FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2); 520-C(1) 520-A(2)	1941

1/145

TUSCARAWAS COUNTY
S.H. 70 SEC. A 'PT.', D & MINERAL CITY 'PT.'

F.A.P. 260-A(2), 520-C(1) & 520-A(2)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DOVER BASIN

• CANTON - DOVER ROAD •

S.H. 70 SEC. A 'PT.', D & MINERAL CITY 'PT.'

TUSCARAWAS COUNTY

DOVER, FAIRFIELD & SANDY TOWNSHIPS & VILLAGE OF MINERAL CITY

• CONVENTIONAL SIGNS •

COUNTY LINE
TOWNSHIP LINE
SECTION LINE
PROPERTY OR FENCE LINE
CITY OR VILLAGE LINE
CENTER LINE
POLE LINE
STEAM RAILROAD
APPROVED STABILIZED MATERIAL

• INDEX OF SHEETS •

• SCALES •

PLAN	1"=50'
PROFILE - HORIZONTAL	1"=50'
PROFILE - VERTICAL	1"= 5'
CROSS-SECTIONS	1"=10'
STRUCTURES	AS SHOWN
APPROACHES	AS SHOWN

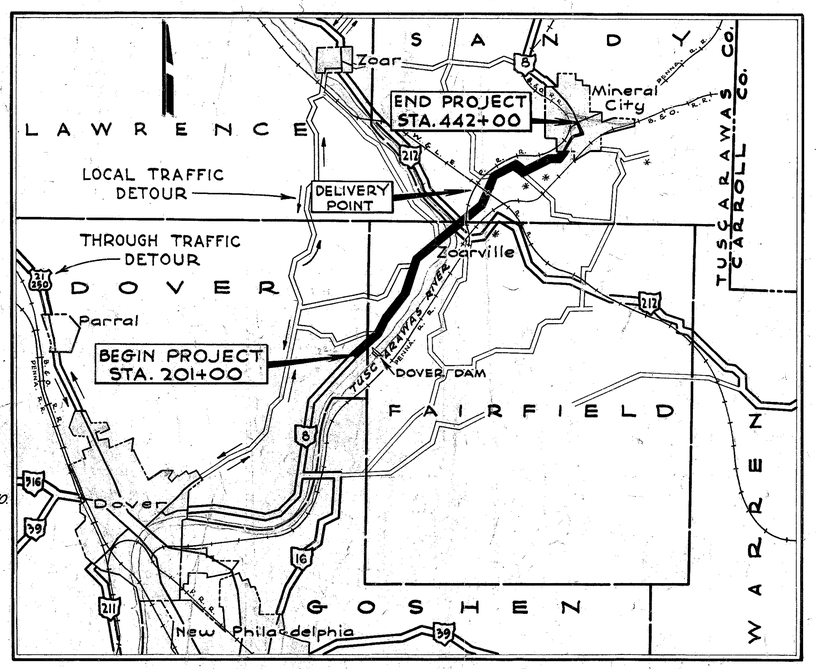
• STANDARD DRAWINGS •

E-5 No.1	8-25-39	I-8 C.B. 2-3 & 2-4	11-1-39	G-7.07	10-1933
E-5 No.2	8-25-39	I-8 C.B. No. 9A	11-1-39	B-T-50-70-71E No.1	10-33
B-T-71R	7-11-38	I-8 I No. 6	1-1-36	I-12	5-6-40
S-27 P.C.1	3-1-39	I-8 I No. 7	3-1-39	T-70-71E No.1	10-1933
S-27 P.C.2	3-1-39	I-12	5-6-40	S.B.C. 34	3-8-39
S-27 P.C.3	3-1-39	I-14G	3-1-39	L.B.C. 33	3-8-39
I-1,2,3,4 & 5	3-1-39	I-15 No.1	10-1-39	A.S. 40	7-30-40
I-8 C.B. 1-2 & 2-2	11-24-39	I-15 No.2	10-1-39	B-T-71E No 1	10-33

CSB-15-40-Sheet #2, rev. 7-26-40

• SUPPLEMENTAL SPECIFICATIONS •

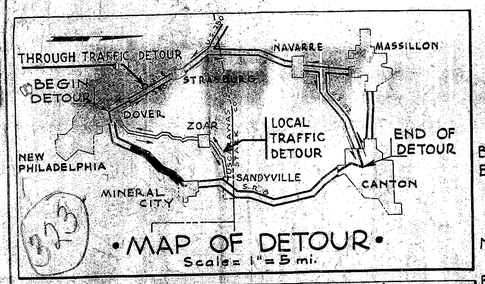
E-305 Revised 2-15-40
E-101 JAN. 1, 1936
M-110.11 Rev. 9-16-36
T-110 REV. 8-3-36
M-110.12 REV. 7-25-40
M-110.23 ADT. 3-11-40



• LOCATION MAP •

SCALE IN MILES 0 1 2 4

PORTION TO BE IMPROVED
STATE ROUTES
COUNTY HIGHWAYS
RAILROADS



• MAP OF DETOUR •

Scale = 1"=5 mi.

323

FILE No.

TUSCARAWAS COUNTY
S.H. 70 SEC. A 'PT.', D & MINERAL CITY 'PT.'
DATE OF LETTING
CONTRACT No.

• LINE DATA •

BEGIN PROJECT & F.A. 260-A(2) = STA. 201+00
End F.A. 260-A(2) = STA. 280+42.5
Gross Length F.A. 260-A(2) = 7942.5 Lin.Ft.
Equation - Sta. 253+03.3 Back = Sta. 253+00.0 Ahead + 3.3 Lin.Ft.
NET LENGTH F.A. 260-A(2) = 7945.8 LIN.FT.

Begin F.A. 520-C(1) = STA. 280+42.5
End F.A. 520-C(1) = STA. 298+48.3
Resume F.A. 520-C(1) = STA. 329+21.5
End F.A. 520-C(1)(Rural) = STA. 414+60

Gross Lengths F.A. 520-C(1) = 10344.30 Lin.Ft.
Equation - Sta. 394+07.82 Back = Sta. 395+00 Ahead = - 92.18 Lin.Ft.
NET LENGTH F.A. 520-C(1)(Rural) = 10252.12 LIN.FT.

Begin F.A. 520-A(2) = Sta. 298+48.3
End F.A. 520-A(2) = Sta. 329+21.5
Gross Length F.A. 520-A(2) 3073.2 Lin.Ft.
Equation - Sta. 301+07.05 Back = Sta. 301+00 Ahead = + 7.05 Lin.Ft.
NET LENGTH F.A. 520-A(2) = 3080.25 LIN.FT.

Begin F.A. 520-C(1)(Municipal) = STA. 414+60
END F.A. 520-C(1)(Municipal) & PROJECT = STA. 442+00
Gross Length F.A. 520-C(1)(Municipal) = 2740 Lin.Ft.
Deductions - (RR) 439+62.7 to 439+88.7 26 Lin.Ft.
NET LENGTH F.A. 520-C(1)(Municipal) = 2714 Lin.Ft.
NET LENGTH 520-C(1) Rural & Municipal = 12,966.12 Lin. Ft.
NET LENGTH THIS PROJECT = 23992.17 LIN.FT.
OR 4.543 MILES

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, TOGETHER WITH THE "SPECIAL PROVISIONS FOR FEDERAL AID PROJECTS" AND SUPPLEMENTAL SPECIFICATIONS IN FORCE ON DATE OF CONTRACT SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE HIGHWAY TO BE CLOSED TO TRAFFIC AND THAT A TEMPORARY ROUTE WILL BE PROVIDED AS SET FORTH ON THESE PLANS AND ESTIMATES.

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

APPROVED Harvey F. Brown
DATE 5-25-40 RESIDENT DISTRICT DEPUTY DIRECTOR.

APPROVED E.R. McCullough
DATE 5/25/40 RESIDENT DIVISION DEPUTY DIRECTOR.

APPROVED Murray D. Shaffer
DATE 2-24-41 CHIEF ENGINEER, LOCATION & RIGHT-OF-WAY.

APPROVED
DATE 8-15-40 CHIEF ENGINEER, BUREAU OF MAINTENANCE.

APPROVED W. A. Hindman FE 2629
DATE 2/24/41 CHIEF ENGINEER, BRIDGES & R.R. XINGS.

APPROVED A. R. Boone
DATE 2-27-41 FIRST ASST. DIRECTOR & CHIEF ENGINEER

APPROVED H. G. Lowe
DATE 2-27-41 DIRECTOR OF HIGHWAYS.

CONSTRUCTION BUREAU DEC 4 1956 GROUND PHOTOLAB

APPROVED: Sept. 13 1940

BY C. C. Chambers
CHIEF ENGINEER OF MUSKINGUM WATERSHED CONSERVANCY DISTRICT

DELIVERY POINT = ZOARVILLE
AVERAGE HAUL = 2 MI.

RIGHT OF WAY LINES REVISED SHEETS 10, 13, 14, 15, 25, 27, 30, 32, 33 DATE 4-17-41

RECOMMENDED FOR APPROVAL

[redacted]
DISTRICT ENGINEER
PUBLIC ROADS ADMIN.
FEDERAL WORKS AGENCY

APPROVED

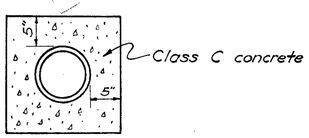
[redacted]
COMMISSIONER
PUBLIC ROADS ADMIN.
FEDERAL WORKS AGENCY

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2), 520-A(2) 520-C(1)	1941

2 / 145

TYPICAL SECTIONS
TYPE T-71

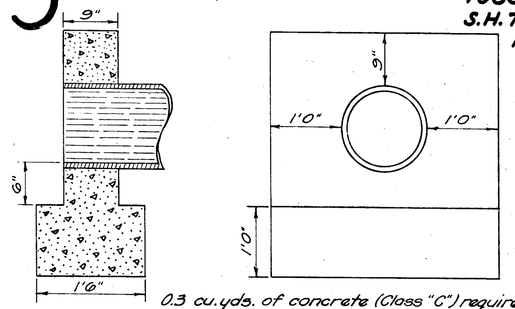
TUSCARAWAS COUNTY
S.H. 70 SEC. A (Pt)-D-E
MINERAL CITY (Pt).
DOVER BASIN.



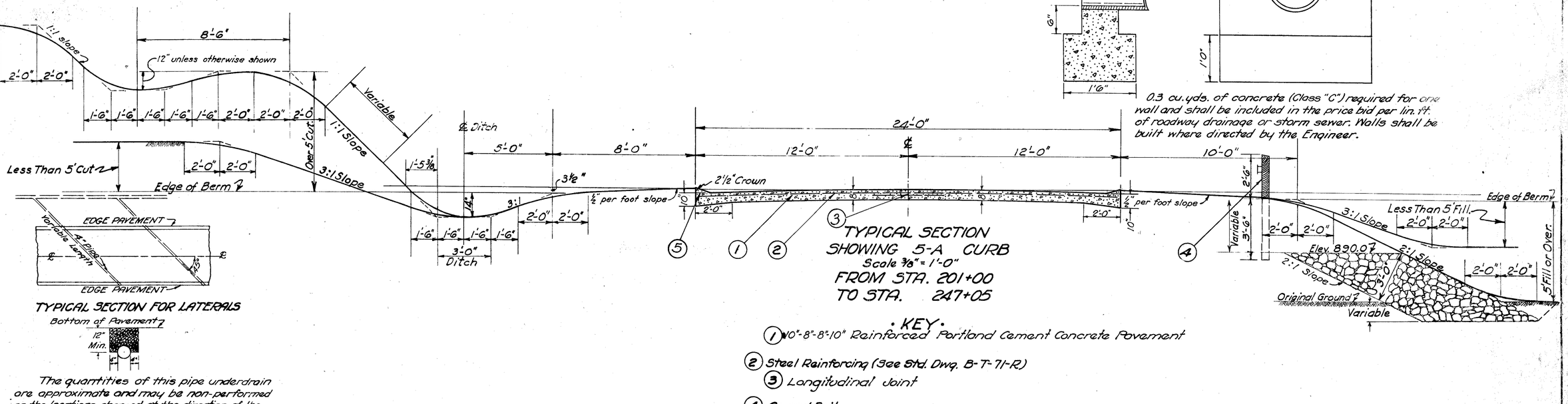
DETAIL OF ENCASEMENT FOR V.S.P. CULVERTS

Cost of encasement is included in price bid per lineal foot of pipe.

DETAIL OF WALL FOR ROADWAY DRAINAGE AND STORM SEWER OUTLET

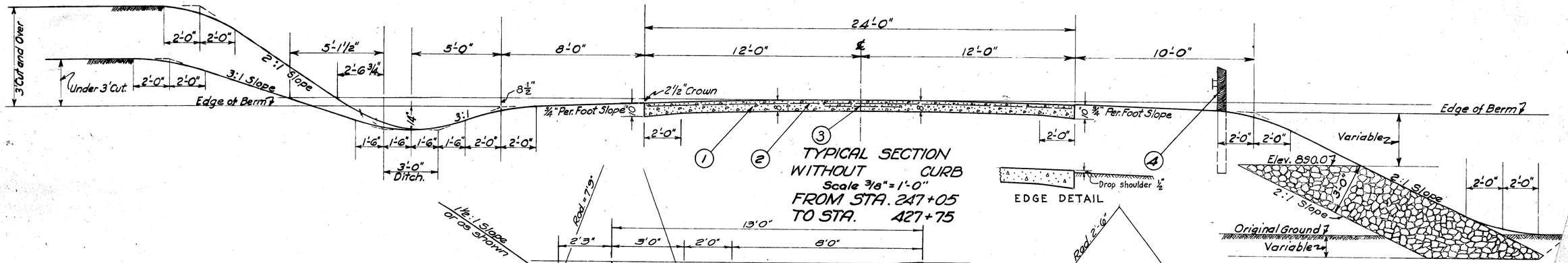


0.3 cu. yds. of concrete (Class "C") required for one wall and shall be included in the price bid per lin. ft. of roadway drainage or storm sewer. Walls shall be built where directed by the Engineer.



· KEY ·

1. 10"-8"-8"-10" Reinforced Portland Cement Concrete Pavement
2. Steel Reinforcing (See Std. Dwg. B-T-71-R)
3. Longitudinal Joint
4. Guard Rail
5. Type 5-A Curb



NOTICE TO CONTRACTOR

If sufficient sound rock is not encountered in excavation on this project to provide for all the quantities of dumped rock fill as specified on the plans, part or all of the dumped rock fill between station 235+25 and station 262+25 will be not performed as directed by the Engineer. Embankment constructed in accordance with E-1.05 will be substituted for any volume so non-performed.

FED. RD DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2) S20-C(1) S20-A(2)	1941

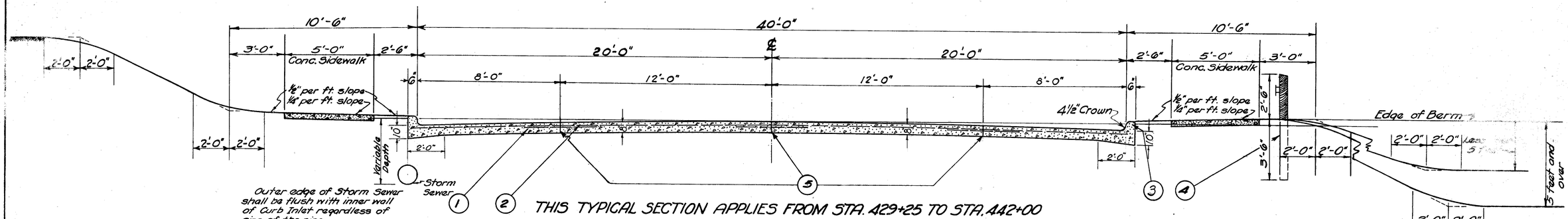
3 / 145

TUSCARAWAS COUNTY
S.H. 70 SEC A(Pt)-D-6
MINERAL CITY(Pt).
DOVER BASIN.

TYPICAL SECTIONS
TYPE T-71

NOTE : Sidewalk on left applies only from Sta. 438+00 to Sta. 441+26

NOTE : Sidewalk on right applies only from Sta. 439+28 to Sta. 441+50

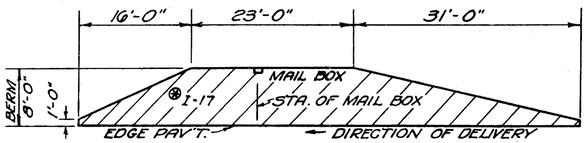


THIS TYPICAL SECTION APPLIES FROM STA. 429+25 TO STA. 442+00

KEY

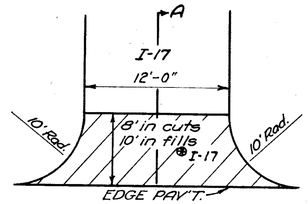
1. 10"-8"-8"-10" Reinforced Portland Cement Concrete Pavement
2. Steel Reinforcing (See Std. Drg. B-T-71-R)
3. Type 2-A Concrete Curb
4. Guard Rail
5. Longitudinal Joint

Note: The two eight foot outer lanes may be finished in accordance with the provisions of Sec. T-70.201.

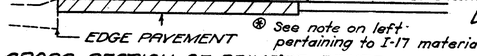


DETAIL OF MAIL BOX APPROACHES

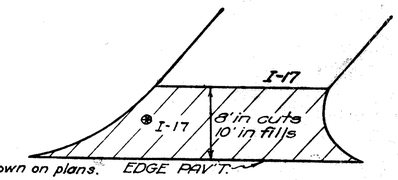
⊛ All I-17 material on this project shall consist of 60% no. 4 and 40% no. 7 sizes and shall be compacted with a roller weighing not less than 2½ tons.



DETAIL OF PRIVATE DRIVES



CROSS SECTION OF PRIVATE DRIVES
SEC. A-A



DETAIL OF SKEWED PRIVATE DRIVES

AGGREGATE: The tonnage of aggregates for T-10 Traffic Bound Surface Course is calculated on the basis of 70 lbs. per cu. ft., dry rodded. See Section T-10.09 of the Construction and Material Specifications.

CURVES: Superelevated curves shall be built without crown. 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.

EXCAVATION TO BE WASTED: "Excavation to be Wasted" as designated on the plan shall be disposed of in compliance with Sec. E-1.06 and as directed by the Engineer.

PIPE: All existing pipe removed on this project shall be stored within the Right of Way and left at the disposal of the State's Forces unless otherwise specified.

PIPES: Whenever Pipes (except Corrugated Metal Pipe and Cast Iron Pipe) are to be placed within or beneath an embankment, and the upper extremity of the pipe will be less than two feet below the surface of the original ground, the embankment shall be constructed to an elevation of at least two feet above the upper extremity of the pipe before same is laid. The trench shall then be excavated to the minimum width for placing pipe and proper back-filling. The pipe shall then be laid and the trench properly backfilled before more embankment is placed thereon.

SUBGRADE COMPACTION: The thickness of the subgrade, in cuts, to be compacted on this project shall be (8") eight inches, loose measurement, and the width of subgrade compaction shall be the width of the pavement plus (18") eighteen inches on each side of the pavement.

EARTHWORK: Divisions of haul and disposition of earthwork are shown on Layout Plan – Sheet #7.

BLANKET COURSE – See description and location as shown on sheet no. 8.

BENCHES shown on the cross sections are tentative and may be changed by the engineer at the time of construction.

TREES: Payment for removal of trees and stumps over (8") eight inches diameter shall be included in bid item "Roadway Excavation" in accordance with E-1.02. No tree shall be removed unless specifically marked for removal by the engineer.

PAVED GUTTER: Paved Gutter on this project may be constr-ucted of any material permitted under Sec. I-14.01. Brick, approved broken Concrete or Stone gutter shall be a min-imum thickness of (9") nine inches and shall be grout filled as provided under Sec. I-14.03. Concrete gutter shall be a minimum thickness of (6") six inches, and in accordance with "Standard Construction Drawing No. I-14, Paved Gutter," and Sec. I-14 of the Specifications.

DUMPED ROCK FILL on this project shall be built to the lines and grades shown on the plans and may be constructed of approved stone or broken concrete meeting the size, soundness and placing requirements as specified under Supplemental Specification E-1.01 (See note on sheet 2)

SEEDING: Seeding on this project shall be performed in accordance with Supplemental Specifications No. E-305 (Revised 2-15-40) on berms, fill slopes, cut slopes and intercepting ditches.

SUBSOIL INFORMATION: The subsoil information shown on the cross sections has been compiled from information obtained by the Testing Laboratory and the Division Office. However, the State of Ohio does not guarantee the accuracy of this information, which is intended only for the general information of the Contractor. In setting forth this data on the plans it shall be understood that the materials indicated will not be classified. All excavation quantities shown on the cross sections shall be bid as Item E-1, Excavation, unclassified.

TRAFFIC NOTE

The contractor shall maintain one-way traffic at all times during the construction of the portions of the project, between Sta. 201+00 and Sta. 223+00 and Rd. Appr. No. 16-A, at Sta. 318+66 and Rd. Appr. No. 32-A, at Sta. 430+47.75, as outlined herewith or as directed by the Engineer. These portions of the roadway shall be provided with temporary traffic lanes. The minimum width of metal for such traffic lanes shall be 12 feet. Upon completion of the pavement, the same may be opened to traffic, when accepted by the Director and as approved by the Engineer.

These portions of roadway and the parking area at the Dover Dam shall be kept clear of the Contractor's equipment, stored materials, employee's cars, or other obstructions, at all times, to provide adequate ingress and egress to the Control House of Dover Dam, and one way traffic on Road Appr's. No. 16-A and 32-A.

Guard rail and barricades shall be erected at narrow and dangerous points along these traffic lanes, as directed by the Engineer. Such guard rail shall be salvaged and reused when the temporary traffic lane is relocated. Upon completion of the project all such existing guard rail shall be removed and stored on the Right of Way as directed by the Engineer and left at the disposal of the State's Forces.

The lump sum bid for maintaining traffic, including lights, signs, barricades and watchmen for 24 hour service shall include for payment all of the foregoing labor, material, and equipment necessary to complete this item, except dust laying material, temporary guard rail and the T-10 aggregate for the traffic lanes, which items are included in the estimate as separate pay items.

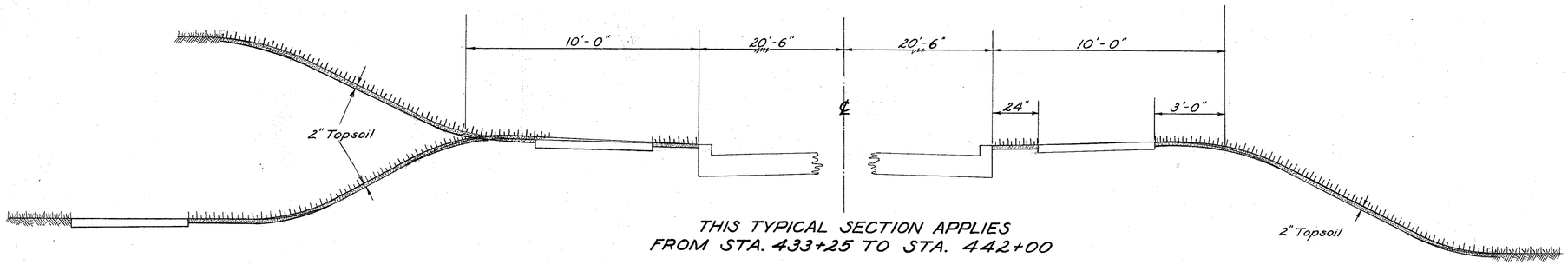
All local traffic on this project shall be maintained as provided for under Section G-7.06 of the General Specifications.

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260A(2),520C(1) 520A(2)	1941

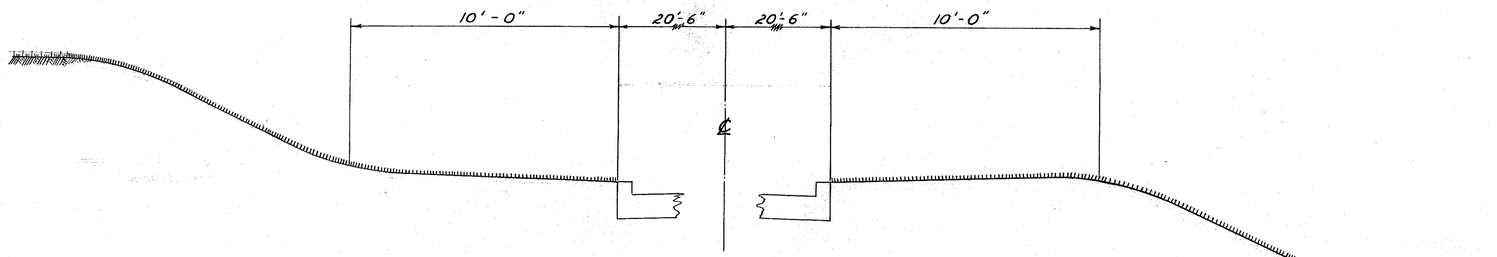
4
145

TUSCARAWAS COUNTY
S.H. 70 SECS. A(PT), D
AND MINERAL CITY(PT)
DOVER BASIN

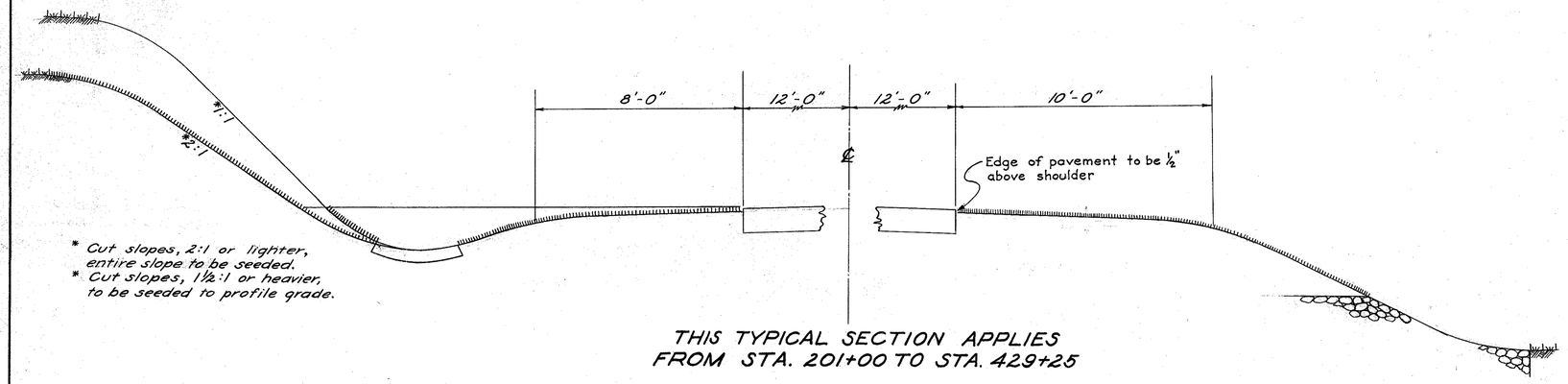
TYPICAL SECTIONS
ROADSIDE IMPROVEMENT
SCALE 3/8"=1'-0"



THIS TYPICAL SECTION APPLIES
FROM STA. 433+25 TO STA. 442+00



THIS TYPICAL SECTION APPLIES
FROM STA. 429+25 TO STA. 433+25



* Cut slopes, 2:1 or lighter, entire slope to be seeded.
* Cut slopes, 1½:1 or heavier, to be seeded to profile grade.

THIS TYPICAL SECTION APPLIES
FROM STA. 201+00 TO STA. 429+25

GENERAL NOTES

SEEDING, E-305 ~

Seeding shall be performed in accordance with supplemental specification E-305 (2-15-40)

AGRICULTURAL HYDRATED LIME ~

Lime of the following formula, minimum calcium 47.09%, minimum magnesium 3.49% with a total neutralizing power of not less than 137 shall be used in lieu of Agricultural Hydrated Lime with an analysis specified in item L-9 of the Construction and Material Specifications and shall be used at the rate of 80 lb's. per 1,000 sq. ft.

COMMERCIAL FERTILIZER ~

A commercial fertilizer of 10-6-4 formula shall be used at the rate of 10 lb's. per 1,000 sq. ft.

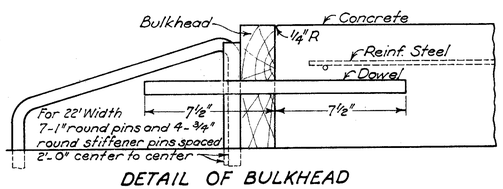
The fertilizer and lime shall be incorporated in the soil to a minimum depth of 1" and both items may be incorporated in the same operation.

LEGEND FOR TYPICAL SECTIONS

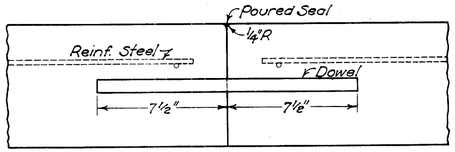
Top Soil
Seeding E-305
Sodding
Existing Vegetation

TRANSVERSE JOINTS

CONSTRUCTION JOINT

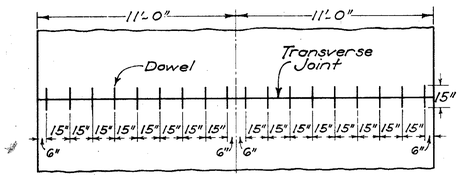


DETAIL OF BULKHEAD

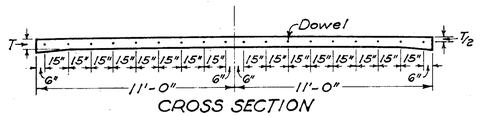


DETAIL OF DOWEL JOINT

DOWEL SPACING

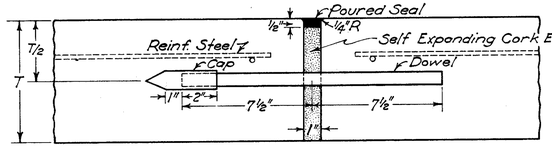


PLAN

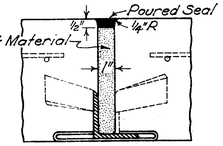


CROSS SECTION

SELF EXPANDING CORK EXPANSION JOINT

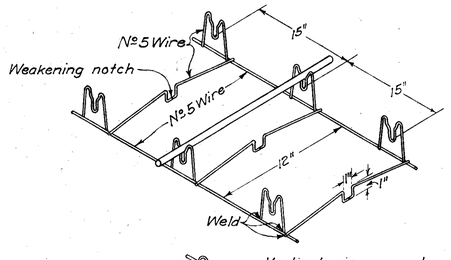


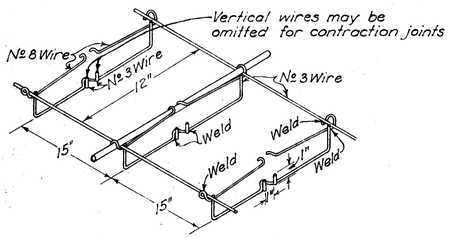
TRANSFER OF LOAD BY DOWEL

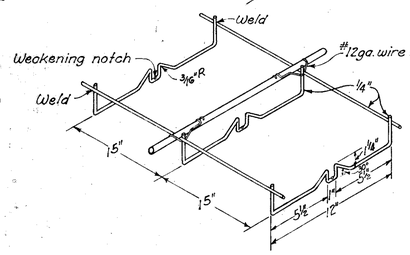


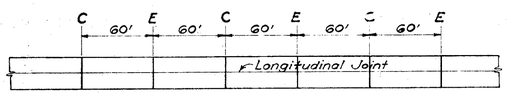
TRANSFER OF LOAD WITH TRANSLODE BASE

DOWEL SUPPORT UNITS







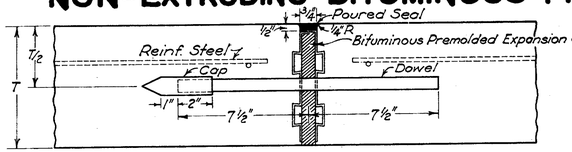


ARRANGEMENT OF TRANSVERSE JOINTS

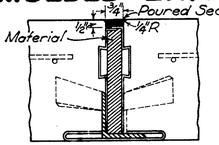
C = Contraction Joint

E = Expansion Joint

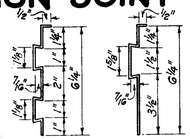
NON-EXTRUDING BITUMINOUS PREMOLDED EXPANSION JOINT



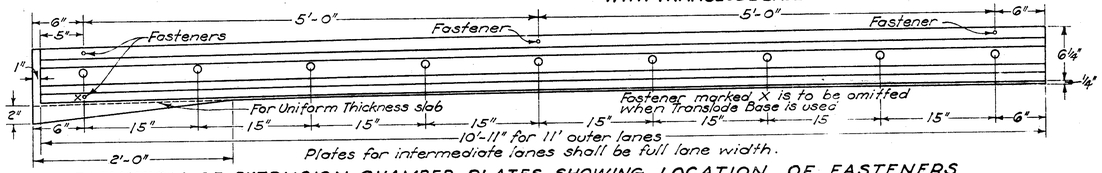
TRANSFER OF LOAD BY DOWEL



TRANSFER OF LOAD WITH TRANSLODE BASE

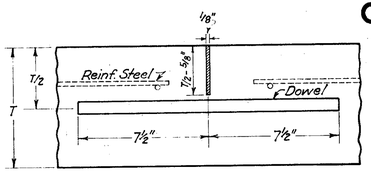


DETAILS OF SIDE PLATES

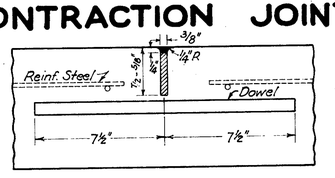


ELEVATION OF EXTRUSION CHAMBER PLATES SHOWING LOCATION OF FASTENERS

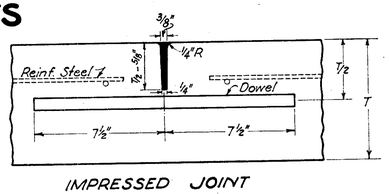
CONTRACTION JOINTS



PREMOLDED JOINT

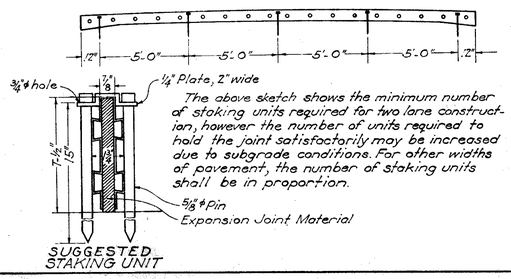


PREMOLDED JOINT



IMPRESSED JOINT

METHOD OF STAKING JOINTS



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.

SUGGESTED STAKING UNIT

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.

FED. RD. DIST. No	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2) 520-C(1) 520-A(2)	1941

5
145

TUSCARAWAS COUNTY

SH. 70 SEC. A(PT), D, MINERAL CITY(PT)

· 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 3/4" 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-5.1 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-5.4 F-1.

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 5/8 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 7/8 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 1/8 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-5.4 F-1. 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 at 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
8-1-40
10-22-40

TJ-6

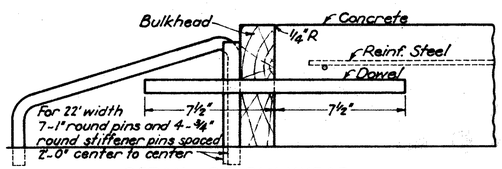
FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2) 520-C(6) 520-A(2)	1941

5-A
145

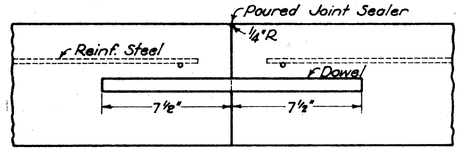
TUSCARAWAS CO. S.H. 70
SEC. A (PT), D, MINERAL CITY (PT)

TRANSVERSE JOINTS

CONSTRUCTION JOINT

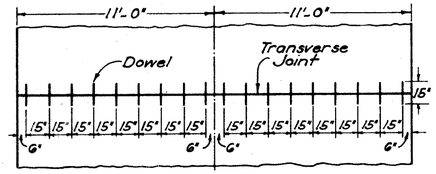


DETAIL OF BULKHEAD

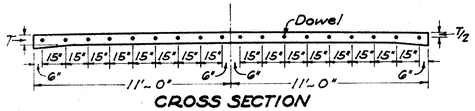


DETAIL OF DOWEL JOINT

DOWEL SPACING

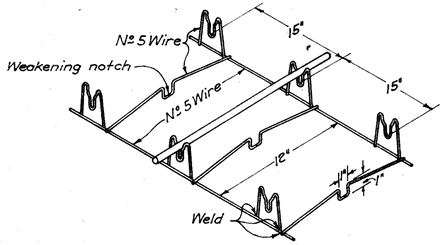


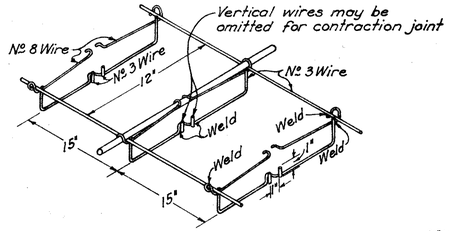
PLAN

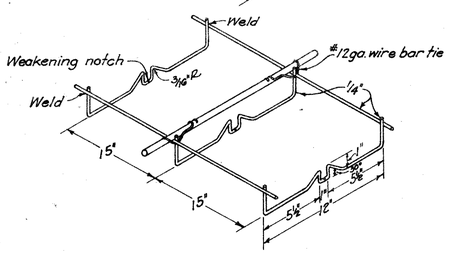


CROSS SECTION

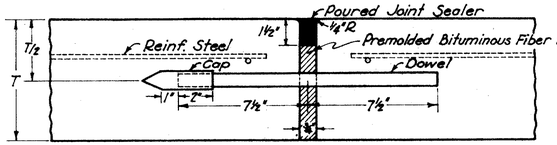
DOWEL SUPPORT UNITS



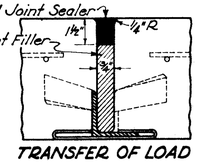




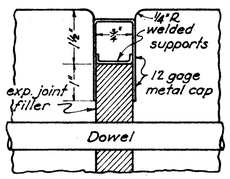
EXPANSION JOINTS



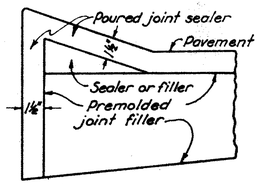
TRANSFER OF LOAD BY DOWEL



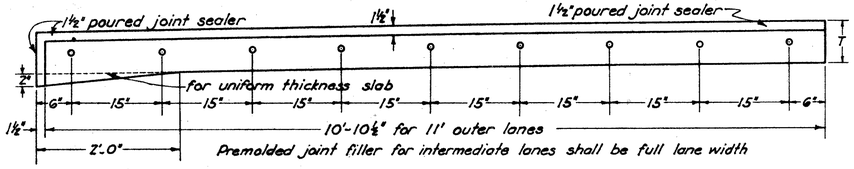
TRANSFER OF LOAD WITH TRANSLODE BASE



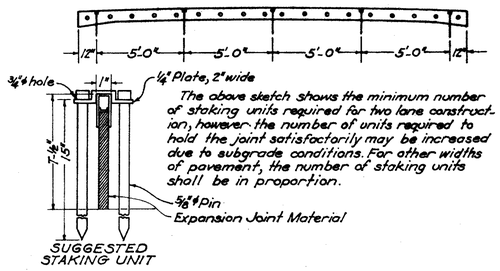
DETAIL OF METAL CAP



CURB SECTION

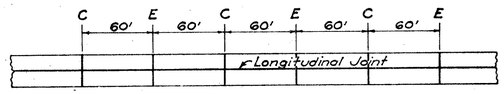


ELEVATION OF PREMOLDED EXPANSION JOINT FILLER SHOWING DOWEL HOLES AND POURED JOINT SEALER



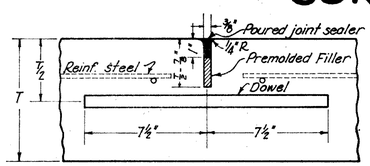
The above sketch shows the minimum number of staking units required for two lane construction, however the number of units required to hold the joint satisfactorily may be increased due to subgrade conditions. For other widths of pavement, the number of staking units shall be in proportion.

METHOD OF STAKING JOINTS

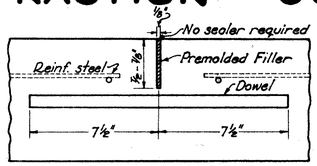


ARRANGEMENT OF TRANSVERSE JOINTS
C = Contraction Joint
E = Expansion Joint

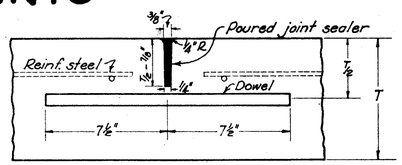
CONTRACTION JOINTS



3/8" PREMOLDED JOINT



1/8" PREMOLDED JOINT



IMPRESSED JOINT

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 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 plans.

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 material for the poured seal shall meet the requirements of Supplemental Specification No M-110.23.

The edges of all expansion joint filler shall be shaped to fit the section of the pavement leaving a 1½" space across the top and down the ends of the joint for poured joint sealer.

The ¾"x1½" vertical space for sealing the ends of the joint at each edge of the pavement shall be provided by removable blocks or forms fastened to the premolded filler.

Joints in monolithic curbs shall be constructed with the same type of filler material as used in the expansion joints and sealed to a depth of 1½" with poured joint sealer.

PREMOLDED BITUMINOUS FIBER EXPANSION JOINT FILLER. This material shall meet the requirements of Supplemental Specification No M-110.12 and shall be accurately held in place by means of approved steel holders. Dowel holes shall be 1/16" in diameter.

POURED JOINT SEALER. Material for sealing expansion, construction and ⅜" premolded contraction joints and for filling impressed contraction joints shall meet the requirements of Supplemental Specification No M-110.23

EDGING JOINTS. Special care shall be exercised in edging joints so 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 at longitudinal joints. The expansion material shall meet in a vertical joint. Longitudinal keys and keyways, where used, shall be omitted for the thickness of the expansion joint.

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.

⅜" PREMOLDED CONTRACTION JOINT. The filler material shall meet the requirements of Sec. M-10.1 or Supplemental Specification No M-110.12.

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 joint sealer is poured.

⅛" PREMOLDED CONTRACTION JOINT. The filler material shall meet the requirements of Sec. M-10.13.

DATE
6-1-40
10-22-40

TJ-8

TRANSVERSE JOINTS

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2), 520-C&D 520-A(2)	1941

5-B
145

TUSCARAWAS CO. S.H. 70
SEC. A(PT), D. MINERAL CITY (PT)

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:- Prior to placing, the dowels shall be assembled into a unit, as shown hereon, which is to remain in place for expansion, contraction and construction joints. The straight end of each dowel shall be neatly fitted with a metal cap as shown hereon. The straight end of each dowel shall be thoroughly coated, before placing in the pavement, with either bituminous material Spec. M-3.10.2 or heavier, or 600 W grease or equal. 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 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 9".

EXPANSION JOINTS:- The spacing of the expansion joints shall not exceed 120 feet. The type and arrangement of expansion joints at intersections will be specifically shown on the plan. The base angle of the dowel assembly and the edge of the expansion joint material shall be shaped to fit the section of the pavement. Joints in monolithic curbs shall be constructed with the same type of premolded filler material as used in the expansion joints.

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 hereon. 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. The filler material for ⅛" PREMOLDED CONTRACTION JOINTS shall meet the requirements of Sec. M-10.13. The filler material for ⅜" PREMOLDED CONTRACTION JOINTS shall meet the requirements of Sec. M-10.1 or Supplemental Specifications M-110.12. IMPRESSED CONTRACTION JOINTS 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 joint sealer is poured.

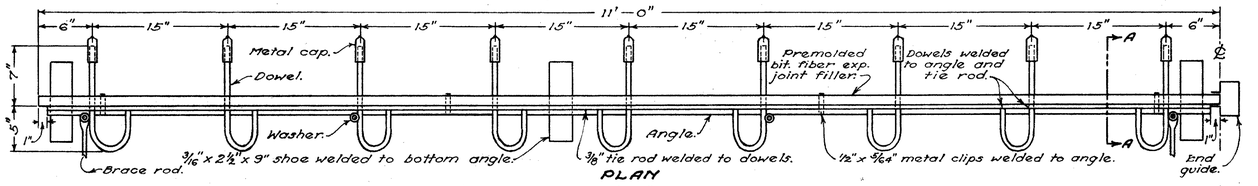
CONSTRUCTION JOINTS:- At construction joints the assembled dowel unit shall be reversed so that the straight end of the dowels point in the direction of the concreting operation. This is to permit the right bulkhead to be slipped over the straight ends of the dowels. If the construction joint is at an expansion joint the premolded expansion joint filler shall be placed to hold the concrete and be backed up by the rigid bulkhead. Care shall be taken in removing the bulkhead and placing the adjacent concrete to see that the dowels are embedded in the concrete without being bent.

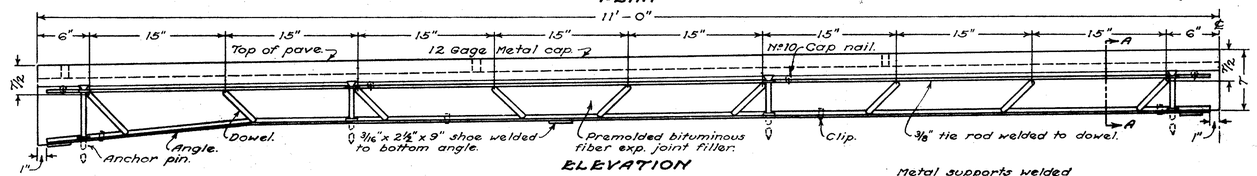
PREMOLDED BITUMINOUS FIBER EXPANSION JOINT FILLER:- This joint filler material shall meet the requirements of Supplemental Specifications No M-110.12. Dowel holes 1/16 inch in diameter shall be accurately punched in the filler material to insure tight fitting dowels. The joint shall at all times be protected from the heat and other agencies which tend to cause distortion. A 12 gage metal cap as shown hereon shall be placed, before concreting, over the upper edge of each joint filler. This metal cap shall be removed immediately after the finishing machine has passed over the joint. A ¾" x 1⅜" strip of planed hardwood or metal shall then be fastened to the premolded joint filler to form the ¾" x 1½" space for the poured joint sealer. Any edging or finishing necessary shall be done along this strip which shall not be removed until the concrete has set. As an alternate method of placing the strip it may be placed before or with the metal cap so that when the cap is removed the strip will be in place. The filler material shall be securely fastened to the 1 inch by 1 inch angle with metal clips and to the ⅜ inch tie rod with No 10 cap nails. The dowel unit assembled with the filler material shall then be staked rigidly to the subgrade with anchor pins and brace rods or metal shoes as shown hereon.

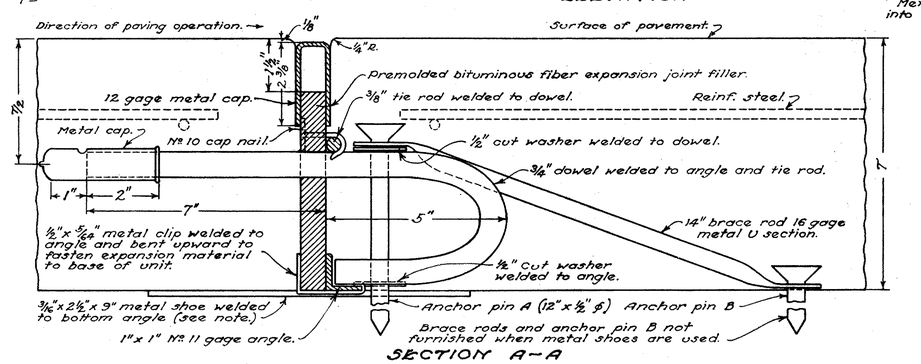
NON-EXTRUDING BITUMINOUS PREMOLDED JOINT:- The filler material shall meet the requirements of Sec. M-10.1. The extrusion chamber plates shall be constructed of 24 gage metal rolled to true section. When assembled in the field a template and protected bench shall be provided for the workmen to insure accuracy in assembling. Dowel holes shall be punched in the filler material and shall be 1/16 inch round holes to insure tight fitting dowels. Dowel holes in the side plates shall be ⅛ 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 ½ 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 dowel unit assembled with the filler and plates shall then be staked rigidly to the subgrade with anchor pins and brace rods or metal shoes as shown hereon.

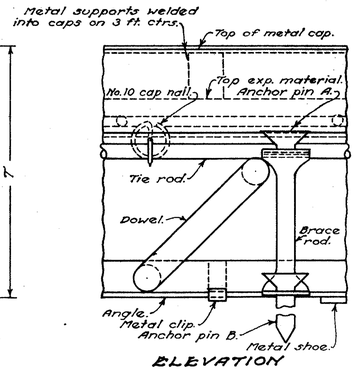
SELF EXPANDING CORK JOINT:- The filler material for this joint shall meet the requirements of Supplemental Specification No M-110.11, and shall be accurately held in place by methods specified for installing PREMOLDED BITUMINOUS FIBER EXPANSION JOINT FILLER.

JOINT ASSEMBLY









NOTES

TREATMENT OF EXPANSION JOINTS AT LONGITUDINAL JOINTS:- At the junction of longitudinal and transverse joints a positive method shall be used to connect the joints and maintain the vertical and longitudinal alignment of the two joints. Longitudinal keys and keyways, where used, shall be omitted for the thickness of the joint.

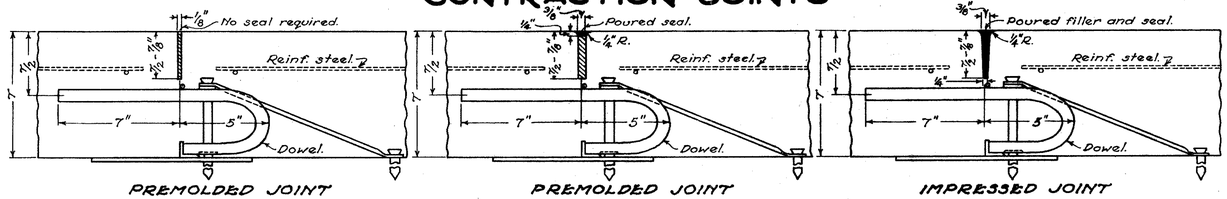
EDGING JOINTS:- Special care shall be exercised in edging joints so that the width of the opening does not exceed that shown.

JOINT SEALER:- Material for sealing expansion, contraction and construction joints in pavements where Non-Extruding Bituminous Premolded Filler or Self Expanding Cork Filler is used shall meet the requirements of Section M-5.4 F-1 for liquid bituminous seal. Immediately before placing liquid bituminous seal an application of kerosene shall be applied by pressure spray, brush or mop to the joint to be in contact with the seal. Material for sealing expansion, contraction and construction joints in pavements where premolded bituminous fiber expansion joint filler is used shall meet the requirements of Supplemental Specification No M-110.23 for poured joint filler.

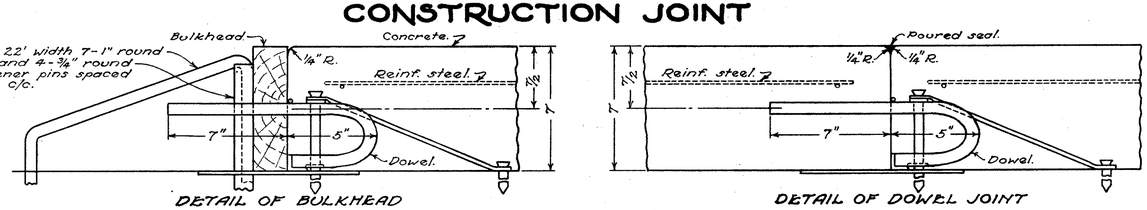
CONSTRUCTION DETAILS:- The assembled unit shall be rigidly held in such position as will keep the plane of the dowels parallel to the surface of the pavement and the expansion joint material at right angles to the pavement surface. This shall be accomplished by staking the unit to the subgrade with a sufficient number of anchor pins "A" and by bracing with a sufficient number of brace rods and anchor pins B. Not less than No "A" pins, two brace rods and "B" pins shall be used for each eleven foot section. Anchor pins 18" long shall be used where necessary to hold the unit in position. The metal shoes may be used in lieu of brace rods where hard shale or rock subgrade is encountered.

The metal cap shall fit closely on the dowel so that when forced on it can not easily be displaced. It shall be crimped to receive only two inches of the dowel and leave one inch space in the end for future movement of the dowel. It shall be made to prevent mortar from entering any part of it when in place on the dowel.

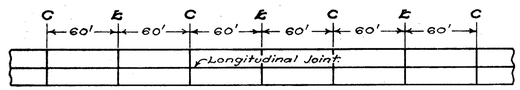
CONTRACTION JOINTS



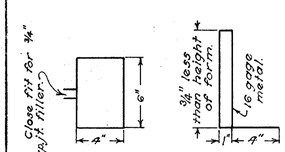
CONSTRUCTION JOINT



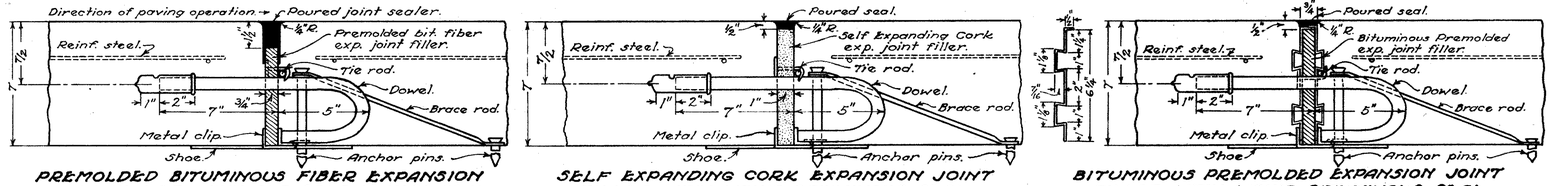
ARRANGEMENT OF TRANSVERSE JOINTS



END GUIDE



EXPANSION JOINTS



DATE
7-1-40
8-1-40

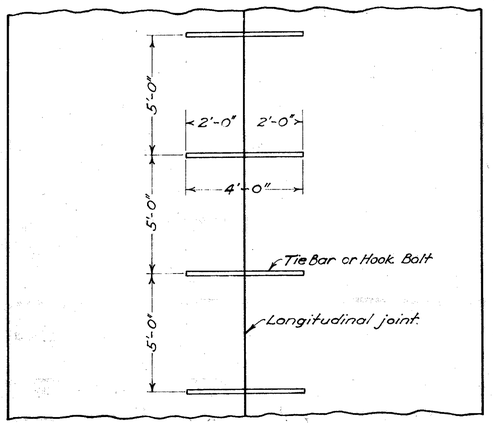
TJ-9

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2) 520-C(1) 520-A(2)	1941

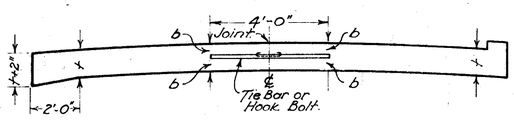
6 / 145

TUSCARAWAS COUNTY
S.H. 70 SEC. A(PT), D, MINERAL CITY (PT)

LONGITUDINAL JOINTS

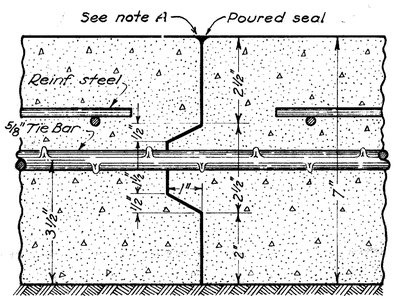


HALF PLAN FOR PAV'T. HALF PLAN FOR BASE



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

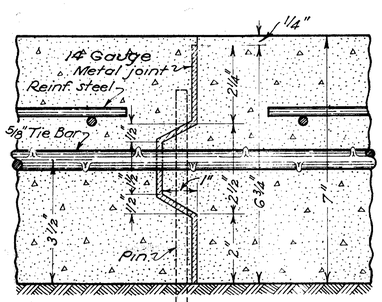
KEY JOINT



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.

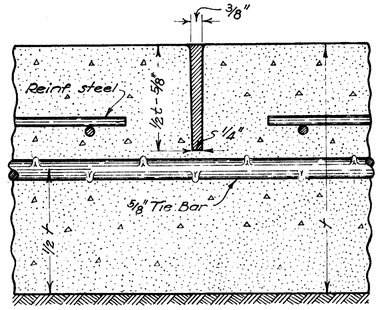
METAL JOINT



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 1/2" 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 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.

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-5.12 AE 1 or 2 before adjoining slabs are poured.

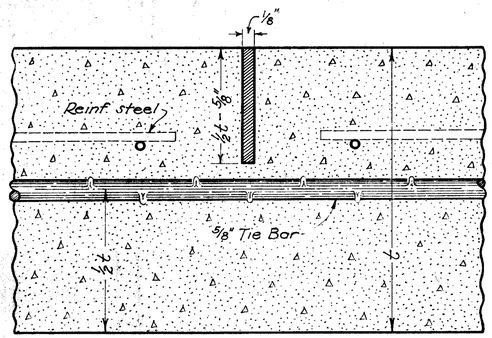
The Metal, and 1/8" Premolded Joints shall not be edged.

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

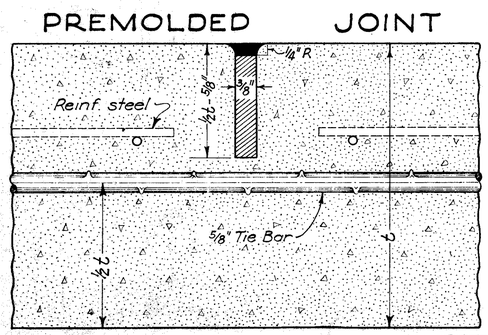
Material for sealing 3/8 inch prem. & key joints and for filling impressed joints shall meet the requirements of Section M-5.4 F-1. Immediately before placing liquid bituminous seal or filler an application of kerosene shall be applied to the area of the joint to be in contact with the seal or filler.

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

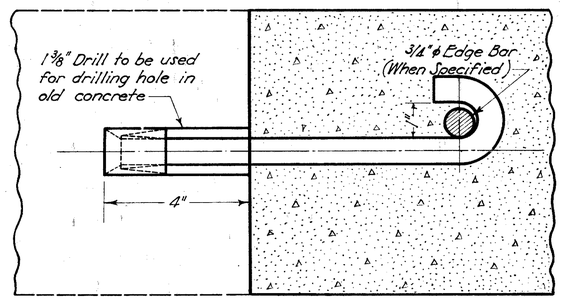
PREMOLDED JOINT



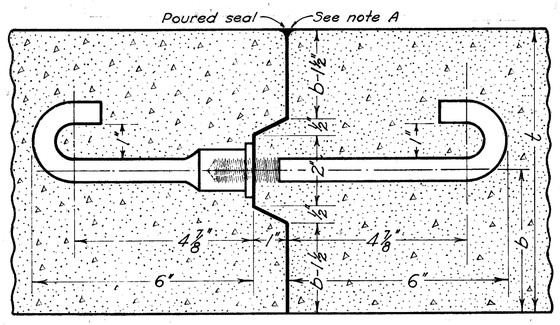
PREMOLDED JOINT



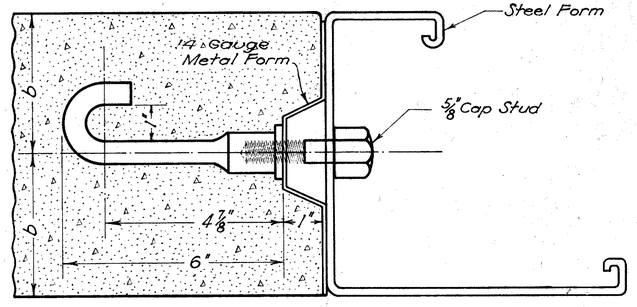
EXPANSION BOLT JOINT

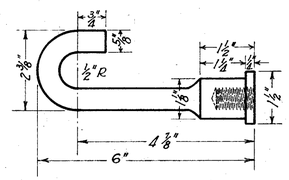


HOOK BOLT AND KEY JOINT



ACCEPTABLE METHOD OF FORMING JOINT





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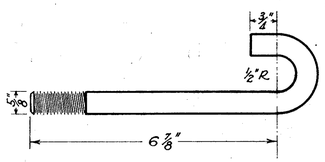
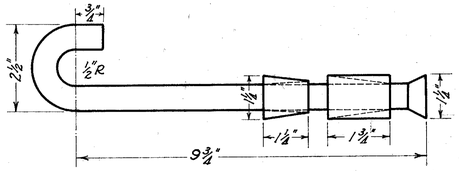


J BOLT

HOOK BOLT DETAIL



EXPANSION BOLT DETAIL

NOTE A

The adjacent edges of adjoining slabs poured in separate operations shall be edged with a thin metal edger having an eighth inch radius. The depth of vertical lip shall not exceed one-half inch.

DATE
3-1-39
8-1-40
11-6-40

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2), 520-C(1) 520-A(2)	1941

7
145

TUSCARAWAS COUNTY
S.H. TO SEC'S.A (PT), D, & MINERAL CITY (PT)
DOVER BASIN

PLAN SHOWING PROPOSED NEW ALIGNMENT IN RELATION TO ℄ OF EXISTING PAVEMENT

SCALE 1"=400'

STA. 201+00 BEGIN
F.A. 260-A(2)
= OLD STA. 201+00 F.A.P. 260 (1922)
BEGIN PROJECT

SEE SUMMARY SHEET NO. 144 FOR CHANGES DUE TO CHANGE OF PAVEMENT DESIGN.

STA. 201+00 — STA. 212+68.5 — F.A. 260-A(2)

Exc.	21,484	C.Y.
Emb.	19,243	C.Y.
+15%	22,129	C.Y.
Unsuit. Mat'l.	5,677	C.Y.

STA. 212+68.5 — STA. 255+53 — F.A. 260-A(2)

Excavation	81,046	C.Y.
Embankment	84,141	C.Y.
Emb. + 15%	96,762	C.Y.
Unsuitable Material	28,622	C.Y.
Dumped Rock Fill	6,627	C.Y.

STA. 255+53 — STA. 280+42.5 — F.A. 260-A(2)

Excavation	72,131	C.Y.
Embankment	41,276	C.Y.
Emb. + 15%	47,467	C.Y.
Unsuitable Material	2,535	C.Y.
Dumped Rock Fill	2,882	C.Y.

STA. 280+42.5 — STA. 298+48.3 — F.A. 520-C(1) RURAL

Excavation	70,234	C.Y.
Embankment	7,544	C.Y.
Emb. + 15%	8,676	C.Y.
Unsuitable Material	493	C.Y.
Dumped Rock Fill	40	C.Y.

STA. 298+48.3 — STA. 329+21.5 — F.A. 520-A(2)

Excavation	25,103	C.Y.
Embankment	92,841	C.Y.
Emb. + 15%	106,767	C.Y.
Unsuitable Material	1,424	C.Y.
Dumped Rock Fill	8,595	C.Y.

Excavation	195,136	C.Y.
Embankment	207,538	C.Y.
Emb. + 15%	238,669	C.Y.
Unsuitable Material	4,743	C.Y.
Dumped Rock Fill	14,771	C.Y.

STA. 329+21.5 — STA. 365+47.2 — F.A. 520-C(1) RURAL

Excavation	27,668	C.Y.
Embankment	65,877	C.Y.
Emb. + 15%	75,759	C.Y.
Unsuitable Material	291	C.Y.
Dumped Rock Fill	3,254	C.Y.

STA. 365+47.2 — STA. 414+60 — F.A. 520-C(1) RURAL

Excavation	23,995	C.Y.
Embankment	195,884	C.Y.
Emb. + 15%	225,267	C.Y.
Dumped Rock Fill	8,900	C.Y.

STA. 414+60 — STA. 442+00 — F.A. 520-C(1) MUNICIPAL

Excavation	7,555	C.Y.
Embankment	109,453	C.Y.
Emb. + 15%	125,871	C.Y.
Dumped Rock Fill	983	C.Y.

STA. 329+21.5 — END F.A. 520-A(2)
BEGIN F.A. 520-C(1)

STA. 280+42.5 END SEC. "A", F.A. 260-A(2)
BEGIN SEC. "D"; F.A. 520-C(1) RURAL

EQUATION
STA. 253+03.3 BACK = STA. 253+00 AHEAD

EQUATION
STA. 301+07.05 BACK = STA. 301+00 AHEAD

STA. 298+48.3 END SEC. "D"
END F.A. 520-C(1) RURAL
BEGIN F.A. 520-A(2)

STA. 414+60 END SEC. "D"
END 520-C(1) RURAL
BEGIN MINERAL CITY (PT.)
BEGIN F.A. 520-C(1) MUNICIPAL

STA. 442+00 END F.A. 520-C(1) MUNICIPAL END PROJECT

EQUATION
STA. 394+07.82 BACK = STA. 395+00 AHEAD

CORP LINE STA. 414+60

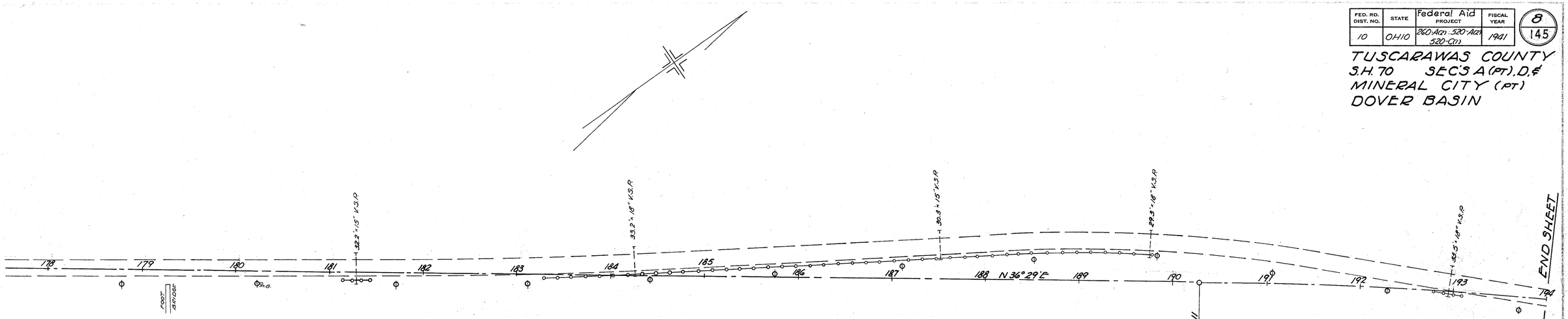
STA. 330+00 MATCH LINE

MINERAL CITY

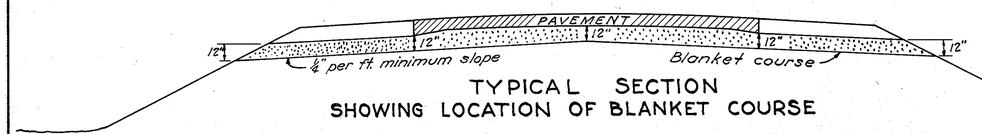
FED. RD. DIST. NO.	STATE	Federal Aid PROJECT	FISCAL YEAR
10	OHIO	260-A(2)-520-A(2) 520-C(1)	1941

8
145

TUSCARAWAS COUNTY
S.H. 70 SEC'S A(PT.), D, E
MINERAL CITY (PT.)
DOVER BASIN



IMPORTANT NOTICE TO CONTRACTOR



TYPICAL SECTION
SHOWING LOCATION OF BLANKET COURSE

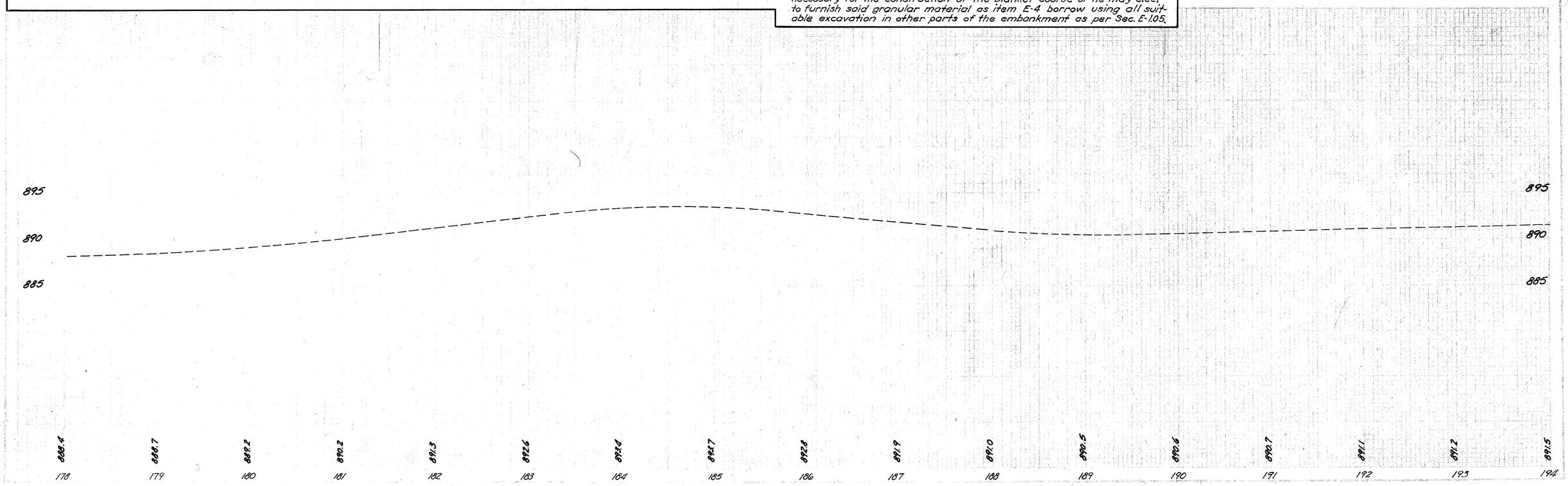
IN THE CASE OF EMBANKMENT EXTENDING ONLY PART WIDTH OF THE SECTION, THE BLANKET COURSE SHALL EXTEND ONLY THE WIDTH OF THE EMBANKMENT SECTION.

SPECIFICATIONS FOR BLANKET COURSE

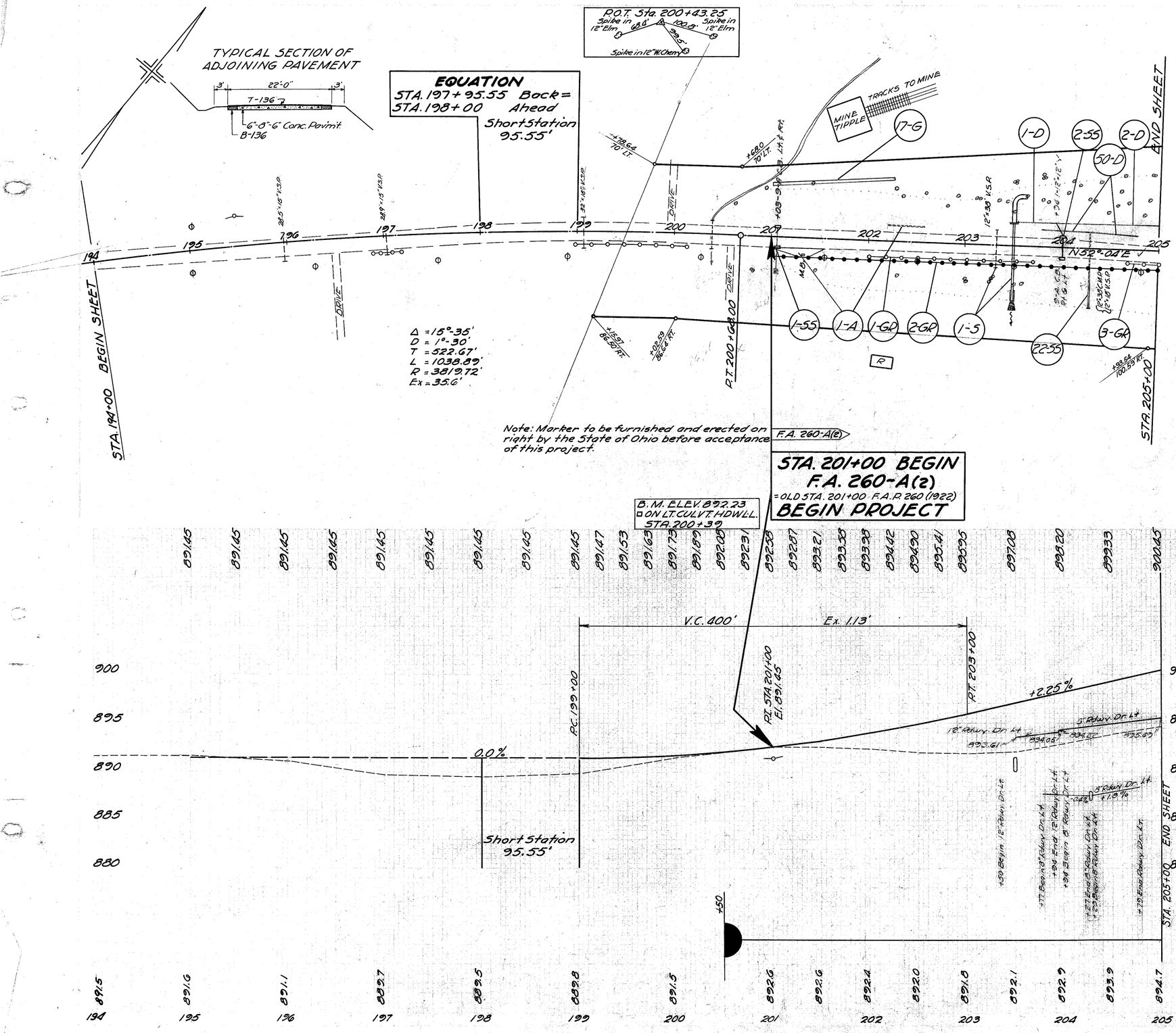
A blanket course, consisting of granular material as described under Sec. E-1.05 of the general specifications, shall be constructed as part of all embankment on this project upon which the pavement is to be placed. This course shall be 12" in thickness and shall be placed adjacent to and immediately below the pavement slab. It shall extend full width of the embankment section and shall be sloped so as to provide adequate drainage to the outer edge of the embankment.

The material for this blanket course shall be obtained from roadway excavation meeting the requirements of said course, or from the borrow pit provided by the State of Ohio located between sta. 320+50 and sta. 324+00 on the right as outlined on sheet 21 of these plans. Payment for this blanket course shall be included in the unit price bid for item E-1 roadway excavation unclassified or item E-4 borrow.

The contractor shall conduct the grading operations so as to use all available granular material encountered in roadway excavation necessary for the construction of the blanket course or he may elect to furnish said granular material as item E-4 borrow using all suitable excavation in other parts of the embankment as per Sec. E-105.



TUSCARAWAS COUNTY
S.H. 70 SECS. A (Pt.), D
& MINERAL CITY (Pt.)
DOVER BASIN



DRIVES & ROAD & MAIL BOX APPROACHES

F.A. 260-A (2)

Ref. No.	Station	Side	Pavement T-10 Sq. Yd.	Pavement I-17 Cu. Yd.	Remove & Store Exist. 8" V.S.P. Lin. Ft.
1-A	201+35	Rt.		7	48
				*	
Totals				7	48

* Mail Box

STRUCTURES 20 FT. SPAN & UNDER

F.A. 260-A(2)

Ref No	Station	See Sheet No	Removals Type	Removals Size	Removals Length	New Work Type	New Work Size	New Work Length
1-S	203+50	87	V.S.P.	12"	38'-0"	Pipe	18"	80'-0"

ROADWAY DRAINAGE

F.A. 260-A(2)

Ref No.	From Station	To Station	Side	Pipe-Lin. Ft. 8"	Pipe-Lin. Ft. 12"	12"x12" Y Each	8"x12" Reducer Each
1-D	203+50	203+98	Lt.		44'	1	1
2-D	203+98	205+00	Lt.	102			
50-D	203+78	204+78	Lt.	100			
Totals				202	44	1	1

REMOVAL OF PAVEMENT

F.A. 260-A(2)

From Station	To Station	Lin. Ft.	8"x18' Conc. Pavt. Sq. Yds.
201+00	205+00	400	800
Totals			800

STORM SEWER

F.A. 260-A(2)

Ref. No.	Station	Remove 12" V.S.P Lin. Ft.	Pipe Lin. Ft. 12"	Pipe Under Pavmt. 12"	Outlet Pipe Lin. Ft. 12"	9'-A C.B. Each	Type A Rip Rap Sq. Yd.
1-55	201+03			20	22	2	3
2-55	204+00		14	20		2	
2255	204+28	18			38	(See below)	
Totals		18	14	40	60	4	3

GUARD RAIL

F.A. 260-A(2)

Ref. No.	From Station	To Station	Side	Remove & Dispose G. Rail Lin. Ft.	New Guard Rail Lin. Ft.
1-GR	202+02	203+70	Rt.	168	
3-GR	204+67	205+00	Rt.	33	
2-GR	201+00	205+00	Rt.		400
Totals				201	400

ROADSIDE IMPROVEMENT

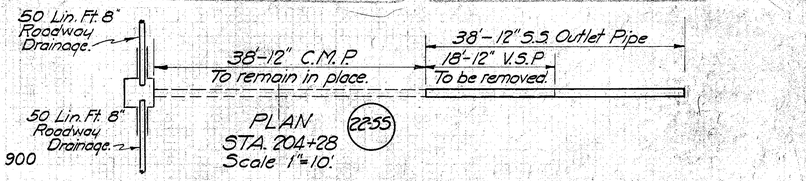
F.A. 260-A(2)

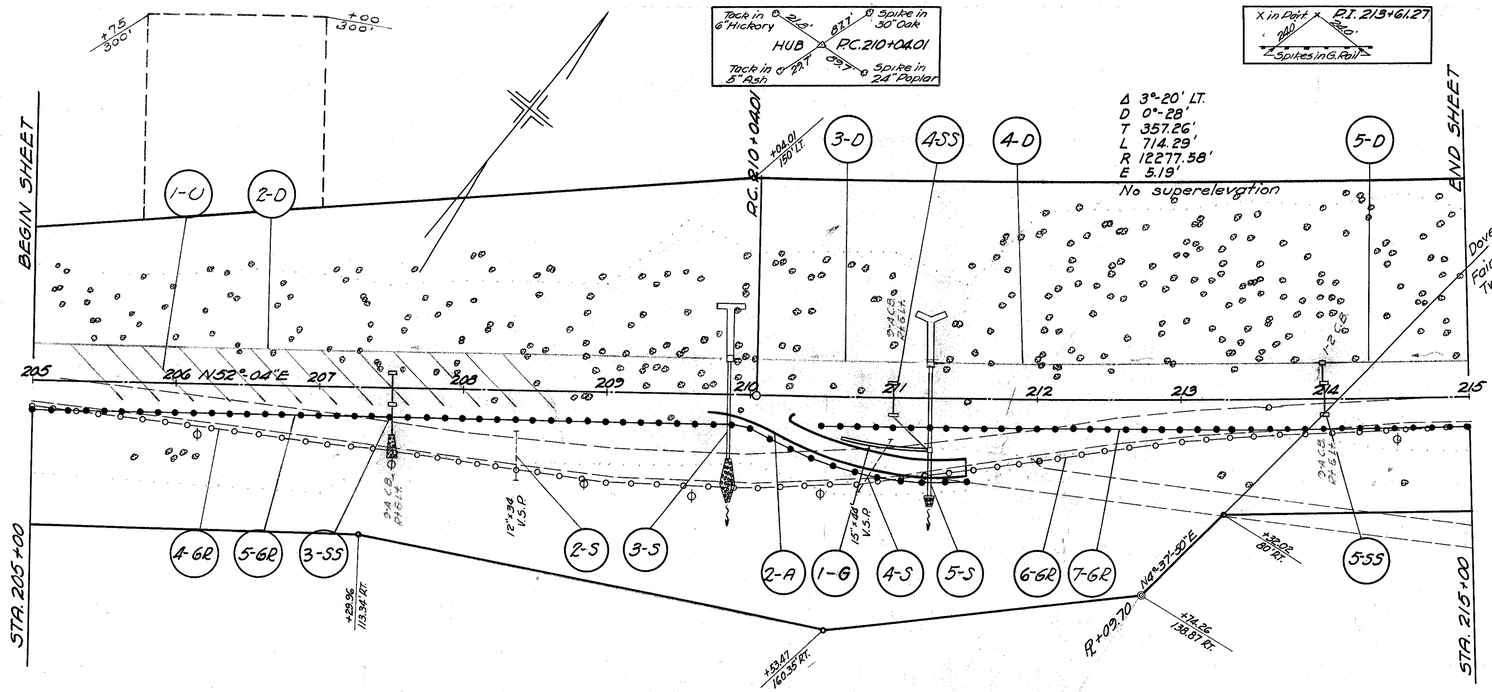
From Station	To Station	Lime Lbs.	Fertilizer Lbs.	Seeding Sq. Yd.
201+00	205+00	2472	309	3438
Total		2472	309	3438

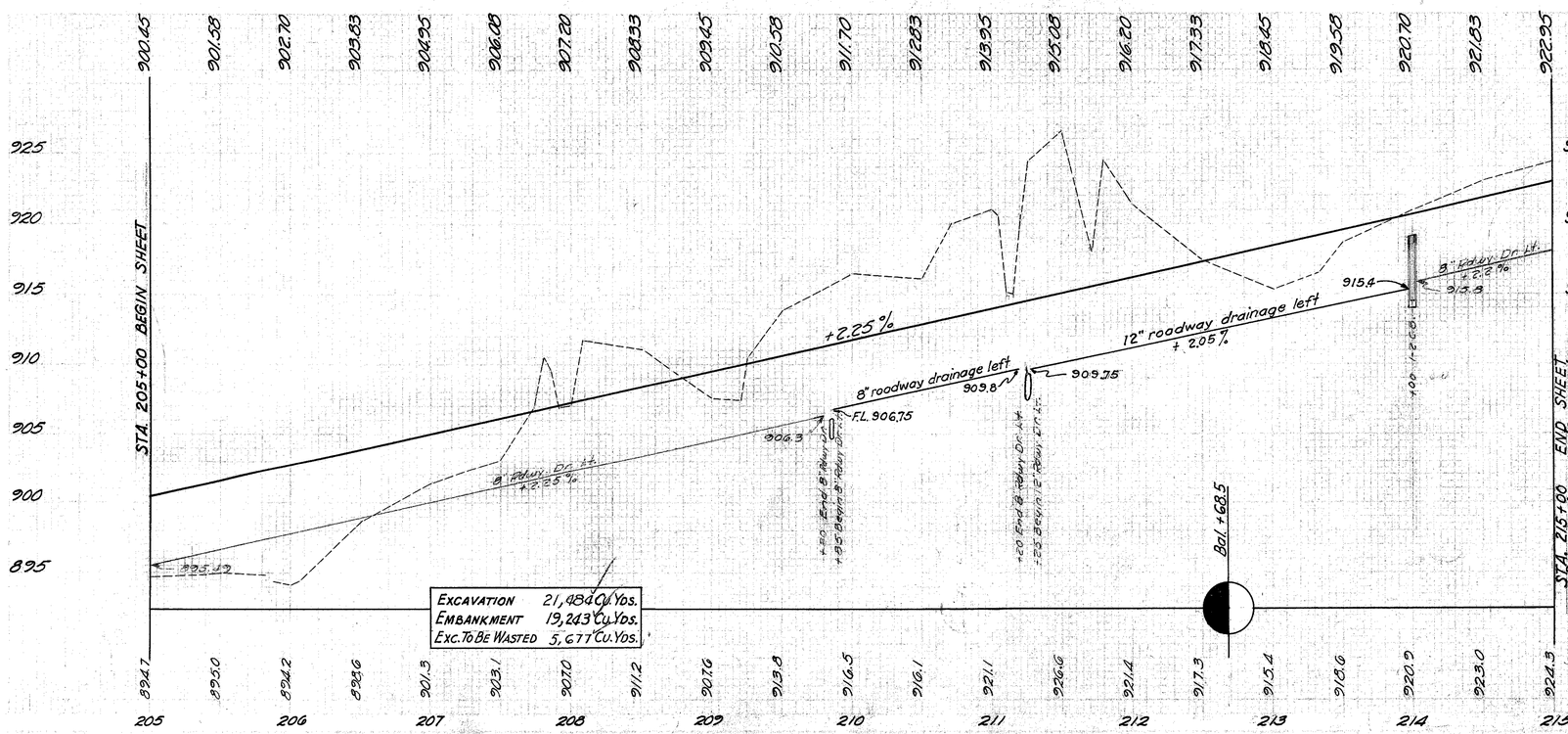
PAVED GUTTER

F.A. 260-A(2)

Ref No.	From Station	To Station	Side	Type No. 3 Paved Gutter Lin. Ft.
17-G	201+00	202+25	Lt.	126
Totals				126







PIPE UNDERDRAIN

F.A. 260-A(2)

Ref. No.	From Station	To Station	Pipe Lin. Ft. 4"	Remarks
1-U	205+50	208+50	676	45° @ 25' Intervals
Totals			676	

FEDERAL AID 10

10 OHIO 260-A(2), 520-C(1) 1941 145
520-A(2)

TUSCARAWAS COUNTY
S.H. 70 SEC. A (Pt.), D
& MINERAL CITY (Pt.)
DOVER BASIN

STRUCTURES 20 FT. SPAN & UNDER

F.A. 260-A(2)

Ref. No	Station	See Sheet No	Removals Type	Removals Size	Removals Length	New Work Type	New Work Size	New Work Length
2-S	208+30		V.S.P.	12"	34'-0"			
3-S	209+85	88				PIPE	18"	66'-0"
4-S	211+00		V.S.P.	15"	44'-0"			
5-S	211+25	89				PIPE	24"	90'-0"

ROADWAY DRAINAGE

F.A. 260-A(2)

Ref. No.	From Station	To Station	Side	Pipe - Lin. Ft. 8"	Pipe - Lin. Ft. 12"	No 1-2 C.B. Each	8"x4" Y.S. Each
2-D	205+00	209+80	LT.	454			13
3-D	209+85	211+20	LT	134			
4-D	211+25	213+99	LT.		274'	1	
5-D	214+01	215+00	LT.	99			
Totals				687	274	1	13

GUARD RAIL

F.A. 260-A(2)

Ref No.	From Station	To Station	Side	Remove & Dispose Lin. Ft.	Remove & Store Lin. Ft.	New Guard Rail Lin. Ft.
4-GR	205+00	211+72	RT	678		
5-GR	205+00	211+50	RT			650
6-GR	211+72	215+00	RT		330	
7-GR	210+50	215+00	RT			450
Totals				678	330	1100

STORM SEWER

F.A. 260-A(2)

Ref. No.	From Station	To Station	Pipe Lin. Ft. 12"	Pipe Under Pavt. Lin. Ft.	Outlet Pipe Lin. Ft. 12"	3-A C.B. Each	Type A Rip-Rap Sq. Yds.
3-SS	207+50			20	20	2	8
4-SS	211+00	211+25	34	20		2	
5-SS	214+00		12	20		2	
	Totals		46	60	20	6	8

REMOVAL OF PAVEMENT

F.A. 260-A(2)

From Station	To Station	Lin. Ft.	8"x 18' Concr. Pavt. Sq. Yds.
205+00	215+00	1007	2014
Totals			2014

PAVED GUTTER

F.A. 260-A(2)

Ref. No.	From Station	To Station	Side	Type No. 3 Modified Lin. Ft.
1-G	210+60	211+25	RT.	65
Totals				65

DRIVES, ROAD & MAIL BOX APPROACHES

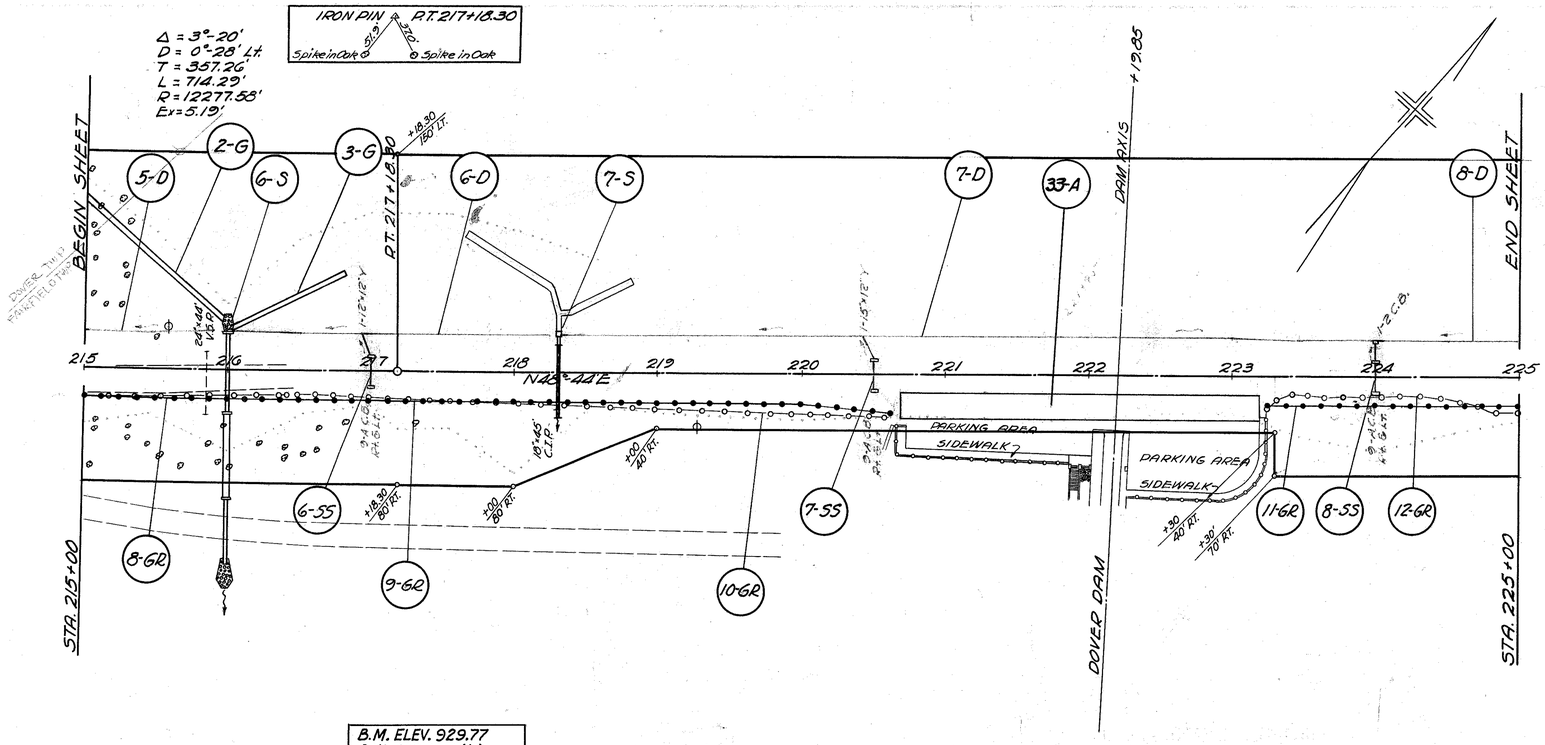
F.A. 260-A(2)

Ref. No.	Station	Side	Pavement T-10 Sq. Yd.	Pavement I-17 Cu. Yd.
2-A	210+00	RT.		24
Totals				24

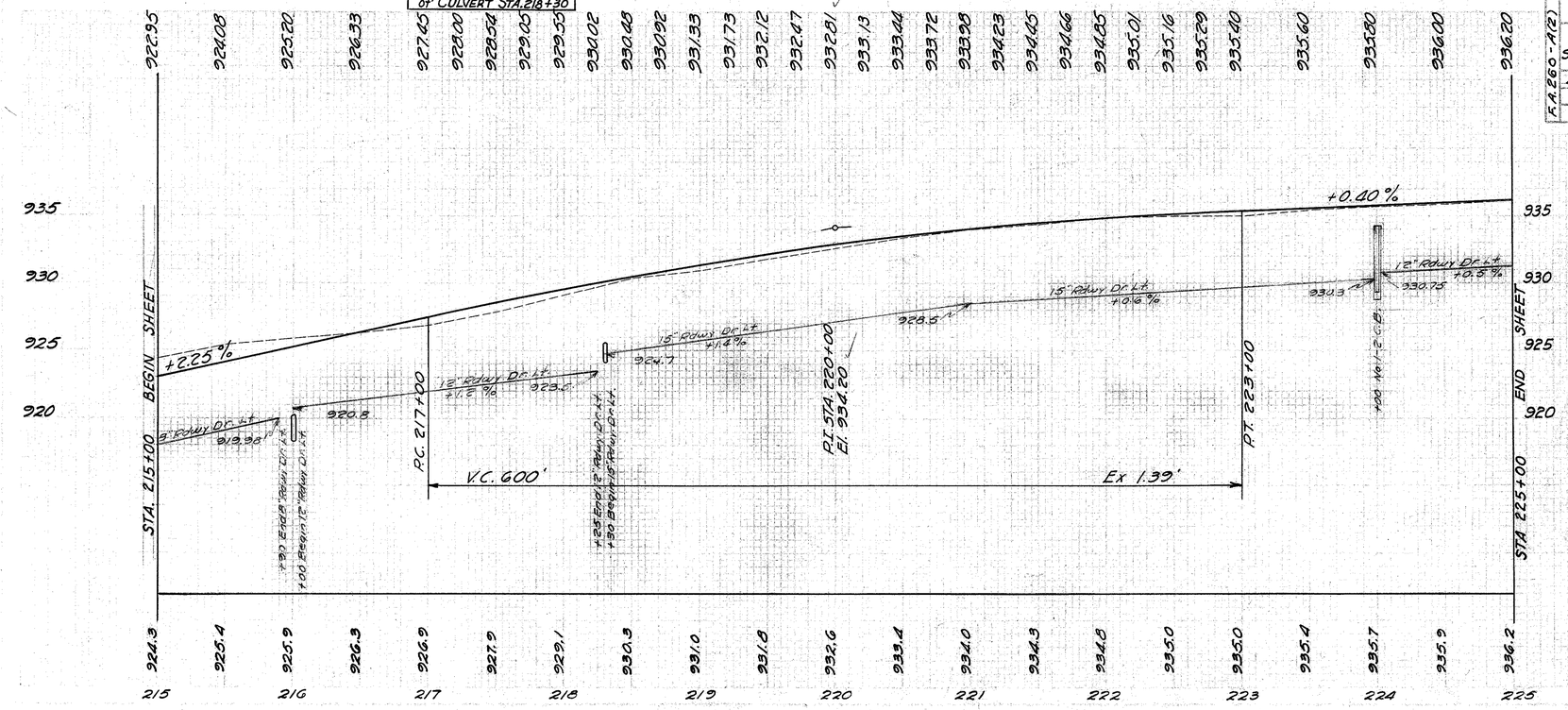
ROADSIDE IMPROVEMENT

F.A. 260-A(2)

From Station	To Station	Lime Lbs.	Fertilizer Lbs.	Seeding Sq. Yd.
205+00	215+00	4368	546	6069
Totals		4368	546	6069



B.M. ELEV. 929.77
S.W. COR. LT. HD'WT.
OF CULVERT STA. 218+30



DRIVES & ROAD & MAIL BOX APPROACHES

F.A. 260-A-(2)

Ref. No	Station	Side	Pavement I-17 Cu. Yds.	Pavement T10 Sq Yds	Remarks
33-A	221+95		80		For Dover Dam Parking Area. 18x250 ÷ 9 = 500 Sq Yd.
	Total		80		

FEDERAL AID 10 0110 260-A(2), 520-C(1) 1941 520-A(2) — 11 / 145

TUSCARAWAS COUNTY
S.H. 70 SECS. A(Pt.), D
& MINERAL CITY (Pt.)
DOVER BASIN

STRUCTURES 20 FT. SPAN & UNDER

F.A. 260-A(2)

Ref. No	Station	See Sheet No	Removals Type	Removals Size	Removals Length	New Work Type	New Work Size	New Work Length
6-S	216+00	90	V.S.P.	24"	44'-0"	PIPE	24"	46'-0" 58'-0"
7-S	218+30	91	C.I.P.	18"	45'-0"	PIPE	18"	53'-0"

ROADWAY DRAINAGE

F.A. 260-A(2)

Ref. No.	From Station	To Station	Side	Pipe-Lin. Ft. 8"	12"	15"	12x12 Y Each	15x12 Y Each	1-2 C.B. Each
5-D	215+00	215+90	LT.	90					
6-D	216+00	218+25	LT.		223		1		
7-D	218+31	223+99	LT.			566		1	1
8-D	224+01	225+00	LT.		99				
Totals				90	322	566	1	1	1

REMOVAL OF PAVEMENT

F.A. 260-A(2)

From Station	To Station	Lin Ft.	8"x18' Conc. Pavt. Sq. Yds.
215+00	216+50	150	300
Totals			300

STORM SEWER

F.A. 260-A(2)

Ref. No.	From Station	To Station	Pipe Lin. Ft. 12"	Pipe Under Pavt. Lin. Ft.	9-A C.B. Each
6-SS	217+00		14	20	2
7-SS	220+50		14	20	2
8-SS	224+00		12	20	2
Totals			40	60	6

GUARD RAIL

F.A. 260-A(2)

Ref. No.	From Station	To Station	Side	Remove & Dispose G. Rail Lin. Ft.	Remove & Re-set G. Rail Lin. Ft.	New Guard Rail Lin. Ft.
8-GR	215+00	216+42	RT.		142	
9-GR	215+00	220+62.5	RT.			562.5
10-GR	216+45	220+58	RT.		413	
11-GR	223+25	225+00	RT.			175
12-GR	223+19	225+00	RT.		185	
Totals					740	737.5

ROADSIDE IMPROVEMENT

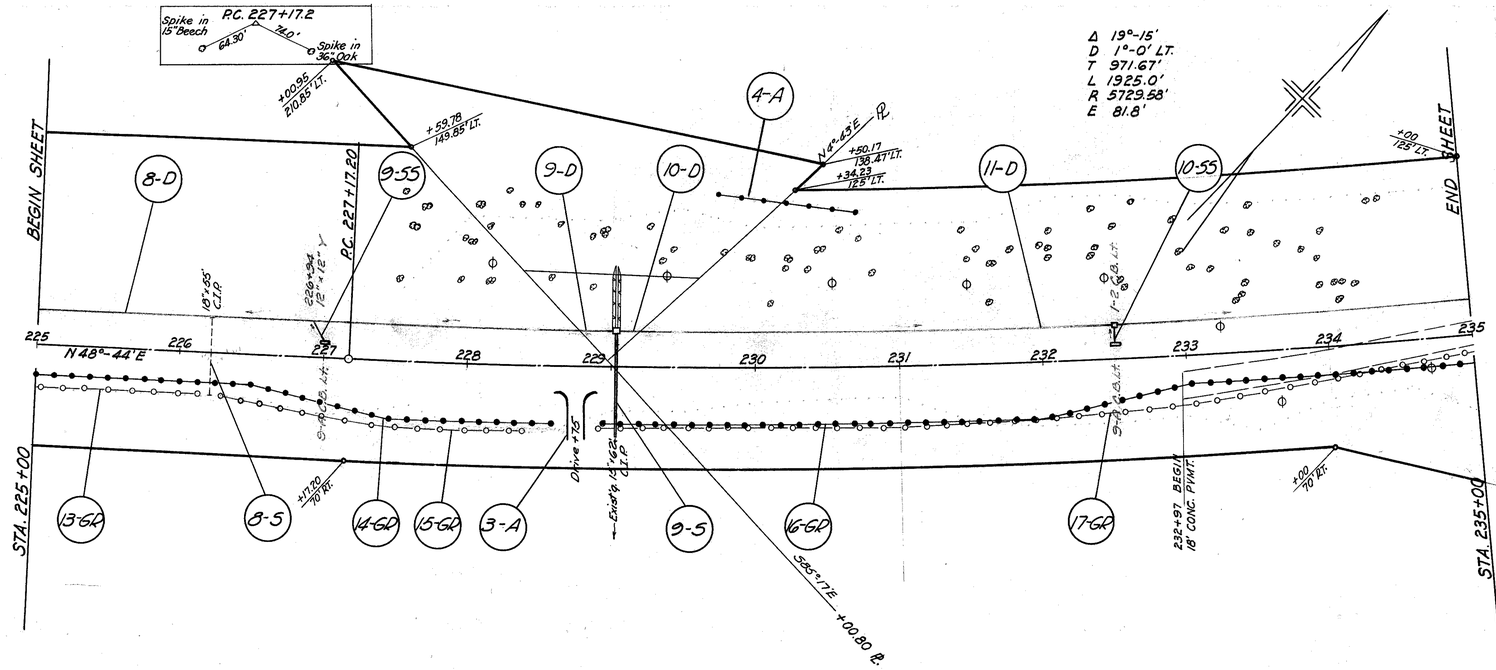
F.A. 260-A(2)

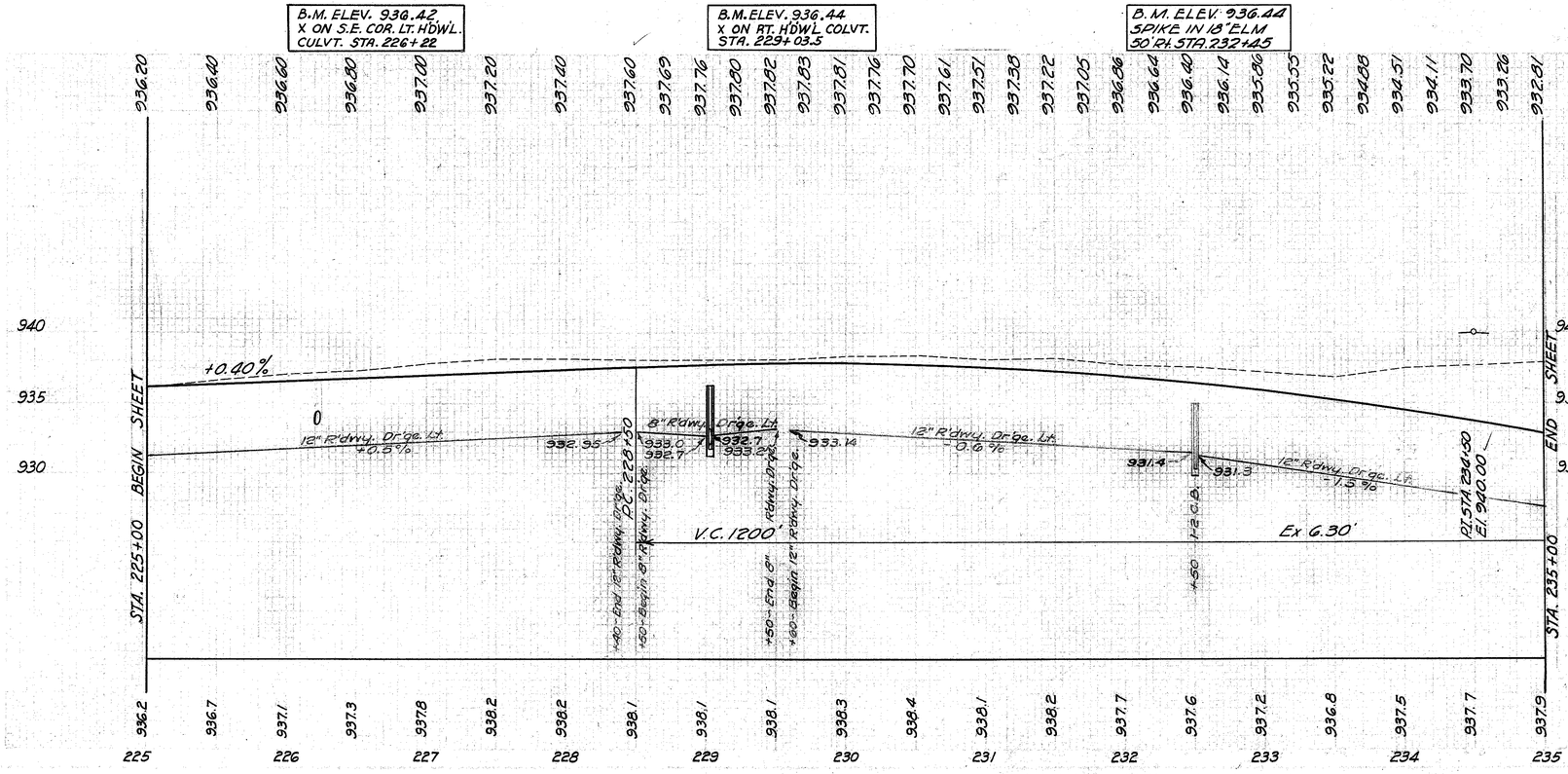
From Station	To Station	Lime Lbs.	Fertilizer Lbs.	Seeding Sq. Yd.
215+00	225+00	3184	398	4426
Total		3184	398	4426

PAVED GUTTER

F.A. 260-A(2)

Ref. No.	From Station	To Station	Side	Type No. 3 Modified Lin. Ft.
2-G	215+00	216+00	Lt	165
3-G	216+00	216+80	Lt.	90
Total				255





DRIVES, ROAD & MAIL BOX APPROACHES

F.A. 260-A(2)

Ref. No.	Station	Side	Pavement T-10 Sq. Yd.	Pavement I-17 Cu. Yd.	New Guard Rail Lin. Ft.	Remarks
3-A	228+75	Rt.		6		
4-A	232+75	Lt.			* 100	* New cut slope necessitates protecting this drive
Totals				6	100	

FEDERAL AID 12

10 OHIO 260-A(2), 320-C(1) 1941 145
320-A(2)

TUSCARAWAS COUNTY
S.H. 70 SECS. A(Pt.), D
& MINERAL CITY (Pt.)
DOVER BASIN

STRUCTURES 20 FT. SPAN & UNDER

F.A. 260-A(2)

Ref. No	Station	See Sheet No	Removals Type	Removals Size	Removals Length	New Work Type	New Work Size	New Work Length
			Work Required (To Remain in Place)					
8-5	226+22	No						
9-5	229+03.5	92	C.I.P.	15"	62'-0	C.I.P.	15"	72'-0"

ROADWAY DRAINAGE

F.A. 260-A(2)

Ref. No.	From Station	To Station	Side	Pipe-Lin. Ft. 8"	Pipe-Lin. Ft. 12"	12x12 Y Each	I-2 C.B. Each
8-D	225+00	228+40	Lt.		338	1	
9-D	228+50	229+02	Lt.	52			
10-D	229+05	229+50	Lt.	45			
11-D	229+60	235+00			538		1
Totals				97	876	1	1

REMOVAL OF PAVEMENT

F.A. 260-A(2)

From Station	To Station	Lin. Ft.	8"x18' Conc. Pavt. Sq. Yds.
232+97	235+00	205	410
Totals			410

STORM SEWER

F.A. 260-A(2)

Ref. No.	From Station	To Station	Pipe Lin. Ft. 12"	9-A C.B. Each
9-55	226+94	227+00	14'	1
10-55	232+50		12'	1
Totals			26	2

GUARD RAIL

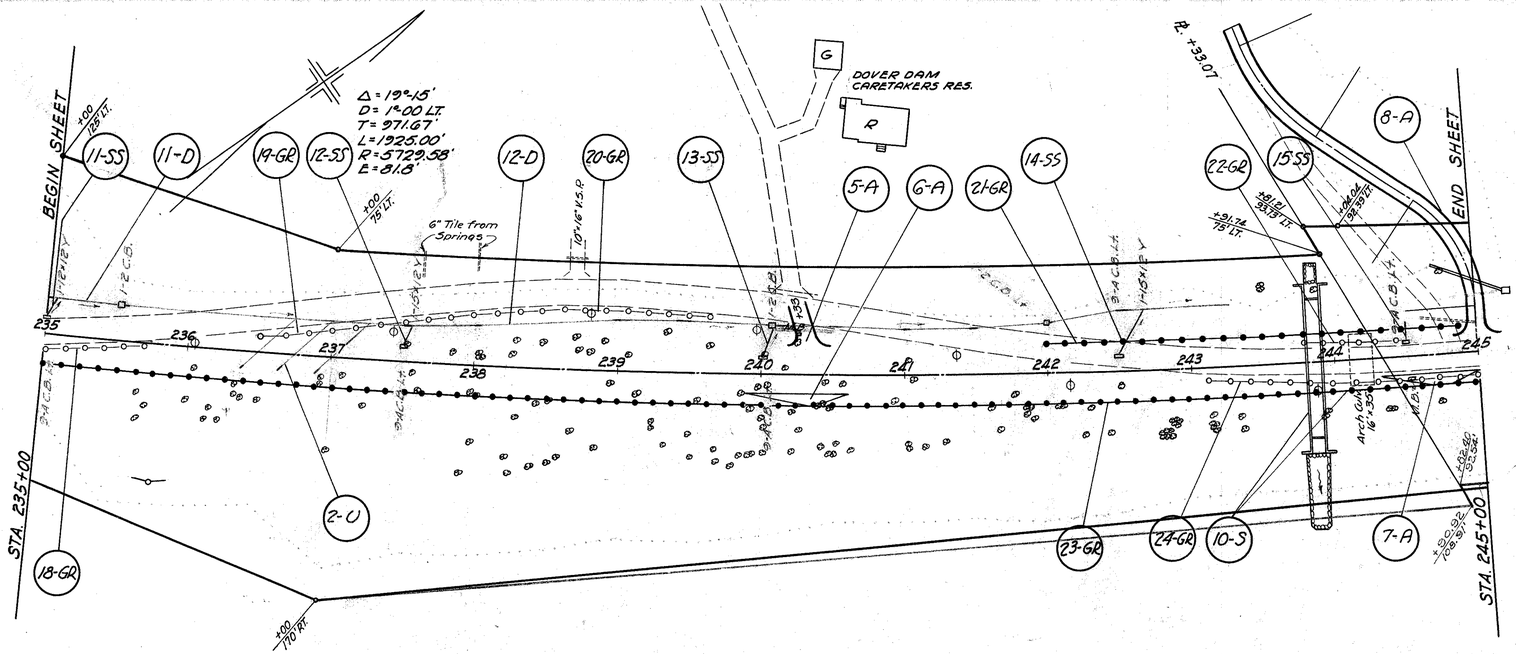
F.A. 260-A(2)

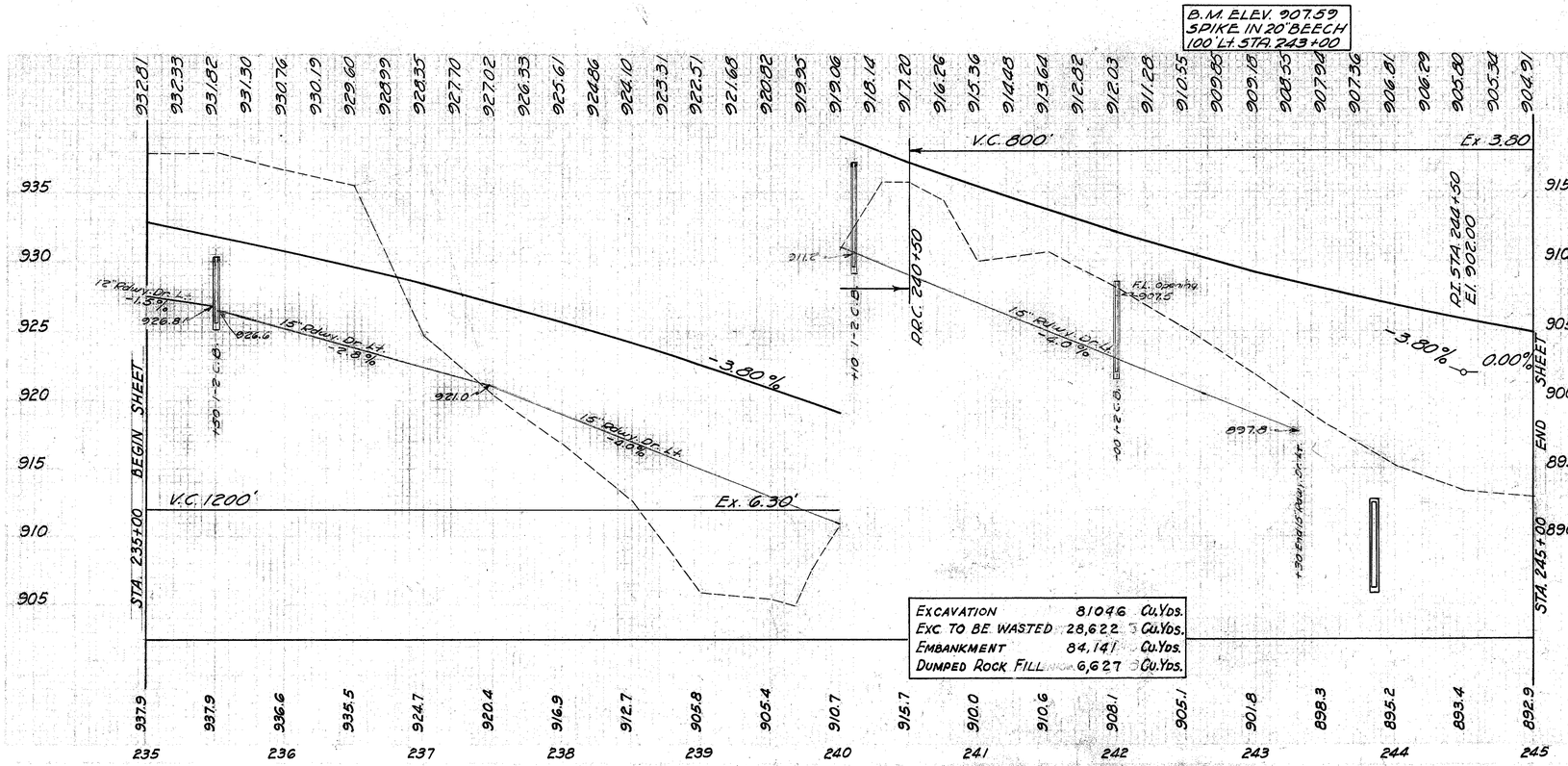
Ref. No.	From Station	To Station	Side	Remove Dispose G. Rail Lin. Ft.	Remove Store G. Rail Lin. Ft.	New Guard Rail Lin. Ft.
13-GR	225+00	226+15	Rt.		115	
14-GR	225+00	228+59	Rt.			362.5
15-GR	226+30	228+40	Rt.		214	
16-GR	228+95	235+00	Rt.			610.1
17-GR	228+92	235+00	Rt.		615	
Totals					944	972.6

ROADSIDE IMPROVEMENT

F.A. 260-A(2)

From Station	To Station	Lime Lbs.	Fertilizer Lbs.	Seeding Sq. Yds.
225+00	235+00	3656	457	5073
Totals		3656	457	5073





Excavation	81046	Cu.Yds.
Exc. to be Wasted	28,622	Cu.Yds.
Embankment	84,141	Cu.Yds.
Dumped Rock Fill	6,627	Cu.Yds.

PIPE UNDERDRAIN

F.A. 260-A(2)

Ref. No.	From Station	To Station	Pipe Lin. Ft. 4"	Remarks
2-U	236+50	237+00	156	45° @ 25' Inter
Totals			156	

County No.	County Name	Federal Aid	Year
10	OHIO	260-A(2), 320-C(1), 320-A(2)	1941

13
145

TUSCARAWAS COUNTY
S.H. 70 SECS. A(Pt.), D
& MINERAL CITY (Pt.)
DOVER BASIN

STRUCTURES 20 FT. SPAN & UNDER

F.A. 260-A(2)

Ref. No	Station	See Sheet No	Removals Type	Removals Size	Removals Length	New Work Type	New Work Size	New Work Length
10-S	243+85	9a & 9A	ARCH	16'	35'-0"	BOX	9'x7'	116'-3"

ROADWAY DRAINAGE

F.A. 260-A(2)

Ref. No.	From Station	To Station	Side	Pipe-Lin. Ft. 12"	Pipe-Lin. Ft. 15"	12"x12" Y's Each	15"x12" Y's Each	15"x6" Y's Each	Std. N°12 C. Basin Each	15" Outlet Pipe Lin. Ft.	15" Pipe Under Drive
11-D	235+00	235+49	LT.	47		1			1		
12-D	235+51	243+30	LT.		705		2	3	2	20	40
Totals				47	705	1	2	3	3	20	40

STORM SEWER

F.A. 260-A(2)

Ref. No.	From Station	To Station	Pipe Lin. Ft. 12"	Outlet Pipe Lin. Ft. 12"	9-A C.B. Each
11-SS	235+00		14		1
12-SS	237+50		14		1
13-SS	240+00		25		1
14-SS	242+50		36		1
15-SS	244+50			48	1
Totals			89	48	5

GUARD RAIL

F.A. 260-A(2)

Ref. No.	From Station	To Station	Side	Remove & Dispose G.Rail Lin. Ft.	Remove & Store G.Rail Lin. Ft.	New Guard Rail Lin. Ft.
18-GR	235+00	235+74	RT.	74		
19-GR	236+50	237+59	LT.		113	
20-GR	237+59	239+64	LT.	197		
21-GR	242+00	244+88.5	LT.			287.5
22-GR	243+77	244+41	LT.	64		
23-GR	235+00	245+00	RT.			1003.5
24-GR	243+11	245+00	RT.	190		
Totals				525	113	1291.0

DRIVES, ROAD & MAIL BOX APPROACHES

F.A. 260-A(2)

Ref. No.	Station	Side	Pavement T/O Sq.Yd.	Pavement I-17 Cu.Yd.	Remarks	Pipe 15" Lin. Ft.	Remove & Re-set 12"I.S.P. Lin. Ft.
5-A	240+33	LT.		8			
6-A	240+35	RT.		7	Mail Box		
7-A	244+75	RT.		7	Mail Box		
8-A	245+00	LT.		43		50	58
Totals				65		50	58

REMOVAL OF PAVEMENT

F.A. 260-A(2)

From Station	To Station	Lin. Ft.	8"x18' Concr. Pavm't Sq. Yds.
235+00	242+50	755	1510
Totals			1510

ROADSIDE IMPROVEMENT

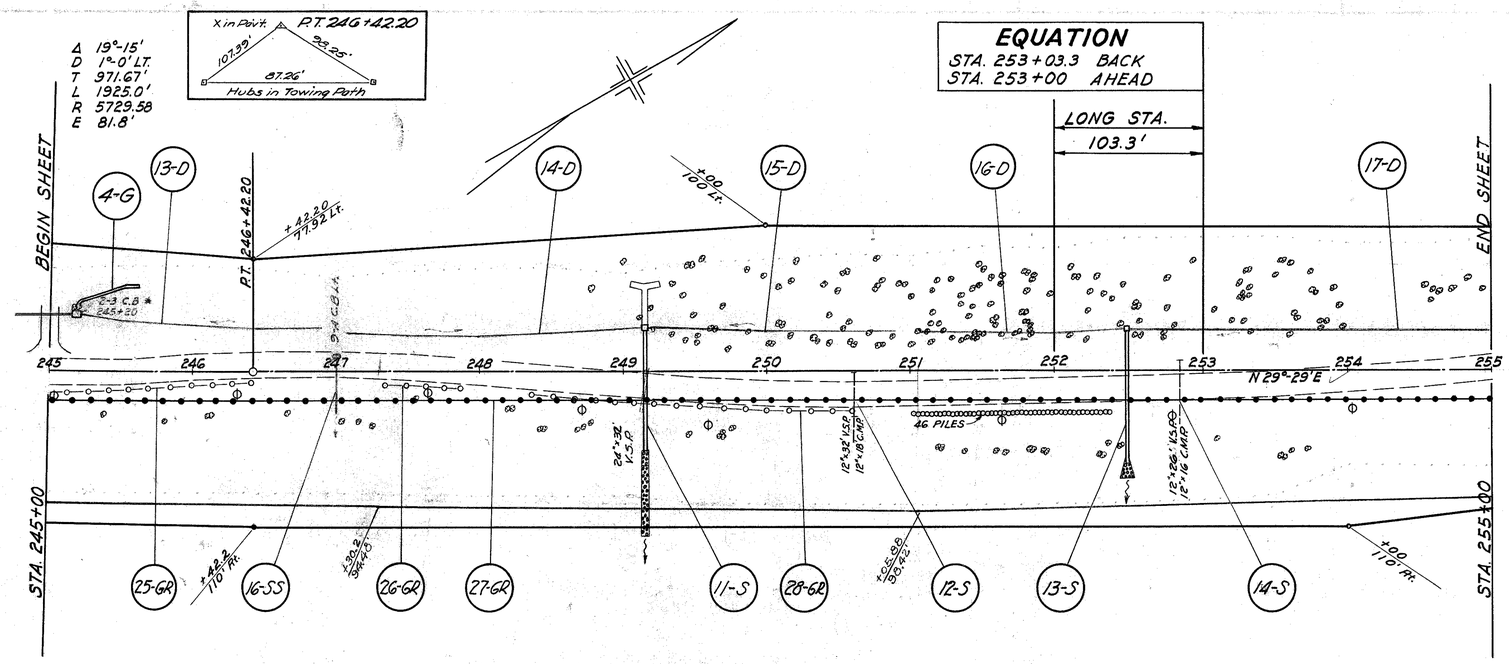
F.A. 260-A (2)

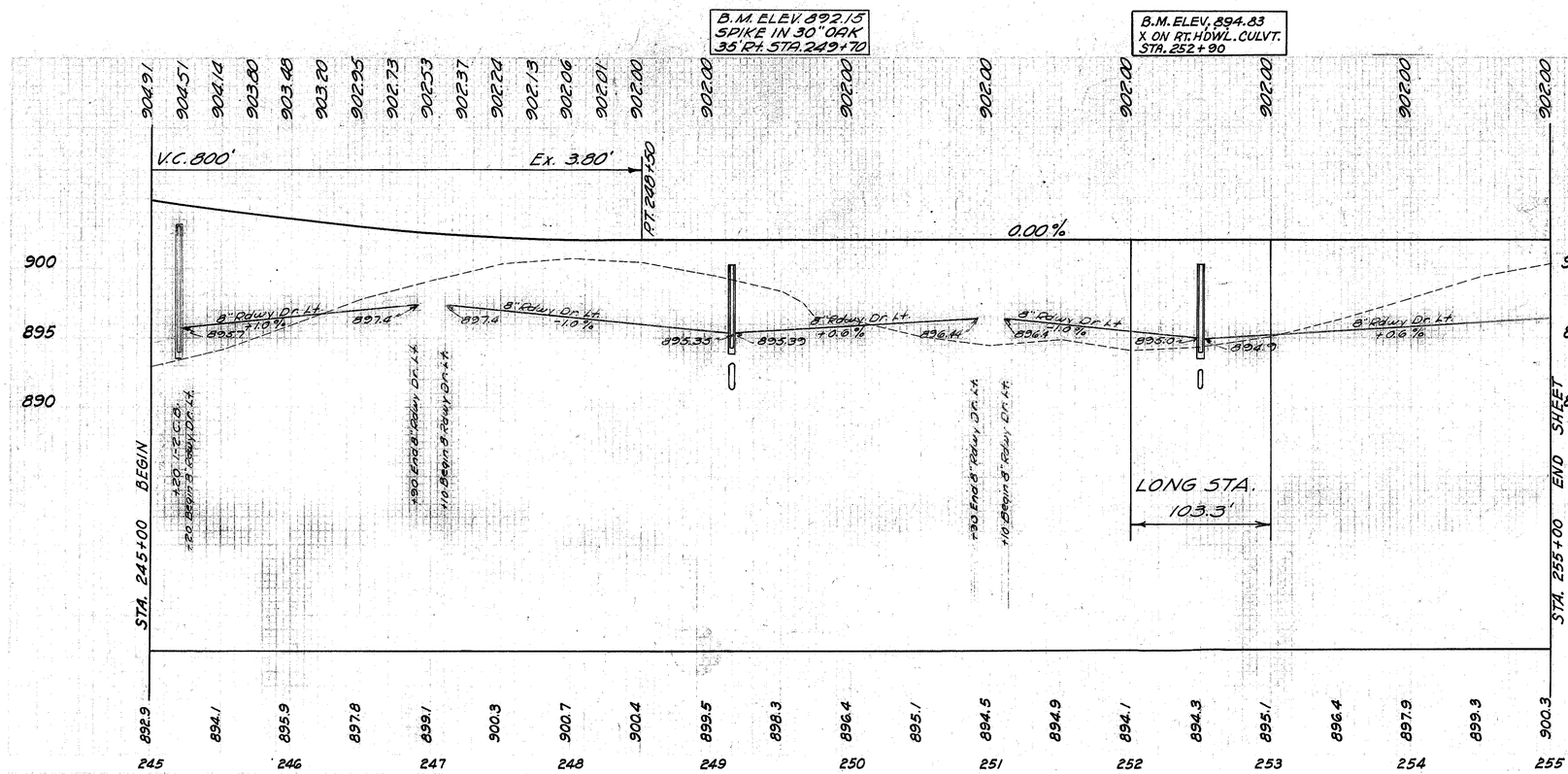
From Station	To Station	Lime-Lbs.	Fertilizer Lbs.	Seeding Sq.Yds.
235+00	245+00	8788	1098	12200
Totals		8788	1098	12200

		FEDERAL AID			
10	OHIO	260-A(2), 320-C(1) 320-A(2)	1941		

14
145

TUSCARAWAS COUNTY
S.H. 70 SECS. A(PT.), D
& MINERAL CITY (PT.)
DOVER BASIN





STRUCTURES 20 FT. SPAN & UNDER

F.A. 260-A(2)

REF. No	STATION	SEE SHEET No	REMOVALS TYPE	REMOVALS SIZE	REMOVALS LENGTH	NEW WORK TYPE	NEW WORK SIZE	NEW WORK LENGTH
11-S	249+145	95	V.S.P	24"	32'-0"	PIPE	24"	86'-0"
12-S	250+61		V.S.P C.M.P.	12" 18"	32'-0" 18'-0"			
13-S	252+50	96				PIPE	18"	94'-0"
14-S	252+88		V.S.P. C.M.P.	12"	42'-0"			

ROADWAY DRAINAGE

F.A. 260-A(2)

REF. No.	FROM STATION	TO STATION	SIDE	PIPE-LIN. FT. 8"	2.3 (Mod.) C.B. EACH	REMARKS
13-D	245+20	246+90	LT.	170	1 *	* FOR CATCH BASIN DETAIL SEE SHEET No STRUCTURE 11S
14-D	247+10	249+13	LT.	203		
15-D	249+16	250+90	LT.	174		
16-D	251+10	252+49	LT.	139		
17-D	252+51	255+00	LT	253		LONG STA. 103.3
TOTALS				939	1	

REMOVAL OF PAVEMENT

F.A. 260-A(2)

FROM STATION	TO STATION	LIN. FT.	8"x18', CONC. PAV'T. SQ. YDS.
246+50	255+00	858	1716
TOTALS			1716

STORM SEWER

F.A. 260-A(2)

REF No.	FROM STATION	TO STATION	PIPE UNDER PAV'T. LIN. FT. 12"	OUTLET PIPE LIN. FT. 12"	9-A C.B. EACH
16-SS	247+00			62	1
TOTALS				62	1

GUARD RAIL

F.A. 260-A(2)

REF. No.	FROM STATION	TO STATION	SIDE	REMOVE & DISPOSE G. RAIL LIN. FT.	REMOVE & STORE G. RAIL LIN. FT.	NEW GUARD RAIL LIN. FT.
25-GR	245+00	246+45	RT.	146		
26-GR	241+33	247+88	RT.	56		
27-GR	245+00	255+00	RT.			1003.3
28-GR	248+37	250+58	RT.	225		
	TOTALS			427		1003.3

PAVED GUTTER

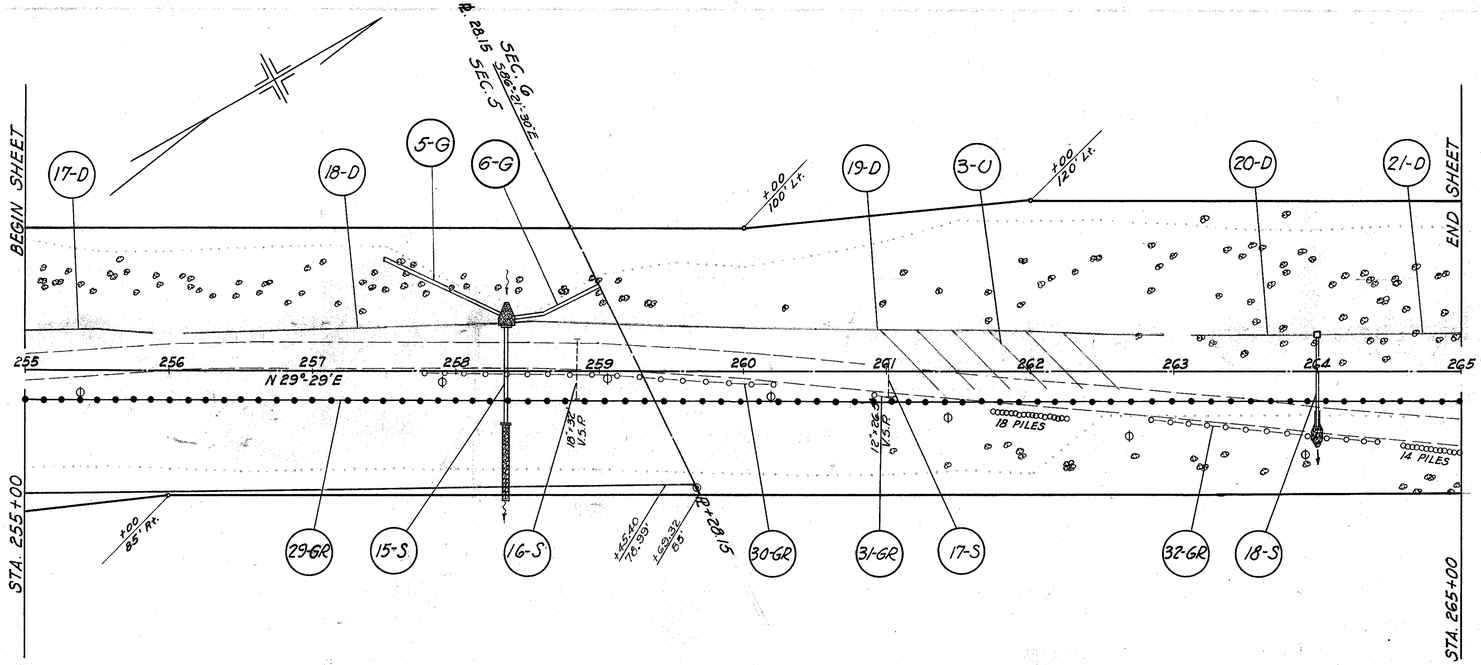
F.A. 260-A(2)

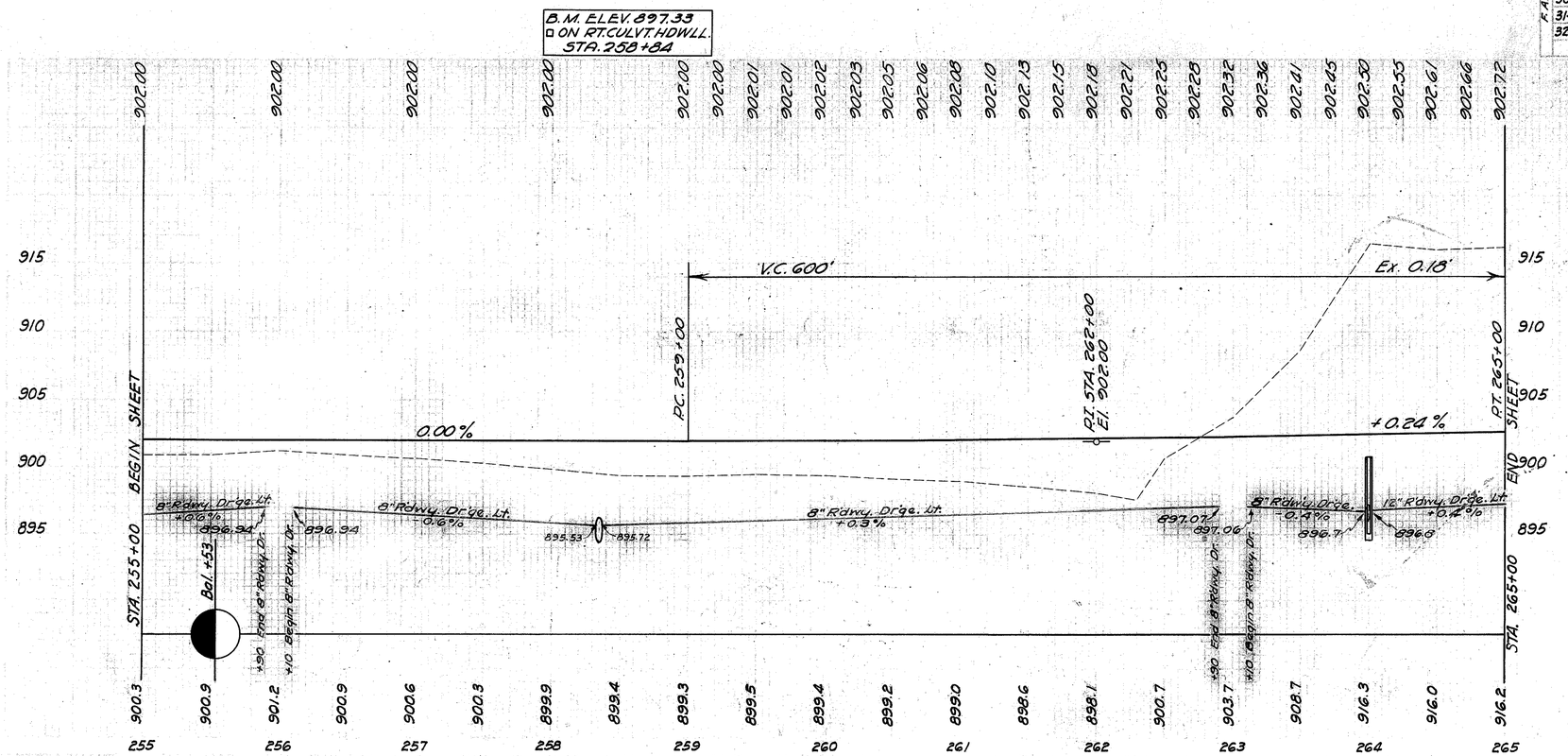
REF. No.	FROM STATION	TO STATION	SIDE	TYPE No.3 MODIFIED LIN. FT.
4-G	245+20	245+80	LT.	45
TOTALS				45

ROADSIDE IMPROVEMENT

F.A. 260-A(2)

FROM STATION	TO STATION	LIME LBS.	FERTILIZER LBS.	SEEDING SQ. YDS.
245+00	255+00	4574	572	6350
TOTALS		4574	572	6350





PIPE UNDERDRAIN

F.A. 260-A(2)

Ref. No.	From Station	To Station	Pipe Lin. Ft. 4"	Remarks
3-U	261+25	262+50	327	45° @ 25' Interv.
		Totals	327	

STRUCTURES 20 FT. SPAN & UNDER

F.A. 260-A(2)

Ref. No	Station	See Sheet No	Removals			New Work		
			Type	Size	Length	Type	Size	Length
15-S	258+35	97				Pipe	24"	68'-0"
16-S	258+84		V.S.P.	18"	32'-0"			
17-S	261+01.5		V.S.P.	12"	26'-0"			
18-S	264+00	91				Pipe	15"	62'-0"

ROADWAY DRAINAGE

F.A. 260-A(2)

Ref. No.	From Station	To Station	Side	Pipe-Lin. Ft. 8"	Pipe-Lin. Ft. 12"	8"x4" Y Each
17-D	255+00	255+90	Lt.	90		
18-D	256+10	258+34	Lt.	224		
19-D	258+36	262+90	Lt.	442		6
20-D	263+10	263+99	Lt.	89		
21-D	264+01	265+00	Lt.		99	
		Totals		845	99	6

GUARD RAIL

F.A. 260-A(2)

Ref. No.	From Station	To Station	Side	Remove & Dispose G. Rail Lin. Ft.	New Guard Rail Lin. Ft.
29-GR	255+00	265+00	Rt.		1000
30-GR	257+75	260+23	Rt.	248	
31-GR	260+90	261+06	Rt.	16	
32-GR	262+84	264+44	Rt.	160	
		Totals		424	1000

REMOVAL OF PAVEMENT

F.A. 260-A(2)

From Station	To Station	Lin. Ft	8"x18' Conc. Pavmt. Sq. Yds.
255+00	265+00	1006	2012
Totals			2012

PAVED GUTTER

F.A.P. 260-A(2)

Ref. No.	From Station	To Station	Side	Type No 3 Modified Lin. Ft.
5-G	257+50	258+33	Lt.	101
6-G	258+37	259+00	Lt.	60
		Total		161

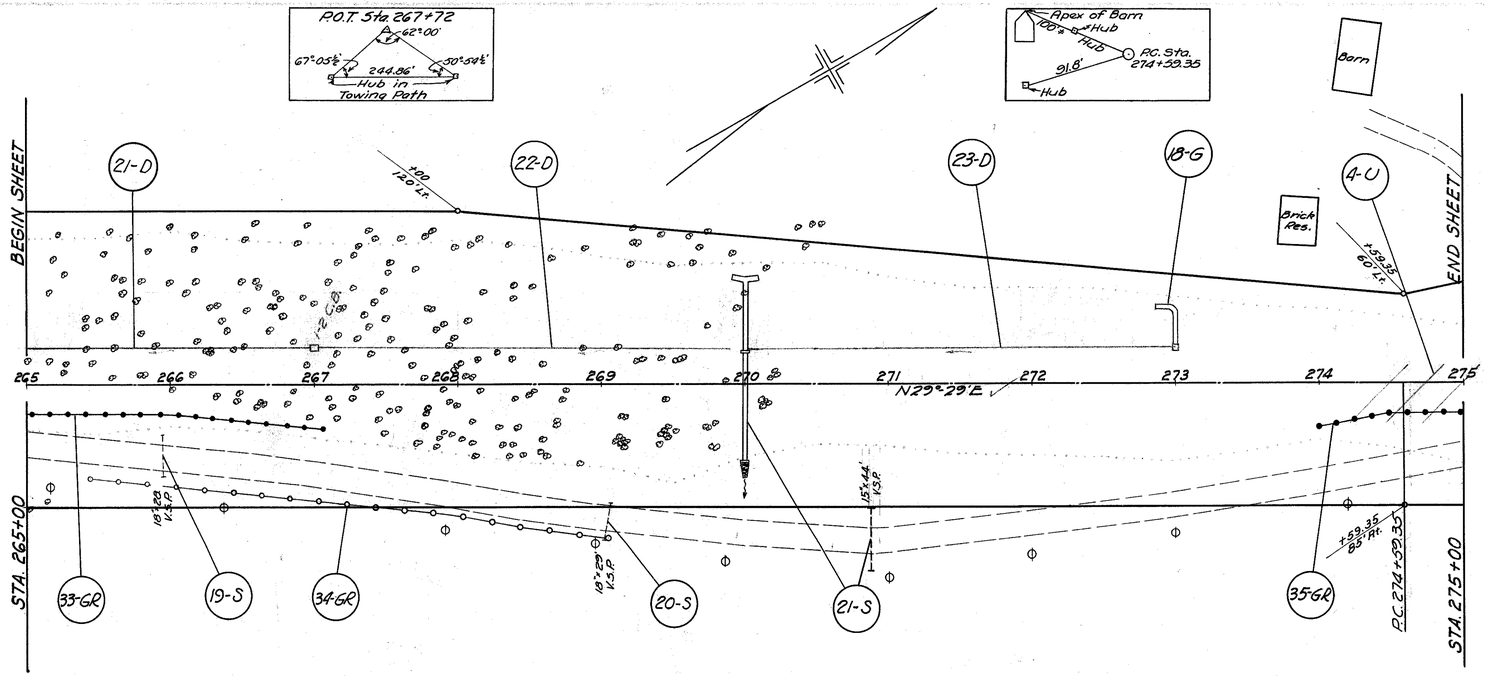
ROADSIDE IMPROVEMENT

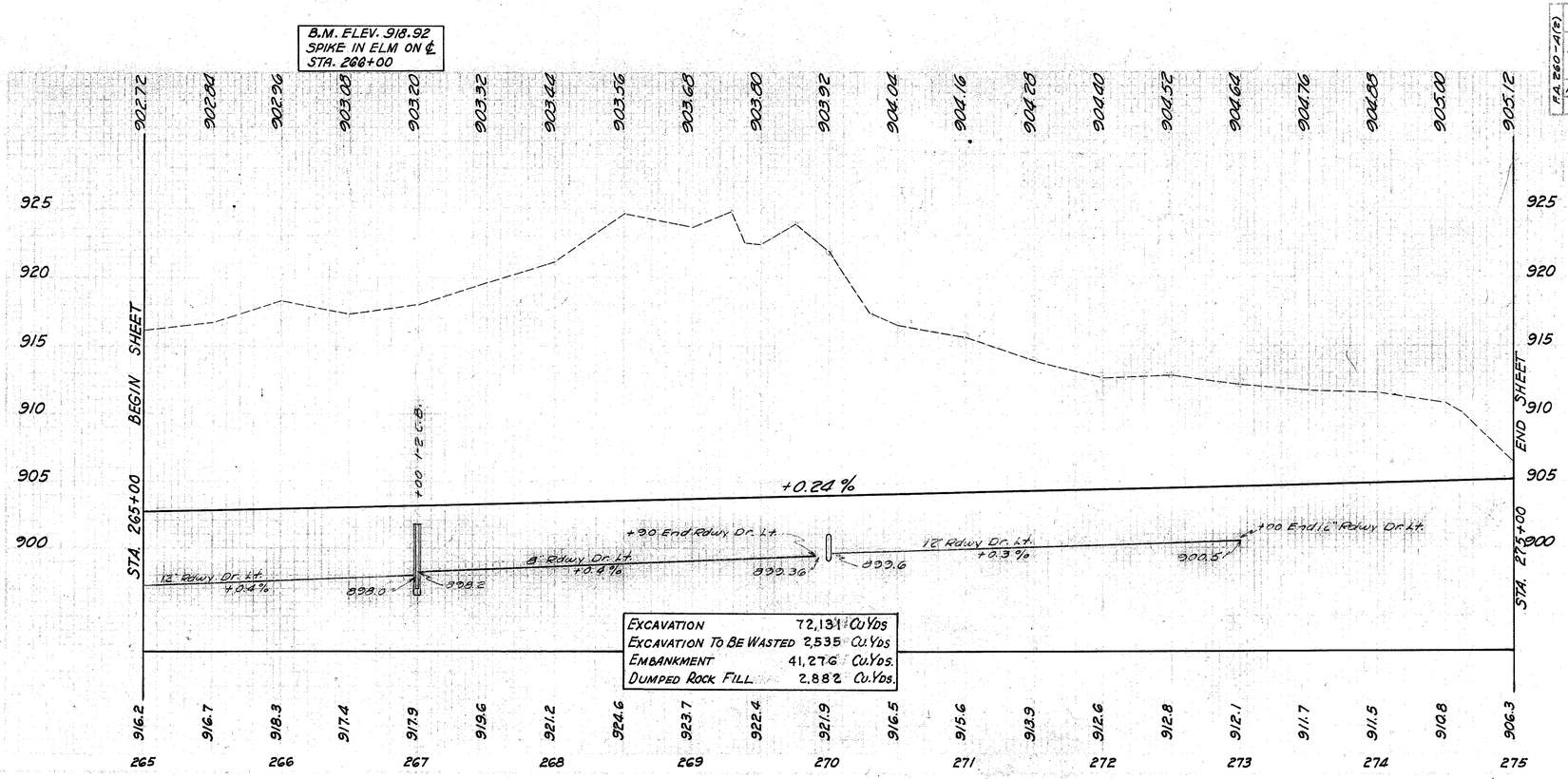
F.A. 260-A(2)

From Station	To Station	Lime Lbs.	Fertilizer Lbs.	Seeding Sq. Yds.
255+00	265+00	4466	558	6200
	Total	4466	558	6200

Project No.	State	Federal Aid	Sheet No.
10	OHIO	260-A(2), 320-C(1), 320-A(2) 1941	15 / 145

TUSCARAWAS COUNTY
S.H. 70 SECS. A(Pt.), D
& MINERAL CITY (Pt.)
DOVER BASIN





PIPE UNDERDRAIN

F.A. 260-A(2)

REF. No.	FROM STATION	TO STATION	PIPE UN. FT 4"	REMARKS
4-U	274+50	275+00	171	45° @ 25' Intervals
TOTALS			171	

		FEDERAL AID		
10	OHIO	260-A(2), 520-(1) 520-A(2)	1941	16 / 145

TUSCARAWAS COUNTY
S.H. 70 SECS. A(PT.), D
& MINERAL CITY (PT.)
DOVER BASIN

STRUCTURES 20 FT. SPAN & UNDER

F.A. 260-A(2)

REF. No	STATION	SEE SHEET No	REMOVALS TYPE	REMOVALS SIZE	REMOVALS LENGTH	NEW WORK TYPE	NEW WORK SIZE	NEW WORK LENGTH
19-S	265+95		V.S.P.	18"	28'-0"			
20-S	269+05		V.S.P.	18"	29'-0"			
21-S	270+00	98	V.S.P.	15"	44'-0"	PIPE	24"	78'-0"

ROADWAY DRAINAGE

F.A. 260-A(2)

REF. No.	FROM STATION	TO STATION	SIDE	PIPE-LIN. FT. 8"	PIPE-LIN. FT. 12"	1-2 C.B. EACH	2-3 * C.B(Med) EACH
21-D	265+00	266+99	LT.		199	1	
22-D	267+01	269+90	LT.	289			
23-D	270+00	273+00	LT.		300		1
TOTALS				289	499	1	1

* See Sheet No. 95 For Detail

REMOVAL OF PAVEMENT

F.A. 260-A(2)

FROM STATION	TO STATION	LIN FT.	8"x18' CONC. PAV'T Sq Yds.
265+00	275+00	1012	2024
TOTALS			2024

GUARD RAIL

F.A. 260-A(2)

REF. No.	FROM STATION	TO STATION	SIDE	REMOVE & DISPOSE G.RAIL LIN. FT.	NEW GUARD RAIL LIN. FT.
33-GR	265+00	267+07	Rt.		208.1
34-GR	265+45	269+05	Rt.	360	
35-GR	274+00	275+00	Rt.		101
TOTALS				360	309.1

ROADSIDE IMPROVEMENT

F.A. 260-A(2)

FROM STATION	TO STATION	LIME Lbs.	FERTILIZER Lbs.	SEEDING Sq. Yds.	SODDING Sq. Yds.	EXCELL Sq. Yds.
265+00	275+00	4648	581	6454	460	460
273+00	274+50					
TOTALS		4648	581	6454	460	460

PAVED GUTTER

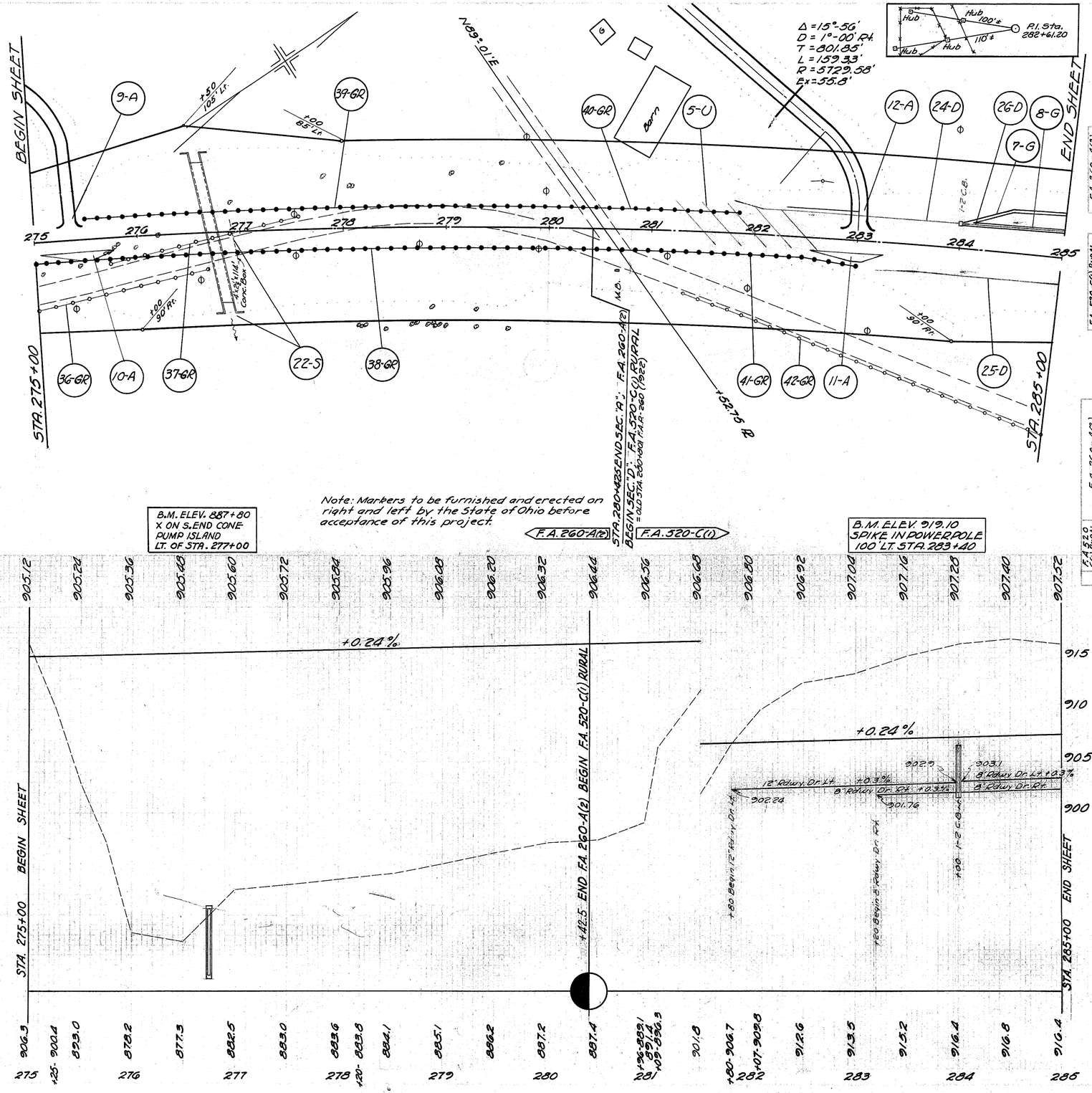
F.A. 260-A(2)

REF. No.	FROM STATION	TO STATION	SIDE	TYPE No. 3 PAVED GUTTER LIN. FT.
18-G	273+00		LT	50
TOTALS				50

DIST.	COUNTY	FEDERAL AID PROJECT	SHEET	YEAR
10	OHIO	260-A(2), 520-C(1) 520-A(2)		1941

17
145

TUSCARAWAS COUNTY
S.H. 70 SECS. A(PT.) D & MINERAL CITY (PT.) DOVER BASIN



Note: Markers to be furnished and erected on right and left by the State of Ohio before acceptance of this project.

F.A. 260-A(2) BEGIN SEC. "A"; F.A. 260-A(2) END SEC. "A"; F.A. 520-C(1) RURAL BEGIN SEC. "D"; F.A. 520-C(1) RURAL END SEC. "D" STA. 280+425 = OLD STA. 280+68 F.A.P. 260 (1922)

B.M. ELEV. 887+80
X ON S. END CONE
PUMP ISLAND
LT. OF STA. 277+00

B.M. ELEV. 919.10
SPIKE IN POWER POLE
100' LT. STA. 283+40

STRUCTURES 20 FT. SPAN & UNDER

F.A. 260-A(2)

Ref. No	Station	See Sheet No	Removals Type	Removals Size	Removals Length	New Work Type	New Work Size	New Work Length
22-S	276+74	99 & 100	Box Culv.	4'x2½"	114'-0"	Box Culvt.	9'x7'	159'-0"

PIPE UNDERDRAIN

F.A. 520-C(1) Rural

Ref. No.	From Station	To Station	Pipe Lin. Ft. 4"	Remarks
5-U	281+50	282+50	274	45° @ 25' Intervals
Totals			274	

REMOVAL OF PAVEMENT

F.A. 260-A(2)

From Station	To Station	Lin. Ft.	8" x 18' Conc. Pavt. Sq Yds.	10" x 18' W.B. Mcdm. Pavt. Sq. Yds.
275+00	275+50	52	104	
SUB-TOTAL			104	

F.A. 520-C(1) Rural

281+50	285+00	357		714
SUB TOTAL				714

GUARD RAIL

F.A. 260-A(2)

Ref. No.	From Station	To Station	S.I.D.E	Remove & Dispose G. Rail Lin. Ft.	Remove & Stack G. Rail Lin. Ft.	New Guard Rail Lin. Ft.
36-GR	275+00	276+68	Rt.	176		
37-GR	275+73	277+57	Both	185		
38-GR	275+00	280+425	Rt.			540.6
39-GR	275+50	280+425	Lt.			494.2
SUB-TOTAL				361		1034.8

F.A. 520-C(1) Rural

40-GR	280+42.5	281+85.3	Lt.			143.3
41-GR	280+42.5	283+01.4	Rt.			258.4
42-GR	281+33	285+00	Rt.		375	
SUB-TOTAL					375	401.7

ROADSIDE IMPROVEMENT

F.A. 260-A(2)

From Station	To Station	Lime Lbs.	Fertilizer Lbs	Seeding Sq Yd.
275+00	280+425	5142	643	7138
275+36	Approach	208	26	292
SUB-TOTALS		5350	669	7430

F.A. 520-C(1) Rural

280+425	285+00	2584	323	3587
SUB-TOTALS		2584	323	3587

DRIVES ROAD & MAIL BOX APPROACHES

F.A. 260-A(2)

Ref No.	Station	Side	Pavement T-10 Sq Yd.	Pavement F-17 Cu Yd.	Pipe Lin. Ft. 12"	Pipe Lin. Ft. 18"	Pipe Lin. Ft. 36"
9-A	275+36	Lt.		23			
10-A*	275+50	Rt.		7			
SUB-TOTALS				30			
11-A*	283+00	Rt.		7			
12-A	283+00	Lt.	1475.6	13	32	42	54
SUB-TOTALS			1475.6	20	32	42	54

F.A. 520-C(1) Rural

* MAIL BOXES

PAVED GUTTER

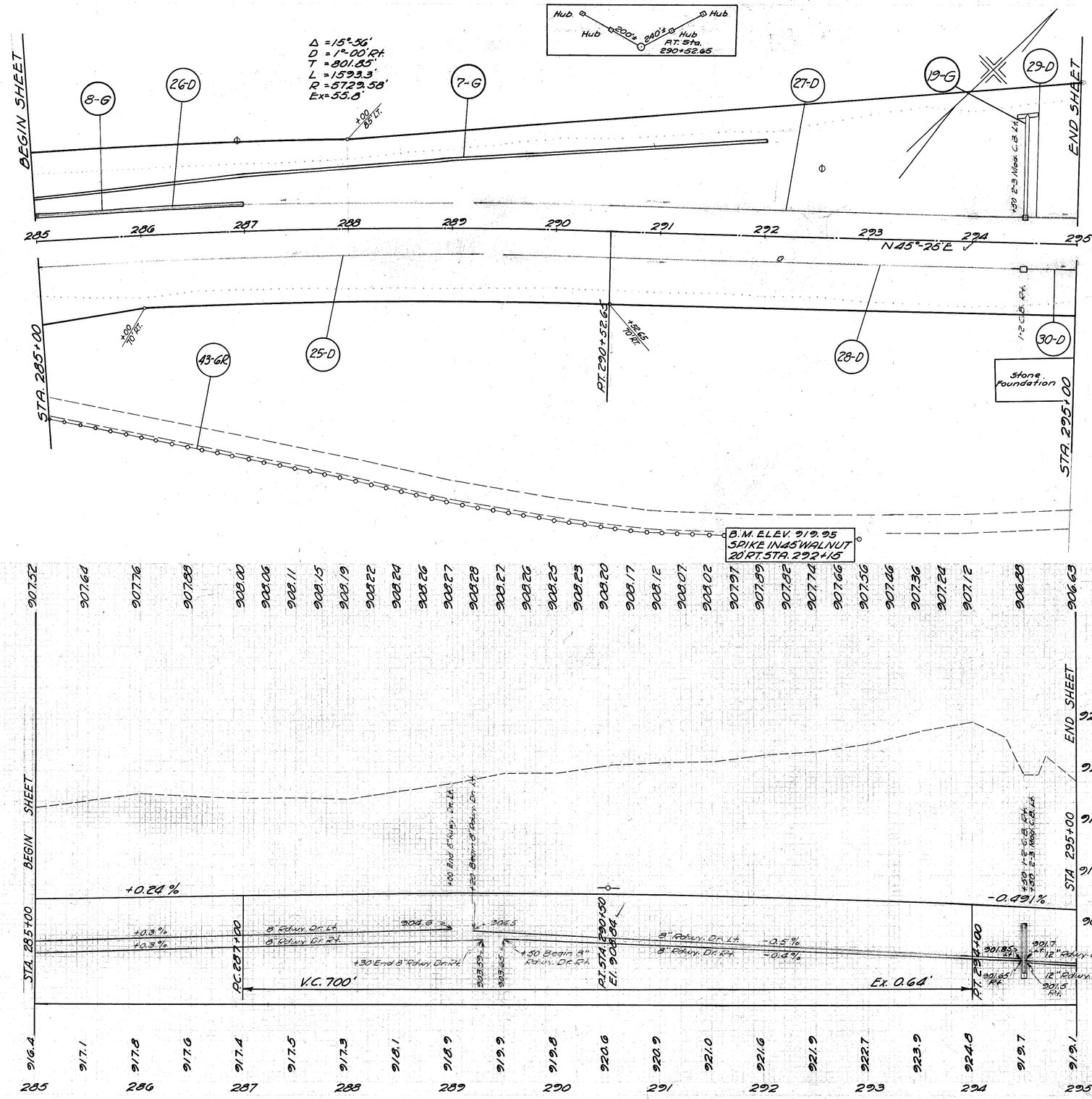
F.A.P. 520-C(1) Rural

Ref. No.	From Station	To Station	Side	Type No. 3 Modified Lin. Ft.
7-G	284+00	285+00	Lt.	100
8-G	284+00	285+00	Lt.	100
Total				200

ROADWAY DRAINAGE

F.A. 520-C(1) Rural

Ref. No.	From Station	To Station	Side	Pipe Lin. Ft. 8"	Pipe Lin. Ft. 12"	Outlet Pipe Lin. Ft. 8"	Outlet Pipe Lin. Ft. 12"	Pipe Under Drives L.F. 12"	Std. J-2 C. Basin Each	12"x4" Y's Each
24-D	281+80	283+99	Lt.		170		20	30	1	2
25-D	283+20	285+00	Rt.	160		20				
26-D	284+01	285+00	Lt.	99						
Totals				259	170	20	20	30	1	2



GUARD RAIL

F.A. 520-C(1) Rural

Ref. No.	From Station	To Station	Side	Remove Steel G. Rail Lin. Ft.
43-GR	285+00	293+00	Lt.	755
		Total		755

ROADWAY DRAINAGE

F.A. 520-C(1) Rural

Ref. No.	From Station	To Station	Side	Pipe-Lin. Ft. 8"	Pipe-Lin. Ft. 12"	1-2 C.B. Each	2-3 Mod. C.B. Each
25-D	285+00	289+30	Rt.	428			
26-D	285+00	289+00	Lt.	402			
27-D	289+20	294+49	Lt.	530			1
28-D	289+50	294+49	Rt.	498		1	
29-D	294+51	295+00	Lt.		49		
30-D	294+51	295+00	Rt.		49		
		Totals		1858	98	1	1

* For Detail of C.B. See Sheet No. 95

ROADSIDE IMPROVEMENT

F.A. 520-C(1) Rural

From Station	To Station	Lime Lbs.	Fertilizer Lbs.	Seeding Sq. Yds.
285+00	295+00	10184	1273	14148
Totals		10184	1273	14148

REMOVAL OF PAVEMENT

F.A. 520-C(1) Rural

From Station	To Station	Lin. Ft.	10"×18' W.B. Mcdm. Pavt. Sq. Yds.
285+00	295+00	993	1986
Totals			1986

PAVED GUTTER

F.A.P. 520-C(1) Rural

Ref. No.	From Station	To Station	Side	Type No 3 Modified Lin. Ft.	Type 4B Lin. Ft.
7-G	285+00	292+00	Lt.	700	
8-G	285+00	287+00	Lt.	200	
19-G	294+50		Lt.	20	98
		Totals		920	98

FEDERAL AID 18

10 OHIO 260-A(2), 320-C(1), 320-A(2) 1941 145

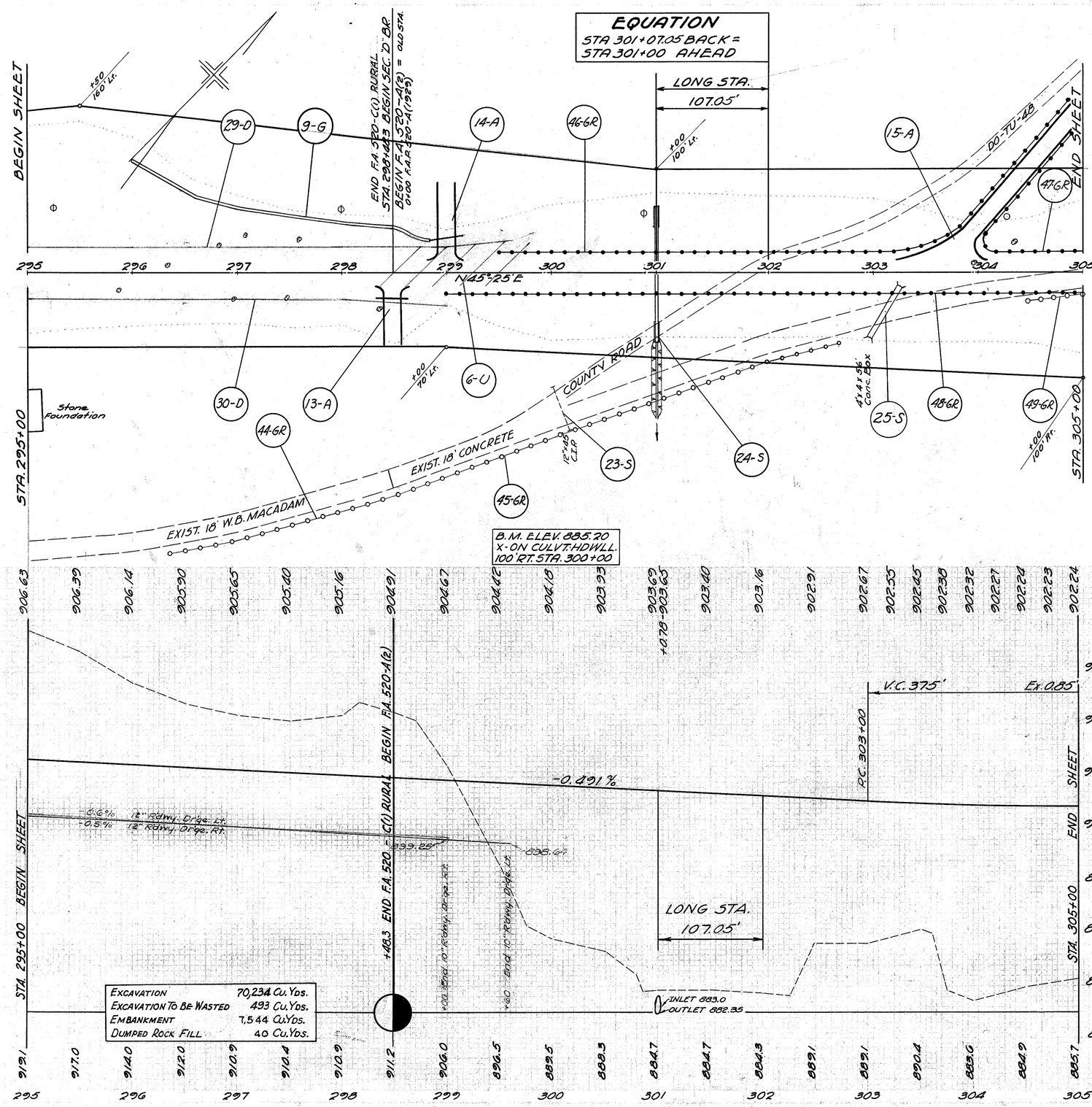
TUSCARAWAS COUNTY
S.H. 70 SECS. A(P.I.), D
& MINERAL CITY (P.I.)
DOVER BASIN

FEDERAL AID 19

10 OHIO 260-A(2), 320-C(1) 1941 145
320-A(2)

TUSCARAWAS COUNTY
S.H. 70 SECS. A(PT.), D & MINERAL CITY (PT.) DOVER BASIN

EQUATION
STA 301+07.05 BACK =
STA 301+00 AHEAD



Excavation	70,234 Cu. Yds.
Excavation To Be Wasted	493 Cu. Yds.
Embankment	7,544 Cu. Yds.
Dumped Rock Fill	40 Cu. Yds.

PIPE UNDERDRAIN

	Ref. No.	From Station	To Station	Pipe Lin. Ft. 4"	Remarks
F.A. 520-A(2)	6-U	298+50	299+50	280	45° @ 25' Intervals
	Totals			280	

STRUCTURES 20 FT. SPAN & UNDER

F.A. 520-A(2)	Ref. No	Station	See Sheet No	Removals Type	Removals Size	Removals Length	New Work Type	New Work Size	New Work Length
	24-S	301+00	101				Pipe	18"	130'-0"
	23-S	300+02		C.I.P.	12"	45'-0"			
	25-S	303+11.5		Box Culvt.	4'x4'	56'-0"			

ROADWAY DRAINAGE

	Ref. No.	From Station	To Station	Side	Pipe Lin. Ft. 12"	Under Drives 12"	Outlet Pipe 12"	Flared Ends Each
F.A. 520-C(1) Rural	29-D	295+00	298+48.3	Lt.	348.3			
	30-D	295+00	298+48.3	Rt.	333.3	15		
	Sub-Total				681.6	15		
F.A. 520-A(2)	29-D	298+48.3	299+60	Lt.	53.7	30	20	4
	30-D	298+48.3	299+00	Rt.	16.7	15	20	
	Sub-Total				70.4	45	40	4

REMOVAL OF PAVEMENT

	From Station	To Station	Lin. Ft.	10'x18' W.B. Mcdm. Pavmt. Sq. Yds	8"x18' Conc. Pavt. Sq. Yds.
F.A. 520-C(1) Rural	295+00	298+48.3	355	710	
	Sub-Total			710	
F.A. 520-A(2)	298+48.3	305+00	690		1380
	Sub-Total				1380

GUARD RAIL

	Ref. No.	From Station	To Station	Side	Remove Double G. Rail Lin. Ft.	Remove Single G. Rail Lin. Ft.	New Guard Rail Lin. Ft.
F.A. 520 C(1) Rural	44-GR	296+35	298+48.3	Rt.	224		
	Sub-Total				224		
F.A. 520-A(2)	45-GR	298+48.3	302+67	Rt.		450	
	46-GR	299+48.25	303+84	Lt.			*450
	47-GR	304+08	305+00	Lt.			*118.52
	48-GR	299+00	305+00	Rt.			607.05
	49-GR	304+27	305+00	Rt.		54	
	Sub-Total					504	1175.6

*Includes curved guard rail at approaches

PAVED GUTTER

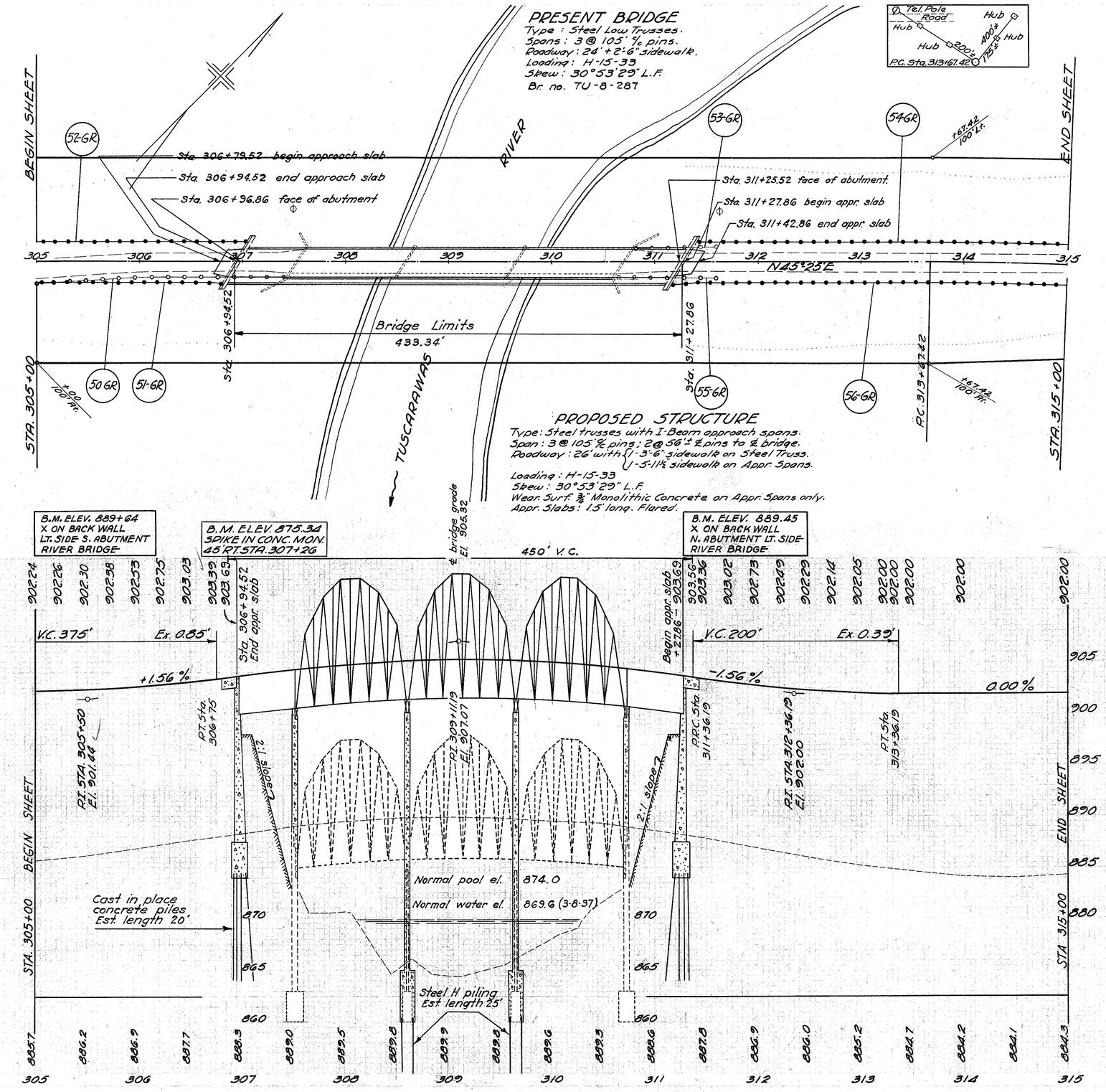
	Ref. No	From Station	To Station	Side	Type No 3 Modified Lin. Ft.
F.A. 520-C(1) Rural	9-G	296+00	298+48.3	Lt.	266
	Sub Total				266
F.A. 520-A(2)	9-G	298+48.3	298+00	Lt.	34
	Sub Total				34

DRIVES ROAD & MAIL BOX APPROACHES

F.A. 520-A(2)	Ref. No.	Station	Side	Pavement 7-10 Sq. Yd.	Pavement 1-17 Cu. Yd.	New Guard Rail Lin. Ft.	Pipe Lin. Ft. 15"
	13-A	298+50	Rt.		8		24
	14-A	299+00	Lt.		11		24
	15-A	303+59.5	Lt.		151	650	
	Totals				170	650	48

ROADSIDE IMPROVEMENT

	From Station	To Station	Lime Lbs.	Fertilizer Lbs.	Seeding Sq. Yds.
F.A. 520-C(1) Rural	295+00	298+48.3	3472	434	4821
	Sub-Totals		3472	434	4821
F.A. 520-A(2)	298+48.3	305+00	3746	468	5200
	303+595	Approach	1456	182	2024
	Sub Totals		5202	650	7224



ROADSIDE IMPROVEMENT					
FA 320-A(2)	From Station	To Station	Lime-Lbs.	Fertilizer Lbs.	Seeding Sq. Yds.
	305+00	315+00	3530	441	4900
		Total	3530	441	4900

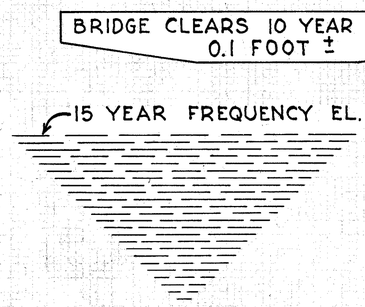
GUARD RAIL						
FA. 520-A(2)	Ref No.	From Station	To Station	Side	Remove & Store G. Rail Lin. Ft.	New Guard Rail Lin. Ft.
	50-GR	305+00	307+40	Rt.	230	
	51-GR	305+00	306+80.45	Rt.		180.45
	52-GR	305+00	307+06.48	Lt.		206.48
	53-GR	310+81	311+60	Lt.	78	
	54-GR	311+42	315+00	Lt.		358.35
	55-GR	310+65	311+59	Rt.	94	
	56-GR	311+18	315+00	Rt.		381.65
	Totals				402	1126.9

FEDERAL AID 20
10 OHIO 260-A(2), 320-C(1), 320-A(2) 1941 145

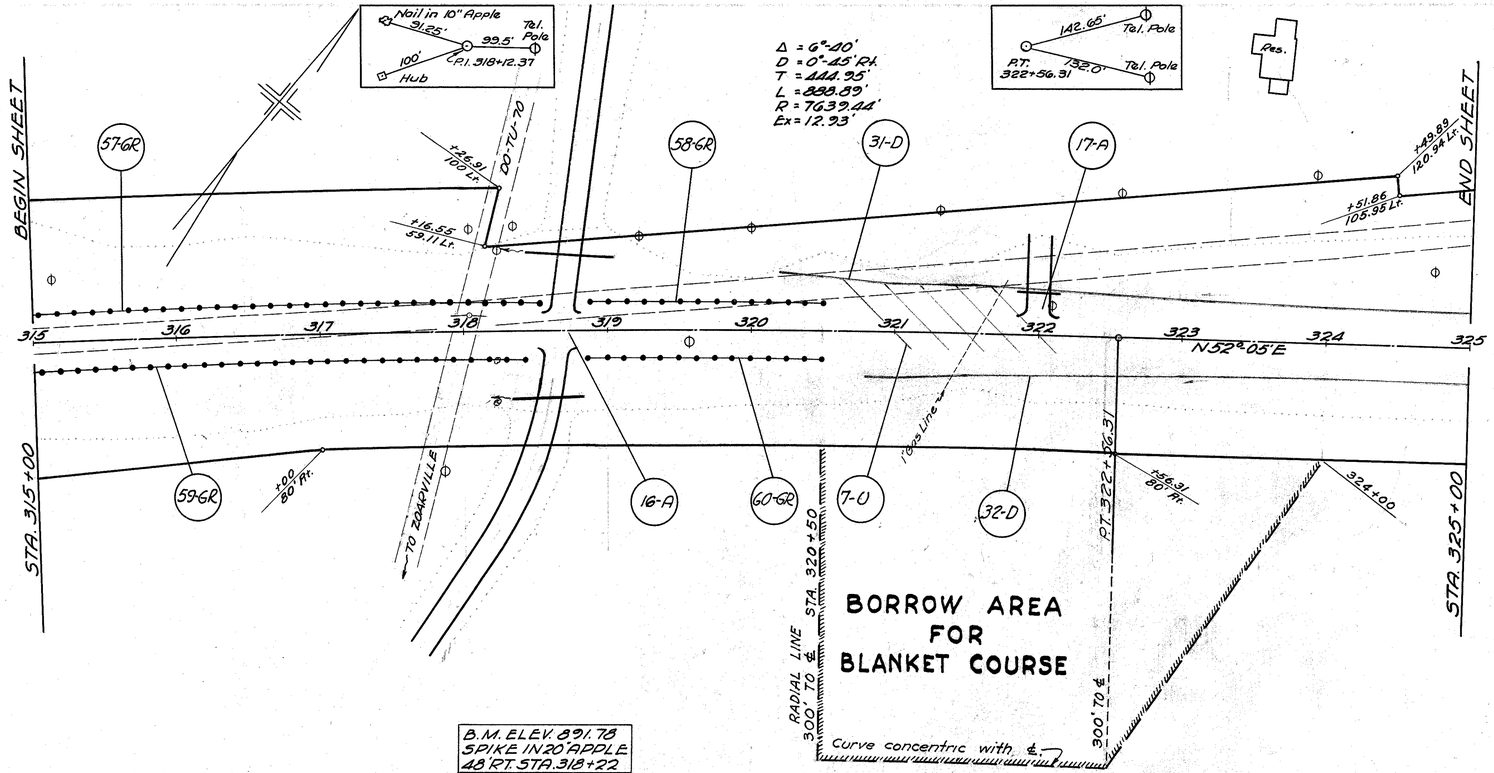
TUSCARAWAS COUNTY
S.H. 70 SECS. A(P4), D
& MINERAL CITY (P4)
DOVER BASIN

REMOVAL OF PAVEMENT				
FA. 320-A(2)	From Station	To Station	Ln. Ft.	8"x18' Conc. Pavmt. Sq Yds.
	305+00	307+42	242	484
	310+82	315+00	418	836
	Totals			1320

BRIDGE CLEARS 10 YEAR FREQUENCY
0.1 FOOT ±



TUSCARAWAS COUNTY
S.H. 70 SECS. A(P4), D & MINERAL CITY (P4)
DOVER BASIN



PIPE UNDERDRAIN

F.A. 520-A(2)

Ref. No.	From Station	To Station	Pipe Lin. Ft. 4"	Remarks
7-U	321+00	322+00	324	45°@25' Intervals
Totals			324	

ROADWAY DRAINAGE

F.A. 520-A(2)

Ref. No.	From Station	To Station	Side	12"x4' Y Each	Pipe Lin. Ft. 12"	Outlet Pipe Lin. Ft. 12"	Pipe Under Drives Lin. Ft. 12"
31-D	320+20	325+00	Lt.	5	424	20	30
32-D	320+80	325+00	Rt.		400	20	
Totals				5	824	40	30

REMOVAL OF PAVEMENT

F.A. 520-A(2)

From Station	To Station	Lin. Ft.	8"x 18' Concr. Pavem't. Sq Yds.
315+00	325+00	1005	2010
Totals			2010

GUARD RAIL

F.A. 520-A(2)

Ref. No.	From Station	To Station	Side	New Guard Rail Lin. Ft.
57-GR	315+00	318+52.23	Lt.	354.15
58-GR	318+87.9	320+50	Lt.	162.50
59-GR	315+00	318+44.22	Rt.	343.35
60-GR	318+87.9	320+50	Rt.	162.50
Totals				1022.50

DRIVES ROAD & MAIL BOX APPROACHES

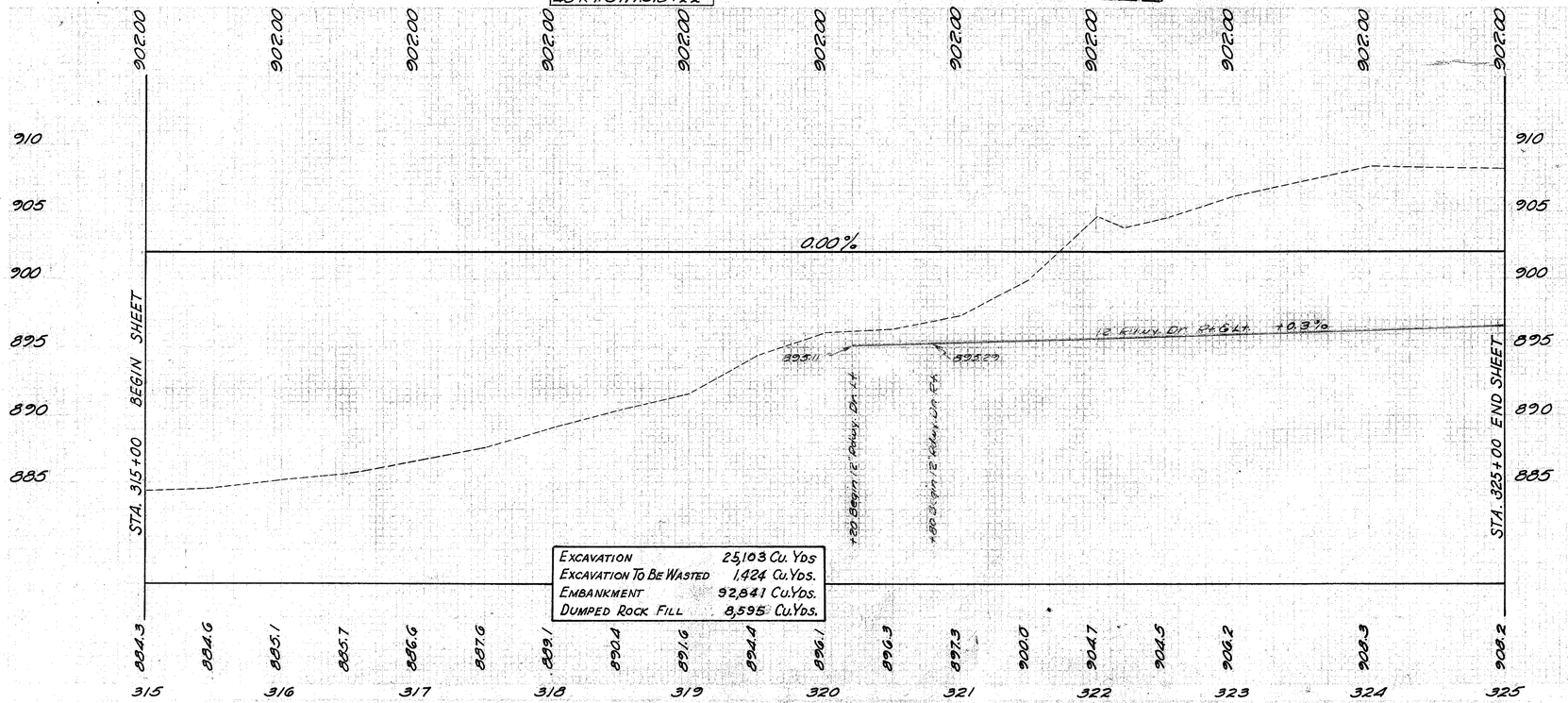
F.A. 520-A(2)

Ref. No.	Station	Side	7-10 Sq Yo.	Chan. Exc. Cu.Yd.	I-17 Cu.Yo.	Pipe Lin. Ft. 12"	Pipe Lin. Ft. 18"
16-A	318+66	Both		41	276		158
17-A	322+00	Lt.			9	30	
Totals				41	285	30	158

ROADSIDE IMPROVEMENT

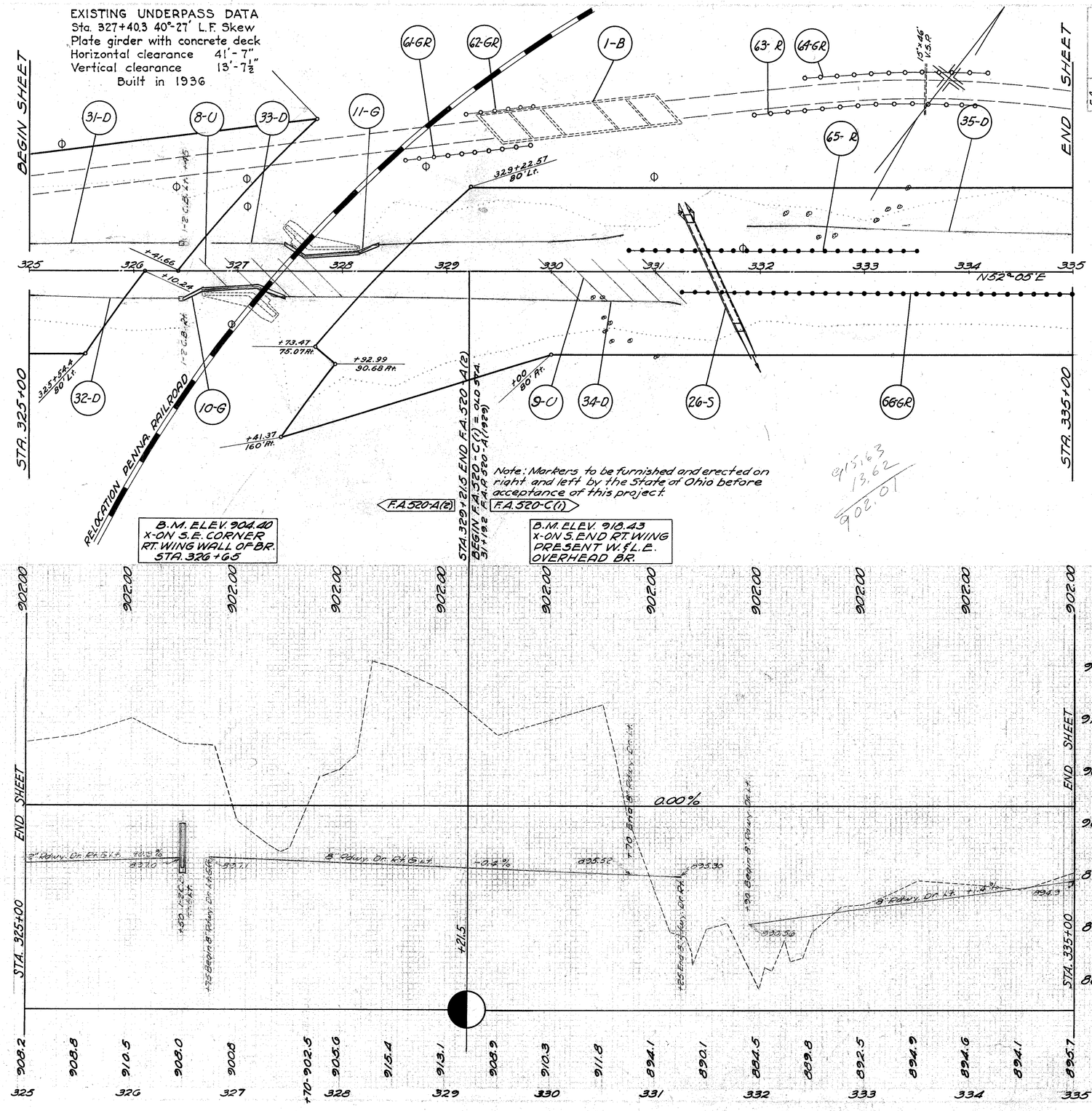
F.A. 520-A(2)

From Station	To Station	Lime-Lbs.	Fertilizer Lbs.	Seeding Sq. Yds.
315+00	325+00	5997	750	8325
318+68	Approach	1808	226	2510
	Total	7805	976	10835



Excavation	25,103 Cu. Yds
Excavation To Be Wasted	1,424 Cu. Yds.
Embankment	32,841 Cu. Yds.
Dumped Rock Fill	8,595 Cu. Yds.

EXISTING UNDERPASS DATA
Sta. 327+40.3 40°-27' L.F. Skew
Plate girder with concrete deck
Horizontal clearance 41'-7"
Vertical clearance 13'-7½"
Built in 1936



PIPE UNDERDRAIN

F.A. 520-A(2)

REF. No.	FROM STATION	TO STATION	PIPE LIN. FT. 4"	REMARKS
8-U	326+75	327+75	230	45°@25' Inter.
SUB-TOTAL			230	
9-U	330+00	331+00	297	45°@25' Inter.
SUB-TOTAL			297	

F.A. 520-C(1) RURAL

FEDERAL AID 22
10 OHIO 260-A(2), 520-C(1) 1941 145
520-A(2)

TUSCARAWAS COUNTY
S.H. TO SECS. A(PT.), D
& MINERAL CITY (PT.)
DOVER BASIN

STRUCTURES 20 FT. SPAN & UNDER

F.A. 520-C(1) RURAL

REF. No	STATION	SEE SHEET No	REMOVALS TYPE	REMOVALS SIZE	REMOVALS LENGTH	NEW WORK TYPE	NEW WORK SIZE	NEW WORK LENGTH
26-S	331+55	102				BOX CLVT.	5'x4'	123'-6"

ROADWAY DRAINAGE

F.A. 520-A(2)

REF. No.	FROM STATION	TO STATION	SIDE	PIPE LIN. FT. 8"	PIPE LIN. FT. 12"	C.B. 1-A EACH	8"x4" Y EACH	OUTLET PIPE LIN. FT. 8"	45° BENDS 8"
31-D	325+00	326+44	LT.		144	1			
32-D	325+00	326+44	RT.		144	1			
33-D	326+75	329+21.5	LT.	248					4
34-D	326+75	329+21.5	RT.	246			5		2
SUB-TOTAL				494	288	2	5		6
33-D	329+21.5	330+70	LT.	134				15	
34-D	329+21.5	331+25	RT.	181			4	15	
35-D	331+90	335+00	LT.	290				20	
SUB-TOTALS				605			4	50	

F.A. 520-C(1) RURAL

GUARD RAIL

F.A. 520-C(1) RURAL

REF. No.	FROM STATION	TO STATION	SIDE	REMOVE & STORE G. RAIL LIN. FT.	NEW GUARD RAIL LIN. FT.
61-GR	328+60	329+80	LT.	120	
62-GR	329+19	329+82	LT.	64	
63-GR	331+94	334+05	LT.	212	
64-GR	332+42	334+18	LT.	176	
65-GR	330+75	333+50	LT.		275
66-GR	331+25	335+00	RT.		375
TOTALS				572	650

REMOVAL OF PAVEMENT

F.A. 520-A(2)

FROM STATION	TO STATION	LIN. FT.	8"x18' CONC. PAVM'T SQ. YDS.
325+00	329+21.5	445	890
SUB-TOTALS			890

F.A. 520-C(1) RURAL

331+15	335+00	386	772
SUB-TOTALS			772

PAVED GUTTER

F.A. 520-A(2)

REF No	FROM STATION	TO STATION	SIDE	TYPE No. 3 MODIFIED LIN FT.
10-G	326+45	327+45	RT.	104
11-G	327+45	328+35	LT.	94
TOTAL				198

ROADSIDE IMPROVEMENT

FROM STATION	TO STATION	LIME-Lbs.	FERTILIZER Lbs.	SEEDING Sq. Yds.
325+00	329+21.5	4336	542	6017
SUB-TOTALS		4336	542	6017
329+21.5	335+00	4012	500	5750
SUB-TOTALS		4012	500	5570

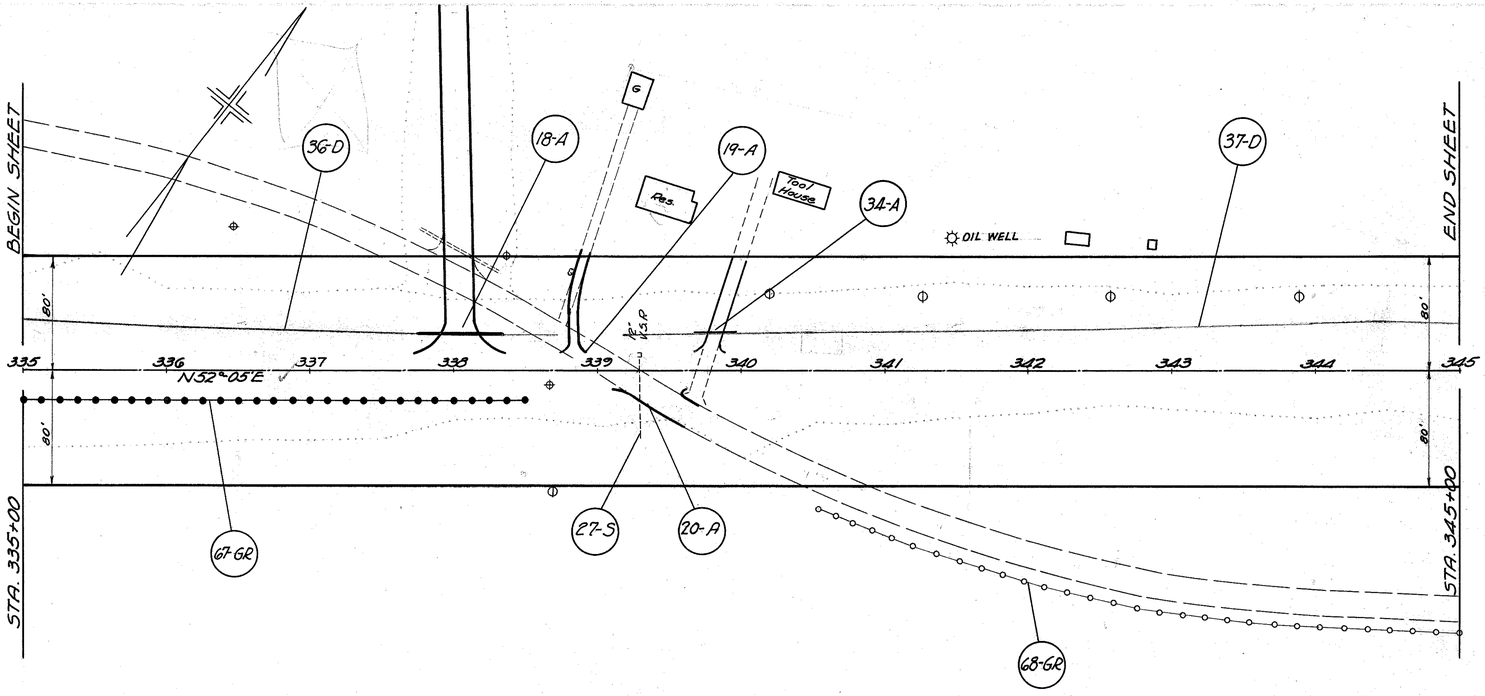
F.A. 520-A(2)

F.A. 520-C(1) RURAL

STRUCTURES OVER 20 FT. SPAN

F.A. 520-C(1) RURAL

REF. No	STATION	REMOVALS TYPE	REMOVALS SPAN	REMOVALS LENGTH	REMOVE EXISTING STRUCTURE LUMP SUM	REMARKS
1-B	Lt. 330+30	BEAM BRIDGE	4@32', 1@36'	175'	1	REMOVE ENTIRE STRUCTURE TO EXIST. GROUND LINE
TOTALS					1	



ROADSIDE IMPROVEMENT

EA.520-C(1) RURAL

From Station	To Station	Lime Lbs.	Fertiliz. Lbs.	Seeding Sq.Yds.	2" Topsoil Sq.Yds.	Sodding Sq.Yds.
335+00	345+00	5746	718	7976		
338+05	APPROACH	1096	137	1524		
338+90	339+80				200	200
TOTALS		6842	855	9500	200	200

FEDERAL AID 23

10 OHIO 260-A(2),520-C(1) 1941 145
320-A(2)

TUSCARAWAS COUNTY
S.H. 70 SECS. A(P1), D
& MINERAL CITY(P1)
DOVER BASIN

STRUCTURES 20 FT. SPAN & UNDER

F.A. 520-C(1)

Ref. No	Station	See Sheet No	Removals Type	Removals Size	Removals Length	New Work Type	New Work Size	New Work Length
27-S	339+29		V.S.P.	12"	50'-0"			

ROADWAY DRAINAGE

F.A.520-C(1) RURAL

Ref. No.	From Station	To Station	Side	Pipe Lin.Ft. 8"	Pipe Under Drives Lin.Ft. 8"
36-D	335+00	338+75	LT.	325	50
37-D	339+20	345+00	LT.	560	20
TOTALS				885	70

REMOVAL OF PAVEMENT

F.A.-520-C (1) RURAL

From Station	To Station	Lin. Ft.	8"x18' Conc. Pav't. Sq.Yds.
335+00	345+00	1070	2140
TOTALS			2140

GUARD RAIL

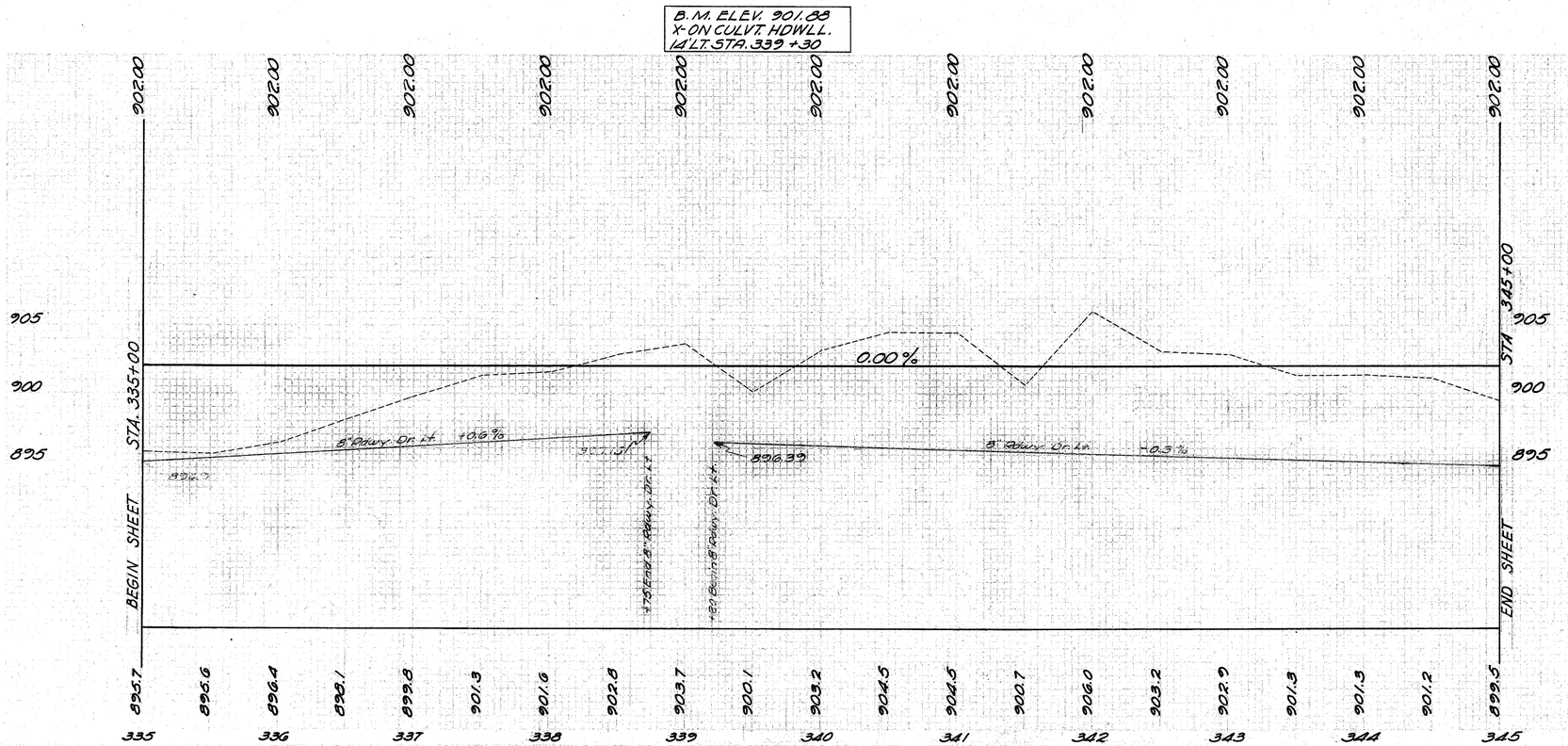
F.A. 520-C(1) RURAL

Ref. No.	From Station	To Station	Side	Remove & Store G. Rail Lin. Ft.	New Guard Rail Lin. Ft.
67-GR	335+00	338+50	Rt.		350
68-GR	340+54	345+00	Rt.	460	
TOTALS				460	350

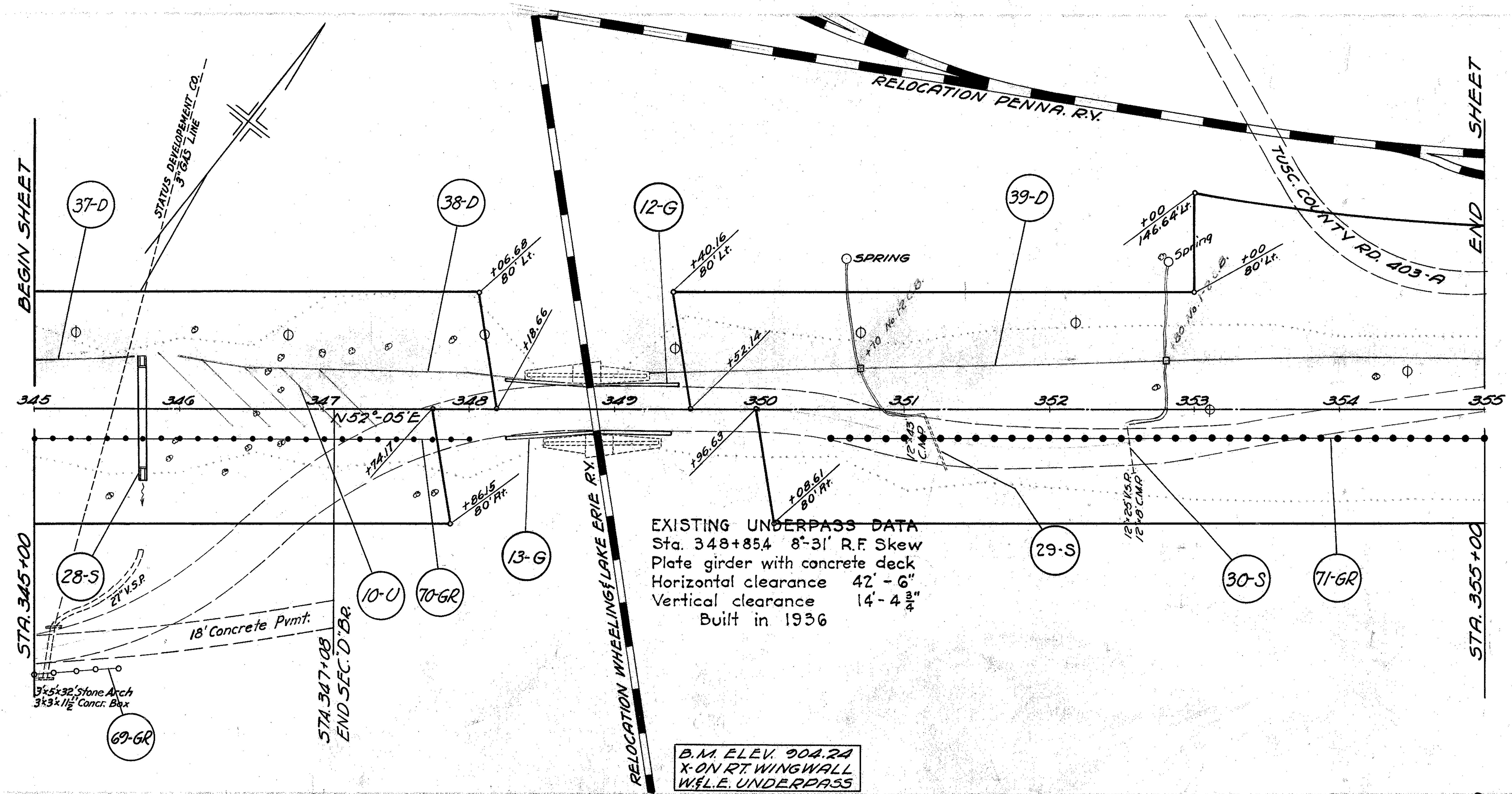
DRIVES, ROAD & MAIL BOX APPROACHES

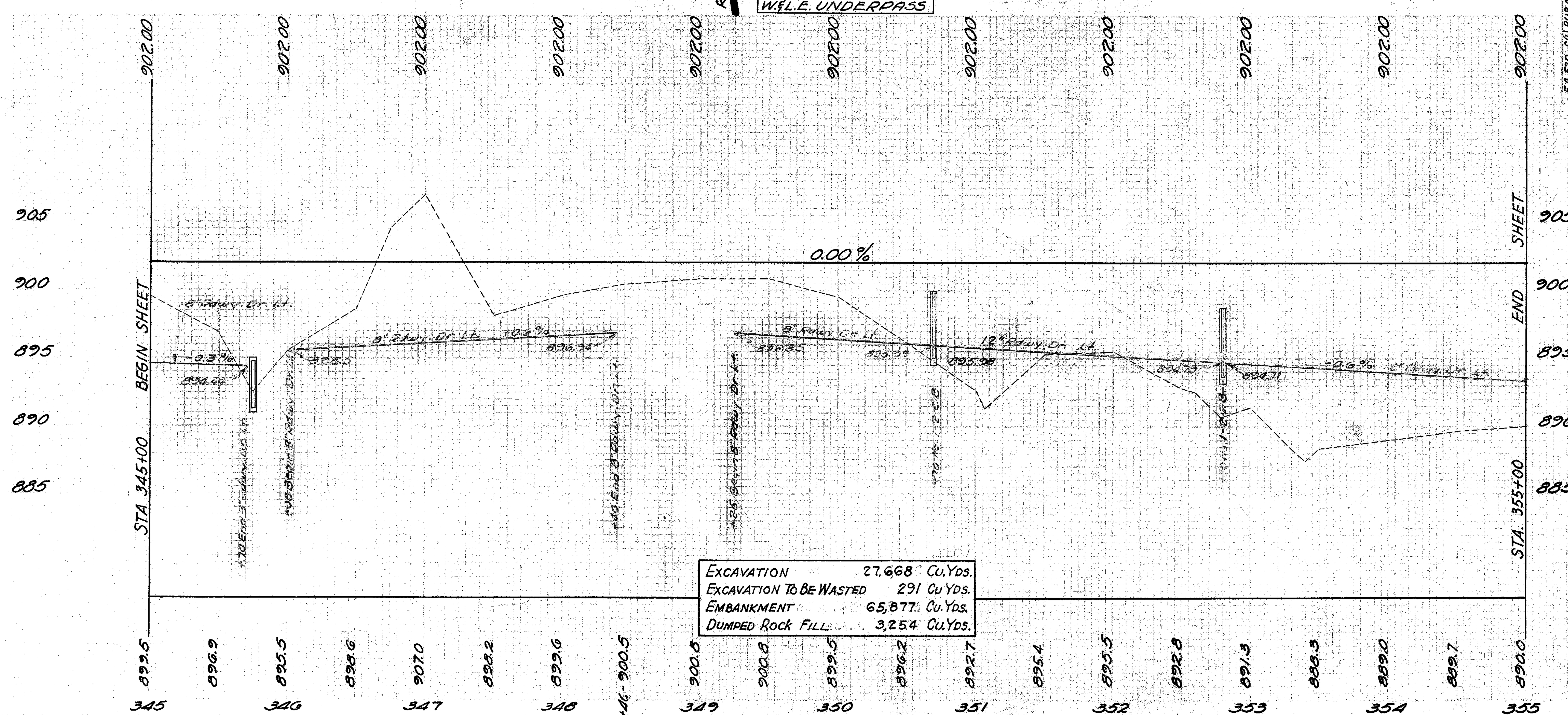
F.A. 520-C(1) RURAL

Ref. No.	Station	Side	Pavement T-10 Sq.Yo.	Pavement T-11 Sq.Yo.	Pavement I-17 Cu.Yo.	Pipe Lin.Ft. 12"	Remove Store 15" Pipe Lin.Ft.
18-A	338+05	LT.			163	58	65
19-A	338+85	LT.			12		
20-A	339+25	RT.			4		
34-A	339+75	LT.			12	30	
TOTALS					191	88	65



TUSCARAWAS COUNTY
S.H. 70 SECS. A(Pt), D
& MINERAL CITY (Pt)
DOVER BASIN





PIPE UNDERDRAIN

F.A. 520-C(1) RURAL

REF. No.	FROM STATION	TO STATION	PIPE LIN. FT. 4"	REMARKS
10-U	346+25	347+25	289	45°@25' Intervls
TOTALS			289	

STRUCTURES 20 FT. SPAN & UNDER

F.A. 520-C(1) RURAL

REF No	STATION	SEE SHEET No	REMOVALS TYPE	REMOVALS SIZE	REMOVALS LENGTH	NEW WORK TYPE	NEW WORK SIZE	NEW WORK LENGTH
28-S	345+75	103				BOX CULVT.	5'x4'	88'-0"
29-S	351+14		C.M.P.	12"	43'-0"			
30-S	352+52		V.S.P. C.M.P.	12"	33'-0"			

ROADWAY DRAINAGE

F.A. 520-C(1) RURAL

REF. No.	FROM STATION	TO STATION	SIDE	PIPE LIN. FT. 8"	PIPE LIN. FT. 12"	OUTLET PIPE 8" LIN. FT.	No 1-2 C.B. EACH	8"x4" Y's EACH
37-D	345+00	345+70	LT.	55		15		
38-D	346+00	348+40	LT.	218		15		4
39-D	349+25	355+00	LT.	144	427		2	
TOTALS				417	427	30	2	4

GUARD RAIL

F.A. 520-C(1) RURAL

REF. No.	FROM STATION	TO STATION	SIDE	REMOVE & STORE G. RAIL LIN. FT.	NEW GUARD RAIL LIN. FT.
69-GR	345+00	345+59	RT.	59	
70-GR	345+00	348+00	RT.		300
71-GR	350+50	355+00	RT.		450
TOTALS				59	750

REMOVAL OF PAVEMENT

F.A. 520-C(1) RURAL

FROM STATION	TO STATION	LIN. FT.	10"x18' W.B. MACADM. PAVMT. SQ. YD.	8"x18' CONC PAVM'T. SQ YD.
345+00	347+08	210		420
TOTALS				420

PAVED GUTTER

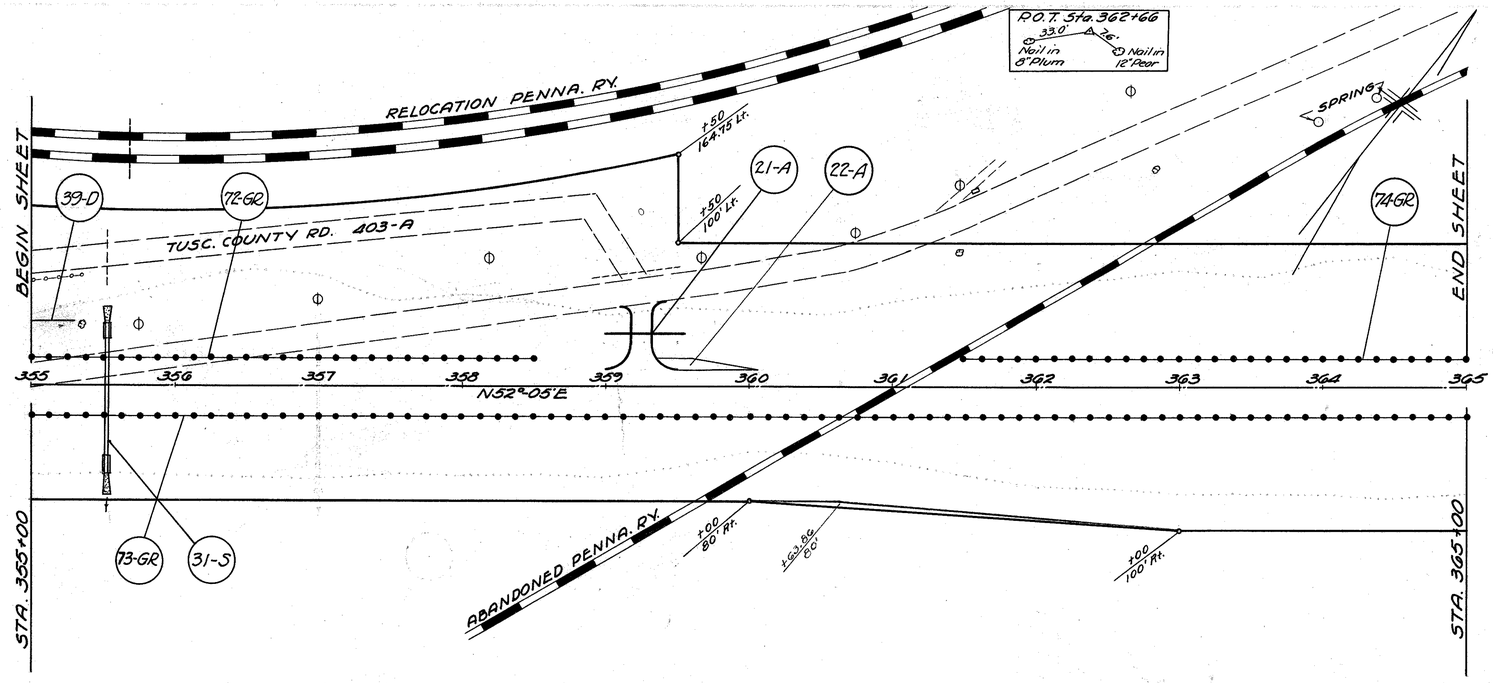
F.A.P. 520-C(1) RURAL

REF. No	FROM STATION	TO STATION	SIDE	TYPE No 3 MODIFIED LIN. FT.
12-G	348+20	349+45	LT.	127
13-G	348+20	349+40	RT.	122
		TOTAL		249

ROADSIDE IMPROVEMENT

F.A. 520-C(1) RURAL

FROM STATION	TO STATION	LIME LBS.	FERTILIZER LBS.	SEEDING SQ. YD.
345+00	355+00	5950	744	8260
TOTALS		5950	744	8260



ROADSIDE IMPROVEMENT

F.A. 520-C(1) RURAL

From Station	To Station	Lime Lbs.	Fertilizer Lbs.	Seeding Sq. Yd.
355+00	365+00	8054	1007	11180
359+25	APPROACH	48	6	66
TOTALS		8102	1013	11246

FEDERAL AID

10	0H10	260-A(2) 520-C(1) 320-A(2)	1941	25	145

TUSCARAWAS COUNTY
S.H. 70 SECS. A(PT), D
& MINERAL CITY (PT)
DOVER BASIN

STRUCTURES 20 FT. SPAN & UNDER

F.A. 520-C(1) Rural

Ref. No	Station	See Sheet No	Removals Type	Removals Size	Removals Length	New Work Type	New Work Size	New Work Length
31-S	355+53	104				PIPE	18"	108'-0"

ROADWAY DRAINAGE

F.A. 520-C(1) RURAL

Ref. No.	From Station	To Station	Side	Pipe Lin. Ft. 12"	Outlet Pipe Lin. Ft. 12"
39-D	355+00	355+30	LT	10	20
TOTALS				10	20

REMOVAL OF PAVEMENT

F.A. 520-C(1) RURAL

From Station	To Station	Lin. Ft.	10'x18' W.B. Mac'dm Pav't. Sq. Yds.

GUARD RAIL

F.A. 520-C(1) RURAL

Ref. No.	From Station	To Station	Side	New Guard Rail Lin. Ft.
72-GR	355+00	358+50	LT.	350
73-GR	355+00	365+00	RT.	1000
74-GR	361+50	365+00	LT.	350
TOTALS				1700

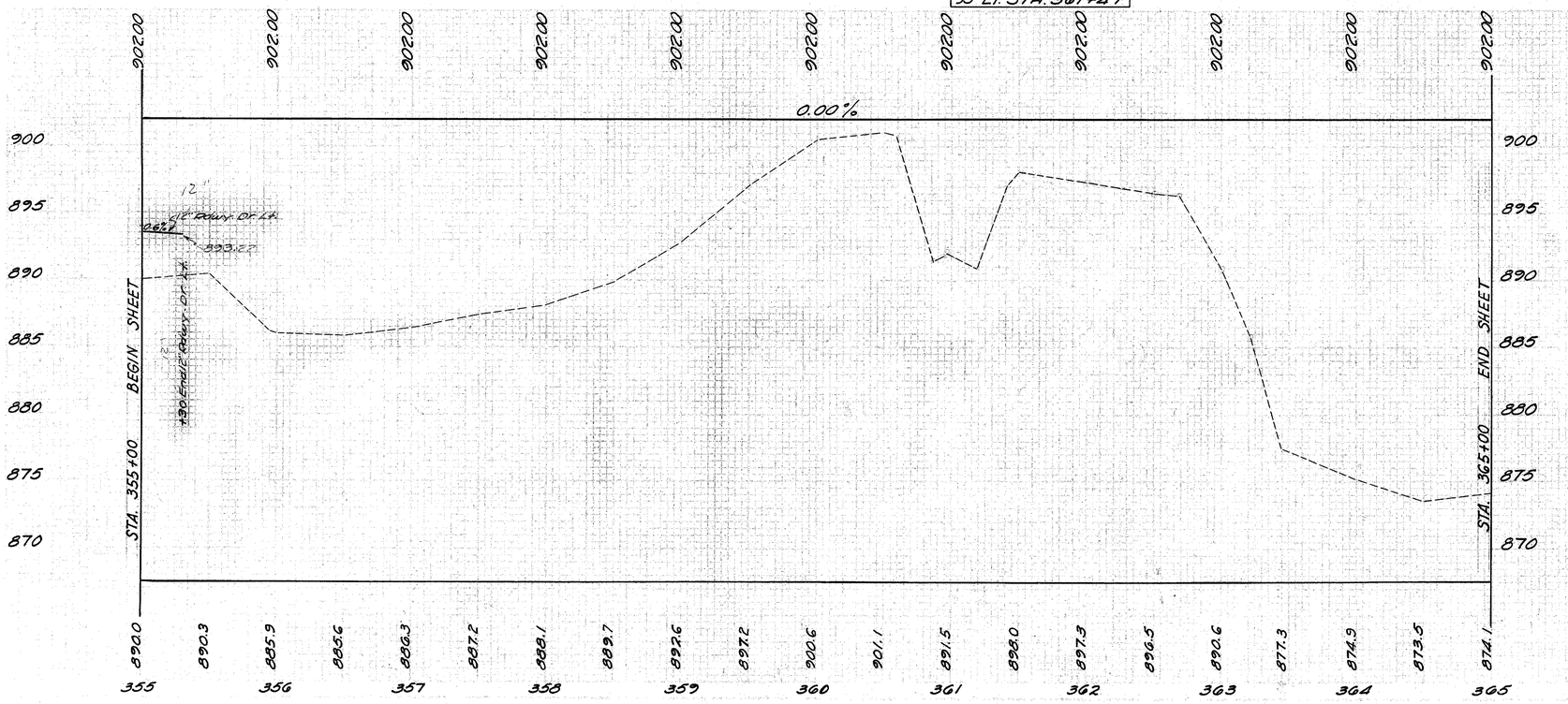
DRIVES ROAD & MAIL BOX APPROACHES

F.A. 520-C(1) RURAL

Ref. No.	Station	Side	Pavement T-10 Sq. Yd.	Pavement I-17 Cu. Yd.	Pipe Lin. Ft. 18"
21 A	359+25	LT.		16	38
22-A*	359+50	LT.		7	
TOTALS				23	38

* Mail Box

B.M. ELEV. 910.53
SPIKE IN 18" WALNUT
35' LT. STA. 361+47



FEDERAL AID 26

10 OHIO 260-A(2), 520-C(1), 1041 145
520-A(2)

TUSCARAWAS COUNTY
S.H. 70 SECS. A(P4), D
& MINERAL CITY (P4)
DOVER BASIN

F.A. 520-C(1) RURAL

STRUCTURES 20 FT. SPAN & UNDER

Ref. No	Station	See Sheet No	Removals			New Work		
			Type	Size	Length	Type	Size	Length
32-S	365+50	106				Ext. Existing Pipe	24"	156'-0"
33-S	370+12	105				Box Culv.	5'x4'	153'-6"

F.A. 520-C(1) RURAL

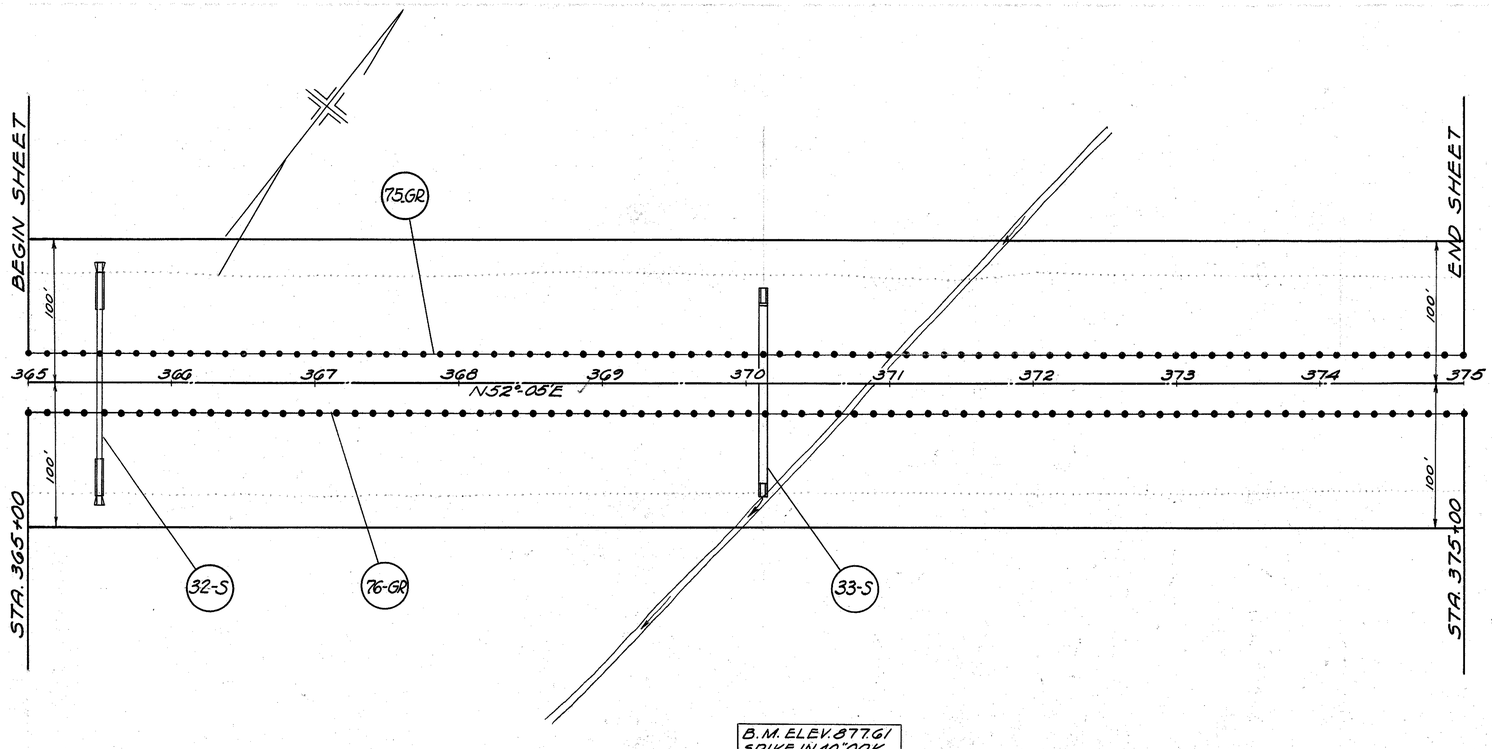
GUARD RAIL

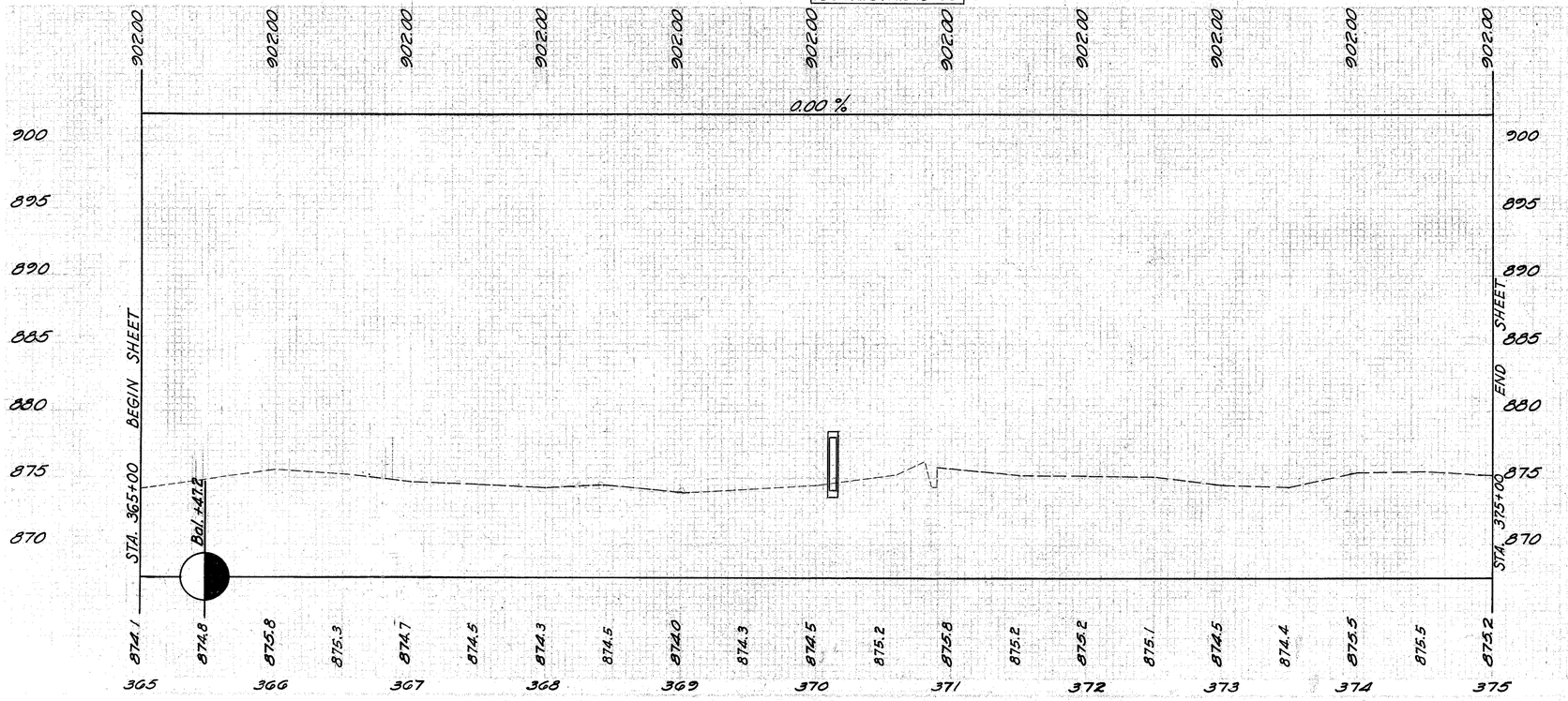
Ref. No.	From Station	To Station	Side	New Guard Rail Lin. Ft.
75-GR	365+00	375+00	Lt.	1000
76-GR	365+00	375+00	Rt.	1000
	Totals			2000

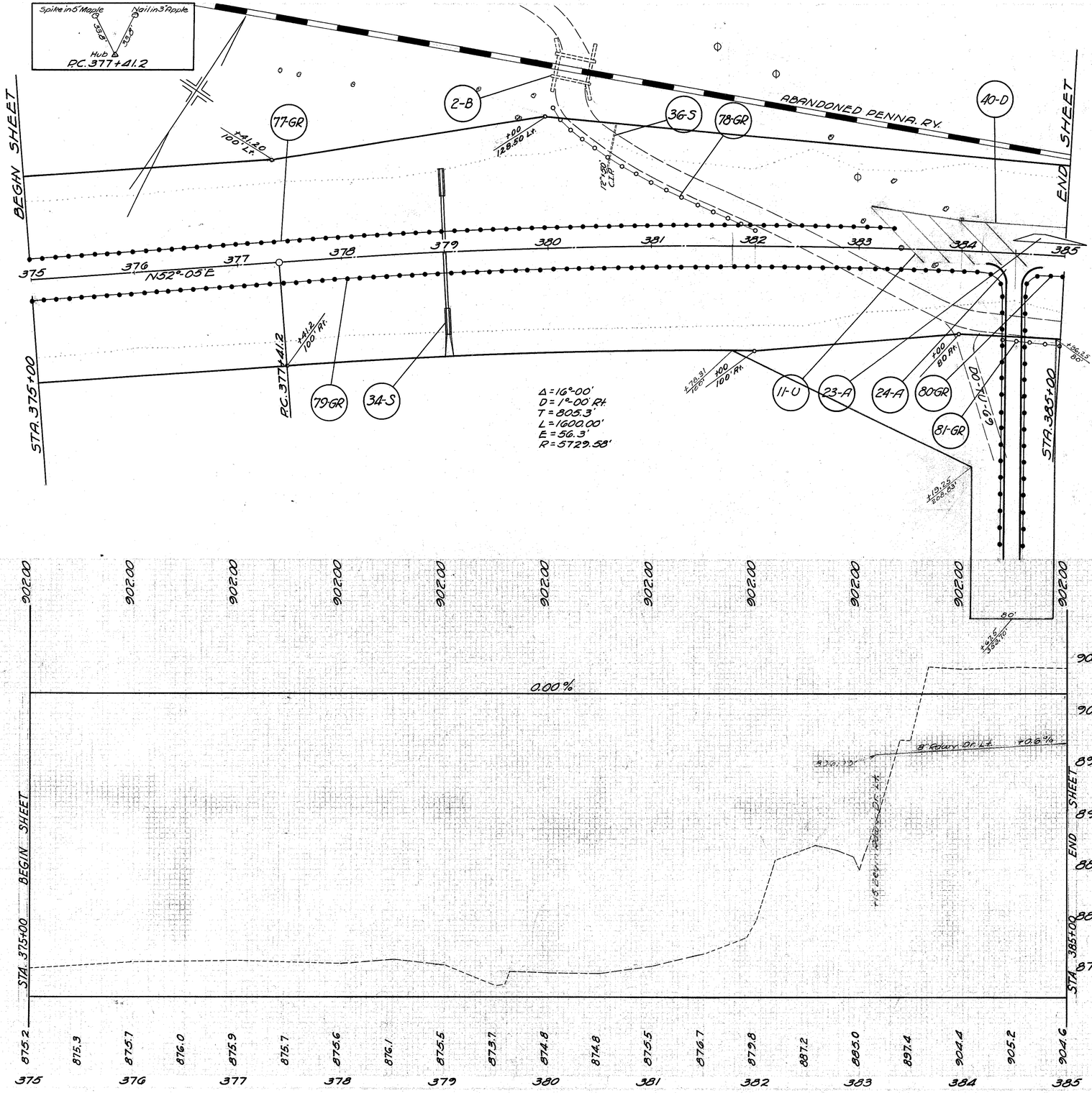
F.A. 520-C(1) RURAL

ROADSIDE IMPROVEMENT

From Station	To Station	Lime-Lbs.	Fertilizer Lbs.	Seeding Sq. Yd.
365+00	375+00	8327	1041	11560
	Total	8327	1041	11560







PIPE UNDERDRAIN

F.A. 520-C(1) Rural

Ref. No.	From Station	To Station	Pipe-Lin. Ft. 4"	Remarks
11-U	383+50	384+50	324	45° @ 25' Intervals
Totals			324	

FEDERAL AID 27
10 OHIO 260-A(2E), 320-C(1), 520-A(2E) 1941 145

TUSCARAWAS COUNTY
S.H. 70 SECS. A(PT.), D & MINERAL CITY (PT.)
DOVER BASIN

STRUCTURES 20 FT. SPAN & UNDER

F.A. 520-C(1) Rural

Ref No	Station	See Sheet No	Removals Type	Removals Size	Removals Length	New Work Type	New Work Size	New Work Length
34-S	379+00	100				Ext. Strength Pipe	24"	160'-0"
36-S	380+65		C.I.P.	12"	50'-0"			

ROADWAY DRAINAGE

F.A. 520-C(1) Rural

Ref. No.	From Station	To Station	Side	Pipe-Lin. Ft. 8"	8"x4" Y Each	Outlet Pipe Lin. Ft. 8"
40-D	383+15	385+00	LT.	159	4	20
Totals				159	4	20

REMOVAL OF PAVEMENT

F.A. 520-C(1) Rural

From Station	To Station	Lin. Ft.	10"x18' W. B. Macdm. Pavmt. Sq. Yds.
380+00	380+50	100	200
383+80	385+00	130	260
Totals			460

GUARD RAIL

F.A. 520-C(1) Rural

Ref. No.	From Station	To Station	Side	Remove & Store G. Rail Lin. Ft.	New Guard Rail Lin. Ft.
77-GR	375+00	383+3536	LT.		837.5
78-GR	380+09	382+00	LT.	232	
79-GR	375+00	384+41	RT.		950.0*
80-GR	384+63	385+00	RT.		48.0*
81-GR	384+44	385+00	RT.	56	
Totals				288	1835.5

* Includes curved Guard Rail at approaches

ROADSIDE IMPROVEMENT

F.A. 520-C(1) Rural

From Station	To Station	Lime Lbs.	Fertilizer Lbs.	Seeding Sq Yd.
375+00	385+00	8775	1097	12182
384+52	Approach	1108	138	1538
Totals		9883	1235	13720

DRIVES ROAD & MAIL BOX APPROACHES

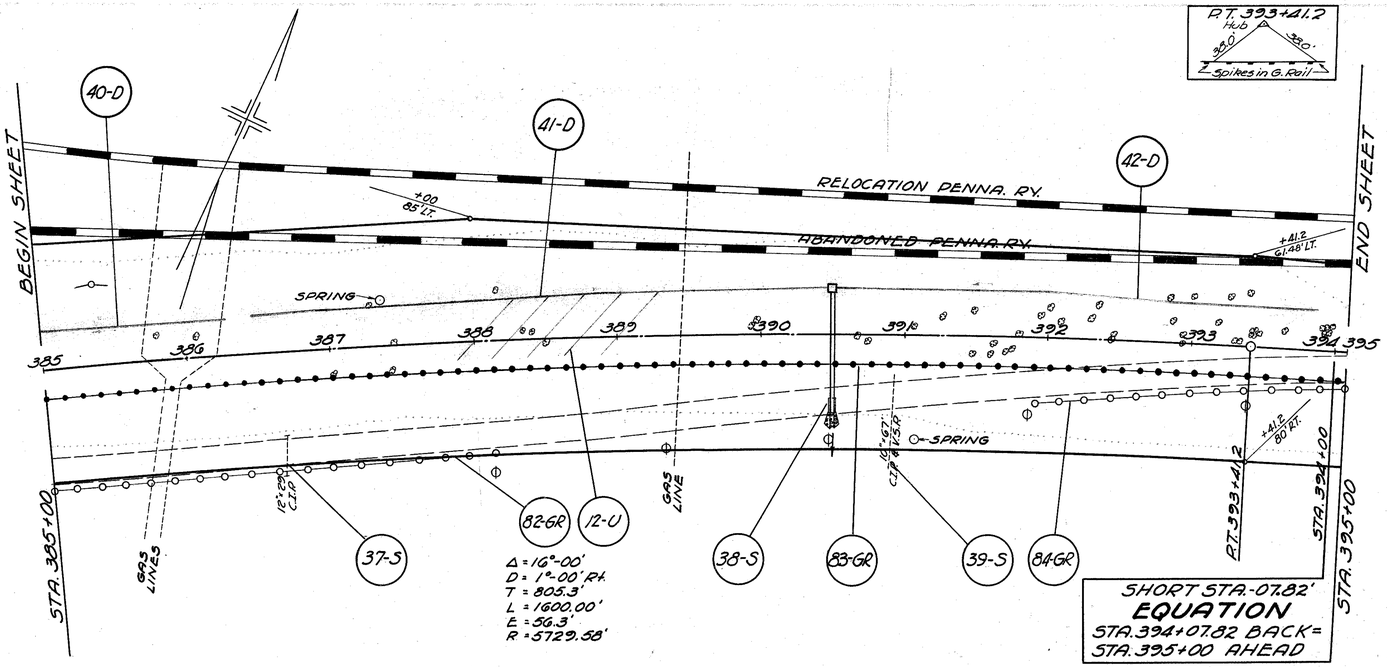
F.A. 520-C(1) Rural

Ref. No.	Station	Side	Pavement T-10 50 Yo.	Pavement I-17 Cu.Yo.	Remove	Stage-12"W.S.P. Lin. Ft.	New Guard Rail Lin. Ft.
24-A	384+52	RT.	571	9		32	475
23-A	384+75	LT.		7			
Totals			571	16		32	475

STRUCTURES OVER 20 FT. SPAN

F.A. 520-C(1) Rural

Ref. No.	Station	Removal Type	Roadway	Clearance	Remove Existing Structure Lump Sum	Remarks
2-B	Lt. 380+20	Underpass	25'	14'	1	Remove Entire Underpass To Exist. Road Elevation



PIPE UNDERDRAIN				
REF. No.	FROM STATION	TO STATION	PIPE LIN. FT. 4"	REMARKS
12-U	388+00	389+00	286	45°@25' Intervals
TOTALS			286	

F.A. 520-C(1) RURAL

FEDERAL AID 28

10 OHIO 260-A(2)-520-C(1) 1941 145
520-A(2)

TUSCARAWAS COUNTY
S.H. 70 SECS. A(PH), D
& MINERAL CITY (PH)
DOVER BASIN

STRUCTURES 20 FT. SPAN & UNDER								
REF No	STATION	SEE SHEET No	REMOVALS			NEW WORK		
			TYPE	SIZE	LENGTH	TYPE	SIZE	LENGTH
37-S	386+65		C.I.P.	12"	29'-0"			
38-S	390+50	107				PIPE	15"	84'-0"
39-S	390+93		C.I.P. & I.S.P.	10"	67'-0"			

F.A. 520-C(1) RURAL

ROADWAY DRAINAGE						
REF. No.	FROM STATION	TO STATION	SIDE	PIPE LIN. FT. 8"	8"x4" Y EACH	
40-D	385+00	386+25	LT.	125		
41-D	386+50	390+49	LT.	391	5	
42-D	390+51	393+90	LT.	340		
TOTALS				856	5	

F.A. 520-C(1) RURAL

REMOVAL OF PAVEMENT			
FROM STATION	TO STATION	LIN. FT.	10" x 18' W.B. MACDM. PAVMT. SQ. YD.
385+00	390+50	500	1000
TOTALS			1000

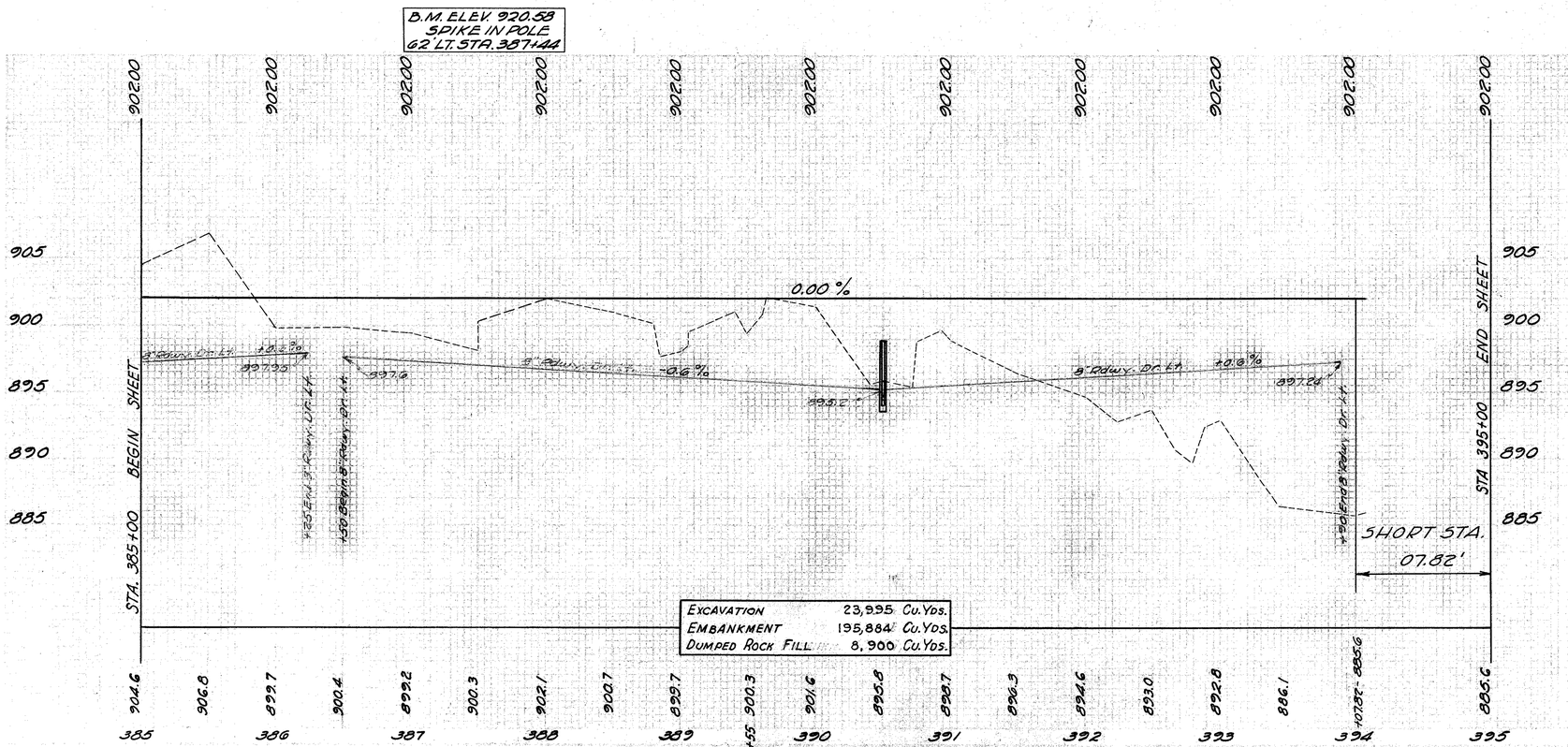
F.A. 520-C(1) RURAL

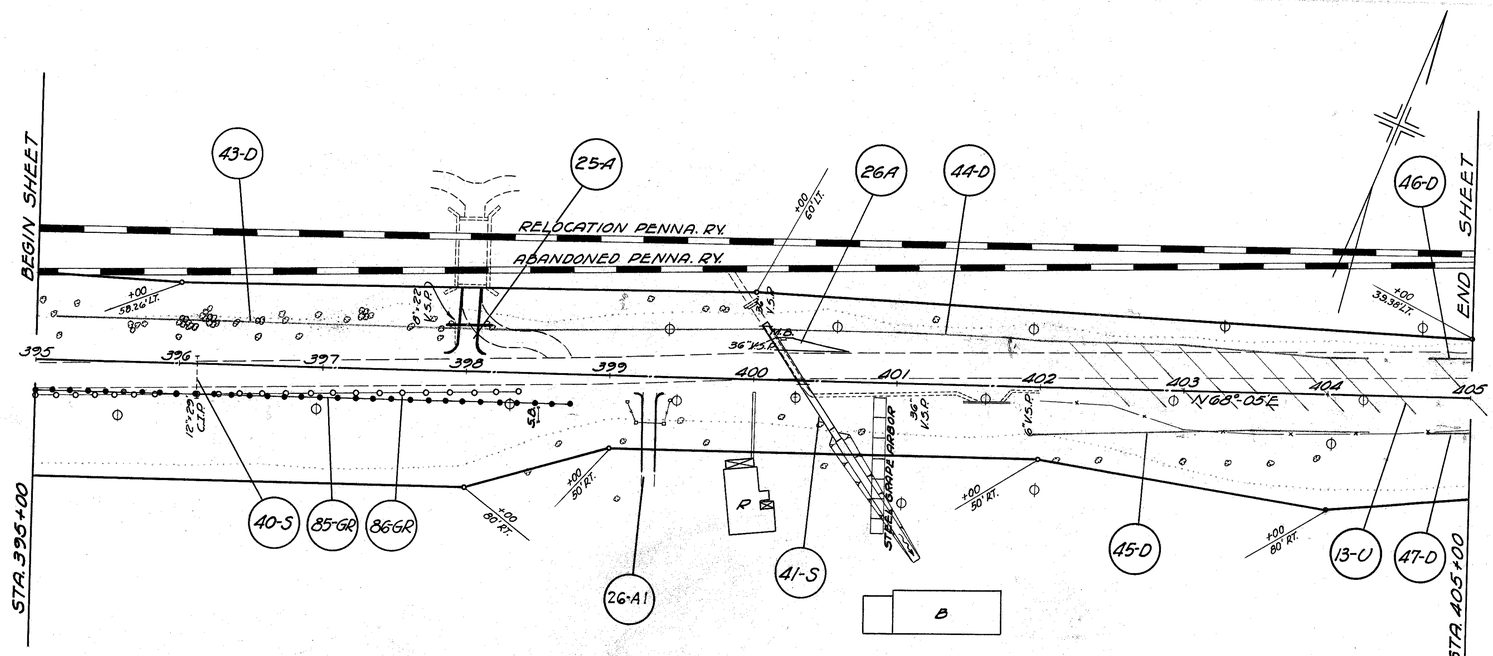
GUARD RAIL						
REF. No.	FROM STATION	TO STATION	SIDE	REMOVE STORE G. RAIL LIN. FT.	NEW GUARD RAIL LIN. FT.	
82-GR	385+00	388+12	Rt.	314		
83-GR	385+00	394+07.82	Rt.		904.88	
84-GR	391+92	394+07.82	Rt	217		
TOTALS				531	904.9	

F.A. 520-C(1) RURAL

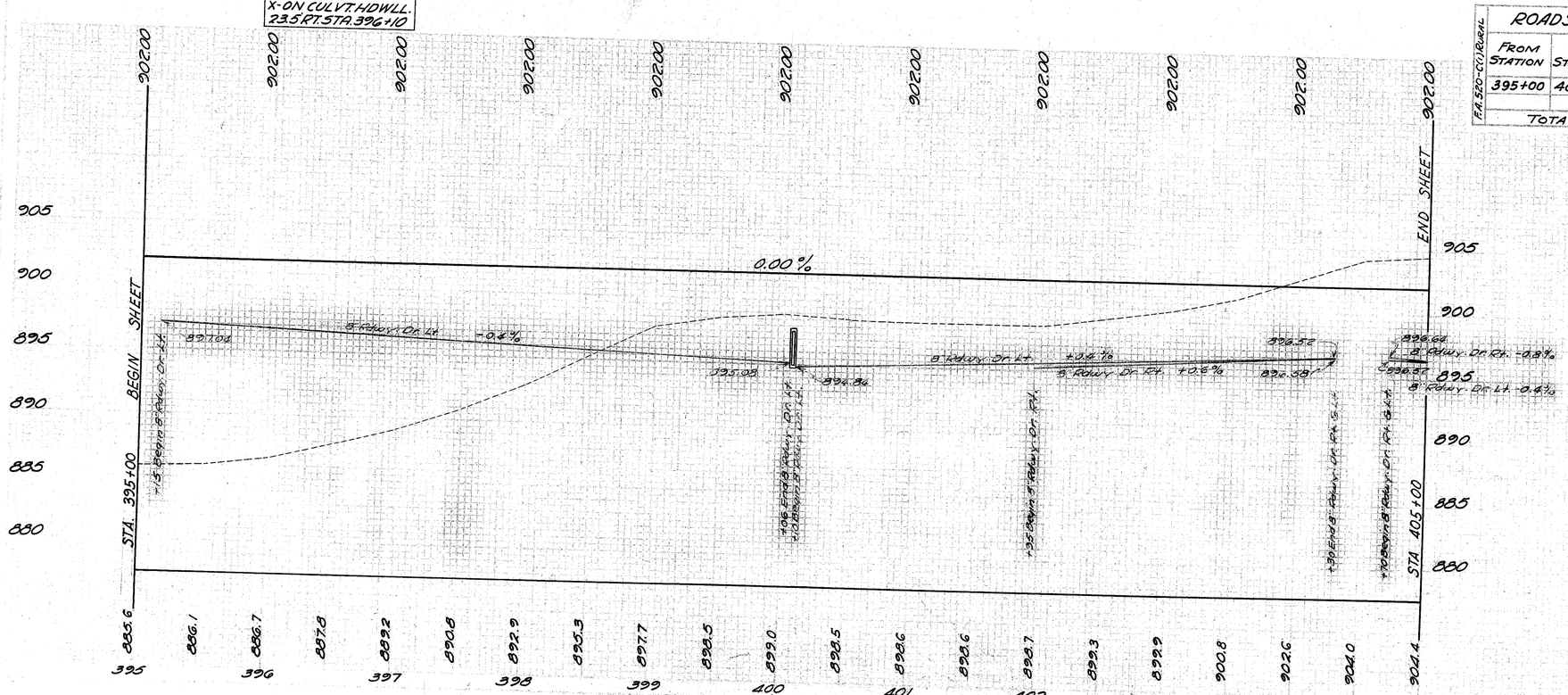
ROADSIDE IMPROVEMENT					
FROM STATION	TO STATION	LIME-LBS.	FERTILIZER LBS.	SEEDING SQ. YD.	
385+00	395+00	677.1	84.6	9400	
TOTALS		677.1	84.6	9400	

F.A. 520-C(1) RURAL





B.M. ELEV. 887.18
X-ON CULVT. HDWLL.
23.5 RT. STA. 396+10



PIPE UNDERDRAIN

F.A. 520-C(1) RURAL

Ref. No.	From Station	To Station	Pipe Lin. Ft. 4"	Remarks
13-U	402+50	405+00	566	45'@25' Intervals
TOTAL			566	

		Federal Aid			29
10	OHIO	260-A(2), 520-C(1) 520-A(2)	1941		145

TUSCARAWAS COUNTY
S.H. TO SECS. A(PH), D
& MINERAL CITY (PH)
DOVER BASIN

STRUCTURES 20 FT. SPAN & UNDER

F.A. 520-C(1) RURAL

Ref. No	Station	See Sheet No	Removals Type	Removals Size	Removals Length	New Work Type	New Work Size	New Work Length
40-S	396+12		C.I.P.	12"	29'-0"			
41-S	400+32.6	108				Box Culvt.	4'x 3'	94'-0"

ROADWAY DRAINAGE

F.A. 520-C(1) RURAL

Ref. No.	From Station	To Station	Side	Pipe Lin. Ft. 8"	8"x4" Y Each	Outlet Pipe Lin. Ft. 8"	Pipe Under Drives Lin. Ft. 8"
43-D	395+15	400+06	Lt.	461			30
44-D	400+10	404+30	Lt.	404	9		
45-D	401+95	404+30	Rt.	215		20	
46-D	404+70	405+00	Lt.	28	1		
47-D	404+70	405+00	Rt.	30			
TOTALS				1138	10	20	30

REMOVAL OF PAVEMENT

F.A. 520-C(1) RURAL

From Station	To Station	Lin Ft.	10'x18' W.B. Macdm. Pavmt Sq Yd.

GUARD RAIL

F.A. 520-C(1) RURAL

Ref. No.	From Station	To Station	Side	Remove & Store G. Rail Lin. Ft.	New Guard Rail Lin. Ft.
85-GR	395+00	398+72.12	Rt.		372.12
86-GR	395+00	398+3.5	Rt.	335	
TOTAL				335	372.1

DRIVES, ROAD & MAIL BOX APPROACHES

F.A. 520-C(1) RURAL

Ref. No.	Station	Side	Pavement T-10 Sq. Yd.	Pavement T-17 Cu. Yd.	Remove & Store 8" V.S.P. Lin. Ft.	Pipe Lin. Ft. 12"
25-A	398+00	Lt.		7	22	30
*26-A	400+40	Lt.		7		
26-A1	399+28	Rt.		7		
TOTAL				21	22	30

* Mail box.

ROADSIDE IMPROVEMENT

F.A. 520-C(1) RURAL

From Station	To Station	Lime Lbs.	Fertilizer Lbs.	Seeding Sq Yd.
395+00	405+00	4668	583	6480
TOTAL		4668	583	6480

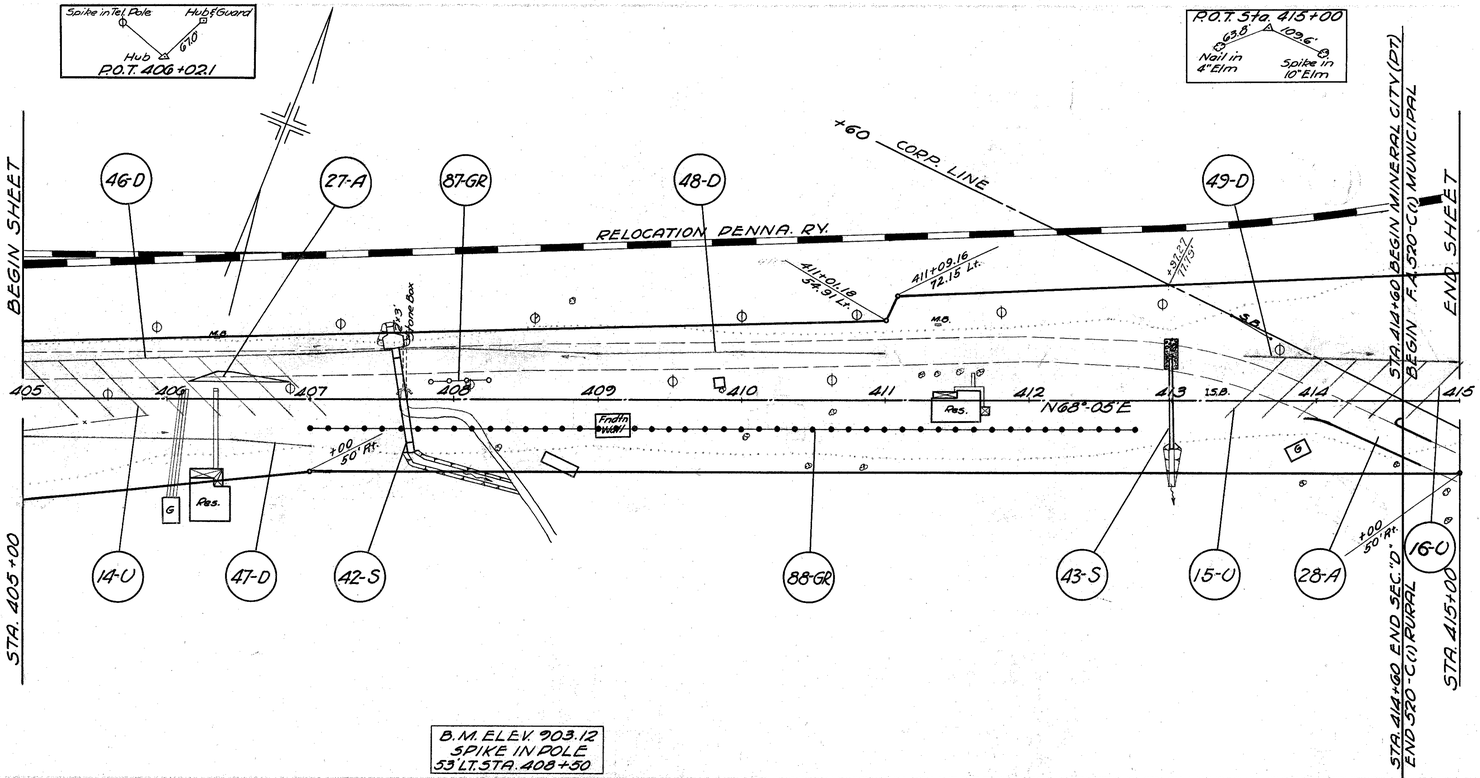
FEDERAL AID

10 OHIO 260-A(2), 320-C(1) 1941 320-A(2)

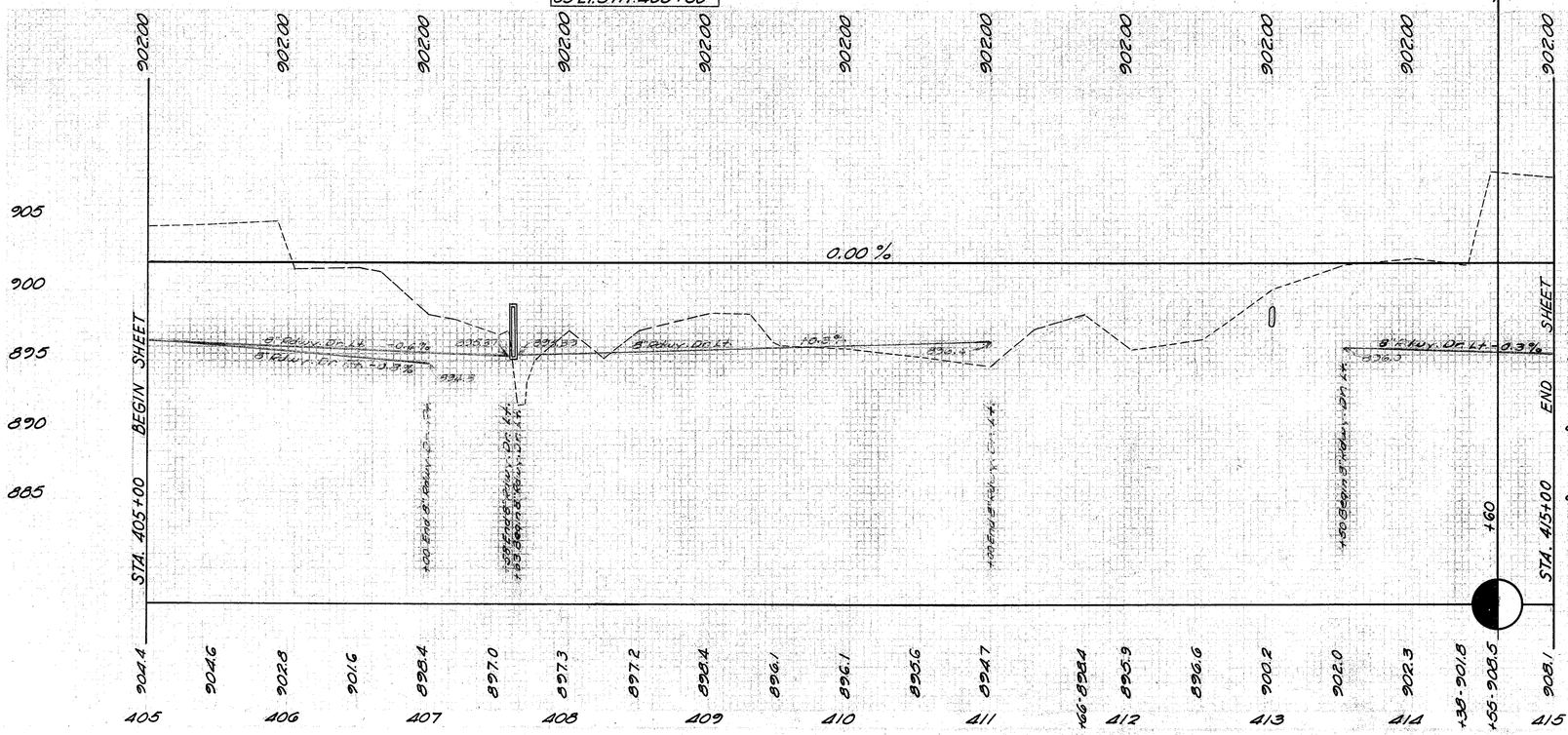
30

145

TUSCARAWAS COUNTY S.H. 70 SECS. A(PH), D & MINERAL CITY (PH) DOVER BASIN



B.M. ELEV. 903.12
SPIKE IN POLE
53' LT. STA. 408+50



STRUCTURES 20 FT. SPAN & UNDER

F.A. 520-C(1) Rural

Ref No	Station	See Sheet No	Removals Type	Removals Size	Removals Length	New Work Type	New Work Size	New Work Length
42-S	407+65.5	109	Stone Box	2'X3'	45'-0"	Box Culvt.	5'X4'	73'-0"
43-S	413+00	110				Pipe	18"	62'-0"

ROADWAY DRAINAGE

F.A. 520-C(1) Rural

Ref. No.	From Station	To Station	Side	Pipe Lin. Ft. 8"	Outlet Pipe Lin. Ft. 8"	8"x4' Y Each
46-D	405+00	407+58	Lt.	243		8
47-D	405+00	407+00	Rt.	180	20	
48-D	407+63	411+00	Lt.	337		
49-D	413+50	414+60	Lt.	102		4
SUB-TOTAL				862	20	12
49-D	414+60	415+00		36		2
F.A. 520-C(1) Municipal	SUB-TOTAL			36		2

DRIVES, ROAD & MAIL BOX APPROACHES

F.A. 520-C(1) Rural

Ref. No.	Station	Side	Pavement T-10 Sq Yd.	Pavement I-17 Cu. Yd.
27-A*	406+60	Lt.		7
28-A	414+00	Rt.		15
TOTAL				22

* Mail Box

PIPE UNDERDRAIN

F.A. 520-C(1) Rural

Ref. No.	From Station	To Station	Pipe Lin. Ft. 4"	Remarks
14-U	405+25	407+00	456	45'@25' Intervals
15-U	413+50	414+60	289	45'@25' Intervals
SUB-TOTAL			745	
16-U	414+60	415+00	56	45'@25' Intervals
F.A. 520-C(1) Municipal	SUB-TOTAL		56	
			801	

GUARD RAIL

F.A. 520-C(1) Rural

Ref. No.	From Station	To Station	Side	Remove Dispose G. Rail Lin. Ft.	New Guard Rail Lin. Ft.
87-GR	407+84	408+24	Lt.	40	
88-GR	407+00	412+75	Rt.		575
TOTAL				40	575

REMOVAL OF PAVEMENT

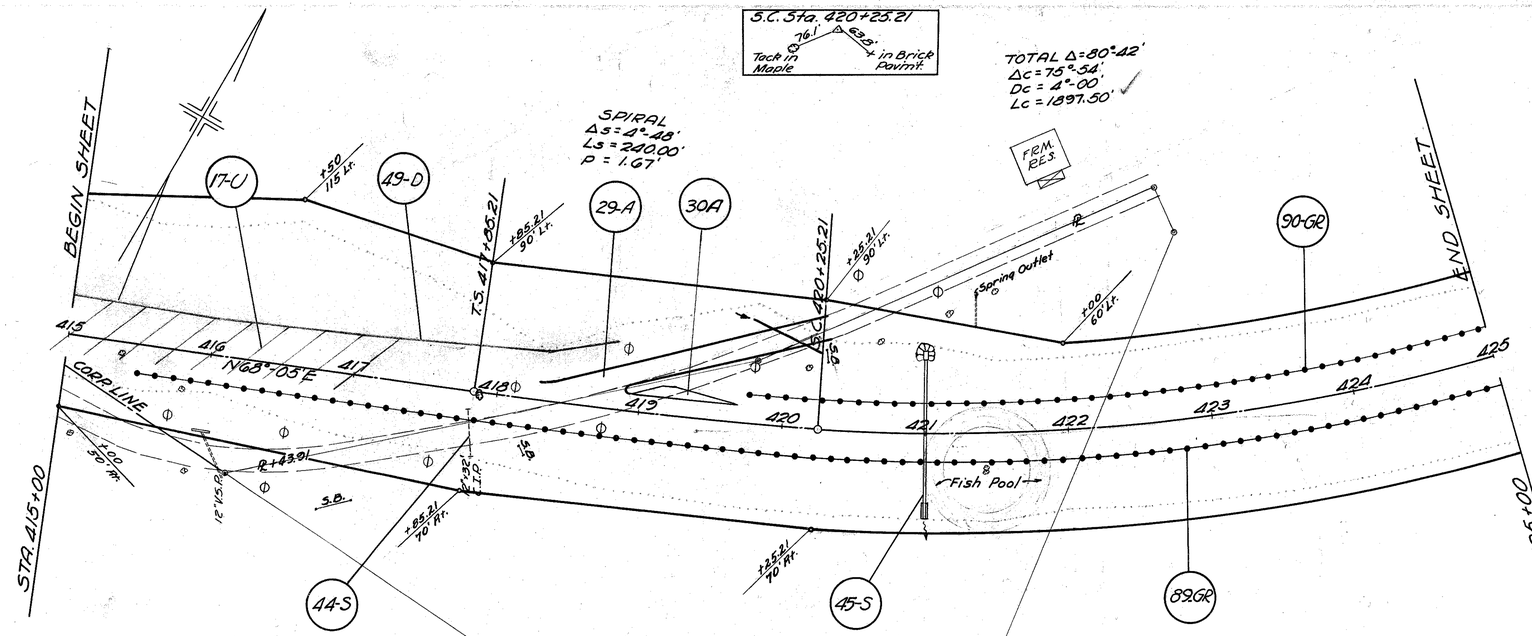
F.A. 520-C(1) Rural

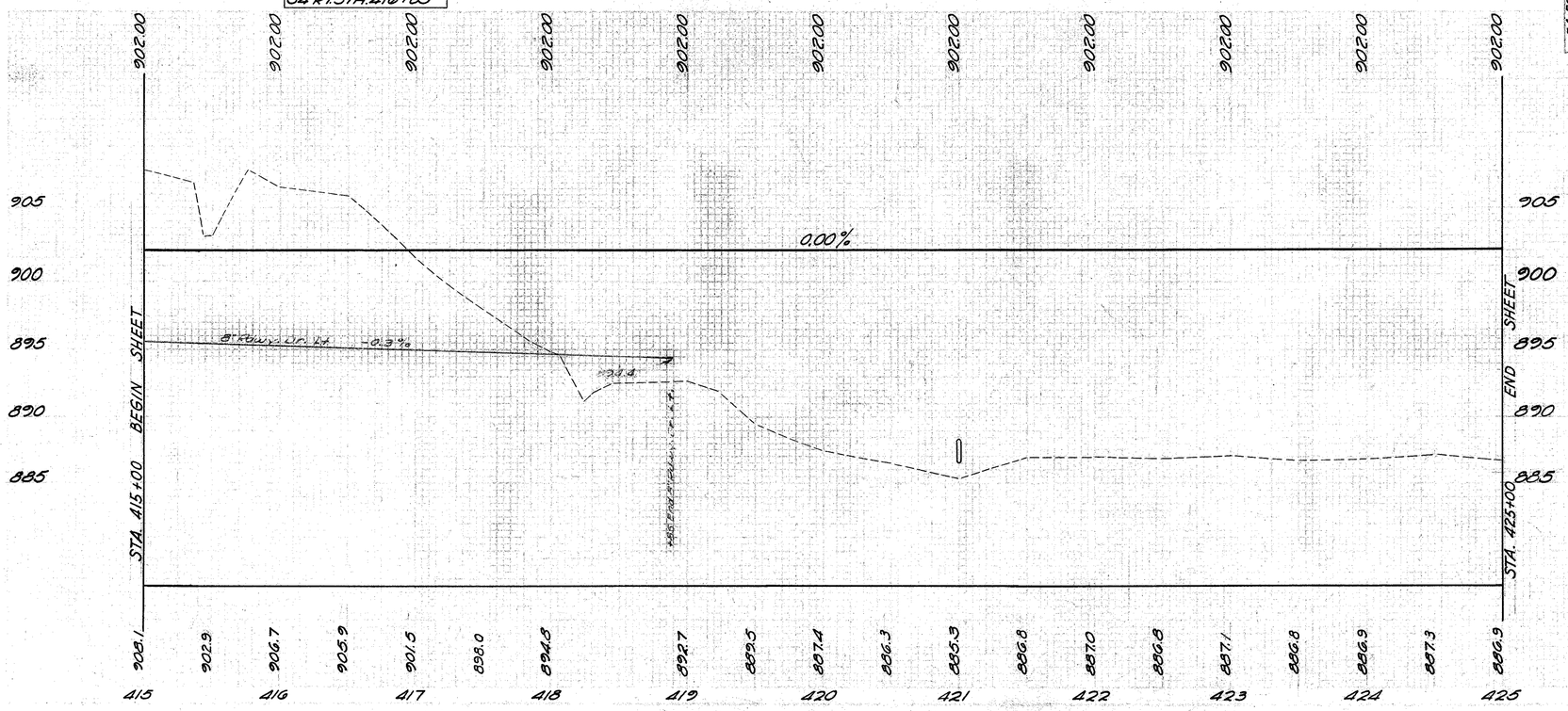
From Station	To Station	Lin. Ft.	10'x18' W.B. Macdm. Pavmt. Sq. Yd.	16' Brick Pavement Sq. Yd.

ROADSIDE IMPROVEMENT

F.A. 520-C(1) Rural

From Station	To Station	Lime Lbs.	Fertilizer Lbs.	Seeding Sq. Yds.
405+00	414+60	5388	673	7480
SUB-TOTAL		5388	673	7480
414+60	415+00	336	42	464
SUB-TOTAL		336	42	464





PIPE UNDERDRAIN

F.A. 520-C(1) MUNICIPAL

Ref. No.	From Station	To Station	Pipe Lin. Ft. 4"	Remarks
17-U	415+00	417+00	485	45'@25 Intervals
TOTAL			485	

FEDERAL AID 31

10 OHIO 260-A(2), 520-C(1) 1941 145
520-A(2)

TUSCARAWAS COUNTY
S.H. 70 SECS. A(PT), D
& MINERAL CITY (PT)
DOVER BASIN

STRUCTURES 20 FT. SPAN & UNDER

F.A. 520-C(1) MUNICIPAL

Ref. No	Station	See Sheet No	Removals Type	Removals Size	Removals Length	New Work Type	New Work Size	New Work Length
44-S	417+85		C.I.P	12"	32'-0"			
45-S	421+00	110				PIPE	24"	112'-0"

ROADWAY DRAINAGE

F.A. 520-C(1) MUNICIPAL

Ref. No.	From Station	To Station	Side	Pipe Lin. Ft. 8"	8"x4" Y Each	Outlet Pipe Lin. Ft. 8"
49-D	415+00	418+85	Lt.	349	9	20
TOTAL				349	9	20

REMOVAL OF PAVEMENT

F.A. 520-C(1) MUNICIPAL

From Station	To Station	Lin. Ft.	15" Brick Pavmt. Sq. Yd.	6"x16" Conc. Base Sq. Yd.	6" Flush Curb Lin. Ft.
416+25	420+25	430	717	764	860
TOTAL		430	717	764	860

GUARD RAIL

F.A. 520-C(1) MUNICIPAL

Ref. No.	From Station	To Station	Side	New Guard Rail Lin. Ft.
89-GR	415+43	425+00	Rt.	970.4
90-GR	419+78.7	425+00	Lt.	521.3
TOTAL				1491.7

DRIVES, ROAD & MAIL BOX APPROACHES

F.A. 520-C(1) MUNICIPAL

Ref. No.	Station	Side	Pavement T-10 Sq Yo	Pavement I-17 Co.Yo.	Pipe Lin. Ft. 15"
29A	418+33.21	Lt.		27	50
30-A*	419+20	Lt.		7	
TOTAL				34	50

* MAIL BOX

ROADSIDE IMPROVEMENT

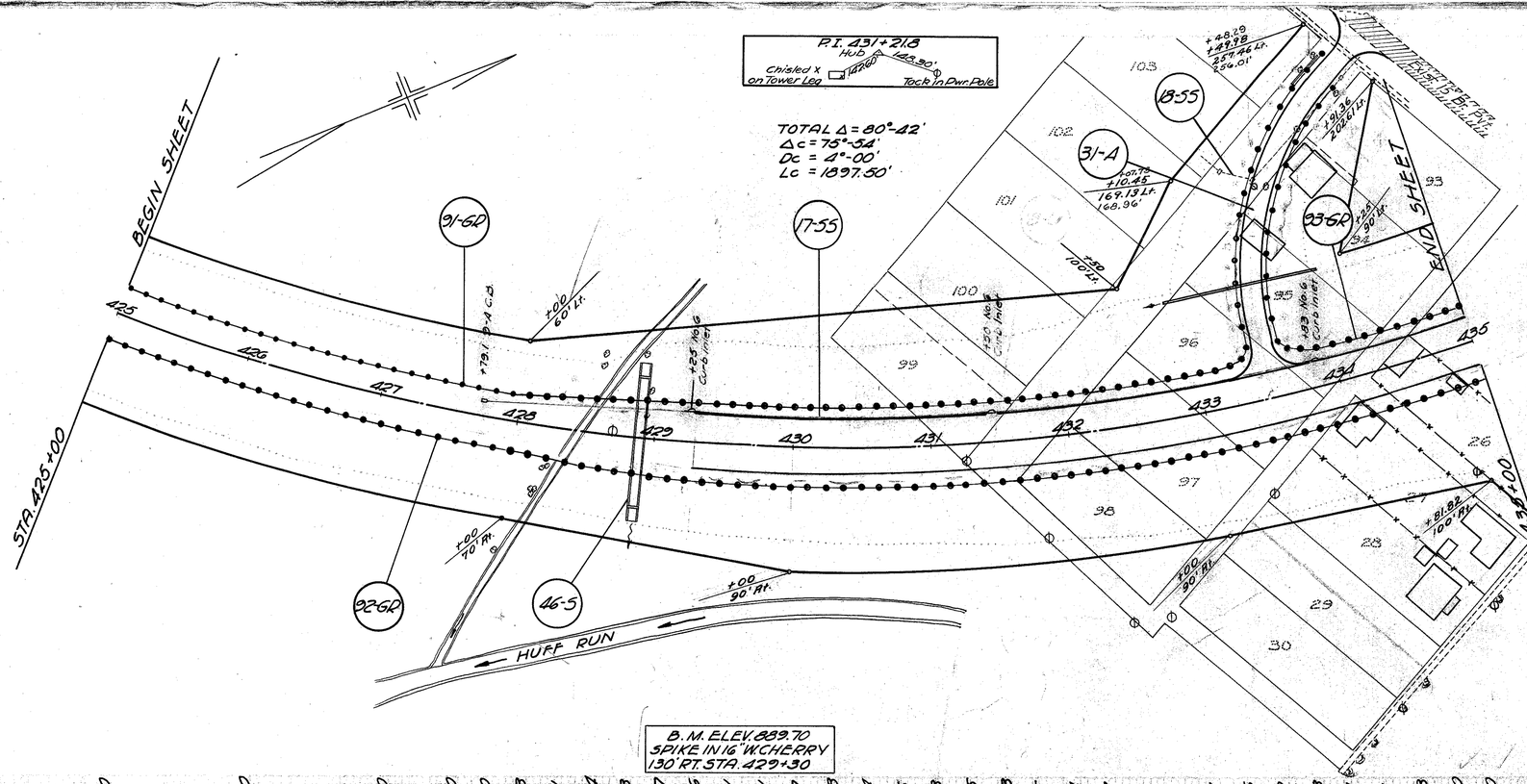
F.A. 520-C(1) MUNICIPAL

From Station	To Station	Lime-Lbs.	Fertilizer Lbs.	Seeding Sq. Yds.
415+00	425+00	7203	900	10,000
TOTAL		7203	900	10,000

FEDERAL AID 32

10 OHIO 260-A(2), 520-C(1) 1941 145
520-A(2)

TUSCARAWAS COUNTY
S.H. 70 SECS. A(PT.), D & MINERAL CITY (PT.) DOVER BASIN



STRUCTURES 20 FT. SPAN & UNDER

F.A. 520-C(1) Municipal

Ref. No	Station	See Sheet No	Removals Type	Removals Size	Removals Length	New Work Type	New Work Size	New Work Length
46-5	428+90	111 & 112				Box Culvt.	8'x6'	114'-6"

STORM SEWER

F.A. 520-C(1) Municipal

Ref. No.	From Station	To Station	Side	Pipe Lin. Ft. 12"	Pipe Lin. Ft. 15"	Pipe Lin. Ft. 18"	15" Pipe Under Drives Lin. Ft.	9-A Catch Basins Each	No. 6 Curb Inlets Each	Removals Man Holes Each	Removals C. Basins Each	Removals 15" S. Sewer Lin. Ft.	Outlet Pipe 18" Lin. Ft.
17-SS	427+79.1	435+00	Lt.	255	382		60	1	3				38
18-SS	433+50		Lt.							1	3	154	
	Totals			255	382		60	1	3	1	3	154	38

DRIVES, ROAD & MAIL BOX APPROACHES

F.A. 520-C(1) Municipal

Ref. No.	Station	Side	Pavement T-10 Sq. Yd.	Pavement T-17 Cu. Yd.	Pipe Lin. Ft. 15"	New Guard Rail Lin. Ft.
31-A	433+50	Lt.		86	110	425
	Totals			86	110	425

ROADSIDE IMPROVEMENT

F.A. 520-C(1) Municipal

From Station	To Station	Lime Lbs.	Fertilizer Lbs.	Seeding Sq. Yds.	Sodding Sq. Yds.	Top Soil Sq. Yds.
425+00	435+00	5957	745	8270	2156	2156
Appr. Lt.	433+50	598	75	830	780	780
Totals		6555	820	9100	2936	2936

GUARD RAIL

F.A. 520-C(1) Municipal

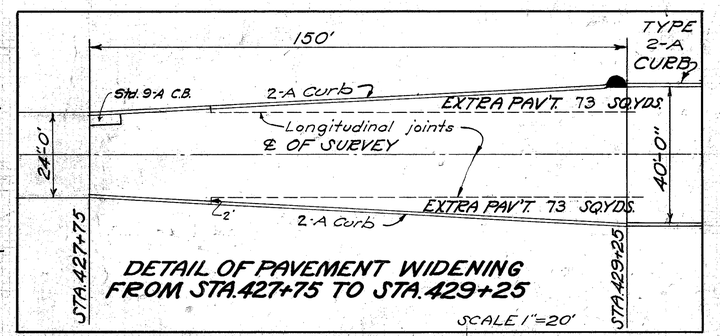
Ref. No.	From Station	To Station	Side	New Guard Rail Lin. Ft.
*91-GR	425+00	433+39	Lt	828.7
92-GR	425+00	435+00	Rt	1017.8
*93-GR	433+61	435+00	Lt	140.8
	Totals			1987.3

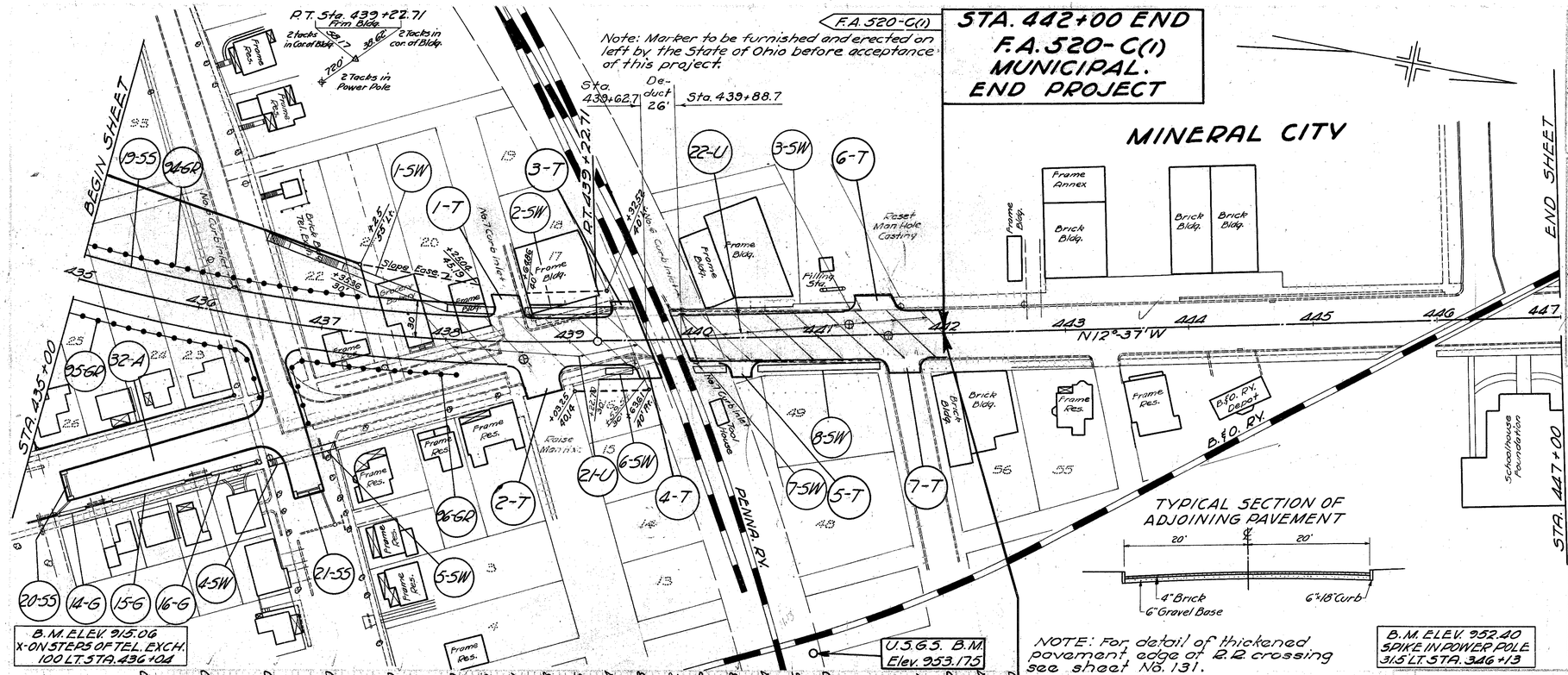
* Includes curved Guard Rail at approach.

CONCRETE CURB

F.A. 520-C(1) Municipal

Ref No.	From Station	To Station	Side	Type 2-A Lin. Ft.
	427+75	435+00	Lt.	725.0
	Deduct For Basins & Aprch.		Lt.	-12.5
	427+75	435+00	Rt.	725.0
	No Deductions		Rt	
	Totals			1437.50





FEDERAL AID
10 OHIO 260-A(2), 520-A(2) 520-C(1) 1941

TUSCARAWAS COUNTY
S.H. 70 SECS. A(Pt), D
& MINERAL CITY (Pt)
DOVER BASIN

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

STA. 442+00 END
F.A. 520-C(1)
MUNICIPAL.
END PROJECT

B.M. ELEV. 915.06
X-ON STEPS OF TEL. EXCH.
100 LT. STA. 436+04

U.S.G.S. B.M.
Elev. 953.175

NOTE: For detail of thickened pavement edge at R.R. crossing see sheet No. 131.

B.M. ELEV. 952.40
SPIKE IN POWER POLE
31.5' LT. STA. 346+13

For elevations at railroad crossing See sheet no. 131.

STA. 442+00 END
F.A. 520-C(1)
MUNICIPAL.
END PROJECT

STREET & ALLEY RETURNS

F.A. 520-C(1) MUNICIPAL

REF. No.	SEE SHEET No. FOR DETAILS
1-T	131
2-T	131
3-T	131
4-T	131
5-T	131
6-T	131
7-T	131

SIDEWALK AND STEPS

F.A. 520-C(1) MUNICIPAL

REF. No.	FROM STATION	TO STATION	SIDE	SIDEWALK 4"×5'-0" SQ. FT.	SIDEWALK 6"×7'-0" SQ. FT.	PIPE RAILING COMPLETE LIN. FT.	STEPS 14" TREAD 7" RISER LIN. FT.	REMOVE SIDEWALK SQ. FT.	DETAIL ON SHEET No.
1-SW	436+45	438+38	LT.	761		29	130	1287	129
2-SW	438+64	439+33	LT.	345				935	
3-SW	439+79.6	441+26	LT.	502	322				
4-SW	APPROACH	436+47.75	RT.	25			20		127
5-SW	APPROACH	436+47.75	RT	68	25				
6-SW	439+28	439+50	RT	110				200	
7-SW	439+97.8	440+24	RT.	131				288	
8-SW	440+50	441+50	RT.	500				1100	
	TOTALS			2442	347	29	150	3810	

DRIVES, ROAD AND MAIL BOX APPROACHES

F.A. 520-C(1) MUNICIPAL

REF. No.	STATION	SIDE	PAVEMENT	PAVEMENT T-71 SQ. YDS.	PAVEMENT I-17 CU. YDS.	PIPE LIN. FT. 12"	PIPE LIN. FT. 15"	GUARD RAIL LIN. FT.	CURB-TYPE 5-A STR'T. LIN. FT.	CURB-TYPE 5-A CIRCLAR LIN. FT.	REMOVE & STORE 8" TO 12" V.S.P. LIN. FT.
32-A	436+47.75	RT		936.1	3	62	26	75	529	101	74
	TOTALS			936.1	3	62	26	75	529	101	74

PAVED GUTTER

F.A. 520-C(1) MUNICIPAL

REF. No.	FROM STATION	TO STATION	SIDE	TYPE No. 4 LIN. FT.
14-G	APPROACH	436+47.75	RT	21.5
15-G	APPROACH	436+47.75	RT	60
16-G	APPROACH	436+47.75	RT	38
	TOTALS			119.5

GUARD RAIL

F.A. 520-C(1) MUNICIPAL

REF. No.	FROM STATION	TO STATION	SIDE	NEW GUARD RAIL LIN. FT.
94-GR	435+00	437+26.2	LT.	221.7
*95-GR	435+00	436+46	RT.	149.3
*96-GR	436+80	438+12.5	RT.	137.5
	TOTALS			508.5

* Includes curved Guard Rail at approaches.

STORM SEWER

F.A. 520-C(1) MUNICIPAL

REF. No.	FROM STATION	TO STATION	SIDE	PIPE 12" LIN. FT.	PIPE 12" UNDER PAVM'T. LIN. FT.	PIPE 12" UNDER DRIVES LIN. FT.	PIPE 12" UNDER R.R. C.I.P. LIN. FT.	CURB INLETS No. 6 EACH	CURB INLETS No. 7 EACH	9-A C. BASIN EACH	Y'S EACH 12"×4"	RESET MAN HOLE CASTING EACH	RAISE MAN HOLE EACH
19-SS	435+00	440+05	LT	383	38	50	50	2	2		7	2	1
20-SS	APPROACH	436+47.75	RT.	16	20					2			
21-SS	APPROACH	436+47.75	RT	27	20					2			
	TOTALS			426	78	50	50	2	2	4	7	2	1

PIPE UNDERDRAIN

F.A. 520-C(1) MUNICIPAL

REF. No	FROM STATION	TO STATION	SIDE	PIPE 4" LIN. FT.	PIPE 6" LIN. FT.	6"×4" Y EACH
21-U	435+00	439+50	℄	455		
22-U	439+92	442+00	LT	564	208	8
	TOTALS			1019	208	8

CONCRETE CURB

F.A. 520-C(1) MUNICIPAL

REF. No.	FROM STATION	TO STATION	SIDE	TYPE 2-A LIN. FT.
	435+00	442+00	LT	694.1
DEDUCT FOR TURNOUTS, BASINS & R.R.			LT	-143.6
	435+00	442+00	RT	705.9
DEDUCT FOR TURNOUTS, BASINS & R.R.			RT	-175
	TOTALS			1081.4

ROADSIDE IMPROVEMENT

F.A. 520-C(1) MUNICIPAL

FROM STATION	TO STATION	TOP SOIL SQ. YDS.	SODDING SQ. YDS.
435+00	442+00	3004	3004
APPR. RT.	436+47.75	706	706
TOTALS		3710	3710

REMOVAL OF PAVEMENT

F.A. 520-C(1) MUNICIPAL

FROM STATION	TO STATION	LIN. FT.	4"×15' BRICK WEARING SURFACE SQ. YDS.	6"×16' CONCRETE BASE SQ. YDS.	6"×4" FLUSH CURB LIN. FT.	4"×40' BRICK WEARING SURFACE SQ. YDS.	6"×18" RAISED STONE CURB LIN. FT.	8" CONC. WIDENING SQ. YDS.
435+00	442+00		583	622	687	1633	715	104
TOTALS			583	622	687	1633	715	104

FEDERAL AID 34
10 OHIO 260-A(2), 520-K(1), 520-A(2) 1941 145

TUSCARAWAS COUNTY
S.H. 70 SECS. A(P.H.), D
& MINERAL CITY (P.H.)
DOVER BASIN

MINERAL CITY

BEGIN SHEET

B. & O. RY.

Δ=16°20' Lt.
STA. 450+11.13

Δ=2°00' Rt.
STA. 455+67.07

Δ=1°22' Lt.
STA. 460+36.75

END SHEET

STA. 447+00

STA. 462+00

N12°-37'W

N28°-37'W

N26°-37'W

447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462

Frame Res.
Brick & Tile Garage
Frame Store
Stone Res.
Brick Res.
Frame Bar.
Filling Sta.
Valve House
Barn

B.M. ELEV. 960.68
TOP OF WORD "OPEN"
ON FIRE HYDRANT
165' RT. STA. 462+00

960
955
950
945
940

351.0 350.0 349.3 349.1 348.9 348.8 348.6 348.4 348.2 348.2 348.1 348.7 349.1 349.6 349.9 350.3 350.8 351.1 351.5 352.0 352.5 353.3 354.1 354.8 355.6 356.3 357.0 357.7 358.0 358.5 358.8

CURVE TABLES

TUSCARAWAS COUNTY
S.H. 70 – SECTION A(PT.) D & MINERAL CITY (PT.)
DOVER BASIN

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(6), 520-C(0) 520-A(2)	1941

P.C. 227+17.20 — D = 1°-0' LT. — L = 1925.0' — P.T. 246+42.20

LEFT EDGE OF PAV'T	LEFT DEDUCT CROWN	LEFT WIDTH	STATION	℄ GRADE ELEV.	RIGHT WIDTH	RIGHT SUPER ELEV.	RIGHT EDGE OF PAV'T
936.26	.21	12'	225+67.20	936.47	12'	0.0	936.26
936.29			+75	936.50		.00	936.29
936.39			226+00	936.60		.05	936.44
936.48			+22	936.69		.13	936.61
936.49			+25	936.70		.15	936.64
936.59			+50	936.80		.30	936.89
936.69			+75	936.90		.42	937.11
936.79			227+00	937.00		.49	937.28
936.86			+17.20	937.07		.50	937.36
936.89			+25	937.10			937.39
936.99			+50	937.20			937.49
937.09			+75	937.30			937.59
937.19			228+00	937.40			937.69
937.29			+25	937.50			937.79
937.39			+50	937.60			937.89
937.48			+75	937.69			937.98
937.55			229+00	937.76			938.05
937.59			+25	937.80			938.09
937.61			+50	937.82			938.11
937.62			+75	937.83			938.12
937.60			230+00	937.81			938.10
937.55			+25	937.76			938.05
937.49			+50	937.70			937.99
937.40			+75	937.61			937.90
937.30			231+00	937.51			937.80
937.17			+25	937.38			937.67
937.01			+50	937.22			937.51
936.84			+75	937.05			937.34
936.65			232+00	936.86			937.15
936.43			+25	936.64			936.93
936.19			+50	936.40			936.69
935.93			+75	936.14			936.43
935.65			233+00	935.86			936.15
935.34			+25	935.55			935.84
935.01			+50	935.22			935.51
934.67			+75	934.88			935.17
934.30			234+00	934.51			934.80
933.90			+25	934.11			934.40
933.49			+50	933.70			933.99
933.05			+75	933.26			933.55
932.60			235+00	932.81			933.10
932.12			+25	932.33			932.62
931.61			+50	931.82			932.11
931.09			+75	931.30			931.59
930.55			236+00	930.76			931.05
929.98			+25	930.19			930.48
929.39			+50	929.60			929.89
928.78			+75	928.99			929.28
928.14			237+00	928.35			928.64
927.49			+25	927.70			927.99
926.81			+50	927.02			927.31
926.12			+75	926.33			926.62
925.40			238+00	925.61			925.90
924.65			+25	924.86			925.15
923.89			+50	924.10			924.39
923.10			+75	923.31			923.60
922.30			239+00	922.51			922.80
921.47			+25	921.68			921.97
920.61	.21	12'	+50	920.82	12'	.50	921.11

CONTINUED

1°-0' CURVE CONTINUED

LEFT EDGE OF PAV'T	LEFT DEDUCT CROWN	LEFT WIDTH	STATION	℄ GRADE ELEV.	RIGHT WIDTH	RIGHT SUPER ELEV.	RIGHT EDGE OF PAV'T
919.74	.21	12'	+75	919.95	12'	.50	920.24
918.85			240+00	919.06			919.35
917.93			+25	918.14			918.43
916.99			+50	917.20			917.49
916.05			+75	916.26			916.55
915.15			241+00	915.36			915.65
914.27			+25	914.48			914.77
913.43			+50	913.64			913.93
912.61			+75	912.82			913.11
911.82			242+00	912.03			912.32
911.07			+25	911.28			911.57
910.34			+50	910.55			910.84
909.64			+75	909.85			910.14
908.97			243+00	909.18			909.47
908.34			+25	908.55			908.84
907.73			+50	907.94			908.23
907.15			+75	907.36			907.65
906.60			244+00	906.81			907.10
906.08			+25	906.29			906.58
905.59			+50	905.80			906.09
905.13			+75	905.34			905.63
904.70			245+00	904.91			905.20
904.30			+25	904.51			904.80
903.93			+50	904.14			904.43
903.59			+75	903.80			904.09
903.27			246+00	903.48			903.77
902.99			+25	903.20			903.49
902.81			+42.20	903.02		.50	903.31
902.74			+50	902.95		.50	903.24
902.52			+75	902.73		.45	902.97
902.32			247+00	902.53		.35	902.67
902.16			+25	902.37		.20	902.36
902.03			+50	902.24		.08	902.11
901.92			+75	902.13		.01	901.93
901.87	.21	12'	+92.20	902.08	12'	0.0	901.87

NO EXTRA PAVEMENT

P.C. 274+62.99 — D = 1°-0' RT. — L = 1593.33' — P.T. 290+56.32

LEFT EDGE OF PAV'T	LEFT SUPER ELEV.	LEFT WIDTH	STATION	℄ GRADE ELEV.	RIGHT WIDTH	RIGHT DEDUCT CROWN	RIGHT EDGE OF PAV'T
904.46	0.0	12'	273+12.99	904.67	12'	.21	904.46
904.50	.01		+25	904.70			904.49
904.61	.06		+50	904.76			904.55
904.78	.17		+75	904.82			904.61
904.99	.32		274+00	904.88			904.67
905.17	.44		+25	904.94			904.73
905.28	.49		+50	905.00			904.79
905.32	.50		+62.99	905.03			904.82
905.35			+75	905.06			904.85
905.41			275+00	905.12			904.91
905.47			+25	905.18			904.97
905.53			+50	905.24			905.03
905.59			+75	905.30			905.09
905.65	.50	12'	276+00	905.36	12'	.21	905.15

CONTINUED

1°-0' CURVE CONTINUED

LEFT EDGE OF PAV'T	LEFT SUPER ELEV.	LEFT WIDTH	STATION	℄ GRADE ELEV.	RIGHT WIDTH	RIGHT DEDUCT CROWN	RIGHT EDGE OF PAV'T
905.71	.50	12'	+25	905.42	12'	.21	905.21
905.77			+50	905.48			905.27
905.83			+75	905.54			905.33
905.89			277+00	905.60			905.39
905.95			+25	905.66			905.45
906.01			+50	905.72			905.51
906.07			+75	905.78			905.57
906.13			278+00	905.84			905.63
906.19			+25	905.90			905.69
906.25			+50	905.96			905.75
906.31			+75	906.02			905.81
906.37			279+00	906.08			905.87
906.43			+25	906.14			905.93
906.49			+50	906.20			905.99
906.55			+75	906.26			906.05
906.61			280+00	906.32			906.11
906.67			+25	906.38			906.17
906.73			+50	906.44			906.23
906.79			+75	906.50			906.29
906.85			281+00	906.56			906.35
906.91			+25	906.62			906.41
906.97			+50	906.68			906.47
907.03			+75	906.74			906.53
907.09			282+00	906.80			906.59
907.15			+25	906.86			906.65
907.21			+50	906.92			906.71
907.27			+75	906.98			906.77
907.33			283+00	907.04			906.83
907.39			+25	907.10			906.89
907.45			+50	907.16			906.95
907.51			+75	907.22			907.01
907.57			284+00	907.28			907.07
907.63			+25	907.34			907.13
907.69			+50	907.40			907.19
907.75			+75	907.46			907.25
907.81			285+00	907.52			907.31
907.87			+25	907.58			907.37
907.93			+50	907.64			907.43
907.99			+75	907.70			907.49
908.05			286+00	907.76			907.55
908.11			+25	907.82			907.61
908.17			+50	907.88			907.67
908.23			+75	907.94			907.73
908.29			287+00	908.00			907.79
908.35			+25	908.06			907.85
908.40			+50	908.11			907.90
908.44			+75	908.15			907.94
908.48			288+00	908.19			907.98
908.51			+25	908.22			908.01
908.53			+50	908.24			908.03
908.55			+75	908.26			908.05
908.56			289+00	908.27			908.06
908.57			+25	908.28			908.07
908.56			+50	908.27			908.06
908.56			+75	908.27			908.06
908.54			290+00	908.25			908.04
908.52			+25	908.23			908.02
908.49			+50	908.20			907.99
908.48	.50	12'	+56.32	908.19	12'	.21	907.98

CONTINUED

1°-0' CURVE CONTINUED

LEFT EDGE OF PAV'T	LEFT SUPER ELEV.	LEFT WIDTH	STATION	℄ GRADE ELEV.	RIGHT WIDTH	RIGHT DEDUCT CROWN	RIGHT EDGE OF PAV'T
908.44	.48	12'	+75	908.17	12'	.21	907.96
908.32	.41		291+00	908.12			907.91
908.16	.29		+25	908.08			907.87
907.95	.14		+50	908.02			907.81
907.80	.04		+75	907.97			907.76
907.68	.00		292+00	907.89			907.68
907.66	0.0	12'	+06.32	907.87	12'	.21	907.66

NO EXTRA PAVEMENT

P.C. 313+25.00 — D = 0°-45' RT. — L = 888.89' — P.T. 322+47.17

LEFT EDGE OF PAV'T	LEFT SUPER ELEV.	LEFT WIDTH	STATION	℄ GRADE ELEV.	RIGHT WIDTH	RIGHT DEDUCT CROWN	RIGHT EDGE OF PAV'T
902.81	0.0	12'	311+75	903.02	12'	.21	902.81
902.60	.00		+85	902.89			902.68
902.55	.03		312+00	902.73			902.52
902.47	.04		+08.28	902.64			902.43
902.37	.09		+25	902.49			902.28
902.33	.15		+36.19	902.39			902.18
902.31	.23		+50	902.29			902.08
902.28	.35		+75	902.14			901.93
902.27	.43		313+00	902.05			901.84
902.24	.45		+25	902.00			901.79
			+36.19				
			+50				
			+58.28				
			+75				
			314+00				
			+25				
			+50				
			+75				
			315+00				
			+25				
			+50				
			+75				
			316+00				
			+25				
			+50				
			+75				
			317+00				
			+25				
			+50				
			+75				
			318+00				
			+25				
			+50				
			+75				
			319+00				
			+25				
			+50				
			+75				
			320+00				
			+25				
			+50				
902.24	.45	12'	+75	902.00	12'	.21	901.79

CONTINUED

CURVE TABLES

TUSCARAWAS COUNTY
S.H. 70 - SECTION A (PT.) D ℄
MINERAL CITY (PT.)
DOVER BASIN

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2), 520-C(1) 520-A(2)	1941

36
145

0°-45' CURVE CONTINUED

LEFT					RIGHT		
EDGE OF PAV'T	SUPER ELEV.	WIDTH	STATION	℄ GRADE ELEV.	WIDTH	DEDUCT CROWN	EDGE OF PAV'T
902.24	.45	12'	321+00	902.00	12'	.21	901.79
			+25				
			+50				
			+75				
			322+00				
			+25				
902.24	.45		+47.17				
902.24	.45		+50				
902.21	.42		+75				
902.13	.34		323+00				
902.00	.21		+25				
901.88	.09		+50				
901.81	.02		+75				
901.79	.00	12'	+97.17	902.00	12'	.21	901.79
NO EXTRA PAVEMENT							

P.C. 377+41.20			D = 1°-0' RT. L = 1600'		P.T. 393+41.20		
LEFT					RIGHT		
EDGE OF PAV'T	SUPER ELEV.	WIDTH	STATION	℄ GRADE ELEV.	WIDTH	DEDUCT CROWN	EDGE OF PAV'T
901.79	0.0	12'	375+91.20	902.00	12'	.21	901.79
901.79	.00		376+00				
901.84	.05		+25				
901.94	.15		+50				
902.10	.31		+75				
902.22	.43		377+00				
902.28	.49		+25				
902.29	.50		+41.20				
			+50				
			+75				
			378+00				
			+25				
			+50				
			+75				
			379+00				
			+25				
			+50				
			+75				
			380+00				
			+25				
			+50				
			+75				
			381+00				
			+25				
			+50				
902.29	.50	12'	+75	902.00	12'	.21	901.79
CONTINUED							

1°-0' CURVE CONTINUED

LEFT					RIGHT		
EDGE OF PAV'T	SUPER ELEV.	WIDTH	STATION	℄ GRADE ELEV.	WIDTH	DEDUCT CROWN	EDGE OF PAV'T
902.29	.50	12'	382+00	902.00	12'	.21	901.79
			+25				
			+50				
			+75				
			383+00				
			+25				
			+50				
			+75				
			384+00				
			+25				
			+50				
			+75				
			385+00				
			+25				
			+50				
			+75				
			386+00				
			+25				
			+50				
			+75				
			387+00				
			+25				
			+50				
			+75				
			388+00				
			+25				
			+50				
			+75				
			389+00				
			+25				
			+50				
			+75				
			390+00				
			+25				
			+50				
			+75				
			391+00				
			+25				
			+50				
			+75				
			392+00				
			+25				
			+50				
			+75				
			393+00				
			+25				
902.29	.50		+41.20				
902.29	.50		+50				
902.28	.49		+57				
902.25	.46		+70				
902.24	.45		+75				
902.20	.41		+86				
902.18	.39		+92				
902.14	.35		394+00				
902.09	.30		394+07.82 Back 393+00 Ahead				
901.94	.15		+25				
901.84	.05		+50				
901.79	.00		℄ +75				
901.79	0.0	12'	+83.38	902.00	12'	.21	901.79
NO EXTRA PAVEMENT							

T.S. 417+85.21 S.C. 420+25.21			D = 4°-0' LT.		P.T. 439+22.71		
LEFT					RIGHT		
EDGE OF PAV'T	DEDUCT CROWN	WIDTH	STATION	℄ GRADE ELEV.	WIDTH	SUPER ELEV.	EDGE OF PAV'T
901.79	.21	12'	417+85.21	902.00	12'	0.0	901.79
			418+00			.02	901.81
			+06			.03	901.82
			+23			.10	901.89
			+25			.11	901.90
			+27			.12	901.91
			+31			.15	901.94
			+33.21			.16	901.95
			+45			.25	902.04
			+50			.29	902.08
			+61			.40	902.19
			+75			.56	902.35
			+81.21			.64	902.43
			+88			.74	902.53
			419+00			.92	902.71
			+22			1.26	903.05
			+25			1.31	903.10
			+29.21			1.36	903.15
			+32			1.40	903.19
			+50			1.61	903.40
			+75			1.83	903.62
			+77.21			1.84	903.63
			420+00			1.96	903.75
			+25.21			2.00	903.79
			+50				
			+75				
			421+00				
			+25				
			+50				
			+75				
			422+00				
			+25				
			+50				
			+75				
			423+00				
			+25				
			+50				
			+75				
			424+00				
			+25				
			+50				
			+75				
			425+00				
			+25				
			+50				
			+75				
			426+00				
			+25				
			+50				
			+75				
			427+00				
			+25				
			+50				
901.79	.21	12.00'	+75	902.00	12.00'		903.79
901.79	.24	13.33'	428+00	902.03	13.33'		903.79
901.84	.27	14.67'	+25	902.11	14.67'		903.84
901.94	.30	16.00'	+50	902.24	16.00'		903.94
902.11	.32	17.33'	+75	902.43	17.33'		904.11
902.32	.35	18.67'	429+00	902.67	18.67'	2.00	904.32
CONTINUED							

Adjustment in edge elevations made to secure railroad grade crossing approaches

4°-0' CURVE CONTINUED

LEFT					RIGHT		
EDGE OF PAV'T	DEDUCT CROWN	WIDTH	STATION	℄ GRADE ELEV.	WIDTH	SUPER ELEV.	EDGE OF PAV'T
902.58	.38	20'	+25	902.96	20'	2.00	904.58
902.93			+50	903.31			904.93
903.33			+75	903.71			905.33
903.79			430+00	904.17			905.79
904.30			+25	904.68			906.30
904.86			+50	905.24			906.86
905.48			+75	905.86			907.48
906.15			431+00	906.53			908.15
906.87			+25	907.25			908.87
907.65			+50	908.03			909.65
908.47			+75	908.85			910.47
909.36			432+00	909.74			911.36
910.30			+25	910.68			912.30
911.29			+50	911.67			913.29
911.70			+60	912.08			913.70
912.33			+75	912.71			914.33
913.43			433+00	913.81			915.43
914.58			+25	914.96			916.58
915.79			+50	916.17			917.79
917.05			+75	917.43			919.05
917.31			+80	917.69			919.31
917.88			+91	918.26			919.88
918.36			434+00	918.74			920.36
919.06			+13	919.44			921.06
919.73			+25	920.11			921.73
920.12			+32	920.50			922.12
921.15			+50	921.53			923.15
921.50			+56	921.88			923.50
922.62			+75	923.00			924.62
924.12			435+00	924.50			926.12
925.17			+17.50	925.55			927.17
925.29			+19.50	925.67			927.29
925.62			+25	926.00			927.62
927.12			+50	927.50			929.12
928.62			+75	929.00			930.62
930.12			436+00	930.50			932.12
931.62			+25	932.00			933.62
933.12			+50	933.50			935.12
934.62			+75	935.00			936.62
936.12			437+00	936.50			938.12
937.62			+25	938.00		2.00	939.62
939.12			+50	939.50			941.12
940.58	.38		+75	940.96			942.47
941.92	.39		438+00	942.31			943.60
943.04	.43		+22.71	943.47			944.48
943.15	.43		+25	943.58			944.58
944.40	.36		+50	944.76			945.48
[illegible]			+57.50	[illegible]			[illegible]
[illegible]			+75	[illegible]			[illegible]
[illegible]			439+00	[illegible]			[illegible]
[illegible]	[illegible]	5'	+22.71	For elevations from sta. 438+50 to sta 442+00 See Sheet No. 131.			
[illegible]	[illegible]	[illegible]	+25				
[illegible]	[illegible]	[illegible]	+50				
[illegible]	[illegible]	[illegible]	+62.7				
[illegible]	[illegible]	[illegible]	+75	[illegible]			[illegible]
[illegible]	[illegible]	[illegible]	+88.7	[illegible]			[illegible]
[illegible]	[illegible]	[illegible]	440+00	[illegible]			[illegible]
[illegible]	[illegible]	[illegible]	+25	[illegible]			[illegible]
[illegible]	[illegible]	20'	+50	[illegible]	20'		[illegible]
NO EXTRA PAVEMENT							

OBTAINED GRAPHICALLY

FEDERAL AID
FA 260-A(2)
10 OHIO FA 520-C(1) 1941
FA 520-A(2)

37
145

TUSCARAWAS COUNTY
S.H. 70 SEC. "A" (PT.): D.-
& MINERAL CITY (PT.).
DOVER BASIN.

Excavation	21484
Excavation To BE Wasted	5,677
Embankment	19,243
Dumped Rock Fill	0

EXCAV. TO BE WASTED E.A.	EXCAV. TO BE WASTED C.Y.	END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
	515			149	1616
	262	31		849	
		861.0			
	494			76	1471
	271				
		880.5 Ahead BACK	51	60	740
	453			19 (60)	1215
		880.0			
	218	0	637		
	413			0	984
		880.05			
	228	0	426		
	135	0			
	441			67	799
		881.3			
	248		103		437
	441			194	708
	228		107		328
		881.35			
	485			222	576
	290		133		294
	274			123	272
	0	0	0		

EXCAV. TO BE WASTED E.A.	EXCAV. TO BE WASTED C.Y.	END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
0					
	145				
157		404	552		
		880.0			
	286			819	1043
		879.75			
	321			923	1077
		878.5			
	195	517	588		
		874.5			
	392			917	1166
		880.2			
	478			646	1404
		880.00			
	288	225	845		
		881.5			
	339			329	1612
	294			130	896

912.5 55.5' Lt. ℄ 1:1
908.6 50.5' Lt. ℄ 1:1
Sta. 203+94 L. End 12" and begin 8" Ry. Drainage El. 894.22
894.34 894.25 894.5 895.0 2.5' Lt. ℄ 9-A C.B. 9-A C.B. Y El. 894.05
898.20 204+00 892.9
Sta. 203+50 Begin Intercepting Ditch On Left
893.6
897.08 203+50 892.1
Sta. 203+50 Beg. 12" Ry. Drainage on Lt. Ele. 893.6
2½:1
895.95 203+00 891.8
Sta. 202+25 - End No. 3 Gutter on Lt.
62.5' Lt. ℄ 883.3
+35 = 0.0 Cut
894.90 202+50 892.0
58.5' Lt. ℄ 882.0
893.98 202+00 892.4
54' Lt. ℄ 880.5
893.21 201+50 892.6
Sta. 201+00 - Begin No. 3 Gutter on Lt.
9-A C.B. 888.0 888.5 887.7 9-A C.B.
892.58 201+00 892.6
Sta. 200+50 - BEGIN WASTE EXCAV.
892.08 200+50 892.1
891.73 200+00 891.4
CHANNEL EXCAV.
Muck 875.0
887.0 Paved Stone Gutter to Foot of slope 882.6
STA. 201+00 - BEGIN GUARD RAIL ON RT.
Sta. 201+00. Begin Part Removal
STA. 201+00 BEGIN F.A. 260-A(2) BEGIN PROJECT

930.0 65.5 Lt. ℄ 1:1
910 66' Lt. ℄
920.0 30° 78° 63' Lt. ℄ 57°
928.0 5.0% 908.87
926.0 62.5' Lt. ℄ 907.74
922.0 65.5 Lt. ℄ 896.62
917.0 61' Lt. ℄ 895.40
25' Lt. ℄ 894.21
STA. 207+50 - END WASTE EXCAVATION
904.95 207+00 901.3
903.83 206+50 898.6
902.70 206+00 894.2
34° 34° 5.0% B B CHANNEL EXCAV.
901.58 205+50 895.0
900.45 205+00 894.7
899.33 204+50 893.9
STA. 200+00 TO STA. 207+00

FEDERAL AID
FA 280-A(2)
10 OHIO FA 320-C(1) 1941
FA 320-A(2)

38
145

TUSCARAWAS COUNTY
S.H. 70 SEC "A" (Pt.)-D-
& MINERAL CITY (Pt.).
DOVER BASIN.

STA. 210+00 - BEGIN DRIVEWAY GUARD RAIL
END ROADWAY GUARD RAIL RT.

Sta. 209+85 Beg. 8" Rdwy. Drainage Elev. 908.25 (Left)

Sta. 209+80 End 8" Rdwy. Drainage Elev. 906.3 (Left)

STA. 211+50 - END
DRIVEWAY GUARD RAIL RT.

2-A STA. 210+00 TO STA. 211+75 - DR. RT.

Sta. 211+25 Beg. 12" Rdwy. Drainage Elev. 911.0 (Left)

Sta. 211+20 End 8" Rdwy. Drainage Elev. 909.6 (Left)

STA. 210+60 TO 211+25
65 LIN. FT. TYPE "3 MODIFIED
PAVED GUTTER

STA. 210+50 - BEGIN
ROADWAY GUARD RAIL RT.

STA. 207+50 TO STA. 211+75

End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
			1058 96
		785	97
			769 90
		875	97
		676	111
		585	143
		699	196
		924	281
		1635	644
		840	415
1639	523		
930	150		
1907	322		
1130	198		
1460	489		
447	330		
946	576		
575	292		
1008	549		
514	301		
857	580		
412	325		

FEDERAL AID
FA 260-A(2)
10 OHIO FA 320-C(1) 1941
FA 320-A(2)

39
145

TUSCARAWAS COUNTY
S.H. 70 SEC. A (Pt.)-D-
& MINERAL CITY (Pt.).
DOVER BASIN.

STA 214+98 to STA 215+98 Left
165 Lin. Ft. of Type 3 Paved Gutter (Modified)

End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
			442 21
751	0		
			950 0
1300	0		
			1407 0
1740	0		
			3014 0
1515	0		
			2875 4
1590	4		

End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
		2806	21
1440	19		
		2722	69
1500	55		
1691	90		
2685	143		
994	53		
1400	99		
		1236	97
1270	110		
		1282	102
1500	111		

(Left) 8" Rdwy. Drain. In Elev. 915.8
12" Rdwy. Drain Out Elev. 915.4

STA 212+00 TO STA 215+50

FEDERAL AID 40
10 OHIO FA-280-A(2) FA 520-C(1) FA 520-A(2) 1941 145

TUSCARAWAS COUNTY
S.H. 70 SEC "A" (Pt.)-D-
& MINERAL CITY (Pt.).
DOVER BASIN.

Excavation To Be Wasted Area	Excavation To Be Wasted Cu. Yds.	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
					56 28
		36	20		
					70 32
		40	15		
					0 0
					69 25
		34	12		
					59 17
		30	6		
					70 11
		46	6		
					70 15
		30	10		
		84		59	93
		91		34	90
		182		48	183
		106		18	108
		232		338	230
		145		347	140

Excavation To Be Wasted Area	Excavation To Be Wasted Cu. Yds.	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
	71			117	72
176		180	184		
	93			124	112
211		335	285		
	337			394	443
516		518	672		
	898			1117	1067
454		688	480		
	848			1480	874
462		910	464		
	428			1293	433
0		486/471	4		
0		93	164	522	155
				52	76
		45	38		

930.27
218+38
Coal (TO BE REMOVED)
924.8
Sta. 218+30 Begin 15" Edwy. Drainage Elev. 924.7 (Left) 930.0

930.02
218+25
923.5
Sta. 218+25 End 12" Edwy. Drainage (Left) 929.7

929.55
218+00
923.2
929.1
Excavate unsuitable material to this Line

928.54
217+50
922.6
927.9

927.45
217+00
926.9
923.0 923.5 924.0
922.0 9-A C.B. 9-A C.B. Coal
Y El. 921.95
Excavate unsuitable material to this Line

926.33
216+50
926.3
921.4
Sta. 216+00 Begin 12" Edwy. Drainage Elev. 920.8 (Left)
Sta. 216+02 to Sta 216+80 Left
90 Lin. Ft. of Type 3 Paved Gutter (Modified)
Sta. 216+50 Begin Waste Area
Ahead
Back
Sta. 216+50 End Pvt. Removal

925.20
216+00
925.9
921.6 920.8
Sta. 215+90 End 8" Edwy. Drainage Elev. 919.96 (Left)

924.75
215+80
925.7
922.0 919.76
Sta. 216+65 = 0.0 Fill

935.16
222+50
935.0
929.4

934.85
222+00
934.8
922.1
33-A Sta 220+70 to Sta 223+20 Drive Rt (Parkway Area)

934.45
221+50
934.3
928.8

933.98
221+00
934.0
928.5
STA 220+62.5 - END GUARD RAIL ON RT.

933.44
220+50
933.4
929.0 929.5 930.0
Y. El. 927.72 9-A C.B. 9-A C.B.
928.8

932.81
220+00
932.6
927.1
Sta. 220+00 End Coal Area

932.12
219+50
931.8
926.4
Coal

931.33
219+00
931.0
925.7
944.0

930.48
218+50
930.3
925.0
Coal

STA. 215+80 TO STA. 222+50

TUSCARAWAS COUNTY
S.H. 70 SEC A(Pt.)-D- & MINERAL CITY (Pt.).
DOVER BASIN.

Excavation	81,046
Excavation To Be Wasted	28,822
Embankment	84,141
Dumped Rock Fill	6,627

Excavation To Be Wasted Area Cu. Yds.	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
			865	18
	132	6		
			156	17
	37	12		
			68	24
	36	14		
			78	19
	48	7		
			83	13
	42	7		
			73	15
	37	9		
			69	45
	37	40		
			73	144
	42	115		
			73	231
	37	134		
			57	133
	25	10		
2534				2
1252				2
931				4
1033	7			
824	117			
556	218			
295	76			
1035	190			
0	0			
1314	209			
739	92			
1427	97			
802	13			

940 E=0.50 — 932.5 — 937.20 — 227+50 — 938.2

940 933.5 E=0.49 — 932.25 — 937.00 — 227+00 — 937.8

940 E=0.30 — 932.0 — 936.80 — 226+50 — 937.3

940 E=0.05 — 931.75 — 936.60 — 226+00 — 937.1

940 — 931.5 — 936.40 — 225+50 — 936.7

940 — 931.25 — 936.20 — 225+00 — 936.2

940 — 931.0 — 936.00 — 224+50 — 935.9 — 2:1

940 931.25 931.5 932.0 — Left 12" Rdwy. Drain. In Elev. 930.70; 12" Rdwy. Drain. Out Elev. 930.8 — 930.9 — 1-2 C.B. — 9-A C.B. — 935.80 — 224+00 — 935.7 — 9-A C.B. — 1½:1

940 — 930.0 — 935.60 — 223+50 — 935.4 — 1½:1

940 — 929.7 — 935.40 — 223+00 — 935.0

STA. 223+25 ~ BEGIN GUARD RAIL RT.

995.0 — 95' Lt. ℄ — 990.0 — 90' Lt. ℄ — 992.0 — 92' Lt. ℄ — 994.0 — 92' Lt. ℄ — 72.5' Lt. ℄ — 971.5

1001.0 — 101' Lt. ℄ — 100 90 80 70 — 1:1

Sta. 229+60 Begin 12" Rdwy. Drainage Elev. 933.14 (Left)

940 E=0.50 — 933.2 — Sta. 229+50 End 8" Rdwy. Drainage Left Elev. 933.2 — 937.82 — 229+50 — 938.1

940 E=0.50 — 933.0 — 937.80 — 229+28 — 938.2 — Sta. 229+28 End Coal

940 E=0.50 — 932.7 — 937.76 — 229+00 — 938.1 — Coal

STA. 228+95 ~ BEGIN GUARD RAIL ON RT

940 E=0.50 — 932.76 — 937.73 — 228+90 — 938.1

3-A — STA. 228+75 DRIVE RT. NO PIPE Req.

940 E=0.50 — 933.0 — Sta. 228+50 Beg. 8" Rdwy. Drainage Elev. 933.0 (L) — 937.60 — 228+50 — 938.1 — Coal

STA. 228+59 ~ END GUARD RAIL ON RT.

Sta. 228+40 End 12" Rdwy. Drainage Elev. 932.05 (Left)

940 E=0.50 — 932.75 — 937.40 — 228+00 — 938.2 — Sta. 228+00 Begin Coal

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 — STA. 223+00 TO STA. 229+50

FEDERAL AID
FA 260-A(2)
FA 320-C(1)
FA 320-A(2)

42

10 OHIO 1941 145

TUSCARAWAS COUNTY
S.H. 70 SEC "A" (Pt)-D-
& MINERAL CITY (Pt).
DOVER BASIN.

GUARD RAIL FOR DRIVE (LUTHEY'S) 4-A
STA. 229+75. ('96 Lin. FT.)
STA. 230+75. ('96 Lin. FT.)

END AREA		CU. YD'S	
CUT	FILL	CUT	FILL
		2588	0
		1500	0
		2569	0
		1185	0
		2472	0
		1485	0
		2750	0
		1485	0

EXCAVATION TO BE WASTED		END AREA		CU. YD'S.	
Area	Cu. Yds	CUT	FILL	CUT	FILL
	541			2185	449
		288		1240	235
	267				
				2329	218
				1275	0
				1536	0
				1095	0
				1001	0
				1550	0

STA. 232+97 Begin Concrete Pavement Removal

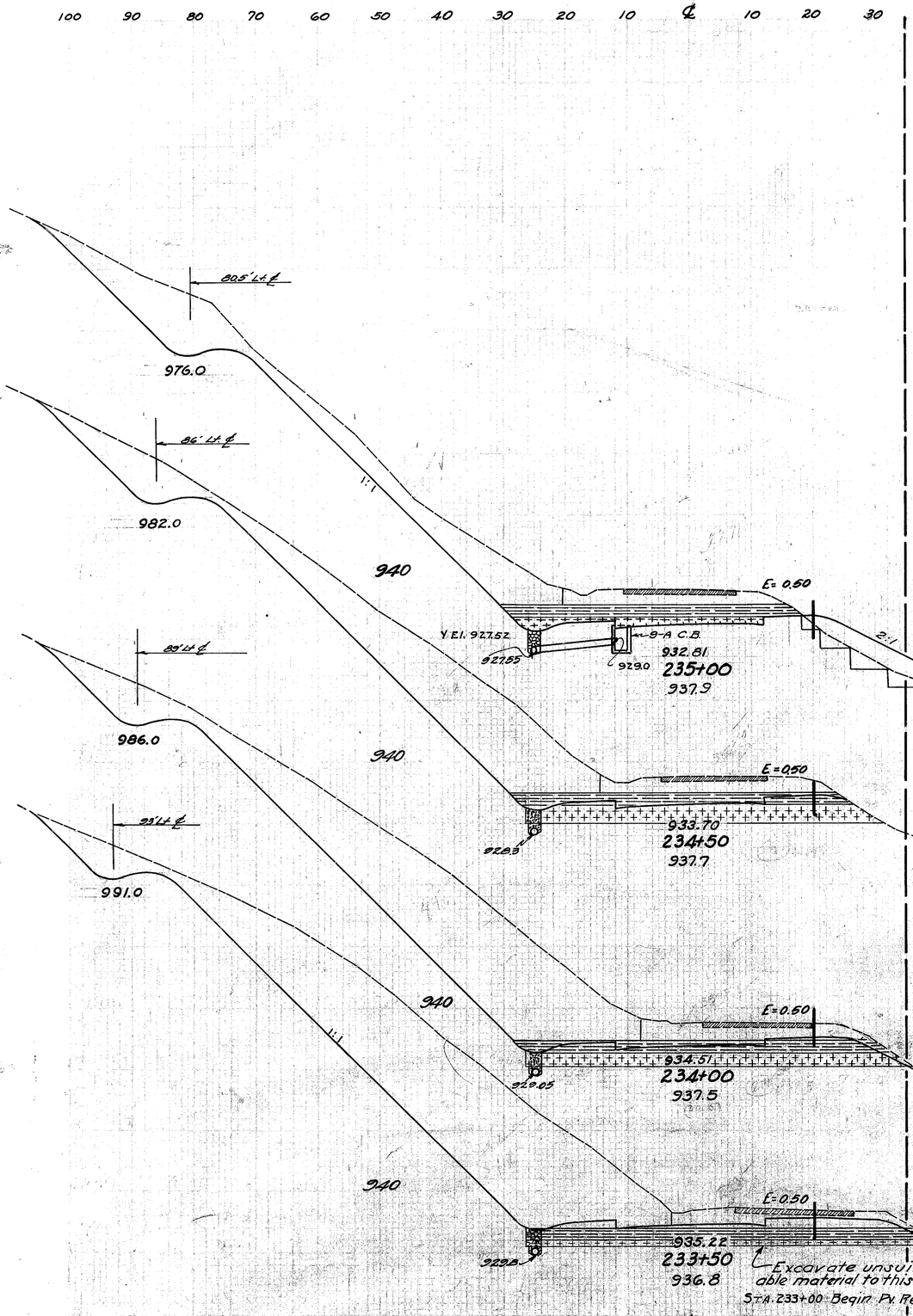
STA. 232+50 BEG. WASTE EXCAVATION 0

STA. 230+00 TO STA. 233+00

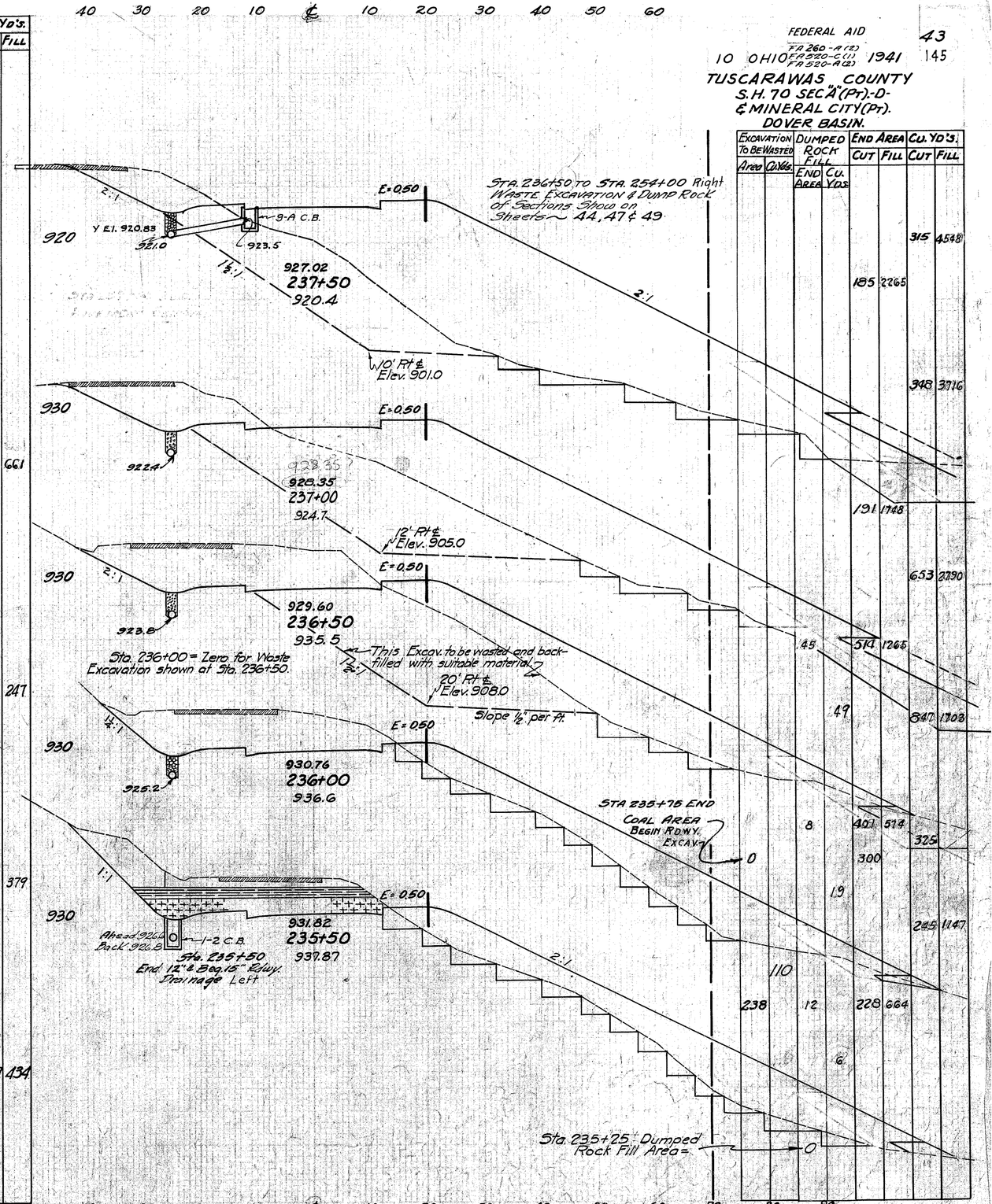
FEDERAL AID
FA 260-A(2)
10 OHIO FA 320-G(1) 1941
FA 320-A(2)

43
145

TUSCARAWAS COUNTY
S.H. 70 SEC "A" (Pt.)-D- & MINERAL CITY (Pt.).
DOVER BASIN.



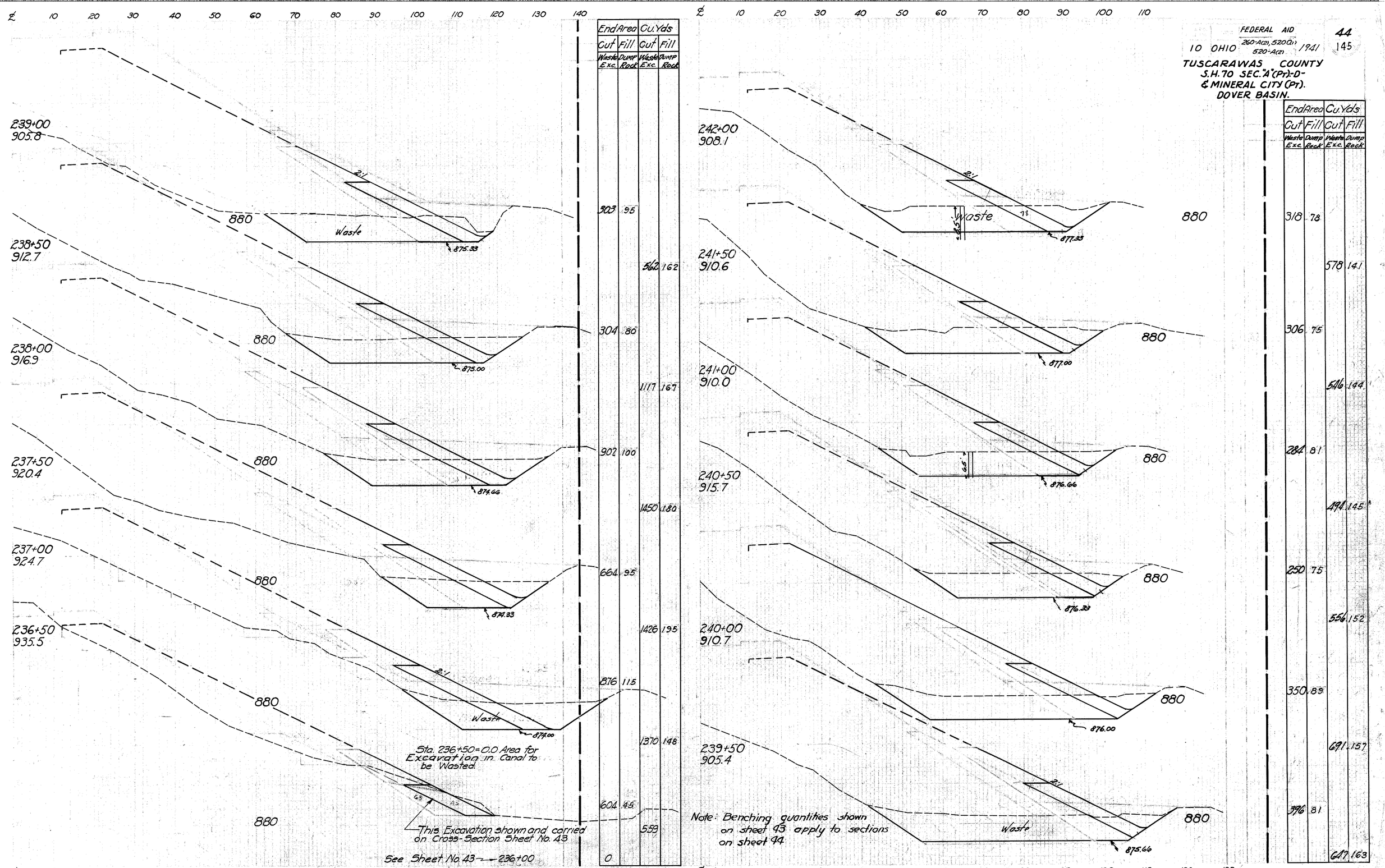
Excavation To Be Wasted		End Area		Cu. Yd's.	
Area	C.Y.Vol.	Cut	Fill	Cut	Fill
	415			647	661
	210			471	128
	519			980	247
	344			638	190
	633			1422	379
	340			898	219
	589			1869	434
	296			1120	250



Excavation To Be Wasted		Dumped Rock Fill		End Area		Cu. Yd's.	
Area	C.Y.Vol.	End Area	Cu. Yds.	Cut	Fill	Cut	Fill
						315	4548
				185	2265		
						348	3716
						191	1748
						653	2390
				45	514		1265
				49		547	1708
				8	401	514	325
						300	
				19		285	1147
						110	
				238	12	228	664
						6	

STA 233+50 TO STA 237+50

TUSCARAWAS COUNTY
S.H. 70 SEC. "A" (Pt)-D-
& MINERAL CITY (Pt).
DOVER BASIN.



End Area Cut Waste Exc.	End Area Fill Dump Rock	Cu. Yds. Cut Waste Exc.	Cu. Yds. Fill Dump Rock
303	95		
		562	162
304	86		
		1117	167
902	100		
		1450	180
664	95		
		1426	195
876	115		
		1370	148
604	45		
		559	
0			

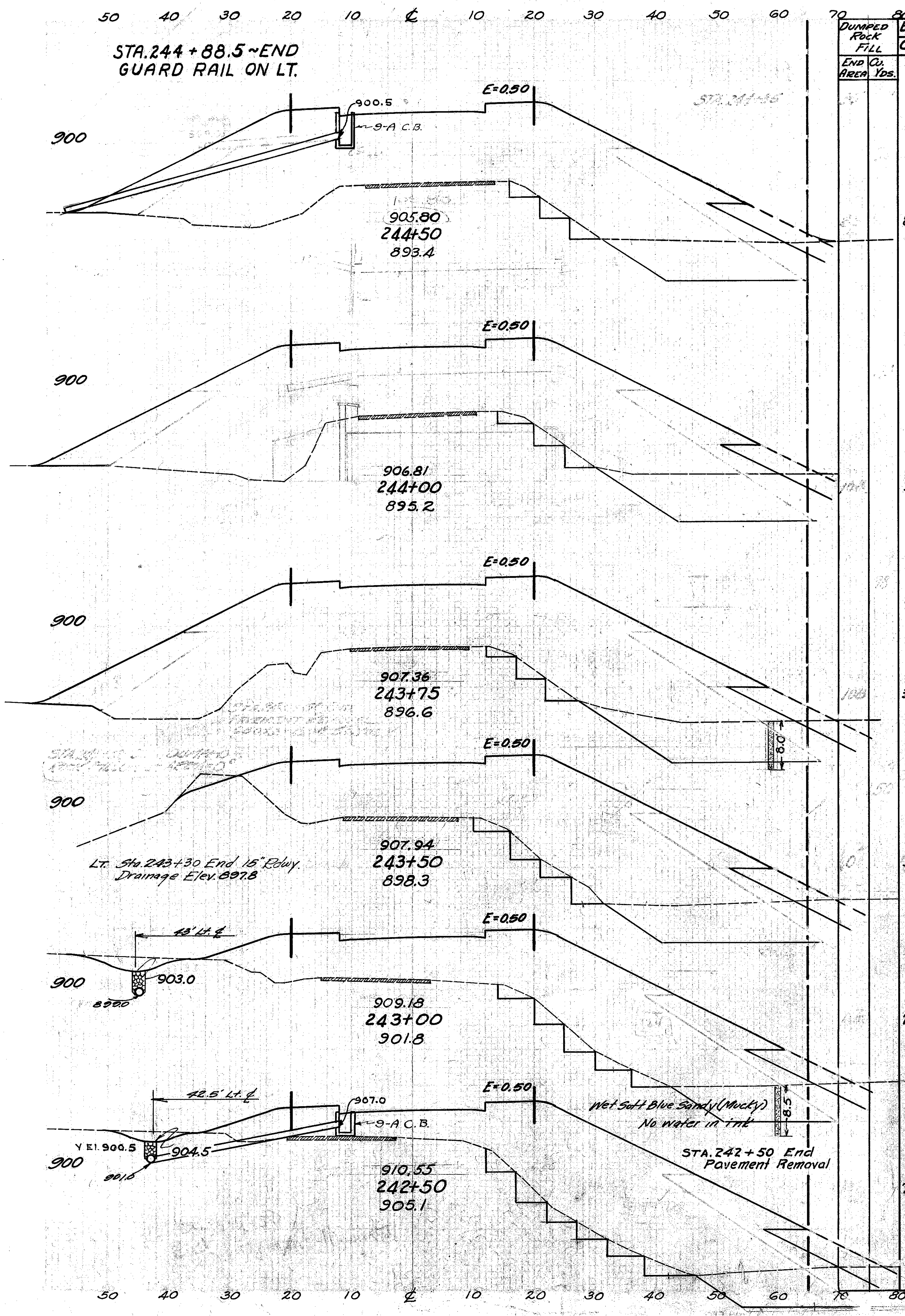
End Area Cut Waste Exc.	End Area Fill Dump Rock	Cu. Yds. Cut Waste Exc.	Cu. Yds. Fill Dump Rock
318	78		
		578	141
306	75		
		546	144
284	81		
		494	145
250	75		
		556	152
350	89		
		691	157
396	81		
		647	163

STA. 236+50 TO STA 242+00


FEDERAL AID
10 OHIO FA 260-A(2) FA 520-C(1) FA 520-A(2) 1941
45
145
TUSCARAWAS COUNTY
S.H. 70 SEC "A" (PT.) D- & MINERAL CITY (PT.).
DOVER BASIN.
Dump Rock Fill
End Area
Cu. Yds.
End Area
Cut
Fill
Cu. Yds.
Cut
Fill
34.5' Lt. ℄
E=0.50
916.3
913.0
910
920.82
239+50
905.4
388 4060
205 2454
35.5' Lt. ℄
917.9
915.0
922.51
239+00
905.8
402 4637
229 2554
32.5' Lt. ℄
920.5
917.6
Sta. 238+50 = Zero for Waste Excavation shown at Sta. 238+00
924.10
238+50
912.7
450 4454
257 2255
28.5' Lt. ℄
923.0
919.0
This Exca. to be wasted and back-filled with suitable material.
925.61
238+00
916.9
Slope 1/2" per ft.
10' Rt. ℄ Elev. 896.0
382 4537
155 2645
Unsuitable material and dump rock fill shown on Sheet 44
907.5
903.0
900
STA. 242+00 ~ BEGIN GUARD RAIL ON LT.
912.03
242+00
908.1
Wet soft blue sandy (Mucky)
No Water in hole
138 2250
77 1230
32.5 Lt. ℄
909.5
905.0
913.64
241+50
910.6
162 2538
98 1504
911.5
907.0
915.36
241+00
910.0
210 2801
129 1519
1-2 C.B.
Sec.-AA
15" In 910.7
15" Out 910.5
12" In 911.5
Roadway Drainage
33.5' Lt. ℄
913.1
909.0
909.67
Wet Soft Blue Sandy (Mucky)
5-A
Sta. 240+33 - Drive Lt. No Pipe Req.
917.20
240+50
915.7
293 2727
0 81
187 1424
34.5 Lt. ℄
915.5
914.7
911.0
9-A C.B.
919.06
240+00
910.7
372 3106
214 1930
STA 238+00 TO STA 242+00

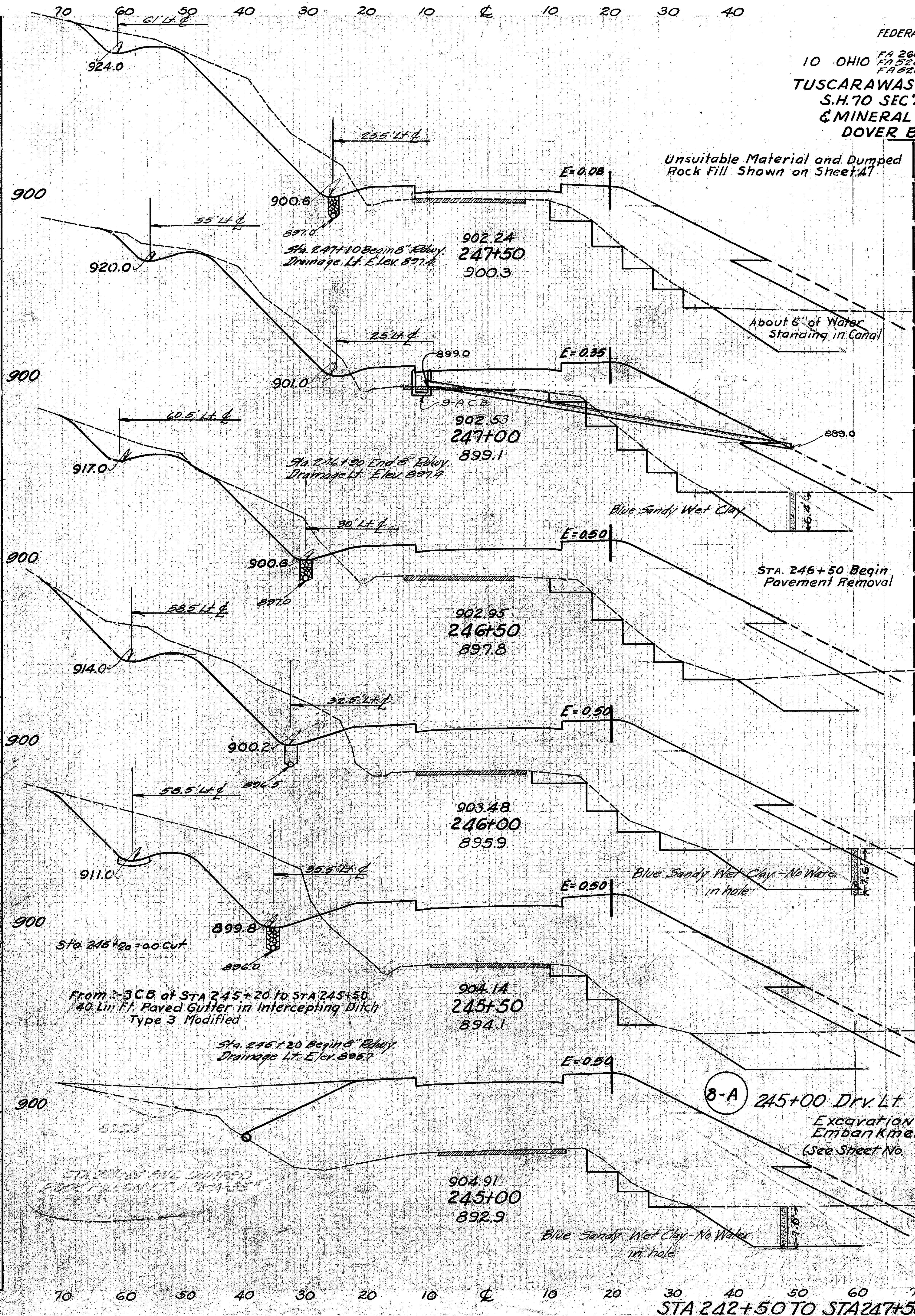
TUSCARAWAS COUNTY.
S.H. 70 SEC "A" (Pt.)-D-
& MINERAL CITY (Pt.).
DOVER BASIN.

STA. 244 + 88.5 ~ END
GUARD RAIL ON LT.


900.5
9-A C.B.
E=0.50
905.80
244+50
893.4
906.81
244+00
895.2
907.36
243+75
896.6
8.0
907.94
243+50
898.3
Lt. Sta. 243+30 End 15" Rdwy. Drainage Elev. 897.8
43' Lt. ℄
903.0
909.18
243+00
901.8
42.5' Lt. ℄
907.0
Y El. 900.5
904.5
Wet Soft Blue Sandy (Mucky) No water in hole
8.5
STA. 242+50 End Pavement Removal
910.55
242+50
905.1
900

Dumped Rock Fill End Area	Dumped Rock Fill Cu. Yds.	End Area Cut	End Area Fill	Cu. Yd's Cut	Cu. Yd's Fill
				51	2680
		29	1557		
				56	3017
		31	1702		
				29	1565
		31	1677		
				39	1377
		53	1299		
				120	2259
		76	1141		
				137	2168
		72	1200		

Unsuitable Material and Dumped Rock Fill Shown on Sheet 47

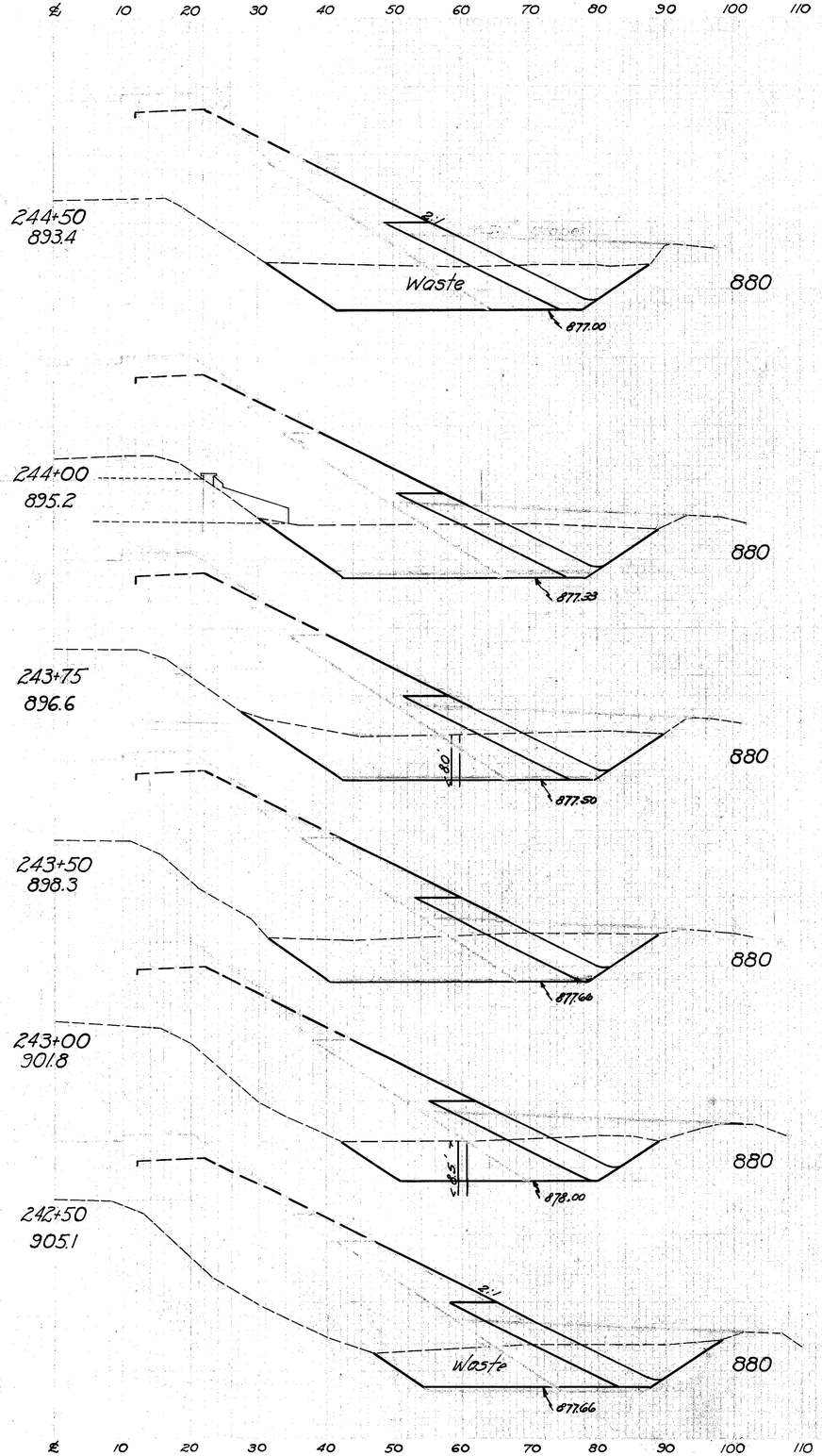

61' Lt. ℄
924.0
25.5' Lt. ℄
E=0.08
900.6
897.0
55' Lt. ℄
920.0
Sta. 247+10 Begin 8" Rdwy. Drainage Lt. Elev. 897.4
902.24
247+50
900.3
About 6" of Water Standing in Canal
25' Lt. ℄
899.0
E=0.35
901.0
9-A C.B.
899.0
902.53
247+00
899.1
60.5' Lt. ℄
917.0
Sta. 246+50 End 8" Rdwy. Drainage Lt. Elev. 897.4
Blue Sandy Wet Clay
6.4
30' Lt. ℄
E=0.50
900.6
897.0
STA. 246+50 Begin Pavement Removal
58.5' Lt. ℄
902.95
246+50
897.8
914.0
32.5' Lt. ℄
E=0.50
900.2
896.5
58.5' Lt. ℄
903.48
246+00
895.9
911.0
35.5' Lt. ℄
Blue Sandy Wet Clay - No Water in hole
7.6
E=0.50
899.8
896.0
Sta. 245+20 = 0.0 Cut
From 2-3CB at STA 245+20 to STA 245+50 40 Lin Ft. Paved Gutter in Intercepting Ditch Type 3 Modified
904.14
245+50
894.1
Sta. 245+20 Begin 8" Rdwy. Drainage Lt. Elev. 895.7
E=0.50
8-A 245+00 Drv. Lt.
904.91
245+00
892.9
Blue Sandy Wet Clay - No Water in hole
7.0
900

End Area Cut	End Area Fill	Cu. Yd's Cut	Cu. Yd's Fill
		442	821
210	600		
		318	1209
139	706		
		282	1406
170	811		
		395	1633
257	933		
		554	1960
341	1164		
		340	2317
		3486	307
26	1338		

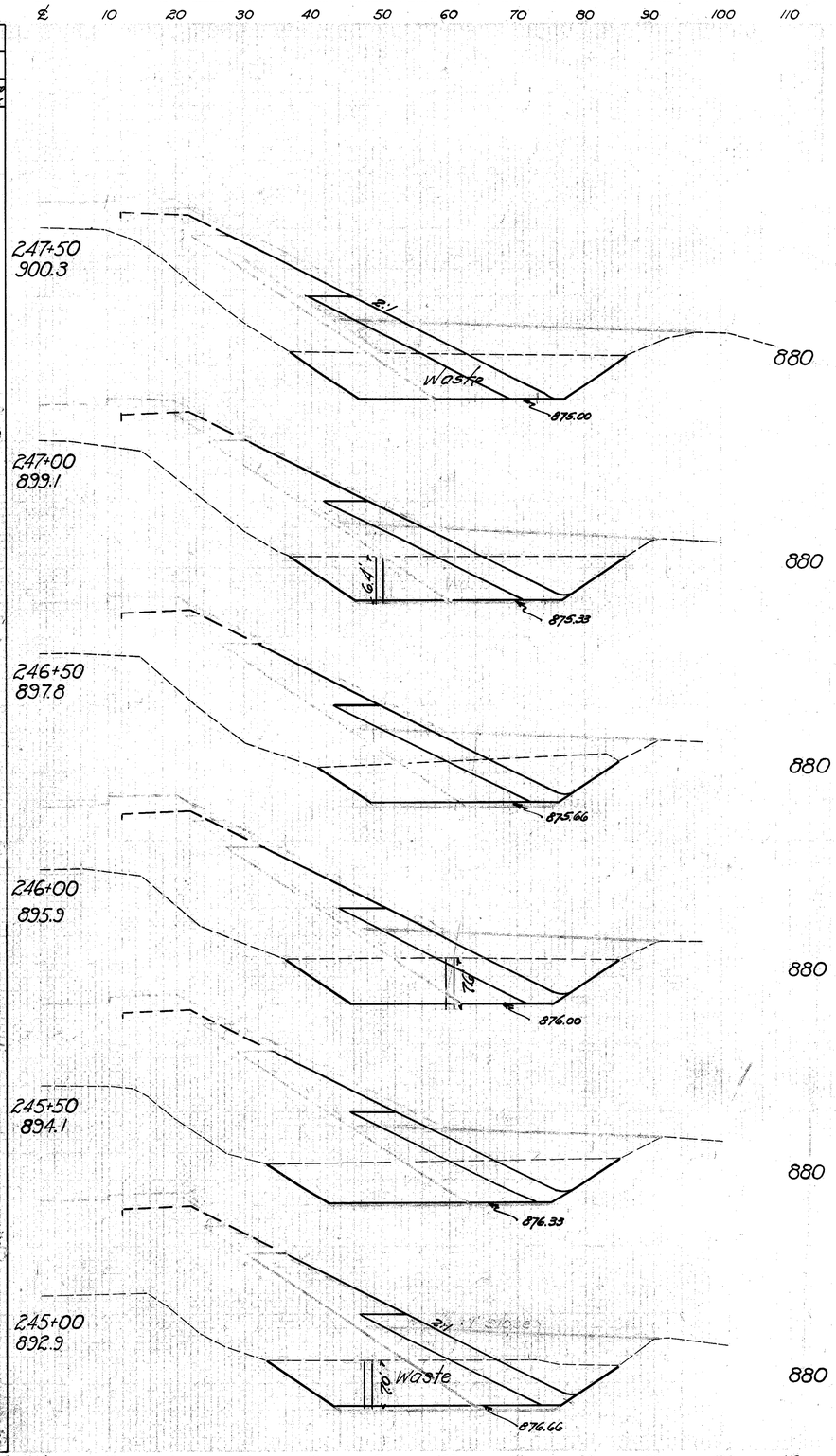
Excavation — 3486
Embankment — 307
(See Sheet No. 113)

STA 242+50 TO STA 247+50

TUSCARAWAS COUNTY
S.H. 70 SEC. "A" (Pt.)-D- & MINERAL CITY (Pt.). DOVER BASIN.



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
Waste Exc.	Dump Rock	Waste Exc.	Dump Rock
306	85		
		619	158
362	85		
		320	77
329	82		
		299	74
317	77		
		522	148
247	83		
		463	156
253	85		
		529	151



End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
Waste Exc.	Dump Rock	Waste Exc.	Dump Rock
262	99		
		485	181
262	96		
		452	178
226	97		
		490	183
260	100		
		485	176
264	90		
		500	172
276	96		
		539	167

STA. 242+50 TO STA. 247+50

FEDERAL AID
10 OHIO FA 260-A (2) FA 320-C (1) FA 320-A (2) 1941
48
145

TUSCARAWAS COUNTY
S.H. 70 SEC. "A" (PT.)-D- & MINERAL CITY (PT.)
DOVER BASIN.

Excavation to be Wasted and Dumped Rock Fill Shown on Sheet 49

EQUATION
Sta. 253+03.3 Back = 253+00 Ahead
Sta. 252+50 to Sta. 253+00 = 53.3
3.3' Long

902.0
250+00
896.4
60' Lt. ℄
28' Lt. ℄
68' Lt. ℄
929.0
926.0
899.4
895.9
900
Wet, soft, blue, sandy clay
902.0
249+50
898.3
Paved Gutter in Intercepting Ditch STA 249+00 to STA 249+50 (For Details See Sheet No. 95)
28.5' Lt. ℄
899.1
895.6
57.5 Lt. ℄
913.0
30.5' Lt. ℄
Roadway Drainage Left
8" Ahead 895.39
8" Back 895.35
898.5
2-3 C.B.
58.5 Lt. ℄
918.0
902.0
249+14.5
899.2
28' Lt. ℄
899.4
895.5
60.5' Lt. ℄
922.0
902.0
249+00
899.5
26.5' Lt. ℄
899.8
896.0
63.5' Lt. ℄
923.0
902.0
248+50
900.4
Balance Point Sta. 248+83.3
28.5 Lt. ℄
900.2
896.5
902.06
248+00
900.7
72.5' Lt. ℄
938.0
78' Lt. ℄
937.0
28.5' Lt. ℄
899.1
895.2
WASTE
890.1
902.0
253+00
895.1
Wet Blue Soft Sand Clay (4' to hard Strata)
74' Lt. ℄
936.0
32' Lt. ℄
898.0
894.9 Ahead
895.0 Back
8" Rdwy. Dr. Left
1-2 C.B.
902.0
252+50
894.3
889.3
75.5' Lt. ℄
935.0
26' Lt. ℄
900.0
895.5
902.0
252+00
894.1
889.1
Wet Blue Soft Sand Clay (Grey hard to bore through)
72.5' Lt. ℄
934.0
25' Lt. ℄
900.3
896.0
Sta. 251+10 Beg. 8" Rdwy. Drainage Elev. 896.0 (Left)
902.0
251+50
894.9
889.5
71.5' Lt. ℄
932.0
26' Lt. ℄
900.0
WASTE
902.0
251+00
894.5
889.5
Sta. 250+90 End 8" Rdwy. Drainage Elev. 896.44 (Left)
Wet Blue Soft Sandy Clay (Grey hard to bore through)
27' Lt. ℄
899.7
896.2
902.0
250+50
895.1
1:1
70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

Station	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
250+00	676	250		
			1107	449
249+50	519	235		
			475	352
249+14.5	203	300		
			138	141
249+00	312	225		
			661	505
248+50	402	320		
			619	562
248+00	267	287		

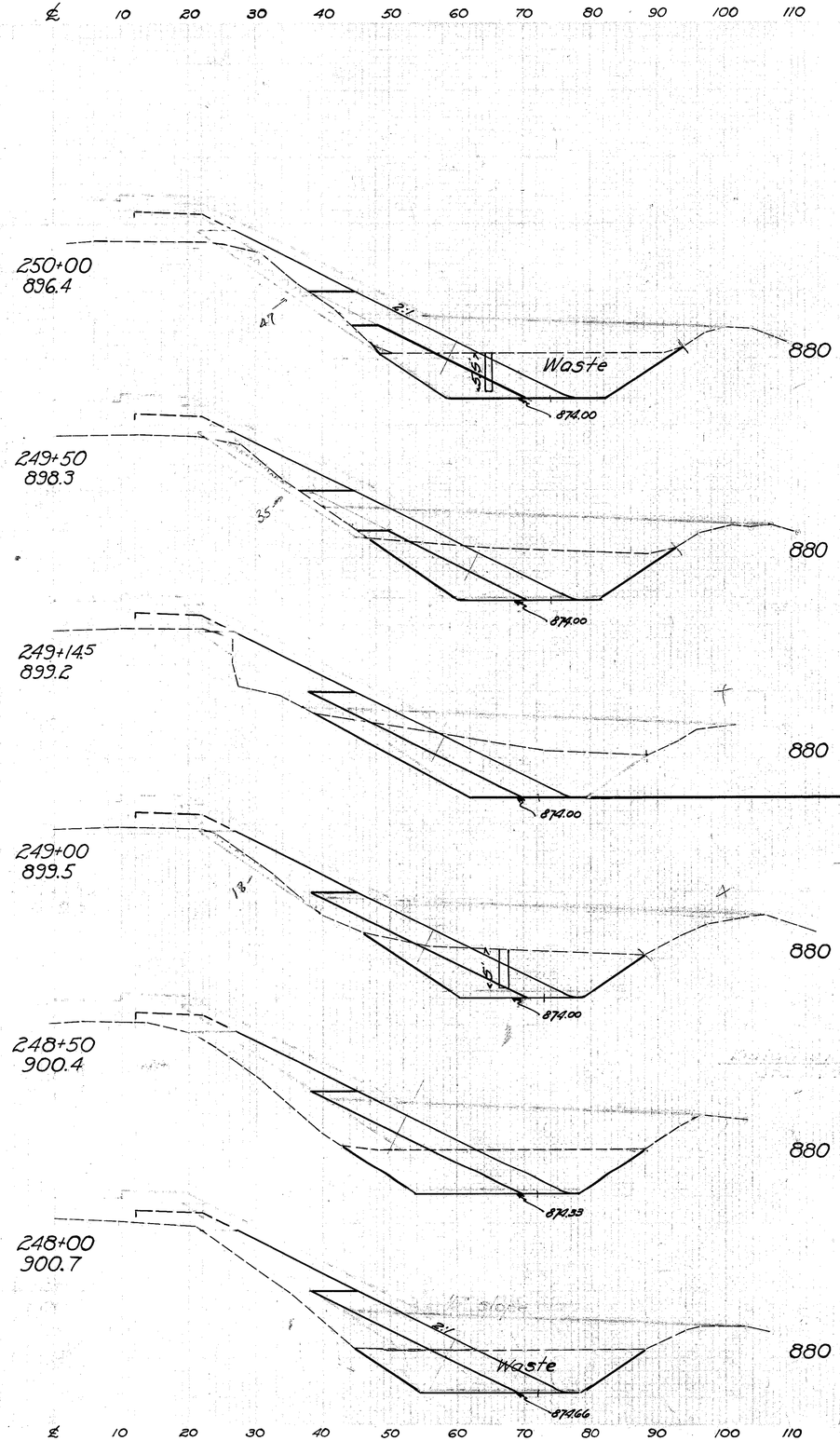
(250+00 to 250+50: Cu. Yds. Cut 1347, Fill 537)

Station	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
			1374	685
253+00	809	395		
			1632	878
252+50	845	495		
			1370	930
252+00	634	510		
			1118	880
251+50	574	440		
			1218	759
251+00	741	380		
			1408	657
250+50	779	330		

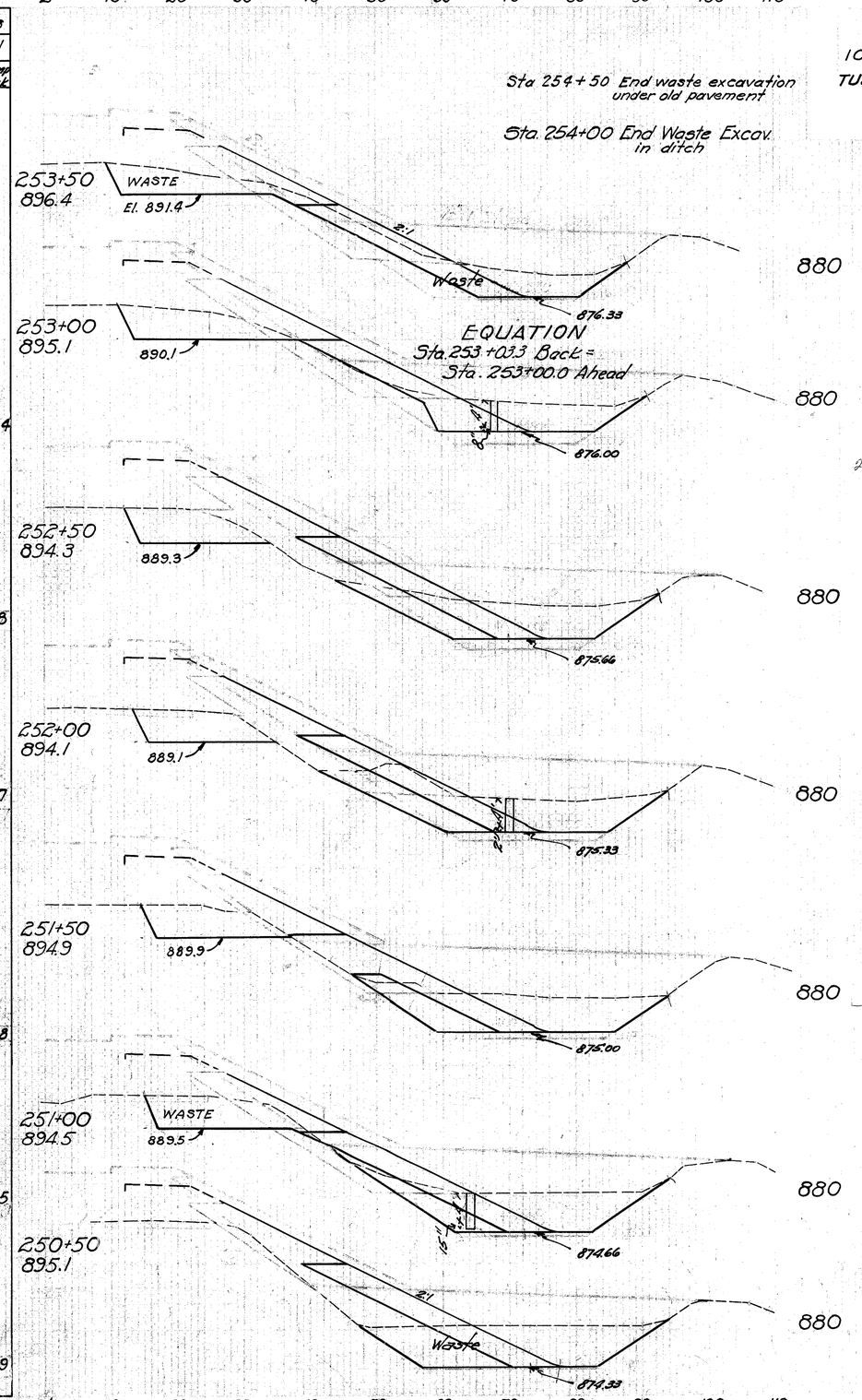
Dumped Rock Fill: End Area, Cu. Yds.

STA 248+00 TO STA 253+00

TUSCARAWAS COUNTY
S.H. 70 SEC. A (PT.)-D- & MINERAL CITY (PT.).
DOVER BASIN.



End Area Cut	End Area Fill	Cu. Yd's Cut Waste Exc.	Cu. Yd's Cut Dump Rock	Cu. Yd's Fill Waste Exc.	Cu. Yd's Fill Dump Rock
240	120				
			463		234
260	133				
			348		158
270	108				
			130		57
272	108				
			407		198
228	106				
			411		195
216	105				
			443		189



End Area Cut	End Area Fill	Cu. Yd's Cut Waste Exc.	Cu. Yd's Cut Dump Rock	Cu. Yd's Fill Waste Exc.	Cu. Yd's Fill Dump Rock
0				185	—
200	58				
			384		140
215	93				
			398		189
215	111				
			482		210
274	102				
			550		191
320	104				
			570		211
295	124				
			524		226
271	120				
			464		207
230	104				
			435		207

STA. 248+00 TO STA. 253+50

FEDERAL AID 50

10 OHIO FA 360-A(12) FA 320-C(1) FA 320-A(12) 1941 145

TUSCARAWAS COUNTY.
S.H. 70 SEC. "A" (Pt.)-D.-
& MINERAL CITY (Pt.).
DOVER BASIN.

DUMPED ROCK FILL		END AREA		CU. YDS.	
		CUT	FILL	CUT	FILL
END AREA	CU. YDS.				
				214	657
	119			*167	
62		70	460		
	*180				
	125			74	796
				*352	
75		10	400		
	*200				
	95			15	500
				*318	
72		13	370		
	*290				
40				24	203
				*161	
72		75	360		
	*290				
	131			190	556
				*468	
69		130	240		
	*215				
	128			250	435
				*440	
69		140	230		
	*260				
	127			226	389
				*435	
68		104	190		
	*210				
				*194	

DUMPED ROCK FILL		END AREA		CU. YDS.	
		CUT	FILL	CUT	FILL
END AREA	CU. YDS.				
	126			288	209
68		207	36		
	120			399	83
	128			424	88
	8			25	5
70		251	59		
	131			626	147
71		425	100		
	120			869	215
58		513	132		
	107			1007	405
58		575	305		
	156			1157	602
		675	345		

Sta. 256+10 Beg. 8" Rdwy. Drainage 896.94 (Left)

Sta. 255+90 End 8" Rdwy. Drainage Elev. 896.94 (Left)

BAL. 255+53

Blue Soft Sandy No Water in hole

Gravel & Water

Sta. 254+00 End Waste Excavation. See Sheet No. 19

Sta 236+50 to Sta 254+50 Unsuitable Material and Dumped Rock Backfill on Right Shown On Sheets 44, 47 & 19

Sta 257+50 to Sta 258+33 Left
101 Lin. Ft. Type 3 Paved Gutter (Modified)

8" Rdwy. Dr. Left
+34 Back 895.53
+36 Fore 695.72

Sta 258+37 to Sta 259+00 Left
60 Lin. Ft. Type 3 Paved Gutter (Modified)

* Indicates excavation to be wasted.

STA 253+50 TO STA 259+00

FEDERAL AID

51

10 OHIO FA 260-A (2) FA 320-C (1) FA 320-A (2) 1941 145

TUSCARAWAS COUNTY.
S.H. 70 SEC. A (Pt.)-D-
& MINERAL CITY (Pt.).
DOVER BASIN.

	DUMPED ROCK FILL		END AREA		CU. YDS.	
	END AREA	CU. YDS.	CUT	FILL	CUT	FILL
70						
60						
50						
40						
30						
20						
10						
℄						
10						
20						
30						
40						
50						
60						
70	112			1027		317
80						
90						
100	72		481	251		
10						2825 156
20				152		83
30	27					
40	72		341	196		
50						1570 91
60				583		343
70	132					
80	70		288	175		
90						2644 173
200				440		347
10	147					
20	89		188	200		
30						1285 96
40				323		417
50	144					
60	67		161	250		
70						2238 198
80						
90						
300						1132 113
10						
20						1886 269
30						
40						905 177
50						
60						
70						
80						
90						
400						
10						
20						
30						
40						
50						
60						
70						
80						
90						
500						
10						
20						
30						
40						
50						
60						
70						
80						
90						
600						
10						
20						
30						
40						
50						
60						
70						
80						
90						
700						
10						
20						
30						
40						
50						
60						
70						
80						
90						
800						
10						
20						
30						
40						
50						
60						
70						
80						
90						
900						
10						
20						
30						
40						
50						
60						
70						
80						
90						
1000						

Sta. 262+25 = 0.0 Area Dumped Rock Fill.

STA 259+50 TO STA 263+00

FEDERAL AID 52
10 OHIO FA 260-A(2) FA 320-C(1) FA 320-A(2) 1941 145
TUSCARAWAS COUNTY
S.H. 70 SEC. "A"(Pt.)-D.-
& MINERAL CITY (Pt.)
DOVER BASIN.

Cu. Yd's Cut Fill
End Area Cut Fill
Dumped Rock Fill End Area Cu. Yds.
3236 0
3338 0
3410 26
3274 70
3253 82
3192 95
1680 0
1925 0
1790 28
1768 48
1745 41
2947 130
1702 62
1481 78
STA 265+75 ZERO DUMP ROCK FILL
Excavation 72131
Excavation To Be Wasted 2535
Embankment 41276
Dumped Rock Fill 2882
903.08 266+50 917.4
902.96 266+00 918.3
902.84 265+50 916.7
902.72 265+00 916.2
902.61 264+50 916.0
902.50 264+00 916.3
902.41 263+50 908.7
Rdwy Dr. Left
1-2 C.B.
STA 263+50 END SPECIAL DITCH ON LT.
87' Lt. ℄
88.5' Lt. ℄
89' Lt. ℄
90' Lt. ℄
952.0
952.5
953.0
953.5
954.0
954.5
955.0
900

STA 263+50 TO STA 266+50

FEDERAL AID 53 145

10 OHIO F.A. 280-A(2) F.A. 320-C(1) F.A. 320-A(2), 1941

TUSCARAWAS COUNTY

S.H. 70 SEC. "A"(PT.)-D-

& MINERAL CITY (PT.).

DOVER BASIN.

END AREA CU. YD'S.
CUT FILL CUT FILL
DUMPED ROCK FILL
END AREA CU. YDS.
1205 0 1986 0
1610 0 2606 0
1860 0 3213 0
2015 0 3588 0
2185 0 3889 0
2055 0 3926 0
0 3713 0
1955 0 3491 0
1815 0
904.04 270+50 916.5
903.92 270+00 921.9
903.80 269+50 922.4
903.68 269+00 923.7
903.56 268+50 924.6
903.44 268+00 921.2
903.32 267+50 919.6
903.20 267+00 917.9
STA. 267+07 END GUARD RAIL RT.
2.4:1
1:1
900
74' Lt. ℄
71' Lt. ℄
73.5' Lt. ℄
76.5' Lt. ℄
79' Lt. ℄
81' Lt. ℄
83' Lt. ℄
86' Lt. ℄
Left Sta. 270+00 Beg. 12" Rdwy. Drainage Elev. 899.6
Left Sta. 269+90 End 8" Rdwy. Drainage Elev. 899.36
1-2 C.B.
End 10" Rdwy. Drainage @ C.B. - Elev. 899.0
Beg. 8" Rdwy. Drainage @ C.B. - Elev. 898.2

STA 267+00 TO STA 270+50

FEDERAL AID 54

10 OHIO FA 260-A (27) FA 320-C (1) FA 320-A (2) 1941 145

TUSCARAWAS COUNTY
S.H. 70 SEC A. (PT)-D-
& MINERAL CITY (PT).
DOVER BASIN.

	DUMPED ROCK FILL		END AREA		CU. YDS.	
	END AREA	CU. YDS.	CUT	FILL	CUT	FILL
904.88 274+00 911.5					915	56
STA 274+00 – BEGIN GUARD RAIL ON RT.						
904.76 273+50 911.7	0		568	0		
904.64 273+00 912.1	0		593	0	1056	0
904.52 272+50 912.8	0		600	0	1086	0
904.40 272+00 912.6	0		620	0	1130	0
904.28 271+50 913.9	0		664	0	1189	0
904.16 271+00 915.6	0		840	0	1393	0
			940	0	1648	0
905.36 276+00 878.2						
905.30 275+75 887.2						
905.24 275+50 893.0						
905.12 275+00 906.3						
905.00 274+50 910.8						

	DUMPED ROCK FILL		END AREA		CU. YDS.	
	END AREA	CU. YDS.	CUT	FILL	CUT	FILL
					162	18 4080
			85		11	1918
					80	17 1487
			88		25	1295
					19	1016
			50			
			19		16	901
					144	1093
					40	212
			31			
			14		140	231
			13			
			0		519	270
					420	61

E=0.32 2:1 2:1

E=0.06

54.5' Lt. ℄ 915.0 2:1 No. 2-3 Modified Catch Basin

Left Sta 273+00 End 12" Alloy Drainage Elev. 900.5 900.5

56.5' Lt. ℄ 917.0 1½:1

900.35

56.5' Lt. ℄ 919.0 1½:1

900.2

58' Lt. ℄ 925.0 1:1

900.05

64.5' Lt. ℄ 931.0 1:1 2:1

899.9

E=0.50 2:1 2:1

68.5' Lt. ℄ 886.0

E=0.50

50' Lt. ℄ 894.8

E=0.50

45.5' Lt. ℄ 897.5

STA 275+50 End Pavement Removal

STA 275+50 – BEGIN GUARD RAIL ON LT.

E=0.50

E=0.49 2:1 2:1

9-A 275+36 Drv. Lt. Excavation Embankment (See Sheet No. 114)

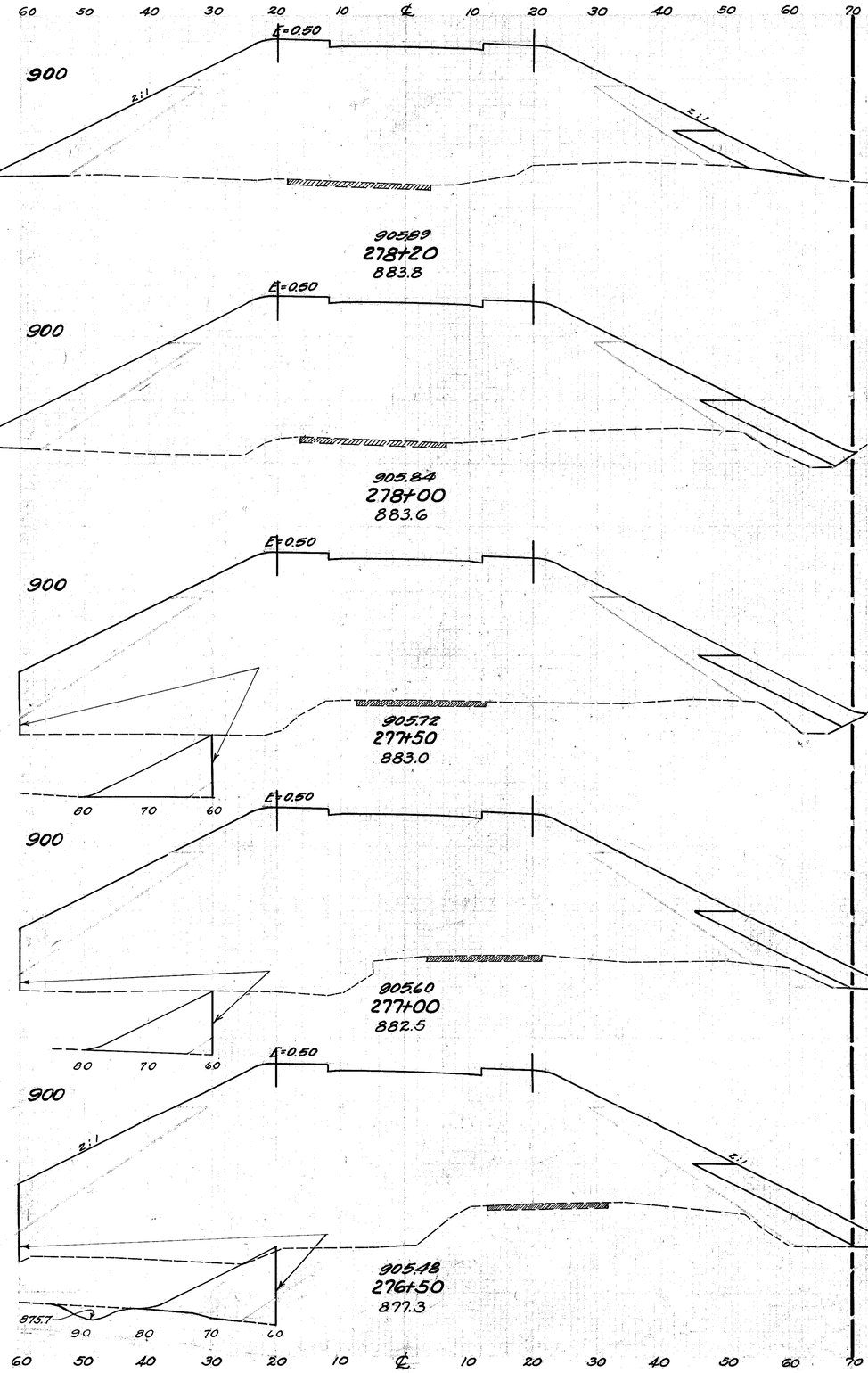
Sta 274+75 Begin Dumped Rock Fill

STA 271+00 TO STA 276+00

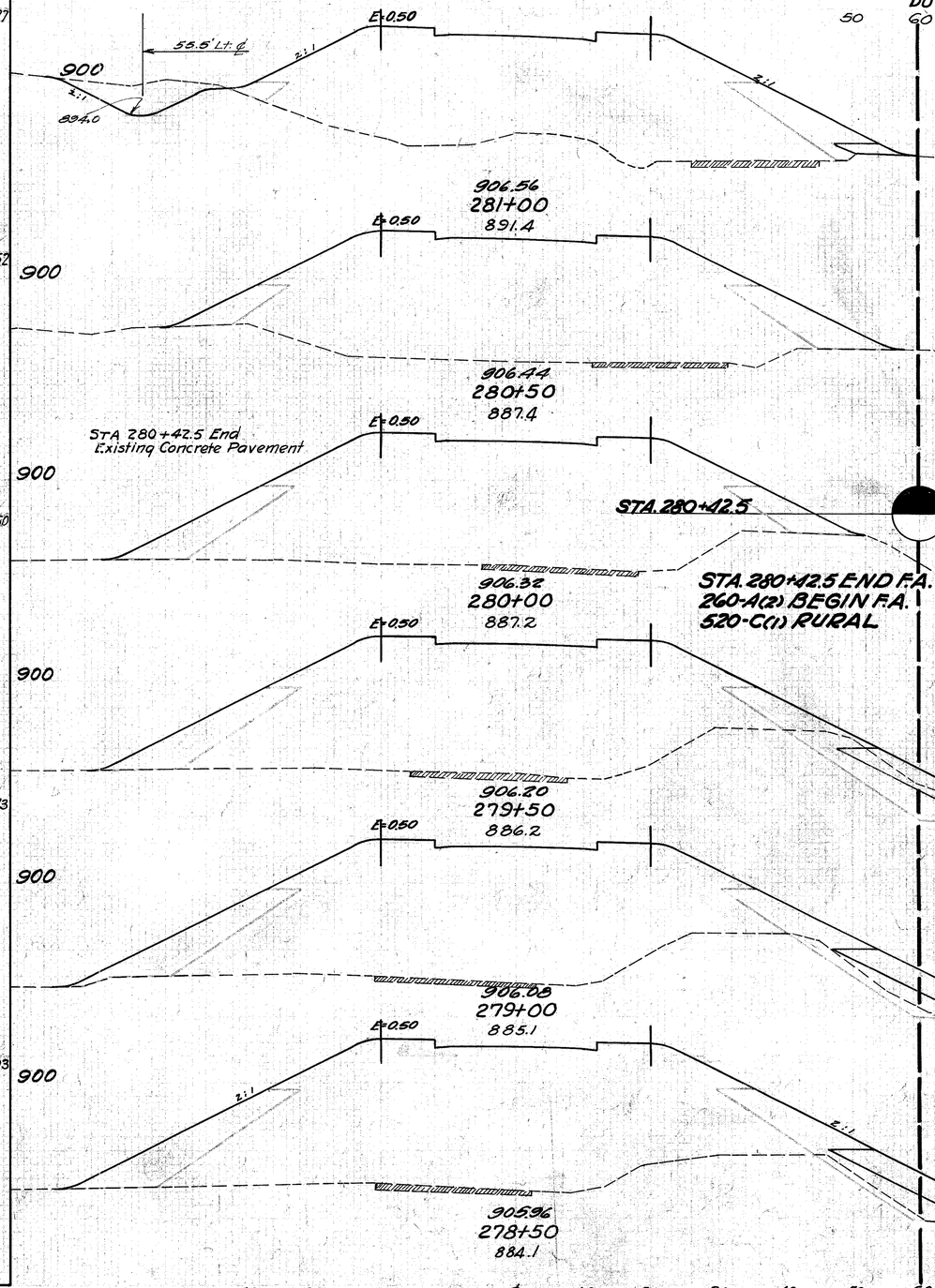
FEDERAL AID 55

10 OHIO FA 280-A(2) FA 520-C(1) FA 520-A(2) 1941 145

TUSCARAWAS COUNTY.
S.H. 70 SEC. A (Pt.)-D-
& MINERAL CITY (Pt.).
DOVER BASIN.



DUMPED ROCK FILL		END AREA		CU. YD'S	
END AREA	CU. YDS.	CUT	FILL	CUT	FILL
	54				1877
45		0	1695		
	39			0	1352
39		0	1955		
	110			0	3960
60		0	2322		
	134			0	4343
84		0	2368		
	161			7	4503
90		8	2495		



DUMPED ROCK FILL		END AREA		CU. YD'S	
END AREA	CU. YDS.	CUT	FILL	CUT	FILL
	22				102 1804
10		66	1216		
	10				61 2412
0		0	1388		
	0				0 391
	0				0 2601
	0				0 2216
0		0	1428		
	72				20 2631
78		21	1413		
	123				20 2719
55		0	1524		
	100				0 2970
53		0	1683		

STA. 280+42.5 END F.A. 260-A(2) BEGIN F.A. 520-C(1) RURAL

STA 276+50 TO STA 281+00

FEDERAL AID 56
10 OHIO FA 260-A(2) FA 520-C(1) 1941 145
FA 520-A(2)

TUSCARAWAS COUNTY
S.H. 70 SEC. "A" (Pt.)-D-
℄ MINERAL CITY (Pt.)
DOVER BASIN.

Excavation	70,234
Excavation To Be Wasted	493
Embankment	7,544
Dumped Rock Fill	40

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

910
908.0
2:1
32.5' Lt. ℄
E=0.50
903.25
907.40
284+50
916.8
4:1
902.15

Sta. 284+00 Beg. Type-3 Modified Paved Gutter In Road & Intecepting Ditches

910
E=0.50
1-2 C.B.
903.1 In 8"
902.9 Out 12"
907.28
284+00
916.4
2.4:1
902.0

910
E=0.50
907.16
283+50
915.2
902.75
901.85

910
E=0.50
902.60
907.04
283+00
913.5

Sta. 283+20 Beg. Rdwy. Drainage Ft. Elev. 901.76
Sta. 283+01.4 End Guard Rail on Rt.

283+00 Road Appr't Lt.
12-A
Excavation 2978
Embankment 1356
(See Sheet No. 115 116)

910
E=0.50
2.4:1
906.92
282+50
912.6
902.45

910
E=0.50
906.82
282+07
909.8
902.32

Sta. 281+85.3 - End Guard Rail on Lt.

900
31' Lt. ℄
E=0.50
2:1
902.24
Sta. 281+80 Beg. 12" Rdwy. Drainage Lt. Elev. 902.24
906.75
281+80
906.7

Sta 281+80 Zero Dump Rock Fill 0

900
53.0' Lt. ℄
E=0.50
2:1
899.0
906.68
281+50
901.8

Sta. 281+50 Begin Pav't. Removal on Rt.

910
56' Lt. ℄
2:1
917.0
E=0.50
904.15
908.11
287+50
917.5
3:1
903.05

Sta 287+00 End Type-3 Modified Gutter In Rdwy. Ditch 300 Lin. Ft.

910
33.5' Lt. ℄
915.5
E=0.50
904.0
908.00
287+00
917.4
902.90

910
50' Lt. ℄
914.0
E=0.50
903.85
907.88
286+50
917.6
902.75

910
48' Lt. ℄
912.5
E=0.50
903.7
907.76
286+00
917.8
902.60

910
45.5' Lt. ℄
911.0
E=0.50
903.55
907.64
285+50
917.1
902.45

910
42.5' Lt. ℄
2:1
909.5
E=0.50
903.4
907.52
285+00
916.4
3:1
902.3

	End Area Cut	End Area Fill	Cu. Yd's Cut	Cu. Yd's Fill
			1648	0
	900	0		
			1633	0
	864	0		
			1348	0
	592	0		
			951	0
	438	0		
			767	0
Dumped Rock Fill End Area	Cu. Yds.			
	390	0	502	40
	240	50	234	33
	228	16	151	415
	8			
	14	44	732	
			1528	0
	830	0		
			1554	0
	848	0		
			1588	0
	867	0		
			1696	0
	965	0		
			1736	0
	910	0		
			1657	0
	880	0		

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

STA 281+50 TO STA 287+50

FEDERAL AID 57

10 OHIO FA 280-A(2) FA 220-C(2) FA 320-A(2) 1941 145

TUSCARAWAS COUNTY
S.H. 70 SEC. "A" (Pt)-D-
& MINERAL CITY (Pt).
DOVER BASIN.

Excavation To Be Wasted Area	Excavation To Be Wasted Cu. Yds.	End Area Cut	End Area Fill	Cu. Yd's Cut	Cu. Yd's Fill
				2516	0
		1350	0		
				2398	0
		1240	0		
				2206	0
Ahead	76	1142	0/76		
		141		2101	141
				1993	141
		1025	76		
		180	141		
				1611	70
		820	0		

End Area Cut	End Area Fill	Cu. Yd's Cut	Cu. Yd's Fill
		3741	0
2110	0		
		3824	0
2095	0		
		3644	0
1840	0		
		3185	0
1600	0		
		2867	0
1496	0		
		2681	0
1400	0		

STA 288+00 TO STA 294+00

FEDERAL AID 58

10 OHIO FA 260-A(2) FA 320-C(1) FA 320-A(2) 1941 145

TUSCARAWAS COUNTY.
S.H. 70 SEC "A" (Pt.)-D-
& MINERAL CITY (Pt.).
DOVER BASIN.

STA. 298+48.3 END
F.A. 520-C(1) RURAL
BEGIN F.A. 520-A(2)

STA. 298+48.3

48' Lt. ℄ — 909.0 — 888.6 — 905.16 — 298+00 — 910.9 — 800.75
52.5' Lt. ℄ — 911.8 — 899.9 — 905.40 — 297+50 — 910.4 — 900.0
63.5' Lt. ℄ — 914.0
73.5' Lt. ℄ — 921.0
108' Lt. ℄ — 940.0 — 900.2 — 905.65 — 297+00 — 910.9 — 900.25
Sta. 296+00 Beg. Type #3 Mod. Paved Gutter in Intercepting Ditch
122.5' Lt. ℄ — 900.5 — 947.0 — 905.90 — 296+50 — 912.0 — 900.5
112.5' Lt. ℄ — 900.8 — 946.0 — 906.14 — 296+00 — 914.0 — 900.75
117' Lt. ℄ — 945.0 — 901.1 — 906.39 — 295+50 — 917.0 — 901.0
20' Type 3 Mod. Gutter in Intercepting Ditch
901.4 — 906.63 — 295+00 — 919.1 — 901.25
98 Lin. Ft. Type 3 Gutter
2-3 Catch Basin
8" Inlet Elev. 901.85
12" Outlet Elev. 901.7
901.7 — 906.88 — 294+50 — 919.7
Std. 1-2C.B. on Rt.
8" In Elev. 901.65
12" Out Elev. 901.5

62.5' Lt. ℄ — 886.5 — 903.93 — 300+50 — 888.3
56' Lt. ℄ — 896.0 — 904.18 — 300+00 — 889.5
545' Lt. ℄ — 895.0 — 904.30 — 299+75 — 890.9
Sta. 299+48.25 Begin Guard Rail on Lt.
41.5' Lt. ℄ — 899.0
Sta. 299+60 End 12" Rdwy. Drainage Lt.-Elev. 898.64
224' — 904.42 — 299+50 — 896.5
Sta. 299+00 - Begin Guard Rail on Rt.
Sta. 299+00 End 12" Rdwy. Drainage - Elev. 899.25
902.0 — 33 1/4 — 196' — 899.0
904.67 — 299+00 — 906.0
899.25
Sta 298+50 = 00 Area in Fill
133'
Sta. 298+85 End Type #3 Mod. Paved Gutter in Intercepting Ditch
300 Lin. Ft.
445 Lt. ℄ — 907.0 — 899.3
904.91 — 298+50 — 911.2
899.50
STA. 298+50 - DRIVE RT. 24 - 15" PIPE
13-A
14-A STA. 299+00 - DRIVE LT. 24 - 15" PIPE

	END AREA CUT	END AREA FILL	CU. YD'S. CUT	CU. YD'S. FILL
			33	0
			972	0
			939	0
	510	0		
			941	0
	508	0		
			907	0
	474	0		
			1068	0
	679	0		
			1754	0
	1215	0		
			2769	0
	1775	0		
			3154	0
	1955	0		
			3597	0
	1930	0		

	DUMPED ROCK FILL END AREA	DUMPED ROCK FILL CU. YDS.	END AREA CUT	END AREA FILL	CU. YD'S. CUT	CU. YD'S. FILL
		96			44	2442
	35		33	1177		
		65			44	2132
	35		14	1125		
	31				14	924
	31					
			16	870	296	5
		14				
					19	625
	0				26	480
					177	461
	165		18			
					653	16
	540	0	34	5		

STA 294+50 TO STA 300+50

FEDERAL AID

59

10 OHIO FA 280-A (2) FA 320-C (1) FA 320-A (2) 1941 145

TUSCARAWAS COUNTY.
S.H.70 SEC "A" (Pt)-D-
& MINERAL CITY (Pt).
DOVER BASIN.

Sta. 302+75 End Pavement Removal.

64.5' Lt. ℄ 890 884.2 2:1

902.91
302+50
889.1

65.5' Lt. ℄ 890 883.8

903.16
302+00
884.3

67.5' Lt. ℄ 890 883.4

903.40
301+50
884.7

68.5' Lt. ℄ 890 883.1 3:1

EQUATION 903.65 {301+07.25 BACK = 301+00 AHEAD} 884.6

69' Lt. ℄ 890 883.0 2:1 2:1

903.69
301+00 BACK
884.7

Dumped Rock Fill End Area	Dumped Rock Fill Cu. Yds.	End Area Cut	End Area Fill	Cu. Yd's Cut	Cu. Yd's Fill
	131			39	2157
64		23	1192		
	109			35	2270
54		15	1261		
	111			31	2445
66		18	1388		
	182			31	2595
65		16	1420		
	17		4		376
68		15	1460		

Sta. 304+14 Left Begin Dump Rock Fill End Area = 10.4

Sta. 304+08 Begin Guard Rail on Lt.

Sta. 303+59.5 = 10-A Road Approach Lt. DO-TU-48 See Sheet No 117 for Details.

Sta 303+84 End Guard Rail on Lt.

Sta. 303+36 Lt. End Dump Rock Fill-End Area = 92 ± sq. ft.

62.5' Lt. ℄ 890 884.5 2:1 2:1

902.24
305+00
885.7

902.24
304+50
884.9

902.32
304+00
883.6

902.45
303+50
890.4

902.67
303+00
889.1

Dumped Rock Fill End Area	Dumped Rock Fill Cu. Yds.	End Area Cut	End Area Fill	Cu. Yd's Cut	Cu. Yd's Fill
	203			0	1912
	185		0		1684
	265			0	2902
Ahead	101		0		1150
Back Right	68				
Back Left	33				
Left.	25				
+14 Left	10			0	2374
Right	125				
Right	67		0		1114
Excavation				0	
Embankment					4532
Dumped Rock Fill (See Sheet No. 117)			0		
Right	111				
				0	2046
	53		0		1095
Right	91			18	2068
+36 Left	42				
Left.	49				
Ahead Left	32				
Ahead Right	45				
Back	77		19		1138

15-A 303+59.5 Road Appr. Lt.

STA 301+00 TO STA 305+00

FEDERAL AID

10 OHIO FA 260-A(2) FA 320-C(1) FA 320-A(2) 1941 145 60

TUSCARAWAS COUNTY.
S.H. 70 SEC. "A"(Pt.)-D-
& MINERAL CITY(Pt.).
DOVER BASIN.

Begin Pav't. Removal
Sta 310+82

End Pav't. Removal
Sta. 307+42

Estimated Dumped Rock Fill under Bridge for both Benches → 1100

Estimated Fill under Bridge for both Benches → 4800

STA. 307+06.48 — END GUARD RAIL ON LT.

900

top of bench ℄ EL. 898.5 to Sta. 307+86

2:1

903.69
306+94.52
888.2

END OF APPROACH EARTHWORK

STA. 306+80.45 — END GUARD RAIL ON RT.

900

903.03
306+50
887.7

900

902.53
306+00
886.9

900

902.30
305+50
886.2

900

902.27
305+30
885.9

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

Dumped Rock Fill End Area	Dumped Rock Fill Co. Yds.	End Area Cut	End Area Fill	Cu. Yd's Cut	Cu. Yd's Fill
228		0	1909		
364		0	3168		
214		0	1916		
440		0	3575		
261		0	1946		
432		0	3556		
205		0	1870		
143		0	1345		
180		0	1757		

890

2:1

902.30
312+50
886.0

890

902.73
312+00
886.9

890

902.89
311+85
887.2

890

903.21
311+60
887.6

STA. 311+42 — BEGIN GUARD RAIL ON LT.

top of bench ℄ EL. 898.5 Ft. Sta. 311+14

903.69
311+27.86
888.1

END OF APPROACH EARTHWORK

STA. 311+18 — BEGIN GUARD RAIL ON RT.

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

Dumped Rock Fill End Area	Dumped Rock Fill Cu. Yds.	End Area Cut	End Area Fill	Cu. Yd's Cut	Cu. Yd's Fill
468		0	2874		
261		0	1510		
475		22	2704		
252		23	1410		
414		17	1760		
265		37	1413		
245		17	1405		
264		0	1621		
311		0	2249		
259		0	2151		

STA 305+30 TO STA 312+50

FEDERAL AID
10 OHIO FA 280-A(2), FA 320-C(1), FA 320-A(2) 1941
61
145

TUSCARAWAS COUNTY.
S.H. 70 SEC. A (Pt.)-D.-
& MINERAL CITY (Pt.).
DOVER BASIN.

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

Excavation	25,103
Excavation To Be Wasted	1,424
Embankment	92,641
Dumped Rock Fill	8,595

Station	Dumped Rock Fill End Area	Dumped Rock Fill Cu. Yds.	End Area Cut	End Area Fill	Cu. Yd's Cut	Cu. Yd's Fill
315+00						
		285			0	2620
	181		0	1501		
314+50						
		374			0	2862
	203		0	1590		
314+00						
		424			0	2997
	235		0	1637		
313+50						
		445			0	2979
	245		0	1571		
313+00						
		447			0	2880
	238		0	1539		
317+50						
		285			0	1715
	183					
	168		0	1039		
317+00						
		374			0	2038
	203		0	1162		
316+50						
		424			0	2269
	235		0	1288		
316+00						
		445			0	2412
	245		0	1318		
315+50						
		447			0	2455
	238		0	1333		

STA 313+00 TO STA 317+50


STA. 320+50 - END GUARD RAIL ON LT.
Sta. 320+80 Beg. 12" Rdwy. Drainage Rt. Elev. 895.29
STA. 320+50 - END GUARD RAIL ON RT.
Sta. 320+20 Beg. 12" Rdwy. Drainage on Lt. Elev. 895.11
STA 320+00 Begin Pavement Removal
STA. 318+87.9 - BEGIN GUARD RAIL ON LT.
STA. 318+87.9 - BEGIN GUARD RAIL ON RT.
318+66 Road Appr. Rt.+Lt.
Excavation
Embankment
(See Sheet No. 118 113) +80
STA. 318+53.23 - END GUARD RAIL ON LT.
STA. 318+44.22 - END GUARD RAIL ON RT.
Sta. 318+25± - Zero Dumped Rock Fill.
16-A
902.0 321+00 897.3
902.0 320+50 896.3
902.0 320+00 896.1
902.0 319+50 894.4
902.0 319+00 891.6
902.0 318+50 890.4
902.0 318+25 889.4
902.0 318+00 889.1
902.0 326+00 910.5
902.0 325+50 908.8
902.0 325+00 908.2
902.0 324+00 908.3
902.0 323+00 906.2
902.0 322+50 904.5
902.0 322+20 903.8
902.0 322+00 904.7
902.0 321+50 900.0
Unsuitable Material in Subgrade
STA. 323+00 BEGIN WASTE
Ave. Section
STA. 322+00 DRIVE LEFT
T-11 ... = 10.7 SQ. YD.
I-17 49'x12'x33'/27 = 7 CU. YD.
12" PIPE = 30 LIN. FT.
17-A
STA. 322+00 BEGIN 8' BERM RT. & LT.
Drive Left STA. 322+00
Sta. 321+70 = 0.0 fill

Dumped Rock Fill End Area	Dumped Rock Fill Cu. Yds.	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
0				83	228
0	0	22	188		
	0			66	420
0		49	265		
	0			68	535
0		25	312		
	0			47	637
0		26	376		
	0			155	837
0		141	528		
	0			1483	1969
0				236	1120
0		114	682		
	0			60	660
10		16	744		
	10			7	767
21		0	913		

Excavation to be Wasted Area	Excavation to be Wasted Cu. Yds.	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
76	84	1135	76	1222	84
	141			1767	141
76		773	76		
	141			1409	141
76		749	76		
	281			2739	281
76		730	76		
	141			2126	141
0		580	0		
				917	0
		410	0		
				422	0
		350	0		
				256	0
		340	0	70	33
				576	21
		68	58		

FEDERAL AID 63

10 OHIO FA 280-A (2) FA 520-C (1) FA 520-A (2) 1941 145

TUSCARAWAS COUNTY.
S.H. 70 SEC. "A" (PT.)-D-
& MINERAL CITY (PT.).
DOVER BASIN.

Station	Waste Excav. End Area	Waste Excav. Cu. Yds.	End Area Cut	End Area Fill	Cu. Yd's Cut	Cu. Yd's Fill
					321	47
327+41			893	129		
					152	42
327+32	0		30	121		
		19			130	126
327+00	41		189	92		
		41			257	59
326+81	76		540	76		
		44			327	44
326+65	72		563	72		
		39			362	39
326+50	70		740	70		
		54			669	54
326+30	76		1065	76		

Station	Excavation To Be Wasted End Area	Excavation To Be Wasted Cu. Yds.	End Area Cut	End Area Fill	Cu. Yd's Cut	Cu. Yd's Fill
329+00	76		1100	76		
		141			2317	141
328+50	76		1435	76		
		56			1094	56
328+30	76		1520	76		
		39			660	39
328+16	74		1025	74		
		97			1480	103
327+80	72		1195	80		
		45			1093	111
327+51	12		840	127		

STA 326+30 TO STA 329+00

FEDERAL AID

64

10 OHIO FA-260-A(8) FA-520-C(1) FA-520-A(2) 1941 145

TUSCARAWAS COUNTY
S.H. 70 SEC. A (Pt.)-D-
& MINERAL CITY (Pt.).
DOVER BASIN.

	END AREA		CU. YD'S	
	CUT	FILL	CUT	FILL
902.0 332+00 884.5				
	37	838		
			139	782
902.0 331+50 890.1				
		845		
			138	1558
902.0 331+00 894.1				
	164	451		
			606	420
902.0 330+50 911.8	400	0		
			1289	70
902.0 330+00 910.3	76	902	76	
			1701	141
902.0 329+50 908.9	76	935	76	
	80		1074	80
	141		1884	141
	61		810	61

	END AREA		CU. YDS.	
	DUMPED ROCK FILL		CUT	FILL
	END AREA	CU. YDS		
902.0 334+00 894.6				
	32		270	829
902.0 333+50 894.9	17		178	436
	32		276	804
902.0 333+00 892.5	17		120	433
	18		128	889
902.0 332+78 892.3	3		18	529
	17		10	451
902.0 332+50 889.8	38		6	577
	35		50	681
902.0 332+25 888.7	27		90	739
	13		163	736
	0		263	850

Sta. 331+90 Beg. 8" Rdwy. Drainage on Lt. Elev. 890.56

Sta. 331+25 End 8" Rdwy. Drainage on Rt. Elev. 895.3

Sta. 330+70 End 8" Rdwy. Drainage on Lt. Elev. 895.52

STA. 330+75—BEGIN GUARD RAIL ON LT.

STA. 331+25—BEG. GUARD RAIL ON RT.

STA 330 + 60 = 0.0 Fill

Sta. 330+50 Zero Waste

STA. 333+50—END GUARD RAIL ON LT.

Sta. 332+25 = Zero Dumped Rock Fill.

STA. 329+21.5 END F.A. 520-A(2) BEGIN F.A. 520-C(1) RURAL

STA. 329+21.5

STA 329+50 TO STA 334+00

FEDERAL AID 65
FA-280-A(2) FA-320-C(1) FA-320-A(2) 1941 145
10 OHIO
TUSCARAWAS COUNTY
S.H. 70 SEC "A" (PT)-D-
& MINERAL CITY (PT).
DOVER BASIN.

DUMPED ROCK FILL END AREA	DUMPED ROCK FILL CU. YDS.	END AREA CUT	END AREA FILL	CU. YD'S CUT	CU. YD'S FILL
				267	88
				2547	
					0
0*		150	54		
	0			614	108
0		513	63		
	0			917	175
0		477	127		
	0			874	320
0		467	219		
	10			856	509
10		458	331		
	22			802	646
	14			408	366
	30			463	698
	19			92	387
	34			191	784
	17			114	460

18-A (See Sheet No. 120) (121) Sta. 338+05 Road Appr. Lt.
Excavation →
Embankment →

Sta. 336+50 Zero Dumped Rock Fill.

Cross-hatched area is dirt end dumped by War Department. To be removed before placing roadway embankment.

25' Lt ℄ — 3:1 — 900.0 — 896.7 — 902.00 338+00 901.6

26.5' Lt ℄ — 899.8 — 896.4 — 902.00 337+50 901.3

27.5 Lt ℄ — 899.6 — 896.1 — 902.00 337+00 899.8

28.5 Lt ℄ — 899.3 — 895.8 — 902.00 336+50 898.1

30.0' Lt ℄ — 899.0 — 895.5 — 902.00 336+00 896.4

35.5' Lt ℄ — 898.7 — 895.2 — 902.00 335+50 895.6

36.0' Lt ℄ — 898.4 — 894.9 — 902.00 335+00 895.7

38.5 Lt ℄ — 897.7 — 894.2 — 902.00 334+50 894.1

29' Lt ℄ — 3:1 — 899.0 — 895.55 — 902.00 342+00 906.0

28.5' Lt ℄ — 899.25 — 895.7 — 902.00 341+50 900.7

27.75' Lt ℄ — 899.5 — 895.85 — 902.00 341+00 904.5

27.0 Lt ℄ — 899.7 — 896.0 — 902.00 340+50 904.5

84"

26.0' Lt ℄ — 12% — 899.9 — 896.15 — 902.00 340+00 903.2

34-A STA. 339+75 - DRIVE LT. 30"-12" PIPE

25.0' Lt ℄ — 900.1 — 896.3 — 902.00 339+50 900.1

20-A STA. 339+25 - DRIVE RT. NO EARTHWORK

Sta. 339+20 Beg. 8" Rdwy. Drainage on Lt. Elev. 896.39

25.5' Lt ℄ — 900.3 — 902.00 339+00 903.7

19-A STA. 338+50 — END STA. 338+85 — DRIVE LT. GUARD RAIL ON RT. NO PIPE

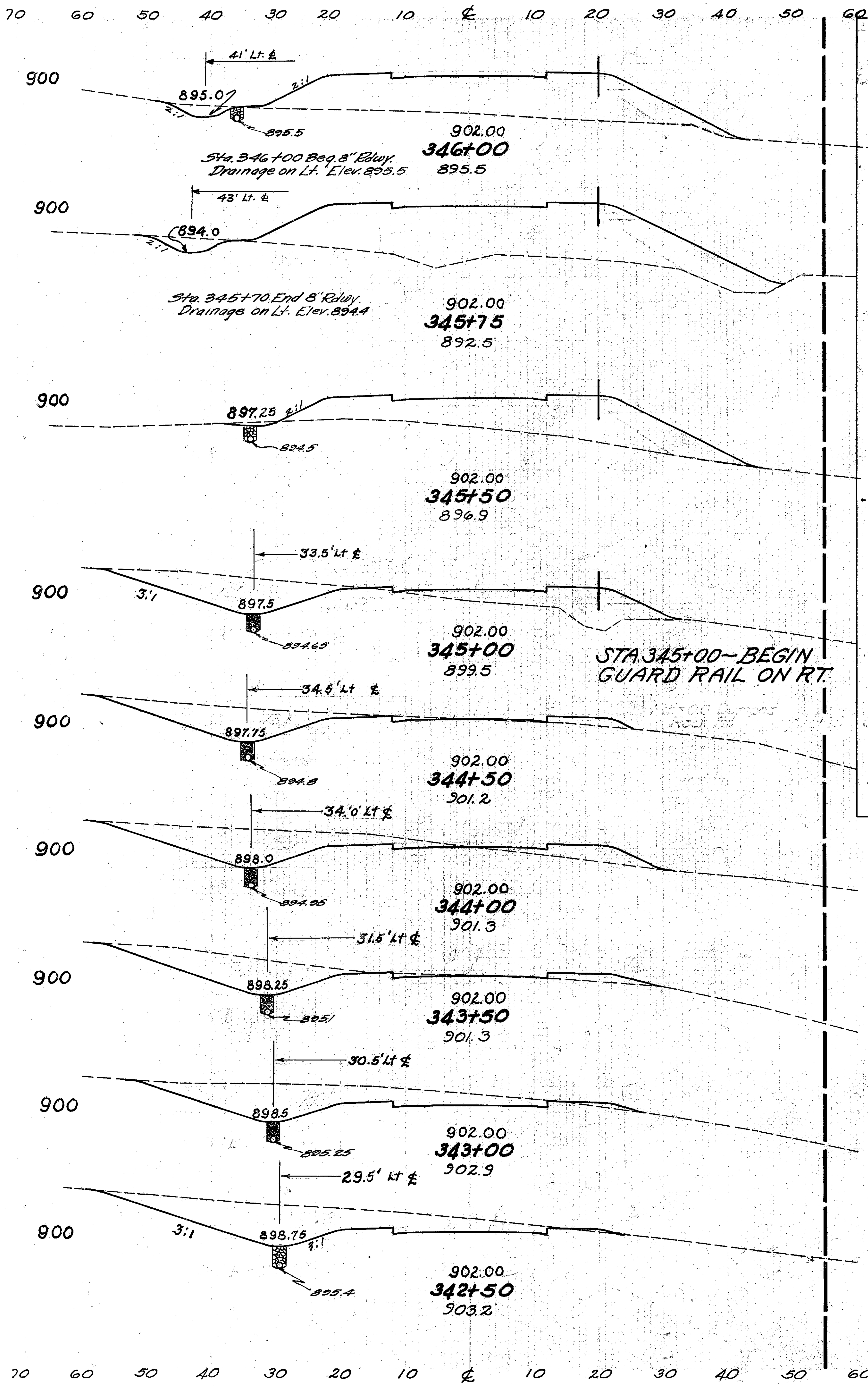
Sta. 338+75 End 8" Rdwy. Drainage Lt. Elev. 897.15

25.5' Lt ℄ — 3:1 — 900.2 — 897.0 — 902.00 338+50 902.8

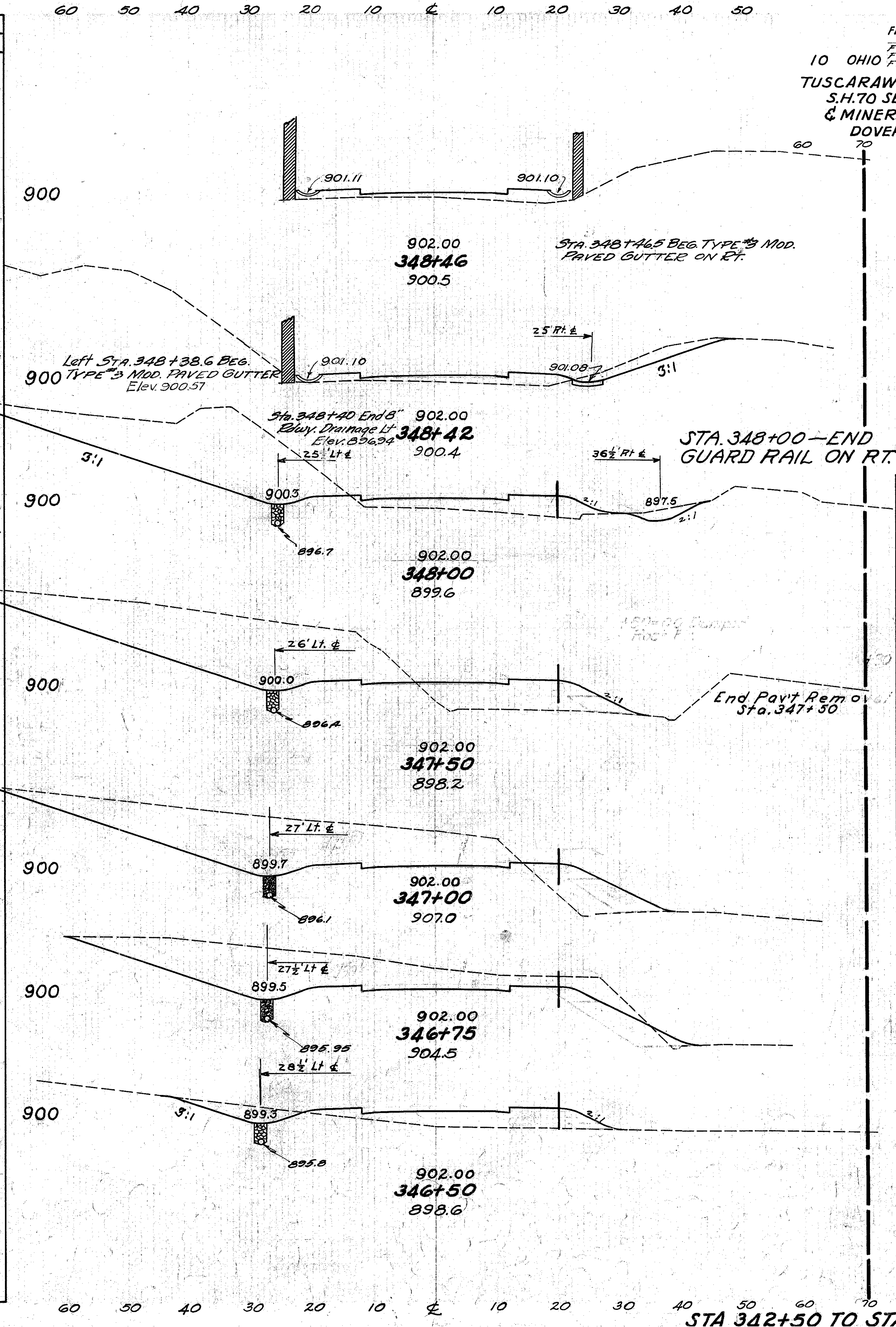
END AREA CUT	END AREA FILL	CU. YD'S CUT	CU. YD'S FILL
		481	2
292	0		
		570	0
324	0		
		585	0
308	0		
		552	4
288	4		
		472	111
222	116	64	26
		368	142
175	37		
		283	44
131	10		
		101	13
		219	47
138	41		

STA 334+50 TO STA 342+00

TUSCARAWAS COUNTY
S.H.70 SEC "A" (Pt)-D-
& MINERAL CITY (Pt).
DOVER BASIN.


41' Lt. ¢
895.0
895.5
902.00
346+00
895.5
Sta. 346+00 Beg. 8" Rdwy. Drainage on Lt. Elev. 895.5
43' Lt. ¢
894.0
Sta. 345+70 End 8" Rdwy. Drainage on Lt. Elev. 894.4
902.00
345+75
892.5
897.25
894.5
902.00
345+50
896.9
33.5' Lt ¢
897.5
894.65
902.00
345+00
899.5
STA. 345+00—BEGIN GUARD RAIL ON RT.
34.5' Lt ¢
897.75
894.8
902.00
344+50
901.2
34.0' Lt ¢
898.0
894.95
902.00
344+00
901.3
31.5' Lt ¢
898.25
895.1
902.00
343+50
901.3
30.5' Lt ¢
898.5
895.25
902.00
343+00
902.9
29.5' Lt ¢
898.75
895.4
902.00
342+50
903.2

End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
		39	431
10	355		
		13	412
18	534		
		10	391
3	311		
		119	394
125	114		
		219	119
112	14		
		217	49
155	39		
		258	51
124	16		
		281	18
180	3		
		377	5
227	2		


901.11
901.10
902.00
348+46
900.5
Sta. 348+46.5 Beg. Type #3 Mod. Paved Gutter on Rt.
25' Rt. ¢
901.10
901.08
3:1
Left Sta. 348+38.6 Beg. Type #3 Mod. Paved Gutter Elev. 900.57
Sta. 348+40 End 8" Rdwy. Drainage Lt. Elev. 896.94
902.00
348+42
900.4
STA. 348+00—END GUARD RAIL ON RT.
25' Lt ¢
36½' Rt ¢
900.3
897.5
896.7
902.00
348+00
899.6
26' Lt. ¢
900.0
896.4
End Pav't Remov. Sta. 347+50
902.00
347+50
898.2
27' Lt. ¢
899.7
896.1
902.00
347+00
907.0
27½' Lt ¢
899.5
895.95
902.00
346+75
904.5
28½' Lt ¢
899.3
895.8
902.00
346+50
898.6

End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
		0	82
0	53		
		2	8
30	50		
		341	106
408	86		
		819	205
476	135		
		879	211
473	93		
		389	45
368	4		
		185	53
32	110		

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	FA-260-A(12) FA 320-C (1) FA 220-A(2)	1941

67
145

TUSCARAWAS COUNTY
S.H. 70 SEC. "A" (PT)-D-
& MINERAL CITY (PT).
DOVER BASIN

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

900

26.5' Lt. ℄ 2:1 899.8 3:1
8964
902.0
350+00
899.5

25.5' Lt. ℄ 900.1 3:1
896.7
902.0
349+50
900.8

25' Lt. ℄ 2:1 901.05 901.1
STA. 349+31.8 END TYPE #3 MOD. PAVED GUTTER ON RT.
896.81
902.0
349+32
900.9
Sta. 349+25 Beg. 8" Rdwy. Drainage Lt. Elev. 896.86

STA. 349+49.2 END TYPE #3 MOD. PAVED GUTTER ON LT.
901.10 901.11
902.0
349+23.5
900.9

901.14 901.15
Top Footer Elev. 897.94
Top Footer Elev. 897.94
902.0
349+00
900.8

End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill	
		291	280	890
182	95			
		335	133	
180	49			890
		116	24	
167	23			900
		26	8	
0	28			900
		0	25	
0	29			900

31.5' Lt. ℄ 2:1 898.24 2:1 894.84 2:1
902.0
352+60
892.6

30.5' Lt. ℄ 898.6 895.2
902.0
352+00
895.5

28.5' Lt. ℄ 898.9 895.5
902.0
351+50
895.4

28.5' Lt. ℄ 899.2 895.8 2:1
902.0
351+00
892.7

27.5' Lt. ℄ 2:1 899.5 2:1 896.1 3:1
902.0
350+50
896.2

+60 = 0.0 Dumped Rock Fill +60

STA. 350+50 — BEGIN GUARD RAIL ON RT.

Dumped Rock Fill End Area	Dumped Rock Fill Cu. Yds.	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
	39			46	418
58		118	541		
	103			273	1122
35		128	469		
	45			249	808
13		163	401		
	40			210	716
30		63	369		
	22				
0				181	534
		132	207		

STA. 349+00 TO STA. 352+60

FEDERAL AID

10 OHIO FA 260-A(2) FA 520-C(1) FA 520-A(2) 1941

TUSCARAWAS COUNTY
S.H.70 SEC "A"(Pt.)-D-
& MINERAL CITY (Pt.)
DOVER BASIN.


Excavation To Be Wasted 27,668
Excavation 291
Embankment 65,877
Dumped Rock Fill 3254
902.00 355+50 890.3
902.00 355+00 890.0
902.00 354+50 889.7
902.00 354+00 889.0
902.00 353+50 888.3
902.00 353+00 891.3
902.00 352+79 890.6
STA. 355+00—BEGIN GUARD RAIL ON LT.
Sta. 355+30 End of 12" Rdwy. Drainage on Left Elev. 893.22
Begin 12" Rdwy. Dr. Lt. 352+81
End 8" Rdwy. Dr. Lt. 352+79
Begin 12" Rdwy. Dr. Lt. 352+81
No. 1-2 C.B. Sta. 352+80
2:1
900

STA. 352+79 TO STA. 355+50

FEDERAL AID

10 OHIO FA 260-A(2) FA 320-C(1) FA 320-A(2) 1941 | 69 145

TUSCARAWAS COUNTY.
S.H. 70 SEC "A" (Pt.) D.-
& MINERAL CITY (Pt.).
DOVER BASIN.

STA. 356+00 TO STA. 360+50

FEDERAL AID
F.A. 260-A(2)
F.A. 320-C(1)
F.A. 320-A(2)

10 OHIO 1941

70
145

TUSCARAWAS COUNTY
S.H. 70 SEC "A" (PT)-D-
& MINERAL CITY (PT).
DOVER BASIN.

		364+50	364+00	363+50	363+00	362+50	362+00	361+50	361+00
END AREA CU. YDS.	FILL	14 1089	57 4636	190 3823	469 2592	601 1440	311 905	99 904	118 893
	CUT	15 2625	40 2384	165 1744	342 1055	309 501	29 501	78 415	114 490
	FILL							36	55
	CUT								23
DUMPED ROCK EXC. END CU. AREA YDS.		192 108	200 108	192 100	190 0	176 105	139 85	94 65	
ELEVATION		902.00	902.00	902.00	902.00	902.00	902.00	902.00	902.00
		8735	8749	8773	8806	8965	8973	8980	8965
		882.5	889.0	891.0	892.0	893.0	894.0	895.0	900.3

STA. 361+50 - BEGIN GUARD RAIL ON LT.

STA. 361+00 TO STA. 364+50

FEDERAL AID

10 OHIO FA-289-A(2) FA 520-C(1) FA 520-A(2) 1941

71

145

TUSCARAWAS COUNTY

S.H.70 SEC "A" (PT.)-D.-

₵ MINERAL CITY (PT.).

DOVER BASIN.

STA. 365+00 TO STA. 368+00

FEDERAL AID
10 OHIO FA-260-A(2) FA-520-C(1) FA-520-A(2) 1941
TUSCARAWAS COUNTY
S.H.70 SEC "A" (PT)-D.-
& MINERAL CITY (PT).
DOVER BASIN.

STA. 368+50 TO STA. 371+50

TUSCARAWAS COUNTY
S.H. 70 SEC. "A" (PT.)-D.-
& MINERAL CITY (PT.).
DOVER BASIN

Cu. Yds.	Fill	4556		4566		4579		4630		4628		4606		1597
Cu. Yds.	Cut	0		0		0		0		0		0		0
End Area	Fill		2476		2450		2459		2511		2487		2488	2477
End Area	Cut		0		0		0		0		0		0	0
Dumped Rock Fill	Cu. Yds.	172		182		190		188		188		189		173
Dumped Rock Fill	End Area		91		105		100		103		100		104	104

STA. 372+00 TO STA. 375+00

FEDERAL AID

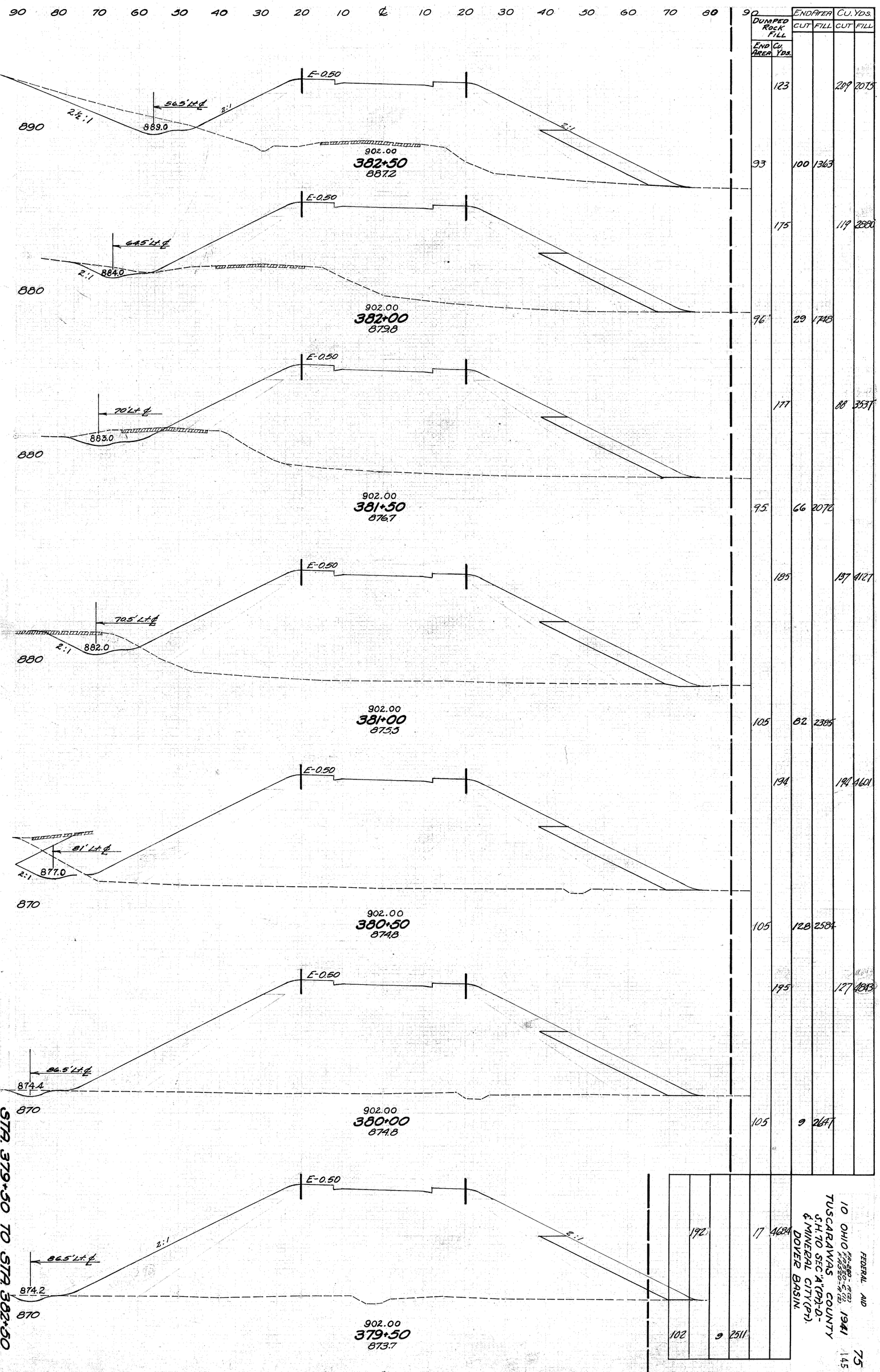
10 OHIO FA-260-A(2) FA520-C(1) FA520-A(2) 1941

74

145

TUSCARAWAS COUNTY
S.H. 70 SEC "A" (PT.)-D.-
& MINERAL CITY (PT.).
DOVER BASIN.

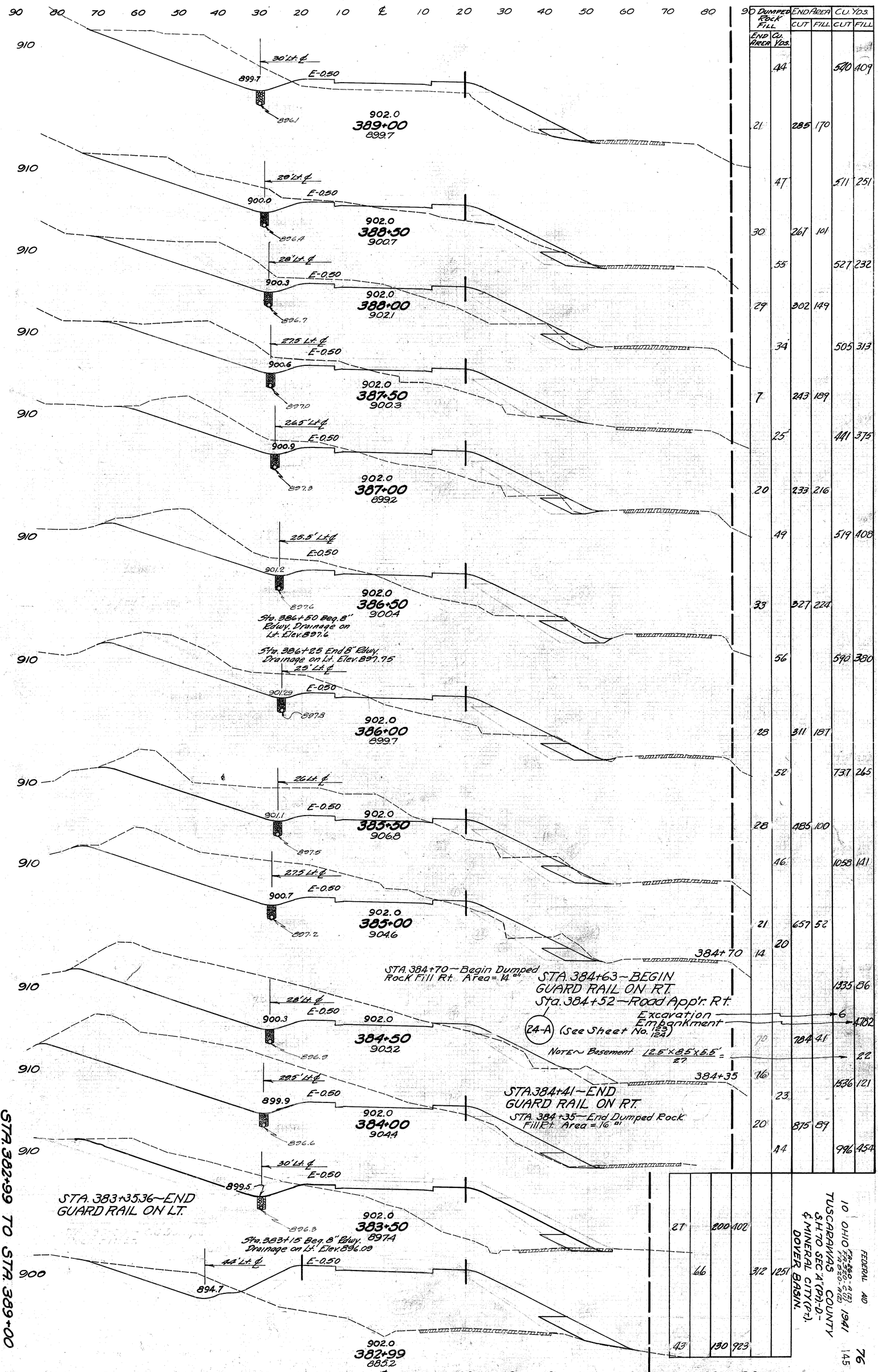
STA. 375+50 TO STA. 379+00



STA. 379+50 TO STA. 382+50

FEDERAL AID
10 OHIO FR-580-(12)
FAS-580-C(12)
1941
TUSCARAWAS COUNTY
S.H. TO SEC. "A" (PT.)-D-
& MINERAL CITY (PT.).
DOVER BASIN.

75
145


90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90
910
900
30'Lt.℄
E-0.050
899.7
896.1
902.0
389+00
899.7
28'Lt.℄
900.0
896.4
902.0
388+50
900.7
28'Lt.℄
900.3
896.7
902.0
388+00
902.1
27.5 Lt.℄
900.6
897.0
902.0
387+50
900.3
26.5'Lt.℄
900.9
897.3
902.0
387+00
899.2
25.5'Lt.℄
901.2
897.6
902.0
386+50
900.4
Sta. 386+50 Beg. 8" Pdwy. Drainage on Lt. Elev. 897.6
Sta. 386+25 End 8" Pdwy. Drainage on Lt. Elev. 897.75
25'Lt.℄
901.29
897.8
902.0
386+00
899.7
26 Lt.℄
901.1
897.5
902.0
385+50
900.6
27.5 Lt.℄
900.7
897.2
902.0
385+00
904.6
384+70
STA. 384+70 — Begin Dumped Rock Fill Rt. Area = 14 sq ft
STA. 384+63 — BEGIN GUARD RAIL ON RT.
Sta. 384+52 — Road App'r. Rt.
24-A (See Sheet No. 23/24)
Excavation
Embankment
NOTE — Basement 12.5'×8.5'×6.5'/27 =
28'Lt.℄
900.3
896.9
902.0
384+50
903.2
29.5'Lt.℄
899.9
896.6
902.0
384+00
904.4
384+35
STA. 384+41 — END GUARD RAIL ON RT.
STA. 384+35 — End Dumped Rock Fill Rt. Area = 16 sq ft
30'Lt.℄
899.5
896.3
902.0
383+50
897.4
STA. 383+3536 — END GUARD RAIL ON LT.
Sta. 383+15 Beg. 8" Pdwy. Drainage on Lt. Elev. 896.09
44'Lt.℄
894.7
902.0
382+99
885.2
STA. 382+99 TO STA. 389+00
DUMPED ROCK FILL
END AREA
CU. YDS.
END AREA CUT
END AREA FILL
CU. YDS. CUT
CU. YDS. FILL
44 540 409
21 285 170
47 511 251
30 267 101
55 527 232
29 302 149
34 505 313
7 243 189
25 441 375
20 233 216
49 519 408
33 327 224
56 590 380
28 311 187
52 737 265
28 485 100
46 1058 141
21 657 52
20
14
1835 86
6 4782
70 784 41
22
16
1536 121
23
20 875 89
44 996 454
27 800 402
66 312 1251
43 130 903
10 OHIO (TUSCARAWAS-COSHOCTON CO. LINE) — TUSCARAWAS COUNTY — FEDERAL AID
S.H. 70 SEC "A" (PT.)-D- 1941
& MINERAL CITY (PT.). 145
DOVER BASIN.
76

FEDERAL AID 77

10 OHIO FA-260-A(2) FA520-C(1) FA520-A(2) 1941 145

TUSCARAWAS COUNTY

S.H. 70 SEC "A" (PT.)-D.-

& MINERAL CITY (PT.).

DOVER BASIN.

STA. 389+55 TO STA. 393+50

FEDERAL AID

10 OHIO FA-260-A(2) FA520-C(1) FA520-A(2) 1941

TUSCARAWAS COUNTY.
S.H. 70 SEC. "A" (PT.)-D-
& MINERAL CITY (PT).
DOVER BASIN.

DUMPED ROCK FILL		END AREA		CU. YD'S	
END AREA	CU. YDS.	CUT	FILL	CUT	FILL
	135			0	1879
70		0	1015		
	139			0	1894
80		0	1031		
	149			0	1880
81		0	999		
	153			0	1843
84		0	992		

DUMPED ROCK FILL		END AREA		CU. YD'S	
END AREA	CU. YDS.	CUT	FILL	CUT	FILL
				6	144
	15				
56		22	589		
				16	20
	20			7	231
53		14	656		
	10			1	127
58		0	721		
	22			3	264
60		15	706		
	86			19	1014
73		14	859		
	137			13	1735
75		0	1015		

STA 394+00 TO STA 398+10

TUSCARAWAS COUNTY.
S.H. 70 SEC'A'(PT)-D- & MINERAL CITY (PT).
DOVER BASIN.

Excavation	28,995
Excavation To Be Wasted	0
Embankment	195,884
Dumped Rock Fill	8900

Dumped Rock Fill End Area	Dumped Rock Fill Cu. Yds.	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
				2	390
		2	200		
				0	66
0	0	0	156		
				19	213
0	0	26	132		
				43	227
0	0	20	113		
				42	229
0	0	25	134		
				18	120
0	0	20	160		
				20	169
0	0	18	166		
				22	467
0	0	6	339		
				20	526
0	0	27	521		

End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
		1205	1
		571	1
		844	17
		341	17
		379	61
68	49		
		72	182
10	155		
		3	98
1	175		
		0	86
0	285		
		0	206
0	270		
		0	45
0	221		

345'Lt. ℄ 3:1 2:1 898.0 895.2 902.00 401+00 898.6

34.5'Lt. ℄ 2:1 897.94 895.16 902.00 400+90 898.6

35'Lt. ℄ 897.7 895.0 902.00 400+50 898.5

Sta 400+06 End Type "B" Mod. Paved Gutter on Lt. (488 Lin. Ft.)

Beg. 8" Rdwy. Drainage on Lt. at Culvert Elev. 894.84

End 8" Rdwy. Drainage on Lt. at Culvert Elev. 895.08

34'Lt. ℄ 897.8 895.1 902.00 400+00 899.0

33'Lt. ℄ 898.1 895.3 902.00 399+50 898.5

32'Lt. ℄ 898.23 895.42 902.00 399+28 898.3

DRIVE RT. 399+28

-10%

32.5'Lt. ℄ 898.4 895.5 902.00 399+00 897.7

Begin Pv't. Removal Sta. 399+00

31.5'Lt. ℄ 898.7 895.7 902.00 398+50 895.3

STA. 398+72.12 — END GUARD RAIL ON RT.

Sta. 398+35 = 0.0 Dumped Rock Fill.

30.5'Lt. ℄ 898.9 895.83 902.00 398+17 893.7

27.5'Lt. ℄ 899.7 896.2 902.00 403+50 900.8

26.5'Rt. ℄ 899.7 896.1

30'Lt. ℄ 899.3 896.0 902.00 403+00 899.9

27.5'Lt. ℄ 899.3 895.8

End Pv't. Removal Sta. 403+00

31'Lt. ℄ 899.0 895.8 902.00 402+50 899.3

29'Lt. ℄ 898.9 895.5

31.5'Lt. ℄ 898.7 895.6 902.00 402+00 898.7

Sta. 401+95 Beg. 8" Rdwy. Drainage on Rt. Elev. 895.17

32'Lt. ℄ 898.6 895.54 902.00 401+85 898.7

32'Lt. ℄ 898.62 895.5 902.00 401+75 898.7

33.5'Lt. ℄ 898.32 895.42 902.00 401+55 898.7

33.5'Lt. ℄ 898.3 895.4 902.00 401+50 898.6

STA 398+17 TO STA 403+50

FEDERAL AID 80

10 OHIO FA-260-R(12) FA-320-C(11) 1941 145 FA-320-A(12)

TUSCARAWAS COUNTY.
S.H. 70 SEC."A"(PT.)-D-
& MINERAL CITY (PT.)
DOVER BASIN.

	End Area		Cu. Yds.	
	Cut	Fill	Cut	Fill
407+00			27	328
	20	140		
406+65			23	109
	16	33		
406+60			7	4
	55	6		
406+50			21	2
	60	5		
406+05			122	4
	86	0		
405+88			142	0
	365	0		
405+50			682	0
	462	0		
405+00			1006	0
	625	0		
404+50			1269	0
	745	0		
404+00			1366	0
	730	0		
410+00			6	515
	9	265		
409+50			6	481
	2	255		
409+00			7	398
	5	175		
408+50			10	365
	5	219		
408+25			8	266
	11	356		
408+00			12	293
	15	276		
407+50			22	451
	9	214		

STA 404+00 TO STA 410+00

FEDERAL AID
FA 260-A(2)
10 OHIO FA 320-C(1) 1941
FA 320-A(2)

81
145

TUSCARAWAS COUNTY
S.H. 70 SEC "A"(Pt.)-D-
& MINERAL CITY (Pt.).
DOVER BASIN.

	END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
			445	0
0	160	0		
			194	51
0	50	55		
			78	272
34	239			
			47	491
12	292			
			13	221
11	185			
			9	346
0	230			
			0	320
0	347			
			2	590
2	291			

	END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
			128	436
	146	259		
			533	315
	429	82		
			1026	95
	682	20		
			1259	19
	678	0		
			1167	0
	582	0		
			291	0
	812	0		
			1082	0
			1352	4
			270	4
	648	20		
			896	19
	320	0		

900
902.0
413+50
902.0
31' Lt. ℄
3:1
898.4
896.0
Sta. 413+50 Beg. 8" Culv.
Drainage on Lt. Elev. 896.0

900
902.0
413+00
900.2
31.5' Lt. ℄
898.0

900
902.0
412+50
896.6
32.5' Lt. ℄
895.7
STA. 412+75 — END
GUARD RAIL ON RT.

900
902.0
412+00
895.9
32' Lt. ℄
898.4

900
902.0
411+75
897.9
32' Lt. ℄
898.5

900
902.0
411+30
897.4
32' Lt. ℄
898.7

900
902.0
411+00
894.7
Sta. 411+00 End Culv.
Drainage on Lt. Elev. 896.4
32' Lt. ℄
898.8
896.4

900
902.0
410+50
895.6
31.5' Lt. ℄
899.0
896.25

900
902.0
417+50
898.0
28.5' Lt. ℄
2½:1
899.1
894.8

900
902.0
417+00
901.5
27.5' Lt. ℄
899.5
894.95

910
902.00
416+50
905.9
26.5' Lt. ℄
899.9
895.1
Begin Pvt. Removal
Sta. 416+25

910
902.00
416+00
906.7
25' Lt. ℄
900.3
895.25

910
902.00
415+50
902.9
2½:1
26' Lt. ℄
900.0
895.4
STA. 415+43 — BEGIN
GUARD RAIL ON RT.

900
902.00
415+00
908.1
3:1
27.5' Lt. ℄
899.6
895.55
Sta. 414+75 - end drive on rt.
STA. 414+60 END F.A. 520-C(1)
RURAL BEGIN F.A. 520-C(1)
MUNICIPAL
End Pvt. Removal
Sta. 414+60
STA. 414+60
Sta. 414+60 = 0.00 fill

900
902.00
414+50
907.2
28.5' Lt. ℄
899.2
895.7
28-A
DRIVE — NO EARTHWORK
T-11 36 SQ. YDS. 12x27
I-17 9 CU. YDS. 60x12x.33 9 27

900
902.00
414+00
902.3
3:1
29.5' Lt. ℄
898.8
895.85
STA. 414+00 — BEGIN
DRIVE ON RT.

STA. 410+50 TO STA. 417+50

FEDERAL AID
FA 280-R(2), FA 320-C(1), FA 320-A(2)
10 OHIO 1941
82
145

TUSCARAWAS COUNTY
S. H. 70 SEC "A" (Pt.)-D.-
& MINERAL CITY (Pt.).
DOVER BASIN.

	Dumped Rock Fill		End Area		Cu. Yds.	
	End Area	Cu. Yds.	Cut	Fill	Cut	Fill
902.00 420+25.21 S.C. 886.8						
	30			24		1089
	33		29			1143
			0			
	52				0	1888
902.00 419+77.21 888.3						
	26		0	982		
	44				0	1609
902.00 419+29.21 891.1						
	23		0	829		
	33				103	358
			0			1331
	14			672		
902.00 418+81.21 892.8						
	17				17	1064
902.00 418+33.21 892.0						
	5		19	522		
	4				61	828
902.00 417+85.21 T.S. 895.5						
	0		50	409		

	Dumped Rock Fill		End Area		Cu. Yds.	
	End Area	Cu. Yds.	Cut	Fill	Cut	Fill
	37				0	2160
902.00 422+50 886.8						
	20		0	1175		
	37				0	2182
902.00 422+00 887.0						
	20		0	1182		
	53				0	2235
902.00 421+50 886.8						
	37		0	1232		
	56				6	2283
902.00 421+00 885.3						
	23		6	1245		
	51				28	2283
902.00 420+50 886.3						
	32		24	1221		

STA. 420+25.21 – END RD. APPROACH ON LT. & END PAVEMENT REMOVAL.

STA. 419+71 – BEGIN GUARD RAIL ON LT.

Sta 418+85 End 8" Road'y. Drainage Elev. 894.4

TYPICAL SECTION OF ROAD APPROACH

STA. 418+33.21 – BEGIN RD. APPROACH ON LT.

Begin Rock Fill Sta. 417+85 Area = 0

29-A STA. 418+33.21 TO STA. 420+25.21
RD. APPR. ON LT.
50"-15" PIPE

STA. 420+50 END PAVT REMOVAL

STA. 417+85.21 TO STA. 422+50

FEDERAL AID
F.A.-280-A(2)
F.A.320-C(1)
F.A.320-A(2)
10 OHIO 1941

83
145

TUSCARAWAS COUNTY
S.H. 70 SEC "A"(PT.)-D-
& MINERAL CITY(PT.)
DOVER BASIN.

Dumped Rock Fill End Area	Dumped Rock Fill Cu. Yds.	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
	56			0	2182
30		0	1151		
	51			0	2153
25		0	1174		
	47			0	2209
26		0	1211		
47				0	2238
25		0	1205		
42				0	2188
20		0	1158		

Excavation
Embankment
Excav. to be Wasted
Dumped Rock Fill

7555 Cu. Yds.
109,453 " "
0 " "
983 " "

890

902.00
425+00
886.9

902.00
424+50
887.3

902.00
424+00
886.9

902.00
423+50
886.8

902.00
423+00
887.1

E-2.00

2:1

902.00
427+50
887.6

902.00
427+00
887.1

902.00
426+50
887.2

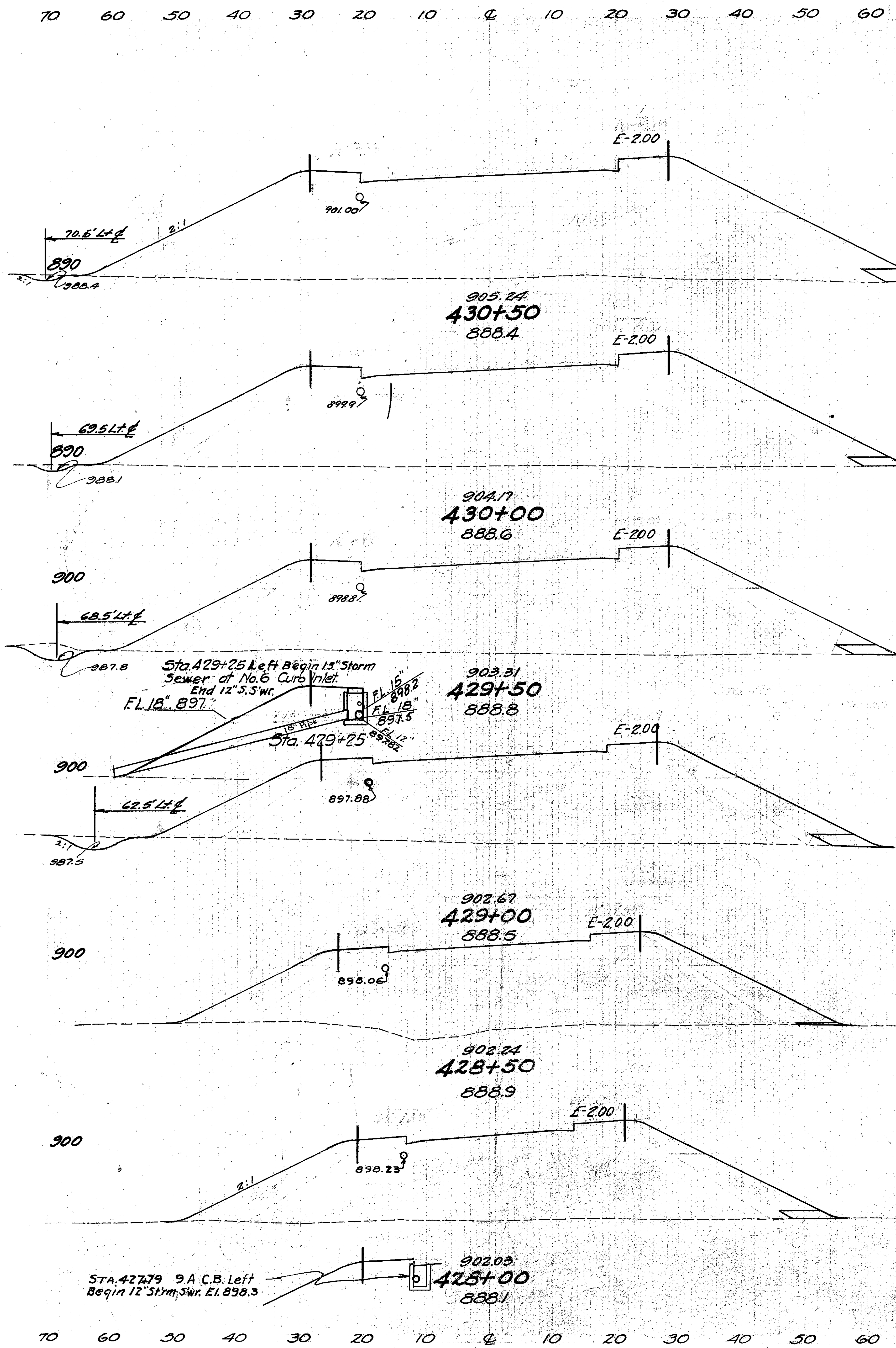
902.00
426+00
886.3

902.00
425+50
886.5

Dumped Rock Fill End Area	Dumped Rock Fill Cu. Yds.	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
	25			0	2021
18		0	1110		
	38			0	2090
23		0	1147		
	42			0	2172
23		0	1198		
43				0	2248
23		0	1230		
43				0	2256
30		0	1206		

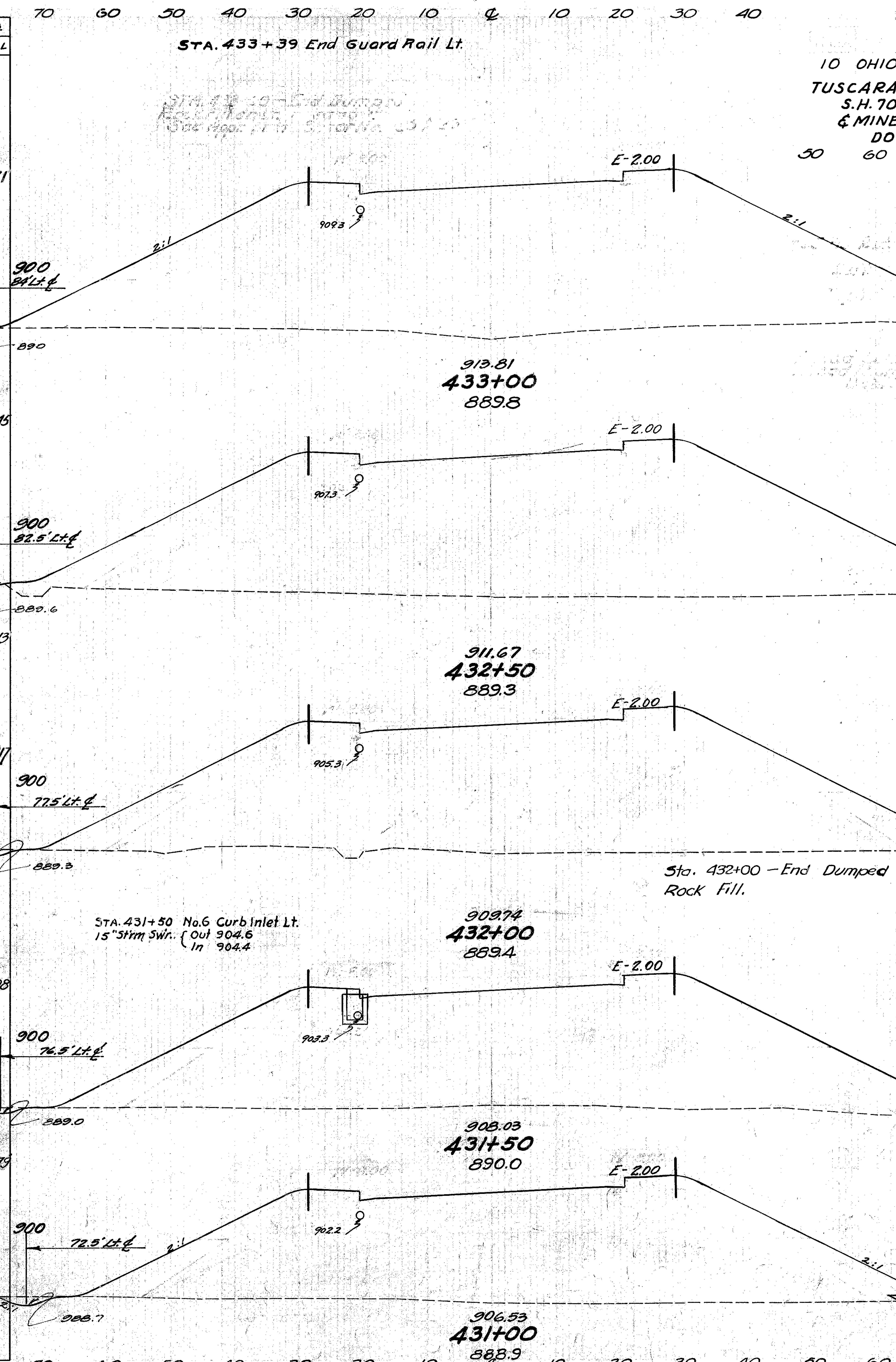
STA 423+00 TO STA 427+50

TUSCARAWAS COUNTY
S.H. 70 SEC. "A" (PT.)-D-
& MINERAL CITY (PT.)
DOVER BASIN.



Station	Dumped Rock Fill End Area	Dumped Rock Fill Cu. Yds.	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
		18			13	3171
430+50	13		4	1650		
		21			8	2945
430+00	9		5	1530		
		17			21	2713
429+50	10		18	1399		
		21			30	2417
429+00	12		14	1212		
		13			13	2108
428+50	2		0	1065		
		10			0	1979
428+00	9		0	1072		

STA. 433+39 End Guard Rail Lt.



Station	Dumped Rock Fill End Area	Dumped Rock Fill Cu. Yds.	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
					8	4631
433+00			9	2470		
					23	4530
432+50			16	2423		
					19	4218
432+00	0		5	2132		
		12			9	3764
431+50	13		4	1933		
		17			13	3434
431+00	6		10	1775		

STA. 428+00 TO STA. 433+00

FEDERAL AID
FA 280-A (2)
10 OHIO FA 320-C (1) 1941
FA 320-A (2)

85
148

TUSCARAWAS COUNTY
S.H. 70 SEC "A" (Pt.): D-
& MINERAL CITY (Pt.).
DOVER BASIN.

End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
		61	871
		0	2322
0	1292		
		17	2796
18	1728		
		30	3687
14	2254		
		16	2157
20	2404		
		23	5684
0	2553		
		0	5931
0	5236		
0	2536		
		26	32
		63	135
		42	114
		39	315
0	326		
		0	689
0	518		
		0	676
0	942		
		0	999
0	1216		

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

920
930.50
436+00
916.1
E-2.00
926.9
2:1
HOUSE

900
927.50
435+50
908.8
E-2.00
920.4
68.5' Rt. ℄
913.5
2:1

900
924.50
435+00
902.5
E-2.00
918.8
77.5' Rt. ℄
906.0

900
923.00
434+75
900.4
E-2.00
914.7
82.5' Rt. ℄
902.0
2:1

890
919.44
434+13
896.3
E-2.00
912.6
STA. 433+83 No. 6 Curb Inlet Left
Begin 12" Storm Sewer El. 912.9
End 15" Storm Sewer El. 912.5
Sta. 433+61 Begin Guard Rail on Lt
911.3
4:1
2:1

890
916.17
433+50
893.3
BARN
31-A Sta. 433+50 Appr. Lt (See Sheet Nos. 125 126)

940
945.09
438+57.5 ALLEY ON LT.
944.3 See Sheet No. 131
940.5

940
944.76
438+50
943.9
BUILDING
2:1
E-0.57
3:1
HOUSE
940.1

940
942.31
438+00
941.9
2:1
E-1.35
End Guard Rail Right 438+12.5
3:1
937.5

940
939.50
437+50
937.9
E-1.90
3:1
934.9
Sta. 437+26 End Guard Rail on Lt

930
936.50
437+00
931.9
E-2.00
2:1
932.4

920
935.00
436+75
923.4
E-2.00
2:1
931.1

920
933.50
436+50
919.9
E-2.00
929.8
2:1
STA 436+25 Curb Inlet No. 6-Lt
12" Storm Sewer Out 928.6
In 928.4
928.5

STA. 433+50 TO STA. 438+57.5

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

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
		13	0
4	0		
		1	1
1	6		
		13	14
Ahead → 15			
Back → 18	20		
		42	33
Ahead → 27	16		
Back →	11		
		31	15
7	5		
		31	34

950

951.25
440+87 DRIVE ON Lt. See Sheet No. 131
950.67
945.67

950 BUILDING

950.80
DRIVE ON Lt. **440+50**
950.07
945.44

950 BUILDING

950.58
440+37 DRIVE ON Rt. & Lt. See Sheet No. 131
949.90
945.37

950

949.99
440+07 DRIVE ON Lt. See Sheet No. 131
949.59
945.20

STA. 440+05 No.7 Curb Inlet Rt
End 12" Pipe Under Street El. 945.5

950 BUILDING

949.84
440+00
949.48
STA 439+90 No.6 Curb Inlet Left
End 12" Storm Sewer El. 944.9
Begin 6" Under Drain El. 945.1
Begin 12" Pipe under Street El. 945.1
12" stopper in T

950

948.52
439+50
948.10
943.7

BUILDING

940

946.83
439+00
946.14
STA. 438+68 (12" stopper on 12"x12" Clean Out Y
STA. 438+70 No.7 Curb Inlet Lt.
942.1
941.1

℄
E-0.35
940

945.59
438+69 STREET ON Rt. See Sheet No. 131
944.82

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

FEDERAL AID
10 OHIO FA 260-A(2) FA 320-C(1) FA 320-A(3) 1941
86
145

TUSCARAWAS COUNTY
S.H. 70 SEC "A" (Pt.) D-
& MINERAL CITY (Pt.)
DOVER BASIN

50 60 70

STA. 442+00 END
F.A. 520-C(1)
MUNICIPAL END
PROJECT

950

951.40
442+00
951.45
Sta. 442+00 Lt. End 6" underdrain Elev. 946.3

BUILDING **STA. 442+00**

Returns 1-7 incl.
See Sheet No. 131

950

951.54
441+75
951.73
946.16

℄

951.56
441+63.6 = ℄ OF STREET ON RT.
951.81 See Sheet No. 131

950

951.57
441+50
951.88
946.04

950

951.51
441+25
951.36
945.90

950

951.37
441+00
950.85
945.74

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
35	0		
		106	0
		38	0
48	0		
		41	0
40	0		
		30	0
25	0		
		16	0
10	0		

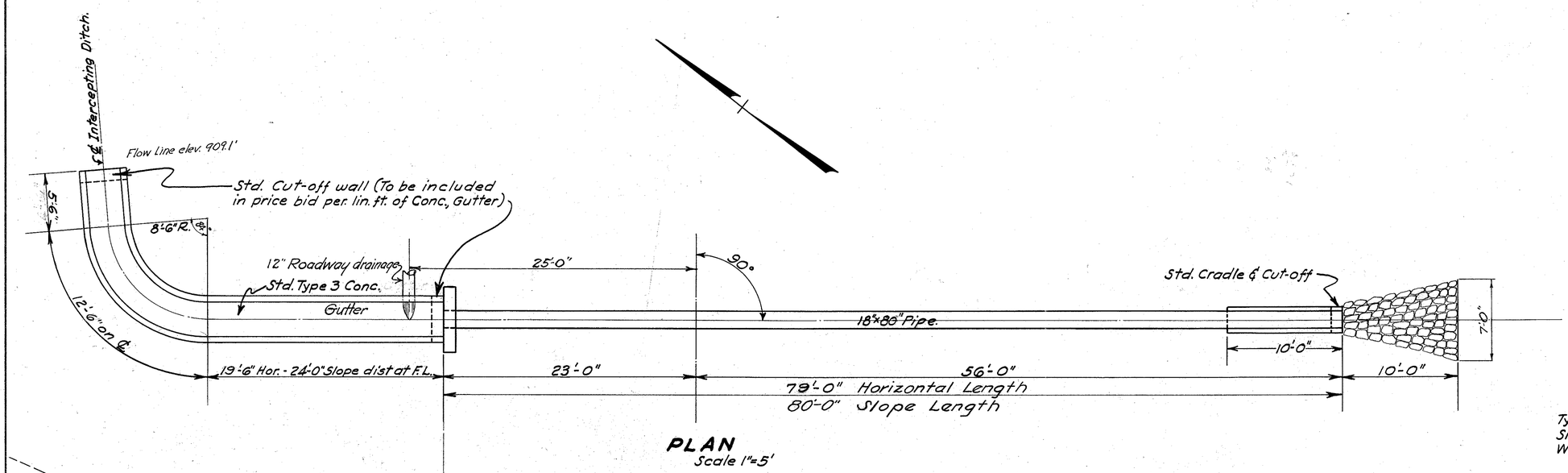
70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

STA. 438+69 TO STA. 442+00

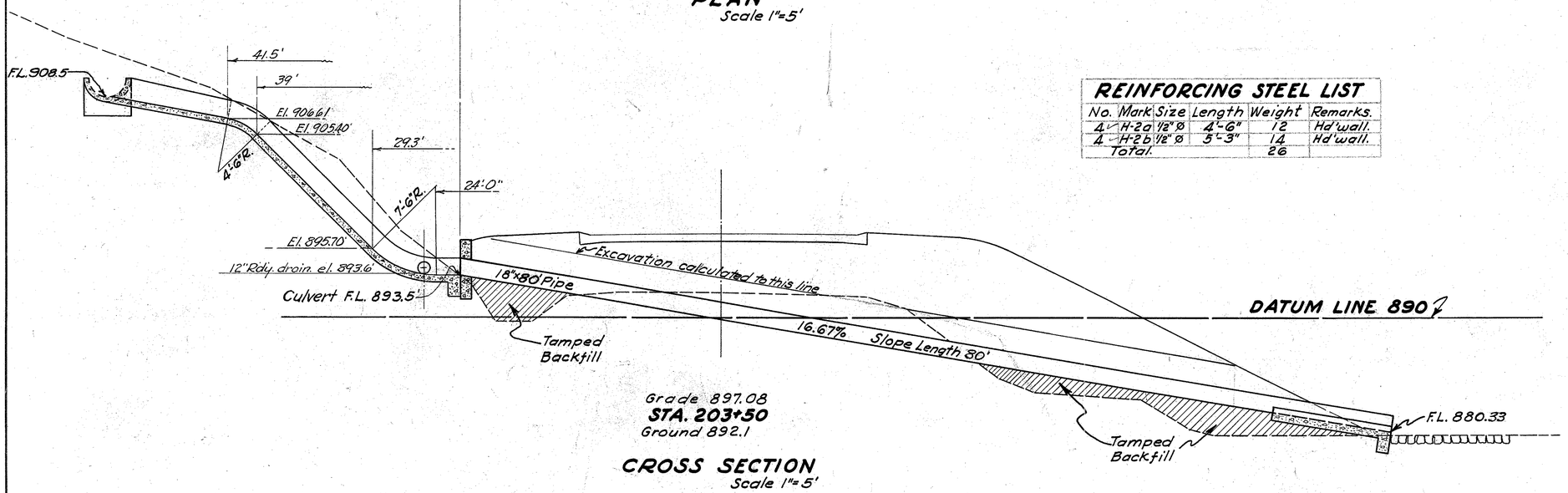
FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2), 520-C(1) 520-A(2)	1941

87
145

TUSCARAWAS COUNTY
S.H. 70 SEC. A (PT.) - D - & MINERAL CITY (PT.).
DOVER BASIN.



PLAN
Scale 1"=5'



Grade 897.08
STA. 203+50
Ground 892.1

CROSS SECTION
Scale 1"=5'

REINFORCING STEEL LIST

No.	Mark	Size	Length	Weight	Remarks.
4	H-2a	1/2" ø	4'-6"	12	Hd'wall.
4	H-2b	1/2" ø	5'-3"	14	Hd'wall.
	Total.			26	

·STRUCTURE DATA·

Type :- Std. Pipe Culvert.
Size :- 18"×80'-0"
Work. Required:- Remove present 12"×38'-0" V.S.P. culvert with conc. hd'walls at sta. 203+33±. Build std. 18"×80" pipe culvert with std. hd'wall on inlet end and std. cradle on outlet end. Rip Rap grout filled on outlet end as shown.

·ESTIMATED QUANTITIES·

Structure Excavation.	34 Cu. Yd's.
Concrete Class "C".	1.9 Cu. Yd's.
Reinforcing Steel.	26 Lbs.
18" Pipe.	80 Lin. Ft.
Rip. Rap. Type "A" (Grout Filled).	6 Sq. Yd's.
Std. Type 3 Concrete Gutter.	42 Lin. Ft.
12" V. S. P. to be removed.	38 Lin. Ft.
Removal of Existing Masonry.	1.3 Cu. Yd's.

·REFERENCE DRAWINGS·

Pipe Culvert Headwall.	S-27 P.C.-1.
Pipe Culvert End.	S-27 P.C. 2.
Pipe Culvert.	S-27 P.C. 3.
Std. Concrete Gutter.	I-14-G.

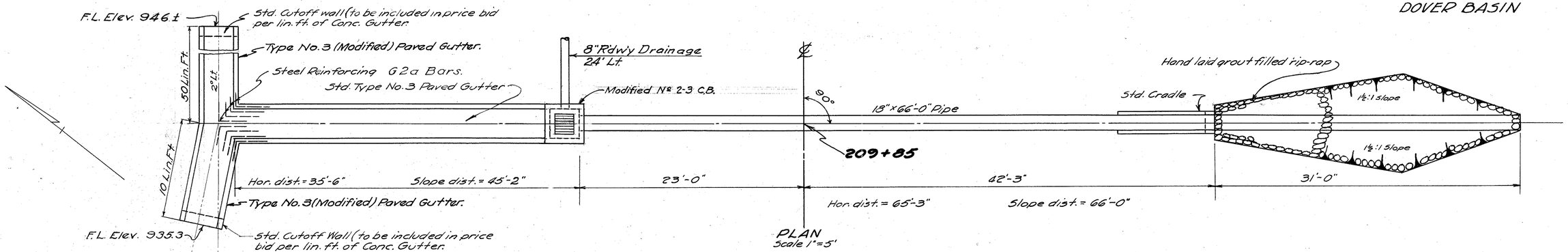
18×80'-0" PIPE CULVERT
STA. 203+50

1-S

FED. RD. DIST. NO.	STATE	Fed. Aid PROJECT	FISCAL YEAR
10	04110	260-A(8), 320-C(8), 320-A(8)	1941

88
145

TUSCARAWAS COUNTY
S.H. 70 SEC'S, A(PT), D
& MINERAL CITY (PT)
DOVER BASIN



· REINFORCING STEEL LIST ·

No.	MARK	SIZE	LENGTH	WEIGHT	REMARKS
8	G2a	½" ϕ	5'-0"	27#	Flume
TOTAL				27#	

· STRUCTURE DATA ·

Type : Std. Pipe Culvert.
Size : 18" x 66'-0"
Work required: Build new 18" x 66'-0" Pipe Culvert, One modified no. 2-3 C.B. One Std. Cradle, 103'.0". Type No. 3 Paved Gutter and 25 Sq. Yds. of Type-A Grout Filled Rip-Rap 12" thick.

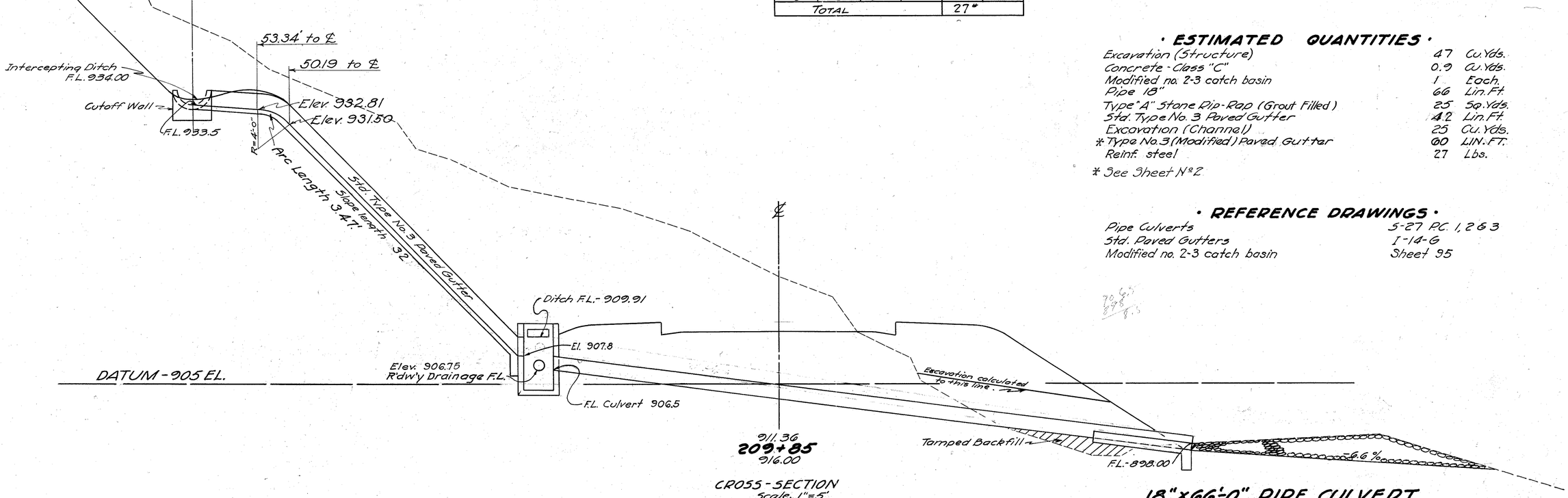
· ESTIMATED QUANTITIES ·

Excavation (Structure)	47	Cu. Yds.
Concrete - Class "C"	0.9	Cu. Yds.
Modified no. 2-3 catch basin	1	Each.
Pipe 18"	66	Lin. Ft.
Type "A" Stone Rip-Rap (Grout Filled)	25	Sq. Yds.
Std. Type No. 3 Paved Gutter	42	Lin. Ft.
Excavation (Channel)	25	Cu. Yds.
* Type No. 3 (Modified) Paved Gutter	60	LIN. FT.
Reinf. steel	27	Lbs.

* See Sheet N°2

· REFERENCE DRAWINGS ·

Pipe Culverts	5-27 P.C. 1, 2 & 3
Std. Paved Gutters	I-14-G
Modified no. 2-3 catch basin	Sheet 95



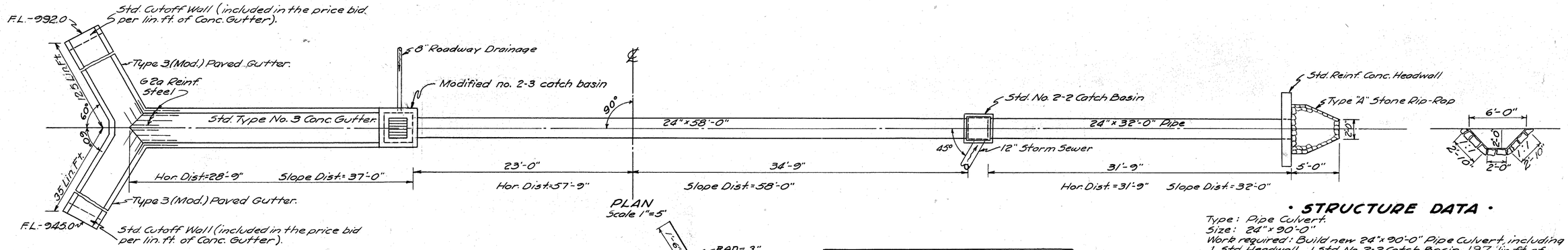
18" x 66'-0" PIPE CULVERT
STA. 209+85

3-S

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	260-A(8), 520-(G), 520-A(82)	1941

89
145

TUSCARAWAS COUNTY
S.H. 70 SEC'S. A(PT), D
& MINERAL CITY (PT)
DOVER BASIN



REINFORCING STEEL LIST					
No	Mark	Size	Length	Weight	Remarks
8	G2a	½" ϕ	5'-0"	27#	Flume
4	H2a	½" ϕ	5'-0"	14#	Howall
4	H2b	½" ϕ	7'-0	19#	Howall
Totals				60#	

• STRUCTURE DATA •

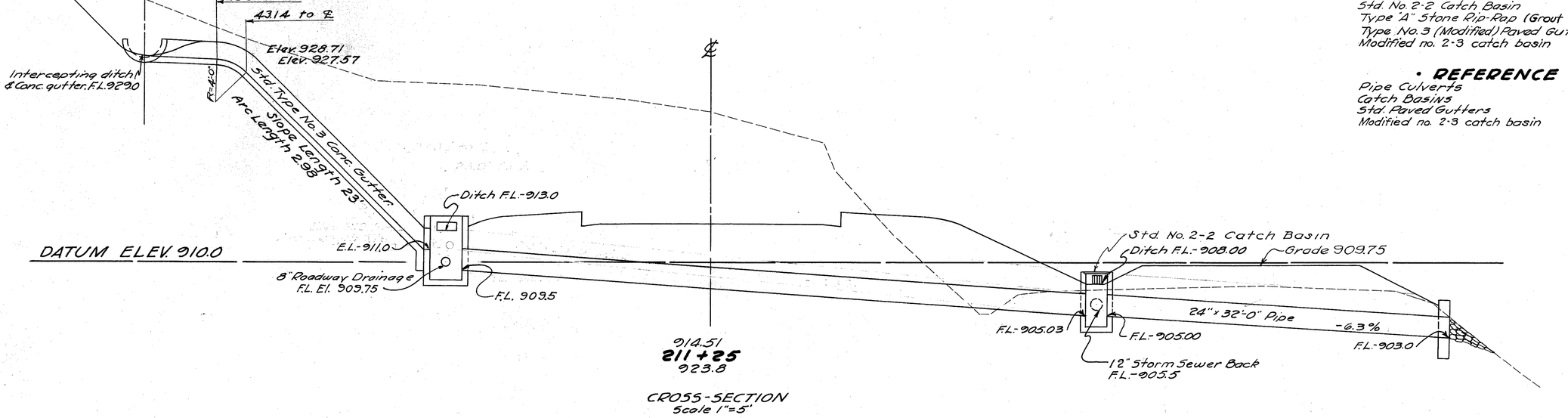
Type: Pipe Culvert.
Size: 24"x90'-0"
Work required: Build new 24"x90'-0" Pipe Culvert, including 1 Std. Headwall, 1 Std. No. 2-2 Catch Basin, 197 lin. ft. of Std. Type No. 3 Conc. Gutter and 3 Sq. Yds. Type "A" Stone Rip-Rap, and 1 modified no. 2-3 catch basin.

• ESTIMATED QUANTITIES •

Excavation (Structure)	85	Cu. Yds.
Concrete (Class "C")	1.9	Cu. Yds.
Reinforcing Steel	60	Lbs.
24" Pipe	90	Lin. Ft.
Std. Type No. 3 Conc. Gutter	33	Lin. Ft.
Std. No. 2-2 Catch Basin	1	Each
Type "A" Stone Rip-Rap (Grout Filled)	3	Sq. Yds.
Type No. 3 (Modified) Paved Gutter	160	Lin. Ft.
Modified no. 2-3 catch basin	1	Each.

• REFERENCE DRAWINGS •

Pipe Culverts	5-27-PC 1 & 3
Catch Basins	I-BCB 1-2 & 2-2
Std. Paved Gutters	I-14-G
Modified no. 2-3 catch basin	Sheet 95



24"x90'-0" PIPE CULVERT

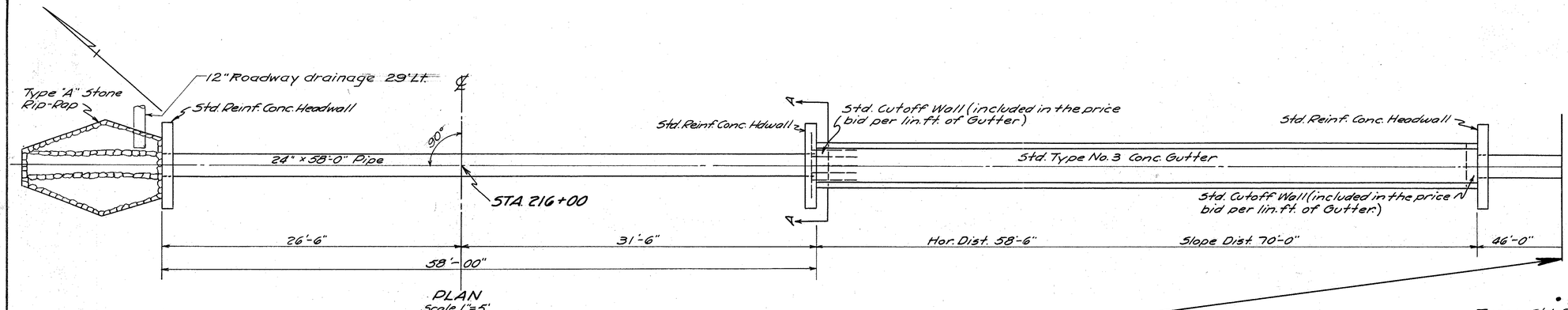
STA. 211+25

5-S

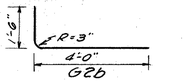
FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2) 320-C(6) 320-A(2)	1941

90
145

TUSCARAWAS COUNTY
S.H. 70 SEC'S. A(PT), D, & MINERAL CITY (PT)
DOVER BASIN

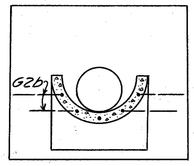


PLAN
Scale 1"=5'

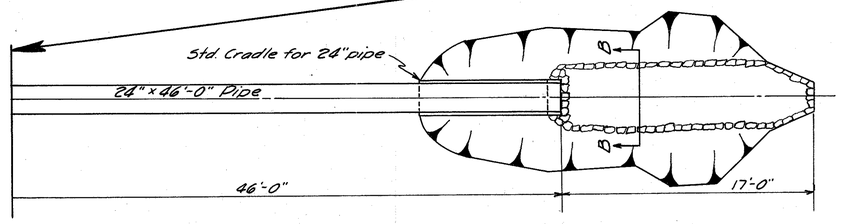


REINFORCING STEEL LIST

	No.	Mark	Size	Length	Weight	Remarks
See Std. Drwg. S-27 PC. 1	12	H2a	½" ϕ	5'-0"	40 lbs	Hdwall
	12	H2b	½" ϕ	7'-0"	56 lbs	Hdwall
	5	G2b	½" ϕ	5'-6"	18 lbs	Gutter
	TOTALS				114 lbs	



SECTION A-A



• STRUCTURE DATA •

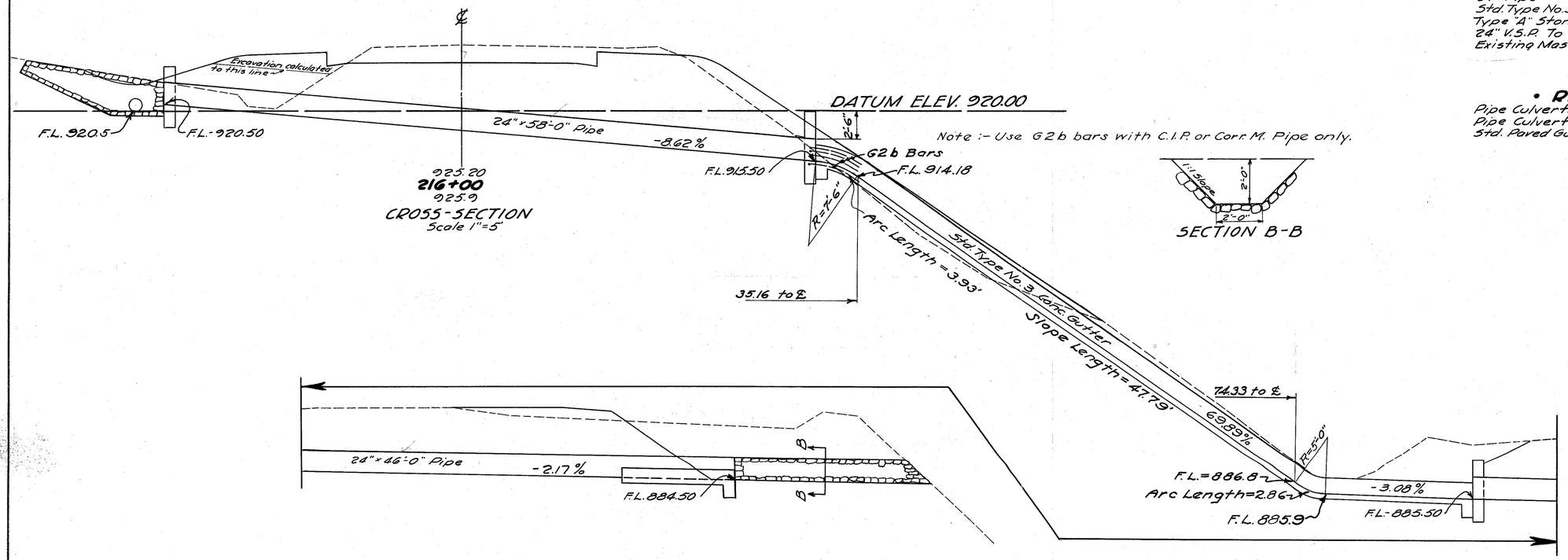
Type: Std. Pipe Culverts.
Size: 24" x 58'-0" & 24" x 46'-0"
Work required: Build new 24" x 58'-0" & 24" x 46'-0" Pipe Culverts, 3 Std. Headwalls, 1 Std. Cradle, 68 lin. ft. of Std. Type No. 3 Paved Gutter and 26 Sq. Yds. Type "A" Stone Rip-Rap.
Remove 24" x 44'-0" V.S.P. culvert at Sta. 215+85.

• ESTIMATED QUANTITIES •

Excavation (Structure)	120	Cu. Yds.
Excavation (Channel)	40	Cu. Yds.
Concrete Class "C"	53	Cu. Yds.
Reinforcing Steel	114	Lbs.
24" Pipe	104	Lin. Ft.
Std. Type No. 3 Paved Gutter	68	Lin. Ft.
Type "A" Stone Rip-Rap (Grout Filled)	26	Sq. Yds.
24" V.S.P. To be removed.	44	Lin. Ft.
Existing Masonry, To be removed.	2.4	Cu. Yds.

• REFERENCE DRAWINGS •

Pipe Culverts	S-27 P.C. 1 & 3
Pipe Culvert Ends	S-27 P.C. 2
Std. Paved Gutter	I-14 G



SECTION B-B

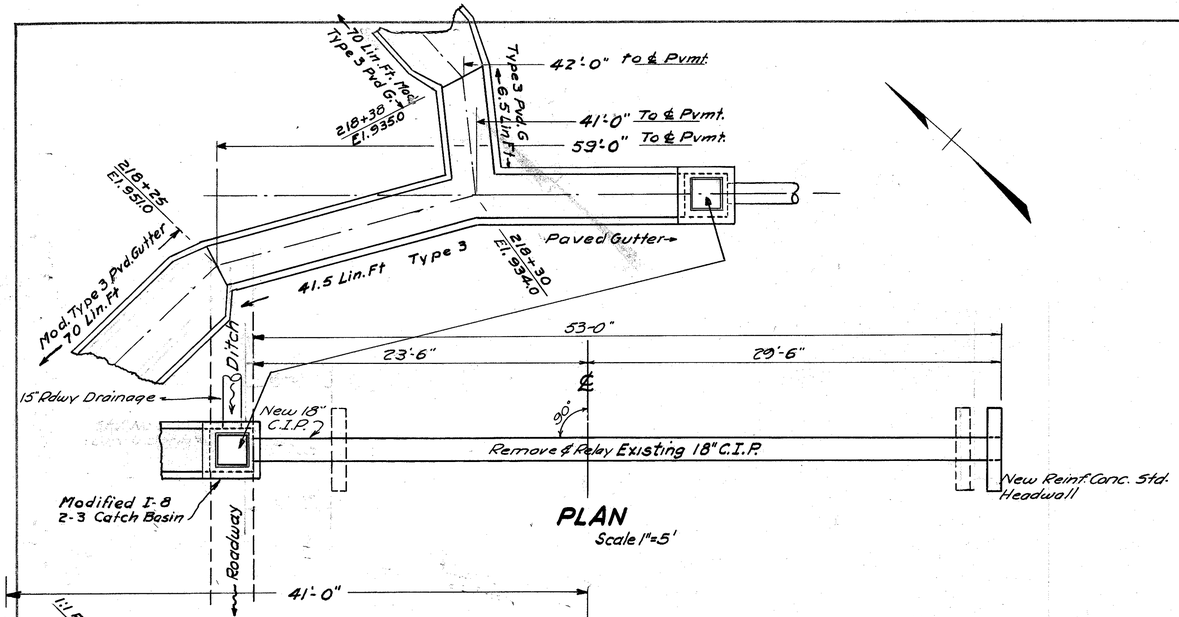
24" x 58'-0" & 24" x 46'-0" PIPE CULVERTS
STA. 216+00

GS

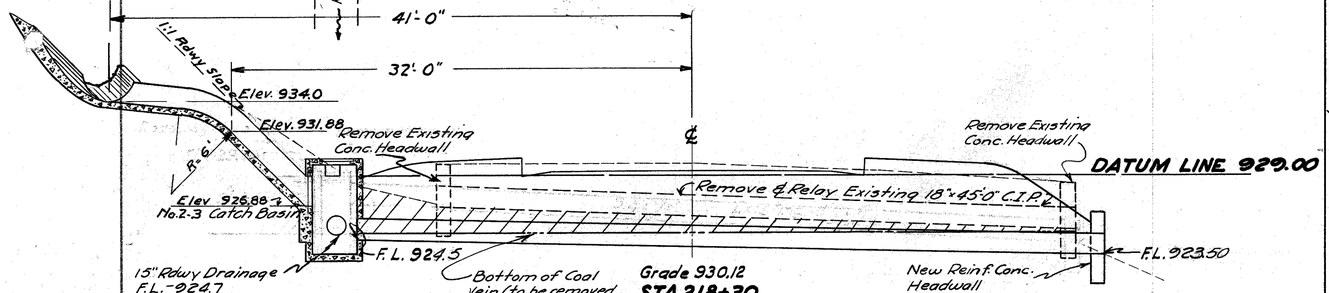
FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2), 520-C(1) 520-A(2)	1941

91
145

TUSCARAWAS COUNTY
S.H. 70 SEC A(PT)-D-E
MINERAL CITY(PT).
DOVER BASIN.



PLAN
Scale 1"=5'



For Detail of modified I-8 C.B 2-3 see structure 11-S on Sheet 95

CROSS SECTION
Scale 1"=5'

·REINFORCING STEEL LIST·

No	Mark	Size	Length	Weight	Remarks
4	H20	½"	4'-6"	12#	Hdwall
4	H26	½"	5'-3"	14#	Hdwall
Totals				26#	

See Std. Drwg. S-27. P.C. 1

·STRUCTURE DATA·

Work Req:- Remove existing 18"x45'-0" C.I.P. Culvert with Std. Hdwalls. After coal is removed below pipe, relay the 18"x45'-0" C.I.P. and extend with 8' of new 18" C.I.P. Build Std. No. 2-3 Catch Basin on left and Std. Headwall on Right.

·ESTIMATED QUANTITIES·

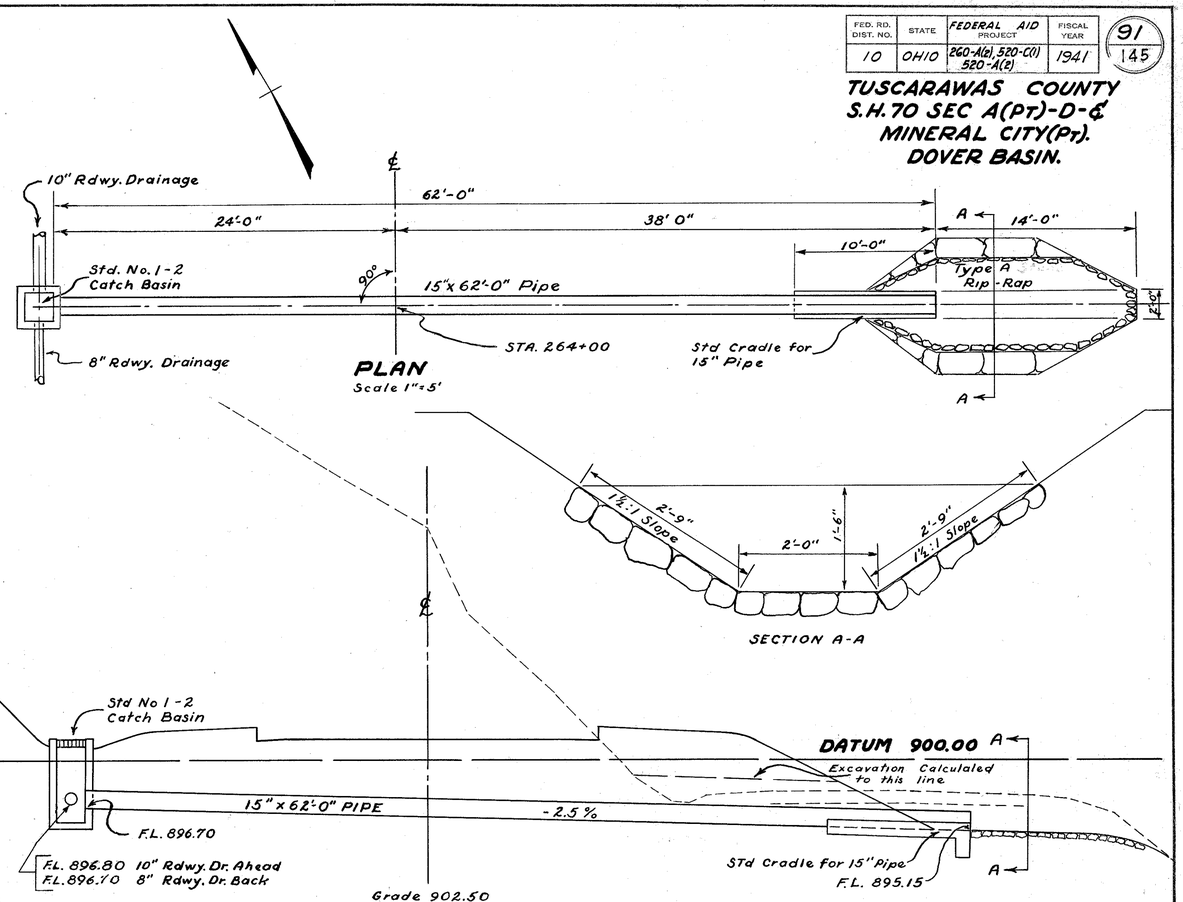
Paved Gutter (Type 3 Modified Type 3	48	Lin. Ft.
	140	Lin. Ft.
Structure Excavation.	7	Cu. Yd
18" Cast Iron Pipe.	8	Lin. Ft.
Std No. 2-3 Catch Basin.	1	Each.
Removal of Existing Masonry.	2.0	Cu. Yds.
18" C.I.P. Removed For Reuse.	45	Lin. Ft.
Concrete. Class "C"	1.0	Cu. Yds.
Reinforcing Steel	26	Lbs.
18" C.I.P. Relaid	45	Lin. Ft.

·REFERENCE DRAWINGS·

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

18"x53'-0" C.I.P. CULVERT
STA. 218+30

7-S



PLAN
Scale 1"=5'

SECTION A-A

Grade 902.50
STA. 264+00
Ground 916.3

CROSS SECTION
Scale 1"=5'

·STRUCTURE DATA·

Type: Std Pipe Culvert
Size: 15"x 62'-0"
Work Req'd: Build Std. 15"x 62'-0" Pipe Culvert at station and on elevations shown with Std. 1-2 C.B. on inlet end and Std. Cradle on outlet end. Rip-Rap outlet channel as shown. Provide opening for 8" and 10" Rdwy. Drg. thru C.B. as shown.

ESTIMATED QUANTITIES

Structure Excavation	35	Cu Yds.
Channel Excavation	7	Cu Yds.
15" Pipe	62	Lin. Ft.
Concrete Class "C"	0.7	Cu. Yds.
Type A Rip-Rap (Grout Filled)	13	Sq. Yds.
Std. No. 1-2 Catch Basin	1	Each

REFERENCE DRAWINGS

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

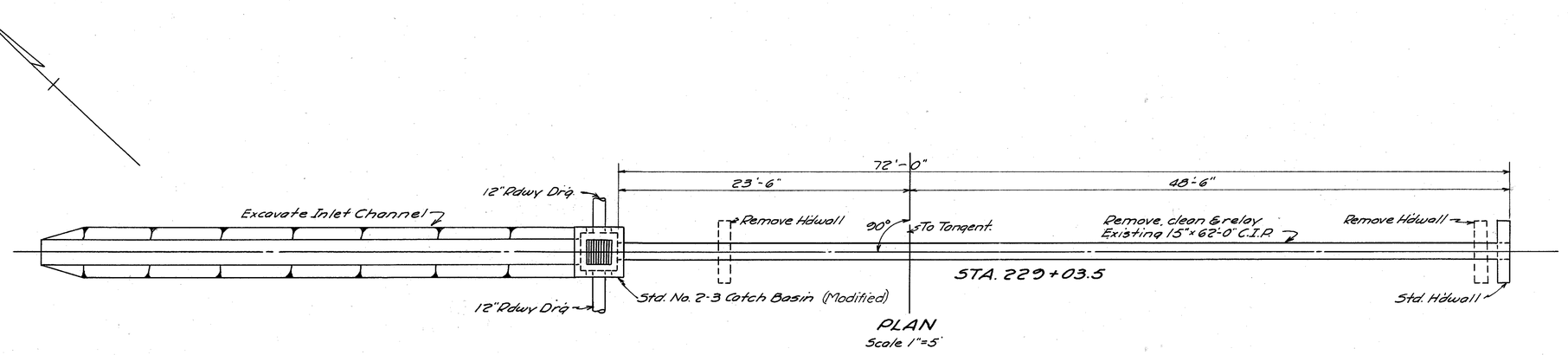
15"x 62'-0" C.I.P. CULVERT
STA. 264+00

18-S

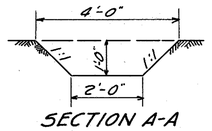
Fed. Ro. Dist. No.	State	Fed. Aid Proj.	Fiscal Year
10	OHIO	220-A(2), 520-C(1) 520-A(2)	1941

92
145

TUSCARAWAS COUNTY
S.H. 70 SEC'S, A(PT), D, & MINERAL CITY (PT)
DOVER BASIN



PLAN
Scale 1"=5'



SECTION A-A

REINFORCING STEEL LIST					
No	Mark	Size	Length	Weight	
4	H2a	½" ø	4'-3"	12#	See Std. Drwg 5-27 RC. 1
4	H2b	½" ø	4'-6"	12#	
Totals				24#	

• STRUCTURE DATA •

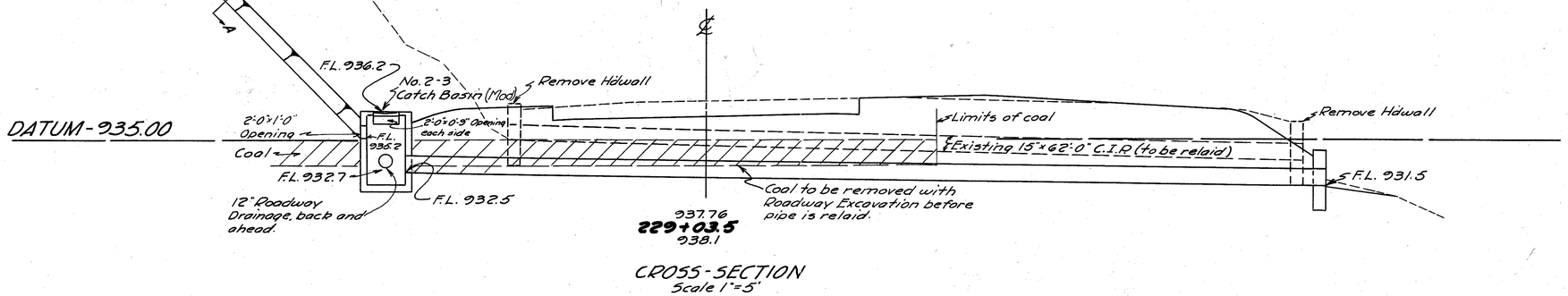
Type : Cast Iron Pipe Culvert.
Size : 15" x 72'-0"
Work required: Remove existing 15"x 62'-0" Cast Iron Pipe and two standard headwalls. After coal has been removed, clean and relay 15"x 62'-0" C.I.P. and extend with 10'-0" new C.I.P. to grade shown. Build Std. No. 2-3 Catch Basin (Modified) at outlet end and Std. Headwall at outlet end. Excavate inlet channel as detailed. Connect 12" Roadway Drainage thru Catch Basin on inlet end. Provide special openings in Catch Basin as shown.

• ESTIMATED QUANTITIES •

Excavation (Structure)	12	Cu. Yds.
Excavation (Channel)	6	Cu. Yds.
15" C.I.P. Removed for re-use	62	Lin. Ft.
Removal of Existing Masonry	1.7	Cu. Yds.
Relay 15" Cast Iron Pipe	62	Lin. Ft.
15" Cast Iron Pipe for Roadway Culvts.	10	Lin. Ft.
Concrete Class "C"	0.9	Cu. Yds.
Reinforcing Steel	24	Lbs.
Std. No. 2-3 Catch Basin (Modified).	1	Each

• REFERENCE DRAWINGS •

Pipe Culverts — 5-27 RC. 1 & 3
Catch Basins — See 11-3 Sheet No. 95



CROSS-SECTION
Scale 1"=5'

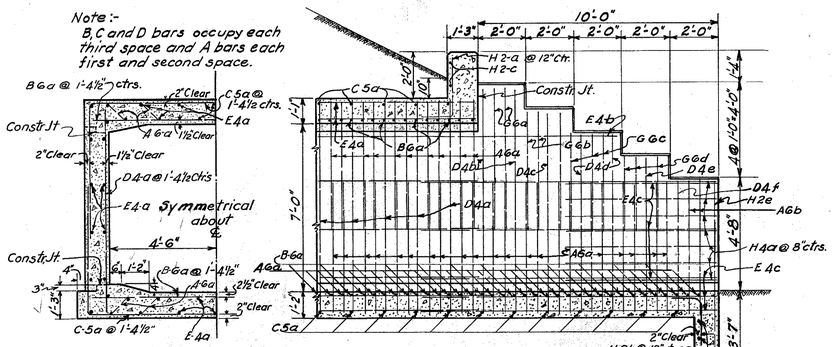
15"x 72'-0" C.I.P. CULVERT
STA. 229+03.5

95

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2), 520-C(1) 520-A(2)	1941

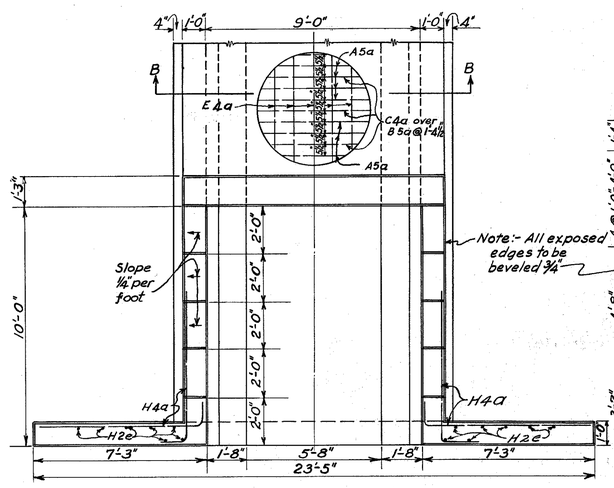
93
145

TUSCARAWAS COUNTY
S.H. 70 SEC. A(Pt) D- & MINERAL CITY(Pt) DOVER BASIN.

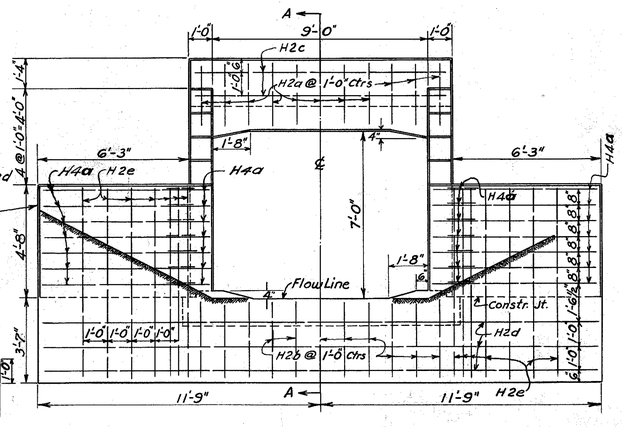


HALF SECTION B-B.
Scale 1"=3'

SECTION A-A RT. & LT. END
Scale 1"=3'



PART PLAN
Scale 1"=3'

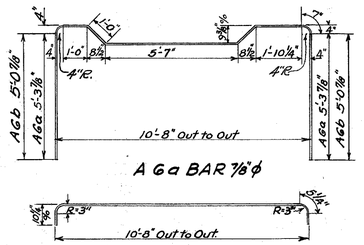


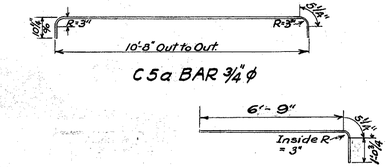
END VIEW
Scale 1"= 3'

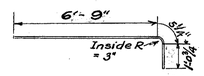
REINFORCING STEEL

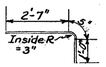
No	Mark	Size	Length	Spacing	Shape	Location	Weight
28	H2e	½"ø	6'-0"	12" ctrs.	Straight	Vert. in turn back wing	150
56	H4a	⅝"ø	8'-3"	8" "	⌐	Hor. in turn back wing	483
22	H2a	½"ø	4'-0"	12" "	⌐	Vert. in Hdwll.	59
4	H2c	½"ø	10'-8"	" "	Straight	Hor. in Hdwll	29
22	H2b	½"ø	4'-2"	" "	⌐	Vert. in cut off wall	62
6	H2d	½"ø	23'-0"	" "	Straight	Hor. in cut off wall	93
26	A6a	⅞"ø	22'-3"	5½" "	⌐	Bottom slab in wings	1184
8	G6a	⅞"ø	6'-4"	" "	Straight	splice to A-bars.	104
12	G6b	⅞"ø	5'-4"	" "	"	" "	131
12	G6c	⅞"ø	4'-4"	" "	"	" "	107
12	G6d	⅞"ø	3'-4"	" "	"	" "	82
8	D4b	⅝"ø	9'-6"	16½" "	"	Alternate with A bars.	80
4	D4c	⅝"ø	8'-6"	" "	"	" "	36
8	D4d	⅝"ø	7'-6"	" "	"	" "	63
4	D4e	⅝"ø	6'-6"	" "	"	" "	27
4	D4f	⅝"ø	5'-6"	" "	"	" "	23
8	E4b	⅝"ø	8'-6"	24" "	"	Hor. in side walls	71
58	E4c	⅝"ø	12'-6"	As shown	"	in walls and slab	757
14	B6a	⅞"ø	10'-6"	16½" ctrs	"	Hor. in bottom wing & slab	301
14	C5a	¾"ø	12'-0"	16½" "	⌣	" " "	253
280	A6a	⅞"ø	22'-3"	5½" "	⌐	Hor. in top & bottom slab.	12747
140	D4a	⅝"ø	8'-9"	16½" "	Straight	Vert. in walls.	1279
140	B6a	⅞"ø	10'-6"	" "	"	Hor. in top & bottom slab.	3008
140	C5a	¾"ø	12'-0"	" "	⌣	" "	2525
200	E4a	⅝"ø	23'-9"	As shown	Straight	Longit bars in wall & slabs.	4954
2	Re2	½"ø	6'-0"			Replacement bar.	8
2	Re4	⅝"ø	6'-6"			" "	14
2	Re5	¾"ø	7'-0"			" "	21
2	Re6	⅞"ø	7'-6"			" "	31
4	A6b	⅞"ø	21'-9"	5½" ctrs	⌐⌣	Bottom Slab at Wing end	178
54	J-5a	¾" ø	4'-0"	As shown	Straight	Slabs & Walls.	324
						TOTAL	29,184

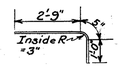
· STEEL BENDING DIAGRAM ·











· ESTIMATED QUANTITIES ·

Structure Excavation.	400	Cu.Yd's.
Channel Excavation.	20	Cu.Yd's.
Concrete Class "C".	177.5	Cu.Yd's.
Reinforcing Steel.	29,184	Lbs.
Rip Rap Type "A" (Grout Filled).	115	Sq.Yd's.
Removal of Existing Masonry	150	Cu.Yds..

SHEET 2 OF 2 SHEETS

STA. 243+85

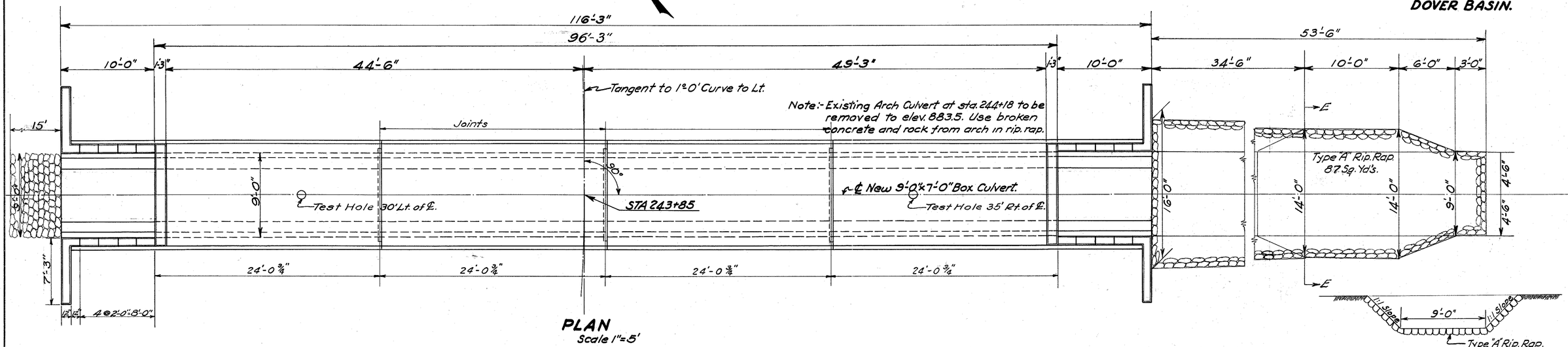
10-S

DRAINAGE AREA = ACRES

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OH10	260-A(2), 520-C(1) 520-A(2)	1941

94
145

TUSCARAWAS COUNTY
S.H. 70 SEC. A(Pt)-D-E
MINERAL CITY(Pt).
DOVER BASIN.



PLAN
Scale 1"=5'

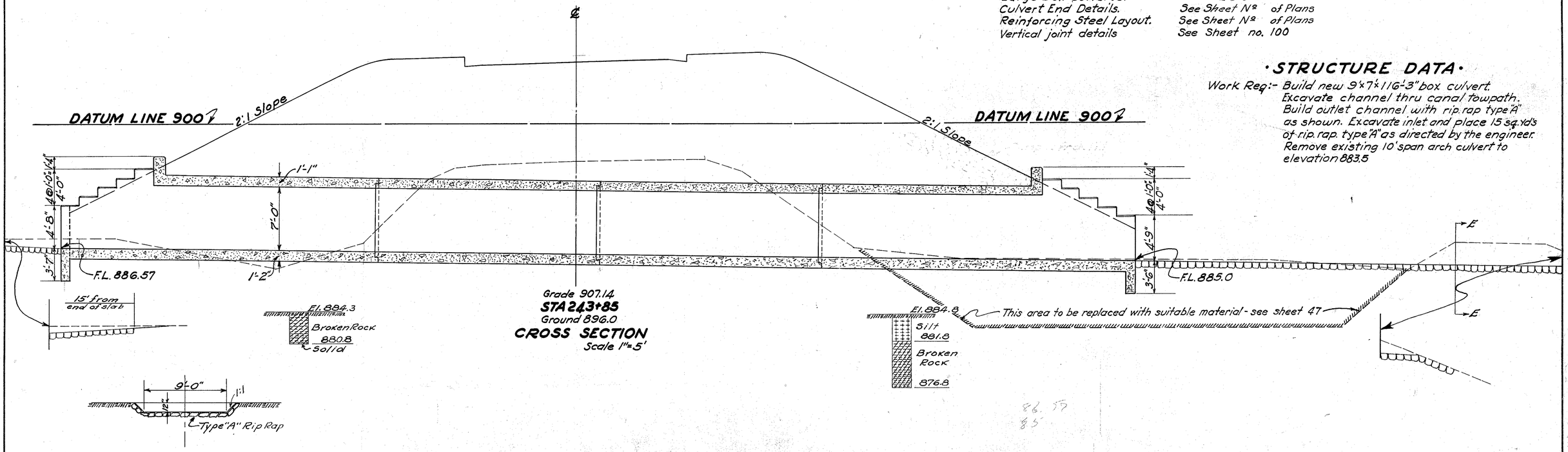
SEC. E-E
Scale 1"=5'

•REFERENCE DRAWINGS•

Large Box Culverts.	L·B·C-33
Culvert End Details.	See Sheet Nº of Plans
Reinforcing Steel Layout.	See Sheet Nº of Plans
Vertical joint details	See Sheet no. 100

•STRUCTURE DATA•

Work Req:- Build new 9'x7'x116'-3" box culvert. Excavate channel thru canal towpath. Build outlet channel with rip.rap type "A" as shown. Excavate inlet and place 15 sq. yd's of rip. rap. type "A" as directed by the engineer. Remove existing 10' span arch culvert to elevation 883.5



86.55
85

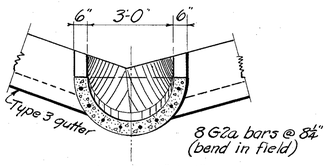
SHEET 1 OF 2 SHEETS.
STA. 243+85

10-S

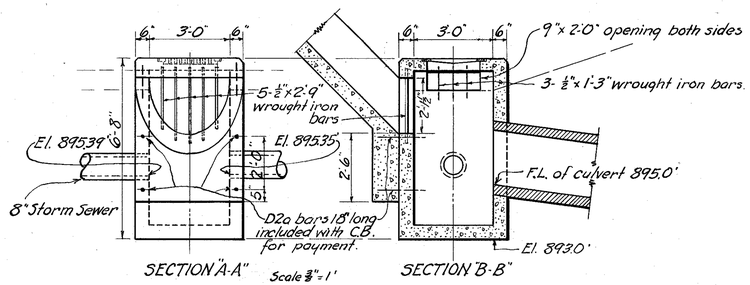
FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2) 520-C(1) 520-A(2)	1941

95
145

TUSCARAWAS COUNTY
S.H. 70. SEC. A (Pt.). D & MINERAL CITY (Pt.)

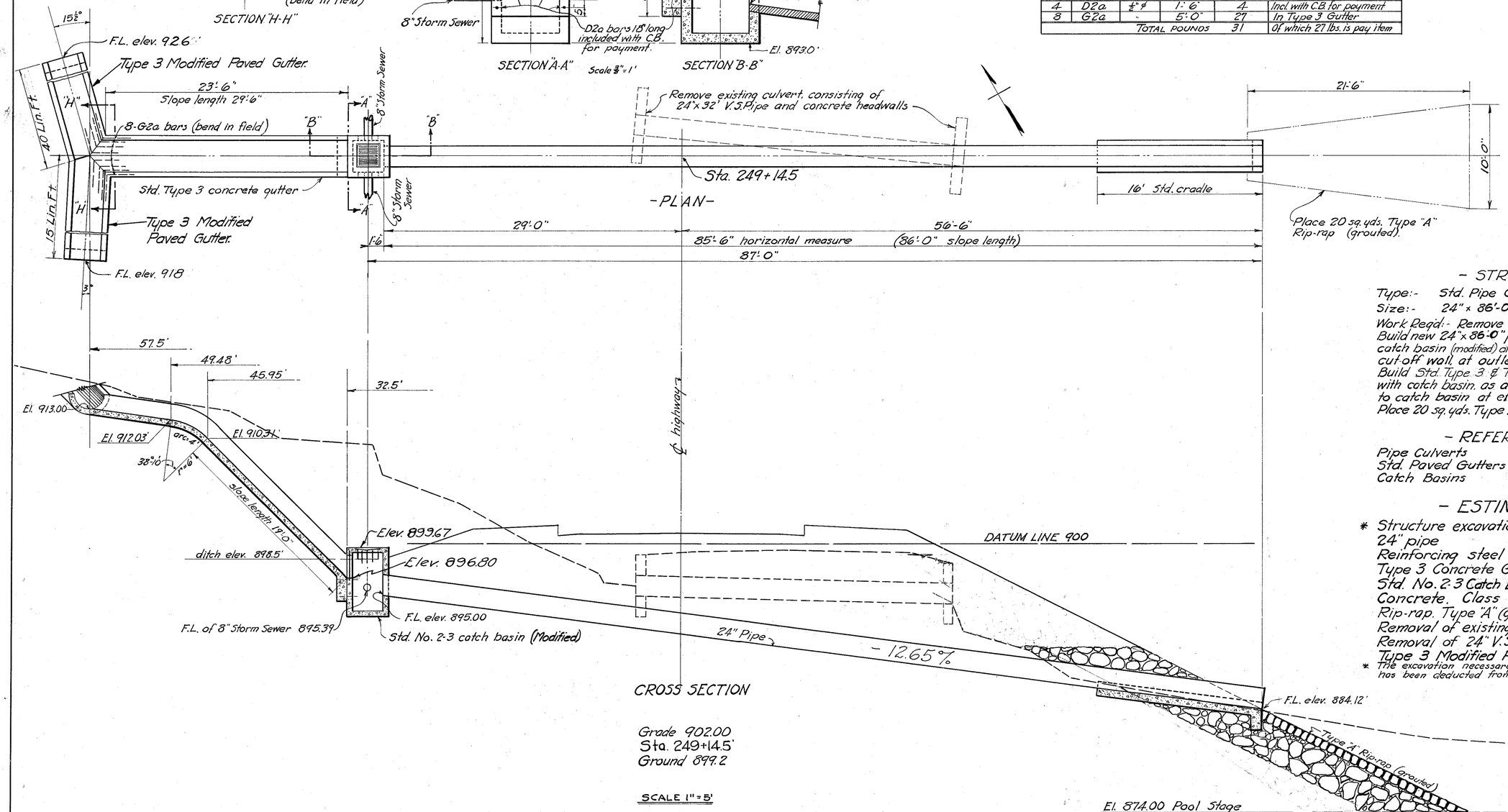


SECTION "H-H"



SECTION "A-A" Scale ¾" = 1' SECTION "B-B"

STEEL LIST					
No.	Mark	Size	Length	Weight	Remarks
4	D2a	⅝" ϕ	1'-6"	4	Incl. with C.B. for payment
8	G2a	"	5'-0"	27	In Type 3 Gutter
		Total pounds		31	Of which 27 lbs. is pay item



-PLAN-

CROSS SECTION

Grade 902.00
Sta. 249+14.5
Ground 899.2

SCALE 1" = 5'

- STRUCTURE DATA -

Type:- Std. Pipe Culvert
Size:- 24" x 86'-0"
Work Reqd:- Remove existing 24" x 32" V.S.P culvert. Build new 24" x 86'-0" pipe culvert, with one Std. No. 2-3 catch basin (modified) at inlet end and 16 of Std. Cradle with cut-off wall at outlet end. Build Std. Type 3 & Type 3 Modified Paved Gutter to connect with catch basin, as detailed. Connect 8" storm sewers to catch basin at elevations shown. Place 20 sq. yds. Type "A" Rip-rap (grouted) at outlet.

- REFERENCE DRAWINGS -

Pipe Culverts S27 P.C. 2 and 3
Std. Paved Gutters I-14-G
Catch Basins I-8. C.B. 2-3 & 2-4

- ESTIMATED QUANTITIES -

* Structure excavation	70 cu. yds.
24" pipe	86 lin. ft.
Reinforcing steel	27 pounds
Type 3 Concrete Gutter	30 lin. ft.
Std. No. 2-3 Catch Basin (Modified)	1 complete
Concrete, Class "C"	1.6 cu. yds.
Rip-rap, Type "A" (grouted)	20 sq. yds.
Removal of existing masonry	3 cu. yds.
Removal of 24" V.S. pipe	32 lin. ft.
Type 3 Modified Paved Gutter	55 lin. ft.

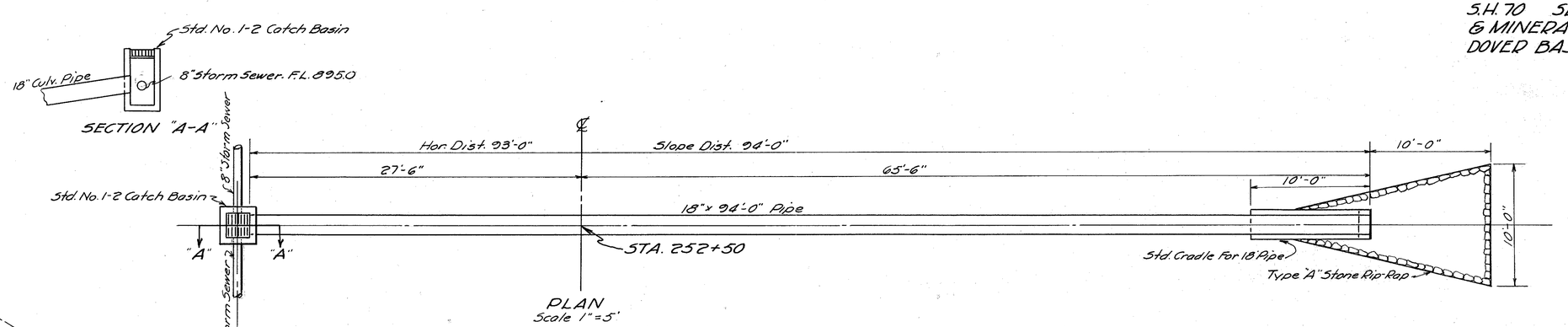
* The excavation necessary for removal of existing structure has been deducted from "Structure Excavation."

24" x 86'-0" PIPE CULVERT
STA. 249+14.5

11-S

FED. RD. DIST. No.	STATE	FED. AID PROJECT	FISCAL YEAR	96
10	0410	260-A(8), 320-C(1), 320-A(2)	1941	145

TUSCARAWAS COUNTY
S.H. 70 SEC'S. A(PT), D, & MINERAL CITY
DOVER BASIN



• STRUCTURE DATA •

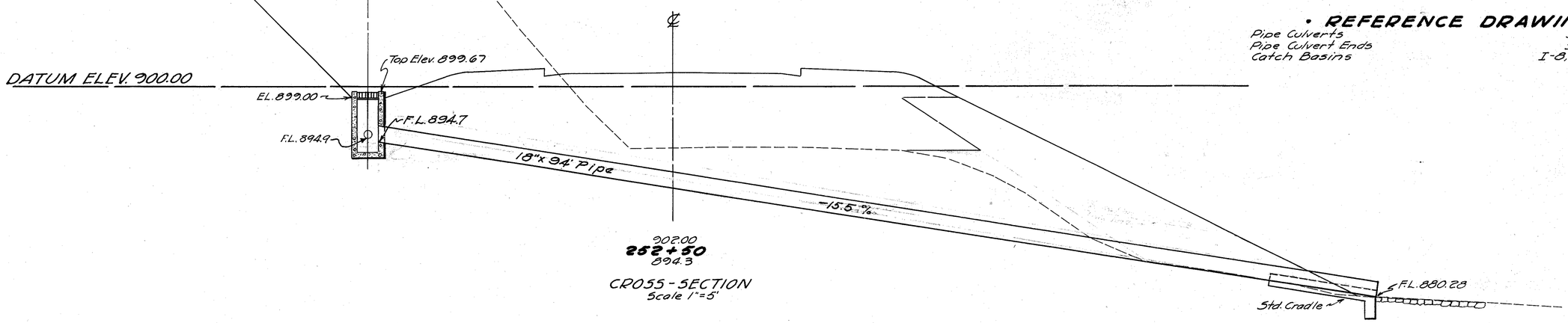
Type: Std. Pipe Culvert.
Size: 18" x 94'-0"
Work required: Build Std. 18" x 94'-0" Pipe Culvert with Std. Cradle and Type "A" Stone Rip-Rap at outlet end and Std. No. 1-2 Catch Basin at inlet end.

• ESTIMATED QUANTITIES •

Excavation (Structure)	75 Cu. Yds.
18" Pipe For Culvert.	94 Lin. Ft.
Concrete. Class "C"	0.9 Cu. Yds.
Type "A" Stone Rip-Rap. (Grout Filled)	10 Sq. Yds.
Std. No. 1-2 Catch Basin.	1 Each

• REFERENCE DRAWINGS •

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



18" x 94'-0" PIPE CULVERT
STA. 252+50

13-S

Fed. Rd. Dist. No	State	Fed. Aid Proj. No.	Fiscal Year
10	OH10	260-A(2) 320-C(1) 520-A(2)	1941

97
145

TUSCARAWAS COUNTY
SH 70 – SEC. "A" (PT.) D & E
MINERAL CITY (PT.)
DOVER BASIN

STRUCTURE DATA

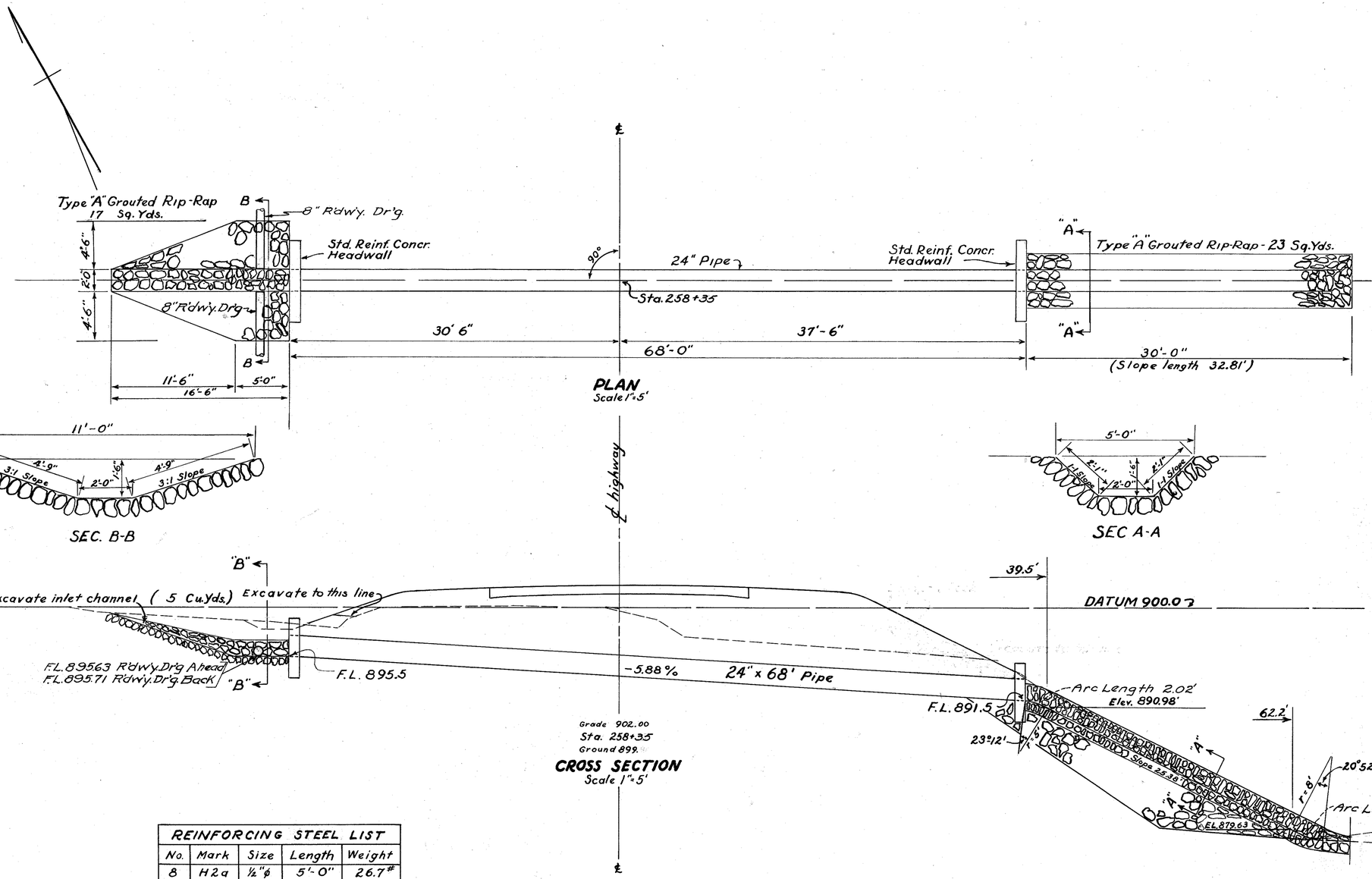
Type: Pipe Culvert
Size: 24" x 68'-0"
Work Req'd: Build new 24" x 68'-0" Std. pipe culvert with 2 Std. Reinf. concrete headwalls. Excavate inlet and outlet channal and pave with Type "A" grouted rip-rap.

REFERENCE DRAWINGS

Pipe Culverts	S-27 P.C.1
Pipe Culverts	S-27 P.C.3

ESTIMATED QUANTITIES

Excavation	76	CU. YDS.
Channel Excavation	65	CU. YDS.
Concrete Class C	2.8	CU. YDS.
Reinf. Steel	64	Lbs.
Type A Grouted Rip-Rap	40	Sq. YDS.
24" Pipe	68	Lin Ft.



REINFORCING STEEL LIST				
No.	Mark	Size	Length	Weight
8	H2a	½"ϕ	5'-0"	26.7#
8	H2b	½"ϕ	7'-0"	37.3#
			Total	64.0#

24" x 68' PIPE CULVERT
STA. 258+35

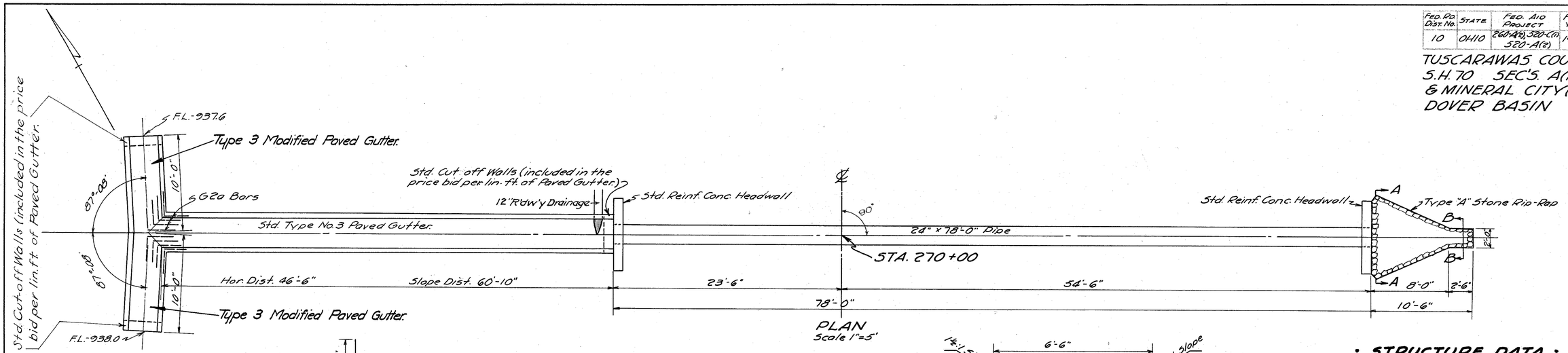
15-S

Fed. Rd. Dist. No.	State	Fed. Aid Project	Fiscal Year
10	OHIO	260-A(2), 320-C(1), 520-A(2)	1941

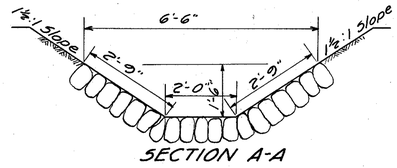
98
145

TUSCARAWAS COUNTY
S.H. 70 SEC'S. A(PT), D,
& MINERAL CITY(PT)
DOVER BASIN

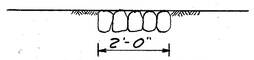
Std. Cut-off Walls (included in the price bid per lin. ft. of Paved Gutter.



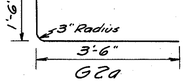
PLAN
Scale 1"=5'



SECTION A-A



SECTION B-B



G2a

See Std. Drwg. 5-27 P.C. 1

• REINFORCING STEEL LIST •

No	Mark	Size	Length	Weight	Remarks
8	H2a	⅝"	5'-0"	27 lbs	Hdwall
8	H2b	⅝"	7'-0"	37 lbs	Hdwall
8	G2a	½"	5'-0"	27 lbs	Gutter
TOTALS				91 lbs	

• STRUCTURE DATA •

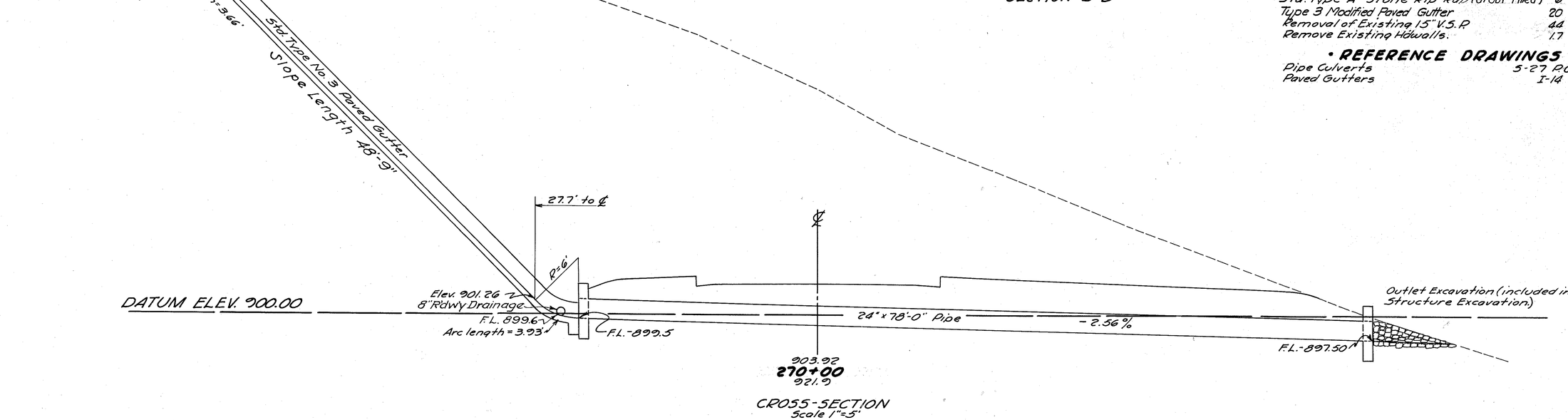
Type: Std. Pipe Culvert.
Size: 24" x 78'-0"
Work required: Build new 24" x 78'-0" Pipe Culvert with 2 Std. Headwalls. Build Std. Type 3 & Type 3 Modified Paved Gutter. Excavate Outlet as shown and pave with Type "A" Stone Rip-Rap. Remove 15" x 44'-0" V.S.P. Right of Sta. 270+90.

• ESTIMATED QUANTITIES •

Excavation (Structure)	80	Cu. Yds.
24" Pipe	78	Lin. Ft.
Concrete, Class "C"	28	Cu. Yds.
Reinforcing Steel	91	Lbs.
Std. Type No. 3 Paved Gutter	61	Lin. Ft.
Std. Type "A" Stone Rip-Rap (Grout Filled)	6	Sq. Yds.
Type 3 Modified Paved Gutter	20	Lin. Ft.
Removal of Existing 15" V.S.P.	44	Lin. Ft.
Remove Existing Hdwalls.	1.7	Cu. Yds.

• REFERENCE DRAWINGS •

Pipe Culverts	5-27 P.C. 1 & 3
Paved Gutters	I-14 G



CROSS-SECTION
Scale 1"=5'

24" x 78'-0" PIPE CULVERT
STA. 270+00

21-S

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2) 520-C(1) 520-A(2)	1941

99
145

TUSCARAWAS COUNTY
S.H. 70, SEC. A (PT), D, & MINERAL CITY (PT).

STRUCTURE DATA

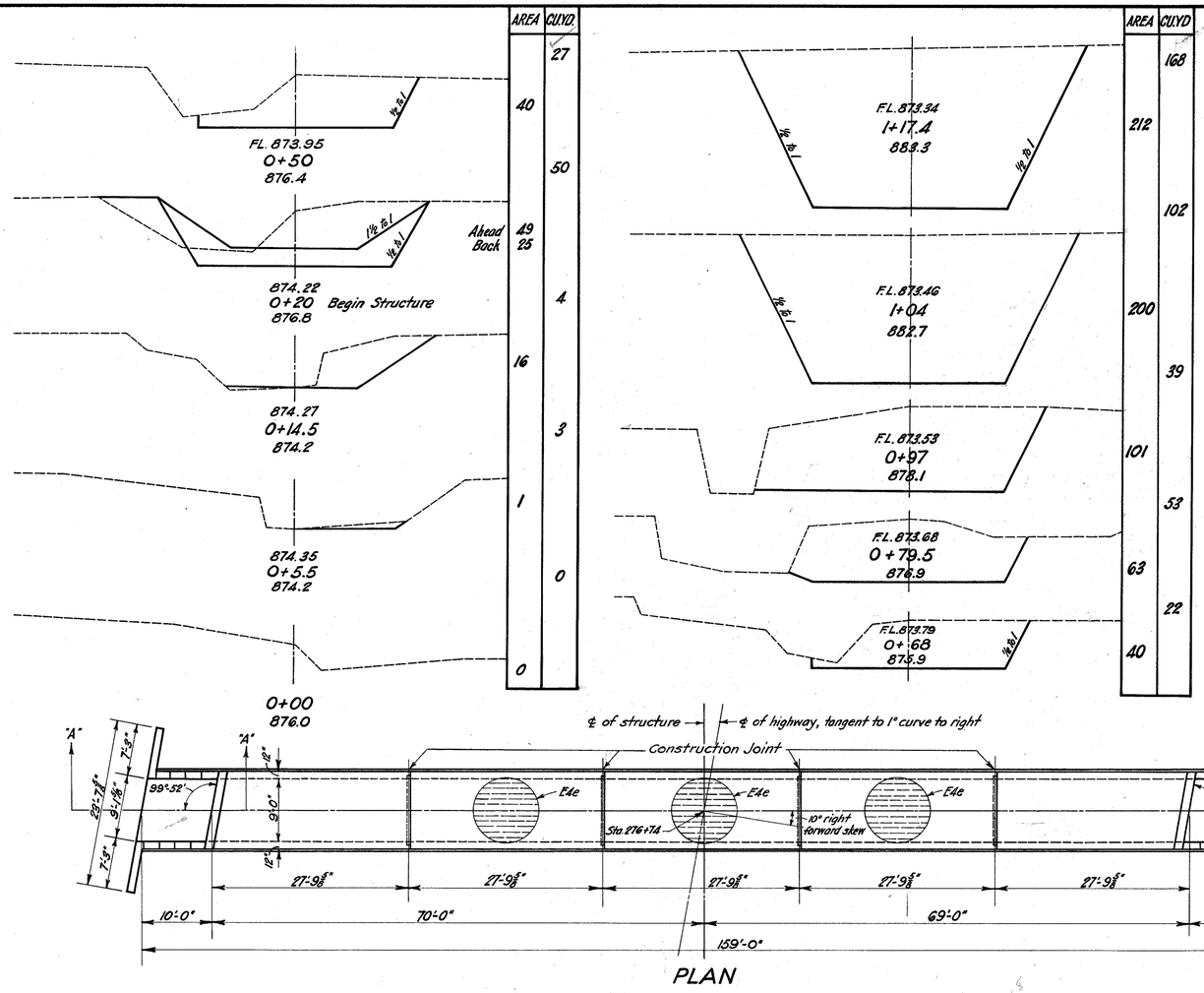
Type : Large Box Culvert.
Size : 9'-0" x 7'-0" x 159'-0"
Work Req'd: Build Box Culvert on 10° R.F. Skew to elevations shown. Excavate outlet channel through canal towpath. Remove existing 4'x2.5'x 114' Concrete Box at Sta. 276+87

REFERENCE DRAWINGS

Large Box Culverts	LBC-33

ESTIMATED QUANTITIES

Structure Excavation	696 Cu. Yds.
Channel Excavation	305 Cu. Yds.
Concrete, Class "C"	267 Cu. Yds.
Reinforcing steel	45016 Lbs.
Type "B" Waterproofing	120 Sq. Yds.
Type "C" Waterproofing	24 Sq. Yds.
Removal of Existing Masonry	47 Cu. Yds.



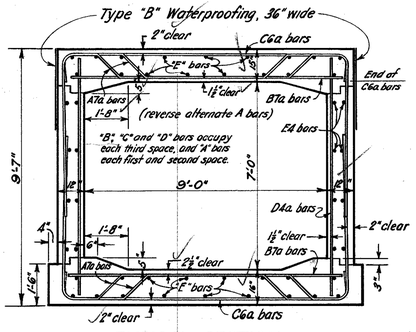
SHEET 1 OF 2 SHEETS
9' X 7' BOX CULVERT
22-S

STA. 276 + 74

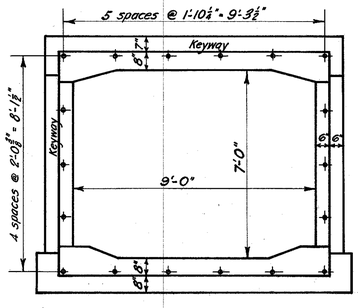
FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2) 520-C(1) 520-A(2)	1941

100
145

TUSCARAWAS COUNTY
S.H. 70, SEC. A (Pt), D, & MINERAL CITY (Pt)



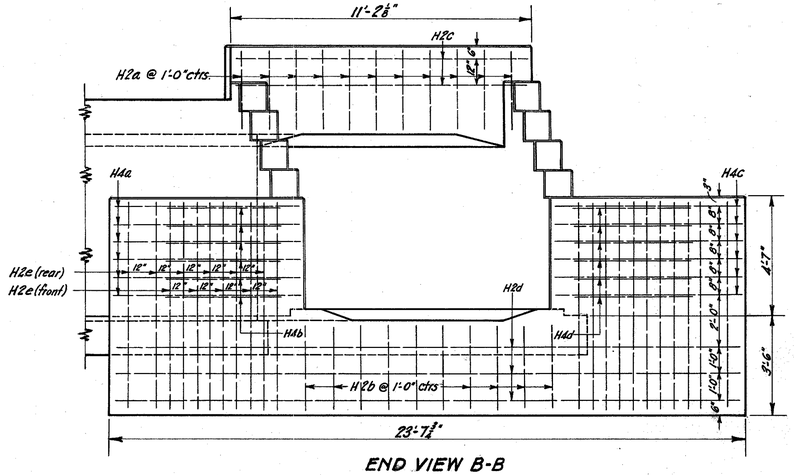
TYPICAL SECTION



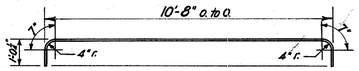
CROSS SECTION SHOWING CONTRACTION JOINT

Note: J5a (dowel bars) only are shown.

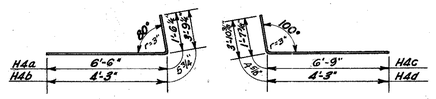
See top view for dowel details



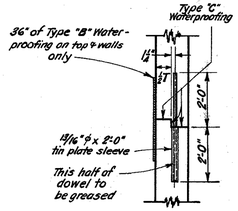
END VIEW B-B
Scale 3/16" = 1'-0"



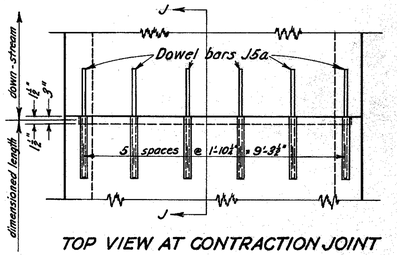
C6a BARS



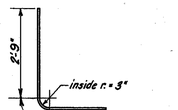
H4a, b, c, and d BARS



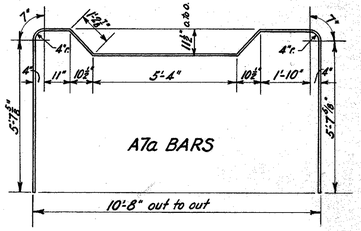
SECTION J-J



TOP VIEW AT CONTRACTION JOINT



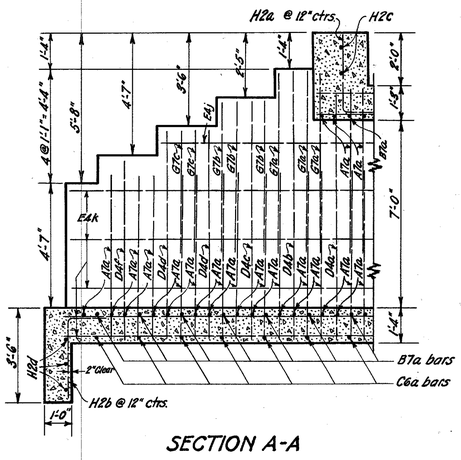
H2a and b BARS



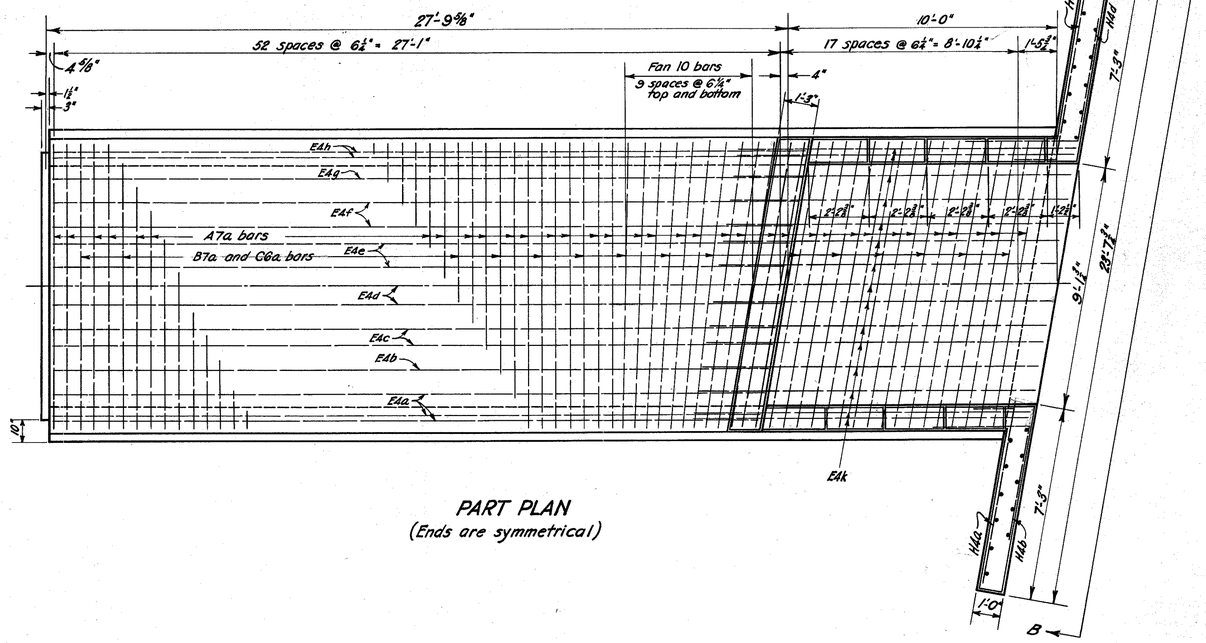
A7a BARS

STEEL LIST					
NUMBER	MARK	SIZE	SHAPE	LENGTH	WEIGHT
28	E4a	5/8"ϕ	Straight	26'-6"	775
8	E4b	"	"	26'-9"	223
8	E4c	"	"	27'-0"	226
8	E4d	"	"	27'-3"	228
158	E4e	"	"	27'-6"	4536
12	E4f	"	"	27'-9"	348
4	E4g	"	"	28'-0"	117
24	E4h	"	"	28'-3"	708
8	E4j	"	"	9'-6"	79
58	E4k	"	"	12'-6"	757
378	A7a	1" ϕ	Bent	23'-0"	23239
188	B7a	"	Straight	10'-6"	5277
188	C6a	⅞"ϕ	Bent	12'-3"	4712
176	D4a	5/8"ϕ	Straight	9'-3"	1700
4	D4b	"	"	10'-0"	42
4	D4c	"	"	9'-0"	38
8	D4d	"	"	7'-9"	65
4	D4f	"	"	6'-9"	28
12	G7a	1"ϕ	"	6'-9"	217
12	G7b	"	"	5'-9	184
8	G7c	"	"	4'-9"	102
22	H2a	½"ϕ	Bent	4'-3"	62
20	H2b	"	"	4'-3"	57
4	H2c	"	Straight	10'-9"	29
6	H2d	"	"	23'-0"	92
44	H2e	"	"	7'-9"	228
12	H4a	5/8"ϕ	Bent	8'-6"	107
12	H4b	"	"	8'-6"	107
12	H4c	"	"	8'-9"	110
12	H4d	"	"	8'-6"	107
* 72	J5a	¾"ϕ	Straight	4'-0"	433
2	RE2	½"ϕ	"	4'-0"	5
2	RE4	5/8"ϕ	"	4'-6"	9
2	RE5	¾"ϕ	"	5'-0"	15
2	RE6	⅞"ϕ	"	5'-6"	22
2	RE7	1"ϕ	"	6'-0"	32
		TOTAL POUNDS			45016

* Dowel Bars to be furnished complete with sleeves as detailed.



SECTION A-A



PART PLAN
(Ends are symmetrical)

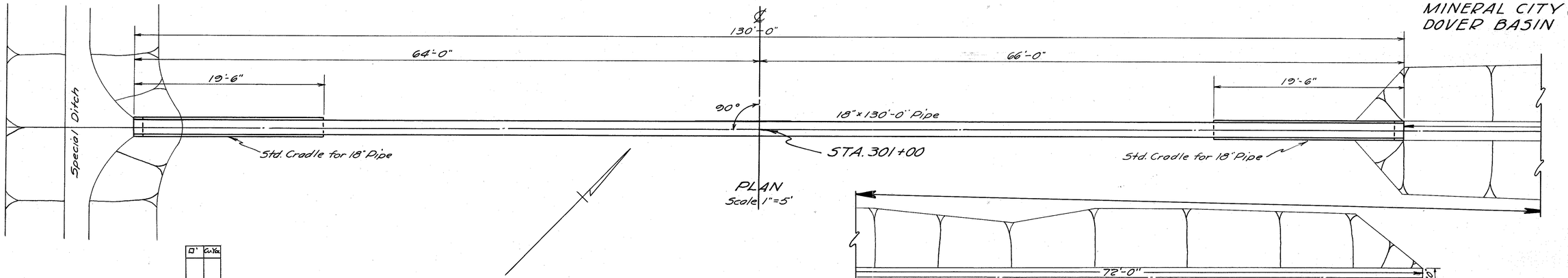
SHEET 2 OF 2 SHEETS
9' X 7' BOX CULVERT
STA. 276+74

225

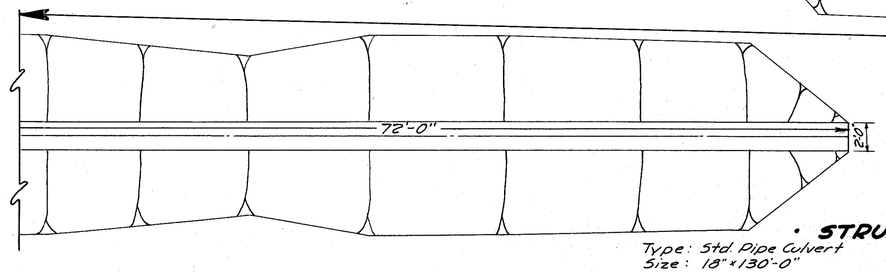
FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR
10	OHIO	260-A(2), 320-C(1) 320-A(2)	1941

101
145

TUSCARAWAS COUNTY
S.H. 70 SEC'S. A(PT), D,
MINERAL CITY (PT)
DOVER BASIN

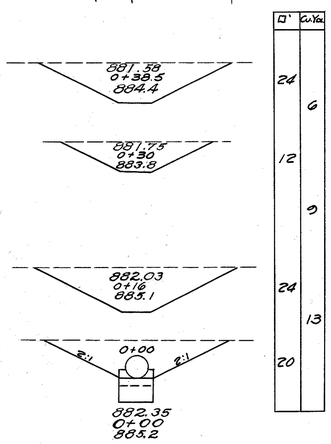


PLAN
Scale 1"=5'



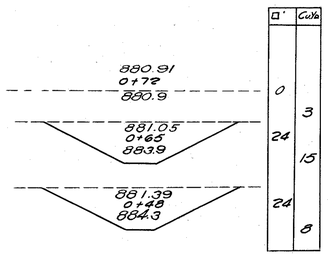
· STRUCTURE DATA ·

Type: Std. Pipe Culvert
Size: 18"x130'-0"
Work required: Build new 18"x130'-0" Std. Pipe Culvert with 2 Std. Cradles. Excavate outlet as shown.



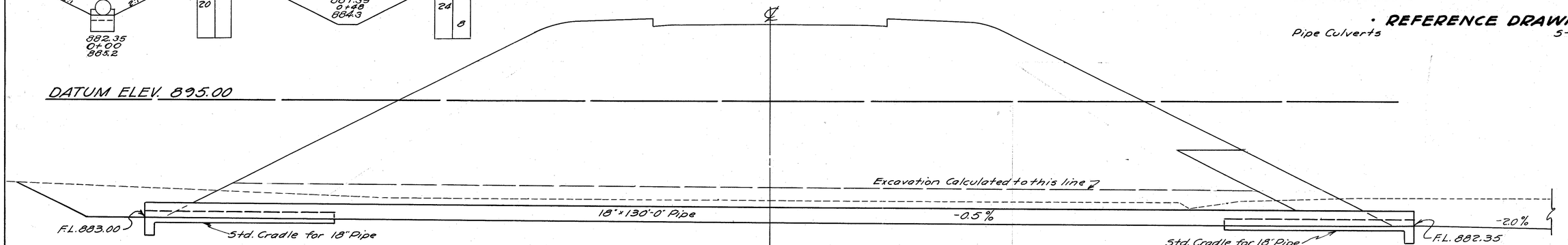
DITCH SECTIONS
Sta. 0+00 is Outlet End of culvert.

D'	Cu.Yds.
24	6
12	9
24	13
20	

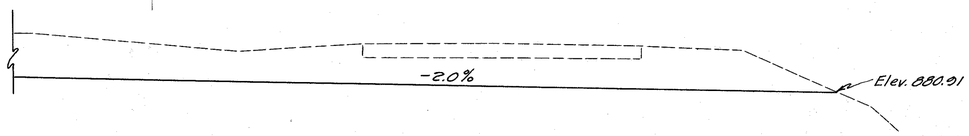


D'	Cu.Yds.
0	
24	3
24	15
24	8

Channel Excavation 54 Cu. Yds.



CROSS-SECTION
Scale 1"=5'



· ESTIMATED QUANTITIES ·

Excavation (Structure)	66 Cu. Yds.
Excavation (Channel)	54 Cu. Yds.
18" Pipe	130 Lin. Ft.
Concrete. Class "C"	3.3 Cu. Yds.

· REFERENCE DRAWINGS ·

Pipe Culverts 5-27 P.C. 263

18"x130'-0" PIPE CULVERT
STA. 301+00

24-S

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2) S20-C(1) S20-A(2)	1941

102
145

TUSCARAWAS COUNTY
S.H. 70 SEC. A (Pt.), D, & MINERAL CITY (Pt.)

AREA	CU.YDS.
	74
82	
	62
51	
	16
Ahead 34	
Back 22	
	7
11	
	5

SCALE OF SECTIONS 1"=5'

884.65
0+47
890.8

884.90
0+22
888.9

Channel
Excavation for structure

885.01
0+12
887.2

885.13
0+00
885.8

Zero at 0-25

883.78
1+32
885.5

883.88
1+22
885.9

884.13
0+97
887.7

884.39
0+72
890.7

AREA	CU.YDS.
	7
64	
	22
57	
	49
49	
	59
79	

883.26
1+82
882.8

883.37
1+72
883.3

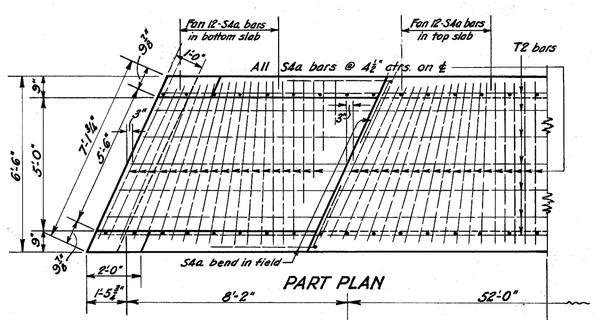
883.62
1+47
884.8

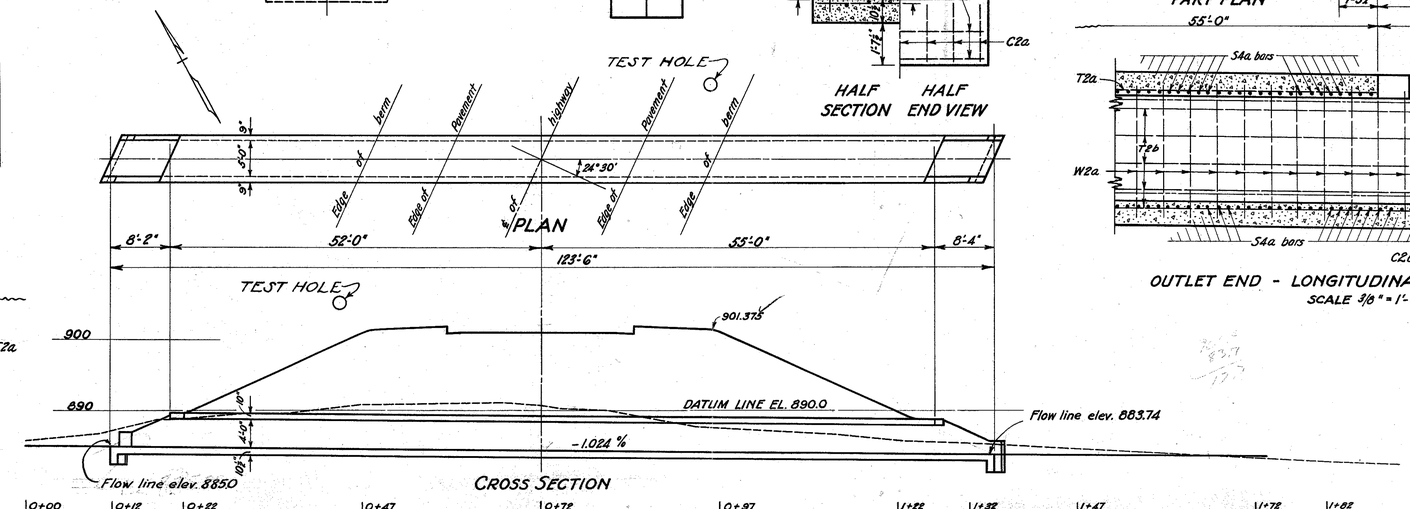
883.75
1+35
885.4

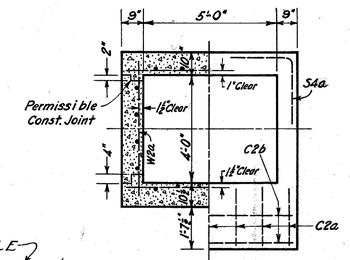
AREA	CU.YDS.
0	
	1
7	
	24
44	
	21
Ahead 49	
Back 63	

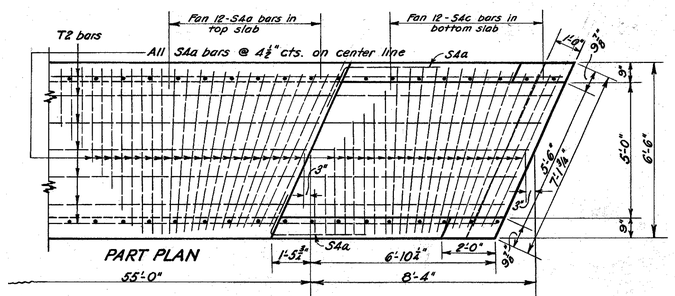
STEEL LIST

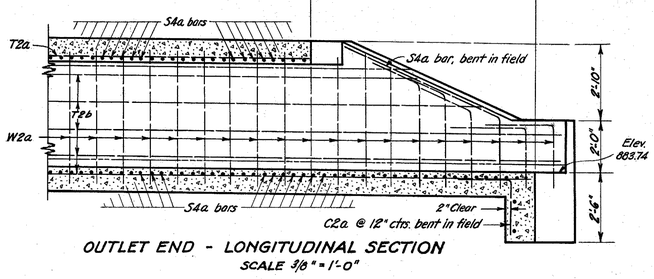
NUMBER	MARK	SIZE	SHAPE	LENGTH	WEIGHT
20	T2a	½"ϕ	Straight	28'-6"	381
65	T2b	"	"	26'-6"	1151
246	W2a	"	"	5'-0"	822
4	C2b	"	"	6'-9"	19
14	C2a	"	Field bent	3'-3"	30
620	S4a	⅝"ϕ	Straight	6'-3"	4046
2	RE2	½"ϕ	"	4'-0"	6
2	RE4	⅝"ϕ	"	4'-6"	10
TOTAL POUNDS					6465











STRUCTURE DATA

TYPE: Small box culvert.
SIZE: 5'x4'x123'-6"
WORK REQ'D.: Build Std. 5'x4'x123'-6" reinforced concrete box culvert, skewed 24°-30' right forward. Excavate channel at inlet and outlet ends.

REFERENCE DRAWINGS

Small Box Culverts ——— S.B.C.-34

ESTIMATED QUANTITIES

Structure excavation, ——— 269 Cu. Yds.
Channel excavation, ——— 58 Cu. Yds.
Concrete, Class 'C', ——— 74.2 Cu Yds.
Reinforcing Steel, ——— 6465 Lbs.

5'x4'x123'-6" BOX CULVERT
STA. 331+55

265

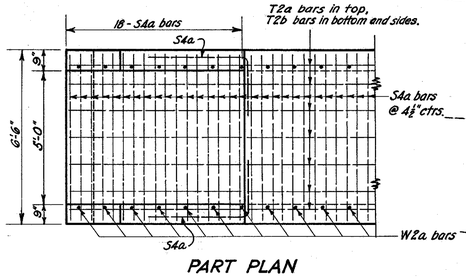
FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2) 520-C(1) 520-A(2)	1941

103
145

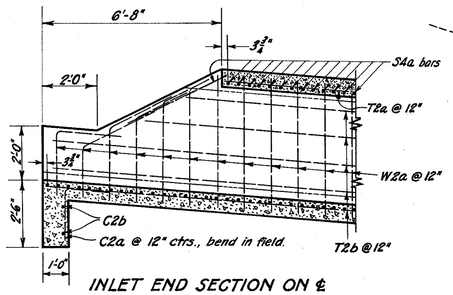
TUSCARAWAS COUNTY
S.H. 70, SEC. A (Pt.), D, & MINERAL CITY (Pt.).

STEEL LIST

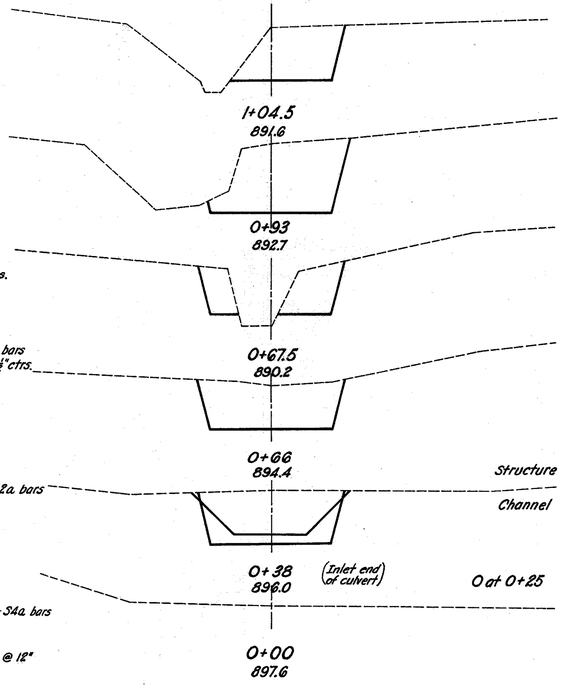
NO	MARK	SIZE	SHAPE	LENGTH	WEIGHT
15	T2a	½" ϕ	Straight	25'-6"	256
52	T2b	"	"	23'-6"	816
176	W2a	"	"	5'-0"	588
4	C2b	"	"	6'-3"	17
14	C2a	"	Field bent	3'-3"	30
432	S4a	⅝" ϕ	Straight	6'-3"	2819
2	RE2	½" ϕ	"	4'-0"	5
2	RE4	⅝" ϕ	"	4'-6"	9
			TOTAL POUNDS		4540

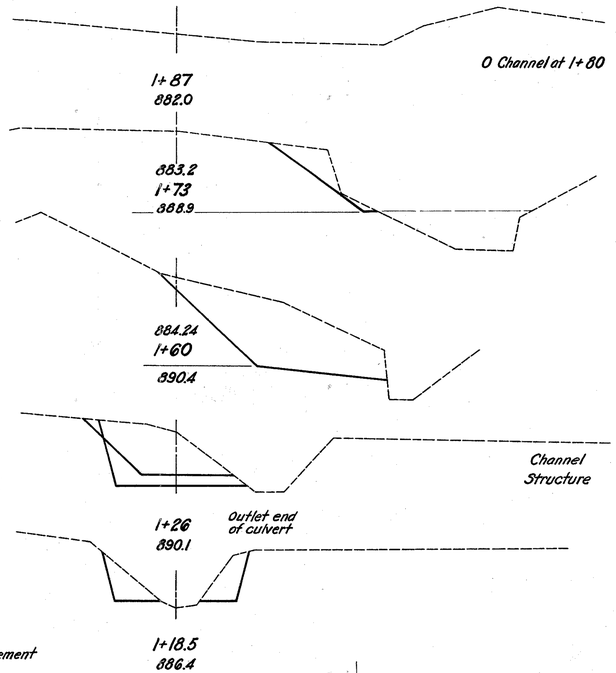


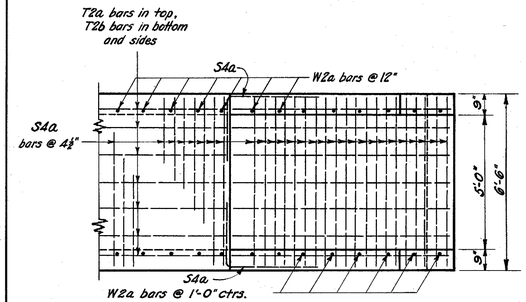
PART PLAN



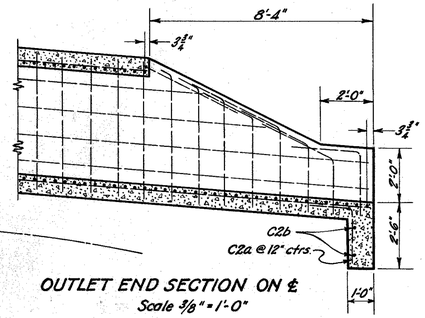
INLET END SECTION ON ℄



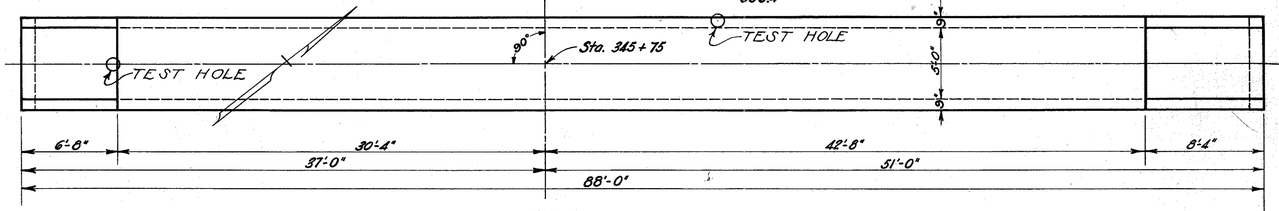




PART PLAN



OUTLET END SECTION ON ℄
Scale ⅜"=1'-0"



PLAN

Channel is curved from end of culvert, to meet present topography of drainage course

STRUCTURE DATA

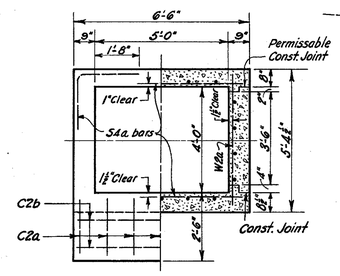
TYPE : Small Box Culvert
SIZE : 5'×4'×88'-0"
WORK REQ'D. : Build Standard 5'×4'×88'-0" Reinforced Concrete Box Culvert. Excavate inlet and channel at outlet end.

REFERENCE DRAWINGS

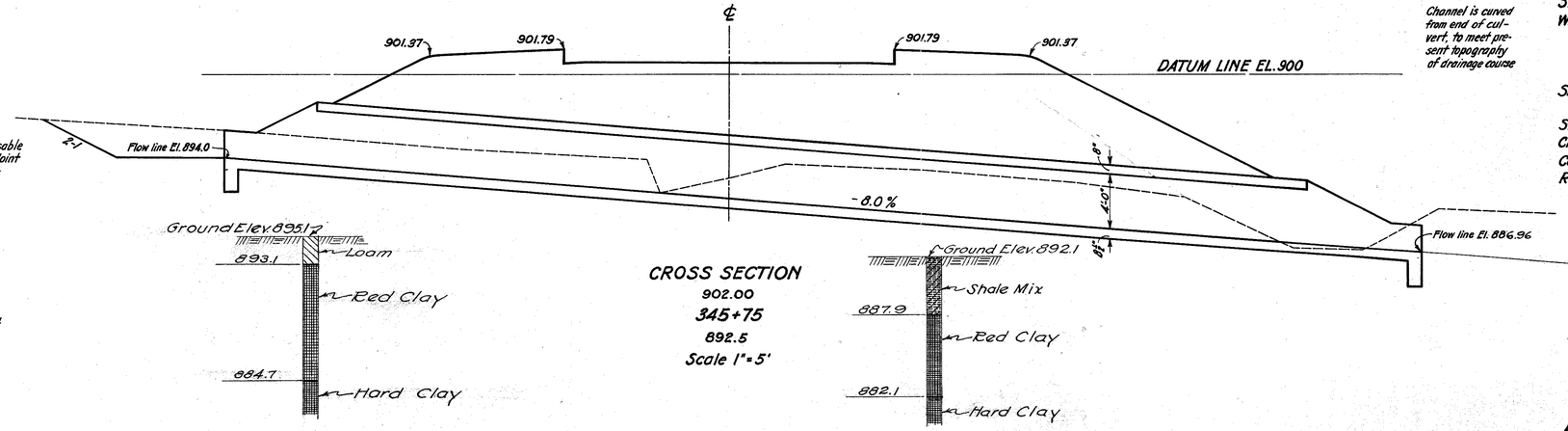
Small Box Culverts S.B.C.-34

ESTIMATED QUANTITIES

Structure Excavation	102 Cu. Yds.
Channel Excavation	68 Cu. Yds.
Concrete, Class "C",	46.8 Cu. Yds.
Reinforcing Steel,	4540 Lbs.



HALF END VIEW HALF SECTION
Scale ⅜"=1'-0"



CROSS SECTION
902.00
345+75
892.5
Scale 1"=5'

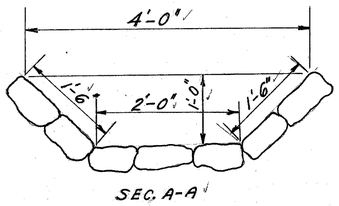
5'X 4'X 88'-0" BOX CULVERT
STA. 345+75

28-S

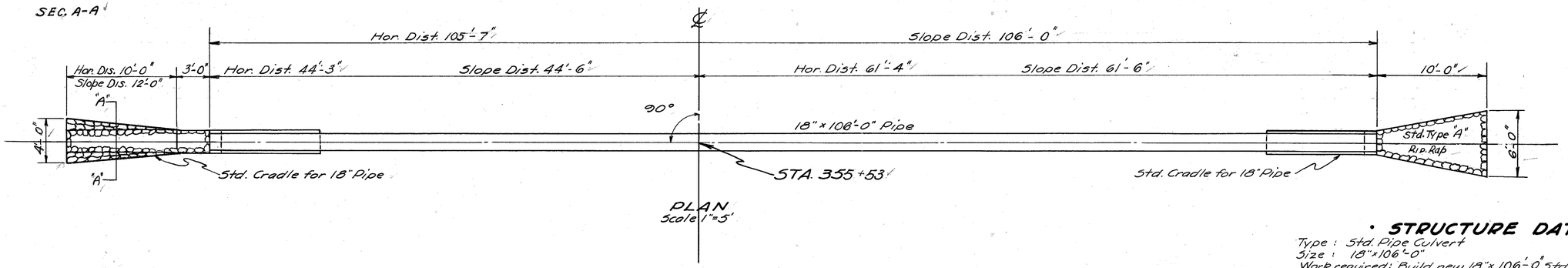
FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR
10	OHIO	260-A(2), 320-C(2), 320-A(2)	1941

104
145

TUSCARAWAS COUNTY
S.H. 70 SEC'S. A(PT), D.
MINERAL CITY (PT)
DOVER BASIN



SEC. A-A



PLAN
Scale 1"=5'

• STRUCTURE DATA •

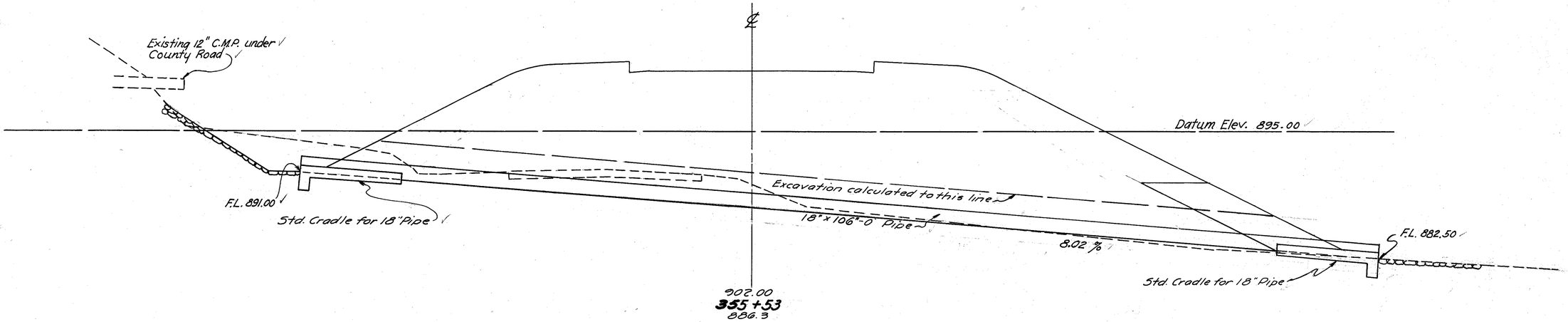
Type : Std. Pipe Culvert
Size : 18" x 106'-0"
Work required: Build new 18" x 106'-0" Std. Pipe Culvert with 2 Std. Cradles. Pave inlet and outlet with Std. Type "A" Stone Rip-Rap.

• ESTIMATED QUANTITIES •

Excavation (Structure)	43 Cu. Yds.
18" Pipe	106 Lin. Ft.
Concrete, Class "C"	1.8 Cu. Yds.
Std. Type "A" Stone Rip-Rap (Grout Filled)	10 Sq. Yds.

• REFERENCE DRAWINGS •

Pipe Culverts 5-27 R.C. 2&3



CROSS-SECTION
Scale 1"=5'

18" x 106'-0" PIPE CULVERT
STA. 355+53

31-S

355 +53

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(0), 520-C(0) 520-A(0).	1941

105
145

TUSCARAWAS COUNTY
S.H. 70, SEC. A (Pt), D, & MINERAL CITY (Pt).

STRUCTURE DATA

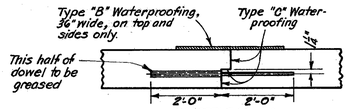
Type: Reinforced Concrete Box Culvert.
Size: 5'x4'x153'-6"
Work Req'd: Build reinforced concrete Box Culvert, 5'x4'x153'-6", modified from Std. Small Box Culvert Dwg. SBC-34 to withstand deep fill.

REFERENCE DRAWINGS

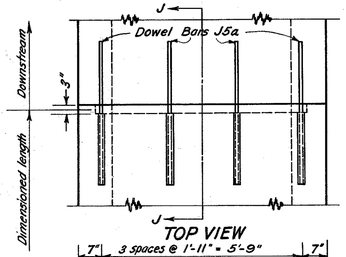
Standard small Box Culverts SBC-34

ESTIMATED QUANTITIES

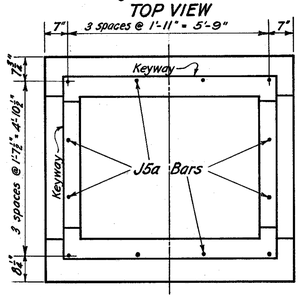
Excavation for Structure,	100 Cu. Yds.
Concrete, Class "C",	125.7 Cu. Yds.
Reinforcing Steel,	13,649 Lbs.
Type "B" Waterproofing,	2.6 Sq. Yds.
Type "C" Waterproofing,	13 Sq. Yds.



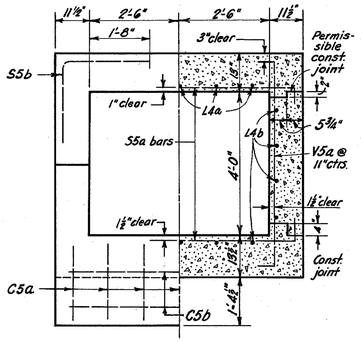
SECTION JJ



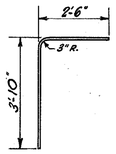
TOP VIEW



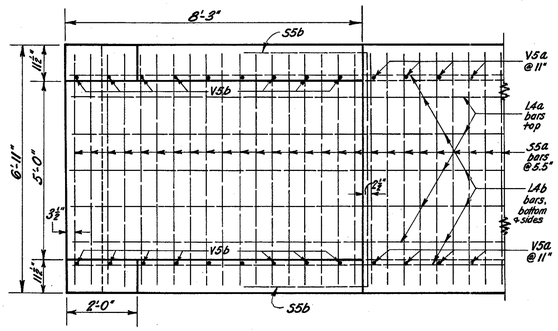
SECTION, CONSTRUCTION JOINT
Note: J5a (dowel bars) only ones shown



HALF END VIEW HALF SECTION



S5b BARS

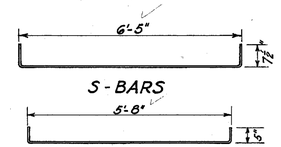


PART PLAN OF ENDS

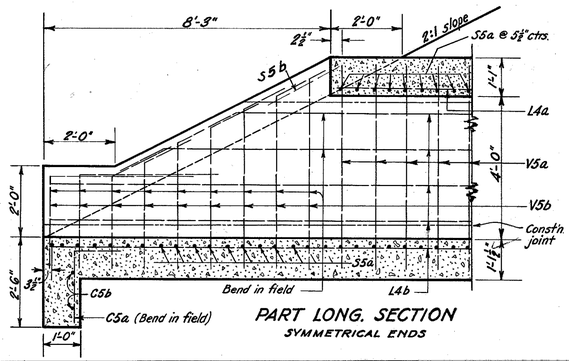
STEEL LIST

NUMBER	MARK	SIZE	SHAPE	LENGTH	WEIGHT
64	L4a	⅝"ϕ	Straight	26'-11"	1798
26	L4b	"	"	35'-0"	950
634	S5a	¾"ϕ	Bent	7'-8"	7305
300	V5a	"	"	6'-6"	2931
36	V5b	"	Straight	6'-6"	352
48	J5a	"	"	2'-0"	144
14	C5a	"	Bent	3'-3"	68
4	C5b	"	Straight	6'-6"	39
4	S5b	"	Bent	6'-3"	38
2	RF4	5/8"ϕ	Straight	4'-6"	9
2	RF5	¾"ϕ	"	5'-0"	15
			TOTAL POUNDS		13,649

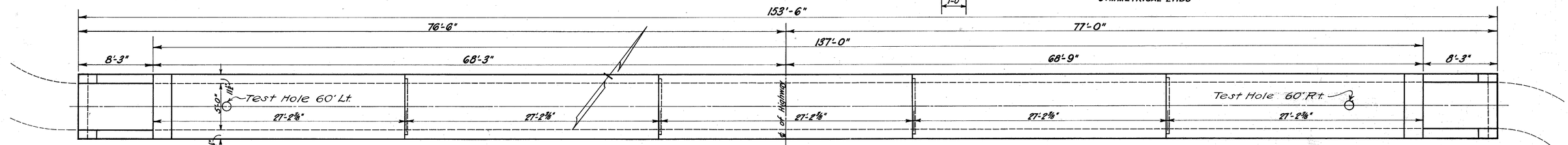
* Dowel bars to be furnished complete with sleeves as detailed on this sheet



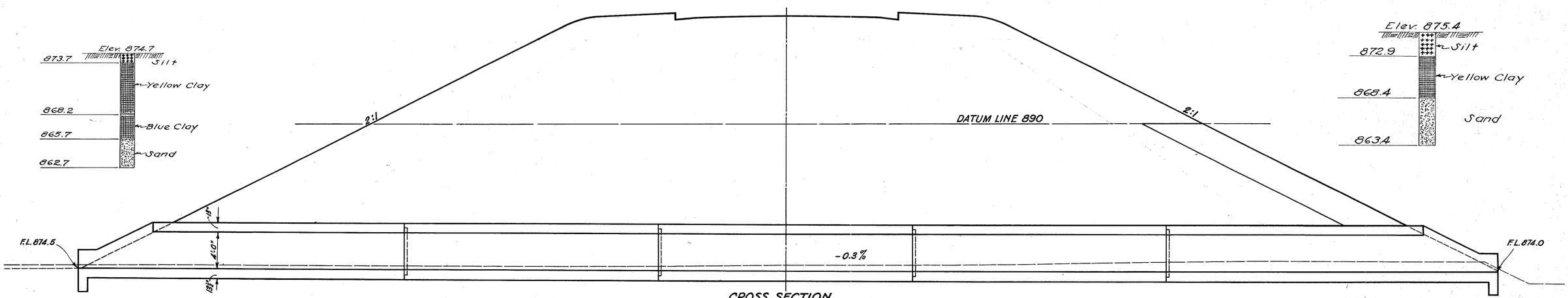
BAR BENDING DIAGRAMS



PART LONG. SECTION
SYMMETRICAL ENDS



PLAN



CROSS SECTION
902.0
370+12
874.8

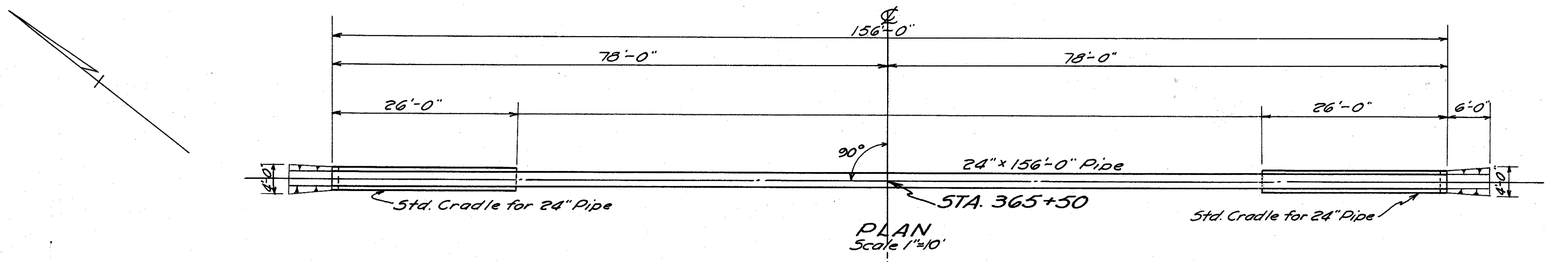
5'x4'x153'-6" BOX CULVERT
STA. 370+12

33-S

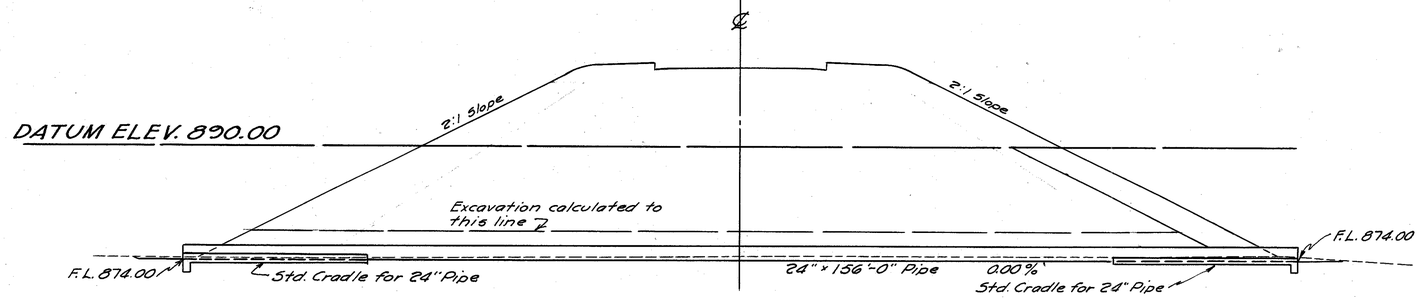
Fed. Dp. Dist. No	State	Fed. Aid Proj. No.	Fiscal Year
10	OHIO	260-A(8) 320-C(1) 320-A(2)	1940

106
145

TUSCARAWAS COUNTY
S.H. 70 SEC'S. A(PT), D,
MINERAL CITY (PT)
DOVER BASIN



PLAN
Scale 1"=10'



202.00
365+50
874.8

CROSS-SECTION
Scale 1"=10'

• STRUCTURE DATA •

Type: Std. Pipe Culvert
Size: 24"x156'-0"
Work required: Build new 24"x156'-0" Extra Strength Pipe Culvert with 2 Std. Cradles.
Excavate inlet and outlet as shown.

• ESTIMATED QUANTITIES •

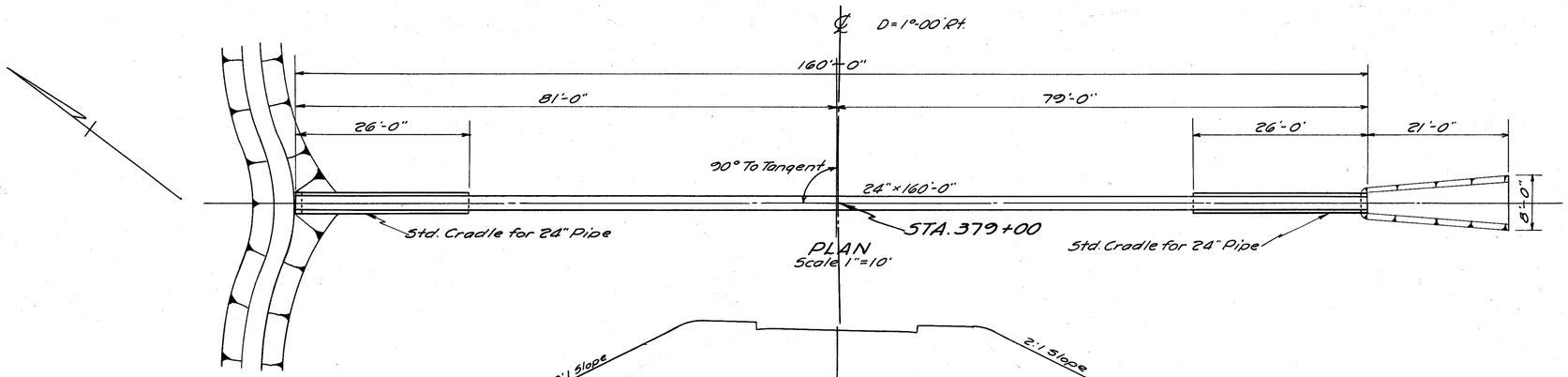
Excavation (Structure)	88	Cu. Yds.
24" Pipe Extra Strength	156	Lin. Ft.
Concrete. Class "C"	5.1	Cu. Yds.

• REFERENCE DRAWINGS •

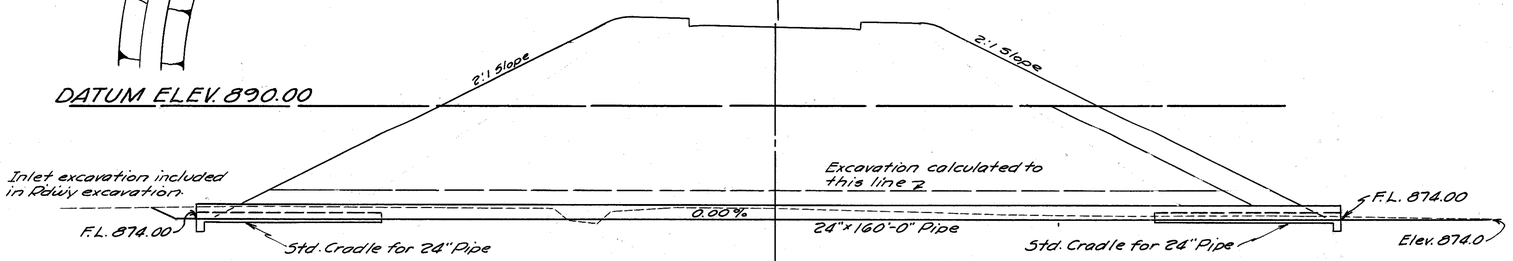
Pipe Culverts 5-27 P.C. 2&3

24"x156'-0" PIPE CULVERT
STA. 365+50

32-S



PLAN
Scale 1"=10'



902.00
379+00
875.5

CROSS-SECTION
Scale 1"=10'

• STRUCTURE DATA •

Type: Std. Pipe Culvert.
Size: 24"x160'-0"
Work required: Build new 24"x160'-0" Extra Strength Std. Pipe Culvert with 2 Std. Cradles. Excavate outlet as shown.

• ESTIMATED QUANTITIES •

Excavation (Structure)	86	Cu. Yds.
Excavation (Channel)	2	Cu. Yds.
24" Extra Strength Pipe	160	Lin. Ft.
Concrete. Class "C"	5.1	Cu. Yds.

• REFERENCE DRAWINGS •

Pipe Culverts 5-27 P.C. 2&3

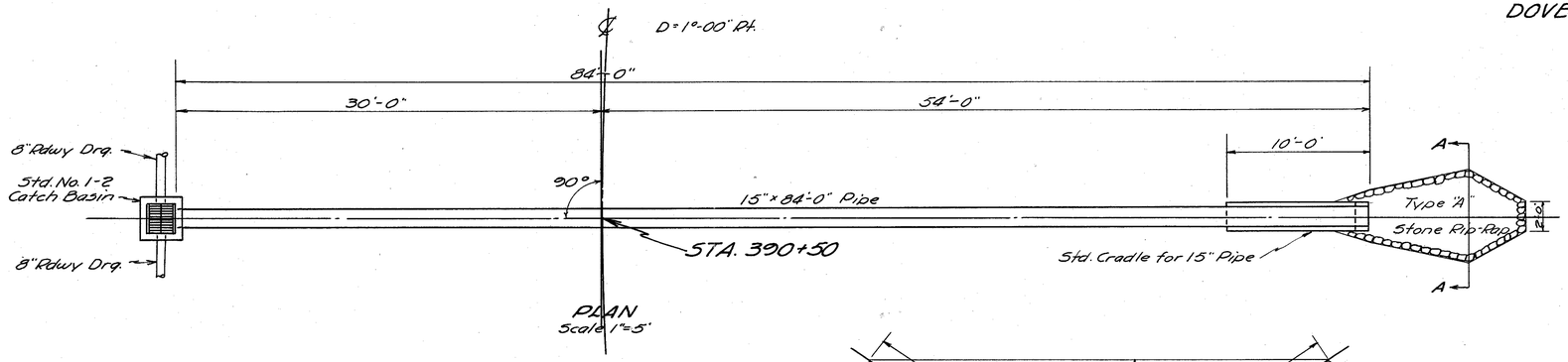
24"x160'-0" PIPE CULVERT
STA. 379+00

34-S

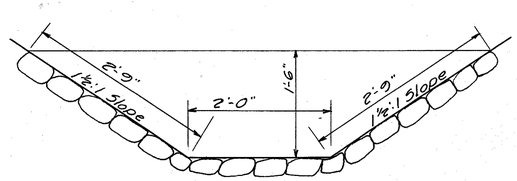
FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR
10	OHIO	260-A(8), 320-C(1), 320-A(2)	1941

107
145

TUSCARAWAS COUNTY
S.H. 70 SEC'S. A(PT), D.
MINERAL CITY (PT)
DOVER BASIN



PLAN
Scale 1"=5'



SECTION A-A

· STRUCTURE DATA ·

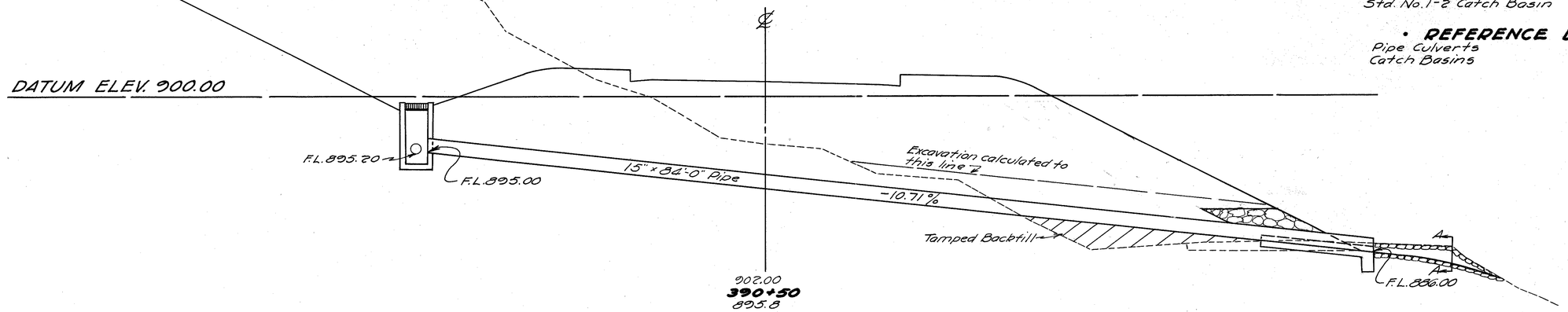
Type: Std. Pipe Culvert.
Size: 15" x 84'-0"
Work required: Build new 15" x 84'-0" Std. Pipe Culvert with Std. No. 1-2 Catch Basin at inlet end and Std. Cradle at outlet end. Excavate outlet as shown and pave with Type "A" Stone Rip-Rap.

· ESTIMATED QUANTITIES ·

Excavation (Structure)	47 Cu. Yds.
Excavation (Channel)	3 Cu. Yds.
15" Pipe	84 Lin. Ft.
Concrete Class "C"	0.7 Cu. Yds.
Type "A" Stone Rip-Rap (Grout Filled)	6 Sq. Yds.
Std. No. 1-2 Catch Basin	1 Each

· REFERENCE DRAWINGS ·

Pipe Culverts	S-27 P.C. 263
Catch Basins	I-8 C.B. 1-26 2-2



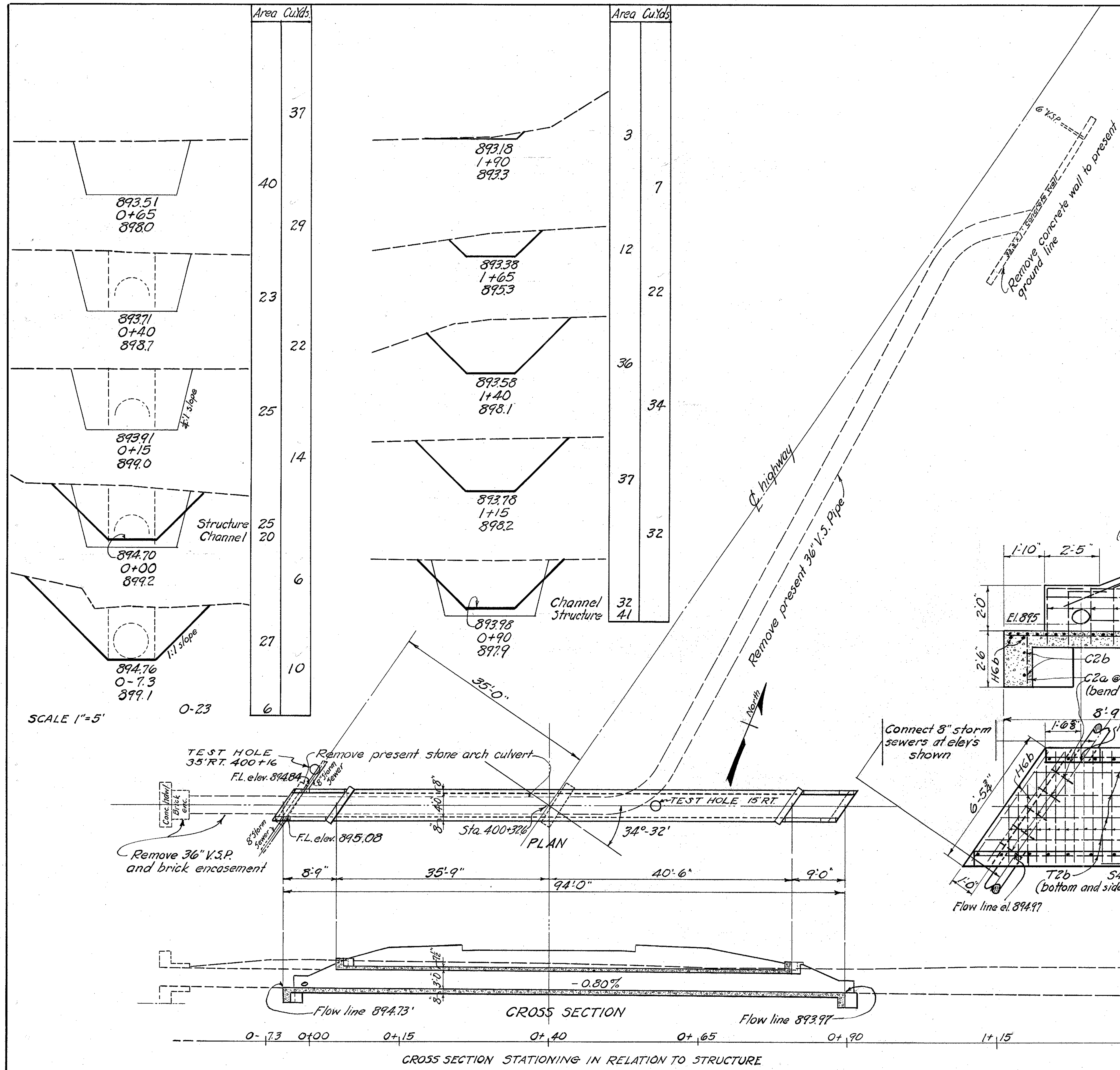
CROSS-SECTION
Scale 1"=5'

15" x 84'-0" PIPE CULVERT
STA. 390+50

38-S

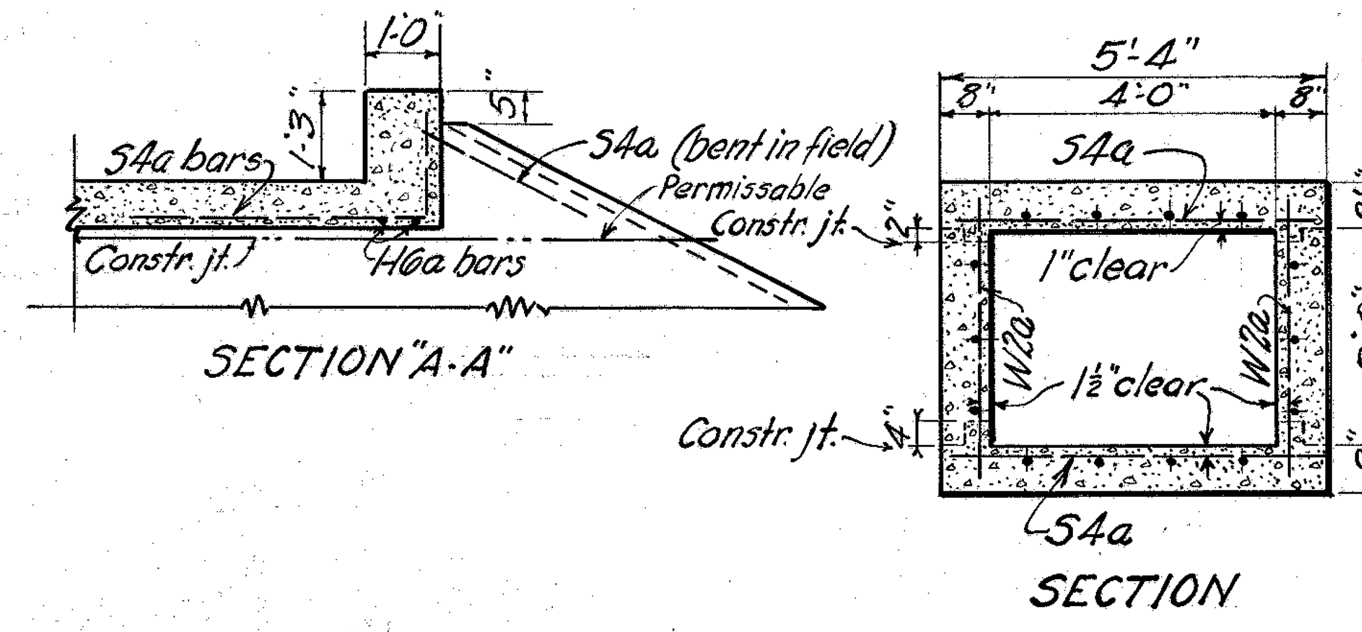
FED.RD. DIST.NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR	108 / 145
10	OHIO	260(2) 520-A(2) 520-C(1)	1941	

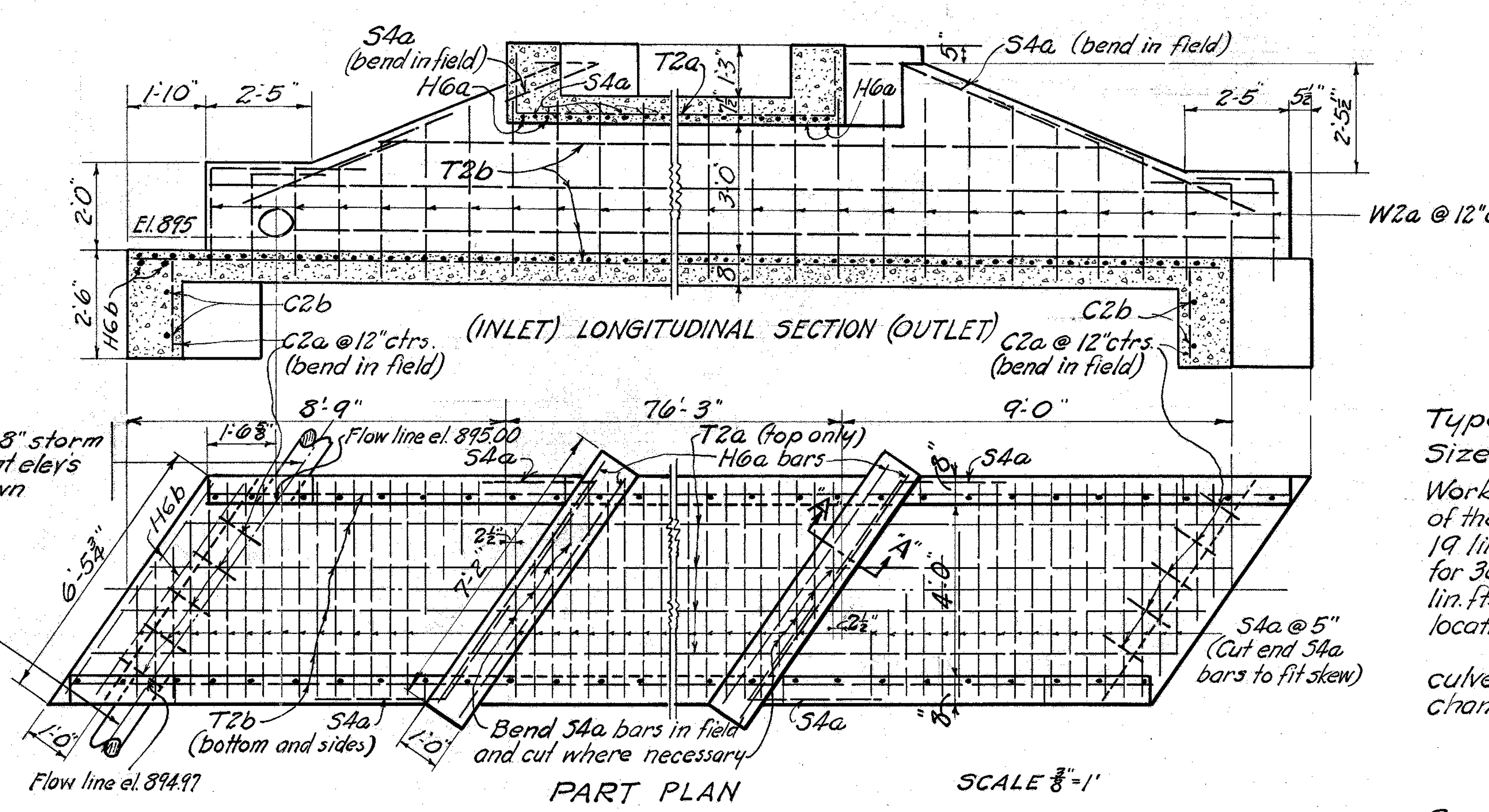
TUSCARAWAS COUNTY
S.H. 70. SEC. A(Pt). D &
MINERAL CITY



STEEL LIST

No.	Mark	Size	Shape	Length	Weight
12	T2a	½"φ	Straight	26'-9"	214
40	T2b	"	"	25'-0"	668
188	W2a	"	"	4'-0"	502
4	C2b	"	"	6'-3"	17
10	C2a	"	Field bent	3'-3"	22
412	S4a	⅝"φ	Straight	5'-1"	2187
4	H6a	⅞"φ	"	6'-9"	55
4	H6b	7/16"φ	"	6'-3"	51
			TOTAL POUNDS		3,716





- STRUCTURE DATA -

Type:- Small box culvert.
Size:- 4'×3'×94'

Work Req'd:- Remove present structure consisting of the following:- 3'×46' stone arch culvert; 19 lin. ft. of 36" V.S. Pipe; 3 lin. ft. of brick encasement for 36" pipe at junction with railroad culvert; 136 lin. ft. of 36" V.S. Pipe paralleling center line of new location; and a concrete wall 33'-4" × 1' × 7'-0".
Build Std. 4'×3'×94' reinforced concrete box culvert, skewed 34°-32' right forward. Excavate channel at inlet and outlet ends.

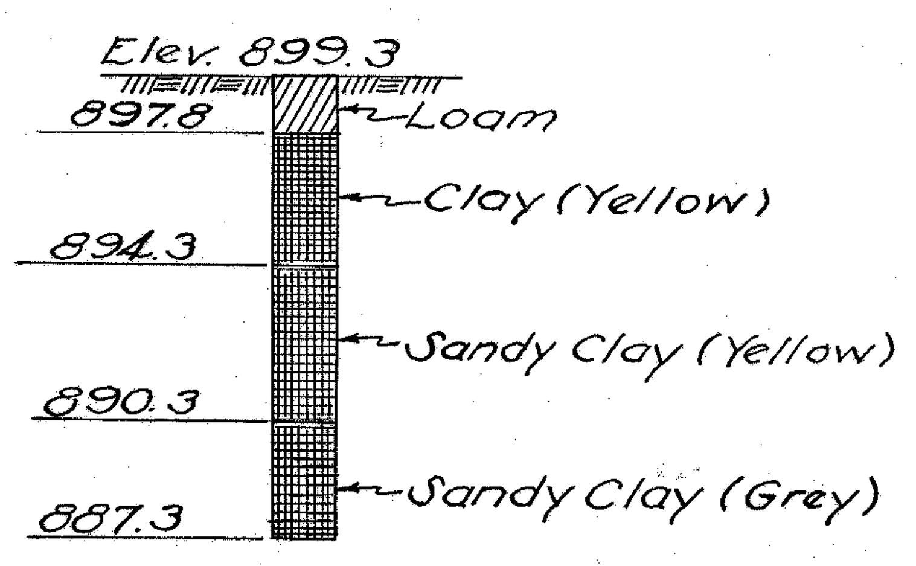
- REFERENCE DRAWINGS -

Small Box Culverts - SBC-34

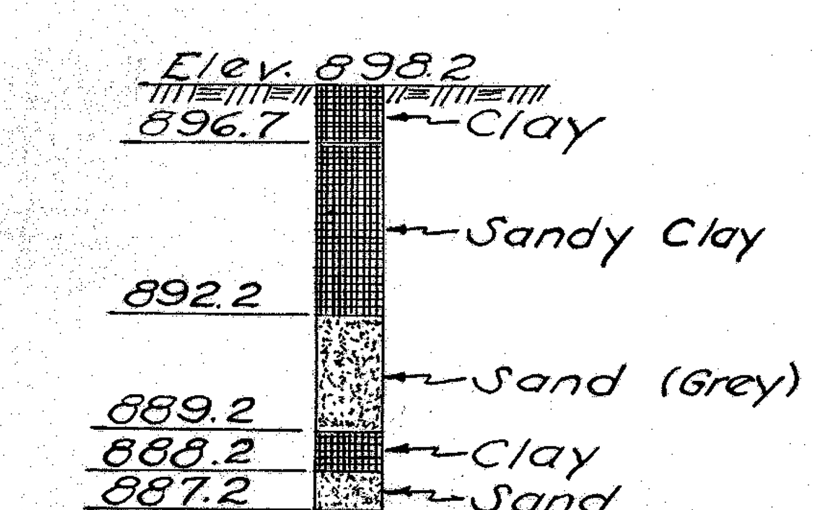
- ESTIMATED QUANTITIES -

* Structure excavation	102 cu. yds.
Channel excavation	111 cu. yds.
Concrete, Class "C"	37.5 cu. yds.
Reinforcing Steel	3,716 pounds
Removal of existing masonry	50 cu. yds.
Removal of 36" V.S. Pipe	155 lin. ft.

* Excavation for removal of existing structure (stone arch and 36" V.S.P. culvert) has been deducted from "Structure Excavation" item.



Grade 902.00
Station 400+32.6
Ground 898.7



4'×3'×94'-0" Box Culvert

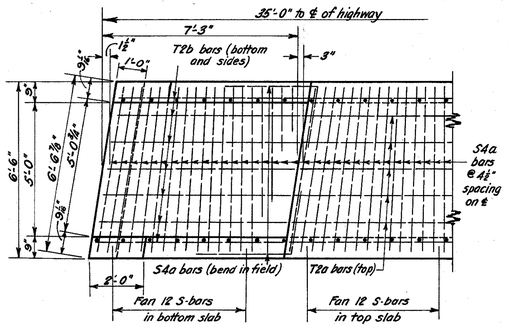
STA. 400+32.6

41-S

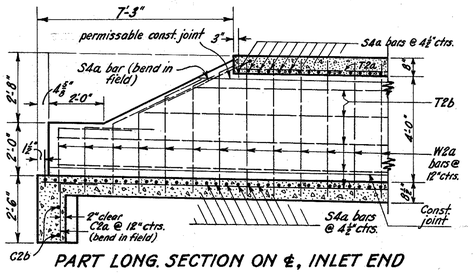
FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2), 520-C(1) 520-A(2).	1941

109
14.5

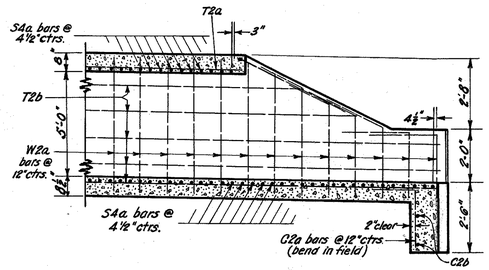
TUSCARAWAS COUNTY
S.H. 70, SEC. A (PT), D, & MINERAL CITY (PT)



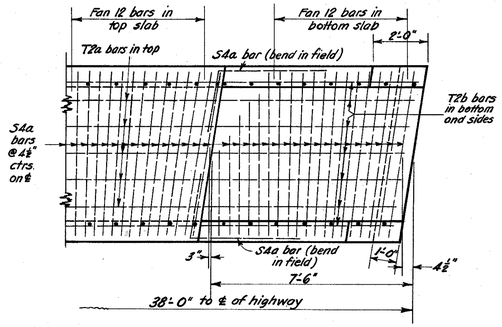
PART PLAN - INLET END



PART LONG. SECTION ON ℄, INLET END



PART LONG. SECTION ON ℄, OUTLET END



PART PLAN - OUTLET END

STRUCTURE DATA

Type: Standard Small Box Culvert
Size: 5'x4'x73'-0"
Work Req'd: Remove existing 2'x3' Stone box culvert under present highway. Build std. 5'x4'x73.0' reinforced concrete box culvert. Excavate inlet and outlet channels. Place 20 sq. yds. Type "A" Rip-Rap at inlet end.

REFERENCE DRAWINGS

Standard Small Box Culverts SBC-34

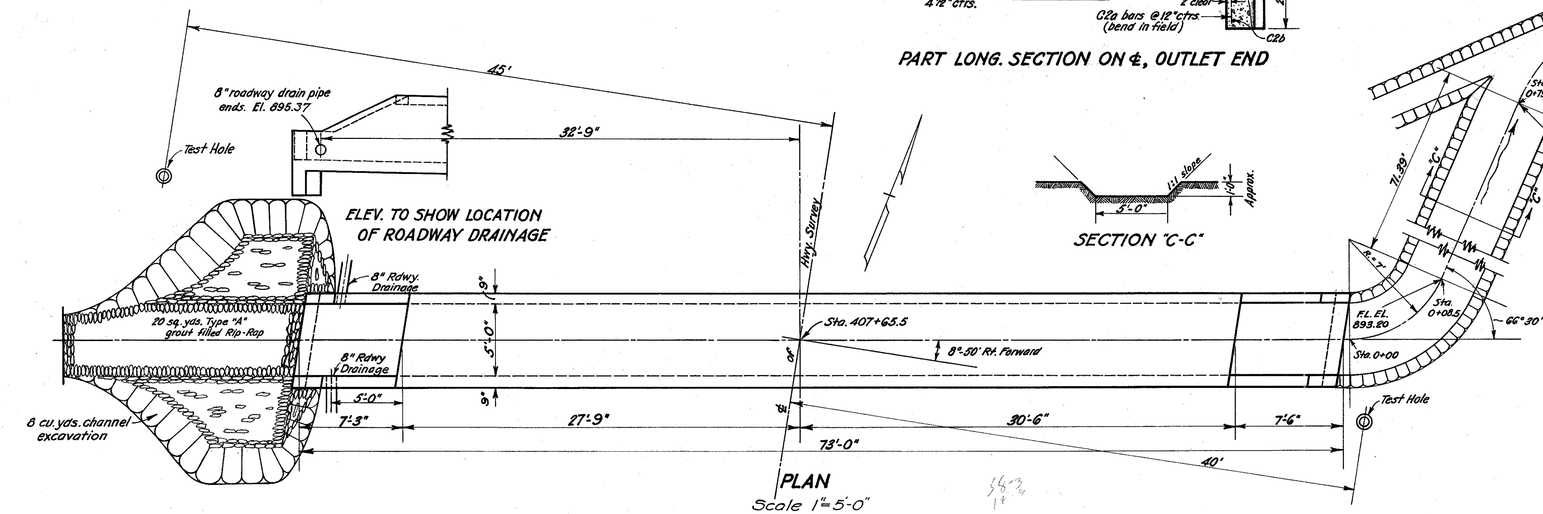
ESTIMATED QUANTITIES

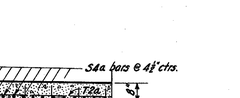
* Structure Excavation,	50 Cu. Yds.
Channel Excavation,	27 Cu. Yds.
Concrete, Class "C",	38.5 Cu. Yds.
Reinforcing Steel,	3726 Lbs.
Rip-Rap, Type "A", (Grout Filled)	20 Sq. Yds.
Removal of Existing 2.0'x3.0'x45' Stone Box Culvert	60 Cu. Yds.

* The excavation necessary for removal of existing structure has been deducted from "Structure Excavation."

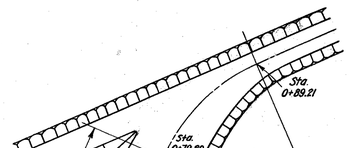
STEEL LIST

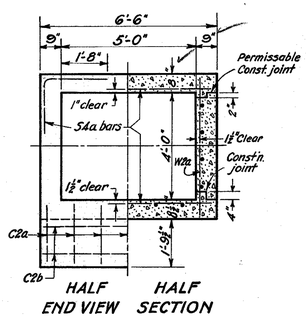
NO.	MARK	SIZE	SHAPE	LENGTH	WEIGHT
15	T2a	½"ϕ	Straight	20'-9"	208
39	T2b	"	"	25'-6"	664
146	W2a	"	"	5'-0"	488
4	C2b	"	"	6'-3"	17
14	C2a	"	Field bent	3'-3"	30
352	S4a	⅝"ϕ	Straight	6'-3"	2297
2	RE2	½"ϕ	"	6'-0"	8
2	RE4	⅝"ϕ	"	6'-6"	14
			TOTAL POUNDS		3726

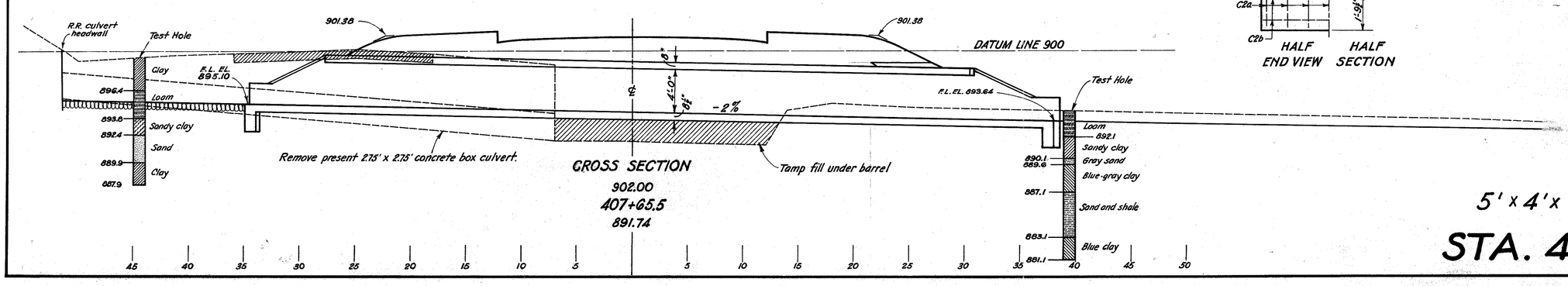




SECTION "C-C"







5' x 4' x 73'-0" BOX CULVERT

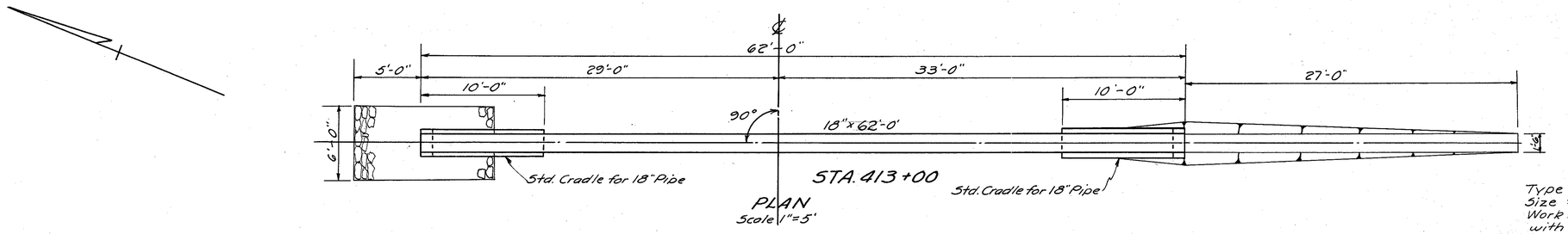
STA. 407+65.5

42-S

Fed. Aid Dist. No.	State	Fed. Aid Proj. No	Fiscal Year
10	OHIO	260-A(20), 520-C(11) 520-A(2)	1941

110
145

TUSCARAWAS COUNTY
S.H. 70 SEC'S. A(PT), D.
MINERAL CITY (PT)
DOVER BASIN



PLAN
Scale 1"=5'

• STRUCTURE DATA •

Type: Std. Pipe Culvert
Size: 18" x 62'-0"
Work required: Build new Std. 18"x62'-0" Pipe Culvert with 2 Std. Cradles. Pave inlet with Std. Type "A" Stone Rip-Rap and excavate outlet as shown.

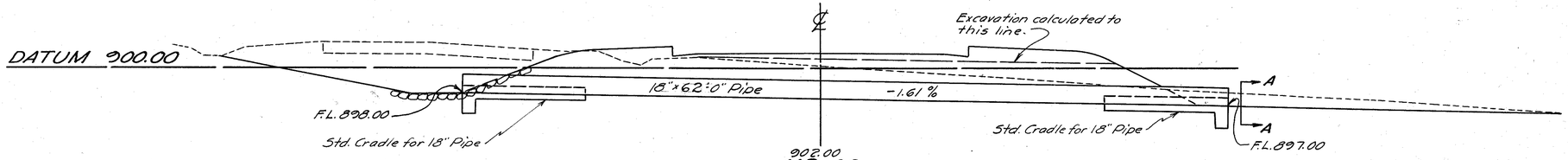
• ESTIMATED QUANTITIES •

Excavation (Structure)	23 Cu. Yds.
Excavation (Channel)	3 Cu. Yds.
18" Pipe	62 Lin. Ft.
Concrete. Class "C"	1.8 Cu. Yds.
Type "A" Stone Rip-Rap Grout filled	8 Sq. Yds.

• REFERENCE DRAWINGS •

Pipe Culverts 5-27 P.C. 263

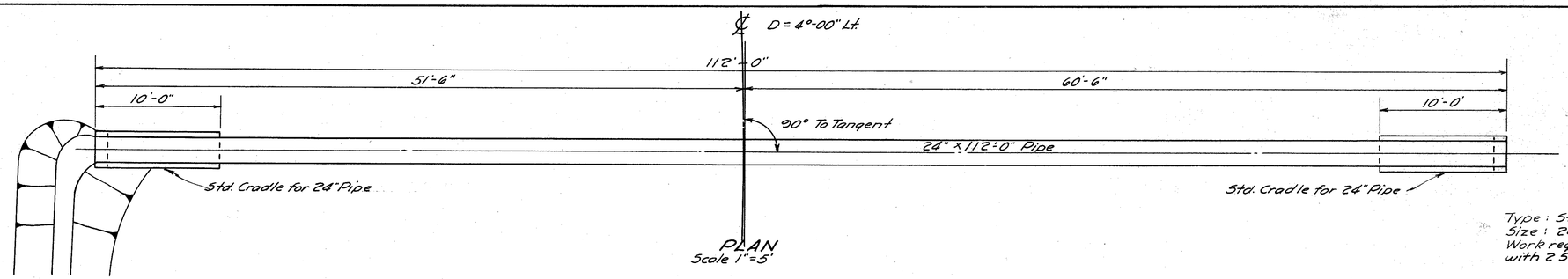
SECTION A-A



CROSS-SECTION
Scale 1"=5'

18"x62'-0" PIPE CULVERT
STA. 413+00

43-S



PLAN
Scale 1"=5'

• STRUCTURE DATA •

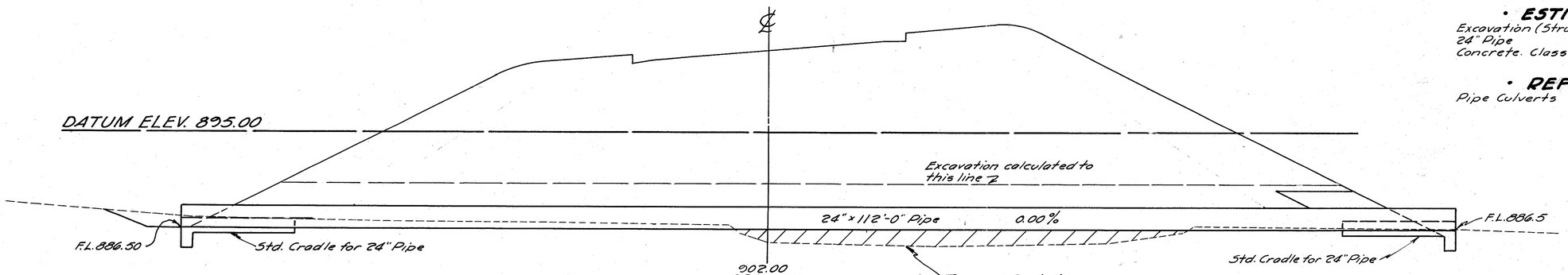
Type: Std. Pipe Culvert.
Size: 24" x 112'-0"
Work required: Build new 24"x112'-0" Std. Pipe Culvert with 2 Std. Cradles.

• ESTIMATED QUANTITIES •

Excavation (Structure)	67 Cu. Yds.
24" Pipe	112 Lin. Ft.
Concrete. Class "C"	2.1 Cu. Yds.

• REFERENCE DRAWINGS •

Pipe Culverts 5-27 P.C. 2-3



CROSS-SECTION
Scale 1"=5'

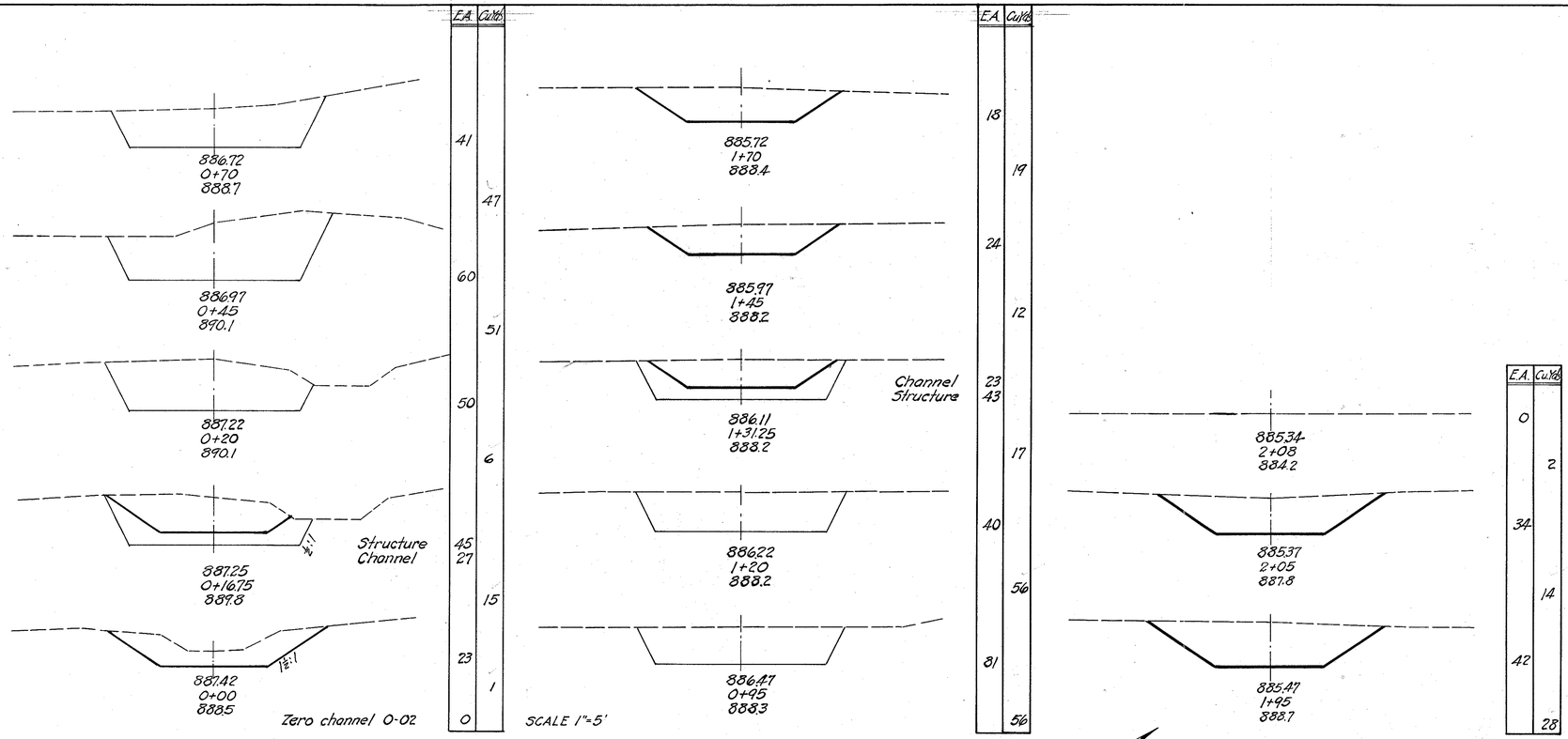
24" x 112'-0" PIPE CULVERT
STA. 421+00

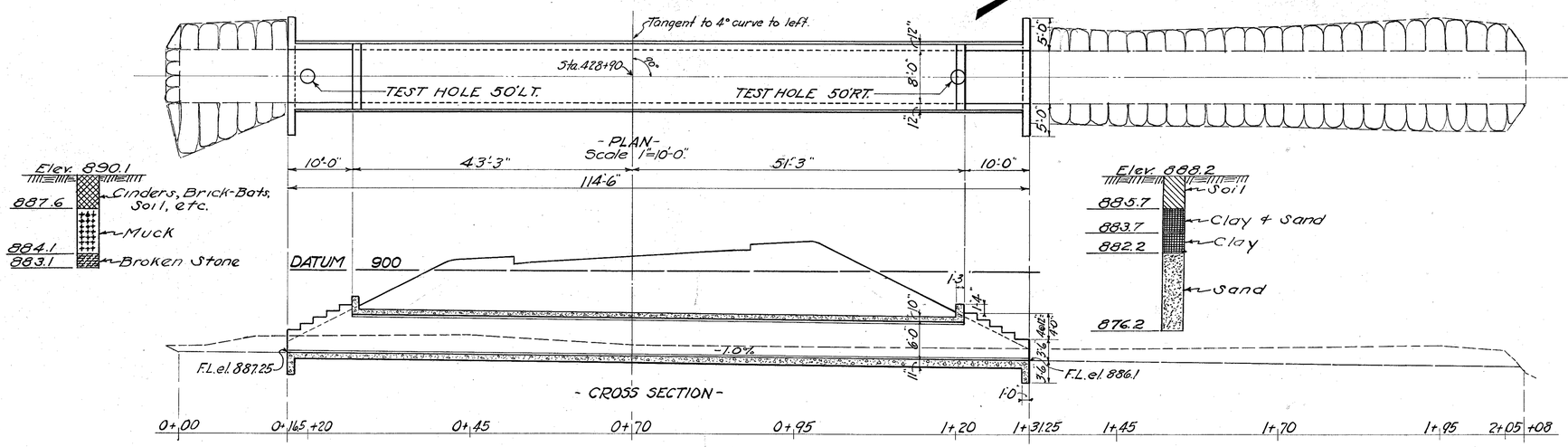
45S

FED. RD DIST. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR
10	OHIO	260-A(8), 520 C(1) 520-A(2)	1941

111
145

TUSCARAWAS COUNTY
S.H. 70. SECS. A(P1). D.
MINERAL CITY
DOVER BASIN





Grade 902.57
Station 428+90
Ground 888.7

SCALE 1"=10'

- STRUCTURE DATA -

Type:- Std. Large Box Culvert
Size:- 8'×6'×114'-6"
Work Reqd:- Build new 8×6'×114'-6" Std. Box Culvert. Excavate inlet and outlet as shown.

- REFERENCE DRAWINGS -

Standard Large Box Culverts LBC-33

- ESTIMATED QUANTITIES -

Excavation (Structure)	233 cu. yds.
Excavation (Channel)	91 cu. yds.
Concrete Class "C"	131 cu. yds.
Reinforcing Steel	19,895 lbs.
Waterproofing (Type "B")	64 sq. yds.

· SHEET 1 OF 2 SHEETS ·

8'×6'×114½' BOX CULVERT

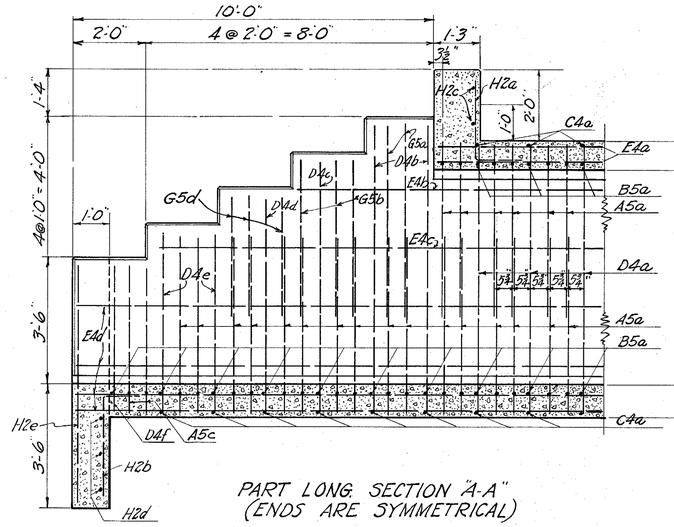
STA. 428+90

465

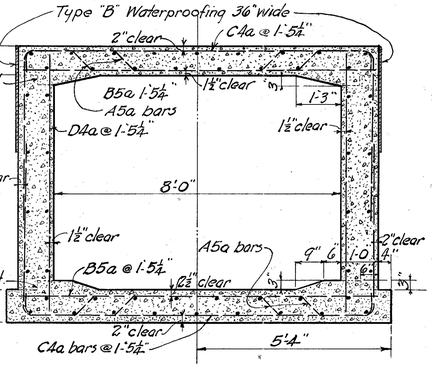
FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR
10	OHIO	260-A(2) 520-C(1) 520-A(2)	1941

112
145

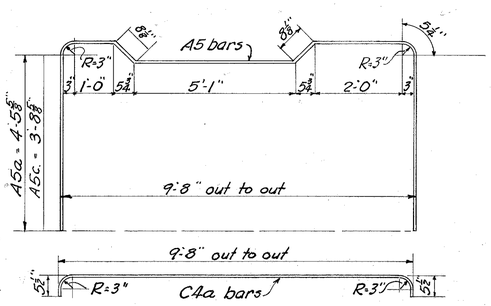
TUSCARAWAS COUNTY
S.H. 70. SECS. A (Pt.), D.
MINERAL CITY (Pt.)
DOVER BASIN



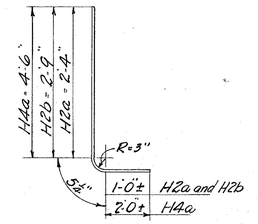
PART LONG. SECTION "A-A"
(ENDS ARE SYMMETRICAL)



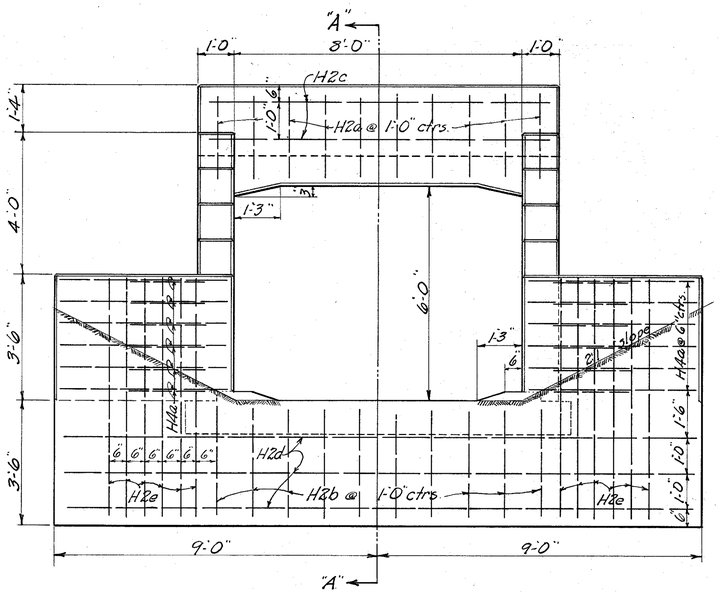
TYPICAL SECTION



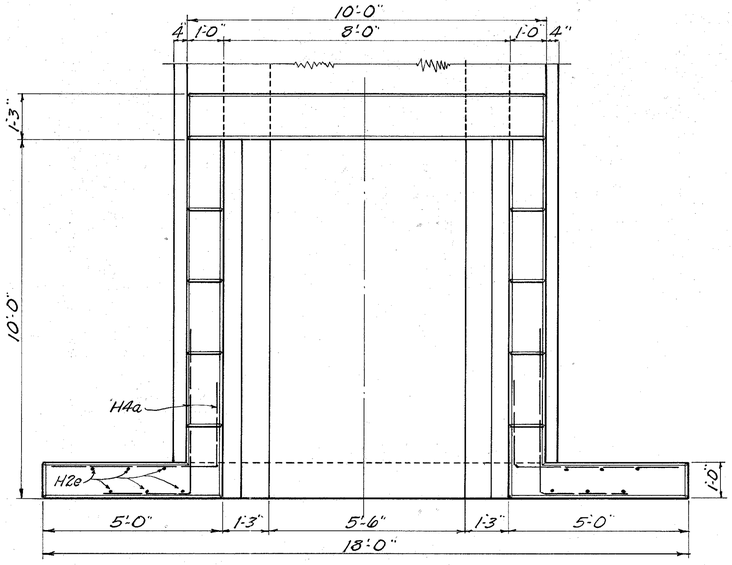
BAR BENDING DIAGRAMS



STEEL LIST							
No.	Mark	Size	Shape	Spacing	Location	Length	Weight
284	A5a	¾"ϕ		0'-5¾"	Barrel	19'-3"	8,217
4	A5c	"		" "	"	17'-9"	107
144	B5a	"		1'-5¼"	Top & Bottom	9'-6"	2,056
142	C4a	⅝"ϕ		" "	" "	10'-3"	1,520
130	D4a	"		" "	Walls	7'-3"	984
8	D4b	"		" "	Wings	8'-0"	67
4	D4c	"		" "	"	7'-0"	29
4	D4d	"		" "	"	6'-0"	25
8	D4e	"		" "	"	5'-0"	42
4	D4f	"		" "	"	4'-0"	17
8	G5a	¾"ϕ		" "	"	5'-3"	63
12	G5b	"		" "	"	4'-3"	77
12	G5d	"		" "	"	3'-3"	59
68	E4a	⅝"ϕ		1'-2"	Top	25'-6"	1,810
16	E4b	"		1'-8"	Walls	27'-6"	459
16	E4c	"		" "	"	29'-6"	493
100	E4d	"		1'-2"	Walls & bottom	30'-6"	3,184
20	H2a	½"ϕ	L	1'-0"	Headwalls	3'-9"	50
20	H2b	"	L	1'-0"	cut off walls	4'-3"	57
48	H4a	⅝"ϕ	L	0'-6"	Wings	7'-0"	351
24	H2e	½"ϕ		1'-0"	"	6'-6"	104
4	H2c	"		1'-0"	Headwalls	9'-6"	25
6	H2d	"		1'-0"	Cut off walls	17'-6"	70
2	RE2	"				4'-0"	5
2	RE4	⅝"ϕ				4'-6"	9
2	RE6	¾"ϕ				5'-0"	15
TOTAL POUNDS							19,895



END VIEW



PART PLAN

SCALE ½" = 1'

·SHEET 2 OF 2 SHEETS·

8'×6'×114½' BOX CULVERT

STA. 428+90

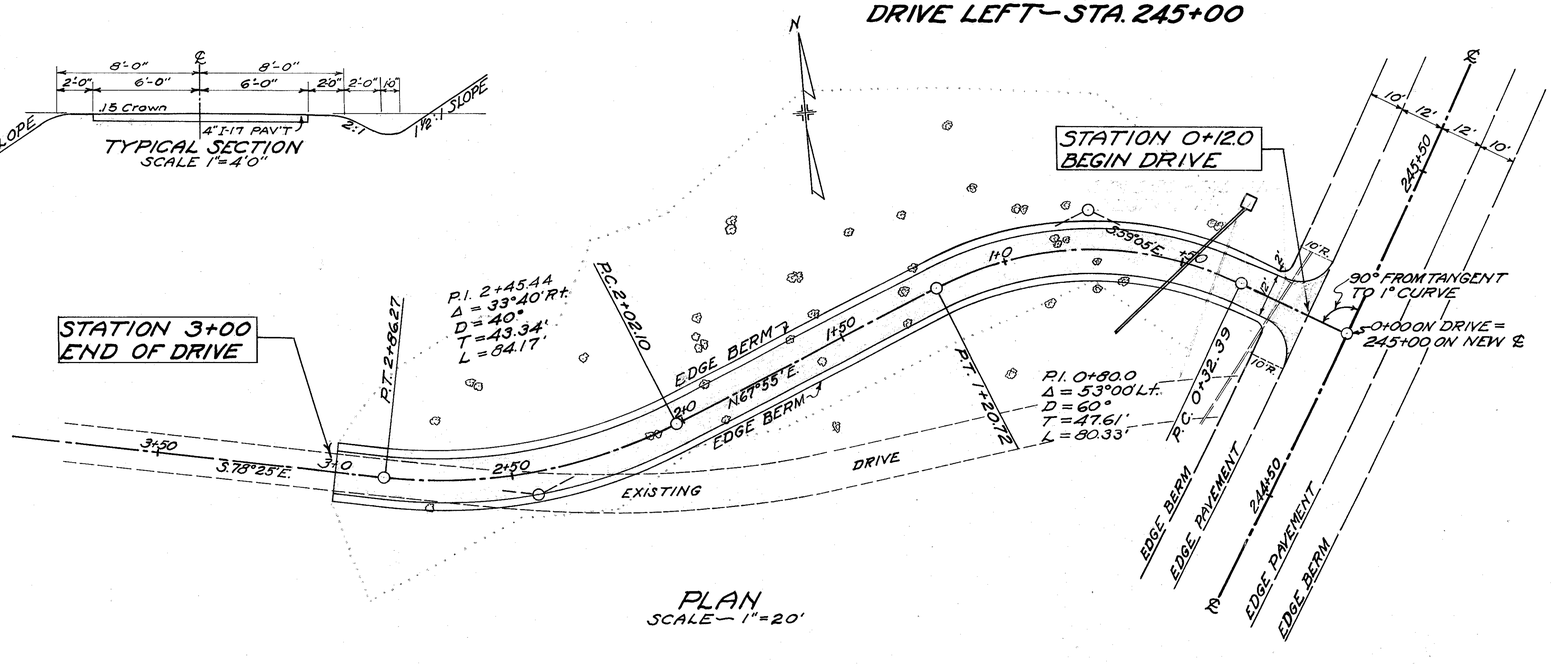
465

		FED. AID			113
10	OHIO	F.A.260 A(2) F.A.520 C(1) F.A.520 A(2)	1941		145

TUSCARAWAS COUNTY
S.H. 70 — SEC. "A" (P.T.) — D & MINERAL CITY (P.T.)
DOVER BASIN.

DRIVE LEFT — STA. 245+00

TYPICAL SECTION
SCALE 1"=4'0"



PLAN
SCALE — 1"=20'

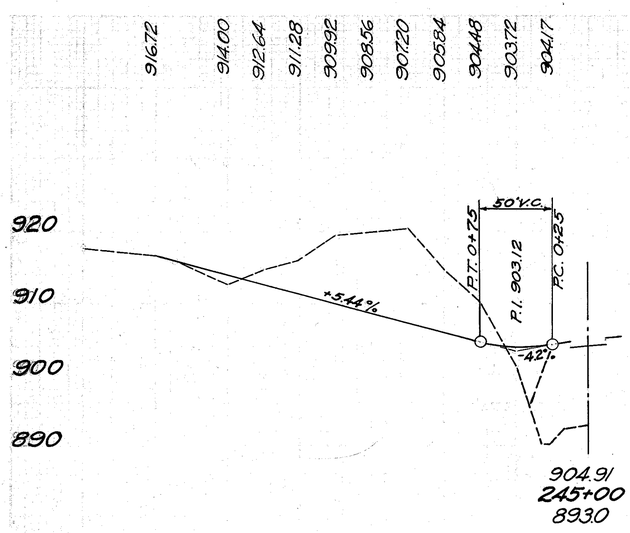
PAVEMENT CALCULATIONS

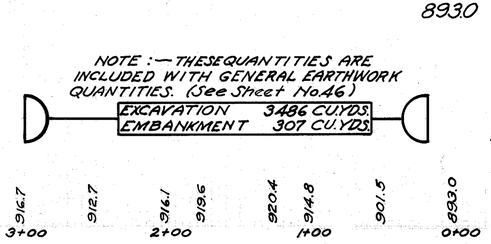
I-17, $\frac{288' \times 12' \times 4"}{27}$ = 43 CU. YDS.

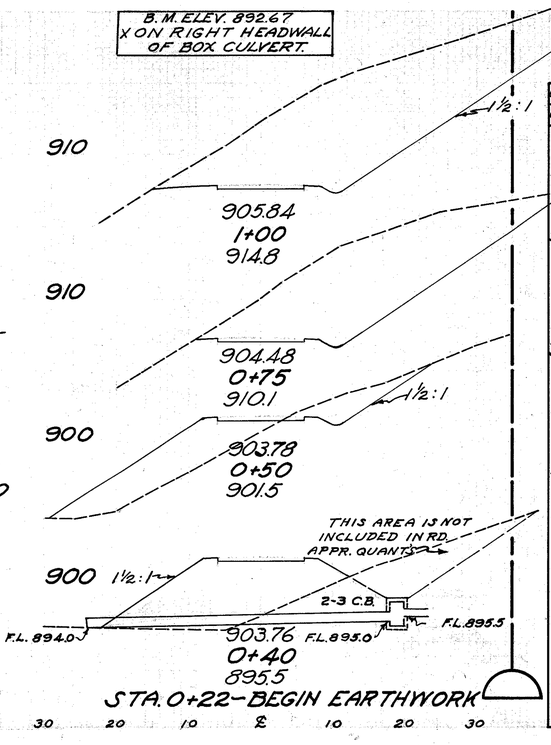
ESTIMATED QUANTITIES

EXCAVATION	3486	CU. YDS.
15" PIPE FOR DRIVEWAY	50	LIN. FT.
I-17, PAVEMENT	43	CU. YDS.
12" Y.S.P. REMOVE & STORE	58.	LIN. FT.

8-A

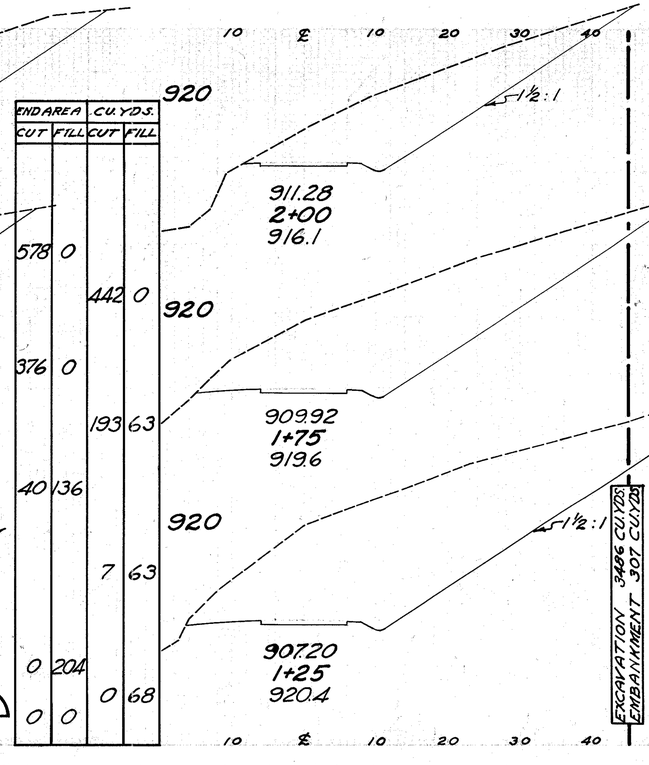






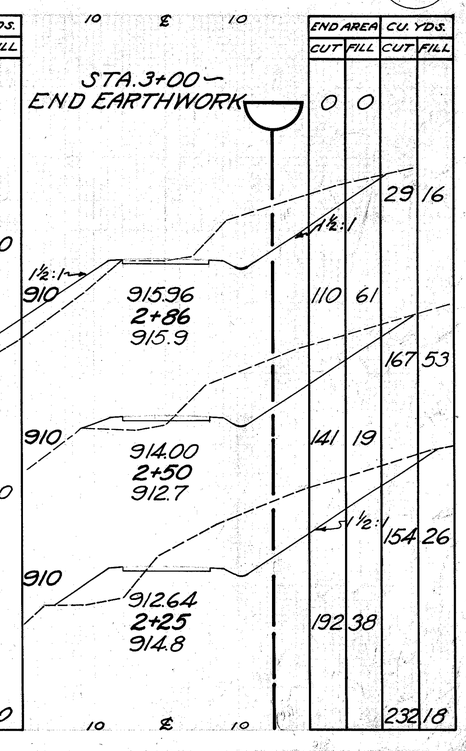
STA. 0+22 — BEGIN EARTHWORK

END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
578	0	442	0
376	0	193	63
40	136	7	63
0	204	0	68
0	0		



EXCAVATION 3486 CU. YDS.
EMBANKMENT 307 CU. YDS.

END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
310	0		
		390	0
533	0		
		1234	0
800	0		
		638	0



END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
0	0		
		29	16
110	61		
		167	53
141	19		
		154	26
192	38		
		232	18

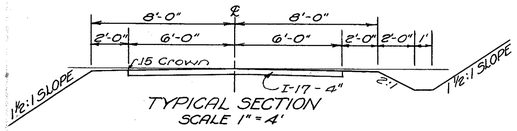
DRIVE LEFT — STA. 245+00

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	F.A. 280-A(12) F.A. 320-C(1) F.A. 520-A(2)	19.41

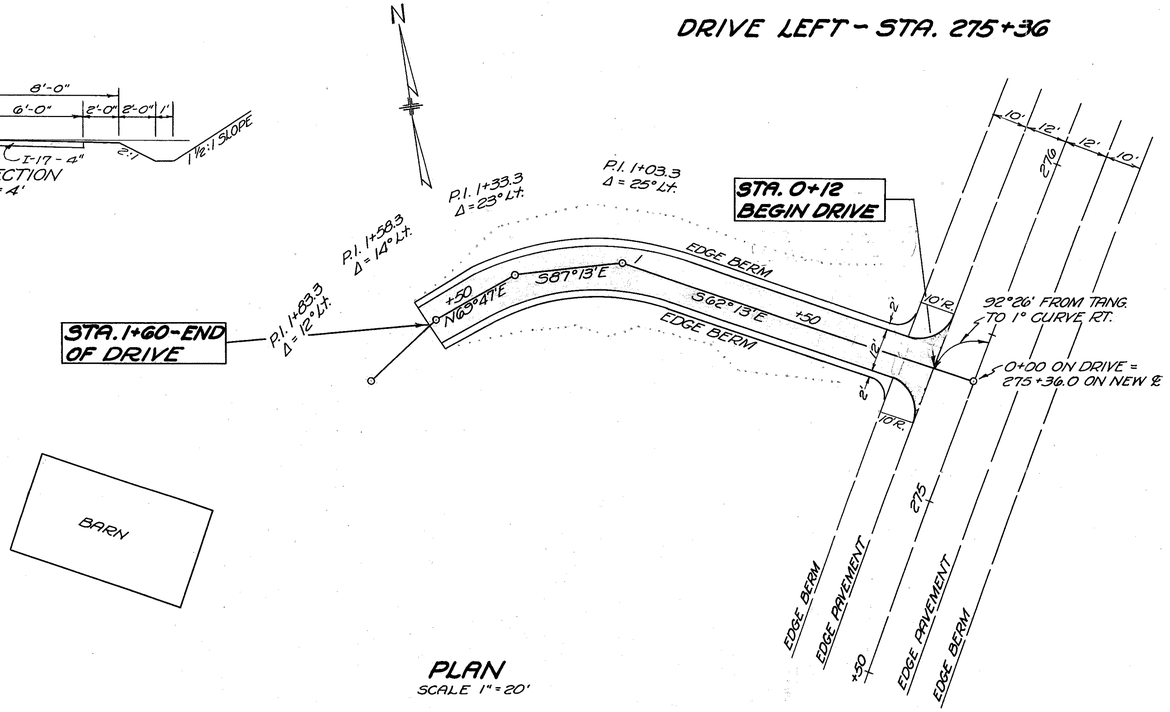
114
145

TUSCARAWAS COUNTY
S.H. 70-SEC. "A"(PT.)-D &
MINERAL CITY (PT.)
DOVER BASIN

DRIVE LEFT - STA. 275+36



TYPICAL SECTION
SCALE 1" = 4'



PLAN
SCALE 1" = 20'

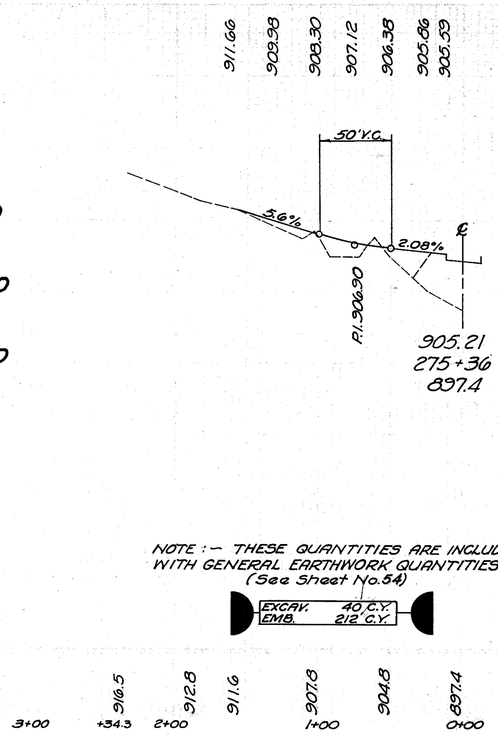
PAVEMENT CALCULATIONS

I-17, $\frac{148 \times 12' \times .33'}{27}$ + 1 cu. yd. (flares) = 23 CU. YDS.

ESTIMATED QUANTITIES

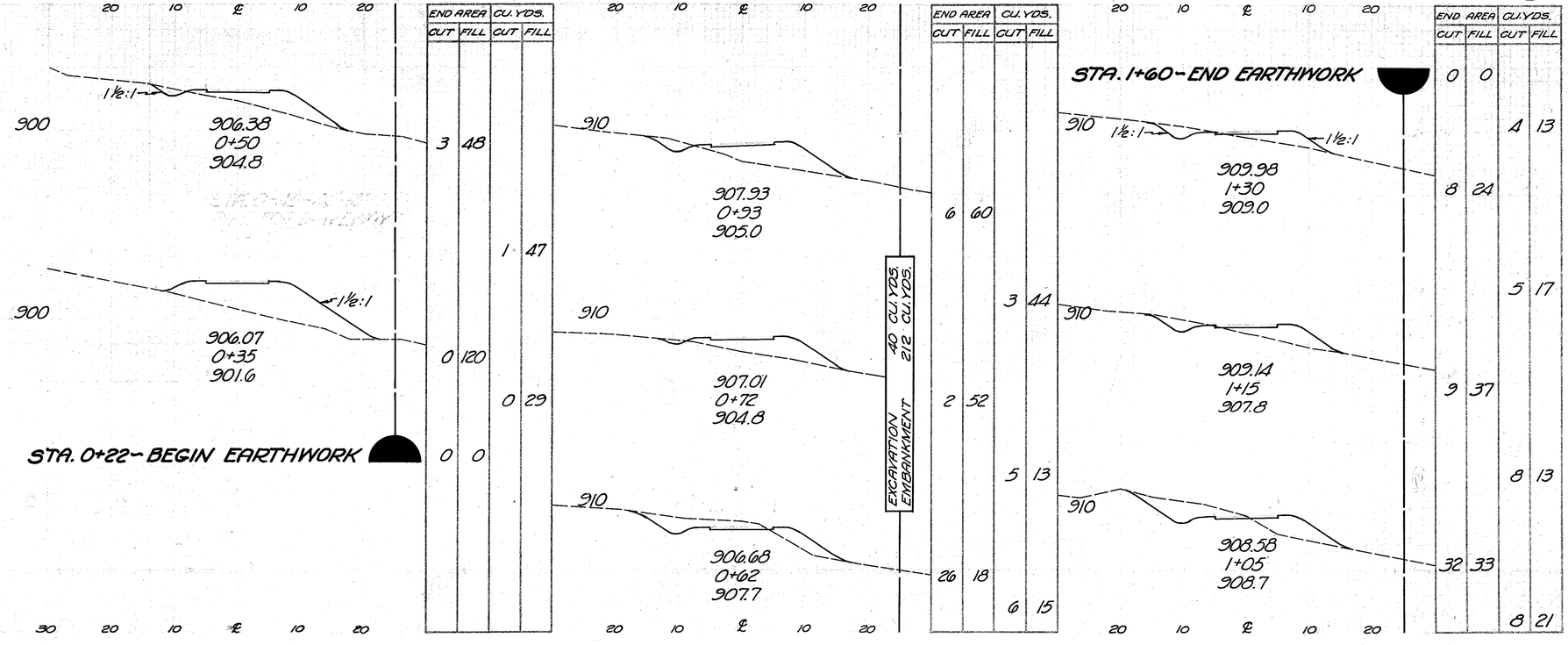
EXCAVATION	40. CU. YDS.
I-17, PAVEMENT	23. CU. YDS.

9-A



NOTE :- THESE QUANTITIES ARE INCLUDED WITH GENERAL EARTHWORK QUANTITIES.
(See Sheet No. 54)

EXCAV.	40 C.Y.
EMB.	212 C.Y.



PRIVATE DRIVE LEFT - STA. 275+36

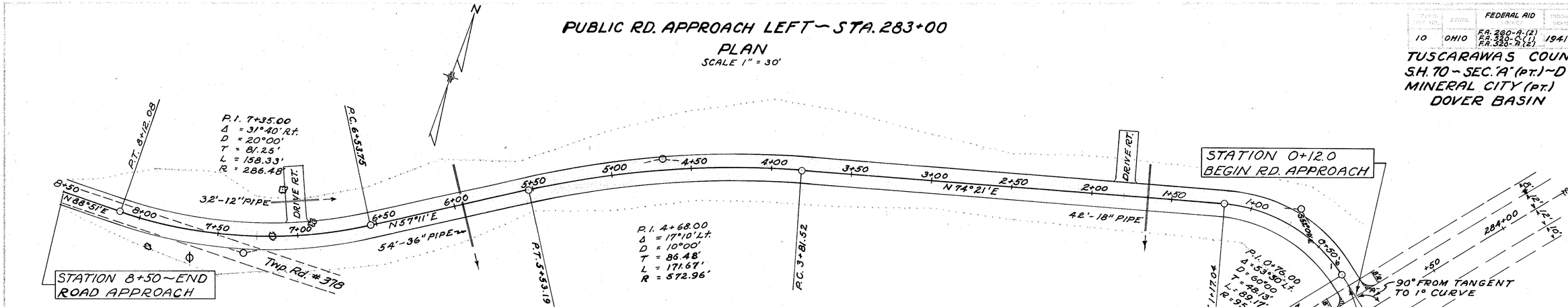
DIST.	STATE	FEDERAL AID	PROJ.	115
10	OHIO	F.A. 260-A-(2) F.A. 330-C-(1) F.A. 328-A-(2)	1941	145

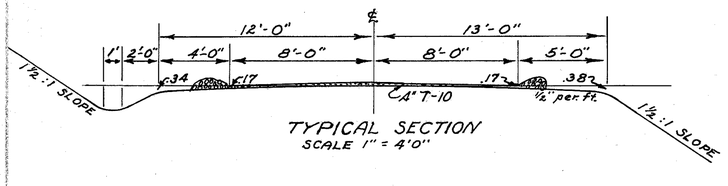
TUSCARAWAS COUNTY
S.H. 70 - SEC. 'A' (PT.) - D &
MINERAL CITY (PT.)
DOVER BASIN

PUBLIC RD. APPROACH LEFT — STA. 283+00

PLAN

SCALE 1" = 30'





TYPICAL SECTION
SCALE 1" = 4'0"

PAVEMENT CALCULATIONS

I-17, $A = \frac{R(T-\frac{L}{2})2}{9} = \frac{10' \times 16'}{9}$ = 3.05 SQ.YDS.

= 17.77 SQ.YDS.

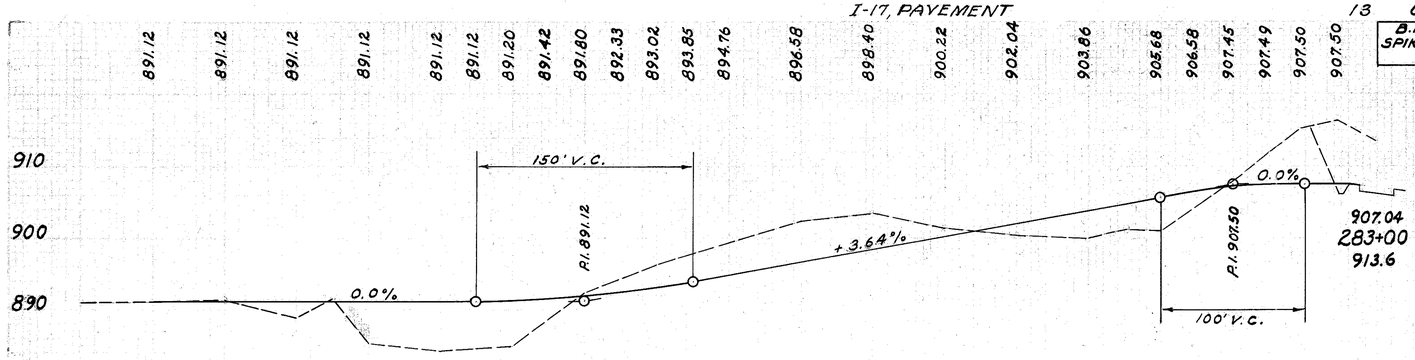
TOTAL I-17 $\frac{20.82}{6}$ + 10 (2 drives) = 13 CU.YDS.

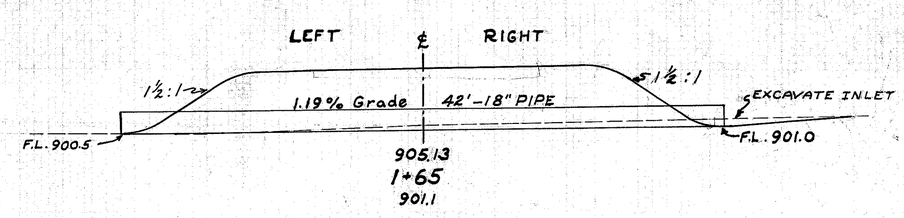
T-10, $\frac{830' \times 16'}{9}$ = 1475.6 SQ.YDS.

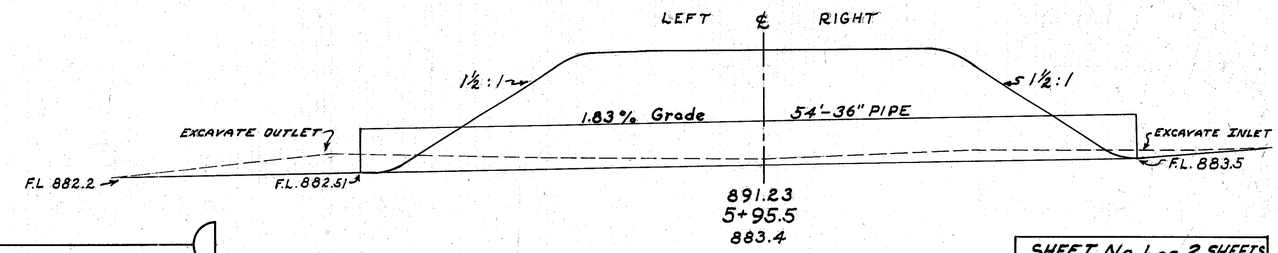
ESTIMATED QUANTITIES

EXCAVATION	2978	CU. YDS.
12" PIPE FOR DRIVEWAY	32	LIN. FT.
18" PIPE FOR DRIVEWAY	42	LIN. FT.
36" PIPE FOR DRIVEWAY	54	LIN. FT.
T-10, PAVEMENT	1475.6	SQ. YDS.
I-17, PAVEMENT	13	CU. YDS.

B.M. ELEV. 892.74
SPIKE IN POLE 15' LT.
STA. 7+65







NOTE:— THESE QUANTITIES ARE INCLUDED WITH GENERAL EARTHWORK QUANTITIES. (See Sheet No. 56)

EXCAVATION	2978 CU. YDS.
EMBANKMENT	1950 CU. YDS.

SHEET No. 1 OF 2 SHEETS
OF
TOWNSHIP RD. APPR.
LEFT STA. 283+00

12-A

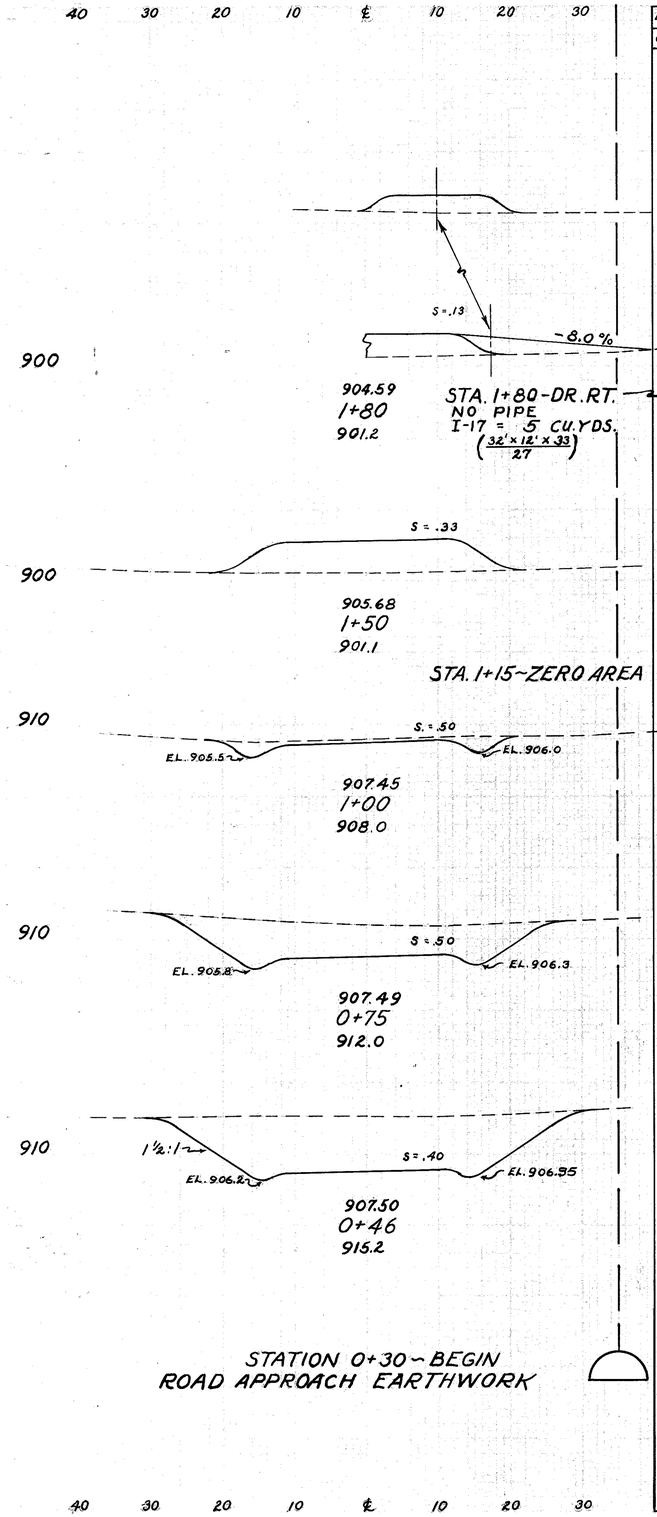
ROAD APPR. STA. 283+00

FEDERAL AID 116

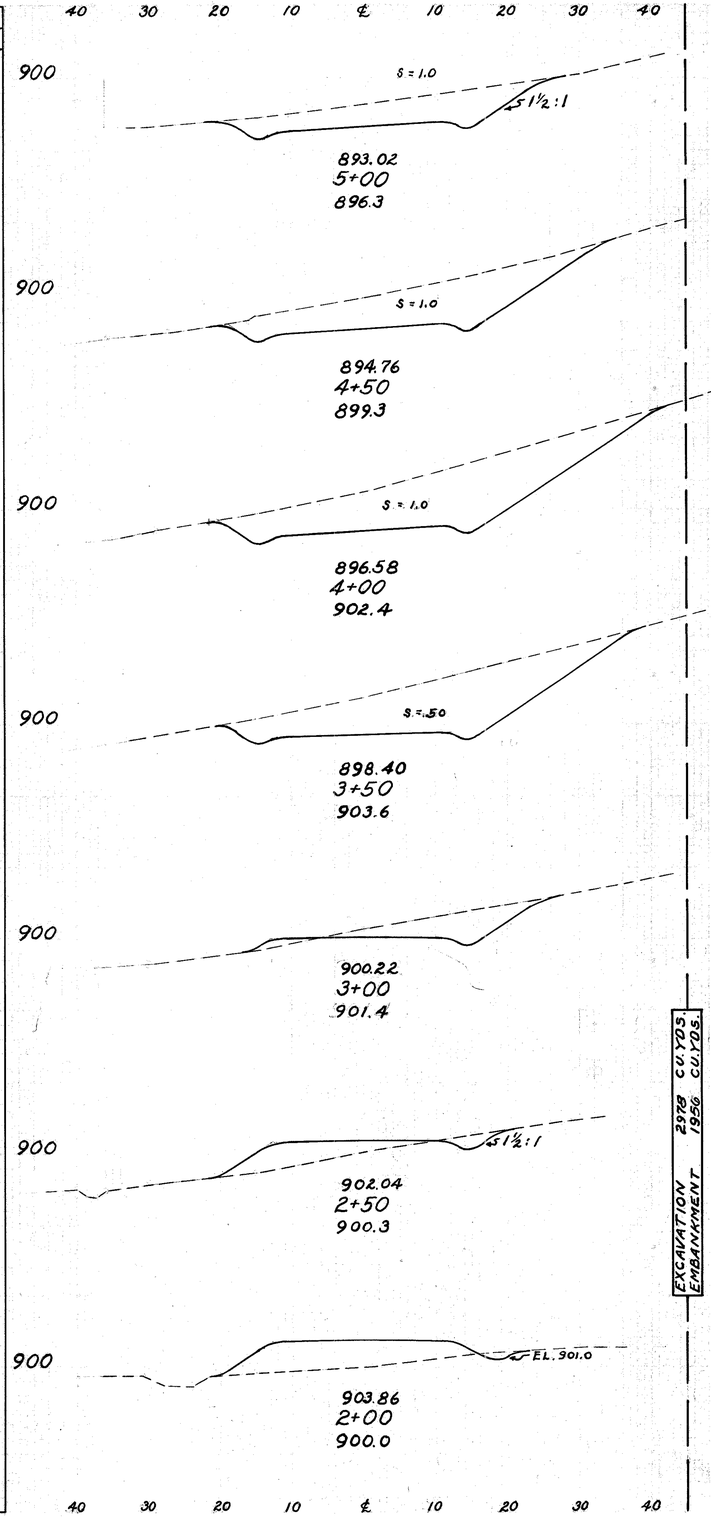
10 OHIO FA.260-A-(2) FA.520-C-(1) FA.520-A-(2) 1941 145

TUSCARAWAS COUNTY
S.H. 70 ~ SEC. "A" (PT.) - D & MINERAL CITY (PT.)
DOVER BASIN

12-A

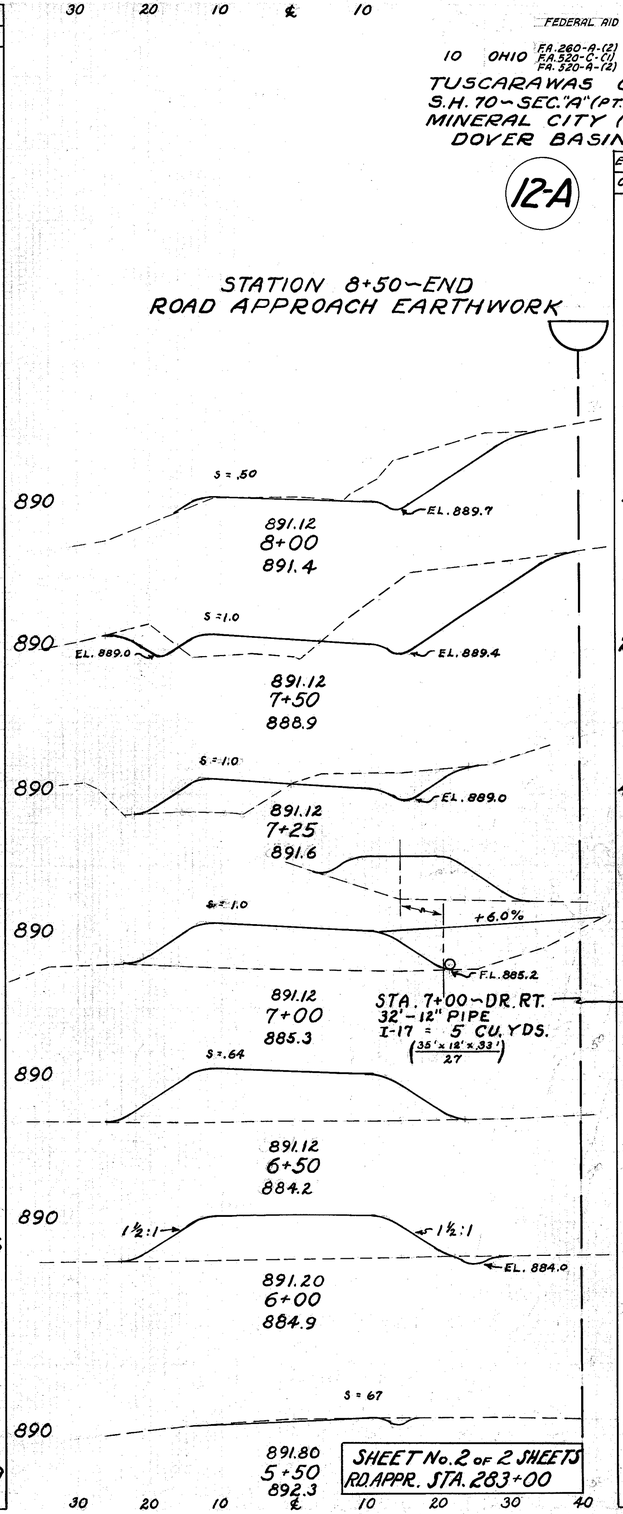


END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
0	21		
0	148		
		0	96
0	0		
		10	0
36	0		
		120	
223	0		
		314	0
361	0		
		107	0
0	0		



END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
138	0		
		324	0
212	0		
		501	0
329	0		
		562	0
278	0		
		320	7
68	8		
		71	62
9	59		
		11	156
3	110		
		3	239

EXCAVATION 2958 C.U.YDS.
EMBANKMENT 1956 C.U.YDS.

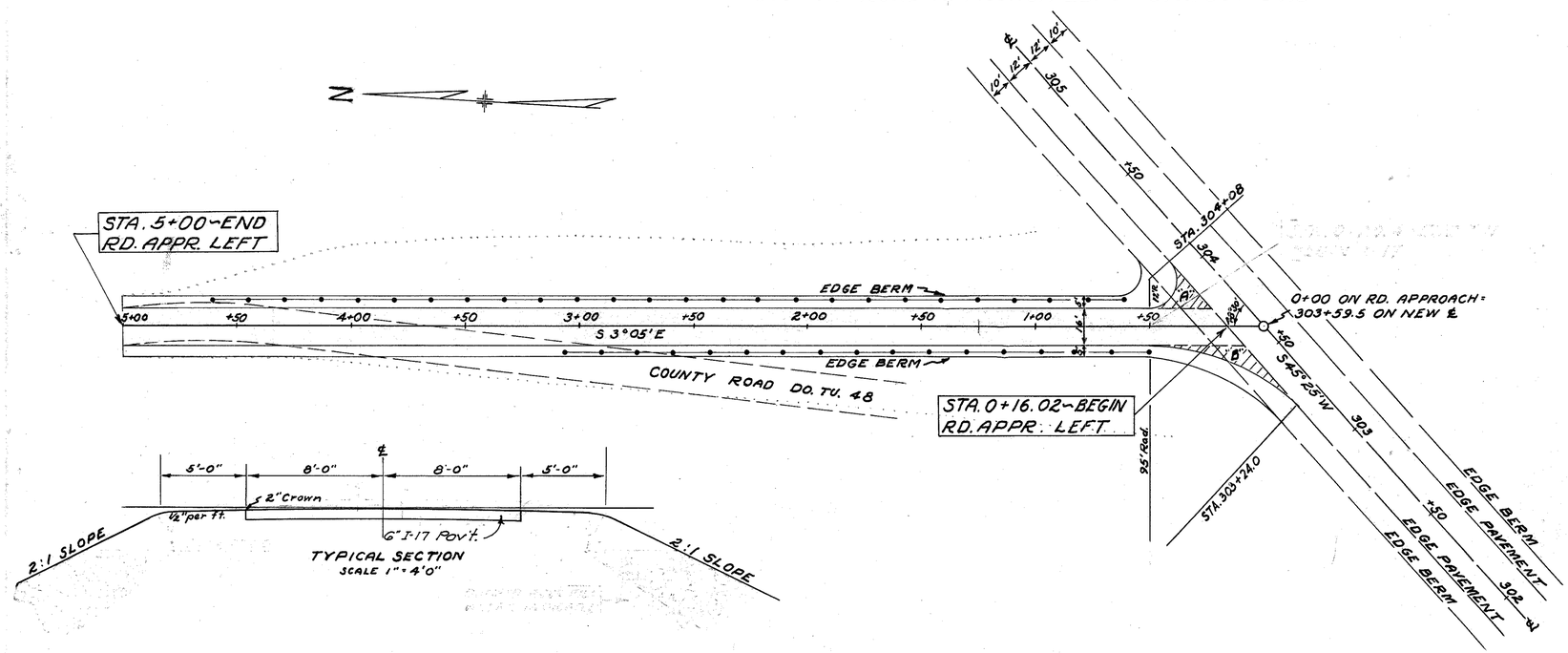


END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
0	0		
		86	7
93	8		
		272	53
201	49		
		115	51
47	62		
		22	125
0	207		
		0	71
		0	426
0	253		
		4	435
4	217		
		6	204
2	3		
		130	3

COUNTY ROAD APPROACH LEFT ~ STA. 303+59.5

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	F.A. 280-A(2) F.A. 320-C(1) F.A. 320-A(2)	1941

TUSCARAWAS COUNTY
S.H. 70 ~ SEC. "A" (PT.) ~ D & E
MINERAL CITY (QT.)
DOVER BASIN



PAVEMENT CALCULATIONS

I-17, "A" = $R\left(\frac{T-\frac{t}{2}}{9}\right) = 12\left(\frac{28-\frac{27.47}{2}}{9}\right)$ = 19.0 SQ. YDS.

"B" = $R\left(\frac{T-\frac{t}{2}}{9}\right) = 95\left(\frac{38.5-\frac{11.30}{2}}{9}\right)$ = 30.1 SQ. YDS.

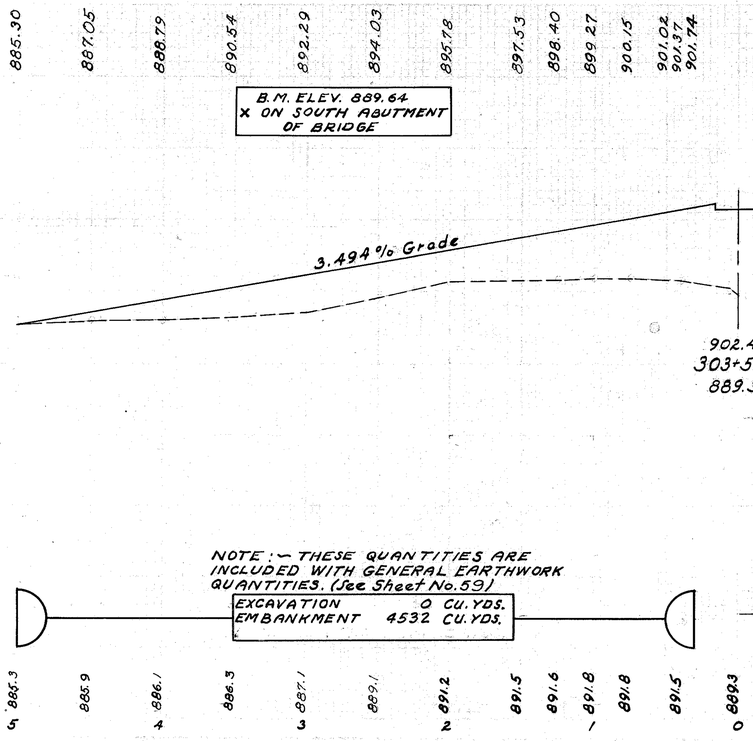
Total area A + B = 49.1 Sq. Yds.

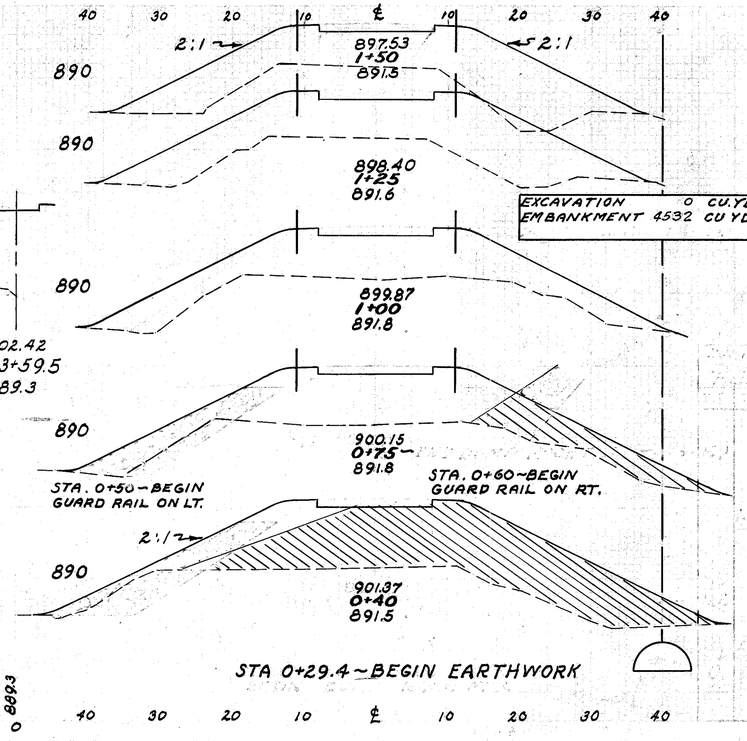
$\frac{484.0' \times 16' \times 6''}{27} + \frac{49.1}{6}$ = 151 CU. YDS.

ESTIMATED QUANTITIES

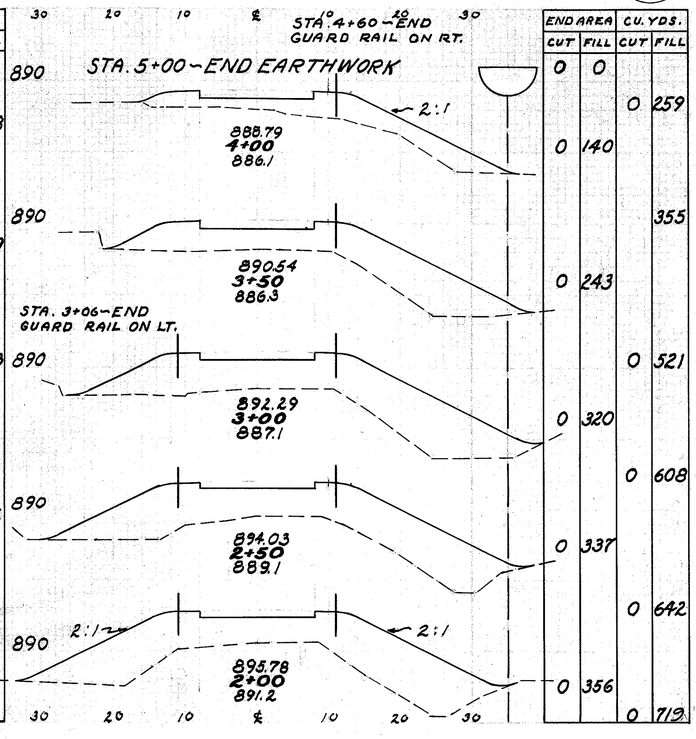
I-17, PAVEMENT	151. CU. YDS.
GUARD RAIL	650.0 LIN. FT.

15-A





END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
0	420		
		0	398
0	440		
		0	379
0	378		
		0	333
0	341		
		0	296
		0	22
0	0		



END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
0	0		
		0	259
0	140		
			355
0	243		
		0	521
0	320		
		0	608
0	337		
		0	642
0	356		
		0	719

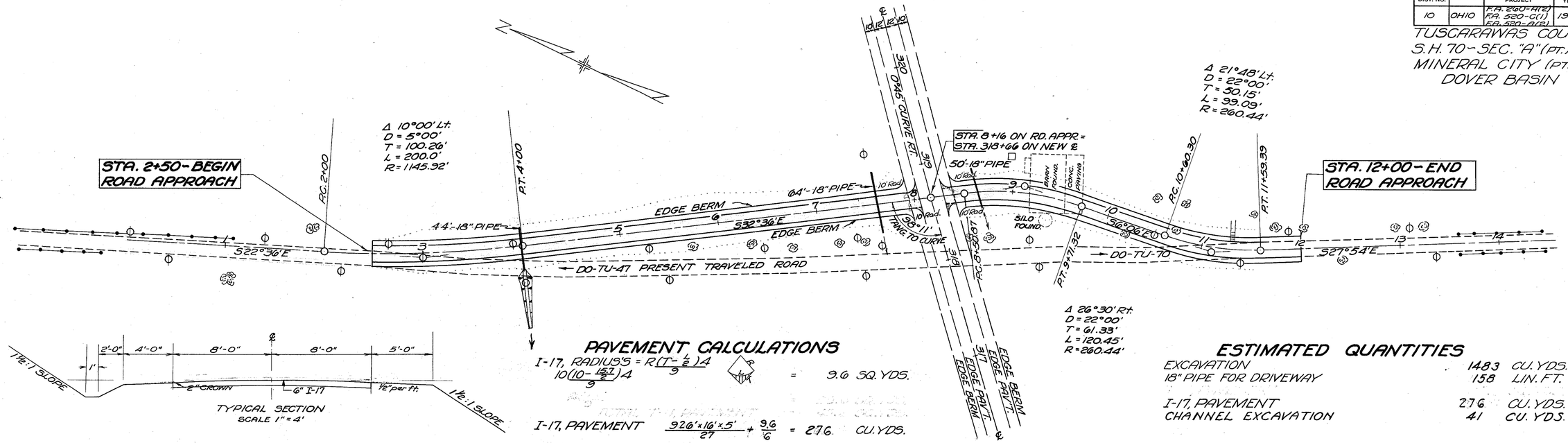
COUNTY ROAD APPROACH LEFT ~ STA. 303+59.5

ROAD APPROACH LEFT & RIGHT - STA. 318+66

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	F.A. 260-A(12) F.A. 320-C(1) F.A. 320-A(2)	1941

118 / 145

TUSCARAWAS COUNTY
S.H. 70 - SEC. "A" (PT.) - D &
MINERAL CITY (PT.)
DOVER BASIN



TYPICAL SECTION
SCALE 1" = 4'

PAVEMENT CALCULATIONS

I-17, RADIUS'S = $R\left(T-\frac{L}{2}\right)\frac{4}{9}$ = $10\left(10-\frac{15.1}{2}\right)\frac{4}{9}$ = 9.6 SQ. YDS.

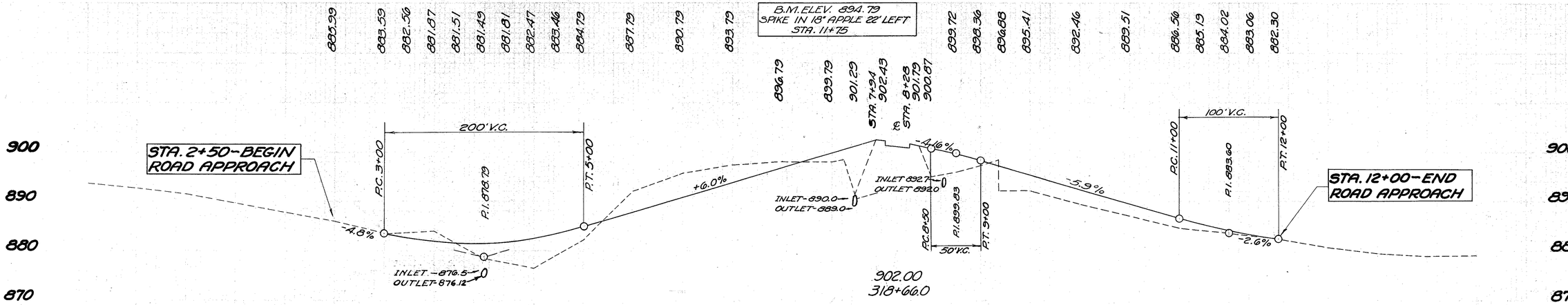
I-17, PAVEMENT $\frac{92.6' \times 16' \times .5'}{27} + \frac{9.6}{6}$ = 27.6 CU. YDS.

ESTIMATED QUANTITIES

EXCAVATION	148.3	CU. YDS.
18" PIPE FOR DRIVEWAY	15.8	LIN. FT.
I-17, PAVEMENT	27.6	CU. YDS.
CHANNEL EXCAVATION	4.1	CU. YDS.

PLAN
SCALE 1" = 50'

16-A



NOTE :- THESE QUANTITIES ARE INCLUDED WITH GENERAL EARTHWORK QUANTITIES. (See Sheet No. 62)

EXCAVATION 141.1 CU. YDS.
EMBANKMENT 98.3 CU. YDS.

EXCAVATION 7.2 CU. YDS.
EMBANKMENT 98.6 CU. YDS.

STA. 318+66
RD. APPR. LEFT & RIGHT
SHEET 1 OF 2 SHEETS

0 893.7 | 892.7 | 1 891.5 | 889.7 | 2 887.7 | 886.0 | 3 883.4 | 884.0 | 4 878.4 | 876.5 | 5 882.1 | 892.1 | 895.7 | 6 897.3 | 898.0 | 7 898.0 | 898.6 | 8 895.0 | 897.2 | 9 892.1 | 889.4 | 10 887.0 | 884.6 | 11 883.6 | 882.3 | 12 880.7 | 879.4 | 13 879.0 | 879.0 | 14

ROAD APPROACH LEFT & RIGHT - STA. 318+66

FED. AID 119

10 OHIO F.A. 260-A(2) F.A. 320-C(1) 1941 F.A. 320-A(2) 145

TUSCARAWAS COUNTY
S.H. 70 - SEC. "A" (PT.) - DE
MINERAL CITY (PT.)
DOVER BASIN

16-A

STA. 2+50 – BEGIN EARTHWORK

890 — 890.79, 6+00, 895.7

EXCAVATION 1411 CU. YDS.
EMBANKMENT 983 CU. YDS.

890 — 887.79, 5+50, 892.1

STA. 5+20

880 — 884.79, 5+00, 882.4

880 — 1½:1 / 1½:1 — 882.47, 4+50, 876.5

1½:1 / 1½:1 — 44'-18" PIPE, ELEV. 876.5, F.L. 876.12, 875.6

880 — 881.49, 4+00, 878.4

880 — 881.87, 3+50, 884.0

880 — 1½:1 — 883.59, 3+00, 883.4

	END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
	230	0		
			409	0
	210	0		
			120	0
STA. 5+20	6	0		
			4	26
	6	71		
			6	236
	0	184		
			32	261
	35	98		
			67	94
	37	4		
			104	4
	75	0		
			69	0
	0	0		

900 — 899.72, 8+75, 895.9

900 — 1½:1 / 1½:1 — 900.87, 8+50, 895.0

STA. 8+38 – BEGIN EARTHWORK

STA 7+94 – END EARTHWORK

900 — 1½:1 / 1½:1 — 901.29, 7+75, 890.6

900 — 900.51, 7+62, 898.4

900 — 899.79, 7+50, 898.0

900 — 896.79, 7+00, 898.0

890 — 1½:1 / 1½:1 — 893.79, 6+50, 897.3

	END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
	0	124		
			0	145
	0	190		
			0	42
	0	0		
	0	0		
			0	154
	0	438		
			0	122
	0	68		
			1	29
	4	62		
			55	57
	55	0		
			192	0
	152	0		
			354	0

STA. 12+00 – END EARTHWORK

890 — 1½:1 / 1½:1 — 884.02, 11+50, 883.6

890 — 886.56, 11+00, 884.6

890 — 1½:1 / 1½:1 — 889.51, 10+50, 887.0

890 — 1½:1 / 1½:1 — 892.46, 10+00, 889.4

890 — 895.41, 9+50, 892.1

EXCAVATION 72 CU. YDS.
EMBANKMENT 986 CU. YDS.

890 — 1½:1 — 896.88, 9+25, 892.1

890 — 1½:1 / 1½:1 — 898.36, 9+00, 897.2

STA. 318+66
RD. APPR. LEFT & RIGHT
SHEET 2 OF 2 SHEETS

	END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
	0	0		
			20	10
	22	11		
			30	42
	10	34		
			9	109
	0	84		
			0	159
	0	88		
			0	183
	0	110		
			0	119
	0	148		
			7	94
	14	56		
			6	83

ROAD APPROACH LEFT & RIGHT – STA. 318+66

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	F.A. 280-A(2) F.A. 520-C(1) F.A. 520-A(2)	1941

120
145

TUSCARAWAS COUNTY
S.H. 70 - SEC. "A" (PT.) - D &
MINERAL CITY (PT.)
DOVER BASIN

PAVEMENT CALCULATIONS

I-17, $R\frac{(T-\frac{1}{2})2}{9}$ = 19.1 SQ.YDS.

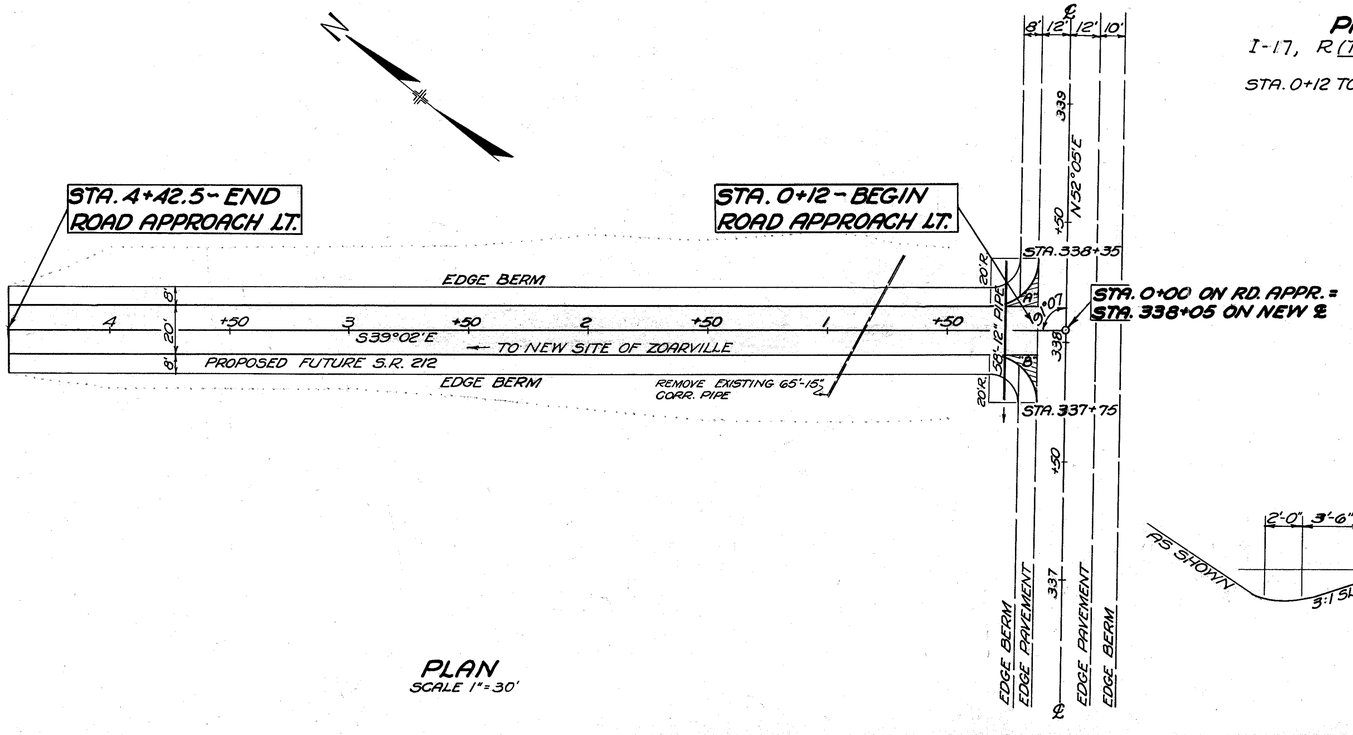
STA. 0+12 TO STA. 4+42.5 $\frac{430.5' \times 20'}{9}$ = 956.7 SQ.YDS.

TOTAL I-17, PAVEMENT = 975.8 SQ.YDS.

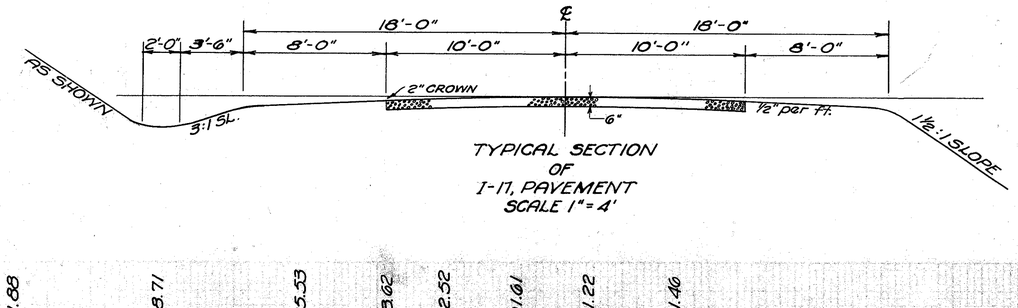
$\frac{975.8}{6}$ = 163 CU. YDS.

ESTIMATED QUANTITIES

EXCAVATION	2547.	CU.YDS.
I-17, PAVEMENT	163.	CU.YDS.
12" PIPE FOR DRIVEWAY	58.	LIN. FT.
15" PIPE, REMOVED AND STORED	65.	LIN. FT.

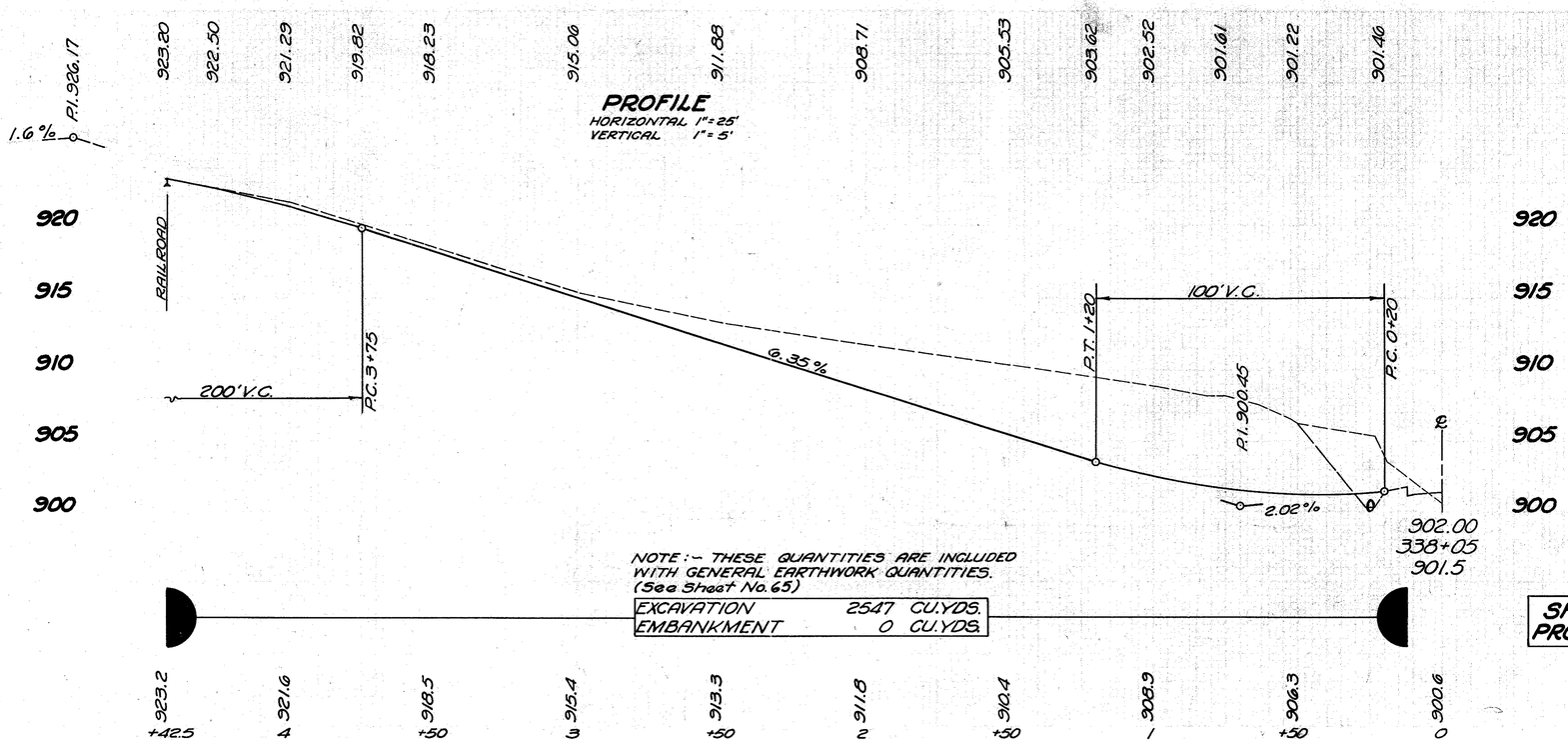


PLAN
SCALE 1"=30'



TYPICAL SECTION
OF
I-17, PAVEMENT
SCALE 1"=4'

18-A



NOTE:- THESE QUANTITIES ARE INCLUDED WITH GENERAL EARTHWORK QUANTITIES. (See Sheet No. 65)

EXCAVATION	2547	CU.YDS.
EMBANKMENT	0	CU.YDS.

SHEET No. 1 OF 2 SHEETS
PROPOSED FUTURE S.R. 212

ROAD APPROACH - STA. 338+05

FED. AID 121
F.A. 260-A(2)
10 OHIO F.A. 520-C(1) 1941 145
F.A. 520-A(2)
TUSCARAWAS COUNTY
S.H. 70 - SEC. "A" (PT.) - D &
MINERAL CITY (PT.)
DOVER BASIN

18-A

30 20 10 ℄ 10 20 30 40

905 — 1½:1
902.52
1+00
908.9

905
901.78
0+81
908.2

905
901.61
0+75
908.2

905
1½:1 — 1½:1
901.22
0+50
906.3

STA. 0+30 - BEGIN EARTHWORK

EXCAVATION 2547 CU. YDS.
EMBANKMENT 0 CU. YDS.

END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
429	0		
		309	0
449	0		
		99	0
440	0		
		367	0
353	0		
		131	0
0	0		

20 10 ℄ 10 20

STA. 4+42.5 - END EARTHWORK

920 — 2:1
921.29
4+00
921.6

915
915.06
3+00
915.4

1½:1
910
911.88
2+50
913.3

910 — 2:1
908.71
2+00
911.8

910 — 1½:1
905.53
1+50
910.4

END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
0	0		
		26	0
33	0		
		126	0
35	0		
		112	0
86	0		
		249	0
183	0		
		450	0
303	0		
		678	0

SHEET No. 2
OF 2 SHEETS

30 20 10 ℄ 10 20 30

ROAD APPROACH - STA. 338+05

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	F.A. 260-A(2) F.A. 520-C(1) F.A. 320-A(2)	1941

122
145

TUSCARAWAS COUNTY
S.H. 70 – SEC. "A" (PT.) - D &
MINERAL CITY (PT.)
DOVER BASIN

ROAD APPROACH LEFT – STA. 359+25

PAVEMENT CALCULATIONS

"A" & "B" = $\frac{R(T-\frac{1}{2})2}{9}$ = 19.1 SQ.YDS.

"C" = $\frac{R(T-\frac{1}{2})}{9}$ = 2.2 SQ.YDS.

"D" = $\frac{R(T-\frac{1}{2})}{9}$ = 1.5 SQ.YDS.

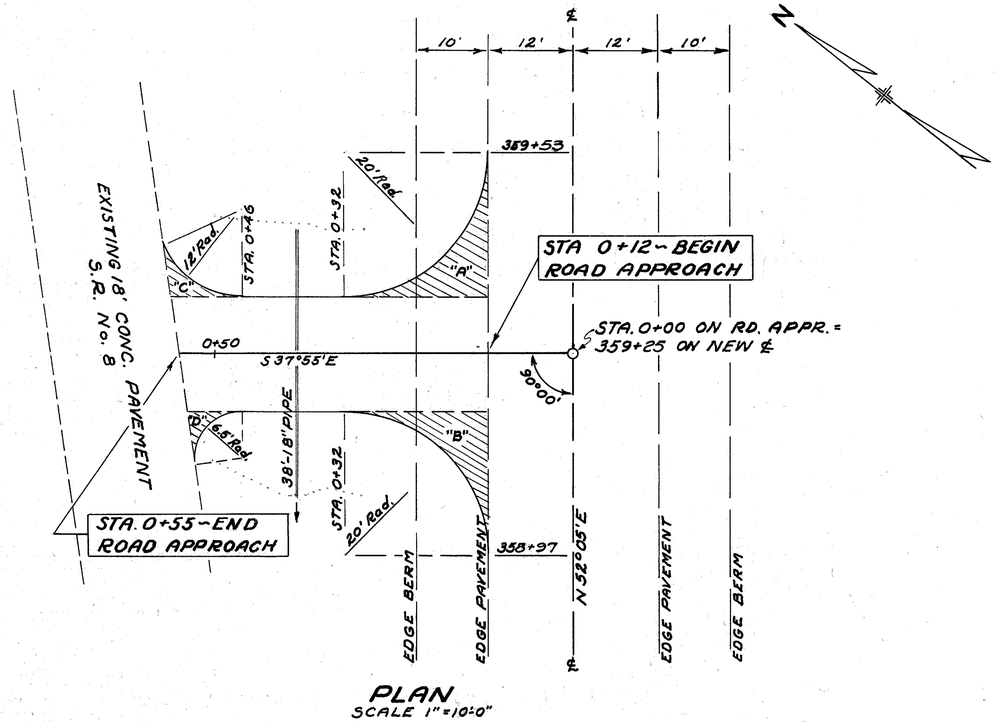
STA. 0+12 TO STA. 0+55 = 43 LF. $\frac{43' \times 16'}{9}$ = 76.5 SQ.YDS.

I-17, TOTAL PAVEMENT 99.3 SQ.YDS.

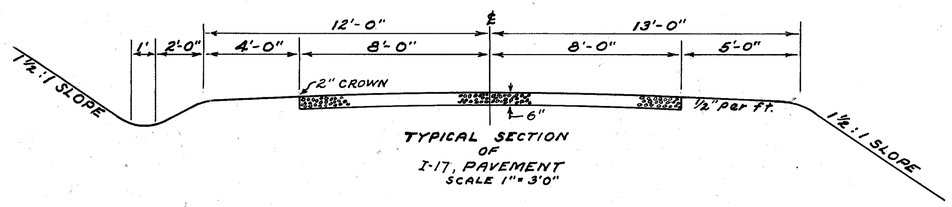
99.3 ÷ 6 = 16 CU. YDS.

ESTIMATED QUANTITIES

EXCAVATION	4.	CU. YDS.
18" PIPE FOR DRIVEWAY	38.	LIN. FT.
I-17, PAVEMENT	16	CU. YDS.

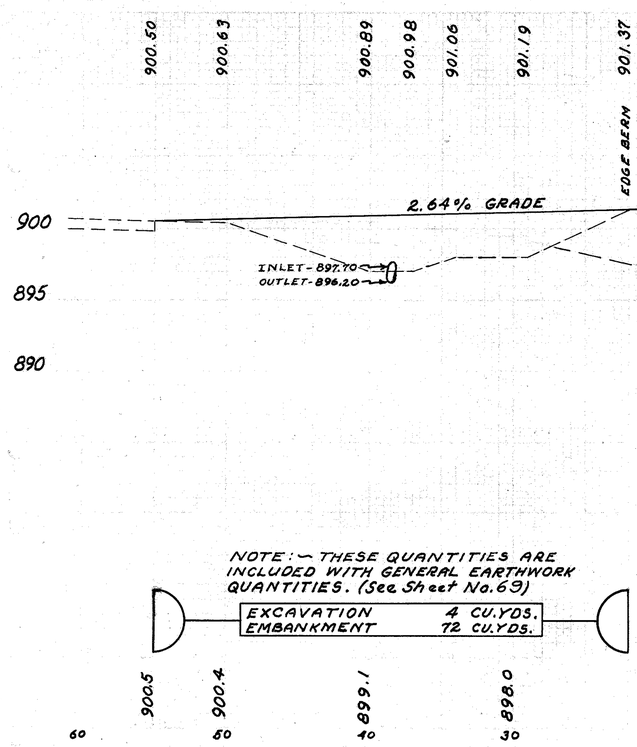


PLAN
SCALE 1" = 10'-0"



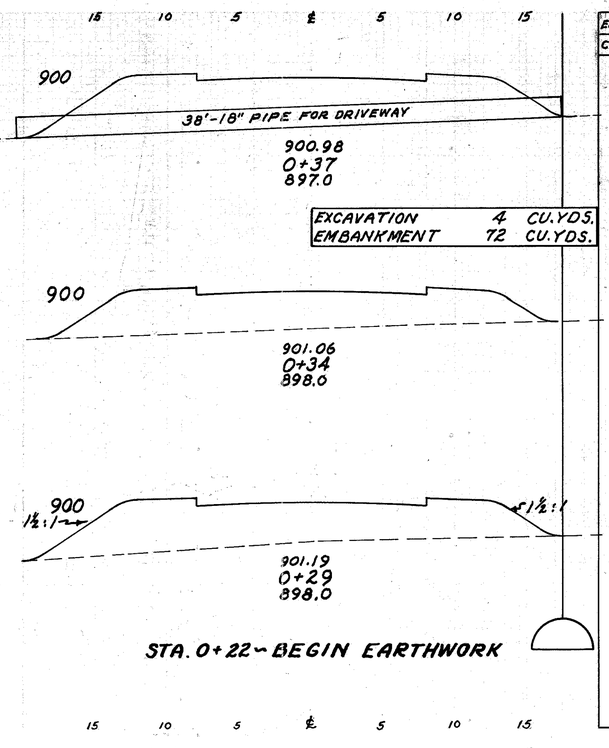
TYPICAL SECTION
OF
I-17, PAVEMENT
SCALE 1" = 3'0"

21-A



NOTE: – THESE QUANTITIES ARE INCLUDED WITH GENERAL EARTHWORK QUANTITIES. (See Sheet No. 69)

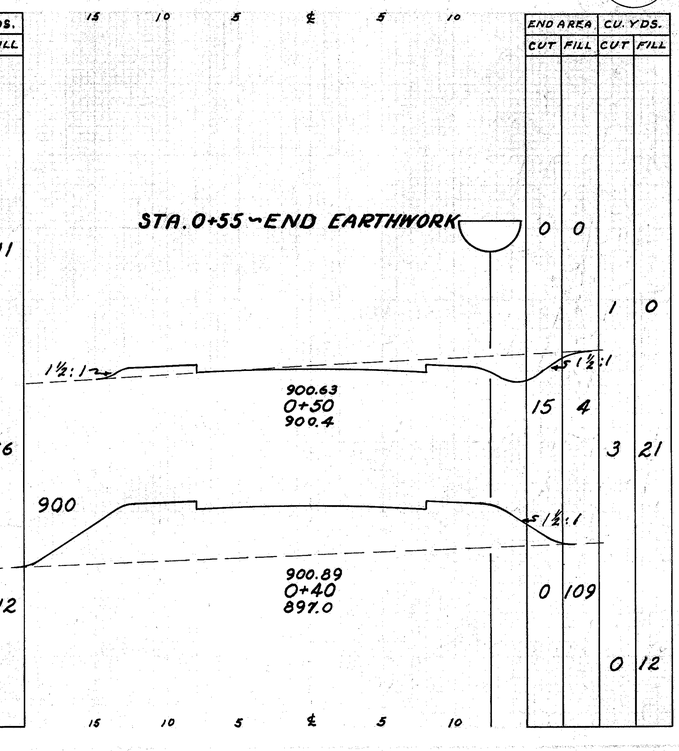
EXCAVATION	4	CU.YDS.
EMBANKMENT	72	CU.YDS.



STA. 0+22 – BEGIN EARTHWORK

EXCAVATION	4	CU.YDS.
EMBANKMENT	72	CU.YDS.

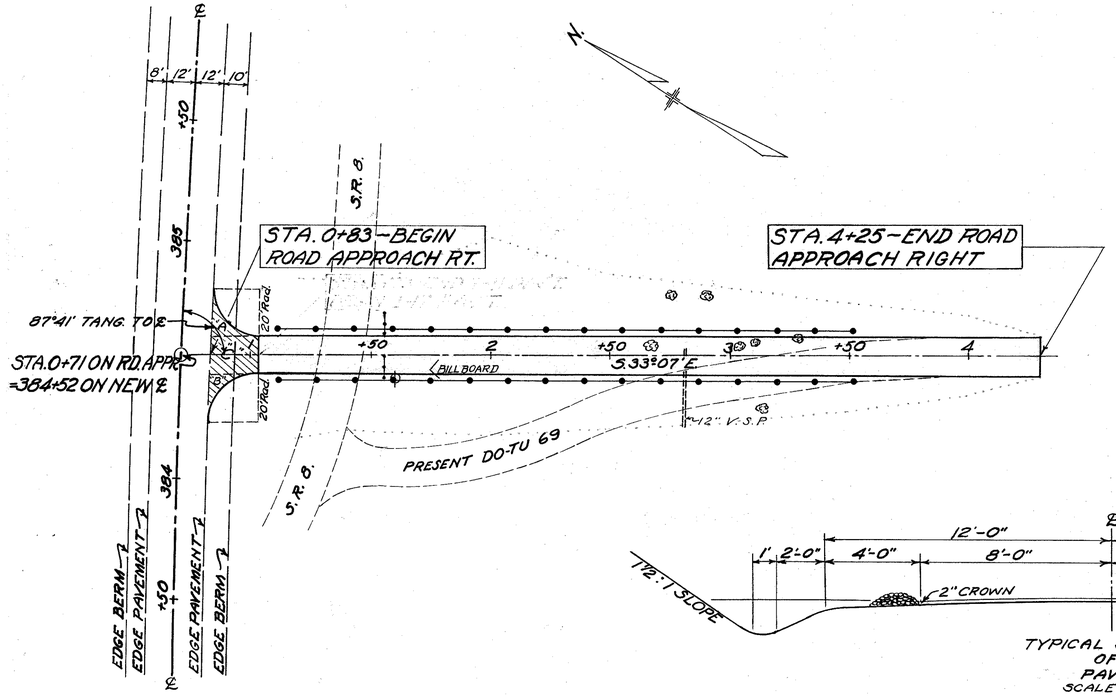
END AREA CUT	END AREA FILL	CU.YDS. CUT	CU.YDS. FILL
0	110		
		0	11
0	80		
		0	16
0	91		
		0	12
0	0		

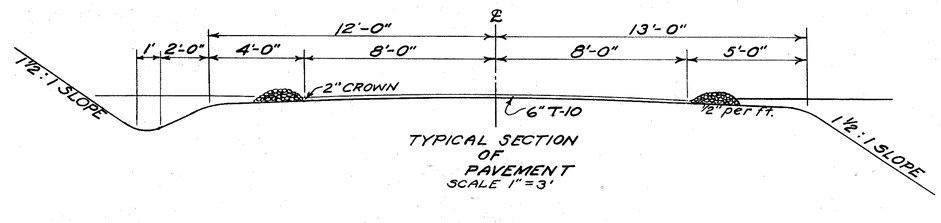


END AREA CUT	END AREA FILL	CU.YDS. CUT	CU.YDS. FILL
0	0		
		1	0
15	4		
		3	21
0	109		
		0	12

ROAD APPROACH LEFT – STA. 359+25

FED. AID 123
10 OHIO F.A. 260-A(2) F.A. 520-C(1) 1941 F.A. 520-A(2) 145
TUSCARAWAS COUNTY
S.H. 70 - SEC. "A" (PT.) - D & MINERAL CITY (PT.)
DOVER BASIN





TYPICAL SECTION OF PAVEMENT
SCALE 1" = 3'

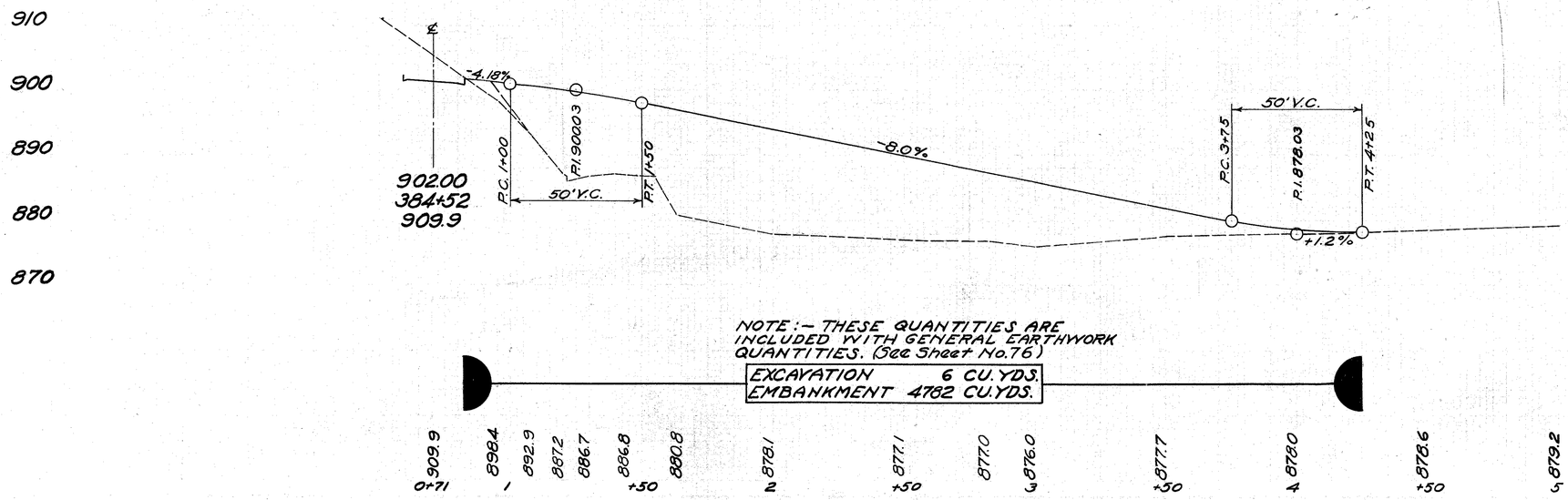
PAVEMENT CALCULATIONS

I-17, PAVEMENT
"A" & "B" = $\frac{R(T-\frac{1}{2})2}{9}$ = 19.1 SQ. YDS.
"C" = $\frac{20 \times 16}{9}$ = 35.6 SQ. YDS.
T-10, STA. 1+04 TO STA. 4+25 —
$\frac{321 \times 16}{9}$ = 570.7 SQ. YDS.

ESTIMATED QUANTITIES

EXCAVATION	6.	CU. YDS.
T-10 SURFACE COURSE	571.	SQ. YDS.
I-17, PAVEMENT	9.1	CU. YDS.
12" V.S.P. REMOVE & STORE	32.	LIN. FT.
GUARD RAIL	475.	LIN. FT.

24-A



B.M. ELEV. 920.58
SPIKE IN POLE 67' LEFT
STA. 387+44

NOTE:— THESE QUANTITIES ARE INCLUDED WITH GENERAL EARTHWORK QUANTITIES. (See Sheet No. 76)

EXCAVATION	6 CU. YDS.
EMBANKMENT	4782 CU. YDS.

SHEET 1 OF 2 SHEETS.

ROAD APPROACH RT. — STA. 384+52

FED. AID 124
F.A. 260-A(2)
10 OHIO F.A. 520-C(1) 1941 145
F.A. 520-A(2)
TUSCARAWYAS COUNTY
S.H. 70 – SEC. "A" (PT.) – D &
MINERAL CITY (PT.)
DOVER BASIN

24-A

30 20 10 ℄ 10 20 30

EXCAVATION 6 CU. YDS.
EMBANKMENT 4782 CU. YDS.

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	0		
		2	8
4	17		
		4	153
0	148		
		0	466
0	355		
		0	824
0	535		
		0	1194
0	755		
		0	926

890

896.67
1+67
880.8

0 760

880

STA. 4+25 – END EARTHWORK

1½:1 1½:1

878.61
4+00
878.0

STA. 3+49.5 END
GUARD RAIL ON LT. & RT.

895

897.63
1+55
886.8

0 456

880

1½:1 1½:1

882.03
3+50
877.7

0 283

895

898.86
1+39
887.0

0 500

880

886.03
3+00
876.0

885

890.03
2+50
877.1

0 375

895

1½:1 1½:1

900.09
1+20
887.2

STA. 1+12 – BEGIN
GUARD RAIL ON LT. & RT.

0 565

890

894.03
2+00
878.1

0 283

STA. 0+93 – BEGIN EARTHWORK

0 0

30 20 10 ℄ 10 20 30

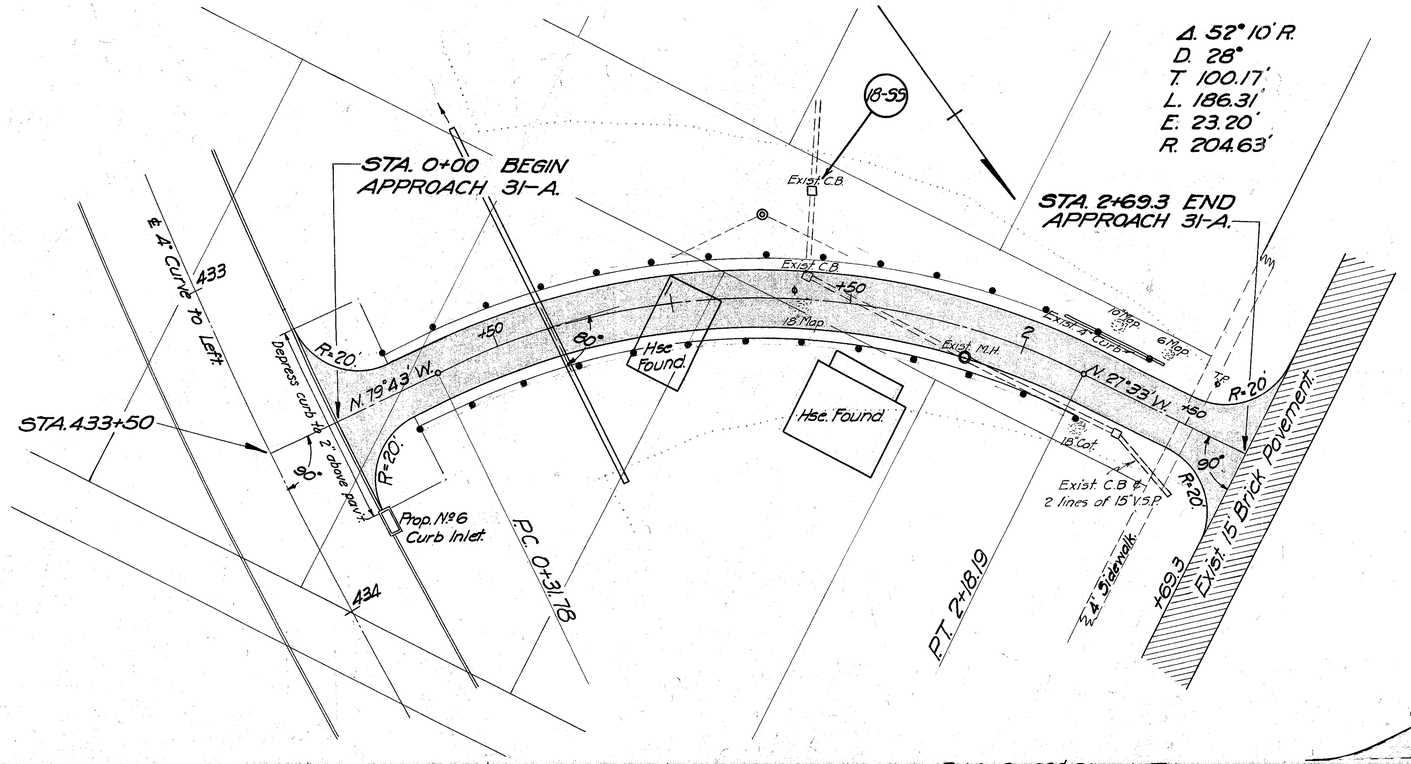
SHEET 2 OF 2 SHEETS

ROAD APPROACH R.T. – STA. 364+52

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	F.A. 280-A(2) F.A. 320-C(1) F.A. 320-A(2)	1941

125
145

TUSCARAWAS COUNTY
S. H. 70 SEC. A (PT.)-D-
& MINERAL CITY (PT.)
DOVER BASIN



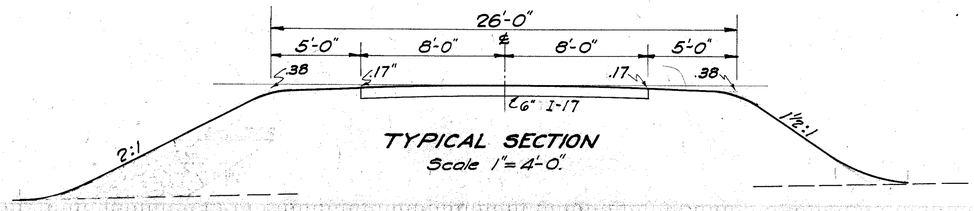
PAVEMENT CALCULATIONS I-17

269.3 × 16 ÷ 9 = 478.8 Sq. Yds.
4 (= (40 × 40 − 20 × 20 π) ⅓ = 38.2 " ".
Total = 517.0 " ".
517 ÷ 6 = 86 Cu. Yds.

ESTIMATED QUANTITIES

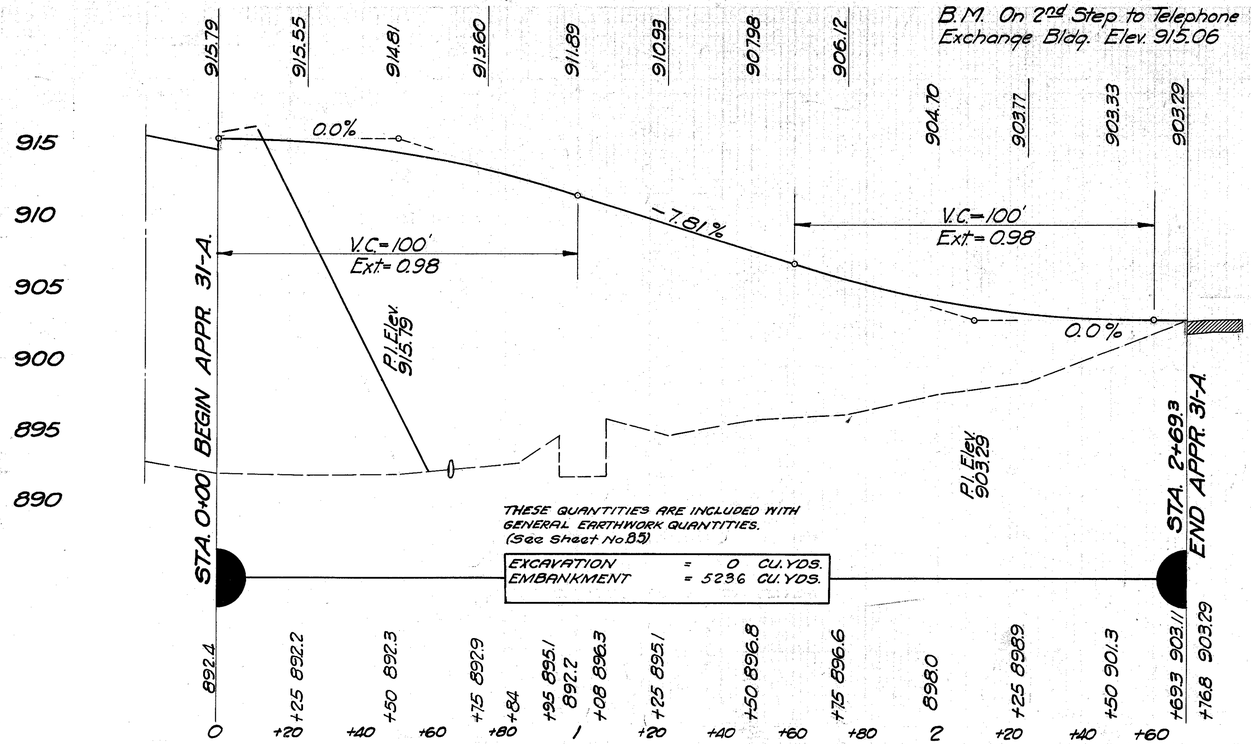
Excavation	0 Cu. Yds.
15" Pipe for Driveway	110 Lin. Ft.
I-17 Pavement	86 Cu. Yds.
Guard Rail	425 Lin. Ft.

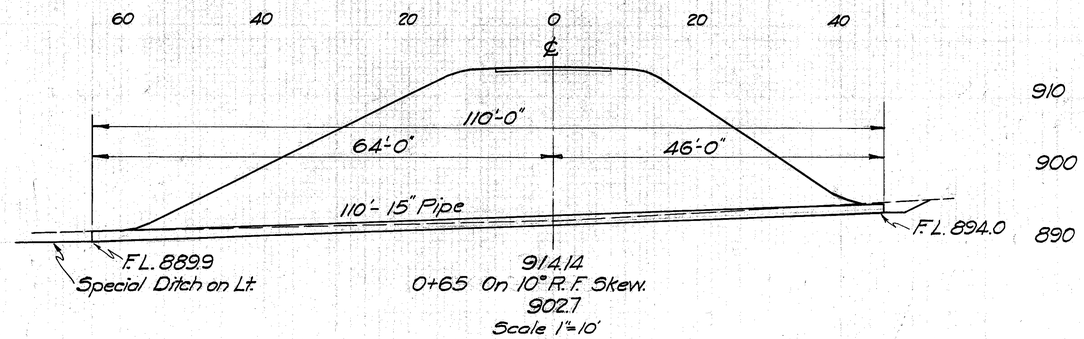
31-A



TYPICAL SECTION
Scale 1" = 4'-0"

B.M. On 2nd Step to Telephone Exchange Bldg. Elev. 915.06





SHEET 1 OF 2 SHEETS
ROAD APPROACH
LEFT STA. 433+50.

ROAD APPR. STA. 433+50.

FEDERAL AID

126
145

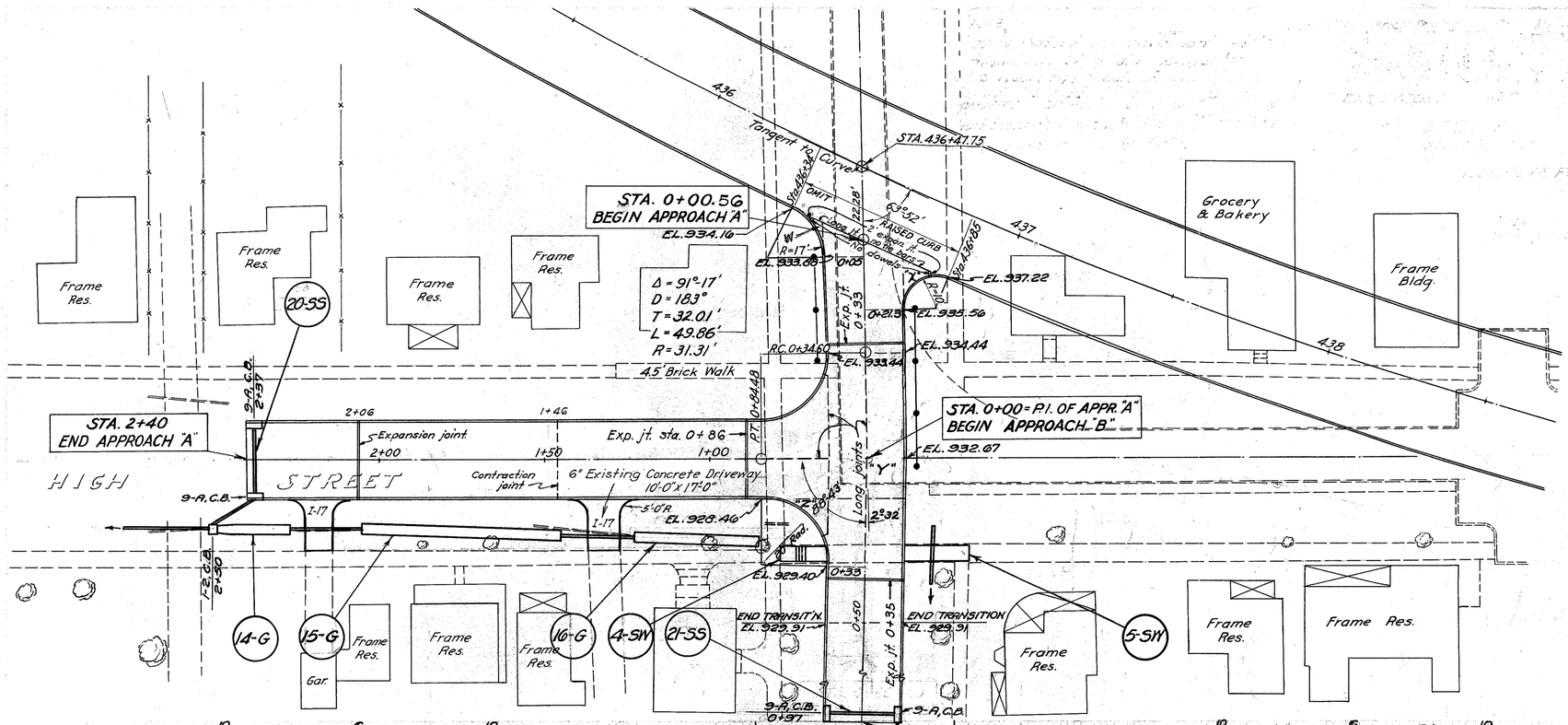
10 OHIO 1941

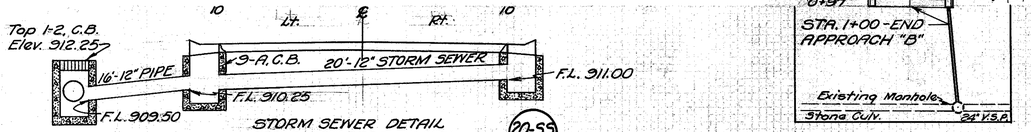
TUSCARAWAS COUNTY
S. H. 70 SEC. A(PT)-D
& MINERAL CITY (PT)
DOVER BASIN

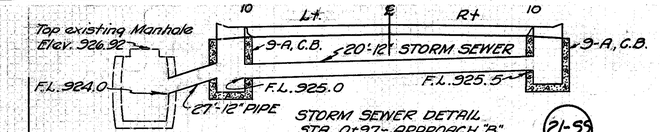

Area
Cut
Fill
Cu. Yds.
Cut
Fill
Excavation 0 Cu. Yds.
Embankment 5236 " "
Sta. 2+69.3 End Approach ¢ Earthwork.
+69.3
900
911.26
1+08
896.3
913.04
0+84
893.2
914.38
0+60
892.5
Basement
Fill in Basement = 28'×16'×3.5' / 27 = 58 ¢
2:1
1½:1
Sta. 0+0 Begin Approach
0+13 = Zero Earthwork.
+50
+13
Sta. 2+32.5 End Guard Rail on Lt.
Sta. 2+32.5 End Guard Rail on Rt.
903.33
2+50
901.3
903.77
2+25
898.9
904.70
2+00
898.0
906.12
1+75
896.6
907.98
1+50
896.2
Fill in Basement 28'×22'×4' / 27 = 91 ¢
0 1031
0 820
0 865
58
0 1127
0 1095
0 1338
0 1165
0 0
0 0
0 16
0 46
0 79
0 125
0 164
0 229
0 27
0 360
0 505
40
30
20
10
¢
ROAD APPR. LT. STA. 433+50

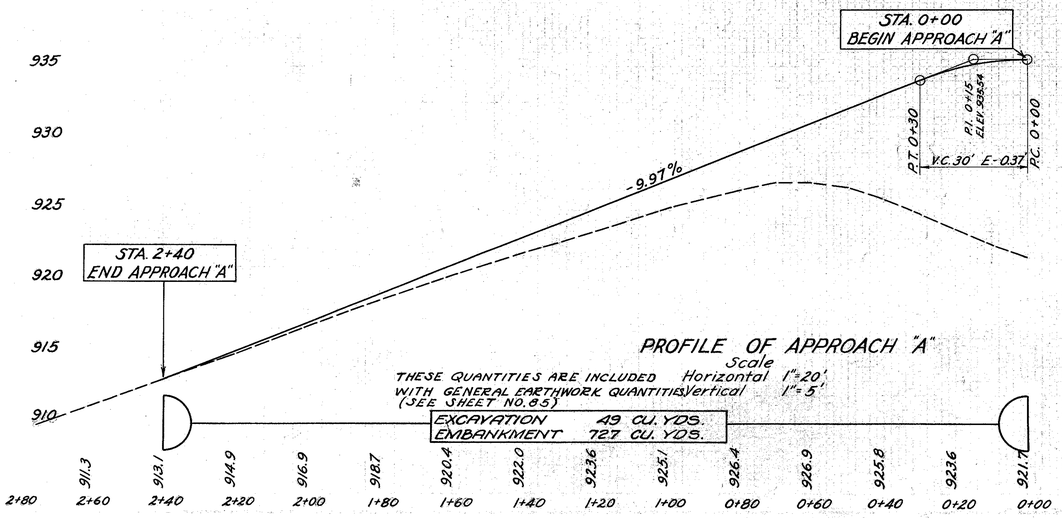
31-A

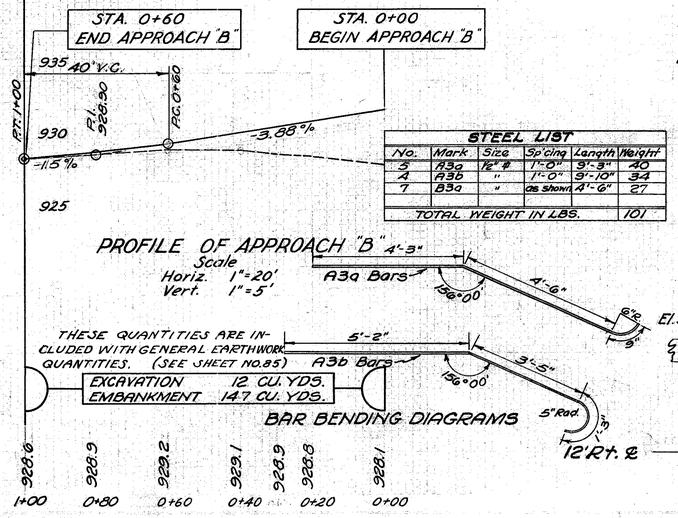
TUSCARAWAS COUNTY
S.H. 70 SECS. A(Pt.), D, & MIN. CITY (Pt.)
DOVER BASIN

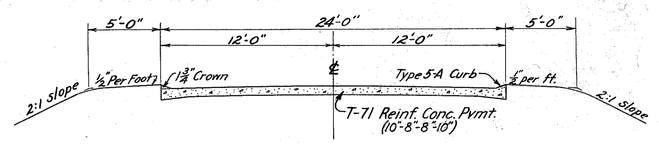












TYPICAL SECTION
Scale 1"=5'

ESTIMATED QUANTITIES

EXCAVATION	61.	CU. YDS.
T-71, PAVEMENT	936.1	SQ. YDS.
CIRCULAR 5-A CURB	101.	LIN. FT.
STRAIGHT 5-A CURB	529.	LIN. FT.
8" TO 12" V.S.P. (REMOVE & STORE)	74.	LIN. FT.
12" PIPE FOR DRIVEWAYS	62.	LIN. FT.
15" PIPE FOR DRIVEWAYS	26.	LIN. FT.
GUARD RAIL (12½ PANELS)	75.	LIN. FT.
I-17, PAVEMENT	3.	CU. YDS.

PAVEMENT CALCULATIONS

APPROACH "A" STA. 0+00.56 TO STA. 2+40 = 239.44 LIN. FT.
APPROACH "B" STA. 0+12 TO STA. 1+00 = 88 LIN. FT.
327.44 LIN. FT.

$\frac{327.44 \times 24'}{9}$ = 873.2 SQ. YDS.

"W" = $R(T-\frac{L}{2})/9 = 17(10.6'-\frac{18.95}{2})/9$ = 2.0 SQ. YDS.

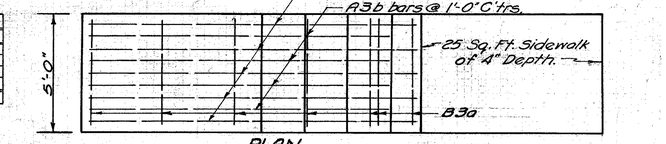
"X" = $R(T-\frac{L}{2})/9 = 10(16.04-\frac{20.42}{2})/9$ = 6.5 SQ. YDS.

"Y" = $R(T-\frac{L}{2})/9 = 43.31(44.0-\frac{69}{2})/9$ = 45.7 SQ. YDS.

"Z" = $R(T-\frac{L}{2})/9 = 20(19.56-\frac{30.97}{2})/9 - 3.18$ = 8.7 SQ. YDS.

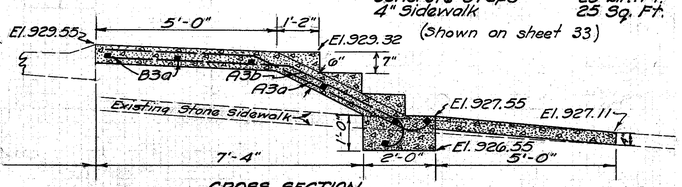
TOTAL 936.1 SQ. YDS.

STEEL LIST					
No.	Mark	Size	Sp'cing	Length	Weight
5	A3a	12" ϕ	1'-0"	3'-3"	30
4	A3b	"	1'-0"	3'-10"	34
7	B3a	"	as shown	4'-6"	27
TOTAL WEIGHT IN LBS.					101



PLAN

ESTIMATED QUANTITIES
Concrete Steps 20 Lin. Ft.
4" Sidewalk 25 Sq. Ft.
(Shown on sheet 33)



CROSS SECTION
SCALE 1"=2'

STEP DETAIL - RT. STA. 0+29.5 ON APPROACH "B"
STA. 436+47.75 - ROAD APPROACH ON RT.

FEDERAL AID 128
10 OHIO 260-A(2), 520-C(1) 520-A(2) 1941 145
TUSCARAWAS COUNTY
S.H. 70-SEC'S. A(PT), D, & MIN. CITY (PT.)
DOVER BASIN

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
		0	17
			3
		0	85
		0	75
		0	65
		0	101
		0	97
		0	161
		0	177
		0	317
		0	200
		0	224
		0	83
		0	0

920
920.6
23' Lt. ℄
922.08
1+50
921.2
STA. 1+45 END PIPE FOR DRIVEWAY
BEGIN PAVED GUTTER
2:1
STA. 1+34 - DRIVE LT.
22'-12" PIPE
I-17, $\frac{10.5 \times 8 \times 33}{27}$ = 1. CU.YD.
921.04
23.5' Lt. ℄
923.68
1+34 Drive Left
922.5
920
STA. 1+23 - END PAVED GUTTER
BEGIN 12" PIPE FOR DRIVEWAY

EXCAVATION = 49 CU. YDS.
EMBANKMENT = 727 CU. YDS.

Sup. = .69
ELEV. 927.61
2:1
ELEV. 926.32
925
925.1
25' Lt. ℄
927.07
1+00
925.1
STA. 0+85 - BEGIN PAVED GUTTER ON LT.
ELEV. 929.91
Sup. = 1.0'
ELEV. 928.91
925
929.06
0+80
926.6
Approach "B"
ELEV. 931.907
Sup. = 1.0'
ELEV. 930.90
STA. 0+55 - END RD. APPR. GUARD RAIL ON LT.
ELEV. 933.90
Sup. = 1.0'
931.05
0+60
927.1
ELEV. 932.90
930
933.05
0+40
925.9
STA. 0+37 - END RD. APPR. GUARD RAIL ON RT.
STA. 0+21.3 - BEGIN RD. APPR. GUARD RAIL ON LT.
ELEV. 935.67
ELEV. 933.66
2:1
930
934.80
0+20
933.6
STA. 0+05 - BEGIN RD. APPR. GUARD RAIL RT.
ELEV. 933.95
2:1
935.54
0+00
921.7
0+00 BEGIN APPROACH "A"

STA. 1+00 - END RD. APPROACH "B"

930
929.02
0+80
928.9
2:1
930
929.68
0+60
929.2
930
ELEV. 930.46
ELEV. 929.61
5'-0"
10"
930.45
0+40
929.1
STA. 0+29.5 - SIDEWALK ON LT.
6" SIDEWALK = 25 SQ. FT.
4" SIDEWALK = 67.5 SQ. FT.
18'-12" PIPE
ELEV. 931.04
F.L. 929.75
930
ELEV. 929.30
930.86
0+29.5
928.9
STA. 0+29.5 - SIDEWALK & STEPS RT.
CONCRETE STEPS = 20 LIN. FT.
4" SIDEWALK = 25 SQ. FT.
ELEV. 931.57
930
ELEV. 929.0
931.23
0+20
928.8
ELEV. 932.67
930
932.00
0+00
928.1
- BEGIN RD. APPROACH "B"

EXCAVATION = 12 CU. YDS.
EMBANKMENT = 147 CU. YDS.

STA. 0-26 = END OF EARTHWORK

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
17	0	9	9
8	24		
		3	19
0	27		
			3
		0	24
0	37		
		0	13
0	32		
		0	16
0	60		
			0
		0	40
0	47		
0	0	0	23

STA. 2+60 - DRIVE LT.
26'-15" PIPE
STA. 2+51 - BEGIN PIPE FOR DRIVEWAY
TOP 1-2, C.B. 912.25
STA. 2+48.5 - END PAVED GUTTER
F.L. 909.50
2+50
912.5
STA. 2+40 - END ROAD APPROACH EARTHWORK - "A"
STA. 2+27 - END 12" PIPE FOR DRIVEWAY. BEGIN PAVED GUTTER.
915
F.L. 913.0
915.53
2+15.7
915.5
STA. 2+15.7 - DRIVE LT.
22'-12" PIPE
I-17, $\frac{12 \times 8 \times 33}{27}$ = 1. CU. YDS.
STA. 2+05 - END PAVED GUTTER
BEGIN 12" PIPE FOR DRIVEWAY
915
916.10
21' Lt. ℄
917.10
2+00
917.1

17	0		
			1
		29	0
22	0		
			20
			16

32-A

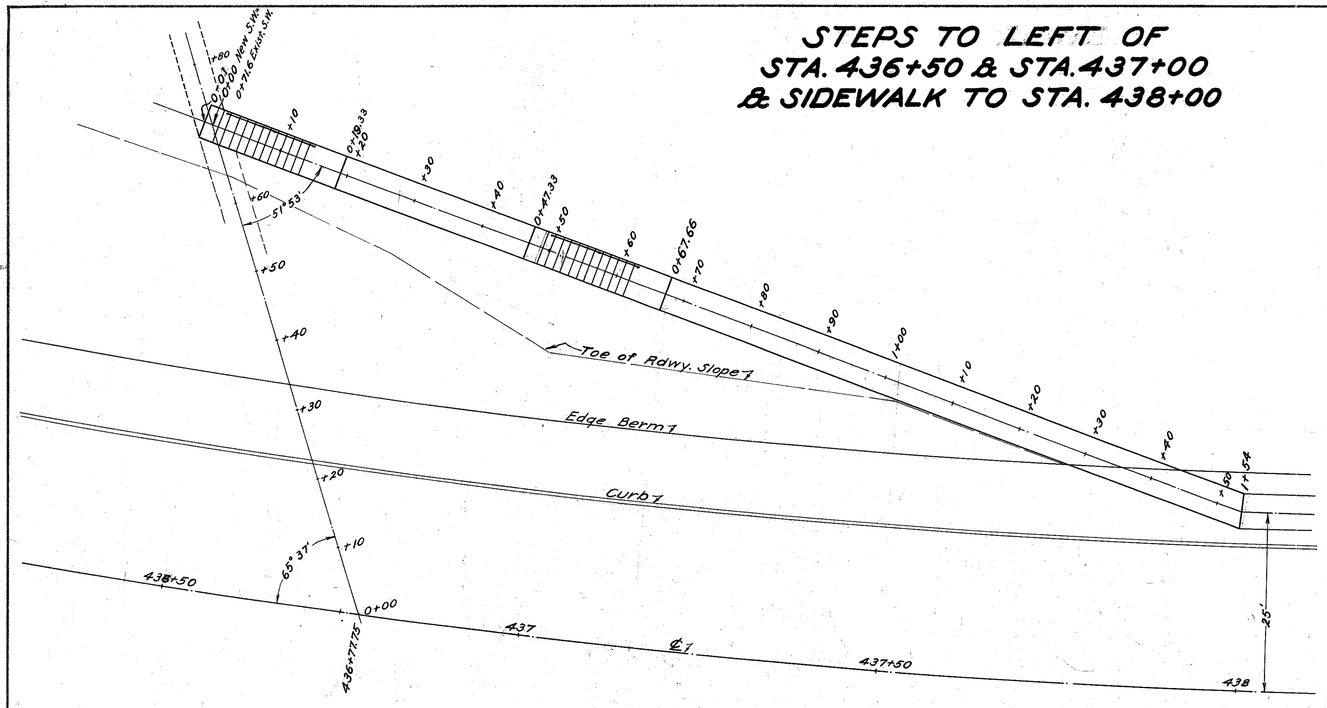
STA. 43+0+47.75 - ROAD APPROACH ON RT.

STEPS TO LEFT OF STA. 436+50 & STA. 437+00 & SIDEWALK TO STA. 438+00

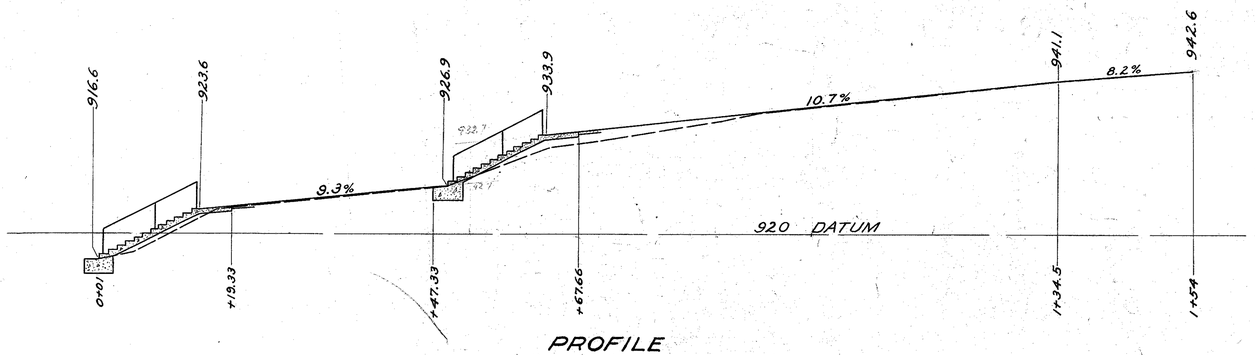
FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	FA 260-A(2) FA 320-C(1) FA 320-A(2)	1941

129
145

TUSCARAWAS COUNTY
S.H. 70 SEC. "A" (PT)-D-
& MINERAL CITY (PT.)
DOVER BASIN



PLAN
Scale 1"=10'



PROFILE
Scale 1"=10'; Hor. & Vert.

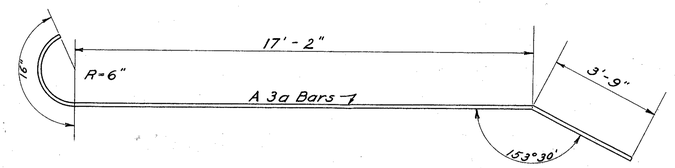
STEEL LIST					
No.	Mark	Size	Spacing	Length	Weight
10	A 3a	½" ⌀	1'-0"	22'-3"	190
8	A 3b	"	1'-0"	22'-3"	152
30	B 3a	"	as shown	4'-6"	115
TOTAL WEIGHT IN POUNDS					457

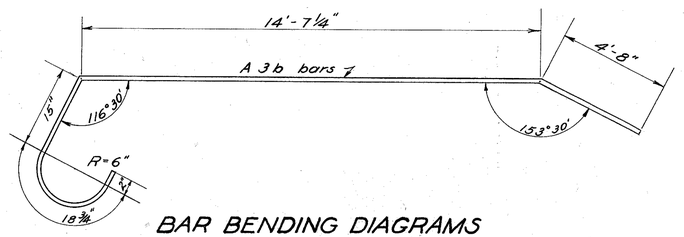
ESTIMATED QUANTITIES

Concrete Steps (Reinforced) 130 Lin. Ft.
1½" Pipe Railing (Complete) 29 Lin. Ft.
4" Sidewalk 57.1 Sq. Ft.

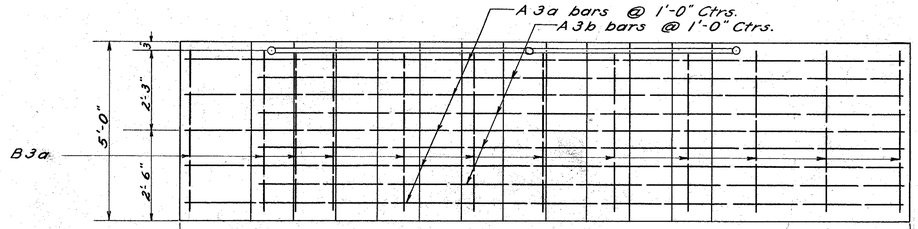
DATA

Work Required:- Build sidewalk and reinforced concrete steps as shown, 14" tread, 7" riser.



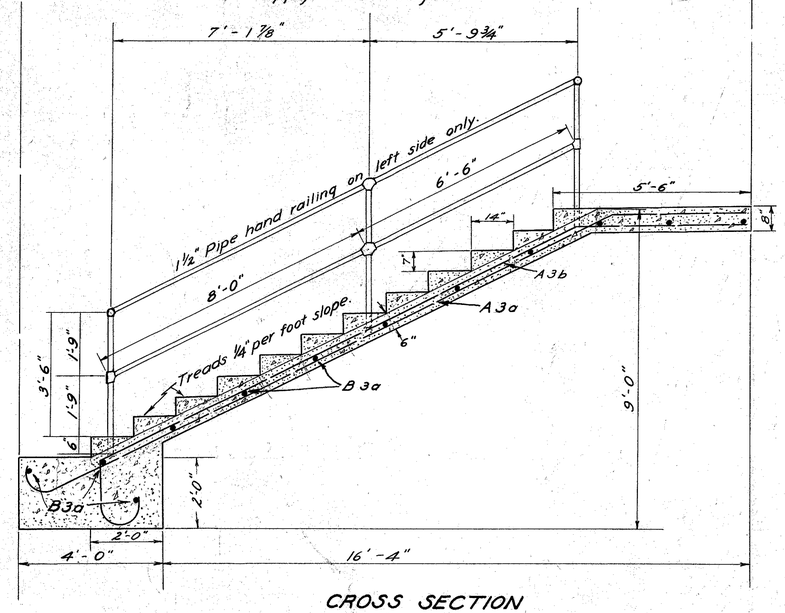


BAR BENDING DIAGRAMS



PLAN
Scale 1"=2'

Note:
Plan and Section of steps apply to both flights.

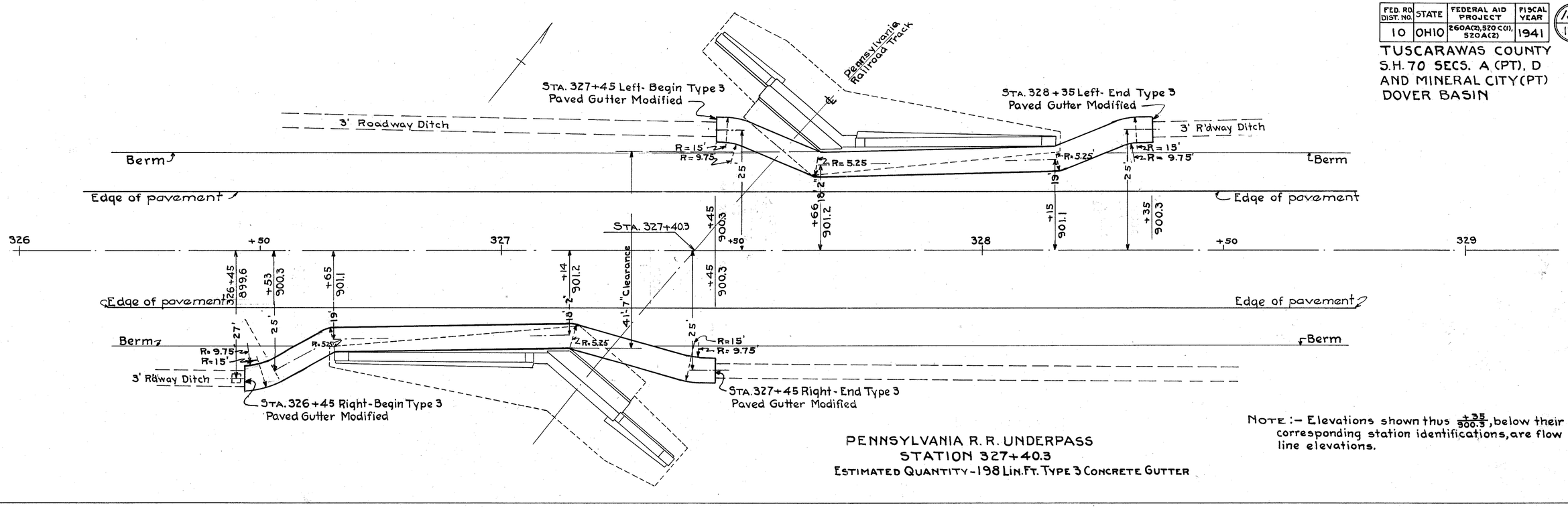


CROSS SECTION
Scale 1"=2'

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260A(2), 520C(1), 520A(2)	1941

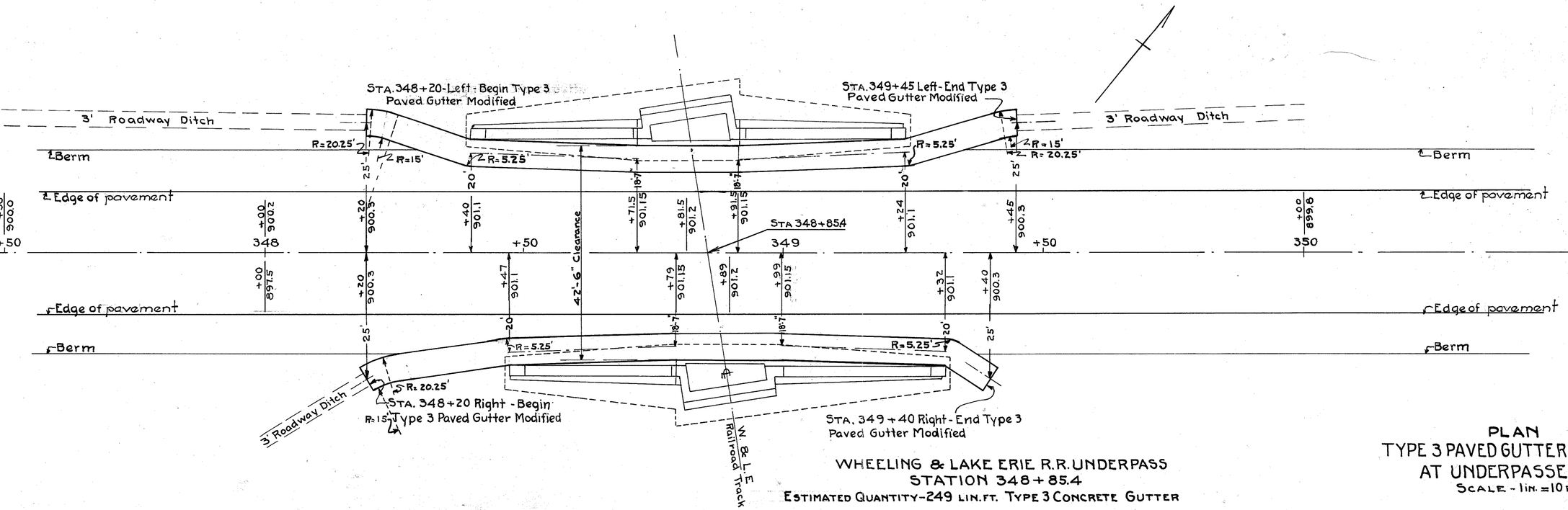
130
145

TUSCARAWAS COUNTY
S.H. 70 SECS. A (PT), D
AND MINERAL CITY (PT)
DOVER BASIN



PENNSYLVANIA R. R. UNDERPASS
STATION 327+40.3
ESTIMATED QUANTITY - 198 LIN. FT. TYPE 3 CONCRETE GUTTER

NOTE :- Elevations shown thus $\frac{+35}{900.3}$, below their corresponding station identifications, are flow line elevations.



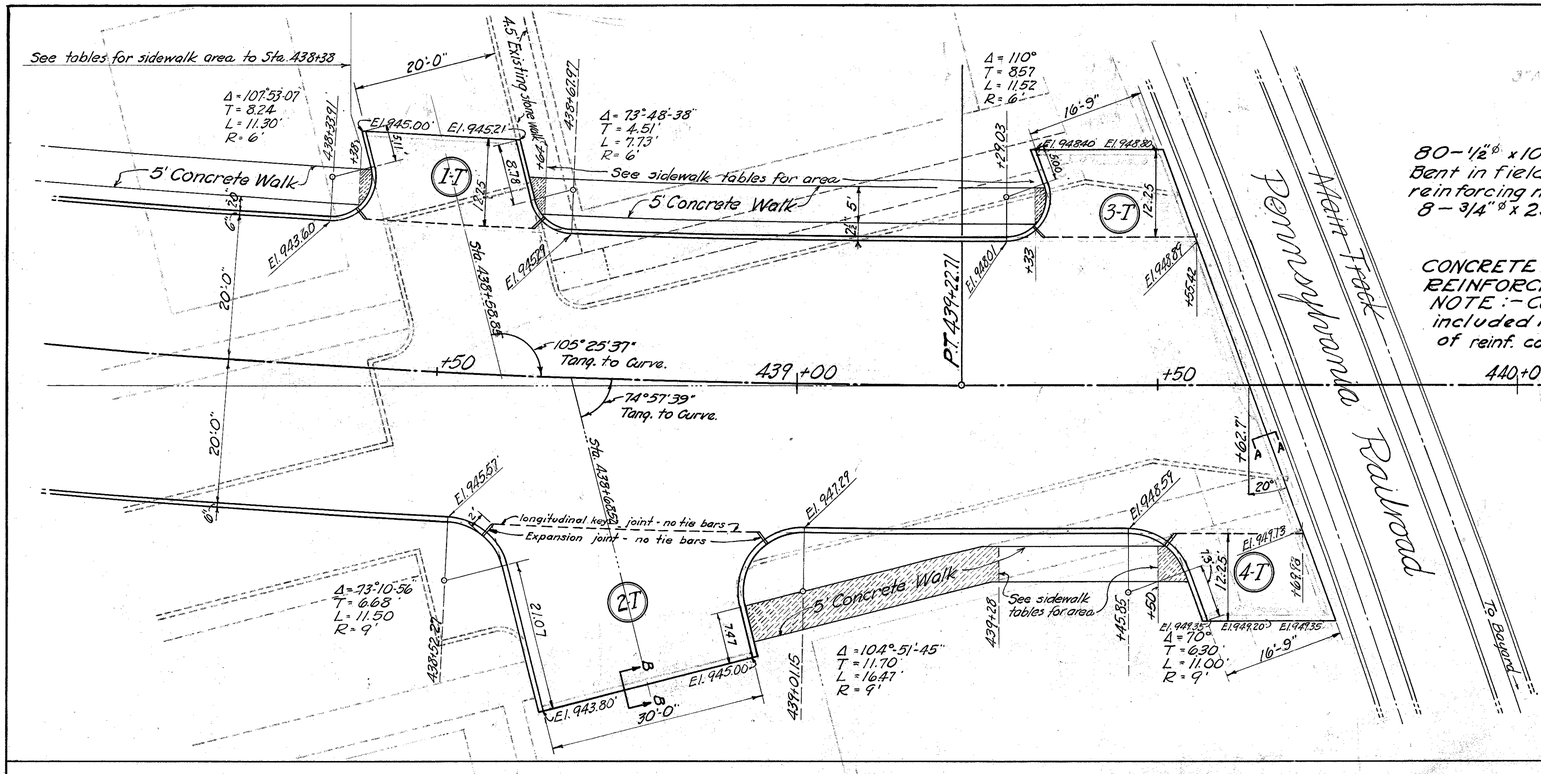
WHEELING & LAKE ERIE R.R. UNDERPASS
STATION 348+85.4
ESTIMATED QUANTITY - 249 LIN. FT. TYPE 3 CONCRETE GUTTER

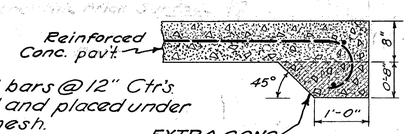
PLAN
TYPE 3 PAVED GUTTER MODIFIED
AT UNDERPASSES
SCALE - 1 in. = 10 FT

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(E), 320-A(E) 320-C-1	1941

131/145

TUSCARAWAS COUNTY
S.H. 70. SECS. A(Pt.) D
& MINERAL CITY (Pt.)
DOVER BASIN





80-1/2"ϕ x 10' bars @ 12" Ctr's. Bent in field and placed under reinforcing mesh.
8 - 3/4"ϕ x 23' bars.

SEC. A-A
Scale 3/4" = 1'-0"

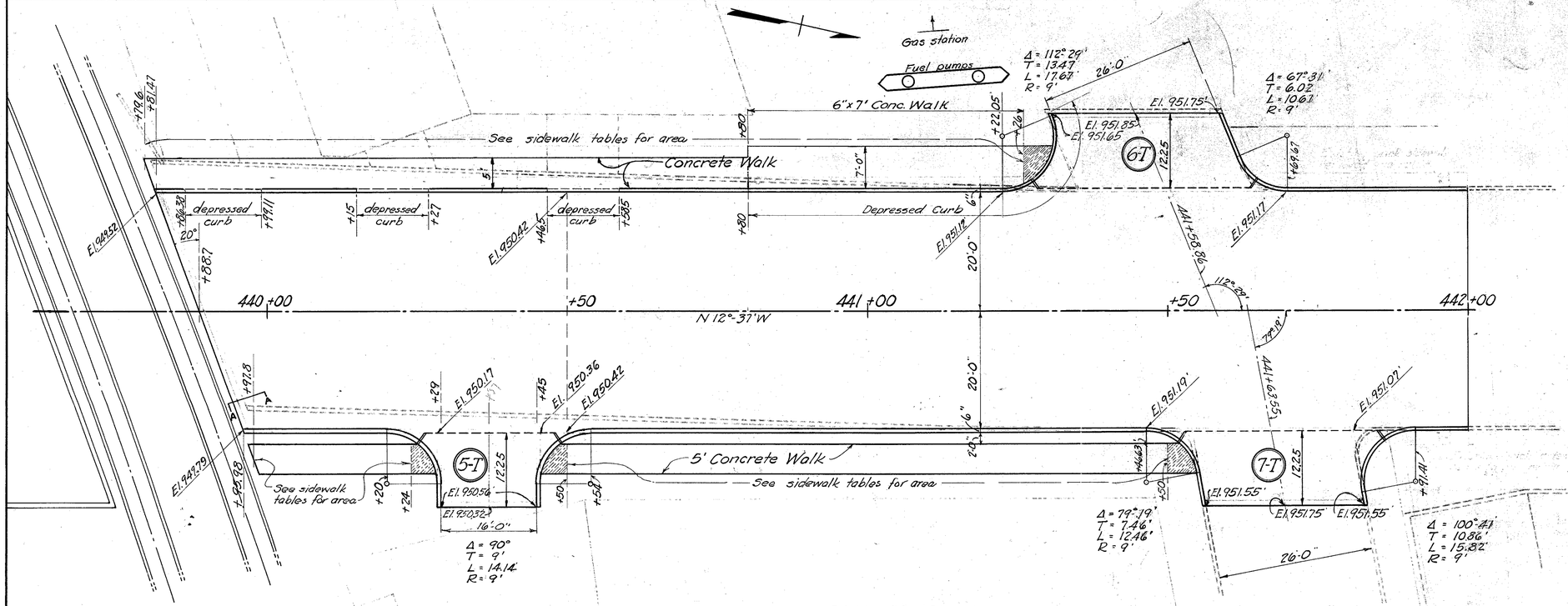
CONCRETE IN EXTRA EDGE THICKNESS 2.6 CU.YDS.
REINFORCING STEEL 811 LBS.
NOTE :- Cost of above Items shall be included in the unit price bid per Sq. Yd. of reinf. concrete pavement - Item T-71

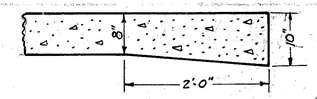
JOINT LEGEND
Expansion joint - no tie bars.
Longitudinal key joint - no tie bars.
Applies to all intersections shown hereon.

SUMMARY OF INTERSECTION QUANTITIES

RETURN NO.	CONC. SIDEWALK 4" x 5'	CONC. SIDEWALK 6" x 7'	10'-8-8'10" REINF. CONC. PAV'T	CONCRETE TYPE 2-A STRAIGHT CURB	CONCRETE TYPE 2-A CIRC. CURB		SIDEWALK REMOVAL	EXCAV. (EST.)
	SQ.FT.	SQ.FT.	SQUARE YARDS	LINEAL FEET	LINEAL FEET		SQUARE FEET	CU.YDS.
1-T	14.00		31.8	13.89	19.03		52.0	12
2-T	180.00		83.0	28.54	21.97		176.0	29
3-T	6.50		26.6	5.00	11.52			10
4-T	16.00		25.7	7.27	11.00			11
5-T	30.40		26.6	7.50	28.28		286.0	11
6-T		18.0	44.6	8.10	28.28			17
7-T	20.00		40.7	7.63	28.28		55.0	16
	266.90	18.0	279.0	77.93	154.36		569.0	* 106

* Carried to roadway quantities for distribution.





SECTION B-B
To be used at the end of each turnout.

Note:- All elevations shown are of wearing surface. No curb elevations given.

SCALE 1" = 10'

STREET & ALLEY RETURNS IN MINERAL CITY

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	260 A(2), 520 C(1) 520 A(2)	1941

132
145

TUSCARAWAS COUNTY
S.H. 70 SECS. A (Pt.), D, & MINERAL CITY (Pt.)
DOVER BASIN

PRESENT STRUCTURE
Type:- Steel low trusses
Spans:- 3 @ 105' c. pins
Roadway:- 24' + 2'-6" sidewalk
Loading:- H-15-33
Skew:- 30° 53' 29" L.F.

PROPOSED STRUCTURE
Type:- Existing steel trusses with new steel beam approach spans.
Span:- 3-Truss spans @ 105' c. pins with 2- steel beam appr. spans @ 54' c. brgs.
Roadway- 26' with { 3'-6" Sidewalk on truss spans / 5'-1½" Sidewalk on appr. spans
Loading:- H-15-33
Skew:- 30° 53' 29" L.F.
Wear. Surf.- 3" Monolithic concrete on approach spans only
Approach slabs:- 15' long, flared

Face of Abut. Sta. 306+96.86
End Appr. Pav't. Sta. 306+94.52
End Appr. Slab Sta. 306+79.52
Toe of proposed slope
2:1 Embankment slopes covered with dumped rock fill 3 ft. thick to Elev. 890
Calibrated rod soundings by Bridge Bureau indicate that piles of the lengths shown will develop 20 tons bearing
℄ Bridge & Pt. of V.C. Sta. 309+11.19
30° 53' 29"
RIVER
N 45° 25' E
℄ Original survey
℄ Bridge & Roadway and revised ℄ survey
Tuscarawas Flow
End Appr. Slab Sta. 311+42.86
End Appr. Pav't. Sta. 311+27.86
Face of Abut. Sta. 311+25.52
Toe of proposed slope
2:1 Embankment slopes covered with dumped rock fill 3 ft. thick to Elev. 890.0
873 Rock fill included with Approach Quantities for payment.
Sta. 306+94.52
Sta. 311+27.86
450' V.C.
Bridge Limits
℄ Br. Sta. 309+11.19
℄ Br. El. 905.32
℄ P.I. El. 907.07
For additional information on present structure refer to plans of S.H. 70 Sec. D Bridge Tuscarawas County, Dated 1929
New Approach Span
+1.56%
15 Year frequency Elev. 902.0
Spillway 916.0 ?
50 Year frequency 908.0 ?
10 Yr. frequency Elev. 900.0
10 year frequency 903.0
Bridge clears 10 year frequency 0.1 ±
New Approach Span
-1.56%
2:1 Slope
El. 884.0
Cast-in-place concrete piles Est. length 20' ±
Normal pool 874.0 ?
Water on 3-8-37 863.6 ?
Existing truss spans to be raised intact
Existing Grade Line
Cast-in-place concrete piling Est. length 20' ±
Dividing plane between Wet and Dry Excavation = El. 870
℄ El. 859
El. 859 ?
Steel 'H' Piling Est. length 17' ±
PROFILE ON PROPOSED ℄

F.A.P. 520 A(2) Revised 9-5-40

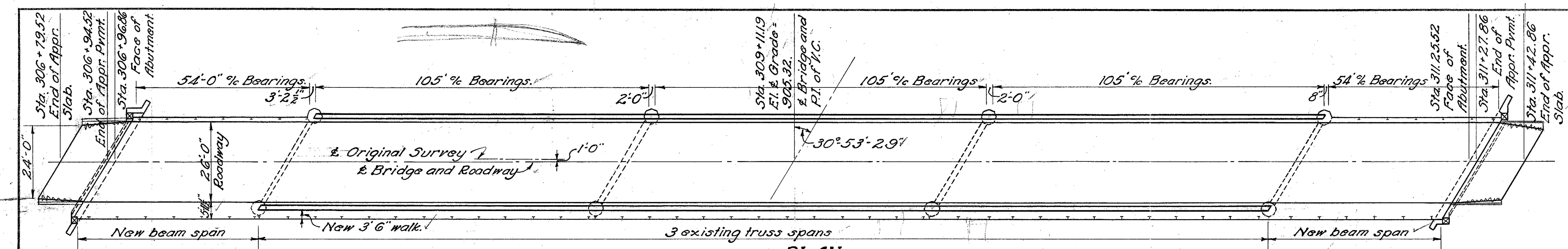
SITE PLAN
BRIDGE No. TU-8-287
OVER
TUSCARAWAS RIVER
S.H. 70 SEC. "D"
TUSCARAWAS COUNTY
STATE OF OHIO

SCALE 1" = 20' STA. 309+11.19

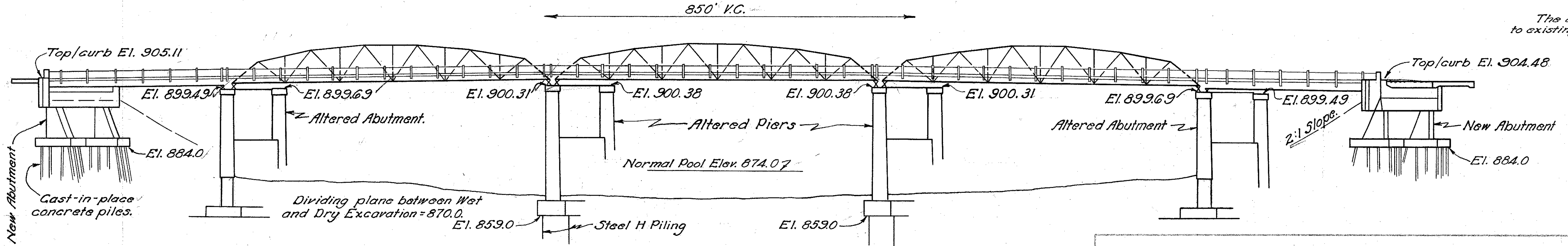
PRESENT TOPOGRAPHY		PROPOSED WORK		
SURVEYED	DRAWN	DESIGNED	CHECKED	REVIEWED
D.L.B.	C.W.H.	E.N.A. H.E.D.	H.E.M. C.W.A.	ADVANCE PLANS 8-13-40

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	520 A(1) 520 C(1) 520 A(2)	

TUSCARAWAS COUNTY
S.H. 70 SEC. A(Pt), D & MINERAL CITY (Pt)
DOVER BASIN



PLAN



ELEVATION

PROPOSED WORK

1. Raise and alter existing steel truss spans and add new walkway.
2. Extend existing piers and abutments to fit raised grade.
3. Construct new end abutments.
4. Construct new steel beam approach spans.

The contractor shall assume full responsibility for any damage to existing structure due to his operations.

GENERAL NOTES

Loading - H-15-33.

All welding shall be Class "A".

Paint for shop coat shall meet the provisions of Sec. M-9.20 or Sec. M-9.21.

All concrete shall be mechanically vibrated.

Chamfer all exposed edges ¾" unless otherwise detailed.

For notes on construction and erection procedure see sheet # 138

For project plans of existing structure see Department of Highway, Bureau of Bridges, plans for Tuscarawas County, S.H. 70 Sec. D, Federal Aid Project 520-A, dated July 1928.

For shop details of existing structural steel see Massillon Bridge and Structural Co. dwgs. dated December, 1928 on company's Contract # 467.

The Contractor shall provide a field office for the exclusive use of engineers and inspectors, as described under "Structures (General)" in the Specifications. It shall have a floor area of at least 150 sq. ft. Payment shall be considered to be included in the contract price bid for the various items.

Open Steel Mesh Sidewalk Grating shall be Irving Subway Grating, type E, Kerlow Sidewalk Grating, type VNR, or an approved equal. The minimum size of carrying bars shall be 1¼" × 3/16" and the minimum thickness of bracing bars, and side finish bars shall be 3/16". All grating steel shall be copper bearing in accordance with the "Construction and Materials Specification", Section M-7.4(b).
Grating shall be painted in accordance with item S-8 of the "Construction and Materials Specification".

Concrete walkway on existing truss spans shall be removed and the resulting void then refilled to grade with Class "C" concrete. Care shall be taken to cause a minimum of damage to existing adjacent 6" curb. After walkway has been removed the curb shall be repaired as directed by the Engineer. In addition, other parts of the existing slab shall be repaired as directed by the Engineer. All repairs to existing concrete deck are included with Item S1, Class "C" Concrete for payment.
Existing structural steel shall be cleaned and all exposed metal given 2 spot coats of paint, after which one complete coat of paint shall be applied. First spot coat shall conform to Sec. M-9.20 or Sec. M-9.21 and Second spot coat shall be the same as the complete coat.

ESTIMATED QUANTITIES

Item	Description	Existing E. Pier	Existing W. Pier	Existing E. Abut.	Existing W. Abut.	New E. Abut.	New W. Abut.	Superstr.	General	Total
E-2	Cofferdams and Pumping.	Lump	Lump							Lump Sum
E-2	Excavation for structures, wet.	90	90							180 Cu. Yds
E-2	Excavation for structures, dry					50	50			100 Cu. Yds
S-1	Class "C" concrete (including repairs to existing deck)							93		93 Cu. Yds
S-1	Class "E" concrete, walls.	89	89	39	39	48.5	48.5			353 Cu. Yds
S-1	Class "E" concrete, footings.	50	50			25	25			150 Cu. Yds
S-3	Type "B" waterproofing.					20	20			40 Sq. Yds
S-4	Reinforcing steel.	7,850	7,850	2,940	2,940	7,100	7,100	16,600		52,380 Lbs.
S-7	Structural steel (new).	28,700	33,600	26,300	26,300			174,600		289,500 Lbs
S-7	Raising and altering existing structural steel.							Lump		Lump Sum
S-7	Open steel mesh sidewalk. grating (including field painting).							Lump		Lump Sum
S-8	Field painting of new struct. steel.	5,700	5,700	12,700	12,700			174,600		211,400 Lbs
S-8	Cleaning and painting existing struct. steel (2 spot coats plus 1 complete coat).							Lump		Lump Sum
S-18	Steel piling (10"×10" H @ 42#).	350	350							700 Lin. Ft.
S-19	11" cast-in-place reinforced concrete piling.			500	500					1,000 Lin. Ft.
S-22	Removal of portions of existing structure	10.5	10.5	76.5	76.5			24		198 Cu. Yds
S-23	Dowel holes for ¾"φ dowels.	188	188	88	88					552 Lin. Ft.
S-23	Dowel holes for 1¼"φ dowels.	12	12	12	12					48 Lin. Ft.
S-23	Dowel holes for 1½"φ dowels.	52	52							104 Lin. Ft.
S-16	First test pile (11" cast-in-place conc).								Lump.	Lump Sum.
S-16	First test pile (10"×10" H @ 42#).								Lump.	Lump Sum.

F.A.P.-520-A(2)

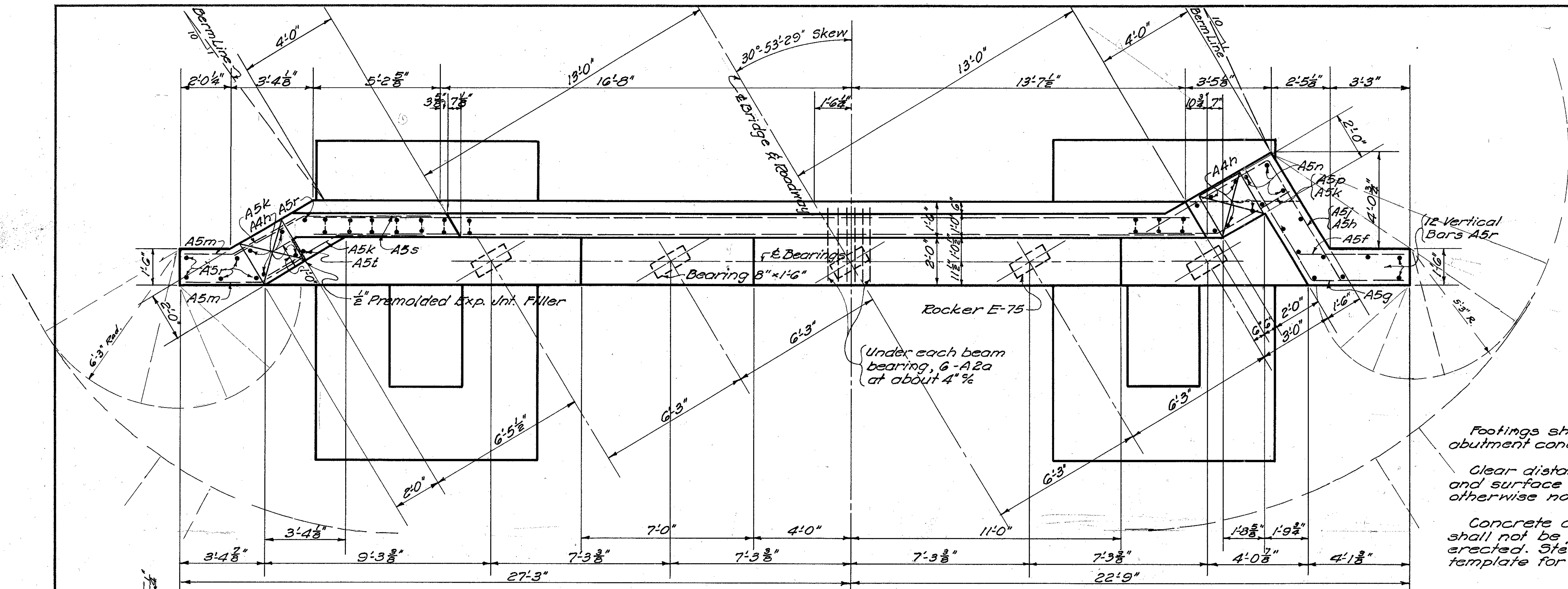
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

GENERAL PLAN AND ELEVATIO[N]
NOTES - ESTIMATED QUANT[ITIES]
BRIDGE No. TU-8-287
OVER TUSCARAWAS RIVE[R]
TUSCARAWAS CO.
SEC. D STA. 309+

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
HKR	OKB	R.L.B.	L.E.U.	RHD WF	8-13-

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	260 A(2) 320 C(1) 520A(2)	

TUSCARAWAS COUNTY
S. H. 70 SEC. A(PT.), D
& MINERAL CITY (PT.)
DOVER BASIN

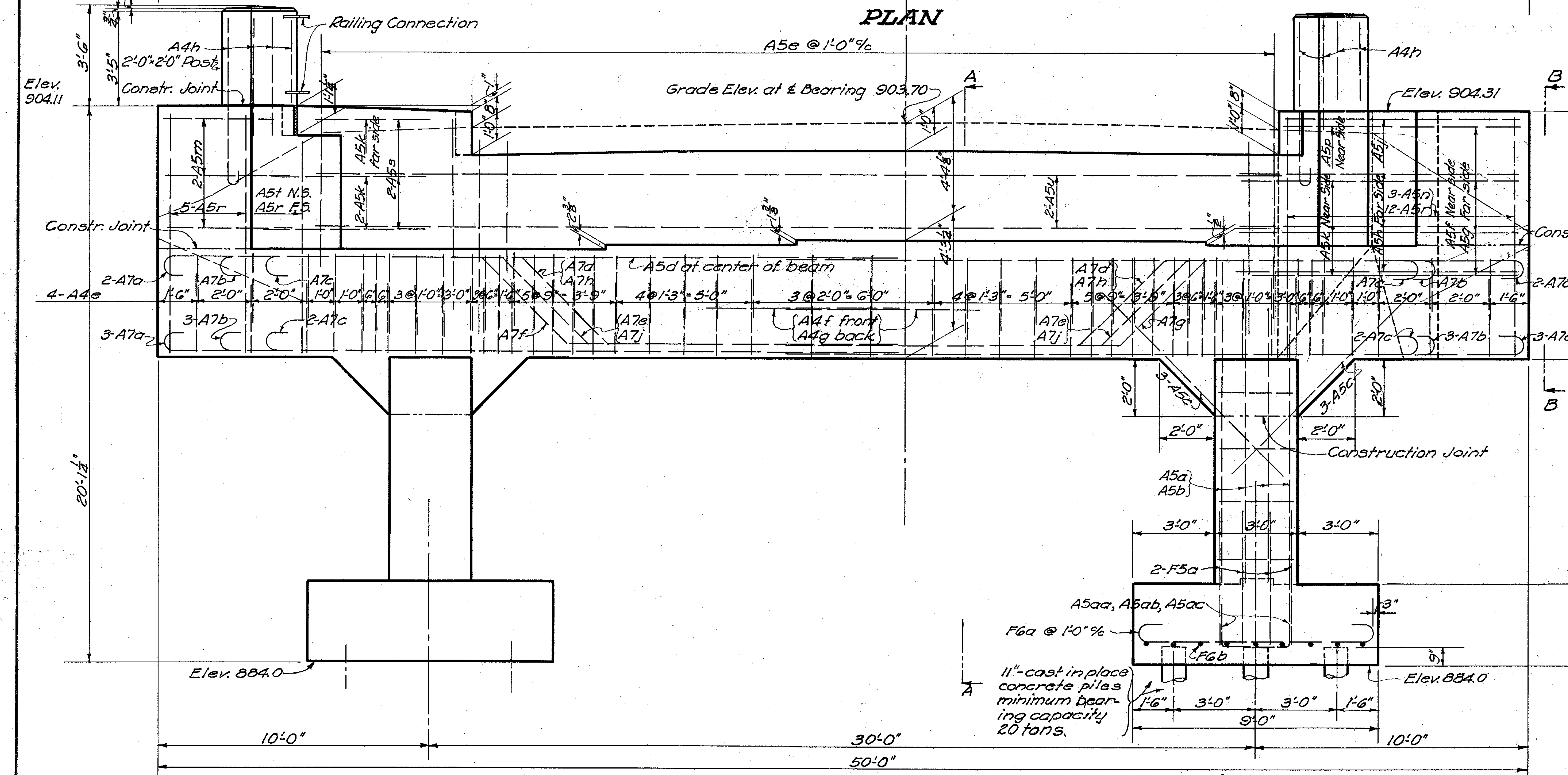


PLAN

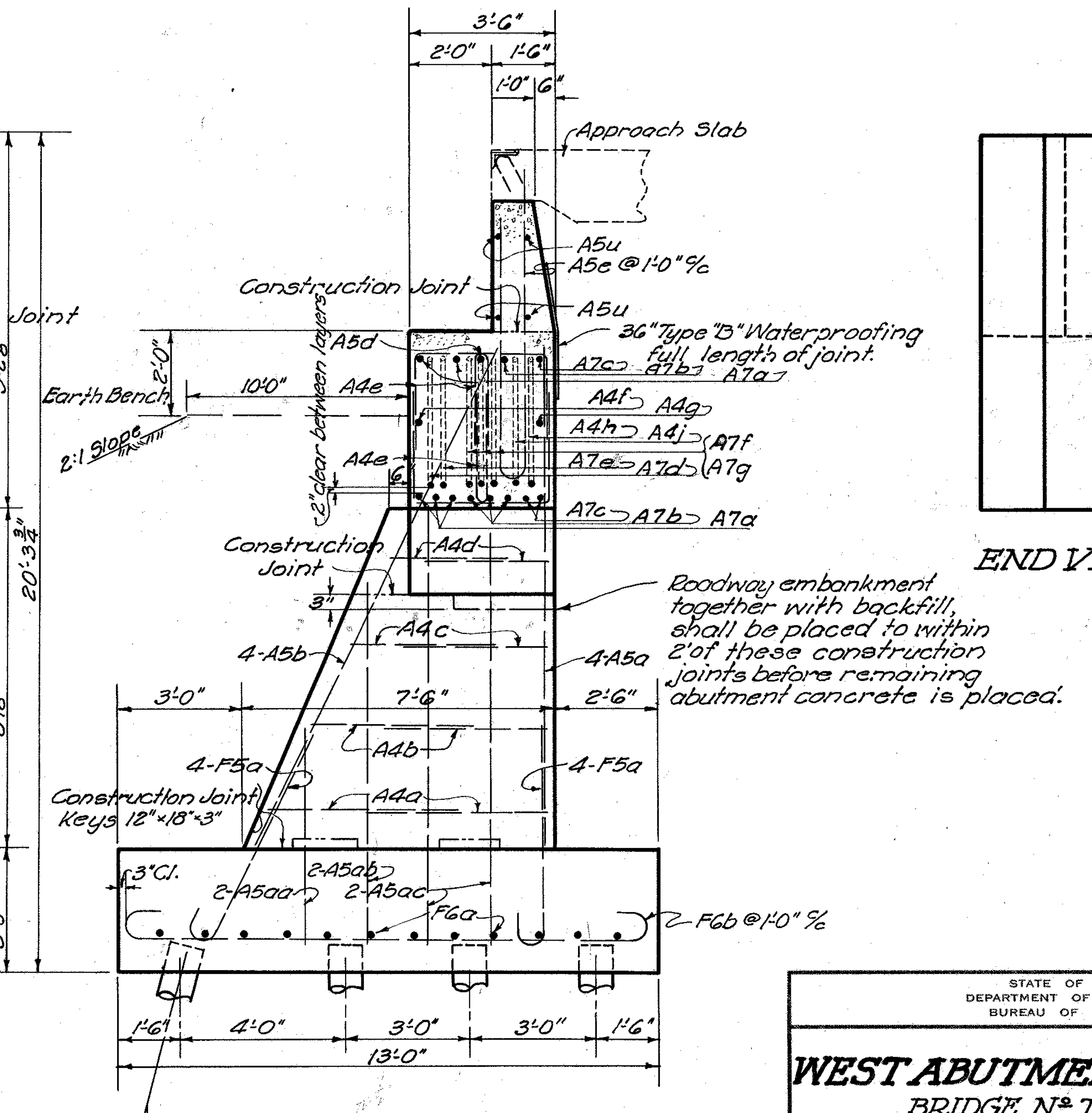
Footings shall be Class "E" concrete. Other abutment concrete shall be Class "C".

Clear distance between reinforcing steel and surface of concrete shall be 2" unless otherwise noted.

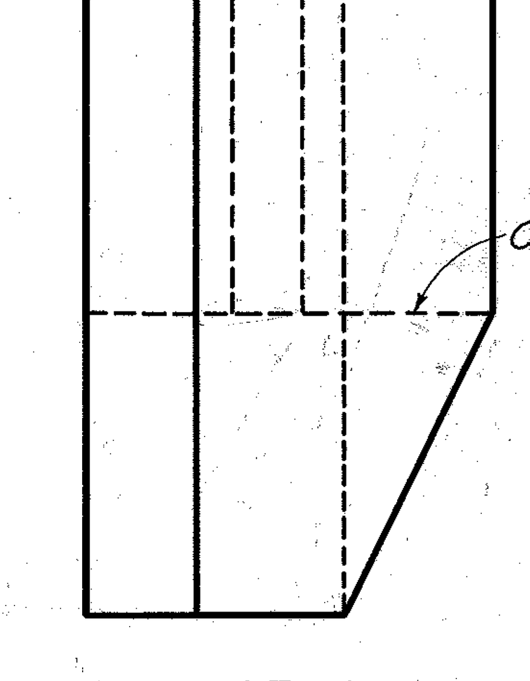
Concrete above bridge seat construction joint shall not be placed until after steel work is erected. Steel end finish shall be used as a template for the top of the approach slab.



FRONT ELEVATION



SECTION A-A



END VIEW B-B

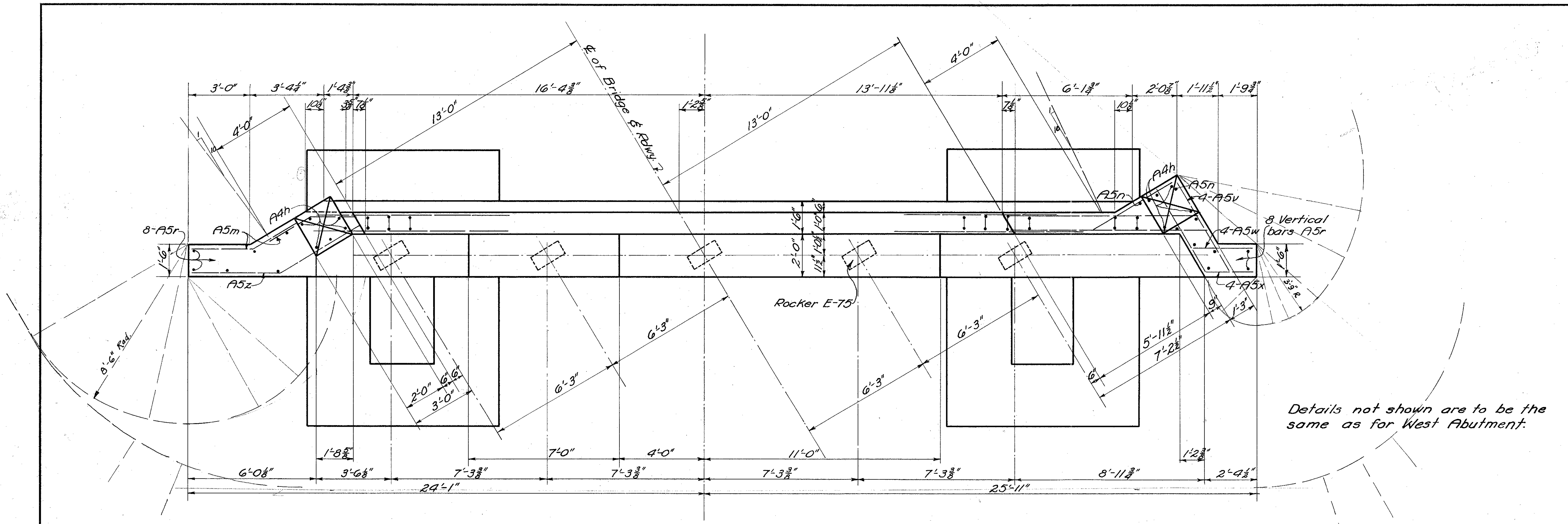
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

WEST ABUTMENT DETAILS
BRIDGE No. TU-8-287
OVER TUSCARAWAS RIVER
TUSCARAWAS CO. S.H. 70
SEC. D STA 309+11.19
F.A.P. 520A(2)

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
H.H.K. C.R.F.	C.B.	F.G.B.	C.J.W.	WF	8-13-40

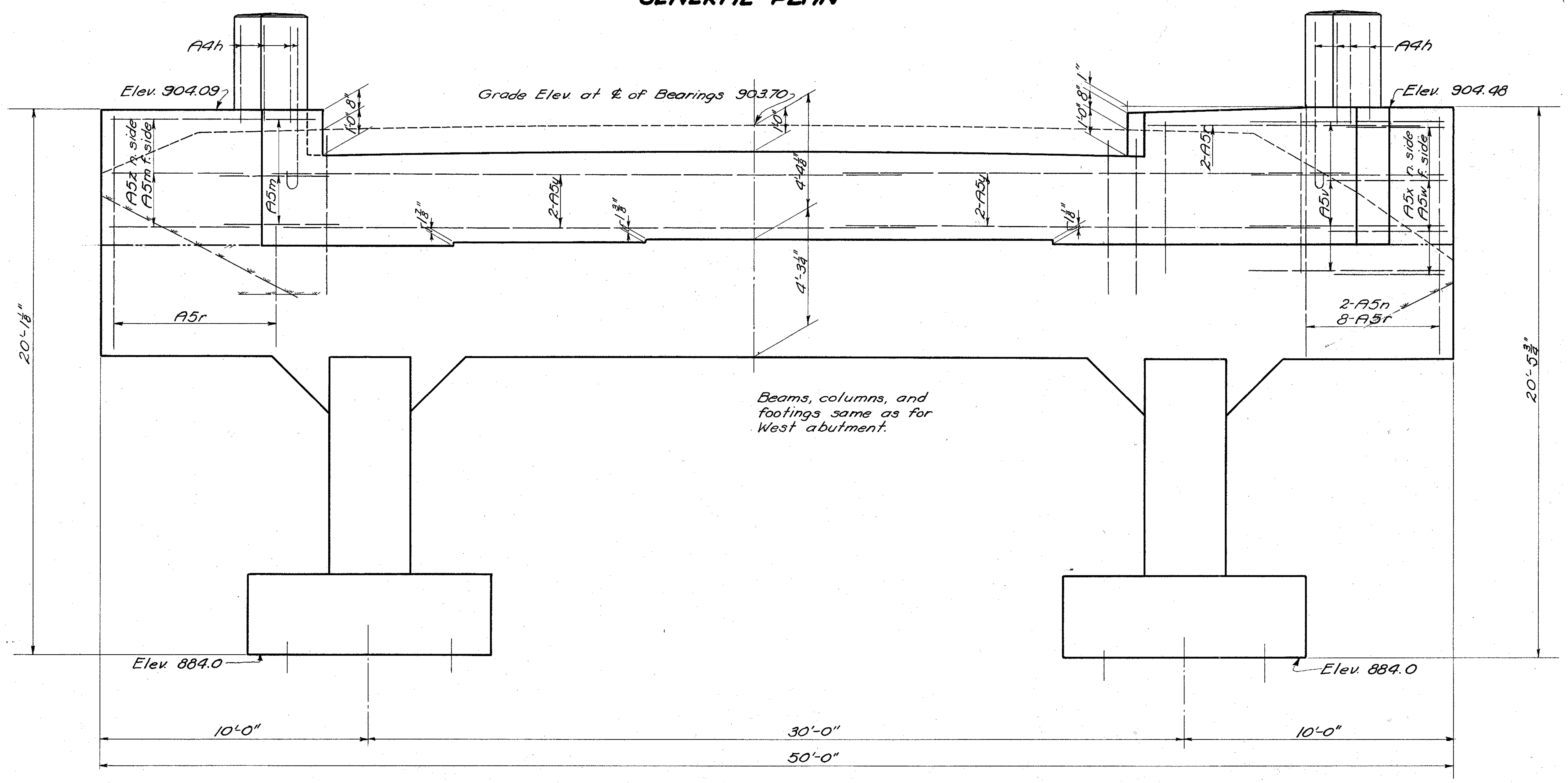
FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR	
10	OHIO	260 A(2) 520 C(1) 520 A(2)	1941	135/145

TUSCARAWAS COUNTY
S. H. 70 SEC. A(pt), D(pt), & Mineral City (pt)
DOVER BASIN



GENERAL PLAN

Details not shown are to be the same as for West Abutment.



FRONT ELEVATION

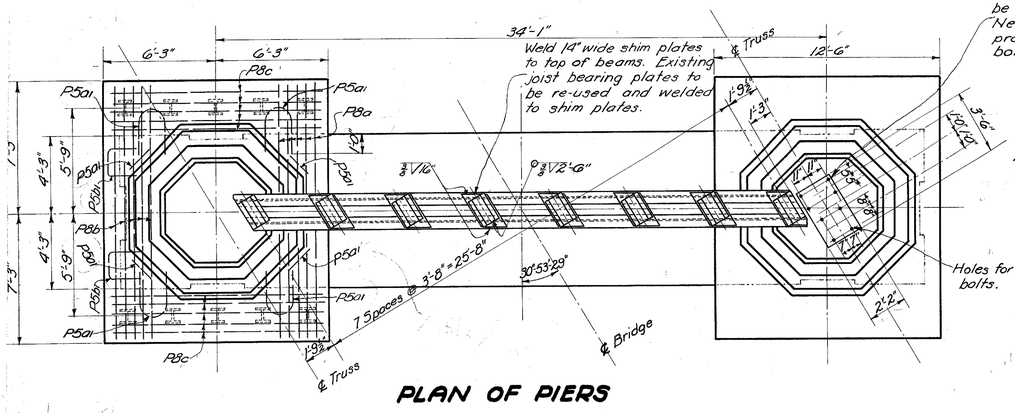
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

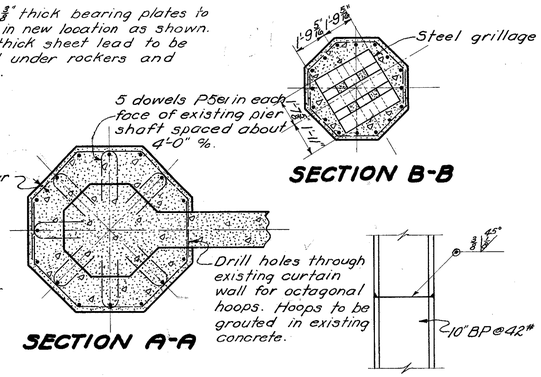
EAST ABUTMENT DETAILS

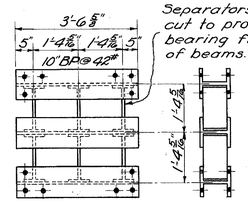
BRIDGE NO. TU-8-287
over
TUSCARAWAS RIVER

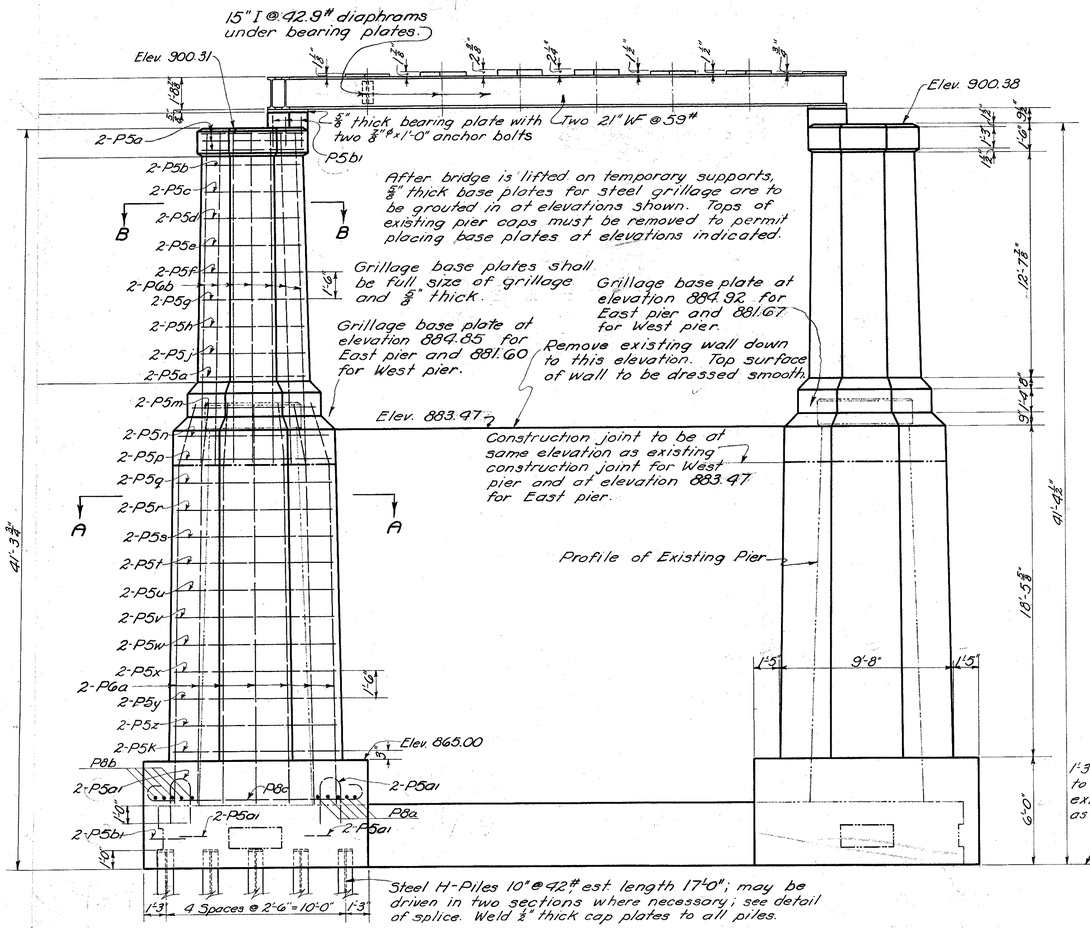
TUSCARAWAS CO. S.H. 70
SECTION D STA. 309+11.19
F.A.S. 520 A(2)

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.H.R. C.W.	C.W.	McB	C.J.W	A.H.D. W.F.	8-13-40	









FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	260 A(2) 520 C(1) 520 A(1)	1941

13
145

TUSCARAWAS COUNTY
S.H. 70 SEC. A(pt), D(pt), & Mineral City (pt.)
DOVER BASIN

Weld 14" wide shim plates to top of beams. Existing joist bearing plates to be re-used and welded to shim plates.

Existing 3/8" thick bearing plates to be used in new location as shown. New 1/8" thick sheet lead to be provided under rockers and bolsters.

PLAN OF PIERS

5 dowels P5e1 in each face of existing pier shaft spaced about 4'-0" c/c.

Drill holes through existing curtain wall for octagonal hoops. Hoops to be grouted in existing concrete.

SECTION A-A

SECTION B-B

DETAIL OF PILE SPLICE

Separators 16" WF @ 36# cut to proper length for bearing fit on flanges of beams.

GRILLAGE SECTION

Steel grillage for supporting bridge during lifting process to be built up of grillage sections as shown above. Sections to be placed with beams alternating in direction and tightly bolted together with 7/8" dia. bolts.

Sufficent grillage sections and shim plates to be provided to build up total height of 18.71 ft. for West pier and 15.46 ft for East pier.

Bottom grillage sections to be bolted to existing concrete with four anchor bolts 1¼"φ × 1'-6".

15" I @ 42.9# diaphrams under bearing plates.

5/8" thick bearing plate with two 7/8"φ × 1'-0" anchor bolts

Two 21" WF @ 59#

After bridge is lifted on temporary supports, 5/8" thick base plates for steel grillage are to be grouted in at elevations shown. Tops of existing pier caps must be removed to permit placing base plates at elevations indicated.

Grillage base plates shall be full size of grillage and 5/8" thick.

Grillage base plate at elevation 884.92 for East pier and 881.67 for West pier.

Grillage base plate at elevation 884.85 for East pier and 881.60 for West pier.

Remove existing wall down to this elevation. Top surface of wall to be dressed smooth.

Construction joint to be at same elevation as existing construction joint for West pier and at elevation 883.47 for East pier.

Profile of Existing Pier

Steel H-Piles 10" @ 42# est. length 17'-0"; may be driven in two sections where necessary; see detail of splice. Weld ½" thick cap plates to all piles.

WEST ELEVATION OF EAST PIER

EAST ELEVATION OF WEST PIER SAME

1'-3" × 3" × 3'-0" Keys to be cut into existing footings as shown.

END ELEVATION

Existing pier cap cut to 4 foot width down to level of construction joint.

New concrete poured up to level of construction joint and used as a base for timber cribbing.

Temporary 6"×6" timber cribbing for supporting jacks.

SUGGESTED METHOD FOR SUPPORTING LIFTING JACKS

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

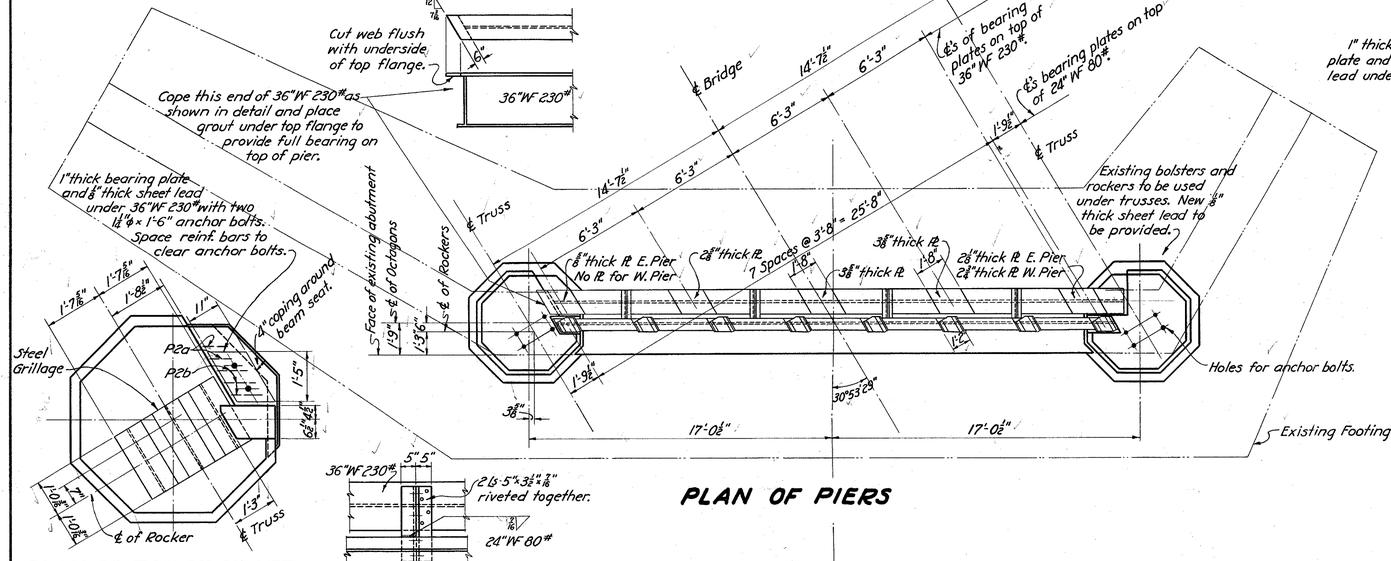
PIER DETAILS
(REMODELED EXISTING PIERS)
BRIDGE NO. TU-8-287
over
TUSCARAWAS RIVER
TUSCARAWAS CO. S.H. 70
SECTION D. STA. 309+11.19
F.A.P. 520 A(2)

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BFG	BFG	McB	C.L.V.	WF	8-13-40	

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	260A(2) F20C(1) 520A(2)	1941

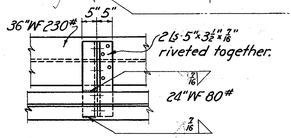
137
145

TUSCARAWAS COUNTY
S. H. 70 SEC. A(PT.), D & MINERAL CITY(PT) DOVER BASIN

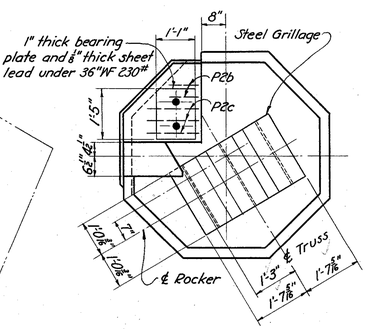


PLAN OF TOP OF SHAFT
(Steel Beams not shown)

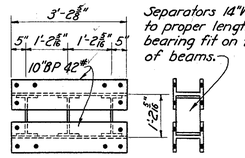
PLAN OF PIERS



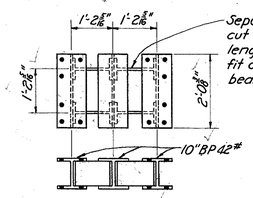
SEC. D-D



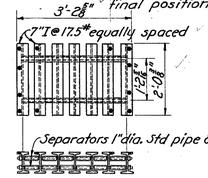
PLAN OF TOP OF SHAFT
(Steel Beams not shown)



Grillage Section "A"



Grillage Section "B"



Bottom Grillage Section "C"

Steel Grillage for supporting bridge during lifting process to be built up with one bottom grillage section "C" resting on ⅝" thick base plate and followed with alternate layers of sections "A" and "B". Bottom section "C" to be bolted down to existing concrete with at least four 1¼"dia. × 1'-6" anchor bolts. All sections to be tightly fastened together with ⅞"dia. bolts.

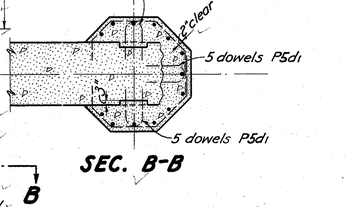
Sufficient grillage sections and shim plates to be provided to make up total height of 15.25 feet.

Grillage is to be placed so that grillage section "A" is at the top. Anchor bolts 1¼"×5½" for the rocker bed plates and bolsters are to be welded to the top of the grillage. Necessary shims for bringing the top of grillage to the correct elevation shall be placed directly under the top grillage section. The bridge shall be raised sufficiently to allow the anchor bolts to be placed, and then shall be lowered to final position.

SEC. A-A

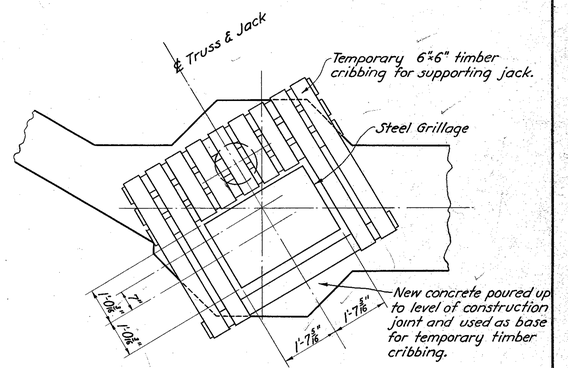
ELEVATION OF PIERS BUILT ON EXISTING ABUTMENTS
WEST ELEVATION OF EAST PIER AND EAST ELEVATION OF WEST PIER

SEC. C-C



SEC. B-B

END ELEVATION



SUGGESTED METHOD OF SUPPORTING LIFTING JACK

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

PIER DETAILS
REMODELED EXISTING ABUT'S.

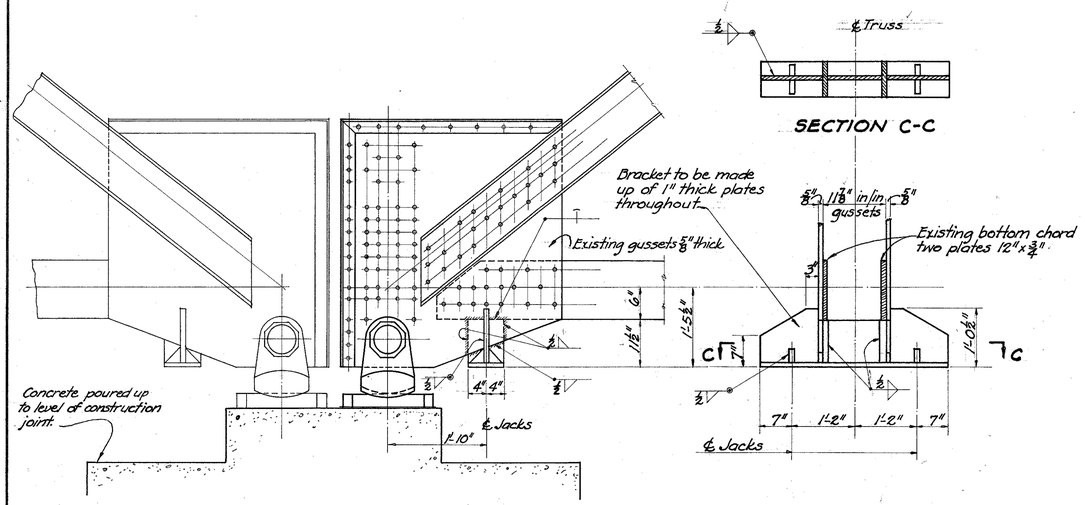
BRIDGE Nº TU-8-287
OVER TUSCARAWAS RIVER
TUSCARAWAS COUNTY S.H. 70
SEC. D STA. 309+11.19
F.A.P. 520A(2)

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BFG	BFG	GWS	L.E.U.	BFG WF	8-13-40	

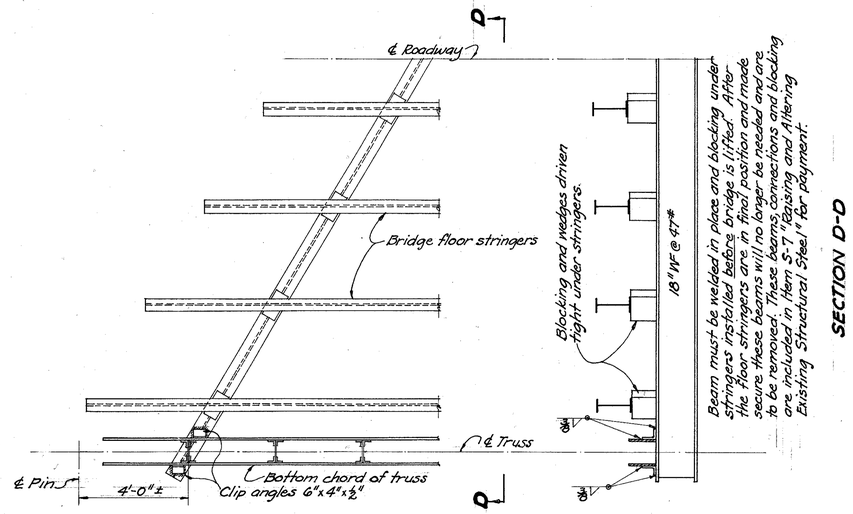
FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	260A(3) 520C(1) 320A(2)	1941

138
145

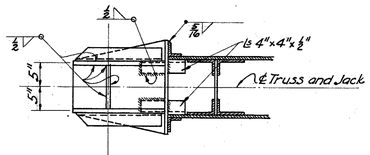
TUSCARAWAS COUNTY
S. H. 70 SEC. A (PT.), D, & MINERAL CITY (PT.)
DOVER BASIN



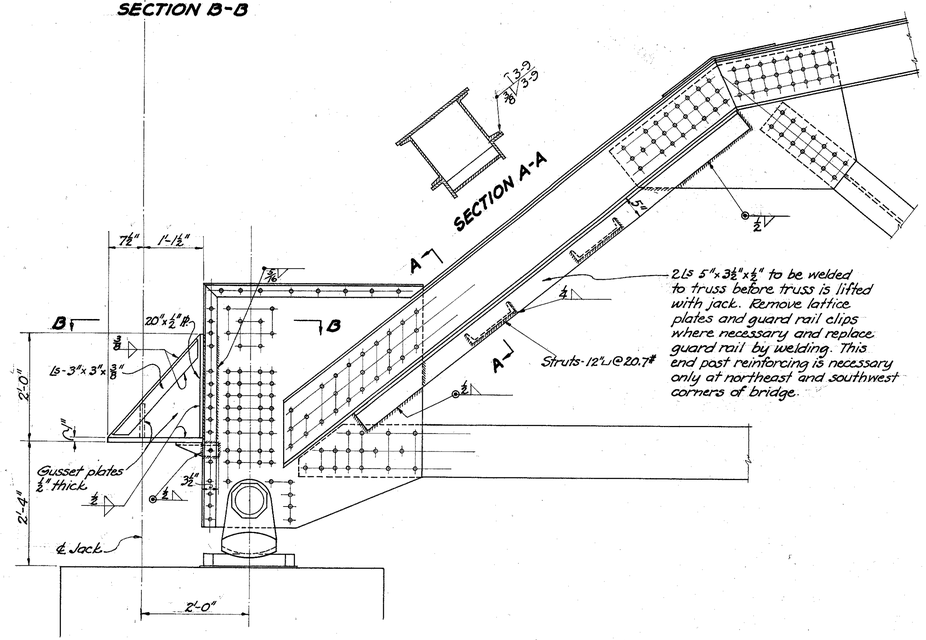
PREPARATION OF TRUSSES FOR LIFTING AT EXISTING PIERS



TEMPORARY SUPPORT FOR ENDS OF FLOOR STRINGERS



SECTION B-B



PREPARATION OF TRUSSES FOR LIFTING AT EXISTING ABUTMENTS

The following procedure notes are intended to offer a definite method for raising the three existing 105' truss spans intact with the deck. Any deviations from the procedures below shall be submitted to the Engineer for approval before starting or proceeding with construction.

PROCEDURE NOTES FOR PIER CONSTRUCTION AND RAISING OF EXISTING BRIDGE

1. Excavate for enlarged footings.
2. Drive piling for enlarged footings.
3. Cut openings for keys and dowels into existing footings and shafts. Set dowels.
4. Pour new concrete footings and shaft encasement up to construction joint level.
5. Trim existing pier caps to 4 foot width to make room for lifting jacks.
6. Weld brackets for lifting jacks to trusses and place temporary 18"WF@47# beams under end stringers.
7. Place timber cribbing and lifting jacks in position and raise bridge slightly to provide working space for removing pier tops.
8. Remove tops of existing piers and grout in base plates for steel grillage at elevations shown.
9. Raise bridge an amount necessary to insert 21 inch beams.
10. Place double 21 inch beams under ends of longitudinal stringers and fasten to stringers with temporary connection.
11. Raise bridge to final elevation, placing steel grillage as lifting proceeds.
12. When bridge is resting on grillage at final elevation, remove timber cribbing.
13. Remove top of curtain wall to elevation shown.
14. Pour concrete for upper part of pier shafts incasing steel grillage.
15. Remove temporary connections of 21 inch beams to longitudinal stringers.

PROCEDURE NOTES FOR PIER CONSTRUCTION OVER OLD ABUTMENTS AND RAISING OF EXISTING BRIDGE

1. Remove existing wings and backwall as shown, supporting ends of stringers by means of temporary supporting beam, 18"WF@47#
2. Set dowels and cut keys in existing abutment wall.
3. Pour new concrete up to construction joint at old bridge seat level.
4. Weld brackets for lifting jacks to trusses.
5. Place timber cribbing and set lifting jacks.
6. Raise bridge enough to provide working space and grout in base plates for steel grillage at the elevations shown.
7. Raise bridge an amount necessary to insert 24"WF@80# beam.
8. Place 24"WF 80# beams under ends of longitudinal stringers and fasten to stringers with temporary connection.
9. Raise bridge to final elevation, placing steel grillage as lifting proceeds.
10. When bridge is resting on steel grillage at final elevation, remove timber cribbing.
11. Pour concrete for upper part of pier shafts.
12. Remove temporary connections of 24"WF@80# to longitudinal stringers.
13. Set 36"WF@230# beam.

Trusses shall be supported directly on steel grillage at all times except during actual raising operations.

Steel added to existing trusses for raising purposes, need not be removed unless it interferes with the completion and operation of finished structure.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

STEEL TRUSS DETAILS

BRIDGE NO. TU-8-287.
OVER TUSCARAWAS RIVER.

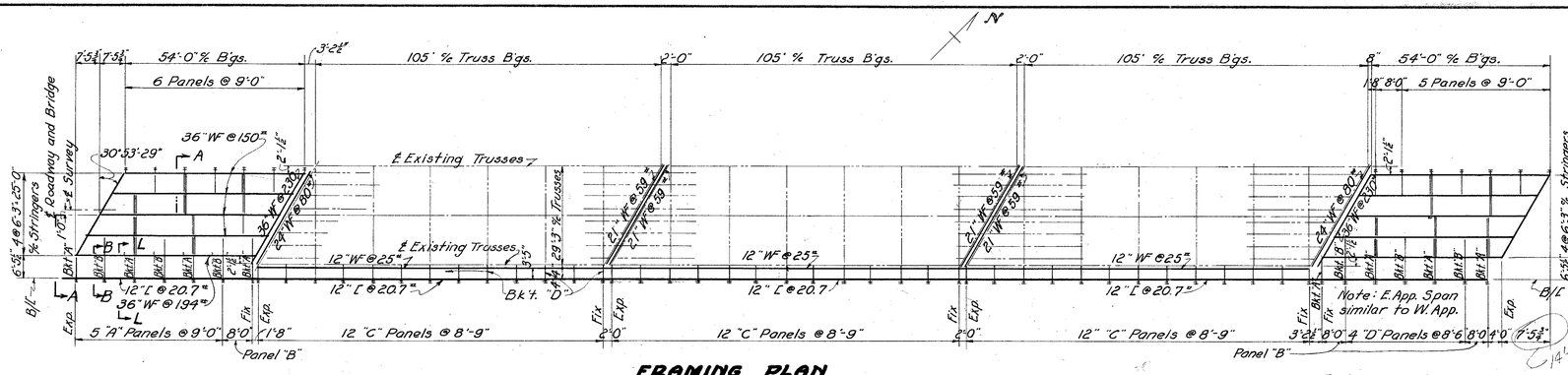
TUSCARAWAS COUNTY S. H. 70
SECTION D STA. 309+11.19
F.A.P. 520 A (2)

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.F.G.	B.F.G.	J.E.A.	L.P.V.	DSND WF	8-13-40	

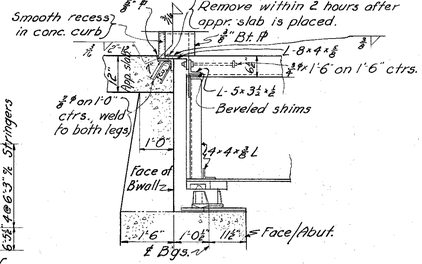
FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2) 520-C(1) 520-A(2)	1941

139
145

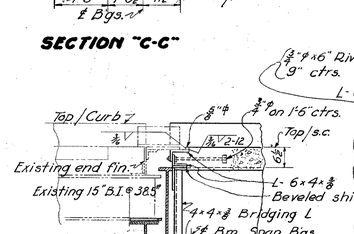
TUSCARAWAS COUNTY
S. H. 70 SEC. A(Pt)D & Mineral City (Pt)
DOVER BASIN



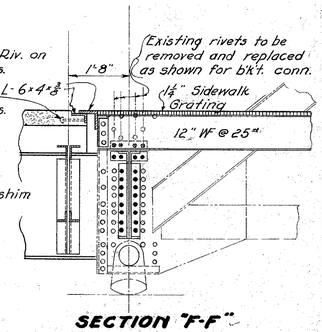
FRAMING PLAN

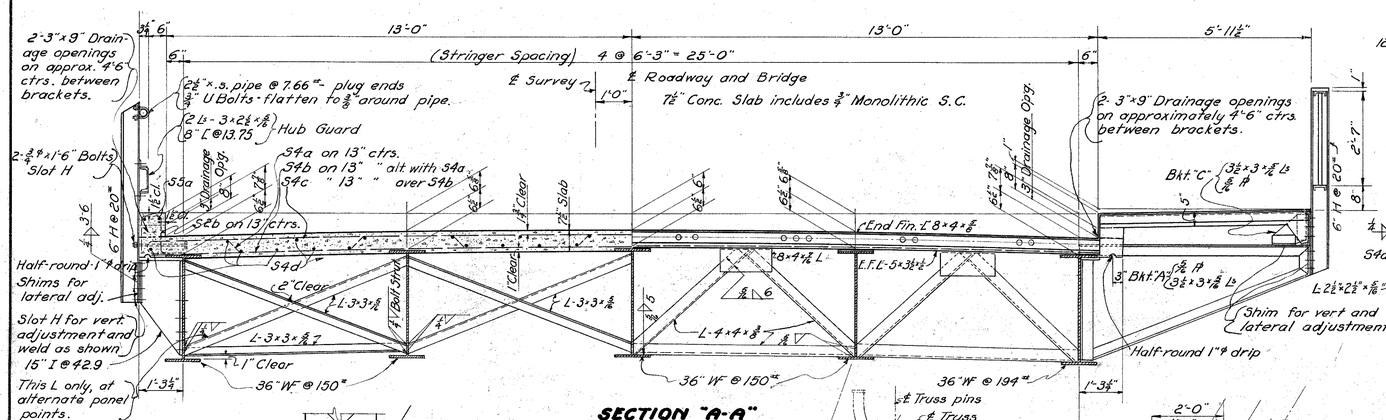


SECTION "C-C"



SECTION "E-E"





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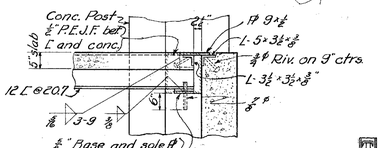

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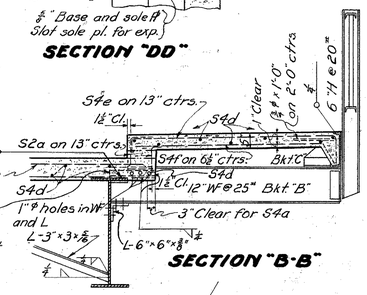
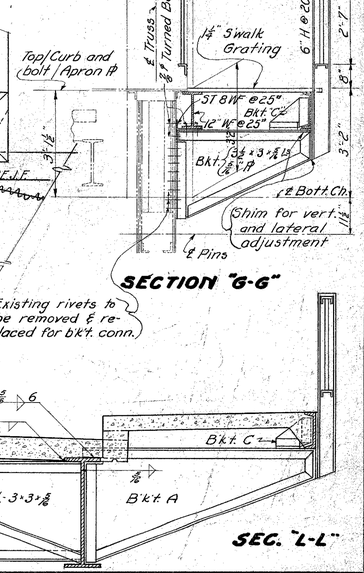
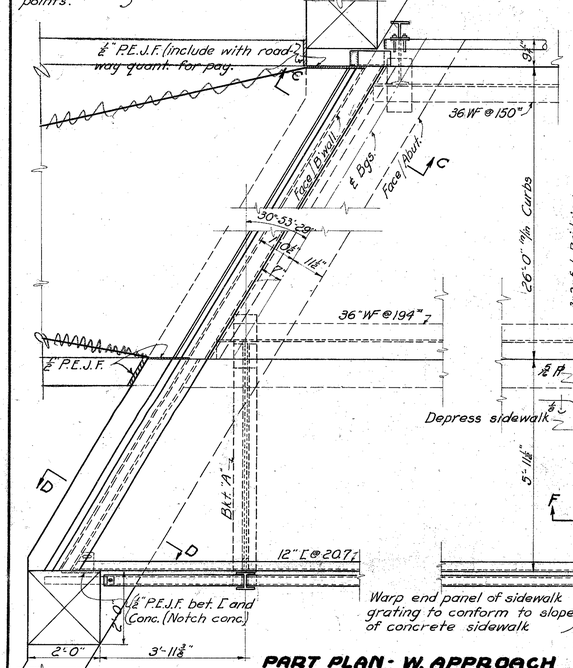


SECTION "B-B"

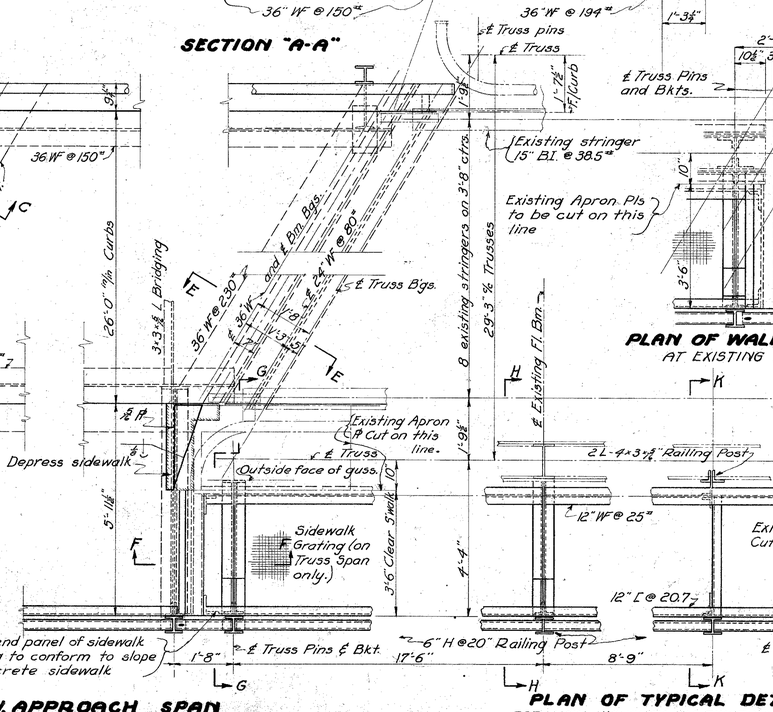


SECTION "G-G"

SEC. "L-L"

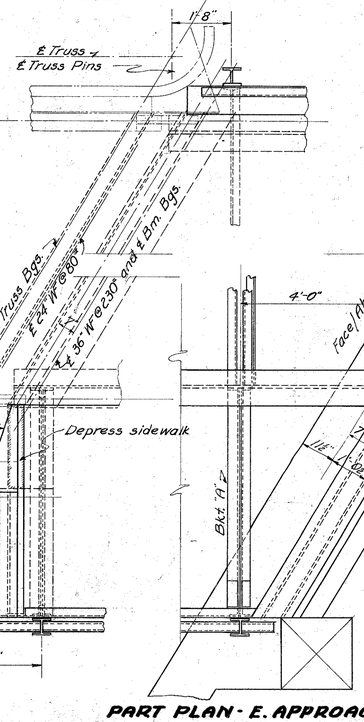


PART PLAN - W. APPROACH SPAN



PLAN OF WALKWAY DETAILS AT EXISTING PIERS

PLAN OF TYPICAL DETAILS FOR NEW WALKWAY ON EXISTING TRUSS SPANS



PART PLAN - E. APPROACH SPAN

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE No. TU-8-287
OVER TUSCARAWAS RIVER

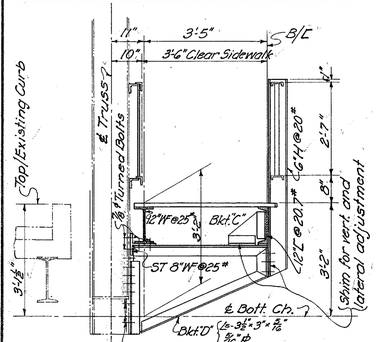
TUSCARAWAS CO. S.H. 70
SEC. "D" STA. 309+11.19
F.A.P. 520-A(2)

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
HJK	HJK	WF	LEU	WF	8-13-40	9-5-40 9-21-40

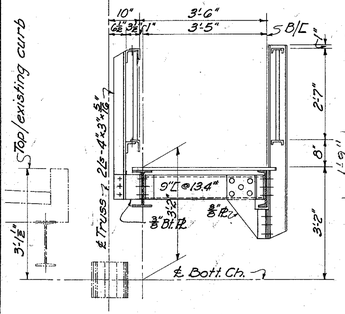
FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	260 A(2) 520 C(1) 520 A(2)	1941

140
145

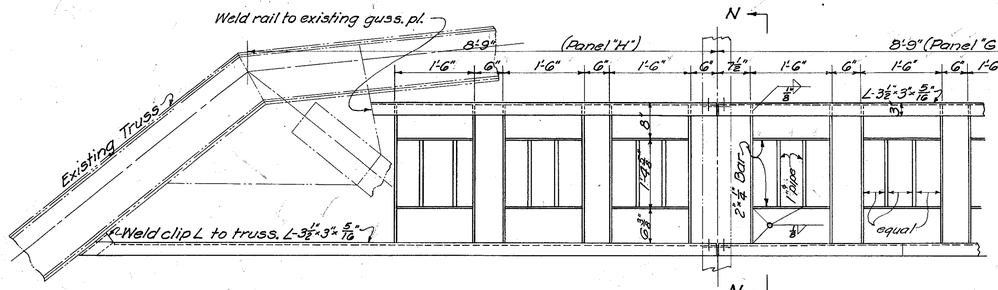
TUSCARAWAS COUNTY
S.H. 70 SEC. A(PT.), D
& MINERAL CITY (PT.)
DOVER BASIN



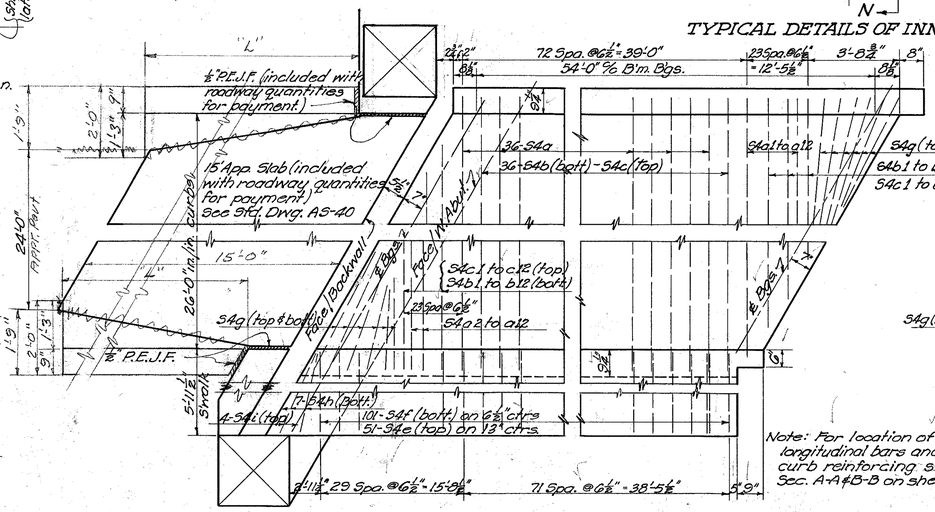
SECTION "H-H"



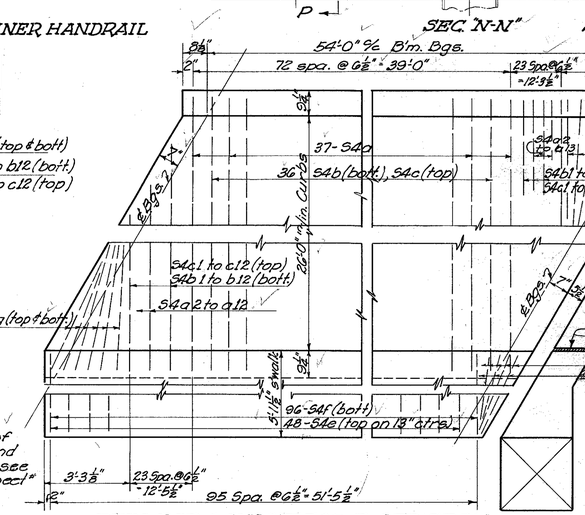
SECTION "K-K"



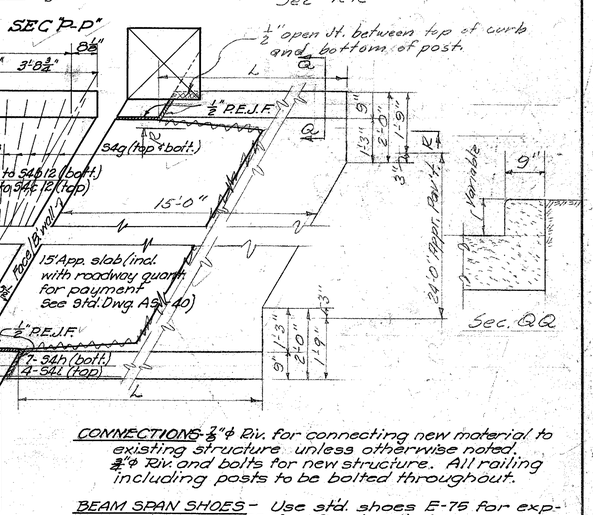
TYPICAL DETAILS OF INNER HANDRAIL



REIN. BAR LAYOUT FOR W. APP. SPAN



REIN. BAR LAYOUT FOR E. APP. SPAN



CONNECTIONS - ¾"ϕ Riv. for connecting new material to existing structure unless otherwise noted. ¾"ϕ Riv. and bolts for new structure. All railing including posts to be bolted throughout.

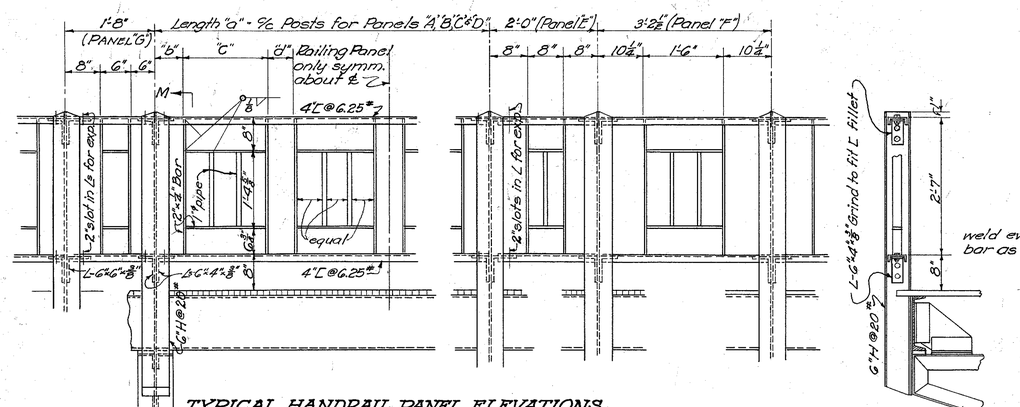
BEAM SPAN SHOES - Use std. shoes E-75 for expansion and F-75 for fixed end of beam span. For details see Std. Dwg. CSB-15-40.

EXISTING APRON PLATES to be removed to permit riveting of new sidewalk brackets, trimmed as shown and then replaced.

EXISTING END FINISH at old abutments to be reused with exception of that part imbedded in backwall.

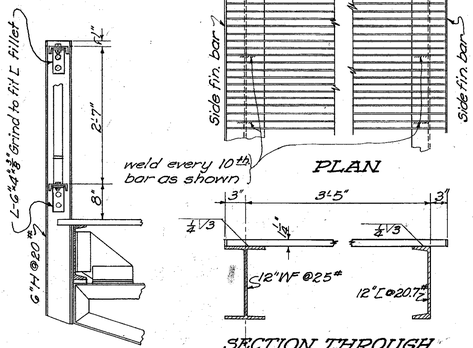
ALL railing included with structural steel for payment. Railing panels shall be so constructed that horizontal elements are parallel with finished center line grade and all vertical elements are truly vertical. See sheet #132 for details of center-line grade. Railing posts shall be vertical.

APPROX. existing dead load truss reaction = 70 tons.



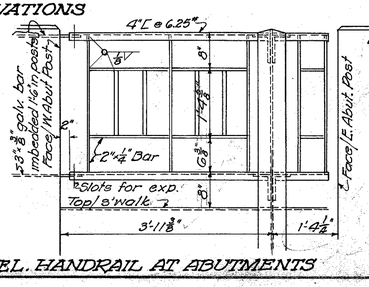
TYPICAL HANDRAIL PANEL ELEVATIONS
(Outside Railing)

TABLE OF RAILING DIMENSIONS				
PANEL MARK	"a"	"b"	"c"	"d"
"A"	9'-0"	9"	1'-6"	6"
"B"	8'-0"	6"	1'-6"	4"
"C"	8'-9"	7⅛"	1'-6"	6"
"D"	8'-6"	6"	1'-6"	6"

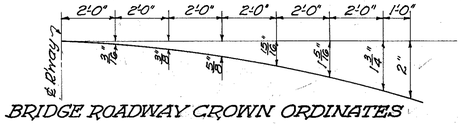


SECTION "M-M"

SECTION THROUGH WALKWAY ON TRUSS

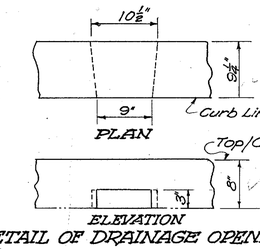


E.L. HANDRAIL AT ABUTMENTS



BRIDGE ROADWAY CROWN ORDINATES

DEFLECTION & CAMBER TABLE FOR BEAM SPANS		
	36"WF@150#	36"WF@194#
Deflection due to W./steel	⅛"	3/16"
Deflection due to remaining D.L.	½"	9/16"
Camber required for vert. curve	¼"	¼"
Total camber required	7/16"	1"



DETAIL OF DRAINAGE OPENINGS
(Openings on approx. 4'6" ctrs. to miss curb stirrups and clear steel bkts. 2'0")

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE Nº TU-8-287
OVER TUSCARAWAS RIVER

TUSCARAWAS CO. S.H. 70
SEC. D STA. 309+11.19
F.A.P. 520 A(2)

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H&K	H&K	F.E.B.	L.L.V.	BDHD WF	8-13-40	8-20-40

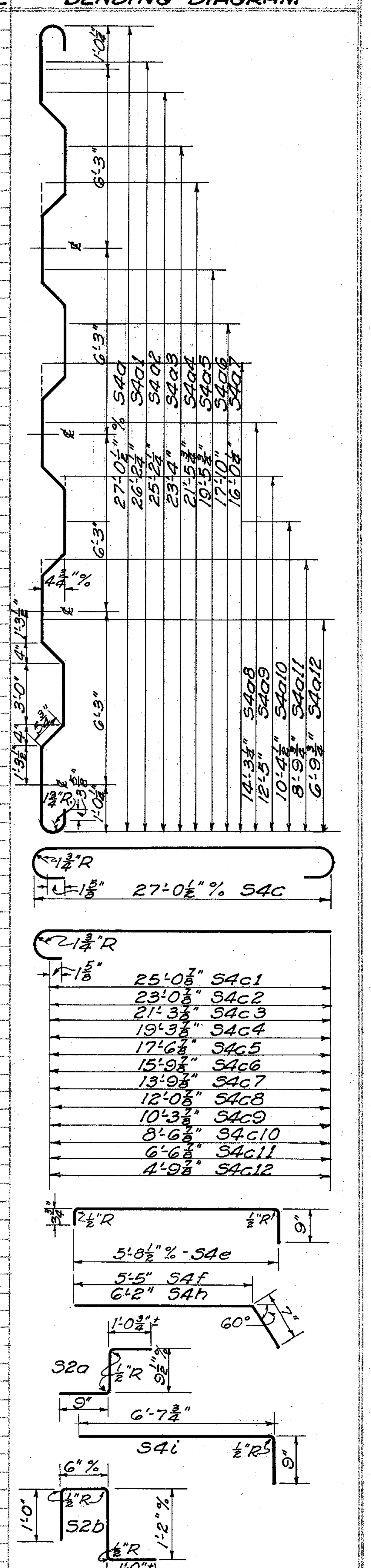
TUSCARAWAS COUNTY
S.H. 70 SEC. A(PT.), D
& MINERAL CITY (PT.)
DOVER BASIN

~ REINFORCING STEEL LIST ~

SUPERSTRUCTURE

MARK	SIZE	NUMBER	LENGTH	WEIGHT	SHAPE
S4a	5/8"φ	73	29'-6"	2250	Bt.
S4a1	5/8"φ	1	28'-0"	30	Bt.
S4a2	5/8"φ	4	27'-0"	110	Bt.
S4a3	5/8"φ	4	25'-0"	100	Bt.
S4a4	5/8"φ	4	23'-0"	100	Bt.
S4a5	5/8"φ	4	21'-0"	90	Bt.
S4a6	5/8"φ	4	19'-3"	80	Bt.
S4a7	5/8"φ	4	17'-3"	70	Bt.
S4a8	5/8"φ	4	15'-6"	60	Bt.
S4a9	5/8"φ	4	13'-6"	60	Bt.
S4a10	5/8"φ	4	11'-6"	50	Bt.
S4a11	5/8"φ	4	9'-9"	40	Bt.
S4a12	5/8"φ	4	7'-9"	30	Bt.
S4b	5/8"φ	72	27'-0"	2030	St.
S4b1	5/8"φ	4	25'-0"	100	St.
S4b2	5/8"φ	4	23'-3"	100	St.
S4b3	5/8"φ	4	21'-6"	90	St.
S4b4	5/8"φ	4	19'-6"	80	St.
S4b5	5/8"φ	4	17'-9"	70	St.
S4b6	5/8"φ	4	16'-0"	70	St.
S4b7	5/8"φ	4	14'-0"	60	St.
S4b8	5/8"φ	4	12'-3"	50	St.
S4b9	5/8"φ	4	10'-6"	40	St.
S4b10	5/8"φ	4	8'-9"	40	St.
S4b11	5/8"φ	4	6'-9"	30	St.
S4b12	5/8"φ	4	5'-0"	20	St.
S4c	5/8"φ	72	28'-0"	2100	Bt.
S4c1	5/8"φ	4	25'-9"	110	Bt.
S4c2	5/8"φ	4	23'-9"	100	Bt.
S4c3	5/8"φ	4	22'-0"	90	Bt.
S4c4	5/8"φ	4	20'-0"	80	Bt.
S4c5	5/8"φ	4	18'-3"	70	Bt.
S4c6	5/8"φ	4	16'-6"	70	Bt.
S4c7	5/8"φ	4	14'-6"	60	Bt.
S4c8	5/8"φ	4	12'-9"	50	Bt.
S4c9	5/8"φ	4	11'-0"	50	Bt.
S4c10	5/8"φ	4	9'-3"	40	Bt.
S4c11	5/8"φ	4	7'-3"	30	Bt.
S4c12	5/8"φ	4	5'-6"	20	Bt.
S4d	5/8"φ	148	29'-0"	4480	St.
S4e	5/8"φ	99	6'-8"	690	Bt.
S4f	5/8"φ	197	6'-0"	1230	Bt.
S4g	5/8"φ	48	7'-6"	380	St.
S4h	5/8"φ	14	6'-9"	100	Bt.
S4i	5/8"φ	8	7'-4"	60	Bt.
S2a	1/2"φ	208	2'-6"	350	Bt.
S2b	1/2"φ	104	3'-6"	240	Bt.
S5a	3/4"φ	8	29'-6"	350	St.

BENDING DIAGRAM



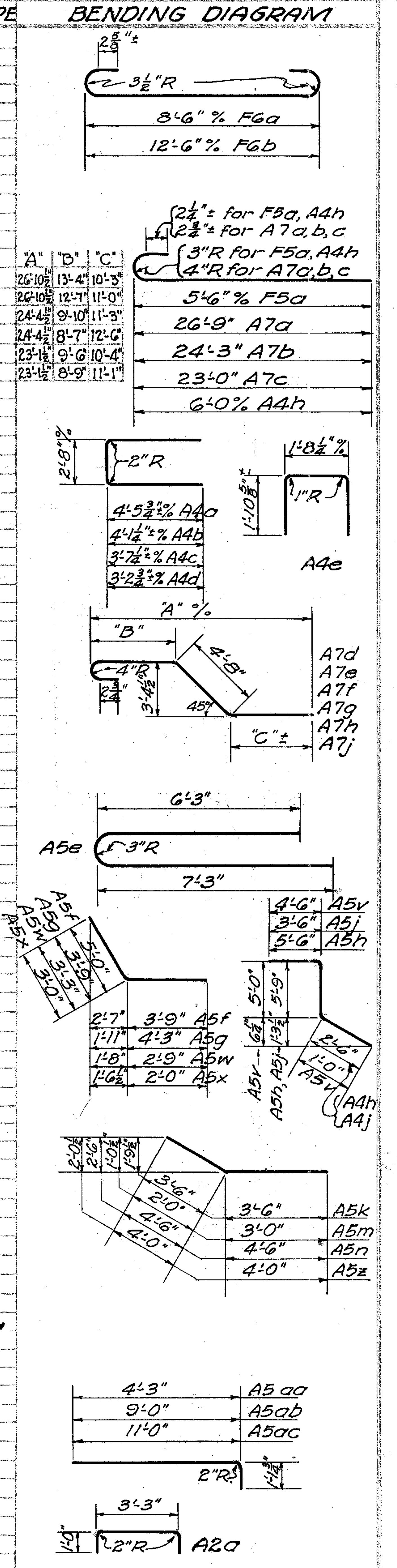
ABUTMENTS

MARK	SIZE	NUMBER	LENGTH	WEIGHT	SHAPE
F6a	7/8"φ	48	10'-3"	1030	Bt.
F6b	7/8"φ	36	14'-3"	1050	Bt.
F5a	3/4"φ	32	6'-3"	300	Bt.
A7a	1"φ	20	27'-9"	1490	Bt.
A7b	1"φ	16	25'-3"	1070	Bt.
A7c	1"φ	12	24'-0"	770	Bt.
A7d	1"φ	4	29'-3"	310	Bt.
A7e	1"φ	4	29'-3"	310	Bt.
A7f	1"φ	6	26'-9"	430	Bt.
A7g	1"φ	6	26'-9"	430	Bt.
A7h	1"φ	4	25'-6"	270	Bt.
A7j	1"φ	4	25'-6"	270	Bt.
A5a	3/4"φ	16	12'-0"	290	St.
A5b	3/4"φ	16	13'-3"	320	St.
A5c	3/4"φ	24	9'-0"	320	St.
A5d	3/4"φ	2	30'-0"	90	St.
A5e	3/4"φ	73	13'-9"	1510	Bt.
A5f	3/4"φ	6	8'-9"	80	Bt.
A5g	3/4"φ	6	8'-0"	70	Bt.
A5h	3/4"φ	3	13'-9"	60	Bt.
A5j	3/4"φ	1	11'-9"	20	Bt.
A5k	3/4"φ	7	7'-0"	70	Bt.
A5m	3/4"φ	12	5'-0"	90	Bt.
A5n	3/4"φ	5	9'-0"	70	Bt.
A5p	3/4"φ	1	3'-6"	10	St.
A5r	3/4"φ	27	8'-6"	350	St.
A5s	3/4"φ	6	6'-0"	50	St.
A5t	3/4"φ	1	7'-6"	10	St.
A5u	3/4"φ	4	35'-6"	210	St.
A5v	3/4"φ	4	11'-3"	70	Bt.
A5w	3/4"φ	4	6'-0"	40	Bt.
A5x	3/4"φ	4	5'-0"	30	Bt.
A5y	3/4"φ	8	22'-6"	270	St.
A5z	3/4"φ	3	8'-0"	40	Bt.
A5aa	3/4"φ	8	5'-3"	60	Bt.
A5ab	3/4"φ	8	10'-0"	120	Bt.
A5ac	3/4"φ	16	12'-0"	290	Bt.
A4a	5/8"φ	8	11'-6"	100	Bt.
A4b	5/8"φ	8	10'-9"	90	Bt.
A4c	5/8"φ	8	9'-9"	80	Bt.
A4d	5/8"φ	8	9'-0"	70	Bt.
A4e	5/8"φ	192	5'-3"	1070	Bt.
A4f	5/8"φ	4	26'-0"	110	St.
A4g	5/8"φ	4	22'-3"	90	St.
A4h	5/8"φ	16	6'-9"	110	Bt.
A2a	1/2"φ	60	5'-0"	200	Bt.

REPLACEMENT BARS

MARK	SIZE	NUMBER	LENGTH	WEIGHT	SHAPE
Re8	1"□	1	8'-0"	30	
Re7	1"φ	1	8'-0"	20	
Re6	7/8"φ	1	7'-6"	20	
Re5	3/4"φ	1	7'-0"	10	
Re4	5/8"φ	1	6'-6"	10	
Re2	1/2"φ	1	6'-0"		
Re1	3/8"φ	1	5'-6"		

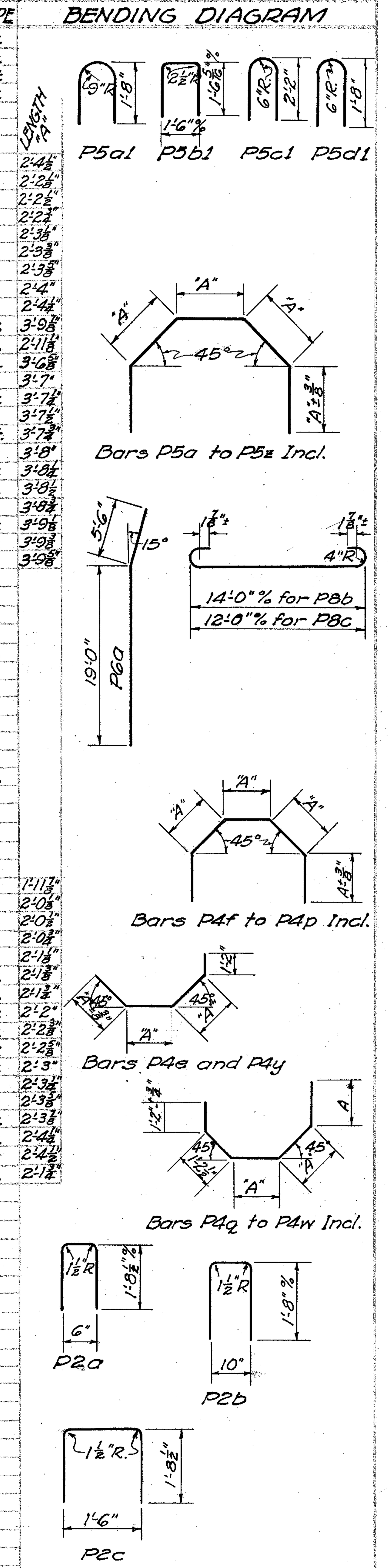
BENDING DIAGRAM



PIERS

MARK	SIZE	NUMBER	LENGTH	WEIGHT	SHAPE	LENGTH "A"
P5a1	3/4"φ	32	5'-9"	270	Bt.	
P5b1	3/4"φ	20	4'-6"	130	Bt.	
P5c1	3/4"φ	140	6'-0"	880	Bt.	
P5d1	3/4"φ	60	5'-0"	450	Bt.	
P5a	3/4"φ	32	11'-10½"	570	Bt.	2'-4½"
P5b	3/4"φ	8	10'-10½"	130	Bt.	2'-2⅛"
P5c	3/4"φ	8	11'-0½"	130	Bt.	2'-2½"
P5d	3/4"φ	8	11'-1½"	130	Bt.	2'-2¾"
P5e	3/4"φ	8	11'-3⅝"	140	Bt.	2'-3⅛"
P5f	3/4"φ	8	11'-4½"	140	Bt.	2'-3⅜"
P5g	3/4"φ	8	11'-6"	140	Bt.	2'-3⅝"
P5h	3/4"φ	8	11'-7½"	140	Bt.	2'-4"
P5j	3/4"φ	8	11'-9"	140	Bt.	2'-4¼"
P5k	3/4"φ	8	19'-1½"	230	Bt.	3'-9⅞"
P5m	3/4"φ	8	14'-7½"	180	Bt.	2'-11⅛"
P5n	3/4"φ	8	17'-9"	210	Bt.	3'-6⅝"
P5p	3/4"φ	8	17'-10½"	210	Bt.	3'-7"
P5q	3/4"φ	8	18'-0"	220	Bt.	3'-7¼"
P5r	3/4"φ	8	18'-1½"	220	Bt.	3'-7½"
P5s	3/4"φ	8	18'-3"	220	Bt.	3'-7¾"
P5t	3/4"φ	8	18'-4½"	220	Bt.	3'-8"
P5u	3/4"φ	8	18'-5⅝"	220	Bt.	3'-8¼"
P5v	3/4"φ	8	18'-6⅝"	220	Bt.	3'-8½"
P5w	3/4"φ	8	18'-7½"	220	Bt.	3'-8¾"
P5x	3/4"φ	8	18'-9½"	230	Bt.	3'-9⅛"
P5y	3/4"φ	8	18'-10½"	230	Bt.	3'-9⅜"
P5z	3/4"φ	8	19'-0"	230	Bt.	3'-9⅝"
P6a	7/8"φ	60	24'-6"	3010	Bt.	
P6b	7/8"φ	64	17'-6"	2290	St.	
P6c	7/8"φ	52	13'-6"	1440	St.	
P6d	7/8"φ	52	15'-0"	1600	St.	
P6e	7/8"φ	12	12'-0"	300	St.	
P8a	1"□	20	14'-0"	950	St.	
P8b	1"□	20	16'-3"	1110	Bt.	
P8c	1"□	40	14'-3"	1940	Bt.	
P4e	5/8"φ	8	7'-1½"	60	Bt.	1'-11⅞"
P4f	5/8"φ	32	10'-0"	330	Bt.	2'-0⅛"
P4g	5/8"φ	32	10'-3"	340	Bt.	2'-0½"
P4h	5/8"φ	8	10'-3"	90	Bt.	2'-0¾"
P4j	5/8"φ	8	10'-6"	90	Bt.	2'-1⅛"
P4k	5/8"φ	8	10'-7½"	90	Bt.	2'-1⅜"
P4m	5/8"φ	8	10'-9"	90	Bt.	2'-1¾"
P4n	5/8"φ	8	10'-10½"	90	Bt.	2'-2"
P4p	5/8"φ	8	11'-0"	90	Bt.	2'-2⅜"
P4q	5/8"φ	8	9'-0"	80	Bt.	2'-2⅝"
P4r	5/8"φ	8	9'-1½"	80	Bt.	2'-3"
P4s	5/8"φ	8	9'-3"	80	Bt.	2'-3¼"
P4t	5/8"φ	8	9'-3"	80	Bt.	2'-3⅝"
P4u	5/8"φ	8	9'-4½"	80	Bt.	2'-3⅞"
P4v	5/8"φ	8	9'-6"	80	Bt.	2'-4¼"
P4w	5/8"φ	8	9'-6"	80	Bt.	2'-4½"
P4y	5/8"φ	24	7'-7½"	190	Bt.	2'-1¾"
P2a	1/2"φ	16	3'-9"	40	Bt.	
P2b	1/2"φ	10	4'-0"	30	Bt.	
P2c	1/2"φ	12	4'-9"	40	Bt.	

BENDING DIAGRAM



F.A.P. 520 A(2)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

REINFORCING STEEL LIST

BRIDGE No. TU-8-287
OVER TUSCARAWAS RIVER
S.H. 70 SEC. D
TUSCARAWAS CO. STA. 309+11.19

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HGR BFG	HGR BFG	F.E.B.	C.J.W.	WF	8-13-40	

SUMMARY OF QUANTITIES

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2), 520-C(1) 520-A(2)	1941

142
145

TUSCARAWAS COUNTY
S.H. 70 SEC. A(Pt.), D & MIN. CITY(Pt.)
DOVER BASIN

STRUCTURES 20 FT. SPAN AND UNDER

PROJECT N°	REFERENCE N°	DETAILS ON SHEET N°	STATION	TYPE	SIZE	LENGTH	REMOVALS: & STORE EXISTING 10" TO 36" PIPE LIN. FT.	REMOVALS: FOR RE-USE OF EXIST. C.I.P. LIN. FT. 15"	REMOVALS: FOR RE-USE OF EXIST. C.I.P. LIN. FT. 18"	REMOVALS: EXISTING MASONRY CU. YDS.	NEW WORK: STRUCT. EXCAV. CU. YDS.	NEW WORK: CHANNEL EXCAV. CU. YDS.	NEW WORK: CONCRETE CLASS "C" CU. YDS.	NEW WORK: WATERPROOFING TYPE B SQ. YDS.	NEW WORK: WATERPROOFING TYPE C SQ. YDS.	NEW WORK: REINF'G STEEL LBS.	NEW WORK: PIPE FOR ROADWAY CULVERTS 15" LIN. FT.	18" LIN. FT.	24" LIN. FT.	CAST I. PIPE 18" LIN. FT.	EXTRA STRENGTH 24" LIN. FT.	CAST I. PIPE 15" LIN. FT.	NEW WORK: RELAY CAST IRON PIPE LIN. FT. 15"	18"	NEW WORK: CATCH BASINS N° I-2 EACH	N° 2-2 EACH	N° 2-3 MODIF. EACH	NEW WORK: GROUTED STONE RIPRAP TYPE "A" SQ. YDS.	NEW WORK: TYPE 3 PAVED GUTTER LIN. FT.	NEW WORK: TYPE 3 MODIFIED PAVED GUTTER LIN FT.
F.A. 260-A-(2)	1-S	87	203+50	PIPE	18"	80'-0"	38			1.3	34		1.9			26		80										6	42	
	2-S	REMOVAL	208+30	V.S.P.	12"	34'-0"	34			1.3																				
	3-S	88	209+85	PIPE	18"	66'-0"					47	25	0.9			27		66								1	25	42	60
	4-S	REMOVAL	211+00	V.S.P.	15"	44'-0"	44			1.7																			
	5-S	89	211+25	PIPE	24"	90'-0"					85		1.9			60			90						1	1	3	33	160
	6-S	90	216+00	PIPE	24"	46'-0" & 58'-0"	44				120	40	5.3			114			104								26	68	
	7-S	91	218+30	PIPE	18"	53'-0"			45	2.0	7		1.0			26				8			45			1		48	140
	8-S	TO REMAIN	226+22	C.I.P.	18"	55'-0"	NO	WORK	REQUIRED		(TO REMAIN IN PLACE)																		
	9-S	92	229+03.5	C.I.P.	15"	72'-0"		62		1.7	12	6	0.9			24						10	62			1			
	10-S	93,94	243+85	BOX CULVT.	9'x7'	116-3"				150.0	400	20	177.5			29184-											115		
	11-S	95	249+14.5	PIPE	24"	86'-0"	32			3.0	70		1.6			27			86							1	20	30	55
	12-S	REMOVAL	250+61	V.S.P. C.M.P.	12" 18"	32'-0" 18'-0"	50			1.7																			
	13-S	96	252+50	PIPE	18"	94'-0"					75		0.9					94							1		10		
	14-S	REMOVAL	252+88	V.S.P & C.M.P	12"	42'-0"	42			1.3																			
	15-S	97	258+35	PIPE	24"	68'-0"					76	65	2.8			64			68								40		
	16-S	REMOVAL	258+84	V.S.P.	18"	32'-0"	32			2.0																			
	17-S	REMOVAL	261+01.5	V.S.P	12"	26'-0"	26			1.3																			
	18-S	91	264+00	PIPE	15"	62'-0"					35	7	0.7				62								1		13		
	19-S	REMOVAL	265+95	V.S.P.	18"	28'-0"	28			2.0																			
	20-S	REMOVAL	269+05	V.S.P	18"	29'-0"	29			2.0																			
	21-S	98	270+00	PIPE	24"	78'-0"	44			1.7	80		2.8			91			78								6	61	20
	22-S	99, 100	276+74	BOX CULVT	9'x7'	159'-0"				47.0	696	305	267.0	120	24	45,016													
	SUB-TOTALS						443	62	45	222.4	1737	468	465.2	120	24	74,659	62	240	426	8	0	10	62	45	2	1	5	264	324	435
F.A. 520-A (2)	23-S	REMOVAL	300+02	C.I.P	12"	45'-0"	45			1.3																			
	24-S	101	301+00	PIPE	18"	130'-0"					66	95	3.3					130											
	25-S	REMOVAL	303+11.5	BOX	4'x4'	56'-0				33.7																			
	SUB-TOTALS						45	0	0	35.0	66	95	3.3	0	0	0	0	130	0	0	0	0	0	0	0	0	0	0	0	0
F.A. 520-C(1) RURAL	26-S	102	331+55	BOX CULVT.	5'x4'	123'-6"					289	58	74.2			6465													
	27-S	REMOVAL	339+29	V.S.P.	12"	50'-0"	50			1.8																			
	28-S	103	345+75	BOX CULVT.	5'x4'	88'-0"					102	68	46.8			4540													
	29-S	REMOVAL	351+14	C.M.P	12"	43'-0"	43																						
	30-S	REMOVAL	352+52	V.S.P & C.M.P.	12"	33'-0"	33			1.3																			
	31-S	104	355+53	PIPE	18"	106'-0"					43		1.8					106									10		
	32-S	106	365+50	Ex. St. PIPE	24"	156'-0"					88		5.1									156							
	33-S	105	370+12	BOX CULVT.	5'x4'	153'-6"					100		125.7	26	13	13649													
	34-S	106	379+00	Ex. St. PIPE	24"	160'-0"					86	2	5.1									160							
	36-S	REMOVAL	380+65	C.I.P.	12"	50'-0"	50																						
	37-S	REMOVAL	386+65	C.I.P.	12"	29'-0"	29			1.3																			
	38-S	107	390+50	PIPE	15"	84'-0"					47	3	0.7				84								1		6		
	39-S	REMOVAL	390+93	C.I.P & V.S.P.	10"	67'-0"	67																						
	40-S	REMOVAL	396+12	C.I.P.	12"	29'-0"	29			1.3																			
	41-S	108	400+32.6	BOX CULVT.	4'x3'	94'-0"	155			50.0	102	111	37.5			3716													
	42-S	109	407+65.5	BOX CULVT.	5'x4'	73'-0"				60.0	50	27	38.5			3726													
	43-S	110	413+00	PIPE	18"	62'-0"					23	3	1.8					62									8		
	SUB-TOTALS						456	0	0	115.7	930	272	337.2	26	13	32,096	84	168	0	0	316	0	0	0	1	0	0	44	0	0
F.A. 520-C(1) MUNICIPAL	44-S	REMOVAL	417+85	C.I.P.	12"	32'-0"	32			1.3																			
	45-S	110	421+00	PIPE	24"	112'-0"					67		2.1						112										
	46-S	111, 112	428+90	BOX CULVT.	8'x6'	114'-6"					233	91	131.0	64		19895													
	SUB-TOTALS						32	0	0	1.3	300	91	133.1	64	0	19895	0	0	112	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTALS							976	62	45	374.4	3033	926	938.8	210	37	126,650	146	538	538	8	316	10	62	45	3	1	5	308	324	435

PAVED GUTTER

F.A.P. N°	TOTAL OF SHEET N°	TYPE 3 LIN. FT.	TYPE 3 (MODIFIED) LIN. FT.	TYPE 4 LIN. FT.
F.A. 260-A(2)	9	126		
	10		65	
	11		255	
	14		45	
	15		161	
	16	50		
SUB-TOTALS		176	526	
F.A. 520-C(1) (RURAL)	17		200	
	18	98	920	
	19		266	
	24		249	
SUB-TOTALS		98	1635	
F.A. 520-A(2)	19		34	
	22		198	
SUB-TOTALS			232	
F.A 520-C(1) (MUNICIPAL)	33			119.5
SUB-TOTALS			0	119.5
GRAND TOTALS		274	2393	119.5

STRUCTURES OVER 20 FT. SPAN

F.A.P. N°	TOTAL OF SHEET N°	REMOVE EXIST. 175' SPAN BEAM BRIDGE LUMP SUM	REMOVE EXISTING UNDERPASS LUMP SUM
F.A. 520-C(1) (RURAL)	22	1	
	27		1
SUB-TOTALS		1	1
GRAND TOTALS		1	1

PIPE UNDERDRAIN

F.A.P. N°	TOTAL OF SHEET N°	LIN. FT. 4"	LIN. FT. 6"	PIPE SPECIALS 6"x4" Y's EACH	OUTLET PIPE LIN. FT. 4"	OUTLET PIPE LIN. FT. 6"
F.A. 260-A(2)	10	676				
	13	156				
	15	327				
	16	171				
SUB-TOTALS		1330				
F.A. 520-C(1) (RURAL)	17	274				
	22	297				
	24	289				
	27	324				
	28	286				
	29	566				
	30	745				
SUB-TOTALS		2781				
F.A. 520-A(2)	19	280				
	21	324				
	22	230				
SUB-TOTALS		834				
F.A. 520-C(1) (MUNICIPAL)	30	56				
	31	485				
	33	1019	208	8		
SUB-TOTALS		1560	208	8		
GRAND TOTALS		6505	208	8		

SUMMARY OF QUANTITIES

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2)520-C(1) 520-A(2)	1941

143
145

TUSCARAWAS COUNTY
S.H 70 SECS. A (PT.), D
& MINERAL CITY (PT.)
DOVER BASIN

DRIVES, ROAD AND MAIL BOX APPROACHES

F.A.P. N°	TOTAL OF SHEET N°	T-10 TRAFFIC BOUND SURF COURSE SQ.YDS.	CHANNEL EXC. CU. YDS.	T-71 REINF. CONCRETE PAVEMENT SQ.YDS.	I-17 AGGREGATE CU.YDS.	PIPE FOR DRIVEWAYS LIN. FT. 12"	15"	18"	36"	APPROACH GUARD RAIL LIN. FT.	TYPE 5-A CONC. CURB Straight Lin. Ft.	TYPE 5-A CONC. CURB Circular Lin. Ft.	REMOVE & STORE EXIST 8"TO15" PIPE LIN. FT.
F.A. 260-A(2)	9				7								48
	10				24								
	11				80								
	12				6					100			
	13				65		50						58
	17				30			40					
SUB-TOTALS					212		50	40		100			106
F.A. 520-C(1) (RURAL)	17	1475.6			20	32		42	54				
	23				191	88							65
	25				23			38					
	27	571			16					475			32
	29				21	30							22
	30				22								
SUB-TOTALS		2046.6			293	150	0	80	54	475			119
F.A. 520-A(2)	19				170		48			650			
	21		41		285	30		158					
SUB-TOTALS					455	30	48	158		650			
F.A. 520-C(1) (MUNICIPAL)	31				34		50						
	32				86		110			425			
	33			936.1	3	62	26			75	529	101	74
SUB-TOTALS				936.1	123	62	186			500	529	101	74
GRAND TOTALS		2046.6	41	*936.1	1083	242	284	278	54	1725	*529	*101	299

* Carried to sheet 144

GUARD RAIL

F.A.P. N°	TOTAL OF SHEET N°	REMOVE & DISPOSE OF LIN. FT.	REMOVE & STORE LIN. FT.	BUILD NEW LIN. FT.
F.A. 260-A(2)	9	201		400
	10	678	330	1100
	11		740	737.5
	12		944	972.6
	13	525	113	1291.0
	14	427		1003.3
	15	424		1000.0
	16	360		309.1
	17	361		1034.8
SUB-TOTALS		2976	2127	7848.3
F.A. 520-C(1) (RURAL)	17		375	401.7
	18		755	
	19	224		
	22		572	650
	23		460	350
	24		59	750
	25			1700
	26			2000
	27		288	1835.5
	28		531	904.9
	29		335	372.1
	30	40		575
SUB-TOTALS		264	3375	9539.2
F.A. 520-A(2)	19		504	1175.6
	20		402	1126.9
	21			1022.5
SUB-TOTALS		0	906	3325.0
F.A. 520-C(1) (MUNICIPAL)	31			1491.7
	32			1987.3
	33			508.5
SUB-TOTALS				3987.5
GRAND TOTALS		3240	6408	24700

ROADSIDE IMPROVEMENT

F.A.P. N°	TOTAL OF SHEET N°	LIME LBS.	FERTILIZER LBS.	SEEDING SQ.YDS.	SODDING SQ.YDS.	2" TOPSOIL SQ.YDS.
F.A. 260-A(2)	9	2472	309	3438		
	10	4368	546	6069		
	11	3184	398	4426		
	12	3656	457	5073		
	13	8788	1098	12200		
	14	4574	572	6350		
	15	4466	558	6200		
	16	4648	581	6454	460	460
	17	5350	669	7430		
SUB-TOTALS		41,506	5,188	57,640	460	460
F.A. 520-C(1) (RURAL)	17	2584	323	3587		
	18	10184	1273	14148		
	19	3472	434	4821		
	22	4012	500	5570		
	23	6842	855	9500	200	200
	24	5950	744	8260		
	25	8102	1013	11246		
	26	8327	1041	11560		
	27	9883	1235	13720		
	28	6771	846	9400		
	29	4668	583	6480		
	30	5388	673	7480		
SUB-TOTALS		76,183	9,520	105,772	200	200
F.A. 520-A(2)	19	5202	650	7224		
	20	3530	441	4900		
	21	7805	976	10835		
	22	4336	542	6017		
SUB-TOTALS		20,873	2,609	28,976		
F.A. 520-C(1) (MUNICIPAL)	30	336	42	464		
	31	7203	900	10000		
	32	6555	820	9100	2936	2936
	33				3710	3710
SUB-TOTALS		14,094	1762	19,564	6646	6646
GRAND TOTALS		152,656	19,079	211,952	7306	7306

ROADWAY DRAINAGE

F.A.P. N°	TOTAL OF SHEET N°	PIPE (INCLUDING) POROUS BACKFILL) LIN. FT. 8"	12"	15"	PIPE UNDER DRIVES LIN. FT. 8"	12"	15"	OUTLET PIPE LIN. FT. 8"	12"	15"	PIPE SPECIALS-EACH 8"x4" Ys.	12"x4" Ys.	12"x12" Ys.	15"x6" Ys.	15"x12" Ys.	8"x12" INCREASE	8"x45° BEND	CATCH BASINS EACH STD. N° 1-2	MOD. N° 2-3
F.A. 260-A(2)	9	202	44										1			1			
	10	687	274								13							1	
	11	90	322	566									1		1			1	
	12	97	876										1					1	
	13		47	705			40			20			1	3	2			3	
	14	939																	1
	15	845	99								6								
	16	289	499															1	1
SUB-TOTALS		3149	2161	1271			40			20	19		4	3	3	1		7	2
F.A. 520-C(1) (RURAL)	17	259	170			30		20	20			2						1	
	18	1858	98															1	1
	19		681.6			15													
	22	605						50			4								
	23	885			70														
	24	417	427					30			4							2	
	25		10						20										
	27	159						20			4								
	28	856									5								
	29	1138			30			20			10								
	30	862						20			12								
SUB-TOTALS		7039	1385.6		100	45		160	40		39	2						4	1
F.A. 520-A(2)	19		70.4			45			40			4							
	21		824			30			40			5							
	22	494	288								5						6	2	
SUB-TOTALS		494	1182.4			75			80		5	9					6	2	
F.A. 520-C(1) (MUNICIPAL)	30	36									2								
	31	349						20			9								
SUB-TOTALS		385						20			11								
GRAND TOTALS		11067	4729	1271	100	120	40	180	120	20	74	11	4	3	3	1	6	13	3

REMOVAL OF PAVEMENT

F.A.P N°	TOTAL OF SHEET N°	8" x 18' CONCRETE PAVEMENT SQ.YDS.	10"x 18' W.B. MAC. PVM'T. SQ.YDS.	4" BRICK PAVEM'T SQ.YDS 15' WIDTH	40' WIDTH	CURB LIN. FT. 6"x4" FLUSH	6"x 18" STONE	8"x16" CONC. BASE SQ.YDS.
F.A. 260-A(2)	9	800						
	10	2014						
	11	300						
	12	410						
	13	1510						
	14	1716						
	15	2012						
	16	2024						
	17	104						
SUB-TOTALS		10890						
F.A. 520-C(1) (RURAL)	17		714					
	18		1986					
	19		710					
	22	772						
	23	2140						
	24	420						
	25							
	27		460					
	28		1000					
	29							
	30							
	31							
SUB-TOTALS		3332	4870					
F.A. 520-A(2)	19	1380						
	20	1320						
	21	2010						
	22	890						
SUB-TOTALS		5600						
F.A. 520-C(1) (MUNICIPAL)	31			717		860		764
	33	104		583	1633	687	715	622
SUB-TOTALS		104		1300	1633	1547	715	1386
GRAND TOTALS		19926	4870	1300	1633	1547	715	1386

STORM SEWER

F.A.P. N°	TOTAL OF SHEET N°	PIPE FOR STORM SEWER. LIN. FT. 12"	15"	STORM SEWER UNDER PAVEM'T LIN. FT. 12"	STORM SEWER UNDER DRIVES LIN. FT. 12"	15"	OUTLET PIPE LIN. FT. 12"	18"	12" CAST IRON PIPE UNDER RAILROAD LIN. FT.	CATCH BASINS EACH STD. N° 1-2	STD. N° 9-A	CURB INLETS EACH STD. N° 6	STD. N° 7	PIPE SPECIALS 12"x4" Y's EACH	12"x12" Y's EACH	EACH	GROUTED TYPE A RIPRAP SQ.YDS.	RAISE EXISTING MANHOLE EACH	RESET MANHOLE CASTING EACH	REMOVALS EXISTING CATCH BASIN EACH	EXISTING MANHOLE EACH	& STORE EXIST. PIPE LIN. FT.
F.A. 260-A(2)	9	14		40			60				4						3					18
	10	46		60			20				6						8					
	11	40		60							6											
	12	26									2											
	13	89					48				5											
	14						62				1											
SUB-TOTALS		215		160			190				24						11					18
F.A. 520-C(1) (MUNICIPAL)	32	255	382			60		38			1	3								3	1	154
	33	426		78	50				50		4	2	2	7	1			1	2			
SUB-TOTALS		681	382	78	50	60		38	50		5	5	2	7	1			1	2	3	1	154
GRAND TOTALS		896	382	238	50	60	190	38	50		29	5	2	7	1		11	1	2	3	1	172

SUMMARY OF QUANTITIES

FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT	FISCAL YEAR
10	OHIO	260-A(2), 520-C(1) 520-A(2)	1941

144
145

TUSCARAWAS COUNTY
S.H. 70 SEC. A(Pt), D & MIN. CITY(Pt)
DOVER BASIN

STREET AND ALLEY RETURNS

F.A.P. N°	TOTAL OF SHEET N°	10"-8"-8"-10" REINF. CONC. PAVEMENT SQ.YDS.	2-A STRAIGHT CONC. CURB LIN.FT.	2-A CIRCULAR CONC. CURB LIN.FT.		CONCR. SIDEWALK 4"x5'-0" SQ.FT.	CONCR. SIDEWALK 6"x7-0" SQ.FT.	REMOVE EXISTING SIDEWALK SQ.FT.
F.A. 520-C(1) (MUNICIPAL)	131	279	77.93	154.36		266.9	18	569
GRAND TOTALS		279	* 77.93	* 154.36		266.9	18	569

* Carried to concrete curb table below

SIDEWALK AND STEPS

F.A.P. N°	TOTAL OF SHEET N°	CONCRETE SIDEWALK 4"x5'-0" SQ. FT.	CONCRETE SIDEWALK 6"x7'-0" SQ.FT.	REIN. CONC. STEPS 7" RISER 14" TREAD LIN. FT.	1½" PIPE HAND RAIL COMPLETE LIN.FT.	REMOVE EXISTING SIDEWALK SQ. FT.
F.A. 520-C(1) (MUNICIPAL)	33	2442	367	150	29	3810
GRAND TOTALS		2442	367	150	29	3810

CONCRETE CURB

F.A.P. N°	TOTAL OF SHEET N°	TYPE 2-A CURB LIN.FT.				
F.A. 520-C(1) (MUNICIPAL)	32	1437.5				
	33	1081.4				
		232.3	From street and alley returns above			
GRAND TOTALS		2751.2				

CALCULATIONS

ITEM T-71 10"-8"-8"-10" REINF. CONC. PAVEMENT

F.A. 260-A(2)

BEGINNING OF PROJECT = STA. 201+00
END OF F.A. 260-A(2) = STA. 280+42.5
GROSS LENGTH OF F.A 260-A(2) 7942.5 LIN.FT.
ADDITION FOR EQUATION 253+03.3 BACK = 253+00 AHEAD +3.3 LIN.FT.
NET LENGTH OF F.A. 260-A(2) 7945.8 LIN.FT.
NET AREA OF F.A. 260-A(2) 24 x 7945.8 ÷ 9 = 21,189 Sq.Yds.

F.A. 520-C(1) RURAL

BEGINNING OF F.A.520-C(1)RURAL STA. 280+42.5
END OF F.A.520-C(1) RURAL, STA. 298+48.3 1805.8 LIN.FT.
RESUME F.A.520-C(1) RURAL, STA. 329+21.5
END F.A.520-C(1) RURAL STA. 414+60 8538.5 LIN.FT.
GROSS LENGTH OF F.A.520-C(1) RURAL 10344.3 LIN.FT.
DEDUCTION FOR EQUATION 394+07.82 BACK = 395+00 AHEAD - 92.18 LIN.FT.
NET LENGTH OF F.A. 520-C(1) RURAL 10252.12 LIN.FT.
NET AREA OF F.A.520-C(1) RURAL 24 x 10,252.12 ÷ 9 = 27,339.0 Sq.Yds.

F.A. 520-A(2)

BEGINNING OF F.A 520-A(2) STA. 298+48.3
END OF F.A 520-A(2) STA. 329+21.5 3073.2 LIN.FT.
GROSS LENGTH OF F.A.520-A(2) 463.34 LIN.FT.
DEDUCT FOR BRIDGE 306+79.52 TO 311+42.86 + 7.05 LIN.FT.
ADDITION FOR EQUATION 301+07.05 BACK = 301+00 AHEAD 2616.91 LIN.FT.
NET LENGTH OF F.A. 520-A(2)
NET AREA OF F.A. 520-A(2) 24 x 2616.91 ÷ 9 = 6,979 Sq.Yds.

F.A. 520-C(1) MUNICIPAL

BEGIN F.A. 520-C(1) MUNICIPAL STA. 414+60
END F.A. 520-C(1) MUNICIPAL STA. 442+00 2740.0 LIN.FT.
GROSS LENGTH OF F.A 520-C(1) MUNICIPAL - 26.0 LIN.FT.
DEDUCTION FOR RAILROAD CROSSING 2714.0 LIN.FT.
NET LENGTH OF F.A. 520-C(1) MUNICIPAL 3906.7 SQ.YDS.
24' WIDTH, STA. 414+60 TO STA. 429+25 = 1465 x 24 ÷ 9 5689.9 SQ.YDS.
41' WIDTH, STA. 429+25 TO STA. 442+00 = 1249 x 41 ÷ 9 146 SQ.YDS.
EXTRA PAVEMENT FOR TRANSITION TO 40' PVMT (SEE SHEET 32) 275 SQ.YDS.
PAVEMENT FOR STREET AND ALLEY RETURNS 936
APPROACH - SEE SHEETS 33 & 143
NET AREA OF F.A. 520-C(1) M = 10,958 Sq.Yds.

TYPE 5-A CONCRETE CURB F.A.P. 260-A(2)

From Sta 201+00 to 247+05 = 4605 x 2 = 9210 lin ft.
Deduct for 24 catch basins @ 5.25' = 126 " "
Net length of 5-A curb = 9084 lin. ft.

F.A.P. 520-C(1) MUNICIPAL

Approach - see sheets no. 33 & 143 630 lin. ft.

ITEM S-5 REINFORCED CONCRETE APPROACH SLABS - 9" THICK

F.A. 520-A(2) 83.6 SQ. YDS.

ITEM E-11 WATER

F.A 260-A(2)
(145,681 + 2320) x 5 ÷ 1000 = 740 M-GALS.

F.A 520-C(1) RURAL
(270974 + 3000) x 5 ÷ 1000 = 1370 M-GALS.

F.A 520-A(2)
(93,367 + 600) x 5 ÷ 1000 = 470 M-GALS.

F.A. 520-C(1) MUNICIPAL
(110,041 + 540) x 5 ÷ 1000 = 550 M-GALS.

ITEM T-10 TRAFFIC BOUND SURFACE COURSE

F.A. 520-C(1) RURAL
2046.6 x 4 x 70 x 27 ÷ 36 x 2000 = 215 TONS

BORROW

FAP 520-C(1) RURAL	311621 - (121288 + 8805 + 2093)	= 179435 CU.YDS.
FAP 520-A(2)	107372 - (25047 + 1244)	= 81081 " "
F.A.P. 520-C(1) MUNICIPAL	126554 - (7350 + 657)	= 118547 " "
	TOTAL BORROW	379063 CU.YDS.

PAVEMENT REMOVAL TO REDUCE BORROW.

FAP 260-A(2)	10,890 sq.yds. x 8/36	= 2420	cu. yds.
FAP 520-C(1) Rural	3332 sq.yds. x 8/36	= 740	cu. yds.
	4870 " " x 8/36 10/36	= 1353	" "
	Total	2093	" "
FAP 520-A(2)	5600 sq.yds x 8/36	= 1244	cu. yds.
FAP 520-C(1) Municipal	104 sq.yds. x 8/36	= 23	cu. yds.
	1386 sq.yds. x 8/36	= 308	cu. yds.
	2933 sq.yds. x 4/36	= 326	cu. yds.
	Total	= 657	cu. yds.

EXCAVATION - EMBANKMENT - DUMPED ROCK FILL

F.A.P. NO.	FROM STA.	TO STA	EXCAV.	WASTE EXCAV.	TOTAL EXCAV.	EMBANK	EMBANK + 15%	DUMPED ROCK FILL	
			CUBIC YARDS						
260-A(2)	200+50	212+68.5	21484	5677	27161	19243	22129	0	
	212+68.5	255+53	81046	28622	109668	84141	96762	6627	
	255+53	280+42.5	72131	2535	74666	41276	47467	2882	
	* LUMP SUM		- 744		- 744	+ 1021	+ 1174		
	** PROJECT TOTALS		173917	36834	210751	145681	167532	9509	
520-A(2)	298+48.3	329+21.5	25103	1424	26527	92841	106767	8595	
	* LUMP SUM		- 56		- 56	+ 526	+ 605		
	PROJECT TOTALS		25047	1424	26471	93367	107372	8595	
520-C(1) RURAL	280+42.5	298+48.3	70234	493	70727	7544	8676	40	
	329+21.5	365+47.2	27668	291	27959	65877	75759	3254	
	365+47.2	414+60	23995	0	23995	195884	225267	8900	
	* LUMP SUM		- 609		- 609	+ 1669	+ 1919		
	PROJECT TOTALS		121288	784	122072	270974	311621	12194	
520-C(1) MUNIC.	414+60	442+00	7555	0	7555	109453	125871	983	
	* LUMP SUM		- 205		- 205	+ 594	+ 683		
	PROJECT TOTALS		7350	0	7350	110047	126554	983	
GRAND TOTALS			327602	39042	366644	620069	713079	31281	

* DUE TO REDUCTION OF PAVEMENT THICKNESS FROM 10" TO 8"

** EXCESS EXC. TO BE CARRIED AHEAD TO F.A.P. 520-C(1) RURAL
173917 - 167532 + 2420 (PAV'T. REMOVAL) = 8805 CU.YDS.

GENERAL SUMMARY

ITEM Nº	DESCRIPTION	F.A. PROJECT F.A.260-A(2) QUANTITY	UNIT	F.A. PROJECT F.A.520-C(1) RURAL QUANTITY	UNIT	F.A. PROJECT F.A.520-A(2) QUANTITY	UNIT	F.A. PROJECT F.A.520-C(1) MUNICIPAL QUANTITY	UNIT	GRAND TOTAL QUANTITY	UNIT
	ROADWAY										
E-1	ROADWAY EXCAVATION (UNCLASSIFIED)	210751	CU.YDS.	122,072	CU.YDS.	26,471	CU.YDS.	7350	CU.YDS.	366,644	CU.YDS
E-101	DUMPED ROCK FILL	9,509	CU.YDS.	12,194	CU.YDS.	8,595	CU.YDS.	983	CU.YDS.	31,281	CU.YDS
E-4	BORROW (CONTRACTOR TO FURNISH)			179,435	CU.YDS.	81,081	CU.YDS.	118,547	CU.YDS.	379,063	CU.YDS.
E-8	REMOVAL & DISPOSAL OF EXISTING 8"x18' CONCRETE PAVEMENT	10,890	SQ.YDS.	3,332	SQ.YDS.	5600	SQ.YDS.	104	SQ.YDS.	19,926	SQ.YDS.
E-8	REMOVAL & DISPOSAL OF EXISTING 10"x18' WATERBOUND MACADAM PAVEMENT			4870	SQ.YDS.					4870	SQ.YDS.
E-8	REMOVAL & DISPOSAL OF EXISTING 4" BRICK PAVEMENT							2933	SQ.YDS.	2933	SQ.YDS.
E-8	REMOVAL & DISPOSAL OF EXISTING 6"x4" CONCRETE CURB							1547	LIN.FT.	1547	LIN.FT.
E-8	REMOVAL & DISPOSAL OF EXISTING 6"x18" STONE CURB							715	LIN.FT.	715	LIN.FT.
E-8	REMOVAL & DISPOSAL OF EXISTING 8"x16' CONCRETE BASE							1386	SQ.YDS.	1386	SQ.YDS.
E-11	WATER	740	M-GALS	1370	M-GALS	470	M-GALS	550	M-GALS.	3130	M-GALS
E-12	8" TO 15" PIPE REMOVED & STORED	124	LIN.FT.	119	LIN.FT.			228	LIN.FT.	471	LIN.FT.
I-1	12" PIPE FOR DRIVEWAYS			150	LIN.FT.	30	LIN.FT.	62	LIN.FT.	242	LIN.FT.
I-1	15" PIPE FOR DRIVEWAYS	50	LIN.FT.			48	LIN.FT.	186	LIN.FT	284	LIN.FT.
I-1	18" PIPE FOR DRIVEWAYS	40	LIN.FT.	80	LIN.FT.	158	LIN.FT.			278	LIN.FT.
I-1	36" PIPE FOR DRIVEWAYS			54	LIN.FT.					54	LIN.FT.
I-2	12" STORM SEWER	215	LIN.FT.					681	LIN.FT.	896	LIN.FT.
I 2	15" STORM SEWER							382	LIN.FT.	382	LIN.FT.
I-2	12" STORM SEWER UNDER PAVEMENT	160	LIN.FT.					78	LIN.FT.	238	LIN.FT
I-2	12" STORM SEWER UNDER DRIVES							50	LIN.FT.	50	LIN.FT.
I-2	15" STORM SEWER UNDER DRIVES							60	LIN.FT.	60	LIN.FT.
I-2	12" STORM SEWER OUTLET PIPE	190	LIN.FT.							190	LIN.FT.
I-2	18" STORM SEWER OUTLET PIPE							38	LIN.FT.	38	LIN.FT.
I-2	12" CAST IRON PIPE STORM SEWER UNDER RAILROAD, SEC. M-6.2 EXTRA HEAVY							50	LIN.FT.	50	LIN.FT.
I-3	8" ROADWAY DRAINAGE (INCLUDING POROUS BACKFILL)	3149	LIN. FT.	7039	LIN. FT.	494	LIN.FT.	385	LIN.FT.	11067	LIN.FT.
I-3	12" ROADWAY DRAINAGE (INCLUDING POROUS BACKFILL)	2161	LIN.FT.	1385.6	LIN.FT.	1182.4				4729	LIN.FT.
I-3	15" ROADWAY DRAINAGE (INCLUDING POROUS BACKFILL)	1271	LIN.FT.							1271	LIN.FT.
I-3	8" ROADWAY DRAINAGE UNDER DRIVES			100	LIN.FT.					100	LIN.FT.
I-3	12" ROADWAY DRAINAGE UNDER DRIVES			45	LIN.FT.	75	LIN.FT.			120	LIN.FT.
I-3	15" ROADWAY DRAINAGE UNDER DRIVES	40	LIN.FT.							40	LIN.FT.
I-3	8" ROADWAY DRAINAGE, OUTLET PIPE			160	LIN.FT.			20	LIN.FT.	180	LIN.FT.
I-3	12" ROADWAY DRAINAGE, OUTLET PIPE			40	LIN.FT.	80	LIN.FT.			120	LIN.FT.
I-3	15" ROADWAY DRAINAGE, OUTLET PIPE	20	LIN.FT.							20	LIN.FT.
I-4	4" PIPE UNDERDRAIN	1330	LIN.FT.	2781	LIN. FT.	834	LIN. FT.	1560	LIN. FT.	6505	LIN.FT.
I-4	6" PIPE UNDERDRAIN							208	LIN. FT.	208	LIN.FT.
I-5	PIPE SPECIALS 12"x4" Y's FOR STORM SEWER							7	EACH	7	EACH
I-5	PIPE SPECIALS 12"x12" Y's FOR STORM SEWER							1	EACH	1	EACH
I-5	PIPE SPECIALS 8"x4" Y's FOR ROADWAY DRAINAGE	19	EACH	39	EACH	5	EACH	11	EACH	74	EACH
I-5	PIPE SPECIALS 12"x4" Y's FOR ROADWAY DRAINAGE			2	EACH	9	EACH			11	EACH
I-5	PIPE SPECIALS 12"x12" Y's FOR ROADWAY DRAINAGE	4	EACH							4	EACH
I-5	PIPE SPECIALS 15"x6" Y's FOR ROADWAY DRAINAGE	3	EACH							3	EACH
I-5	PIPE SPECIALS 15"x12" Y's FOR ROADWAY DRAINAGE	3	EACH							3	EACH
I-5	PIPE SPECIALS 8"x12" INCREASER FOR ROADWAY DRAINAGE	1	EACH							1	EACH
I-5	PIPE SPECIALS 8"x45° BEND FOR ROADWAY DRAINAGE					6	EACH			6	EACH
I-5	PIPE SPECIALS 6"x4" Y's FOR PIPE UNDERDRAIN							8	EACH	8	EACH
I-8	CATCH BASINS STD. Nº 1-2	7	EACH	4	EACH	2	EACH			13	EACH
I-8	CATCH BASINS MOD. Nº 2-3 AS PER PLAN	2	EACH	1	EACH					3	EACH
I-8	CATCH BASINS STD. Nº 9-A	24	EACH					5	EACH	29	EACH
I-8	CURB INLETS STD. Nº 6							5	EACH	5	EACH
I-8	CURB INLETS STD. Nº 7							2	EACH	2	EACH
I-8	RAISE EXISTING MANHOLE							1	EACH	1	EACH
I-8	RESET MANHOLE CASTINGS							2	EACH	2	EACH
I-10	RIPRAP, TYPE A GROUTED	11	SQ.YDS.							11	SQ.YDS.
T-10	TRAFFIC BOUND SURFACE COURSE, Nº 46 SIZE			215	TONS					215	TONS
M-10	CALCIUM CHLORIDE FOR MAINTAINING TRAFFIC, ESTIMATED	15	TONS			6	TONS	4	TONS	25	TONS
I-14	TYPE 3 PAVED GUTTER	176	LIN. FT.	98	LIN. FT.					274	LIN. FT.
I-13	4" CONCRETE SIDEWALK							2709	SQ. FT.	2709	SQ.FT.
I-13	6" CONCRETE SIDEWALK							385	SQ. FT.	385	SQ.FT.
E-8	REMOVAL AND DISPOSAL OF EXISTING SIDEWALK							4379	SQ. FT.	4379	SQ.FT.
I-13	CONCRETE STEPS (AS PER PLAN) 7" RISER, 14" TREAD, REINFORCED							150	LIN. FT.	150	LIN.FT.
I-14	PAVED GUTTER, TYPE 3 MODIFIED AS PER PLAN	526	LIN.FT.	1635	LIN.FT.	232	LIN.FT.			2393	LIN.FT.
I-14	PAVED GUTTER, TYPE 4, AS PER PLAN							119.5	LIN. FT.	119.5	LIN.FT.
I-15	STANDARD STRENGTH FLEXIBLE STEEL PLATE TENSION TYPE GUARD RAIL SEC. 1-15.03 OR STEEL BEAM TYPE SEC. I-15.05	7948.3	LIN.FT.	10014.2	LIN.FT.	3975	LIN.FT.	4487.5	LIN. FT.	26,425	LIN.FT.
I-15	GUARD RAIL RESET FOR TEMPORARY TRAFFIC LANES (ESTIMATED)	2000	LIN.FT.			1000	LIN.FT.			3000	LIN.FT.
I-15	GUARD RAIL REMOVED & DISPOSED OF	2976	LIN.FT.	264	LIN.FT.					3240	LIN.FT.
I-15	GUARD RAIL REMOVED & STORED	2127	LIN.FT.	3375	LIN.FT.	906	LIN.FT.			6408	LIN.FT.
I-17	TRAFFIC BOUND SIDE APPROACHES, 60 % Nº 4, 40 % Nº 7.	212	CU.YDS.	293	CU.YDS.	455	CU.YDS.	123	CU.YDS.	1083	CU.YDS.
S-14	1½" PIPE HANDRAIL FOR STEPS							29	LIN. FT.	29	LIN.FT.
S-22	REMOVAL OF EXISTING CATCH BASINS							3	EACH	3	EACH
S-22	REMOVAL OF EXISTING MANHOLE							1	EACH	1	EACH
T-110	TRAFFIC COMPACTED SURFACE, COURSE FOR MAINTAINING TRAFFIC (ESTIMATED)	490	CU.YDS.			210	CU.YDS.	145	CU.YDS.	845	CU.YDS.
	PAVEMENT										
S-5	9" REINFORCED CONCRETE APPROACH SLABS					83.6	SQ.YDS			83.6	SQ.YDS.
I-12	TYPE 5-A INTEGRAL CONCRETE CURB	9084	LIN. FT.					630	LIN. FT.	9714	LIN. FT.
I-12	TYPE 2-A INTEGRAL CONCRETE CURB							2751	LIN. FT.	2751	LIN. FT.
T-71	REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT - 10"-8"-8"-10"	21,189	SQ.YDS.	27,339	SQ.YDS.	6979	SQ.YDS.	10958	SQ.YDS.	66465	SQ.YDS.
	STRUCTURES 20 FT. SPAN & UNDER										
E-2	EXCAVATION FOR STRUCTURES (UNCLASSIFIED)	1737	CU.YDS.	930	CU.YDS.	66	CU.YDS.	300	CU.YDS.	3033	CU.YDS.
E-3	CHANNEL EXCAVATION	468	CU.YDS.	272	CU.YDS.	95	CU.YDS.	91	CU.YDS.	926	CU.YDS.
E-12	10" TO 36" PIPE REMOVED AND STORED	443	LIN.FT.	456	LIN.FT.	45	LIN.FT.	32	LIN.FT.	976	LIN.FT.
E-12	15" PIPE REMOVED FOR RE-USE - CAST IRON	62	LIN.FT.							62	LIN.FT.
E-12	18" PIPE REMOVED FOR RE-USE - CAST IRON	45	LIN.FT.							45	LIN.FT.
I-6	RELAY 15" CAST IRON PIPE	62	LIN.FT.							62	LIN.FT.
I-6	RELAY 18" CAST IRON PIPE	45	LIN.FT.							45	LIN.FT.
I-8	CATCH BASINS, STD. Nº 1-2	2	EACH	1	EACH					3	EACH
I-8	CATCH BASINS, STD. Nº 2-2	1	EACH							1	EACH
I-8	CATCH BASINS, Nº 2-3 MODIFIED AS PER PLAN	5	EACH							5	EACH
I-10	RIPRAP, TYPE A GROUT FILLED	264	SQ.YDS.	44	SQ.YDS.					308	SQ.YDS.
I-14	PAVED GUTTER, TYPE 3	324	LIN.FT.							324	LIN.FT.
I-14	PAVED GUTTER TYPE 3 MODIFIED AS PER PLAN	435	LIN.FT.							435	LIN.FT.
S-1	CONCRETE FOR STRUCTURES, CLASS "C"	465.2	CU.YDS.	337.2	CU.YDS.	3.3	CU.YDS.	133.1	CU.YDS.	938.8	CU.YDS.
S-3	WATERPROOFING - TYPE B	120	SQ.YDS.	26	SQ.YDS.			64	SQ.YDS.	210	SQ.YDS.
S-3	WATERPROOFING TYPE C	24	SQ.YDS.	13	SQ.YDS.					37	SQ.YDS.
S-4	REINFORCING STEEL	74,659	LBS.	32096	LBS.			19895	LBS.	126,650	LBS.
S-22	REMOVAL OF PORTIONS OF EXISTING STRUCTURES	223	CU.YDS.	116	CU.YDS.	35	CU.YDS.	1	CU.YDS.	375	CU.YDS.
S-27	15" PIPE FOR ROADWAY CULVERTS	62	LIN.FT.	84	LIN.FT.					146	LIN.FT.
S-27	18" PIPE FOR ROADWAY CULVERTS	240	LIN.FT.	168	LIN.FT.	130	LIN.FT.			538	LIN.FT.
S-27	24" PIPE FOR ROADWAY CULVERTS	426	LIN.FT.					112	LIN. FT.	538	LIN.FT.
S-27	15" CAST IRON PIPE FOR ROADWAY CULVERTS	10	LIN.FT.							10	LIN.FT.
S-27	18" CAST IRON PIPE FOR ROADWAY CULVERTS	8	LIN.FT.							8	LIN FT.
S-27	24" EXTRA STRENGTH PIPE FOR ROADWAY CULVERTS			316	LIN.FT.					316	LIN.FT.
	STRUCTURES OVER 20 FT SPAN										
S-24	REMOVAL OF EXISTING BEAM BRIDGE			1	LUMP SUM						
S-24	REMOVAL OF EXISTING UNDERPASS SEE SHEET Nº 133 FOR QUANTITIES ON RIVER BRIDGE			1	LUMP SUM						
	ROADWAY - CONTINUED										
L-2	2" TOPSOIL FURNISHED AND PLACED	460	SQ.YDS.	200	SQ.YDS.			6646	SQ.YDS.	7306	SQ.YDS.
L-9	FERTILIZER, 10-6-4 FORMULA	5,188	LBS.	9,520	LBS.	2609	LBS.	1762	LBS.	19,079	LBS.
L-9	LIME	41,506	LBS.	76,188	LBS.	20,878	LBS.	14,094	LBS.	152,656	LBS.
E-305	SEEDING AND PROTECTING ROADWAY AREAS	57,640	SQ.YDS.	105,772	SQ.YDS.	28,976	SQ.YDS.	19,564	SQ.YDS.	211,952	SQ.YDS
L-10	SODDING	460	SQ.YDS.	200	SQ.YDS.			6646	SQ.YDS.	7,306	SQ.YDS.

TUSCARAWAS COUNTY
S.H. 70 SEC. A(Pt), D & MIN. CITY (Pt.)
DOVER BASIN

DIST. NO.	STATE
10	OHIO

FEDERAL AID PROJECT	FISCAL YEAR
260-A(2), 520-A(2), 520-C(1)	1941

145