| FED. RD. DIVISION | STATE | PROJECT | |
|---|---|---|---|
| 2 | OHIO | F1042( 13 ) | |

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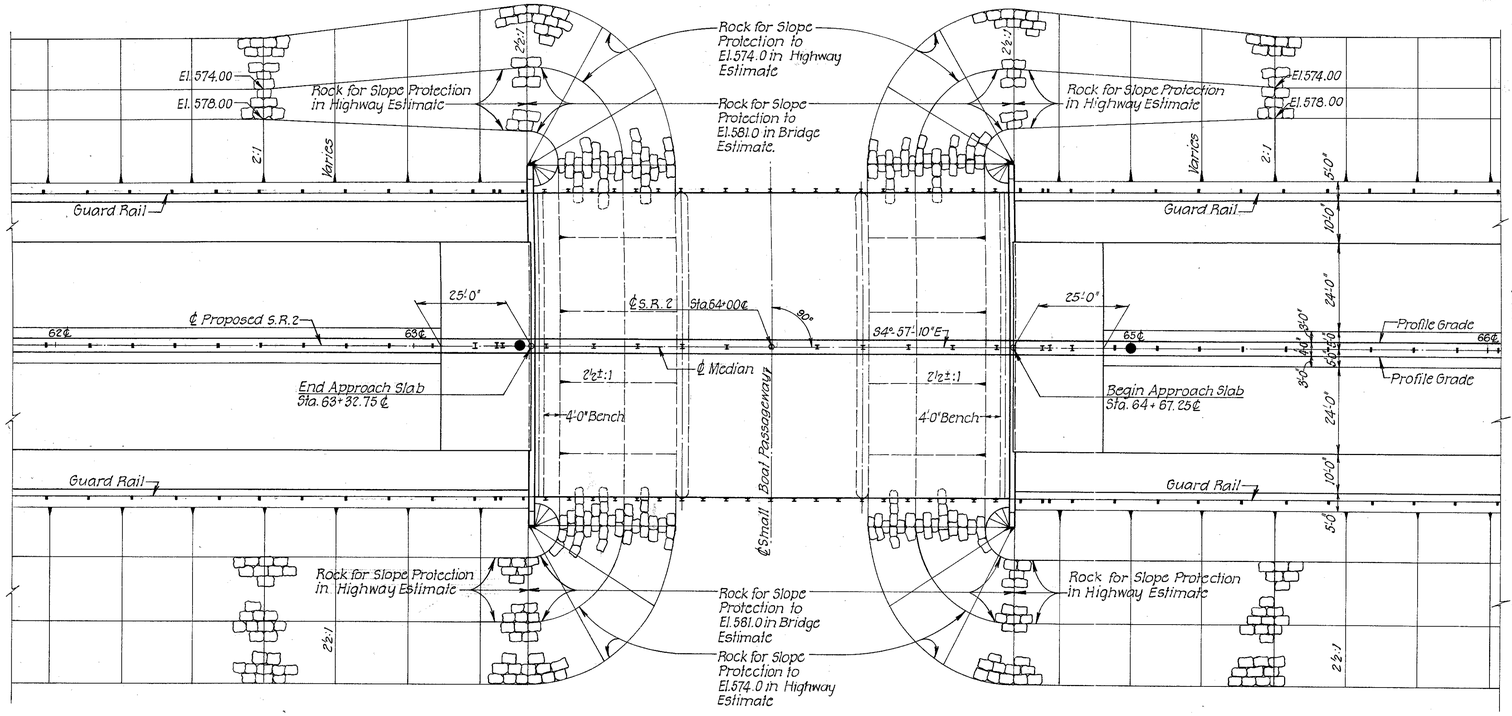
46

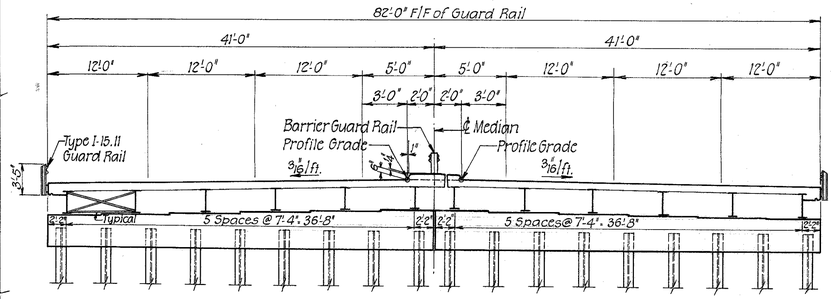
OTT-2-27.36
ERI-2-0.15



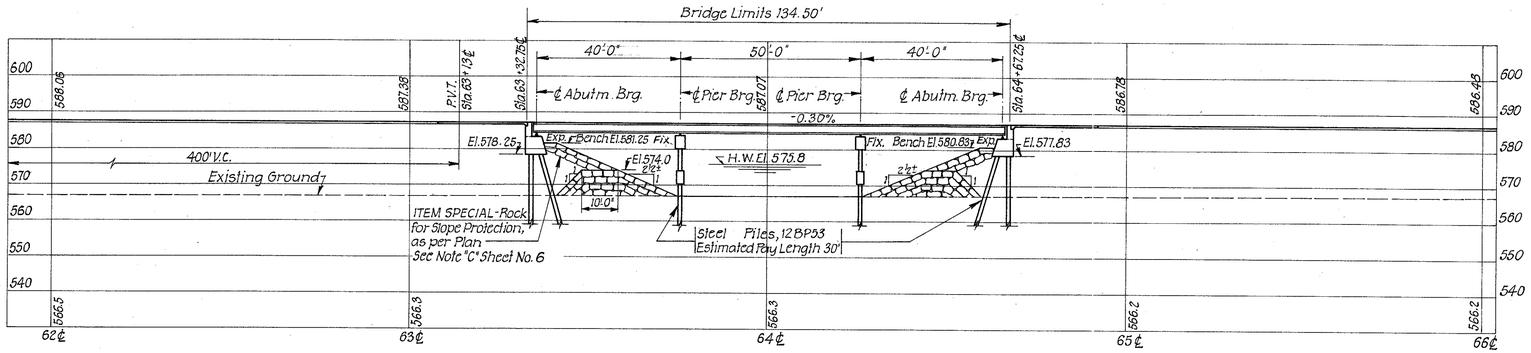

PLAN

● Indicate location of borings

FOUNDATION SOUNDINGS. Foundation design and foundation quantities are based on a study of rod soundings and soil-samplings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division Office, but the state does not guarantee the accuracy thereof.




SECTION THRU BRIDGE




PROFILE ON GRADE LINE OF PROPOSED S.R. 2

**PROPOSED STRUCTURE**

TYPE: Continuous Steel Beam with reinforced Conc. Deck and Substructure
SPANS: 40'-50'-40'
SKEW: 0°
WEARING SURFACE: 1" Monolithic
ROADWAY: 82'-0" face to face of Guard Rail
LOAD FREQUENCY: C.F. 2000# Adequate for AASHO alternate loading
APPROACH SLABS: 25' Long
ALIGNMENT: Tangent

KING & GAVARIS
CONSULTING ENGINEERS

## SITE PLAN

BRIDGE NO. OTT-2-2820
OVER SANDUSKY BAY
(SMALL BOAT PASSAGEWAY)

OTTAWA COUNTY — STA. 63+32.75℄
STA. 64+67.25℄

| PRESENT TOPOGRAPHY | | PROPOSED WORK | | | |
|---|---|---|---|---|---|
| SURVEYED | DRAWN | DESIGNED | DRAWN | CHECKED | REVISIONS |
| AERIAL SURVEY | AERIAL SURVEY | W.S.G. | V.B. | W.S.G. | |

| FED. RD. DIVISION | STATE | PROJECT | |
|---|---|---|---|
| 2 | OHIO | F1042( 13 ) | |

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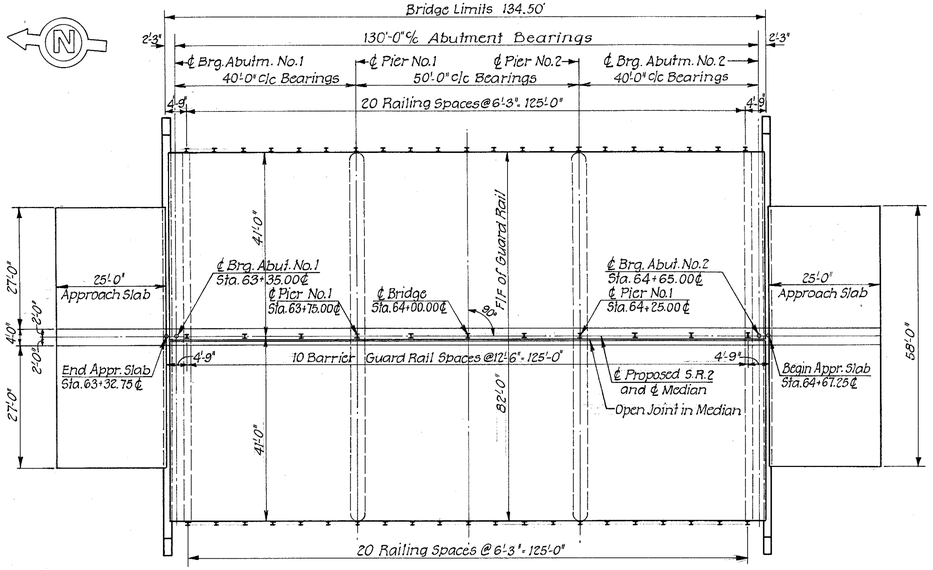
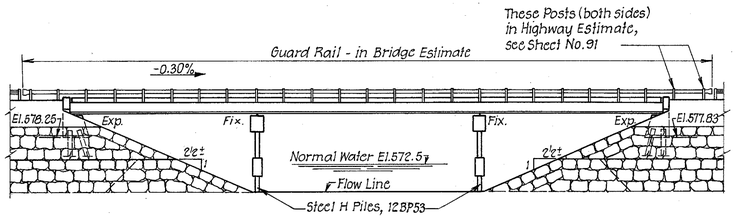
OTT-2-27.36
ERI-2-0.15




PLAN

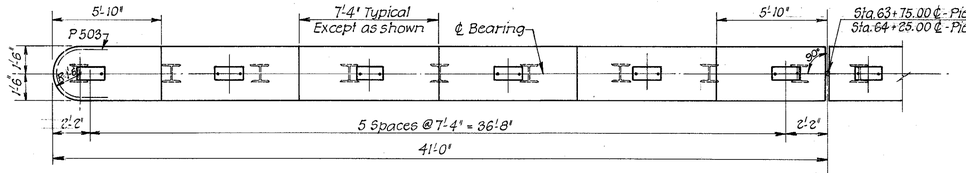



ELEVATION

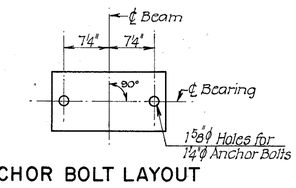
## PIER ELEVATIONS

| | A .18 | B .30 | C .41 | D .53 | E .64 | F .75 | G |
|---|---|---|---|---|---|---|---|
| PIER NO.1 | 583.14 | 583.26 | 583.37 | 583.49 | 583.60 | 583.71 | 579.67 |
| PIER NO.2 | 582.99 | 583.11 | 583.22 | 583.34 | 583.45 | 583.56 | 579.50 |
| | 3.03 | .15 | .26 | .38 | .49 | .60 | |

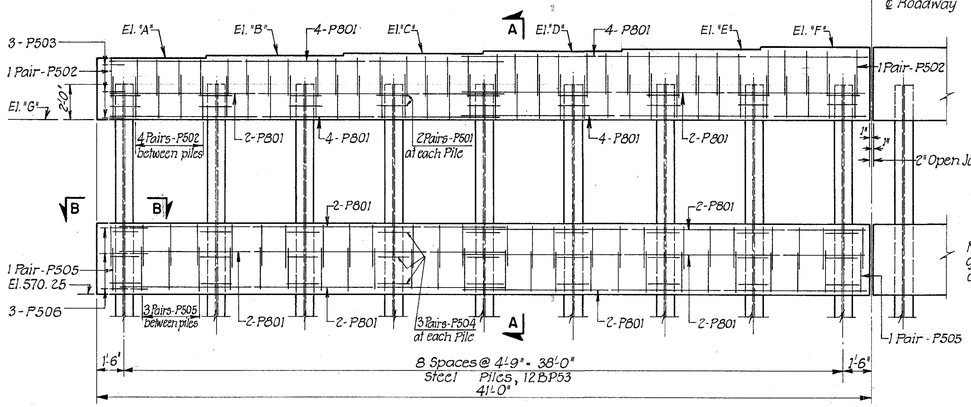
PIER NOTES
1. All reinforcing steel shall be 2" clear from face of concrete unless otherwise shown.
2. For Reinforcing Steel List, see Sheet No. 97




HALF PLAN

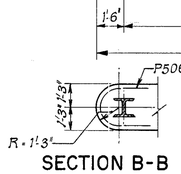



ANCHOR BOLT LAYOUT



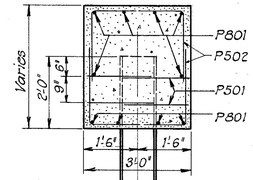

HALF ELEVATION

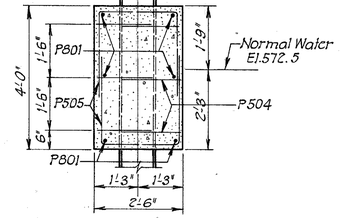
CAPPED PILE PIERS




SECTION B-B

NOTE: For electrical ground wire in pier cap, see Sheet No.116




SECTION A-A

## ESTIMATED QUANTITIES

| Item | Total | Unit | Description | Super. | Abut. | Piers | Gen'l. |
|---|---|---|---|---|---|---|---|
| E-2 | 143 | Cu.Yd. | Unclassified Excavation | | 143 | | |
| S-1 | 320 | Cu.Yd. | Class "C" Concrete, Superstructure | 320 | | | |
| S-1 | 128 | Cu.Yd. | Class "C" Concrete, Pier Caps & Diaphragms | | | 128 | |
| S-1 | 210 | Cu.Yd. | Class "E" Concrete, Abutments | | 210 | | |
| S-3 | 15 | Lin.Ft. | Waterproofing premolded sealing strip | | 15 | | |
| S-4 | 118,345 | Lb. | Reinforcing Steel | 90,505 | 14,938 | 12,902 | |
| S-7 | 243,200 | Lb. | Structural Steel | 243,200 | | | |
| S-8 | 243,200 | Lb. | Field painting of structural steel | 243,200 | | | |
| S-9 | 72 | Sq.Ft. | 1" thick preformed expansion joint filler | | 72 | | |
| S-14 | 304 | Lin.Ft. | Railing (Type 1-15,11 with galvanized steel posts and bolts) | 304 | | | |
| S-14 | 152 | Lin.Ft. | Railing (Barrier Guard-Type 1-15,11 with galvanized steel posts & bolts) | 152 | | | |
| S-16 | Lump | Lump Sum | First Test Pile | | | | Lump |
| S-18 | 2520 | Lin.Ft. | Steel Piles, 12 BP 53 | | 1440 | 1080 | |
| S-25 | Lump | Lump Sum | Electric Lighting System* | | | | Lump |
| S-29 | 50 | Cu.Yd. | Porous Backfill | | 50 | | |
| SPECIAL | 700 | Cu.Yd. | Rock for Slope Protection, as per Plan** | | | | 700 |
| SPECIAL | 320 | Each | Water-reducing set-retarding admixture*** | 320 | | | |

* For Quantities breakdown see Estimated Quantities - Lighting Sheet No. 115
** Rock for Slope Protection, as per plan see Note "C" Sheet No. 6
*** See Proposal Note.

## GENERAL NOTES

REFERENCE shall be made to Standard Drawings AS-1-54 revised 12-1-54, CSB-1-55 Sheets 1 & 2 revised 2-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirments of "Design Specifications for Highway Structures" of the State of Ohio Department of Highways, dated 9-1-57 together with current revisions therefore.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments.

PILES shall be driven to a minimum bearing capacity of 30 tons per pile for the abutments and piers.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope (bottom of rock slope protection) and to the level of the subgrade for a distance of 200 ft. back of the abutments, after which excavation shall be made for the abutment. All embankment should be in place before the abutments are constructed.

KING & GAVARIS
CONSULTING ENGINEERS

# GENERAL PLAN AND PIERS

BRIDGE NO. OTT-2-2820
OVER SANDUSKY BAY
(SMALL BOAT PASSAGEWAY)

OTTAWA COUNTY — STA. 63+32.75 ℄ STA. 64+67.25 ℄

| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| W.F.L. | V.B. | P.A.M. | W.F.L. | WC | 12-8-61 | 9-17-62 |

| FED. RD. DIVISION | STATE | PROJECT | |
|---|---|---|---|
| 2 | OHIO | FI042 ( 13 ) | |

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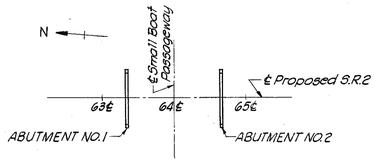
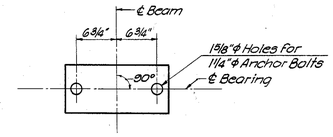
OTT-2-27.36
ERI-2-0.15

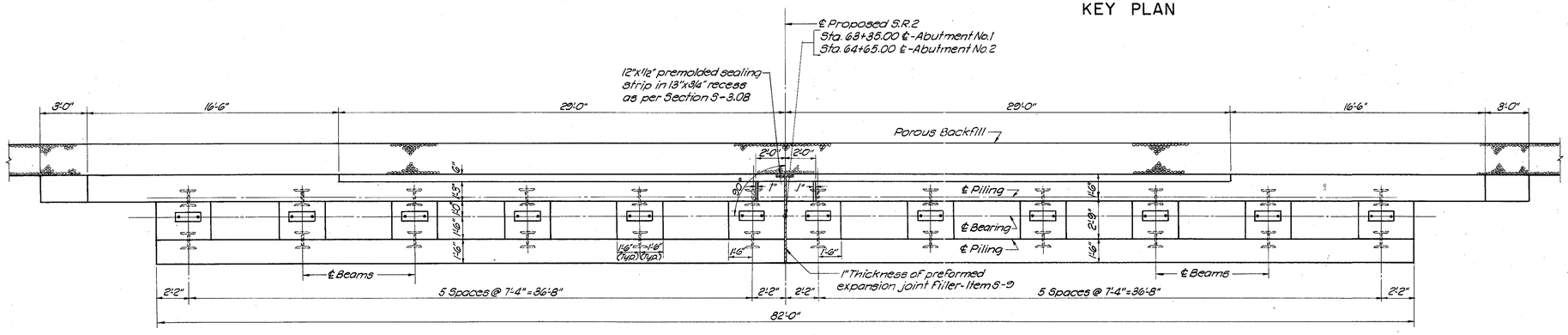
POROUS BACKFILL shall extend upward to the approach slab and to the paved shoulders, and outward to the surface of the embankment slopes. Excavation therefore, in excess of that required for the construction of the abutment, shall be considered as paid for in the price per cu. yd. paid for porous backfill.



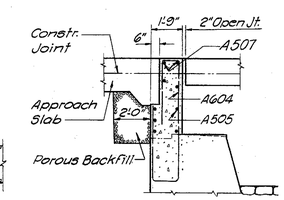

KEY PLAN



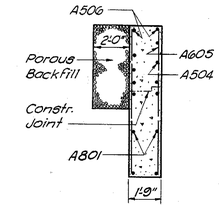

ANCHOR BOLT LAYOUT



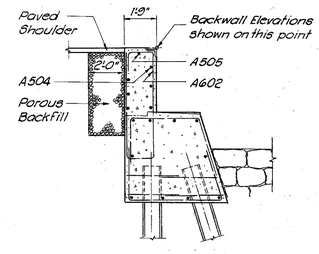

PLAN



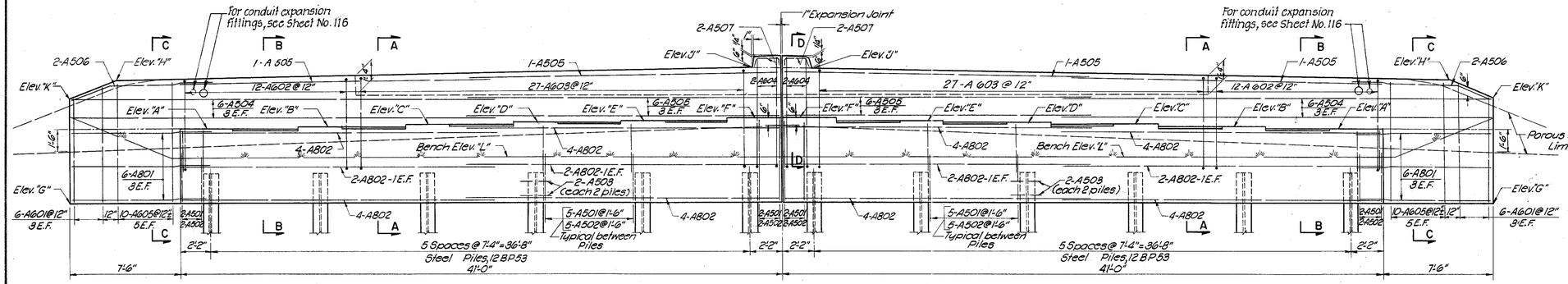

SECTION D-D



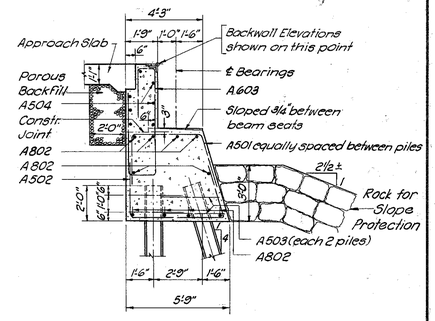

SECTION C-C




SECTION B-B




ELEVATION




SECTION A-A

| ABUTMENT ELEVATIONS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | A .28 | B .39 | C .50 | D .62 | E .73 | F .85 | G | H | J | K | L |
| ABUTMENT NO.1 | 583.24 | 583.35 | 583.40 | 583.38 | 583.27 | 583.81 | 578.25 | 586.59 | 587.27 | 585.39 | 581.25 |
| ABUTMENT NO.2 | 582.85 | 582.96 | 583.08 | 583.13 | 583.31 | 583.42 | 577.83 | 586.20 | 586.88 | 585.00 | 580.83 |
| | .89 | 3.00 | .12 | .23 | .35 | .46 | | | | | |

NOTES:

1. All reinforcing steel shall be 2" clear from face of concrete unless otherwise shown.
2. Designations used are as follows: E.F. = Each face.
3. For Reinforcing Steel List, see Sheet No. 97

KING & GAVARIS
CONSULTING ENGINEERS

# ABUTMENTS

BRIDGE NO. OTT-2-2820
OVER SANDUSKY BAY
(SMALL BOAT PASSAGEWAY)
OTTAWA COUNTY

STA. 63+32.75 ℄
STA. 64+67.25 ℄

| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| V.T.L. | P.A.M. | A.W. | V.T.L. | | 12-8-61 | 9-11-62 |

| FED. RD. DIVISION | STATE | PROJECT | |
|---|---|---|---|
| 2 | OHIO | F1042 ( 13 ) | |

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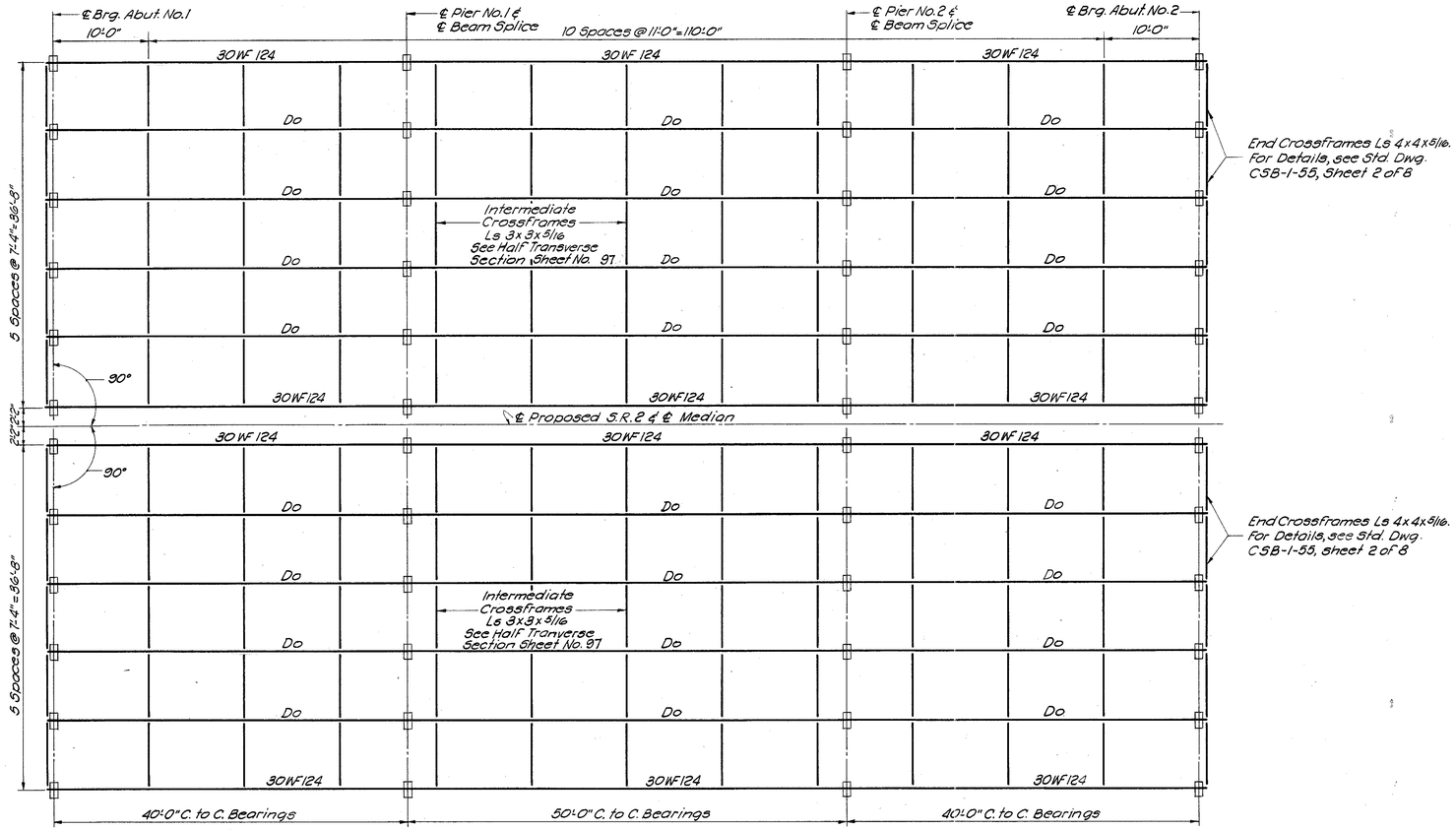
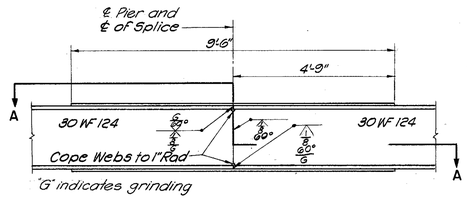
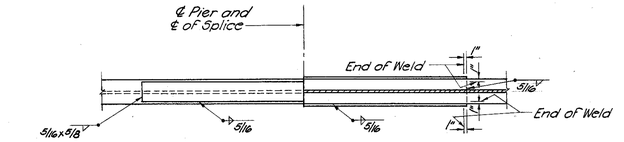



FRAMING PLAN

| DEFLECTIONS AND CAMBER | | | | |
|---|---|---|---|---|
| LOCATION | OUTSIDE BEAMS | | INSIDE BEAMS | |
| | END SPAN | MID. SPAN | END SPAN | MID. SPAN |
| Deflection due to Wt. of steel | 0 | 0 | 0 | 0 |
| Deflection due to remaining D.L. | 1/8" | 1/8" | 1/8" | 1/8" |
| Sum of Deflections | 1/8" | 1/8" | 1/8" | 1/8" |
| Required Camber | 0 | 0 | 0 | 0 |




ELEVATION



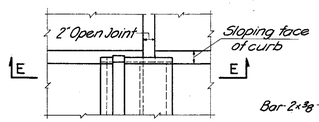

SECTION A-A

## BEAM SPLICE DETAILS

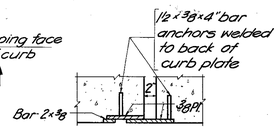
BEAM SPLICE WELDING PROCEDURE

1. Raise the Abutment ends of the beams 3/8".
2. Built - weld the beam flanges and web, using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location, until welds are completed.
3. Weld the bottom and top moment plates.
4. Lower the beam ends to final position.

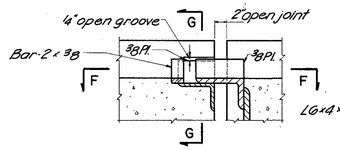
NOTES:
1. For Bearing Plate Details see Std. Dwg. CSB-1-55 Sheet No. 1 of 8.
2. Provide Bumper Ls-8"x6"x3/4" at Abutments, see Standard Drawing CSB-1-55, sheet No. 1 of 8.



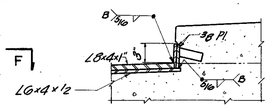

PART PLAN




SECTION F-F




SECTION E-E




SECTION G-G

CURB PLATE DETAILS AT MEDIAN

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CONSULTING ENGINEERS

STEEL FRAMING PLAN

BRIDGE NO. OTT-2-2820
OVER SANDUSKY BAY
(SMALL BOAT PASSAGEWAY)
OTTAWA COUNTY

STA. 63+32.75 ℄
STA. 64+67.25 ℄

| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| W.J.L. | A.J. | A.M.B. | W.J.L. | JLC | 12-8-61 | |

| FED. RD. DIVISION | STATE | PROJECT | |
|---|---|---|---|
| 2 | OHIO | F1042 ( 13 ) | |

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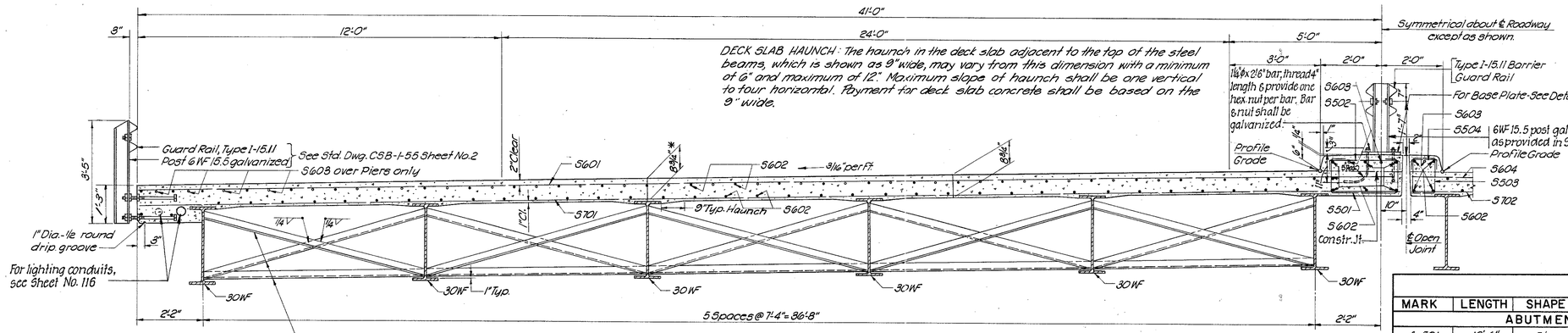
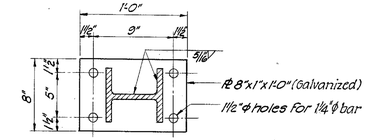
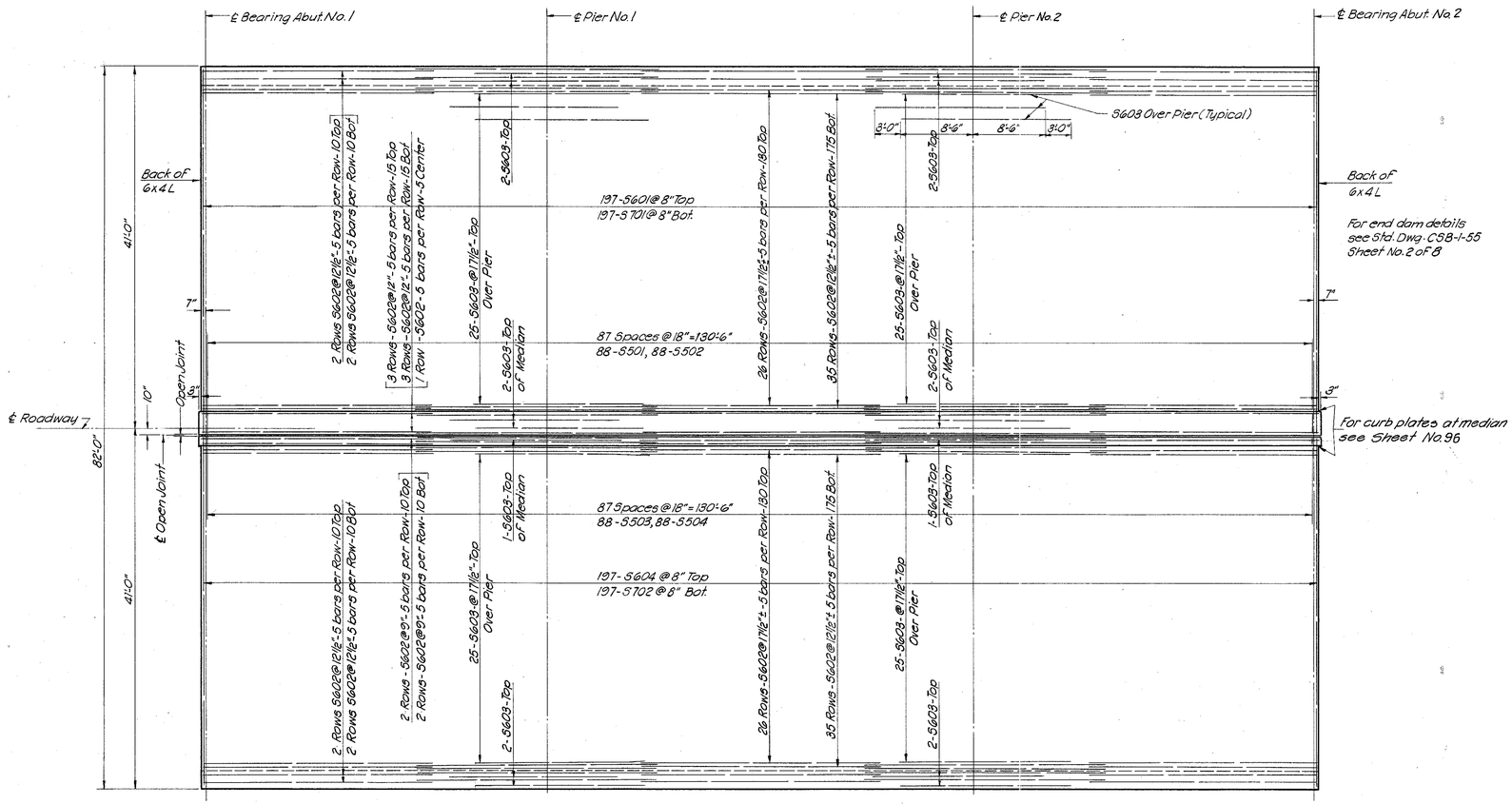



HALF TRANSVERSE SECTION

* This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.




DETAIL "A"




SLAB REINFORCING

## REINFORCING STEEL LIST

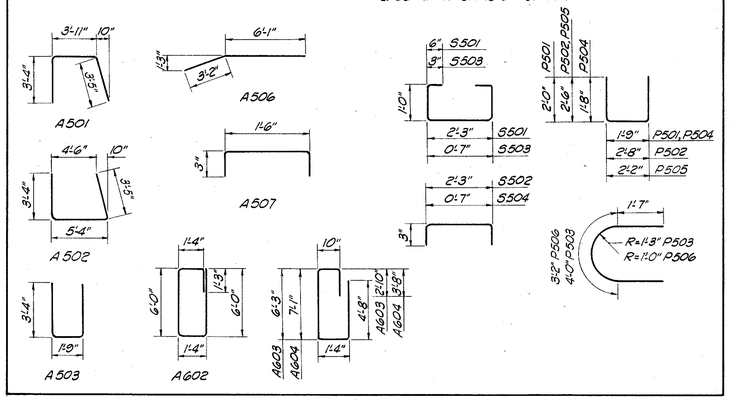
| MARK | LENGTH | SHAPE | NO. | WEIGHT |
|---|---|---|---|---|
| **ABUTMENTS** | | | | |
| A 501 | 10'-6" | Bt. | 116 | 1270 |
| A 502 | 11'-11" | Bt. | 116 | 1442 |
| A 503 | 8'-3" | Bt. | 96 | 826 |
| A 504 | 28'-8" | Str. | 24 | 718 |
| A 505 | 21'-2" | Str. | 32 | 706 |
| A 506 | 9'-3" | Bt. | 8 | 77 |
| A 507 | 1'-10" | Bt. | 8 | 15 |
| A 601 | 7'10" thru 7'10" Varies by 5" | Str. | 8 - Series of 8 bars | 267 |
| A 602 | 15'-8" | Bt. | 48 | 1130 |
| A 603 | 15'-8" | Bt. | 108 | 2541 |
| A 604 | 17'-4" | Bt. | 8 | 208 |
| A 605 | 8'-0" | Str. | 40 | 481 |
| A 801 | 10'-0" | Str. | 24 | 641 |
| A 802 | 21'-7" | Str. | 80 | 4610 |
| **PIERS** | | | | |
| P 501 | 5'-7" | Bt. | 144 | 889 |
| P 502 | 7'-6" | Bt. | 272 | 2128 |
| P 503 | 7'-2" | Bt. | 12 | 90 |
| P 504 | 4'-9" | Bt. | 216 | 1070 |
| P 505 | 7'-0" | Bt. | 208 | 1519 |
| P 506 | 6'-4" | Bt. | 12 | 79 |
| | | | | |
| P 801 | 21'-0" | Str. | 128 | 7177 |

| MARK | LENGTH | SHAPE | NO. | WEIGHT |
|---|---|---|---|---|
| **SUPERSTRUCTURE** | | | | |
| S 501 | 4'-11" | Bt. | 88 | 451 |
| S 502 | 2'-7" | Bt. | 88 | 237 |
| S 503 | 2'-9" | Bt. | 88 | 252 |
| S 504 | 0'-11" | Bt. | 88 | 84 |
| | | | | |
| S 601 | 41'-4" | Str. | 197 | 12,230 |
| S 602 | 27'-10" | Str. | 705 | 29,473 |
| S 603 | 20'-0" | Str. | 114 | 3425 |
| S 604 | 39'-8" | Str. | 197 | 11,737 |
| | | | | |
| S 701 | 41'-4" | Str. | 197 | 16,643 |
| S 702 | 39'-8" | Str. | 197 | 15,973 |
| **REPLACEMENT BARS** | | | | |
| R E 5 | 5'-7" | Str. | 1 | |
| R E 6 | 5'-11" | Str. | 4 | |
| R E 7 | 6'-2" | Str. | 2 | |
| R E 8 | 6'-6" | Str. | 1 | |

If reinforcing bars are fabricated from stock which has previously been tested approved by the OHIO Highway Testing Laboratory, test samples as provided in Sec. 5-4.02 need not be furnished and replacement bars will not be required.

### NOTES

1. Bar size is indicated in the bar mark. The first digit where three digits are used, indicates the bar size number. For example, A601 is a No. 6 size bar.
2. Bar dimensions are out to out.




NOTE:
Slab thickness includes 1" monolithic wearing surface.

KING & GAVARIS
CONSULTING ENGINEERS

# SUPERSTRUCTURE ROADWAY SLAB & REINFORCING STEEL LIST

BRIDGE NO. OTT-2-2820
OVER SANDUSKY BAY
(SMALL BOAT PASSAGEWAY)
OTTAWA COUNTY
STA. 63+32.75 ℄
STA. 64+67.25 ℄

| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| V.J.L. | P.A.M. | A.M. | V.J.L. | We | 12-8-61 | |

| FED. RD. DIVISION | STATE | PROJECT | |
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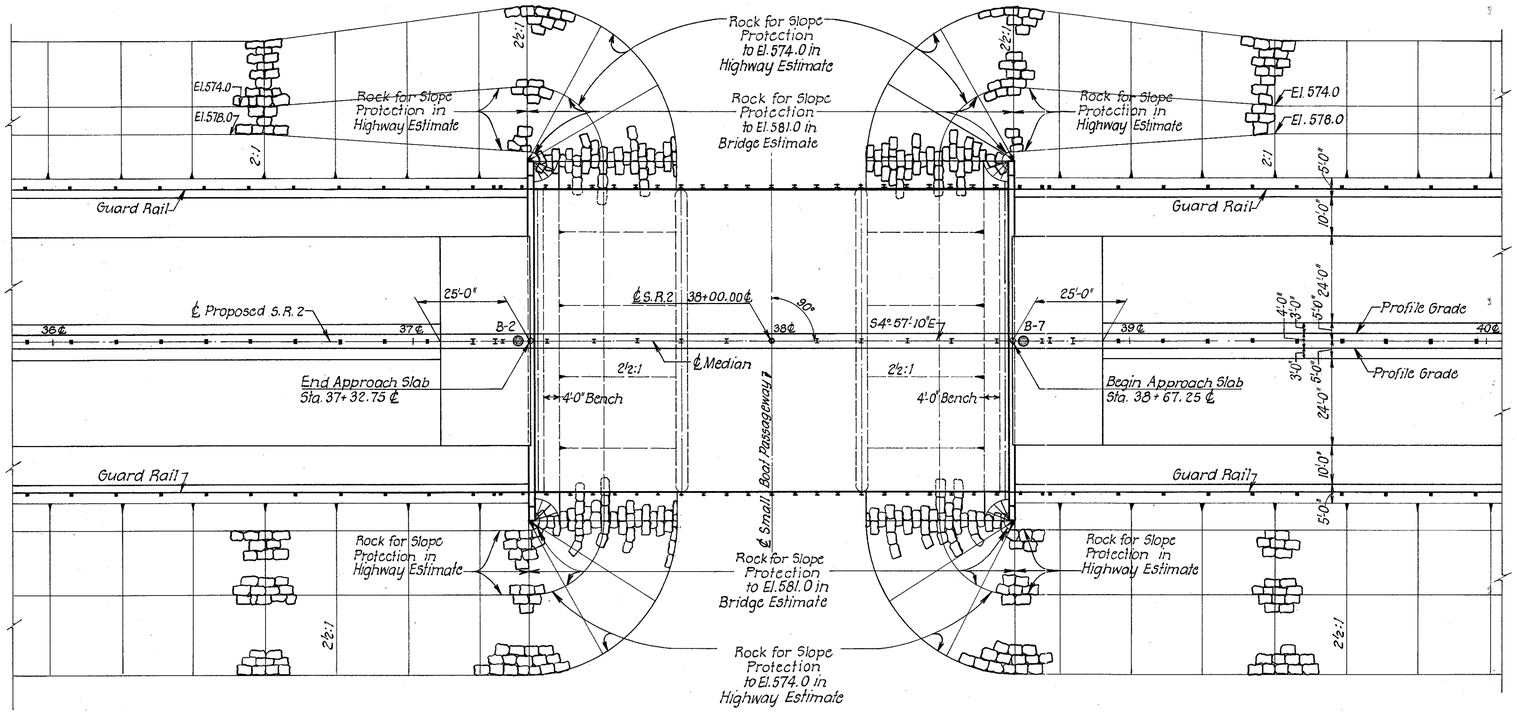
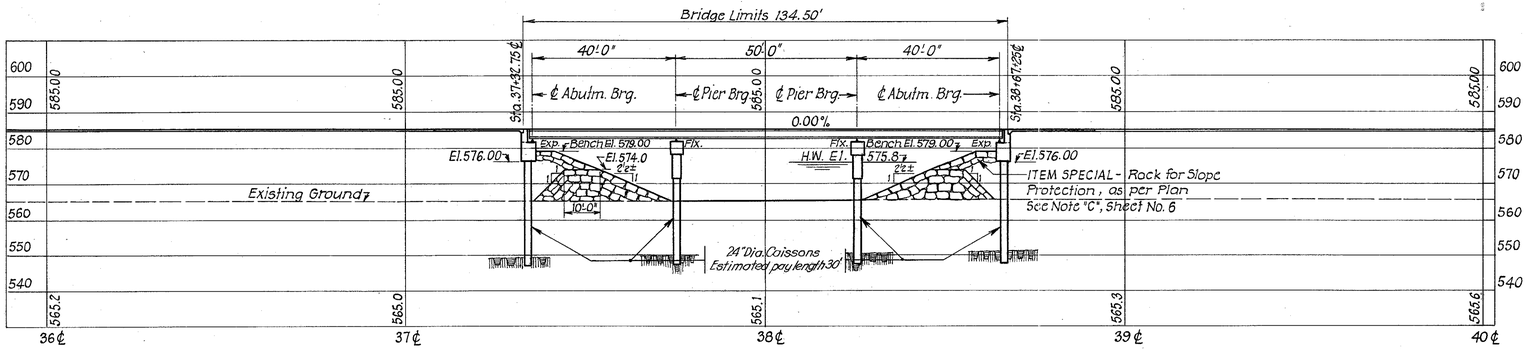


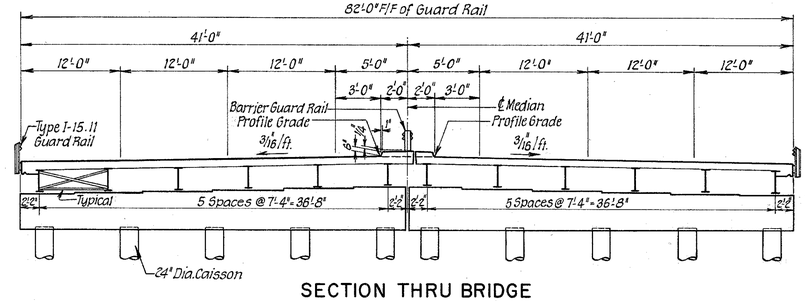

● B2 and B-7 indicate location of borings.

FOUNDATION SOUNDINGS. Foundation design and foundation quantities are based on a study of rod soundings and soil-samplings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division Office, but the state does not guarantee the accuracy thereof.

PLAN




PROFILE ON GRADE LINE OF PROPOSED S. R. 2




SECTION THRU BRIDGE

## CAISSON NOTES

### ITEM SPECIAL - DRILLED CAISSONS

DESCRIPTION. This item shall consist of furnishing and installing caissons of the kind and size called for on the Plans and in the following Specifications. Caissons shall be installed in accordance with these Specifications and in the location and manner and to the elevation shown on the Plans or as directed by the Director. It shall be the Contractor's responsibility to determine the proper lengths of shell or casings and caisson materials to be brought to the site and this responsibility shall not be considered in anyway affected if the approximate estimated pay lengths shown on the Plans are different from that found at the site.

MATERIALS. The materials for concrete shall be the same as for "Sec. 5-1 Concrete for Structures". Concrete shall be Class "C". Metal shells or casings shall be water-tight and shall be of sufficient strength to withstand earth pressure during installation and before being filled with concrete. Weld metal for splices shall be in accordance with Sec. M-7.16.
The caissons are designed for a minimum bearing capacity of 75 tons per caisson.

METAL SHELLS OR CASINGS. Caissons shall be of a type using a metal shell or casing 24" in diameter with a ½" wall thickness and shall be left in place. If splices are required the Contractor shall make adequate preparation so as to reduce to a minimum the interruption of casing installation while the splice is being made. Welds shall be made at least two feet above ground.

INSTALLATION. The hole for the caisson shall be drilled through the overlying soil and into solid rock a minimum of 2ft. as specified on the Plans. When the proper depth has been reached, the hole shall be cleaned, dewatered, and inspected by the Engineer. Upon his approval, reinforcement may be then placed and concrete poured up to the elevation shown on the Plans. In all cases, the concrete mix, after pouring, shall fill completely the excavated space to the top of the caisson. The tops of the shells or casings shall be completely covered until the concrete is placed. Any accumulation of water or other foreign matter in the shell or casing shall be removed before placing the concrete.
However, if artesian water pressure is encountered, the concrete shall be placed by the tremie method. To counterbalance this pressure a full head of water must be maintained in the casing through extending the caisson length and filling with water or by another method approved by the Director.

DEFECTIVE CAISSONS. A caisson shall be removed and replaced at no additional cost to the State if it is injured or if its location differs from the specified location by more than one inch at the top. During the installation, no jetting to aid in the penetration shall be permitted.
The caissons shall be installed straight and shall not be out of plumb more than two percent. If a caisson is out of plumb more than this, the design of the caisson shall be modified accordingly.

METHOD OF MEASUREMENT. The length of each caisson to be paid for shall be the completed and accepted length, measured along the axis of the caisson from the bottom of the drilled hole to 4" above the underside of the pier cap or abutment footing.

BASIS OF PAYMENT. The quantity of caissons, measured as described above, shall be paid for at the contract unit price per linear foot bid under "Item Special Drilled Caissons," complete in place, which price and payment shall constitute full compensation for furnishing all materials, labor and work, the use of tools and equipment and all incidentals necessary to complete this item.

### PROPOSED STRUCTURE

TYPE: Continuous Steel Beam with reinforced Conc. Deck and Substructure
SPANS: 40'- 50'- 40'
SKEW: 0°
WEARING SURFACE: 1" Monolithic
ROADWAY: 82'-0" Face to Face of Guard Rail
LOAD FREQUENCY: C.F. 2000 ("Adequate for AASHO alternate loading")
APPROACH SLABS: 25' Long
ALIGNMENT: Tangent

KING & GAVARIS
CONSULTING ENGINEERS

## SITE PLAN

BRIDGE NO. ERI-2-0071
OVER SANDUSKY BAY
(SMALL BOAT PASSAGEWAY)

ERIE COUNTY — STA. 37+32.75 ℄ STA. 38+67.25 ℄

| PRESENT TOPOGRAPHY | | PROPOSED WORK | | | |
|---|---|---|---|---|---|
| SURVEYED | DRAWN | DESIGNED | DRAWN | CHECKED | REVISIONS |
| AERIAL SURVEY | AERIAL SURVEY | W.J.L. | P.A.M. | W.J.L. | |

| FED. RD. DIVISION | STATE | PROJECT | |
|---|---|---|---|
| 2 | OHIO | FI042(13) | |

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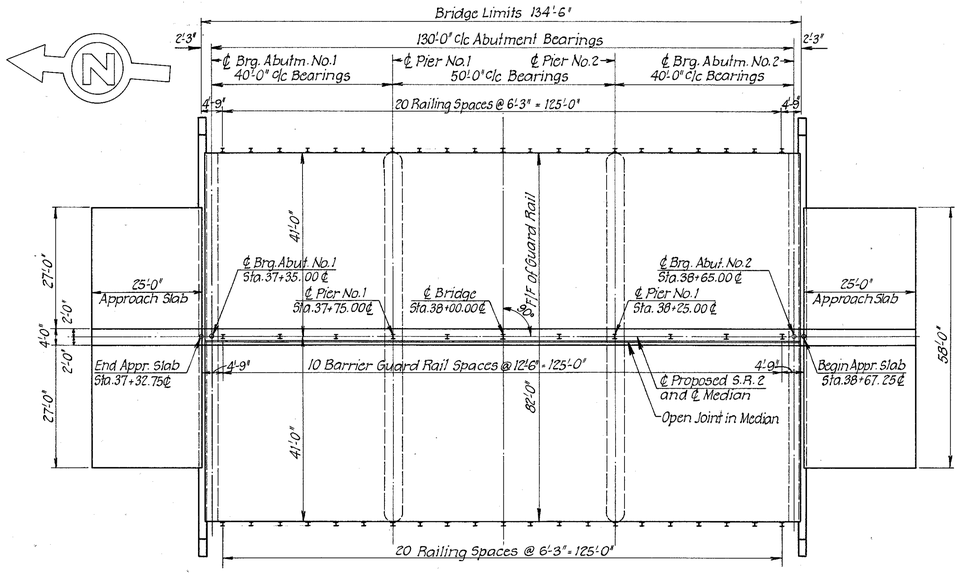
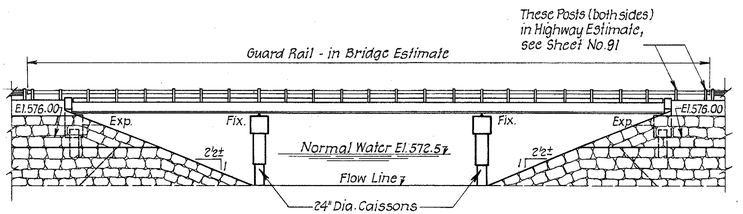
## PIER ELEVATIONS

| | A 1.03 | B .15 | C .26 | D .38 | E .49 | F .63 | G |
|---|---|---|---|---|---|---|---|
| PIER NO.1 | 580.99 | 581.11 | 581.22 | 581.34 | 581.45 | 581.57 | 577.00 |
| PIER NO.2 | 580.99 | 581.11 | 581.22 | 581.34 | 581.45 | 581.57 | 577.00 |
| | 1.03 | .15 | .26 | .38 | .49 | .63 | |

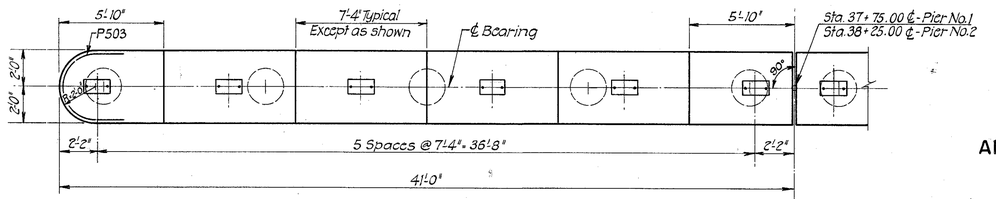
PIER NOTES:
1. All reinforcing steel shall be 2" clear from face of concrete unless otherwise shown.
2. For Reinforcing Steel List, see Sheet No. 102



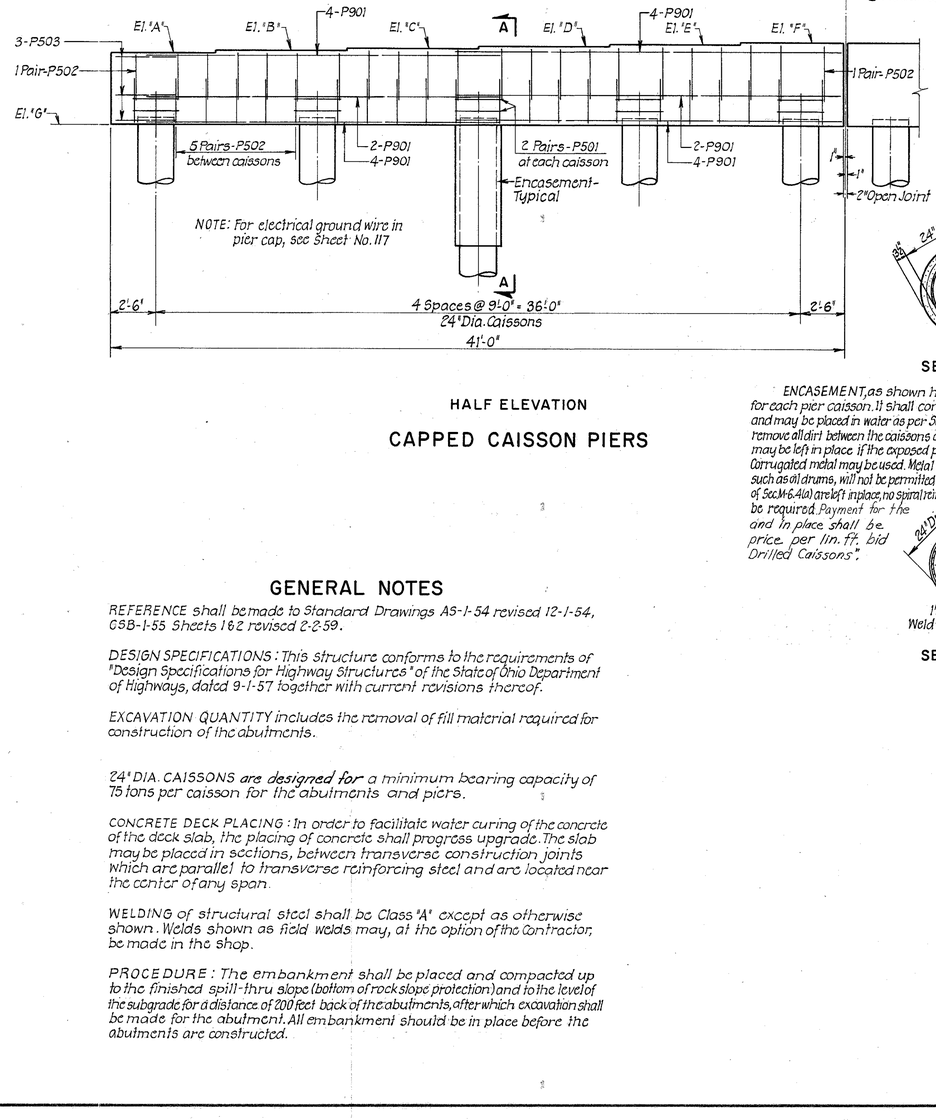

PLAN




ELEVATION

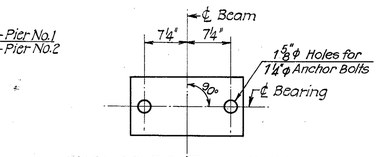



HALF PLAN

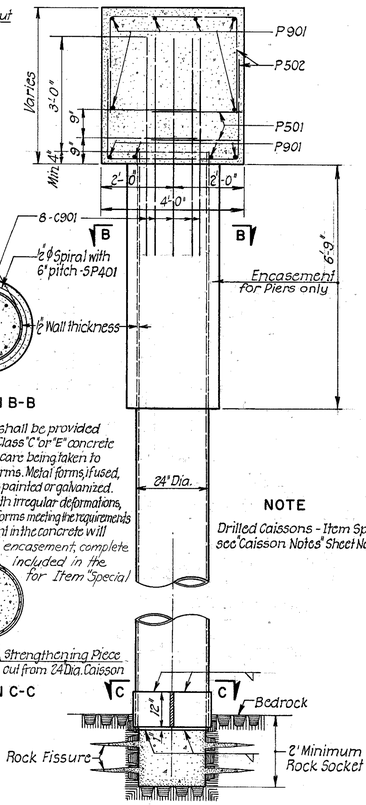



HALF ELEVATION

## CAPPED CAISSON PIERS

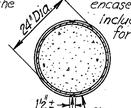



ANCHOR BOLT LAYOUT




SECTION B-B

ENCASEMENT, as shown hereon, shall be provided for each pier caisson. It shall consist of Class "C" or "E" concrete and may be placed in water as per Sec. S-1.18, care being taken to remove all dirt between the caissons and the forms. Metal forms, if used, may be left in place if the exposed portion is painted or galvanized. Corrugated metal may be used. Metal forms with irregular deformations, such as oil drums, will not be permitted. If metal forms meeting the requirements of Sec M-6.4(a) are left in place, no spiral reinforcement in the concrete will be required. Payment for the encasement, complete and in place shall be included in the price per lin. ft. bid for Item "Special Drilled Caissons".




SECTION C-C

## ESTIMATED QUANTITIES

| Item | Total | Unit | Description | Super. | Abut. | Piers | Gen'l. |
|---|---|---|---|---|---|---|---|
| E-2 | 114 | Cu.Yd. | Unclassified Excavation | | 114 | | |
| S-1 | 320 | Cu.Yd. | Class "C" Concrete, Superstructure | 320 | | | |
| S-1 | 102 | Cu.Yd. | Class "C" Concrete, Pier Caps | | | 102 | |
| S-1 | 173 | Cu.Yd. | Class "E" Concrete, Abutments | | 173 | | |
| S-3 | 15 | Lin.Ft. | Waterproofing, premolded Sealing Strip | | 15 | | |
| S-4 | 115,586 | Lb. | Reinforcing Steel | 90,505 | 16,917 | 8,164 | |
| S-7 | 243,200 | Lb. | Structural Steel | 243,200 | | | |
| S-8 | 243,200 | Lb. | Field Painting of Structural Steel | 243,200 | | | |
| S-9 | 57 | Sq.Ft. | 1" Thick preformed expansion joint filler | | 57 | | |
| S-14 | 304 | Lin.Ft. | Railing (Type T-15,11 with galvanized steel posts and bolts) | 304 | | | |
| S-14 | 152 | Lin.Ft. | Railing (Barrier Guard-Type T-15,11 with galvanized steel posts & bolts) | 152 | | | |
| S-25 | Lump | Lump Sum | Electric Lighting System* | | | | Lump |
| S-29 | 54 | Cu.Yd. | Porous Backfill | | 54 | | |
| SPECIAL | 565 | Cu.Yd. | Rock for Slope Protection as per Plan** | | | | 565 |
| SPECIAL | 320 | Each | Water-reducing set-retarding admixture*** | 320 | | | |
| SPECIAL | 1080 | Lin.Ft. | Drilled Caissons | | 480 | 600 | |

* For Quantities breakdown see Estimated Quantities - Lighting Sheet No. 115
** Rock for Slope Protection, as per plan see Note "C" sheet No. 6
*** See Proposal Note

## GENERAL NOTES

REFERENCE shall be made to Standard Drawings AS-1-54 revised 12-1-54, CSB-1-55 Sheets 162 revised 2-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio Department of Highways, dated 9-1-57 together with current revisions thereof.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments.

24" DIA. CAISSONS are designed for a minimum bearing capacity of 75 tons per caisson for the abutments and piers.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope (bottom of rock slope protection) and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutment. All embankment should be in place before the abutments are constructed.

SECTION A-A
DRILLED CAISSON DETAILS

KING & GAVARIS
CONSULTING ENGINEERS

# GENERAL PLAN AND PIERS

BRIDGE NO. ERI-2-0071
OVER SANDUSKY BAY
(SMALL BOAT PASSAGEWAY)

ERIE COUNTY

STA. 37+32.75 ℄
STA. 38+67.25 ℄

| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| V.J.C. | P.A.M. | P.A.M. | V.J.C. | lle | 12-8-61 | 9-17-62 |

| FED. RD. DIVISION | STATE | PROJECT | |
|---|---|---|---|
| 2 | OHIO | F1042 ( 13 ) | |

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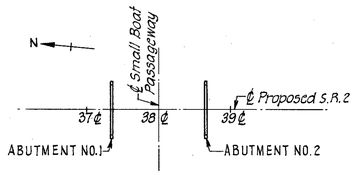
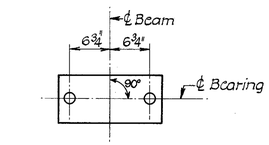
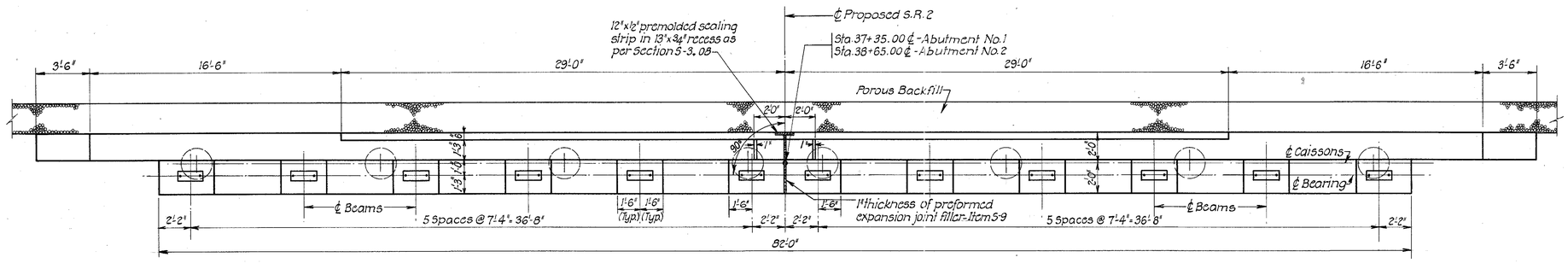
POROUS BACKFILL shall extend upward to the approach slab and to the paved shoulders, and outward to the surface of the embankment slopes. Excavation therefore, in excess of that required for the construction of the abutment, shall be considered as paid for in the price per cu. yd. paid for porous backfill.



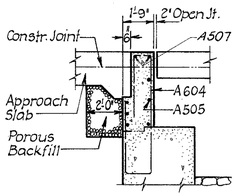

KEY PLAN



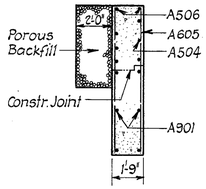

ANCHOR BOLT LAYOUT



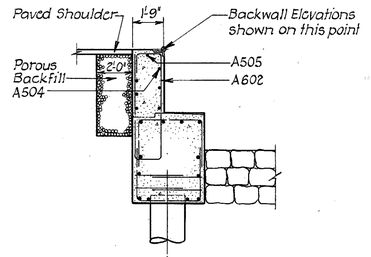

PLAN



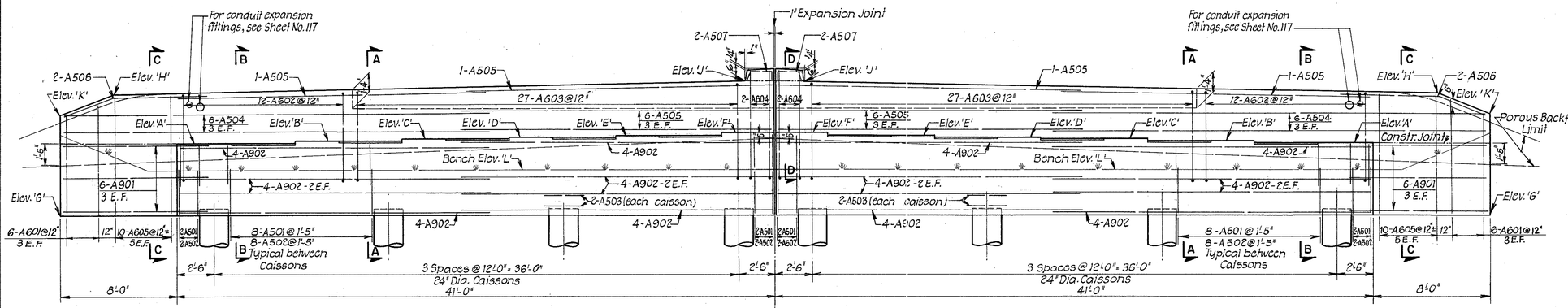

SECTION D-D



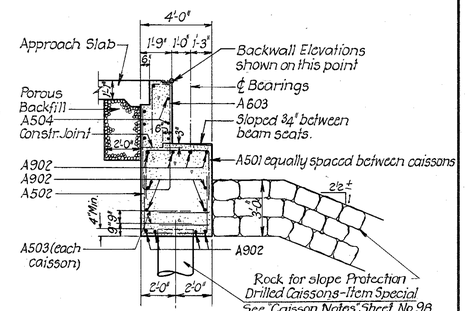

SECTION C-C




SECTION B-B




ELEVATION




SECTION A-A

| ABUTMENT ELEVATIONS | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A .01 | B .12 | C .24 | D .35 | E .47 | F .58 | G | H | J | K | L |
| ABUTMENT №1 | 580.97 | 581.08 | 581.20 | 581.31 | 581.43 | 581.54 | 576.00 | 584.32 | 585.00 | 582.92 | 579.00 |
| ABUTMENT №2 | 580.97 | 581.08 | 581.20 | 581.31 | 581.43 | 581.54 | 576.00 | 584.32 | 585.00 | 582.92 | 579.00 |

NOTES:

1. All reinforcing steel shall be 2" clear from face of concrete unless otherwise shown.
2. Designations used are as follows: E.F. = Each Face.
3. For Reinforcing Steel List, see Sheet No. 102
4. Caisson Details, same as shown in Section A-A, Sheet No. 99, except omit encasement.
5. Areas on abutment face (9"x1'-6" centered at each beam) shall be finished with particular care to insure full bearing for bumper angles.

KING & GAVARIS
CONSULTING ENGINEERS

# ABUTMENTS

BRIDGE NO. ERI-2-0071
OVER SANDUSKY BAY
(SMALL BOAT PASSAGEWAY)

ERIE COUNTY

STA. 37+32.75 ℄
STA. 38+67.25 ℄

| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| W.J.L. | P.A.M. | P.A.M. | W.J.L. | dlc | 12-8-61 | 9-17-62 |

| FED. RD. DIVISION | STATE | PROJECT | |
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ERI-2-0.15

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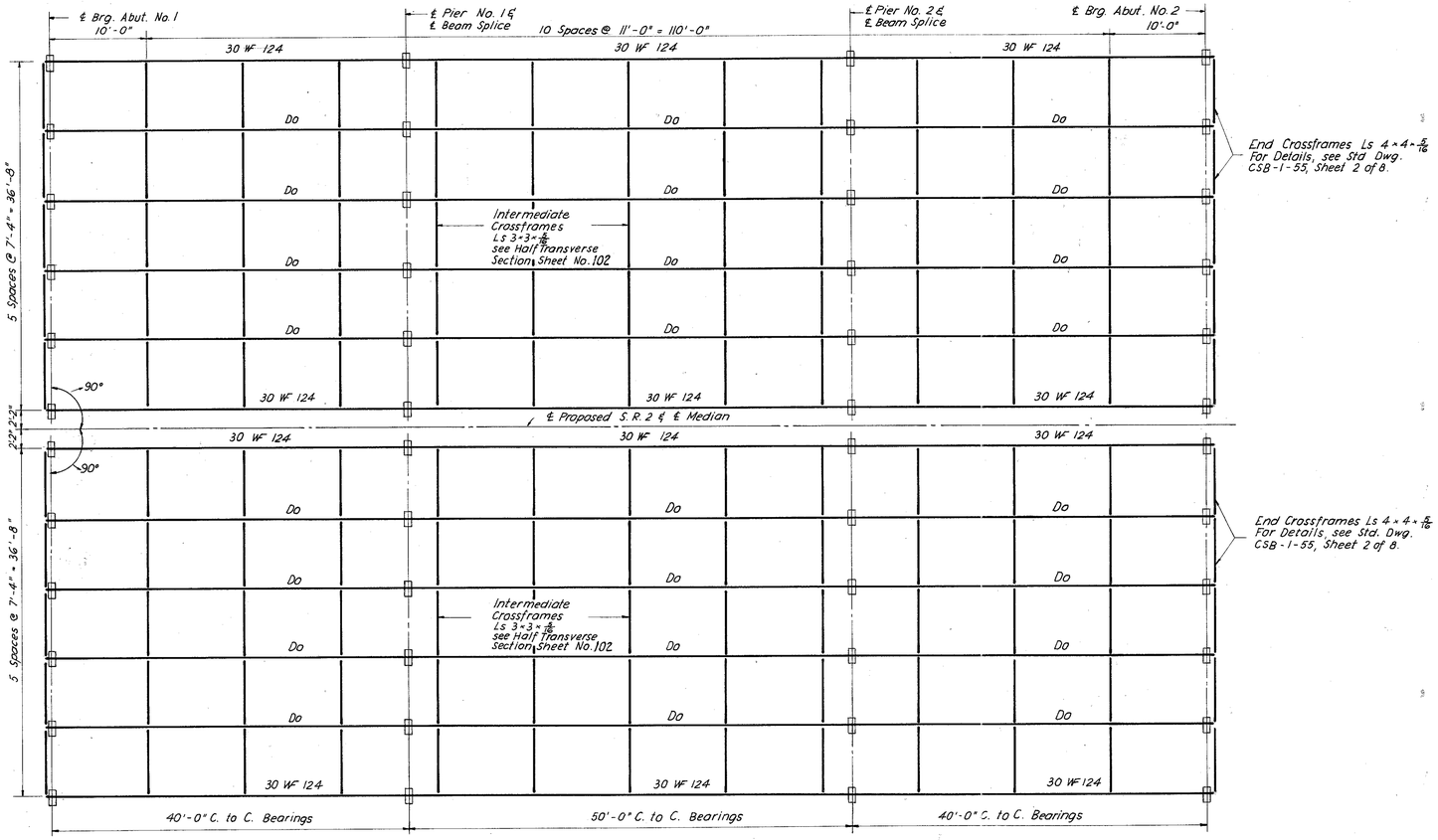
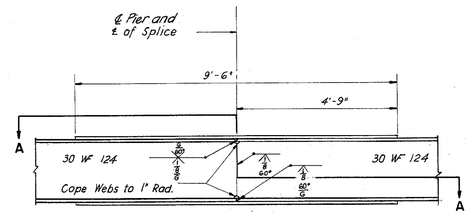
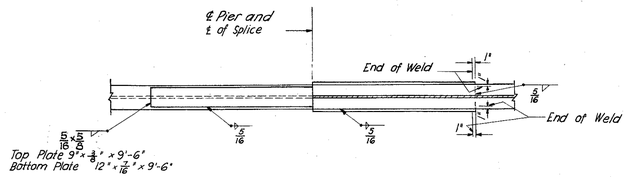



FRAMING PLAN

| DEFLECTIONS & CAMBER | | | | |
|---|---|---|---|---|
| LOCATION | OUTSIDE BEAMS | | INSIDE BEAMS | |
| | END SPAN | MID SPAN | END SPAN | MID SPAN |
| Deflection due to Wt. of steel | 0 | 0 | 0 | 0 |
| Deflection due to remaining D.L. | 1/8" | 1/8" | 1/8" | 1/8" |
| Sum of Deflections | 1/8" | 1/8" | 1/8" | 1/8" |
| Required Camber | 0 | 0 | 0 | 0 |




ELEVATION

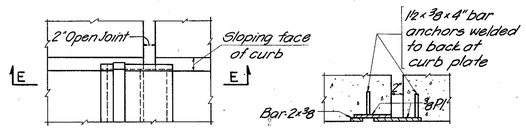


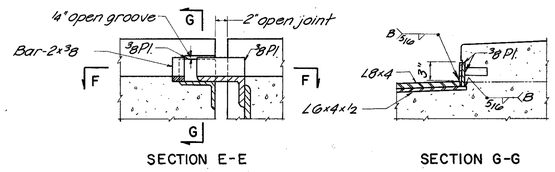

SECTION A-A

## BEAM SPLICE DETAILS

### BEAM SPLICE WELDING PROCEDURE

1. Raise the Abutment ends of the beams 3/8".
2. Butt. - weld the flanges and web, using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location, until welds are completed.
3. Weld the bottom and top moment plates.
4. Lower the beam ends to final position.




CURB PLATE DETAILS AT MEDIAN

### NOTES:

1. For Bearing Plate Details see Std. Dwg. CSB-1-55 Sheet No. 1 of 8.
2. Provide Bumper Ls - 8" x 6" x 3/4" at Abutments, see Standard Drawing CSB-1-55 Sheet No. 1 of 8.

KING & GAVARIS
CONSULTING ENGINEERS

## STEEL FRAMING PLAN

BRIDGE NO. ERI-2-0071
OVER SANDUSKY BAY
(SMALL BOAT PASSAGEWAY)
ERIE COUNTY

STA. 37+32.75 ℄
STA. 38+67.25 ℄

| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| V.J.K. | A.J. | I.M. | V.J.K. | [illegible] | 12-8-61 | |

| FED. RD. DIVISION | STATE | PROJECT | |
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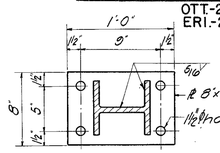
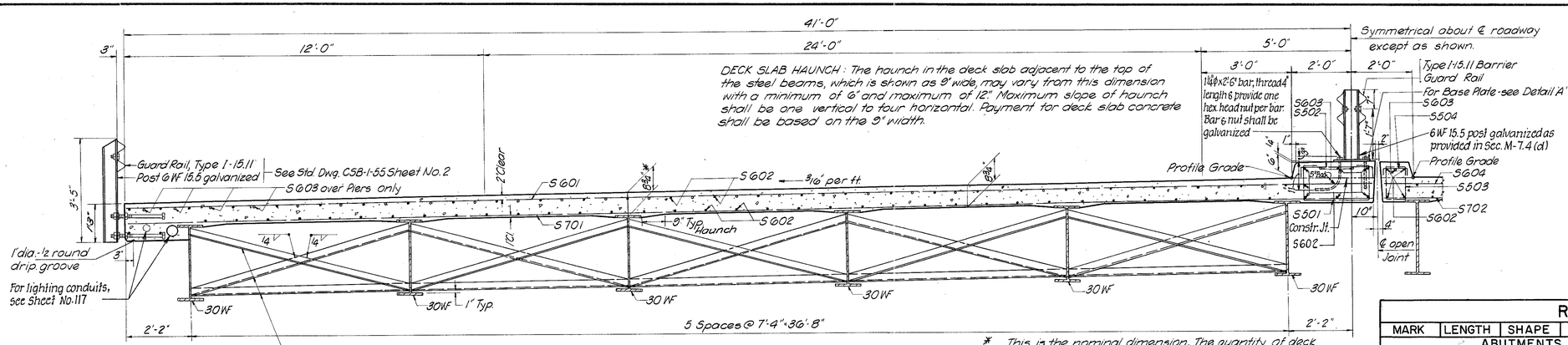
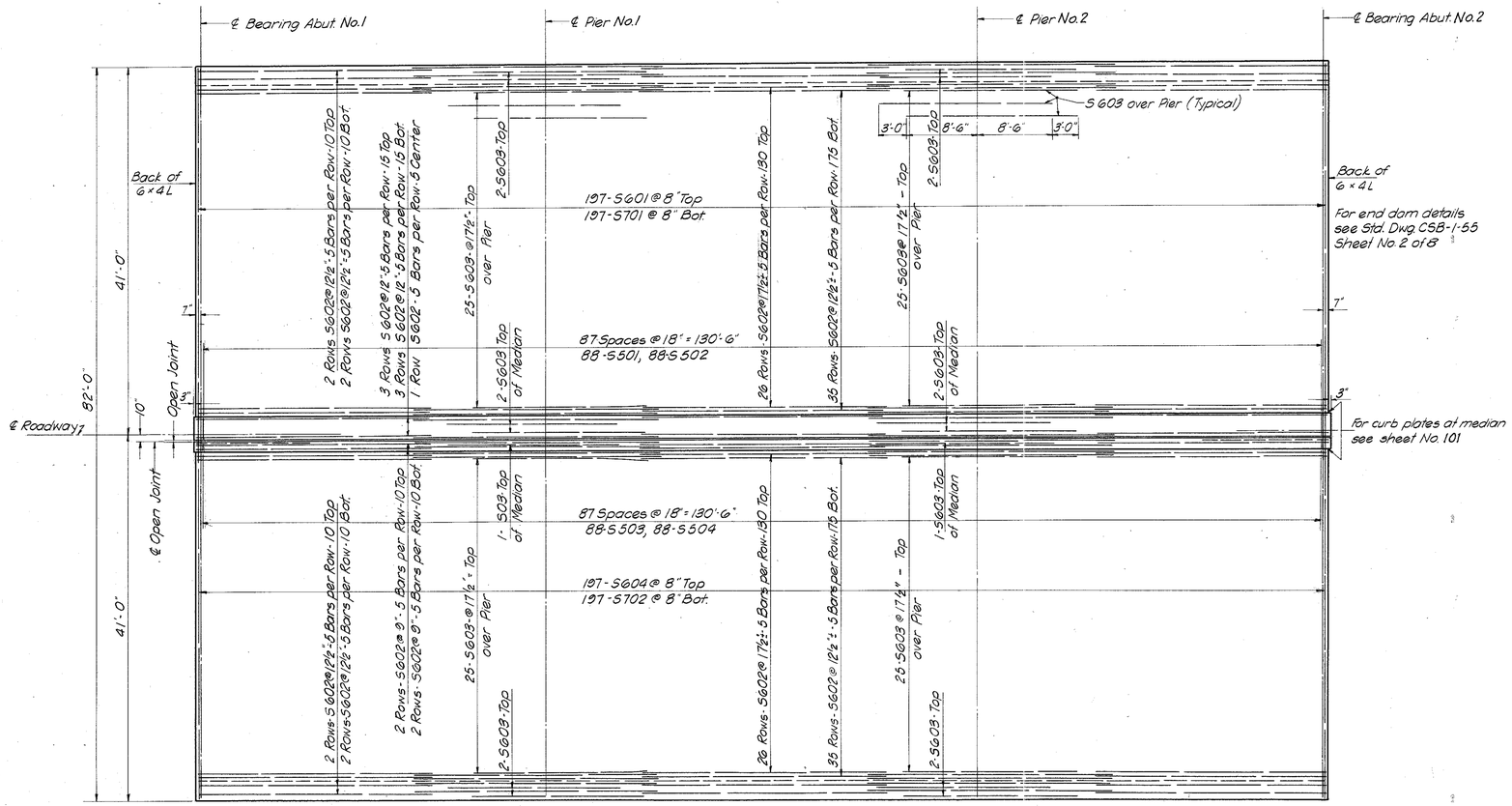



DETAIL "A"




HALF TRANSVERSE SECTION




SLAB REINFORCING

NOTE:
Slab thickness includes 1" monolithic wearing surface.

## REINFORCING STEEL LIST

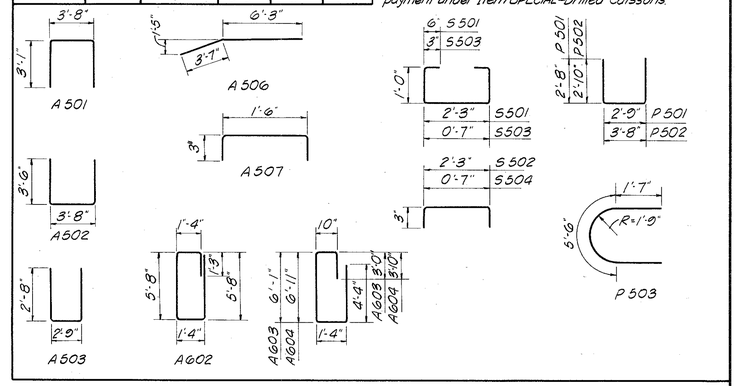
| MARK | LENGTH | SHAPE | NO. | WEIGHT | MARK | LENGTH | SHAPE | NO. | WEIGHT |
|---|---|---|---|---|---|---|---|---|---|
| ABUTMENTS | | | | | SUPERSTRUCTURE | | | | |
| A501 | 9'-8" | Bt. | 112 | 1129 | S501 | 4'-11" | Bt. | 88 | 451 |
| A502 | 10'-6" | Bt. | 112 | 1227 | S502 | 2'-7" | Bt. | 88 | 237 |
| A503 | 7'-11 | Bt | 64 | 528 | S503 | 2'-9" | Bt. | 88 | 252 |
| A504 | 29'-2" | Str. | 24 | 730 | S504 | 0'-11" | Bt. | 88 | 84 |
| A505 | 21'-2" | Str. | 32 | 705 | | | | | |
| A506 | 9'-10" | Bt. | 8 | 82 | S601 | 41'-4" | Str. | 197 | 12,230 |
| A507 | 1'-10" | Bt. | 8 | 15 | S602 | 27'-10" | Str. | 705 | 20,473 |
| | | | | | S603 | 20'-0" | Str. | 114 | 3425 |
| A601 | 6'-9" thru 7'-7" Varies by 5 | Str. | 8-Series of 3 bars | 258 | S604 | 39'-3" | Str. | 197 | 11,737 |
| A602 | 15'-0" | Bt. | 48 | 1081 | | | | | |
| A603 | 15'-4" | Bt. | 108 | 2487 | S701 | 41'-6" | Str. | 197 | 16,643 |
| A604 | 17'-0" | Bt. | 8 | 204 | S702 | 39'-9" | Str. | 197 | 15,973 |
| A605 | 8'-0" | Str. | 40 | 481 | REPLACEMENT BARS | | | | |
| A901 | 10'-10" | Str. | 24 | 884 | RE5 | 5'-7" | Str. | 1 | |
| A902 | 21'-9" | Str. | 96 | 7099 | RE6 | 5'-11" | Str. | 4 | |
| PIERS | | | | | RE7 | 6'-2" | Str. | 2 | |
| P501 | 7'-11" | Bt. | 80 | 661 | RE9 | 6'-10" | Str. | 1 | |
| P502 | 9'-2" | Bt. | 176 | 1683 | | | | | |
| P503 | 8'-8" | Bt. | 12 | 108 | | | | | |
| | | | | | | | | | |
| P901 | 21'-0" | Str. | 80 | 5712 | | | | | |
| CAISSONS | | | | | | | | | |
| *C901 | 6'-0" | Str. | 288 | | | | | | |

SPIRAL REINFORCING LIST

| Mark | No. | Core Dia. % Spiral | Length | Pitch | No. of Turns |
|---|---|---|---|---|---|
| *SP401 | 20 | 28" | 6'-9" | 6" | 17 |

If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. 5.4.02 need not be furnished and replacement bars will not be required.

1. Bar size is indicated in the bar mark. The first digit where three digits are used indicates the bar size number. For example, A 601 is a No 6 size bar.
2. Bar dimensions are out to out.
3. Bars marked with sigle asterisk to be included for payment under Item SPECIAL - Drilled Caissons.




KING & GAVARIS
CONSULTING ENGINEERS

# SUPERSTRUCTURE ROADWAY SLAB & REINFORCING STEEL LIST

BRIDGE NO. ERI.-2-0071
OVER SANDUSKY BAY
(SMALL BOAT PASSAGEWAY)
ERIE COUNTY

STA. 37+32.75 ℄
STA. 38+67.25 ℄

| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|---|---|---|---|---|---|---|
| V.J.L. | A.J. | A.J. | V.J.L. | dc | 12-8-61 | |