

PLAN - UNIT E

\* Measured along SB IL-171 & P.G.L.

SCREED SPACING  
(SB IL-171)

| LOCATION           | L1         |
|--------------------|------------|
| Girder E1          | 7'-10 1/4" |
| Girder E2          | 6'-11"     |
| Girder E3          | 5'-11 3/4" |
| Girder E4          | 5'-2 1/4"  |
| SB IL-171 & P.G.L. | 14'-6 5/8" |
| Girder E5          | 14'-5"     |
| Girder E6          | 13'-7 3/8" |
| Girder E7          | 12'-10"    |

**benesch**  
engineers · scientists · planners

Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

|             |                     |                |           |
|-------------|---------------------|----------------|-----------|
| FILE NAME = | USER NAME = ksnider | DESIGNED - DTS | REVISED - |
|             |                     | CHECKED - AJK  | REVISED - |
|             |                     | DRAWN - KMS    | REVISED - |
|             |                     | CHECKED - AJK  | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS PLAN UNIT E  
STRUCTURE NO. 016-2457

|                           |             |        |                    |           |
|---------------------------|-------------|--------|--------------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821                | 401       |
| ILLINOIS FED. AID PROJECT |             |        | CONTRACT NO. 60J16 |           |

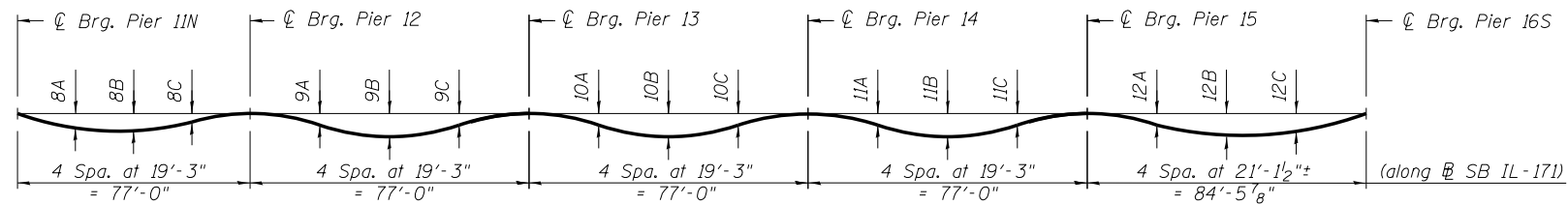
SHEET NO. SD26 OF SD83 SHEETS

0162457.60J16.026.TOS.Elev.Plan.Unit.E.dgn

PLOT SCALE =

PLOT DATE = 12/20/2013

Y:\chicago\100005\10093\Eng\_Docs\_Phase\_1\SN\_016\_2456\_2457\_1st\_Ave\_over\_Des\_Plaines\_River\_Valley\_Final\2457\_Final\0162457\_60J16\_026\_TOS\_Elev\_Plan\_Unit\_E.dgn 3:41:18 PM 8/6/2014



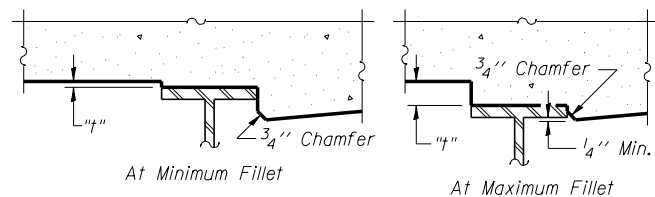
**DEAD LOAD DEFLECTION DIAGRAM**

(Includes weight of concrete only.)

| Girder | 8A   | 8B   | 8C   | 9A   | 9B   | 9C   | 10A  | 10B  | 10C  | 11A  | 11B  | 11C   | 12A  | 12B    | 12C    |
|--------|------|------|------|------|------|------|------|------|------|------|------|-------|------|--------|--------|
| E1     | 7/8" | 1/8" | 5/8" | 1/8" | 3/8" | 1/8" | 1/2" | 3/4" | 1/2" | 1/8" | 1/4" | 0"    | 7/8" | 1/2"   | 1/4"   |
| E2     |      |      |      |      |      |      |      |      |      | 0"   | 0"   | -1/8" | 7/8" | 1 5/8" | 1 1/4" |
| E3     | 3/4" | 7/8" | 1/2" | 0"   | 1/4" | 1/8" | 3/8" | 5/8" | 3/8" | 0"   | 1/8" | -1/8" | 3/4" | 1 3/8" | 1 1/8" |
| E4     |      |      |      |      |      |      |      |      |      | 0"   | 1/8" | 0"    | 5/8" | 1 1/4" | 1"     |
| E5     |      |      |      |      |      |      |      |      |      | 0"   | 1/8" | 0"    | 5/8" | 1 1/4" | 1"     |
| E6     |      |      |      |      |      |      |      |      |      | 0"   | 1/8" | 0"    | 5/8" | 1 1/4" | 1"     |
| E7     | 7/8" | 1/8" | 5/8" | 1/8" | 3/8" | 1/8" | 1/2" | 3/4" | 1/2" | 1/8" | 1/4" | 0"    | 3/4" | 1 3/8" | 1 1/8" |

**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 on SD27 - SD29.



To determine "t": Elevations of the top flanges of the beams shall be taken at intervals shown herein. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown herein, minus slab thickness, equals the fillet heights "t" above top flange of beams.

**FILLET HEIGHTS**

**BEAM E1**

| Location          | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-------------------|----------|--------|------------------------------|--|
| CL. PIER 11       | 59+24.75 | -28.00 | 628.46                       | 628.46   |
| CL. BRG. PIER 11N | 59+25.50 | -28.00 | 628.47                       | 628.47   |
| 8A                | 59+35.50 | -28.00 | 628.62                       | 628.66   |
| 8B                | 59+45.50 | -28.00 | 628.77                       | 628.85   |
| 8C                | 59+55.50 | -28.00 | 628.91                       | 629.01   |
| 8D                | 59+65.50 | -28.00 | 629.06                       | 629.16   |
| 8E                | 59+75.50 | -28.00 | 629.21                       | 629.29   |
| 8F                | 59+85.50 | -28.00 | 629.36                       | 629.41   |
| 8G                | 59+95.50 | -28.00 | 629.51                       | 629.52   |
| CL. BRG. PIER 12  | 60+02.50 | -28.00 | 629.61                       | 629.61   |
| 9A                | 60+12.50 | -28.00 | 629.76                       | 629.76   |
| 9B                | 60+22.50 | -28.00 | 629.91                       | 629.92   |
| 9C                | 60+32.50 | -28.00 | 630.06                       | 630.08   |
| 9D                | 60+42.50 | -28.00 | 630.21                       | 630.24   |
| 9E                | 60+52.50 | -28.00 | 630.36                       | 630.38   |
| 9F                | 60+62.50 | -28.00 | 630.51                       | 630.52   |
| 9G                | 60+72.50 | -28.00 | 630.66                       | 630.66   |
| CL. BRG. PIER 13  | 60+79.50 | -28.00 | 630.76                       | 630.76   |
| 10A               | 60+89.50 | -28.00 | 630.91                       | 630.93   |
| 10B               | 60+99.50 | -28.00 | 631.06                       | 631.10   |
| 10C               | 61+09.50 | -28.00 | 631.21                       | 631.27   |
| 10D               | 61+19.50 | -28.00 | 631.36                       | 631.42   |
| 10E               | 61+29.50 | -28.00 | 631.50                       | 631.56   |
| 10F               | 61+39.50 | -28.00 | 631.65                       | 631.69   |
| 10G               | 61+49.50 | -28.00 | 631.80                       | 631.81   |
| CL. BRG. Pier 14  | 61+56.50 | -28.00 | 631.91                       | 631.91   |
| 11A               | 61+66.50 | -28.00 | 632.05                       | 632.05   |
| 11B               | 61+76.50 | -28.00 | 632.20                       | 632.21   |
| 11C               | 61+86.50 | -28.00 | 632.35                       | 632.37   |
| 11D               | 61+96.50 | -28.00 | 632.50                       | 632.52   |
| 11E               | 62+06.50 | -28.00 | 632.65                       | 632.66   |
| 11F               | 62+16.50 | -28.16 | 632.80                       | 632.79   |
| 11G               | 62+26.50 | -28.40 | 632.94                       | 632.93   |
| CL BRG. Pier 15   | 62+33.50 | -28.56 | 633.04                       | 633.04   |
| 12A               | 62+43.50 | -28.79 | 633.18                       | 633.21   |
| 12B               | 62+53.49 | -29.03 | 633.33                       | 633.39   |
| 12C               | 62+63.49 | -29.26 | 633.47                       | 633.57   |
| 12D               | 62+73.49 | -29.49 | 633.62                       | 633.74   |
| 12E               | 62+83.49 | -29.72 | 633.76                       | 633.89   |
| 12F               | 62+93.48 | -29.96 | 633.91                       | 634.02   |
| 12G               | 63+03.48 | -30.19 | 634.05                       | 634.14   |
| 12H               | 63+13.48 | -30.42 | 634.19                       | 634.24   |
| CL. BRG. Pier 16S | 63+21.33 | -30.60 | 634.31                       | 634.31   |
| CL PIER 16        | 63+22.09 | -30.62 | 634.32                       | 634.32   |

**BEAM E2**

| Location          | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-------------------|----------|--------|------------------------------|--|
| CL. PIER 11       | 59+24.75 | -20.67 | 628.60                       | 628.60   |
| CL. BRG. PIER 11N | 59+25.50 | -20.67 | 628.61                       | 628.61   |
| 8A                | 59+35.50 | -20.67 | 628.76                       | 628.80   |
| 8B                | 59+45.50 | -20.67 | 628.91                       | 628.98   |
| 8C                | 59+55.50 | -20.67 | 629.06                       | 629.14   |
| 8D                | 59+65.50 | -20.67 | 629.21                       | 629.29   |
| 8E                | 59+75.50 | -20.67 | 629.36                       | 629.42   |
| 8F                | 59+85.50 | -20.67 | 629.51                       | 629.55   |
| 8G                | 59+95.50 | -20.67 | 629.66                       | 629.67   |
| CL. BRG. PIER 12  | 60+02.50 | -20.67 | 629.76                       | 629.76   |
| 9A                | 60+12.50 | -20.67 | 629.91                       | 629.91   |
| 9B                | 60+22.50 | -20.67 | 630.06                       | 630.06   |
| 9C                | 60+32.50 | -20.67 | 630.21                       | 630.22   |
| 9D                | 60+42.50 | -20.67 | 630.36                       | 630.38   |
| 9E                | 60+52.50 | -20.67 | 630.50                       | 630.52   |
| 9F                | 60+62.50 | -20.67 | 630.65                       | 630.66   |
| 9G                | 60+72.50 | -20.67 | 630.80                       | 630.80   |
| CL. BRG. PIER 13  | 60+79.50 | -20.67 | 630.91                       | 630.91   |
| 10A               | 60+89.50 | -20.67 | 631.06                       | 631.07   |
| 10B               | 60+99.50 | -20.67 | 631.20                       | 631.24   |
| 10C               | 61+09.50 | -20.67 | 631.35                       | 631.40   |
| 10D               | 61+19.50 | -20.67 | 631.50                       | 631.56   |
| 10E               | 61+29.50 | -20.67 | 631.65                       | 631.70   |
| 10F               | 61+39.50 | -20.67 | 631.80                       | 631.83   |
| 10G               | 61+49.50 | -20.67 | 631.95                       | 631.96   |
| CL. BRG. Pier 14  | 61+56.50 | -20.67 | 632.05                       | 632.05   |
| 11A               | 61+66.50 | -20.67 | 632.20                       | 632.20   |
| 11B               | 61+76.50 | -20.67 | 632.35                       | 632.35   |
| 11C               | 61+86.50 | -20.67 | 632.50                       | 632.50   |
| 11D               | 61+96.50 | -20.67 | 632.65                       | 632.65   |
| 11E               | 62+06.50 | -20.67 | 632.80                       | 632.79   |
| 11F               | 62+16.50 | -20.75 | 632.94                       | 632.93   |
| 11G               | 62+26.50 | -20.87 | 633.09                       | 633.08   |
| CL BRG. Pier 15   | 62+33.50 | -20.95 | 633.19                       | 633.19   |
| 12A               | 62+43.50 | -21.07 | 633.34                       | 633.37   |
| 12B               | 62+53.50 | -21.18 | 633.49                       | 633.55   |
| 12C               | 62+63.50 | -21.30 | 633.63                       | 633.74   |
| 12D               | 62+73.50 | -21.42 | 633.78                       | 633.91   |
| 12E               | 62+83.50 | -21.54 | 633.93                       | 634.06   |
| 12F               | 62+93.50 | -21.65 | 634.07                       | 634.19   |
| 12G               | 63+03.50 | -21.77 | 634.22                       | 634.31   |
| 12H               | 63+13.49 | -21.89 | 634.36                       | 634.40   |
| CL. BRG. Pier 16S | 63+20.41 | -21.97 | 634.47                       | 634.47   |
| CL PIER 16        | 63+21.16 | -21.98 | 634.48                       | 634.48   |

**Note:**

Offset measured perpendicular to SB IL-171

|             |                     |                |           |
|-------------|---------------------|----------------|-----------|
| FILE NAME = | USER NAME = ksnider | DESIGNED - DTS | REVISED - |
|             |                     | CHECKED - AJK  | REVISED - |
|             |                     | DRAWN - KMS    | REVISED - |
|             |                     | CHECKED - AJK  | REVISED - |

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 402       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

Y:\chicago\100005\100093\Eng\_Docs\_Phase\_1\1\SN\_016-2456-2457-1st\_Ave\_over\_Plaines\_River\_Valley\Final\0162457\_TOS\_Elev\_Unit\_E.1\_of\_3.dgn 3:41:28 PM 8/6/2014

**BEAM E3**

| Location          | Station  | Offset | Theoretical<br>Grade<br>Elevations | Theoretical Grade<br>Elevations<br>Adjusted For Dead<br>Load Deflection |
|-------------------|----------|--------|------------------------------------|---|
| CL. PIER 11       | 59+24.75 | -13.33 | 628.75                             | 628.75  |
| CL. BRG. PIER 11N | 59+25.50 | -13.33 | 628.76                             | 628.76  |
| 8A                | 59+35.50 | -13.33 | 628.91                             | 628.94  |
| 8B                | 59+45.50 | -13.33 | 629.06                             | 629.12  |
| 8C                | 59+55.50 | -13.33 | 629.21                             | 629.28  |
| 8D                | 59+65.50 | -13.33 | 629.36                             | 629.43  |
| 8E                | 59+75.50 | -13.33 | 629.51                             | 629.56  |
| 8F                | 59+85.50 | -13.33 | 629.65                             | 629.69  |
| 8G                | 59+95.50 | -13.33 | 629.80                             | 629.81  |
| CL. BRG. PIER 12  | 60+02.50 | -13.33 | 629.91                             | 629.91  |
| 9A                | 60+12.50 | -13.33 | 630.06                             | 630.05  |
| 9B                | 60+22.50 | -13.33 | 630.20                             | 630.21  |
| 9C                | 60+32.50 | -13.33 | 630.35                             | 630.37  |
| 9D                | 60+42.50 | -13.33 | 630.50                             | 630.52  |
| 9E                | 60+52.50 | -13.33 | 630.65                             | 630.67  |
| 9F                | 60+62.50 | -13.33 | 630.80                             | 630.81  |
| 9G                | 60+72.50 | -13.33 | 630.95                             | 630.95  |
| CL. BRG. PIER 13  | 60+79.50 | -13.33 | 631.05                             | 631.05  |
| 10A               | 60+89.50 | -13.33 | 631.20                             | 631.21  |
| 10B               | 60+99.50 | -13.33 | 631.35                             | 631.38  |
| 10C               | 61+09.50 | -13.33 | 631.50                             | 631.55  |
| 10D               | 61+19.50 | -13.33 | 631.65                             | 631.70  |
| 10E               | 61+29.50 | -13.33 | 631.80                             | 631.84  |
| 10F               | 61+39.50 | -13.33 | 631.95                             | 631.97  |
| 10G               | 61+49.50 | -13.33 | 632.10                             | 632.10  |
| CL. BRG. Pier 14  | 61+56.50 | -13.33 | 632.20                             | 632.20  |
| 11A               | 61+66.50 | -13.33 | 632.35                             | 632.35  |
| 11B               | 61+76.50 | -13.33 | 632.50                             | 632.50  |
| 11C               | 61+86.50 | -13.33 | 632.65                             | 632.65  |
| 11D               | 61+96.50 | -13.33 | 632.79                             | 632.80  |
| 11E               | 62+06.50 | -13.33 | 632.94                             | 632.94  |
| 11F               | 62+16.50 | -13.33 | 633.09                             | 633.08  |
| 11G               | 62+26.50 | -13.33 | 633.24                             | 633.23  |
| CL BRG. Pier 15   | 62+33.50 | -13.33 | 633.35                             | 633.35  |
| 12A               | 62+43.50 | -13.33 | 633.49                             | 633.52  |
| 12B               | 62+53.50 | -13.33 | 633.64                             | 633.70  |
| 12C               | 62+63.50 | -13.33 | 633.79                             | 633.88  |
| 12D               | 62+73.50 | -13.33 | 633.94                             | 634.05  |
| 12E               | 62+83.50 | -13.33 | 634.09                             | 634.20  |
| 12F               | 62+93.50 | -13.33 | 634.24                             | 634.34  |
| 12G               | 63+03.50 | -13.33 | 634.39                             | 634.46  |
| 12H               | 63+13.50 | -13.33 | 634.54                             | 634.57  |
| CL. BRG. Pier 16S | 63+19.48 | -13.33 | 634.62                             | 634.62  |
| CL PIER 16        | 63+20.23 | -13.33 | 634.64                             | 634.64  |

**BEAM E4**

| Location          | Station  | Offset | Theoretical<br>Grade<br>Elevations | Theoretical Grade<br>Elevations<br>Adjusted For Dead<br>Load Deflection |
|-------------------|----------|--------|------------------------------------|---|
| CL. PIER 11       | 59+24.75 | -6.00  | 628.87                             | 628.87  |
| CL. BRG. PIER 11N | 59+25.50 | -6.00  | 628.88                             | 628.88  |
| 8A                | 59+35.50 | -6.00  | 629.03                             | 629.06  |
| 8B                | 59+45.50 | -6.00  | 629.18                             | 629.24  |
| 8C                | 59+55.50 | -6.00  | 629.32                             | 629.40  |
| 8D                | 59+65.50 | -6.00  | 629.47                             | 629.55  |
| 8E                | 59+75.50 | -6.00  | 629.62                             | 629.68  |
| 8F                | 59+85.50 | -6.00  | 629.77                             | 629.81  |
| 8G                | 59+95.50 | -6.00  | 629.92                             | 629.93  |
| CL. BRG. PIER 12  | 60+02.50 | -6.00  | 630.02                             | 630.02  |
| 9A                | 60+12.50 | -6.00  | 630.17                             | 630.17  |
| 9B                | 60+22.50 | -6.00  | 630.32                             | 630.33  |
| 9C                | 60+32.50 | -6.00  | 630.47                             | 630.48  |
| 9D                | 60+42.50 | -6.00  | 630.62                             | 630.64  |
| 9E                | 60+52.50 | -6.00  | 630.77                             | 630.78  |
| 9F                | 60+62.50 | -6.00  | 630.92                             | 630.92  |
| 9G                | 60+72.50 | -6.00  | 631.07                             | 631.07  |
| CL. BRG. PIER 13  | 60+79.50 | -6.00  | 631.17                             | 631.17  |
| 10A               | 60+89.50 | -6.00  | 631.32                             | 631.33  |
| 10B               | 60+99.50 | -6.00  | 631.47                             | 631.50  |
| 10C               | 61+09.50 | -6.00  | 631.62                             | 631.66  |
| 10D               | 61+19.50 | -6.00  | 631.77                             | 631.82  |
| 10E               | 61+29.50 | -6.00  | 631.91                             | 631.96  |
| 10F               | 61+39.50 | -6.00  | 632.06                             | 632.09  |
| 10G               | 61+49.50 | -6.00  | 632.21                             | 632.22  |
| CL. BRG. Pier 14  | 61+56.50 | -6.00  | 632.32                             | 632.32  |
| 11A               | 61+66.50 | -6.00  | 632.46                             | 632.46  |
| 11B               | 61+76.50 | -6.00  | 632.61                             | 632.62  |
| 11C               | 61+86.50 | -6.00  | 632.76                             | 632.77  |
| 11D               | 61+96.50 | -6.00  | 632.91                             | 632.92  |
| 11E               | 62+06.50 | -6.00  | 633.06                             | 633.06  |
| 11F               | 62+16.50 | -6.00  | 633.21                             | 633.20  |
| 11G               | 62+26.50 | -6.00  | 633.36                             | 633.35  |
| CL BRG. Pier 15   | 62+33.50 | -6.00  | 633.46                             | 633.46  |
| 12A               | 62+43.50 | -6.00  | 633.61                             | 633.63  |
| 12B               | 62+53.50 | -6.00  | 633.76                             | 633.82  |
| 12C               | 62+63.50 | -6.00  | 633.91                             | 633.99  |
| 12D               | 62+73.50 | -6.00  | 634.06                             | 634.16  |
| 12E               | 62+83.50 | -6.00  | 634.21                             | 634.32  |
| 12F               | 62+93.50 | -6.00  | 634.35                             | 634.45  |
| 12G               | 63+03.50 | -6.00  | 634.50                             | 634.57  |
| 12H               | 63+13.50 | -6.00  | 634.65                             | 634.68  |
| CL. BRG. Pier 16S | 63+18.69 | -6.00  | 634.73                             | 634.73  |
| CL PIER 16        | 63+19.44 | -6.00  | 634.74                             | 634.74  |

**SB IL-171 & P.G.L.**

| Location          | Station  | Offset | Theoretical<br>Grade<br>Elevations | Theoretical Grade<br>Elevations<br>Adjusted For Dead<br>Load Deflection |
|-------------------|----------|--------|------------------------------------|---|
| CL. PIER 11       | 59+24.75 | 0.00   | 628.96                             | 628.96  |
| CL. BRG. PIER 11N | 59+25.50 | 0.00   | 628.97                             | 628.97  |
| 8A                | 59+35.50 | 0.00   | 629.12                             | 629.15  |
| 8B                | 59+45.50 | 0.00   | 629.27                             | 629.33  |
| 8C                | 59+55.50 | 0.00   | 629.41                             | 629.49  |
| 8D                | 59+65.50 | 0.00   | 629.56                             | 629.64  |
| 8E                | 59+75.50 | 0.00   | 629.71                             | 629.77  |
| 8F                | 59+85.50 | 0.00   | 629.86                             | 629.90  |
| 8G                | 59+95.50 | 0.00   | 630.01                             | 630.02  |
| CL. BRG. PIER 12  | 60+02.50 | 0.00   | 630.11                             | 630.11  |
| 9A                | 60+12.50 | 0.00   | 630.26                             | 630.26  |
| 9B                | 60+22.50 | 0.00   | 630.41                             | 630.42  |
| 9C                | 60+32.50 | 0.00   | 630.56                             | 630.57  |
| 9D                | 60+42.50 | 0.00   | 630.71                             | 630.73  |
| 9E                | 60+52.50 | 0.00   | 630.86                             | 630.87  |
| 9F                | 60+62.50 | 0.00   | 631.01                             | 631.01  |
| 9G                | 60+72.50 | 0.00   | 631.16                             | 631.16  |
| CL. BRG. PIER 13  | 60+79.50 | 0.00   | 631.26                             | 631.26  |
| 10A               | 60+89.50 | 0.00   | 631.41                             | 631.42  |
| 10B               | 60+99.50 | 0.00   | 631.56                             | 631.59  |
| 10C               | 61+09.50 | 0.00   | 631.71                             | 631.75  |
| 10D               | 61+19.50 | 0.00   | 631.86                             | 631.90  |
| 10E               | 61+29.50 | 0.00   | 632.00                             | 632.05  |
| 10F               | 61+39.50 | 0.00   | 632.15                             | 632.18  |
| 10G               | 61+49.50 | 0.00   | 632.30                             | 632.31  |
| CL. BRG. Pier 14  | 61+56.50 | 0.00   | 632.41                             | 632.41  |
| 11A               | 61+66.50 | 0.00   | 632.55                             | 632.55  |
| 11B               | 61+76.50 | 0.00   | 632.70                             | 632.71  |
| 11C               | 61+86.50 | 0.00   | 632.85                             | 632.86  |
| 11D               | 61+96.50 | 0.00   | 633.00                             | 633.01  |
| 11E               | 62+06.50 | 0.00   | 633.15                             | 633.15  |
| 11F               | 62+16.50 | 0.00   | 633.30                             | 633.29  |
| 11G               | 62+26.50 | 0.00   | 633.45                             | 633.44  |
| CL BRG. Pier 15   | 62+33.50 | 0.00   | 633.55                             | 633.55  |
| 12A               | 62+43.50 | 0.00   | 633.70                             | 633.72  |
| 12B               | 62+53.50 | 0.00   | 633.85                             | 633.90  |
| 12C               | 62+63.50 | 0.00   | 634.00                             | 634.08  |
| 12D               | 62+73.50 | 0.00   | 634.15                             | 634.25  |
| 12E               | 62+83.50 | 0.00   | 634.30                             | 634.40  |
| 12F               | 62+93.50 | 0.00   | 634.44                             | 634.53  |
| 12G               | 63+03.50 | 0.00   | 634.59                             | 634.65  |
| CL. BRG. Pier 16S | 63+18.05 | 0.00   | 634.81                             | 634.81  |
| CL PIER 16        | 63+18.80 | 0.00   | 634.82                             | 634.82  |

Note:  
Offset measured perpendicular to SB IL-171



|  |                        |                |           |
|--|------------------------|----------------|-----------|
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|  |                        | CHECKED - AJK  | REVISED - |
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|  | PLOT DATE = 12/20/2013 | CHECKED - AJK  | REVISED - |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS UNIT E (2 OF 3)  
STRUCTURE NO. 016-2457**

SHEET NO. SD28 OF SD83 SHEETS

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 403       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

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**BEAM E5**

| Location          | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-------------------|----------|--------|------------------------------|--|
| CL. PIER 11       | 59+24.75 | 1.33   | 628.94                       | 628.94   |
| CL. BRG. PIER 11N | 59+25.50 | 1.33   | 628.95                       | 628.95   |
| 8A                | 59+35.50 | 1.33   | 629.10                       | 629.13   |
| 8B                | 59+45.50 | 1.33   | 629.25                       | 629.31   |
| 8C                | 59+55.50 | 1.33   | 629.39                       | 629.47   |
| 8D                | 59+65.50 | 1.33   | 629.54                       | 629.62   |
| 8E                | 59+75.50 | 1.33   | 629.69                       | 629.75   |
| 8F                | 59+85.50 | 1.33   | 629.84                       | 629.88   |
| 8G                | 59+95.50 | 1.33   | 629.99                       | 630.00   |
| CL. BRG. PIER 12  | 60+02.50 | 1.33   | 630.09                       | 630.09   |
| 9A                | 60+12.50 | 1.33   | 630.24                       | 630.24   |
| 9B                | 60+22.50 | 1.33   | 630.39                       | 630.40   |
| 9C                | 60+32.50 | 1.33   | 630.54                       | 630.55   |
| 9D                | 60+42.50 | 1.33   | 630.69                       | 630.71   |
| 9E                | 60+52.50 | 1.33   | 630.84                       | 630.85   |
| 9F                | 60+62.50 | 1.33   | 630.99                       | 630.99   |
| 9G                | 60+72.50 | 1.33   | 631.14                       | 631.14   |
| CL. BRG. PIER 13  | 60+79.50 | 1.33   | 631.24                       | 631.24   |
| 10A               | 60+89.50 | 1.33   | 631.39                       | 631.40   |
| 10B               | 60+99.50 | 1.33   | 631.54                       | 631.57   |
| 10C               | 61+09.50 | 1.33   | 631.69                       | 631.73   |
| 10D               | 61+19.50 | 1.33   | 631.84                       | 631.88   |
| 10E               | 61+29.50 | 1.33   | 631.98                       | 632.03   |
| 10F               | 61+39.50 | 1.33   | 632.13                       | 632.16   |
| 10G               | 61+49.50 | 1.33   | 632.28                       | 632.29   |
| CL. BRG. Pier 14  | 61+56.50 | 1.33   | 632.39                       | 632.39   |
| 11A               | 61+66.50 | 1.33   | 632.53                       | 632.53   |
| 11B               | 61+76.50 | 1.33   | 632.68                       | 632.69   |
| 11C               | 61+86.50 | 1.33   | 632.83                       | 632.84   |
| 11D               | 61+96.50 | 1.33   | 632.98                       | 632.99   |
| 11E               | 62+06.50 | 1.33   | 633.13                       | 633.13   |
| 11F               | 62+16.50 | 1.33   | 633.28                       | 633.27   |
| 11G               | 62+26.50 | 1.33   | 633.43                       | 633.42   |
| CL BRG. Pier 15   | 62+33.50 | 1.33   | 633.53                       | 633.53   |
| 12A               | 62+43.50 | 1.33   | 633.68                       | 633.70   |
| 12B               | 62+53.50 | 1.33   | 633.83                       | 633.88   |
| 12C               | 62+63.50 | 1.33   | 633.98                       | 634.06   |
| 12D               | 62+73.50 | 1.33   | 634.13                       | 634.23   |
| 12E               | 62+83.50 | 1.33   | 634.28                       | 634.38   |
| 12F               | 62+93.50 | 1.33   | 634.42                       | 634.51   |
| 12G               | 63+03.50 | 1.33   | 634.57                       | 634.63   |
| CL. BRG. Pier 16S | 63+17.90 | 1.33   | 634.79                       | 634.79   |
| CL PIER 16        | 63+18.66 | 1.33   | 634.80                       | 634.80   |

**BEAM E6**

| Location          | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-------------------|----------|--------|------------------------------|--|
| CL. PIER 11       | 59+24.75 | 8.67   | 628.83                       | 628.83   |
| CL. BRG. PIER 11N | 59+25.50 | 8.67   | 628.84                       | 628.84   |
| 8A                | 59+35.50 | 8.67   | 628.99                       | 629.02   |
| 8B                | 59+45.50 | 8.67   | 629.14                       | 629.20   |
| 8C                | 59+55.50 | 8.67   | 629.28                       | 629.36   |
| 8D                | 59+65.50 | 8.67   | 629.43                       | 629.51   |
| 8E                | 59+75.50 | 8.67   | 629.58                       | 629.64   |
| 8F                | 59+85.50 | 8.67   | 629.73                       | 629.77   |
| 8G                | 59+95.50 | 8.67   | 629.88                       | 629.89   |
| CL. BRG. PIER 12  | 60+02.50 | 8.67   | 629.98                       | 629.98   |
| 9A                | 60+12.50 | 8.67   | 630.13                       | 630.13   |
| 9B                | 60+22.50 | 8.67   | 630.28                       | 630.29   |
| 9C                | 60+32.50 | 8.67   | 630.43                       | 630.45   |
| 9D                | 60+42.50 | 8.67   | 630.58                       | 630.60   |
| 9E                | 60+52.50 | 8.67   | 630.73                       | 630.75   |
| 9F                | 60+62.50 | 8.67   | 630.88                       | 630.88   |
| 9G                | 60+72.50 | 8.67   | 631.03                       | 631.03   |
| CL. BRG. PIER 13  | 60+79.50 | 8.67   | 631.13                       | 631.13   |
| 10A               | 60+89.50 | 8.67   | 631.28                       | 631.29   |
| 10B               | 60+99.50 | 8.67   | 631.43                       | 631.46   |
| 10C               | 61+09.50 | 8.67   | 631.58                       | 631.63   |
| 10D               | 61+19.50 | 8.67   | 631.73                       | 631.78   |
| 10E               | 61+29.50 | 8.67   | 631.87                       | 631.92   |
| 10F               | 61+39.50 | 8.67   | 632.02                       | 632.05   |
| 10G               | 61+49.50 | 8.67   | 632.17                       | 632.18   |
| CL. BRG. Pier 14  | 61+56.50 | 8.67   | 632.28                       | 632.28   |
| 11A               | 61+66.50 | 8.67   | 632.42                       | 632.42   |
| 11B               | 61+76.50 | 8.67   | 632.57                       | 632.58   |
| 11C               | 61+86.50 | 8.67   | 632.72                       | 632.73   |
| 11D               | 61+96.50 | 8.67   | 632.87                       | 632.88   |
| 11E               | 62+06.50 | 8.67   | 633.02                       | 633.02   |
| 11F               | 62+16.50 | 8.67   | 633.17                       | 633.16   |
| 11G               | 62+26.50 | 8.67   | 633.32                       | 633.31   |
| CL BRG. Pier 15   | 62+33.50 | 8.67   | 633.42                       | 633.42   |
| 12A               | 62+43.50 | 8.67   | 633.57                       | 633.59   |
| 12B               | 62+53.50 | 8.67   | 633.72                       | 633.78   |
| 12C               | 62+63.50 | 8.67   | 633.87                       | 633.95   |
| 12D               | 62+73.50 | 8.67   | 634.02                       | 634.12   |
| 12E               | 62+83.50 | 8.67   | 634.17                       | 634.27   |
| 12F               | 62+93.50 | 8.67   | 634.31                       | 634.41   |
| 12G               | 63+03.50 | 8.67   | 634.46                       | 634.53   |
| CL. BRG. Pier 16S | 63+17.11 | 8.67   | 634.67                       | 634.67   |
| CL PIER 16        | 63+17.87 | 8.67   | 634.68                       | 634.68   |

**BEAM E7**

| Location          | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-------------------|----------|--------|------------------------------|--|
| CL. PIER 11       | 59+24.75 | 16.00  | 628.70                       | 628.70   |
| CL. BRG. PIER 11N | 59+25.50 | 16.00  | 628.71                       | 628.71   |
| 8A                | 59+35.50 | 16.00  | 628.86                       | 628.90   |
| 8B                | 59+45.50 | 16.00  | 629.01                       | 629.09   |
| 8C                | 59+55.50 | 16.00  | 629.15                       | 629.25   |
| 8D                | 59+65.50 | 16.00  | 629.30                       | 629.40   |
| 8E                | 59+75.50 | 16.00  | 629.45                       | 629.53   |
| 8F                | 59+85.50 | 16.00  | 629.60                       | 629.65   |
| 8G                | 59+95.50 | 16.00  | 629.75                       | 629.76   |
| CL. BRG. PIER 12  | 60+02.50 | 16.00  | 629.85                       | 629.85   |
| 9A                | 60+12.50 | 16.00  | 630.00                       | 630.00   |
| 9B                | 60+22.50 | 16.00  | 630.15                       | 630.16   |
| 9C                | 60+32.50 | 16.00  | 630.30                       | 630.32   |
| 9D                | 60+42.50 | 16.00  | 630.45                       | 630.48   |
| 9E                | 60+52.50 | 16.00  | 630.60                       | 630.62   |
| 9F                | 60+62.50 | 16.00  | 630.75                       | 630.76   |
| 9G                | 60+72.50 | 16.00  | 630.90                       | 630.90   |
| CL. BRG. PIER 13  | 60+79.50 | 16.00  | 631.00                       | 631.00   |
| 10A               | 60+89.50 | 16.00  | 631.15                       | 631.17   |
| 10B               | 60+99.50 | 16.00  | 631.30                       | 631.34   |
| 10C               | 61+09.50 | 16.00  | 631.45                       | 631.51   |
| 10D               | 61+19.50 | 16.00  | 631.60                       | 631.66   |
| 10E               | 61+29.50 | 16.00  | 631.74                       | 631.80   |
| 10F               | 61+39.50 | 16.00  | 631.89                       | 631.93   |
| 10G               | 61+49.50 | 16.00  | 632.04                       | 632.05   |
| CL. BRG. Pier 14  | 61+56.50 | 16.00  | 632.15                       | 632.15   |
| 11A               | 61+66.50 | 16.00  | 632.29                       | 632.30   |
| 11B               | 61+76.50 | 16.00  | 632.44                       | 632.45   |
| 11C               | 61+86.50 | 16.00  | 632.59                       | 632.61   |
| 11D               | 61+96.50 | 16.00  | 632.74                       | 632.76   |
| 11E               | 62+06.50 | 16.00  | 632.89                       | 632.90   |
| 11F               | 62+16.50 | 16.00  | 633.04                       | 633.04   |
| 11G               | 62+26.50 | 16.00  | 633.19                       | 633.18   |
| CL BRG. Pier 15   | 62+33.50 | 16.00  | 633.29                       | 633.29   |
| 12A               | 62+43.50 | 16.00  | 633.44                       | 633.47   |
| 12B               | 62+53.50 | 16.00  | 633.59                       | 633.65   |
| 12C               | 62+63.50 | 16.00  | 633.74                       | 633.83   |
| 12D               | 62+73.50 | 16.00  | 633.89                       | 634.00   |
| 12E               | 62+83.50 | 16.00  | 634.04                       | 634.15   |
| 12F               | 62+93.50 | 16.00  | 634.18                       | 634.28   |
| 12G               | 63+03.50 | 16.00  | 634.33                       | 634.39   |
| CL. BRG. Pier 16S | 63+16.33 | 16.00  | 634.52                       | 634.52   |
| CL PIER 16        | 63+17.08 | 16.00  | 634.54                       | 634.54   |

|              |   |
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| PLOT DATE =  | 12/20/2013                                  |

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| DRAWN -    | KMS | REVISED - |  |
| CHECKED -  | AJK | REVISED - |  |

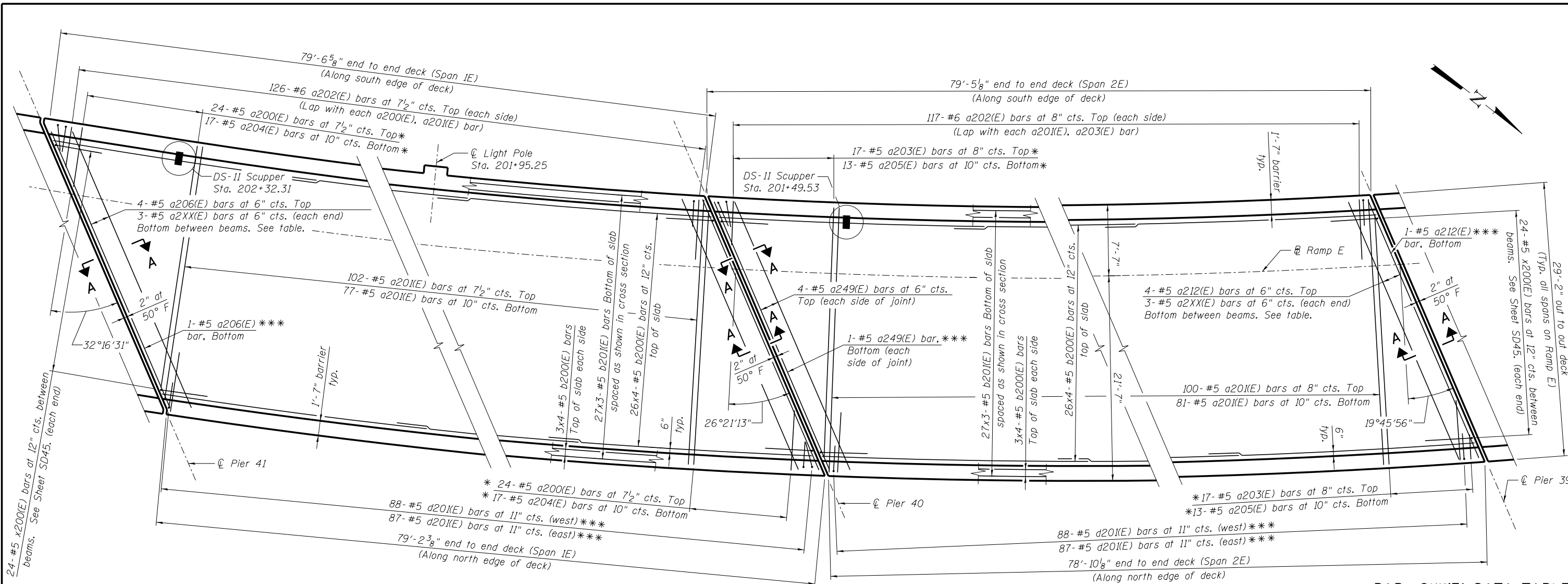
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS UNIT E (3 OF 3)  
 STRUCTURE NO. 016-2457**

SHEET NO. SD29 OF SD83 SHEETS

Note:  
 Offset measured perpendicular to SB IL-171

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372                       | 2013-0388-R | COOK   | 821          | 404       |
| CONTRACT NO.              |             |        | 60J16        |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |



**PLAN - RAMP E**

**S.E. DATA - RAMP E**

Normal Crown = Sta. 197+06.62  
 2.0% to 3.56% S.E. = Sta. 197+06.62 to Sta. 198+21.67  
 3.56% to 3.95% S.E. = Sta. 198+21.67 to Sta. 198+50.00  
 3.95% to 5.15% S.E. = Sta. 198+50.00 to Sta. 199+00.00  
 5.15% to 6.2% S.E. = Sta. 199+00.00 to Sta. 199+50.00  
 6.2% S.E. = Sta. 199+50.00 to Sta. 201+70.00  
 6.2% S.E. to 2.3% S.E. = Sta. 201+70.00 to 203+00.00

**BAR a2XX(E) DATA TABLE**

| Span | Pier | Bay   | Bar     |
|------|------|-------|---------|
| 1E   | 41   | R1-R2 | a208(E) |
| 1E   | 41   | R2-R5 | a207(E) |
| 1E   | 40   | R1-R2 | a209(E) |
| 1E   | 40   | R2-R5 | a207(E) |
| 2E   | 40   | R1-R2 | a210(E) |
| 2E   | 40   | R2-R5 | a247(E) |
| 2E   | 39   | R1-R2 | a211(E) |
| 2E   | 39   | R2-R5 | a247(E) |

**MINIMUM BAR LAP**

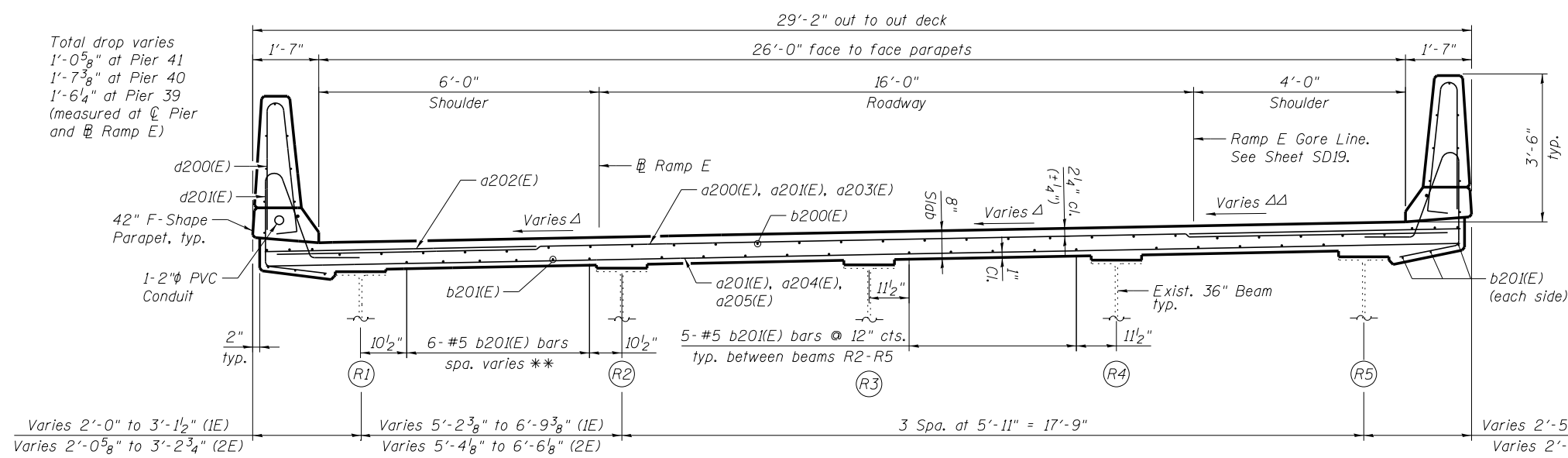
(Slab and Parapet)  
 #5 bar = 3'-3"  
 #6 bar = 3'-10"

\* Order a200(E), a203(E), a204(E) and a205(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.  
 \*\* 12" at Pier 41 (1E) 8 1/4" at Pier 40 (1E) 11 1/2" at Pier 40 (2E) 8 1/2" at Pier 39 (2E)  
 \*\*\* Cut to fit in field

**NOTES:**

- For Superstructure Details, Section A-A, and Bar Bends, see Sheet SD45.
- For Bill of Material, see Sheet SD46.
- Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
- Barrier widths are measured perpendicular from the edge of deck. Overhang widths are measured perpendicular from the fascia girders. Girder spacings are measured perpendicular from the east girder to the west girder at the centerline of bearing. All remaining deck dimensions are measured perpendicular to the baseline shown unless noted otherwise.
- Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet SD49.

Total drop varies  
 1'-0 5/8" at Pier 41  
 1'-7 3/8" at Pier 40  
 1'-6 1/4" at Pier 39  
 (measured at Pier and Ramp E)



**DECK CROSS SECTION - RAMP E**  
 (Looking Downstation, North)

Δ See S.E. Data Table  
 ΔΔ Matches S.E. Data Table from Sta. 201+25.00 to end of structure at Pier 41. Linear slope transition from 6.2% at Sta. 201+25.00 to 2.2% at Sta. 200+46.84. See Sheet SD19.

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 Alfred Benesch & Company  
 205 North Michigan Avenue, Suite 2400  
 Chicago, Illinois 60601  
 312-565-0450 Job No. 10093

|                                      |                        |                 |           |
|--------------------------------------|------------------------|-----------------|-----------|
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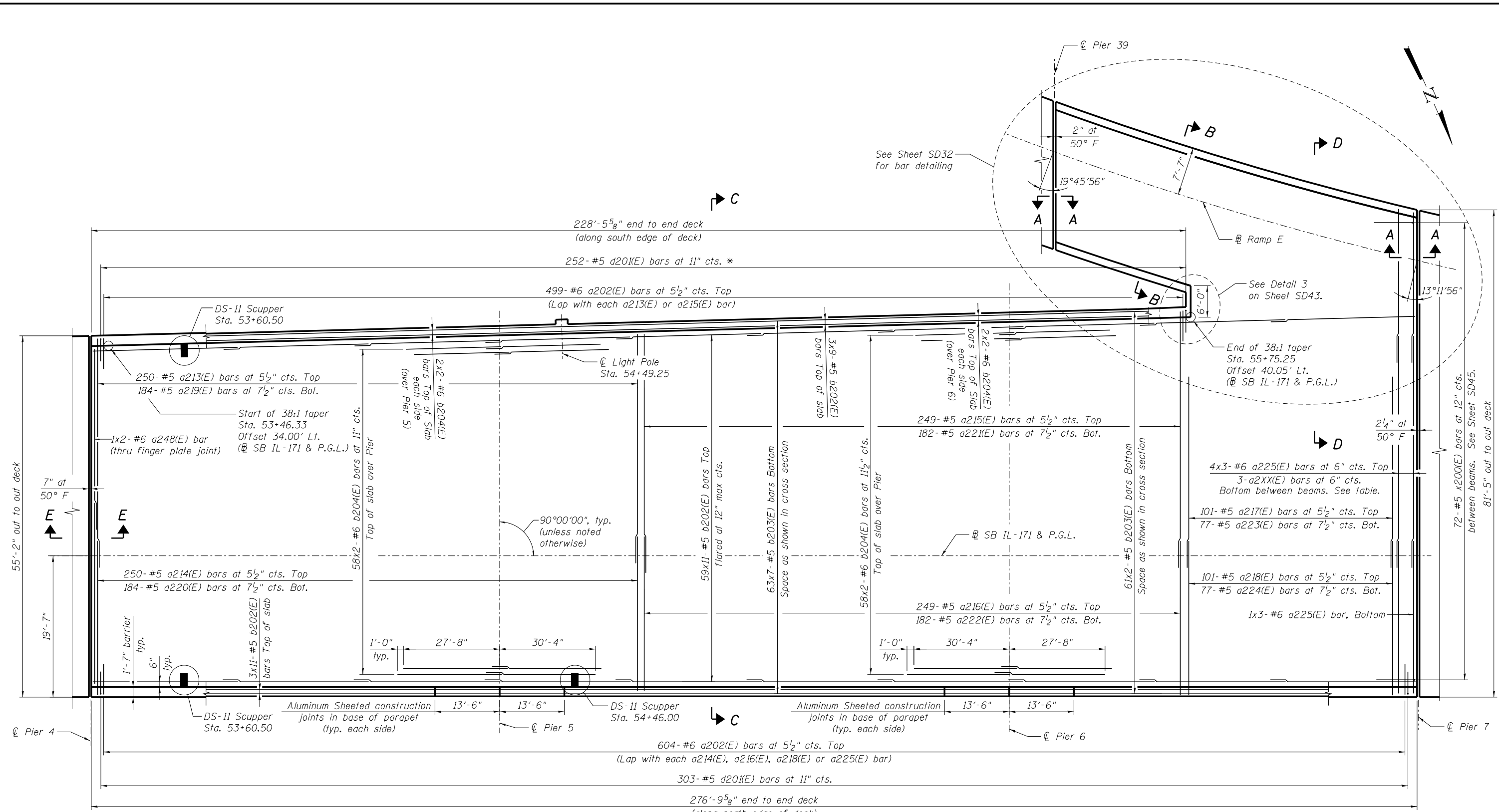
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**DECK PLAN & CROSS SECTION UNIT A RAMP E**  
**STRUCTURE NO. 016-2457**

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821          | 405       |
| CONTRACT NO. 60J16        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

SHEET NO. SD30 OF SD83 SHEETS

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**BAR a2XX(E) DATA TABLE**

(Pier 7)

| Bay   | Bar     | Size |
|-------|---------|------|
| R1-R4 | a211(E) | #5   |
| R4-A1 | a226(E) | #5   |
| A1-A2 | a227(E) | #5   |
| A2-A3 | a210(E) | #5   |
| A3-A6 | a228(E) | #6   |
| A6-A8 | a229(E) | #5   |

**MINIMUM BAR LAP**

(Slab and Parapet)  
 #5 bar = 3'-3"  
 #6 bar = 3'-10"

**PLAN - SPANS 1 THRU 3**

\* Cut to fit in field

**NOTES:**

- For Superstructure Details, Section A-A, and Bar Bends, see Sheet SD45.
- For Bill of Material, see Sheet SD46.
- Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
- For Section B-B, C-C, and D-D, see Sheet SD33.
- Design stresses and deflections were calculated based on a single monolithic deck pour for all of Unit A. Use of staged construction joints and a deck pouring sequence will require a submittal to the Engineer for review and approval.
- Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet SD49.
- For Section E-E, see Sheet SD50.

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 205 North Michigan Avenue, Suite 2400  
 Chicago, Illinois 60601  
 312-565-0450 Job No. 10093

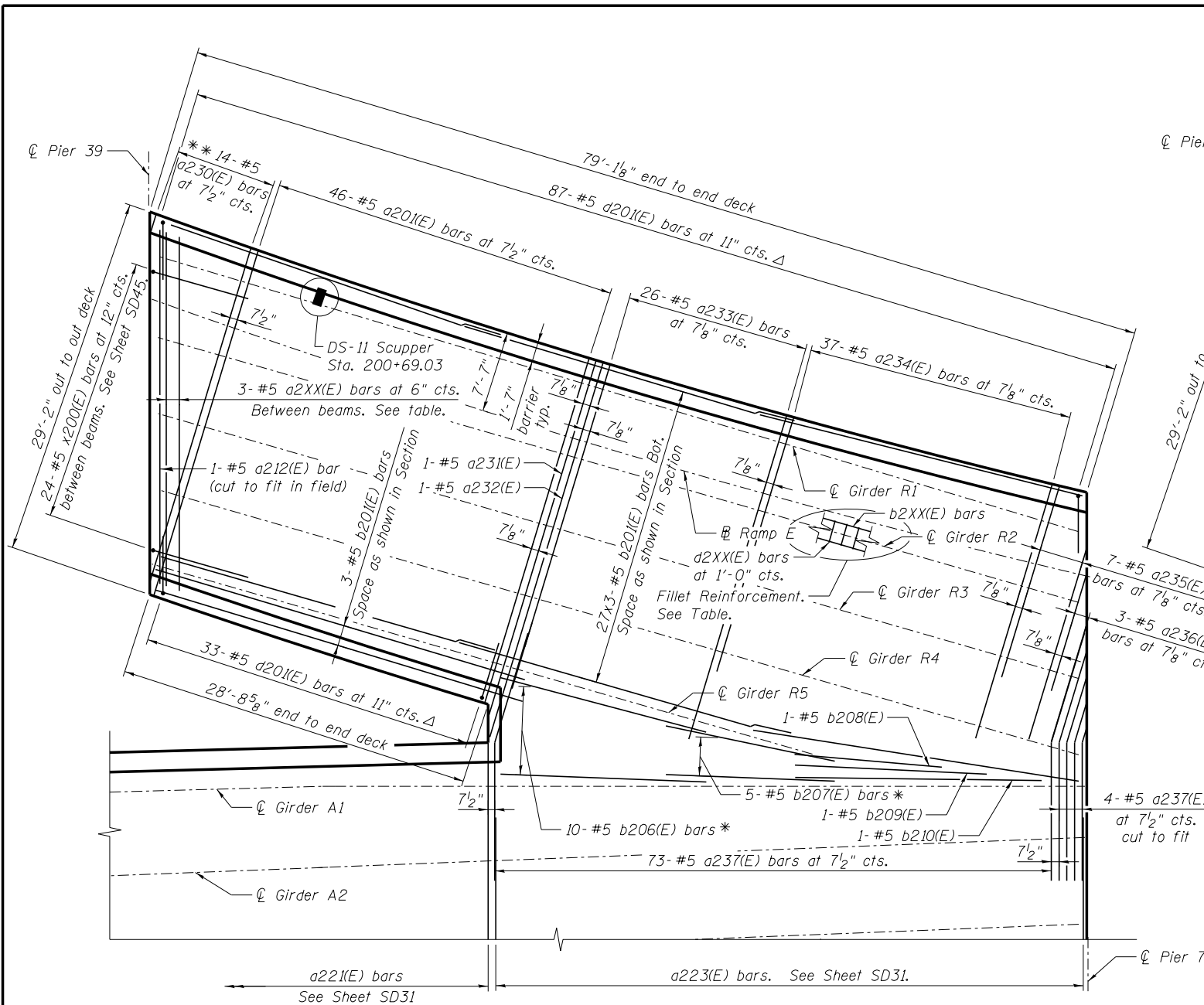
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|  | PLOT DATE = 12/20/2013 | CHECKED - MFH   | REVISED - |

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

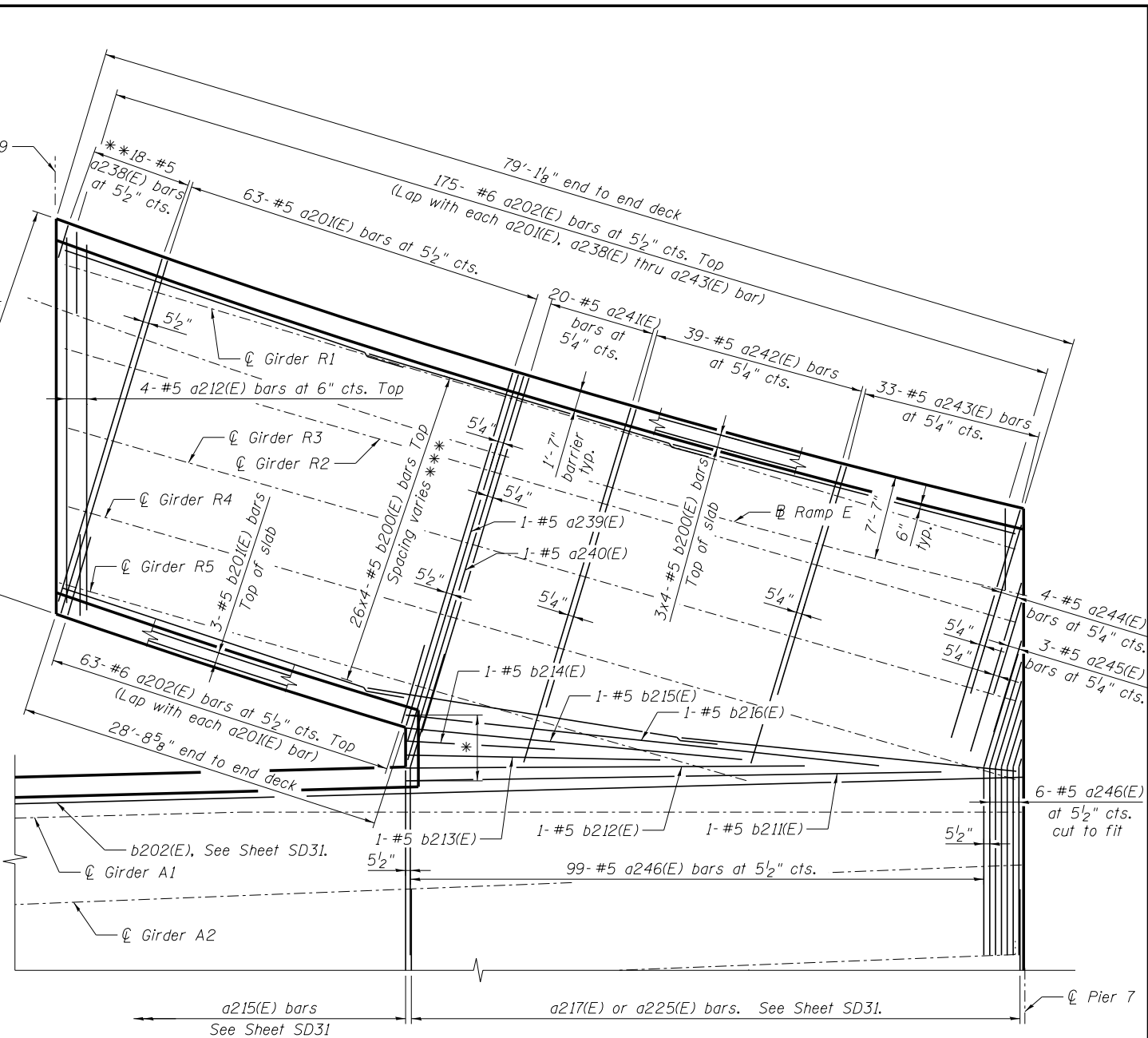
**DECK PLAN UNIT A 1 OF 2**  
**STRUCTURE NO. 016-2457**

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 406       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

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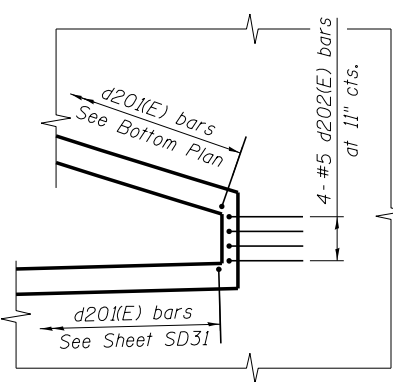
**BOTTOM PLAN - SPAN 3E**



**TOP PLAN - SPAN 3E**

**BAR a2XX(E) DATA TABLE**  
(Pier 39)

| Bay   | Bar     |
|-------|---------|
| R1-R2 | a247(E) |
| R2-R5 | a209(E) |



**GORE PLAN**

- \* equal spacing
- \*\* See cut diagram on sheet SD45
- \*\*\* 12" at Pier 39  
8 3/4" at Pier 7
- Δ Cut to fit in field

**FILLET REINFORCEMENT DATA TABLE**

| Girder | Start Sta. | End Sta.  | b2XX(E) bars    | d2XX(E) bars   |
|--------|------------|-----------|-----------------|----------------|
| R1     | 200+13.13  | 200+73.57 | 2x2- #4 b218(E) | 61- #4 d203(E) |
| R2     | 200+21.50  | 200+51.48 | 2- #4 b218(E)   | 31- #4 d203(E) |

For Fillet Reinforcement detail, see Sheet SD55.

**NOTES:**

1. For Superstructure Details and Bar Bends, see Sheet SD45.
2. For Bill of Material, see Sheet SD46.
3. Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
4. Ramp E Span 3E reinforcement included in Unit A Bill of Material.
5. Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet SD49.

**MINIMUM BAR LAP**

(Slab and Parapet)  
 #4 bar = 2'-7"  
 #5 bar = 3'-3"  
 #6 bar = 3'-10"



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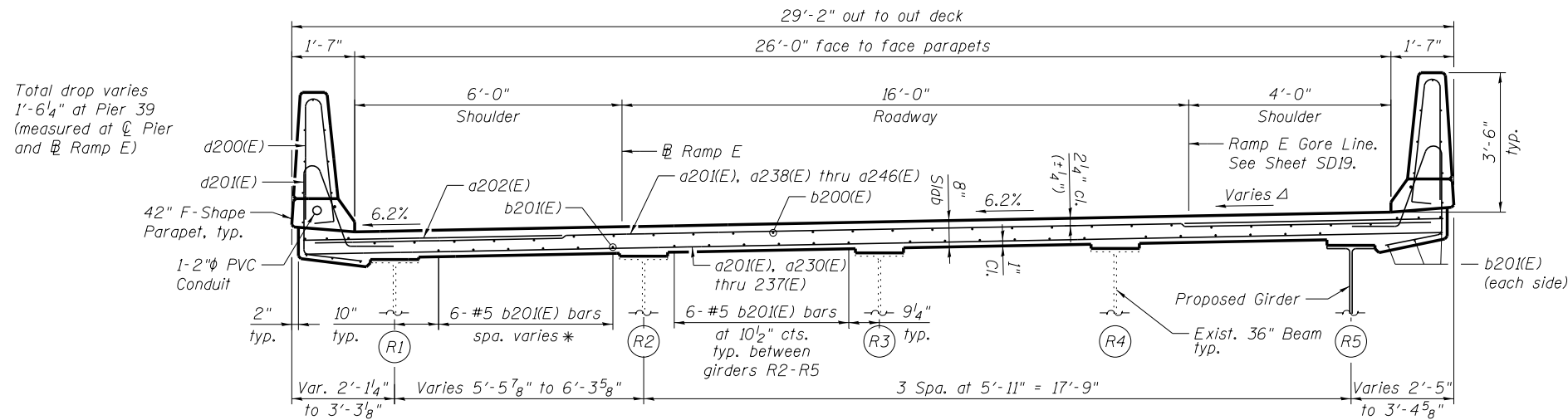
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**DECK PLAN UNIT A 2 OF 2  
 STRUCTURE NO. 016-2457**

SHEET NO. SD32 OF SD83 SHEETS

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 407       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

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**DECK CROSS SECTION B-B**  
(Looking Downstation, North)

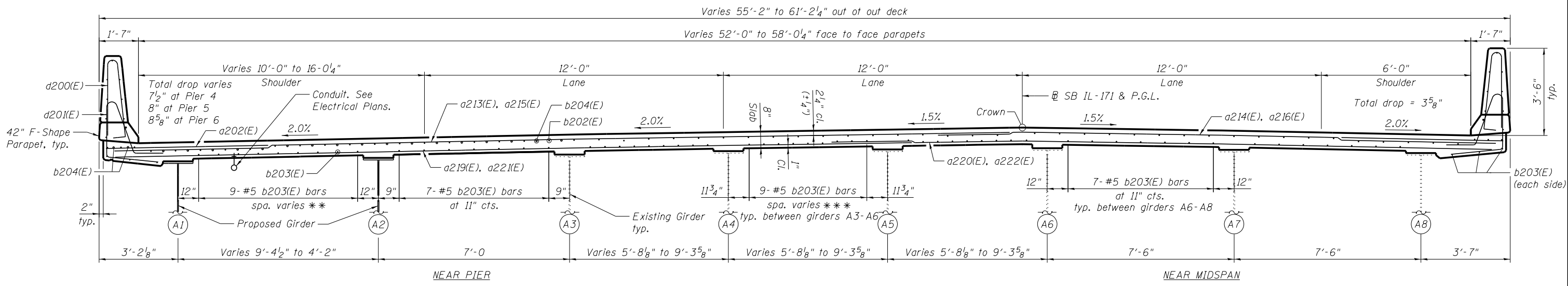
**MINIMUM LAP**

(Slab and Parapet)  
#5 bar = 3'-3"  
#6 bar = 3'-10"

- \* 11" at Pier 39  
9 1/4" at Pier 7
- \*\* 11" at Pier 4  
7 1/4" at Pier 6
- \*\*\* 11" at Pier 4  
5 5/8" at Pier 7

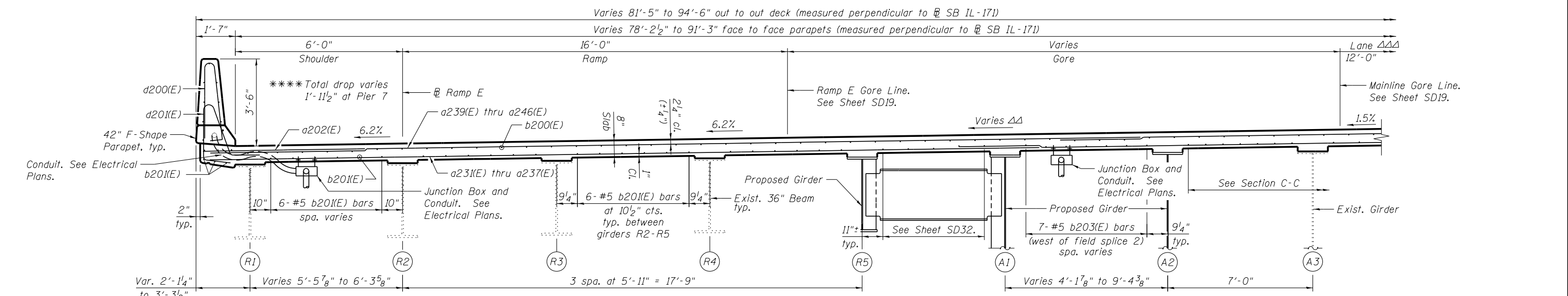
**NOTES:**

1. For Superstructure Details and Bar Bends, see Sheet SD45.
  2. For Bill of Material, see Sheet SD46.
  3. Barrier widths are measured perpendicular from the edge of deck. Overhang widths are measured perpendicular from the fascia girders. Girder spacings are measured perpendicular from the east girder to the west girder at the centerline of bearing. All remaining deck dimensions are measured perpendicular to the baseline shown unless noted otherwise.
- Δ Linear slope transition from 6.2% at Sta. 201+25.00 to 2.2% at Sta. 200+46.84. See Sheet SD19.
- ΔΔ Cross slope varies in gore from Sta. 55+75.25 to Sta. 56+22.75. See Sheet SD19.
- ΔΔΔ Measured perpendicular to SB IL-171.



**DECK CROSS SECTION C-C**  
(Looking Upstation, North)

\*\*\* Measured from SB IL-171 & P.G.L.



**PARTIAL DECK CROSS-SECTION D-D**  
(Looking Upstation, North)

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|-------------|---------------------|-----------------|-----------|
| FILE NAME = | USER NAME = ksnider | DESIGNED - AWH  | REVISED - |
|             |                     | CHECKED - MFH   | REVISED - |
|             |                     | DRAWN - RMG/KMS | REVISED - |
|             |                     | CHECKED - MFH   | REVISED - |

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

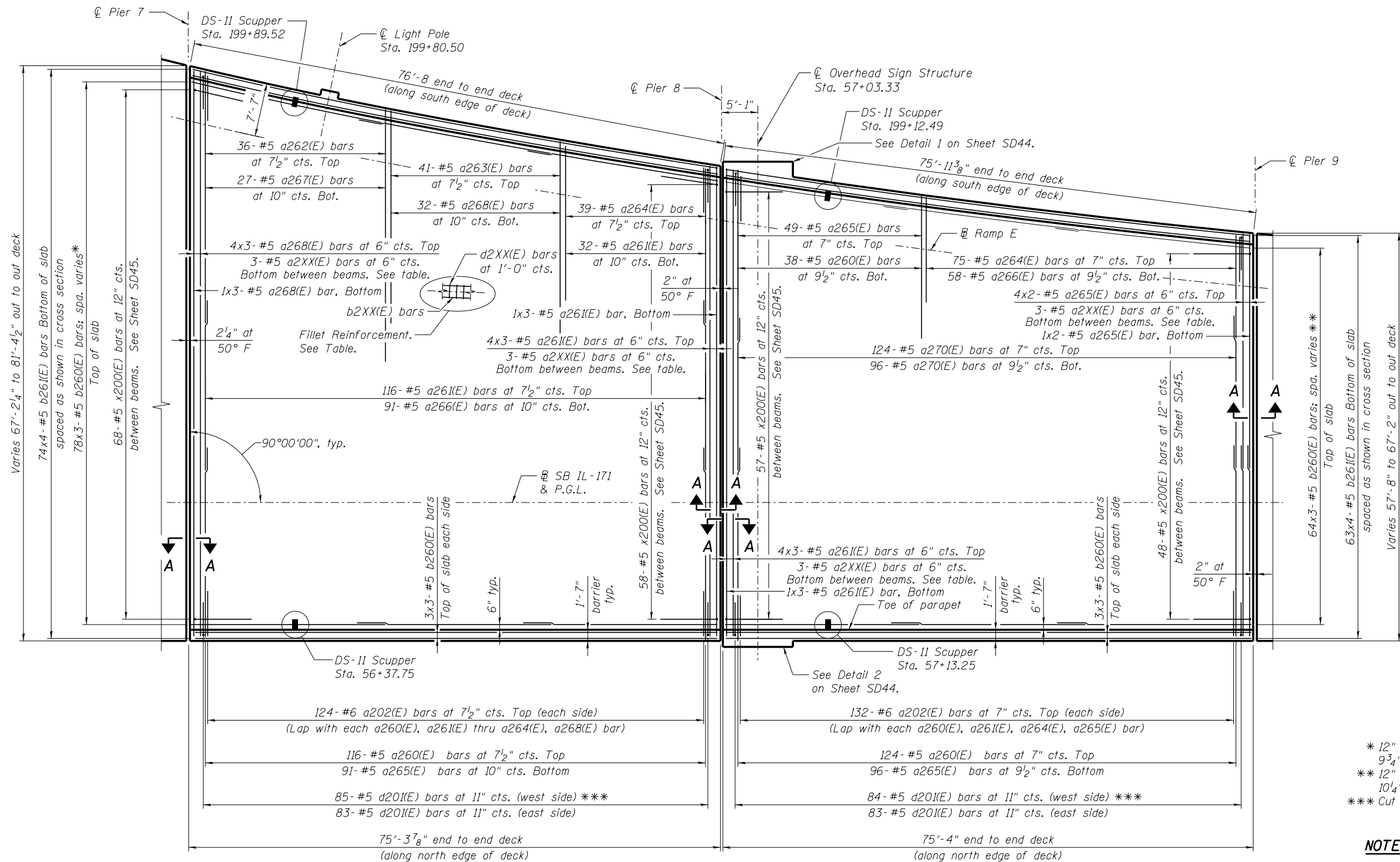
**DECK CROSS SECTION UNIT A**  
**STRUCTURE NO. 016-2457**

|                    |             |        |                           |           |
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| F.A.P. R.T.E.      | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 408       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

SHEET NO. SD33 OF SD83 SHEETS

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**MINIMUM BAR LAP**  
 (Slab and Parapet)  
 #4 bar = 2'-7"  
 #5 bar = 3'-3"  
 #6 bar = 3'-10"

**PLAN - SPANS 4 & 5**

**BAR a2XX(E) DATA TABLE**

| Span | Pier | Bay   | Bar     |
|------|------|-------|---------|
| 4    | 7    | R1-R6 | a207(E) |
| 4    | 7    | R6-R7 | a285(E) |
| 4    | 7    | R7-C6 | a286(E) |
| 4    | 8    | R1-R6 | a287(E) |
| 4    | 8    | R6-R7 | a285(E) |
| 4    | 8    | R7-C6 | a286(E) |

| Span | Pier | Bay   | Bar     |
|------|------|-------|---------|
| 5    | 8    | R1-R4 | a229(E) |
| 5    | 8    | R4-C6 | a286(E) |
| 5    | 9    | R1-R4 | a289(E) |
| 5    | 9    | R4-C6 | a286(E) |

**FILLET REINFORCEMENT DATA TABLE**

| Girder | Start Sta. | End Sta. | b2XX(E) bars   | d2XX(E) bars  |
|--------|------------|----------|----------------|---------------|
| R1     | 56+33.33   | 56+72.64 | 2x2-#4 b217(E) | 41-#4 d203(E) |
| R5     | 56+53.48   | 56+73.47 | 2-#4 b217(E)   | 21-#4 d203(E) |

For Fillet Reinforcement detail, see Sheet SD55.

- \* 12" at Pier 7  
 9 3/4" at Pier 8  
 \*\* 12" at Pier 8  
 10 1/4" at Pier 9  
 \*\*\* Cut to fit in field

**NOTES:**

- For Superstructure Details, Section A-A, and Bar Bends, see Sheet SD45.
- For Bill of Material, see Sheet SD46.
- Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
- See Sheet SD44 for Sign Structure support details.
- Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet SD49.

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|--|------------------------|-----------------|-----------|
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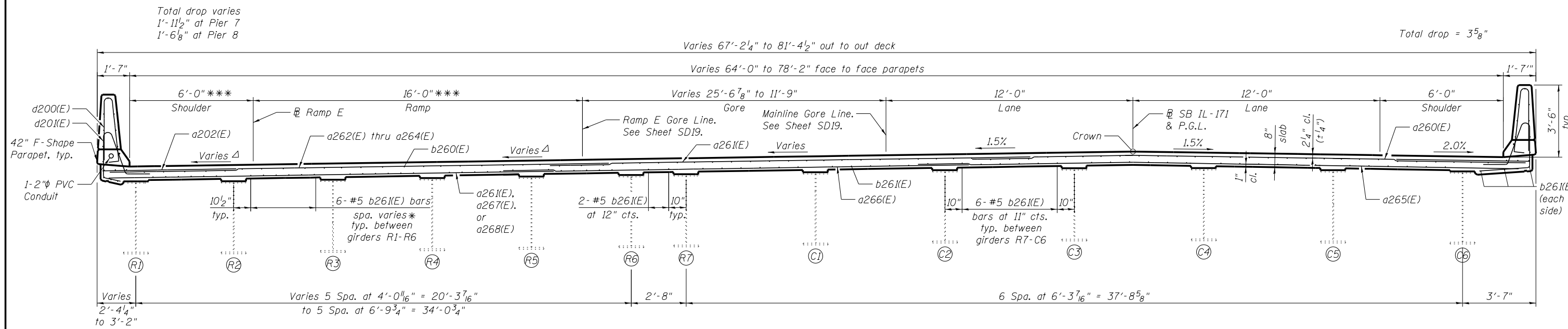
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**DECK PLAN UNIT C SPANS 4 & 5  
 STRUCTURE NO. 016-2457**

SHEET NO. SD34 OF SD83 SHEETS

|                           |             |        |                    |           |
|---------------------------|-------------|--------|--------------------|-----------|
| F.A.P. RT.                | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821                | 409       |
| ILLINOIS FED. AID PROJECT |             |        | CONTRACT NO. 60J16 |           |

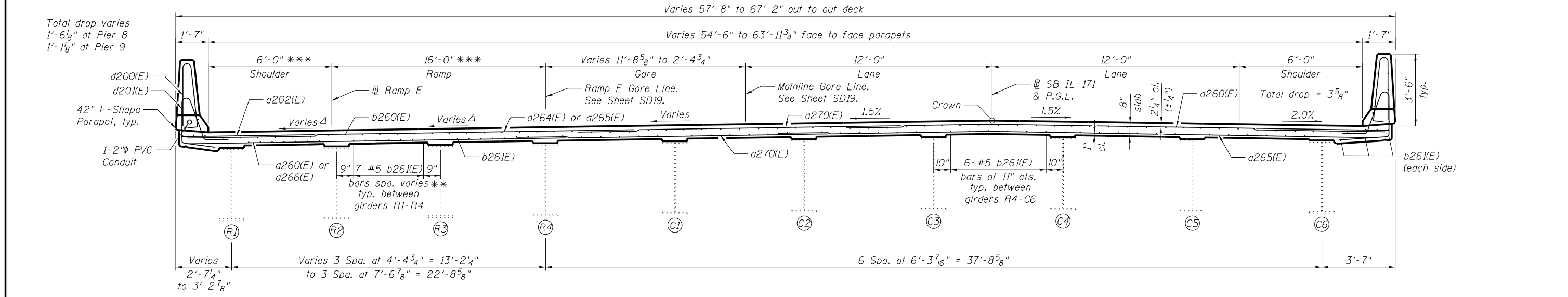
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**DECK CROSS SECTION - SPAN 4**  
(Looking Upstation, North)

\*12" at Pier 7  
5 1/2" at Pier 8

\*\*\* Measured perpendicular to Ramp E



**DECK CROSS SECTION - SPAN 5**  
(Looking Upstation, North)

\*12" at Pier 8  
5 3/4" at Pier 9

Δ See S.E. Data Table on Sheet SD30.

**NOTES:**

1. For Superstructure Details and Bar Bends, see Sheet SD45.
2. For Bill of Material, see Sheet SD46.
3. Barrier widths are measured perpendicular from the edge of deck. Overhang widths are measured perpendicular from the fascia girders. Girder spacings and all remaining deck dimensions are measured perpendicular to the baseline of SB IL-171 unless noted otherwise.

**MINIMUM BAR LAP**

(Slab and Parapet)  
#5 bar = 3'-3"  
#6 bar = 3'-10"

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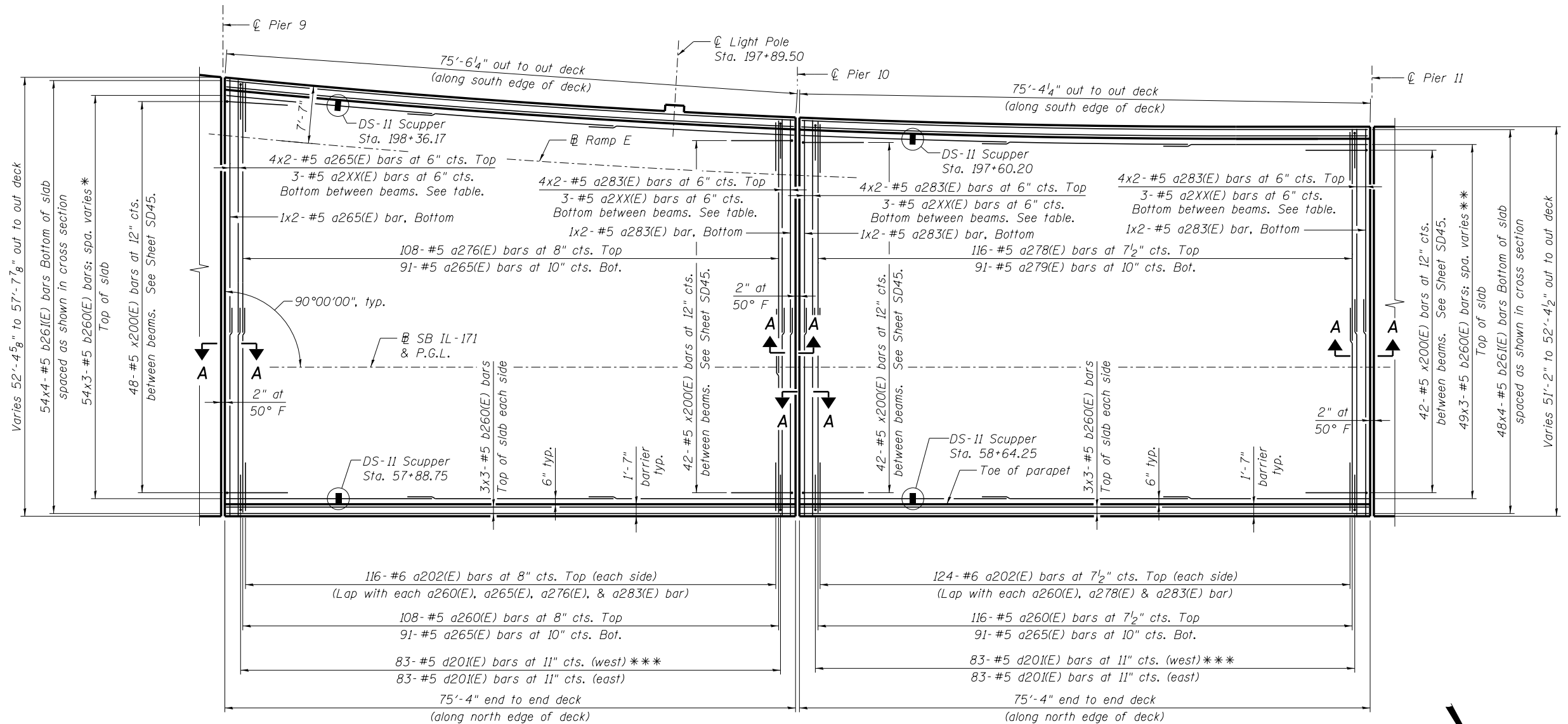
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**DECK CROSS SECTION UNIT C SPANS 4 & 5**  
**STRUCTURE NO. 016-2457**

SHEET NO. SD35 OF SD83 SHEETS

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821          | 410       |
| CONTRACT NO. 60J16        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

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**PLAN - SPANS 6 & 7**

- \* 12" at Pier 9
- 11" at Pier 10
- \*\* 12" at Pier 11
- 11<sup>3</sup>/<sub>4</sub>" Pier 11
- \*\*\* Cut to fit in field

**BAR a2XX(E) DATA TABLE**

| Span | Pier | Bay   | Bar     |
|------|------|-------|---------|
| 6    | 9    | R1-C6 | a286(E) |
| 6    | 10   | R1-C1 | a289(E) |
| 6    | 10   | C1-C6 | a286(E) |
| 7    | 10   | R1-C1 | a207(E) |
| 7    | 10   | C1-C6 | a286(E) |
| 7    | 11   | R1-C6 | a286(E) |

**MINIMUM BAR LAP**

- (Slab and Parapet)
- #5 bar = 3'-3"
- #6 bar = 3'-10"

**NOTES:**

1. For Superstructure Details, Section A-A, and Bar Bends, see Sheet SD45.
2. For Bill of Material, see Sheet SD46.
3. Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
4. Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet SD49.

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

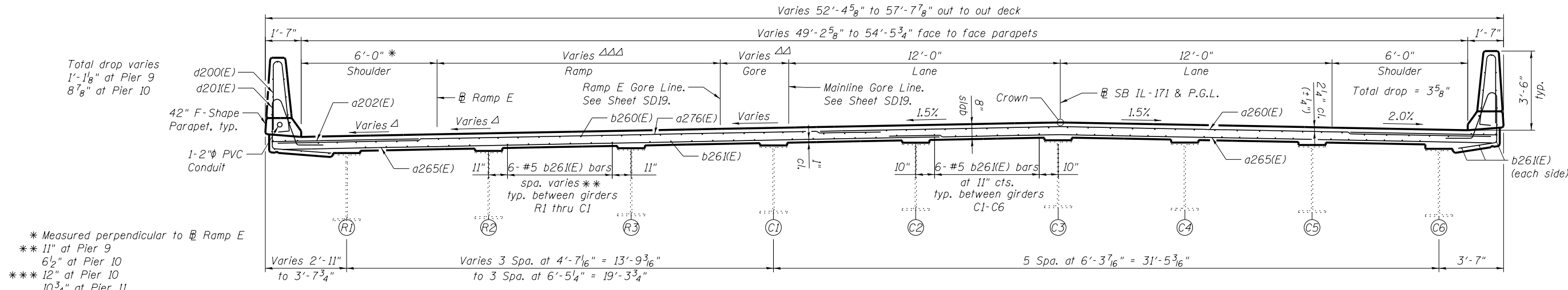
**DECK PLAN UNIT C SPANS 6 & 7  
STRUCTURE NO. 016-2457**

SHEET NO. SD36 OF SD83 SHEETS

|                    |             |        |                           |           |
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| F.A.P. RT.E.       | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 411       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

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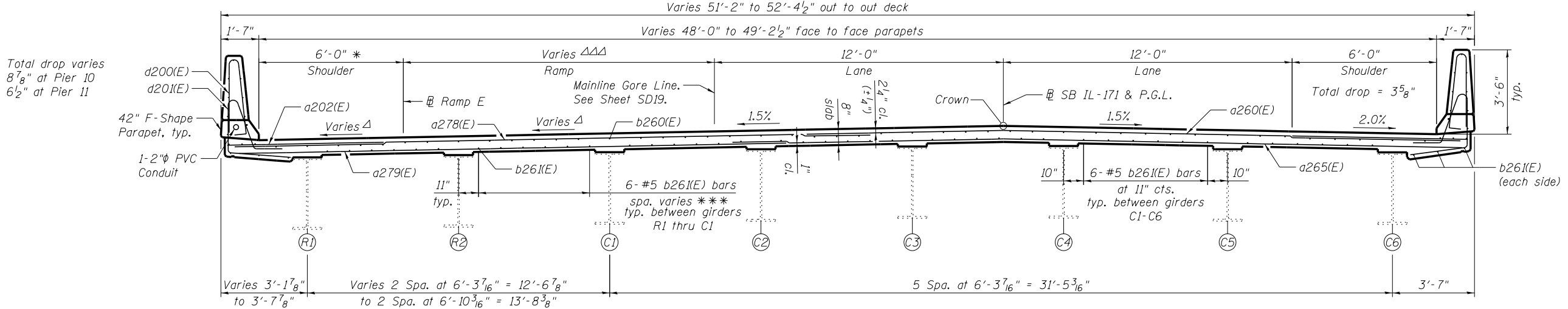
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Total drop varies  
1'-1 1/8\"/>

\* Measured perpendicular to Ramp E  
 \*\* 11\"/>

**DECK CROSS SECTION SPAN 6**  
 (Looking Upstation, North)



Total drop varies  
8 7/8\"/>

**DECK CROSS SECTION SPAN 7**  
 (Looking Upstation, North)

**MINIMUM BAR LAP**

(Slab and Parapet)  
 #5 bar = 3'-3\"/>

**NOTES:**

1. For Superstructure Details and Bar Bends, see Sheet SD45.
2. For Bill of Material, see Sheet SD46.
3. Barrier widths are measured perpendicular from the edge of deck. Overhang widths are measured perpendicular from the fascia girders. Girder spacings and all remaining deck dimensions are measured perpendicular to the baseline of SB IL-171 unless noted otherwise.

- Δ See S.E. Data Table on Sheet SD30.
- ΔΔ Varies from 2'-4 1/2\"/>

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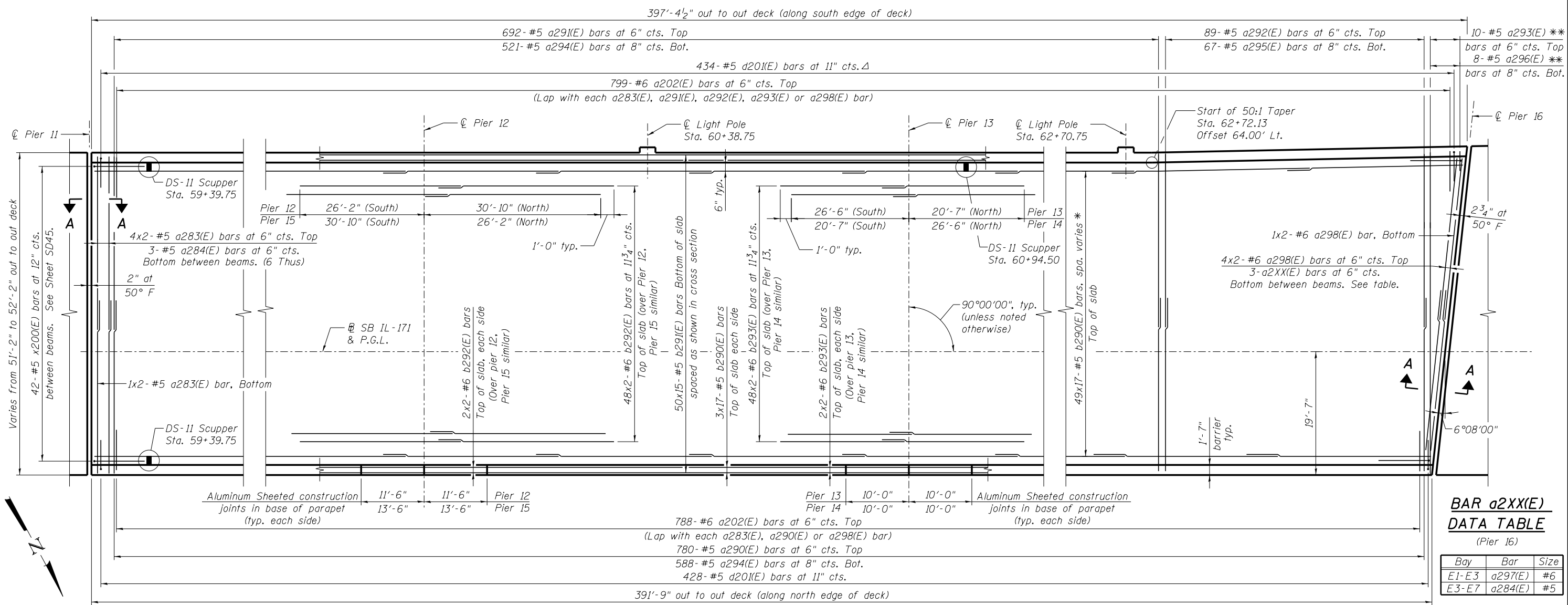
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|   | PLOT DATE = 12/20/2013 | CHECKED - MFH   | REVISED - |

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

**DECK CROSS SECTION UNIT C SPANS 6 & 7**  
**STRUCTURE NO. 016-2457**

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 412       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

SHEET NO. SD37 OF SD83 SHEETS



**BAR a2XX(E) DATA TABLE**  
(Pier 16)

| Bay   | Bar     | Size |
|-------|---------|------|
| E1-E3 | a297(E) | #6   |
| E3-E7 | a284(E) | #5   |

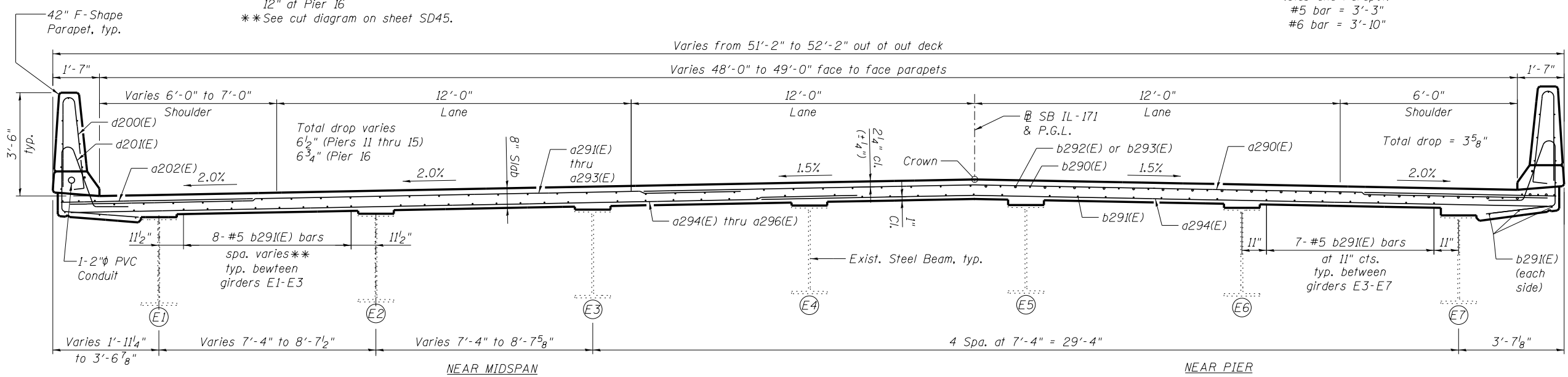
**PLAN - SPANS 8 THRU 12**

**MINIMUM BAR LAP**

(Slab and Parapet)  
#5 bar = 3'-3"  
#6 bar = 3'-10"

**NOTES:**

- For Superstructure Details, Section A-A, and Bar Bends, see Sheet SD45.
- For Bill of Material, see Sheet SD46.
- Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
- See Sheet SD45 for Pour Sequence.
- Barrier widths are measured perpendicular from the edge of deck. Overhang widths are measured perpendicular from the fascia girders. Girder spacings are measured perpendicular from the east girder to the west girder at the centerline of bearing. All remaining deck dimensions are measured perpendicular to the baseline shown unless noted otherwise.
- Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet SD49.



**DECK CROSS SECTION - SPANS 8 THRU 12**  
(Looking Upstation, North)

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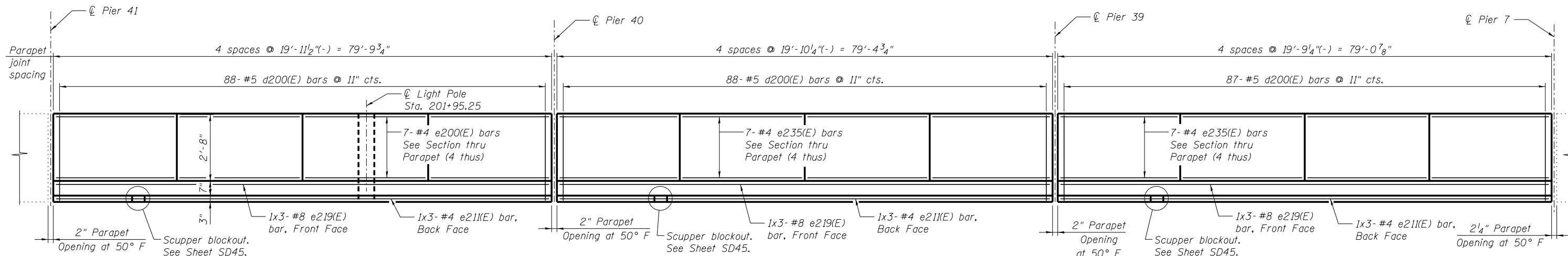
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|  | PLOT DATE = 12/20/2013 | CHECKED - MFH   | REVISED - |

**STATE OF ILLINOIS**  
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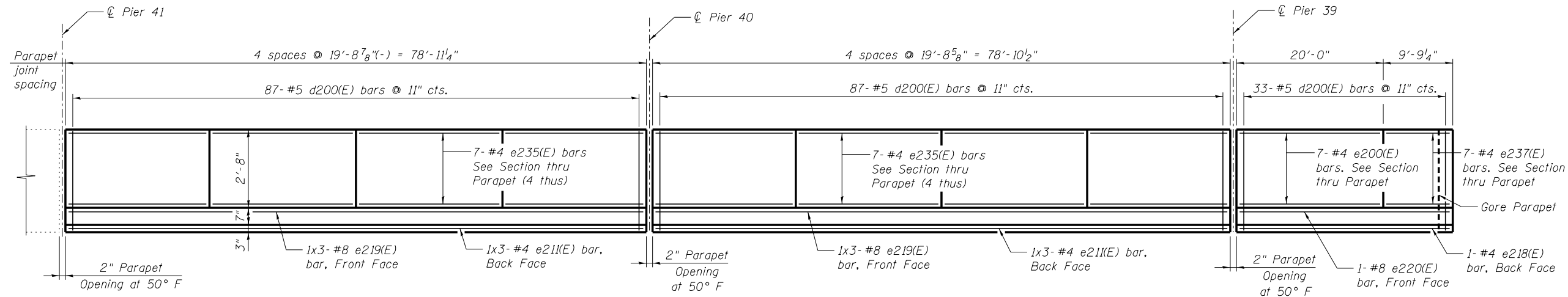
**DECK PLAN & CROSS SECTION UNIT E**  
**STRUCTURE NO. 016-2457**

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 413       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

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**INSIDE ELEVATION OF RAMP E WEST PARAPET**



**INSIDE ELEVATION OF RAMP E EAST PARAPET**

(Reflected View Shown)

**MINIMUM BAR LAP**

(Parapet)  
 #4 bar = 2'-0"  
 #8 bar = 5'-2"

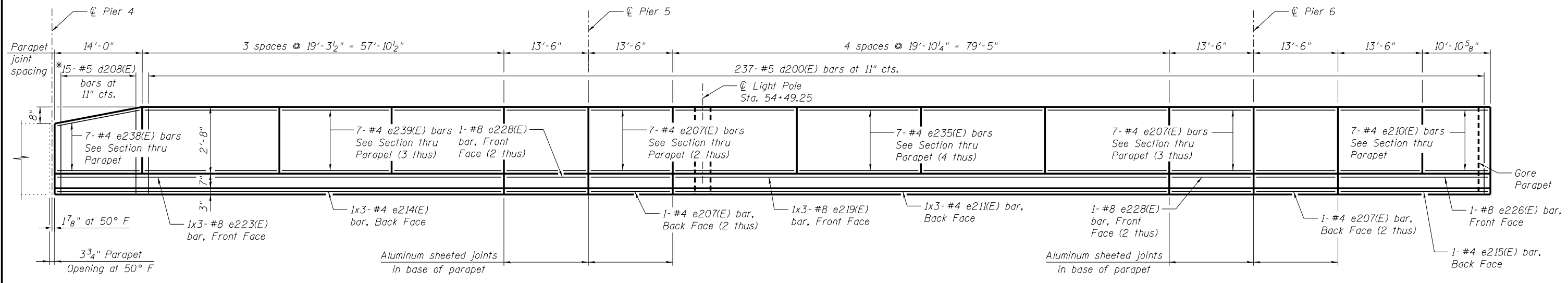
**NOTES:**

- All dimensions shown are along the toe of the parapet (gutterline).
- Bars indicated thus 1x3- #8 etc. indicates 1 line of bars with 3 lengths per line.
- See Sheet SD43 for cross section thru parapet.
- Span 3E Ramp E bars included in Unit A Bill of Material.

|             |                     |                |           |
|-------------|---------------------|----------------|-----------|
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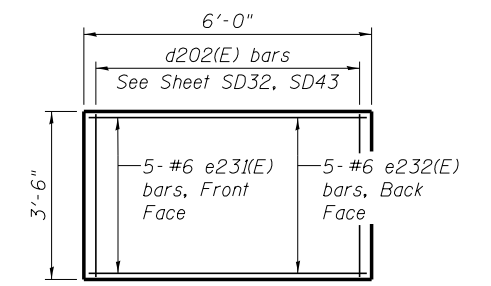
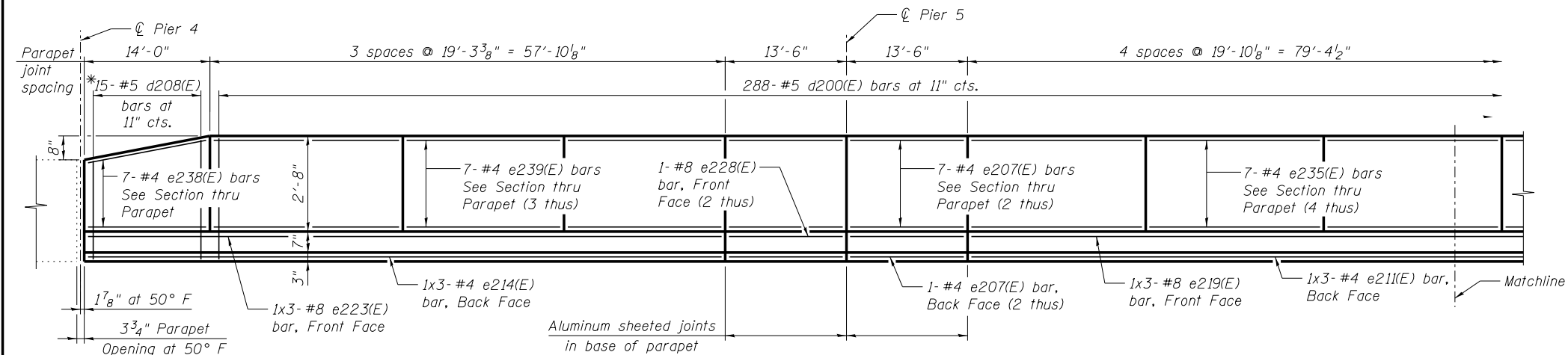
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| F.A.P. RT.E.              | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821                | 414       |
| ILLINOIS FED. AID PROJECT |             |        | CONTRACT NO. 60J16 |           |

Y:\chicago\100005\10093\Eng\_Docs\_Phase\_1\SN\_016-2456-2457-1st\_Ave\_cover\_Des\_Plaines\_River\_Valley\Final\0162457\_60J16\_039\_Parapet\_Details\_Ramp\_E.dgn 3:45:20 PM 8/6/2014

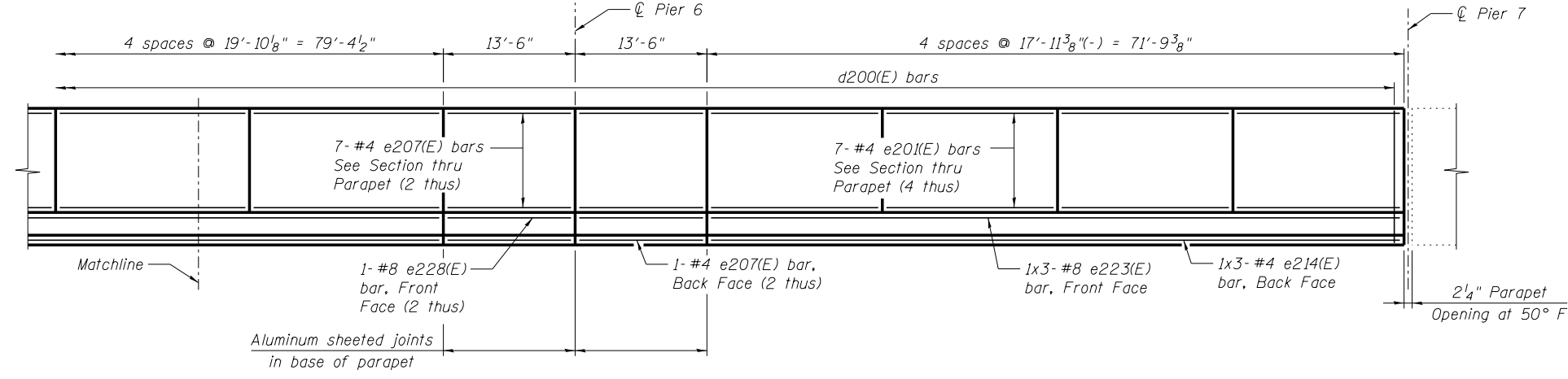


\* Cut and bend in field to fit. Front (inside) leg shall terminate with 5 7/8" long 90° hook similar to d200(E) bars.

**INSIDE ELEVATION OF SB IL-171 WEST PARAPET**



**INSIDE ELEVATION OF GORE PARAPET**



**INSIDE ELEVATION OF SB IL-171 EAST PARAPET**

(Reflected View Shown)

**MINIMUM LAP**  
(Parapet)  
#4 bar = 2'-0"  
#8 bar = 5'-2"

- NOTES:**
- All dimensions shown are along the toe of the parapet (gutterline).
  - Bars indicated thus 1x3- #8 etc. indicates 1 line of bars with 3 lengths per line.
  - See Sheet SD43 for cross section thru parapet.

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|             |                     |                |           |
|-------------|---------------------|----------------|-----------|
| FILE NAME = | USER NAME = ksnider | DESIGNED - AWH | REVISED - |
|             |                     | CHECKED - MFH  | REVISED - |
|             |                     | DRAWN - AWH    | REVISED - |
|             |                     | CHECKED - MFH  | REVISED - |

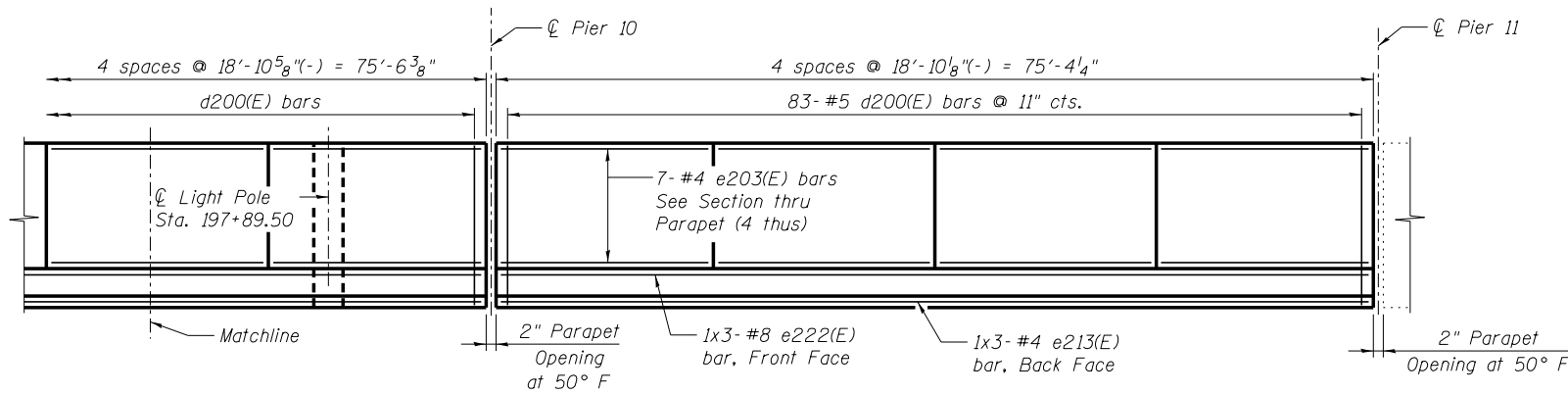
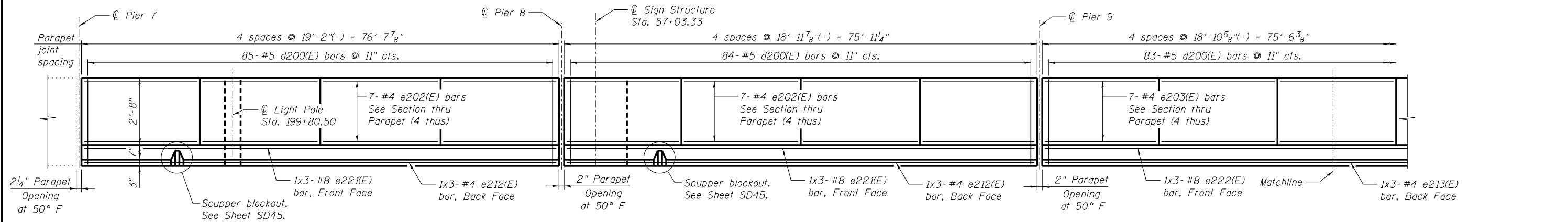
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PARAPET ELEVATION UNIT A**  
**STRUCTURE NO. 016-2457**

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 415       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

SHEET NO. SD40 OF SD83 SHEETS

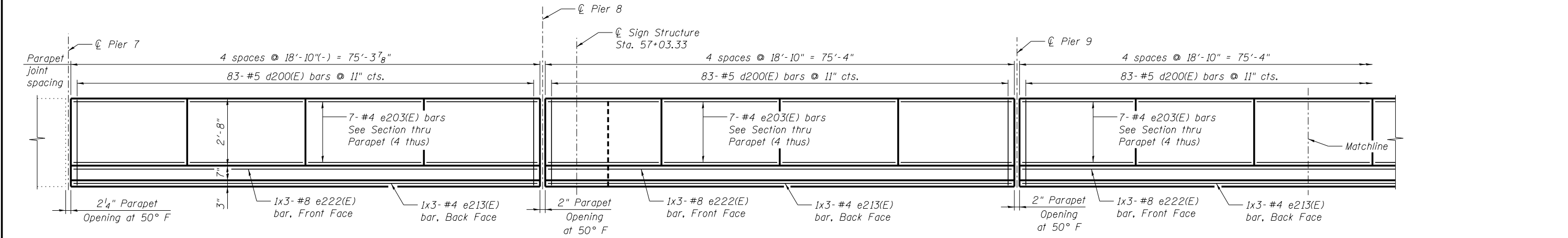
Y:\chicago\100005\10093\Eng\_Docs\Phase\_1\1\SN\_016-2456-2457-1st\_Ave\_cover\_Des\_Plaines\_River\_Valley\Final\0162457-60J16-040-Parapet\_Details\_Unit\_A.dgn 3:45:28 PM 8/6/2014



**INSIDE ELEVATION OF WEST PARAPET**

- NOTES:**
- All dimensions shown are along the toe of the parapet (gutterline).
  - Bars indicated thus 1x3-#8 etc. indicates 1 line of bars with 3 lengths per line.
  - See Sheet SD43 for cross section thru parapet.

**MINIMUM BAR LAP**  
(Parapet)  
#4 bar = 2'-0"  
#8 bar = 5'-2"



**INSIDE ELEVATION OF EAST PARAPET**  
(Reflected View Shown)

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|  |                        |                |           |
|--|------------------------|----------------|-----------|
| FILE NAME =                                  | USER NAME = ksnider    | DESIGNED - AWH | REVISED - |
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|  | PLOT DATE = 12/20/2013 | DRAWN - AWH    | REVISED - |
|  |                        | CHECKED - MFH  | REVISED - |

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

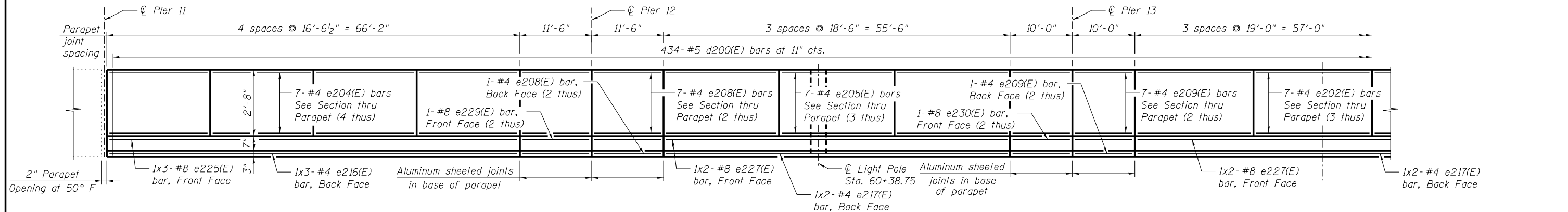
**PARAPET ELEVATION UNIT C**  
**STRUCTURE NO. 016-2457**

SHEET NO. SD41 OF SD83 SHEETS

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 416       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

Y:\chicago\100005\100093\Eng\_Docs\Phase\_1\1\SN\_016\_2456\_2457\_1st\_Ave\_over\_Des\_Plaines\_River\_Valley\Final\0162457\_Final\0162457\_041.Parapet.Details.Unit.C.dwg 3:45:36 PM 8/6/2014



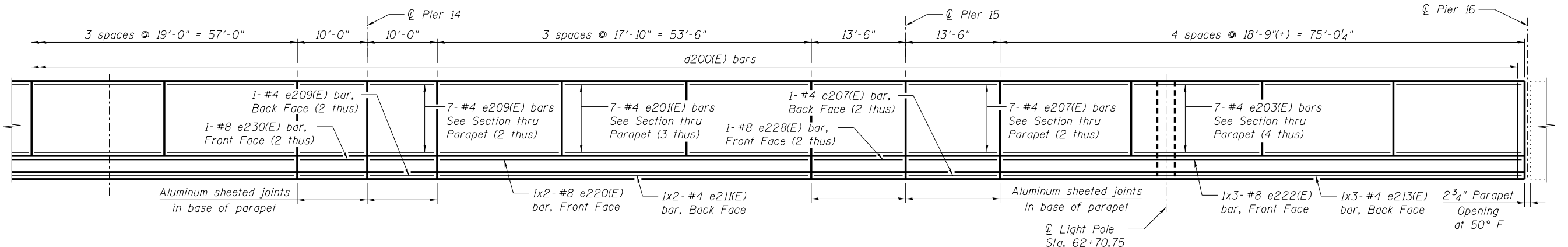


**MINIMUM BAR LAP**

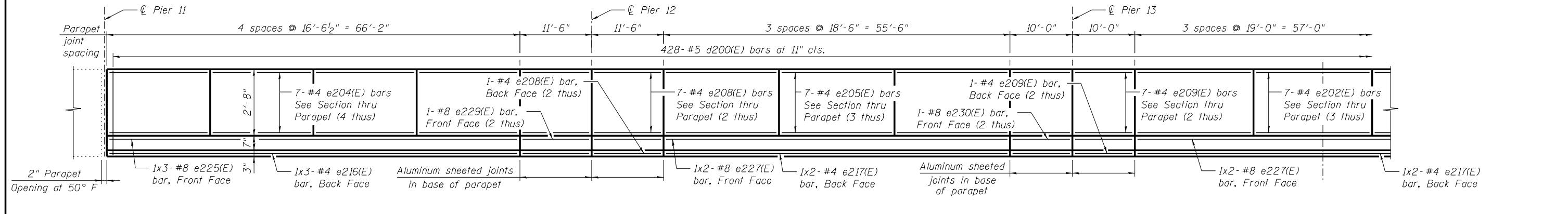
(Parapet)  
 #4 bar = 2'-0"  
 #8 bar = 5'-2"

**NOTES:**

1. All dimensions shown are along the toe of the parapet (gutterline).
2. Bars indicated thus 1x3-#8 etc. indicates 1 line of bars with 3 lengths per line.
3. See Sheet SD43 for cross section thru parapet.



**INSIDE ELEVATION OF WEST PARAPET**



**INSIDE ELEVATION OF EAST PARAPET**

(Reflected View Shown)

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|   |                        |                |           |
|---|------------------------|----------------|-----------|
| FILE NAME =                                 | USER NAME = ksnider    | DESIGNED - AWH | REVISED - |
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|   | PLOT DATE = 12/20/2013 | DRAWN - AWH    | REVISED - |
|   |                        | CHECKED - MFH  | REVISED - |

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

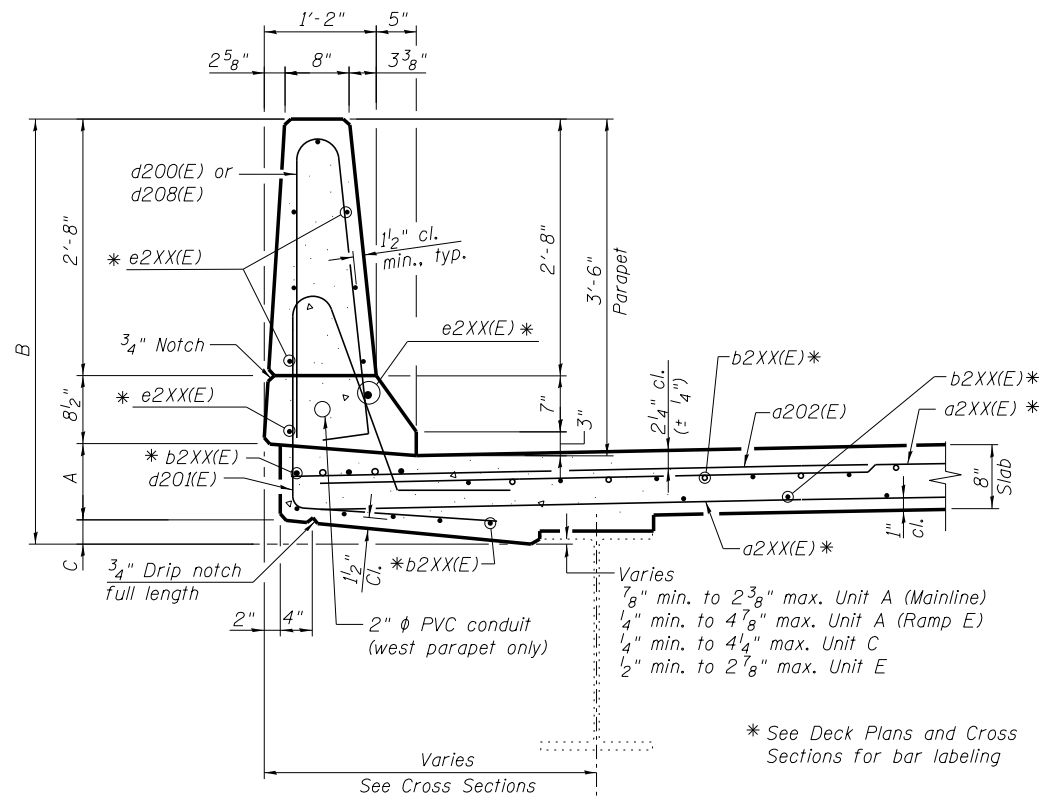
**PARAPET ELEVATION UNIT E**  
**STRUCTURE NO. 016-2457**

SHEET NO. SD42 OF SD83 SHEETS

|                    |             |        |              |           |
|--------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821          | 417       |
| CONTRACT NO. 60J16 |             |        |              |           |

ILLINOIS FED. AID PROJECT

Y:\chicago\100005\100093\Eng\_Docs\Phase\_1\1\SN\_016\_2456\_2457\_1st\_Ave\_cover\_Des.Plaines\_River\_Valley\Final\0162457\_Final\0162457\_60J16\_042.Parapet.Details.Unt.E.dgn 3:45:44 PM 8/6/2014

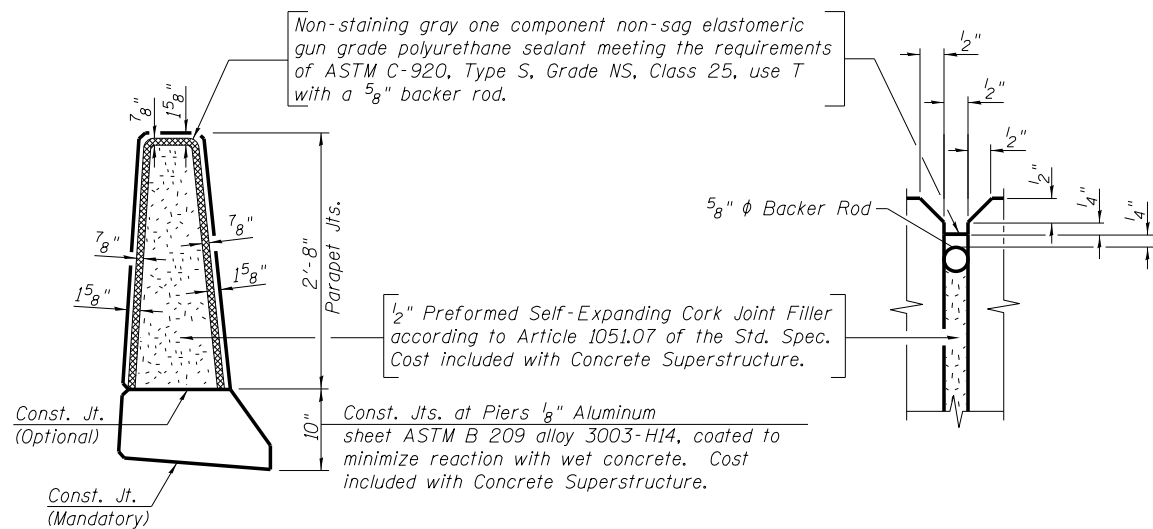


**SECTION THRU PARAPET**

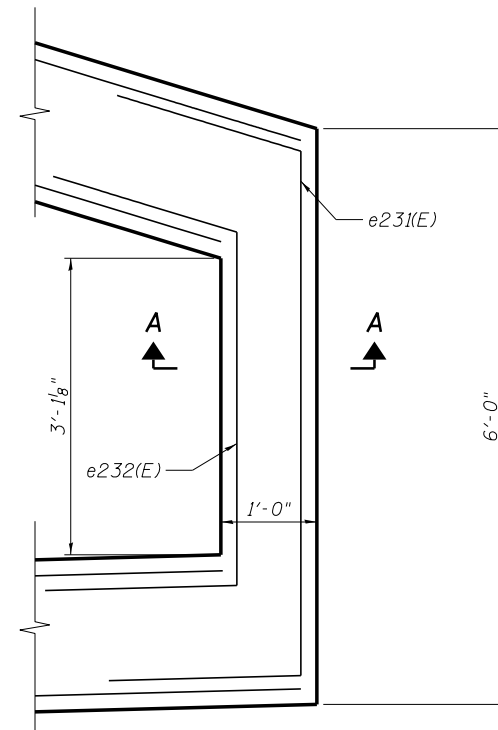
| Location                               | A      | B         | C  |
|--|--------|-----------|----|
| Typical, unless noted below            | 9 1/2" | 4'-7"     | 5" |
| Ramp E West Parapet Pier 40 to Pier 39 | 10"    | 4'-7 1/2" | 5" |
| Ramp E West Parapet Pier 39 to Pier 7  | 12"    | 4'-9 1/2" | 5" |
| Ramp E East Parapet Pier 41 to Pier 40 | 12"    | 4'-9 1/2" | 5" |
| Ramp E East Parapet Pier 40 to Pier 39 | 11"    | 4'-8 1/2" | 5" |
| Unit C West Parapet Pier 7 to Pier 8   | 11"    | 4'-8 1/2" | 5" |
| Unit A & Unit E                        | 9 1/2" | 4'-6"     | 4" |

\* See Deck Plans and Cross Sections for bar labeling

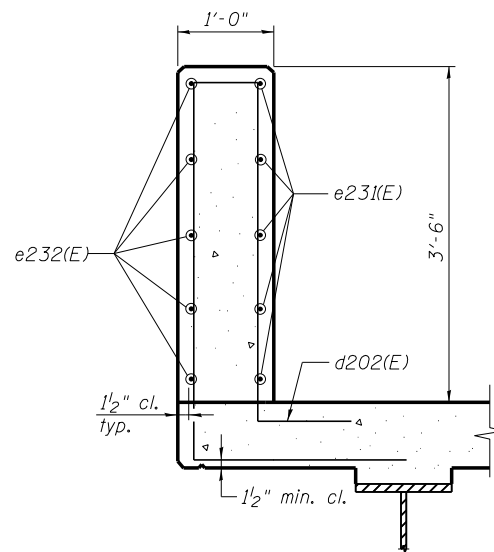
Non-staining gray one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25, use T with a 5/8" backer rod.



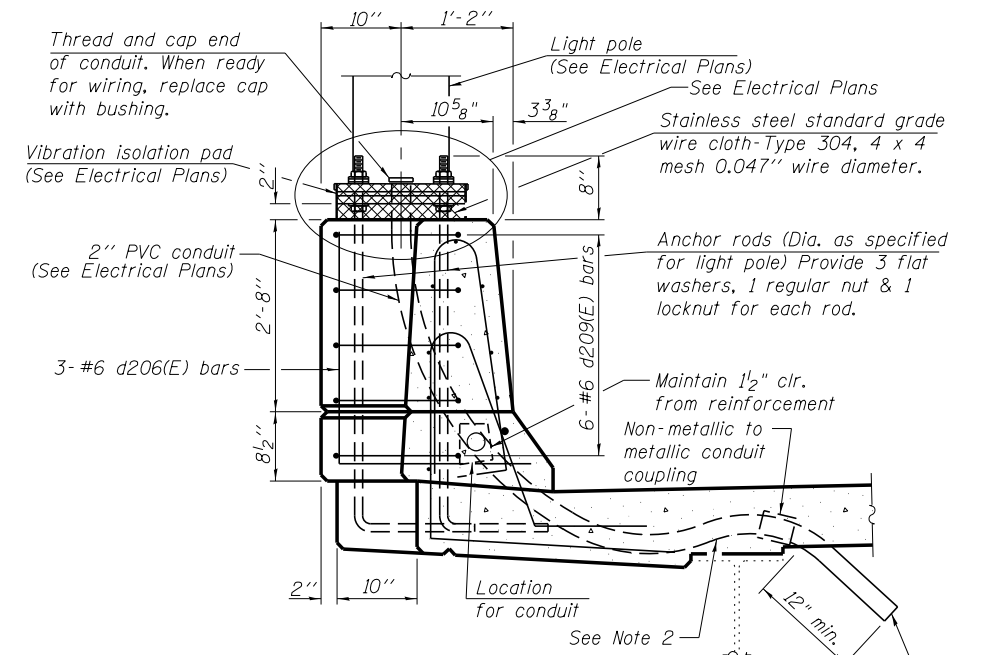
**PARAPET JOINT DETAILS**



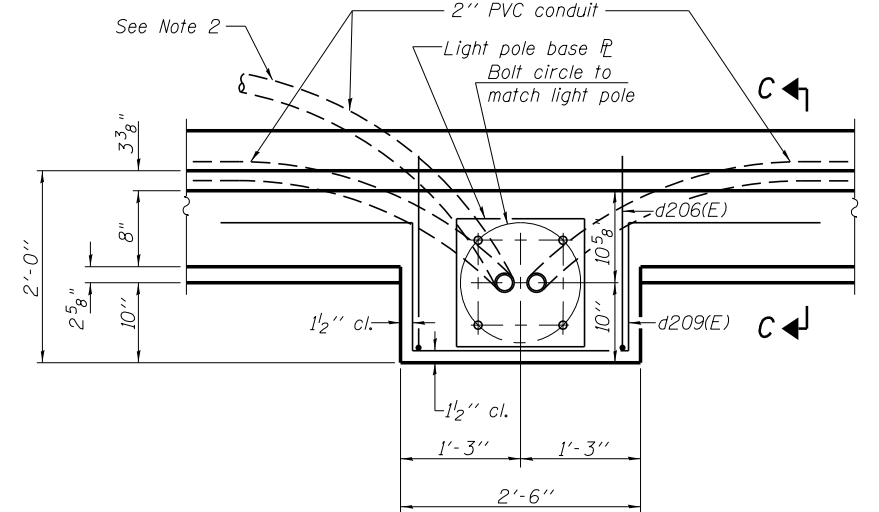
**DETAIL 3**  
(See Sheet SD31)



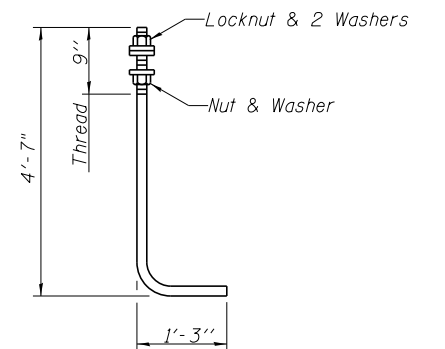
**SECTION A-A**



**SECTION C-C**



**PLAN**



**ANCHOR ROD**

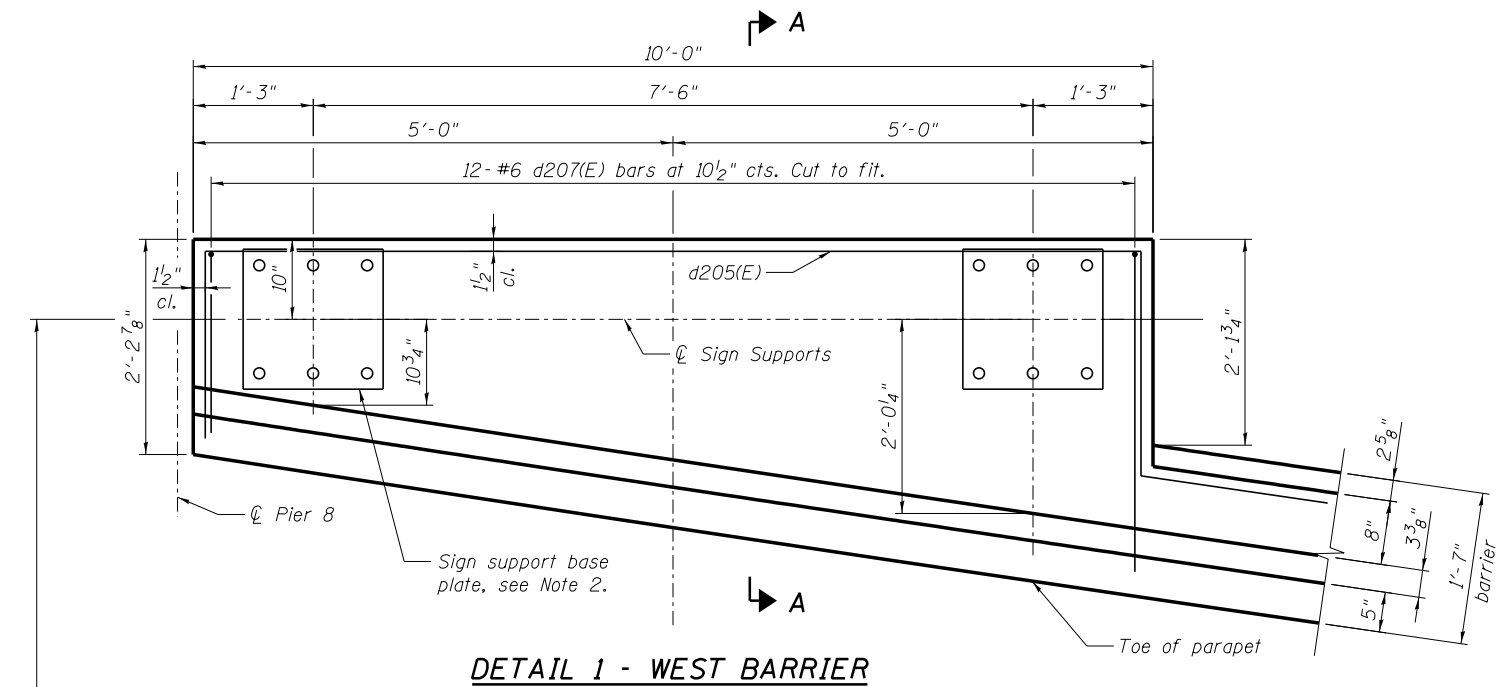
Diameter as specified for light poles.  
(ASTM F 1554 Grade 105)  
Full length hot dipped galvanized.

**NOTES:**

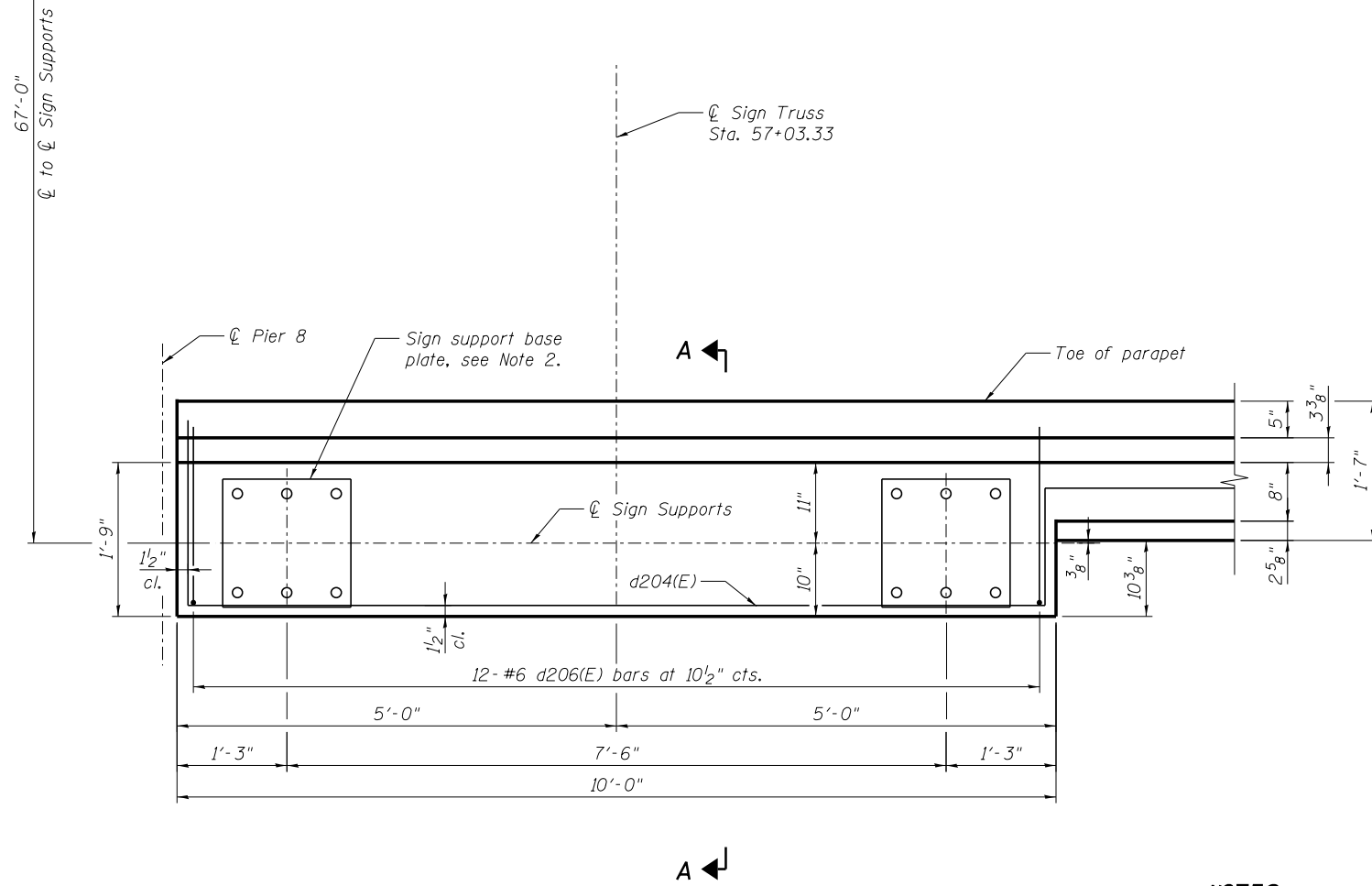
- Cost of anchor rods is included with "Concrete Superstructure".
- Conduit upstation from light pole at Sta. 54+49.25 is attached to bottom of deck. See Electrical Plans.

|             |                     |            |           |
|-------------|---------------------|------------|-----------|
| FILE NAME = | USER NAME = ksnider | DESIGNED - | REVISED - |
|             |                     | CHECKED -  | REVISED - |
|             |                     | DRAWN -    | REVISED - |
|             |                     | CHECKED -  | REVISED - |

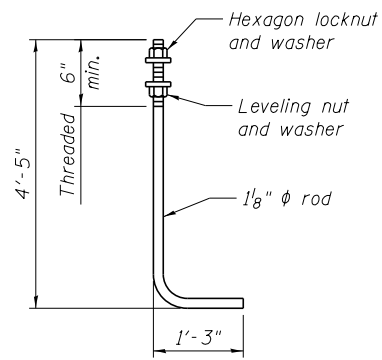
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-------------|--------|--------------|-----------|
| 372                       | 2013-038B-R | COOK   | 821          | 418       |
| CONTRACT NO. 60J16        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |



**DETAIL 1 - WEST BARRIER**

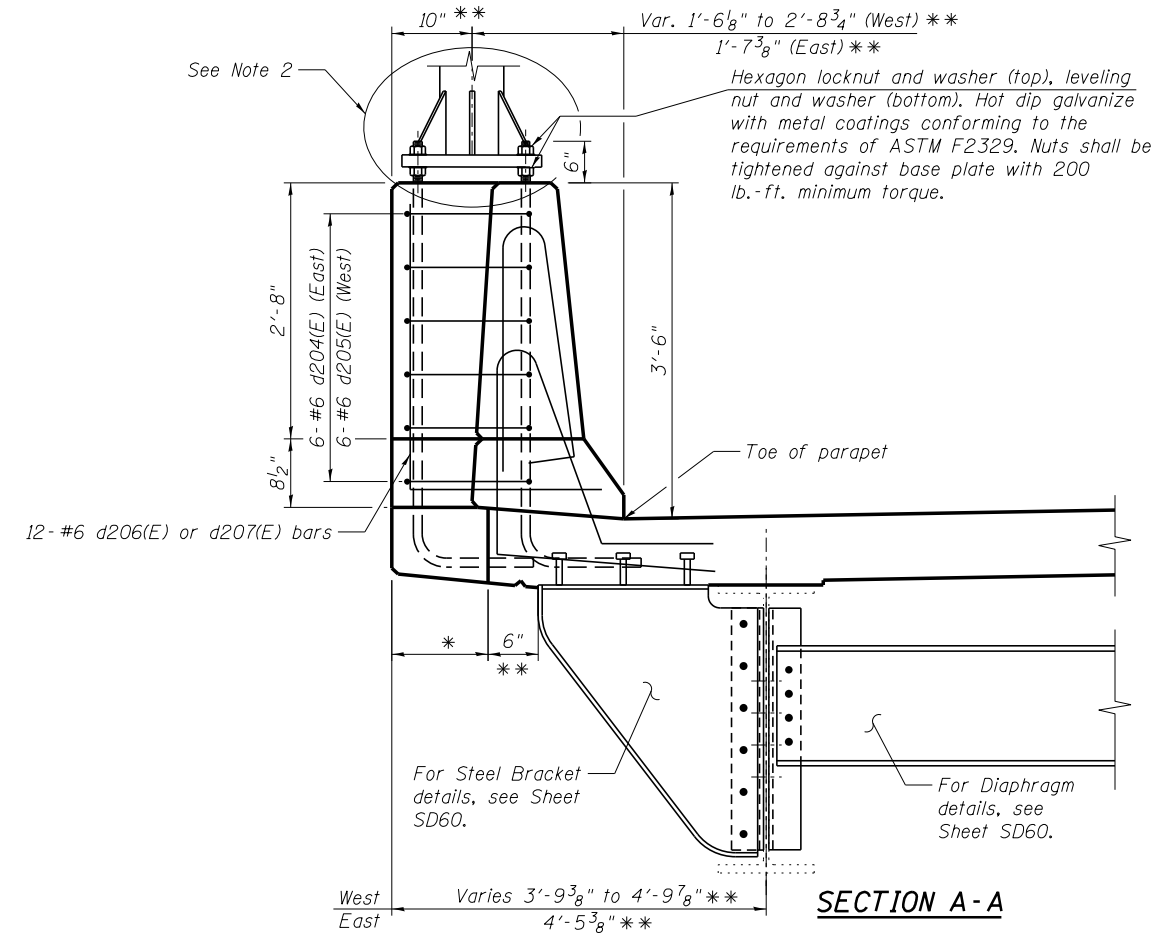


**DETAIL 2 - EAST BARRIER**



**ANCHOR ROD**

Anchor rods shall conform to ASTM F1554 Grade 105. Hot dip galvanize upper 12" minimum with metal coatings conforming to the requirements of ASTM F2329. No welding shall be permitted on rods.



**SECTION A-A**

- NOTES:**
- Cost of anchor rods, positioning plates, nuts, and washers included with Concrete Superstructure.
  - See Overhead Sign Structures Support Frame Details sheet for base plate and positioning plate details.

\* Varies 11 1/8" to 2'-1 1/2" (West)  
1'-0 3/8" (East) \*\*  
\*\* Measured perpendicular to baseline of SB IL-171

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|   |                        |                |           |
|---|------------------------|----------------|-----------|
| FILE NAME =                               | USER NAME = ksnider    | DESIGNED - AWH | REVISED - |
| 0162457.60J16.044.Sign.Structure.Dtls.dgn | PLOT SCALE =           | CHECKED - MFH  | REVISED - |
|   | PLOT DATE = 12/20/2013 | DRAWN - AWH    | REVISED - |
|   |                        | CHECKED - MFH  | REVISED - |

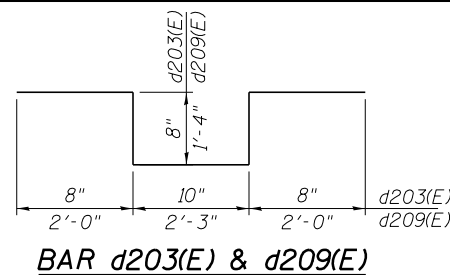
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SIGN STRUCTURE SUPPORT DETAILS  
STRUCTURE NO. 016-2457**

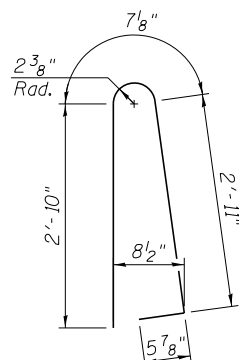
SHEET NO. SD44 OF SD83 SHEETS

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 419       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

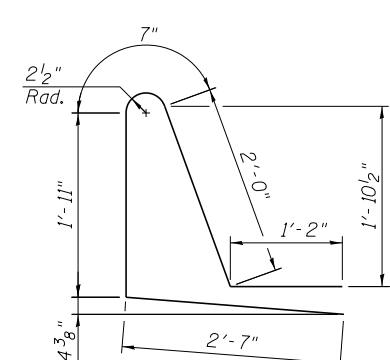
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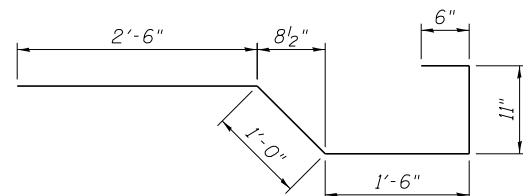
**BAR d203(E) & d209(E)**



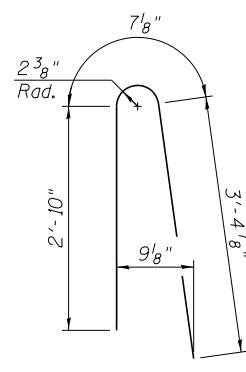
**BAR d200(E)**



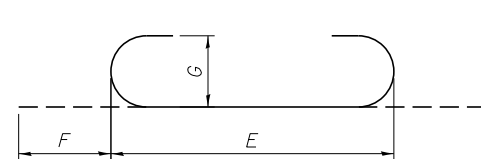
**BAR d201(E)**



**BAR x200(E)**



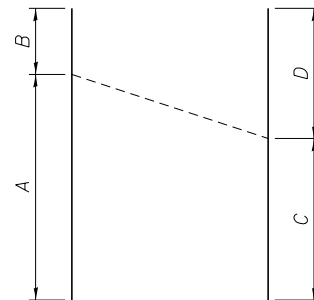
**BAR d208(E)**



**BAR DIAGRAM**

(See table for designations)

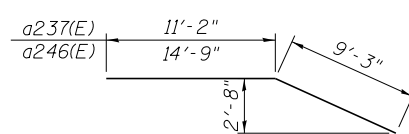
| Bar     | E      | F  | G  |
|---------|--------|----|----|
| a207(E) | 6'-6"  | 7" | 5" |
| a208(E) | 7'-6"  | 7" | 5" |
| a209(E) | 5'-8"  | 7" | 5" |
| a210(E) | 6'-9"  | 7" | 5" |
| a211(E) | 5'-6"  | 7" | 5" |
| a226(E) | 2'-3"  | 7" | 5" |
| a227(E) | 3'-11" | 7" | 5" |
| a228(E) | 9'-0"  | 8" | 6" |
| a229(E) | 7'-3"  | 7" | 5" |
| a247(E) | 6'-2"  | 7" | 5" |
| a284(E) | 7'-1"  | 7" | 5" |
| a285(E) | 2'-5"  | 7" | 5" |
| a286(E) | 6'-0"  | 7" | 5" |
| a287(E) | 3'-9"  | 7" | 5" |
| a289(E) | 4'-1"  | 7" | 5" |
| a297(E) | 8'-4"  | 8" | 6" |



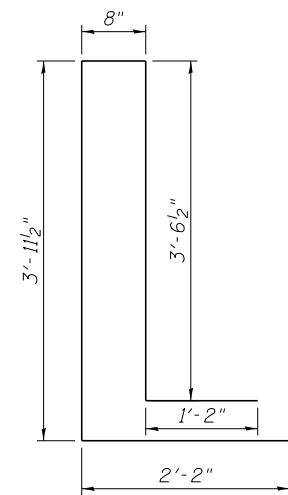
**CUTTING DIAGRAM**

(See table for designations)

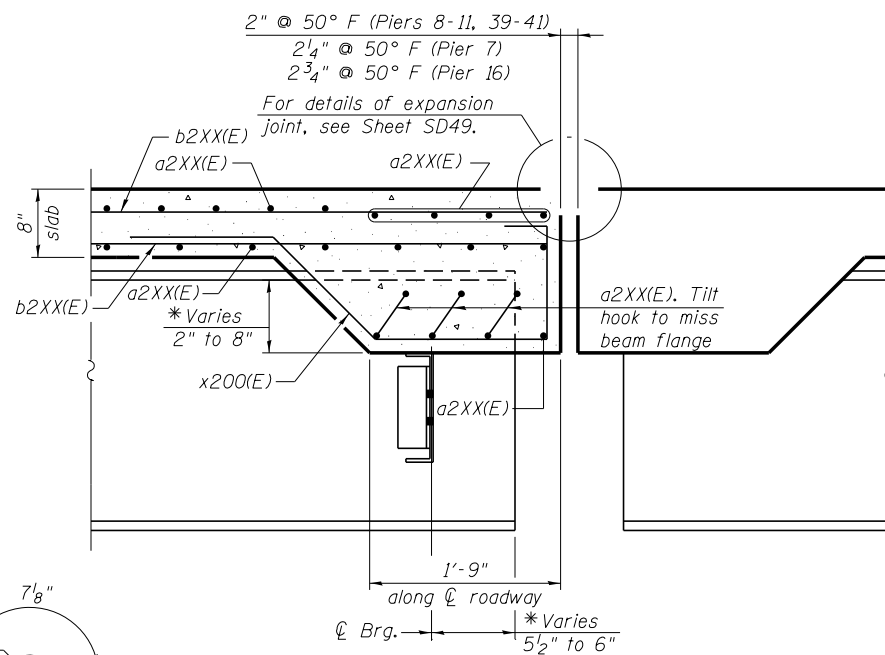
| Bar     | A      | B      | C       | D      |
|---------|--------|--------|---------|--------|
| a200(E) | 27'-6" | 1'-10" | 1'-10"  | 27'-6" |
| a203(E) | 27'-5" | 1'-8"  | 1'-8"   | 27'-5" |
| a204(E) | 27'-0" | 3'-0"  | 3'-0"   | 27'-0" |
| a205(E) | 27'-0" | 2'-10" | 2'-10"  | 27'-0" |
| a230(E) | 27'-6" | 1'-0"  | 15'-3"  | 13'-3" |
| a238(E) | 28'-0" | 2'-8"  | 16'-1"  | 14'-7" |
| a293(E) | 45'-7" | 3'-9"  | 27'-0"  | 22'-4" |
| a296(E) | 44'-1" | 1'-6"  | 25'-10" | 19'-9" |



**BARS a237(E) & a246(E)**

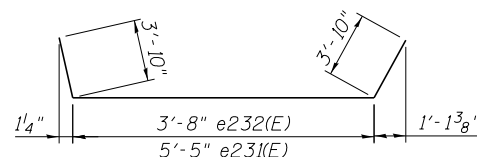


**BAR d202(E)**

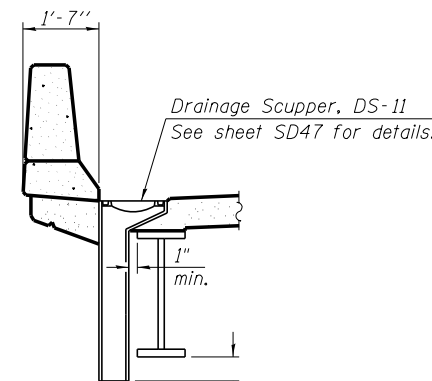


**SECTION A-A**

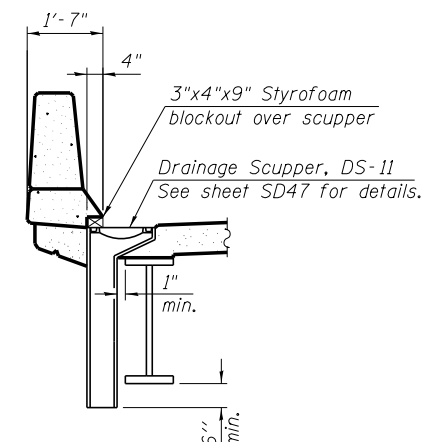
\*These dimensions shall be determined in field



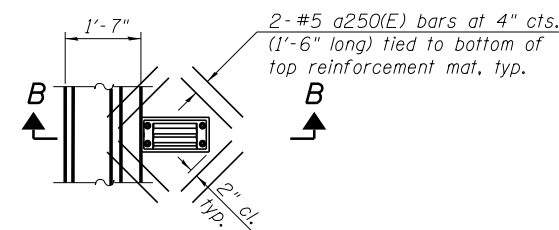
**BARS e231(E) & e232(E)**



**SECTION B-B**

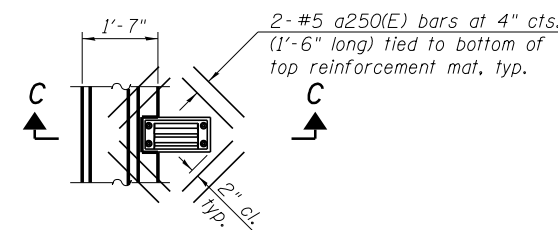


**SECTION C-C**



**PLAN**

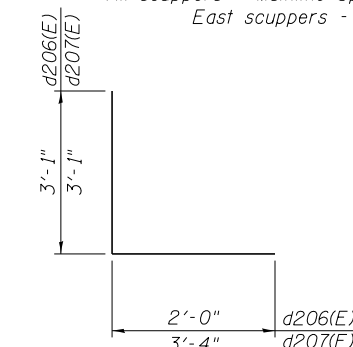
All scuppers - Mainline Span 1-3, Spans 6-12  
East scuppers - Spans 4-5



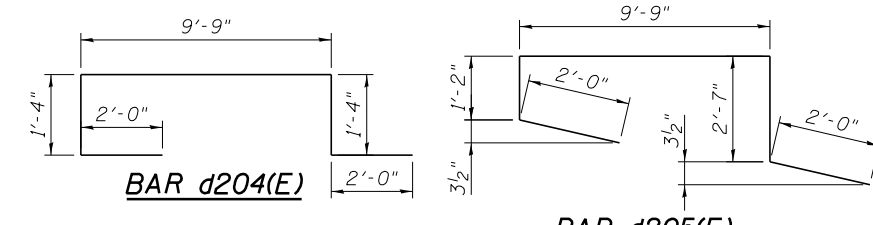
**PLAN**

West scuppers - Ramp E, Spans 4-5

Note: Cut longitudinal reinforcement to clear drainage scuppers.



**BARS d206(E) & d207(E)**

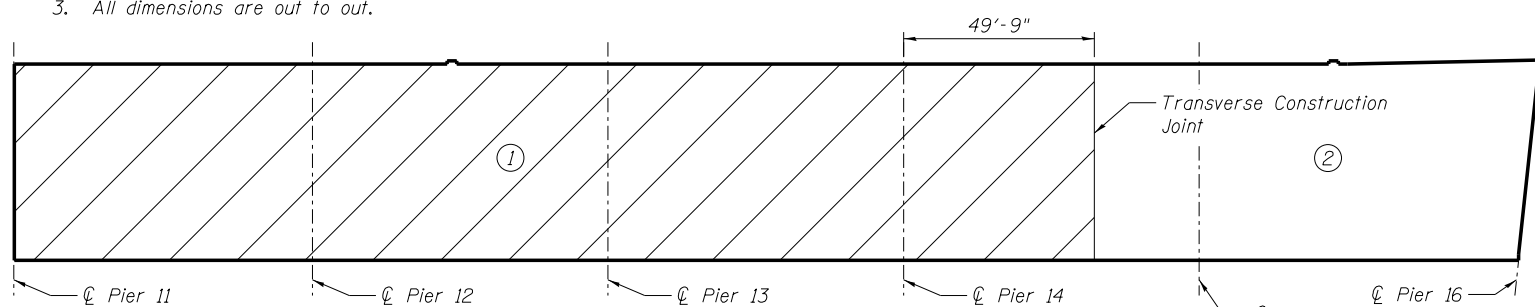


**BAR d204(E)**

**BAR d205(E)**

**NOTES:**

- When the deck pour is stopped for the day at the transverse construction joint in the deck pouring sequence shown, the next pour shall not be made until both of the following are met:
  - At least 72 hours shall have elapsed from the end of the previous pour.
  - The concrete strength shall have attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.
- The Contractor is alerted that the camber and dead load deflection values were developed based on the deck pouring sequence shown. Any deviation from this pouring sequence will result in changes to camber and deck elevations. These changes shall be submitted to the Engineer to review and approve.
- All dimensions are out to out.



**REQUIRED DECK POUR SEQUENCE - UNIT E**



Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

FILE NAME = 0162457.60J16.045\_Deck\_Details.dgn

USER NAME = ksnider  
DESIGNED -  
CHECKED -  
PLOT SCALE =  
DRAWN -  
PLOT DATE = 12/20/2013  
CHECKED -

REVISOR -  
REVISOR -  
REVISOR -  
REVISOR -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS AND BAR BENDS  
STRUCTURE NO. 016-2457

SHEET NO. SD45 OF SD83 SHEETS

| F.A.P. R.T.E.      | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|-------------|--------|--------------|-----------|
| 372                | 2013-038B-R | COOK   | 821          | 420       |
| CONTRACT NO. 60J16 |             |        |              |           |

ILLINOIS FED. AID PROJECT

Y:\chicago\100005\100093\Eng\_Docs\_Phase\_1\16.2456.2457\_1st\_Ave\_over\_Plaines\_River\_Valley\Final\0162457.60J16.045\_Deck\_Details.dgn 3:47:07 PM 8/6/2014

**UNIT A RAMP E  
BILL OF MATERIAL**

| Bar                                 | No. | Size | Length  | Shape  |
|-------------------------------------|-----|------|---------|--------|
| a200(E)                             | 24  | #5   | 29'-4"  | ————   |
| a201(E)                             | 360 | #5   | 28'-6"  | ————   |
| a202(E)                             | 486 | #6   | 6'-6"   | ————   |
| a203(E)                             | 17  | #5   | 29'-1"  | ————   |
| a204(E)                             | 17  | #5   | 30'-0"  | ————   |
| a205(E)                             | 13  | #5   | 29'-10" | ————   |
| a206(E)                             | 5   | #5   | 33'-9"  | ————   |
| a207(E)                             | 18  | #5   | 7'-8"   | ————   |
| a208(E)                             | 3   | #5   | 8'-8"   | ————   |
| a209(E)                             | 3   | #5   | 6'-10"  | ————   |
| a210(E)                             | 3   | #5   | 7'-11"  | ————   |
| a211(E)                             | 3   | #5   | 6'-8"   | ————   |
| a212(E)                             | 5   | #5   | 30'-3"  | ————   |
| a247(E)                             | 18  | #5   | 7'-4"   | ————   |
| a249(E)                             | 10  | #5   | 31'-9"  | ————   |
| a250(E)                             | 16  | #5   | 1'-6"   | ————   |
| b200(E)                             | 256 | #5   | 22'-3"  | ————   |
| b201(E)                             | 162 | #5   | 31'-0"  | ————   |
| d200(E)                             | 350 | #5   | 6'-10"  | ————   |
| d201(E)                             | 350 | #5   | 8'-3"   | ————   |
| d206(E)                             | 3   | #6   | 5'-1"   | ————   |
| d209(E)                             | 6   | #6   | 8'-11"  | ————   |
| e200(E)                             | 28  | #4   | 19'-8"  | ————   |
| e211(E)                             | 12  | #4   | 27'-10" | ————   |
| e219(E)                             | 12  | #8   | 29'-11" | ————   |
| e235(E)                             | 84  | #4   | 19'-5"  | ————   |
| x200(E)                             | 96  | #5   | 6'-5"   | ————   |
| Concrete Superstructure             |     |      | Cu. Yd. | 175.6  |
| Reinforcement Bars,<br>Epoxy Coated |     |      | Pound   | 38,770 |

**UNIT A BILL OF MATERIAL**

| Bar                                 | No.  | Size | Length  | Shape  |
|-------------------------------------|------|------|---------|--------|
| a201(E)                             | 109  | #5   | 28'-6"  | ————   |
| a202(E)                             | 1341 | #6   | 6'-6"   | ————   |
| a209(E)                             | 9    | #5   | 6'-10"  | ————   |
| a210(E)                             | 3    | #5   | 7'-11"  | ————   |
| a211(E)                             | 9    | #5   | 6'-8"   | ————   |
| a212(E)                             | 5    | #5   | 30'-3"  | ————   |
| a213(E)                             | 250  | #5   | 30'-5"  | ————   |
| a214(E)                             | 250  | #5   | 30'-9"  | ————   |
| a215(E)                             | 249  | #5   | 31'-1"  | ————   |
| a216(E)                             | 249  | #5   | 33'-1"  | ————   |
| a217(E)                             | 101  | #5   | 30'-2"  | ————   |
| a218(E)                             | 101  | #5   | 24'-7"  | ————   |
| a219(E)                             | 184  | #5   | 33'-9"  | ————   |
| a220(E)                             | 184  | #5   | 27'-5"  | ————   |
| a221(E)                             | 182  | #5   | 35'-3"  | ————   |
| a222(E)                             | 182  | #5   | 28'-11" | ————   |
| a223(E)                             | 77   | #5   | 24'-10" | ————   |
| a224(E)                             | 77   | #5   | 33'-5"  | ————   |
| a225(E)                             | 15   | #6   | 29'-7"  | ————   |
| a226(E)                             | 3    | #5   | 3'-5"   | ————   |
| a227(E)                             | 3    | #5   | 5'-1"   | ————   |
| a228(E)                             | 9    | #6   | 10'-4"  | ————   |
| a229(E)                             | 6    | #5   | 8'-5"   | ————   |
| a230(E)                             | 7    | #5   | 28'-6"  | ————   |
| a231(E)                             | 1    | #5   | 29'-6"  | ————   |
| a232(E)                             | 1    | #5   | 31'-5"  | ————   |
| Concrete Superstructure             |      |      | Cu. Yd. | 336.5  |
| Reinforcement Bars,<br>Epoxy Coated |      |      | Pound   | 76,990 |

**UNIT A BILL OF MATERIAL (CON'T)**

| Bar                                 | No. | Size | Length  | Shape   |
|-------------------------------------|-----|------|---------|---------|
| a233(E)                             | 26  | #5   | 27'-3"  | ————    |
| a234(E)                             | 37  | #5   | 21'-4"  | ————    |
| a235(E)                             | 7   | #5   | 16'-0"  | ————    |
| a236(E)                             | 3   | #5   | 9'-4"   | ————    |
| a237(E)                             | 77  | #5   | 20'-5"  | ————    |
| a238(E)                             | 9   | #5   | 30'-8"  | ————    |
| a239(E)                             | 1   | #5   | 29'-11" | ————    |
| a240(E)                             | 1   | #5   | 31'-5"  | ————    |
| a241(E)                             | 20  | #5   | 29'-0"  | ————    |
| a242(E)                             | 39  | #5   | 24'-5"  | ————    |
| a243(E)                             | 33  | #5   | 18'-8"  | ————    |
| a244(E)                             | 4   | #5   | 13'-9"  | ————    |
| a245(E)                             | 3   | #5   | 7'-6"   | ————    |
| a246(E)                             | 105 | #5   | 24'-0"  | ————    |
| a247(E)                             | 3   | #5   | 7'-4"   | ————    |
| a248(E)                             | 2   | #6   | 27'-11" | ————    |
| a250(E)                             | 32  | #5   | 1'-6"   | ————    |
| b200(E)                             | 116 | #5   | 22'-3"  | ————    |
| b201(E)                             | 87  | #5   | 31'-0"  | ————    |
| b202(E)                             | 709 | #5   | 28'-2"  | ————    |
| b203(E)                             | 563 | #5   | 33'-8"  | ————    |
| b204(E)                             | 248 | #6   | 31'-2"  | ————    |
| b206(E)                             | 10  | #5   | 17'-3"  | ————    |
| b207(E)                             | 5   | #5   | 14'-0"  | ————    |
| b208(E)                             | 1   | #5   | 12'-0"  | ————    |
| b209(E)                             | 1   | #5   | 15'-6"  | ————    |
| b210(E)                             | 1   | #5   | 19'-11" | ————    |
| b211(E)                             | 1   | #5   | 42'-0"  | ————    |
| b212(E)                             | 1   | #5   | 31'-3"  | ————    |
| b213(E)                             | 1   | #5   | 19'-11" | ————    |
| b214(E)                             | 1   | #5   | 11'-9"  | ————    |
| b215(E)                             | 1   | #5   | 26'-6"  | ————    |
| b216(E)                             | 1   | #5   | 37'-4"  | ————    |
| b218(E)                             | 6   | #4   | 31'-0"  | ————    |
| d200(E)                             | 645 | #5   | 6'-10"  | ————    |
| d201(E)                             | 675 | #5   | 8'-3"   | ————    |
| d202(E)                             | 4   | #5   | 11'-6"  | ————    |
| d203(E)                             | 92  | #4   | 3'-6"   | ————    |
| d206(E)                             | 3   | #6   | 5'-1"   | ————    |
| d208(E)                             | 30  | #5   | 6'-10"  | ————    |
| d209(E)                             | 6   | #6   | 8'-11"  | ————    |
| e200(E)                             | 7   | #4   | 19'-8"  | ————    |
| e201(E)                             | 28  | #4   | 17'-6"  | ————    |
| e207(E)                             | 71  | #4   | 13'-2"  | ————    |
| e210(E)                             | 7   | #4   | 10'-7"  | ————    |
| e211(E)                             | 9   | #4   | 27'-10" | ————    |
| e214(E)                             | 9   | #4   | 25'-2"  | ————    |
| e215(E)                             | 1   | #4   | 24'-0"  | ————    |
| e218(E)                             | 1   | #4   | 29'-5"  | ————    |
| e219(E)                             | 9   | #8   | 29'-11" | ————    |
| e220(E)                             | 1   | #8   | 29'-5"  | ————    |
| e223(E)                             | 9   | #8   | 27'-4"  | ————    |
| e226(E)                             | 1   | #8   | 24'-0"  | ————    |
| e228(E)                             | 8   | #8   | 13'-2"  | ————    |
| e231(E)                             | 5   | #6   | 13'-1"  | ————    |
| e232(E)                             | 5   | #6   | 11'-4"  | ————    |
| e235(E)                             | 84  | #4   | 19'-5"  | ————    |
| e237(E)                             | 7   | #4   | 9'-5"   | ————    |
| e238(E)                             | 14  | #4   | 13'-8"  | ————    |
| Concrete Superstructure             |     |      | Cu. Yd. | 577.4   |
| Reinforcement Bars,<br>Epoxy Coated |     |      | Pound   | 168,750 |

**UNIT A BILL OF MATERIAL (CON'T)**

| Bar                                 | No. | Size | Length  | Shape   |
|-------------------------------------|-----|------|---------|---------|
| e239(E)                             | 42  | #4   | 18'-11" | ————    |
| x200(E)                             | 96  | #5   | 6'-5"   | ————    |
| Concrete Superstructure             |     |      | Cu. Yd. | 577.4   |
| Reinforcement Bars,<br>Epoxy Coated |     |      | Pound   | 168,750 |

**UNIT C SPANS 4-5  
BILL OF MATERIAL**

| Bar                                 | No. | Size | Length  | Shape  |
|-------------------------------------|-----|------|---------|--------|
| a202(E)                             | 512 | #6   | 6'-6"   | ————   |
| a207(E)                             | 15  | #5   | 7'-8"   | ————   |
| a229(E)                             | 9   | #5   | 8'-5"   | ————   |
| a250(E)                             | 32  | #5   | 1'-6"   | ————   |
| a260(E)                             | 278 | #5   | 27'-3"  | ————   |
| a261(E)                             | 178 | #5   | 24'-6"  | ————   |
| a262(E)                             | 36  | #5   | 35'-9"  | ————   |
| a263(E)                             | 41  | #5   | 30'-11" | ————   |
| a264(E)                             | 114 | #5   | 26'-2"  | ————   |
| a265(E)                             | 246 | #5   | 30'-4"  | ————   |
| a266(E)                             | 149 | #5   | 23'-0"  | ————   |
| a267(E)                             | 27  | #5   | 34'-2"  | ————   |
| a268(E)                             | 47  | #5   | 29'-2"  | ————   |
| a270(E)                             | 220 | #5   | 15'-11" | ————   |
| a285(E)                             | 6   | #5   | 3'-7"   | ————   |
| a286(E)                             | 72  | #5   | 7'-2"   | ————   |
| a287(E)                             | 15  | #5   | 4'-11"  | ————   |
| a289(E)                             | 9   | #5   | 5'-3"   | ————   |
| b217(E)                             | 6   | #4   | 21'-0"  | ————   |
| b260(E)                             | 462 | #5   | 27'-2"  | ————   |
| b261(E)                             | 548 | #5   | 21'-3"  | ————   |
| d200(E)                             | 335 | #5   | 6'-10"  | ————   |
| d201(E)                             | 335 | #5   | 8'-3"   | ————   |
| d203(E)                             | 62  | #4   | 3'-6"   | ————   |
| d204(E)                             | 6   | #6   | 16'-5"  | ————   |
| d205(E)                             | 6   | #6   | 17'-6"  | ————   |
| d206(E)                             | 15  | #6   | 5'-1"   | ————   |
| d207(E)                             | 12  | #6   | 6'-5"   | ————   |
| d209(E)                             | 6   | #6   | 8'-11"  | ————   |
| e202(E)                             | 56  | #4   | 18'-8"  | ————   |
| e203(E)                             | 56  | #4   | 18'-6"  | ————   |
| e212(E)                             | 6   | #4   | 26'-10" | ————   |
| e213(E)                             | 6   | #4   | 26'-5"  | ————   |
| e221(E)                             | 6   | #8   | 28'-11" | ————   |
| e222(E)                             | 6   | #8   | 28'-6"  | ————   |
| x200(E)                             | 231 | #5   | 6'-5"   | ————   |
| Concrete Superstructure             |     |      | Cu. Yd. | 336.5  |
| Reinforcement Bars,<br>Epoxy Coated |     |      | Pound   | 76,990 |

**UNIT C SPANS 6-7  
BILL OF MATERIAL**

| Bar                                 | No. | Size | Length  | Shape  |
|-------------------------------------|-----|------|---------|--------|
| a202(E)                             | 480 | #6   | 6'-6"   | ————   |
| a207(E)                             | 6   | #5   | 7'-8"   | ————   |
| a250(E)                             | 32  | #5   | 1'-6"   | ————   |
| a260(E)                             | 224 | #5   | 27'-3"  | ————   |
| a265(E)                             | 283 | #5   | 30'-4"  | ————   |
| a276(E)                             | 108 | #5   | 33'-4"  | ————   |
| a278(E)                             | 116 | #5   | 28'-2"  | ————   |
| a279(E)                             | 91  | #5   | 25'-2"  | ————   |
| a283(E)                             | 30  | #5   | 27'-8"  | ————   |
| a286(E)                             | 75  | #5   | 7'-2"   | ————   |
| a289(E)                             | 9   | #5   | 5'-3"   | ————   |
| b260(E)                             | 345 | #5   | 27'-2"  | ————   |
| b261(E)                             | 408 | #5   | 21'-3"  | ————   |
| d200(E)                             | 332 | #5   | 6'-10"  | ————   |
| d201(E)                             | 332 | #5   | 8'-3"   | ————   |
| d206(E)                             | 3   | #6   | 5'-1"   | ————   |
| d209(E)                             | 6   | #6   | 8'-11"  | ————   |
| e203(E)                             | 112 | #4   | 18'-6"  | ————   |
| e213(E)                             | 12  | #4   | 26'-5"  | ————   |
| e222(E)                             | 12  | #8   | 28'-6"  | ————   |
| x200(E)                             | 174 | #5   | 6'-5"   | ————   |
| Concrete Superstructure             |     |      | Cu. Yd. | 266.4  |
| Reinforcement Bars,<br>Epoxy Coated |     |      | Pound   | 58,950 |

**UNIT E BILL OF MATERIAL**

| Bar                                 | No.  | Size | Length  | Shape   |
|-------------------------------------|------|------|---------|---------|
| a202(E)                             | 1587 | #6   | 6'-6"   | ————    |
| a250(E)                             | 24   | #5   | 1'-6"   | ————    |
| a283(E)                             | 10   | #5   | 27'-8"  | ————    |
| a284(E)                             | 30   | #5   | 8'-3"   | ————    |
| a290(E)                             | 780  | #5   | 30'-9"  | ————    |
| a291(E)                             | 692  | #5   | 23'-5"  | ————    |
| a292(E)                             | 89   | #5   | 24'-3"  | ————    |
| a293(E)                             | 5    | #5   | 49'-4"  | ————    |
| a294(E)                             | 1109 | #5   | 27'-1"  | ————    |
| a295(E)                             | 67   | #5   | 27'-11" | ————    |
| a296(E)                             | 4    | #5   | 45'-7"  | ————    |
| a297(E)                             | 6    | #6   | 9'-8"   | ————    |
| a298(E)                             | 10   | #6   | 28'-0"  | ————    |
| b290(E)                             | 935  | #5   | 26'-5"  | ————    |
| b291(E)                             | 750  | #5   | 29'-7"  | ————    |
| b292(E)                             | 208  | #6   | 30'-11" | ————    |
| b293(E)                             | 208  | #6   | 26'-0"  | ————    |
| d200(E)                             | 862  | #5   | 6'-10"  | ————    |
| d201(E)                             | 862  | #5   | 8'-3"   | ————    |
| d206(E)                             | 6    | #6   | 5'-1"   | ————    |
| d209(E)                             | 12   | #6   | 8'-11"  | ————    |
| e201(E)                             | 42   | #4   | 17'-6"  | ————    |
| e202(E)                             | 42   | #4   | 18'-8"  | ————    |
| e203(E)                             | 28   | #4   | 18'-6"  | ————    |
| e204(E)                             | 56   | #4   | 16'-2"  | ————    |
| e205(E)                             | 42   | #4   | 18'-2"  | ————    |
| e206(E)                             | 28   | #4   | 17'-1"  | ————    |
| e207(E)                             | 32   | #4   | 13'-2"  | ————    |
| e208(E)                             | 32   | #4   | 11'-2"  | ————    |
| e209(E)                             | 64   | #4   | 9'-8"   | ————    |
| e211(E)                             | 4    | #4   | 27'-10" | ————    |
| e213(E)                             | 3    | #4   | 26'-5"  | ————    |
| e214(E)                             | 3    | #4   | 25'-2"  | ————    |
| e216(E)                             | 6    | #4   | 23'-4"  | ————    |
| e217(E)                             | 8    | #4   | 29'-4"  | ————    |
| e220(E)                             | 4    | #8   | 29'-5"  | ————    |
| e222(E)                             | 3    | #8   | 28'-6"  | ————    |
| e224(E)                             | 3    | #8   | 26'-7"  | ————    |
| e225(E)                             | 6    | #8   | 25'-5"  | ————    |
| e227(E)                             | 8    | #8   | 30'-11" | ————    |
| e228(E)                             | 4    | #8   | 13'-2"  | ————    |
| e229(E)                             | 4    | #8   | 11'-2"  | ————    |
| e230(E)                             | 8    | #8   | 9'-8"   | ————    |
| x200(E)                             | 42   | #5   | 6'-5"   | ————    |
| Concrete Superstructure             |      |      | Cu. Yd. | 638.3   |
| Reinforcement Bars,<br>Epoxy Coated |      |      | Pound   | 181,660 |



Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

FILE NAME :  
0162457.60J16.046.Reinforcing.Details.dgn

USER NAME : ksnider  
PLOT SCALE :  
PLOT DATE : 12/20/2013

|                |           |
|----------------|-----------|
| DESIGNED - AWH | REVISED - |
| CHECKED - MFH  | REVISED - |
| DRAWN - AWH    | REVISED - |
| CHECKED - MFH  | REVISED - |

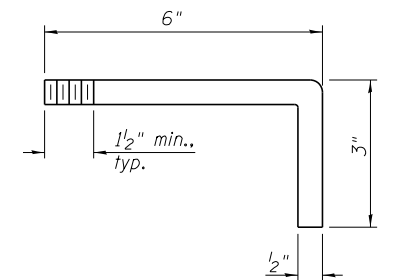
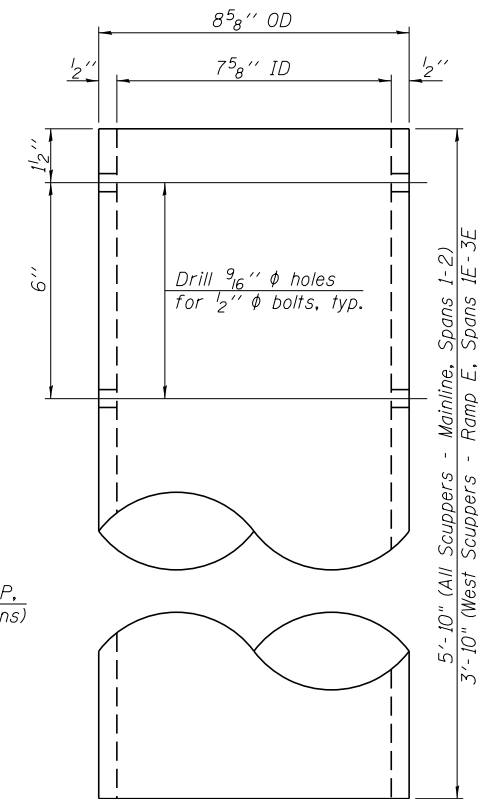
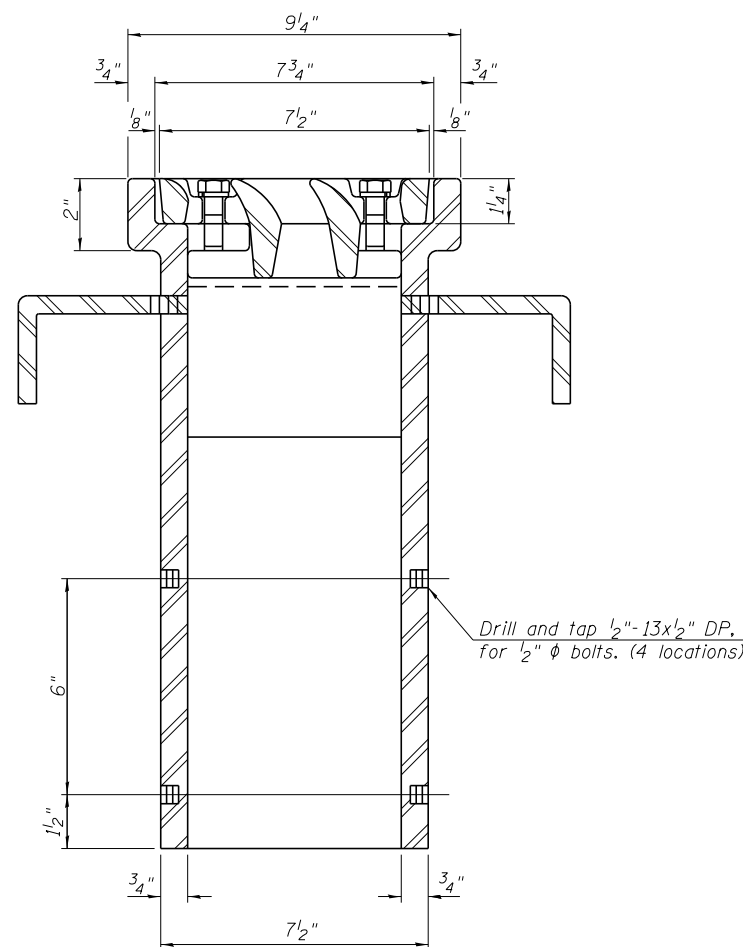
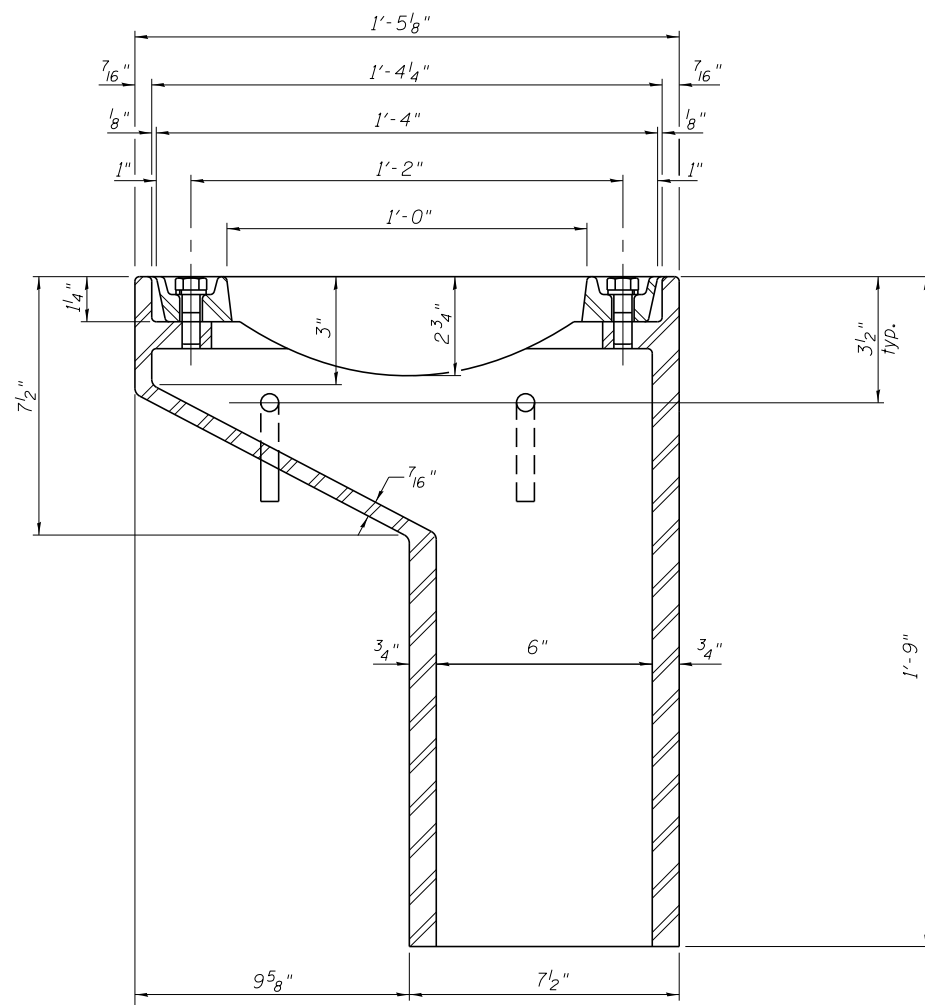
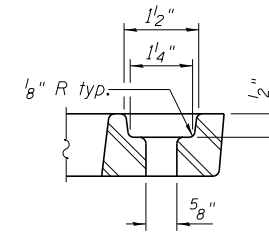
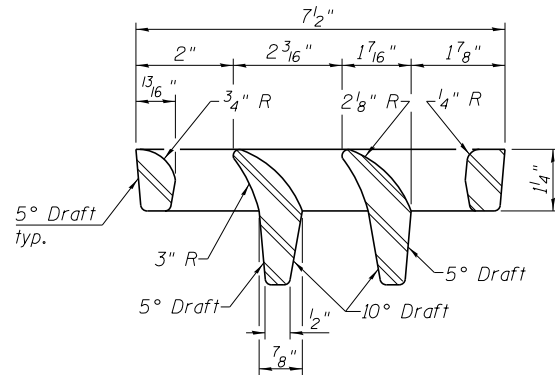
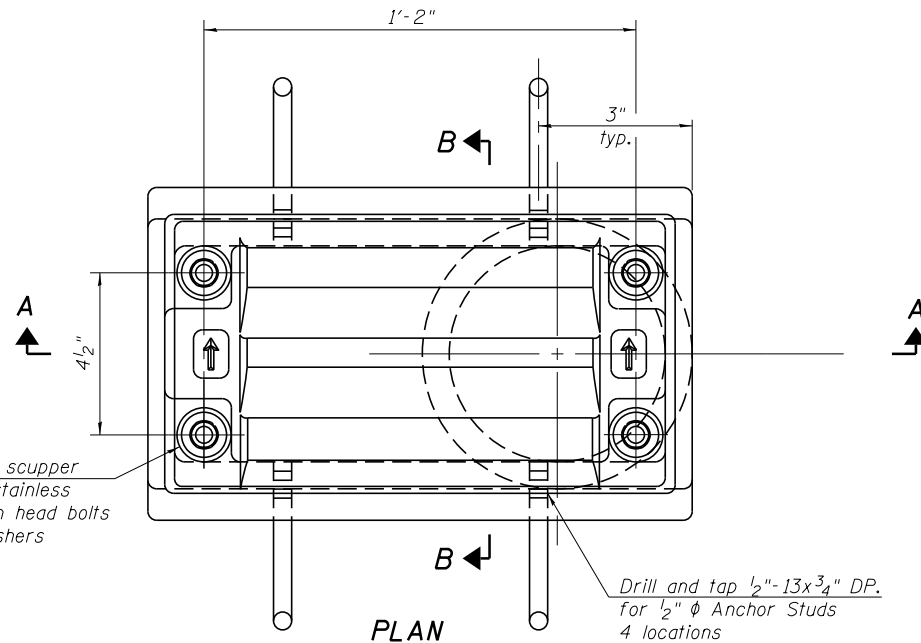
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE BILLS OF MATERIALS  
STRUCTURE NO. 016-2457**

SHEET NO. SD46 OF SD83 SHEETS

| F.A.P. R.T.E.      | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|-------------|--------|--------------|-----------|
| 372                | 2013-0388-R | COOK   | 821          | 421       |
| CONTRACT NO. 60J16 |             |        |              |           |

ILLINOIS FED. AID PROJECT



Notes:  
 All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.  
 Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.  
 Downspouts located on the exterior side of a fascia beam shall be painted under a separate painting contract.  
 As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.  
 Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.  
 The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.  
 Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.  
 Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

**SECTION A-A**  
 See sheet SD45 for scupper location relative to parapet.

**SECTION B-B**

**DOWNSPOUT**

**BILL OF MATERIAL**

| ITEM                    | UNIT | QUANTITY |
|-------------------------|------|----------|
| Drainage Scupper, DS-11 | Each | 17       |

DS-11

7-1-10

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 engineers · scientists · planners

Alfred Benesch & Company  
 205 North Michigan Avenue, Suite 2400  
 Chicago, Illinois 60601  
 312-565-0450 Job No. 10093

FILE NAME =  
 0162457.60J16.047.scupper\_DS-11.dgn

USER NAME = ksnider  
 PLOT SCALE =  
 PLOT DATE = 12/20/2013

DESIGNED - FSM  
 CHECKED - RMM  
 DRAWN - FSM  
 CHECKED - RMM

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

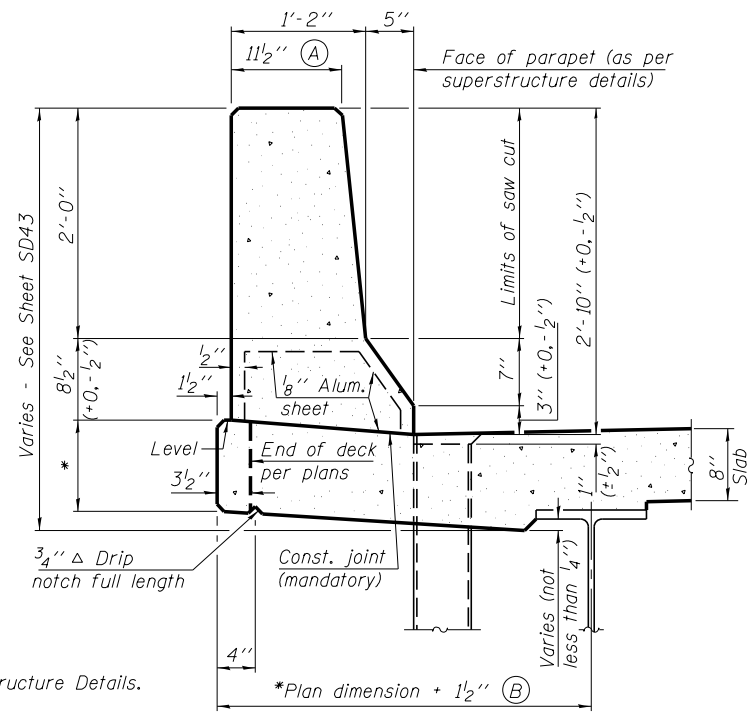
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER, DS-11  
 STRUCTURE NO. 016-2457

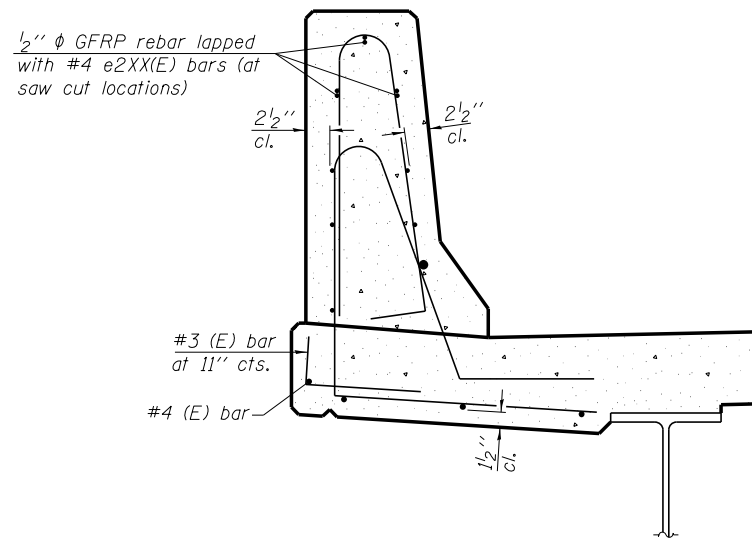
SHEET NO. SD47 OF SD83 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
| 372                | 2013-038B-R | COOK   | 821                       | 422       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

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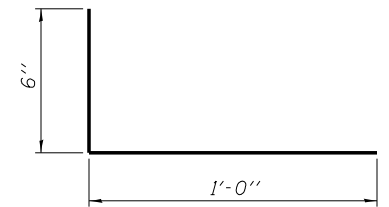
**34" F SHAPE PARAPET SECTION**  
(Showing dimensions)



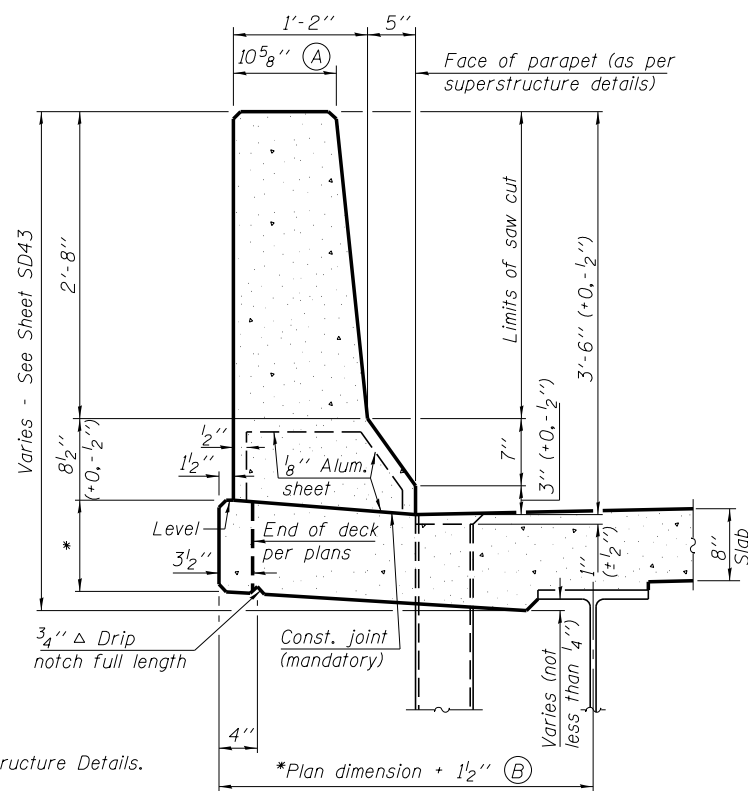
**SECTION**  
(34" parapet shown - 42" parapet similar)  
(Showing reinforcement clearances for slip forming and additional reinforcement bars)

**GENERAL NOTES**

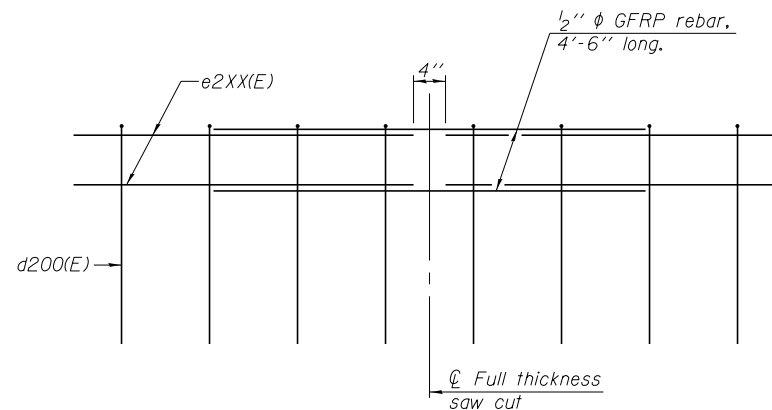
All dimensions shall remain the same as shown on superstructure details, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B = 0.0165 cu. yds./ft. for 34" parapet or = 0.0223 cu. yds./ft. for 42" parapet. Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all joint locations in lieu of cork joint filler. Steel superstructure shown. Other superstructure types similar.



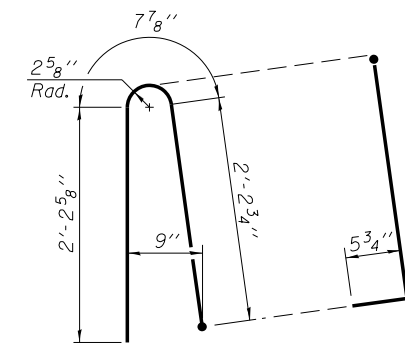
**#3 (E) BAR**



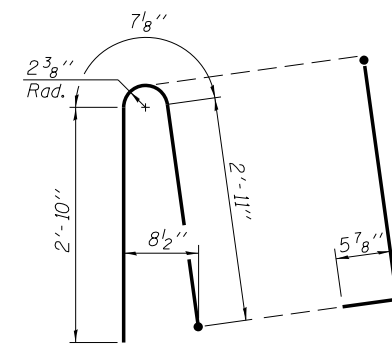
**42" F SHAPE PARAPET SECTION**  
(Showing dimensions)



**GFRP REBAR STIFFENING DETAIL**  
(Place as shown in parapet section at each parapet joint location.)



**ALTERNATE BAR d200(E)**  
(For 34" parapet when conduit is present)



**ALTERNATE BAR d200(E)**  
(For 42" parapet when conduit is present)



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SFP 34-42

8-16-12

|                                      |                        |                |           |
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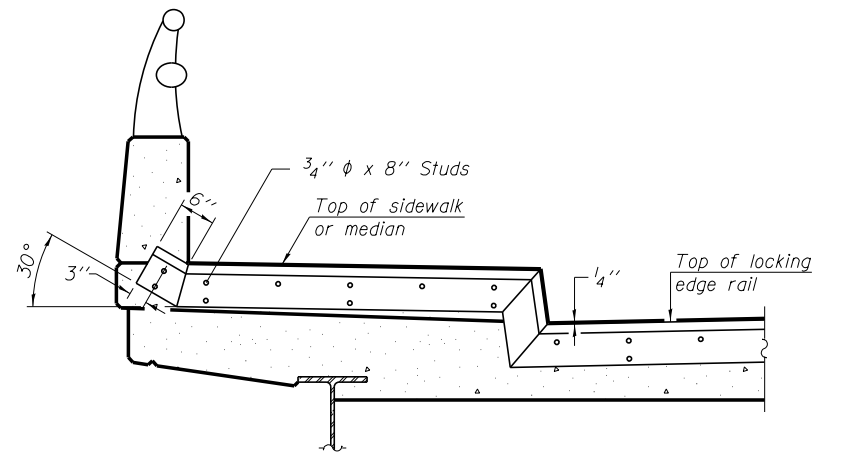
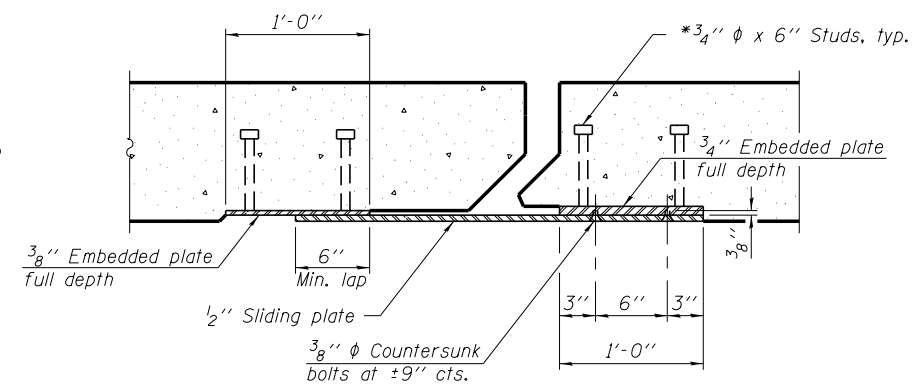
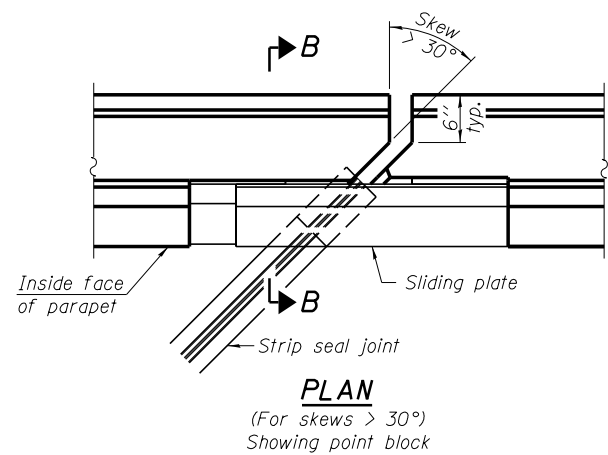
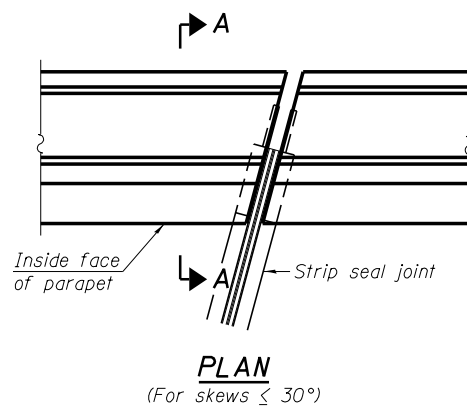
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

CONCRETE PARAPET SLIPFORMING OPTION  
STRUCTURE NO. 016-2457

SHEET NO. SD48 OF SD83 SHEETS

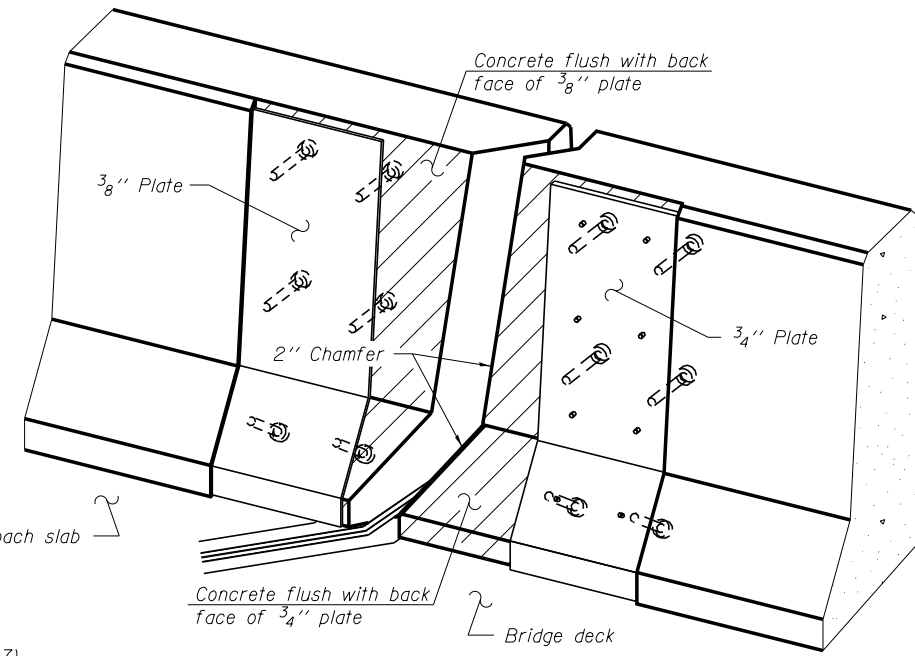
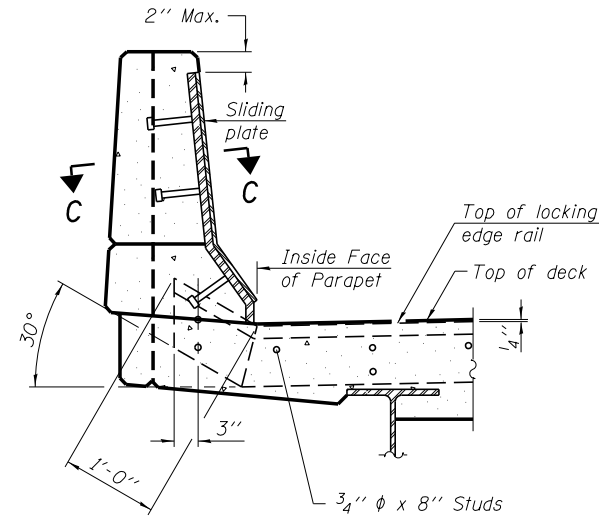
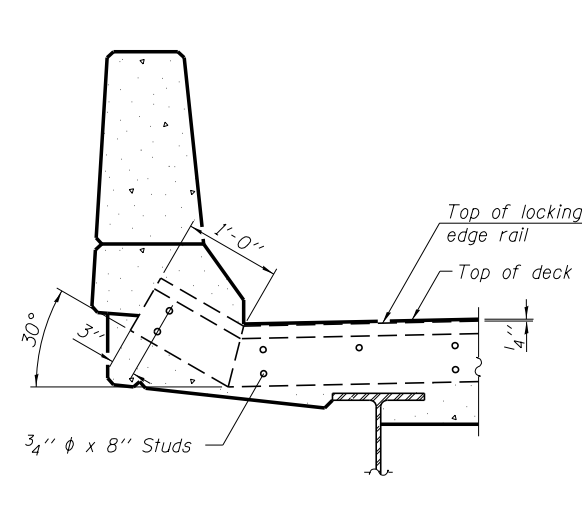
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 372                       | 2013-038B-R | COOK   | 821          | 423                |
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| ILLINOIS FED. AID PROJECT |             |        |              |                    |

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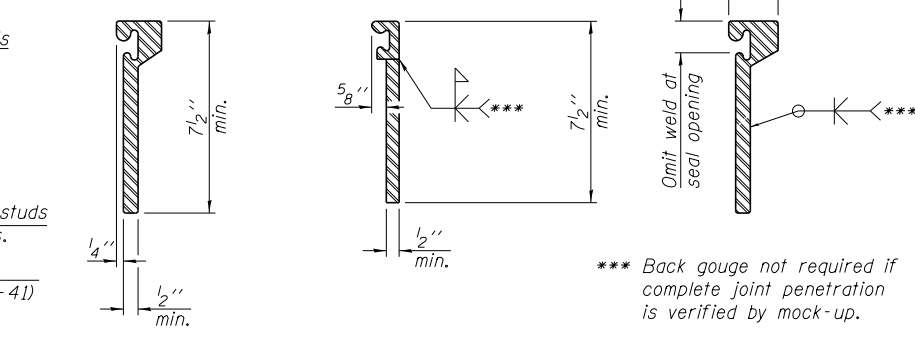
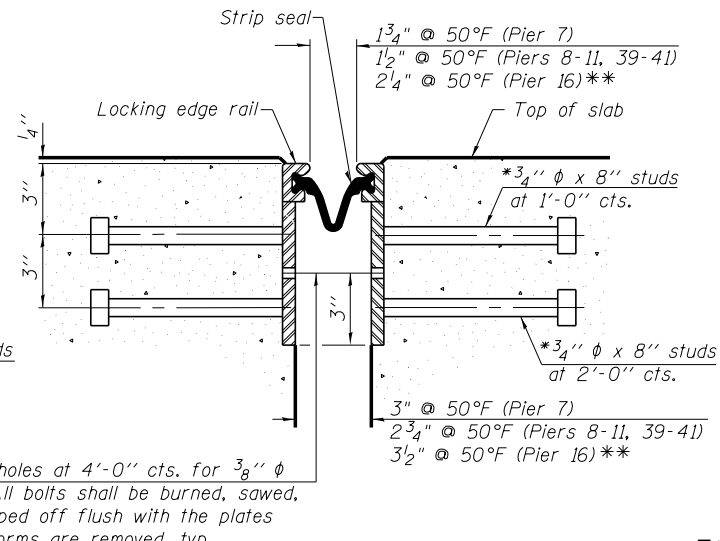
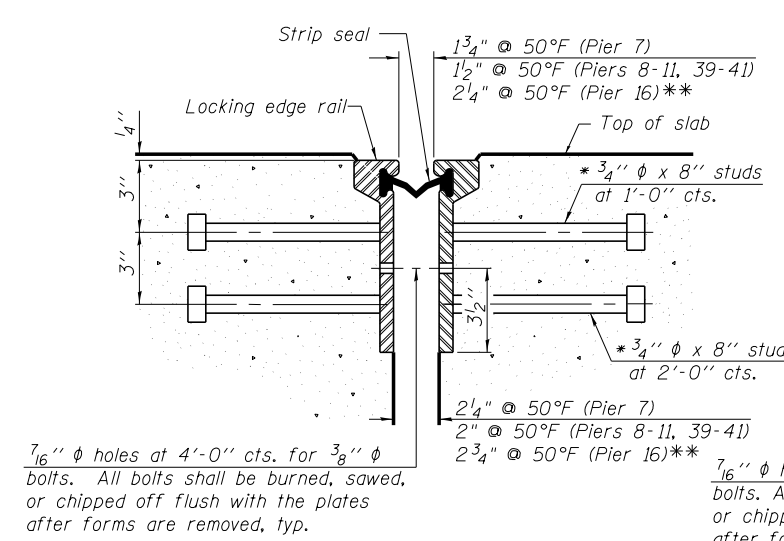
**TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN**

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



**Notes:**

At Pier 16, the strip seal shall be installed when the temperature is between 30°F and 90°F.  
The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.  
The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.  
The manufacturer's recommended installation methods shall be followed.  
The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.  
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications. Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.  
Parapet plates and anchorage studs for skews  $> 30^\circ$  included in the cost of Preformed Joint Strip Seal.



**LOCKING EDGE RAIL SPLICE**

The inside of the locking edge rail groove shall be free of weld residue.  
Rolled rail shown, welded rail similar.

**BILL OF MATERIAL**

| Item                       | Unit | Total |
|----------------------------|------|-------|
| Preformed Joint Strip Seal | Foot | 397.5 |

\*\* Preformed Joint Strip Seal for Pier 16 billed with SN 016-2455.

**EJ-SSJ**      1-27-12

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

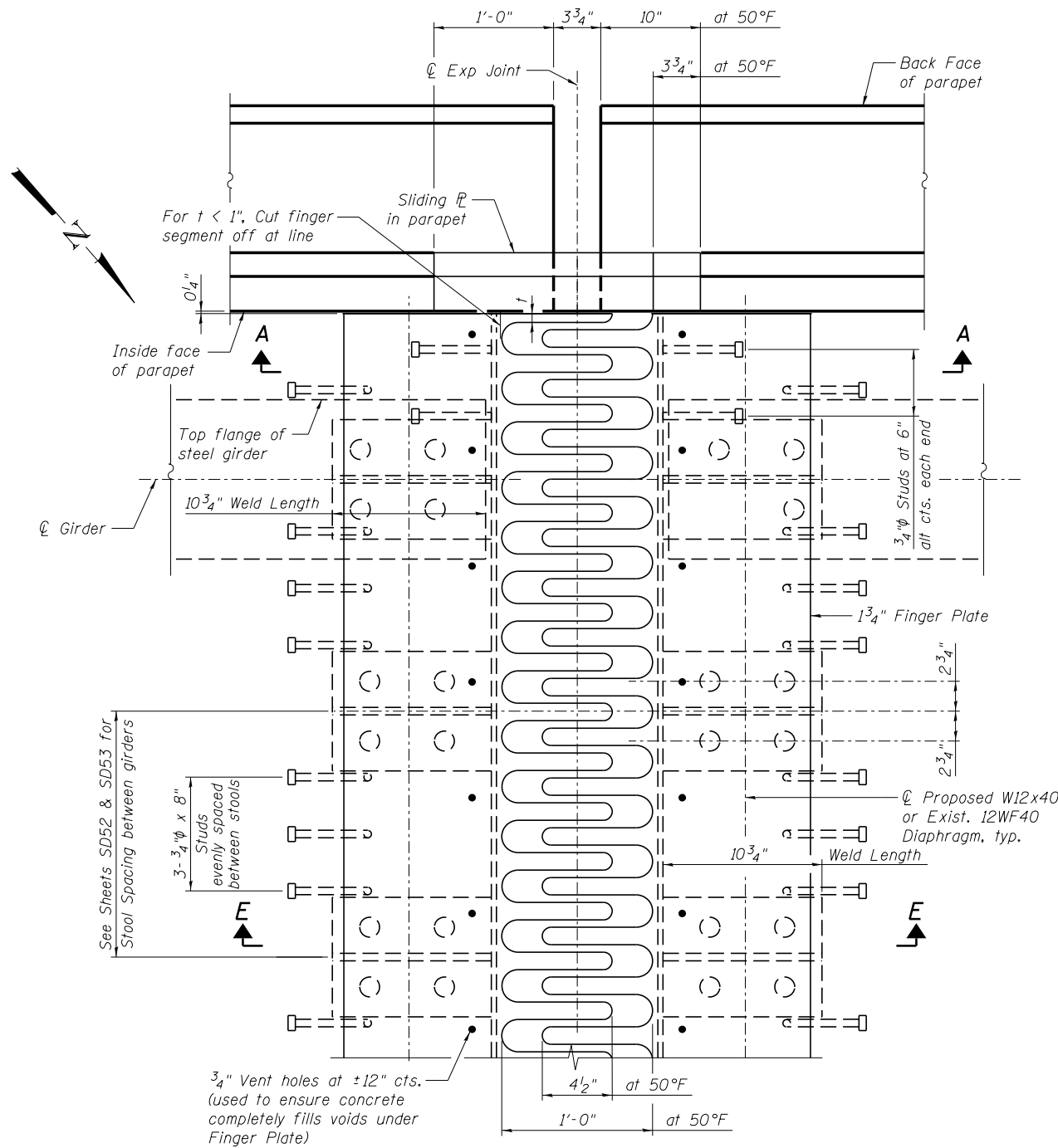
**PREFORMED JOINT STRIP SEAL**  
**STRUCTURE NO. 016-2457**

SHEET NO. SD49 OF SD83 SHEETS

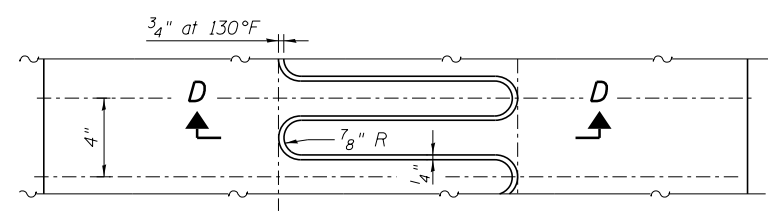
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| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 424       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

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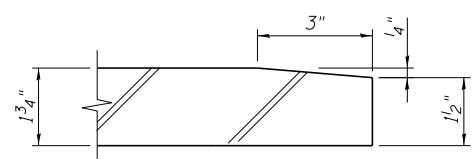




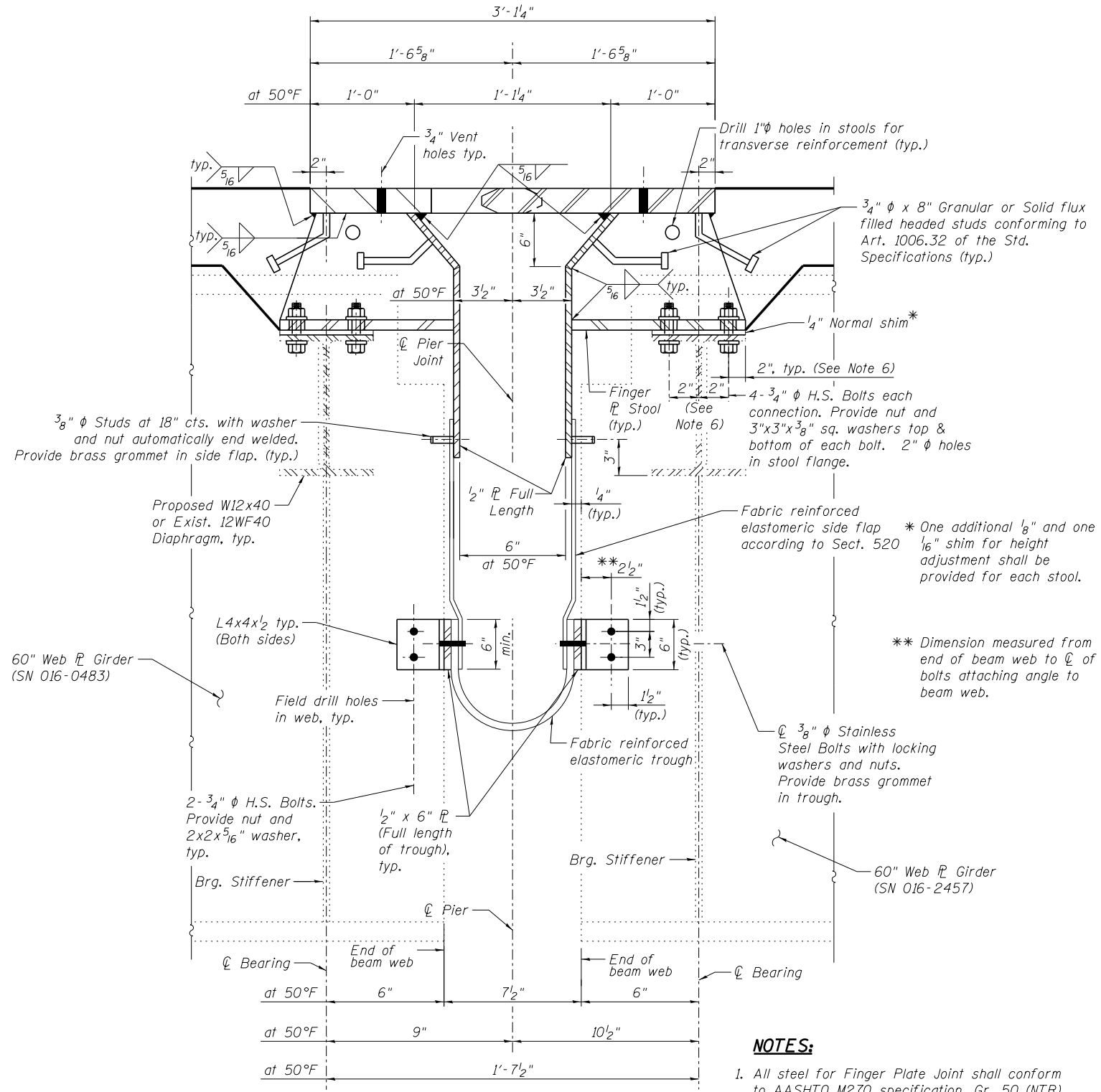
**PLAN OF FINGER PLATE AT PIER 4**



**FINGER DETAIL**



**SECTION D-D**



**SECTION E-E**

(All dimensions shown along @ IL-171)

- NOTES:**
1. All steel for Finger Plate Joint shall conform to AASHTO M270 specification, Gr. 50 (NTR).
  2. Design expansion at Pier 4 ± 2.83"
  3. For View A-A, see Sheet SD51.
  4. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
  5. Finger plate expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.
  6. Hole spacing and dimensions for proposed stools on existing cross frames shall be field verified.

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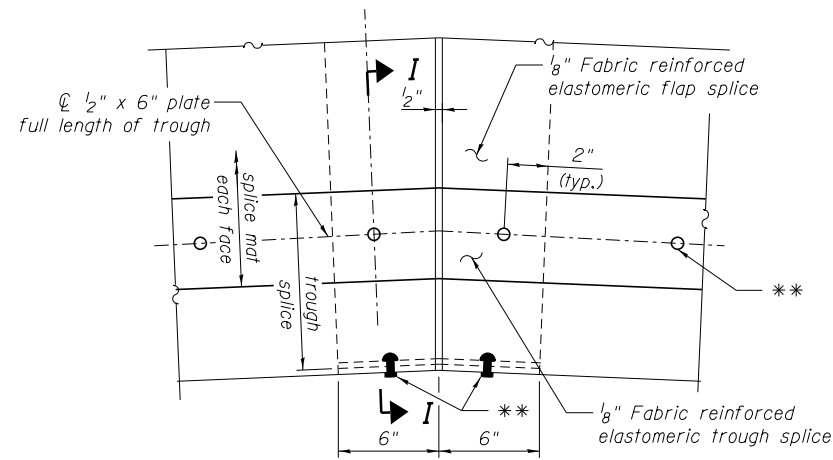
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**FINGER PLATE DETAILS (1 OF 2)  
STRUCTURE NO. 016-2457**

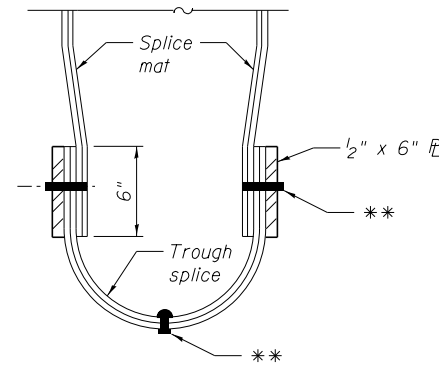
SHEET NO. SD50 OF SD83 SHEETS

| F.A.P. R.E.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
| 372                | 2013-038B-R | COOK   | 821                       | 425       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

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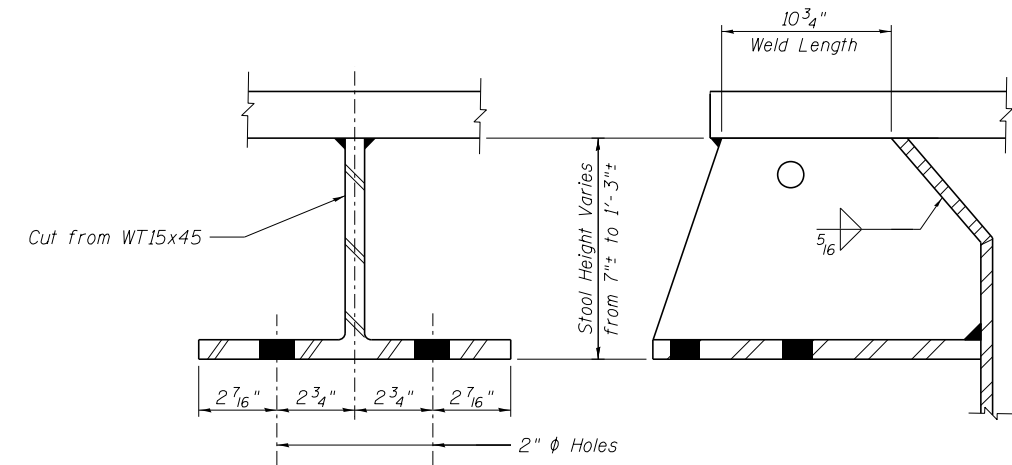


**TROUGH SPLICE DETAIL**



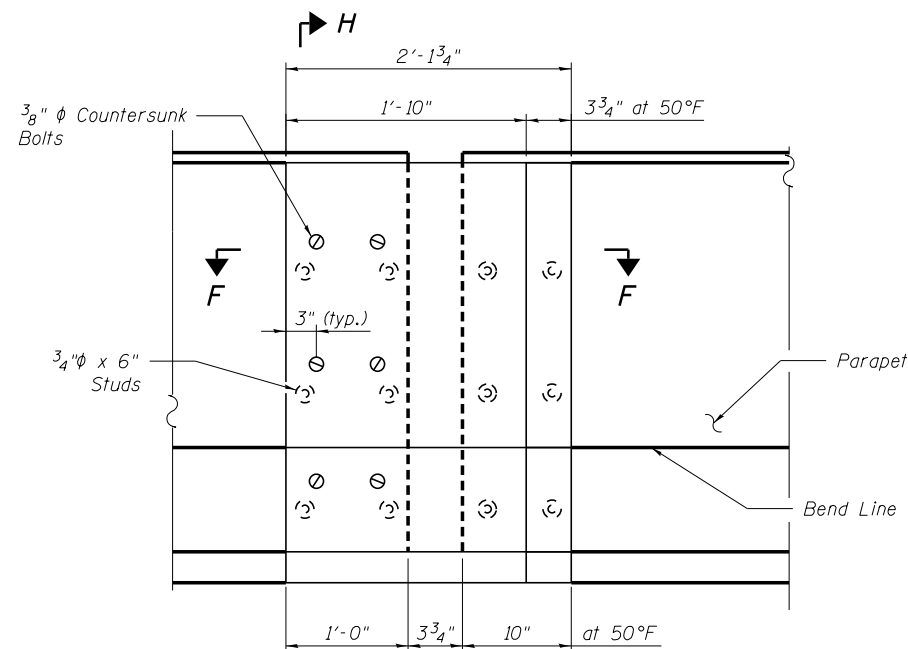
**SECTION I-I**

\*\* 3/8"  $\phi$  Stainless Steel bolts w/ washers & nuts. Provide brass grommet in trough.

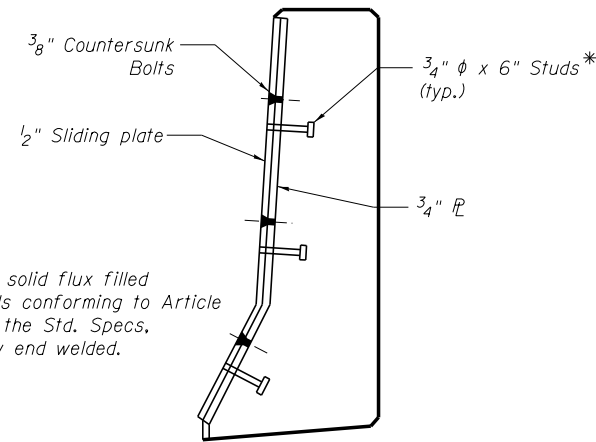


**FINGER PLATE STOOL DETAIL**

(Weld length shown where Stool bears on Girder)  
(Contractor shall field verify stool heights)

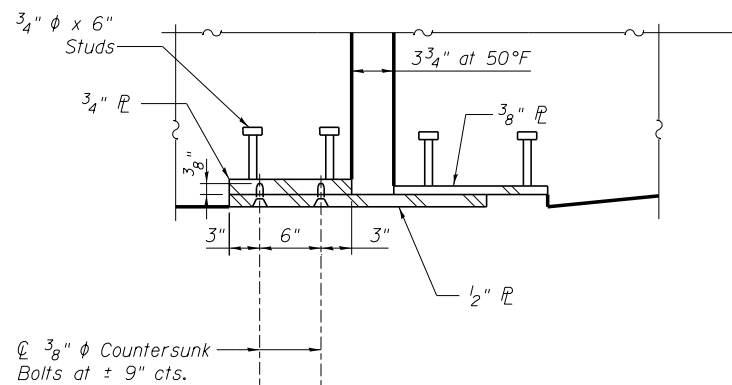


**VIEW A-A**



**SECTION H-H**

\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs. automatically end welded.



**SECTION F-F**

**NOTES:**

1. Finger Plate Expansion Joint, 4" refers to the joint at Pier 4.
2. Cost of field drilling required for Finger Plate installation included with "Finger Plate Expansion Joint" of the dimension specified.
3. Finger plate expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.

**BILL OF MATERIAL**

| ITEM                             | UNIT | QUANTITY |
|----------------------------------|------|----------|
| Finger Plate Expansion Joint, 4" | Foot | 52.0     |

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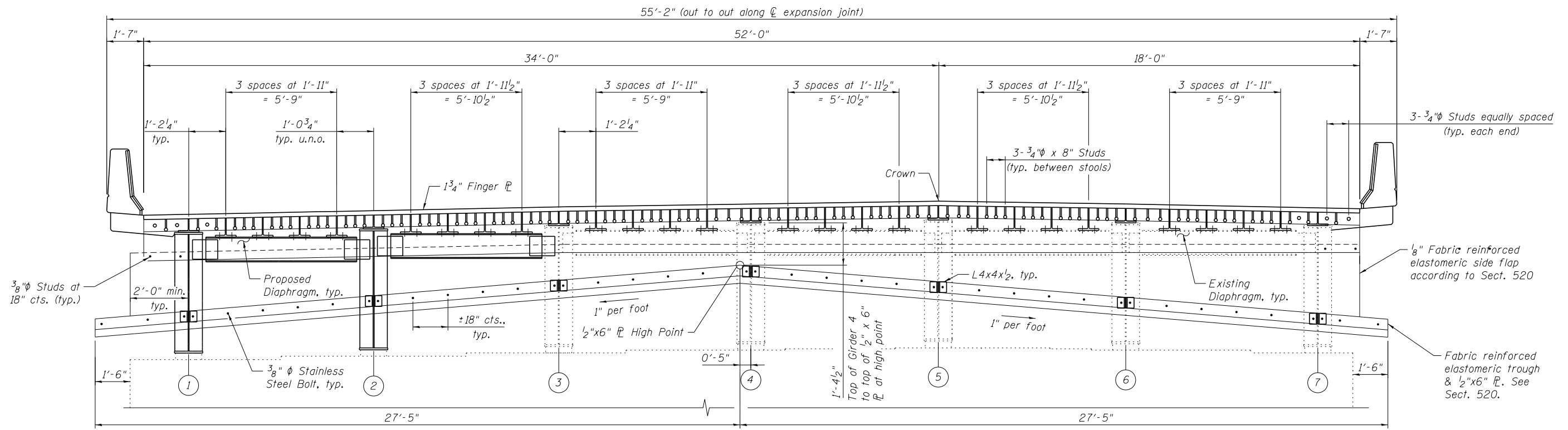
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**FINGER PLATE DETAILS (2 OF 2)  
STRUCTURE NO. 016-2457**

SHEET NO. SD51 OF SD83 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
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**PIER 4**

(South side of joint - looking upstation)  
 (All dimensions measured along  $\bar{C}$  expansion joint)  
 (Only top diaphragm of cross frame shown for clarity)

**NOTES:**

- Existing stools shall be removed and replaced with proposed stools in the same location.
- Where existing cross frames shall remain in place, Contractor to field verify all stool locations and top of diaphragm elevations.
- Where existing cross frames shall be replaced, Contractor to field verify bolt hole elevations and locations at connection plates. Proposed top of diaphragm elevation shall be set by matching these bolt hole locations. Field measured bolt hole locations and provided spacing shall be used to fabricate proposed stools.
- Field drill  $1\frac{5}{16}$ " hole in top flange of existing girder where stool bears on girder.
- Finger plate expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.

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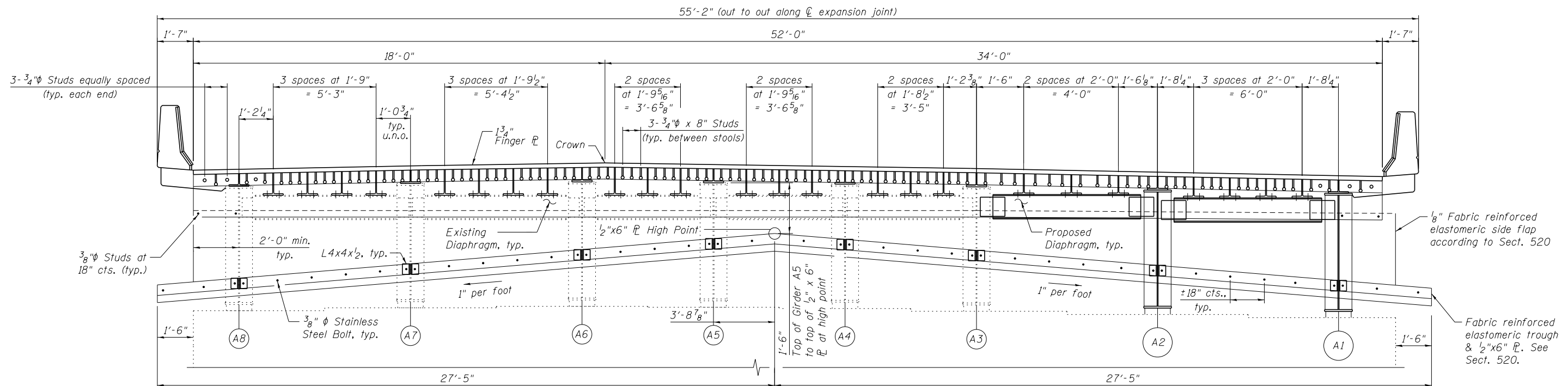
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**DEPARTMENT OF TRANSPORTATION**

**FINGER PLATE ELEVATION PIER 4 (1 OF 2)**  
**STRUCTURE NO. 016-2457**

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
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SHEET NO. SD52 OF SD83 SHEETS

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**PIER 4**

(North side of joint - looking downstation)  
 (All dimensions measured along  $\perp$  expansion joint)  
 (Only top diaphragm of cross frame shown for clarity)

**NOTES:**

- Existing stools shall be removed and replaced with proposed stools in the same location.
- Where existing cross frames shall remain in place, Contractor to field verify all stool locations and top of diaphragm elevations.
- Where existing cross frames shall be replaced, Contractor to field verify bolt hole elevations and locations at connection plates. Proposed top of diaphragm elevation shall be set by matching these bolt hole locations. Field measured bolt hole locations and provided spacing shall be used to fabricate proposed stools.
- Field drill  $1\frac{5}{16}$ "  $\phi$  hole in top flange of existing girder where stool bears on girder.
- Finger plate expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.

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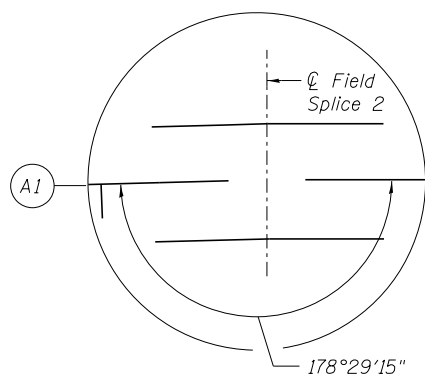
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**FINGER PLATE ELEVATION PIER 4 (2 OF 2)**  
**STRUCTURE NO. 016-2457**

SHEET NO. SD53 OF SD83 SHEETS

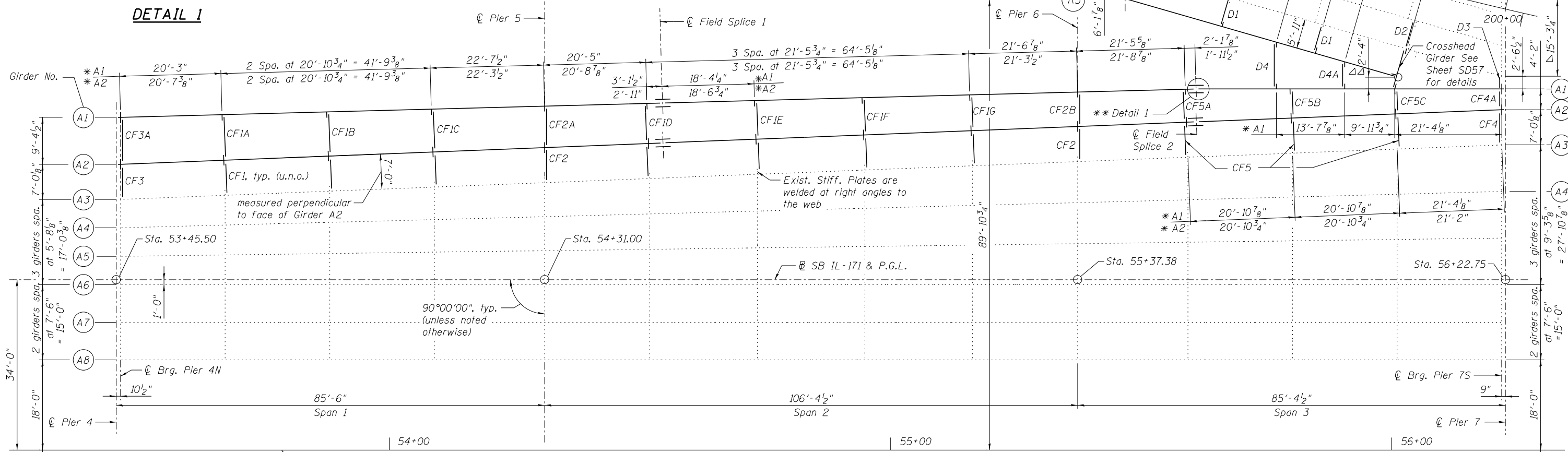
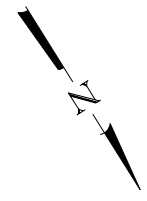
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| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 428       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

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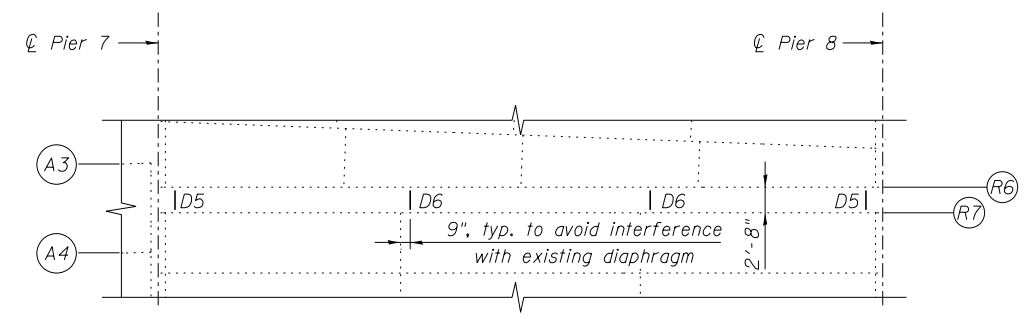


\*\* Kink Point Sta. 55+61.00  
Offset 72.08' Lt.  
of IL-171

\* All spacing measured along face of girder/beam



**FRAMING PLAN - UNIT A SPANS 1-3**



**PARTIAL FRAMING PLAN - UNIT C SPAN 4**

Δ Dimension measured from Beam R4 at C Brg. Pier 7S to Beam R5 at C Brg. Pier 39N  
 ΔΔ Dimension measured from End of Beam R5 at C Cross Head Girder to C of Web for Girder A1.

**NOTES:**

1. Field verify all existing stiffener plate locations on girder A3 before fabricating proposed girders. Adjust location of cross frames so that connection to existing stiffener can be made.
2. Proposed Cross frame shall be placed perpendicular to Girder A2, except as noted otherwise. At all support locations all cross frames shall be placed parallel to C Brg.
3. Proposed Diaphragms shall be placed perpendicular to Beam R5, except as noted otherwise. At all support locations all diaphragms shall be placed parallel to C Brg. Diaphragm D4 & D4-A shall be placed perpendicular to Girder A1.
4. See Sheet SD56 for cross frame details.
5. See Sheets SD57 & SD58 for diaphragm details.
6. See Sheet SD59 for splice details.
7. See Sheets SD63-SD68 for structural steel removal and repairs.
8. All cross frames shall be installed as steel is erected and secured with erection pins and bolts. Individual cross frames at supports may be temporarily disconnected to install bearing anchor rods.

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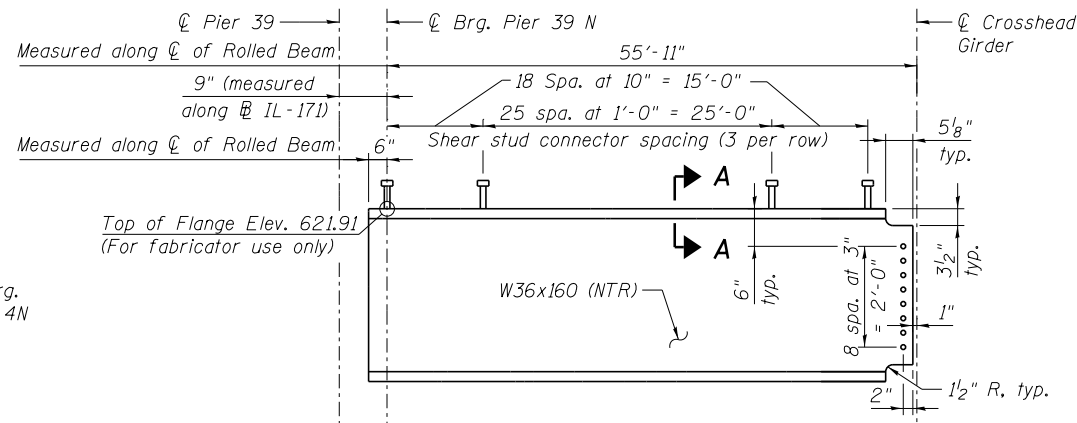
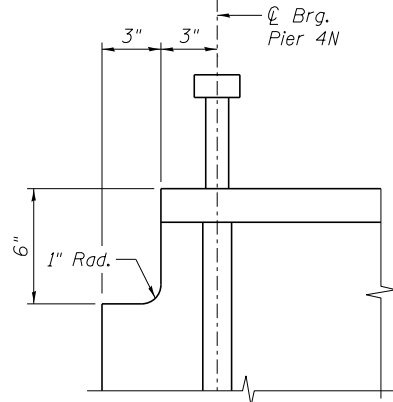
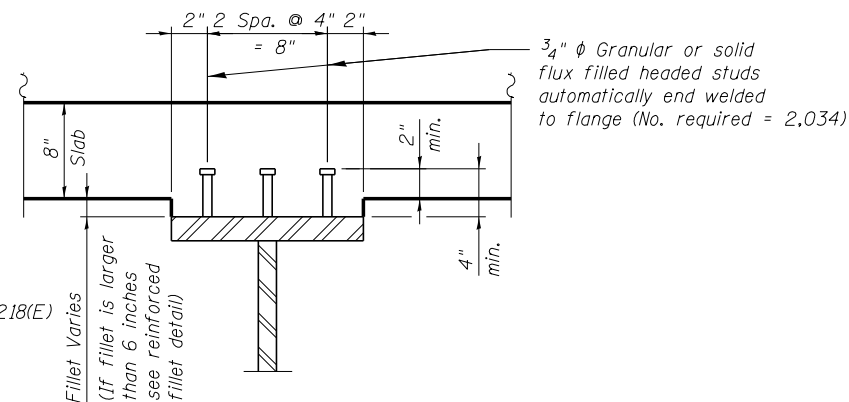
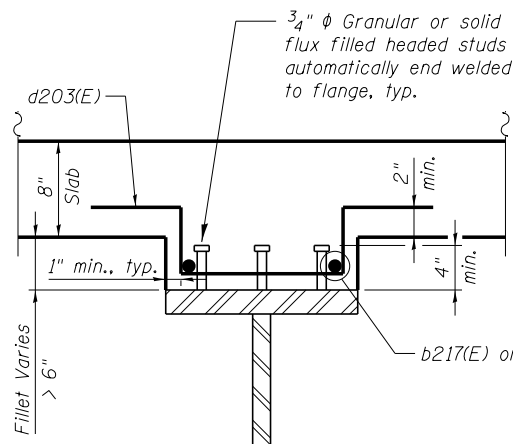
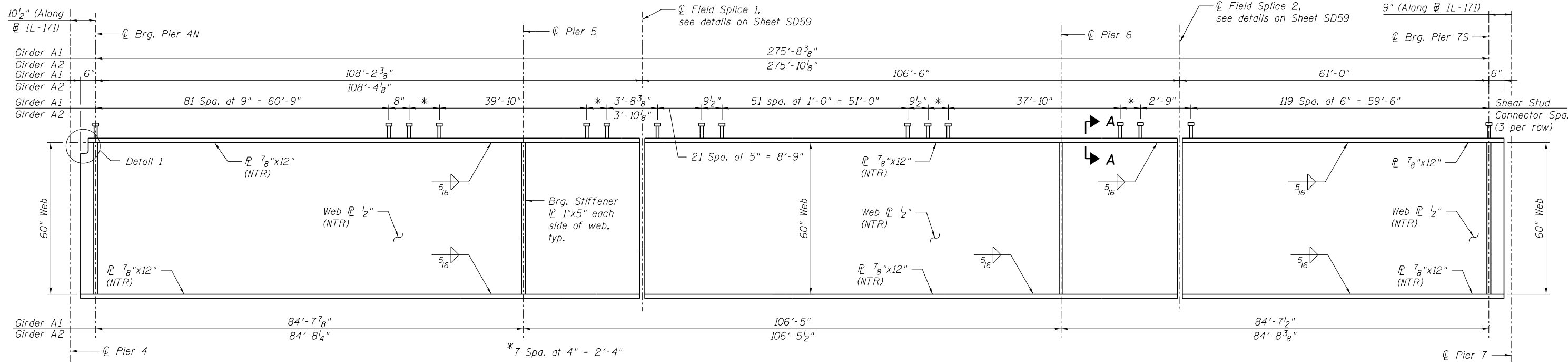
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**FRAMING PLAN  
STRUCTURE NO. 016-2457**

SHEET NO. SD54 OF SD83 SHEETS

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 429       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

Y:\chicago\100005\100093\Eng\_Docs\Phase\_1\16-2456-2457-1st-Ave-over-Des-Plaines-River-Valley\Final\0162457\_60J16\_054\_Framing Plan\_Unit\_A.dgn 5/18/14 2:18:42 PM 8/6/2014



- NOTES:**
1. Load carrying components designated "NTR" shall conform to the Impact Testing Requirements, Zone 2.
  2. All flange plates and web plates shall be AASHTO M270 Grade 50 steel.
  3. Beam R5 shall be AASHTO M270 Grade 50 steel.
  4. See sheets SD61 for existing girder stud placement.

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|   |                        |                |             |
|---|------------------------|----------------|-------------|
| FILE NAME =                             | USER NAME = ksnider    | DESIGNED - DTS | REVISIONS - |
| 0162457.60J16.055.Girder.Elevations.dgn | PLOT SCALE =           | CHECKED - MJF  | REVISIONS - |
|   | PLOT DATE = 12/20/2013 | DRAWN - DTS    | REVISIONS - |
|   |                        | CHECKED - KMP  | REVISIONS - |

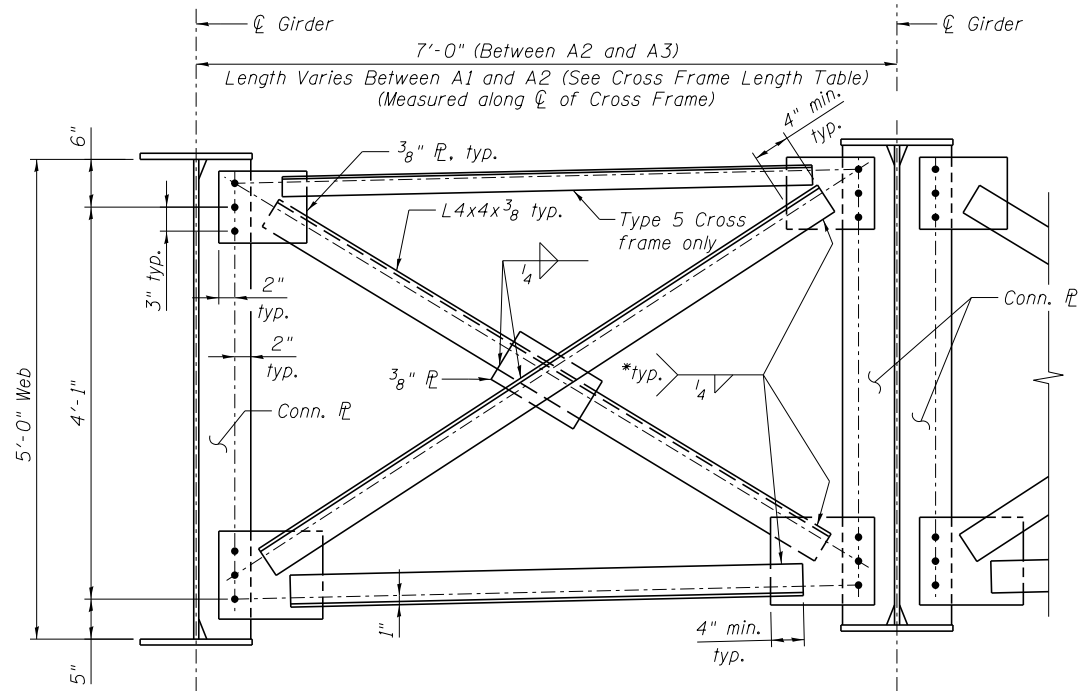
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**GIRDER ELEVATION & STEEL DETAILS**  
**STRUCTURE NO. 016-2457**

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821          | 430       |
| CONTRACT NO. 60J16        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

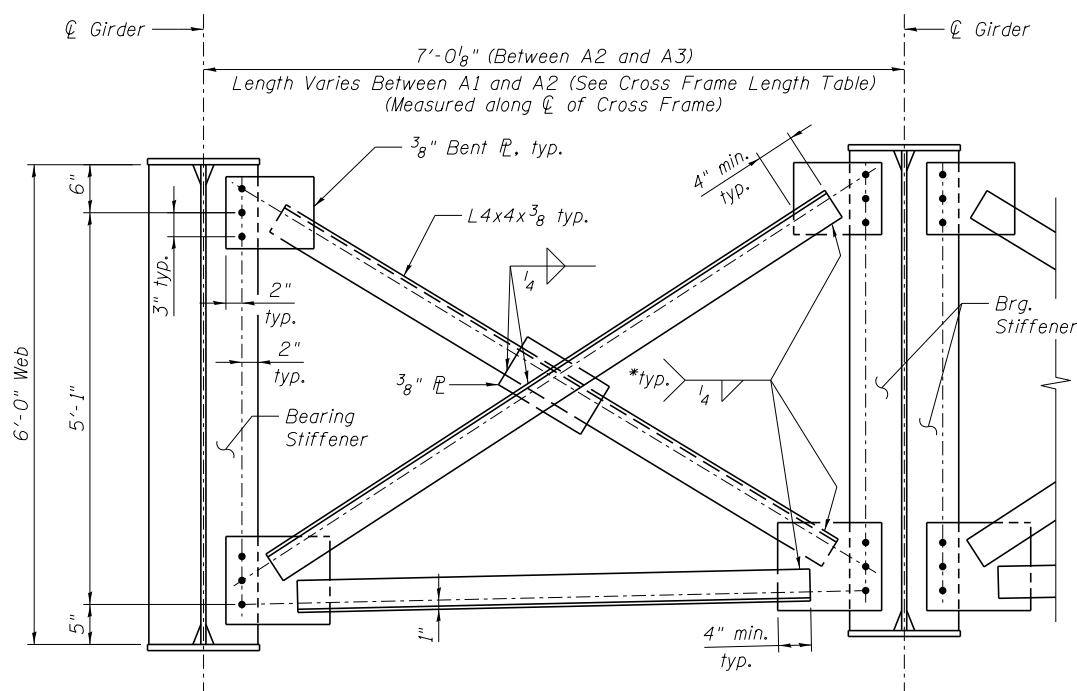
SHEET NO. SD55 OF SD83 SHEETS

Y:\chicago\100005\10093\Eng\_Docs\Phase\_1\SN\_016-2456-2457-1st\_Ave\_over\_Des\_Plaines\_River\_Valley\Final\0162457\_Final\0162457\_055-Girder-Elevations.dgn 3:49:03 PM 8/6/2014



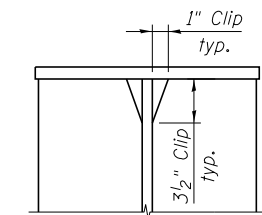
**TYPE CF1 & CF1A-CF1G AND  
TYPE CF5 & CF5A-CF5C CROSS FRAME**

(No. Req'd CF1 = 7) (No. Req'd CF5 = 3)  
(No. Req'd CF1A-CF1G = 1 each) (No. Req'd CF5A-CF5C = 1 each)



**TYPE CF2, CF2A & CF2B  
CROSS FRAME AT PIERS 5 & 6**

(No. Req'd CF2 = 2)  
(No. Req'd CF2A & CF2B = 1 each)

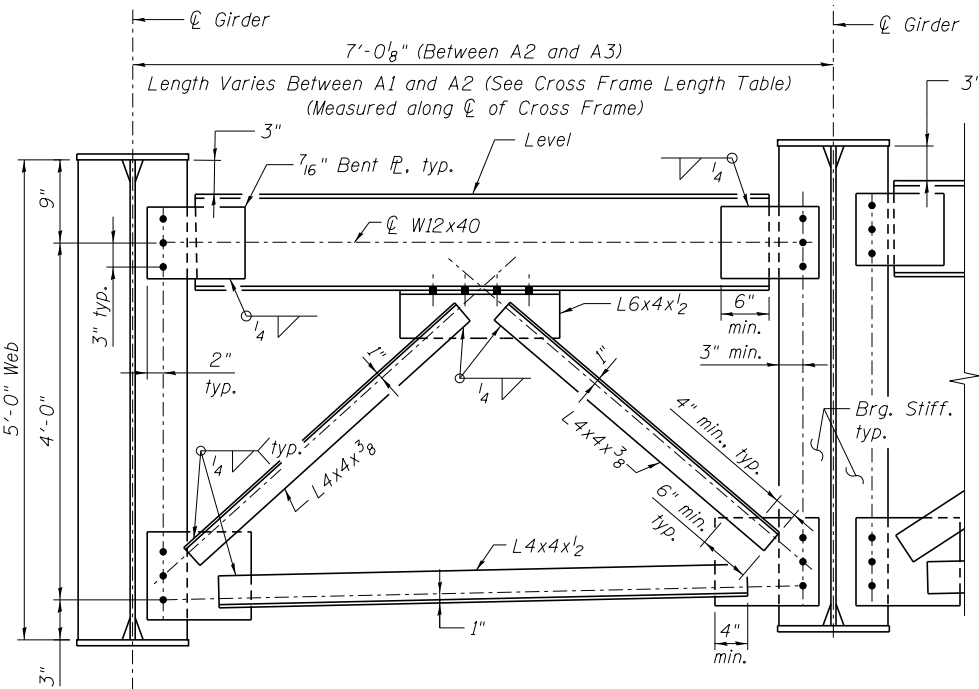


**DETAIL 1**  
(Typical top & bottom flanges)

**CROSS FRAME LENGTH**

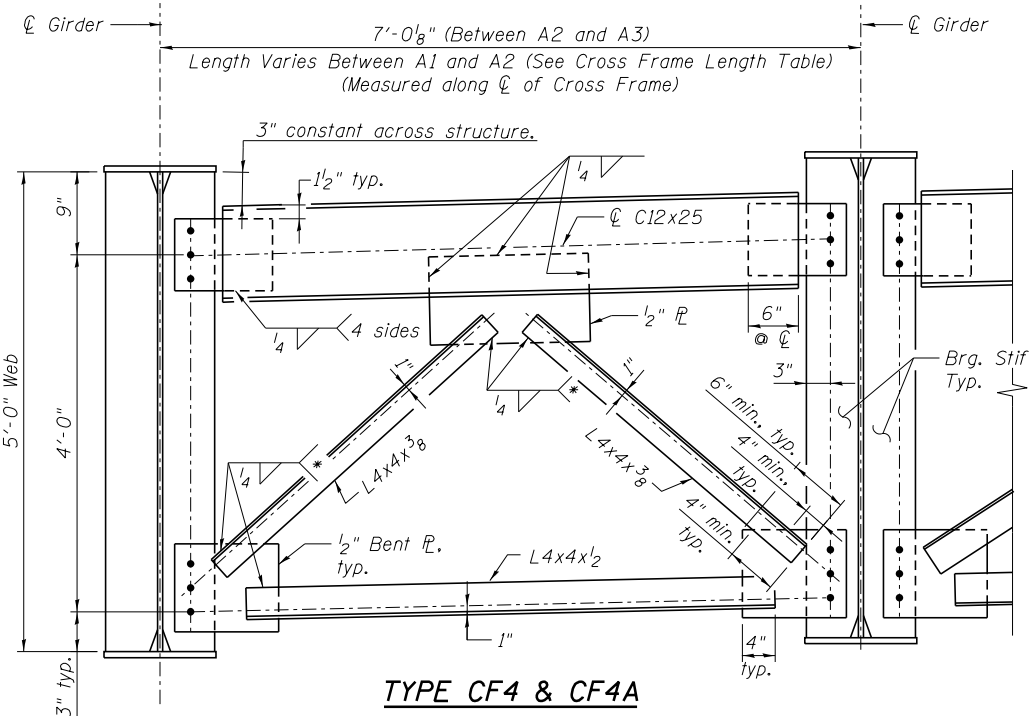
| Cross Frame | Length     |
|-------------|------------|
| CF1         | 7'-0"      |
| CF1A        | 9'-1 1/4"  |
| CF1B        | 8'-10"     |
| CF1C        | 8'-6 3/4"  |
| CF1D        | 8'-0"      |
| CF1E        | 7'-8 5/8"  |
| CF1F        | 7'-5 1/4"  |
| CF1G        | 7'-1 7/8"  |
| CF2         | 7'-0 1/8"  |
| CF2A        | 8'-3 1/4"  |
| CF2B        | 6'-10 1/2" |
| CF3         | 7'-0 1/8"  |
| CF3A        | 9'-4 1/2"  |
| CF4         | 7'-0 1/8"  |
| CF4A        | 4'-1 1/8"  |
| CF5         | 7'-0"      |
| CF5A        | 6'-7 1/8"  |
| CF5B        | 5'-9 7/8"  |
| CF5C        | 4'-11 3/4" |

(Measured along  $\bar{C}$  of Cross Frame)



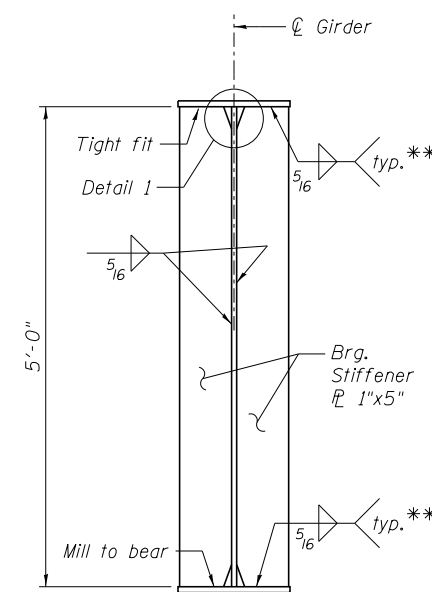
**TYPE CF3 & CF3A  
CROSS FRAME AT PIER 4S**

(No. Req'd CF3 & CF3A = 1 each)

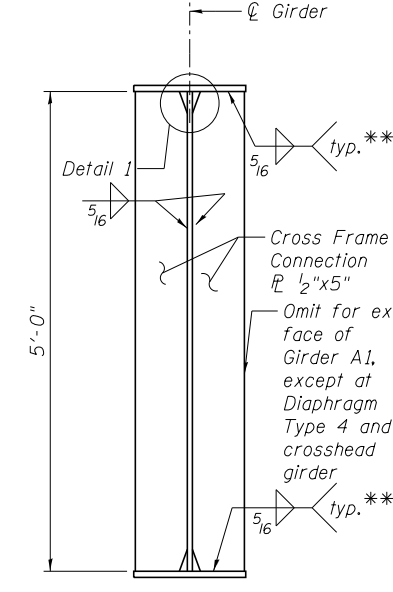


**TYPE CF4 & CF4A  
CROSS FRAME AT PIER 7N**

(No. Req'd CF4 & CF4A = 1 each)



**BEARING STIFFENER**  
(No. of Plates Required = 16)



**CONNECTION PLATE DETAIL**  
(No. of Plates Req'd = 33)

**NOTES:**

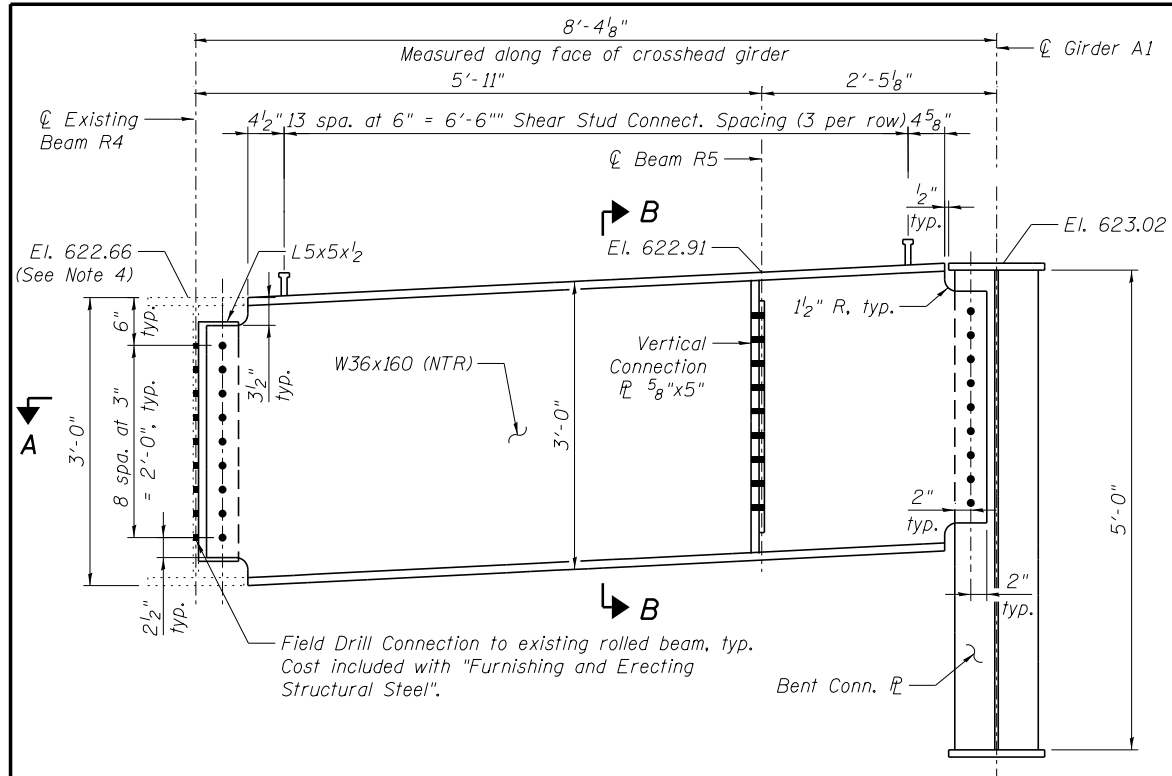
- All cross frames between girders shall be installed as steel is erected and secured with erection pins and bolts. Individual cross frames at supports may be temporarily disconnected to install bearing anchor rods.
- Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 3/4"  $\phi$ , holes 15/16"  $\phi$ . Two hardened washers required for each set of oversized holes.
- See Sheet SD67 for Cross Frame Connection Detail to Existing Steel.

\* Fillet weld angles along 3 sides on one face of gusset plate.  
\*\* Terminate weld 1/4" from edges of stiffener flange.

|             |                     |                |             |
|-------------|---------------------|----------------|-------------|
| FILE NAME = | USER NAME = ksnider | DESIGNED - DTS | REVISIONS - |
|             |                     | CHECKED - MJF  | REVISIONS - |
|             |                     | DRAWN - KMS    | REVISIONS - |
|             |                     | CHECKED - KMP  | REVISIONS - |

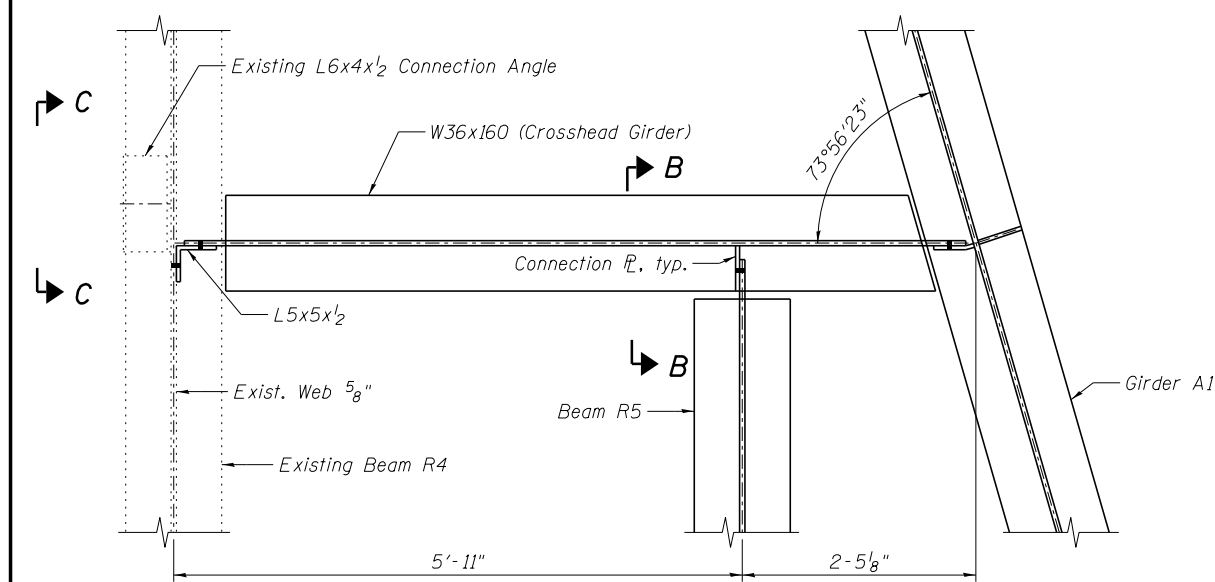
|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 431       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

Y:\chicago\100005\10093\Eng\_Docs\Phase\_1\11\SN\_016-2456-2457-1st\_Ave.-over\_Des\_Plumes-River\_Valley\Final\0162457-Final\0162457-Steel\_CrossFrame\_Details.dgn 3/4/14 PM 8/6/2014

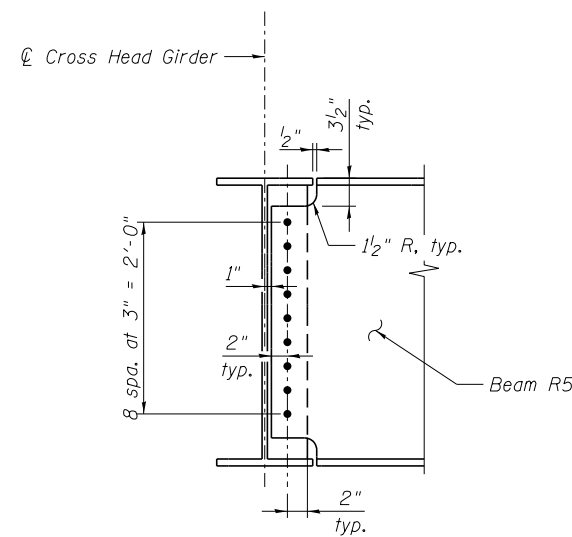
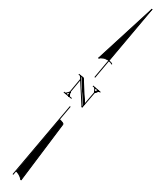


**CROSS-HEAD GIRDER ELEVATION**

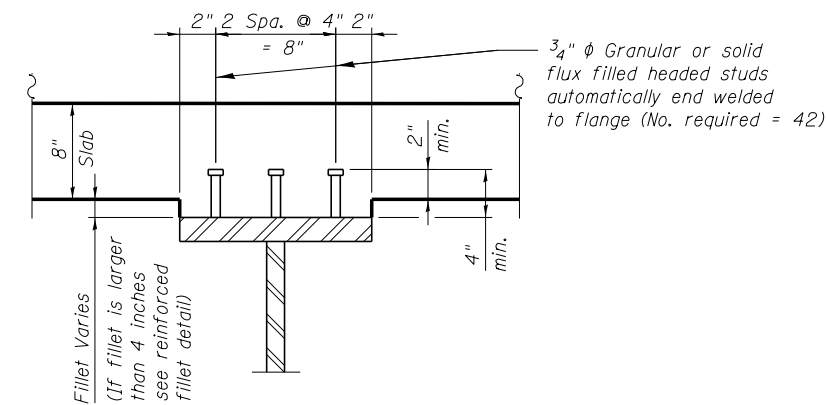
(Looking West)



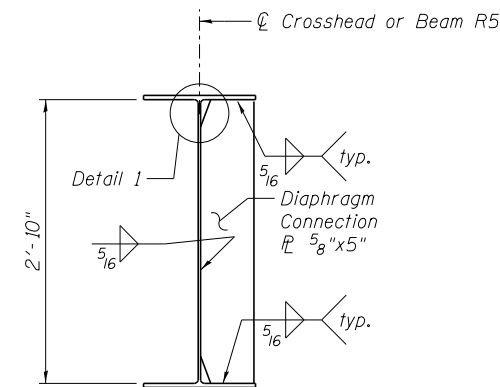
**SECTION A-A**



**SECTION B-B**

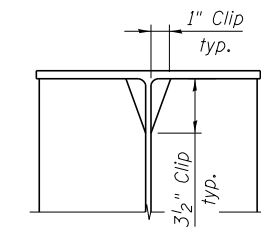


**SHEAR STUD DETAILS**



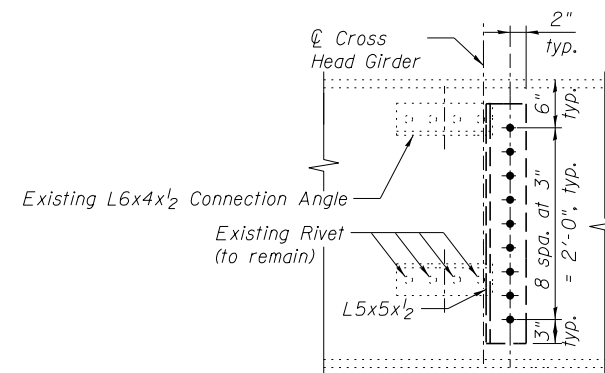
**BEAM CONNECTION PLATE DETAIL**

(No. of Plates Req'd = 3)



**DETAIL 1**

(Typical top & bottom flanges)



**VIEW C-C**

**NOTES:**

1. Cross Head Girder shall be AASHTO Grade 50 Steel.
2. All diaphragms between girders shall be installed as steel is erected and secured with erection pins and bolts.
3. Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 7/8" φ, holes 1 5/16" φ. Two hardened washers required for each set of oversized holes.
4. Contractor to verify elevations in field after deck removal and prior to fabrication to ensure proper fit up. Elevations given do not include concrete deflections.

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|             |                     |                    |           |
|-------------|---------------------|--------------------|-----------|
| FILE NAME = | USER NAME = ksnider | DESIGNED - DTS/MJF | REVISED - |
|             |                     | CHECKED - KMP      | REVISED - |
|             |                     | DRAWN - DTS        | REVISED - |
|             |                     | CHECKED - KMP      | REVISED - |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

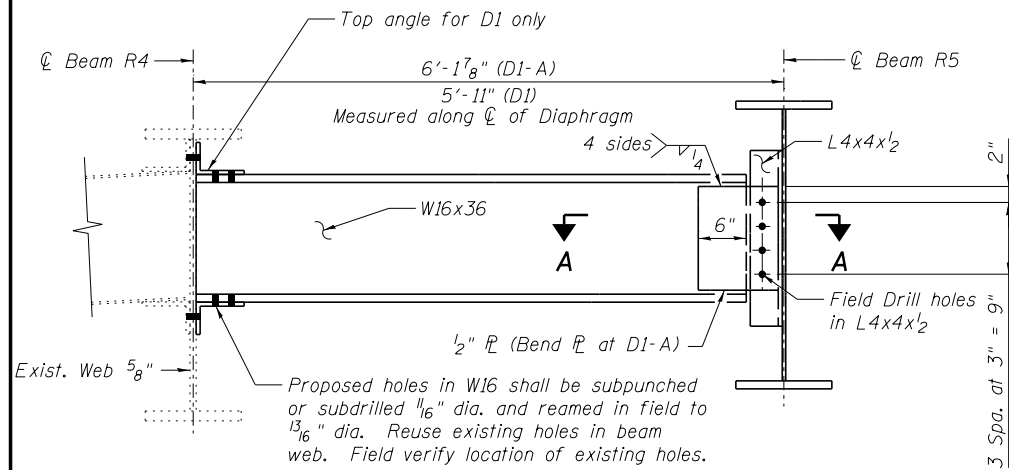
**STEEL DIAPHRAGM DETAILS (1 OF 2)  
STRUCTURE NO. 016-2457**

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821          | 432       |
| CONTRACT NO. 60J16        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

SHEET NO. SD57 OF SD83 SHEETS

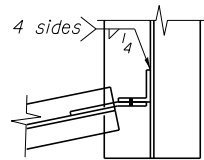
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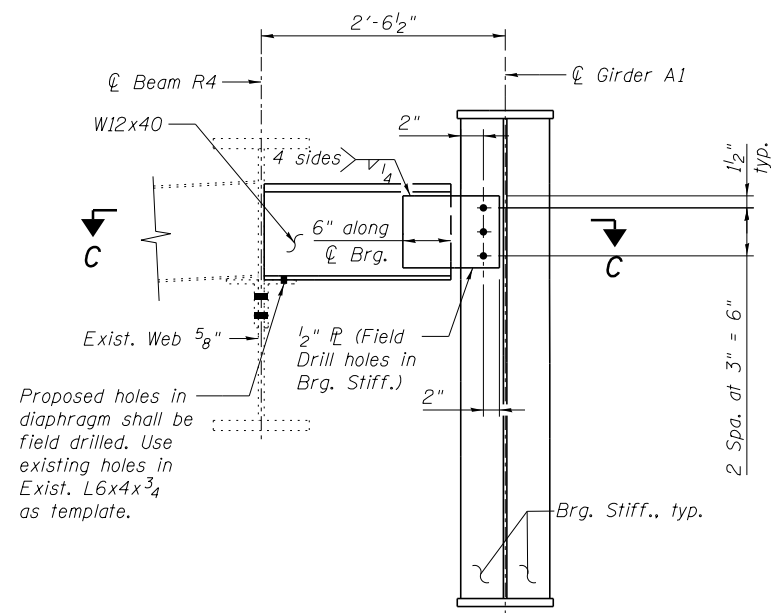
**TYPE D1 & D1A DIAPHRAGM**

(No. Req'd = 3)



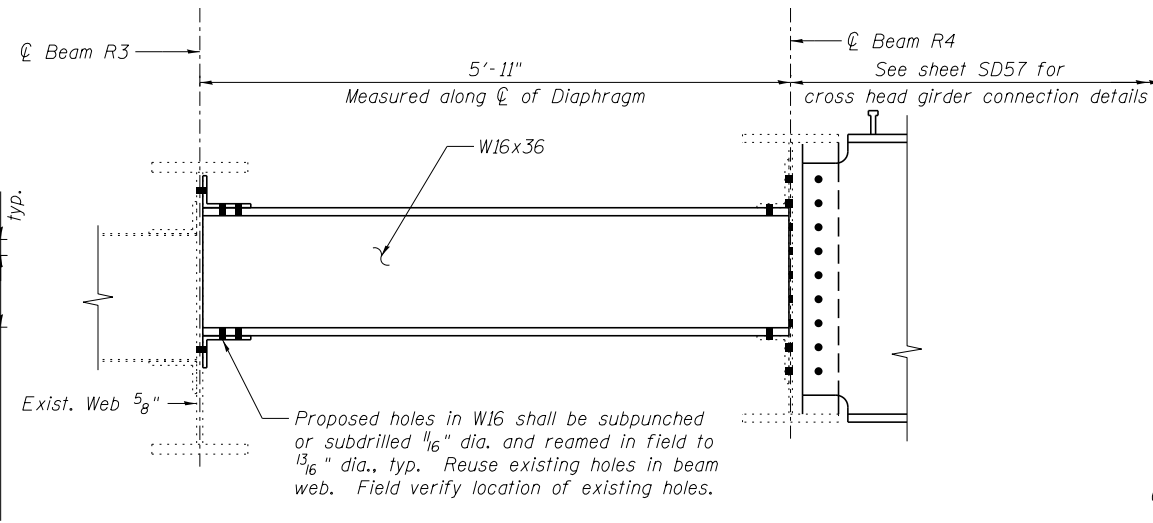
**SECTION A-A**

(Type D1A Shown)



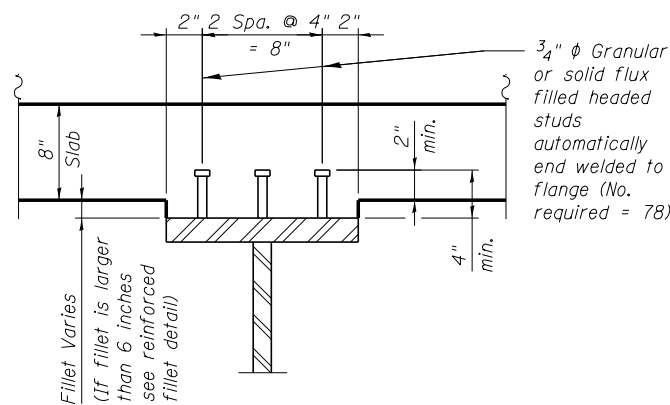
**TYPE D3 DIAPHRAGM**

(No. Req'd = 1)

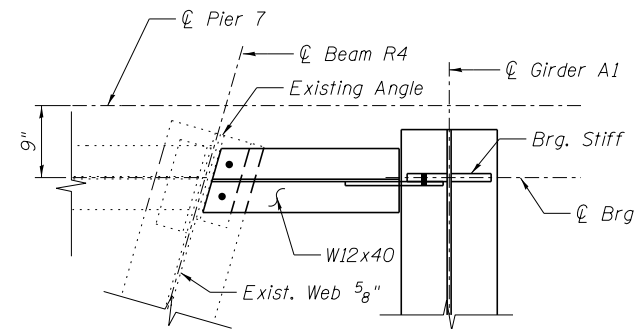


**TYPE D2 DIAPHRAGM**

(No. Req'd = 1)



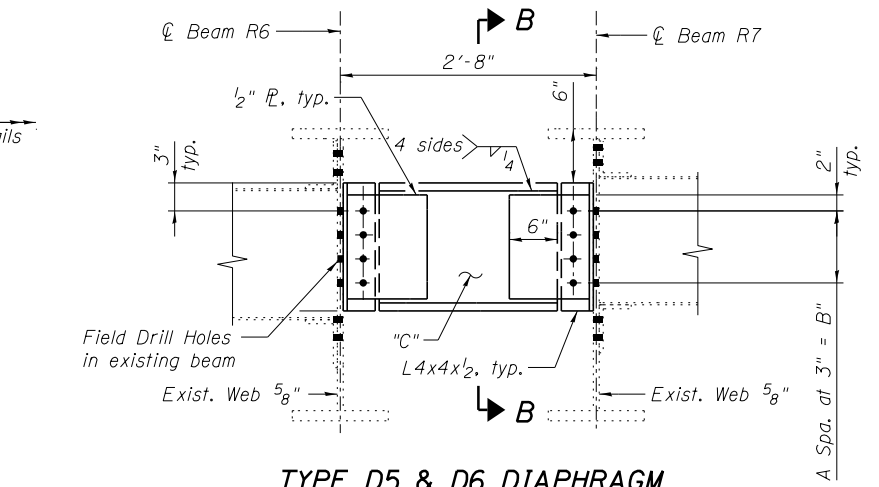
**SHEAR STUD DETAILS**



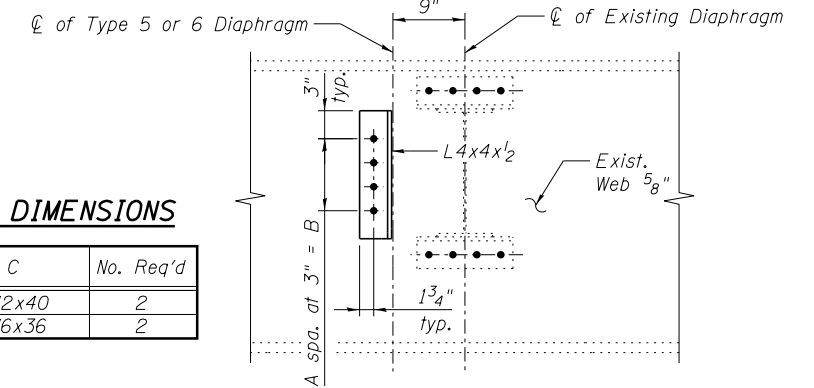
**SECTION C-C**

**TYPE 5 & 6 DIAPHRAGM DIMENSIONS**

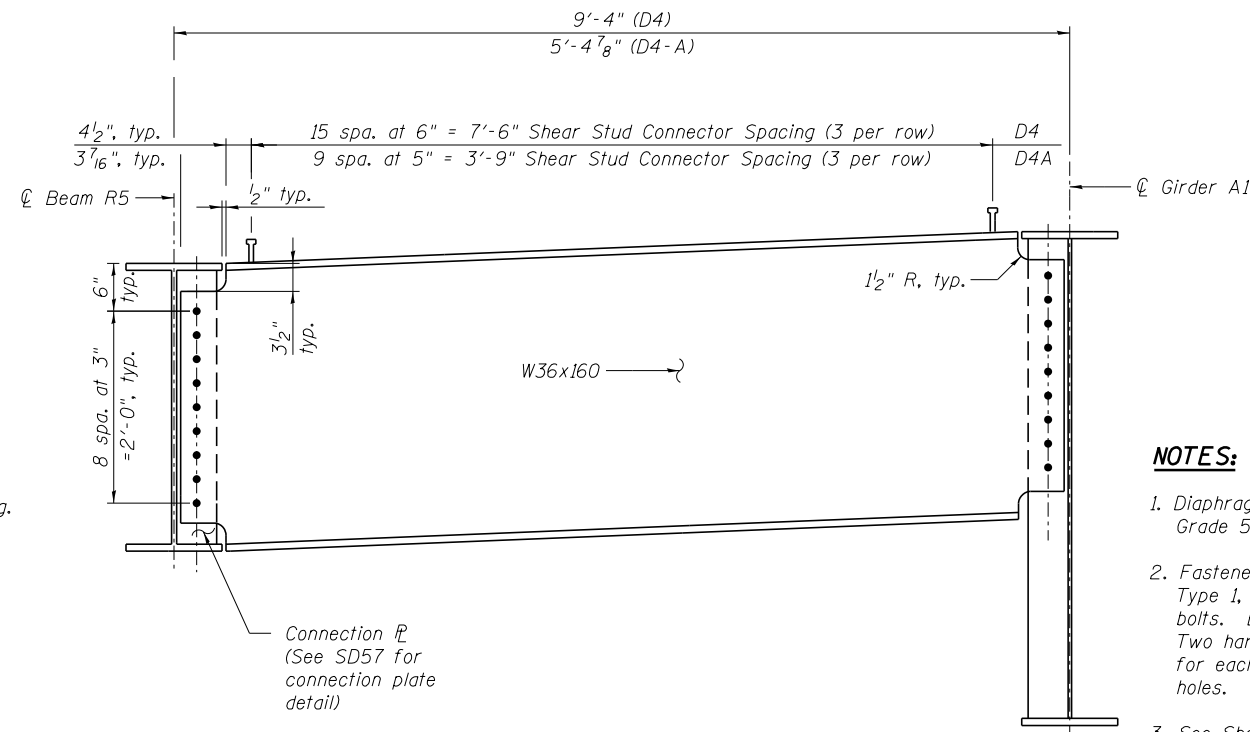
| Type | A | B  | C      | No. Req'd |
|------|---|----|--------|-----------|
| 5    | 2 | 6" | W12x40 | 2         |
| 6    | 3 | 9" | W16x36 | 2         |



**TYPE D5 & D6 DIAPHRAGM**



**VIEW B-B**



**TYPE D4 & D4A DIAPHRAGM**

(No. Req'd = 2)

**NOTES:**

- Diaphragms shall be AASHTO Grade 50 Steel.
- Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 3/4" φ, holes 15/16" φ. Two hardened washers required for each set of oversized holes.
- See Sheet SD68 for existing diaphragm details.
- Cost of field drilling included with "Furnishing and Erecting Structural Steel".

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|  |                        |                    |           |
|--|------------------------|--------------------|-----------|
| FILE NAME =                              | USER NAME = ksnider    | DESIGNED - DTS/MJF | REVISED - |
| 0162457.60J16.058.Steel.Diaphragm.Detail | PLT SCALE =            | CHECKED - KMP      | REVISED - |
|  | PLOT DATE = 12/20/2013 | DRAWN - DTS        | REVISED - |
|  |                        | CHECKED - KMP      | REVISED - |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

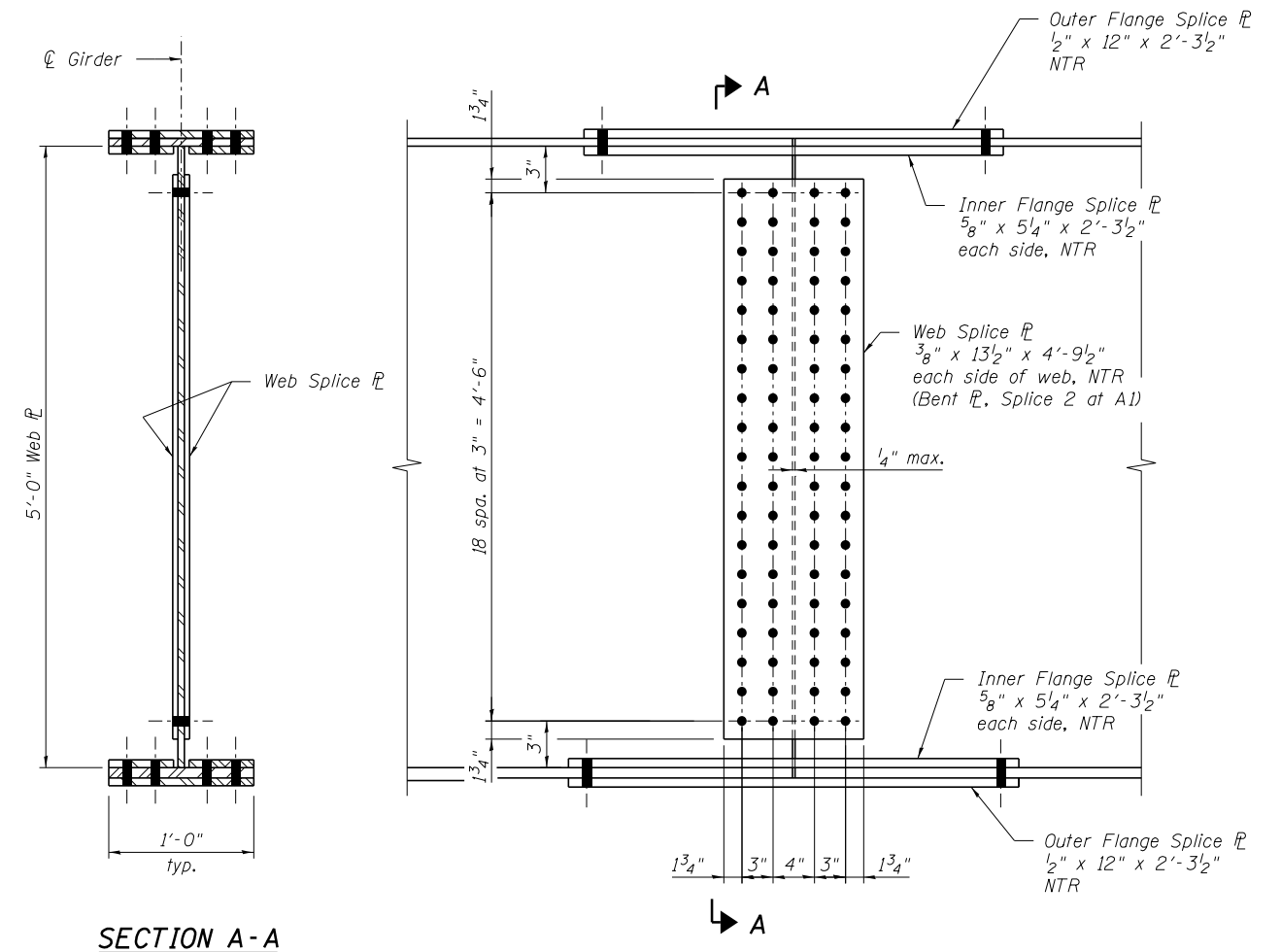
**STEEL DIAPHRAGM DETAILS (2 OF 2)  
STRUCTURE NO. 016-2457**

SHEET NO. SD58 OF SD83 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|-------------|--------|--------------|-----------|
| 372                | 2013-038B-R | COOK   | 821          | 433       |
| CONTRACT NO. 60J16 |             |        |              |           |

ILLINOIS FED. AID PROJECT

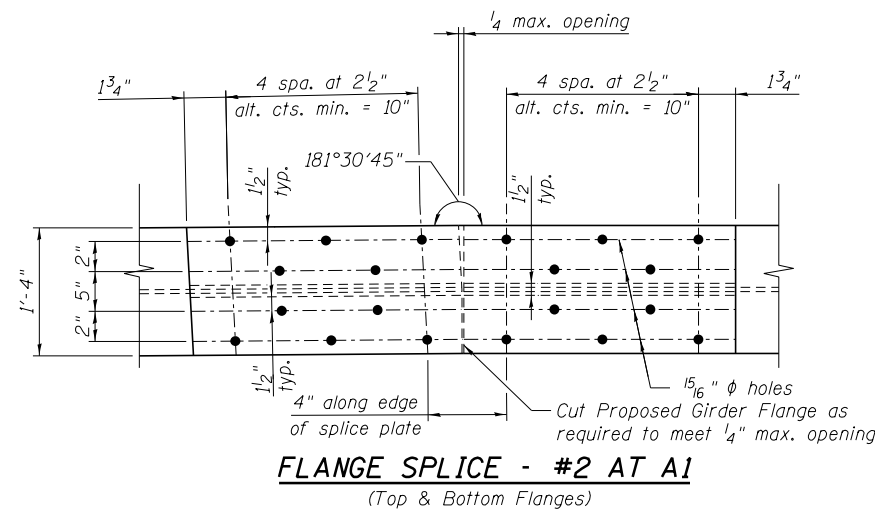
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SECTION A-A

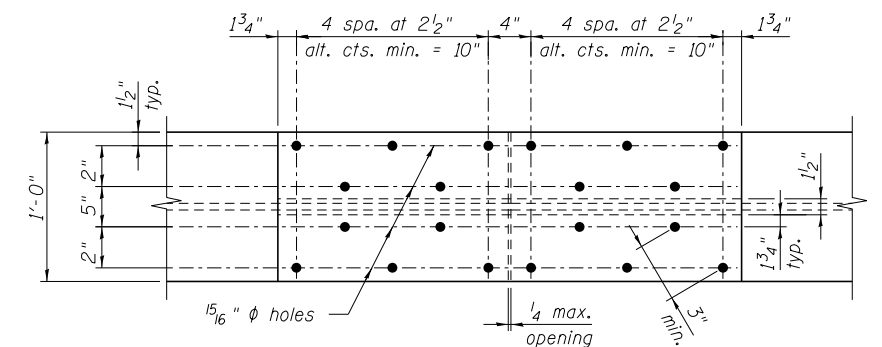
ELEVATION - FIELD SPLICE - GIRDER A1 & A2

(76 Bolts per Web Splice)



FLANGE SPLICE - #2 AT A1

(Top & Bottom Flanges)



FLANGE SPLICE #1 & #2

(Top & Bottom Flanges)  
(20 Bolts per Flange Splice)

TOP OF WEB ELEVATIONS

| Location         | Girder A1 | Girder A2 |
|------------------|-----------|-----------|
| CL. BRG. PIER 4N | 620.43    | 620.59    |
| CL. BRG. PIER 5  | 621.18    | 621.34    |
| FS #1            | 621.38    | 621.55    |
| CL. BRG. PIER 6  | 622.20    | 622.34    |
| FS #2            | 622.44    | 622.57    |
| CL. BRG. PIER 7S | 623.22    | 623.32    |

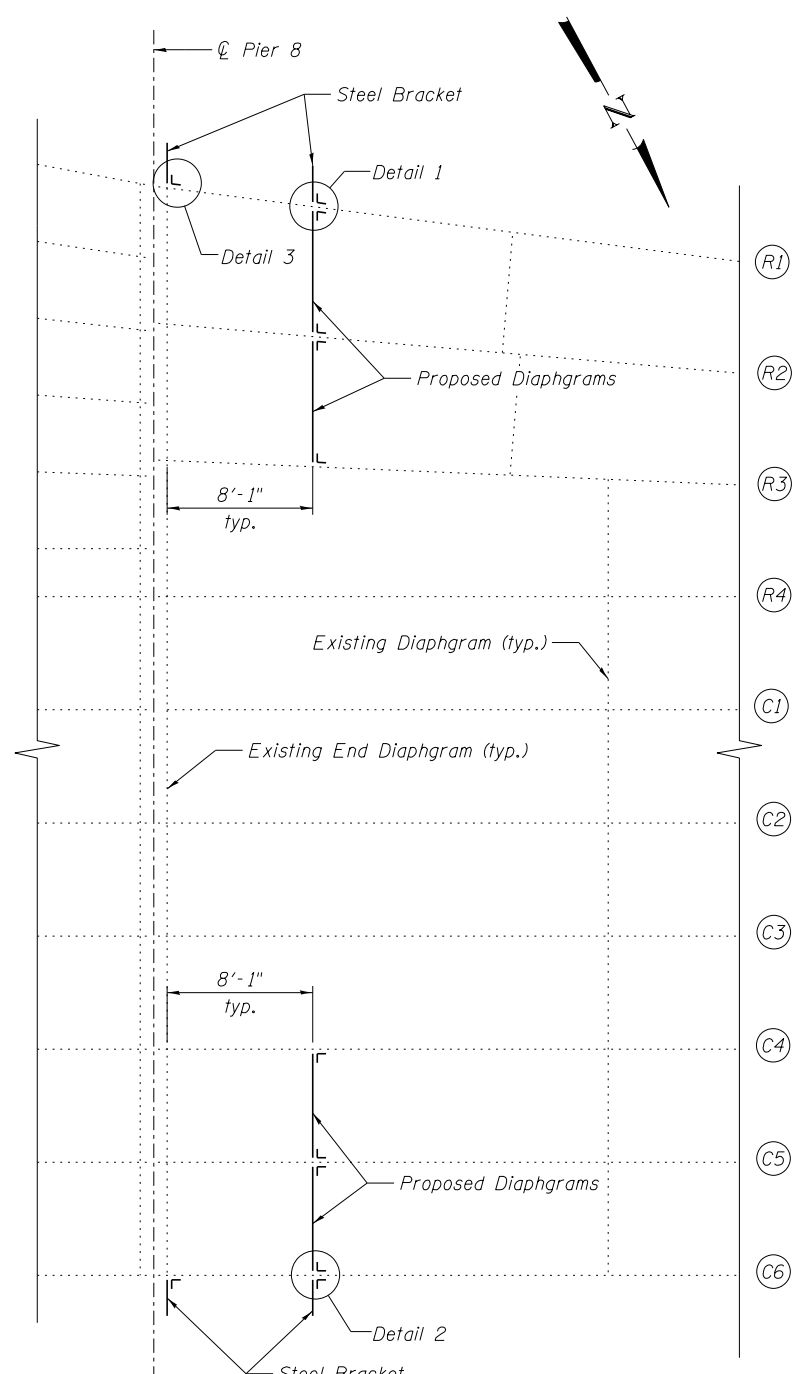
For fabricator use only.

NOTES:

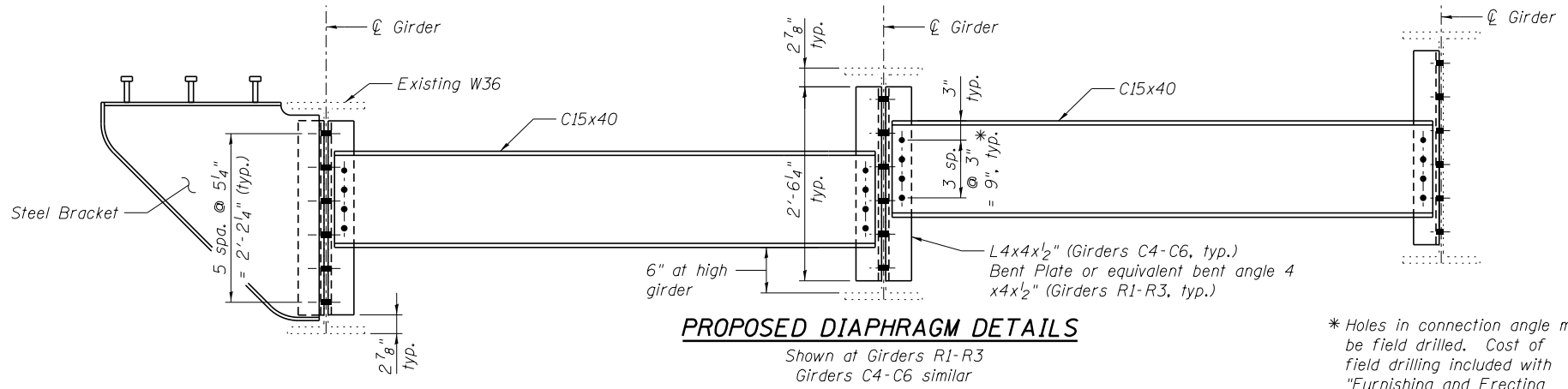
- All Splice Plates shall be AASHTO M270 Grade 50 steel.
- All Splice Bolts shall be 7/8"  $\phi$  ASTM A325 High Strength with 15/16"  $\phi$  holes.
- Load carrying components designated "NTR" shall conform to the Impact Testing Requirements, Zone 2.
- Girders A1 and A2 do not have any camber.

|                                     |                        |                |           |
|-------------------------------------|------------------------|----------------|-----------|
| FILE NAME =                         | USER NAME = ksnider    | DESIGNED - DTS | REVISED - |
| 0162457.60J16.059.Camber.Splice.dgn |                        | CHECKED - KMP  | REVISED - |
|                                     | PLOT SCALE =           | DRAWN - RMG    | REVISED - |
|                                     | PLOT DATE = 12/20/2013 | CHECKED - KMP  | REVISED - |

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 434       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

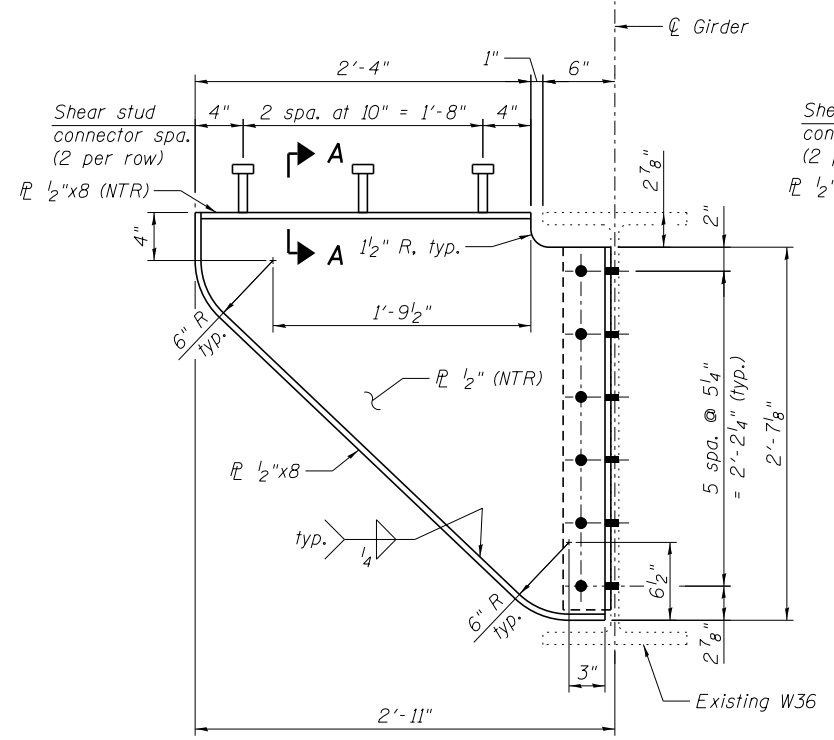


**PARTIAL FRAMING PLAN AND DIAPHRAGM DETAILS - PIER 8**

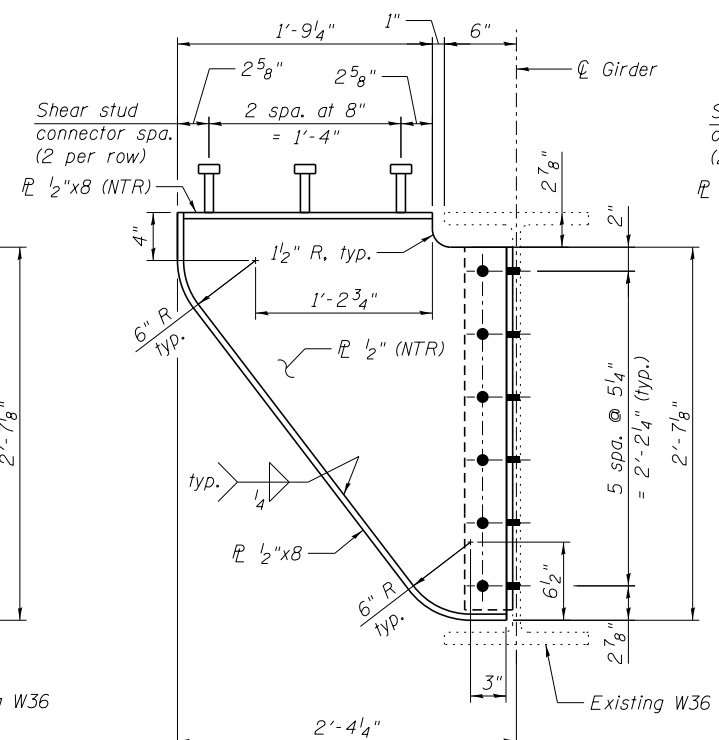


**PROPOSED DIAPHRAGM DETAILS**

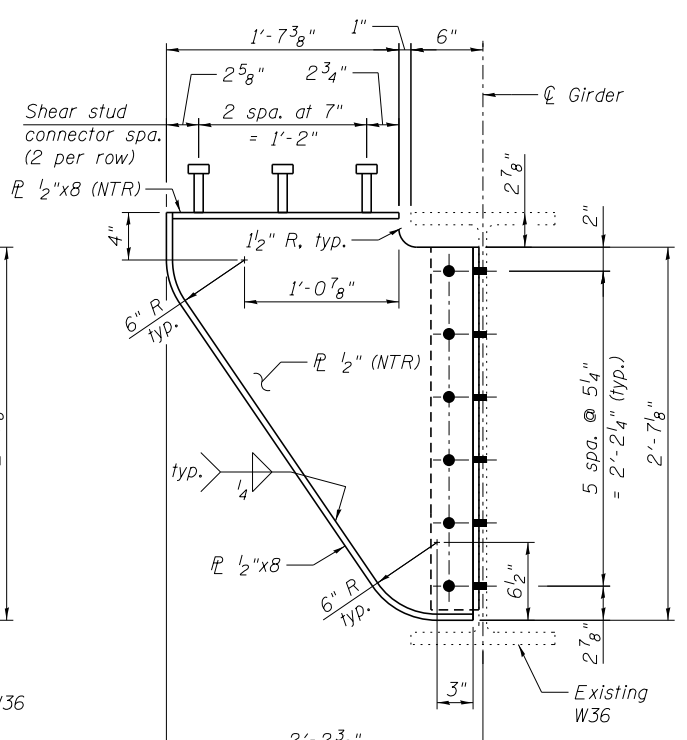
Shown at Girders R1-R3  
Girders C4-C6 similar



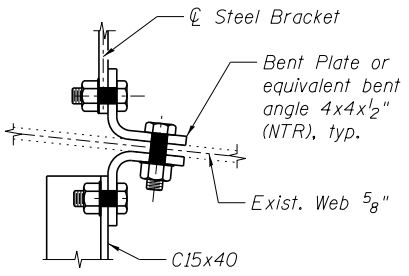
**NORTH AND SOUTH BRACKETS GIRDER C6**



**SOUTH BRACKET GIRDER R1**

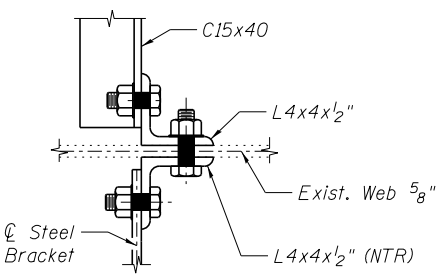


**NORTH BRACKET GIRDER R1**



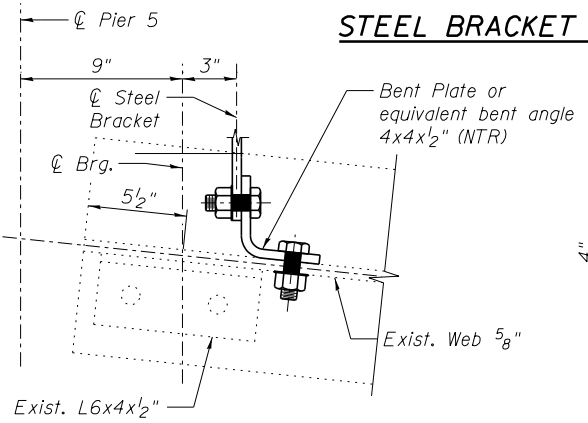
**DETAIL 1**

Shown at Girder R1.  
Girders R2 & R3 similar.  
Top and bottom flanges not shown for clarity.



**DETAIL 2**

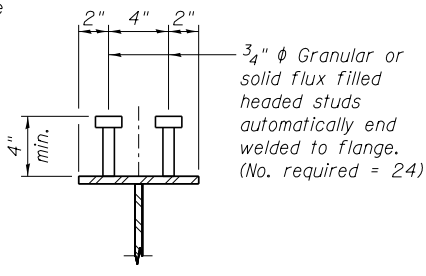
Shown at Girder C6.  
Girders C4 & C5 similar.  
Top and bottom flanges not shown for clarity.



**DETAIL 3**

Shown at Girder R1, Girder C6 similar

**STEEL BRACKET DETAILS**



**SECTION A-A**

**NOTES:**

1. Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 3/4" phi, holes 5/16" phi, unless noted otherwise.
2. For Sign Support Deck Bilster Details, see Sheet SD44.
3. For Sign Truss details, see Signing Plans.
4. Load carrying components designated "NTR" shall conform to the Impact Testing Requirements, Zone 2.
5. Holes in existing webs shall be field drilled, cost included with "Furnishing and Erecting Structural Steel".

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312-565-0450 Job No. 10093

|  |                        |                |           |
|--|------------------------|----------------|-----------|
| FILE NAME =                                | USER NAME = ksnider    | DESIGNED - AWH | REVISED - |
| 0162457.60J16.060.Framing_Diaphragm_Span_5 | SCALE =                | CHECKED - AJK  | REVISED - |
|  | PLOT DATE = 12/20/2013 | DRAWN - AWH    | REVISED - |
|  |                        | CHECKED - AJK  | REVISED - |

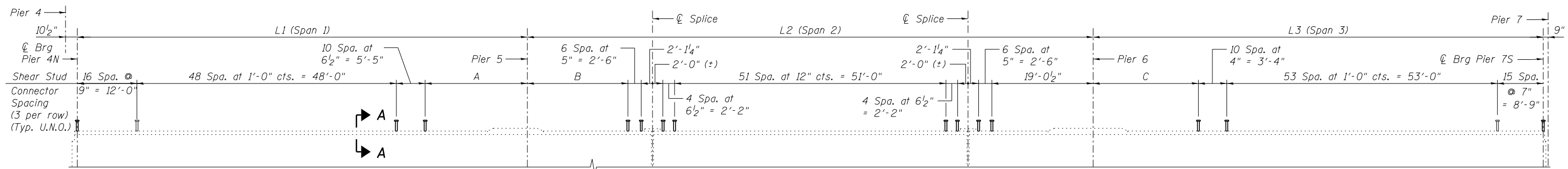
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**FRAMING PLAN AND DIAPHRAGM DETAILS - SPAN 5  
STRUCTURE NO. 016-2457**

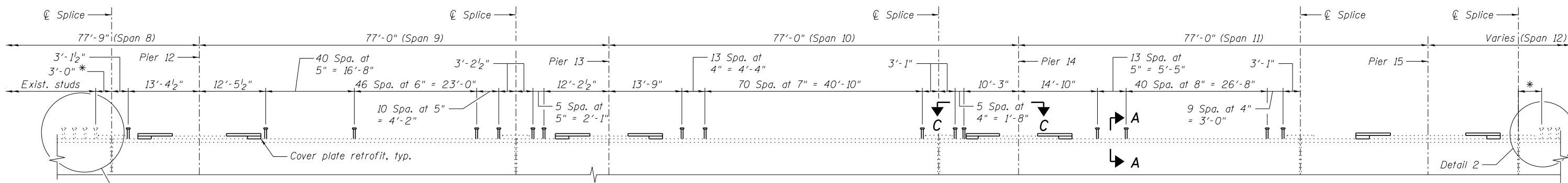
SHEET NO. SD60 OF SD83 SHEETS

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 435       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

Y:\chicago\100005\10093\Eng\_Docs\Phase\_1\1\SN\_016\_2456\_2457\_1st\_Ave\_over\_Des\_Plaines\_River\_Valley\Final\0162457\_60J16\_060.Framing\_Diaphragm\_Span\_5.dwg 8/6/2014 3:49:54 PM

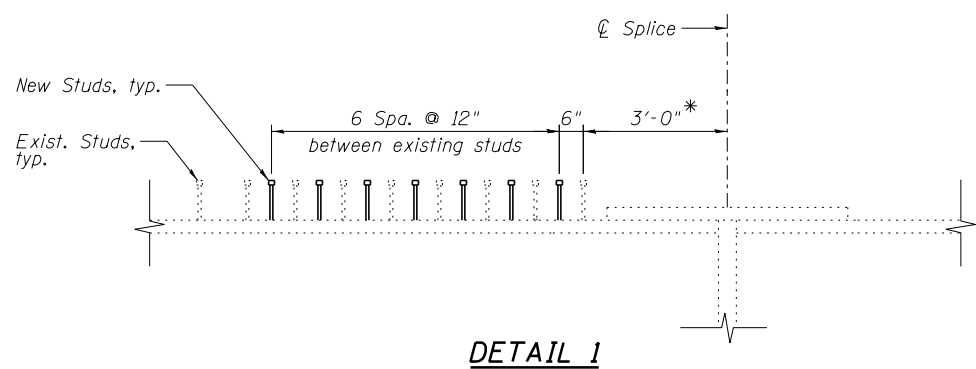


**PARTIAL GIRDER ELEVATION - GIRDERS A3-A8 - UNIT A (SPANS 1-3)**

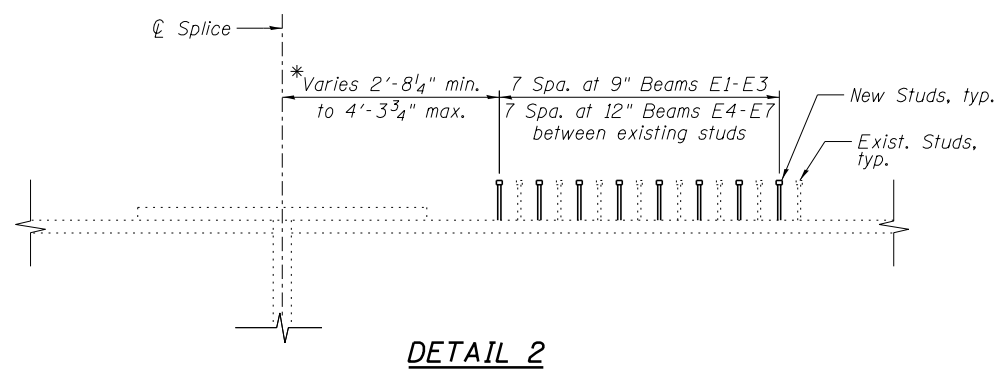


**PARTIAL GIRDER ELEVATION - UNIT E (SPANS 8-12)**

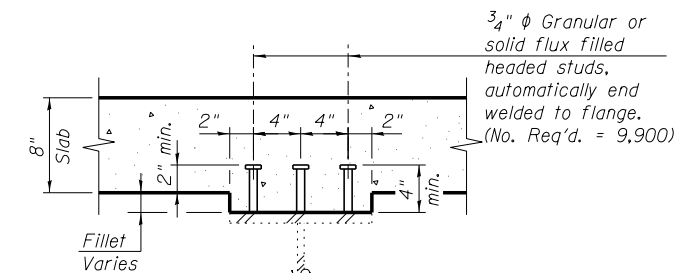
\* To be verified in field.



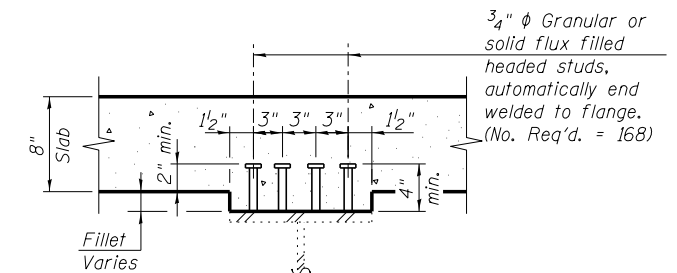
**DETAIL 1**



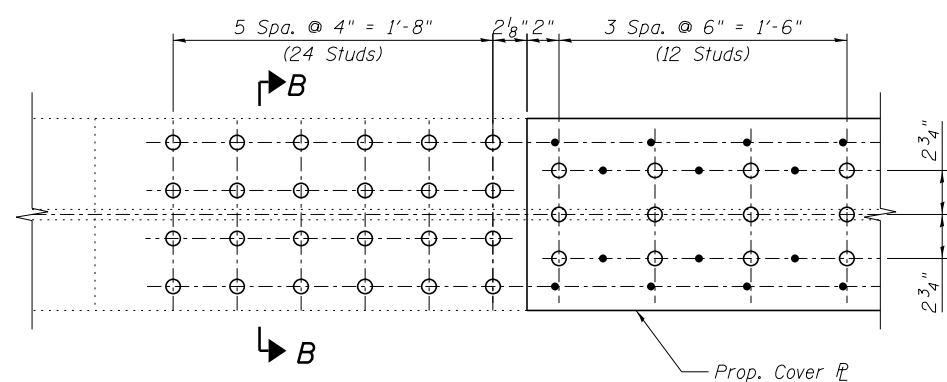
**DETAIL 2**



**SECTION A-A**



**SECTION B-B**



**SECTION C-C**

**GIRDERS A3-A8 STUD SPACING TABLE**

| Girder Line | Dimensions (Given along Girder) |             |            |            |             |            |
|-------------|---------------------------------|-------------|------------|------------|-------------|------------|
|             | L1                              | L2          | L3         | A          | B           | C          |
| A3          | 84'-8 1/4"                      | 106'-5 1/2" | 84'-8 1/4" | 19'-3 1/4" | 18'-10 1/2" | 19'-7 1/4" |
| A4          | 84'-7 7/8"                      | 106'-5"     | 84'-7 7/8" | 19'-2 7/8" | 18'-10"     | 19'-6 7/8" |
| A5          | 84'-7 5/8"                      | 106'-4 5/8" | 84'-7 5/8" | 19'-2 5/8" | 18'-9 5/8"  | 19'-6 5/8" |
| A6-A8       | 84'-7 1/2"                      | 106'-4 1/2" | 84'-7 1/2" | 19'-2 1/2" | 18'-9 1/2"  | 19'-6 1/2" |

**NOTE:**

Unit C beams have existing shear studs and no new shear studs shall be added.

**UNIT A - MAINLINE - GIRDER A3**

| EXISTING INTERIOR GIRDER MOMENT TABLE            |                    |            |        |            |        |            |
|--|--------------------|------------|--------|------------|--------|------------|
|  |                    | 0.4 Span 1 | Pier 5 | 0.5 Span 2 | Pier 6 | 0.6 Span 3 |
| $I_s$  | (in <sup>4</sup> ) | 23,358     | 31,973 | 26,207     | 37,832 | 29,078     |
| $I_c(n)$   | (in <sup>4</sup> ) | 54,720     | ----   | 60,480     | ----   | 66,291     |
| $I_c(3n)$  | (in <sup>4</sup> ) | 41,367     | ----   | 46,031     | ----   | 50,736     |
| $S_s$  | (in <sup>3</sup> ) | 760        | 1027   | 849        | 1206   | 938        |
| $S_c(n)$   | (in <sup>3</sup> ) | 1037       | ----   | 1137       | ----   | 1237       |
| $S_c(3n)$  | (in <sup>3</sup> ) | 952        | ----   | 1050       | ----   | 1147       |
| Z  | (in <sup>3</sup> ) | ----       | ----   | ----       | ----   | ----       |
| $\rho$   | (k/')              | 0.872      | 1.072  | 0.953      | 1.167  | 1.033      |
| $M \rho$   | ('k)               | 414.0      | 958.2  | 445.2      | 1071.4 | 502.3      |
| $s \rho$   | (k/')              | 0.130      | ----   | 0.130      | ----   | 0.130      |
| $M_s \rho$                                       | ('k)               | 68.7       | ----   | 74.4       | ----   | 67.3       |
| $M \underline{\underline{L}}$                    | ('k)               | 622.8      | 496.0  | 723.4      | 560.6  | 715.5      |
| $M_{IM}$   | ('k)               | 147.9      | 112.3  | 156.3      | 126.9  | 170.0      |
| $\int_3 [M \underline{\underline{L}} + i]$       | ('k)               | 1285       | 1014   | 1466       | 1146   | 1476       |
| $M_a$  | ('k)               | 2297.4     | 2563.6 | 2581.6     | 2882.4 | 2659.2     |
| * $M_u$  | ('k)               | 3284.1     | ----   | 4642.0     | ----   | 3982.7     |
| $f_s \rho$ non-comp                              | (ksi)              | 6.5        | 11.2   | 6.3        | 10.7   | 6.4        |
| $f_s \rho$ (comp)                                | (ksi)              | 0.9        | ----   | 0.9        | ----   | 0.7        |
| $f_s \int_3 [M \underline{\underline{L}} + M_I]$ | (ksi)              | 14.9       | 11.8   | 15.5       | 11.4   | 14.3       |
| $f_s$ (Overload)                                 | (ksi)              | 22.3       | 23.0   | 22.6       | 22.1   | 21.4       |
| ** $f_s$ (Total)                                 | (ksi)              | ----       | 29.9   | ----       | 28.7   | ----       |
| VR   | (k)                | 56.3       | ----   | 51.9       | ----   | 69.1       |

| EXISTING INTERIOR GIRDER REACTION TABLE |     |        |        |        |        |
|---|-----|--------|--------|--------|--------|
|   |     | Pier 4 | Pier 5 | Pier 6 | Pier 7 |
| $R \rho$                                | (k) | 31.4   | 110.6  | 121.0  | 37.3   |
| $R \underline{\underline{L}}$           | (k) | 41.0   | 60.2   | 66.5   | 50.6   |
| $R_I$                                   | (k) | 9.7    | 9.5    | 10.5   | 12.0   |
| $R_{Total}$                             | (k) | 82.0   | 180.3  | 198.0  | 99.9   |

\* Compact section  
\*\* Braced non-compact and partially braced section

**UNIT E - GIRDER E2**

| EXISTING INTERIOR GIRDER MOMENT TABLE            |                    |            |         |            |         |             |         |             |         |             |
|--|--------------------|------------|---------|------------|---------|-------------|---------|-------------|---------|-------------|
|  |                    | 0.4 Span 8 | Pier 12 | 0.5 Span 9 | Pier 13 | 0.5 Span 10 | Pier 14 | 0.5 Span 11 | Pier 15 | 0.6 Span 12 |
| $I_s$  | (in <sup>4</sup> ) | 11,974     | 13,626  | 9,040      | 12,217  | 9,040       | 12,217  | 9,040       | 16,623  | 13,275      |
| $I_c(n)$   | (in <sup>4</sup> ) | 30,521     | ----    | 23,064     | ----    | 23,064      | ----    | 23,064      | ----    | 35,843      |
| $I_c(3n)$  | (in <sup>4</sup> ) | 22,047     | ----    | 17,080     | ----    | 17,080      | ----    | 17,080      | ----    | 25,554      |
| $S_s$  | (in <sup>3</sup> ) | 707        | 733     | 504        | 664     | 504         | 664     | 504         | 879     | 830         |
| $S_c(n)$   | (in <sup>3</sup> ) | 989        | ----    | 721        | ----    | 721         | ----    | 721         | ----    | 1166        |
| $S_c(3n)$  | (in <sup>3</sup> ) | 898        | ----    | 655        | ----    | 655         | ----    | 655         | ----    | 1061        |
| Z  | (in <sup>3</sup> ) | ----       | ----    | ----       | ----    | ----        | ----    | ----        | ----    | ----        |
| $\rho$   | (k/')              | 0.951      | 1.110   | 0.913      | 1.096   | 0.913       | 1.096   | 0.913       | 1.174   | 1.058       |
| $M \rho$   | ('k)               | 439.0      | 667.6   | 159.0      | 521.1   | 252.7       | 457.5   | 100.5       | 869.2   | 641.3       |
| $s \rho$   | (k/')              | 0.148      | ----    | 0.148      | ----    | 0.148       | ----    | 0.148       | ----    | 0.148       |
| $M_s \rho$                                       | ('k)               | 72.8       | ----    | 36.0       | ----    | 45.8        | ----    | 30.2        | ----    | 95.2        |
| $M \underline{\underline{L}}$                    | ('k)               | 630.6      | 378.0   | 515.4      | 354.8   | 527.8       | 351.8   | 478.1       | 461.3   | 799.2       |
| $M_{IM}$   | ('k)               | 155.9      | 93.5    | 127.6      | 87.8    | 130.6       | 87.1    | 118.3       | 111.9   | 190.0       |
| $\int_3 [M \underline{\underline{L}} + i]$       | ('k)               | 1311       | 786     | 1072       | 738     | 1097        | 732     | 994         | 955     | 1649        |
| $M_a$  | ('k)               | 2369.4     | 1889.5  | 1646.5     | 1636.4  | 1814.6      | 1545.8  | 1462.2      | 2371.8  | 3100.8      |
| * $M_u$  | ('k)               | 2955.1     | ----    | 3047.1     | ----    | 3207.1      | ----    | 3157.1      | ----    | 3379.4      |
| $f_s \rho$ non-comp                              | (ksi)              | 7.4        | 10.9    | 3.8        | 9.4     | 6.0         | 8.3     | 2.4         | 11.9    | 9.3         |
| $f_s \rho$ (comp)                                | (ksi)              | 1.0        | ----    | 0.7        | ----    | 0.8         | ----    | 0.6         | ----    | 1.1         |
| $f_s \int_3 [M \underline{\underline{L}} + M_I]$ | (ksi)              | 15.9       | 12.9    | 17.8       | 13.3    | 18.3        | 13.2    | 16.5        | 13.0    | 17.0        |
| $f_s$ (Overload)                                 | (ksi)              | 24.3       | 23.8    | 22.3       | 22.7    | 25.1        | 21.5    | 19.5        | 24.9    | 27.3        |
| ** $f_s$ (Total)                                 | (ksi)              | ----       | 30.9    | ----       | 29.6    | ----        | 27.9    | ----        | 32.4    | ----        |
| VR   | (k)                | 62.4       | ----    | 66.1       | ----    | 66.3        | ----    | 66.8        | ----    | 70.8        |

| EXISTING INTERIOR GIRDER REACTION TABLE |     |         |         |         |         |         |         |
|---|-----|---------|---------|---------|---------|---------|---------|
|   |     | Pier 11 | Pier 12 | Pier 13 | Pier 14 | Pier 15 | Pier 16 |
| $R \rho$                                | (k) | 34.1    | 94.1    | 81.2    | 76.2    | 109.0   | 43.0    |
| $R \underline{\underline{L}}$           | (k) | 46.1    | 55.6    | 54.3    | 53.7    | 61.2    | 52.8    |
| $R_I$                                   | (k) | 11.4    | 10.0    | 9.7     | 9.6     | 10.7    | 12.5    |
| $R_{Total}$                             | (k) | 91.6    | 159.7   | 145.3   | 139.5   | 180.9   | 108.4   |

\* Compact section  
\*\* Braced non-compact and partially braced section

**UNIT C - GIRDER C5**

| EXISTING INTERIOR GIRDER MOMENT TABLE            |                    | 0.5 Span 7 |
|--|--------------------|------------|
| $I_s$  | (in <sup>4</sup> ) | 11,772     |
| $I_c(n)$   | (in <sup>4</sup> ) | 29,822     |
| $I_c(3n)$  | (in <sup>4</sup> ) | 21,247     |
| $S_s$  | (in <sup>3</sup> ) | 723        |
| $S_c(n)$   | (in <sup>3</sup> ) | 1001       |
| $S_c(3n)$  | (in <sup>3</sup> ) | 907        |
| Z  | (in <sup>3</sup> ) | ----       |
| $\rho$   | (k/')              | 0.855      |
| $M \rho$   | ('k)               | 583.8      |
| $s \rho$   | (k/')              | 0.130      |
| $M_s \rho$                                       | ('k)               | 89.0       |
| $M \underline{\underline{L}}$                    | ('k)               | 602.1      |
| $M_{IM}$   | ('k)               | 150.2      |
| $\int_3 [M \underline{\underline{L}} + i]$       | ('k)               | 1254       |
| $M_a$  | ('k)               | 2504.5     |
| * $M_u$  | ('k)               | 3823.0     |
| $f_s \rho$ non-comp                              | (ksi)              | 9.7        |
| $f_s \rho$ (comp)                                | (ksi)              | 1.2        |
| $f_s \int_3 [M \underline{\underline{L}} + M_I]$ | (ksi)              | 15.0       |
| $f_s$ (Overload)                                 | (ksi)              | 25.9       |
| ** $f_s$ (Total)                                 | (ksi)              | ----       |
| VR   | (k)                | 50.8       |

| EXISTING INTERIOR GIRDER REACTION TABLE |     |         |         |
|---|-----|---------|---------|
|   |     | Pier 10 | Pier 11 |
| $R \rho$                                | (k) | 36.6    | 36.6    |
| $R \underline{\underline{L}}$           | (k) | 40.3    | 40.3    |
| $R_I$                                   | (k) | 10.0    | 10.0    |
| $R_{Total}$                             | (k) | 86.9    | 86.9    |

\* Compact section  
\*\* Braced non-compact and partially braced section

**UNIT A - RAMP E - GIRDERS R2-R4**

| EXISTING INTERIOR GIRDER MOMENT TABLE            |                    | 0.5 Span 3E |
|--|--------------------|-------------|
| $I_s$  | (in <sup>4</sup> ) | 11,952      |
| $I_c(n)$   | (in <sup>4</sup> ) | 29,915      |
| $I_c(3n)$  | (in <sup>4</sup> ) | 21,210      |
| $S_s$  | (in <sup>3</sup> ) | 740         |
| $S_c(n)$   | (in <sup>3</sup> ) | 1021        |
| $S_c(3n)$  | (in <sup>3</sup> ) | 923         |
| Z  | (in <sup>3</sup> ) | ----        |
| $\rho$   | (k/')              | 0.821       |
| $M \rho$   | ('k)               | 613.1       |
| $s \rho$   | (k/')              | 0.208       |
| $M_s \rho$                                       | ('k)               | 155.9       |
| $M \underline{\underline{L}}$                    | ('k)               | 600.2       |
| $M_{IM}$   | ('k)               | 146.9       |
| $\int_3 [M \underline{\underline{L}} + i]$       | ('k)               | 1245        |
| $M_a$  | ('k)               | 2618.3      |
| * $M_u$  | ('k)               | 3838.7      |
| $f_s \rho$ non-comp                              | (ksi)              | 9.9         |
| $f_s \rho$ (comp)                                | (ksi)              | 2.0         |
| $f_s \int_3 [M \underline{\underline{L}} + M_I]$ | (ksi)              | 14.6        |
| $f_s$ (Overload)                                 | (ksi)              | 26.6        |
| ** $f_s$ (Total)                                 | (ksi)              | ----        |
| VR   | (k)                | 47.9        |

| EXISTING INTERIOR GIRDER REACTION TABLE |     |         |        |
|---|-----|---------|--------|
|   |     | Pier 39 | Pier 7 |
| $R \rho$                                | (k) | 39.8    | 39.8   |
| $R \underline{\underline{L}}$           | (k) | 38.1    | 38.1   |
| $R_I$                                   | (k) | 9.3     | 9.3    |
| $R_{Total}$                             | (k) | 87.3    | 87.3   |

\* Compact section  
\*\* Braced non-compact and partially braced section

$I_s, S_s$ : Non-composite moment of inertia and section modulus of the steel section used for computing  $f_s$ (Total and Overload) due to non-composite dead loads (in<sup>4</sup> and in<sup>3</sup>).

$I_c(n), S_c(n)$ : Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing  $f_s$ (Total and Overload) due to short-term composite live loads (in<sup>4</sup> and in<sup>3</sup>).

$I_c(3n), S_c(3n)$ : Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing  $f_s$ (Total and Overload) due to long-term composite (superimposed) dead loads (in<sup>4</sup> and in<sup>3</sup>).

Z: Plastic Section Modulus of the steel section in non-composite areas (in<sup>3</sup>).

$\rho$ : Un-factored non-composite dead load (kips/ft.).

$M \rho$ : Un-factored moment due to non-composite dead load (kip-ft.).

$s \rho$ : Un-factored long-term composite (superimposed) dead load (kips/ft.).

$M_s \rho$ : Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

$M \underline{\underline{L}}$ : Un-factored live load moment (kip-ft.).

$M_I$ : Un-factored moment due to impact (kip-ft.).

$M_a$ : Factored design moment (kip-ft.).  
 $1.3 [M \rho + M_s \rho + \frac{9}{5} (M \underline{\underline{L}} + M_I)]$

$M_u$ : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).

$f_s$  (Overload): Sum of stresses as computed from the moments below (ksi).  
 $M \rho + M_s \rho + \frac{9}{5} (M \underline{\underline{L}} + M_I)$

$f_s$  (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).  
 $1.3 [M \rho + M_s \rho + \frac{9}{5} (M \underline{\underline{L}} + M_I)]$

VR: Maximum  $\underline{\underline{L}}$  + impact shear range within the composite portion of the span for stud shear connector design (kips).



Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

|                                       |                        |                |           |
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|                                       |                        | CHECKED - KMP  | REVISED - |
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|                                       | PLOT DATE = 12/20/2013 |                |           |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

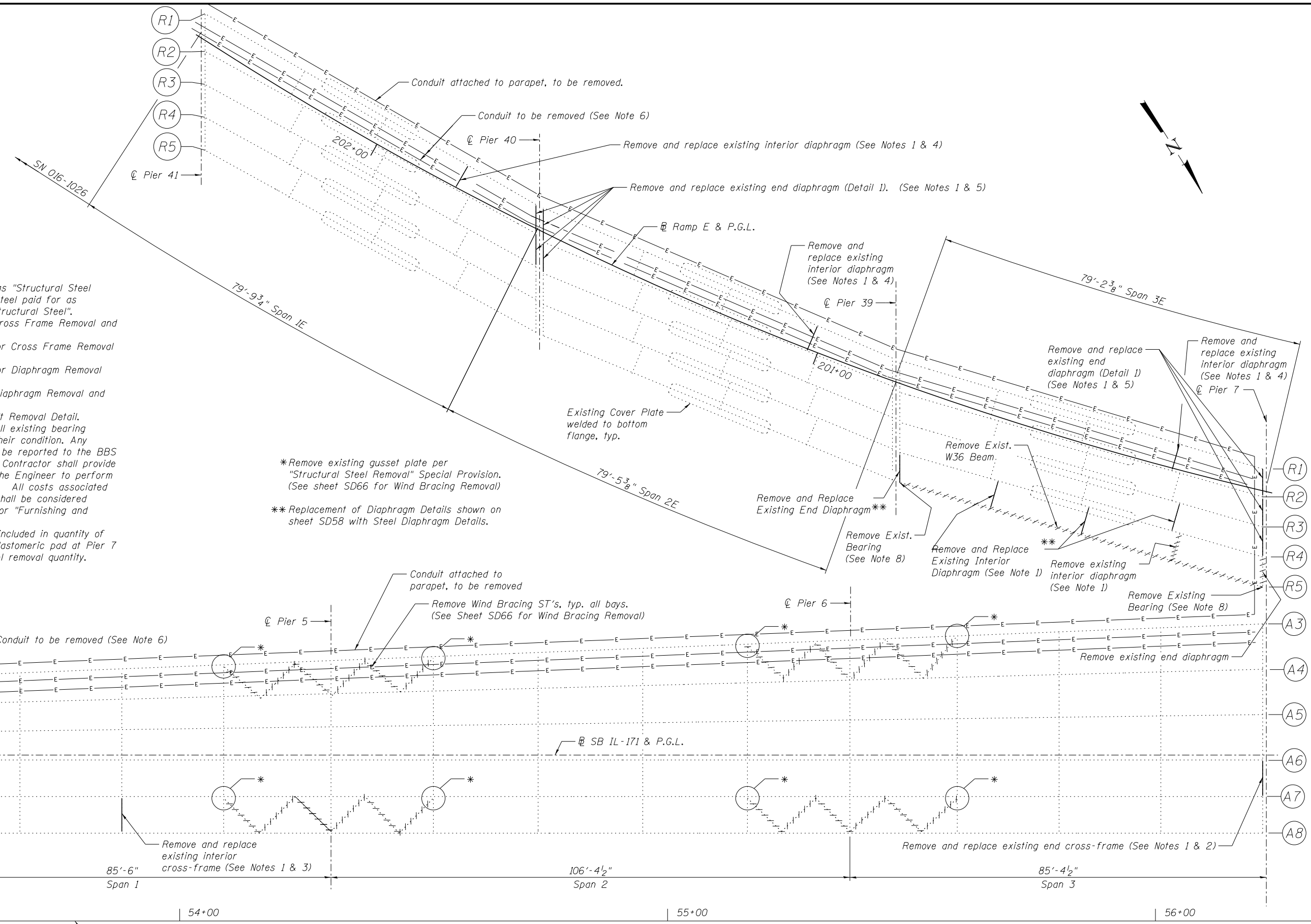
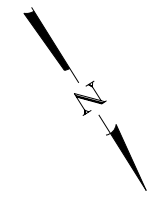
**MOMENT & REACTION TABLES  
STRUCTURE NO. 016-2457**

SHEET NO. SD62 OF SD83 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
| 372                | 2013-038B-R | COOK   | 821                       | 437       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

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**NOTES:**

1. Removal of steel paid for as "Structural Steel Removal". Replacement of steel paid for as "Furnishing and Erecting Structural Steel".
2. See sheet SD67 for End Cross Frame Removal and Replacement Details.
3. See sheet SD67 for Interior Cross Frame Removal and Replacement Details.
4. See sheet SD68 for Interior Diaphragm Removal and Replacement Details.
5. See sheet SD68 for End Diaphragm Removal and Replacement Detail 1.
6. See sheet SD66 for Conduit Removal Detail.
7. The Engineer will inspect all existing bearing anchor bolts to ascertain their condition. Any damaged anchor bolts shall be reported to the BBS for further direction. The Contractor shall provide all means and access for the Engineer to perform the anchor bolt inspections. All costs associated with providing the access shall be considered included in the unit price for "Furnishing and Erecting Structural Steel".
8. Weight of existing bearing included in quantity of steel removal. Weight of elastomeric pad at Pier 7 incidental to structural steel removal quantity.

\*Remove existing gusset plate per "Structural Steel Removal" Special Provision. (See sheet SD66 for Wind Bracing Removal)

\*\*Replacement of Diaphragm Details shown on sheet SD58 with Steel Diaphragm Details.

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312-565-0450 Job No. 10093

**EXISTING FRAMING PLAN - SPANS 1 THRU 3**

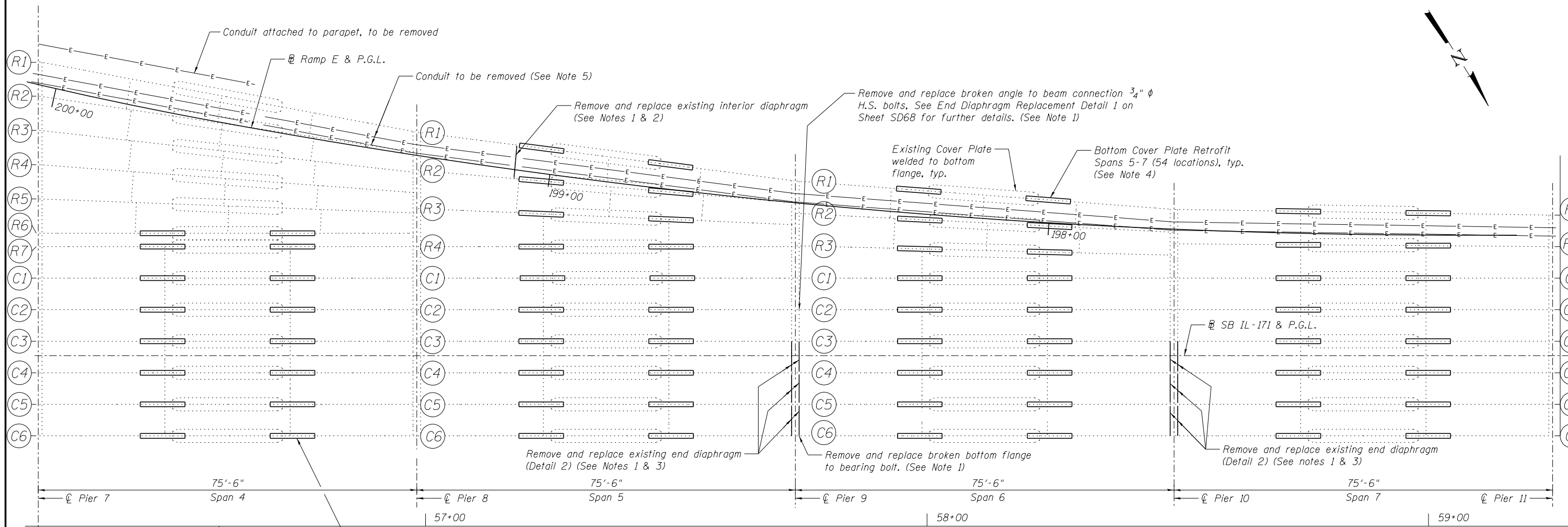
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STEEL REMOVAL AND REPAIR PLAN UNIT A  
STRUCTURE NO. 016-2457**

SHEET NO. SD63 OF SD83 SHEETS

|  |                        |                |           |
|--|------------------------|----------------|-----------|
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|  | PLOT DATE = 12/20/2013 | DRAWN - RMG    | REVISED - |
|  |                        | CHECKED - TPS  | REVISED - |

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 438       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |



**EXISTING FRAMING PLAN - SPANS 4 THRU 7**

**NOTES:**

1. Removal of steel paid for as "Structural Steel Removal". Replacement of steel paid for as "Furnishing and Erecting Structural Steel".
2. See sheet SD68 for Interior Diaphragm Removal & Replacement Detail.
3. See sheet SD68 for End Diaphragm Removal & Replacement Detail 2.
4. Place bolted cover plate at ends of existing cover plates where shown. See sheet SD66 for Cover Plate Retrofit Detail.
5. See sheet SD66 for Conduit Removal Detail.
6. The Engineer will inspect all existing bearing anchor bolts to ascertain their condition. Any damaged anchor bolts shall be reported to the BBS for further direction. The Contractor shall provide all means and access for the Engineer to perform the anchor bolt inspections. All costs associated with providing the access shall be considered included in the unit price for "Furnishing and Erecting Structural Steel".

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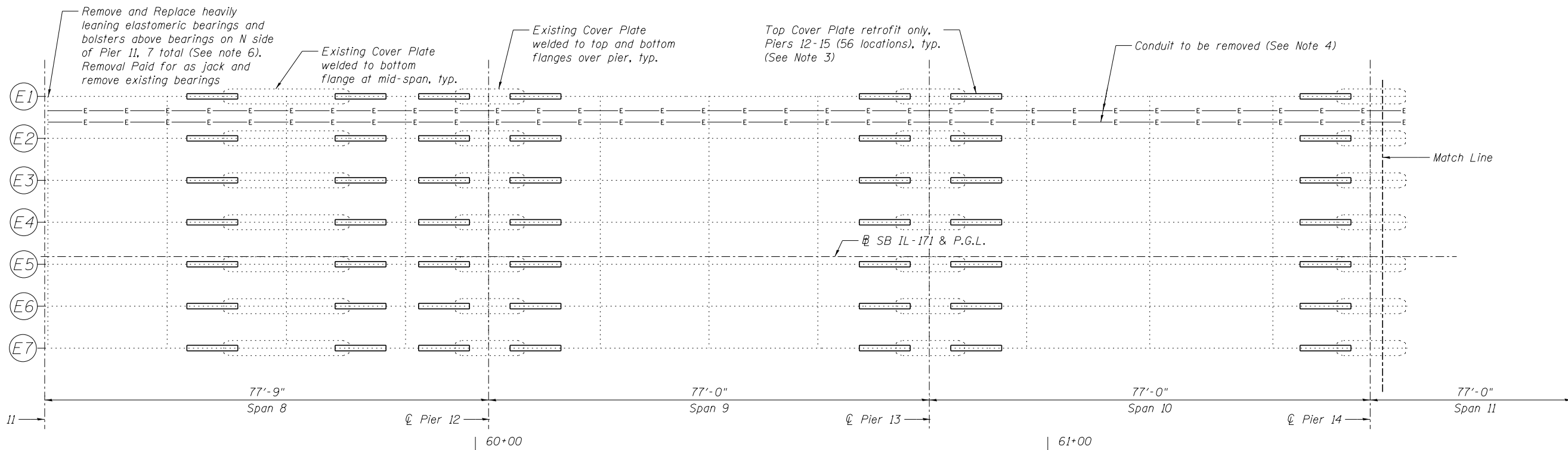
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STEEL REMOVAL AND REPAIR PLAN UNIT C  
STRUCTURE NO. 016-2457**

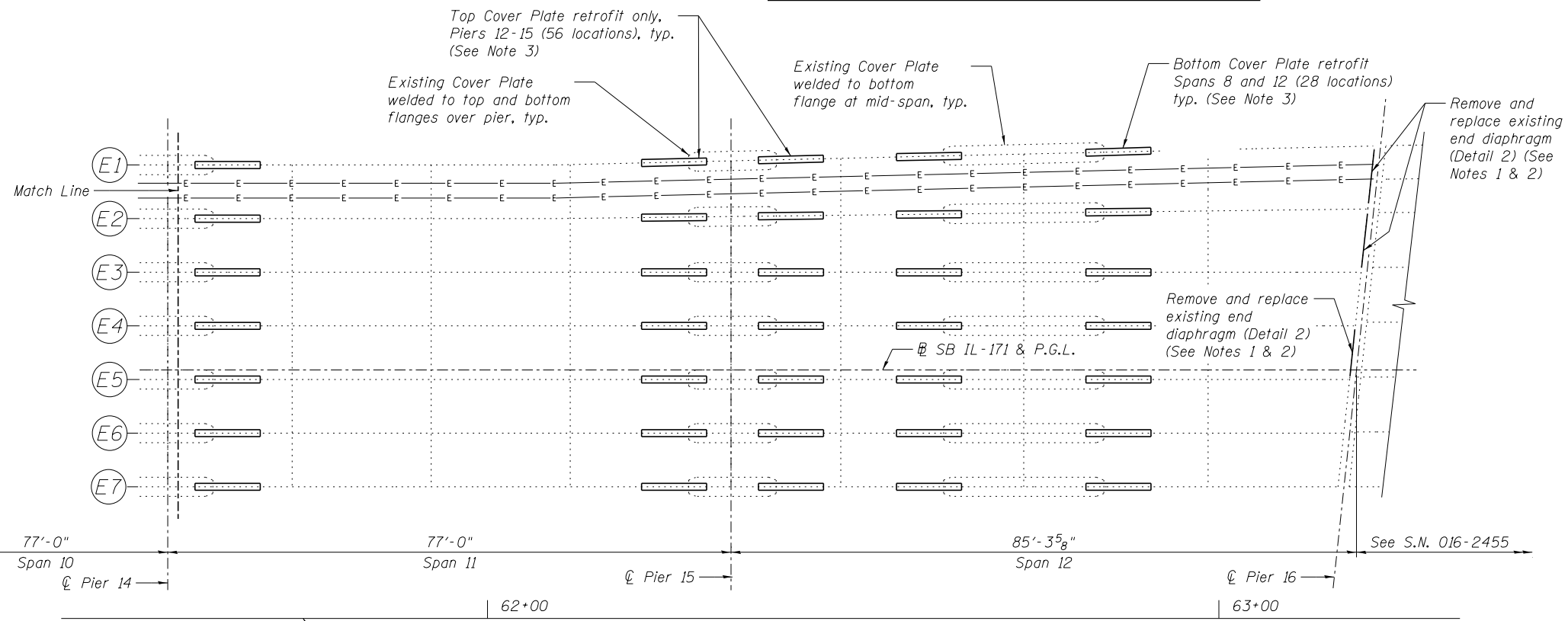
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| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 439       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

SHEET NO. SD64 OF SD83 SHEETS

Y:\chicago\100005\100093\Eng\_Docs\_Phase\_1\SN\_016-2456-2457-1st\_Ave\_Over\_Plaines\_River\_Valley\_Final\2457\_Final\0162457\_60J16\_064\_Steel\_Repair\_Plan\_Unit\_C.dwg 3:50:40 PM 8/6/2014



**EXISTING FRAMING PLAN - SPANS 8 THRU 10**



**EXISTING FRAMING PLAN - SPANS 11 AND 12**

**NOTES:**

1. Removal of steel paid for as "Structural Steel Removal". Replacement of steel paid for as "Furnishing and Erecting Structural Steel".
2. See sheet SD68 for End Diaphragm Removal & Replacement Detail 2.
3. Place bolted cover plate at ends of existing cover plates where shown. See sheet SD66 for Cover Plate Retrofit Detail.
4. See sheet SD66 for Conduit Removal Detail.
5. The Engineer will inspect all existing bearing anchor bolts to ascertain their condition. Any damaged anchor bolts shall be reported to the BBS for further direction. The Contractor shall provide all means and access for the Engineer to perform the anchor bolt inspections. All costs associated with providing the access shall be considered included in the unit price for "Furnishing and Erecting Structural Steel".
6. See sheet SD66 for Bearing Removal Detail.
7. See sheet SD69 for Proposed Bearing Details.

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|  |                       |                |           |
|--|-----------------------|----------------|-----------|
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

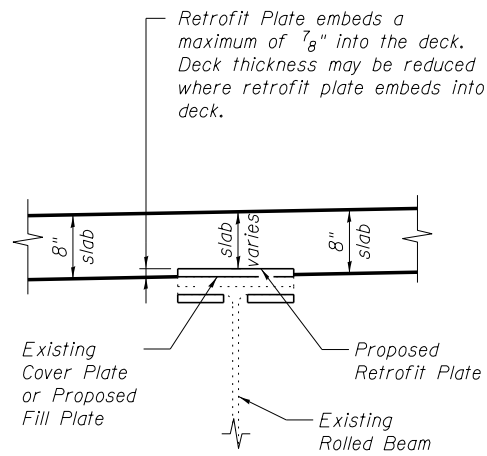
**STEEL REMOVAL AND REPAIR PLAN UNIT E  
STRUCTURE NO. 016-2457**

SHEET NO. SD65 OF SD83 SHEETS

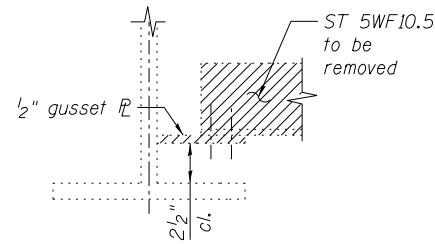
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| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 440       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

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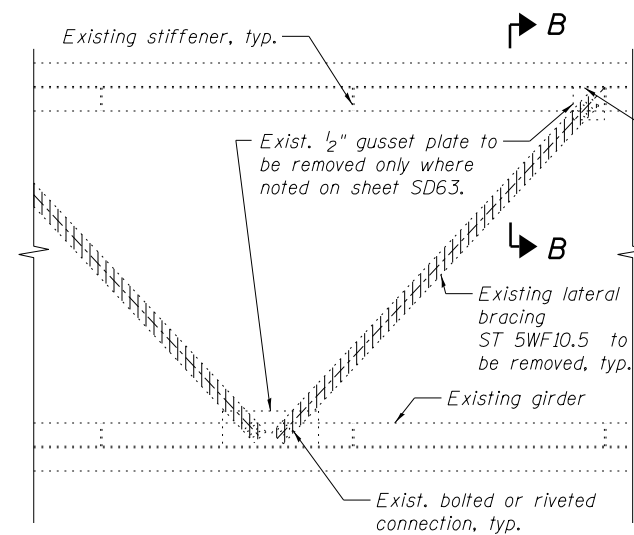




**COVER PLATE RETROFIT EMBEDMENT**

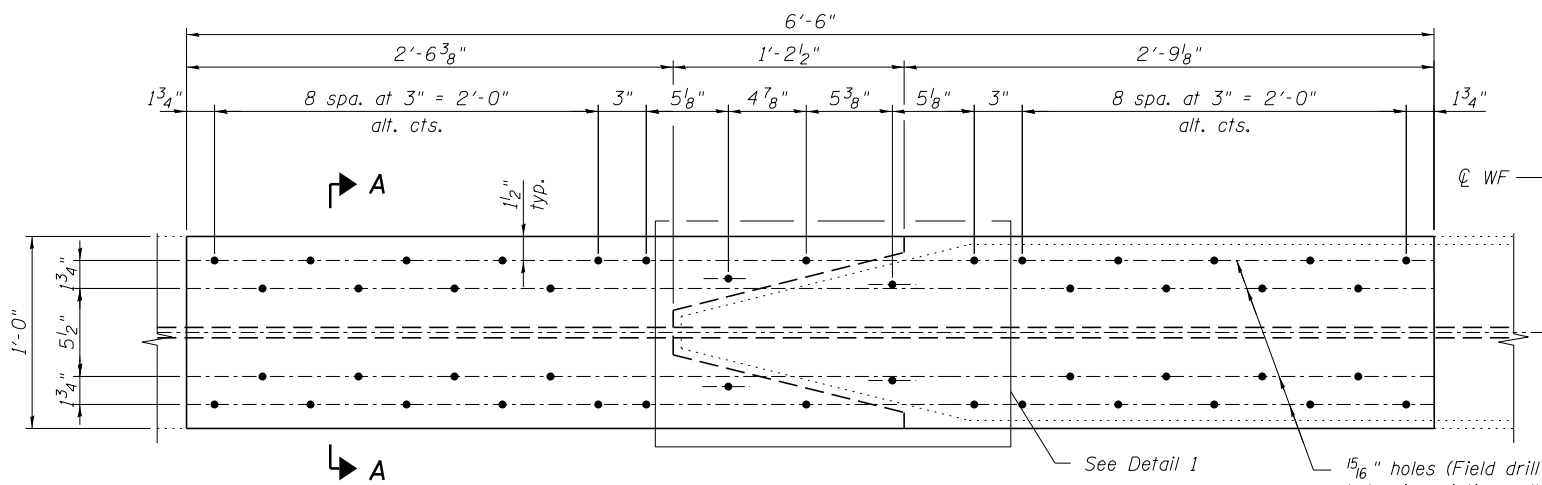


**SECTION B-B**



**WIND BRACING REMOVAL**

(Removal of lateral bracing and gusset plates paid for as "Structural Steel Removal")  
(24 angles to be removed)  
(8 gusset PL's to be removed)



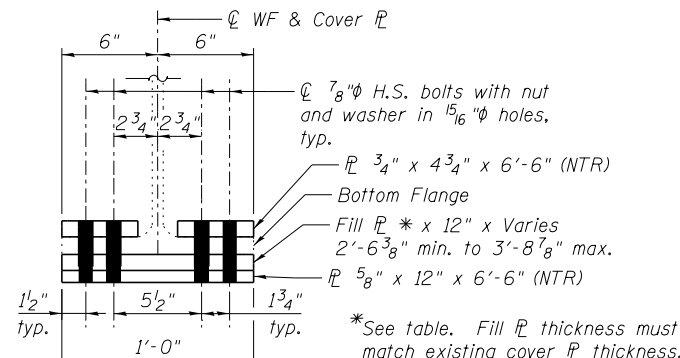
**COVER PLATE RETROFIT**

(46 bolts per retrofit)  
(154 Locations, 98 Top & 56 Bottom)  
(See Note 2)

Note: Locations of Cover plate retrofit are symmetrical about the CL of the existing cover plate.

**EXISTING COVER PLATE THICKNESS**

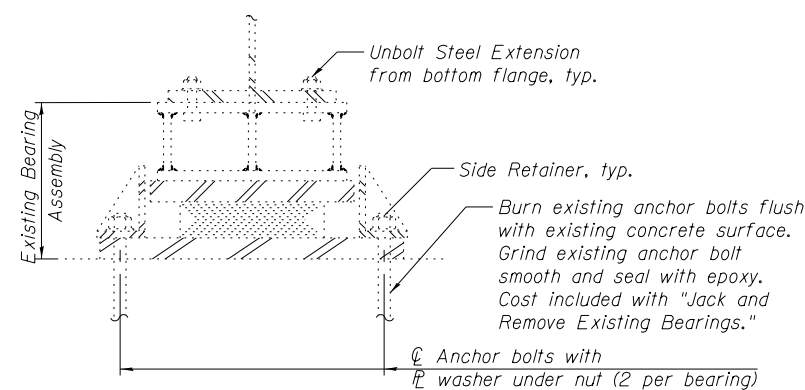
| Cover PL Location       | Thick.            |
|-------------------------|-------------------|
| Span 4 Beams R6 & C1-C6 | $\frac{5}{8}$ "   |
| Span 4 Beam R7          | $\frac{3}{4}$ "   |
| Span 5 Beam R1          | $\frac{3}{4}$ "   |
| Span 5 Beams R2-R3      | $\frac{1}{2}$ "   |
| Span 5 Beams R4 & C1-C6 | $\frac{5}{8}$ "   |
| Span 6 Beams R1-R3      | $\frac{7}{16}$ "  |
| Span 6 Beams C1-C6      | $\frac{5}{8}$ "   |
| Span 7 Beams R1-R2 & C1 | $\frac{11}{16}$ " |
| Span 7 Beams C2-C6      | $\frac{5}{8}$ "   |
| Span 8 Beams E1-E8      | $\frac{7}{16}$ "  |
| Pier 12 Beams E1-E8     | $\frac{5}{8}$ "   |
| Pier 13 Beams E1-E8     | $\frac{7}{16}$ "  |
| Pier 14 Beams E1-E8     | $\frac{7}{16}$ "  |
| Pier 15 Beams E1-E3     | $\frac{13}{16}$ " |
| Pier 15 Beams E4-E8     | $\frac{3}{4}$ "   |
| Span 12 Beams E1-E3     | $\frac{7}{8}$ "   |
| Span 12 Beams E4-E8     | $\frac{11}{16}$ " |



**SECTION A-A**

(Bottom shown, Top similar)

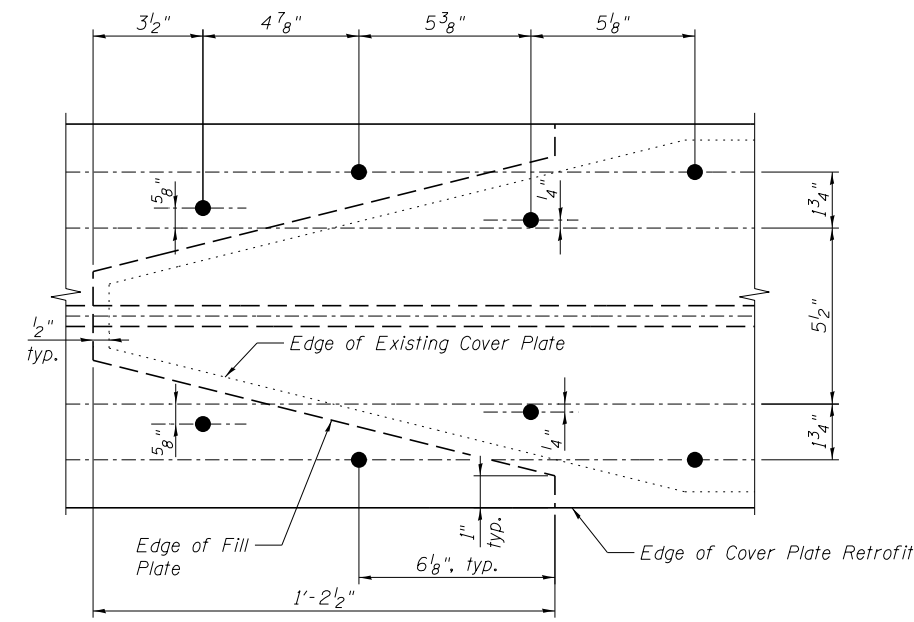
\*See table. Fill PL thickness must match existing cover PL thickness. Contractor to field verify thickness prior to ordering new materials.



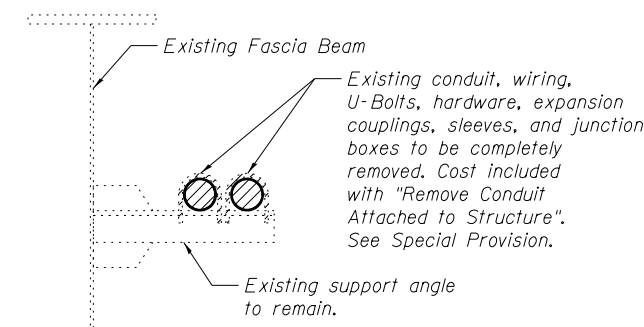
**BEARING REMOVAL DETAIL**

(North Side of Pier 11)

- See special provision for "Jack and Remove Existing Bearings."
- Jacking shall not commence until the deck has been removed entirely. The service steel dead load reaction for each bearing location at Pier 11 is 6.0 kips. Minimum jack capacity = 4.5 tons.
- Contractor shall avoid conduit in front of bearing or coordinate with utility companies before jacking bearing.

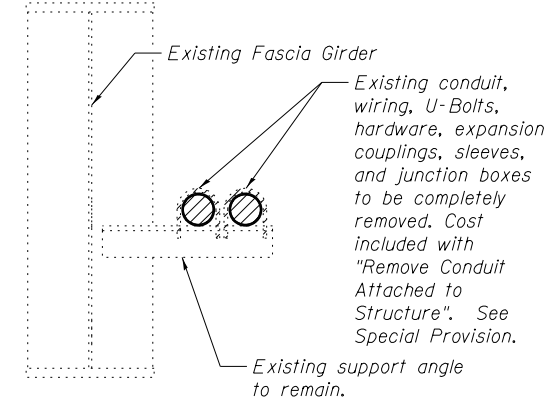


**DETAIL 1**



**CONDUIT REMOVAL DETAIL**

(Wide Flange Detail)



**CONDUIT REMOVAL DETAIL**

(Plate Girder Detail)

**NOTES:**

- See Sheets SD63 thru SD65 for locations of cover plate retrofits.
- Cost of furnishing all labor, equipment, and materials necessary to furnish and install the cover plate retrofit detail shall be included with "Structural Steel Repair". See Special Provision. Quantity listed below is calculated for gross section of plate with voids for bolts holes not accounted for.
- Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
- Structural Steel Plates for cover plate retrofit shall conform to the requirements of AASHTO M270 Grade 50.
- Cost of field drilling included with "Structural Steel Repair".

**BILL OF MATERIAL**

| ITEM                                 | UNIT  | TOTAL  |
|--------------------------------------|-------|--------|
| Structural Steel Removal             | Pound | 27,220 |
| Remove Conduit Attached to Structure | Foot  | 3,008  |
| Structural Steel Repair              | Pound | 62,730 |
| Jack and Remove Existing Bearings    | Each  | 7      |

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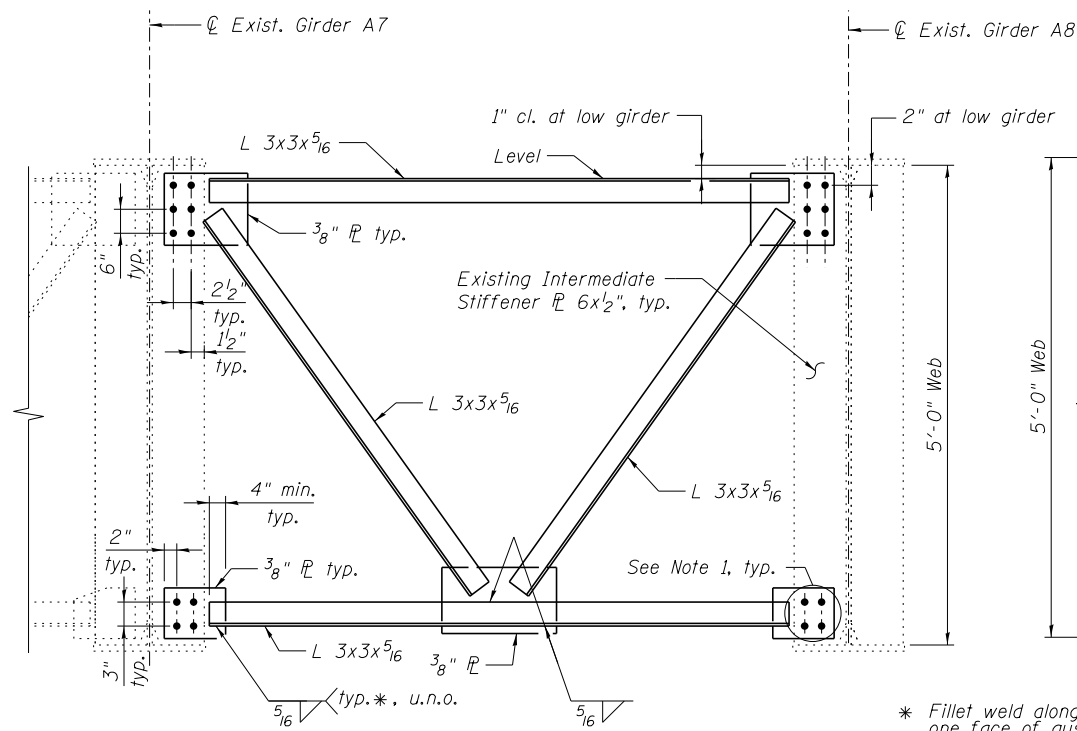
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

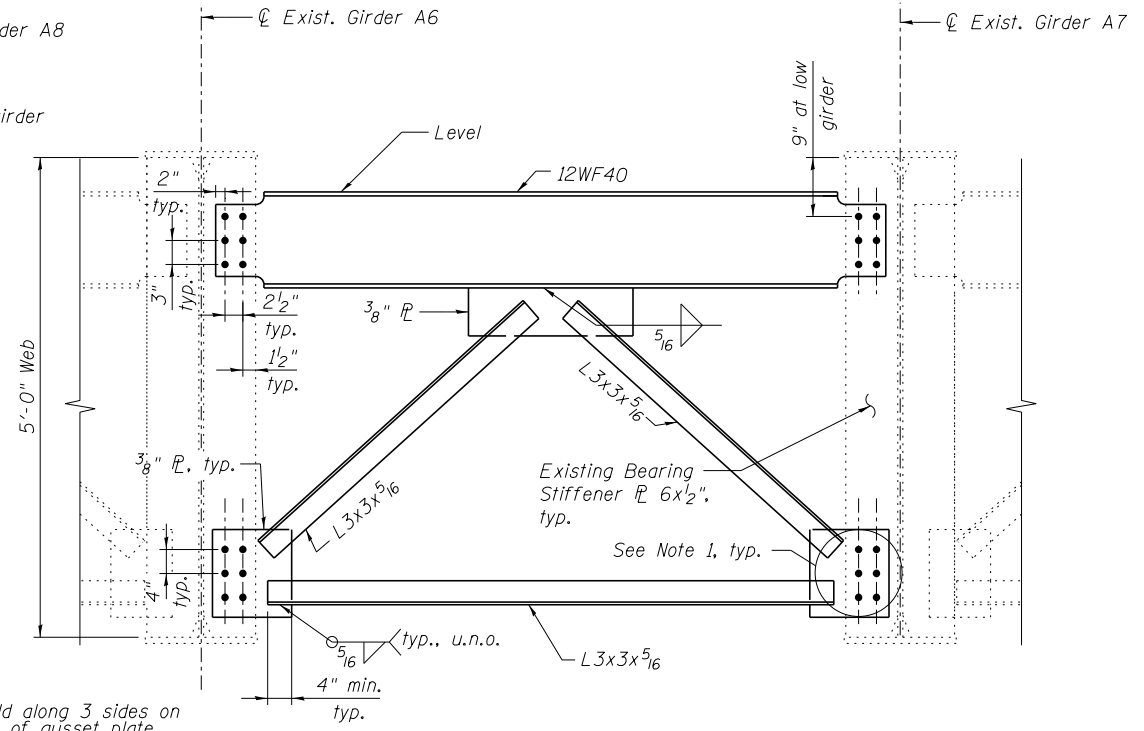
**STRUCTURAL STEEL REPAIR DETAILS (1 OF 3)**  
**STRUCTURE NO. 016-2457**

SHEET NO. SD66 OF SD83 SHEETS

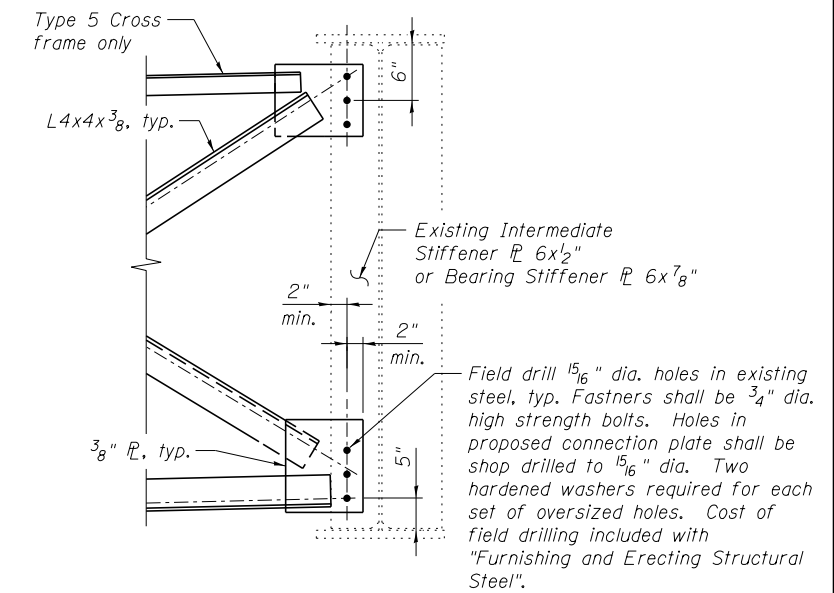
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
|---------------------------|-------------|--------|--------------------|-----------|
| 372                       | 2013-038B-R | COOK   | 821                | 441       |
| ILLINOIS FED. AID PROJECT |             |        | CONTRACT NO. 60J16 |           |



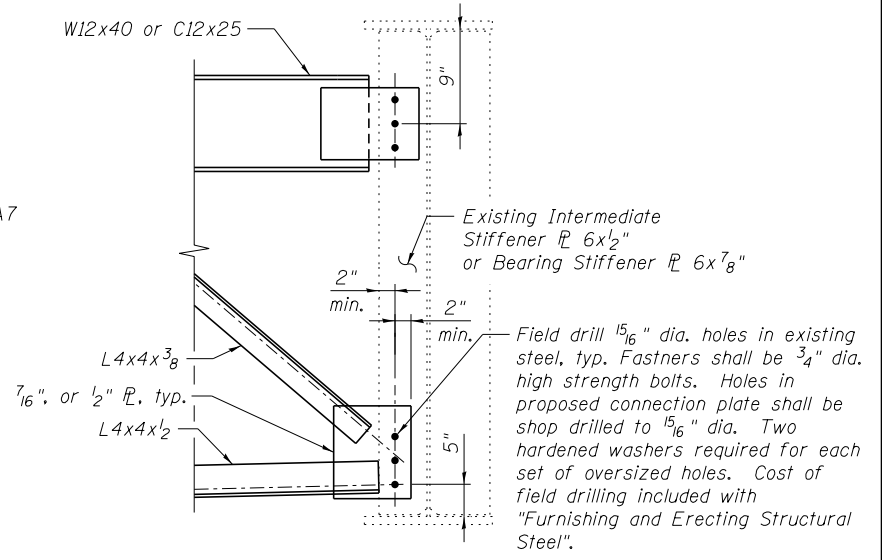
**INTERIOR CROSS FRAME REPLACEMENT DETAIL**  
(No. of Locations 1)



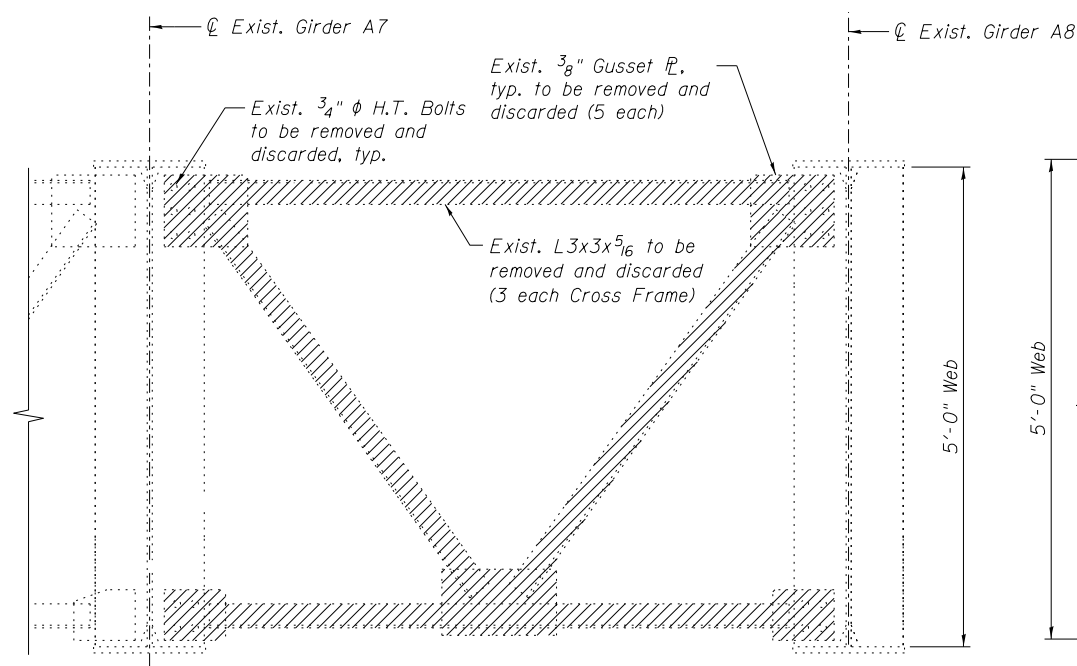
**END CROSS FRAME REPLACEMENT DETAIL**  
(No. of Locations 1)



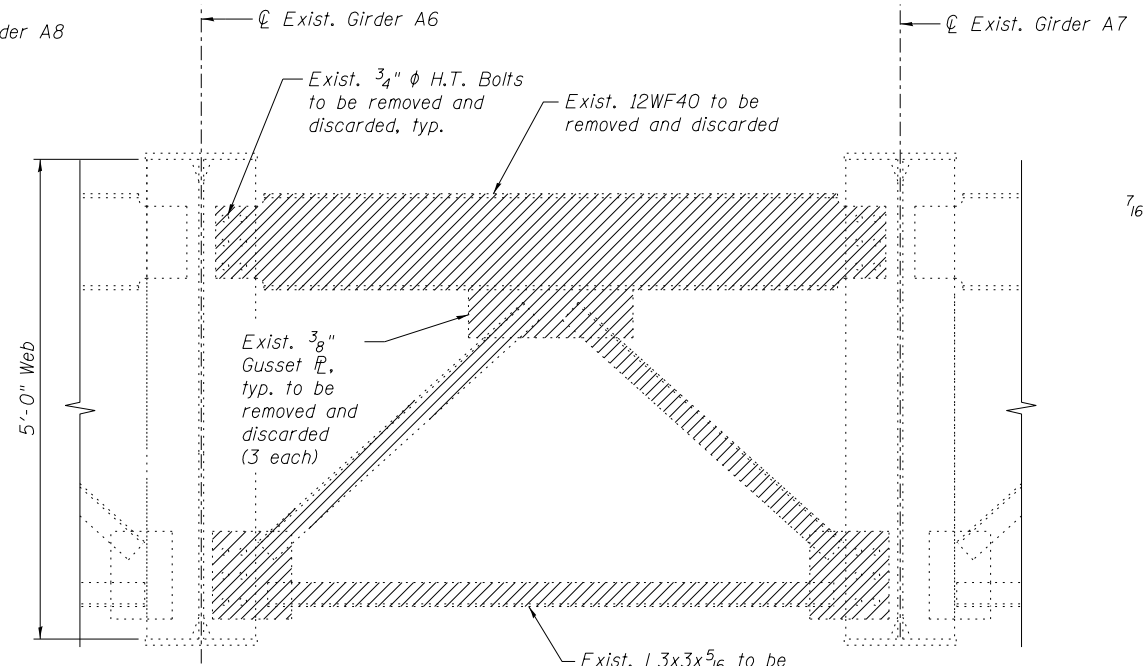
**EXISTING GIRDER CONNECTION**  
(Cross Frames Type CF1, CF2 & CF5)  
(See Sheet SD56 for additional cross frame connection details)



**EXISTING GIRDER CONNECTION**  
(Cross Frames Type CF3 & CF4)  
(See Sheet SD56 for additional cross frame connection details)



**EXISTING INTERIOR CROSS FRAME REMOVAL DETAIL**  
(No. of Locations 1)



**EXISTING END CROSS FRAME REMOVAL DETAIL**  
(No. of Locations 1)

- NOTES:**
1. New 3/4" dia. fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Holes in new steel shall be subpunched or subdrilled 1/16" dia. and reamed in the field to 13/16" dia. Reuse existing holes in existing steel. Contractor to field verify location, size and spacing of existing holes prior to ordering new materials. Cost included with "Furnishing and Erecting Structural Steel".
  2. See Sheets SD63 thru SD65 for location of cross frame replacement removal.

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|-------------|---------------------|----------------|-----------|
| FILE NAME = | USER NAME = ksnider | DESIGNED - DTS | REVISED - |
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

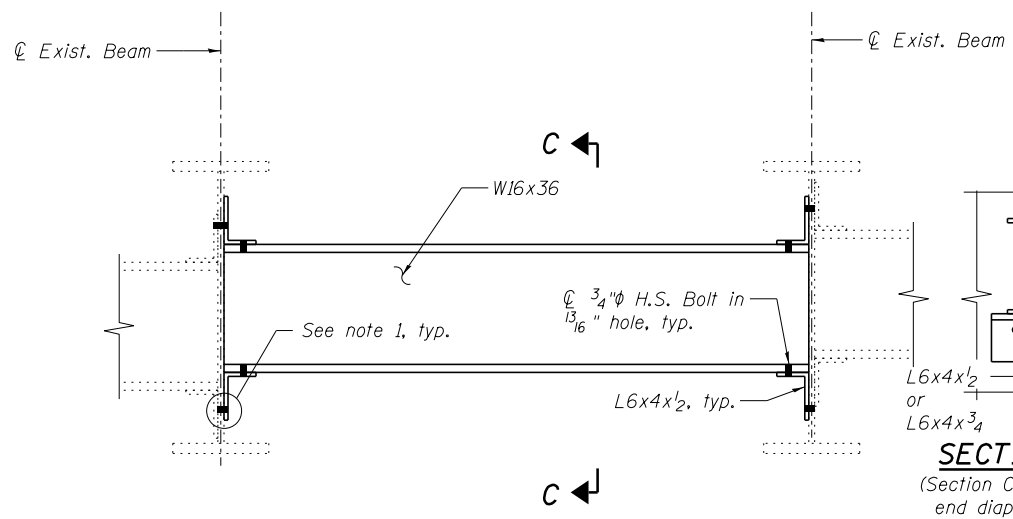
**STRUCTURAL STEEL REPAIR DETAILS (2 OF 3)**  
**STRUCTURE NO. 016-2457**

|                    |             |        |              |           |
|--------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821          | 442       |
| CONTRACT NO. 60J16 |             |        |              |           |

SHEET NO. SD67 OF SD83 SHEETS

ILLINOIS FED. AID PROJECT

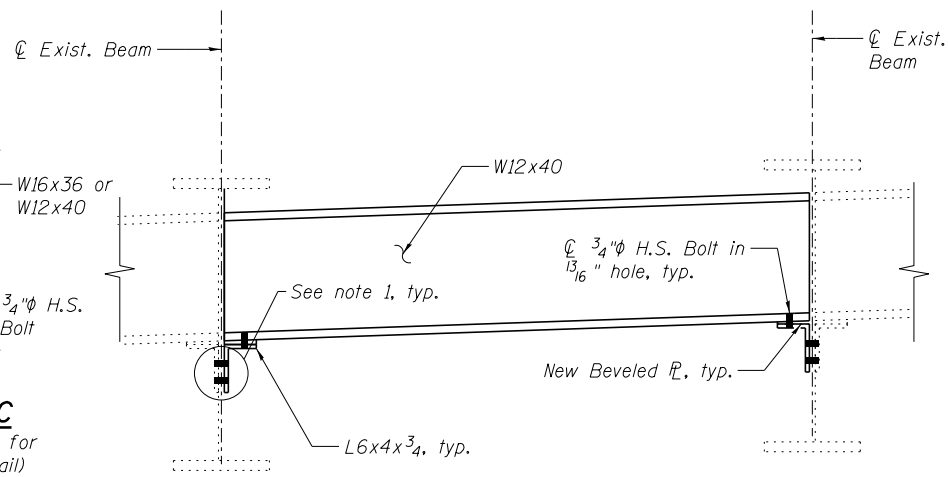
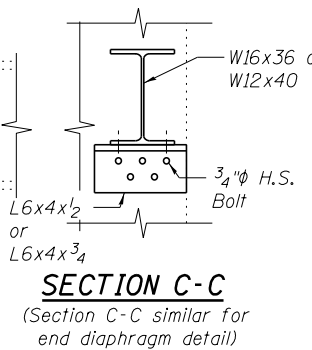
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**INTERIOR DIAPHRAGM REPLACEMENT DETAIL**

(No. of Locations 4)

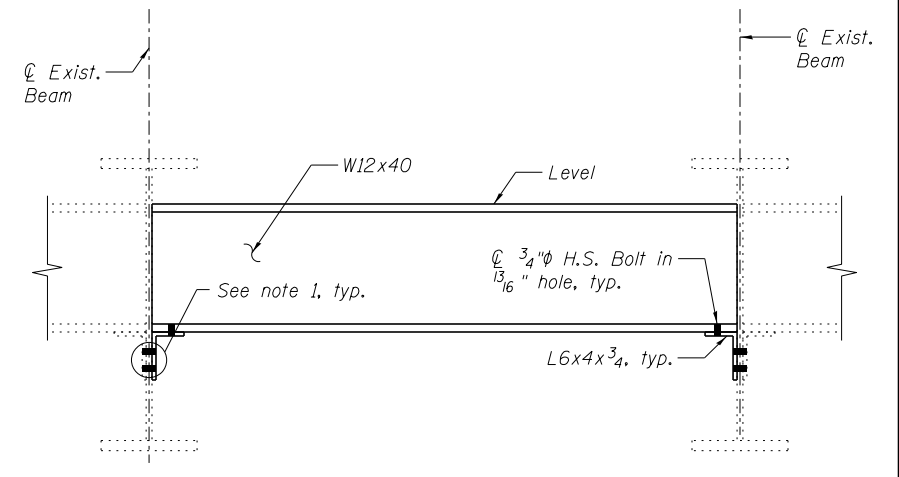
(See sheet SD58 for replacement of diaphragms to proposed beams, not included in No. of Locations above)



**END DIAPHRAGM REPLACEMENT DETAIL 1**

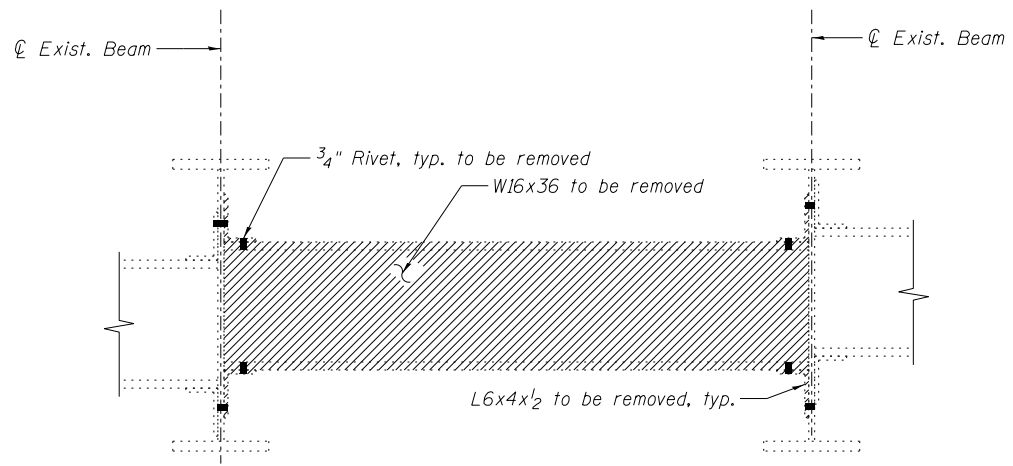
(No. of Locations 7)

(See sheet SD58 for replacement of diaphragms to proposed beams, not included in No. of Locations above)



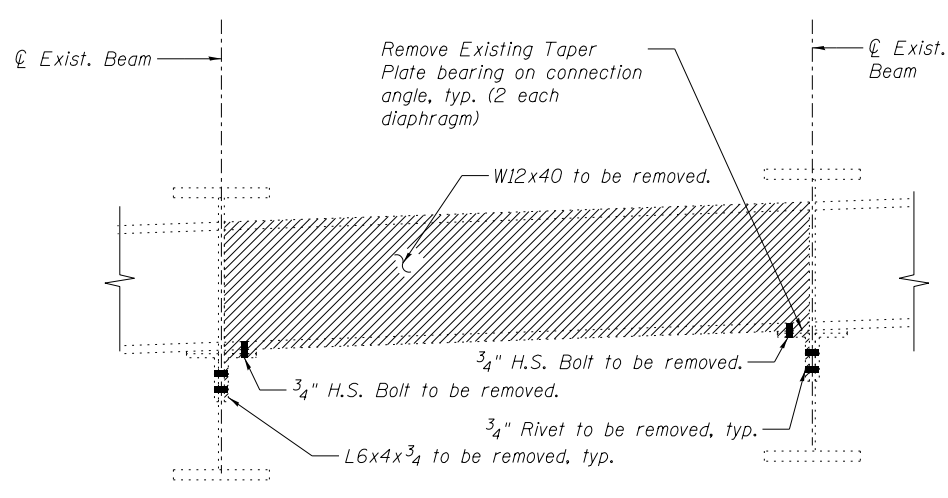
**END DIAPHRAGM REPLACEMENT DETAIL 2**

(No. of Locations 15)



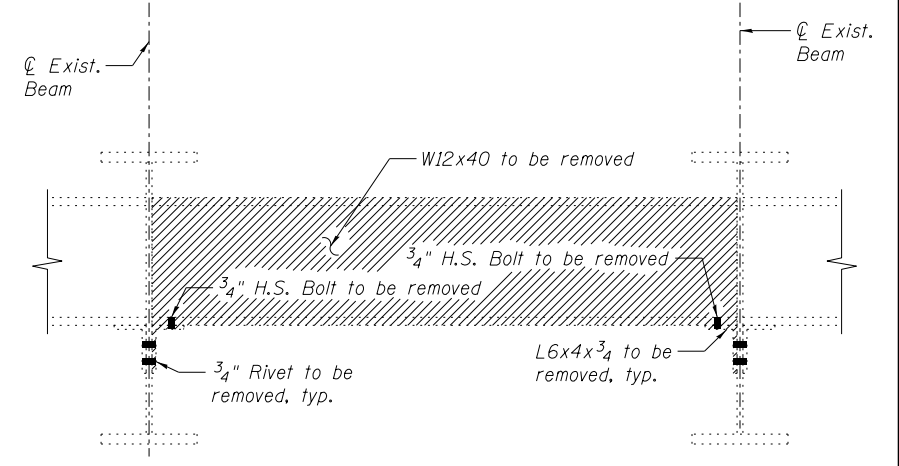
**EXISTING INTERIOR DIAPHRAGM REMOVAL DETAIL**

(No. of Locations 4)



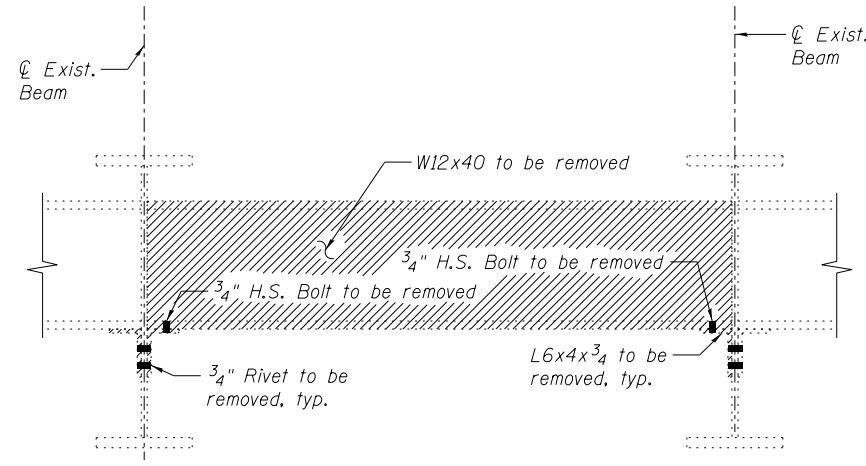
**EXISTING END DIAPHRAGM REMOVAL DETAIL 1**

(No. of Locations 7)



**EXISTING END DIAPHRAGM REMOVAL DETAIL 2**

(No. of Locations 14)



**EXISTING END DIAPHRAGM REMOVAL DETAIL 3**

(No. of Locations 1)

**NOTES:**

1. New 3/4" dia. fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Holes in new steel shall be subpunched or subdrilled 1/16" dia. and reamed in the field to 13/16" dia. Reuse existing holes in existing steel. Contractor to field verify location, size and spacing of existing holes prior to ordering new materials. Cost included with "Furnishing and Erecting Structural Steel".
2. See sheets SD63 thru SD65 for location of diaphragm replacement and removal.
3. Contractor shall ensure that the adjacent existing diaphragm is supported during angle replacement under proposed diaphragm. Cost included with structural steel removal.
4. Cost of field drilling included with furnishing and erecting structural steel.
5. Removal of steel paid for as "Structural Steel Removal". Replacement of steel paid for as "Furnishing and Erecting Structural Steel".

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|--|------------------------|----------------|-------------|
| FILE NAME =                                  | USER NAME = ksnider    | DESIGNED - DTS | REVISIONS - |
|  |                        | CHECKED - TPS  | REVISIONS - |
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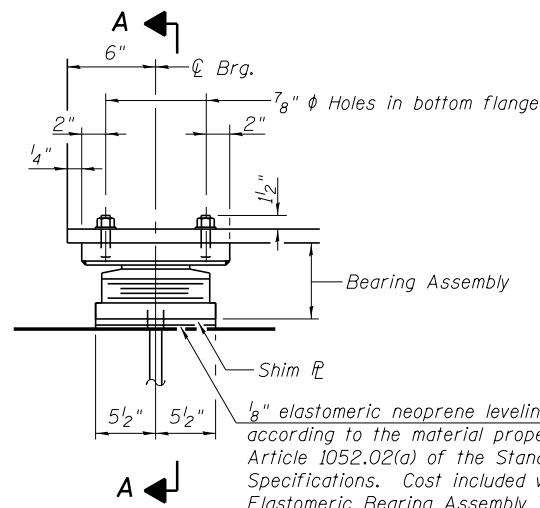
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**STRUCTURAL STEEL REPAIR DETAILS (3 OF 3)**  
**STRUCTURE NO. 016-2457**

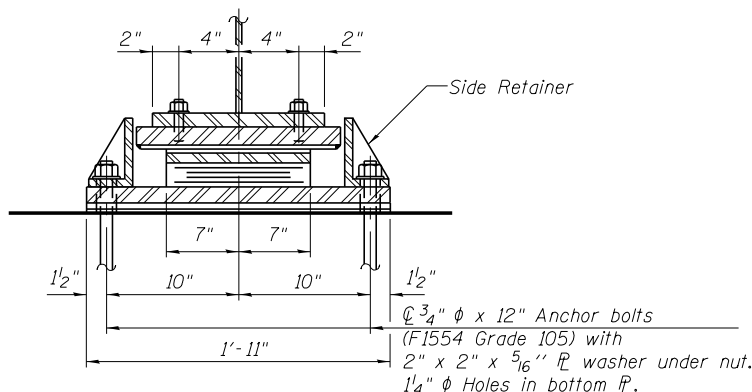
SHEET NO. SD68 OF SD83 SHEETS

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 443       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

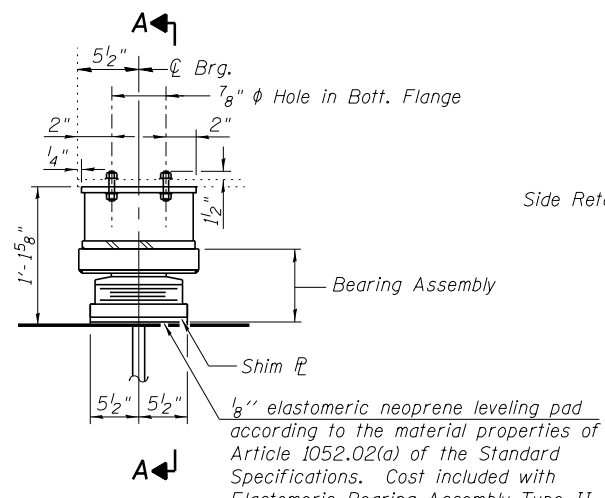
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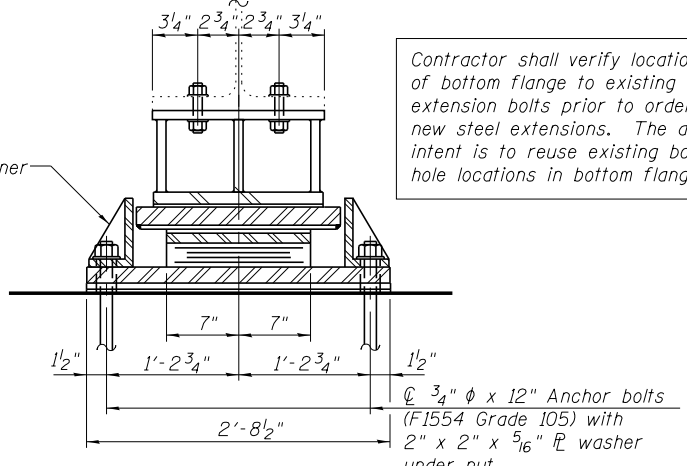
**ELEVATION AT PIER 4**



**SECTION A-A**



**ELEVATION AT PIER 11**



**SECTION A-A**

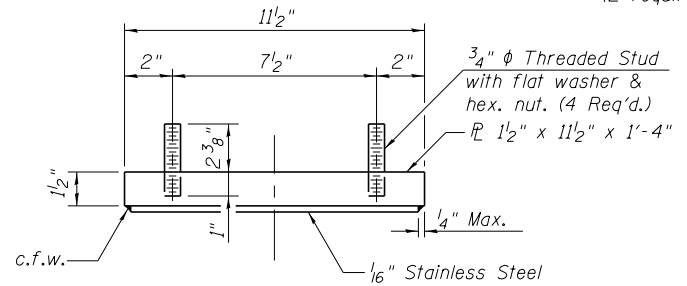
Contractor shall verify location of bottom flange to existing steel extension bolts prior to ordering new steel extensions. The design intent is to reuse existing bolt hole locations in bottom flange.

**TYPE II ELASTOMERIC EXP. BRG.**

(2 required)

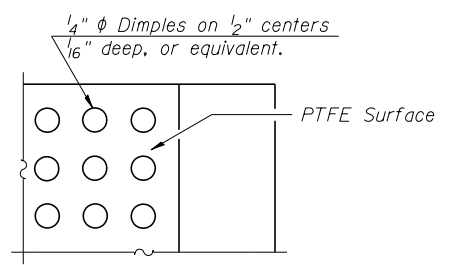
**TYPE II ELASTOMERIC EXP. BRG.**

(7 required)

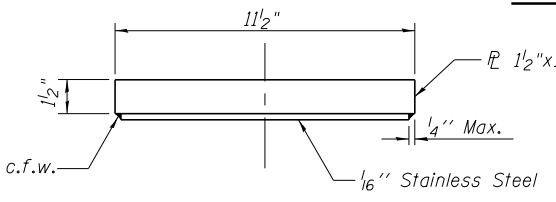


**TOP BEARING ASSEMBLY**

(Pier 4 only)

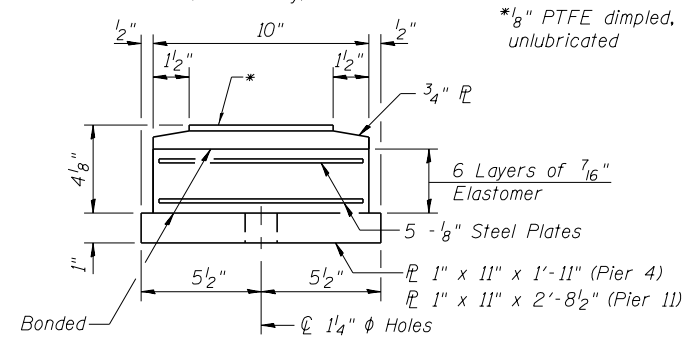


**PLAN-PTFE SURFACE**



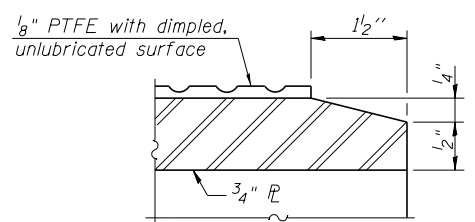
**TOP BEARING PLATE**

(Pier 11 only)

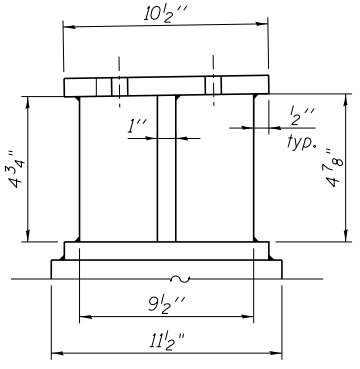


**BOTTOM BEARING ASSEMBLY**

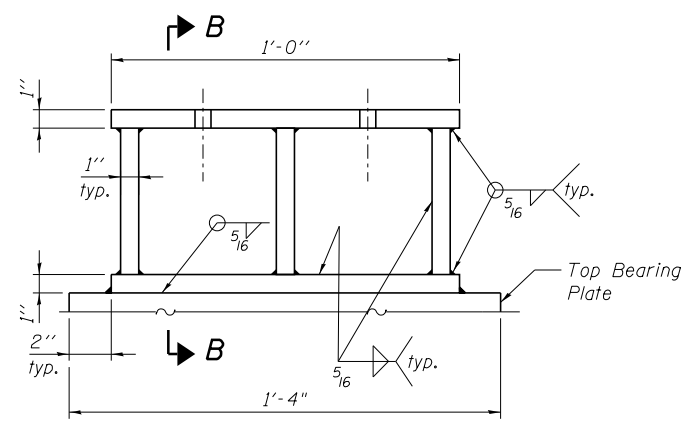
(Piers 4 & 11)



**SECTION THRU PTFE**



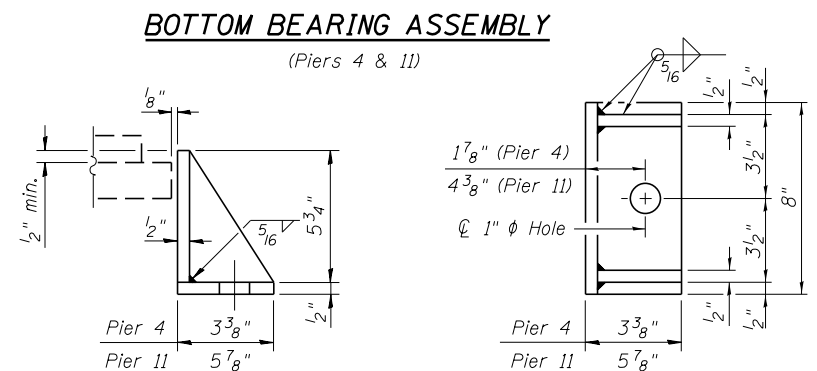
**SECTION B-B**



**ELEVATION STEEL EXTENSION**

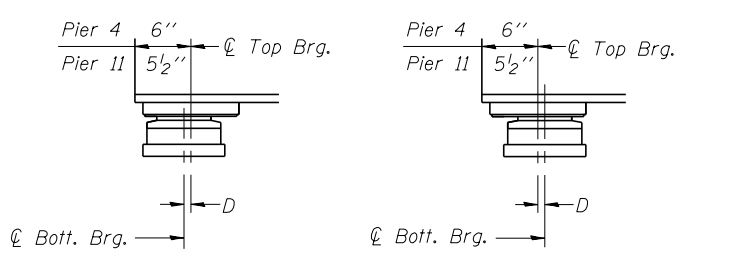
(Weight included with Furnishing and Erecting Structural Steel.)

Notes:  
 Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.  
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
 Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.  
 Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
 Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.  
 The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.  
 Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.  
 The structural steel plates of the bearing assemblies shall meet the requirements of AASHTO M270 Grade 50.



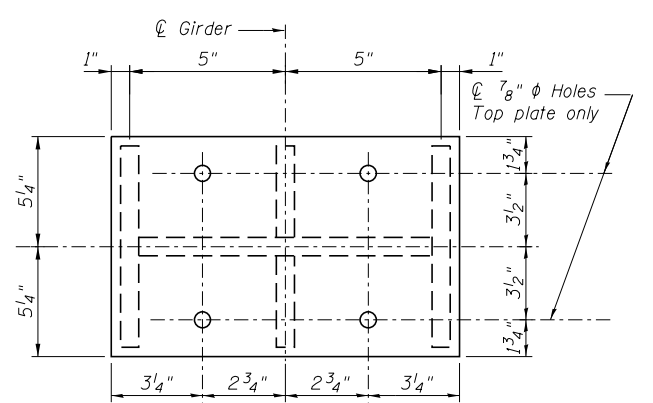
**SIDE RETAINER**

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



**SETTING ANCHOR BOLTS AT EXP. BRG.**

D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.  
 BELOW 50°F. (Move bott. brg. away from fixed brg.)  
 ABOVE 50°F. (Move bott. brg. toward fixed brg.)



**PLAN STEEL EXTENSION**

Prior to ordering any material, Contractor shall verify in the field all bearing height and shim thickness dimensions.

**BILL OF MATERIAL**

| Item                                 | Unit | Total |
|--------------------------------------|------|-------|
| Elastomeric Bearing Assembly Type II | Each | 9     |
| Anchor Bolts, 3/4"                   | Each | 18    |



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 Chicago, Illinois 60601  
 312-565-0450 Job No. 10093

I-2E-2 1-27-12

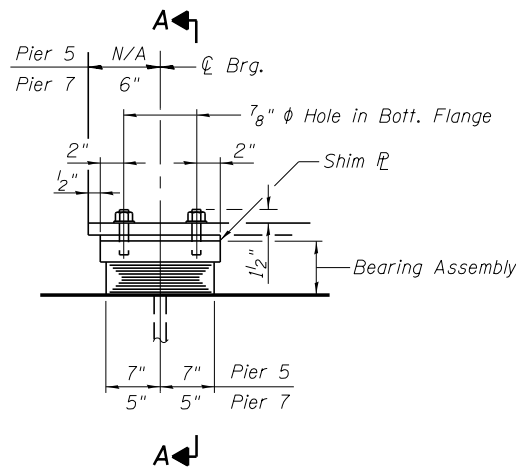
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| 0162457.60J16.069.Bearing.Dtls.dgn | ksnyder     | AAY        | -           |
|                                    |             | AJK        | -           |
|                                    |             | RMG        | -           |
|                                    |             | AJK        | -           |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

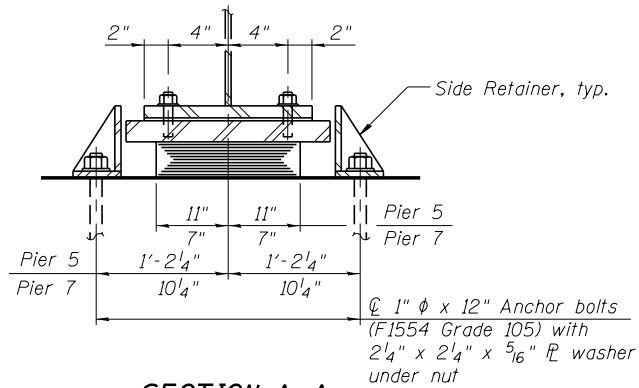
BEARING DETAILS 1 OF 2  
 STRUCTURE NO. 016-2457

SHEET NO. SD69 OF SD83 SHEETS

| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-------------|--------|--------------|-----------|
| 372                       | 2013-038B-R | COOK   | 821          | 444       |
| CONTRACT NO. 60J16        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |



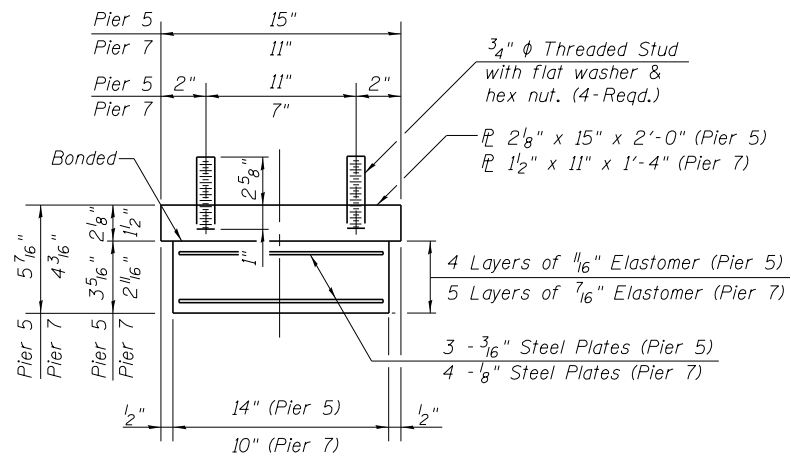
**ELEVATION AT PIERS 5 & 7**



**SECTION A-A**

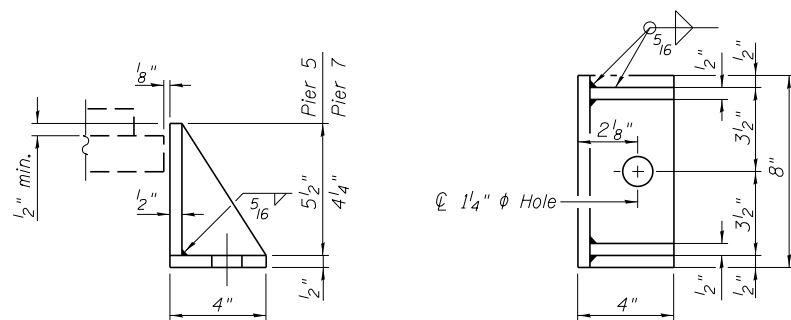
**TYPE I ELASTOMERIC EXP. BRG.**

(2 required, each pier)



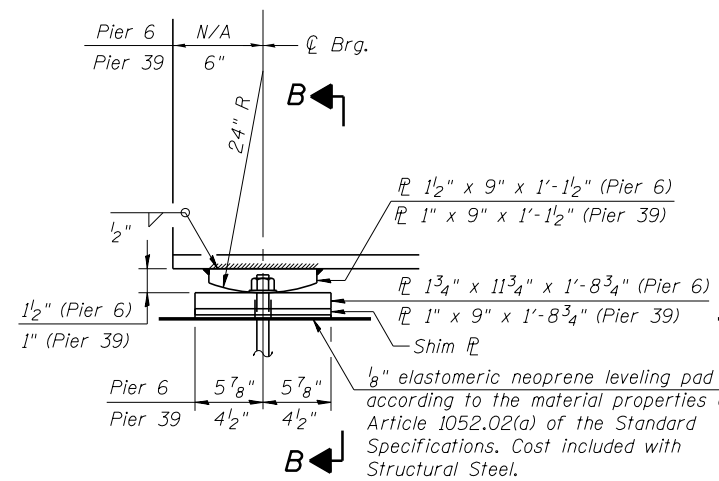
**BEARING ASSEMBLY**

Note:  
Shim plates shall not be placed under Bearing Assembly.



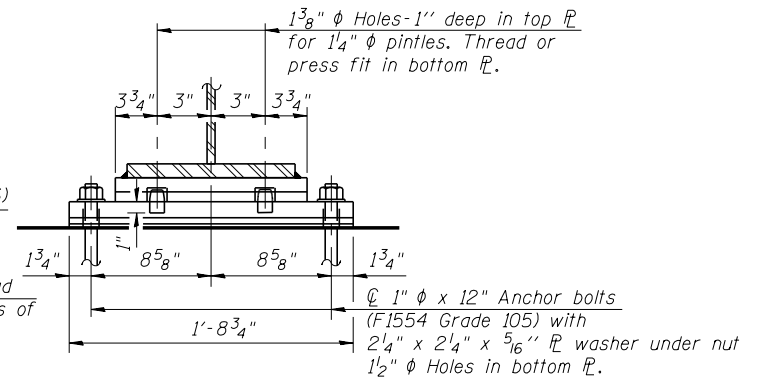
**SIDE RETAINER**

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



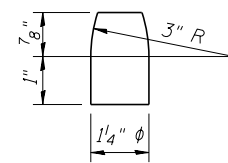
**ELEVATION AT PIERS 6 & 39**

(2 required @ Pier 6, 1 required @ Pier 39 for new beam R5)

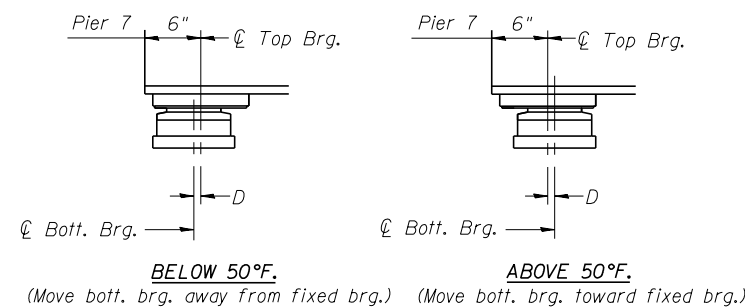


**SECTION B-B**

**FIXED BEARING**



**PINTLE**



**SETTING ANCHOR BOLTS AT EXP. BRG.**

D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

Notes:  
Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.  
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.  
Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.  
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.  
Steel members and pintles required for fixed bearing assemblies shall be included with cost of furnishing and erecting structural steel.  
The structural steel plates of the elastomeric bearing assemblies shall meet the requirements of AASHTO M270 Grade 50.  
The structural steel plates and pintles of the fixed bearing assemblies shall meet the requirements of AASHTO M270 Grade 50.

**BILL OF MATERIAL**

| Item                                | Unit | Total |
|-------------------------------------|------|-------|
| Elastomeric Bearing Assembly Type I | Each | 4     |
| Anchor Bolts, 1"                    | Each | 14    |

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I-27-12

|                        |                     |                |           |
|------------------------|---------------------|----------------|-----------|
| FILE NAME =            | USER NAME = ksnider | DESIGNED - AAY | REVISED - |
|                        |                     | CHECKED - AJK  | REVISED - |
|                        |                     | DRAWN - RMG    | REVISED - |
|                        |                     | CHECKED - AJK  | REVISED - |
| PLOT SCALE =           |                     |                |           |
| PLOT DATE = 12/20/2013 |                     |                |           |

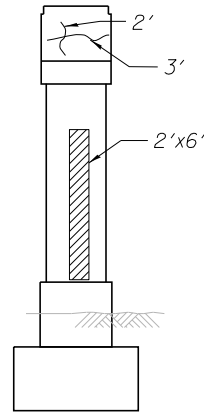
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BEARING DETAILS 2 OF 2  
STRUCTURE NO. 016-2457**

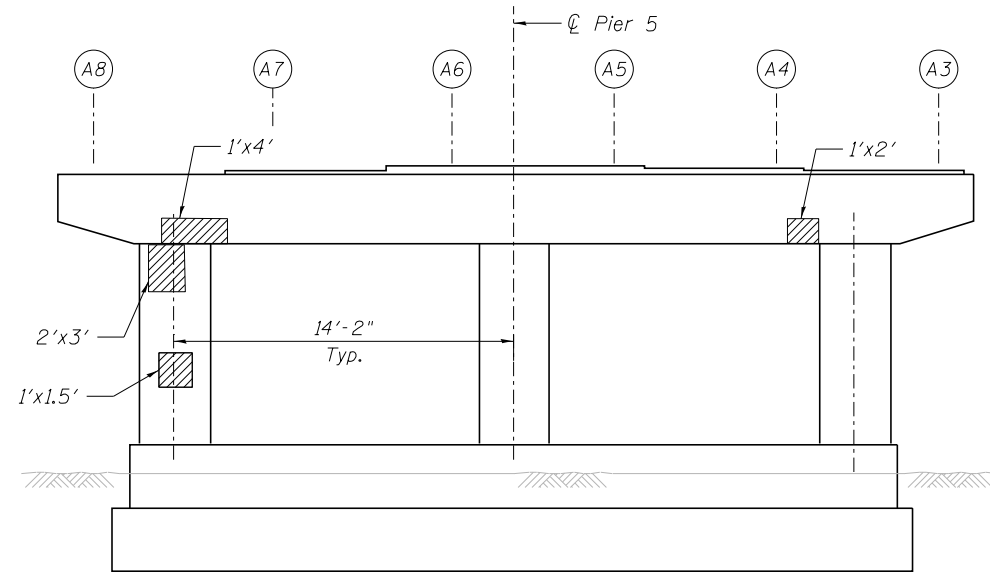
SHEET NO. SD70 OF SD83 SHEETS

|                           |             |        |                    |           |
|---------------------------|-------------|--------|--------------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821                | 445       |
| ILLINOIS FED. AID PROJECT |             |        | CONTRACT NO. 60J16 |           |

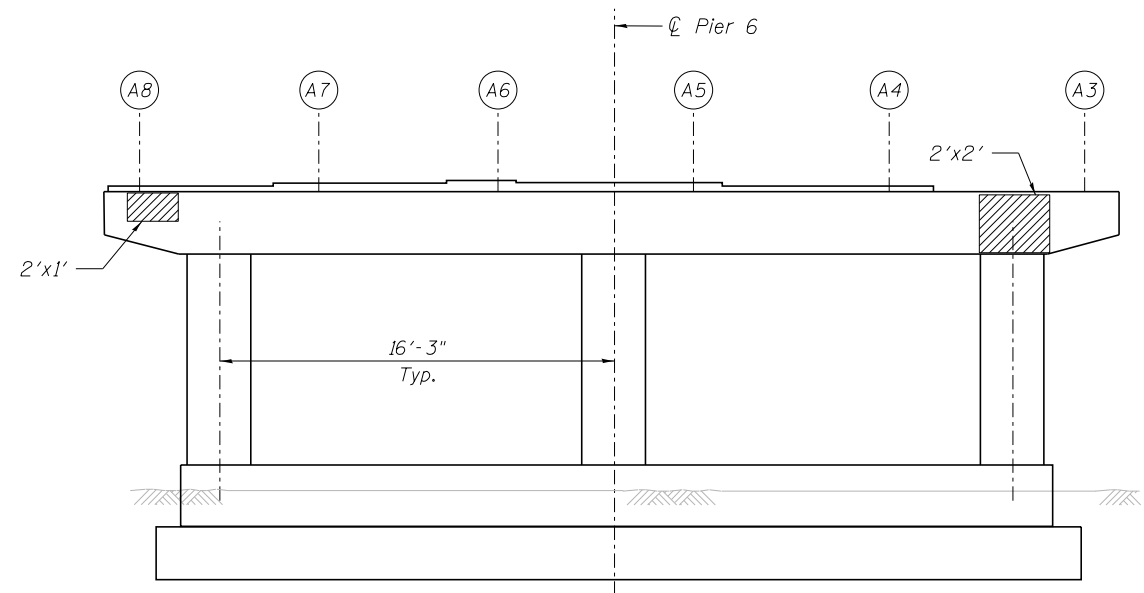
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**PIER 5**  
Looking South

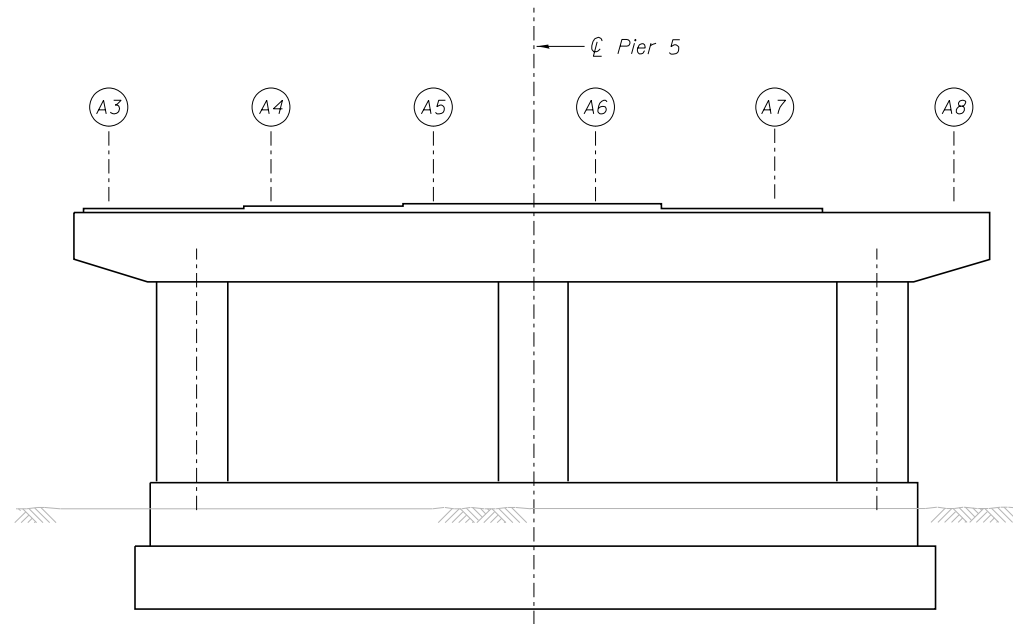


**PIER 5**  
Looking East

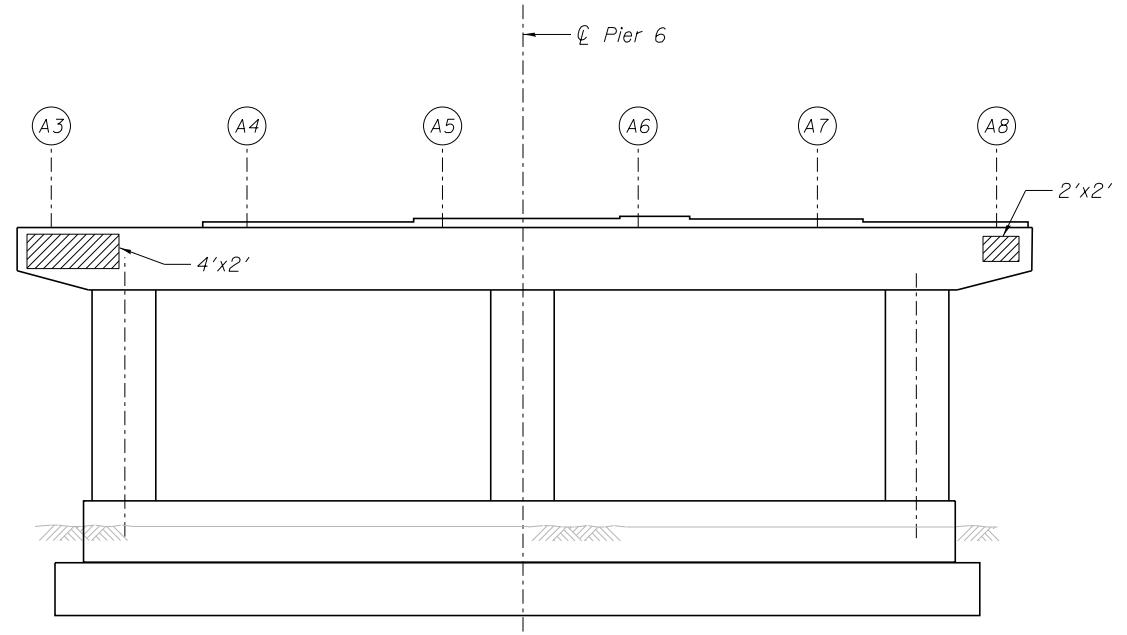


**PIER 6**  
Looking East

See Str. No. 016-0483  
For Pier 4



**PIER 5**  
Looking West



**PIER 6**  
Looking West

**LEGEND**

- Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)
- Epoxy Crack Injection

**NOTE:**

Actual quantities of repairs shall be approved by the Engineer.

**BILL OF MATERIAL**

| ITEM   | UNIT    | TOTAL |
|--|---------|-------|
| Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches) | Sq. Ft. | 44    |
| Epoxy Crack Injection  | Foot    | 5     |

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|                                     |                        |                |           |
|-------------------------------------|------------------------|----------------|-----------|
| FILE NAME =                         | USER NAME = ksnider    | DESIGNED - FSM | REVISED - |
| 0162457.60J16.071.pierrepair5-6.dgn |                        | CHECKED - RMM  | REVISED - |
|                                     | PLOT SCALE =           | DRAWN - FSM    | REVISED - |
|                                     | PLOT DATE = 12/20/2013 | CHECKED - RMM  | REVISED - |

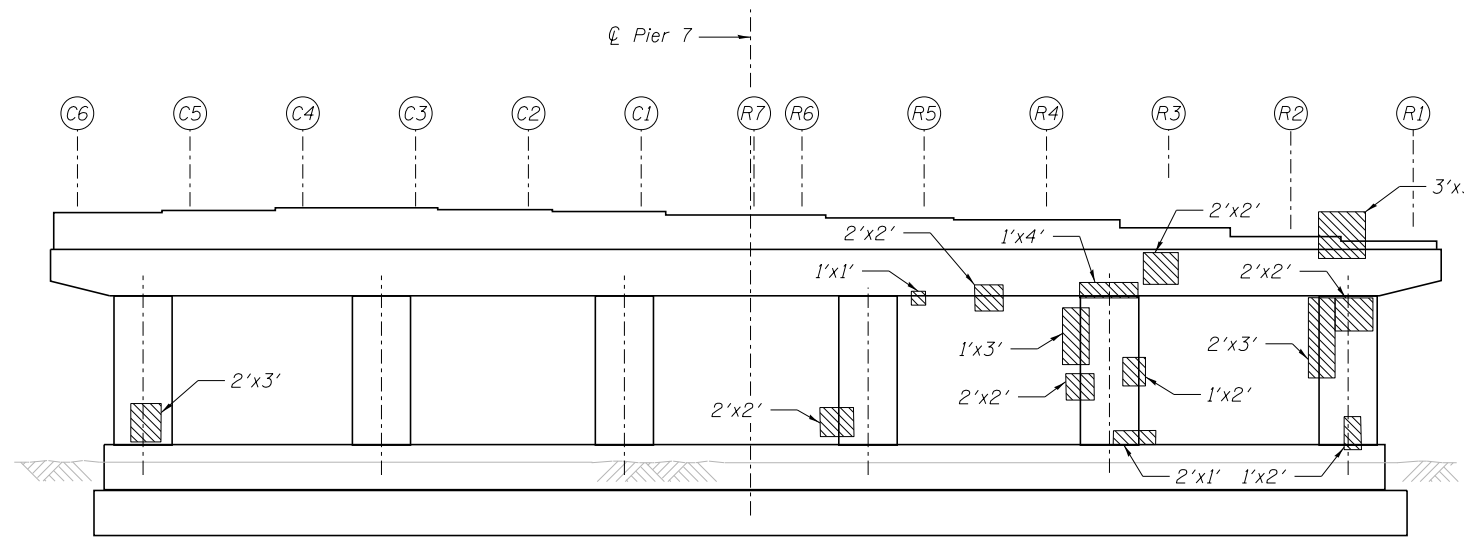
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PIERS 5 AND 6 CONCRETE REPAIR DETAILS**  
**STRUCTURE NO. 016-2457**

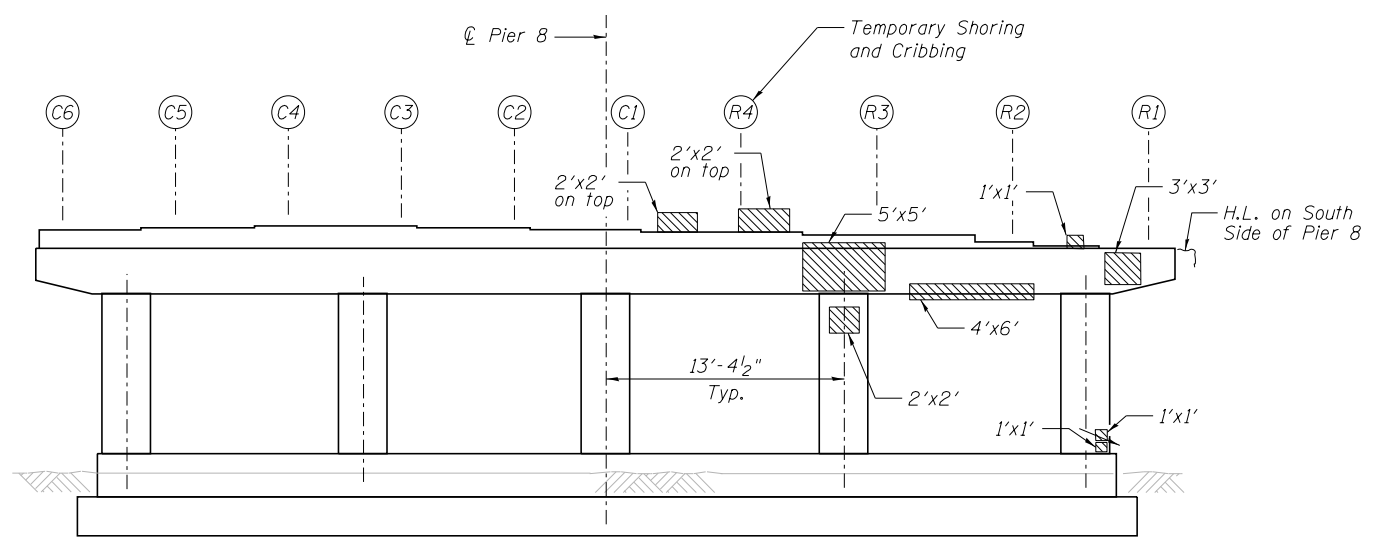
SHEET NO. SD71 OF SD83 SHEETS

|                    |             |        |                           |           |
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| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 446       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

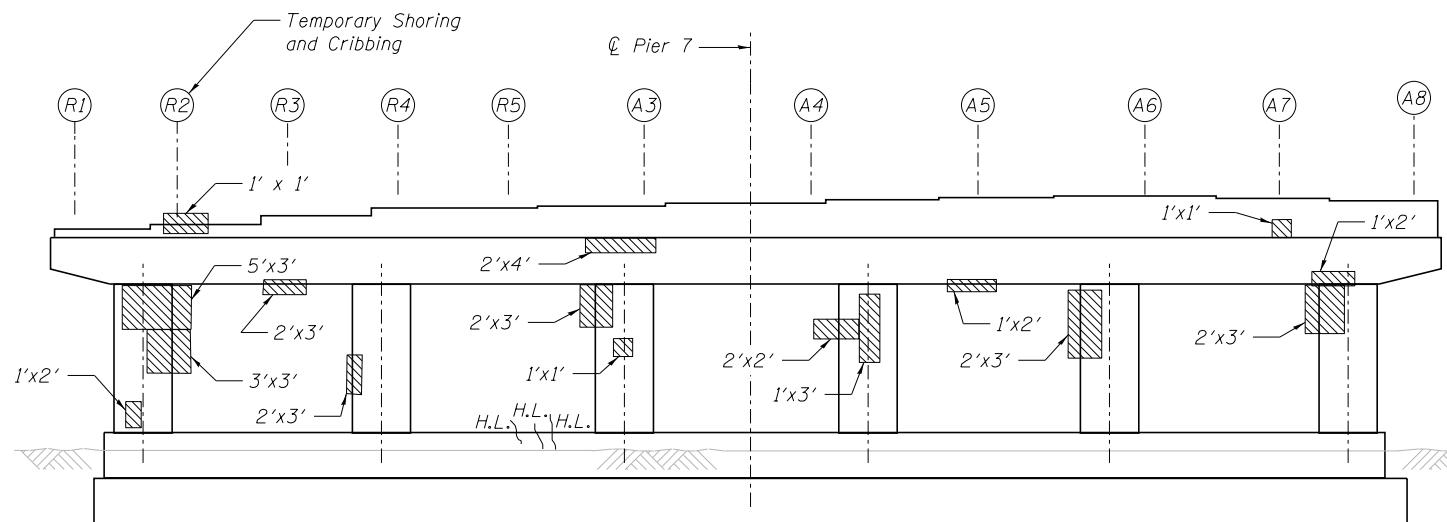
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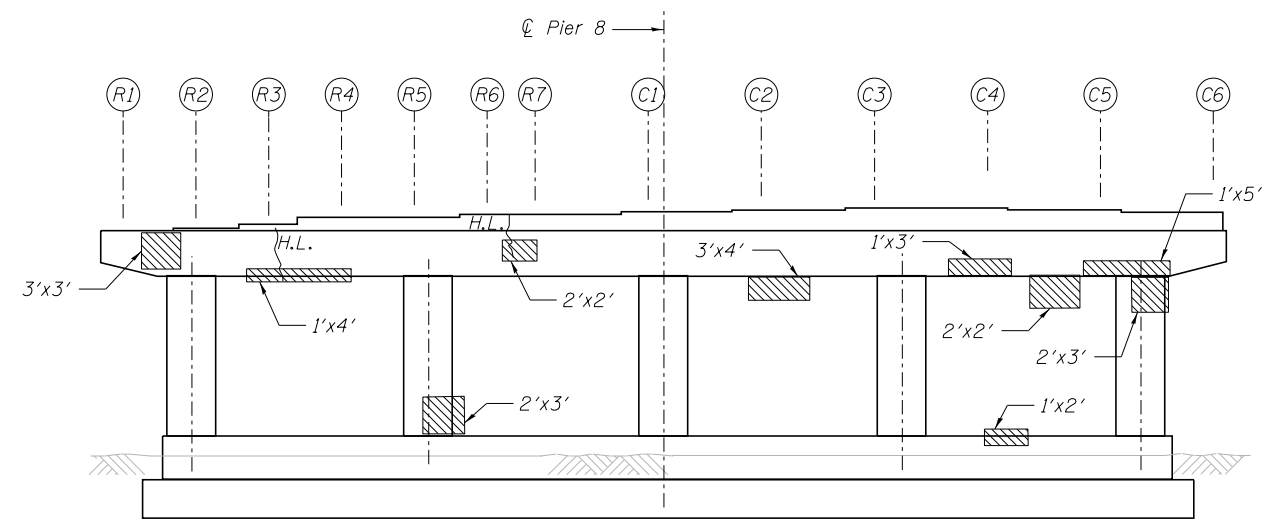
**PIER 7**  
Looking East



**PIER 8**  
Looking East



**PIER 7**  
Looking West



**PIER 8**  
Looking West

**UNFACTORED BEAM REACTIONS (KIPS)**

| LOCATION            | DEAD LOAD |
|---------------------|-----------|
| Girder R2 - Span 3E | 8.0       |
| Girder R4 - Span 5  | 8.0       |

Repairs shall be completed when the deck is removed  
Dead Load represents steel weight only

**BILL OF MATERIAL**

| ITEM  | UNIT    | TOTAL |
|---|---------|-------|
| Structural Repair of Concrete<br>(Depth Equal to or Less Than 5 Inches) | Sq. Ft. | 261   |
| Temporary Shoring and Cribbing  | Each    | 2     |

**LEGEND**

- Structural Repair of Concrete  
(Depth Equal to or Less Than 5 Inches)
- H.L. { Hairline Crack (not to be repaired)

**NOTE:**

Actual quantities of repairs shall be approved by the Engineer.

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|                                     |                        |                |           |
|-------------------------------------|------------------------|----------------|-----------|
| FILE NAME =                         | USER NAME = ksnider    | DESIGNED - FSM | REVISED - |
|                                     |                        | CHECKED - RMM  | REVISED - |
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|                                     |                        | CHECKED - RMM  | REVISED - |
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|                                     | PLOT DATE = 12/20/2013 |                |           |

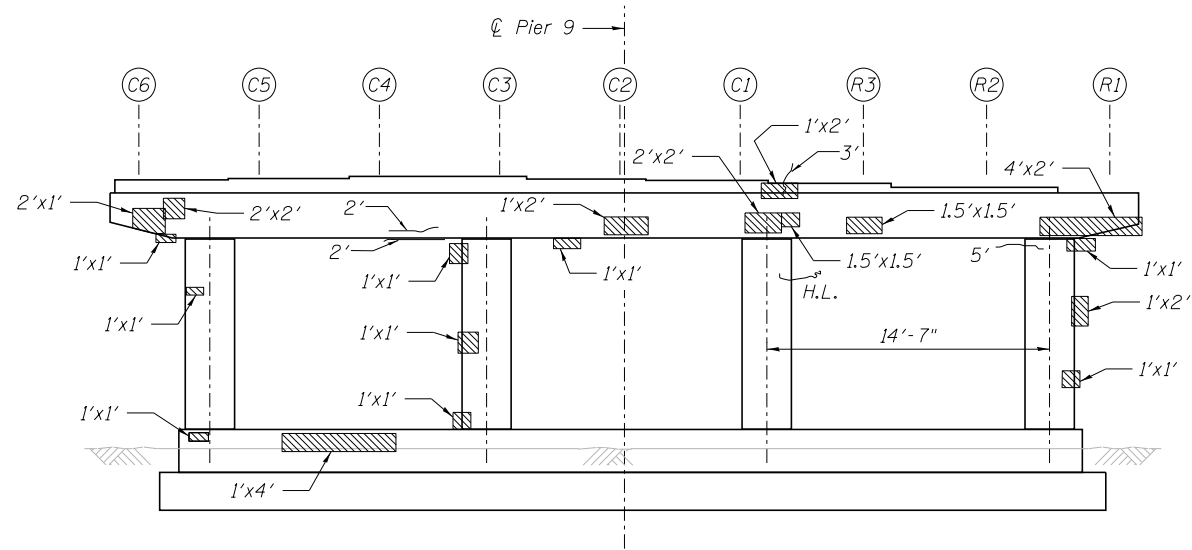
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PIERS 7 AND 8 CONCRETE REPAIR DETAILS**  
**STRUCTURE NO. 016-2457**

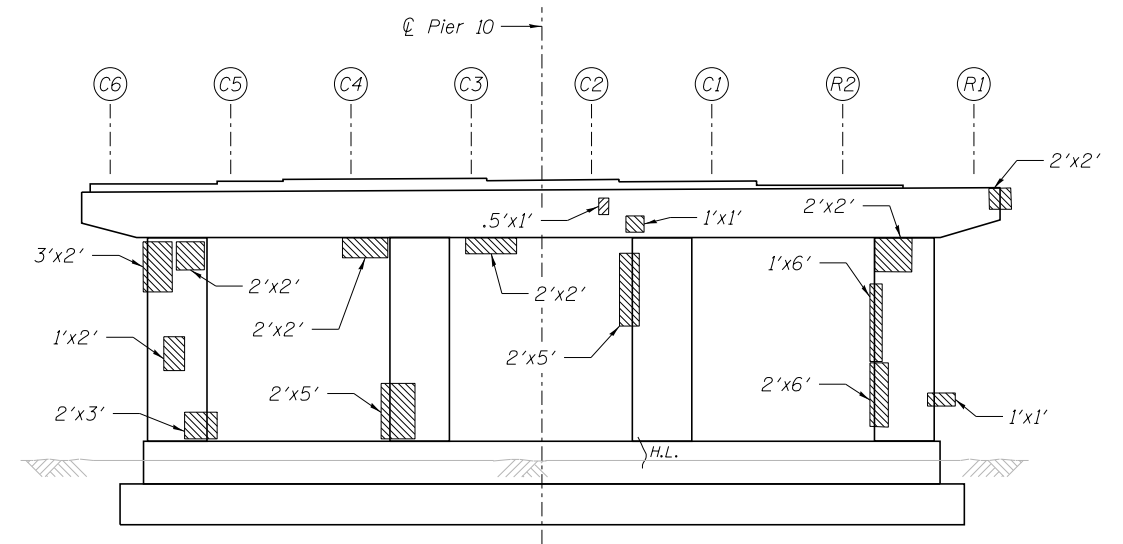
SHEET NO. SD72 OF SD83 SHEETS

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821          | 447       |
| CONTRACT NO. 60J16        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

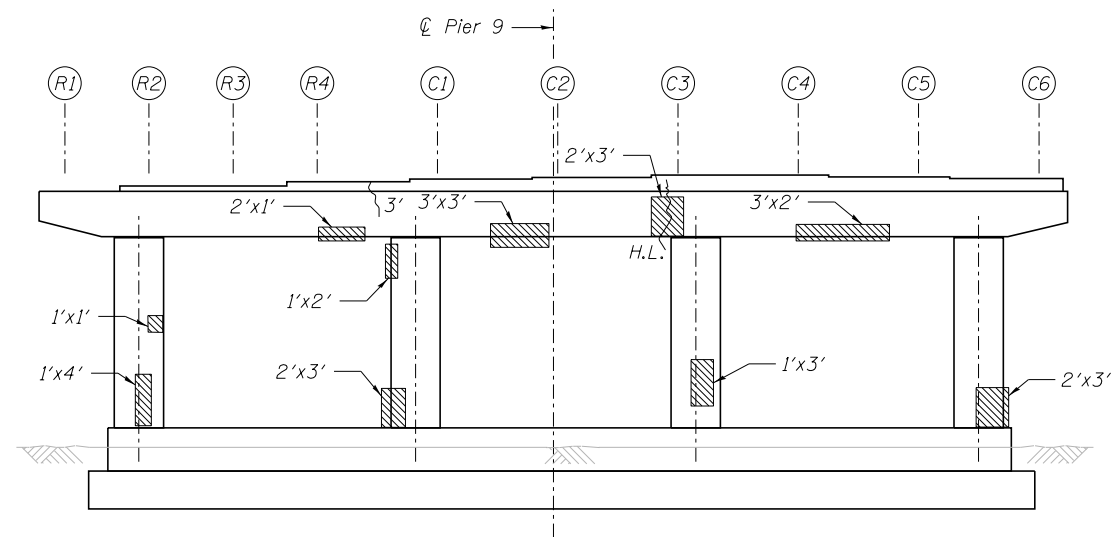
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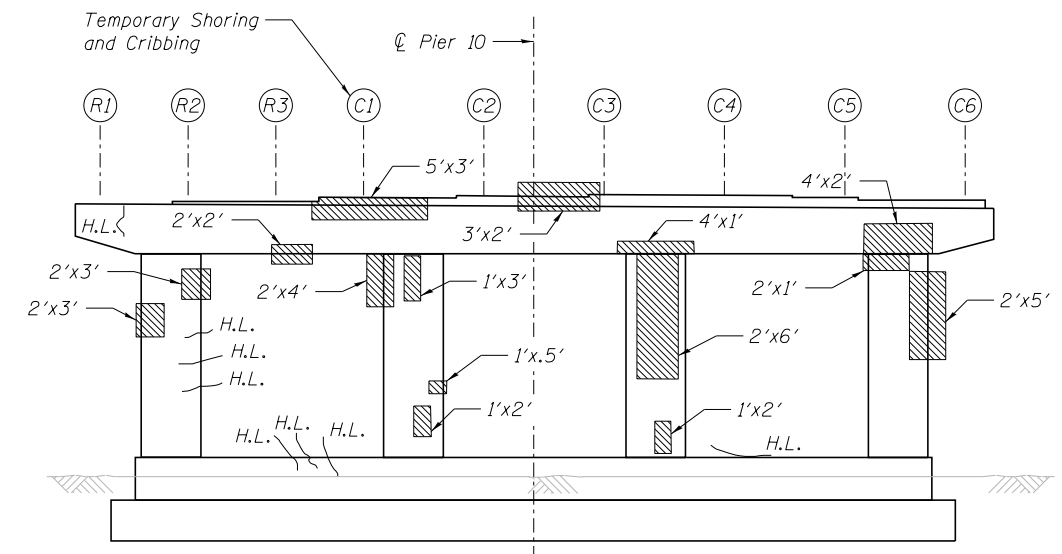
**PIER 9**  
Looking East



**PIER 10**  
Looking East



**PIER 9**  
Looking West



**PIER 10**  
Looking West

**UNFACTORED BEAM REACTIONS (KIPS)**

| LOCATION           | DEAD LOAD |
|--------------------|-----------|
| Girder C1 - Span 6 | 8.0       |

Repairs shall be completed when the deck is removed  
Dead Load represents steel weight only

**BILL OF MATERIAL**

| ITEM   | UNIT    | TOTAL |
|--|---------|-------|
| Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches) | Sq. Ft. | 250   |
| Epoxy Crack Injection  | Foot    | 15    |
| Temporary Shoring and Cribbing                                       | Each    | 1     |

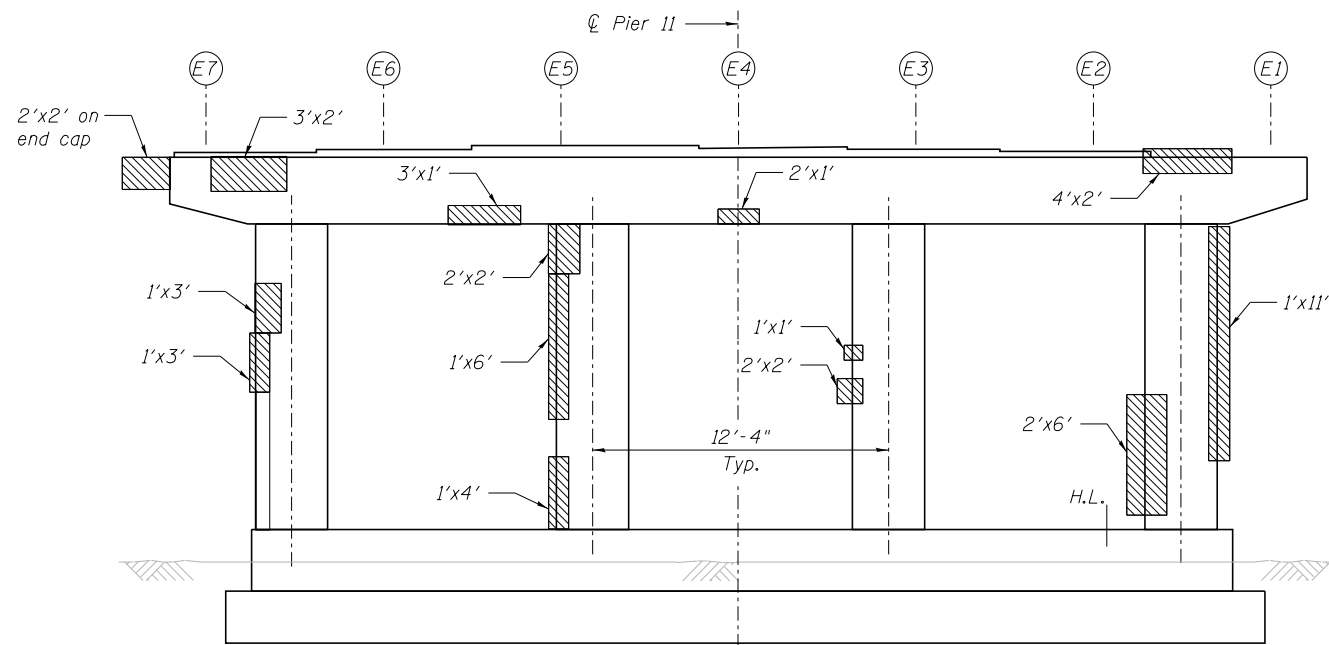
**LEGEND**

- Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)
- H.L. { Hairline Crack (not to be repaired)
- { Epoxy Crack Injection

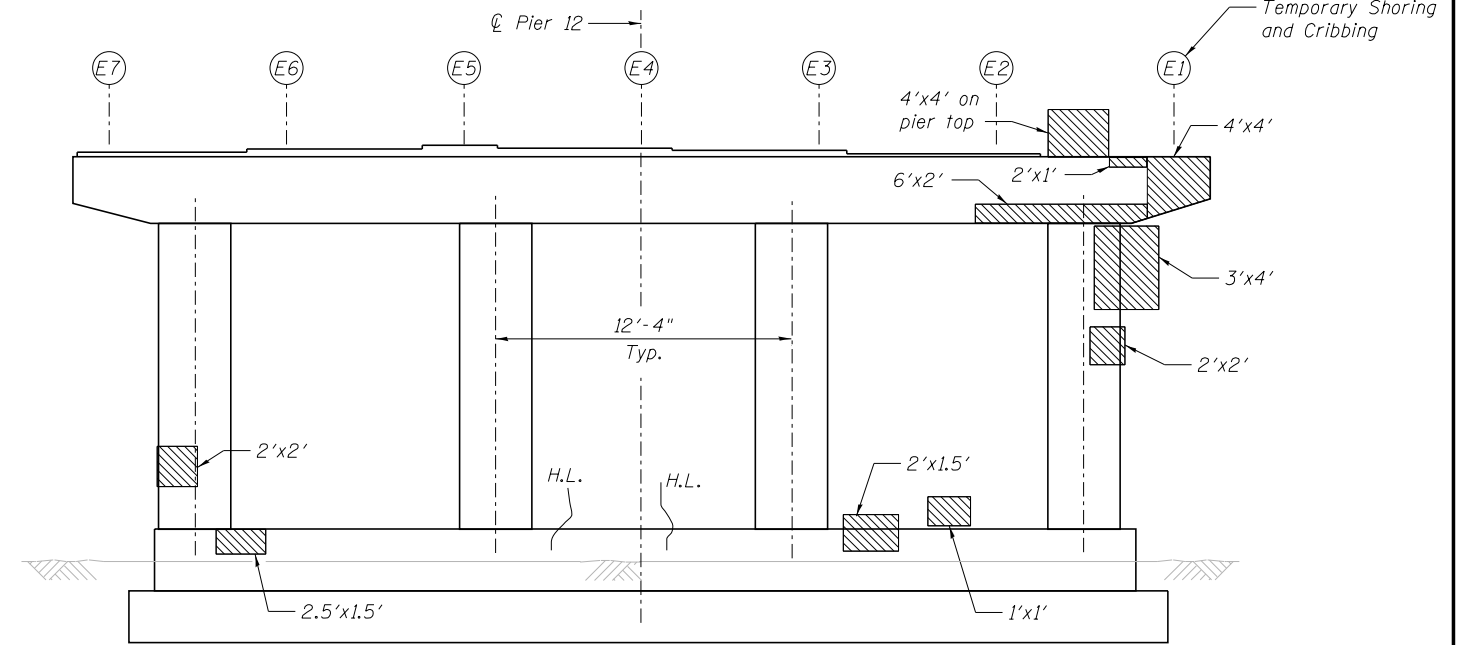
**NOTE:**

Actual quantities of repairs shall be approved by the Engineer.

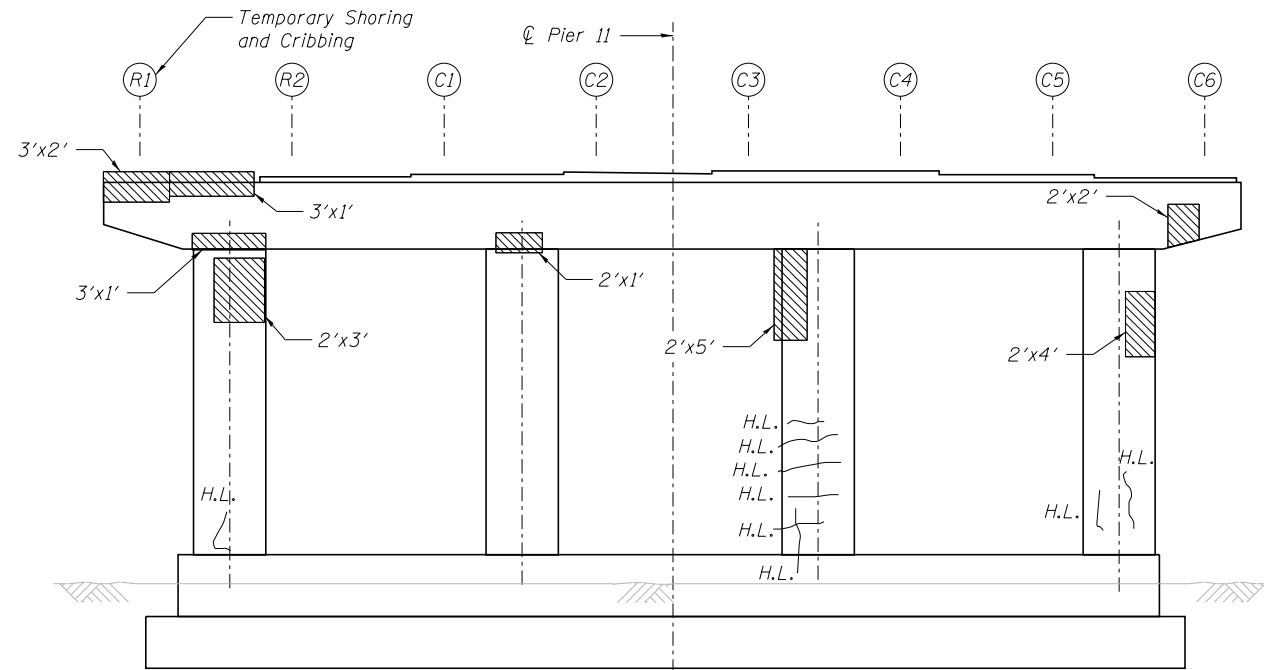




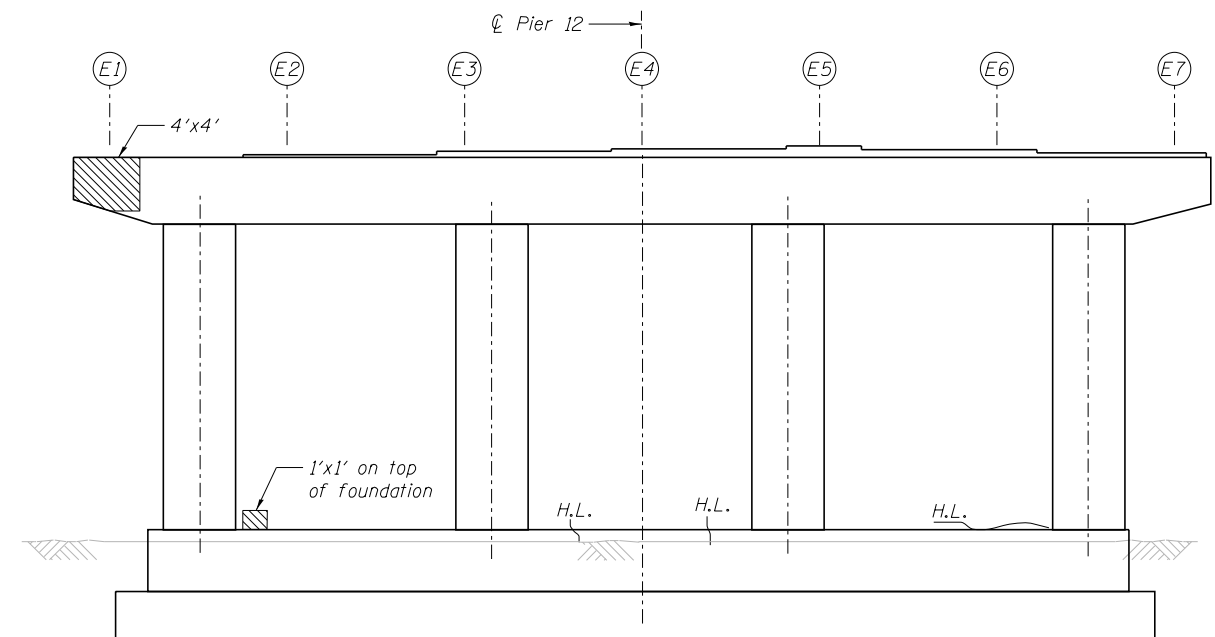
**PIER 11**  
Looking East



**PIER 12**  
Looking East



**PIER 11**  
Looking West



**PIER 12**  
Looking West

**UNFACTORED BEAM REACTIONS (KIPS)**

| LOCATION            | DEAD LOAD |
|---------------------|-----------|
| Girder R1 - Span 7  | 8.0       |
| Girder E1 - Pier 12 | 15.0      |

Repairs shall be completed when the deck is removed  
Dead Load represents steel weight only

**BILL OF MATERIAL**

| ITEM  | UNIT    | TOTAL |
|---|---------|-------|
| Structural Repair of Concrete<br>(Depth Equal to or Less Than 5 Inches) | Sq. Ft. | 204   |
| Temporary Shoring and Cribbing  | Each    | 2     |

**LEGEND**

Structural Repair of Concrete  
(Depth Equal to or Less Than 5 Inches)

H.L. { Hairline Crack (not to be repaired)

**NOTE:**

Actual quantities of repairs shall be approved by the Engineer.

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|                                       |                        |                |           |
|---------------------------------------|------------------------|----------------|-----------|
| FILE NAME =                           | USER NAME = ksnider    | DESIGNED - FSM | REVISED - |
| 0162457.60J16.074.pierrepair11-12.dgn | PLOT SCALE =           | CHECKED - RMM  | REVISED - |
|                                       | PLOT DATE = 12/20/2013 | DRAWN - FSM    | REVISED - |
|                                       |                        | CHECKED - RMM  | REVISED - |

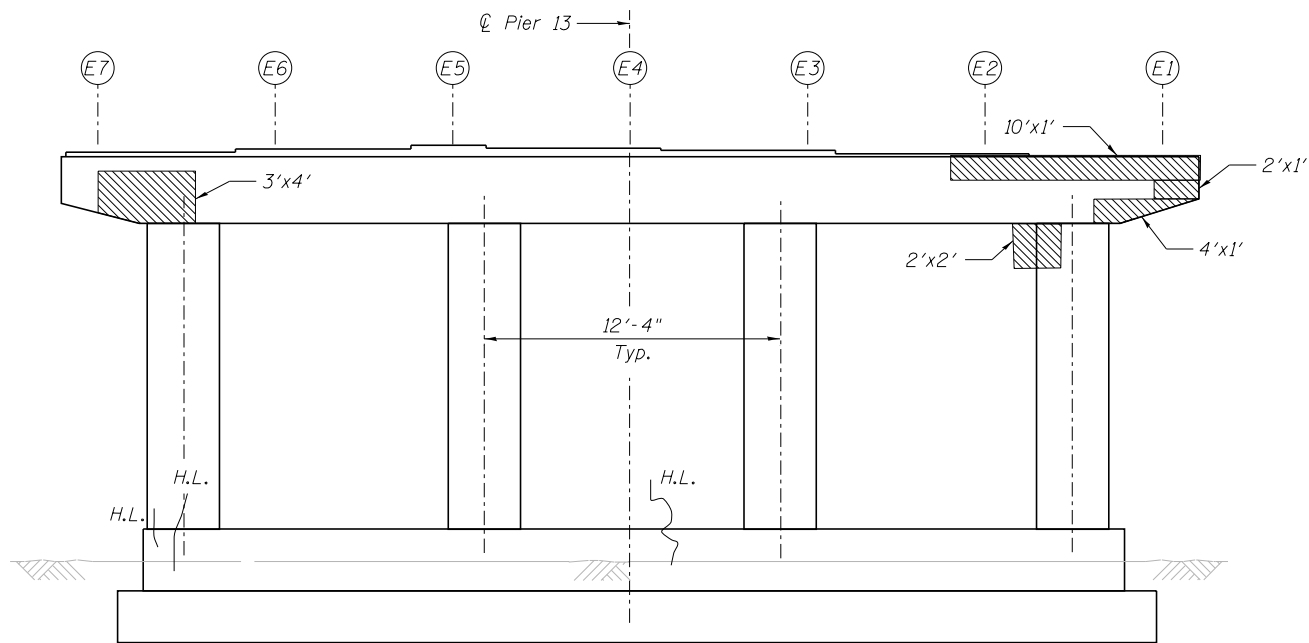
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PIERS 11 AND 12 CONCRETE REPAIR DETAILS**  
**STRUCTURE NO. 016-2457**

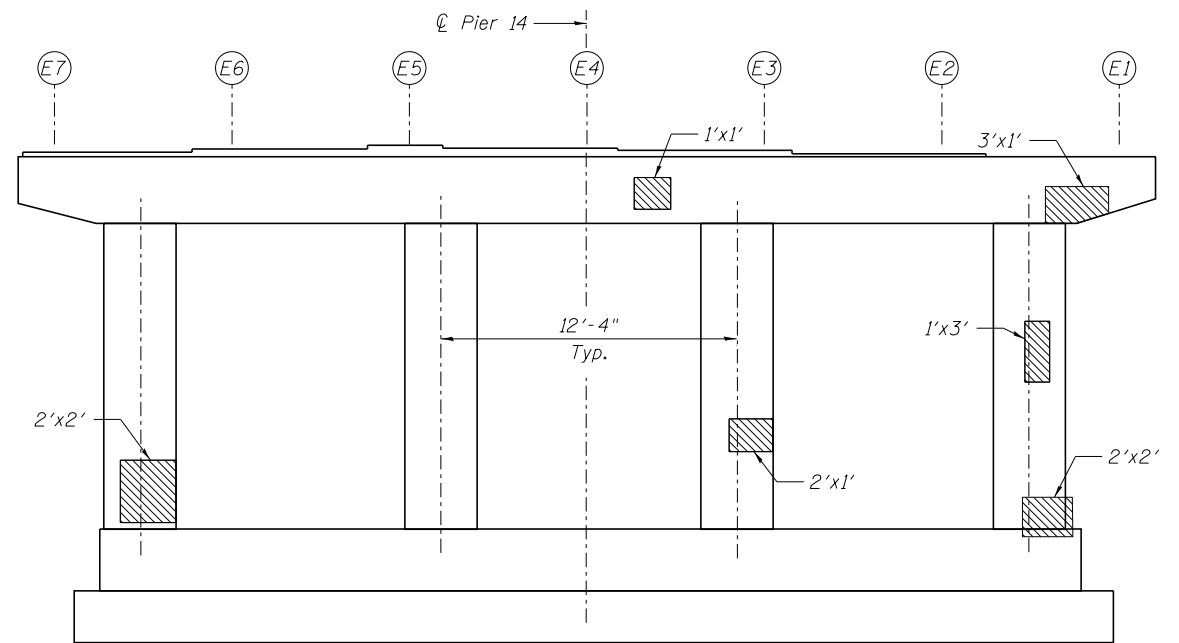
SHEET NO. SD74 OF SD83 SHEETS

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821          | 449       |
| CONTRACT NO. 60J16        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

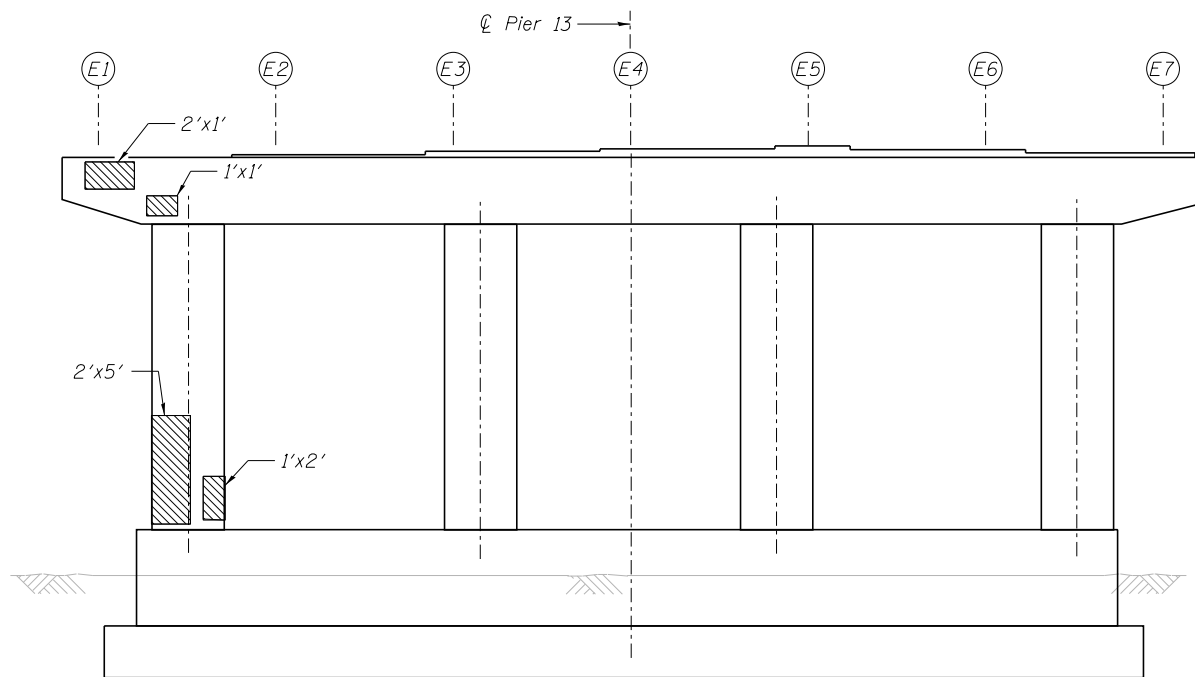
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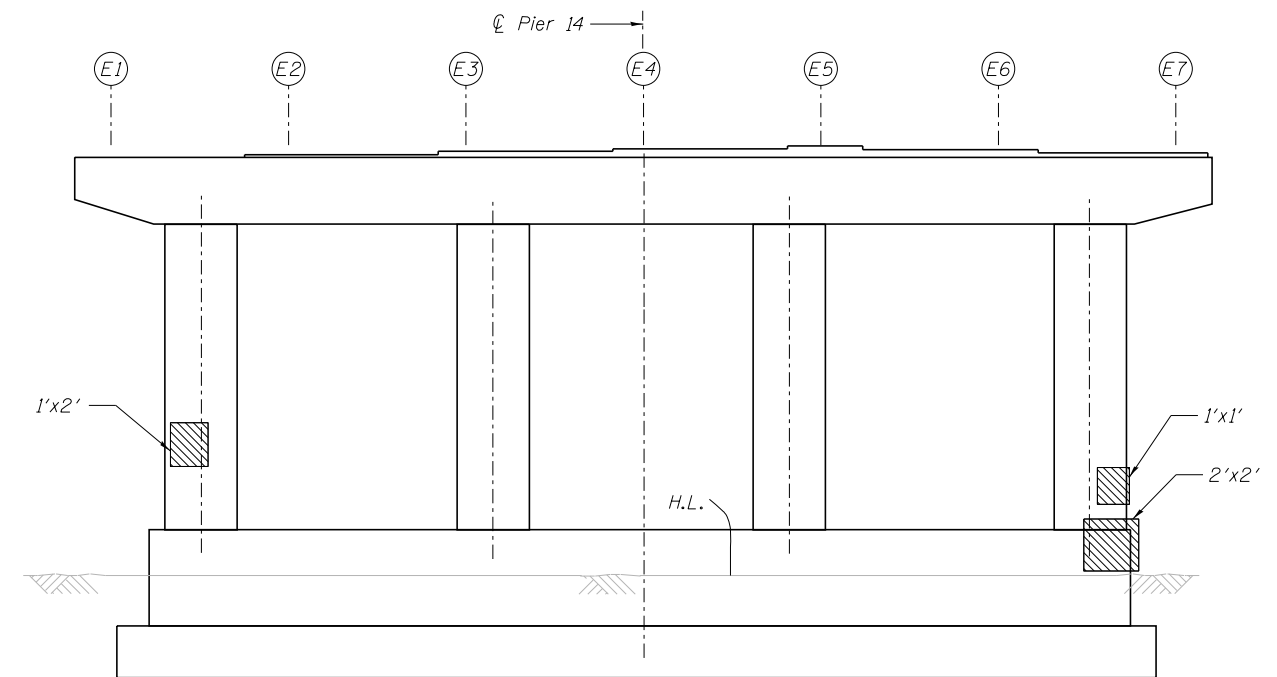
**PIER 13**  
Looking East



**PIER 14**  
Looking East



**PIER 13**  
Looking West



**PIER 14**  
Looking West

**BILL OF MATERIAL**

| ITEM  | UNIT    | TOTAL |
|---|---------|-------|
| Structural Repair of Concrete<br>(Depth Equal to or Less Than 5 Inches) | Sq. Ft. | 71    |

**LEGEND**

- Structural Repair of Concrete  
(Depth Equal to or Less Than 5 Inches)
- H.L. { Hairline Crack (not to be repaired)

**NOTE:**

Actual quantities of repairs shall be approved by the Engineer.

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|                                       |                        |                |           |
|---------------------------------------|------------------------|----------------|-----------|
| FILE NAME =                           | USER NAME = ksnider    | DESIGNED - FSM | REVISED - |
| 0162457.60J16.075.pierrepair13-14.dgn |                        | CHECKED - RMM  | REVISED - |
|                                       | PLOT SCALE =           | DRAWN - RSM    | REVISED - |
|                                       | PLOT DATE = 12/20/2013 | CHECKED - RMM  | REVISED - |

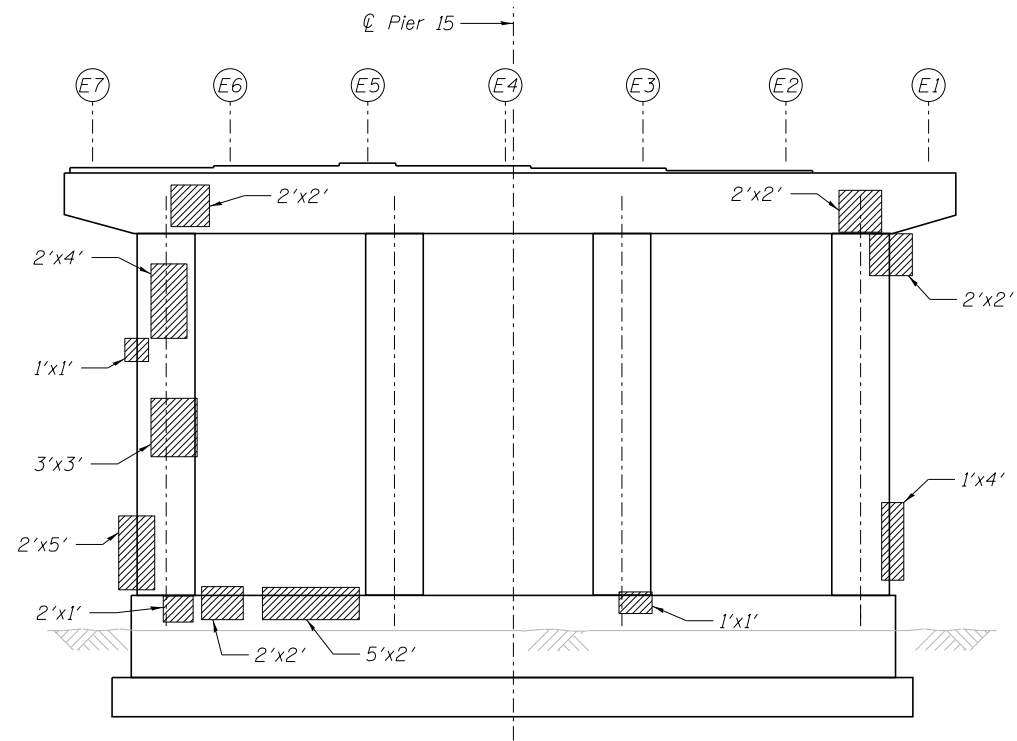
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PIERS 13 AND 14 CONCRETE REPAIR DETAILS**  
**STRUCTURE NO. 016-2457**

SHEET NO. SD75 OF SD83 SHEETS

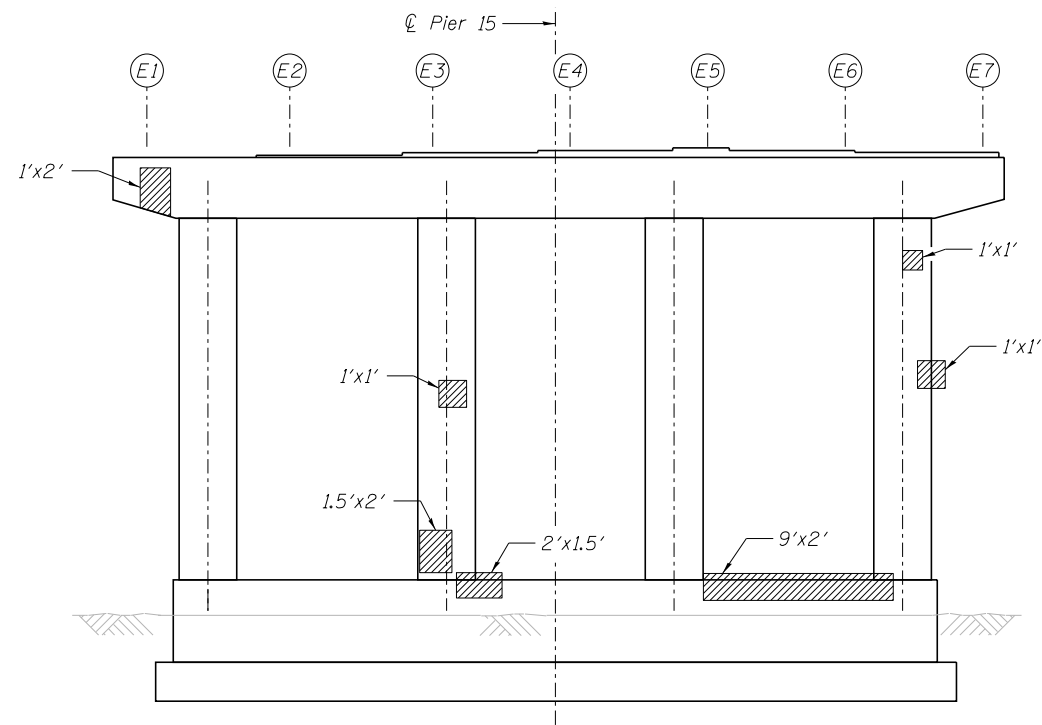
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
| 372                | 2013-038B-R | COOK   | 821                       | 450       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

Y:\chicago\100005\100093\Eng\_Docs\_Phase\_1\1\SN\_016\_2456\_2457\_1st\_Ave\_over\_Des\_Plaines\_River\_Valley\Final\0162457\_60J16\_075.pierrepair13-14.dgn 3:52:26 PM 8/6/2014



**PIER 15**  
Looking East

See Str. No. 016-2455  
for Pier 16




**PIER 15**  
Looking West

**BILL OF MATERIAL**

| ITEM  | UNIT    | TOTAL |
|---|---------|-------|
| Structural Repair of Concrete<br>(Depth Equal to or Less Than 5 Inches) | Sq. Ft. | 95    |

**LEGEND**

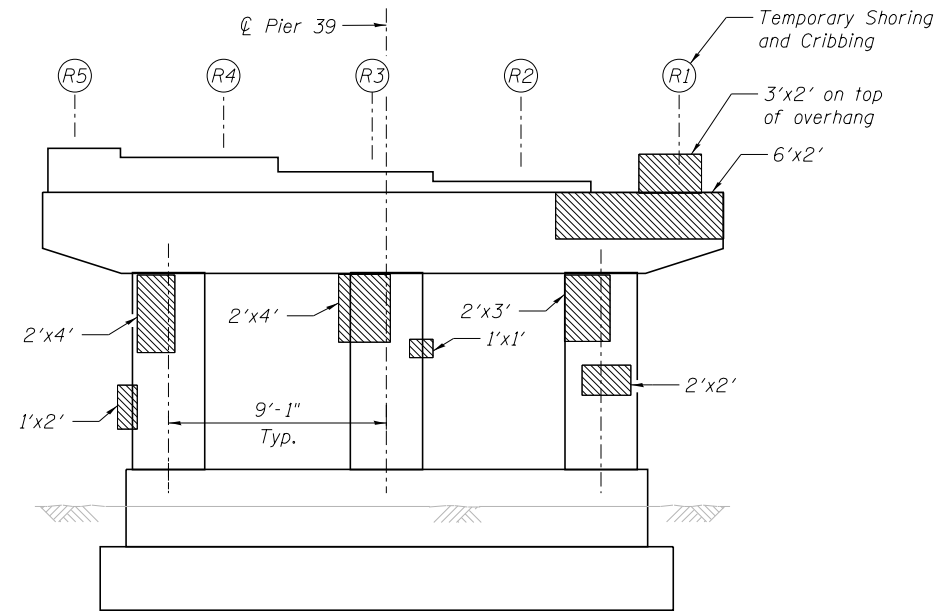
 Structural Repair of Concrete  
(Depth Equal to or Less Than 5 Inches)

**NOTE:**

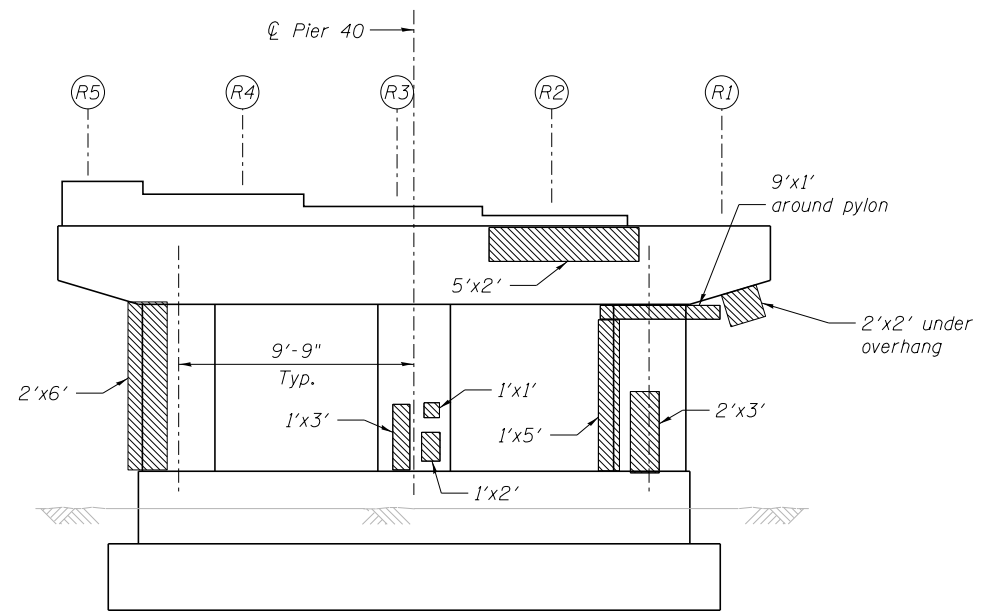
Actual quantities of repairs shall be approved by the Engineer.

|                                    |                        |                |           |
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| FILE NAME =                        | USER NAME = ksnider    | DESIGNED - FSM | REVISED - |
| 0162457.60J16.076.pierrepair15.dgn |                        | CHECKED - RMM  | REVISED - |
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|                                    | PLOT DATE = 12/20/2013 | CHECKED - RMM  | REVISED - |

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
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| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

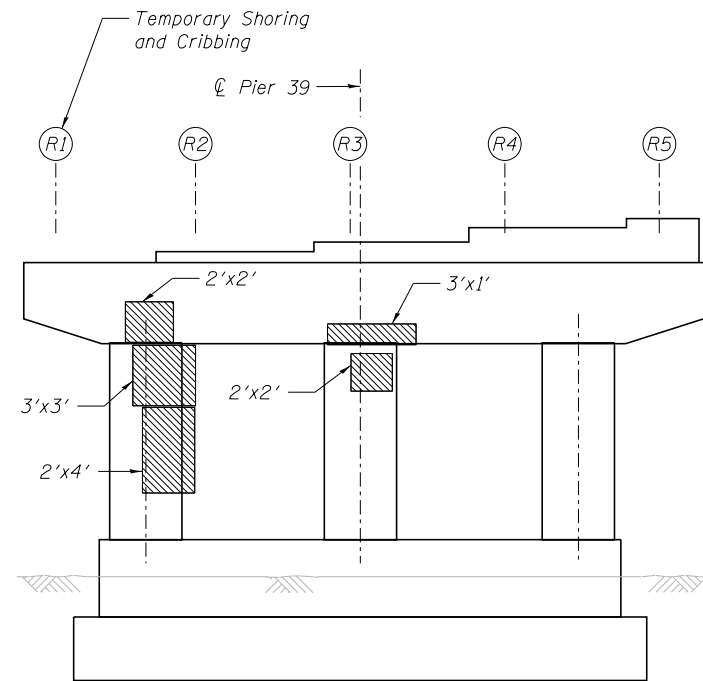


**PIER 39**  
Looking East

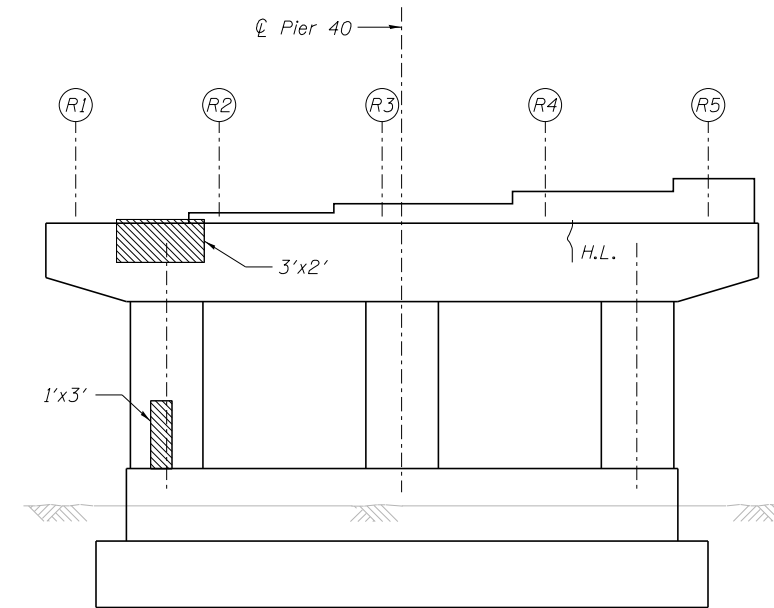


**PIER 40**  
Looking East

See Str. No. 016-1026  
for Pier 41



**PIER 39**  
Looking West



**PIER 40**  
Looking West

**LEGEND**

Structural Repair of Concrete  
(Depth Equal to or Less Than 5 Inches)

H.L. { Hairline Crack (not to be repaired)

**UNFACTORED BEAM REACTIONS (KIPS)**

| LOCATION            | DEAD LOAD |
|---------------------|-----------|
| Girder R1 - Span 1E | 8.0       |
| Girder R1 - Span 2E | 8.0       |

Repairs shall be completed when the deck is removed  
Dead Load represents steel weight only

**BILL OF MATERIAL**

| ITEM  | UNIT    | TOTAL |
|---|---------|-------|
| Structural Repair of Concrete<br>(Depth Equal to or Less Than 5 Inches) | Sq. Ft. | 136   |
| Temporary Shoring and Cribbing  | Each    | 2     |

**NOTE:**

Actual quantities of repairs shall be approved by the Engineer.



Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

FILE NAME =  
0162457.60J16.077.pierrepair39-40.dgn

USER NAME = ksnider  
PLOT SCALE =  
PLOT DATE = 12/20/2013

DESIGNED - FSM  
CHECKED - RMM  
DRAWN - FSM  
CHECKED - RMM

REVISED -  
REVISED -  
REVISED -  
REVISED -

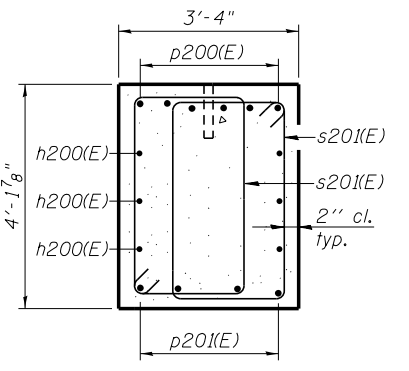
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PIERS 39 AND 40 CONCRETE REPAIR DETAILS  
STRUCTURE NO. 016-2457

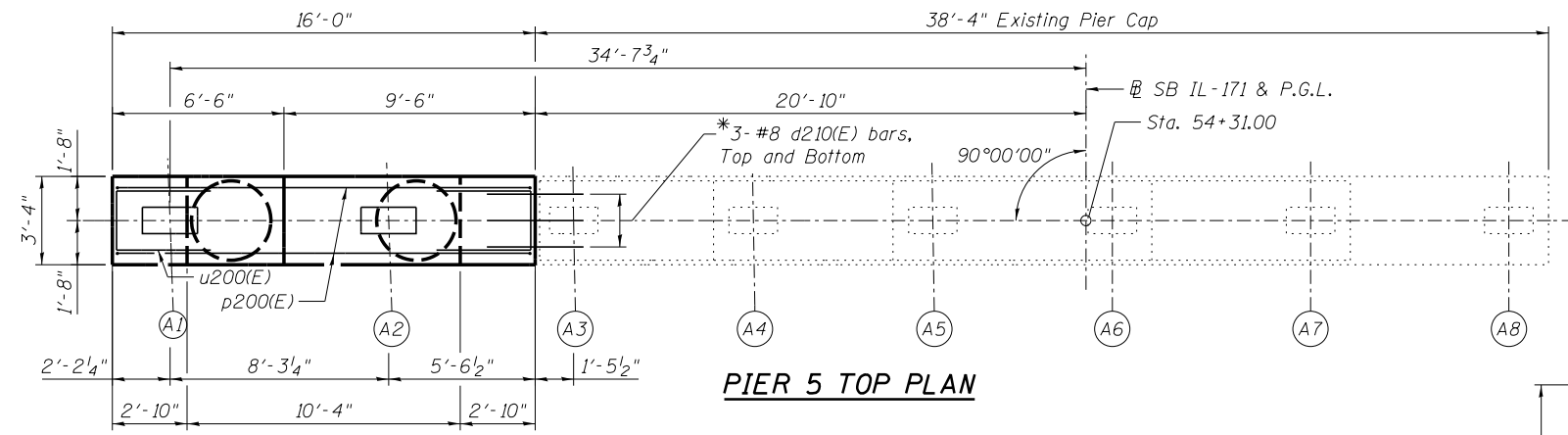
SHEET NO. SD77 OF SD83 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
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| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

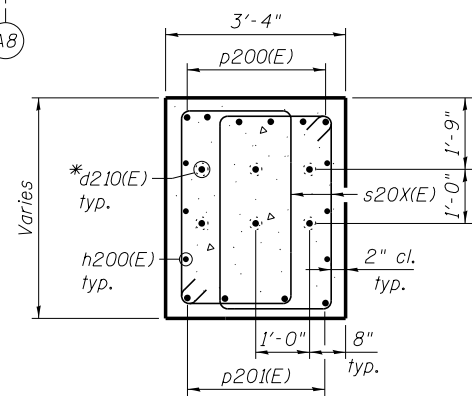
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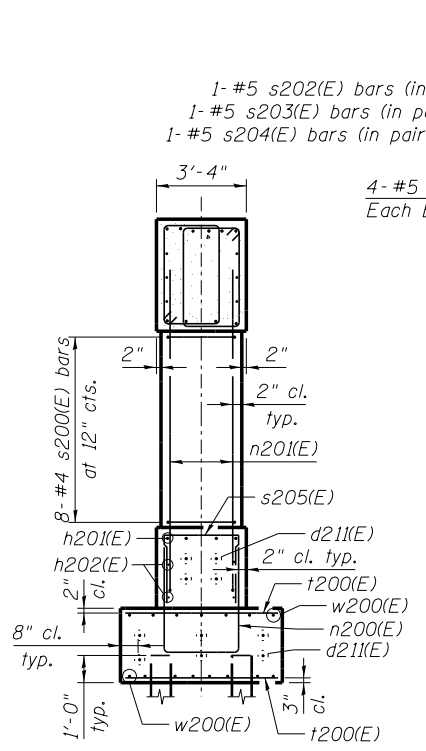
**SECTION A-A**



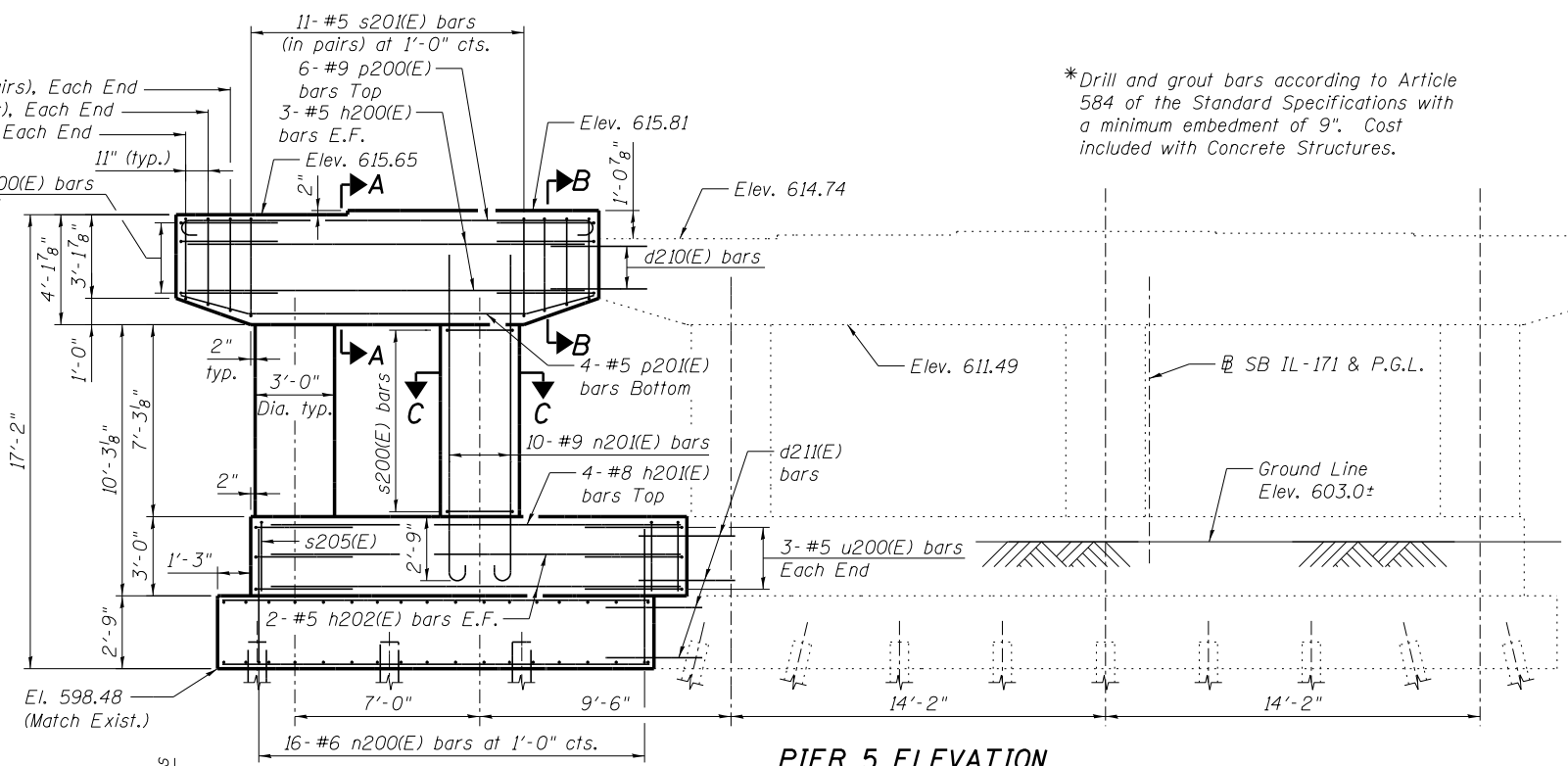
**PIER 5 TOP PLAN**



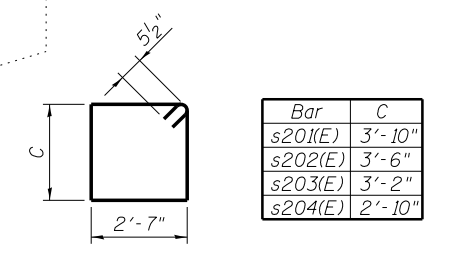
**SECTION B-B**



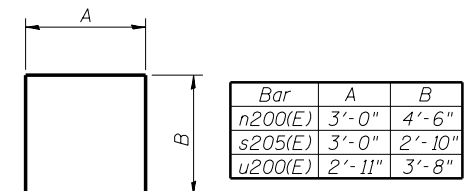
**END VIEW**



**PIER 5 ELEVATION**  
(Looking Upstation)



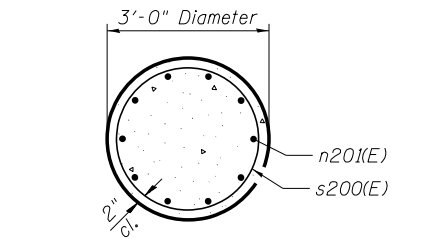
**s201(E) THRU s204(E) BARS**



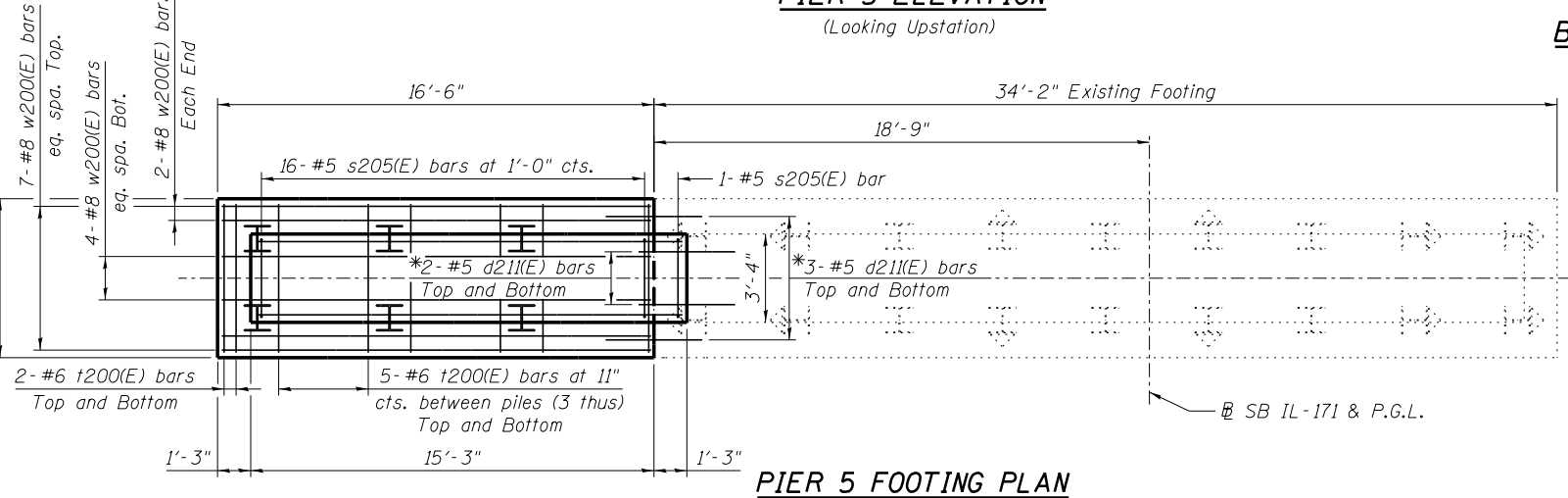
**BARS n200(E), s205(E) AND u200(E)**

**BILL OF MATERIAL**

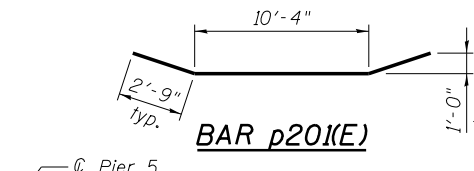
| Bar                              | No. | Size    | Length  | Shape |
|----------------------------------|-----|---------|---------|-------|
| d210(E)                          | 6   | #8      | 7'-0"   | —     |
| d211(E)                          | 10  | #5      | 4'-0"   | —     |
| h200(E)                          | 6   | #5      | 15'-8"  | —     |
| h201(E)                          | 4   | #8      | 16'-2"  | —     |
| h202(E)                          | 4   | #5      | 16'-2"  | —     |
| n200(E)                          | 16  | #6      | 12'-0"  | U     |
| n201(E)                          | 20  | #9      | 14'-3"  | U     |
| p200(E)                          | 6   | #9      | 18'-0"  | C     |
| p201(E)                          | 4   | #5      | 15'-10" | U     |
| s200(E)                          | 16  | #4      | 11'-0"  | O     |
| s201(E)                          | 22  | #5      | 13'-9"  | □     |
| s202(E)                          | 4   | #5      | 13'-1"  | □     |
| s203(E)                          | 4   | #5      | 12'-5"  | □     |
| s204(E)                          | 4   | #5      | 11'-9"  | □     |
| s205(E)                          | 17  | #5      | 8'-8"   | U     |
| t200(E)                          | 34  | #6      | 5'-8"   | —     |
| u200(E)                          | 14  | #5      | 10'-3"  | U     |
| w200(E)                          | 15  | #8      | 16'-2"  | —     |
| Structure Excavation             |     | Cu. Yd. | 37      |       |
| Concrete Structures              |     | Cu. Yd. | 28.1    |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 4,020   |       |
| Furnishing Steel Piles HPI2x53   |     | Foot    | 115     |       |
| Driving Piles                    |     | Foot    | 115     |       |
| Test Pile Steel HPI2x53          |     | Each    | 1       |       |
| Pile Shoes                       |     | Each    | 6       |       |



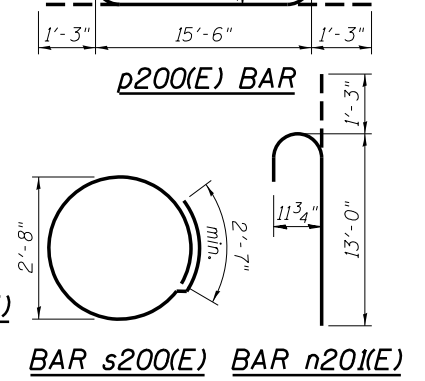
**SECTION C-C**



**PIER 5 FOOTING PLAN**



**BAR p200(E)**



**BAR s200(E) BAR n201(E)**

**PILE DATA**  
 Type: HPI2x53 with Pile Shoes  
 Nominal Required Bearing: 418 kips  
 Allowable Resistance Available: 139 kips  
 Est. Length: 23 ft.  
 No. Production Piles: 5  
 No. Test Piles: 1

**ANCHOR BOLT DETAIL**

| Dimension | Girder A1 | Girder A2 |
|-----------|-----------|-----------|
| a         | 88°29'15" | 87°44'22" |
| b         | 3/8"      | 9/16"     |

- NOTES:**
- Space reinforcement to miss anchor bolts.
  - Pour steps monolithically with cap.
  - For pile spacing and footing layout, see Foundation Layout on Sheet SD5.

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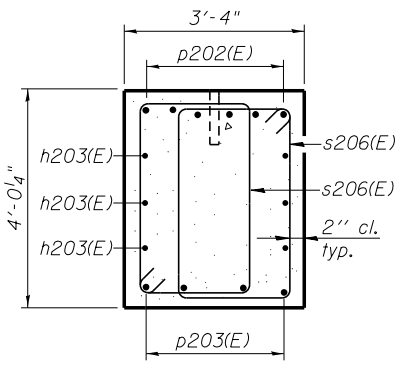
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|---|------------------------|----------------|-----------|
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| 0162457.60J16.078.Pier.5.Widening.Details | PROJECT SCALE =        | CHECKED - AJK  | REVISED - |
|   | PLOT DATE = 12/20/2013 | DRAWN - KMS    | REVISED - |
|   |                        | CHECKED - AJK  | REVISED - |

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

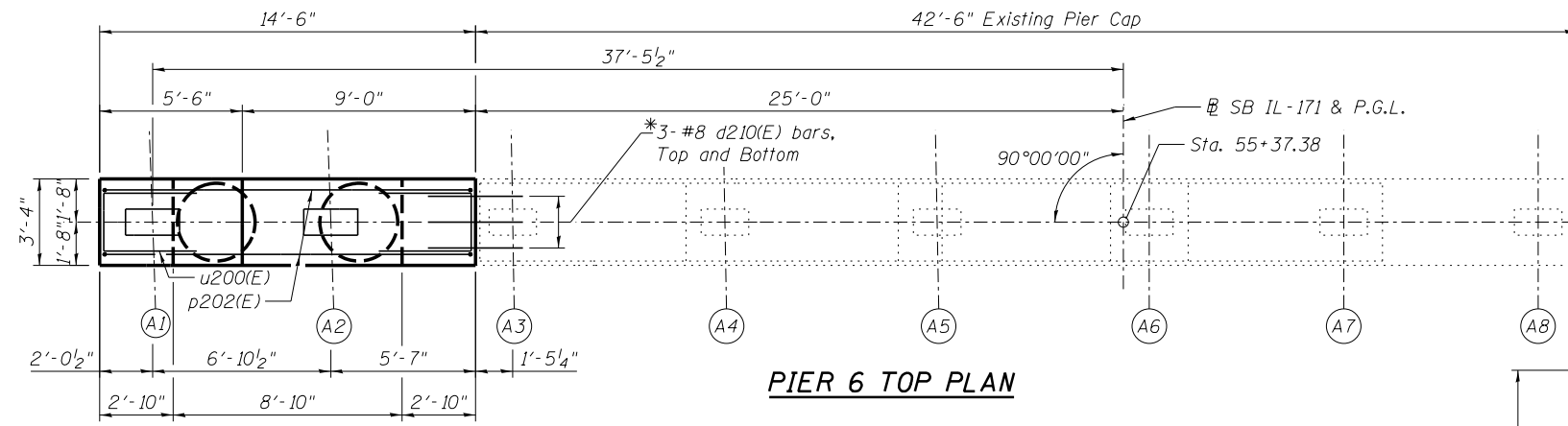
**PIER 5 WIDENING DETAILS**  
**STRUCTURE NO. 016-2457**

SHEET NO. SD78 OF SD83 SHEETS

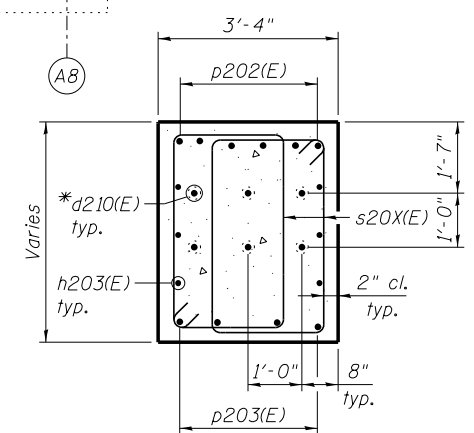
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
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| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |



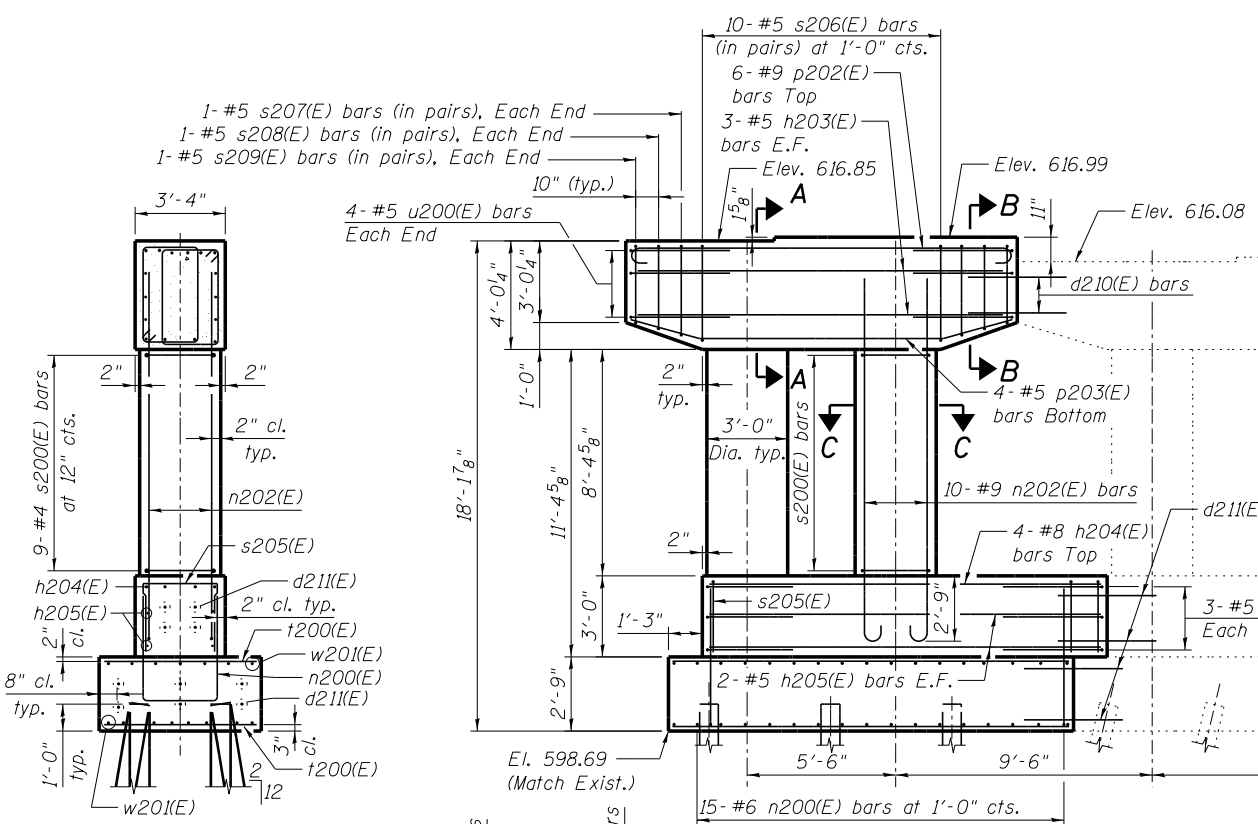
**SECTION A-A**



**PIER 6 TOP PLAN**

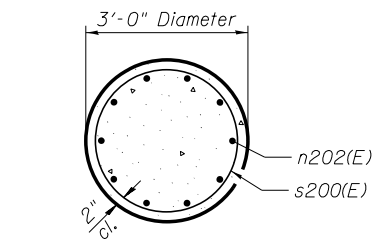


**SECTION B-B**

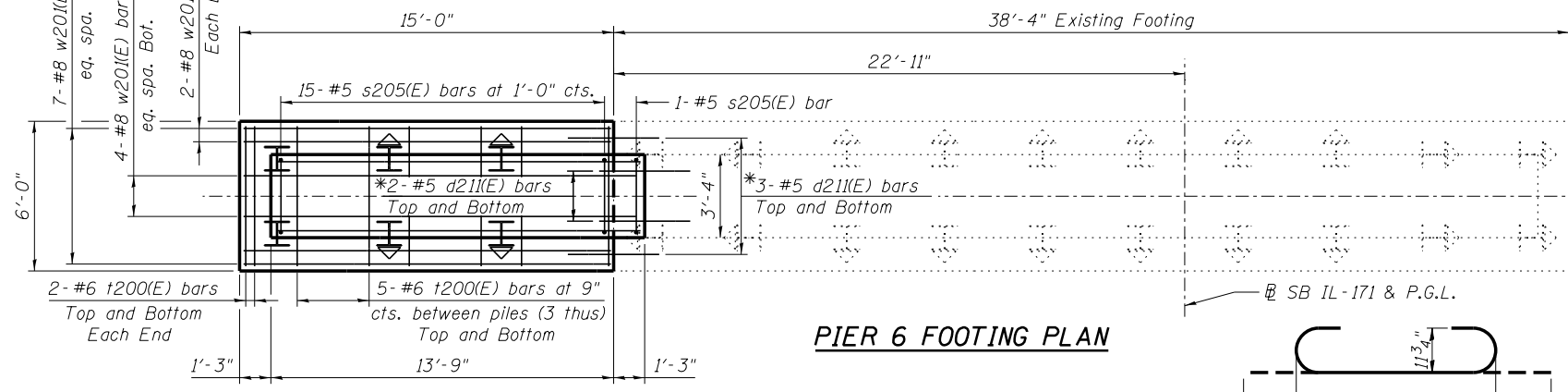


**PIER 6 ELEVATION**  
(Looking Upstation)

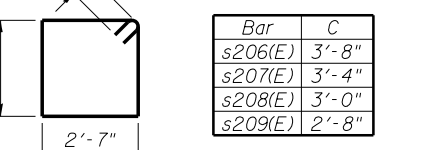
**END VIEW**



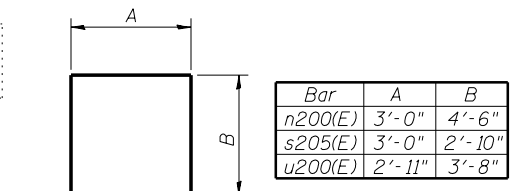
**SECTION C-C**



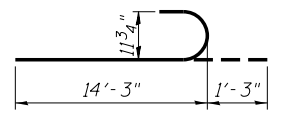
**PIER 6 FOOTING PLAN**



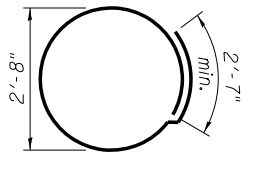
**s206(E) THRU s209(E) BARS**



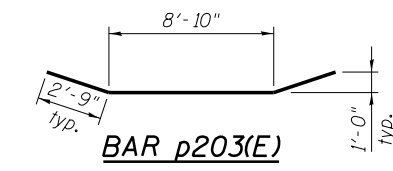
**BARS n200(E), s205(E) AND u200(E)**



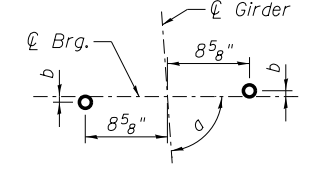
**BAR n202(E)**



**BAR s200(E)**



**BAR p203(E)**



**ANCHOR BOLT DETAIL**

**PILE DATA**  
 Type: HP12x53 with Pile Shoes  
 Nominal Required Bearing: 418 kips  
 Allowable Resistance Available: 139 kips  
 Est. Length: 16 ft.  
 No. Production Piles: 5  
 No. Test Piles: 1

- NOTES:**
- Space reinforcement to miss anchor bolts.
  - Pour steps monolithically with cap.
  - For pile spacing and footing layout, see Foundation Layout on Sheet SD5.

**BILL OF MATERIAL**

| Bar                              | No. | Size    | Length | Shape |
|----------------------------------|-----|---------|--------|-------|
| d210(E)                          | 6   | #8      | 7'-0"  | —     |
| d211(E)                          | 10  | #5      | 4'-0"  | —     |
| h203(E)                          | 6   | #5      | 14'-2" | —     |
| h204(E)                          | 4   | #8      | 14'-8" | —     |
| h205(E)                          | 4   | #5      | 14'-8" | —     |
| n200(E)                          | 15  | #6      | 12'-0" | U     |
| n202(E)                          | 20  | #9      | 15'-6" | U     |
| p202(E)                          | 6   | #9      | 16'-6" | U     |
| p203(E)                          | 4   | #5      | 14'-4" | U     |
| s200(E)                          | 18  | #4      | 11'-0" | O     |
| s205(E)                          | 16  | #5      | 8'-8"  | U     |
| s206(E)                          | 20  | #5      | 13'-5" | □     |
| s207(E)                          | 4   | #5      | 12'-9" | □     |
| s208(E)                          | 4   | #5      | 12'-1" | □     |
| s209(E)                          | 4   | #5      | 11'-5" | □     |
| t200(E)                          | 34  | #6      | 5'-8"  | —     |
| u200(E)                          | 14  | #5      | 10'-3" | U     |
| w201(E)                          | 15  | #8      | 14'-8" | —     |
| Structure Excavation             |     | Cu. Yd. | 31     |       |
| Concrete Structures              |     | Cu. Yd. | 26.2   |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 3,920  |       |
| Furnishing Steel Piles HP12x53   |     | Foot    | 80     |       |
| Driving Piles                    |     | Foot    | 80     |       |
| Test Pile Steel HP12x53          |     | Each    | 1      |       |
| Pile Shoes                       |     | Each    | 6      |       |

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 Alfred Benesch & Company  
 205 North Michigan Avenue, Suite 2400  
 Chicago, Illinois 60601  
 312-565-0450 Job No. 10093

|   |                        |                |           |
|---|------------------------|----------------|-----------|
| FILE NAME =                               | USER NAME = ksnider    | DESIGNED - JLS | REVISED - |
| 0162457.60J16.079.Pier.6.Widening.Details | PROJECT SCALE =        | CHECKED - AJK  | REVISED - |
|   | PLOT DATE = 12/20/2013 | DRAWN - KMS    | REVISED - |
|   |                        | CHECKED - AJK  | REVISED - |

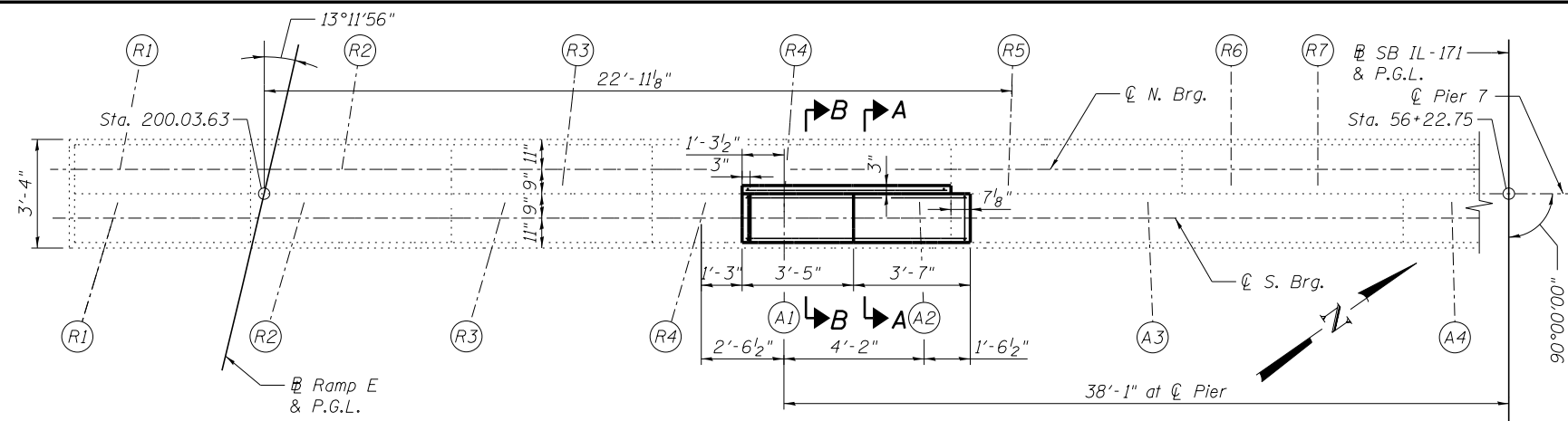
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PIER 6 WIDENING DETAILS**  
**STRUCTURE NO. 016-2457**

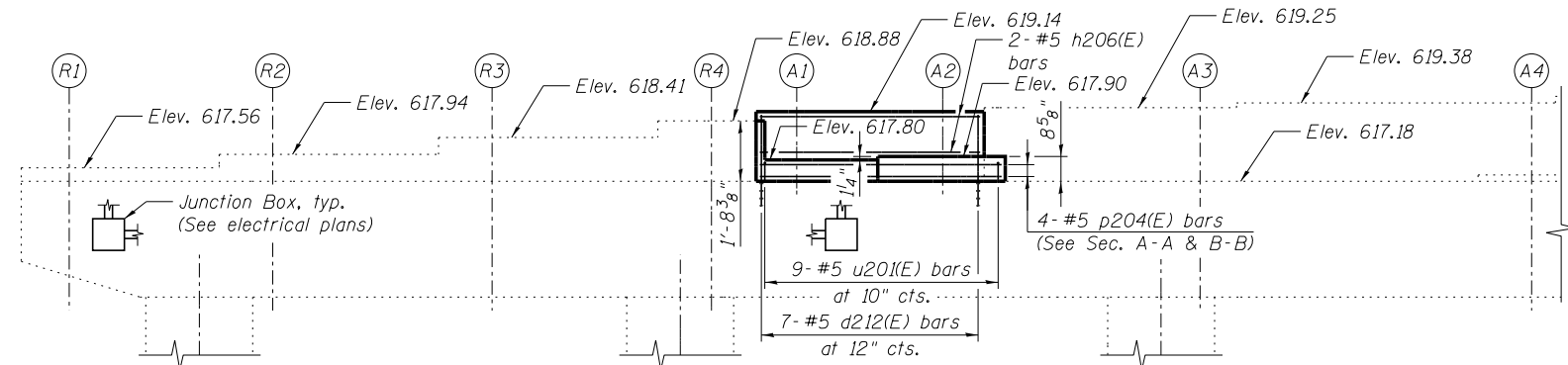
SHEET NO. SD79 OF SD83 SHEETS

| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
|---------------------------|-------------|--------|--------------------|-----------|
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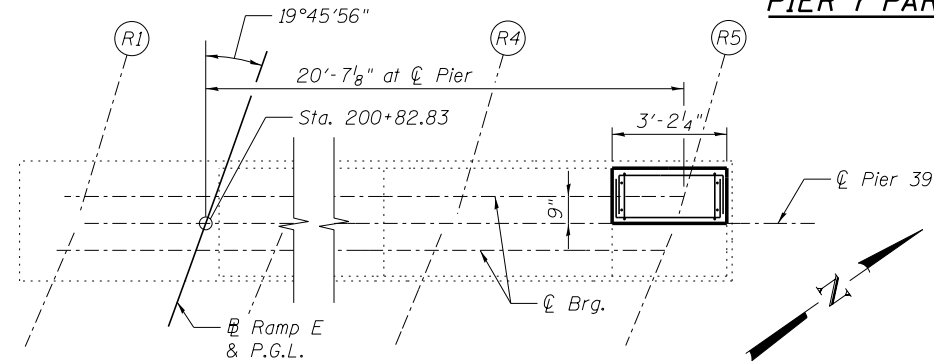
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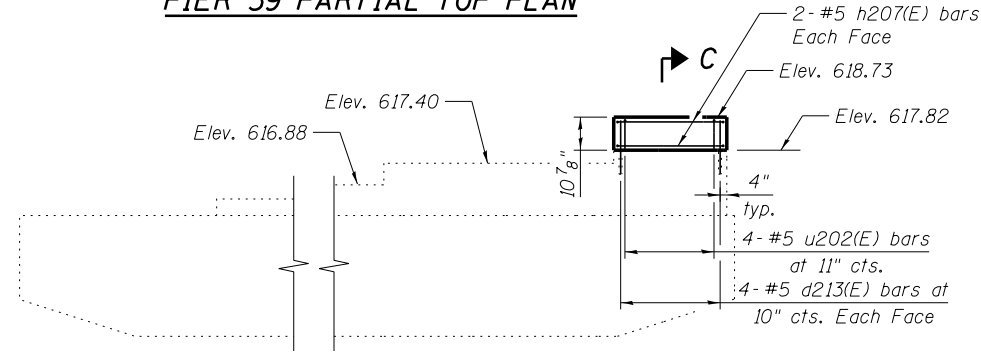
**PIER 7 PARTIAL TOP PLAN**



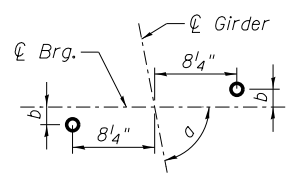
**PIER 7 PARTIAL ELEVATION**



**PIER 39 PARTIAL TOP PLAN**

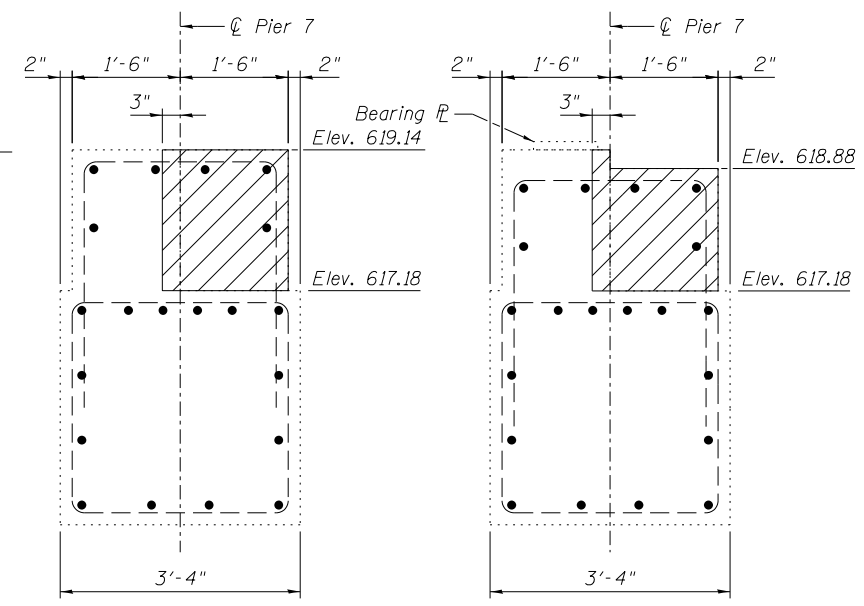


**PIER 39 PARTIAL ELEVATION**



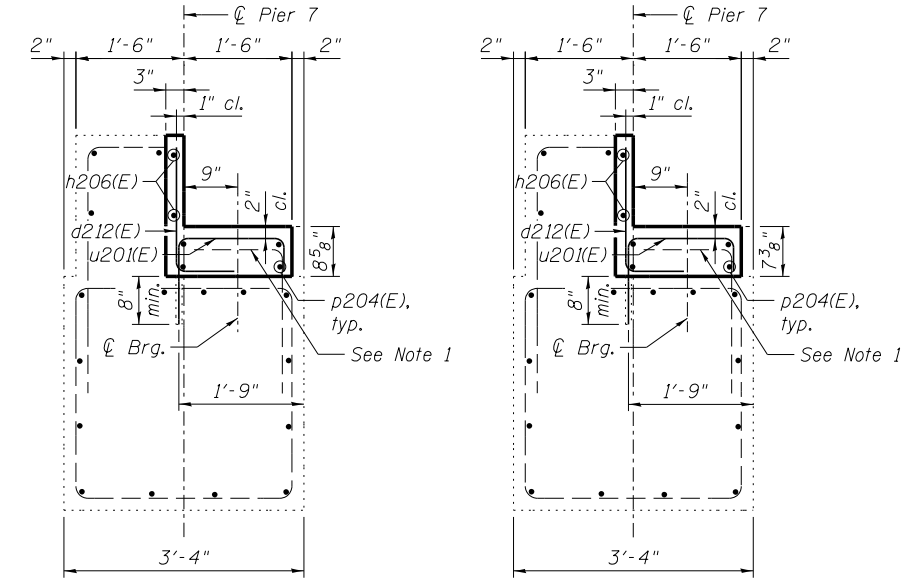
**PIER 39 ANCHOR BOLT DETAIL**

| Dimension | Girder R5 |
|-----------|-----------|
| a         | 73°56'21" |
| b         | 2 3/8"    |



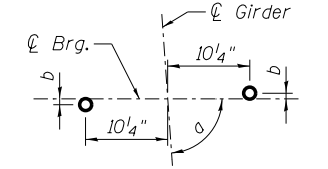
**SECTION A-A (EXIST.)**

**SECTION B-B (EXIST.)**



**SECTION A-A (PROP.)**

**SECTION B-B (PROP.)**

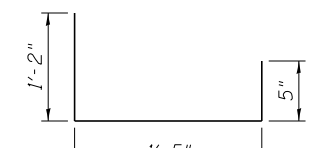


**PIER 7 ANCHOR BOLT DETAIL**

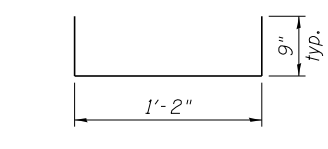
| Dimension | Girder A1 | Girder A2 |
|-----------|-----------|-----------|
| a         | 90°00'00" | 87°44'22" |
| b         | 0"        | 3 3/8"    |

**LEGEND**

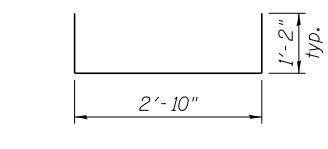
Concrete Removal



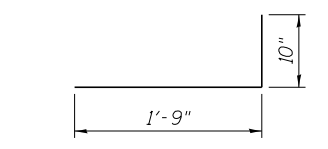
**BAR u20(E)**



**BAR u202(E)**



**BAR h207(E)**



**BAR d212(E)**

**PIER 7 BILL OF MATERIAL**

| Bar                              | No. | Size    | Length | Shape |
|----------------------------------|-----|---------|--------|-------|
| d212(E)                          | 7   | #5      | 2'-7"  | ┌     |
| h206(E)                          | 2   | #5      | 6'-0"  | —     |
| p204(E)                          | 4   | #5      | 6'-8"  | —     |
| u201(E)                          | 9   | #5      | 3'-0"  | ┌     |
| Concrete Removal                 |     | Cu. Yd. | 0.8    |       |
| Concrete Structures              |     | Cu. Yd. | 0.4    |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 90     |       |
| Concrete Sealer                  |     | Sq. Ft. | 28     |       |

**NOTES:**

- Existing reinforcement shall be cleaned, bent and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Drill and grout bars according to Article 584 of the Standard Specifications with a minimum embedment of 8". Cost included with Concrete Structures.

**PIER 39 BILL OF MATERIAL**

| Bar                              | No. | Size    | Length | Shape |
|----------------------------------|-----|---------|--------|-------|
| d213(E)                          | 8   | #5      | 1'-5"  | —     |
| h207(E)                          | 4   | #5      | 5'-2"  | ┌     |
| u202(E)                          | 4   | #5      | 2'-8"  | ┌     |
| Concrete Structures              |     | Cu. Yd. | 0.2    |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 50     |       |
| Concrete Sealer                  |     | Sq. Ft. | 14     |       |

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205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

|  |                        |                |           |
|--|------------------------|----------------|-----------|
| FILE NAME =                              | USER NAME = jsurber    | DESIGNED - JLS | REVISED - |
| 0162457.60J16.080.Pier_7.Mod.Details.dgn | PLOT SCALE =           | CHECKED - AJK  | REVISED - |
|  | PLOT DATE = 12/20/2013 | DRAWN - KMS    | REVISED - |
|  |                        | CHECKED - AJK  | REVISED - |

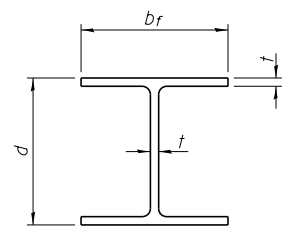
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PIER 7 AND PIER 39 MODIFICATION DETAILS  
STRUCTURE NO. 016-2457**

SHEET NO. SD80 OF SD83 SHEETS

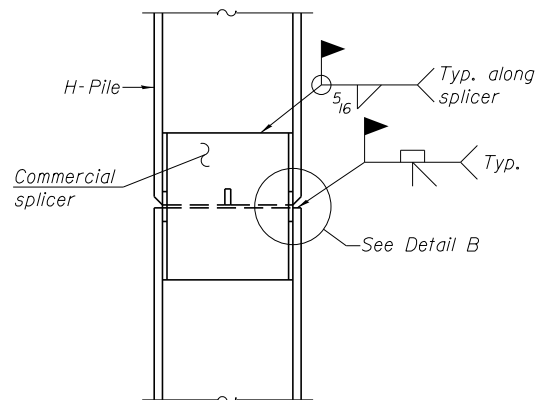
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
| 372                | 2013-038B-R | COOK   | 821                       | 455       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

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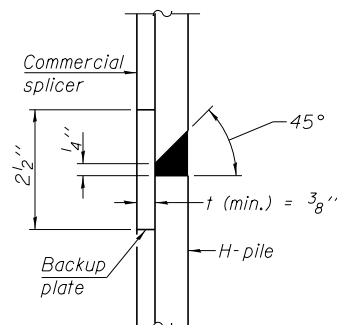


**STEEL PILE TABLE**

| Designation | Depth d | Flange width br | Web and Flange thickness t | Encasement diameter A |
|-------------|---------|-----------------|----------------------------|-----------------------|
| HP 14x117   | 14 1/4" | 14 7/8"         | 13/16"                     | 30"                   |
| x102        | 14"     | 14 3/4"         | 1/16"                      | 30"                   |
| x89         | 13 7/8" | 14 3/4"         | 5/8"                       | 30"                   |
| x73         | 13 5/8" | 14 5/8"         | 1/2"                       | 30"                   |
| HP 12x84    | 12 1/4" | 12 1/4"         | 1/16"                      | 24"                   |
| x74         | 12 1/8" | 12 1/4"         | 5/8"                       | 24"                   |
| x63         | 12"     | 12 1/8"         | 1/2"                       | 24"                   |
| x53         | 11 3/4" | 12"             | 7/16"                      | 24"                   |
| HP 10x57    | 10"     | 10 1/4"         | 9/16"                      | 24"                   |
| x42         | 9 3/4"  | 10 1/8"         | 7/16"                      | 24"                   |
| HP 8x36     | 8"      | 8 1/8"          | 7/16"                      | 18"                   |

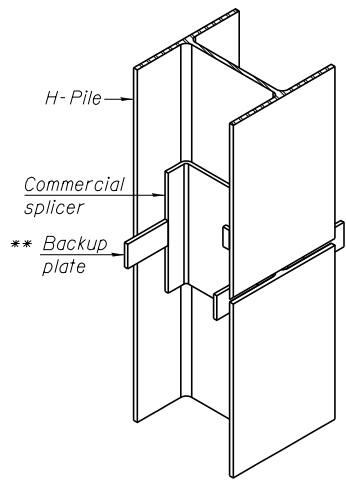


**ELEVATION**

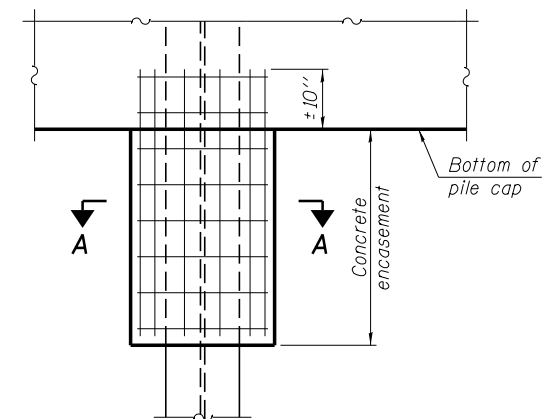


**DETAIL "B"**

**WELDED COMMERCIAL SPLICE**

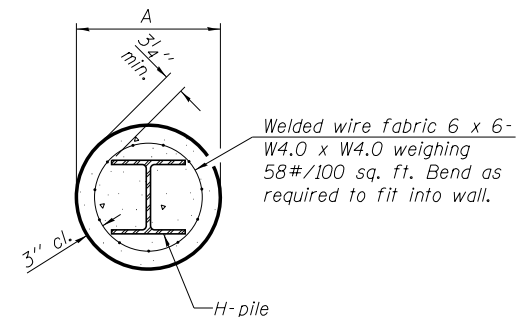


**ISOMETRIC VIEW**



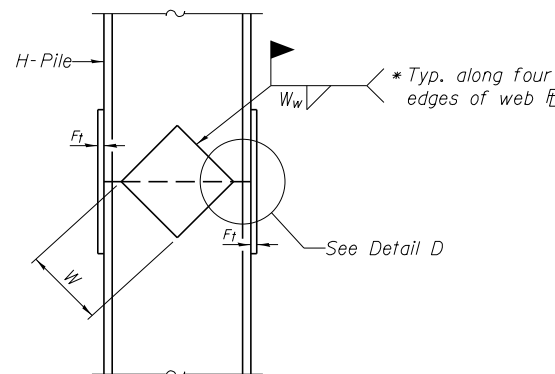
**ELEVATION**

**PILE ENCASEMENT**

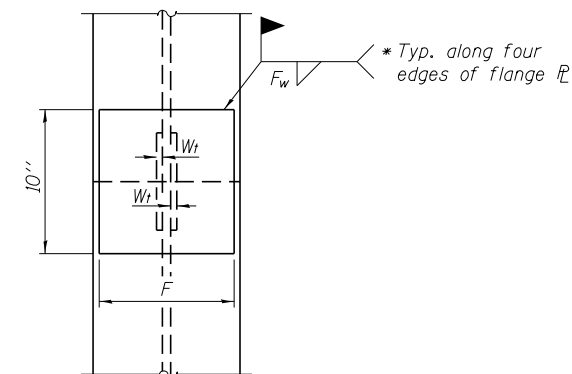


**SECTION A-A**

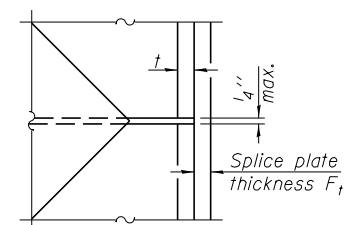
Note:  
Forms for encasement may be omitted when soil conditions permit.



**ELEVATION**



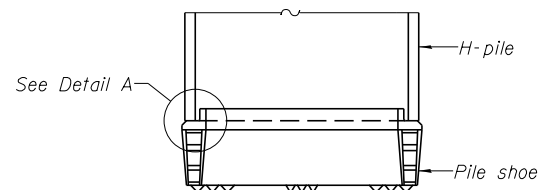
**END VIEW**



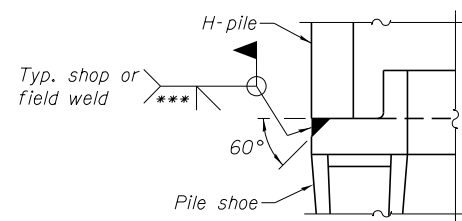
**DETAIL D**

**WELDED PLATE FIELD SPLICE**

| Designation | F       | Ft   | Fw    | W      | Wt     | Ww   |
|-------------|---------|------|-------|--------|--------|------|
| HP 14x117   | 12 1/2" | 1"   | 7/8"  | 7 3/4" | 5 1/2" | 1/2" |
| x102        | 12 1/2" | 7/8" | 3/4"  | 7 3/4" | 5 1/2" | 1/2" |
| x89         | 12 1/2" | 3/4" | 1/16" | 7 3/4" | 5 1/2" | 1/2" |
| x73         | 12 1/2" | 5/8" | 9/16" | 7 3/4" | 5 1/2" | 1/2" |
| HP 12x84    | 10"     | 7/8" | 1/16" | 6 1/2" | 5 1/2" | 1/2" |
| x74         | 10"     | 7/8" | 1/16" | 6 1/2" | 5 1/2" | 1/2" |
| x63         | 10"     | 5/8" | 1/2"  | 6 1/2" | 1/2"   | 3/8" |
| x53         | 10"     | 5/8" | 1/2"  | 6 1/2" | 1/2"   | 3/8" |
| HP 10x57    | 8"      | 3/4" | 9/16" | 5 1/4" | 1/2"   | 3/8" |
| x42         | 8"      | 5/8" | 9/16" | 5 1/4" | 1/2"   | 3/8" |
| HP 8x36     | 7"      | 5/8" | 7/16" | 4 1/4" | 1/2"   | 3/8" |

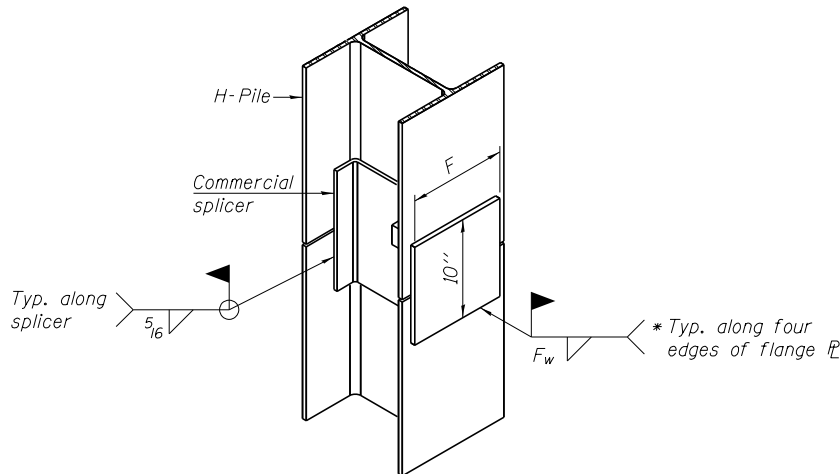


**ELEVATION**



**DETAIL A**

**H-PILE SHOE ATTACHMENT**



**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE ALTERNATE**

- \* Interrupt welds 1/4" from end of web and/or each flange.
- \*\* Remove portions of backup plates that extend outside the flanges.
- \*\*\* Weld size per pile shoe manufacturer (5/16" min.).

Note:  
The steel H-piles shall be according to AASHTO M270 Grade 50.

**F-HP** 1-27-12  
**benesch** Alfred Benesch & Company  
 engineers · scientists · planners 205 North Michigan Avenue, Suite 2400  
 Chicago, Illinois 60601  
 312-565-0450 Job No. 10093

|                                |                        |                |           |
|--------------------------------|------------------------|----------------|-----------|
| FILE NAME =                    | USER NAME = ksnider    | DESIGNED - FSM | REVISED - |
| 0162457.60J16.081.steehp1e.dgn |                        | CHECKED - RMM  | REVISED - |
|                                | PLOT SCALE =           | DRAWN - FSM    | REVISED - |
|                                | PLOT DATE = 12/20/2013 | CHECKED - RMM  | REVISED - |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**HP PILE DETAILS  
STRUCTURE NO. 016-2457**

SHEET NO. SD81 OF SD83 SHEETS

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 456       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |



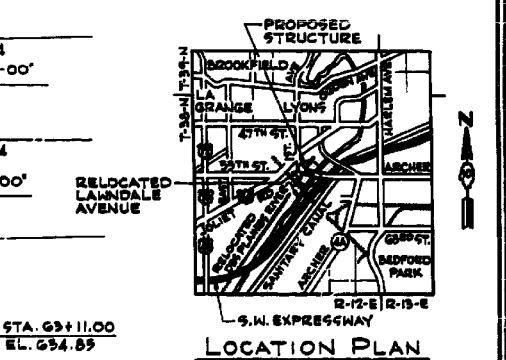
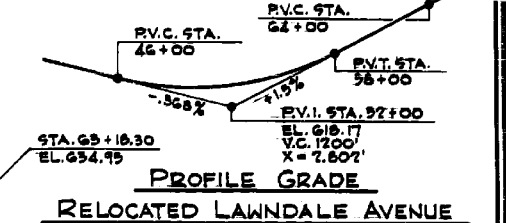




|        |           |      |        |           |
|--------|-----------|------|--------|-----------|
| DATE   | REV.      | BY   | REASON | SHEET NO. |
| 1-25   | 0707-0708 | COOK | 95     | 20        |
| SHEETS |           |      |        |           |

**DESIGN LOADING:**  
A.A.S.H.O. H20-43 & 15% FUTURE WEARING SURFACE

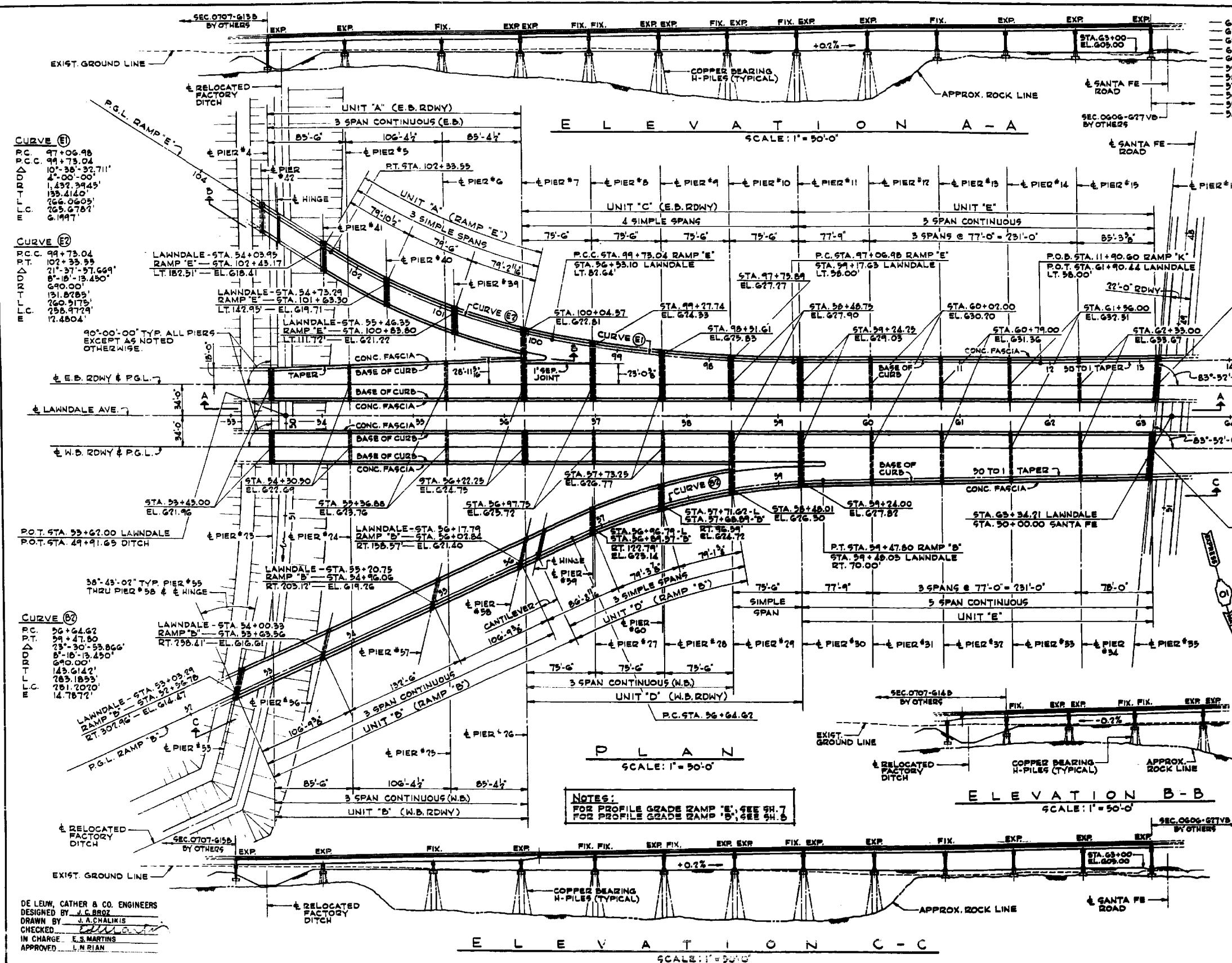
**DESIGN STRESSES:**  
FC = 1400 P.S.I. SUPERSTRUCTURE AND SUB-STRUCTURE WITHOUT EARTH PRESSURE.  
FC = 1000 P.S.I. SUBSTRUCTURE WITH EARTH PRESSURE.  
FS = 20,000 P.S.I. REINFORCEMENT BARS.  
FS = 20,000 P.S.I. STRUCTURAL STEEL, A-36  
V = 75 P.S.I. SHEAR IN PIER FOOTINGS.  
MAX. L.L. + I DEFLECTION  $\leq$  L/1200 (COMPOSITE) AND L/1000 (NON-COMPOSITE).



| ITEM  | UNIT   | SUPER   | SUB     | TOTAL   |
|---|--------|---------|---------|---------|
| EARTH EXCAVATION FOR CLASS A EXCAVATION FOR STRUCTURES    | CU YD  | -       | 16,230  | 16,230  |
| ROCK EXCAVATION FOR STRUCTURES                            | CU YD  | -       | 2,186   | 2,186   |
| CLASS II CONCRETE PROTECTIVE COAT                         | CU YD  | 3,950.1 | 2,068.0 | 5,918.1 |
| REINFORCING & ERECTING STRUCTURAL STEEL                   | POUND  | 14,221  | -       | 14,221  |
| REINFORCING STEEL PILES                                   | POUND  | 267,857 | -       | 267,857 |
| REINFORCING STEEL PILES                                   | LIN FT | 11,986  | 236,004 | 119,846 |
| TEST PILE STEEL (100%)                                    | EACH   | -       | 17      | 17      |
| DRIVING STEEL PILES                                       | LIN FT | -       | 15,997  | 15,997  |
| NAME PLATES   | EACH   | 2       | -       | 2       |
| CHAIN LINE FENCE (6")                                     | LIN FT | -       | 2,300   | 2,300   |
| CONCRETE IN CONCRETE, 1 1/2" DIA., GALVANIZED STEEL       | LIN FT | 100     | -       | 100     |
| CONCRETE IN CONCRETE, 1 1/2" DIA., GALVANIZED STEEL       | LIN FT | 50      | -       | 50      |
| ALUMINUM HANDRAIL   | LIN FT | 5,530   | -       | 5,530   |
| BRIDGE BEAT SEALANT                                       | LAMP   | 3000    | -       | 3000    |
| CONCRETE ATTACHED TO STRUCTURE, 2" DIA., GALVANIZED STEEL | LIN FT | 5600    | -       | 5,600   |
| C.I. JUNCTION BOX 12"x12"x12"                             | EACH   | 2       | -       | 2       |
| C.I. JUNCTION BOX 15"x12"x12"                             | EACH   | 1       | -       | 1       |
| C.I. JUNCTION BOX 18"x18"x18"                             | EACH   | 1       | -       | 1       |

**ILLINOIS DIVISION OF HIGHWAYS**  
**SOUTHWEST EXPRESSWAY**  
**LAWNDALE AVE. VIADUCT**  
**GENERAL PLAN AND ELEVATIONS**

SCALE: AS NOTED



JOB NO. 1179  
**benesch**  
engineers - scientists - planners  
Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

|                                  |             |              |           |
|----------------------------------|-------------|--------------|-----------|
| FILE NAME =                      | USER NAME = | DESIGNED -   | REVISIONS |
| 0162457.60J16.084.existplan1.dgn | tjenicke    | FSM          |           |
|                                  |             | CHECKED -    | REVISIONS |
|                                  |             | RMM          |           |
|                                  |             | DRAWN -      | REVISIONS |
|                                  |             | FSM          |           |
|                                  |             | CHECKED -    | REVISIONS |
|                                  |             | RMM          |           |
|                                  |             | IN CHARGE -  | REVISIONS |
|                                  |             | E.S. MARTINS |           |
|                                  |             | APPROVED -   | REVISIONS |
|                                  |             | L.N. RIAN    |           |

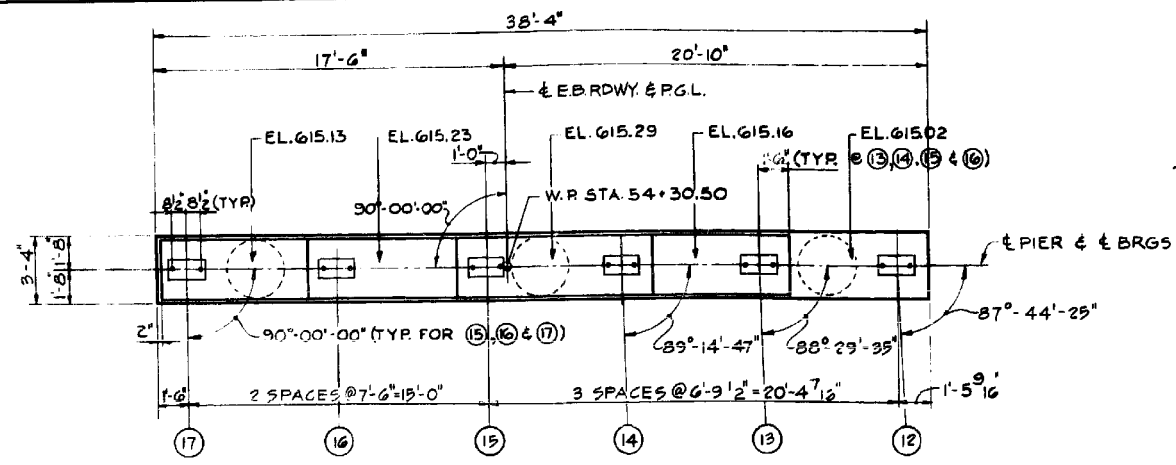
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|------------|-----|-----------|--|
| DESIGNED - | FSM | REVISIONS |  |
| CHECKED -  | RMM | REVISIONS |  |
| DRAWN -    | FSM | REVISIONS |  |
| CHECKED -  | RMM | REVISIONS |  |

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

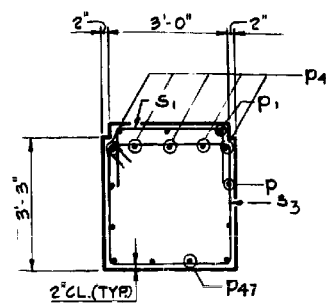
**EXISTING PLAN INFORMATION (1 OF 26)**  
**STRUCTURE NO. 016-2457**  
SHEET NO. SDX1 OF SDX26 SHEETS

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821          | 459       |
| CONTRACT NO. 60J16        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

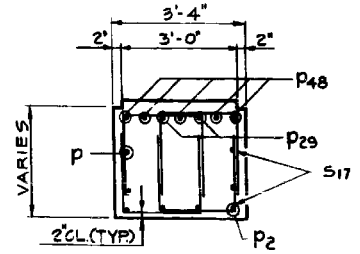
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2:41:41 PM  
6/23/2014



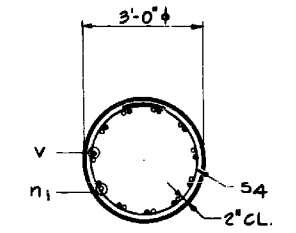
**PLAN**  
SCALE: 1/4"=1'-0"



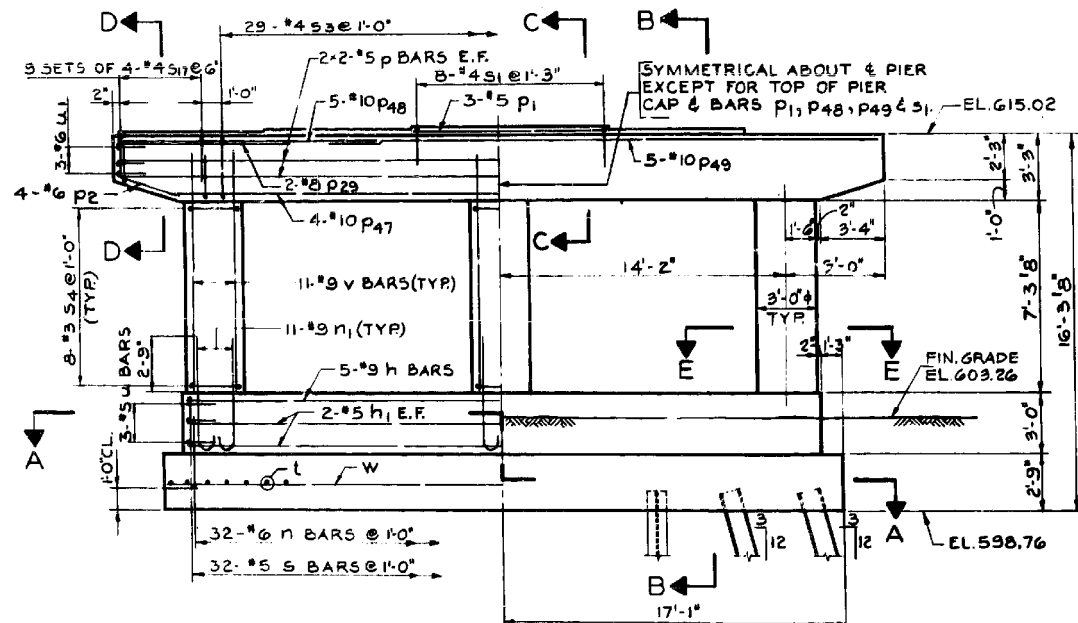
**SECTION C-C**  
SCALE: 1/2"=1'-0"



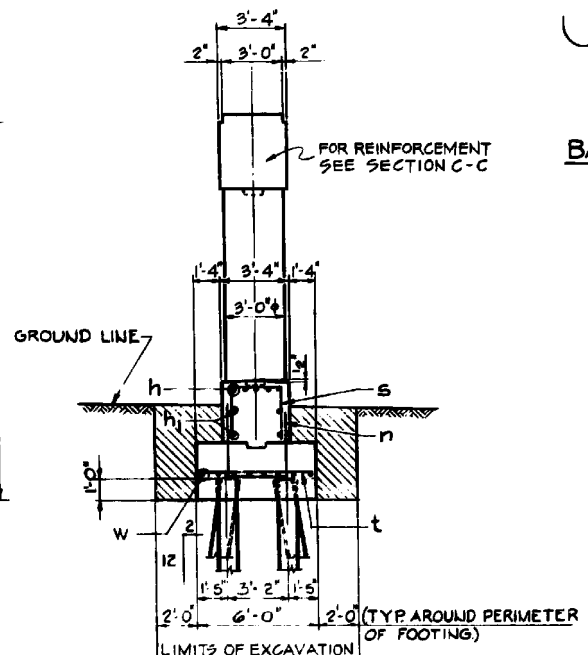
**SECTION D-D**  
SCALE: 1/2"=1'-0"



**SECTION E-E**  
SCALE: 1/2"=1'-0"



**ELEVATION**  
SCALE: 1/4"=1'-0"



**SECTION B-B**  
SCALE: 1/4"=1'-0"

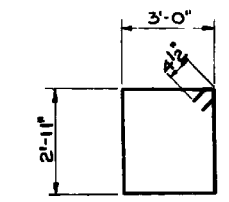
| BAR | A      | B      |
|-----|--------|--------|
| n   | 3'-3"  | 3'-0"  |
| s   | 2'-10" | 3'-0"  |
| s1  | 1'-6"  | 2'-8"  |
| s17 | 1'-11" | 2'-1"  |
| u   | 1'-6"  | 2'-11" |
| u1  | 1'-6"  | 2'-11" |

**BAR n1**

**BARS n, s, s1, s17, u & u1**



**BAR 54**

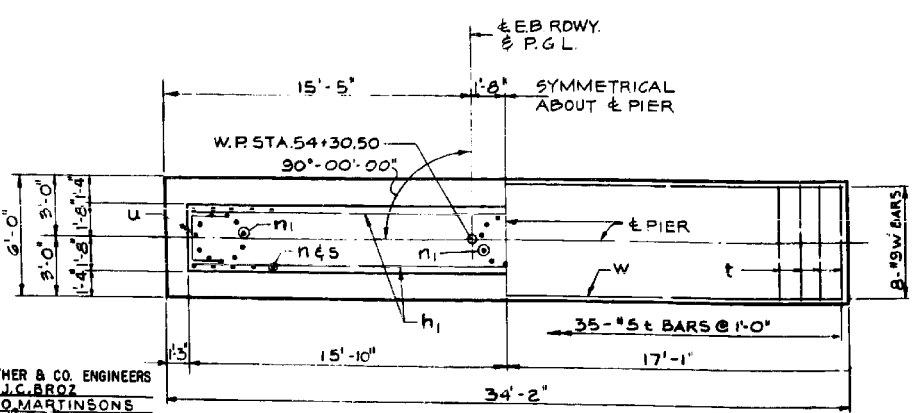


**BAR 53**

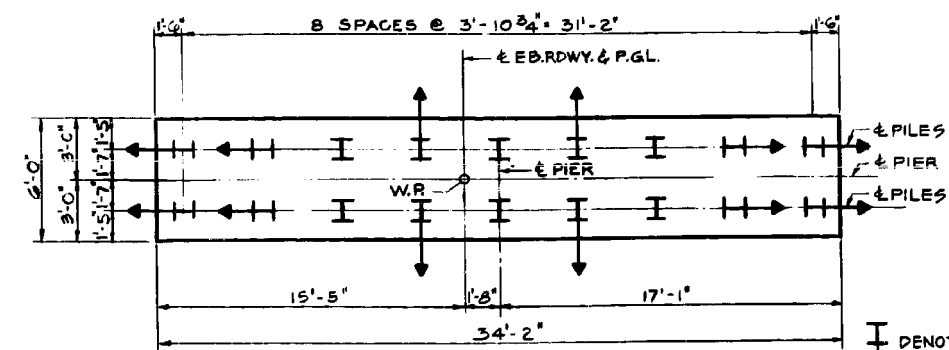
| PILE DATA               |        |
|-------------------------|--------|
| PILE TYPE               | 12BP53 |
| MIN. CAPACITY TONS      | 32     |
| NO. REQUIRED            | 18 #   |
| EST. LENGTH FEET        | 16     |
| CUT OFF ELEVATION       | 599.76 |
| * INCLUDES 1 TEST PILE. |        |

**NOTES:**

ALL BAR DIMENSIONS ARE OUT TO OUT. PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED. EXAMPLE: 5h MEANS BARS h FOR PIER 5. FOR ANCHOR BOLT PROJECTION SEE 5H.76 POUR STEPS JOINTLICHALLY WITH PIER CAP. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.



**SECTION A-A**  
SCALE: 1/4"=1'-0"



**PILE PLAN**  
SCALE: 1/4"=1'-0"

| BILL OF MATERIAL                 |               |
|----------------------------------|---------------|
| ITEM                             | UNIT QUANTITY |
| CLASS A EXCAVATION FOR STRUCTURE | CUYD 63       |
| CLASS X CONCRETE                 | CUYD 53.9     |
| REINFORCEMENT BARS               | POUND 6,911   |
| FURNISHING STEEL PILES 12 BP 53  | LIN.FT 272    |
| TEST PILE STEEL 12 BP 53         | EACH 1        |
| DRIVING STEEL PILES              | LIN.FT 272    |

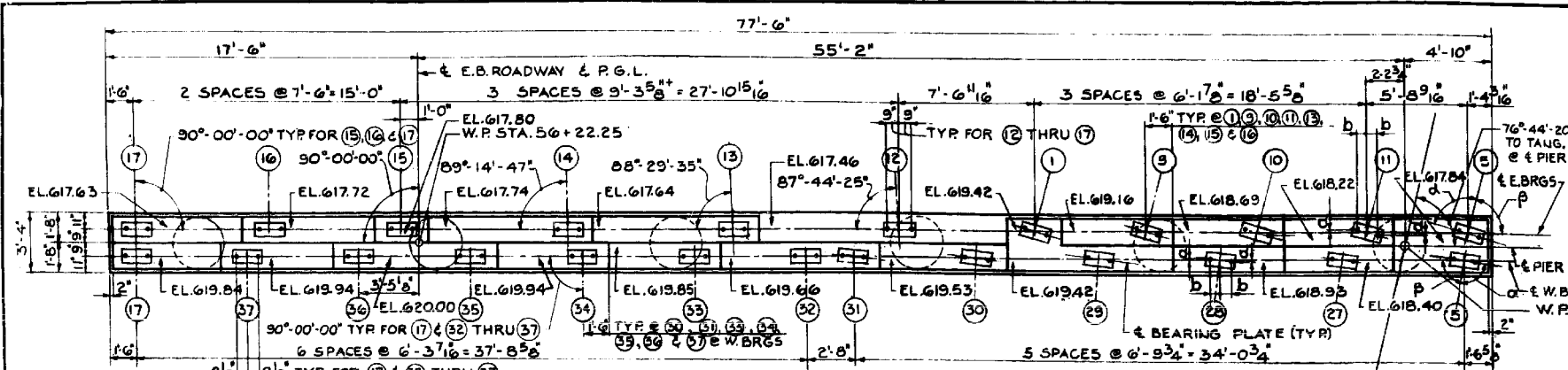
**ILLINOIS DIVISION OF HIGHWAYS**  
SOUTHWEST EXPRESSWAY  
**LAWDALE AVE. VIADUCT**  
PIER 5  
SCALE: AS NOTED DATE 11-25-1969

DE LEUW, CATHER & CO. ENGINEERS  
DESIGNED BY J.C. BROZ  
DRAWN BY O. MARTINSONS  
CHECKED BY E.S. MARTINS  
IN CHARGE L.N. RIAN

|                        |                      |                |           |
|------------------------|----------------------|----------------|-----------|
| FILE NAME =            | USER NAME = tjenicke | DESIGNED - FSM | REVISED - |
|                        |                      | CHECKED - RMM  | REVISED - |
|                        |                      | DRAWN - FSM    | REVISED - |
|                        |                      | CHECKED - RMM  | REVISED - |
| PLOT SCALE =           |                      |                |           |
| PLOT DATE = 12/28/2013 |                      |                |           |

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
| 372                | 2013-038B-R | COOK   | 821                       | 460       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

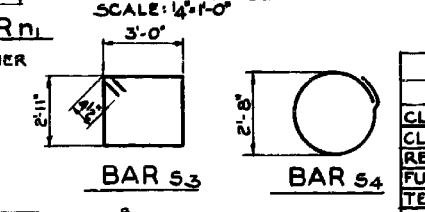
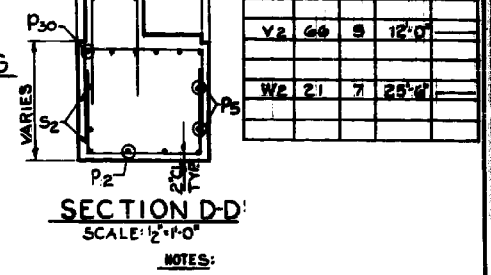
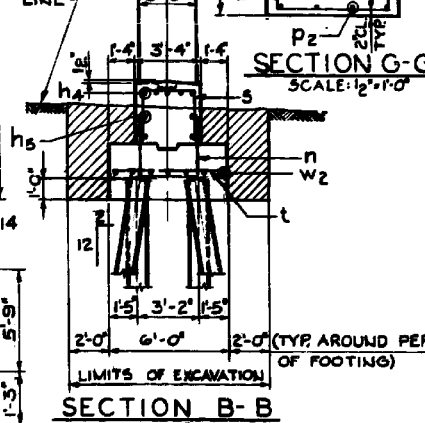
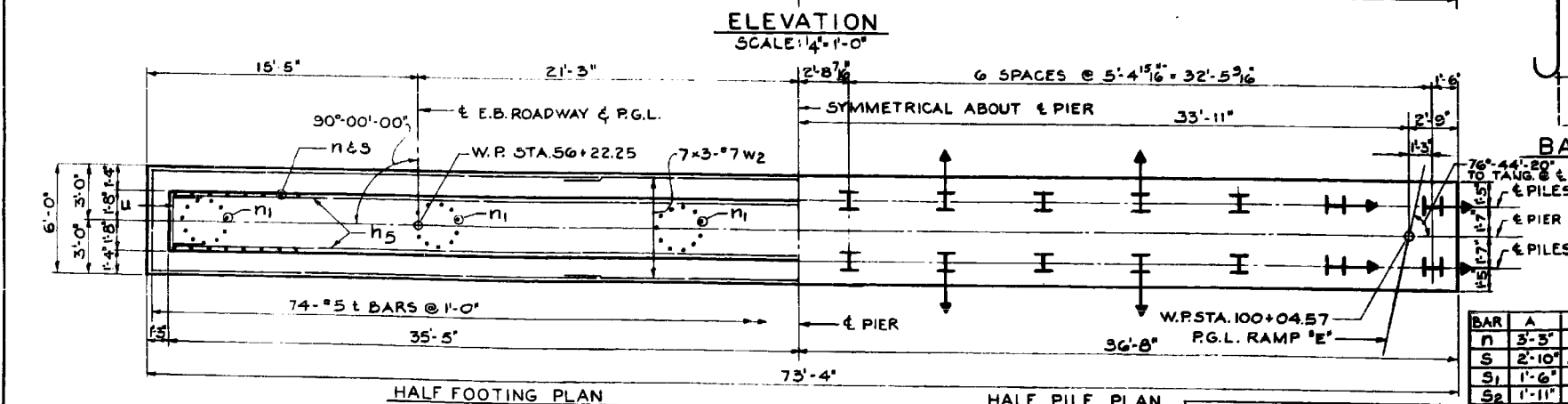
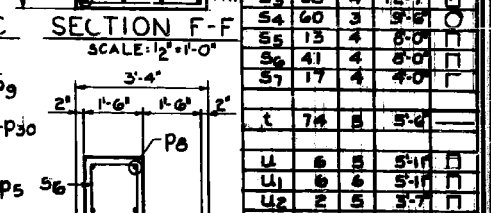
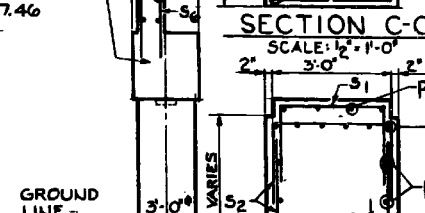
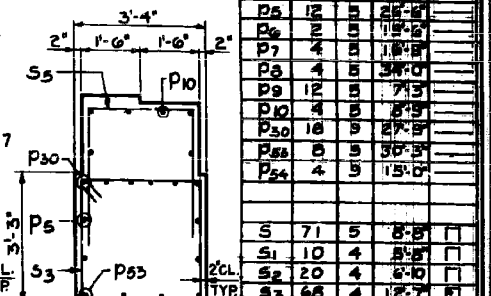
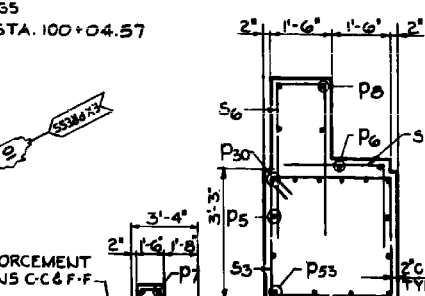
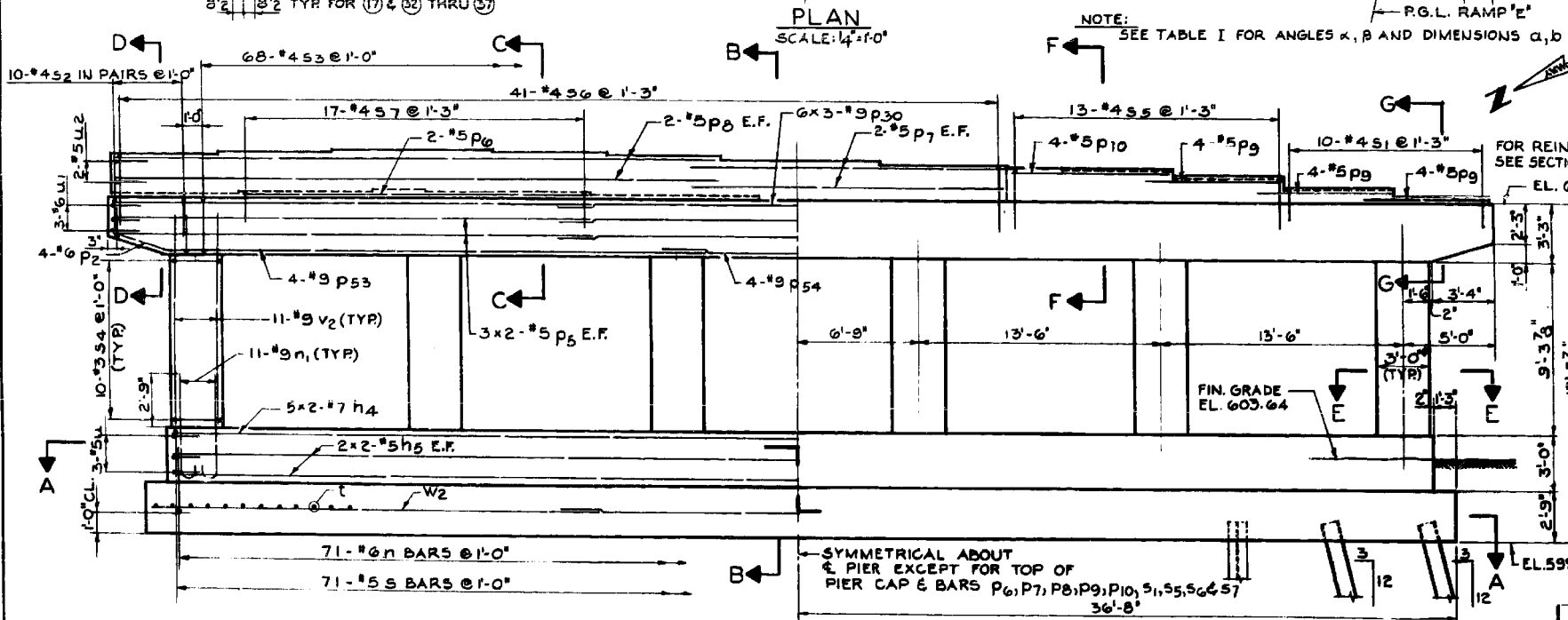




| STRINGER LINE | $\alpha$    | $\beta$     | a     | b      |
|---------------|-------------|-------------|-------|--------|
| 1             | 80°-00'-00" | 73°-56'-21" | 23'8" | 8'3/4" |
| 2             | 90°-00'-00" | 73°-56'-21" |       |        |
| 3             | 90°-35'-47" | 73°-20'-34" | 23'8" | 8'3/4" |
| 4             | 94°-11'-25" | 73°-27'-09" | 15'6" | 8'7/8" |
| 5             | 92°-06'-56" | 81°-31'-38" |       |        |
| 6             | 90°-01'-05" | 83°-37'-28" |       |        |
| 7             | 87°-54'-05" | 85°-44'-23" |       |        |
| 8             | 85°-46'-30" | 87°-32'-04" |       |        |
| 9             | 83°-38'-34" | 90°-00'-00" | 15'6" | 8'7/8" |

|             |           |        |        |           |    |
|-------------|-----------|--------|--------|-----------|----|
| PROJECT NO. | 0707-8788 | COUNTY | COOK   | SHEET NO. | 23 |
| DATE        |           |        | 95     | 23        |    |
| SHEETS      |           |        | SHEETS |           |    |

| BAR NO | SIZE | LENGTH | SHAPE |
|--------|------|--------|-------|
| n4     | 10   | 7      | 26-3  |
| h5     | 8    | 5      | 36-0  |
| n      | 71   | 6      | 9-6   |
| n1     | 68   | 9      | 7-0   |
| p2     | 8    | 5      | 3-6   |
| p5     | 12   | 5      | 28-8  |
| p6     | 2    | 4      | 18-0  |
| p7     | 4    | 8      | 34-0  |
| p8     | 4    | 8      | 34-0  |
| p9     | 12   | 5      | 7-3   |
| p10    | 4    | 8      | 8-5   |
| p30    | 18   | 4      | 27-5  |
| p33    | 8    | 5      | 36-3  |
| p34    | 4    | 9      | 13-0  |
| s      | 71   | 5      | 8-5   |
| s1     | 10   | 4      | 8-8   |
| s2     | 20   | 4      | 8-10  |
| s3     | 68   | 4      | 12-7  |
| s4     | 60   | 3      | 3-8   |
| s5     | 13   | 4      | 8-0   |
| s6     | 41   | 4      | 8-0   |
| s7     | 17   | 4      | 4-0   |
| u      | 6    | 5      | 5-11  |
| u1     | 6    | 6      | 5-11  |
| u2     | 2    | 5      | 3-7   |
| v2     | 66   | 5      | 12-0  |
| w2     | 21   | 7      | 25-8  |



| PILE TYPE        | MIN. CAPACITY TONS |
|------------------|--------------------|
| 12 BP53          | 31                 |
| NO REQUIRED      | 28*                |
| EST. LENGTH FEET | 33'                |
| CUT OFF ELEV.    | 600.14             |

| ITEM                             | UNIT   | QUANTITY |
|----------------------------------|--------|----------|
| CLASS A EXCAVATION FOR STRUCTURE | CU YD  | 129      |
| CLASS X CONCRETE                 | CU YD  | 127.0    |
| REINFORCEMENT BARS               | POUND  | 13,304   |
| FURNISHING STEEL PILES 12 BP 53  | LIN FT | 891      |
| TEST PILE STEEL 12 BP 53         | EACH   | 1        |
| DRIVING STEEL PILES              | LIN FT | 891      |

DE LEW, CATHY & CO. ENGINEERS  
 DESIGNED BY J.C. BROZ  
 DRAWN BY O. MARTINSONS  
 CHECKED [Signature]  
 IN CHARGE E.S. MARTINS  
 APPROVED L.N. RIAN

SECTION A-A  
SCALE: 1/4"=1'-0"

PILE DATA  
 PILE TYPE 12 BP53  
 MIN. CAPACITY TONS 31  
 NO REQUIRED 28\*  
 EST. LENGTH FEET 33'  
 CUT OFF ELEV. 600.14  
 \* INCLUDES 1 TEST PILE

ILLINOIS DIVISION OF HIGHWAYS  
 SOUTHWEST EXPRESSWAY  
 LAWNDALE AVE. VIADUCT  
 PIER 7  
 DATE: 11-25-1993

**benesch**  
 engineers - scientists - planners  
 Alfred Benesch & Company  
 205 North Michigan Avenue, Suite 2400  
 Chicago, Illinois 60601  
 312-565-0450 Job No. 10093

|                                  |                        |                |             |
|----------------------------------|------------------------|----------------|-------------|
| FILE NAME =                      | USER NAME = tjenicke   | DESIGNED - FSM | REVISIONS - |
| 0162457.60J16.087.existplan4.dgn | PLOT SCALE =           | CHECKED - RMM  | REVISIONS - |
|                                  | PLOT DATE = 12/28/2013 | DRAWN - FSM    | REVISIONS - |
|                                  |                        | CHECKED - RMM  | REVISIONS - |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION (4 OF 26)  
 STRUCTURE NO. 016-2457  
 SHEET NO. SDX4 OF SDX26 SHEETS

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 462       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

X:\100005\10093\Eng\_Docs\_Phase\_1\11\SN\_016\_2456\_2457\_1st\_Ave.cover\_Des.Plaines\_River\_Volley\Final\2457\_60J16\_087.existplan4.dgn 2:41:45 PM 6/23/2014

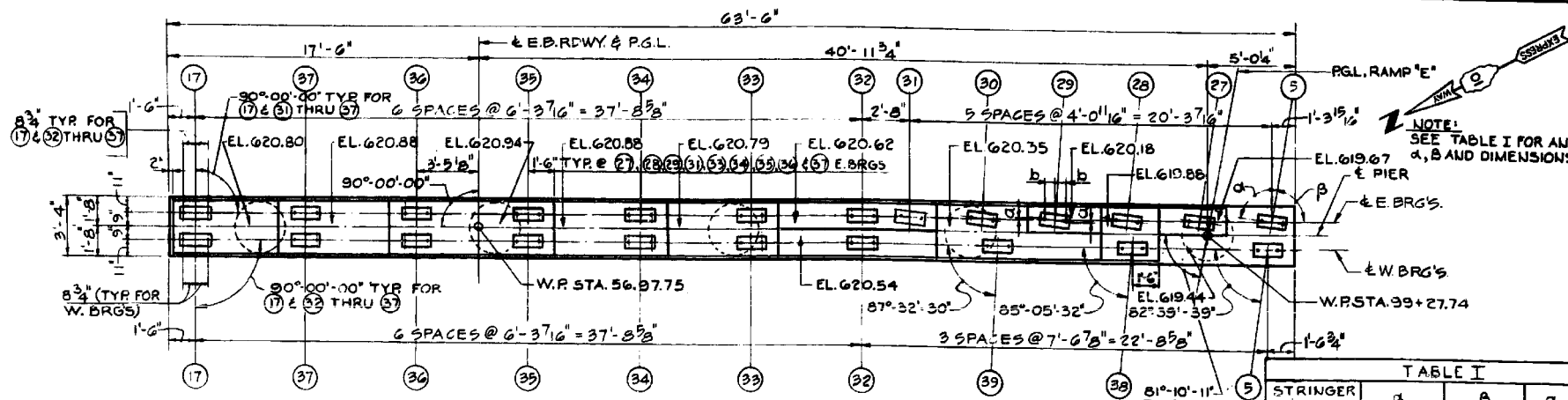


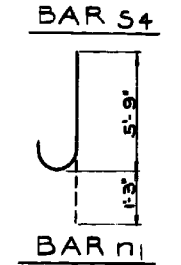
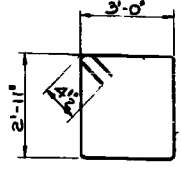
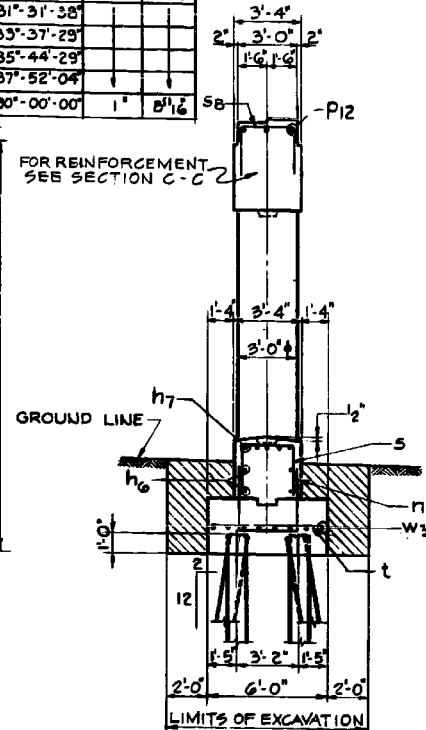
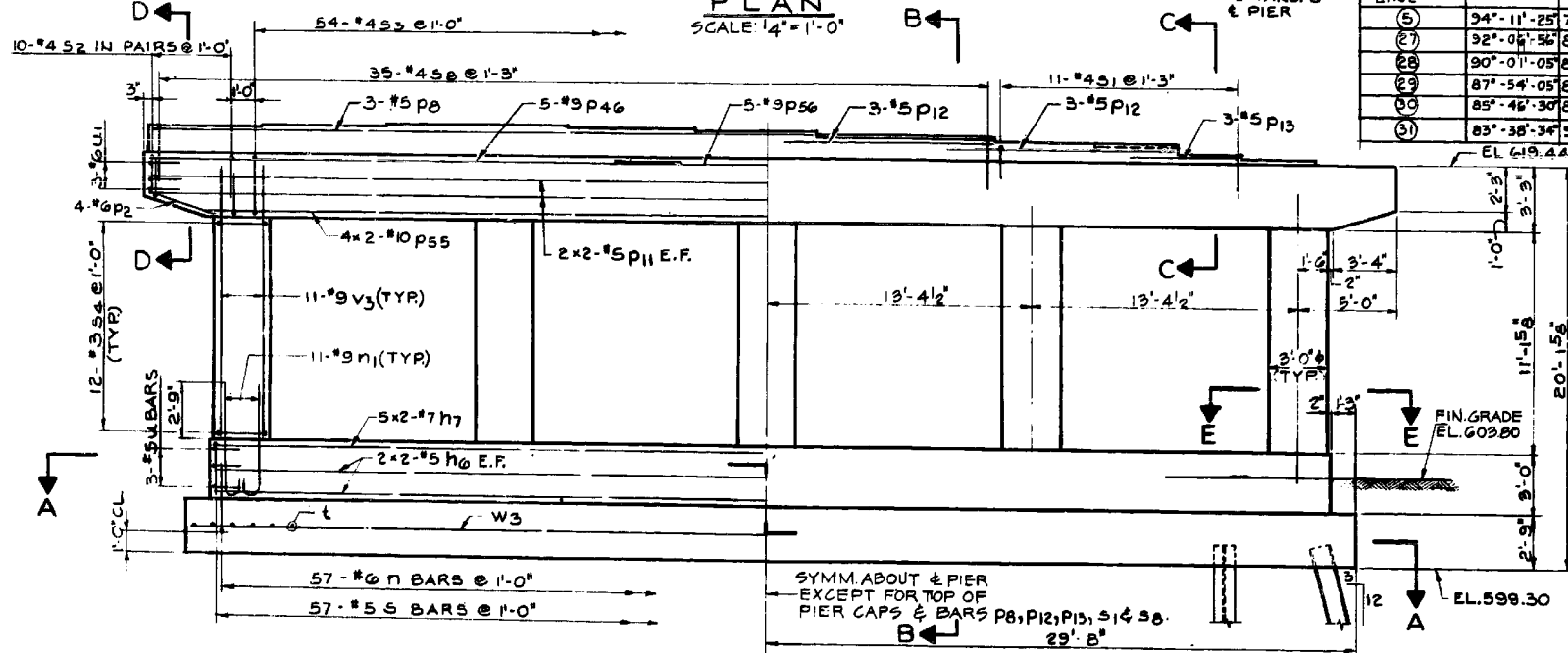
TABLE I

| STRINGER LINE | α           | β           | a  | b        |
|---------------|-------------|-------------|----|----------|
| (5)           | 94°-11'-25" | 79°-27'-09" | 1" | 8' 1/16" |
| (7)           | 92°-08'-56" | 81°-31'-38" | 1" | 8' 1/16" |
| (8)           | 90°-01'-05" | 83°-37'-29" | 1" | 8' 1/16" |
| (9)           | 87°-54'-05" | 85°-44'-29" | 1" | 8' 1/16" |
| (3)           | 85°-48'-30" | 87°-52'-04" | 1" | 8' 1/16" |

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

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

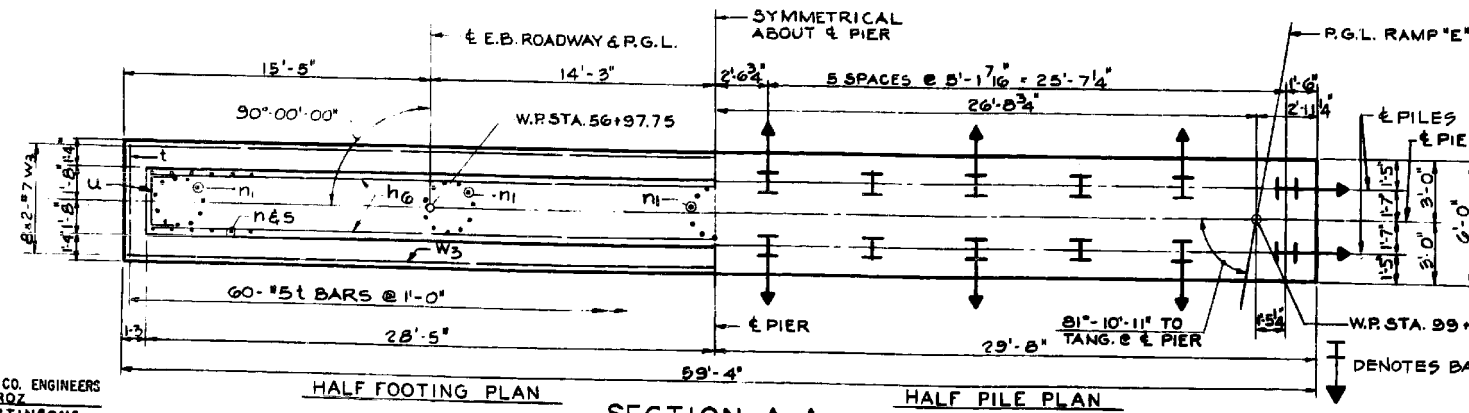
SECTION E-E  
SCALE: 1/2" = 1'-0"



BAR LIST

| BAR NO. | SIZE | LENGTH | SHAPE  |
|---------|------|--------|--------|
| h6      | 8    | 5      | 29'-0" |
| h7      | 10   | 7      | 29'-3" |
| n       | 57   | 6      | 9'-6"  |
| n1      | 55   | 9      | 7'-0"  |
| D2      | 8    | 6      | 5'-6"  |
| D3      | 3    | 5      | 34'-0" |
| P11     | 8    | 5      | 32'-3" |
| P12     | 6    | 5      | 10'-0" |
| P13     | 3    | 5      | 4'-3"  |
| P46     | 10   | 9      | 27'-0" |
| P55     | 8    | 10     | 29'-9" |
| P56     | 5    | 9      | 15'-6" |
| S       | 57   | 5      | 6'-8"  |
| S1      | 11   | 4      | 5'-8"  |
| S2      | 20   | 4      | 6'-0"  |
| S3      | 54   | 4      | 12'-7" |
| S4      | 60   | 3      | 9'-6"  |
| S8      | 35   | 4      | 7'-0"  |
| t       | 60   | 5      | 5'-6"  |
| u       | 6    | 5      | 5'-11" |
| u1      | 6    | 6      | 5'-11" |
| v3      | 55   | 9      | 13'-9" |
| w3      | 16   | 7      | 30'-6" |

NOTES:  
ALL BAR DIMENSIONS ARE OUT TO OUT. PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED. EXAMPLE: S1 6 MEANS BARS #6 FOR PIER 1. FOR ANCHOR BOLT PROJECTION SEE SM.77. POUR STEPS MONOLITHICALLY WITH PIER CAP. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.



PILE DATA

|                   |         |
|-------------------|---------|
| PILE TYPE         | 12 BP53 |
| MIN CAPACITY TONS | 33      |
| NO. REQUIRED      | 24 *    |
| EST. LENGTH FEET  | 33      |
| CUT OFF ELEVATION | 600.30  |

\* INCLUDES 1 TEST PILE

BILL OF MATERIAL

| ITEM                             | UNIT   | QUANTITY |
|----------------------------------|--------|----------|
| CLASS A EXCAVATION FOR STRUCTURE | CU YD  | 106      |
| CLASS X CONCRETE                 | CU YD  | 104.6    |
| REINFORCEMENT BARS               | POUND  | 11,145   |
| FURNISHING STEEL PILES 12 BP53   | LIN FT | 759      |
| TEST PILE STEEL 12 BP53          | EACH   | 1        |
| DRIVING STEEL PILES              | LIN FT | 759      |

BARS

| BAR | A      | B      |
|-----|--------|--------|
| n   | 3'-3"  | 3'-0"  |
| S   | 2'-10" | 3'-0"  |
| S1  | 1'-6"  | 2'-8"  |
| S2  | 1'-11" | 3'-0"  |
| S8  | 2'-2"  | 2'-8"  |
| u   | 1'-6"  | 2'-11" |
| u1  | 1'-6"  | 2'-11" |

ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
LAWDALE AVE. VIADUCT  
PIER 8  
DATE: 11-25-1965

DE LEUW, CATHY & CO. ENGINEERS  
DESIGNED BY J.C. BROZ  
DRAWN BY O. MARTINSONS  
CHECKED F.E. MARTINSONS  
IN CHARGE F.S. MARTINSONS  
APPROVED L.N. RIAN

**benesch**  
engineers · scientists · planners  
Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

| FILE NAME                        | USER NAME | DESIGNED | CHECKED | PLLOT SCALE | PLLOT DATE | DESIGNED | CHECKED | PLLOT SCALE | PLLOT DATE |
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| 0162457.60J16.088.existplan5.dgn | tjenicke  | FSM      | RMM     |             | 12/28/2013 | FSM      | RMM     |             | 12/28/2013 |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

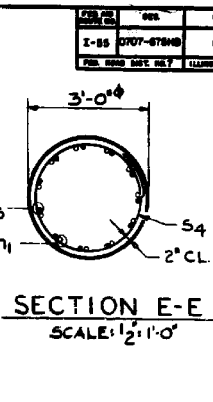
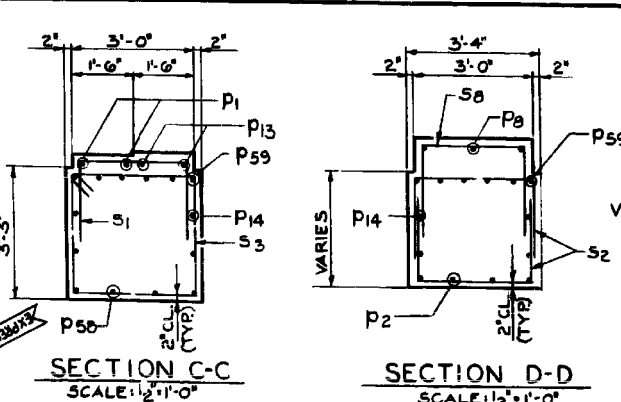
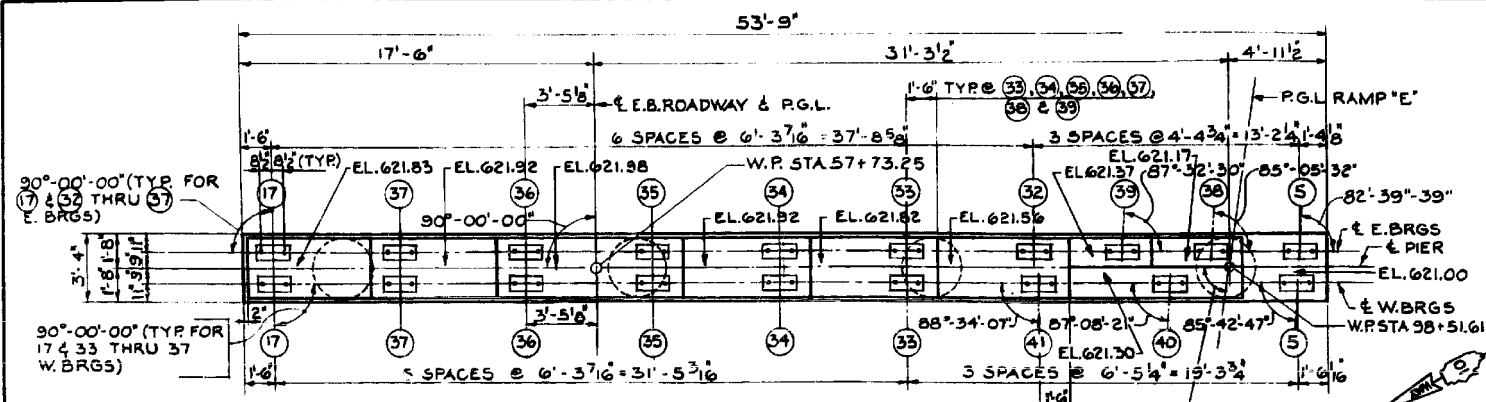
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STRUCTURE NO. 016-2457  
SHEET NO. SDX5 OF SDX26 SHEETS

FOR INFORMATION ONLY

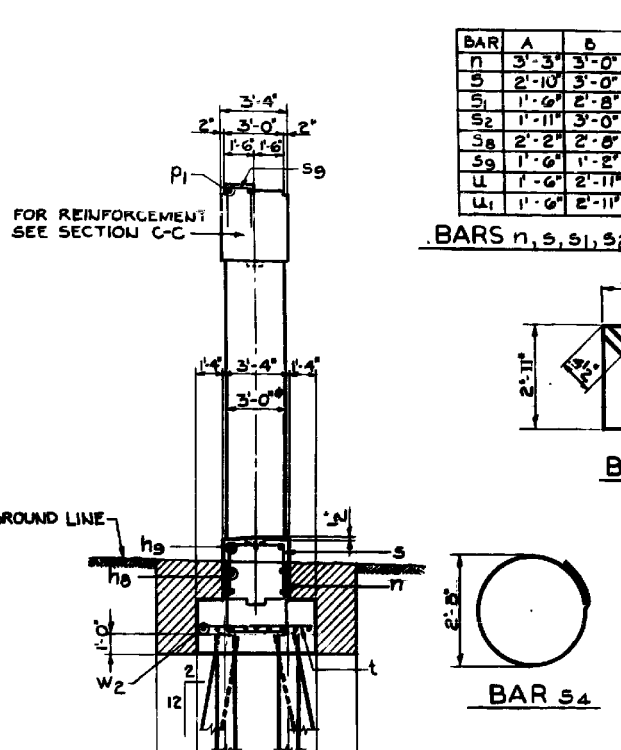
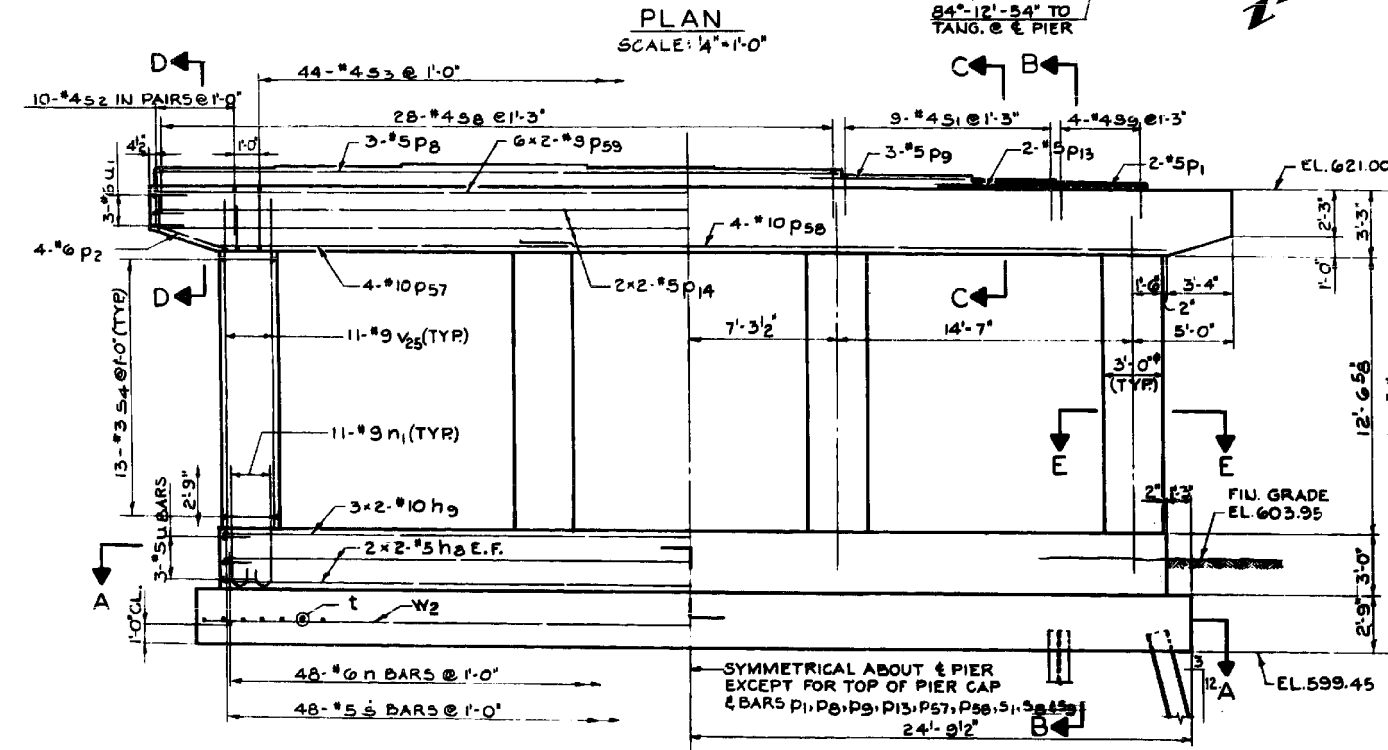
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|-------------|-------------|--------|--------------|-----------|
| 372         | 2013-038B-R | COOK   | 821          | 463       |

CONTRACT NO. 60J16  
ILLINOIS FED. AID PROJECT

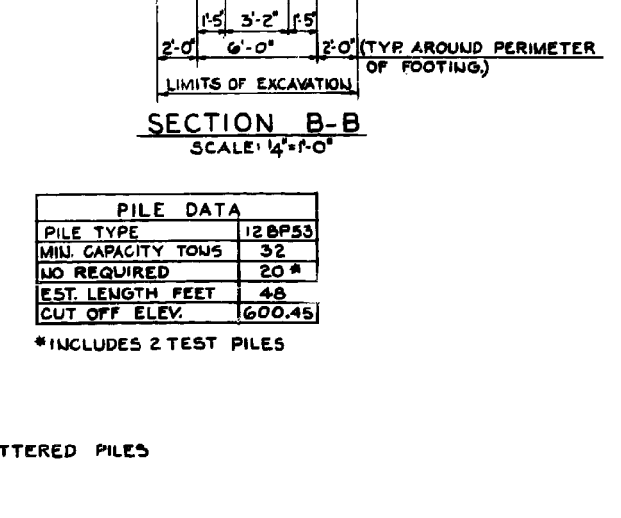
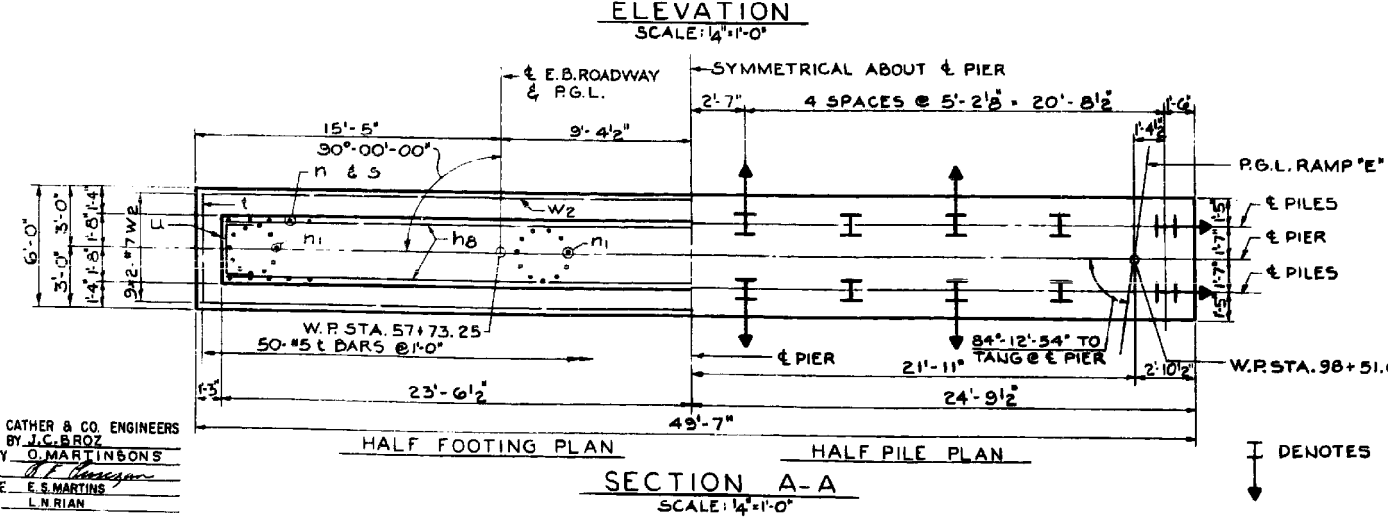
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| BAR             | NO | SIZE | LENGTH | SHAPE |
|-----------------|----|------|--------|-------|
| h <sub>8</sub>  | 8  | 5    | 24'-0" |       |
| h <sub>9</sub>  | 6  | 10   | 24'-9" |       |
| n               | 48 | 6    | 8'-6"  | □     |
| n <sub>1</sub>  | 44 | 9    | 7'-0"  | J     |
| p <sub>1</sub>  | 2  | 5    | 9'-3"  |       |
| p <sub>2</sub>  | 8  | 6    | 3'-6"  |       |
| p <sub>8</sub>  | 3  | 5    | 34'-0" |       |
| p <sub>9</sub>  | 3  | 5    | 7'-3"  |       |
| p <sub>13</sub> | 2  | 5    | 4'-3"  |       |
| p <sub>14</sub> | 8  | 5    | 27'-3" |       |
| p <sub>57</sub> | 4  | 10   | 17'-6" |       |
| p <sub>58</sub> | 4  | 10   | 32'-0" |       |
| p <sub>59</sub> | 12 | 9    | 28'-0" |       |
| s               | 48 | 5    | 8'-8"  | □     |
| s <sub>1</sub>  | 9  | 4    | 5'-8"  | □     |
| s <sub>2</sub>  | 20 | 4    | 6'-10" | □     |
| s <sub>3</sub>  | 44 | 4    | 12'-7" | □     |
| s <sub>4</sub>  | 52 | 3    | 9'-6"  | ○     |
| s <sub>8</sub>  | 28 | 4    | 7'-0"  | □     |
| s <sub>9</sub>  | 4  | 4    | 4'-2"  | □     |
| t               | 50 | 5    | 5'-6"  |       |
| u               | 6  | 5    | 5'-11" | □     |
| u <sub>1</sub>  | 6  | 6    | 5'-11" | □     |
| v <sub>25</sub> | 44 | 9    | 15'-3" |       |
| w <sub>2</sub>  | 18 | 7    | 25'-6" |       |



| BAR            | A      | B      |
|----------------|--------|--------|
| n              | 3'-3"  | 3'-0"  |
| s              | 2'-10" | 3'-0"  |
| s <sub>1</sub> | 1'-6"  | 2'-8"  |
| s <sub>2</sub> | 1'-11" | 3'-0"  |
| s <sub>3</sub> | 2'-2"  | 2'-8"  |
| s <sub>9</sub> | 1'-6"  | 1'-2"  |
| u              | 1'-6"  | 2'-11" |
| u <sub>1</sub> | 1'-6"  | 2'-11" |



| BILL OF MATERIAL                  |        |          |
|-----------------------------------|--------|----------|
| ITEM                              | UNIT   | QUANTITY |
| CLASS A EXCAVATION FOR STRUCTURES | CU YD  | 89       |
| CLASS X CONCRETE                  | CU YD  | 86.1     |
| REINFORCEMENT BARS                | POUND  | 9,846    |
| FURNISHING STEEL PILES 12 BP53    | LIN FT | 864      |
| TEST PILE STEEL 12 BP53           | EACH   | 2        |
| DRIVING STEEL PILES               | LIN FT | 864      |

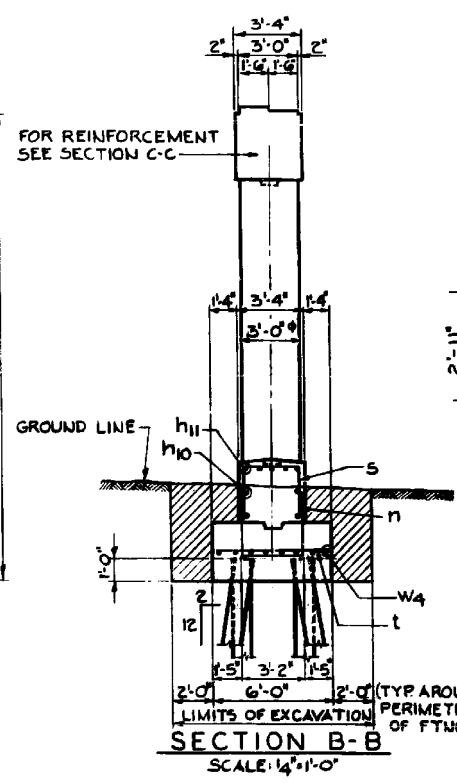
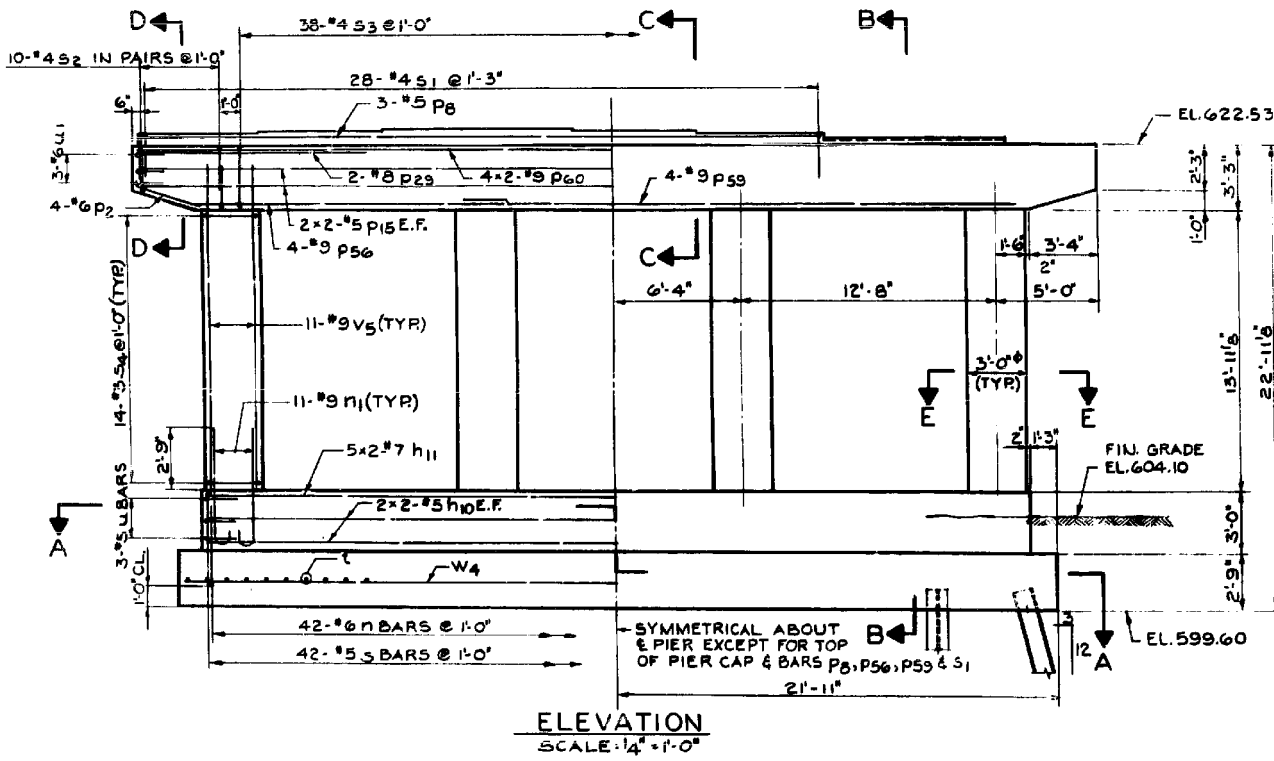
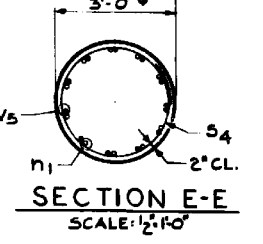
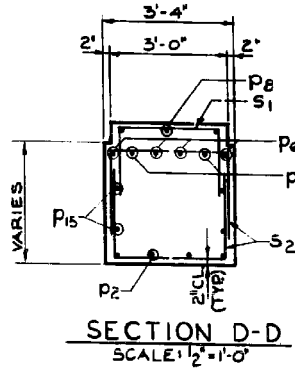
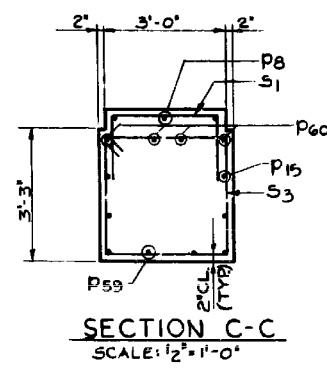
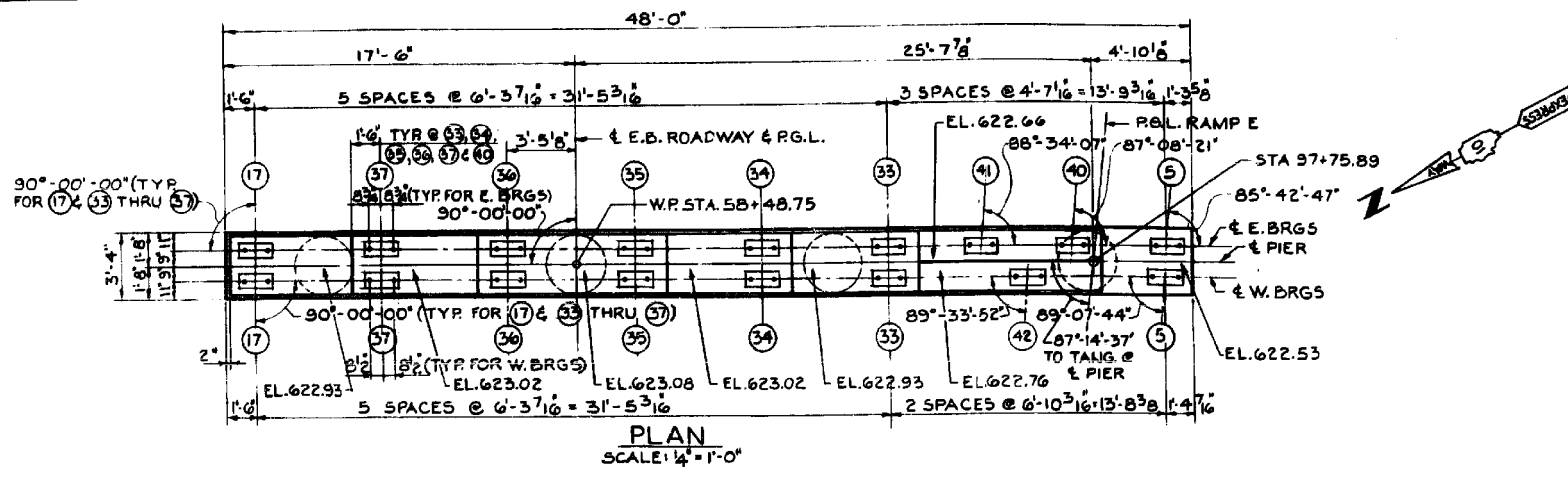
ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
LAWDALE AVE. VIADUCT  
PIER 9  
SCALE: AS NOTED DATE: 11-25-1969

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|                                  |             | FSM        |             |
|                                  |             | RMM        |             |

| FOR INFORMATION ONLY      |             |        |                    |           |
|---------------------------|-------------|--------|--------------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821                | 464       |
|                           |             |        | CONTRACT NO. 60J16 |           |
| ILLINOIS FED. AID PROJECT |             |        |                    |           |

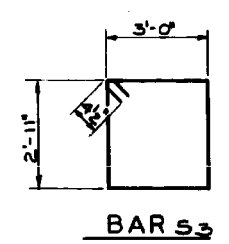
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| BAR | A      | B      |
|-----|--------|--------|
| n   | 3'-3"  | 3'-0"  |
| s   | 2'-10" | 3'-0"  |
| S1  | 1'-6"  | 2'-8"  |
| S2  | 1'-11" | 3'-0"  |
| U   | 1'-6"  | 2'-11" |
| U1  | 1'-6"  | 2'-11" |

BARS n, s, S1, S2, U & U1



BAR n1

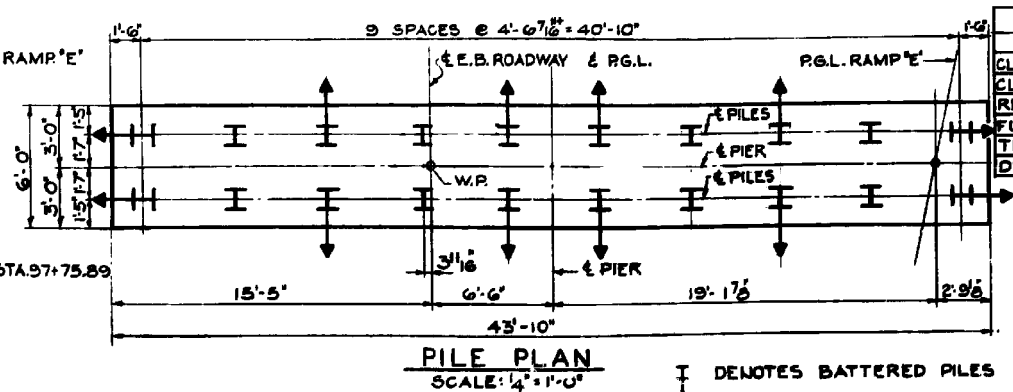
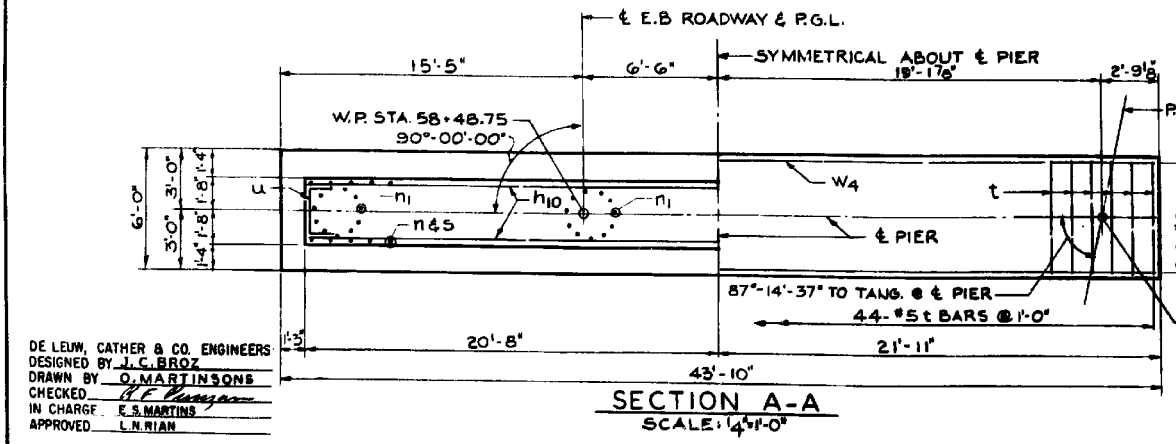
| BAR LIST |    |      |        |       |
|----------|----|------|--------|-------|
| BAR      | NO | SIZE | LENGTH | SHAPE |
| h10      | 8  | 5    | 21'-3" |       |
| h11      | 10 | 7    | 21'-6" |       |
| n        | 42 | 6    | 9'-6"  | □     |
| n1       | 44 | 9    | 7'-0"  | J     |
| P2       | 8  | 6    | 3'-6"  |       |
| P8       | 3  | 5    | 3'-0"  |       |
| P15      | 8  | 5    | 2'-9"  |       |
| P29      | 4  | 8    | 8'-3"  |       |
| P56      | 4  | 9    | 15'-6" |       |
| P59      | 4  | 9    | 28'-0" |       |
| P60      | 8  | 9    | 25'-3" |       |
| S        | 42 | 5    | 8'-8"  | □     |
| S1       | 28 | 4    | 5'-8"  | □     |
| S2       | 20 | 4    | 6'-10" | □     |
| S3       | 38 | 4    | 12'-7" | □     |
| S4       | 56 | 3    | 9'-6"  | ○     |
| t        | 44 | 5    | 5'-6"  |       |
| U        | 6  | 5    | 5'-11" | □     |
| U1       | 6  | 6    | 5'-11" | □     |
| V5       | 44 | 9    | 16'-9" |       |
| W4       | 16 | 7    | 22'-9" |       |

NOTES:  
ALL BAR DIMENSIONS ARE OUT TO OUT  
PREFIX ALL BAR MARKS FOR SHIPMENT  
WITH A NUMBER INDICATING THE PIER  
WHERE THE BARS WILL BE USED.  
EXAMPLE: 10 n10 MEANS BARS n10 FOR  
PIER 10. FOR ANCHOR BOLT PROJEC-  
TION SEE SH. 77. POUR STEPS  
MONOLITHICALLY WITH PIER CAP.  
SPACE REINFORCEMENT IN CAP TO MISS  
ANCHOR BOLTS.

| PILE DATA          |          |
|--------------------|----------|
| PILE TYPE          | 12 BP 53 |
| MIN. CAPACITY TONS | 31       |
| NO. REQUIRED       | 20       |
| EST. LENGTH FEET   | 58       |
| CUT OFF ELEV.      | 600.60   |

\* INCLUDES 1 TEST PILE

| BILL OF MATERIAL                 |        |          |
|----------------------------------|--------|----------|
| ITEM                             | UNIT   | QUANTITY |
| CLASS A EXCAVATION FOR STRUCTURE | CU YD  | 80       |
| CLASS X CONCRETE                 | CU YD  | 77.6     |
| REINFORCEMENT BARS               | POUND  | 8,674    |
| FURNISHING STEEL PILES 12 BP 53  | LIN FT | 1,102    |
| TEST PILE STEEL 12 BP 53         | EACH   | 1        |
| DRIVING STEEL PILES              | LIN FT | 1,102    |

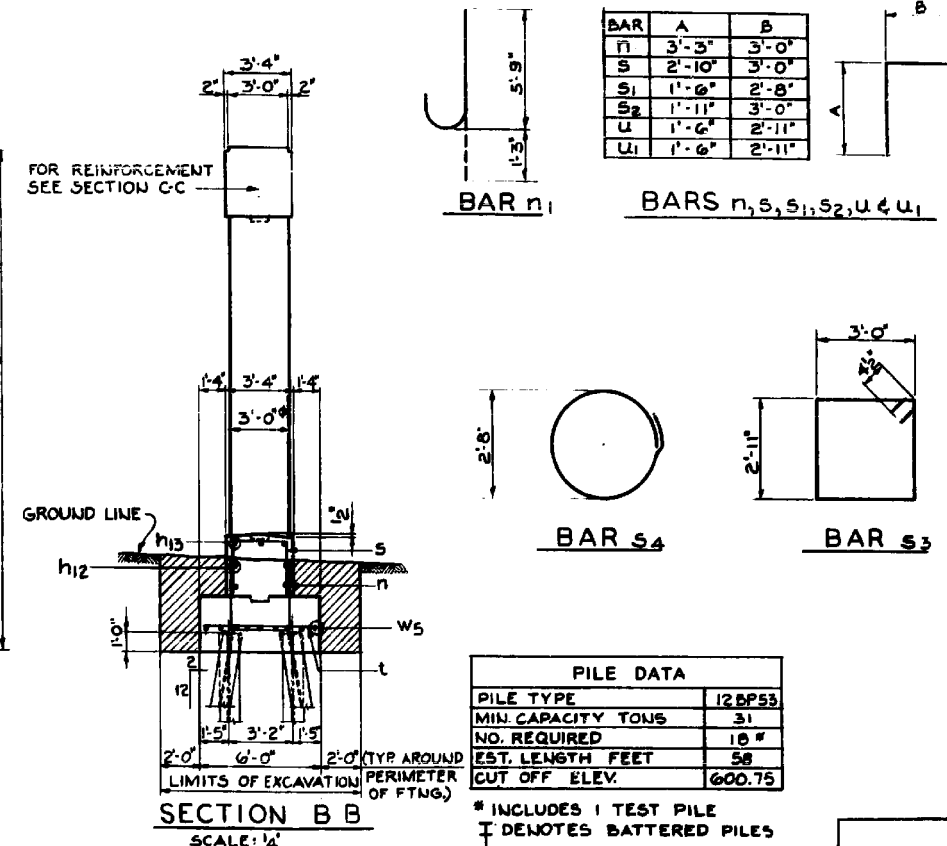
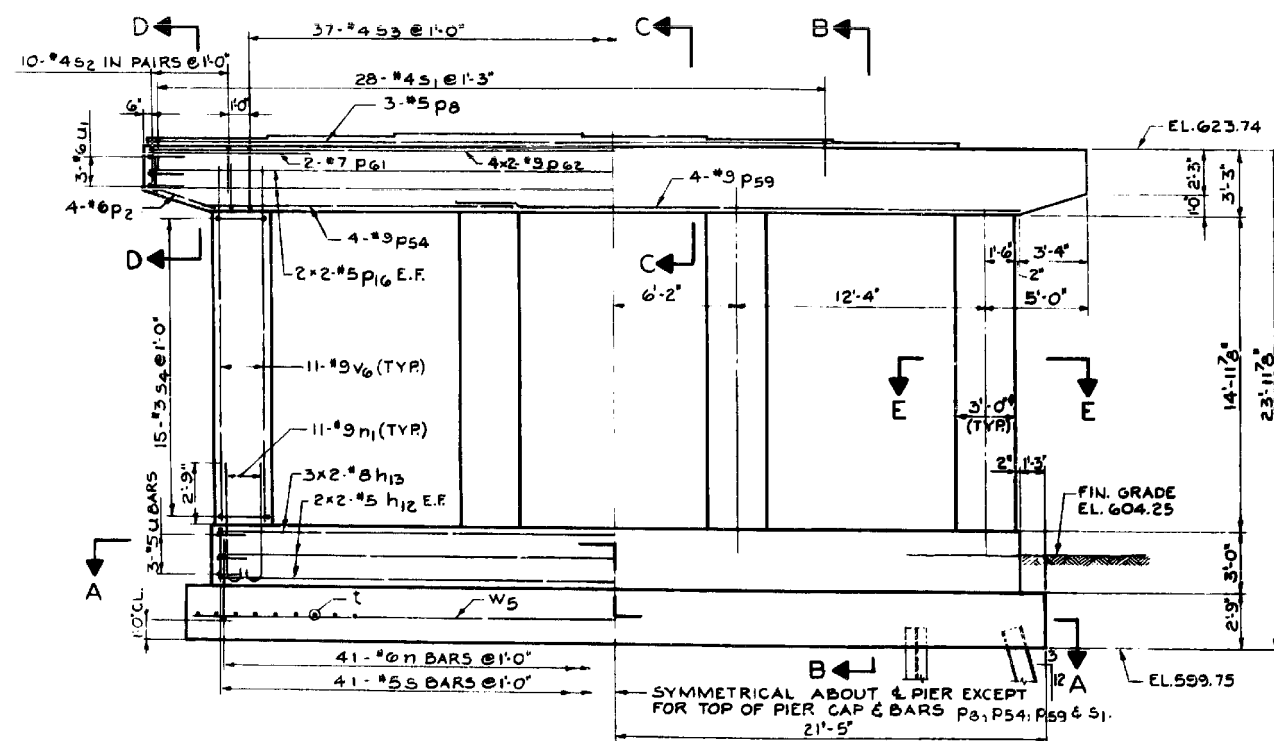
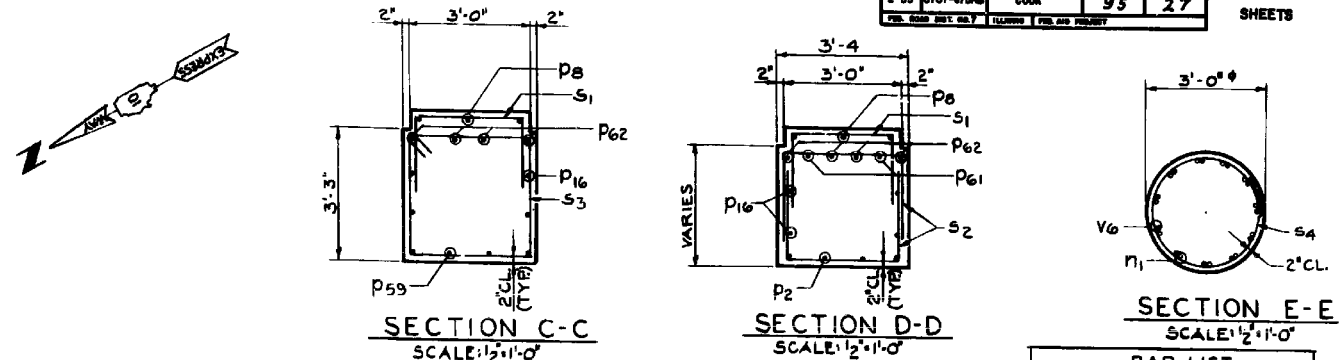
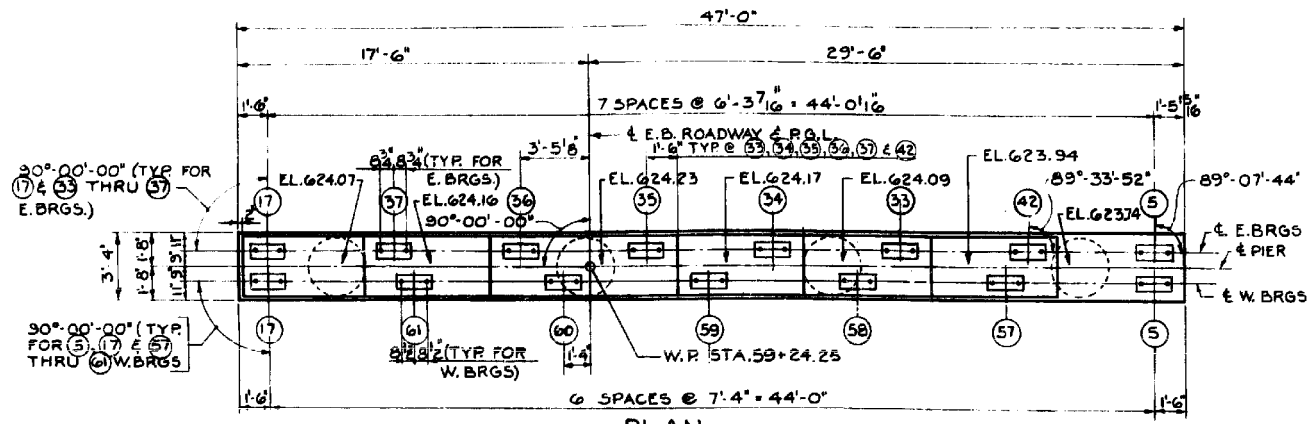


I DENOTES BATTERED PILES

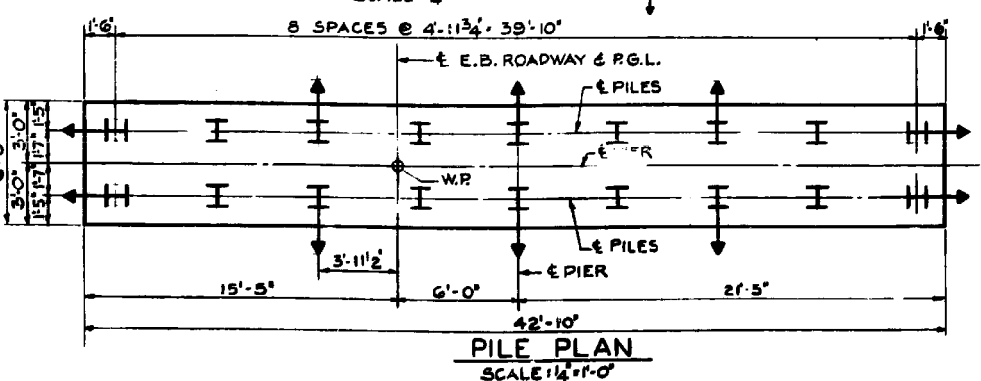
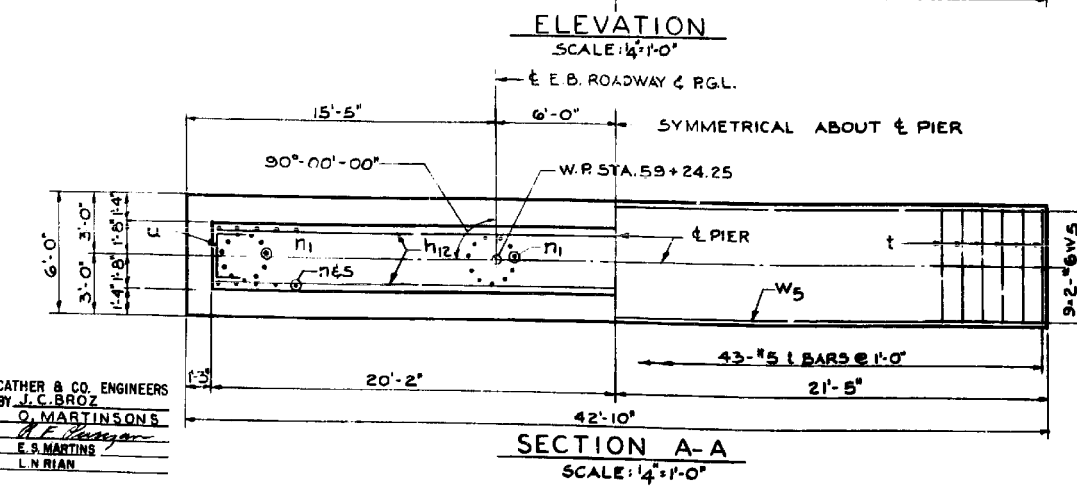
ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
LAWDALE AVE. VIADUCT  
PIER 10  
SCALE: AS NOTED DATE: 11-25-1993

| FILE NAME                        | USER NAME | DESIGNED | CHECKED | REVISIONS |
|----------------------------------|-----------|----------|---------|-----------|
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| BAR LIST |      |        |        |   |
|----------|------|--------|--------|---|
| BAR NO   | SIZE | LENGTH | SHAPE  |   |
| h12      | 8    | 5      | 20'-9" |   |
| h13      | 8    | 8      | 21'-0" |   |
| n        | 41   | 6      | 9'-6"  | □ |
| n1       | 44   | 9      | 7'-0"  | J |
| p2       | 8    | 6      | 3'-6"  |   |
| p3       | 3    | 5      | 34'-0" |   |
| p6       | 8    | 5      | 24'-0" |   |
| p54      | 4    | 9      | 15'-0" |   |
| p59      | 4    | 9      | 28'-0" |   |
| p61      | 4    | 7      | 8'-0"  |   |
| p62      | 8    | 9      | 24'-9" |   |
| s        | 41   | 5      | 8'-8"  | □ |
| s1       | 28   | 4      | 5'-8"  | □ |
| s2       | 20   | 4      | 6'-10" | □ |
| s3       | 37   | 4      | 12'-7" | □ |
| s4       | 60   | 3      | 5'-6"  | ○ |
| t        | 43   | 5      | 5'-6"  |   |
| u        | 6    | 5      | 5'-11" | □ |
| u1       | 6    | 6      | 5'-11" | □ |
| v6       | 44   | 9      | 17'-9" |   |
| w5       | 15   | 6      | 22'-0" |   |



NOTES:

ALL BAR DIMENSIONS ARE OUT TO OUT. PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED. EXAMPLE: 11n12 MEANS BARS n12 FOR PIER 11. FOR ANCHOR BOLT PROJECTION SEE 54.77. POUR STEPS MONOLITHICALLY WITH PIER CAP. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.

| BILL OF MATERIAL                  |        |          |
|-----------------------------------|--------|----------|
| ITEM                              | UNIT   | QUANTITY |
| CLASS A EXCAVATION FOR STRUCTURES | CU YD  | 78       |
| CLASS X CONCRETE                  | CU YD  | 76.9     |
| REINFORCEMENT BARS                | POUND  | 8,514    |
| FURNISHING STEEL PILES 12 BP 53   | LIN FT | 986      |
| TEST PILE STEEL 12 BP 53          | EACH   | 1        |
| DRIVING STEEL PILES               | LIN FT | 986      |

ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
LAWDALE AVE. VIADUCT  
PIER II  
SCALE: AS NOTED DATE: 11-28-93

DE LEW, CATHAR & CO. ENGINEERS  
DESIGNED BY J.C. BROZ  
DRAWN BY O. MARTINSONS  
CHECKED BY E.S. MARTINS  
IN CHARGE E.S. MARTINS  
APPROVED L.N. RIAN

**benesch**  
engineers · scientists · planners

Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

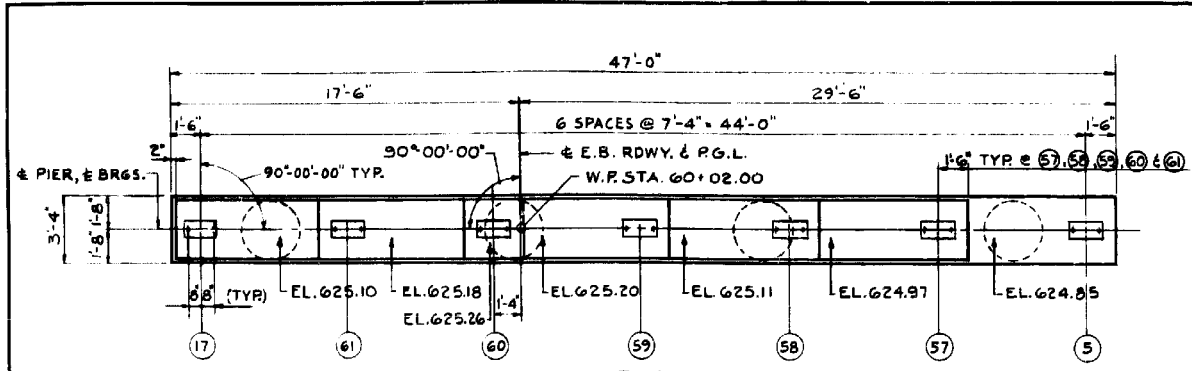
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|  |                      | DRAWN - FSM    | REVISED - |
|  |                      | CHECKED - RMM  | REVISED - |
|  |                      |                | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

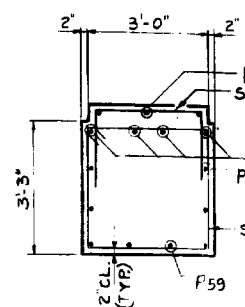
EXISTING PLAN INFORMATION (8 OF 26)  
STRUCTURE NO. 016-2457

|                    |                     |             |                  |                           |
|--------------------|---------------------|-------------|------------------|---------------------------|
| F.A.P. RT. 372     | SECTION 2013-038B-R | COUNTY COOK | TOTAL SHEETS 821 | SHEET NO. 466             |
| CONTRACT NO. 60J16 |                     |             |                  | ILLINOIS FED. AID PROJECT |

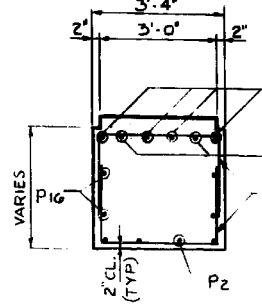
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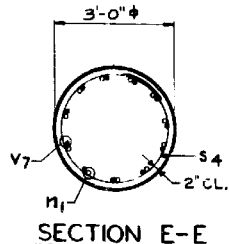
PLAN  
SCALE: 1/4" = 1'-0"



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

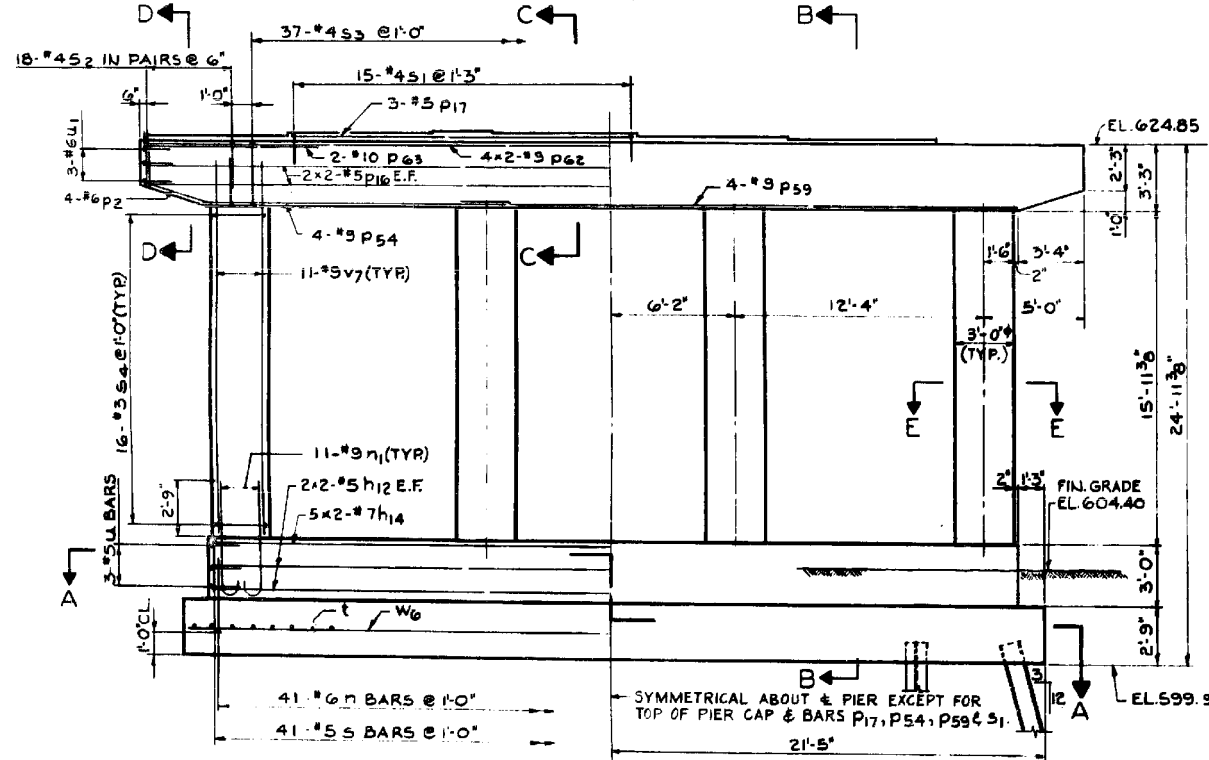


SECTION D-D  
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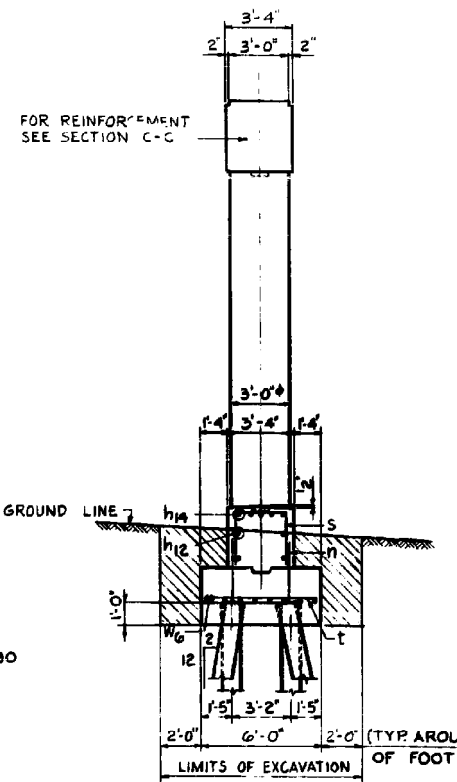


SECTION E-E  
SCALE: 1/2" = 1'-0"

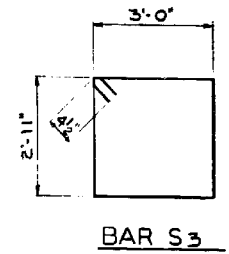
| BAR LIST |     |      |        |       |  |
|----------|-----|------|--------|-------|--|
| BAR      | NO. | SIZE | LENGTH | SHAPE |  |
| n12      | 8   | 5    | 20'-9" |       |  |
| n14      | 10  | 7    | 21'-0" |       |  |
| n        | 41  | 6    | 9'-6"  |       |  |
| n1       | 44  | 9    | 7'-0"  |       |  |
| p2       | 8   | 6    | 3'-6"  |       |  |
| p16      | 8   | 5    | 24'-0" |       |  |
| p17      | 3   | 5    | 17'-3" |       |  |
| p54      | 4   | 9    | 15'-0" |       |  |
| p55      | 4   | 9    | 28'-0" |       |  |
| p62      | 8   | 9    | 24'-9" |       |  |
| p63      | 4   | 10   | 8'-9"  |       |  |
| s        | 41  | 5    | 8'-8"  |       |  |
| s1       | 15  | 4    | 5'-8"  |       |  |
| s2       | 36  | 4    | 6'-10" |       |  |
| s3       | 37  | 4    | 12'-7" |       |  |
| s4       | 64  | 3    | 9'-6"  |       |  |
| t        | 43  | 5    | 5'-6"  |       |  |
| u        | 6   | 5    | 5'-11" |       |  |
| u1       | 6   | 6    | 5'-11" |       |  |
| v7       | 44  | 9    | 18'-9" |       |  |
| w6       | 16  | 7    | 22'-0" |       |  |



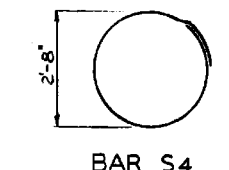
ELEVATION  
SCALE: 1/4" = 1'-0"



SECTION B-B  
SCALE: 1/4" = 1'-0"



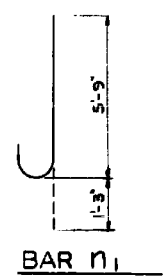
BAR S3



BAR S4

| BAR | A      | B      |
|-----|--------|--------|
| n   | 3'-3"  | 3'-0"  |
| s   | 2'-10" | 3'-0"  |
| s1  | 1'-6"  | 2'-8"  |
| s2  | 1'-11" | 3'-0"  |
| u   | 1'-6"  | 2'-11" |
| u1  | 1'-6"  | 2'-11" |

BARS n, s, s1, s2, u & u1

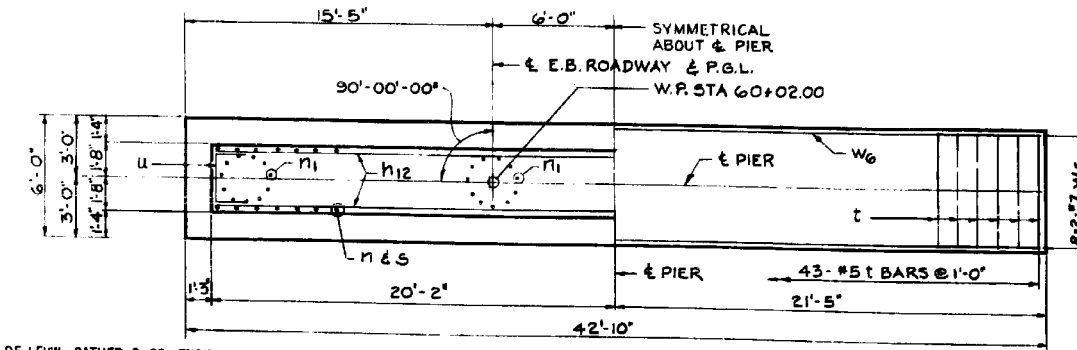


BAR n1

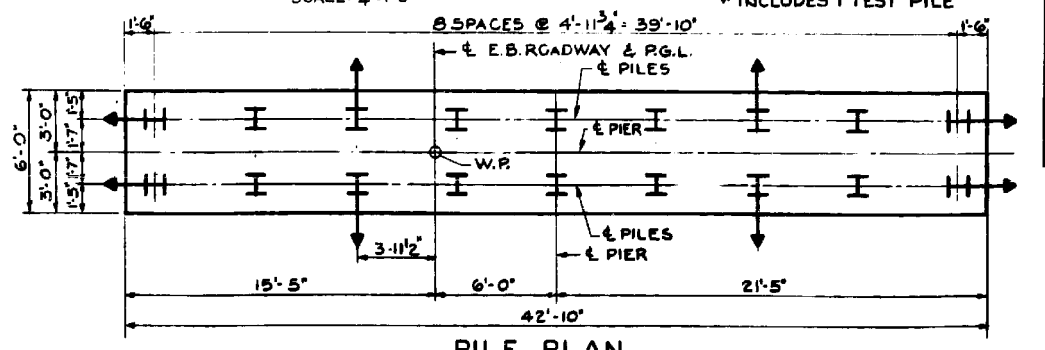
| PILE DATA          |        |
|--------------------|--------|
| PILE TYPE          | 12BP53 |
| MIN. CAPACITY TONS | 34     |
| NO. REQUIRED       | 18     |
| EST. LENGTH FEET   | 55     |
| CUT OFF ELEV.      | 600.90 |

\* INCLUDES 1 TEST PILE

NOTES:  
ALL BAR DIMENSIONS ARE OUT TO OUT. PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED.  
EXAMPLE: 12 n12 MEANS BARS n12 FOR PIER 12 FOR ANCHOR BOLT PROJECTION SEE 5H.77. POUR STEPS MONOLITHICALLY WITH PIER CAP.  
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.



SECTION A-A  
SCALE: 1/4" = 1'-0"



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

| BILL OF MATERIAL                  |        |          |
|-----------------------------------|--------|----------|
| ITEM                              | UNIT   | QUANTITY |
| CLASS A EXCAVATION FOR STRUCTURES | CU YD  | 78       |
| CLASS X CONCRETE                  | CU YD  | 77.4     |
| REINFORCEMENT BARS                | POUND  | 8,932    |
| FURNISHING STEEL PILES 12 BP 53   | LIN FT | 935      |
| TEST PILE STEEL 12 BP 53          | EACH   | 1        |
| DRIVING STEEL PILES               | LIN FT | 935      |

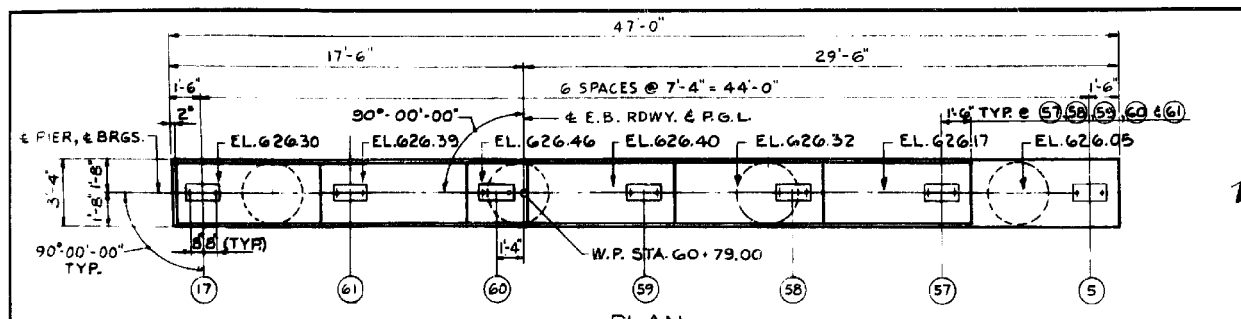
ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
LAWDALE AVE. VIADUCT  
PIER 12  
DATE 11-29-1963

DE LEJW, CATHAR & CO. ENGINEERS  
DESIGNED BY J.C. BROZ  
DRAWN BY O. MARTINSON  
CHECKED  
IN CHARGE E.S. MARTINS  
APPROVED L.N. RIAN

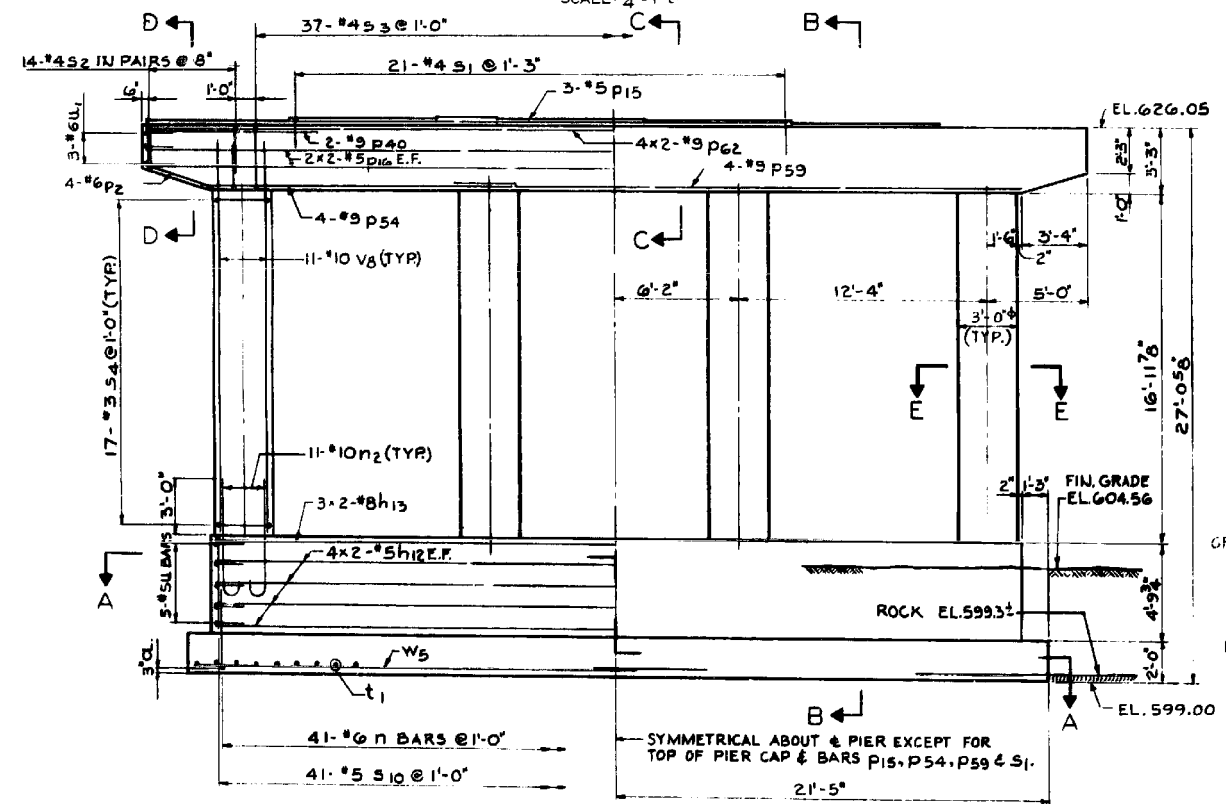
|                                  |                      |                |           |
|----------------------------------|----------------------|----------------|-----------|
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| 0162457.60J16.092.existplan9.dgn |                      | CHECKED - RMM  | REVISED - |
|                                  |                      | DRAWN - FSM    | REVISED - |
|                                  |                      | CHECKED - RMM  | REVISED - |
|                                  |                      |                |           |

| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 372                       | 2013-038B-R | COOK   | 821          | 467                |
|                           |             |        |              | CONTRACT NO. 60J16 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

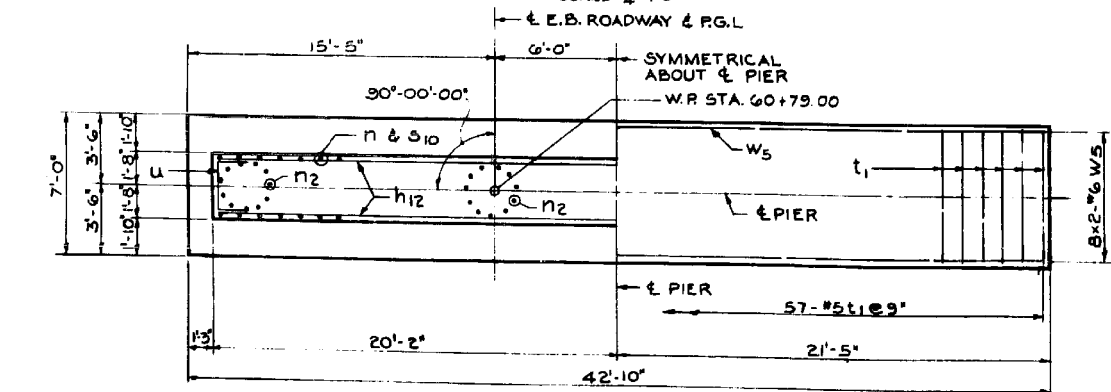
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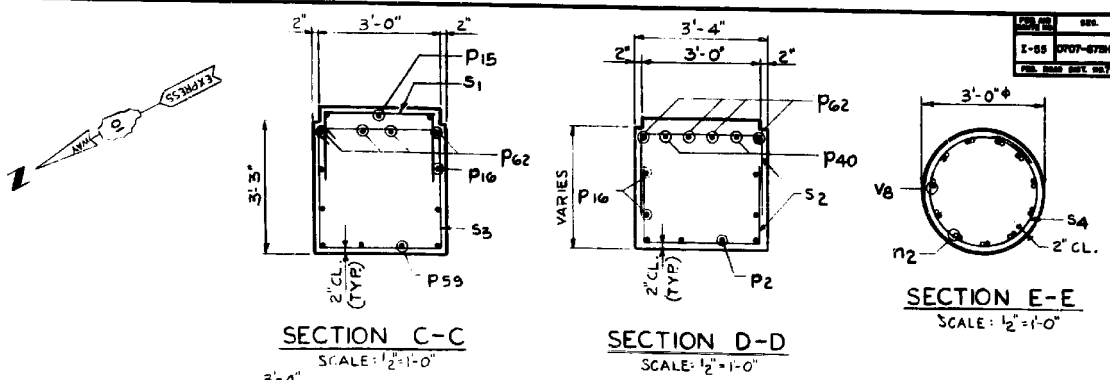
PLAN  
SCALE: 1/4" = 1'-0"



ELEVATION  
SCALE: 1/4" = 1'-0"



SECTION A-A  
SCALE: 1/4" = 1'-0"



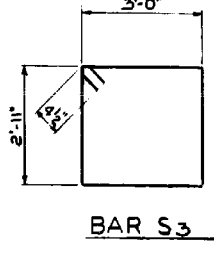
SECTION C-C  
SCALE: 1/2" = 1'-0"

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

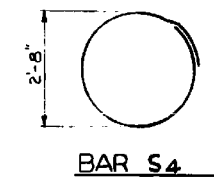
SECTION E-E  
SCALE: 1/2" = 1'-0"

| BAR | A         | B      |
|-----|-----------|--------|
| n   | 3'-3"     | 3'-0"  |
| S1  | 1'-0"     | 2'-8"  |
| S2  | 1'-11"    | 3'-0"  |
| S10 | 4'-7 1/2" | 3'-0"  |
| U   | 1'-6"     | 2'-11" |
| U1  | 1'-6"     | 2'-11" |

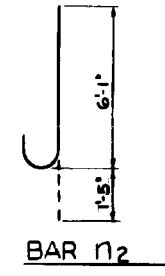
BARS n, S1, S2, S10, U & U1



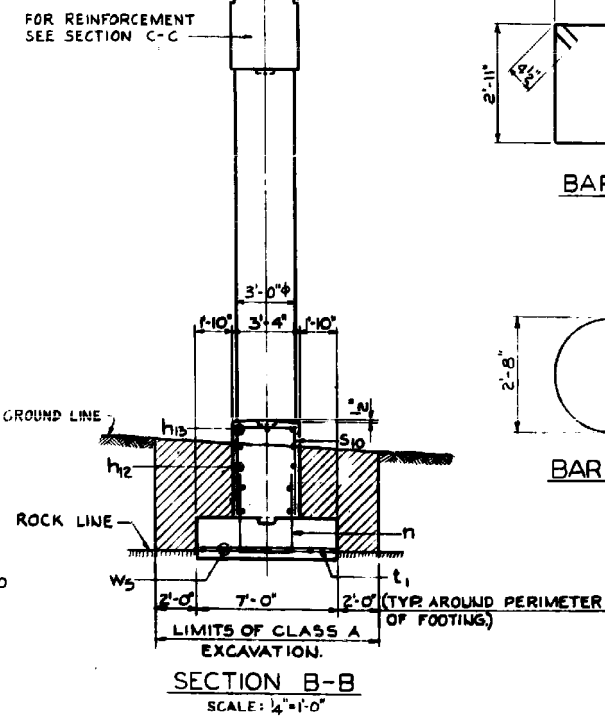
BAR S3



BAR S4



BAR n2



SECTION B-B  
SCALE: 1/4" = 1'-0"

ACTUAL MAXIMUM TOE PRESSURES:

|                   |             |
|-------------------|-------------|
| LOADING GROUP I   | 4050 P.S.F. |
| LOADING GROUP II  | 6930 P.S.F. |
| LOADING GROUP III | 9850 P.S.F. |

| NO. | REV. | DATE     | BY   | CHKD. | APP'D. |
|-----|------|----------|------|-------|--------|
| 1   | 05   | 07/07/03 | COOK | 95    | 29     |

SHEET NO. 29  
SHEETS

| BAR NO. | SIZE | LENGTH | SHAPE  |
|---------|------|--------|--------|
| n12     | 16   | 5      | 20'-9" |
| n13     | 6    | 8      | 21'-0" |
| n       | 41   | 6      | 9'-6"  |
| n2      | 44   | 10     | 7'-0"  |
| P2      | 8    | 6      | 3'-0"  |
| P15     | 3    | 5      | 24'-9" |
| P16     | 8    | 5      | 24'-0" |
| P40     | 4    | 9      | 6'-6"  |
| P54     | 4    | 9      | 15'-0" |
| P59     | 4    | 9      | 28'-0" |
| P62     | 8    | 9      | 24'-8" |
| S1      | 21   | 4      | 5'-8"  |
| S2      | 26   | 4      | 6'-10" |
| S3      | 37   | 4      | 12'-7" |
| S4      | 68   | 3      | 8'-6"  |
| S10     | 41   | 5      | 12'-3" |
| t1      | 57   | 5      | 2'-2"  |
| U       | 10   | 5      | 5'-11" |
| U1      | 6    | 6      | 5'-11" |
| V8      | 44   | 10     | 19'-9" |
| W5      | 16   | 6      | 22'-0" |

NOTES:  
ALL BAR DIMENSIONS ARE OUT TO OUT.  
PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED.  
EXAMPLE: 13n12 MEANS BARS n12 FOR PIER 13. FOR ANCHOR BOLT PROJECTION SEE SH.77. POUR STEPS MONOLITHICALLY WITH PIER CAP.  
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.

| BILL OF MATERIAL                 |       |          |
|----------------------------------|-------|----------|
| ITEM                             | UNIT  | QUANTITY |
| CLASS A EXCAVATION FOR STRUCTURE | CU YD | 100      |
| ROCK EXCAVATION FOR STRUCTURE    | CU YD | 3        |
| CLASS X CONCRETE                 | CU YD | 83.6     |
| REINFORCEMENT BARS               | POUND | 10,436   |

ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
LAWDALE AVE. VIADUCT  
PIER 13  
SCALE: AS NOTED DATE: 11-25-12-03

**benesch**  
engineers · scientists · planners  
Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

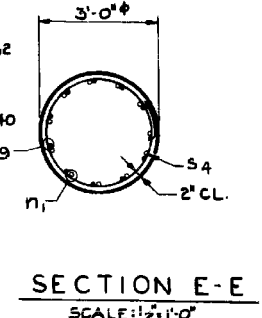
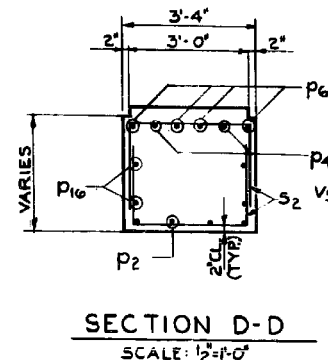
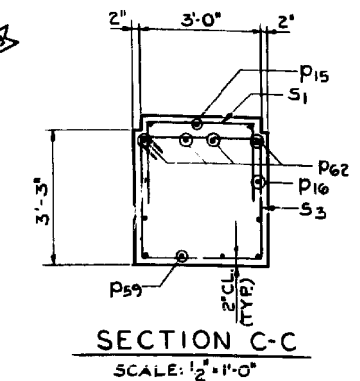
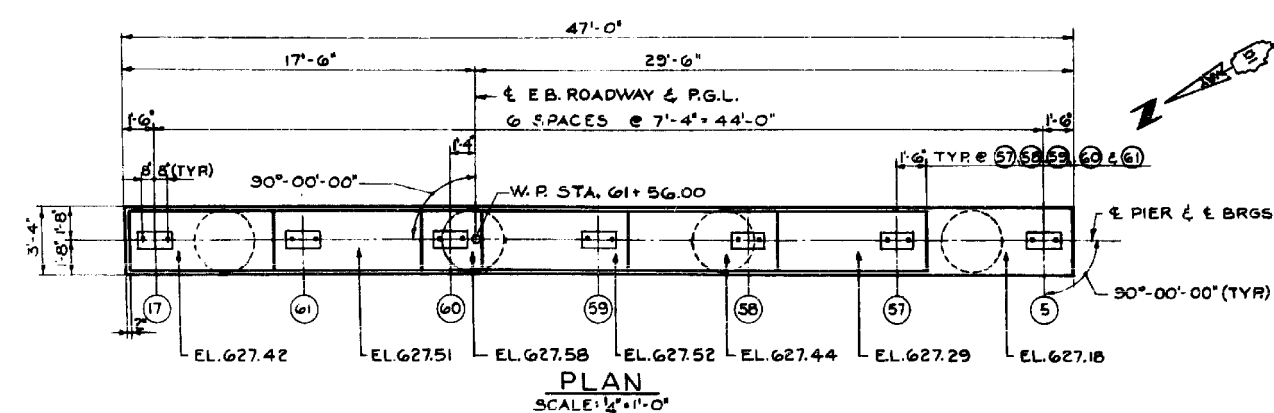
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|-----------------------------------|-----------|----------------|---------------|-----------|
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|                                   |           | DESIGNED - FSM | CHECKED - RMM | REVISED - |
|                                   |           | DRAWN - FSM    | CHECKED - RMM | REVISED - |
|                                   |           | DESIGNED - FSM | CHECKED - RMM | REVISED - |
|                                   |           | DESIGNED - FSM | CHECKED - RMM | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

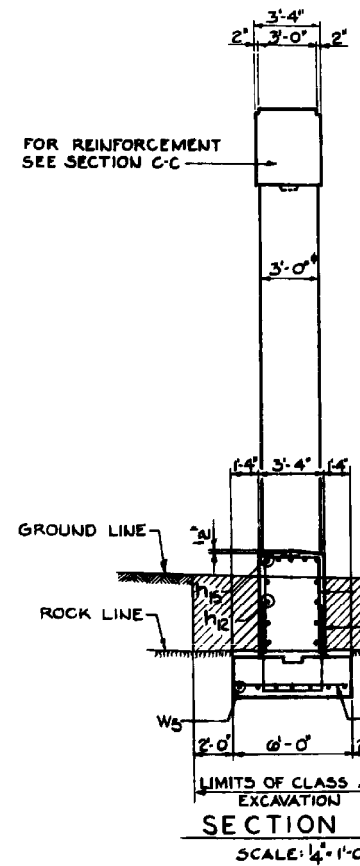
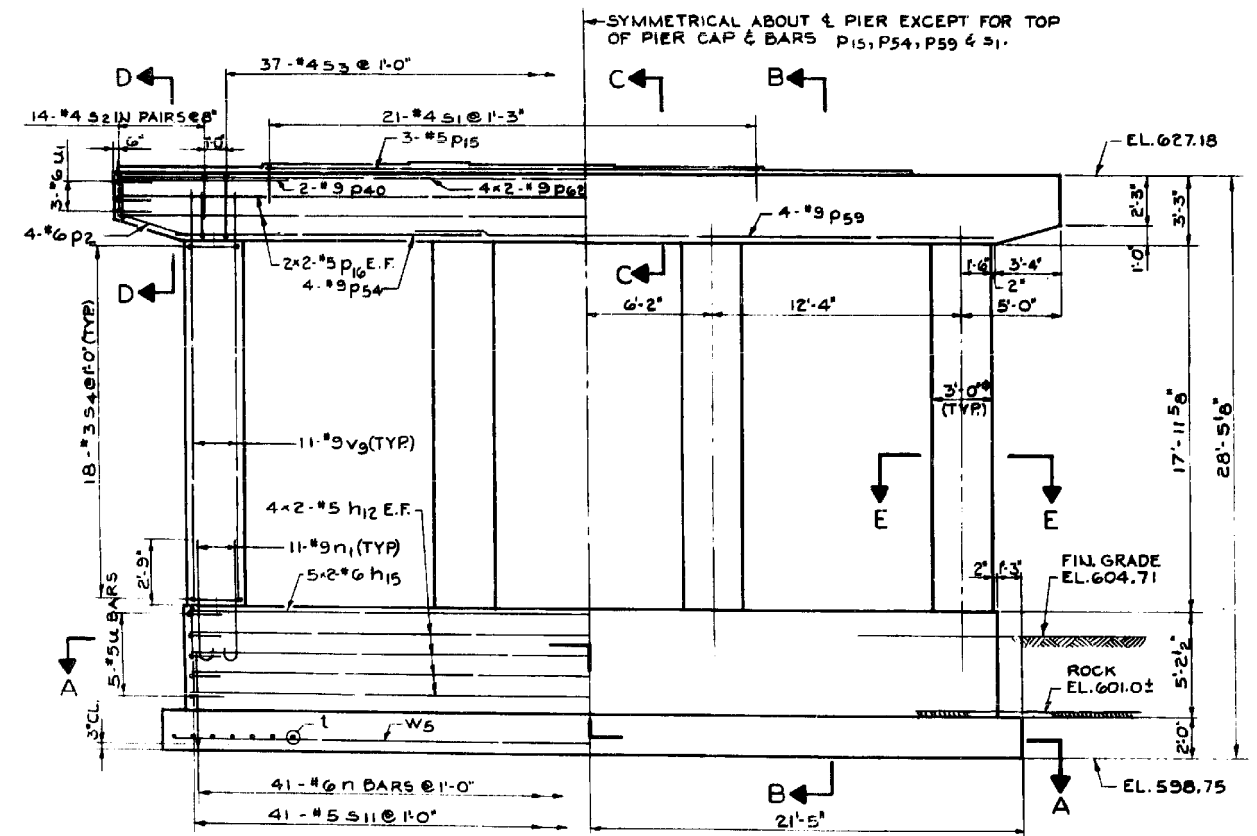
EXISTING PLAN INFORMATION (10 OF 26)  
STRUCTURE NO. 016-2457  
SHEET NO. SDX10 OF SDX26 SHEETS

| FOR INFORMATION ONLY      |             |        |                    |           |
|---------------------------|-------------|--------|--------------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821                | 468       |
|                           |             |        | CONTRACT NO. 60J16 |           |
| ILLINOIS FED. AID PROJECT |             |        |                    |           |

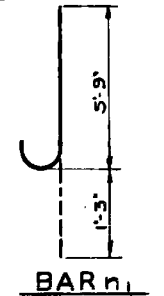
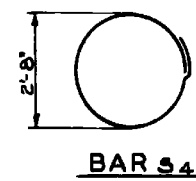
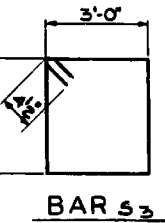
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| BAR LIST |      |        |        |   |
|----------|------|--------|--------|---|
| BAR NO   | SIZE | LENGTH | SHAPE  |   |
| h12      | 16   | 5      | 20'-9" |   |
| h15      | 10   | 6      | 20'-9" |   |
| n        | 41   | 6      | 9'-6"  | J |
| n1       | 44   | 9      | 7'-0"  | J |
| P2       | 8    | 6      | 3'-6"  |   |
| P15      | 3    | 5      | 24'-9" |   |
| P16      | 5    | 5      | 24'-0" |   |
| P40      | 4    | 9      | 8'-6"  |   |
| P54      | 4    | 9      | 15'-0" |   |
| P59      | 4    | 9      | 28'-0" |   |
| P62      | 5    | 9      | 24'-9" |   |
| S1       | 21   | 4      | 5'-8"  | J |
| S2       | 28   | 4      | 6'-10" | J |
| S3       | 37   | 4      | 12'-7" | J |
| S4       | 72   | 3      | 9'-6"  | O |
| S11      | 41   | 5      | 13'-0" | J |
| t        | 43   | 5      | 5'-6"  |   |
| u        | 10   | 5      | 5'-11" | J |
| u1       | 6    | 6      | 5'-11" | J |
| V8       | 44   | 9      | 20'-9" |   |
| W5       | 14   | 6      | 22'-0" |   |



| BAR | A      | B      |
|-----|--------|--------|
| n   | 3'-3"  | 3'-0"  |
| S1  | 1'-6"  | 2'-8"  |
| S2  | 1'-11" | 3'-0"  |
| S11 | 5'-0"  | 3'-0"  |
| u   | 1'-6"  | 2'-11" |
| u1  | 1'-6"  | 2'-11" |



NOTES:  
 ALL BAR DIMENSIONS ARE OUT TO OUT. PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED. EXAMPLE: 14 h12 MEANS BARS h12 FOR PIER 14. FOR ANCHOR BOLT PROJECTION SEE SH. 77. POUR STEPS MONOLITHICALLY WITH PIER CAP. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.

| BILL OF MATERIAL                 |       |          |
|----------------------------------|-------|----------|
| ITEM                             | UNIT  | QUANTITY |
| CLASS A EXCAVATION FOR STRUCTURE | CU YD | 64       |
| ROCK EXCAVATION FOR STRUCTURE    | CU YD | 21       |
| CLASS X CONCRETE                 | CU YD | 83.4     |
| REINFORCEMENT BARS               | POUND | 9,243    |

ACTUAL MAXIMUM TOE PRESSURES:  
 LOADING GROUP I — 4550 P.S.F.  
 LOADING GROUP II — 5360 P.S.F.  
 LOADING GROUP III — 5250 P.S.F.

ILLINOIS DIVISION OF HIGHWAYS  
 SOUTHWEST EXPRESSWAY  
 LAWDALE AVE. VIADUCT  
 PIER 14  
 SCALE: AS NOTED DATE 11-29-1968

DE LEW, CATHER & CO. ENGINEERS  
 DESIGNED BY J.C. BRQZ  
 DRAWN BY O. MARTINSONS  
 CHECKED BY E.S. MARTINS  
 IN CHARGE E.S. MARTINS  
 APPROVED L.M. RIAN

SECTION A-A  
 SCALE: 1/4" = 1'-0"

| FILE NAME                        | USER NAME | DESIGNED | CHECKED | PLLOT SCALE | PLLOT DATE | DESIGNED | CHECKED | REVISIONS |
|----------------------------------|-----------|----------|---------|-------------|------------|----------|---------|-----------|
| 0162457.60J16.094.exstplan11.dgn | tjenicke  | FSM      | RMM     |             | 12/28/2013 | FSM      | RMM     | REVISIONS |

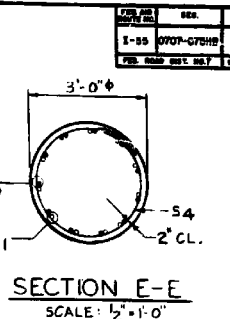
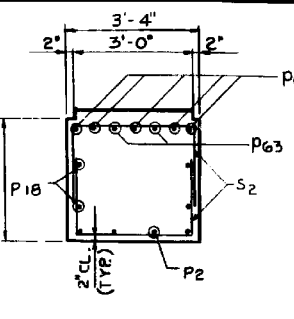
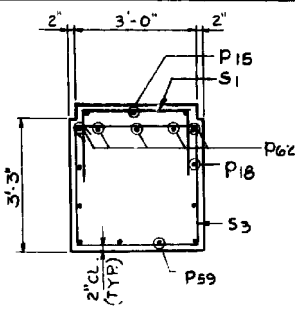
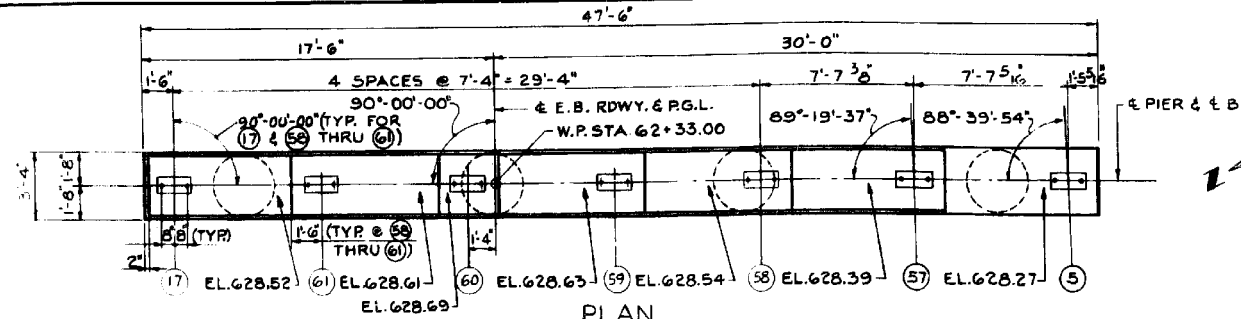
FOR INFORMATION ONLY

| F.A.P. RTE. | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|-------------|--------|--------------|-----------|
| 372         | 2013-0388-R | COOK   | 821          | 469       |

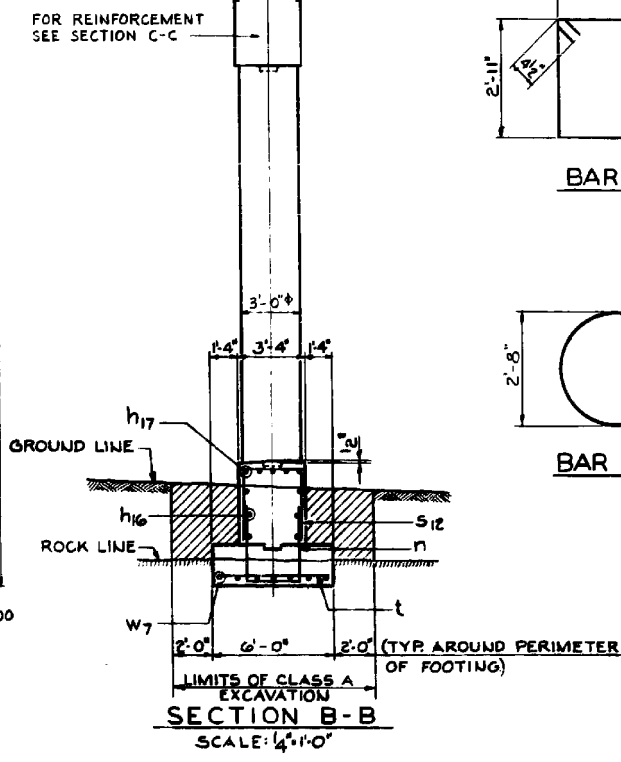
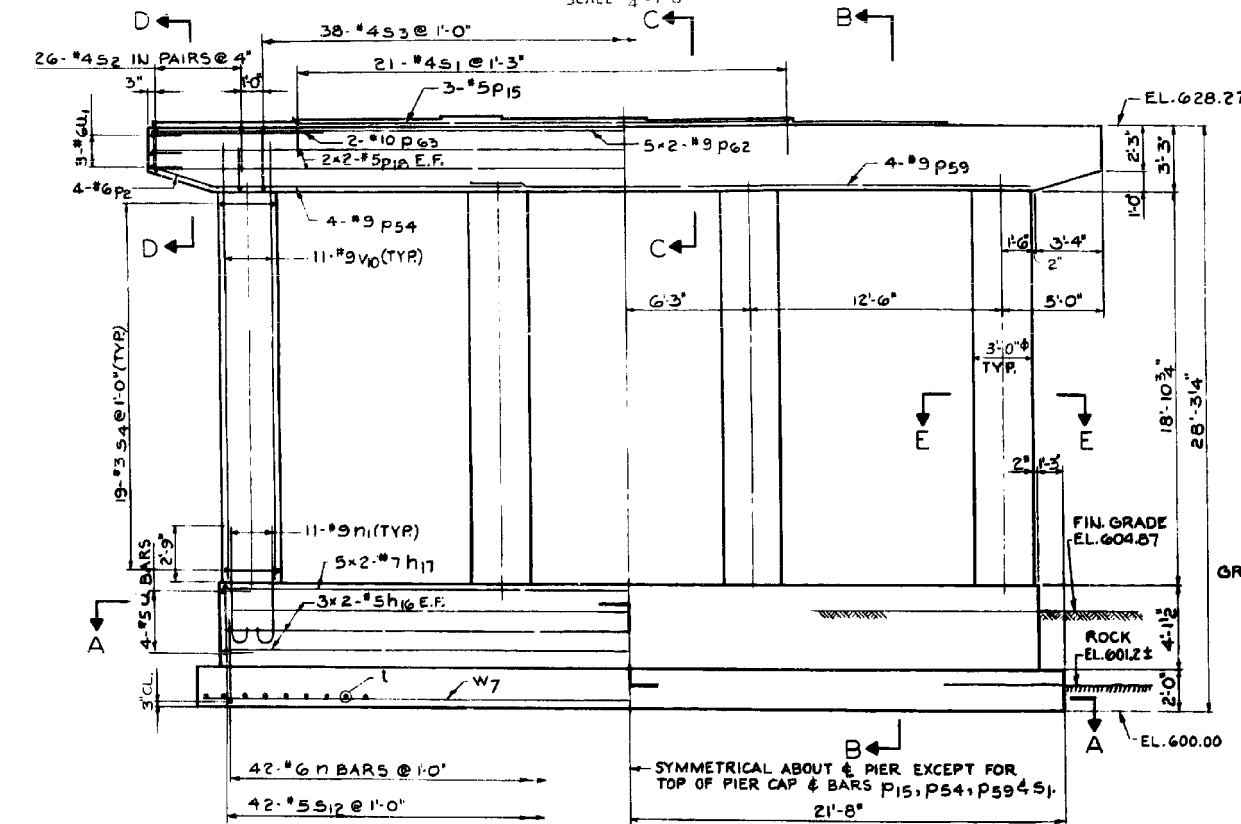
CONTRACT NO. 60J16  
 ILLINOIS FED. AID PROJECT

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|              |           |        |         |           |
|--------------|-----------|--------|---------|-----------|
| DATE         | REV.      | COUNTY | SECTION | SHEET NO. |
| 1-18         | 0207-0708 | COOK   | 95      | 31        |
| SHEET NO. 31 |           |        |         | SHEETS    |



| BAR LIST |     |      |         |       |
|----------|-----|------|---------|-------|
| BAR      | NO. | SIZE | LENGTH  | SHAPE |
| h16      | 12  | 5    | 21'-0"  |       |
| h17      | 10  | 7    | 21'-3"  |       |
| n        | 42  | 6    | 9'-6"   | Π     |
| n1       | 44  | 9    | 7'-0"   | J     |
| P2       | 8   | 6    | 3'-6"   |       |
| P15      | 3   | 5    | 24'-9"  |       |
| P16      | 8   | 5    | 24'-3"  |       |
| P54      | 4   | 9    | 15'-0"  |       |
| P55      | 4   | 9    | 28'-0"  |       |
| P62      | 10  | 9    | 24'-9"  |       |
| P63      | 4   | 10   | 8'-9"   |       |
| S1       | 21  | 4    | 5'-8"   | Π     |
| S2       | 52  | 4    | 6'-10"  |       |
| S12      | 38  | 4    | 12'-7"  | Π     |
| S4       | 76  | 3    | 9'-6"   | Π     |
| S12      | 42  | 5    | 10'-10" | Π     |
| t        | 44  | 5    | 5'-6"   |       |
| u        | 8   | 5    | 5'-11"  | Π     |
| u1       | 6   | 6    | 5'-11"  | Π     |
| v10      | 44  | 9    | 21'-9"  |       |
| w7       | 14  | 7    | 22'-6"  |       |



| BAR | A      | B      |
|-----|--------|--------|
| n   | 3'-3"  | 3'-0"  |
| s1  | 1'-6"  | 2'-8"  |
| s2  | 1'-11" | 3'-0"  |
| u   | 1'-6"  | 2'-11" |
| u1  | 1'-6"  | 2'-11" |

BAR S3

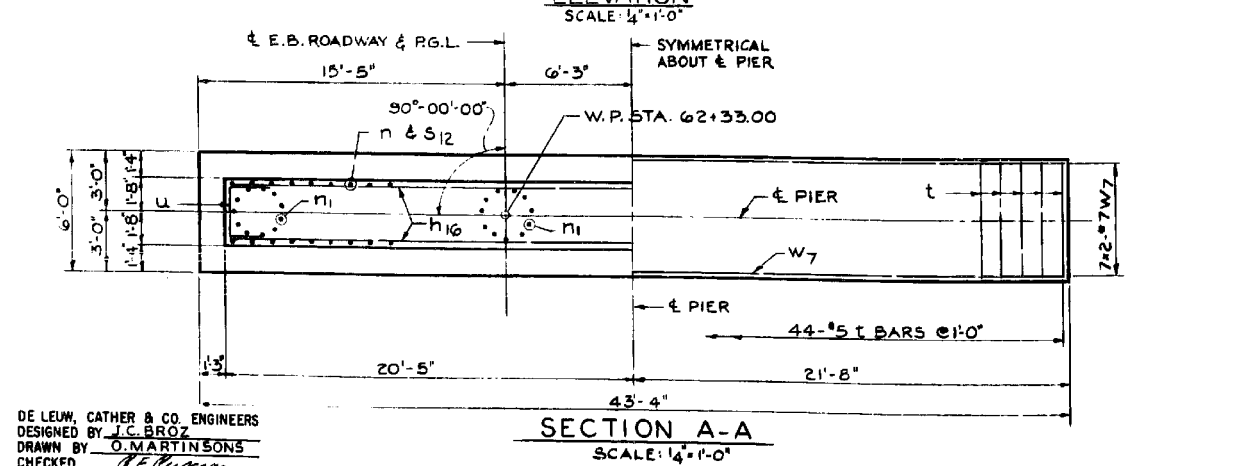
BAR S4

BAR n1

**NOTES:**  
 ALL BAR DIMENSIONS ARE OUT TO OUT. PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED. EXAMPLE: 15h16 MEANS BARS h16 FOR PIER 15. FOR ANCHOR BOLT PROJECTION SEE SH. 77. FOUR STEPS MONOLITHICALLY WITH PIER CAP. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.

| BILL OF MATERIAL                 |       |          |
|----------------------------------|-------|----------|
| ITEM                             | UNIT  | QUANTITY |
| CLASS A EXCAVATION FOR STRUCTURE | CU YD | 6.4      |
| ROCK EXCAVATION FOR STRUCTURE    | CU YD | 12       |
| CLASS X CONCRETE                 | CU YD | 79.7     |
| REINFORCEMENT BARS               | POUND | 9,878    |

| ACTUAL MAXIMUM TOE PRESSURES: |             |
|-------------------------------|-------------|
| LOADING GROUP I               | 5160 P.S.F. |
| LOADING GROUP II              | 5990 P.S.F. |
| LOADING GROUP III             | 5880 P.S.F. |



DE LEUW, CATHY & CO. ENGINEERS  
 DESIGNED BY J.C. BROZ  
 DRAWN BY O. MARTINSONS  
 CHECKED BY P.F. BARTON  
 IN CHARGE C.S. MARTINS  
 APPROVED L. RIAN

ILLINOIS DIVISION OF HIGHWAYS  
 SOUTHWEST EXPRESSWAY  
 LAWNDALE AVE. VIADUCT  
 PIER 15  
 SCALE: AS NOTED DATE 11-25-1965

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 205 North Michigan Avenue, Suite 2400  
 Chicago, Illinois 60601  
 312-565-0450 Job No. 10093

|                                   |                        |                |           |
|-----------------------------------|------------------------|----------------|-----------|
| FILE NAME =                       | USER NAME = tjenicke   | DESIGNED - FSM | REVISED - |
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|                                   | PLOT DATE = 12/28/2013 | DRAWN - FSM    | REVISED - |
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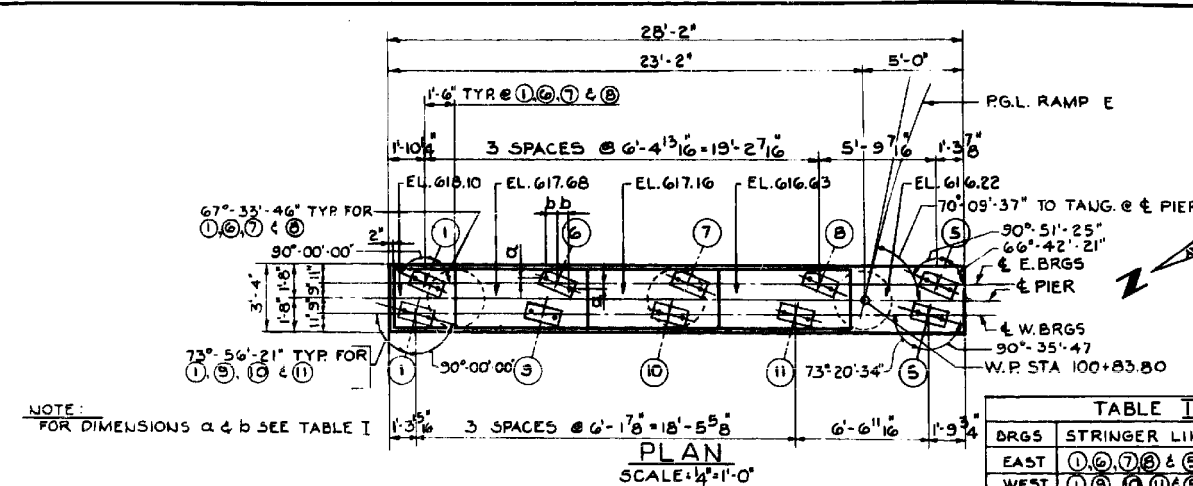
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION (12 OF 26)  
 STRUCTURE NO. 016-2457  
 SHEET NO. SDX12 OF SDX26 SHEETS

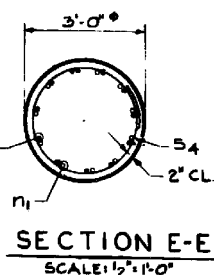
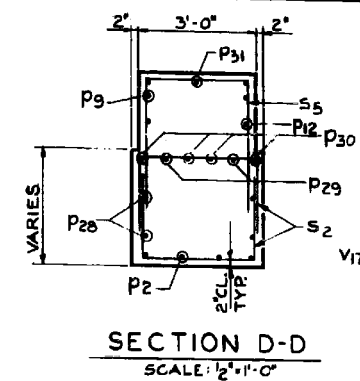
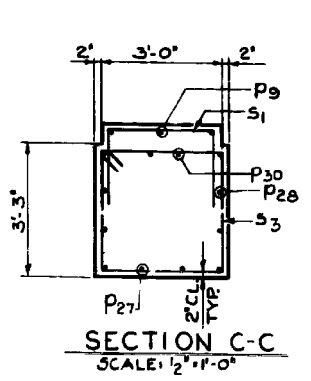
FOR INFORMATION ONLY

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
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| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

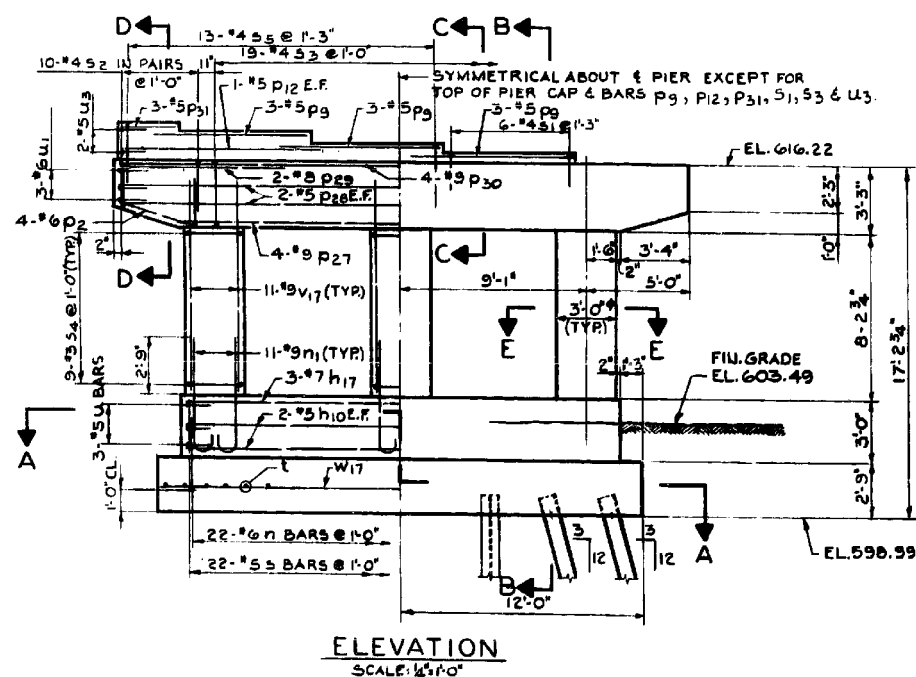
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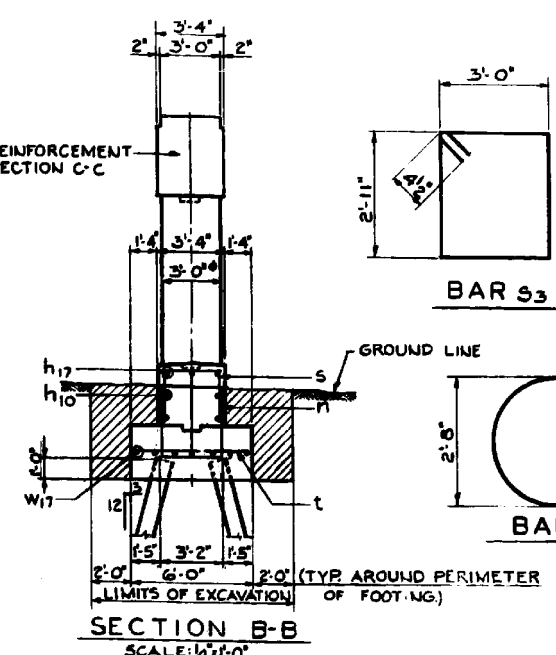
| DIRGS | STRINGER LINE  | a                              | b                             |
|-------|----------------|--------------------------------|-------------------------------|
| EAST  | ①, ②, ⑦, ⑧ & ⑨ | 3 <sup>5</sup> / <sub>16</sub> | 8 <sup>1</sup> / <sub>8</sub> |
| WEST  | ①, ②, ③, ④ & ⑤ | 2 <sup>7</sup> / <sub>16</sub> | 8 <sup>3</sup> / <sub>8</sub> |



| BAR             | NO | SIZE | LENGTH | SHAPE |
|-----------------|----|------|--------|-------|
| h <sub>10</sub> | 4  | 5    | 21'-3" |       |
| h <sub>17</sub> | 3  | 7    | 21'-3" |       |
| n               | 22 | 6    | 9'-6"  | J     |
| n <sub>1</sub>  | 33 | 9    | 7'-0"  | J     |
| P <sub>2</sub>  | 8  | 6    | 3'-6"  |       |
| P <sub>9</sub>  | 9  | 5    | 7'-3"  |       |
| P <sub>12</sub> | 2  | 5    | 10'-0" |       |
| P <sub>27</sub> | 4  | 9    | 21'-3" |       |
| P <sub>28</sub> | 4  | 5    | 27'-9" |       |
| P <sub>29</sub> | 4  | 8    | 8'-3"  |       |
| P <sub>30</sub> | 4  | 9    | 27'-9" |       |
| P <sub>31</sub> | 3  | 5    | 2'-6"  |       |
| S               | 22 | 5    | 8'-8"  |       |
| S <sub>1</sub>  | 6  | 4    | 5'-8"  |       |
| S <sub>2</sub>  | 20 | 4    | 6'-10" |       |
| S <sub>3</sub>  | 19 | 4    | 12'-7" |       |
| S <sub>4</sub>  | 27 | 3    | 8'-6"  |       |
| S <sub>5</sub>  | 13 | 4    | 8'-0"  |       |
| t               | 25 | 5    | 5'-6"  |       |
| U               | 6  | 5    | 5'-11" |       |
| U <sub>1</sub>  | 6  | 6    | 5'-11" |       |
| U <sub>3</sub>  | 2  | 5    | 5'-3"  |       |
| V <sub>17</sub> | 33 | 9    | 11'-0" |       |
| W <sub>17</sub> | 7  | 6    | 23'-6" |       |



FOR REINFORCEMENT SEE SECTION C-C



| BAR            | A      | B      |
|----------------|--------|--------|
| n              | 3'-3"  | 3'-0"  |
| S              | 2'-10" | 3'-0"  |
| S <sub>1</sub> | 1'-6"  | 2'-8"  |
| S <sub>2</sub> | 1'-11" | 3'-0"  |
| S <sub>3</sub> | 2'-8"  | 2'-8"  |
| U              | 1'-6"  | 2'-11" |
| U <sub>1</sub> | 1'-6"  | 2'-11" |
| U <sub>3</sub> | 1'-4"  | 2'-7"  |

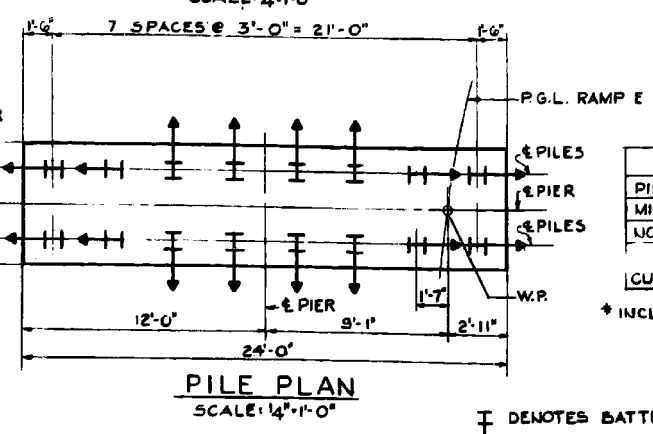
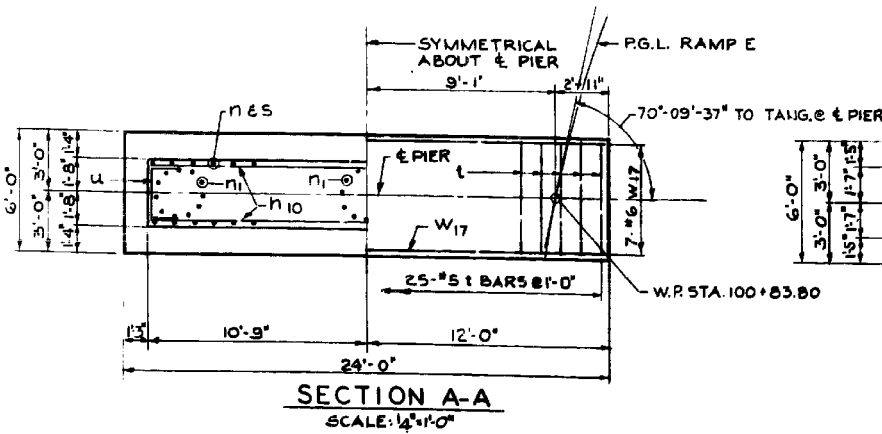
BARS n, S, S<sub>1</sub>, S<sub>2</sub>, S<sub>3</sub>, U, U<sub>1</sub> & U<sub>3</sub>

BAR S<sub>3</sub>



BAR n<sub>1</sub>

NOTES:  
ALL BAR DIMENSIONS ARE OUT TO OUT.  
PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED.  
EXAMPLE: 33h<sub>17</sub> MEANS BARS h<sub>17</sub> FOR PIER 39. FOR ANCHOR BOLT PROJECTION SEE 5H.77. FOUR STEPS MONOLITHICALLY WITH PIER CAP.  
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.



|                    |        |
|--------------------|--------|
| PILE TYPE          | 10BP57 |
| MIN. CAPACITY TONS | 37     |
| NO REQUIRED        | 16*    |
| LENGTH FEET        | 20     |
| CUT OFF ELEV.      | 599.99 |

\* INCLUDES 2 TEST PILES

|                                  | UNIT  | QUANTITY |
|----------------------------------|-------|----------|
| CLASS A EXCAVATION FOR STRUCTURE | CU YD | 47       |
| CLASS X CONCRETE                 | CU YD | 42.6     |
| REINFORCEMENT BARS               | POUND | 4,692    |
| FURNISHING STEEL PILES 10 BP 57  | LN FT | 280      |
| TEST PILE STEEL 10 BB 57         | EACH  | 2        |
| DRIVING STEEL PILES              | LN FT | 280      |

ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
LAWDALE AVE. VIADUCT  
PIER 39  
SCALE: AS NOTED DATE: 11-25-1993

DE LEUW, CATHER & CO. ENGINEERS  
DESIGNED BY J.C. BROZ  
DRAWN BY O. MARTINSON  
CHECKED A.F. [Signature]  
IN CHARGE E.S. MARTINS  
APPROVED L.N. RIAN

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|                                   |                        |                |           |
|-----------------------------------|------------------------|----------------|-----------|
| FILE NAME =                       | USER NAME = tjenicke   | DESIGNED - FSM | REVISED - |
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|                                   | PLOT DATE = 12/28/2013 | DRAWN - FSM    | REVISED - |
|                                   |                        | CHECKED - RMM  | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

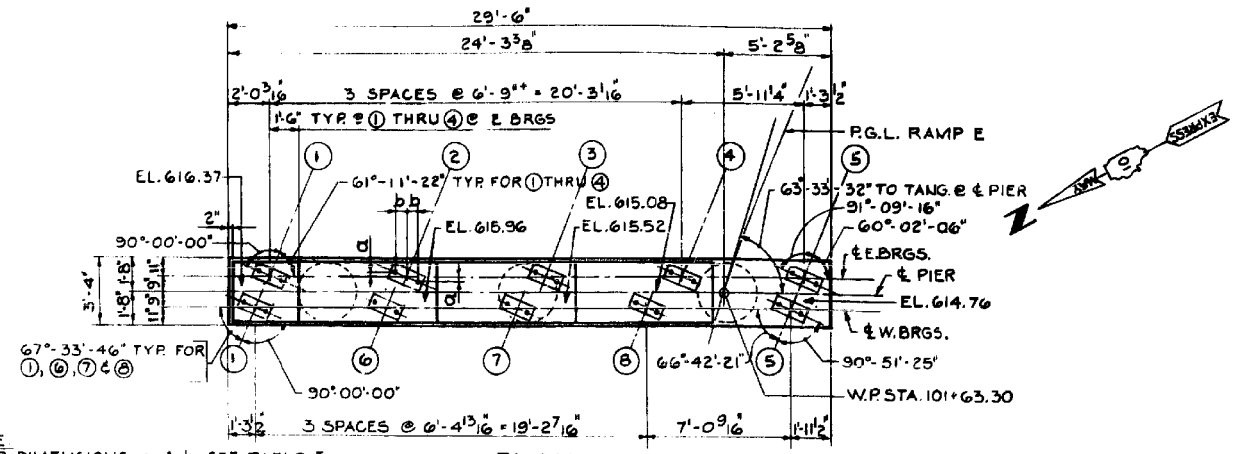
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STRUCTURE NO. 016-2457  
SHEET NO. SDX13 OF SDX26 SHEETS

FOR INFORMATION ONLY

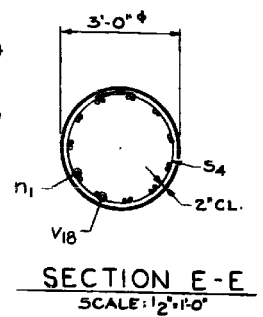
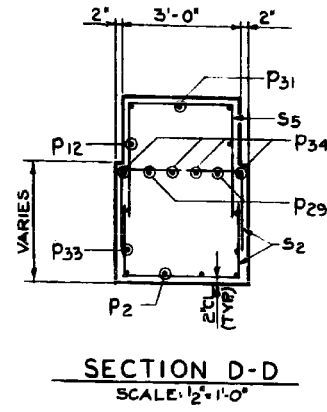
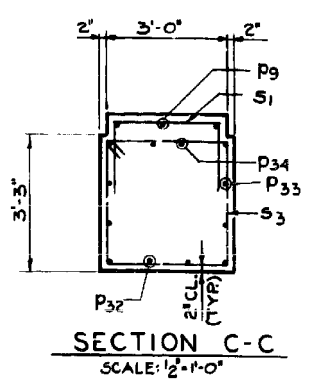
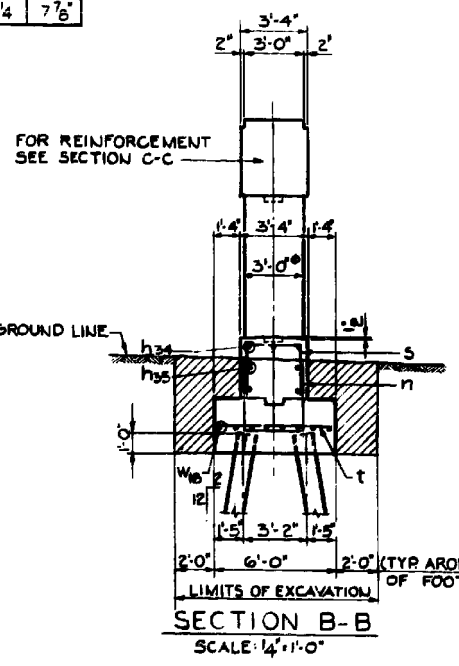
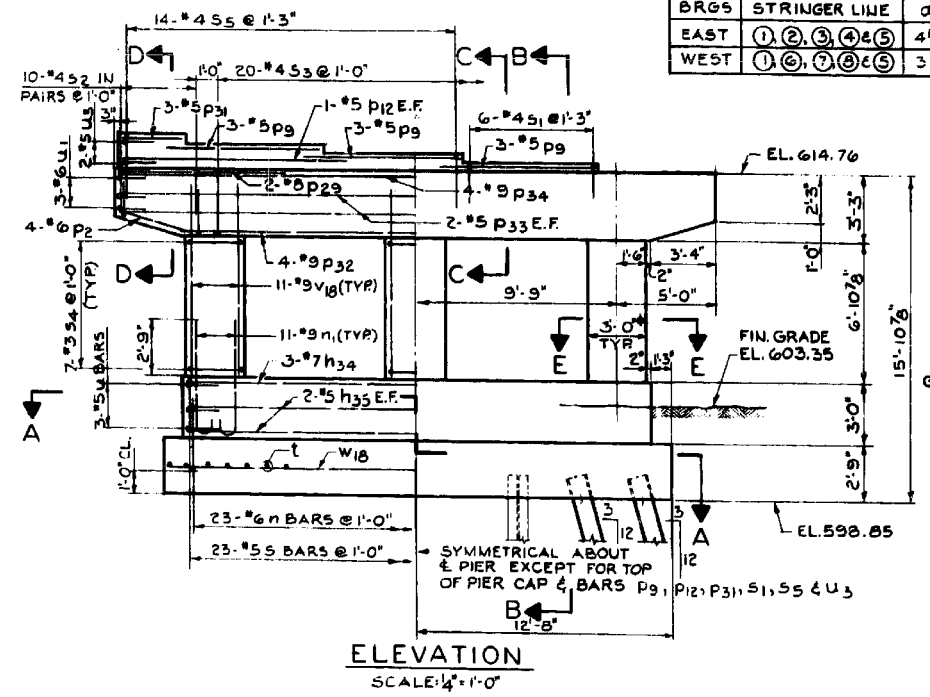
| F.A.P. RTE. | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|-------------|--------|--------------|-----------|
| 372         | 2013-038B-R | COOK   | 821          | 471       |

CONTRACT NO. 60J16  
ILLINOIS FED. AID PROJECT

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| BRGS | STRINGER LINE | a    | b     |
|------|---------------|------|-------|
| EAST | ① ② ③ ④ ⑤     | 4'8" | 7'10" |
| WEST | ① ⑥ ⑦ ⑧ ⑨     | 3'4" | 7'6"  |



| BAR | A      | B      |
|-----|--------|--------|
| n   | 3'-3"  | 3'-0"  |
| s   | 2'-10" | 3'-0"  |
| s1  | 1'-6"  | 2'-8"  |
| s2  | 1'-11" | 3'-0"  |
| s5  | 2'-8"  | 2'-8"  |
| u   | 1'-6"  | 2'-11" |
| u1  | 1'-6"  | 2'-11" |
| u3  | 1'-4"  | 2'-7"  |

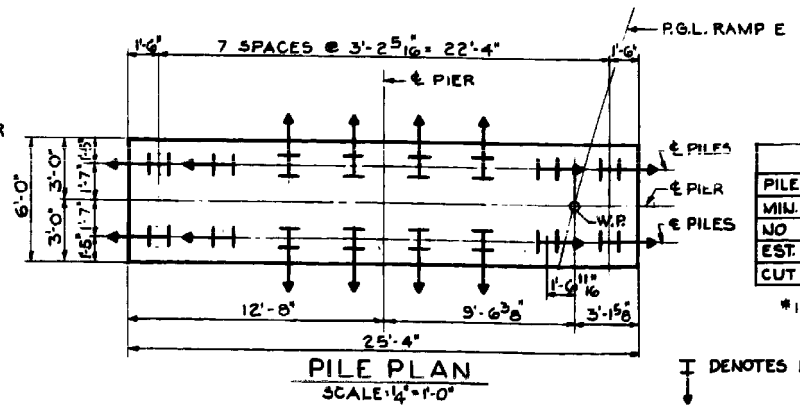
| BAR NO | SIZE | LENGTH | SHAPE  |
|--------|------|--------|--------|
| h34    | 3    | 7      | 22'-6" |
| h35    | 4    | 5      | 22'-6" |
| n      | 23   | 6      | 9'-6"  |
| n1     | 33   | 9      | 7'-0"  |
| p2     | 8    | 6      | 3'-6"  |
| p9     | 9    | 5      | 7'-3"  |
| p12    | 2    | 5      | 10'-0" |
| p29    | 4    | 8      | 8'-3"  |
| p31    | 3    | 5      | 2'-6"  |
| p32    | 4    | 9      | 22'-6" |
| p33    | 4    | 5      | 29'-0" |
| p34    | 4    | 9      | 29'-0" |
| s      | 23   | 5      | 8'-8"  |
| s1     | 6    | 4      | 5'-8"  |
| s2     | 20   | 4      | 6'-10" |
| s3     | 20   | 4      | 12'-7" |
| s4     | 20   | 3      | 9'-6"  |
| s5     | 14   | 4      | 8'-0"  |
| t      | 26   | 5      | 5'-6"  |
| u      | 6    | 5      | 5'-11" |
| u1     | 6    | 6      | 5'-11" |
| u3     | 2    | 5      | 5'-3"  |
| v18    | 33   | 9      | 9'-9"  |
| w18    | 8    | 6      | 25'-0" |

NOTES:  
ALL BAR DIMENSIONS ARE OUT TO OUT.  
PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED.  
EXAMPLE: 40n11 MEANS BARS n11 FOR PIER 40. FOR ANCHOR BOLT PROJECTION SEE SH.77. POUR STEPS MONOLITHICALLY WITH PIER CAP.  
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.

| ITEM                             | UNIT   | QUANTITY |
|----------------------------------|--------|----------|
| CLASS A EXCAVATION FOR STRUCTURE | CU YD  | 49       |
| CLASS X CONCRETE                 | CU YD  | 43.1     |
| REINFORCEMENT BARS               | POUND  | 4,678    |
| FURNISHING STEEL PILES 12 BP 53  | LIN FT | 300      |
| TEST PILE STEEL 12 BP 53         | EACH   | 1        |
| DRIVING STEEL PILES              | LIN FT | 300      |

|                    |        |
|--------------------|--------|
| PILE TYPE          | 12BP53 |
| MIN. CAPACITY TONS | 31     |
| NO. REQUIRED       | 16*    |
| EST. LENGTH FEET   | 20     |
| CUT OFF ELEV.      | 599.85 |

\*INCLUDES 1 TEST PILE



DE LEW, CATHY & CO. ENGINEERS  
DESIGNED BY J.C. BROZ  
DRAWN BY D. MARTINSON  
CHECKED BY [Signature]  
IN CHARGE [Signature]  
APPROVED L. RIAN

ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
LAWDALE AVE. VIADUCT  
PIER 40  
DATE: AS NOTED DATE 11-25-1963

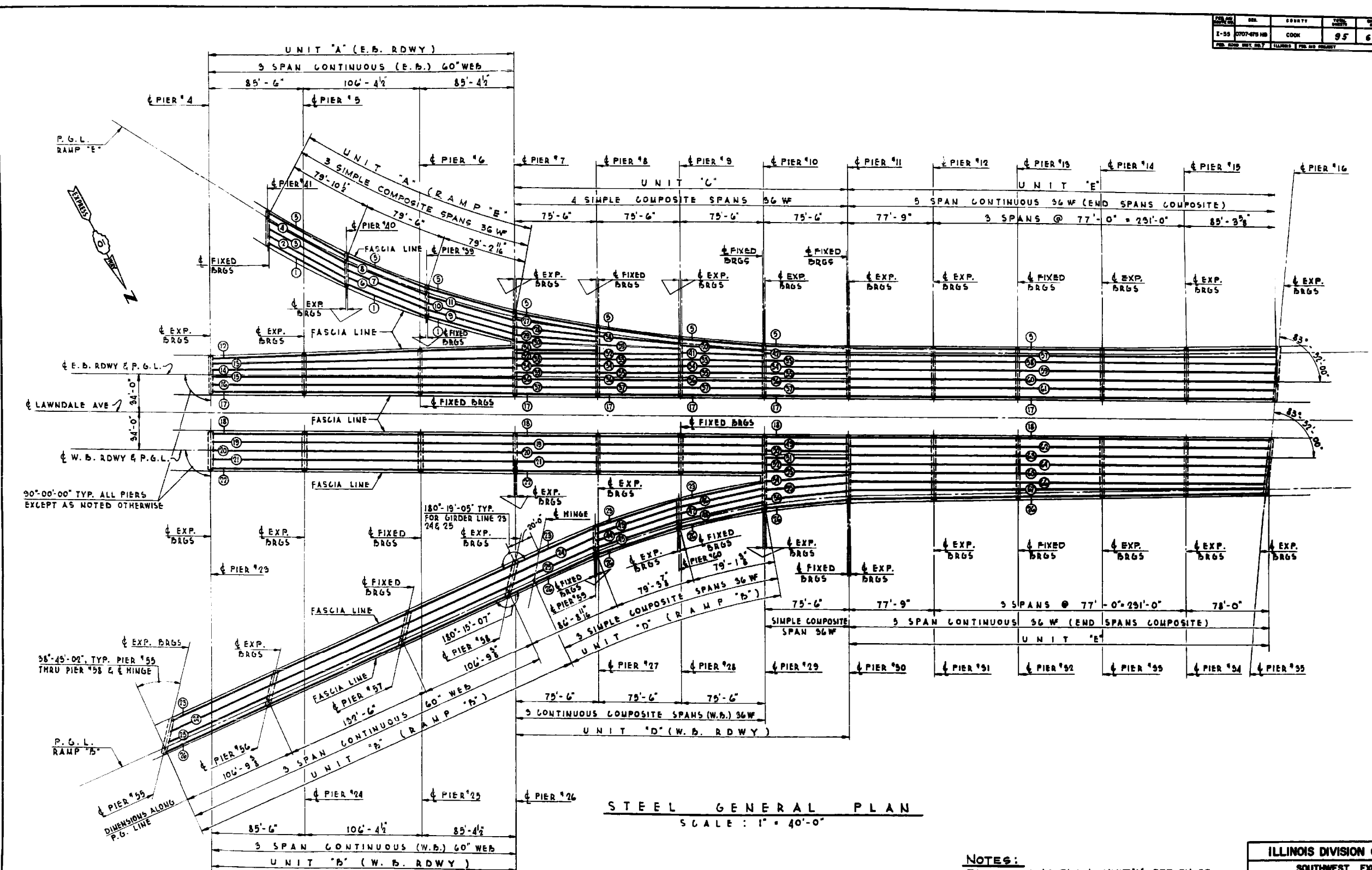
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|-----------------------------------|-----------|----------|---------|------------|------------|---|
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| F.A.P. RTE. | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|-------------|--------|--------------|-----------|
| 372         | 2013-038B-R | COOK   | 821          | 472       |

CONTRACT NO. 60J16  
ILLINOIS FED. AID PROJECT

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**STEEL GENERAL PLAN**  
SCALE: 1" = 40'-0"

DE LEUW, CATHER & CO. ENGINEERS  
 DESIGNED BY J.C. BROOK  
 DRAWN BY F. BOBINAS  
 CHECKED E.M.  
 IN CHARGE E.S. MARTINS  
 APPROVED L.N. RIAN

JOB NO. 1179

**NOTES:**  
 FOR FRAMING PLAN - UNIT 'A', SEE SH. 63  
 FOR FRAMING PLAN - UNIT 'B', SEE SH. 64  
 FOR FRAMING PLAN - UNIT 'C', SEE SH. 66  
 FOR FRAMING PLAN - UNIT 'D', SEE SH. 69  
 FOR FRAMING PLAN - UNIT 'E', SEE SH. 71  
 FOR BEARING TYPES, SEE FRAMING PLANS.

|                                      |               |
|--------------------------------------|---------------|
| <b>ILLINOIS DIVISION OF HIGHWAYS</b> |               |
| SOUTHWEST EXPRESSWAY                 |               |
| <b>LAWDALE AVE. VIADUCT</b>          |               |
| GENERAL FRAMING PLAN                 |               |
| SCALE: AS NOTED                      | DATE 11-25-63 |

**benesch**  
 engineers - scientists - planners

Alfred Benesch & Company  
 205 North Michigan Avenue, Suite 2400  
 Chicago, Illinois 60601  
 312-565-0450 Job No. 10093

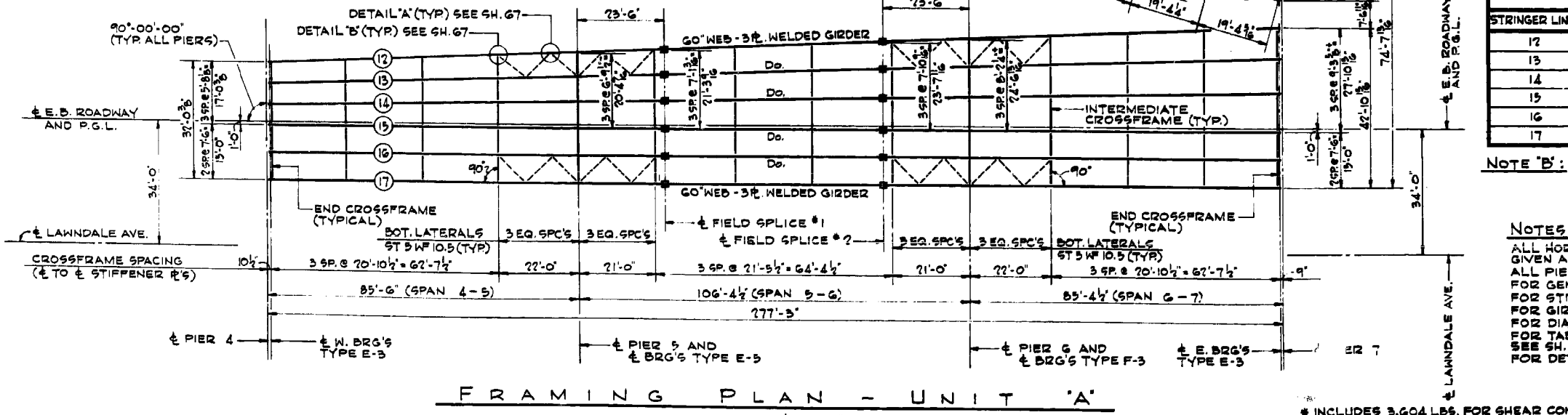
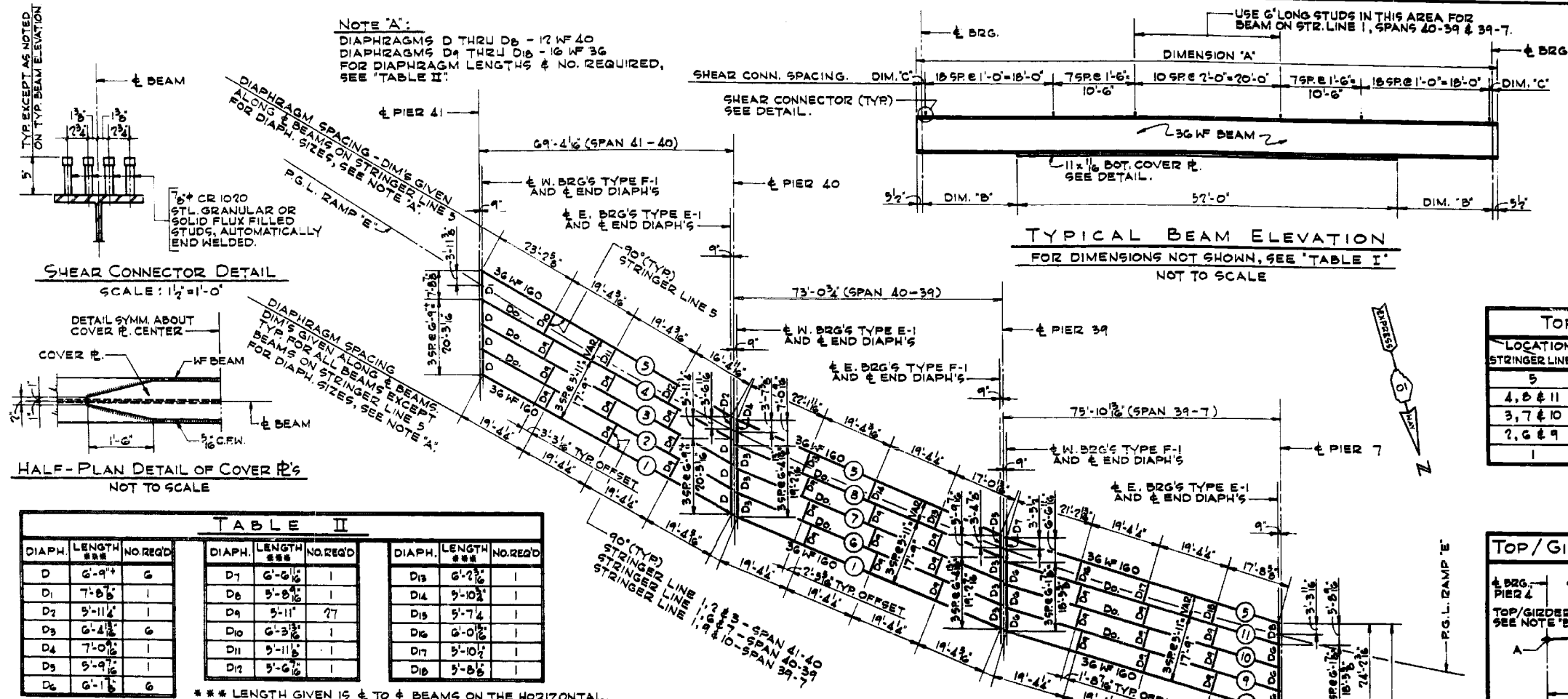
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|                                   | PLOT DATE = 12/20/2013 | DRAWN - FSM    | REVISED - |
|                                   |                        | CHECKED - RMM  | REVISED - |

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

**EXISTING PLAN INFORMATION (15 OF 26)**  
**STRUCTURE NO. 016-2457**  
 SHEET NO. SDX15 OF SDX26 SHEETS

|                             |             |        |                    |           |
|-----------------------------|-------------|--------|--------------------|-----------|
| <b>FOR INFORMATION ONLY</b> |             |        |                    |           |
| F.A.P. RTE.                 | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
| 372                         | 2013-038B-R | COOK   | 821                | 473       |
|                             |             |        | CONTRACT NO. 60J16 |           |
| ILLINOIS FED. AID PROJECT   |             |        |                    |           |

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**TOP/WF ELEVATIONS - UNIT 'A'**

| LOCATION      | PIER 41            | PIER 40            | PIER 39            | PIER 7             |
|---------------|--------------------|--------------------|--------------------|--------------------|
| STRINGER LINE | $\epsilon$ W. BRG. | $\epsilon$ E. BRG. | $\epsilon$ W. BRG. | $\epsilon$ E. BRG. |
| 5             | 617.687            | 618.846            | 618.924            | 620.367            |
| 4, 6 & 11     | 617.994            | 619.219            | 619.316            | 620.780            |
| 3, 7 & 10     | 618.286            | 619.655            | 619.735            | 621.305            |
| 2, 6 & 9      | 618.590            | 620.100            | 620.158            | 621.830            |
| 1             | 618.846            | 620.309            | 620.347            | 622.246            |

**TOP/GIRDER WEB  $\epsilon$ . ELEVATIONS - UNIT 'A'**

| STRINGER LINE | A       | B       | C       | D       | E       | F       |
|---------------|---------|---------|---------|---------|---------|---------|
| 12            | 621.137 | 621.690 | 621.843 | 622.473 | 622.692 | 623.662 |
| 13            | 621.147 | 621.878 | 622.018 | 622.998 | 623.267 | 623.836 |
| 14            | 621.271 | 621.957 | 622.147 | 622.721 | 622.991 | 623.960 |
| 15            | 621.307 | 621.989 | 622.178 | 622.753 | 623.027 | 623.997 |
| 16            | 621.222 | 621.904 | 622.093 | 622.673 | 622.942 | 623.911 |
| 17            | 621.127 | 621.809 | 621.998 | 622.578 | 622.847 | 623.816 |

**NOTE 'B':** TOP OF GIRDER WEB  $\epsilon$ . IS A STRAIGHT LINE BETWEEN POINTS A & C, C & D AND D & F.

**NOTES:**  
ALL HORIZONTAL DIMENSIONS ON FRAMING PLAN ARE GIVEN ALONG LINES PARALLEL TO  $\epsilon$  LANSDALE AVE.  
ALL PIERS ARE 90°-00'-00" TO  $\epsilon$  LANSDALE AVE.  
FOR GENERAL FRAMING PLAN, SEE SH. 62.  
FOR STRUCTURAL STEEL NOTES, SEE SH. 3.  
FOR GIRDER & CROSSFRAME DETAILS, SEE SH. 65.  
FOR DIAPHRAGM DETAILS, SEE SH. 73 & SH. 74.  
FOR TABLES OF MOMENTS, REACTIONS & PROPERTIES, SEE SH. 65.  
FOR DETAILS OF CONDUIT SUPPORT BRACKETS, SEE SH. 81.

**BILL OF MATERIAL \*\*\***

| ITEM                                     | UNIT  | QUANTITY |
|--|-------|----------|
| FURNISHING AND ERECTING STRUCTURAL STEEL | POUND | 938,675* |

\*\*\* INCLUDES ALL STRUCTURAL STEEL IN UNIT 'A' EXCEPT BEARINGS AND EXPANSION GUARDS.

**ILLINOIS DIVISION OF HIGHWAYS**  
SOUTHWEST EXPRESSWAY  
**LAWDALE AVE. VIADUCT**  
FRAMING PLAN  
UNIT "A"  
SCALE: AS NOTED DATE 11-25-1963

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Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

| FILE NAME                         | USER NAME | DESIGNED | CHECKED | PLLOT SCALE | PLLOT DATE |
|-----------------------------------|-----------|----------|---------|-------------|------------|
| 0162457.60J16.099.existplan16.dgn | tjenicke  | FSM      | RMM     |             | 12/28/2013 |

| DESIGNED | CHECKED | PLLOT SCALE | PLLOT DATE |
|----------|---------|-------------|------------|
| FSM      | RMM     |             | 12/28/2013 |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

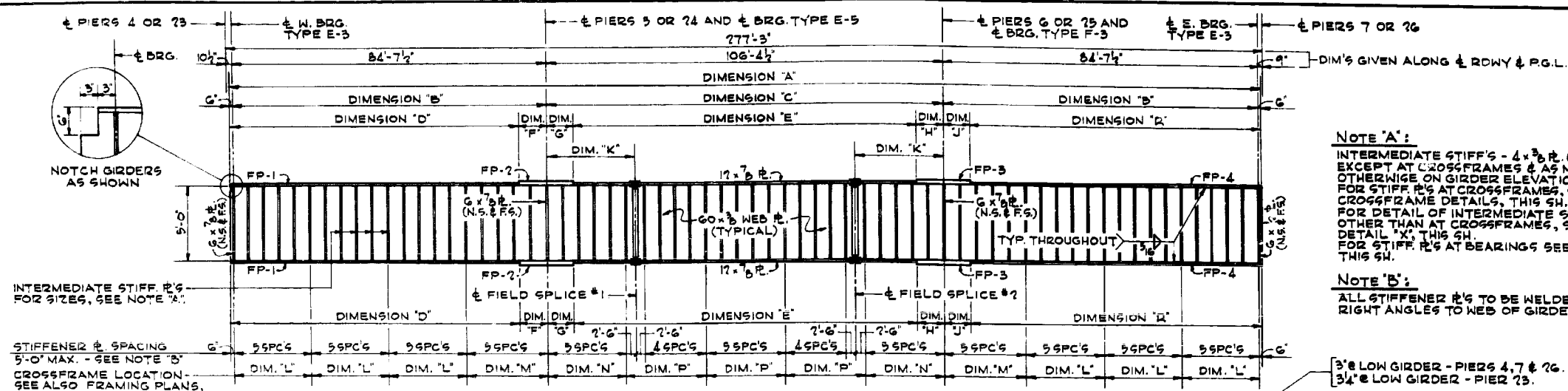
EXISTING PLAN INFORMATION (16 OF 26)  
STRUCTURE NO. 016-2457  
SHEET NO. SDX16 OF SDX26 SHEETS

**FOR INFORMATION ONLY**

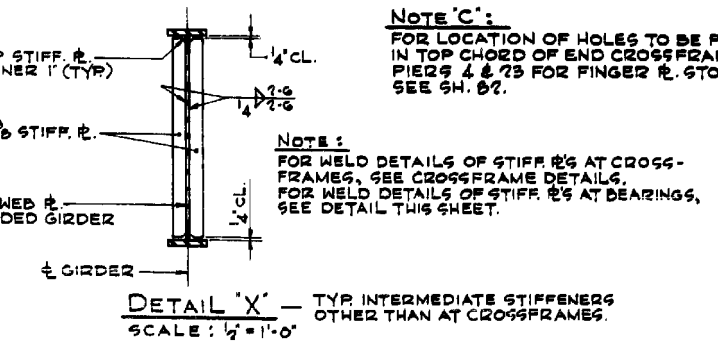
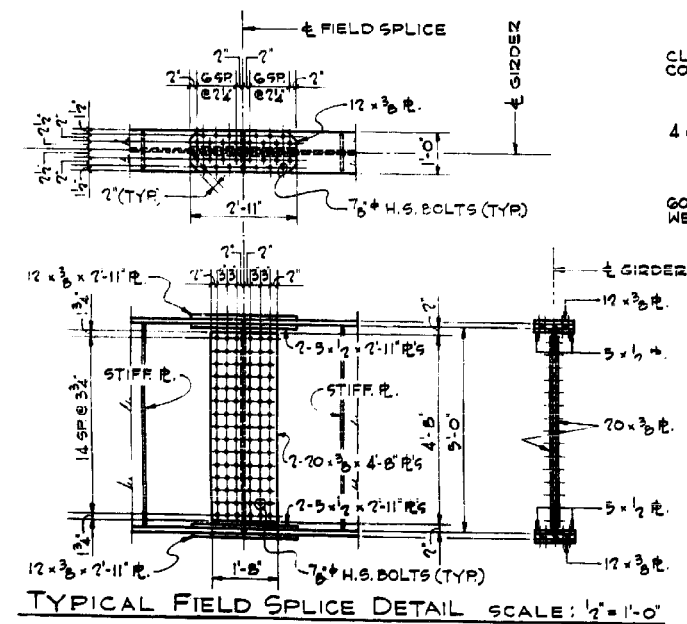
| F.A.P. RTE. | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|-------------|--------|--------------|-----------|
| 372         | 2013-038B-R | COOK   | 821          | 474       |

CONTRACT NO. 60J16  
ILLINOIS FED. AID PROJECT

X:\100005\10093\Eng\_Docs\_Phase\_1\11\_S\016\_2456\_2457\_1st\_Ave.cover\_Des.Plaines\_River\_Valley\Final\2457\_Final\0162457\_60J16\_099\_existplan16.dgn 2/4/2015 PM 6/23/2014

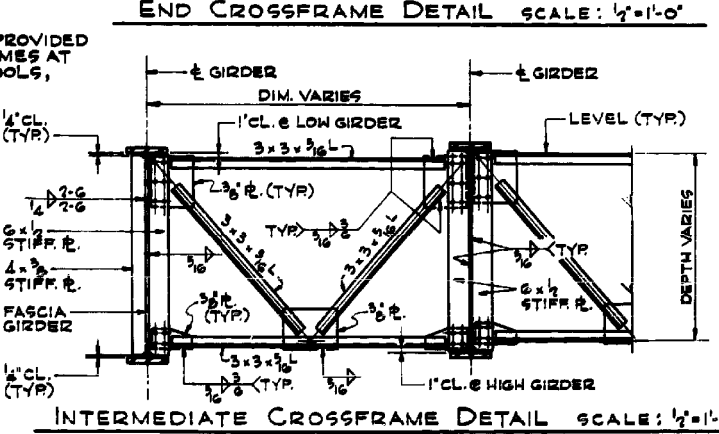


| STRINGER LINE | FLANGE R. SIZES |          |          |        | DIMENSIONS (GIVEN ALONG GIRDER) |           |            |           |           |       |       |       |       |            |             |            |            |            |             |
|---------------|-----------------|----------|----------|--------|---------------------------------|-----------|------------|-----------|-----------|-------|-------|-------|-------|------------|-------------|------------|------------|------------|-------------|
|               | FP-1            | FP-2     | FP-3     | FP-4   | 'A'                             | 'B'       | 'C'        | 'D'       | 'E'       | 'F'   | 'G'   | 'H'   | 'J'   | 'K'        | 'L'         | 'M'        | 'N'        | 'P'        | 'R'         |
| 12            | 12x3/4          | 12x1     | 12x1 1/2 | 12x1   | 27'-10 1/2"                     | 8'-8 1/2" | 10'-6 1/2" | 7'-8 1/2" | 9'-2 1/2" | 7'-6" | 5'-0" | 8'-6" | 6'-6" | 23'-6 1/2" | 20'-10 1/2" | 22'-0 1/2" | 21'-0 1/2" | 21'-5 1/2" | 78'-8 1/2"  |
| 13            |                 |          |          |        | 27'-8 1/2"                      | 8'-7 1/2" | 10'-4 1/2" | 7'-7 1/2" | 9'-2 1/2" |       |       |       |       | 23'-6 1/2" | 20'-10 1/2" | 22'-0 1/2" | 21'-0 1/2" | 21'-5 1/2" | 78'-7 1/2"  |
| 14            |                 |          |          |        | 27'-6 1/2"                      | 8'-7 1/2" | 10'-4 1/2" | 7'-7 1/2" | 9'-2 1/2" |       |       |       |       | 23'-6 1/2" | 20'-10 1/2" | 22'-0 1/2" | 21'-0 1/2" | 21'-5 1/2" | 78'-7 1/2"  |
| 15            | 12x3/4          | 12x1     | 12x1 1/2 | 12x1   | 27'-6 1/2"                      | 8'-7 1/2" | 10'-4 1/2" | 7'-7 1/2" | 9'-2 1/2" | 7'-6" | 5'-0" | 8'-6" | 6'-6" | 23'-6 1/2" | 20'-10 1/2" | 22'-0 1/2" | 21'-0 1/2" | 21'-5 1/2" | 78'-7 1/2"  |
| 16 & 17       | 12x3/4          | 12x1 1/4 | 12x1 1/4 | 12x3/4 | 27'-6 1/2"                      | 8'-7 1/2" | 10'-4 1/2" | 7'-7 1/2" | 9'-2 1/2" | 7'-3" | 7'-3" | 7'-3" | 7'-3" | 23'-6 1/2" | 20'-10 1/2" | 22'-0 1/2" | 21'-0 1/2" | 21'-5 1/2" | 77'-10 1/2" |
| 18 THRU 22    | 12x3/4          | 12x1 1/2 | 12x1 1/2 | 12x3/4 | 27'-6 1/2"                      | 8'-7 1/2" | 10'-4 1/2" | 7'-7 1/2" | 9'-2 1/2" | 8'-0" | 8'-0" | 8'-0" | 8'-0" | 23'-6 1/2" | 20'-10 1/2" | 22'-0 1/2" | 21'-0 1/2" | 21'-5 1/2" | 77'-11 1/2" |

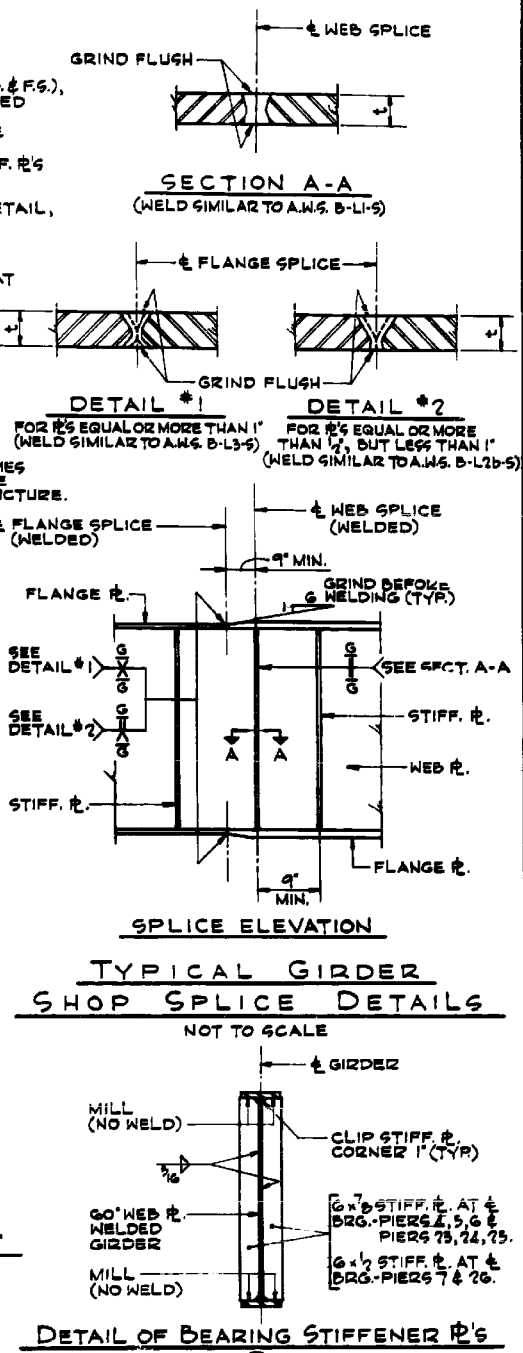


| TABLE OF MOMENTS AND REACTIONS      |                |                  | PROPERTIES     |                |
|-------------------------------------|----------------|------------------|----------------|----------------|
| UNIT 'A' - INTERIOR COMPOSITE BEAMS |                |                  | STEEL SECTION  |                |
|                                     | MAX. * MOMENTS | MAX. * REACTIONS | I <sub>s</sub> | S <sub>T</sub> |
| D.L.                                | 544            | 27               | 11931          | 581            |
| S.D.L.                              | 170            | 7                | 739            |                |
| L.L.                                | 602            | 34               |                |                |
| IMP.                                | 149            | 8                |                |                |
| TOTAL                               | 1415           | 76               |                |                |

\* MOMENTS ARE IN FT. - KIPS  
REACTIONS ARE IN KIPS.  
FOR MEANING OF SYMBOLS USED IN TABLE SEE LEGEND, SH. 70.



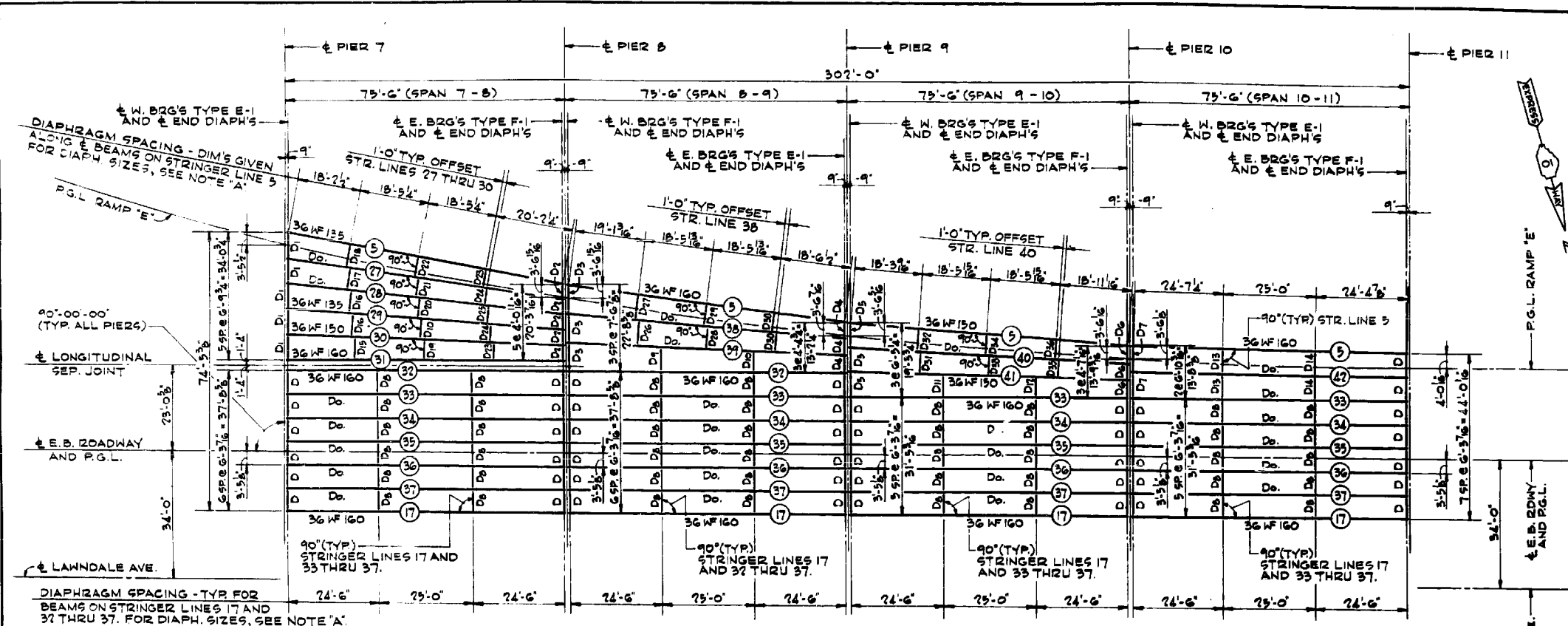
| TABLE OF MOMENTS AND REACTIONS - UNIT 'A' - 3 SPAN CONTINUOUS INTERIOR GIRDERS |            |        |            |        |             |        |        |        |        |
|--|------------|--------|------------|--------|-------------|--------|--------|--------|--------|
| STRINGER LINE  | MOMENTS *  |        |            |        | REACTIONS * |        |        |        |        |
|  | 4 SPAN 4-5 | PIER 5 | 5 SPAN 5-6 | PIER 6 | 6 SPAN 6-7  | PIER 4 | PIER 5 | PIER 6 | PIER 7 |
| DEAD LOAD  | 404        | -881   | 467        | -1044  | 565         | 77     | 100    | 116    | 36     |
| LIVE LOAD  | 565        | -632   | 690        | -754   | 800         | 35     | 67     | 73     | 49     |
| IMPACT   | 133        | -146   | 152        | -172   | 193         | 8      | 14     | 16     | 12     |
| TOTAL  | 1104       | -1659  | 1309       | -1970  | 1556        | 70     | 176    | 203    | 97     |
| DEAD LOAD  | 484        | -991   | 485        | -991   | 484         | 32     | 110    | 110    | 32     |
| LIVE LOAD  | 681        | -707   | 680        | -707   | 681         | 42     | 67     | 67     | 42     |
| IMPACT   | 164        | -184   | 149        | -183   | 164         | 10     | 16     | 16     | 10     |
| TOTAL  | 1329       | -1962  | 1287       | -1961  | 1329        | 84     | 193    | 193    | 84     |



DE LEW, CATHER & CO. ENGINEERS  
DESIGNED BY V.K. BURKEVIGS  
DRAWN BY J.A. CHALIKIS  
CHECKED BY J. MILLER  
IN CHARGE E.S. MARTINS  
APPROVED L.N. RIAN

**NOTE:**  
FOR BILL OF MATERIAL AND "TOP/GIRDER WEB R. ELEVATIONS," SEE SH. 63 & SH. 64.





**TABLE II**

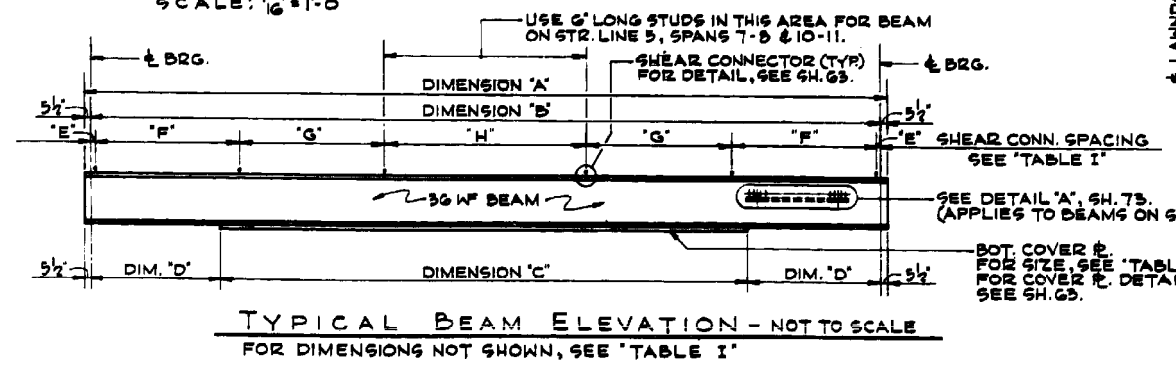
| DIAPH. | LENGTH<br>'-" | NO. REQ'D | DIAPH. | LENGTH<br>'-" | NO. REQ'D |
|--------|---------------|-----------|--------|---------------|-----------|
| D      | 6'-3 3/8"     | 46        | D22    | 5'-5"         | 1         |
| D1     | 6'-9 3/8"     | 5         | D23    | 4'-8 1/2"     | 2         |
| D2     | 4'-0 11/16"   | 5         | D24    | 4'-9 3/8"     | 2         |
| D3     | 7'-6 7/8"     | 3         | D25    | 4'-9 1/4"     | 1         |
| D4     | 4'-4 3/8"     | 3         | D26    | 6'-9 1/2"     | 1         |
| D5     | 6'-5 1/4"     | 3         | D27    | 6'-8 7/8"     | 1         |
| D6     | 4'-7 1/16"    | 3         | D28    | 5'-11 1/16"   | 1         |
| D7     | 6'-10 3/8"    | 2         | D29    | 5'-11 1/2"    | 1         |
| D8     | 6'-3 3/8"     | 44        | D30    | 5'-2 1/16"    | 2         |
| D9     | 6'-6 1/4"     | 1         | D31    | 5'-11 3/8"    | 1         |
| D10    | 5'-5 3/8"     | 2         | D32    | 5'-11 1/16"   | 1         |
| D11    | 5'-9 7/8"     | 1         | D33    | 5'-6 1/16"    | 1         |
| D12    | 5'-2 7/16"    | 1         | D34    | 5'-6 3/16"    | 1         |
| D13    | 6'-7 1/16"    | 2         | D35    | 5'-0 9/16"    | 1         |
| D14    | 6'-5 11/16"   | 2         | D36    | 5'-0 11/16"   | 1         |
| D15    | 6'-1 7/8"     | 1         |        |               |           |
| D16    | 6'-1 3/8"     | 2         |        |               |           |
| D17    | 6'-1 3/8"     | 1         |        |               |           |
| D18    | 6'-1"         | 1         |        |               |           |
| D19    | 5'-5 5/16"    | 1         |        |               |           |
| D20    | 5'-5 7/16"    | 1         |        |               |           |
| D21    | 5'-5 9/16"    | 1         |        |               |           |

\*\*\* LENGTH GIVEN IS ± TO ± BEAMS ON THE HORIZONTAL.

**TABLE I**

| STRINGER LINE | DIMENSIONS **** |            |        |             | SHEAR CONNECTOR SPACING |            |            |            | COVER SIZE  |
|---------------|-----------------|------------|--------|-------------|-------------------------|------------|------------|------------|-------------|
|               | 'A'             | 'B'        | 'C'    | 'D'         | 'E'                     | 'F'        | 'G'        | 'H'        |             |
| SPAN 7-8      |                 |            |        |             |                         |            |            |            |             |
| 5             | 76'-2 1/4"      | 75'-3 1/4" | 51'-0" | 12'-1 1/8"  | 1 1/2"                  | 11SPR1'-0" | 10SPR1'-3" | 14SPR2'-0" | 11 x 5 1/2" |
| 27            | 75'-8 1/2"      | 74'-9 3/8" | 51'-0" | 11'-10 7/8" | 10 3/4"                 | 11SPR1'-0" | 10SPR1'-3" | 13SPR2'-0" | 11 x 5 1/2" |
| 28            | 75'-4 1/2"      | 74'-5 1/2" | 51'-0" | 11'-8 3/4"  | 8 3/4"                  | 11SPR1'-0" | 10SPR1'-3" | 13SPR2'-0" | 11 x 5 1/2" |
| 29            | 75'-1 1/2"      | 74'-2 1/8" | 51'-0" | 11'-7 3/8"  | 7 3/8"                  | 11SPR1'-0" | 10SPR1'-3" | 13SPR2'-0" | 11 x 5 1/2" |
| 30            | 74'-11 1/2"     | 74'-0 3/8" | 47'-6" | 13'-3 3/8"  | 6 5/8"                  | 10SPR1'-0" | 10SPR1'-3" | 14SPR2'-0" | 11 x 7 1/2" |
| 32            | 74'-11"         | 74'-0"     | 49'-0" | 11'-0"      | 3"                      | 24SPR1'-0" | 11SPR1'-3" | 3SPR2'-0"  | 11 x 3 1/2" |
| SPAN 8-9      |                 |            |        |             |                         |            |            |            |             |
| 5             | 75'-6 3/8"      | 74'-7 1/8" | 53'-6" | 10'-6 3/4"  | 9 3/4"                  | 12SPR1'-0" | 10SPR1'-3" | 12SPR2'-0" | 11 x 3 1/2" |
| 36            | 75'-2 1/4"      | 74'-3 1/4" | 47'-6" | 13'-4 3/8"  | 7 3/8"                  | 12SPR1'-0" | 10SPR1'-3" | 12SPR2'-0" | 11 x 7 1/2" |
| 39            | 74'-11 1/2"     | 74'-0 3/8" | 47'-6" | 13'-3 3/8"  | 6 3/8"                  | 12SPR1'-0" | 10SPR1'-3" | 12SPR2'-0" | 11 x 7 1/2" |
| SPAN 9-10     |                 |            |        |             |                         |            |            |            |             |
| 5             | 75'-1 1/2"      | 74'-2 1/8" | 47'-6" | 13'-4 1/4"  | 7 1/4"                  | 10SPR1'-0" | 10SPR1'-3" | 14SPR2'-0" | 11 x 7 1/2" |
| 40            | 75'-0 1/8"      | 74'-1 1/8" | 47'-6" | 13'-3 1/8"  | 6 1/8"                  | 10SPR1'-0" | 10SPR1'-3" | 14SPR2'-0" | 11 x 7 1/2" |
| 41            | 74'-11 1/4"     | 74'-0 1/4" | 47'-6" | 13'-3 3/8"  | 6 3/8"                  | 10SPR1'-0" | 10SPR1'-3" | 14SPR2'-0" | 11 x 7 1/2" |
| SPAN 10-11    |                 |            |        |             |                         |            |            |            |             |
| 5             | 74'-11 1/2"     | 74'-0 3/8" | 51'-0" | 11'-6 1/8"  | 1 1/8"                  | 18SPR1'-0" | 12SPR1'-3" | 7SPR2'-0"  | 11 x 1 1/2" |
| 42 & 43       | 74'-11"         | 74'-0"     | 51'-0" | 11'-6"      | 0"                      | 18SPR1'-0" | 12SPR1'-3" | 7SPR2'-0"  | 11 x 1 1/2" |
| 34 THRU 37    | 74'-11"         | 74'-0"     | 49'-0" | 12'-6"      | 0"                      | 24SPR1'-0" | 6SPR1'-6"  | 8SPR2'-0"  | 11 x 5 1/2" |

\*\*\* DIMENSIONS GIVEN ALONG ± BEAM.



**TOP/WF ELEVATIONS - UNIT 'C'**

| LOCATION STRINGER LINE | PIER 7 & W. BRG. | PIER 8 & E. BRG. | LOCATION STRINGER LINE | PIER 8 & W. BRG. | PIER 9 & E. BRG. | LOCATION STRINGER LINE | PIER 9 & W. BRG. | PIER 10 & E. BRG. | LOCATION STRINGER LINE | PIER 10 & W. BRG. | PIER 11 & E. BRG. |
|------------------------|------------------|------------------|------------------------|------------------|------------------|------------------------|------------------|-------------------|------------------------|-------------------|-------------------|
| 5                      | 672.007          | 673.993          | 5                      | 673.585          | 675.134          | 5                      | 675.166          | 676.668           | 5                      | 676.697           | 677.806           |
| 27                     | 672.498          | 673.777          | 38                     | 674.077          | 675.308          | 40                     | 675.478          | 676.796           | 42                     | 676.893           | 678.083           |
| 28                     | 673.070          | 674.032          | 39                     | 674.496          | 675.902          | 41                     | 675.709          | 676.879           | 33                     | 677.076           | 678.249           |
| 29                     | 673.510          | 674.286          | 37                     | 674.689          | 675.695          | 33                     | 675.960          | 677.111           | 34                     | 677.159           | 678.348           |
| 30                     | 673.653          | 674.540          | 33                     | 674.959          | 675.962          | 34                     | 676.095          | 677.215           | 35                     | 677.221           | 678.411           |
| 31                     | 673.796          | 674.769          | 34                     | 675.053          | 676.059          | 35                     | 676.158          | 677.278           | 36                     | 677.216           | 678.405           |
| 32                     | 673.852          | 674.804          | 35                     | 675.116          | 676.122          | 36                     | 676.157          | 677.272           | 37                     | 677.153           | 678.342           |
| 33                     | 673.984          | 674.936          | 36                     | 675.110          | 676.116          | 37                     | 676.089          | 677.210           | 17                     | 677.070           | 678.259           |
| 34                     | 674.080          | 675.033          | 37                     | 675.047          | 676.053          |                        |                  |                   |                        |                   |                   |
| 35                     | 674.143          | 675.096          | 17                     | 674.964          | 675.970          |                        |                  |                   |                        |                   |                   |
| 36                     | 674.138          | 675.090          |                        |                  |                  |                        |                  |                   |                        |                   |                   |
| 37                     | 674.075          | 675.077          |                        |                  |                  |                        |                  |                   |                        |                   |                   |
| 17                     | 673.997          | 674.944          |                        |                  |                  |                        |                  |                   |                        |                   |                   |

**NOTE 'A':**  
 DIAPHRAGMS D THRU D7 - 12 WF 40  
 DIAPHRAGMS D8 THRU D36 - 16 WF 36  
 FOR DIAPHRAGM LENGTHS & NO. REQUIRED, SEE 'TABLE II':

**NOTES:**  
 FOR GENERAL FRAMING PLAN, SEE SH. 67.  
 FOR STRUCTURAL STEEL NOTES, SEE SH. 8.  
 FOR DIAPHRAGM DETAILS, SEE SH. 73 & SH. 74.  
 FOR TABLE OF MOMENTS, REACTIONS AND PROPERTIES, SEE SH. 70.  
 FOR DETAILS OF CONDUIT SUPPORT BRACKETS, SEE SH. 81.

**BILL OF MATERIAL \*\***

| ITEM                                     | UNIT  | QUANTITY |
|--|-------|----------|
| FURNISHING AND ERECTING STRUCTURAL STEEL | POUND | 569,706* |

\*\* INCLUDES ALL STRUCTURAL STEEL IN UNIT 'C' EXCEPT BEARINGS AND EXPANSION GUARDS.  
 \* INCLUDES 10,267 LBS. FOR SHEAR CONNECTORS.

**ILLINOIS DIVISION OF HIGHWAYS**  
 SOUTHWEST EXPRESSWAY  
**LAWDALE AVE. VIADUCT**  
 FRAMING PLAN & DETAILS  
 UNIT 'C'

SCALE: AS NOTED DATE: 11-25-1965

**benesch**  
 engineers - scientists - planners

Alfred Benesch & Company  
 205 North Michigan Avenue, Suite 2400  
 Chicago, Illinois 60601  
 312-565-0450 Job No. 10093

|                                   |             |             |             |
|-----------------------------------|-------------|-------------|-------------|
| FILE NAME :                       | USER NAME : | DESIGNED :  | REVISIONS : |
| 0162457.60J16.102.existplan19.dgn | tjenicke    | FSM         | FSM         |
|                                   |             | CHECKED :   | REVISIONS : |
|                                   |             | RMM         | RMM         |
|                                   |             | DRAWN :     | REVISIONS : |
|                                   |             | FSM         | FSM         |
|                                   |             | CHECKED :   | REVISIONS : |
|                                   |             | RMM         | RMM         |
|                                   |             | PLOT DATE : | REVISIONS : |
|                                   |             | 12/28/2013  |             |

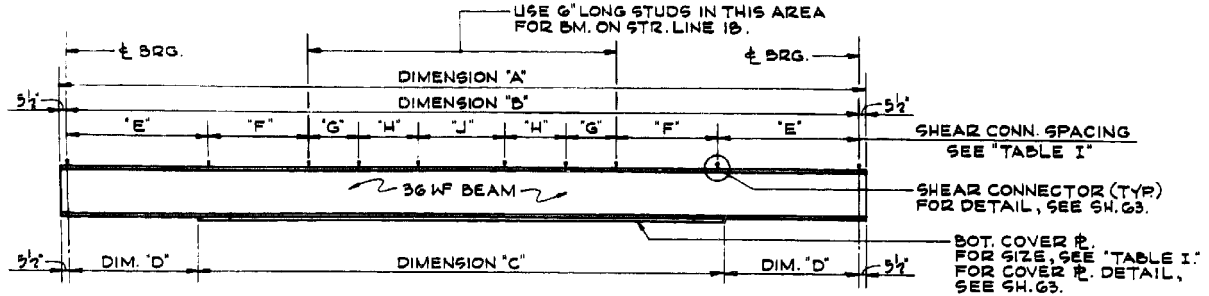
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION (19 OF 26)  
 STRUCTURE NO. 016-2457  
 SHEET NO. SDX19 OF SDX26 SHEETS

FOR INFORMATION ONLY

| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 372                       | 2013-038B-R | COOK   | 821          | 477                |
|                           |             |        |              | CONTRACT NO. 60J16 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

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 2:42:10 PM  
 6/23/2014



TYPICAL BEAM ELEVATION  
UNIT "D" - SPAN 29-30  
FOR DIMENSIONS NOT SHOWN, SEE "TABLE I"  
NOT TO SCALE

| STRINGER LINE | DIMENSIONS ** |            |        |             | SHEAR CONNECTOR SPACING |           |          |          |           | COVER PL. SIZE |
|---------------|---------------|------------|--------|-------------|-------------------------|-----------|----------|----------|-----------|----------------|
|               | 'A'           | 'B'        | 'C'    | 'D'         | 'E'                     | 'F'       | 'G'      | 'H'      | 'J'       |                |
| 18            | 74'-11"       | 74'-0"     | 49'-0" | 12'-6"      | 17SPR11'                | 6SPR1-3'  | 3SPR1-6' | 2SPR1-8' | 6SPR1-0'  | 11x1/2"        |
| 49 THRU 53    | 75'-0 1/2"    | 74'-1 1/2" | 52'-6" | 10'-9 3/4"  | 10SPR1-9'               | 10SPR1-0' | 4SPR1-3' | 4SPR1-6' | 3SPR1-8'  | 11x1/2"        |
| 54            | 75'-3 3/8"    | 74'-4 1/8" | 52'-6" | 10'-11 1/8" | 10SPR1-9'               | 10SPR1-0' | 4SPR1-3' | 4SPR1-6' | 3SPR1-10' | 11x1/2"        |

\*\* DIMENSIONS GIVEN ALONG  $\perp$  BEAM.

| STRINGER LINE LOCATION    | 18 & 22 | 19 & 21 | 20      |
|---------------------------|---------|---------|---------|
| PIER 26 - $\perp$ W. BRG. | G23.996 | G24.096 | G24.176 |
| $\perp$ FIELD SPLICE #1   | G24.721 | G24.821 | G24.901 |
| $\perp$ PIER 27           | G24.913 | G25.013 | G25.093 |
| $\perp$ FIELD SPLICE #2   | G25.168 | G25.268 | G25.348 |
| $\perp$ FIELD SPLICE #3   | G25.660 | G25.760 | G25.840 |
| $\perp$ PIER 28           | G25.969 | G26.069 | G26.149 |
| $\perp$ FIELD SPLICE #4   | G26.201 | G26.301 | G26.381 |
| PIER 29 - $\perp$ E. BRG. | G27.127 | G27.227 | G27.307 |

| LOCATION | PIER 29 | PIER 30 |
|----------|---------|---------|
| 23       | G23.884 | G23.748 |
| 24       | G23.517 | G23.297 |
| 25       | G23.117 | G22.783 |
| 26       | G22.724 | G22.351 |

| STRINGER LINE | PIER 29 | PIER 30 |
|---------------|---------|---------|
| 18            | G27.149 | G26.259 |
| 49            | G27.231 | G26.341 |
| 50            | G27.293 | G26.403 |
| 51            | G27.303 | G26.413 |
| 52            | G27.241 | G26.351 |
| 53            | G27.139 | G26.249 |
| 54            | G27.049 | G26.134 |
| 55            | G26.640 | G27.902 |
| 56            | G26.058 | G27.447 |
| 26            | G25.514 | G27.053 |

| LOCATION   | STRINGER LINE | SPAN   | STEEL SECTION | STEEL SECTION |
|------------|---------------|--------|---------------|---------------|
| 27 THRU 29 | 7-B           | D.L.   | 452           | 23.6          |
|            |               | S.D.L. | 36            | 4.6           |
|            |               | L.L.   | 922           | 30.7          |
|            |               | IMP.   | 131           | 7.7           |
| TOTAL      | 739           | 45.0   |               |               |

| LOCATION | STRINGER LINE | SPAN   | STEEL SECTION | STEEL SECTION |
|----------|---------------|--------|---------------|---------------|
| 30       | 7-B           | D.L.   | 458           | 24.1          |
|          |               | S.D.L. | 102           | 3.6           |
|          |               | L.L.   | 530           | 31.5          |
|          |               | IMP.   | 133           | 7.9           |
| TOTAL    | 765           | 45.0   |               |               |

| LOCATION   | STRINGER LINE | SPAN   | STEEL SECTION | STEEL SECTION |
|------------|---------------|--------|---------------|---------------|
| 33 THRU 37 | 7-B           | D.L.   | 530           | 28.0          |
|            |               | S.D.L. | 112           | 6.0           |
|            |               | L.L.   | 604           | 36.0          |
|            |               | IMP.   | 132           | 9.0           |
| TOTAL      | 868           | 51.0   |               |               |

| LOCATION   | STRINGER LINE | SPAN   | STEEL SECTION | STEEL SECTION |
|------------|---------------|--------|---------------|---------------|
| 33 THRU 37 | 8-9           | D.L.   | 496           | 26.0          |
|            |               | S.D.L. | 99            | 5.4           |
|            |               | L.L.   | 575           | 34.0          |
|            |               | IMP.   | 144           | 8.6           |
| TOTAL      | 818           | 48.0   |               |               |

| LOCATION | STRINGER LINE | SPAN   | STEEL SECTION | STEEL SECTION |
|----------|---------------|--------|---------------|---------------|
| 36 & 39  | 8-9           | D.L.   | 496           | 26.0          |
|          |               | S.D.L. | 99            | 5.4           |
|          |               | L.L.   | 575           | 34.0          |
|          |               | IMP.   | 144           | 8.6           |
| TOTAL    | 818           | 48.0   |               |               |

| LOCATION | STRINGER LINE | SPAN   | STEEL SECTION | STEEL SECTION |
|----------|---------------|--------|---------------|---------------|
| 33 & 42  | 10-11         | D.L.   | 534           | 28.2          |
|          |               | S.D.L. | 117           | 6.3           |
|          |               | L.L.   | 632           | 37.6          |
|          |               | IMP.   | 139           | 9.4           |
| TOTAL    | 908           | 53.3   |               |               |

| LOCATION | STRINGER LINE | SPAN   | STEEL SECTION | STEEL SECTION |
|----------|---------------|--------|---------------|---------------|
| 24       | HINGE - 59    | D.L.   | 440           | 28.0          |
|          |               | S.D.L. | 103           | 6.7           |
|          |               | L.L.   | 612           | 44.6          |
|          |               | IMP.   | 164           | 11.9          |
| TOTAL    | 879           | 63.2   |               |               |

| LOCATION | STRINGER LINE | SPAN   | STEEL SECTION | STEEL SECTION |
|----------|---------------|--------|---------------|---------------|
| 25       | HINGE - 59    | D.L.   | 481           | 29.3          |
|          |               | S.D.L. | 113           | 7.0           |
|          |               | L.L.   | 648           | 49.0          |
|          |               | IMP.   | 171           | 11.9          |
| TOTAL    | 932           | 63.9   |               |               |

| LOCATION   | STRINGER LINE | SPAN   | STEEL SECTION | STEEL SECTION |
|------------|---------------|--------|---------------|---------------|
| 43 THRU 46 | 56-60 & 60-71 | D.L.   | 344           | 27.4          |
|            |               | S.D.L. | 120           | 6.7           |
|            |               | L.L.   | 602           | 34.1          |
|            |               | IMP.   | 149           | 8.4           |
| TOTAL      | 871           | 48.7   |               |               |

| LOCATION   | STRINGER LINE | SPAN   | STEEL SECTION | STEEL SECTION |
|------------|---------------|--------|---------------|---------------|
| 49 THRU 52 | 29-30         | D.L.   | 519           | 27.3          |
|            |               | S.D.L. | 127           | 6.9           |
|            |               | L.L.   | 596           | 33.5          |
|            |               | IMP.   | 150           | 8.9           |
| TOTAL      | 873           | 51.3   |               |               |

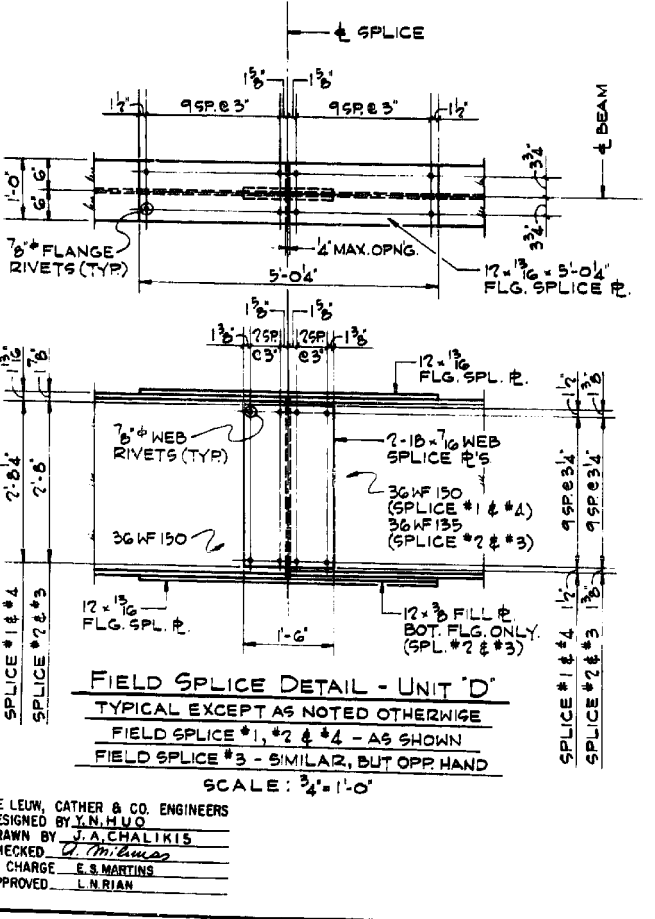
| LOCATION | STRINGER LINE | SPAN   | STEEL SECTION | STEEL SECTION |
|----------|---------------|--------|---------------|---------------|
| 55 & 56  | 29-30         | D.L.   | 690           | 36.0          |
|          |               | S.D.L. | 161           | 8.8           |
|          |               | L.L.   | 809           | 47.5          |
|          |               | IMP.   | 201           | 11.9          |
| TOTAL    | 1163          | 68.2   |               |               |

|                 | MOMENTS *  |         |            |         | REACTIONS * |         |            |         |
|-----------------|------------|---------|------------|---------|-------------|---------|------------|---------|
|                 | SPAN 26-27 | PIER 27 | SPAN 27-28 | PIER 28 | SPAN 28-29  | PIER 29 | SPAN 29-30 | PIER 30 |
| D.L.            | 387        | -517    | 114        | -517    | 387         | 26.2    | 73.4       | 73.4    |
| S.D.L.          | 95         | -96     | 46         | -96     | 95          | 6.2     | 16.2       | 16.2    |
| L.L.            | 656        | -403    | 532        | -403    | 656         | 44.7    | 39.4       | 39.4    |
| IMP.            | 164        | -101    | 133        | -101    | 164         | 11.3    | 14.9       | 14.9    |
| TOTAL COMPOSITE | 915        | -       | 711        | -       | 915         | -       | -          | -       |
| TOTAL STEEL     | 387        | -1117   | 114        | -1117   | 387         | 88.4    | 163.9      | 163.9   |

\* MOMENTS ARE IN FT.-KIPS.  
REACTIONS ARE IN KIPS.

LEGEND:  
FOR SYMBOLS USED IN TABLES OF MOMENTS, REACTIONS AND PROPERTIES.  
D.L. — DEAD LOAD.  
S.D.L. — SUPERIMPOSED DEAD LOAD ACTING ON COMPOSITE SECTION.  
L.L. — LIVE LOAD.  
IMP. — IMPACT.  
I<sub>s</sub> — MOMENT OF INERTIA STEEL SECTION.  
S<sub>ts</sub> — SECTION MODULUS - TOP STEEL SECTION.  
S<sub>bs</sub> — SECTION MODULUS - BOT. STEEL SECTION.  
I<sub>c</sub> — MOMENT OF INERTIA COMPOSITE SECTION.  
S<sub>tc</sub> — SECTION MODULUS - TOP COMPOSITE SECTION.  
S<sub>bc</sub> — SECTION MODULUS - BOT. COMPOSITE SECTION.

NOTE:  
FOR BILL OF MATERIAL, SEE SH. G9.



ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
LAWDALE AVE. VIADUCT  
STEEL DETAILS - UNIT "B" & TABLE OF MOMENTS & SHEARS - UN. "C"  
SCALE: AS NOTED DATE: 11-25-1965

benesch engineers - scientists - planners  
Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

|   |                      |                |           |
|---|----------------------|----------------|-----------|
| FILE NAME = 0162457.60J16.103.existplan28.dgn | USER NAME = tjenicke | DESIGNED - FSM | REVISED - |
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|   |                      | DRAWN - FSM    | REVISED - |
|   |                      | CHECKED - RMM  | REVISED - |

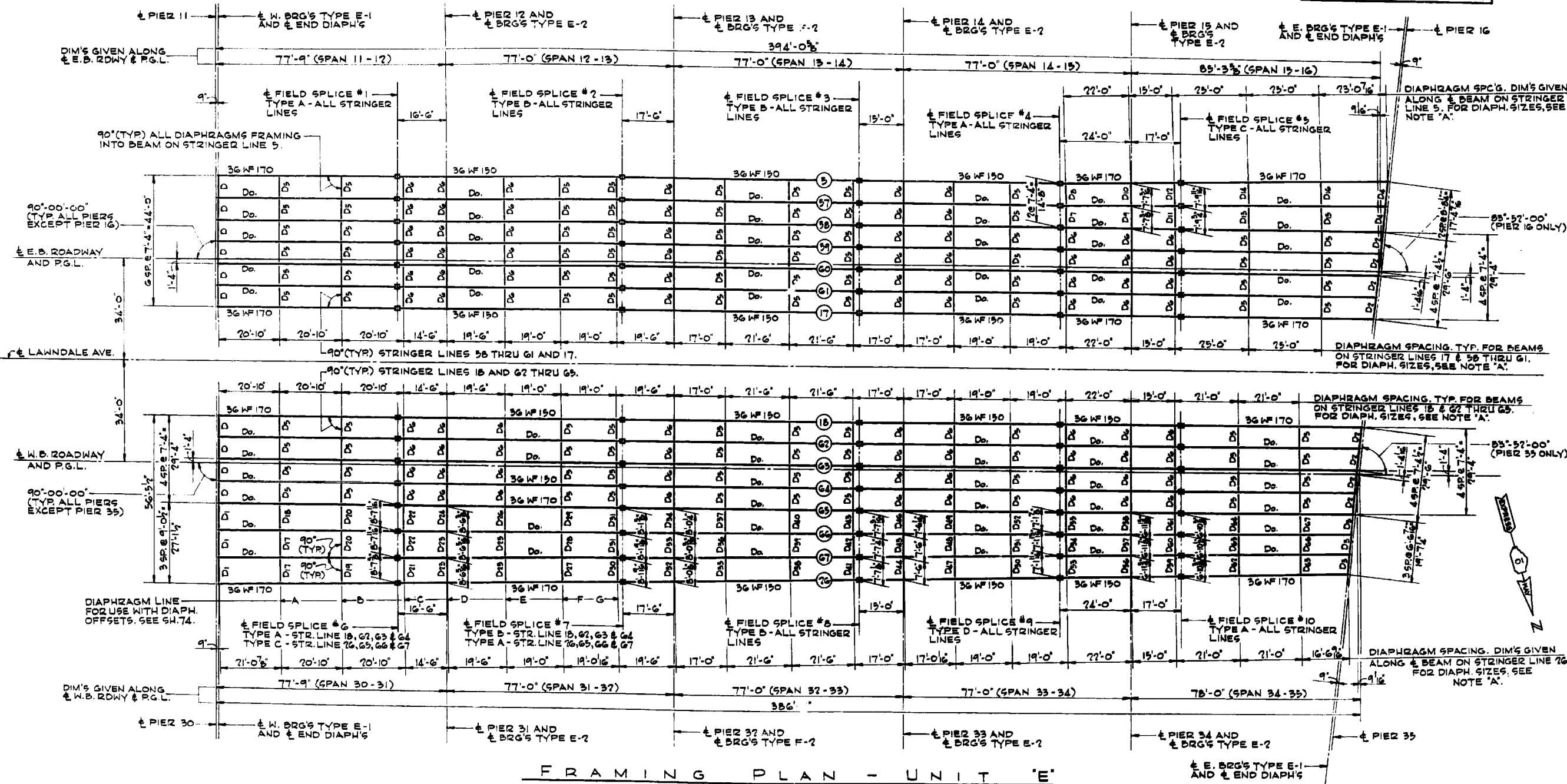
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION (20 OF 26)  
STRUCTURE NO. 016-2457  
SHEET NO. SDX20 OF SDX26 SHEETS

FOR INFORMATION ONLY

| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-------------|--------|--------------|-----------|
| 372                       | 2013-038B-R | COOK   | 821          | 478       |
| CONTRACT NO. 60J16        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

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**FRAMING PLAN - UNIT 'E'**  
SCALE: 1/16" = 1'-0"

**NOTE 'A':**  
DIAPHRAGMS D<sub>4</sub> THRU D<sub>4</sub> - 12 WF 40  
DIAPHRAGMS D<sub>5</sub> THRU D<sub>7</sub> - 16 WF 36  
FOR DIAPHRAGM LENGTHS & NO. REQUIRED,  
SEE 'TABLE II', SH. 72.

**NOTES:**  
FOR GENERAL FRAMING PLAN, SEE SH. 62.  
FOR STRUCTURAL STEEL NOTES, SEE SH. 5.  
FOR TYPICAL BEAM ELEVATION & DETAILS, SEE SH. 72.  
FOR TOP/WF ELEVATIONS, SEE SH. 72.  
FOR DIAPHRAGM DETAILS, SEE SH. 73 & SH. 74.  
FOR TABLES OF MOMENTS, REACTIONS & PROPERTIES, SEE SH. 73.  
FOR DETAILS OF CONDUIT SUPPORT BRACKETS, SEE SH. 81.

INCLUDES 6,546 LBS. FOR SHEAR CONNECTORS

| BILL OF MATERIAL **                      |       |            |
|--|-------|------------|
| ITEM                                     | UNIT  | QUANTITY   |
| FURNISHING AND ERECTING STRUCTURAL STEEL | POUND | 1,142,092* |

\*\* INCLUDES ALL STRUCTURAL STEEL IN UNIT 'E' EXCEPT BEARINGS AND EXPANSION GUARDS.

|                               |                  |
|-------------------------------|------------------|
| ILLINOIS DIVISION OF HIGHWAYS |                  |
| SOUTHWEST EXPRESSWAY          |                  |
| <b>LAWDALE AVE. VIADUCT</b>   |                  |
| <b>FRAMING PLAN</b>           |                  |
| <b>UNIT "E"</b>               |                  |
| SCALE: AS NOTED               | DATE: 11-25-1999 |

DE LEUM, CATHAR & CO. ENGINEERS  
DESIGNED BY T. BRUNOVSKIS  
DRAWN BY J. CHALIKIS  
CHECKED *[Signature]*  
IN CHARGE E.S. MARTINS  
APPROVED L.H. RIAN

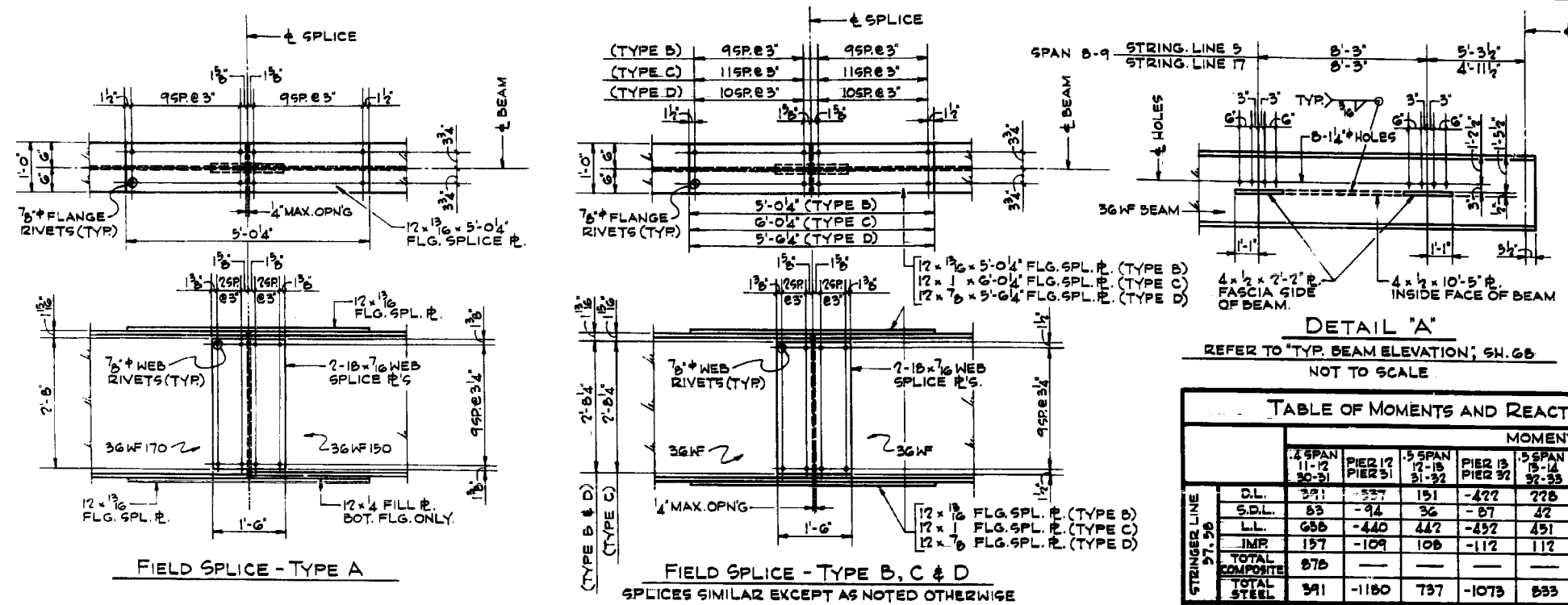
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|   |                      | DRAWN - FSM    | REVISIONS - |
|   |                      | CHECKED - RMM  | REVISIONS - |
|   |                      |                | REVISIONS - |

|                           |             |        |                    |           |
|---------------------------|-------------|--------|--------------------|-----------|
| FOR INFORMATION ONLY      |             |        |                    |           |
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821                | 479       |
| ILLINOIS FED. AID PROJECT |             |        | CONTRACT NO. 60J16 |           |

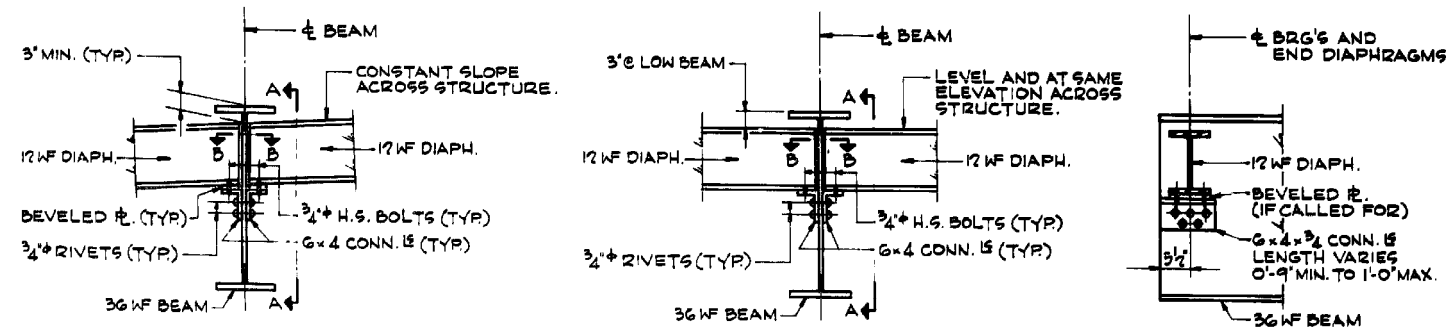
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**FIELD SPICE DETAILS - UNIT 'E'**  
FOR SPICE TYPE LOCATION SEE 'FRAMING PLAN - UNIT 'E'', SH. 71  
SCALE: 3/4" = 1'-0"



**DETAILS OF END DIAPHRAGMS - FOR ALL UNITS**  
SEAT ANGLES MAY BE SHOP CONNECTED WITH 3/4" H.S. BOLTS OR 1/4" C.F.W. IN LIEU OF 3/4" RIVETS  
FOR DIAPHRAGM LOCATIONS, SEE FRAMING PLANS  
FOR INTERMEDIATE DIAPHRAGM DETAILS, SEE SH. 74  
SCALE: 3/4" = 1'-0"

**NOTE:**  
FOR LOCATION OF HOLES TO BE PROVIDED IN END DIAPHRAGMS @ PIERS 16 & 35 FOR FINGER PL. STOODS, SEE SH. 84 & 85.

DE LEW, CATHER & CO. ENGINEERS  
DESIGNED BY T. BRUNOVSKI  
DRAWN BY J. A. CHALIKIS  
CHECKED BY W. P. KESSLER  
IN CHARGE E. S. MARTINS  
APPROVED L. N. RIAN

**PROPERTIES - UNIT 'E' - 5 SPAN CONTINUOUS INTERIOR BEAMS**

| SPAN                     | 11-12 @ 30-31 | 30-31      | 15-16  | 15-16      | 15-16      | 15-16  |
|--------------------------|---------------|------------|--------|------------|------------|--------|
| STRINGER LINE            | 57 THRU 64    | 65, 66, 67 | 67, 68 | 69, 70, 71 | 72 THRU 79 | 80, 81 |
| <b>STEEL SECTION</b>     |               |            |        |            |            |        |
| I <sub>s</sub>           | 11940         | 12326      | 13237  | 12700      | 11940      | 10470  |
| S <sub>ts</sub>          | 607           | 613        | 628    | 619        | 607        | 579    |
| S <sub>bc</sub>          | 706           | 742        | 829    | 777        | 706        | 579    |
| <b>COMPOSITE SECTION</b> |               |            |        |            |            |        |
| I <sub>c</sub>           | 26030         | 27099      | 29696  | 28191      | 26030      | 22140  |
| S <sub>tc</sub>          | 17243         | 17535      | 18199  | 17811      | 17243      | 16067  |
| S <sub>bc</sub>          | 930           | 975        | 1091   | 1022       | 930        | 767    |

**TABLE OF MOMENTS AND REACTIONS - UNIT 'E' - 5 SPAN CONTINUOUS INTERIOR BEAMS**

| STRINGER LINE            | MOMENTS*   | REACTIONS* |         |         |         |         |         |         |         |         |         |       |       |       |       |
|--------------------------|--|------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|-------|-------|-------|
|                          |  | PIER 11    | PIER 12 | PIER 13 | PIER 14 | PIER 15 | PIER 16 | PIER 17 | PIER 18 | PIER 19 | PIER 20 |       |       |       |       |
| STRINGER LINE 57, 58     | D.L. 391<br>S.D.L. 83<br>L.L. 636<br>IMP. 157<br>TOTAL COMPOSITE 878<br>TOTAL STEEL 391  | 1180       | 737     | -1073   | 833     | -1021   | 683     | -1495   | 550     | 82.9    | 159.5   | 147.1 | 143.1 | 178.4 | 101.2 |
| STRINGER LINE 59, 60, 61 | D.L. 391<br>S.D.L. 83<br>L.L. 636<br>IMP. 157<br>TOTAL COMPOSITE 878<br>TOTAL STEEL 391  | 1180       | 737     | -1073   | 833     | -1021   | 683     | -1402   | 516     | 82.9    | 159.5   | 147.1 | 143.1 | 171.6 | 88.3  |
| STRINGER LINE 62         | D.L. 385<br>S.D.L. 85<br>L.L. 634<br>IMP. 156<br>TOTAL COMPOSITE 875<br>TOTAL STEEL 385  | -1227      | 727     | -1057   | 825     | -1057   | 727     | -1263   | 410     | 82.6    | 160.7   | 145.7 | 145.7 | 160.7 | 82.6  |
| STRINGER LINE 63, 64     | D.L. 385<br>S.D.L. 85<br>L.L. 634<br>IMP. 156<br>TOTAL COMPOSITE 875<br>TOTAL STEEL 385  | -1227      | 727     | -1057   | 825     | -1057   | 727     | -1227   | 385     | 82.6    | 160.7   | 145.7 | 145.7 | 160.7 | 82.6  |
| STRINGER LINE 65         | D.L. 440<br>S.D.L. 82<br>L.L. 760<br>IMP. 188<br>TOTAL COMPOSITE 1030<br>TOTAL STEEL 440 | -1383      | 831     | -1108   | 860     | -1097   | 737     | -1227   | 385     | 98.3    | 181.7   | 155.1 | 149.0 | 160.7 | 82.6  |
| STRINGER LINE 66, 67     | D.L. 440<br>S.D.L. 82<br>L.L. 760<br>IMP. 188<br>TOTAL COMPOSITE 1030<br>TOTAL STEEL 440 | -1383      | 831     | -1108   | 860     | -1097   | 737     | -1123   | 328     | 98.3    | 181.7   | 155.1 | 149.0 | 151.4 | 75.9  |

\* MOMENTS ARE IN FT.-KIPS.  
REACTIONS ARE IN KIPS.  
FOR MEANING OF SYMBOLS USED IN TABLES OF MOMENTS, REACTIONS & PROPERTIES SEE LEGEND, SH. 70.

**NOTE:**  
FOR BILL OF MATERIAL SEE SH. 63, 68, 69 & 71.

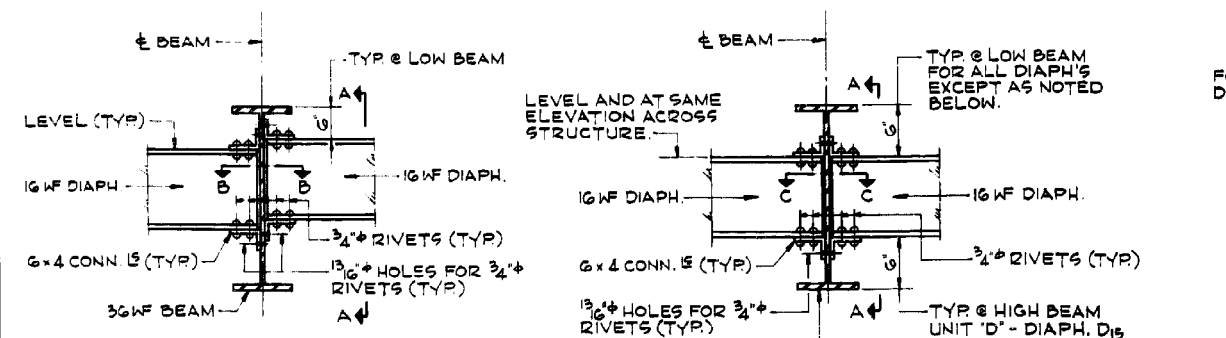
**ILLINOIS DIVISION OF HIGHWAYS**  
SOUTHWEST EXPRESSWAY  
**LAWDALE AVE. VIADUCT**  
MISCELLANEOUS STEEL DETAILS AND TABLES  
SCALE: AS NOTED DATE: 11-25-63

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|   |                      | CHECKED - RMM  | REVISIONS - |
|   |                      |                | REVISIONS - |

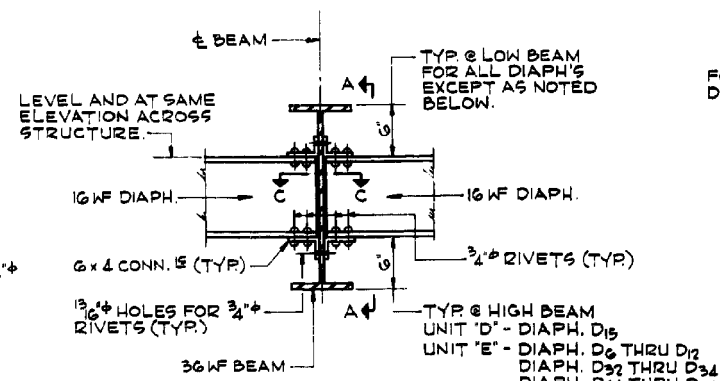
**FOR INFORMATION ONLY**

| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 372                       | 2013-038B-R | COOK   | 821          | 481                |
|                           |             |        |              | CONTRACT NO. 60J16 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

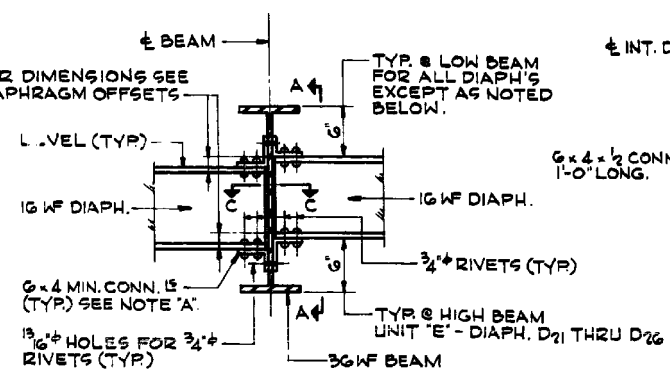
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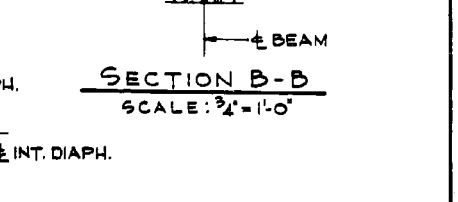
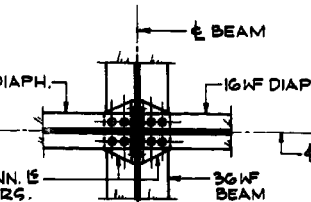
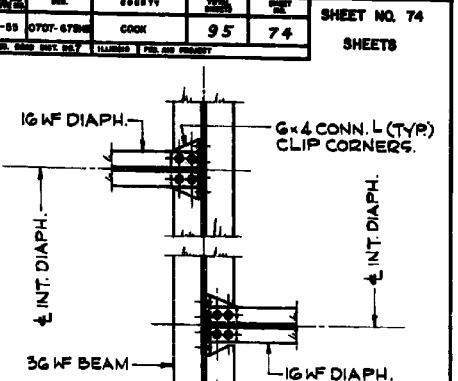
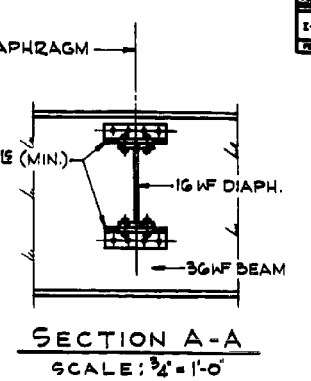
**INT. DIAPHRAGM DETAIL**  
 UNIT 'A' - DIAPHRAGMS D1 THRU D16  
 UNIT 'C' - DIAPHRAGMS D15 THRU D36  
 ALSO D10 (SPAN B-9 ONLY)  
 UNIT 'D' - DIAPHRAGMS D14 THRU D32



**INT. DIAPHRAGM DETAIL**  
 UNIT 'C' - DIAPHRAGMS D8, D9 & D11 THRU D14  
 ALSO D10 (SPAN B-9 ONLY)  
 UNIT 'D' - DIAPHRAGMS D14 THRU D16  
 UNIT 'E' - DIAPHRAGMS D5 THRU D16 & D32 THRU D67



**NOTE 'A':**  
 ALL DIAPHRAGMS BETWEEN ADJACENT STRINGERS SHALL BE MADE LEVEL BY VARYING THE GAUGE AND/OR SIZE OF THE CONNECTION ANGLES AS REQUIRED.

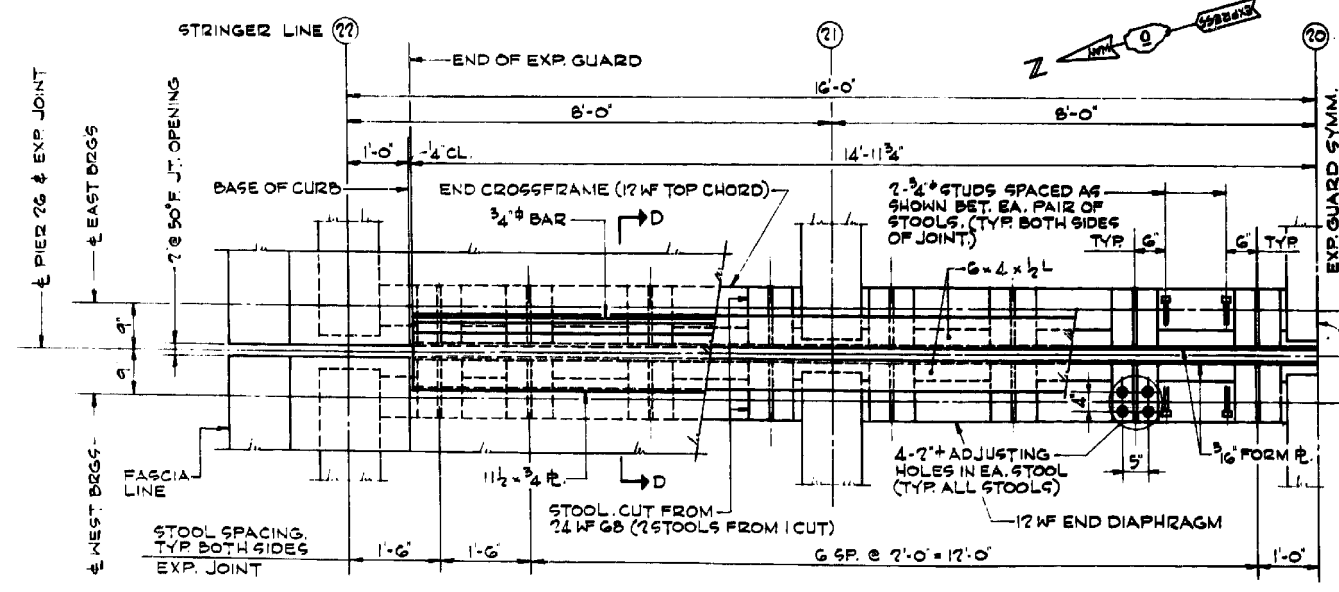


| DIAPH. LINE   | 4 1/2' | 5'     | 2 1/2' |
|---------------|--------|--------|--------|
| DIAPH. LINE A | 4 1/2' | 5'     | 2 1/2' |
| DIAPH. LINE B | 3 1/2' | 4 3/8' | 3'     |
| DIAPH. LINE C | 3 3/8' | 3 3/8' | 2 3/8' |
| DIAPH. LINE D | 3 3/8' | 3'     | 2 3/8' |
| DIAPH. LINE E | 2 1/2' | 2 1/2' | 2 3/8' |
| DIAPH. LINE F | 1 1/2' | 2 1/2' | 1 1/2' |
| DIAPH. LINE G | 1 1/2' | 2'     | 1 1/2' |

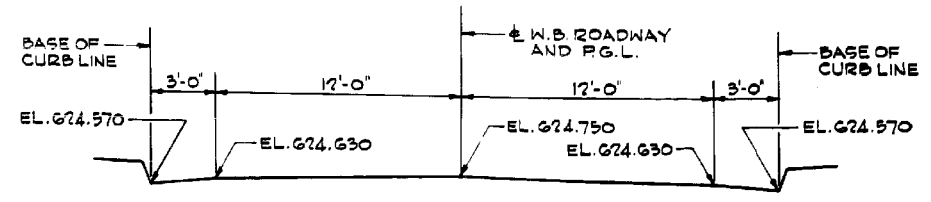
**DETAILS OF INTERMEDIATE DIAPHRAGMS - FOR ALL UNITS**

FOR DIAPHRAGM LOCATIONS, SEE FRAMING PLANS  
 FOR END DIAPHRAGM DETAILS, SEE SH. 73

SCALE: 3/4" = 1'-0"



**HALF-PLAN SLIDING P. EXPANSION GUARD @ PIER 26**  
 SCALE: 3/4" = 1'-0"



**ELEVATION**  
**W.B. ROADWAY PROFILE @ PIER 26**  
 PROFILE IS A STRAIGHT LINE BETWEEN ELEVATIONS SHOWN

DE LEW, CATHER & CO. ENGINEERS  
 DESIGNED BY V.K. BURKEVICS  
 DRAWN BY J.A. CHALIKIS  
 CHECKED E.S. MARTINS  
 IN CHARGE E.S. MARTINS  
 APPROVED L.N. RIAN

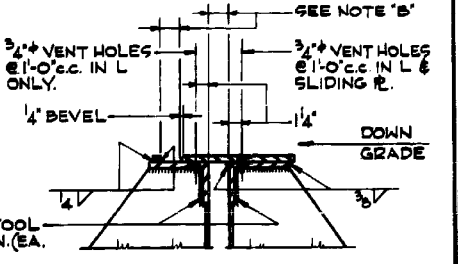
**DECK JOINT GUARD NOTES:**  
 SEE ARTICLE 51-13d OF THE STANDARD SPECIFICATIONS FOR SLIDING P. & DECK JOINT EXPANSION GUARD OPENINGS. FOR STRUCTURAL STEEL NOTES, SEE SH. 3.  
 ALL GUARD ASSEMBLIES SHALL BE FABRICATED & ERECTED TO CONFORM TO THE ROADWAY CROWN AND SLOPE OF GRADE AT THE GUARD. THEY SHALL BE ASSEMBLED IN THE SHOP FOR INSPECTION.  
 ALL PARTS OF THE GUARD ASSEMBLIES INCLUDING STUDS SHALL BE INCLUDED IN STRUCTURAL STEEL FOR PAYMENT.

**NOTE:**  
 FOR BILL OF MATERIAL OTHER THAN FOR SLIDING P. EXPANSION GUARD SEE SH. 63, 68, 69 & 71.

| BILL OF MATERIAL*                        |       |          |
|--|-------|----------|
| ITEM                                     | UNIT  | QUANTITY |
| FURNISHING AND ERECTING STRUCTURAL STEEL | POUND | 3,862    |

\* INCLUDES STRUCTURAL STEEL FOR SLIDING P. EXPANSION GUARD ONLY.

**DIAPHRAGM OFFSETS**  
 UNIT 'E' - DIAPHRAGMS D17 THRU D31  
 FOR LOCATION OF DIAPH. LINES SEE FRAMING PLAN - UNIT 'E', SH. 71  
 NOT TO SCALE



**NOTE 'D':** 2' x 50' F. JOINT OPENING. SEE DECK JOINT GUARD NOTES FOR OTHER JOINT OPENINGS.

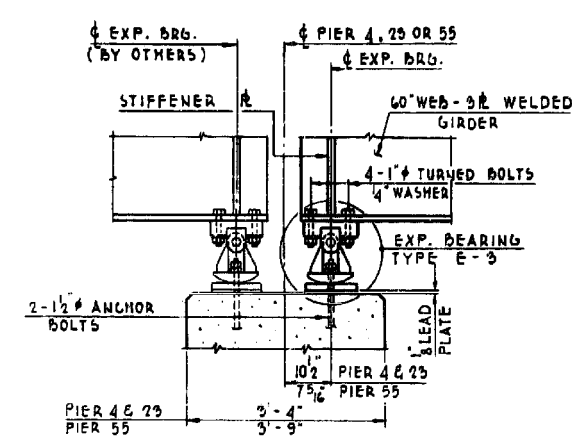
**DETAIL 'A' SCALE: 1/2" = 1'-0"**

ILLINOIS DIVISION OF HIGHWAYS  
 SOUTHWEST EXPRESSWAY  
**LAWDALE AVE. VIADUCT**  
 INTERMEDIATE DIAPHRAGMS AND SLIDING PLATE AT PIER NO. 26  
 SCALE: AS NOTED DATE 11-25-65

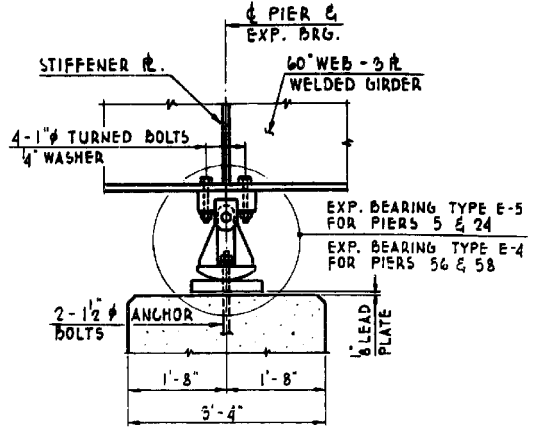
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|                                   |           | RMM      | RMM     |           |

| F.A.P. RTE. | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|-------------|--------|--------------|-----------|
| 372         | 2013-038B-R | COOK   | 821          | 482       |

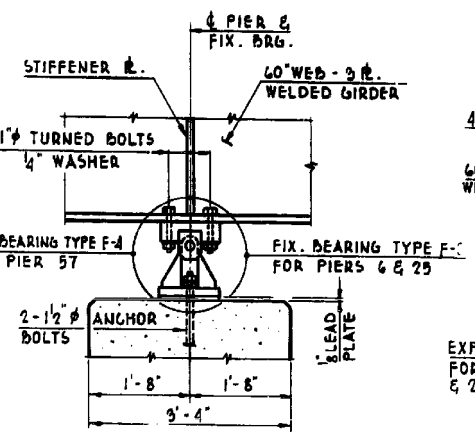
CONTRACT NO. 60J16  
 ILLINOIS FED. AID PROJECT



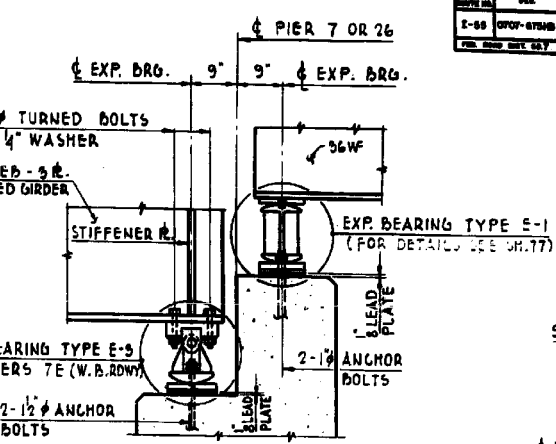
BRG. TYPE E-3 AT PIERS 4W, 23W & 55N  
SCALE: 3/4"=1'-0"



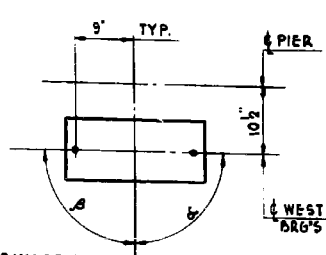
BRG. TYPE E-4 & E-5 AT PIERS 5, 24, 56 & 58



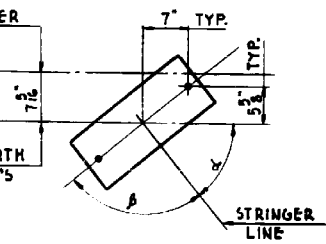
BRG. TYPE F-3 & F-4 AT PIERS 6, 25 & 57



BRG. TYPE E-3 AT PIERS 7E (W.B.RDWY) & 26E

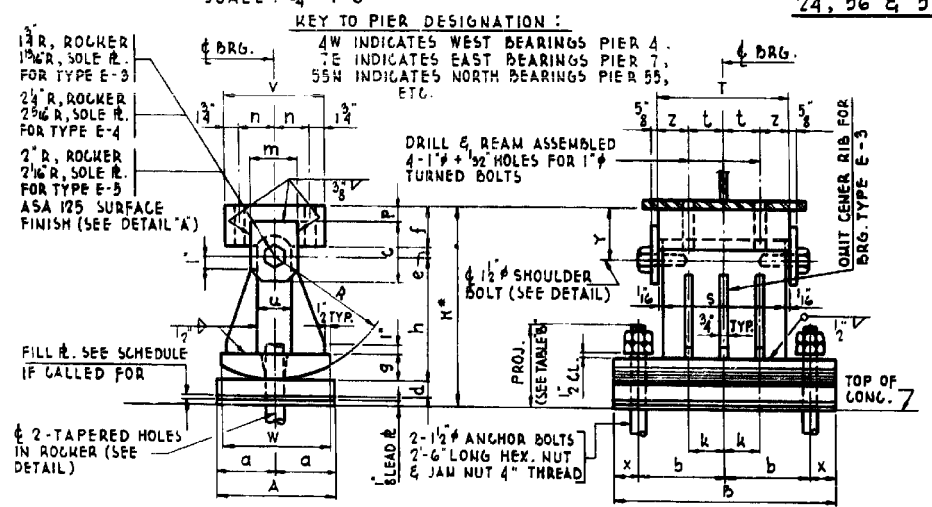


PIERS 4 & 23



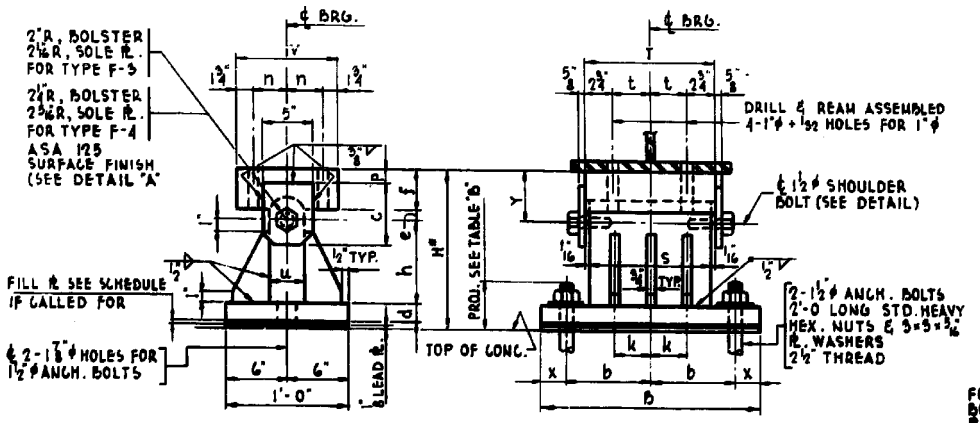
PIER 55

| PIER | STRINGER LINE | ANGLE α     | ANGLE β     |
|------|---------------|-------------|-------------|
| 4    | 12            | 87° 44'-25" | 92° 15'-55" |
|      | 13            | 88° 29'-35" | 91° 30'-25" |
|      | 14            | 89° 14'-41" | 90° 45'-15" |
|      | 15 TO 17      | 90° 00'-00" | 90° 00'-00" |
| 23   | 18 TO 22      | 90° 00'-00" | 90° 00'-00" |
| 55   | 23 TO 26      | 91° 16'-58" | 90° 00'-00" |



**FILL PLATE SCHEDULE**

| BEARING TYPE | PIER | STRINGER LINE | THICKNESS |
|--------------|------|---------------|-----------|
| E-3          | 4W   | 12            | 1/2"      |
|              |      | 13            | 3/8"      |
|              |      | 14            | 3/8"      |
|              |      | 15            | 3/8"      |
|              |      | 16            | 1/2"      |
| E-3          | 7E   | 14            | 1/2"      |
|              |      | 19, 21        | 1 1/8"    |
|              |      | 25, 24        | 3/8"      |
| E-3          | 55N  | 23, 26        | 3/8"      |
|              |      | 5             | 1/2"      |
| F-3          | 6    | 14            | 3/8"      |



**BOLSTER DETAIL OF FIXED BRG. TYPE F-3 & F-4**

| BRG. TYPE | NO. REQ'D | b      | c      | d      | e      | f      | h         | k         | n      | p      | s      | t         | u      | v      | x      | y   | TOTAL WEIGHT POUNDS |        |     |
|-----------|-----------|--------|--------|--------|--------|--------|-----------|-----------|--------|--------|--------|-----------|--------|--------|--------|-----|---------------------|--------|-----|
| F-3       | 11        | 1'-10" | 8 1/2" | 6"     | 1 1/2" | 3 1/2" | 1'-2 1/4" | 8"        | 3 1/4" | 3 1/4" | 1"     | 11 1/2"   | 1'-0"  | 3 1/4" | 3 1/2" | 10" | 2 1/2"              | 4 1/2" | 489 |
| F-4       | 4         | 2'-2"  | 11"    | 4 1/2" | 2 1/2" | 1"     | 4"        | 1'-3 1/2" | 8"     | 4"     | 3 1/2" | 1'-2 1/2" | 4 1/4" | 4"     | 11"    | 2"  | 5"                  | 790    |     |

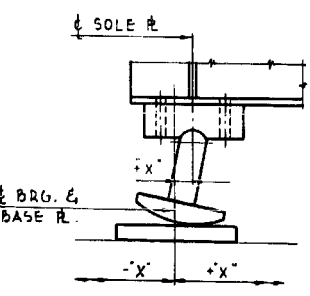
\* DOES NOT INCLUDE FILL PLATES

**ROCKER SETTING DIAGRAM**

| BRG. TYPE | NO. REQ'D | A     | a      | b      | c      | d      | e      | f      | g      | h         | k         | m      | n  | p      | r      | s     | t       | u         | v      | w      | x   | y   | z      | TOTAL WEIGHT POUNDS |     |
|-----------|-----------|-------|--------|--------|--------|--------|--------|--------|--------|-----------|-----------|--------|----|--------|--------|-------|---------|-----------|--------|--------|-----|-----|--------|---------------------|-----|
| E-3       | 26        | 1'-0" | 6"     | 1'-10" | 9"     | 4 1/2" | 1 1/2" | 3 1/2" | 2 1/2" | 1'-1 1/2" | 8"        | 3"     | 4" | 3 1/4" | 1"     | 8"    | 11 1/2" | 1'-0"     | 4 1/4" | 3"     | 10" | 9"  | 2"     | 3 1/2"              | 526 |
| E-4       | 8         | 1'-1" | 6 1/2" | 2'-5"  | 11"    | 4 1/2" | 2 1/2" | 1 1/2" | 4"     | 2 1/2"    | 1'-7 1/2" | 1'-0"  | 4" | 5"     | 3 1/2" | 2"    | 1'-0"   | 1'-1 1/2" | 1'-2"  | 5"     | 4"  | 11" | 1'-0"  | 2 1/2"              | 947 |
| E-5       | 11        | 1'-0" | 6"     | 1'-10" | 8 1/2" | 4 1/2" | 2 1/2" | 3 1/2" | 2 1/2" | 1'-6 1/2" | 1'-0"     | 3 1/4" | 5" | 3 1/4" | 1"     | 1'-0" | 11 1/2" | 1'-0"     | 3 1/4" | 3 1/2" | 10" | 10" | 2 1/2" | 4 1/2"              | 714 |

\* DOES NOT INCLUDE FILL PLATES

ROCKER DETAIL OF EXP. BRG. TYPE E-3, E-4 & E-5



\*\* TOTAL WEIGHT OF ONE ASSEMBLY INCLUDES TOP #, ROCKER OR BOLSTER, ANCHOR BOLTS, # WASHERS, BOTTOM #, AND LEAD #. IT DOES NOT INCLUDE THE WEIGHT OF ANY FILL #.

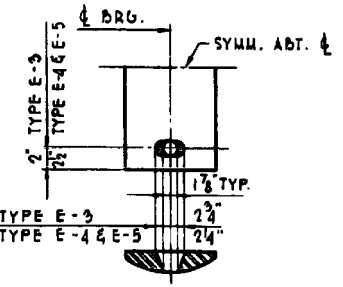
**TEMPERATURE F°**

|                       | 110°    | 90°     | 70°     | 50° | 30°     | 10°     |
|-----------------------|---------|---------|---------|-----|---------|---------|
| WEST BRG'S @ PIER 4   | -7 1/2" | -5 1/2" | -3 1/2" | 0   | +3 1/2" | +5 1/2" |
| BRG'S @ PIER 5        | -7 1/2" | -5 1/2" | -3 1/2" | 0   | +3 1/2" | +5 1/2" |
| EAST BRG'S @ PIER 7   | +3 1/2" | +1 1/2" | -1 1/2" | 0   | -3 1/2" | -5 1/2" |
| WEST BRG'S @ PIER 23  | -7 1/2" | -5 1/2" | -3 1/2" | 0   | +3 1/2" | +5 1/2" |
| BRG'S @ PIER 24       | -7 1/2" | -5 1/2" | -3 1/2" | 0   | +3 1/2" | +5 1/2" |
| EAST BRG'S @ PIER 26  | +3 1/2" | +1 1/2" | -1 1/2" | 0   | -3 1/2" | -5 1/2" |
| NORTH BRG'S @ PIER 55 | -7 1/2" | -5 1/2" | -3 1/2" | 0   | +3 1/2" | +5 1/2" |
| BRG'S @ PIER 56       | -7 1/2" | -5 1/2" | -3 1/2" | 0   | +3 1/2" | +5 1/2" |
| BRG'S @ PIER 58       | +3 1/2" | +1 1/2" | -1 1/2" | 0   | -3 1/2" | -5 1/2" |

MINUS SIGN INDICATES # SOLE PLATE EAST OF # BEARING # TYP. ALL PIERS, EXCEPT PLUS SIGN INDICATES # SOLE PLATE WEST OF # BEARING # PIER 55 SEE NOTE-1

NOTE-1: MINUS SIGN INDICATES # SOLE PLATE SOUTH OF # BEARING PLUS SIGN INDICATES # SOLE PLATE NORTH OF # BEARING

ROCKER SETTING DIAGRAM



DETAIL OF HOLE IN ROCKERS

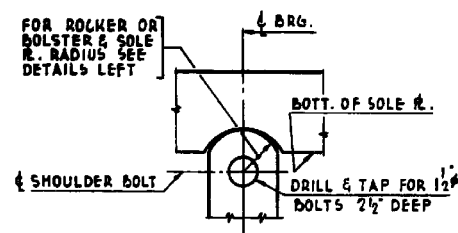
**ANCHOR BOLT PROJECTIONS - TABLE 'B'**

| BRG. TYPE                   | E-3    | E-4    | E-5    | F-3 | F-4    |
|-----------------------------|--------|--------|--------|-----|--------|
| PROJ. FOR FILL #S 0 TO 1/2" | 7 1/2" | 8 1/2" | 8 1/2" | 4"  | 4 1/2" |
| PROJ. FOR FILL #S 3/4 TO 1" | 8"     | -      | -      | -   | -      |
| PROJ. FOR FILL #S > 1"      | 8 1/2" | -      | -      | -   | -      |

**BILL OF MATERIAL**

| ITEM                                      | UNIT  | QUANTITY |
|---|-------|----------|
| FURNISHING & ERECTING 5" STRUCTURAL STEEL | POUND | 86,904   |

WEIGHT OF ALL MATERIAL SHOWN ON THIS SHEET, INCL. FILL #S



SHOULDER BOLT DETAIL SCALE: 3/4"=1'-0"

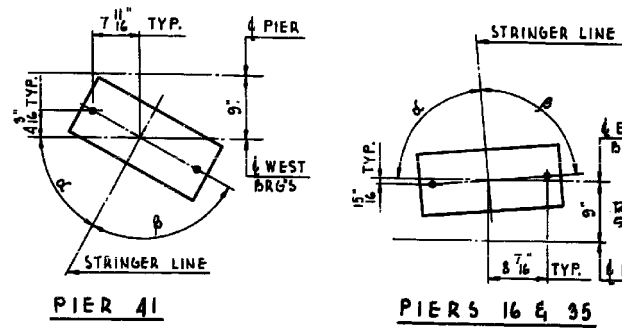
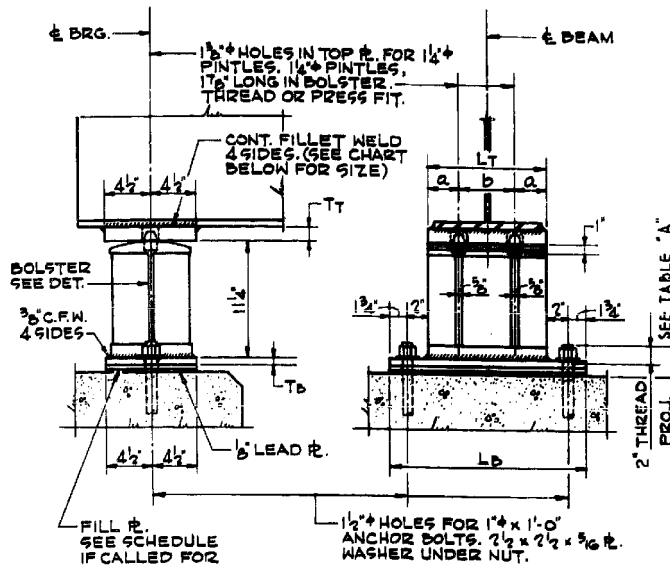
ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
LAWDALE AVE. VIADUCT  
BEARING DETAILS  
WELDED GIRDERS

### FILL PLATE SCHEDULE

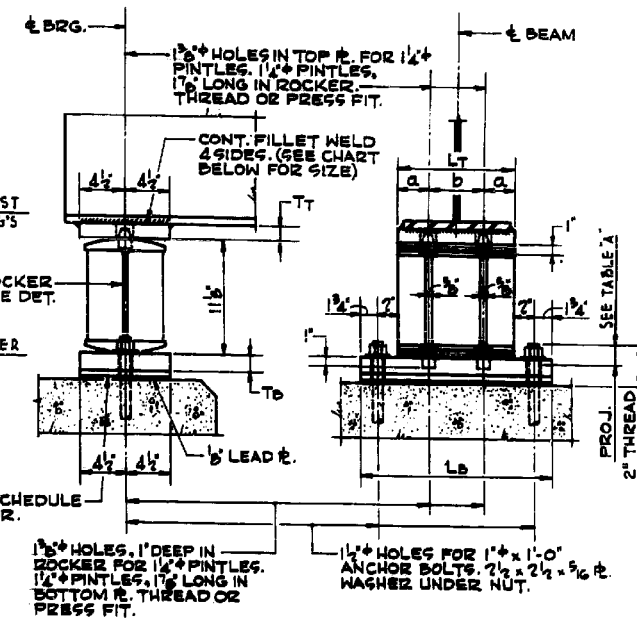
| BEARING TYPE | PIER   | STRINGER LINE | THICKNESS | BEARING TYPE | PIER       | STRINGER LINE | THICKNESS |
|--------------|--------|---------------|-----------|--------------|------------|---------------|-----------|
| E-1          | 7W     | 5             | 15/16"    | F-1          | 8E         | 5, 95         | 1/8"      |
|              |        | 92            | 11/16"    |              |            | 28            | 9/16"     |
|              |        | 17            | 5/16"     |              |            | 30            | 5/8"      |
|              | 9E     | 99            | 1/8"      |              | 32         | 1/16"         |           |
|              |        | 5, 24, 25, 17 | 1/2"      |              | 29, 34, 26 | 5/16"         |           |
|              |        | 41            | 7/16"     |              | 39         | 5/8"          |           |
|              | 9W     | 36            | 7/16"     |              | 37, 17     | 1/4"          |           |
|              |        | 37            | 5/8"      |              | 41         | 1/16"         |           |
|              |        | 5             | 5/8"      |              | 34, 36     | 9/16"         |           |
|              | 10W    | 99            | 1/8"      |              | 35, 17     | 5/8"          |           |
|              |        | 5             | 1"        |              | 37         | 1/2"          |           |
|              |        | 59            | 5/16"     |              | 39         | 7/8"          |           |
|              | 11W    | 59            | 1/4"      |              | 34, 36     | 3/8"          |           |
|              |        | 19            | 1/8"      |              | 35, 37     | 7/16"         |           |
|              |        | 20            | 5/16"     |              | 17         | 1/2"          |           |
| 16E          | 29     | 1/8"          | 18        | 1/2"         |            |               |           |
|              | 29W    | 18            | 3/16"     | 30E          | 49, 50     | 1/16"         |           |
|              | 51     | 1/8"          | 59        | 1/4"         |            |               |           |
| 29W          | 62     | 1/4"          | 5, 1      | 5/16"        |            |               |           |
|              | 63     | 1/2"          | 41W       | 1            | 5/8"       |               |           |
|              | 26     | 15/16"        | 59E       | 25           | 5/8"       |               |           |
| 40W          | 5      | 3/16"         | 59W       | 29           | 11/16"     |               |           |
|              | 7      | 15/16"        | 26        | 3/16"        |            |               |           |
|              | 6      | 3/4"          | 25        | 5/16"        |            |               |           |
| E-2          | 12, 15 | 59            | 1/8"      | 60W          | 46         | 1/2"          |           |
|              | 14     | 59            | 3/16"     |              | 47         | 5/8"          |           |
|              | 31     | 62            | 5/16"     |              | 48         | 3/4"          |           |
| 39           | 62     | 1/4"          | 26        | 1/4"         |            |               |           |
|              | 63     | 1/2"          | 99        | 1/8"         |            |               |           |
|              | 34     | 62            | 1/8"      | 62           | 5/16"      |               |           |
|              |        |               |           | 63           | 5/8"       |               |           |

### ANCHOR BOLT PROJECTIONS - TABLE "A"

| BRG. TYPE                           | E-1    | E-2    | F-1    | F-2    | F-5    |
|-------------------------------------|--------|--------|--------|--------|--------|
| PROJ. FOR FILL R'S 0" TO 7/16"      | 3 3/8" | 3 3/4" | 2 3/4" | 3 1/4" | 2 3/4" |
| PROJ. FOR FILL R'S 7/16" TO 1 1/16" | 3 3/8" | 4 1/4" | 3 1/4" | 3 3/4" | —      |
| PROJ. FOR FILL R'S > 1 1/16"        | 4 1/8" | —      | 3 3/4" | —      | —      |

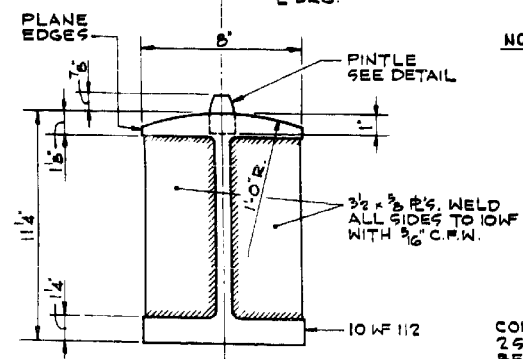


| PIER | STRINGER LINE | ANGLE "A"   | ANGLE "B"   |
|------|---------------|-------------|-------------|
| 16   | 5             | 82°-51'-54" | 91°-20'-06" |
|      | 57            | 85°-11'-57" | 90°-40'-25" |
| 35   | 58 TO 61, 17  | 85°-52'-00" | 90°-00'-00" |
|      | 18, 62 TO 65  | 85°-52'-00" | 90°-00'-00" |
| 41   | 66            | 85°-25'-10" | 90°-22'-50" |
|      | 67            | 85°-06'-15" | 90°-45'-45" |
|      | 26            | 82°-45'-15" | 91°-08'-45" |
| 41   | 1 TO 4        | 61°-11'-22" | 90°-00'-00" |



| TYPE | NO. REQ'D | LT  | Lb      | Tt | Tb     | a      | b      | C.F.W. | TOTAL WEIGHT* |
|------|-----------|-----|---------|----|--------|--------|--------|--------|---------------|
| E-1  | 115       | 19" | 20 1/2" | 1" | 1 1/2" | 3 1/4" | 6 1/2" | 1/2"   | 276           |

**EXPANSION BEARINGS AT PIERS**  
 7E, 7W, 9E, 9W, 10W, 11W, 16E, 26W, 29E, 29W, 30W, 35E, 40E, 40W & 60E.



**BOLSTER DETAIL**  
 SCALE: 3"=1'-0"

1" BRG. TYPE E-1 @ PIER 40E  
 1/2" BRG. TYPE F-1 @ PIERS 39E & 39E

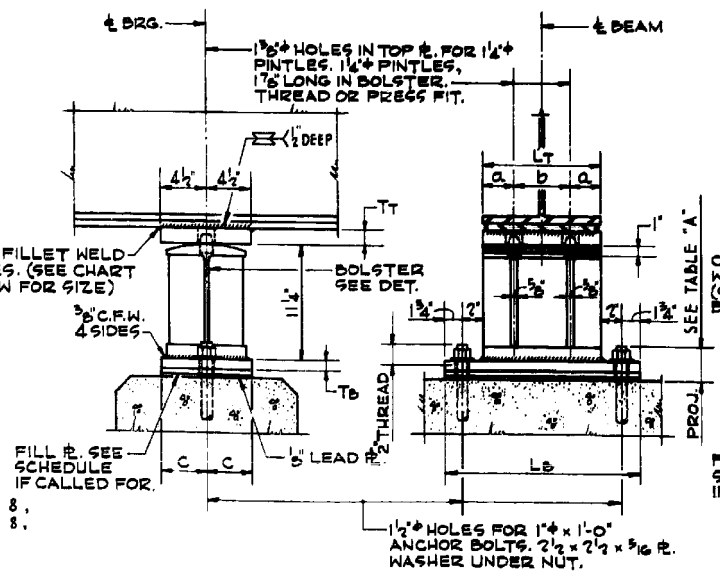
**KEY TO PIER DESIGNATION:**  
 8E INDICATES EAST BEARINGS PIER 8,  
 8W INDICATES WEST BEARINGS PIER 8,  
 ETC.

**BEARING PLATE DETAIL**  
 NOTE: CUT CORNER IS LOCATED NEAREST TO OUTSIDE FACE OF PIER CAP.

DE LEW, CATHER & CO. ENGINEERS  
 DESIGNED BY J.C. BROZ  
 DRAWN BY J.A. CHALIKIS  
 CHECKED T. BARNETT  
 IN CHARGE E.S. MARTINS  
 APPROVED L.N. RIAN

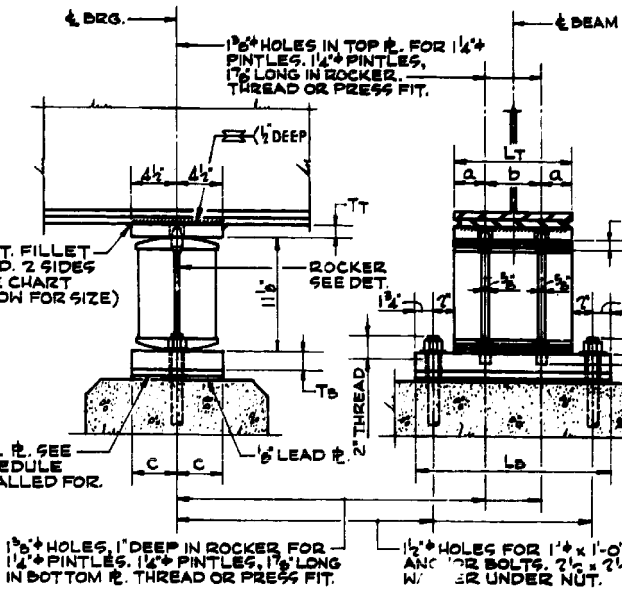
\* TOTAL WEIGHT OF ONE ASSEMBLY INCLUDES TOP R., ROCKER OR BOLSTER, BOTTOM R., ANCHOR BOLTS, R. WASHERS AND LEAD R. DOES NOT INCLUDE THE WEIGHT OF ANY FILL R.

**FIXED BEARINGS AT PIERS**  
 TYPE F-1 @ 8E, 8W, 10E, 11E, 39E, 39W, 41W, 59E, 59W, 60W & 30E\*  
 TYPE F-5 @ 30E SEE NOTE 1.  
 NOTE: FOR PIER 30E LOCATE BRG TYPE F-1 @ STRINGER LINES 18 & 49 THRU 53; LOCATE BRG TYPE F-5 @ STRINGER LINES 54 THRU 56 & 26



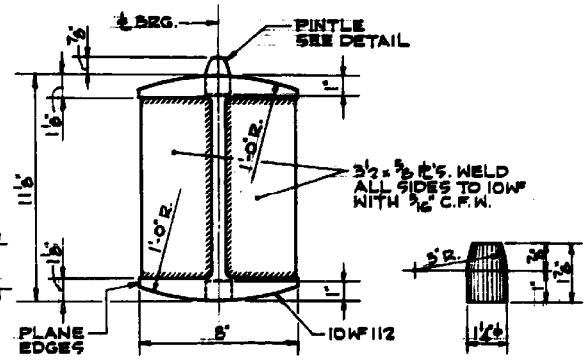
| TYPE | NO. REQ'D | LT  | Lb      | Tt     | Tb     | a  | b  | C  | C.F.W. | TOTAL WEIGHT* |
|------|-----------|-----|---------|--------|--------|----|----|----|--------|---------------|
| F-2  | 20        | 12" | 19 1/2" | 1 1/2" | 1 1/2" | 3" | 6" | 5" | 1/2"   | 290           |

**FIXED BEARINGS AT PIERS 19, 28 & 32**  
 BEAM WITH COVER PLATES  
 SCALE: 1 1/2"=1'-0"



| TYPE | NO. REQ'D | LT  | Lb      | Tt     | Tb | a  | b  | C  | C.F.W. | TOTAL WEIGHT* |
|------|-----------|-----|---------|--------|----|----|----|----|--------|---------------|
| E-2  | 50        | 12" | 19 1/2" | 1 1/2" | 2" | 3" | 6" | 5" | 5/8"   | 321           |

**EXPANSION BEARINGS AT PIERS 12, 14, 15, 27, 31, 33 & 34**  
 BEAM WITH COVER PLATES  
 SCALE: 1 1/2"=1'-0"



**ROCKER DETAIL**  
 SCALE: 3"=1'-0"

**PINTLE DETAIL**  
 NOT TO SCALE

\*\* WEIGHT OF ALL MATERIAL SHOWN ON THIS SHEET, INCL. FILL PLATES.

### BILL OF MATERIAL

| ITEM                                     | UNIT  | QUANTITY |
|--|-------|----------|
| FURNISHING AND ERECTING STRUCTURAL STEEL | POUND | 77,731   |

ILLINOIS DIVISION OF HIGHWAYS  
 SOUTHWEST EXPRESSWAY  
 LAWNDALE AVE. VIADUCT  
 BEARING DETAILS - WF BEAMS  
 SCALE: AS NOTED DATE: 11-25-1995

Bench Mark: Chiseled square of SW corner of SB IL-171 bridge over Des Plaines River. El. 622.14

Existing Structures: S.N. 016-0483 (SB) and S.N. 016-0985 (NB) were built in 1964 as F.A.I. Rte. 55, Section 0707-613B at Sta. 50+80. Existing dual structures each consist of a four span reinforced concrete deck on five lines of continuous welded haunched plate girders. The reinforced concrete deck is 7 1/2" thick, including a 2" microsilica concrete overlay. The substructures consist of open stub abutments founded on steel piles at the downstream end, solid wall concrete piers founded on spread footings through the river, and multi-column piers founded on spread footings at the upstream end. Piers 23 and 4 are shared with S.N. 016-2456 (NB) and S.N. 016-2457 (SB), respectively. The structures are 527'-9 1/2" from back of abutment to centerline of Pier 4 and 23, with an out-to-out deck width of 36'-0" and no skew. Traffic is to be maintained utilizing crossovers.

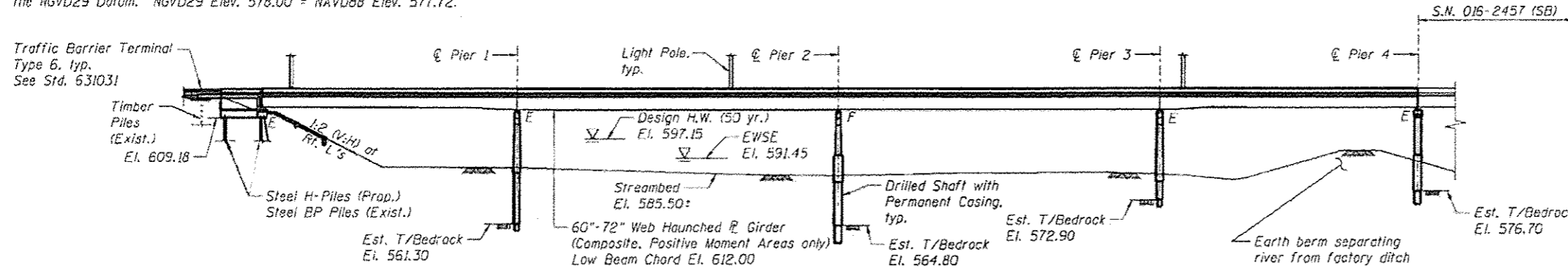
No salvage.

All Elevations in the proposed plans are based on NAVD88 Datum. Elevations in the existing plans are based on the NGVD29 Datum. NGVD29 Elev. 578.00 = NAVD88 Elev. 577.72.

**WATERWAY INFORMATION**

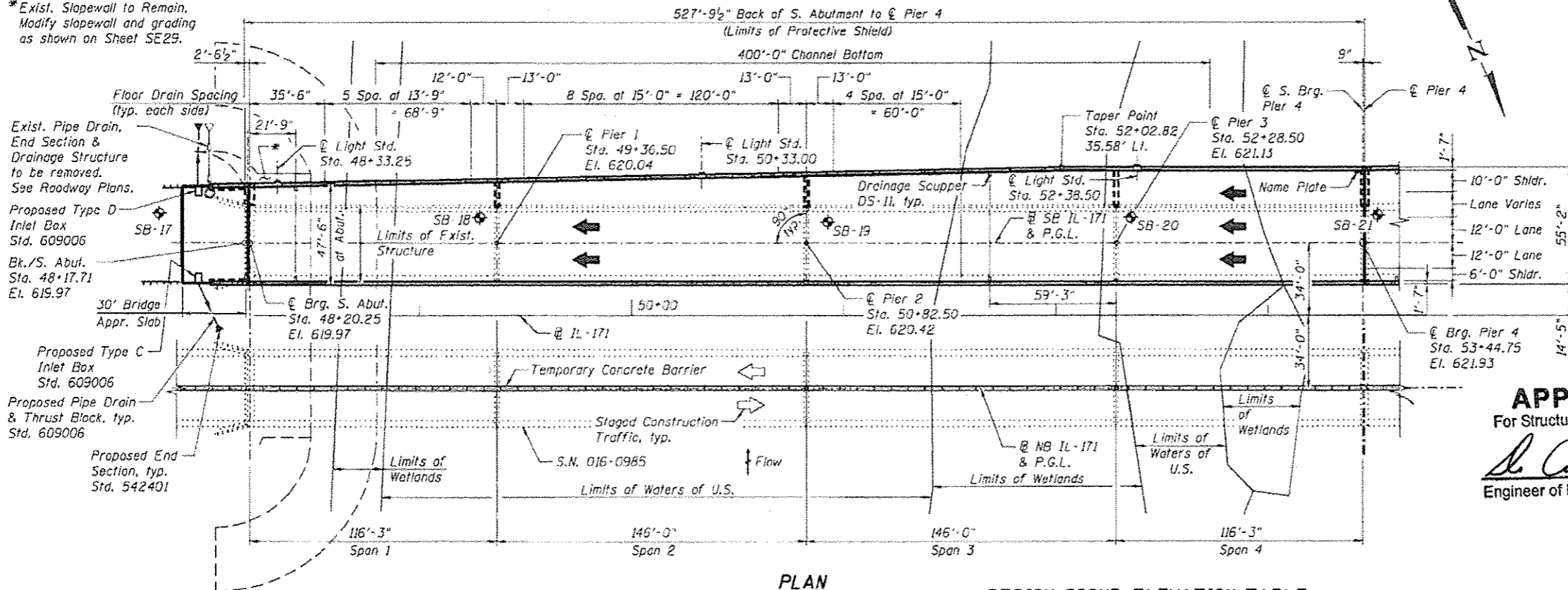
| Drainage Area = 641.59 sq. mi. |           | Low Grade Elev. 619.97 at Sta. 48+42 |                 |       |        |       |            |        |               |       |
|--------------------------------|-----------|--------------------------------------|-----------------|-------|--------|-------|------------|--------|---------------|-------|
| Flood                          | Freq. Yr. | C.F.S.                               | Opening Sq. Ft. |       | H.W.E. |       | Head - Ft. |        | Headwater El. |       |
|                                |           |                                      | Exist.          | Prop. | Exist. | Prop. | Exist.     | Prop.  | Exist.        | Prop. |
|                                | 2         | 4,554                                | 3,423           | 3,423 | 594.80 |       |            |        |               |       |
|                                | 10        | 5,930                                | 2,988           | 2,988 | 595.75 | 0.57  | 0.57       | 596.32 | 596.32        |       |
| Design                         | 50        | 7,370                                | 3,567           | 3,567 | 597.15 | 0.60  | 0.61       | 597.75 | 597.76        |       |
| Base                           | 100       | 7,500                                | 3,773           | 3,773 | 597.64 | 0.61  | 0.61       | 598.25 | 598.25        |       |
| Overtopping                    | >500      |                                      |                 |       |        |       |            |        |               |       |
| Max. Calc.                     | 500       | 9,316                                | 4,297           | 4,297 | 598.88 | 0.63  | 0.63       | 599.51 | 599.51        |       |

10 Year Velocity through Existing and Proposed Bridge = 1.95 fps



**REFLECTED ELEVATION**

\*Exist. Slopewall to Remain. Modify slopewall and grading as shown on Sheet SE29.



**NOTE:**  
See Roadway Plans-Bridge Approach Schedule for Proposed Drainage Quantities.

**DESIGN SCOUR ELEVATION TABLE**

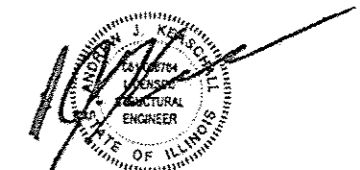
| Design Scour Elevation (ft.) |        |        |        |        |
|------------------------------|--------|--------|--------|--------|
| S. Abut.                     | Pier 1 | Pier 2 | Pier 3 | Pier 4 |
| 609.18                       | 581.00 | 579.00 | 583.30 | 584.22 |

Design scour elevations estimated from existing data.

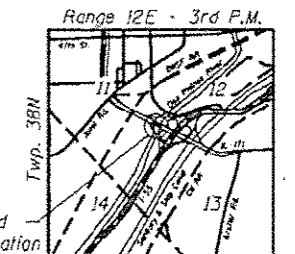
**LOADING HS20-44**  
No future wearing surface allowed.  
**DESIGN SPECIFICATIONS**  
2002 AASHTO Standard Specifications for Highway Bridges

**DESIGN STRESSES**  
**FIELD UNITS (New Construction)**  
f'c = 3,500 psi  
fy = 60,000 psi (Reinforcement)  
fy = 50,000 psi (M270 Grade 50)  
**FIELD UNITS (Exist. Construction)**  
f'c = 3,500 psi  
fy = 40,000 psi (Reinforcement)  
fy = 35,000 psi (Structural Steel)

**SEISMIC DATA**  
Seismic Performance Category (SPC) = A  
Bedrock Acceleration Coefficient (A) = 0.04g  
Site Coefficient (S) = 1.0



EXPIRATION DATE 11-30-2014  
DATE: 09-11-2014



**APPROVED**  
For Structural Adequacy Only  
*De. Carl Puyger*  
Engineer of Bridges & Structures

**GENERAL PLAN AND ELEVATION**  
**IL-171 OVER DES PLAINES RIVER**  
"PUBLIC WATER"  
**FAP 372 - SECTION 2013-038B-R**  
**COOK COUNTY**  
**STATION 50+80.50**  
**STRUCTURE NO. 016-0483**

**benesch**  
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Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

|                                      |                       |               |            |
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| FILE NAME: 016-0483_0216_001.gpe.dgn | USER NAME: amcneill   | DESIGNED: JLS | REVISED: - |
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|                                      | PLDT DATE: 12/29/2013 | DRAWN: RMG    | REVISED: - |
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|                              |                     |             |                    |               |
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| F.A.P. RTE. 372              | SECTION 2013-038B-R | COUNTY COOK | TOTAL SHEETS 821   | SHEET NO. 485 |
| SHEET NO. 5E1 OF 5E46 SHEETS |                     |             | CONTRACT NO. 60J16 |               |
| ILLINOIS FED. AID PROJECT    |                     |             |                    |               |

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**GENERAL NOTES**

- For new structural steel elements, fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts  $\frac{7}{8}$ " $\phi$ , holes  $\frac{15}{16}$ " $\phi$ , unless otherwise noted.
- Calculated weight of Structural Steel =  
 M 270 Grade 36: 18,170 lbs  
 M 270 Grade 50: 250,550 lbs
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars designated (E) shall be epoxy coated.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding  $\frac{1}{4}$  inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

- If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.

7. 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.

- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of  $\frac{1}{8}$  inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
- Concrete Sealer shall be applied to the designated areas of the South Abutment and Pier 4.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel and the steel portions of new elastomeric and HLMR bearings. Only Inorganic Zinc Rich Primer shall be applied to the new structural steel and the steel portions of the new elastomeric and HLMR bearings in the shop under this contract and is included in "Furnishing and Erecting Structural Steel" and the elastomeric and HLMR bearing pay items, respectively. The intermediate and top coats shall be applied under a separate painting contract.
- Existing structural steel shall only be cleaned and painted as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".
- The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutment.
- The Contractor shall obtain a construction permit from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for any temporary construction activity placed in the water except cofferdams. This shall include the placement of material for run-arounds, causeways, etc. Any permit application by the Contractor shall refer to the IDNR 3704 Floodway Construction permit number allowing permanent construction as shown in the contract plans.

**INDEX OF SHEETS**

- SE1 General Plan and Elevation
- SE2 General Notes, Index of Sheets and Total Bill of Material
- SE3 Foundation Layout
- SE4 Stage Construction Details
- SE5 Temporary Concrete Barrier for Stage Construction
- SE6 Top of Slab Elevations Plan
- SE7 Top of Slab Elevations (1 of 3)
- SE8 Top of Slab Elevations (2 of 3)
- SE9 Top of Slab Elevations (3 of 3)
- SE10 Top of South Approach Slab Elevations
- SE11 Deck Reinforcement Plan (1 of 2)
- SE12 Deck Reinforcement Plan (2 of 2)
- SE13 Deck Cross Section and Details
- SE14 Deck Drain Details
- SE15 Parapet Details
- SE16 Superstructure Details and Bill of Material
- SE17 Concrete Parapet Slipforming Option
- SE18 Bridge Approach Slab Plan
- SE19 Bridge Approach Slab Details
- SE20 Preformed Joint Strip Seal
- SE21 Drainage Scupper, DS-11
- SE22 Framing Plan
- SE23 Steel Plate Girder Elevation & Camber Diagram
- SE24 Splice Details and Moment & Reaction Table
- SE25 Steel Plate Girder Cross Frames
- SE26 Structural Steel Repairs
- SE27 Elastomeric and Fixed Bearing Details
- SE28 HLMR Guided Expansion Bearing Details
- SE29 Abutment Concrete Removal and Repair Details
- SE30 Abutment Widening Details (1 of 3)
- SE31 Abutment Widening Details (2 of 3)
- SE32 Abutment Widening Details (3 of 3)
- SE33 Piers 1 and 2 Concrete Repair Details
- SE34 Piers 3 and 4 Concrete Repair Details
- SE35 Pier 1 Widening Details
- SE36 Pier 2 Widening Details
- SE37 Pier 3 Widening Details
- SE38 Pier 4 Widening Details
- SE39 Piers 1-4 Bar Details
- SE40 HP Pile Details
- SE41 Bar Splicer Assembly and Mechanical Splicer Details
- SE42-SE46 Soil Boring Logs

For existing bridge plans, see Sheets SEX1 thru SEX13 immediately following Sheet SE46.

**SCOPE OF WORK**

- Remove existing concrete deck and microsilica concrete overlay and replace with new 8" reinforced concrete deck.
- Make new deck composite in positive moment areas only by adding shear studs to all existing and proposed girders.
- Remove and replace existing expansion joints and drainage scuppers.
- Remove and replace existing backwall.
- Widen abutment, piers and slopewall.
- Remove and replace approach slab and wingwalls.
- Repair spalls, delaminations and open cracks in substructure using formed concrete repair and epoxy crack injection. Replace failed slopewall panels.
- Add two additional steel girder lines.
- Remove wind bracing from the structure.
- Perform miscellaneous repairs including fixing unseated anchor bolts and debris/vegetation removal.
- Remove and dispose of existing electrical conduits and junction boxes attached to the girders and/or deck.

**TOTAL BILL OF MATERIAL**

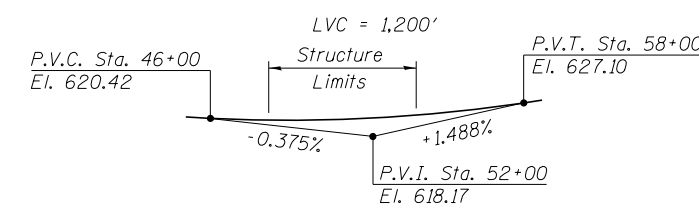
| ITEM  | UNIT  | SUPER   | SUB    | TOTAL   |
|---|-------|---------|--------|---------|
| Concrete Removal  | Cu Yd |         | 33.2   | 33.2    |
| Slope Wall Removal  | Sq Yd |         | 17     | 17      |
| Removal of Existing Concrete Deck No. 3                                 | Each  | 1       |        | 1       |
| Protective Shield   | Sq Yd | 2,098   |        | 2,098   |
| Structure Excavation  | Cu Yd |         | 213    | 213     |
| Floor Drains  | Each  | 40      |        | 40      |
| Concrete Structures   | Cu Yd |         | 187.2  | 187.2   |
| Concrete Superstructure   | Cu Yd | 931.8   |        | 931.8   |
| Bridge Deck Grooving  | Sq Yd | 2,901   |        | 2,901   |
| Concrete Encasement   | Cu Yd |         | 1.8    | 1.8     |
| Protective Coat   | Sq Yd | 3,488   |        | 3,488   |
| * Furnishing and Erecting Structural Steel                              | L Sum | 0.28    |        | 0.28    |
| Stud Shear Connectors   | Each  | 10,752  |        | 10,752  |
| Reinforcement Bars, Epoxy Coated  | Pound | 231,670 | 35,640 | 267,310 |
| Bar Splicers  | Each  |         | 45     | 45      |
| Mechanical Splicers   | Each  |         | 118    | 118     |
| Slope Wall 6 Inch   | Sq Yd |         | 60     | 60      |
| Furnishing Steel Piles HP12x53  | Foot  |         | 132    | 132     |
| Driving Piles   | Foot  |         | 132    | 132     |
| Test Pile Steel HP12x53   | Each  |         | 1      | 1       |
| Pile Shoes  | Each  |         | 5      | 5       |
| Name Plates   | Each  | 1       |        | 1       |
| Permanent Casing  | Foot  |         | 186    | 186     |
| Drilled Shaft in Soil   | Cu Yd |         | 50.8   | 50.8    |
| Drilled Shaft in Rock   | Cu Yd |         | 8.8    | 8.8     |
| Preformed Joint Strip Seal  | Foot  | 46.5    |        | 46.5    |
| Elastomeric Bearing Assembly, Type II                                   | Each  | 4       |        | 4       |
| Anchor Bolts, 3/4"  | Each  | 24      |        | 24      |
| Anchor Bolts, 1"  | Each  | 4       |        | 4       |
| Anchor Bolts, 1 1/2"  | Each  | 1       |        | 1       |
| Concrete Sealer   | Sq Ft |         | 1,013  | 1,013   |
| ** Epoxy Crack Injection  | Foot  |         | 11     | 11      |
| Geocomposite Wall Drain   | Sq Yd |         | 45     | 45      |
| Structural Steel Removal  | Pound | 3,710   |        | 3,710   |
| Cleaning Bridge Seats   | Sq Ft |         | 440    | 440     |
| ** Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches) | Sq Ft |         | 79     | 79      |
| ** Structural Repair of Concrete (Depth Greater Than 5 Inches)          | Sq Ft |         | 5      | 5       |
| Drainage Scuppers, DS-11  | Each  | 4       |        | 4       |
| Pipe Underdrains for Structures 4"                                      | Foot  |         | 55     | 55      |
| *** Selective Clearing  | Unit  |         | 1      | 1       |
| Temporary Shoring and Cribbing  | Each  |         | 3      | 3       |
| Remove Conduit Attached to Structure                                    | Foot  | 1,626   |        | 1,626   |
| High Load Multi-Rotational Bearings, Guided Expansion, 250K             | Each  | 2       |        | 2       |
| High Load Multi-Rotational Bearings, Guided Expansion, 300K             | Each  | 2       |        | 2       |
| Granular Backfill for Structures  | Cu Yd |         | 103    | 103     |

- \* Remainder of this item is installed with other structures in this Contract. See the other structures for remaining quantity.
- \*\* Quantity includes a contingency (above the amounts shown in the individual bills of material) to account for uncertainties associated with the condition of the existing substructure and the age of the original inspection (2008-9). Actual repair areas will be determined by the Engineer in the field.
- \*\*\* The quantity for this item is estimated. The intent for this work is to remove accumulations of rubbish, vegetation, etc. on the existing slopewalls and other areas.

STATION 50+80.50  
 RE-BUILT 201- BY  
 STATE OF ILLINOIS  
 F.A.P. RT. 372  
 SECTION 2013-038B-R  
 LOADING HS-20  
 STRUCTURE NO. 016-0483

**NAME PLATE**  
 See Std. 515001

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



**PROFILE GRADE SB IL-171**  
 (Along  $\frac{1}{2}$  of Roadway)



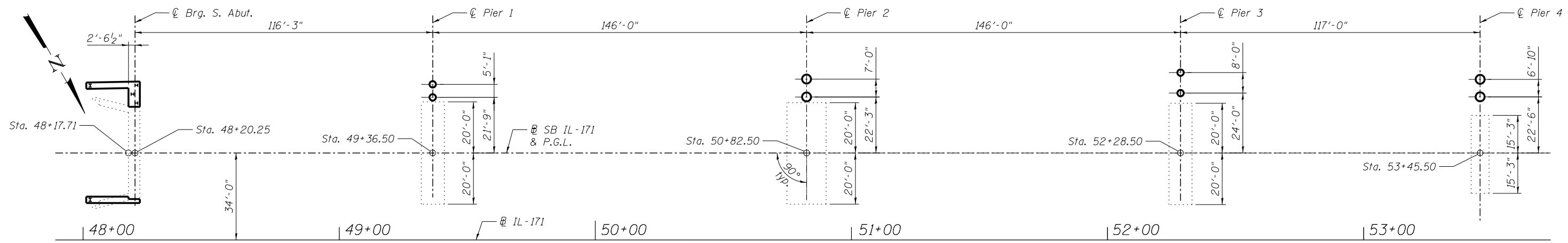
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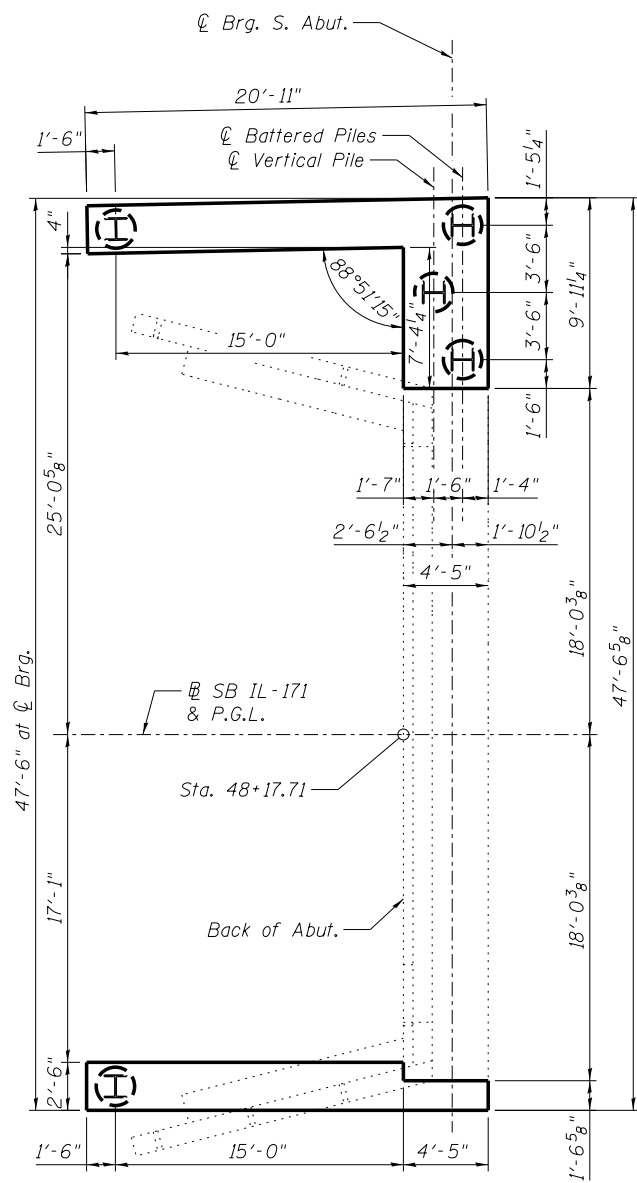
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| <b>GENERAL NOTES, INDEX OF SHEETS AND TOTAL BILL OF MATERIAL</b> |  |
| <b>STRUCTURE NO. 016-0483</b>                                    |  |
| SHEET NO. SE2 OF SE46 SHEETS                                     |  |

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| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821          | 486       |
| CONTRACT NO.              |             |        | 60J16        |           |
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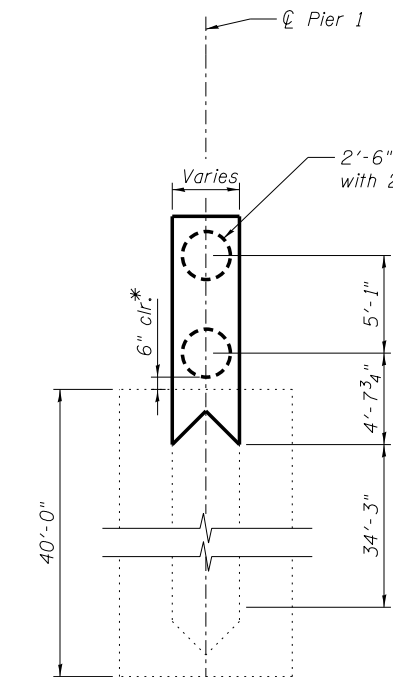
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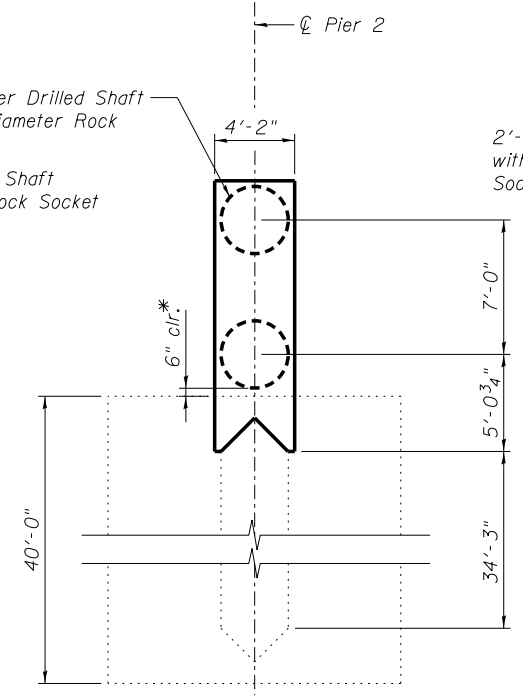
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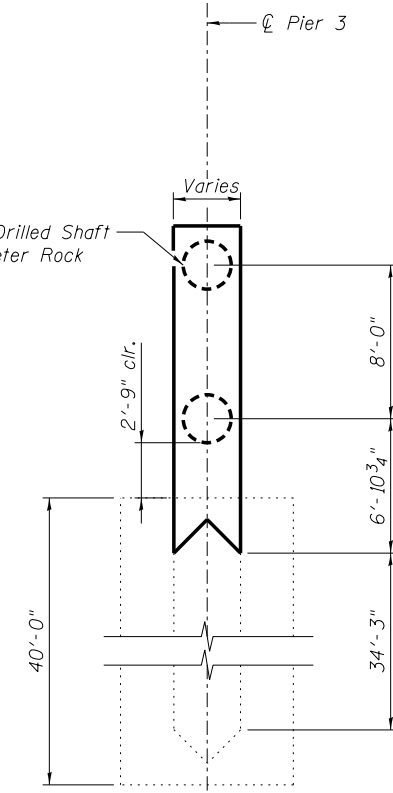
**EXISTING SOUTH ABUTMENT**



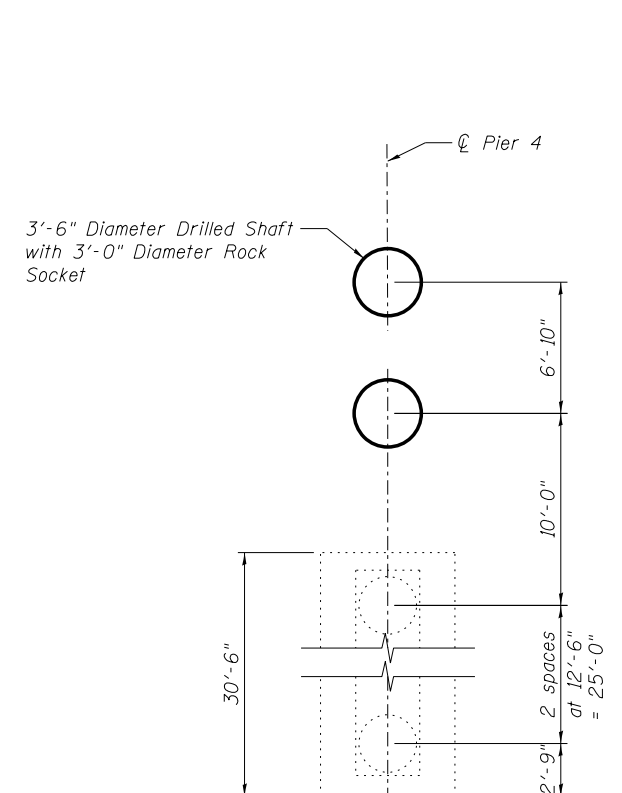
**PIER 1 FOUNDATION PLAN**



**PIER 2 FOUNDATION PLAN**



**PIER 3 FOUNDATION PLAN**



**PIER 4 FOUNDATION PLAN**

\*Contractor shall probe to verify the edge of existing footing prior to constructing drilled shafts. Cost of probing shall be included with "Drilled Shaft in Soil".

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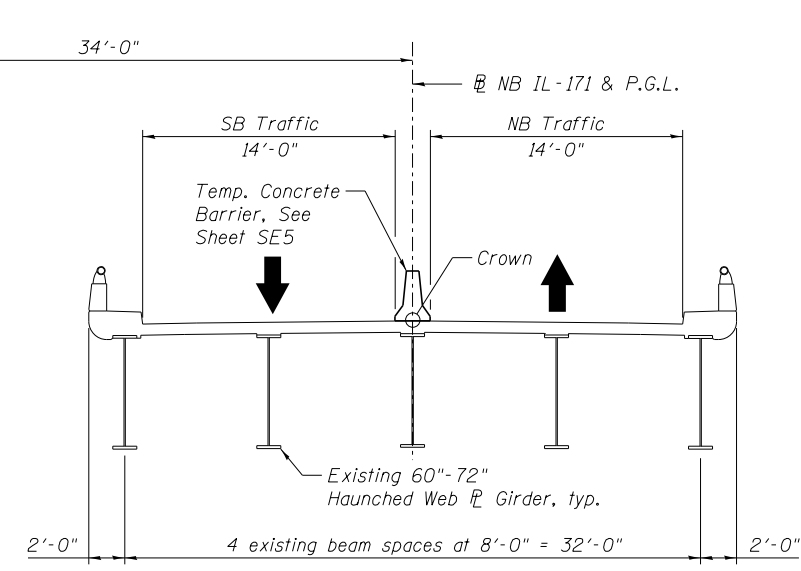
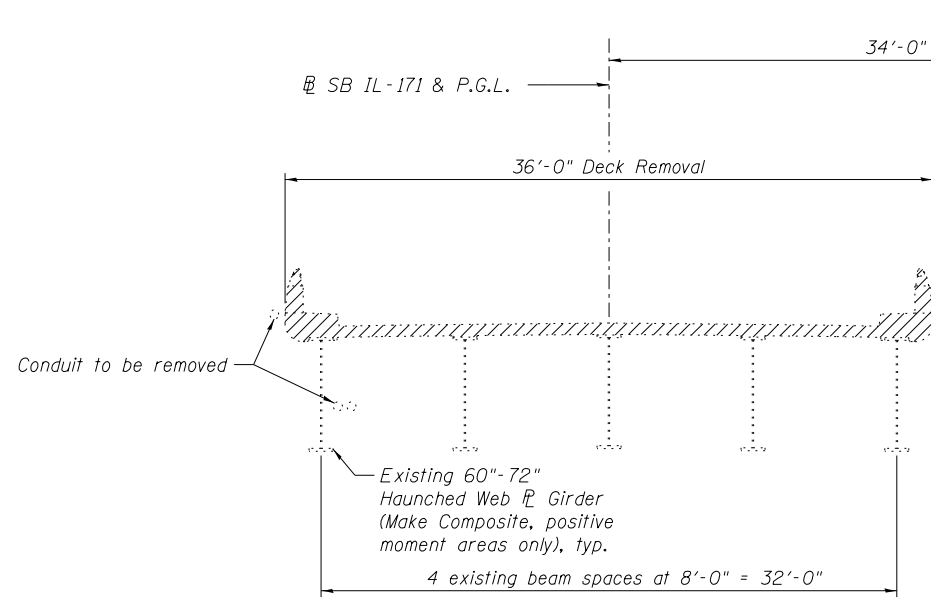
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STRUCTURE NO. 016-0483**

SHEET NO. SE3 OF SE46 SHEETS

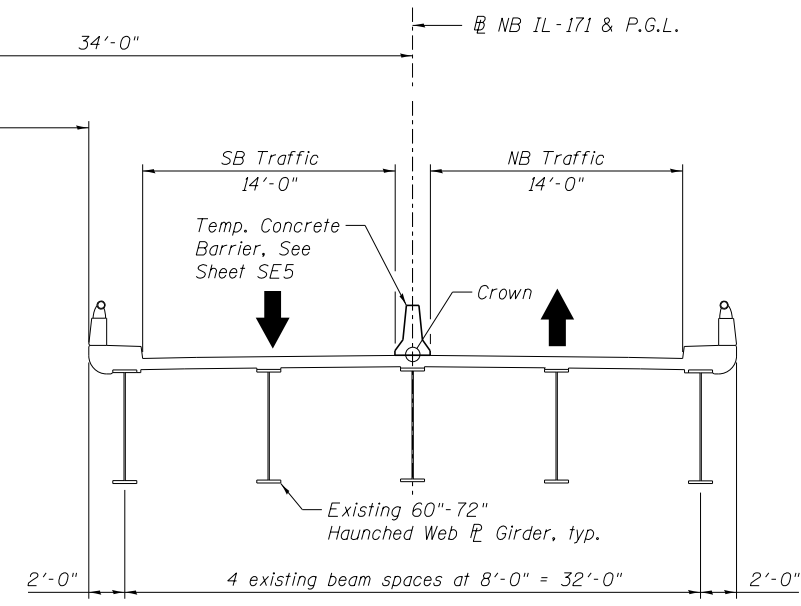
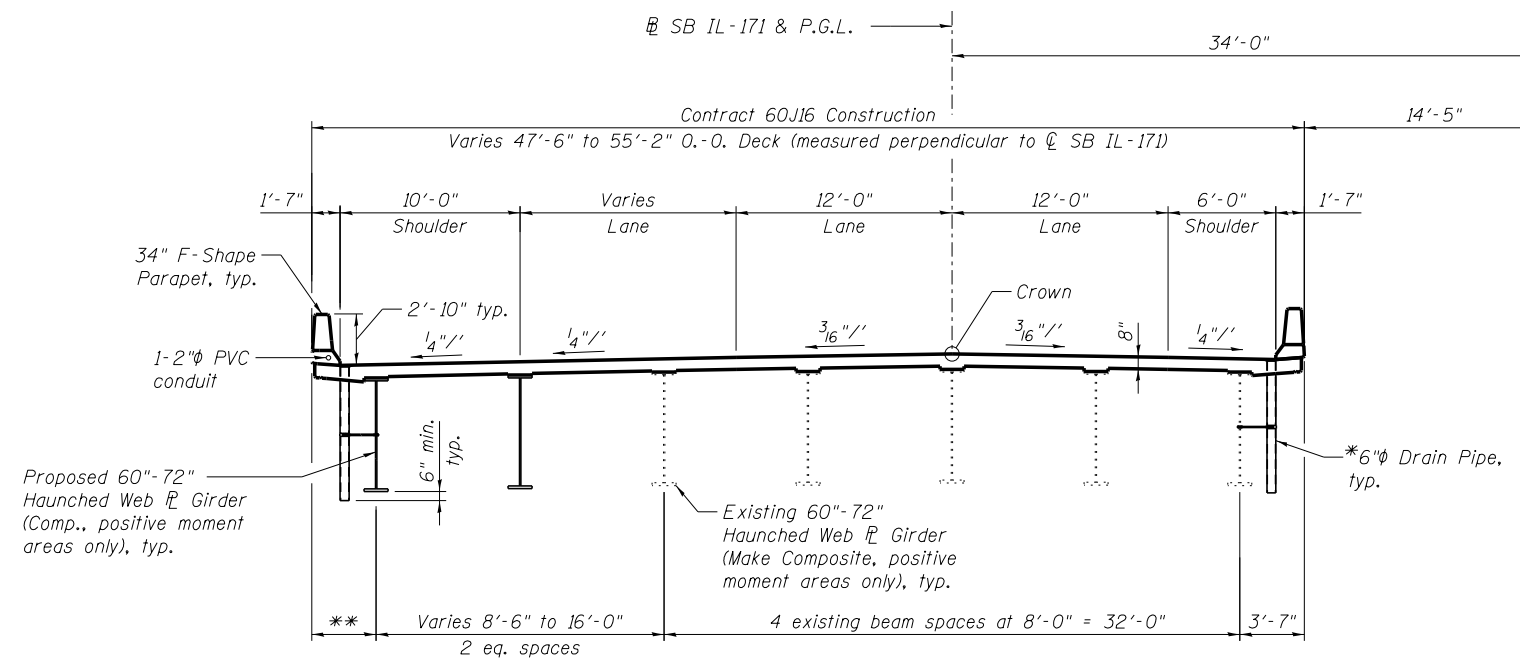
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| CONTRACT NO. 60J16 |             |        |              |           |

ILLINOIS FED. AID PROJECT

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**CONTRACT 60J16 REMOVAL**  
(Looking Upstation/North)



**CONTRACT 60J16 CONSTRUCTION**  
(Looking Upstation/North)

\*Floor Drains shown. Drainage scuppers not shown for clarity. See Sheet SE1 for location of floor drains and drainage scuppers.  
\*\*Varies 3'-5 1/4" in tapered section to 3'-7" in constant width section (measured perpendicular to Girder 1).

**NOTE:**  
Temporary Concrete Barrier shall not be doweled into existing or proposed bridge decks.

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

**STAGE CONSTRUCTION DETAILS**  
**STRUCTURE NO. 016-0483**

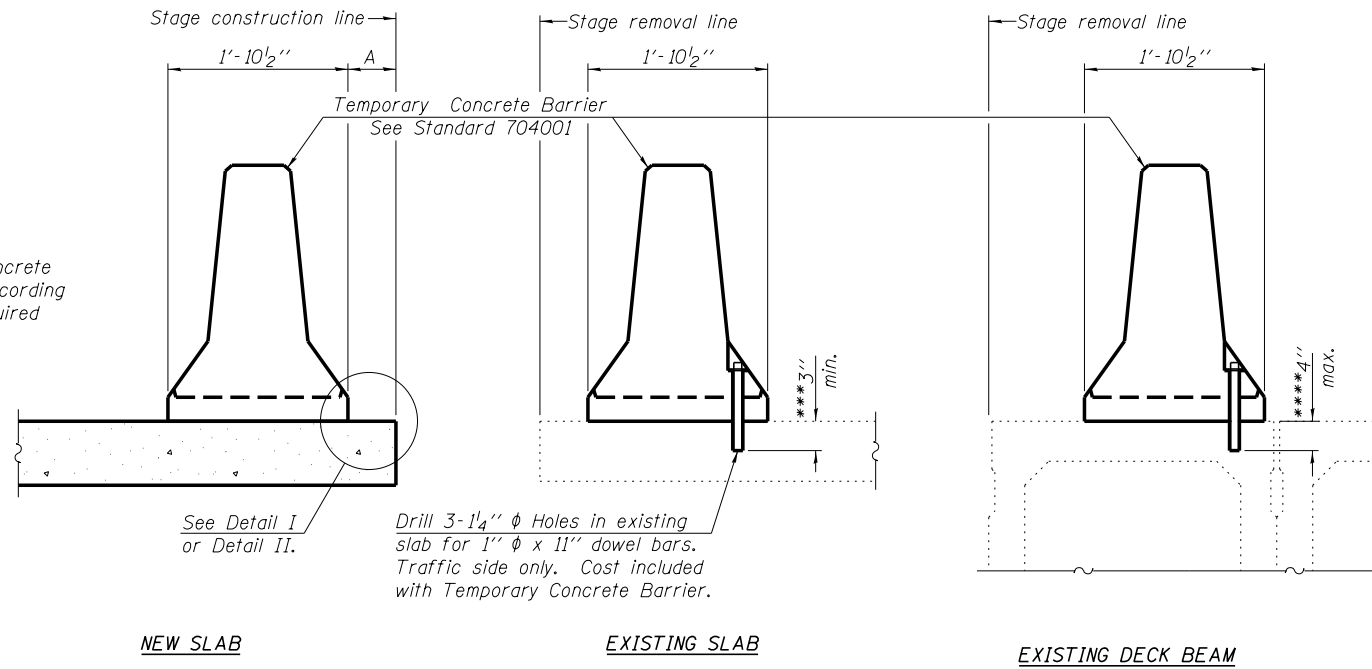
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| ILLINOIS FED. AID PROJECT |             |        |              |           |

SHEET NO. SE4 OF SE46 SHEETS

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When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



**SECTIONS THRU SLAB OR DECK BEAM**

**NOTES**

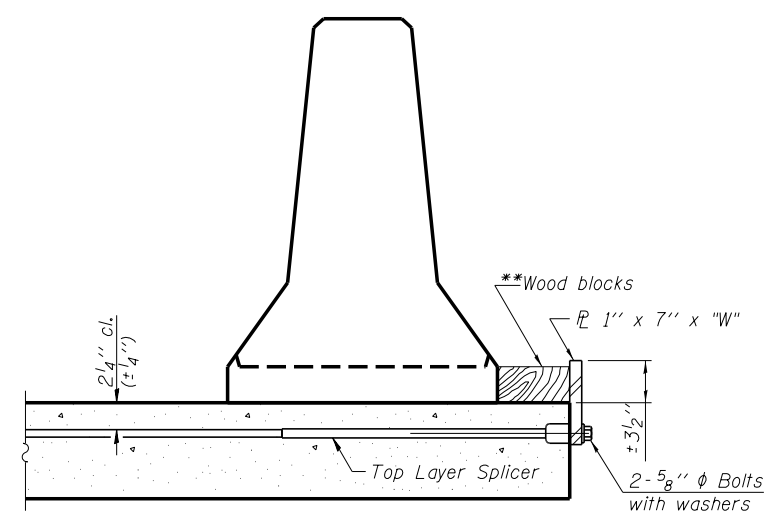
Detail I - With Bar Splicer or Couplers:  
Connect one (1) 1" x 7" x "W" steel  $\bar{r}$  to the top layer of couplers with 2-5/8"  $\phi$  bolts screwed to coupler at approximate  $\bar{c}$  of each barrier panel.

Detail II - With Extended Reinforcement Bars:  
Connect one (1) 1" x 7" x "W" steel  $\bar{r}$  to the concrete slab or concrete wearing surface with 2-5/8"  $\phi$  Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate  $\bar{c}$  of each barrier panel.

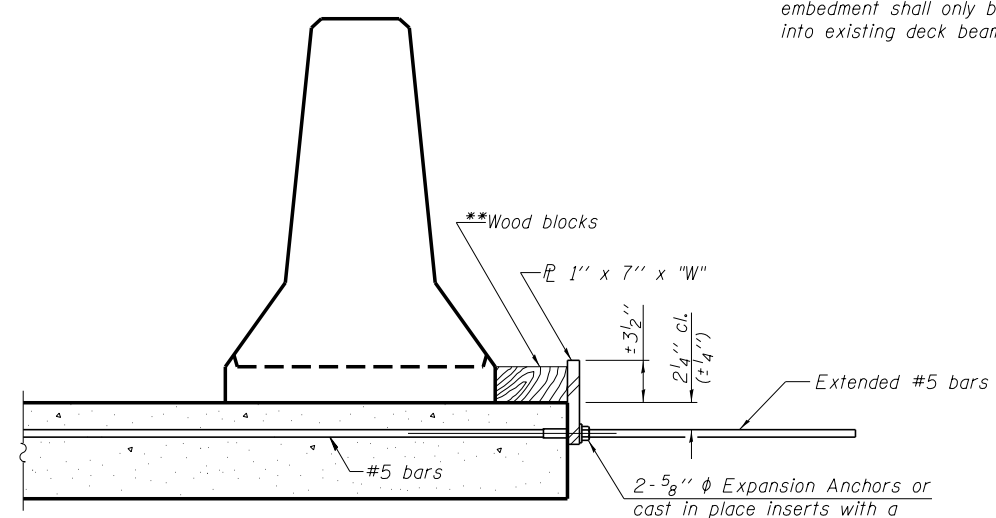
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

\*\*\* Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

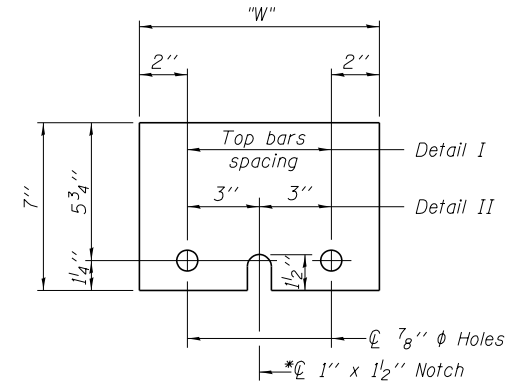
\*\*\*\* If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



**DETAIL I**



**DETAIL II**



**STEEL RETAINER  $\bar{r}$  1" x 7" x "W"**

\* Required only with Detail II

\*\* Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

"W" = Top bars spacing + 4"

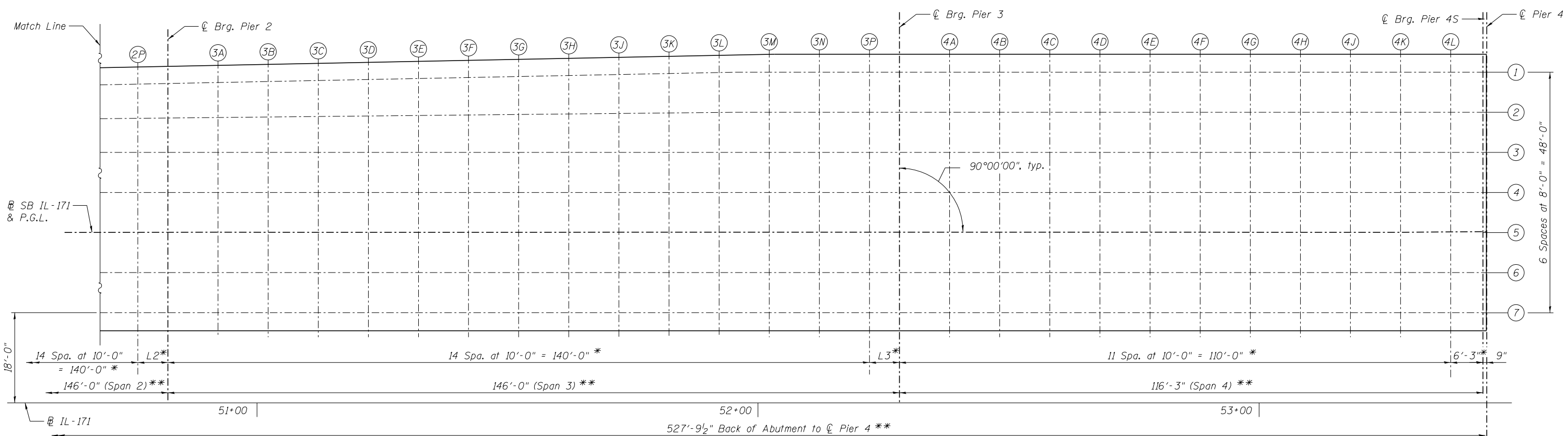
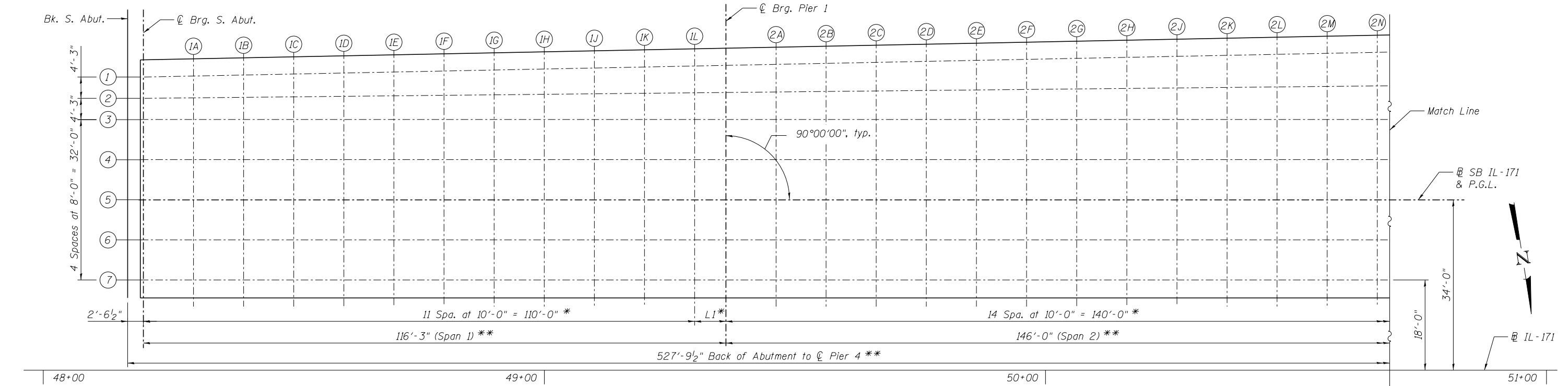
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| F.A.P. R.E.  | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372          | 2013-038B-R | COOK   | 821          | 489       |
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**SCREED SPACING**

| LOCATION   | L1        | L2        | L3        |
|------------|-----------|-----------|-----------|
| Girder 1   | 6'-3 1/4" | 6'-0 3/8" | 6'-0 1/4" |
| Girder 2   | 6'-3 3/8" | 6'-0 3/8" | 6'-0"     |
| Girder 3-7 | 6'-3"     | 6'-0"     | 6'-0"     |



**DECK ELEVATION PLAN**

\* Measured along  $\text{C}$  of girder  
 \*\* Measured along  $\text{SB IL-171}$

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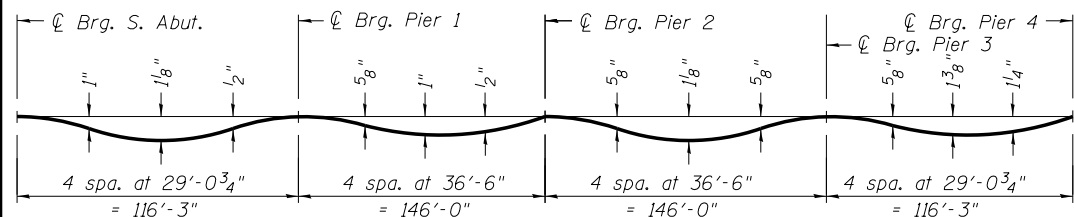
**TOP OF SLAB ELEVATIONS PLAN  
 STRUCTURE NO. 016-0483**

SHEET NO. SE6 OF SE46 SHEETS

|                    |             |        |                           |           |
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| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 490       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

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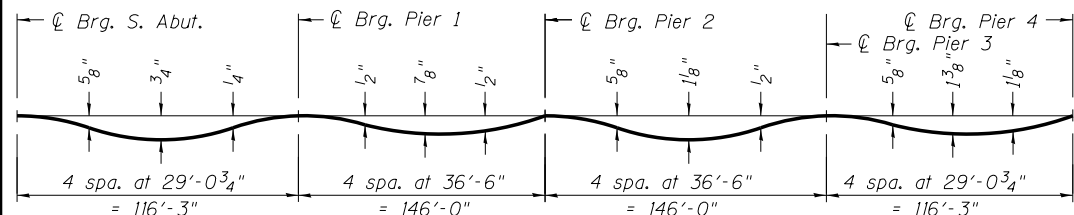
**GIRDER 1**



**DEAD LOAD DEFLECTION DIAGRAM (GIRDER 1)**

(Includes weight of concrete only)

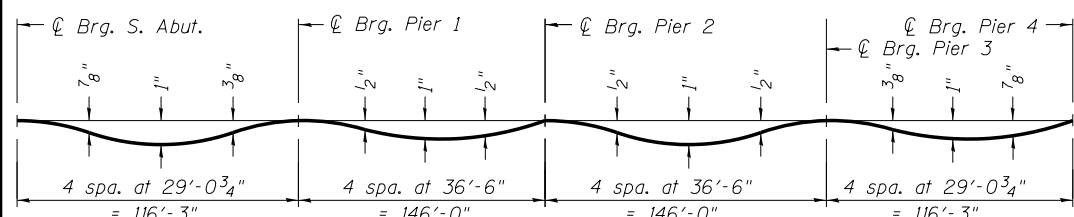
Note: The above deflections are not for use in the field if the Engineer is working from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" as shown on this sheet.



**DEAD LOAD DEFLECTION DIAGRAM (GIRDER 2)**

(Includes weight of concrete only)

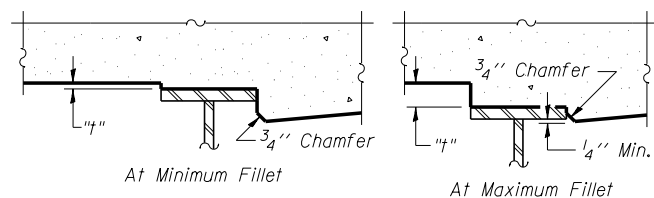
Note: The above deflections are not for use in the field if the Engineer is working from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" as shown on this sheet.



**DEAD LOAD DEFLECTION DIAGRAM (GIRDER 3 THRU GIRDER 7)**

(Includes weight of concrete only)

Note: The above deflections are not for use in the field if the Engineer is working from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" as shown on sheets SE8 and SE9.



**FILLET HEIGHTS**

To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on Sheets SE7 thru SE9. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheets SE7 thru SE9, minus slab thickness, equals the fillet heights "t" above top flange of beams.

**GIRDER 2**

| Location         | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|------------------|----------|--------|------------------------------|--|
| Bk. S. Abut.     | 48+17.71 | -24.50 | 619.54                       | 619.54   |
| CL Brg. S. Abut. | 48+20.25 | -24.50 | 619.54                       | 619.54   |
| 1A               | 48+30.25 | -24.70 | 619.53                       | 619.57   |
| 1B               | 48+40.25 | -24.90 | 619.53                       | 619.59   |
| 1C               | 48+50.24 | -25.10 | 619.53                       | 619.61   |
| 1D               | 48+60.24 | -25.30 | 619.52                       | 619.62   |
| 1E               | 48+70.24 | -25.50 | 619.52                       | 619.62   |
| 1F               | 48+80.24 | -25.70 | 619.52                       | 619.61   |
| 1G               | 48+90.24 | -25.90 | 619.53                       | 619.60   |
| 1H               | 49+00.23 | -26.10 | 619.53                       | 619.59   |
| 1J               | 49+10.23 | -26.30 | 619.54                       | 619.57   |
| 1K               | 49+20.23 | -26.50 | 619.55                       | 619.56   |
| 1L               | 49+30.23 | -26.70 | 619.55                       | 619.56   |
| CL Brg. Pier 1   | 49+36.50 | -26.82 | 619.56                       | 619.56   |
| 2A               | 49+46.50 | -27.02 | 619.57                       | 619.58   |
| 2B               | 49+56.50 | -27.22 | 619.59                       | 619.60   |
| 2C               | 49+66.49 | -27.42 | 619.60                       | 619.63   |
| 2D               | 49+76.49 | -27.62 | 619.62                       | 619.67   |
| 2E               | 49+86.49 | -27.82 | 619.63                       | 619.70   |
| 2F               | 49+96.49 | -28.02 | 619.65                       | 619.73   |
| 2G               | 50+06.49 | -28.22 | 619.67                       | 619.76   |
| 2H               | 50+16.48 | -28.42 | 619.70                       | 619.78   |
| 2J               | 50+26.48 | -28.62 | 619.72                       | 619.80   |
| 2K               | 50+36.48 | -28.82 | 619.75                       | 619.81   |
| 2L               | 50+46.48 | -29.02 | 619.77                       | 619.82   |
| 2M               | 50+56.48 | -29.22 | 619.80                       | 619.83   |
| 2N               | 50+66.47 | -29.42 | 619.83                       | 619.84   |
| 2P               | 50+76.47 | -29.62 | 619.86                       | 619.87   |
| CL Brg. Pier 2   | 50+82.50 | -29.74 | 619.88                       | 619.88   |
| 3A               | 50+92.50 | -29.94 | 619.92                       | 619.92   |
| 3B               | 51+02.50 | -30.14 | 619.95                       | 619.97   |
| 3C               | 51+12.49 | -30.34 | 619.99                       | 620.03   |
| 3D               | 51+22.49 | -30.54 | 620.03                       | 620.09   |
| 3E               | 51+32.49 | -30.74 | 620.07                       | 620.15   |
| 3F               | 51+42.49 | -30.94 | 620.11                       | 620.20   |
| 3G               | 51+52.49 | -31.14 | 620.16                       | 620.25   |
| 3H               | 51+62.48 | -31.34 | 620.20                       | 620.29   |
| 3J               | 51+72.48 | -31.54 | 620.25                       | 620.33   |
| 3K               | 51+82.48 | -31.74 | 620.30                       | 620.36   |
| 3L               | 51+92.48 | -31.94 | 620.34                       | 620.39   |
| 3M               | 52+02.48 | -32.00 | 620.40                       | 620.43   |
| 3N               | 52+12.48 | -32.00 | 620.46                       | 620.47   |
| 3P               | 52+22.48 | -32.00 | 620.51                       | 620.52   |
| CL Brg. Pier 3   | 52+28.50 | -32.00 | 620.55                       | 620.55   |
| 4A               | 52+38.50 | -32.00 | 620.61                       | 620.62   |
| 4B               | 52+48.50 | -32.00 | 620.67                       | 620.70   |
| 4C               | 52+58.50 | -32.00 | 620.74                       | 620.79   |
| 4D               | 52+68.50 | -32.00 | 620.80                       | 620.88   |
| 4E               | 52+78.50 | -32.00 | 620.87                       | 620.97   |
| 4F               | 52+88.50 | -32.00 | 620.94                       | 621.06   |
| 4G               | 52+98.50 | -32.00 | 621.01                       | 621.13   |
| 4H               | 53+08.50 | -32.00 | 621.08                       | 621.20   |
| 4J               | 53+18.50 | -32.00 | 621.15                       | 621.25   |
| 4K               | 53+28.50 | -32.00 | 621.23                       | 621.29   |
| 4L               | 53+38.50 | -32.00 | 621.30                       | 621.33   |
| CL Brg. Pier 4S  | 53+44.75 | -32.00 | 621.35                       | 621.35   |
| CL Pier 4        | 53+45.50 | -32.00 | 621.36                       | 621.36   |

| Location         | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|------------------|----------|--------|------------------------------|--|
| Bk. S. Abut.     | 48+17.71 | -20.25 | 619.63                       | 619.63   |
| CL Brg. S. Abut. | 48+20.25 | -20.25 | 619.63                       | 619.63   |
| 1A               | 48+30.25 | -20.35 | 619.62                       | 619.65   |
| 1B               | 48+40.25 | -20.45 | 619.62                       | 619.66   |
| 1C               | 48+50.25 | -20.55 | 619.62                       | 619.68   |
| 1D               | 48+60.25 | -20.65 | 619.62                       | 619.69   |
| 1E               | 48+70.25 | -20.75 | 619.62                       | 619.69   |
| 1F               | 48+80.25 | -20.85 | 619.62                       | 619.69   |
| 1G               | 48+90.25 | -20.95 | 619.63                       | 619.68   |
| 1H               | 49+00.25 | -21.05 | 619.63                       | 619.67   |
| 1J               | 49+10.25 | -21.15 | 619.64                       | 619.66   |
| 1K               | 49+20.25 | -21.25 | 619.65                       | 619.66   |
| 1L               | 49+30.24 | -21.35 | 619.66                       | 619.67   |
| CL Brg. Pier 1   | 49+36.50 | -21.41 | 619.67                       | 619.67   |
| 2A               | 49+46.50 | -21.51 | 619.68                       | 619.69   |
| 2B               | 49+56.50 | -21.61 | 619.70                       | 619.72   |
| 2C               | 49+66.50 | -21.71 | 619.71                       | 619.75   |
| 2D               | 49+76.50 | -21.81 | 619.73                       | 619.78   |
| 2E               | 49+86.50 | -21.91 | 619.75                       | 619.81   |
| 2F               | 49+96.50 | -22.01 | 619.77                       | 619.85   |
| 2G               | 50+06.50 | -22.11 | 619.80                       | 619.87   |
| 2H               | 50+16.50 | -22.21 | 619.82                       | 619.89   |
| 2J               | 50+26.50 | -22.31 | 619.85                       | 619.91   |
| 2K               | 50+36.50 | -22.41 | 619.87                       | 619.93   |
| 2L               | 50+46.49 | -22.51 | 619.90                       | 619.94   |
| 2M               | 50+56.49 | -22.61 | 619.93                       | 619.96   |
| 2N               | 50+66.49 | -22.71 | 619.97                       | 619.97   |
| 2P               | 50+76.49 | -22.81 | 620.00                       | 620.00   |
| CL Brg. Pier 2   | 50+82.50 | -22.87 | 620.02                       | 620.02   |
| 3A               | 50+92.50 | -22.97 | 620.06                       | 620.06   |
| 3B               | 51+02.50 | -23.07 | 620.09                       | 620.12   |
| 3C               | 51+12.50 | -23.17 | 620.13                       | 620.17   |
| 3D               | 51+22.50 | -23.27 | 620.17                       | 620.23   |
| 3E               | 51+32.50 | -23.37 | 620.22                       | 620.29   |
| 3F               | 51+42.50 | -23.47 | 620.26                       | 620.35   |
| 3G               | 51+52.50 | -23.57 | 620.31                       | 620.40   |
| 3H               | 51+62.50 | -23.67 | 620.35                       | 620.44   |
| 3J               | 51+72.50 | -23.77 | 620.40                       | 620.48   |
| 3K               | 51+82.50 | -23.87 | 620.45                       | 620.52   |
| 3L               | 51+92.50 | -23.97 | 620.50                       | 620.55   |
| 3M               | 52+02.50 | -24.00 | 620.56                       | 620.59   |
| 3N               | 52+12.50 | -24.00 | 620.62                       | 620.63   |
| 3P               | 52+22.50 | -24.00 | 620.67                       | 620.68   |
| CL Brg. Pier 3   | 52+28.50 | -24.00 | 620.71                       | 620.71   |
| 4A               | 52+38.50 | -24.00 | 620.77                       | 620.78   |
| 4B               | 52+48.50 | -24.00 | 620.83                       | 620.86   |
| 4C               | 52+58.50 | -24.00 | 620.90                       | 620.95   |
| 4D               | 52+68.50 | -24.00 | 620.96                       | 621.04   |
| 4E               | 52+78.50 | -24.00 | 621.03                       | 621.13   |
| 4F               | 52+88.50 | -24.00 | 621.10                       | 621.21   |
| 4G               | 52+98.50 | -24.00 | 621.17                       | 621.28   |
| 4H               | 53+08.50 | -24.00 | 621.24                       | 621.35   |
| 4J               | 53+18.50 | -24.00 | 621.31                       | 621.40   |
| 4K               | 53+28.50 | -24.00 | 621.39                       | 621.45   |
| 4L               | 53+38.50 | -24.00 | 621.46                       | 621.49   |
| CL Brg. Pier 4S  | 53+44.75 | -24.00 | 621.51                       | 621.51   |
| CL Pier 4        | 53+45.50 | -24.00 | 621.52                       | 621.52   |

**NOTE:**

Offset measured from SB IL-171 & P.G.L.



Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

FILE NAME = 0160483.60J16.007.TOS.Elev.1.dgn

|                        |                |           |
|------------------------|----------------|-----------|
| USER NAME = jsurber    | DESIGNED - DTS | REVISED - |
| PLOT SCALE =           | CHECKED - AJK  | REVISED - |
| PLOT DATE = 12/20/2013 | DRAWN - RMG    | REVISED - |
|                        | CHECKED - AJK  | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS (1 OF 3)  
STRUCTURE NO. 016-0483

SHEET NO. SE7 OF SE46 SHEETS

|                    |                     |             |                           |               |
|--------------------|---------------------|-------------|---------------------------|---------------|
| F.A.P. RTE. 372    | SECTION 2013-038B-R | COUNTY COOK | TOTAL SHEETS 821          | SHEET NO. 491 |
| CONTRACT NO. 60J16 |                     |             | ILLINOIS FED. AID PROJECT |               |

**GIRDER 3**

| Location         | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|------------------|----------|--------|------------------------------|--|
| Bk. S. Abut.     | 48+17.71 | -16.00 | 619.71                       | 619.71   |
| CL Brg. S. Abut. | 48+20.25 | -16.00 | 619.71                       | 619.71   |
| 1A               | 48+30.25 | -16.00 | 619.71                       | 619.74   |
| 1B               | 48+40.25 | -16.00 | 619.71                       | 619.77   |
| 1C               | 48+50.25 | -16.00 | 619.71                       | 619.79   |
| 1D               | 48+60.25 | -16.00 | 619.71                       | 619.80   |
| 1E               | 48+70.25 | -16.00 | 619.71                       | 619.81   |
| 1F               | 48+80.25 | -16.00 | 619.72                       | 619.80   |
| 1G               | 48+90.25 | -16.00 | 619.73                       | 619.80   |
| 1H               | 49+00.25 | -16.00 | 619.73                       | 619.79   |
| 1J               | 49+10.25 | -16.00 | 619.74                       | 619.78   |
| 1K               | 49+20.25 | -16.00 | 619.76                       | 619.77   |
| 1L               | 49+30.25 | -16.00 | 619.77                       | 619.78   |
| CL Brg. Pier 1   | 49+36.50 | -16.00 | 619.78                       | 619.78   |
| 2A               | 49+46.50 | -16.00 | 619.79                       | 619.80   |
| 2B               | 49+56.50 | -16.00 | 619.81                       | 619.82   |
| 2C               | 49+66.50 | -16.00 | 619.83                       | 619.86   |
| 2D               | 49+76.50 | -16.00 | 619.85                       | 619.89   |
| 2E               | 49+86.50 | -16.00 | 619.87                       | 619.93   |
| 2F               | 49+96.50 | -16.00 | 619.89                       | 619.97   |
| 2G               | 50+06.50 | -16.00 | 619.92                       | 620.00   |
| 2H               | 50+16.50 | -16.00 | 619.94                       | 620.02   |
| 2J               | 50+26.50 | -16.00 | 619.97                       | 620.04   |
| 2K               | 50+36.50 | -16.00 | 620.00                       | 620.06   |
| 2L               | 50+46.50 | -16.00 | 620.03                       | 620.07   |
| 2M               | 50+56.50 | -16.00 | 620.07                       | 620.09   |
| 2N               | 50+66.50 | -16.00 | 620.10                       | 620.11   |
| 2P               | 50+76.50 | -16.00 | 620.14                       | 620.14   |
| CL Brg. Pier 2   | 50+82.50 | -16.00 | 620.16                       | 620.16   |
| 3A               | 50+92.50 | -16.00 | 620.20                       | 620.20   |
| 3B               | 51+02.50 | -16.00 | 620.24                       | 620.25   |
| 3C               | 51+12.50 | -16.00 | 620.28                       | 620.31   |
| 3D               | 51+22.50 | -16.00 | 620.32                       | 620.37   |
| 3E               | 51+32.50 | -16.00 | 620.36                       | 620.43   |
| 3F               | 51+42.50 | -16.00 | 620.41                       | 620.48   |
| 3G               | 51+52.50 | -16.00 | 620.46                       | 620.54   |
| 3H               | 51+62.50 | -16.00 | 620.51                       | 620.58   |
| 3J               | 51+72.50 | -16.00 | 620.56                       | 620.63   |
| 3K               | 51+82.50 | -16.00 | 620.61                       | 620.67   |
| 3L               | 51+92.50 | -16.00 | 620.66                       | 620.70   |
| 3M               | 52+02.50 | -16.00 | 620.72                       | 620.74   |
| 3N               | 52+12.50 | -16.00 | 620.78                       | 620.78   |
| 3P               | 52+22.50 | -16.00 | 620.83                       | 620.84   |
| CL Brg. Pier 3   | 52+28.50 | -16.00 | 620.87                       | 620.87   |
| 4A               | 52+38.50 | -16.00 | 620.93                       | 620.94   |
| 4B               | 52+48.50 | -16.00 | 620.99                       | 621.01   |
| 4C               | 52+58.50 | -16.00 | 621.06                       | 621.10   |
| 4D               | 52+68.50 | -16.00 | 621.12                       | 621.18   |
| 4E               | 52+78.50 | -16.00 | 621.19                       | 621.27   |
| 4F               | 52+88.50 | -16.00 | 621.26                       | 621.35   |
| 4G               | 52+98.50 | -16.00 | 621.33                       | 621.42   |
| 4H               | 53+08.50 | -16.00 | 621.40                       | 621.49   |
| 4J               | 53+18.50 | -16.00 | 621.47                       | 621.55   |
| 4K               | 53+28.50 | -16.00 | 621.55                       | 621.60   |
| 4L               | 53+38.50 | -16.00 | 621.62                       | 621.65   |
| CL Brg. Pier 4S  | 53+44.75 | -16.00 | 621.67                       | 621.67   |
| CL Pier 4        | 53+45.50 | -16.00 | 621.68                       | 621.68   |

**GIRDER 4**

| Location         | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|------------------|----------|--------|------------------------------|--|
| Bk. S. Abut.     | 48+17.71 | -8.00  | 619.85                       | 619.85   |
| CL Brg. S. Abut. | 48+20.25 | -8.00  | 619.85                       | 619.85   |
| 1A               | 48+30.25 | -8.00  | 619.85                       | 619.88   |
| 1B               | 48+40.25 | -8.00  | 619.85                       | 619.91   |
| 1C               | 48+50.25 | -8.00  | 619.85                       | 619.93   |
| 1D               | 48+60.25 | -8.00  | 619.85                       | 619.94   |
| 1E               | 48+70.25 | -8.00  | 619.85                       | 619.95   |
| 1F               | 48+80.25 | -8.00  | 619.86                       | 619.94   |
| 1G               | 48+90.25 | -8.00  | 619.87                       | 619.94   |
| 1H               | 49+00.25 | -8.00  | 619.87                       | 619.93   |
| 1J               | 49+10.25 | -8.00  | 619.88                       | 619.92   |
| 1K               | 49+20.25 | -8.00  | 619.90                       | 619.91   |
| 1L               | 49+30.25 | -8.00  | 619.91                       | 619.92   |
| CL Brg. Pier 1   | 49+36.50 | -8.00  | 619.92                       | 619.92   |
| 2A               | 49+46.50 | -8.00  | 619.93                       | 619.94   |
| 2B               | 49+56.50 | -8.00  | 619.95                       | 619.96   |
| 2C               | 49+66.50 | -8.00  | 619.97                       | 620.00   |
| 2D               | 49+76.50 | -8.00  | 619.99                       | 620.03   |
| 2E               | 49+86.50 | -8.00  | 620.01                       | 620.07   |
| 2F               | 49+96.50 | -8.00  | 620.03                       | 620.11   |
| 2G               | 50+06.50 | -8.00  | 620.06                       | 620.14   |
| 2H               | 50+16.50 | -8.00  | 620.08                       | 620.16   |
| 2J               | 50+26.50 | -8.00  | 620.11                       | 620.18   |
| 2K               | 50+36.50 | -8.00  | 620.14                       | 620.20   |
| 2L               | 50+46.50 | -8.00  | 620.17                       | 620.21   |
| 2M               | 50+56.50 | -8.00  | 620.21                       | 620.23   |
| 2N               | 50+66.50 | -8.00  | 620.24                       | 620.25   |
| 2P               | 50+76.50 | -8.00  | 620.28                       | 620.28   |
| CL Brg. Pier 2   | 50+82.50 | -8.00  | 620.30                       | 620.30   |
| 3A               | 50+92.50 | -8.00  | 620.34                       | 620.34   |
| 3B               | 51+02.50 | -8.00  | 620.38                       | 620.39   |
| 3C               | 51+12.50 | -8.00  | 620.42                       | 620.45   |
| 3D               | 51+22.50 | -8.00  | 620.46                       | 620.51   |
| 3E               | 51+32.50 | -8.00  | 620.50                       | 620.57   |
| 3F               | 51+42.50 | -8.00  | 620.55                       | 620.62   |
| 3G               | 51+52.50 | -8.00  | 620.60                       | 620.68   |
| 3H               | 51+62.50 | -8.00  | 620.65                       | 620.72   |
| 3J               | 51+72.50 | -8.00  | 620.70                       | 620.77   |
| 3K               | 51+82.50 | -8.00  | 620.75                       | 620.81   |
| 3L               | 51+92.50 | -8.00  | 620.80                       | 620.84   |
| 3M               | 52+02.50 | -8.00  | 620.86                       | 620.88   |
| 3N               | 52+12.50 | -8.00  | 620.92                       | 620.92   |
| 3P               | 52+22.50 | -8.00  | 620.97                       | 620.98   |
| CL Brg. Pier 3   | 52+28.50 | -8.00  | 621.01                       | 621.01   |
| 4A               | 52+38.50 | -8.00  | 621.07                       | 621.08   |
| 4B               | 52+48.50 | -8.00  | 621.13                       | 621.15   |
| 4C               | 52+58.50 | -8.00  | 621.20                       | 621.24   |
| 4D               | 52+68.50 | -8.00  | 621.26                       | 621.32   |
| 4E               | 52+78.50 | -8.00  | 621.33                       | 621.41   |
| 4F               | 52+88.50 | -8.00  | 621.40                       | 621.49   |
| 4G               | 52+98.50 | -8.00  | 621.47                       | 621.56   |
| 4H               | 53+08.50 | -8.00  | 621.54                       | 621.63   |
| 4J               | 53+18.50 | -8.00  | 621.61                       | 621.69   |
| 4K               | 53+28.50 | -8.00  | 621.69                       | 621.74   |
| 4L               | 53+38.50 | -8.00  | 621.76                       | 621.79   |
| CL Brg. Pier 4S  | 53+44.75 | -8.00  | 621.81                       | 621.81   |
| CL Pier 4        | 53+45.50 | -8.00  | 621.82                       | 621.82   |

**GIRDER 5, @ SB IL-171 & P.G.L.**

| Location         | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|------------------|----------|--------|------------------------------|--|
| Bk. S. Abut.     | 48+17.71 | 0.00   | 619.97                       | 619.97   |
| CL Brg. S. Abut. | 48+20.25 | 0.00   | 619.97                       | 619.97   |
| 1A               | 48+30.25 | 0.00   | 619.97                       | 620.00   |
| 1B               | 48+40.25 | 0.00   | 619.97                       | 620.03   |
| 1C               | 48+50.25 | 0.00   | 619.97                       | 620.05   |
| 1D               | 48+60.25 | 0.00   | 619.97                       | 620.06   |
| 1E               | 48+70.25 | 0.00   | 619.97                       | 620.07   |
| 1F               | 48+80.25 | 0.00   | 619.98                       | 620.06   |
| 1G               | 48+90.25 | 0.00   | 619.99                       | 620.06   |
| 1H               | 49+00.25 | 0.00   | 619.99                       | 620.05   |
| 1J               | 49+10.25 | 0.00   | 620.00                       | 620.04   |
| 1K               | 49+20.25 | 0.00   | 620.02                       | 620.03   |
| 1L               | 49+30.25 | 0.00   | 620.03                       | 620.04   |
| CL Brg. Pier 1   | 49+36.50 | 0.00   | 620.04                       | 620.04   |
| 2A               | 49+46.50 | 0.00   | 620.05                       | 620.06   |
| 2B               | 49+56.50 | 0.00   | 620.07                       | 620.08   |
| 2C               | 49+66.50 | 0.00   | 620.09                       | 620.12   |
| 2D               | 49+76.50 | 0.00   | 620.11                       | 620.15   |
| 2E               | 49+86.50 | 0.00   | 620.13                       | 620.19   |
| 2F               | 49+96.50 | 0.00   | 620.15                       | 620.23   |
| 2G               | 50+06.50 | 0.00   | 620.18                       | 620.26   |
| 2H               | 50+16.50 | 0.00   | 620.20                       | 620.28   |
| 2J               | 50+26.50 | 0.00   | 620.23                       | 620.30   |
| 2K               | 50+36.50 | 0.00   | 620.26                       | 620.32   |
| 2L               | 50+46.50 | 0.00   | 620.29                       | 620.33   |
| 2M               | 50+56.50 | 0.00   | 620.33                       | 620.35   |
| 2N               | 50+66.50 | 0.00   | 620.36                       | 620.37   |
| 2P               | 50+76.50 | 0.00   | 620.40                       | 620.40   |
| CL Brg. Pier 2   | 50+82.50 | 0.00   | 620.42                       | 620.42   |
| 3A               | 50+92.50 | 0.00   | 620.46                       | 620.46   |
| 3B               | 51+02.50 | 0.00   | 620.50                       | 620.51   |
| 3C               | 51+12.50 | 0.00   | 620.54                       | 620.57   |
| 3D               | 51+22.50 | 0.00   | 620.58                       | 620.63   |
| 3E               | 51+32.50 | 0.00   | 620.62                       | 620.69   |
| 3F               | 51+42.50 | 0.00   | 620.67                       | 620.74   |
| 3G               | 51+52.50 | 0.00   | 620.72                       | 620.80   |
| 3H               | 51+62.50 | 0.00   | 620.77                       | 620.84   |
| 3J               | 51+72.50 | 0.00   | 620.82                       | 620.89   |
| 3K               | 51+82.50 | 0.00   | 620.87                       | 620.93   |
| 3L               | 51+92.50 | 0.00   | 620.92                       | 620.96   |
| 3M               | 52+02.50 | 0.00   | 620.98                       | 621.00   |
| 3N               | 52+12.50 | 0.00   | 621.04                       | 621.04   |
| 3P               | 52+22.50 | 0.00   | 621.09                       | 621.10   |
| CL Brg. Pier 3   | 52+28.50 | 0.00   | 621.13                       | 621.13   |
| 4A               | 52+38.50 | 0.00   | 621.19                       | 621.20   |
| 4B               | 52+48.50 | 0.00   | 621.25                       | 621.27   |
| 4C               | 52+58.50 | 0.00   | 621.32                       | 621.36   |
| 4D               | 52+68.50 | 0.00   | 621.38                       | 621.44   |
| 4E               | 52+78.50 | 0.00   | 621.45                       | 621.53   |
| 4F               | 52+88.50 | 0.00   | 621.52                       | 621.61   |
| 4G               | 52+98.50 | 0.00   | 621.59                       | 621.68   |
| 4H               | 53+08.50 | 0.00   | 621.66                       | 621.75   |
| 4J               | 53+18.50 | 0.00   | 621.73                       | 621.81   |
| 4K               | 53+28.50 | 0.00   | 621.81                       | 621.86   |
| 4L               | 53+38.50 | 0.00   | 621.88                       | 621.91   |
| CL Brg. Pier 4S  | 53+44.75 | 0.00   | 621.93                       | 621.93   |
| CL Pier 4        | 53+45.50 | 0.00   | 621.94                       | 621.94   |

**NOTE:**  
Offset measured from @ SB IL-171 & P.G.L.



Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

|             |                                  |              |            |            |     |           |  |
|-------------|----------------------------------|--------------|------------|------------|-----|-----------|--|
| FILE NAME = | 0160483.60J16.008.TOS.Elev.2.dgn | USER NAME =  | jsurber    | DESIGNED - | DTS | REVISED - |  |
|             |                                  | CHECKED -    | AJK        | CHECKED -  | AJK | REVISED - |  |
|             |                                  | PLOT SCALE = |            | DRAWN -    | RMG | REVISED - |  |
|             |                                  | PLOT DATE =  | 12/20/2013 | CHECKED -  | AJK | REVISED - |  |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS (2 OF 3)  
STRUCTURE NO. 016-0483

SHEET NO. SE8 OF SE46 SHEETS

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821          | 492       |
| CONTRACT NO.              |             |        | 60J16        |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

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**GIRDER 6**

| Location         | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|------------------|----------|--------|------------------------------|--|
| Bk. S. Abut.     | 48+17.71 | 8.00   | 619.85                       | 619.85   |
| CL Brg. S. Abut. | 48+20.25 | 8.00   | 619.85                       | 619.85   |
| 1A               | 48+30.25 | 8.00   | 619.85                       | 619.88   |
| 1B               | 48+40.25 | 8.00   | 619.85                       | 619.91   |
| 1C               | 48+50.25 | 8.00   | 619.85                       | 619.93   |
| 1D               | 48+60.25 | 8.00   | 619.85                       | 619.94   |
| 1E               | 48+70.25 | 8.00   | 619.85                       | 619.95   |
| 1F               | 48+80.25 | 8.00   | 619.86                       | 619.94   |
| 1G               | 48+90.25 | 8.00   | 619.87                       | 619.94   |
| 1H               | 49+00.25 | 8.00   | 619.87                       | 619.93   |
| 1J               | 49+10.25 | 8.00   | 619.88                       | 619.92   |
| 1K               | 49+20.25 | 8.00   | 619.90                       | 619.91   |
| 1L               | 49+30.25 | 8.00   | 619.91                       | 619.92   |
| CL Brg. Pier 1   | 49+36.50 | 8.00   | 619.92                       | 619.92   |
| 2A               | 49+46.50 | 8.00   | 619.93                       | 619.94   |
| 2B               | 49+56.50 | 8.00   | 619.95                       | 619.96   |
| 2C               | 49+66.50 | 8.00   | 619.97                       | 620.00   |
| 2D               | 49+76.50 | 8.00   | 619.99                       | 620.03   |
| 2E               | 49+86.50 | 8.00   | 620.01                       | 620.07   |
| 2F               | 49+96.50 | 8.00   | 620.03                       | 620.11   |
| 2G               | 50+06.50 | 8.00   | 620.06                       | 620.14   |
| 2H               | 50+16.50 | 8.00   | 620.08                       | 620.16   |
| 2J               | 50+26.50 | 8.00   | 620.11                       | 620.18   |
| 2K               | 50+36.50 | 8.00   | 620.14                       | 620.20   |
| 2L               | 50+46.50 | 8.00   | 620.17                       | 620.21   |
| 2M               | 50+56.50 | 8.00   | 620.21                       | 620.23   |
| 2N               | 50+66.50 | 8.00   | 620.24                       | 620.25   |
| 2P               | 50+76.50 | 8.00   | 620.28                       | 620.28   |
| CL Brg. Pier 2   | 50+82.50 | 8.00   | 620.30                       | 620.30   |
| 3A               | 50+92.50 | 8.00   | 620.34                       | 620.34   |
| 3B               | 51+02.50 | 8.00   | 620.38                       | 620.39   |
| 3C               | 51+12.50 | 8.00   | 620.42                       | 620.45   |
| 3D               | 51+22.50 | 8.00   | 620.46                       | 620.51   |
| 3E               | 51+32.50 | 8.00   | 620.50                       | 620.57   |
| 3F               | 51+42.50 | 8.00   | 620.55                       | 620.62   |
| 3G               | 51+52.50 | 8.00   | 620.60                       | 620.68   |
| 3H               | 51+62.50 | 8.00   | 620.65                       | 620.72   |
| 3J               | 51+72.50 | 8.00   | 620.70                       | 620.77   |
| 3K               | 51+82.50 | 8.00   | 620.75                       | 620.81   |
| 3L               | 51+92.50 | 8.00   | 620.80                       | 620.84   |
| 3M               | 52+02.50 | 8.00   | 620.86                       | 620.88   |
| 3N               | 52+12.50 | 8.00   | 620.92                       | 620.92   |
| 3P               | 52+22.50 | 8.00   | 620.97                       | 620.98   |
| CL Brg. Pier 3   | 52+28.50 | 8.00   | 621.01                       | 621.01   |
| 4A               | 52+38.50 | 8.00   | 621.07                       | 621.08   |
| 4B               | 52+48.50 | 8.00   | 621.13                       | 621.15   |
| 4C               | 52+58.50 | 8.00   | 621.20                       | 621.24   |
| 4D               | 52+68.50 | 8.00   | 621.26                       | 621.32   |
| 4E               | 52+78.50 | 8.00   | 621.33                       | 621.41   |
| 4F               | 52+88.50 | 8.00   | 621.40                       | 621.49   |
| 4G               | 52+98.50 | 8.00   | 621.47                       | 621.56   |
| 4H               | 53+08.50 | 8.00   | 621.54                       | 621.63   |
| 4J               | 53+18.50 | 8.00   | 621.61                       | 621.69   |
| 4K               | 53+28.50 | 8.00   | 621.69                       | 621.74   |
| 4L               | 53+38.50 | 8.00   | 621.76                       | 621.79   |
| CL Brg. Pier 4S  | 53+44.75 | 8.00   | 621.81                       | 621.81   |
| CL Pier 4        | 53+45.50 | 8.00   | 621.82                       | 621.82   |

**GIRDER 7**

| Location         | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|------------------|----------|--------|------------------------------|--|
| Bk. S. Abut.     | 48+17.71 | 16.00  | 619.71                       | 619.71   |
| CL Brg. S. Abut. | 48+20.25 | 16.00  | 619.71                       | 619.71   |
| 1A               | 48+30.25 | 16.00  | 619.71                       | 619.74   |
| 1B               | 48+40.25 | 16.00  | 619.71                       | 619.77   |
| 1C               | 48+50.25 | 16.00  | 619.71                       | 619.79   |
| 1D               | 48+60.25 | 16.00  | 619.71                       | 619.80   |
| 1E               | 48+70.25 | 16.00  | 619.71                       | 619.81   |
| 1F               | 48+80.25 | 16.00  | 619.72                       | 619.80   |
| 1G               | 48+90.25 | 16.00  | 619.73                       | 619.80   |
| 1H               | 49+00.25 | 16.00  | 619.73                       | 619.79   |
| 1J               | 49+10.25 | 16.00  | 619.74                       | 619.78   |
| 1K               | 49+20.25 | 16.00  | 619.76                       | 619.77   |
| 1L               | 49+30.25 | 16.00  | 619.77                       | 619.78   |
| CL Brg. Pier 1   | 49+36.50 | 16.00  | 619.78                       | 619.78   |
| 2A               | 49+46.50 | 16.00  | 619.79                       | 619.80   |
| 2B               | 49+56.50 | 16.00  | 619.81                       | 619.82   |
| 2C               | 49+66.50 | 16.00  | 619.83                       | 619.86   |
| 2D               | 49+76.50 | 16.00  | 619.85                       | 619.89   |
| 2E               | 49+86.50 | 16.00  | 619.87                       | 619.93   |
| 2F               | 49+96.50 | 16.00  | 619.89                       | 619.97   |
| 2G               | 50+06.50 | 16.00  | 619.92                       | 620.00   |
| 2H               | 50+16.50 | 16.00  | 619.94                       | 620.02   |
| 2J               | 50+26.50 | 16.00  | 619.97                       | 620.04   |
| 2K               | 50+36.50 | 16.00  | 620.00                       | 620.06   |
| 2L               | 50+46.50 | 16.00  | 620.03                       | 620.07   |
| 2M               | 50+56.50 | 16.00  | 620.07                       | 620.09   |
| 2N               | 50+66.50 | 16.00  | 620.10                       | 620.11   |
| 2P               | 50+76.50 | 16.00  | 620.14                       | 620.14   |
| CL Brg. Pier 2   | 50+82.50 | 16.00  | 620.16                       | 620.16   |
| 3A               | 50+92.50 | 16.00  | 620.20                       | 620.20   |
| 3B               | 51+02.50 | 16.00  | 620.24                       | 620.25   |
| 3C               | 51+12.50 | 16.00  | 620.28                       | 620.31   |
| 3D               | 51+22.50 | 16.00  | 620.32                       | 620.37   |
| 3E               | 51+32.50 | 16.00  | 620.36                       | 620.43   |
| 3F               | 51+42.50 | 16.00  | 620.41                       | 620.48   |
| 3G               | 51+52.50 | 16.00  | 620.46                       | 620.54   |
| 3H               | 51+62.50 | 16.00  | 620.51                       | 620.58   |
| 3J               | 51+72.50 | 16.00  | 620.56                       | 620.63   |
| 3K               | 51+82.50 | 16.00  | 620.61                       | 620.67   |
| 3L               | 51+92.50 | 16.00  | 620.66                       | 620.70   |
| 3M               | 52+02.50 | 16.00  | 620.72                       | 620.74   |
| 3N               | 52+12.50 | 16.00  | 620.78                       | 620.78   |
| 3P               | 52+22.50 | 16.00  | 620.83                       | 620.84   |
| CL Brg. Pier 3   | 52+28.50 | 16.00  | 620.87                       | 620.87   |
| 4A               | 52+38.50 | 16.00  | 620.93                       | 620.94   |
| 4B               | 52+48.50 | 16.00  | 620.99                       | 621.01   |
| 4C               | 52+58.50 | 16.00  | 621.06                       | 621.10   |
| 4D               | 52+68.50 | 16.00  | 621.12                       | 621.18   |
| 4E               | 52+78.50 | 16.00  | 621.19                       | 621.27   |
| 4F               | 52+88.50 | 16.00  | 621.26                       | 621.35   |
| 4G               | 52+98.50 | 16.00  | 621.33                       | 621.42   |
| 4H               | 53+08.50 | 16.00  | 621.40                       | 621.49   |
| 4J               | 53+18.50 | 16.00  | 621.47                       | 621.55   |
| 4K               | 53+28.50 | 16.00  | 621.55                       | 621.60   |
| 4L               | 53+38.50 | 16.00  | 621.62                       | 621.65   |
| CL Brg. Pier 4S  | 53+44.75 | 16.00  | 621.67                       | 621.67   |
| CL Pier 4        | 53+45.50 | 16.00  | 621.68                       | 621.68   |

**NOTE:**

Offset measured from SB IL-171 & P.G.L.



Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

|              |                                  |            |     |           |  |
|--------------|----------------------------------|------------|-----|-----------|--|
| FILE NAME =  | 0160483.60J16.009.TOS.Elev.3.dgn | DESIGNED - | DTS | REVISED - |  |
| USER NAME =  | jsurber                          | CHECKED -  | AJK | REVISED - |  |
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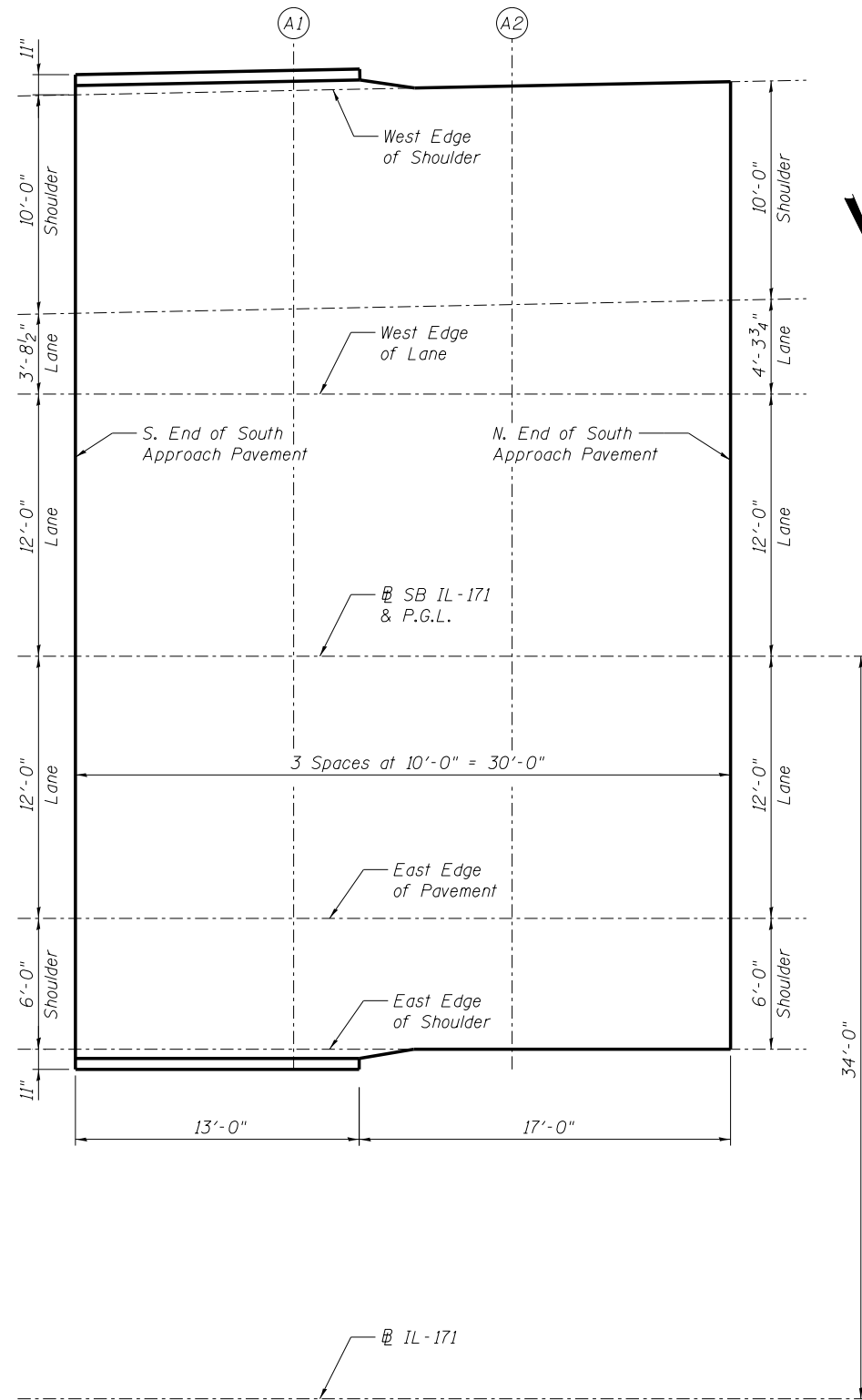
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS (3 OF 3)  
STRUCTURE NO. 016-0483**

SHEET NO. SE9 OF SE46 SHEETS

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821          | 493       |
| CONTRACT NO.              |             |        | 60J16        |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

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**PLAN**

**WEST EDGE OF SHOULDER**

| Location                          | Station  | Offset | Theoretical Grade Elevations |
|-----------------------------------|----------|--------|------------------------------|
| S. End of South Approach Pavement | 47+88.21 | -25.71 | 619.54                       |
| A1                                | 47+98.21 | -25.91 | 619.52                       |
| A2                                | 48+08.21 | -26.10 | 619.51                       |
| N. End of South Approach Pavement | 48+18.21 | -26.31 | 619.51                       |

**WEST EDGE OF LANE**

| Location                          | Station  | Offset | Theoretical Grade Elevations |
|-----------------------------------|----------|--------|------------------------------|
| S. End of South Approach Pavement | 47+88.21 | -12.00 | 619.81                       |
| A1                                | 47+98.21 | -12.00 | 619.80                       |
| A2                                | 48+08.21 | -12.00 | 619.80                       |
| N. End of South Approach Pavement | 48+18.21 | -12.00 | 619.79                       |

**@ SB IL-171 & P.G.L.**

| Location                          | Station  | Offset | Theoretical Grade Elevations |
|-----------------------------------|----------|--------|------------------------------|
| S. End of South Approach Pavement | 47+88.21 | 0.00   | 619.99                       |
| A1                                | 47+98.21 | 0.00   | 619.98                       |
| A2                                | 48+08.21 | 0.00   | 619.98                       |
| N. End of South Approach Pavement | 48+18.21 | 0.00   | 619.97                       |

**EAST EDGE OF PAVEMENT**

| Location                          | Station  | Offset | Theoretical Grade Elevations |
|-----------------------------------|----------|--------|------------------------------|
| S. End of South Approach Pavement | 47+88.21 | 12.00  | 619.81                       |
| A1                                | 47+98.21 | 12.00  | 619.80                       |
| A2                                | 48+08.21 | 12.00  | 619.80                       |
| N. End of South Approach Pavement | 48+18.21 | 12.00  | 619.79                       |

**EAST EDGE OF SHOULDER**

| Location                          | Station  | Offset | Theoretical Grade Elevations |
|-----------------------------------|----------|--------|------------------------------|
| S. End of South Approach Pavement | 47+88.21 | 18.00  | 619.69                       |
| A1                                | 47+98.21 | 18.00  | 619.68                       |
| A2                                | 48+08.21 | 18.00  | 619.68                       |
| N. End of South Approach Pavement | 48+18.21 | 18.00  | 619.67                       |

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Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

|   |                        |                |           |
|---|------------------------|----------------|-----------|
| FILE NAME =                             | USER NAME = jsurber    | DESIGNED - JLS | REVISED - |
| 0160483.60J16.010.TOS.Approach.Elev.dgn |                        | CHECKED - AJK  | REVISED - |
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|   | PLOT DATE = 12/20/2013 | CHECKED - AJK  | REVISED - |

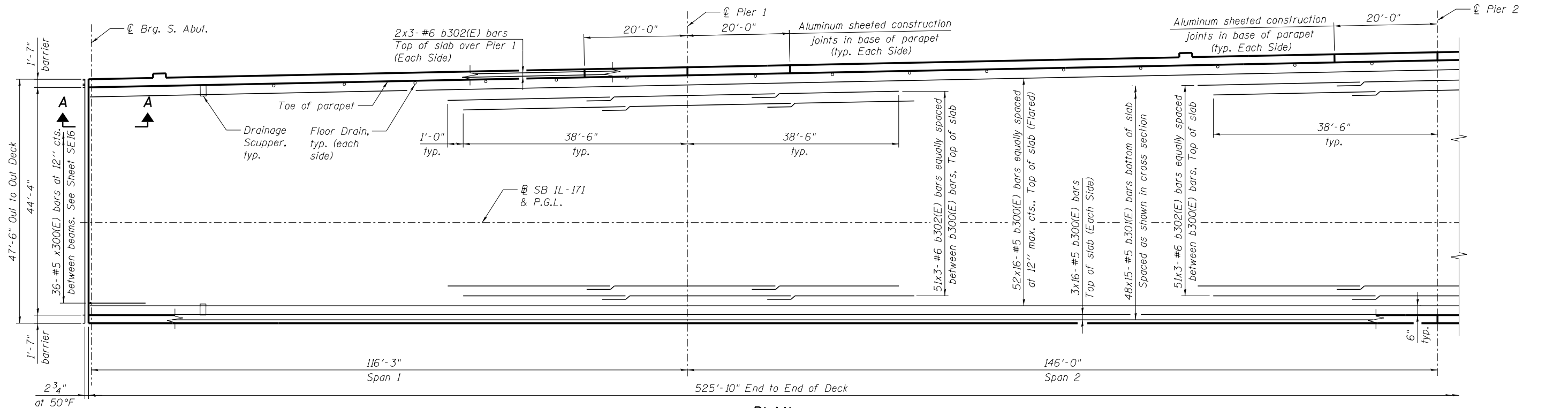
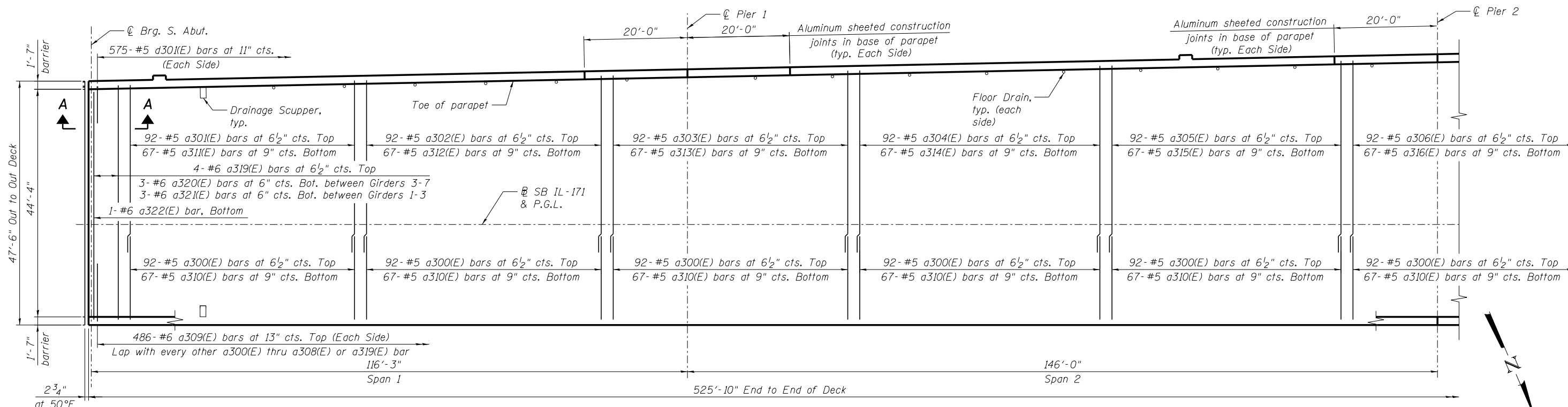
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TOP OF SOUTH APPROACH SLAB ELEVATIONS  
STRUCTURE NO. 016-0483**

SHEET NO. SE10 OF SE46 SHEETS

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 494       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

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**MINIMUM BAR LAP**  
(Slab)

#4 bar = 2'-7"  
#5 bar = 3'-3"  
#6 bar = 3'-10"

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205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10093

|                                   |                     |                |           |
|-----------------------------------|---------------------|----------------|-----------|
| FILE NAME =                       | USER NAME = jsurber | DESIGNED - JLS | REVISED - |
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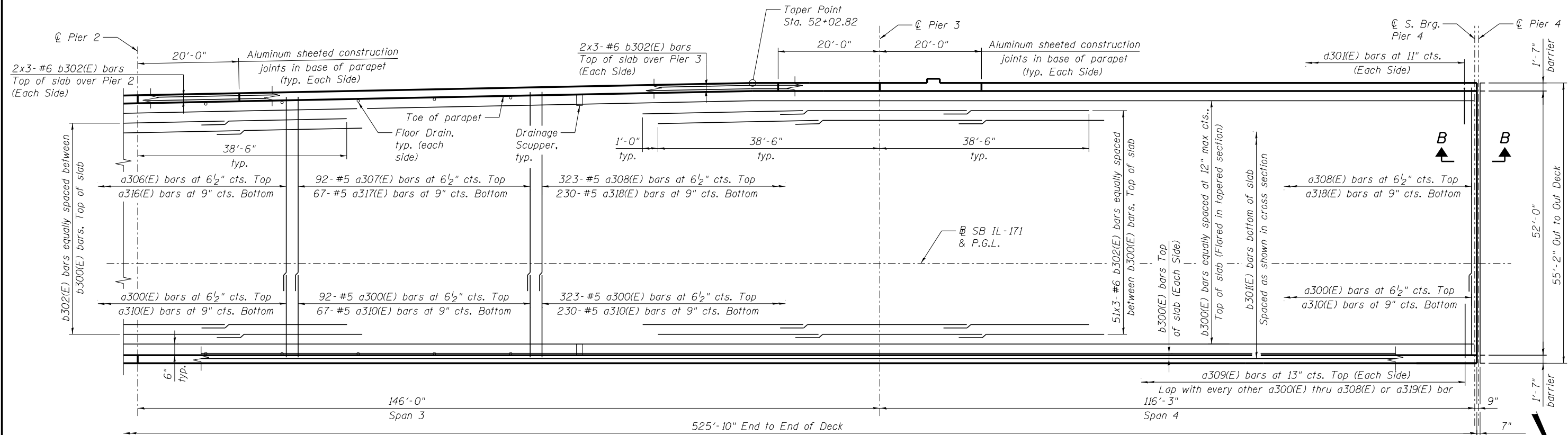
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**DECK REINFORCEMENT PLAN (1 OF 2)**  
**STRUCTURE NO. 016-0483**

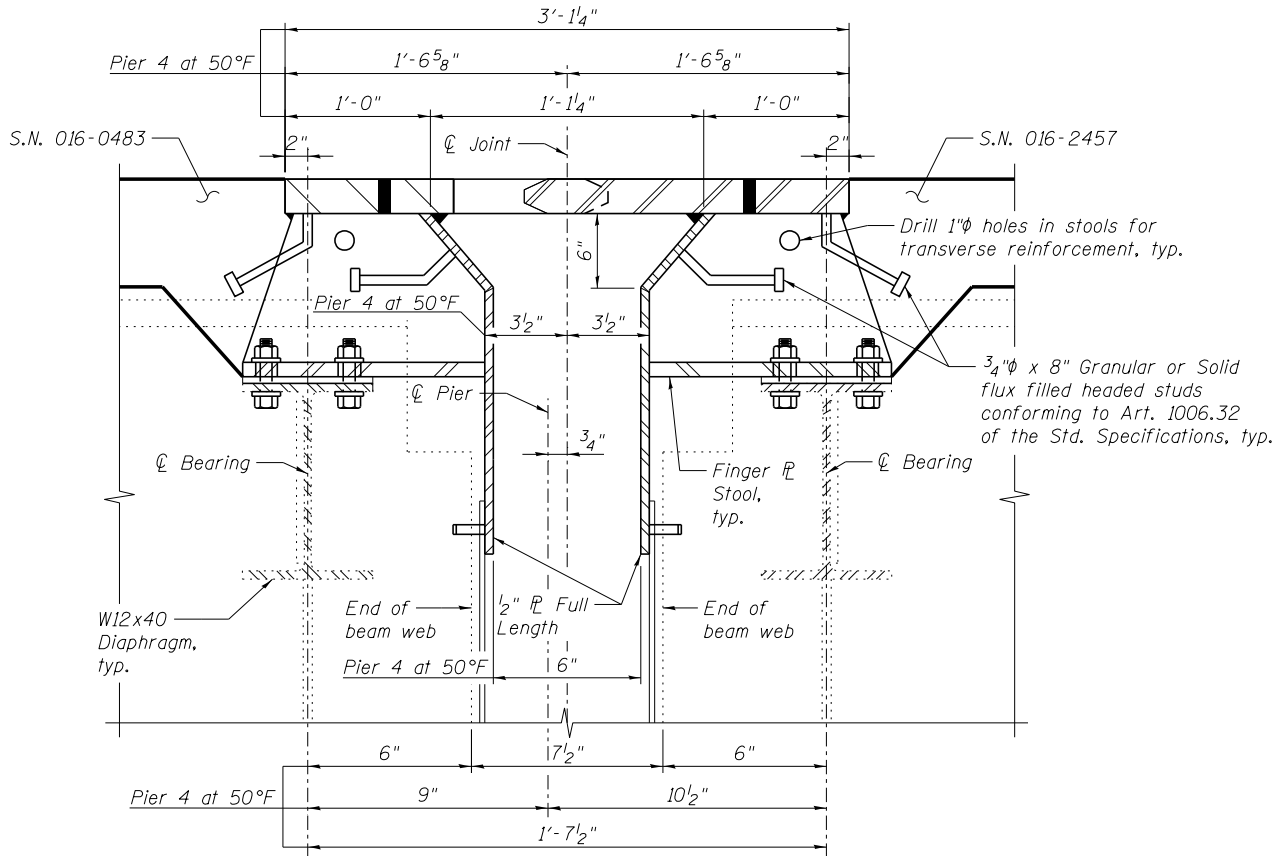
SHEET NO. SE11 OF SE46 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
| 372                | 2013-038B-R | COOK   | 821                       | 495       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

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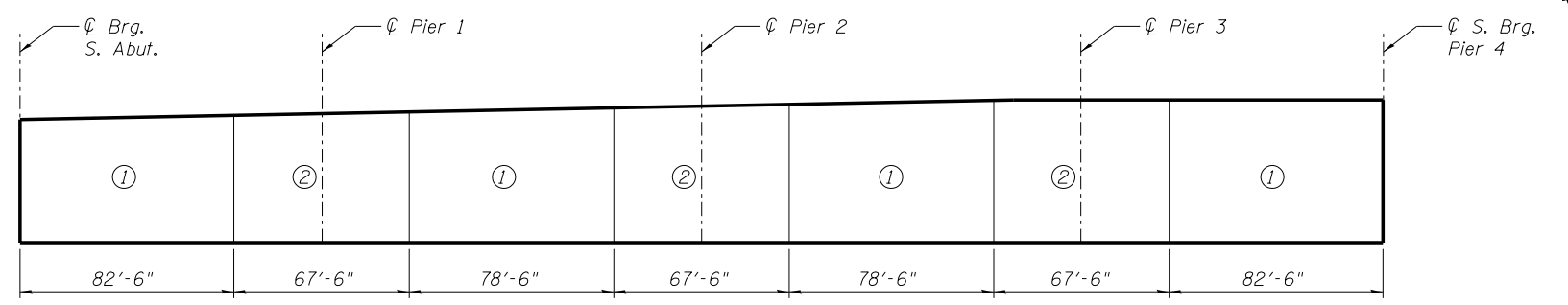


**PLAN**



**SECTION B-B**

(All dimensions shown along @ IL-171)  
 (See SN 016-2457 plans for additional finger plate joint details. Cost of finger plate joint included with SN 016-2457.)



**DECK POUR SEQUENCE**

**MINIMUM BAR LAP**

- (Slab)
- #4 bar = 2'-7"
  - #5 bar = 3'-3"
  - #6 bar = 3'-10"

**NOTES:**

1. When the deck pour is stopped for the day at one or more of the transverse bonded construction joints in the deck pouring sequence as shown, the next pour shall not be made until both of the following are met:
  - A) At least 72 hours shall have elapsed from the end of the previous pour.
  - B) The concrete strength shall have attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.
2. The Contractor is alerted that camber and dead load deflection values were developed based on the deck pouring sequence shown. Any deviation from this pouring sequence will result in changes to camber and deck elevations and will require a submittal to the Engineer for review and approval.
3. See Sheet SE16 for Superstructure Details and Bill of Material.
4. See Sheet SE13 for Deck Cross Section.
5. See Sheet SE1 for locations of Drainage Scuppers, Floor Drains and Light Poles.
6. See Sheet SE16 for Section A-A.
7. Dimensions are based on a Rolled Rail Strip Seal Joint at the S. Abutment. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet SE20.

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

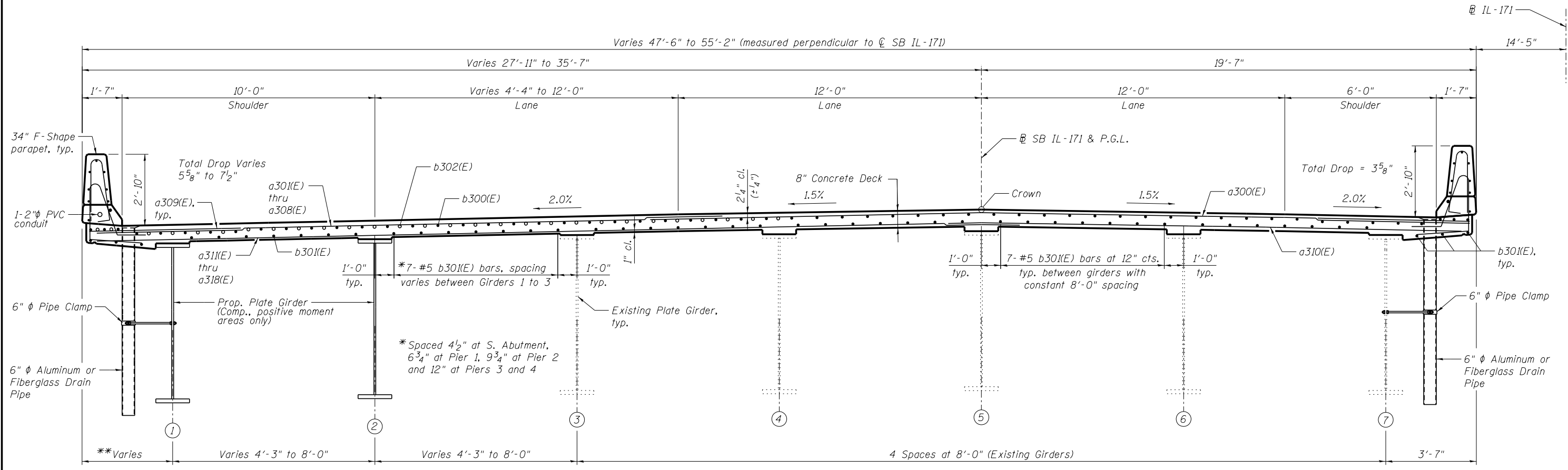
**DECK REINFORCEMENT PLAN (2 OF 2)**  
**STRUCTURE NO. 016-0483**

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821          | 496       |
| CONTRACT NO. 60J16        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

SHEET NO. SE12 OF SE46 SHEETS

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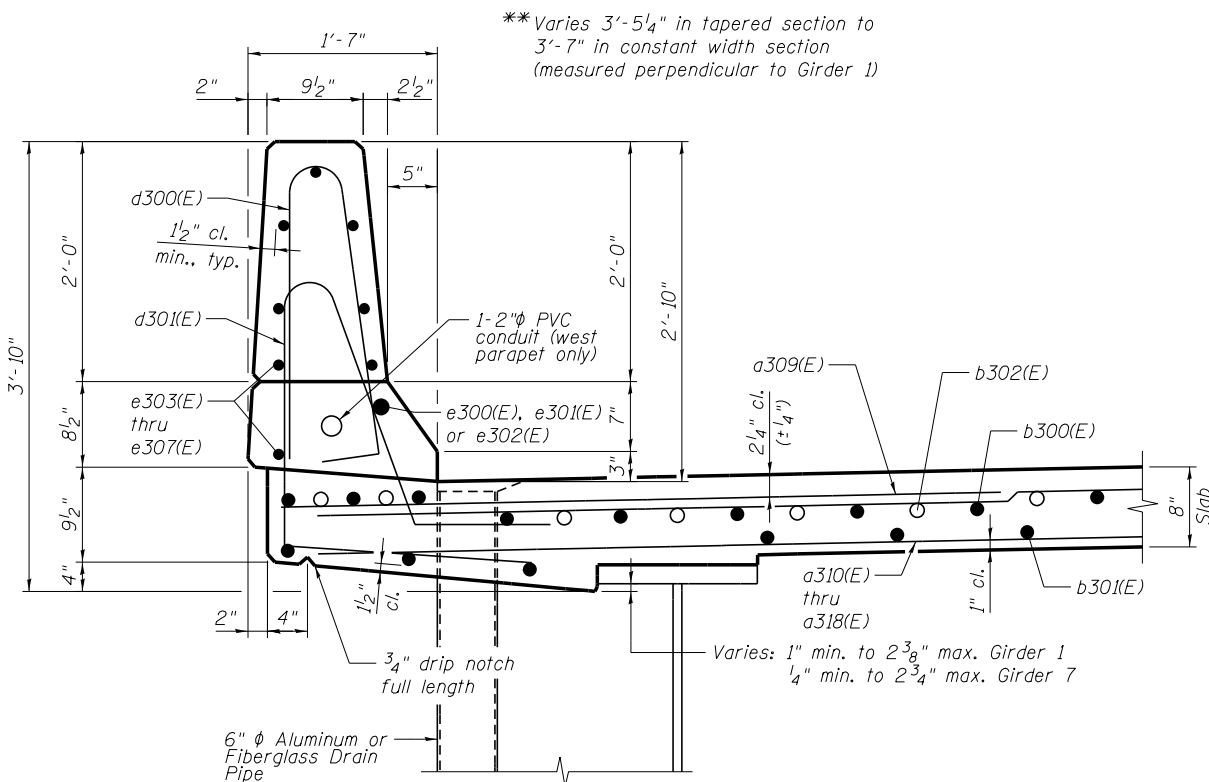


NEAR PIER

NEAR MIDSPAN

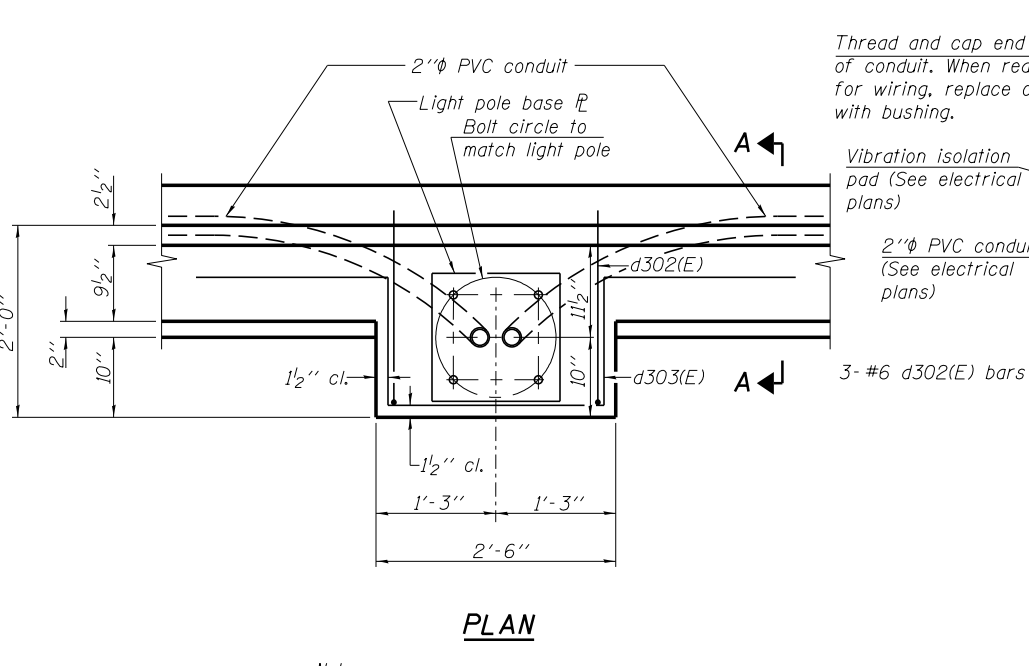
**CROSS SECTION**

(Looking Upstation/North)  
(showing Floor Drains)

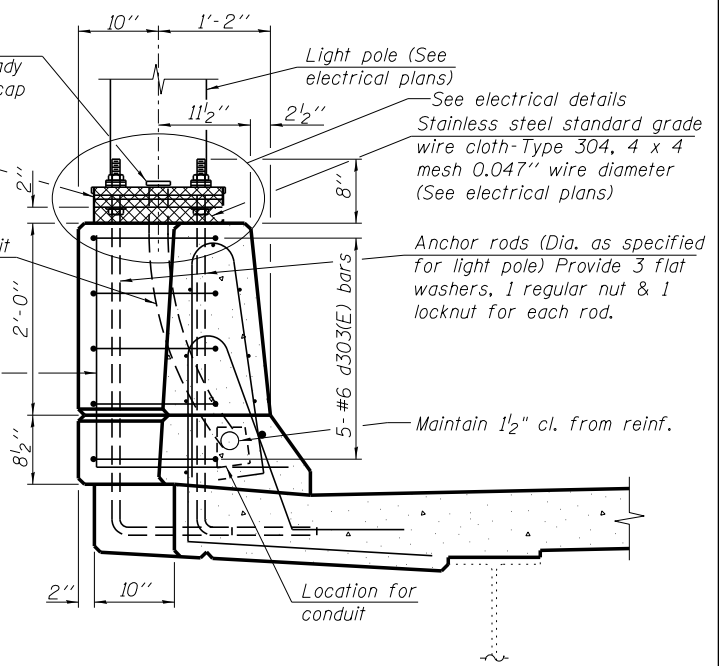


**SECTION THRU PARAPET**

(showing Floor Drain)



**PLAN**



**SECTION A-A**

Note:  
Cost of anchor rods is included with Concrete Superstructure.

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|                                    |                        |                |           |
|------------------------------------|------------------------|----------------|-----------|
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|                                    | PLOT DATE = 12/20/2013 | DRAWN - KMS    | REVISED - |
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

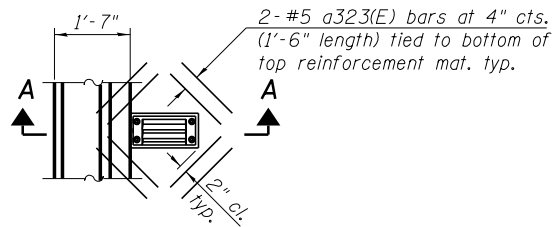
**DECK CROSS SECTION AND DETAILS**  
**STRUCTURE NO. 016-0483**

|                    |             |        |              |           |
|--------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821          | 497       |
| CONTRACT NO. 60J16 |             |        |              |           |

SHEET NO. SE13 OF SE46 SHEETS

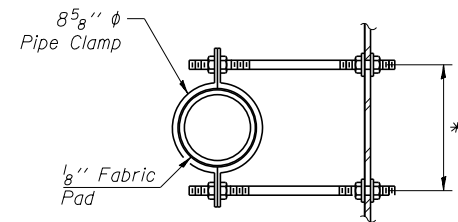
ILLINOIS FED. AID PROJECT

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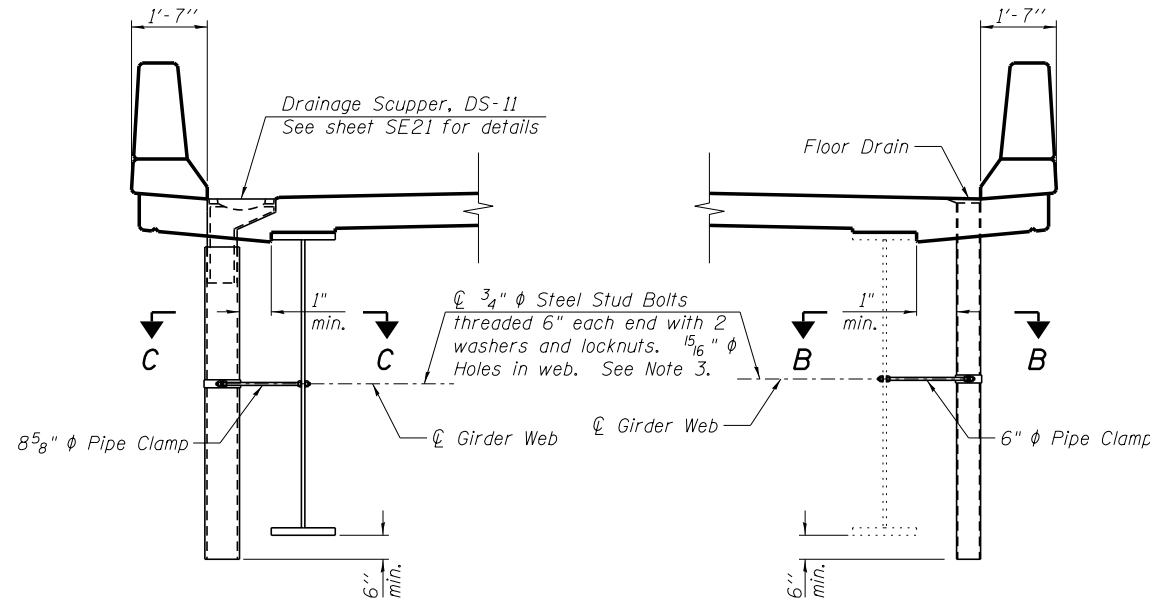
**PLAN**

Note:  
Cut longitudinal reinforcement to clear drainage scuppers.



**SECTION C-C**

\* Dimension as required by Pipe Clamp

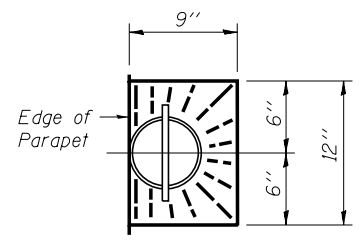


**SECTION A-A**

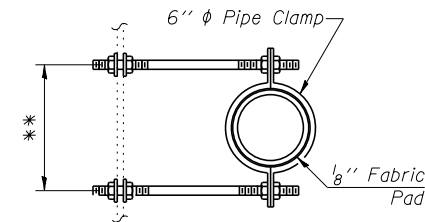
(showing proposed girder)

**SECTION AT PARAPET WITH FLOOR DRAIN**

(showing existing girder)

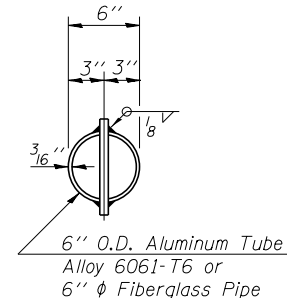


**TOP PLAN**



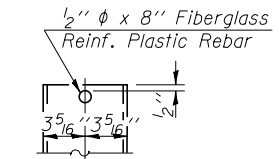
**SECTION B-B**

\*\* Dimension as required by Pipe Clamp

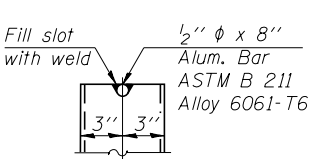


**TOP PLAN**

(Showing Aluminum Tube)



**FIBERGLASS PIPE**



**ALUMINUM TUBE**

**NOTES:**

- Cleaning and painting of the exterior surfaces of the floor drains and drainage scuppers shall be performed under a separate painting contract.
- Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum. Galvanize clamping device according to AASHTO M232. Cost of clamping device and galvanizing included with Floor Drains.
- Holes shall be drilled in field for existing girder and may be either field drilled or shop drilled for proposed girder.

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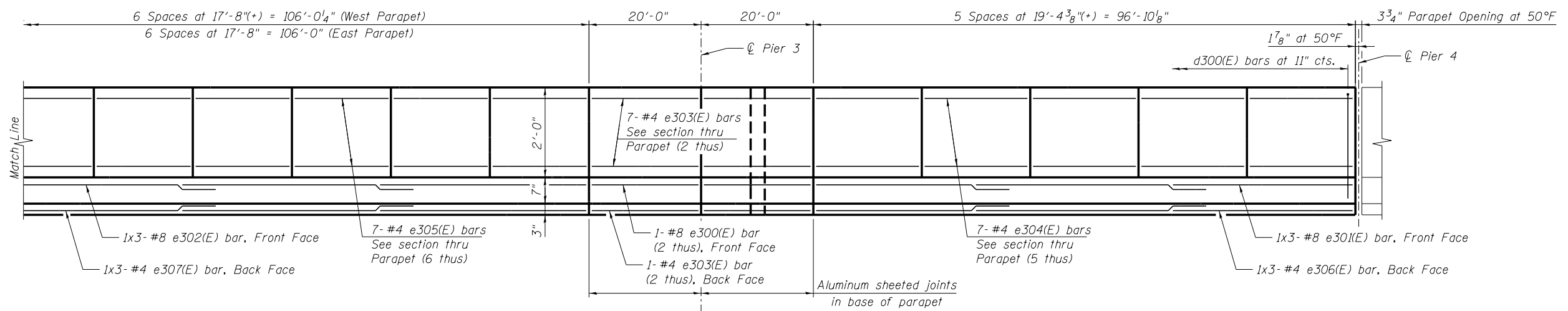
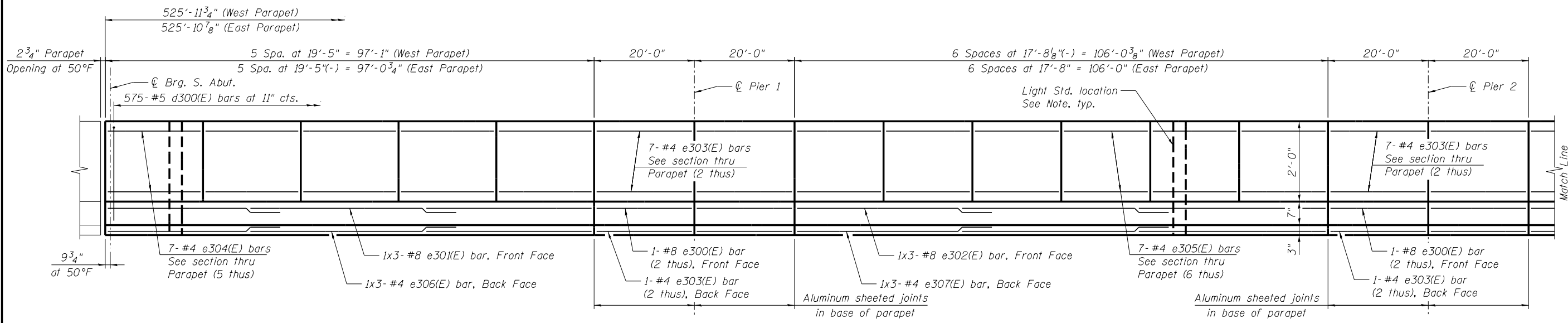
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|  |                        | CHECKED - MFH  | REVISED - |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**DECK DRAIN DETAILS  
STRUCTURE NO. 016-0483**

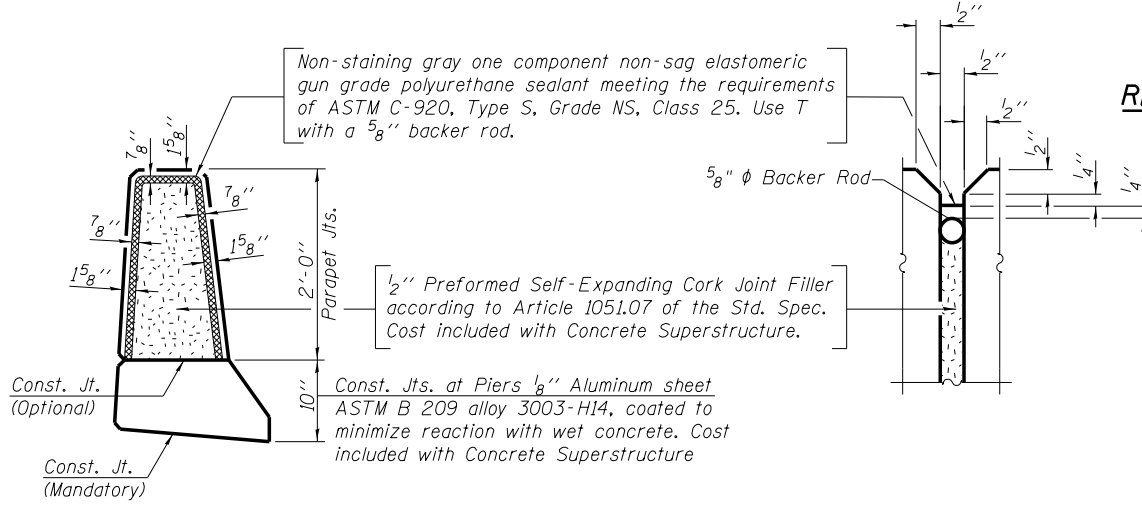
SHEET NO. SE14 OF SE46 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
| 372                | 2013-038B-R | COOK   | 821                       | 498       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |



**INSIDE ELEVATION OF WEST PARAPET  
REFLECTED INSIDE ELEVATION OF EAST PARAPET**

**MINIMUM BAR LAP**  
(Parapet)  
#4 bar = 2'-0"  
#8 bar = 5'-2"



**PARAPET JOINT DETAILS**  
(For conventional concrete placement)

**NOTE:**  
See Sheet SE1 for Light Pole locations (W. Parapet only).

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|                                       |                     |                |           |
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|                                       |                     | CHECKED - MFH  | REVISED - |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PARAPET DETAILS  
STRUCTURE NO. 016-0483**

SHEET NO. SE15 OF SE46 SHEETS

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 372                | 2013-038B-R | COOK   | 821                       | 499       |
| CONTRACT NO. 60J16 |             |        | ILLINOIS FED. AID PROJECT |           |

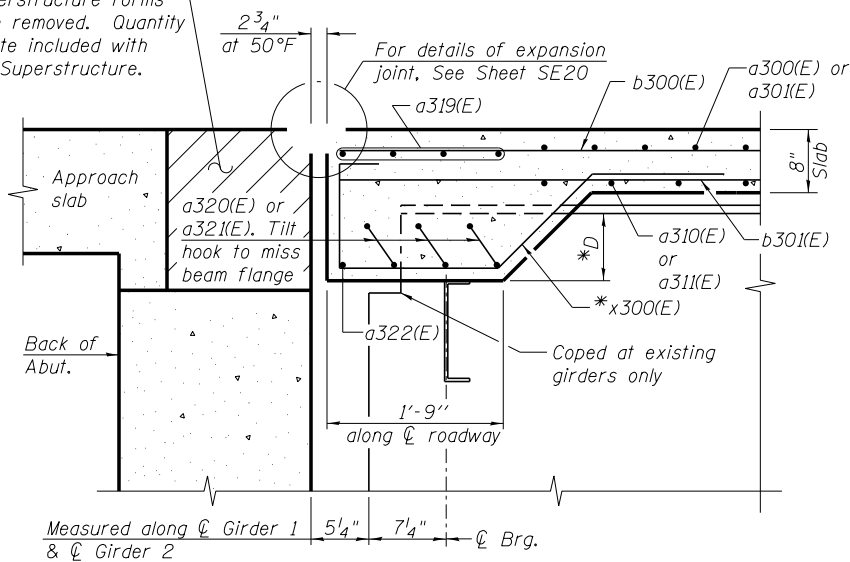
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**SUPERSTRUCTURE  
BILL OF MATERIAL**

| Bar                                 | No.  | Size    | Length  | Shape |
|-------------------------------------|------|---------|---------|-------|
| a300(E)                             | 967  | #5      | 33'-0"  | —     |
| a301(E)                             | 92   | #5      | 18'-3"  | —     |
| a302(E)                             | 92   | #5      | 19'-3"  | —     |
| a303(E)                             | 92   | #5      | 20'-3"  | —     |
| a304(E)                             | 92   | #5      | 21'-3"  | —     |
| a305(E)                             | 92   | #5      | 22'-3"  | —     |
| a306(E)                             | 92   | #5      | 23'-3"  | —     |
| a307(E)                             | 92   | #5      | 24'-3"  | —     |
| a308(E)                             | 323  | #5      | 25'-3"  | —     |
| a309(E)                             | 972  | #6      | 6'-6"   | —     |
| a310(E)                             | 699  | #5      | 21'-0"  | —     |
| a311(E)                             | 67   | #5      | 30'-3"  | —     |
| a312(E)                             | 67   | #5      | 31'-3"  | —     |
| a313(E)                             | 67   | #5      | 32'-3"  | —     |
| a314(E)                             | 67   | #5      | 33'-3"  | —     |
| a315(E)                             | 67   | #5      | 34'-3"  | —     |
| a316(E)                             | 67   | #5      | 35'-3"  | —     |
| a317(E)                             | 67   | #5      | 36'-3"  | —     |
| a318(E)                             | 230  | #5      | 37'-3"  | —     |
| a319(E)                             | 4    | #6      | 46'-9"  | —     |
| a320(E)                             | 12   | #6      | 9'-1"   | —     |
| a321(E)                             | 6    | #6      | 5'-4"   | —     |
| a322(E)                             | 1    | #6      | 40'-0"  | —     |
| a323(E)                             | 32   | #5      | 1'-6"   | —     |
| b300(E)                             | 928  | #5      | 36'-0"  | —     |
| b301(E)                             | 720  | #5      | 38'-2"  | —     |
| b302(E)                             | 495  | #6      | 28'-8"  | —     |
| d300(E)                             | 1150 | #5      | 5'-7"   | —     |
| d301(E)                             | 1150 | #5      | 8'-0"   | —     |
| d302(E)                             | 9    | #6      | 4'-5"   | —     |
| d303(E)                             | 15   | #6      | 8'-11"  | —     |
| e300(E)                             | 12   | #8      | 19'-8"  | —     |
| e301(E)                             | 12   | #8      | 35'-9"  | —     |
| e302(E)                             | 12   | #8      | 38'-9"  | —     |
| e303(E)                             | 96   | #4      | 19'-8"  | —     |
| e304(E)                             | 140  | #4      | 19'-1"  | —     |
| e305(E)                             | 168  | #4      | 17'-4"  | —     |
| e306(E)                             | 12   | #4      | 33'-8"  | —     |
| e307(E)                             | 12   | #4      | 36'-8"  | —     |
| x300(E)                             | 36   | #5      | 6'-5"   | —     |
| Concrete Superstructure             |      | Cu. Yd. | 861.9   |       |
| Bridge Deck Grooving                |      | Sq. Yd. | 2,758   |       |
| Protective Coat                     |      | Sq. Yd. | 3,315   |       |
| Reinforcement Bars,<br>Epoxy Coated |      | Pound   | 216,860 |       |

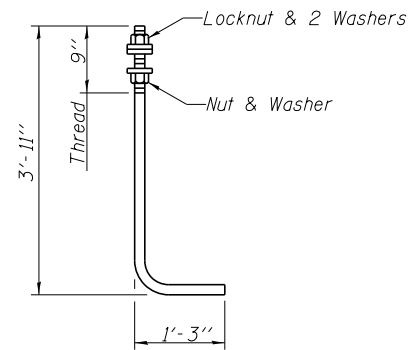
Bars indicated thus 52x16- #5 etc. indicates 52 lines of bars with 16 lengths per line.

Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure.



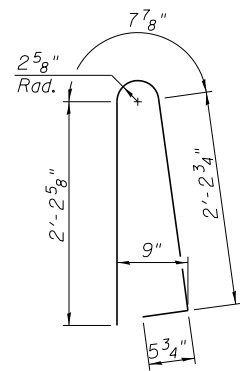
**SECTION A-A**

\*(7 thus) x300(E) bars in each 8'-0" wide bay, D Varies 2 1/4" to 4 3/8"  
(4 thus) x300(E) bars in each 4'-3" wide bay, D=5 1/2"

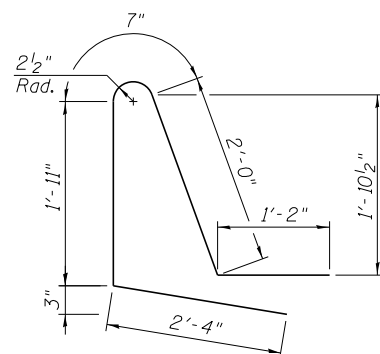


**ANCHOR ROD**

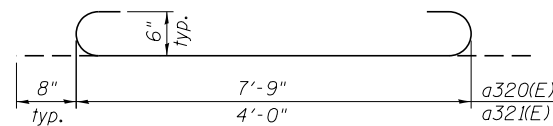
Diameter as specified for light poles.  
(ASTM F 1554 Grade 105)  
Full length hot dipped galvanized.



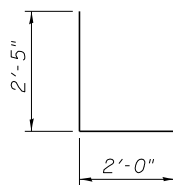
**BAR d300(E)**



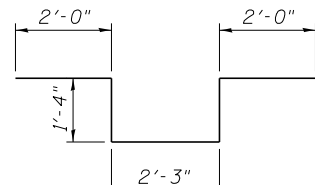
**BAR d301(E)**



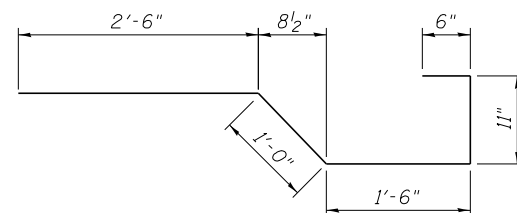
**BARS a320(E) AND a321(E)**



**BAR d302(E)**



**BAR d303(E)**



**BAR x300(E)**

|  |                     |                |           |
|--|---------------------|----------------|-----------|
| FILE NAME =                            | USER NAME = jsurber | DESIGNED - JLS | REVISED - |
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|  |                     | CHECKED - MFH  | REVISED - |
|  |                     |                |           |

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 372                       | 2013-038B-R | COOK   | 821          | 500       |
| CONTRACT NO.              |             |        | 60J16        |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |