# SUMMIT COUNTY
## DEPARTMENT OF HIGHWAYS
## BUREAU OF ROADS & BRIDGES

## BRIDGE NO. BAR-11-270
## WOOSTER ROAD WEST OVER HUDSON RUN
## CITY OF BARBERTON

| OHIO | 1 / 24 |
|---|---|
| FHWA REGION 5 | |
| FEDERAL PROJECT | |

SUMMIT COUNTY
WOOSTER ROAD WEST

### DESIGN DESIGNATION

| | | |
|---|---|---|
| CURRENT ADT | (1989) | 11,000 |
| DESIGN | (2009) | |
| DHV | (2009) | |
| D | | |
| T | | |
| V | | 35 MPH |
| LEGAL SPEED | | 35 MPH |
| FUNCTIONAL CLASSIFICATION – | | |

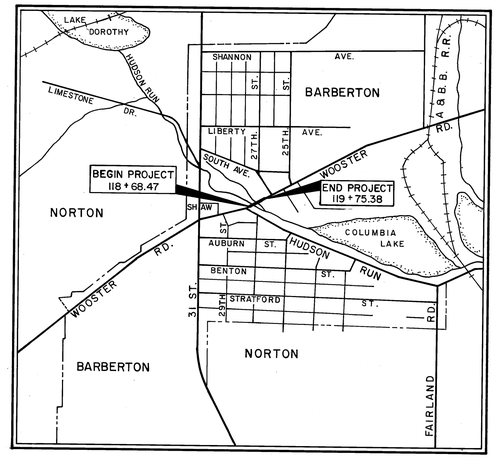
### CONVENTIONAL SIGNS

County Line
Township Line
Section Line
Corporation Line or
Fence Line (existing) (proposed)
Center Line 352 + 353 +
Trees, Stumps, (to be removed)
Utility Poles: Telephone, Power, Light.

Limited Access (only) LA
Right of Way (only) RW
Limited Access & Right of Way LA & RW
Existing Right of Way
Property Line (in existing fence)
Railroad or
Guardrail (existing) (proposed)
BEGIN PROJECT STA. 118+68.32

### INDEX OF SHEETS


| | |
|---|---|
| Title Sheet | 1 |
| Typical Sections | 2 |
| General Notes | 3 |
| General Summary & Calculations | 4 |
| Sub–Summary | 5 |
| Plan & Profile | 6 |
| Roadway Cross Sections | 7,8 |
| Utility Relocation Plan & Profile | 9 |
| Approach Slab Details | 10 |
| Channel Cross Sections | 11 |
| Construction Sequence | 12,13 |
| Construction Signing & Signalized Closing | 14,14a,14b |
| Structure Over 20' Span | 15–23 |
| Right of Way Plan | 24 |
| Subsurface Investigation | 1-3 |


### LOCATION MAP

0 1500 3000 6000
SCALE IN FEET

Portion to be Improved
State & Federal Routes
Other Roads

### SCALES

Plan: 0 10 20
Profile: Horizontal 0 10 20, Vertical 0 2 4
Cross Section: Horizontal 0 5 10, Vertical 0 5 10

### 1989 SPECIFICATIONS

The standard specifications of the state of Ohio, Department of Transportation, 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 the maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved _____
Date 5/14/89 Service Director, City of Barberton

Approved _____
Date 4/12/89 Engineer, County of Summit

Approved _____
Date _____ District Deputy Director of Transportation

Approved _____
Date _____ Engineer, Bureau of Bridges and Structural Design

Approved _____
Date _____ Chief Engineer, Planning and Design

Approved _____
Date _____ Director, Department of Transportation

### LINE DATA

| | |
|---|---|
| BEGIN PROJECT | STA. 118+68.47 |
| END PROJECT | STA. 119+75.38 |
| NO ADDITIONS OR DEDUCTIONS | |
| | 106.91 LF OR 0.020 MI. |
| ADD FOR WORK | |
| WOOSTER ROAD WEST | |
| STA. 118+50.00 TO 118+68.47 | 18.47 |
| STA. 119+75.38 TO 120+17.00 | 41.62 |
| | 167.00 LF OR 0.032 MI. |

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
Call...800–362–2764 (Toll free)
OHIO UTILITIES PROTECTION SERVICE
NON–MEMBERS
MUST BE CALLED DIRECTLY

Bryan E. McCoy
BRYAN E. McCOY

Plan Prepared By:
McCOY ASSOCIATES, INC.
2620 Ridgewood Road
Akron, Ohio 44313
(216) 867–4727

STATE OF OHIO
BRYAN E. McCOY
E-27739
REGISTERED PROFESSIONAL ENGINEER

| SUPPLEMENTAL SPECIFICATIONS | | | |
|---|---|---|---|
| 814 | 1–21–88 | 947 | 10–17–83 |
| | | 956 | 6–26–78 |
| 836 | 11–12–85 | | |
| 853 | 6–26–78 | | |

| SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS | |
|---|---|
| BP–5 | 10–01–87 |
| BP–7 | 10–01–87 |
| MH–3 | 12–18–84 |
| MC–4 | 7–26–76 |
| AS–1–81 | 11–27–81 |
| BR–2–82 | 11–01–82 |
| MT–99.10 | 11–14–86 |

Project:
Date of Letting _____ 19 __ , Contract No. _____

AS BUILT 3/7/90

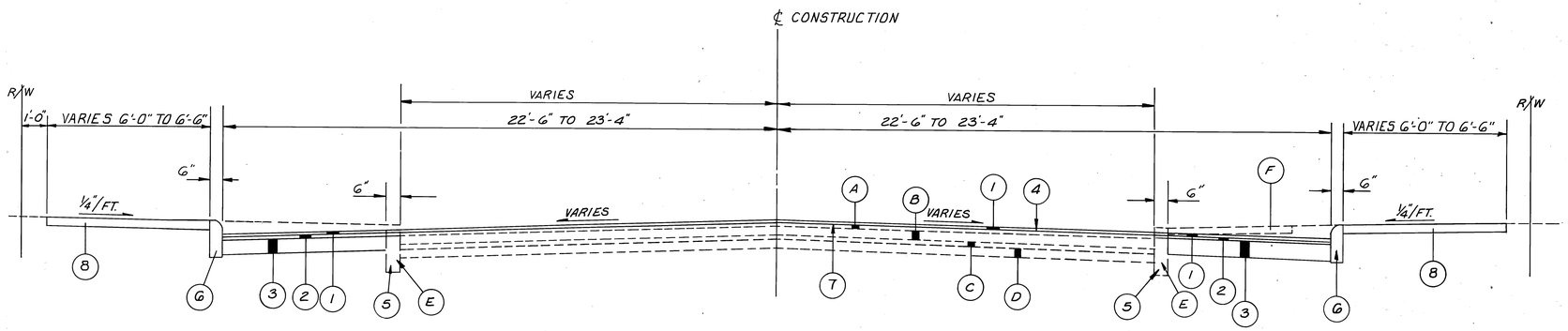
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ADMINISTRATOR DATE

BAR 11-0270 SN: 2231043

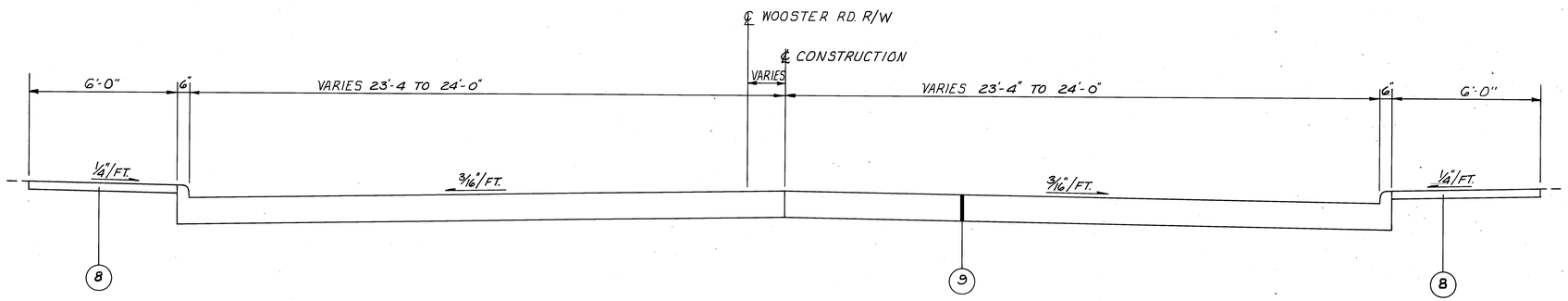
| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

2/24

SUMMIT COUNTY
WOOSTER RD. WEST



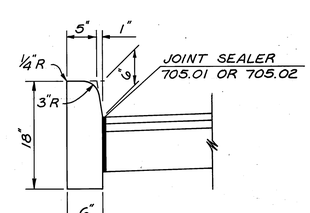

STA. 118+50.00 TO STA. 118+68.47
STA. 119+55.38 TO STA. 120+17.00




STA. 118+68.47 TO STA. 118+88.47
STA. 119+55.38 TO STA. 119+75.38

## LEGEND

| EXISTING | PROPOSED |
|---|---|
| (A) 1 3/4" ASPHALT | (1) ITEM 404 1 1/4" ASPHALT CONCRETE, AC-20 |
| (B) 4" PAVING BRICK | (2) ITEM 402 1 1/4" ASPHALT CONCRETE, AC-20 |
| (C) 2" SAND | (3) ITEM 301 7" BITUMINOUS AGGREGATE BASE: AC-20 |
| (D) 4" CONCRETE | (4) ITEM 407 TACK COAT: RC-250, SS1, SS1h, MS-2, OR RS1; APPLIED AT THE RATE OF 0.1 GAL. PER SQ. YD. |
| (E) 6" x 22" STONE CURB | (5) ITEM 202 CURB REMOVED |
| (F) 4" WALK | (6) ITEM 609 6" x 18" CONCRETE CURB, (SEE DETAIL "A") TYPE 6 |
| | (7) ITEM 403 0" MIN. ASPHALT CONCRETE, AC-20 |
| | (8) ITEM 608 4" CONCRETE WALK |
| | (9) ITEM 452 13" REINFORCED CONCRETE APPROACH SLAB |




## DETAIL "A"

TYPE 6 CONC. CURB
SCALE: 1" = 1'-0"

SFN: 7731043 BAR 11-0270

TYPICAL SECTIONS

# CALCULATIONS

**ITEM 202 - PAVEMENT REMOVAL**

EAST AND WEST APPROACH SLABS

WEST (20')(1/2)(31' + 33')/9 = 71.1 S.Y.

EAST (20')(1/2)(30.5' + 29')/9 = 66.1 S.Y.

137.2 S.Y. = 137 S.Y.

**ITEM 203 - SUBGRADE COMPACTION**

STA. 118+50 TO 118+64.5, LT.

(7' + 8')(14')/9 / 2 = 11.67 S.Y.

STA. 118+50 TO 118+72.25, RT.

(8' + 9.5')(22.5')/9 / 2 = 21.88 S.Y.

STA. 119+73 TO 120+17, LT.

(6.5' + 5')(44')/9 / 2 = 28.11 S.Y.

STA. 119+78 TO 120+17, RT.

(9.5' + 8.5')(40')/9 / 2 = 40.00 S.Y.

101.66 S.Y. = 102 S.Y.

**ITEM 301 - BITUMINOUS AGGREGATE BASE, AC-20**

STA. 118+50 TO 118+64.5, LT.

(7' + 8')(14')(7"/12)/27 / 2 = 2.27 C.Y.

STA. 118+50 TO 118+72.25, RT.

(8' + 9.5')(22.5')(7"/12)/27 / 2 = 4.25 C.Y.

STA. 119+73 TO 120+17, LT.

(6.5' + 5')(44')(7"/12)/27 / 2 = 5.47 C.Y.

STA. 119+78 TO 120+17, RT.

(9.5' + 8.5')(40')(7"/12)/27 / 2 = 7.78 C.Y.

19.77 C.Y. = 20 C.Y.

**ITEM 402 - ASPHALT CONCRETE, AC-20**

STA. 118+50 TO 118+64.5, LT.

(7' + 8')(14')(1.25"/12)/27 / 2 = 0.41 C.Y.

STA. 118+50 TO 120+72.25, LT.

(8' + 9.5')(22.5')(1.25"/12)/27 / 2 = 0.76 C.Y.

STA. 119+73 TO 120+17, LT.

(6.5' + 5')(44')(1.25"/12)/27 / 2 = 0.98 C.Y.

STA 119+78 TO 120+17, RT.

(9.5' + 8.5')(40')(1.25"/12)/27 / 2 = 1.39 C.Y.

3.54 C.Y. = 4.0 C.Y.

**ITEM 403 - ASPHALT CONCRETE, AC-20**

0" MINIMUM, ASSUME 1/2" OVER ALL EXISTING PAVEMENT

STA. 118+50 TO 118+68.47

(18.5')(32' + 30')(0.5"/12)/27 / 2 = .89 C.Y.

STA. 119+75.38 TO 120+17

(30.5')(43.5' + 40.5')(0.5/12)/27 / 2 = 1.98 C.Y.

2.87 C.Y. = 3.0 C.Y.

**ITEM 404 - ASPHALT CONCRETE, AC-20**

STA. 118+50 TO 118+68.47

(46.6')(14' + 23')(1.25"/12)/27 / 2 = 3.33 C.Y.

STA. 119+75.38 TO 120+17

(46.7' + 44.0')(41.4')(1.25"/12)/27 / 2 = 7.24 C.Y.

10.57 C.Y. = 11 C.Y.

**ITEM 407 - TACK COAT APPLIED AT THE RATE OF 0.1 GAL/SY**

SAME AREAS AS ITEM 403

STA. 118+50 TO 118+68.47 = 63.7 S.Y.

STA. 119+75.38 TO 120+17 = 142.3 S.Y.

204.7 S.Y.

204.7 S.Y x 0.1 GAL/S.Y. = 20.5 GAL = 21 GAL

**ITEM 621 - CENTER LINES**

STA. 118+50 TO 120+17 = 167'/5280 = 0.03 MILE

**ITEM 621 - EDGE LINES**

STA. 118+50 TO 120+17 = (167'/5280) x 2 = 0.06 MILE

**ITEM 621 - LANE LINES**

STA. 118+50 TO 120+17 = (167'/5280) x 2 = 0.60 MILE

**ITEM 659 - COMMERCIAL FERTILIZER**

(208 S.Y. SEEDING AND MULCHING)(9) = 1872 S.F.

(1872 SF)(20LB/100SF) / 2000 LB/TON = 0.19 TONS

**ITEM 659 - AGRICULTURAL LIMING**

(1872 SF)(100LB/1000SF) / 2000 LB/TON = 0.09 TONS

| QUANTITIES |
|---|
| CALC. BY: S.M.S. |
| DATE: 2-15-89 |
| CHKD. BY: J.B.H. |
| DATE: 2-15-89 |

# GENERAL SUMMARY

| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

4/24

SUMMIT COUNTY
WOOSTER ROAD, WEST

| SHEET NO. 3 | 4 | 5 | 6 | | | PARTICIPATION | | | ITEM | ITEM EXT. | GRAND TOTAL | UNIT | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | ROADWAY |
| LUMP | | | | | | | | | 201 | | LUMP | | CLEARING & GRUBBING |
| | | 1 | | | | | | | 202 | | 1 | EACH | MANHOLE ABANDONED |
| | 137 | | | | | | | | 202 | | 137 | SQ. YD. | PAVEMENT REMOVAL |
| | | ~~37.5~~ 25 | | | | | | | 202 | | 25 ~~37.5~~ | LIN. FT. | GUARDRAIL REMOVED |
| | | ~~552~~ 328 | | | | | | | 202 | | 328 ~~552~~ | SQ. FT. | WALK REMOVED |
| | | ~~29~~ 53 | | | | | | | 202 | | 53 ~~29~~ | LIN. FT. | CURB REMOVED |
| | | | ~~101~~ 124 | | | | | | 203 | | 124 ~~101~~ | CU. YD. | EMBANKMENT |
| | | | ~~70~~ 127 | | | | | | 203 | | 127 ~~70~~ | CU. YD. | EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION |
| | ~~102~~ 315 | | | | | | | | 203 | | 315 ~~102~~ | SQ. YD. | SUBGRADE COMPACTION |
| ~~68~~ 61 | | | | | | | | | 606 | | 61 ~~68~~ | EACH | TEMPORARY DRUMS |
| | | ~~1280~~ 1219 | | | | | | | 608 | | 1219 ~~1280~~ | SQ. FT. | 4" CONCRETE WALK |
| | | | | | | | | | | | | | EROSION CONTROL |
| | | ~~139~~ 161 | | | | | | | 601 | | 161 ~~139~~ | CU. YD. | ROCK CHANNEL PROTECTION, TYPE "C" (2'-0" THICK) WITH FABRIC FILTER |
| | | | ~~133~~ 208 | | | | | | 659 | | 208 ~~133~~ | SQ. YD. | SEEDING AND MULCHING |
| | ~~0.19~~ 0.02 | | | | | | | | 659 | | 0.02 ~~0.19~~ | TON | COMMERCIAL FERTILIZER |
| | ~~0.09~~ 0.0 | | | | | | | | 659 | | 0.0 ~~0.09~~ | TON | AGRICULTURAL LIMING |
| ~~10~~ | | | | | | | | | 659 | | 0 ~~1~~ | M GAL. | WATER |
| | | | | | | | | | | | | | PAVEMENT |
| | ~~20~~ 25 | | | | | | | | 301 | | 25 ~~20~~ | CU. YD. | BITUMINOUS AGGREGATE BASE, AC-20 |
| | 4 | | | | | | | | 402 | | 4 | CU. YD. | ASPHALT CONCRETE, AC-20 |
| | ~~3~~ 11 | | | | | | | | 403 | | 11 ~~3~~ | CU. YD. | ASPHALT CONCRETE, AC-20 |
| | 11 | | | | | | | | 404 | | 11 | CU. YD. | ASPHALT CONCRETE, AC-20 |
| | 21 | | | | | | | | 407 | | 21 | GAL | TACK COAT, AS PER PLAN |
| | | ~~121~~ 126 | | | | | | | 609 | | 126 ~~121~~ | LIN. FT. | CURB, TYPE 6 |
| | | 213 | | | | | | | 611 | | 213 | SQ. YD. | REINFORCED CONCRETE APPROACH SLABS (T=13") WITH TYPE 2A CURBS |
| | | | | | | | | | | | | | WATER WORK |
| | | ~~140~~ 141 | | | | | | | 814 | | 141 ~~140~~ | LIN. FT. | 12 INCH WATER MAIN, DUCTILE IRON PIPE, ANSI CLASS 52, PUSH-ON OR MECHANICAL JOINTS AND FITTINGS, AS PER PLAN |
| | | | | | | | | | | | | | SANITARY SEWER |
| | | ~~40~~ 37 | | | | | | | 603 | | 37 ~~40~~ | LIN. FT. | 8 INCH TYPE B CONDUIT, 706.08 |
| | | ~~13~~ 11 | | | | | | | 603 | | 11 ~~13~~ | LIN. FT. | 8 INCH TYPE B CONDUIT, AS PER PLAN |
| | | 1 | | | | | | | 604 | | 1 | EACH | MANHOLE NO. 3 |
| | | 1 | | | | | | | 604 | | 1 | EACH | MANHOLE ADJUSTED TO GRADE |
| | | | | | | | | | | | | | TRAFFIC CONTROL |
| | ~~0.03~~ 0 | | | | | | | | 621 | | 0 ~~0.03~~ | MILE | CENTER LINES |
| | ~~0.06~~ 0 | | | | | | | | 621 | | 0 ~~0.06~~ | MILE | EDGE LINES |
| | ~~0.06~~ 0 | | | | | | | | 621 | | 0 ~~0.06~~ | MILE | LANE LINES |
| | | | | | | | | | | | | | MAINTENANCE OF TRAFFIC |
| ~~290~~ 300 | | | | | | | | | 622 | | 300 ~~290~~ | LIN. FT. | TEMPORARY CONCRETE BARRIER, AS PER PLAN |
| 20 | | | | | | | | | 614 | | 20 | LIN FT. | TEMPORARY STOP LINES, CLASS I |
| ~~0.12~~ 0.08 | | | | | | | | | 614 | | 0.08 ~~0.12~~ | MILE | TEMPORARY CENTER LINES, CLASS I, 947.03, TYPE B |
| | | | | | | | | | | | | | FOR STRUCTURES 20' AND OVER GENERAL SUMMARY, SEE SHEET 16 OF 24. |
| LUMP | | | | | | | | | 614 | | LUMP | | MAINTAINING TRAFFIC |
| LUMP | | | | | | | | | 619 | | LUMP | | FIELD OFFICE |
| | | | | | | | | | 623 | | LUMP | | CONSTRUCTION LAYOUT STAKES |
| | | | | | | | | | 624 | | LUMP | | MOBILIZATION |

SFN:7731043 BAR 11-0270

CALCULATIONS AND GENERAL SUMMARY

# QUANTITY SUB-SUMMARY

| CALCULATED BY: S.M.S | DATE: 2-89 |
|---|---|
| CHECKED BY: J.B.H. | DATE: 2-89 |

| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |



SUMMIT COUNTY
WOOSTER ROAD, WEST

| REF. No. | SHEET. No. | STATION TO STATION | SIDE | FUNDING | 202 WALK REMOVED | 202 CURB REMOVED | 202 GUARD RAIL REMOVED | 202 MANHOLE ABANDONED | | 601 ROCK CHANNEL PROTECTION TYPE C (2'-0" THICK) WITH FABRIC FILTER | 603 8" TYPE B CONDUIT, AS PER PLAN | 603 8" TYPE B CONDUIT, 706.08 | | 604 MANHOLE NO.3 | 604 MANHOLE ADJUSTED TO GRADE | | 608 4" CONCRETE WALK | 609 CURB, TYPE 6 | | 611 REINFORCED CONCRETE APPROACH SLABS (T=13") | | 814 12" WATER MAIN, DUCTILE IRON PIPE CLASS 52 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | SQ. FT. | LIN. FT. | LIN. FT. | EACH | | CU. YD. | LIN. FT. | LIN. FT. | | EACH | EACH | | SQ. FT. | LIN. FT. | | SQ. YD. | | LIN. FT. | | | | | | | |
| R1 | 6 | 118+72 TO 118+84 | LT. | | | | 12.5 | | | | | | | | | | | | | | | | | | | | | | |
| R2 | 6 | 118+78 TO 118+89 | RT. | | | | 12.5 | | | | | | | | | | | | | | | | | | | | | | |
| R3 | 6 | 119+59 TO 119+71 | RT. | | | | 12.5 | | | | | | | | | | | | | | | | | | | | | | |
| R4 | 6 | 118+64 TO 118+86 | LT. | | 80 | | | | | | | | | | | | | | | | | | | | | | | | |
| R5 | 6 | 118+71 TO 118+89 | RT. | | 80 | | | | | | | | | | | | | | | | | | | | | | | | |
| R6 | 6 | 119+61 TO 119+78 | LT. | | 68 | | | | | | | | | | | | | | | | | | | | | | | | |
| R7 | 6 | 119+57 TO 120+17 | RT. | | 324 | | | | | | | | | | | | | | | | | | | | | | | | |
| R8 | 6 | 118+63 TO 118+65.5 | LT. | | | 2.5 | | | | | | | | | | | | | | | | | | | | | | | |
| R9 | 6 | 118+50 TO 118+71 | RT. | | | 21.5 | | | | | | | | | | | | | | | | | | | | | | | |
| R10 | 6 | 119+73.5 TO 119+76 | LT. | | | 2.5 | | | | | | | | | | | | | | | | | | | | | | | |
| R11 | 6 | 119+77 TO 119+79.5 | RT. | | | 2.5 | | | | | | | | | | | | | | | | | | | | | | | |
| AB1 | 9 | 119+53.88 | RT. | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| SW1 | 6 | 118+50 TO 118+64 | LT. | | | | | | | | | | | | | | 208 | | | | | | | | | | | | |
| SW2 | 6 | 118+50 TO 118+73 | RT. | | | | | | | | | | | | | | 284 | | | | | | | | | | | | |
| SW3 | 6 | 119+53 TO 120+17 | LT. | | | | | | | | | | | | | | 413 | | | | | | | | | | | | |
| SW4 | 6 | 119+58 TO 120+17 | RT. | | | | | | | | | | | | | | 375 | | | | | | | | | | | | |
| C1 | 6 | 118+50 TO 118+64 | LT. | | | | | | | | | | | | | | | 13.5 | | | | | | | | | | | |
| C2 | 6 | 118+50 TO 118+73 | RT. | | | | | | | | | | | | | | | 23.5 | | | | | | | | | | | |
| C3 | 6 | 119+73 TO 120+17 | LT. | | | | | | | | | | | | | | | 44 | | | | | | | | | | | |
| C4 | 6 | 119+77 TO 120+17 | RT. | | | | | | | | | | | | | | | 39.5 | | | | | | | | | | | |
| AS1 | 6 | 118+68.47 TO 118+88.47 | ℄ | | | | | | | | | | | | | | | | | 106.8 | | | | | | | | | |
| AS2 | 6 | 119+55.38 TO 119+75.38 | ℄ | | | | | | | | | | | | | | | | | 106.3 | | | | | | | | | |
| S1 | 9 | 119+65 TO 119+85.5 | RT. | | | | | | | | | 40 | | | | | | | | | | | | | | | | | |
| S2 | 9 | 119+45 TO 119+65 | RT. | | | | | | | | 13 | | | | | | | | | | | | | | | | | | |
| S3 | 9 | 119+65 | RT. | | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| S4 | 9 | 119+85.5 | LT. | | | | | | | | | | | | 1 | | | | | | | | | | | | | | |
| RC1 | 6 | 118+89 TO 119+54.5 | ℄ | | | | | | | 139 | | | | | | | | | | | | | | | | | | | |
| W1 | 9 | 118+50.67 TO 119+75.05 | LT. | | | | | | | | | | | | | | | | | | | 140 | | | | | | | |
| SUBTOTAL | | | | | 552 | 29 | 37.5 | 1 | | 139 | 13 | 40 | | 1 | 1 | | 1280 | 121 | | 213 | | 140 | | | | | | | |

SFN 7731043 BAR 11-0270

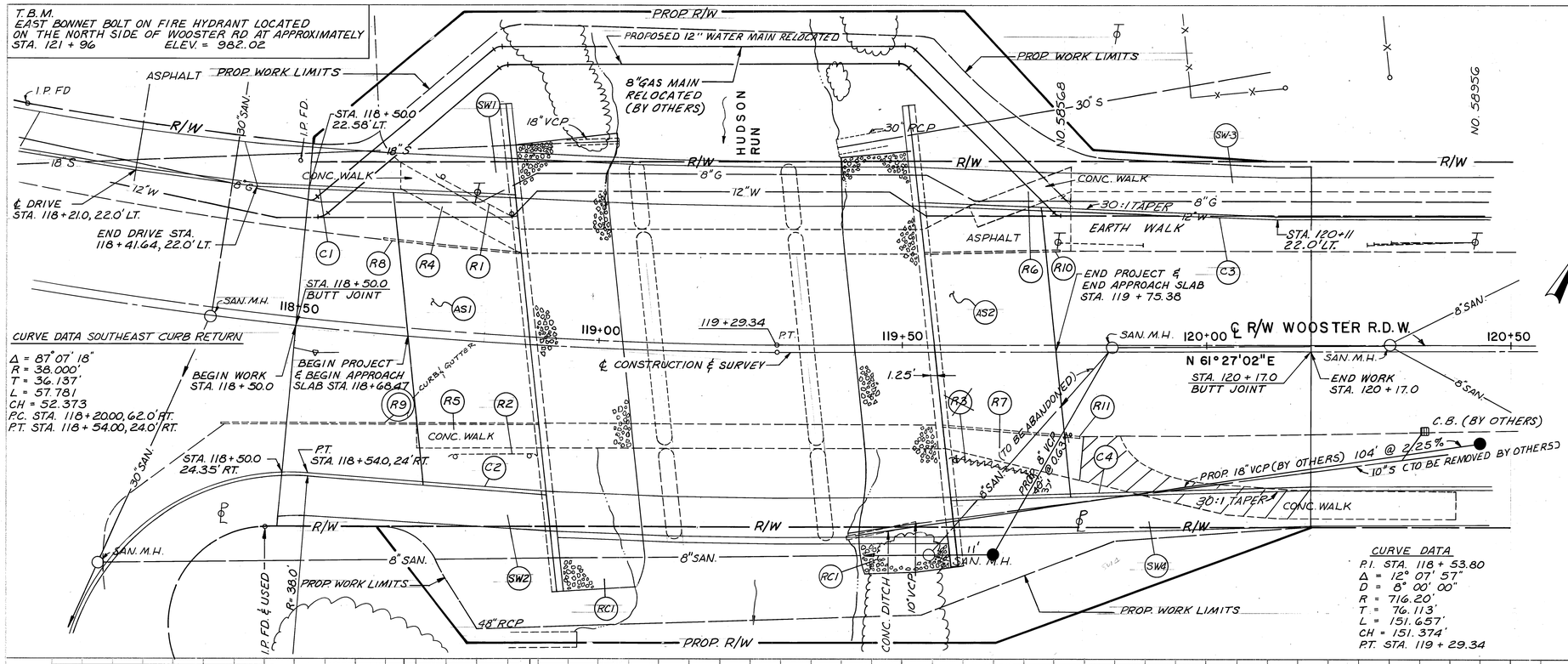
T.B.M.
EAST BONNET BOLT ON FIRE HYDRANT LOCATED ON THE NORTH SIDE OF WOOSTER RD AT APPROXIMATELY STA. 121 + 96 ELEV. = 982.02

| QUANTITIES |
|---|
| CALC. BY: S.M.S. DATE: 2-89 |
| CHKD. BY: J.B.H. DATE: 2-89 |

| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

6 / 24

SUMMIT COUNTY
WOOSTER RD.

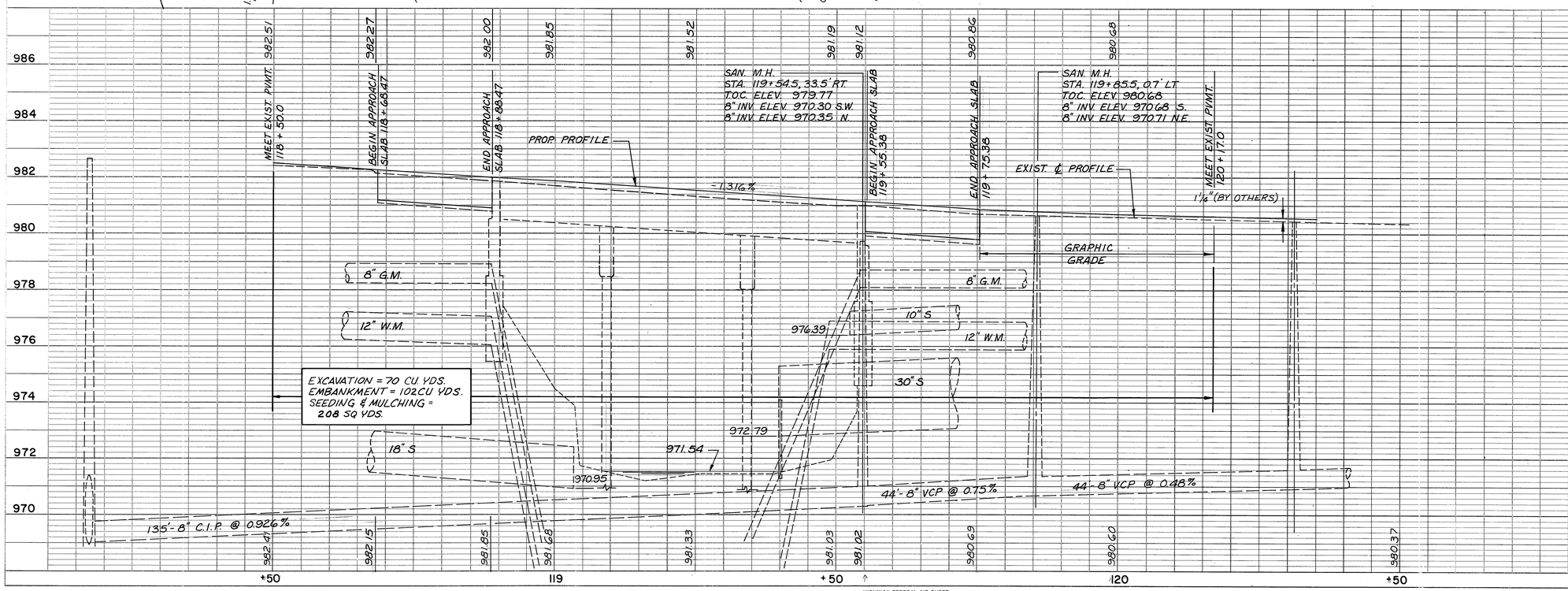


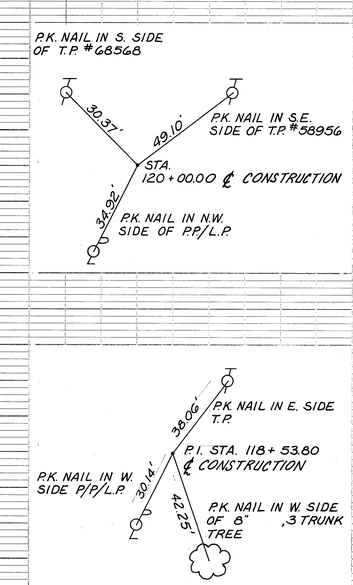

NOTES:

1. FOR CHANNEL EARTHWORK SEE SHEET 11 OF 24.
2. FOR UTILITY RELOCATION SEE SHEET 9 OF 24.

CURVE DATA
P.I. STA. 118 + 53.80
Δ = 12° 07' 57"
D = 8° 00' 00"
R = 716.20'
T = 76.113'
L = 151.657'
CH = 151.374'
P.T. STA. 119 + 29.34

AS BUILT 3/7/90




EXCAVATION = 70 CU. YDS.
EMBANKMENT = 102 CU. YDS.
SEEDING & MULCHING = 208 SQ. YDS.

| PLAN | SURVEYED / PLOTTED / ALIGNMENT CHECKED / BL OF WAY CHECKED | DATE / BY |
|---|---|---|
| NOTE BOOK No. | | |

| PROFILE | SURVEYED / PLOTTED / GRADES CHECKED / B.M. & CONTROL / STRUCTURE NOTATIONS CHECKED | DATE / BY |
|---|---|---|
| NOTE BOOK No. | | |

SF N: 7731043

HIGHWAY FEDERAL AID SHEET
PLATE 1-SINGLE PLAN AND PROFILE-FULL LINE
3M TELEWINE
PRINTED IN U.S.A.

# PLAN & PROFILE - STA. 118 + 50 TO STA. 120 + 50

BAR. 11-0270

| QUANTITIES | |
|---|---|
| CALC. BY: | S.M.S. |
| DATE: | 2-89 |
| CHKD. BY: | J.B.H. |
| DATE: | 2-89 |

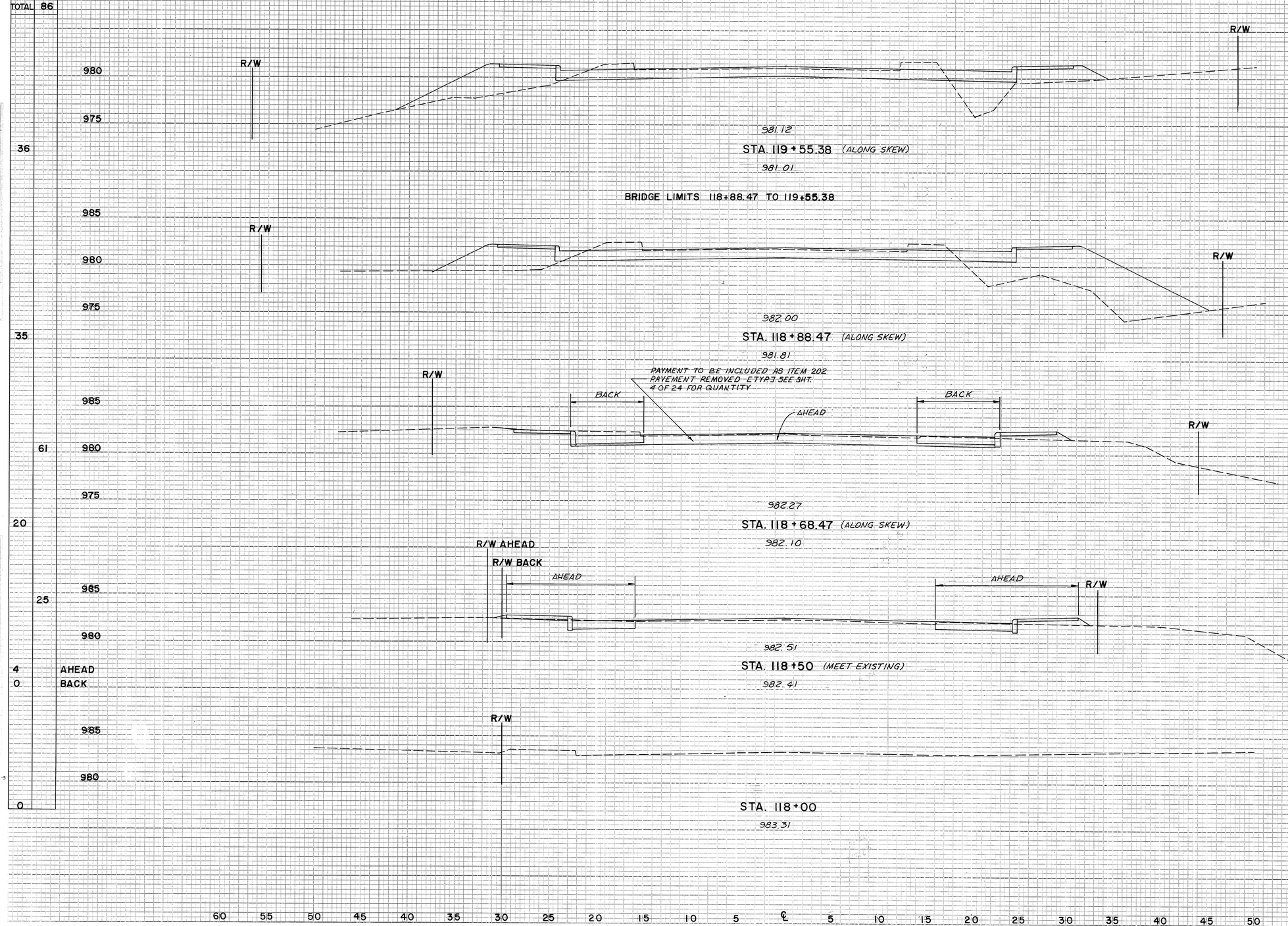
| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

7/24

SUMMIT COUNTY

WOOSTER RD.

| SEEDING | | |
|---|---|---|
| WIDTH | SQ. YDS. | |
| SUB TOTAL | 86 | |




| END AREA | | VOLUME | |
|---|---|---|---|
| CUT | FILL | CUT | FILL |
| SUB TOTAL | | 22 | 42 |
| 14 | 62 | | |
| 18 | 104 | | |
| | | 13 | 40 |
| AHEAD 17 | 3 | | |
| BACK 13 | 3 | | |
| | | 9 | 2 |
| AHEAD 13 | 4 | | |
| BACK 0 | 0 | | |
| | | 0 | 0 |
| 0 | 0 | | |

FINAL SURVEY

| | | | |
|---|---|---|---|
| SURVEYED | | BY | DATE |
| PLOTTED | | | |
| TEMPLATE | | | |
| AREAS | AREAS CHECKED | | |
| NOTE BOOK NO. | | | |

| | | | |
|---|---|---|---|
| DESIGNED | | BY | DATE |
| CHECKED | | | |
| QUANTITIES | | | |
| NOTE BOOK NO. | | | |

SFN: 7731043

CROSS SECTIONS - STA. 118+00 TO STA. 119+55.38

BAR U-0290

| SEEDING | |
|---|---|
| WIDTH | SQ. YDS. |
| GRAND TOTAL | 208 |
| SUB TOTAL | 122 |

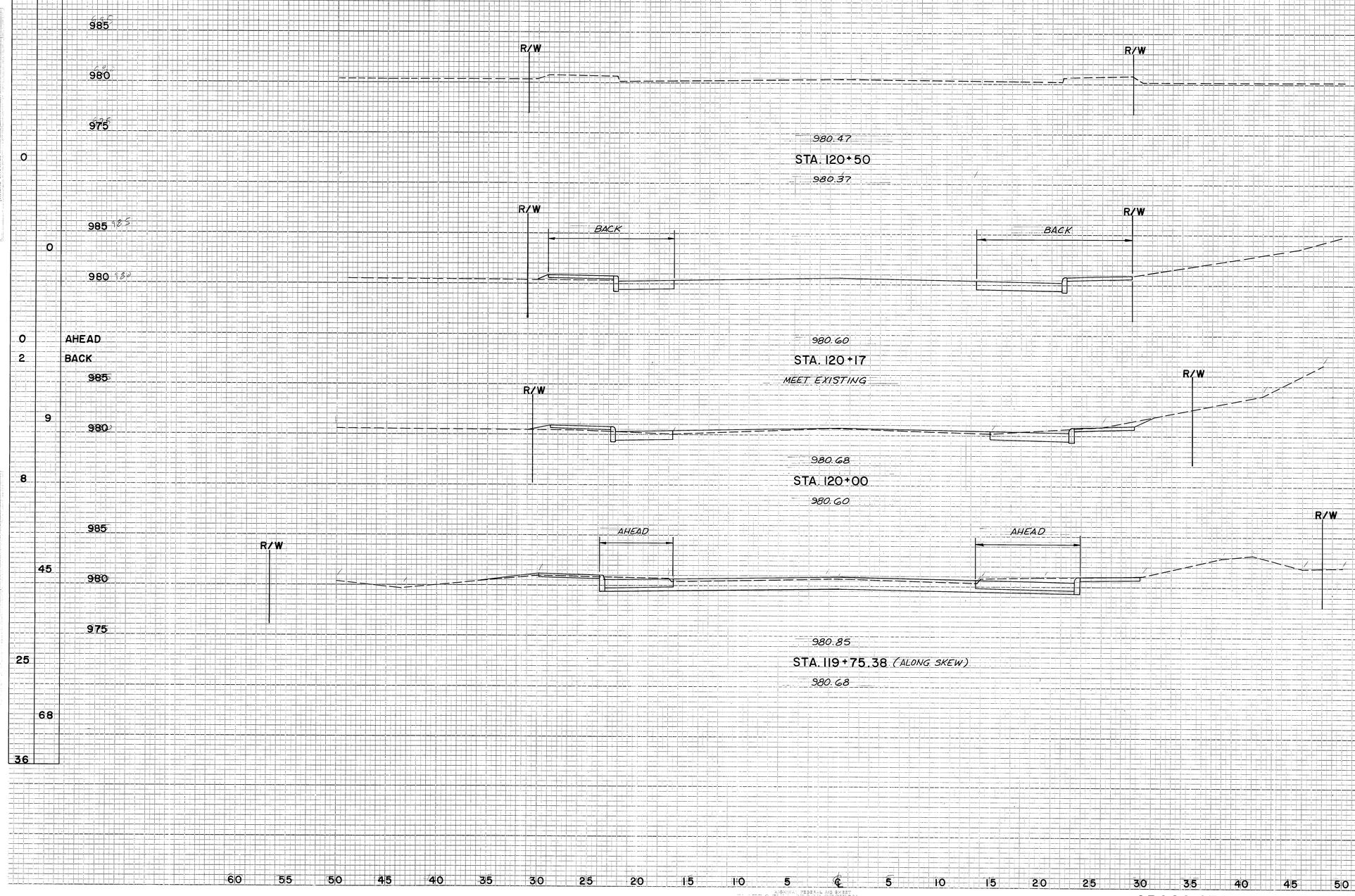
| QUANTITIES |
|---|
| CALC. BY: S.M.S DATE: 2-89 |
| CHKD. BY: J.B.H. DATE: 2-89 |

| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

8
24

SUMMIT COUNTY

WOOSTER RD.




| END AREA | | VOLUME | |
|---|---|---|---|
| CUT | FILL | CUT | FILL |
| GRAND TOTAL | | 63 | 67 |
| SUB TOTAL | | 41 | 25 |
| 0 | 0 | | |
| | | 0 | 0 |
| AHEAD 0 | 0 | | |
| BACK 14 | 1 | | |
| | | 10 | 1 |
| 16 | 2 | | |
| | | 17 | 1 |
| AHEAD 21 | 1 | | |
| BACK 25 | 1 | | |
| | | 14 | 23 |
| 14 | 62 | | |

SFN: 7731013

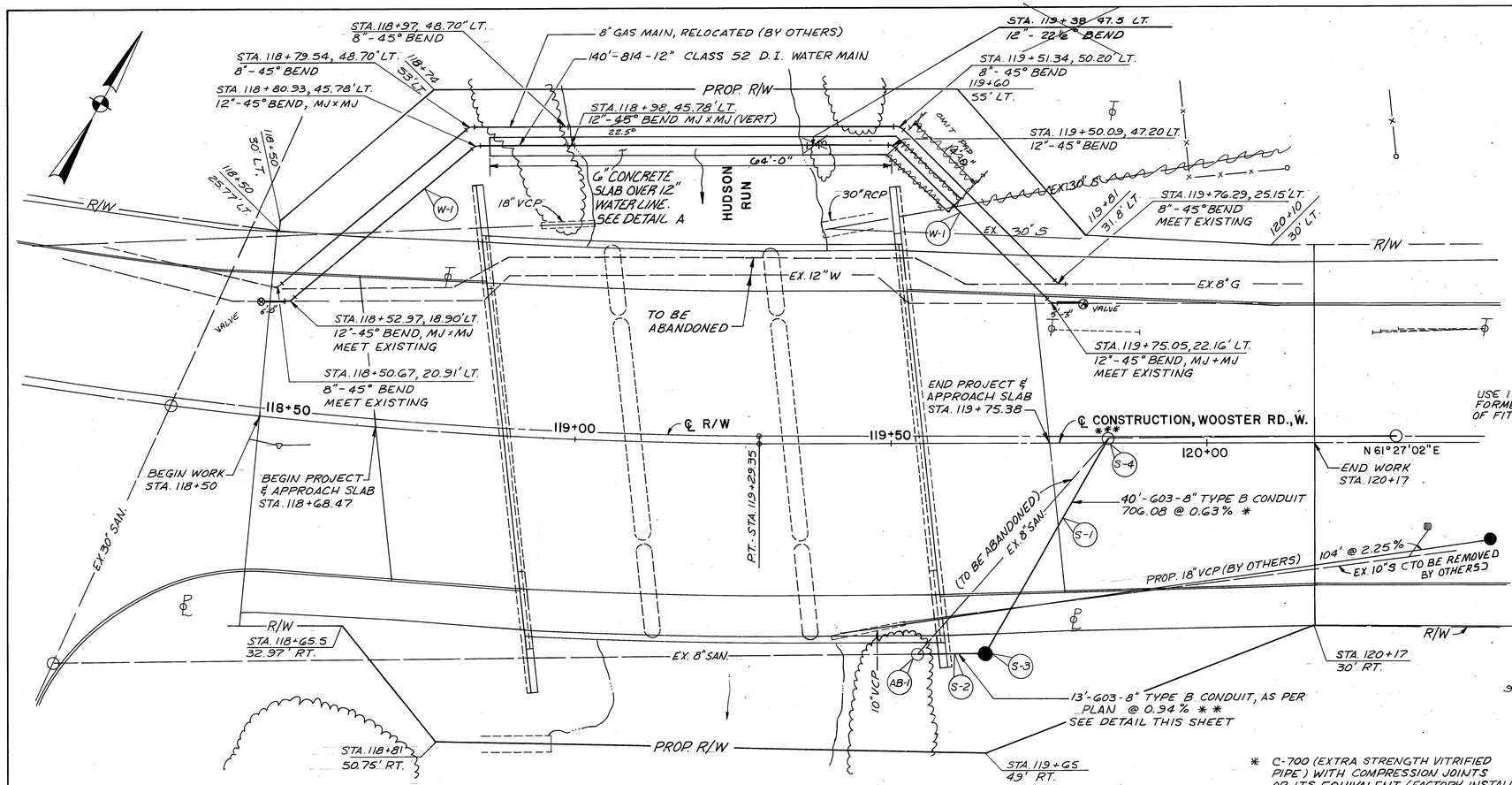
CROSS SECTIONS — STA. 119+75.38 TO STA. 120+50

BAR 11-0270

| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |



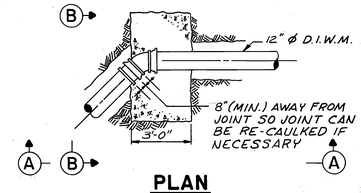
SUMMIT COUNTY
WOOSTER ROAD, WEST



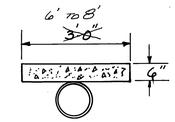

* C-700 (EXTRA STRENGTH VITRIFIED PIPE) WITH COMPRESSION JOINTS OR ITS EQUIVALENT (FACTORY INSTALLED)

** CLASS 52 DUCTILE CAST IRON (CEMENT LINED)

*** PLUG EXISTING 8" SAN OUTLET TO BE INCLUDED WITH ITEM-604 MANHOLE ADJUSTED TO GRADE FOR PAYMENT

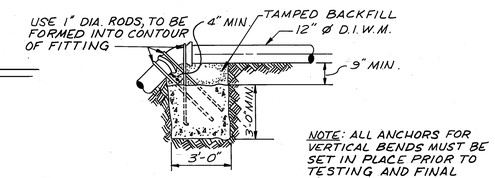



## PLAN
## 22 1/2° & 45° VERTICAL BEND
NO SCALE




## DETAIL A

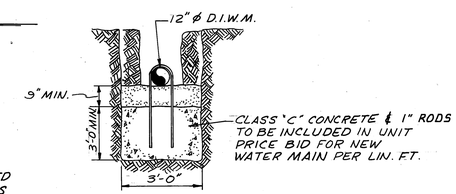
PROVIDE 6" CONCRETE SLAB OVER WATER LINE WITHIN LIMITS SHOWN IN PLAN VIEW. INCLUDE WITH ITEM 814, 12 INCH WATER MAIN, DUCTILE IRON PIPE, ANSI CLASS 52, PUSH-ON OR MECHANICAL JOINTS AND FITTINGS, AS PER PLAN, FOR PAYMENT.



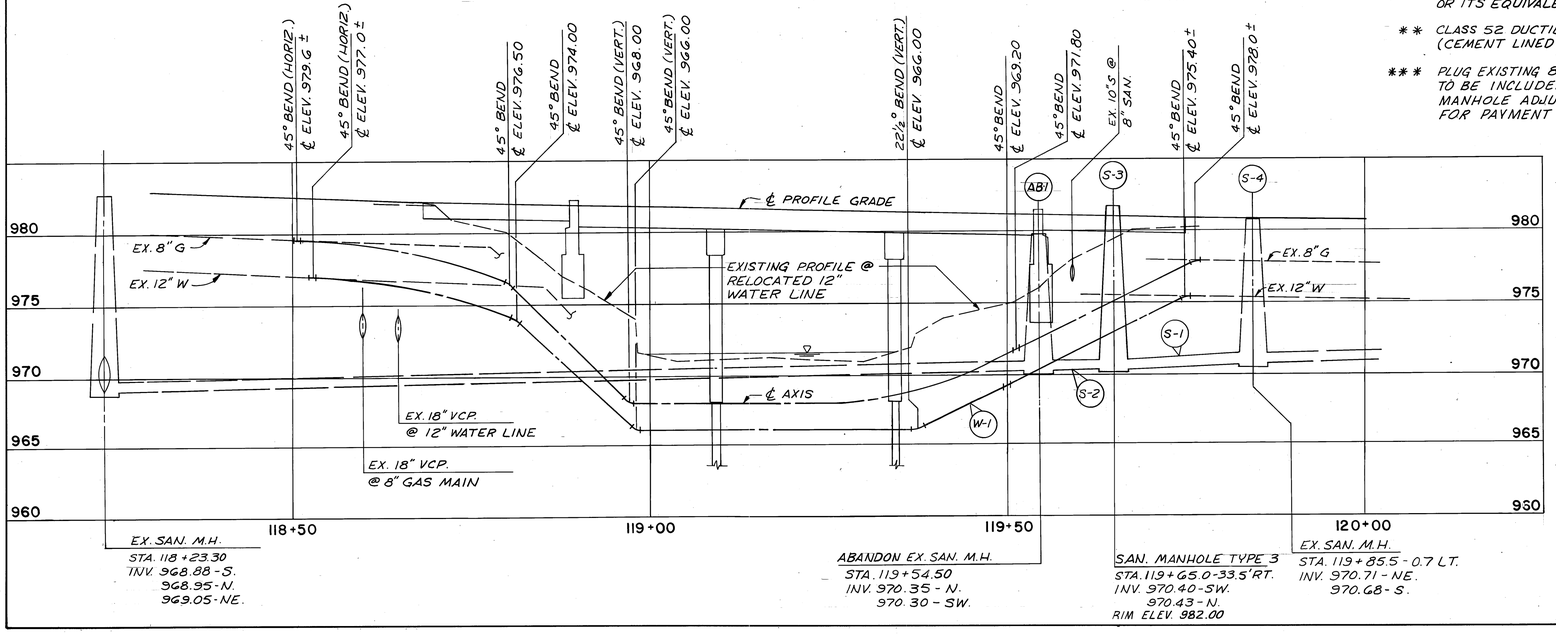

NOTE: ALL ANCHORS FOR VERTICAL BENDS MUST BE SET IN PLACE PRIOR TO TESTING AND FINAL CONNECTION.

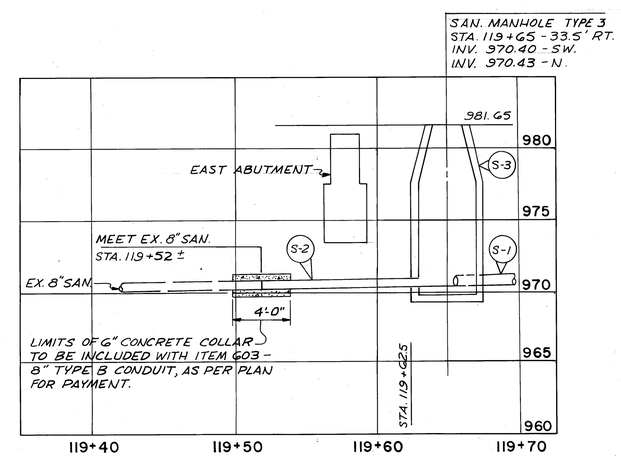
## SECTION A-A
NO SCALE

FOR ADDITIONAL NOTES SEE SHEET 3 OF 24.




## SECTION B-B
NO SCALE




## DETAIL

SFN: 7731043

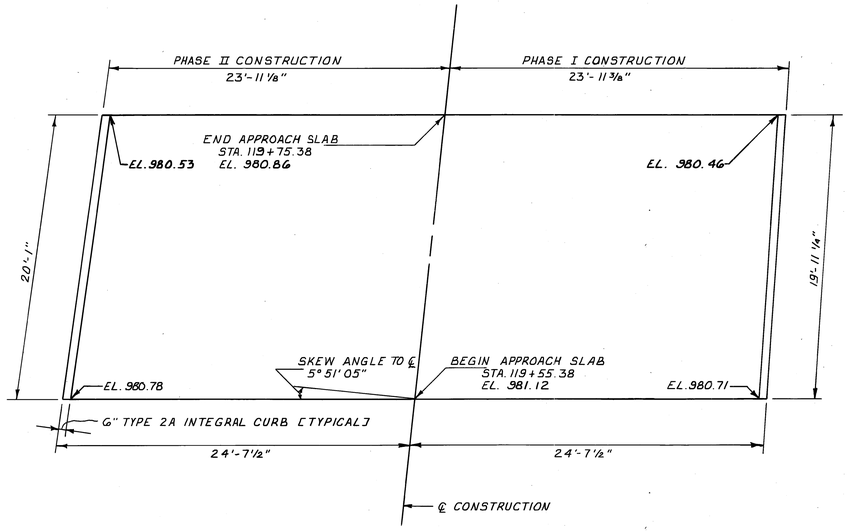
## UTILITY RELOCATION PLAN

BAR 11-0270

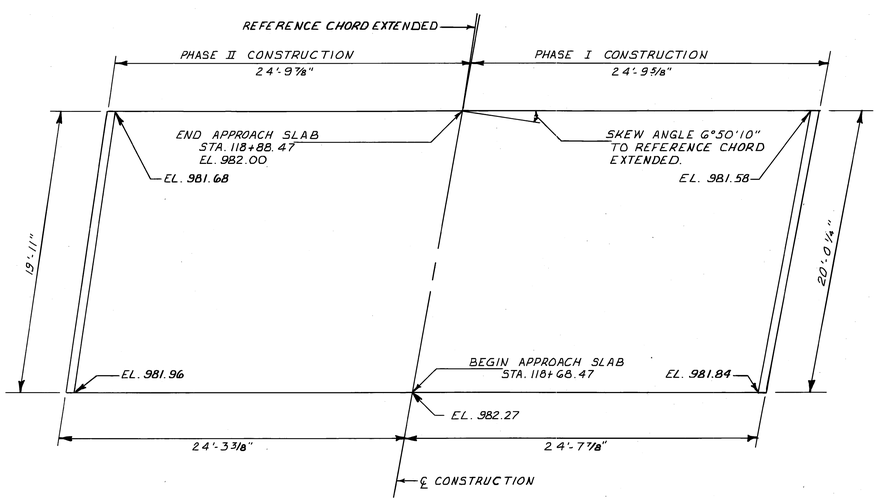
| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

10
24

SUMMIT COUNTY
WOOSTER RD, WEST




## EAST APPROACH SLAB




## WEST APPROACH SLAB

NOTES:

1. FOR OTHER DETAILS SEE STD. DRAWING - AS-1-81.

SFN: 7731043

APPROACH SLAB DETAILS

BAR 11-0270

| QUANTITIES |
|---|
| CALC. BY: S.M.S DATE: 2-89 |
| CHKD. BY: J.B.H. DATE: 2-89 |

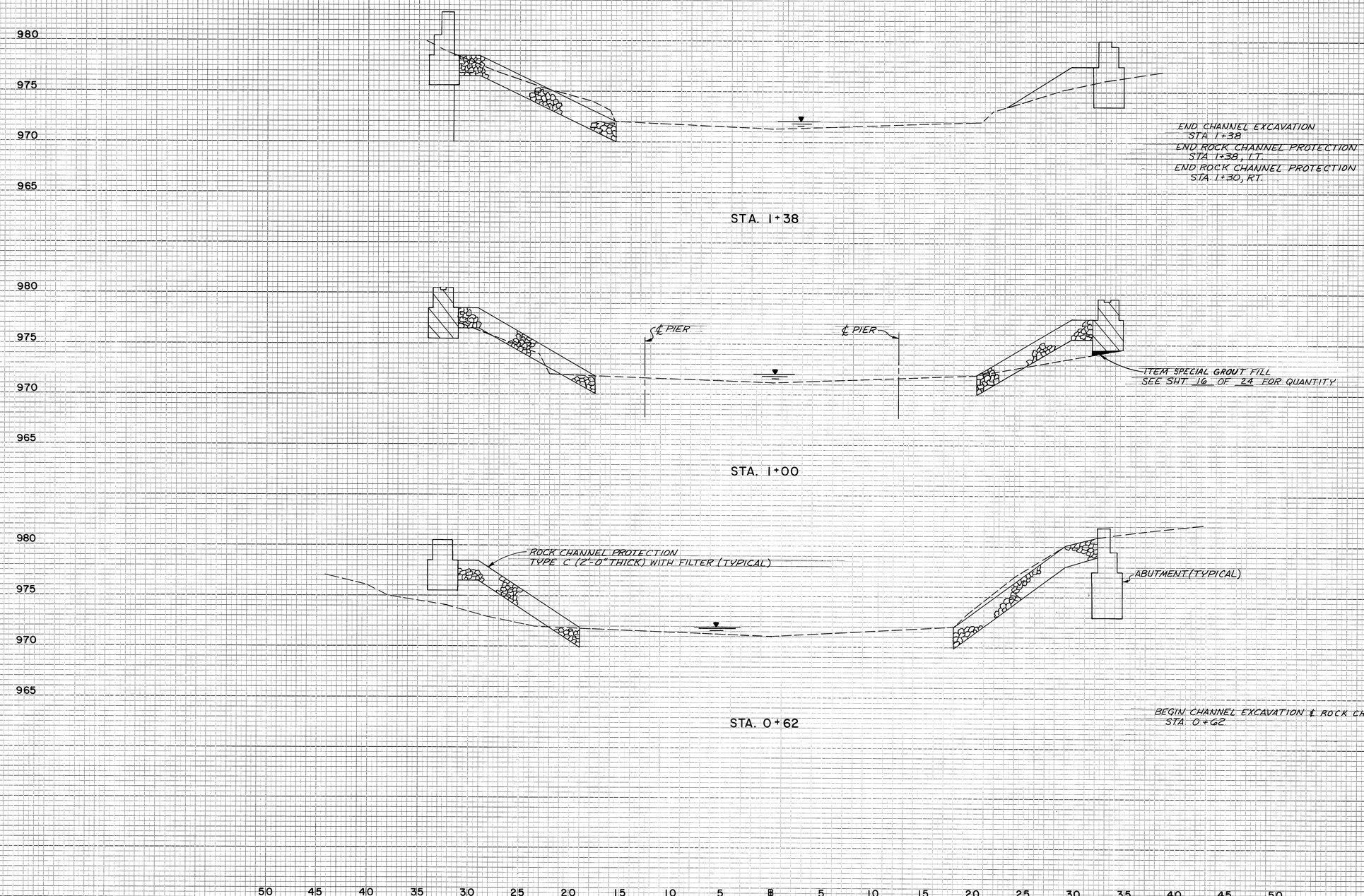
| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

11/24

SUMMIT COUNTY

WOOSTER RD., W

| SEEDING | |
|---|---|
| WIDTH | SQ. YDS. |




| END AREA | | VOLUME | |
|---|---|---|---|
| CUT | FILL | CUT | FILL |
| GRAND TOTAL | | 7 | 35 |
| | | 5 | 11 |
| | | 4 | 15 |
| | | 0 | 10 |
| | | 3 | 20 |
| | | 4 | 19 |

BAR 11-0290

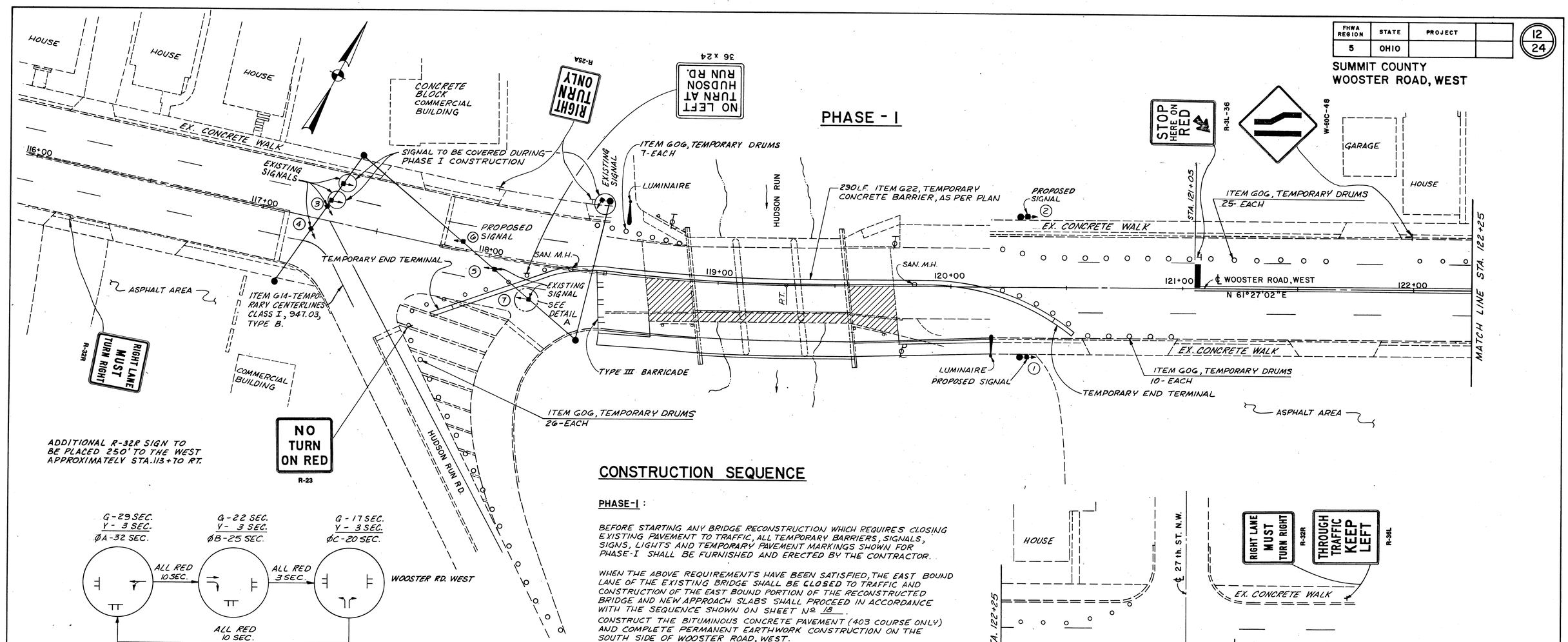
CHANNEL CROSS SECTIONS - STA. 0+62 TO STA. 1+38

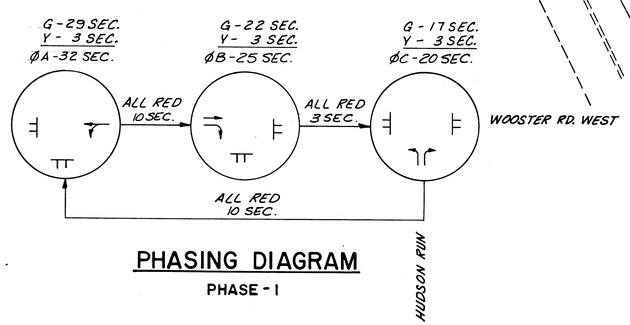
SFN 7731043

| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

12
24

SUMMIT COUNTY
WOOSTER ROAD, WEST



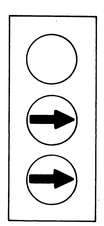




## PHASING DIAGRAM

PHASE - I

| SIGNAL Nº | ØA | | ØB | | ØC | |
|---|---|---|---|---|---|---|
| | R/W | CL | R/W | CL | R/W | CL |
| 1 | G | Y | R | R | R | R |
| 2 | G | Y | R | R | R | R |
| 3 | R | R | R | R | G | Y |
| 4 | R | R | R | R | G | Y |
| 5 | R | R | G | Y | R | R |
| 6 | R | R | G | Y | R | R |
| 7 | R | R | G→ | Y→ | R | R |

## DISPLAY CHART



## DETAIL A

SIGNAL 7

## CONSTRUCTION SEQUENCE

**PHASE-I :**

BEFORE STARTING ANY BRIDGE RECONSTRUCTION WHICH REQUIRES CLOSING EXISTING PAVEMENT TO TRAFFIC, ALL TEMPORARY BARRIERS, SIGNALS, SIGNS, LIGHTS AND TEMPORARY PAVEMENT MARKINGS SHOWN FOR PHASE-I SHALL BE FURNISHED AND ERECTED BY THE CONTRACTOR.

WHEN THE ABOVE REQUIREMENTS HAVE BEEN SATISFIED, THE EAST BOUND LANE OF THE EXISTING BRIDGE SHALL BE CLOSED TO TRAFFIC AND CONSTRUCTION OF THE EAST BOUND PORTION OF THE RECONSTRUCTED BRIDGE AND NEW APPROACH SLABS SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE SHOWN ON SHEET Nº 18.

CONSTRUCT THE BITUMINOUS CONCRETE PAVEMENT (403 COURSE ONLY) AND COMPLETE PERMANENT EARTHWORK CONSTRUCTION ON THE SOUTH SIDE OF WOOSTER ROAD, WEST.

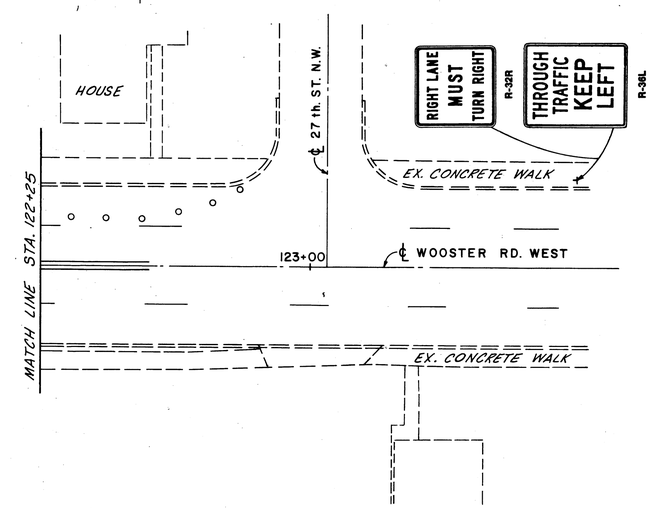
**PHASE - 2 :**

RELOCATE THE TEMPORARY BARRIER, SIGNALS, SIGNS, LIGHTS AND PAVEMENT MARKINGS AS SHOWN FOR PHASE-II. MOVEMENT OF TEMPORARY BARRIER, SIGNALS, SIGNS, LIGHTS AND PAVEMENT MARKINGS BETWEEN PHASES SHALL BE ACCOMPLISHED IN ONE (1) WORKING DAY. FLAGGERS SHALL BE UTILIZED FOR PROTECTION OF VEHICULAR TRAFFIC UNTIL RELOCATION OF THE TEMPORARY BARRIER, SIGNALS, SIGNS, LIGHTS AND PAVEMENT MARKINGS IS COMPLETED.

THE COMPLETED PORTION OF THE RECONSTRUCTED BRIDGE, APPROACH SLABS, AND PERMANENT PAVEMENT SHALL BE OPENED TO TRAFFIC AND THE REMAINING BRIDGE AND APPROACH SLAB CONSTRUCTION SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE SHOWN ON SHEET Nº 18. PLACEMENT OF THE 404 ASPHALT CONCRETE SURFACE COURSE SHALL BE DELAYED UNTIL IT CAN BE ACCOMPLISHED IN A CONTINUOUS OPERATION, CONSISTENT WITH THE REQUIREMENTS OF THE SPECIFICATIONS FOR PROTECTION OF COMPLETED ASPHALT CONCRETE COURSES.

## LEGEND

STRUCTURE REMOVED (TWO PHASE REMOVAL)




## NOTES

1. FOR DETAILS NOT SHOWN, SEE SHEET Nº 14, 14A, 14B.
2. FOR QUANTITIES, SEE SHEET Nº 3.
3. FOR ADDITIONAL TRAFFIC SIGNS, SEE SHEET 14A OF 24.
4. FOR PHASE I CONSTRUCTION, CONNECT PROPOSED TRAFFIC SIGNALS INTO EXISTING TRAFFIC SIGNAL CONTROLLER.

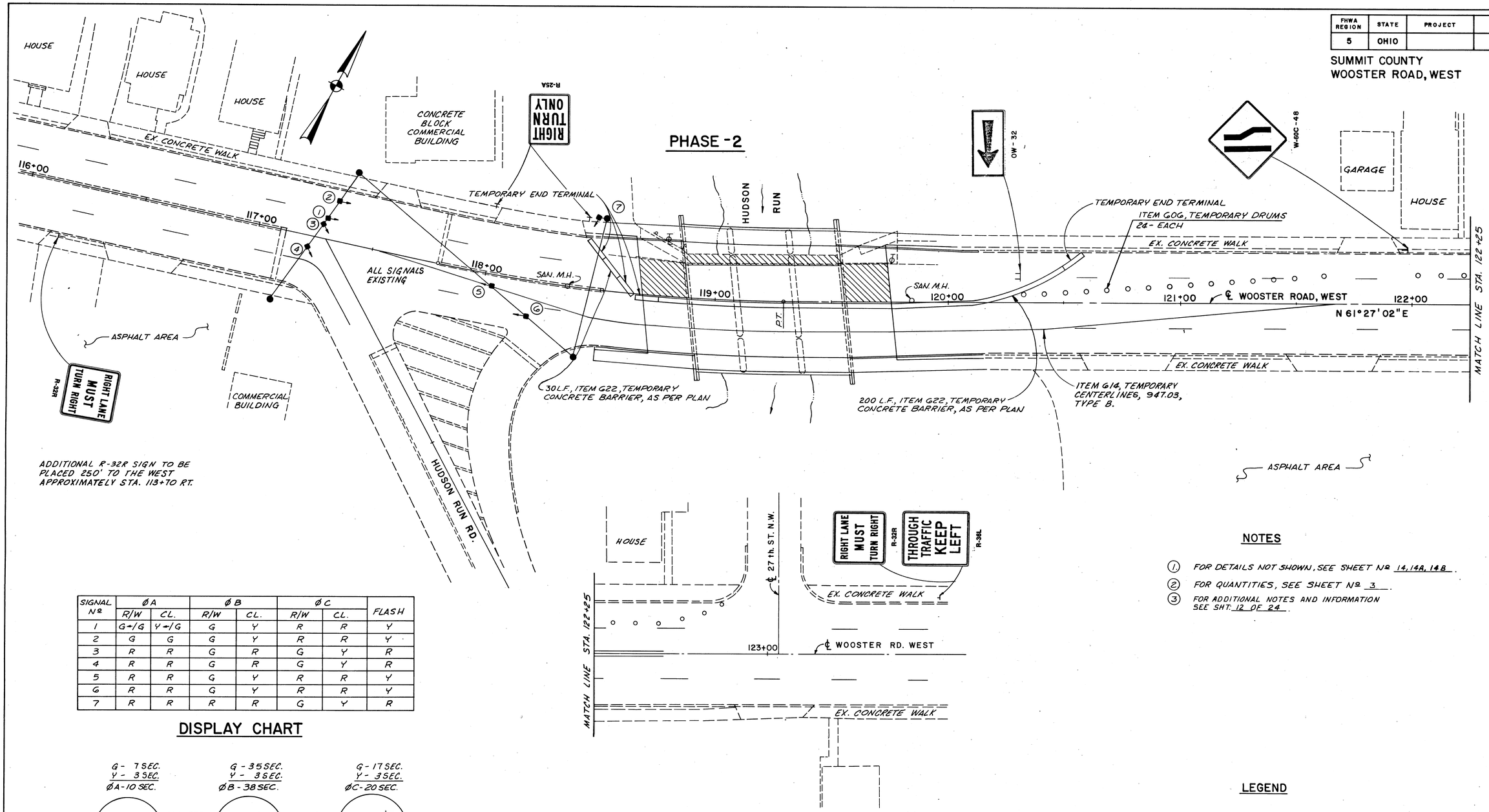
BAR 11-0270

CONSTRUCTION SEQUENCE ~ PHASE I SCN: 71310

| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

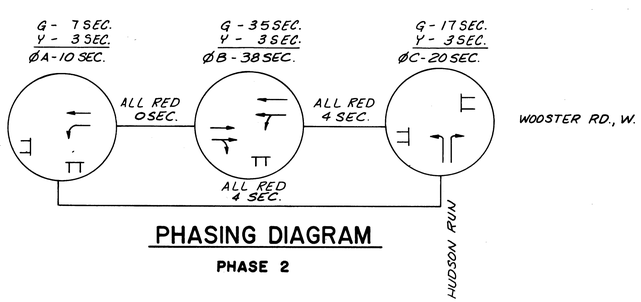


SUMMIT COUNTY
WOOSTER ROAD, WEST




| SIGNAL Nº | ØA | | ØB | | ØC | | FLASH |
|---|---|---|---|---|---|---|---|
| | R/W | CL. | R/W | CL. | R/W | CL. | |
| 1 | G→/G | Y→/G | G | Y | R | R | Y |
| 2 | G | G | G | Y | R | R | Y |
| 3 | R | R | G | R | G | Y | R |
| 4 | R | R | G | R | G | Y | R |
| 5 | R | R | G | Y | R | R | Y |
| 6 | R | R | G | Y | R | R | Y |
| 7 | R | R | R | R | G | Y | R |

## DISPLAY CHART




## PHASING DIAGRAM

PHASE 2

## NOTES

1. FOR DETAILS NOT SHOWN, SEE SHEET Nº 14, 14A, 14B.
2. FOR QUANTITIES, SEE SHEET Nº 3.
3. FOR ADDITIONAL NOTES AND INFORMATION SEE SHT. 12 OF 24.

## LEGEND

STRUCTURE REMOVED (TWO PHASE REMOVAL)

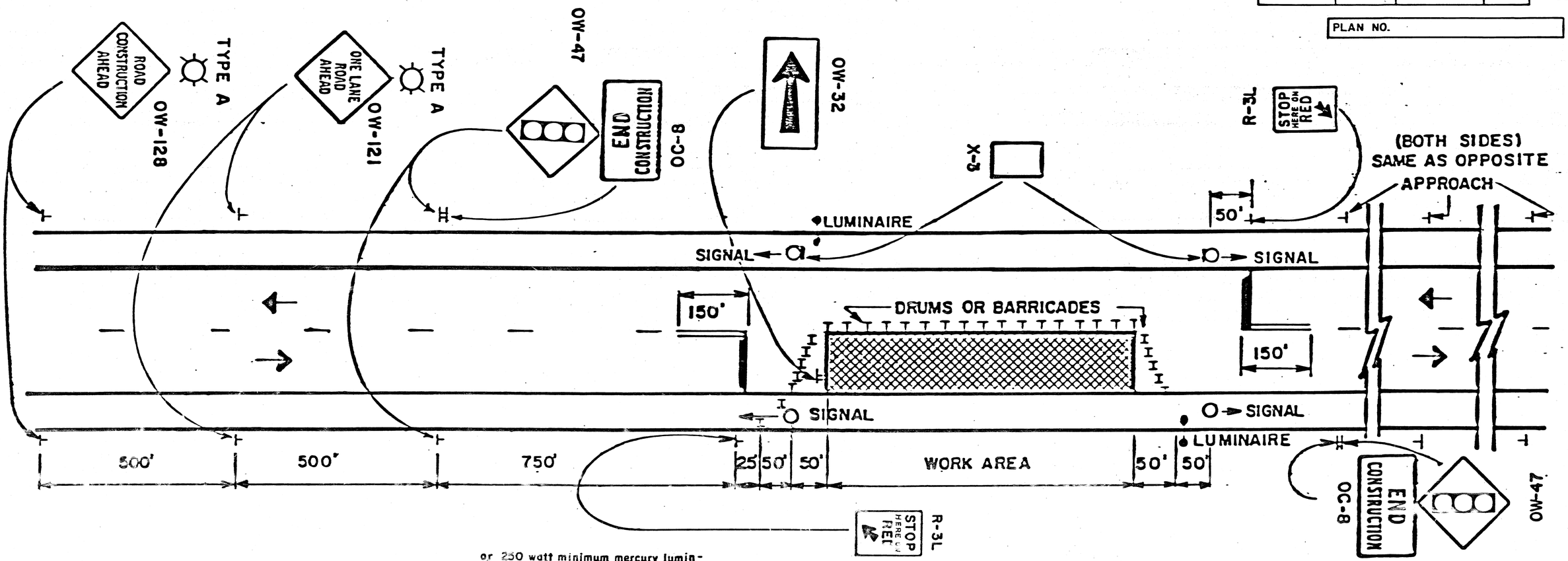
SFN: 7731043 BAR 11-0290

CONSTRUCTION SEQUENCE ~ PHASE 2

| FED. RD. DIVISION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

14
24

PLAN NO.




GENERAL NOTES:

1. The maximum length of work area for one way traffic signal control is determined by the capacity required to handle the peak hour demand. Practical maximum length is 400 feet. Signal timing changes shall be approved by the Engineer.
2. Signals shall be installed and operated in accordance with the requirements of Part 6 of the Ohio Manual of Uniform Traffic Control Devices.
3. Drums or barricades shall be spaced at 50' to 60' center to center within the work area. Drums or barricades on the advance and return tapers shall be spaced at 10' center to center.
4. Adequate area illumination to clearly identify both ends of the work area at night for long term operations shall be provided by using 150 watt minimum high pressure sodium luminaires or 250 watt minimum mercury luminaires. Luminaires shall be located adjacent to one signal for each direction of traffic. The mounting height for temporary luminaires shall be a minimum of 27 feet above the pavement and the overhead conductor clearence shall be a minimum of 15 feet above the pavement. Lighting material shall comply with Specification 625.
5. Twenty-four (24) inch stop lines shall be installed and where no passing lines are not already in place they shall be added. Removable pavement markings may be used. Existing conflicting pavement markings and raised pavement marker reflectors between the work area and the stop line shall be removed. After completion of the work the stop lines and added no passing lines shall be removed in accordance with 621.134 and the raised pavement marker reflectors shall be replaced in kind.
6. The Type A flashing barricade warning lights shown on the "Road Construction Ahead" and the "One Lane Road Ahead" signs are required whenever a night lane closure is necessary.
7. Type C steady burning barricade warning lights shall be erected on drums or barricades for night lane closures. The maximum spacing shall be identical to the channelizing device spacing requirements described in Note 3.
8. The horizontal or vertical alignment of the roadway may require adjustments in the location of the advance warning signs (the distances shown for advance warning sign spacings are minimums). The vertical alignment of the roadway may require adjustments in the height of the signal heads within the range specified in the Typical Pole Supported Signal Detail.
9. All traffic signals and equipment used in this traffic signal installation, such as a signal cable and signal heads, shall be in conformance with Specifications 632 and 732. However, the performance test provision noted in Specification 632.27, paragraph 6 and the working drawing requirements of 632.03 are waived. The controller, flashers, load switches, conflict monitor and other controller accessories shall comply with Supplemental Specifications 861 and 961, except that the requirements of 861.03 and 861.05 are waived, as well as the requirements of 961.01 for expansible three dial units and twelve circuits for pretimed controllers. Used equipment meeting current ODOT Specifications is acceptable.

   Conflict monitors shall be furnished at all locations unless an electromechanical pretimed controller with cam shaft is provided.
10. When the signal is changed to a flash condition either manually or automatically, red shall be flashed to both approaches.

OHIO DEPARTMENT OF TRANSPORTATION

SIGNALIZED CLOSING
I LANE OF A 2 LANE
HIGHWAY (A)

DATE
12/82
3/84
4/85

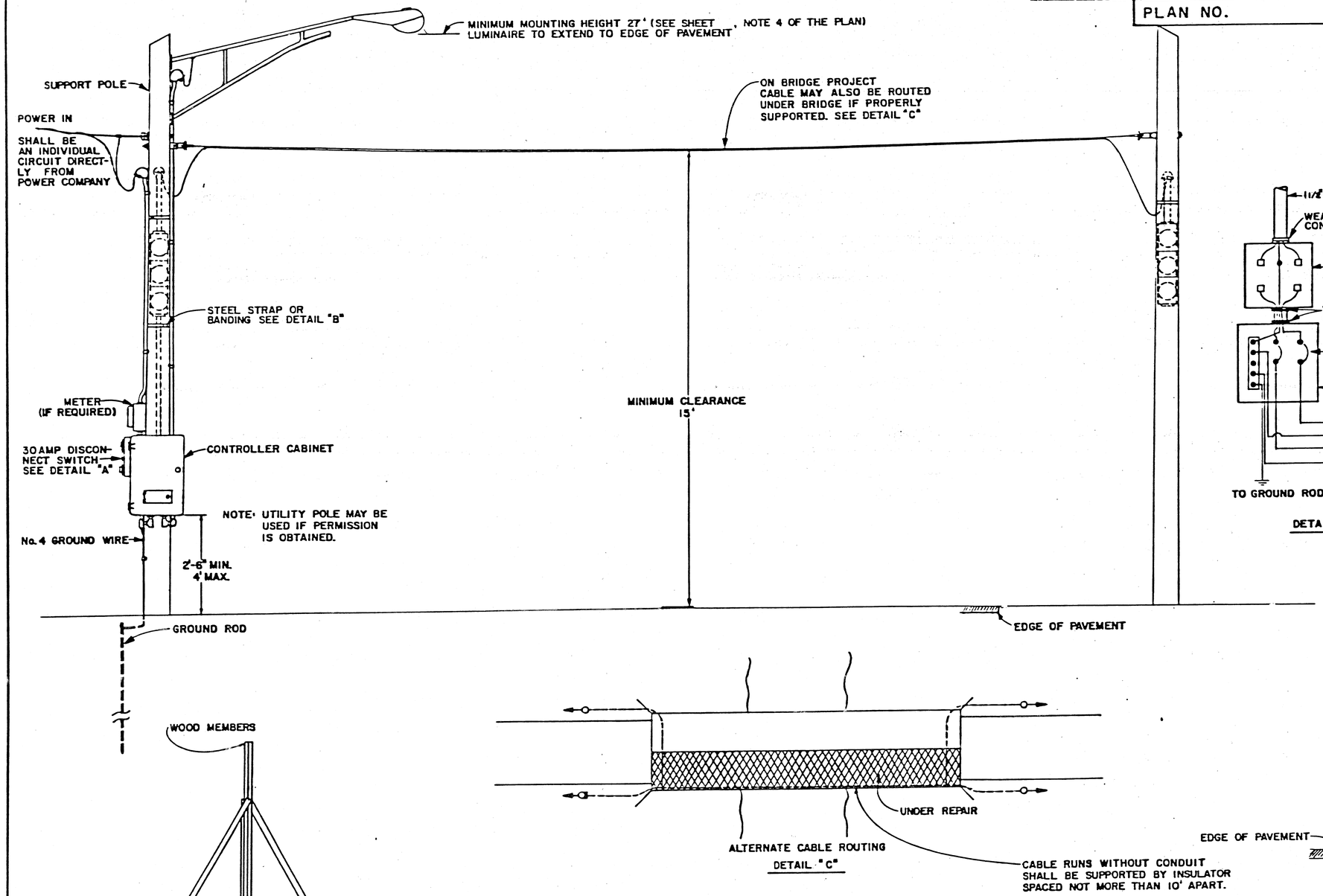
DR. | CK.

7G-2A

SFN: 7731043

BAR 11-0270

| PLAN NO. | FED. RD. DIVISION | STATE | PROJECT | | 14A |
|---|---|---|---|---|---|
| | 5 | OHIO | | | 24 |




# TYPICAL SERVICE, LUMINAIRE, SIGNAL HEAD AND CONTROLLER CABINET INSTALLATION

OHIO DEPARTMENT OF TRANSPORTATION

SIGNALIZED CLOSING
I LANE OF A 2 LANE
HIGHWAY (B)

DATE 4/85

DR. | CK

SW:7731043

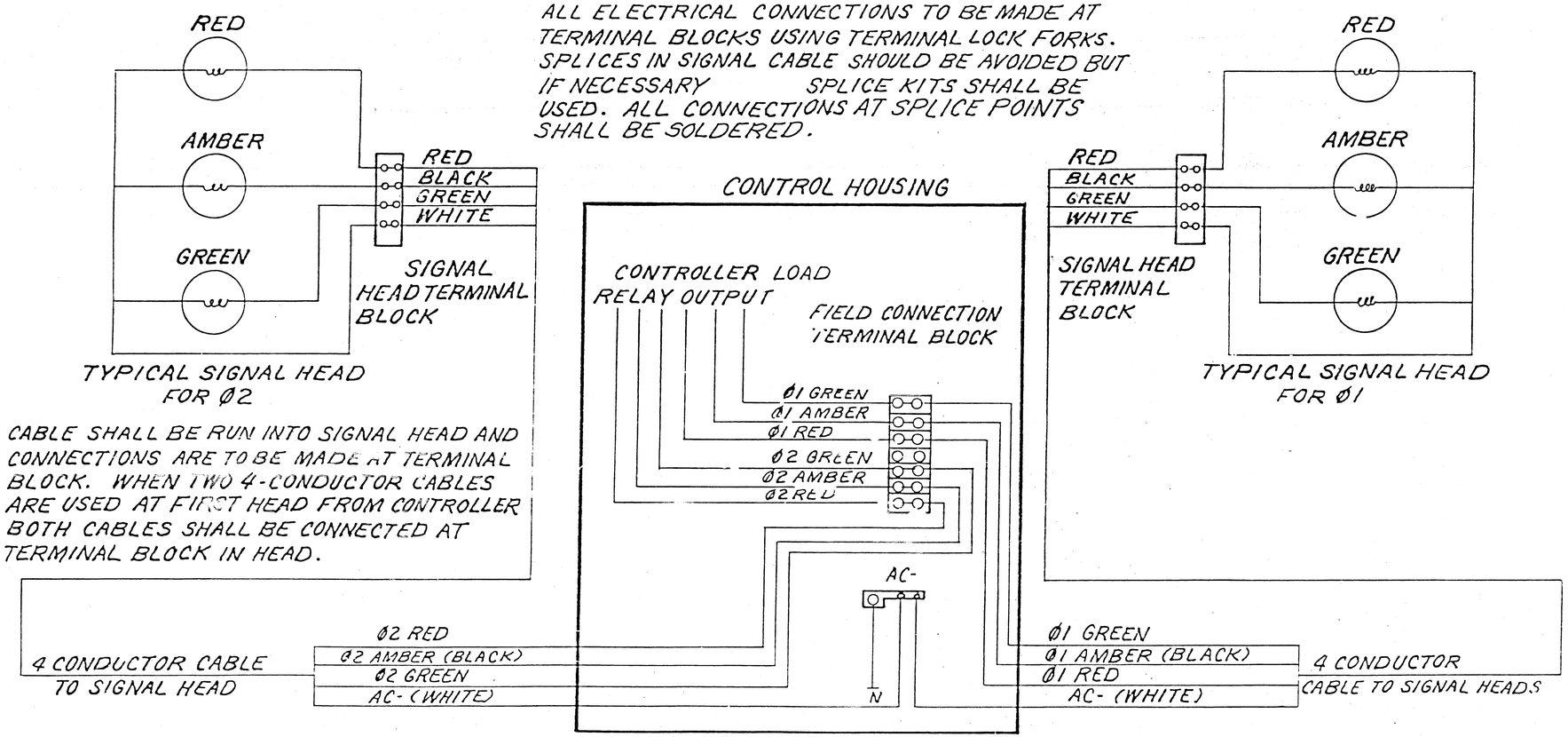
BAR 11-0270

| FED. RD. DIVISION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

14B
24

PLAN NO.

CABLE SHALL BE 4-CONDUCTOR No. 14 COPPER SIGNAL CABLE, COLOR CODED AND STRANDED. ALL ELECTRICAL CONNECTIONS TO BE MADE AT TERMINAL BLOCKS USING TERMINAL LOCK FORKS. SPLICES IN SIGNAL CABLE SHOULD BE AVOIDED BUT IF NECESSARY SPLICE KITS SHALL BE USED. ALL CONNECTIONS AT SPLICE POINTS SHALL BE SOLDERED.




CABLE SHALL BE RUN INTO SIGNAL HEAD AND CONNECTIONS ARE TO BE MADE AT TERMINAL BLOCK. WHEN TWO 4-CONDUCTOR CABLES ARE USED AT FIRST HEAD FROM CONTROLLER BOTH CABLES SHALL BE CONNECTED AT TERMINAL BLOCK IN HEAD.

TYPICAL SIGNAL HEAD HOOK-UP

OHIO DEPARTMENT OF TRANSPORTATION

SIGNALIZED CLOSING
I LANE OF A 2 LANE
HIGHWAY (C)

DATE 4/85

DR. | CK.

7G-2C

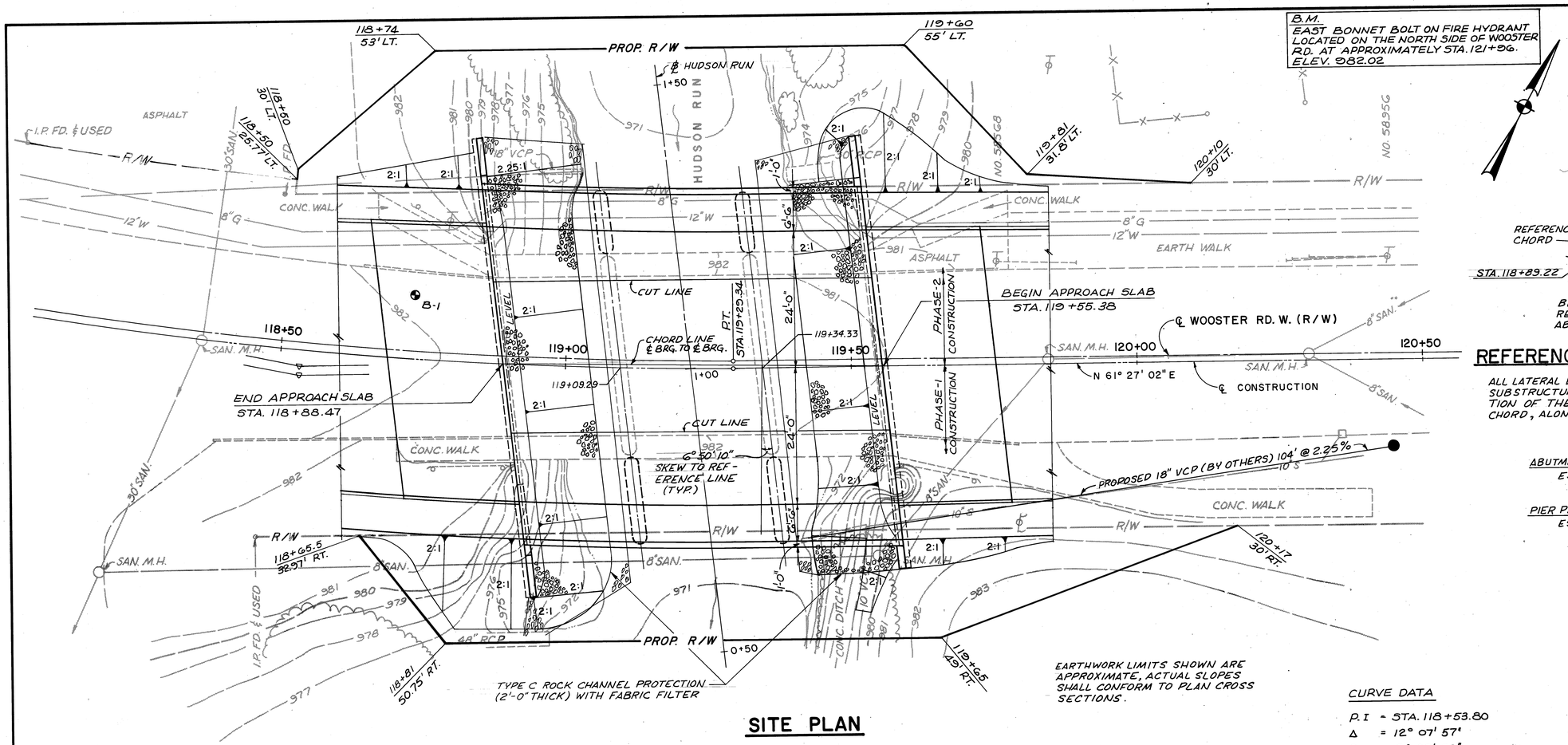
SFN: 7731013 BAR 11-0270

| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

15/24

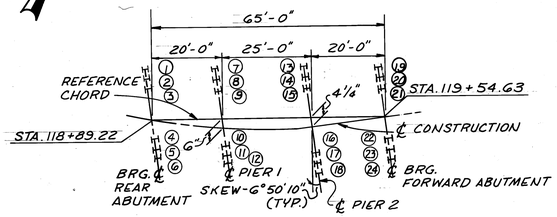
SUMMIT COUNTY
WOOSTER ROAD, WEST

B.M.
EAST BONNET BOLT ON FIRE HYDRANT LOCATED ON THE NORTH SIDE OF WOOSTER RD. AT APPROXIMATELY STA. 121+56.
ELEV. 982.02




EARTHWORK LIMITS SHOWN ARE APPROXIMATE, ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

## SITE PLAN




## REFERENCE CHORD & PILE LAYOUT DIAGRAM

ALL LATERAL DIMENSIONS FOR THE CONSTRUCTION OF THE SUBSTRUCTURE SHOULD BE MEASURED FROM THE INTERSECTION OF THE CENTERLINE OF BEARINGS AND THE REFERENCE CHORD, ALONG THE CENTERLINE OF BEARINGS.

ABUTMENT PILES ~ 10 BP 42 STEEL WITH PREBORED HOLES
ESTIMATED AVERAGE PAY LENGTH = 31'-0"

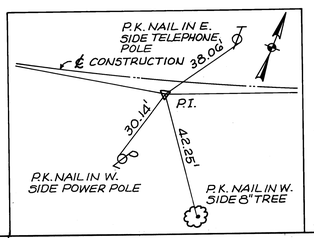
PIER PILES ~ 12 BP 53 WITH PREBORED HOLES
ESTIMATED AVERAGE PAY LENGTH = 34'-0"

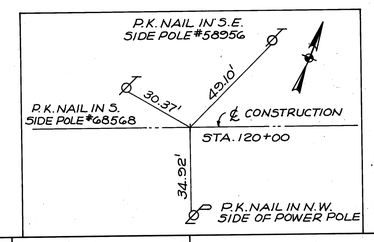
TRAFFIC DATA
1988 11,000 A.D.T.

DRAINAGE DATA
DRAINAGE AREA = 11.5 SQ. MILES

CURVE DATA

P.I = STA. 118+53.80
Δ = 12° 07' 57"
Dc = 8° 00' 00"
R = 716.20'
T = 76.113'
Lc = 151.657'
CH. = 151.374'



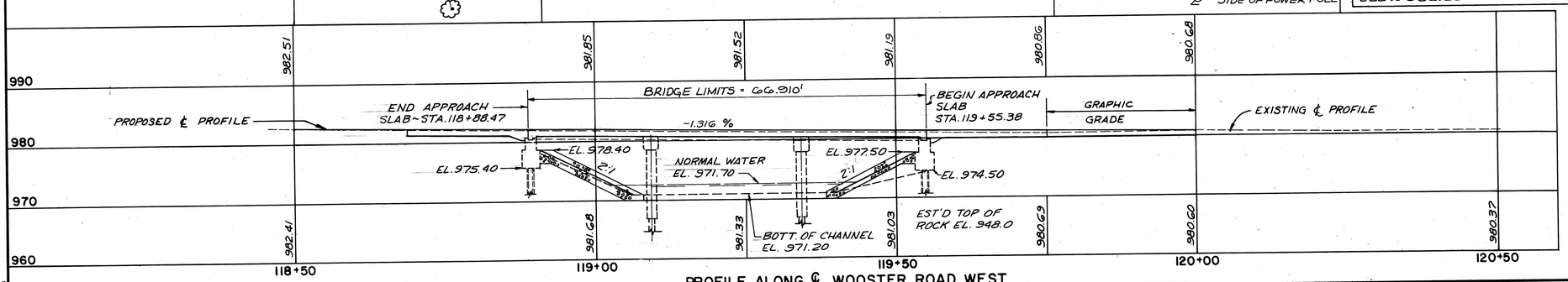

B.M.
BOX CUT IN S.W. CORNER OF BRIDGE WINGWALL, SOUTH SIDE WOOSTER RD. AT APPROXIMATELY STA. ~~121+56~~ 118+90
ELEV. 982.26

### EXISTING STRUCTURE

TYPE: CONCRETE SLAB ON CONCRETE SUBSTRUCTURE
SPANS: 20'-0", 25'-0", 20'-0"
ROADWAY: 28'-0" F/F, 4' SIDEWALKS
SKEW: 6° RT., FORWARD
LIVE LOAD: CF-400
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
WEARING SURFACE: 1" MONOLITHIC CONCRETE
APPROACH SLABS: 20' (AS-1-54)

### PROPOSED STRUCTURE

TYPE: CONTINUOUS REINFORCED CONCRETE SLAB
SPANS: 20'-0", 25'-0", 20'-0"
ROADWAY: 48'-0" F/F 6'-6" SIDEWALKS
LOADING: HS 20-44
SKEW: 6°50'10" RT., FORWARD TO REFERENCE LINE
WEARING SURFACE: 1½" MICRO-SILICA MODIFIED CONC.
APPROACH SLABS: 20' (AS-1-81)
ALIGNMENT: 8° CURVE LEFT AND TANGENT
SUPERELEVATION: NONE




PROFILE ALONG ℄ WOOSTER ROAD, WEST

McCOY ASSOCIATES, INC. 1/9
CONSULTING ENGINEERS
AKRON, OHIO

SITE PLAN
BRIDGE NO. BAR 11-0270
WOOSTER ROAD, WEST
OVER HUDSON RUN

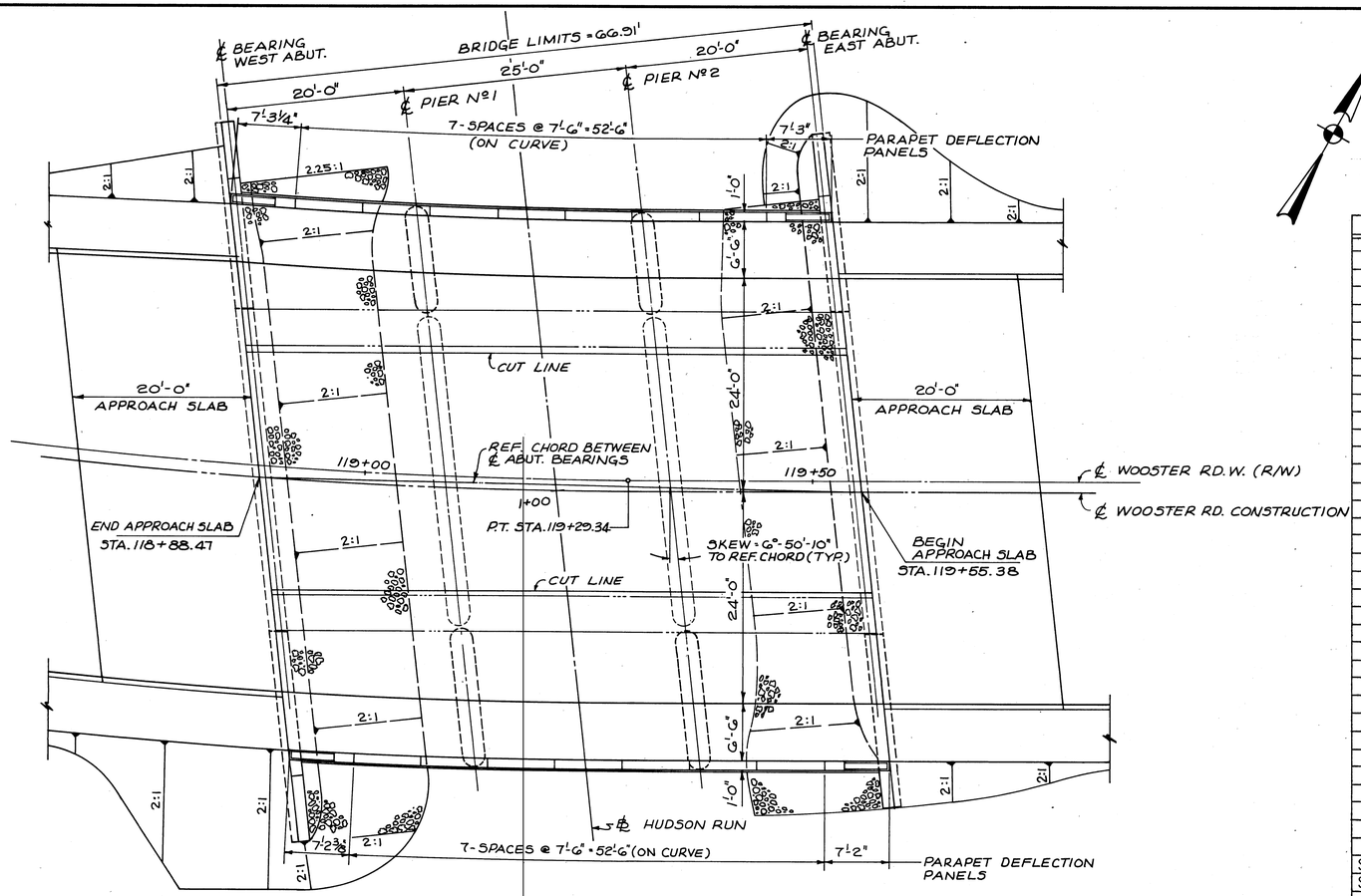
| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| JBH | J.D.P. MRA | | SMS | JBH | 2-27-89 | |

SFN: 7731043 BAR 11-0270

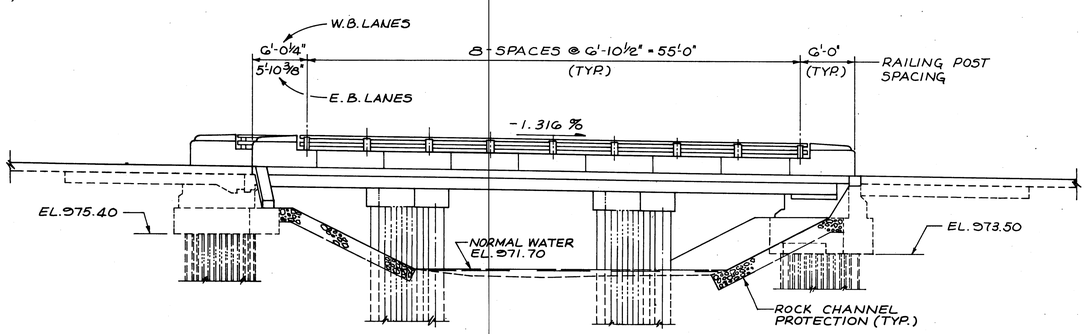
| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

16/24

SUMMIT COUNTY
WOOSTER ROAD, WEST




## PLAN




## ELEVATION

### ESTIMATED QUANTITIES

| ITEM | TOTAL | UNIT | DESCRIPTION | SUPER | PIERS | ABUT'S | GENERAL |
|---|---|---|---|---|---|---|---|
| 202 | LUMP | LUMP | PORTIONS OF STRUCTURES REMOVED | | | | LUMP |
| 503 | LUMP | LUMP | COFFERDAMS, CRIBS AND SHEETING | | | | LUMP |
| 503 | 41 | C.Y. | UNCLASSIFIED EXCAVATION | | | 41 | |
| 505 | LUMP | LUMP | PILE DRIVING EQUIPMENT MOBILIZATION | | | | LUMP |
| 507 | ~~372~~ 431 | L.F. | STEEL PILES, HP 10 x 42 | | | 431 ~~372~~ | |
| 507 | ~~408~~ 443 | L.F. | STEEL PILES, HP 12 x 53 | | 443 ~~408~~ | | |
| 507 | ~~594~~ 621 | L.F. | PREBORED HOLES | | 294 ~~276~~ | 327 ~~318~~ | |
| 507 | 24 | EACH | STEEL POINTS | | 12 | 12 | |
| 509 | ~~5,377~~ 5,451 | LB | REINFORCING STEEL, GRADE 60 | | 1,332 ~~1,258~~ | 4,119 | |
| 510 | ~~249~~ 147 | L.F. | DOWEL HOLES | ~~201~~ 99 | | 48 | |
| 511 | ~~38~~ 37 | C.Y. | CLASS C CONCRETE, ABUTMENTS | | | 37 ~~38~~ | |
| 511 | 10 | C.Y. | CLASS C CONCRETE, PIER CAPS | | 10 | | |
| 511 | ~~136~~ 138 | C.Y. | CLASS S CONCRETE, SUPERSTRUCTURE | ~~136~~ 138 | | | |
| 512 | 25 | S.Y. | TYPE A WATER PROOFING | | | 25 | |
| 516 | 11 | S.F. | 1/2" PREFORMED EXPANSION JOINT FILLER | | | 11 | |
| 517 | 133.88 | L.F. | RAILING (CONCRETE PARAPET WITH DOUBLE PIPE RAIL) | 133.88 | | | |
| 518 | ~~12~~ 15 | C.Y. | POROUS BACKFILL | | | 15 ~~12~~ | |
| 518 | 67 | L.F. | 6" PERFORATED HELICAL CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01 | | | 67 | |
| 518 | 32 | L.F. | 6" NON-PERFORATED HELICAL CORRUGATED STEEL PIPE, 707.01 | | | 32 | |
| 509 | 31,688 ~~31,598~~ | LB | EPOXY COATED REINFORCING STEEL, GRADE 60 | 30,514 ~~30,424~~ | 1,174 | | |
| SPECIAL | 231 | S.F. | SEALING OF CONCRETE SURFACES (SEE PROPOSAL NOTE) | 231 | | | |
| SPECIAL | 357 | S.Y. | MICRO-SILICA MODIFIED CONCRETE OVERLAY (1 1/4 INCHES THICK) SEE PROPOSAL NOTE | 357 | | | |
| SPECIAL | 13 ~~9~~ | C.Y. | MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS) SEE PROPOSAL NOTE | ~~9~~ 13 | | | |
| SPECIAL | 0 ~~4~~ | C.Y. | FULL-DEPTH REPAIR (SEE PROPOSAL NOTE) | ~~4~~ 0 | | | |
| SPECIAL | LUMP | LUMP | TEST SLAB (SEE PROPOSAL NOTE) | | | | LUMP |
| SPECIAL | 2.5 ~~3~~ | C.Y. | GROUT FILL, USING NON-SHRINK GROUT | | | 2.5 ~~3~~ | |

McCOY ASSOCIATES, INC.
CONSULTING ENGINEERS
AKRON, OHIO

2/9

# GEN. PLAN & ELEVATION & ESTIMATED QUANTITIES

BRIDGE NO. BAR.-11-0270
WOOSTER ROAD, WEST
OVER HUDSON RUN

| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| JBH | J.D.R. | | SMS | JBH | 2-27-89 | |

SFN: 7731043 BAR 11-0270

# STRUCTURAL GENERAL NOTES

**REFERENCE**

SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81 DATED 11-27-81
BR-2-82 DATED 11-01-82

AND TO SUPPLEMENTAL SPECIFICATIONS:

824 DATED 10-08-82
836 DATED 11-12-85
853 DATED 06-26-78
947 DATED 10-17-83
956 DATED 06-26-78

**DESIGN SPECIFICATIONS**

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1983 ALONG WITH THE 1984, 1985, 1986 AND 1987 INTERIMS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

**DESIGN LOADING**

DESIGN LOADING - HS20-44

**DESIGN STRESSES**

CONCRETE CLASS S - COMPRESSIVE STRENGTH 4500 P.S.I.

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 P.S.I.

REINFORCING STEEL - ASTM A615, A616, A617 - GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.

SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615

**DECK PROTECTION METHOD:** EPOXY COATED REINFORCING STEEL, BOTH MATS, 1.25" MICRO-SILICA MODIFIED CONCRETE OVERLAY

**EXISTING STRUCTURE VERIFICATIONS**

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

**DEMOLITION OF PORTIONS OF EXISTING STRUCTURES**

REMOVAL OF PORTIONS OF EXISTING STRUCTURE AS SHOWN ON THE CONTRACT DRAWINGS SHALL CONFORM IN ALL RESPECTS TO ITEM 202 OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIALS SPECIFICATIONS.

AS INDICATED IN THE PLANS, THE DEMOLITION WORK FOR BRIDGE NO. BAR-11-0270 SHALL BE DONE PART-WIDTH FOR PHASE I AND PHASE II CONSTRUCTION. FOR MAINTENANCE OF PEDESTRIAN AND VEHICULAR TRAFFIC DURING EACH PHASE, SEE SHEET NOS. 12 AND 13.

THE CONTRACTOR SHALL PREPARE DETAILED PROCEDURES AND PLANS FOR REMOVAL OF THE EXISTING STRUCTURE PORTIONS INCLUDING METHODS OF PROTECTING EXISTING OR RELOCATED UTILITIES AND PROTECTING THE PEDESTRIAN AND THE VEHICULAR TRAFFIC WITHIN THE LIMITS OF THE PROJECT. SUCH PLANS SHALL INCLUDE INFORMATION AS TO EQUIPMENT AND MATERIALS TO BE USED, PERSONNEL, SUPERVISION, THE HOURS OF OPERATION AND DURATION OF THE JOB.

THESE PLANS SHALL BE APPROVED BY THE ENGINEER BEFORE COMMENCING ANY DEMOLITION OPERATION. THE REVIEW AND APPROVAL BY THE ENGINEER SHALL NOT RELIEVE THE CONTRACTOR OF HIS FULL RESPONSIBILITY FOR SAFE DEMOLITION OPERATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE OR INJURY TO ANY PROPERTY OR PERSON DURING THE EXECUTION OF HIS WORK, RESULTING FROM HIS METHOD OR MANNER OF PERFORMING THE WORK.

CARE SHALL BE EXERCISED IN REMOVING PORTIONS OF THE EXISTING ABUTMENTS AND DECK SLAB SO THAT NO DAMAGE IS DONE TO THE PORTIONS WHICH ARE TO REMAIN. ANY RESULTING DAMAGE TO THE REMAINING CONCRETE OR REINFORCING STEEL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY REMOVAL OF THE CONCRETE BEYOND THE LIMITS SHOWN IN THE PLANS WILL ONLY BE AS AUTHORIZED BY THE ENGINEER.

**EMBANKMENT CONSTRUCTION**

THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 50 FEET BACK OF THE ABUTMENTS. EXCAVATION MAY THEN BE MADE FOR THE ABUTMENTS.

**PILES**

SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS ATTAINED BY PENETRATING SOFT BEDROCK WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH, OR REFUSAL SHALL BE CONSIDERED AS ATTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

THE DESIGN LOAD IS 29 TONS PER PILE FOR THE ABUTMENT PILES AND 38 TONS PER PILE FOR THE PIER PILES.

**STEEL PILE POINTS**

STEEL PILE POINTS SHALL BE USED TO PROTECT THE TIPS OF THE PROPOSED PILING. THE STEEL POINTS SHALL BE FURNISHED BY THE ASSOCIATED PILE AND FITTING CORPORATION, 262 RUTHERFORD BOULEVARD, CLIFTON, NEW JERSEY 07014, THE INTERNATIONAL CONSTRUCTION EQUIPMENT, INC., 301 WAREHOUSE DRIVE, MATTHEWS, NORTH CAROLINA 28015; DOUGHERTY FOUNDATION PRODUCTS, INC., P.O. BOX 688, FRANKLIN LAKES, NEW JERSEY 07417; VERSA STEEL INC., 3601 N.W. YEON AVENUE, P.O. BOX 10559, PORTLAND, OREGON 97210 OR BY A MANUFACTURER THAT CAN FURNISH A STEEL POINT THAT IS ACCEPTABLE TO THE ENGINEER.

**PILE ENCASEMENT**

EXPOSED PILE CASINGS IN CAPPED PILE PIERS SHALL HAVE PILE ENCASEMENT SIMILAR TO THAT SHOWN ON STANDARD DRAWING CPP-2-73. THE ENCASEMENT SHALL CONSIST OF CLASS C CONCRETE PLACED WITHIN A SHELL OF EXTRA-STRENGTH VITRIFIED CLAY PIPE, GALVANIZED CORRUGATED STEEL PIPE, OR PLAIN OR CORRUGATED PLASTIC PIPE ALL HAVING A MINIMUM INSIDE DIAMETER OF 24" FOR THE 12" HP X 53 PILES. THE ENCASEMENT SHALL EXTEND FROM THE BOTTOM OF THE PIER CAP TO APPROXIMATELY 4 FEET BELOW THE FLOWLINE OR GROUND LINE.

THE COST OF ENCASEMENT SHALL BE INCLUDED WITH THE PILES FOR PAYMENT.

**MAINTENANCE OF TRAFFIC**

REFER TO SHEETS NUMBERED 12 THRU 14B OF THE MAINTENANCE OF TRAFFIC PLANS.

**ITEM 518 POROUS BACKFILL, AS PER PLAN**

TO ENSURE THAT FINE SOIL PARTICLES INCLUDED WITHIN THE EMBANKMENT DO NOT MIGRATE INTO AND THROUGH THE VOIDS OF THE POROUS BACKFILL MATERIAL, FILTER FABRIC, 712.09 TYPE A, SHALL BE PLACED BETWEEN THE 518 POROUS BACKFILL MATERIAL AND THE 203 EMBANKMENT MATERIAL TO THE LIMITS AS SHOWN IN THE PLANS. PAYMENT FOR THE FILTER FABRIC SHALL BE INCLUDED IN THE UNIT PRICE BID PER CUBIC YARD FOR THE ITEM 518 POROUS BACKFILL, AS PER PLAN, WHICH SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**CUTTING OR BENDING OF REINFORCING BARS**

ANY CUTTING OR BENDING OF REINFORCING BARS NECESSARY TO ACCOMMODATE THE UTILITY OPENINGS OR ANY OTHER ESSENTIAL ELEMENT OF WORK RELATED TO THE PROJECT, SHALL BE INCLUDED IN THE PRICE BID PER POUND FOR "ITEM 509 - REINFORCING STEEL-GRADE 60," AND/OR "ITEM 824 - EPOXY COATED REINFORCING STEEL, GRADE 60," UNLESS OTHERWISE NOTED.

**ITEM SPECIAL - SEALING OF CONCRETE SURFACES**

SPECIFIED CONCRETE SURFACES SHALL BE SEALED USING MATERIALS SPECIFIED IN THE PROPOSAL, SEE SHEET NO. 8 / 9 FOR DETAIL OF AREAS TO BE SEALED. SEE THE PROPOSAL FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION, RATES, MATERIAL REQUIREMENTS, APPLICATION PROCEDURES AND MEASUREMENT AND PAYMENT.

**STATE SAFETY REQUIRED**

THE CONTRACTOR IS REQUIRED TO MEET THE APPLICABLE SAFETY REQUIREMENTS OF THE OHIO INDUSTRIAL COMMISSION.

**EXISTING STRUCTURE PLANS**

THE EXISTING STRUCTURE PLANS ARE ON FILE AND MAY BE REVIEWED AT THE SUMMIT COUNTY ENGINEER'S OFFICE.

**GRAVEL AGGREGATE**

GRAVEL AGGREGATE WILL NOT BE PERMITTED IN ANY PORTLAND CEMENT CONCRETE EXPOSED TO VIEW. GRAVEL AGGREGATE MAY BE USED ONLY IN CONCRETE THAT WILL BE PLACED 1' OR MORE BELOW THE FINISHED GROUND LINE.

**PROPOSED WORK**

1. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.
2. INSTALL TEMPORARY PRECAST CONCRETE BARRIERS ON EXISTING BRIDGE AND APPROACHES.
3. REMOVE THE FIRST PORTION OF THE EXISTING STRUCTURE.
4. CONSTRUCT STAGE 1 COMPLETE.
5. INSTALL TEMPORARY PRECAST CONCRETE BARRIER ON STAGE 1 CONSTRUCTION AND MAINTAIN TRAFFIC FOR STAGE 2.
6. REMOVE PORTIONS OF REMAINING EXISTING STRUCTURE.
7. CONSTRUCT STAGE 2 COMPLETE.
8. REMOVE TEMPORARY CONCRETE BARRIER.

**GROUT FILL USING NON-SHRINK GROUT**

THE CONTRACTOR SHALL FILL THE EXISTING CAVITY UNDER THE EAST ABUTMENT WITH NON-SHRINK GROUT PRIOR TO PLACING SLOPE PROTECTION.

THE NON-SHRINK GROUT SHALL BE: SET NON-SHRINK GROUT MANUFACTURED BY SET PRODUCTS, INC., 801 FREEWAY DRIVE, MACEDONIA, OHIO 44056 OR FIVE STAR GROUT MANUFACTURED BY U.S. GROUT CORPORATION, WEST END AVENUE, OLD GREENWICH, CONN. 06870 OR THEIR EQUIVALENT.

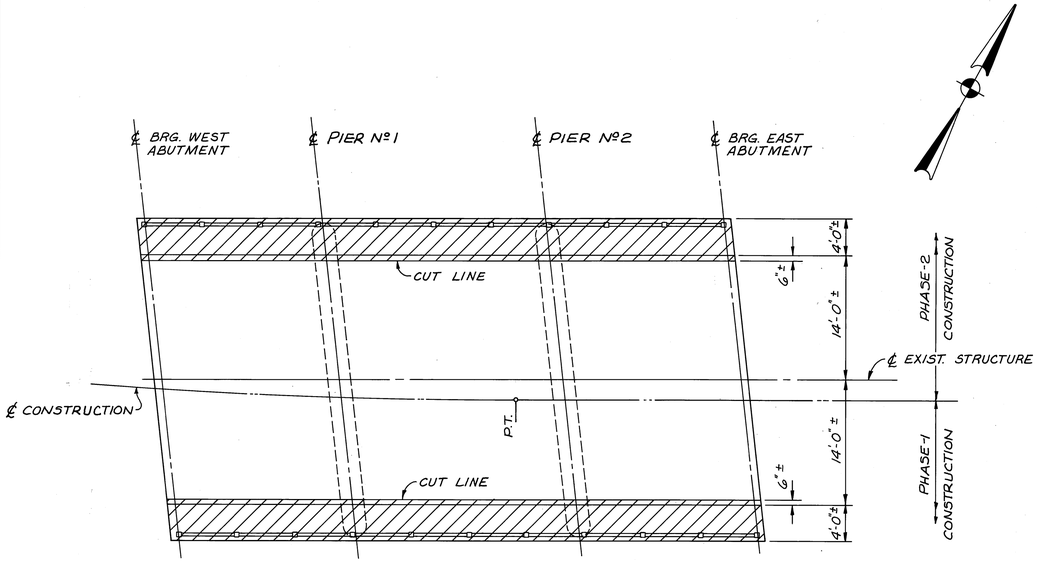
**PILE DRIVING**

ALL PILES SHALL BE INSTALLED IN PREBORED HOLES ADVANCED TO BEDROCK. THE CONTRACTOR SHALL EXERCISE CAUTION TO PREVENT ANY EXCESS VIBRATION CAUSED BY THE PILE DRIVING OPERATIONS DUE TO PROXIMITY OF EXISTING BUILDINGS AND TO PRESERVE THE EXISTING STRUCTURES INTEGRITY.

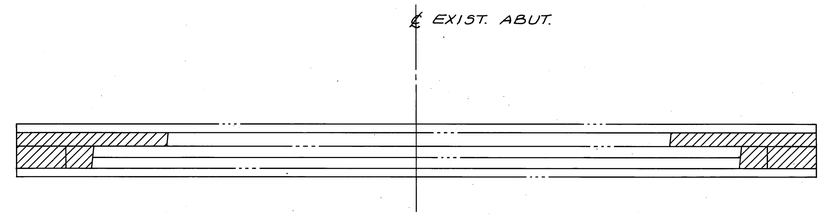
| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

18/24

SUMMIT COUNTY
WOOSTER ROAD, WEST




PLAN

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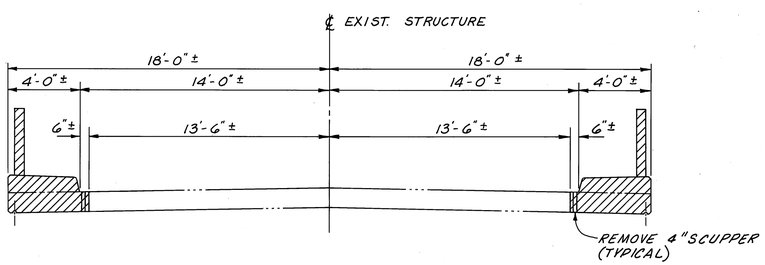
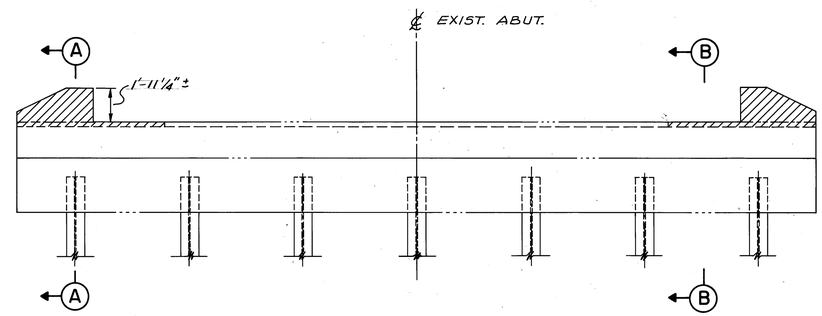



ELEVATION

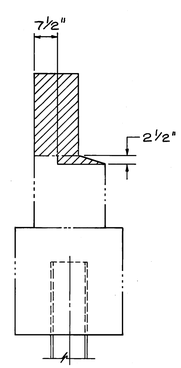



ABUTMENT ELEVATION

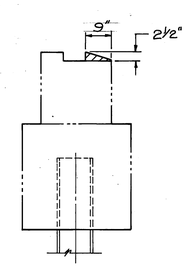
TYPICAL BOTH ABUTMENTS

NOTES

(1) INDICATES PORTIONS OF EXISTING STRUCTURE TO BE REMOVED.




SECTION A-A




SECTION B-B

McCOY ASSOCIATES, INC. 4/9
CONSULTING ENGINEERS
AKRON, OHIO

DEMOLITION DETAILS

BRIDGE NO. BAR.-11-0270
WOOSTER ROAD, WEST
OVER HUDSON RUN

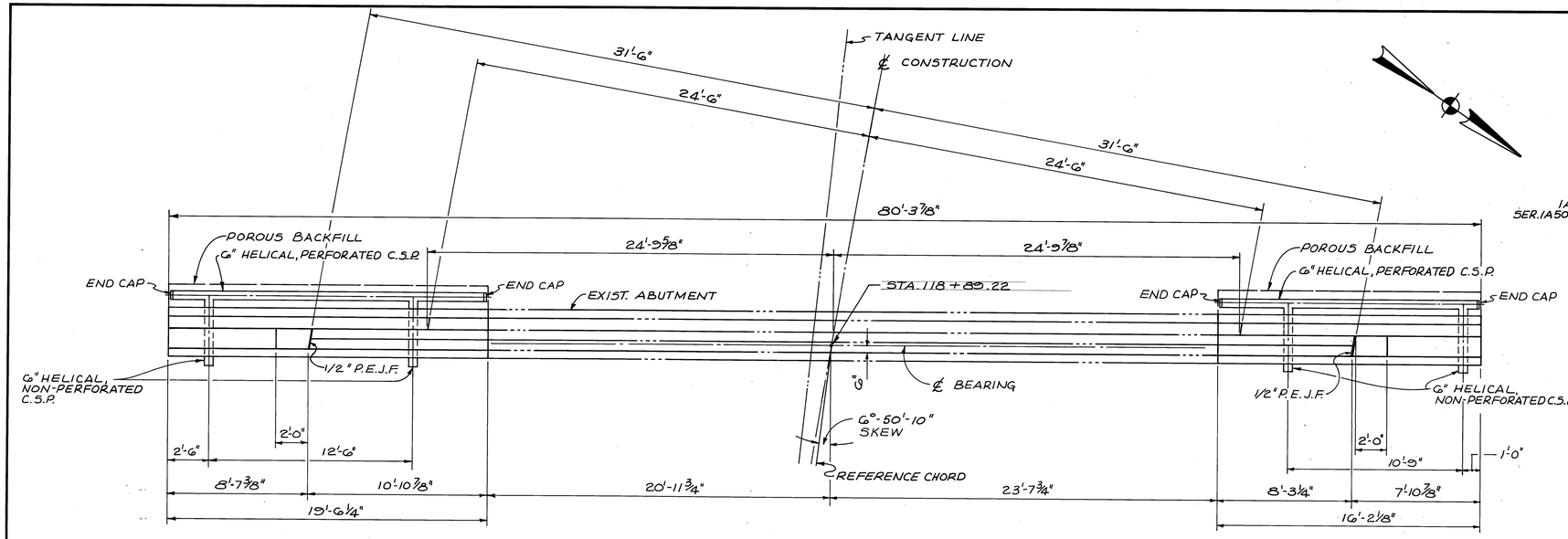
| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| JBH | J.D.P. | | TEN | JBH | 2-27-89 | |

SFN: 7731043 BAR 11-0270

| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

19/24

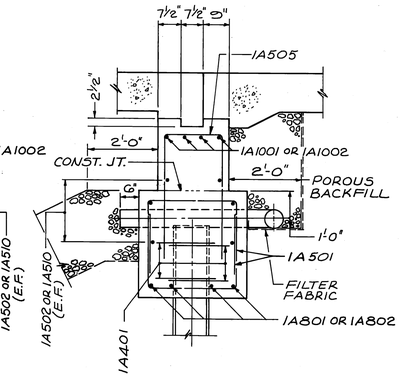
SUMMIT COUNTY
WOOSTER ROAD, WEST




PLAN




SECTION A-A

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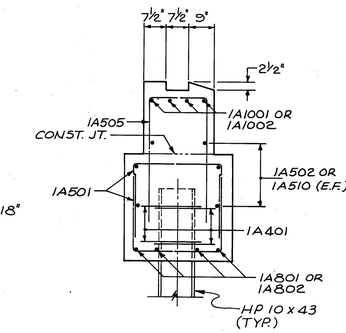
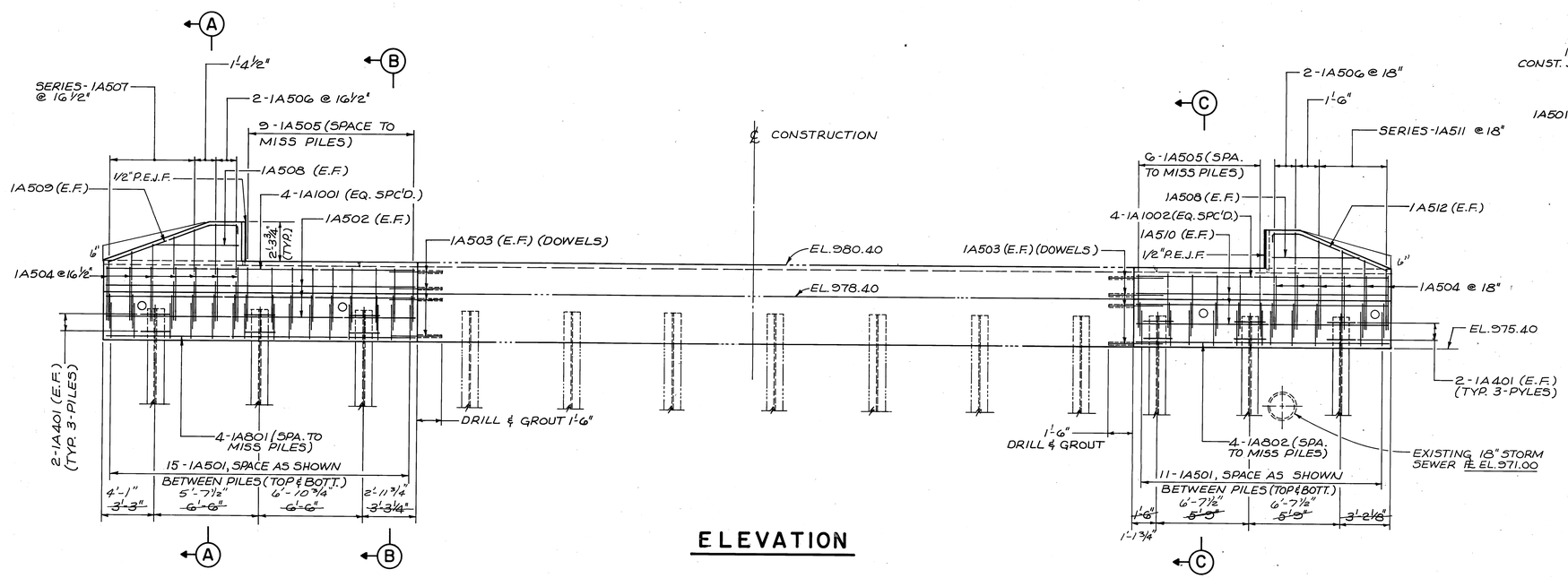



SECTION C-C

## NOTES

1. ABBREVIATIONS:
   N.F. = NEAR FACE
   F.F. = FAR FACE
   E.F. = EACH FACE
2. POROUS BACKFILL SHALL EXTEND UPWARD TO THE PLANE OF THE SUBGRADE AND LATERALLY TO THE ENDS OF THE WALL EXTENSIONS.
3. MINIMUM REINFORCING BAR LAP LENGTHS ARE AS FOLLOWS:
   Nº 4 BAR = 16"
   Nº 5 BAR = 20"




ELEVATION

McCOY ASSOCIATES, INC. 5/9
CONSULTING ENGINEERS
AKRON, OHIO

# WEST ABUTMENT DETAILS

BRIDGE NO. BAR.-11-0270
WOOSTER ROAD, WEST
OVER HUDSON RUN

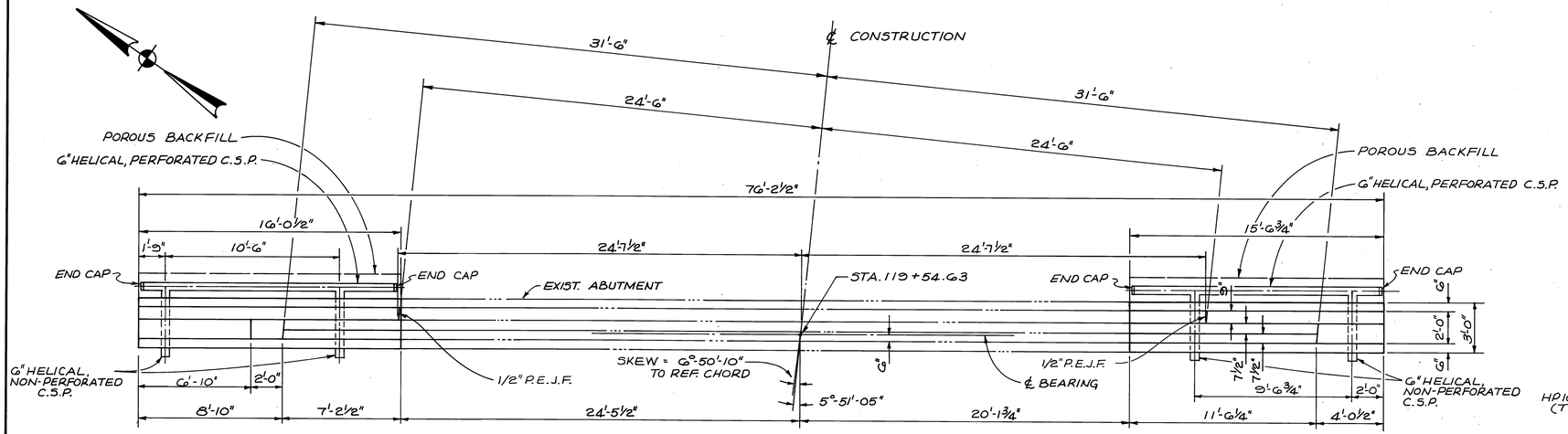
| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| TEN | J.D.P. | | JBH | JBH | 2-28-89 | |

SEN: 7731043 BAR 11-0270

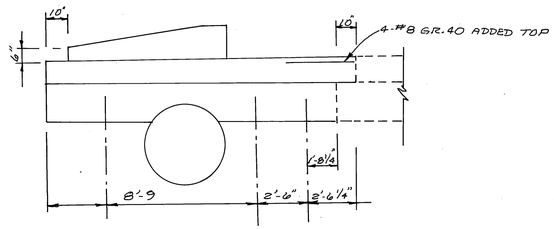
| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

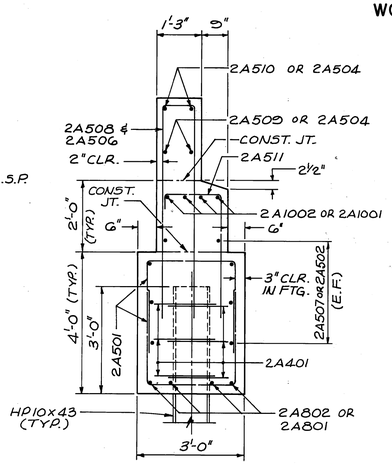
20 / 24

SUMMIT COUNTY
WOOSTER ROAD, WEST

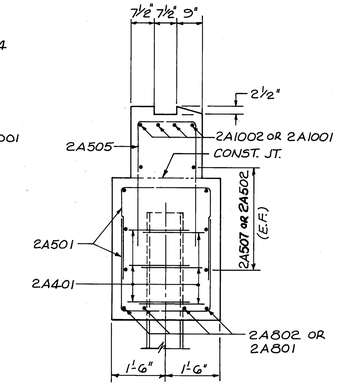



PLAN

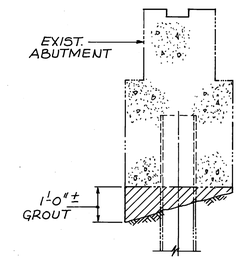


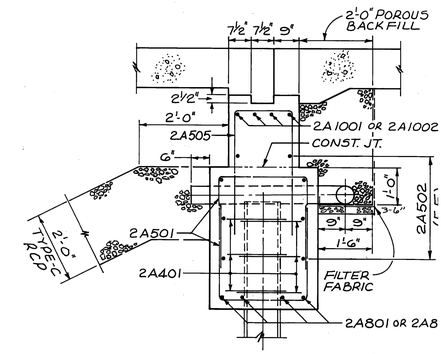

SECTION A-A



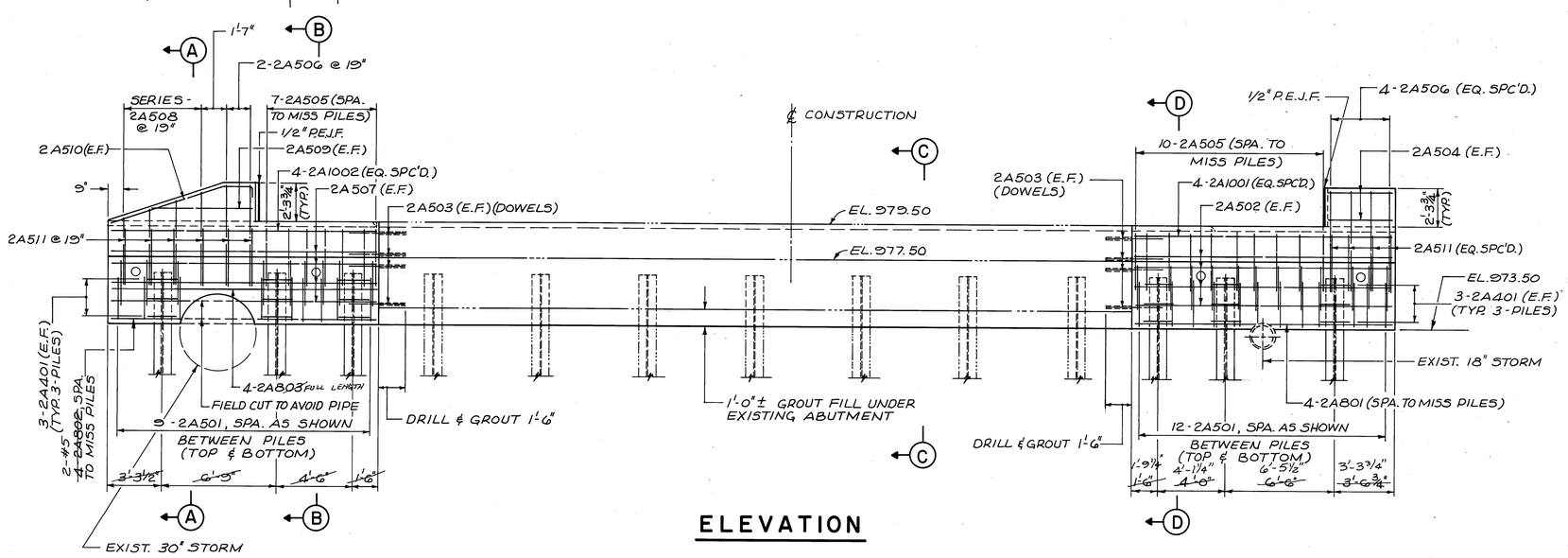

SECTION B-B




SECTION C-C




SECTION D-D




ELEVATION

FOR NOTES SEE SHEET 5/9

McCOY ASSOCIATES, INC. 6/9
CONSULTING ENGINEERS
AKRON, OHIO

# EAST ABUTMENT DETAILS

BRIDGE NO. BAR.-11-0270
WOOSTER ROAD, WEST
OVER HUDSON RUN

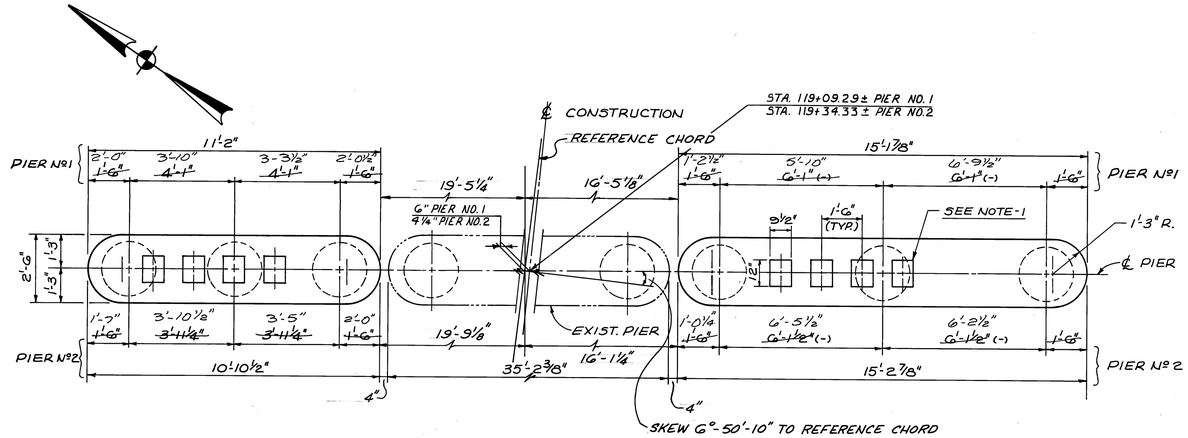
| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVIS |
|---|---|---|---|---|---|---|
| TEN | J.D.P. | | JBH | JBH | 2-27-89 | |

SFN: 7731043 BAR 11-0270

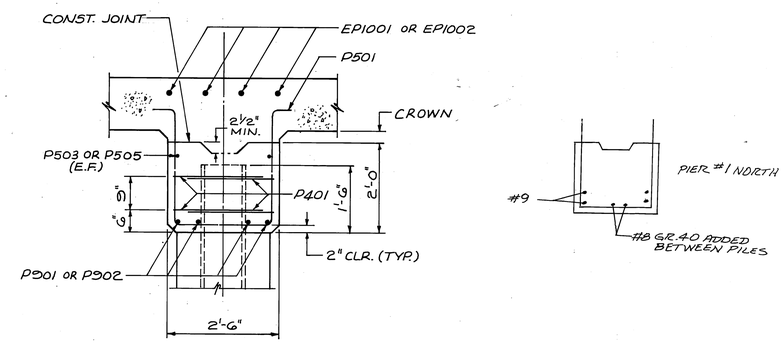
| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

21/24

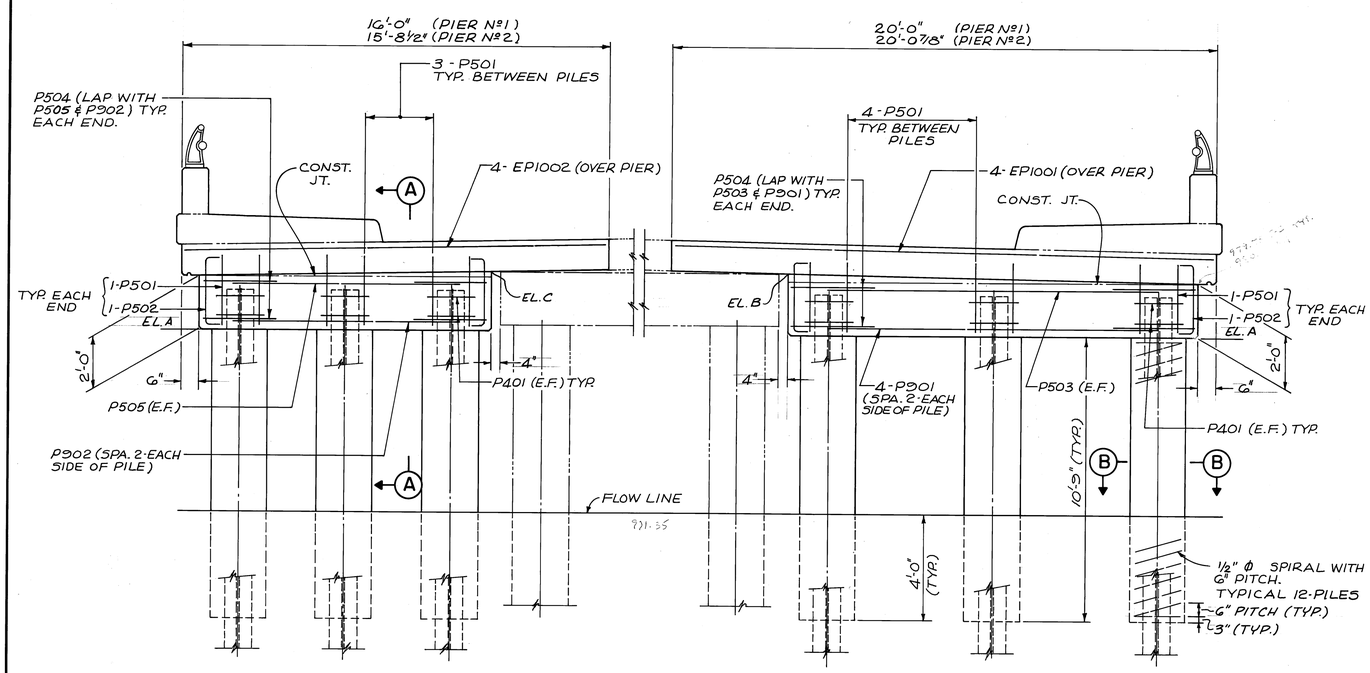
SUMMIT COUNTY
WOOSTER ROAD, WEST



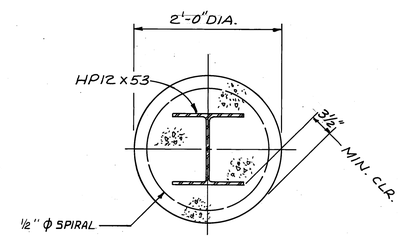

## PLAN




## SECTION A-A




## ELEVATION




## SECTION B-B

ELEVATIONS

| | A | B | C |
|---|---|---|---|
| PIER 1 | 978.03 | 980.28 ~~978.28~~ | 980.28 ~~978.28~~ |
| PIER 2 | 977.71 | 979.97 ~~977.97~~ | 979.95 ~~977.95~~ |

## NOTES

1. PLACE SHEAR KEYS ONLY IF OPTIONAL CONSTRUCTION JOINT IS USED. SHEAR KEYS MAY BE FORMED WITH 12" LENGTHS OF 3" x 10" PLANK.
2. ABBREVIATIONS
   E.F. – EACH FACE
3. MINIMUM CLEARANCE TO REBARS SHALL BE 2" UNLESS NOTED OTHERWISE
4. PIER CAPS SHALL NOT BE USED TO SUPPORT FALSEWORK FOR THE DECK SLAB
5. THE OPTIONAL HORIZONTAL CONSTRUCTION JOINT BETWEEN THE TOP OF THE PIER CAP AND BOTTOM OF SLAB WILL BE PERMITTED ONLY IF SHEAR KEYS, AS SHOWN ARE PROVIDED AT THE TOP OF THE CAP. IF SUCH A JOINT IS NOT PROVIDED, THE CONCRETE IN THE SLAB AND CAP SHALL BE PLACED IN A CONTINUOUS OPERATION.
6. CONCRETE ENCASEMENT AND SPIRAL REINFORCEMENT SHALL BE INCLUDED WITH ITEM 507, STEEL PILES HP 12 x 53 FOR PAYMENT.

McCOY ASSOCIATES, INC.
CONSULTING ENGINEERS
AKRON, OHIO

7/9

# PIERS Nº1 & Nº2 DETAILS

BRIDGE NO. BAR.-11-0270
WOOSTER ROAD, WEST
OVER HUDSON RUN

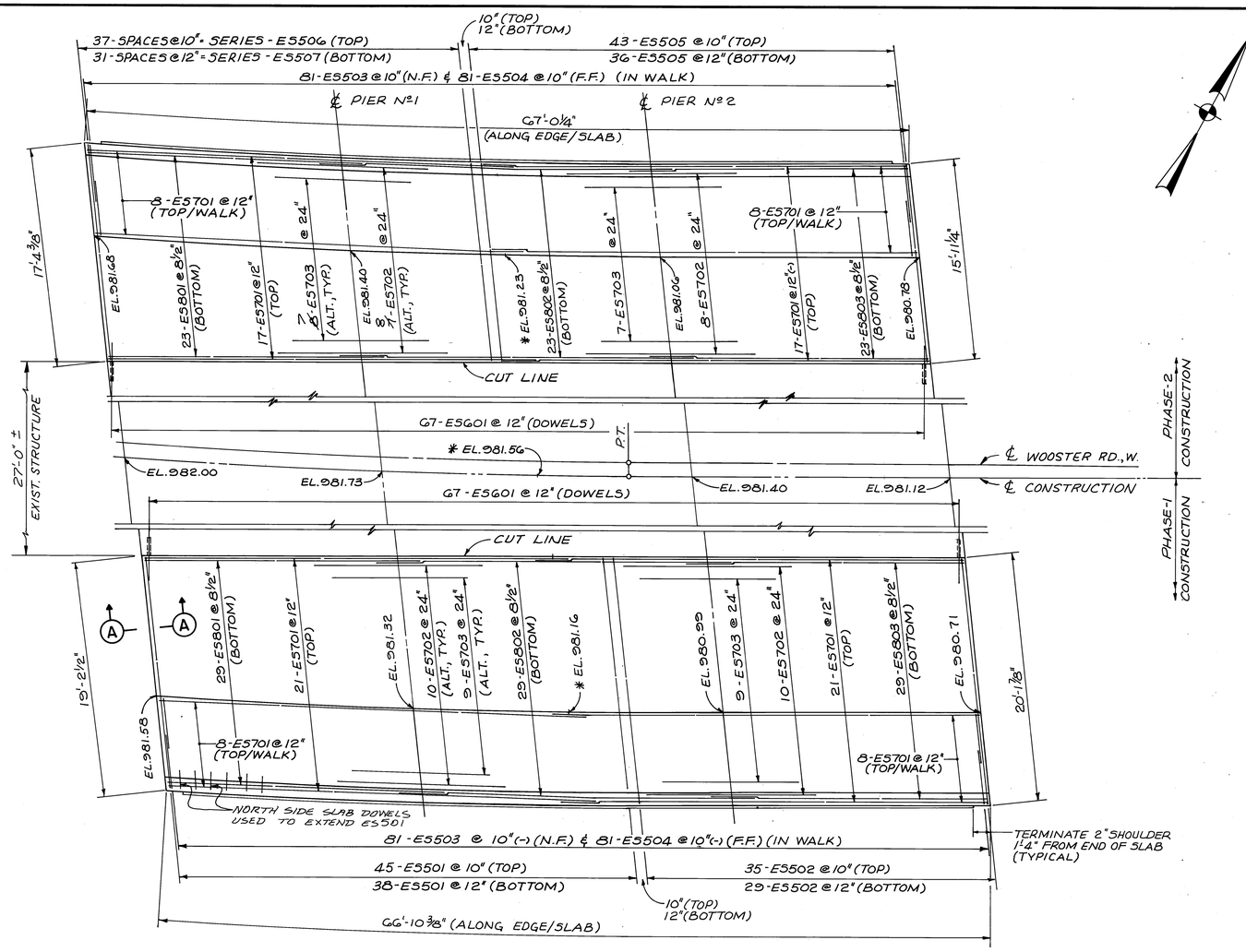
| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| TEN | J.D.R. | | JBH | JBH | 2-27-89 | |

BAR 11-0270 SEQ: 7731043

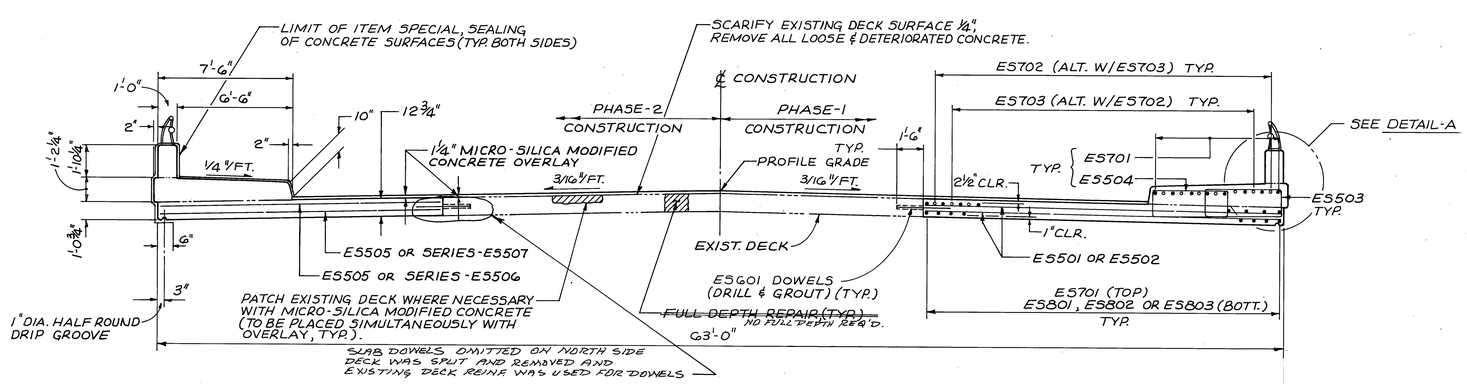
| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

22/24

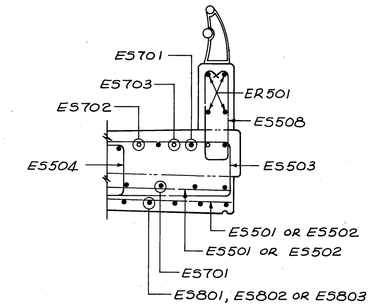
SUMMIT COUNTY
WOOSTER ROAD, WEST



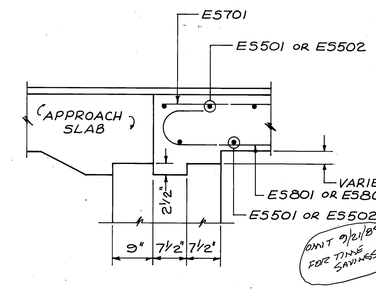

## DECK PLAN



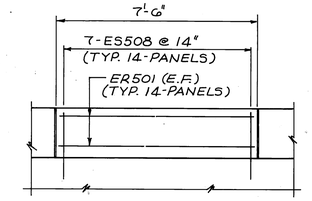

## TRANSVERSE SECTION



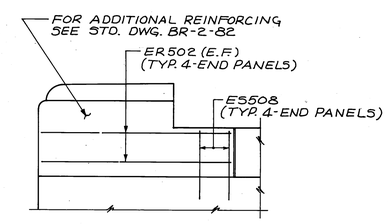

## DETAIL-A




## SECTION A-A




## PARAPET PANEL DETAIL




## PARAPET END PANEL DETAIL

## NOTES

1. ABBREVIATIONS:
   N.F. = NEAR FACE
   F.F. = FAR FACE
   E.F. = EACH FACE
2. MINIMUM REINFORCING BAR LAP LENGTHS ARE AS FOLLOWS:
   Nº 7 BAR = 31"
   Nº 8 BAR = 41"
3. FOR RAILING DETAILS NOT SHOWN SEE STANDARD DRAWING BR-2-82.
4. FOR POST SPACING & PARAPET DEFLECTION JOINT LOCATIONS SEE SHEET 2/9.
5. SIDEWALKS SHALL BE PLACED AFTER THE SHORING UNDER THE SLAB HAS BEEN RELEASED SUFFICIENTLY TO PERMIT THE SLAB SPANS TO ATTAIN FULL DEAD LOAD DEFLECTION.
6. * INDICATES MID-SPAN.
7. ELEVATIONS SHOWN ARE FINAL PAVEMENT ELEVATIONS.
8. CAMBER OF 1/800 OF THE SPAN SHALL BE PROVIDED IN EACH SPAN TO ALLOW FOR DEAD LOAD DEFLECTION. THIS IS THE AMOUNT OF CAMBER REQUIRED BEFORE FALSEWORK IS RELEASED. TO OBTAIN THIS, PROPER ALLOWANCE SHALL BE MADE FOR THE DEFLECTION OF FALSEWORK MEMBERS.

McCOY ASSOCIATES, INC. 8/9
CONSULTING ENGINEERS
AKRON, OHIO

# SUPERSTRUCTURE DETAILS

BRIDGE NO. BAR.-11-0270
WOOSTER ROAD, WEST
OVER HUDSON RUN

| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| TEN | J.D.P. | | JBH | JBH | 2-27-89 | |

BAR 11-0270 SFN: 7731043

| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

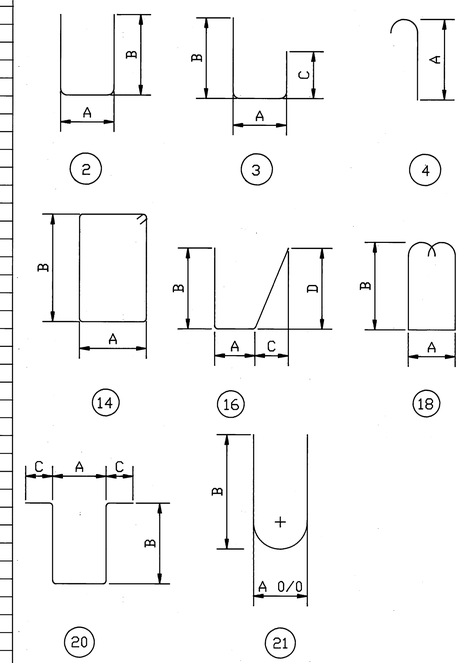
23/24

SUMMIT COUNTY
WOOSTER ROAD WEST

# REINFORCING SCHEDULE

| MARK | No. REQ'D | LENGTH | TYPE | PHASE 1 | PHASE 2 | | | DIMENSIONS A | DIMENSIONS B | DIMENSIONS C | DIMENSIONS D | INCRM. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NON-EPOXY COATED BARS | | | | | | | | | | | | | |
| WEST ABUTMENT | | | | | | | | | | | | | |
| 1A1001 | 4 | 19'-0" | ST | 4 | | | | | | | | | 327 |
| 1A1002 | 4 | 15'-8" | ST | | 4 | | | | | | | | 270 |
| 1A801 | 4 | 19'-0" | ST | 4 | | | | | | | | | 203 |
| 1A802 | 4 | 15'-8" | ST | | 4 | | | | | | | | 167 |
| 1A501 | 52 | 6'-5" | 2 | 30 | 22 | | | 2'-6" | 2'-1" | | | | 348 |
| 1A502 | 6 | 19'-0" | ST | 6 | | | | | | | | | 119 |
| 1A503 | 16 | 3'-0" | ST | 8 | 8 | | | | | | | | 50 |
| 1A504 | 13 | 5'-5" | 3 | 7 | 6 | | | 1'-8" | 3'-6" | 6" | | | 73 |
| 1A505 | 15 | 8'-5" | 2 | 9 | 6 | | | 1'-8" | 3'-6" | | | | 132 |
| 1A506 | 4 | 12'-8" | 2 | 2 | 2 | | | 11" | 6'-0" | | | | 53 |
| 1A507 | 1 SET | 8'-2" | 2 | 5 | | | | 11" | 3'-9" | | | 12" | 53 |
| | OF 5 | TO 12'-2" | | | | | | | TO 5'-9" | | | | |
| 1A508 | 4 | 5'-6" | ST | 2 | 2 | | | | | | | | 22 |
| 1A509 | 2 | 8'-11" | 16 | 2 | | | | 1'-9" | 6" | 6'-6" | 2'-3" | | 19 |
| 1A510 | 6 | 15'-8" | ST | | 6 | | | | | | | | 98 |
| 1A511 | 1 SET | 8'-2" | 2 | | 4 | | | 11" | 3'-9" | | | 14" | 41 |
| | OF 4 | TO 11'-8" | | | | | | | TO 5'-6" | | | | |
| 1A512 | 2 | 8'-1" | 16 | | 2 | | | 1'-9" | 6" | 5'-7" | 2'-3" | | 17 |
| 1A401 | 24 | 5'-5" | 2 | 12 | 12 | | | 1'-9" | 1'-11" | | | | 87 |
| SUB-TOTAL WEST ABUTMENT = 2,079 | | | | | | | | | | | | | |
| EAST ABUTMENT | | | | | | | | | | | | | |
| 2A1001 | 4 | 15'-1" | ST | 4 | | | | | | | | | 260 |
| 2A1002 | 4 | 15'-6" | ST | | 4 | | | | | | | | 267 |
| 2A801 | 4 | 15'-0" | ST | 4 | | | | | | | | | 160 |
| 2A802 | 4 | 15'-6" | ST | | 4 | | | | | | | | 166 |
| 2A803 | 4 | 5'-6" | ST | | 4 | | | | | | | | 59 |
| 2A501 | 42 | 7'-4" | 2 | 24 | 18 | | | | | | | | 321 |
| 2A502 | 8 | 15'-1" | ST | 8 | | | | | | | | | 126 |
| 2A503 | 16 | 3'-0" | ST | 8 | 8 | | | | | | | | 50 |
| 2A504 | 4 | 3'-8" | ST | 4 | | | | | | | | | 15 |
| 2A505 | 17 | 8'-5" | 2 | 10 | 7 | | | 1'-8" | 3'-6" | | | | 149 |
| 2A506 | 6 | 12'-8" | 2 | 4 | 2 | | | 11" | 6'-0" | | | | 79 |
| 2A507 | 8 | 15'-6" | ST | | 8 | | | | | | | | 129 |
| 2A508 | 1 SET | 8'-8" | 2 | | 4 | | | 11" | 4'-0" TO | | | 12" | 42 |
| | OF 4 | TO 11'-8" | | | | | | | 5'-6" | | | | |
| 2A509 | 2 | 6'-0" | ST | | 2 | | | | | | | | 13 |
| 2A510 | 2 | 8'-1" | 16 | | 2 | | | 1'-9" | 6" | 5'-9" | 1'-11" | | 17 |
| 2A511 | 10 | 5'-5" | 3 | 4 | 6 | | | 1'-8" | 3'-6" | 6" | | | 57 |
| 2A401 | 36 | 5'-5" | 2 | 18 | 18 | | | 1'-9" | 1'-11" | | | | 130 |
| SUB-TOTAL EAST ABUTMENT = 2,040 | | | | | | | | | | | | | |
| TOTAL ABUTMENTS = 4,119 | | | | | | | | | | | | | |

| MARK | No. REQ'D | LENGTH | TYPE | | | | | DIMENSIONS A | DIMENSIONS B | DIMENSIONS C | DIMENSIONS D | INCRM. | WEIGHT LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PIERS | | | | | | | | | | | | | |
| | | | | PIER 1 | | PIER 2 | | | | | | | |
| | | | | PHASE 1 | PHASE 2 | PHASE 1 | PHASE 2 | | | | | | |
| P901 | 8 | 12'-8" | ST | 4 | | 4 | | | | | | | 345 |
| P902 | 8 | 8'-5" | ST | | 4 | | 4 | | | | | | 229 |
| P501 | 36 | 7'-10" | 20 | 10 | 8 | 10 | 8 | 2'-2" | 2'-7" | 6" | | | 294 |
| P502 | 8 | 3'-4" | 2 | 2 | 2 | 2 | 2 | 2'-7" | 6" | | | | 28 |
| P503 | 4 | 12'-8" | ST | 2 | | 2 | | | | | | | 53 |
| P504 | 16 | 6'-8" | 21 | 4 | 4 | 4 | 4 | 2'-2" | 1'-8" | | | | 111 |
| P505 | 4 | 8'-5" | ST | | 2 | | 2 | | | | | | 35 |
| P401 | 48 | 5'-1" | 2 | 12 | 12 | 12 | 12 | 1'-9" | 1'-9" | | | | 163 |
| TOTAL PIERS = 1,258 | | | | | | | | | | | | | |
| GRAND TOTAL - NON-EPOXY COATED BARS = 5,377 | | | | | | | | | | | | | |
| EPOXY COATED BARS | | | | | | | | | | | | | |
| PIERS | | | | | | | | | | | | | |
| | | | | PIER 1 | | PIER 2 | | | | | | | |
| | | | | PHASE 1 | PHASE 2 | PHASE 1 | PHASE 2 | | | | | | |
| EP1001 | 8 | 19'-2" | ST | 4 | | 4 | | | | | | | 660 |
| EP1002 | 8 | 14'-11" | ST | | 4 | | 4 | | | | | | 514 |
| TOTAL PIERS = 1,174 | | | | | | | | | | | | | |
| SUPERSTRUCTURE | | | | | | | | | | | | | |
| | | | | PHASE 1 | PHASE 2 | | | | | | | | |
| ES801 | 52 | 23'-1" | 4 | 29 | 23 | | | 22'-2" | | | | | 3,205 |
| ES802 | 52 | 21'-11" | ST | 29 | 23 | | | | | | | | 3,043 |
| ES803 | 52 | 29'-4" | 4 | 29 | 23 | | | 28'-5" | | | | | 4,073 |
| ES701 | 108 | 34'-6" | ST | 58 | 50 | | | | | | | | 7,616 |
| ES702 | 36 | 13'-6" | ST | 20 | 16 | | | | | | | | 993 |
| ES703 | 32 | 11'-0" | ST | 18 | 14 | | | | | | | | 720 |
| ES601 | 134 | 3'-0" | ST | 67 | 67 | | | | | | | | 604 |
| ES501 | 83 | 18'-10" | ST | 83 | | | | | | | | | 1,630 |
| ES502 | 64 | 19'-9" | ST | 64 | | | | | | | | | 1,318 |
| ES503 | 81 | 12'-2" | 14 | 81 | 81 | | | 1'-9" | 4'-1" | | | | 2,056 |
| ES504 | 162 | 11'-10" | 14 | 81 | 81 | | | 1'-7" | 4'-1" | | | | 1,999 |
| ES505 | 79 | 15'-7" | ST | | 79 | | | | | | | | 1,284 |
| ES506 | 1 SET | 15'-8" TO | ST | | 38 | | | | | | | 7/16" | 647 |
| | OF 38 | 17'-0" | | | | | | | | | | | |
| ES507 | 1 SET | 15'-8" TO | ST | | 32 | | | | | | | 1/2" | 545 |
| | OF 32 | 17'-0" | | | | | | | | | | | |
| ES508 | 106 | 6'-3" | 18 | 53 | 53 | | | 8" | 2'-6" | | | | 691 |
| TOTAL SUPERSTRUCTURE = 30,424 | | | | | | | | | | | | | |
| GRAND TOTAL - EPOXY COATED BARS = 31,598 | | | | | | | | | | | | | |




REINFORCING STEEL

BAR SIZE AND LOCATION ARE INDICATED IN THE BAR MARK. THE FIRST DIGIT, IF PRESENT, AND ALPHABETICAL LETTER\LETTERS INDICATE LOCATION. THE NEXT DIGIT OF A THREE DIGIT SERIES, OR THE NEXT TWO DIGITS OF A FOUR DIGIT SERIES INDICATE BAR SIZE NUMBER.

EXAMPLES: 1A501
- NO. 5 SIZE BAR
- LOCATION = ABUTMENT NO. 1

SP401
- NO. 4 SIZE BAR
- LOCATION = PIER & BAR IS A SPIRAL

ALL BAR DIMENSIONS ARE GIVEN OUT TO OUT.

REINFORCING STEEL SAMPLES

REFER TO CMS SECTIONS 106.03, 700, 709.01 THROUGH 709.05 AND 709.08. SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING. RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURES BY THE ADDITIONAL STEEL, SPLICED IN ACCORDANCE WITH 509.08.

McCOY ASSOCIATES INC. 9 / 9
CONSULTING ENGINEERS
AKRON, OHIO

REINFORCING SCHEDULE

BRIDGE NO. BAR-11-0270

WOOSTER ROAD WEST OVER HUDSON RUN

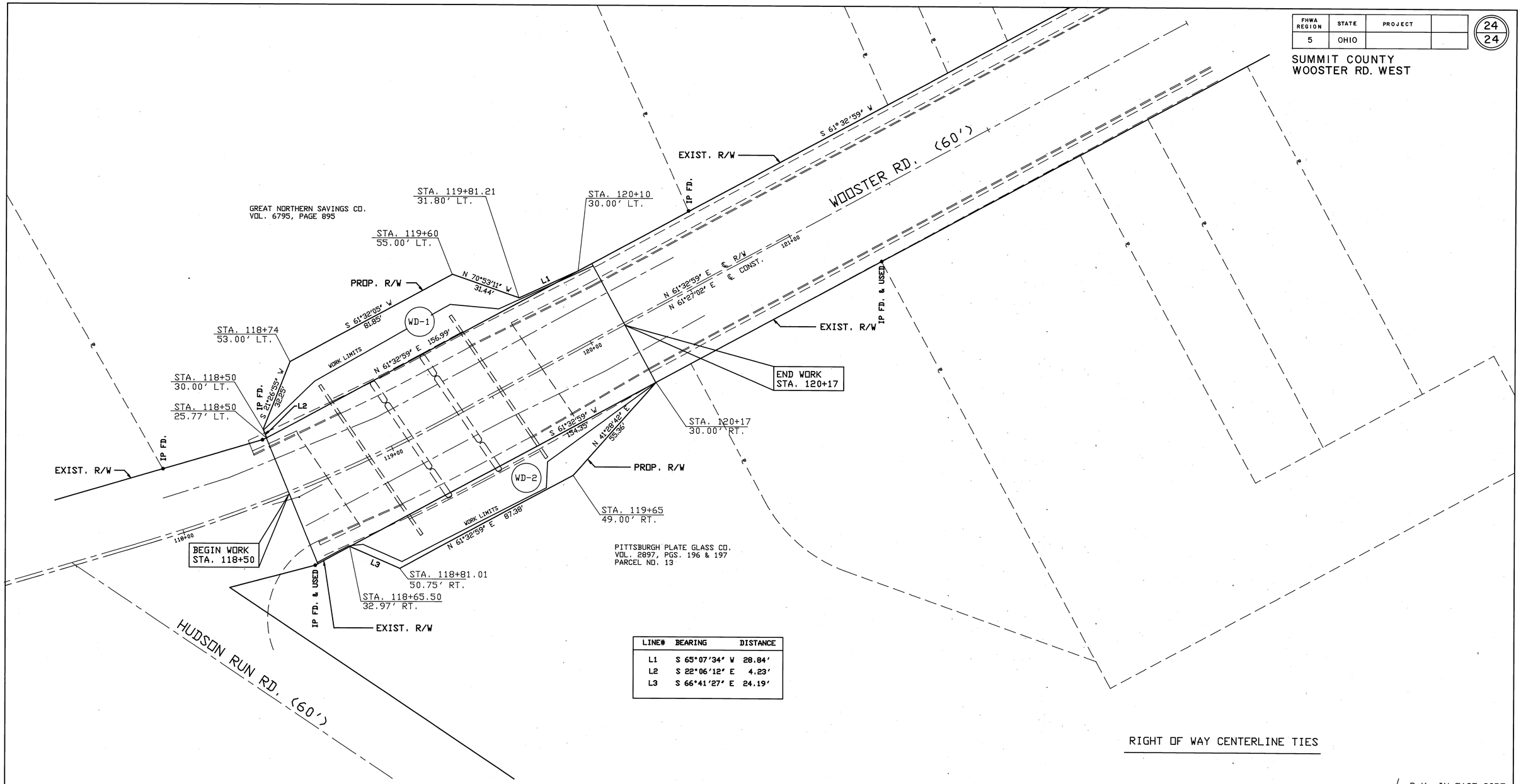
| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| JBH | MRA | | SMS | JBH | 2-27-89 | |

BAR 11-0270 SFN: 7731043

| FHWA REGION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | | |

24
24

SUMMIT COUNTY
WOOSTER RD. WEST

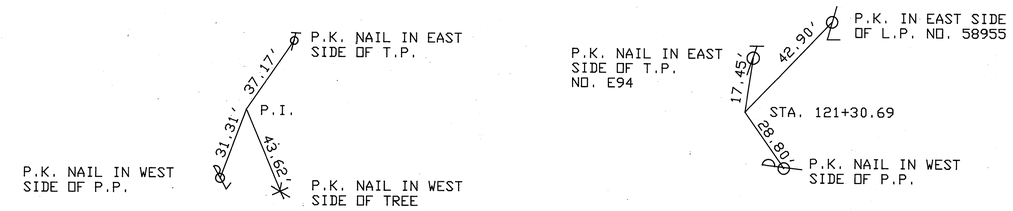



| LINE# | BEARING | DISTANCE |
|---|---|---|
| L1 | S 65°07'34" W | 28.84' |
| L2 | S 22°06'12" E | 4.23' |
| L3 | S 66°41'27" E | 24.19' |

## SUMMARY OF ADDITIONAL RIGHT OF WAY

| PARCEL NO. | OWNER | LOT NO. | TAKE | TOTAL AREA |
|---|---|---|---|---|
| WD-1 | GREAT NORTHERN SAVINGS CO. | | PERMANENT | 0.062 ACRES |
| | | | | |
| WD-2 | PITTSBURGH PLATE GLASS CO. | | PERMANENT | 0.053 ACRES |
| | | | | |
| | | | | |

## RIGHT OF WAY CENTERLINE TIES




SFN: 7731043 BAR 11-0230

R/W PLAN AND SUMMARY

| FHWA REGION | STATE | PROJECT |
|---|---|---|
| | | |

# STRUCTURE SURFACE INVESTIGATION

1/3

## GEOLOGY OF THE SITE

THE PROJECT SITE IS LOCATED ON THE GLACIATED, ROLLING ALLEGHENY PLATEAU PHYSIOGRAPHIC PROVINCE AT AN APPROXIMATE ELEVATION OF 980. THE EXISTING STRUCTURE SPANS HUDSON RUN, A RELATIVELY SMALL STREAM.

THIS AREA WAS GLACIATED BY THE WISCONSIN ICE SHEET. LOCALLY, THE GLACIAL DRIFT DEPOSITED BY THE ICE SHEET IS EXTREMELY VARIABLE BUT IN GENERAL THICK, RANGING FROM 20 TO 400 FEET. THE GLACIAL MATERIAL ALONG HUDSON RUN CONSISTS OF SAND AND SILT ALLUVIAL DEPOSITS. THIS MATERIAL IS POORLY SORTED, POORLY BEDDED AND INCLUDES ALL DETRITAL MATERIAL DEPOSITED IN VALLEYS SINCE THE RETREAT OF THE GLACIER.

THE BEDROCK SURFACE IN THIS VICINITY STANDS AT AN APPROXIMATE ELEVATION OF 945 TO 950 AND HAS A GENTLE DOWNWARD SLOPE TOWARDS THE NORTH. THE BEDROCK CONSISTS OF SANDSTONE BELONGING TO THE PENNSYLVANIAN AGE SHARON CONGLOMERATE AND LIMESTONE BELONGING TO THE MISSISSIPPIAN AGE MAXVILLE FORMATION. INFORMATION OBTAINED FROM THE OHIO GEOLOGICAL SURVEY (O.G.S.) INDICATES THAT THE ABANDONED BARBERTON MINE IS LOCATED JUST TO THE NORTHWEST OF THE PROJECT SITE. LIMESTONE WAS MINED EXTENSIVELY FROM AN APPROXIMATE ELEVATION OF 1250 FEET BELOW SEA LEVEL AT THIS MINE.

## EXPLORATION

THE SUBSURFACE EXPLORATION PROGRAM FOR THIS STRUCTURE INCLUDED ADVANCING ONE (1) DRIVE SAMPLE-CORE BORING WITH A CME-75 TRUCK MOUNTED DRILLING RIG USING CONVENTIONAL 3.25 INCH I.D. HOLLOW STEM AUGERS, PERFORMED ON JANUARY 12, 1989.

## INVESTIGATIONAL FINDINGS

THE TEST BORING DISCLOSED STIFF TO VERY STIFF SANDY SILT, CLASSIFIED AS A-4a EXTENDING FROM BELOW THE EXISTING CONCRETE PAVEMENT TO AN APPROXIMATE ELEVATION OF 955.4. AT THIS ELEVATION, SANDSTONE BEDROCK WAS ENCOUNTERED. THE SANDSTONE IS EXTREMELY WEATHERED TO A DEPTH OF 34.0 FEET AT WHICH DEPTH AUGER REFUSAL OCCURRED. A ROCK CORE SAMPLE OF THE SANDSTONE WAS THEN OBTAINED.

FOR SPECIFIC CONDITIONS AT VARIOUS DEPTHS, REFER TO THE TEST BORING LOG WHICH FORMS A PART OF THESE PLANS.

## LEGEND

- AUGER BORING LOCATION - PLAN VIEW
- PRESS AND/OR DRIVE SAMPLE AND/OR CORE BORING LOCATION - PLAN VIEW
- TR — TOP OF ROCK
- CAPPED PILE
- FOOTING
- FOOTING ON PILE
- HORIZONTAL BAR ON BORING LOG INDICATES THE DEPTH THE SAMPLE WAS TAKEN
- X/Y/Z — FIGURES BESIDE THE BORING LOG IN PROFILE INDICATE THE NUMBER OF BLOWS FOR STANDARD PENETRATION TEST
  - X = NO. OF BLOWS FOR FIRST 6"
  - Y = NO. OF BLOWS FOR SECOND 6"
  - Z = NO. OF BLOWS FOR THIRD 6"
- W — INDICATES FREE WATER ELEVATION
- INDICATES STATIC WATER ELEVATION

## SYMBOLS OF ROCK TYPES

- COAL
- WEATHERED MUDSTONE
- MUDSTONE
- WEATHERED SHALE
- SHALE
- CLAYSTONE
- SILTSTONE
- WEATHERED SANDSTONE
- SANDSTONE
- LEACHED DOLOMITE
- DOLOMITE
- LEACHED LIMESTONE
- LIMESTONE
- BOULDERS or COBBLES

## GENERAL INFORMATION

### Drive sample / Press sample / Core borings

Drive sample borings are made by means of a mechanically-powered rotary-type drilling machine, employing a 2" O.D., 1-3/8" I.D. split spoon sampler, at 2.5 and/or 5-foot depth intervals, driven by means of a 140 lb. drop hammer with a free fall of 30". The number of blows required to drive the sampler 18" is considered the standard penetration test.

Drive/press borings are made by means of a mechanically-powered rotary-type drilling machine, employing a 2" O.D., 1-3/8" I.D. split spoon sampler, and 3" O.D. thin wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drilling machine.

Core borings are made by means of a mechanically-powered rotary-type drilling machine, employing a NXM core barrel with industrial diamond cutting head.

The boring log sheets display a graphic plot of the information obtained including depth and elevation of the sample, type of sample, the standard penetration test readings in three 6-inch increments, depth and elevation of press samples, field number assigned to sample, sample description - based on laboratory tests utilizing the Casagrande AC classification system - and gradation, plasticity and moisture determinations. Results of strength and consolidation testing, if performed on undisturbed samples, will appear graphically on separate enclosures. Rock samples are displayed on the log sheets including depth and elevation of the sample, amount of recovery and a visual classification based on type, color, degree of hardness, grain size, deterioration, bedding, acid reaction and other qualifying factors.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be utilized, a wash sample is procured and visually classified, in order to determine the general characteristics of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

## PARTICLE SIZE DEFINITIONS

| Boulders | 12" | Cobbles | 3" | Gravel | 2.0mm | Coarse Sand | 0.42mm | Fine Sand | 0.074mm | Silt | 0.005mm | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | No. 10 sieve | | No. 40 sieve | | No. 200 sieve | | | |

NOTE - ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE BUREAU OF TESTS AT 1600 WEST BROAD STREET, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

**SUBSURFACE INVESTIGATION**
WOOSTER ROAD, WEST
OVER HUDSON RUN
SUMMIT COUNTY, OHIO

R&R INTERNATIONAL INC.
Geotechnical Engineers • Geologists
1234 S. CLEVELAND-MASSILLON ROAD
P.O. BOX 4383
AKRON, OH 44321

BAR 11-0270 SFN: 7731043

| FHWA REGION | STATE | PROJECT |
|---|---|---|
| | | |

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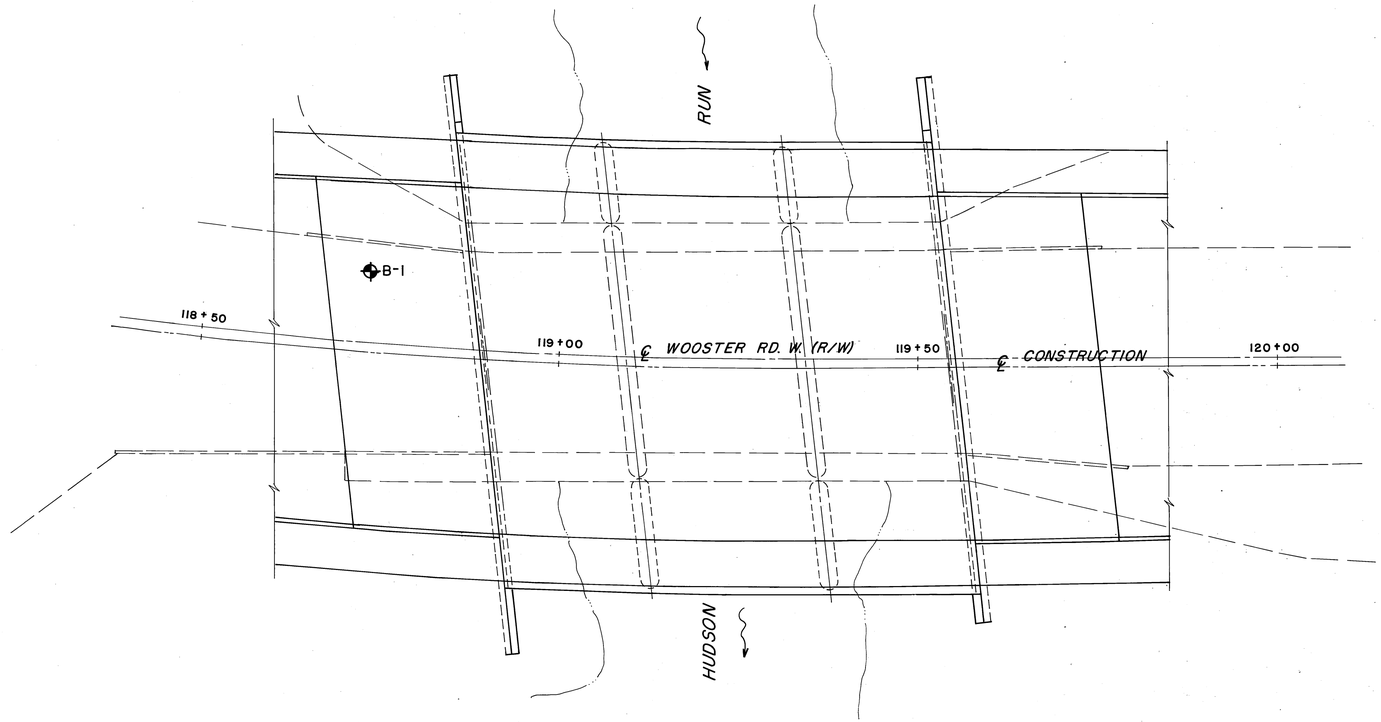


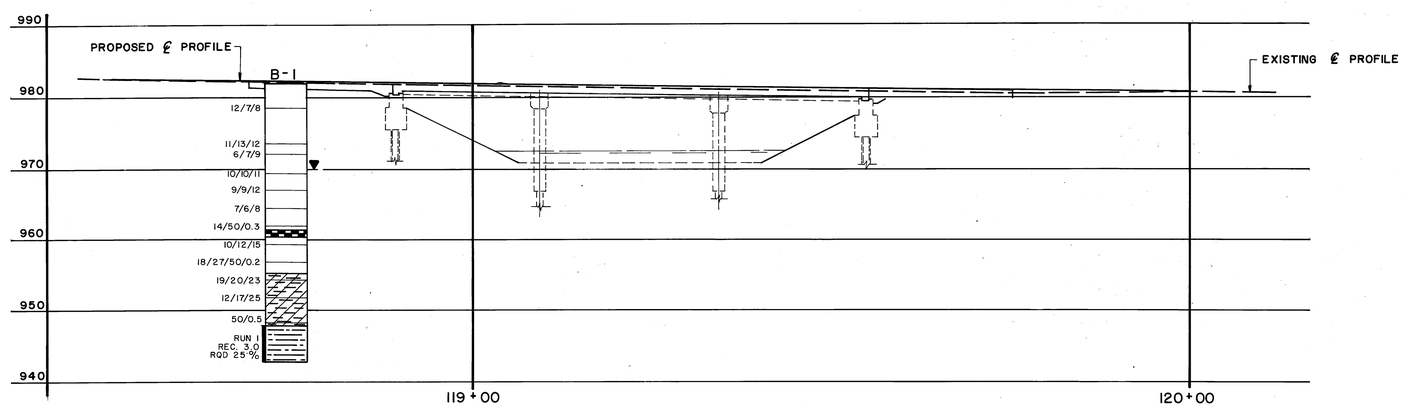


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|---|---|---|
| | | |

3/3

# LOG OF BORING

Date Started 1-12-89 Sampler Type Split Spoon Dia. 2.0 Water Elev. 969.9

Date Completed 1-12-89 Casing: Length -- Dia. ---

Boring No. B-1 Station & Offset Sta. 118 + 74 10' LT.± Surface Elev. 981.9

| ELEV. | DEPTH | STD. PEN. (N) | REC. Ft. | LOSS Ft. | DESCRIPTION | SAMPLE NO. | SAMPLE TYPE | PHYSICAL CHARACTERISTICS % AGG. | % C. SAND | % F. SAND | % SILT | % CLAY | L.L. | P.L. | P.I. | W.C. | SHTL CLASS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 981.9 | 0 | | | | | | | | | | | | | | | | |
| 980.4 | | | | | CONCRETE | | | | | | | | | | | | |
| | | 12-7-8 | 1.5 | | Stiff, brown SANDY SILT, trace gravel, moist. | 1 | SS | 0.1 | 12.3 | 39.1 | * | 48.5 | 26.4 | 20.9 | 5.5 | 26.8 | A-4a |
| | 5 | | | | | | | | | | | | | | | | |
| 974.4 | | | | | | | | | | | | | | | | | |
| | | 11-13-12 | 1.5 | | | 2 | SS | | | | | | | | | | |
| | 10 | 6-7-9 | 1.5 | | | 3 | SS | | | | | | | | | | |
| | | 10-10-11 | 1.5 | | Very stiff to stiff, gray SANDY SILT, trace to little gravel, moist. | 4 | SS | 6.2 | 8.4 | 21.2 | * | 64.2 | 19.5 | 14.3 | 5.2 | 11.5 | A-4a |
| | 15 | 9-9-12 | 1.5 | | | 5 | SS | | | | | | | | | | |
| | | 7-6-8 | 1.5 | | | 6 | SS | 15.6 | 3.8 | 20.8 | 37.8 | 22.0 | -- | -- | -- | 11.0 | A-4a |
| 961.4 | 20 | 14-50/0.3 | 0.8 | | | 7 | SS | 19.4 | 8.4 | 14.2 | * | 58.0 | -- | -- | -- | 9.1 | A-4a |
| 960.4 | | | | | GLACIAL ERRATIC - GNEISS BOULDER | | | | | | | | | | | | |
| | | 10-12-15 | 1.5 | | Very stiff, gray SANDY SILT, trace gravel, moist. | 8 | SS | | | | | | | | | | |
| | 25 | 18-27-50/0.2 | 1.2 | | | 9 | SS | 5.7 | 8.9 | 22.9 | 37.0 | 25.5 | -- | -- | -- | 13.0 | A-4a |
| 955.4 | | | | | | | | | | | | | | | | | |
| | | 19-20-23 | 1.5 | | | 10 | SS | | | | | | | | | | |
| | 30 | 12-17-25 | 1.5 | | Extremely altered, brown SANDSTONE, friable. | 11 | SS | 22.1 | 10.4 | 23.7 | * | 43.8 | -- | -- | -- | 12.5 | ** |
| 947.9 | | 50/0.5 | 0.5 | | AUGER REFUSAL AT 34.0 FEET. | 12 | SS | 10.1 | 9.7 | 30.5 | * | 49.7 | -- | -- | -- | 14.0 | ** |
| | 35 | | | | | | | | | | | | | | | | |
| | | RQD 25% | 3.0 | 2.0 | Light, brown SANDSTONE, moderately altered, medium grained, firm to hard. | Run 1 | NXW | | | | | | | | | | |
| 942.9 | | | | | | | | | | | | | | | | | |
| | 40 | | | | TERMINATION DEPTH 39.0 FEET | | | | | | | | | | | | |

* SILT AND CLAY COMBINED

** NOTE: These samples are extremely altered sandstone and therefore do not have a soil classification.

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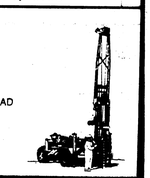

SEAL 223 INR