I-480-4(40)162

| FED. RD. DIVISION | STATE | PROJECT | |
|---|---|---|---|
| 5 | OHIO | I-480-4(40)162 | |

1/107

CUYAHOGA COUNTY
CUY-480-8.26

# STATE OF OHIO
# DEPARTMENT OF TRANSPORTATION

# CUY-480-8.26

## CUYAHOGA COUNTY

## CITY OF CLEVELAND

### GRADE SEPARATION WITH THE CONSOLIDATED RAIL CORPORATION AND THE GREATER CLEVELAND REGIONIONAL TRANSIT AUTHORITY

## CONVENTIONAL SIGNS

MICROFILMED DEC 14 1982

MICROFILMED JUL 6 1984

| | | | |
|---|---|---|---|
| Center Line | | Existing Sewer | |
| Existing R/W | | Proposed Sewer | |
| Proposed R/W | | Existing Manhole | |
| Limited Access Line | —LA— | Proposed Manhole | |
| Temporory R/W | —T— | Existing Catch Basin | |
| Work Agreement Line | | Proposed Catch Basin | |
| Property Line | PL | Manhole Abandoned | |
| Original Lot Line | O.L. 78 / O.L. 79 | Catch Basin Abandoned | |
| Water Line | —W— | Existing Guard Rail | |
| Water Valve | | Proposed Guard Rail | |
| Water Hydrant | | Fence | |
| Gas Line | —G— | Existing Retaining Wall | |
| Gas Valve | | Railroad | |
| Telephone Underground | —T— | Existing Trees Removed | |
| Electric Underground | —E— | | |
| Power Pole | | | |
| Light Pole | | | |
| Telephone Pole | | | |

## INDEX OF SHEETS

Sheet 8 revised 1-4-79 EBL


| | |
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| General Summary | 6-7 |
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Plans Prepared By
ALDEN E. STILSON & ASSOCIATES, LIMITED
Consulting Engineers
75 Public Square
Cleveland Ohio
For
STATE OF OHIO


## LINE DATA

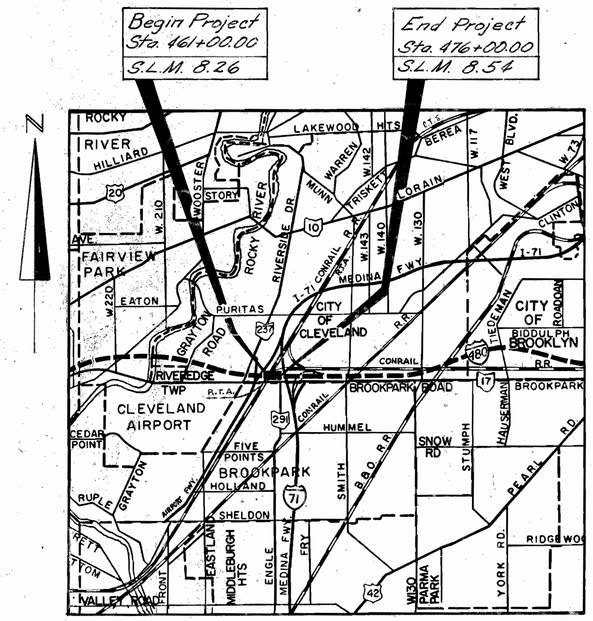
Begin Proj. Work Sta. 461+00.00
End Proj. Work Sta. 476+00.00

Net Length of Project — 1500 Lin. Ft. or 0.284 Miles

Add Work on RR Access Road - - - - 1101.00 Lin. Ft.

Net Length of Work - - - - 2601.00 Lin. Ft. or 0.492 Miles

| SUPPLEMENTAL SPECIFICATIONS | |
|---|---|
| NUMBER | DATE |
| 5625 | 1-11-74 |
| 5713 | 1-11-74 |
| | |
| 801 | 4-25-77 |
| 808 | 1-1-71 |
| 814 | 1-1-69 |
| 836 | 3-12-75 |
| 838 | 1-13-77 |
| 839 | 11-25-70 |
| 844 | 11-8-74 |
| 846 | 4-25-77 |
| 948 | 2-10-74 |
| 950 | 4-25-77 |
| 951 | 4-25-77 |
| | |
| 1001 | 1-3-77 |




## LOCATION MAP

0 1 2 3
SCALE OF MILES

Portion To Be Improved
State Routes
U.S. Routes
Interstate Routes
City Streets
To be Improved Under Separate Contract

## SCALES

| | | |
|---|---|---|
| PLAN | 0–50 | 1" = 50' |
| PROFILE: HORIZ. | 0–50 | 1" = 50' |
| VERT. | 0–10-20 | 1" = 20' / 1" = 10' |
| CROSS SECTIONS | 0–10 | 1" = 10' |
| PAVEMENT DETAILS | 0–20 | 1" = 20' |

| STANDARD DRAWINGS | |
|---|---|
| Number | Date |
| BP-1 | 6-1-65 |
| BP-2 | 12-6-76 |
| BP-3 | 12-6-76 |
| BP-4 | 12-6-76 |
| BP-5 | 8-11-75 |
| BP-9 | 12-6-76 |
| BP-10 | 1-3-75 |
| CB-6 | 6-1-65 |
| F-1 | 5-1-76 |
| F-3 | 5-1-76 |
| F-4 | 5-1-76 |
| F-6 | 5-1-76 |
| GR-1 | 12-6-76 |
| GR-2B | 12-6-76 |
| GR-3 | 12-6-76 |
| HW-4 | 1-1-70 |
| I-2A | 6-6-69 |
| MC-1 | 5-13-69 |
| MC-3 | 6-1-73 |
| MC-4 | 7-26-76 |
| MC-7 | 10-15-76 |
| MC-10 | 5-1-76 |
| MH-1 | 6-12-75 |
| | |
| AS-1-72 | 6-30-72 |
| BR-1-67 | 10-15-71 |
| RB-1-55 | 2-2-59 |
| SD-1-69 | 6-12-69 |
| | |
| HL-1 | 9-6-73 |
| HL-2 | 7-27-73 |
| HL-3 | 7-27-73 |
| HL-4 | 1-21-76 |
| HL-5 | 9-6-73 |
| HL-7 | 1-21-76 |
| HL-8 | 1-21-76 |
| HL-9 | 3-22-77 |
| HL-10 | 1-21-76 |
| HL-11 | 4-6-73 |
| HL-12 | 4-6-73 |
| HL-15 | 1-21-76 |
| HL-16 | 4-6-73 |
| HL-19 | 3-22-77 |
| | |
| TC-22.20 | 8-19-77 |
| TC-7.65 | 10-1-74 |
| TC-12.30 | 10-1-74 |
| TC-21.10 | 10-1-74 |
| TC-21.40 | 8-19-77 |
| TC-22.10 | 10-1-74 |
| TC-31.21 | 8-27-76 |
| TC-32.10 | 8-27-76 |
| TC-32.11 | 8-27-76 |
| TC-41.10 | 8-19-77 |
| TC-41.20 | 4-1-77 |
| TC-42.10 | 8-19-77 |
| TC-42.20 | 4-1-77 |
| TC-51.10 | 6-2-75 |
| TC-51.11 | 6-2-75 |
| TC-52.10 | 4-1-77 |
| TC-52.20 | 4-1-77 |
| TC-61.10 | 8-19-77 |
| TC-72.20 | 8-29-77 |

## "LIMITED ACCESS"

This improvement is especially designed for thru traffic and has been declared a Limited Access Highway or Freeway by action of the Director of Transportation in accordance with the provisions of Sec. 5511.02 of The Revised Code of Ohio.

1977 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.

The Right of Way for this improvement will be provided by the State of Ohio.

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

Approved Ralph C. Taylor
Date 5-13-71 Director of Public Service, City of Cleveland

Approved Thomas M. Krall
Date 5-28-75 District Deputy Director OF TRANSPORTATION

Approved Robert B. Pfeifer
Date 8-22-77 Engineer, BUREAU OF BRIDGES AND STRUCTURAL DESIGN

Approved R. E. Bartlett
Date 11-17-77 CHIEF ENGINEER, PLANNING AND DESIGN

Approved David L. Weir
Date 11-17-77 DIRECTOR, DEPARTMENT OF TRANSPORTATION

NOTE: All references to former Cleveland Transit System appearing throughout this plan shall be considered to pertain to the Greater Cleveland Regional Transit Authority

NOTE: All references to former Penn Central Transportation Co. appearing throughout this plan shall be considered to pertain to the Consolidated Rail Corporation.

| DESIGN DESIGNATION | |
|---|---|
| 1978 A.D.T. = | 36,000 |
| 1990 A.D.T. = | 47,190 |
| D.H.V. | 3,600 |
| D. (directional distribution) | 67% |
| T. (percent B&C trucks) | 4% |
| V. (design speed) | 60 M.P.H. |

NOTE: PROJECT DESIGNATION CUY-80 APPEARING THOUGHOUT THIS PLAN SHALL BE CONSIDERED TO READ CUY-480

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE:

Rev. 12-20-77 Rev. 2-15-78

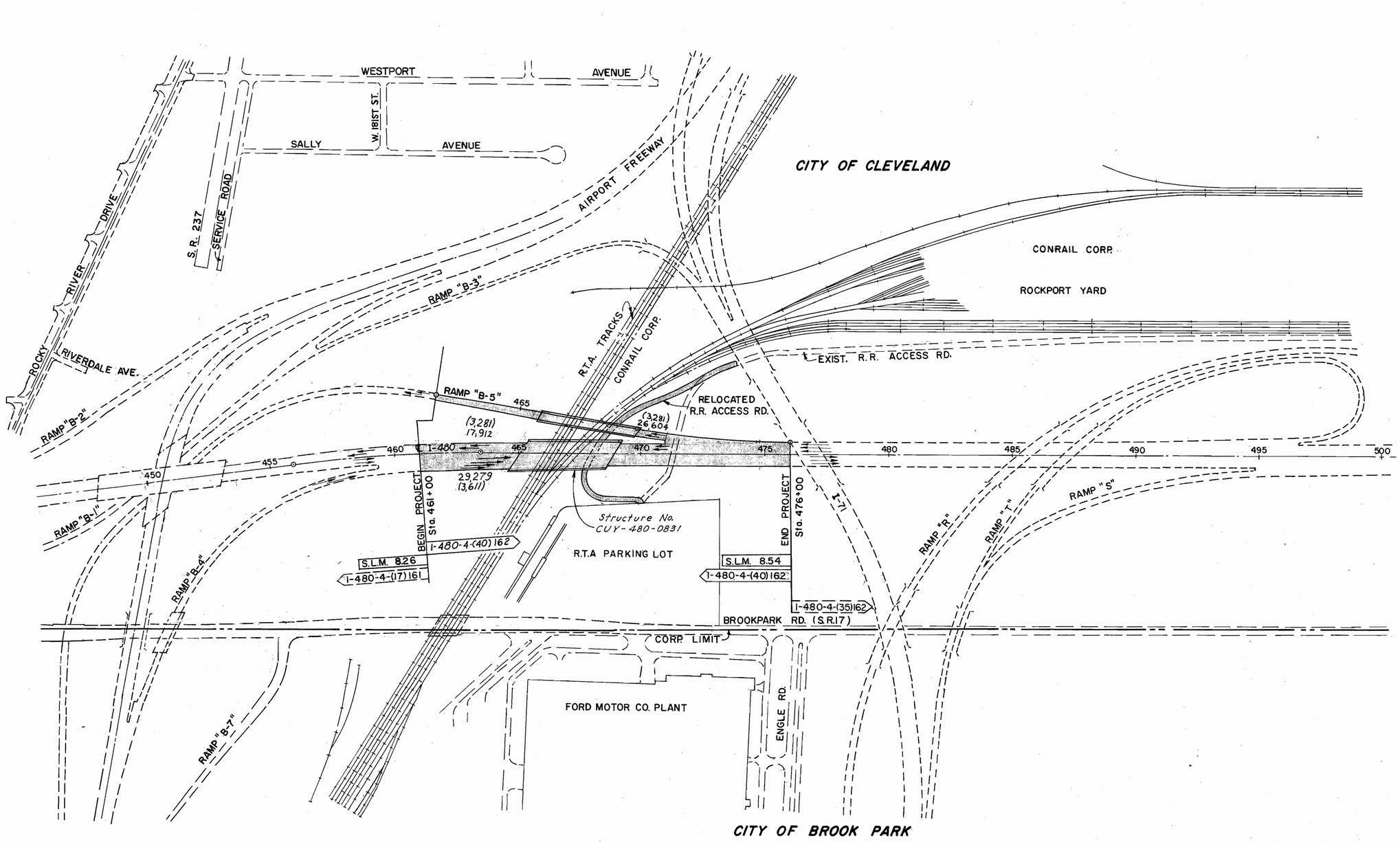
| FILE NUMBER | CUYAHOGA COUNTY CUY.-480-8.26 00387 |
|---|---|
| | DATE OF LETTING |
| | CONTRACT NUMBER |

MICROFILMED
DEC 14 1982

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

2/107

CUYAHOGA COUNTY
CUY-480-8.26



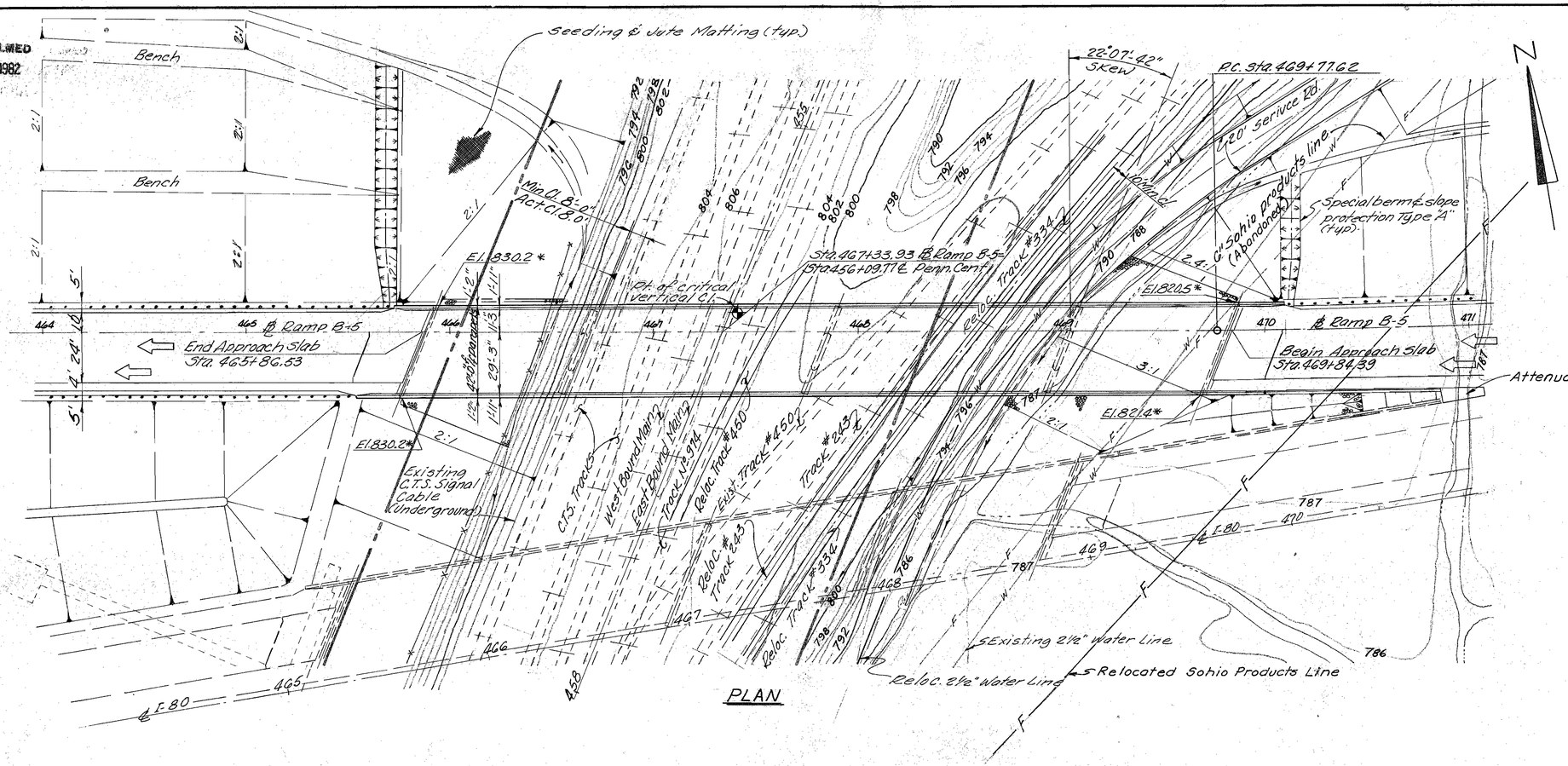

SCHEMATIC PLAN

MICROFILMED
DEC 15 1982

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

88
107

CUYAHOGA COUNTY
CUY-80-8.26




PLAN

## CURVE DATA
## ℄ RAMP-B-5

P.I. Sta. 472+89.50
Δ = 9° 20'-08"
D = 1° 30'-00"
R = 3819.72'
Lc = 622.38'
T = 311.88'

NOTES:

All piles shall be HP 10 x 42 piles.
Estimated average pay lengths are:

| | |
|---|---|
| W. Abutment | 57' |
| E. Abutment | 47' |
| Pier No. 1 | 39' |
| Pier No. 2 | 35' |
| Pier No. 3 | 33' |

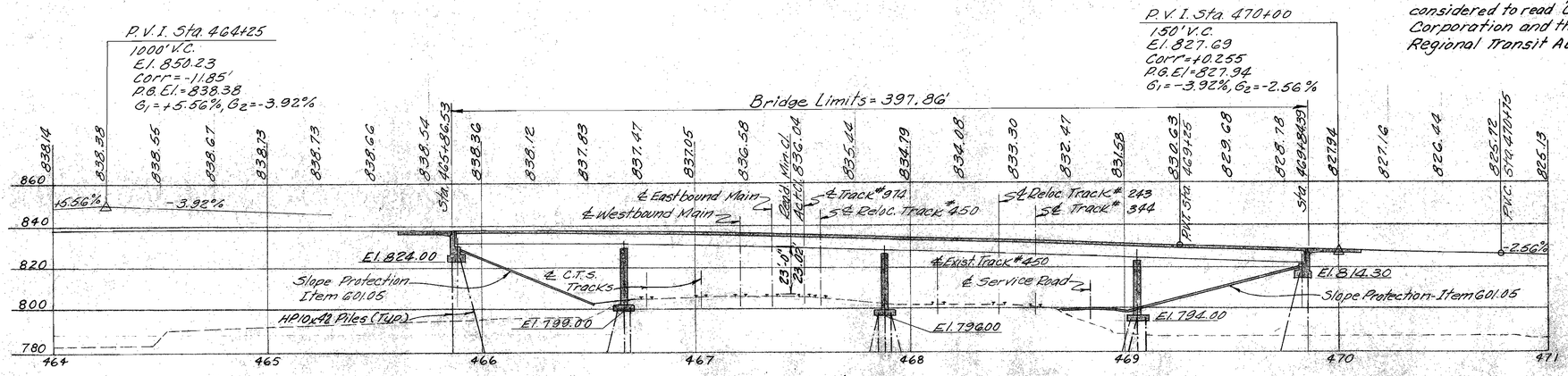
Earthwork limits as shown are schematic. Actual slopes shall conform to plan cross-sections.
For Details of service road see Sht. 15
All Track Relocation Work to be performed by others.

## PROPOSED STRUCTURE

TYPE: Continuous steel girder with reinforced concrete deck and substructure.
SPANS: 77'-6", 119'-0", 119'-0", 77'-6" (Long)
ROADWAY: 42'-0" f/f parapets of BR-1-67 railing
LOADING: HS 20-44
WEARING SURFACE: Monolithic Concrete
SKEW: 22° 07'-42" Lt. forward.
ALIGNMENT: Tangent & 1° 30' Curve
SUPERELEVATION: Variable (0.025% Max.)
APPROACH SLABS: AS-1-72 (25' long) Modified

* Elevations marked with an asterisk are top of slope at face of abutments.

Note: All references to the Penn Central and Cleveland Transit System shall be considered to read Consolidated Rail Corporation and the Greater Cleveland Regional Transit Authority respectively.




PROFILE along ℄ RAMP B-5

TRAFFIC ESTIMATE
Design Year - 1987
Total A.D.T. - 17,736

Modify Std. Drwg. AS-1-72 by changing the cover over the top rebars from 2" to 3" and changing from full width to the width of the approach pavement. Omit jacking holes.

1/12

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

SITE PLAN
BRIDGE No. CUY-80-
RAMP B-5 over PENN CENTRAL and CLEVELAND TRANSIT SYSTEM
CUYAHOGA COUNTY Sta. 465+86.53 Sta. 469+84.39

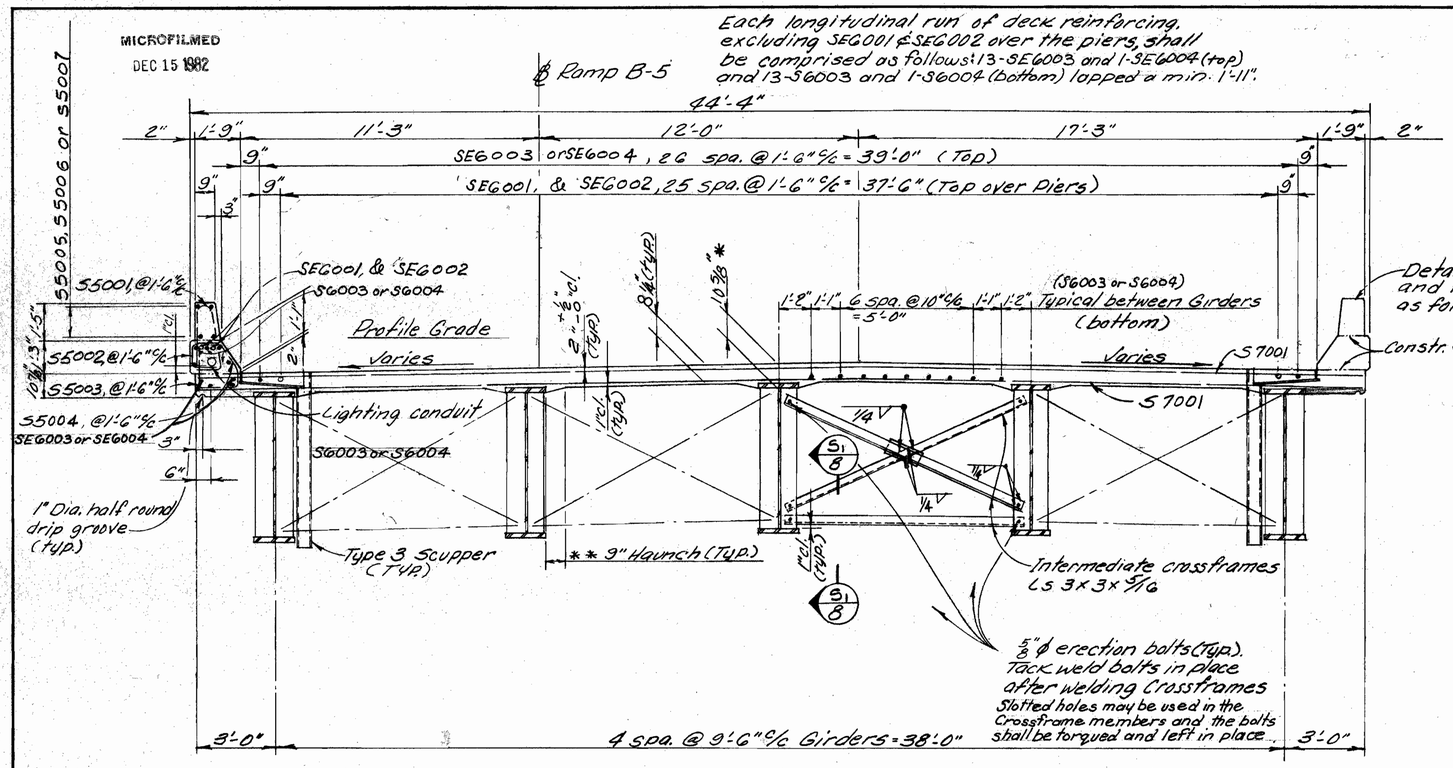
| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| R.J.P. | R.J.P. | R.T. | R.S.S. | G.N.M. | 9/23/69 | |

MICROFILMED
DEC 15 1982

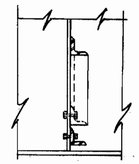
| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | |



CUYAHOGA COUNTY
CUY.-80-8.26




TRANSVERSE SECTION



SECTION S1-S1

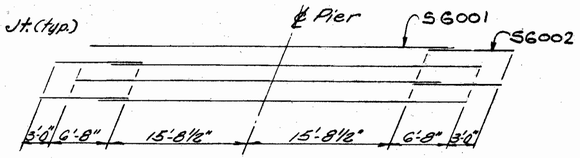



DIAGRAM SHOWING STAGGER OF SEG001 & SEG002, BARS OVER PIERS

NOTES:

*This is the design dimension. The quantity of deck concrete to be paid for shall be based upon this dimension, even though deviation from it may necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per 511.18.

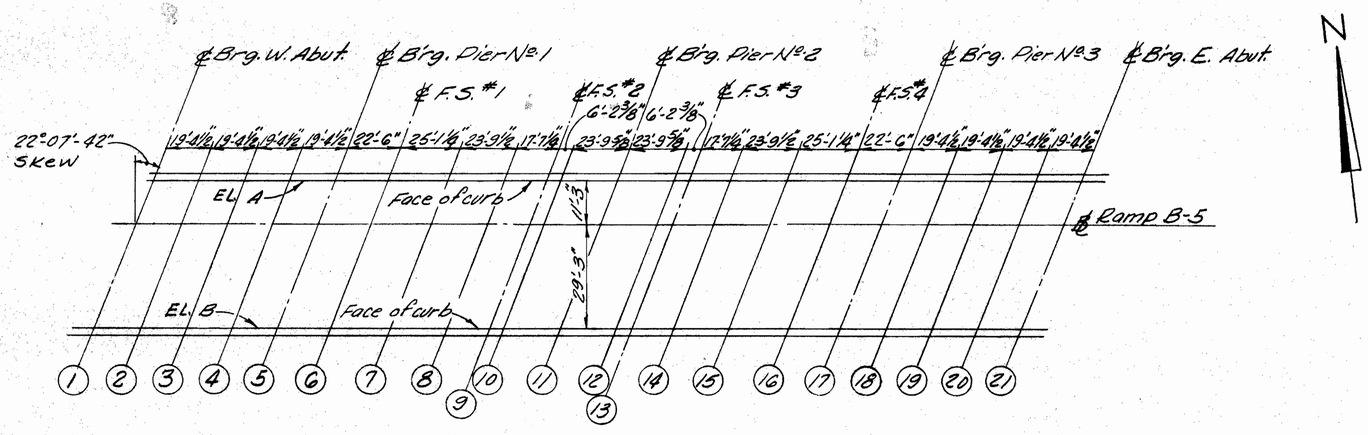
**A typical haunch width of 9" shall be used for all girders in computing quantity of concrete. However the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

For transverse slab reinforcing see Sht. 9/12

Concrete and reinforcing steel for parapets shall be included for payment with their respective items. Item 511 superstructure concrete and Item 509 reinforcing steel.

For Scupper Details see Sht. 9/12

Longitudinal reinforcing steel shall be field cut as necessary to avoid interference with scuppers.




DECK ELEVATION LOCATIONS

NOTE: The deck elevations shown are those which are required prior to placing of the concrete deck. Proper allowance has been made for the dead load deflection caused by the weight of the concrete.

TABLE OF DECK ELEVATIONS (Top of Portland Cement concrete slab)

| LINE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Elev. A | 838.25 | 838.10 | 837.90 | 837.64 | 837.35 | 837.01 | 836.58 | 836.08 | 835.65 | 835.50 | 834.88 | 834.25 | 834.07 | 833.57 | 832.81 | 831.92 | 831.07 | 830.33 | 829.65 | 829.05 | 828.51 |
| Elev. B | 838.44 | 838.32 | 838.16 | 837.92 | 837.67 | 837.39 | 836.99 | 836.53 | 836.12 | 835.98 | 835.40 | 834.80 | 834.63 | 834.17 | 833.45 | 832.63 | 831.88 | 831.22 | 830.55 | 829.98 | 829.51 |

8/12

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

**SUPERSTRUCTURE DETAILS**
**BRIDGE No**
RAMP B-5 over PENN CENTRAL and CLEVELAND TRANSIT SYSTEM
STA. 465+86.53
CUYAHOGA COUNTY STA. 469+84.39

| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| R.S.S. | R.T. | | B.I.P. | G.W.H. | 9/25/69 | |

MICROFILMED
DEC 15 1982

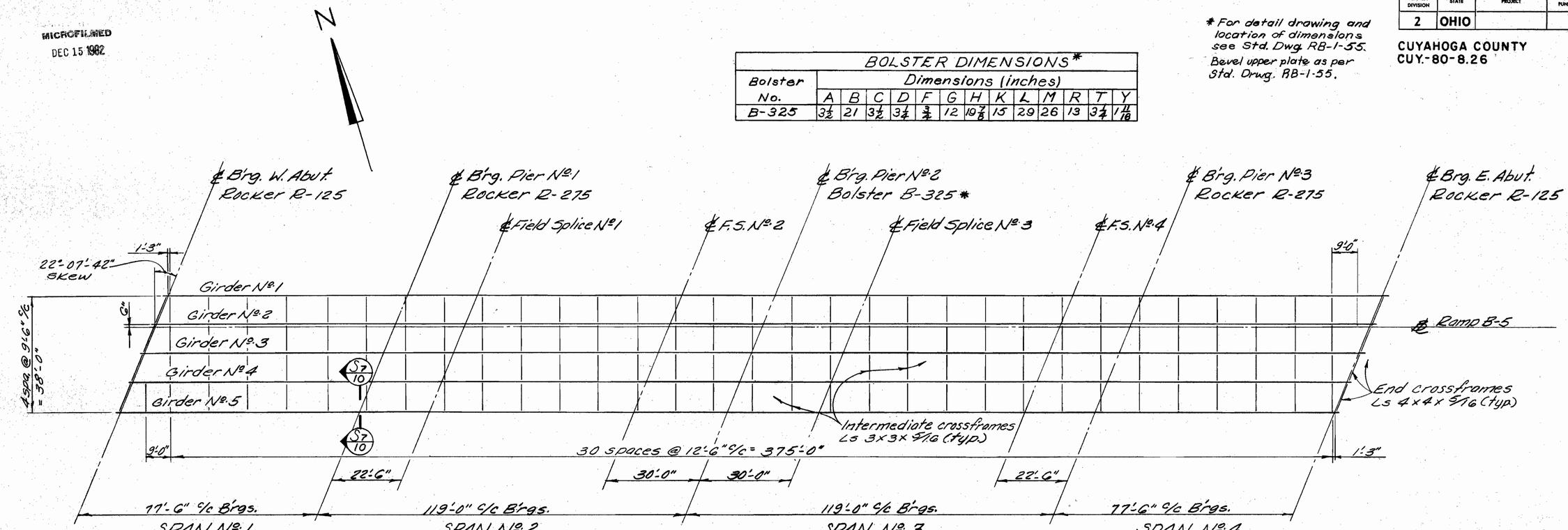
| FED. RD. DIVISION | STATE | PROJECT | TYPE FUNDS |
|---|---|---|---|
| 2 | OHIO | | |

97/107

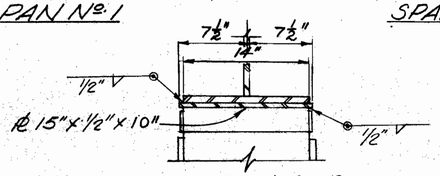
CUYAHOGA COUNTY
CUY.-80-8.26

* For detail drawing and location of dimensions see Std. Dwg. RB-1-55. Bevel upper plate as per Std. Drwg. RB-1-55.

| BOLSTER DIMENSIONS* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bolster No. | Dimensions (inches) | | | | | | | | | | | | |
| | A | B | C | D | F | G | H | K | L | M | R | T | Y |
| B-325 | 3 1/2 | 21 | 3 1/2 | 3 1/4 | 3/4 | 12 | 19 7/8 | 15 | 29 | 26 | 13 | 3 1/4 | 1 11/16 |




## FRAMING PLAN

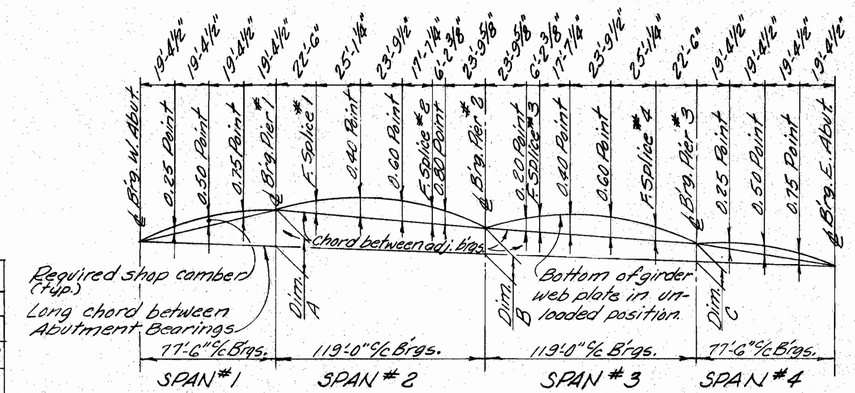



SECTION S7-S7

Note: Place intermediate crossframes normal to girders

STEEL ERECTION: During the erection of end dams and crossframes care shall be taken to insure that girders, bearing parts and bridge seats remain in bearing contact.

Note: The 1/2" plate shown shall be centered on the brg. ℄. Typical for pier 1 & 3 brg. units.




## CAMBER & BLOCKING DIAGRAM

## DEFLECTION AND CAMBER

| Location | Span No. 1 | | | Span No. 2 | | | | Span No. 3 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Girder No. | 1 thru 5 | | | 1 thru 5 | | | | 1 thru 3 | | | | | 4 | | | | | |
| Point along Girder | 0.25 | 0.50 | 0.75 | F.S.#1 | 0.40 | 0.60 | F.S.#2 | 0.80 | 0.20 | F.S.#3 | 0.40 | 0.60 | F.S.#4 | 0.20 | F.S.#3 | 0.40 | 0.60 | F.S.#4 |
| Deflection due to weight of steel | 1/16 | 1/16 | 0 | 1/16 | 3/16 | 1/8 | 1/16 | 1/16 | 1/16 | 1/16 | 1/8 | 3/16 | 1/16 | 1/16 | 1/16 | 1/8 | 3/16 | 1/16 |
| Deflection due to remaining dead load | 1/4 | 1/4 | 1/16 | 3/8 | 13/16 | 3/4 | 1/4 | 1/4 | 1/4 | 1/4 | 3/4 | 13/16 | 3/8 | 1/4 | 1/4 | 3/4 | 13/16 | 3/8 |
| Adjust. req'd. for vertical curve | 5/8 | 7/8 | 5/8 | 1 1/4 | 1 15/16 | 1 15/16 | 1 9/16 | 1 5/16 | 1 5/16 | 1 1/2 | 1 15/16 | 1 15/16 | 1 1/4 | 1 3/16 | 1 3/8 | 1 11/16 | 1 15/16 | 1 1/16 |
| Required shop camber | 15/16 | 1 3/16 | 11/16 | 1 11/16 | 2 15/16 | 2 13/16 | 1 7/8 | 1 5/8 | 1 5/8 | 1 13/16 | 2 13/16 | 2 15/16 | 1 11/16 | 1 1/2 | 1 11/16 | 2 9/16 | 2 15/16 | 1 1/2 |

| Location | Span No. 3 | | | | | Span No. 4 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Girder No. | 5 | | | | | 1 | | | 2 | | | 3 | | | 4 | | | 5 | | |
| Point along Girder | 0.20 | F.S.#3 | 0.40 | 0.60 | F.S.#4 | 0.25 | 0.50 | 0.75 | 0.25 | 0.50 | 0.75 | 0.25 | 0.50 | 0.75 | 0.25 | 0.50 | 0.75 | 0.25 | 0.50 | 0.75 |
| Deflection due to weight of steel | 1/16 | 1/16 | 1/8 | 3/16 | 1/16 | 0 | 1/16 | 1/16 | 0 | 1/16 | 1/16 | 0 | 1/16 | 1/16 | 0 | 1/16 | 1/16 | 0 | 1/16 | 1/16 |
| Deflection due to remaining dead load | 1/4 | 1/4 | 3/4 | 13/16 | 3/8 | 1/16 | 1/4 | 1/4 | 1/16 | 1/4 | 1/4 | 1/16 | 1/4 | 1/4 | 1/16 | 1/4 | 1/4 | 1/16 | 1/4 | 1/4 |
| Adjust. req'd. for vertical curve | 1 1/16 | 1 3/16 | 1 7/16 | 1 3/16 | 1 1/16 | -1 5/16 | -2 | -1 1/2 | -1 1/8 | -1 5/16 | -1 9/16 | -7/8 | -1 3/4 | -1 1/2 | -1 3/16 | -1 13/16 | -1 9/16 | -1 3/16 | -1 5/16 | -1 3/4 |
| Required shop camber | 1 3/8 | 1 1/2 | 2 5/16 | 2 3/16 | 1 1/8 | -1 1/4 | -1 11/16 | -1 3/16 | -1 1/16 | -1 5/8 | -1 1/4 | -1 3/16 | -1 7/16 | -1 3/16 | -3/4 | -1 1/2 | -1 1/4 | -3/4 | -1 5/8 | -1 7/16 |

## BLOCKING DIMENSIONS

| Girder No. | Dim. A | Dim. B | Dim. C |
|---|---|---|---|
| 1 | 1'-0 7/16" | 1'-6 11/16" | 0'-7 5/8" |
| 2 | 1'-0 9/16" | 1'-6 7/16" | 0'-8 1/4" |
| 3 | 1'-0 3/4" | 1'-6 15/16" | 0'-8 5/16" |
| 4 | 1'-0 7/16" | 1'-6 3/16" | 0'-8 7/16" |
| 5 | 1'-0" | 1'-5" | 0'-7 1/4" |

10/12

ALDEN E. STILSON & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
CLEVELAND, OHIO COLUMBUS, OHIO WHEELING, W. VA.

**SUPERSTRUCTURE DETAILS**

BRIDGE No.
RAMP B-5 over PENN CENTRAL and CLEVELAND TRANSIT SYSTEM
STA. 465+86.53
CUYAHOGA COUNTY STA. 469+84.39

| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| R.S.S. | R.T. | | B.I.P. | G.W.U. | 9/29/69 | |

K.&E. - Cleveland 107155