| FED. RD. DIV. NO. | STATE | FED. AID PROJECT | FISCAL YEAR | |
|---|---|---|---|---|
| 2 | OHIO | | 1950 | 19 |

HOL-520-(5.22-5.34)

S. H. SEC.

# STATE OF OHIO
# DEPARTMENT OF HIGHWAYS
# HOL-520-(5.22-5.34)
# HOLMES COUNTY
# VILLAGE OF GLENMONT

## CONVENTIONAL SIGNS

COUNTY LINE
TOWNSHIP LINE
SECTION LINE
CORPORATION LINE
PROPERTY LINE
FENCE LINE
CENTER LINE
POLE LINE
RAILROADS

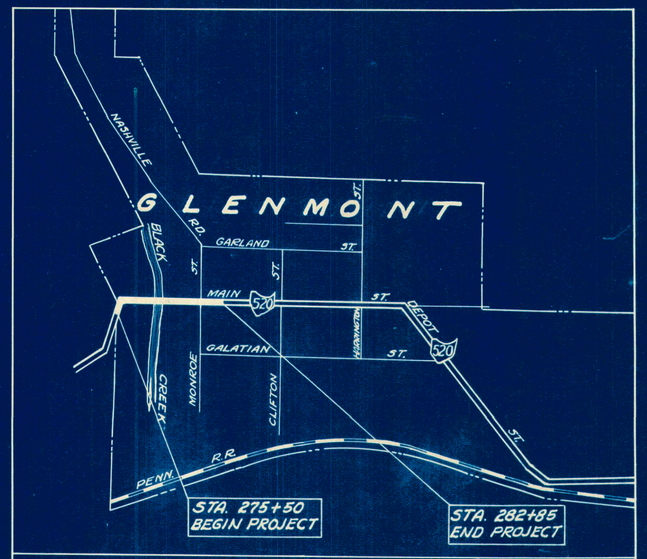
℄ Telephone ℄ Electric

## INDEX OF SHEETS


| | |
|---|---|
| TITLE PAGE | 1 |
| TYPICAL SECTIONS | 2 |
| DETAILS AND GENERAL NOTES | 3 |
| SUMMARY OF QUANTITIES | 4-5 |
| PLAN AND PROFILE | 6-7 |
| CURVE TABLE | 10 |
| CROSS SECTIONS | 8-9 |
| PAVEMENT, WALK AND SEWER DETAILS | 10 |
| CHANNEL DETAILS | 11-12 |
| STRUCTURE OVER 20' SPAN | 13-19 |


## LINE DATA

BEGIN PROJECT STA. 275+50
END PROJECT STA. 282+85
NO ADDITIONS OR DEDUCTIONS
NET LENGTH OF PROJECT = 735 LIN. FT. OR 0.139 MILES




Average Haul From Siding = 0.5 Miles
Delivery Point = Glenmont, Ohio

## LOCATION PLAN

Scale 1" = 400'

PORTION TO BE IMPROVED
STATE HIGHWAYS
STREETS

## SCALES

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

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

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

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

Approved Duncan W. Smith
Date 1-13-50 Division Deputy Director.

Approved _____
Date _____ Chief Engineer, Bureau of Maintenance.

Approved Richard Orth
Date 1-13-50 Chief Engineer, Bureau of Bridges & R.R. Crossings.

Approved R. L. Peterman
Date 1-13-50 Chief Engineer, Bureau of Location & Design.

Approved J. F. Schaudin
Date 1-13-50 First Asst. Director & Chief Engineer.

Approved H. Keller
Date 1-13-50 Director of Highways.

| File No. | HOL-520-(5.22-5.34) |
|---|---|
| ____ | DATE OF LETTING _____ |
| | CONTRACT NO. _____ |

| STANDARD DRAWINGS | | | | | |
|---|---|---|---|---|---|
| G-8.07 | 2-1-47 | I-8 I. No.1 | 3-1-39 | | |
| L-1 | 10-1-45 | I-12 | 3-15-48 | | |
| L-3 | 2-1-47 | I-15 No.1 | 3-1-47 | | |
| I-1,2,3,4 & 5 | 2-20-45 | I-15 No.2 | 6-17-49 | | |
| I-8 C.B.No.3-A | 12-15-41 | A5.3-47 A5.4-47 | 7-27-49 | | |

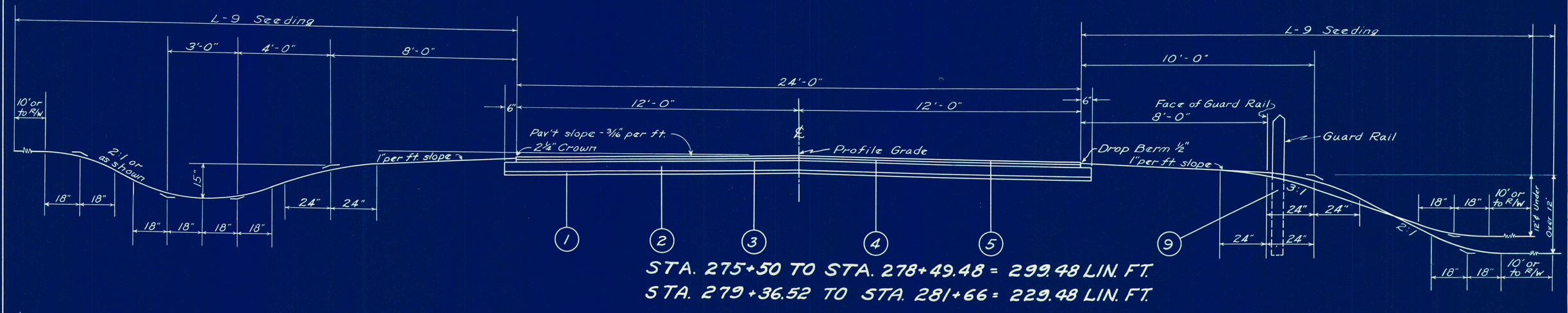
| SUPPLEMENTAL SPECIFICATIONS | | | |
|---|---|---|---|
| T-110 | Rev. 8-3-36 | | |
| S-303 | 12-20-46 | | |
| 31 | 6-13-49 | | |
| | | | |
| | | | |

| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | |

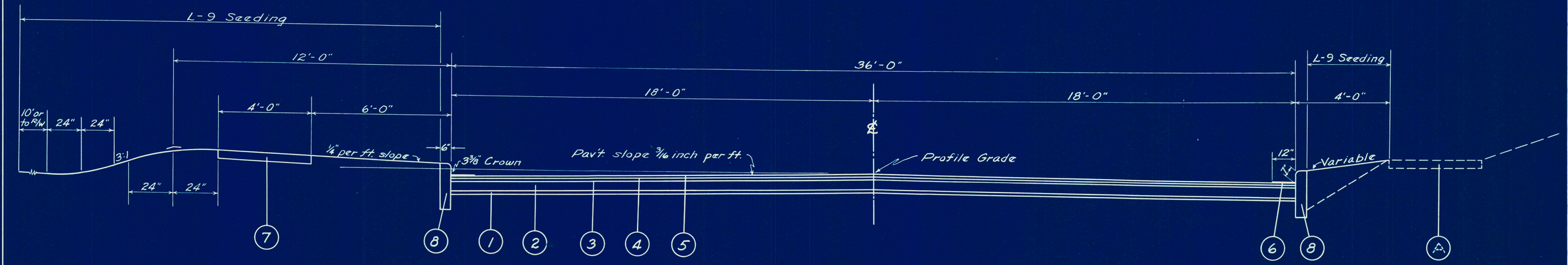
2/19

HOL ~ 520 ~ (5.22 - 5.34)

# TYPICAL SECTION
# TYPE T~35 ON B~20
## SCALE ½" = 1'0"




STA. 275+50 TO STA. 278+49.48 = 299.48 LIN. FT.
STA. 279+36.52 TO STA. 281+66 = 229.48 LIN. FT.




STA. 281+66 TO STA. 282+85 = 119 LIN. FT.

NOTE: For Station to Station limits of new sidewalk right and left, see Sheet No. 7

## ~KEY~

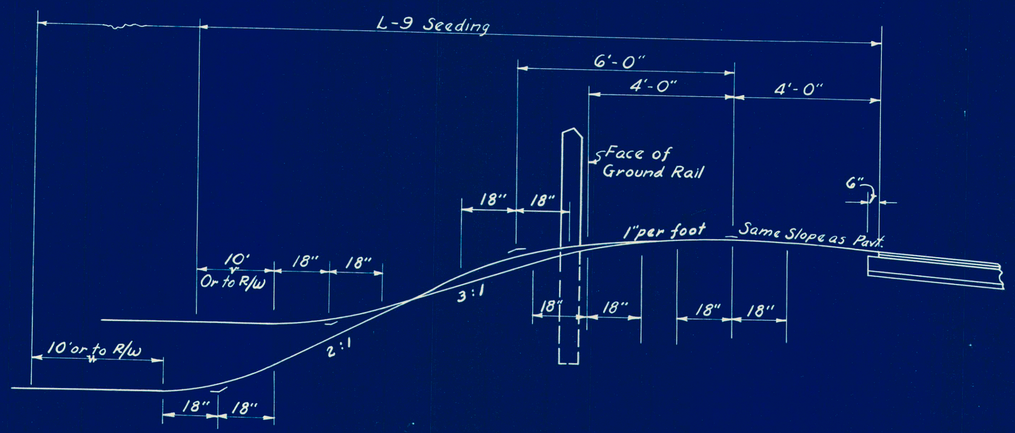
- (A) Existing Concrete Sidewalk.
- (1) I-19-1½" Insulation Course.
- (2) B-20-5" Waterbound Macadam Base Course.
- (3) T-30-Bituminous Prime Coat using 0.35 gal. Sec. M-5.7 RT-2 or RT-3 per Sq. Yd.
- (4) B-35-1¼ Asphaltic Concrete Leveling Course
- (5) T-35-1¼" Asphaltic Concrete Surface Course, Type A.
- (6) Gutter Seal.
- (7) I-13-4" Concrete Sidewalk.
- (8) I-12-6"x24" Concrete Curb. (See detail on Sheet 3)
- (9) I-15-Guard Rail.

| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | |

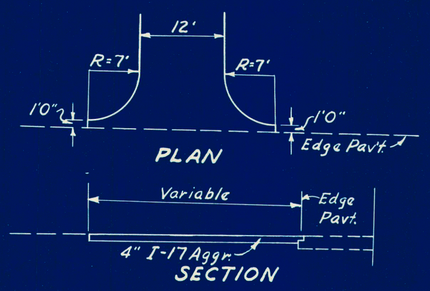
3/19

HOL-520-(5.22-5.34)

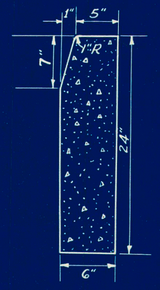
# DETAILS AND GENERAL NOTES




PART SUPERELEVATED SECTION




DETAIL OF PRIVATE DRIVE




CURB DETAIL
TYPE 6 (MOD.)

SECTION ON ℄ UNDERDRAIN SEC.A-A

**NOTE:** Stone Underdrain shall be placed as directed by the Engineer at all locations where there is a concentration of water in the subgrade of the pavement.
Estimated Quantity = 100 Lin. Ft.
Carried direct to General Summary.

DETAIL OF Nº 2 STONE UNDERDRAIN

**Curves:-** Superelevated curves shall be built without crown. The crown shall be worked out of the pavement in that portion between the beginning of the transition and the point where the superelevation equals twice the crown.

**Berms and Slopes:-** Berms and slopes shall be finished in accordance with the typical sections except where otherwise shown on the cross sections. While the cross sections, as drawn, show straight lines and angles, in construction all corners shall be rounded as shown in the typical sections.

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

**Utility Adjustment:-** Any and all work required for Public or Private Utilities will be done by the respective owners, and the Contractor shall co-operate with the utility companies by arranging his work in such a manner that needless conflictions will be avoided.

**Field House:-** The Contractor shall provide a suitable "Field Office" in accordance with Sec.S-0.01(b) having a minimum of 120 sq. ft. of floor space. The Contractor shall have a telephone installed and maintained during construction of this project.

**Seeded Areas:-** The area of seeding, Item L-9, is estimated to extend ten(10) feet beyond the work limits or to the right of way line if it is less than ten (10) feet beyond the limits of work. Areas unnecessarily disturbed by the contractor, in the opinion of the Engineer, beyond the limits estimated, shall be seeded according to the requirements of Item L-9 at the Contractor's expense.

**Compaction:-** Compaction will not be required on the top four(4) inches of the area to be seeded.

**Optional Method of Holding Mulch in Place:-** The method of tying down the mulching material as shown on Standard Drawing L-3 may be replaced over suitable areas, as directed, by the use of an approved power driven rotary type mixing machine to incorporate the mulching material with the soil. Any area not treated with the machine shall have the mulching material secured by the usual method shown in the Standard Drawing.

**I-17 Grading Requirements:-** The grading requirements for material passing the Nº 200 mesh sieve, as specified in Sec. I-17.02 may be modified as follows:-
Passing 200 mesh - 0% to 20%
provided compaction is obtained in accordance with Sec. I-17.02.

**Removal of Existing Structure:-** Existing structure HO-520-53 at Sta. 277+88 shall be removed to Elevation 877.0. Suitable waste masonry may be used as riprap.

**Traffic:-** The Contractor shall maintain traffic at all times in accordance with the requirements of Sec. G-8.07. The item of "Maintaining Traffic" shall include furnishing lights, signs, barricades and watchmen necessary to secure the flow of traffic twenty-four(24) hours daily.

| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | |

4/19

HOL-520-(5.22-5.34)

# SUMMARY OF QUANTITIES

## CULVERTS

| Ref. No. | Station | See Sheet No. | Removal of Existing Structure Lump Sum | | | |
|---|---|---|---|---|---|---|
| 1-C | 277+88 | 3 & 6 | Lump | | | |
| | | | | | | |
| | | | | | | |
| Total | | | Lump | | | |

## APPROACHES

| Total of Sheet No. | Pipe for Driveways Lin. Ft. 15" | I-17 Aggr. Cu. Yds. | New Pavt. Surface Sq. Yds. | 10" V.S.P. Removed and Disposed of Lin. Ft. | |
|---|---|---|---|---|---|
| 6 | 32 | 21 | | 26 | |
| 7 | | 5 | 250 | | |
| | | *4 | | | |
| | | | | | |
| Totals | 32 | 30 | °250 | 26 | |

* +15% for Compaction.
° Carried to Pavement Calculations.

## TREES

| Total of Sheet No. | Removals - Each 12"-18" | 18"-24" | 24"-30" | 30"-36" | | Aggregate for Tree Root Aeration Cu. Yds. | |
|---|---|---|---|---|---|---|---|
| 6 | 9 | 2 | 1 | 1 | | 3 | |
| 7 | 1 | 2 | | | | 8 | |
| | | | | | | | |
| | | | | | | | |
| Totals | 10 | 4 | 1 | 1 | | 11 | |

## REMOVALS

| Total of Sheet No. | Concrete Pavement Sq. Yds. | Concrete Sidewalk Sq. Ft. | Concrete Curb Lin. Ft. | | |
|---|---|---|---|---|---|
| 6 | 217 | | | | |
| 7 | 844 | 1250 | 263 | | |
| | | | | | |
| | | | | | |
| Totals | 1061 | 1250 | 268 | | |

## DRAINAGE

| Total of Sheet No. | Storm Sewer Lin. Ft. 12" | 15" | | Storm Sewer Under Pavement Lin. Ft. 12" | 15" | | Std. No.1 Side Ditch Inlet Each | Std. No.3-A Catch Basin Each | Catch Basin Abandoned Each | |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | | 136 | | | | | | | | |
| 7 | 28 | 81 | | 33 | 36 | | 1 | 2 | 1 | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Totals | 28 | 217 | | 33 | 36 | | 1 | 2 | 1 | |

## GUARD RAIL

| Total of Sheet No. | New Lin. Ft. | |
|---|---|---|
| 6 | 123.42 | |
| | | |
| | | |
| | | |
| Total | 123.42 | |

## APPROACH SLABS

| Total of Sheet No. | Approach Slabs Sq. Yds. | T-35 Surface Sq. Yds. | |
|---|---|---|---|
| 6 | 80 | 80 | |
| | | | |
| | | | |
| | | | |
| | | | |
| Totals | 80 | °80 | |

°Carried to Pavement Calculations

## CURB AND SIDEWALK

| Total of Sheet No. | 4" Concrete Sidewalk Sq. Ft. | 6"x24" Concrete Curb Lin. Ft. Straight | Circular | |
|---|---|---|---|---|
| 7 | 1190 | 248 | 20 | |
| | | | | |
| | | | | |
| | | | | |
| Totals | 1190 | 268 | | |

## EARTHWORK AND SEEDING

| Station From | Station To | Excavation Cu. Yds. | Embankment Cu. Yds. | Embankment +20% Cu. Yds. | | Seeding Sq. Yds. | Fertilizer Lbs. | Lime Lbs. | |
|---|---|---|---|---|---|---|---|---|---|
| 275+50 | 282+85 | 100 | 5090 | 6108 | | 5464 | 984 | 4918 | |
| | | | | | | | | | |
| | | | | | | | | | |
| Totals | | 100 | 5090 | 6108 | | 5464 | 984 | 4918 | |

Borrow = 6108 - 100 = 6008 Cu. Yds.
Water = 5090 x 5 ÷ 1000 = 26 M-Gals.

| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | |

5/19

HOL-520 (5.22-5.34)

# SUMMARY OF QUANTITIES

## PAVEMENT CALCULATIONS

| | | | | | |
|---|---|---|---|---|---|
| Net Length of 24' Pavement | = | | | 528.96 | Lin. Ft. |
| Net Length of 36' Pavement | = | | | 119 | Lin Ft |
| Area of Pavement | = | 528.96 x 24 ÷ 9 | = | 1411 | Sq. Yds. |
| | | 119 x 36 ÷ 9 | = | 476 | Sq. Yds. |
| Street Approaches | = | | | 250 | Sq. Yds. |
| Total Area of Pavement | = | | | | 2137 Sq. Yds. |
| | | | | | |
| Item I-19 | | | | | |
| Area | = | 528.96 x 25 ÷ 9 | = | 1469 | Sq. Yds. |
| | | 119 x 36 ÷ 9 | = | 476 | Sq. Yds. |
| Street Approaches | = | | | 256 | Sq. Yds. |
| Total I-19 | = | | | | 2201 Sq. Yds. |
| | | | | | |
| Item B-20 | | | | | |
| Total B-20 | = | | | | 2201 Sq. Yds. |
| | | | | | |
| Item T-30 | | | | | |
| Prime | = | 2201 x 0.35 | = | 771 | Gals. |
| Approach Slabs | = | 80 x 0.10 | = | 8 | Gals. |
| Total Prime | = | | | | 779 Gals. |
| | | | | | |
| Item B-35 | | | | | |
| Leveling Course | = | 2137 x 1¼ ÷ 36 | = | 74 | Cu. Yds. |
| Extra Leveling | = | 0.100 x 200 | = | 20 | Cu. Yds. |
| | | 0.023 x 300 | = | 7 | Cu. Yds. |
| Total Leveling | = | | | | 101 Cu. Yds. |
| | | | | | |
| Item T-35 | | | | | |
| Surface | = | 2137 x 1½ ÷ 36 | = | 74 | Cu. Yds. |
| Approach Slabs | = | 80 x 2½ ÷ 36 | = | 6 | Cu. Yds. |
| Total Surface | = | | | | 80 Cu. Yds. |

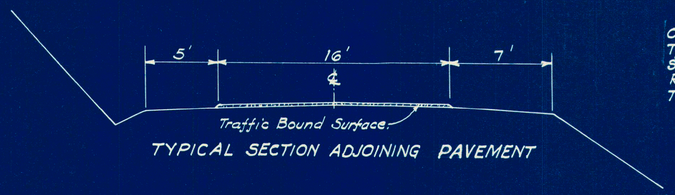
## GENERAL SUMMARY

| ITEM | QUANTITY | UNIT | DESCRIPTION |
|---|---|---|---|
| | | | ROADWAY |
| E-1 | 100 | Cu. Yds. | Roadway Excavation |
| E-4 | 6008 | Cu. Yds. | Borrow |
| E-8 | 1061 | Sq. Yds. | Removal and Disposal of Existing Concrete Pavement. |
| E-8 | 1250 | Sq. Ft. | Removal and Disposal of Existing Concrete Sidewalk |
| E-8 | 268 | Lin. Ft. | Removal and Disposal of Existing Concrete Curb |
| E-9 | 16 | Each | Removal of Trees and Stumps |
| E-11 | 26 | M-Gals. | Water |
| E-12 | 26 | Lin. Ft. | 10" Pipe Removed and Disposed of |
| I-13 | 1190 | Sq. Ft. | 4" Concrete Sidewalks |
| I-15 | 123.42 | Lin. Ft. | Guard Rail, Steel Beam Type (Deep) |
| I-17 | 30 | Cu. Yds. | Side Approaches, Mail Box Turnouts and Berm Material |
| L-8 | 11 | Cu. Yds. | Aggregate for Tree Root Aeration |
| L-9 | 5464 | Sq. Yds. | Seeding and Protecting, Type "A" |
| L-9 | 0.49 | Ton | Commercial Fertilizer, (10-6-4) |
| L-9 | 2.46 | Tons | Agricultural Ground Limestone |
| M-10 | 7 | Tons | Calcium Chloride for Maintaining Traffic |
| T-110 | 950 | Cu. Yds. | Traffic Compacted Surface Course for Maintaining Traffic |
| | | | DRAINAGE |
| I-1 | 32 | Lin Ft. | 15" Pipe for Driveways |
| I-2 | 28 | Lin. Ft. | 12" Storm Sewers |
| I-2 | 217 | Lin Ft. | 15" Storm Sewers |
| I-2 | 33 | Lin. Ft. | 12" Storm Sewers Under Pavement |
| I-2 | 36 | Lin. Ft. | 15" Storm Sewers Under Pavement |
| I-8 | 1 | Each | Std. No. 1 Side Ditch Inlet |
| I-8 | 2 | Each | Std. No. 3-A Catch Basins |
| I-9 | 100 | Lin. Ft. | Stone Underdrains, No. 2 |
| I-16 | 1 | Each | Catch Basin Abandoned |
| S-24 | Lump | Lump Sum | Removal of Existing Structure (HO-520-53), As Per Plan |
| | | | PAVEMENT |
| I-19 | 2201 | Sq. Yds. | 1½" Insulation Course |
| B-20 | 2201 | Sq. Yds. | 5" Waterbound Macadam Base Course |
| T-30 | 779 | Gals. | Bituminous Prime Coat, Sec. M-5.7 RT-2 or 3 |
| B-35 | 101 | Cu. Yds. | Asphaltic Concrete Leveling Course (85-100) |
| T-35 | 80 | Cu. Yds. | Asphaltic Concrete Surface Course, Type "A" (85-100) |
| I-7 | 80 | Sq. Yds | 9" Reinforced Concrete Approach Slabs |
| I-12 | 268 | Lin. Ft. | Concrete Curb, Type 6 Modified as per Plan |
| | | | STRUCTURE OVER 20' SPAN |
| | | | See Sheet No. 14 for Quantities |

| FED. RD. DIVISION | STATE | PROJECT | FISCAL YEAR |
|---|---|---|---|
| 2 | OHIO | | |

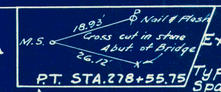
6/19

HOL-520-(5.22-5.34)

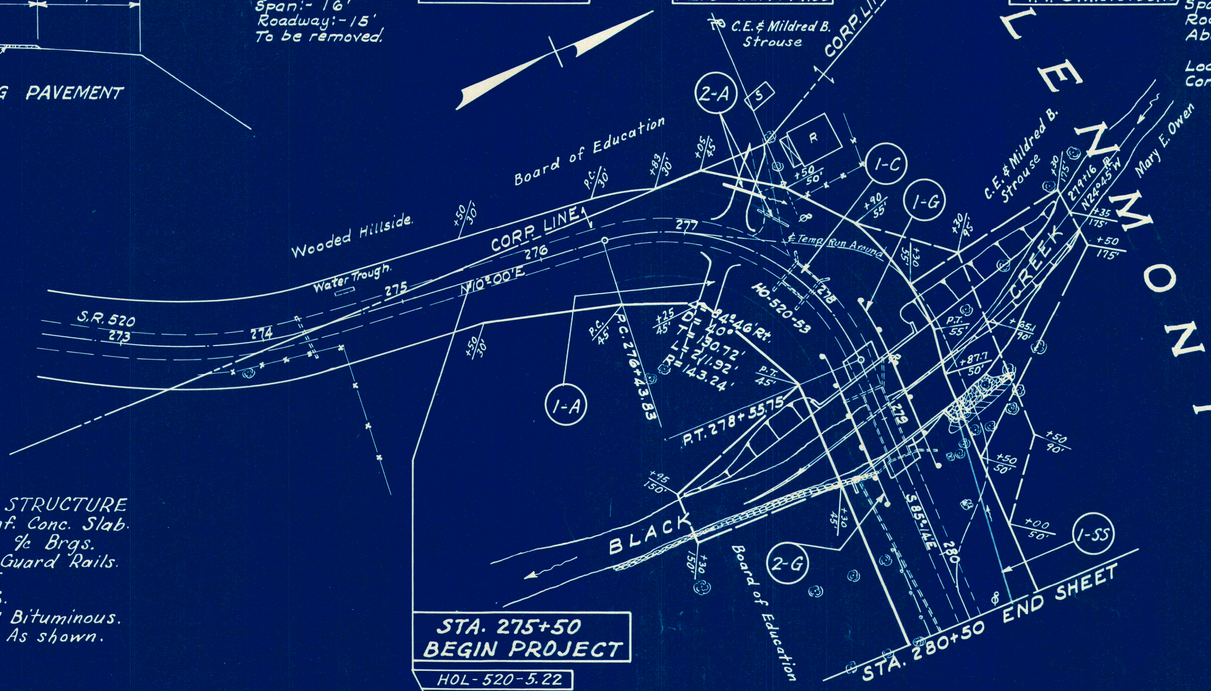


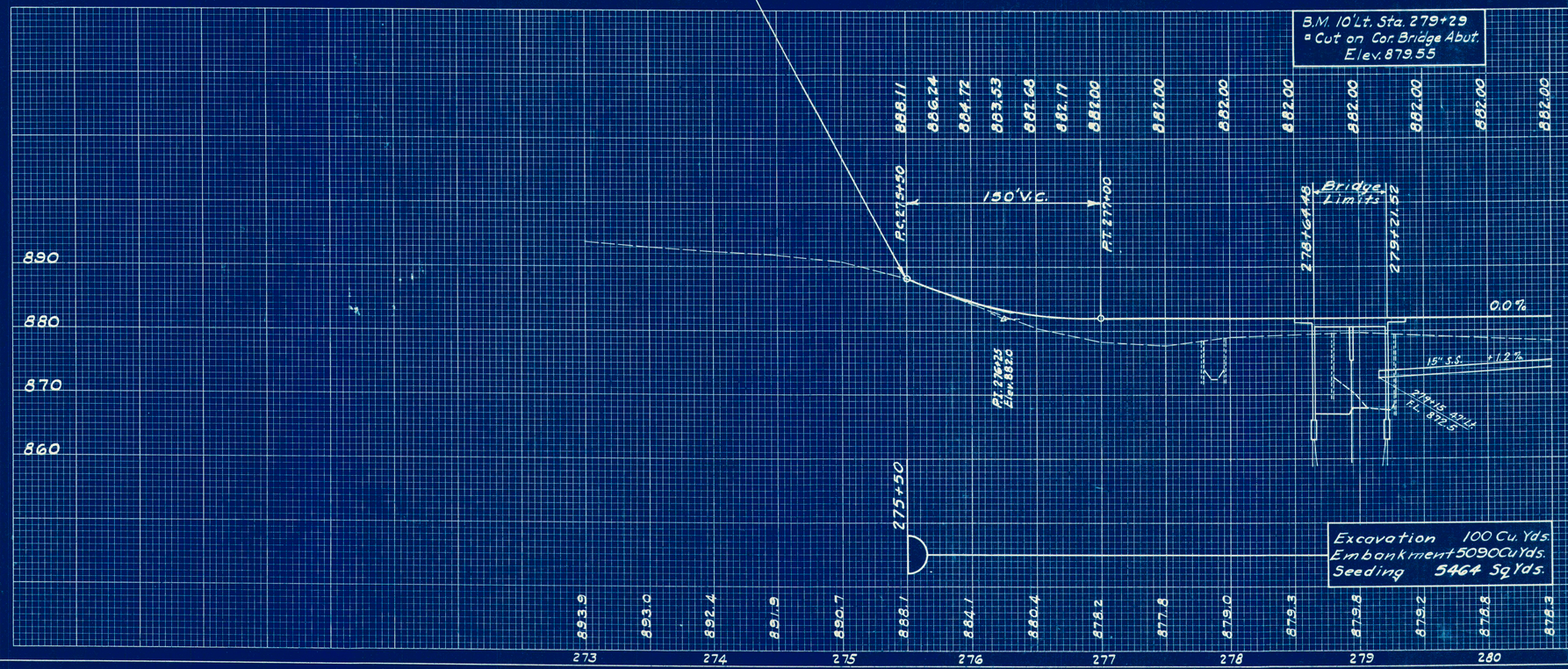

TYPICAL SECTION ADJOINING PAVEMENT

HO-520-53
Overflow Structure
Type:- Conc. Slab.
Span:- 16'
Roadway:- 15'
To be removed.




Existing Bridge Data.
HO-520-53A.
Type:- Low Truss,
Span:- 47'
Roadway:- 12'-6"
Abutments:- Rear-Timber and Stone
Fwd- Concrete.
Loading:- 5 Ton.
Condition:- Poor.
To be removed.




## PROPOSED STRUCTURE

TYPE: Cont. Reinf. Conc. Slab.
SPAN: 2 @ 28' ℄ Brgs.
RDWY: 40' f/f Guard Rails.
SKEW: 15° R.F.
LDG: S-15-46.
SURF. COURSE: Bituminous.
APPR. SLABS: As shown.

## APPROACHES

| Ref. No. | Station | Side ℄ | See Sheet No. | Pipe Lin. Ft. 15" | I-17 Cu. Yds. | 10" V.S.P. Removed and Disposed of - Lin. Ft. |
|---|---|---|---|---|---|---|
| 1-A | 277+30 | Rt. | 8 | | 12 | |
| 2-A | 277+30 | Lt. | 8 | | 32 | 9 | 26 |
| | | | | | | |
| | | | | | | |
| TOTALS | | | | 32 | 21 | 26 |

## CULVERTS

| Ref. No. | Station | See Sheet | Removals Type | Span | Roadway |
|---|---|---|---|---|---|
| 1-C | 277+88 | 3 & 6 | Conc. Slab | 16' | 15' |
| | | | | | |
| | | | | | |

## GUARD RAIL

| Ref. No. | From Sta. | To Sta. | Side ℄ | New-Lin. Ft. | Remarks |
|---|---|---|---|---|---|
| 1-G | 278+23.3 | 279+43.98 | Lt. | 67.96 | 57.04 is Bridge Railing |
| 2-G | 278+39.9 | 279+54.52 | Rt. | 55.46 | 57.04 is Bridge Railing |
| | | | | | |
| | | | | | |
| TOTAL | | | | 123.42 | |

## APPROACH SLABS

| From Sta. | To Sta. | Appr. Slab-S.Y. | T-35 Surf.-S.Y. | Remarks |
|---|---|---|---|---|
| 278+49.48 | 278+64.48 | 40 | 40 | AS-4-47 |
| 278+21.52 | 279+36.52 | 40 | 40 | AS-4-47 |
| | | | | |
| | | | | |
| TOTALS | | 80 | 80 | |

## TREES

| Station From | Station To | Side ℄ | Removals - Each 12"-18" | 18"-24" | 24"-30" | 30"-36" | Aeration Aggr.-C.Y. |
|---|---|---|---|---|---|---|---|
| 278+40 | 278+55 | Lt. | 2 | | | | |
| 279+00 | 279+45 | Lt. | 7 | | 1 | 1 | |
| 279+76 | | Lt. | | 1 | | | |
| 279+90 | | Rt. | | 1 | | | |
| 280+47 | | Rt. | | | | | 3 |
| | | | | | | | |
| TOTALS | | | 9 | 2 | 1 | 1 | 3 |

## DRAINAGE

| Ref. No. | From Sta. | To Sta. | Side ℄ | 15" Storm Sewer-L.F. |
|---|---|---|---|---|
| 1-SS | 279+15 | 280+50 | Lt. | 136 |
| | | | | |
| | | | | |
| TOTAL | | | | 136 |

## PAVEMENT REMOVAL

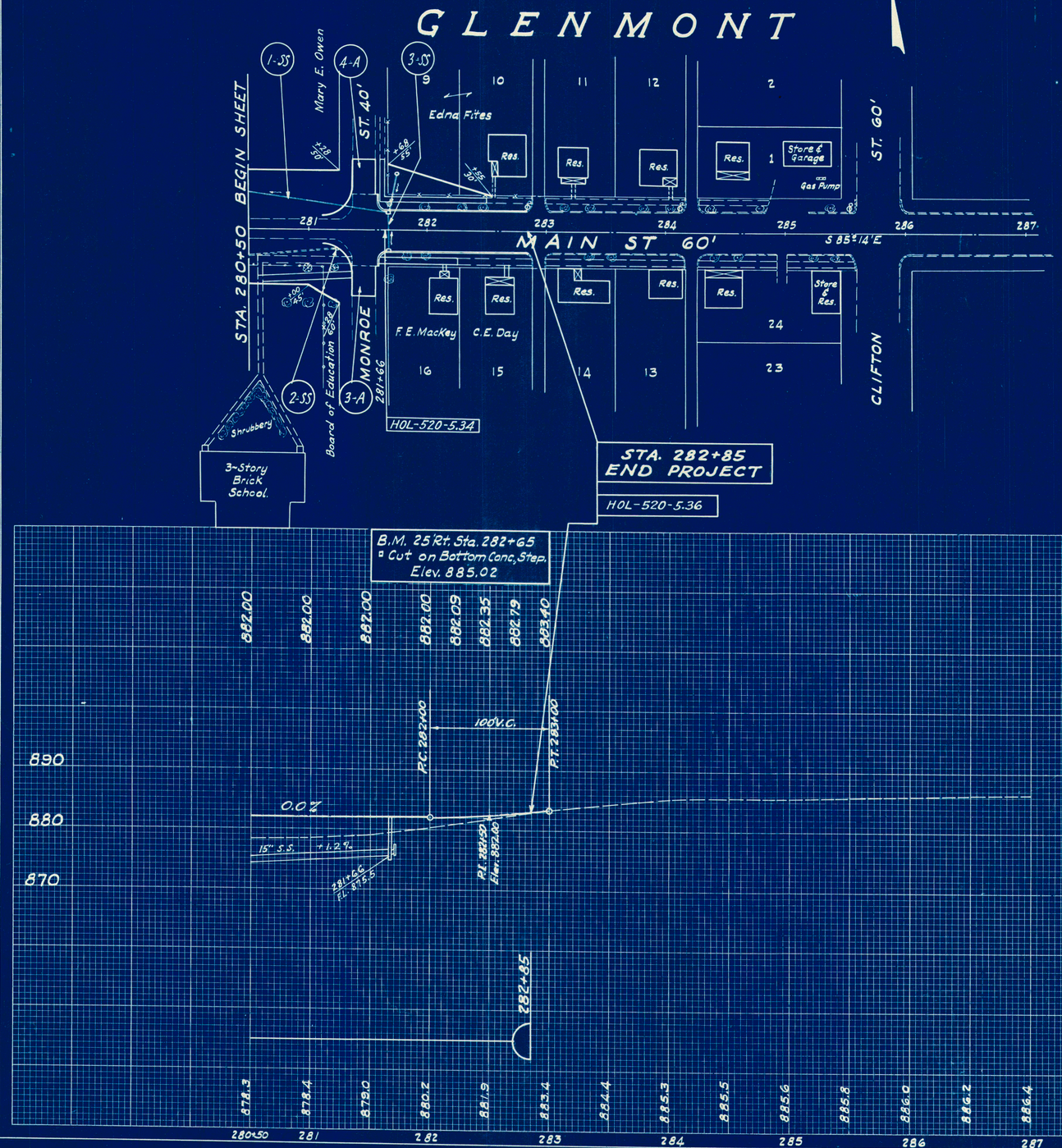
| From Sta. | To Sta. | Width | Sq. Yds. |
|---|---|---|---|
| 279+28 | 280+50 | 16' | 217 |
| | | | |
| TOTAL | | | 217 |

| FED. RD. DIVISION | STATE | PROJECT | FISCAL YEAR |
|---|---|---|---|
| 2 | OHIO | | |

7/19

HOL-520-(5.22-5.34)

TYPICAL SECTION ADJOINING PAVEMENT




## APPROACHES

| Ref. No. | Station | Side ℄ | See Sheet No | I-17 Aggr. Cu Yds. | New Pavt. Surf. Sq. Yds. | | |
|---|---|---|---|---|---|---|---|
| 3-A | 281+47 | Rt. | 10 | 5 | 120 | | |
| 4-A | 281+47 | Lt. | 10 | | 130 | | |
| | | | | | | | |
| Totals | | | | 5 | 250 | | |

## DRAINAGE

| Ref. No. | Station From | Station To | Side ℄ | See Sheet No. | Storm Sewer Lin Ft. 12" | Storm Sewer Lin Ft. 15" | S.S. Under Pavt. Lin Ft. 12" | S.S. Under Pavt. Lin Ft. 15" | No. 3-A C.B. Ea. | No. 1 Inlet Ea. | C.B. Abandoned Ea. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-SS | 280+50 | 281+66 | Lt. | 10 | | 81 | | 36 | | | | |
| 2-SS | 281+25 | | Rt. | | | | | | | | 1 | |
| 3-SS | 281+67 | 281+71 | Lt & Rt | 10 | 28 | | 33 | | 2 | 1 | | |
| | | | | | | | | | | | | |
| Totals | | | | | 28 | 81 | 33 | 36 | 2 | 1 | 1 | |

## TREES

| Station From | Station To | Side ℄ | Removals - Each 12"-18" | Removals - Each 18"-24" | | Aeration Aggr.-C.Y. | | |
|---|---|---|---|---|---|---|---|---|
| 281+80 | 282+00 | Rt. | | 2 | | | | |
| 281+96 | | Lt. | 1 | | | | | |
| | | | | | | | | |
| 280+95 | | Rt. | | | | 3 | | |
| 281+20 | | Rt. | | | | 3 | | |
| 282+29 | | Lt. | | | | 1 | | |
| 282+46 | | Lt. | | | | 1 | | |
| | | | | | | | | |
| Totals | | | 1 | 2 | | 8 | | |

## REMOVALS

| Station From | Station To | Side ℄ | Width Lin Ft. | Conc. Pavt. Sq. Yds. | Conc. Walk Sq. Ft. | Conc. Curb Lin. Ft. | |
|---|---|---|---|---|---|---|---|
| 280+50 | 281+66 | | 16 | 206 | | | |
| 281+66 | 282+85 | | 37 | 489 | | | |
| 281+27 | 281+66 | Lt. | 22 | 70 | | | |
| 281+27 | 281+66 | Rt. | 22 | 79 | | | |
| | | | | | | | |
| 280+56.5 | 280+62.5 | Rt. | 6 | | 97 | | |
| 280+62.5 | 281+31 | Rt. | 6 | | 411 | | |
| 281+61 | 281+65 | Lt. | 4 | | 140 | | |
| 281+59.5 | 282+25 | Rt. | 4 | | 262 | | |
| 281+65 | 282+50 | Lt. | 4 | | 340 | | |
| | | | | | | | |
| 281+59 | 282+85 | Lt. | 0.5 | | | 134 | |
| 281+59 | 282+85 | Rt. | 0.5 | | | 134 | |
| | | | | | | | |
| Totals | | | | 844 | 1250 | 268 | |

## NEW CURB AND SIDE WALK

| Station From | Station To | Side ℄ | See Sheet | Width Lin Ft. | Walk Sq. Ft. | Curb - Lin Ft. Str. | Curb - Lin Ft. Circ. | |
|---|---|---|---|---|---|---|---|---|
| 280+62.5 | 281+37 | Rt. | 10 | 6 | 448 | | | |
| 281+61 | 281+65 | Lt. | 10 | 4 | 140 | | | |
| 281+59.5 | 282+25 | Rt. | 10 | 4 | 262 | | | |
| 281+65 | 282+50 | Lt. | 10 | 4 | 340 | | | |
| | | | | | | | | |
| 281+59.5 | 282+85 | Lt. | 10 | 0.5 | | 124 | 10 | |
| 281+59.5 | 282+85 | Rt. | 10 | 0.5 | | 124 | 10 | |
| | | | | | | | | |
| Totals | | | | | 1190 | 248 | 20 | |

| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | |

8/19

HOL-520-(5.22-5.34)

| Seeding Width S.Y. | End Area Cut | Fill | Cu. Yds. Exc. | Emb. |
|---|---|---|---|---|
| | | | | 2 580 |
| 74 | | 0 | 887 | |
| Temporary Run Around Seeding Area → 200 | | | | |
| | | | | 464 |
| Channel Slope Seeding Rt. & Lt. Sta. 278+79 → 475 | | | | |
| 70 | | 0 | 240 | |
| | | | | 2 130 |
| | | | | 117 |
| 80 | | 6 | 260 | |
| | | | | 467 |
| | | | | 10 527 |
| 88 | | 5 | 309 | |
| Backfill for Overflow Structure Sta. 277+77 to Sta. 277+97 → 75 | | | | |
| | | | | 467 |
| | | | | 11 531 |
| 80 | | 7 | 265 | |

417

9 456

0 65

0 131

70 3 228

3 535

344

54 0 134

289

14 167

50 15 46

172

29 44

12 16 2

Excavation 100 Cu.yds.
Embankment 5090 Cu.Yds.
Seeding 5464 Sq.Yds.

BEGIN PROJECT

BRIDGE

Sta. 277+30 Drive Lt.
32 Lin. Ft. 15" Pipe
9 Cu. Yds. I-17 Aggr.

Sta. 277+30 Drive Rt.
12 Cu. Yds. I-17 Aggr.

882.00 277+30 877.9 Drives Rt & Lt.

882.00 277+00 878.2

882.68 276+50 880.4

884.72 276+00 884.1

888.11 275+50 888.1

275+00 890.7

882.00 279+22 868.0

882.00 278+64 879.4

882.00 278+50 879.3

882.00 278+00 879.0

882.00 277+50 877.8

STA. 275+00 TO STA. 279+22

| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | |

9/19

HOL-520-(5.22-5.34)

60 40 20 ℄ 20 40 60

880

R/W

F=181

882.00
282+00
880.2

82%

+7%

-7%

F=163

882.00
281+47
879.0

Sta. 281+47 Appr. Rt.
T-17 Aggr. = 5 Cu. Yds.
Sta. 281+47 Appr. Lt.
See Sheet No. ____

880

F=188

879.5

882.00
281+00
878.4

880

F=210

879.5

882.00
280+50
878.3

880

F=227

876.2

882.00
280+00
878.8

880

R/W

3:1

F=232

3:1

R/W

875.5

882.00
279+50
879.2

Seeding | End Area | Cu. Yds.
Width | S.Y. | Cut | Fill | Exc. | Emb.

| | | | | | |
|---|---|---|---|---|---|
| | | 0 | 138 | | |
| 128 | | | | | |
| 34 | | 0 | 131 | | |
| 241 | | 0 | 289 | | |
| | | | | +3 | 44 |
| 48 | | 0 | 163 | | |
| | | | | +3 | 62 |
| 282 | | 2 | 305 | | |
| 60 | | 2 | 188 | | |
| 350 | | 4 | 369 | | |
| 66 | | 2 | 210 | | |
| 378 | | 4 | 405 | | |
| 70 | | 2 | 227 | | |
| 400 | | 4 | 425 | | |
| 74 | | 2 | 232 | | |
| 230 | | | | | |

Seeding | End Area | Cu. Yds.
Width | S.Y. | Cut | Fill | Exc. | Emb.

880

R/W

House

284+00
885.3

880

R/W

House

283+50
884.4

880

882.95
282+85
882.9

END PROJECT

| | | | | | |
|---|---|---|---|---|---|
| | | 10 | 0 | 0 | |
| 43 | | 0 | 12 | | |
| 12 | | 0 | 18 | | |

880

R/W

F=1

F=16

R/W

House

F=1

882.35
282+50
881.9

60 40 20 ℄ 20 40 50

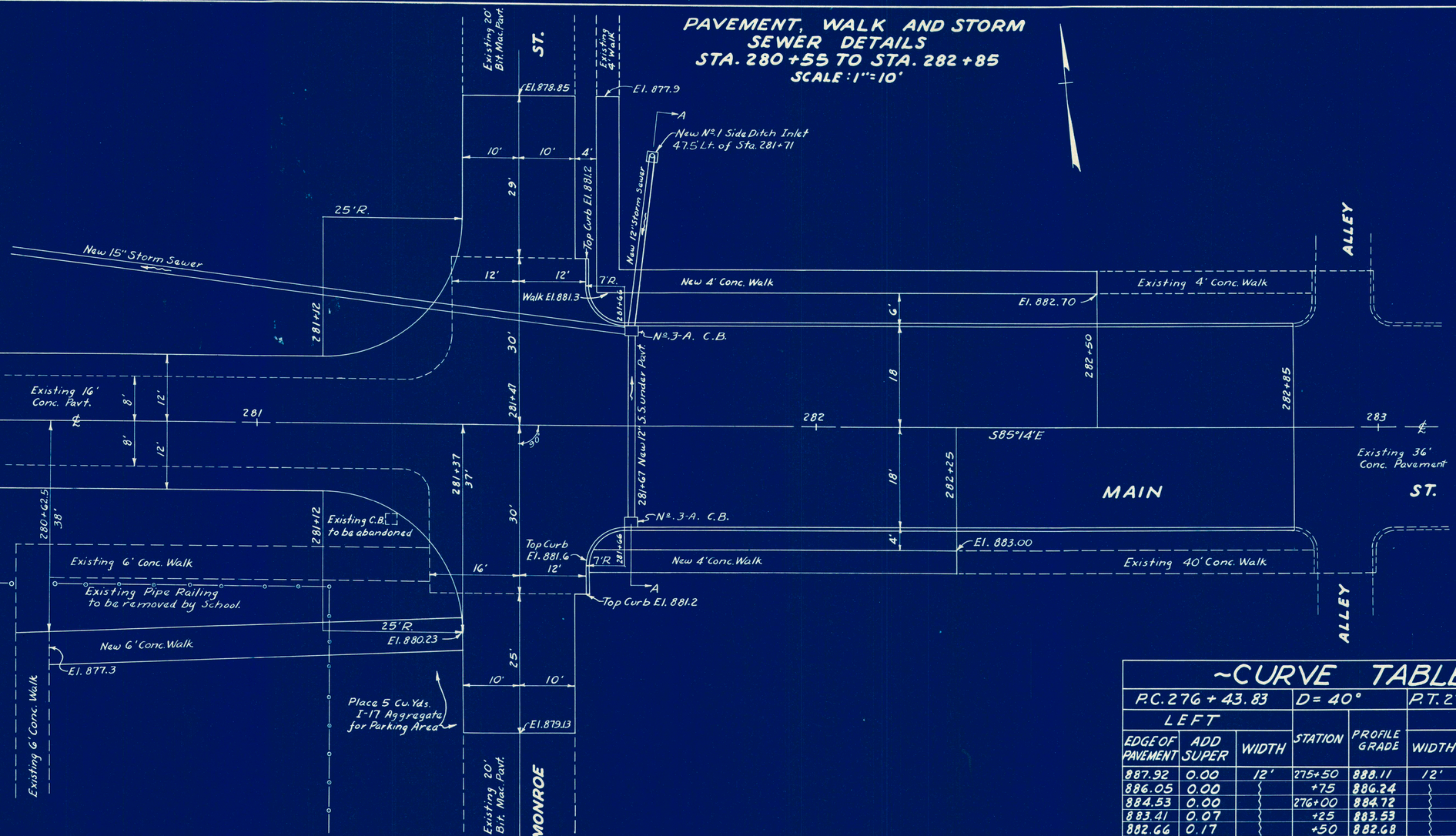
STA. 279+50 TO STA. 284+00

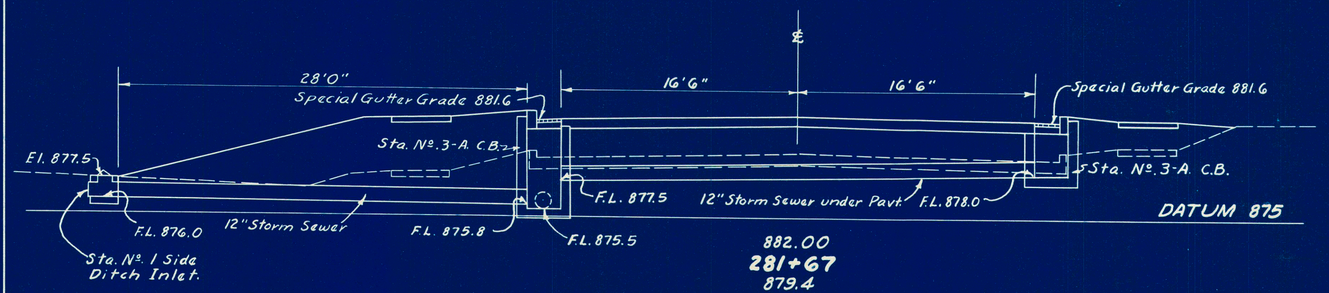
| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | H.I. |

10 / 19

HOL-520-(5.22-5.34)

# PAVEMENT, WALK AND STORM SEWER DETAILS
## STA. 280+55 TO STA. 282+85
SCALE: 1"=10'




882.00
281+67
879.4
SEC. A-A
SCALE: 1" = 5'

## NOTES

NEW WORK: New work shall be adjusted to fit adjoining work as directed by the Engineer.

PAVEMENT DETAILS: For pavement details not shown hereon see Typical Sections on Sheet No. 2.

## ~CURVE TABLE~

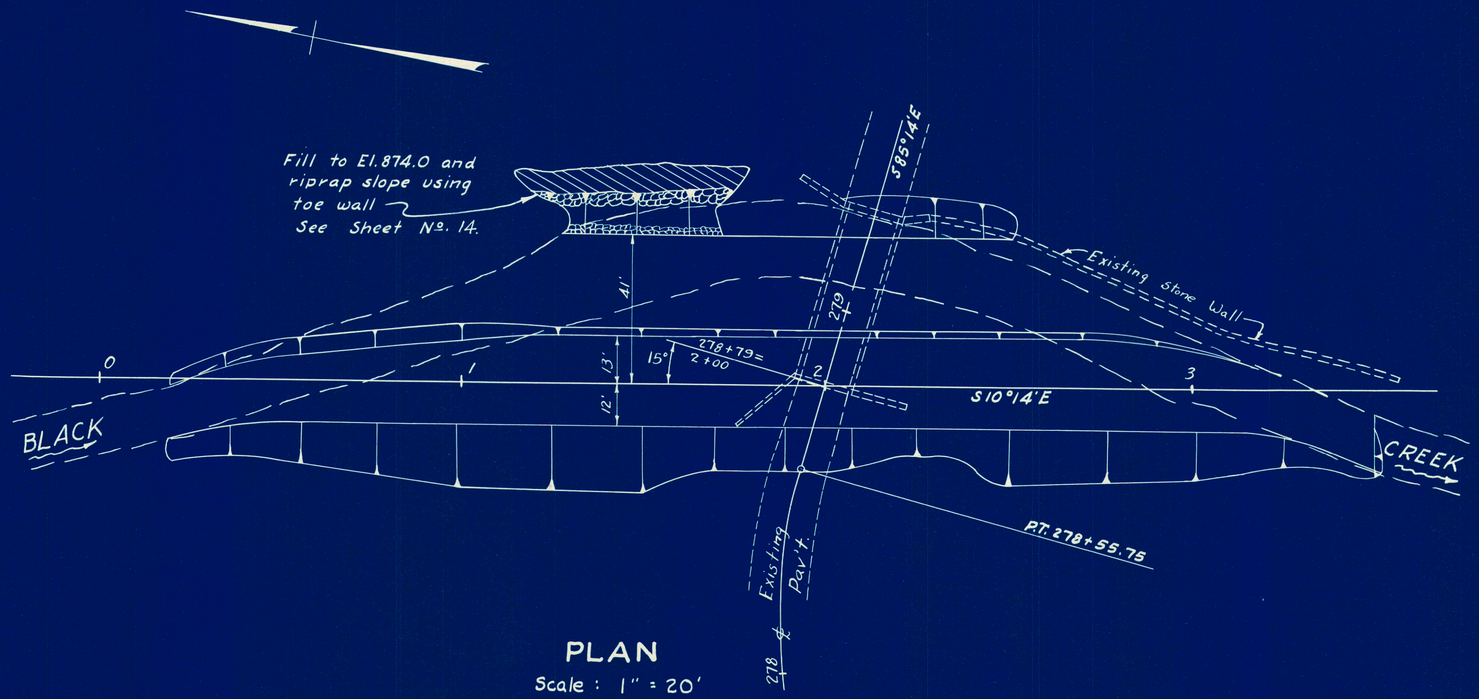
P.C. 276+43.83 — D = 40° — P.T. 278+55.75

| LEFT | | | | | RIGHT | | |
|---|---|---|---|---|---|---|---|
| EDGE OF PAVEMENT | ADD SUPER | WIDTH | STATION | PROFILE GRADE | WIDTH | DEDUCT CROWN | EDGE OF PAVEMENT |
| 887.92 | 0.00 | 12' | 275+50 | 888.11 | 12' | 0.19' | 887.92 |
| 886.05 | 0.00 | | +75 | 886.24 | | | 886.05 |
| 884.53 | 0.00 | | 276+00 | 884.72 | | | 884.53 |
| 883.41 | 0.07 | | +25 | 883.53 | | | 883.34 |
| 882.66 | 0.17 | | +50 | 882.68 | | | 882.49 |
| 882.27 | 0.29 | | +75 | 882.17 | | | 881.98 |
| 882.19 | 0.38 | | 277+00 | 882.00 | | | 881.81 |
| 882.19 | 0.38 | | +25 | | | | |
| 882.19 | 0.38 | | +50 | | | | |
| 882.19 | 0.38 | | +75 | | | | |
| 882.19 | 0.38 | | 278+00 | | | | |
| 882.19 | 0.38 | | +25 | | | | |
| 882.19 | 0.38 | | +50 | | | | |
| 882.19 | 0.38 | | +75 | | | | |
| 882.19 | 0.38 | | 279+00 | | | | |
| 882.19 | 0.38 | | +25 | | | | |
| 882.15 | 0.34 | | +50 | | | | |
| 882.05 | 0.24 | | +75 | | | | |
| 881.94 | 0.13 | | 280+00 | | | | |
| 881.86 | 0.05 | | +25 | | | | |
| 881.81 | 0.00 | 12' | +50 | 882.00 | 12' | 0.19' | 881.81 |

| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | |

11/19

HOL-520 - ( 5.22 - 5.34)




## PLAN

Scale : 1" = 20'

## ESTIMATED QUANTITIES

| | | |
|---|---|---|
| Channel Excavation | 1759 | Cu. Yds. |
| Riprap | 75 | Sq. Yds. |

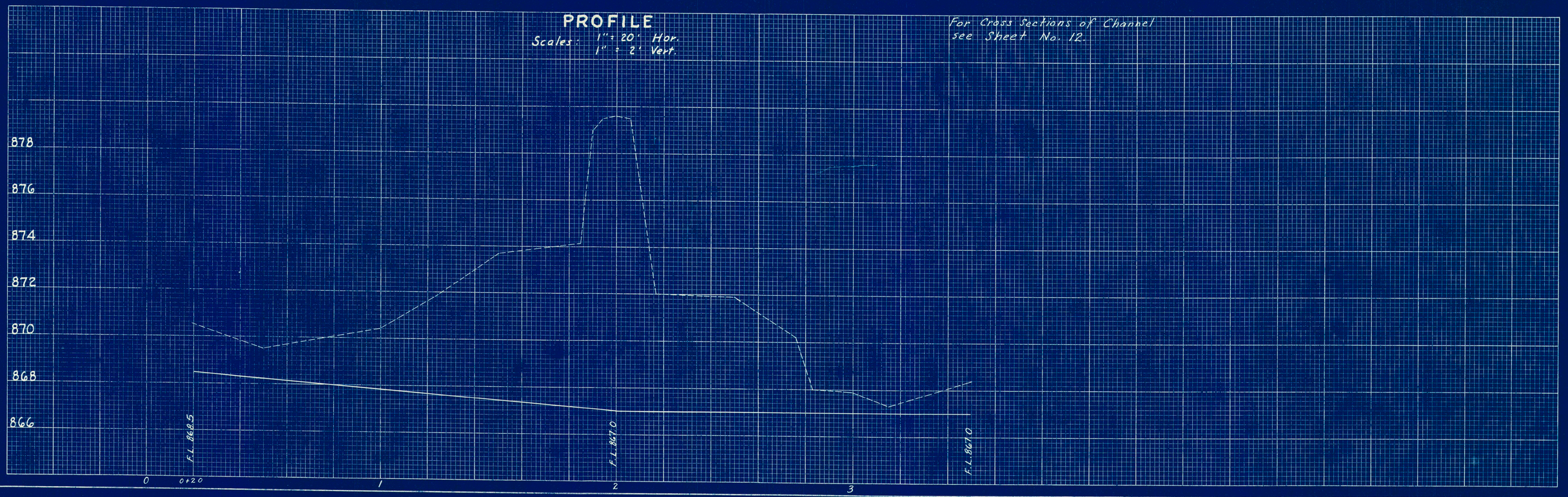
NOTE: These quantities are included with Bridge Quantities. See Sheet No. 14

NOTE: Suitable Channel Excavation may be used in Roadway Embankment as directed by the Engineer.

## PROFILE

Scales: 1" = 20' Hor.
1" = 2' Vert.

For Cross Sections of Channel see Sheet No. 12.



| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | |

HOL-520-(5.22-5.34)

12/19

Channel Excav. E.A. C.Y.

870

867.00
2+00
879.6

868.0

2:1

1:1

157

870

867.13
1+85
874.1

868.1

326

181

870

867.42
1+50
873.7

868.33

Backfill to El. 874

326

356

870

867.63
1+25
871.9

868.5

Ahead 224
Back 262

212

196

870

867.83
1+00
870.4

153

135

870

868.25
0+50
869.5

168

46

870

0+20
870.5
Begin Channel Excav.

26

0

870

867.00
3+50
868.4
End Channel Excav.

867.0

5

870

867.0

24

3+15
867.3

Channel Excav. 1759 Cu.Yds.

32

870

867.00
3+00
867.9

29

72

870

867.00
2+76
870.2

80

108

870

868.0

138

867.00
2+50
871.3

Ahead 178
Back 213

870

867.00
2+17
872.0

235

172

| FED. RD. DIV. NO. | STATE | FED. AID PROJECT | FISCAL YEAR |
|---|---|---|---|
| 2 | OHIO | | |

13
19

HOLMES COUNTY
SEC. HOL-520-(5.22-5.34)
200' East of W.C.L. Glenmont

HO-520-53
Overflow Structure
Type: Conc. Slab
Span: 16'
Roadway: 15'
To be removed

EXISTING BRIDGE DATA
HO-520-53A
Type: Low Truss
Span: 47'
Roadway: 12'6"
Abutments: Rear - Timber and Stone
Fwd. - Concrete
Loading: 5 Ton
Condition: Poor
To be removed

## PROPOSED STRUCTURE

TYPE: Continuous Reinf. Concrete Slab
SPAN: 2 @ 28' c/c bearings
ROADWAY: 40' f/f guard rails
LOADING: S-15-46
SKEW: 15° R.F.
SURFACE COURSE: Bituminous
APPROACH SLABS: As shown
SUPEREL.: 3/16" per foot

## SOUNDING NOTE

Estimated average piling lengths determined by rod soundings.

GLENMONT

End of Channel Excavation
℄ Bridge Ahead Sta. 278+93.00
℄ Temporary run-around. Grade same as existing roadway.
End of Appr. Slab Sta. 278+64.48
Trans. 3:1 to 2:1 Slope
Fill to El. 879.0 and riprap slope, using toe wall.
Transition 2:1 to 3:1 Slope
Begin. of Appro. Slab Sta. 279+21.52
Existing 36' Conc. Pavt.
Existing 16' Conc. Pavt.
S 85°14'E
MAIN ST.
Fr. Res.
Shed
Corporation Line
Wooded Hillside
To S.R. 514
N 10°00 E
P.C. 276+43.83
Δ = 84°46' Rt.
D = 40°
T = 130.72'
L = 211.92'
R = 143.24'
Existing 16' T-10 Pavt.
P.T. 278+55.75
Transition 3:1 to 2:1 Slope
Transition 2:1 to 3:1 Slope
Top Wall El. 875.6
Top Wall El. 875.5
25.98' Guard Rail Posts
36.52'
40'-0" c/c Slab
60'
15°
Pipe Railing
12" Storm Sewer (Existing)
To Hillbuck
School Yard
MONROE ST.
BLACK CREEK
1:1 to Roadway ℄
Stone Wall
End of Channel Excavation
Clears 10-15 yr. H.W. 1.5' ±
DRAINAGE AREA = 11.6 SQ. MI.

150' V.C.
P.T. 277+00
Proposed Grade
0.0%
882.00
Pt. 276+25 El. 882.00
Sta. 278+64.48
Sta. 279+21.52
BRIDGE LIMITS
Highest Known High Water El. 880.0
Assumed 10-15 yr. High Water 879.0
Excav. channel on 1:1 slope under structure.
2:1 Slope
Elev. 863.0
El. 867.0
El. 868.0
884.1
878.2
879.0
879.8
878.8
878.4

Est. ave. length
Forward abut. piles ~ Timber piles ~ 18'
Pier piles ~ 12" BP @ 53° ~ 44' to 46'
Rear abut. piles ~ Timber piles ~ 18' to 20'

## SITE PLAN

BRIDGE NO. HO - 520 - 53A
over BLACK CREEK
HOLMES CO. S.R. 520
VILLAGE OF GLENMONT
SEC. HOL-520-(5.22 - 5.34)
Scale: 1" = 20' Sta. 278 + 93.00

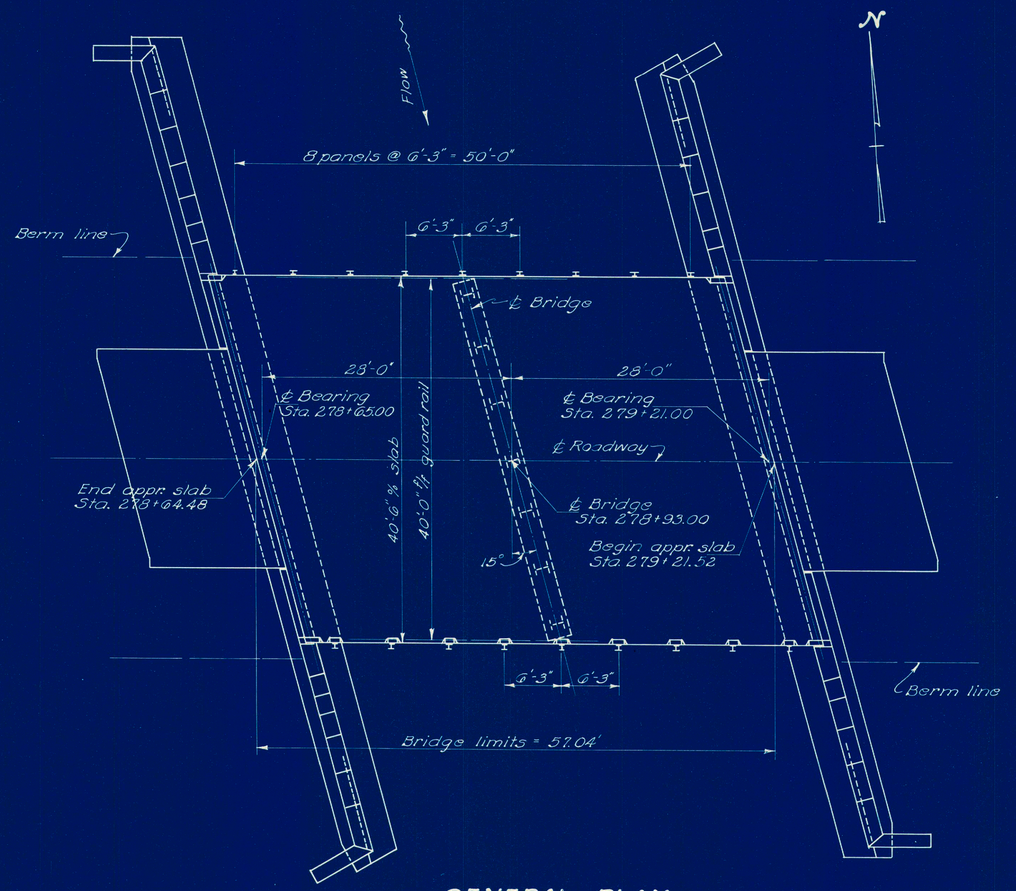
| EXISTING TOPO. | | PROPOSED WORK | | | |
|---|---|---|---|---|---|
| SURVEY | DRAWN | DESIGN | DRAWN | CHECK | REVIEW |
| Div. Office | Div. Office | E.V.F. | E.V.F. | J.H.D. | J.A.L. |

BFG
11-30-49

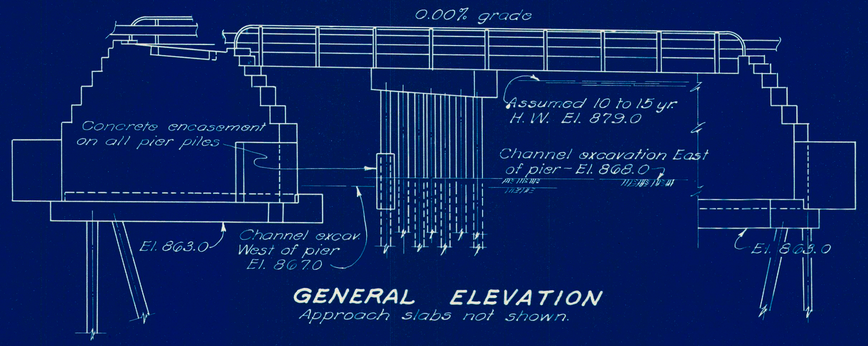
| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | |

14
19

HOL-520-(5.22-5.34)




GENERAL PLAN




GENERAL ELEVATION
Approach slabs not shown.

## ESTIMATED QUANTITIES

| Item | Quantity | Unit | Description | Supers | Pier | Abuts. | General | | |
|---|---|---|---|---|---|---|---|---|---|
| E-2 | Lump | Sum | Cofferdams, cribs and sheeting | | | | Lump | | |
| E-2 | 319 | Cu. Yd. | Unclassified excavation | | | 319 | | | |
| E-3 | 1759 | Cu. Yd. | Channel excavation | | | | 1759 | | |
| | | | | | | | | | |
| S-1 | 115 | Cu. Yd. | Class "C" concrete, superstructure | 115 | | | | | |
| S-1 | 175 | Cu. Yd. | Class "E" concrete, abutment walls | | | 175 | | | |
| S-1 | 98 | Cu. Yd. | Class "E" concrete, abutment footings | | | 98 | | | |
| S-3 | 257 | Sq. Yd. | Type "C" waterproofing | 257 | | | | | |
| S-303 | 67 | Lin. Ft. | Waterproofing, premolded sealing strip | | | 67 | | | |
| S-4 | 40,744 | Lb. | Reinforcing steel | 25,819 | 1754 | 13,063 | 108 | | |
| S-9 | 13 | Sq. Ft. | ½" premolded expansion joint filler | 13 | | | | | |
| S-14 | 114.08 | Lin. Ft. | Railing (Type I-15.13 with steel posts and top rail) | 114.08 | | | | | |
| S-15 | Lump | Sum | Temporary run-around bridge and approaches | | | | Lump | | |
| S-16 | Lump | Sum | First test pile (timber or steel) | | | | Lump | | |
| S-18 | 1260 | Lin. Ft. | Timber piling (Untreated) | | | 1260 | | | |
| S-19 | 320 | Lin. Ft. | Steel piling, 12" BP @ 53# including encasement & painting | | 320 | | | | |
| S-18 | 68 | Each | Steel pile points | | | 68 | | | |
| S-24 | Lump | Sum | Removal of existing structure (Br. No. HO-520-53A) | | | | Lump | | |
| S-29 | 136 | Cu. Yd. | Porous backfill | | | 136 | | | |
| | | | | | | | | | |
| T-35 | 18 | Cu. Yd. | Asphaltic concrete surface course, Type A or C (85-100) | 18 | | | | | |
| | | | | | | | | | |
| I-10 | 75 | Sq. Yd. | Type "A" riprap | | | | 75 | | |

## GENERAL NOTES

REFERENCE shall be made to Supplemental Specifications S-303, dated 12-20-46 and T-110, revised 8-3-36.

TEMPORARY RUN-AROUND BRIDGE & APPROACHES shall be paid for as lump sum under Item S-15, except furnishing and placing approach surface course. Surface course aggregate shall be paid for per cu. yd. and governed by Supple. Spec. T-110, except that rolling will be required. Calcium chloride (M-10), applied to surface course, shall be paid for per ton. Amount of surface material applied and paid for to be as directed by the Engineer. Embankment to be substantially in accordance with E-1.05 with side slopes not steeper than 1½:1.

REMOVAL OF EXISTING BRIDGE: Existing superstructure shall be removed and shall become the property of the contractor. Existing substructure: West abutment shall be removed to finished ground line. East abutment shall be removed to a minimum depth of 3'0" below finished ground. Suitable waste masonry may be used as riprap where shown on the plans. Contractor shall re-lay any disturbed wallstone South of S.E. wing at his own expense.

FIELD PAINT FOR RAILS AND POSTS shall be the same color as railing on approaches.

PILING - Abutment piles shall be driven to a minimum bearing capacity of 20 tons. Pier piles shall be driven to rock with a minimum bearing capacity of 35 tons. The exposed portion of the pier piles above the encasement shall be painted in accordance with Item S-8 using two coats M-9.9, M-9.20 or M-9.21 and two coats M-9.12. If metal forms for encasement are left in place, the exposed portions shall be similarly painted unless galvanized. Payment for encasement, for painting and for necessary excavation shall be included in the price per lin. ft. of piles.

CONCRETE in bridge slab, Class "C"; quantity includes pier cap concrete. Wall and footing concrete shall be Class "E".

BITUMINOUS SURFACE COURSE: 2½" Asphaltic concrete surface course, Item T-35, laid in two 1¼" courses.

SURFACE FINISH OF CONCRETE - Fascia of deck slab shall receive a rubbed surface finish. All other exposed surfaces shall be governed by the provisions of Sec. S-1.22.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

# GENERAL PLAN & ELEVATION NOTES & ESTIMATED QUANTITIES

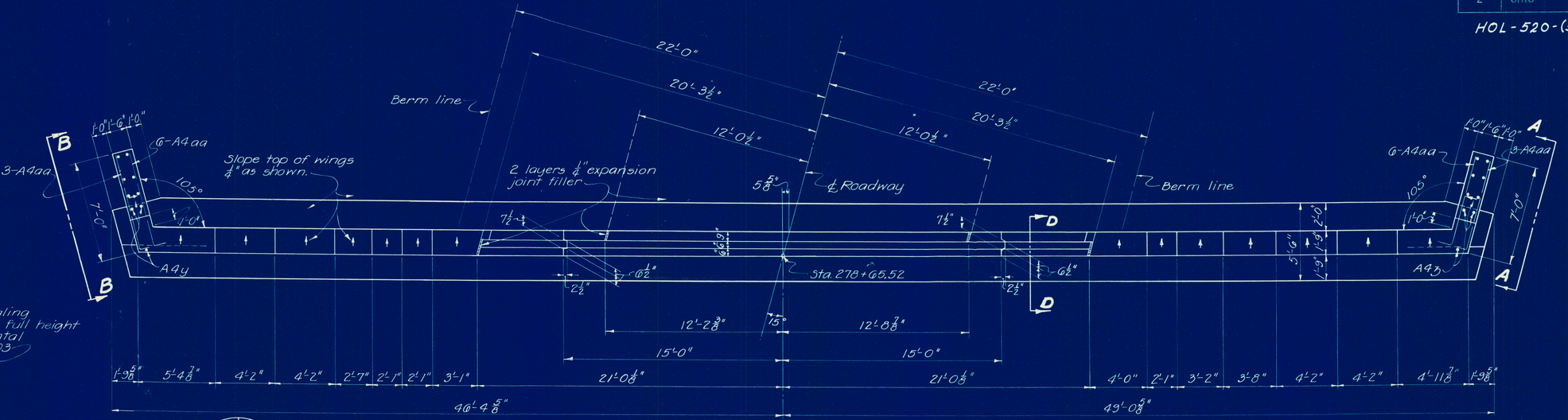
BRIDGE NO. HO-520-53A
OVER BLACK CREEK
HOLMES COUNTY STA. 276+93.00
Sec. HOL-520-(5.22-5.34)

| DESIGNED | DRAWN | TRACED | CHECKED | RECOMMENDED | DATE | REVISED |
|---|---|---|---|---|---|---|
| Sims | Sims | J.D.J. | W.C.K. | BFG WHR | 11-30-49 | |

| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | |

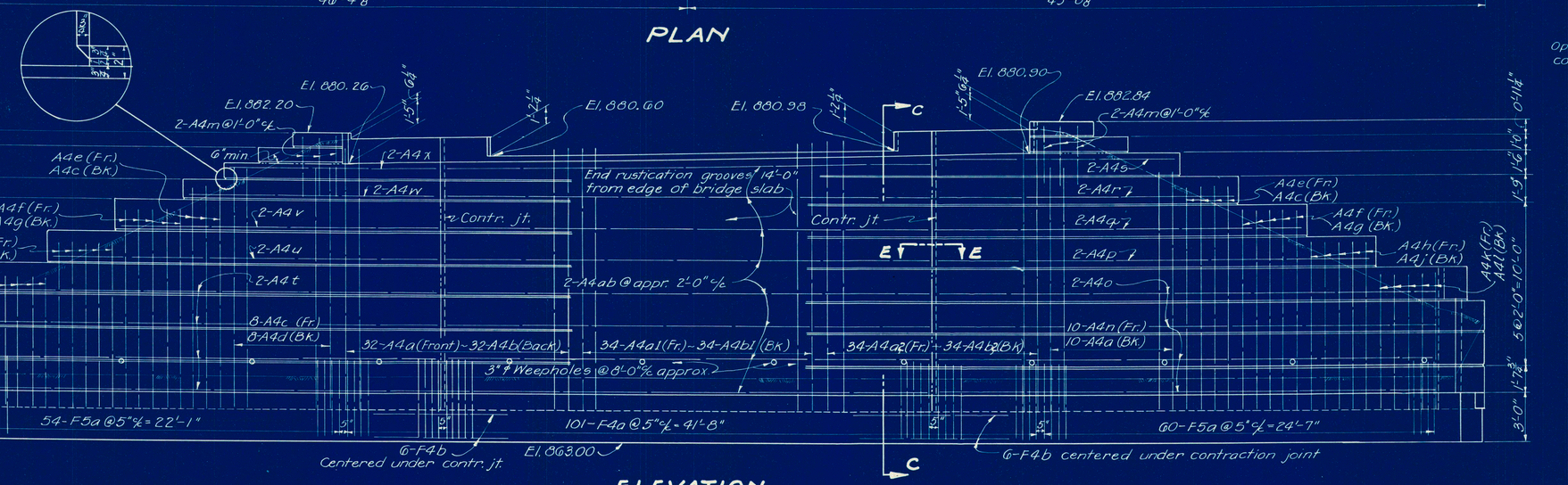
15
19

HOL-520-(5.22-5.34)

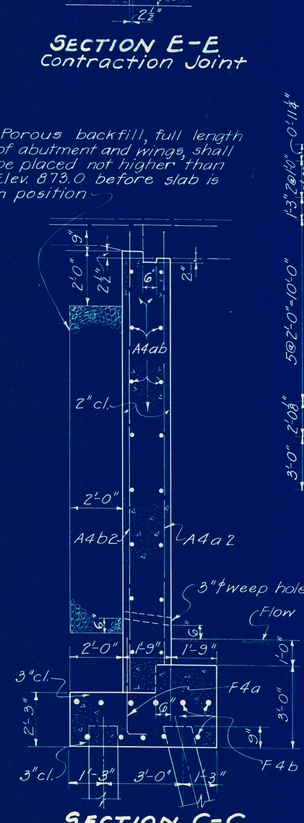



PLAN

SECTION E-E
Contraction Joint

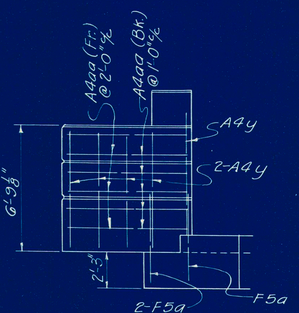



ELEVATION
Piling not shown



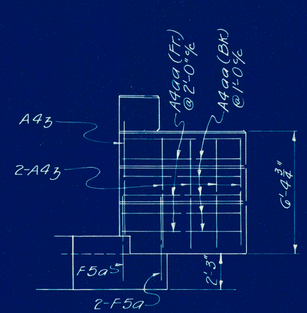

SECTION C-C
Batter toe row piles 1:4

Porous backfill, 2'-0" thick shall extend up to a point 2'-0" below approach slab seat or finished ground. Impervious soil shall be placed above this porous material.



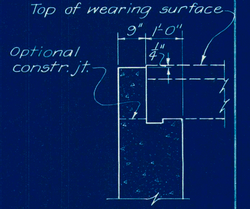

VIEW B-B
Piling not shown

NOTE: Bar clearance to be 2" from face of concrete unless noted.




VIEW A-A
Piling not shown

NOTE: See Sheet No. 16 for West Abutment Piling Layout.




SECTION D-D

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

# WEST ABUTMENT DETAILS

BRIDGE NO. HO-520-53A
OVER BLACK CREEK

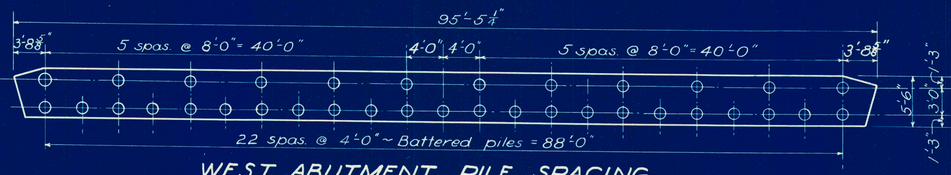
HOLMES COUNTY STA. 278+93.00
SEC. HOL-520-(5.22-5.34)

| DESIGNED | DRAWN | TRACED | CHECKED | REVISED | DATE | REVISED |
|---|---|---|---|---|---|---|
| Sims | Sims | K&T | W.C.K. | BFG WHR | 11-30-49 | |

| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | |

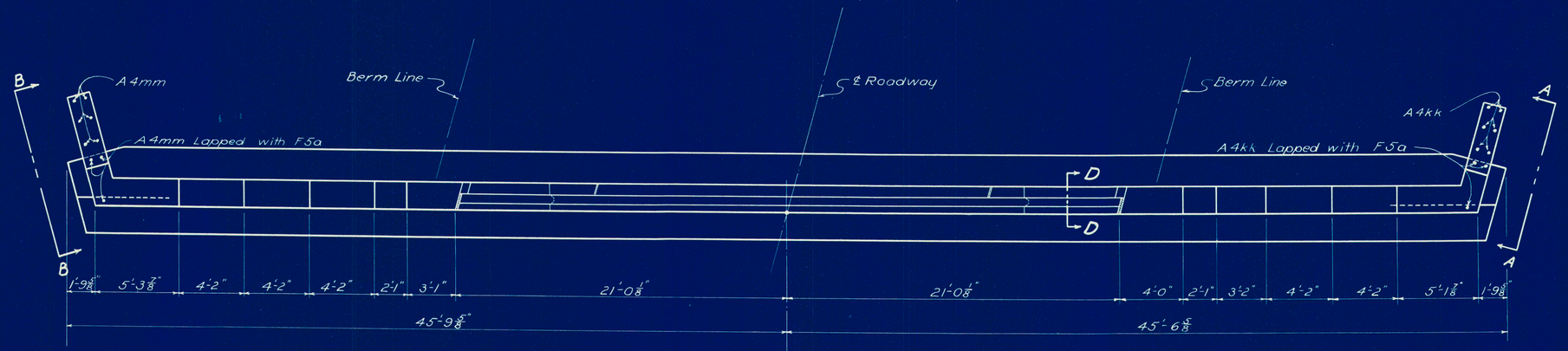
16
19

HOL-520-(5.22-5.34)

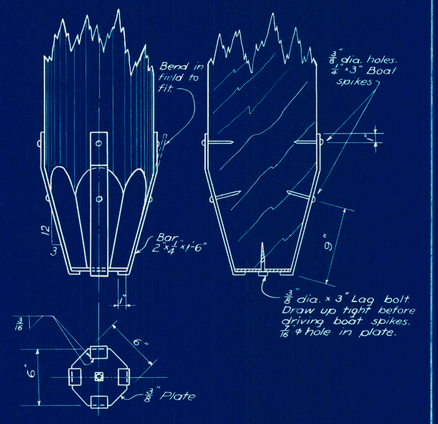



WEST ABUTMENT PILE SPACING

EAST ABUTMENT PILE SPACING

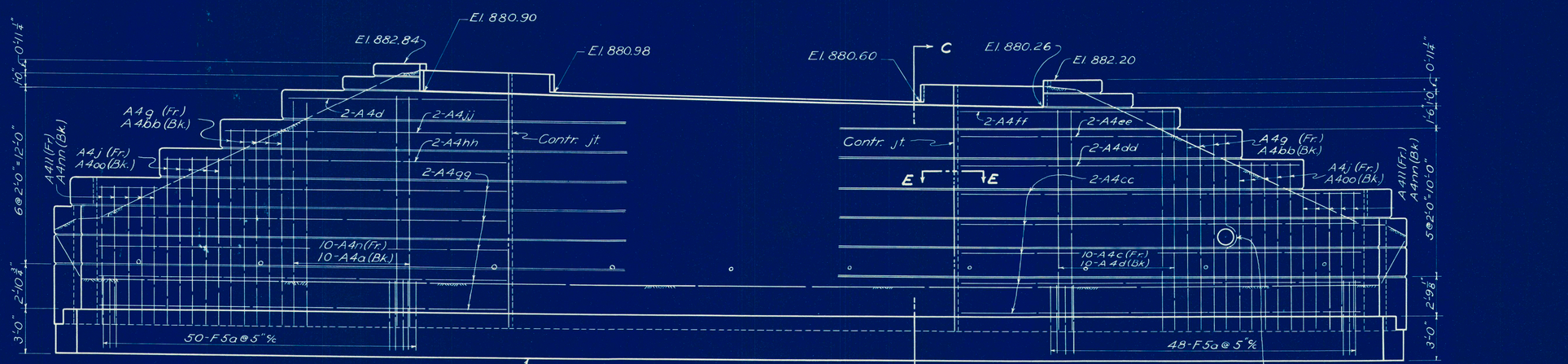



PLAN



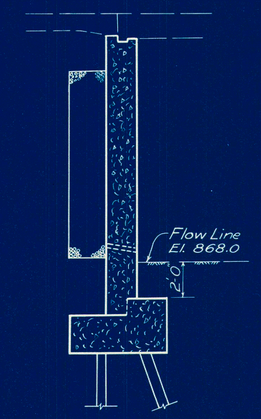

BOTTOM VIEW

STEEL PILE POINT
FOR
TIMBER PILES

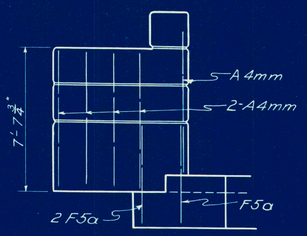



ELEVATION
Piling not shown

Existing 12" storm sewer to be extended through wall. Reinforcing steel in wall to be bent in field as needed.

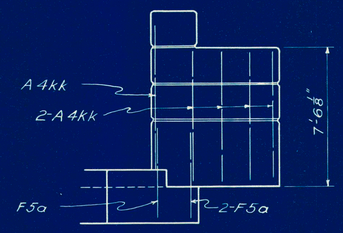



SECTION C-C




VIEW B-B
Piling not shown

NOTE: All details not shown are to be same as given on "WEST ABUTMENT DETAIL" sheet.




VIEW A-A
Piling not shown

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

# EAST ABUTMENT DETAILS

BRIDGE NO. HO-520-53A
OVER BLACK CREEK

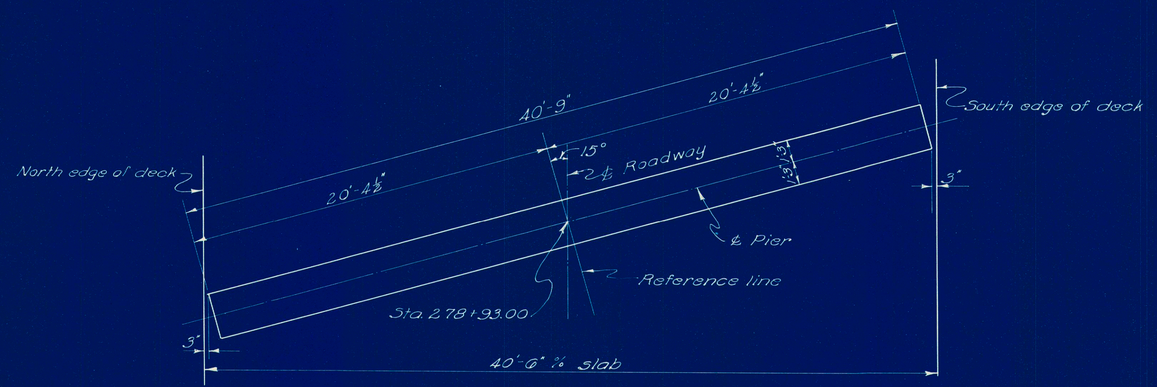
HOLMES COUNTY
SEC. HOL-520-(5.22-5.34) Sta. 278+93.00

| DESIGNED | DRAWN | TRACED | CHECKED | REVISED | DATE | REVISED |
|---|---|---|---|---|---|---|
| Sims | Sims | R.B.P. | W.C.K. | BFG WHC | 11-30-44 | |

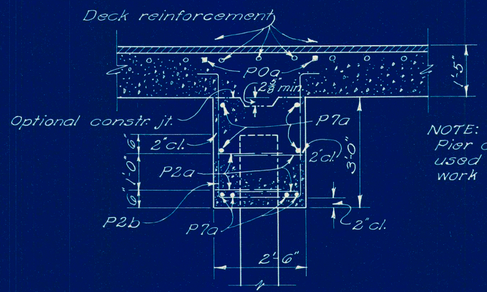
| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | |

17/19

HOL - 520 - (5.22-5.34)



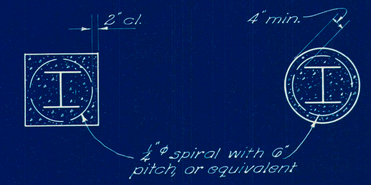

GENERAL PLAN OF PIER CAP

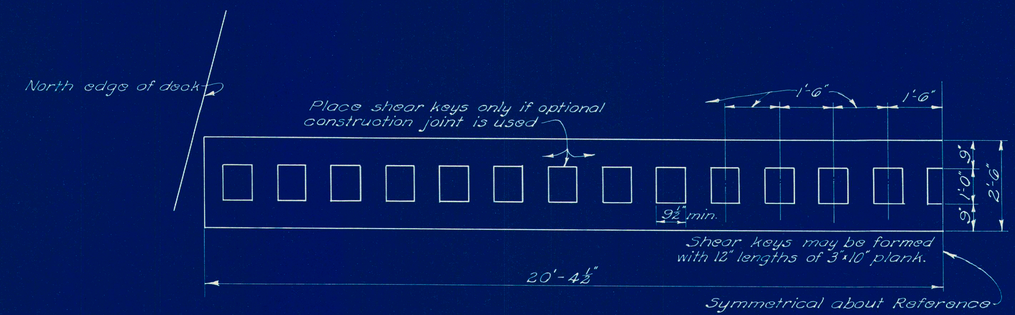



SECTION L-L

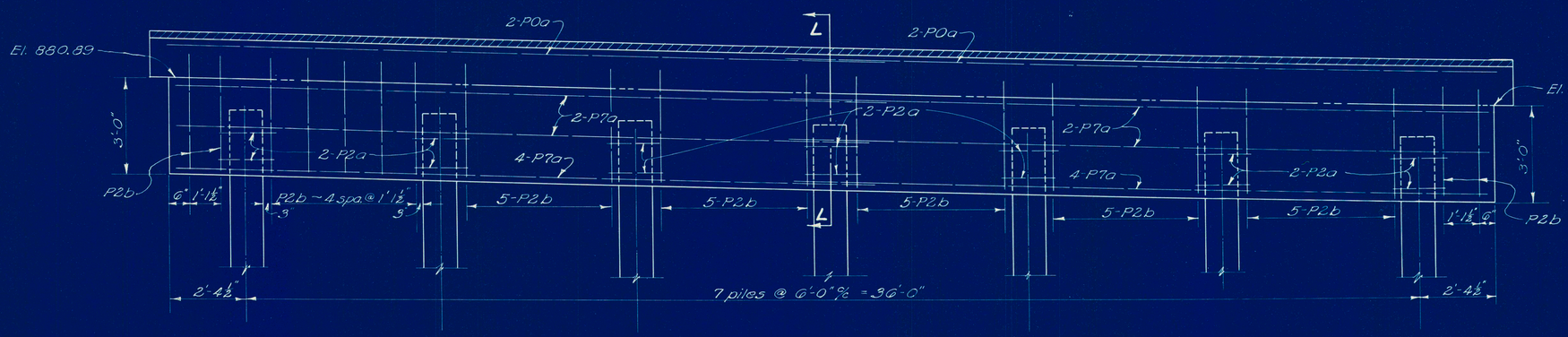
NOTE:
Pier cap shall not be used to support false-work for slab.

NOTE:
A protective concrete encasement, either square or circular in section, shall be provided on all pier piles. Encasement shall be placed after the piles are driven and may be placed in water as per Item 511.18, care being taken to remove all dirt between the piles and forms. Metal forms, if used, may be left in place. Corrugated metal may be used.

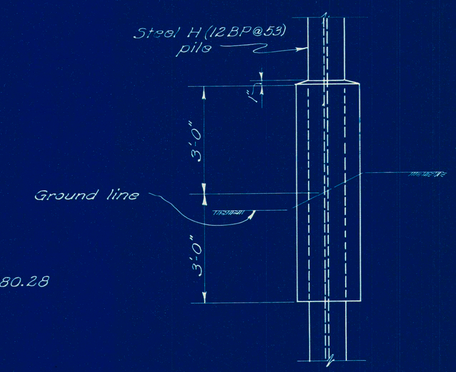



HALF PLAN




ELEVATION




DETAIL OF PILE ENCASEMENT

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

# PIER DETAILS

BRIDGE No. HO-520-53A
OVER BLACK CREEK

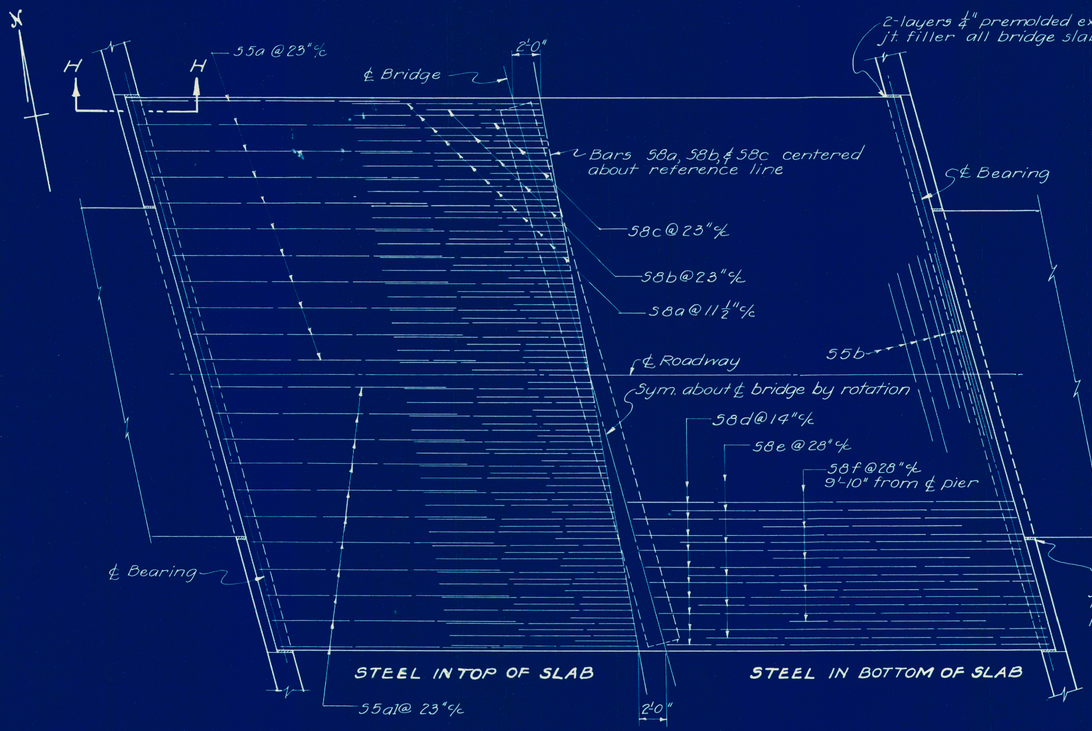
HOLMES COUNTY
SEC. HOL-520-(522-534) STA. 278+93.00

| DESIGNED | DRAWN | TRACED | CHECKED | RECHECKED | DATE | REVISED |
|---|---|---|---|---|---|---|
| Sims | Sims | J.D.J. | W.C.K. | BFG WHR | 11-30-49 | |

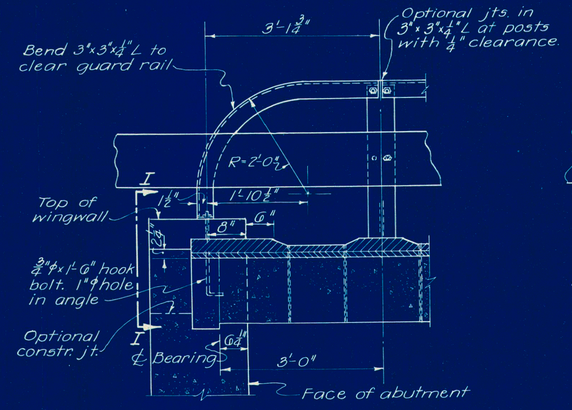
| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | |

18
19

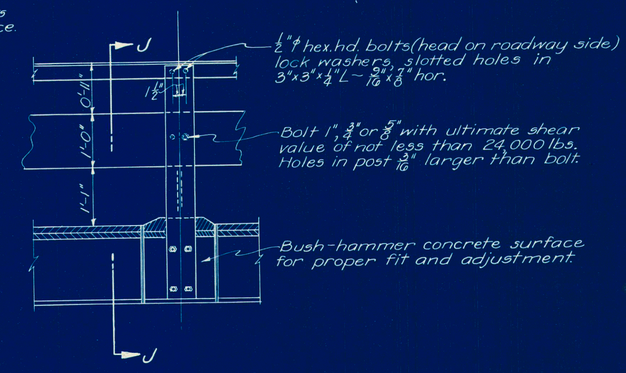
HOL-520-(5.22-5.34)



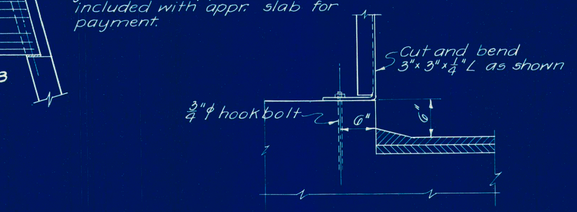

PLAN OF SLAB REINFORCING STEEL



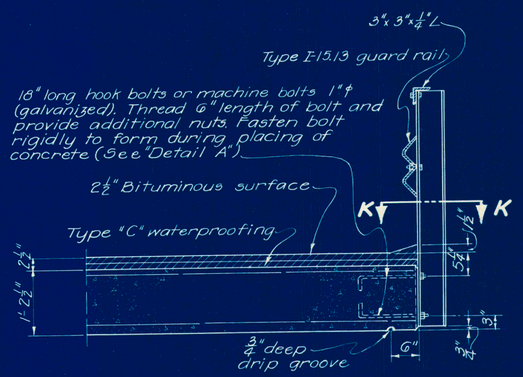

SECTION H-H



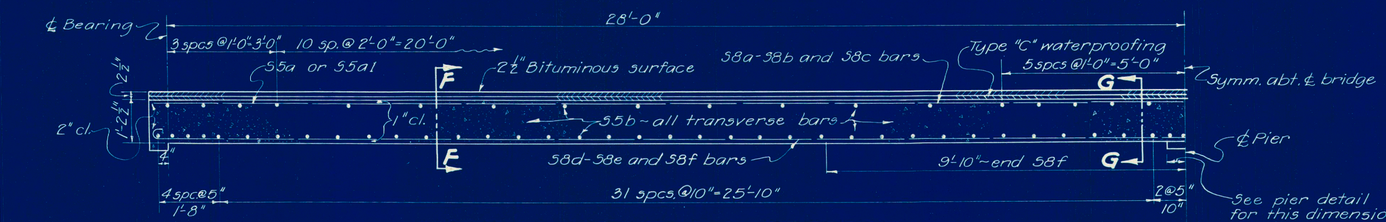

ELEVATION OF POST



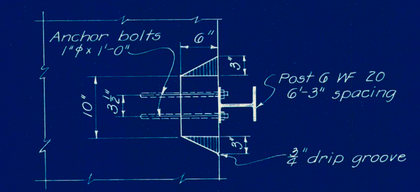

SECTION I-I




SECTION J-J

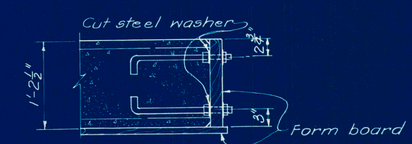



HALF LONGITUDINAL SECTION

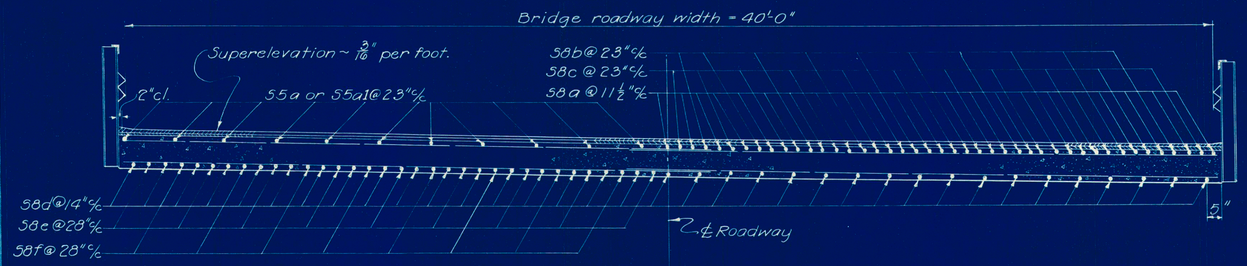



SECTION K-K

Pads at railing posts on South side of bridge slab only.

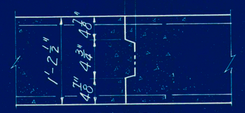



DETAIL "A"




SECTION F-F

SECTION G-G




DECK CONSTRUCTION JOINT

One longitudinal const. jt. will be permitted along ℄ rdwy.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

# SUPERSTRUCTURE DETAILS

BRIDGE NO. HO-520-53.A OVER BLACK CREEK

HOLMES COUNTY STA. 278+93.00
SEC. HOL-520-(5.22-5.34)

| DESIGNED | DRAWN | TRACED | CHECKED | RECOMMENDED | DATE | REVISED |
|---|---|---|---|---|---|---|
| Sims | Sims | K&T | W.C.K. | BFG WHR | 11-30-49 | |

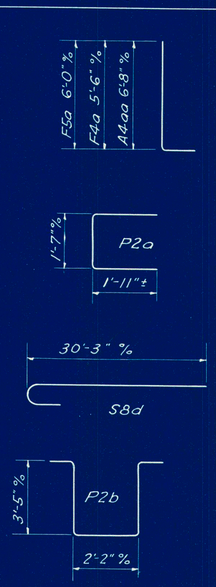
| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | |

19
19

HOL-520-(5.22-5.34)

# REINFORCING STEEL LIST

| Mark | Size | No. | Length | Weight | Shp |
|---|---|---|---|---|---|
| *Abutments* | | | | | |
| F4a | 5/8" ϕ | 202 | 6'-3" | 1317 | Bt. |
| F4b | 5/8" ϕ | 48 | 6'-0" | 300 | Str. |
| F5a | 3/4" ϕ | 224 | 6'-10" | 2298 | Bt. |
| | | | | | |
| A4a | 5/8" ϕ | 52 | 15'-2" | 823 | Str. |
| A4a$_1$ | 5/8" ϕ | 34 | 15'-5" | 547 | Str. |
| A4a$_2$ | 5/8" ϕ | 34 | 15'-8" | 556 | Str. |
| A4b | 5/8" ϕ | 32 | 15'-11" | 531 | Str. |
| A4b$_1$ | 5/8" ϕ | 34 | 16'-2" | 573 | Str. |
| A4b$_2$ | 5/8" ϕ | 34 | 16'-5" | 582 | Str. |
| A4c | 5/8" ϕ | 25 | 13'-8" | 356 | Str. |
| A4d | 5/8" ϕ | 20 | 14'-9" | 308 | Str. |
| A4e | 5/8" ϕ | 7 | 13'-0" | 95 | Str. |
| A4f | 5/8" ϕ | 10 | 11'-6" | 120 | Str. |
| A4g | 5/8" ϕ | 19 | 12'-3" | 243 | Str. |
| A4h | 5/8" ϕ | 10 | 9'-6" | 99 | Str. |
| A4j | 5/8" ϕ | 20 | 10'-3" | 214 | Str. |
| A4k | 5/8" ϕ | 10 | 7'-6" | 78 | Str. |
| A4l | 5/8" ϕ | 10 | 8'-3" | 86 | Str. |
| A4m | 5/8" ϕ | 24 | 4'-0" | 100 | Str. |
| A4n | 5/8" ϕ | 20 | 14'-7" | 304 | Str. |
| A4o | 5/8" ϕ | 8 | 30'-9" | 257 | Str. |
| A4p | 5/8" ϕ | 2 | 26'-10" | 56 | Str. |
| A4q | 5/8" ϕ | 2 | 22'-8" | 47 | Str. |
| A4r | 5/8" ϕ | 2 | 18'-6" | 39 | Str. |
| A4s | 5/8" ϕ | 2 | 14'-10" | 31 | Str. |
| A4t | 5/8" ϕ | 8 | 28'-0" | 234 | Str. |
| A4u | 5/8" ϕ | 2 | 23'-8" | 49 | Str. |
| A4v | 5/8" ϕ | 2 | 19'-6" | 41 | Str. |
| A4w | 5/8" ϕ | 2 | 15'-4" | 32 | Str. |
| A4x | 5/8" ϕ | 2 | 12'-9" | 27 | Str. |
| A4y | 5/8" ϕ | 9 | 6'-5" | 60 | Str. |
| A4z | 5/8" ϕ | 9 | 6'-0" | 56 | Str. |
| A4aa | 5/8" ϕ | 36 | 7'-5" | 278 | Bt. |
| A4ab | 5/8" ϕ | 32 | 29'-6" | 985 | Str. |
| A4bb | 5/8" ϕ | 9 | 13'-3" | 124 | Str. |




| Mark | Size | No. | Length | Weight | Shp |
|---|---|---|---|---|---|
| A4cc | 5/8" ϕ | 10 | 27'-0" | 281 | Str. |
| A4dd | 5/8" ϕ | 2 | 23'-3" | 49 | Str. |
| A4ee | 5/8" ϕ | 2 | 19'-1" | 40 | Str. |
| A4ff | 5/8" ϕ | 2 | 14'-11" | 31 | Str. |
| A4gg | 5/8" ϕ | 10 | 27'-7" | 288 | Str. |
| A4hh | 5/8" ϕ | 2 | 23'-4" | 49 | Str. |
| A4jj | 5/8" ϕ | 2 | 19'-2" | 40 | Str. |
| A4kk | 5/8" ϕ | 9 | 7'-2" | 67 | Str. |
| A4ll | 5/8" ϕ | 10 | 8'-6" | 89 | Str. |
| A4mm | 5/8" ϕ | 9 | 7'-4" | 69 | Str. |
| A4nn | 5/8" ϕ | 10 | 9'-3" | 97 | Str. |
| A4oo | 5/8" ϕ | 10 | 11'-3" | 117 | Str. |
| *Piers* | | | | | |
| P0a | 1 1/4" □ | 4 | 23'-0" | 489 | Str. |
| P7a | 1" ϕ | 16 | 22'-0" | 940 | Str. |
| P2a | 1/2" ϕ | 28 | 5'-3" | 98 | Bt. |
| P2b | 1/2" ϕ | 34 | 10'-0" | 227 | Bt. |
| *Superstructure* | | | | | |
| S5a | 3/4" ϕ | 22 | 18'-0" | 595 | Str. |
| S5a$_1$ | 3/4" ϕ | 22 | 16'-0" | 529 | Str. |
| S5b | 3/4" ϕ | 224 | 21'-10" | 7345 | Str. |
| S8a | 1" □ | 43 | 27'-6" | 4021 | Str. |
| S8b | 1" □ | 21 | 14'-3" | 1017 | Str. |
| S8c | 1" □ | 21 | 10'-0" | 714 | Str. |
| S8d | 1" □ | 70 | 31'-2" | 7417 | Bt. |
| S8e | 1" □ | 34 | 21'-9" | 2514 | Str. |
| S8f | 1" □ | 34 | 14'-5" | 1667 | Str. |
| *Replacement Bars* | | | | | |
| R0a | 1 1/4" □ | 1 | 8'-2" | 43 | Str. |
| R8a | 1" □ | 1 | 7'-4" | 25 | Str. |
| R7a | 1" ϕ | 1 | 7'-4" | 20 | Str. |
| R5a | 3/4" ϕ | 1 | 6'-6" | 10 | Str. |
| R4a | 5/8" ϕ | 1 | 6'-1" | 6 | Str. |
| R2a | 1/2" ϕ | 1 | 5'-8" | 4 | Str. |

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

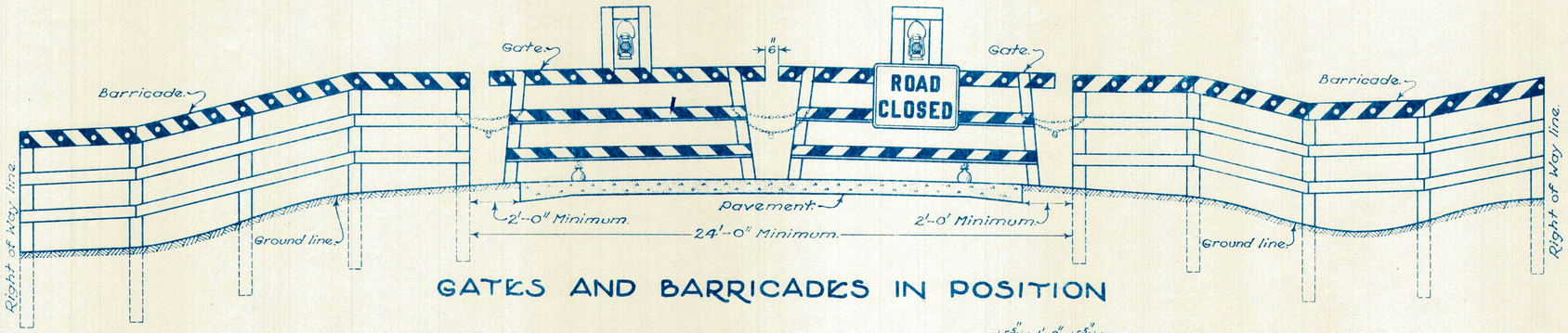
## REINFORCING STEEL LIST

BRIDGE NO. HO-520-53A
OVER BLACK CREEK
HOLMES COUNTY
SEC. HOL-520 (5.22-5.34) STA. 278+93.00

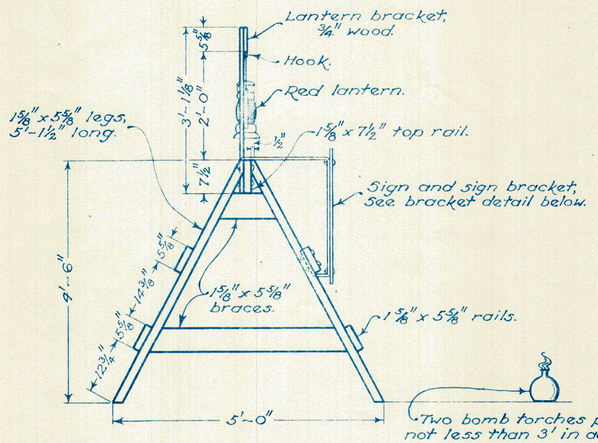
| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| Sims | Sims | RAY | W.C.K. | BFG WHR | 11-30-49 | |

EUGENE D'EYDEN CO., PRINTERS OF SPECIAL TRACING CLOTH. FORM NO. BR-23

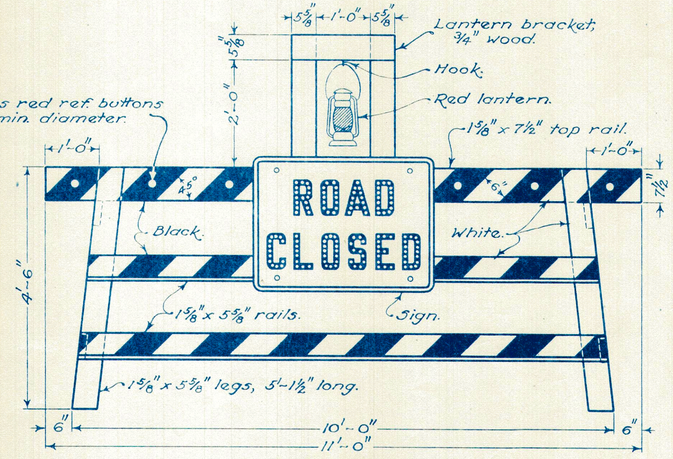
# STANDARD BARRICADES AND GATES




GATES AND BARRICADES IN POSITION

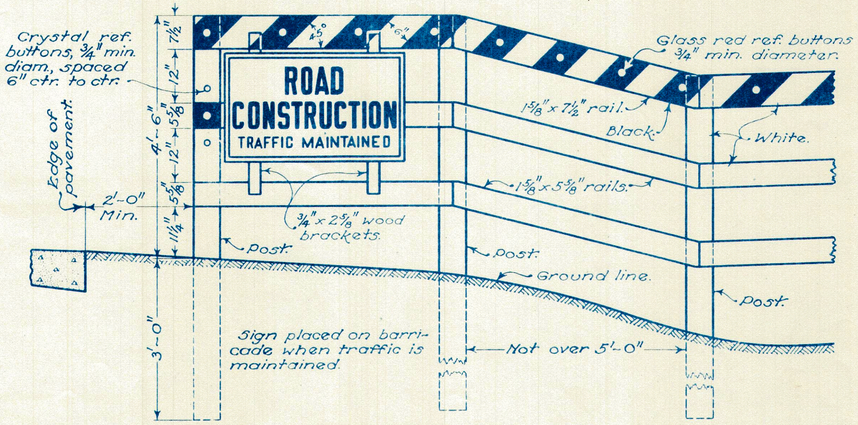



END VIEW

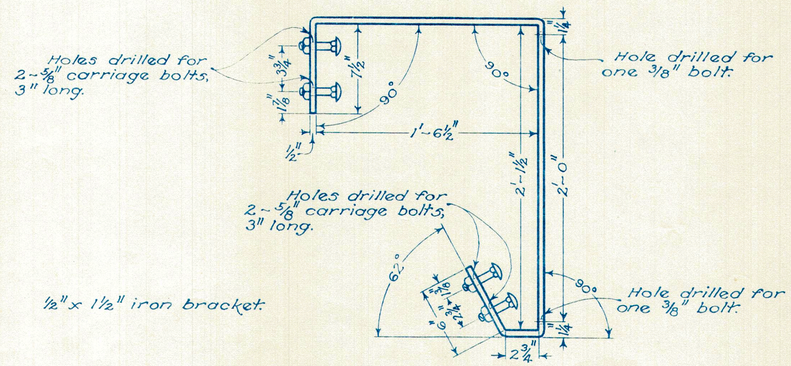



ELEVATION

GATE




BARRICADE




Two brackets spaced 28 inches apart in the center of the gate and bolted to top and center rails.

SIGN BRACKET

## NOTES

LUMBER used in the construction of the gates and barricades shall be No. 1 common yellow pine or No. 1 common Douglas Fir, surfaced on four sides standard, in accordance with the requirements of the Specifications.

GATES:- The movable gates shall be constructed according to the details shown and shall be painted with alternate 6" black and white stripes on a 45° angle. One gate shall be erected for each traffic lane. The gates shall be well spiked, using spikes long enough to clinch.

BARRICADES shall be constructed according to the details shown. The top rail shall be painted on both sides with alternate 6" black and white stripes on a 45° angle, sloping toward the roadway. The two lower rails and posts shall be painted white on both sides.

The barricades shall have an opening of a minimum width of 24 feet. For pavement widths greater than 20 feet, the minimum widths of the barricade openings shall be the pavement width plus 4 feet. The barricades shall remain in place following the re-opening of the road if berm or other work is not completed.

POSTS shall be 6" x 6" sawed or round posts and shall conform to the Specifications for Guard Rail Posts.

RAILS of the barricade shall be bolted to the posts with 5/8" bolts.

CHAINS:- Gates shall be chained and padlocked to one another and to adjacent posts of the barricades. Chains shall be of 5/8" stock with welded links.

REFLECTORS:- The top rail of the barricades and movable gates shall be reflectorized with red reflector buttons 3/4" minimum diameter, placed in the black stripes. When traffic is maintained, the top rails of the barricades shall be reflectorized on both sides. To install the buttons, drill holes into the top railing slightly less in diameter than that of the reflector housing. The button may be driven into the rail by placing a pipe over the reflector in such a manner that it will rest on the housing.

When traffic is maintained through the construction section, three glass crystal buttons 3/4" in diameter shall be mounted as shown on each side of the two posts adjacent to the traveled roadway.

SIGNS:- Upon the erection of the gates and barricades according to the above standards, the Division Traffic Engineer shall furnish ROAD CLOSED sign, size 40" x 30", which shall be mounted on the gate as shown. When three gates are used for closing 3-lane roads, the sign shall be mounted on the middle gate facing traffic approaching the closed section.

Where traffic is maintained a ROAD CONSTRUCTION TRAFFIC MAINTAINED sign, size 40" x 24" will be furnished for mounting on the barricade at the right-hand side of the roadway adjacent to the roadway facing traffic approaching the construction section. An END OF CONSTRUCTION sign, size 40" x 20", shall be mounted on the back of the barricade at the right-hand side of the road facing traffic leaving the construction section.

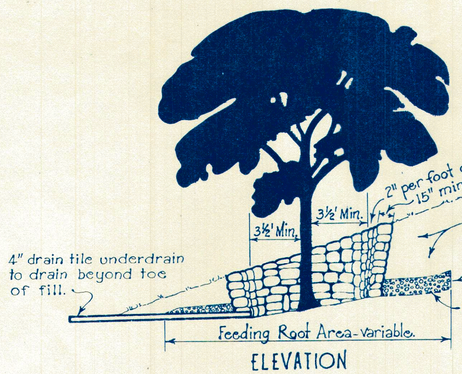
BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

# BARRICADES AND GATES

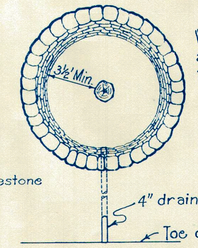
DATE
10-1933
6-1-42
2-1-47

STANDARD CONSTRUCTION DRAWING G-8.07

APPROVED _____ CHIEF ENGINEER

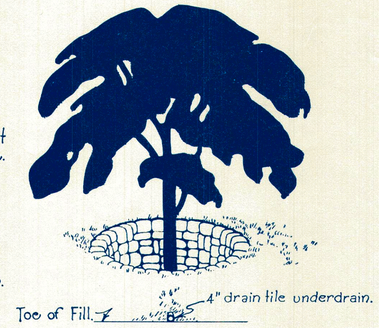



ELEVATION




PLAN

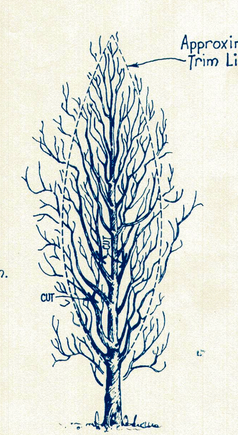
Wells to be circular, and equal in height to fill around tree.



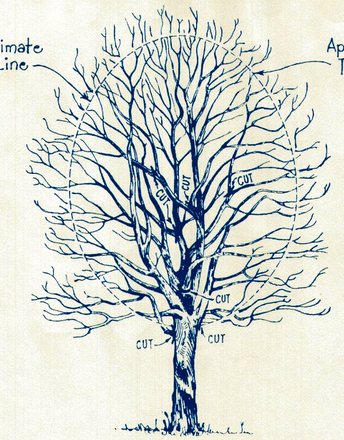

FRONT VIEW

Note:- Where fill around tree is 12" or more in depth over any part of Feeding Root Area or periphery of the tree, wells are to be constructed as shown, augmented by Specifications for Roadside Improvement.

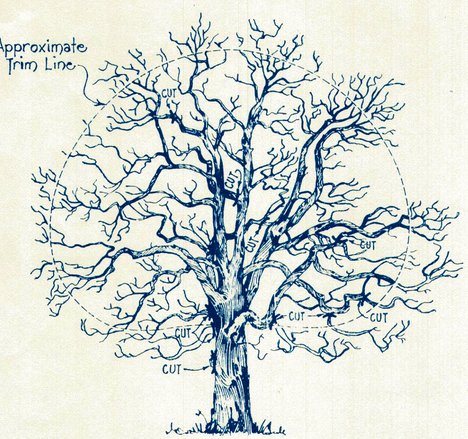
## RIP RAP & AGGREGATE FOR TREE PROTECTION & AERATION IN FILL



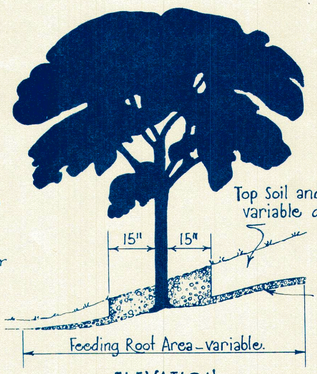

PYRAMIDAL TYPE




ROUND-HEADED TYPE

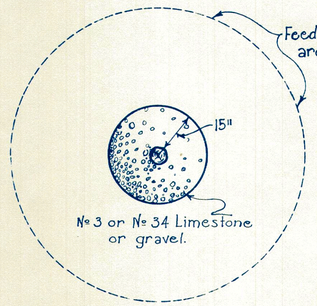



SPREADING TYPE



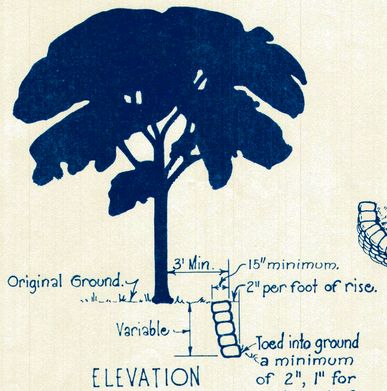

ELEVATION

Note:- Where fill around tree is less than 12" and greater than 4", № 3 or № 34 limestone or gravel is to be placed as shown, augmented by Specifications for Roadside Improvement.

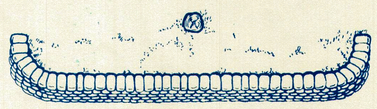



PLAN

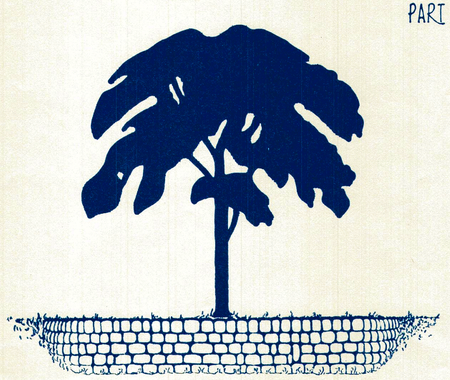
## AGGREGATE FOR TREE ROOT AERATION IN FILL




ELEVATION



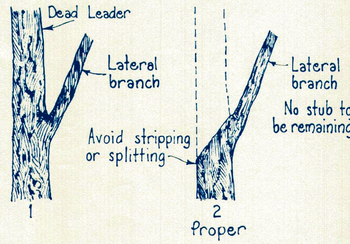
PLAN



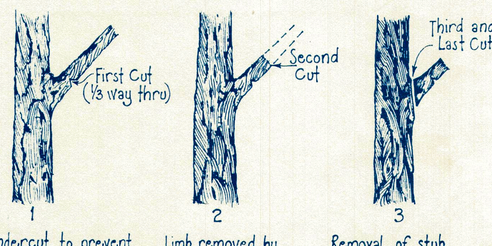
FRONT VIEW

Note:- Where the top of slope in cut is within 6' or less of tree, rip rap is to be placed as shown, augmented by Specifications for Roadside Improvement. Walls are to extend far enough from center of tree to amply cover roots.

## RIP RAP FOR TREE PROTECTION IN CUT




PART OF LEADER OR BRANCH TO BE REMOVED

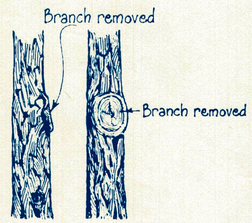



Undercut to prevent bark from stripping.

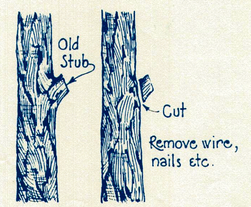
Limb removed by making downward cut leaving stub.

Removal of stub by downward cut from top side.

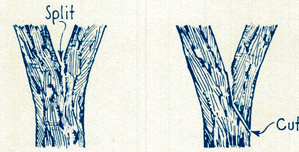
PROPER REMOVAL OF BRANCHES




Cuts made flush with remaining limb or trunk and ready for painting, if diameter exceeds ½"-1" as specified.




REMOVING STUBS




PROPER CROTCH TREATMENT

## PRUNING

BUREAU OF LOCATION & RIGHT OF WAY
OHIO DEPARTMENT OF HIGHWAYS

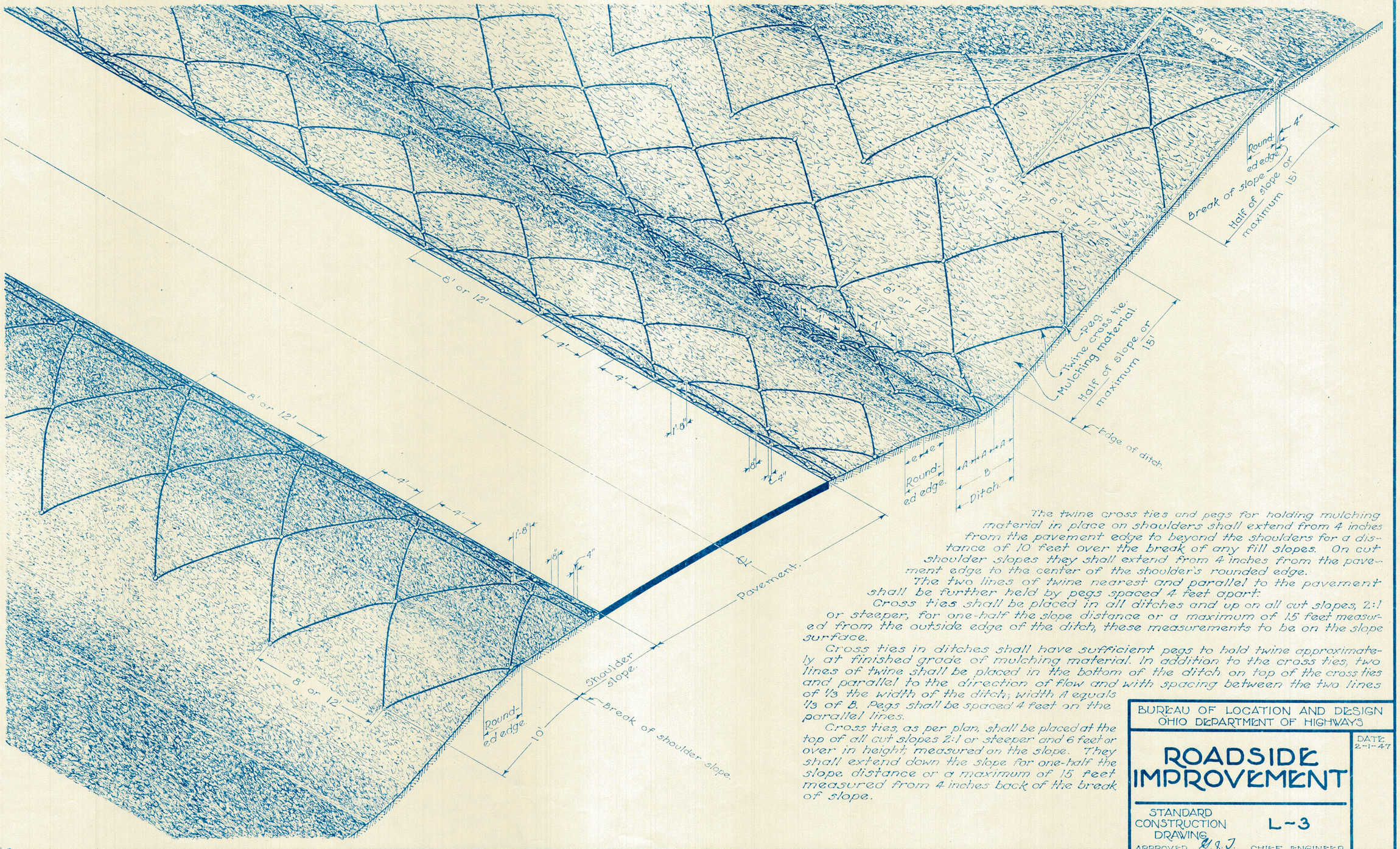
# ROADSIDE IMPROVEMENT

STANDARD CONSTRUCTION DRAWING

L-1

APPROVED M.D.S CHIEF ENGINEER

DATE
2-20-36
7-10-36
2-16-38
12-1-41
10-1-45




The twine cross ties and pegs for holding mulching material in place on shoulders shall extend from 4 inches from the pavement edge to beyond the shoulders for a distance of 10 feet over the break of any fill slopes. On cut shoulder slopes they shall extend from 4 inches from the pavement edge to the center of the shoulder's rounded edge.

The two lines of twine nearest and parallel to the pavement shall be further held by pegs spaced 4 feet apart:

Cross ties shall be placed in all ditches and up on all cut slopes, 2:1 or steeper, for one-half the slope distance or a maximum of 15 feet measured from the outside edge of the ditch, these measurements to be on the slope surface.

Cross ties in ditches shall have sufficient pegs to hold twine approximately at finished grade of mulching material. In addition to the cross ties, two lines of twine shall be placed in the bottom of the ditch on top of the cross ties and parallel to the direction of flow and with spacing between the two lines of 1/3 the width of the ditch; width A equals 1/3 of B. Pegs shall be spaced 4 feet on the parallel lines.

Cross ties, as per plan, shall be placed at the top of all cut slopes 2:1 or steeper and 6 feet or over in height, measured on the slope. They shall extend down the slope for one-half the slope distance or a maximum of 15 feet measured from 4 inches back of the break of slope.

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

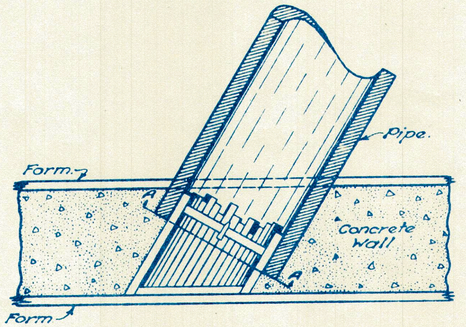
# ROADSIDE IMPROVEMENT

DATE 2-1-47

STANDARD CONSTRUCTION DRAWING L-3

APPROVED R. J. J. CHIEF ENGINEER

# CONSTRUCTION METHODS

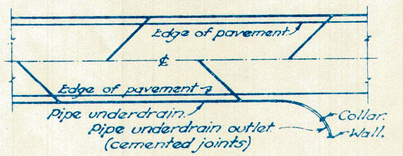



SECTION B-B
Through wall and pipe.

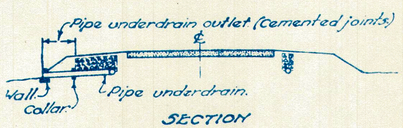
## BARRELLING CONCRETE WALL



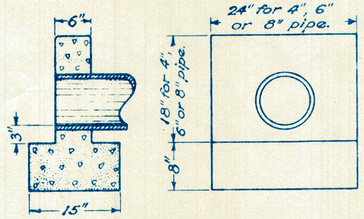

SECTION A-A



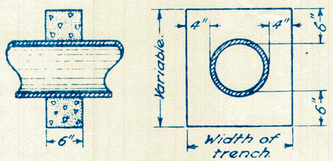

PLAN




SECTION

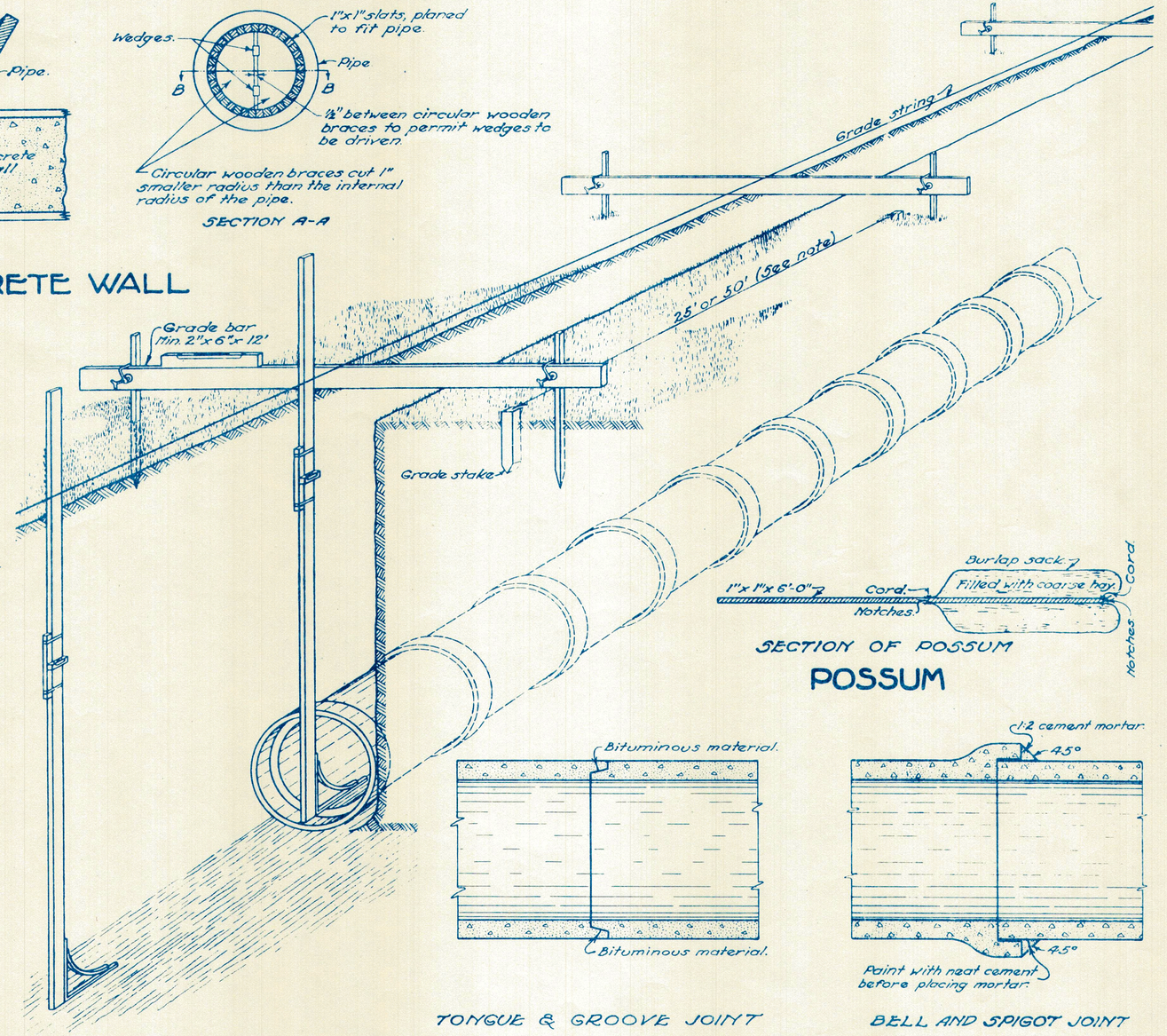



DETAIL OF DRILL




DETAIL OF COLLAR

## PIPE UNDERDRAIN OUTLET




## LAYING PIPE




TONGUE & GROOVE JOINT




BELL AND SPIGOT JOINT




SECTION OF POSSUM

## POSSUM

## PIPE JOINTS

## NOTES

BARRELLING OUT CONCRETE WALL:- When necessary that the pipe be barrelled out to the required lengths, it shall be done according to the details shown hereon.

GRADE STAKES shall be set at the following intervals:- For grades less than 0.70% - 25 feet. For grades of 0.70% and over - 50 feet.

GRADE POLE shall be a straight pole dressed with corners rounded, size depending on the length but approximately 1" x 2". The pole shall be equiped with a metal bracket on the bottom with a projecting length of 12". Notches shall be cut on the pole for the depth of the flow line below the grade string and for the depth of trench. A spirit level shall be used on the pole to determine when the pole is vertical.

POSSUM or swab is for wiping out any excess mortar from the inside of the pipe and shall be made and used as follows:- The stem is 1" x 1" x 6'-0" and made of strong wood. The burlap sack shall be filled around the stem in such a manner so that the stem will remain practically central when the swab is in the pipe and the stem is unsupported. The swab, when pulled ahead, shall drag the entire circumference of the pipe so that any mortar which has entered at the joints will be dragged ahead. The length of the stem shall be such that the swab will not pass a joint where the backfill has not been tamped. After every tenth pipe layed, the swab shall be removed and cleaned.

PIPE JOINTS:- When the construction item calls for sealed joints, they shall conform to the appropriate details shown for pipe joints.

ALTERNATE METHOD OF INSTALLATION:- Where tongue and groove pipe, 36" diameter or over is used, the slanting portion of the tongue shall be given one or more coats of Sec.M-5.6 F-1 bituminous material before placing. After the pipe has been placed in true alignment and blocked, any opening remaining between the inner surface of the pipe and the slanting portion of the tongue may be filled with stiff cement mortar consisting of one part of cement to two parts of clean sand.

The remaining openings in the joint shall be filled with additional bituminous material by brushing or by pouring.

PIPE UNDERDRAIN OUTLET:- 0.15 cu. yds. of concrete (Class "C") required for one collar and wall and shall be included in the price bid per lineal foot of pipe underdrain outlet.

BUREAU OF LOCATION & RIGHT OF WAY
OHIO DEPARTMENT OF HIGHWAYS

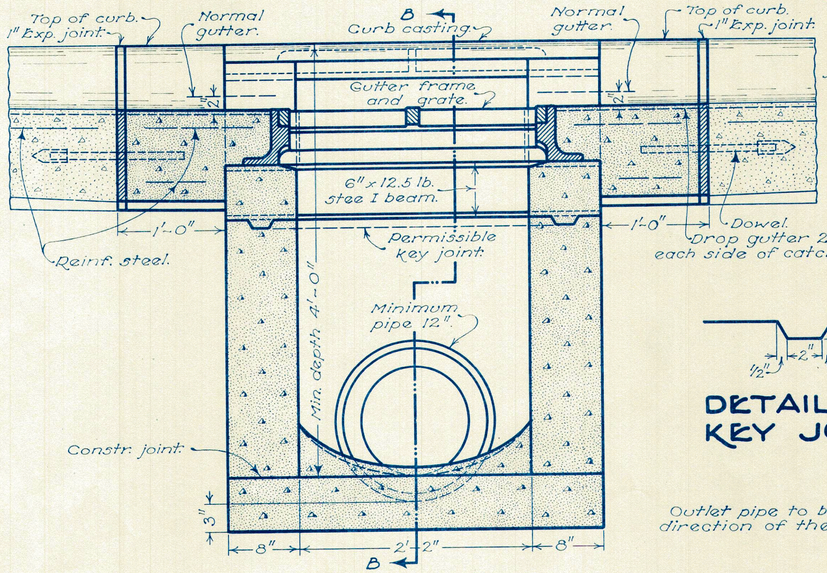
# DRAINS AND SEWERS

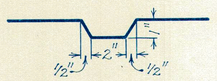
STANDARD CONSTRUCTION DRAWING I-1,2,3,4 & 5

APPROVED M.D.S. CHIEF ENGINEER

DATE
9 - 1933
4 - 1934
5 - 1934
1 - 1 - 36
3 - 1 - 39
1 - 1 - 45
2 - 20 - 45

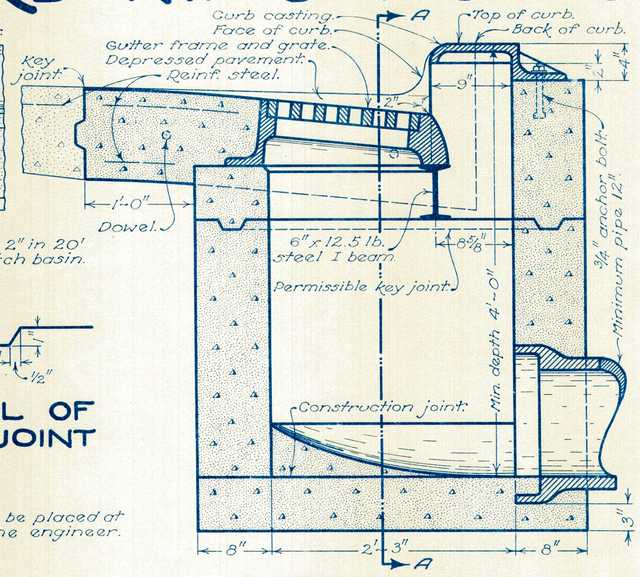
# STANDARD No. 3-A CATCH BASIN

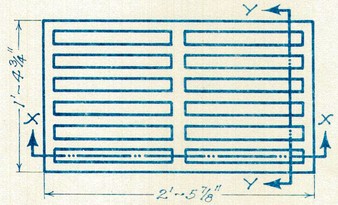



DETAIL OF KEY JOINT

Outlet pipe to be placed at direction of the engineer.




All edges to be rounded 1/4" radius.

GRATE

## NOTES

CASTINGS shall be of cast iron in accordance with Material Details. The design shall be essentially the same and equally as strong as those shown hereon and shall be given one coat of asphaltum paint as per specifications.

WEIGHTS approximately are:—

| | |
|---|---|
| Curb casting | 180 pounds. |
| Gutter grate | 140 pounds. |
| Gutter frame | 340 pounds. |

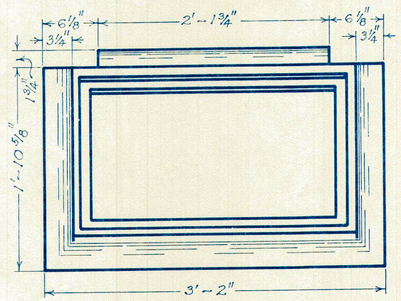
BEARING AREAS of frame and grate shall be so fitted and finished as to provide a firm and even seat for all portions of the grate in the frame. No projections shall exist on bearing areas of either casting and the grate shall seat in its frame without rocking. Frame and grate shall be fitted, matched and marked before delivery to the project.

DOWELS to be 3/4 inch round, smooth bars 15 inches long spaced as shown hereon and greased.

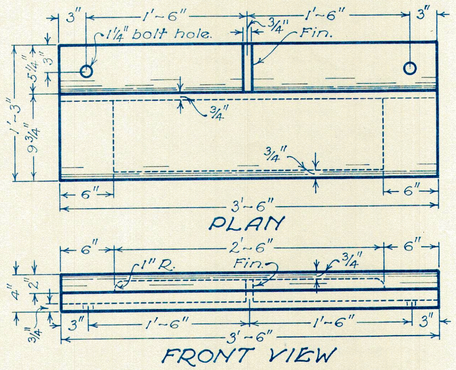
CONCRETE to be Class "C".

BRICK side walls, when used in place of concrete, shall be 8 inches in thickness and be plastered on the inside and outside with 1:2 cement mortar 1/2 inch thick.

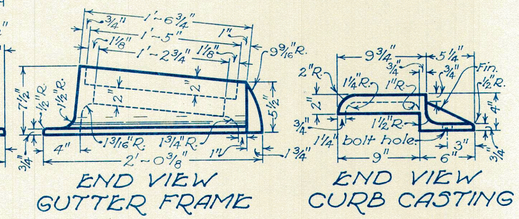
PAVEMENT:— The portion blocked out of the pavement shall be placed after the casting has been set but shall be paid for as part of the pavement.

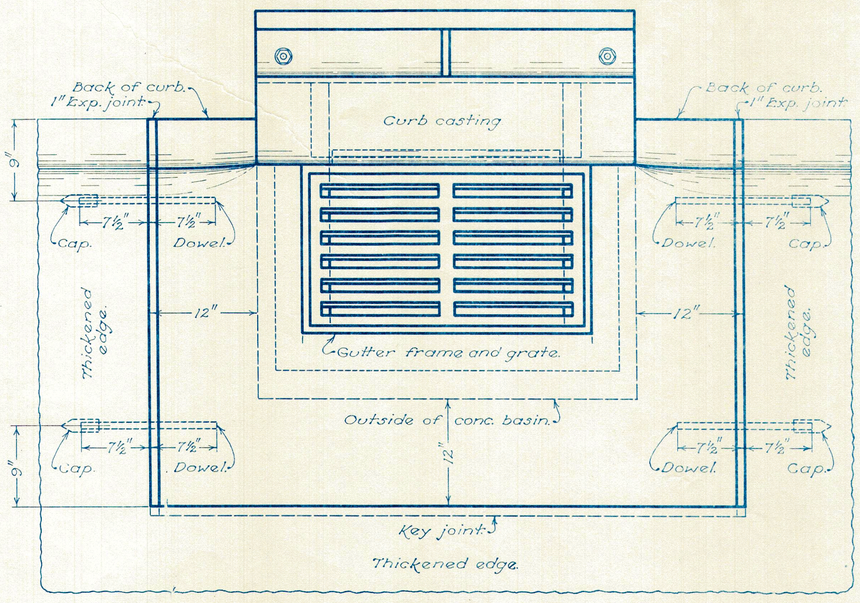



GUTTER FRAME




CURB CASTING




PLAN OF CATCH BASIN AND PAVEMENT JOINTS

BUREAU OF LOCATION & RIGHT OF WAY
OHIO DEPARTMENT OF HIGHWAYS

# CATCH BASINS

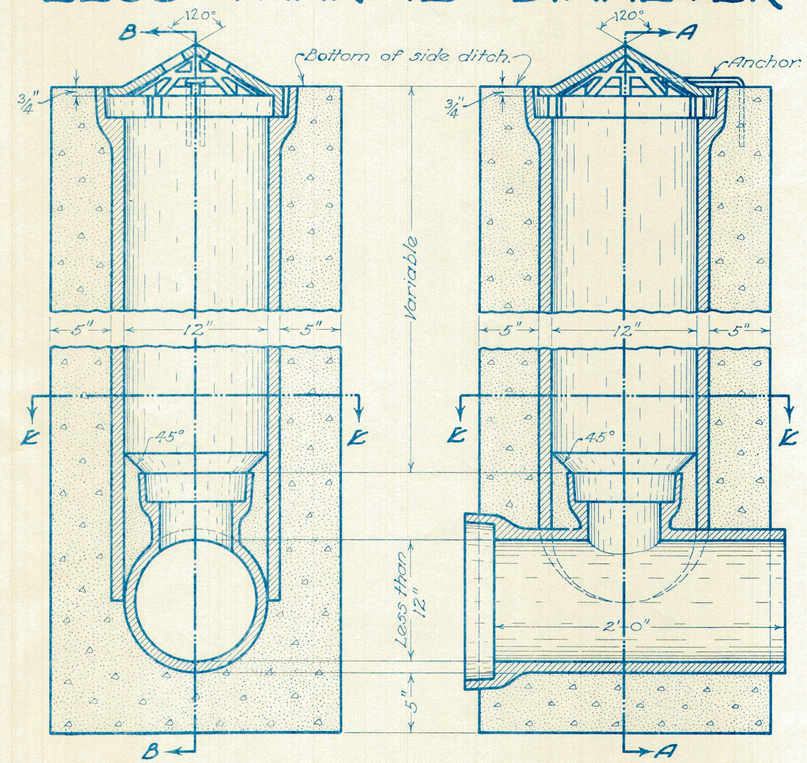
STANDARD CONSTRUCTION DRAWING I-8 C.B. No. 3-A

APPROVED M.D.S. CHIEF ENGINEER.

| DATE |
|---|
| 4-1-36 |
| 12-15-38 |
| 3-1-39 |
| 11-1-39 |
| 8-1-41 |
| 9-2-41 |
| 12-15-41 |

# STANDARD Nº 1 SIDE DITCH INLETS

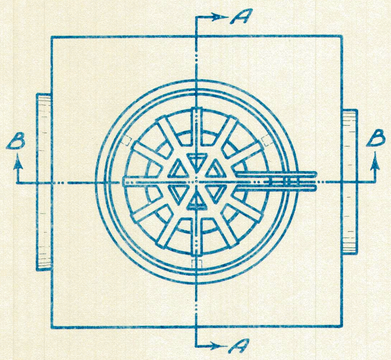
## CONSTRUCTED ON PIPE LESS THAN 12" DIAMETER



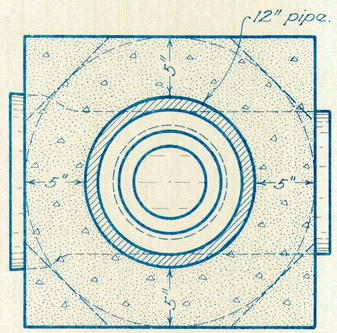

SECTION A-A




SECTION B-B

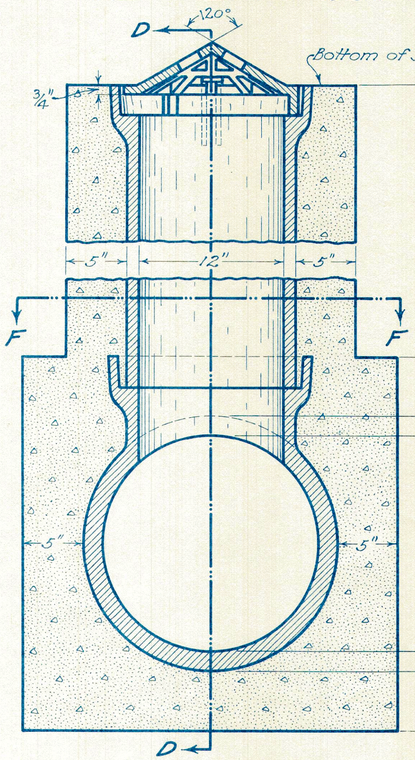



PLAN

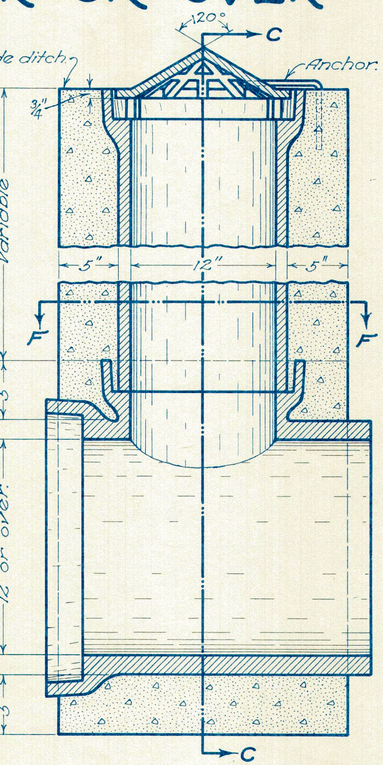



SECTION E-E

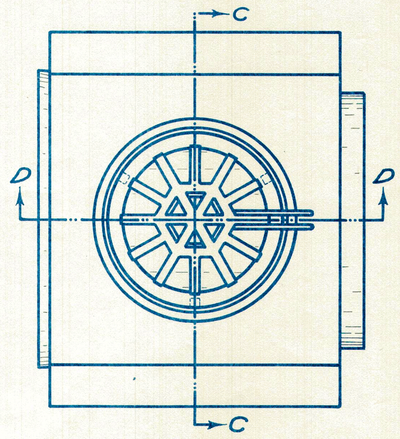
## CONSTRUCTED ON PIPE 12" DIAMETER OR OVER



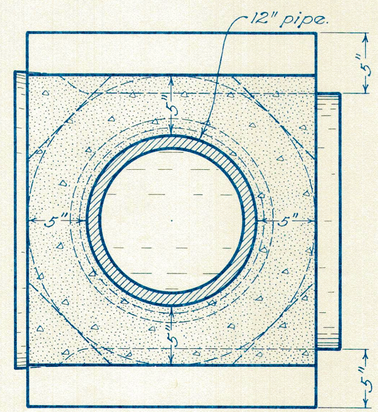

SECTION C-C




SECTION D-D




PLAN




SECTION F-F

## NOTES

**CASTING** shall be of cast iron in accordance with Material Details. The design shall be essentially the same and equally as strong as the one shown hereon, and shall be given one coat of asphaltum paint as per specifications. Weight approximately 25 pounds.

**ANCHOR** for casting to be a 3/8 in. rod, 2 ft. long, bent around grate as shown and anchored into concrete casing.

**CONCRETE** casing for riser may be square, round or hexagonal in shape, and shall be Class "C."

**RISER PIPE** in all cases shall be 12 in. in diameter regardless of size of carrying line.

**TEE** :- Where carrying line is not continuous through inlet the upstream opening of the tee shall be properly plugged using vitrified stopper and sealed joint.

BUREAU OF LOCATION & RIGHT OF WAY
OHIO DEPARTMENT OF HIGHWAYS

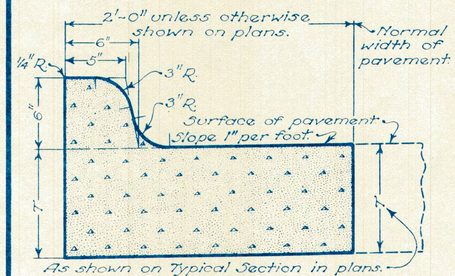
# SIDE DITCH INLETS

DATE
8 - 1933
1 - 1 - 36
3 - 1 - 39

STANDARD CONSTRUCTION DRAWING I-8 I. Nº 1

APPROVED _____ CHIEF ENGINEER

# STANDARD CONCRETE CURBS AND COMBINED CURB AND GUTTER

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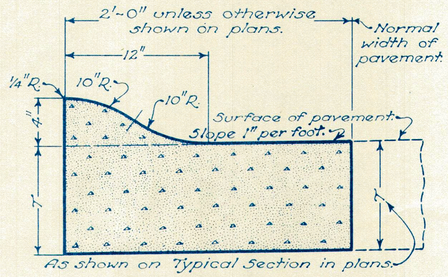


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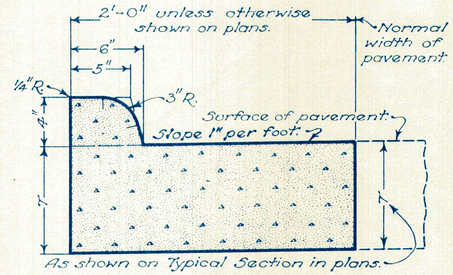


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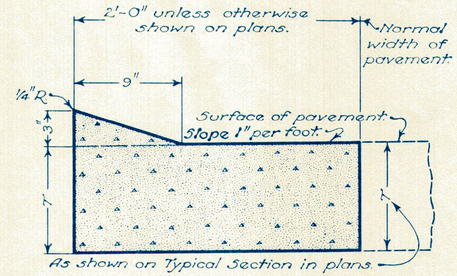


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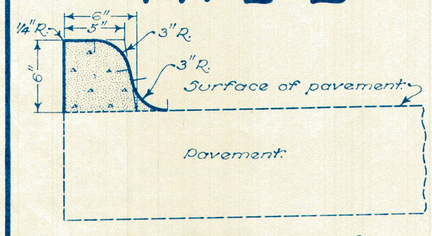
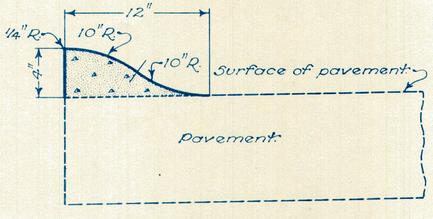



TYPE 2-A

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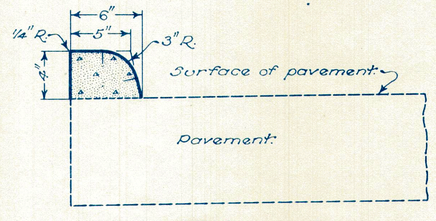


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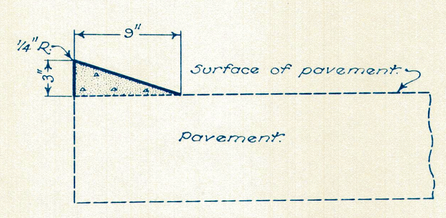
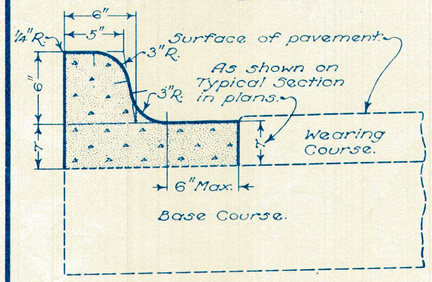
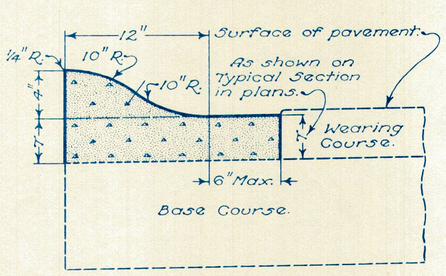


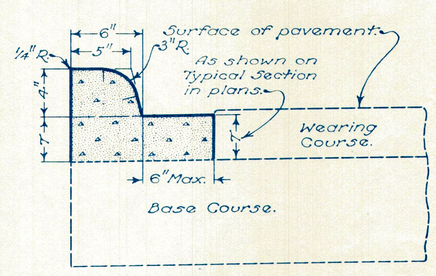

TYPE 5-A



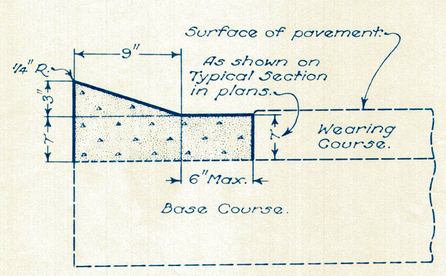

TYPE 2-B



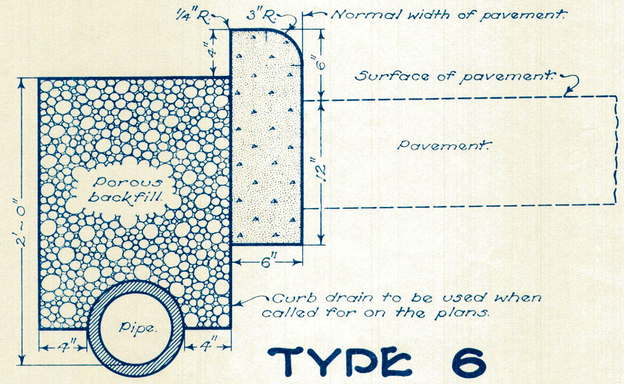

TYPE 3-B




TYPE 4-B




TYPE 5-B




TYPE 6

## NOTES

GENERAL:— This drawing shows alternate types of curb that may be used on various types of pavement. Typical section of project shows the type to be used also the thickness of the edge of the pavement or the edge of the curb and gutter section.

JOINTS:— Transverse joints in pavements or bases shall be extended through curbs or combined curb and gutters built integral with or tied to the pavement or base in which case expansion joints shall be constructed in the curb and gutter section in such a manner that the joint seal will extend the full width of the gutter and into the curb face a sufficient distance to seal the joint to an elevation at least two (2) inches above the flow line of the gutter. Dowel bars shall be used in the curb and gutter section at expansion and contraction joints which are identical with the joints in the pavement.

One quarter (1/4) inch preformed expansion joints shall be constructed at intervals of ten (10) feet in combined curb and gutters not tied to the base or pavement. Expansion joint material shall meet the requirements of Sec. M-10.02 or M-10.03.

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

**CONCRETE CURBS AND COMBINED CURB AND GUTTER**

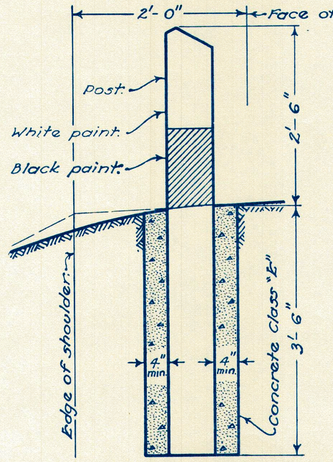
STANDARD CONSTRUCTION DRAWING I-12

APPROVED W. J. J. CHIEF ENGINEER.

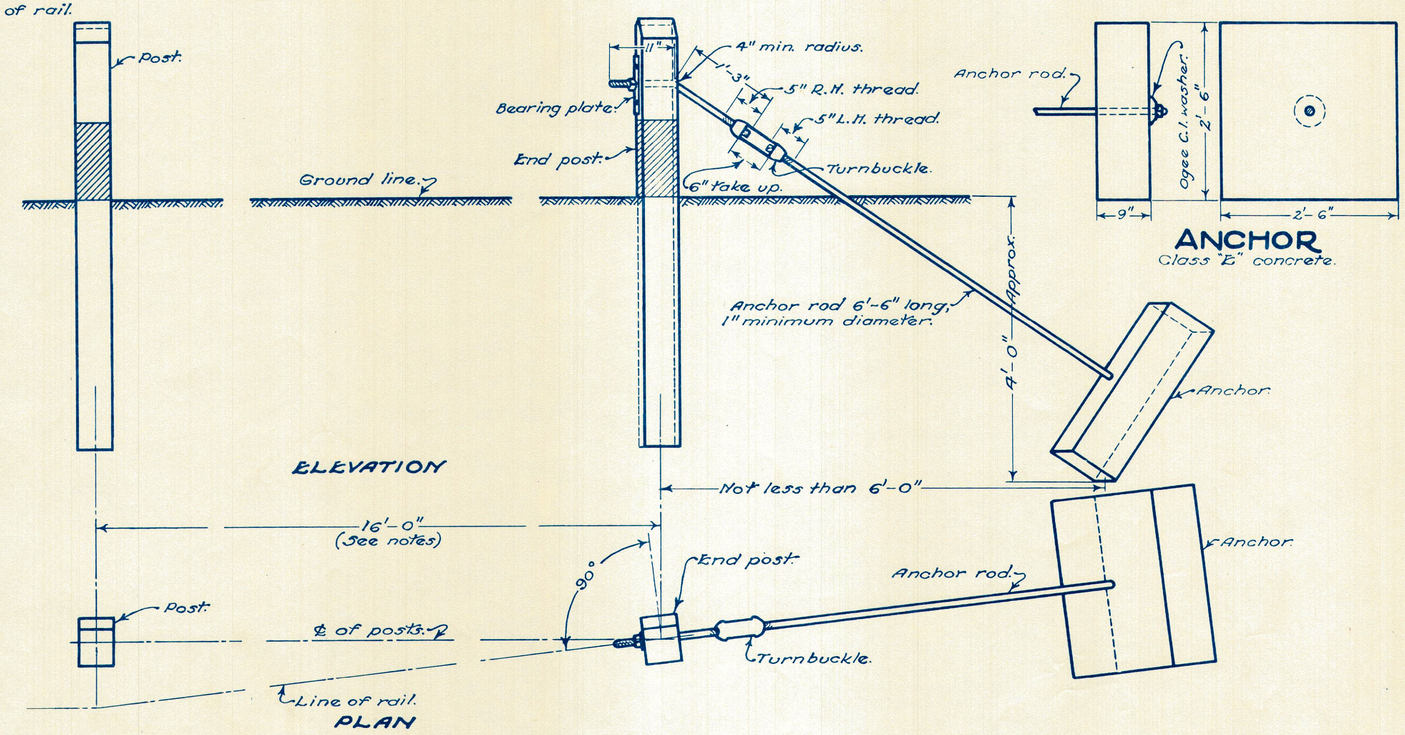
DATE
8-1933
4-1934
7-10-35
2-15-36
5-6-40
7-1-42
3-15-48

# STANDARD WOOD GUARD RAIL POSTS

## TWO END POSTS WITH ANCHOR




SIDE VIEW
SHOWING ENCASEMENT WHEN REQUIRED




ELEVATION

PLAN




ANCHOR
Class "E" concrete.

## NOTES

GENERAL:- Standard Construction Drawings showing rail types shall be used in conjunction with this drawing.

POSTS:- Wood posts may be either round or square sawed and butt treated unless otherwise specified. For flexible plate, steel beam, 4 cable and 4 tape types, square sawed posts, when used, shall be full 6"x 8" and round wood posts, when used, shall have a minimum top diameter of 7". For 3 cable, 2 or 3 tape and woven wire band types, square sawed posts, when used, may be full 6"x 6" and round wood posts, when used, shall have a minimum top diameter of 6".

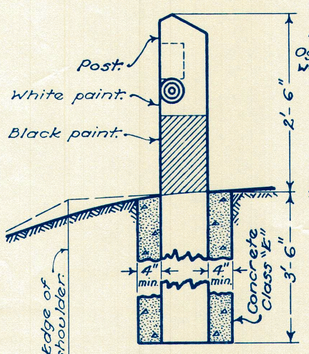
Bolt holes shall be bored and top of posts trimmed after posts are set.

Posts shall be spaced 16 feet on centers for all types of rail except steel beam, measured along the center line of the rail except where otherwise noted in the Specifications for curves. Posts for steel beam type shall be spaced 12'-6" on centers measured along the center line of the rail.

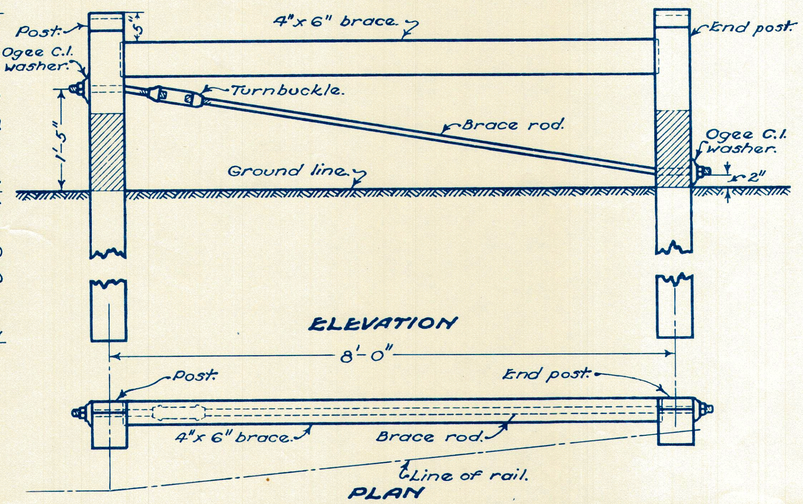
END ANCHORAGE:- Where end anchorage is required deadmen shall be used except where physical features such as bridges, drives, road intersections, etc. make this impractical, in which case the end anchorage shall be of the bracing type with the two end posts spaced 8 feet on centers.

PAINTING:- The portion of the post above the ground shall have two coats of paint in addition to the prime coat. The paint below the lower edge of the rail shall be black and the paint above the lower edge of the rail shall be white.

## TWO END POSTS WITH BRACING



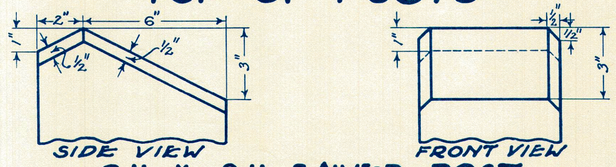

SIDE VIEW
SHOWING ENCASEMENT WHEN REQUIRED



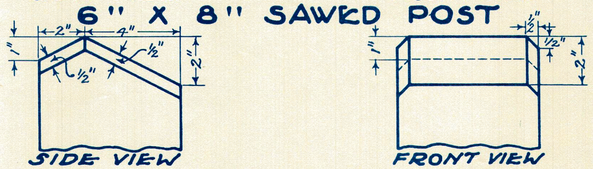

ELEVATION

PLAN

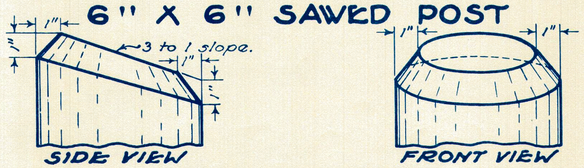
## TOP OF POSTS




6" X 8" SAWED POST




6" X 6" SAWED POST




ROUND POSTS

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

# GUARD RAIL

STANDARD CONSTRUCTION DRAWING I-15 No. 1

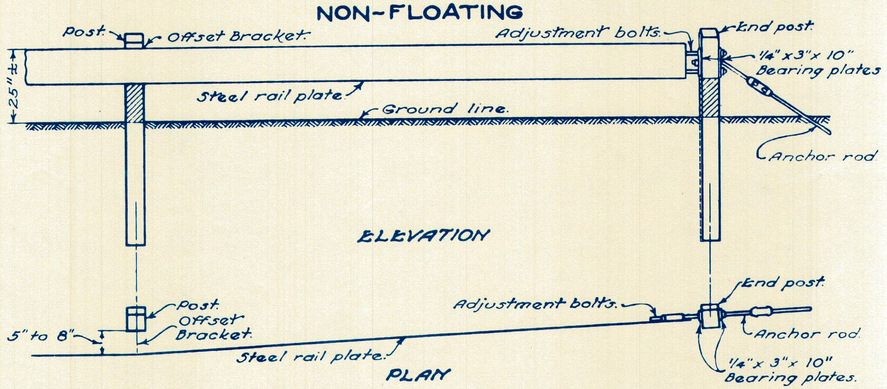
APPROVED W. J. CHIEF ENGINEER

| DATE |
|---|
| 10-1-39 |
| 11-1-41 |
| 2-1-47 |
| 3-1-47 |

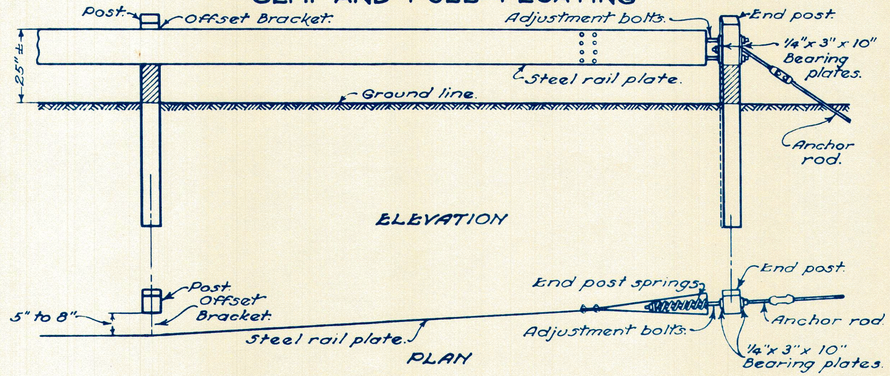
# STANDARD GUARD RAIL

## FLEXIBLE STEEL PLATE TENSION TYPE

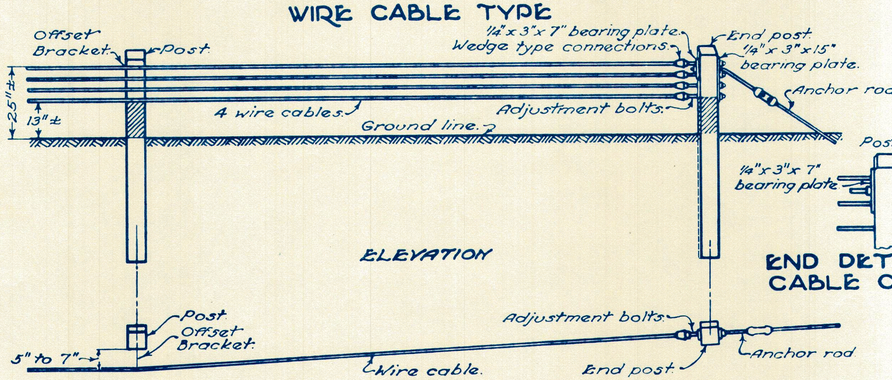
### NON-FLOATING

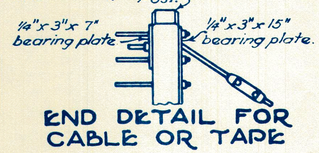



### SEMI AND FULL-FLOATING



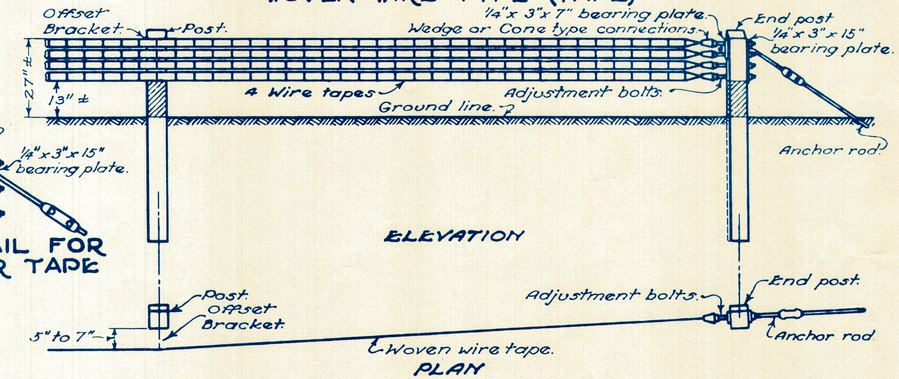

## WIRE CABLE TYPE



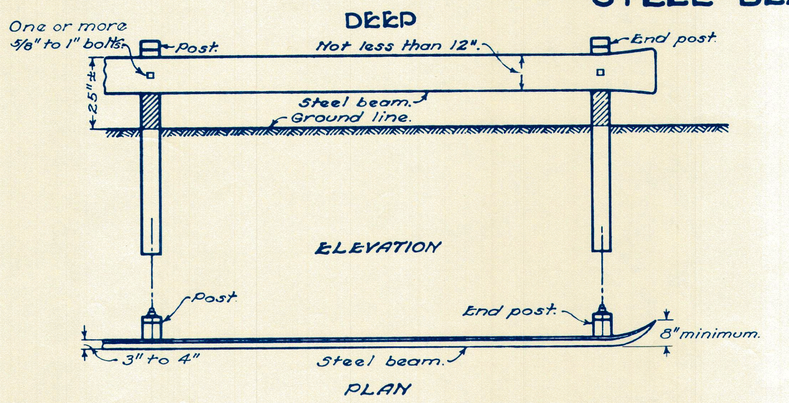

END DETAIL FOR CABLE OR TAPE

## WOVEN WIRE TYPE (TAPE)

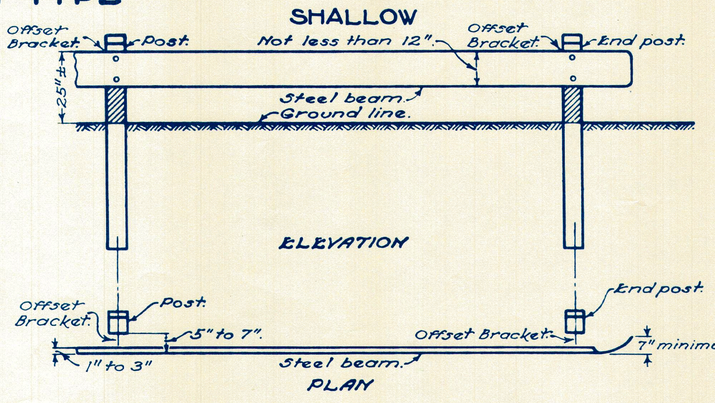



## STEEL BEAM TYPE

### DEEP




### SHALLOW




## NOTES

GENERAL:- Standard Construction Drawings showing post details shall be used in conjunction with this drawing.

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

# GUARD RAIL

STANDARD CONSTRUCTION DRAWING I-15 No 2

APPROVED L.A.R. CHIEF ENGINEER

DATE
10-1-39
10-1-40
4-1-41
2-1-47
6-17-49