

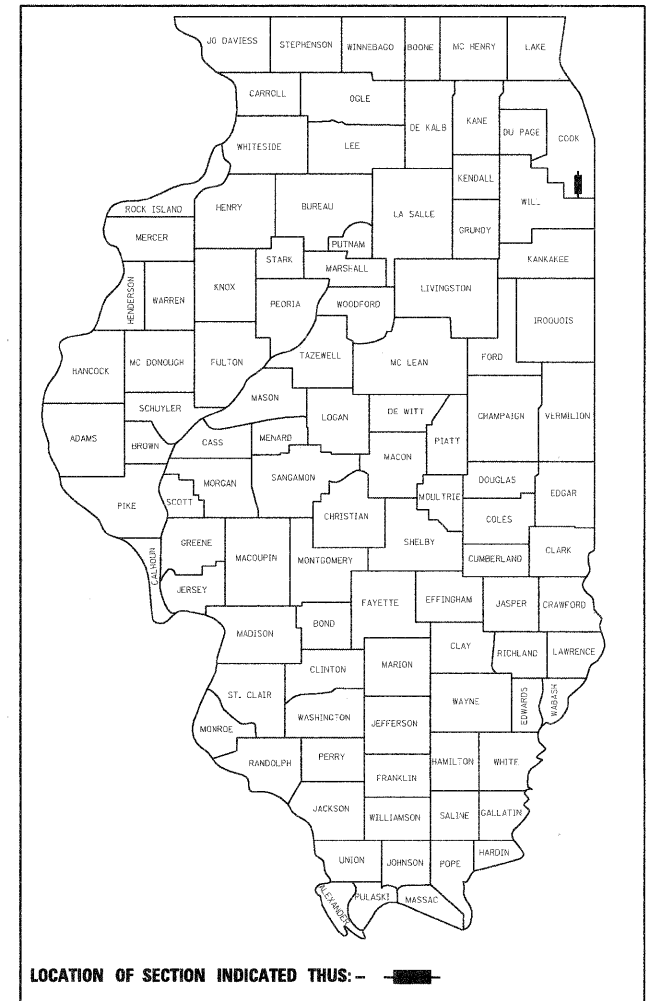
| F.A.U. RTE. | SECTION    | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|------------|--------|--------------|-----------|
| 2845        | 2011-206-F | COOK   | 18           | 1         |

ILLINOIS CONTRACT NO. 60R36  
D-91-072-12

FOR INDEX OF SHEETS, SEE SHEET NO. 2  
\*\*\*\*\*

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
**PROPOSED  
HIGHWAY PLANS**

**FAU ROUTE 2845 – WESTERN AVENUE (SN 016-0772)  
OVER BUTTERFIELD CREEK  
SECTION 2011-206-F  
PROJECT: ACIM-2845(006)  
COOK COUNTY  
BEAM AND BEARING FABRICATION  
C-91-072-12**



LOCATION OF SECTION INDICATED THIS: - [black rectangle] -

TRAFFIC DATA  
\*\*\*\*\*

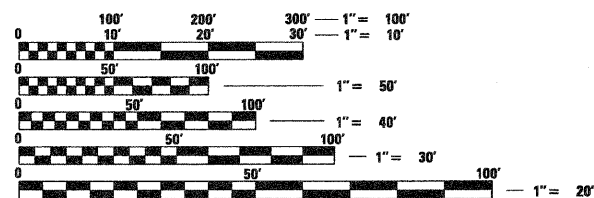
WESTERN AVENUE

EXISTING ADT (2010) : 6,500

POSTED SPEED LIMIT : 35 MPH

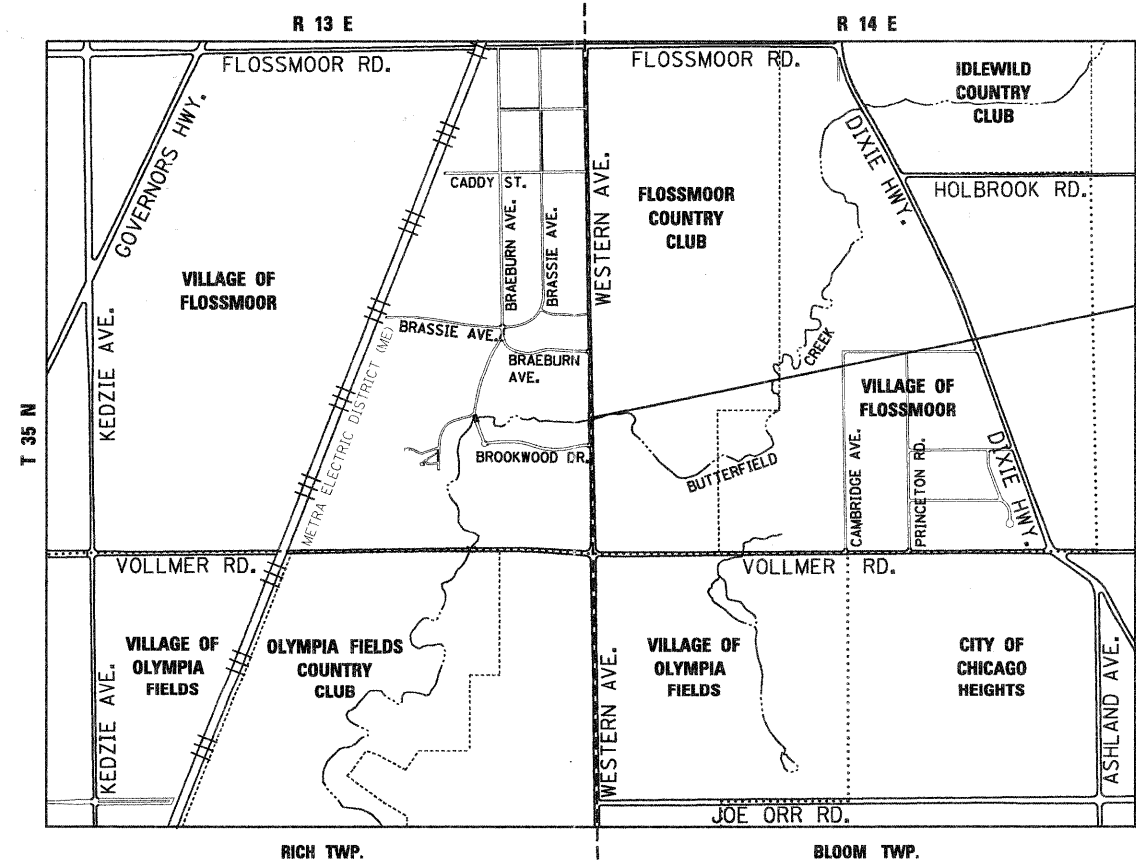
DESIGN SPEED : 40 MPH

IMPROVEMENT IS LOCATED IN THE VILLAGE OF FLOSSMOOR



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811



WESTERN AVE OVER BUTTERFIELD CREEK  
SN: 016-0772



THOMAS M. HEIN, P. E.  
IL. LIC. NO. 062-053199  
EXP 11-30-11  
DATE 9-12-11

PROJECT ENGINEER ROBERT BORO (847) 705-4237  
PROJECT MANAGER ISSAM RAYYAN

CONTRACT NO. 60R36



LOCATION MAP  
NOT TO SCALE  
GROSS LENGTH = 415 FT. = 0.079 MILE  
NET LENGTH = 415 FT. = 0.079 MILE

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
SUBMITTED SEPTEMBER 13, 2011  
Diana M. O'Keefe  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER  
October 14, 2011  
Scott E. Stitt, P.E.  
acting ENGINEER OF DESIGN AND ENVIRONMENT  
October 14, 2011  
Christine M. Reed  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

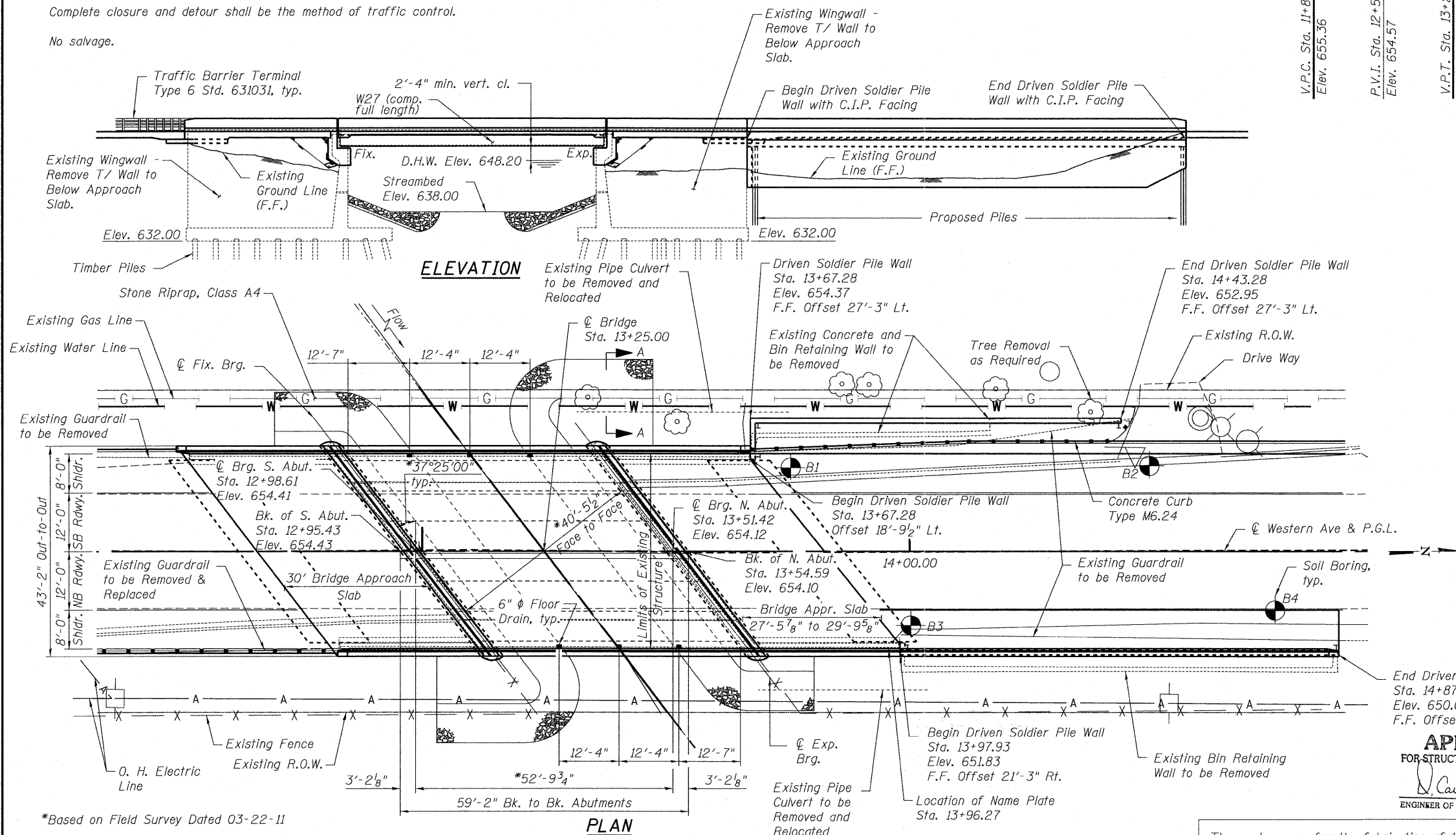
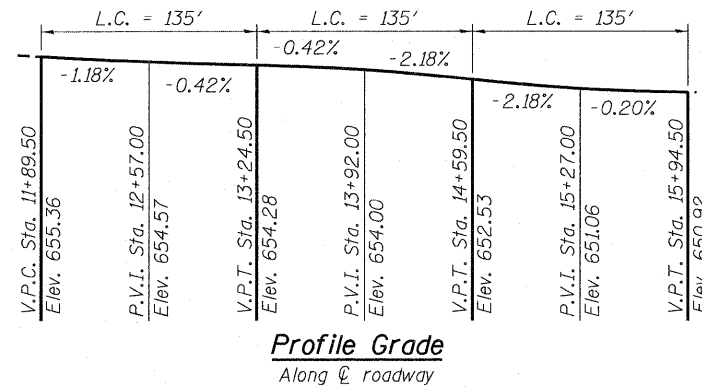
PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS



**BENCHMARK:** Square cut on the south east corner of south west wingwall of the Western Avenue Bridge over Butterfield Creek, Elevation 654.70.  
**Existing Structure:** S.N. 016-0772 built in 1960 as a FAU 2845, Section 62742 at Station 13+25. Structure consists of 1 span PPC deck beam structure supported on cantilevered type reinforced concrete abutments. Groups of untreated timber piles support the abutments and wingwalls. The bridge spans 53'-0" center-to-center of bearing and 57'-8" back-to-back of abutments along center line of Western Avenue. The structure width is 40'-0" out-to-out of deck. Existing elements to be removed include wearing surface, PPC deck beams, approaches and joints. Replace superstructure with 8" concrete deck supported on steel beams. Approach slabs to be replaced with structural approach slabs. Remove and reconstruct abutment caps to accommodate new superstructure. Provide riprap protection at abutments. Remove existing bin retaining walls and replace with new driven soldier pile retaining walls with C.I.P. Facing.

Complete closure and detour shall be the method of traffic control.

No salvage.



**SEISMIC DATA**  
 Seismic Performance Zone (SPZ) = 1  
 Design Spectral Acceleration at 1.0 sec. (SD1) = 0.096g  
 Design Spectral Acceleration at 0.2 sec. (SDS) = 0.16g  
 Soil Site Class = D

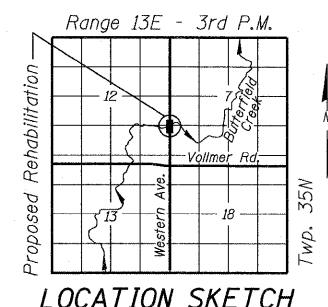
**LOADING HL-93**  
 Allow 50#/sq. ft. for future wearing surface.

**DESIGN SPECIFICATIONS**  
 AASHTO LRFD Bridge Design Specifications, 5th Edition, with 2010 Interims  
 17TH Edition - AASHTO Standard Specifications for Highway Bridges (Driven Soldier Pile Wall Design)

**DESIGN STRESSES**  
**FIELD UNITS (New Construction)**  
 f'c = 3,500 psi  
 fy = 60,000 psi (Reinforcement)  
 fy = 50,000 psi (M270 Grade 50)  
 Soldier Piles Shall Be M270 Grade 36

**DESIGN STRESSES**  
**FIELD UNITS (Exist. Construction)**  
 f'c = 3,500 psi  
 fs = 20,000 psi (Reinforcement)

**APPROVED**  
 FOR STRUCTURAL ADEQUACY ONLY  
 D. Cal Puy (SE)  
 ENGINEER OF BRIDGES AND STRUCTURES



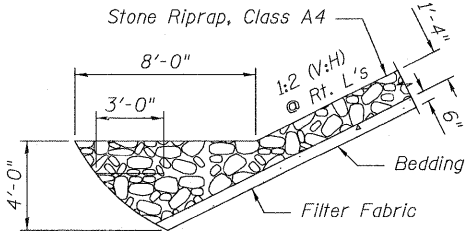
These plans are for the fabrication of the structural steel and bearings. All work shown that is not related to the fabrication is for information only. It is not included in this contract, and is identified as "Not Included in this Contract" or "For Information only"

**WATERWAY INFORMATION TABLE (DESIGN)**

| Drainage Area = 21.7 sq miles |           | Proposed Low Grade Elev. = 654.77 feet @ Sta. 13+55.00 |                  | Max. Recorded H.W.E. = 649.0 |                |              |          |                     |          |
|-------------------------------|-----------|--|------------------|------------------------------|----------------|--------------|----------|---------------------|----------|
| Flood                         | Freq. Yr. | Discharge C.F.S.                                       | Waterway Opening |                              | Natural H.W.E. | Created Head |          | Headwater Elevation |          |
|                               |           |  | Existing         | Proposed                     |                | Existing     | Proposed | Existing            | Proposed |
| Design                        | 50        | 2430   | 372.7            | 372.7                        | 647.8          | 1.4          | 1.3      | 649.2               | 649.1    |
| Base                          | 100       | 2890   | 419.5            | 419.5                        | 648.5          | 1.8          | 1.3      | 650.3               | 649.8    |
| Overtopping                   | N/A       | N/A  | N/A              | N/A                          | N/A            | N/A          | N/A      | N/A                 | N/A      |
| Max. Calc.                    | 500       | 4040   | 445.2            | 445.2                        | 649.2          | 4.0          | 2.9      | 653.2               | 652.1    |

**DESIGN SCOUR ELEVATION TABLE**

| Design Scour Elevation (ft.) | N. Abut. | S. Abut. |
|------------------------------|----------|----------|
|                              | 634.75   | 634.75   |



**SECTION A-A**



RAGHAD ADEIS DAHHAN, S.E.  
 IL. LIC. NO. 081-006300  
 EXP. 11-30-2012  
 DATE 10-13-2011

**GENERAL PLAN & ELEVATION**  
**WESTERN AVENUE OVER BUTTERFIELD CREEK**  
**F.A.U. 2845 - SECTION 2011-206-F**  
**COOK COUNTY**  
**STATION 13+25.00**  
**STRUCTURE NO. 016-0772**



|                        |                |           |
|------------------------|----------------|-----------|
| USER NAME =            | DESIGNED - HAA | REVISED - |
| PLOT SCALE =           | CHECKED - RAD  | REVISED - |
| PLOT DATE = 10/13/2011 | DRAWN - HAA    | REVISED - |
|                        | CHECKED - RAD  | REVISED - |

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN & ELEVATION**  
**STRUCTURE NO. 016-0772**  
 SHEET NO. S1 OF S33 SHEETS

| F.A.U. RTE.        | SECTION    | COUNTY | TOTAL SHEETS | SHEET NO.                 |
|--------------------|------------|--------|--------------|---------------------------|
| 2845               | 2011-206-F | COOK   | 18           | 3                         |
| CONTRACT NO. 60R36 |            |        |              | ILLINOIS FED. AID PROJECT |

INDEX OF SHEETS

- S1 General Plan and Elevation
- S2 General Data
- \*\*\* S3 Removal Plan
- \*\* S4 Top of Deck Elevations (1 of 2)
- \*\* S5 Top of Deck Elevations (2 of 2)
- \*\*\* S6 North Approach Slab Elevations
- \*\*\* S7 South Approach Slab Elevations
- \*\* S8 Deck Plan and Section
- \*\*\* S9 Parapet and Superstructure Details
- \*\*\* S10 Superstructure Drainage
- \*\*\* S11 Preformed Joint Strip Seal
- \*\*\* S12 South Approach Slab
- \*\*\* S13 North Approach Slab
- \*\*\* S14 Approach Slab Section and Details
- S15 Framing Plan
- S16 Structural Steel Detail
- S17 Bearing Details
- \*\*\* S18 Cantilever Forming Brackets
- \*\* S19 South Abutment Plan and Elevation
- \*\*\* S20 South Abutment Details
- \*\* S21 North Abutment Plan and Elevation
- \*\*\* S22 North Abutment Details
- \*\*\* S23 Wing Walls Elevation and Details
- \*\*\* S24 Retaining walls plan and elevation
- \*\*\* S25 Retaining Walls section and details
- \*\*\* S26 Bar Splicer Details
- \*\*\* S27 Geotechnical soil boring logs.
- \*\* S28 Existing Bridge Plans (1 of 6)
- \*\* S29 Existing Bridge Plans (2 of 6)
- \*\* S30 Existing Bridge Plans (3 of 6)
- \*\* S31 Existing Bridge Plans (4 of 6)
- \*\* S32 Existing Bridge Plans (5 of 6)
- \*\* S33 Existing Bridge Plans (6 of 6)

GENERAL NOTES

1. Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts  $\frac{3}{4}$ "  $\phi$ , holes  $\frac{13}{16}$ "  $\phi$ , unless otherwise noted.
2. Calculated weight of Structural Steel:  
Grade 50 Structural Steel = 39,000 #  
Grade 36 Structural Steel = 7,000 #
3. No field welding is permitted except as specified in the contract documents.
- \*\* 4. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60.
- \*\* 5. Reinforcement bars designated (E) shall be epoxy coated.
- \*\* 6. Concrete Sealer shall be applied to the designated areas of the exposed surface of the new abutment caps and backwall.
7. The Organic Zinc Rich Primer / Epoxy / Urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception that masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the field. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Reddish Brown (Munsell No 2.5YR 3/4). See Special Provision for "Cleaning and Painting New Metal Structures".
8. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- \*\* 9. Slip forming of parapets is not allowed.

**FOR INFORMATION ONLY**

STATION 13+25.00  
REBUILT 20\_\_ BY  
STATE OF ILLINOIS  
F.A.U.2845 - SEC. 0505-B  
LOADING HL-93  
STRUCTURE NO.016-0772

**NAME PLATE**  
See Std. 515001

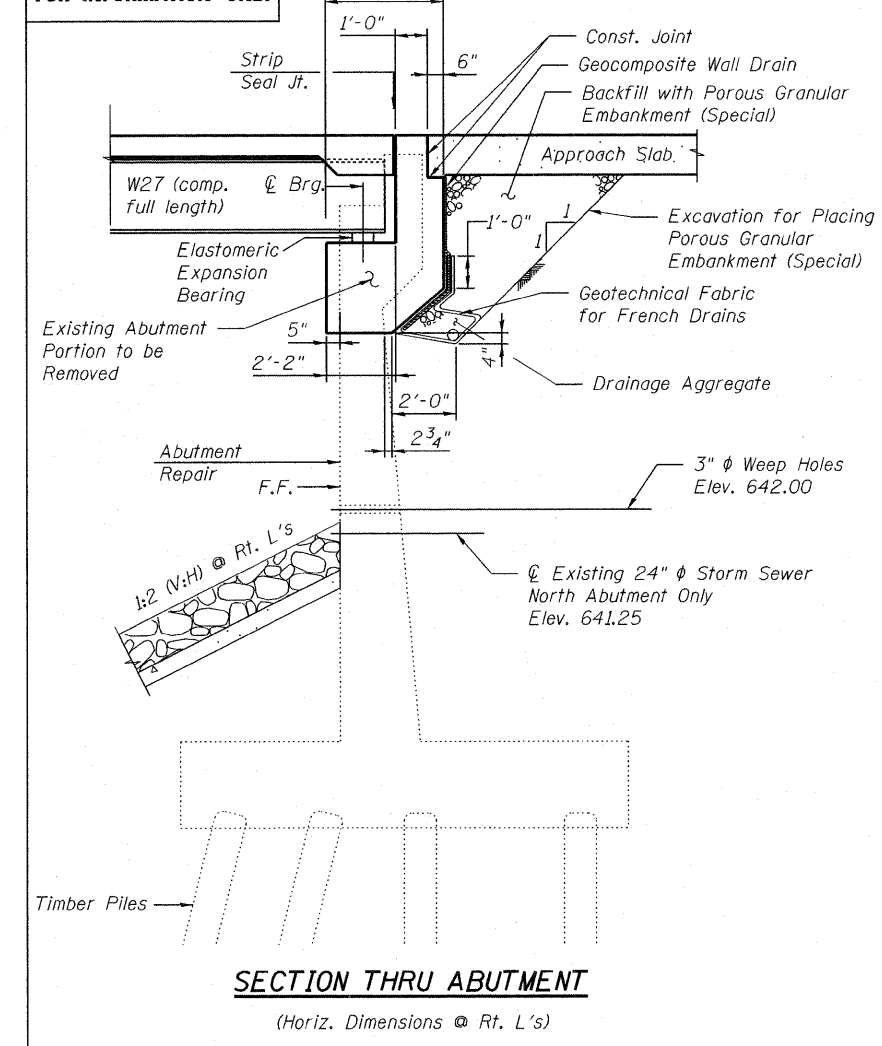
Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.

This work is included in the fabrication contract and is paid for under "Field Measurement"

TOTAL BILL OF MATERIAL

| ITEM  | UNIT    | SUPER | SUB | TOTAL |
|---|---------|-------|-----|-------|
| Porous Granular Embankment (Special)            | Cu. Yd. |       |     |       |
| Stone Riprap, Class A                           | Sq. Yd. |       |     |       |
| Removal of Existing Superstructures             | Each    |       |     |       |
| Concrete Removal                                | Cu. Yd. |       |     |       |
| Structure Excavation                            | Cu. Yd. |       |     |       |
| Concrete Structures                             | Cu. Yd. |       |     |       |
| Concrete Superstructure                         | Cu. Yd. |       |     |       |
| Bridge Deck Grooving                            | Sq. Yd. |       |     |       |
| Furnishing Structural Steel                     | L. Sum  | 1     |     |       |
| Erecting Structural Steel                       | L. Sum  | 1     |     |       |
| Storage Structural Steel                        | Cal Day | 60    |     |       |
| Stud Shear Connectors                           | Each    | 1,113 |     |       |
| Reinforcement Bars, Epoxy Coated                | Pound   |       |     |       |
| Bar Splicers                                    | Each    |       |     |       |
| Name Plates                                     | Each    |       |     |       |
| Preformed Joint Strip Seal                      | Foot    |       |     |       |
| Furnishing Elastomeric Bearing Assembly, Type I | Each    | 7     |     |       |
| Erecting Elastomeric Bearing Assembly, Type I   | Each    | 7     |     |       |
| Storage of Elastomeric Bearing Assemblies       | Cal Day | 60    |     |       |
| Anchor Bolt $\frac{5}{8}$ " $\phi$              | Each    | 14    |     |       |
| Anchor Bolt 1" $\phi$                           | Each    | 14    |     |       |
| Field Measurements                              | L. Sum  | 1     |     |       |

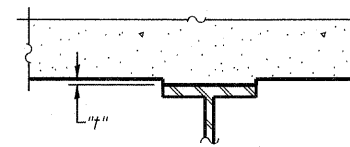
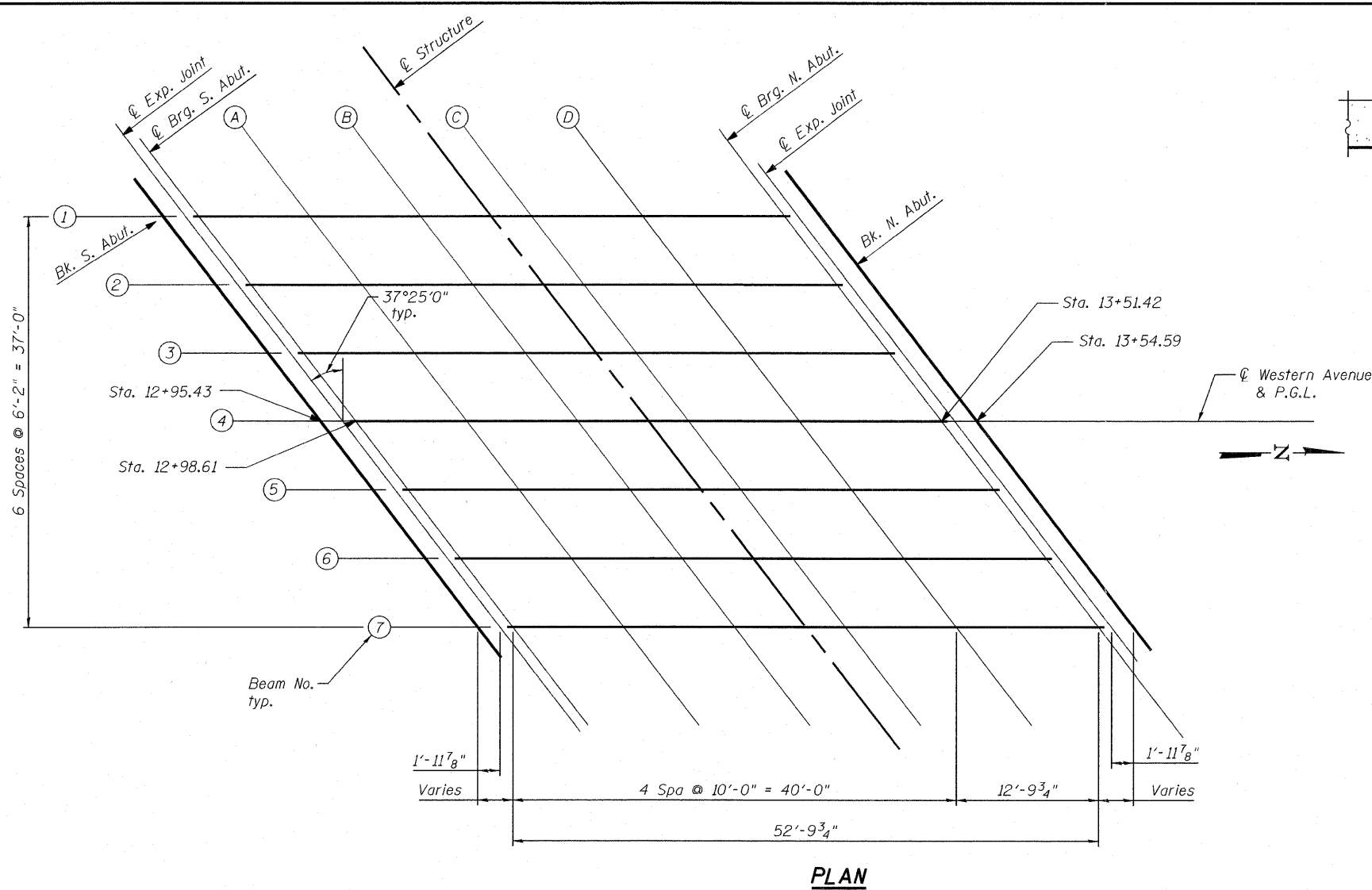
**FOR INFORMATION ONLY**



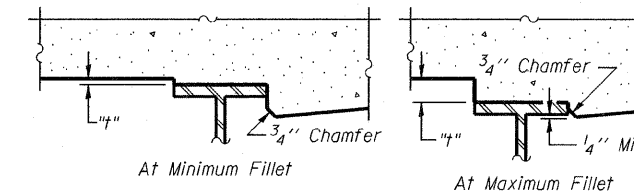
\*\* - This work is not included in the fabrication contract and is provided for information only.

\*\*\* - This work is not in the fabrication contract and sheet is not included in these plans.

These plans are for the fabrication of the structural steel and bearings. All work shown that is not related to the fabrication is for information only. It is not included in this contract, and is identified as "Not Included in this Contract" or "For Information only"



**INTERIOR BEAM**

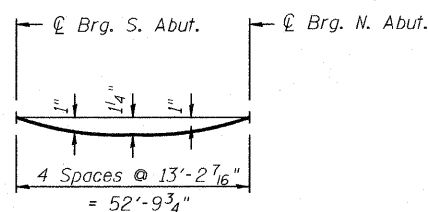


**EXTERIOR BEAM**

To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals as shown in Sheet S5 of S33. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown in Sheet S5 of S33, minus slab thickness, equals the fillet heights "t" above top flange of beams.

**FILLET HEIGHTS**

**PLAN**



**DEAD LOAD DEFLECTION DIAGRAM**

(Includes weight of concrete only.)

**Note:**

The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown in Sheet S5 of S33.

**APEX**  
CONSULTING ENGINEERS, LLC  
111 E. Wacker Drive, Suite 620  
Chicago, IL 60601  
Phone (312) 977-0860 Fax (312) 977-0861

USER NAME =  
PLOT SCALE =  
PLOT DATE = 10/13/2011

DESIGNED - HAA  
CHECKED - RAD  
DRAWN - HAA  
CHECKED - RAD

REVISED  
REVISED  
REVISED  
REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TOP OF DECK ELEVATIONS (1 OF 2)  
STRUCTURE NO. 016-0772**

SHEET NO. S4 OF S33 SHEETS

| F.A.U. RTE.               | SECTION    | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|------------|--------|--------------|-----------|
| 2845                      | 2011-206-F | COOK   | 18           | 5         |
| CONTRACT NO. 60R36        |            |        |              |           |
| ILLINOIS FED. AID PROJECT |            |        |              |           |

FOR INFORMATION ONLY

| <b>Beam 1</b>  |          |        |                              |  |
|----------------|----------|--------|------------------------------|--|
| Location       | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
| Bk. S. Abut.   | 12+81.26 | -18.50 | 654.21                       | 654.21   |
| ⊘ Exp. Joint   | 12+83.26 | -18.50 | 654.20                       | 654.20   |
| ⊘ Brg S. Abut. | 12+84.46 | -18.50 | 654.19                       | 654.19   |
| A              | 12+94.46 | -18.50 | 654.13                       | 654.19   |
| B              | 13+04.46 | -18.50 | 654.07                       | 654.18   |
| C              | 13+14.46 | -18.50 | 654.02                       | 654.14   |
| D              | 13+24.46 | -18.50 | 653.97                       | 654.06   |
| ⊘ Brg N. Abut. | 13+37.27 | -18.50 | 653.91                       | 653.91   |
| ⊘ Exp. Joint   | 13+38.47 | -18.50 | 653.90                       | 653.90   |
| Bk. N. Abut.   | 13+40.46 | -18.50 | 653.89                       | 653.89   |

| <b>Beam 2</b>  |          |        |                              |  |
|----------------|----------|--------|------------------------------|--|
| Location       | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
| Bk. S. Abut.   | 12+85.99 | -12.33 | 654.30                       | 654.30   |
| ⊘ Exp. Joint   | 12+87.98 | -12.33 | 654.29                       | 654.29   |
| ⊘ Brg S. Abut. | 12+89.18 | -12.33 | 654.28                       | 654.28   |
| A              | 12+99.18 | -12.33 | 654.22                       | 654.29   |
| B              | 13+09.18 | -12.33 | 654.17                       | 654.28   |
| C              | 13+19.18 | -12.33 | 654.12                       | 654.24   |
| D              | 13+29.18 | -12.33 | 654.08                       | 654.16   |
| ⊘ Brg N. Abut. | 13+41.98 | -12.33 | 654.00                       | 654.00   |
| ⊘ Exp. Joint   | 13+43.18 | -12.33 | 654.00                       | 654.00   |
| Bk. N. Abut.   | 13+45.17 | -12.33 | 653.98                       | 653.98   |

| <b>Beam 3</b>  |          |        |                              |  |
|----------------|----------|--------|------------------------------|--|
| Location       | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
| Bk. S. Abut.   | 12+90.71 | -6.17  | 654.37                       | 654.37   |
| ⊘ Exp. Joint   | 12+92.70 | -6.17  | 654.35                       | 654.35   |
| ⊘ Brg S. Abut. | 12+93.89 | -6.17  | 654.35                       | 654.35   |
| A              | 13+03.89 | -6.17  | 654.29                       | 654.36   |
| B              | 13+13.89 | -6.17  | 654.24                       | 654.35   |
| C              | 13+23.89 | -6.17  | 654.19                       | 654.31   |
| D              | 13+33.89 | -6.17  | 654.15                       | 654.23   |
| ⊘ Brg N. Abut. | 13+46.70 | -6.17  | 654.07                       | 654.07   |
| ⊘ Exp. Joint   | 13+47.89 | -6.17  | 654.06                       | 654.06   |
| Bk. N. Abut.   | 13+49.88 | -6.17  | 654.04                       | 654.04   |

| <b>Beam 4 &amp; ⊘ Western Ave &amp; PGL</b> |          |        |                              |  |
|---|----------|--------|------------------------------|--|
| Location                                    | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
| Bk. S. Abut.                                | 12+95.43 | 0      | 654.43                       | 654.43   |
| ⊘ Exp. Joint                                | 12+97.43 | 0      | 654.42                       | 654.42   |
| ⊘ Brg S. Abut.                              | 12+98.61 | 0      | 654.41                       | 654.41   |
| A   | 13+08.61 | 0      | 654.36                       | 654.43   |
| B   | 13+18.61 | 0      | 654.31                       | 654.42   |
| C   | 13+28.61 | 0      | 654.27                       | 654.39   |
| D   | 13+38.61 | 0      | 654.21                       | 654.30   |
| ⊘ Brg N. Abut.                              | 13+51.42 | 0      | 654.12                       | 654.12   |
| ⊘ Exp. Joint                                | 13+52.60 | 0      | 654.12                       | 654.12   |
| Bk. N. Abut.                                | 13+54.59 | 0      | 654.10                       | 654.10   |

| <b>Beam 5</b>  |          |        |                              |  |
|----------------|----------|--------|------------------------------|--|
| Location       | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
| Bk. S. Abut.   | 13+00.16 | 6.17   | 654.31                       | 654.31   |
| ⊘ Exp. Joint   | 13+02.15 | 6.17   | 654.30                       | 654.30   |
| ⊘ Brg S. Abut. | 13+03.33 | 6.17   | 654.29                       | 654.29   |
| A              | 13+13.33 | 6.17   | 654.24                       | 654.31   |
| B              | 13+23.33 | 6.17   | 654.20                       | 654.31   |
| C              | 13+33.33 | 6.17   | 654.15                       | 654.27   |
| D              | 13+43.33 | 6.17   | 654.09                       | 654.17   |
| ⊘ Brg N. Abut. | 13+56.14 | 6.17   | 653.99                       | 653.99   |
| ⊘ Exp. Joint   | 13+57.31 | 6.17   | 653.98                       | 653.98   |
| Bk. N. Abut.   | 13+59.30 | 6.17   | 653.97                       | 653.97   |

| <b>Beam 6</b>  |          |        |                              |  |
|----------------|----------|--------|------------------------------|--|
| Location       | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
| Bk. S. Abut.   | 13+04.88 | 12.33  | 654.19                       | 654.19   |
| ⊘ Exp. Joint   | 13+06.88 | 12.33  | 654.18                       | 654.18   |
| ⊘ Brg S. Abut. | 13+08.05 | 12.33  | 654.17                       | 654.17   |
| A              | 13+18.05 | 12.33  | 654.13                       | 654.19   |
| B              | 13+28.05 | 12.33  | 654.08                       | 654.20   |
| C              | 13+38.05 | 12.33  | 654.03                       | 654.15   |
| D              | 13+48.05 | 12.33  | 653.96                       | 654.05   |
| ⊘ Brg N. Abut. | 13+60.85 | 12.33  | 653.86                       | 653.86   |
| ⊘ Exp. Joint   | 13+62.02 | 12.33  | 653.85                       | 653.85   |
| Bk. N. Abut.   | 13+64.01 | 12.33  | 653.83                       | 653.83   |

| <b>Beam 7</b>  |          |        |                              |  |
|----------------|----------|--------|------------------------------|--|
| Location       | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
| Bk. S. Abut.   | 13+09.61 | 18.50  | 654.04                       | 654.04   |
| ⊘ Exp. Joint   | 13+11.60 | 18.50  | 654.03                       | 654.03   |
| ⊘ Brg S. Abut. | 13+12.76 | 18.50  | 654.03                       | 654.03   |
| A              | 13+22.76 | 18.50  | 653.98                       | 654.05   |
| B              | 13+32.76 | 18.50  | 653.94                       | 654.05   |
| C              | 13+42.76 | 18.50  | 653.88                       | 654.00   |
| D              | 13+52.76 | 18.50  | 653.80                       | 653.89   |
| ⊘ Brg N. Abut. | 13+65.57 | 18.50  | 653.69                       | 653.69   |
| ⊘ Exp. Joint   | 13+66.73 | 18.50  | 653.68                       | 653.68   |
| Bk. N. Abut.   | 13+68.72 | 18.50  | 653.66                       | 653.66   |

**APEX**  
CONSULTING ENGINEERS, LLC  
111 E. Wacker Drive, Suite 500  
Chicago, IL 60601  
Phone (312) 977-0860 Fax (312) 977-0861

USER NAME =  
DESIGNED - HAA  
CHECKED - RAD  
PLOT SCALE =  
DRAWN - WHI  
PLOT DATE = 10/13/2011  
CHECKED - RAD

REVISED  
REVISED  
REVISED  
REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

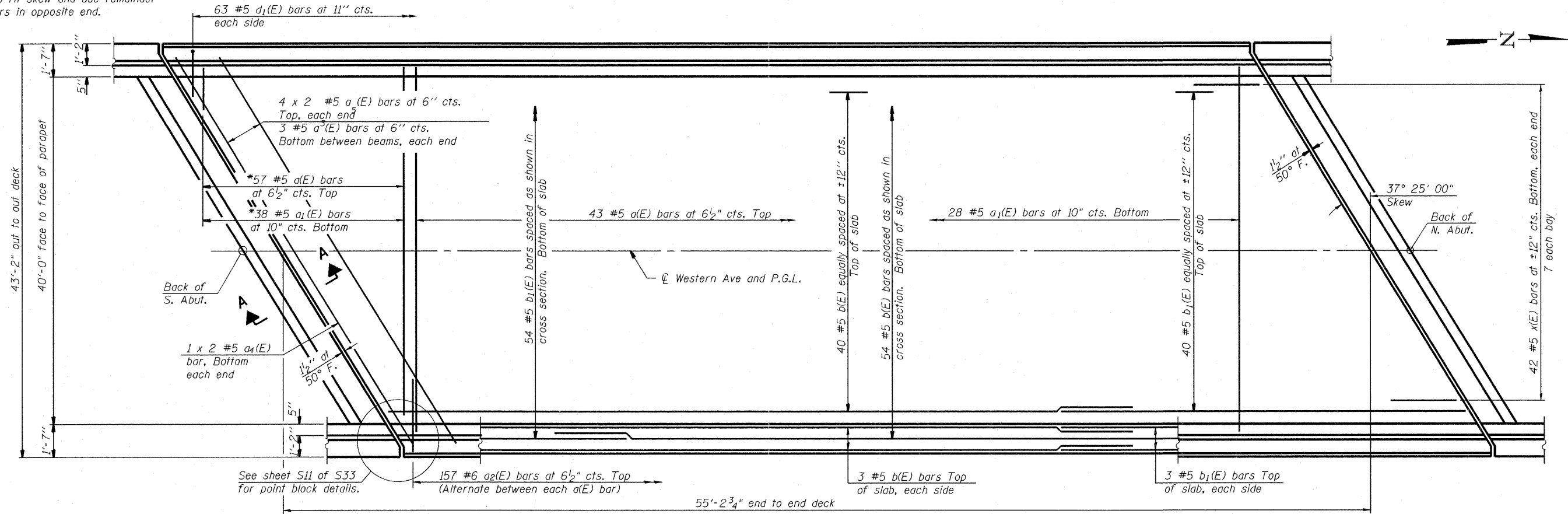
**TOP OF SLAB ELEVATIONS (2 OF 2)  
STRUCTURE NO. 016-0772**

SHEET NO. 55 OF S33 SHEETS

|                           |            |        |                    |           |
|---------------------------|------------|--------|--------------------|-----------|
| F.A.U. RTE.               | SECTION    | COUNTY | TOTAL SHEETS       | SHEET NO. |
| 2845                      | 2011-206-F | COOK   | 18                 | 6         |
| ILLINOIS FED. AID PROJECT |            |        | CONTRACT NO. 60R36 |           |

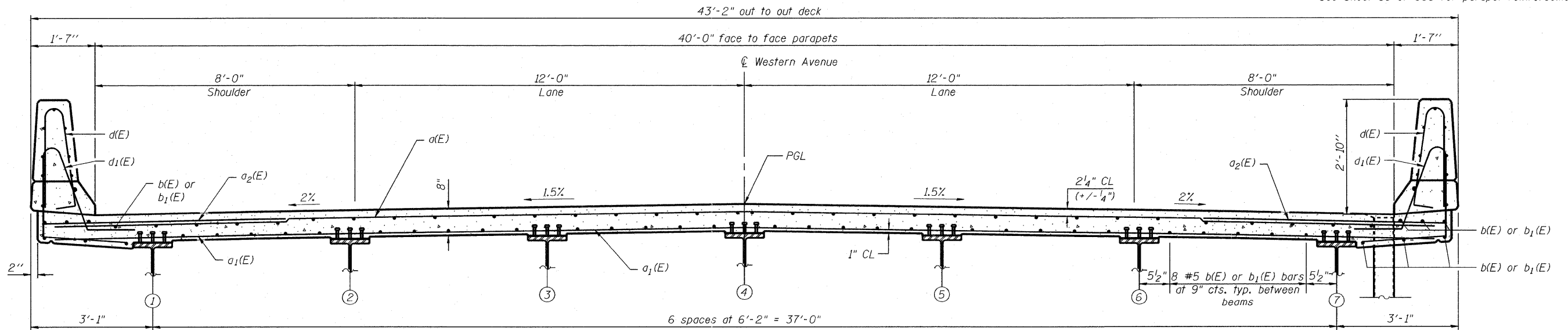
FOR INFORMATION ONLY

\* Order  $a(E)$  &  $a_1(E)$  bars full length.  
Cut to fit skew and use remainder  
of bars in opposite end.



**PLAN**

Notes:  
See Sheet S9 of S35 for superstructure details  
and Bill of Material.  
Bars indicated thus 20 x 3-#5 etc. indicates  
20 lines of bars with 3 lengths per line.  
See Sheet S9 of S35 for parapet reinforcement.



**CROSS SECTION**  
(Looking North)

**APEX**  
CONSULTING ENGINEERS, LLC  
111 N. Wacker Drive, Suite 690  
Chicago, IL 60601  
Phone (312) 977-0660 Fax (312) 977-0661

USER NAME =  
PLOT SCALE =  
PLOT DATE = 10/13/2011

DESIGNED - RAD  
CHECKED - HAA  
DRAWN - WHI  
CHECKED - RAD

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REVISED  
REVISED  
REVISED

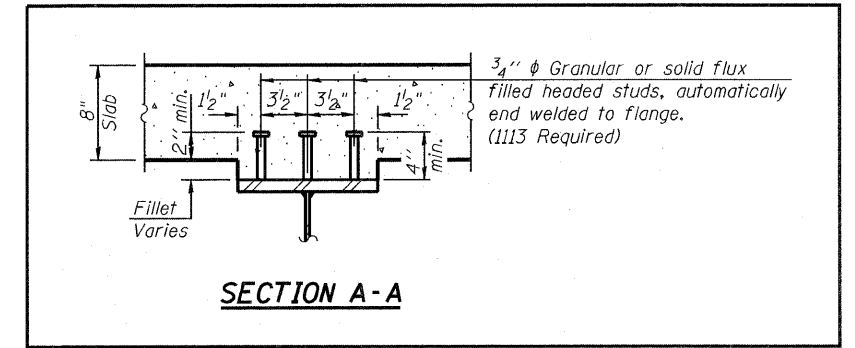
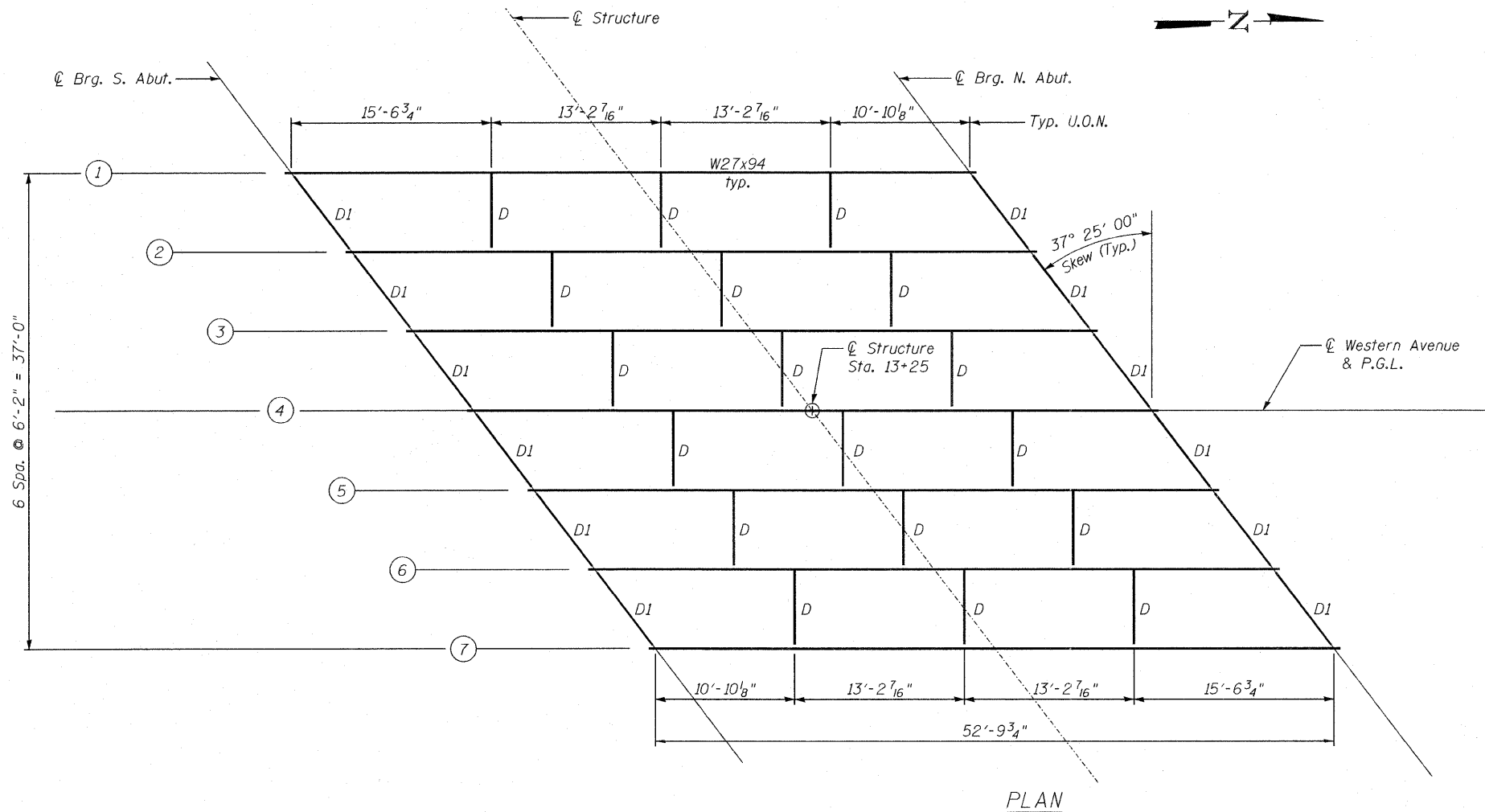
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

DECK PLAN AND SECTION  
STRUCTURE NO. 016-0772

SHEET NO. 58 OF S33 SHEETS

|                        |                       |                |                           |                   |
|------------------------|-----------------------|----------------|---------------------------|-------------------|
| F.A.U.<br>RTE.<br>2845 | SECTION<br>2011-206-F | COUNTY<br>COOK | TOTAL<br>SHEETS<br>18     | SHEET<br>NO.<br>7 |
| CONTRACT NO. 60R36     |                       |                | ILLINOIS FED. AID PROJECT |                   |

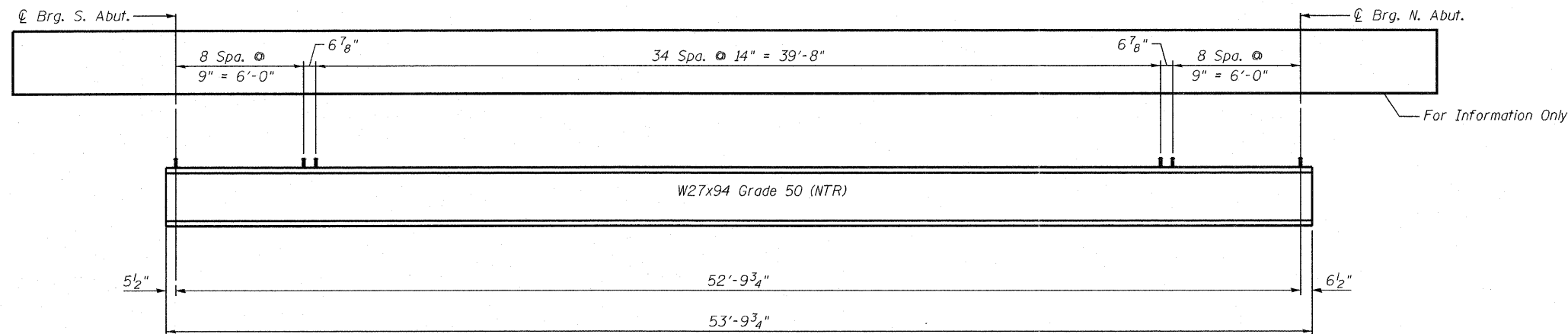
FOR INFORMATION ONLY



For Information Only

TOP OF BEAM ELEVATION TABLE  
(For fabrication use only)

| Beam | Centerline Brg. S. Abut. | Centerline Brg. N. Abut. |
|------|--------------------------|--------------------------|
| 1    | 653.47                   | 653.19                   |
| 2    | 653.56                   | 653.29                   |
| 3    | 653.63                   | 653.35                   |
| 4    | 653.70                   | 653.41                   |
| 5    | 653.58                   | 653.28                   |
| 6    | 653.46                   | 653.14                   |
| 7    | 653.31                   | 652.98                   |

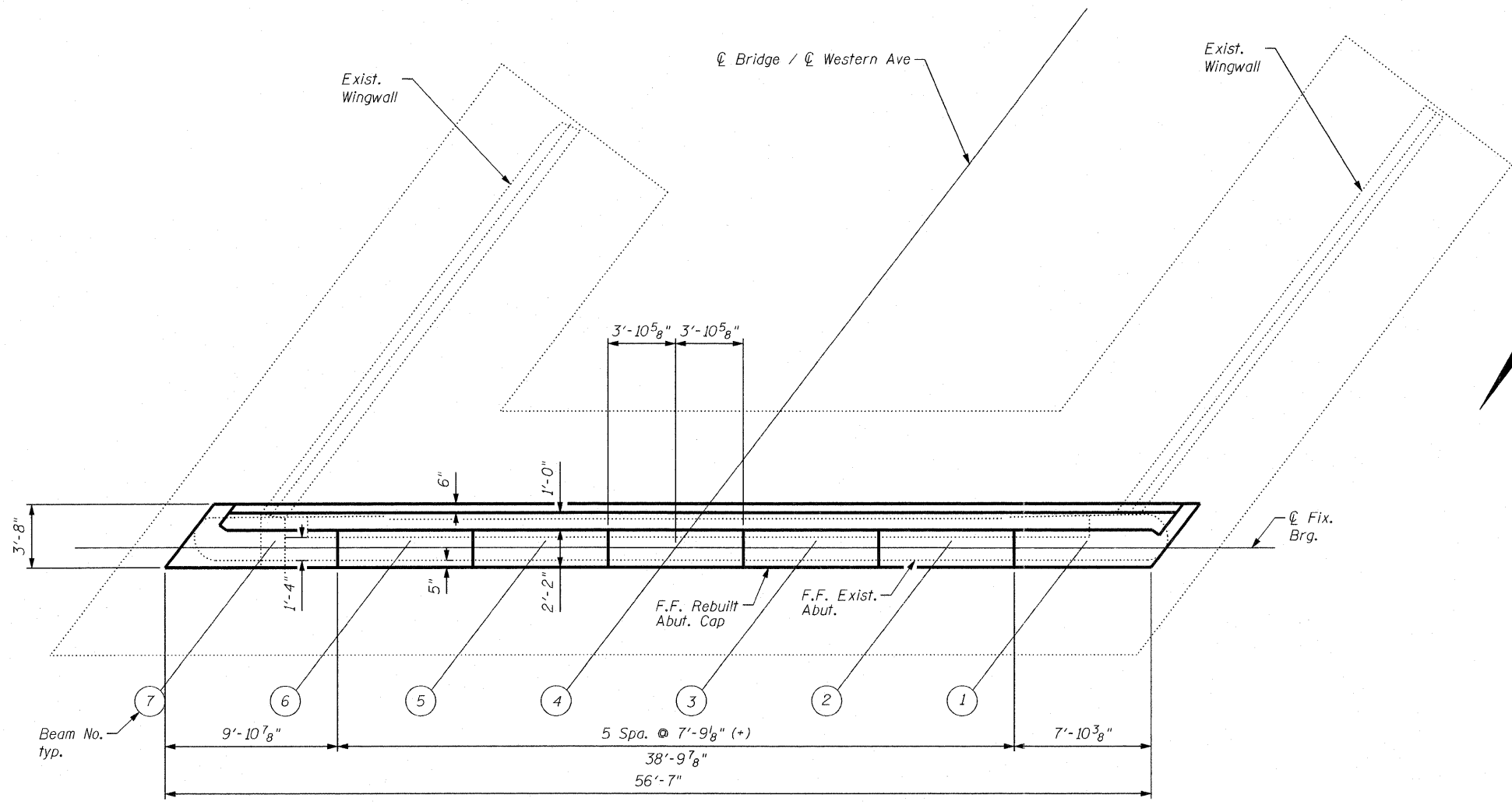


Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

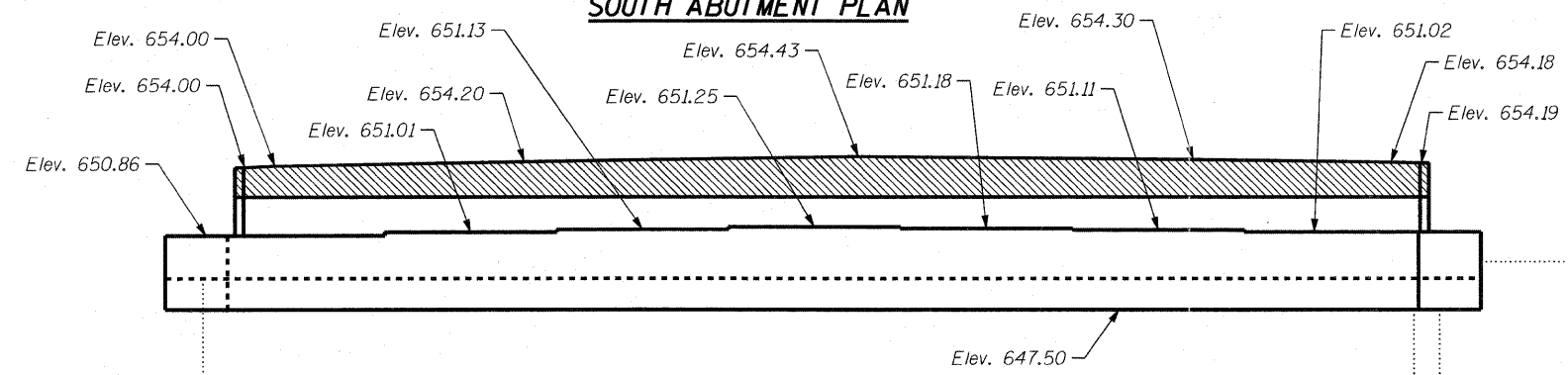




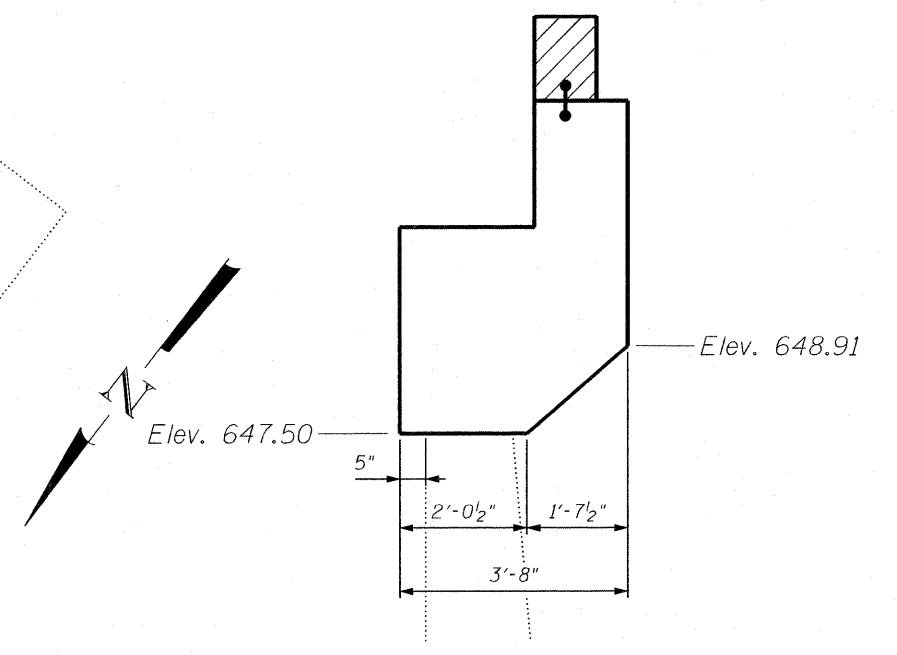




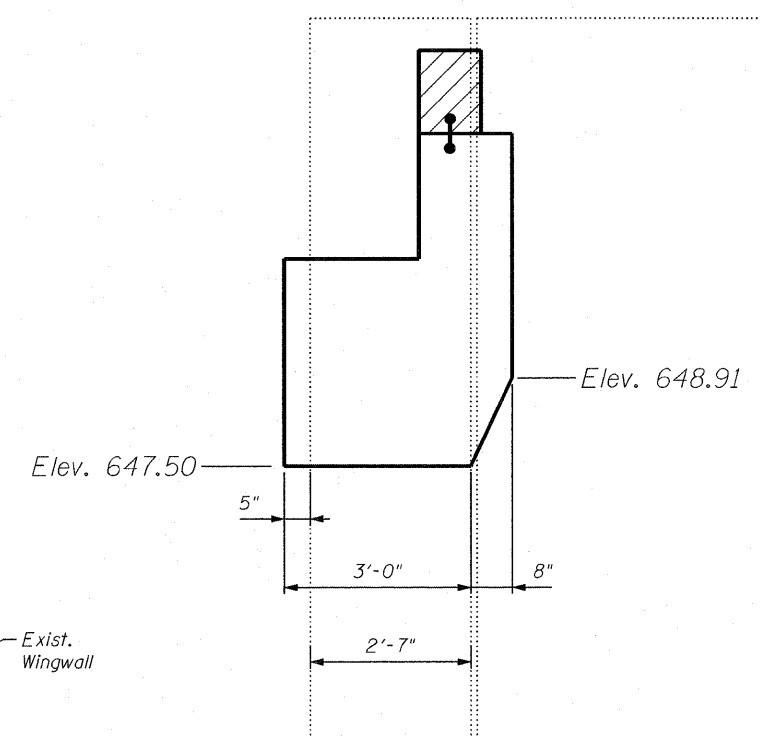
**SOUTH ABUTMENT PLAN**



**SOUTH ABUTMENT ELEVATION**



**SECTION THRU ABUTMENT CAP**



**SECTION THRU ABUTMENT CAP AT WINGWALL**

**APEX**  
CONSULTING ENGINEERS, LLC  
111 E. Wacker Drive, Suite 520  
Chicago, IL 60601  
Phone (312) 977-0660 Fax (312) 977-0661

USER NAME =  
DESIGNED - HAA  
CHECKED - RAD  
PLOT SCALE =  
DRAWN - HAA  
PLOT DATE = 10/13/2011  
CHECKED - RAD

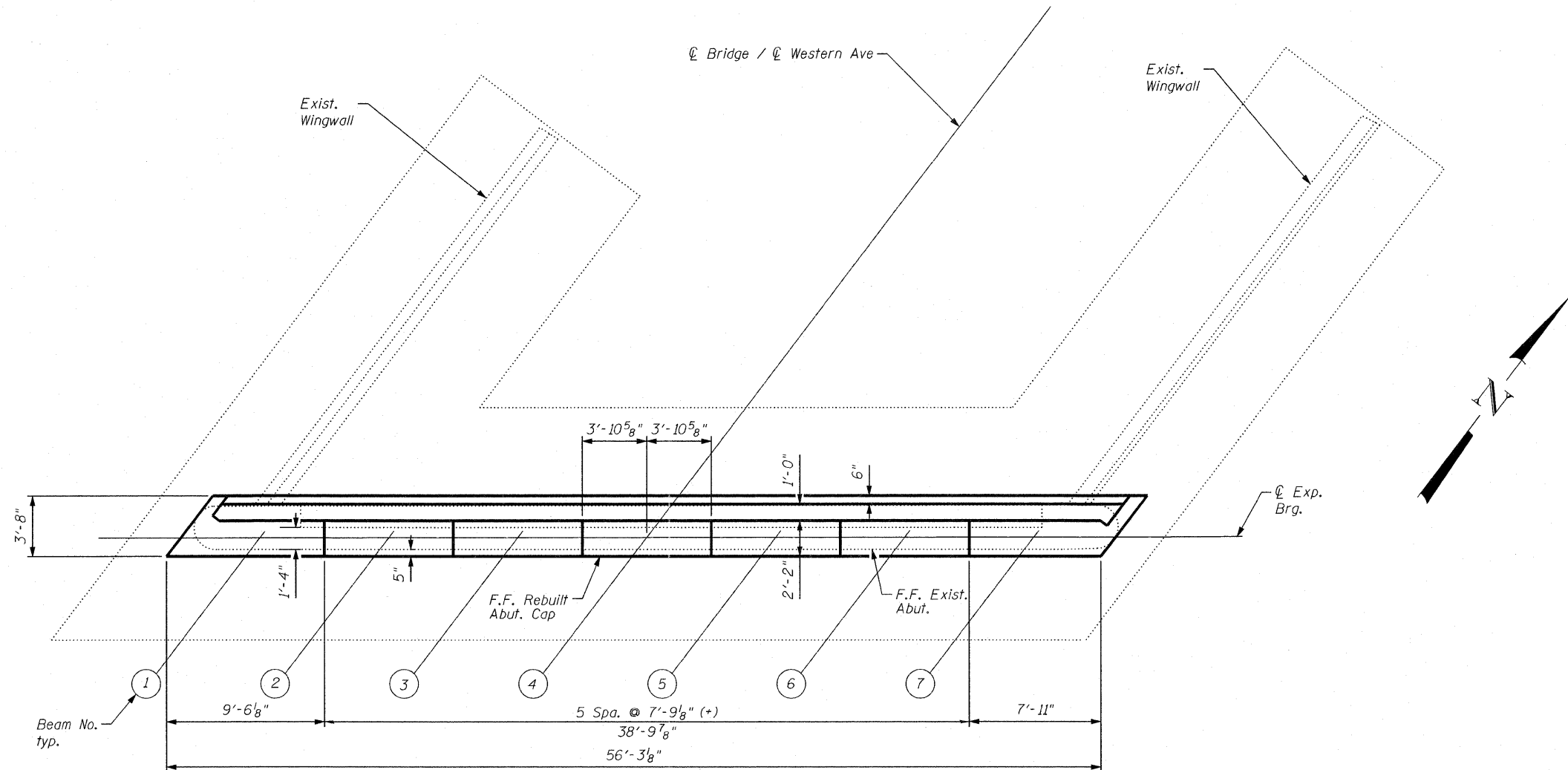
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REVISED  
REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

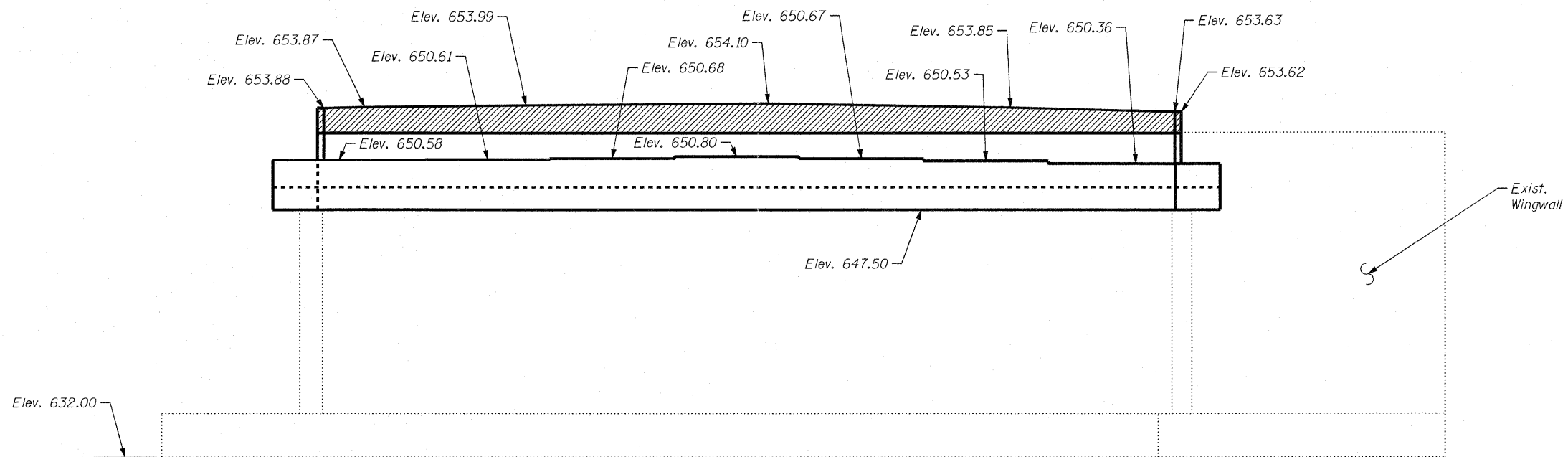
**SOUTH ABUTMENT PLAN AND ELEVATION**  
**STRUCTURE NO. 016-0772**  
SHEET NO. S19 OF S33 SHEETS

| F.A.U. RTE.        | SECTION    | COUNTY | TOTAL SHEETS                | SHEET NO. |
|--------------------|------------|--------|-----------------------------|-----------|
| 2845               | 2011-206-F | COOK   | 18                          | 11        |
| CONTRACT NO. 60R36 |            |        | [ILLINOIS] FED. AID PROJECT |           |

FOR INFORMATION ONLY



**NORTH ABUTMENT PLAN**



**NORTH ABUTMENT ELEVATION**

**APEX**  
CONSULTING ENGINEERS, LLC  
111 E. Wacker Drive, Suite 530  
Chicago, IL 60601  
Phone (312) 977-0660 Fax (312) 977-0661

USER NAME =  
PLOT SCALE =  
PLOT DATE = 10/13/2011

DESIGNED - HAA  
CHECKED - RAD  
DRAWN - HAA  
CHECKED - RAD

REVISED  
REVISED  
REVISED  
REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

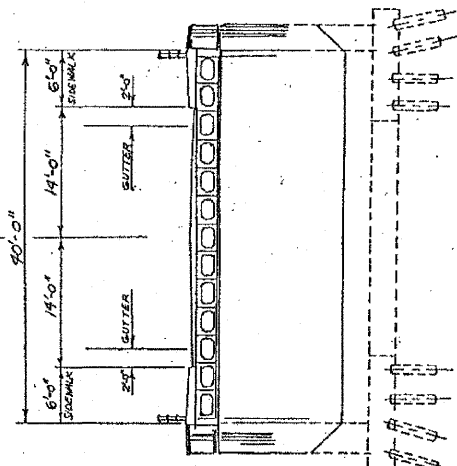
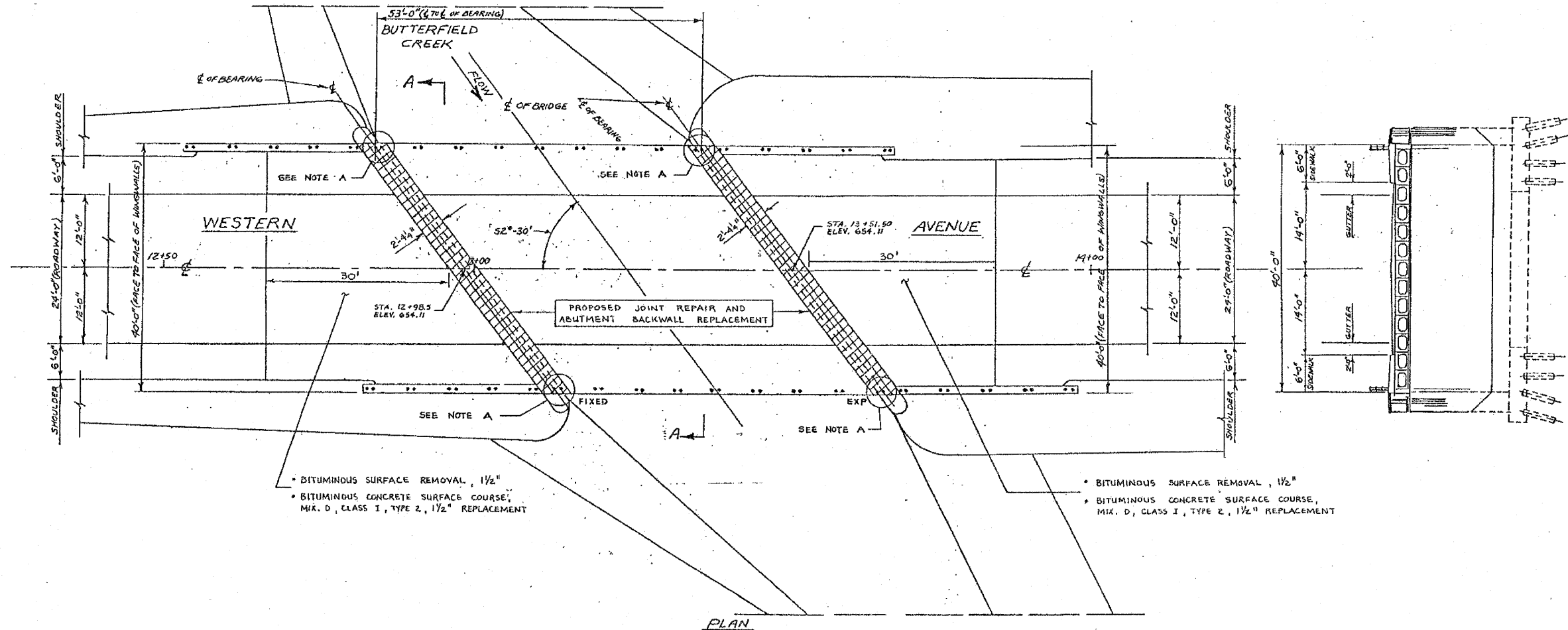
NORTH ABUTMENT PLAN AND ELEVATION  
STRUCTURE NO. 016-0772

SHEET NO. S21 OF S33 SHEETS

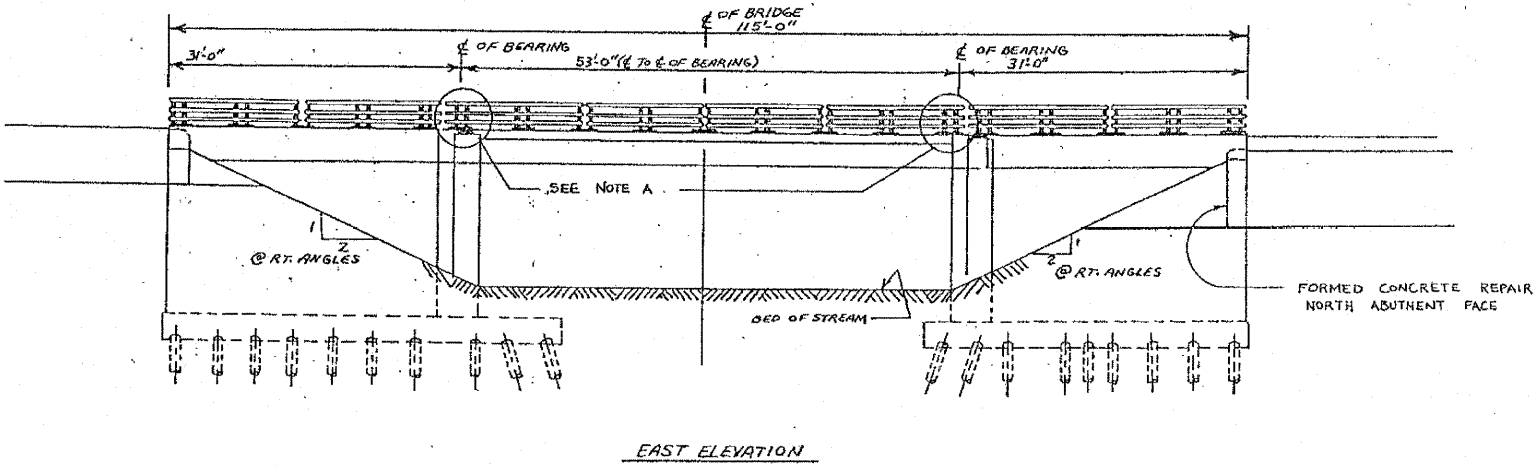
| F.A.U. RTE.        | SECTION    | COUNTY | TOTAL SHEETS                | SHEET NO. |
|--------------------|------------|--------|-----------------------------|-----------|
| 2845               | 2011-206-F | COOK   | 18                          | 12        |
| CONTRACT NO. 60R36 |            |        | [ILLINOIS] FED. AID PROJECT |           |

FOR INFORMATION ONLY

|                       |           |                  |              |           |
|-----------------------|-----------|------------------|--------------|-----------|
| FILE NO.              | SECTION   | COUNTY           | TOTAL SHEETS | SHEET NO. |
| 2845                  | 0605 I-DL | COOK             | 18           | 8         |
| STA.                  | TO R/A    |                  |              |           |
| FED. ROAD DIST. NO. 1 | ALINDA    | FED. AID PROJECT |              |           |



- BITUMINOUS SURFACE REMOVAL, 1 1/2"
- BITUMINOUS CONCRETE SURFACE COURSE, MIX. D, CLASS I, TYPE 2, 1 1/2" REPLACEMENT



NOTE A: EXISTING RAIL TO BE REMOVED TEMPORARILY AND ANCHOR BOLTS SALVAGED IN NEW BONDED PREFORMED JOINT SYSTEM CONSTRUCTION.

**FOR INFORMATION ONLY**

|           |      |
|-----------|------|
| REVISIONS |      |
| NAME      | DATE |
|           |      |
|           |      |
|           |      |
|           |      |
|           |      |
|           |      |
|           |      |
|           |      |

ILLINOIS DEPARTMENT OF TRANSPORTATION  
GENERAL PLAN & ELEVATION  
WESTERN AVE.

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE \_\_\_\_\_ DRAWN BY \_\_\_\_\_  
CHECKED BY \_\_\_\_\_

**APEX**  
CONSULTING ENGINEERS, LLC  
111 E. Wacker Drive, Suite 500  
Chicago, IL 60601  
Phone (312) 977-0960 Fax (312) 977-0661

|                        |            |         |
|------------------------|------------|---------|
| USER NAME =            | DESIGNED - | REVISED |
| PLOT SCALE =           | CHECKED -  | REVISED |
| PLOT DATE = 10/13/2011 | DRAWN -    | REVISED |
|                        | CHECKED -  | REVISED |

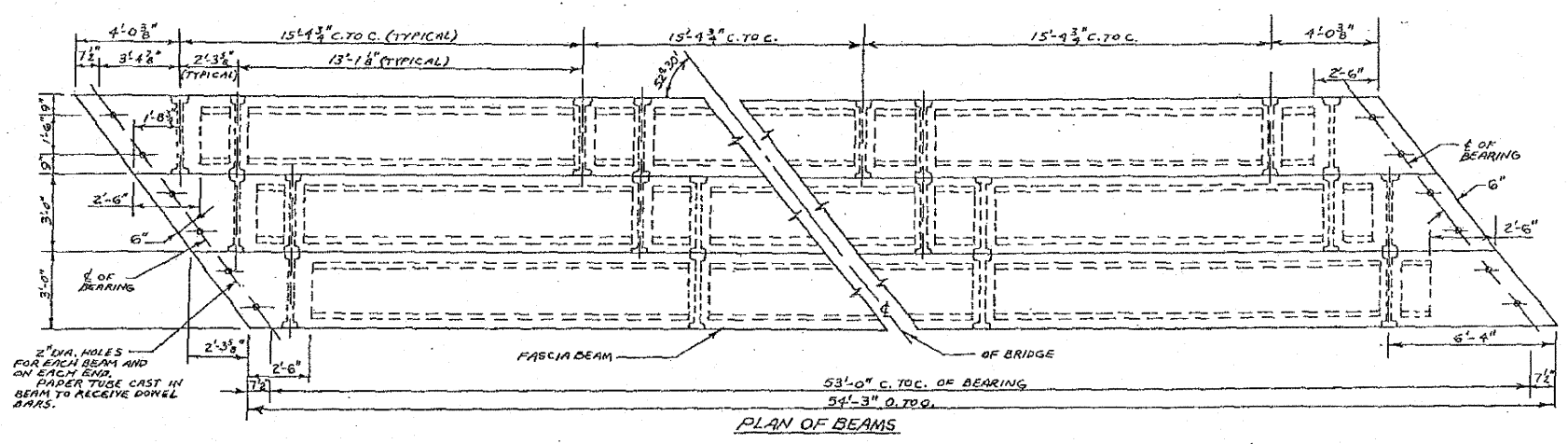
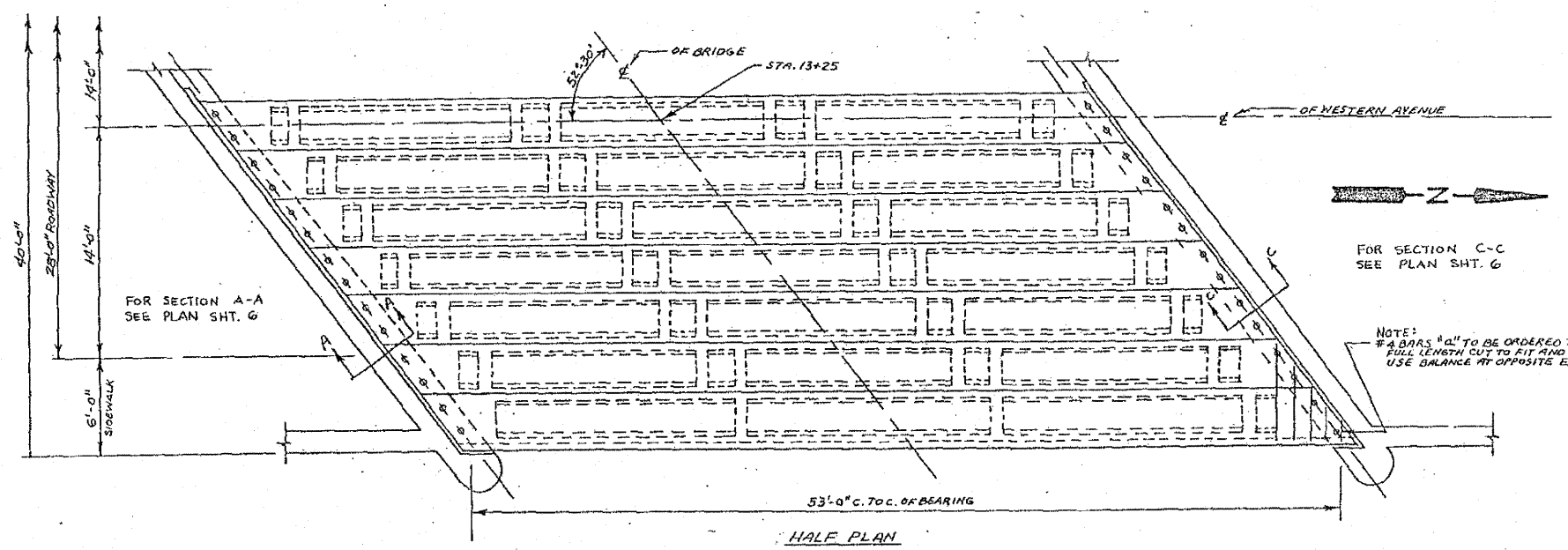
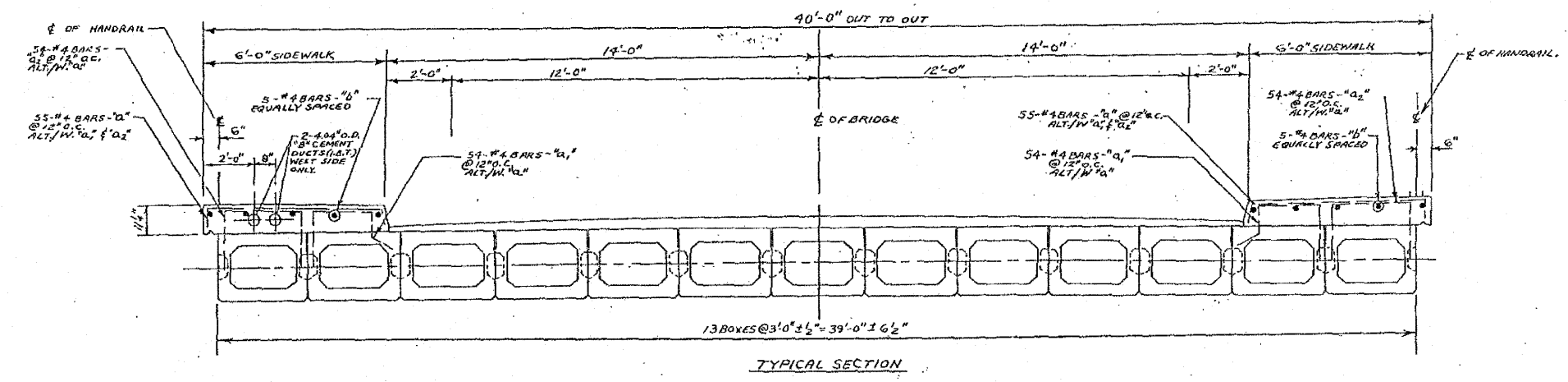
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS (1 OF 6)  
S.N. 016-0772

|                             |            |        |                    |           |
|-----------------------------|------------|--------|--------------------|-----------|
| F.A.U. RTE.                 | SECTION    | COUNTY | TOTAL SHEETS       | SHEET NO. |
| 2845                        | 2011-206-F | COOK   | 18                 | 13        |
| SHEET NO. S28 OF S33 SHEETS |            |        | CONTRACT NO. 60R36 |           |
| [ILLINOIS] FED. AID PROJECT |            |        |                    |           |

FOR INFORMATION ONLY

|                       |           |          |                    |
|-----------------------|-----------|----------|--------------------|
| FILE                  | SECTION   | COUNTY   | SHEET NO.          |
| 2845                  | 0505 I-DL | COOK     | 18                 |
| STA.                  | TO STA.   |          |                    |
| FED. ROAD DIST. NO. 7 |           | ILLINOIS | POST. ROAD PROJECT |



**FOR INFORMATION ONLY**

| REVISIONS |      |
|-----------|------|
| NAME      | DATE |
|           |      |
|           |      |
|           |      |
|           |      |
|           |      |
|           |      |
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|           |      |
|           |      |

SCALE: VERT. \_\_\_\_\_  
 HORIZ. \_\_\_\_\_  
 DATE \_\_\_\_\_

DRAWN BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_

**APEX**  
 CONSULTING ENGINEERS, LLC  
 111 N. Wacker Drive, Suite 600  
 Chicago, IL 60601  
 Phone (312) 977-0660 Fax (312) 977-0661

USER NAME = \_\_\_\_\_  
 DESIGNED - \_\_\_\_\_  
 CHECKED - \_\_\_\_\_  
 PLOT SCALE = \_\_\_\_\_  
 DRAWN - \_\_\_\_\_  
 PLOT DATE = 10/13/2011  
 CHECKED - \_\_\_\_\_

DESIGNED - \_\_\_\_\_  
 CHECKED - \_\_\_\_\_  
 DRAWN - \_\_\_\_\_  
 CHECKED - \_\_\_\_\_

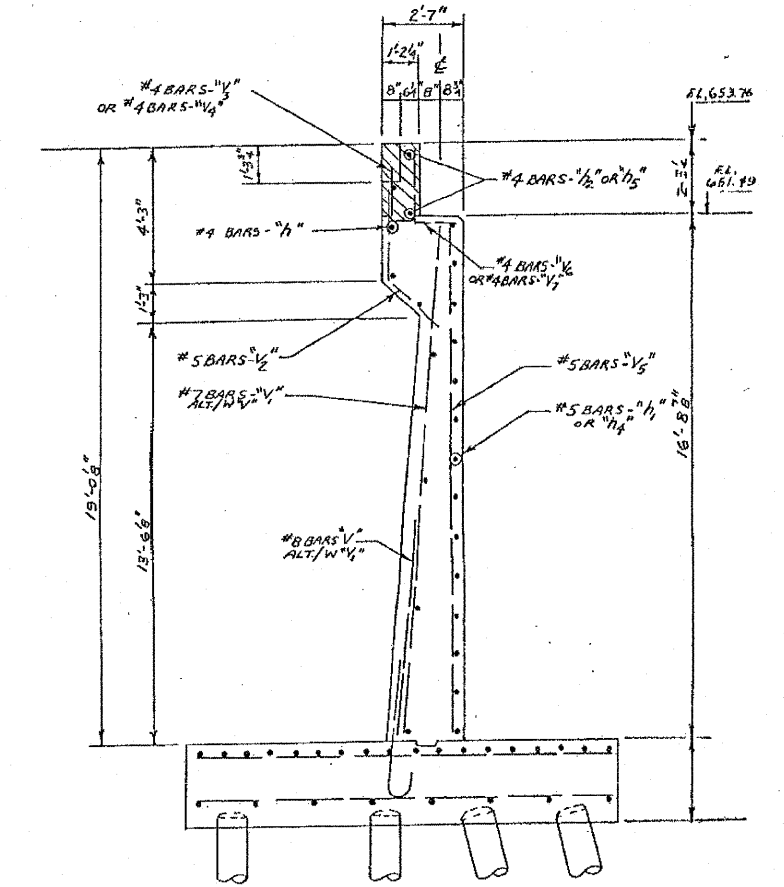
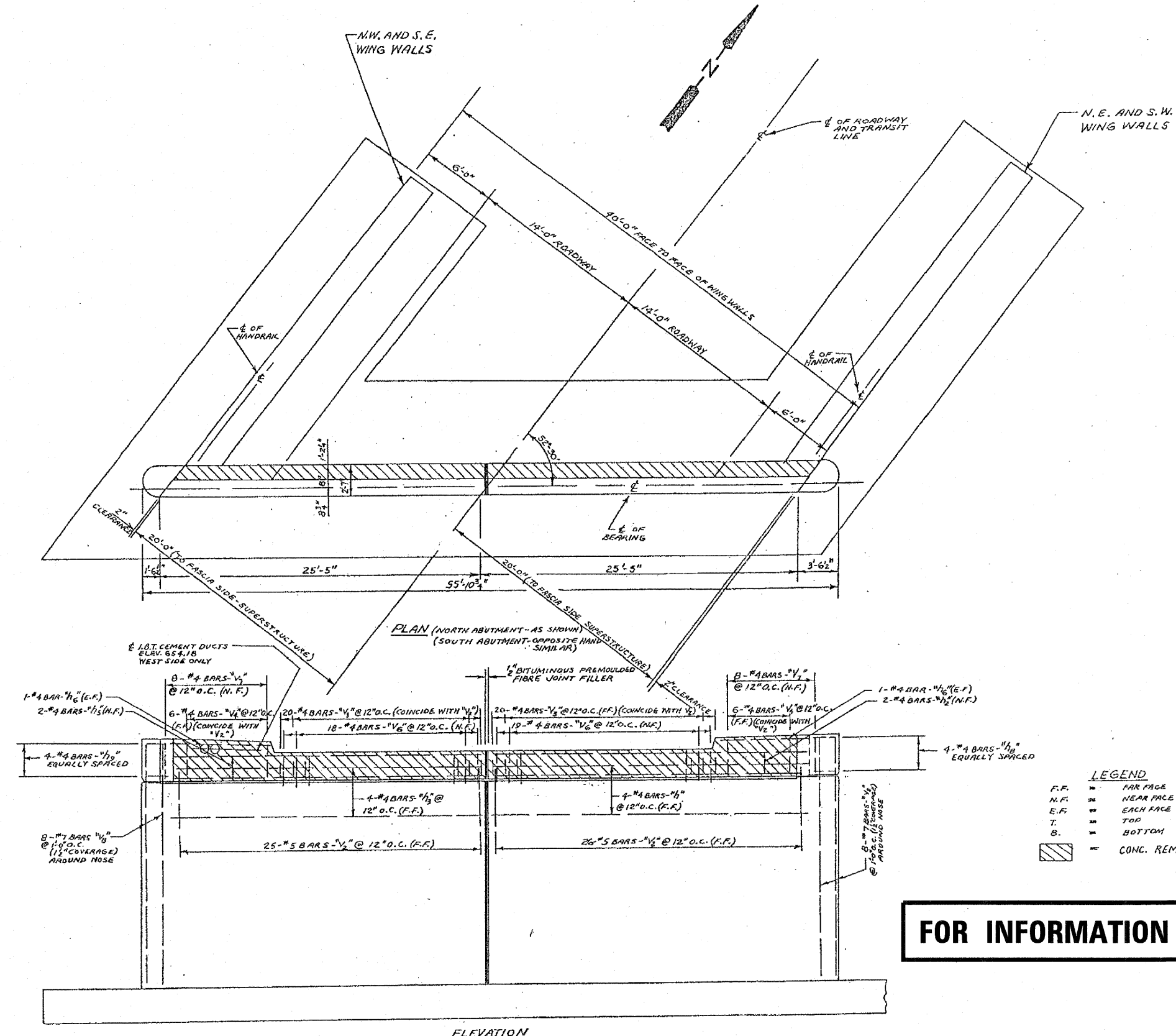
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS (2 OF 6)  
 S.N. 016-0772  
 SHEET NO. S29 OF S33 SHEETS

F.A.U. RTE. 2845 SECTION 2011-206-F COUNTY COOK TOTAL SHEETS 18 SHEET NO. 14  
 ILLINOIS FED. AID PROJECT  
 CONTRACT NO. 60R36

FOR INFORMATION ONLY

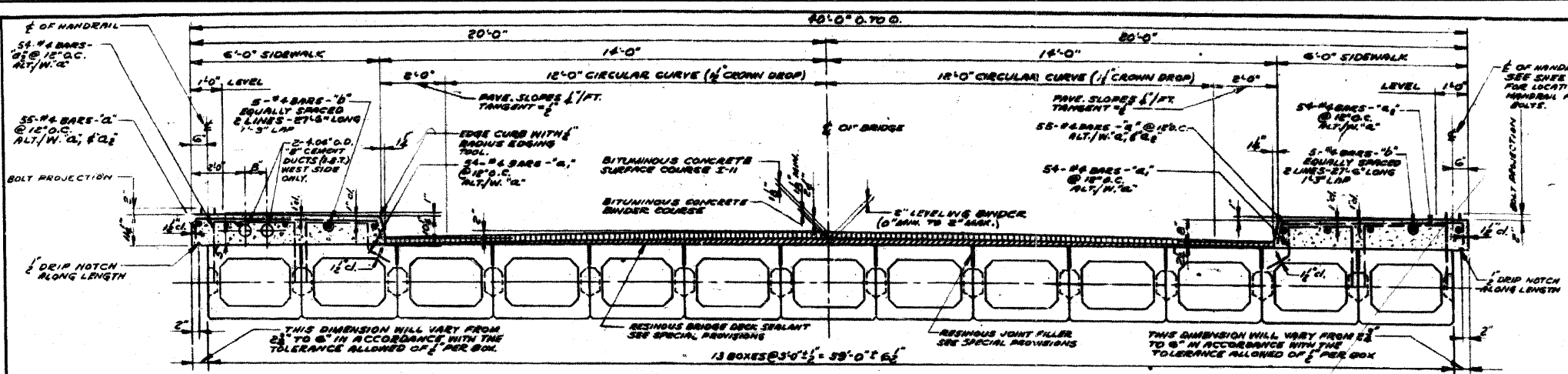
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| F.A.U. NO.            | SECTION   | COUNTY   | TOTAL SHEETS | SHEET NO.        |
| 2845                  | 0505 I-DL | COOK     | 16           | 7                |
| STA.                  |           | TO STA.  |              |                  |
| FED. ROAD DIST. NO. 7 |           | ILLINOIS |              | FED. AID PROJECT |



**FOR INFORMATION ONLY**

|                                       |      |
|---------------------------------------|------|
| ILLINOIS DEPARTMENT OF TRANSPORTATION |      |
| ABUTMENT BACKWALL                     |      |
| CONCRETE REMOVAL PLAN                 |      |
| REVISIONS                             |      |
| NAME                                  | DATE |
|                                       |      |
|                                       |      |
|                                       |      |
|                                       |      |
|                                       |      |
| SCALE: VERT.      DRAWN BY            |      |
| HORIZ.              CHECKED BY        |      |
| DATE                                  |      |

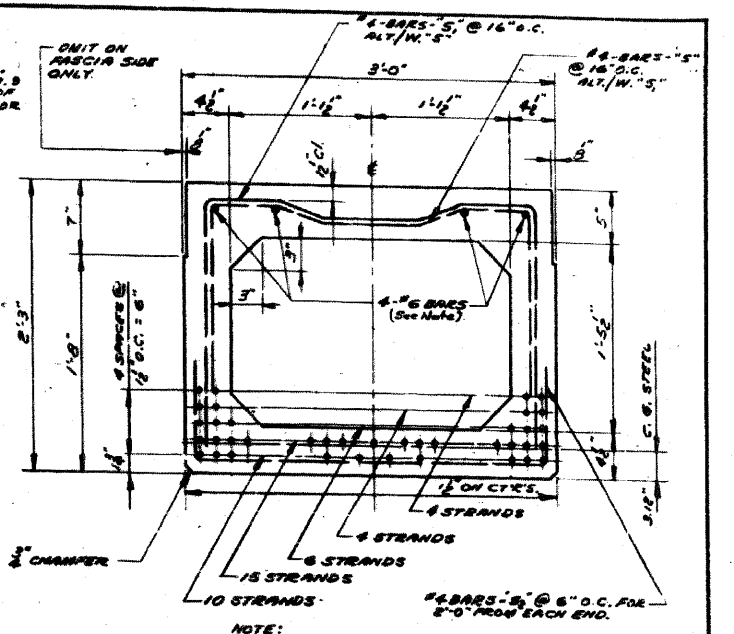
FOR INFORMATION ONLY



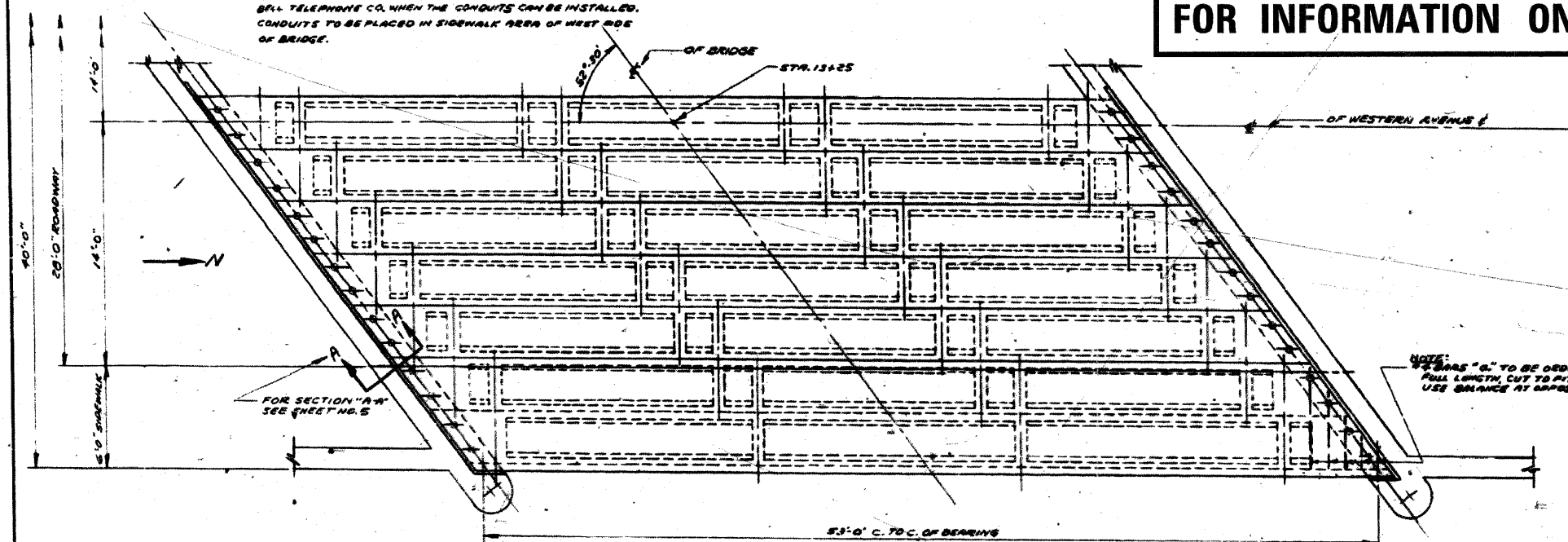
NOTE: ILLINOIS BELL TELEPHONE CO. TO FURNISH AND INSTALL "B" CEMENT CONDUITS WITH THEIR OWN FORCES. THIS WORK IS TO BE COORDINATED BY THE CONTRACTOR CONTACTING THE ILLINOIS BELL TELEPHONE CO. WHEN THE CONDUITS CAN BE INSTALLED. CONDUITS TO BE PLACED IN SIDEWALK AREA OF WEST SIDE OF BRIDGE.

TYPICAL SECTION  
SCALE: 1/2" = 1'-0"

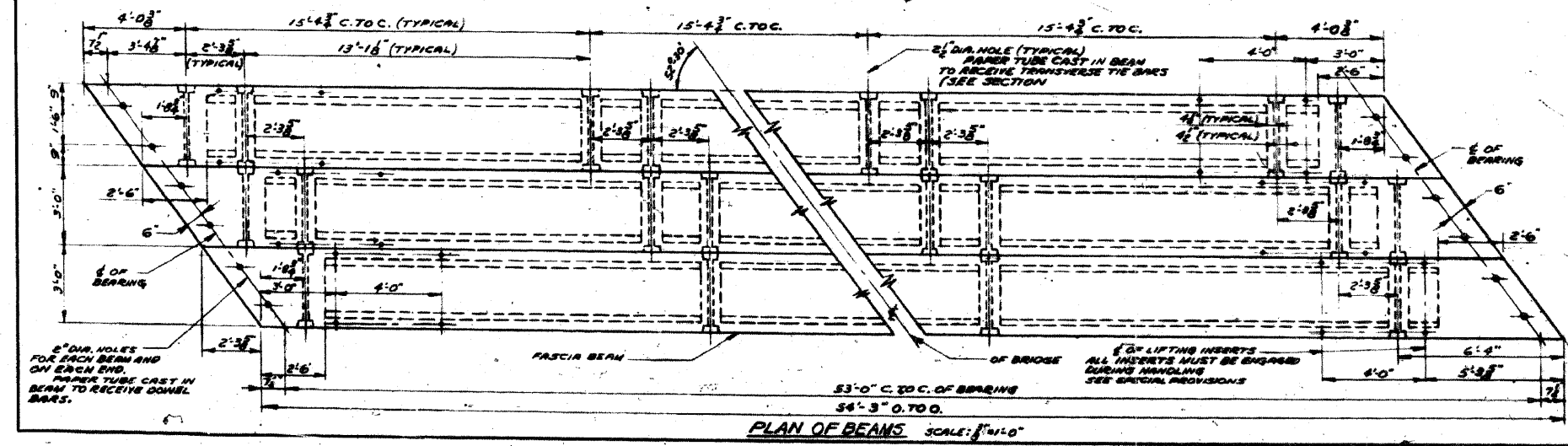
**FOR INFORMATION ONLY**



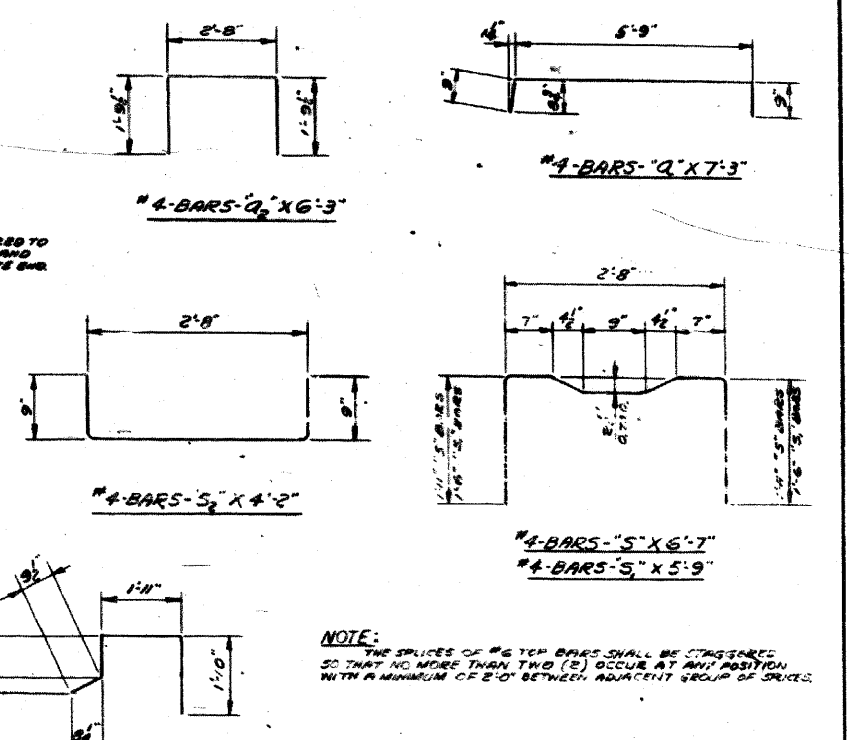
SECTION A-A  
SCALE: 1/2" = 1'-0"



HALF PLAN  
SCALE: 1/4" = 1'-0"



PLAN OF BEAMS  
SCALE: 1/4" = 1'-0"



NOTE: THE SPICES OF #6 TOP BARS SHALL BE STAGGERED SO THAT NO MORE THAN TWO (2) OCCUR AT ANY POSITION WITH A MINIMUM OF 2'-0" BETWEEN ADJACENT GROUPS OF SPICES.

| REVISIONS |    |             |
|-----------|----|-------------|
| DATE      | BY | DESCRIPTION |
|           |    |             |
|           |    |             |
|           |    |             |

DEPARTMENT OF HIGHWAYS  
COOK COUNTY, ILLINOIS

DANIEL RYAN  
PRESIDENT BOARD OF COMMISSIONERS

WILLIAM J. MORTIMER  
SUPERINTENDENT OF HIGHWAYS

DETAILS OF SUPERSTRUCTURE  
WESTERN AVENUE BRIDGE  
OVER BUTTERFIELD CREEK

COMPUTED BY B. B. RIMAN PROJECT 054-0505 M.F.T.  
DRAWN BY F. TANNENBAUM SCALE AS SHOWN  
CHECKED BY R. A. LAUSE APPROVED M.F. Ryan

APPROVED Jan 19 1960  
J. G. [Signature]

|       |      |     |   |    |
|-------|------|-----|---|----|
| FILED | 1960 | 054 | 4 | 17 |
|-------|------|-----|---|----|

**APEX**  
CONSULTING ENGINEERS, LLC  
311 E. Wacker Drive, Suite 530  
Chicago, IL 60601  
Phone (312) 977-0980 Fax (312) 977-0661

|                        |            |             |
|------------------------|------------|-------------|
| USER NAME =            | DESIGNED - | REVISIONS - |
| PLOT SCALE =           | CHECKED -  | REVISIONS - |
| PLOT DATE = 10/13/2011 | DRAWN -    | REVISIONS - |
|                        | CHECKED -  | REVISIONS - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS (4 OF 6)  
S.N. 016-0772  
SHEET NO. S31 OF S33 SHEETS

|                           |            |        |                    |           |
|---------------------------|------------|--------|--------------------|-----------|
| F.A.U. RTE.               | SECTION    | COUNTY | TOTAL SHEETS       | SHEET NO. |
| 2845                      | 2011-206-F | COOK   | 18                 | 16        |
| ILLINOIS FED. AID PROJECT |            |        | CONTRACT NO. 60R36 |           |

FOR INFORMATION ONLY

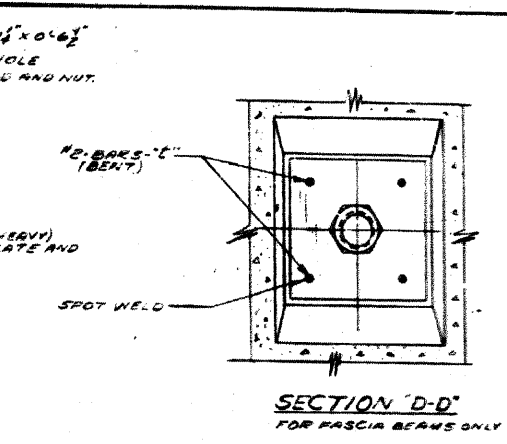
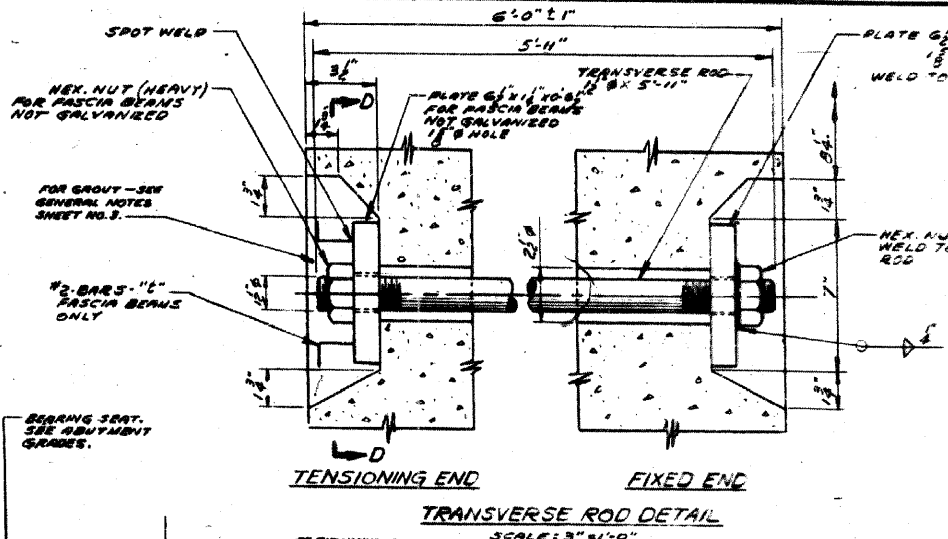
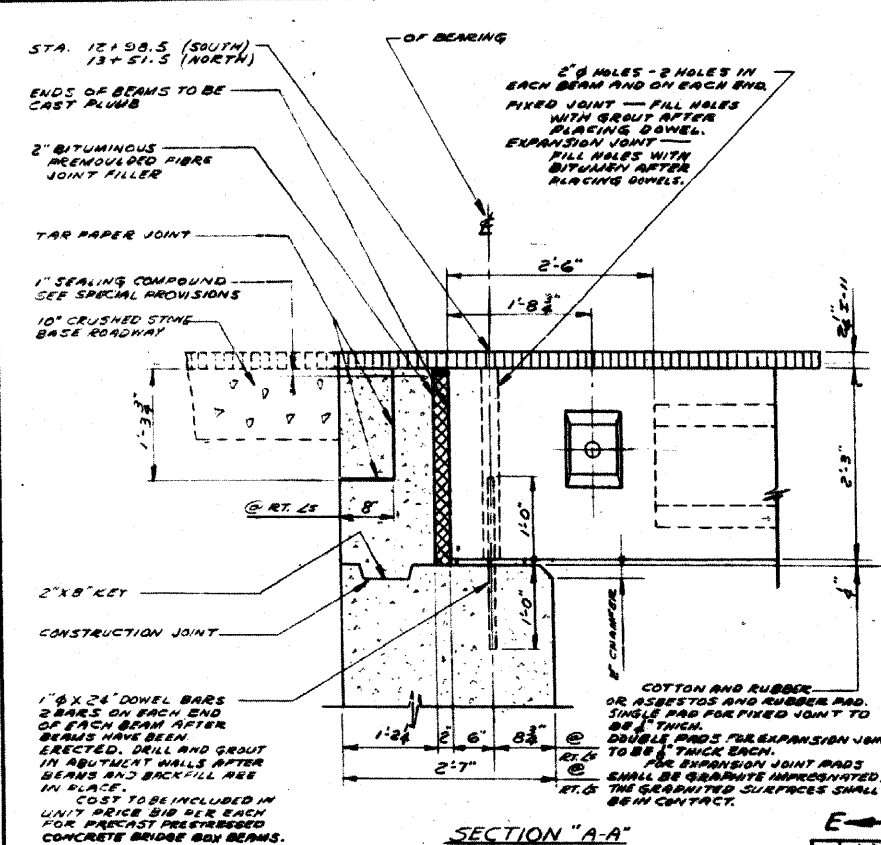


**BILL OF MATERIAL  
SUPERSTRUCTURE**

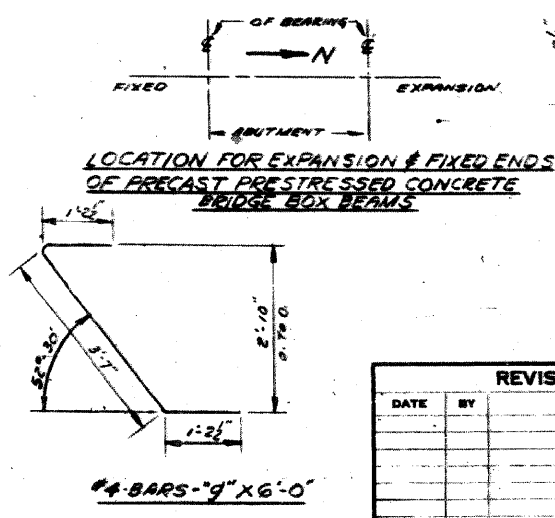
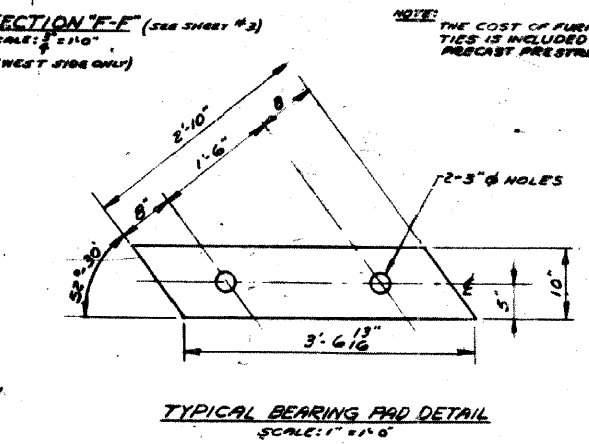
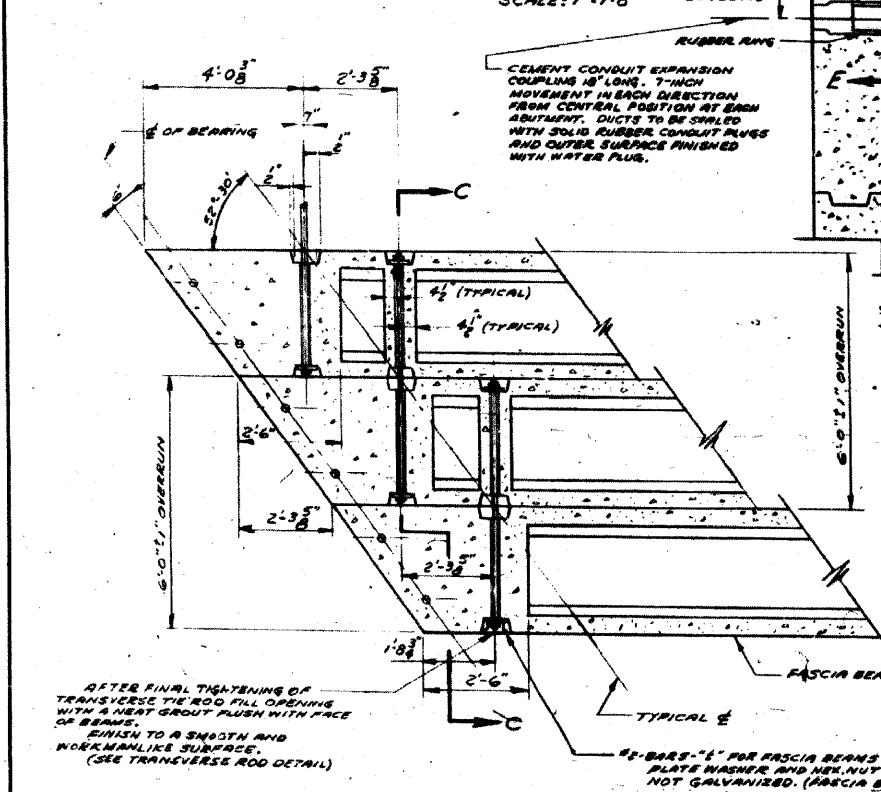
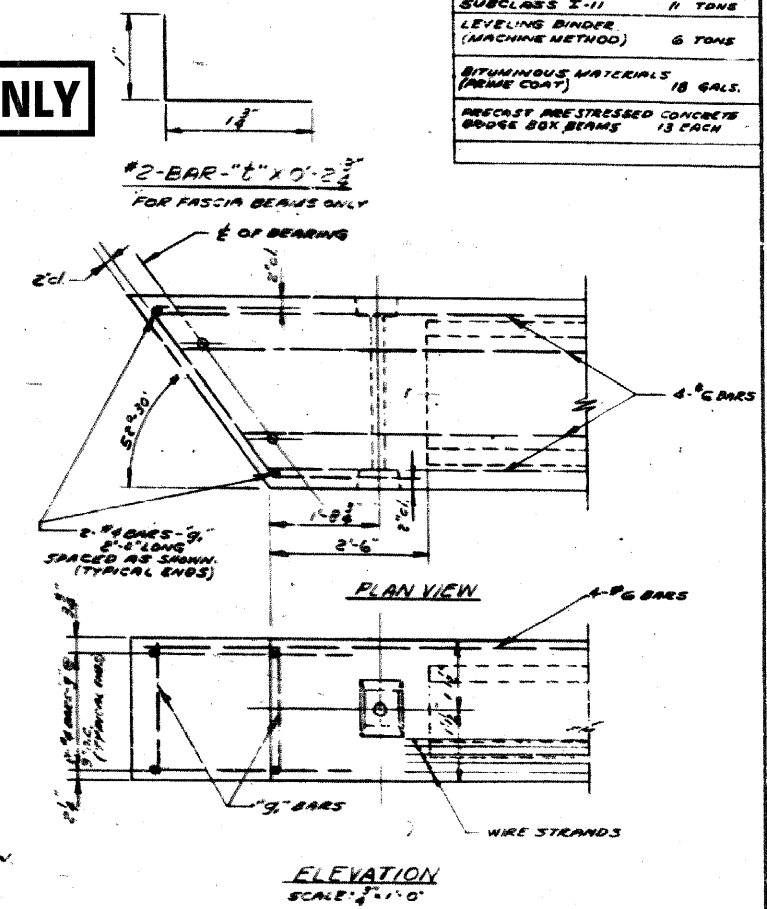
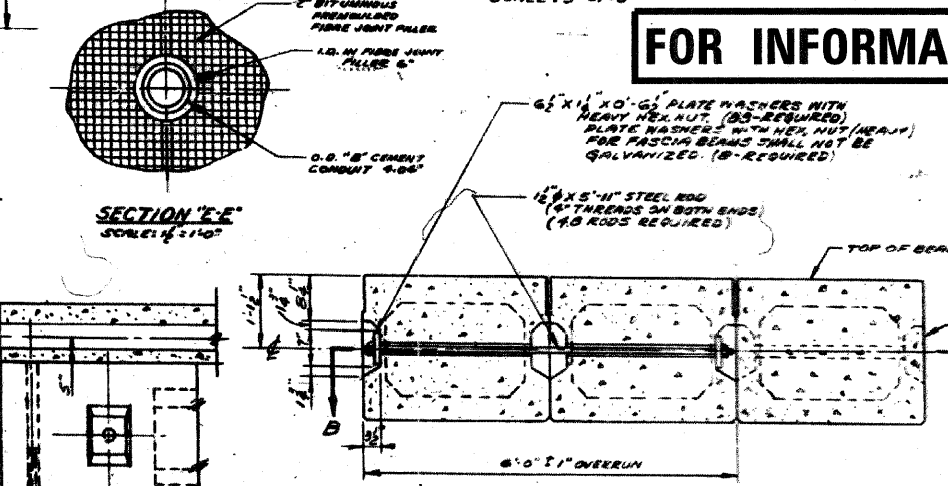
| BAR NO. | SIZE | LENGTH | TYPE            |
|---------|------|--------|-----------------|
| CL      | 110  | #4     | 7'-9" BENT      |
| Q       | 100  | #4     | 5'-6" DO        |
| Q       | 100  | #4     | 6'-9" DO        |
| D       | 20   | #4     | 27'-6" STRAIGHT |

|  |              |
|--|--------------|
| CLASS "X" CONCRETE                                 | 220 CU. YDS. |
| REINFORCEMENT BARS                                 | 4,150 LBS.   |
| BITUMINOUS CONCRETE BINDER COURSE                  | 12 TONS      |
| BITUMINOUS CONCRETE SURFACE COURSE SUBCLASS "I-11" | 11 TONS      |
| LEVELING BINDER (MACHINE METHOD)                   | 6 TONS       |
| BITUMINOUS MATERIALS (PRIME COAT)                  | 18 GALS.     |
| PRECAST PRESTRESSED CONCRETE BRIDGE BOX BEAMS      | 13 EACH      |



**FOR INFORMATION ONLY**



NOTE: BARS # 9 & # 2 TO BE INCLUDED IN THE CONTRACT UNIT PRICE BID EACH FOR PRECAST PRESTRESSED CONCRETE BRIDGE BOX BEAMS. TRANSVERSE TENSIONING TIES SHALL BE SHOP PAINTED WITH TWO (2) COATS OF RED LEAD OXIDE PAINT.

**DEPARTMENT OF HIGHWAYS  
COOK COUNTY, ILLINOIS**

DANIEL RYAN  
PRESIDENT BOARD OF COMMISSIONERS

WILLIAM J. MORTIMER  
SUPERVISOR OF HIGHWAYS

**DETAILS OF SUPERSTRUCTURE  
WESTERN AVENUE BRIDGE  
OVER BUTTERFIELD CREEK**

COMPUTED BY B. S. RIMAN PROJECT 054-0505 M.F.T.  
DRAWN BY F. TAMMENBAUM SCALE AS SHOWN  
CHECKED BY B. U. LAUGE APPROVED [Signature]

APPROVED [Signature] 11 1960 FISCAL YEAR 1960 COUNTY 054 DISTRICT 5 SHEET NO. 17

**APEX CONSULTING ENGINEERS, LLC**  
111 E. Wacker Drive, Suite 530  
Chicago, IL 60601  
Phone (312) 977-0660 Fax (312) 977-0661

| USER NAME =            | DESIGNED - | REVISED |
|------------------------|------------|---------|
| PLOT SCALE =           | CHECKED -  | REVISED |
| PLOT DATE = 10/13/2011 | DRAWN -    | REVISED |
|                        | CHECKED -  | REVISED |

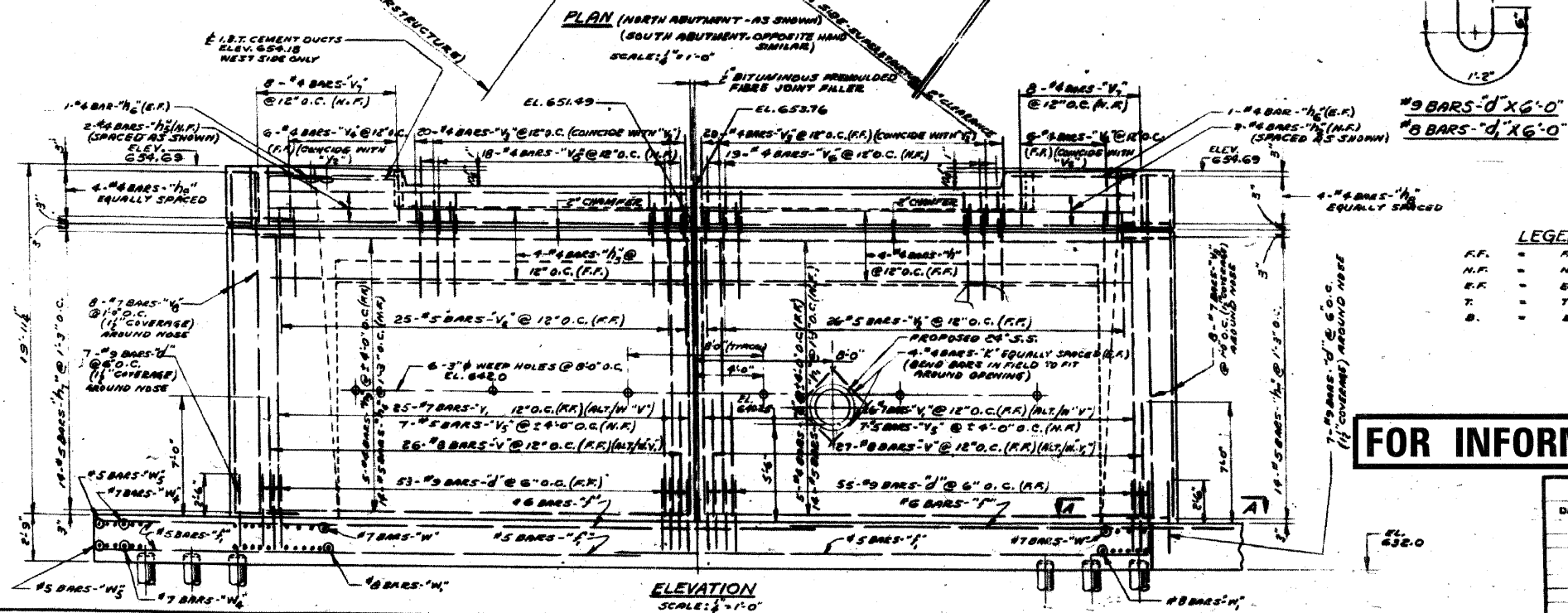
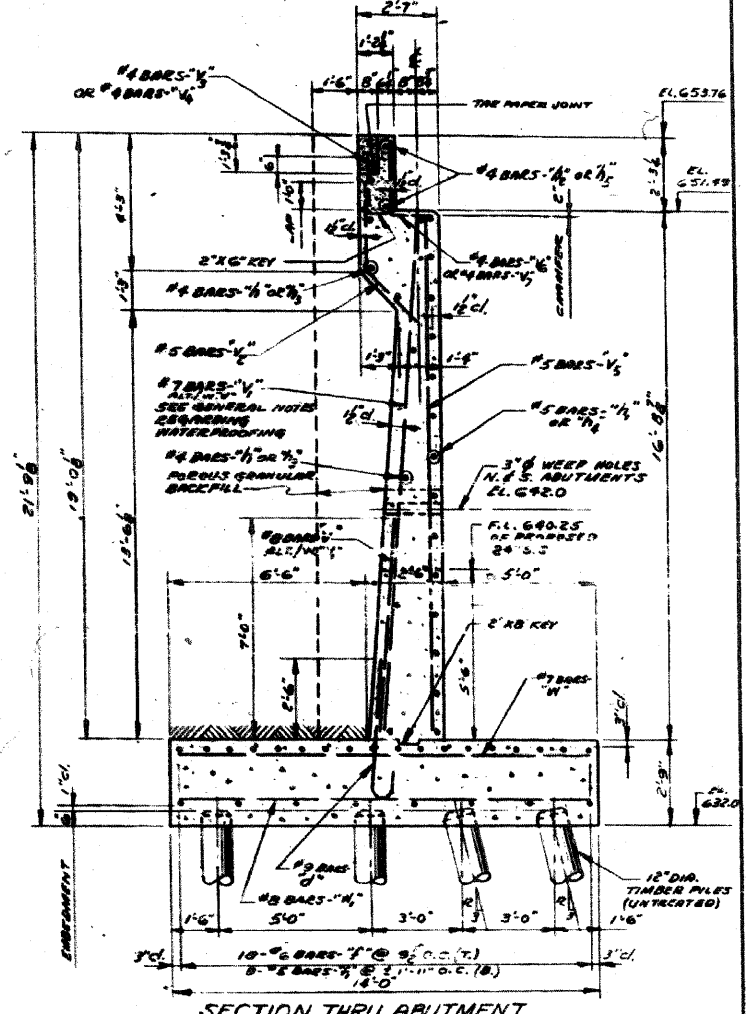
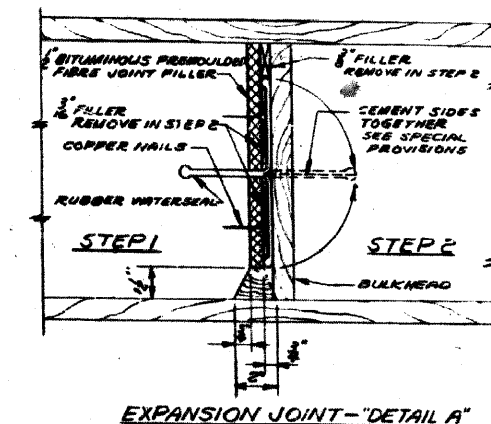
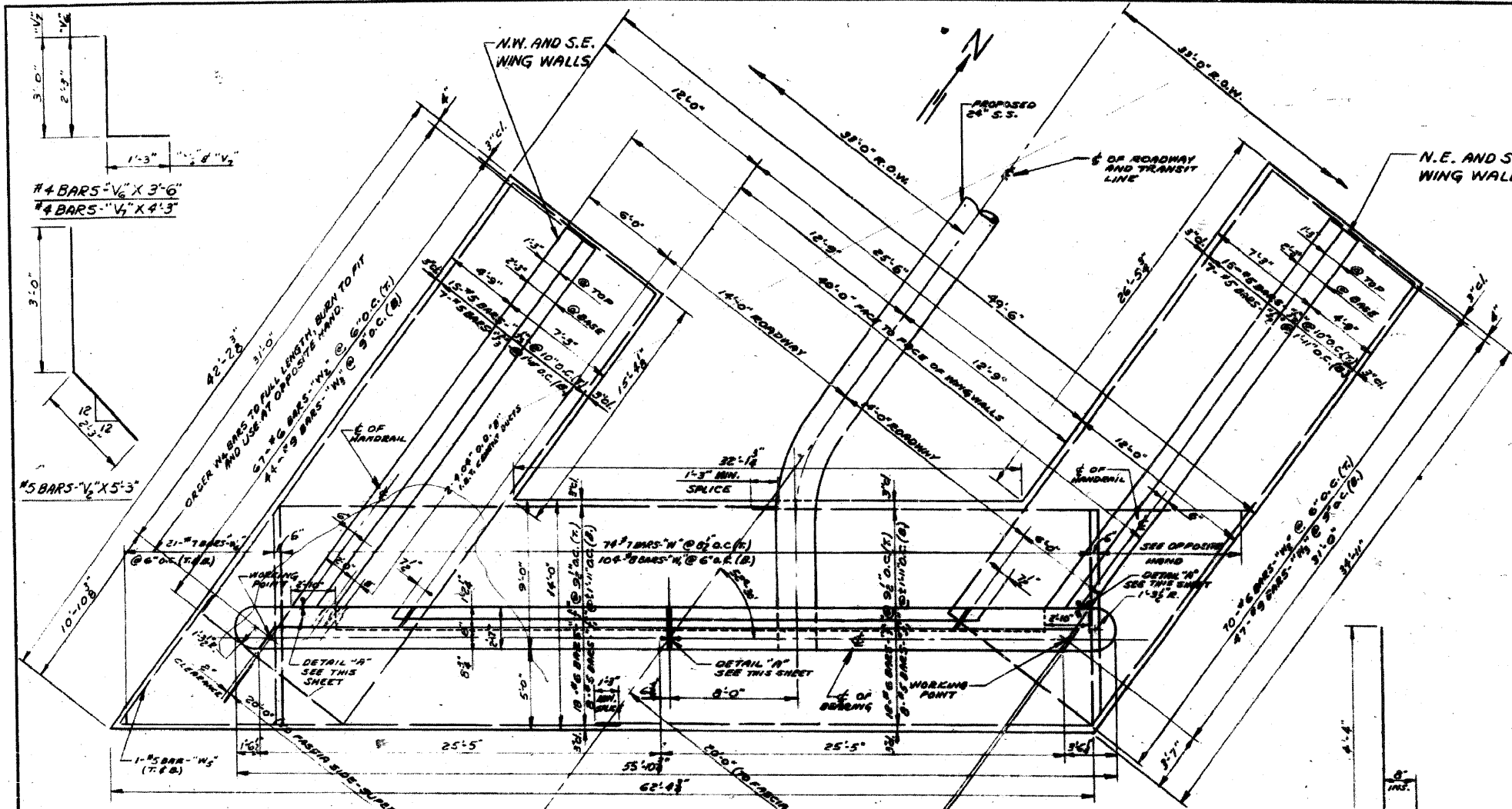
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**EXISTING BRIDGE PLANS (5 OF 6)  
S.N. 016-0772**

| F.A.U. RTE. | SECTION    | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|------------|--------|--------------|-----------|
| 2845        | 2011-206-F | COOK   | 18           | 17        |

CONTRACT NO. 60R36  
ILLINOIS FED. AID PROJECT

FOR INFORMATION ONLY



**LEGEND**

F.F. = FAR FACE  
 N.F. = NEAR FACE  
 E.F. = EACH FACE  
 T. = TOP  
 B. = BOTTOM

**NOTE:**  
 FOR GENERAL NOTES SEE SHEET NO. 532

**FOR INFORMATION ONLY**

| REVISIONS |    |             |
|-----------|----|-------------|
| DATE      | BY | DESCRIPTION |
|           |    |             |
|           |    |             |

|   |                     |   |                  |
|---|---------------------|---|------------------|
| DEPARTMENT OF HIGHWAYS<br>COOK COUNTY, ILLINOIS                                     |                     |   |                  |
| DANIEL RYAN<br>PRESIDENT BOARD OF SUPERVISORS                                       |                     | WILLIAM J. MORTIMER<br>SUPERINTENDENT OF HIGHWAYS |                  |
| DETAILS OF ABUTMENT & WING WALLS<br>WESTERN AVENUE BRIDGE<br>OVER BUTTERFIELD CREEK |                     |   |                  |
| COMPUTED  | B. B. RYAN          | PROJECT   | 054-0505 M.F.T.  |
| DRAWN   | F. TAMMENBAUM       | SCALE   | AS SHOWN         |
| CHECKED   | R. V. LAUGE         | APPROVED  | <i>M.S. Ryan</i> |
| APPROVED  | <i>John J. Hall</i> | DATE  | 1960 054 6 17    |

**APEX**  
 CONSULTING ENGINEERS, LLC  
 111 E. Wacker Drive, Suite 530  
 Chicago, IL 60601  
 Phone (312) 977-0980 Fax (312) 977-0981

|                        |            |         |
|------------------------|------------|---------|
| USER NAME =            | DESIGNED - | REVISED |
|                        | CHECKED -  | REVISED |
| PLOT SCALE =           | DRAWN -    | REVISED |
| PLOT DATE = 10/13/2011 | CHECKED -  | REVISED |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS (6 OF 6)  
 S.N. 016-0772  
 SHEET NO. 533 OF 533 SHEETS

|                           |            |        |              |           |
|---------------------------|------------|--------|--------------|-----------|
| F.A.U. RTE.               | SECTION    | COUNTY | TOTAL SHEETS | SHEET NO. |
| 2845                      | 2011-206-F | COOK   | 18           | 18        |
| CONTRACT NO. 60R36        |            |        |              |           |
| ILLINOIS FED. AID PROJECT |            |        |              |           |

FOR INFORMATION ONLY