FED RD DIST NO	YEAR	FAGCP NO / FAGH 415-F(1) / FAGH 415-B(2)	F.A.P. NO	FISCAL YEAR
10	OHIO	415-G(1)		1939

1/55

HARRISON COUNTY
S.H. 370 SEC. S(PT)&P(PT)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

F.A.G.C.P. No F.A.G.H. 415-F(1)
F.A.G.C.P. No F.A.G.H. 415-B(2)
F.A.P. 415-G(1)

DENNISON CADIZ ROAD

S.H. 370 SEC, S.(PT). & P.(PT).

HARRISON COUNTY

MONROE TOWNSHIP

GRADE CROSSING ELIMINATION WITH PENNA. R.R.

• CONVENTIONAL SIGNS •

TOWNSHIP LINE
CITY OR VILLAGE LINE
PROPERTY LINE
FENCE LINE
CENTER LINE
POLE LINE
RAILROADS

INDEX OF SHEETS

• SCALES •

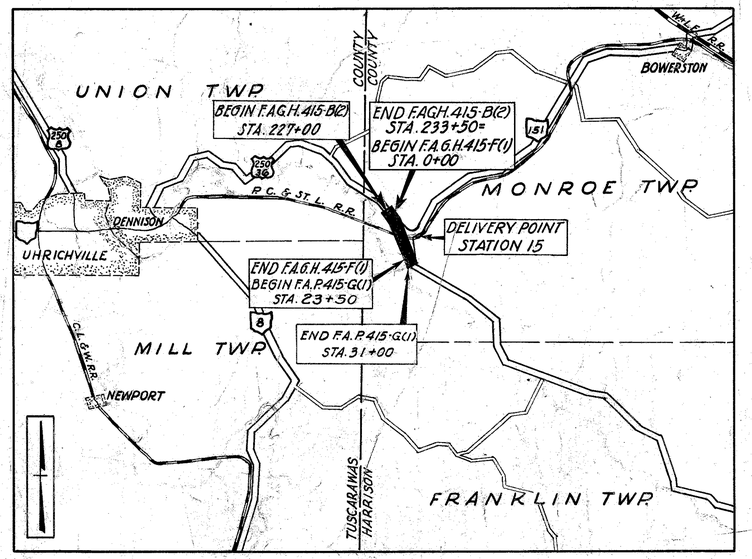
PLAN	1" = 50'
PROFILE-HORIZONTAL	1" = 50'
PROFILE-VERTICAL	1" = 5'
CROSS-SECTIONS	1" = 10'
STRUCTURES	Various

• STANDARD DRAWINGS •

E-5 No 1	8-25-39	I-14 G		3-1-39	BT-50,70,71 E No 1	Oct. 33
E-5 No 2	8-25-39	I-8 CB 1-2, 2-2		11-1-39	BT-70,71 E No 1	Oct. 33
L-1	2-16-38	I-8 CB 13-A		11-1-39	BT-71 E No 1	Oct. 33
I-1-2-3-4-5	3-1-39	SB-35		6-21-39	T-70,71 E No 1	Oct. 33
S-27 PC-2	3-1-39	AS-35		3-8-39	BT-71 R	7-11-38
S-27 PC 3	3-1-39	MBD-36		3-8-39	I-15 No 1	10-1-39
I-12	2-15-36	G-7.07		Oct. 33	I-15 No 2	10-1-39
					L-2	2-16-38

SUPPLEMENTAL SPECIFICATIONS

M-110.11	Rev.	9-16-36
S-103		3-22-39
S-107		3-22-39
T-110	Rev.	8-3-36
132		1-4-40



• LOCATION PLAN •

SCALE IN MILES
0 1/2 1 2 3 4

PORTION TO BE IMPROVED
STATE ROUTES
COUNTY

CONSTRUCTION BUREAU
NOV 21 1956
GROUND PHOTOLAB

• DELIVERY POINT •

STATION 15
NEW PHILADELPHIA

• AVERAGE HAUL •

1/4 MILES
15 MILES

LINE DATA.

Begin F.A.G.C.P. No F.A.G.H. 415-B(2)	Sta. 227+00
End F.A.G.C.P. No F.A.G.H. 415-B(2)	Sta. 233+50
Net Length F.A.G.C.P. No F.A.G.H. 415-B(2)	650 Lin. Ft. or .123 Mi.
Begin F.A.G.C.P. No F.A.G.H. 415-F(1)	Sta. 0+00
End F.A.G.C.P. No F.A.G.H. 415-F(1)	Sta. 23+50
Net Length F.A.G.C.P. No F.A.G.H. 415-F(1)	2350 Lin. Ft. or .445 Mi.
Begin F.A.P. 415-G(1)	Sta. 23+50
End F.A.P. 415-G(1)	Sta. 31+00
Net Length F.A.P. 415-G(1)	750 Lin. Ft. or .142 Mi.
Net Length of Project	3750 Lin. Ft. or .711 Mi.
Begin Approach	Sta. 31+00
End Approach	Sta. 34+00
Net Length of Approach	300 Lin. Ft. or .056 Mi.

Begin Approach Side Road (S.H. 372)	Sta 0+41.22
End Approach Side Road (S.H 372)	Sta. 10+00
Net Length Approach	958.78 Lin. Ft or .181 Mi
NET LENGTH OF WORK	5008.78 LIN. FT. OR .948 MI.

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 NOT REQUIRE THE CLOSING OF THE HIGHWAY TO TRAFFIC AND THAT TRAFFIC WILL BE MAINTAINED AS PROVIDED IN THESE PLANS AND ESTIMATES.

THE NECESSARY RIGHT OF WAY WILL BE PROVIDED BY THE STATE OF OHIO.

APPROVED Harry F. Brown
DATE 8-2-'39. RESIDENT DISTRICT DEPUTY DIRECTOR

APPROVED E.R. McCullough
DATE 8/3/39 RESIDENT DIVISION DEPUTY DIRECTOR

APPROVED
DATE CHIEF ENGINEER OF MAINTENANCE

APPROVED W.S. Lindman P.E. 2629
DATE 12/1/39 CHIEF ENGINEER OF BRIDGES & R.R. XINGS

APPROVED A.R. Hogue P.E. 25
DATE 12-6-39 CHIEF ENGINEER OF LOCATION & RIGHT OF WAY

APPROVED H. G. Shaw
DATE 12-8-39 FIRST ASS'T DIRECTOR & CHIEF ENGINEER

APPROVED Thos. J. Boughton
DATE 12-6-39 DIRECTOR OF HIGHWAYS

APPROVED C. I. Leiper
DATE Dec. 8, 1939 **PENNSYLVANIA RAILROAD CO.**

RECOMMENDED FOR APPROVAL
DISTRICT ENGINEER
PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY

APPROVED
COMMISSIONER
PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY

FILE NO
300

HARRISON COUNTY
F.A.G.H. PROJECT S.H. 370 SEC. S(PT) & P(PT)
DATE OF LETTING _____ 1939
CONTRACT NO _____

Rev. 2/1/40

FED. RD. DIST. NO.	STATE	F.A.G.C.P. No's.	F.A.P. No	FISCAL YEAR
10	OHIO	F.A.G.H. 415-F(1) F.A.G.C. 415-A(2)	415(G)(1)	1939

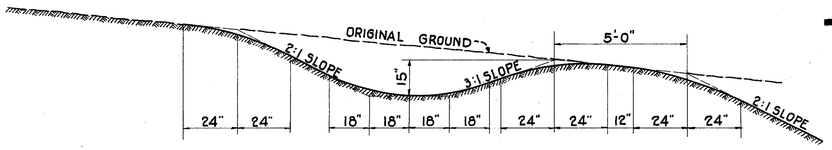
2 / 55

HARRISON COUNTY
S.H. 370 SEC. S(P$_T$) & P(P$_T$)

TYPICAL SECTION

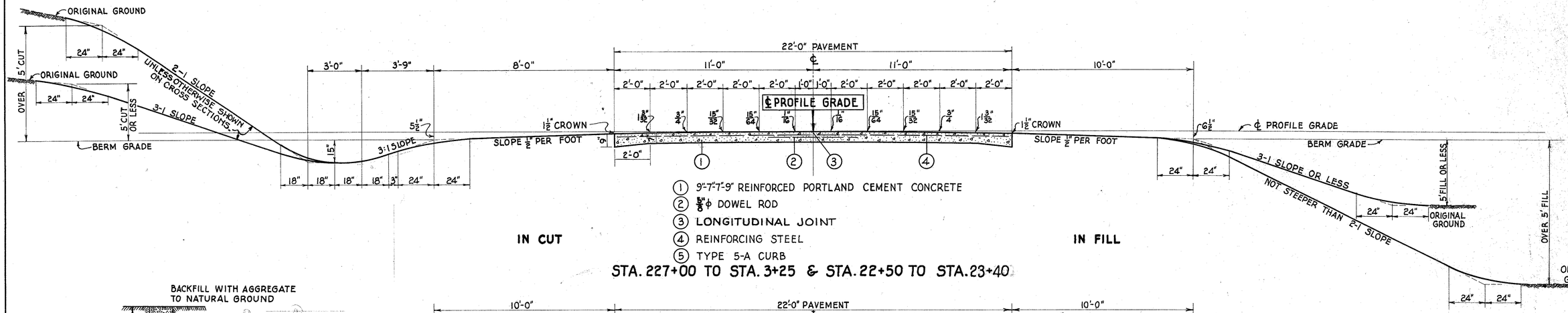
TYPE T-71 & TYPE T-70

SCALE $\frac{3}{8}$" = 1'-0"



DETAIL OF INTERCEPTING DITCH

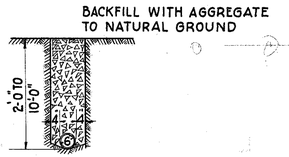
FOR GENERAL NOTES PERTAINING TO THIS PROJECT SEE SHEET Nº 3



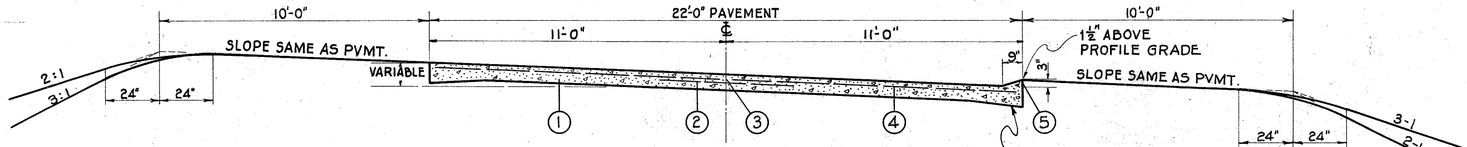
IN CUT IN FILL

① 9"-7"-7"-9" REINFORCED PORTLAND CEMENT CONCRETE
② ⅝"ϕ DOWEL ROD
③ LONGITUDINAL JOINT
④ REINFORCING STEEL
⑤ TYPE 5-A CURB

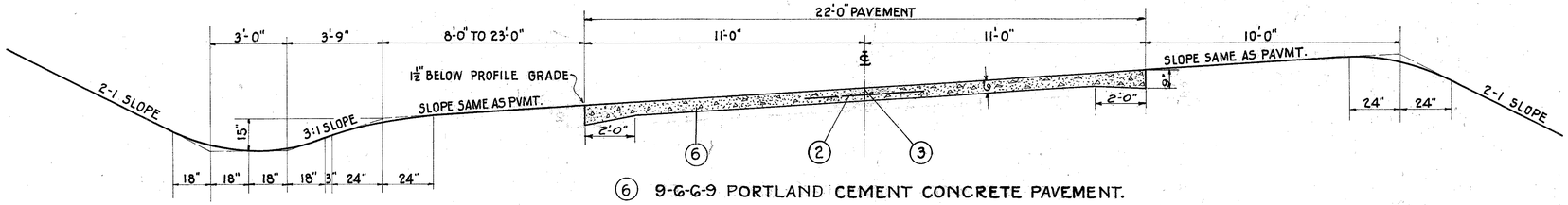
STA. 227+00 TO STA. 3+25 & STA. 22+50 TO STA. 23+40



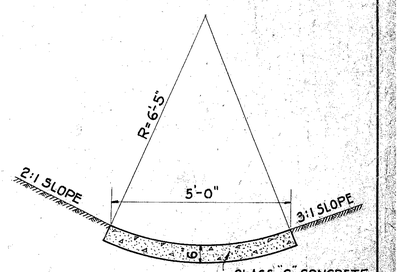
DETAIL OF PIPE UNDERDRAIN



THIS TYPICAL SECTION APPLIES ONLY FROM STA. 3+25 TO STA. 22+50 AND STA. 23+40 TO STA. 31+00 (Reverse Slope)



⑥ 9-6-6-9 PORTLAND CEMENT CONCRETE PAVEMENT.



DETAIL OF MODIFIED TYPE 3 GUTTER

STA. 31+00 TO STA 34+00

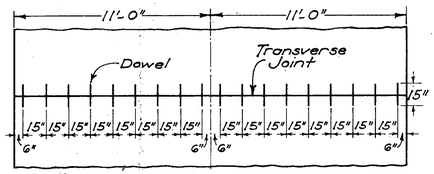
FED. RD. DIST. Nº	STATE	F.A.G.C.P NO	F.A.P	FISCAL YEAR
10	0H10	F.A.G.H (15-F(1)) F.A.G.H (15-B(2))	415-G(1)	1939

2-A 55

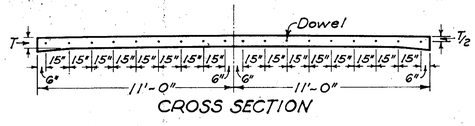
HARRISON COUNTY
S.H. 370 SEC. S(PT.) & F(PT.)

TRANSVERSE JOINTS

DOWEL SPACING

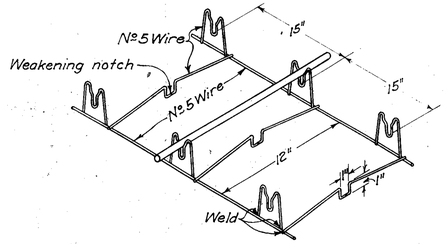


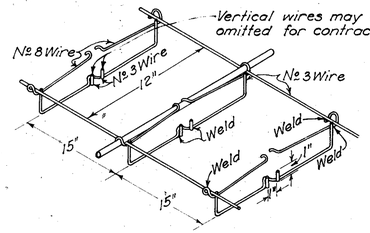
PLAN

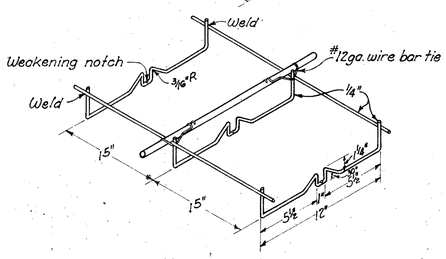


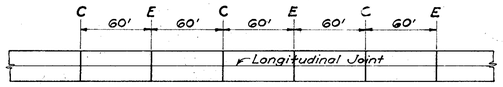
CROSS SECTION

DOWEL SUPPORT UNITS



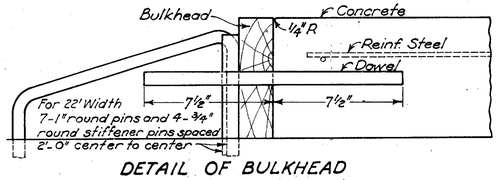




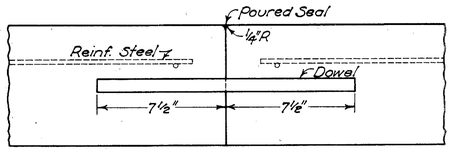


ARRANGEMENT OF TRANSVERSE JOINTS
C = Contraction Joint
E = Expansion Joint

CONSTRUCTION JOINT

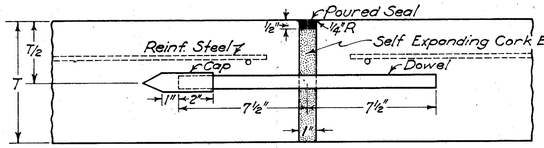


DETAIL OF BULKHEAD

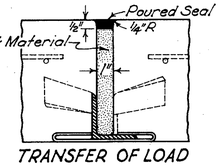


DETAIL OF DOWEL JOINT

SELF EXPANDING CORK EXPANSION JOINT

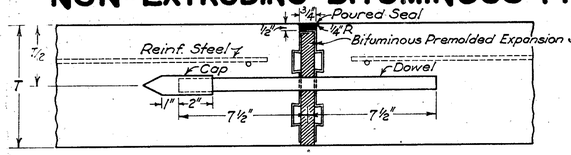


TRANSFER OF LOAD BY DOWEL

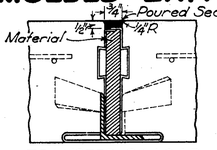


TRANSFER OF LOAD WITH TRANSLODE BASE

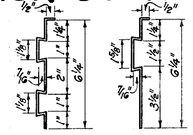
NON-EXTRUDING BITUMINOUS PREMOLDED EXPANSION JOINT



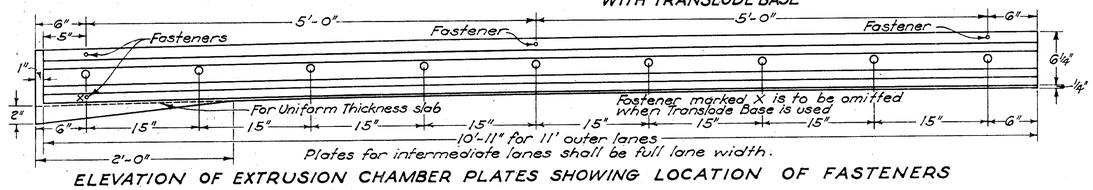
TRANSFER OF LOAD BY DOWEL



TRANSFER OF LOAD WITH TRANSLODE BASE

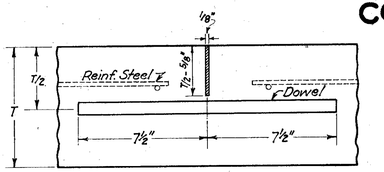


DETAILS OF SIDE PLATES

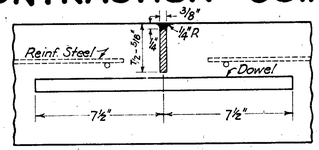


ELEVATION OF EXTRUSION CHAMBER PLATES SHOWING LOCATION OF FASTENERS

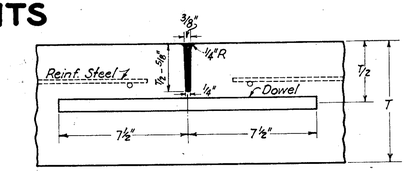
CONTRACTION JOINTS



PREMOLDED JOINT

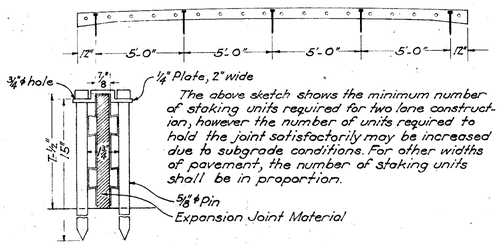


PREMOLDED JOINT



IMPRESSED JOINT

SUGGESTED METHOD OF STAKING JOINTS



STAKING UNIT

The above sketch shows the minimum number of staking units required for two lane construction, however the number of units required to hold the joint satisfactorily may be increased due to subgrade conditions. For other widths of pavement, the number of staking units shall be in proportion.

CONTRACTION JOINTS. Contraction joints shown are to be considered as alternates; the type to be used on any project shall be optional with the contractor, and shall be constructed as shown herewith. Contraction joints shall be spaced so that the length of any slab between transverse joints shall not exceed 60 feet. Joint arrangement at intersections shall be as specifically shown on the plans.

PREMOLDED CONTRACTION JOINTS. The filler material shall meet the requirements of Sec. M-10.1 or Sec. M-10.13. The top edge of contraction joint material shall be shaped to fit the surface of the pavement.

IMPRESSED CONTRACTION JOINT. This joint shall be formed by impressing a device or bar into the newly deposited concrete before initial setting. The device or bar shall be removed as soon as the concrete is in such condition as to preclude of distortion or injury to the concrete. The groove thus formed shall be of dimensions detailed. After the joint is formed it must be protected from dirt and foreign matter until the filler is placed.

· NOTES ·

GENERAL. Expansion joints shown are to be considered as alternates; the type to be used on any project shall be optional with the contractor. The type of joint selected by the contractor and all operations and materials for assembling and installing the joints shall be approved by the engineers.

DOWELS. All dowels shall be ¾" inch round, straight, smooth bars, free from burring and flattening at ends. The entire dowel shall be thoroughly coated before placing in the pavement using either Bit. Mat., Sec. M-5.11 SC-2 or heavier, or an oil such as 600 W or equal.

Prior to placing, all dowels shall be assembled in a unit which is to remain in place for construction, contraction or expansion joints. The length of the unit shall be not less than the distance between longitudinal joints and sufficient support shall be provided to hold the dowels accurately perpendicular to the joint. Expansion joint material shall be forced over the lower cross wires so as to fit snugly on the subgrade. The design of the dowel support unit may be as shown herewith or may be an approved equal, and it shall be shop assembled. When the lane width varies from 11 feet, the spacing of the dowels shall be 15 inches and the 6" end spaces shall be equally increased or decreased and shall be less than 10½" but not less than 3".

CONSTRUCTION JOINTS. A bulkhead shall be constructed to permit dowels to extend through the joint. Care shall be taken in removing bulkhead and placing adjacent concrete to see that dowels are embedded in the concrete without being bent.

EXPANSION JOINTS. Expansion joints shall be constructed as shown herewith. The spacing of the expansion joints shall not exceed 120 feet. The type and arrangement of expansion joints at intersections shall be as specifically shown on the plan.

Each dowel bar shall be equipped with a neat fitting metal cap on one end. The surface width of expansion joints shall not be greater than the width shown herewith. The bituminous material for the poured seal shall meet the requirements of Section M-5.5 F-2.

The top edge of the extrusion chamber plates, and also the edges of all expansion joint materials shall be shaped to fit the section of the pavement.

Joints in monolithic curbs shall be constructed with the same type of filler material as used in the expansion joints. When premolded material is used in curbs over 3 inches in height, sufficient holes shall be provided in the material to prevent extrusion.

SELF EXPANDING CORK JOINT. The filler material for this joint shall meet the requirements of Supplemental Specification Nº M-110.11, and shall be accurately held in place by means of approved steel bulkheads. Dowel holes shall be ⅝ inch in diameter.

NON-EXTRUDING BITUMINOUS PREMOLDED JOINT. The filler material shall meet the requirements of Sec. M-10.1. The extrusion chamber plates shall be constructed of 24 gauge metal rolled to true section. When assembled in the field, a template and protected bench shall be provided for the workmen to insure accuracy in assembling.

Dowel holes shall be punched in the filler material, and shall be 11/16 inch round holes to insure tight fitting dowels.

Dowel holes in the side plates shall be ⅞ inch in diameter. In no case shall dowels interfere with the extrusion chambers. At each edge of the pavement the extrusion chambers shall be bent down to seal the ends of the chambers. The joint shall at all times be protected from heat and other agencies which tend to cause distortion. The assembled joint shall be securely fastened together by ⅛ inch stove bolts or other approved fasteners. The holes for the fasteners may be made in the plates at the factory; when made in the field, they shall be drilled after the joint is assembled. The stove bolts shall be fastened with thin nuts, speed nuts, or rubber tubing screwed on. In order for this joint to function properly, the plates must be fitted snugly against the filler material and held in position while concrete is being deposited so that no mortar enters between the plate and filler, after which the fasteners must function in such a manner as will permit the plates to move with the concrete slab. The use of clinched nails or any such fasteners as would prevent the movement of the plates will not be permitted. The joint shall then be staked rigidly to the subgrade.

BITUMINOUS SEAL AND FILLER. Material for sealing expansion, construction and contraction joints and for filling impressed contraction joints shall meet the requirements of Section M-5.5 F-2. Immediately before placing liquid bituminous seal or filler an application of kerosene shall be applied to the area of the joint to be in contact with the seal or filler. Application of kerosene shall be by pressure spray, brush or swab.

EDGING JOINTS. Special care shall be exercised in edging joints that the width of the opening does not exceed that shown.

TREATMENT OF EXPANSION JTS. AT LONGITUDINAL JTS. A positive method to maintain required alignment shall be used in connecting the expansion joints of longitudinal joints. The expansion material and metal plates shall meet in a vertical joint. Longitudinal keys and keyways, where used, shall be omitted for the thickness of the expansion joint.

DATE
3-1-39
3-28-39
5-4-39
7-20-39
9-18-39

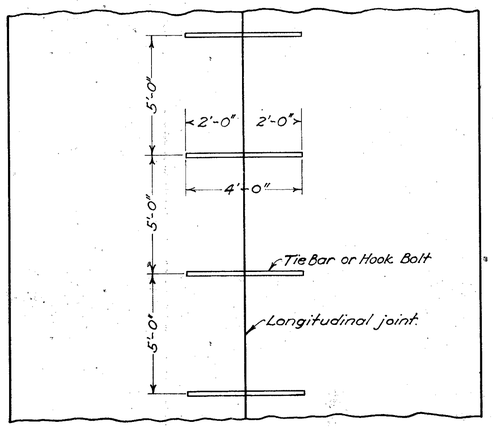
TJ-6

LONGITUDINAL JOINTS

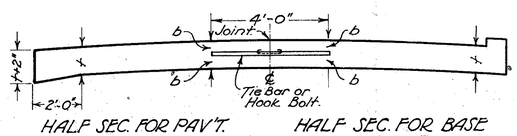
FED. RD. DIST. NO.	STATE	F.A.G.C.P. No.	F.A.P.	FISCAL YEAR
10	OH10	F.A.G.H. 415-F(1) F.A.G.H. 415-B(2)	415-G(1)	1939

2-B 55

HARRISON COUNTY
S.H.370 SEC. S(PT.) & P(PT.)

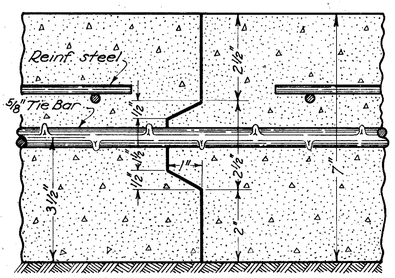


HALF PLAN FOR PAV'T. HALF PLAN FOR BASE



HALF SEC. FOR PAV'T. HALF SEC. FOR BASE

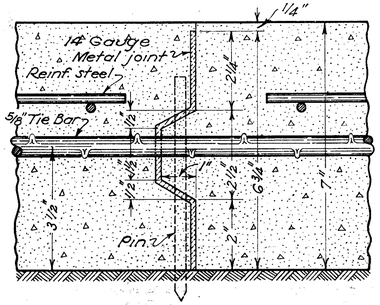
KEY JOINT



DETAIL OF JOINT

NOTE:- This joint is designed for 7" slab. When a greater or less thickness is used the joint shall be proportionally designed. Other deformations may be used if approved by the engineer.

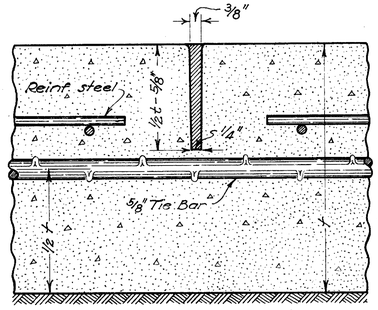
METAL JOINT



DETAIL OF JOINT

NOTE:- This joint is designed for 7" slab. When a greater or less thickness is used the joint shall be proportionally designed to extend within 1/4" of the surface of the slab. Other deformations may be used if approved by the engineer.

IMPRESSED JOINT



DETAIL OF JOINT

DESCRIPTION:- This joint shall be formed by impressing a device or bar into the newly deposited concrete before initial setting. The device or bar shall be removed as soon as the concrete is in such condition as to preclude of distortion or injury to the concrete. The groove thus formed shall be on the center line unless otherwise shown on the plans, and of the dimensions as detailed above. After the joint is formed it must be protected from dirt and foreign matter until the filler is placed.

The filler shall be handled in such a manner that it will be confined to the joint and in nowise mar the surface.

Material for sealing 3/8 inch premolded joints and for filling impressed joints shall meet the requirements of Section M-5.5 F-2. Immediately before placing liquid bituminous seal or filler an application of kerosene shall be applied to the area of the joint to be in contact with the seal or filler.

Application of kerosene shall be by pressure spray, brush or swab.

GENERAL:- Longitudinal joints shall be used when called for on the typical section, and shall be constructed as shown on this sheet.

Tie bars to be 5/8 inch round, deformed bars.

A satisfactory device shall be used to hold the tie bars in proper position.

The longitudinal joint between adjoining slabs poured in separate operations shall be a key joint with American hook bolts or equal, or billet steel (Sec. M-7.1) tie bars, unless otherwise shown on the plans.

If tie bars are bent, no portion of the bend shall extend into the first slab poured.

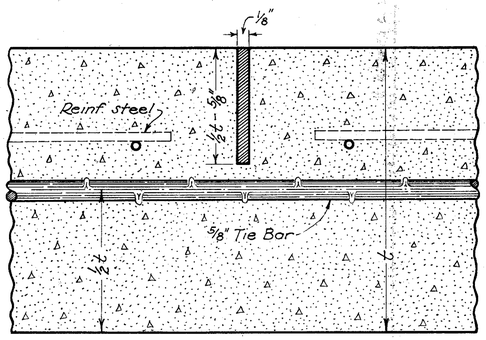
Immediately prior to placing the second slab, bent tie bars shall be straightened by means of a pipe slipped over the free end of the bar.

Key joints used in part width construction shall be painted with two coats of bituminous material as per Section M-5.5 F-2 before adjoining slabs are poured.

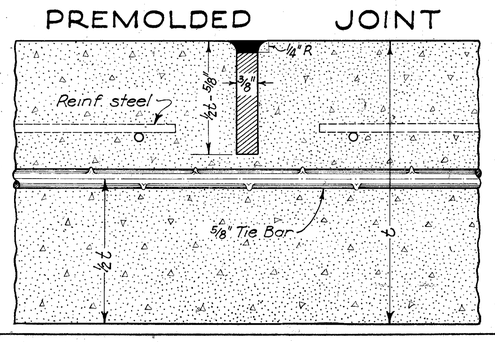
The Metal, Key, and 1/8" Premolded Joints shall not be edged.

Special care shall be exercised in edging Impressed and 3/8" Premolded Joints, that the width of the opening does not exceed that shown.

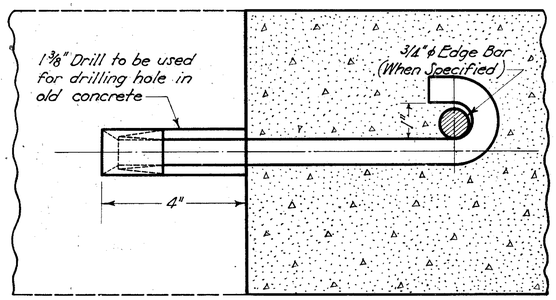
PREMOLDED JOINT



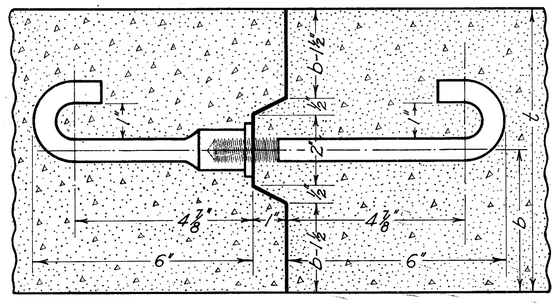
PREMOLDED JOINT



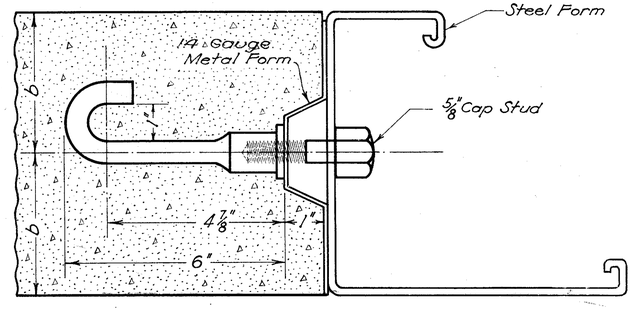
EXPANSION BOLT JOINT

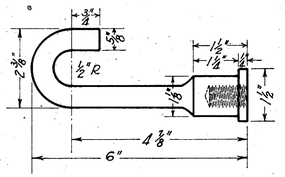


HOOK BOLT AND KEY JOINT



ACCEPTABLE METHOD OF FORMING JOINT





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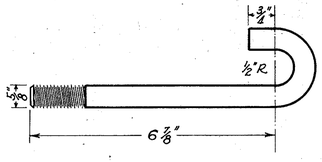
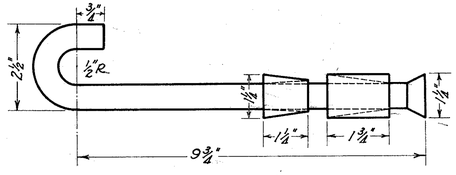


J BOLT

HOOK BOLT DETAIL



EXPANSION BOLT DETAIL

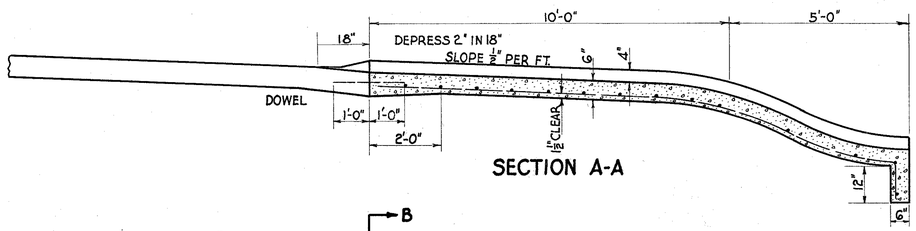
DATE 3-1-39

NO. 1 DRAIN BASIN

FED. RD. DIST. NO.	STATE	F.A.G.C.P. No's.	F.A.P. No.	FISCAL YEAR
10	OHIO	F.A.G.H. 2(A-C(1) F.A.G.H. 415-B(2)	415-G(1)	1939

3/55

HARRISON COUNTY
S.H. 370 SEC. S(Pt.) & P(Pt.)

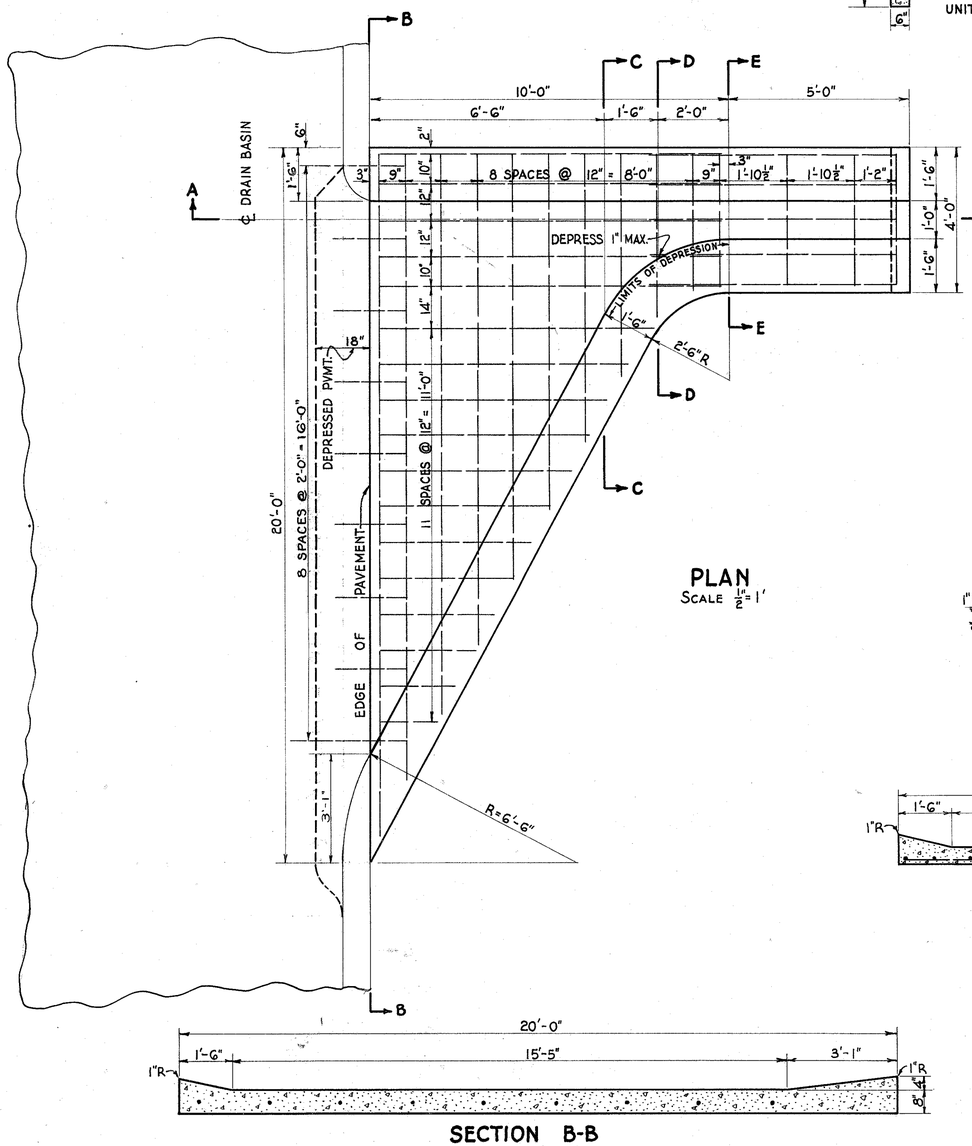


SECTION A-A

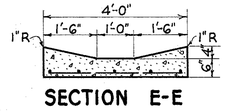
ESTIMATED QUANTITIES

EXCAVATION	4 CU.YDS.
CONCRETE (CLASS C)	3.3 CU.YDS.
REINFORCING STEEL	190 LBS.

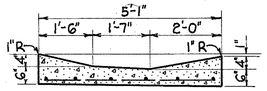
NOTE:
THE ABOVE ESTIMATED QUANTITIES ARE FOR THE CONTRACTORS CONVENIENCE ONLY FOR ARRIVING AT A UNIT PRICE FOR DRAIN BASIN.
ALL CONCRETE TO BE CLASS "C."
ALL REINFORCING STEEL TO BE $\frac{1}{2}$" ϕ
PAYMENT FOR DRAIN BASIN SHALL BE PER UNIT, COMPLETE IN PLACE.



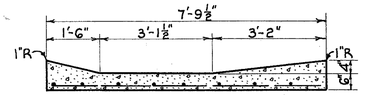
PLAN
SCALE $\frac{1}{2}$" = 1'



SECTION E-E



SECTION D-D



SECTION C-C

SECTION B-B

✱ TRAFFIC NOTE (CONT.)

Two way temporary traffic lanes shall be surfaced 20' wide, one way traffic lanes shall be surfaced 10' wide. Wher ever one way traffic is permitted, at least one signalman shall be stationed at each end of each one way lane at all hours of the day and night.

• GENERAL NOTES •

• CURVES: Curves shall be super-elevated in accordance with the curve tables included in these plans, but widening will not be required. Superalevated curves shall be built without crown. The crown shall be worked out of the pavement in that portion between the beginning of the transition and the point where the superelevation equals twice the crown.

• TRAFFIC NOTE: The contractor shall maintain traffic twenty-four (24) hours per day during the construction of this project, including the maintenance of traffic from State Route No. 151.

The temporary traffic lanes shall be surfaced, when deemed necessary by the Engineer, with material meeting the requirements of T-110 and treated with Calcium Chloride or other approved dust preventative, and the surface maintained daily. When it becomes necessary to relocate the temporary traffic lanes, the T-110 surfacing material shall be salvaged and re-used on the new location.✱

The contractor shall co-ordinate the work on the temporary traffic lane with the raising of the Penna. R.R. Co. tracks in such a manner that no interference with railroad traffic will occur and with a minimum of interruption to highway traffic.

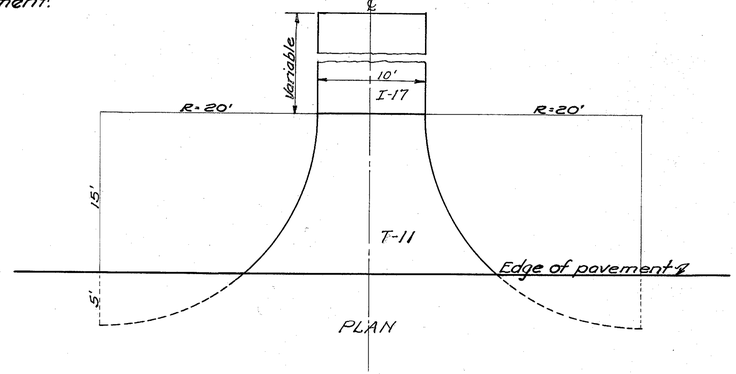
The lump sum bid for maintaining traffic, including lights, signs, barricades and watchmen for 24 hour service shall include for payment all the above labor, material and equipment except dust laying material and the aggregate for traffic lanes, which are separate pay items.

• STRUCTURE EXCAVATION: Wherever pipes are to be placed with-in or beneath an embankment, and the upper extremity of the pipe will be less than two (2') feet below the surface of the original ground, the embankment shall be constructed to an elevation of at least two (2') feet above the upper extremity of the pipe, before laying pipe. The trench shall then be excavated to the minimum width necessary for placing pipe and proper back-filling. The pipe shall then be laid, and the trench back-filled before more embankment is placed thereon.

• STORM SEWER EXCAVATION: Wherever storm sewers are to be placed within or beneath embankments, the procedure shall be the same as outlined for pipe culverts in the note above.

Payment for the above is included in the price bid per lineal foot for "Storm Sewers."

• SUBGRADE IN CUTS: The thickness of the subgrade in cuts to be compacted on this project will be eight inches, loose measurement; the width shall be the width of the pavement plus eighteen inches on each side of the pavement.



CROSS SECTION ON ℄

DETAIL OF DRIVE

FED. RD. DIST. NO.	STATE	F.A.G.C.P. No's.	F.A.P. No	FISCAL YEAR
10	OHIO	F.A.G.H. 415-F(1) F.A.G.H. 415-B(2)	415-G(1)	1939

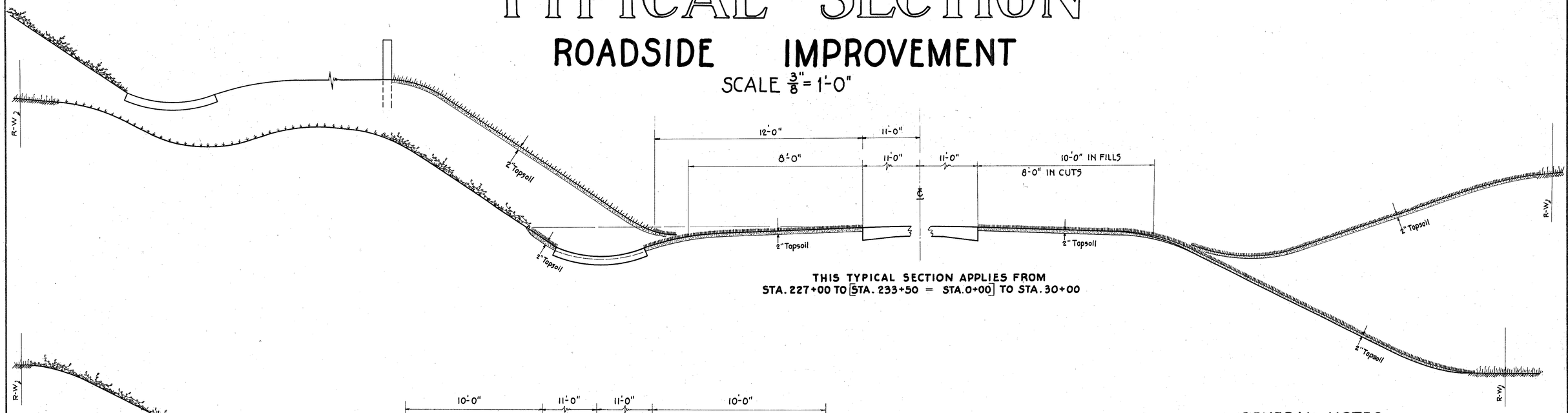
4
55

HARRISON COUNTY
S.H. 370 SEC. S(PT) & P(PT)

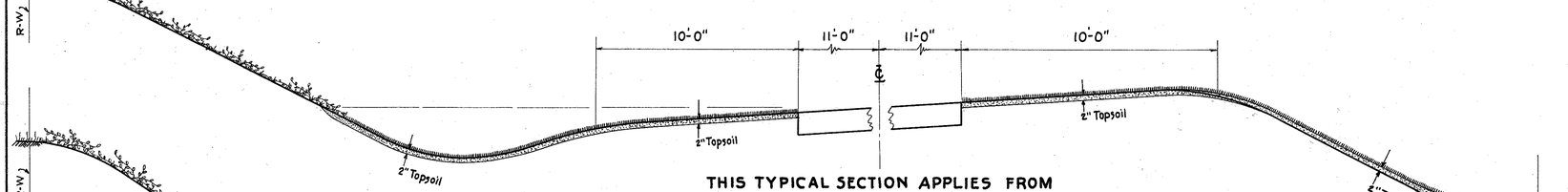
TYPICAL SECTION

ROADSIDE IMPROVEMENT

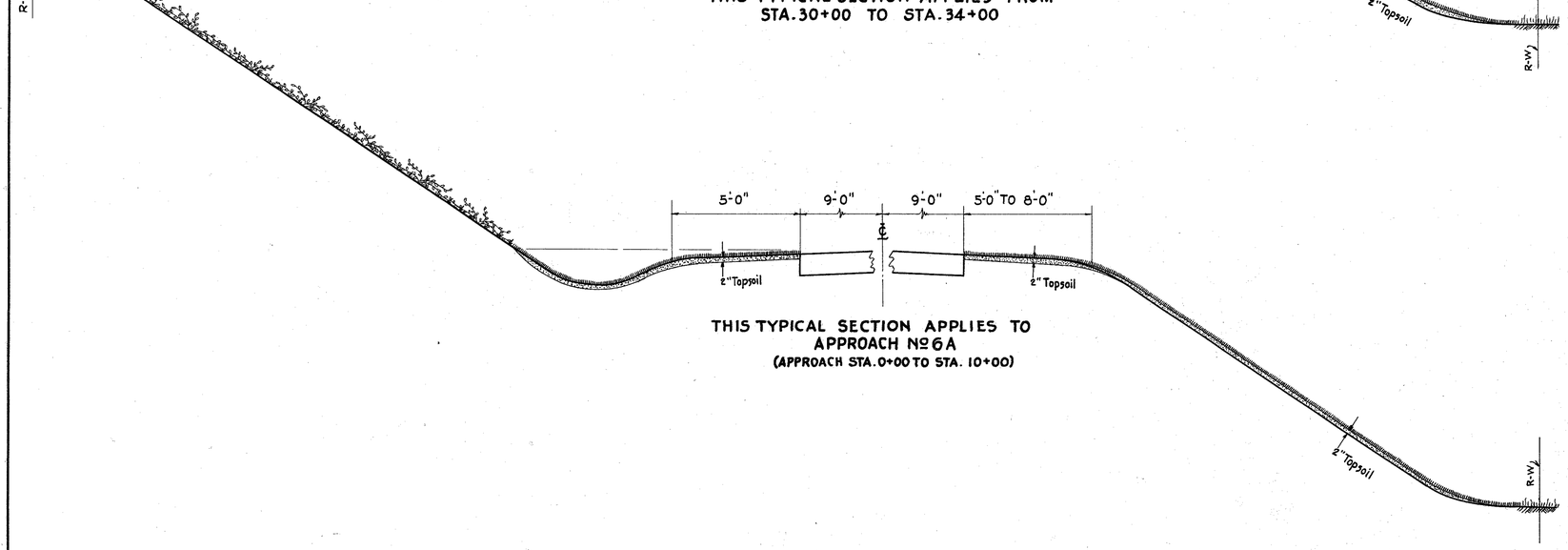
SCALE $\frac{3}{8}$" = 1'-0"



THIS TYPICAL SECTION APPLIES FROM
STA. 227+00 TO STA. 233+50 = STA. 0+00 TO STA. 30+00



THIS TYPICAL SECTION APPLIES FROM
STA. 30+00 TO STA. 34+00



THIS TYPICAL SECTION APPLIES TO
APPROACH Nº6A
(APPROACH STA. 0+00 TO STA. 10+00)

GENERAL NOTES

PREPARATION OF SUB GRADE—
The sub-grade shall be loosened to a depth of two inches before any Top Soil is placed

RENOVATING EXISTING SOIL —
This item shall include intercepting ditch only. This area shall be loosened to a depth of three inches (3") to form a proper seed bed

Nº1 SEEDING
All berms, ditches, cut & fill slopes and fadeaway areas adjacent to the berm shall be seeded with the following mixture at the rate of 4 lb. per 1000 square feet
- 60% Kentucky Blue Grass (Poa pratensis)
- 20% Domestic Rye Grass (Lolium species)
- 20% Red Top (Argrostia alba)

Nº2 SEEDING
This seeding shall be done in intercepting ditches, using the following mixture at the rate of 3 lb. per 1000 Square Feet. It shall also be done between Vines on slopes and raked sufficiently to cover.
- 20% Kentucky Blue Grass (Poa pratensis)
- 20% Red Top (Argrostia alba)
- 60% Yellow Sweet Clover (Melilotus officinalis)

COMMERCIAL FERTILIZER
A commercial fertilizer of 10-6-4 formula shall be used at the rate of twenty pounds (20#) per one thousand (1000) square feet of Nº1 Seeding Area.

VINE PLANTING
Vines planted on slopes where there is an overburden of earth shall be spaced 5' on centers; where rock occurs the spacing shall be increased to 10' on centers, approximately.

MULCHING
Straw shall be used as a mulch for all material planted. Seeded areas shall be mulched with straw within 24 hours after seeding.

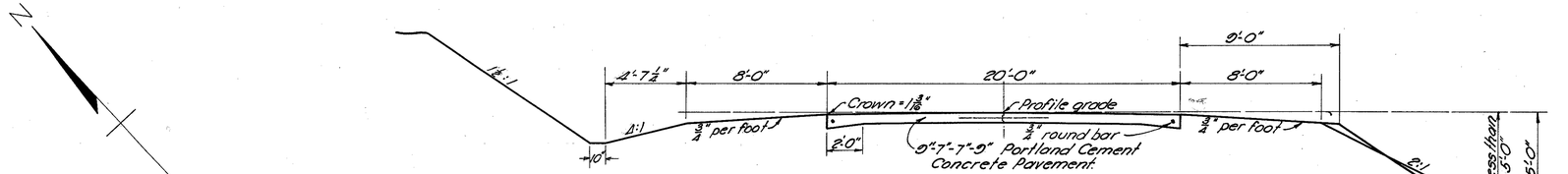
INCREASED OR DECREASED QUANTITIES
Quantities are subject to revision and unit price payment will not be limited by G-403.

LEGEND FOR TYPICAL SECTIONS

- Top Soil
- Seeding Nº1
- Seeding Nº2
- Vines
- Existing Vegetation
- Sodding

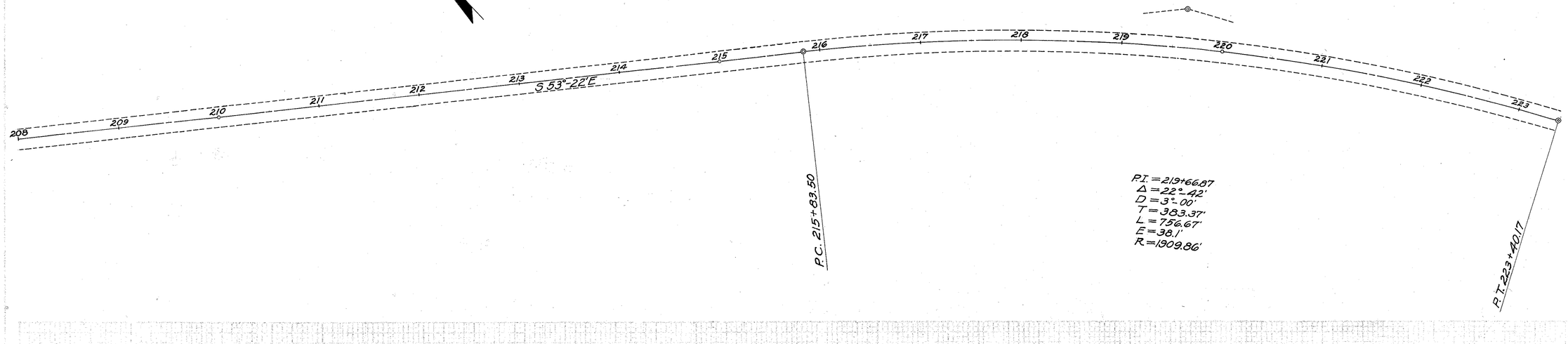
F.A.G.C.P. Nos. | F.A.P. No. | 5
F.A.G.H. 415-F(1) | F.A.G.(1) 415-G(1) | 1939 | 55
10 OHIO | 415-B(2)

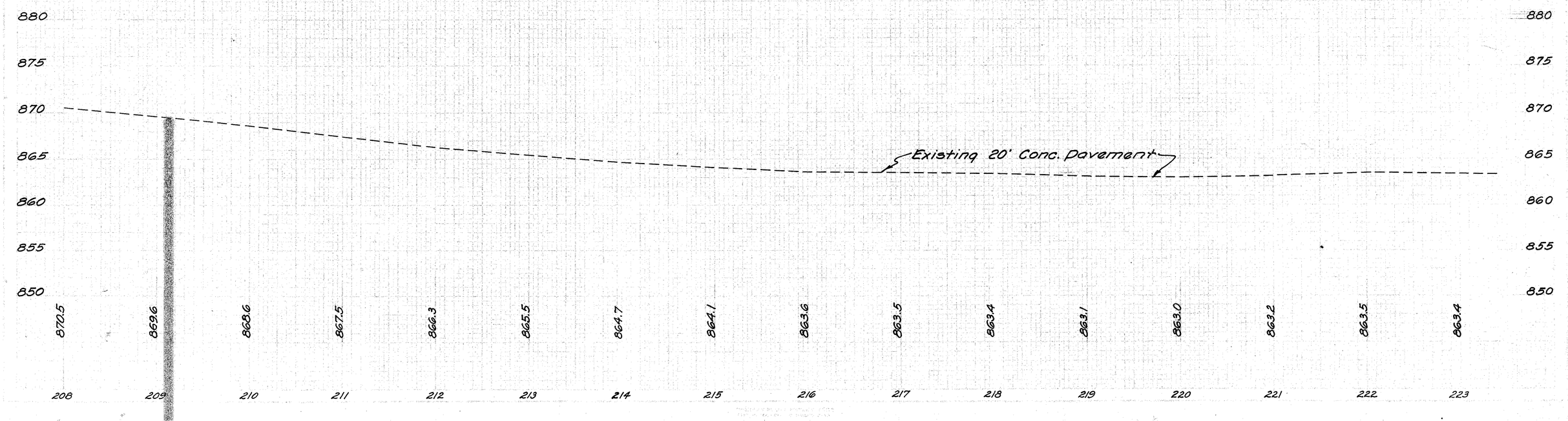
HARRISON COUNTY
S.H. 370 SEC. S(PT) & P(PT.)



TYPICAL SECTION OF ADJOINING PAVEMENT

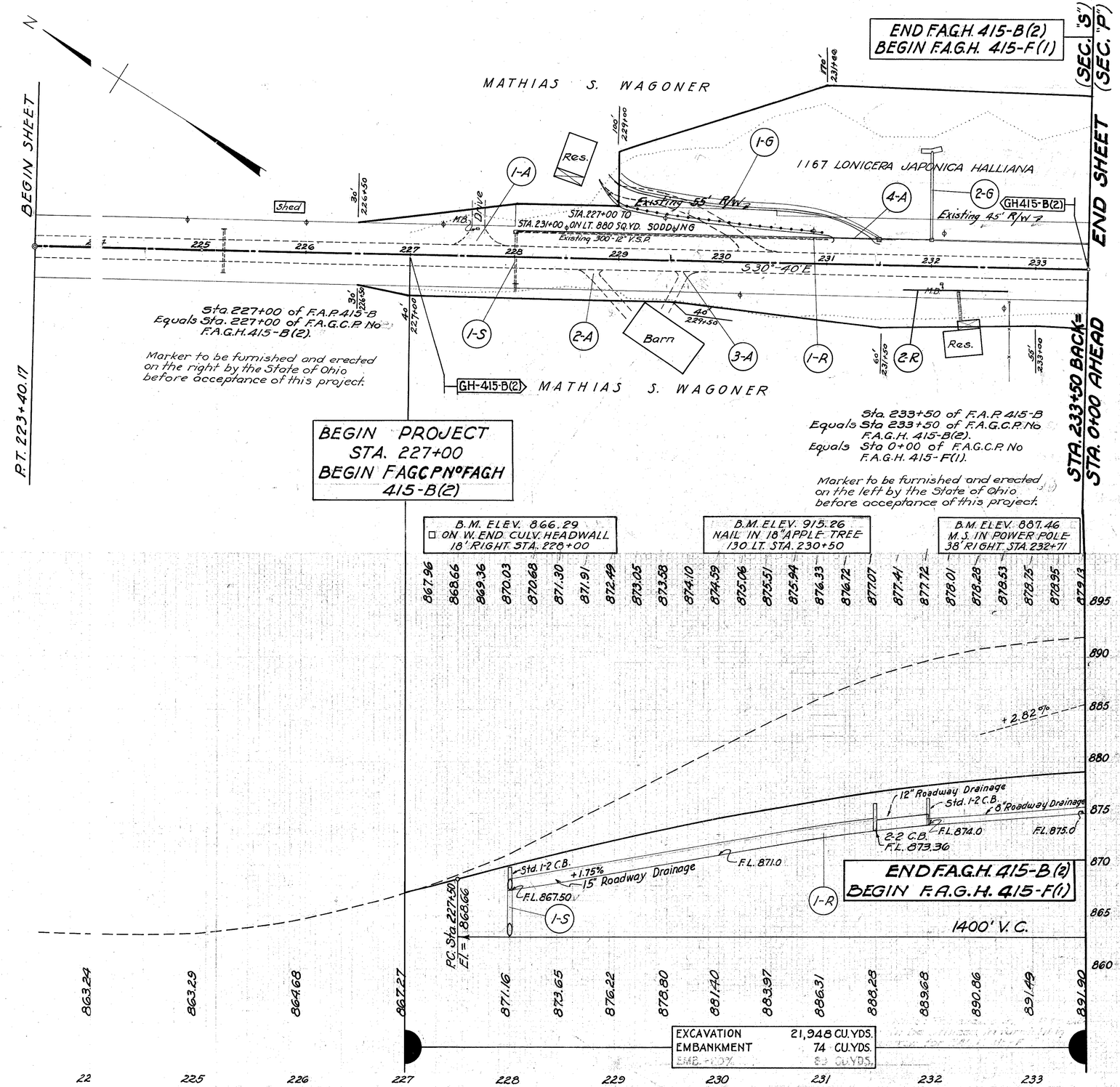
Scale ¼" = 1'-0"





F.A.G.C.P. No's. F.A.P. No. G
F.A.G.H. 415-F(1) 10 OHIO F.A.G.H. 415-G(1) 1939 55
F.A.G.H. 415-B(2)

HARRISON COUNTY
S.H. 370 SEC. "S"(PT.) & "P"(PT.)



REMOVAL OF EXISTING PAVEMENT

Station From	Station To	Length	Width	9"-7"-7-9" Concrete Pavement Sq. Yds.	Remarks
227+00	233+50	650'	20'	1444.4	
Totals				1444.4	

STRUCTURES 20 FT. SPAN & UNDER

Ref. No.	Station	See Sheet No.	Removals Type	Removals Size	Removals Length	Existing Masonry Cu. Yds.	New Work Type	New Work Size	New Work Length
1-S	228+00	38					PIPE	15"	2'-0" LEFT 9'-0" RIGHT

DRIVES AND ROAD APPROACHES

Ref. No.	Station	Left or Right	Pipe For Driveways Lin. Ft. 12"	15"	18"	24"	I-17 Aggregate Cu. Yds.	Guard Rail Rebuilt From 6-A Lin. Ft.	T-11 Stabilized Pavement Sq. Yds.
1-A	227+64	Left					2		23.6
2-A	228+75	Right					2		23.6
3-A	229+50	Right		20			4		23.6
4-A	231+50	Left					35	220	30.0
Totals				20			43	220	100.8

ROADWAY DRAINAGE

Ref. Nº	Station From	Station To	Right or Left	Pipe-Including Porous Backfill 8" Lin. Ft.	12"	Pipe Under Drives 15" Lin. Ft.	Pipe 15" Lin. Ft.	Pipe 12" Lin. Ft.	Remove & Store Exist 12" V.S.P. Lin. Ft.	Catch Basins Each Std. Nº 1-2	Catch Basins Each Std. Nº 2-2
1-R	228+00	233+50	Left	149	48	50	298		300	1	1
2-R	231+75	232+75	Right					100			
Totals				149	48	50	298	100	300	1	1

PAVED GUTTER

Ref. Nº	Station From	Station To	Side	Type Nº3 Lin Ft.	Type Nº3 Modified Lin. Ft.	Remarks
1-G	229+00	231+50	LEFT ALONG DRIVE		260'	
2-G	232+00		LEFT	98	20	
Totals				98	280'	

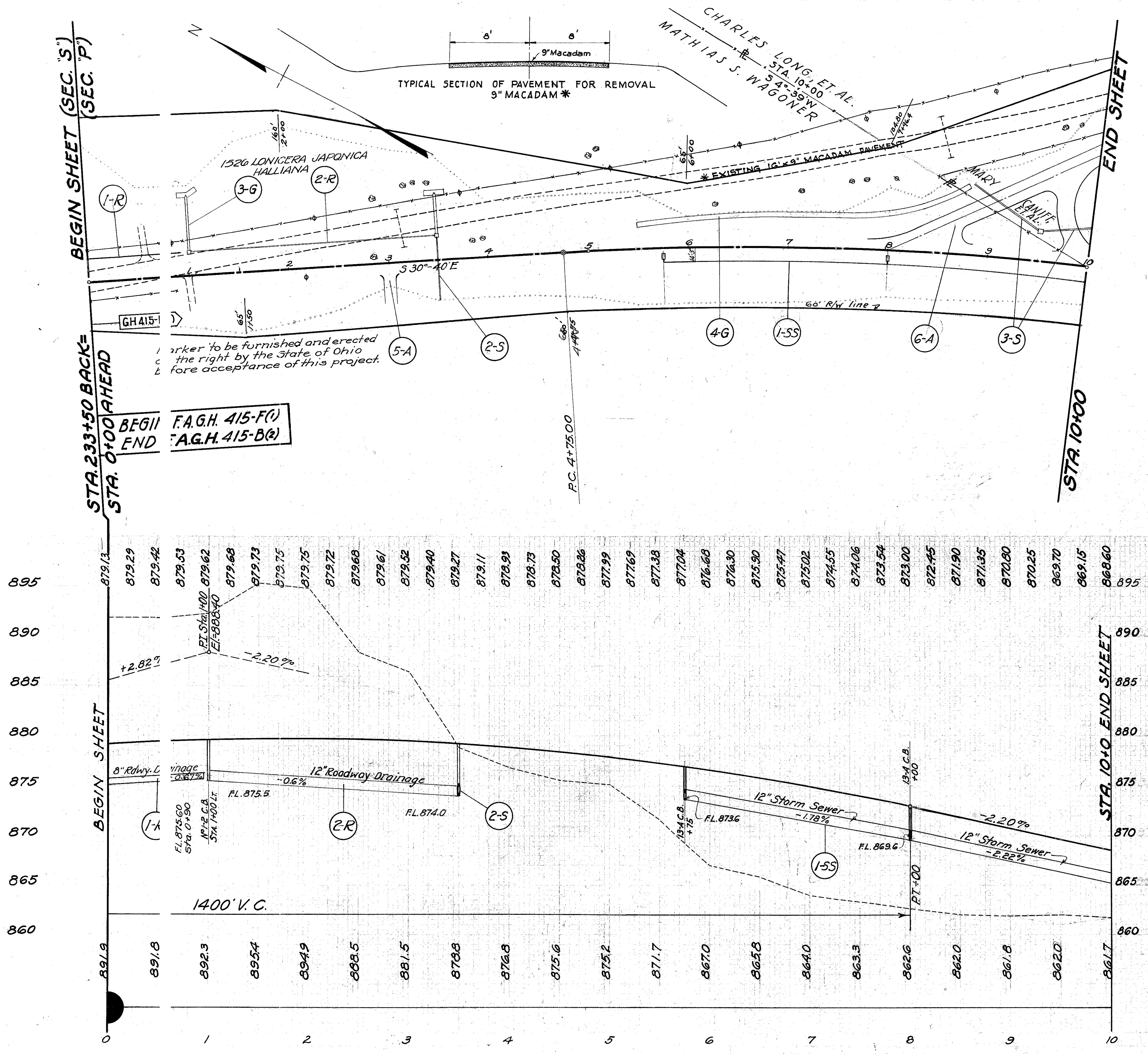
ROADSIDE IMPROVEMENT

From Station	To Station	2" Topsoil Sq. Yds.	Seeding Sq. Yds. Nº 1	Seeding Sq. Yds. Nº 2	Fertilizer Lbs.	Renovating M. Sq. Ft.	Mulching Sq. Yds.	Sodding Sq. Yds.	Planting Vines Each
227+00	233+50	4755	3,875	4220	698	8.8	4853	880	1167
Totals		4755	3,875	4220	698	8.8	4853	880	1167

CONCRETE STEPS

Station	Concrete Steps 12" Tread, 6" Risers Lin. Ft.	2" Iron Pipe Railing Including Fittings Lin. Ft.	Remarks
232+29 RT.	84	22	DETAILED ON SHEET No 44.

HARRISON COUNTY
S.H.370 SEC. "S"(PT.) & "P"(PT.)



REMOVAL OF EXISTING PAVEMENT

Station From	Station To	Length	Width	9" Macadam Pavement Sq. Yds.	Remarks
5+00	10+00	525'	16'	933	9" MACADAM
SEE SHEET No 22				292	
TOTALS				1225	

STRUCTURES 20 FT. SPAN & UNDER

Ref. No.	Station	See Sheet No.	Removals Type	Removals Size	Removals Length	Existing Masonry Cu. Yds.	New Work Type	New Work Size	New Work Length
2-S	3+50	39					PIPE	15"	62'-0"
3-S	1+20.8 ON APPR.	40	C. I. P.	12"	38'-0"		PIPE	18"	146'-0"
4-S	6+76.9 ON APPR.	41					Pipe Extension	15"	14'-0"
5-S	8+29.4 ON APPR.	38	V. S. P.	12"	2'-0"		Pipe Extension	12"	2'-0"

DRIVES AND ROAD APPROACHES

Ref No.	Station	Left or Right	Guard Rail Lin. Ft.	Pipe Underdrain Lin. Ft. 6"	Pipe Underdrain Lin. Ft. 8"	I-17 Agg. Cu. Yds.	B-20 Waterbound Base Course Sq. Yds.	T-31 Bituminous Surface Treatment Sq. Yds.	Guard Rail Removed Lin. Ft.	Item T-11 6" Stabilized Pavement Sq. Yds.
5-A	3+00	Rt.				1				23.6
6-A	8+00	Lt.	412.5	436			2146.6	2146.6	220	
TOTALS			412.5	436		1	2146.6	2146.6	220	23.6

STORM SEWER

Ref. No.	Station From	Station To	Side	Pipe for Storm Sewer Lin. Ft. 12"	Storm Sewer under Drives Lin. Ft. 12"	Pipe Specials 12"×12" Tees Each	Pipe Specials 12"×90° Elbows Each	Std. Catch Basins - Each No. 1-2	Std. Catch Basins - Each No. 13-A	Remarks
1-SS	5+75	10+00	Right	428		1	1		2	
TOTALS				428		1	1		2	

PAVED GUTTER

Ref. No.	Station From	Station To	Side	Type No3 Lin. Ft.	Type No3 Modified Lin. Ft.	Remarks
3-G	1+00		LEFT	64	20	
4-G	5+50	1+00 on Appr.	LEFT		344	
TOTALS				64	364	

ROADSIDE IMPROVEMENT

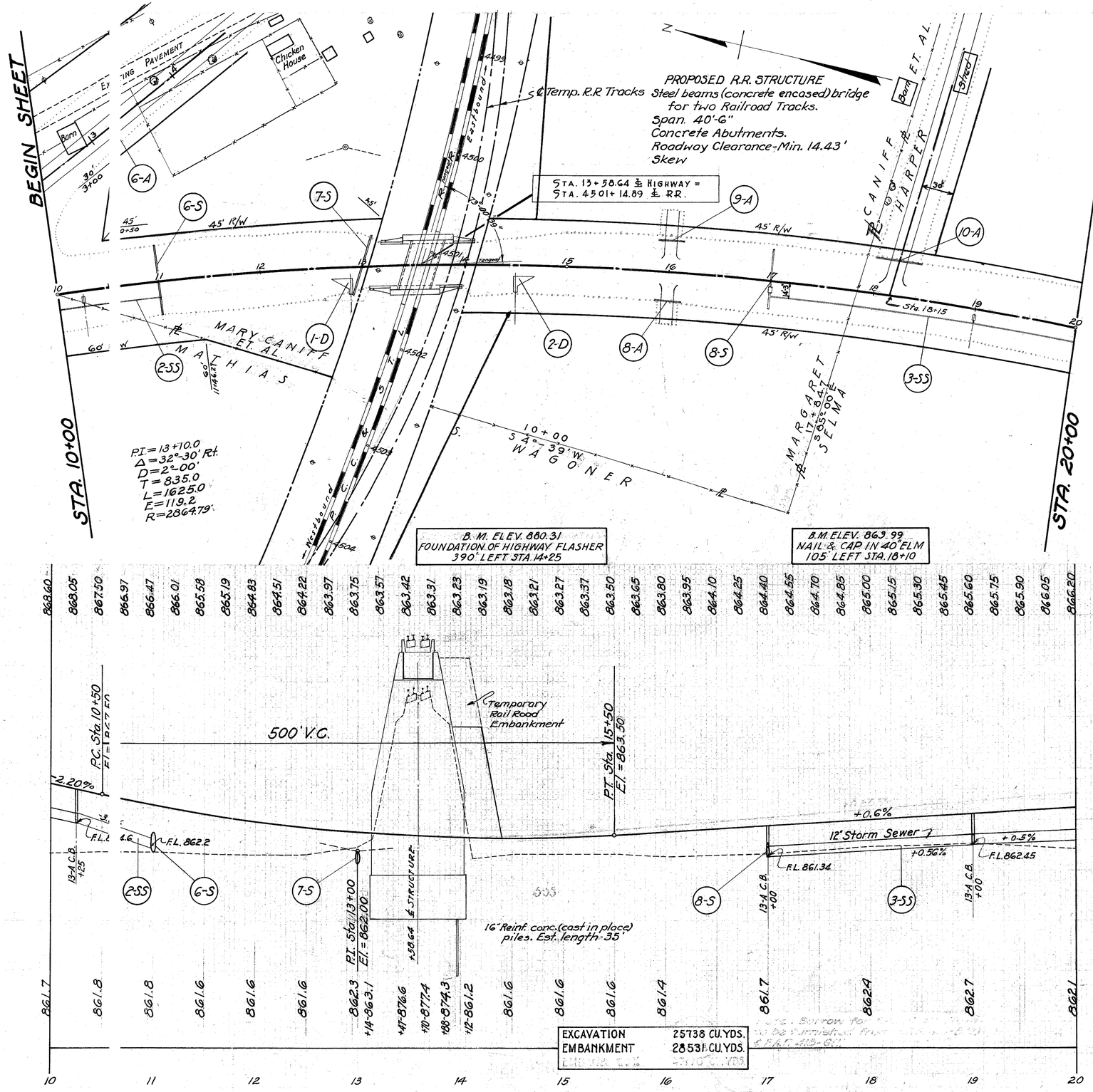
From Station	To Station	2" Top-Soil, Sq. Yds.	Seeding, Sq. Yds. No 1	Seeding, Sq. Yds. No 2	Fertilizer Lbs.	Renovating M. Sq. Ft.	Mulching Sq. Yds.	Planting Vines Each
0+00	10+00	6,162	6,162	4,959	1,109	6.5	6,882	1,526
8+00 = 0+00 ON APPROACH	10+00 on Appr.	6,191	6,191	3,662	1,114	0	6,191	1,319
TOTALS		12,353	12,353	8,621	2,223	6.5	13,073	2,845

ROADWAY DRAINAGE

Ref. No	Station From	Station To	Side	Lin. Ft. Pipe Including Porous Backfill 8"	Lin. Ft. Pipe Including Porous Backfill 12"	Standard No 1-2 Catch Basin Each
1-R	0+00	0+90	LEFT	90		
2-R	1+01	3+49	LEFT		348	1
TOTAL				90	348	1

F.A.G.C.P. No's. F.A.P.No. 8
F.A.G.H. 415-F(1) F.A.G.H. 415-6(1) 1939 55
10 OHIO F.A.G.H. 415-B(2)

HARRISON COUNTY
S.H. 370 SEC. "S"(PT.) & "P"(PT.)



ROADSIDE IMPROVEMENT

From Station	To Station	2" Topsoil Sq.Yds.	Seeding, Sq.Yds. No.1	Seeding, Sq.Yds. No.2	Fertilizer Lbs.	Mulching Sq.Yds.	Planting Vines Each
10+00	20+00	3,864	3,864	0	696	3,864	0
Totals		3,864	3,864	0	696	3,864	0

STRUCTURES 20 FT. SPAN & UNDER

Ref No.	Station	See Sheet No.	Removals Type	Removals Size	Removals Length	Existing Masonry Cu.Yds.	New Work Type	New Work Size	New Work Length
6-S	11+00	41					PIPE	24"	66'
7-S	13+00	42					PIPE	15"	60'
8-S	17+00	42					PIPE	15"&18"	59'

DRIVES AND ROAD APPROACHES

Ref No.	Station	Left or Right	Pipe For Driveways Lin. Ft. 12"	15"	18"	24"	I-17 Agg. Cu.Yds.	Std. Catch Basins Each No.1-2	No.2-2	Reinf. Steel Lbs.	Dowel Holes Lin.Ft.	Item T-11 6"Stabilized Pavement Sq.Yds.	
8-A	16+00	Rt.	24				3					23.6	
9-A	16+00	Lt.	26				4					23.6	
10-A	18+15	Lt.		52	50		72		1	9	3	33.6	See Sheet No. 26
7-A	7+58.18 On Apr.	Lt.											See Sheet No. 25
	13+58.64	Lt					20						See Sheet No. 33
Totals			50	52	50		99		1	9	3	80.8	

STORM SEWER

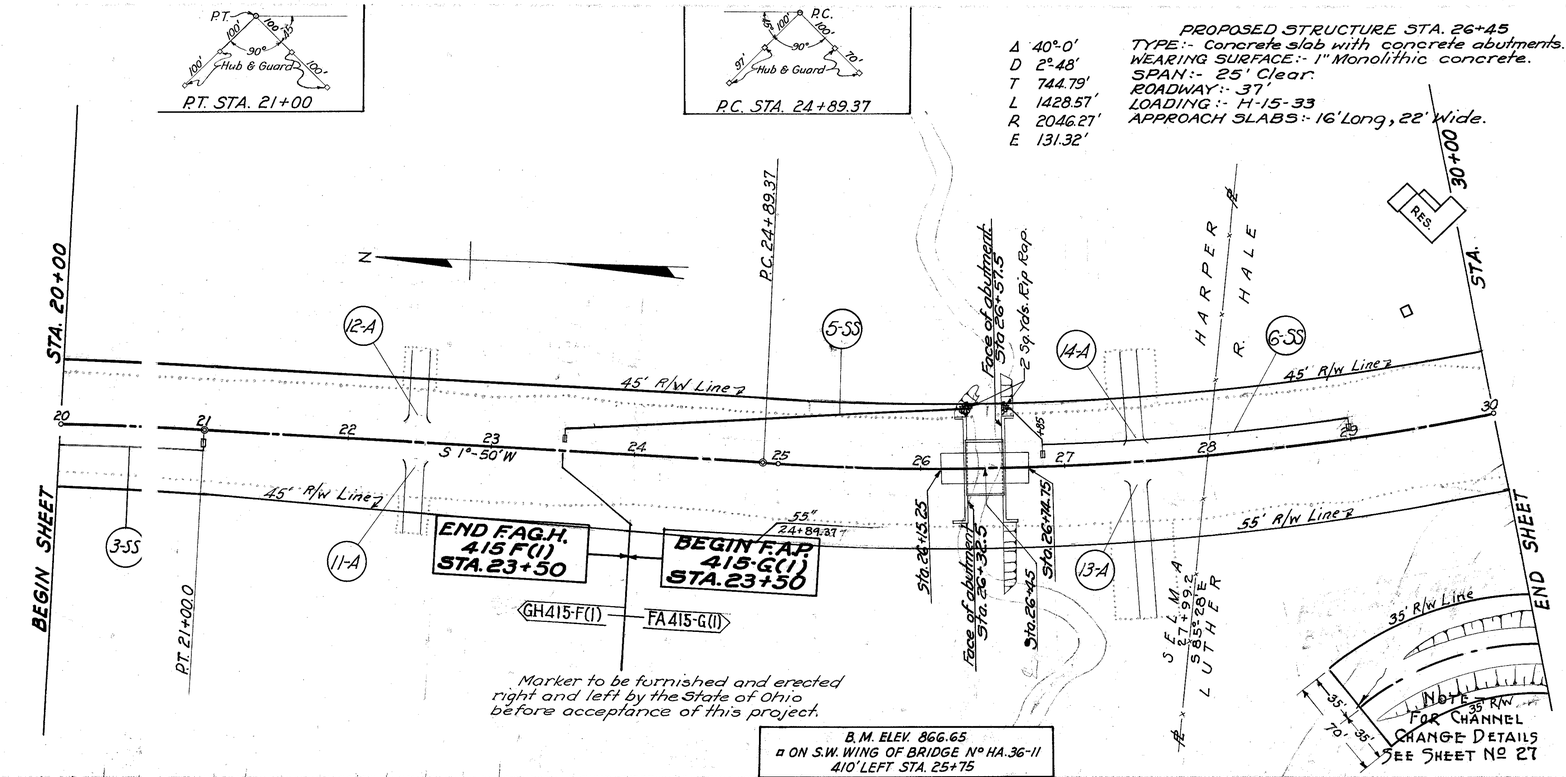
Ref No.	Station From	Station To	Side	Pipe For Storm Sewer Lin.Ft. 12"	Storm Sewer Under Drives Lin.Ft. 12"	Pipe Specials 12"×12" Tee Each	Pipe Specials 12"×90° Elbow	Std. Catch Basins- Each No.1-2	Std. Catch Basins- Each No.13-A	Remarks
2-SS	10+00	11+00	Rt.	99		1			1	
3-SS	17+00	20+00	Rt.	300		1			2	
Totals				399		2			3	

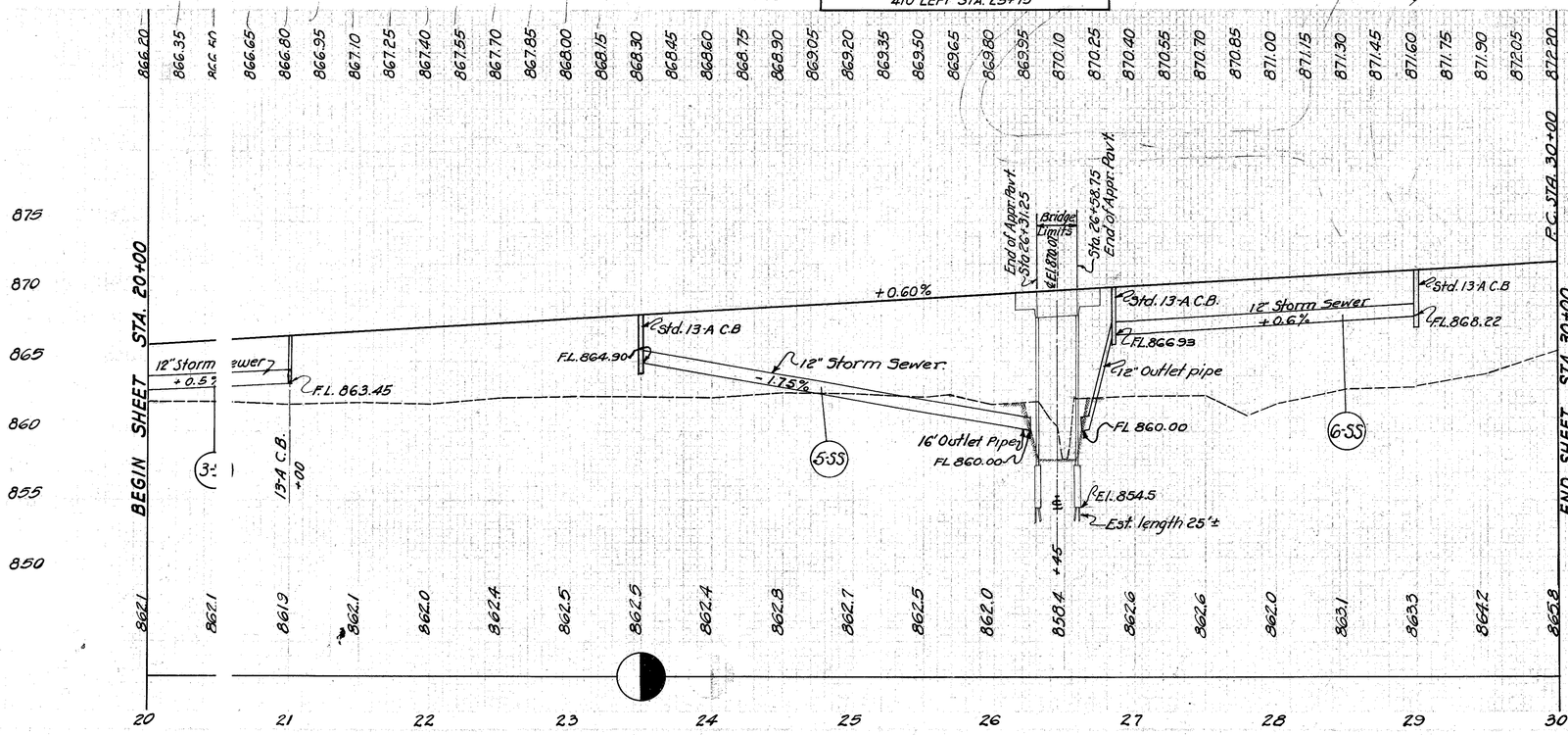
DRAIN BASINS

Ref No.	Station	Side	No.1 Drain Basin	Remarks
1-D	12+88	Right	1	For details see Sheet No. 3
2-D	14+50	Right	1	" " " " " 3
Totals			2	

F.A.G.C.P. No's. F.A.G.H. 415-F(1) F.A.G.H. 415-B(2) | F.A.P. No. 9 55
10 OHIO 415-G(1) 1939

HARRISON COUNTY
S.H. 370 SEC. S(Pt.) & P(Pt.)





ROADSIDE IMPROVEMENT

From Station	To Station	2" Topsoil Sq. Yds.	Seeding Sq. Yds.		Fertilizer Lbs.	Mulching Sq. Yds.	Planting Vines Each
			No 1	No 2			
20+00	23+50	2212	2212	0	401	2212	0
Total F.A.G.H. 415-F(1)		2212	2212	0	401	2212	0
23+50	30+00	4108	4108	0	737	4108	0
Total F.A.P. 415-G(1)		4108	4108	0	737	4108	0

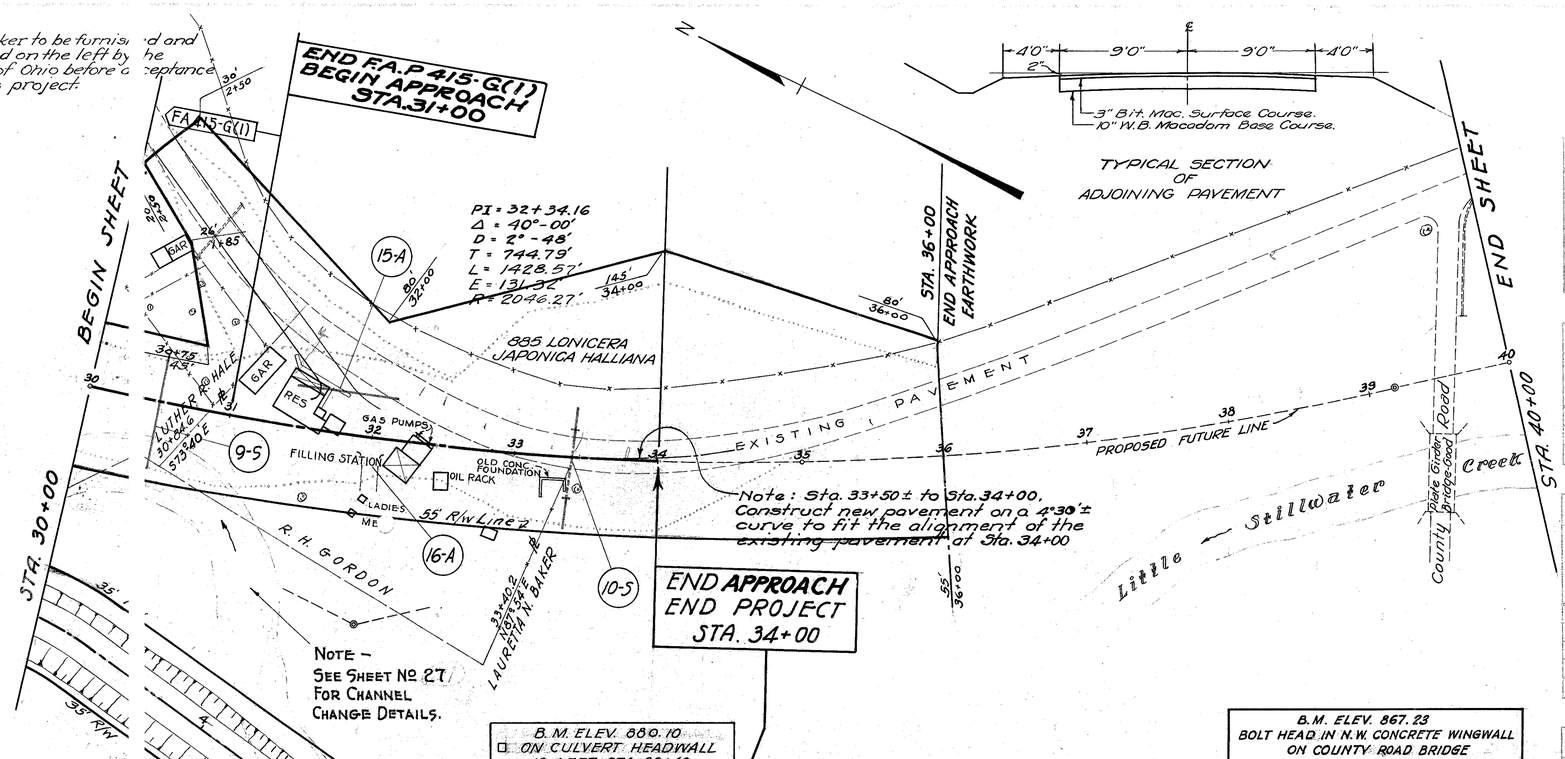
DRIVES AND ROAD APPROACHES

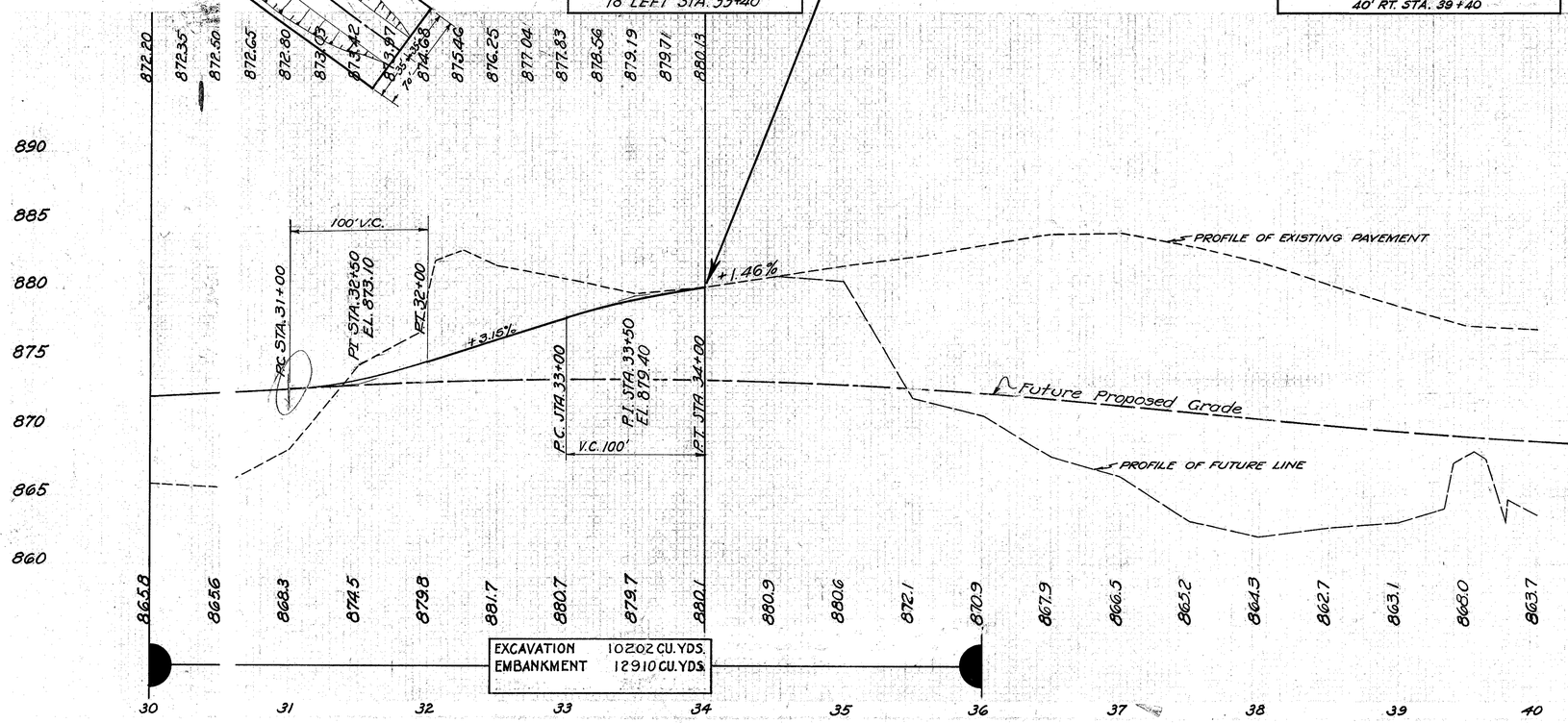
Ref. No.	Station	Side	Pipe For Driveways Lin. Ft. 12"	15"	18"	24"	1-17 Aggregate Cu. Yds.	Item T-11 6" Stabilized Pavement Sq. Yds.	Remarks
11-A	22+50	Rt.					5	23.6	
12-A	22+50	Lt.					5	23.6	
Total	F.A.G.H. 415-F(1)						10	47.2	
14-A	27+50	Lt.					6	23.6	
13-A	27+50	Rt.					10	23.6	
Total	F.A.P. 415-G(1)						16	47.2	

STORM SEWER

Ref. No.	Station From	Station To	Side	Pipe For Storm Sewer Lin. Ft. 12"	Storm Sewer Under Drives Lin. Ft. 12"	Pipe Specials-Each 12"x90° Ell	For Outlets 12"x12" Tee	12"x90° Ell	12"x45° Ell	Std Catch Basins No 13-A	Lin. Ft. 12" Pipe For Outlets	Type A Rip Rap Sq. Yds.
3-SS	20+00	21+00	Rt.	102		1				1		
Total	F.A.G.H. 415-F(1)			102		1				1		
5-SS	23+50	26+31.5	Lt.	268		1				1	16	2
6-SS	26+57.5	29+00	Lt.	195	20	1	1	2	2	2	36	2
Total	F.A.P. 415-G(1)			463	20	2	1	2	3	3	52	4

Marker to be furnished and erected on the left by the State of Ohio before acceptance of this project.





FA.G.C.P. No's.	F.A.P. No.	
F.A.G.H. 415-F(1)		10
F.A.G.H. 413-B(2)	10 OHIO 415-G(1) 1939	55

HARRISON COUNTY
S.H. 370 SECS S(PT.)&P(PT.)

REMOVAL OF EXISTING PAVEMENT

Station From	Station To	Length	Width	4" Macadam Pavement Sq. Yds.	Remarks
		NONE			
Totals					

STRUCTURES 20 FT. SPAN & UNDER

Ref. No.	Station	See Sheet No.	Removals Type	Removals Size	Removals Length	Existing Masonry Cu. Yds.	New Work Type	New Work Size	New Work Length
9-S	30+50	43					Pipe	15"	78'
10-S	33+39.5	44	V.S. PIPE	12"	8'-0"		Pipe Extension	12"	24'-0" LEFT 21'-0" RIGHT

DRIVES AND ROAD APPROACHES

Ref. No.	Station	Left Or Right	Pipe For Driveways Lin. Ft. 12"	15"	18"	24"	I-17 Agg. Cu. Yds.	T-11 Stabilized Pavement Sq. Yds.	T-32 Bituminous Road Mix- Surface Course TYPE "A" Sq. Yds.	Bit. Mat. Road Mix Gals.	Agg. For Road Mix Tons	Bit. Mat. For Seal Gals.	Agg. For Seal Tons
15-A	32+00	Lt.		70			41	50					
16-A	32+00	Rt.					1	23.6					
Totals				70			42	73.6					

ROADSIDE IMPROVEMENT

From Station	To Station	2" Topsoil Sq. Yds.	Seeding Sq. Yds. No. 1	Seeding Sq. Yds. No. 2	Fertilizer Lbs.	Mulching Sq. Yds.	Planting Vines Each
30+00	36+00	2,838	2,838	2,461	510	2,838	885
Totals		2,838	2,838	2,461	510	2,838	885

HARRISON COUNTY
S.H.370 SEC. "S"(PT.) & "P"(PT.)


BEGIN SHEET
STA. 40+00
END SHEET
STA. 55+00
N
BARN
RES
GAR
RES
BARN
SHED
RES.
RES.
BARN
EXISTING 18' BIT. MACADAM PAVEMENT
PROPOSED FUTURE LINE
S38°10'E
41
42
43
44
45
46
47
48
49
50
PROFILE OF EXISTING PAVEMENT
PROFILE OF FUTURE LINE
895
890
885
880
875
870
865
860
863.7
864.3
865.3
867.6
870.0
869.8
872.5
874.6
875.0
874.5
870.9
868.7
866.3
865.6
865.5
864.2
863.0
862.1
862.5
863.5
869.7
870.5
872.3
873.9
876.8
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55

FED. RD. DIST. NO.	STATE	F.A.G.C.P. IVa's	F.A.P.No.	FISCAL YEAR
10	OHIO	F.A.G.H. 415-F(1) F.A.G.H. 413-B(2)	415-G(1)	1939

12
55

HARRISON COUNTY
S.H. 370 SEC. "S" (PT) & "P" (PT)

— CURVE TABLES —

P.C. 4+75.00 — D = 2°-00' RT. — P.T. 21+00

ADD TO RT. EDGE	LEFT EDGE OF PAVE GRADE	LEFT WIDTH	STATION	℄ GR. ELEV.	RIGHT WIDTH	RIGHT EDGE OF PAVE GRADE	DEDUCT FROM ℄
0.00	879.55	11.0	2+50	879.98	11.0	879.55	.13
	879.51	↑	2+75	879.61	↑	879.48	↑
	879.47		3+00	879.52		879.39	
	879.43		3+25	879.40		879.27	
	879.38		3+50	879.27		879.14	
	879.33		3+75	879.11		878.98	
	879.26		4+00	878.93		878.80	
	879.19		4+25	878.73		878.60	
	879.08		4+50	878.60		878.37	
Obtained Graphically	879.95		4+75	878.26		878.13	
	878.75		5+00	877.99		877.86	
.92	878.48		5+25	877.69		877.56	
	878.17		5+50	877.36		877.25	
	877.83		5+75	877.04		876.91	
	877.47		6+00	876.68		876.55	
	877.09		6+25	876.30		876.17	
	876.69		6+50	875.90		875.77	
	876.26		6+75	875.47		875.34	
	875.81		7+00	875.02		874.89	
	875.34		7+25	874.55		874.42	
	874.85		7+50	874.06		873.93	
	874.33		7+75	873.54		873.41	
	873.79		8+00	873.00		872.87	
	873.24		8+25	872.45		872.32	
	872.69		8+50	871.90		871.77	
	872.14		8+75	871.35		871.22	
	871.59		9+00	870.80		870.67	
	871.04		9+25	870.25		870.12	
	870.49		9+50	869.70		869.57	
	869.24		9+75	869.15		869.02	
	869.39		10+00	868.60		868.47	
	868.84		10+25	868.05		867.92	
	868.29		10+50	867.50		867.37	
	867.76		10+75	866.97		866.84	
	867.26		11+00	866.47		866.34	
	866.80		11+25	866.01		865.88	
	866.37		11+50	865.58		865.45	
	865.98		11+75	865.19		865.06	
	865.62		12+00	864.83		864.70	
	865.30		12+25	864.51		864.38	
	865.01		12+50	864.22		864.09	
	864.76		12+75	863.97		863.84	
	864.54		13+00	863.75		863.62	
	864.36		13+25	863.57		863.44	
	864.21		13+50	863.42		863.29	
	864.10		13+75	863.31		863.18	
	864.02		14+00	863.23		863.10	
	863.98		14+25	863.19		863.06	
	863.97		14+50	863.18		863.05	
	864.00		14+75	863.21		863.08	
	864.06		15+00	863.27		863.14	
	864.16		15+25	863.37		863.24	
	864.29		15+50	863.50		863.37	
	864.44		15+75	863.65		863.52	
	864.59		16+00	863.80		863.67	
	864.74		16+25	863.95		863.82	
	864.89		16+50	864.10		863.97	
	865.04		16+75	864.25		864.12	
	865.19		17+00	864.40		864.27	
	865.34		17+25	864.55		864.42	
	865.49		17+50	864.70		864.57	
	865.64		17+75	864.85		864.72	
	865.79		18+00	865.00		864.87	
	865.94		18+25	865.15		865.02	
	866.09		18+50	865.30		865.17	
	866.24		18+75	865.45		865.32	
	866.39		19+00	865.60		865.47	
	866.54		19+25	865.75		865.62	
	866.69		19+50	865.90		865.77	
	866.84		19+75	866.05		865.92	
	866.99		20+00	866.20		866.07	
	867.14		20+25	866.35		866.22	
↓	867.29		20+50	866.50		866.37	
.92	867.44		20+75	866.65		866.52	
	867.56		21+00	866.80		866.67	
Obtained Graphically	867.64		21+25	866.95		866.82	
	867.68		21+50	867.10		866.97	
	867.70		21+75	867.25		867.12	
	867.70		22+00	867.40		867.27	
	867.70	↓	22+25	867.55	↓	867.42	↓
	867.71	11.0	22+39.37	867.64	11.0	867.51	.13

CONTINUED NEXT TABLE.

P.C. 24+89.37 — D = 2°-48' — P.T. 39+17.94

Obtained Graphically

DED. FR. ℄ GRADE	LEFT EDGE OF PAVT. GRADE	LEFT WIDTH	STATION	℄ GRADE	RIGHT WIDTH	RIGHT EDGE OF PAVT. GRADE	ADD TO LT. EDGE
	867.72	11.0	22+50	867.70	11.0	867.58	
	867.77	↑	22+75	867.85	↑	867.75	
	867.87		23+00	868.00		867.96	
.13	867.96		23+15	868.09		868.08	
.13	868.02		23+25	868.15		868.22	Obtained Graphically
.13	868.11		23+39.37	868.24		868.40	
↑	868.17		23+50	868.30		868.55	
	868.32		23+75	868.45		868.96	
	868.47		24+00	868.60		869.35	
	868.62		24+25	868.75		869.72	
	868.77		24+50	868.90		870.03	
	868.92		24+75	869.05		870.26	
	869.01		24+89.37	869.14		870.39	1.38
	869.07		25+00	869.20		870.45	↑
	869.22		25+25	869.35		870.60	
	869.37		25+50	869.50		870.75	
	869.52		25+75	869.65		870.90	
	869.67		26+00	869.80		871.05	
	869.82		26+25	869.95		871.20	
	869.97		26+50	870.10		871.35	
	870.12		26+75	870.25		871.50	
	870.27		27+00	870.40		871.65	
	870.42		27+25	870.55		871.80	
	870.57		27+50	870.70		871.95	
	870.72		27+75	870.85		872.10	
	870.87		28+00	871.00		872.25	
	871.02		28+25	871.15		872.40	
	871.17		28+50	871.30		872.55	
	871.32		28+75	871.45		872.70	
	871.47		29+00	871.60		872.85	
	871.62		29+25	871.75		873.00	
	871.77		29+50	871.90		873.15	
	871.92		29+75	872.05		873.30	
	872.07		30+00	872.20		873.45	
	872.22		30+25	872.35		873.60	
	872.37		30+50	872.50		873.75	
	872.52		30+75	872.65		873.90	
	872.67		31+00	872.80		874.05	
	872.90		31+25	873.03		874.28	
	873.29		31+50	873.42		874.67	
	873.84		31+75	873.97		875.22	
	874.55		32+00	874.68		875.93	
	875.33		32+25	875.46		876.71	
	876.12		32+50	876.25		877.50	
	876.91		32+75	877.04		878.29	
	877.70		33+00	877.83		879.08	
	878.43		33+25	878.56		879.81	
↓	879.06	↓	33+50	879.19	↓	880.44	1.38
	879.58		33+75	879.71		880.77	1.19
.13	880.00	11.0	34+00	880.13	11.0	881.00	1.00

NO ADDITIONAL PAVEMENT

F.A.G.C.P. No's.	F.A.P. No		
10 OHIO F.A.G.H. 415-F(1) F.A.G.H. 415-B(2)	415-G(1)	1939	13 55

HARRISON COUNTY
S.H.370 SEC. "S"(PT.) & "P"(PT.)

End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
		187	15
59	16		
		65	19
38	13		
		47	33
2	15		

End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
		2171	0
789	0		
		1177	0
		16	7
482	0		
		514	0
359	0		
		194	0
256 237	Ahead Back		
		352	0
143	0		

EXCAVATION = 21,948 CU. YDS.
EMBANKMENT = 74 CU. YDS.

STA. 224+00 TO STA. 230+00

HARRISON COUNTY
S.H. 370 SEC. S(PT) & P(PT)


890
880
2:1
El. 912.0
F.L. 874.33
878.28
232+50
890.9
Sta. 232+50 - Build 98 Lin. Ft. Type 3 Paved Gutter.
* 40 Lin. Ft. ± of existing 4" drain tile shall be removed and left at the disposal of the property owner. The new outlet of the drain shall be connected into new concrete gutter.
* Cost of this item shall be included in the price bid per lin. ft. for type 3 gutter.
Sta. 232+00 - End 12" Roadway Drainage on Lt.
Sta. 232+02 - Begin 8" Rdwy. Drge.
El. 913.2
F.L. 874.01
Std. No. 1-2 C.B.
877.72
232+00
889.7
Sta. 231+52 - Begin 12" Rdwy. Drge.
Sta. 231+50 End Drive on Lt. End 15" Rdwy. Drge.
El. 918.0
F.L. 873.30
9"x12" opening in two sides
Sta. 231+50 - Std. 2-2 C.B. End No. 3 Modified Paved Gutter on Lt.
877.07
231+50
888.3
El. 906.0
12' Berm
F.L. 872.52
End Guard Rail Sta. 230+90
876.33
231+00
886.3
El. 900.8
F.L. 871.68
El. 909.8
875.51
230+50
884.0
El. 906.0
F.L. 875.2
879.73
1+50
895.4
El. 899.3
Sta. 1+00 - Build 1-2 C.B. 84' No. 3 Gutter Begin 12" Storm Sewer
F.L. 875.5
For Detail of No. 3 Gutter in intercepting ditch See Sheet No. 39
879.62
1+00
892.3
El. 901.3
879.42
0+50
891.8
Sta. 233+50 - End Removal of existing (9"-7"-7"-9") 20 ft. width Concrete pavement. End 8" Roadway Drainage.
F.L. 875.0
879.13
233+50=0+00
891.9
STA. 0+00 - BEGIN F.A.G.H. 415-F(1)
STA. 233+50 - END F.A.G.H 415-B(2)
F.L. 874.66
878.75
233+00
891.5
80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80
140 130 110 100 90 80

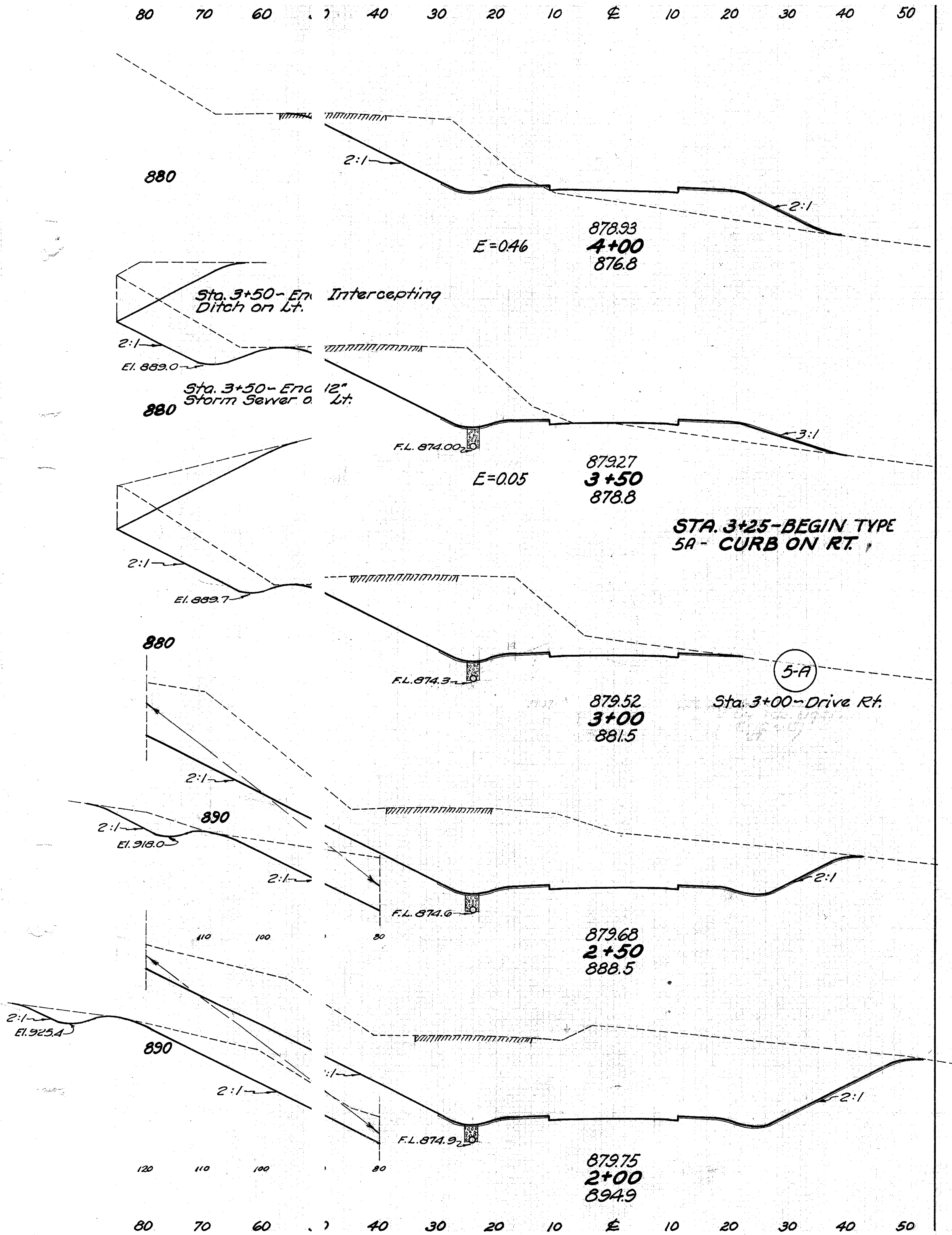
End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
		2812	0
1648	0		
		2885	0
1468	0		
		2606	0
1347	0		
		3071	0
1970	0		
		3265	0
1556	0		

End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
		3006	0
1683	0		
		2627	0
1154	0		
		2035	0
1044	0		
		2267	0
1404	0		
		2586	0
1389	0		

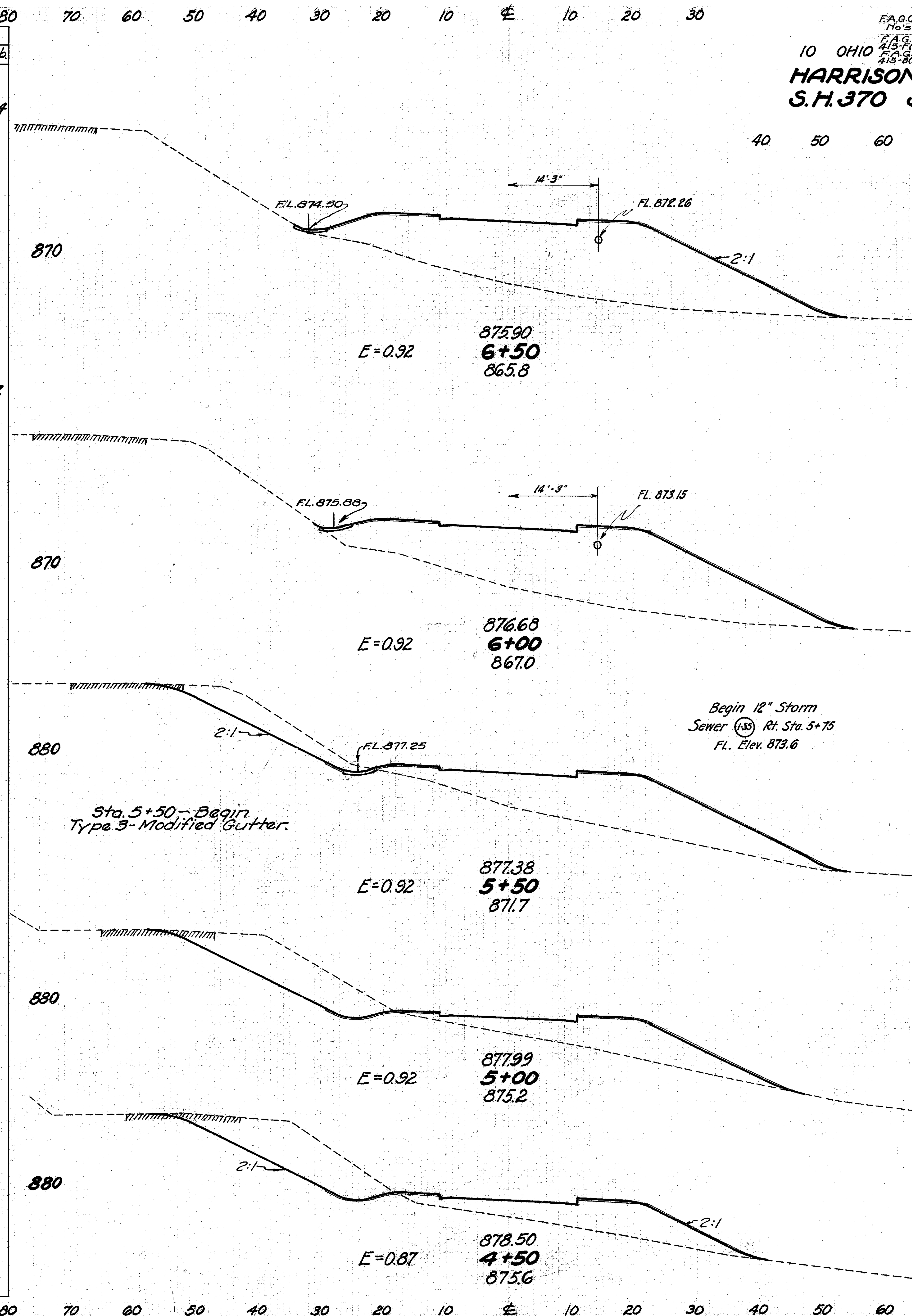
STA. 230+50 TO STA. 1+50

10 OHIO F.A.G.C.P. No's. F.A.G.H. 415-F(1) F.A.G.H. 415-B(2) F.A.P. No 415-G(1) 1939 15 55

HARRISON COUNTY
S.H. 370 SEC. "S"(PT.) & "P"(PT.)



End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
		348	274
220	129		
		680	182
514	68		
		1139	63
716	0		
		1831	0
1261	0		
		2616	0
1564	0		



End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
		0	1225
0	657		
		0	1201
0	640		
		74	932
80	367		
		211	525
148	200		
		281	340
156	167		

STA. 2+00 TO STA. 6+50

F.A.G.C.P. No's. | F.A.P. No. 16
F.A.G.H. 415-F(1) | F.A.G.H. 415-G(1) | 1939 | 55
10 OHIO | F.A.G.H. 419-B(2)

HARRISON COUNTY
S.H.370 SEC. "S"(PT.) & "P"(PT.)

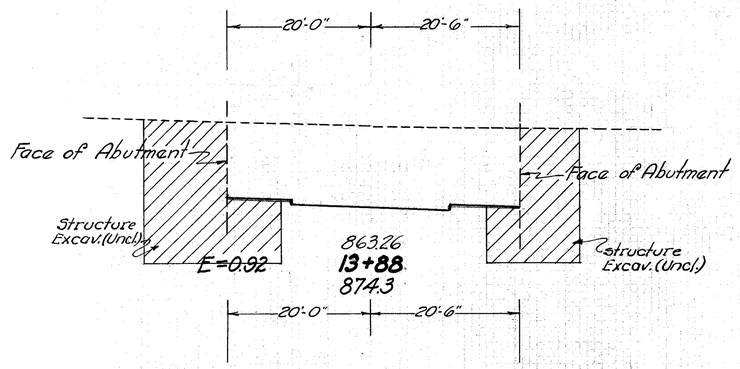
	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
870.80 9+00 861.8			0	882
	0	518		
871.90 8+50 862.0			0	1020
	0	584		
873.00 8+00 862.6			0	1130
	0	636		
Sta. 8+00 Rd. Appr. on Lt. For Detail-See Sheet No. 22	3718	3661		
874.06 7+50 863.3			0	1186
	0	645		
Sta. 7+58.18 on Road Approach 6-A For Detail-See Sheet No. 25	2479	3211		
875.02 7+00 864.0			0	1214
	0	666		
864.83 12+00 861.6			0	288
	0	165		
865.58 11+50 861.6			0	366
	0	230		
866.47 11+00 861.8			0	459
End 12" Storm Sewer Sta. 11+00 (at Culvert)				
	0	266		
867.50 10+50 861.8			0	544
Sta. 10+25 13-A C.B. on Rt.				
	0	322		
868.60 10+00 861.7			0	656
	0	387		
869.70 9+50 862.0			0	761
	0	435		

See Sheet No. 23 for continuation of Type 3-Modified Gutter.

STA. 7+00 TO STA. 12+00

80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50

870



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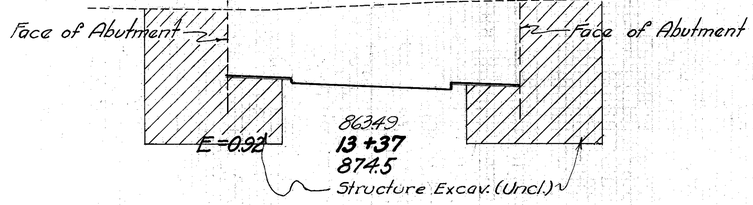

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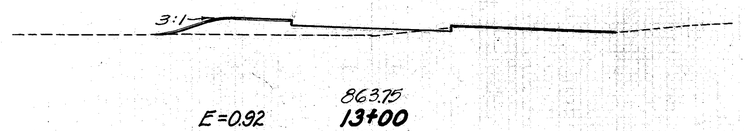

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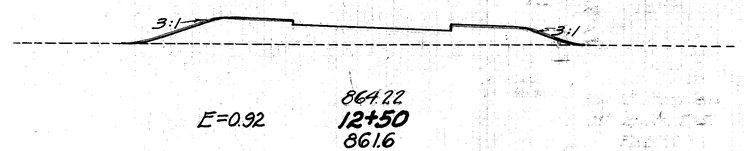


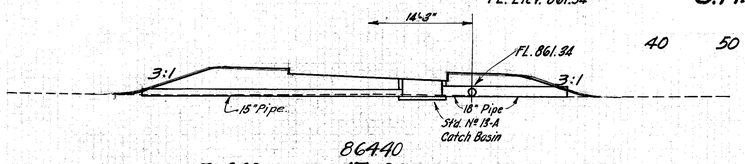
80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50

End Area		Cu. Yds.	
Cut	Fill	Exc.	Emb.
		734	0
		166	0
447	0		
		841	0
444	0		
		306	34
2	50		
		2	181
0	146		

60 70 80

70 60 50 40 30 20 10 ℄ 10 20 30

860



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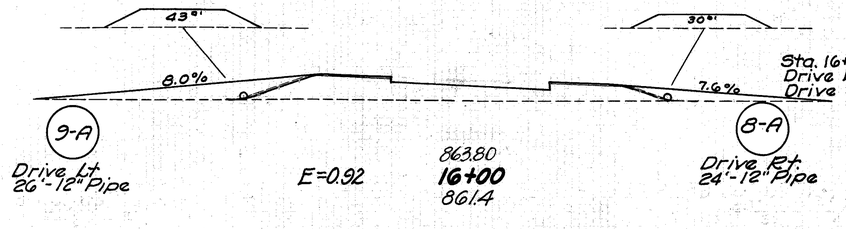

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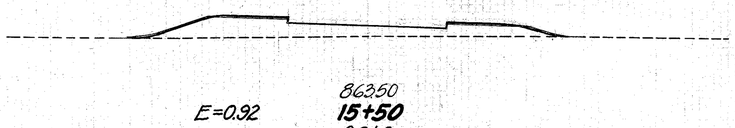

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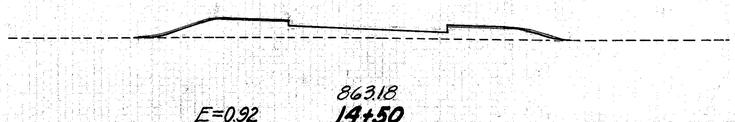
860



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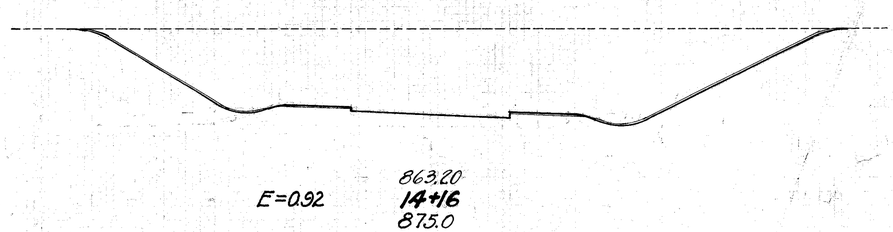


70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60

End Area		Cu. Yds.	
Cut	Fill	Exc.	Emb.
		0	570
0	156		
		0	520
			31
			16
0	125		
		0	213
0	105		
		0	189
0	99		
		0	177
0	92		
		0	44
0	92		
0	0		
		377	0
		177	0
970	0		

Sta. 16+00
Drive Lt.
Drive Rt.

+37 Ahead
Back

EXCAVATION = 2.5738 CU. YDS.
EMBANKMENT = 2.8531 CU. YDS.

70 80

F.A.G.C.P. Nos. F.A.P.No. 17
F.A.G.H. 415-F(1)
F.A.G.H. 415-G(1) 1939 55
F.A.G.H. 415-B(2)

10 OHIO

HARRISON COUNTY
S.H. 370 SEC. "S"(P.T.) & "P"(P.T.)

STA. 12+50 TO STA. 17+00

F.A.G.C.P. Nos. F.A.P. No. | F.A.G.H. 415-F(1) F.A.G.H. 415-G(1) 413-B(2)

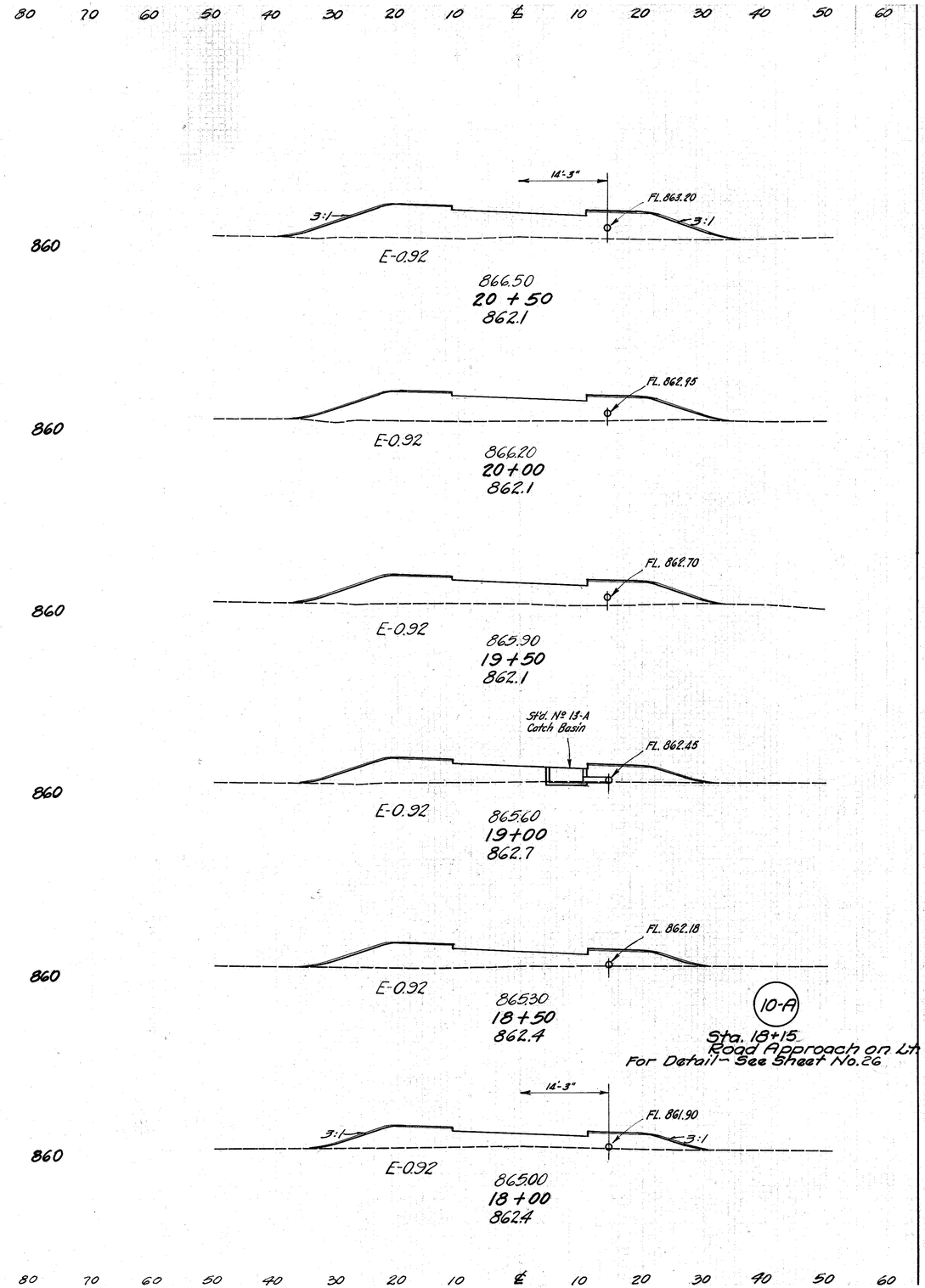
10 OHIO 1939

18
55

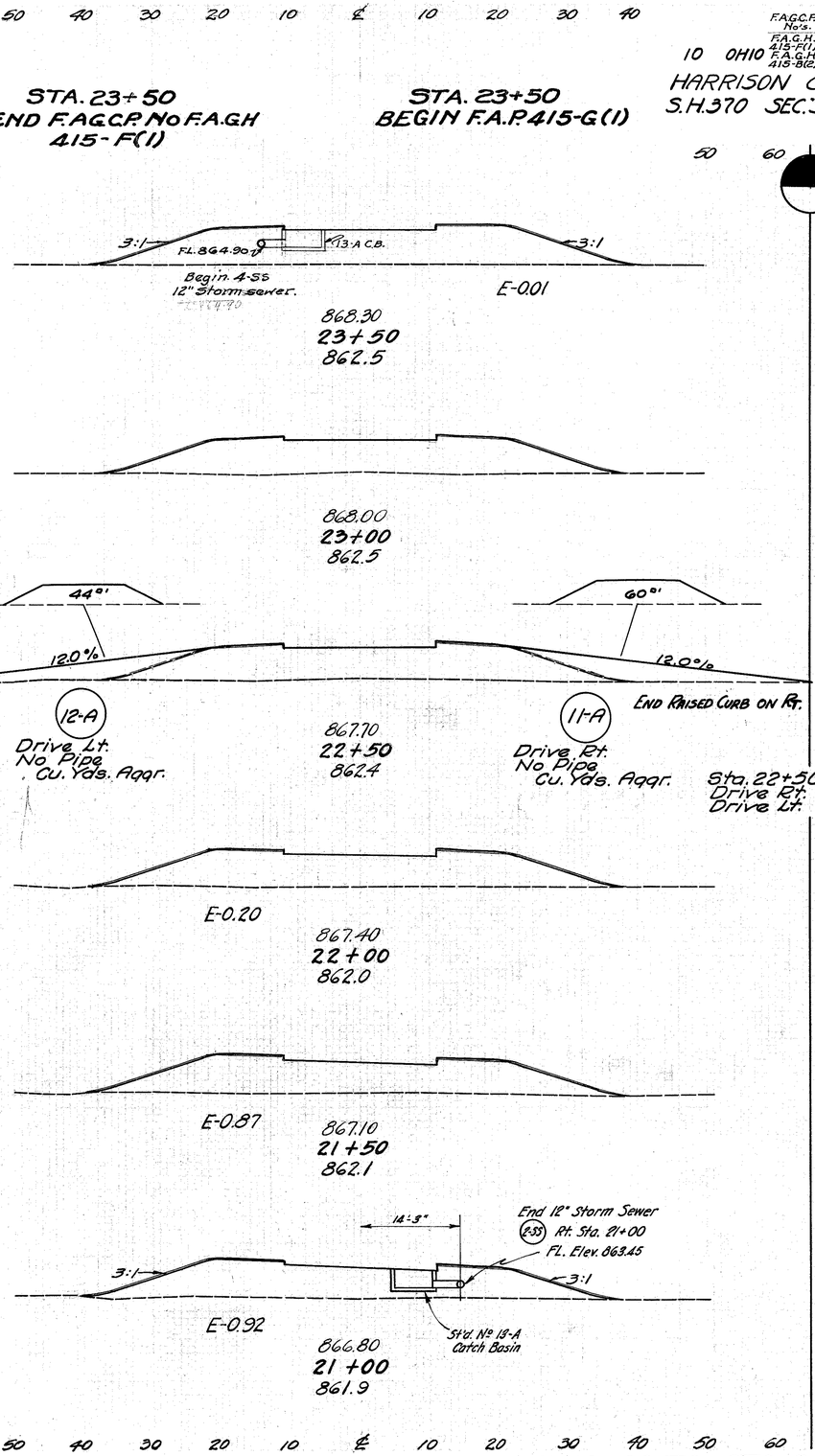
HARRISON COUNTY
S.H. 370 SEC. 'S' (PT) & 'P' (PT)

STA. 23+50
END F.A.G.C.P. No F.A.G.H
415-F(1)

STA. 23+50
BEGIN F.A.P. 415-G(1)



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
		0	523
0	275		
		0	468
0	230		
		0	416
0	219		
		0	362
0	172		
		0	309
0	162		
		0	1268
		0	291
0	152		



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
0	311		
		0	557
0	291		
		0	535
0	287		
		4.9	
		35	
		0	538
0	294		
		0	544
0	294		
		0	541
0	290		

STA 18+00 TO STA. 23+50

F.A.G.C.P. No's. F.A.P.No. 19
10 OHIO F.A.G.H. 413-F(1) F.A.S.H. 413-B(2) 413-G(1) 1939 55
HARRISON COUNTY
S.H.370 SEC. 'S'(PT) & 'P'(PT)

NO EARTHWORK
29.0'

End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
0	407		
		0	456
0	400		
		0	748
0	408		
		0	724
0	374		
		0	674
0	354		
		0	621
0	317		
		0	681

860

2:1 — 860.00 — E-1.38 — 2:1

869.98
26+30.5 — BRIDGE LIMIT
863.1

860

860.55 — E-1.38

869.80
26+00
863.0

860

861.42 — E-1.38

869.50
25+50
862.5

860

862.29 — E-1.38

869.20
25+00
862.7

860

863.17 — E-1.18

868.90
24+50
862.8

860

Sta 24+00
End 4-SS
Begin 5-SS
12" Storm Sewer.

2:1 — 864.04 — E-0.44 — 2:1

868.60
24+00
862.4

End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
		0	962
0	505		
		0	985
0	559		
		0	427
0	593		
		0	615
0	515		
		0	942
0	502		
		0	711
		0	446

860

2:1 — 967.92 — E-1.38 — 2:1

871.30
28+50
863.1

860

967.62 — E-1.38

871.00
28+00
862.0

860

967.50 — E-1.38

870.88
27+80
861.2

860

133°1 — 218°1

Sta. 27+50
Drive Rt. 359
Drive Lt. 136

12.0% — 967.32 — E-1.38 — 12.0%

14-A
Drive Lt.
No Pipe

870.70
27+50
862.6

13-A
Drive Rt.
No Pipe

860

967.02 — E-1.38

Sta. 26+85
Begin 6-SS
12" Storm sewer

870.40
27+00
862.6

860

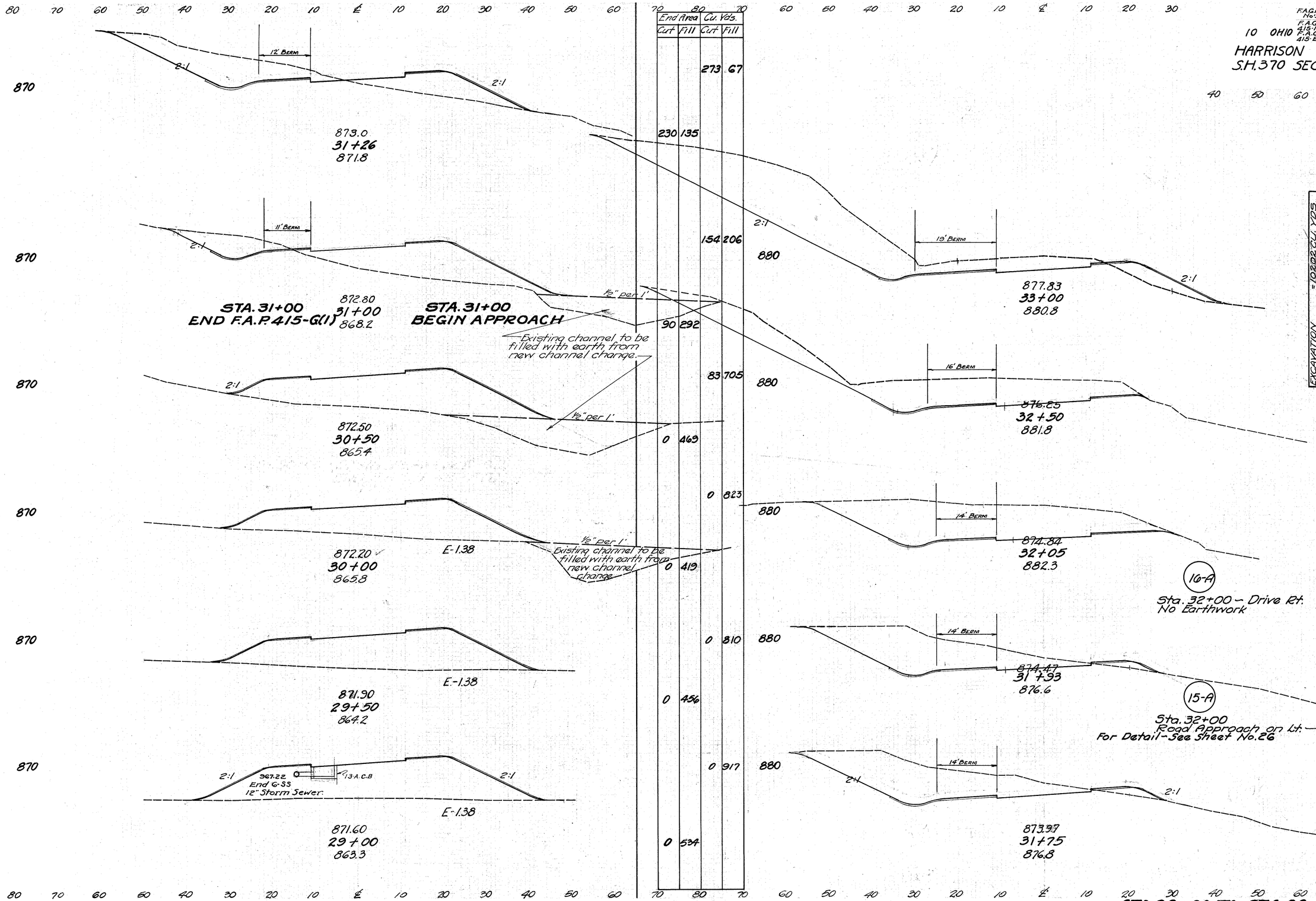
2:1 — E-1.38 — 2:1

870.16
26+59.5 — BRIDGE LIMIT
862.4

STA. 24+00 TO STA. 28+50

F.A.G.C.P. Nos. F.A.P. No. 20
F.A.G.H. 415-F(1) 10 OHIO F.A.G.H. 415-G(1) 1939 55
F.A.G.H. 415-B(2)

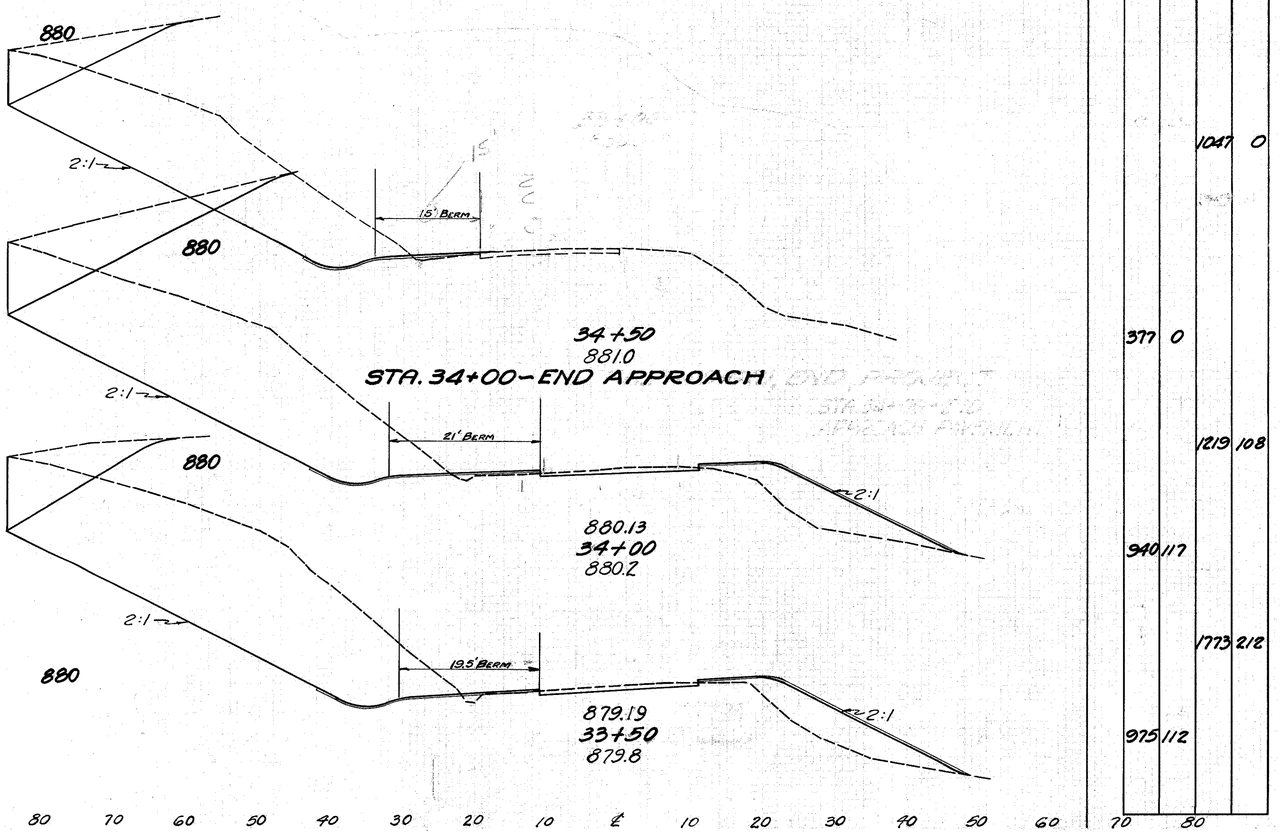
HARRISON COUNTY
S.H. 370 SEC. "S" (PT) & "P" (PT)



STA. 29+00 TO STA. 33+00

F.A.G.C.P. No's. F.A.P. No. 21
F.A.G.H. 413-F(1) 10 OHIO F.A.G.H. 415-G(1) 1939 55
418-B(2)

HARRISON COUNTY
S.H.370 SEC. 'S'(PT) & 'P'(PT)



End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
0	0		
		1047	0
377	0		
		1219	108
940	117		
		1773	218
975	112		

STA. 33+50 TO STA. 36+00

		F.A.G.C.P. / F.A.G.H.	F.A.P. No.		
10	OHIO	415 F(1) / F.A.G.H. 415 B(2)	415-6(1)	1939	22 / 55

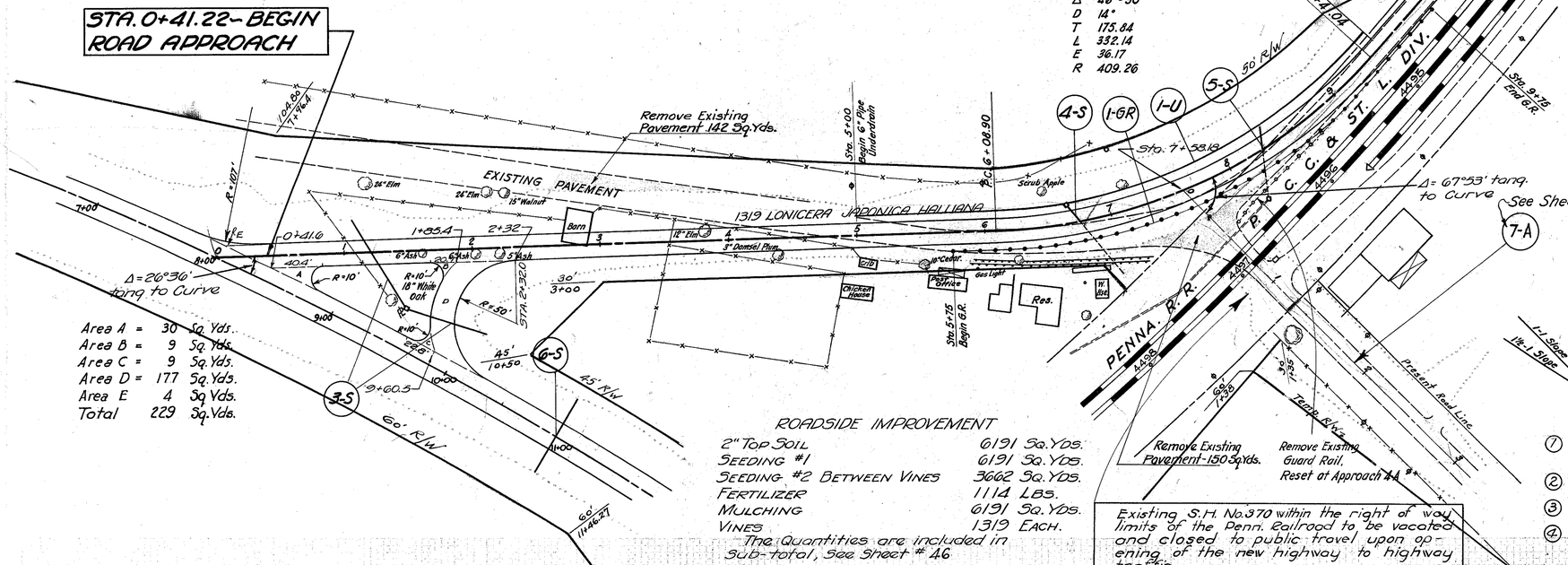
HARRISON COUNTY
S.H. 370 SECS. S (pt) & P (pt)

APPROACH No. 6-A

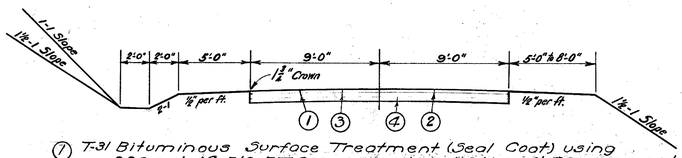
STATION 8+00

STA. 0+41.22 – BEGIN ROAD APPROACH

STA. 10+00 – END ROAD APPROACH



Note: Guard Rail to be built after Approach 7-A is abandoned and traffic is using underpass.



① T-31 Bituminous Surface Treatment (Seal Coat) using 0.20 gal. M-5.16, RT-6 per sq.yd. and 0.11 cu.ft. #6 aggregate per sq.yd.
② T-31 Bituminous Surface Treatment using 0.40 to 0.46 gal. M-5.16, RT-6 per sq.yd. and 0.40 cu.ft. #46 aggregate per sq.yd.
③ T-30 Bituminous Prime Coat using 0.30 gal. M-5.15, RT-2 per sq.yd.
④ B-20 5" Waterbound Macadam Base Course.

ROADSIDE IMPROVEMENT

2" Top Soil	6191 Sq.Yds.
Seeding #1	6191 Sq.Yds.
Seeding #2 Between Vines	3662 Sq.Yds.
Fertilizer	1114 Lbs.
Mulching	6191 Sq.Yds.
Vines	1319 Each.

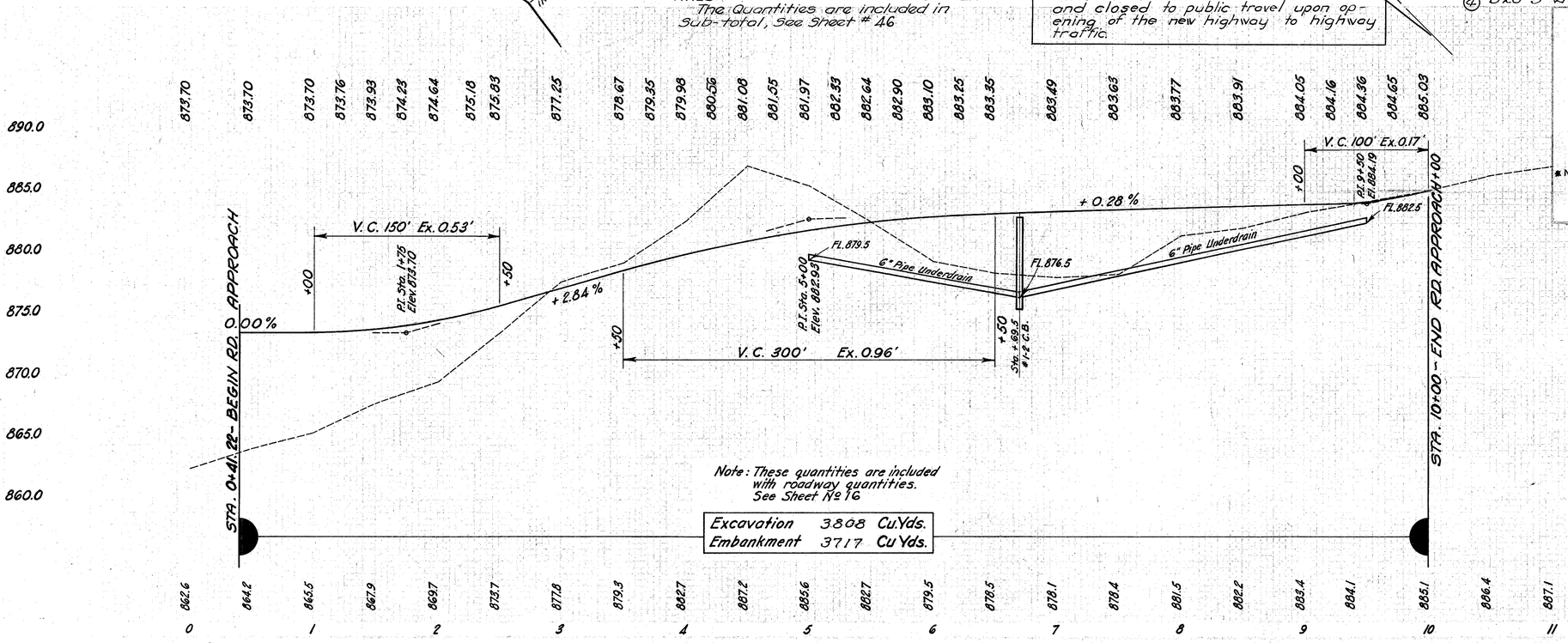
The Quantities are included in Sub-total, See Sheet # 46

ESTIMATED QUANTITIES

* Excavation	3718 Cu.Yds.
* Embankment	3661 Cu.Yds.
6" Pipe Underdrain (H)	436 Lin.Ft.
Waterbound Macadam Base Course (B-20)	2146.6 Sq.Yds.
Bituminous Surface Treatment (T-31)	2146.6 Sq.Yds.
Guard Rail (1-GR)	412.5 Lin.Ft.

* NOTE – THE EXCAVATION & EMBANKMENT QUANTITIES SHOWN ON THIS SHEET ARE INCLUDED FOR PAYMENT WITH THE ROADWAY EXCAVATION QUANTITIES. SEE CROSS-SECTION SHEET No. 16

Remove Existing Guard Rail Reset at 4-A	220 Lin.Ft.
Removal of Existing Pavement	292 Sq.Yds.



Note: These quantities are included with roadway quantities. See Sheet № 16

Excavation	3808 Cu.Yds.
Embankment	3717 Cu.Yds.

ROAD APPROACH. STA. 8+00

HARRISON COUNTY
S.H. 370 SEC. S(P.I.) & P(P.I.)

40 30 20 10 ℄ 10 20 30 40 30 20 10 ℄ 10 20 30

END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
		378	23
181	16		
		275	107
116	100		
		111	364
4	293		
9	628		
6	385		
		58	588
57	250		
		53	304
0	78		
		0	36
0	0		

880.0
1½-1
877.25
3+00
877.8

875.0
875.83
2+50
873.7

875.0
874.74
2+00
869.7

FL. 871.50
870.0
873.93
1+50
867.9

Sta. 1+03.5 – End Type 3-Modified Gutter

1½-1
FL. 868.5
870.0
FL. 871.6
Slope of Highway Fill
873.70
1+00
865.5

FL. 869.0
Slope of Highway Fill
865.0
873.70
0+50
864.2

STA. 0+41.22 – BEGIN ROAD APPROACH

Sta. 0+25 Zero End Area

885.0
1-1
F.L. 877.73
883.10
6+00
879.5

Begin Guard Rail
Right Sta 5+75
(Not to be placed until present railroad crossing is abandoned)

885.0
F.L. 876.62
882.64
5+50
882.7

885.0
1-1
F.L. 879.5
881.97
5+00
885.6

Sta. 5+00 – Begin 6" Pipe Underdrain on Lt.

FL. 870.10
½" per ft.
Slope of Highway Fill
1½-1
880.0
881.08
4+50
887.2

885.0
879.98
4+00
882.7

1½-1
880.0
878.67
3+50
879.3

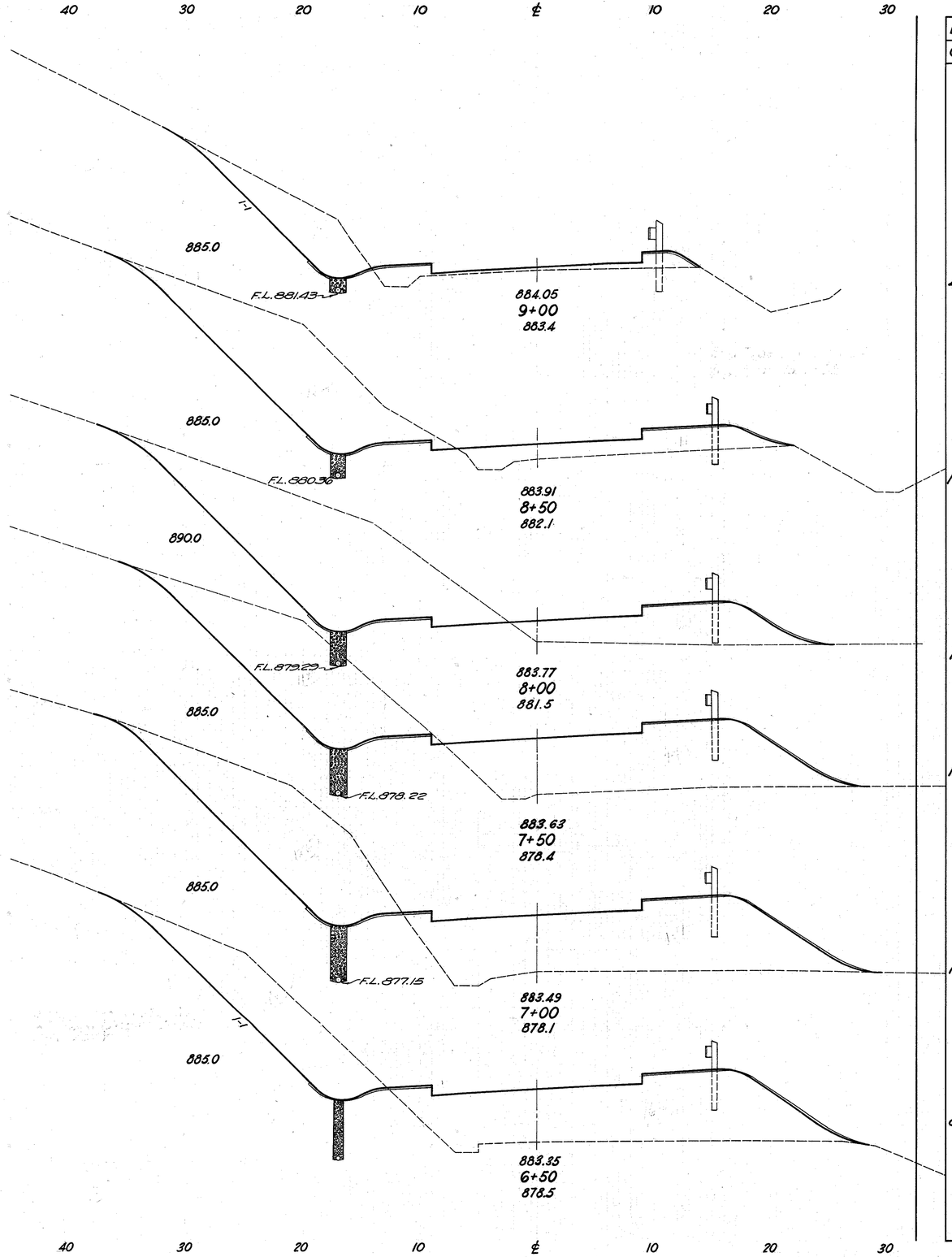
ROAD APPROACH STA 8+00

Excavation = 3718 Cu. Yds.
Embankment = 3661 Cu. Yds.

END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
88	94		
		119	94
41	7		
		161	6
133	0		
		333	2
227	2		
		473	3
284	1		
		473	9
227	9		

F.A.G.C.R. F.A.P.
F.A.G.H. 415 F(1)
10 OHIO F.A.G.H. 415-6(1) 1939 24
415 B(2) 55

HARRISON COUNTY
S.H. 370 SEC. S (PH) & P (PH)



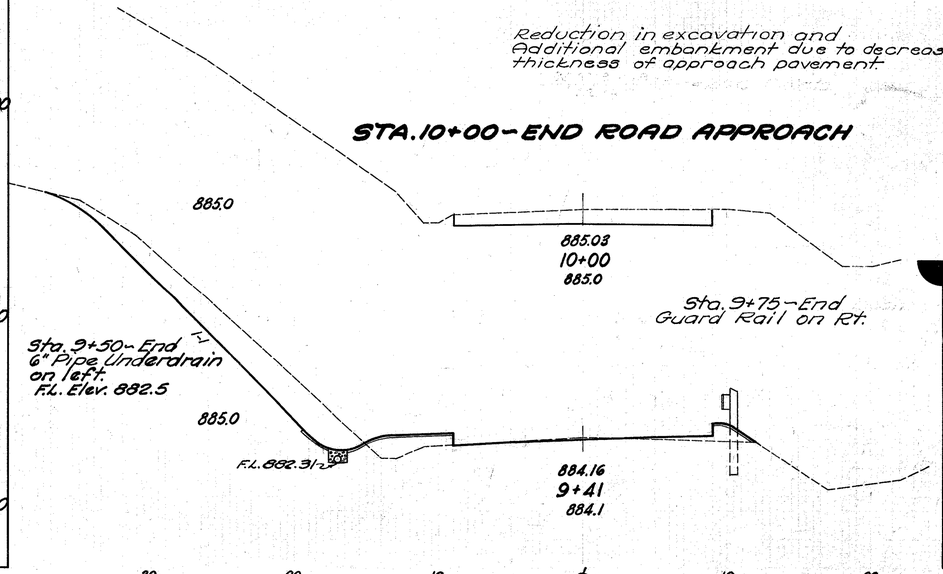
END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
45	18		
		160	55
128	41		
		281	94
175	60		
		271	188
118	143		
		226	300
126	181		
		194	320
84	165		
		159	240

P.C. 6+08.90 D = 14° L PT 9+41.04

Dedtn. to get Grade	Edge of Pavt. Grade	Width	Sta.	℄ Grade	Width	Edge of Pavt. Grade	Add to L.P. Edge
0.15	881.10	9.00	4+58.90	881.25	9.00	881.10	0.00
	881.40		+75	881.55		881.42	0.02
	881.82		5+00	881.97		881.97	0.15
	882.18		+25	882.33		882.57	0.39
	882.49		+50	882.64		883.18	0.69
	882.75		+75	882.90		883.65	0.90
	882.95		6+00	883.10		883.94	0.99
	883.01		+08.90	883.16		884.01	1.00
	883.10		+25	883.25		884.10	
	883.20		+50	883.35		884.20	
	883.27		+75	883.42		884.27	
	883.34		7+00	883.49		884.34	
	883.41		+25	883.56		884.41	
	883.48		+50	883.63		884.48	
	883.55		+75	883.70		884.55	
	883.62		8+00	883.77		884.62	
	883.69		+25	883.84		884.69	
	883.76		+50	883.91		884.76	1.00
	883.83		+75	883.98		884.77	0.94
	883.90		9+00	884.05		884.68	0.78
	884.01		+25	884.16		884.51	0.50
	884.21		+50	884.36		884.43	0.22
	884.50		+75	884.65		884.56	0.06
	884.88	9.00	10+00	885.03	9.00	884.88	0.00

Reduction in excavation and Additional embankment due to decreased thickness of approach pavement.

STA. 10+00 - END ROAD APPROACH

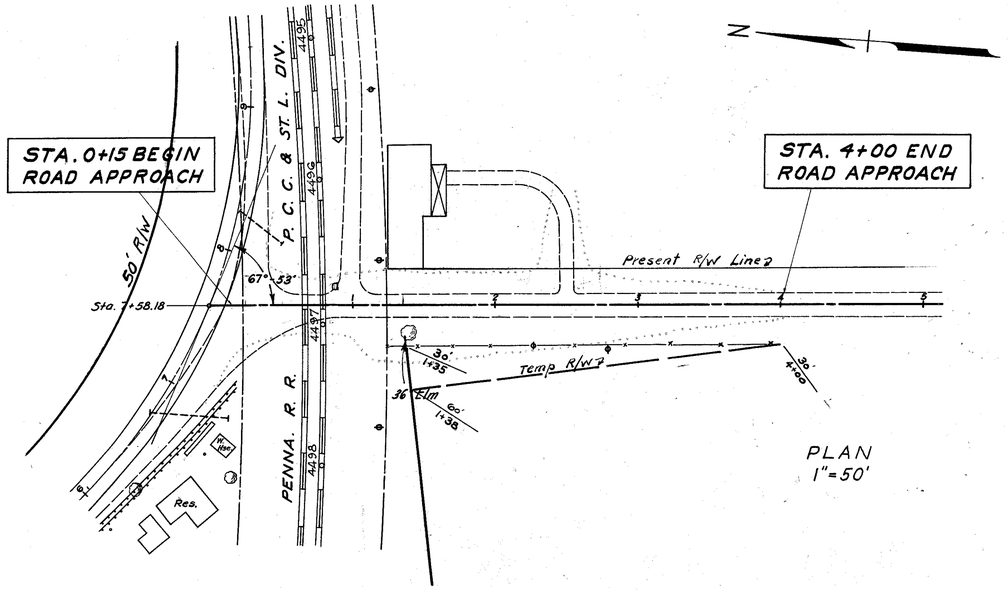


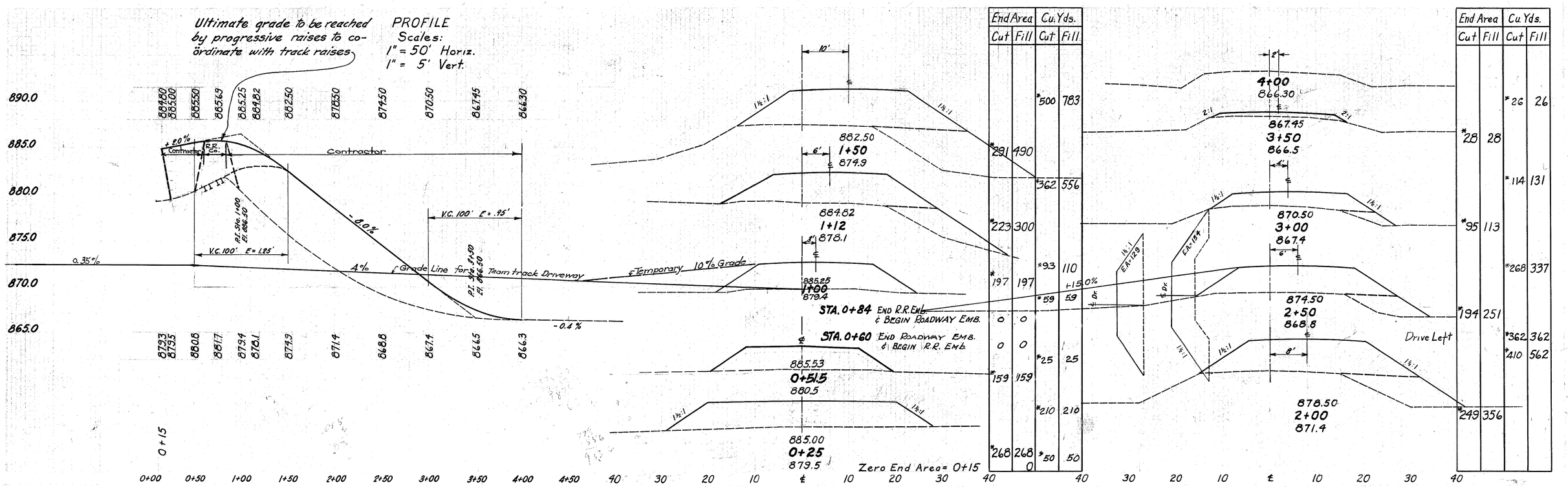
END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
		17	0
			31
			45
		11	41
			43
			45
		- 90	210

ROAD APPROACH. STA. 8+00

APPROACH No. 7-A

STATION 7+58.18 ON ROAD APPROACH G-A





- GENERAL NOTES -

* EXCAVATION:-

The excavation end areas and quantities shown on this sheet marked with an asterisk (*) indicate the embankment to be removed upon the opening of the grade separation and Route 151 approach to traffic.

The removed material may be disposed of in the roadway embankment, to construct permanent approaches or in any part of the work at the discretion of the contractor, and upon approval of the Engineer.

The contractor shall exercise care in the placing and removal of the embankment for the temporary road, so that the existing pavement will remain in a servicable condition for the use of adjacent property owners, after completion of the project.

TREE PROTECTION:-

Tree noted on this sheet at right of Station 1+45 shall be protected by Rip-rap as shown on Standard Drawing No. L-1, by timber cribbing, plank sheathing or other acceptable method giving necessary protection and aeration, during the time the temporary embankment remains in place. Upon completion of the work the temporary embankment and protection shall be removed as directed by the Engineer.
All the necessary labor, materials, and equipment for such protection shall be included for payment in the lump sum bid for, "Maintaining traffic, including lights, signs, barricades and watchmen, 24 hour service."

TRAFFIC BOUND MATERIAL:-

Traffic bound material for this temporary road is included in the surfacing material estimated for maintaining traffic.

F.A.G.C.P. F.A.P. 25
F.A.G.H. 415 F(1) 55
10 OHIO F.A.G.H. 415-6(1) 1939
415 B(2)

HARRISON COUNTY
S.H. 370 SECS. S(PH) & P(PH).

ESTIMATED QUANTITIES

Embankment	3,211. Cu.Yds.
* Excavation	2,479. Cu.Yds.

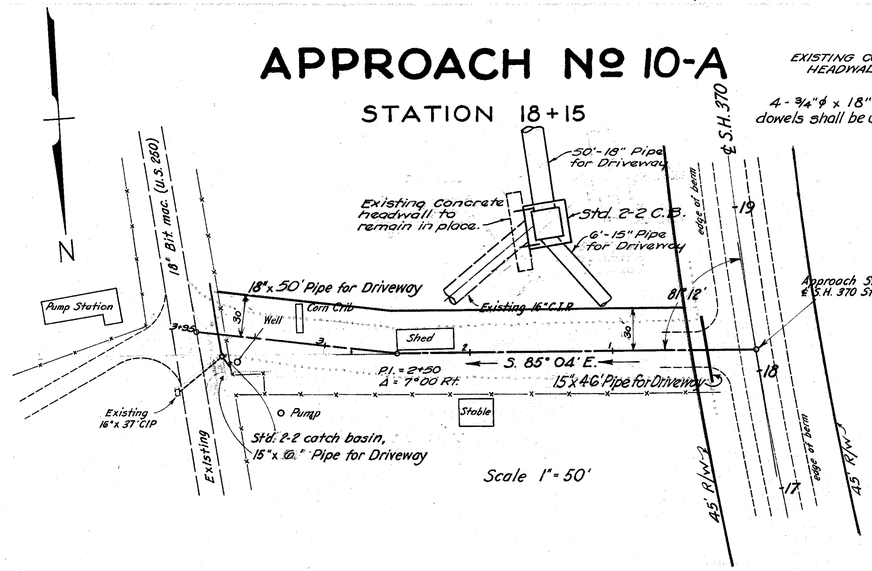
NOTE:- THE EXCAV. & EMB. ARE INCLUDED IN THE SUMMARY OF ROADWAY QUANTITIES, SEE SHEET NO. 16

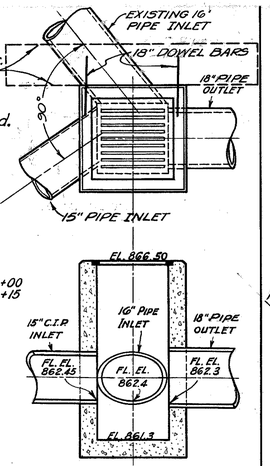
FED. RD DIST. NO	STATE	F.A.G.C.P	F.A.P.	FISCAL YEAR
10	OHIO	F.A.S.H. 415 F(1)	415-G(1)	1939
		F.A.S.H. 415 B(2)		

26
55

APPROACH Nº 10-A

STATION 18+15

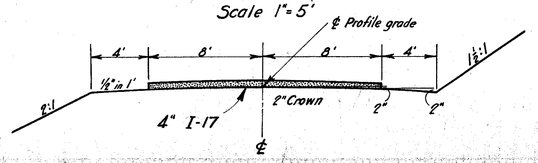




STD. 2-2 CATCH BASIN
SIDE INLETS TO BE OMITTED

TYPICAL SECTION

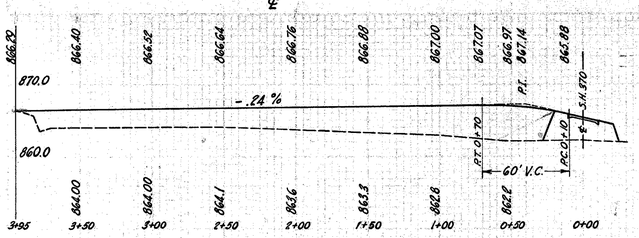
Scale 1" = 5'



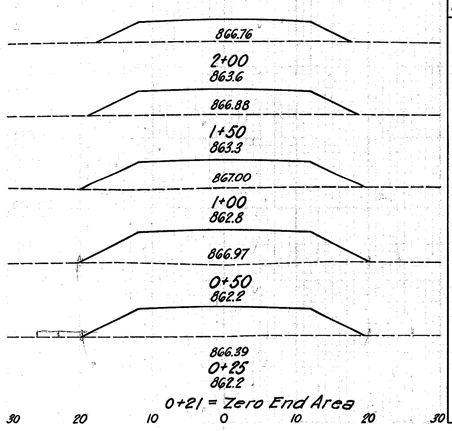
* Included in roadway embankment quantities See Sheet N° 18

ESTIMATED QUANTITIES

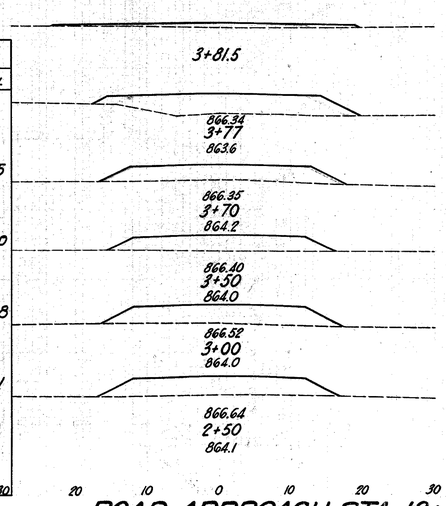
REINF. STEEL	9	LBS.
* EMBANKMENT,	1268	Cu. YDS.
AGGREGATE,	72	Cu. YDS.
18" PIPE,	50	LIN. FT.
15" PIPE,	52	LIN. FT.
STD. 2-2 CB	1	EACH.
STABILIZED PAVT.	33.6	SQ. YDS.
DOWEL HOLES	3	LIN. FT.



GRADE PROFILE
Scales, Hor. 1" = 50'
Vert. 1" = 10'



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
	92		185
	107		220
	130		248
	138		121
	124		9
	0		



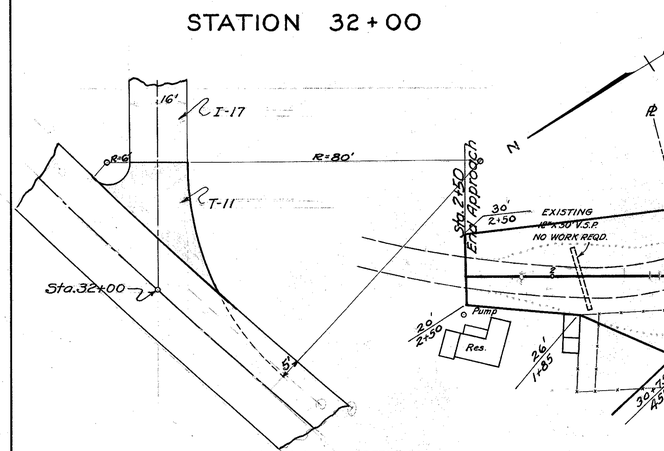
End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
	0		6
	23		10
	92		21
	68		48
	61		119
	68		129
	72		152

ROAD APPROACH, STA. 18+15

APPROACH Nº 15-A

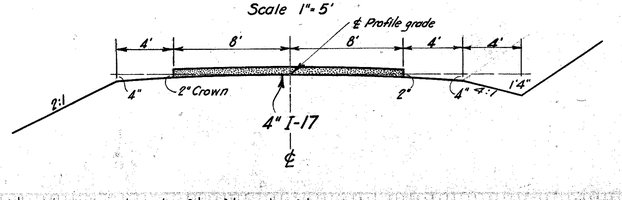
STATION 32+00

HARRISON COUNTY
S.H. 370 SEC. S (PH) & P (PH)



TYPICAL SECTION

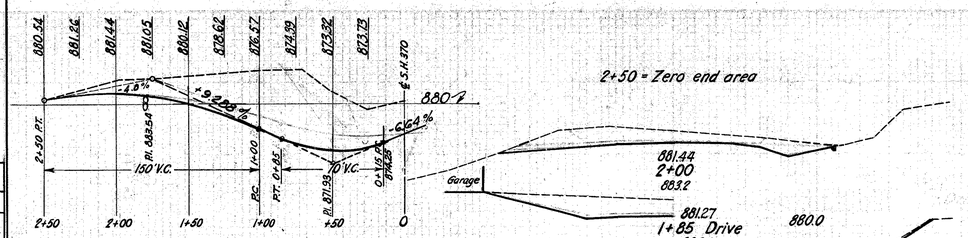
Scale 1" = 5'



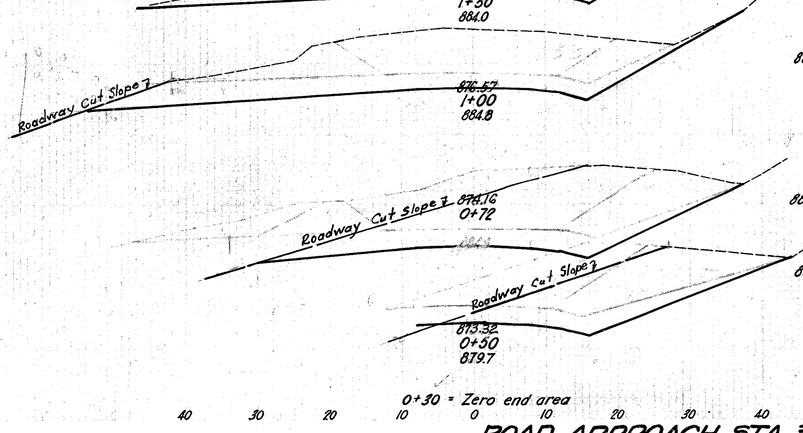
ESTIMATED QUANTITIES

STABILIZED PAVT.	50	SQ. YDS.
* EXCAVATION,	1840	Cu. YDS.
AGGREGATE,	41	Cu. YDS.
15" PIPE,	70	LIN. FT.

* Included for payment with Roadway Excavation Quantities See Sheet N° 20



Grade Profile
Scales, Hor. 1" = 50'
Vert. 1" = 10'



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
0			
80	0	74	0
215	0	273	0
500	0	662	0
413	0	475	0
240	0	267	0
0	0	89	0

ROAD APPROACH, STA. 32+00

HARRISON COUNTY
S.H. 370 SEC. S(PT)&P(PT)

50 40 30 20 10 ℄ 10 20 30 40 50

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
		238	
255			
		467	
249			
		456	
244			
		311	
92			
		85	
0			

855

1½:1 1½:1

855.5
5+00
862.3

855

855.6
4+50
862.3

855

1½:1

855.8
4+00
862.7

SEE NOTE

855

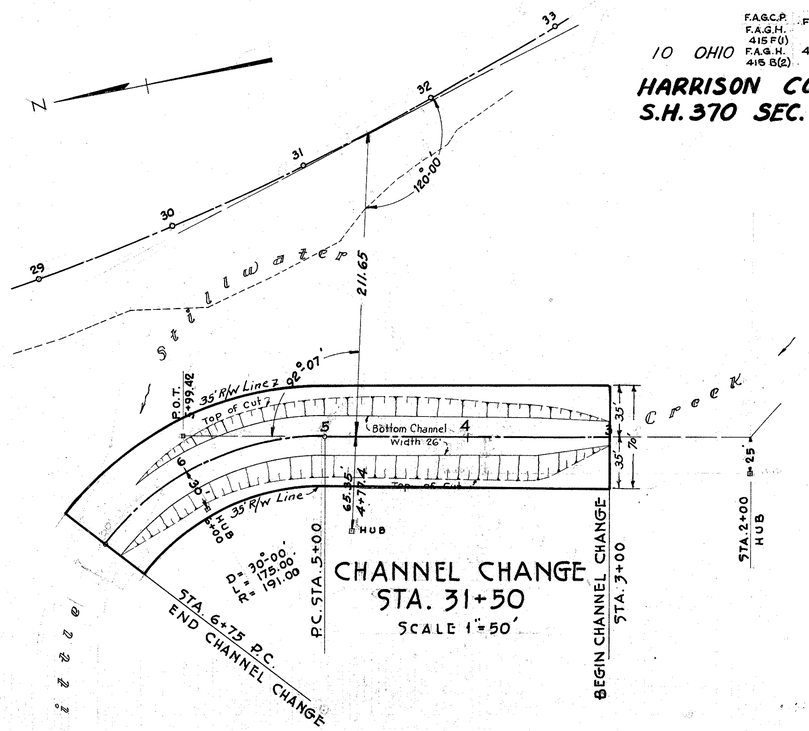
1½:1

855.9
3+50
857.1

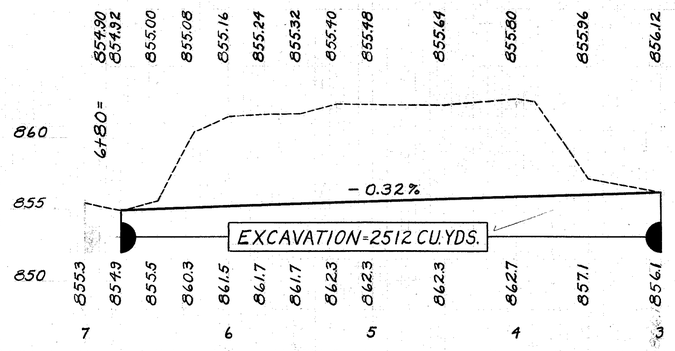
855

3+00 – BEGIN CHANNEL CHANGE
856.1

50 40 30 20 10 ℄ 10 20 30 40 50



NOTE: ALL EXCAVATED MATERIAL SHALL BE USED TO FILL EXISTING CHANNEL



PROFILE
SCALE-1"=50'

CHANNEL CHANGE, STA. 31+50

50 40 30 20 10 ℄ 10 20 30 40 50

854.9
6+75 – END CHANNEL CHANGE
854.9

1½:1

855

855.0
6+50
855.5

855

855.0
6+25
860.3

1½:1

855

855.1
6+00
861.5

855

855.2
5+75
861.7

855

855.3
5+50
861.7

1½:1 1½:1

855

855.4
5+25
862.3

50 40 30 20 10 ℄ 10 20 30 40 50

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0			
		29	
62			
		100	
154			
		174	
221			
		211	
234			
		215	
231			
		226	
258			

F.A.G.C.P. F.A.P.
F.A.G.H. 415 F(1)
10 OHIO F.A.G.H. 415 B(2) 415-G(1) 1939

28
55

HARRISON COUNTY
S.H. 370 SEC. S(PT) & P(PT)

CHANNEL CHANGE, STA. 31+50

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

60 50 40 30 20 10 ℄ 10 20 30

F.A.S.C.R. F.A.P.
F.A.G.H. 415 F(1)
10 OHIO F.A.G.H. 415-G(1) 1939 **C9 55**
415 B(2)

HARRISON COUNTY
S.H. 370 SEC. S.(PT)&R.(PT)

Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.

Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.

Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.

Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.
			0		

890

890.45
4484
889.0

890

891.09
4483
890.7

BEGINNING OF PROPOSED TRACK RAISE STA. 4482+65

℄ RIGHT OF WAY LINE

890

4482
891.4

℄ RIGHT OF WAY LINE

890

4481
892.1

Elevations shown are top of rail for proposed tracks and base of rail for existing tracks.

880

888.38
4489
886.5

880

888.73
4488
887.0

880

889.08
4487
887.7

880

889.45
4486
888.4

880

889.91
4485
889.1

LEGEND OF R.R. FILLS

- Cinder Ballast Placed by R.R. and removed by Contractor.
- Earth Fill Placed by Contractor
- Porous Fill Placed by Railroad Company
- Porous Fill To Be Placed by Contractor and Removed by him along with the R.R. Ballast from Detour tracks.
- Ballast Placed by Railroad
- Emb. for Drive for Team Track to be placed by R.R.

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

60 50 40 30 20 10 ℄ 10 20 30 40 50 60

R.R. STA 4480 TO STA 4489

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.
	68				75		
	38				37		
	74				59		
	42						
	57				27		
	20				44		
					21		
	39						
	21				44		
	27						
	49						
	26				48		

880

887.16
4492+50
884.00

880

887.33
4492
884.5

880

887.51
4491+50
884.6

880

887.68
4491
885.0

880

887.86
4490+50
885.5

880

888.03
4490
885.4

4489

60 50 40 30 20 10 ℄ 10 20 30 40

F.A.G.C.R. F.A.P. 30
F.A.S.H. 55
10 OHIO 415 F(1) F.A.S.H. 415-611/939
415 B(2)

HARRISON COUNTY
S.H. 370 SEC. S.(PT)&P.(PT)

Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.
	65				100		
	120				161		
	64				74		
	99				128		
	43				64		
	84				113		
	48				58		
	80				107		
	38				58		
	68				94		
	35				44		

880

Reinf. Conc. Crib.

886.11
4495+50
881.70

880

886.28
4495
882.2

880

886.46
4494+50
884.80

880

886.63
4494
882.8

880

886.81
4493+50
883.20

880

886.98
4493
883.5

60 50 40 30 20 10 ℄ 10 20 30 40 50 60

R.R. STA 4490 TO STA 4495+50

F.A.G.C.P. F.A.P.
F.A.G.H. 415 F(1)
F.A.G.H. 415 B(2)
10 OHIO 415-G(1) 1939

31
55

HARRISON COUNTY
S.H. 370 SEC. S.(PT).& P.(PT).

	Cut End Area	Cut Cu. Yds.	Emb. End Area	Emb. Cu. Yds.	Emb End Area	Emb Cu. Yds.	Emb. End Area	Emb. Cu. Yds.
880								
884.89 4498+50 879.6	28		43		147		158	
		46		80		262		146
880	22							
885.14 4498 880.0		32	43		136		0	
				66		233		
880	13							
885.37 4497+50 880.50		13	28		116			
				26		127		
880	10							
885.49 4497+20 880.8		6	18		112			
				9		64		
880	6							
885.57 4497 881.6		10	7		62			
				7		145		
880	5							
885.76 4496+50 881.10		8	100		95			
				176				
880	4							
885.93 4496 881.5		4	90		119			
	0		144			198		
	4495+50					203		

	Cut End Area	Cut Cu. Yds.	Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.
870								
882.86 4501+50 877.0	59		132		176		443	
		22		48		64		161
STA 4501+40.18 END OF APPROACH EARTHWORK			132		176		443	
870	63							
BRIDGE		126	334		363		818	
883.50 4500+86.18 877.30 END OF APPROACH EARTHWORK	63		202		187		375	
		84		236		235		527
870	62							
883.61 4500+50 877.70	111		150		163		412	
		58		253		315		758
870	94		123		177		407	
883.96 4500 878.2		44	195		312		724	
870	81		88		160		374	
884.30 4499+50 878.7		44	160		287		682	
870	67		85		150		363	
884.60 4499 878.9			119		275		482	

R.R. STA 4496 TO STA 4501+50

F.A.G.C.R. F.A.G.H. 415 F(1) F.A.G.H. 415 B(2) F.A.P. 415-G(1) 1939

10 OHIO

32
55

HARRISON COUNTY
S.H. 370 SEC. S.(PT.) & P.(PT.)

Cut End Area	Cut Cu. Yds.
12	28
18	43
28	63
40	83
50	100
58	108

EMB. End Area	EMB. Cu. Yds.
56	320
94	323
141	330
184	284
221	287
291	329
293	325

EMB. End Area	EMB. Cu. Yds.
181	
218	
322	
439	
564	
650	
732	

EMB. End Area	EMB. Cu. Yds.
40	169
62	180
90	176
109	130
130	180
184	175
184	175

EMB. End Area	EMB. Cu. Yds.
107	
129	
219	
255	
354	
348	
325	

870

880.61
4504+50
874.90

880.98
4504
875.10

881.36
4503+50
875.50

881.73
4503
875.9

882.11
4502+50
876.30

882.48
4502
876.7

878.36
4507+50
872.6

878.73
4507
873.0

879.11
4506+50
873.4

879.48
4506
873.6

879.86
4505+50
874.0

880.23
4505
874.40

Cut End Area	Cut Cu. Yds.
0	2
2	7
6	17

450C+00

EMB. End Area	EMB. Cu. Yds.
315	128
170	75
301	141
155	77
299	135
168	69
309	123
0	166
9	316
10	175
28	326
20	177

EMB. End Area	EMB. Cu. Yds.
64	
133	
80	
157	
89	

80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60

80 70 60 50 40 30 20 10 ℄ 10 20 30 40

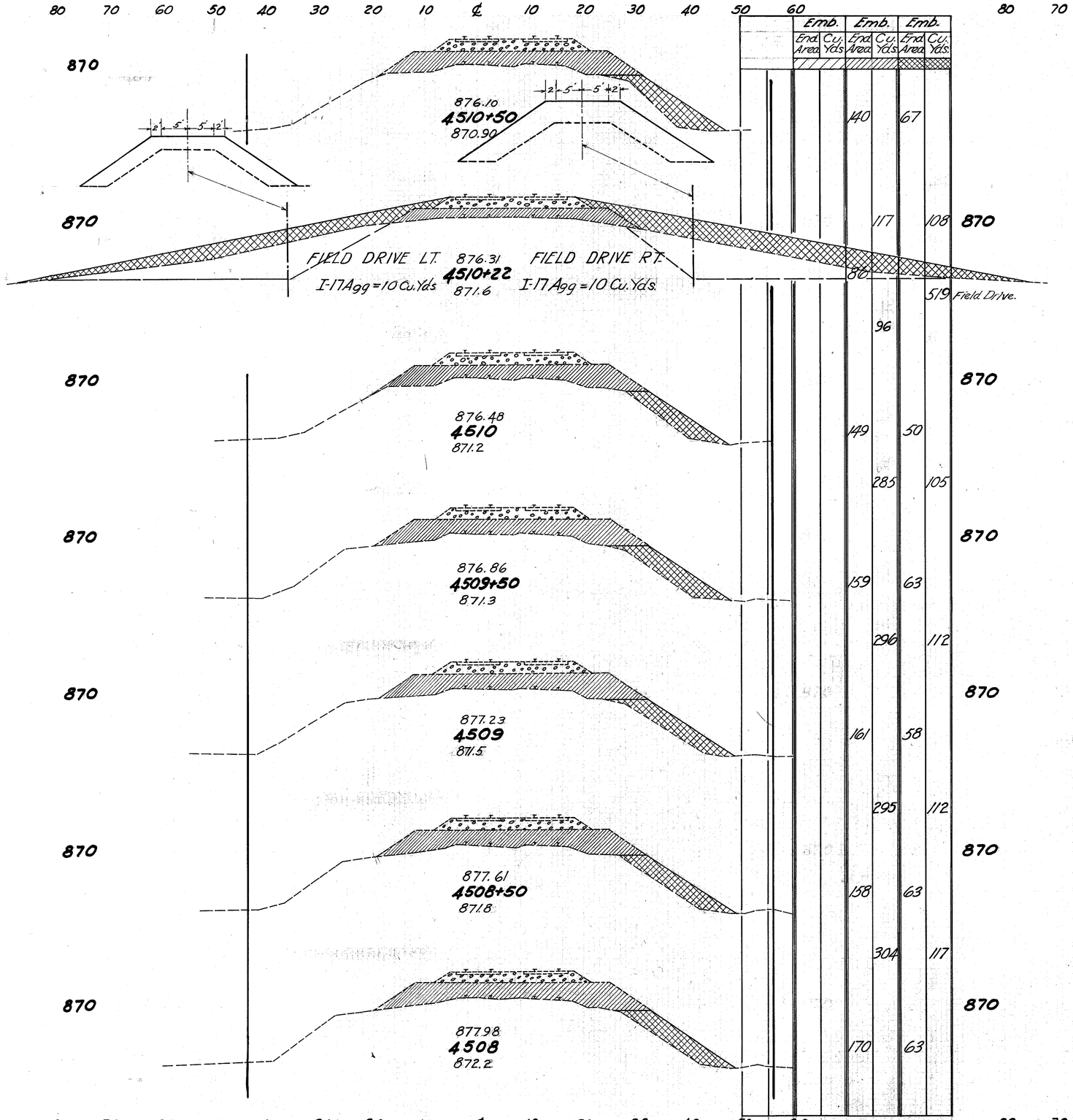
R.R. STA 4502 TO STA 4507+50

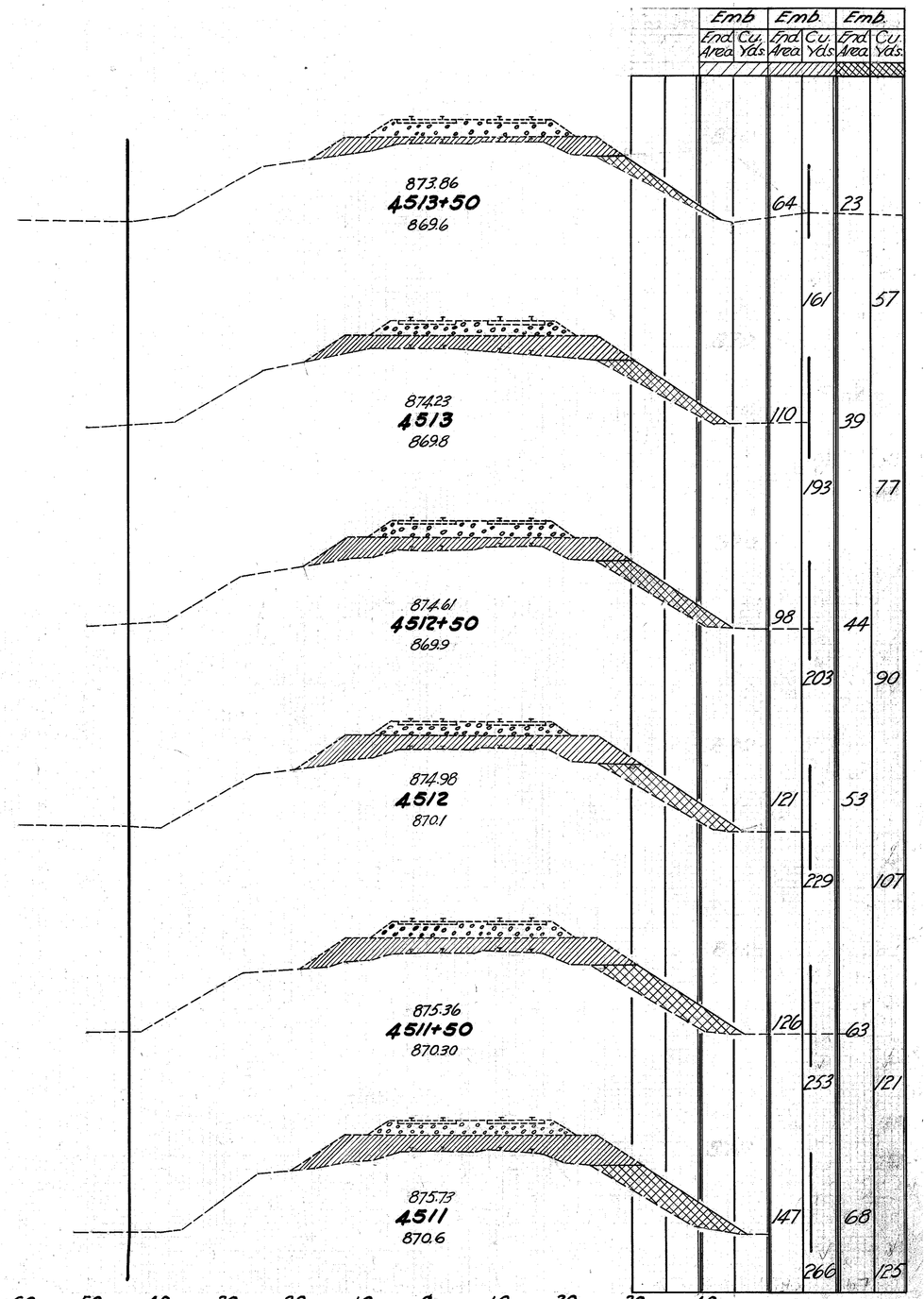
F.A.G.C.P. F.A.P. F.A.G.H. 415 F(1) F.A.G.H. 415 B(2) 415-611 1939

33
55

10 OHIO

HARRISON COUNTY
S.H. 370 SEC. S.(PT) & P.(PT)





R.R. STA 4508 TO STA 4513+50

F.A.G.C.P. F.A.P. 34
F.A.G.H. 415 F(1)
10 OHIO F.A.G.H. 415 B(2) 415-611) 1939 55

HARRISON COUNTY
S.H. 370 SEC. S(PT) & R(PT)

80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60

	Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.
870 871.23 **4518** 869.5			11			
				57		
870 871.70 **4517** 869.5			20			
				94		
870 872.23 **4516** 869.60			31			
				55		
870 872.52 **4515+50** 869.6			28	70	0	11
870 872.83 **4515** 869.7			48	93	12	20
870 873.16 **4514+50** 869.70			52	121	10	33
870 873.49 **4514** 869.6			79	132	26	45

80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60

ESTIMATED QUANTITIES

Work To Be Done By Rail Road.

Porous Embankment for permanent tracks.	11448	Cu.Yds.
Embankment for team track.	970	Cu.Yds.
Ballast for temporary tracks	1155	Cu.Yds.

Work To Be Done By Contractor:

Earth fill for permanent and detour Rail Road embankment.	9980	Cu.Yds.
Porous fill for detour embankment above present subgrade.	2850	Cu.Yds.
Removal of porous fill for detour embankment above present subgrade.	2850	Cu.Yds.
Removal of ballast for temporary tracks.	1155	Cu.Yds.
Total Removal (Excavation) Waste	4005	Cu.Yds.

NOTE:-

Borrow for porous embankment, Item E-4, shall meet the requirements of "Granular Material" as described in Sec. E-1.05 of the Construction and Material Specifications.

END OF PROPOSED TRACK RAISE STA. 4523+35.9

80 70 60 50 40 30 20 10 ℄ 10 20

	Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.	Emb. End Area	Emb. Cu. Yds.
870 870.12 **4522** 869.4						
870 870.30 **4521** 869.5						
870 870.54 **4520** 869.5						
870 870.86 **4519** 869.5					0	20

80 70 60 50 40 30 20 10 ℄ 10 20 30 40

R.R. STA 4514 TO STA 4522

FED. RD. DIST. NO.	STATE	F.A.G.C.P.	F.A.P.	FISCAL YEAR
10	OHIO	FAGH415-F(1) FAGH415-D(2)	415-G(1)	1939

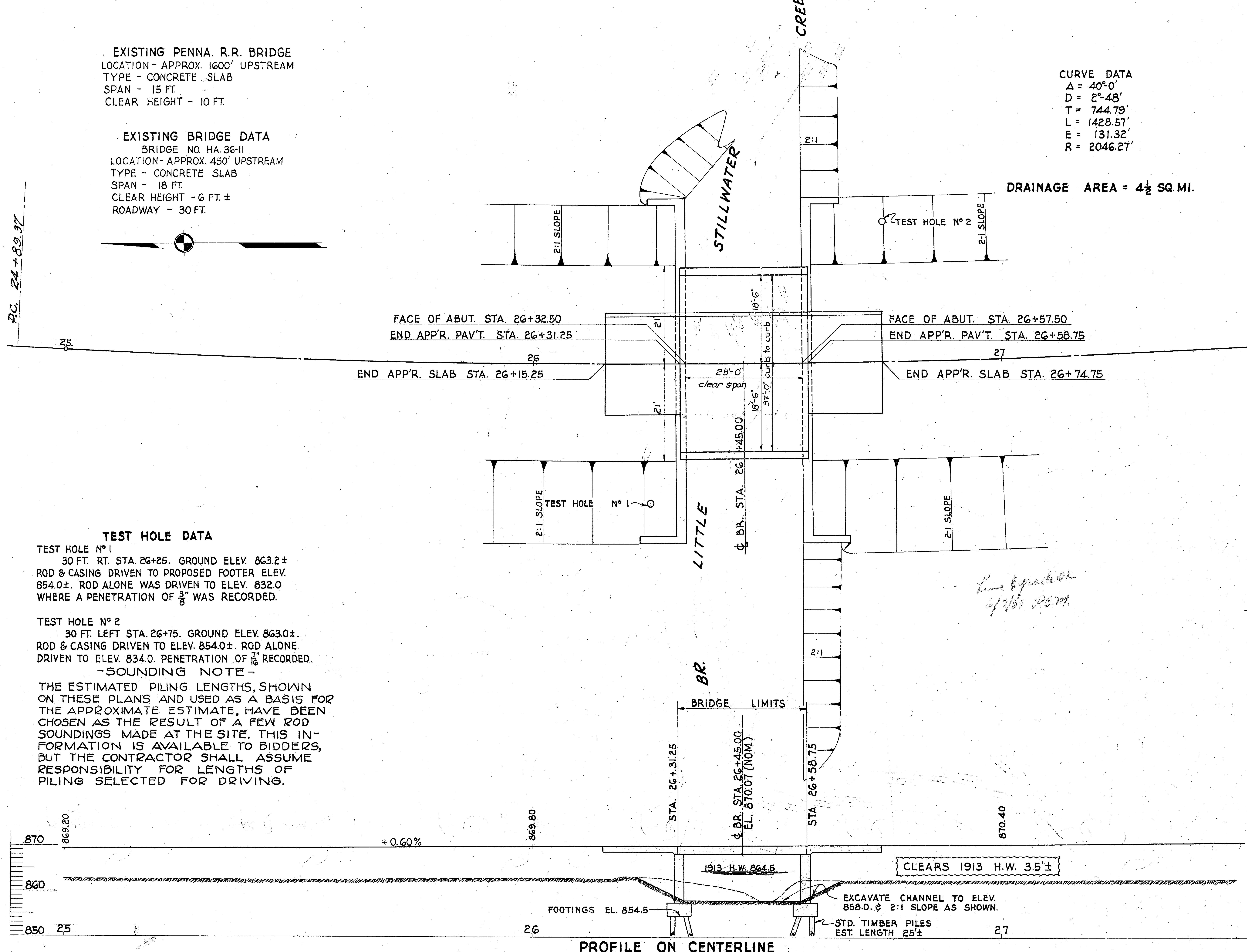
HARRISON COUNTY
S.H. 370 SECS. S(PT.) & P(PT.)
BRIDGE NO. HA-36-11

EXISTING PENNA. R.R. BRIDGE
LOCATION - APPROX. 1600' UPSTREAM
TYPE - CONCRETE SLAB
SPAN - 15 FT.
CLEAR HEIGHT - 10 FT.

EXISTING BRIDGE DATA
BRIDGE NO. HA.36-11
LOCATION - APPROX. 450' UPSTREAM
TYPE - CONCRETE SLAB
SPAN - 18 FT.
CLEAR HEIGHT - 6 FT. ±
ROADWAY - 30 FT.

CURVE DATA
Δ = 40°-0'
D = 2°-48'
T = 744.79'
L = 1428.57'
E = 131.32'
R = 2046.27'

DRAINAGE AREA = 4½ SQ. MI.



Line & grade OK
6/7/39 R.E.M.

TEST HOLE DATA

TEST HOLE Nº 1
30 FT. RT. STA. 26+25. GROUND ELEV. 863.2 ± ROD & CASING DRIVEN TO PROPOSED FOOTER ELEV. 854.0±. ROD ALONE WAS DRIVEN TO ELEV. 832.0 WHERE A PENETRATION OF 3/8" WAS RECORDED.

TEST HOLE Nº 2
30 FT. LEFT STA. 26+75. GROUND ELEV. 863.0±. ROD & CASING DRIVEN TO ELEV. 854.0±. ROD ALONE DRIVEN TO ELEV. 834.0. PENETRATION OF 7/16" RECORDED.

-SOUNDING NOTE-

THE ESTIMATED PILING LENGTHS, SHOWN ON THESE PLANS AND USED AS A BASIS FOR THE APPROXIMATE ESTIMATE, HAVE BEEN CHOSEN AS THE RESULT OF A FEW ROD SOUNDINGS MADE AT THE SITE. THIS INFORMATION IS AVAILABLE TO BIDDERS, BUT THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR LENGTHS OF PILING SELECTED FOR DRIVING.

PROPOSED STRUCTURE
TYPE: CONCRETE SLAB WITH CONCRETE ABUTS.
SPAN: 25' (CLEAR)
ROADWAY: 37'
LOADING: H-15-33
SKEW: NONE
WEAR. SURF.: 1" MONOLITHIC CONCRETE
APP'R. SLABS: 16' LONG BY 22' WIDE
ALIGNMENT: 2°-48' CURVE LEFT
SUPERELEVATION: 0.063 '/'

F.A.P. 415-G(1)

SITE PLAN
S.H. 370 SEC. S(PT.) & P(PT.)
BRIDGE Nº HA-36-11
HARRISON COUNTY
STATE OF OHIO
STA. 26+45.0 SCALE 1" = 10'

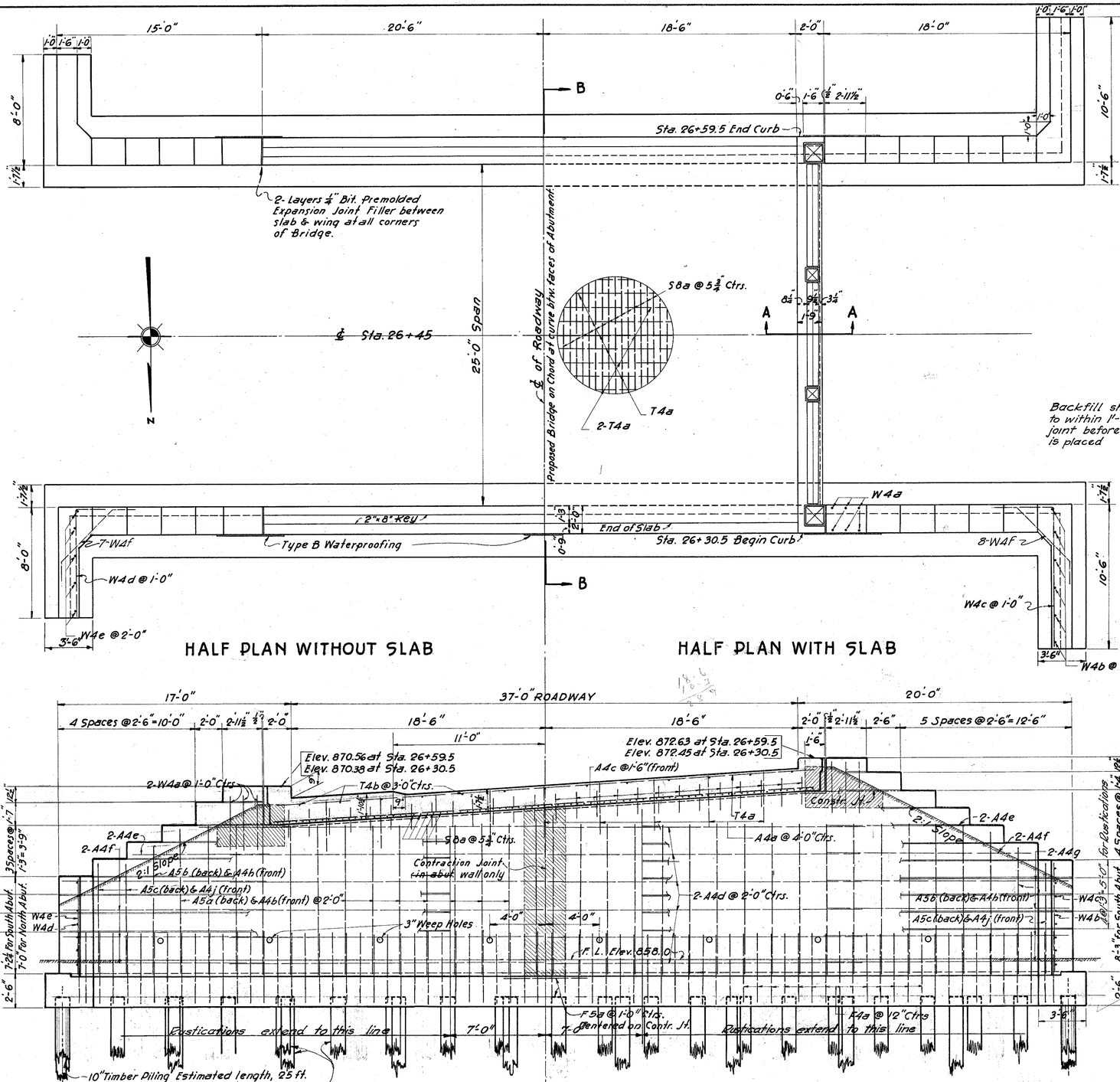
PRESENT TOPOGRAPHY		PROPOSED WORK		
SURVEYED	DRAWN	DESIGNED	CHECKED	REVIEWED
D.B. & C.A.P.	S.S.P.	C.H.G.	RLK	H.H.E. 9/14/39

T.O.P.
6-7-39

FED. RD. DIST. NO.	STATE	F.A.G.C.P.	F.A.P.	FISCAL YEAR
10	OHIO	FAGH-415-F(1) FAGH-415-B(2)	415-G(1)	1939

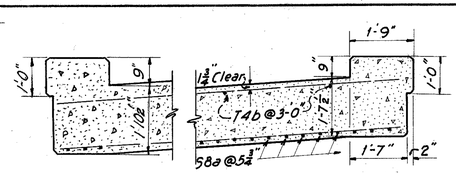
36
55

HARRISON COUNTY
S.H.370 SEC. S(PT) & P(PT)
BRIDGE NO. HA-36-11



HALF PLAN WITHOUT SLAB

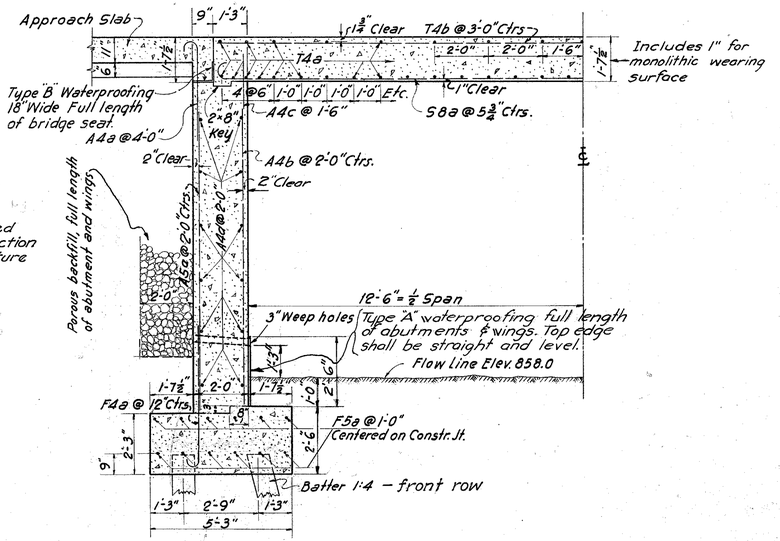
HALF PLAN WITH SLAB



SECTION "A-A" FOR EAST CURB

SECTION "A-A" FOR WEST CURB

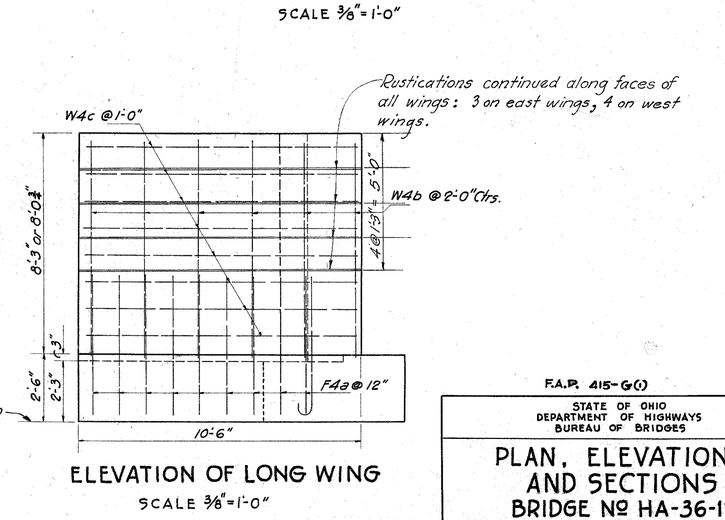
Backfill shall be placed to within 1'-0" of construction joint before superstructure is placed



HALF SECTION "B-B"
SCALE 3/8" = 1'-0"

BACK ELEVATION NORTH ABUTMENT
FRONT ELEVATION SOUTH ABUTMENT
SCALE ¼" = 1'-0"

Note -
---- All details, dimensions and notes, not otherwise shown, shall be in accordance with Standard Drwgs. SB-35 & MBD-36. ----
---- Existing structure to remain in place. ----



ELEVATION OF LONG WING
SCALE 3/8" = 1'-0"

F.A.P. 415-G(1)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

PLAN, ELEVATIONS AND SECTIONS
BRIDGE No HA-36-11

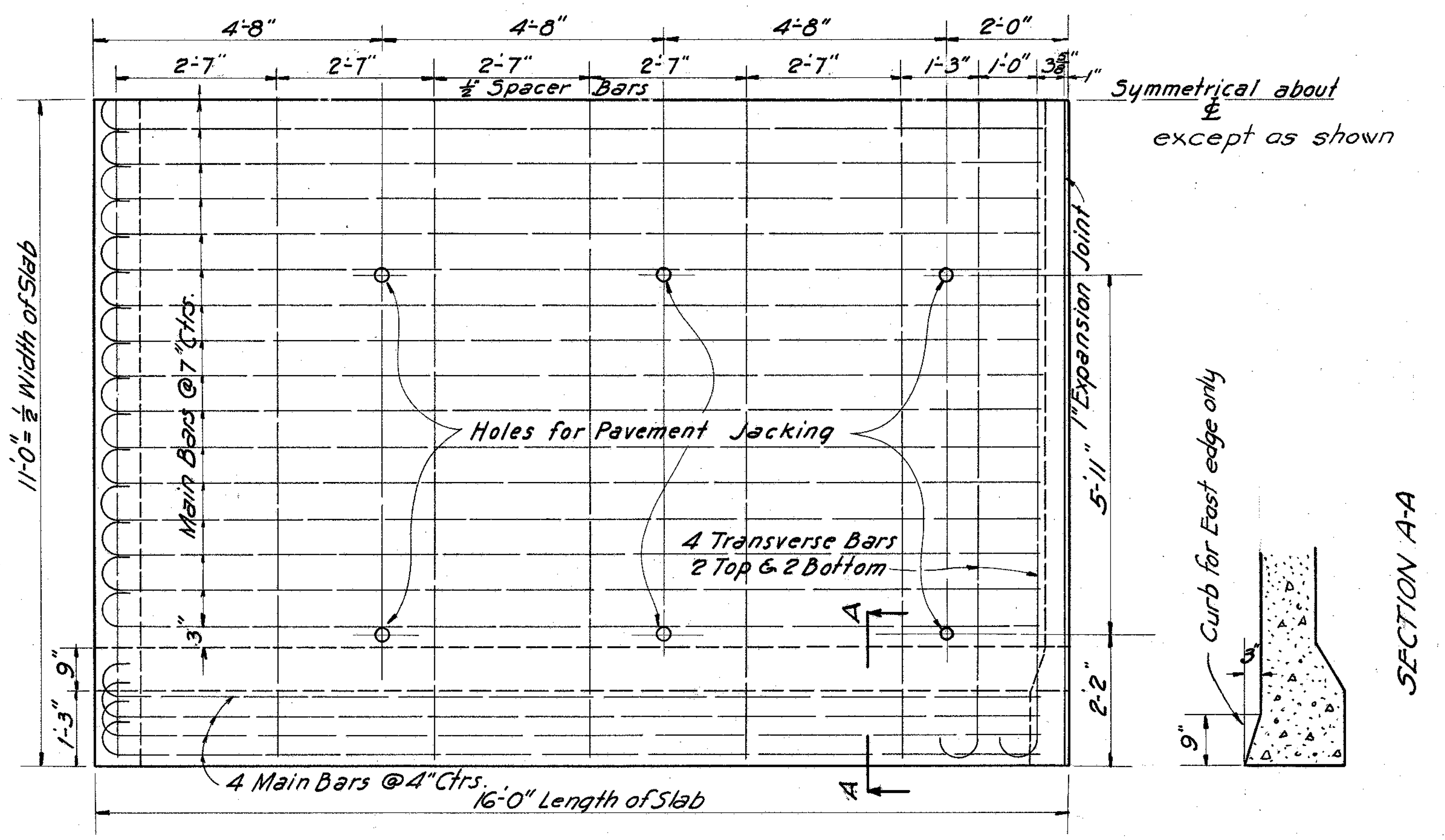
HARRISON COUNTY S.H. 370
SECS. S(PT) & P(PT) STA. 26+45

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.H.A. S.S.P.	S.S.P.	J.T.B.	V.A.E.	B.H.S. W.H.R.	9/14/39	

FED. RD. DIST. NO.	STATE	F.A.G.C.P.	F.A.P.	FISCAL YEAR
10	OHIO	FAGH-415-R(1) FAGH-415-R(2)	415-G(1)	1939

37
55

HARRISON COUNTY
S.H. 370 SEC. S(PT) & P(PT)
BRIDGE NO HA-36-11

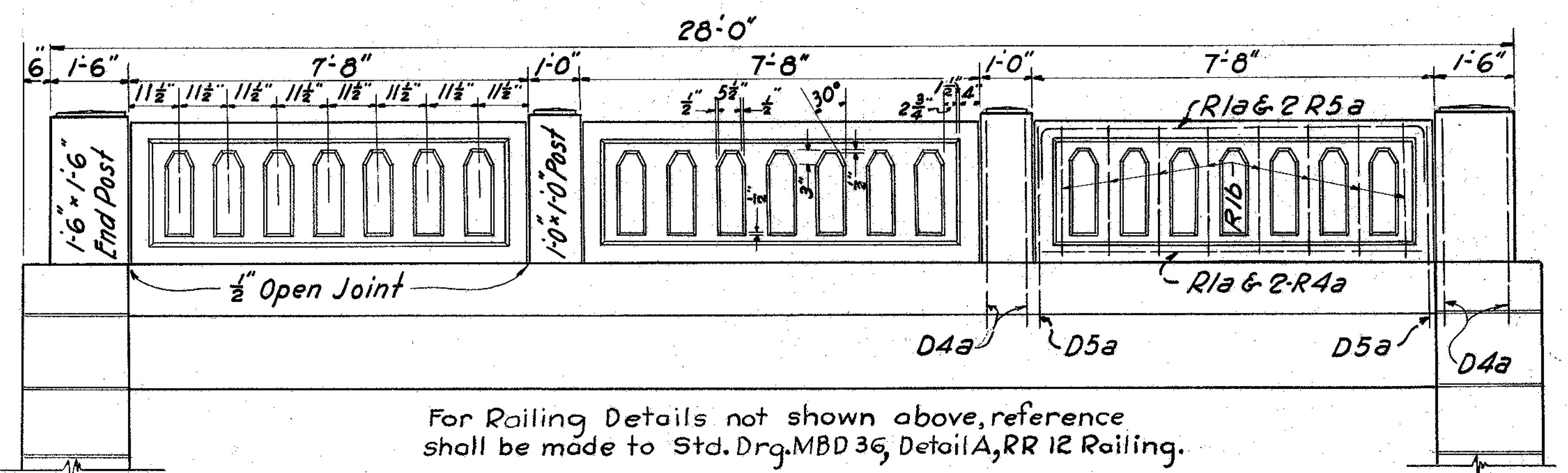


HALF DETAIL PLAN OF APPROACH SLAB

Note - For details not otherwise shown see Standard Drawing AS-35

Scale 1/2" = 1'-0"

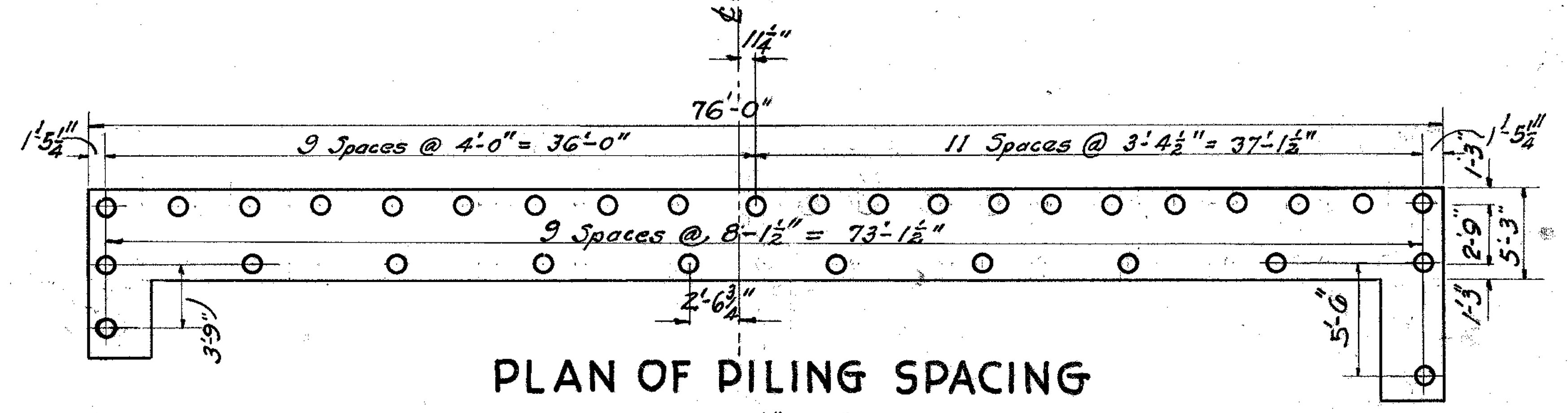
Approach slabs included with approach quantities for payment



For Railing Details not shown above, reference shall be made to Std. Drg. MBD 36, Detail A, RR 12 Railing.

ELEVATION OF RAILING

Scale 3/8" = 1'-0"



PLAN OF PILING SPACING

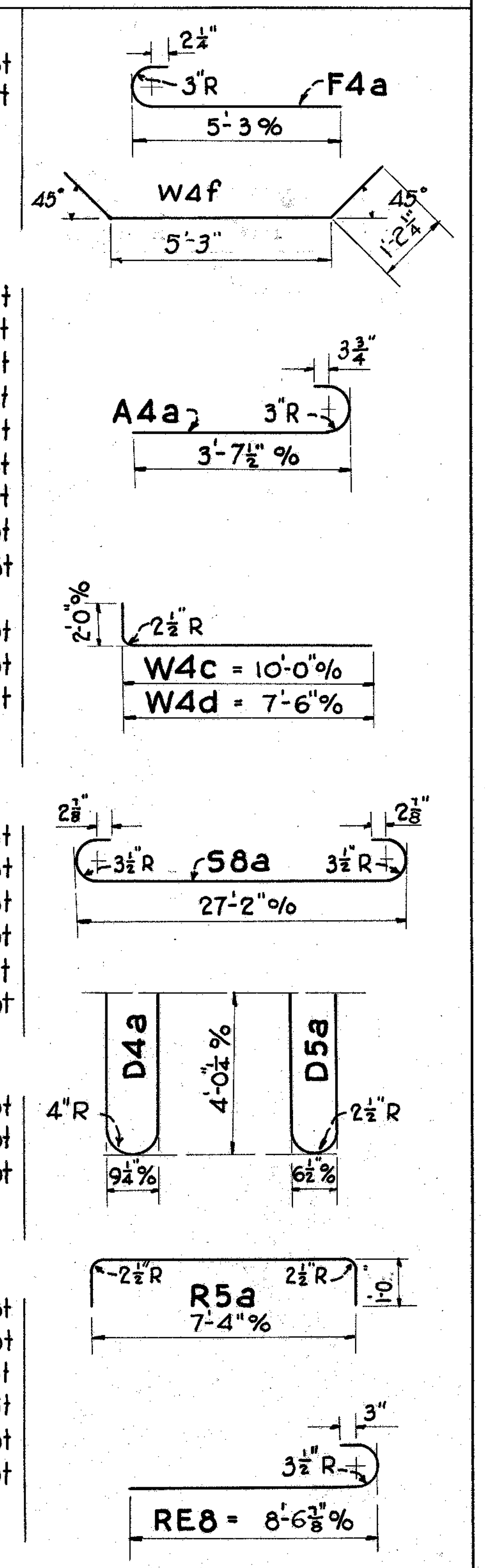
Scale 1/8" = 1'-0"

NORTH ABUTMENT SHOWN
SOUTH ABUTMENT OPPOSITE HAND

STEEL LIST

MARK	SIZE	NO.	LENGTH	WEIGHT	
FOOTING STEEL					
F4a	5/8" ø	174	6'-0"	1090	Bt
F5a	3/4" ø	24	6'-0"	220	St
ABUTMENT STEEL					
A4a	5/8" ø	18	4'-6"	85	Bt
A4b	5/8" ø	62	11'-0"	712	St
A4c	5/8" ø	52	2'-0	109	St
A4d	5/8" ø	48	22'-9"	1140	St
A4e	5/8" ø	8	10'-0"	84	St
A4f	5/8" ø	16	15'-0"	251	St
A4g	5/8" ø	16	18'-0"	301	St
A4h	5/8" ø	4	9'-6"	40	St
A4j	5/8" ø	6	8'-3"	52	St
A5a	3/4" ø	62	10'-9"	1001	St
A5b	3/4" ø	4	9'-3"	56	St
A5c	3/4" ø	6	8'-0"	72	St
WING STEEL					
W4a	5/8" ø	24	5'-0"	125	St
W4b	5/8" ø	12	8'-3"	103	St
W4c	5/8" ø	16	12'-0"	200	Bt
W4d	5/8" ø	14	9'-6"	139	Bt
W4e	5/8" ø	10	7'-0"	73	St
W4f	5/8" ø	30	8'-0"	251	Bt
SLAB STEEL					
T4a	5/8" ø	98	21'-0"	2148	St
T4b	5/8" ø	13	27'-0"	366	St
S8a	1" □	83	29'-0"	8190	Bt
RAILING STEEL					
D4a	5/8" ø	16	8'-5"	Included	Bt
D5a	3/4" ø	12	8'-3"	with	Bt
R1a	3/8" ø	12	7'-4"	Railing	St
R4a	5/8" ø	12	7'-4"	for	St
R5a	3/4" ø	12	9'-0"	Payment	Bt
R1b	3/8" ø	48	2'-6"		St
REPLACEMENT STEEL					
RE8	1" □	1	9'-6"	32	Bt
RE5	3/4" ø	1	7'-0"	11	St
RE4	5/8" ø	1	7'-0"	7	St
RE1	3/8" ø	1	6'-0"	2	St
TOTAL				16860	

SHAPE



Note: Length of bar measured along center. All dimensions are out to out of bar. All radii to inside of bar.

ESTIMATED QUANTITIES

E-2	Structure Excavation (Unclassified)	211	Cu. Yds.
E-3	Channel Excavation	460	Cu. Yds.
S-1	Concrete - Class E: Footings and Walls	219.5	Cu. Yds.
S-1	Concrete - Class C: Superstructure	73.0	Cu. Yds.
S-4	Reinforcing Steel	16860	Lbs.
S-17	10" Timber Piling (Including Steel points) Est. Length 25 ft.	~~1650~~ 2059.42	Lin. Ft.
S-3	Type B Waterproofing	28.7	Sq. Yds.
S-9	1/2" Bituminous Premolded Expansion Joint Material	38	Sq. Ft.
S-3	Type "A" Waterproofing	50	Sq. Yds.
S-14	Concrete Railing: Type RR-12	56	Lin. Ft.
S-16	First Test Pile: Timber	Lump Sum	
S-29	Porous Backfill	Lump Sum	

[B] MO#1, +325, CO#1, +84.42

F.A.P. 415-G(1)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

DETAILS, STEEL LIST & QUANTITIES

BRIDGE NO HA-36-11

HARRISON COUNTY S.H. 370
SEC. S(PT) & P(PT) STA. 26+45

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.H.A. S.S.P.	S.S.P.	J.T.B.	V.A.E.		9/14/39	

[B] Revised As-Built 1-5-42

FED. RD. DIST. NO.	STATE	F.A.G.C.P. No's.	F.A.P. No.	FISCAL YEAR
10	OHIO	F.A.S.H. 415-F(1) F.A.S.H. 415-B(2)	415-G(1)	1939

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55

HARRISON COUNTY
S.H. 370 SECS. S.(PI) & P.(PI)

CULVERT DATA

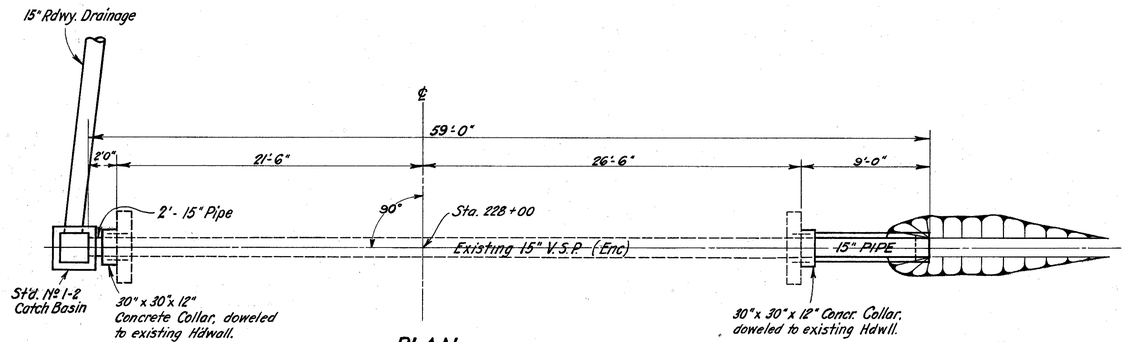
Type: Pipe Culvert (Extension)
Size: 15" x 2'-0" Left. 15" x 9'-0" Right
Work Reqd: Extend existing 15" V.S.P (Enc.) Culvert as shown, with concrete collars doweled to existing headwalls. Excavate outlet and build Standard No 1-2 Catch Basin at inlet end. Build Std. Conc. Cradle on Rt.

ESTIMATED QUANTITIES

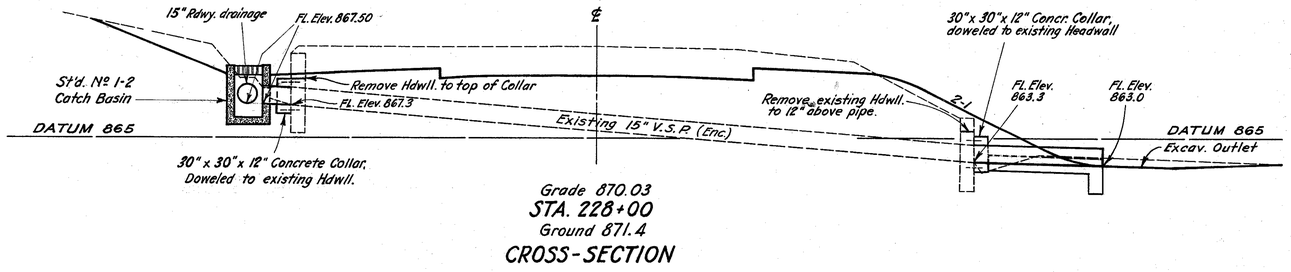
Excavation for Structures	3 Cu. Yds.
15" Pipe for Rdwy. Culverts	11 Lin. Ft.
Class "C" Concrete	1.1 Cu. Yds.
Reinforcing Steel	18 Lbs.
Standard No 1-2 Catch Basin	1 Each
Dowel holes	6 Lin. Ft.

REFERENCE DRAWINGS

Pipe Culverts — S-27, P.C. 1, 2, & 3

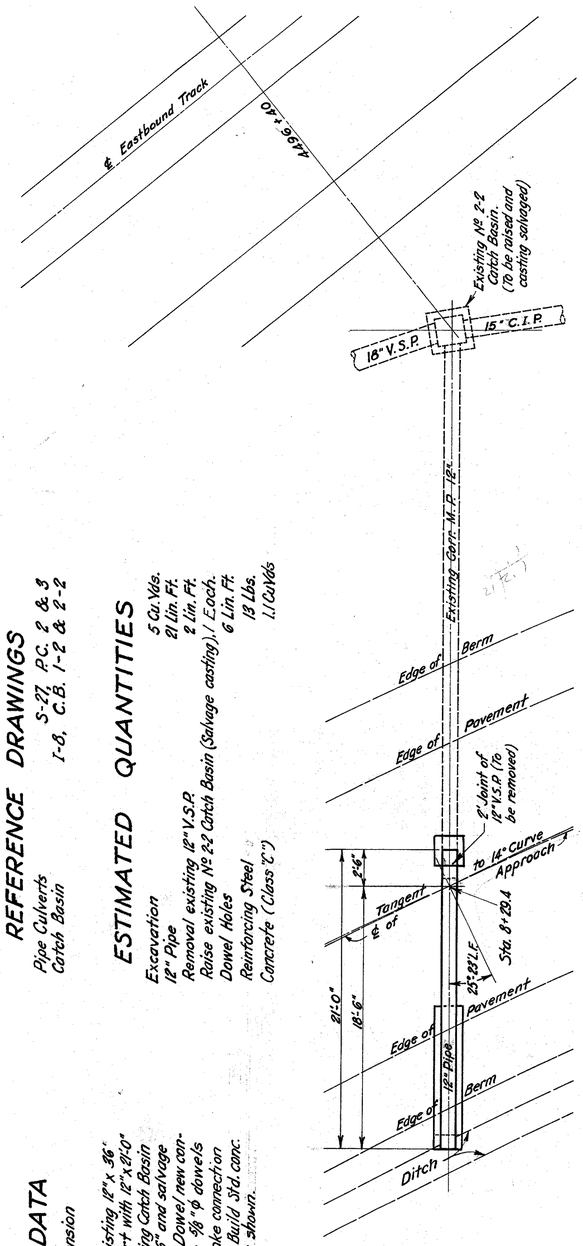


PLAN
SCALE 1" = 5'



Grade 870.03
STA. 228+00
Ground 871.4
CROSS-SECTION

STA. 228+00 (1-S)



PLAN
SCALE 1" = 5'

REFERENCE DRAWINGS

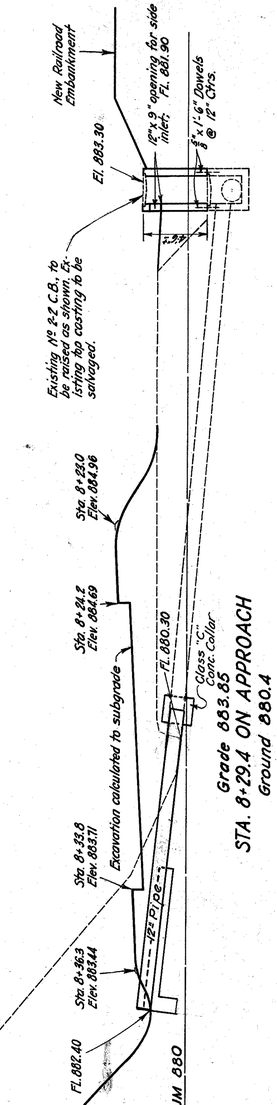
Pipe Culverts — S-27, P.C. 2 & 3
Catch Basin — 1-2, C.B. 1-2 & 2-2

ESTIMATED QUANTITIES

Excavation	5 Cu. Yds.
12" Pipe	21 Lin. Ft.
Removal existing 12" V.S.P.	2 Lin. Ft.
Raise existing No 2.2 Catch Basin (Salvage casting).	1 Each.
Dowel Holes	6 Lin. Ft.
Reinforcing Steel	13 Lbs.
Concrete (Class "C")	1.1 Cu Yds

CULVERT DATA

Type: Pipe Culvert Extension
Size: 12" x 21'-0"
Work Reqd: Extend existing 12" x 36" Corr. M. Pipe Culvert with 12" x 21'-0" Pipe. Raise existing Catch Basin approximately 1'-6" and salvage existing casting. Dowel new concrete to old with 3/4" ϕ dowels at 12" centers. Make connection with conc. collar. Build Std. conc. cradle on Left as shown.



Grade 883.85
STA. 8+29.4 ON APPROACH
Ground 880.4
CROSS-SECTION

STA. 8+29.4 ON APPROACH (5-S)

FED. RD. DIST. NO.	STATE	F.A.G.C.P. No's.	F.A.P. No.	FISCAL YEAR
10	OHIO	F.A.G.H. 415-P(1) F.A.S.H. 415-B(2)	415-G(1)	1939

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55

HARRISON COUNTY
S.H. 370 SECS. S(PA) & P(PA)

CULVERT DATA

Type: Pipe Culvert
Size: 15"x 62'-0"
Work Req'd: Place new 15"x 62'-0" Pipe Culvert as shown. Build Std. Nº 1-2 Catch Basin at inlet, provide opening in C.B. to take water from Type 3 Gutter. Build Type 3 Gutter and Type 3 Modified Gutter as detailed. Remove existing 12"x 38' Sec. C.I.P. Culvert left of Sta. 3+19 Build Std. Pipe Culvert End on Right.

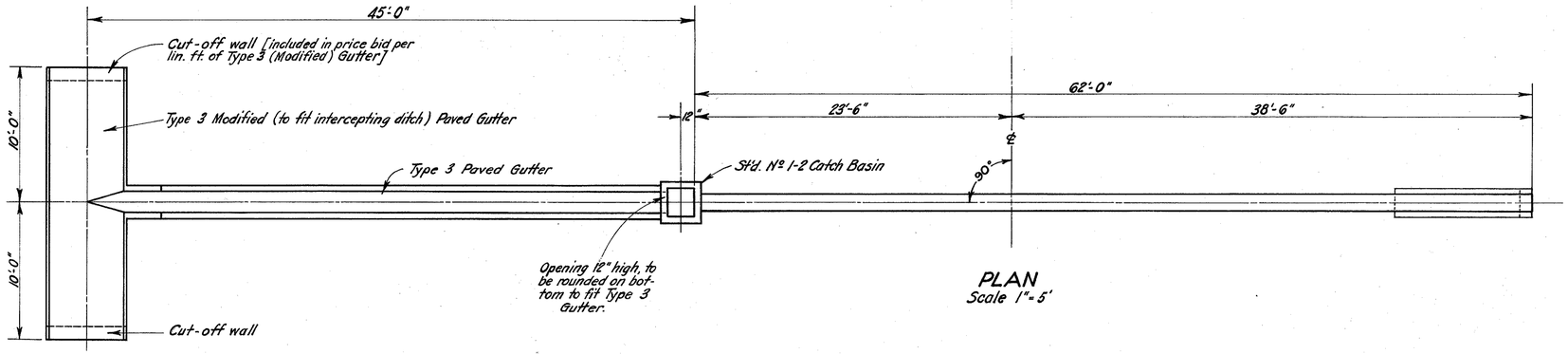
REFERENCE DRAWINGS

Pipe Culverts	S-27, P.C. 2 & 3
Catch Basins	I-8, C.B. 1-2 & 2-2

Detailed: S.J.P. Traced: W.B. Checked

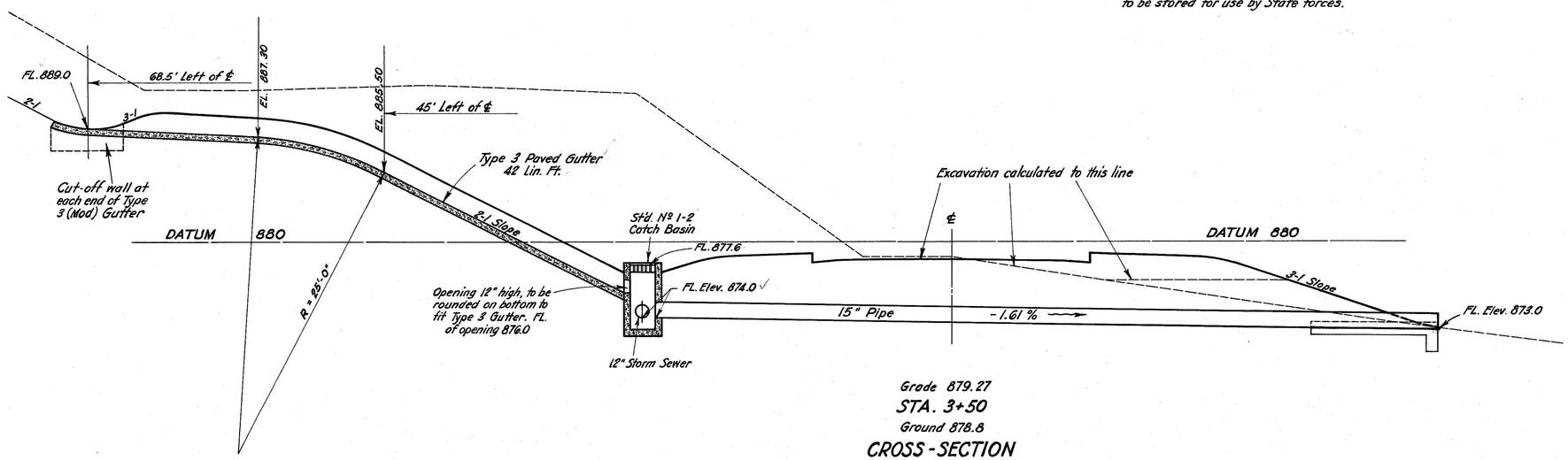
ESTIMATED QUANTITIES

Excavation for Structures	30 Cu. Yds.
15" Pipe for Roadway Culverts	62 Lin. Ft.
Std. Nº 1-2 Catch Basin	1 Each
Type 3 Paved Gutter	42 Lin. Ft.
Type 3 Modified Paved Gutter	20 Lin. Ft.
Removal existing 12" Sect. C.I.P.	38 Lin. Ft.
Removal portions existing masonry	1.3 Cu. Yds.
Concrete (Class E)	0.7 Cu. Yds.



PLAN
Scale 1"= 5'

Note: Remove existing 12"x 38'-0" Sectional Cast Iron Pipe Culvert and 2-4'-0" concrete Headwalls, left of Sta. 3+19. Pipe to be stored for use by State forces.



Grade 879.27
STA. 3+50
Ground 878.8
CROSS-SECTION

STA. 3+50 (2-S)

FED. RD. DIST. NO.	STATE	F.A.G.C.R. No's. / F.A.G.H. 415-F(1) / F.A.P. 415-B(2)	F.A.P.No.	FISCAL YEAR
10	OHIO		415-G(1)	1939

40
55

HARRISON COUNTY
S.H. 370 SECS. S(PI) & P(PI)

CULVERT DATA

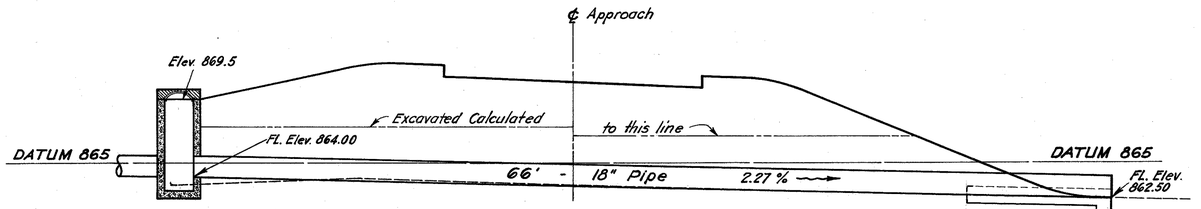
Type: Pipe Culvert
Size: 18"x 80'-0" and 18" x 66'-0"
Work Req'd: Build 18" Pipe Culvert under Approach as shown. Excavate Inlet, Build Std. № 1-2 Catch Basin and lay hand-laid, grout-filled Rip-Rap as detailed. Build Std. Cradle Rt. & Lt. as shown.
Detailed: S.J.P. Traced: W.B. Checked:

REFERENCE DRAWINGS

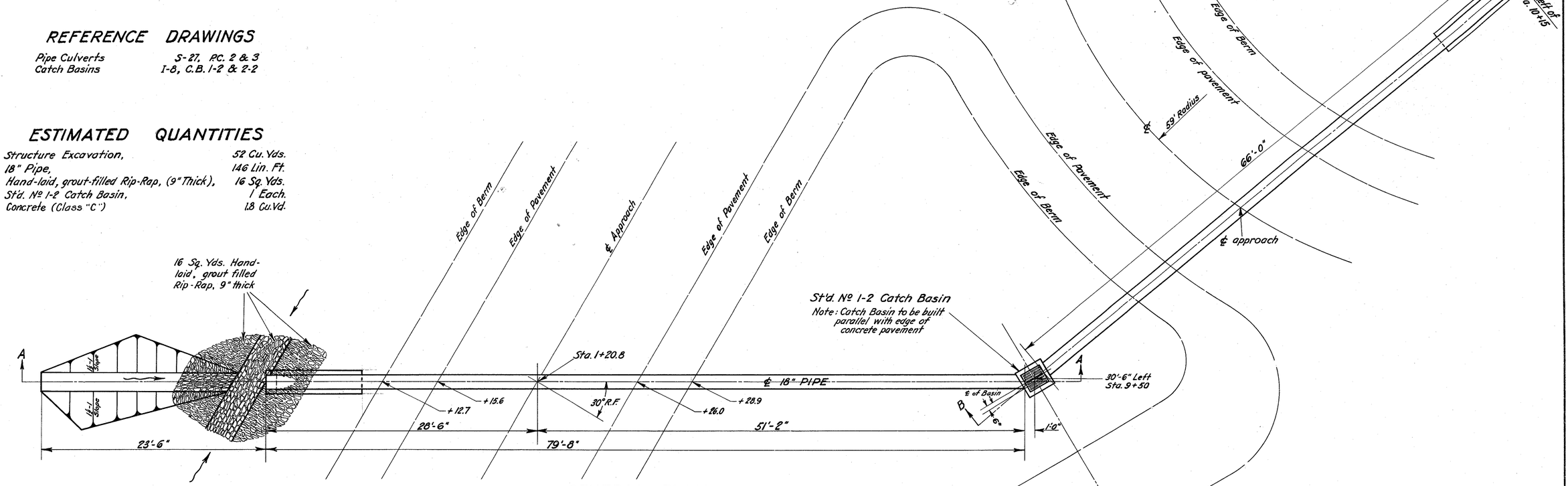
Pipe Culverts	S-27, PC. 2 & 3
Catch Basins	I-8, C.B. 1-2 & 2-2

ESTIMATED QUANTITIES

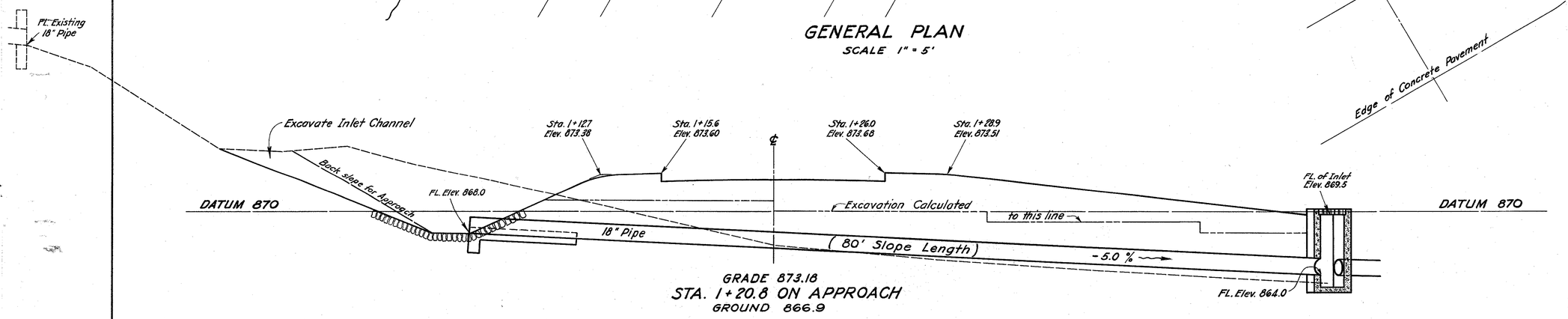
Structure Excavation,	52 Cu. Yds.
18" Pipe,	146 Lin. Ft.
Hand-laid, grout-filled Rip-Rap, (9" Thick),	16 Sq. Yds.
Std. № 1-2 Catch Basin,	1 Each.
Concrete (Class "C")	1.8 Cu.Yd.



SECTION B-B



GENERAL PLAN
SCALE 1" = 5'



GRADE 873.18
STA. 1+20.8 ON APPROACH
GROUND 866.9

SECTION A-A

STRUCTURE № 3-S STA. 1+20.8 ON APPROACH

FED. RD. DIST. NO.	STATE	F.A.G.C.P. No's.	F.A.P. No	FISCAL YEAR
10	OHIO	F.A.G.H. 415-F(1) F.A.G.H. 415-B(8)	415-G(1)	1939

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55

HARRISON COUNTY
S.H. 370 SEC. S(P.H.) & P(P.H.)

CULVERT DATA

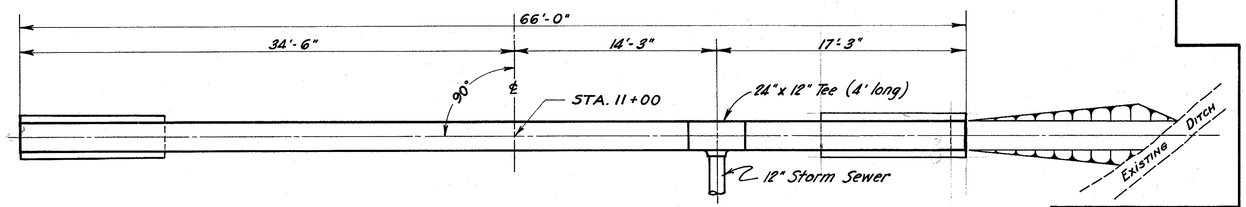
Type: Pipe Culvert
Size: 24" x 66'-0"
Work Required: Build Standard 24" x 66'-0" Pipe Culvert as shown. Excavate outlet channel. Build Std. Conc. Cradle Rf. & Lf. as shown.

REFERENCE DRAWINGS

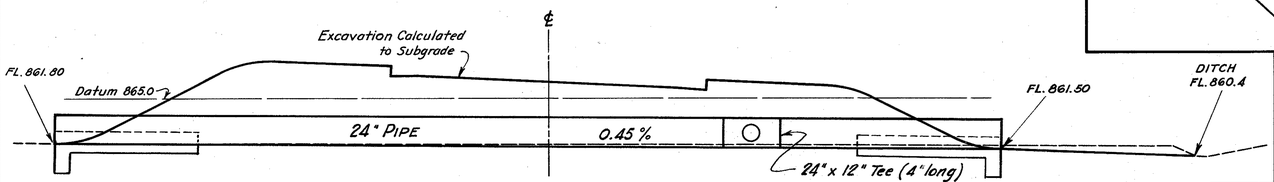
Standard Drawing S-27, PC 2 & 3

ESTIMATED QUANTITIES

Structure Excavation	40 Cu. Yds.
24" x 12" Tee	1 Each
24" Pipe	62 Lin. Ft.
Concrete (Class "C")	2.1 Cu. Yds.



PLAN
Scale 1" = 5'



GRADE, 866.47
STA. 11+00
GROUND, 861.8

CROSS-SECTION

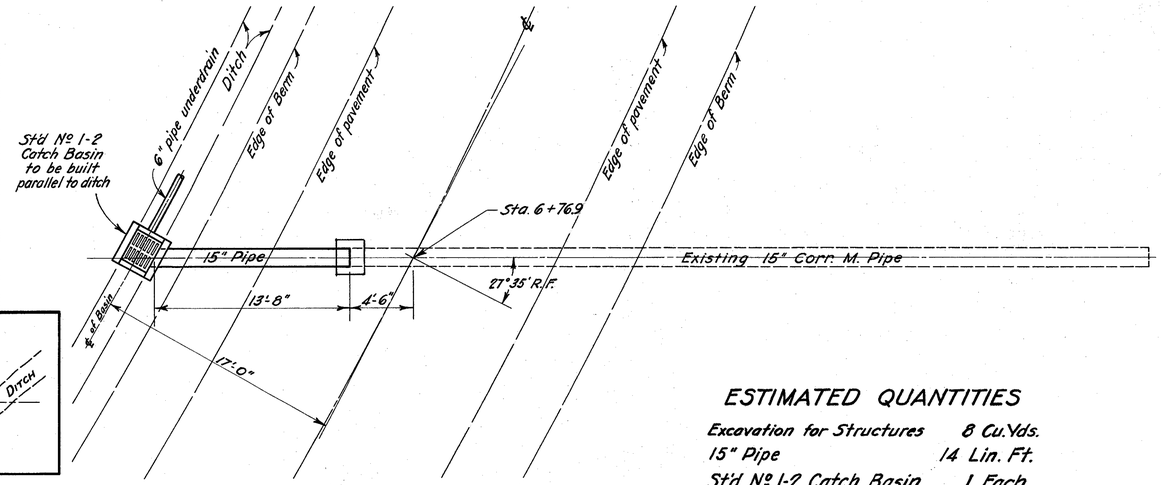
STATION 11+00 (6-S)

CULVERT DATA

Type: Pipe Culvert
Size: 15" x 14'-0"
Work Req'd: Extend existing 15" Corr. M. Pipe, with 15" x 14'-0" Pipe. Build Std. No 1-2 Catch Basin at inlet end. Catch Basin to be built parallel to ditch line. Make extension with conc. collar as shown.

REFERENCE DRAWINGS

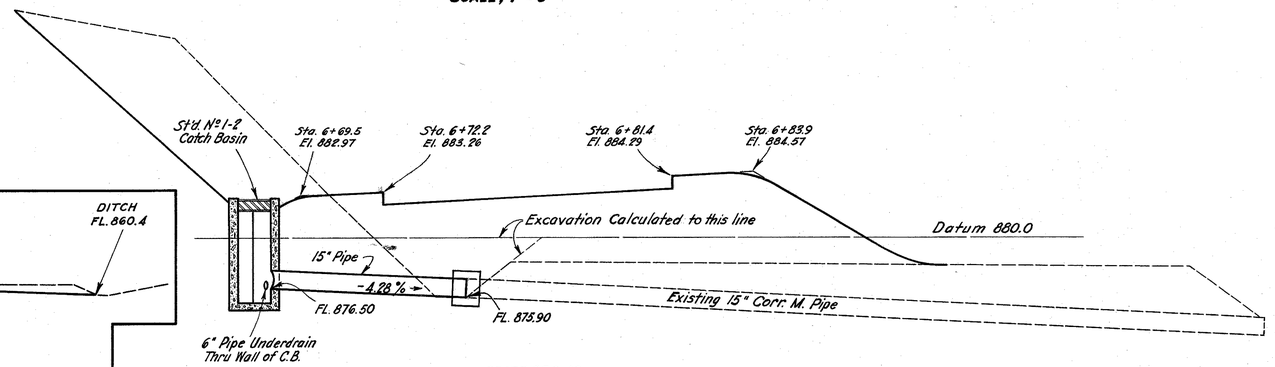
Pipe Culverts S-27, P.C. 2 & 3
Catch Basins 1-8, C.B. 1-2 & 2-2



PLAN
SCALE, 1" = 5'

ESTIMATED QUANTITIES

Excavation for Structures	8 Cu. Yds.
15" Pipe	14 Lin. Ft.
Std. No 1-2 Catch Basin	1 Each.
Concrete (Class "C")	0.2 Cu. Yds.



GRADE 883.43
STA. 6+76.9
GROUND 878.4

CROSS-SECTION
SCALE 1" = 5'

STATION 6+76.9 (ON APPR.) (4-S)

FED. RD. DIST. NO.	STATE	F.A.G.C.P. No's.	F.A.P.No	FISCAL YEAR
10	OHIO	F.A.G.H. 413-F(1) F.A.G.H. 413-B(2)	413-G(1)	1939

42
55

HARRISON COUNTY
S.H. 370 SEC. S(PT.) & P(PT.)

CULVERT DATA

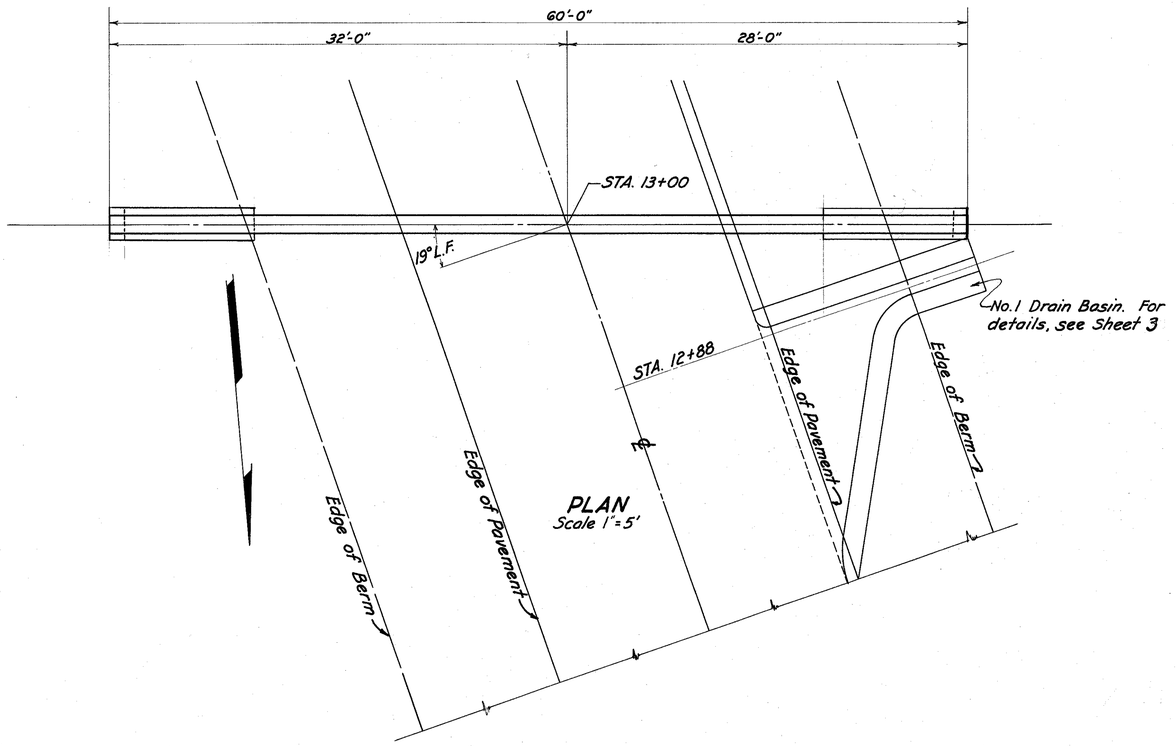
Type : Pipe Culvert
Size : 15"x60'-0"
Work Req'd : Build 15"x60'-0" Pipe Culvert on 19° L.F. Skew. with Std. Conc. cradles Rt. & Lt. as shown.

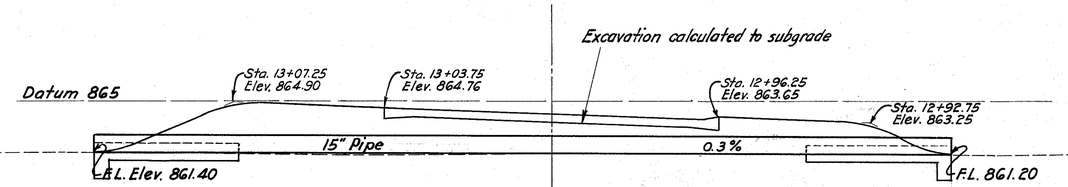
ESTIMATED QUANTITIES

Excavation For Structures	17 Cu. Yds.
15" Pipe for Rdwy Culvert.	60 Lin. Ft.
Concrete (Class "C")	1.4 Cu. Yds.

REFERENCE DRAWINGS

Std. Drwg. S-27 P.C. 2 & 3





GRADE 863.75
STA. 13+00
GROUND 861.3

CROSS-SECTION

STATION 13+00 (7-S)

CULVERT DATA

Type: Pipe Culvert
Size : 15"x58'-0"
Work Req'd: Build 15"x58'-0" Pipe Culvert with Std. Conc. Cradles Rt. & Lt. as shown.

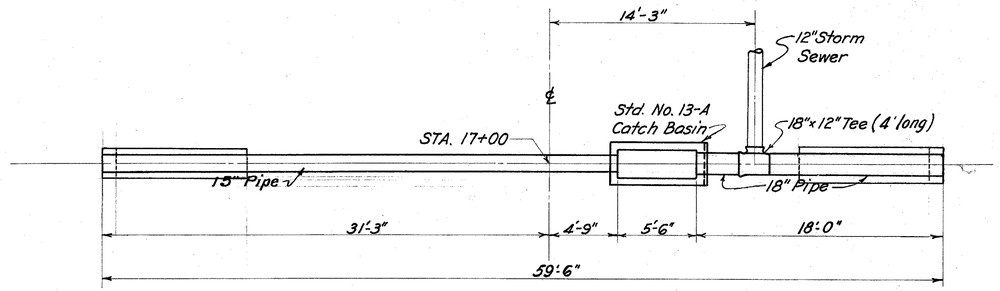
Detailed: S.J.P. Traced: S.J.P. Checked:

REFERENCE DRAWINGS

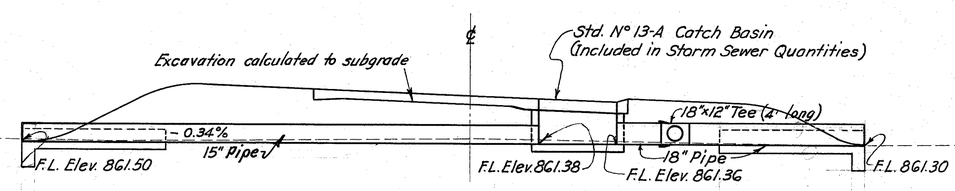
Std. Drwg. S-27 P.C. 1 & 3

ESTIMATED QUANTITIES

Excavation For Structures	19 Cu. Yds.
15" Pipe for Rdwy. Culvert.	36 Lin. Ft.
18" Pipe	14 Lin. Ft.
18"x 12" Tee (4' long)	1 Each
Concrete (Class "C")	1.6 Cu. Yds.



PLAN
Scale 1"=5'



GRADE 864.40
STA. 17+00
GROUND 861.7

CROSS-SECTION

STATION 17+00 (8-S)

FED. RD. DIST. NO.	STATE	F.A.G.C.P. No's.	F.A.P.No.	FISCAL YEAR
10	OHIO	F.A.G.H. 415-F(1) F.A.G.H. 415-B(2)	415-G(1)	1939

43/55

HARRISON COUNTY
S.H. 370 SECS. S(PH) & P(PH)

CULVERT DATA

Type: Pipe Culvert
Size: 15"x 78'-0"
Work Req'd: Build new 15"x 78'-0" Pipe Culvert as shown. Excavate Inlet and lay hand-laid Rip-Rap at Inlet and Outlet end. Build Std. Concrete Cradles Rt. & Lt. as shown.

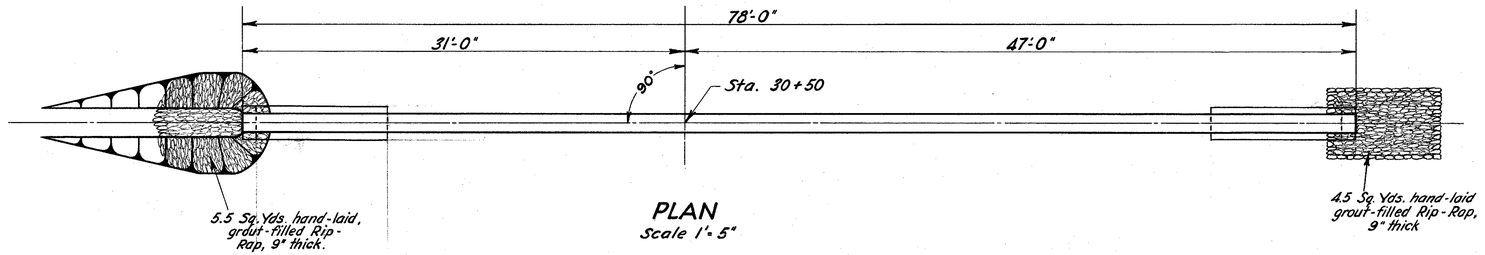
REFERENCE DRAWINGS

Pipe Culvert 5-27, P.C. 2 & 3

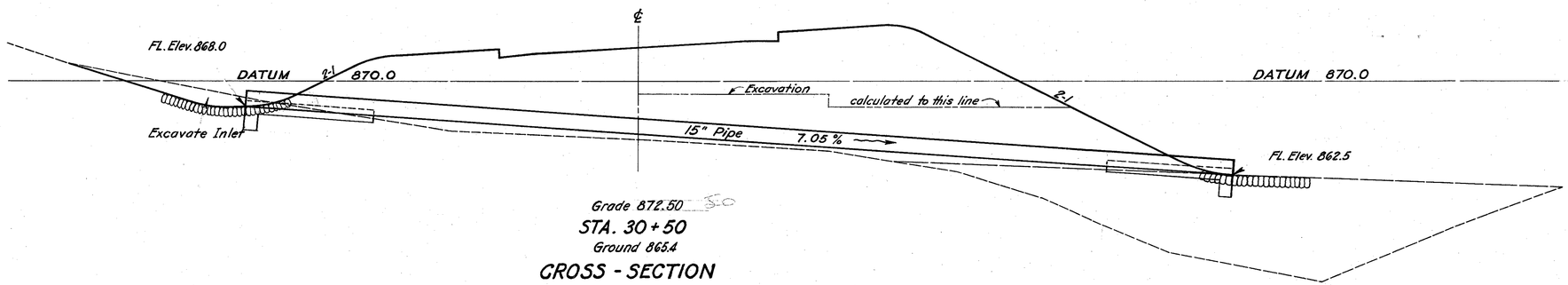
Detailed: S.J.P. Traced: W.B., Checked:

ESTIMATED QUANTITIES

Excavation for Structures	12 Cu. Yds.
15" Pipe for Roadway Culverts	78 Lin. Ft.
Hand-laid, grout-filled Rip-Rap	10 Sq. Yds.
Concrete ("Class "C")	1.4 Cu.Yds.



PLAN
Scale 1"= 5'



Grade 872.50
STA. 30+50
Ground 865.4
CROSS - SECTION

STA. 30+50 9-S

FED. RD. DIST. NO.	STATE	F.A.G.C.P. NOS.	F.A.P. NO.	FISCAL YEAR
10	OHIO	F.A.G.H. 415-F(1) F.A.G.H. 415-B(2)	415-G(1)	1939

44
55

HARRISON COUNTY
S.H. 370 SECS. S(PT) & P(PT)

CULVERT DATA

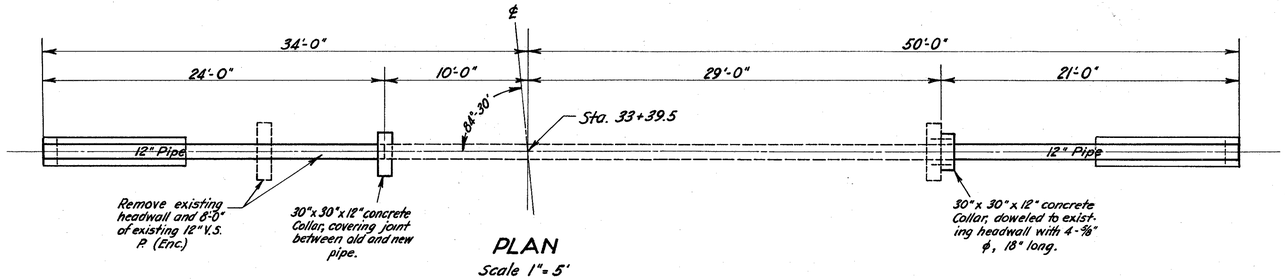
Type: Pipe Culvert (Extension)
Size: 12"x 24'-0" Left. 12"x 21'-0" Right
Work Req'd: Remove left headwall and 8'-0" of left end of existing 12" V.S.P. (Enc). Extend Culvert as detailed with collars and cradles. Rt. & Lt. as shown.
Detailed: S.J.P. Traced: W.B., Checked:

REFERENCE DRAWINGS

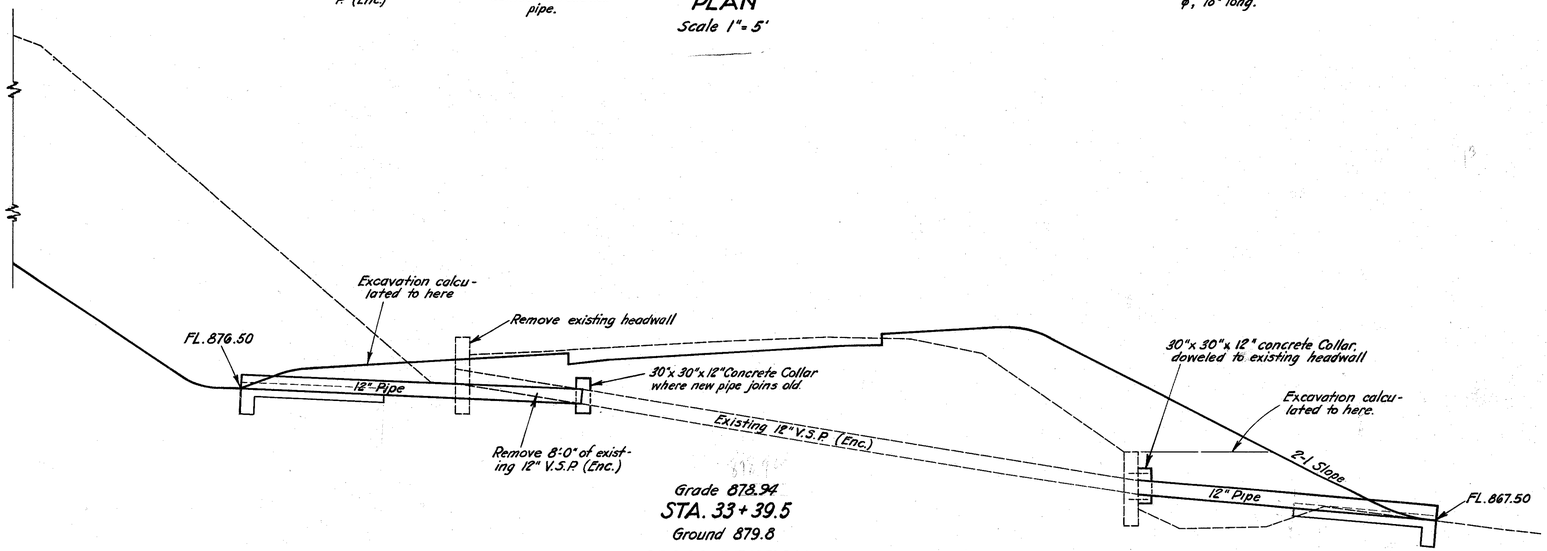
Pipe Culverts S-27, P.C. 2 & 3

ESTIMATED QUANTITIES

Excavation for Structures	13 Cu. Yds.
12" Pipe for Roadway Culverts	45 Lin. Ft.
Class "C" concrete	1.8 Cu. Yd.
Reinforcing Steel (Dowels)	9 Lbs.
Dowel holes	3 Lin. Ft.
Removal existing 12" V.S.P. (Enc.).	8 Lin. Ft.
Removal of portions of existing masonry,	0.7 Cu. Yd.



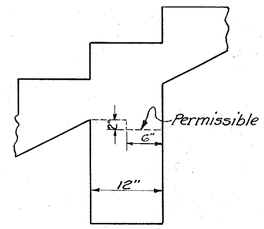
PLAN
Scale 1"= 5'

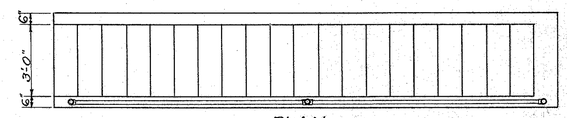


Grade 878.94
STA. 33+39.5
Ground 879.8

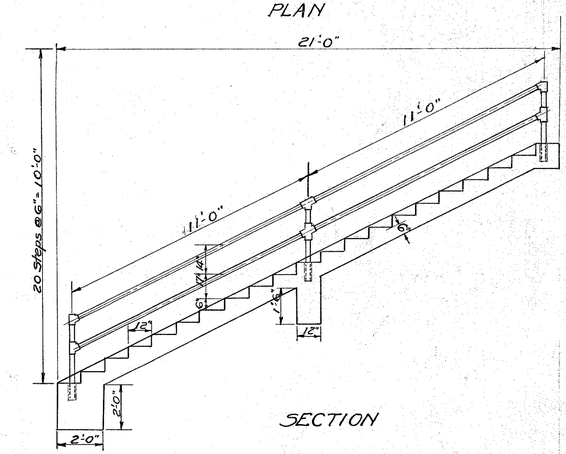
CROSS-SECTION

STA. 33+39.5 (10-S)





PLAN



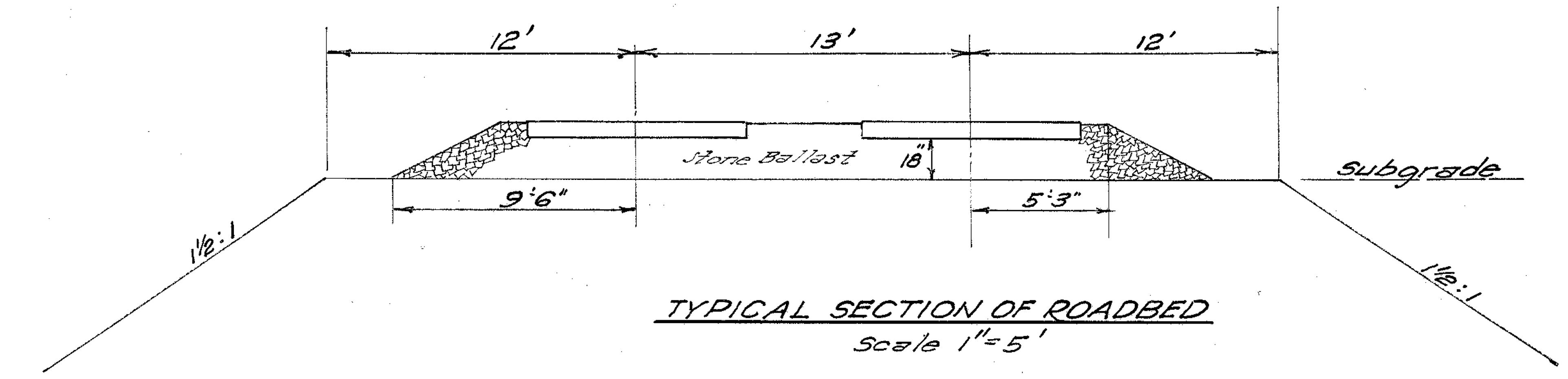
SECTION

DETAIL OF STEPS - STA. 232+29

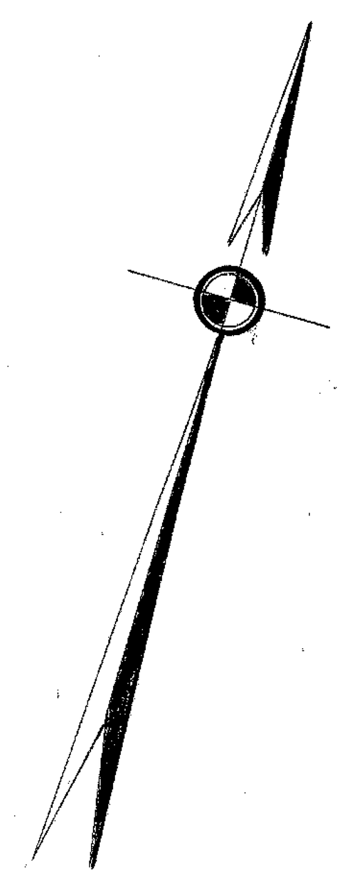
ESTIMATED QUANTITIES

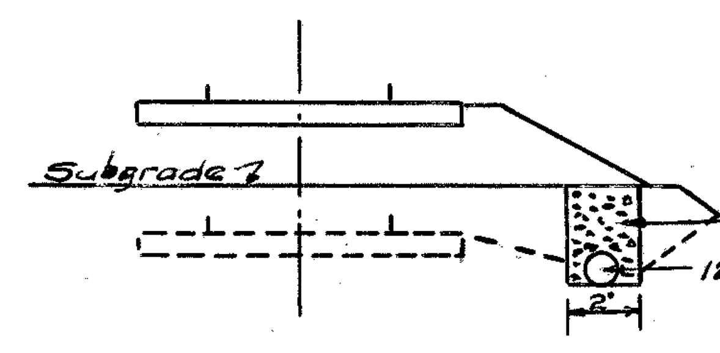
Concrete Steps.	84 Lin. Ft.
2" Iron pipe railing, including fittings. Item S-14	22 Lin. Ft.

HARRISON COUNTY
S.H. 370. SEC. S. (P.T.) & P. (P.T.)



TYPICAL SECTION OF ROADBED
Scale 1" = 5'





Typical Section of Tile Drain
Scale 1" = 5'

SHEET REFERENCE	Work to be done by Railroad Company	
[45] [47]	Raise and Reballast Main Tracks - Sta. 4482+65 to Sta. 4523+35.9	8141.8 lin. ft.
[45]	" " " Side Track - Sta. 4485+98 to Sta. 4495+70	972.0 " "
[45] [46]	Construct Detour Tracks - Sta. 4497+60 to Sta. 4504+30	1340.0 " "
[45] [46]	Shift Main Tracks. - Sta. 4495+50 to Sta. 4497+60; Sta. 4504+30 to Sta. 4506+40	840.0 " "
[45] [46]	Remove and Relay Main tracks E.B. Sta. 4497+60 to Sta. 4504+30; W.B. Sta. 4500+66 to Sta. 4501+66	770.0 " "
[45] [46]	Remove Detour Tracks - Sta. 4497+60 to Sta. 4504+30	1340.0 " "
[45]	Shift Main Tracks used for Detour Track Sta. 4495+50 to Sta. 4497+60	
[46]	back to original location Sta. 4504+30 to Sta. 4506+40	840.0 " "
[45] [46]	Relocate T. & T. Lines Sta 4496+55 to Sta. 4506+25	970 " "
[46]	" Power Line Sta. 4499+20 to Sta. 4503+30	410.0 " "
[45]	Maintain Flashing Light Signals during Construction	
[45]	Remove " " " upon completion of Project	
[45]	Maintain Highway Grade Xing during Construction	
[45]	Remove " " " upon Completion of project	
[46]	Construct Barricade Sta. 4496+79.5 to Sta. 4496+99.5	20 lin. ft.
[47]	Temporary Cross-Overs installed and removed Sta. 4520+30 to Sta. 4522+50	One No. 10
[47]	Temporary Turnouts " " " Sta. 4522+80	One No. 10
[45]	Reconstruct Slag Drop & Chute - Sta. 4490+71	
[45]	Construct 12" Tile drain Sta. 4491 to Sta. 4496+40	540 lin. ft.
[46]	Place Guard rails across Bridge	360 " "
[45]	Construct reinforced concrete crib wall Sta 4495+22 to Sta 4495+78	336 sq. ft.
[46]	Relocate right of way fence Sta. 4497+15 to Sta. 4502+46	531 lin. ft.

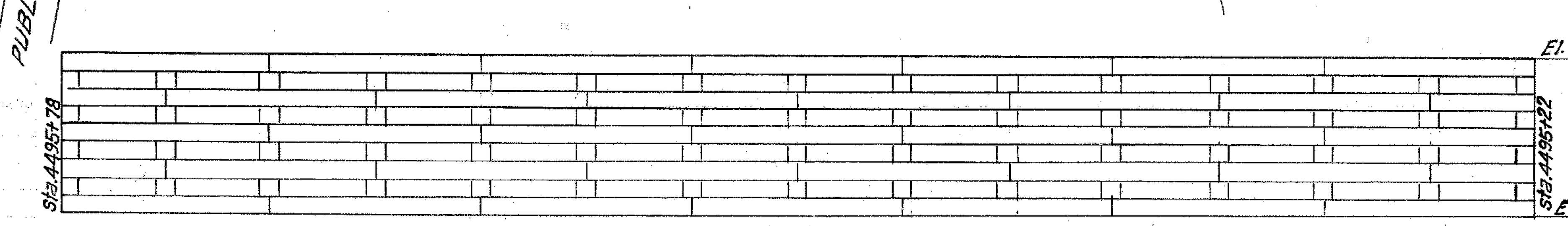
SHEET REFERENCE	Work to be done by Contractor	
[34]	Earth fill for permanent and detour embankment, below level of present subgrade.	11,353 cu. yds. *
[34]	Porous fill for detour embankment above present subgrade.	3165 " " *
[34]	Fill for Farm crossing Sta. 4510+22.	623 " " *
[34]	Material in detour embankment to be removed; porous fill and cinder Ballast	4005 " " *
[38] [46]	Raise catch Basin Sta. 4496+40	1 each *
[45]	Furnish 12" Tile Pipe.	540 lin. ft. ‡
[45]	" Material for Reinforced Concrete Crib Wall.	336 sq. ft. ‡
[46]	Extend 14" drain under farm crossing Sta. 4510+22	32 lin. ft. ‡

* Included with Roadway Quantities.
‡ " " Railroad "

☒ Rev. As built. C.O. No 1 FAGH 415-F(1)
Permission granted to move R.R. run around approximately 10 Ft. Southerly. To permit the construction of the Underpass in two instead of three construction periods.

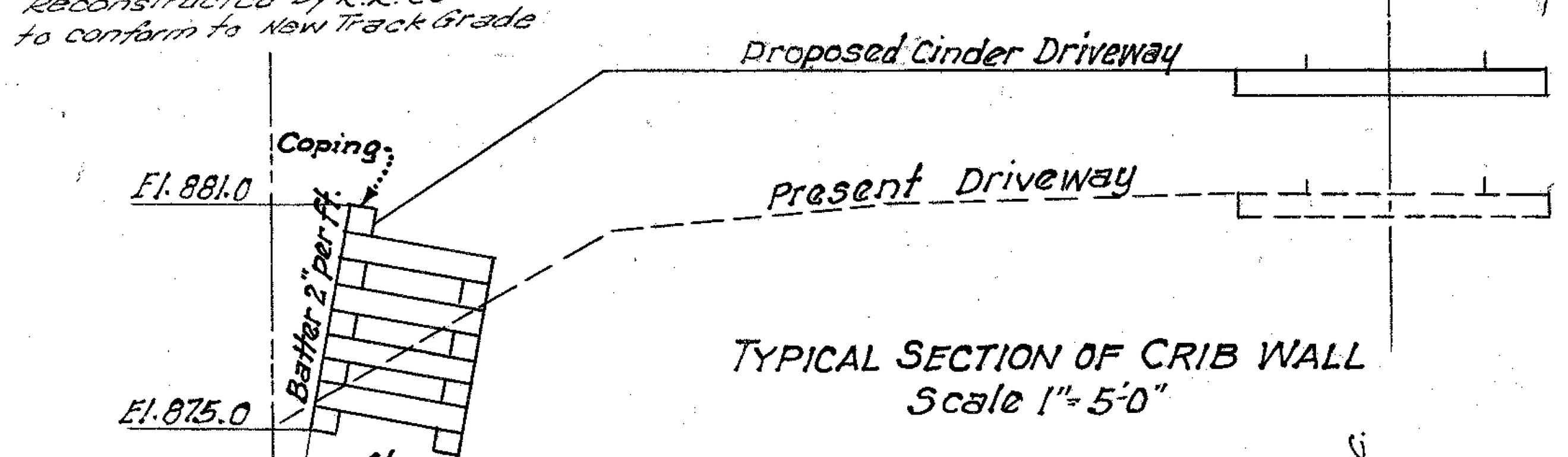
ESTIMATED QUANTITIES

S-30 .... 12" Drain Tile - Extra Quality, Sec. M-6.7(b) .... 540 Lin. Ft.
S-30 .... Reinf. Conc. Crib Wall Material (as per plan) .... 336 Sq. Ft.



PLAN
Scale 1" = 50'

REINFORCED CONCRETE CRIB WALL (SUPPLEMENTAL SPECIFICATION No 132 - CONCRETE WALLS)
Scale 1" = 5'-0"



TYPICAL SECTION OF CRIB WALL
Scale 1" = 5'-0"

PROFILE OF TRACK
Scale Hor. 1" = 50'; Vert. 1" = 10'

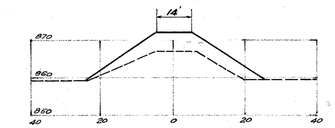
Note:-
Elevations refer to P.R.R. datum.
Bench Mark El. 870.36, Aluminum Plate on Bridge 87.07

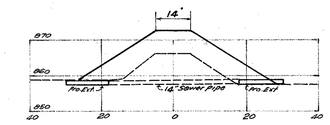
BR·NO· HA-36-08
F.A.G.H.-415-F(1).

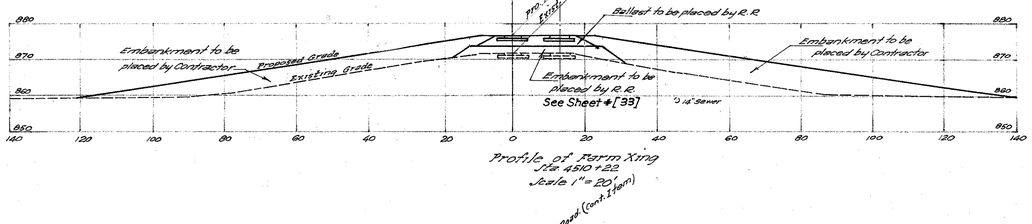
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
SHEET 1 OF 4 | 243

THE PENNSYLVANIA RAILROAD
CENTRAL REGION PANHANDLE
PHILADELPHIA ROAD, OHIO.
ELIMINATION OF GRADE XING.
ON STATE HIGHWAY 370 (U.S. 36 & 2
Scale 1" = 50' Feb. 7, 193
OFFICE OF CHIEF ENGR. CENTRAL
PITTSBURGH, PA.

☒ Rev. As built 1-9-42 ICM
Rev. 2/1/40
Rev. 2/1/40







Fed. Rd Dist. No.	State	F.A.G.C.P. FAGH-415-F(I) FAGH-415-B(2) F.A.P.-415-G(I)	Fiscal Year
10	Ohio		1939

HARRISON COUNTY
S.H. 370. SEC. S. (P.T.) & P. (P.T.)

B1 Rev. as Built C.O. #2, Main line track elevations lowered approximately 6 inches each side of underpass.

B2 Rev. as-Built C.O. #2, 270 ft. 15" vitrified sewer pipe (Sec. M-6.8a) added (Sta. 4498+30 to 4501+00) for roadway drainage.

B3 Rev. As built C.O. NO. 1 Permission granted to move R.R. Runaround 10 ft. to South, to permit construction of Underpass in two periods instead of three.

Two guard rails to be provided over bridge for each track extending 100 ft. from back wall in the direction of approaching traffic and terminating 30 feet from back wall in the trailing direction. Ends toward approaching traffic to be provided with nose guards. (Railroad Work)

ESTIMATED QUANTITY
I-1 ....15" Pipe for driveway..........32 lin. ft.

—The Contractor shall conduct his work in such manner that the Railroad Company will not be required to raise its tracks during the months of December, January February, and March.

Note:
R.R. Power Line - 3 Cross Arms and 12 W on each Pole
R.R. Telegraph & Telephone Line - 5 Cr Arms and 35 Wires on each Pole.

F.A.G.H.-415-F(I).

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
SHEET 2 OF 4. 24
THE PENNSYLVANIA RAILROA
CENTRAL REGION PANHANDLE
PHILADELPHIA ROAD, OHIO
ELIMINATION OF GRADE XING
ON STATE HIGHWAY 370 (U.S. 36
Scale 1" = 50' Feb. 7,
OFFICE OF CHIEF ENGR., CENTR
PITTSBURGH, PA.

B1 Revised As Built

B3 Revised As Built 1-5-42

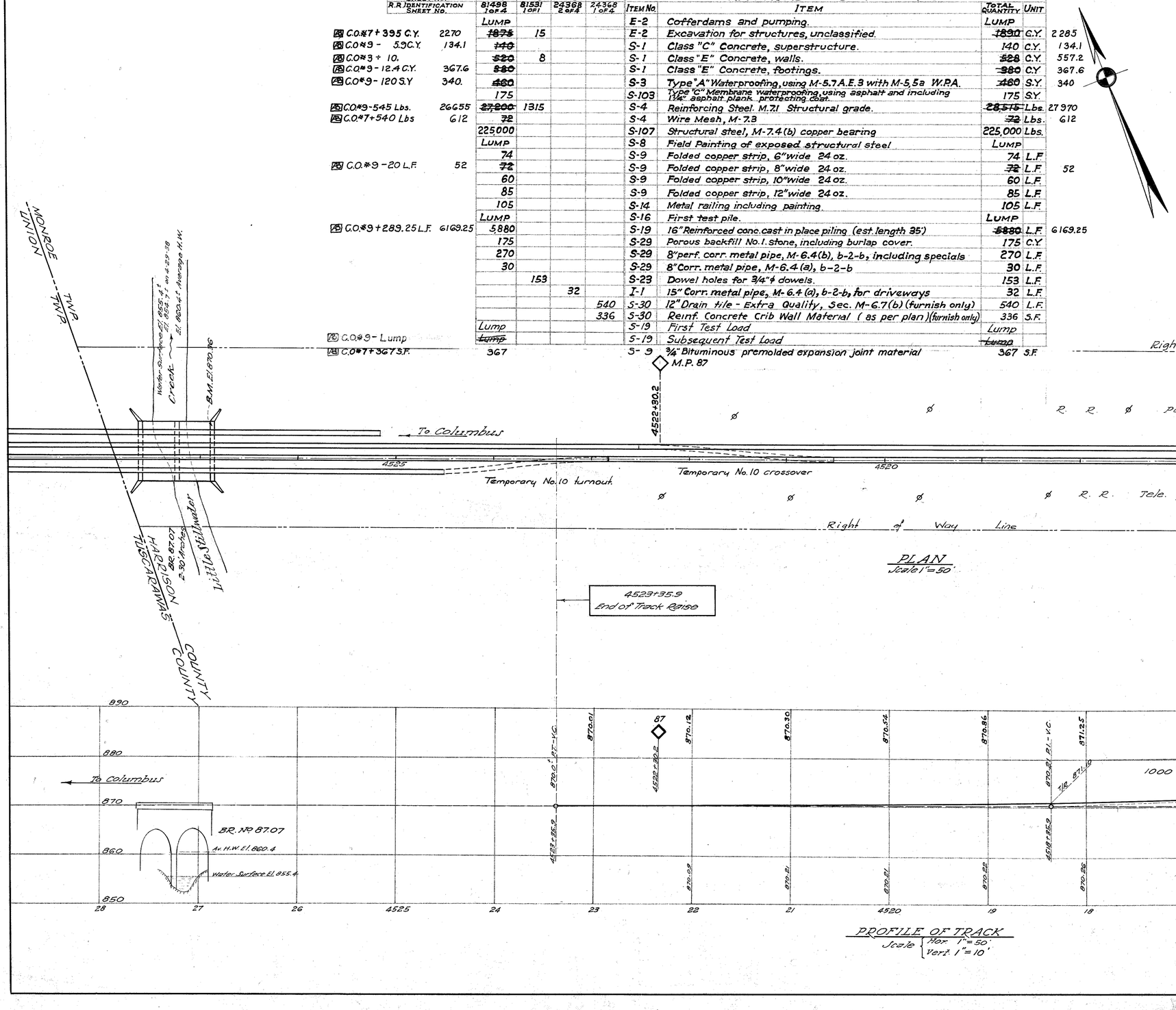
Rev. by Hwy. 3/4/40 - Contractors conduct of work note.

Fed. Rd Dist. No.	State	FA. G.C.P. FAGH-415(2)	Fiscal Year
10	Ohio	FAGH-415(6) FAP 415(4)	1939

HARRISON COUNTY
S.H. 370. SEC. S. (P.T.) & P. (P.T.)

GENERAL SUMMARY - CONTRACT WORK

State Identification Sheet No.	[48]	[52]	[46]	[45]	RAILROAD STRUCTURES				
R.R. Identification Sheet No.	81498 1 of 4	81531 1 of 1	24368 2 of 4	24368 1 of 4	Item No.	Item	Total Quantity	Unit	
	Lump				E-2	Cofferdams and pumping.	Lump		
(A) C.O.#7 + 395 C.Y. 2270	~~1875~~	15			E-2	Excavation for structures, unclassified.	~~1890~~	C.Y.	2285
(A) C.O.#9 - 5.9 C.Y. 134.1	~~110~~				S-1	Class "C" Concrete, superstructure.	140	C.Y.	134.1
(A) C.O.#3 + 10.	~~520~~	8			S-1	Class "E" Concrete, walls.	~~528~~	C.Y.	557.2
(A) C.O.#9 - 12.4 C.Y. 367.6	~~380~~				S-1	Class "E" Concrete, footings.	~~380~~	C.Y.	367.6
(A) C.O.#9 - 120 S.Y 340.	~~460~~				S-3	Type "A" Waterproofing, using M-5.7 A.E.3 with M-5,5a W.P.A.	~~460~~	S.Y.	340
	175				S-103	Type "C" Membrane waterproofing, using asphalt and including 1½" asphalt plank protecting coat.	175	S.Y.	
(A) C.O.#9 - 545 Lbs. 26655	~~27200~~	1315			S-4	Reinforcing Steel. M.71 Structural grade.	~~28515~~	Lbs.	27970
(A) C.O.#7 + 540 Lbs 612	~~72~~				S-4	Wire Mesh, M-7.3	~~72~~	Lbs.	612
	225000				S-107	Structural steel, M-7.4 (b) copper bearing	225,000	Lbs.	
	Lump				S-8	Field Painting of exposed structural steel	Lump		
	74				S-9	Folded copper strip, 6" wide 24 oz.	74	L.F.	
(A) C.O.#9 - 20 L.F. 52	~~72~~				S-9	Folded copper strip, 8" wide 24 oz.	~~72~~	L.F.	52
	60				S-9	Folded copper strip, 10" wide 24 oz.	60	L.F.	
	85				S-9	Folded copper strip, 12" wide 24 oz.	85	L.F.	
	105				S-14	Metal railing including painting.	105	L.F.	
	Lump				S-16	First test pile.	Lump		
(A) C.O.#9 + 289.25 L.F. 6169.25	5880				S-19	16" Reinforced conc. cast in place piling (est. length 35')	~~5880~~	L.F.	6169.25
	175				S-29	Porous backfill No. 1. stone, including burlap cover.	175	C.Y.	
	270				S-29	8" perf. corr. metal pipe, M-6.4 (b), b-2-b, including specials	270	L.F.	
	30				S-29	8" Corr. metal pipe, M-6.4 (a), b-2-b	30	L.F.	
		153			S-23	Dowel holes for ¾" ϕ dowels.	153	L.F.	
			32		I-1	15" Corr. metal pipe, M-6.4 (a), b-2-b, for driveways	32	L.F.	
				540	S-30	12" Drain tile - Extra Quality, Sec. M-6.7 (b) (furnish only)	540	L.F.	
				336	S-30	Reinf. Concrete Crib Wall Material (as per plan) (furnish only)	336	S.F.	
	Lump				S-19	First Test Load	Lump		
(A) C.O.#9 - Lump	~~Lump~~				S-19	Subsequent Test Load	~~Lump~~		
(A) C.O.#7 + 367 S.F.	367				S-9	¾" Bituminous premolded expansion joint material	367	S.F.	



F.A.G.-415-F(1)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
SHEET 3 OF 4. 2436

THE PENNSYLVANIA RAILROAD
CENTRAL REGION PANHANDLE L
PHILADELPHIA ROAD, OHIO.
ELIMINATION OF GRADE XING.
ON STATE HIGHWAY 370 (U.S. 36 #25
Scale 1"=50' Feb. 7, 193
OFFICE OF CHIEF ENGR., CENTRAL REG
PITTSBURGH, PA.

AB 1-16-42

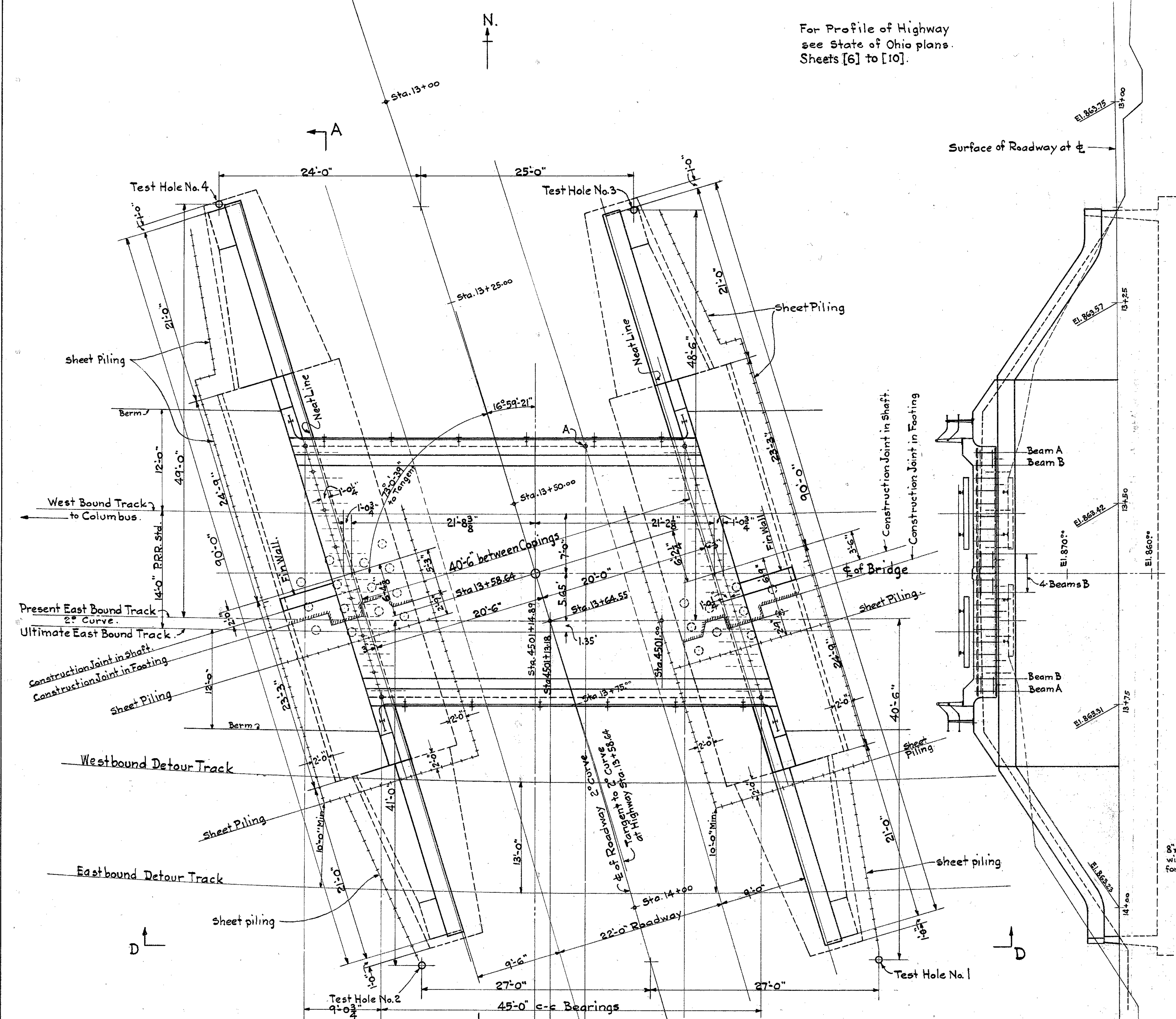
Rev. by Hwy. 3/4/40 Add Item S-19 - First Test Load
Rev. by Hwy. 3/4/40 Add Item S-19 - Subsequent Test Load

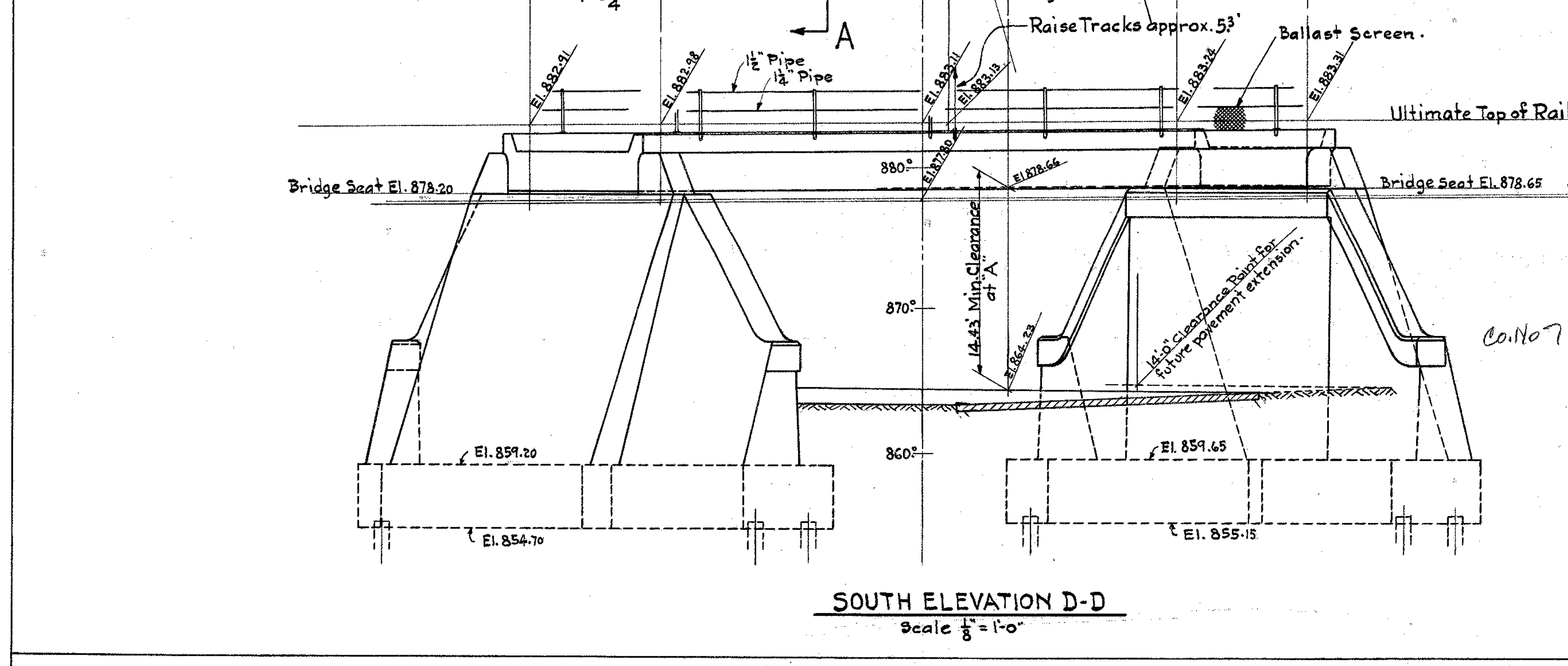
3 14 12

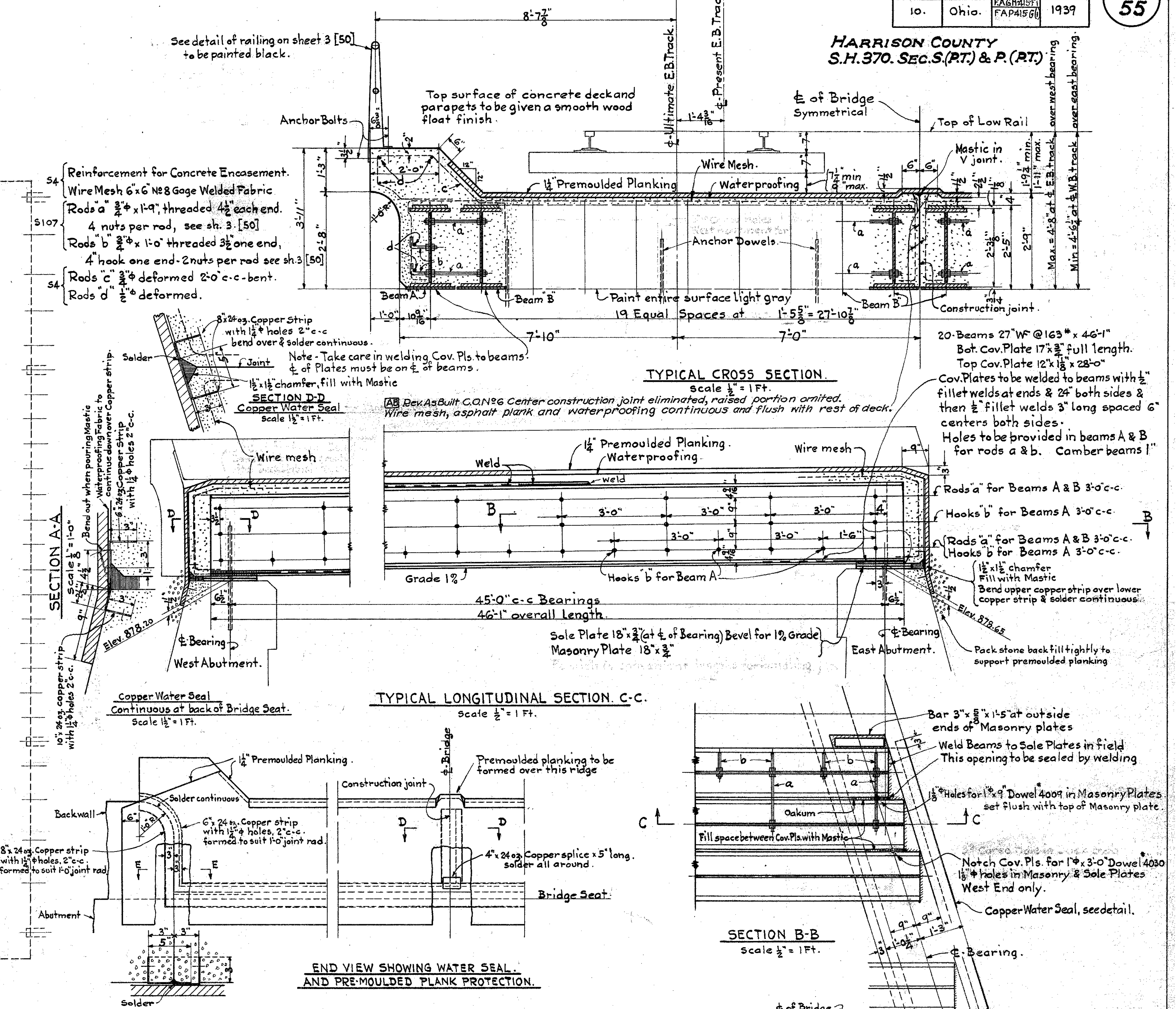
Fed. Rd. Dist. No.	State	F.A.G.C.P.	Fiscal Year
10.	Ohio.	FAGH415B2 / FAGH415F1 / FAP415G(1)	1939

48 / 55

HARRISON COUNTY
S.H. 370. SEC. S.(P.T.) & P.(P.T.)







Excavation quantities for substructure estimated as cubical contents of a prism bounded by vertical planes 2'-0" outside of footing outline and between bottom plane of footing and existing surface of ground, or top of railroad detour fill.
This does not include roadway excavation between faces of abutments [See Sheet #17]

DESIGN - P.R.R. Specifications for Steel Bridges of Oct. 1, 1916. with live load and impact of 1928.
WELDING is Class "A" and shall be done in conformance with the Construction and Material Specification dated Mar. 1, 1939.
INSPECTION - Mill and shop inspection of structural steel by P.R.R.

TEST LOAD - A test load shall be applied to one of the test piles, therefore this pile shall preferably be driven, as nearly as possible, to a bearing capacity of 30 tons. A subsequent test load shall be applied to another pile if so directed by the Engineer. The results of the test load or loads shall be used in conjunction with the driving formula for the determination of the length of piles to be driven.

QUANTITIES FOR SUBSTRUCTURE.

Item	Description	Estimated	Actual.
E2	Cofferdams & pumping	Lump sum.	Lump Sum
E2	Excavation for structure, unclassified.	1875 c.y.	2270 CY
S16	Test pile.	Lump sum	Lump Sum
S19	16" Reinforced concrete cast in place piling (est. length 35')	5880 lin.ft.	6169.25
S1	Class "E" concrete footings.	380 c.y.	367.6 C.Y.
S1	Class "E" concrete walls.	520 c.y.	539. C.Y.
S3	Type "A" waterproofing using M-5.7 A.E.3 with M-5.5a W.P.A.	460 sq.yd.	340 S.Y.
S4	Reinforcing steel M-7.1 structural grade	26200 lbs.	25655 lbs.
S9	Folded copper strip 12" wide @ 24 oz.	85 lin.ft.	85 Lin.Ft.
S29	Porous backfill, No. 1 stone, including burlap cover.	175 c.y.	175 C.Y.
S29	8" Dia. Perforated corrugated metal pipe M-6.4 (b), b-2-b, including specials	270 lin.ft.	270 Lin.Ft
S9	Folded Copper strip 8" wide @ 24 oz.	50 lin.ft.	30 Lin. Ft.
S29	8" Corrugated metal pipe, M-6.4 (a), b-2-b	30 lin.ft.	30 Lin. Ft.
S-9	3/4" Bituminous premolded expansion joint material	None	367 S.F.

Co. No 7

QUANTITIES FOR SUPERSTRUCTURE.

Item	Description	Estimated	Actual.
S4	Reinforcing steel M-7.1 structural grade	1000 lbs.	1000 Lbs
S107	Structural steel M-7.4 (b) copper bearing	225000 lbs	225000 Lbs
S103	Type "C" membrane waterproofing using asphalt & including 1¼" asphalt plank protecting coat.	175 sq.yd.	175 S.Y.
S1	Class "C" concrete.	140 c.y.	1341 C.Y.
S14	Metal railing including painting.	105 lin.ft.	105 Lin.Ft.
S8	Field painting of exposed structural steel	Lump sum.	Lump Sum
S9	Folded copper strip 10" wide 24 oz.	60 lin.ft.	60 Lin.Ft.
S9	Folded copper strip 6" wide 24 oz.	74 lin.ft.	74 Lin.Ft.
S9	Folded copper strip 8" wide 24 oz.	22 lin.ft.	22 Lin Ft
S4	Wire Mesh M-7.3 Co No 7	72 lbs.	612 Lbs
	QUANTITIES FOR SUBSTRUCTURE (CONTINUED)		
S-19	First Test Load	Lump Sum	Lump Sum
S-19	Subsequent Test Load	Lump Sum	Nome

For Track layout & profile see plan #24368 [45, 46 & 47]
For Track cross sections see sheets [29 to 34]
Elevations on this Plan are based on P.R.R. datum; Bench Mark El. 870.36, Aluminum Plate on Bridge 87.07
For Test Hole data see sheet No. 2 [49]

FAGH-415-F(1).

STATE OF OHIO
DEPARTMENT OF HIGHWAYS.

SHEET 1 of 4 — 81498

THE PENNSYLVANIA RAILROAD
CENTRAL REGION.
PANHANDLE DIV. MAIN LINE
BRIDGE No. at PHILADELPHIA ROAD, OHIO
OVER STATE HIGHWAY 370 (ROUTE U.S. 36 & 250)
SUPERSTRUCTURE.

OFFICE OF ENGR. OF BRIDGES & BUILDINGS.
PITTSBURGH, PA. JAN. 3, 1939
APPROVED 6-6-39
ENGR. BRIDGES & BUILDINGS.
APPROVED
CHIEF ENGR. CENTRAL REGION.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.W.L.	J.W.L.	J.W.L.	J.W.L.			

1-16-42

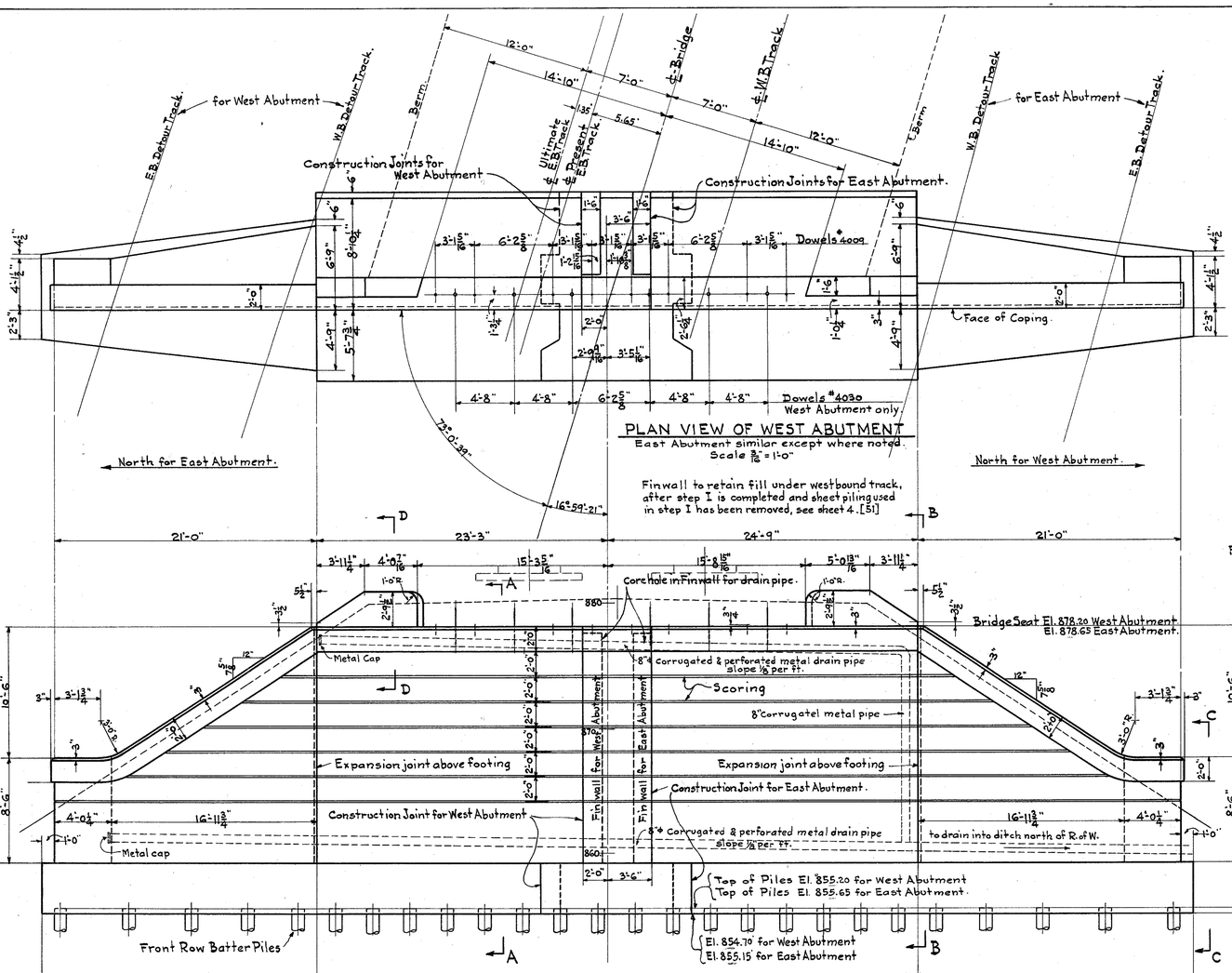
Rev. by Hwy. 3/4/40 Add Test Load Items and note
Rev. by Hwy. 3/4/40 Excav. note.

FILE 31-14-7

Fed. Rd. Dist. No.	State	F.A.G.C.P.	Fiscal Year
10	Ohio	FAGH-415(8) FAGH-415(11) FAP-415(6)	1939

49
55

HARRISON COUNTY
S.H. 370. Sec. S. (R.T.) & P. (R.T.)



PLAN VIEW OF WEST ABUTMENT

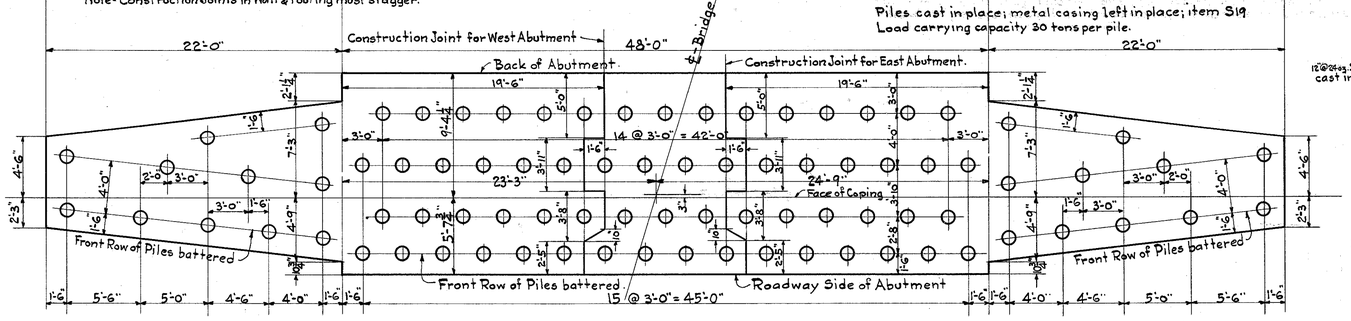
East Abutment similar except where noted.
Scale 3/16" = 1'-0"

Finwall to retain fill under westbound track, after step I is completed and sheet piling used in step I has been removed, see sheet 4. [51]

ELEVATION

East & West Abutments alike except where noted.
Scale 3/16" = 1'-0"

Note- Construction Joints in Wall & Footing must stagger.



PILING DIAGRAM

Similar for East & West Abutments.
Scale 3/16" = 1'-0"

Test Hole Nº 1.

862.95

	Moist earth and yellow clay.	4'-9"
Rise of Water	Moist brown clay to blue gray silty clay.	5'-3"
	Pasty blue & gray silty clay.	5'-0"
	Soft blue silt mixed with very fine sand.	5'-0"
	Moist dark slate gray silt. Trace of coal. Silt.	5'-0"
	Moist dryer than above dark slate gray silt.	5'-0"
	Moist harder than above dark slate gray sandy silt.	5'-0"
	Damp dark slate gray silt, no sand Black leafy flakes.	5'-0"
	Moist dark slate gray silt.	5'-0"
	Moist to damp dark slate-gray silt shaley at 813. to 814.	5'-0"
	Dry dark slate gray sandy silt. Small pebbles	5'-0"
	Dry dark slate gray sandy silt. Soft sand stones.	5'-0"
	Dry tough clayey silt with 50% sand stone pebbles.	5'-0"

℄ 798.5°

Test Hole Nº. 2

862.25

	Moist earth & yellow clay	4'-8"
Rise of Water	Moist brown clay to blue gray silty clay	5'-3"
	Pasty blue & gray silty clay.	5'-0"
	Soft dark slate gray silt with very fine sand.	5'-0"
	Moist slate gray silt.	5'-0"
	Moist slate gray silt	5'-0"
	Damp dark slate gray sandy silt. Trace of coal silt.	5'-0"
	Damp slate. gray silt with sand streaks & coal silt.	5'-0"
	Damp slate gray silt.	5'-0"

℄ 818°

F-F indicate bottom of Footings.

Test Hole No. 3

862.80

	Damp earth & yellow clay	4'-8"
Rise of water	Moist brown clay and slate gray silt streaks.	5'-3"
	Moist slate gray silt to sand at 809.	5'-0"
	Wet dark slate gray medium fine sand.	5'-0"
	Moist dark slate gray silt with streaks of coal silt.	5'-0"
	Stiff putty-like slate-gray silt.	5'-0"
	Damp mixed shaley clay. Silt with brown clay flakes.	5'-0"
	Damp dark slate gray silt with trace of coal silt.	5'-0"
	Putty-like dark gray silt to 814. stiff gray silt clay with sand stones.	5'-0"
	Moist sandy dark gray silt. Rotten brown sand stone	6'-0"
	Damp rotten brown sand stone	4'-0"

℄ 808°

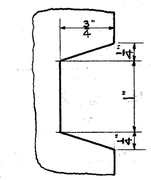
Test Hole Nº 4

862.30

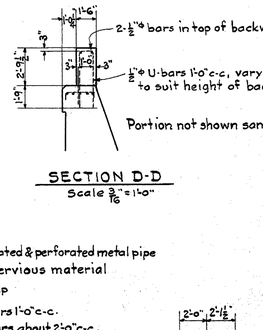
	Slightly moist mixed brown & gray clay. Trace of Coal silt.	5'-3"
Rise of water	Moist brown & gray clay to gray silt.	5'-0"
	Wet dark slate-gray medium fine sand. Small pieces soft wood	4'-0"
	Wet dark gray sand coarser than other holes.	5'-0"
	Damp slate-gray silt, heavy with coal silt.	5'-0"
	Damp slate-gray silt to 836-2' dark gray sand to stiff silt.	5'-0"
	Damp stiff dark gray silt	5'-0"
	Putty-like dark gray silt.	5'-0"
	Tough sandy silt to clay.	5'-0"

℄ 817.0°

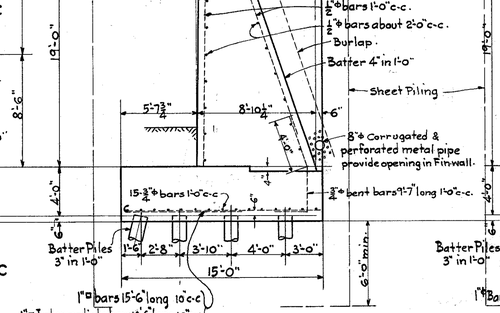
These test holes indicate the information obtained but the State of Ohio does not guarantee the accuracy thereof.



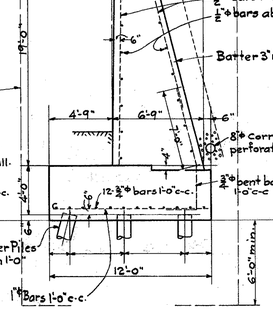
SCORING
Scale Full Size.



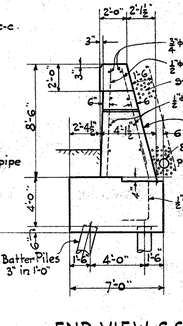
SECTION D-D
Scale 3/16" = 1'-0"



SECTION A-A
Scale 3/16" = 1'-0"

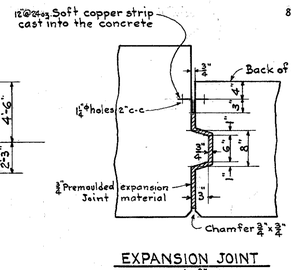


SECTION B-B
Scale 3/16" = 1'-0"

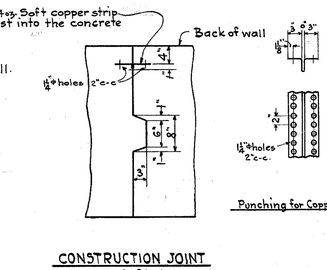


END VIEW C-C
Scale 3/16" = 1'-0"

Waterproof backs of abutments and wingwalls; item 93.



EXPANSION JOINT
Scale 3/4" = 1'-0"



CONSTRUCTION JOINT
Scale 3/4" = 1'-0"

Punching for Copper Strips.

For location of Test Holes see Sheet 1. [48]
Elevations on this Plan are based on P.R.R. datum;
Bench Mark El. 870.36, Aluminum Plate on Bridge 87.07 FAGH-415-F(1)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

SHEET 2 of 4 — 81498

THE PENNSYLVANIA RAILROAD
CENTRAL REGION.
PANHANDLE DIV. — MAIN LINE

BRIDGE Nº. at PHILADELPHIA ROAD, OHIO
OVER STATE HIGHWAY 370 (ROUTE U.S. 36 & 250)

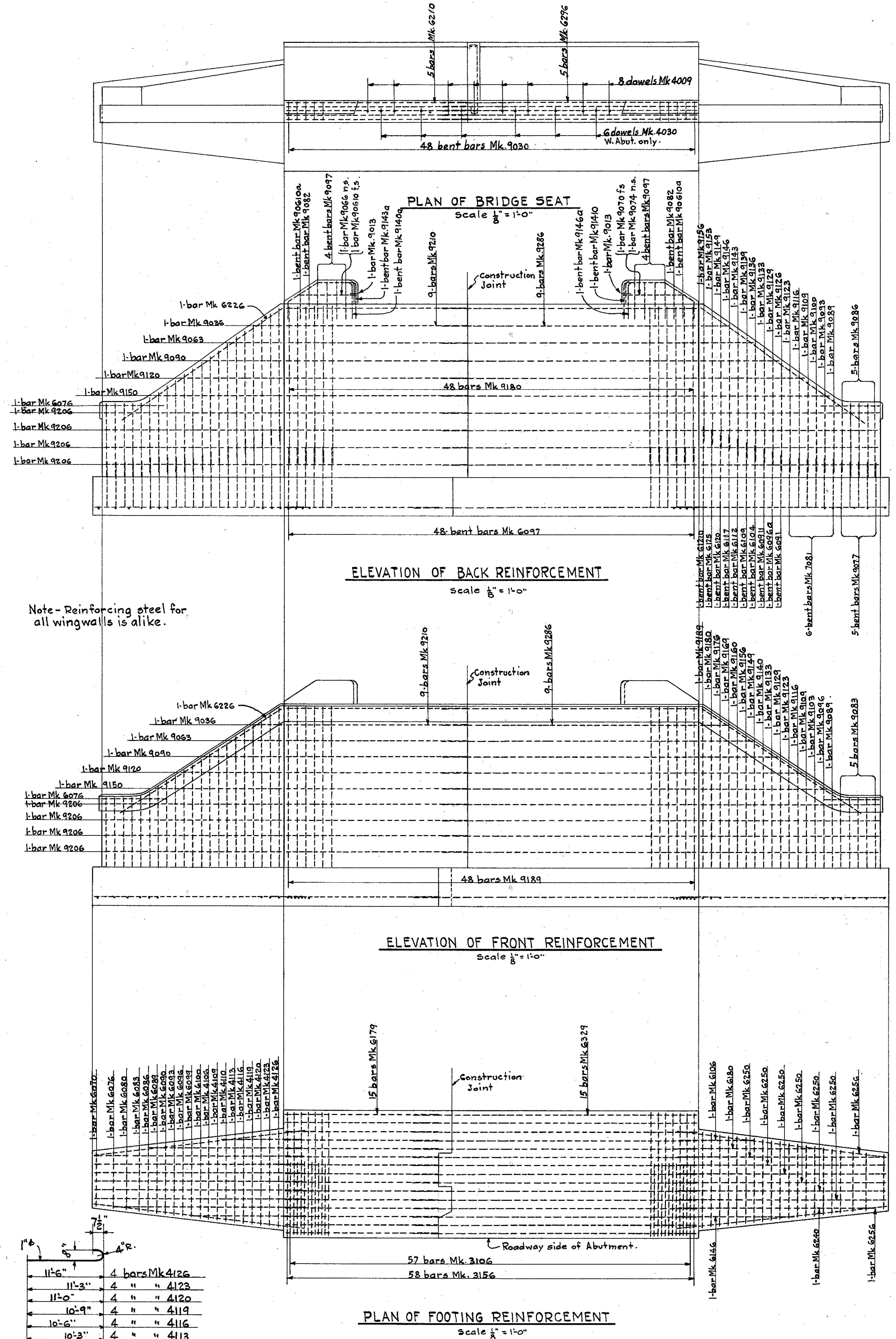
SUBSTRUCTURE

OFFICE OF ENGR. OF BRIDGES & BUILDINGS
PITTSBURGH, PA., JAN. 3 1939
APPROVED 6-6-39
APPROVED
CHIEF ENGR. BRIDGES & BUILDINGS
CHIEF ENGR. CENTRAL REGION

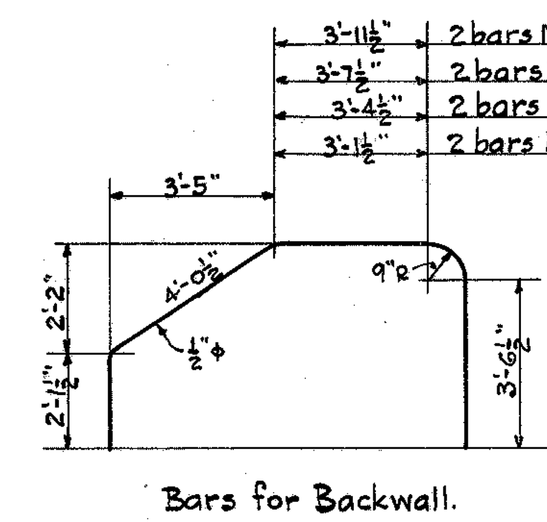
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.W.L.	J.W.L.	J.W.L.	J.W.L.			

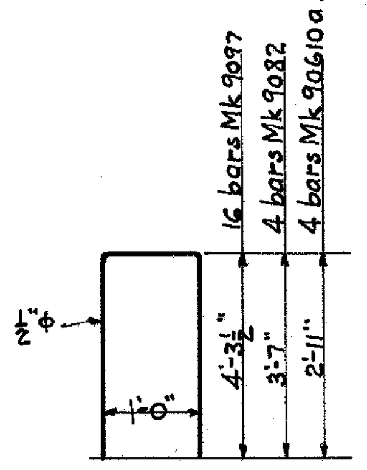
FILE 31-14-7

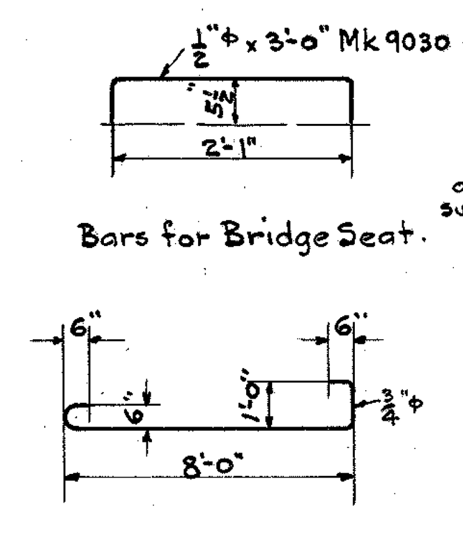
HARRISON COUNTY
S.H. 370. SEC. S.(P.T.) & P.(P.T.)

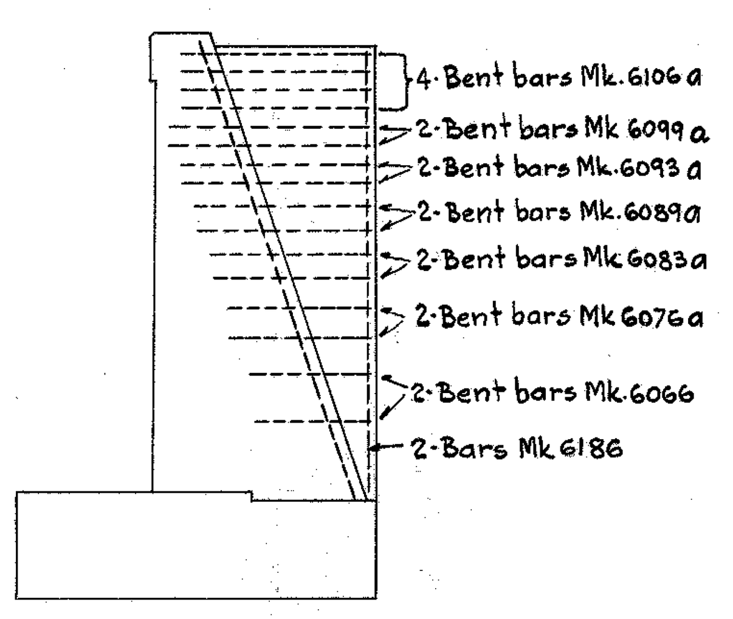


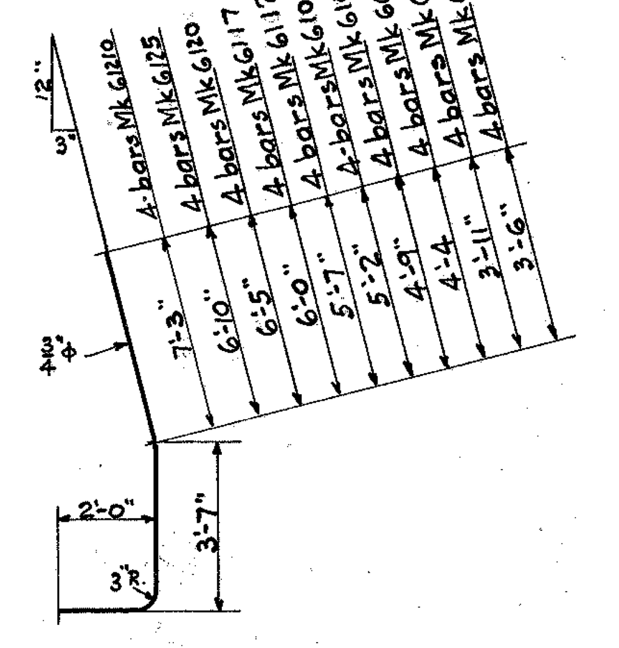
11'-6"	4 bars Mk 4126
11'-3"	4 " " 4123
11'-0"	4 " " 4120
10'-9"	4 " " 4119
10'-6"	4 " " 4116
10'-3"	4 " " 4113
10'-0"	4 " " 4110
9'-9"	4 " " 4109
9'-6"	4 " " 4106

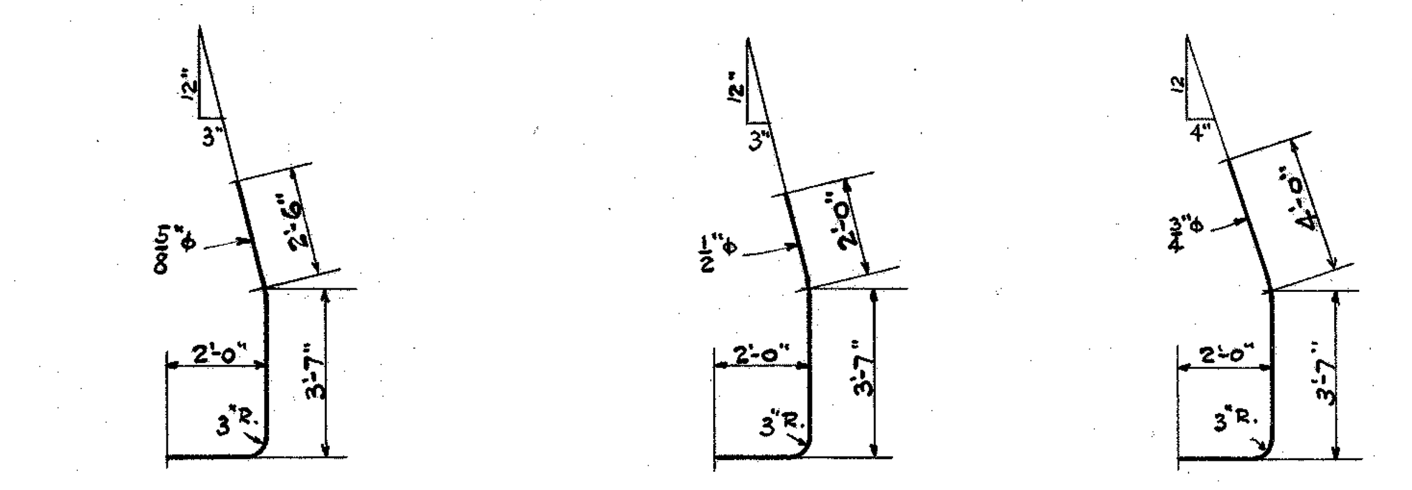












9'-6"	114 bars Mk 3106
14'-6"	116 bars Mk 3156

Schedule of Reinforcing Steel (contd)

Mark.	Size	Pieces	Length	Weight	Remarks.
9036	1/2" rd.	8	3'-6"	19	
9063	"	8	6'-3"	34	
9013	"	4	1'-3"	4	
3106	1" sq.	114	10'-6"	4120	bent.
3156	1" sq.	116	15'-6"	6180	bent
4009	1" rd	16	9"	33	Plain Dowels. for Masonry Pls.
4030	1" rd	6	3'-0"	49	Plain Dowel Anchors.
d	1/2" rd.	20	24'-6"	333	for Parapets.
c	3/4" rd.	48	8'-9"	615	bent, for Parapets.
7081	5/8" rd.	24	8'-1"	206	bent.
6106a	3/4" rd.	8	10'-6"	128	bent.
6099a	"	4	9'-9"	59	"
6093a	"	4	9'-3"	56	"
6089a	"	4	8'-9"	53	"
6083a	"	4	8'-3"	50	"
6076a	"	4	7'-6"	46	"
6066	"	4	6'-6"	40	"
6186	"	4	18'-6	113	

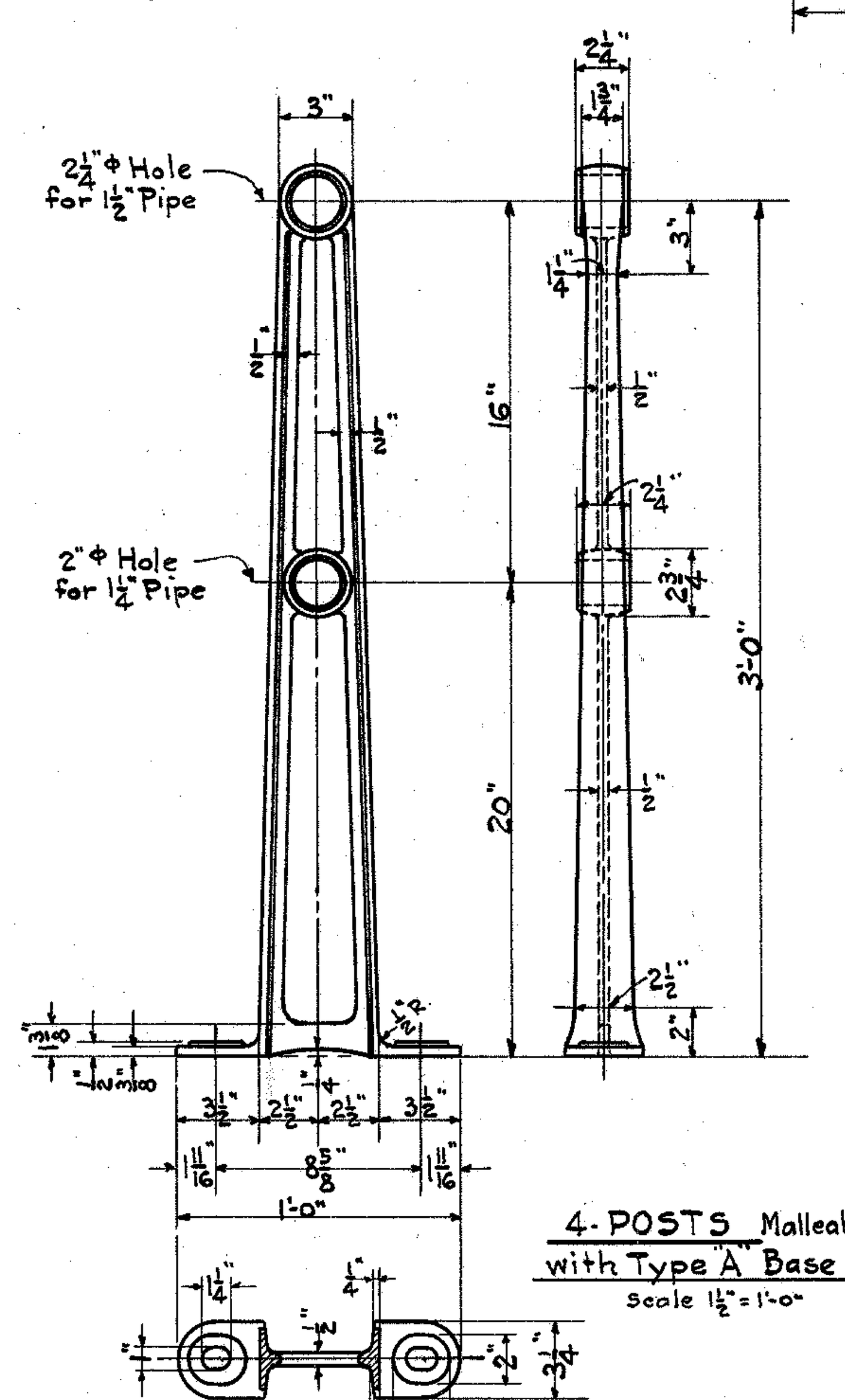
27170# total.

order with superstructure (d, c)

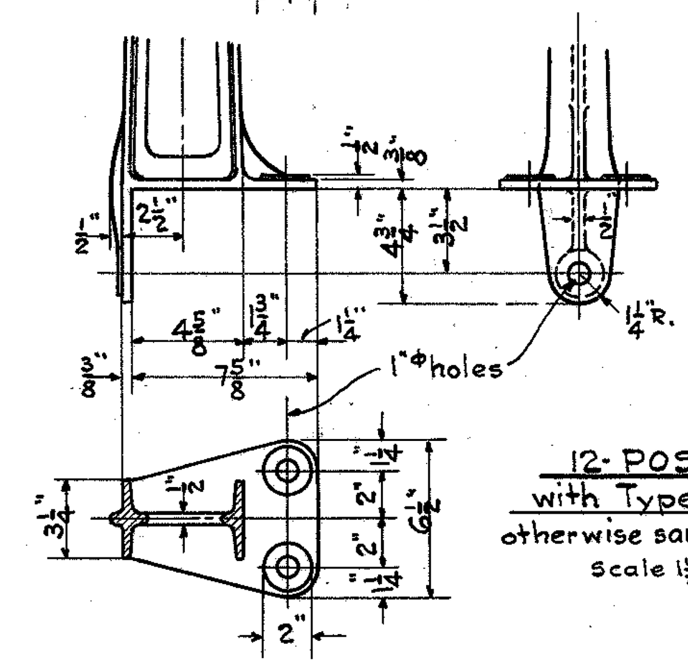
[R] Rev. As Built Fin Walls Non Performed. 545 lbs

Schedule of Reinforcing Steel. 54

Mark	Size	Pieces	Length	Weight	Remarks
9066	1/2" rd.	2	6'-6"	9	
90610	"	2	6'-10"	9	
90610a	"	4	6'-10"	19	bent.
9070	"	2	7'-0"	10.	
9074	"	2	7'-4"	10.	
9077	"	20	7'-7"	103	bent
9082	"	4	8'-2"	22	bent
9083	"	20	8'-3"	112	
9086	"	20	8'-6"	116	
9089	"	8	8'-9"	48	
9090	"	8	9'-0"	49	
9093	"	4	9'-3"	25	
9096	"	4	9'-6"	26	
9097	"	16	9'-7"	104	bent
9100	"	4	10'-0"	27	
9103	"	4	10'-3"	28	
9109	"	8	10'-9"	59	
9116	"	8	11'-6"	63	
9120	"	8	12'-0"	65	
9123	"	8	12'-3"	67	
9126	"	4	12'-6"	34	
9129	"	8	12'-9"	69	
9133	"	8	13'-3"	72	
9136	"	4	13'-6"	37	
9139	"	4	13'-9"	37	
9140	"	4	14'-0"	38	
9140a	"	2	14'-0"	19	bent
9143	"	4	14'-3"	39	
9143a	"	2	14'-3"	20	bent
9146	"	4	14'-6"	40	
9146a	"	2	14'-6"	20	bent
9149	"	8	14'-9"	80	
91410	"	2	14'-10"	20	bent
9150	"	8	15'-0"	82	
9153	"	4	15'-3"	42	
9156	"	8	15'-6"	84	
9160	"	4	16'-0"	44	
9169	"	4	16'-9"	45	
9176	"	4	17'-6	48	
9180	"	100	18'-0"	1224	
9189	"	100	18'-9"	1275	
9206	"	32	20'-6"	447	
9286	"	36	28'-6"	698	
9030	"	96	3'-0"	196	bent.
9210	"	36	21'-0"	515	
6146	3/4" rd.	4	14'-6	88	
6180	3/4" rd.	4	18'-0"	110	
6179	"	30	17'-9"	810	
6070	"	4	7'-0"	43	bent
6076	"	12	7'-6"	137	"
6329	"	30	32'-9"	1496	
6080	"	4	8'-0"	49	bent
6240	"	4	24'-0"	146	
6083	"	4	8'-3"	50	bent
6086	"	4	8'-6"	52	"
6096a	"	4	9'-6"	58	bent
6089	"	4	8'-9"	53	"
60911	"	4	9'-11"	60	bent.
6090	"	4	9'-0"	55	"
6091	"	4	9'-1"	55	bent
6093	"	4	9'-3"	56	"
6097	"	96	9'-7"	1400	bent
6096	"	4	9'-6"	58	"
6099	"	4	9'-9"	59	"
6226	"	8	22'-6	274	
6100	"	4	10'-0"	61	bent
6104	"	4	10'-4"	63	bent
6250	"	24	25'-0"	912	
6106	"	4	10'-6"	64	
6256	"	8	25'-6	310	
6109	"	4	10'-9"	65	bent
6296	"	10	29'-6"	449	
6210	"	10	21'-0"	319	
6112	"	4	11'-2"	68	bent
6125	"	4	12'-5"	75	bent
6117	"	4	11'-7"	71	"
61210	"	4	12'-10"	78	bent.
6120	"	4	12'-0"	73	"
4106	1" rd.	4	10'-6"	114	"
4109	"	4	10'-9"	116	"
4110	"	4	11'-0"	119	"
4113	"	4	11'-3"	122	"
4116	"	4	11'-6"	124	"
4119	"	4	11'-9"	127	"
4120	"	4	12'-0"	130	"
4123	"	4	12'-3"	132	"
4126	"	4	12'-6"	135	"

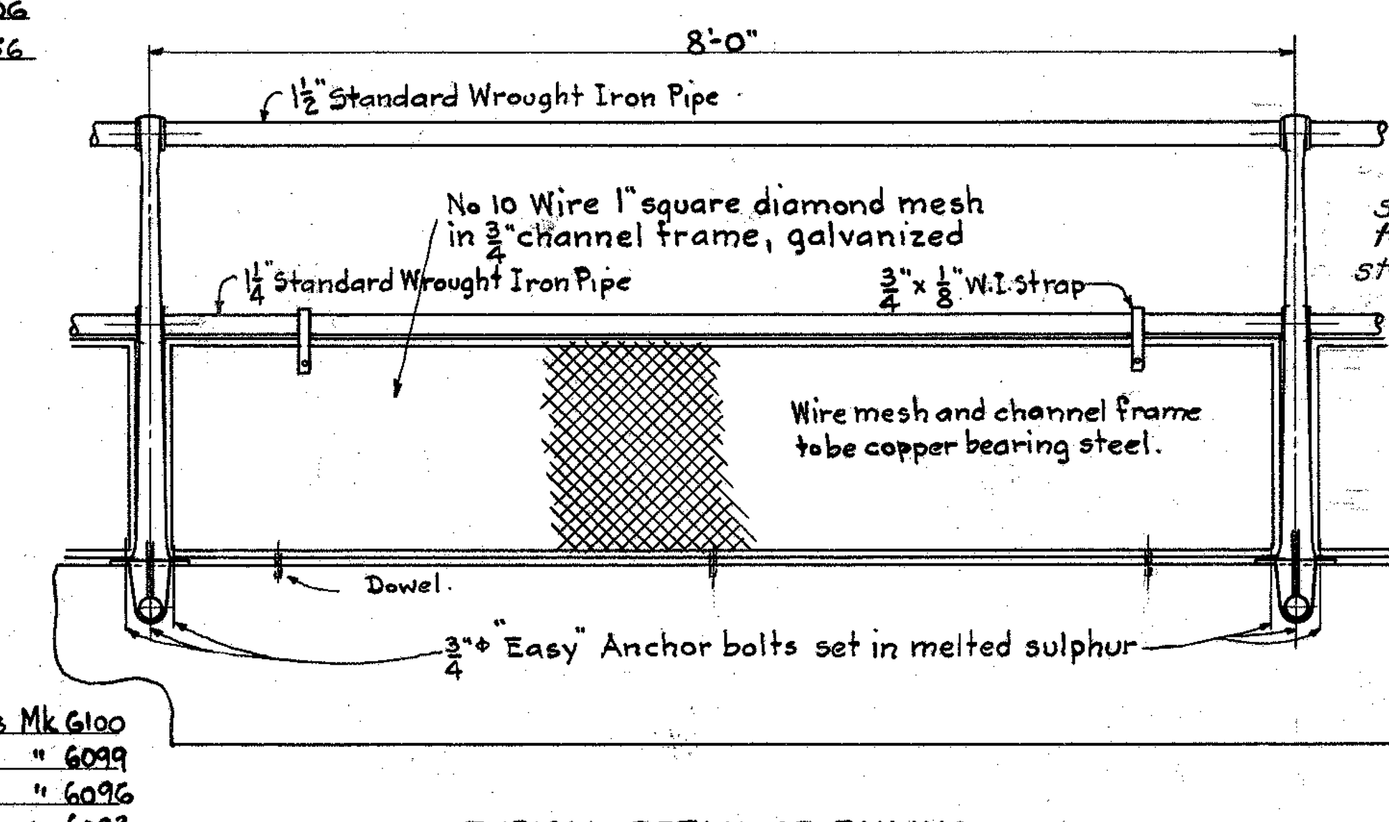


4-POSTS Malleable Iron M-7.9
with Type "A" Base
Scale 1 1/2" = 1'-0"



12-POSTS Malleable Iron M-7.9
with Type "B" Base
otherwise same as Type "A" Post.
Scale 1 1/2" = 1'-0"

9'-3"	4 bars Mk 6100
9'-0"	4 " " 6099
8'-9"	4 " " 6096
8'-6"	4 " " 6093
8'-3"	4 " " 6090
8'-0"	4 " " 6089
7'-9"	4 " " 6086
7'-6"	4 " " 6083
7'-3"	4 " " 6080
6'-9"	4 " " 6076
6'-3"	4 " " 6070

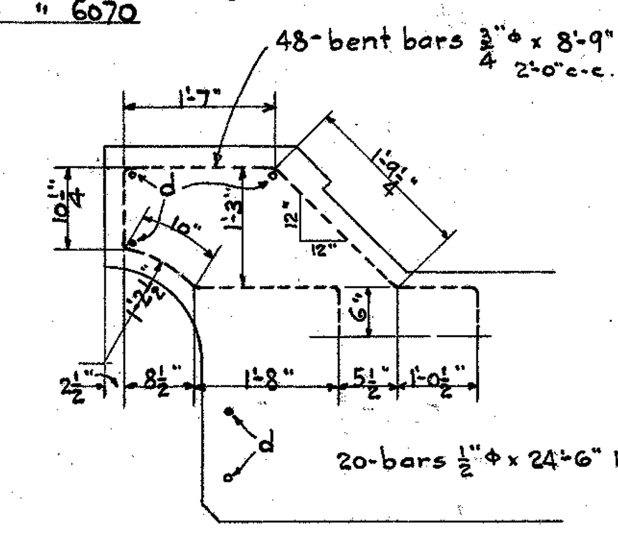


[R] Rev. As Built C.O. No. 8
3/4" copper bearing steel channel changed to 1 1/8" x 9/16" x 3/16" carbon steel (structural grade).

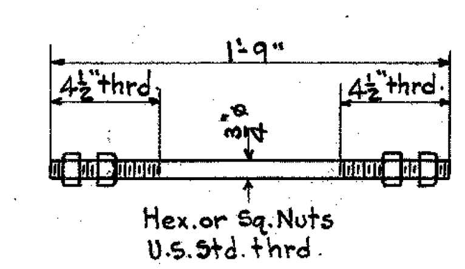
TYPICAL DETAIL OF RAILING
Scale 3/4" = 1'-0"

Painting included in bid price per lineal foot of railing. Paint according to the provisions of 58 using one coat of red lead and two coats of black M-9.8

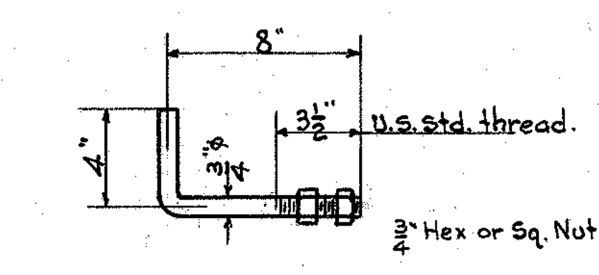
NOTE:- Galvanizing and painting shall be done (or the galvanized surface treated) in such a manner as to insure bond between the paint and the galvanized surface.



REINFORCING BARS FOR PARAPETS.



128-Rods Mk. "a"
order with Struc. Steel, Item 5107
440#



62-Hook Rods Mk. "b"
order with struc. steel, Item 5107
120#

8'-3"	4 bars Mk 6099a
7'-9"	4 bars Mk. 6093a
7'-3"	4 bars Mk 6089a
6'-9"	4 bars Mk 6083a
6'-0"	4 bars Mk. 6076a
5'-0"	4 bars Mk 6066

Bars for Finwall.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

SHEET 3 of 4 — 81498

THE PENNSYLVANIA RAILROAD
CENTRAL REGION.
PANHANDLE DIV. — MAIN LINE.
BRIDGE No. at PHILADELPHIA ROAD, OHIO.
OVER STATE HIGHWAY 370 (ROUTE U.S. 36 & 250)
REINFORCING STEEL.

OFFICE OF ENGR. OF BRIDGES & BUILDINGS.
PITTSBURGH PA. JAN. 10 1939.
APPROVED 6-6-34 — APPROVED
F.A.G.H-415-F(1)
ENGR. BRIDGES & BUILDINGS. — CHIEF ENGR. CENTRAL REGION

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.W.L.	J.W.L.	J.W.L.	J.W.L.			

Rev. by Hwy. 12/13/39 Galvanizing, Painting Note

1-16-42
2-16-42

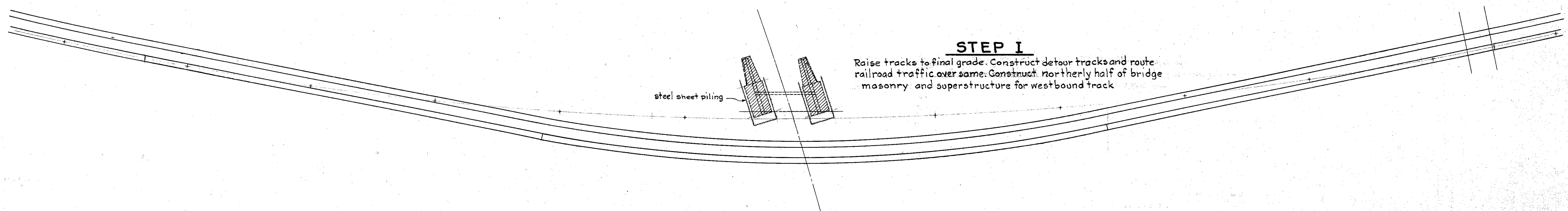
Fed. Rd. Dist. №.	State	F.A.G.C.P. FAGH415B2 FAGH415F1 FAP-415-G(1)	Fiscal Year
10	Ohio		1939

LAYOUT PLAN

Showing Present tracks; detour tracks and proposed bridge masonry and superstructure.

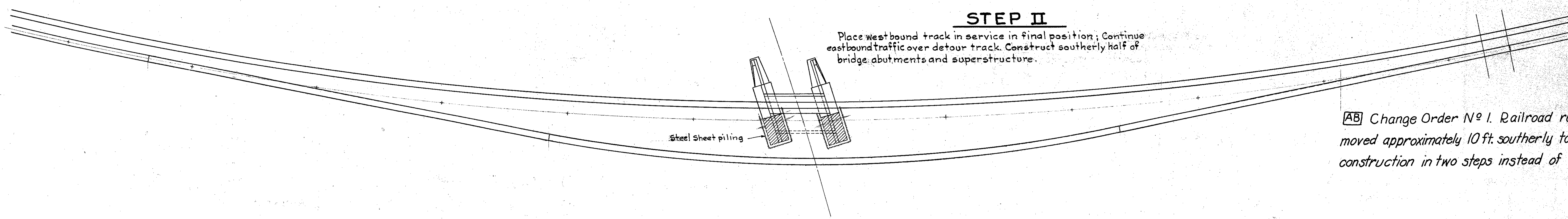
STEP I

Raise tracks to final grade. Construct detour tracks and route railroad traffic ~~over same. Construct~~ northerly half of bridge masonry and superstructure for westbound track



STEP II

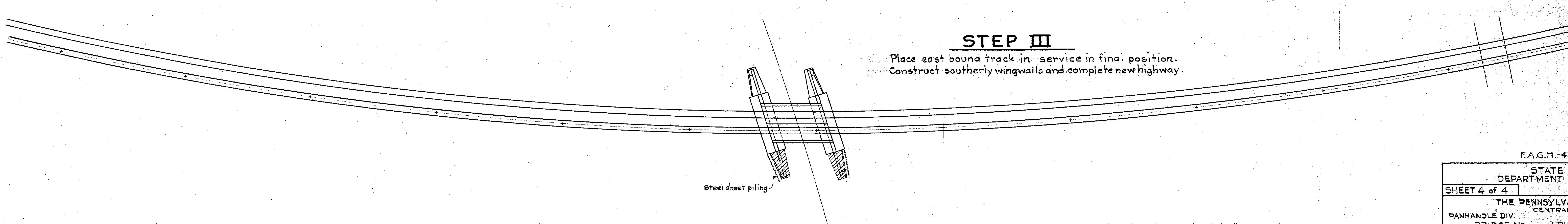
Place westbound track in service in final position; Continue eastbound traffic over detour track. Construct southerly half of bridge abutments and superstructure.



[AB] *Change Order № 1. Railroad run-around moved approximately 10 ft. southerly to permit construction in two steps instead of three.*

STEP III

Place east bound track in service in final position. Construct southerly wingwalls and complete new highway.



NOTE:- The contractor shall submit to the Director, for highway and railroad approval, detailed plans for the bracing of the steel sheet piling.

F.A.G.H.-415-F(1)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS.

SHEET 4 of 4 — 81498

THE PENNSYLVANIA RAILROAD
CENTRAL REGION.
PANHANDLE DIV. MAIN LINE
BRIDGE №. at PHILADELPHIA ROAD OHIO
OVER STATE HIGHWAY 370 (ROUTE U.S. 36 & 250)
PROPOSED DETOUR TRACKS.

OFFICE OF ENGR. OF BRIDGES & BUILDINGS. SCALE 1" = 40'
PITTSBURGH, PA., JAN. 31, 1939.
APPROVED 6-6-39 APPROVED
ENGR. BRIDGES & BUILDINGS. CHIEF ENGR. CENTRAL REGION.

DESIGNED	DRAWN.	TRACED	CHECKED	REVIEWED DATE.	REVISED
	J.W.L.	J.W.L.			

1-16-42

Rev. by Hwy. 3/4/40 - Add Plan approval note.

FILE 31-14-7

Fed. Rd. Dist. No.	State	F.A.G.C.P. FAGH-415-B2	Fiscal Year
10.	Ohio.	FAGH-415-F1 FAP-415-G(1)	1939

52 / 55

HARRISON COUNTY
S.H. 370 SEC. S. (P.T.) & P. (P.T.)

Schedule of Reinforcing Steel S4

Mark	Size	Pieces	Length	Weight	Remarks.
6016	3/4" rd.	48	1'-6"	110	
6019	"	8	1'-9"	21	
6020	"	4	2'-0"	12	
6026	"	4	2'-6"	15	
6029	"	4	2'-9"	17	
6030	"	4	3'-0"	18	
6060	"	4	6'-0"	37	
6080	"	4	8'-0"	49	
6090	"	16	9'-0"	219	
6093	"	2	9'-3"	28	
6100	"	2	10'-0"	30	
6113	"	2	11'-3	34	
6120	"	2	12'-0"	37	
6220	"	4	22'-0"	134	
6020	3/4" rd.	8	2'-0"	24	bent dowel.
6024	"	32	2'-4"	114	" "
6027	"	12	2'-7"	47	" "
60210	"	30	2'-10"	129	" "
6037	"	16	3'-7"	87	" "
6040	"	8	4'-0"	49	" "
6044	"	16	4'-4"	106	" "

Note - Alterations to bridge 86.25 shown on this plan are due to construction of new undergrade bridge west of Philadelphia Road station and the raising of tracks shown on Plans 24368, [29-34, 45-47]
For new bridge west of Philadelphia Road Station see Plan 81498, [48-51]
For orriginal drawing of bridge 86.25 see Plan 22089.
Drill holes for all dowels, 1'-3" deep in masonry.

QUANTITIES

Item	Description.	Estimated	Actual.
E2	Excavation for Structure, unclassified	15 c.y.	15 C.Y.
S1	Class "E" Concrete, Walls Co-3 +10.2	8 c.y.	18.2 C.Y.
S4	Reinforcing steel M7.1 structural grade.	1315 lbs.	1315 lbs.
S23	Dowel Holes for 3/4" φ dowels	153 lin.ft.	153 lin ft.

Elevations on this Plan are based on P.R.R. datum;
Bench Mark El. 870.36, Aluminum Plate on Bridge 87.07.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS.

SHEET 1 of 1 — 81531

THE PENNSYLVANIA RAILROAD
CENTRAL REGION.
PANHANDLE DIV. — MAIN LINE

BRIDGE No. 86.25
NEAR PHILADELPHIA ROAD, OHIO
ALTERATIONS TO PARAPETS and WING WALLS.

OFFICE OF ENGR. OF BRIDGES & BUILDINGS.
PITTSBURGH PA. JUNE 12, 1939.
SCALE 1/4" = 1 Ft.
APPROVED 6-16-39
F.A.G.H.-415-F(1)
APPROVED
ENGR. BRIDGES & BUILDINGS — CHIEF ENGR. CENTRAL REGION.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.W.L.	J.W.L.	J.W.L.	J.W.L.			

1-16-42

FILE F-2-9

Fed. Rd. Dist. No	State	F.A.G.C.P.	Fiscal Year
10	Ohio	F.A.G.H.415-B, F.A.G.H.415-F, F.A.P.415-(6)	1939

53
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HARRISON COUNTY
S.H. 370, SEC. 3. (P.T.) & P. (P.T.)

SPECIAL REQUIREMENTS

1.- All cars of material, tools and equipment which have been regularly consigned to the contractor will be placed on the nearest available side track to the site of the work.

2.- Should the contractor desire any work train service or switching service other than mentioned above, he shall pay the Railroad Company, at established rates, for such service including the cost of train crews, pilots, flagmen or equipment and equipment operators of any nature furnished by the Railroad Company to the Contractor in connection with carrying out his work. Before any such services are furnished, the Railroad Company may require the contractor to deposit a certified check to cover the estimated cost thereof.

3. The Contractor shall perform all work without damage and delay to the trains of the Railroad Company and the Contractor must, and shall, observe such restrictions as to the time and methods of construction, as the Chief Engineer of the Railroad Company, or his representative on the ground, may impose, to insure the safe and expeditious operation of its trains and the safety of persons and property in the care of the Railroad Company. The Railroad Company will maintain train operation during the construction period with such reasonable speed restrictions as it may consider necessary, but such provisions shall not be construed as requiring the Railroad Company to stop any of its trains or reduce their speed beyond its normal practice in such matters for the convenience of the Contractor.

4.- The Contractor shall not occupy any portion of the operated tracks of the Railroad, move construction plant, equipment or materials across such operated tracks, or encroach on specified clearances.

5.- During all of the Contractor's operations which are conducted in accordance with the above regulations, the Railroad Company will provide temporary operators, switchtenders, flagmen or watchmen who may be necessary for the safe and proper operation of its trains at State expense without cost to the Contractor.

6.- In case the Contractor deems it necessary or desirable to deviate from the foregoing regulations he shall first obtain from the Chief Engineer of the Railroad Company, or his representative, permission for such method of procedure and shall observe such regulations pertaining thereto as said Railroad Company may require. If such methods entail expense for temporary operators, conductors, switchmen, flagmen, or other cost necessary for the safe and proper operation of the Railroad Company's trains, such expense shall be borne by the Contractor. No provisions of this section or approval by the Railroad Company as to construction operations shall relieve the Contractor from any or all responsibility and for liability under this contract.

METHOD OF PROCEDURE

THE STATE WILL:

1.- Have charge of the maintenance of highway detour except between the ends of the ties of the R.R. Company tracks.

THE RAILROAD COMPANY WILL:

1.- Install temporary crossovers and turnout and remove same upon completion and raise, reballast, and maintain its main tracks between R.R. Station 4482+65 and 4523+35.9 and its side track between R.R. Station 4485+98 and 4495+70 including team track driveway on Railroad Right of Way extending from R.R. Station 4491+50 to present S.H. 370. with supporting reinforced concrete crib wall between R.R. Station 4495+22 and 4495+78.

2.- Construct and maintain two main detour tracks between R.R. Station 4497+60 and 4504+30 and shift present main tracks to connect with same, and upon completion of bridge structure remove detour tracks and restore shifted tracks to permanent alignment and grade.

3.- Take up and replace present tracks, as may be required to enable the construction of the proposed bridge and to make proper connections between the present and detour tracks.

4.- Relocate communication and power lines.

5.- Adjust and maintain flashing light signals during construction and remove upon completion.

6.- Maintain highway crossing during construction and remove upon completion.

7.- Place 12" tile drain on North Side of tracks between R.R. station 4491 and 4496+40

8.- Reconstruct slag drop chute at Station 4490+71.

9.- Place reinforced concrete crib wall between Sta. 4495+22 and Sta. 4495+78.

10.- Furnish material and labor and construct barricade across present S.H. 370 on south side of present crossing.

[A] Rev. As Built C.O. No 3 Railroad Co. authorized to move the power and telephone lines on the North side of the railroad tracks to clear operations at the underpass. The cost to be included under Railroad Force Account billing.

These moves from relocated permanent positions as per "4," which interfered with construction procedure, to temporary location then back to permanent location.

THE CONTRACTOR SHALL:

1.- Place earth fill for railroad embankment and for temporary railroad detour tracks below the level of the present subgrade.

2.- Furnish material and labor for alterations to railroad bridge #86.25 as per plan 81531. Sheet [52]

3.- Furnish and place fill for railroad detour above present subgrade level.

4.- Place all fill for raising farm crossing of R.R. Station 4510+22 to a point 15 ft. from the center line of the railroad tracks.

5.- Remove filled material on railroad detour embankment to level of present subgrade, including ballast from detour tracks remaining after detour tracks have been removed.

6.- Raise and adjust catch basin north of R.R. Station 4496+40.

7.- Furnish material and labor and construct the bridge over the new highway as shown on plan 81498. sheets [48] [49] [50] The work to be carried out in three steps as shown on sheet [51] In each step the excavation for foundations shall be protected with steel sheet piling as shown on the plans and adequately braced.

[A] Rev. As Built C.O. No 1. Railroad runaround moved southerly approximately ten feet in order to permit the construction of the Underpass in two construction periods instead of three.

F.A.G.H.-415-F(11).

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

SHEET 4 OF 4 — 24368

THE PENNSYLVANIA RAILROAD
CENTRAL REGION — PANHANDLE DIV.
PHILADELPHIA ROAD, OHIO.
SPECIAL REQUIREMENTS
METHOD OF RAILROAD PROCEDURE
Oct. 10, 1939.
OFFICE OF CHIEF ENGR. CENTRAL REGION
PITTSBURGH, PA.

KB Revised to Print 1-16-42

SUMMARY OF QUANTITIES

FED. RD. DIST. NO.	STATE	FAG.C.P. NO'S.	F.A.P. NO.	FISCAL YEAR
10	0H10	F.A.G.H. 415-F(1) F.A.G.H. 415-B(2)	415-G(1)	1939

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HARRISON COUNTY
S. H. 370 SEC. S(PT) & P(PT)

STRUCTURES 20 FT. SPAN & UNDER

PROJECT Nº	REF. Nº	DETAIL ON SHEET Nº	STATION	REMOVALS: EXISTING MASONRY CU.YDS.	REMOVALS: EXISTING 12" PIPE LIN.FT.	NEW CONSTRUCTION: TYPE	SIZE	LENGTH	STRUCTURE EXCAVATION (UNCLASS) CU.YDS.	CONCRETE CLASS "C" CU.YDS.	DOWEL HOLES LIN.FT.	REINF'ING STEEL LBS.	PIPE FOR ROADWAY CULVERTS LIN.FT. 12"	15"	18"	24"	PIPE SPECIALS 24"x12"x4'-0" TEE EACH	18"x12"x4'-0" TEE EACH	CATCH BASINS STD. Nº 1-2 EACH	CATCH BASINS RAISE EXISTING Nº 2-2 C.B. SALVAGE CASTING EACH	PAVED GUTTER TYPE 3 LIN.FT.	PAVED GUTTER TYPE 3 MODIFIED LIN.FT.	9" RIP-RAP GROUT FILLED SQ.YDS.
F.A.G.H. 415-B(2)	1-5	38	228+00			PIPE	15"	2'-0" & 9'-0"	3	1.1	6	18		11					1				
SUB-TOTALS									3	1.1	6	18		11					1				
F.A.G.H. 415-F(1)	2-5	39	3+50	1.3	38	PIPE	15"	62'-0"	30	0.7				62					1		42	20	
	3-5	40	1+20.8 ON APPR.			PIPE	18"	146'-0"	52	1.8					146				1				16
	4-5	41	6+76.9 ON APPR.			PIPE	15"	14'-0"	8	0.2				14					1				
	5-5	38	8+29.4 ON APPR.		2	PIPE	12"	21'-0"	5	1.1	6	13	21							1			
	6-5	41	11+00			PIPE	24"	62'-0"	40	2.1						62	1						
	7-5	42	13+00			PIPE	15"	60'-0"	17	1.4				60									
	8-5	42	17+00			PIPE	15" & 18"	59'-6"	19	1.6				36	14			1					
SUB-TOTALS				1.3	40				171	8.9	6	13	21	172	160	62	1	1	3	1	42	20	16
F.A.P. 415-G(1)	9-5	43	30+50			PIPE	15"	78'-0"	12	1.4				78									10
	10-5	44	33+39.5	0.7	8	PIPE	12"	24'-0" & 21'-0"	13	1.8	3	9	45										
SUB-TOTALS				0.7	8				25	3.2	3	9	45	78									10
GRAND TOTALS				2.0	48				199	13.2	15	40	66	261	160	62	1	1	4	1	42	20	26

CHANNEL EXCAVATION

PROJECT Nº	TOTAL OF SHEET Nº	CHANNEL EXCAVATION CU.YDS.
F.A.P. 415-B(1)	27	2512
GRAND TOTALS		2512

CONCRETE STEPS

PROJ. No.	SHEET No	CONCRETE STEPS 12" TREAD 6" RISER	2" IRON PIPE RAILING
		LIN FT	LIN. FT.
F.A.G.H. 415-B(2)	6	84	22
TOTAL		84	22

REMOVAL OF EXISTING PAVEMENT

PROJECT Nº	TOTAL OF SHEET Nº	9-7-7-9 CONCRETE PAVEMENT SQ.YDS.	9" MACADAM PAVEMENT SQ.YDS.
F.A.G.H. 415-B(2)	6	1,444.4	
SUB-TOTALS		1,444.4	
F.A.G.H. 415-F(1)	7		1225
SUB-TOTALS			1225
GRAND TOTALS		1444.4	1225

PAVED GUTTER

PROJECT Nº	TOTAL OF SHEET Nº	TYPE 3 LIN.FT.	TYPE 3 MODIFIED LIN.FT.
F.A.G.H. 415-B(2)	6	98	280
SUB-TOTALS		98	280
F.A.G.H. 415-F(1)	7	64	364
SUB-TOTALS		64	364
GRAND TOTALS		162	644

ROADWAY DRAINAGE

PROJECT Nº	TOTAL OF SHEET Nº	PIPE INCLUDING POROUS BACKF LIN.FT. 8"	12"	PIPE UNDER DRIVES LIN.FT. 15"	PIPE LIN.FT. 12"	15"	REMOVAL EXISTING 12" V.S.P. LIN. FT. 12"	15"	CATCH BASINS EACH STD. Nº 1-2	STD. Nº 2-2
F.A.G.H. 415-B(2)	6	149	48	50	100	298	300		1	1
F.A.G.H. 415-F(1)	7	90	348						1	
GRAND TOTALS		239	396	50	100	298	300		2	1

STORM SEWERS

PROJECT NO	SHEET NO	12" PIPE Lin.Ft.	12" PIPE FOR OUTLETS Lin.Ft.	12" PIPE UNDER DRIVES Lin.Ft.	PIPE SPECIALS 12"x12" TEES Each	12"x90° ELLS Each	FOR OUTLETS 12"x12" TEES Each	FOR OUTLETS 12"x45° ELLS Each	STANDARD CATCH BASINS EACH 13-A	1-2	TYPE A RIP RAP Sq.Yds.
	7	428			1				2		
FAGH 415-F(1)	8	399			2	1			3		
	9	102				1			1		
Sub Total		929			3	2			6		
FAP 415-G(1)	9	463	52	20		2	1	2	3		4
Sub Total		463	52	20		2	1	2	3		4
GRAND TOTAL		1392	52	20	3	4	1	2	9		4

DRAIN BASINS

PROJECT Nº	TOTAL OF SHEET Nº	Nº 1 EACH
F.A.G.H. 415-F(1)	8	2
GRAND TOTALS		2

* This guard rail quantity is shown twice only because it is removed from an approach on FAGH 415-F(1) and reset on a drive on FAGH 415-B(2). However it is only one pay item and is carried into the final summary as "220 Lin.Ft. Guard Rail Removed and Reset.

DRIVES AND ROAD APPROACHES

PROJECT Nº	TOTAL OF SHEET Nº	PIPE FOR DRIVEWAYS LIN. FT. 12"	15"	18"	I-17 AGGREGATE CU.YDS	PIPE UNDER DRAINS LIN.FT. 6"	DOWEL HOLES LIN.FT. 8"	GUARD RAIL LIN.FT.	GUARD RAIL REMOVED & RESET LIN. FT.	CATCH BASINS EACH STD. Nº 2-2	REINFING STEEL LBS.	T-11 STABILIZED SURFACE COURSE SQ.YDS
F.A.G.H. 415-B(2)	6		20		43				* 220			100.8
SUB-TOTALS			20		43							100.8
F.A.G.H. 415-F(1)	7				1	436		412.5	* 220			23.6
	8	50	52	50	99		3			1	9	80.8
	9				10							47.2
SUB-TOTALS		50	52	50	110	436	3	412.5	* 220	1	9	151.6
F.A.P. 415-G(1)	9				16							47.2
	10		70		42							73.6
SUB-TOTALS			70		58							120.8
GRAND TOTALS		50	142	50	211	436	3	412.5	* 220	1	9	373.2

DERIVATION OF PAVEMENT QUANTITIES

	CALCULATIONS	9-7-7-9 Reinf. Conc. Pavt Sq.Yds.	9-6-6-9 Plain Conc. Pavt Sq.Yds.	Type S-A Conc. Curb Lin.Ft.	WATERBOUND MACADAM BASE COURSE 5": COARSE AGGREGATE TONS	SCREENINGS TONS	T-30 Prime Coat Sec. M-5.15 RT-2 GALS.	T-31 BITUMINOUS SURF TREAT.: Aggregate No. 4a TONS	Bit. Mat. Sec. M-5.16 RT-6 GALS.	Aggregate for Seal Coat No. 6 TONS	Bit. Mat. for Seal Coat Sec. M-5.16 RT-6 GALS
F.A.G.H. 415-B(2)	BEGIN. OF F.A.G.H. 415-B(2) = STA. 227+00 TO END OF F.A.G.H. 415-B(2) = STA. 233+50 = 650 LIN.FT. 650×22÷9	1588.8									
F.A.G.H. 415-F(1)	BEGIN. OF F.A.G.H. 415-F(1) = STA. 0+00 TO END OF F.A.G.H. 415-F(1) = STA. 23+50 GROSS LENGTH=2350 LIN.FT. DEDUCT FOR BRIDGE STA. 26+15.25 TO STA. 26+74.75 = 59.5 LIN.FT. NET LENGTH F.A.G.H. 415-F(1) = 2290.5 LIN.FT.										
	2290.5×22÷9	5599.0									
	TYPE S-A CURB STA. 3+25 TO STA. 22+50 & 23+40 TO 23+50			1935							
	APPROACH 6-A STA. 0+41.22 TO STA. 10+00 (SEE SHEET 22) = 958.78 LIN.FT 958.78×18÷9 = 1917.5 SQ.YDS. + AREAS A, B, C & D (SEE SHEET 22) = 2146.6 SQ.YD										
	2146.6×5×0.030 = B-20 COARSE AGGREG.				322.0						
	2146.6×5×0.013 = B-20 SCREENINGS					139.5					
	PRIME COAT USE 0.3 GAL. PER SQ.YD. 2146.6×0.3						644				
	BIT. MATL. USE 43 GAL. PER SQ.YD. 2146.6×43								923		
	SEAL COAT USE 0.2 GAL. PER SQ.YD. 2146.6×0.2										429
	AGGR. FOR SUR. TR. 2146.6 × 0.4 ×70 ÷2000							30.0			
	AGGR. FOR SEAL COAT 2146.6 ×.11×70÷2000									8.3	
F.A.P. 415-G(1)	BEGIN OF F.A.P. 415-F(2) = STA. 23+50 TO END OF F.A.P. 415-F(2) = STA. 31+00 NET LENGTH = 750 LIN.FT. 750×22÷9 =	1833.3									
	BEGIN APPROACH STA. 31+00 END APPROACH STA. 34+00 = 300 LIN.FT. 300×22÷9 =		733.3								
	TYPE S-A CURB STA. 23+50 TO STA. 31+00			750							

EXCAVATION AND EMBANKMENT

PROJECT Nº	STATION FROM	STATION TO	EXCAVATION CU.YDS.	EXCAVATION ADD FOR TOPSOIL CU.YDS.	EXCAVATION TOTAL CU.YDS.	EMBANKMENT CU.YDS.	EMBANKMENT DEDUCT FOR TOPSOIL CU.YDS	EMBANKMENT NET CU.YDS.	EMBANKMENT +20% CU.YDS.	POROUS FILL CU.YDS.	POROUS FILL+10% BORROW CU.YDS.
F.A.G.H. 415-B(2)	227+00	233+50	21,948	195	22,143	74	5	69	83		
SUB-TOTALS					22,143			69	83		
F.A.G.H. 415-F(1)	0+00	23+50	25738	253	25991	28531	334	28197	33863		
	NEW RAIL	ROAD FILL			4005			9980	11976	2850	3135
SUB-TOTALS					29996				45812		3135
F.A.P. 415-G(1)	23+50	36+00	10202	71	10273	12910	147	12763	15316		
SUB-TOTALS			10202	71	10273	12910	147	12763	15316		
GRAND TOTALS					62412				61211		3135

SUMMARY OF QUANTITIES

FED. RD. DIST. NO.	STATE	F.A.G.C.P. NO'S. F.A.G.H. 415-F(1) F.A.G.H. 415-B-(2)	F.A.P.	FISCAL YEAR
10	OHIO		415-G(1)	1939

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HARRISON COUNTY
S.H.370 SEC. S(PT.) & P(PT.)

T-11 CALCULATIONS (PLANT MIX)

TONS COMPLETED MIXTURE DELIVERED (MIXED WITH CALCIUM CHLORIDE)

FAGH 415-B(1)	(100.8 x2x4000) ÷ (36x 2000) =	11.20 TONS.
FAGH 415-F(1)	(151.6 x2x4000) ÷ (36x 2000) =	16.84 TONS
FAP 415-G(1)	(120.8 x2x4000) ÷ (36x 2000) =	13.42 TONS

TONS COMPLETED MIXTURE DELIVERED (NOT MIXED WITH CALCIUM CHLORIDE)

FAGH 415-B(1)	(100.8 x4 x4000) ÷ (36x 2000)	22.40 TONS
FAGH 415-F(1)	(151.6 x4 x4000) ÷ (36x 2000)	33.68 TONS
FAP 415-G(1)	(120.8 x4 x4000) ÷ (36x 2000)	26.84 TONS.

CALCIUM CHLORIDE DELIVERED (SEC. M-10.3)

FAGH 415-B(1)	100.8 x0.6 ÷ 2000 =	.03 TONS
FAGH 415-F(1)	151.6 x 0.6 ÷ 2000 =	.045 TONS
FAP 415-G(1)	120.8 x 0.6 ÷ 2000 =	.035 TONS

CALCULATIONS FOR APPROACH SLABS

2(22x16 ÷ 9) = 78.2 SQ.YDS.

ROADSIDE IMPROVEMENT

PROJECT N°	TOTAL OF SHEET N°	SEEDING SQ.YDS. N° 1	SEEDING SQ.YDS. N° 2	FERTILIZER LBS.	MULCHING SQ.YDS.	PLANTING VINES EACH	RENOVATING EXISTING SOIL M-SQ.FT.	2" TOPSOIL SQ.YDS.	SODDING SQ.YDS.
FAGH 415-B(2)	6	3875	4220	698	4853	1167	8.8	4755	880
SUB-TOTALS		3875	4220	698	4853	1167	8.8	4755	880
FAGH 415-F(1)	7	12353	8621	2223	13073	2845	6.5	12353	
	8	3864		696	3864			3864	
	9	2212		401	2212			2212	
SUB-TOTALS		18429	8621	3320	19149	2845	6.5	18429	
FAP 415-G(1)	10	2838	2461	510	2838	885		2838	
	9	4108		737	4108			4108	
SUB-TOTALS		6946	2461	1247	6946	885		6946	
GRAND TOTALS		29250	15302	5265	30,948	4897	15.3	30130	880

RECAP OF EARTHWORK

	Excav.	Emb.	Emb. +20%	Porous Emb.	Porous Emb+10% Borrow	Ballast	Ballast +10% Borrow	Borrow	Waste
WORK TO BE DONE BY RAILROAD									
Porous Emb. for permanent tracks.				11448	12593				
Embankment for team track.				970	1067				
Ballast for temporary tracks.						1155	1270		
Total				12418	13660	1155	1270		
WORK TO BE DONE BY CONTRACTOR									
From Earthwork Summary	58407	41029	49235						
Earth fill for permanent and detour R.R. Embankment:		9980	11976						
Sub. Total	58407		61211						2804
Porous fill for detour emb. above present subgrade.				2850	3135				
Removal of porous fill for detour emb. above present subgrade.	2850								2850
Removal of ballast for temp tracks.	1155								1155
TOTAL	62412	51009	61211	2850	3135				2804 4005

RECAPITULATION OF QUANTITIES

ITEM N°	DESCRIPTION	F.A.G.H. 415-B(2) QUANTITY	UNIT	FAGH 415-F(1) QUANTITY	UNIT	FAP 415-G(1) QUANTITY	UNIT	GRAND TOTAL QUANTITY	UNIT
	ROADWAY								
E-1	ROADWAY EXCAVATION (UNCLASSIFIED)	22143	CU.YDS.	29996	CU.YDS.	10273	CU.YDS.	62412	CU.YDS.
E-3	CHANNEL EXCAVATION					2512	CU.YDS.	2512	CU.YDS.
E-4	BORROW					2804	CU.YDS.	2804	CU.YDS.
E-8	REMOVAL AND DISPOSAL OF EXISTING CONCRETE PAVEMENT.	1444.4	SQ.YDS.					1444.4	SQ.YDS.
E-8	REMOVAL AND DISPOSAL OF EXISTING 9"MACADAM PAVEMENT			1225	SQ.YDS.			1225	SQ.YDS.
E-11	WATER (ESTIMATED)	0.3	M-GALS.	230	M-GALS.	76.7	M-GALS	307	M-GALS.
E-12	12"PIPE REMOVED AND DISPOSED OF	300	LIN.FT.					300	LIN. FT.
I-1	12" PIPE FOR DRIVEWAYS			50	LIN. FT.			50	LIN.FT.
I-1	15" PIPE FOR DRIVEWAYS	20	LIN.FT.	52	LIN. FT.	70	LIN.FT.	142	LIN.FT.
I-1	18" PIPE FOR DRIVEWAYS			50	LIN.FT.			50	LIN.FT.
I-2	12" STORM SEWER PIPE			929	LIN.FT.	463	LIN.FT.	1392	LIN.FT.
I-3	12" ROADWAY DRAINAGE PIPE INCLUDING POROUS BACKFILL	48	LIN.FT.	348				396	LIN.FT.
I-4	6" PIPE UNDERDRAINS			436	LIN.FT.			436	LIN.FT.
I-5	PIPE SPECIALS - 12"x12" TEES FOR STORM SEWER			3	EACH			3	EACH
I-5	PIPE SPECIALS - 12"x 90° ELBOWS FOR STORM SEWER			2	EACH	2	EACH	4	EACH
I-8	CATCH BASIN - STD. N° I-2	1	EACH	1	EACH			2	EACH
I-8	CATCH BASIN - STD. N° 2-2	1	EACH	1	EACH			2	EACH
I-8	CATCH BASIN - STD. N° 13-A			6	EACH	3	EACH	9	EACH
I-8	DRAIN BASIN N° 1 AS PER DETAIL (INCL. OUTLET GUTTER)			2	EACH			2	EACH
I-14	PAVED GUTTER - TYPE 3	98		64	LIN.FT.			162	LIN.FT.
I-14	PAVED GUTTER - TYPE 3 MODIFIED AS PER DETAIL	280	LIN.FT.	364	LIN.FT.			644	LIN.FT.
I-15	GUARD RAIL - BEAM TYPE (SEC. I-15.05)			412.5	LIN.FT.			412.5	LIN.FT.
M-10	CALCIUM CHLORIDE FOR MAINTAINING TRAFFIC (ESTIMATED)	2	TON	20	TONS	3	TON	25	TONS.
I-3	12" PIPE FOR ROADWAY DRAINAGE	100	LIN.FT.		LIN.FT.			100	LIN.FT.
I-17	AGGREGATE FOR TRAFFIC BOUND SIDE APPROACHES	43	CU.YDS.	110	CU.YDS.	58	CU.YDS.	211	CU.YDS.
T-110	TRAFFIC COMPACTED SURFACE COURSE FOR MAINT. TRAFFIC (EST.)	120	CU.YDS.	490	CU.YDS.	190	CU.YDS.	800	CU.YDS.
I-2	12" PIPE FOR STORM SEWER OUTLETS					52	LIN.FT.	52	LIN.FT.
S-4	REINFORCING STEEL			9	LBS.			9	LBS.
E-4	POROUS FILL FOR RAILROAD EMBANKMENT (BORROW)			3135	CU.YDS.			3135	CU.YDS.
I-3	8" ROADWAY DRAINAGE INCLUDING POROUS BACKFILL	149	LIN.FT.	90				239	LIN.FT.
I-3	15"ROADWAY DRAINAGE UNDER DRIVES	50	LIN.FT.					50	LIN.FT.
I-3	15"ROADWAY DRAINAGE	298	LIN.FT.					298	LIN.FT.
I-15	GUARD RAIL REMOVED AND REBUILT			220	LIN.FT.			220	LIN.FT.
I-2	12" PIPE FOR STORM SEWER UNDER DRIVES					20	LIN.FT.	20	LIN.FT.
	PAVEMENT								
B-20	WATERBOUND MACADAM BASE COURSE- 5"COURSE-COARSE AGGR'TE			322	TONS		TONS	322	TONS
B-20	WATERBOUND MACADAM BASE COURSE- 5" COURSE- SCREENINGS.			139.5	TONS		TONS	139.5	TONS
T-10	9"6"-6"-9" PORTLAND CEMENT CONCRETE PAVEMENT					733.3	SQ.YDS.	733.3	SQ.YDS.
S-5	11" REINFORCED CONCRETE APPROACH SLABS					78.2	SQ.YDS.	78.2	SQ.YDS.
T-30	BITUMINOUS PRIME COAT, SEC. M-5.15 RT-2			644	GALS.		GALS.	644	GALS.
T-31	BITUMINOUS SURFACE TREATMENT, BIT. MATERIAL SEC. M-5.16 RT-6			923	GALS.		GALS.	923	GALS.
T-31	BITUMINOUS SURFACE TREATMENT, NO 46 AGGREGATE			30.0	TONS			30.0	TONS
T-31	BITUMINOUS MATERIAL FOR SEAL COAT, SEC. M-5.16, RT-6			429	GALS			429	GALS
T-31	AGGREGATE FOR SEAL COAT #6 SIZE			8.3	TONS		TONS	8.3	TONS
T-71	REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT 9"-7"-7.9"	1588.8	SQ.YDS.	55990	SQ.YDS.	1833.3	SQ.YDS	9021.1	SQ.YDS.
I-12	CONCRETE CURB - TYPE 5-A			1935	LIN.FT.	750	LIN FT	2685	LIN.FT.

ITEM N°	DESCRIPTION	F.A.G.H. 415-B(2) QUANTITY	UNIT	FAGH 415-F(1) QUANTITY	UNIT	FAP 415-G(1) QUANTITY	UNIT	GRAND TOTAL QUANTITY	UNIT
	STRUCTURES 20 FT. SPAN AND UNDER								
E-2	EXCAVATION FOR STRUCTURES (UNCLASSIFIED)	3	CU.YDS.	171	CU.YDS.	25	CU.YDS.	199	CU.YDS.
E-12	12" PIPE REMOVED AND DISPOSED OF			40	LIN.FT.	8	LIN.FT.	48	LIN.FT.
I-5	PIPE SPECIALS - 24"x 12"x 4'-0" TEES FOR ROADWAY CULVERTS.			1	EACH			1	EACH
I-5	PIPE SPECIALS - 18"x 12"x 4'-0" TEES FOR ROADWAY CULVERTS.			1	EACH			1	EACH
I-8	CATCH BASINS - STD. N° I-2	1	EACH	3	EACH			4	EACH
I-8	CATCH BASINS - RAISE STD. N°2-2 - SALVAGE CASTING			1	EACH			1	EACH
I-10	RIP-RAP. TYPE "A" GROUT-FILLED, 9" THICK			16	SQ.YDS.	10	SQ.YDS.	26	SQ.YDS.
I-14	PAVED GUTTER - TYPE 3			42	LIN.FT.			42	LIN.FT.
I-14	PAVED GUTTER - TYPE 3 MODIFIED AS PER DETAIL			20	LIN.FT			20	LIN.FT.
S-1	CONCRETE FOR STRUCTURES-CLASS C	1.1	CU.YDS.	8.9		3.2	CU.YDS.	13.2	CU.YDS.
S-4	REINFORCING STEEL	18	LBS.	13	LBS.	9	LBS.	40	LBS.
S-22	REMOVAL OF PORTIONS OF EXISTING STRUCTURE			1.3	CU.YDS.	0.7	CU.YDS.	2	CU.YDS.
S-23	DOWEL HOLES	6	LIN.FT.	6	LIN.FT.	3	LIN.FT.	15	LIN.FT.
S-27	12" PIPE FOR ROADWAY CULVERTS			21	LIN.FT.	45	LIN.FT.	66	LIN.FT.
S-27	15" PIPE FOR ROADWAY CULVERTS	11	LIN.FT.	172	LIN.FT.	78	LIN.FT.	261	LIN.FT.
S-27	18" PIPE FOR ROADWAY CULVERTS			160	LIN.FT.			160	LIN.FT.
S-27	24" PIPE FOR ROADWAY CULVERTS			62	LIN.FT.			62	LIN.FT.

STRUCTURES OVER 20 FT. SPAN AND RAILROAD STRUCTURES

SUMMARY OF QUANTITIES ON SHEET NO 37 & NO 47

ROADWAY CONT'D.

I-5	PIPE SPECIALS 12"x 12" TEES FOR STORM SEWER OUTLETS					1	EACH	1	EACH
I-5	PIPE SPECIALS 12"x45° ELLS FOR STORM SEWER OUTLETS					2	EACH	2	EACH
T-11	COMPLETED MIXTURE DELIVERED (MIXED WITH CALCIUM CHLORIDE)	11.20	TONS	16.84	TONS	13.42	TONS	41.46	TONS
T-11	COMPLETED MIXTURE DELIVERED (NOT MIXED WITH CALCIUM CHLORIDE)	22.40	TONS	33.68	TONS	26.84	TONS	82.92	TONS
T-11	CALCIUM CHLORIDE (SEC. M-10.3)	.03	TONS	.045	TONS	.035	TONS	.11	TONS
T-11	SPREADING, SHAPING AND COMPACTING.	100.8	SQ.YDS.	151.6	SQ.YDS.	120.8	SQ.YDS.	373.2	SQ.YDS.
S-23	DOWEL HOLES			3	LIN.FT.			3	LIN.FT.
I-13	CONCRETE STEPS (AS PER PLAN)	84	LIN.FT.					84	LIN.FT.
S-14	2" IRON PIPE RAILING (INCLUDING FITTINGS)	22	LIN.FT.					22	LIN.FT.
I-10	RIPRAP TYPE A (GROUT FILLED) 9" THICK					4	SQ.YDS	4	SQ.YDS

ROADSIDE IMPROVEMENT

L-2	TOPSOIL FURNISHED AND PLACED	4755	SQ.YDS.	18429	SQ.YDS.	6946	SQ.YDS.	30130	SQ.YDS.
L-4	RENOVATING EXISTING SOIL	8.8	M-SQ.FT.	6.5	M-SQ.FT.			15.3	M-SQ.FT.
L-9	SEEDING N° 1	3875	SQ.YDS.	18429	SQ.YDS.	6946	SQ.YDS.	29250	SQ.YDS.
L-9	SEEDING N° 2	4220	SQ.YDS.	8621	SQ.YDS.	2461	SQ.YDS.	15302	SQ.YDS.
L-9	FERTILIZER	698	LBS.	3320	LBS.	1247	LBS.	5265	LBS.
L-12	PLANTING VINES - LONICERA JAPONICA HALLIANA - HALLS JAPANESE HONEYSUCKLE - 2 YEAR	1167	EACH	2845	EACH	885	EACH	4897	EACH
L-18	MULCHING	4853	SQ.YDS.	19149	SQ.YDS.	6946	SQ.YDS.	30948	SQ.YDS.
L-10	SODDING	880	SQ.YDS.					880	SQ.YDS.

FOR RAILROAD FORCE-ACCOUNT-WORK, SEE SHEET NO. 45 F.A.G.H. 415-F(1)