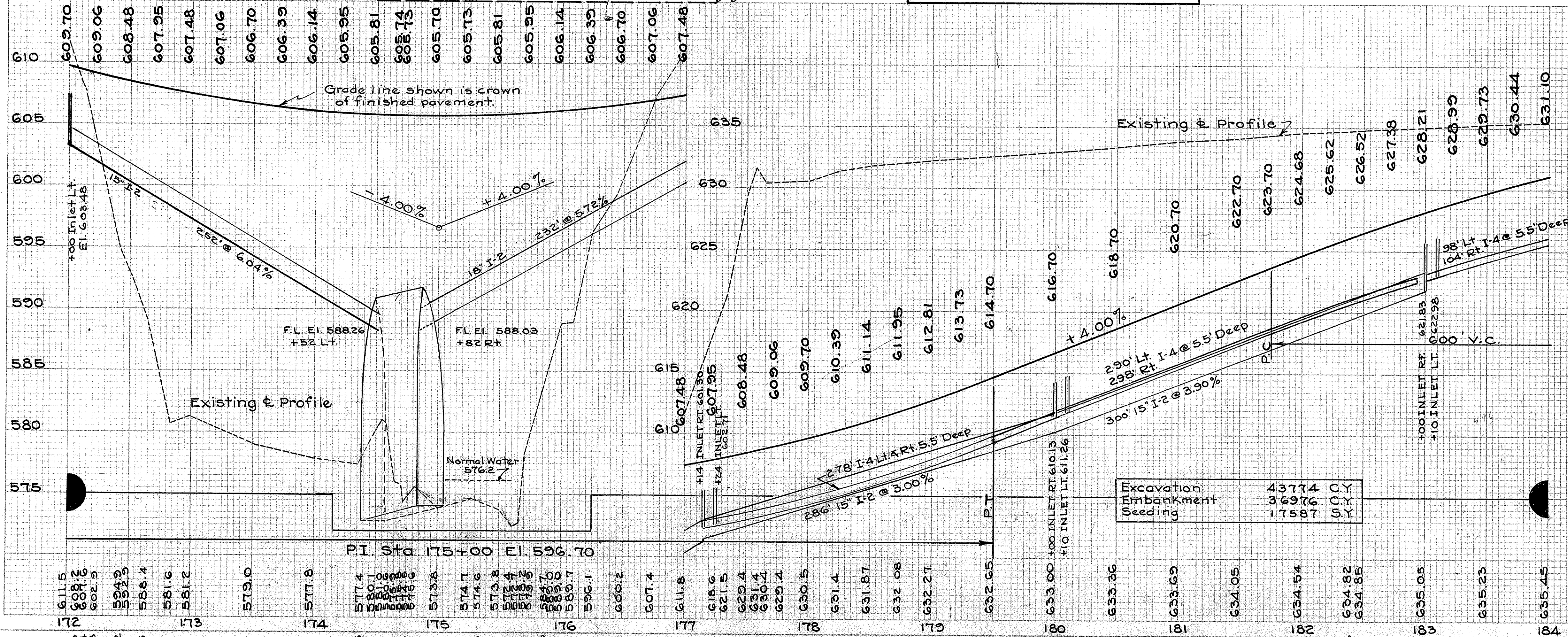
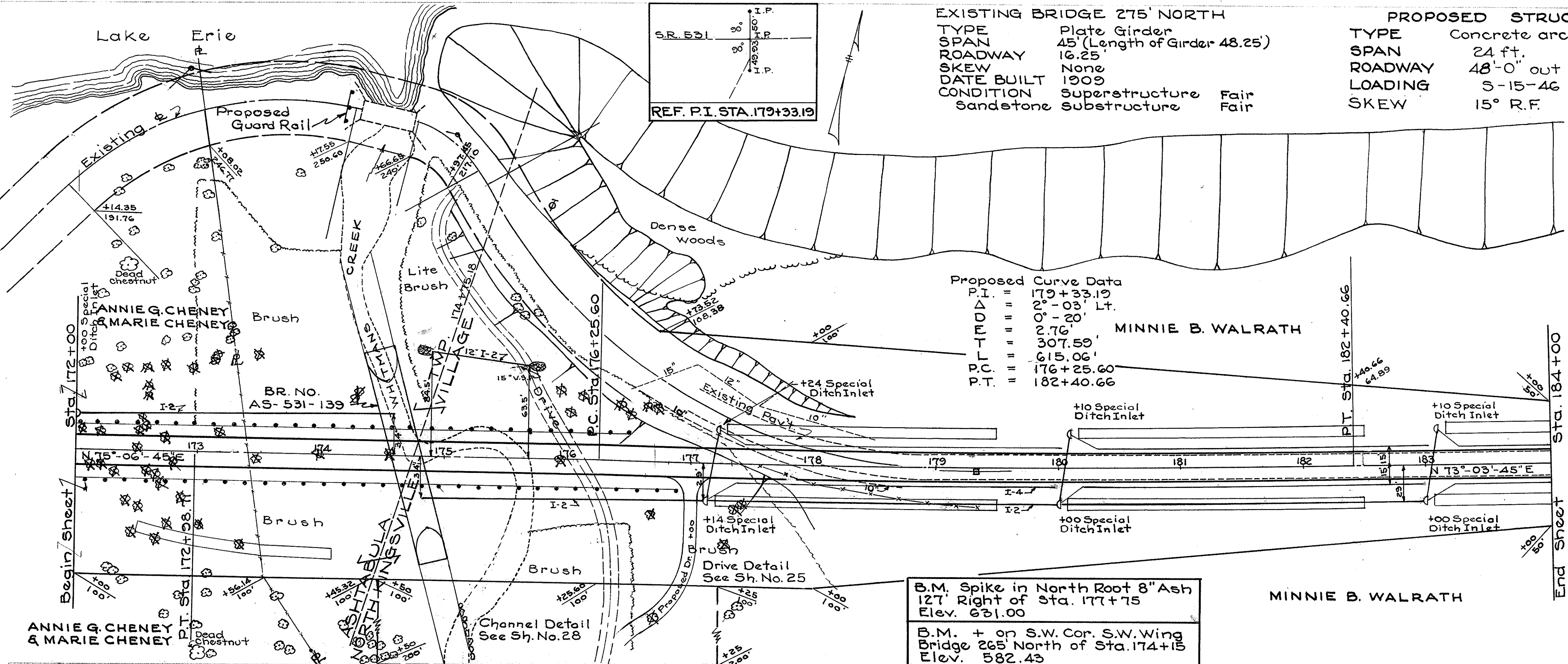
DRAINAGE								
STATION FROM	STATION TO	SIDE	Under Pavt. 12"	I-2 L.F. 15"	M-6.4 (C) 15"	I-8 SPEC. DITCH INLET EA.		
172+00	174+52	L		250		1		
174+82	177+14	R			230	1		
177+14	177+24	L & R	54			1		
177+14	180+00	R		284		1		
180+00	180+10	L & R	54			1		
180+00	183+00	R		298		1		
183+00	183+10	L & R	54			1		
174+90	175+65	L		75		1		
Total			108	129	582	250	230	7

GUTTERS				
STATION FROM	STATION TO	SIDE	WIDTH	L-10 S.Y.
177+19	179+50	R	8	205.3
177+29	179+50	L	8	196.4
180+05	182+50	R	8	217.7
180+15	182+50	L	8	208.8
183+05	184+00	R	8	84.4
183+15	184+00	L	8	75.5
172+50	174+10	L	8	142.2
Total				1130.3

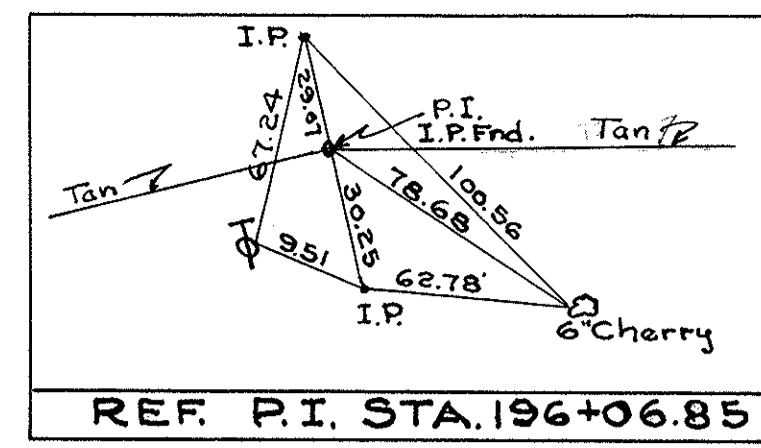
IS MONUMENT BOX		
STATION	EACH	
179+33.19	1	
Total	1	

GUARD RAIL			
STATION FROM	STATION TO	SIDE	I-15 Steel Beam Type (Depth)
172+00	176+50	L	450
172+00	176+94	R	494
174+15			25'
Total			969

RIP RAP			
STATION FROM	STATION TO	SIDE	I-10 TYPE 'A' S.Y.
174+80	174+90	L	10
175+65	175+75	L	10
Total			20



ASHTABULA COUNTY  
ATB-531 (13.73-14.07)

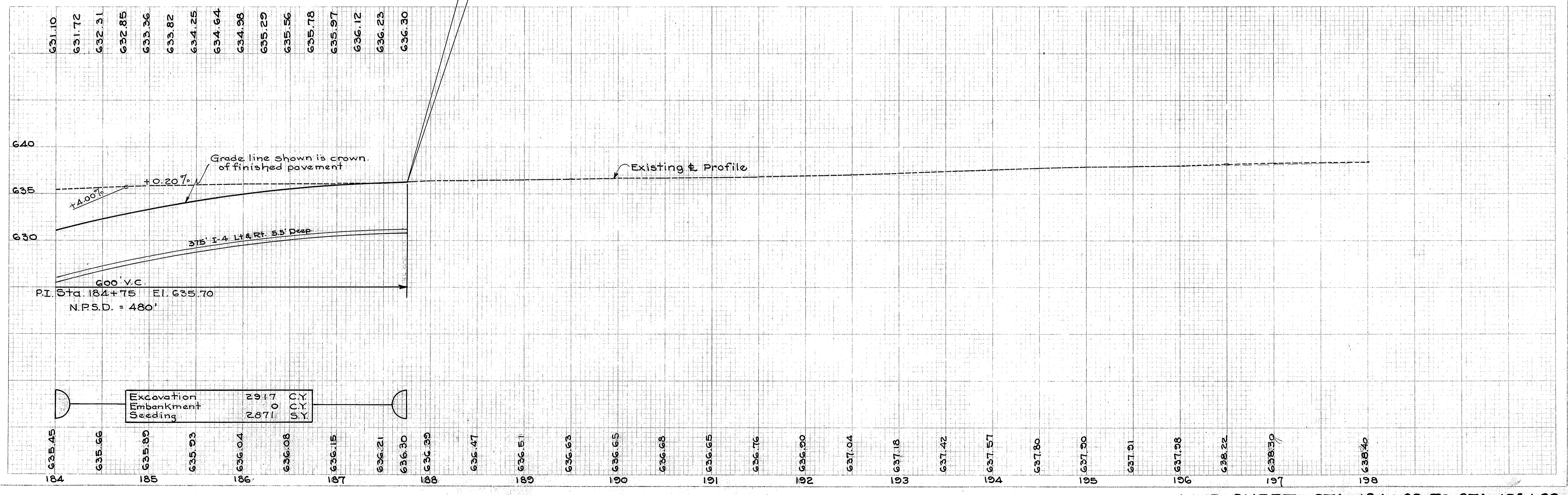
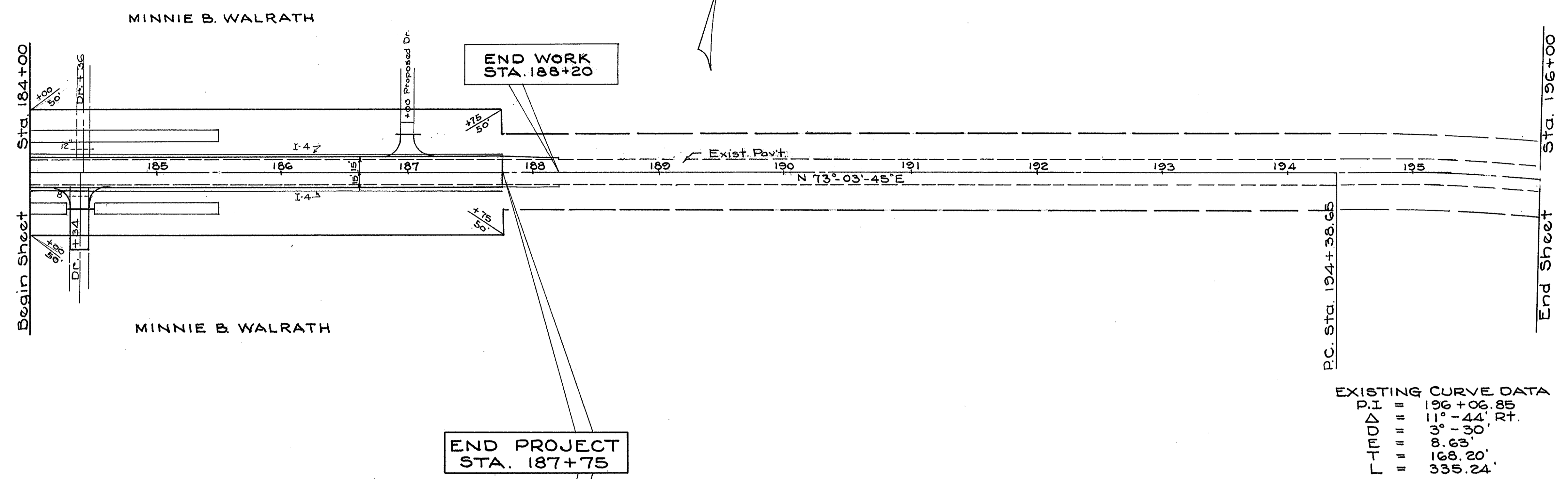


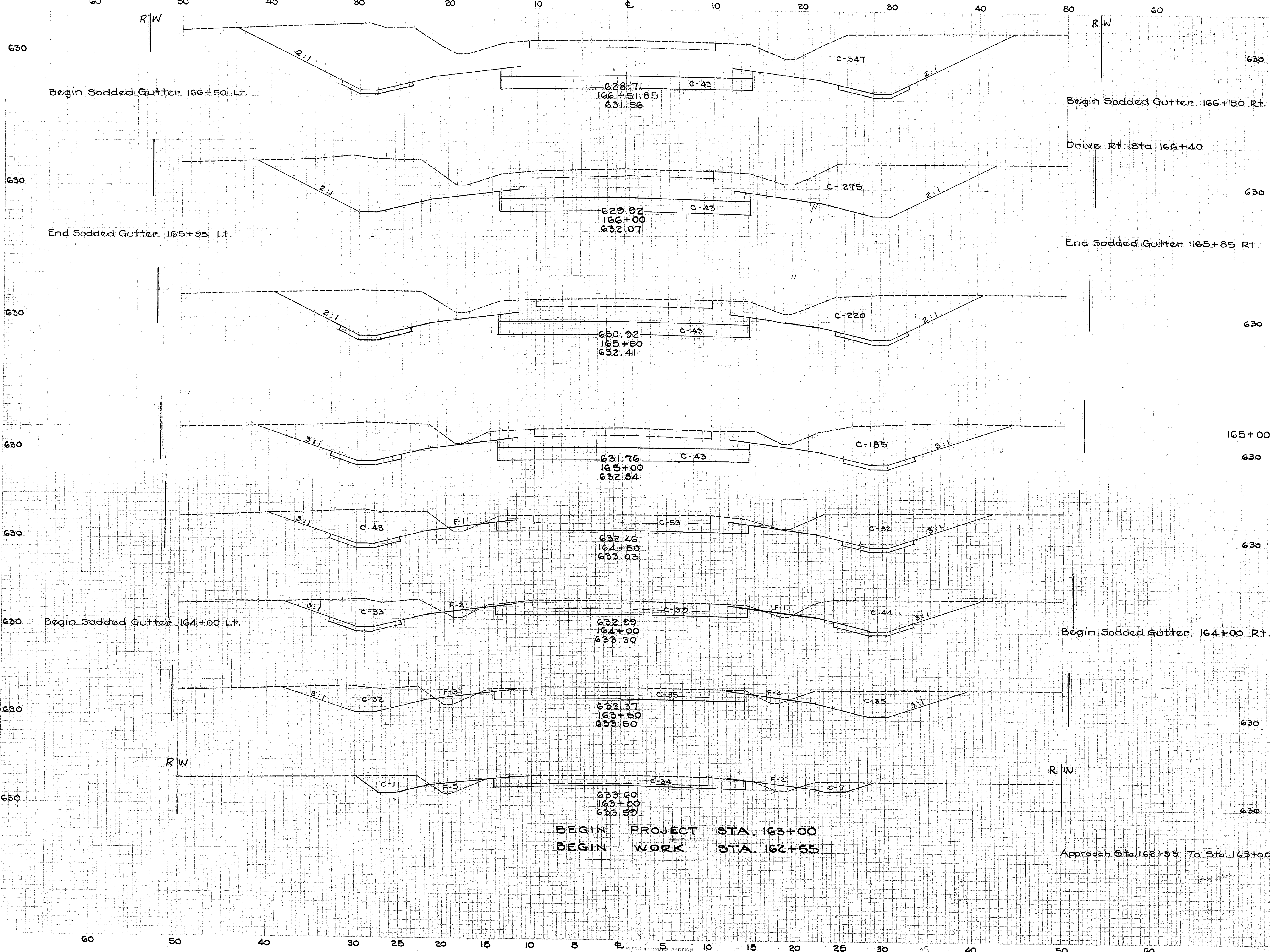
Station From	Station To	Side	Dist. Out	6" Pipe L.F.
184+00	187+75	L	15'	375
184+00	187+75	R	15'	375
Total				750

Station From	Station To	Side	L-10 Width	S.Y.
184+00	185+50	L	8	133.3
184+00	184+24	R	8	21.3
184+44	185+50	R	8	94.2
Total				248.8

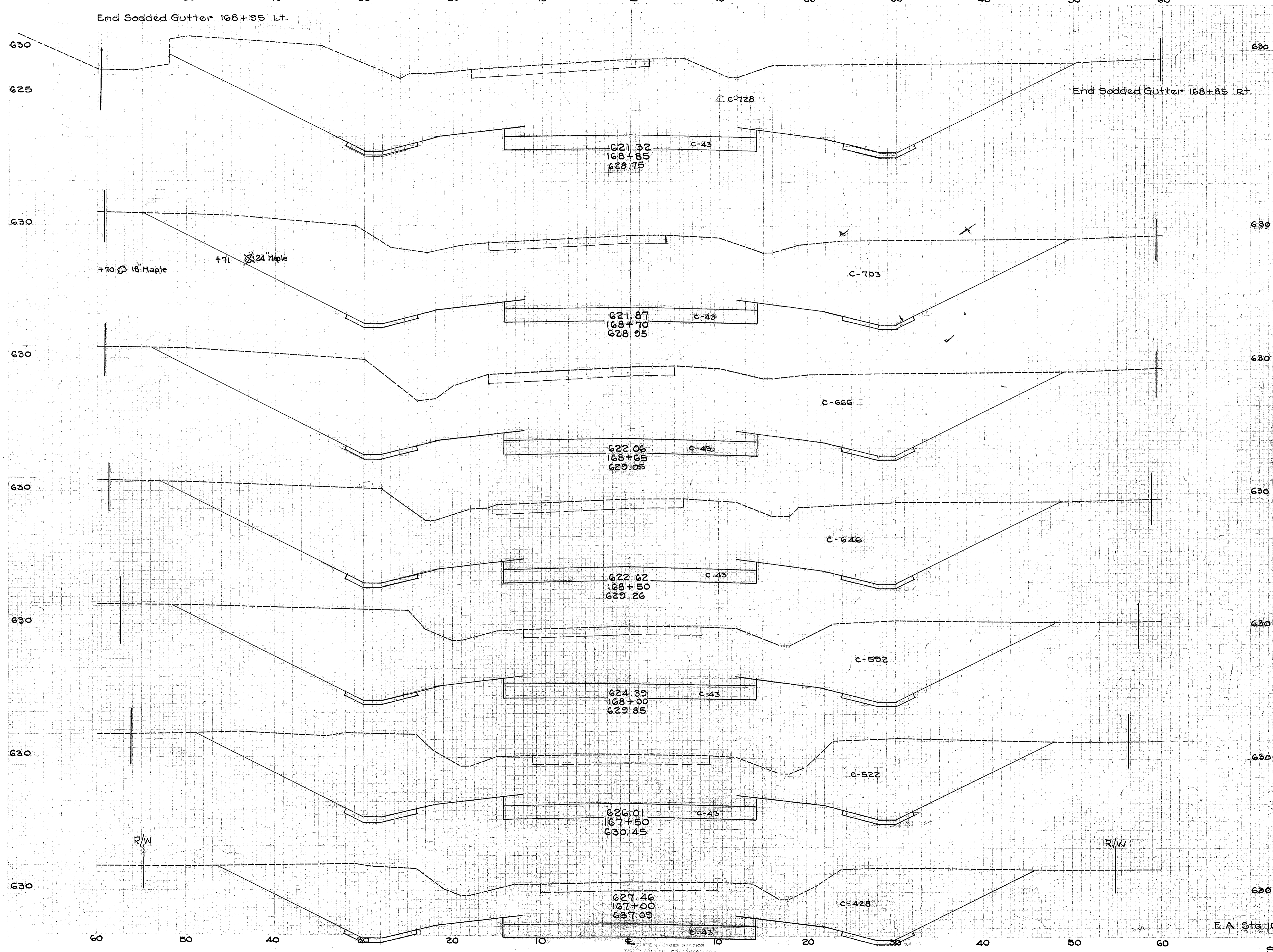
Station	Side	I-15" Pipe or Dr. L.F.	I-17 S.Y.
184+34	R	20	42
187+00	L	20	30
Total		40	72

EXISTING CURVE DATA  
 P.I. = 196+06.85  
 $\Delta$  = 11°-44' RT.  
 D = 3°-30'  
 E = 8.63'  
 T = 168.20'  
 L = 335.24'





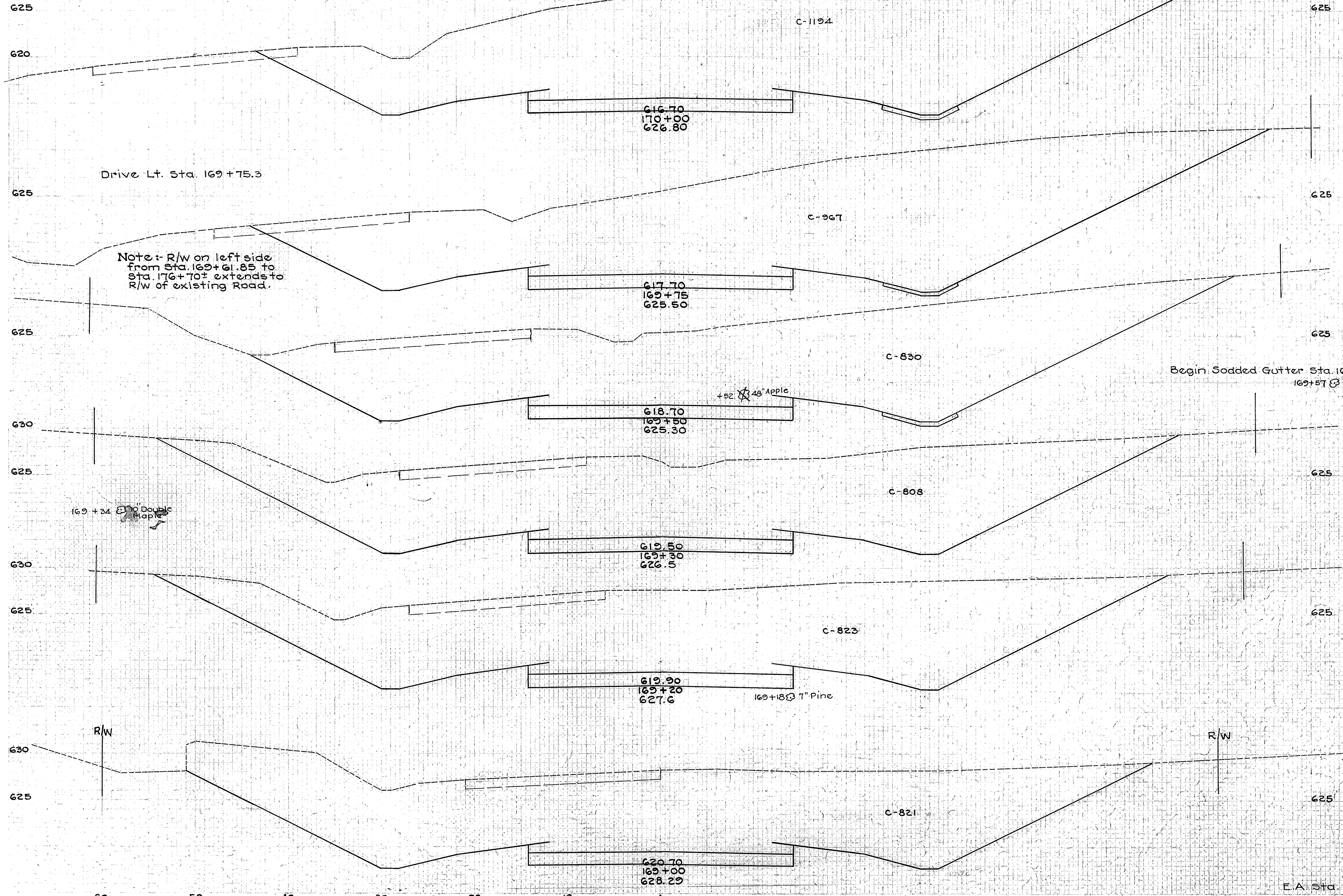
STA.	SEEDING		END AREA		CU. YDS.	
	L.F.	S.Y.	CUT	FILL	Exc.	Emb.
72			390	0	16	0
			444		680	0
82			318	0		
			403		538	0
63			263	0		
			353		455	0
165+00			228	0		
630			185	0		
64			353		313	1
63			153	1		
			342		249	4
60			116	3		
			375		202	8
630			75	5		
			308		143	11
630			36	7		
						10



SEEDING	END AREA	CU. YDS.	CU. YDS.
L.F. S.Y.	CUT	FILL	EXC. EMB.
83	771	0	
	138		421 0
83	746	0	
	46		135 0
83	709	0	
	138		388 0
82	689	0	
	450		1226 0
80	635	0	
	450		1111 0
82	565	0	
	430		959 0
73	471	0	
	388		768 0
E.A. Sta 166+51.85	72	390	0

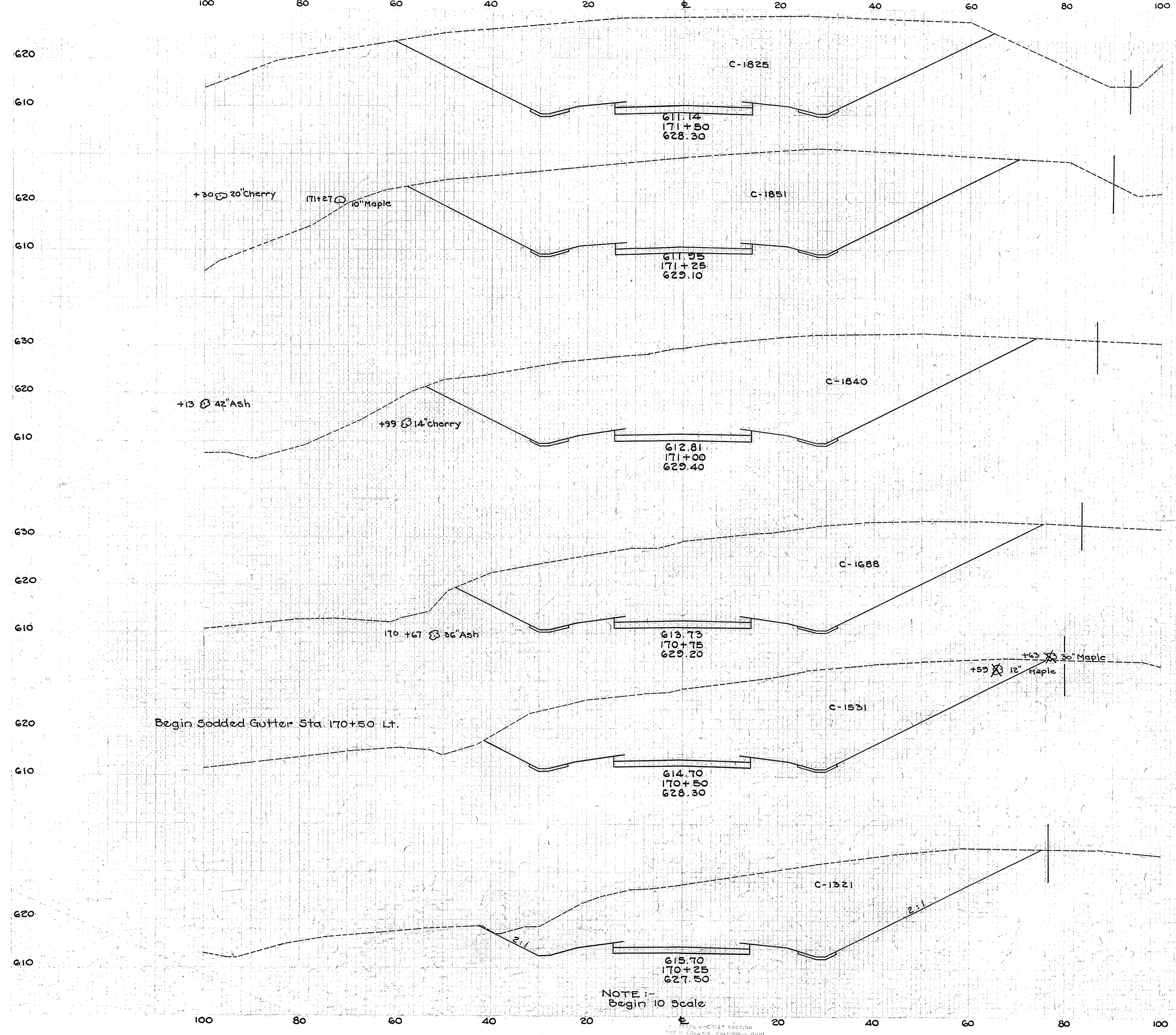
Excavation 22,740 C.Y.  
 Embankment 8,315 S.Y.  
 Seeding 8,315 S.Y.

ASHTABULA COUNTY  
ATB-531 (13.73 -14.07)



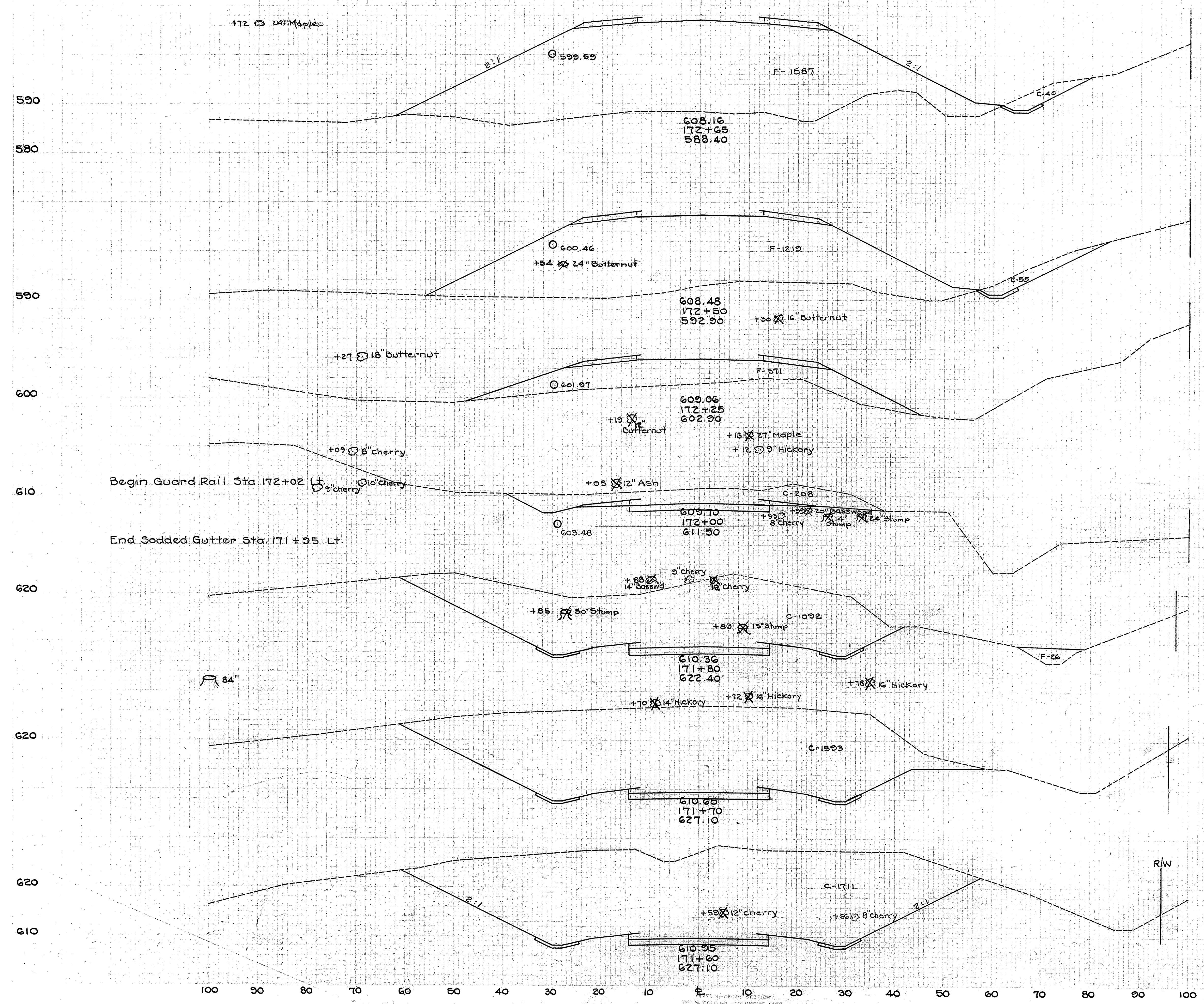
L.F.	S.Y.	SEEDING END AREA		CU. YDS.
		CUT	FILL	
109	1194	0		
279			1001	0
				50
106	967	0		
275			832	0
92	830	0		
220			607	0
106	808	0		
118			302	0
106	823			
230			603	0
101	821	0		
153			442	0
83	771	0		

ASHTABULA COUNTY  
ATB-5.31 (13.73-14.07)



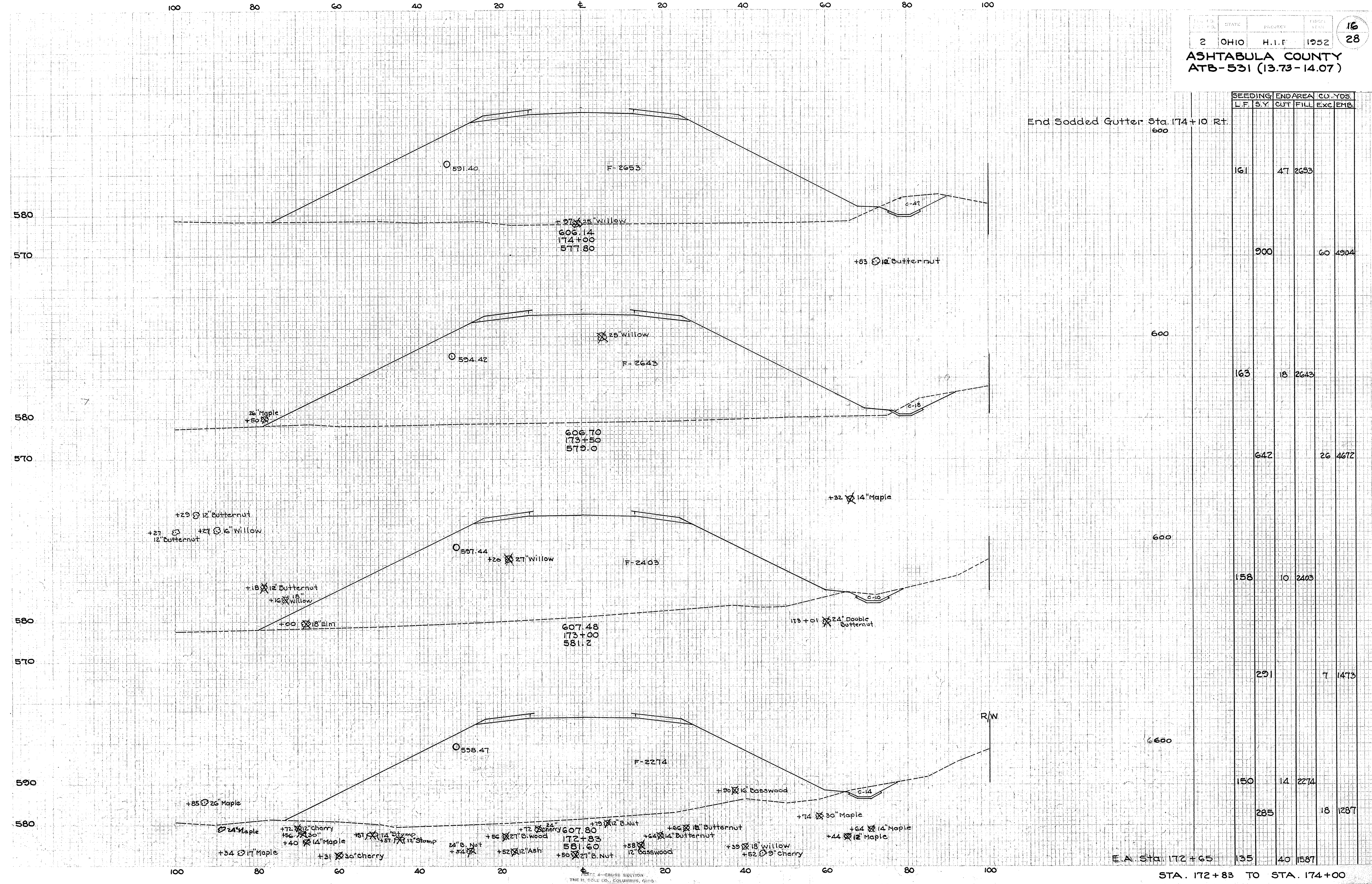
STATION	SEEDING		END AREA		CU. YDS.	
	L.F.	S.Y.	CUT	FILL	EXC.	EMB.
114	1825	0				
320			1702	0		
116	1851	0				
321			1709	0		
115	1840	0				
310			1634	0		
108	1688	0				
286			1490	0		
98	1531	0				
308			1321	0		
124	1321	0				
324			1165	0		
E.A. Sta. 170+00	109	1194	0			

STA. 170 + 25 TO STA. 171 + 25



E.A. Sta.	SEEDING		END AREA		CU. YDS.	
	L.F.	S.Y.	CUT	FILL	EXC.	EMB.
600	135		40	1587		
		227			26	779
600	137		55	1219		
					25	736
600	82				0	124
610	75		208	0		
		218			27	0
620	90		1092	26		
					498	10
620	108		1593	0		
		118			612	0
620	105		1711			
		122			655	0
E.A. Sta. 171+50	114		1825			

STA. 171+60 TO STA. 172+65



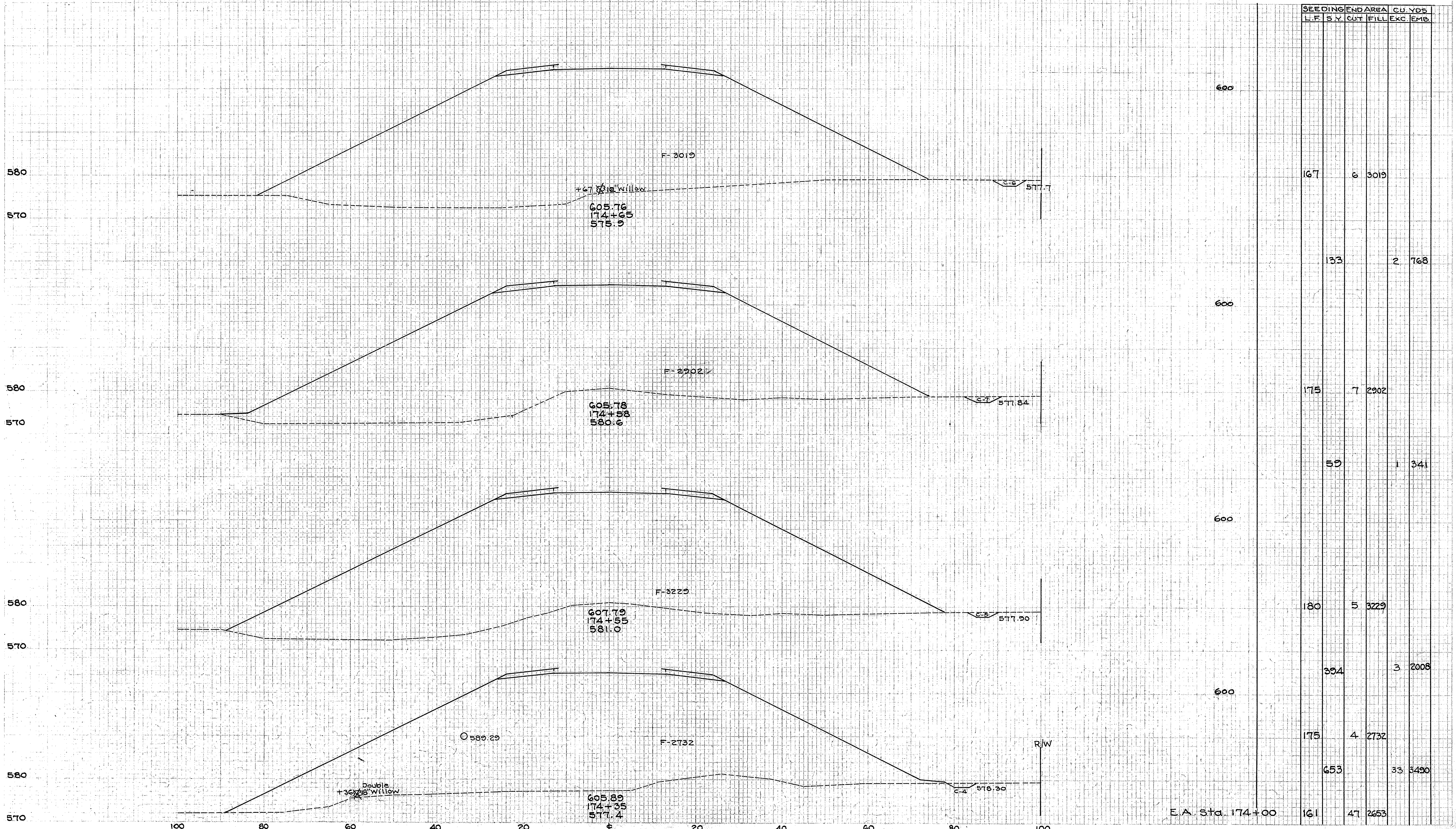
End Sodded Gutter Sta. 174+10 Rt. 600

SEEDING L.F.	S.Y.	END AREA		CU. YDS. EXC.	YDS. EMB.
		CUT	FILL		
161		47	2653		
900				60	4904
163		18	2643		
642				26	4672
158		10	2403		
291				7	1473
150		14	2274		
285				18	1287
135		40	1587		

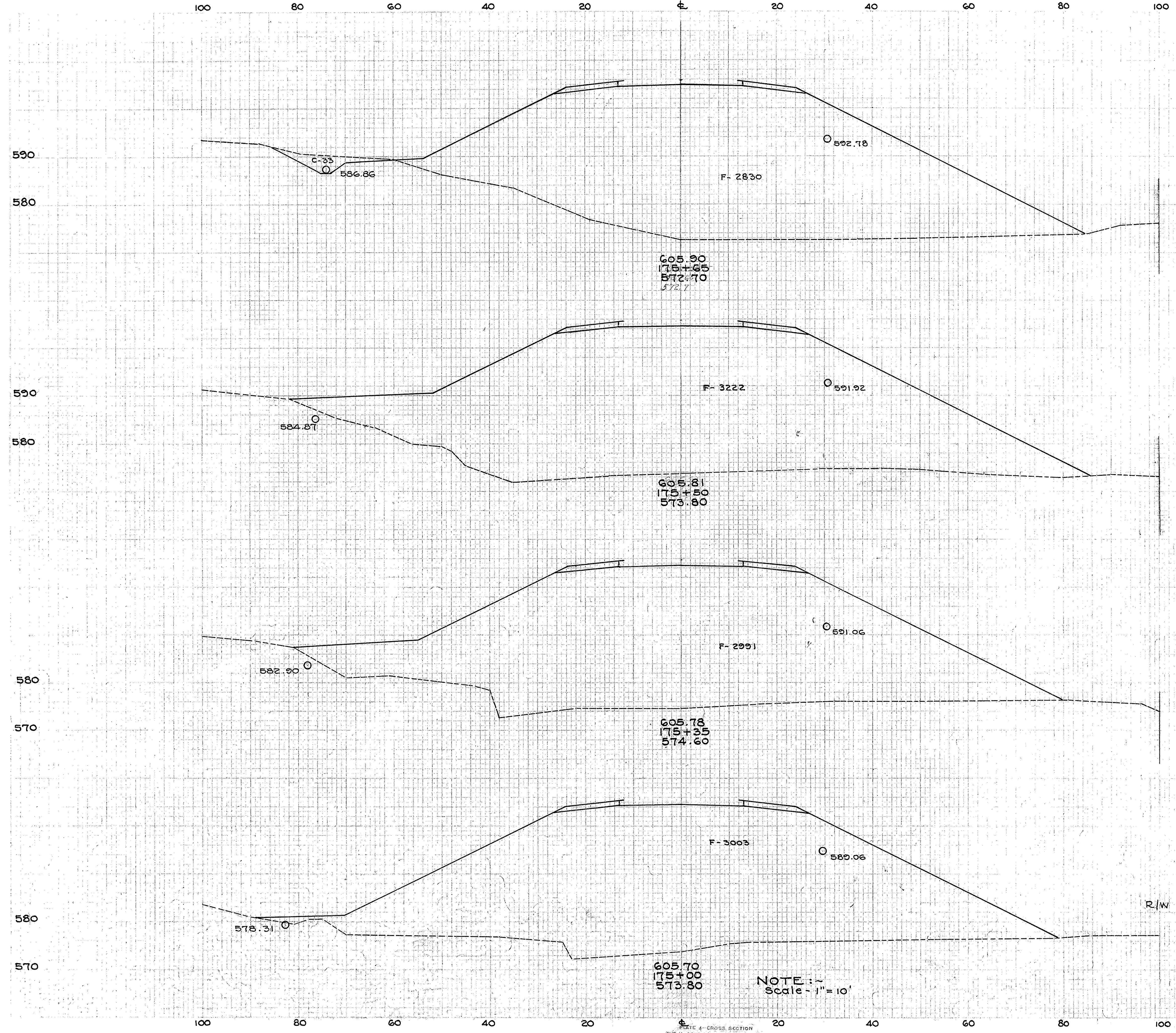
E.I.A. Sta. 172+65  
STA. 172+83 TO STA. 174+00



100 80 60 40 20 0 20 40 60 80 100



SEEDING L.F.	END S.Y.	AREA CUT	AREA		CU. YDS. EMB.
			FILL	EXC.	
167	6	3019			
133			2	768	
175	7	2902			
59			1	341	
180	5	3229			
394			3	2008	
175	4	2732			
653			33	3490	
161	47	2653			



SEEDING	END AREA	Cu. Yds.	L.F. S.Y.	
			CUT	FILL
172	33	2830	0	2830
294	0	1681		
174	0	3222		
284	0	1728		
167	0	2991		
671		3885		
178	0	3003		
671	0	3903		
174+80	6	3		
E.A. Sta: 174+65	167	6	3019	

STA. 175+00 TO STA. 175+65

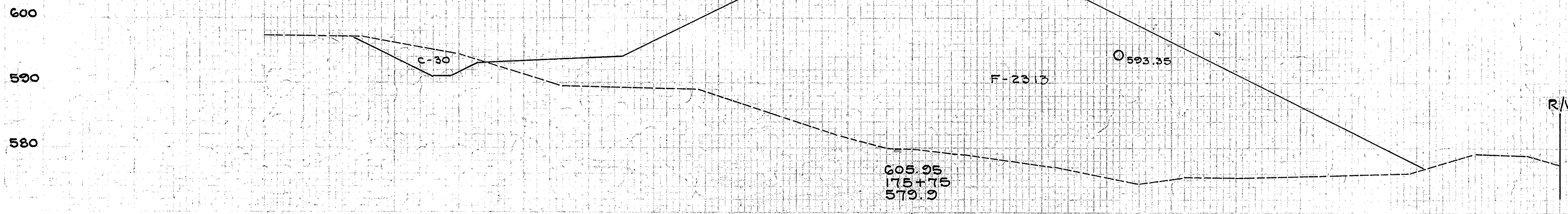
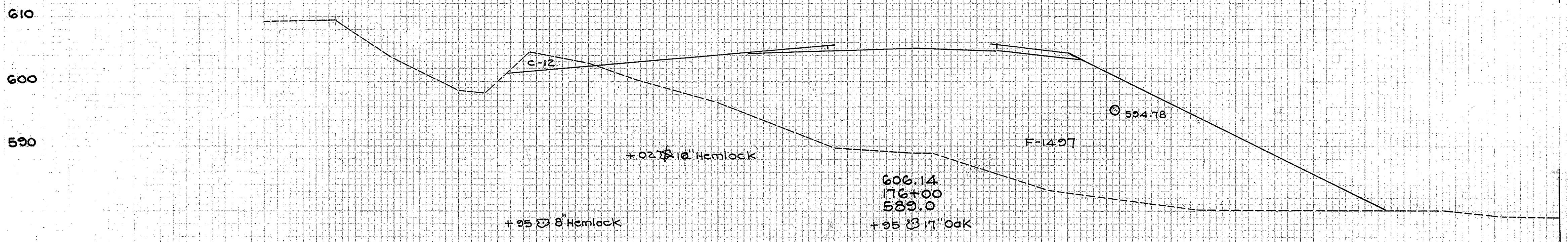
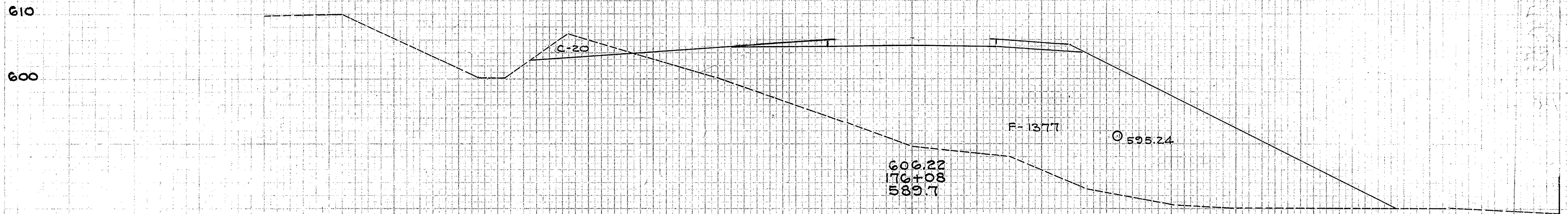
100 80 60 40 20 0 20 40 60 80 100

Archive Sheet For Plans Scanned in

County: 2 OHIO H.I.F. 1952

Route: ASHTABULA COUNTY  
ATB-531 (13.73-14.07)

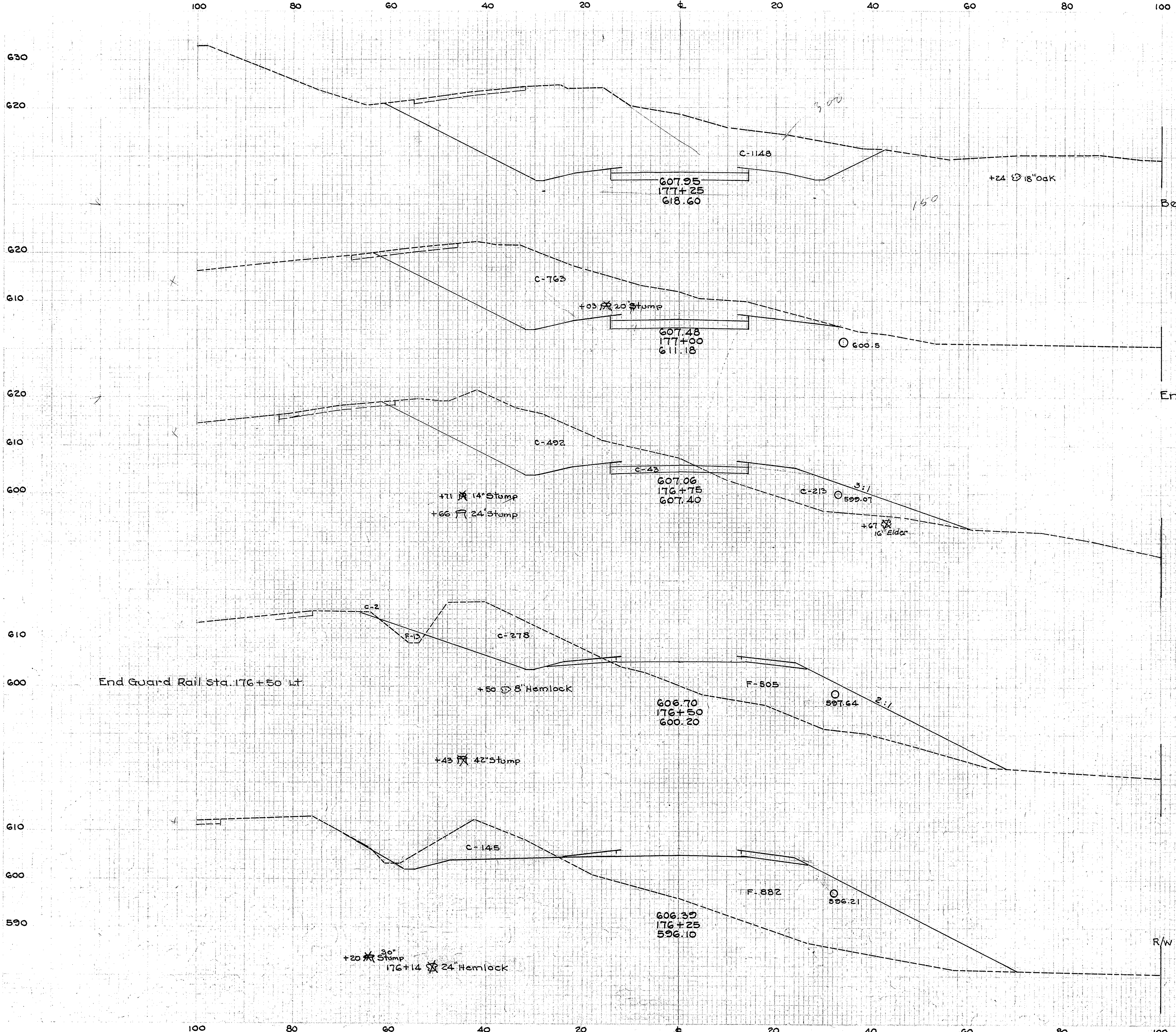
Station	Grade	Notes	Seeding	End Area	Cu. Yds.
L.F.	S.Y.	CUT	FILL	Exc.	Emb.
136	20	1377			
122	5	426			
138	12	1497			
157	4	599			
145	10	1737			
266		1125			
174	30	2313			
196	12	952			
E.A. Sta. 175+65	179	33	2830		



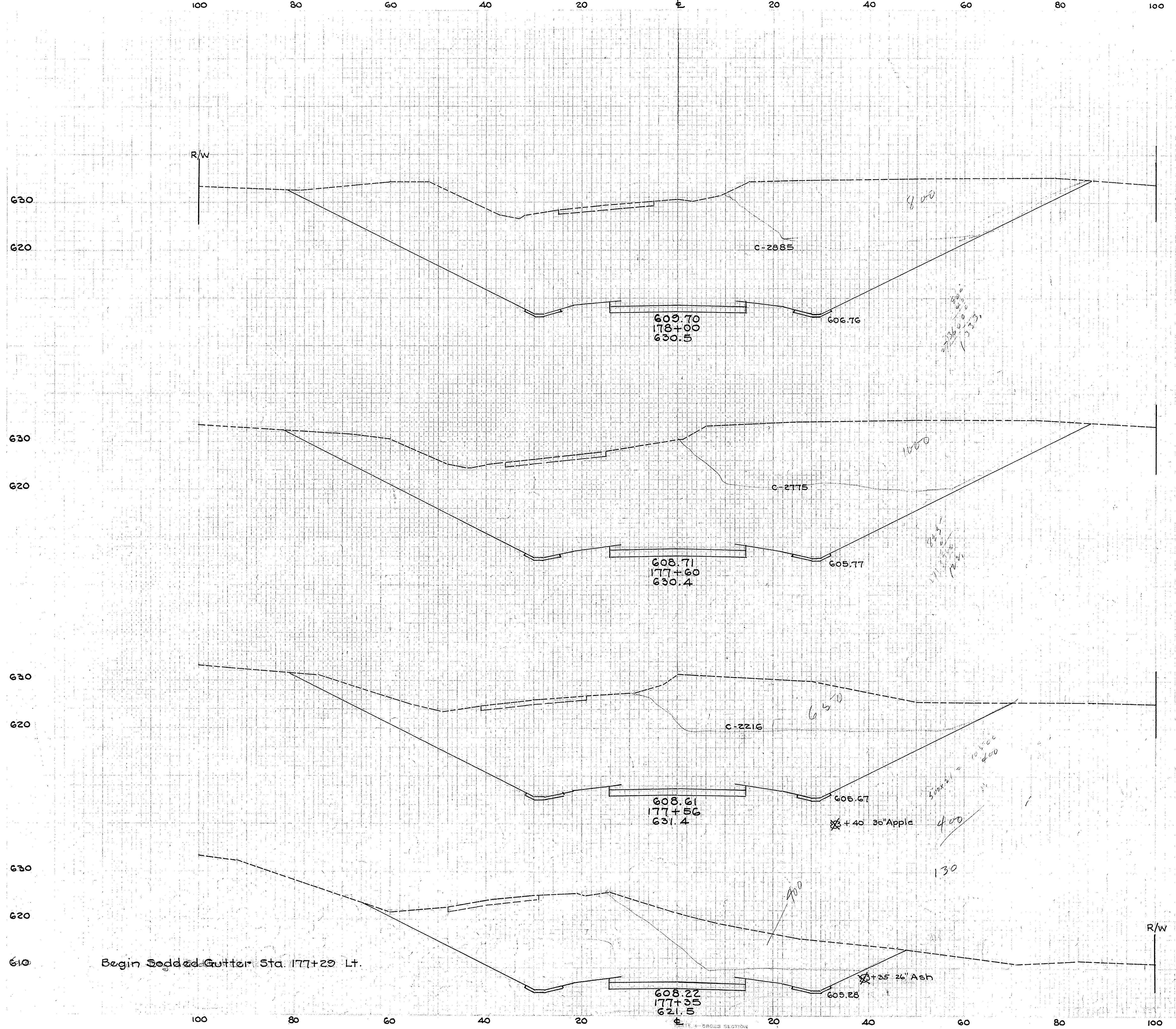
R/W

E.A. Sta. 175+65 179 33 2830

STA. 175+75 TO STA. 176+08



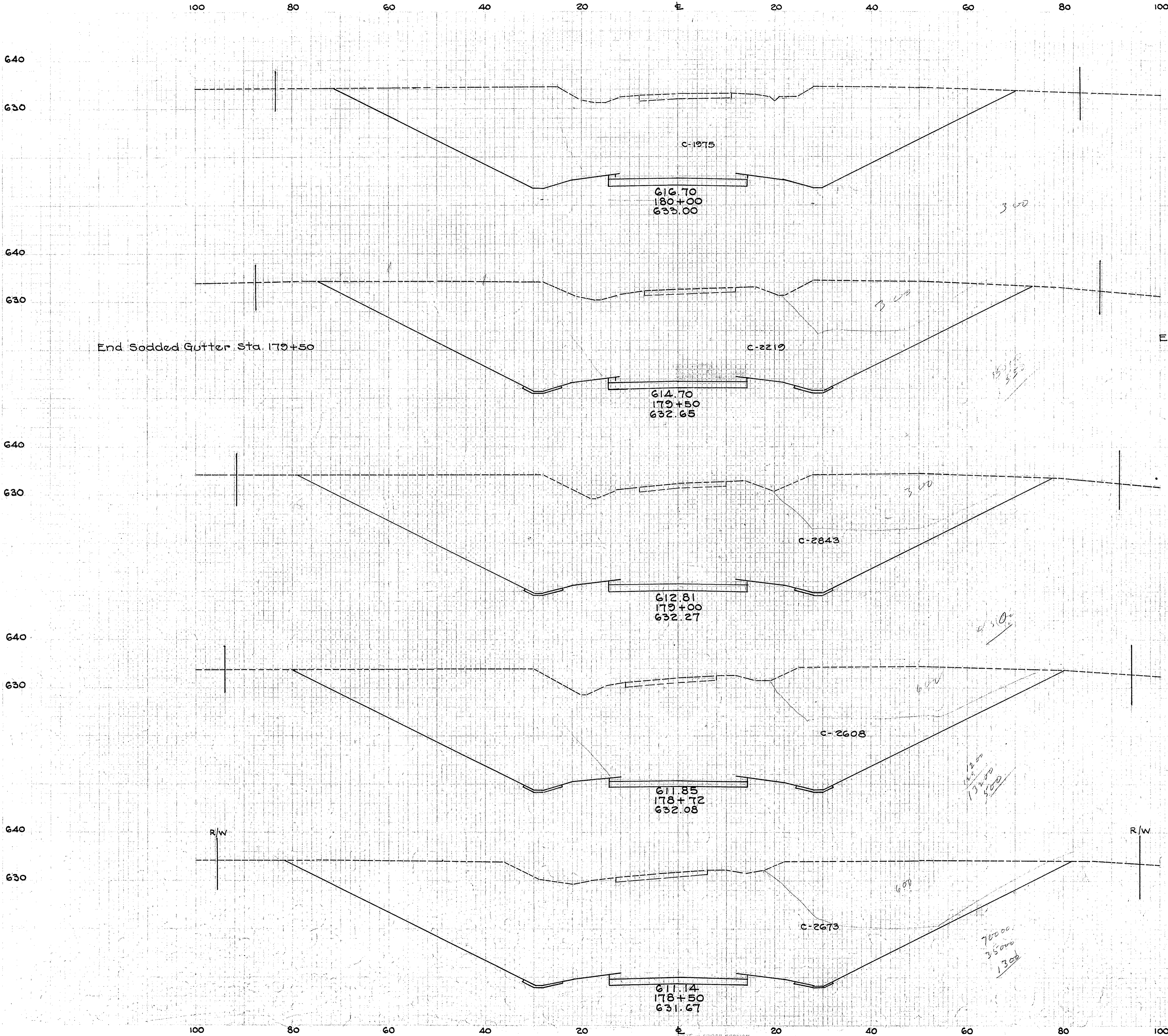
SEEDING L.F.	END AREA S.Y.	AREA		Cu. YDS.	
		CUT	FILL	Exc.	Emb.
105	1148	0			
277				885	0
94	763	0			
687				179	331
299				581	0
				0	
					75
121	492	213			
	456	220			
369				341	336
135	260	505			
379				196	642
138	145	882			
259				52	711
136	20	1377			



SEEDING	END AREA	CUT	FILL	CY	YOS
L. F. S.Y.	CUT	FILL	Exc.	EMB.	
162	2885	0			
720		4192	0		
162	2175	0			
68		370	0		
144	2216	0			
285		1367	0		
100		1300	0		
114		453	0		
105	1148	0			

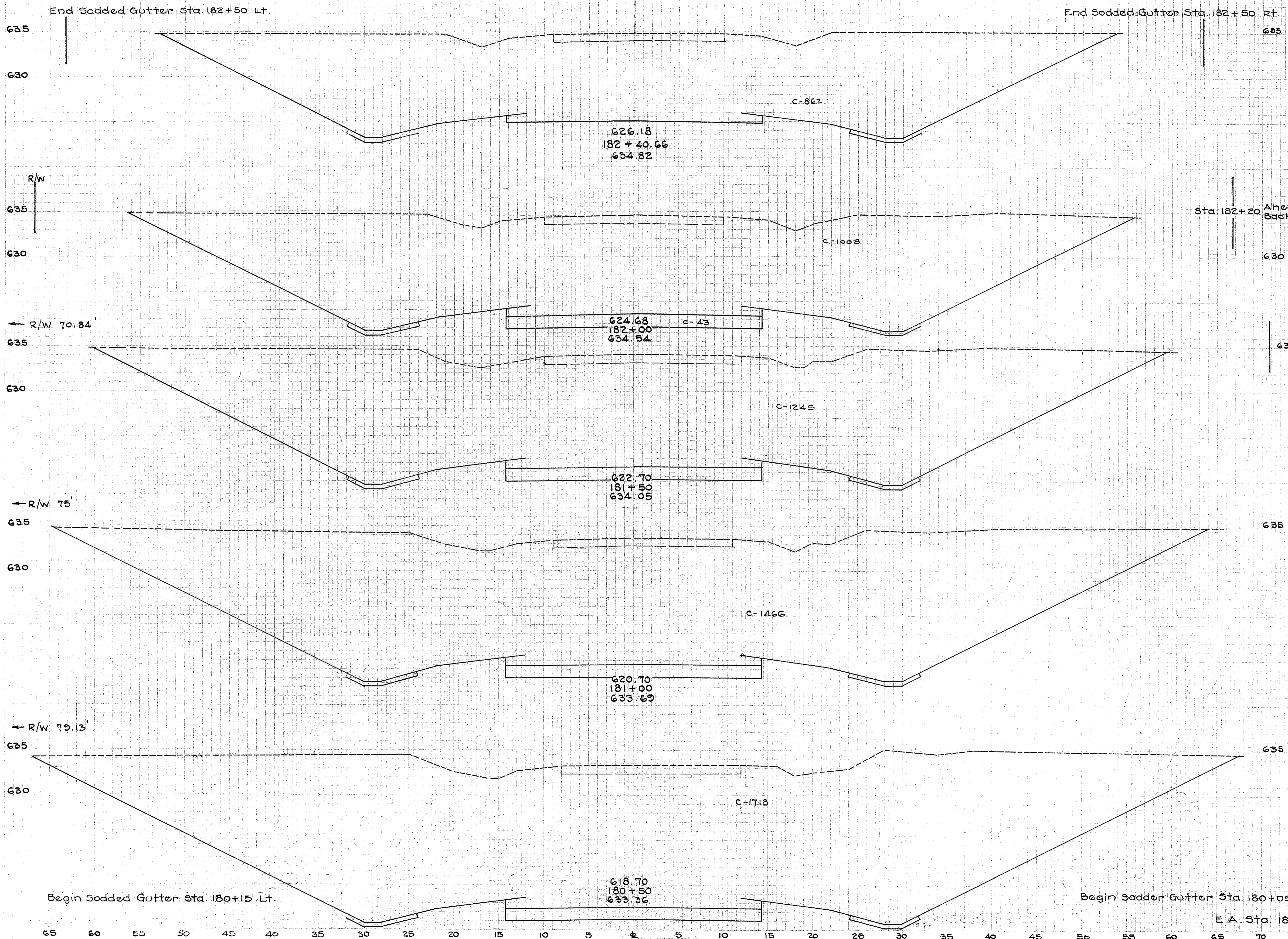
Excavation 43,774 C.Y.  
 Embankment 36,976 C.Y.  
 Seeding 17,587 S.Y.

ASHTABULA COUNTY  
ATB-531 (13.73-14.07)



SEEDING	END AREA	CU. YDS.
L.F. S.Y.	CUT	FILL EXC. EMB.
147	1975	0
794		3883 0
139	2219	0
775		4687 0
140	2843	0
440		2826 0
143	2608	0
354		2151 0
147	2673	0
858		5146 0
162	2885	0

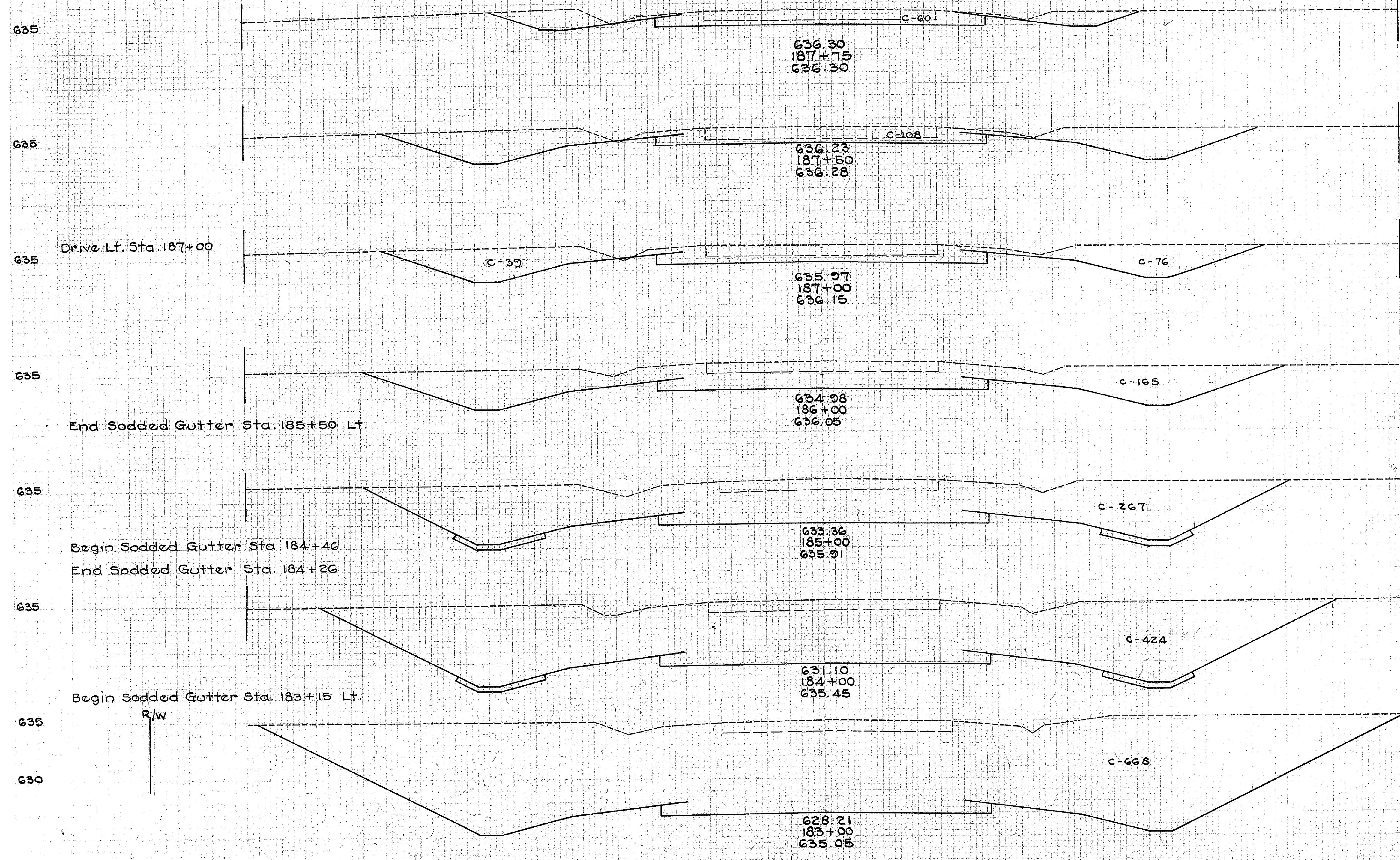
STA. 178+50 TO STA. 180+00



L.F.	SEEDING END AREA		CU. YDS	
	L.F.	S.Y.	CUT	FILL
83	862	0		
	370		715	0
	1008			
	1051		779	0
81	1051	0		
	478		2126	0
	1245			
91	1245	0		
	531		2510	0
	1466			
100	1466	0		
	578		2948	0
	1718			
107	1718	0		
	706		3420	0
	1975			
147	1975	0		

END WORK STA. 188+20  
 END PROJECT STA. 187+75

Approach Sta. 187+75 To Sta. 188+20



STATION	SEEDING		END AREA		CU. YDS.	
	L.F.	S.Y.	CUT	FILL	EXC.	EMB.
188+20						10 0
187+75	36		60	0		
187+50	152		78	0		
187+00	73		108	0		
186+00	408		207	0		
185+50	74		115	0	4	
185+00	833		518	0		
184+44	76		165	0		
184+24	772		800	0		
184+15	63		267	0		
184+00	706		1280	0		
184+34				20		
183+05	64		424	0		
183+00	889		2023	0		
182+40	36		668	0		
182+00	590		1681	0		
181+00	83		862	0		

EXCAVATION 2917 C.Y.  
 EMBANKMENT 2871 C.Y.  
 SEEDING 2871 S.Y.

R/W

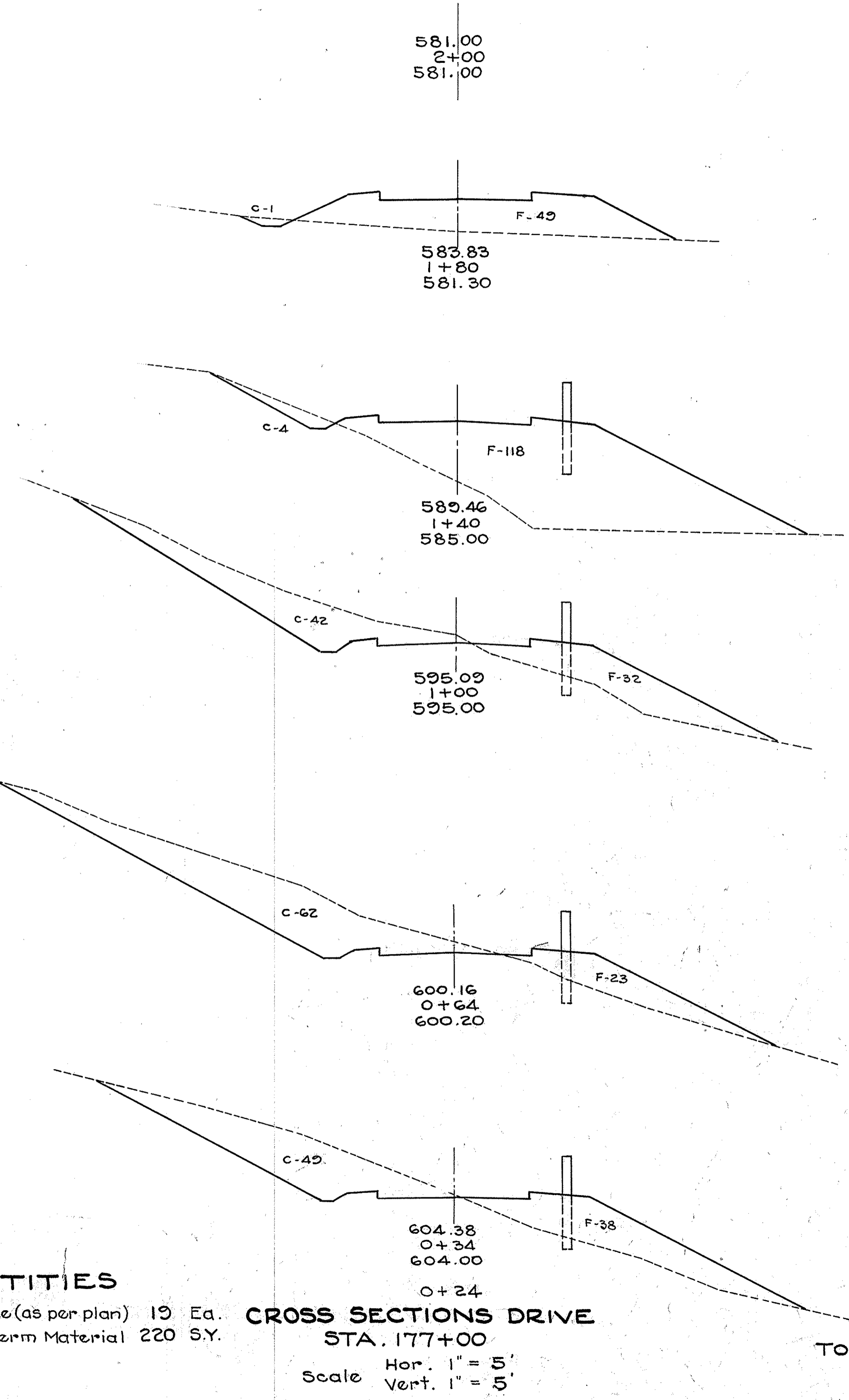
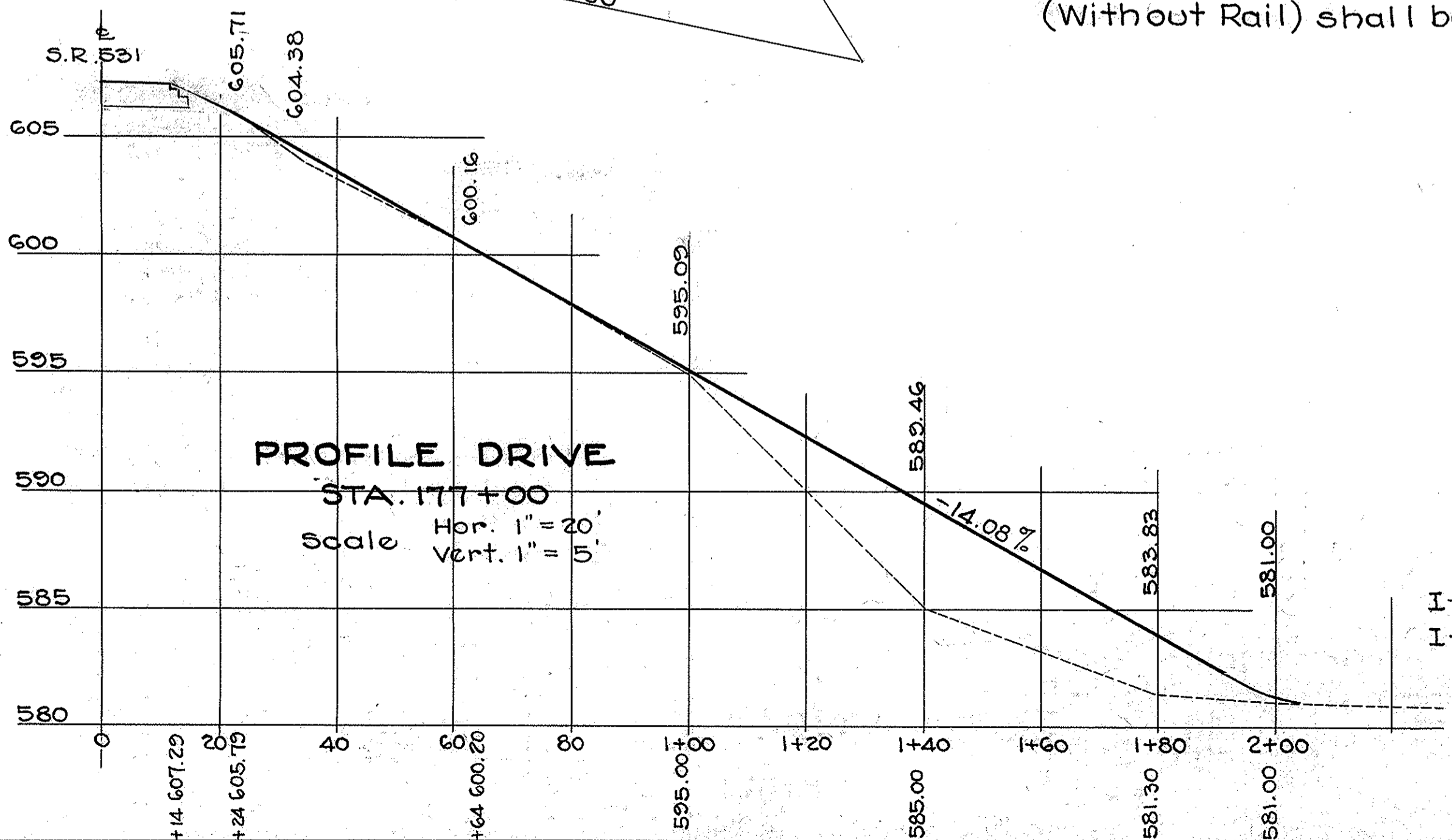
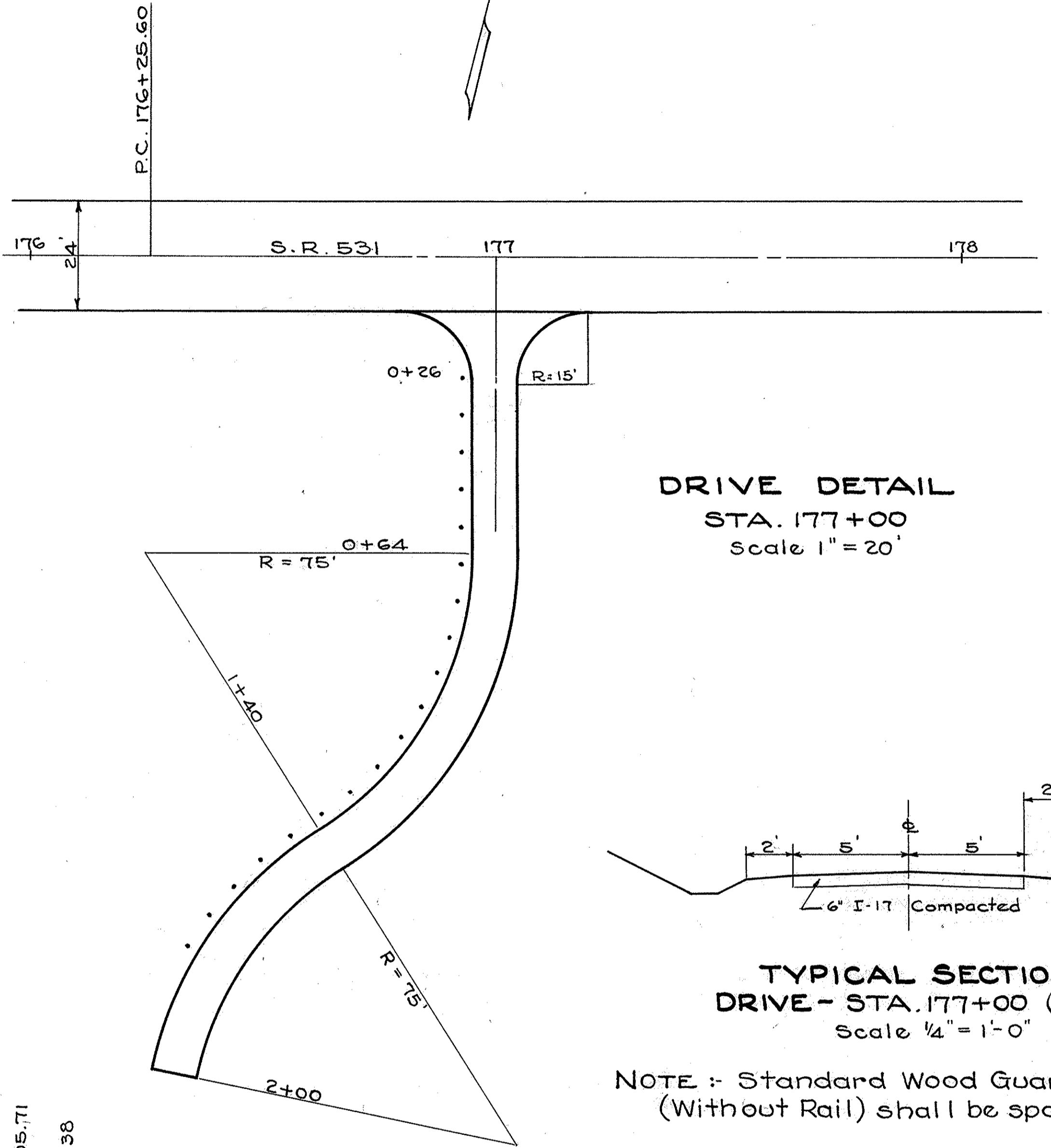
E.A. Sta. 182+40.66 83 862 0

STA. 183+00 TO STA. 187+75



# DRIVE DETAIL

## STA. 177+00



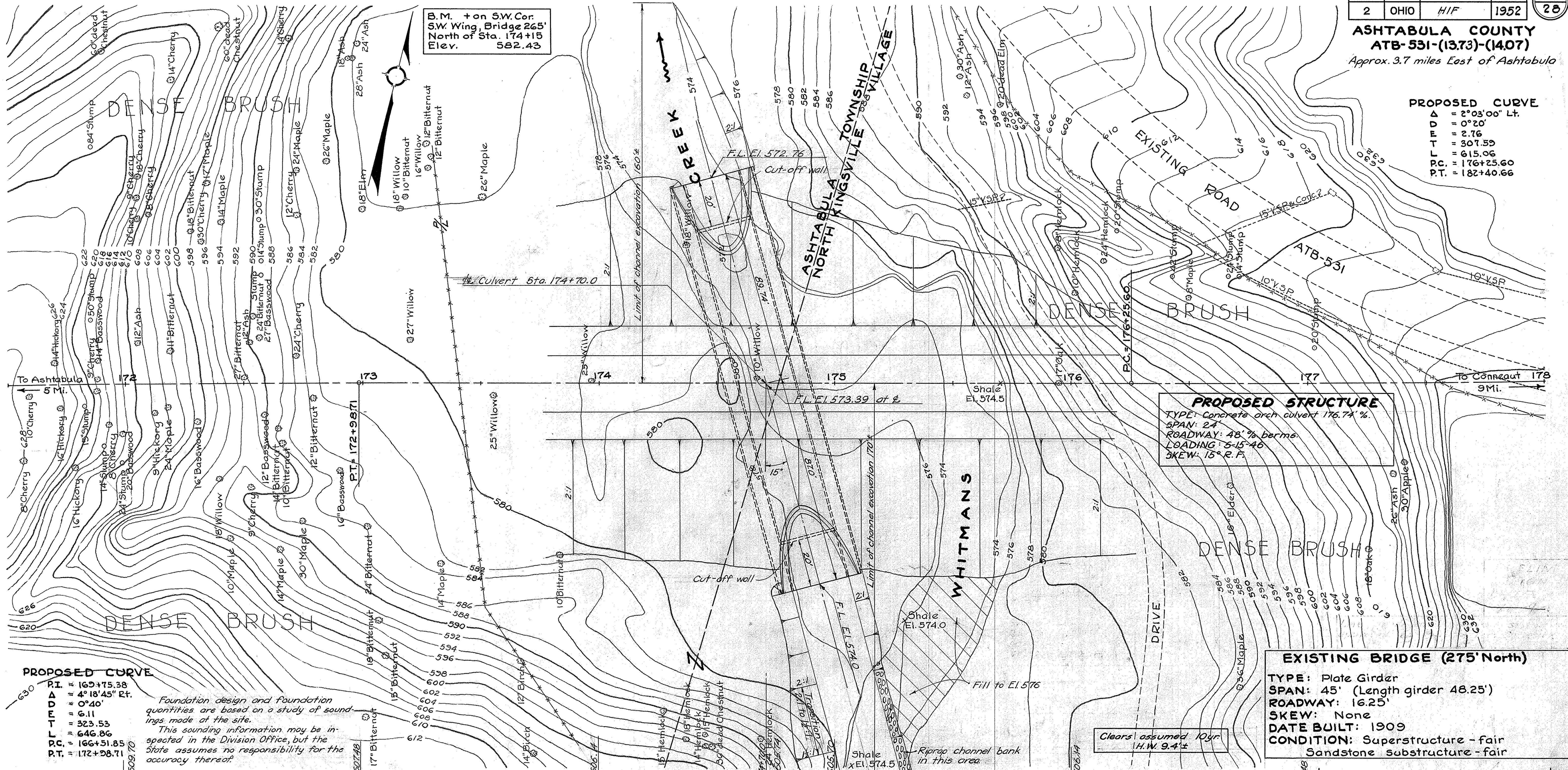
**ESTIMATED QUANTITIES**  
I-15 Guard Rail Posts Only, Complete in place (as per plan) 19 Ea.  
I-17 Side Approaches, Mail Box Turnouts & Berm Material 220 S.Y.

END AREA	CU. YDS.		SEEDING		
	CUT	FILL	EXC. EMB.	L.F. S.Y.	
			1	18	20
1	49			23	
		4	124		131
4	118			36	
		34	111		180
42	32			45	
		69	37		188
62	23			49	
		62	34		157
49	38			45	
0	0	9	7		5
<b>TOTAL</b>			<b>179</b>	<b>331</b>	<b>687</b>

NOTE:  
Quantities carried to  
Cross Sections

**ASHTABULA COUNTY**  
**ATB-531-(13.73)-(14.07)**  
 Approx. 3.7 miles East of Ashtabula

**PROPOSED CURVE**  
 $\Delta = 2^{\circ}03'00''$  Lt.  
 $D = 0^{\circ}20'$   
 $E = 2.76$   
 $L = 307.55$   
 $P.C. = 615.06$   
 $P.T. = 182+40.66$

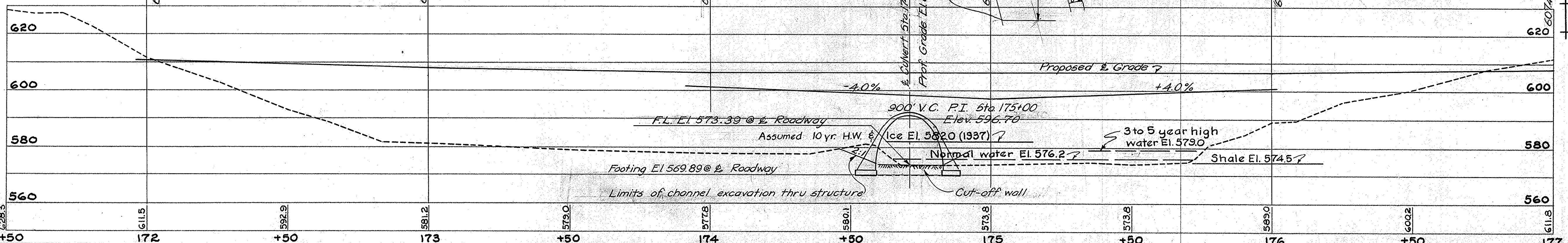


**PROPOSED STRUCTURE**  
 TYPE: Concrete arch culvert 176.74%  
 SPAN: 24'  
 ROADWAY: 48' % berms  
 LOADING: 5-15-40  
 SKEW: 15° R.F.

**EXISTING BRIDGE (275' North)**  
 TYPE: Plate Girder  
 SPAN: 45' (Length girder 48.25')  
 ROADWAY: 16.25'  
 SKEW: None  
 DATE BUILT: 1909  
 CONDITION: Superstructure - fair  
 Sandstone substructure - fair

**PROPOSED CURVE**  
 P.I. = 169+75.38  
 $\Delta = 4^{\circ}18'45''$  Rt.  
 $D = 0^{\circ}40'$   
 $E = 6.11$   
 $L = 323.53$   
 $P.C. = 646.86$   
 $P.T. = 166+51.85$   
 $P.T. = 172+28.71$

Foundation design and foundation quantities are based on a study of soundings made at the site. This sounding information may be inspected in the Division Office, but the State assumes no responsibility for the accuracy thereof.



**DRAINAGE AREA 751 SQ. MI.**

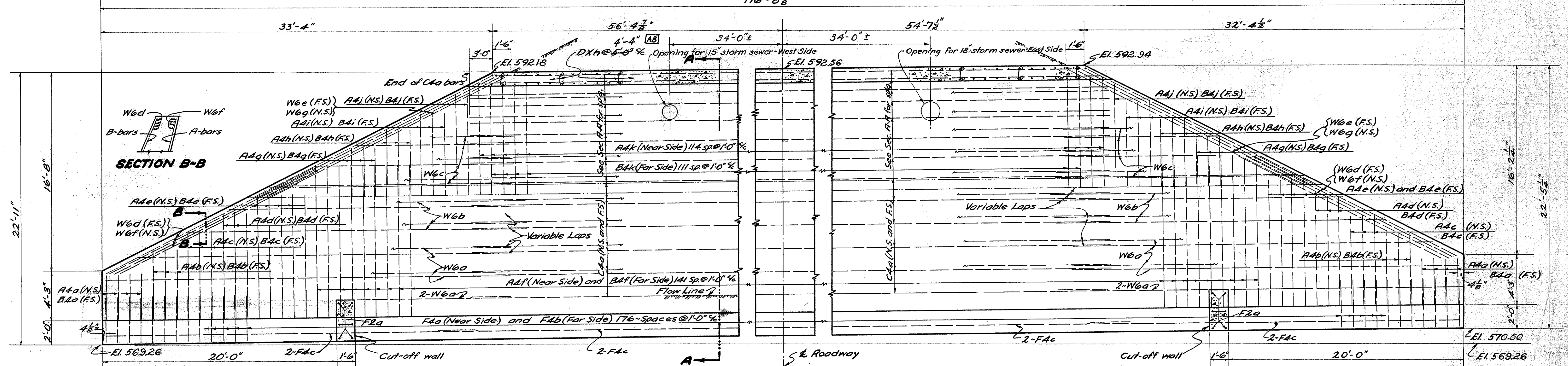
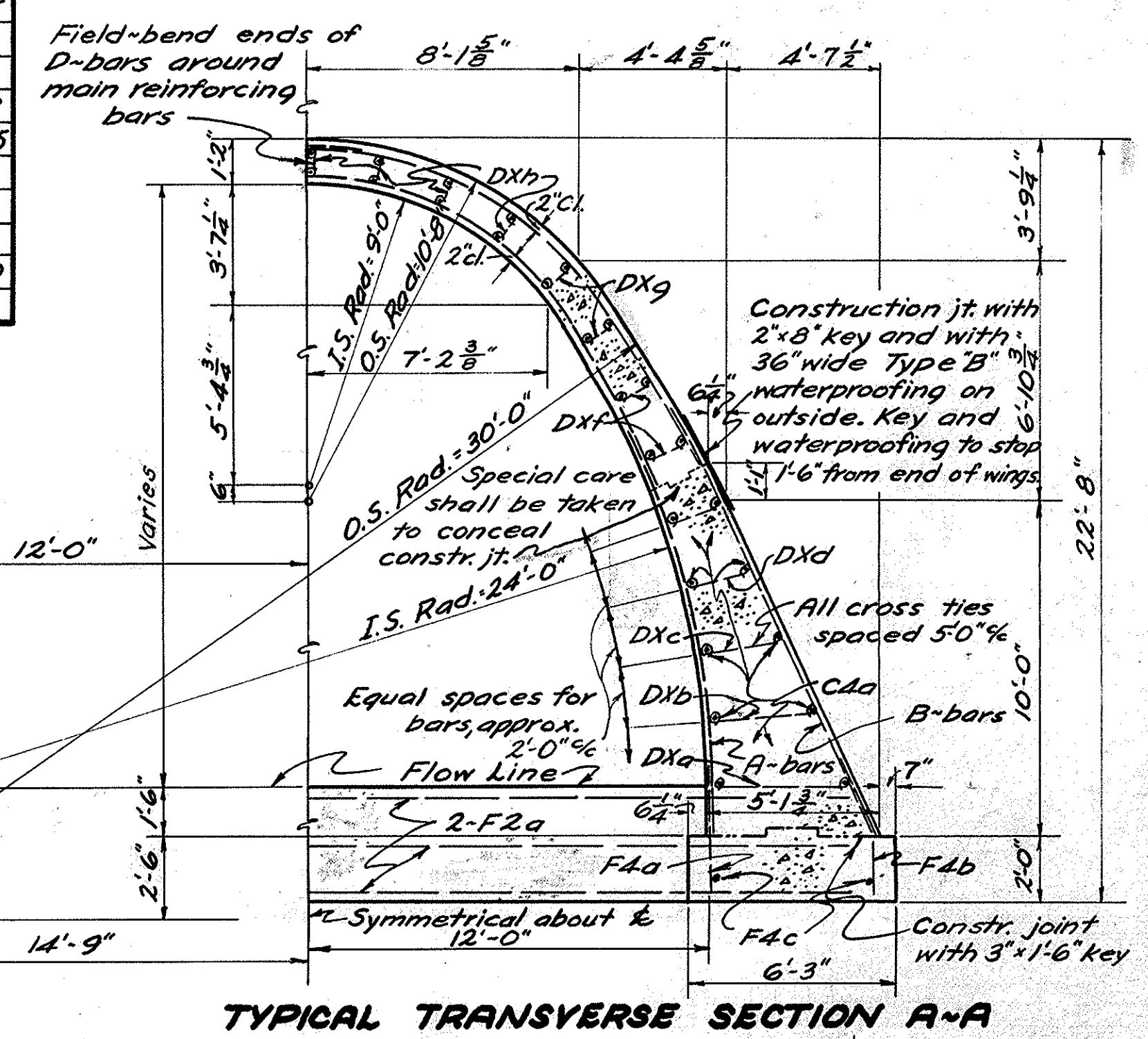
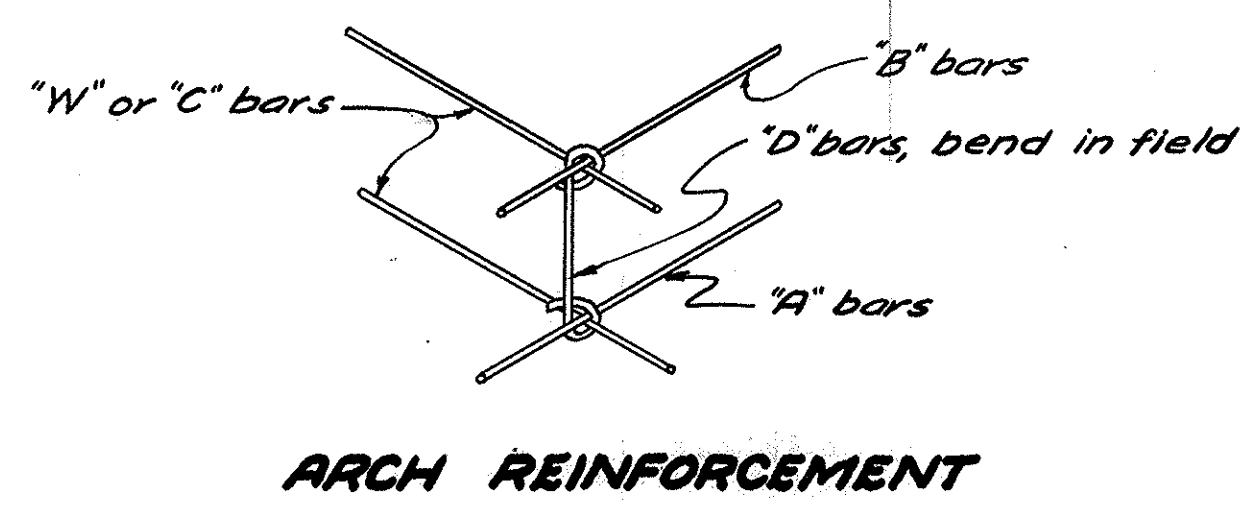
STATE OF OHIO  
 DEPARTMENT OF HIGHWAYS  
 BUREAU OF BRIDGES

**SITE PLAN**  
**BRIDGE NO AS-531-139**  
**OVER WHITMANS CREEK**  
**ASHTABULA CO. ATB-531-(13.73-**  
**STA. 174+70.0 14.07)**  
 Scale 1"=20'

PRESENT TOPOGRAPHY	DESIGNED	DRAWN	CHECKED	REVIEWED
SURVEYED	BY	DATE	DATE	DATE
REC. & DDH.	PEJ	PEJ	PEJ	PEJ

REINFORCING STEEL LIST															
MARK	SIZE	NO.	LENGTH	WEIGHT	SHAPE	BENDING DIAGRAM				MARK	SIZE	NO.	LENGTH	WEIGHT	SHAPE
AAd	3/8"	16	3'-9"	63	S	[Bending Diagram: AAd]				C4d	3/8"	200	30'-9"	6414	S
ADb	3/8"	12	5'-9"	72	B	[Bending Diagram: ADb]				DXa	1/2"	182	5'-3"	72.68	S
ADc	3/8"	12	7'-6"	94	B	[Bending Diagram: ADc]				DXb	1/2"	182	4'-3"	58.51	S
ADd	3/8"	12	8'-9"	110	B	[Bending Diagram: ADd]				DXc	1/2"	182	3'-6"	47.21	S
ADe	3/8"	18	10'-6"	197	B	[Bending Diagram: ADe]				DXd	1/2"	182	3'-0"	37.33	S
ADf	3/8"	284	12'-9"	3777	B	[Bending Diagram: ADf]				DXe	1/2"	182	2'-9"	32.29	S
ADg	3/8"	12	3'-9"	47	B	[Bending Diagram: ADg]				DXf	1/2"	182	2'-6"	53.27	S
ADh	3/8"	12	5'-6"	69	B	[Bending Diagram: ADh]				DXg	1/2"	182	2'-3"	44.39	S
ADi	3/8"	12	7'-3"	91	B	[Bending Diagram: ADi]				DXh	1/2"	182	2'-0"	61.54	S
ADj	3/8"	6	10'-0"	63	B	[Bending Diagram: ADj]				F2d	1/2"	12	30'-0"	240	S
ADk	3/8"	230	16'-3"	3898	B	[Bending Diagram: ADk]				F4d	3/8"	354	4'-0"	1477	S
B4d	3/8"	16	4'-6"	75	S	[Bending Diagram: B4d]				F4b	3/8"	354	4'-0"	1477	B
B4e	3/8"	12	6'-6"	81	S	[Bending Diagram: B4e]				F4c	3/8"	24	31'-3"	782	S
B4f	3/8"	12	8'-3"	103	S	[Bending Diagram: B4f]				RE6	3/8"	1	6'-11"	14	S
B4g	3/8"	12	10'-0"	125	S	[Bending Diagram: B4g]				REA	3/8"	2	6'-1"	13	S
B4h	3/8"	18	11'-6"	216	S	[Bending Diagram: B4h]				REZ	3/8"	1	5'-8"	4	S
B4i	3/8"	284	14'-3"	4221	B	[Bending Diagram: B4i]				REX	3/8"	1	4'-10"	1	S
B4j	3/8"	12	3'-3"	41	B	[Bending Diagram: B4j]									
B4k	3/8"	12	5'-0"	63	B	[Bending Diagram: B4k]									
B4l	3/8"	12	6'-9"	84	B	[Bending Diagram: B4l]									
B4m	3/8"	6	9'-3"	58	B	[Bending Diagram: B4m]									
B4n	3/8"	224	17'-3"	4030	B	[Bending Diagram: B4n]									
W6d	3/8"	24	31'-0"	1521	S	[Bending Diagram: W6d]									
W6e	3/8"	16	24'-0"	785	S	[Bending Diagram: W6e]									
W6f	3/8"	24	13'-0"	638	S	[Bending Diagram: W6f]									
W6g	3/8"	16	18'-6"	605	B	A	B	R5	R6	R7					
W6h	3/8"	16	26'-9"	875	B	13'-3"	6'-2"	106'-0"	22'-0"	7'-7"					
W6i	3/8"	16	17'-0"	556	B										
W6j	3/8"	16	25'-3"	826	B	12'-0"	7'-2"	96'-0"	22'-0"	5'-0"					

ESTIMATED QUANTITIES				
ITEM	UNIT	DESCRIPTION	TOTAL	As Built
E-2	Lump	Cofferdams, Cribbs and Sheeting		
E-2	Cu. yd.	Excavation for structures, unclassified	43	160
E-2	Cu. yd.	Excavation for structures, shale	340	242.45
E-3	Cu. yd.	Channel Excavation	310	823
S-1	Cu. yd.	Concrete, Class "E", footings and cut-off walls	176	177.58
S-1	Cu. yd.	Concrete, Class "C", barrel and wings	636	634.45
S-3	Sq. yd.	Waterproofing, Type "B"	98	
S-4	Lb.	Reinforcing Steel	34162	34,160



**GENERAL NOTES**

EXISTING STRUCTURE shall remain in place.

REINFORCING STEEL: The bar size designations shown do not correspond with the size designations given in the January 1, 1951 edition of the Construction and Material Specifications.

CONSTRUCTION JOINTS, as indicated hereon, shall be carefully made and free from laitance, dirt, sand, etc. Vertical joints in barrel are permissible, but shall be provided with keys and Type "B" waterproofing, 36" wide; "C" bars shall be continuous through such vertical joints.

EXCAVATION. Structural excavation includes only that material removed below the flow line and the 2:1 slopes of the channel excavation.

EMBANKMENT shall be placed simultaneously on both sides of barrel.

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES

**DETAILS**

BRIDGE No. AS-531-139  
OVER WHITMAN'S CREEK

Ashtabula Co.  
SEC. ATB-531-(13.73-14.07) Sta. 174+70

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WAK	WAK	K.B.L.	S.C.P.	D.F.G.	12-26-51	
M.P.B.	M.P.B.		M.F.W.			

Revised As-Built 6-4-54 J.K.R.

# CHANNEL CROSS SECTIONS

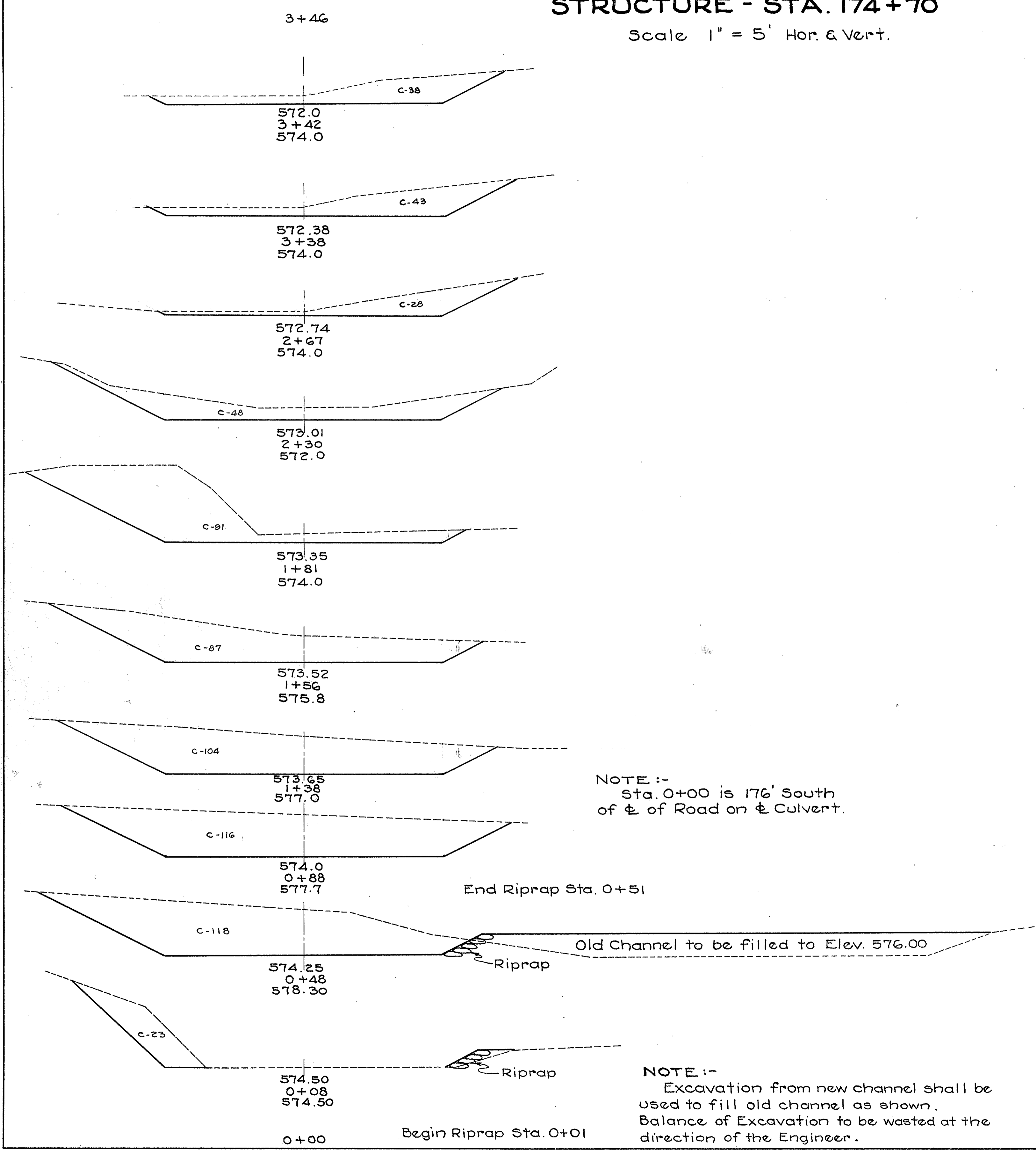
STRUCTURE - STA. 174+70

Scale 1" = 5' Hor. & Vert.

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	H. I. F.	1952

ASHTABULA COUNTY  
ATB-531 (13.73-14.07)

28  
28



NOTE :-  
Sta. 0+00 is 176' South  
of  $\phi$  of Road on  $\phi$  Culvert.

NOTE :-  
Excavation from new channel shall be  
used to fill old channel as shown.  
Balance of Excavation to be wasted at the  
direction of the Engineer.

E.A.	C.Y.
CUT	EXC.
0	3
38	6
43	93
28	28
52	48
48	126
91	82
82	87
64	64
104	104
204	204
116	116
173	173
118	118
104	104
23	23
3	3
910	910

**ESTIMATED QUANTITIES**  
 E-3 Channel Excavation 910 C.Y.  
 I-10 12" Grout Filled Type "A" Riprap 20 S.Y.