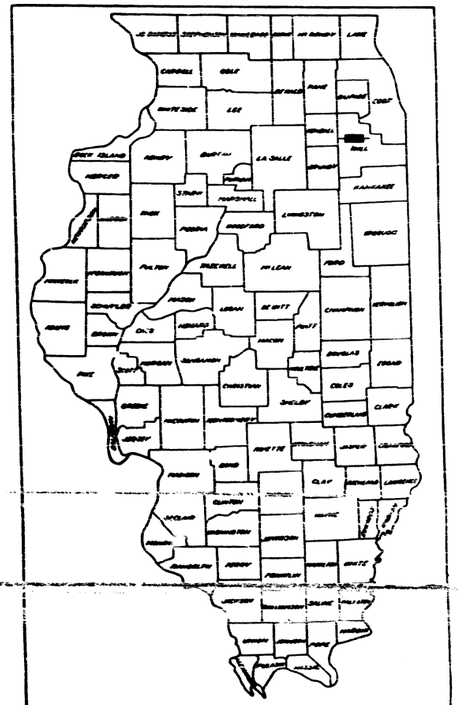
| FEDERAL-AID ROUTE NO. | SEC. | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| FA I-80 | 99-4 HB-1 | WILL | 30 | 1 |
| FED. ROAD DIV. NO. 4 | ILLINOIS | PROJECT I-80-4(38)134 | | |

# STATE OF ILLINOIS
# DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
# DIVISION OF HIGHWAYS
# PLANS FOR PROPOSED
# FEDERAL AID INTERSTATE HIGHWAY

SCALES
- PLAN 1 INCH 50 FT.
- PROFILE, HOR. 1 INCH 50 FT.
- PROFILE, VERT. 1 INCH 5 FT.
- CROSS-SECTIONS 1 INCH 10 FT.

## F.A.I. ROUTE 80 SECTION 99-4HB-1
## PROJECT I-80-4(38)134
## WILL COUNTY

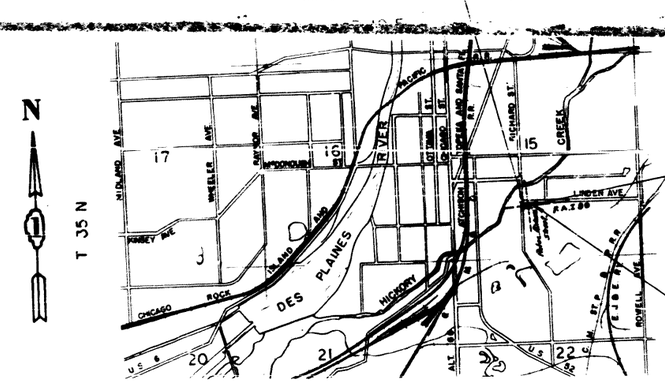


LOCATION OF SECTION INDICATED THUS:—

INDEX TO SHEETS


1 TITLE SHEET
2 TYPICAL SECTIONS
3 SUMMARY OF QUANTITIES
4 SCHEDULE OF QUANTITIES
5-7 PLAN AND PROFILE
9 EXISTING UTILITIES
10-20 BRIDGE PLANS
21-25 CROSS SECTIONS
26 STANDARDS 1686-2, 2113
27 STANDARDS 2138-1
28 STANDARDS 1538-2, 1683-1, 2153-2
29 STANDARD 1517, 1516-5
30 STANDARD 1527-2, 2114, 1979-4
30A/B CRITICAL PATH


SECTIONS 99-4HB-1
BEGINS STA. 439+09.25




APPROXIMATE SCALE 1" = 2000'

SECTION 99-4HB-1
TWIN 3-SPAN WF-BEAM GRADE SEPARATION STRUCTURE
SPANS 39'-11½", 82'-2½", 41'-1⅝"
AT STATION 439+92.03

SECTION 99-4HB-1
ENDS STA. 440+75.60

APPROVED
FOR CONSTRUCTION ONLY
W. E. Baumann 4/29/63
DIRECTOR

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS

SUBMITTED Aug 31 1961
Geo. L. Jost
ASSISTANT DISTRICT ENGINEER

EXAMINED May 28 1963
William Cunningham
ENGINEER OF ROAD PLANS AND CONTRACTS

PASSED May 28 1963
ENGINEER OF BRIDGES

APPROVED May 28 1963
ASSISTANT CHIEF ENGINEER

APPROVED May 28 1963
Francis Lorenz
CHIEF ENGINEER

NET LENGTH OF PROJECT 166.35 Ft. = 0.032 Miles

PLANS PREPARED AND RECOMMENDED BY

BLAUVELT ENGINEERING COMPANY

CONSULTING ENGINEERS

CRYSTAL LAKE, ILL.— NEW YORK, N.Y.— WOODBURY, N.J.

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED

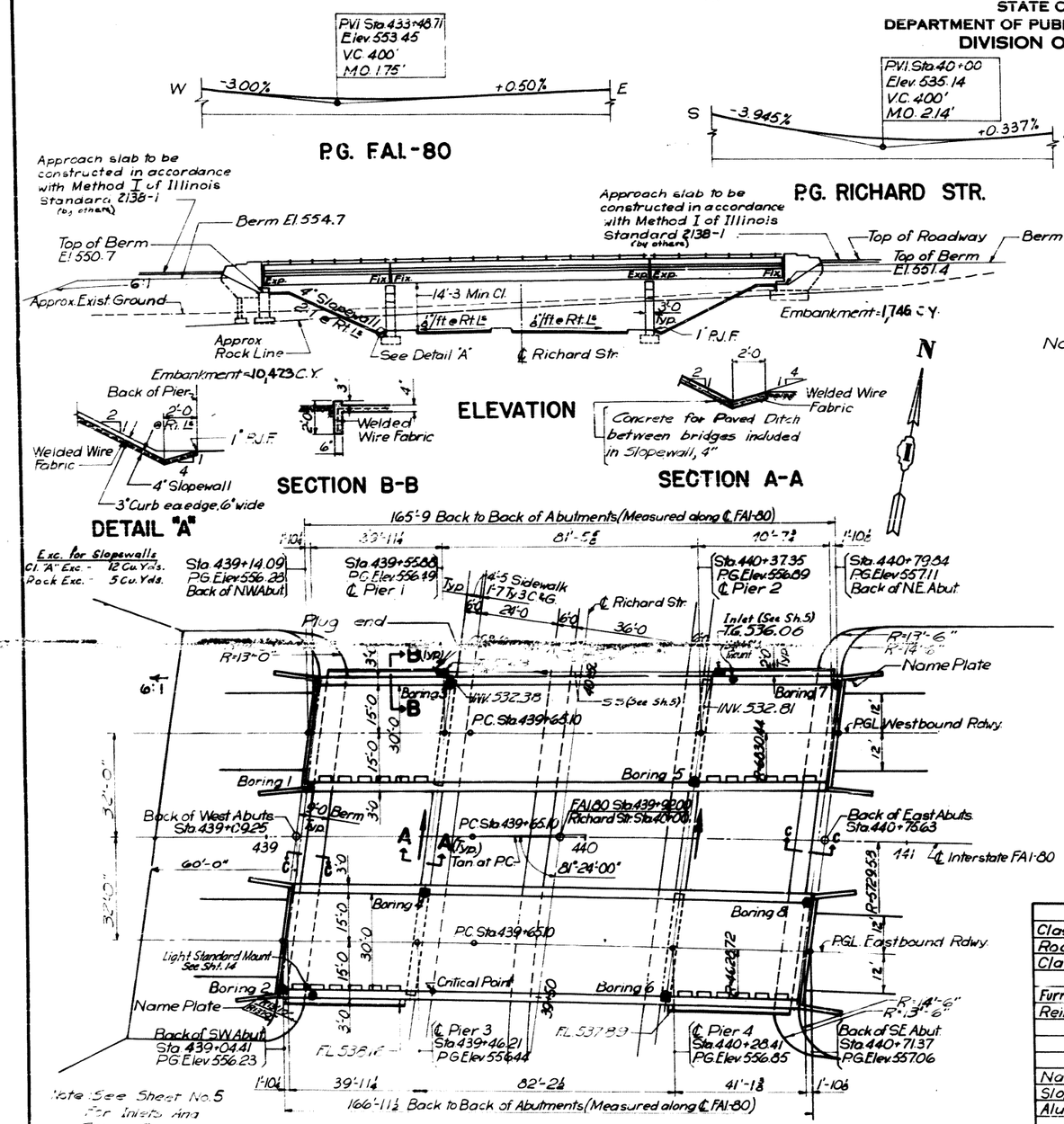
DIVISION ENGINEER DATE

JOB NO 22985

COUNTY WILL SECTION 99-4HB-1

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I.-80 | 99-4HB-1 | WILL | 20 | 10 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | PROJECT I-80-4(38)134 | | |




STATION 439+92.00
BUILT 196 BY
STATE OF ILLINOIS
F.A.I. RT. 80 SEC. 99-4HB-1
F.A. PROJ. I-80-4 (38)
LOADING H20-S16 & ALT.

See Standard 2113

## LETTERING FOR NAME PLATE

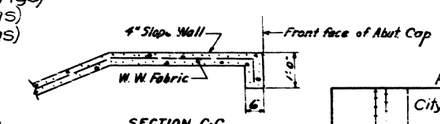
Note: Welded Wire Fabric in slopewall & paved ditch shall be 6"×6" mesh, #4 wires 58 lbs/100 □'

Cost of welded wire fabric shall be included in cost of 4" slopewall.

Cost of cut-off wall shall be included in cost of 4" slopewall.

## DESIGN STRESSES

Reinforced Concrete:
$f'_c$ = 3500 p.s.i.
$f_s$ = 20,000 p.s.i.
n = 10
$f_c$ = 1400 p.s.i. (except ftgs)
$f_c$ = 1000 p.s.i. (footings)
$V_c$ = 90 p.s.i. (except ftgs)
$V_c$ = 75 p.s.i. (footings)
Structural Steel:
$f_s$ = 20,000 p.s.i. (A-36)
Loading:
H20-S16 & Alternate.




## TOTAL BILL OF MATERIALS

| Item | Code | Unit | Super | Sub | Total |
|---|---|---|---|---|---|
| Class A Excavation for Structures | 050001 | Cu. Yd. | | 125 | 125 |
| Rock Excavation for Structures | 050003 | Cu. Yd. | | 77 | 77 |
| Class X Concrete | 052003 | Cu. Yd. | 356.3 | 306.8 | 663.1 |
| Furnishing & Erecting Structural Steel | 054001 | Pound | 405,460 | | 405,460 |
| Reinforcement Bars | 059001 | Pound | 71,064 | 31,360 | 102,424 |
| Name Plates | 061001 | Each | | 2 | 2 |
| Slopewall, 4" | 083002 | Sq. Yd. | | 970 | 970 |
| Aluminum Handrail | 200004 | Lin. Ft. | 657 | | 657 |
| Bridge Seat Sealant | | | | | |
| Protective Coat | 055021 | Sq. Yd. | 1478 | | 1478 |

Prepared and recommended by
Blauvelt Engineering Co.
Structural Engineer
# 81-2251

## GENERAL NOTES

Class X Concrete shall be used throughout. Coarse aggregate used in parapets and end posts must be free of chert, flint, limonite, lignite and soft sandstone.

The concrete floor slab shall be finished in accordance with Article 51.19 of the Standard Specifications.

Rivets shall be $\frac{3}{4}$" ϕ with $\frac{13}{16}$" ϕ open holes unless noted.

All welding as shown shall be by the electric arc process and shall comply with the requirements of the Standard Specifications for Welded Highway and Railway Bridges, 1956, of the American Welding Society.

All Rockers, Bolsters, Bearing Plates, Lead Plates, Pintles and Anchor Bolts shall be fabricated and set in accordance with Article 51.15 of the Standard Specifications and are included in quantity of Structural Steel.

Anchor bolts shall be set before connecting diaphragms over support. Space reinforcing to miss Anchor Bolts.

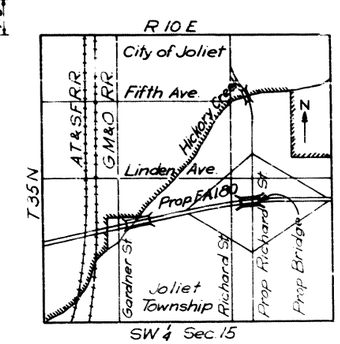
Expansion guards and plates shall be fabricated and erected in accordance with Article 51.13(d) of the Standard Specifications and are included in quantity of Structural Steel.

Except as otherwise provided all Structural Steel shall receive one shop coat of red lead paint and two field coats of aluminum paint. See Articles 56.1 to 56.5 inclusive of the Standard Specifications.

All Surfaces of Expansion Guards inaccessible after erection shall be given two shop coats of red lead paint. The $\frac{3}{4}$" ϕ welded studs shall not be painted.

Floor drains shall not be paid for separately but are to be included in price bid for Class X Concrete.

Permanent forms will not be permitted in forming the concrete floor slab.




LOCATION PLAN

| | |
|---|---|
| DESIGNED | J.M.C. |
| CHECKED | R.H. |
| DRAWN | E.R. |
| CHECKED | L.A.N. |

# GENERAL PLAN & ELEVATION
# F.A.I. 80 OVER
# RICHARDS STREET
## STA. 439+92.00

F.A.I. ROUTE 80 — PROJECT I-80-4(38)134
SECTION 99-4HB-1 — WILL COUNTY
Scale: NO SCALE — Date: February 3, 1961

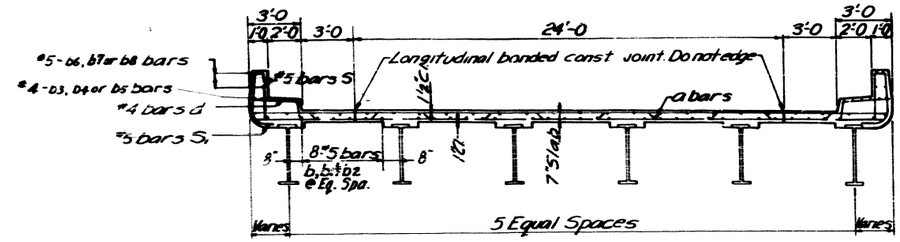
BLAUVELT ENGINEERING CO.
CONSULTING ENGINEERS
WOODBURY, N. J. NEW YORK, N. Y. CRYSTAL LAKE, ILL.

Revised bridge cone 11-15-61 L.D.W.

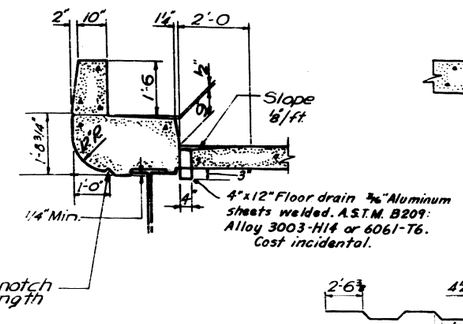
Rev. Pier & Abut. Removed: 1 Sect. 1" Pier & Abut. & Slope Wall. Rev. Quant.: Added Slope Wall Sealant 1 lbs. Rev. Sheet: Changed Slope Wall Sealant 1 lbs. to 900 lbs. Rev. E. Str. S.: 054303 to F & E Str. S.: 054001. Added Metal H.R. 657 lin. ft.; Bridge Seat Sealant. Rev. Quant.: Rein W.: 63,285# to 71,064#; 76,645# to 102,424#; Slope Wall: 856 to 970 sq. yd. Rev. 7-12-63 Added Hand Standard Mounts W.C.K.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I.-80 | 99-4HB-1 | WILL | 30 | 11 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | PROJECT- | | |



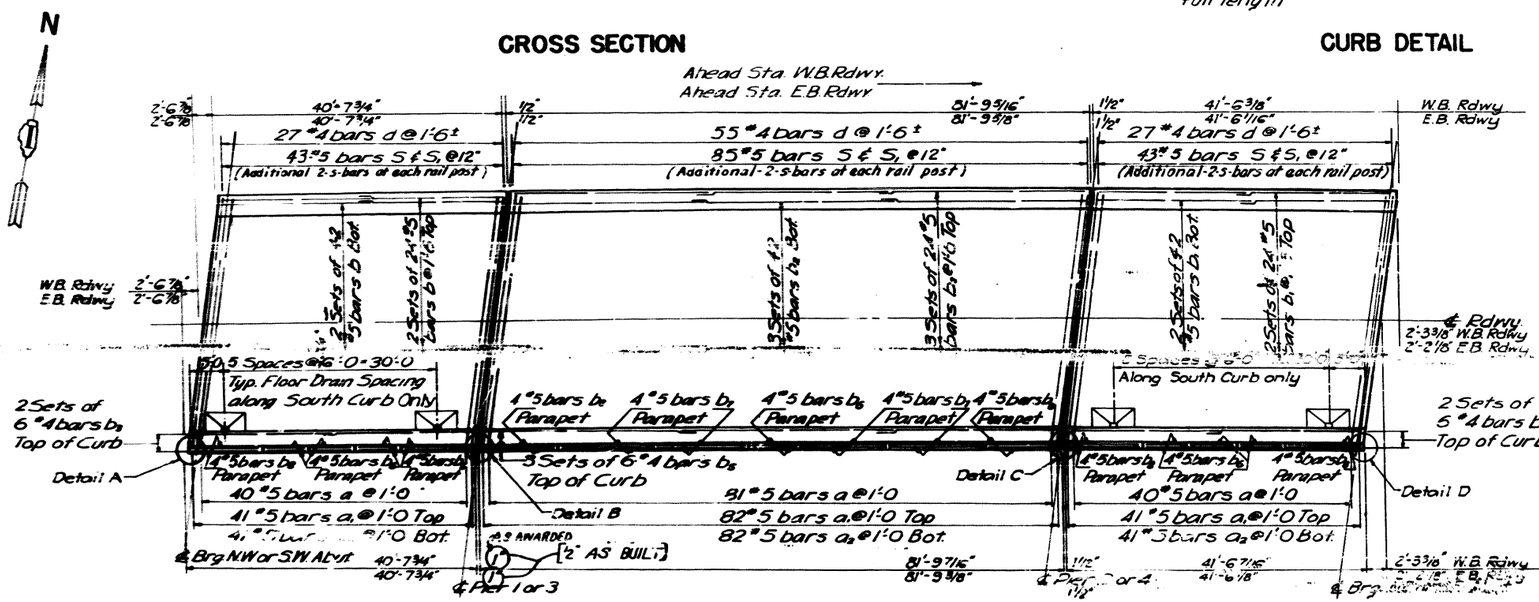

## CROSS SECTION




## CURB DETAIL

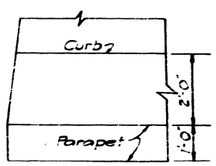
After all structural steel has been erected elevations of the top flanges of the beams shall be taken at intervals shown on D.L. Deflection Diagram Sheet 12. From these elevations subtract the increment of deflections for these points determined from the D.L. Deflection Diagram. The elevations so attained subtracted from the theoretical grade elevations minus floor thickness equals fillet heights above top of beams.

## METHOD OF DETERMINING FILLET HEIGHT "t"

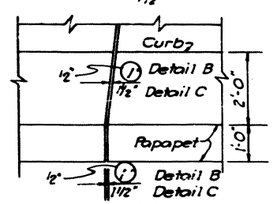



## PLAN

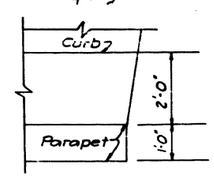
Note: Westbound Roadway shown. Eastbound Roadway similar.



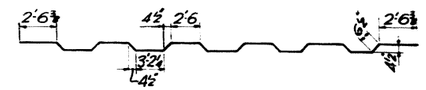

DETAIL A



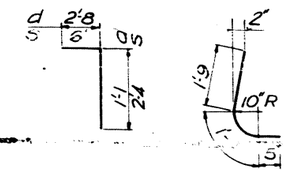

DETAILS B & C




DETAIL D



BAR a



BARS d & s



BAR s1

## BILL OF REINFORCEMENT

| Bar | No. | Size | Lgth | Shape |
|---|---|---|---|---|
| a | 322 | #5 | 36-5 | |
| a1 | 328 | #5 | 35-9 | |
| a2 | 328 | #5 | 34-9 | |
| | | | | |
| b | 264 | #5 | 20-9 | |
| b1 | 264 | #5 | 21-3 | |
| b2 | 396 | #5 | 28-0 | |
| b3 | 48 | #4 | 20-9 | |
| b4 | 48 | #4 | 21-3 | |
| b5 | 72 | #4 | 28-0 | |
| b6 | 112 | #5 | 6-3 | |
| b7 | 64 | #5 | 15-0 | |
| b8 | 96 | #5 | 10-6 | |
| | | | | |
| d | 436 | #4 | 3-9 | |
| | | | | |
| s | 900 | #5 | 2-10 | |
| s1 | 684 | #5 | 2-6 | |

Above Bill of Reinforcement is for two bridges.

*Structural Steel includes weight of rockers, bolsters, bearing plates, lead plates, pintles and anchor bolts. Estimated Weight = 19,150 lbs

| | | |
|---|---|---|
| Class "X" Concrete | Cu. Yd. | 556.3 |
| Reinforcement | Lbs. | 71,064 |
| Structural Steel* | Lbs. | 405,460 |

## BILL OF MATERIALS
(For Two Bridges)

## ELEVATIONS-TOP OF SLAB**
(See sheet #12 for locations of points)

| Slab Pt | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 556.10 | 556.21 | 556.31 | 556.42 | [illegible] | 556.52 | 556.63 | 556.73 | 556.83 | 556.93 | 557.03 | 557.11 | 557.16 | 557.21 | 557.22 | 557.27 | 557.32 | 557.37 | 557.42 |
| B | 556.22 | 556.29 | 556.37 | 556.45 | 556.52 | 556.53 | 556.61 | 556.69 | 556.77 | 556.84 | 556.92 | 556.98 | 557.03 | 557.08 | 557.09 | 557.14 | 557.19 | 557.24 | 557.29 |
| C | [illegible] | [illegible] | [illegible] | [illegible] | 556.51 | 556.51 | 556.57 | 556.63 | 556.68 | 556.74 | 556.79 | 556.85 | 556.90 | [illegible] | 556.95 | 557.00 | 557.06 | 557.11 | 557.16 |
| D | 556.27 | 556.31 | 556.36 | 556.40 | 556.45 | 556.45 | 556.51 | 556.55 | 556.59 | 556.62 | 556.68 | 556.72 | 556.77 | 556.82 | 556.82 | 556.87 | 556.93 | 556.98 | 557.03 |
| E | 556.20 | 556.25 | 556.28 | 556.32 | 556.35 | 556.36 | 556.39 | 556.43 | 556.47 | 556.50 | 556.54 | 556.58 | 556.63 | 556.69 | 556.69 | 556.74 | 556.80 | 556.85 | 556.90 |
| F | 556.07 | 556.11 | 556.15 | 556.19 | 556.22 | 556.23 | 556.26 | 556.30 | 556.34 | 556.38 | 556.4 | 556.46 | 556.50 | 556.56 | 556.55 | 556.60 | 556.66 | 556.72 | 556.77 |
| G | 556.04 | 556.11 | 556.21 | 556.31 | 556.42 | 556.42 | 556.52 | 556.63 | 556.73 | 556.83 | 556.94 | 557.05 | 557.12 | 557.17 | 557.18 | 557.23 | 557.28 | 557.34 | 557.39 |
| H | 556.16 | 556.21 | 556.29 | 556.37 | 556.45 | 556.45 | 556.54 | 556.61 | 556.68 | 556.77 | 556.85 | 556.92 | 556.99 | 557.04 | 557.04 | 557.10 | 557.16 | 557.21 | 557.26 |
| J | 556.23 | 556.28 | 556.34 | 556.39 | 556.45 | 556.46 | 556.51 | 556.51 | 556.63 | 556.69 | 556.75 | 556.80 | 556.86 | 556.91 | 556.92 | 556.97 | 557.02 | 557.08 | 557.13 |
| K | 556.27 | 556.27 | 556.31 | 556.36 | 556.41 | 556.41 | 556.45 | 556.51 | 556.55 | 556.59 | 556.63 | 556.68 | 556.72 | 556.78 | 556.78 | 556.83 | 556.88 | 556.94 | 556.99 |
| L | 556.15 | 556.21 | 556.25 | 556.28 | 556.31 | 556.32 | 556.35 | 556.39 | 556.44 | 556.48 | 556.51 | 556.55 | 556.59 | 556.63 | 556.65 | 556.69 | 556.74 | 556.80 | 556.86 |
| M | 556.08 | 556.08 | 556.11 | 556.15 | 556.19 | 556.19 | 556.22 | 556.26 | 556.31 | 556.34 | 556.38 | 556.42 | 556.46 | 556.51 | 556.52 | 556.57 | 556.62 | 556.68 | 556.73 |

**Where curb is over stringer add depth of curb to elevation to get top of curb to elevation over 8" S.I. [illegible]

| | |
|---|---|
| DESIGNED | RH |
| CHECKED | CS |
| DRAWN | GMN |
| CHECKED | LAN |

Revised joint 13 slab. Deers "1" & "3. 11-16-61 L.D.W.

Rev. 4-22-63 VLD [illegible] 556-5 to 700'. 436-51 to 684'. 63,285# to 71,064#. Removed "F Sect.". Changed 3"ø drains to 4"ø.

Rev. 2-18-64: Slab joint dimension over piers 1 & 3 at South face of bridge in Plan and Detail D changed from [illegible]

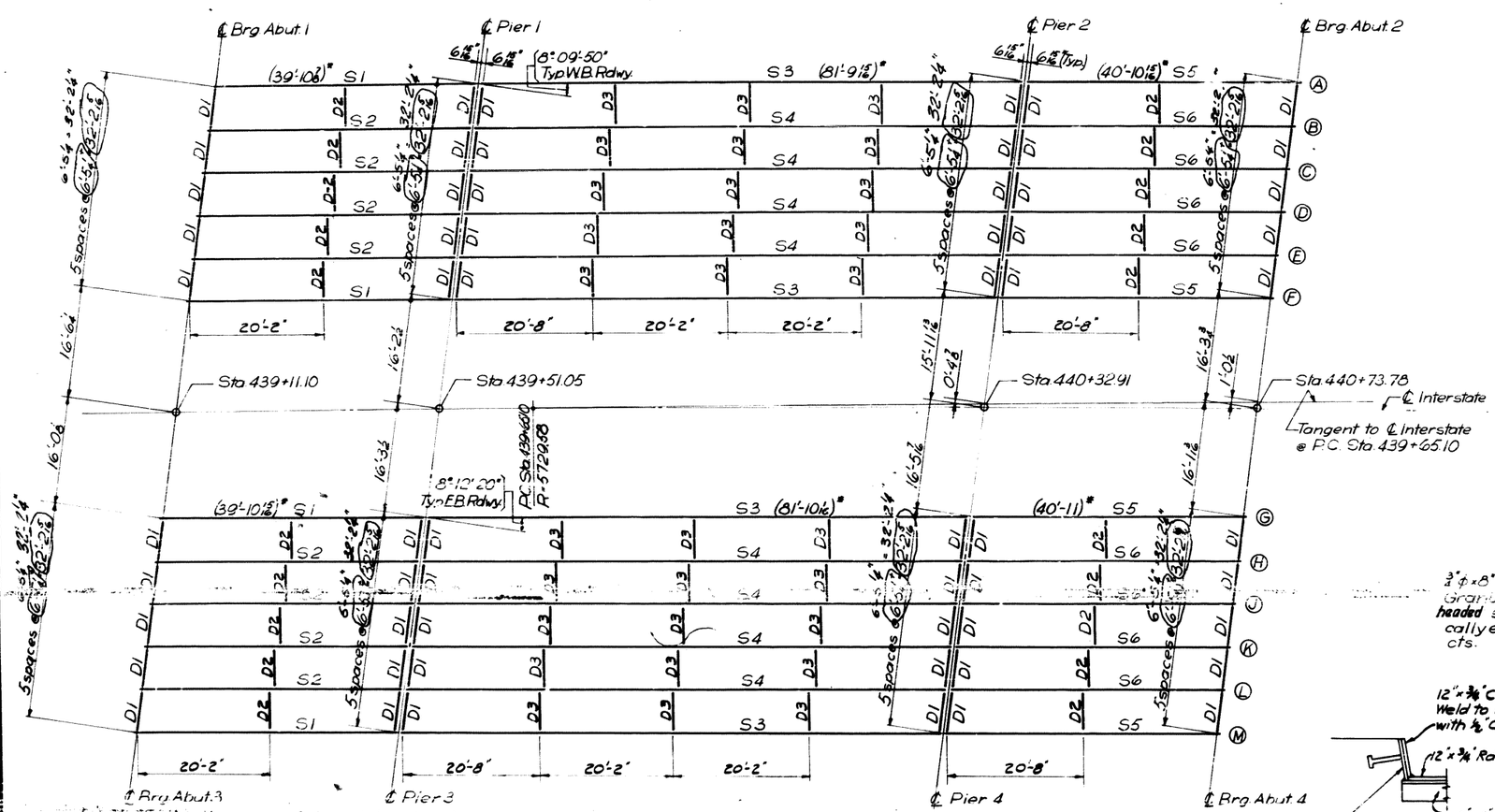
## SLAB PLAN & CROSS SECTION
## F.A.I. 80 OVER
## RICHARDS STREET
STA. 439 + 92.00

F.A.I. ROUTE 80 — PROJECT
SECTION 99-4HB-1 — WILL COUNTY
Scale: NO SCALE — Date: February 3, 1961

BLAUVELT ENGINEERING CO.
CONSULTING ENGINEERS
WOODBURY, N.J. NEW YORK, N.Y. CRYSTAL LAKE, ILL.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I.-80 | 99-4HB-1 | WILL | 30 | 12 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | PROJECT- | | |



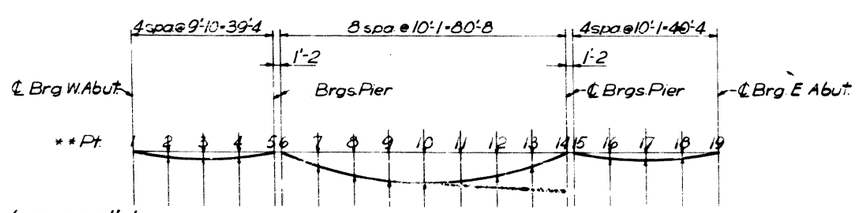

FRAMING PLAN

* Lengths given in parenthesis are distances between ℄-s of Piers and ℄-s of Abut. Brgs.

Note: All Plan dimensions are in a horizontal plane

| Stgr. / **Pt. | 2 | 3 | 4 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Δ | | | | | | | | | | | | |
| S1, S3, S5 | 0.011 | 0.014 | 0.011 | 0.063 | 0.107 | 0.134 | 0.143 | 0.134 | 0.107 | 0.063 | 0.012 | 0.016 | 0.012 |
| S2, S4, S6 | 0.013 | 0.018 | 0.013 | 0.042 | 0.071 | 0.089 | 0.095 | 0.089 | 0.071 | 0.042 | 0.015 | 0.020 | 0.015 |

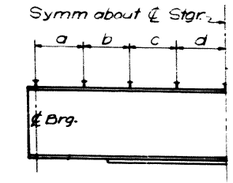
Δ - Dead load deflection in feet due to weight of slab.




** Point are along lines parallel to the ℄ of bearings.

DEAD LOAD DEFLECTIONS

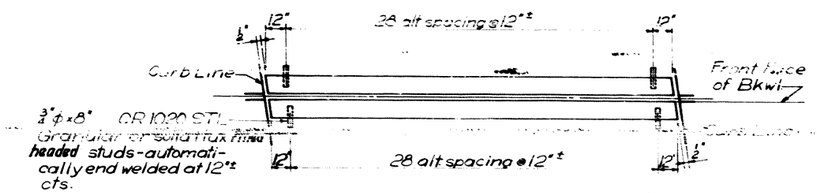
See sheet 13 for Shear Connector and Cover Plate Details



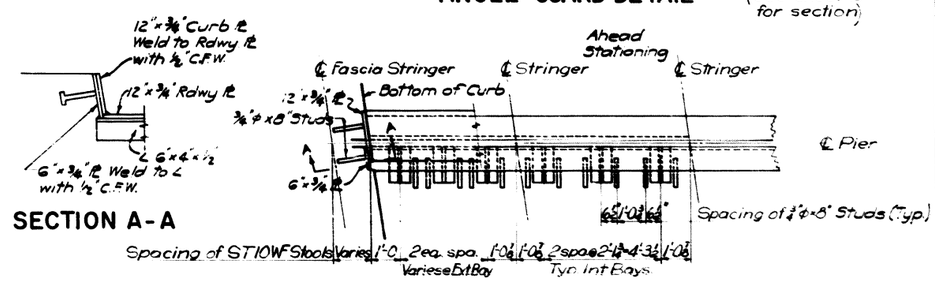

STRINGER DETAIL

BEAM SCHEDULE

| Stgr. Mark | Size | Cover Plate | | Shear Connector Spacing | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | a | | b | | c | | d |
| | | Size | Lgth. | Pitch | Lgth. | Pitch | Lgth. | Pitch | Lgth. | Pitch |
| S1, S5 | 36WF150 | — | — | — | — | — | — | — | — | — |
| S2, S6 | 30WF124 | — | — | — | — | — | — | — | — | — |
| S3 | 36WF194 | 11×1 | 55'-0 | 9" | 9'-9 | 11" | 10'-1 | 13" | 9'-9 | 15" |
| S4 | 36WF194 | 11×1 | 51'-3 | 9" | 10'-6 | 11" | 9'-2 | 13" | 10'-10 | 18" |




ANGLE GUARD DETAIL (See sheet 13 for section)




SECTION A-A

EXP. GUARD DETAIL (See sheet 13 for section)

TOP OF BEAM ELEVATIONS OVER BEARINGS

| **Pt. / Stgr. | 1 | 5 | 6 | 14 | 15 | 19 |
|---|---|---|---|---|---|---|
| A | 555.47 | 555.89 | 555.89 | 556.58 | 556.59 | 556.79 |
| B | 555.59 | 555.89 | 555.90 | 556.45 | 556.46 | 556.66 |
| C | 555.65 | 555.88 | 555.88 | 556.32 | 556.32 | 556.53 |
| D | 555.64 | 555.82 | 555.82 | 556.19 | 556.19 | 556.40 |
| E | 555.57 | 555.72 | 555.73 | 556.06 | 556.06 | 556.27 |
| F | 555.44 | 555.59 | 555.60 | 555.93 | 555.92 | 556.14 |
| G | 555.41 | 555.79 | 555.79 | 556.54 | 556.55 | 556.76 |
| H | 555.53 | 555.82 | 555.82 | 556.41 | 556.41 | 556.63 |
| J | 555.60 | 555.82 | 555.83 | 556.28 | 556.29 | 556.50 |
| K | 555.59 | 555.78 | 555.78 | 556.15 | 556.15 | 556.36 |
| L | 555.52 | 555.68 | 555.69 | 556.02 | 556.02 | 556.23 |
| M | 555.40 | 555.56 | 555.56 | 555.86 | 555.89 | 556.10 |

| | |
|---|---|
| DESIGNED | C.S. |
| CHECKED | R.H. |
| DRAWN | E.R. |
| CHECKED | L.A.N. |

FRAMING PLAN AND STEEL DETAILS
F.A.I. 80 OVER
RICHARDS ST.
STA. 439+92.00

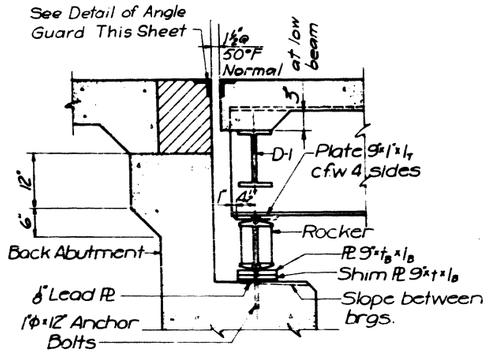
F.A.I. ROUTE 80 — PROJECT
SECTION 99-4HB-1 — WILL COUNTY
Scale: NO SCALE — Date: February 3, 1961

BLAUVELT ENGINEERING CO.
CONSULTING ENGINEERS
WOODBURY, N. J. NEW YORK, N. Y. CRYSTAL LAKE, ILL.

Rev. 5-12-64 Stringer Spl.

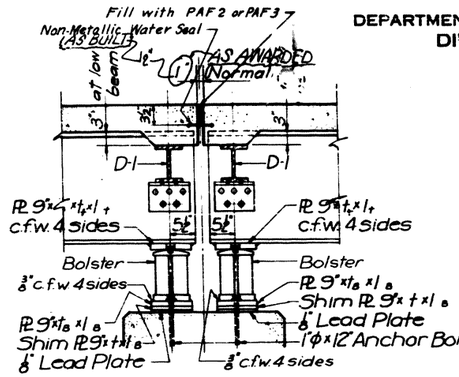
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I.-80 | [illegible] | WILL | 30 | 13 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | PROJECT | | |

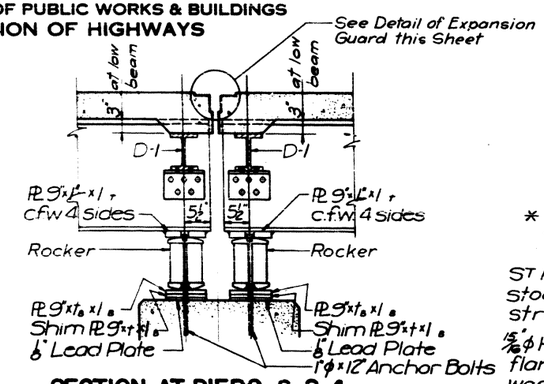



## SECTION AT ABUTMENTS

W. Abutments shown
E. Abutments similar but use fixed bearing

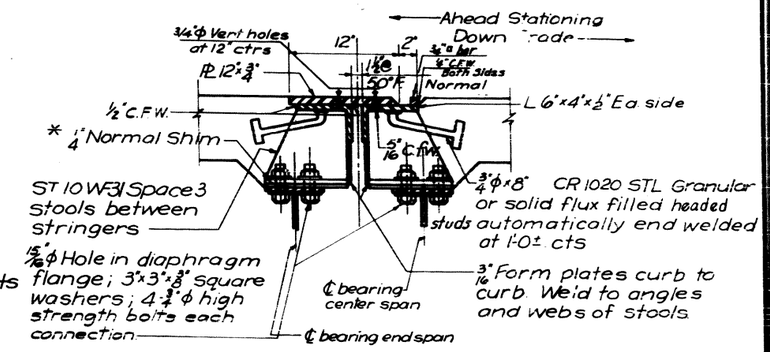



## SECTION AT PIERS 1 & 3



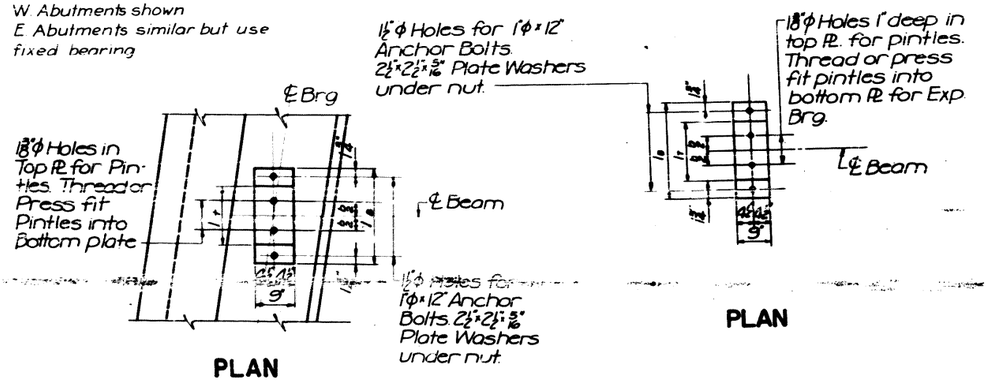

## SECTION AT PIERS 2 & 4

Angles shall be held securely in place while pouring concrete with ⅞"φ Bolts in 7/16"φ holes at 12" cts. All bolts shall be burned, sawed or clipped flush with back of angles after forms are removed.



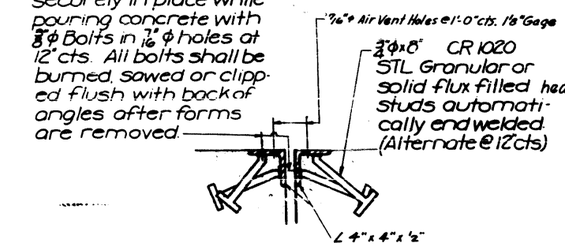

## EXPANSION GUARD DETAIL

At Piers 2 and 4



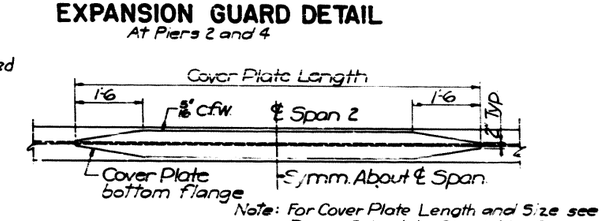

## PLAN

## PLAN




## SECTION THRU ANGLE GUARD

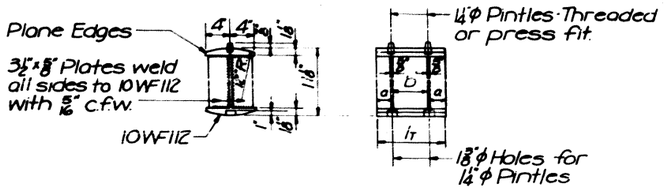
(At Abutments)



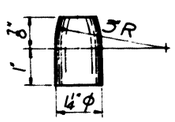

Note: For Cover Plate Length and Size see Beam Schedule Sheet No. 12

## DETAIL OF COVER PLATES

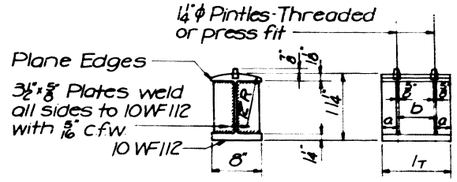
* In addition to the ¼" Normal shims, provide 1-⅛" and 2-1/16" shim for 50% of the stool connections.



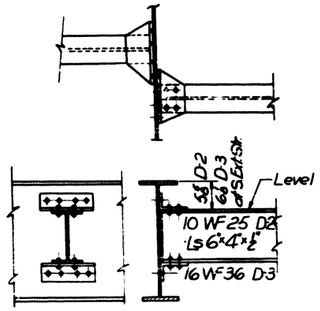

## DETAIL OF EXPANSION BEARING



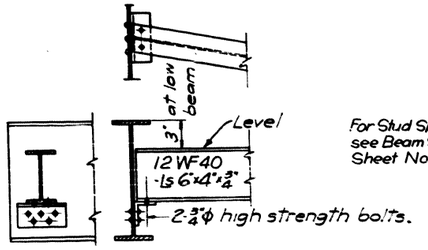

## DETAIL OF PINTLE



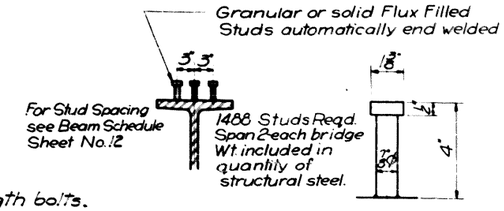

## DETAIL OF FIXED BEARING




## DIAPHRAGMS D-2 & D-3




## DIAPHRAGMS D-1




## SHEAR CONNECTOR DETAILS

## DIMENSIONS FOR BEARINGS

| | Stringer | | $l_T$ | $l_B$ | $t_T$ | $t_B$ | c.f.w. | b | a |
|---|---|---|---|---|---|---|---|---|---|
| | $S_1$ & $S_3$ | Fix. | 13½" | 21" | 1⅜" | 1" | ⅝" | 6½" | 3½" |
| | | Exp. | 13" | 20½" | 1" | 1⅜" | ½" | 6½" | 3¼" |
| $S_3$ | $S_3$ & $S_4$ | Fix. | 13½" | 21 | 1⅜" | 1" | ⅝" | 6½" | 3½" |
| | | Exp. | 13" | 20½" | 1" | 1⅜" | ½" | 6½" | 3¼" |
| $S_2$ | $S_3$ & $S_4$ | Fix. | 11½" | 19" | 1⅜" | ¾" | ½" | 5½" | 3" |
| | | Exp. | 11½" | 19" | 1" | 1⅜" | ⅝" | 5½" | 3" |

## TABLE OF "t" DIMENSIONS

| Str No | N.W. Abut | Pier #1 Bk | Pier #1 Ahd | Pier #2 Bk | Pier #2 Ahd | N.E. Abut | Str No | S.W. Abut | Pier #3 Bk | Pier #3 Ahd | Pier #4 Bk | Pier #4 Ahd | S.E. Abut |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | - | [illegible] | [illegible] | - | [illegible] | - | G | - | [illegible] | [illegible] | - | [illegible] | - |
| B | [illegible] | [illegible] | [illegible] | - | - | - | H | [illegible] | [illegible] | [illegible] | - | - | - |
| C | [illegible] | [illegible] | - | - | - | - | J | [illegible] | [illegible] | [illegible] | - | - | - |
| D | [illegible] | - | - | - | - | - | K | [illegible] | - | - | - | - | - |
| E | - | - | - | - | - | - | L | - | - | - | - | - | - |
| F | - | [illegible] | [illegible] | - | [illegible] | - | M | - | [illegible] | [illegible] | - | [illegible] | - |

| | |
|---|---|
| DESIGNED | R.H. |
| CHECKED | C.S. |
| DRAWN | E.R. |
| CHECKED | L.A.N. |

BEARING & MISC. STEEL DETAILS
F.A.I. 80 OVER
RICHARDS ST.
STA. 439+92.00

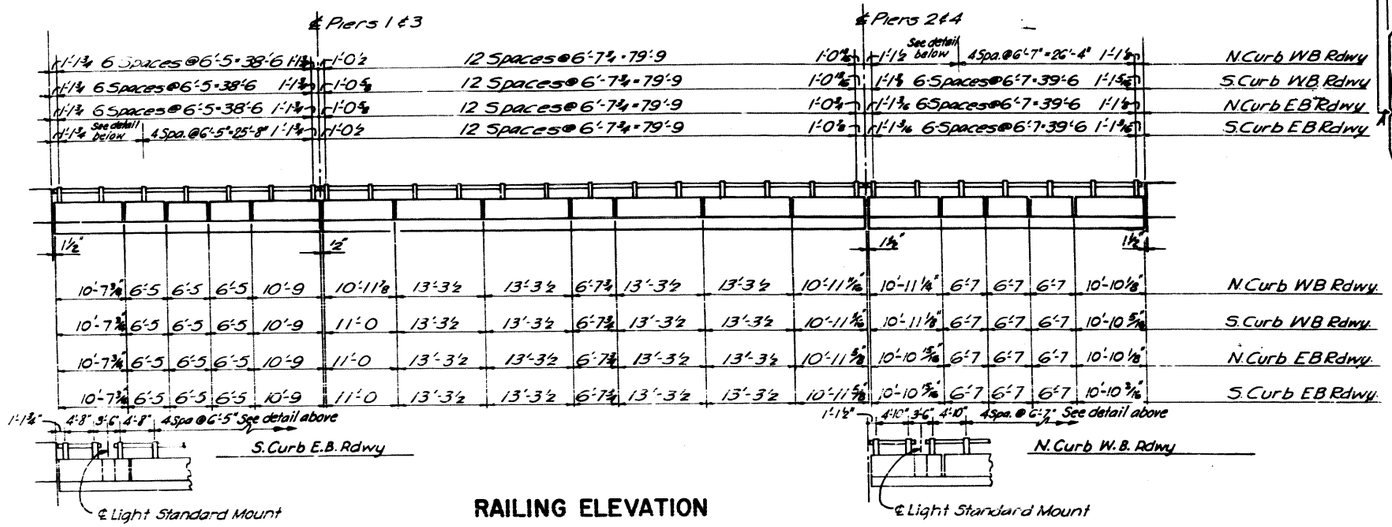
F.A.I. ROUTE 80 — PROJECT
SECTION 99-4HB-1 — WILL COUNTY
Scale: NO SCALE — Date: February 3, 1961

BLAUVELT ENGINEERING CO.
CONSULTING ENGINEERS
WOODBURY, N.J. NEW YORK, N.Y. CRYSTAL LAKE, ILL.

Rev. 5-27-64 (Dim. for Bearings Table, stringer column R.R.E. Revised Table of "t" Dimensions. 5-27-64: R.P.E.

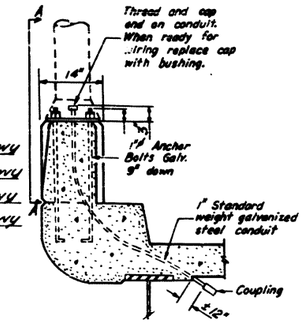
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I.-80 | 99-4HB-1 | WILL | 30 | 14 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | PROJECT- | | |




## RAILING ELEVATION

NOTE: SEE SHEET 10 FOR GENERAL LOCATION OF LIGHT STANDARD MOUNTS.

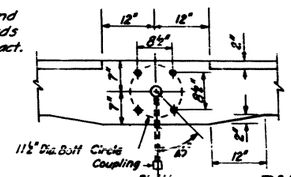



SECTION THRU MOUNT

NOTE:
The cost of furnishing and installing the anchor bolts and conduit for the light standards shall be incidental to the contract.

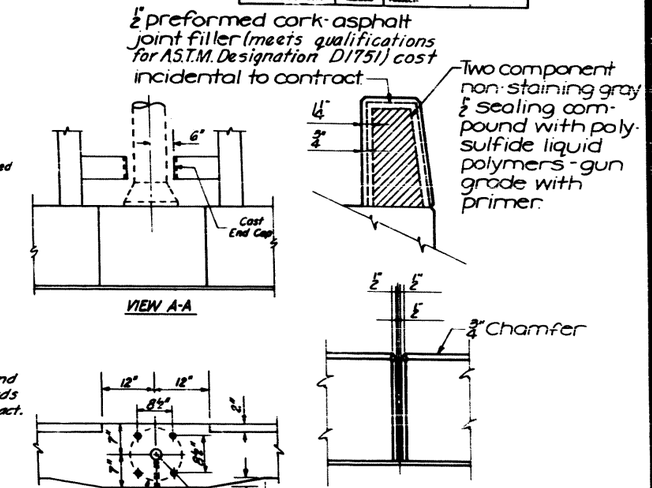



VIEW A-A

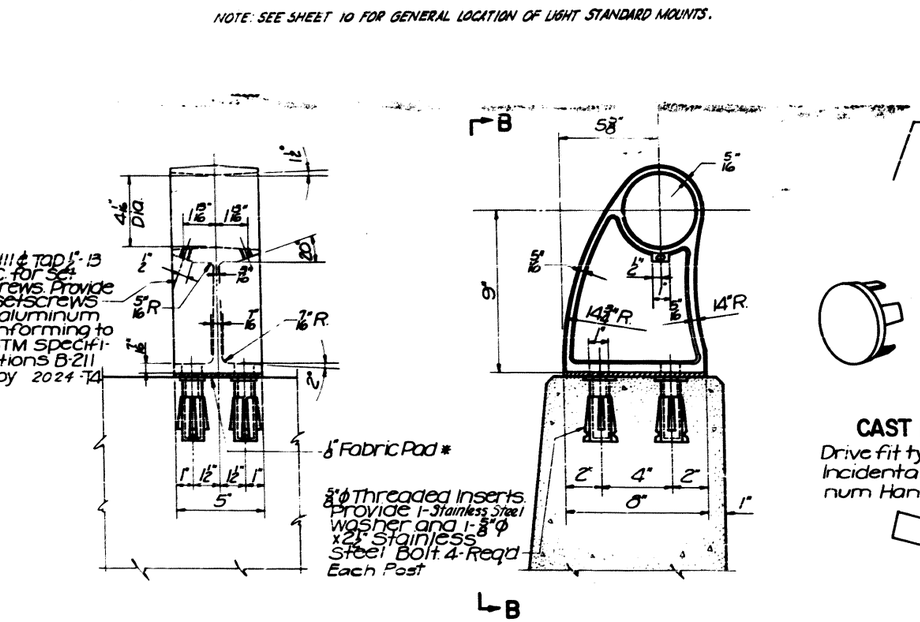



PLAN

DETAILS OF LIGHT STANDARD MOUNT




## PARAPET JOINT DETAILS

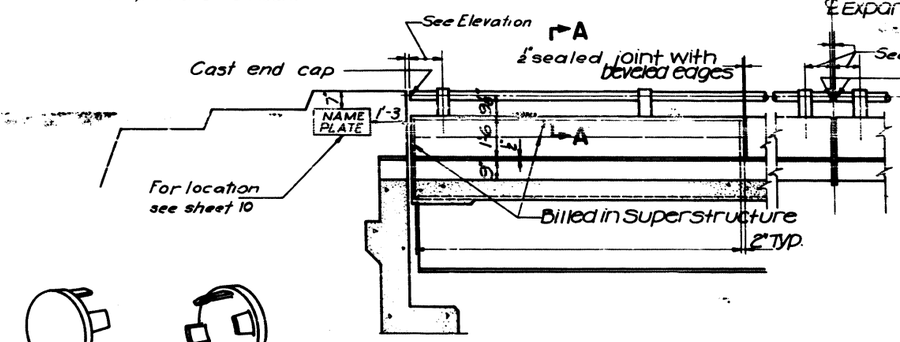



VIEW B-B

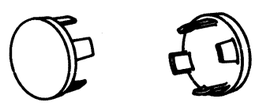
SECTION A-A

RAIL POST DETAILS

* For each post provide ⅛" prefabricated pad (See Article 54.3(f) of the Standard Specifications. Cost to be incidental to the contract.

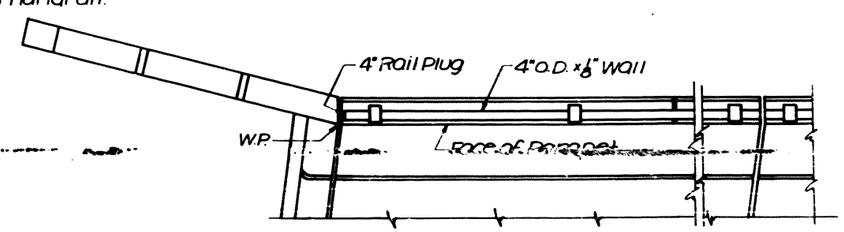



ELEVATION-END POST

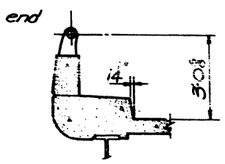


CAST END CAP

Drive fit type-28 Required Incidental to item "Aluminum Handrail."




PLAN-END POST




SEC THRU CURB

(For two bridges)
BILL OF MATERIAL

| Item | Unit | Quantity |
|---|---|---|
| Alum. Handrail | Lin. Ft. | 657 |

NOTES

All Posts shall be placed normal to parapet.
All posts shall conform to ASTM Specification B-108 alloy SG-70B-T6.
All Rail Tubing shall conform to ASTM Specification B-235 alloy 6061-T6.
Rail tubing may be continuous for a maximum of three (3) panels.
The contract unit price per lineal foot for Aluminum Handrail shall include the furnishing, fabrication, transportation and erection of all material.
Aluminum Handrail shall be measured in lineal feet. The length paid for shall be the overall length along the top longitudinal railing member through all posts and gaps.

| | |
|---|---|
| DESIGNED | J.M.C. |
| CHECKED | R.H. |
| DRAWN | S.E.F. |
| CHECKED | L.A.N. |

ALUMINUM HANDRAIL
~~RAILING DETAILS~~
F.A.I. 80 OVER
RICHARDS STREET
STA. 439 + 92.00

F.A.I. ROUTE 80 — PROJECT
SECTION 99-4HB-1 — WILL COUNTY
Scale: NO SCALE — Date: February 3, 1961

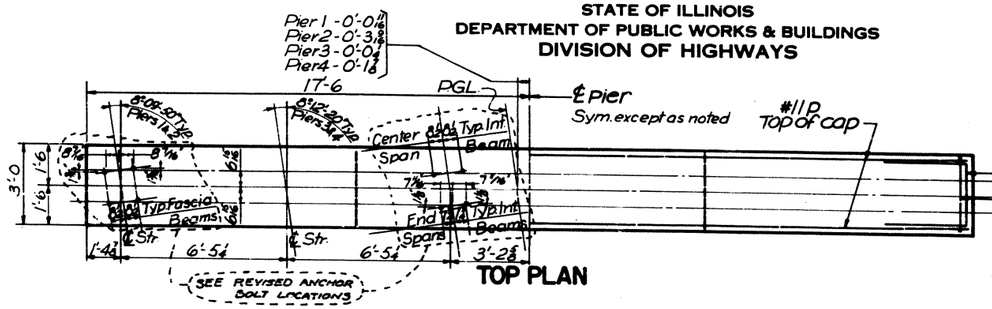
BLAUVELT ENGINEERING CO.
CONSULTING ENGINEERS
WOODBURY, N.J. NEW YORK, N.Y. CRYSTAL LAKE, ILL.

Revised No. cast end caps

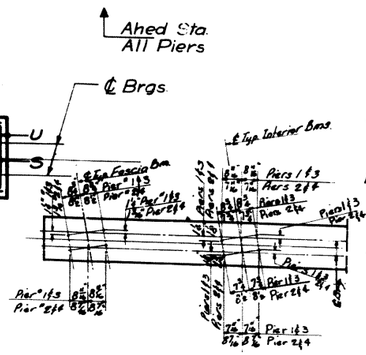
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

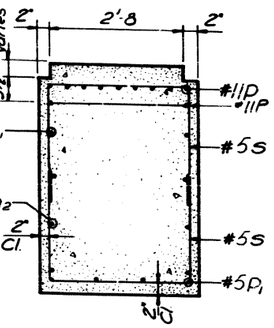
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I.-80 | 99-4HB-1 | WILL | 30 | 15 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | PROJECT- | | |

P.G.L. Pier 1 Sta 439+55.88 P.G.L. Elev 556.49
P.G.L. Pier 2 Sta 440+37.35 P.G.L. Elev 556.89
P.G.L. Pier 3 Sta 439+46.21 P.G.L. Elev 556.44
P.G.L. Pier 4 Sta 440+28.42 P.G.L. Elev 556.85

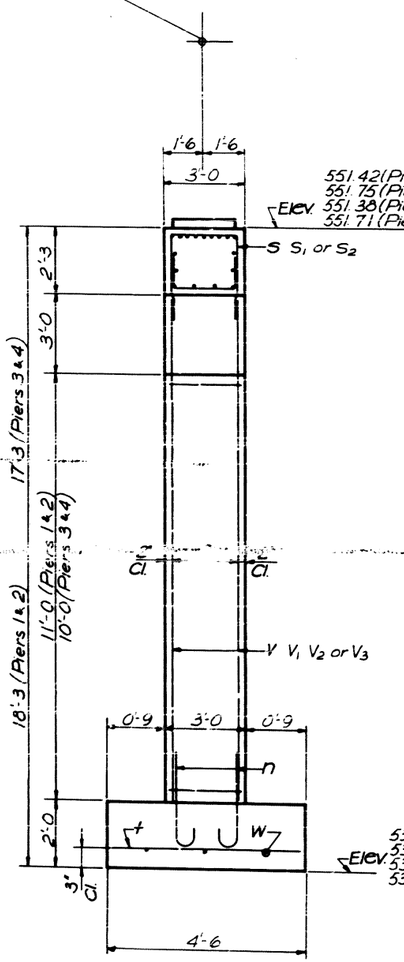



TOP PLAN



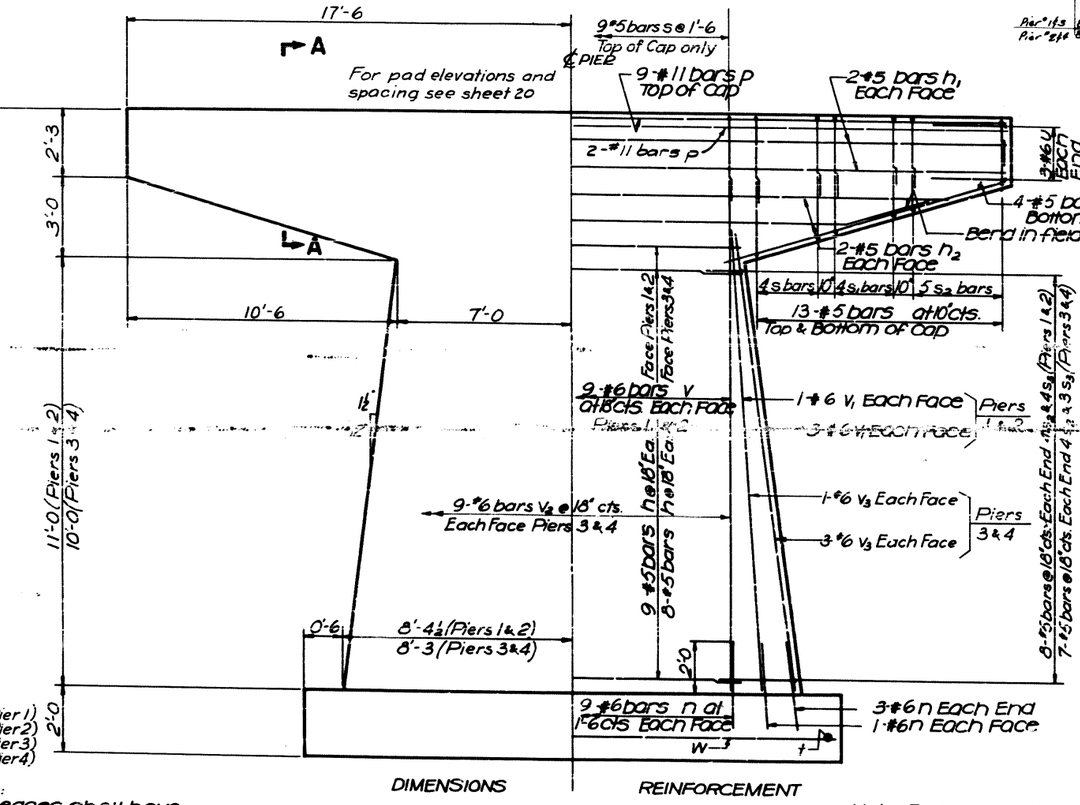




SECTION A-A




END VIEW

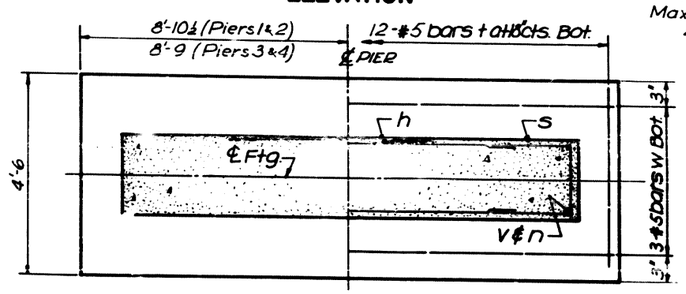
Note:
All edges shall have standard 3/4" chamfers except footings.



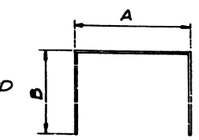

DIMENSIONS REINFORCEMENT

ELEVATION

Note: Footings shall extend 1'-0 Minimum into Sound Rock
Maximum Bearing Pressure: 4.2 Tons per sq. ft.



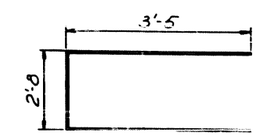

FOOTING PLAN



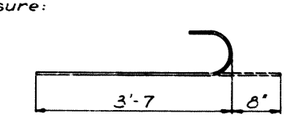

s BARS

A & B DIMENSIONS

| Bar | A | B |
|---|---|---|
| S | 6'-8 | 5'-8 |
| S1 | 2'-8 | 2'-8 |
| S2 | 2'-8 | 2'-2 |
| S3 | 2'-8 | 1'-8 |
| S4 | 1'-0 | 2'-0 |




u BARS




n BARS

4 PIERS
BILL OF MATERIAL

| Bar | No. | Size | Lgth. | Shape |
|---|---|---|---|---|
| h | 68 | #5 | 12'-6 | — |
| h1 | 16 | #5 | 34'-6 | — |
| h2 | 16 | #5 | 27'-6 | — |
| h3 | 8 | #5 | 25'-3 | — |
| n | 112 | #6 | 4'-3 | ⊃ |
| p | 44 | #11 | 34'-6 | — |
| p1 | 32 | #5 | 11'-0 | — |
| s | 100 | #5 | 9'-0 | ⊓ |
| s1 | 64 | #5 | 8'-0 | ⊓ |
| s2 | 112 | #5 | 7'-0 | ⊓ |
| s3 | 28 | #5 | 6'-0 | ⊓ |
| s4 | 72 | #4 | 5'-0 | ⊓ |
| t | 48 | #5 | 4'-0 | — |
| u | 24 | #6 | 9'-6 | ⊏ |
| v | 36 | #6 | 14'-0 | — |
| v1 | 20 | #6 | 12'-6 | — |
| v2 | 36 | #6 | 13'-0 | — |
| v3 | 20 | #6 | 11'-6 | — |
| w | 12 | #5 | 17'-0 | — |
| Class X Concrete | | | cu. yd. | 168.9 |
| Reinf. Bars | | | lbs. | 16,320 |
| Rock Excavation | | | cu. yds. | 47 |

Note: See sheet 20 for bars $h_3$ & $s_4$
Fabricator shall identify bars by location and bar mark, i.e. Pier #1 Mk h.

| | |
|---|---|
| DESIGNED | C.S. |
| CHECKED | J.M.C. |
| DRAWN | E.R. |
| CHECKED | L.A.N. |

PIERS
~~F.A.I. SC OVER~~
RICHARDS STREET
STA. 439+92.00

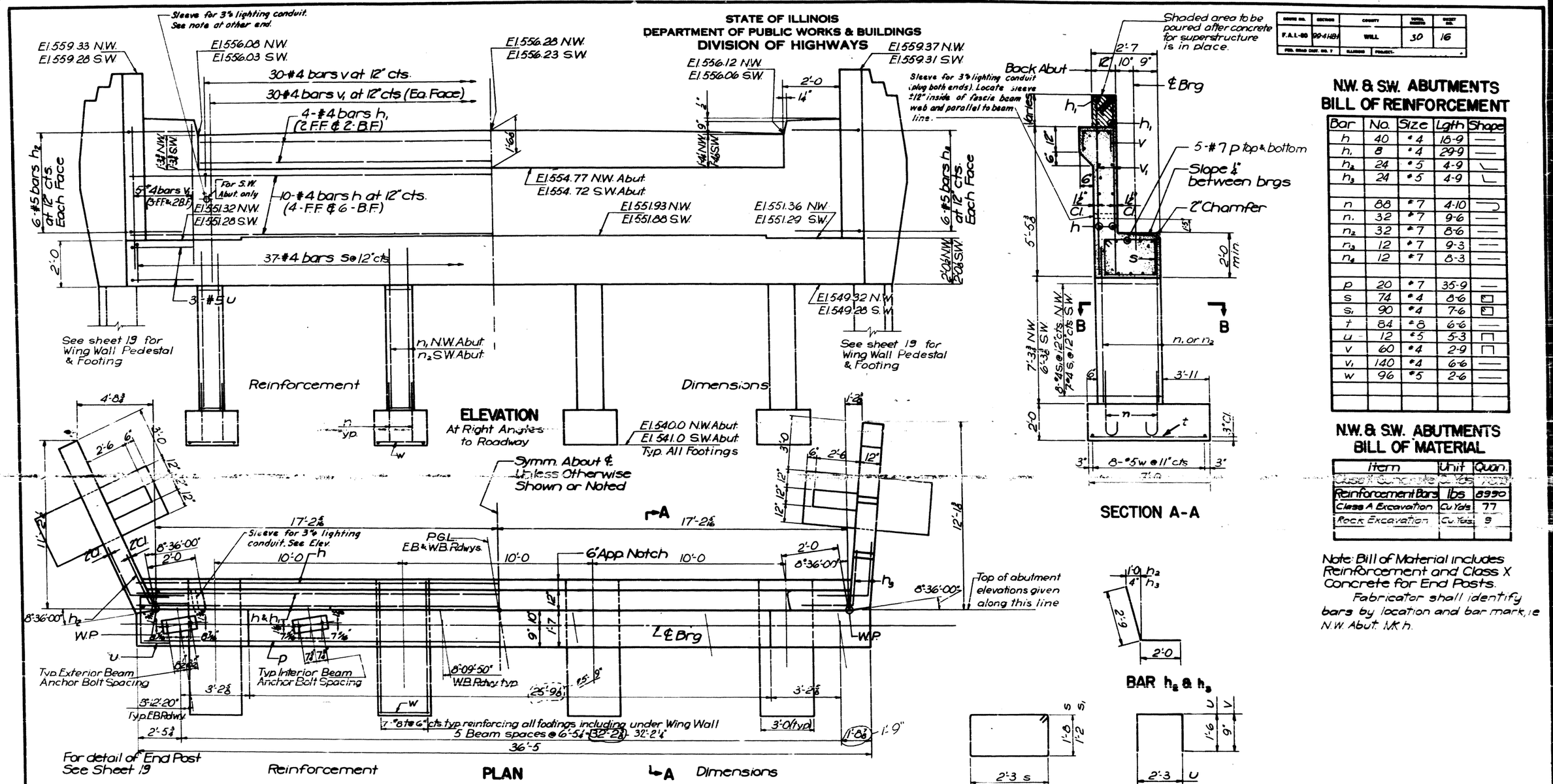
F.A.I. ROUTE 90
SECTION 99-4HB-1
PROJECT
WILL COUNTY
Scale: NO SCALE
Date: February 3, 1961

BLAUVELT ENGINEERING CO.
CONSULTING ENGINEERS
WOODBURY, N. J. NEW YORK, N. Y. CRYSTAL LAKE, ILL.

Rev. 5-14-68 Locations of Pier Anchor Bolts P.D.E.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

| SECTION NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I.-80 | 99-4HB-1 | WILL | 30 | 16 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | PROJECT- | | |




## N.W. & S.W. ABUTMENTS BILL OF REINFORCEMENT

| Bar | No. | Size | Lgth | Shape |
|---|---|---|---|---|
| h | 40 | #4 | 16-9 | — |
| h1 | 8 | #4 | 29-9 | — |
| h2 | 24 | #5 | 4-9 | |
| h3 | 24 | #5 | 4-9 | |
| | | | | |
| n | 88 | #7 | 4-10 | |
| n1 | 32 | #7 | 9-6 | — |
| n2 | 32 | #7 | 8-6 | — |
| n3 | 12 | #7 | 9-3 | — |
| n4 | 12 | #7 | 8-3 | — |
| | | | | |
| p | 20 | #7 | 35-9 | — |
| s | 74 | #4 | 8-6 | |
| s1 | 90 | #4 | 7-6 | |
| t | 84 | #8 | 6-6 | — |
| u | 12 | #5 | 5-3 | |
| v | 60 | #4 | 2-9 | |
| v1 | 140 | #4 | 6-6 | — |
| w | 96 | #5 | 2-6 | — |
| | | | | |
| | | | | |

## N.W. & S.W. ABUTMENTS BILL OF MATERIAL

| Item | Unit | Quan. |
|---|---|---|
| Reinforcement Bars | lbs | 8990 |
| Class A Excavation | Cu Yds | 77 |
| Rock Excavation | Cu Yds | 9 |

Note: Bill of Material includes Reinforcement and Class X Concrete for End Posts.
Fabricator shall identify bars by location and bar mark, ie N.W. Abut. Mk h.

Note: Footings shall bear on rock with a 1' min. embedment.
Maximum Bearing Pressure: 3.6 Tons per sq. ft.

| | |
|---|---|
| DESIGNED | R.H. |
| CHECKED | C.S. |
| DRAWN | S.E.F. |
| CHECKED | L.A.N. |

# NW & SW ABUTMENTS
# F.A.I. 80 OVER RICHARDS STREET
## STA. 439+92.00

F.A.I. ROUTE 80
SECTION 99-4HB-1
Scale: NO SCALE

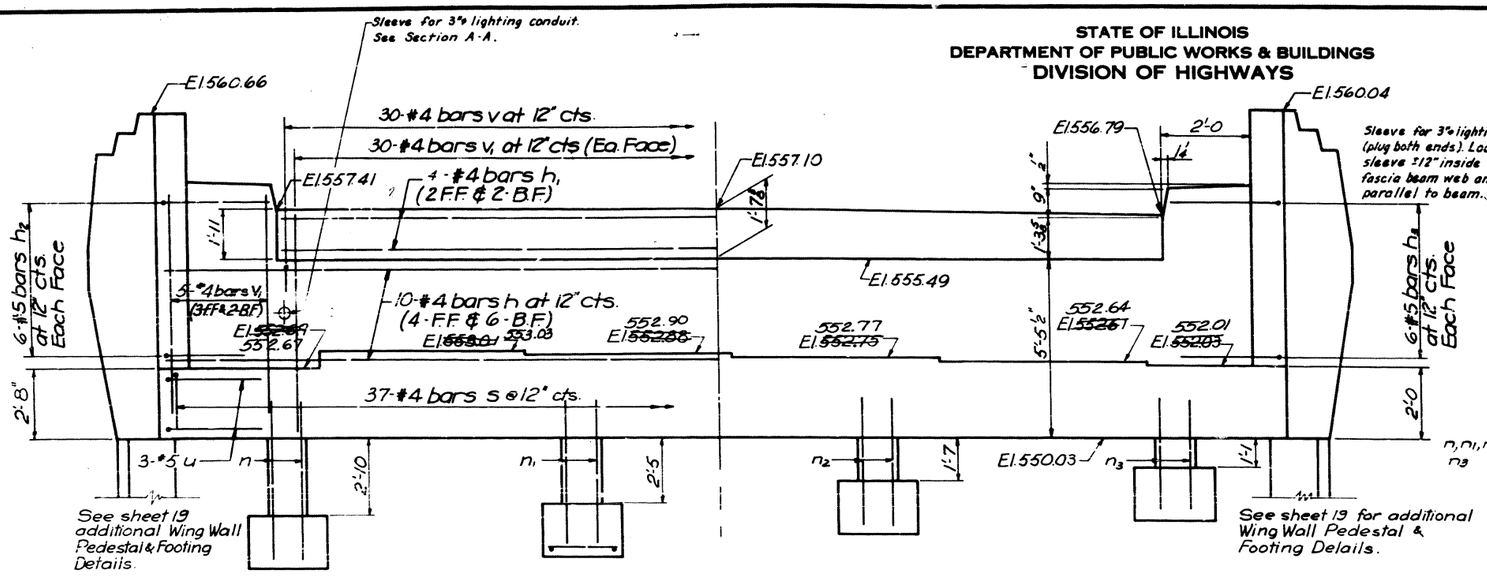
PROJECT
WILL COUNTY
Date: February 3, 1961

BLAUVELT ENGINEERING CO.
CONSULTING ENGINEERS

Rev. 4-23-63 VDS Added lighting conduit
Revised footing reinf. 11-16-61 L.D.W.
Rev. 3-14-64 length of int. stringer pad, stringer spa. & dimension from North fascia stringer to edge of Abut. K.P.E.

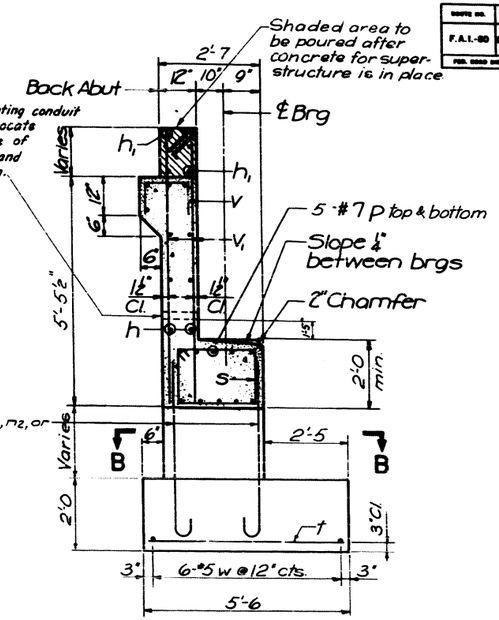
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I.-80 | 99-4HB-1 | WILL | 30 | 17 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | PROJECT- | | |




## ELEVATION

At Right Angles to Roadway




## SECTION A-A

## N.E. ABUTMENT BILL OF REINFORCEMENT

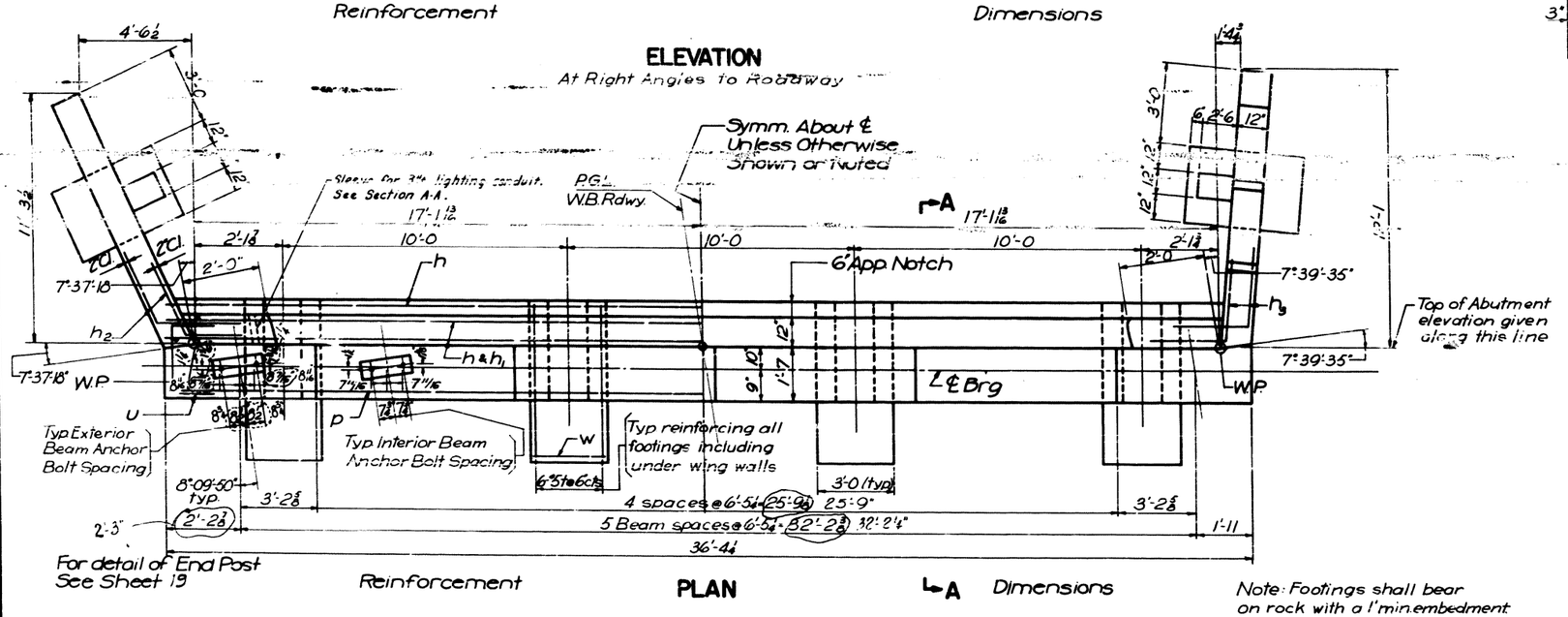
| Bar | No. | Size | Lgth | Shape |
|---|---|---|---|---|
| h | 20 | #4 | 18-9 | — |
| h₁ | 4 | #4 | 29-9 | — |
| h₂ | 12 | #5 | 4-9 | L |
| h₃ | 12 | #5 | 4-9 | L |
| | | | | |
| n | 6 | #5 | 6-5 | U |
| n₁ | 6 | #5 | 6-0 | U |
| n₂ | 6 | #5 | 5-2 | U |
| n₃ | 6 | #5 | 4-8 | U |
| n₄ | 6 | #5 | 6-11 | U |
| n₅ | 6 | #5 | 5-2 | U |
| p | 10 | #7 | 35-9 | — |
| s | 37 | #4 | 8-6 | □ |
| | | | | |
| t | 36 | #5 | 5-0 | — |
| | | | | |
| u | 6 | #5 | 5-3 | ⊓ |
| v | 30 | #4 | 2-9 | ⊓ |
| v₁ | 70 | #4 | 6-6 | — |
| w | 36 | #5 | 2-6 | — |
| | | | | |

## N.E. ABUTMENT BILL OF MATERIAL

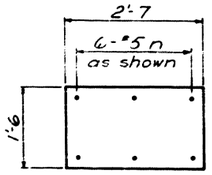
| Item | Unit | Quan. |
|---|---|---|
| Class X Concrete | C.Yds. | 220 |
| Reinforcement Bars | lbs. | 2630 |
| Class A Excavation | Cu. Yds. | 17 |
| Rock Excavation | Cu. Yds. | 4 |
| | | |

Note: Bill of Material includes Reinforcement and Class X Concrete for End Posts.

Fabricator shall identify bars by location and bar mark, i.e. N.E. Abut Mk. h.

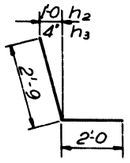



Note: Footings shall bear on rock with a 1' min. embedment.
Maximum Bearing Pressure: 3.6 Tons per sq. ft.

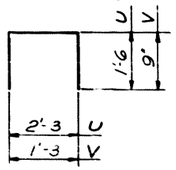



## SECTION B-B

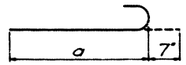
| n Bars | |
|---|---|
| | J |
| n | 5'-10 |
| n₁ | 5-5 |
| n₂ | 4-7 |
| n₃ | 4-1 |
| n₄ | 6-4 |
| n₅ | 4-7 |



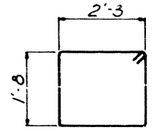

## BAR $h_2$ & $h_3$




## BARS u, & v




## BARS n




## BAR s

| | |
|---|---|
| DESIGNED | R.H. |
| CHECKED | C.S. |
| DRAWN | S.E.F. |
| CHECKED | L.A.N. |

# N.E. ABUTMENT
# F.A.I. 80 OVER RICHARDS STREET
## STA. 439+92.00

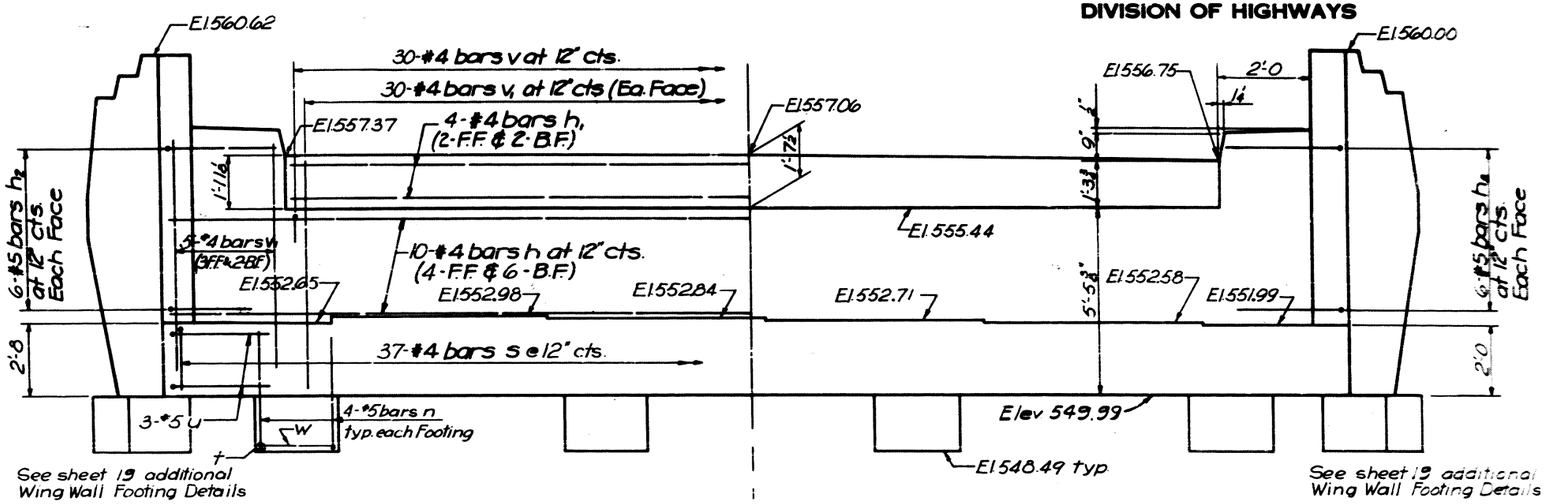
F.A.I. ROUTE 80 — PROJECT
SECTION 99-4HB-1 — WILL COUNTY
Scale: NO SCALE — Date: February 3, 1961

BLAUVELT ENGINEERING CO.
CONSULTING ENGINEERS
WOODBURY, N. J. — NEW YORK, N. Y. — CRYSTAL LAKE, ILL.

Rev. 4-23-63 V.D.S. Added lighting conduit
Revised brg. seat elev. 11-16-61 L.D.W.
Rev: 5-14-64 To East Abut. Anchor Bolt Location. Rte. int. stringer pad, stringer spa. & dimension from the North fascia edge of Abut. N.E.
Revised bearing seat elevations 5-27-64 R.P.E.

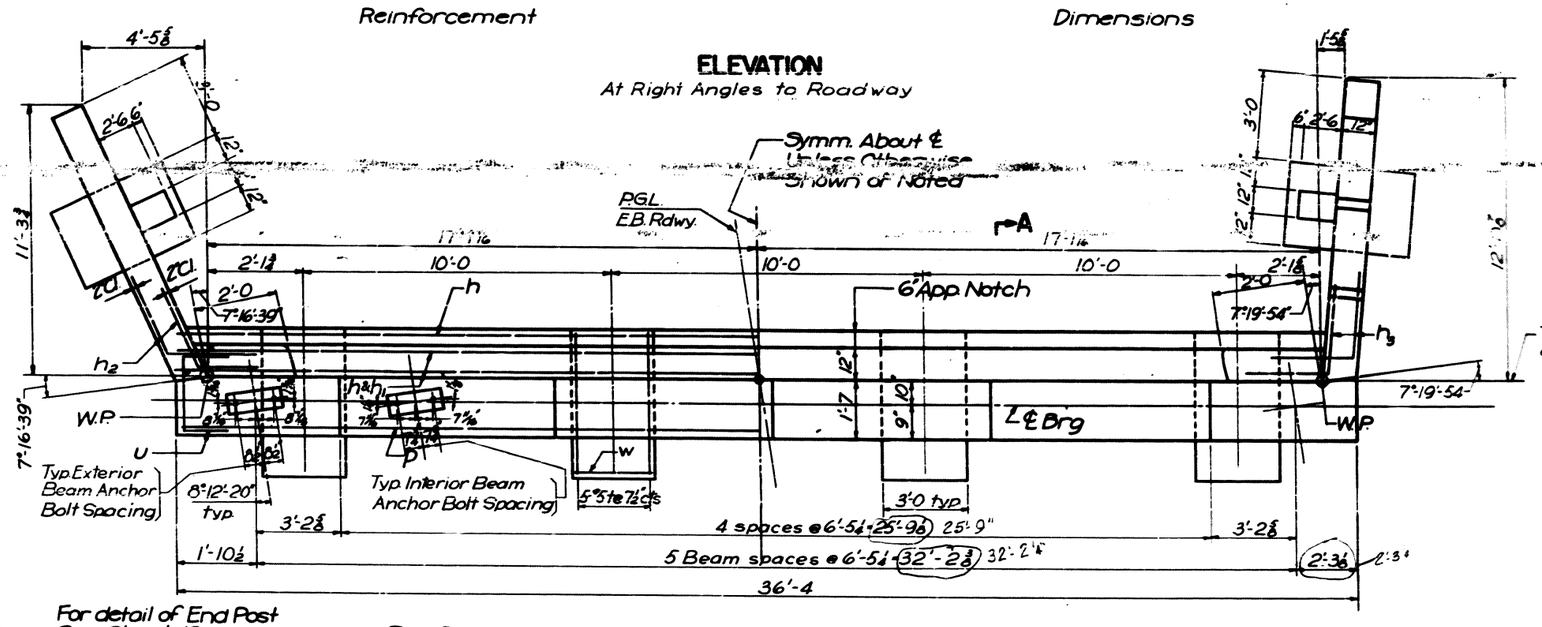
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

| | | | | |
|---|---|---|---|---|
| F.A.I.-80 | 99-4HB-1 | WILL | 30 | 18 |




Reinforcement — Dimensions

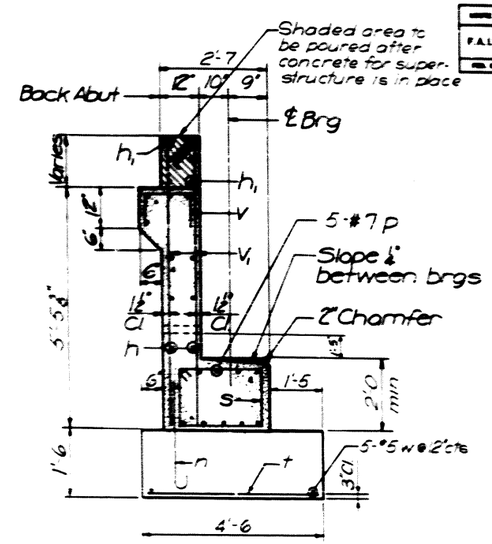
## ELEVATION
At Right Angles to Roadway



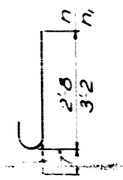

For detail of End Post See Sheet 19

Reinforcement — PLAN — Dimensions

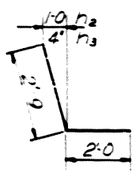
Note: Footings shall bear on rock with a 1' min embedment. Maximum Bearing Pressure 3.3 Tons per sq. ft.



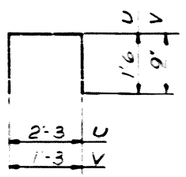

SECTION A-A



BAR n & n1



BAR h2 & h3



BARS u & v

## S.E. ABUTMENT BILL OF REINFORCEMENT

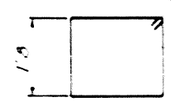
| Bar | No. | Size | Lgth | Shape |
|---|---|---|---|---|
| h | 20 | #4 | 18-9 | — |
| h1 | 4 | #4 | 29-9 | — |
| h2 | 12 | #5 | 4-9 | L |
| h3 | 12 | #5 | 4-9 | L |
| n | 16 | #5 | 3-3 | ⊃ |
| n1 | 12 | #5 | 3-9 | ⊃ |
| p | 10 | #7 | 35-9 | — |
| s | 37 | #4 | 8-6 | ▭ |
| t | 30 | #5 | 4-0 | — |
| u | 6 | #5 | 5-3 | ⊓ |
| v | 30 | #4 | 2-9 | ⊓ |
| v1 | 70 | #4 | 6-6 | — |
| w | 30 | #5 | 2-6 | — |

## S.E. ABUTMENT BILL OF MATERIAL

| Item | Unit | Quan. |
|---|---|---|
| Reinforcement Bars | lbs | 2630 |
| Class A Excavation | Cu Yds | 19 |
| Rock Excavation | Cu Yds | 12 |

Note Bill of Material includes Reinforcement and Class X Concrete for End Posts.

Fabricator shall identify bars by location and bar mark. e.g. SE Abut Mk h



BAR s

| | |
|---|---|
| DESIGNED | R.H. |
| CHECKED | C.S. |
| DRAWN | S.E.F. |
| CHECKED | L.A.N. |

S.E. ABUTMENT
F.A.I. 80 OVER
RICHARDS STREET
STA. 439+92.00

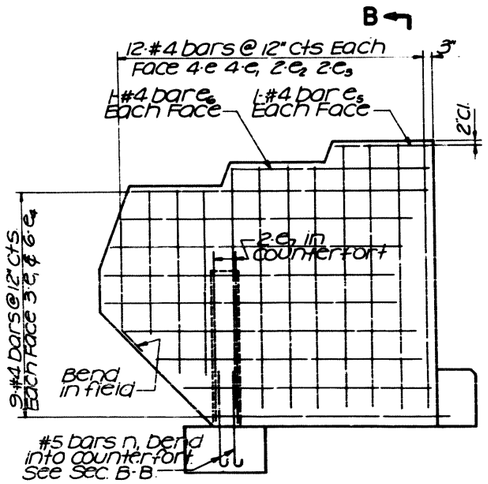
F.A.I. ROUTE 80 — PROJECT WILL COUNTY
SECTION 99-4HB-1
Scale: NO SCALE — Date: February 3, 1964

BLAUVELT ENGINEERING CO.
CONSULTING ENGINEERS
WOODBURY, N.J. — NEW YORK, N.Y. — CHICAGO, ILL.

Revised 2-23-63 Added [illegible] Conduit
Revised brg seat Elev. 11-16-61 L.D.W.
Rev. 5-19-64: Changed length of int. stringer spa., total stringer spa. & dimension from south [illegible] of Abut. [illegible]
Revised bearing seat elevations 5-27-64 R.P.E.

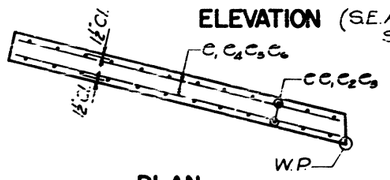
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I.-80 | 99-4HB-1 | WILL | 30 | 19 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | PROJECT- | | |

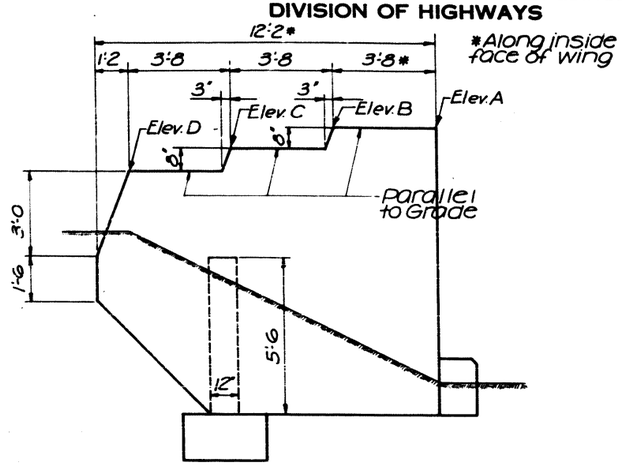



B

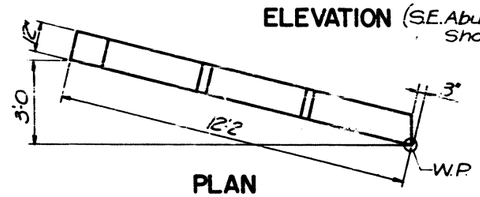
ELEVATION (S.E. Abutment Shown)




PLAN

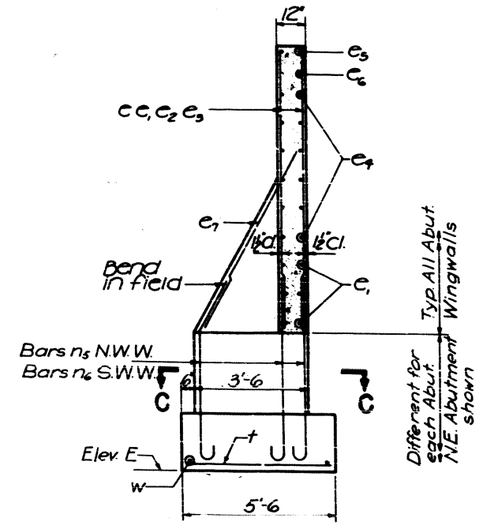



ELEVATION (S.E. Abutment Shown)

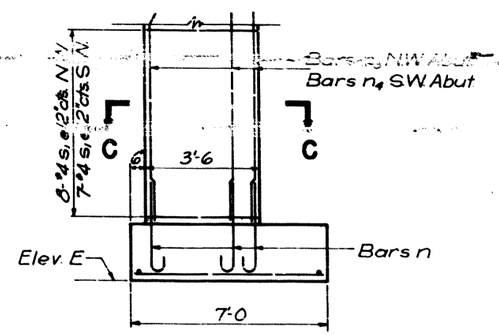



PLAN

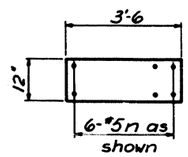
Note: See abutment drawings for footing reinforcing



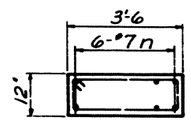

N.E. ABUT.




N.W. & S.W. ABUT.

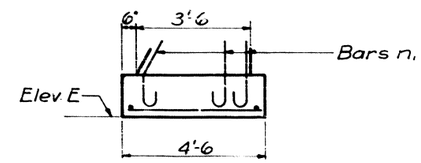



N.E. ABUT.




N.W. & S.W. ABUT.

SECTION C-C




S.E. ABUT.

SECTION B-B

## ONE END POST BILL OF MATERIAL

| Bar | No. | Size | Lgth | Shape |
|---|---|---|---|---|
| e | 8 | #4 | 9-3 | — |
| e1 | 14 | #4 | 8-6 | — |
| e2 | 4 | #4 | 6-6 | — |
| e3 | 4 | #4 | 5-0 | — |
| e4 | 12 | #4 | 10-6 | — |
| e5 | 2 | #4 | 3-6 | — |
| e6 | 2 | #4 | 7-0 | — |
| e7 | 2 | #5 | 7-0 | — |
| | | | | |
| | | | | |
| | | | | |
| ** Reinforcement bars | | | lbs | 270 |

** Included in Quantity on sheets 16, 17, 18

Fabricator shall identify bars by Location and bar mark, i.e. N.W. Abut. Mk.

## TABLE OF WINGWALL ELEVATIONS

| Elev. | N.W. Abut. | | N.E. Abut. | | S.W. Abut. | | S.E. Abut. | |
|---|---|---|---|---|---|---|---|---|
| | N.W.W. | S.W.W. | N.W.W. | S.W.W. | N.W.W. | S.W.W. | N.W.W. | S.W.W. |
| A | 559.37 | 559.33 | 560.66 | 560.04 | 559.31 | 559.28 | 560.62 | 560.00 |
| B | 559.35 | 559.31 | 560.68 | 560.06 | 559.29 | 559.26 | 560.64 | 560.02 |
| C | 558.66 | 558.62 | 560.03 | 559.41 | 558.60 | 558.57 | 559.99 | 559.37 |
| D | 557.97 | 557.93 | 559.38 | 558.76 | 557.91 | 557.88 | 559.34 | 558.72 |
| E | 540.00 | 540.00 | 545.19 | 546.94 | 541.00 | 541.00 | 548.49 | 548.49 |

| | |
|---|---|
| DESIGNED | RH |
| CHECKED | C.S. |
| DRAWN | S.E.F./ E.R. |
| CHECKED | L.A.N. |

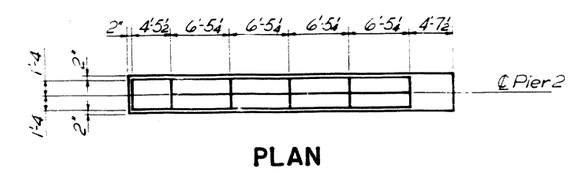
# ABUTMENT DETAILS
## F.A.I. 80 OVER RICHARDS STREET
## STA. 439+92.00

F.A.I. ROUTE 80 — PROJECT
SECTION 99-4HB-1 — WILL COUNTY
Scale: NO SCALE — Date: February 3, 1961

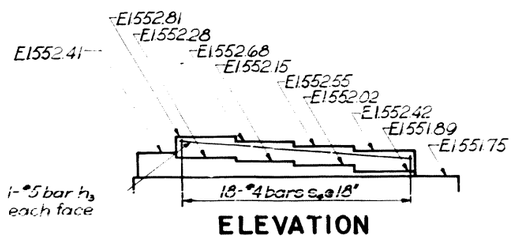
BLAUVELT ENGINEERING CO.
CONSULTING ENGINEERS
WOODBURY, N. J. NEW YORK, N. Y. CRYSTAL LAKE, ILL.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I.-80 | 99-4HB-1 | WILL | 30 | 20 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | PROJECT | | |

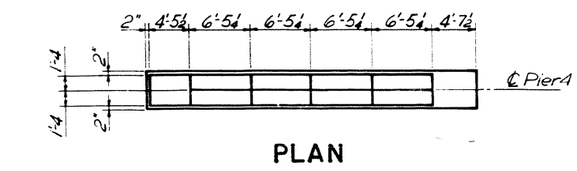



PLAN

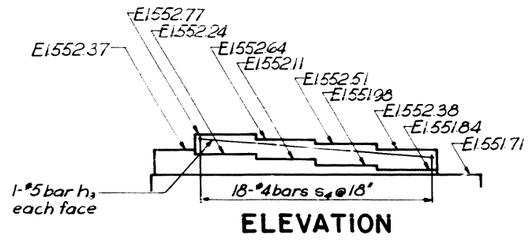



ELEVATION

PIER 2



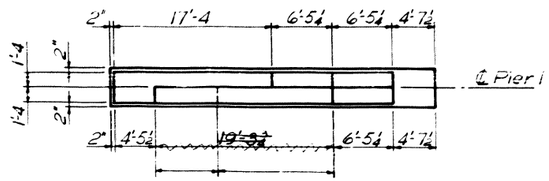

PLAN



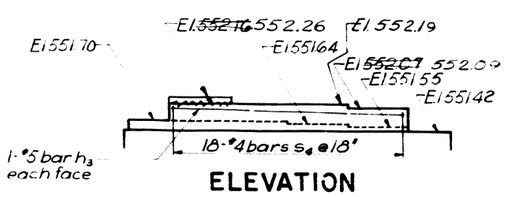

ELEVATION

PIER 4

Note: Reinforcing for High Pads only. Bars included in Bill of Materials on sheet 5

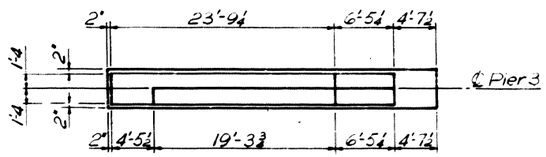



PLAN

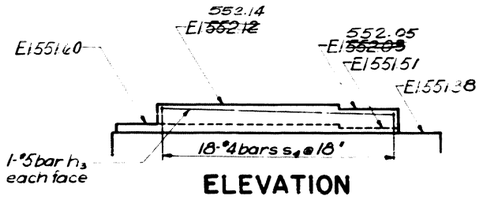



ELEVATION

PIER 1




PLAN




ELEVATION

PIER 3

Note: Piers shown looking ahead.

Boring No. 1
Boring located at Sta. 439+15
15' left of ℄

| Elev. | N | Ground El. 543.2 |
|---|---|---|
| | | Medium stiff black topsoil |
| | | Medium stiff brown clay, trace of gravel |
| 540 | 77.8% Rec. | Medium hard stratified limestone |

Boring No. 2
Boring located at Sta. 439+06
47' right of ℄

| Elev. | N | Ground El. 545.3 |
|---|---|---|
| 545 | | Medium stiff black topsoil |
| | | Medium stiff brown clay, trace of gravel |
| | 86.3% Rec. | Medium hard stratified limestone |
| 540 | | |

Boring No. 3
Boring located at Sta. 439+59
47' left of ℄

| Elev. | N | Ground El. 543.4 |
|---|---|---|
| | | Medium stiff black topsoil |
| | | Medium stiff brown clay, trace of gravel |
| | 79.2% Rec. | Medium hard stratified limestone |
| 540 | | |

Boring No. 4
Boring located at Sta. 439+50
18' right of ℄

| Elev. | N | Ground El. 546.2 |
|---|---|---|
| | | Loose black cinders and clay |
| 545 | | Medium stiff brown clay, trace of gravel |
| | 86.2% Rec. | Medium hard stratified limestone |
| 540 | | |

Boring No. 5
Boring located at Sta. 440+35
17' left of ℄

| Elev. | N | Ground El. 547.8 |
|---|---|---|
| | | Medium stiff black topsoil |
| | | Medium stiff brown clay, trace of gravel |
| 545 | 88.6% Rec. | Medium hard stratified limestone |

Boring No. 6
Boring located at Sta. 440+26
48' right of ℄

| Elev. | N | Ground El. 550.9 |
|---|---|---|
| | | Loose black cinders and clay |
| 550 | | Medium stiff brown clay, trace of gravel |
| | 89.2% Rec. | Medium hard stratified limestone |
| 545 | | |

Boring No. 7
Boring located at Sta. 440+80
48' left of ℄

| Elev. | N | Ground El. 547.5 |
|---|---|---|
| | | Medium stiff black topsoil |
| | | Medium stiff brown clay, trace of gravel |
| 545 | 81.7% Rec. | Medium hard stratified limestone |

Boring No. 8
Boring located at Sta. 440+70
19' right of ℄

| Elev. | N | Ground El. 551.6 |
|---|---|---|
| | | Medium stiff black topsoil |
| | | Medium stiff brown clay, trace of gravel |
| 550 | 80.0% Rec. | Medium hard stratified limestone |

BORING DATA

| | |
|---|---|
| DESIGNED | C.S. |
| CHECKED | L.A.N. |
| DRAWN | E.R. |
| CHECKED | L.A.N. |

PIER ELEVATION ~~& BORING~~ DATA
F.A.I. 80 OVER
RICHARDS ST.
STA. 439+92.00

F.A.I. ROUTE 80
SECTION 99-4HB-1
PROJECT
WILL COUNTY
Scale: NO SCALE
Date: February 3, 1961

BLAUVELT ENGINEERING CO.
CONSULTING ENGINEERS
WOODBURY, N. J. NEW YORK, N. Y. CRYSTAL LAKE, ILL.

Revised top pier Elev. "17" J.A.P.E. 5-21-64. Revised top of Pier 3 dimension, K.H.C. 5-21-81

Revised top Pier #1 E43 Elev. 11-19-61 L.D.W.