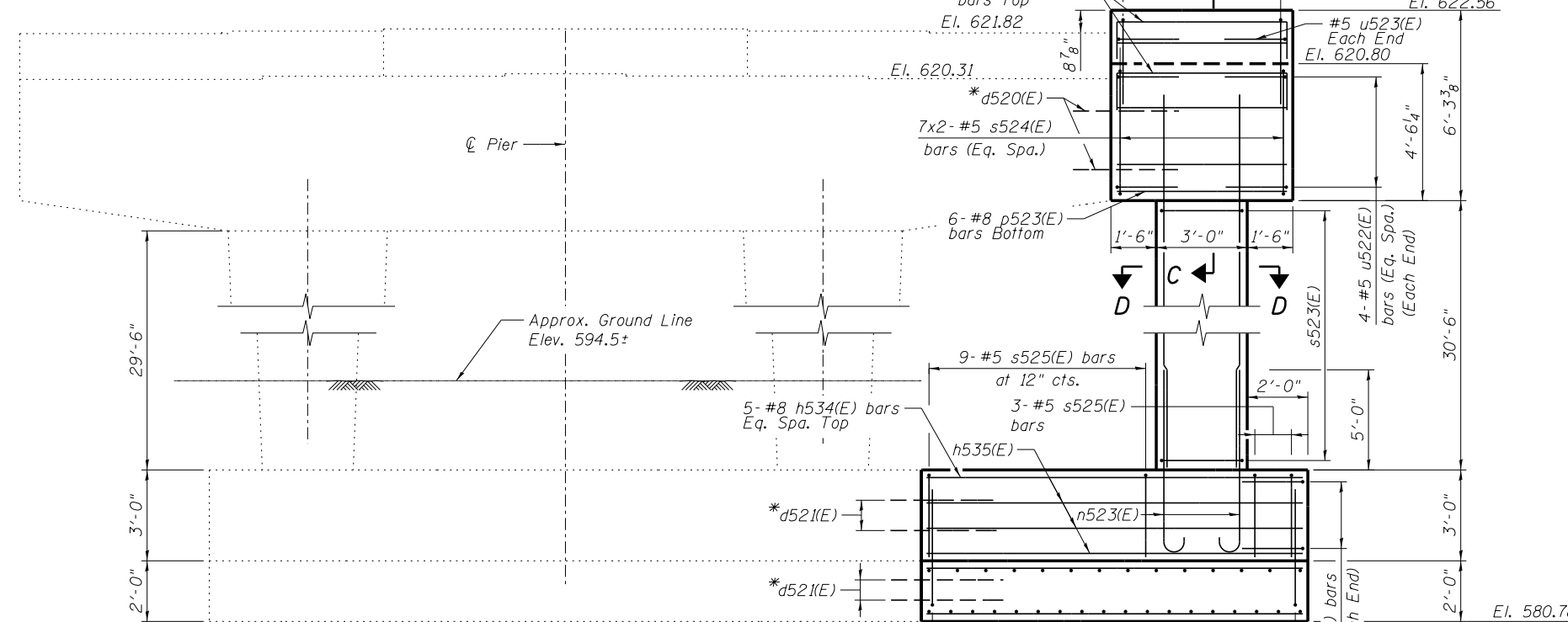
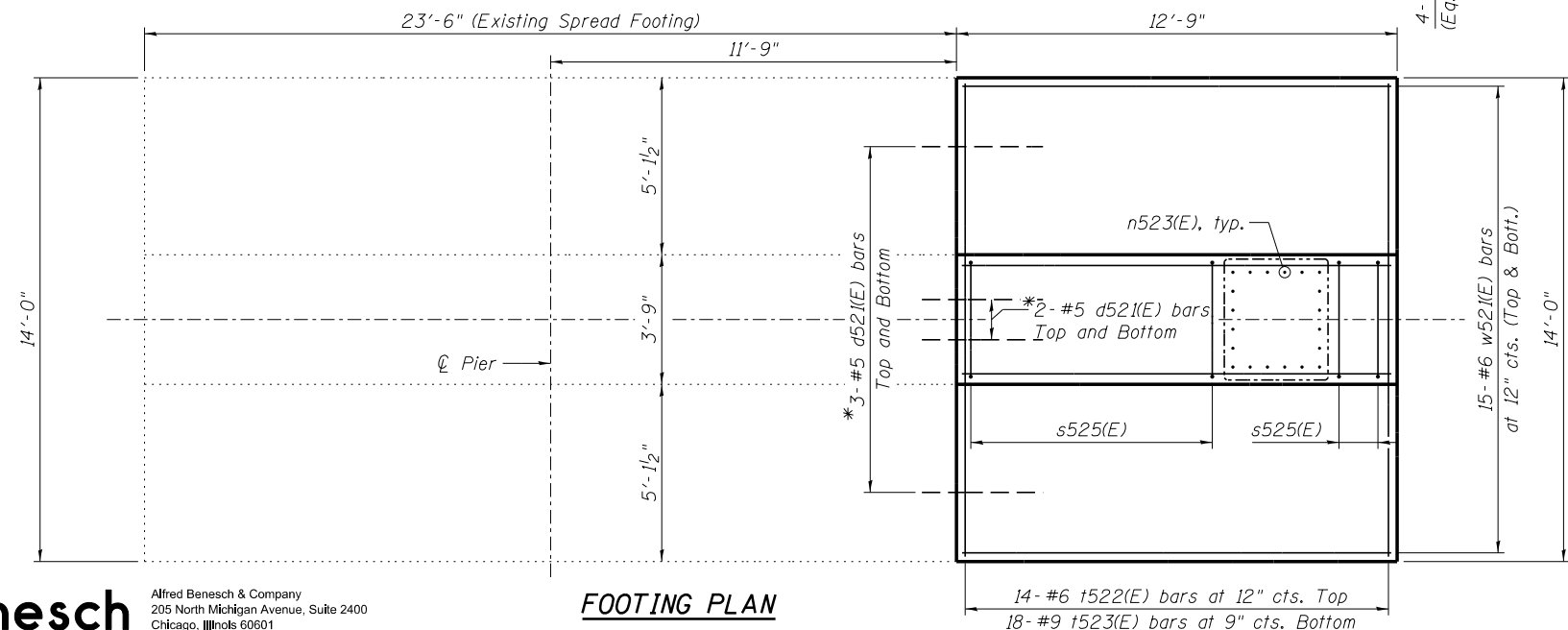


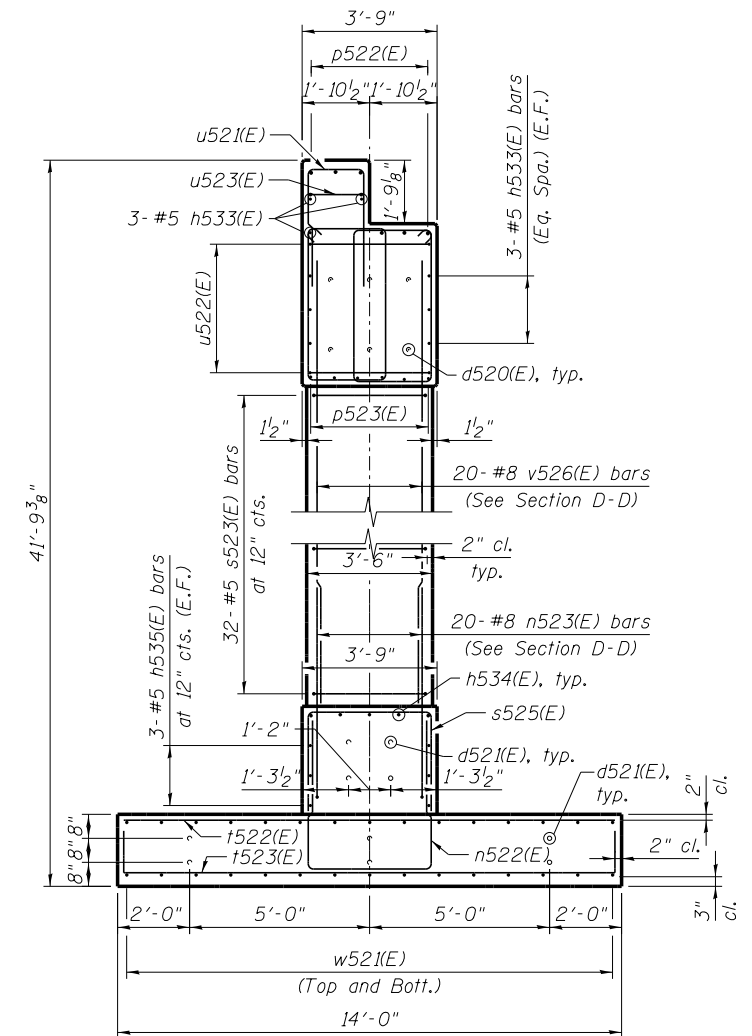
**TOP PLAN**



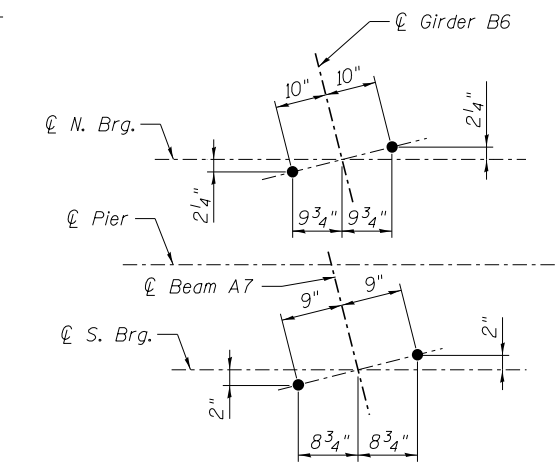
**ELEVATION**  
(Looking Upstation)



**FOOTING PLAN**



**END VIEW**



**ANCHOR BOLT DETAIL**

- NOTES:**
1. See Sheet SF76 for Sections C-C and D-D.
  2. See Sheet SF76 for Bar Bends and Bill of Material.
  3. Space reinforcement in cap to miss anchor bolts.
  4. All exposed surface areas of the pier widening shall be treated with Concrete Sealer.

\* Drill and grout according to Article 584 of the Standard Specifications with a minimum embedment of 6" (#5 bars) or 8" (#7 bars). Cost included with Concrete Structures.

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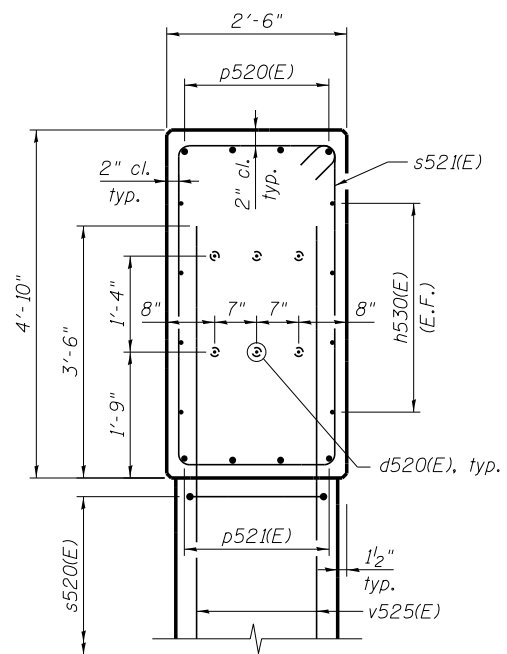
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|  |                     | DRAWN - RMG        | REVISIONS - |
|  |                     | CHECKED - JLS      | REVISIONS - |
|  |                     |                    |             |

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

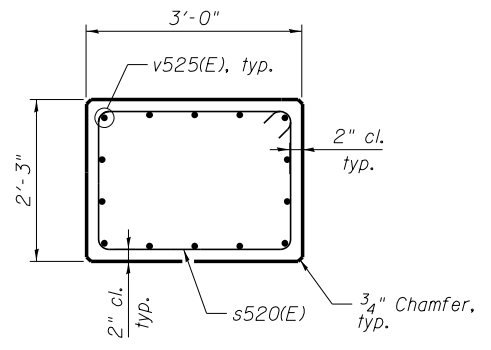
**PIER 13 WIDENING**  
**STRUCTURE NO. 016-0487**

SHEET NO. SF75 OF SF96 SHEETS

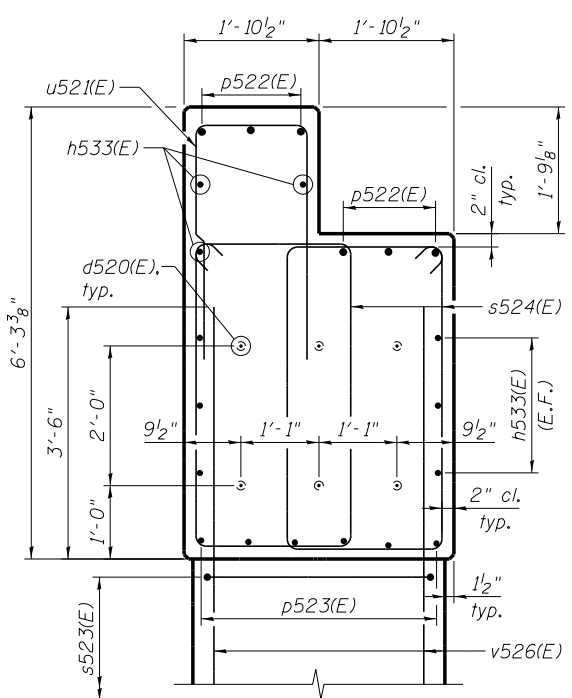
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| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 373                       | 2013-037B-R | COOK   | 787          | 601       |
| CONTRACT NO. 60W75        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |



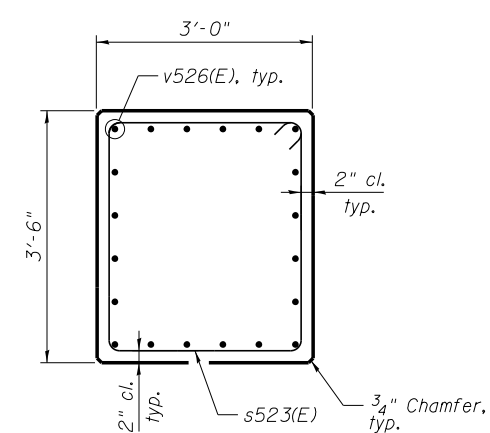
**SECTION A-A**



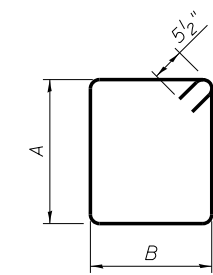
**SECTION B-B**



**SECTION C-C**



**SECTION D-D**



**BARS s520(E), s521(E), s523(E) & s524(E)**

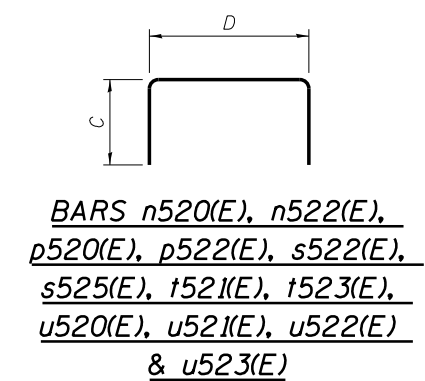
| Bar     | A     | B      |
|---------|-------|--------|
| s520(E) | 2'-8" | 1'-11" |
| s521(E) | 4'-6" | 2'-2"  |
| s523(E) | 3'-2" | 2'-8"  |
| s524(E) | 4'-2" | 2'-2"  |

**PIER 12 BILL OF MATERIAL**

| Bar                              | No. | Size    | Length | Shape |
|----------------------------------|-----|---------|--------|-------|
| d520(E)                          | 6   | #7      | 4'-0"  | —     |
| d521(E)                          | 10  | #5      | 3'-6"  | —     |
| h530(E)                          | 8   | #5      | 6'-8"  | —     |
| h531(E)                          | 4   | #8      | 12'-9" | —     |
| h532(E)                          | 8   | #5      | 12'-9" | —     |
| n520(E)                          | 14  | #6      | 13'-2" | ┌     |
| n521(E)                          | 14  | #8      | 9'-8"  | └     |
| p520(E)                          | 4   | #8      | 9'-4"  | ┌     |
| p521(E)                          | 4   | #8      | 6'-8"  | —     |
| s520(E)                          | 29  | #5      | 10'-1" | ┌     |
| s521(E)                          | 8   | #5      | 14'-3" | ┌     |
| s522(E)                          | 12  | #5      | 9'-10" | ┌     |
| t520(E)                          | 14  | #6      | 9'-2"  | —     |
| t521(E)                          | 18  | #8      | 12'-4" | ┌     |
| u520(E)                          | 20  | #5      | 6'-2"  | ┌     |
| v525(E)                          | 14  | #8      | 31'-6" | —     |
| w520(E)                          | 20  | #6      | 12'-9" | —     |
| Structure Excavation             |     | Cu. Yd. | 138    |       |
| Concrete Structures              |     | Cu. Yd. | 24.3   |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 4,220  |       |

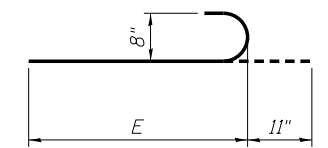
**PIER 13 BILL OF MATERIAL**

| Bar                              | No. | Size    | Length  | Shape |
|----------------------------------|-----|---------|---------|-------|
| d520(E)                          | 6   | #7      | 4'-0"   | —     |
| d521(E)                          | 10  | #5      | 3'-6"   | —     |
| h533(E)                          | 9   | #5      | 5'-8"   | —     |
| h534(E)                          | 5   | #8      | 12'-5"  | —     |
| h535(E)                          | 6   | #5      | 12'-5"  | —     |
| n522(E)                          | 14  | #6      | 12'-5"  | ┌     |
| n523(E)                          | 20  | #8      | 8'-8"   | └     |
| p522(E)                          | 6   | #8      | 8'-4"   | ┌     |
| p523(E)                          | 6   | #8      | 5'-8"   | —     |
| s523(E)                          | 32  | #5      | 12'-7"  | ┌     |
| s524(E)                          | 14  | #5      | 13'-7"  | ┌     |
| s525(E)                          | 12  | #5      | 9'-1"   | ┌     |
| t522(E)                          | 14  | #6      | 13'-8"  | —     |
| t523(E)                          | 18  | #9      | 16'-10" | ┌     |
| u521(E)                          | 7   | #5      | 8'-4"   | ┌     |
| u522(E)                          | 16  | #5      | 7'-5"   | ┌     |
| u523(E)                          | 2   | #5      | 5'-6"   | ┌     |
| v526(E)                          | 20  | #8      | 34'-0"  | —     |
| w521(E)                          | 30  | #6      | 12'-5"  | —     |
| Structure Excavation             |     | Cu. Yd. | 149     |       |
| Concrete Structures              |     | Cu. Yd. | 34.9    |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 5,960   |       |
| Concrete Sealer                  |     | Sq. Ft. | 614     |       |



**BARS n520(E), n522(E), p520(E), p522(E), s522(E), s525(E), t521(E), t523(E), u520(E), u521(E), u522(E) & u523(E)**

| Bar     | C      | D      |
|---------|--------|--------|
| n520(E) | 5'-6"  | 2'-2"  |
| n522(E) | 4'-6"  | 3'-5"  |
| p520(E) | 1'-4"  | 6'-8"  |
| p522(E) | 1'-4"  | 5'-8"  |
| s522(E) | 3'-10" | 2'-2"  |
| s525(E) | 2'-10" | 3'-5"  |
| t521(E) | 1'-7"  | 9'-2"  |
| t523(E) | 1'-7"  | 13'-8" |
| u520(E) | 2'-0"  | 2'-2"  |
| u521(E) | 3'-5"  | 1'-6"  |
| u522(E) | 2'-0"  | 3'-5"  |
| u523(E) | 2'-0"  | 1'-6"  |



**BARS n521(E) & n523(E)**

| Bar     | E     |
|---------|-------|
| n521(E) | 8'-9" |
| n523(E) | 7'-9" |



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|--|-----------------------|--------------------|-----------|
| FILE NAME =                              | USER NAME = jsurber   | DESIGNED - MLM/MWG | REVISED - |
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|  | PLOT DATE = 6/12/2015 | DRAWN - RMG        | REVISED - |
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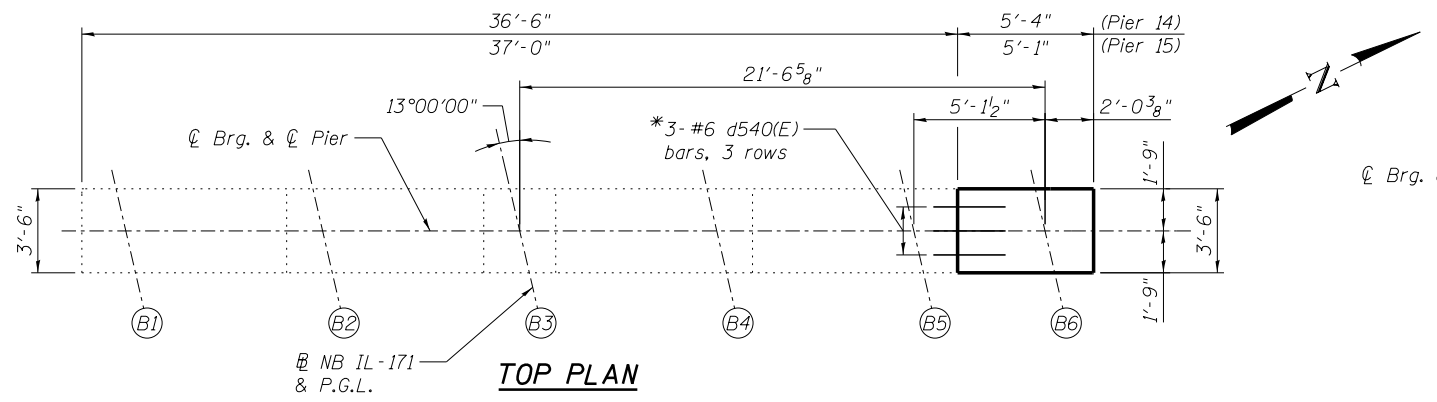
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PIERS 12 AND 13 WIDENING DETAILS  
STRUCTURE NO. 016-0487**

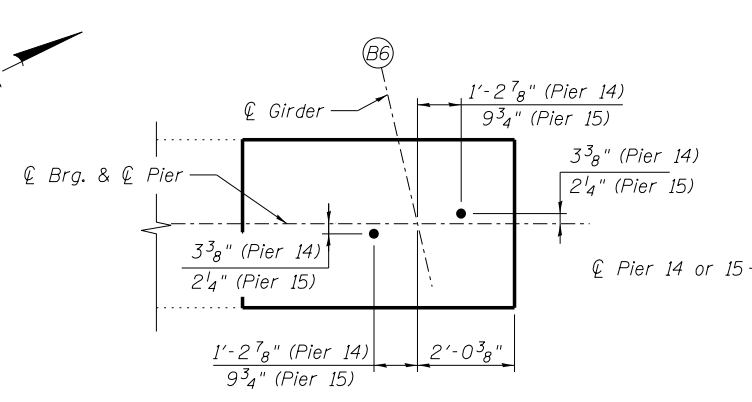
SHEET NO. SF76 OF SF96 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
| 373                | 2013-037B-R | COOK   | 787                       | 602       |
| CONTRACT NO. 60W75 |             |        | ILLINOIS FED. AID PROJECT |           |

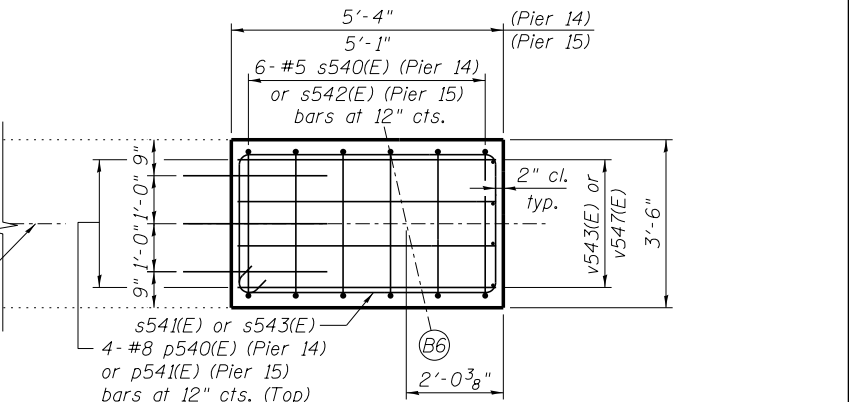
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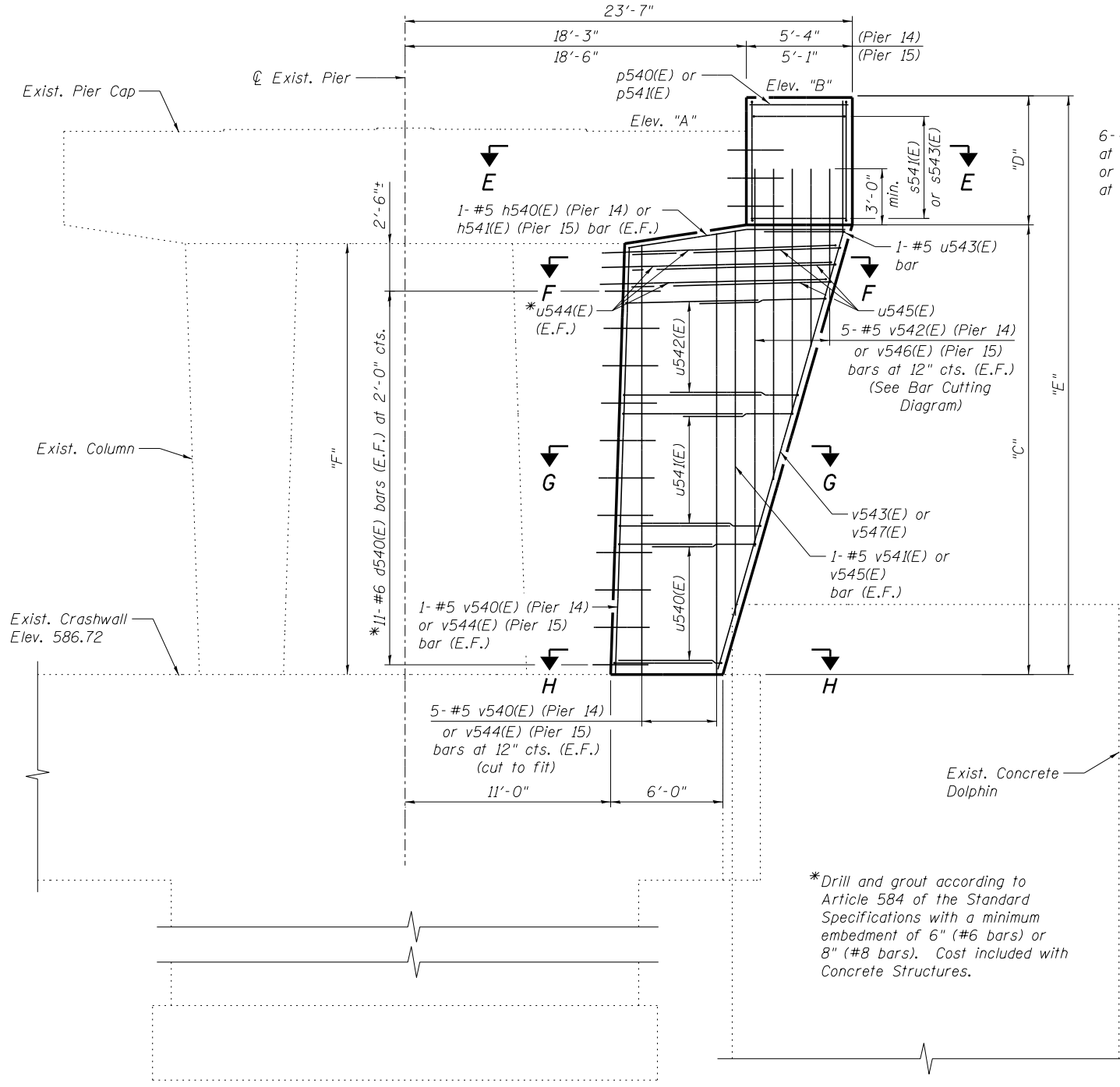
**TOP PLAN**



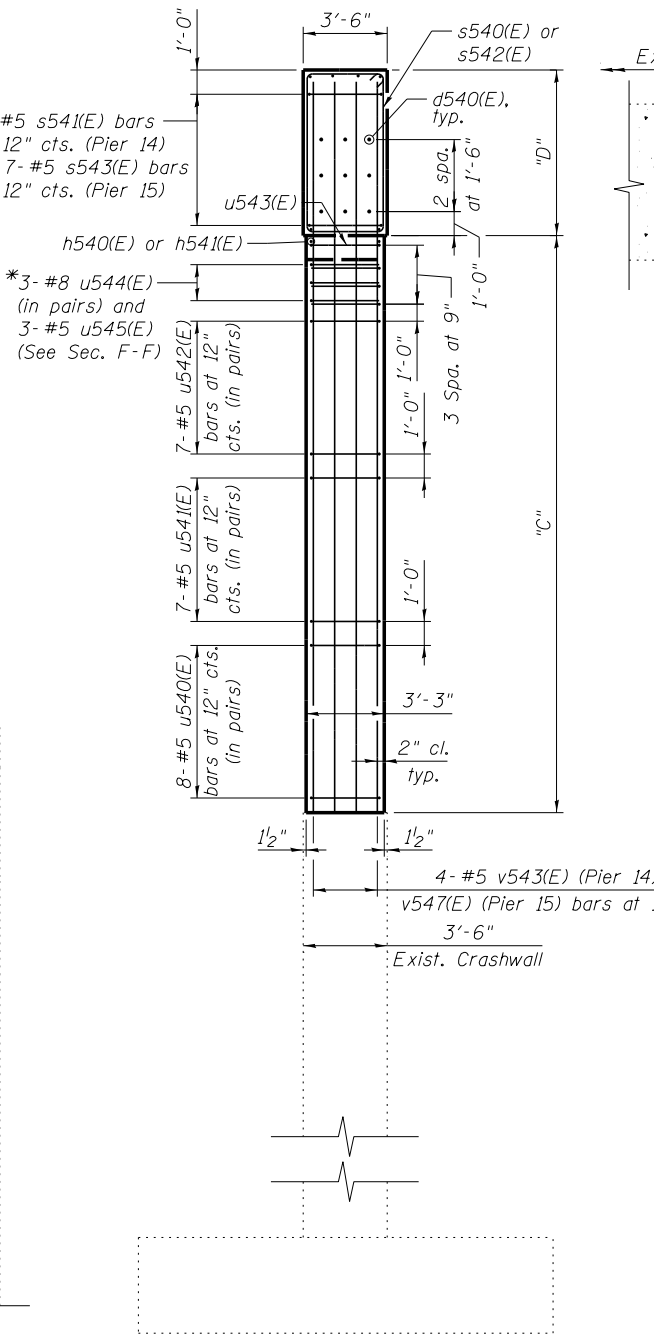
**ANCHOR BOLT DETAIL**



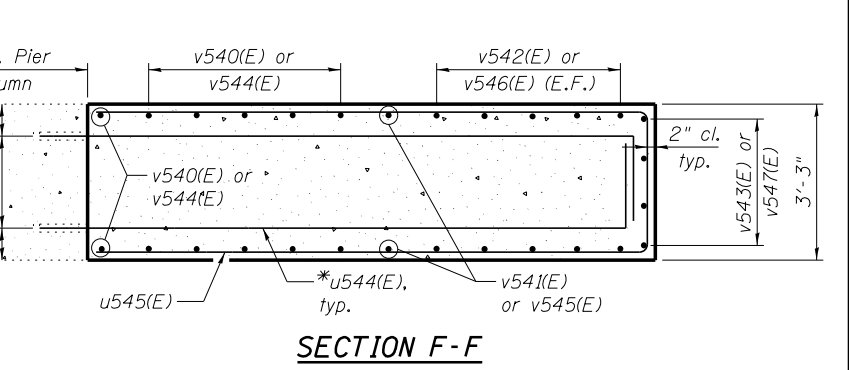
**SECTION E-E**



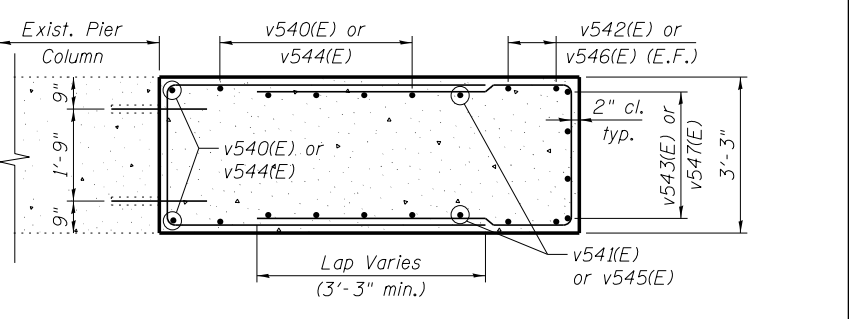
**ELEVATION**



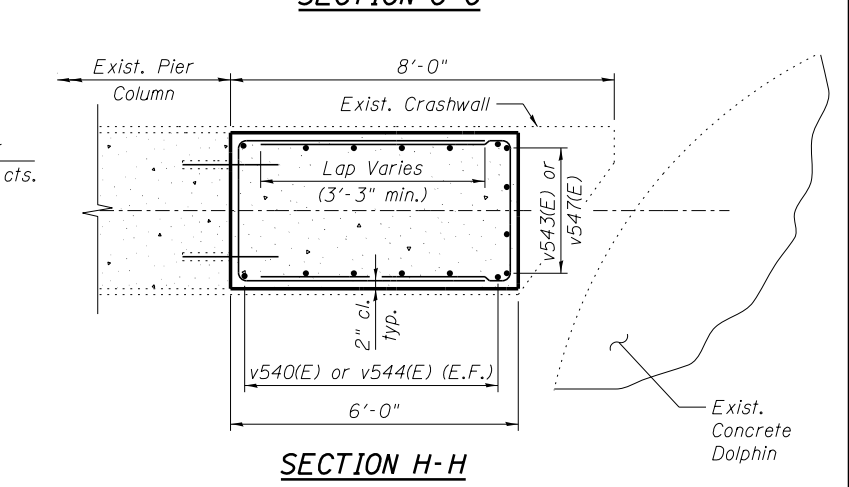
**END VIEW**



**SECTION F-F**



**SECTION G-G**



**SECTION H-H**

|         | A      | B      | C          | D          | E          | F          |
|---------|--------|--------|------------|------------|------------|------------|
| Pier 14 | 616.58 | 618.41 | 24'-10"    | 6'-10 1/4" | 31'-8 1/4" | 23'-10"    |
| Pier 15 | 615.81 | 618.12 | 24'-0 5/8" | 7'-4"      | 31'-4 5/8" | 23'-0 5/8" |

**NOTES:**

- See Sheet SF78 for Bar Bends and Bill of Material.
- Space reinforcement in cap to miss anchor bolts.

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|             |                     |                    |           |
|-------------|---------------------|--------------------|-----------|
| FILE NAME = | USER NAME = jsurber | DESIGNED - DTS/JLS | REVISED - |
|             |                     | CHECKED - AJK      | REVISED - |
|             |                     | DRAWN - RMG/JLS    | REVISED - |
|             |                     | CHECKED - AJK      | REVISED - |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PIERS 14 & 15 WIDENING  
STRUCTURE NO. 016-0487**

|                    |                     |             |                           |               |
|--------------------|---------------------|-------------|---------------------------|---------------|
| F.A.P. RTE. 373    | SECTION 2013-037B-R | COUNTY COOK | TOTAL SHEETS 787          | SHEET NO. 603 |
| CONTRACT NO. 60W75 |                     |             | ILLINOIS FED. AID PROJECT |               |

SHEET NO. SF77 OF SF96 SHEETS

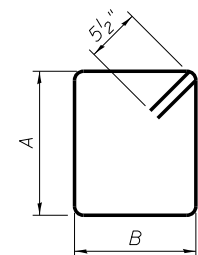
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**PIER 14 BILL OF MATERIAL**

| Bar                              | No. | Size | Length  | Shape |
|----------------------------------|-----|------|---------|-------|
| d540(E)                          | 31  | #6   | 4'-0"   | —     |
| h540(E)                          | 2   | #5   | 11'-7"  | ⌋     |
| p540(E)                          | 4   | #8   | 5'-2"   | —     |
| s540(E)                          | 6   | #5   | 20'-3"  | □     |
| s541(E)                          | 6   | #5   | 17'-1"  | □     |
| u540(E)                          | 16  | #5   | 13'-11" | ⌋     |
| u541(E)                          | 14  | #5   | 15'-11" | ⌋     |
| u542(E)                          | 16  | #5   | 17'-11" | ⌋     |
| u543(E)                          | 1   | #5   | 12'-11" | ⌋     |
| u544(E)                          | 6   | #8   | 13'-10" | ⌋     |
| u545(E)                          | 3   | #5   | 24'-11" | ⌋     |
| v540(E)                          | 12  | #5   | 24'-3"  | —     |
| v541(E)                          | 2   | #5   | 21'-4"  | —     |
| v542(E)                          | 5   | #5   | 25'-6"  | —     |
| v543(E)                          | 4   | #5   | 32'-3"  | ⌋     |
| Concrete Structures              |     |      | Cu. Yd. | 31.0  |
| Reinforcement Bars, Epoxy Coated |     |      | Pound   | 2,200 |

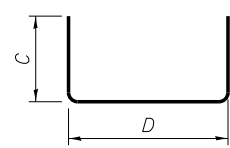
**PIER 15 BILL OF MATERIAL**

| Bar                              | No. | Size | Length  | Shape |
|----------------------------------|-----|------|---------|-------|
| d540(E)                          | 31  | #6   | 4'-0"   | —     |
| h541(E)                          | 2   | #5   | 11'-7"  | ⌋     |
| p541(E)                          | 4   | #8   | 4'-11"  | —     |
| s542(E)                          | 6   | #5   | 21'-3"  | □     |
| s543(E)                          | 7   | #5   | 16'-7"  | □     |
| u540(E)                          | 16  | #5   | 13'-11" | ⌋     |
| u541(E)                          | 14  | #5   | 15'-11" | ⌋     |
| u542(E)                          | 16  | #5   | 17'-11" | ⌋     |
| u543(E)                          | 1   | #5   | 12'-11" | ⌋     |
| u544(E)                          | 6   | #8   | 13'-10" | ⌋     |
| u545(E)                          | 3   | #5   | 24'-11" | ⌋     |
| v542(E)                          | 5   | #5   | 25'-6"  | —     |
| v544(E)                          | 12  | #5   | 23'-5"  | —     |
| v545(E)                          | 2   | #5   | 20'-6"  | —     |
| v547(E)                          | 4   | #5   | 31'-11" | ⌋     |
| Concrete Structures              |     |      | Cu. Yd. | 30.2  |
| Reinforcement Bars, Epoxy Coated |     |      | Pound   | 2,200 |



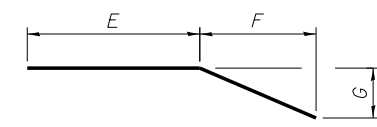
**BARS s540(E), s541(E), s542(E) & s543(E)**

| Bar     | A     | B     |
|---------|-------|-------|
| s540(E) | 6'-6" | 3'-2" |
| s541(E) | 5'-0" | 3'-1" |
| s542(E) | 7'-0" | 3'-2" |
| s543(E) | 4'-9" | 3'-1" |



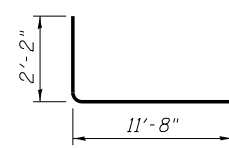
**BARS u540(E), u541(E), u542(E), u543(E) & u545(E)**

| Bar     | C      | D      |
|---------|--------|--------|
| u540(E) | 5'-6"  | 2'-11" |
| u541(E) | 6'-6"  | 2'-11" |
| u542(E) | 7'-6"  | 2'-11" |
| u543(E) | 5'-0"  | 2'-11" |
| u545(E) | 11'-0" | 2'-11" |

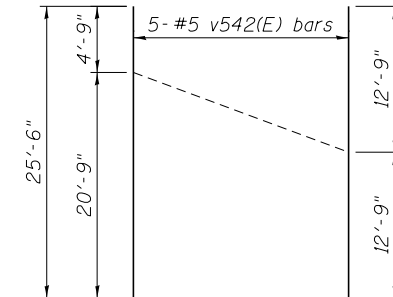


**BARS h540(E), h541(E), u543(E) & v547(E)**

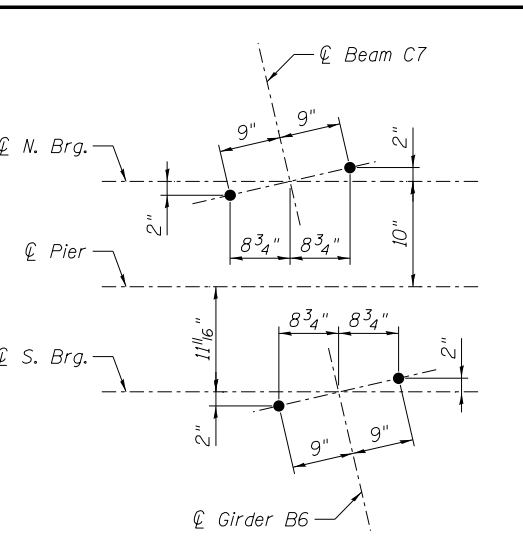
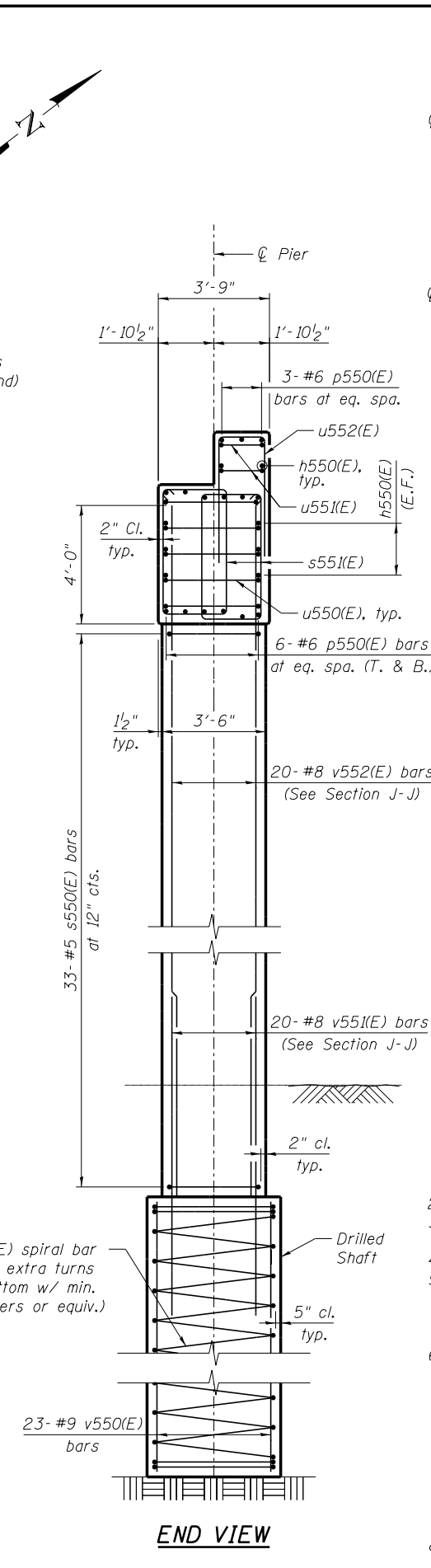
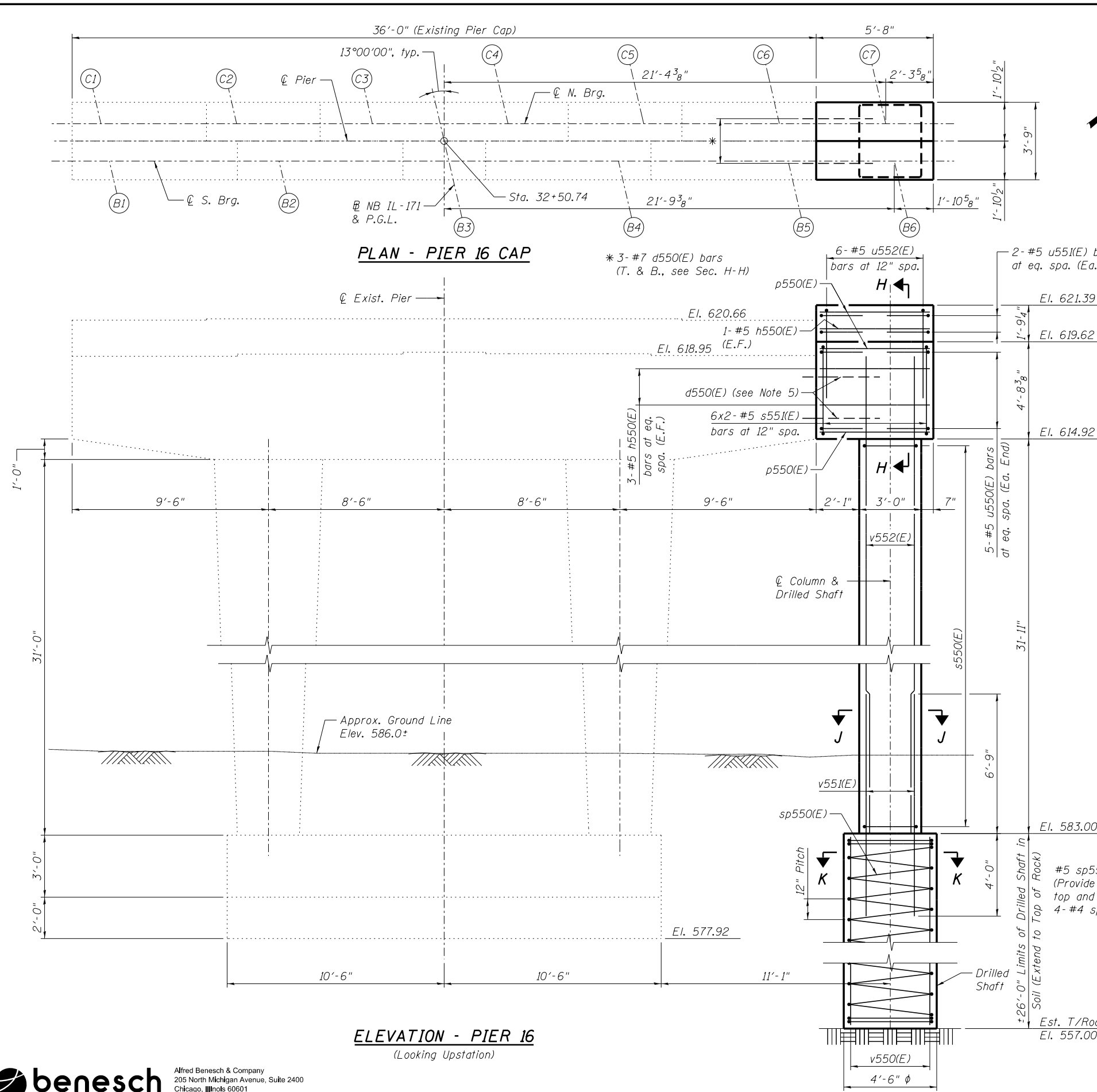
| Bar     | E       | F     | G      |
|---------|---------|-------|--------|
| h540(E) | 5'-2"   | 6'-4" | 12"    |
| h541(E) | 4'-11"  | 6'-7" | 12"    |
| v543(E) | 25'-8"  | 6'-4" | 1'-8"  |
| v547(E) | 24'-11" | 6'-9" | 1'-10" |



**BAR u544(E)**



**CUTTING DIAGRAM**



- NOTES:**
1. For Sections H-H, J-J and K-K, see Sheet SF81.
  2. For bar list and bill of material, see Sheet SF81.
  3. For drilled shaft location and foundation layout, see Sheet SF6.
  4. Space reinforcement in cap to miss anchor bolts.
  5. Drill and grout d550(E) bars according to Article 584 of the Standard Specifications with a minimum embedment of 8". Cost included with Concrete Structures.
  6. Per section 516 of the Standard Specifications, the Contractor is responsible for selecting construction methods that maintain the stability of the drilled shaft side walls during construction. The selected method of construction shall consider the silty and sandy soils as well as the potential for groundwater infiltration due to the adjacent canal.
  7. All exposed surface areas of the pier widening shall be treated with Concrete Sealer.
  8. The pier cap shall be cast monolithically.

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|  |                       |                |          |
|--|-----------------------|----------------|----------|
| FILE NAME =                            | USER NAME = jsurber   | DESIGNED - MFH | REVISD - |
| 0160487.60W75.077.Pier.16.Widening.dgn | PLOT SCALE =          | CHECKED - AJK  | REVISD - |
|  | PLOT DATE = 6/12/2015 | DRAWN - RMG    | REVISD - |
|  |                       | CHECKED - AJK  | REVISD - |

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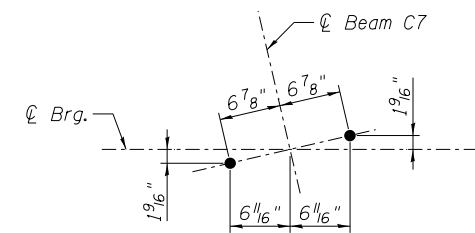
PIER 16 WIDENING  
STRUCTURE NO. 016-0487

SHEET NO. SF79 OF SF96 SHEETS

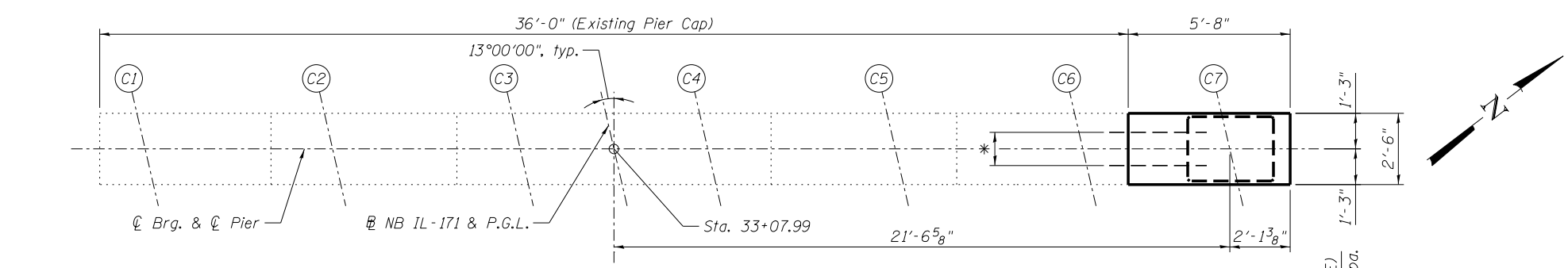
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| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
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| CONTRACT NO. 60W75 |             |        |              |           |

ILLINOIS FED. AID PROJECT

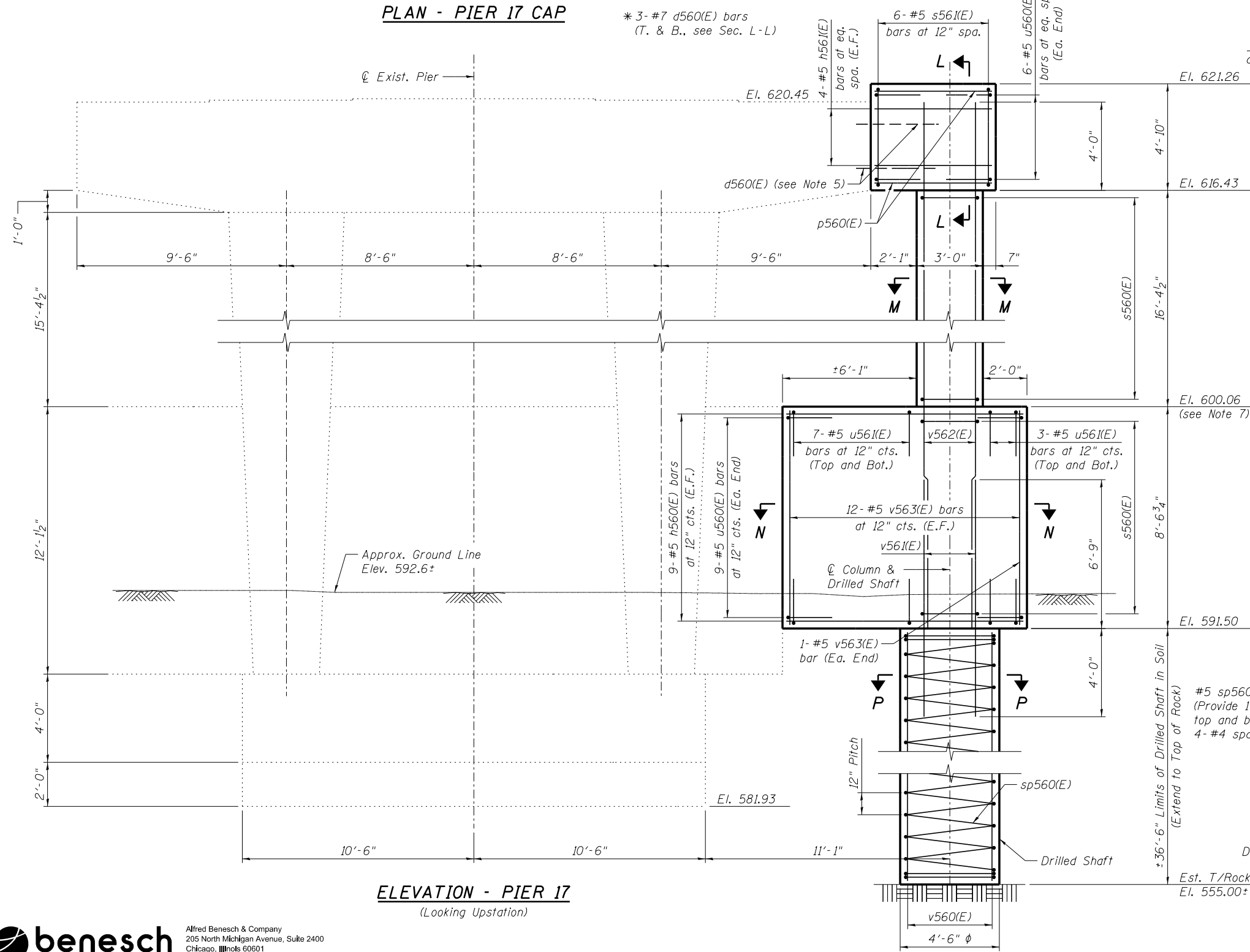
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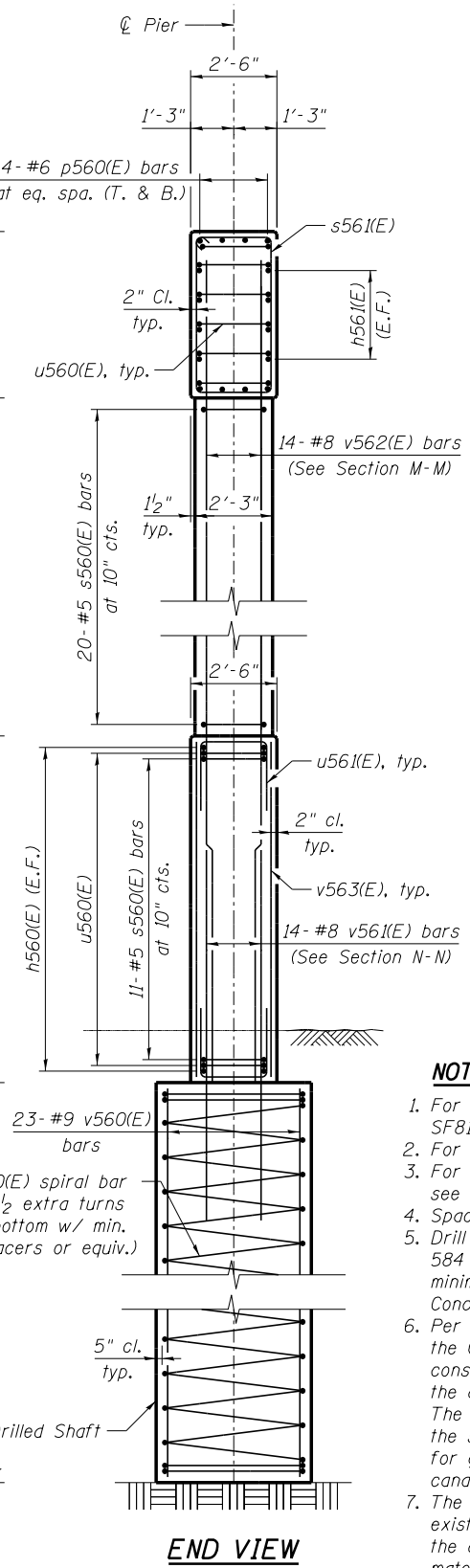
**ANCHOR BOLT DETAIL**



**PLAN - PIER 17 CAP**



**ELEVATION - PIER 17**  
(Looking Upstation)



**END VIEW**

**NOTES:**

1. For Sections L-L, M-M, N-N, and P-P, see Sheet SF81.
2. For bar list and bill of material, see Sheet SF81.
3. For drilled shaft location and foundation layout, see Sheet SF6.
4. Space reinforcement in cap to miss anchor bolts.
5. Drill and grout d560(E) bars according to Article 584 of the Standard Specifications with a minimum embedment of 8". Cost included with Concrete Structures.
6. Per section 516 of the Standard Specifications, the Contractor is responsible for selecting construction methods that maintain the stability of the drilled shaft side walls during construction. The selected method of construction shall consider the silty and sandy soils as well as the potential for groundwater infiltration due to the adjacent canal.
7. The top of crash wall elevation shall match the existing structure. The Contractor shall verify the dimensions in the field prior to ordering materials.

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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 - MFH | REVISED - |
| 0160487.60W75.078.Pier.17.Widening.dgn |                       | CHECKED - AJK  | REVISED - |
|  | PLOT SCALE =          | DRAWN - RMG    | REVISED - |
|  | PLOT DATE = 6/12/2015 | CHECKED - AJK  | REVISED - |

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

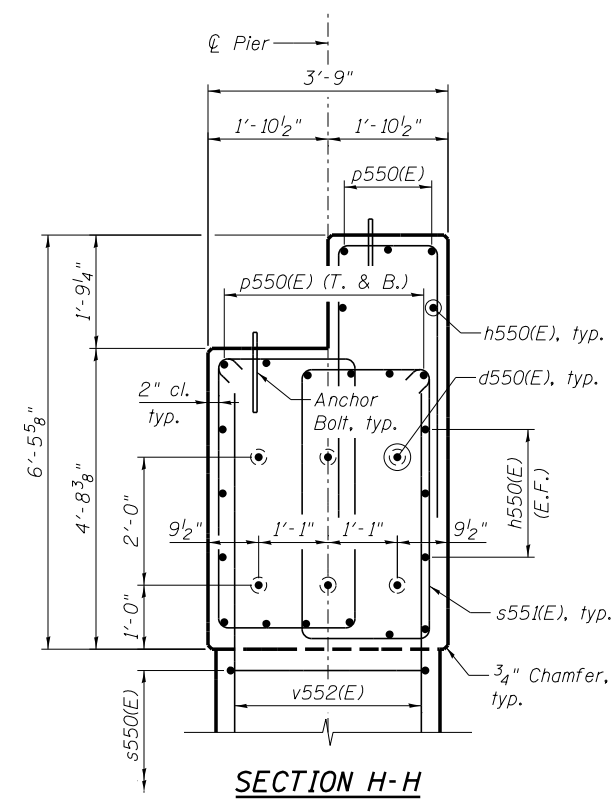
**PIER 17 WIDENING**  
**STRUCTURE NO. 016-0487**

SHEET NO. SF80 OF SF96 SHEETS

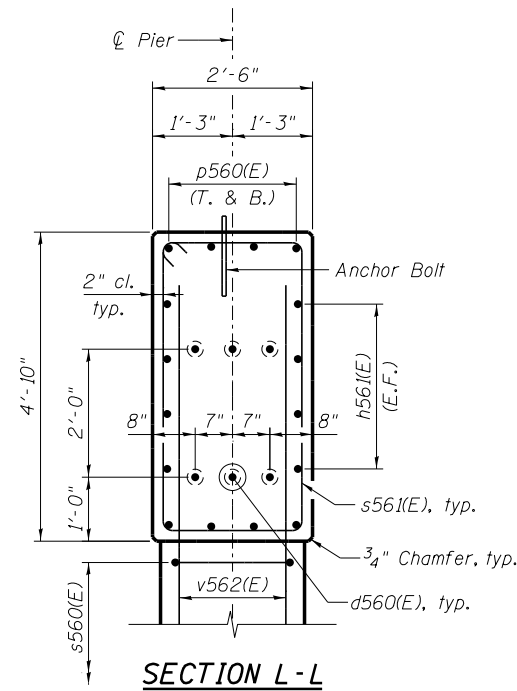
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| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 373                | 2013-037B-R | COOK   | 787          | 606       |
| CONTRACT NO. 60W75 |             |        |              |           |

ILLINOIS FED. AID PROJECT

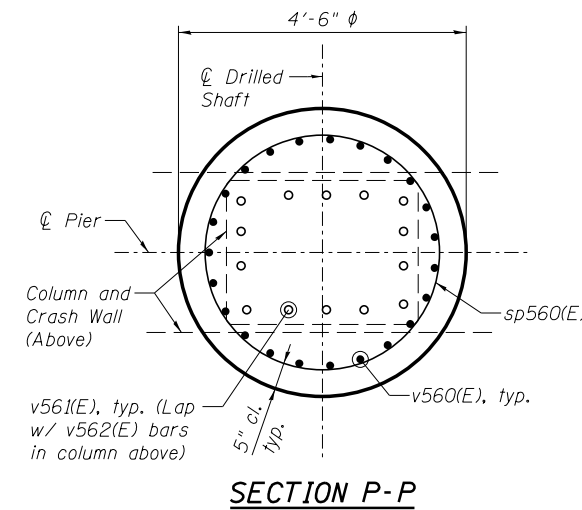
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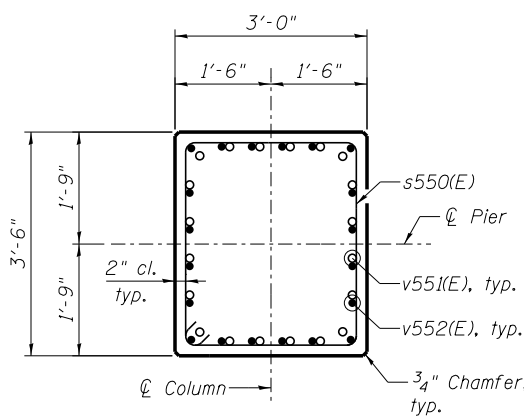
**SECTION H-H**



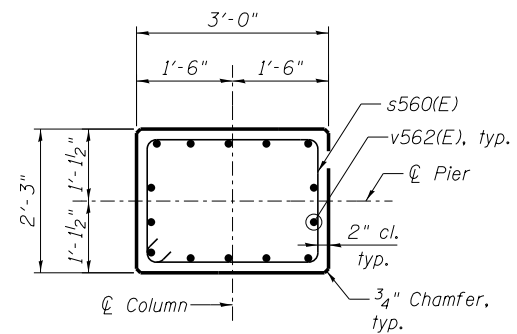
**SECTION L-L**



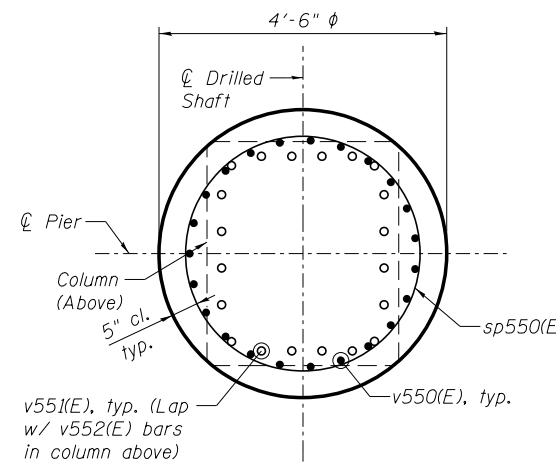
**SECTION P-P**



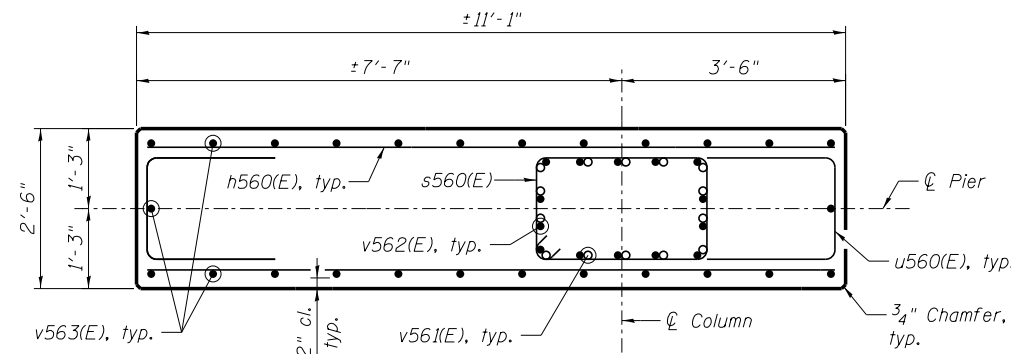
**SECTION J-J**



**SECTION M-M**



**SECTION K-K**



**SECTION N-N**

**PIER 16 BILL OF MATERIAL**

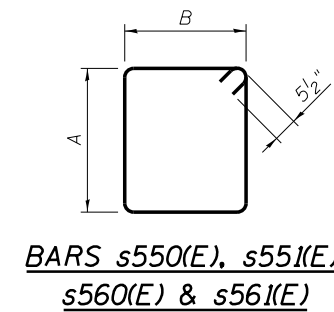
| Bar                              | No. | Size    | Length  | Shape |
|----------------------------------|-----|---------|---------|-------|
| d550(E)                          | 6   | #7      | 3'-9"   | —     |
| h550(E)                          | 8   | #5      | 5'-4"   | —     |
| p550(E)                          | 15  | #6      | 5'-4"   | —     |
| s550(E)                          | 33  | #5      | 12'-7"  | □     |
| s551(E)                          | 12  | #5      | 13'-11" | □     |
| sp550(E)                         | 1   | #5      | 25'-6"  | ⋈     |
| u550(E)                          | 10  | #5      | 7'-3"   | □     |
| u551(E)                          | 4   | #5      | 5'-5"   | □     |
| u552(E)                          | 6   | #5      | 10'-0"  | □     |
| v550(E)                          | 23  | #9      | 25'-6"  | —     |
| v551(E)                          | 20  | #8      | 10'-9"  | —     |
| v552(E)                          | 20  | #8      | 35'-11" | —     |
| Structure Excavation             |     | Cu. Yd. | 6       |       |
| Concrete Structures              |     | Cu. Yd. | 16.9    |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 5,810   |       |
| Drilled Shaft in Soil            |     | Cu. Yd. | 15.4    |       |
| Concrete Sealer                  |     | Sq. Ft. | 542     |       |

Minimum lap for spirals = 2'-6"  
\* Length is height of spiral.

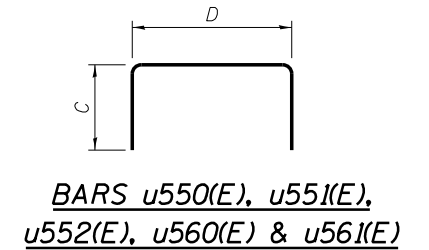
**PIER 17 BILL OF MATERIAL**

| Bar                              | No. | Size    | Length | Shape |
|----------------------------------|-----|---------|--------|-------|
| d560(E)                          | 6   | #7      | 3'-9"  | —     |
| h560(E)                          | 18  | #5      | 10'-9" | —     |
| h561(E)                          | 8   | #5      | 5'-4"  | —     |
| p560(E)                          | 8   | #6      | 5'-4"  | —     |
| s560(E)                          | 31  | #5      | 10'-1" | □     |
| s561(E)                          | 6   | #5      | 14'-3" | □     |
| sp560(E)                         | 1   | #5      | 36'-0" | ⋈     |
| u560(E)                          | 30  | #5      | 6'-0"  | □     |
| u561(E)                          | 20  | #5      | 6'-2"  | □     |
| v560(E)                          | 23  | #9      | 36'-0" | —     |
| v561(E)                          | 14  | #8      | 10'-9" | —     |
| v562(E)                          | 14  | #8      | 29'-0" | —     |
| v563(E)                          | 26  | #5      | 8'-2"  | —     |
| Structure Excavation             |     | Cu. Yd. | 4      |       |
| Concrete Structures              |     | Cu. Yd. | 15.5   |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 6,090  |       |
| Drilled Shaft in Soil            |     | Cu. Yd. | 21.6   |       |

Minimum lap for spirals = 2'-6"  
\* Length is height of spiral.



| Bar     | A     | B      |
|---------|-------|--------|
| s550(E) | 3'-2" | 2'-8"  |
| s551(E) | 4'-4" | 2'-2"  |
| s560(E) | 2'-8" | 1'-11" |
| s561(E) | 4'-6" | 2'-2"  |



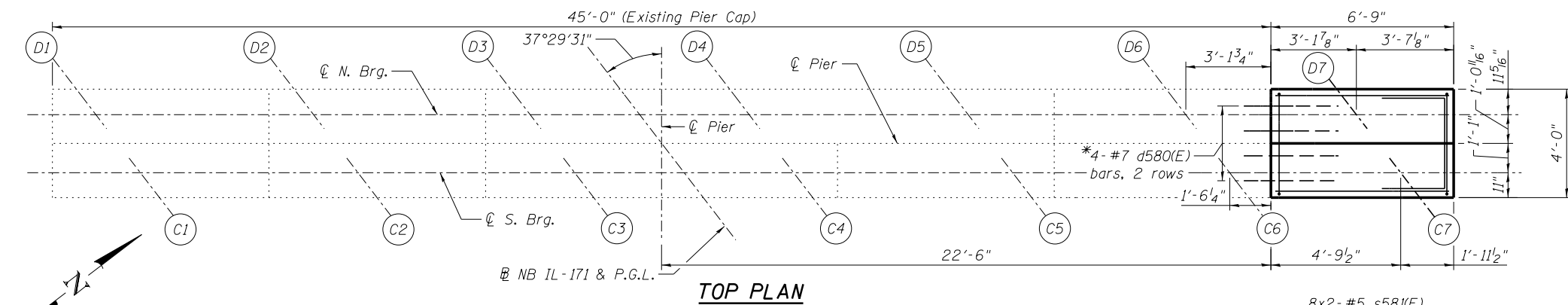
| Bar     | C     | D     |
|---------|-------|-------|
| u550(E) | 2'-0" | 3'-3" |
| u551(E) | 2'-0" | 1'-5" |
| u552(E) | 4'-3" | 1'-6" |
| u560(E) | 2'-0" | 2'-0" |
| u561(E) | 2'-0" | 2'-2" |

**NOTES:**

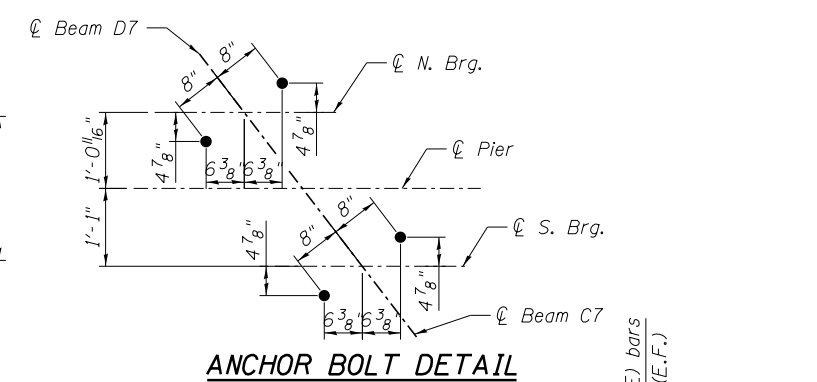
- The quantities and reinforcement detailing are based on the estimated top of rock elevations shown and may change based on the actual top of rock elevations encountered at the shaft locations.
- Space reinforcement in cap to miss anchor bolts.

| FILE NAME                                | USER NAME | DESIGNED | REVISIONS |
|--|-----------|----------|-----------|
| 0160487.60W75.079.Piers.16and17.Widening | jsurber   | MFH      | -         |
|  |           | AJK      | -         |
|  |           | RMG      | -         |
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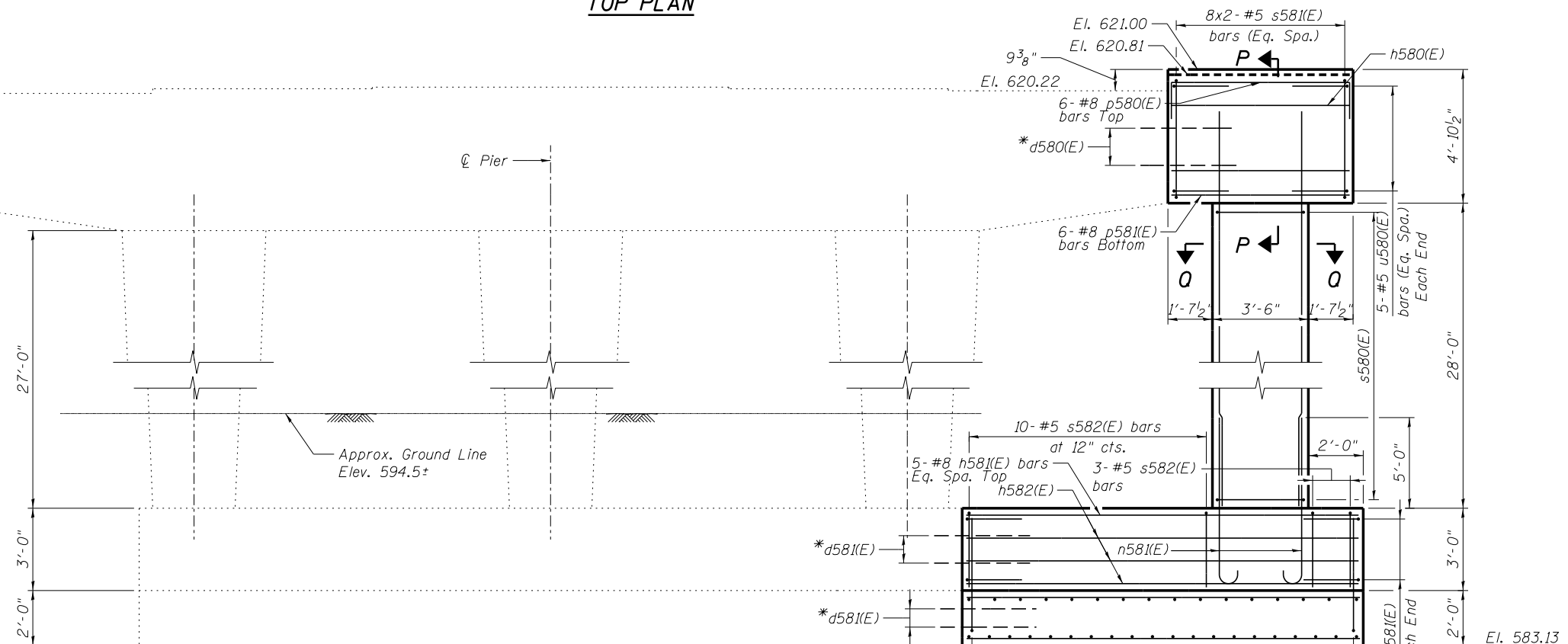
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 373                       | 2013-037B-R | COOK   | 787          | 607                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |



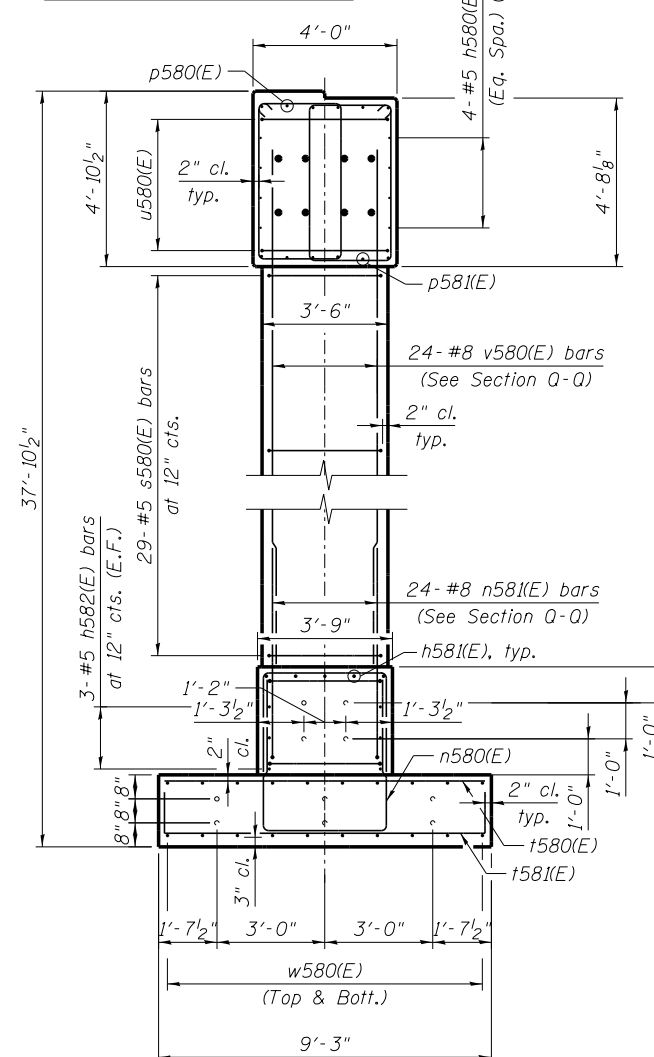
**TOP PLAN**



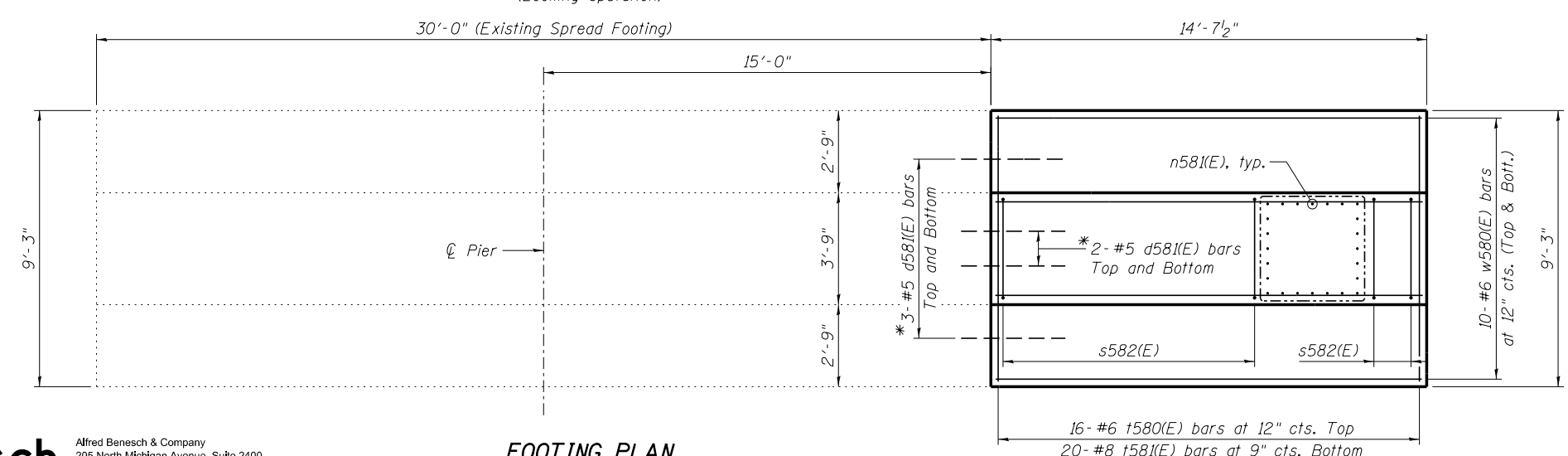
**ANCHOR BOLT DETAIL**



**ELEVATION**  
(Looking Upstation)



**END VIEW**



**FOOTING PLAN**

\* Drill and grout according to Article 584 of the Standard Specifications with a minimum embedment of 6" (#5 bars) or 8" (#7 bars). Cost included with Concrete Structures.

**NOTES:**

1. See Sheet SF84 for Sections P-P and Q-Q.
2. See Sheet SF85 for Bar Bends and Bill of Material.
3. Space reinforcement in cap to miss anchor bolts.
4. All exposed surface areas of the pier widening shall be treated with Concrete Sealer.

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|  |                     |                    |             |
|--|---------------------|--------------------|-------------|
| FILE NAME =                            | USER NAME = jsurber | DESIGNED - MLM/MWG | REVISIONS - |
| 0160487_60W75_080_Pier_18_Widening.dgn |                     | CHECKED - JLS      | REVISIONS - |
|  |                     | DRAWN - RMG        | REVISIONS - |
|  |                     | CHECKED - JLS      | REVISIONS - |
|  |                     |                    | REVISIONS - |

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

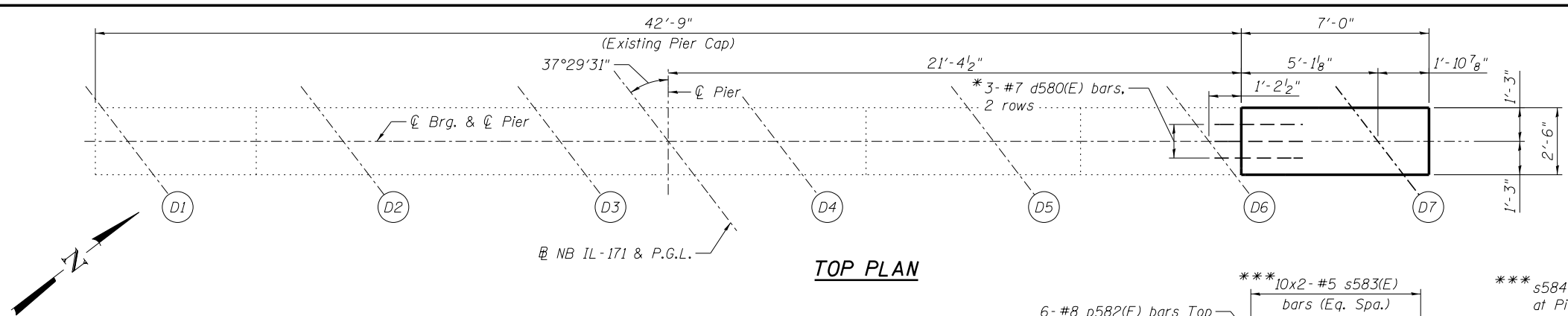
**PIER 18 WIDENING**  
**STRUCTURE NO. 016-0487**

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 373                       | 2013-037B-R | COOK   | 787          | 608       |
| CONTRACT NO. 60W75        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

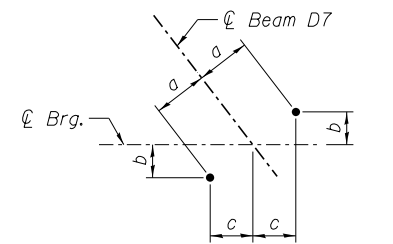
SHEET NO. SF82 OF SF96 SHEETS

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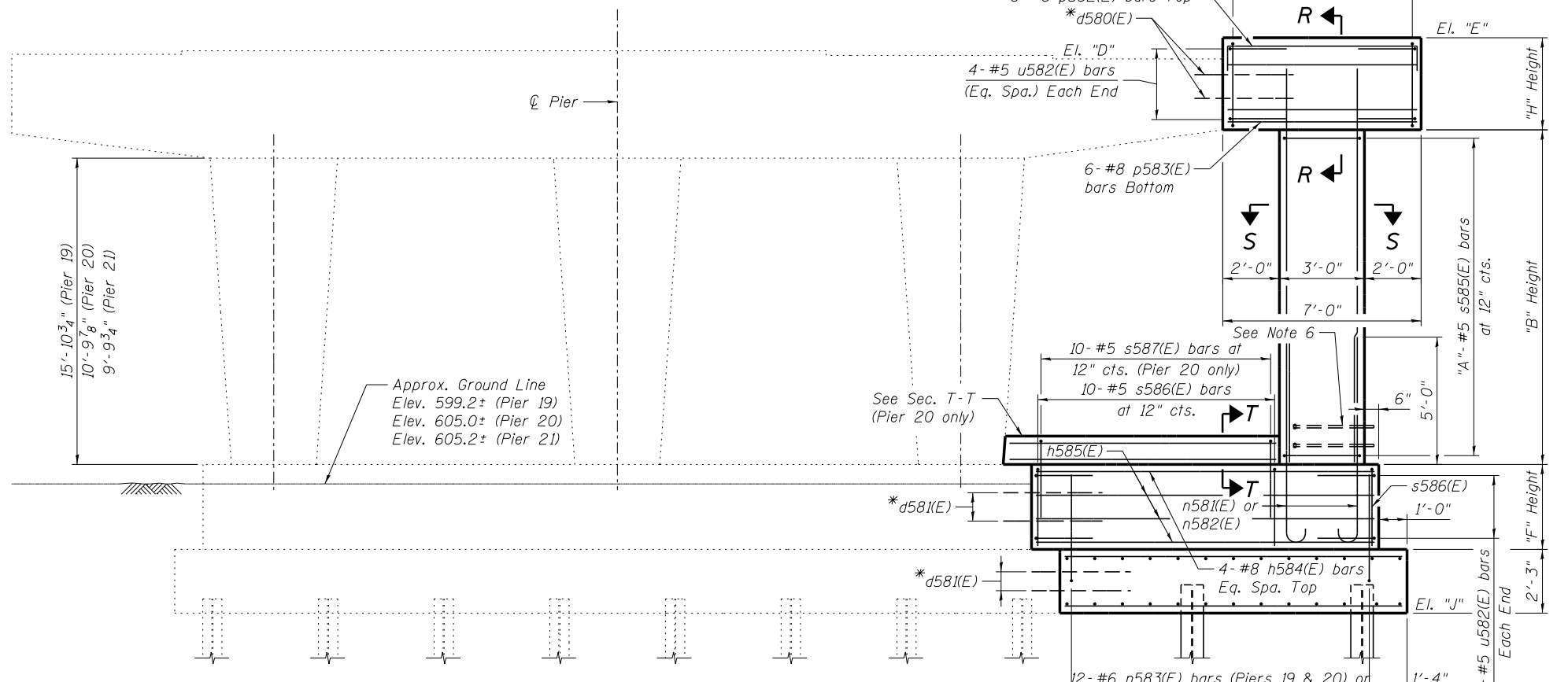


**TOP PLAN**

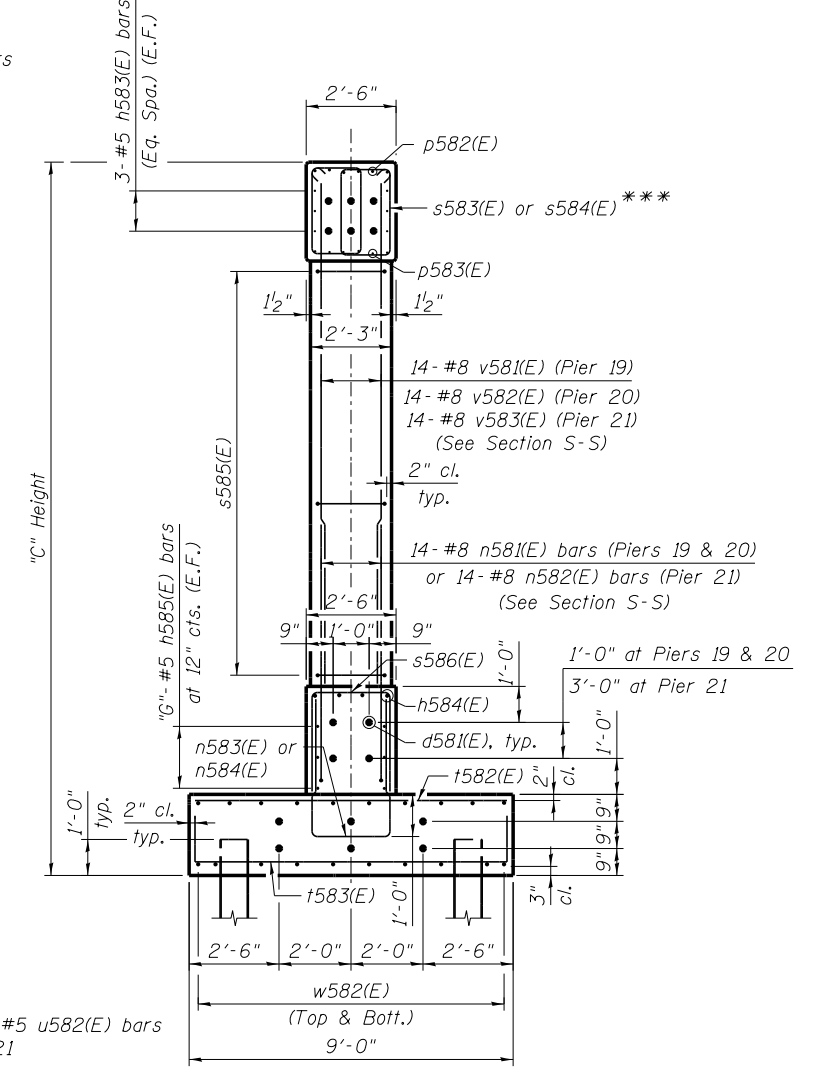


**ANCHOR BOLT DETAIL**

| Location | a      | b      | c      |
|----------|--------|--------|--------|
| Pier 19  | 9"     | 5 1/2" | 7 1/8" |
| Pier 20  | 6 1/8" | 4 1/4" | 5 1/2" |
| Pier 21  | 9"     | 5 1/2" | 7 1/8" |



**ELEVATION**  
(Looking Upstair)



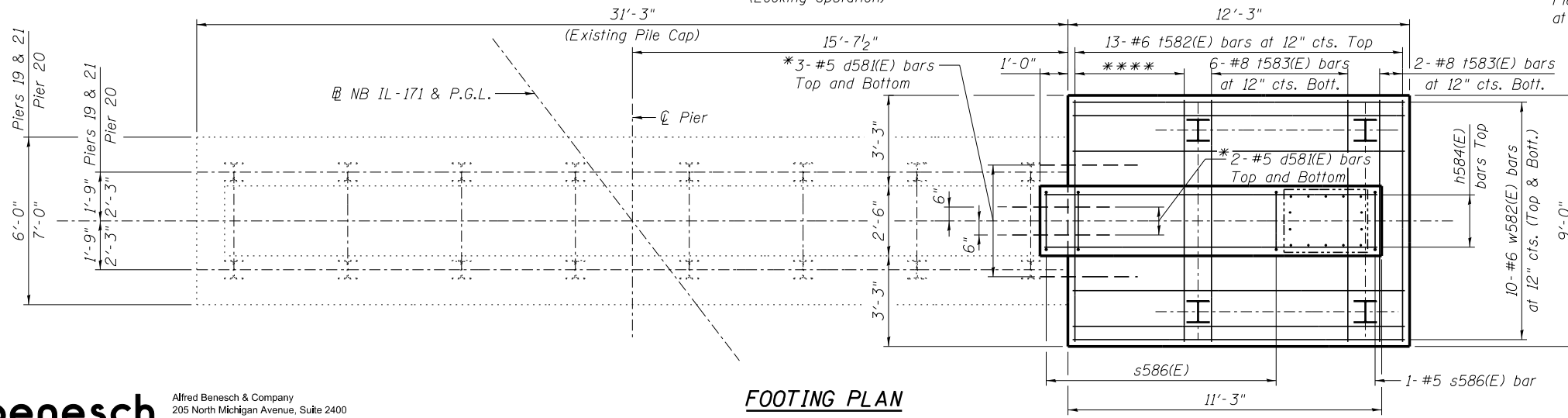
**END VIEW**

**NOTES:**

- See Sheet SF84 for Pile Data.
- See Sheet SF84 for Sections R-R, S-S and T-T.
- See Sheet SF7 for Pile Layout.
- See Sheet SF85 for Bar Bends and Bill of Material.
- Space reinforcement in cap to miss anchor bolts.
- Provide 2-1"  $\phi$  anchor bolts for Type 5 terminal connection at Pier 20 only. See Sheet SF85 for anchor bolt detail. Cost included with "Concrete Superstructure". Coordinate with Roadway Plans for location of anchor bolts.

| Location | A  | B           | C          | D      | E      | F     | G | H         | J      |
|----------|----|-------------|------------|--------|--------|-------|---|-----------|--------|
| Pier 19  | 18 | 16'-10 1/8" | 25'-6 3/8" | 619.96 | 620.75 | 3'-0" | 3 | 3'-4 1/2" | 595.22 |
| Pier 20  | 13 | 11'-9 1/8"  | 20'-6 1/8" | 619.88 | 620.73 | 3'-0" | 3 | 3'-5 1/4" | 600.22 |
| Pier 21  | 12 | 10'-9 5/8"  | 21'-5"     | 619.62 | 620.39 | 5'-0" | 5 | 3'-4 3/8" | 598.97 |

\* Drill and grout according to Article 584 of the Standard Specifications with a minimum embedment of 6" (#5 bars) or 8" (#7 bars). Cost included with Concrete Structures.



**FOOTING PLAN**

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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 - MLM/MWG | REVISIONS - |
| 0160487.60W75.081.Piers.19thru21.Widening | PLOT SCALE =          | CHECKED - JLS      | REVISIONS - |
|   | PLOT DATE = 6/12/2015 | DRAWN - RMG        | REVISIONS - |
|   |                       | CHECKED - JLS      | REVISIONS - |

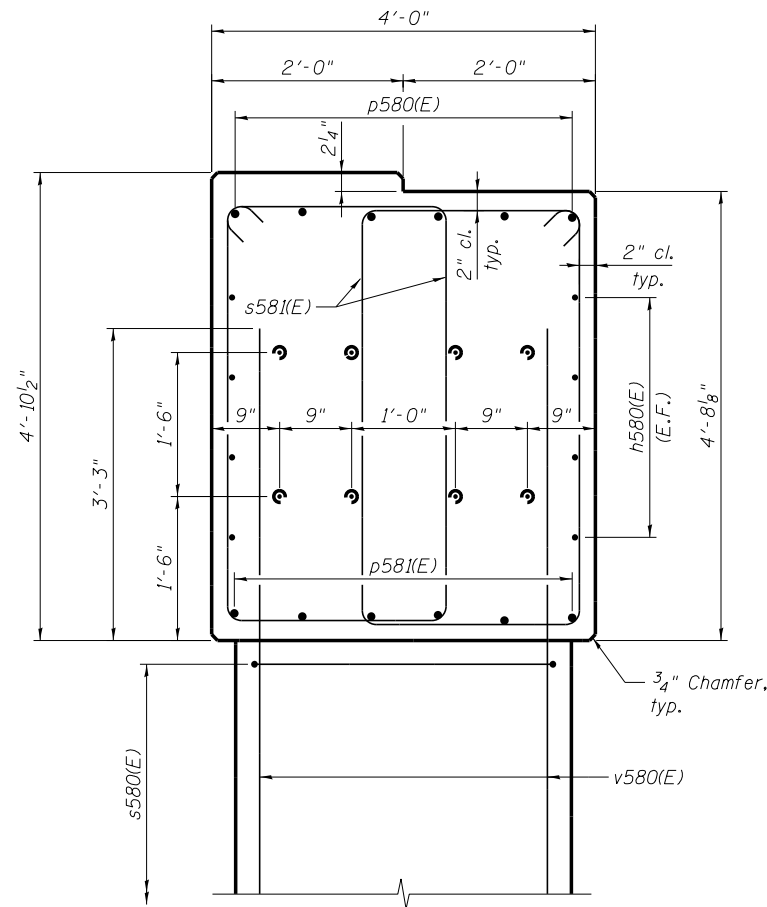
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PIERS 19 THRU 21 WIDENING**  
**STRUCTURE NO. 016-0487**

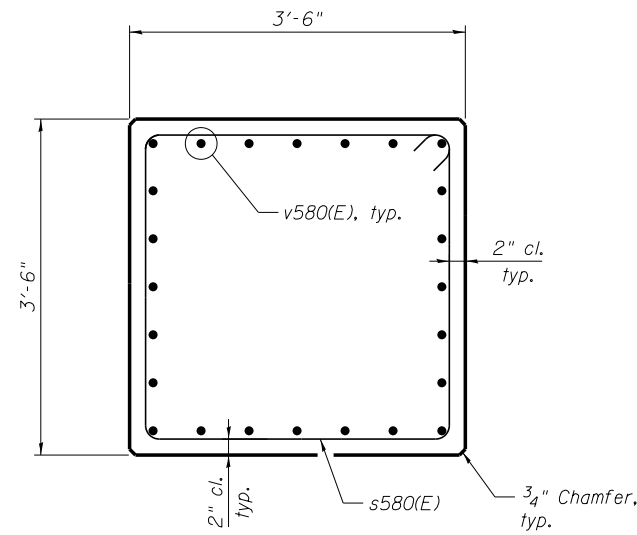
SHEET NO. SF83 OF SF96 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
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| CONTRACT NO. 60W75 |             |        | ILLINOIS FED. AID PROJECT |           |

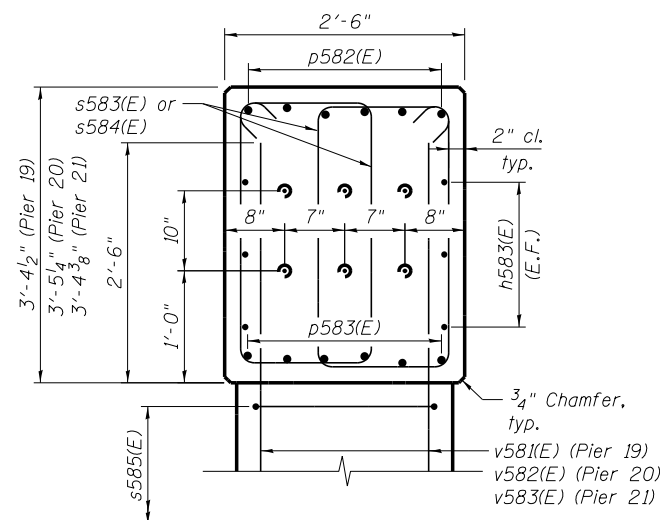
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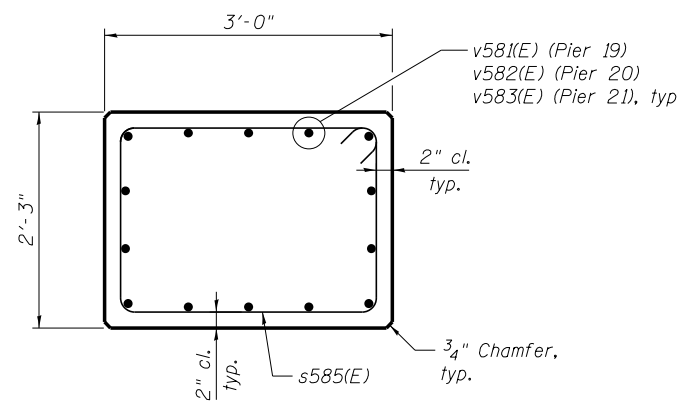
**SECTION P-P**



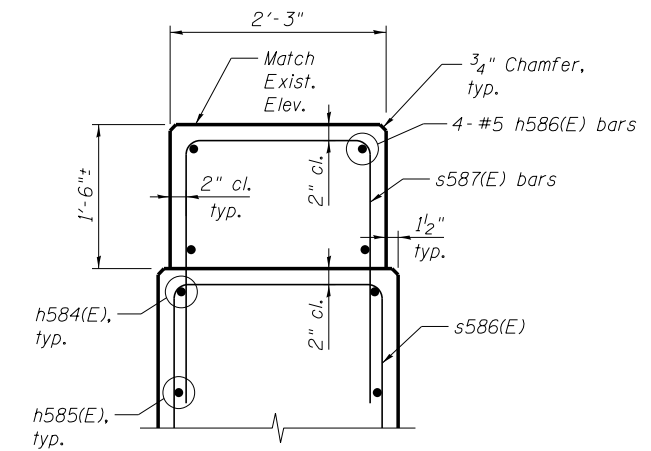
**SECTION Q-Q**



**SECTION R-R**



**SECTION S-S**



**SECTION T-T**  
(at Pier 20 only)

**PILE DATA TABLE**

| Location | Type                    | Nominal Bearing Required | Allowable Resistance Available | Est. Length | No. Production Piles | No. Test Piles |
|----------|-------------------------|--------------------------|--------------------------------|-------------|----------------------|----------------|
| Pier 19  | HP12x53 with Pile Shoes | 254 kips                 | 85 kips                        | 41 ft       | 3                    | 1              |
| Pier 20  | HP12x53 with Pile Shoes | 263 kips                 | 88 kips                        | 46 ft       | 4                    | 0              |
| Pier 21  | HP12x53 with Pile Shoes | 248 kips                 | 83 kips                        | 45 ft       | 3                    | 1              |

**PIER 18 BILL OF MATERIAL**

| Bar                              | No. | Size    | Length | Shape |
|----------------------------------|-----|---------|--------|-------|
| d580(E)                          | 8   | #7      | 4'-0"  | ————  |
| d581(E)                          | 10  | #5      | 3'-6"  | ————  |
| h580(E)                          | 8   | #5      | 6'-5"  | ————  |
| h581(E)                          | 5   | #8      | 14'-3" | ————  |
| h582(E)                          | 6   | #5      | 14'-3" | ————  |
| n580(E)                          | 16  | #6      | 12'-5" | ┌     |
| n581(E)                          | 24  | #8      | 8'-8"  | └     |
| p580(E)                          | 6   | #8      | 9'-1"  | ┌     |
| p581(E)                          | 6   | #8      | 6'-5"  | ————  |
| s580(E)                          | 29  | #5      | 13'-7" | □     |
| s581(E)                          | 16  | #5      | 14'-1" | □     |
| s582(E)                          | 13  | #5      | 9'-1"  | ┌     |
| t580(E)                          | 16  | #6      | 8'-11" | ————  |
| t581(E)                          | 20  | #8      | 12'-1" | ┌     |
| u580(E)                          | 10  | #5      | 7'-8"  | ┌     |
| u581(E)                          | 8   | #5      | 7'-5"  | ┌     |
| v580(E)                          | 24  | #8      | 31'-3" | ————  |
| w580(E)                          | 20  | #6      | 14'-3" | ————  |
| Structure Excavation             |     | Cu. Yd. | 104    |       |
| Concrete Structures              |     | Cu. Yd. | 33.6   |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 5,740  |       |
| Concrete Sealer                  |     | Sq. Ft. | 614    |       |

**PIER 19 BILL OF MATERIAL**

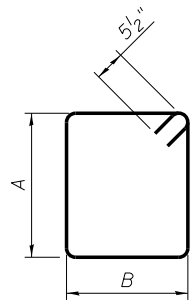
| Bar                              | No. | Size    | Length  | Shape |
|----------------------------------|-----|---------|---------|-------|
| d580(E)                          | 6   | #7      | 4'-0"   | ————  |
| d581(E)                          | 10  | #5      | 3'-6"   | ————  |
| h583(E)                          | 6   | #5      | 6'-8"   | ————  |
| h584(E)                          | 4   | #8      | 11'-11" | ————  |
| h585(E)                          | 6   | #5      | 11'-11" | ————  |
| n581(E)                          | 14  | #8      | 8'-8"   | └     |
| n583(E)                          | 12  | #6      | 9'-9"   | ┌     |
| p582(E)                          | 6   | #8      | 9'-4"   | ┌     |
| p583(E)                          | 6   | #8      | 6'-8"   | ————  |
| s583(E)                          | 20  | #5      | 11'-3"  | □     |
| s585(E)                          | 18  | #5      | 10'-1"  | □     |
| s586(E)                          | 11  | #5      | 7'-10"  | ┌     |
| t582(E)                          | 13  | #6      | 8'-8"   | ————  |
| t583(E)                          | 13  | #8      | 12'-4"  | ┌     |
| u582(E)                          | 16  | #5      | 6'-2"   | ┌     |
| v581(E)                          | 14  | #8      | 19'-5"  | ————  |
| w582(E)                          | 20  | #6      | 11'-11" | ————  |
| Structure Excavation             |     | Cu. Yd. | 32      |       |
| Concrete Structures              |     | Cu. Yd. | 19.1    |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 3,390   |       |
| Furnishing Steel Piles HPI2x53   |     | Foot    | 123     |       |
| Driving Piles                    |     | Foot    | 123     |       |
| Test Pile Steel HPI2x53          |     | Each    | 1       |       |
| Pile Shoes                       |     | Each    | 4       |       |

**PIER 20 BILL OF MATERIAL**

| Bar                              | No. | Size    | Length  | Shape |
|----------------------------------|-----|---------|---------|-------|
| d580(E)                          | 6   | #7      | 4'-0"   | ————  |
| d581(E)                          | 10  | #5      | 3'-6"   | ————  |
| h583(E)                          | 6   | #5      | 6'-8"   | ————  |
| h584(E)                          | 4   | #8      | 11'-11" | ————  |
| h585(E)                          | 6   | #5      | 11'-11" | ————  |
| h586(E)                          | 4   | #5      | 9'-4"   | ————  |
| n581(E)                          | 14  | #8      | 8'-8"   | └     |
| n583(E)                          | 12  | #6      | 9'-9"   | ┌     |
| p582(E)                          | 6   | #8      | 9'-4"   | ┌     |
| p583(E)                          | 6   | #8      | 6'-8"   | ————  |
| s583(E)                          | 20  | #5      | 11'-3"  | □     |
| s585(E)                          | 13  | #5      | 10'-1"  | □     |
| s586(E)                          | 11  | #5      | 7'-10"  | ┌     |
| s587(E)                          | 10  | #5      | 7'-11"  | ┌     |
| t582(E)                          | 13  | #6      | 8'-8"   | ————  |
| t583(E)                          | 13  | #8      | 12'-4"  | ┌     |
| u582(E)                          | 16  | #5      | 6'-2"   | ┌     |
| v582(E)                          | 14  | #8      | 14'-4"  | ————  |
| w582(E)                          | 20  | #6      | 11'-11" | ————  |
| Structure Excavation             |     | Cu. Yd. | 38      |       |
| Concrete Structures              |     | Cu. Yd. | 19.0    |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 3,270   |       |
| Furnishing Steel Piles HPI2x53   |     | Foot    | 184     |       |
| Driving Piles                    |     | Foot    | 184     |       |
| Pile Shoes                       |     | Each    | 4       |       |

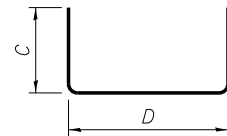
**PIER 21 BILL OF MATERIAL**

| Bar                              | No. | Size    | Length  | Shape |
|----------------------------------|-----|---------|---------|-------|
| d580(E)                          | 6   | #7      | 4'-0"   | ————  |
| d581(E)                          | 10  | #5      | 3'-6"   | ————  |
| h583(E)                          | 6   | #5      | 6'-8"   | ————  |
| h584(E)                          | 4   | #8      | 11'-11" | ————  |
| h585(E)                          | 10  | #5      | 11'-11" | ————  |
| n582(E)                          | 14  | #8      | 10'-8"  | └     |
| n584(E)                          | 12  | #6      | 13'-9"  | ┌     |
| p582(E)                          | 6   | #8      | 9'-4"   | ┌     |
| p583(E)                          | 6   | #8      | 6'-8"   | ————  |
| s584(E)                          | 20  | #5      | 11'-5"  | □     |
| s585(E)                          | 12  | #5      | 10'-1"  | □     |
| s586(E)                          | 11  | #5      | 7'-10"  | ┌     |
| t582(E)                          | 13  | #6      | 8'-8"   | ————  |
| t583(E)                          | 13  | #8      | 12'-4"  | ┌     |
| u582(E)                          | 20  | #5      | 6'-2"   | ┌     |
| v583(E)                          | 14  | #8      | 13'-4"  | ————  |
| w582(E)                          | 20  | #6      | 11'-11" | ————  |
| Structure Excavation             |     | Cu. Yd. | 49      |       |
| Concrete Structures              |     | Cu. Yd. | 19.8    |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 3,320   |       |
| Furnishing Steel Piles HPI2x53   |     | Foot    | 135     |       |
| Driving Piles                    |     | Foot    | 135     |       |
| Test Pile Steel HPI2x53          |     | Each    | 1       |       |
| Pile Shoes                       |     | Each    | 4       |       |



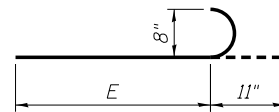
**BARS s580(E), s581(E), s583(E), s584(E), & s585(E)**

| Bar     | A     | B      |
|---------|-------|--------|
| s580(E) | 3'-2" | 3'-2"  |
| s581(E) | 4'-4" | 2'-3"  |
| s583(E) | 3'-0" | 2'-2"  |
| s584(E) | 3'-1" | 2'-2"  |
| s585(E) | 2'-8" | 1'-11" |



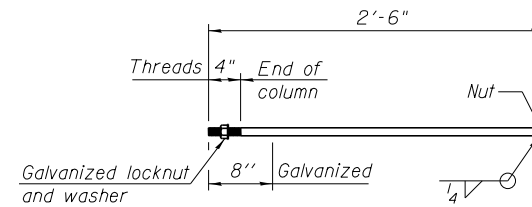
**BARS n580(E), n583(E), n584(E), p580(E), p582(E), s582(E), s586(E), s587(E), t581(E), t583(E), u580(E), u581(E), & u582(E)**

| Bar     | C      | D      |
|---------|--------|--------|
| n580(E) | 4'-6"  | 3'-5"  |
| n583(E) | 3'-10" | 2'-1"  |
| n584(E) | 5'-10" | 2'-1"  |
| p580(E) | 1'-4"  | 6'-5"  |
| p582(E) | 1'-4"  | 6'-8"  |
| s582(E) | 2'-10" | 3'-5"  |
| s586(E) | 2'-10" | 2'-2"  |
| s587(E) | 3'-0"  | 1'-11" |
| t581(E) | 1'-7"  | 8'-11" |
| t583(E) | 1'-10" | 8'-8"  |
| u580(E) | 2'-0"  | 3'-8"  |
| u581(E) | 2'-0"  | 3'-5"  |
| u582(E) | 2'-0"  | 2'-2"  |



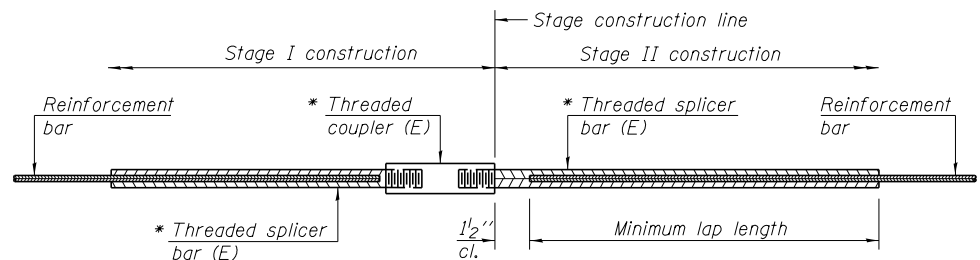
**BARS n581(E) & n582(E)**

| Bar     | E     |
|---------|-------|
| n581(E) | 7'-9" |
| n582(E) | 9'-9" |



**1" ANCHOR BOLT**

(At Pier 20 only. Cost included with Concrete Superstructure.)



**STANDARD BAR SPLICER ASSEMBLY**

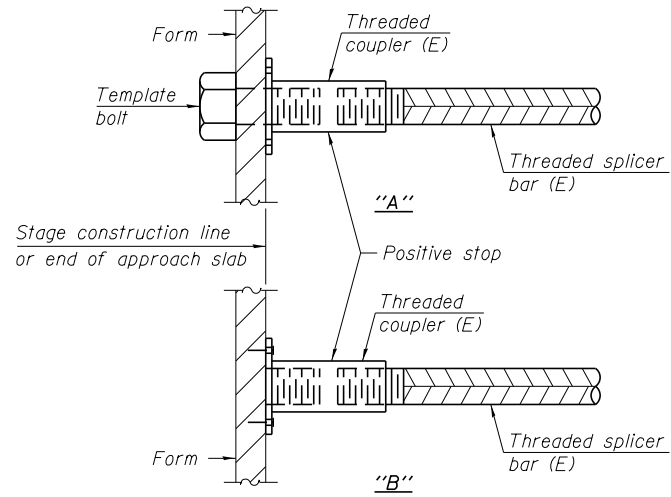
| Minimum Lap Lengths    |         |         |         |         |         |         |
|------------------------|---------|---------|---------|---------|---------|---------|
| Bar size to be spliced | Table 1 | Table 2 | Table 3 | Table 4 | Table 5 | Table 6 |
| 3, 4                   | 1'-5"   | 1'-11"  | 2'-1"   | 2'-4"   | 2'-7"   | 2'-11"  |
| 5                      | 1'-9"   | 2'-5"   | 2'-7"   | 2'-11"  | 3'-3"   | 3'-8"   |
| 6                      | 2'-1"   | 2'-11"  | 3'-1"   | 3'-6"   | 3'-10"  | 4'-5"   |
| 7                      | 2'-9"   | 3'-10"  | 4'-2"   | 4'-8"   | 5'-2"   | 5'-10"  |
| 8                      | 3'-8"   | 5'-1"   | 5'-5"   | 6'-2"   | 6'-9"   | 7'-8"   |
| 9                      | 4'-7"   | 6'-5"   | 6'-10"  | 7'-9"   | 8'-7"   | 9'-8"   |

- Table 1: Black bar, 0.8 Class C
- Table 2: Black bar, Top bar lap, 0.8 Class C
- Table 3: Epoxy bar, 0.8 Class C
- Table 4: Epoxy bar, Top bar lap, 0.8 Class C
- Table 5: Epoxy bar, Class C
- Table 6: Epoxy bar, Top bar top, Class C

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

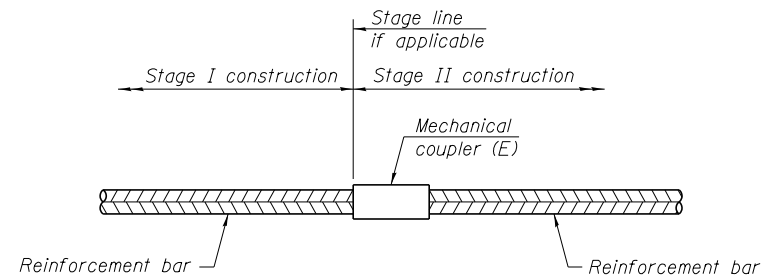
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

| Location | Bar size | No. assemblies required | Table for minimum lap length |
|----------|----------|-------------------------|------------------------------|
|          |          |                         |                              |
|          |          |                         |                              |
|          |          |                         |                              |
|          |          |                         |                              |



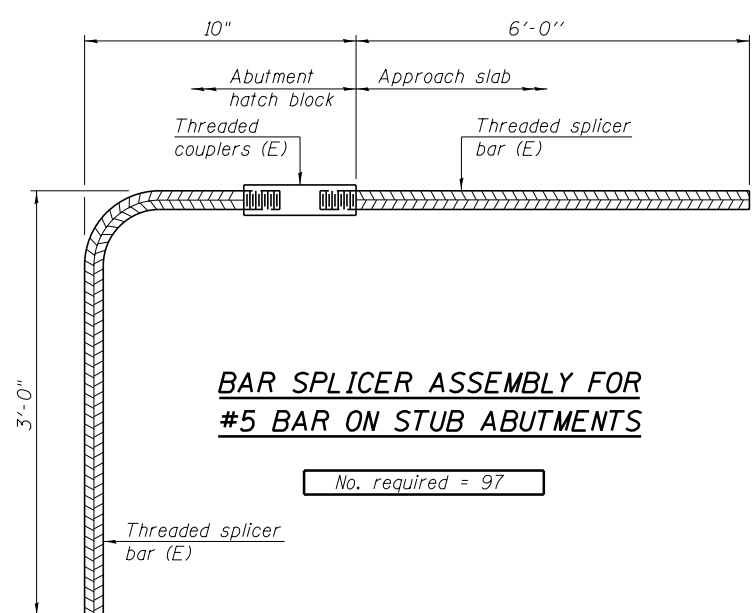
**INSTALLATION AND SETTING METHODS**

"A" : Set bar splicer assembly by means of a template bolt.  
 "B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.  
 (E) : Indicates epoxy coating.



**STANDARD MECHANICAL SPLICER**

| Location | Bar size | No. assemblies required |
|----------|----------|-------------------------|
|          |          |                         |
|          |          |                         |
|          |          |                         |
|          |          |                         |



**BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS**

No. required = 97

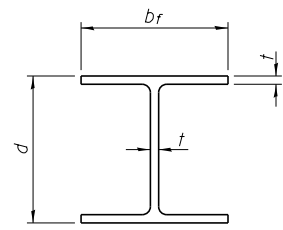
**NOTES**

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.  
 All reinforcement shall be lapped and tied to the splicer bars.  
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.  
 See approved list of bar splicer assemblies and mechanical splicers for alternatives.

|                                     |                       |                |           |
|-------------------------------------|-----------------------|----------------|-----------|
| FILE NAME =                         | USER NAME = jsurber   | DESIGNED - JLS | REVISED - |
| 0160487.60W75.084_bar-spliced.t.dgn |                       | CHECKED - AJK  | REVISED - |
|                                     | PLOT SCALE =          | DRAWN - RMG    | REVISED - |
|                                     | PLOT DATE = 6/12/2015 | CHECKED - AJK  | REVISED - |

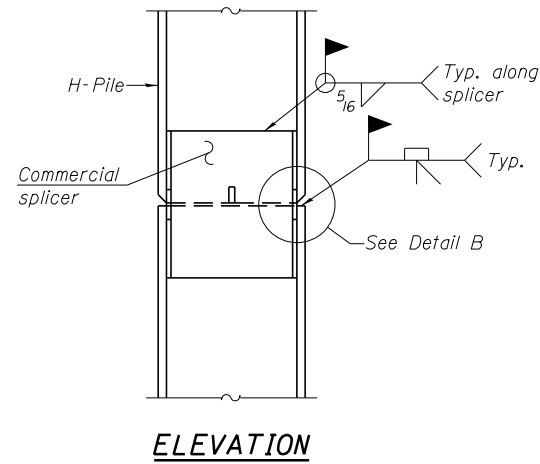
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
| 373                | 2013-037B-R | COOK   | 787                       | 612       |
| CONTRACT NO. 60W75 |             |        | ILLINOIS FED. AID PROJECT |           |

Y:\chicago\100005\10093\Eng\_Docs\_Phase\_1\SN\_016\_0486\_0487\_1st\_Ave\_Over\_Canal\Final\Final\_0487\_0160487\_60W75\_084\_bar-spliced.t.dgn 5:45:45 PM 6/12/2015

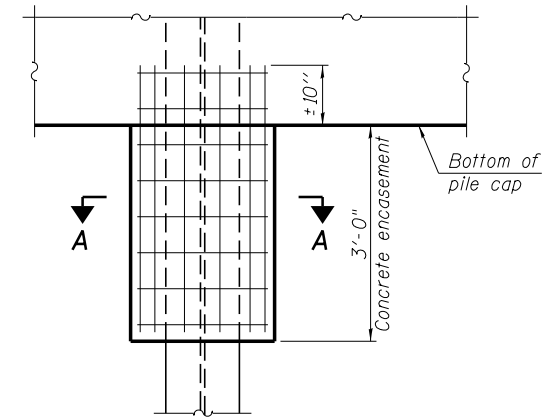


**STEEL PILE TABLE**

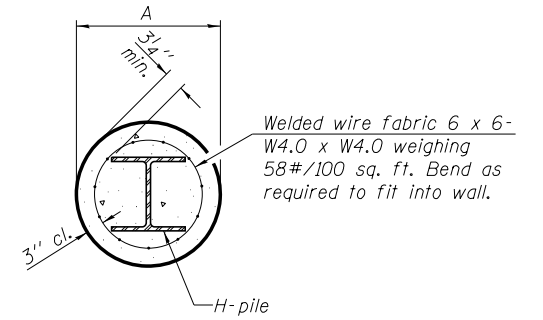
| Designation | Depth d | Flange width br | Web and Flange thickness t | Encasement diameter A |
|-------------|---------|-----------------|----------------------------|-----------------------|
| HP 14x117   | 14 1/4" | 14 7/8"         | 13/16"                     | 30"                   |
| x102        | 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**



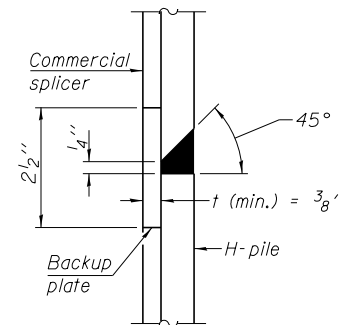
**ELEVATION**



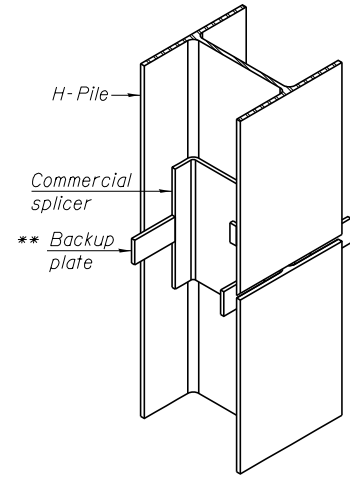
**SECTION A-A**

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

**PILE ENCASEMENT**

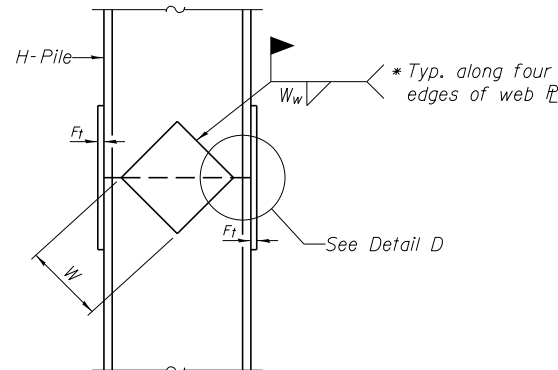


**DETAIL "B"**

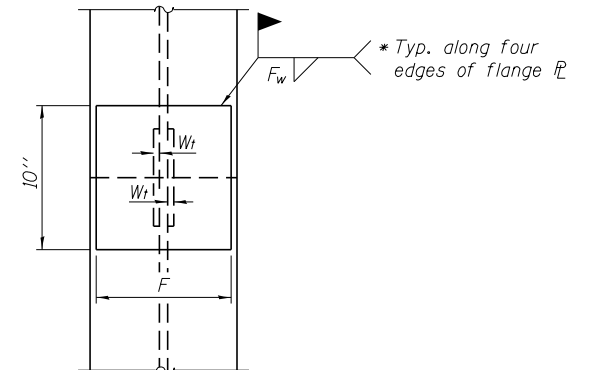


**ISOMETRIC VIEW**

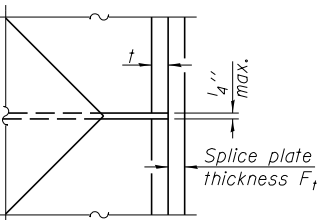
**WELDED COMMERCIAL SPLICE**



**ELEVATION**



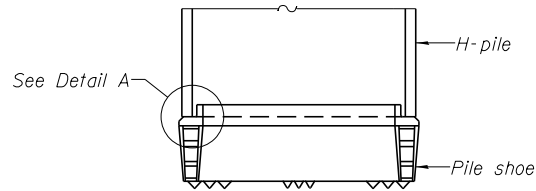
**END VIEW**



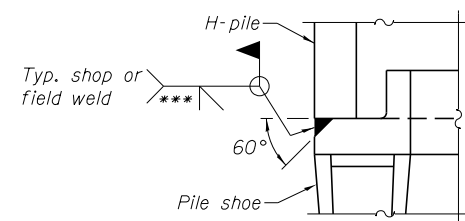
**DETAIL D**

**WELDED PLATE FIELD SPLICE**

| Designation | F       | F <sub>t</sub> | F <sub>w</sub> | W      | W <sub>t</sub> | W <sub>w</sub> |
|-------------|---------|----------------|----------------|--------|----------------|----------------|
| HP 14x117   | 12 1/2" | 1"             | 7/8"           | 7 3/4" | 5 8/8"         | 1/2"           |
| x102        | 12 1/2" | 7/8"           | 3/4"           | 7 3/4" | 5 8/8"         | 1/2"           |
| x89         | 12 1/2" | 3/4"           | 1/16"          | 7 3/4" | 5 8/8"         | 1/2"           |
| x73         | 12 1/2" | 5/8"           | 9/16"          | 7 3/4" | 5 8/8"         | 1/2"           |
| HP 12x84    | 10"     | 7/8"           | 1/16"          | 6 1/2" | 5 8/8"         | 1/2"           |
| x74         | 10"     | 7/8"           | 1/16"          | 6 1/2" | 5 8/8"         | 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"           |

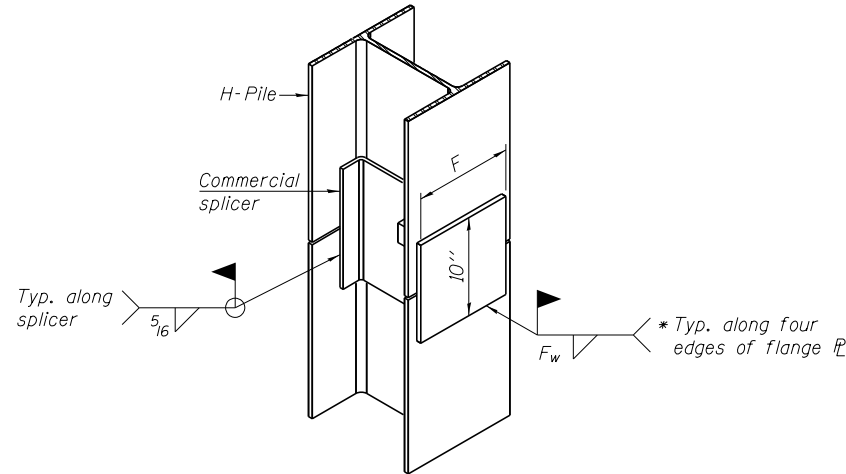


**ELEVATION**



**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.











# SOIL BORING LOG

GSI Job No. 10025  
Page 1 of 1  
Date 4/11/13

ROUTE FAP 373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY JZ  
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM  
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

| STRUCT. NO.<br>Station                                       | BORING NO.<br>Station | Offset        | Ground Surface Elev. | D E P T H |       |     |     | B L O C K |     |     |     | U C S |     |     |     | M O I S T |     |     |     |
|--|-----------------------|---------------|----------------------|-----------|-------|-----|-----|-----------|-----|-----|-----|-------|-----|-----|-----|-----------|-----|-----|-----|
|  |                       |               |                      | (ft)      | (#)   | (%) | (%) | (ft)      | (#) | (%) | (%) | (ft)  | (#) | (%) | (%) | (ft)      | (#) | (%) | (%) |
| 016-0487<br>30+72.59   | SB-29<br>32+60        | 76.10ft Right | 591.70               |           |       |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
| 6.0" ASPHALT   |                       |               |                      | 591.20    |       |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
| CLAY LOAM-dark brown, gray & black-stiff to hard (Fill)      |                       |               |                      |           | 6     |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 8     | 4.9 | 18  |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 9     | S   |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           |       |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 4     |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 5     | 2.0 | 23  |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 6     | P   |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           |       |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 4     |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 4     | 1.0 | 27  |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 4     | P   |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           |       |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
| SILTY CLAY LOAM with Gravel-brown & gray-dense to very dense |                       |               |                      | 583.70    |       |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 16    |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 24    |     | 10  |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 33    |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           |       |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 26    |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 50/5" |     | 13  |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           |       |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
| SILTY CLAY LOAM with Gravel-brown & gray-very dense          |                       |               |                      | 578.70    |       |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 37    |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 50/5" |     | 18  |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           |       |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 15    |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
| SILTY LOAM-gray-dense  |                       |               |                      | 576.20    |       |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 18    |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 19    |     | 20  |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 21    |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           |       |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 18    |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 20    |     | 19  |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 23    |     |     |           |     |     |     |       |     |     |     |           |     |     |     |
|  |                       |               |                      |           | 20    |     |     |           |     |     |     |       |     |     |     |           |     |     |     |

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, from 137 (Rev. 8-99)



# ROCK CORE LOG

PAGE 1 of 1  
DATE 4/11/2013  
LOGGED BY JK  
GSI JOB No. 10025

ROUTE FAP 373 (IL 171) DESCRIPTION 1st Ave. Bridge Rehabilitation & Replacement, 47th St. to 55th St.  
SECTION 2013-037B-R LOCATION SEC 11, 12, 13 & 14 T 38 N, R 12 E, 3rd PM  
COUNTY Cook CORING METHOD Rotary Wash

| STRUCT. NO.<br>Station                                  | BORING NO.<br>Station | Offset      | Ground Surface Elev. | D E P T H |     |     |     | R E C O R D |     |     |     | C O R E I N G |     |     |     |
|---|-----------------------|-------------|----------------------|-----------|-----|-----|-----|-------------|-----|-----|-----|---------------|-----|-----|-----|
|   |                       |             |                      | (ft)      | (#) | (%) | (%) | (ft)        | (#) | (%) | (%) | (ft)          | (#) | (%) | (%) |
| 016-0847<br>30+72.59                                    | SB-29<br>32+60        | 76.1' Right | 591.7                |           |     |     |     |             |     |     |     |               |     |     |     |
| CORING BARREL TYPE & SIZE <u>NX Double Swivel-10 ft</u> |                       |             |                      |           |     |     |     |             |     |     |     |               |     |     |     |
| Core Diameter <u>2.0 in</u>                             |                       |             |                      |           |     |     |     |             |     |     |     |               |     |     |     |
| Top of Rock Elev. <u>557.2</u>                          |                       |             |                      |           |     |     |     |             |     |     |     |               |     |     |     |
| Begin Core Elev. <u>556.2</u>                           |                       |             |                      |           |     |     |     |             |     |     |     |               |     |     |     |

| CORING METHOD | CORING BARREL TYPE & SIZE | CORE DIAMETER | TOP OF ROCK ELEV. | BEGIN CORE ELEV. | DEPTH (ft) | CORING RATE (ft/min) | CORING TIME (min) | CORING COST (\$/ft) | CORING NOTES    |
|---------------|---------------------------|---------------|-------------------|------------------|------------|----------------------|-------------------|---------------------|-----------------|
|               |                           |               |                   |                  |            |                      |                   |                     |                 |
| Rotary Wash   | NX Double Swivel-10 ft    | 2.0 in        | 557.2             | 556.2            | 1          | 95.0                 | 81.0              | n/a                 | 110.4<br>-39.2' |

SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE  
RUN 1 (-35.5' to -45.5')  
Light gray mottled gray & fine grained with horizontal bedding. Vertical fracture with intersecting horizontal fractures from -35.5' to -36.4'. Horizontal fractures @ -37.9', -39.2', -40.2', -40.4', -40.9', -42.1', -42.9', -43.0' & -43.1'.



Color pictures of the cores Yes Cores will be stored for examination for -  
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)



|   |                     |                |           |
|---|---------------------|----------------|-----------|
| FILE NAME =                             | USER NAME = jsurber | DESIGNED - AJK | REVISED - |
| 0160487.60W75.089.Soil Boring Logs Pter | 6/12/2015           | CHECKED - JLS  | REVISED - |
|   |                     | DRAWN - AJK    | REVISED - |
|   |                     | CHECKED - JLS  | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS PIER 16  
STRUCTURE NO. 016-0487  
SHEET NO. SF91 OF SF96 SHEETS

| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-------------|--------|--------------|-----------|
| 373                       | 2013-037B-R | COOK   | 787          | 617       |
| CONTRACT NO. 60W75        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

X:\100005\10093\Eng\_Docs\_Phase\_1\11\SN\_016\_0486\_0487\_1st\_Ave\_cover\_Conc\Final\Final\_0487\_0160487\_60W75\_089\_Soil Boring Logs Pter 16.dgn 5:46:17 PM 6/12/2015



SOIL BORING LOG

GSI Job No. 10025 Page 1 of 2 Date 4/8/13

ROUTE FAP 373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE CME Automatic

Table with columns for DEPTH (ft), BLOW COUNT (blows/ft), UCS (tsf), and MOISTURE (%). Includes data for 9.0" CONCRETE BRIDGE DECK and VOID.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-99)



SOIL BORING LOG

GSI Job No. 10025 Page 2 of 2 Date 4/8/13

ROUTE FAP 373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE CME Automatic

Table with columns for DEPTH (ft), BLOW COUNT (blows/ft), UCS (tsf), and MOISTURE (%). Includes data for SILTY CLAY LOAM, CLAY, SILTY SAND & GRAVEL, and SILTY SAND & GRAVEL.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-99)

ROCK CORE LOG

PAGE 1 of 1 DATE 4/8/2013 LOGGED BY MD GSI JOB No. 10025

ROUTE FAP 373 (IL 171) DESCRIPTION 1st Ave. Bridge Rehabilitation & Replacement, 47th St. to 55th St. SECTION 2013-037B-R LOCATION SEC 11, 12, 13 & 14 T 38 N, R 12 E, 3rd PM COUNTY Cook CORING METHOD Rotary Wash

Table with columns for DEPTH (ft), CORE RECOVERY (%), ROCK QUALITY INDEX (RQI), and STRONG POINT INDEX (SPI). Includes data for BORING NO. SB-30.

SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE RUN 1 (-70.5' to -80.5') Light gray mottled gray, fine grained with horizontal bedding. Mottled from -79.6' to -80.5'. Vertical fracture with intersecting horizontal fractures from -70.5' to -71.8'.



Color pictures of the cores Yes Cores will be stored for examination for The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)



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

Table with columns for FILE NAME, USER NAME, DESIGNED, CHECKED, DRAWN, PLOT DATE, REVISIONS.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS PIER 17 STRUCTURE NO. 016-0487

SHEET NO. SF92 OF SF96 SHEETS

Table with columns for F.A.P. RTE., SECTION, COUNTY, TOTAL SHEETS, SHEET NO., CONTRACT NO.

ILLINOIS FED. AID PROJECT





# SOIL BORING LOG

GSI Job No. 10025

Page 1 of 2

Date 12/24/12

ROUTE FAP 373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY RT

SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM

COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. 016-0487  
 Station 30+72.59

BORING NO. SB-32  
 Station 34+02  
 Offset 47.00ft Right  
 Ground Surface Elev. 624.50 ft

| DEPTH (ft) | DIAMETER (in) | UNIT WEIGHT (pcf) | MOISTURE (%) |
|------------|---------------|-------------------|--------------|
| 0          |               |                   |              |
| 1          |               |                   |              |
| 2          |               |                   |              |
| 3          |               |                   |              |
| 4          |               |                   |              |
| 5          |               |                   |              |
| 6          |               |                   |              |
| 7          |               |                   |              |
| 8          |               |                   |              |
| 9          |               |                   |              |
| 10         |               |                   |              |
| 11         |               |                   |              |
| 12         |               |                   |              |
| 13         |               |                   |              |
| 14         |               |                   |              |
| 15         |               |                   |              |
| 16         |               |                   |              |
| 17         |               |                   |              |
| 18         |               |                   |              |
| 19         |               |                   |              |
| 20         |               |                   |              |

| DEPTH (ft) | DIAMETER (in) | UNIT WEIGHT (pcf) | MOISTURE (%) |
|------------|---------------|-------------------|--------------|
| 0          |               |                   |              |
| 1          |               |                   |              |
| 2          |               |                   |              |
| 3          |               |                   |              |
| 4          |               |                   |              |
| 5          |               |                   |              |
| 6          |               |                   |              |
| 7          |               |                   |              |
| 8          |               |                   |              |
| 9          |               |                   |              |
| 10         |               |                   |              |
| 11         |               |                   |              |
| 12         |               |                   |              |
| 13         |               |                   |              |
| 14         |               |                   |              |
| 15         |               |                   |              |
| 16         |               |                   |              |
| 17         |               |                   |              |
| 18         |               |                   |              |
| 19         |               |                   |              |
| 20         |               |                   |              |

9.0" CONCRETE BRIDGE DECK 623.75

VOID

VOID (continued)

CLAY LOAM-brown & gray-very stiff to hard (Fill)

CRUSHED STONE-medium dense to very dense (Fill)

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)



# SOIL BORING LOG

GSI Job No. 10025

Page 2 of 2

Date 12/24/12

ROUTE FAP 373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY RT

SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM

COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. 016-0487  
 Station 30+72.59

BORING NO. SB-32  
 Station 34+02  
 Offset 47.00ft Right  
 Ground Surface Elev. 624.50 ft

| DEPTH (ft) | DIAMETER (in) | UNIT WEIGHT (pcf) | MOISTURE (%) |
|------------|---------------|-------------------|--------------|
| 0          |               |                   |              |
| 1          |               |                   |              |
| 2          |               |                   |              |
| 3          |               |                   |              |
| 4          |               |                   |              |
| 5          |               |                   |              |
| 6          |               |                   |              |
| 7          |               |                   |              |
| 8          |               |                   |              |
| 9          |               |                   |              |
| 10         |               |                   |              |
| 11         |               |                   |              |
| 12         |               |                   |              |
| 13         |               |                   |              |
| 14         |               |                   |              |
| 15         |               |                   |              |
| 16         |               |                   |              |
| 17         |               |                   |              |
| 18         |               |                   |              |
| 19         |               |                   |              |
| 20         |               |                   |              |

| DEPTH (ft) | DIAMETER (in) | UNIT WEIGHT (pcf) | MOISTURE (%) |
|------------|---------------|-------------------|--------------|
| 0          |               |                   |              |
| 1          |               |                   |              |
| 2          |               |                   |              |
| 3          |               |                   |              |
| 4          |               |                   |              |
| 5          |               |                   |              |
| 6          |               |                   |              |
| 7          |               |                   |              |
| 8          |               |                   |              |
| 9          |               |                   |              |
| 10         |               |                   |              |
| 11         |               |                   |              |
| 12         |               |                   |              |
| 13         |               |                   |              |
| 14         |               |                   |              |
| 15         |               |                   |              |
| 16         |               |                   |              |
| 17         |               |                   |              |
| 18         |               |                   |              |
| 19         |               |                   |              |
| 20         |               |                   |              |

CRUSHED STONE-medium dense to very dense (Fill)

CLAY LOAM with Stone-gray-very dense (Fill)

SILT-gray-very dense

Drillers Observation: Fractured & weathered rock. Borehole continued with rock coring.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)

# ROCK CORE LOG

PAGE 1 of 2

DATE 12/27/2012

LOGGED BY DR

GSI JOB No. 10025

FAP 373 (IL 171) DESCRIPTION 1st Ave. Bridge Rehabilitation & Replacement, 47th St. to 55th St.

SECTION 2013-037B-R LOCATION SEC 11, 12, 13 & 14 T 38 N, R 12 E, 3rd PM

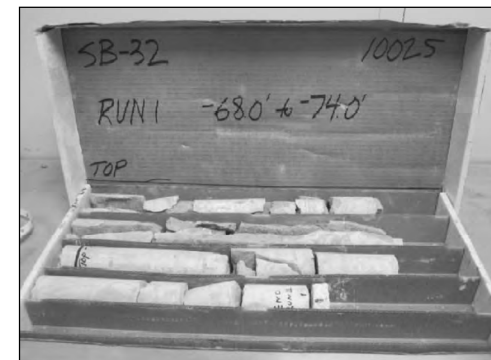
COUNTY Cook CORING METHOD Rotary Wash

STRUCT. NO. 016-0847  
 Station 30+72.59

BORING NO. SB-32  
 Station 34+02  
 Offset 47.0' Right  
 Ground Surface Elev. 624.5

SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE  
 RUN 1 (-68.0' to -74.0')  
 Light gray mottled gray with horizontal bedding. Fine grained with numerous horizontal & vertical fractures throughout.

| DEPTH (ft) | DIAMETER (in) | UNIT WEIGHT (pcf) | MOISTURE (%) |
|------------|---------------|-------------------|--------------|
| 0          |               |                   |              |
| 1          |               |                   |              |
| 2          |               |                   |              |
| 3          |               |                   |              |
| 4          |               |                   |              |
| 5          |               |                   |              |
| 6          |               |                   |              |
| 7          |               |                   |              |
| 8          |               |                   |              |
| 9          |               |                   |              |
| 10         |               |                   |              |
| 11         |               |                   |              |
| 12         |               |                   |              |
| 13         |               |                   |              |
| 14         |               |                   |              |
| 15         |               |                   |              |
| 16         |               |                   |              |
| 17         |               |                   |              |
| 18         |               |                   |              |
| 19         |               |                   |              |
| 20         |               |                   |              |



Color pictures of the cores Yes Cores will be stored for examination for  
 The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)



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

|             |                     |                |           |
|-------------|---------------------|----------------|-----------|
| FILE NAME = | USER NAME = jsurber | DESIGNED - AJK | REVISED - |
|             |                     | CHECKED - JLS  | REVISED - |
|             |                     | DRAWN - AJK    | REVISED - |
|             |                     | CHECKED - JLS  | REVISED - |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS PIER 19  
 STRUCTURE NO. 016-0487

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|-------------|--------|--------------|-----------|
| 373                | 2013-037B-R | COOK   | 787          | 620       |
| CONTRACT NO. 60W75 |             |        |              |           |

SHEET NO. SF94 OF SF96 SHEETS

ILLINOIS FED. AID PROJECT



### SOIL BORING LOG

GSI Job No. 10025  
Page 1 of 2  
Date 12/18/12

ROUTE FAP 373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY RT  
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3<sup>rd</sup> PM  
COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE CME Automatic

| STRUCT. NO.   | STATION  | DEPTH (ft)                  | BLOWS | UCS | MOIST | Surface Water Elev. | Stream Bed Elev. | Groundwater Elev.: | First Encounter | Upon Completion | After | DEPTH (ft) | BLOWS | UCS | MOIST |
|---|----------|-----------------------------|-------|-----|-------|---------------------|------------------|--------------------|-----------------|-----------------|-------|------------|-------|-----|-------|
| 016-0487  | 30+72.59 |                             |       |     |       | n/a                 | n/a              | n/a                | n/a             | n/a             |       |            |       |     |       |
| SB-33   | 34+54    |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
|   |          | 47.00ft Right               |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
|   |          | Ground Surface Elev. 624.30 |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| 9.0" CONCRETE BRIDGE DECK 623.55                      |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| VOID  |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| VOID (continued)                                      |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| CLAY LOAM-dark brown & gray-very stiff to hard (Fill) |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| CLAY LOAM with Stone-gray-dense (Fill)                |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| CLAY LOAM with Fractured Rock-gray-very dense         |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| Drillers Observation: Apparent bedrock                |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| Borehole continued with rock coring.                  |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| CLAY-gray-stiff                                       |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| CRUSHED STONE-medium dense to very dense (Fill)       |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| SILT-gray-dense to very dense                         |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, from 137 (Rev. 8-99)



### SOIL BORING LOG

GSI Job No. 10025  
Page 2 of 2  
Date 12/18/12

ROUTE FAP 373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY RT  
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3<sup>rd</sup> PM  
COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE CME Automatic

| STRUCT. NO.   | STATION  | DEPTH (ft)                  | BLOWS | UCS | MOIST | Surface Water Elev. | Stream Bed Elev. | Groundwater Elev.: | First Encounter | Upon Completion | After | DEPTH (ft) | BLOWS | UCS | MOIST |
|---|----------|-----------------------------|-------|-----|-------|---------------------|------------------|--------------------|-----------------|-----------------|-------|------------|-------|-----|-------|
| 016-0487  | 30+72.59 |                             |       |     |       | n/a                 | n/a              | n/a                | n/a             | n/a             |       |            |       |     |       |
| SB-33   | 34+54    |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
|   |          | 47.00ft Right               |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
|   |          | Ground Surface Elev. 624.30 |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| CRUSHED STONE-medium dense to very dense (Fill) (continued) |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| CLAY LOAM with Stone-gray-dense (Fill)                      |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| CLAY LOAM with Fractured Rock-gray-very dense               |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| Drillers Observation: Apparent bedrock                      |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| Borehole continued with rock coring.                        |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| CLAY-gray-stiff   |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| CRUSHED STONE-medium dense to very dense (Fill)             |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |
| SILT-gray-dense to very dense                               |          |                             |       |     |       |                     |                  |                    |                 |                 |       |            |       |     |       |

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, from 137 (Rev. 8-99)

PAGE 1 of 1  
DATE 12/19/2012  
LOGGED BY DR  
GSI JOB No. 10025

### ROCK CORE LOG

FAP 373 (IL 171) DESCRIPTION 1st Ave. Bridge Rehabilitation & Replacement, 47th St. to 55th St.  
SECTION 2013-037B-R LOCATION SEC 11, 12, 13 & 14 T 38 N, R 12 E, 3rd PM  
COUNTY Cook CORING METHOD Rotary Wash

| STRUCT. NO.   | STATION  | BORING NO. | STATION | OFFSET      | GROUND SURFACE ELEV. | CORING BARREL TYPE & SIZE | CORE DIAMETER | TOP OF ROCK ELEV. | BEGIN CORE ELEV. | DEPTH (ft) | CORE (#) | RECOVERY (%) | RECOVERED (ft) | CORRECTED (ft) | STRENGTH (tsf) |
|---|----------|------------|---------|-------------|----------------------|---------------------------|---------------|-------------------|------------------|------------|----------|--------------|----------------|----------------|----------------|
| 016-0847  | 30+72.59 | SB-33      | 34+54   | 47.0' Right | 624.30               | NX Double Swivel-10 ft    | 2.0 in        | 555.8             | 555.3            |            |          |              |                |                |                |
| SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE<br>RUN 1 (-69.0' to -79.0')<br>Light gray mottled gray with horizontal bedding. Fine grained with few small vugs.<br>Horizontal fracture @ -70.2'. Vertical fracture from -71.0' to -71.4'. Horizontal fractures @ -72.0' & -72.6'. 1/4" clay parting @ -73.4'. Horizontal fractures @ -74.6', -75.6', -76.3', -77.8' & -78.8'. |          |            |         |             |                      |                           |               |                   |                  |            |          |              |                |                |                |

Color pictures of the cores Yes. Cores will be stored for examination for \_\_\_\_  
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)



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

FILE NAME = 0160487.60W75.093.Soil Boring Logs Pier 20 and 21.dgn  
PLOT DATE = 6/12/2015

USER NAME = jsurber  
SCALE =  
DESIGNED - AJK  
CHECKED - JLS  
DRAWN - AJK  
CHECKED - JLS

REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS PIERS 20 AND 21  
STRUCTURE NO. 016-0487

SHEET NO. SF95 OF SF96 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|-------------|--------|--------------|-----------|
| 373                | 2013-037B-R | COOK   | 787          | 621       |
| CONTRACT NO. 60W75 |             |        |              |           |

ILLINOIS FED. AID PROJECT

X:\100005\10093\Eng\_Docs\_Phase\_1\11\SN\_016\_0486\_0487\_1st\_Ave\_cover\_Conc\Final\Final\_0487\0160487\_60W75\_093\_Soil Boring Logs Pier 20.dgn 5:46:54 PM 6/12/2015



# SOIL BORING LOG

GSI Job No. 10025  
Page 1 of 2  
Date 12/13/12

ROUTE FAP 373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY TZ  
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM  
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. 016-0487  
Station 30+72.59  
BORING NO. SB-34  
Station 36+02  
Offset 49.20ft Right  
Ground Surface Elev. 623.70 ft

| DEPTH (ft) | BLOWS (6") | UCS (tsf) | MOISTURE (%) | DESCRIPTION   | DEPTH (ft) | BLOWS (6") | UCS (tsf) | MOISTURE (%) |
|------------|------------|-----------|--------------|---|------------|------------|-----------|--------------|
| 0          |            |           |              | 12.0" ASPHALT   |            |            |           |              |
| 622.70     |            |           |              | CLAY to CLAY LOAM-brown & gray-stiff to hard (Fill) (continued) |            |            |           |              |
| 7          |            |           |              |   | 5          |            |           |              |
| 5          | 3.8        | 15        |              |   | 8          | 1.9        | 23        |              |
| 5          | P          |           |              |   | 11         | B          |           |              |
| 6          |            |           |              |   | 4          |            |           |              |
| 8          | 2.9        | 17        |              |   | 8          | 2.7        | 20        |              |
| 8          | B          |           |              |   | 11         | B          |           |              |
| 4          |            |           |              |   | 5          |            |           |              |
| 4          | 3.4        | 19        |              |   | 8          | 4.3        | 17        |              |
| 10         | B          |           |              |   | 12         | B          |           |              |
| 5          |            |           |              | CLAY-gray-very stiff  | 7          |            |           |              |
| 6          | 2.7        | 20        |              |   | 10         | 3.5        | 20        |              |
| 8          | B          |           |              |   | 12         | B          |           |              |
| 5          |            |           |              |   | 7          |            |           |              |
| 6          | 2.3        | 17        |              | FRACTURED ROCK & GRAVEL-very loose to dense                     | 10         | 2.0        | 16        |              |
| 8          | B          |           |              |   | 12         | P          |           |              |
| 8          |            |           |              |   | 15         |            |           |              |
| 8          |            | 27        |              |   | 16         | B          | 7         |              |
| 4          |            |           |              |   | 13         |            |           |              |
| 6          | 2.0        | 13        |              |   | 11         | 2.2        | 24        |              |
| 8          | B          |           |              |   | 15         | B          |           |              |
| 8          |            |           |              |   | 10         |            |           |              |
| 8          |            |           |              |   | 16         | 2.2        | 24        |              |
| 5          |            |           |              |   | 21         | B          |           |              |
| 8          | 2.8        | 13        |              |   | 10         |            |           |              |
| 5          | B          |           |              |   | 16         | 2.2        | 24        |              |
| 20         |            |           |              |   | 21         | B          |           |              |

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, from 137 (Rev. 8-99)



# SOIL BORING LOG

GSI Job No. 10025  
Page 2 of 2  
Date 12/13/12

ROUTE FAP 373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY TZ  
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM  
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. 016-0487  
Station 30+72.59  
BORING NO. SB-34  
Station 36+02  
Offset 49.20ft Right  
Ground Surface Elev. 623.70 ft

| DEPTH (ft) | BLOWS (6") | UCS (tsf) | MOISTURE (%) | DESCRIPTION                                   | DEPTH (ft) | BLOWS (6") | UCS (tsf) | MOISTURE (%) |
|------------|------------|-----------|--------------|---|------------|------------|-----------|--------------|
| 581.70     |            |           |              | CLAY LOAM-gray-very stiff to hard (continued) | 581.70     |            |           |              |
| 9          |            |           |              |   | 15         |            |           |              |
| 9          | 5.9        | 19        |              |   | 29         |            |           |              |
| 13         | B          |           |              |   | 33         |            |           |              |
| 14         |            |           |              |   | 15         |            |           |              |
| 15         | 2.0        | 16        |              |   | 72/6"      |            |           |              |
| 22         | P          |           |              |   | 17         |            |           |              |
| 14         |            |           |              |   | 553.70     | -70        |           |              |
| 15         |            |           |              | Drillers Observation: Apparent bedrock        |            |            |           |              |
| 22         |            |           |              |   | 551.70     |            |           |              |
| 13         |            |           |              | Borehole continued with rock coring.          |            |            |           |              |
| 11         | 2.2        | 24        |              |   |            |            |           |              |
| 15         | B          |           |              |   |            |            |           |              |
| 10         |            |           |              |   |            |            |           |              |
| 16         | 2.2        | 24        |              |   |            |            |           |              |
| 21         | B          |           |              |   |            |            |           |              |

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, from 137 (Rev. 8-99)

# ROCK CORE LOG

PAGE 1 of 1  
DATE 12/18/2012  
LOGGED BY RJ  
GSI JOB No. 10025  
FAP 373 (IL 171) DESCRIPTION 1st Ave. Bridge Rehabilitation & Replacement, 47th St. to 55th St.  
SECTION 2013-037B-R LOCATION SEC 11, 12, 13 & 14 T 38 N, R 12 E, 3rd PM  
COUNTY Cook CORING METHOD Rotary Wash  
STRUCT. NO. 016-0847  
Station 30+72.59  
BORING NO. SB-34  
Station 36+02  
Offset 49.2' Right  
Ground Surface Elev. 623.7

| DEPTH (ft) | CORE (#) | RECOVERY (%) | RECOVERED (ft) | CORRECTED (ft) | STRENGTH (tsf) |
|------------|----------|--------------|----------------|----------------|----------------|
| 1          | 100.0    | 79.0         | n/a            | 337.4          | -72.1'         |
| -77        |          |              |                |                |                |
| -82        |          |              |                |                |                |



Color pictures of the cores Yes Cores will be stored for examination for -  
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)



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

|   |                     |                |           |
|---|---------------------|----------------|-----------|
| FILE NAME =                                       | USER NAME = jsurber | DESIGNED - AJK | REVISED - |
|   |                     | CHECKED - JLS  | REVISED - |
| 0160487.60W75.094.Soil Boring Logs N Abutment.dwg | DATE = 6/12/2015    | DRAWN - AJK    | REVISED - |
|   |                     | CHECKED - JLS  | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS NORTH ABUTMENT  
STRUCTURE NO. 016-0487

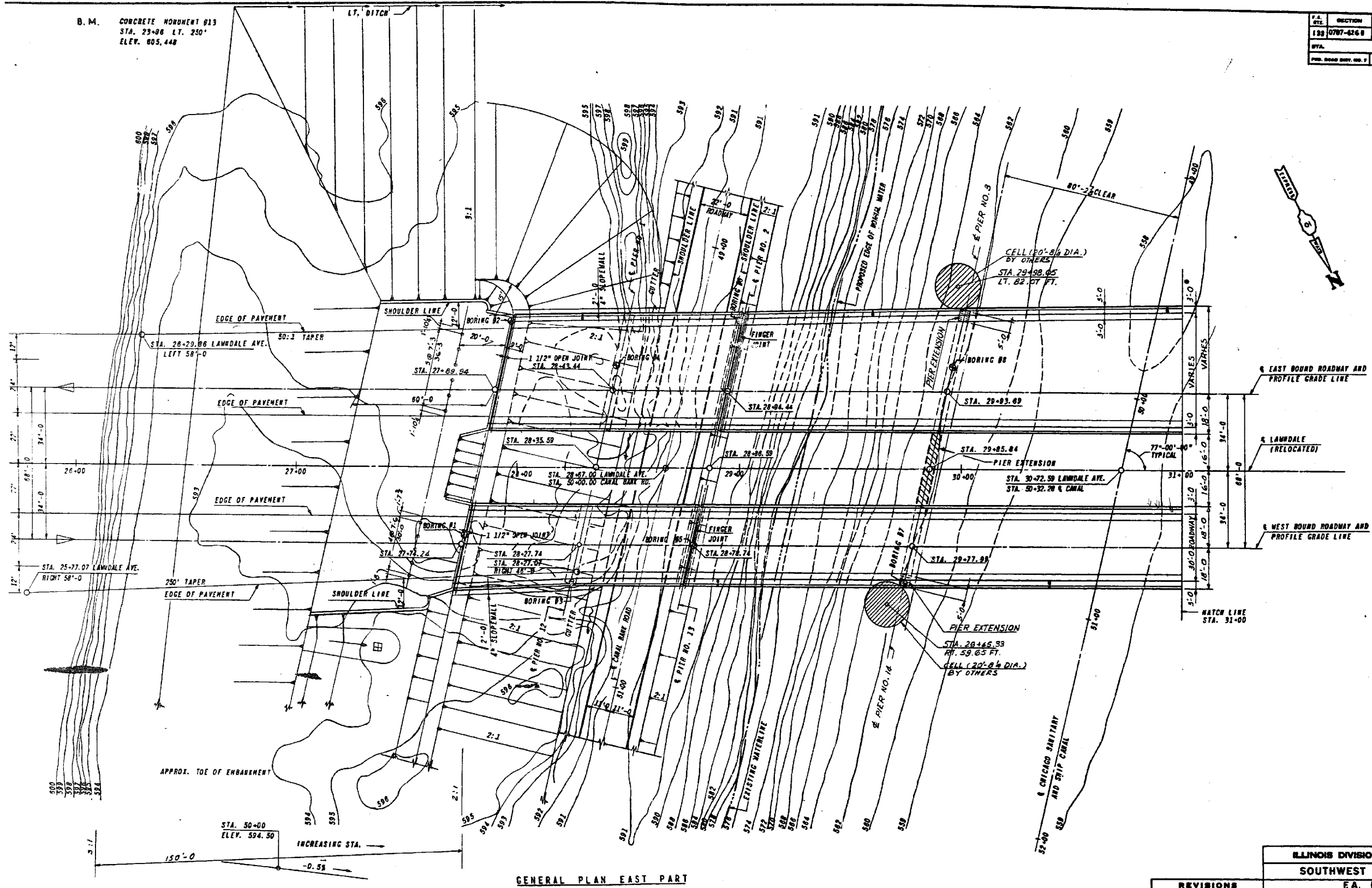
SHEET NO. SF96 OF SF96 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|-------------|--------|--------------|-----------|
| 373                | 2013-037B-R | COOK   | 787          | 622       |
| CONTRACT NO. 60W75 |             |        |              |           |

ILLINOIS FED. AID PROJECT

B.M. CONCRETE MONUMENT #13  
STA. 23+86 LT. 250'  
ELEV. 605.448

| F.A. STA.            | SECTION    | EXPRESSWAY | TOTAL SHEETS     | SHEET NO. |
|----------------------|------------|------------|------------------|-----------|
| 133                  | 0707-626 B | SOUTHWEST  | 495              | 7         |
| FROM STA.            |            | TO STA.    |                  |           |
| P.L. ROAD DIV. NO. 7 |            | ILLINOIS   | FED. AID PROJECT |           |



PROFILE GRADE  
CANAL BANK RD.

GENERAL PLAN EAST PART

| REVISIONS   |      |
|-------------|------|
| NAME        | DATE |
|             |      |
|             |      |
|             |      |
| DESIGNED BY |      |
| REVIEWED    | Cwy  |

|                                 |                   |
|---------------------------------|-------------------|
| ILLINOIS DIVISION OF HIGHWAYS   |                   |
| SOUTHWEST EXPRESSWAY            |                   |
| F.A. RT 133                     |                   |
| LAWDALE AVE. STRUCTURE OVER     |                   |
| CHICAGO SANITARY AND SHIP CANAL |                   |
| SECTION 0707-626B               |                   |
| GENERAL PLAN EAST PART          |                   |
| SCALE: HORIZ. 1" = 20'          | VERT. DATE 8-5-63 |
| DESIGNED BY                     | DRAWN BY J.P.     |
| REVIEWED Cwy                    | CHECKED BY L.O.B. |

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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 - AJK | REVISIONS - |
| 0160487.60W75.X01.exist.gpe.dgn |                       | CHECKED - JLS  | REVISIONS - |
|                                 | PLOT SCALE =          | DRAWN - AJK    | REVISIONS - |
|                                 | PLOT DATE = 6/17/2015 | CHECKED - JLS  | REVISIONS - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS GENERAL PLAN SPANS 1 THRU 4  
STRUCTURE NO. 016-0487

SHEET NO. SFX1 OF SFX46 SHEETS

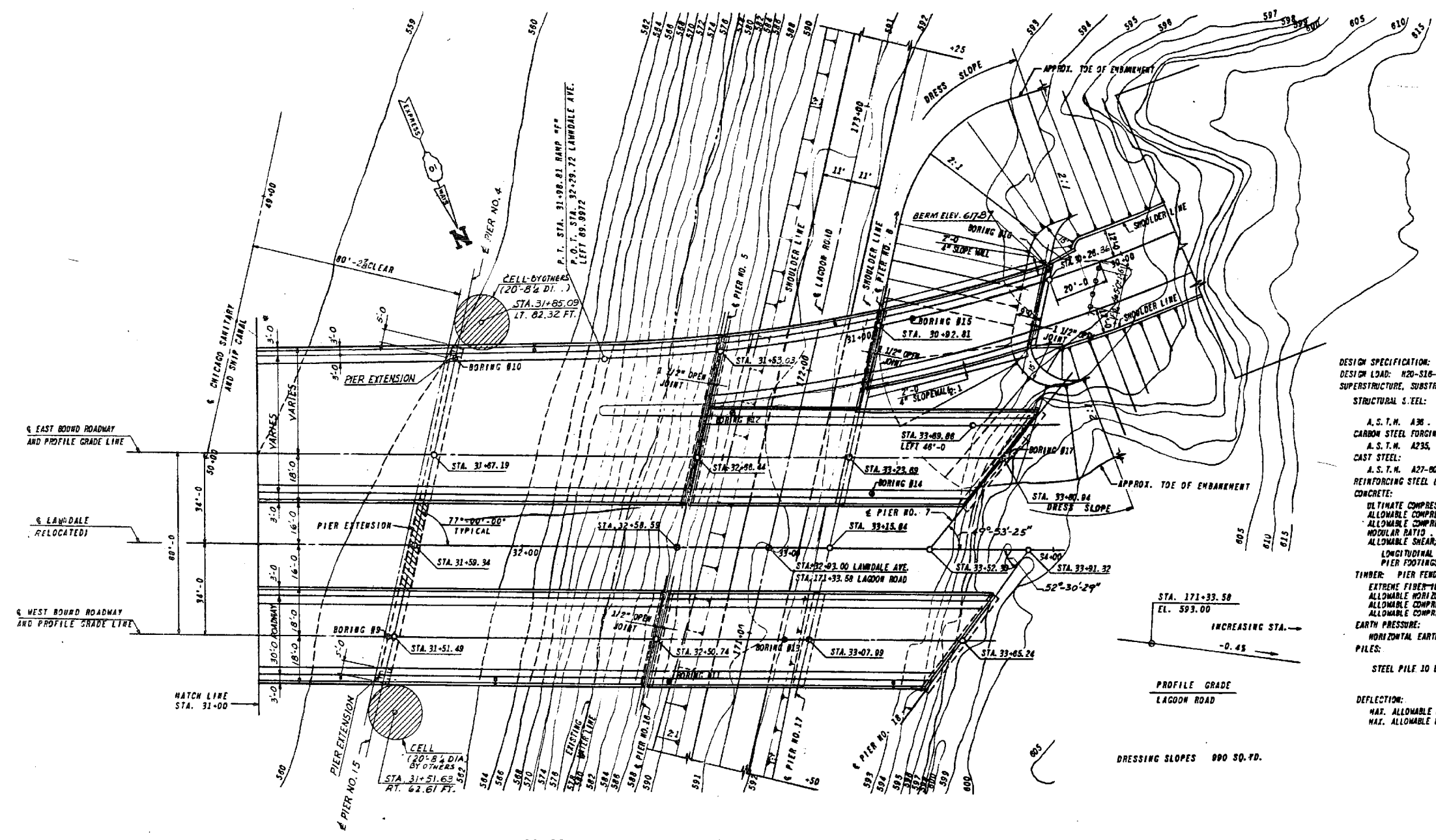
FOR INFORMATION ONLY

| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 373                       | 2013-037B-R | COOK   | 787          | 623                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

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| F.A. RT.              | SECTION    | EXPRESSWAYS               | TOTAL SHEETS | SHEET NO. |
|-----------------------|------------|---------------------------|--------------|-----------|
| 133                   | 0707-626 B | SOUTHWEST                 | 95           | 8         |
| BYA.                  |            | TO STA.                   |              |           |
| FED. ROAD DIST. NO. 7 |            | ILLINOIS FED. AID PROJECT |              |           |

B. M. CONCRETE MONUMENT #12  
 STA. 30+05 LT. 395'  
 ELEV. 635.043



**DESIGN DATA**

DESIGN SPECIFICATION: AASHTO 1961 EDITION  
 DESIGN LOAD: H20-S16-44  
 SUPERSTRUCTURE, SUBSTRUCTURE AND ABUTMENTS:

STRUCTURAL STEEL:

- A. S. T. M. A36 . . . . .  $f_c = 20,000$  psi
- CARBON STEEL FORGINGS:
- A. S. T. M. A235, CLASS F . . . . .  $f_y = 40,000$  psi
- CAST STEEL:
- A. S. T. M. A27-80, GRADE 65-35 . . . . .  $f_y = 35,000$  psi
- REINFORCING STEEL (INTERMEDIATE AND HARD GRADE) . . . . .  $f_s = 20,000$  psi

CONCRETE:

- ULTIMATE COMPRESSION . . . . .  $f'_c = 3,500$  psi
- ALLOWABLE COMPRESSION (WITHOUT EARTH PRESSURE) . . . . .  $f_c = 1,400$  psi
- ALLOWABLE COMPRESSION (WITH EARTH PRESSURE) . . . . .  $f_c = 1,200$  psi
- MODULAR RATIO . . . . .  $n = 10$
- ALLOWABLE SHEAR; BEAMS WITHOUT WEB REINFORCEMENT . . . . .  $v = 90$  psi
- LONGITUDINAL BARS ANCHORED . . . . .  $u = 90$  psi
- PIER FOOTINGS . . . . .  $v = 75$  psi

TIMBER: PIER FENDER

- EXTREME FIBER-IN BENDING, PARALLEL TO GRAIN . . . . .  $f = 3,300$  psi
- ALLOWABLE HORIZONTAL SHEAR . . . . .  $u = 400$  psi
- ALLOWABLE COMPRESSION, PERPENDICULAR TO GRAIN . . . . .  $f = 1,500$  psi
- ALLOWABLE COMPRESSION, PARALLEL TO GRAIN . . . . .  $f = 3,100$  psi

EARTH PRESSURE:

- HORIZONTAL EARTH PRESSURE = EQUIV. FLUID PRESSURE . . . . . 40 p/cf

PILES:

- STEEL PILE 10 HP 87 . . . . . 60 TONS

DEFLECTION:

- MAX. ALLOWABLE LIVE LOAD DEFLECTION, COMPOSITE . . . . . 1/1200 SPAN
- MAX. ALLOWABLE LIVE LOAD DEFLECTION, NON-COMPOSITE . . . . . 1/1000 SPAN

GENERAL PLAN WEST PART

| REVISIONS   |        | ILLINOIS DIVISION OF HIGHWAYS   |                       |
|-------------|--------|---------------------------------|-----------------------|
| NAME        | DATE   | SOUTHWEST EXPRESSWAY            |                       |
|             |        | F.A. RT 133                     |                       |
|             |        | LAWDALE AVE. STRUCTURE OVER     |                       |
|             |        | CHICAGO SANITARY AND SHIP CANAL |                       |
|             |        | SECTION 0707-626B               |                       |
|             |        | GENERAL PLAN WEST PART          |                       |
| DESIGNED BY | ST.    | SCALE                           | HORIZ. VERT. $1"=20'$ |
| REVIEWED BY | C.W.N. | DATE                            | 8-5-83                |
|             |        | DRAWN BY                        | D.U.                  |
|             |        | CHECKED BY                      | L.D.B.                |

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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 - AJK | REVISIONS - |
| 0160487.60W75.X82.existgpe.dgn | PLOT SCALE =          | CHECKED - JLS  | REVISIONS - |
|                                | PLOT DATE = 6/17/2015 | DRAWN - AJK    | REVISIONS - |
|                                |                       | CHECKED - JLS  | REVISIONS - |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS GENERAL PLAN SPANS 4 THRU 7  
 STRUCTURE NO. 016-0487

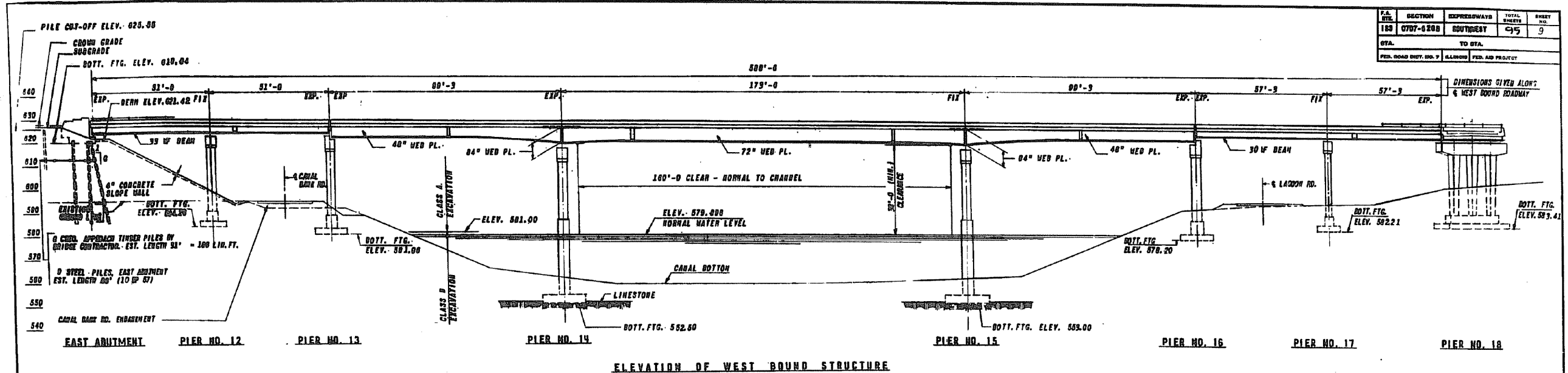
SHEET NO. SFX2 OF SFX46 SHEETS

| FOR INFORMATION ONLY      |             |        |                    |           |
|---------------------------|-------------|--------|--------------------|-----------|
| F.A.P. RT.                | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
| 373                       | 2013-037B-R | COOK   | 787                | 624       |
|                           |             |        | CONTRACT NO. 60W75 |           |
| ILLINOIS FED. AID PROJECT |             |        |                    |           |

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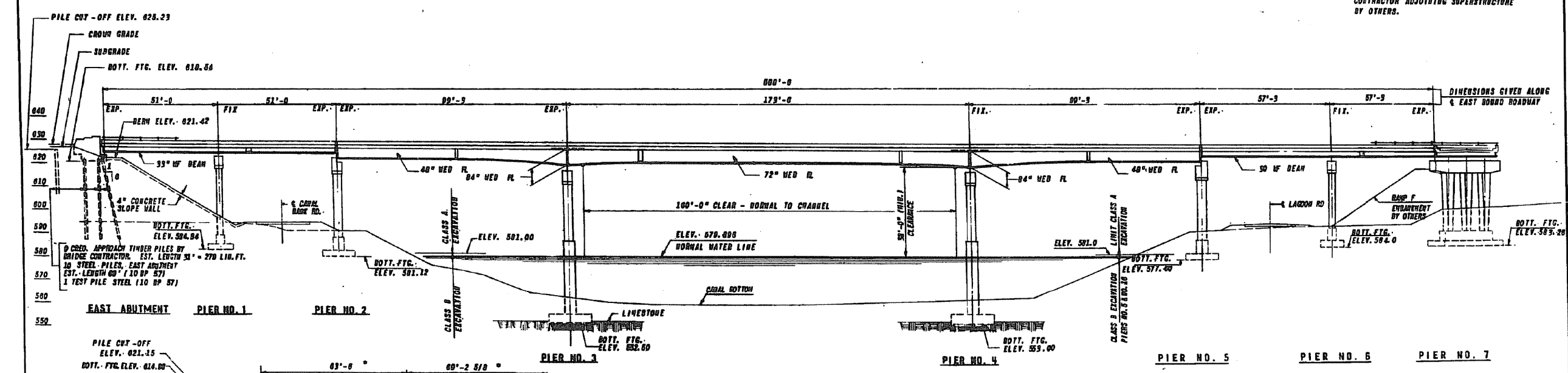


|                       |           |            |                  |           |
|-----------------------|-----------|------------|------------------|-----------|
| F.A. RT.              | SECTION   | EXPRESSWAY | TOTAL SHEETS     | SHEET NO. |
| 133                   | 0707-826B | SOUTHWEST  | 95               | 9         |
| STA.                  | TO STA.   |            |                  |           |
| FED. ROAD DIST. NO. 7 | ILLINOIS  |            | FED. AID PROJECT |           |

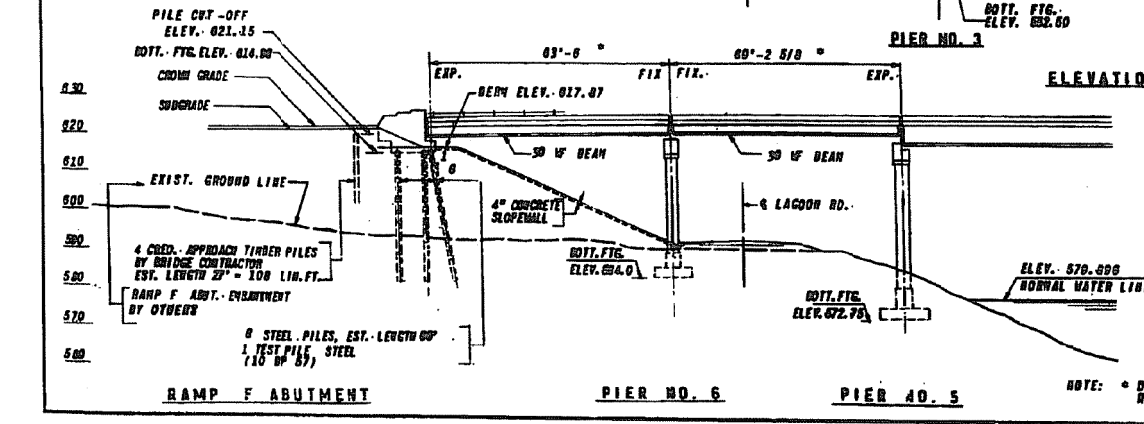


ELEVATION OF WEST BOUND STRUCTURE

NOTE: PIERS NO. 7 & NO. 18 BY BRIDGE CONTRACTOR ADJOINING SUPERSTRUCTURE BY OTHERS.



ELEVATION OF EAST BOUND STRUCTURE



NOTE: DIMENSIONS ALONG RAMP F SURVEY LINE

|             |      |  |                   |
|-------------|------|--|-------------------|
| REVISIONS   |      | ILLINOIS DIVISION OF HIGHWAYS  |                   |
| NAME        | DATE | SOUTHWEST EXPRESSWAY   |                   |
|             |      | F.A. RT 133  |                   |
|             |      | LAWDALE AVE. STRUCTURE OVER CHICAGO SANITARY AND SHIP CANAL SECTION 0707-826B ELEVATIONS |                   |
| DESIGNED BY |      | SCALE: HORIZ. VERT.  | DRAWN BY E.G.     |
| REVIEWED BY |      | DATE 6-5-63  | CHECKED BY L.D.S. |



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

FILE NAME = 0160487.60W75.X03.genelev.dgn

|                       |                |           |
|-----------------------|----------------|-----------|
| USER NAME = jsurber   | DESIGNED - AJK | REVISED - |
| PLOT SCALE =          | CHECKED - JLS  | REVISED - |
| PLOT DATE = 6/17/2015 | DRAWN - AJK    | REVISED - |
|                       | CHECKED - JLS  | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS ELEVATION SPANS 1 THRU 7  
STRUCTURE NO. 016-0487

SHEET NO. SFX3 OF SFX46 SHEETS

FOR INFORMATION ONLY

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 373                       | 2013-037B-R | COOK   | 787          | 625       |
| CONTRACT NO. 60W75        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

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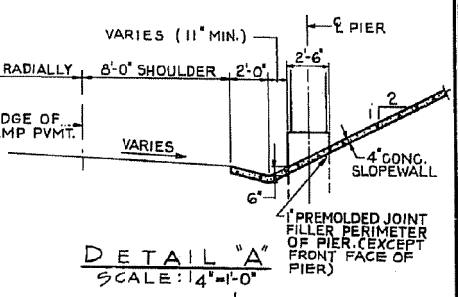
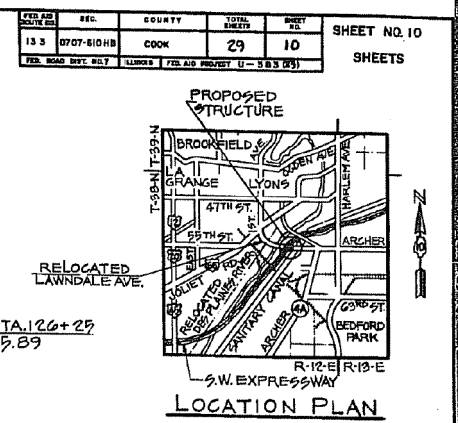
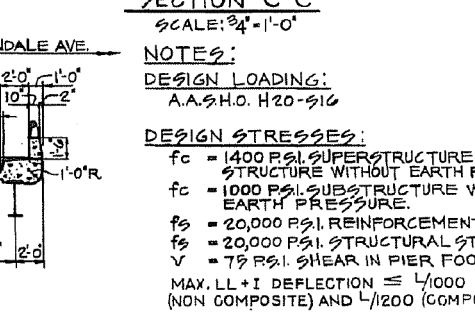
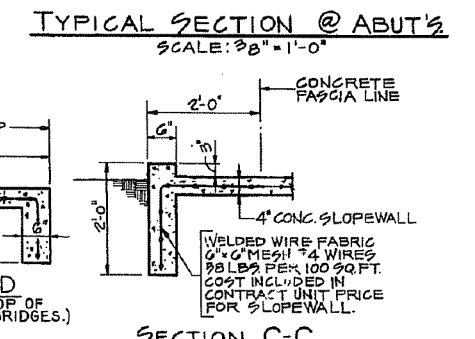
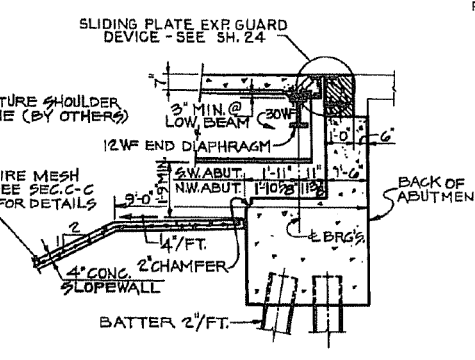
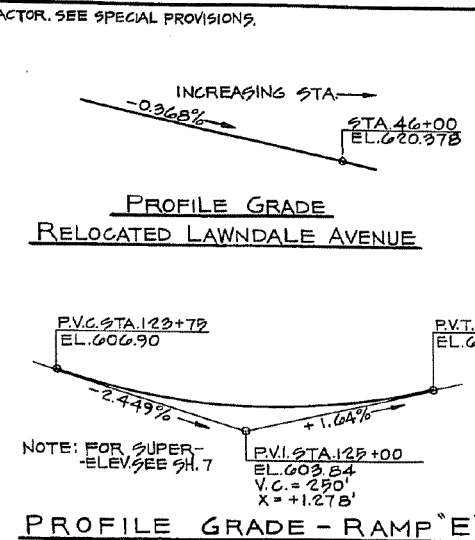
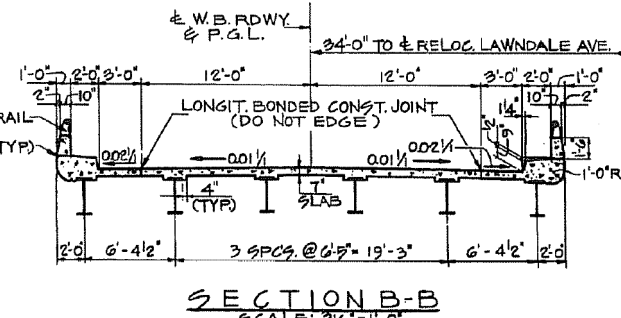
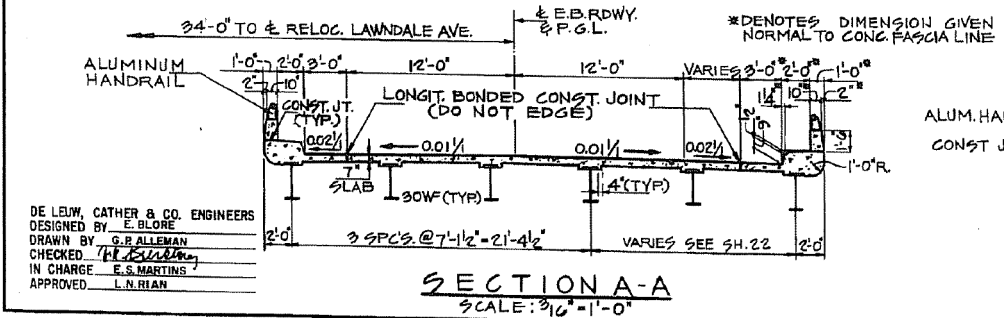
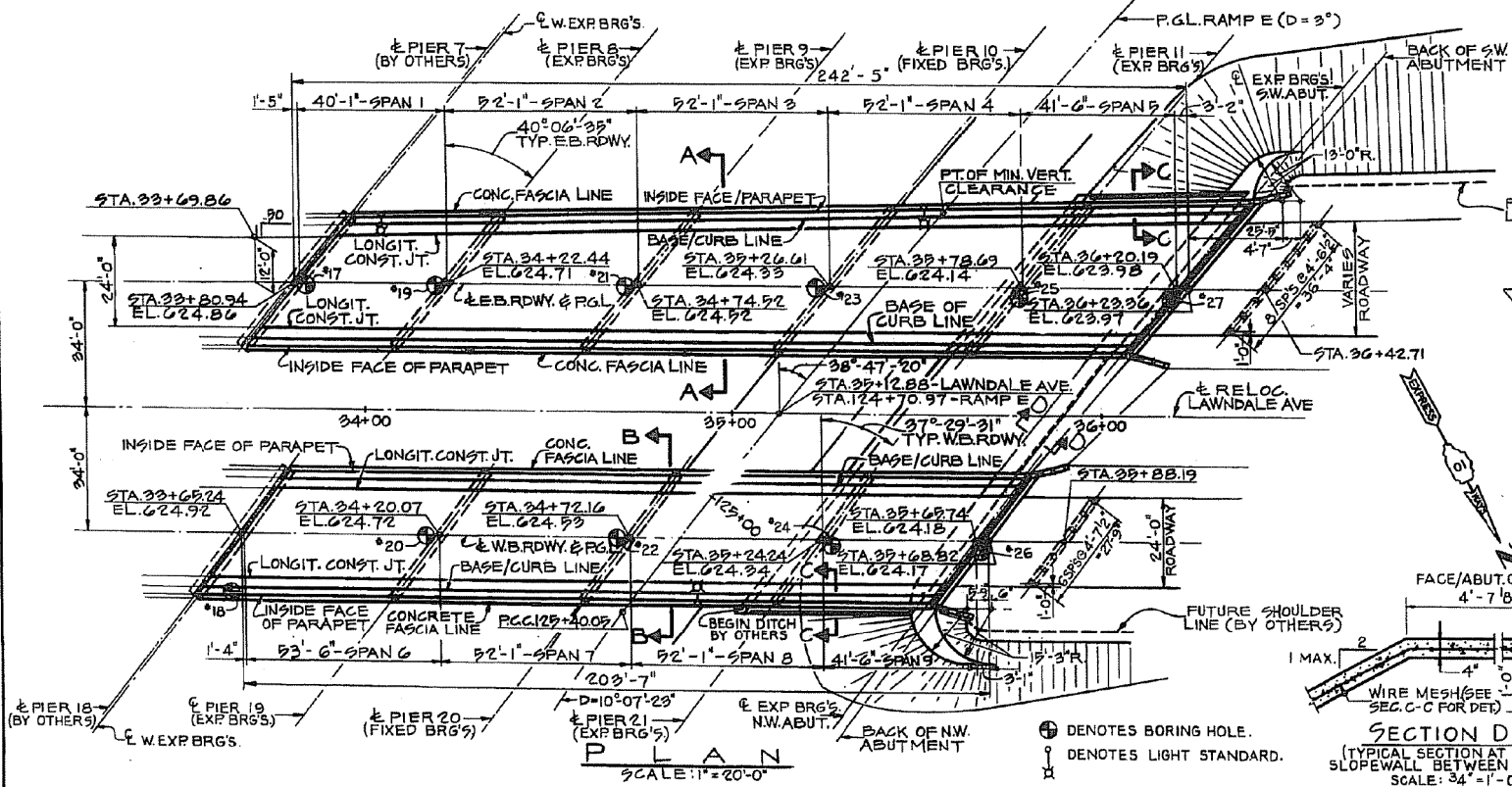
FOR DETAILS OF PIERS 7 AND 18 SEE CONTRACT PLANS FOR SECTION 0707-626B

EXISTING GROUND TO BE REMOVED AND REPLACED UNDER SECTION 0707-635A TO SUBGRADE ELEVATION SHOWN

| APPROACH PILE DATA |            |            |
|--------------------|------------|------------|
| LOCATION           | N.W. ABUT. | S.W. ABUT. |
| NO. REQUIRED       | 7          | 9          |
| EST. LENGTH        | 28'        | 28'        |
| CUT OFF ELEV.      | 621.57     | 621.24     |

**ELEVATION - E.B. ROADWAY**  
SCALE: 1" = 20'-0"

| TABLE A                                     |           |            |
|---|-----------|------------|
| MIN. HORIZ. CLEARANCES (NORMAL TO RAMP 'E') |           |            |
| DIM. (E.B. RDWY. / W.B. RDWY.)              |           |            |
| A   | 9'-7 1/2" | 9'-10 1/2" |
| B   | 10'-11"   | 12'-4 3/8" |



| TOTAL BILL OF MATERIAL Section 0707-810 HB |          |               |             |         |
|--|----------|---------------|-------------|---------|
| ITEM                                       | UNIT     | SUPER STRUCT. | SUB STRUCT. | TOTAL   |
| CLASS A EXCAVATION FOR STRUCT.             | CU YD    |               | 69B         | 69B     |
| CLASS X CONCRETE                           | CU YD    | 507.3         | 473.0       | 980.3   |
| PROTECTIVE COAT                            | SQ YD    | 2,068         |             | 2,068   |
| FURNISHING AND ERECTING STRUCTURAL STEEL   | POUNDS   | 369,145       |             | 369,145 |
| REINFORCEMENT BARS                         | POUNDS   | 123,563       | 69,149      | 192,712 |
| FURNISH, CREO. PILES 20.1-38               | LIN FT   |               | 44B         | 44B     |
| DRIVING TIMBER PILES                       | LIN FT   |               | 44B         | 44B     |
| FURNISH STEEL PILES 88P26                  | LIN FT   |               | 3,476       | 3,476   |
| TEST PILES, (STEEL)                        | EACH     |               | 6           | 6       |
| DRIVING STEEL PILES                        | LIN FT   |               | 3,476       | 3,476   |
| SLOPE WALL 4 INCH                          | SQ YD    |               | 621         | 621     |
| NAME PLATES                                | EACH     |               | 2           | 2       |
| CONDUIT IN TRENCH, 2\"/>                   |          |               |             |         |
| CONDUIT MOUNTED, 2\"/>                     |          |               |             |         |
| WIRE MESH 1 1/2\"/>                        |          |               |             |         |
| CONDUIT IN CONCRETE 1/2\"/>                |          |               |             |         |
| TRENCH AND BACKFILL                        | LIN FT   |               | 20          | 20      |
| HANDRAIL                                   | LIN FT   | 88B           |             | 88B     |
| EMBANKMENT                                 | CU. YDS. |               | 112         | 112     |

**ILLINOIS DIVISION OF HIGHWAYS**  
SOUTHWEST EXPRESSWAY  
**LAWDALE AVE. OVER RAMP E**  
GENERAL PLAN AND ELEVATION

SCALE: AS NOTED DATE: 7-30-63

DE LEW, CATHER & CO. ENGINEERS  
DESIGNED BY E. BLORE  
DRAWN BY G. ALLEMAN  
CHECKED BY H. BULLOCK  
IN CHARGE F. S. MARTINS  
APPROVED L. N. RIAN

JOB NO. 1179

**NOTES:**  
DESIGN LOADING:  
A.A.S.H.O. H20-310

**DESIGN STRESSES:**  
fc = 1400 PSI SUPERSTRUCTURE AND SUBSTRUCTURE WITHOUT EARTH PRESSURE.  
fc = 1000 PSI SUBSTRUCTURE WITH EARTH PRESSURE.  
fs = 20,000 PSI REINFORCEMENT BARS.  
fs = 20,000 PSI STRUCTURAL STEEL A-36.  
v = 7.5 PSI SHEAR IN PIER FOOTING.  
MAX. LL+I DEFLECTION ≤ L/1000 (NON COMPOSITE) AND L/1200 (COMPOSITE).



|                       |                |           |
|-----------------------|----------------|-----------|
| USER NAME = jsurber   | DESIGNED - AJK | REVISED - |
| PLOT SCALE =          | CHECKED - JLS  | REVISED - |
| PLOT DATE = 6/17/2015 | DRAWN - AJK    | REVISED - |
|                       | CHECKED - JLS  | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

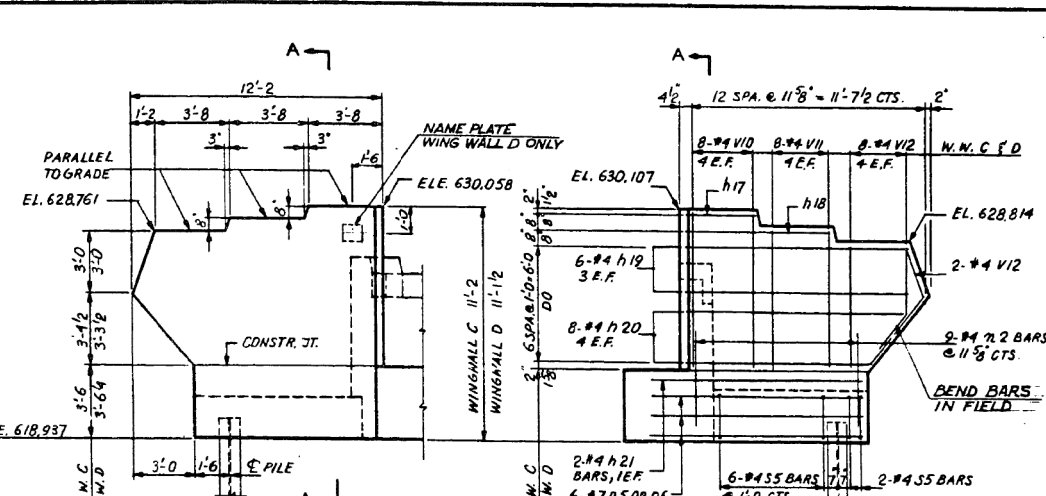
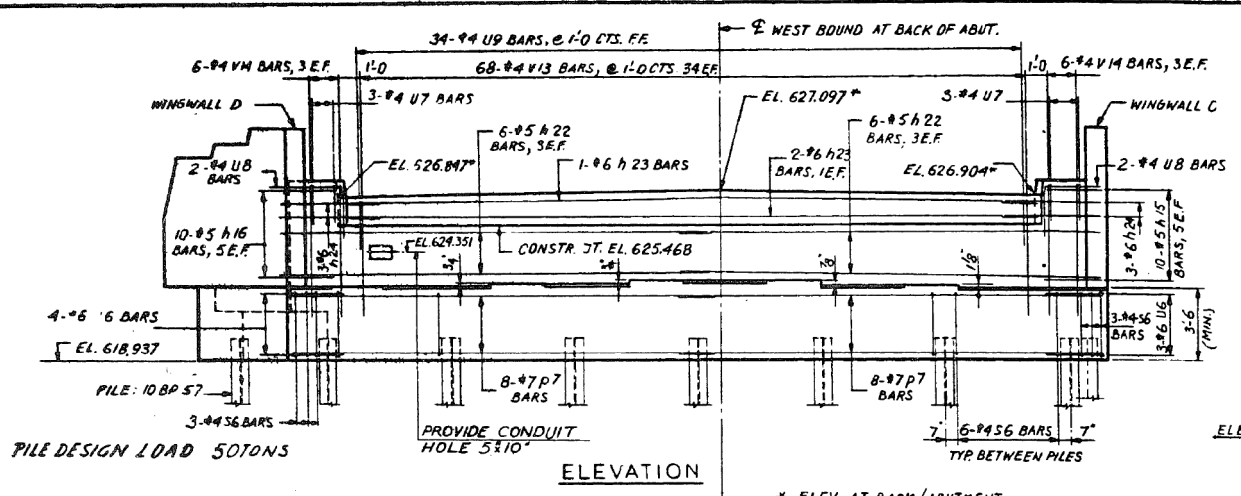
EXISTING PLANS GENERAL PLAN SPANS 8 THRU 11  
STRUCTURE NO. 016-0487  
SHEET NO. SFX4 OF SFX46 SHEETS

| FOR INFORMATION ONLY      |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 373                       | 2013-037B-R | COOK   | 787          | 626       |
| CONTRACT NO. 60W75        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

0160487.60W75.X04.genplan.8 thru 12.dgn

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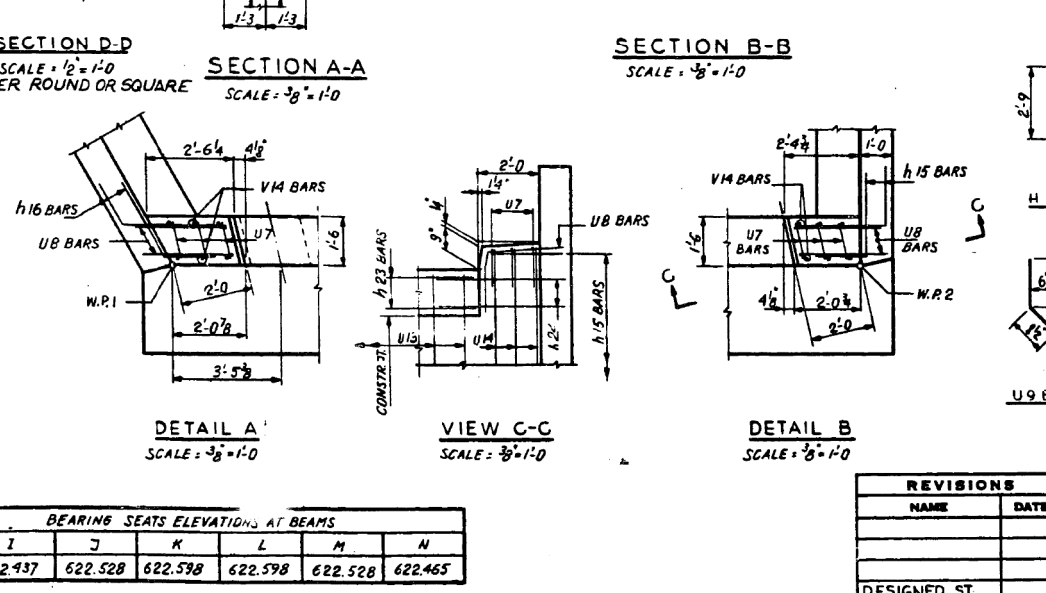
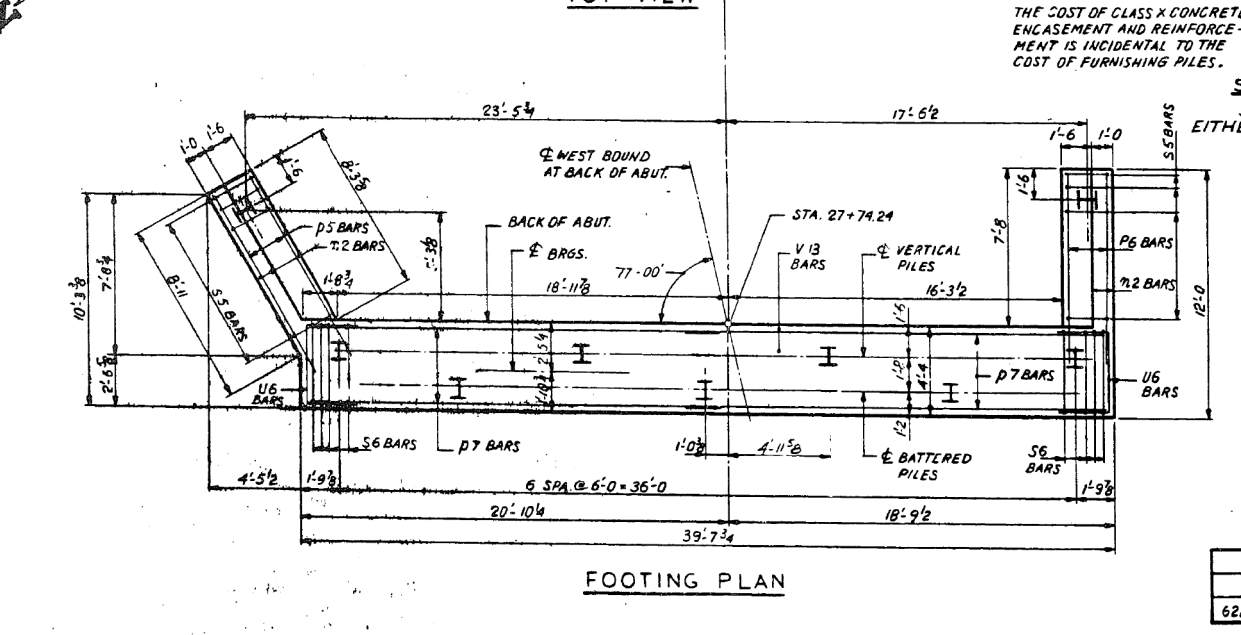
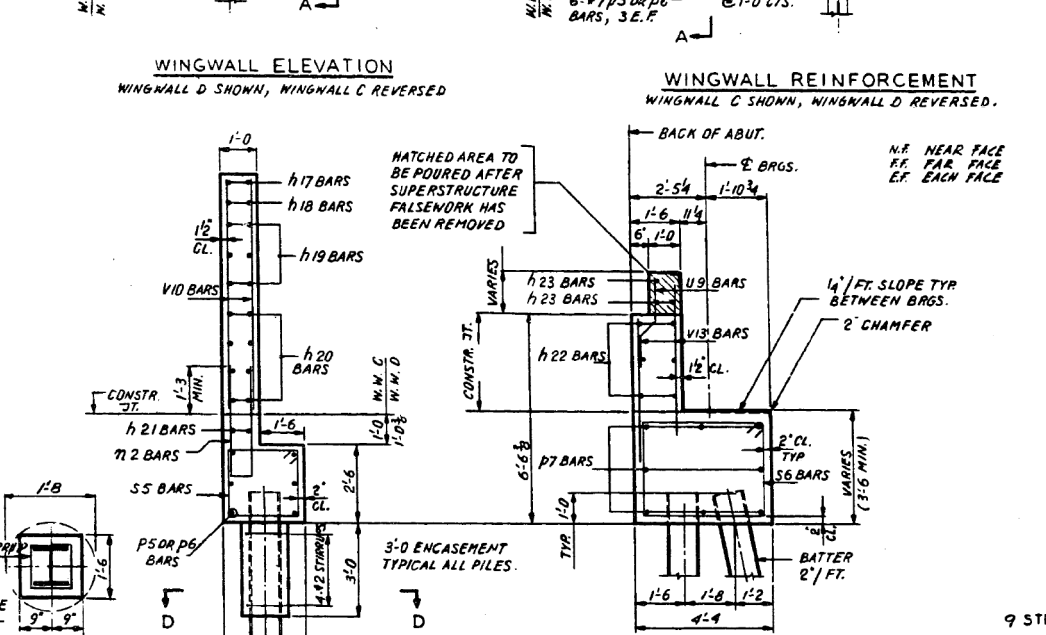
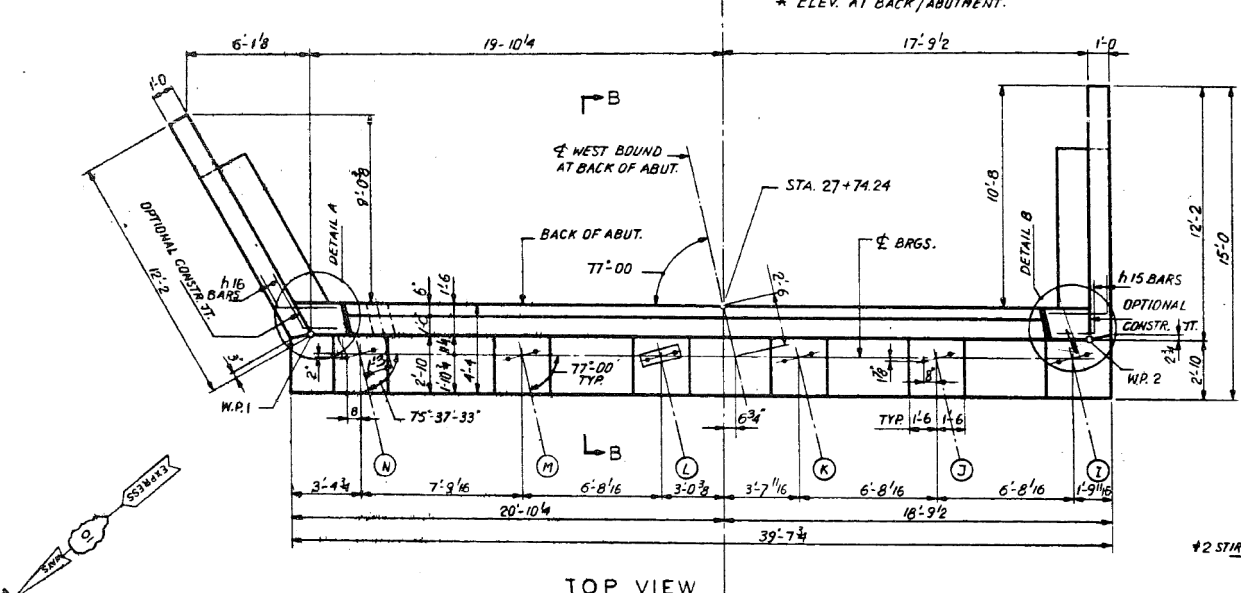
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|-----------------------|-----------|------------------|--------------|-----------|
| F.A. RTE.             | SECTION   | EXPRESSWAY       | TOTAL SHEETS | SHEET NO. |
| 133                   | 0707 626B | SOUTHWEST        | 95           | 30        |
| STA.                  | TO STA.   |                  |              |           |
| FED. ROAD DIST. NO. 7 | ILLINOIS  | FED. AID PROJECT |              |           |



| BILL OF REINFORCEMENT |      |        |       |  |
|-----------------------|------|--------|-------|--|
| BAR NO.               | SIZE | LENGTH | SHAPE |  |
| h15                   | 10   | 5      | 4-3   |  |
| h16                   | 10   | 5      | 4-6   |  |
| h17                   | 4    | 4      | 3-2   |  |
| h18                   | 4    | 4      | 6-10  |  |
| h19                   | 12   | 4      | 10-6  |  |
| h20                   | 16   | 4      | 11-8  |  |
| h21                   | 4    | 4      | 9-3   |  |
| h22                   | 12   | 5      | 20-4  |  |
| h23                   | 3    | 6      | 33-6  |  |
| h24                   | 6    | 6      | 2-9   |  |
| m2                    | 18   | 4      | 8-1   |  |
| p5                    | 6    | 7      | 10-0  |  |
| p6                    | 6    | 7      | 9-3   |  |
| p7                    | 16   | 7      | 20-7  |  |
| s5                    | 16   | 4      | 9-5   |  |
| s6                    | 42   | 4      | 15-1  |  |
| u6                    | 8    | 6      | 9-6   |  |
| u7                    | 6    | 4      | 4-3   |  |
| u8                    | 4    | 4      | 5-0   |  |
| u9                    | 34   | 4      | 3-6   |  |
| v10                   | 16   | 4      | 7-4   |  |
| v11                   | 16   | 4      | 6-8   |  |
| v12                   | 20   | 4      | 6-0   |  |
| v13                   | 68   | 4      | 5-1   |  |
| v14                   | 12   | 4      | 6-4   |  |

| EAST ABUTMENT W.B. QUANTITIES |          |       |
|-------------------------------|----------|-------|
| CLASS X CONCRETE              | CU. YDS. | 42.1  |
| REINFORCING BARS              | LBS.     | 3,050 |
| PILES IOBP57                  | LIN. FT. | 594   |



| BEARING SEATS ELEVATIONS AT BEAMS |         |         |         |         |         |
|-----------------------------------|---------|---------|---------|---------|---------|
| I                                 | J       | K       | L       | M       | N       |
| 622.437                           | 622.528 | 622.598 | 622.598 | 622.528 | 622.465 |

| REVISIONS       |      |
|-----------------|------|
| NAME            | DATE |
|                 |      |
|                 |      |
| DESIGNED ST.    |      |
| REVIEWED C.W.W. |      |

**ILLINOIS DIVISION OF HIGHWAYS**  
**SOUTHWEST EXPRESSWAY**

F.A. RT 133  
 LAWDALE AVE. STRUCTURE OVER CHICAGO SANITARY AND SHIP CANAL  
 SECTION 0707 - 626 B  
 EAST ABUTMENT WEST BOUND

SCALE: HORIZ. 4"=1'-0"  
 VERT. DATE 6-5-84 EXCEPT AS NOTED  
 DRAWN BY J.W. CHECKED BY L.D.B.

**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 = jsurber   | DESIGNED - AJK | REVISIONS - |
| 0160487.60W75.X05.exist.eabut.dgn | PLOT SCALE =          | CHECKED - JLS  | REVISIONS - |
|                                   | PLOT DATE = 6/17/2015 | DRAWN - AJK    | REVISIONS - |
|                                   |                       | CHECKED - JLS  | REVISIONS - |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

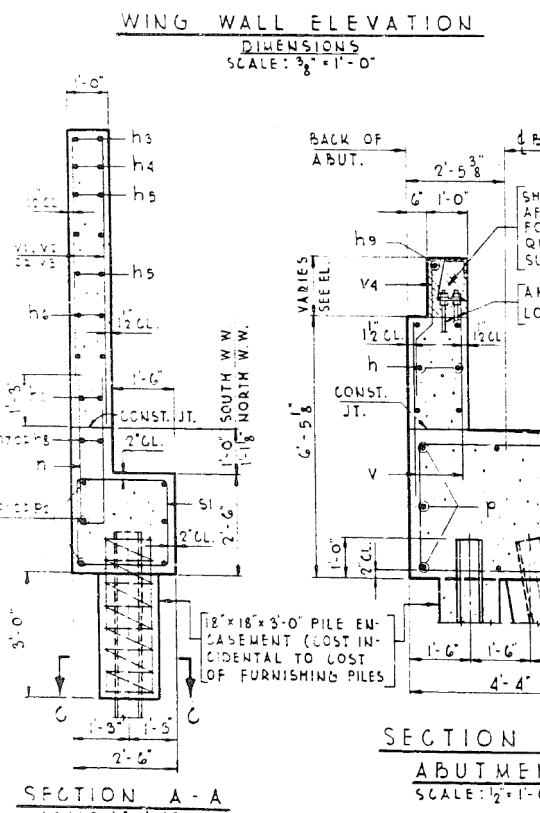
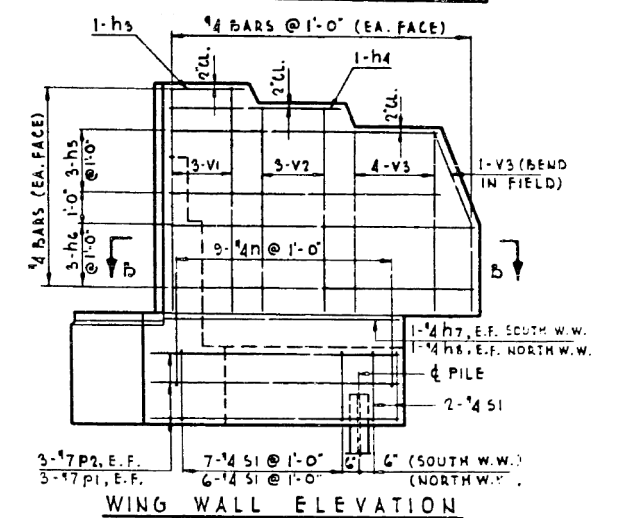
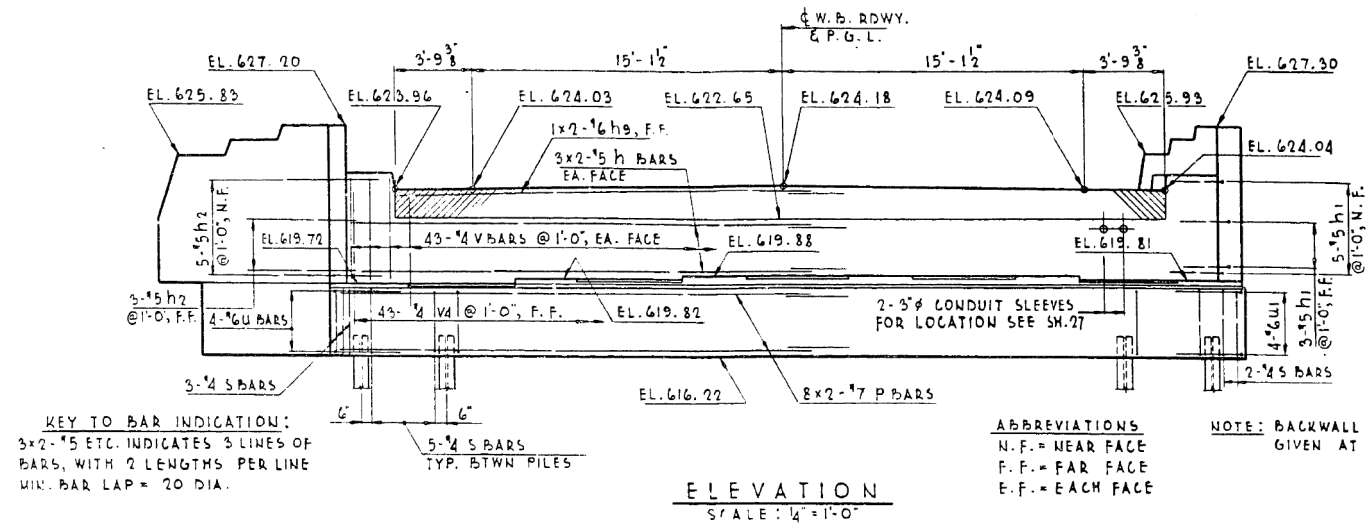
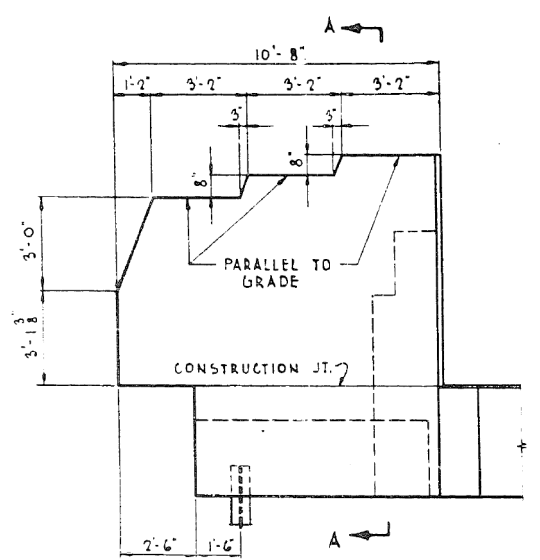
EXISTING PLANS EAST ABUTMENT  
 STRUCTURE NO. 016-0487

SHEET NO. SFX5 OF SFX46 SHEETS

FOR INFORMATION ONLY

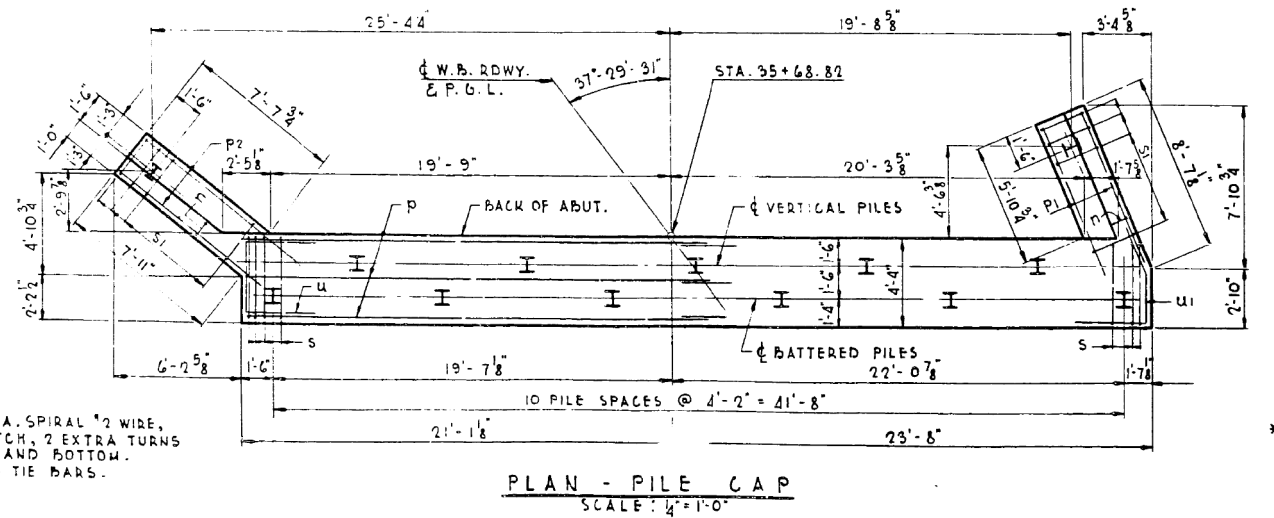
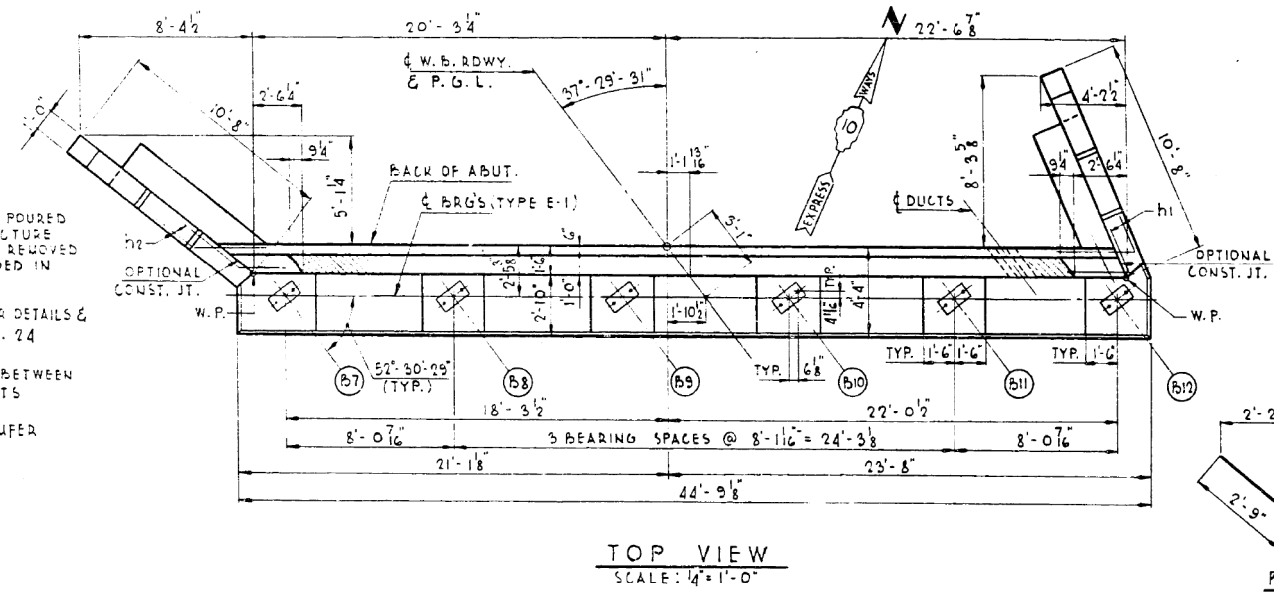
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|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 373                | 2013-037B-R | COOK   | 787                       | 627       |
| CONTRACT NO. 60W75 |             |        | ILLINOIS FED. AID PROJECT |           |

Y:\chicago\100005\100093\Eng\_Docs\Phase II\SN\_016\_0486\_0487\_1st\_Ave\_over\_Canal\Final\Final\_0487\0160487\_60W75\_X05.exist.eabut.dgn 6/17/2015 4:25:36 PM



| PILE DATA          |         |
|--------------------|---------|
| PILE TYPE          | 8 BP 36 |
| MIN. CAPACITY TONS | 30      |
| NO. REQUIRED       | 13*     |
| EST. LENGTH FEET   | 36      |

\*INCLUDING TEST PILE.



| BAR LIST |                   |
|----------|-------------------|
| BAR NO.  | SIZE LENGTH SHAPE |
| h        | 12 5 22'-0"       |
| h1       | 8 5 5'-0"         |
| h2       | 8 5 5'-3"         |
| h3       | 4 4 2'-0"         |
| h4       | 4 2 5'-0"         |
| h5       | 12 4 8'-0"        |
| h6       | 12 4 10'-5"       |
| h7       | 2 4 8'-8"         |
| h8       | 2 4 8'-3"         |
| h9       | 2 6 18'-9"        |
| v        | 18 4 7'-8"        |
| p        | 16 7 25'-0"       |
| p1       | 6 7 8'-0"         |
| p2       | 6 7 9'-3"         |
| s        | 55 4 5'-0"        |
| s1       | 17 4 5'-3"        |
| u        | 4 6 9'-11"        |
| u1       | 4 6 7'-6"         |
| v        | 86 4 4'-6"        |
| v1       | 12 4 7'-3"        |
| v2       | 12 4 2'-0"        |
| v3       | 20 2 5'-8"        |
| v4       | 23 2 2'-6"        |

| BILL OF MATERIAL             |          |          |
|------------------------------|----------|----------|
| ITEM                         | UNIT     | QUANTITY |
| CLASS X CONCRETE             | CU YD    | 41.9     |
| REINFORCEMENT BARS           | POUND    | 2988     |
| FURNISHING STEEL PILES 8BP36 | LIN. FT. | 432      |
| TEST PILE STEEL 8BP 36       | EACH     | 1        |
| DRIVING STEEL PILES          | LIN. FT. | 432      |
| PROTECTIVE COAT *            | SQ YD    | 8        |
| CLASS A EXCAV FOR STRUCT.    | CU YD    | 75       |

ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
LAWDALE AVE. OVER RAMP E  
N.W. ABUTMENT-WESTBOUND BRIDGE  
SCALE: AS NOTED DATE: 7-31-63

DE LEW, CATHY & CO ENGINEERS  
DESIGNED BY Y.N. HUO  
DRAWN BY F. BOBINAS  
CHECKED BY [Signature]  
IN CHARGE E.S. MARTIN  
APPROVED L.N. RIAN

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

|                                   |                     |                |           |
|-----------------------------------|---------------------|----------------|-----------|
| FILE NAME =                       | USER NAME = jsurber | DESIGNED - AJK | REVISED - |
| 0160487.60W75.X06.exist.wabut.dgn |                     | CHECKED - JLS  | REVISED - |
|                                   |                     | DRAWN - AJK    | REVISED - |
|                                   |                     | CHECKED - JLS  | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

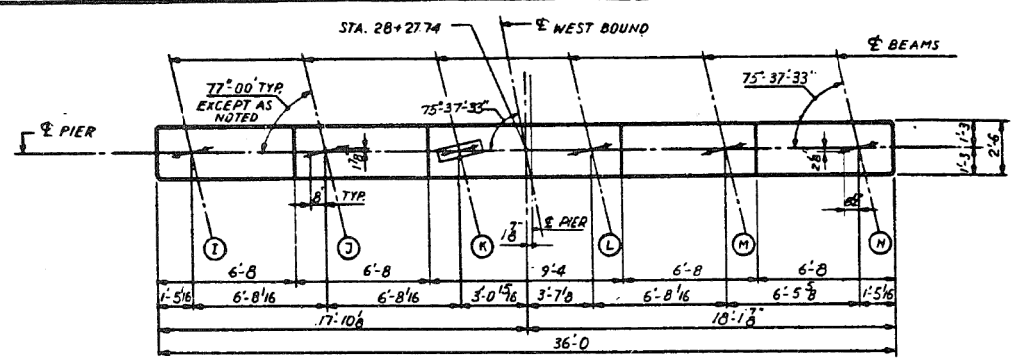
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STRUCTURE NO. 016-0487

SHEET NO. SFX6 OF SFX46 SHEETS

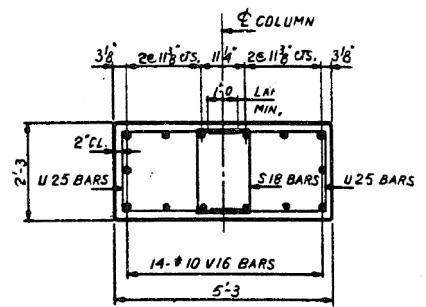
FOR INFORMATION ONLY

| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 373                       | 2013-037B-R | COOK   | 787          | 628                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

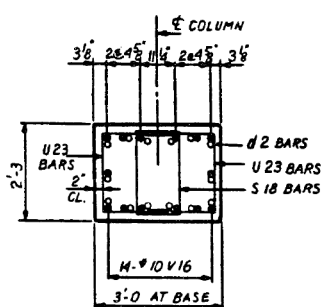
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| F.A. RT.              | SECTION   | EXPRESSWAY | TOTAL SHEETS | SHEET NO. |
| 133                   | 0707-626B | SOUTHWEST  | 95           | 34        |
| STA.                  | TO STA.   |            |              |           |
| FED. ROAD DIST. NO. 7 |           |            |              |           |



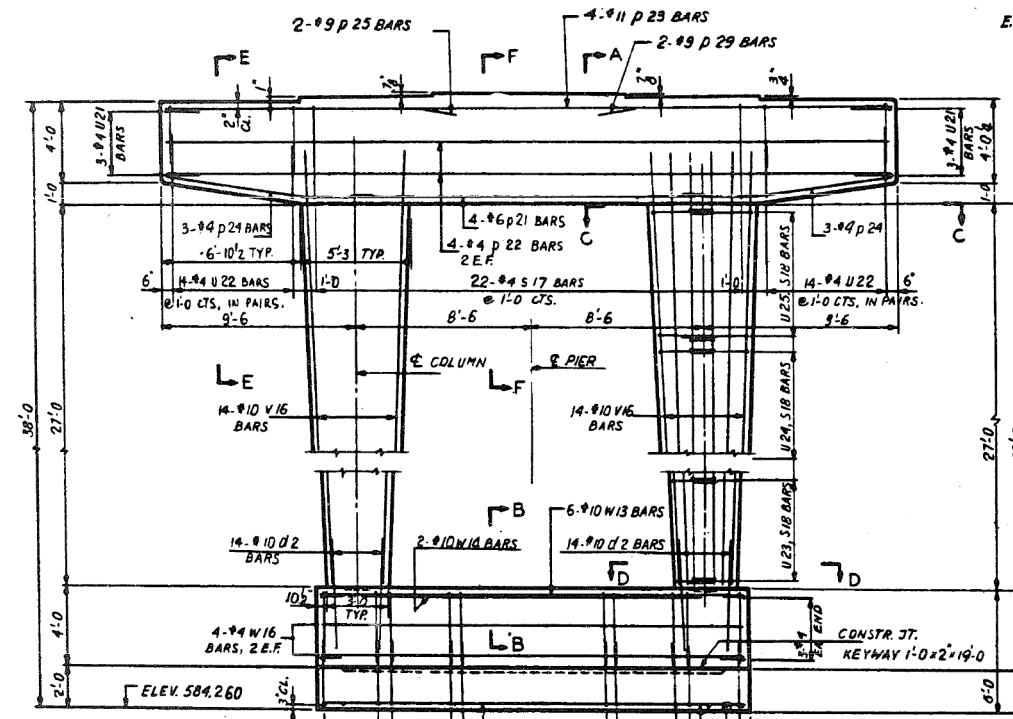
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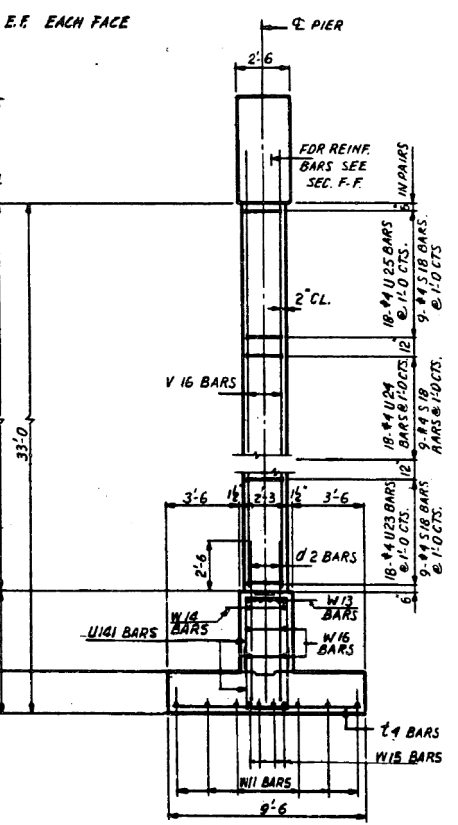
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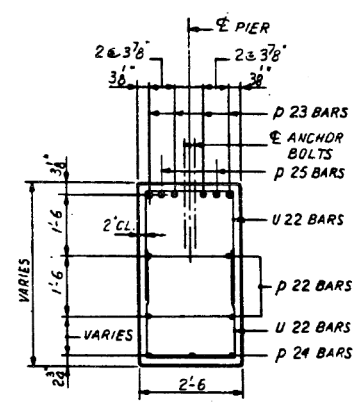
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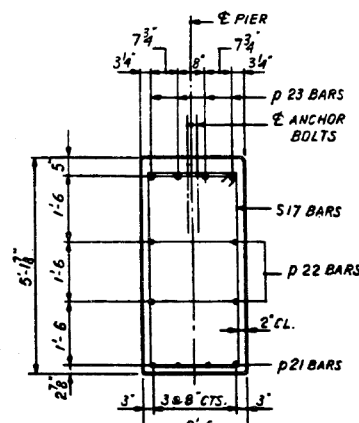
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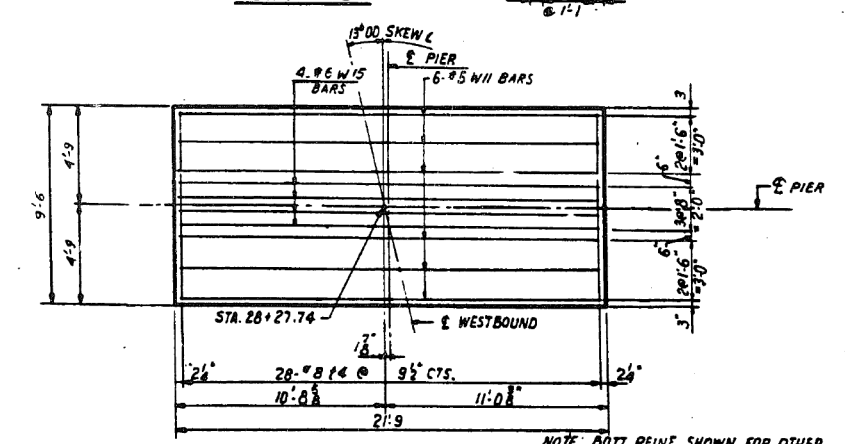
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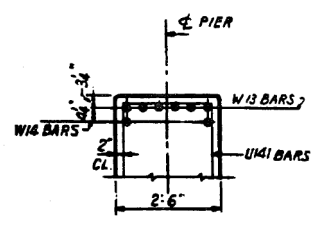
SECTION E-E  
SCALE = 1/2" = 1'-0"



SECTION F-F  
SCALE = 1/2" = 1'-0"



FOOTING PLAN

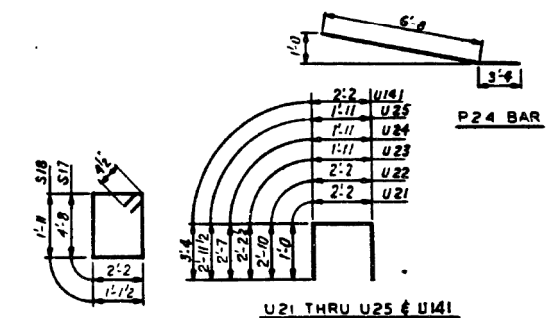


SECTION B-B  
SCALE = 1/2" = 1'-0"

| Point | Elevation |
|-------|-----------|
| I     | 622.260   |
| J     | 622.350   |
| K     | 622.421   |
| L     | 622.421   |
| M     | 622.308   |
| N     | 622.285   |

| BAR NO. | SIZE | LENGTH | SHAPE  |
|---------|------|--------|--------|
| d 2     | 28   | 10     | 8'-6"  |
| p 21    | 4    | 6      | 7'-6"  |
| p 22    | 4    | 4      | 35'-8" |
| p 23    | 4    | 11     | 35'-8" |
| p 24    | 6    | 5      | 10'-0" |
| p 25    | 4    | 9      | 14'-6" |
| s 17    | 22   | 4      | 4'-5"  |
| s 18    | 54   | 4      | 6'-10" |
| l 4     | 28   | 8      | 9'-2"  |
| u 21    | 12   | 4      | 4'-2"  |
| u 22    | 28   | 4      | 7'-10" |
| u 23    | 36   | 4      | 6'-4"  |
| u 24    | 36   | 4      | 7'-1"  |
| u 25    | 36   | 4      | 7'-10" |
| u 41    | 58   | 5      | 8'-10" |
| v 16    | 28   | 10     | 30'-0" |
| w 11    | 6    | 5      | 21'-5" |
| w 13    | 6    | 10     | 21'-5" |
| w 14    | 2    | 10     | 14'-4" |
| w 15    | 4    | 6      | 21'-5" |
| w 16    | 4    | 4      | 21'-5" |

|                  |          |       |
|------------------|----------|-------|
| CLASS X CONCRETE | CU. YDS. | 58.2  |
| REINFORCING BARS | LBS.     | 9,230 |



ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
F.A. RT 133  
LAWDALE AVE. STRUCTURE OVER CHICAGO SANITARY AND SHIP CANAL  
SECTION 0707-626 B  
PIER NO. 12 WEST BOUND

SCALE: HORIZ. 1/4" = 1'-0" VERT. EXCEPT AS NOTED  
DATE 6-5-63

DESIGNED S.T.O.P.  
REVIEWED C.W.V.

REVISIONS  
NAME DATE

CHECKED BY J. W.  
CHECKED BY L.D.B.

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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

|                                     |                       |                |           |
|-------------------------------------|-----------------------|----------------|-----------|
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|                                     | PLOT DATE = 6/17/2015 | DRAWN - AJK    | REVISED - |
|                                     |                       | CHECKED - JLS  | REVISED - |

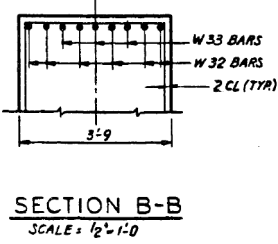
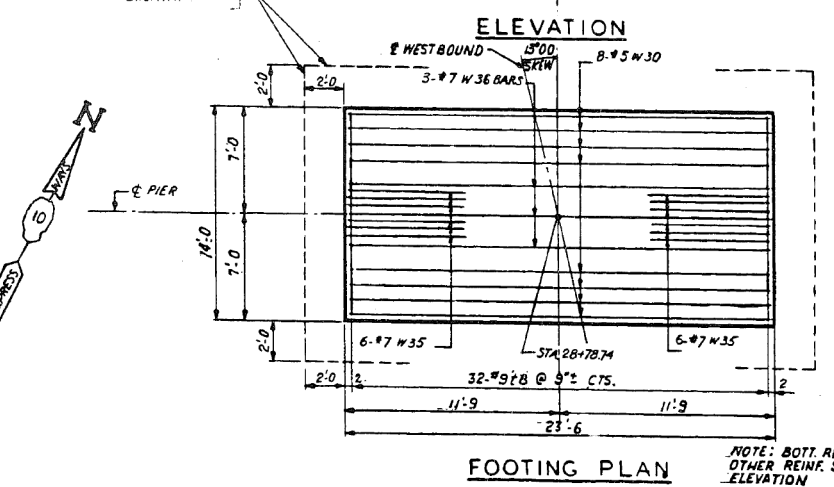
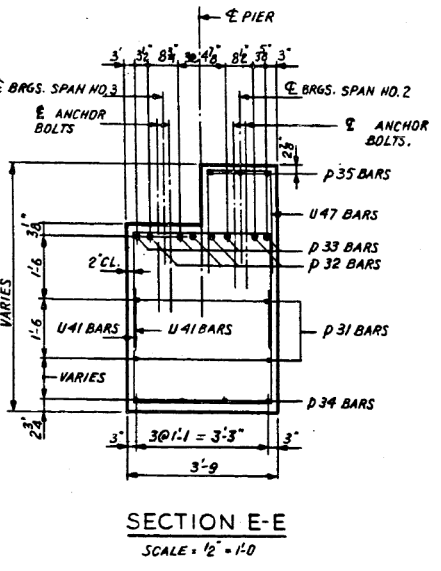
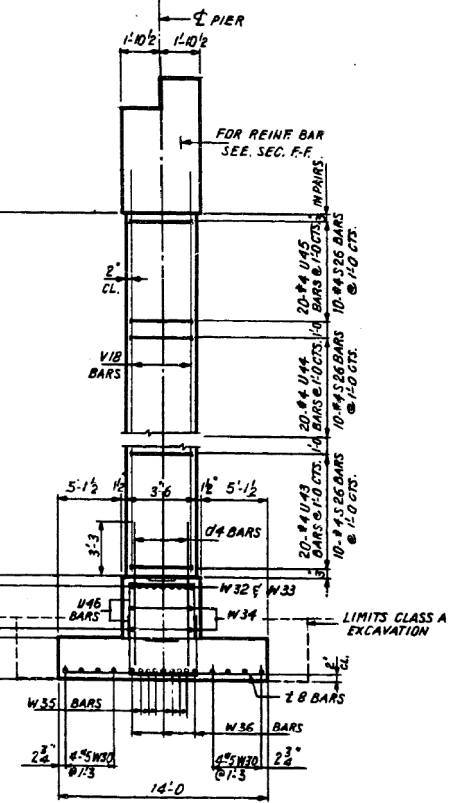
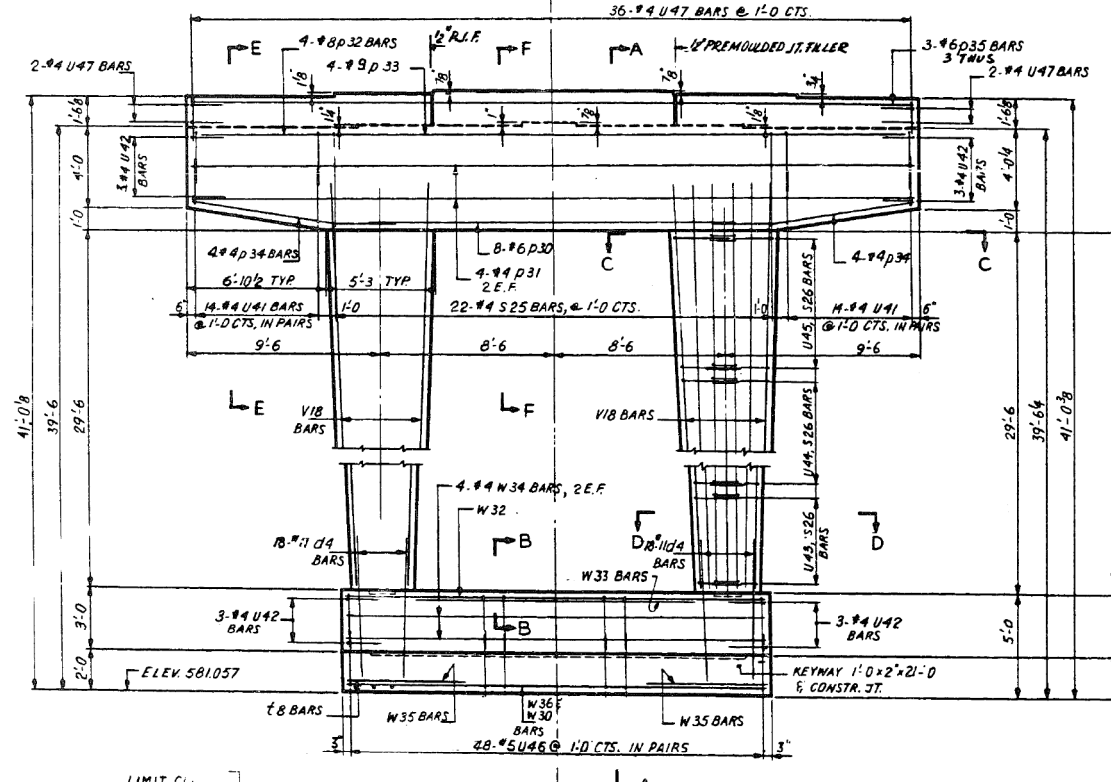
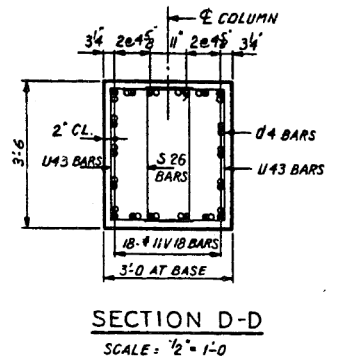
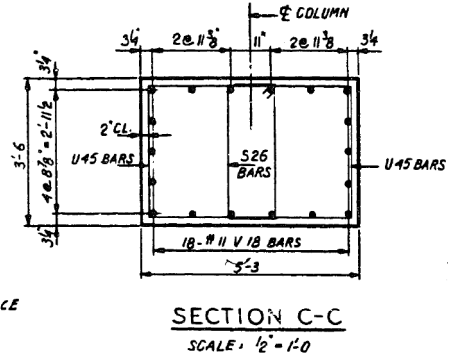
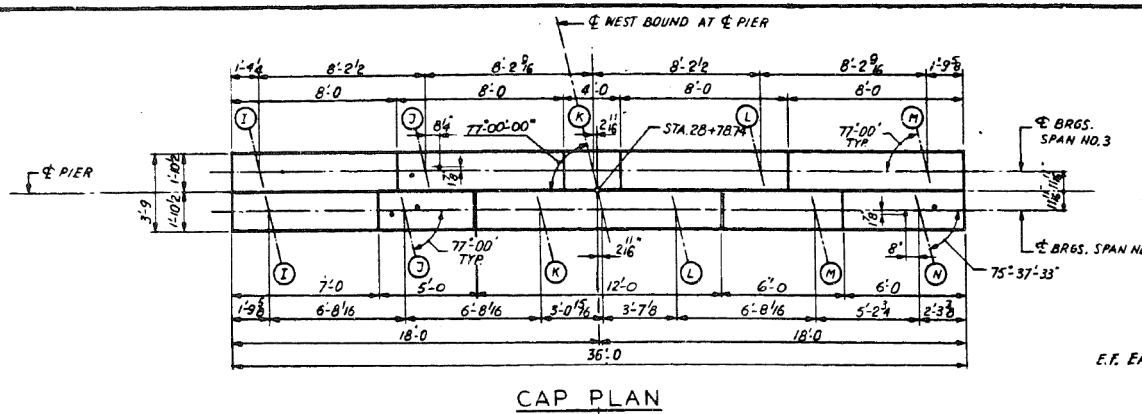
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS PIER 12  
STRUCTURE NO. 016-0487  
SHEET NO. SFX7 OF SFX46 SHEETS

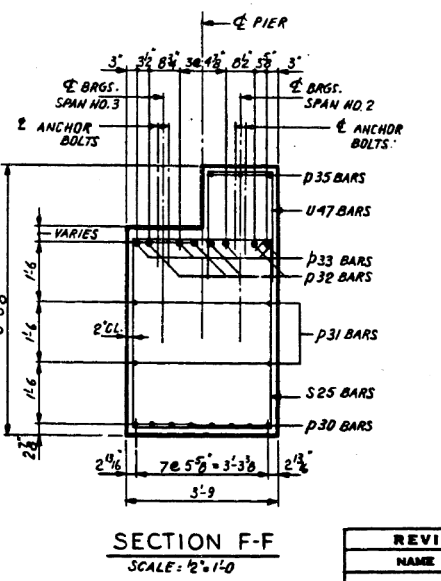
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| F.A.P. RT.                | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 373                       | 2013-037B-R | COOK   | 787          | 629       |
| CONTRACT NO. 60W75        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

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| F.A. SITE             | SECTION   | EXPRESSWAY       | TOTAL SHEETS | SHEET NO. |
|-----------------------|-----------|------------------|--------------|-----------|
| 133                   | 0707-626B | SOUTHWEST        | 95           | 35        |
| STA.                  | TO STA.   |                  |              |           |
| FED. ROAD DIST. NO. 1 | CLASS     | FED. AID PROJECT |              |           |



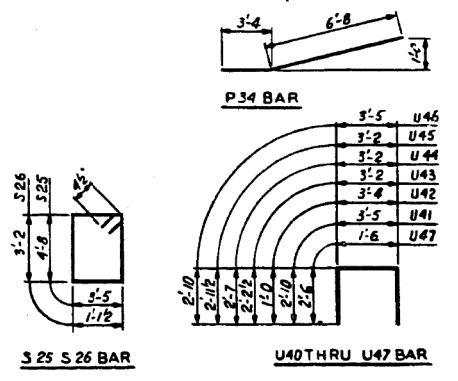
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| J          | 622.156 | J          | 620.643 |
| K          | 622.226 | K          | 620.750 |
| L          | 622.226 | L          | 620.677 |
| M          | 622.155 | M          | 620.584 |
| N          | 62      |            |         |



| BAR | N.O. | SIZE | LENGTH | SHAPE |
|-----|------|------|--------|-------|
| d4  | 36   | 11   | 7'-9   |       |
| p30 | 8    | 6    | 17'-6  |       |
| p31 | 4    | 4    | 35'-8  |       |
| p32 | 4    | 8    | 35'-8  |       |
| p33 | 4    | 9    | 35'-8  |       |
| p34 | 8    | 4    | 10'-0  |       |
| p35 | 9    | 6    | 11'-6  |       |
| S25 | 22   | 4    | 16'-11 |       |
| S26 | 60   | 4    | 9'-4   |       |
| t8  | 32   | 9    | 13'-8  |       |
| U41 | 28   | 4    | 9'-1   |       |
| U42 | 12   | 4    | 5'-4   |       |
| U43 | 40   | 4    | 7'-7   |       |
| U44 | 40   | 4    | 8'-4   |       |
| U45 | 40   | 4    | 9'-1   |       |
| U46 | 48   | 5    | 9'-1   |       |
| U47 | 40   | 4    | 6'-6   |       |
| W30 | 8    | 5    | 23'-2  |       |
| W32 | 6    | 10   | 23'-2  |       |
| W33 | 3    | 10   | 13'-6  |       |
| W34 | 4    | 4    | 23'-2  |       |
| W35 | 12   | 7    | 7'-6   |       |
| W36 | 3    | 7    | 23'-2  |       |
| V18 | 36   | 11   | 32'-9  |       |

| CLASS X CONCRETE   | CU. YDS. | 93.9   |
|--------------------|----------|--------|
| REINFORCING BARS   | LBS.     | 14,110 |
| CLASS A EXCAVATION | CU. YDS. | 54     |



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

|                     |                            |                    |
|---------------------|----------------------------|--------------------|
| DESIGNED BY: OP     | SCALE: HORIZ. 1/2" = 1'-0" | DRAWN BY: J.W.     |
| REVIEWED BY: C.W.W. | DATE: 8-3-09               | CHECKED BY: L.D.B. |

ILLINOIS DIVISION OF HIGHWAYS  
**SOUTHWEST EXPRESSWAY**  
 F.A. RT 133  
 LAWNDALE AVE. STRUCTURE OVER  
 CHICAGO SANITARY AND SHIP CANAL  
 SECTION 0707-626 B  
 PIER NO. 13 WEST BOUND

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

|                                     |                       |                |           |
|-------------------------------------|-----------------------|----------------|-----------|
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| 0160487.60W75.X08.exist.Pier.13.dgn | PLOT SCALE =          | CHECKED - JLS  | REVISED - |
|                                     | PLOT DATE = 6/17/2015 | DRAWN - AJK    | REVISED - |
|                                     |                       | CHECKED - JLS  | REVISED - |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

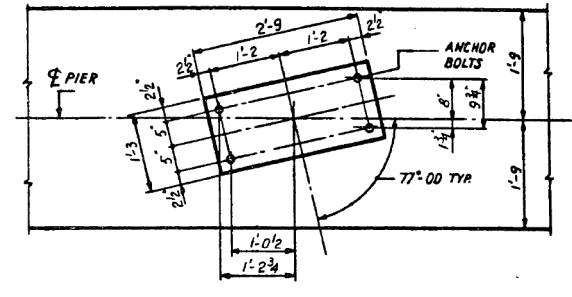
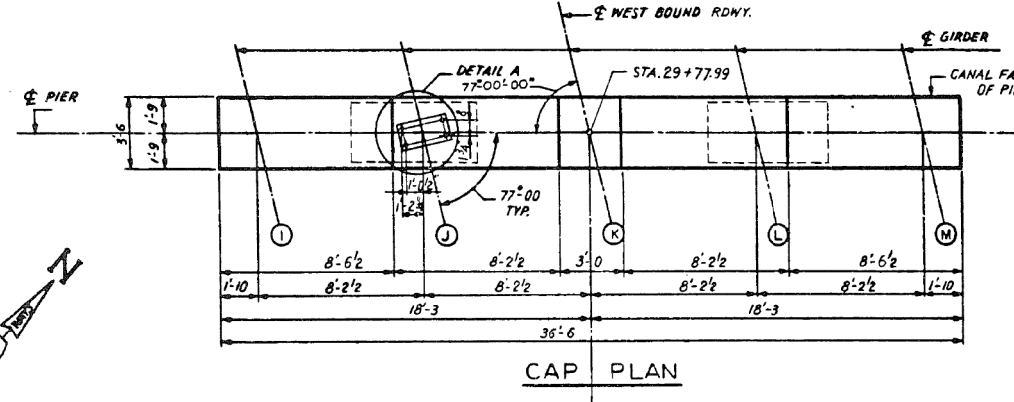
EXISTING PLANS PIER 13  
 STRUCTURE NO. 016-0487  
 SHEET NO. SFXB OF SFX46 SHEETS

FOR INFORMATION ONLY

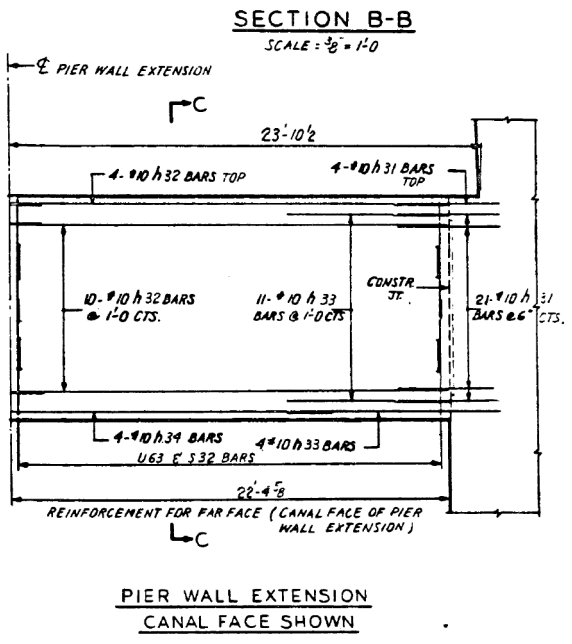
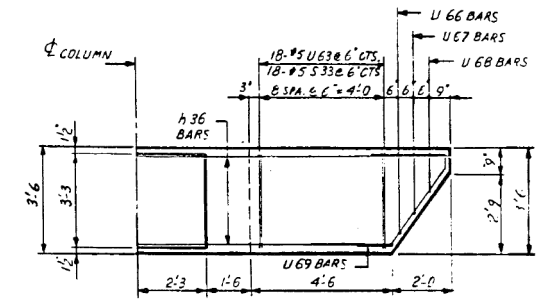
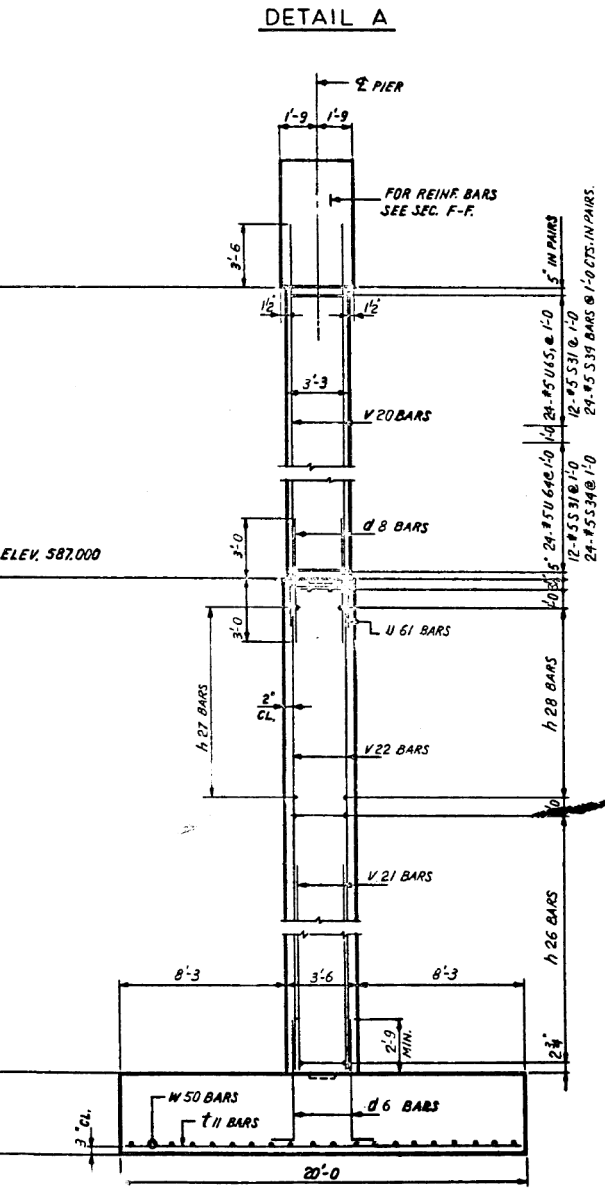
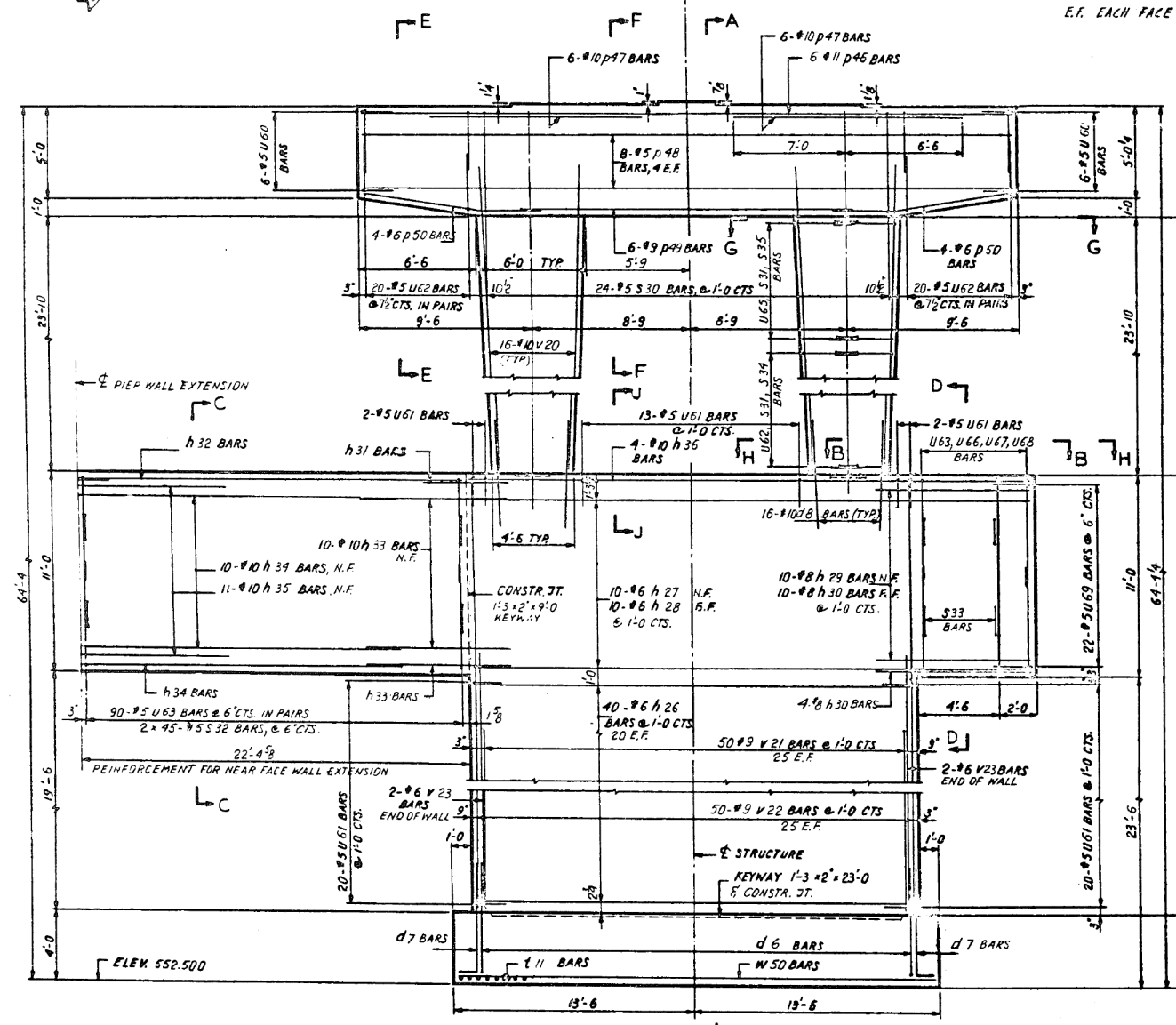
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 373                       | 2013-037B-R | COOK   | 787          | 630                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

Y:\chicago\100005\100093\Eng\_Docs\Phase\_II\NSN\_016\_0486\_0487\_1st\_Ave\_over\_Canal\Final\Final\_0487\0160487\_60W75\_X08.exist.Pier.13.dgn 4:30:37 PM 6/17/2015

| F.A. RT.              | SECTION   | EXPRESSWAY       | TOTAL SHEETS | SHEET NO. |
|-----------------------|-----------|------------------|--------------|-----------|
| 133                   | 0707-626B | SOUTHWEST        | 95           | 99        |
| STA.                  | TO STA.   |                  |              |           |
| FED. ROAD DIST. NO. 7 | ILLINOIS  | FED. AID PROJECT |              |           |



| Point | Elevation |
|-------|-----------|
| I     | 616.830   |
| J     | 616.937   |
| K     | 617.024   |
| L     | 616.951   |
| M     | 616.858   |



| REVISIONS |      | DESIGNED P.R.-ST. | REVIEWED C.W.W. |
|-----------|------|-------------------|-----------------|
| NAME      | DATE |                   |                 |
|           |      |                   |                 |
|           |      |                   |                 |

ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
F.A. RT 133  
LAWDALE AVE. STRUCTURE OVER  
CHICAGO SANITARY AND SHIP CANAL  
SECTION 0707 - 626 B  
PIER NO.14 WEST BOUND  
SCALE: HORIZ. 4"=1'-0"  
VERT. EXCEPT AS NOTED  
DATE 8-5-63  
DRAWN BY J. W.  
CHECKED BY L.D.B.

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

|   |                     |                |               |             |
|---|---------------------|----------------|---------------|-------------|
| FILE NAME = 0160487.60W75.X09.exist.Pier.14.dgn | USER NAME = jsurber | DESIGNED - AJK | CHECKED - JLS | REVISIONS - |
|   |                     |                |               |             |
|   |                     |                |               |             |
|   |                     |                |               |             |
|   |                     |                |               |             |
|   |                     |                |               |             |
|   |                     |                |               |             |
|   |                     |                |               |             |
|   |                     |                |               |             |
|   |                     |                |               |             |
|   |                     |                |               |             |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS PIER 14  
STRUCTURE NO. 016-0487

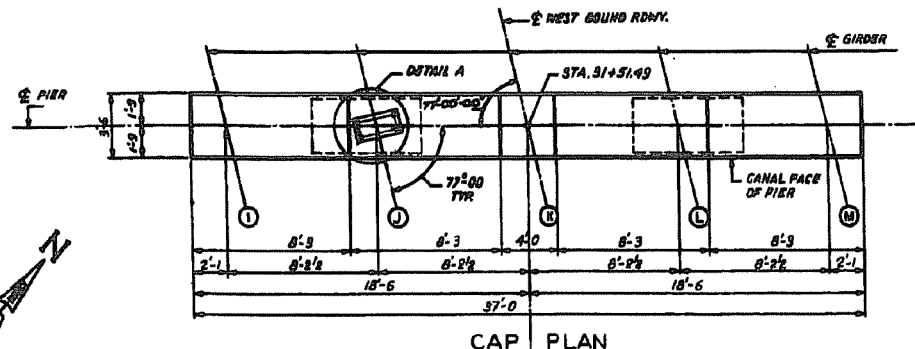
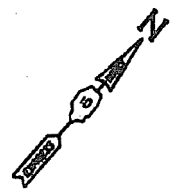
SHEET NO. SF99 OF SF46 SHEETS

FOR INFORMATION ONLY

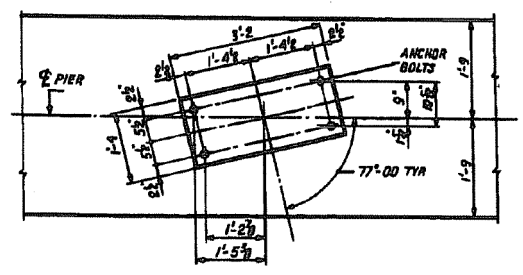
| F.A.P. RT.                | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 373                       | 2013-037B-R | COOK   | 787          | 631                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

Y:\chicago\100005\10093\Eng\_Docs\Phase\_II\SN\_016\_0486\_0487\_1st\_Ave.over\_Canal\Final\Final\_0487\_0160487\_60W75\_X09\_exist.Pier\_14.dgn 4:32:17 PM 6/17/2015

| F.A.P. R.T.           | SECTION    | EXPANDED WAY | TOTAL SHEETS | SHEET NO.        |
|-----------------------|------------|--------------|--------------|------------------|
| 133                   | 0707-626 B | SOUTHWARD    | 95           | 43               |
| STA.                  |            | TO STA.      |              |                  |
| FROM ROAD EXIST. TO V |            | ELEVATED     |              | FED. AID PROJECT |

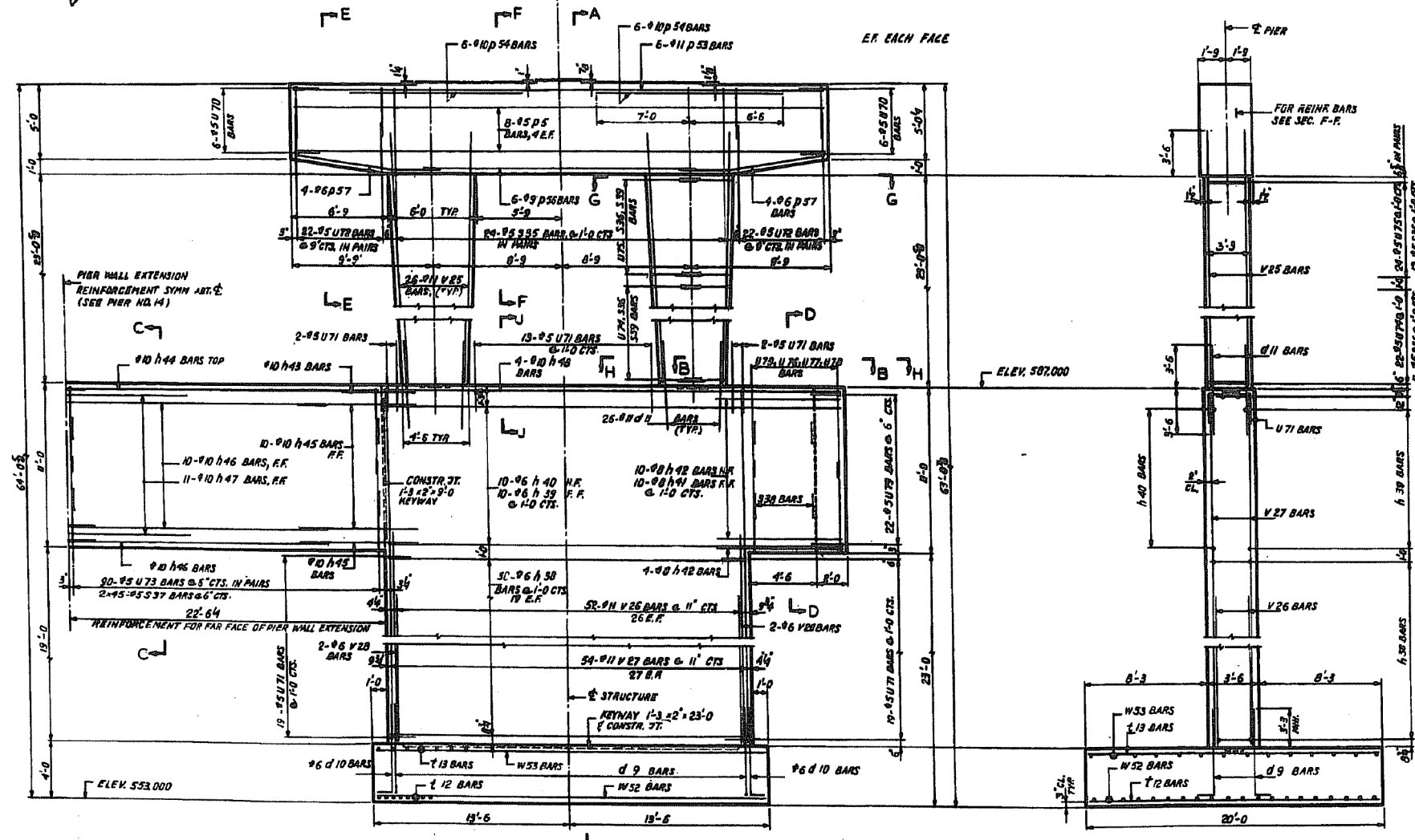


CAP PLAN

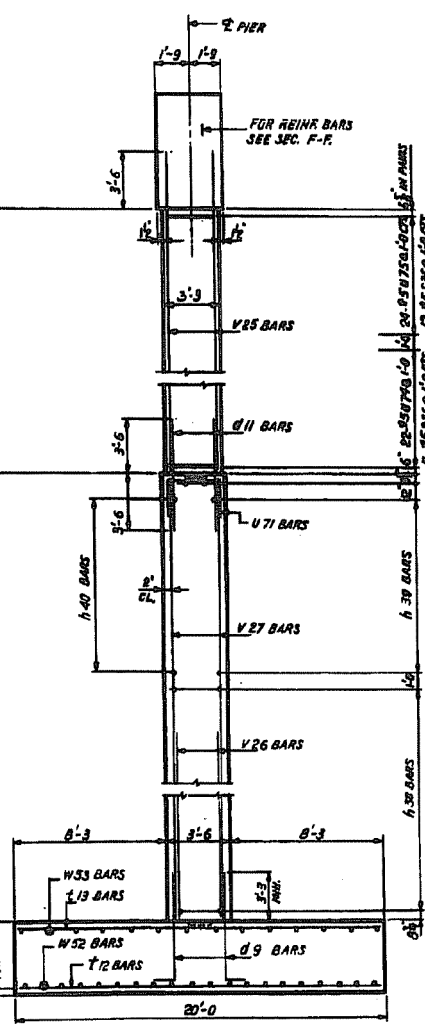


DETAIL A (TYR)

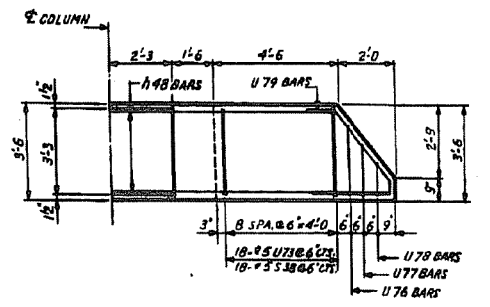
| Point | Elevation |
|-------|-----------|
| I     | 616.057   |
| J     | 616.163   |
| K     | 616.250   |
| L     | 616.177   |
| M     | 616.084   |



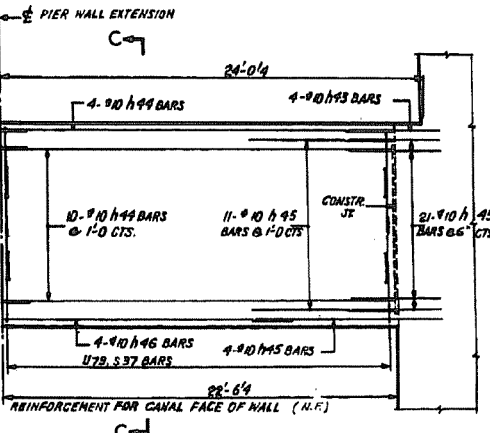
ELEVATION



SECTION A-A



SECTION B-B



PIER WALL EXTENSION  
CANAL FACE SHOWN

| REVISIONS       |                             | ILLINOIS DIVISION OF HIGHWAYS   |  |
|-----------------|-----------------------------|---------------------------------|--|
| NAME            | DATE                        | SOUTHWEST EXPRESSWAY            |  |
|                 |                             | FA RT 133                       |  |
|                 |                             | LAWDALE AVE. STRUCTURE OVER     |  |
|                 |                             | CHICAGO SANITARY AND SHIP CANAL |  |
|                 |                             | SECTION 0707 - 626 B            |  |
|                 |                             | PIER NO. 15 WEST BOUND          |  |
| DESIGNED RKS:ST | SCALE: HORIZ. 4"=1'-0"      | DRAWN BY J. W.                  |  |
| REVIEWED CJKW   | DATE 8-5-83 EXCEPT AS NOTED | CHECKED BY L.D.B.               |  |



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

|                                     |                       |                |           |
|-------------------------------------|-----------------------|----------------|-----------|
| FILE NAME =                         | USER NAME = jsurber   | DESIGNED - AJK | REVISED - |
| 0160487.60W75.X10.exist.Pier.15.dgn |                       | CHECKED - JLS  | REVISED - |
|                                     | PLOT SCALE =          | DRAWN - AJK    | REVISED - |
|                                     | PLOT DATE = 6/17/2015 | CHECKED - JLS  | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS PIER 15  
STRUCTURE NO. 016-0487

SHEET NO. SFX10 OF SFX46 SHEETS

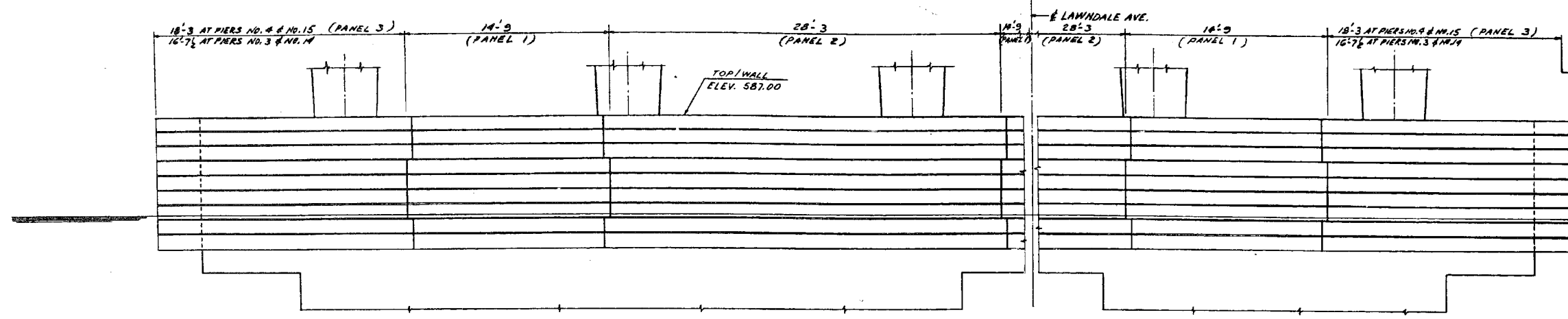
FOR INFORMATION ONLY

| F.A.P. R.T.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 373                       | 2013-037B-R | COOK   | 787          | 632                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

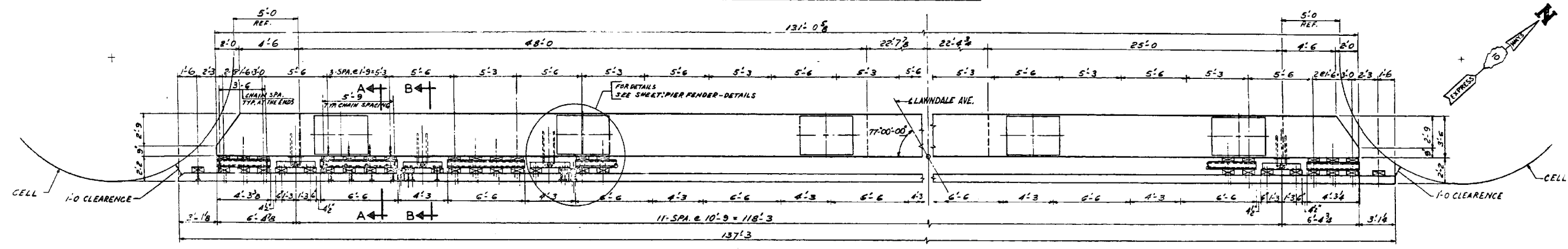
Y:\chicago\100005\100093\Eng\_Docs\Phase 1\11SN\_016\_0486\_0487\_1st\_Ave.over\_Canal\Final\Final\_0487\0160487\_60W75\_X10.exist.Pier.15.dgn 4:33:56 PM 6/17/2015



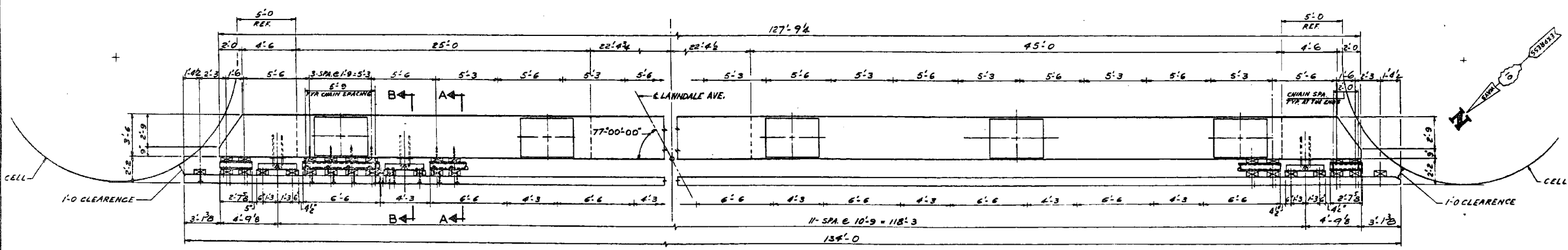
| F.A. R.T.                                       | SECTION    | EXPRESSWAYS | TOTAL SHEETS | SHEET NO. |
|---|------------|-------------|--------------|-----------|
| 133   | 0707-626 B | SOUTHWEST   | 99           | 45        |
| BYA.  |            | TO BYA.     |              |           |
| FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT |            |             |              |           |



FENDER ELEVATION FOR PIER NO.4 & NO.15  
(LOOKING UP-STATION)  
ELEVATION FOR PIER NO.3 & NO.14 OPPOSITE



FENDER PLAN AT PIERS NO.4 & NO.15



FENDER PLAN AT PIERS NO.3 & NO.14

|  |                          |                      |                   |
|--|--------------------------|----------------------|-------------------|
| ILLINOIS DIVISION OF HIGHWAYS                                |                          | SOUTHWEST EXPRESSWAY |                   |
| F.A. RT. 133   |                          |                      |                   |
| LAWNDALE AVE. STRUCTURE OVER CHICAGO SANITARY AND SHIP CANAL |                          |                      |                   |
| SECTION 0707-626 B   |                          |                      |                   |
| PIER FENDER PLAN & ELEVATION                                 |                          |                      |                   |
| DESIGNED ST.   | SCALE: HORIZ. 1/4"=1'-0" | DRAWN BY E.M.        | CHECKED BY L.D.B. |
| REVIEWED C.W.W.  | DATE 8-5-63              |                      |                   |

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

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|                                      |                       |                |           |
|--------------------------------------|-----------------------|----------------|-----------|
| FILE NAME =                          | USER NAME = jsurber   | DESIGNED - AJK | REVISED - |
| 0160487.60W75.X11.fender_details.dgn |                       | CHECKED - JLS  | REVISED - |
|                                      | PLOT SCALE =          | DRAWN - AJK    | REVISED - |
|                                      | PLOT DATE = 6/17/2015 | CHECKED - JLS  | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS PIER FENDER PLAN AND ELEVATION  
STRUCTURE NO. 016-0487

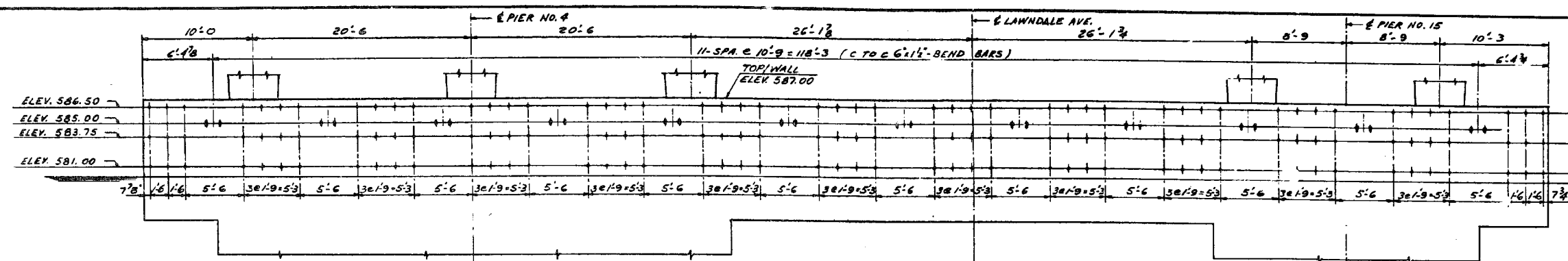
SHEET NO. SF11 OF SF46 SHEETS

FOR INFORMATION ONLY

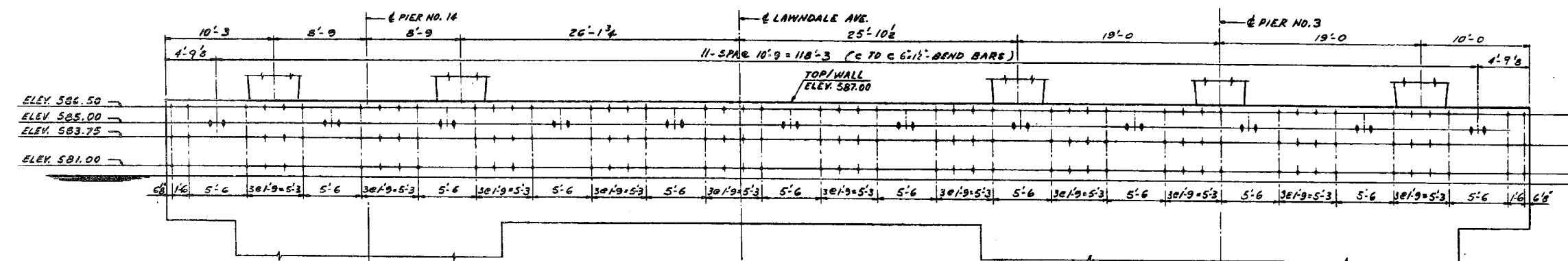
| F.A.P. R.T.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-------------|--------|--------------|-----------|
| 373                       | 2013-037B-R | COOK   | 787          | 633       |
| CONTRACT NO. 60W75        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

Y:\chicago\100005\100093\Eng\_Docs\Phase\_11\SN\_016\_0486\_0487\_1st\_Ave\_over\_Canal\Final\Final\_0487\_0160487\_60W75\_X11.fender\_details.dgn 4:34:28 PM 6/17/2015

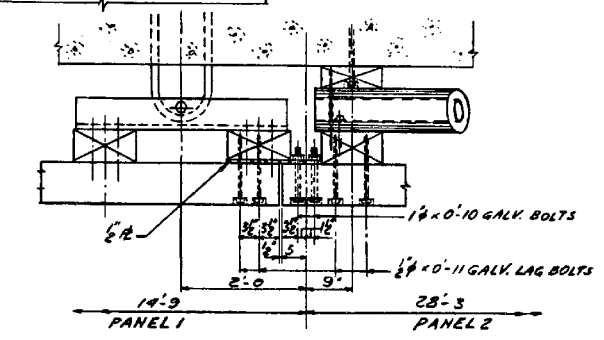
| F.A. RTE.                                       | SECTION   | EXPRESSWAY | TOTAL SHEETS | SHEET NO. |
|---|-----------|------------|--------------|-----------|
| 133   | 0707-626B | SANITARY   | 95           | 46        |
| STA.  |           | TO STA.    |              |           |
| FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT |           |            |              |           |



ANCHOR BOLTS LAYOUT AT PIERS NO. 4 & NO. 15  
(ELEVATION SHOWN FROM CANAL)  
SCALE: 3/16" = 1'-0"



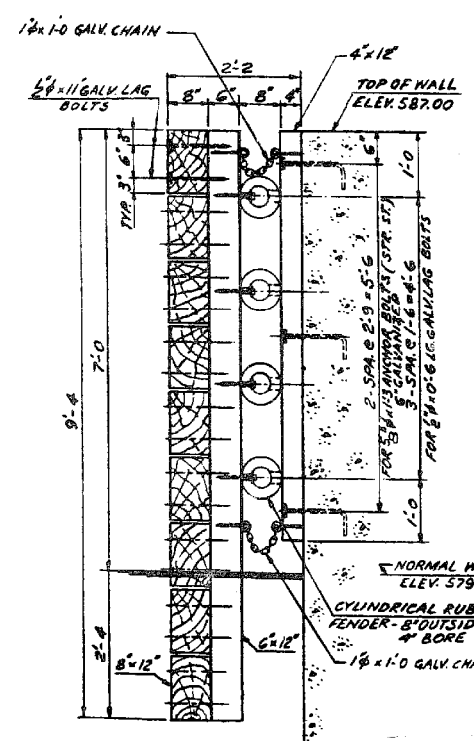
ANCHOR BOLTS LAYOUT AT PIERS NO. 14 & NO. 3  
(ELEVATION SHOWN FROM CANAL)  
SCALE: 3/16" = 1'-0"



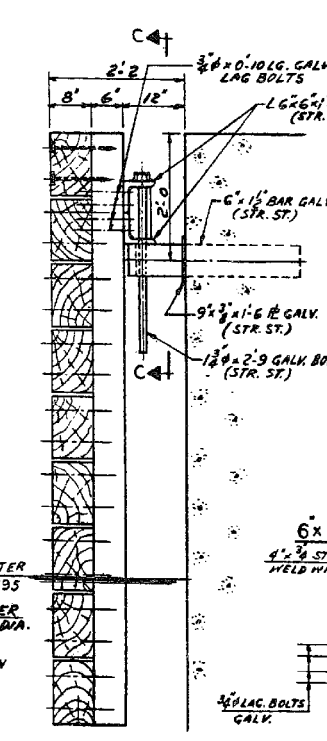
| PIER FENDER AT PIER NO. 3 & NO. 14 |          |       |
|------------------------------------|----------|-------|
| PIER FENDER QUANTITIES *           |          |       |
| TIMBER                             | MBM      | 18.4  |
| CYLINDRICAL RUBBER FENDER          | LIN. FT. | 307   |
| STRUCTURAL STEEL                   | LBS.     | 7,450 |
| HARDWARE                           | LBS.     | 1,830 |

| PIER FENDER AT PIER NO. 4 & NO. 15 |          |       |
|------------------------------------|----------|-------|
| PIER FENDER QUANTITIES *           |          |       |
| TIMBER                             | MBM      | 14.8  |
| CYLINDRICAL RUBBER FENDER          | LIN. FT. | 320   |
| STRUCTURAL STEEL                   | LBS.     | 7,450 |
| HARDWARE                           | LBS.     | 1,850 |

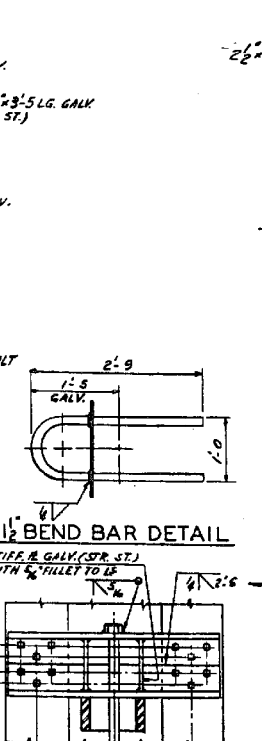
\* QUANTITIES SHOWN FROM CELL TO CELL FOR ONE PIER FENDER.  
TIMBER: DEMERARA GREEN HART (NECTANDRA RODIOEI)



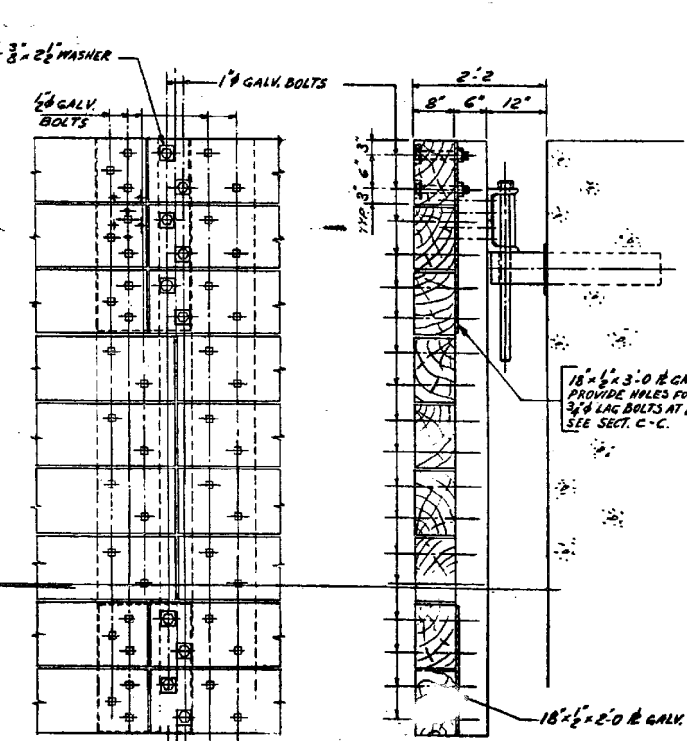
SECTION A-A  
SCALE: 3/16" = 1'-0"



SECTION B-B  
SCALE: 3/16" = 1'-0"



SECTION C-C  
SCALE: 3/16" = 1'-0"



6 x 1 1/2" BEND BAR DETAIL

|                                 |                                 |
|---------------------------------|---------------------------------|
| ILLINOIS DIVISION OF HIGHWAYS   |                                 |
| SOUTHWEST EXPRESSWAY            |                                 |
| F.A. RT. 133                    |                                 |
| LAWDALE AVE. STRUCTURE OVER     |                                 |
| CHICAGO SANITARY AND SHIP CANAL |                                 |
| SECTION 0707-626 B              |                                 |
| PIER FENDER - DETAILS           |                                 |
| DESIGNED ST.                    | SCALE: HORIZ. VERT. DATE 8-5-83 |
| REVIEWED CWW                    | DRAWN BY E.M. CHECKED BY L.D.B. |

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

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|--------------------------------------|---------------------|----------------|-------------|
| FILE NAME =                          | USER NAME = jsurber | DESIGNED - AJK | REVISIONS - |
| 0160487.60W75.X12.fender details.dgn |                     | CHECKED - JLS  | REVISIONS - |
|                                      |                     | DRAWN - AJK    | REVISIONS - |
|                                      |                     | CHECKED - JLS  | REVISIONS - |
|                                      |                     |                |             |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS PIER FENDER DETAILS  
STRUCTURE NO. 016-0487

SHEET NO. SFX12 OF SFX46 SHEETS

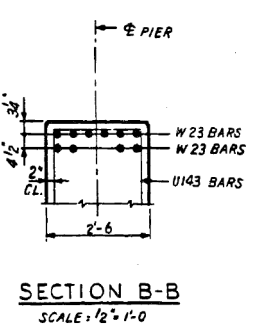
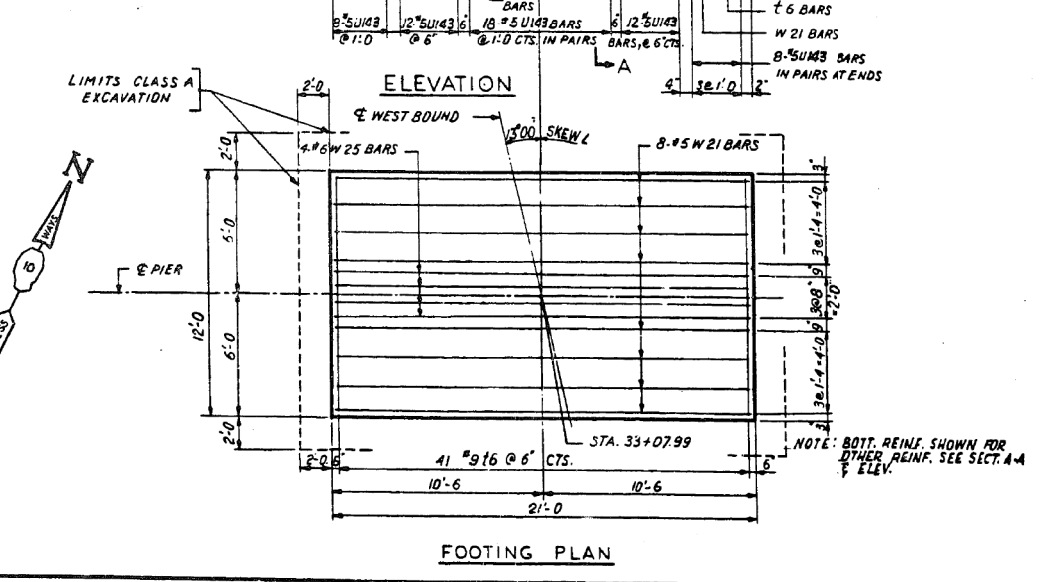
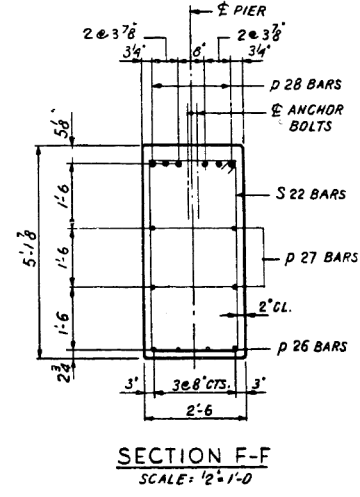
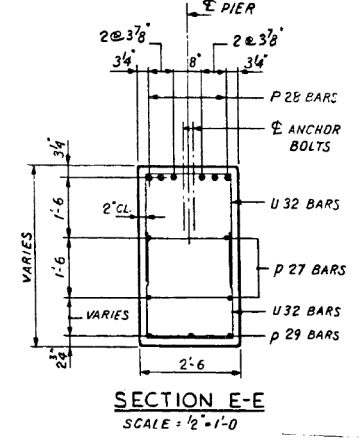
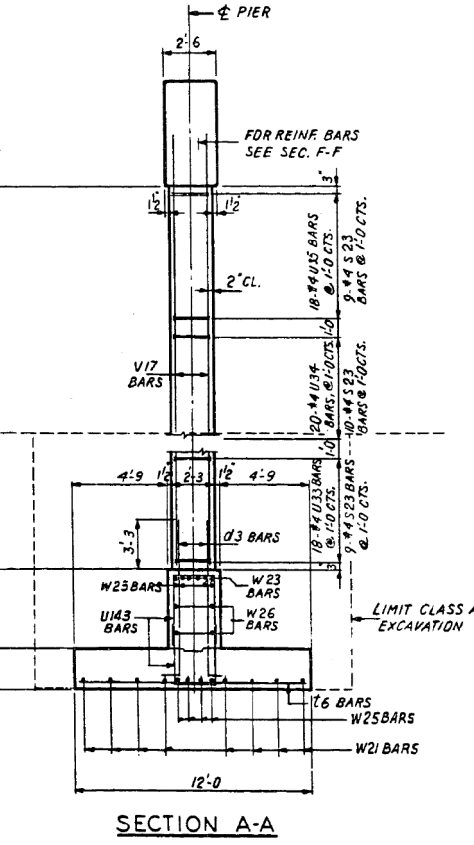
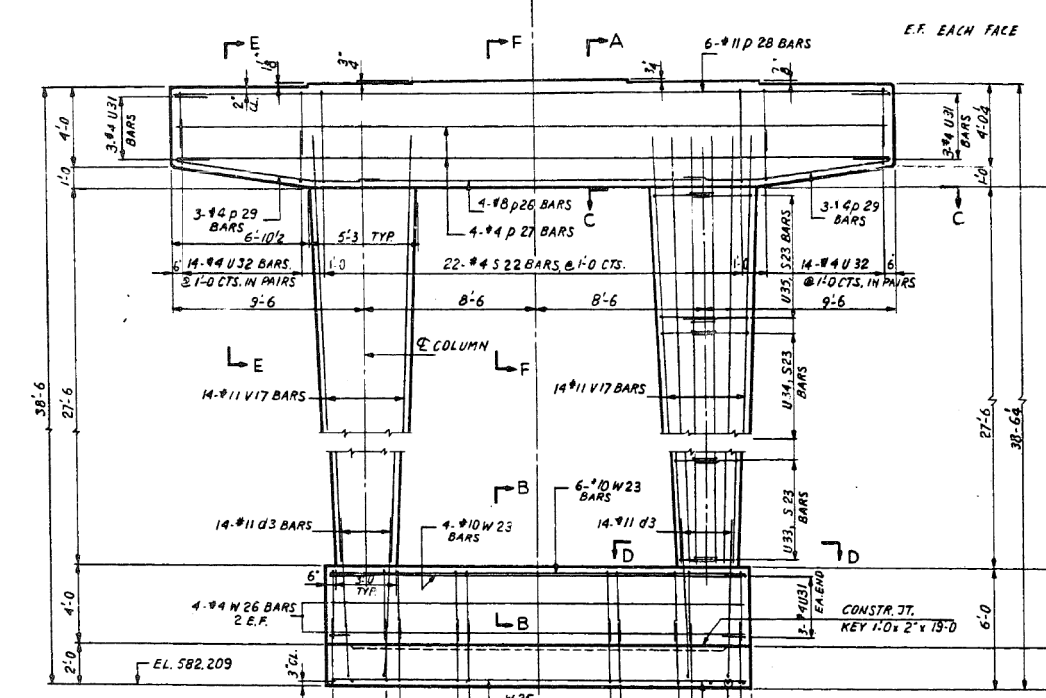
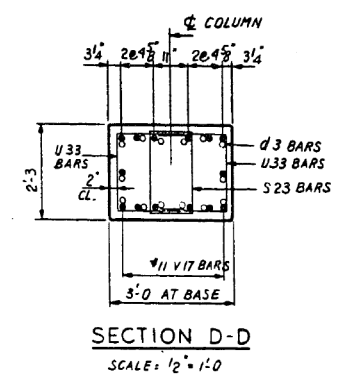
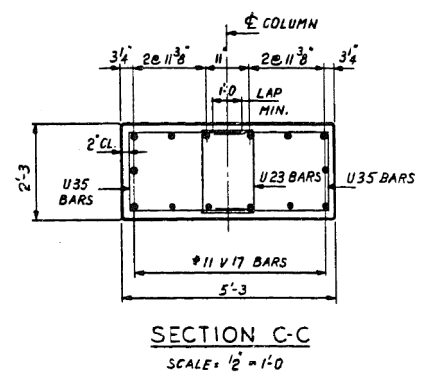
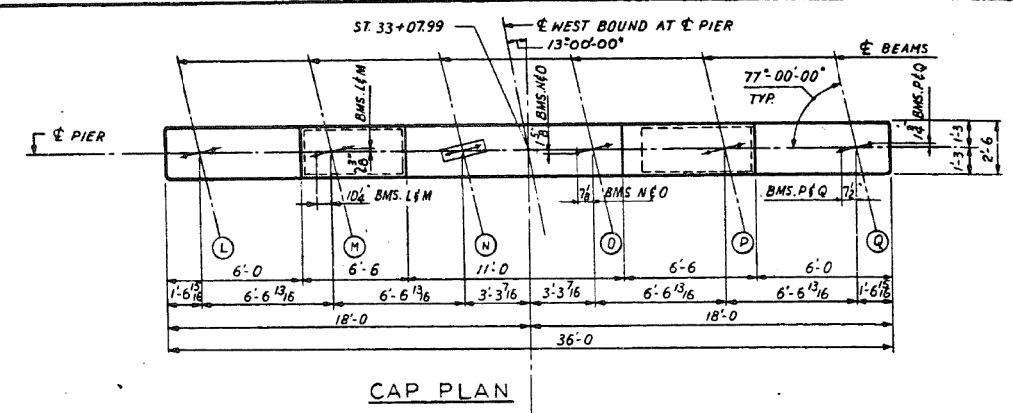
FOR INFORMATION ONLY

| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-------------|--------|--------------|-----------|
| 373                       | 2013-037B-R | COOK   | 787          | 634       |
| CONTRACT NO. 60W75        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

Y:\chicago\100005\10093\Eng\_Docs\_Phase\_II\SN\_016\_0486\_0487\_1st\_Ave\_over\_Canal\Final\Final\_0487\_0160487\_60W75\_X12.fender\_details.dgn 4:34:29 PM 6/17/2015



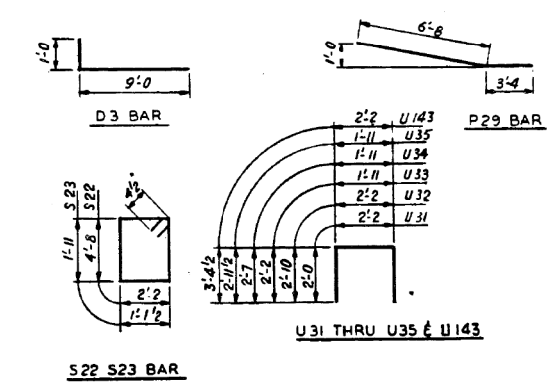
|                       |           |                  |              |           |
|-----------------------|-----------|------------------|--------------|-----------|
| F.A. RT.              | SECTION   | EXPRESSWAY       | TOTAL SHEETS | SHEET NO. |
| 133                   | 0707-626B | SOUTHWEST        | 95           | 51        |
| STA.                  | TO STA.   |                  |              |           |
| FED. ROAD DIST. NO. 7 | ILLINOIS  | FED. AID PROJECT |              |           |



|   |         |
|---|---------|
| L | 620.709 |
| M | 620.799 |
| N | 620.864 |
| O | 620.864 |
| P | 620.801 |
| Q | 620.733 |

| BAR  | NO. | SIZE | LENGTH | SHAPE |
|------|-----|------|--------|-------|
| d3   | 28  | 11   | 10'-0" |       |
| p26  | 4   | 8    | 17'-6" |       |
| p27  | 4   | 4    | 35'-8" |       |
| p28  | 6   | 11   | 35'-8" |       |
| p29  | 6   | 4    | 10'-0" |       |
| s22  | 22  | 4    | 14'-5" |       |
| s23  | 56  | 4    | 6'-10" |       |
| t6   | 41  | 9    | 11'-8" |       |
| u143 | 58  | 5    | 8'-11" |       |
| u31  | 12  | 4    | 4'-2"  |       |
| u32  | 28  | 4    | 7'-10" |       |
| u33  | 36  | 4    | 6'-4"  |       |
| u34  | 40  | 4    | 7'-1"  |       |
| u35  | 36  | 4    | 7'-10" |       |
| v17  | 28  | 11   | 30'-6" |       |
| w21  | 8   | 5    | 20'-8" |       |
| w23  | 10  | 10   | 20'-8" |       |
| w25  | 4   | 6    | 20'-8" |       |
| w26  | 4   | 4    | 20'-8" |       |

|                    |          |        |
|--------------------|----------|--------|
| CLASS X CONCRETE   | CU. YDS. | 61.9   |
| REINFORCING BARS   | LBS.     | 12,070 |
| CLASS A EXCAVATION | CU. YDS. | 190    |



|   |  |
|---|--|
| SOUTHWEST EXPRESSWAY  |  |
| I.A. RT 133   |  |
| LAWDALE AVE. STRUCTURE OVER CHICAGO SANITARY AND SHIP CANAL |  |
| SECTION 0707 - 626 B  |  |
| PIER NO. 17 WEST BOUND                                      |  |
| SCALE: HORIZ. 1"=1'-0"                                      | VERT. 1"=4'-0"                                 |
| DATE 8-5-63   | EXCEPT AS NOTED DRAWN BY J. W. CHECKED BY LDB. |

| NAME           | DATE |
|----------------|------|
|                |      |
|                |      |
| DESIGNED ST-OP |      |
| REVIEWED CWW   |      |

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312-565-0450 Job No. 10093

|                                      |                       |                |             |
|--------------------------------------|-----------------------|----------------|-------------|
| FILE NAME =                          | USER NAME = jsurber   | DESIGNED - AJK | REVISIONS - |
| 01680487.60W75.X14.exist.Pier.17.dgn | PLOT SCALE =          | CHECKED - JLS  | REVISIONS - |
|                                      | PLOT DATE = 6/17/2015 | DRAWN - AJK    | REVISIONS - |
|                                      |                       | CHECKED - JLS  | REVISIONS - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

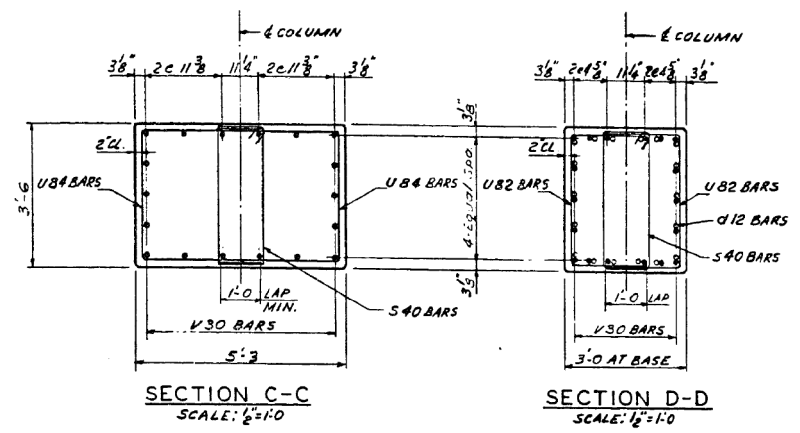
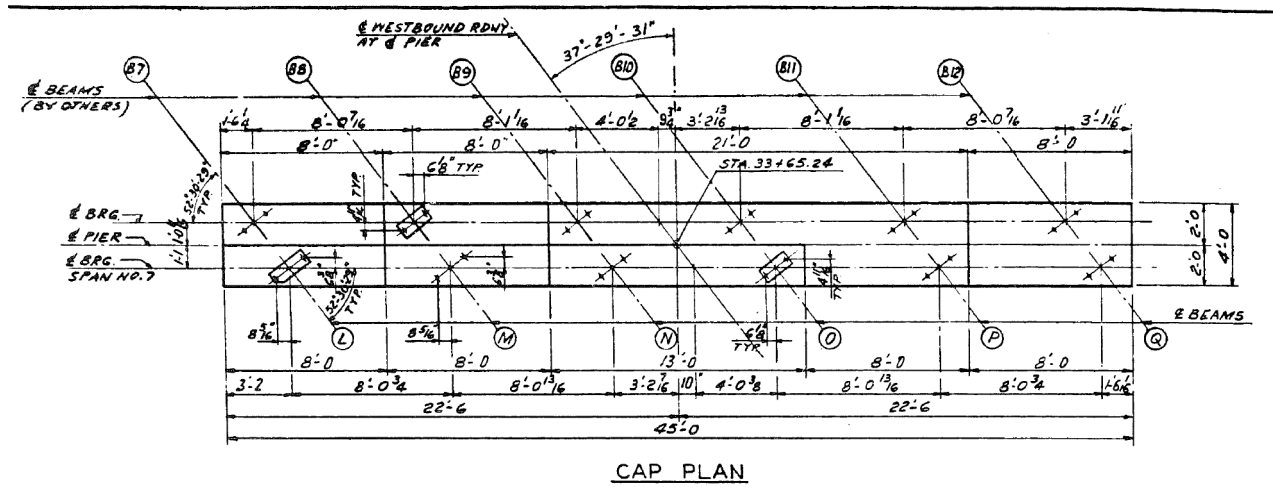
EXISTING PLANS PIER 17  
STRUCTURE NO. 016-0487  
SHEET NO. SFX14 OF SFX46 SHEETS

FOR INFORMATION ONLY

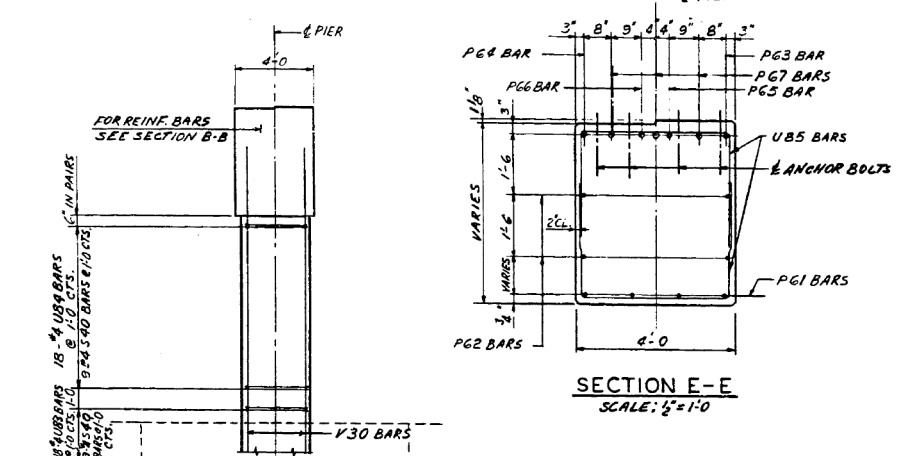
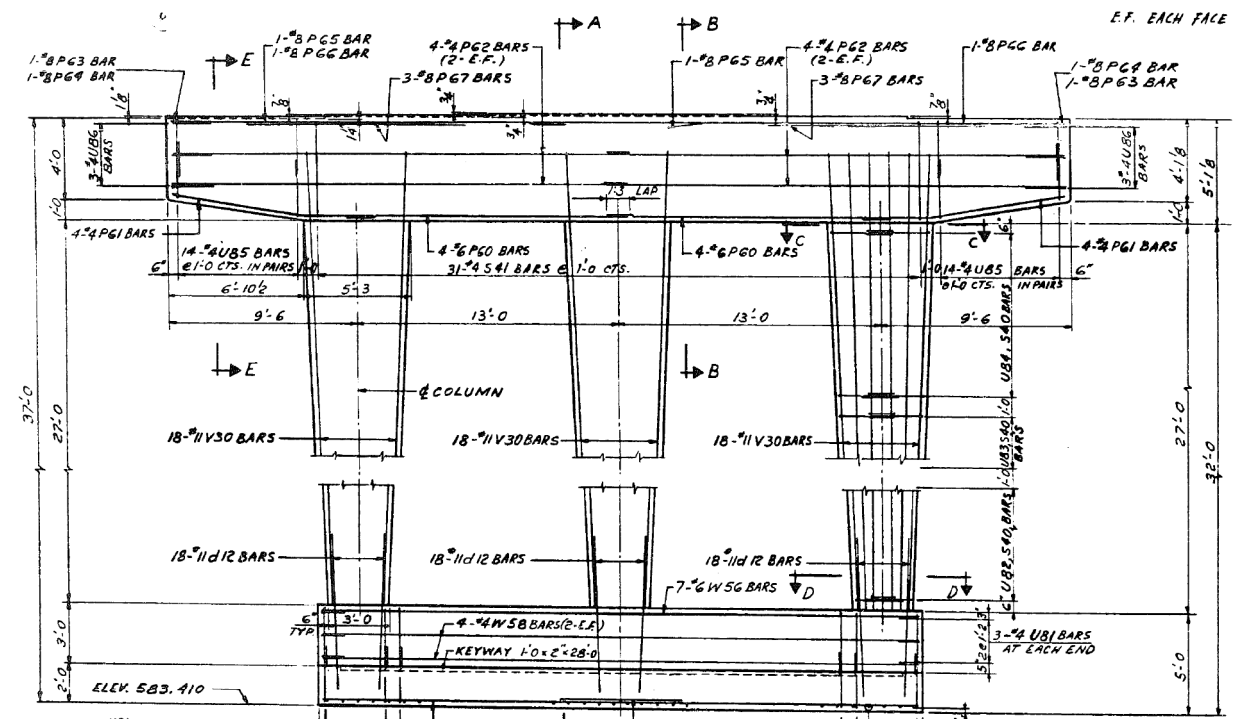
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|---------------------------|-------------|--------|--------------|--------------------|
| F.A.P. RT.                | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
| 373                       | 2013-037B-R | COOK   | 787          | 636                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

Y:\chicago\100005\100093\Eng\_Docs\_Phase.I\N\_S\016\_0486\_0487\_1st\_Ave.over\_Canal\Final\Final\_0487\0160487\_60W75\_X14\_exist\_Pier.17.dgn 4:35:59 PM 6/17/2015

|                       |           |                  |              |           |
|-----------------------|-----------|------------------|--------------|-----------|
| F.A. REL.             | SECTION   | EXPRESSWAY       | TOTAL SHEETS | SHEET NO. |
| 133                   | 0707-626  | SOUTHWEST        | 95           | 52        |
| STA.                  | TO STA.   |                  |              |           |
| FED. ROAD DIST. NO. 7 | ILL. FROM | FED. AID PROJECT |              |           |

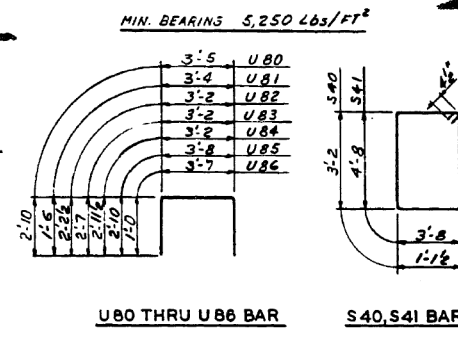
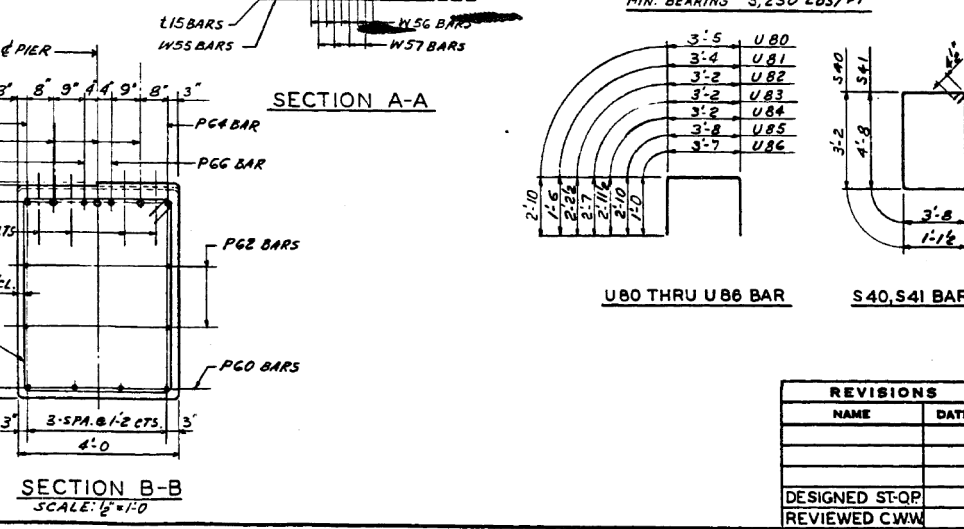
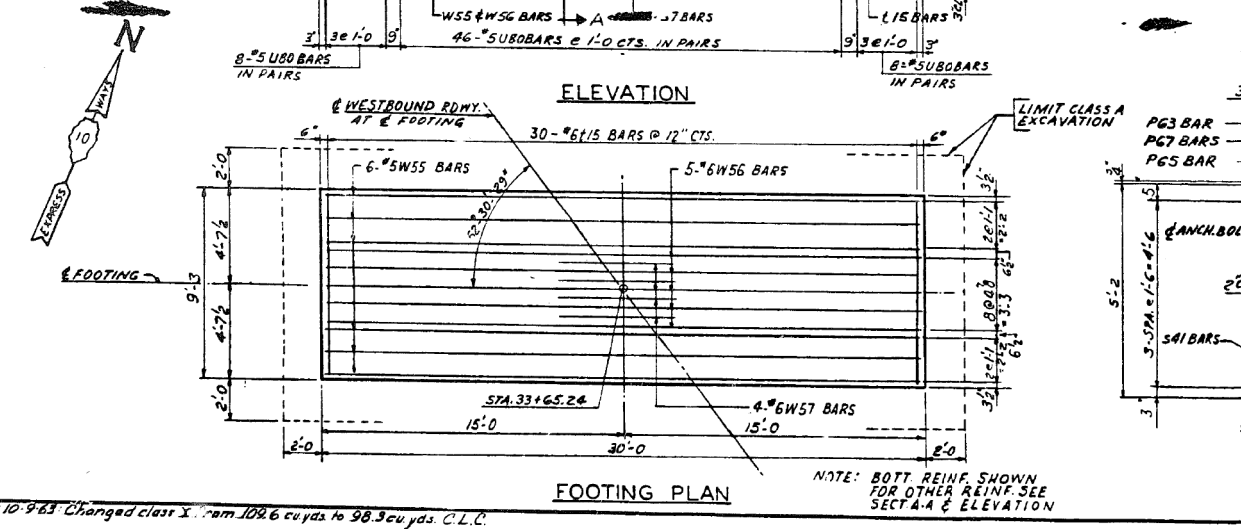


| BILL OF REINFORCEMENT |     |      |         |       |
|-----------------------|-----|------|---------|-------|
| BAR                   | NO. | SIZE | LENGTH  | SHAPE |
| d 12                  | 54  | 11   | 7'-9"   |       |
| P60                   | 8   | 6    | 14'-3"  |       |
| P61                   | 8   | 4    | 10'-0"  |       |
| P62                   | 8   | 4    | 22'-9"  |       |
| P63                   | 2   | 8    | 18'-6"  |       |
| P64                   | 2   | 8    | 30'-0"  |       |
| P65                   | 2   | 8    | 17'-5"  |       |
| P66                   | 2   | 8    | 28'-11" |       |
| P67                   | 6   | 8    | 11'-0"  |       |
| S40                   | 81  | 4    | 9'-4"   |       |
| S41                   | 31  | 4    | 17'-5"  |       |
| L15                   | 30  | 6    | 8'-11"  |       |
| U80                   | 62  | 5    | 9'-1"   |       |
| U81                   | 6   | 4    | 5'-4"   |       |
| U82                   | 54  | 4    | 7'-7"   |       |
| U83                   | 54  | 4    | 6'-4"   |       |
| U84                   | 54  | 4    | 9'-1"   |       |
| U85                   | 28  | 4    | 9'-4"   |       |
| U86                   | 6   | 4    | 5'-7"   |       |
| V30                   | 59  | 11   | 30'-3"  |       |
| W55                   | 6   | 5    | 29'-8"  |       |
| W56                   | 12  | 6    | 29'-8"  |       |
| W57                   | 4   | 6    | 6'-0"   |       |
| W58                   | 4   | 4    | 29'-8"  |       |



| BEARING SEAT ELEVATIONS AT BEAMS |         |          |         |
|----------------------------------|---------|----------|---------|
| SPAN NO.                         | BEAM    | SPAN NO. | BEAM    |
| L                                | 620.503 | B 7      | 620.410 |
| M                                | 620.579 | B 8      | 620.510 |
| N                                | 620.642 | B 9      | 620.570 |
| O                                | 620.642 | B 10     | 620.570 |
| P                                | 620.570 | B 11     | 620.570 |
| Q                                | 620.500 | B 12     | 620.500 |

| PIER NO. 18 WB. QUANTITIES |       |        |
|----------------------------|-------|--------|
| CLASS X CONCRETE           | CUYDS | 983    |
| REINFORCING BARS           | LB.S. | 15,750 |
| CLASS A EXCAVATION         | CUYDS | 234    |



| ILLINOIS DIVISION OF HIGHWAYS                               |                   |
|---|-------------------|
| SOUTHWEST EXPRESSWAY  |                   |
| F.A. RT. 133  |                   |
| LAWDALE AVE. STRUCTURE OVER CHICAGO SANITARY AND SHIP CANAL |                   |
| SECTION 0707-626 B  |                   |
| PIER NO. 18 WESTBOUND                                       |                   |
| SCALE: HORIZ. 1/4"=1'-0"                                    | DRAWN BY E.M.     |
| SCALE: VERT. 1/8"=1'-0"                                     | CHECKED BY L.O.B. |
| DATE: 5-83  |                   |

| REVISIONS      |      |
|----------------|------|
| NAME           | DATE |
|                |      |
|                |      |
| DESIGNED ST-OP |      |
| REVIEWED CWM   |      |

**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 = jsurber   | DESIGNED - AJK | REVISED - |
| 0160487.60W75.X15.exist.Pier_18.dgn |                       | CHECKED - JLS  | REVISED - |
|                                     | PLOT SCALE =          | DRAWN - AJK    | REVISED - |
|                                     | PLOT DATE = 6/17/2015 | CHECKED - JLS  | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

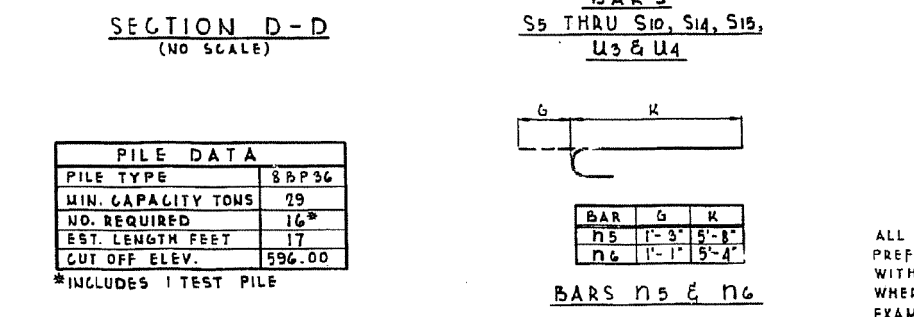
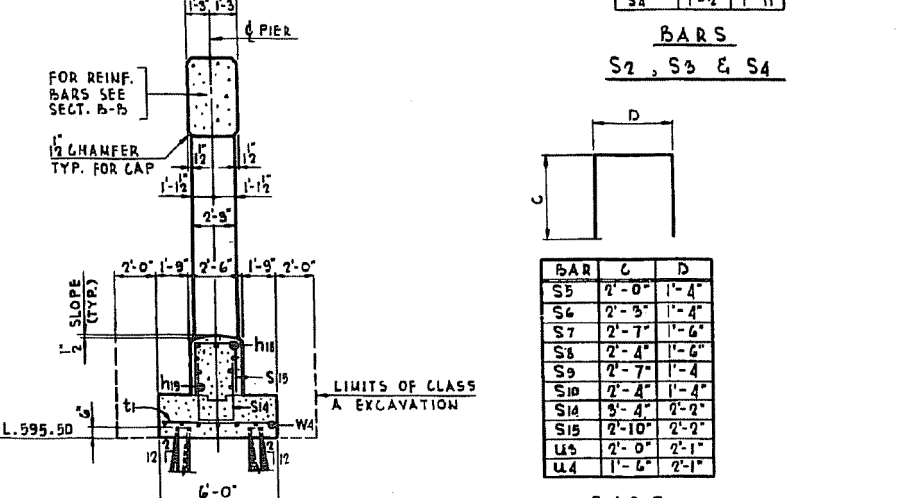
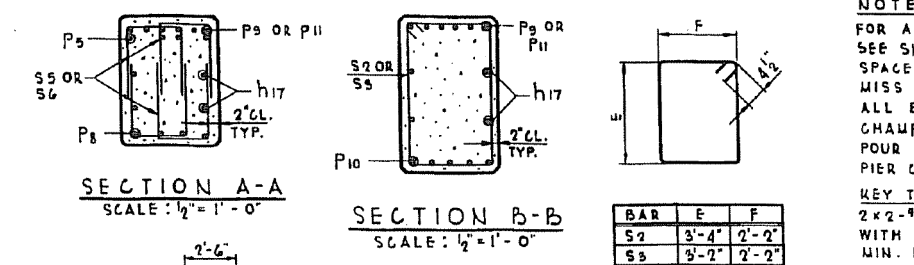
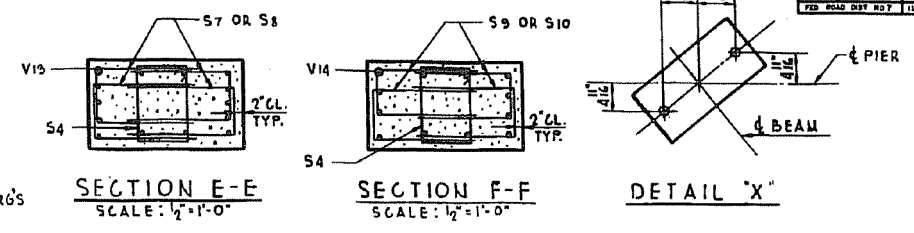
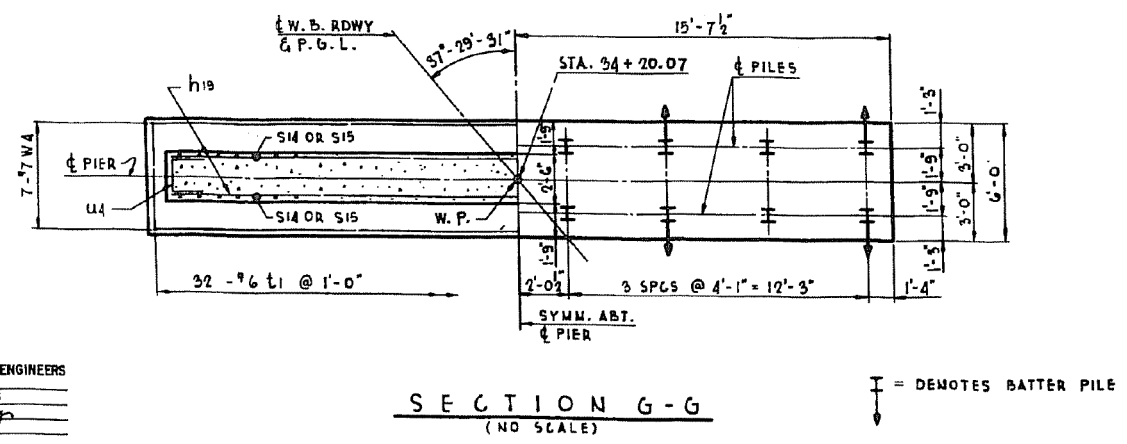
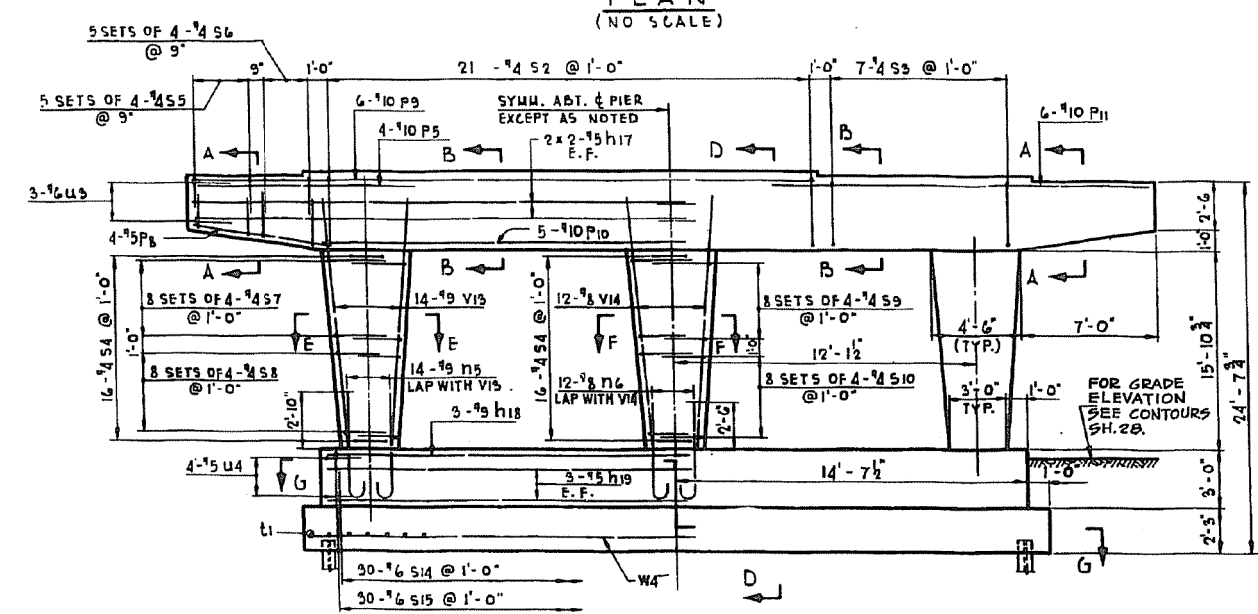
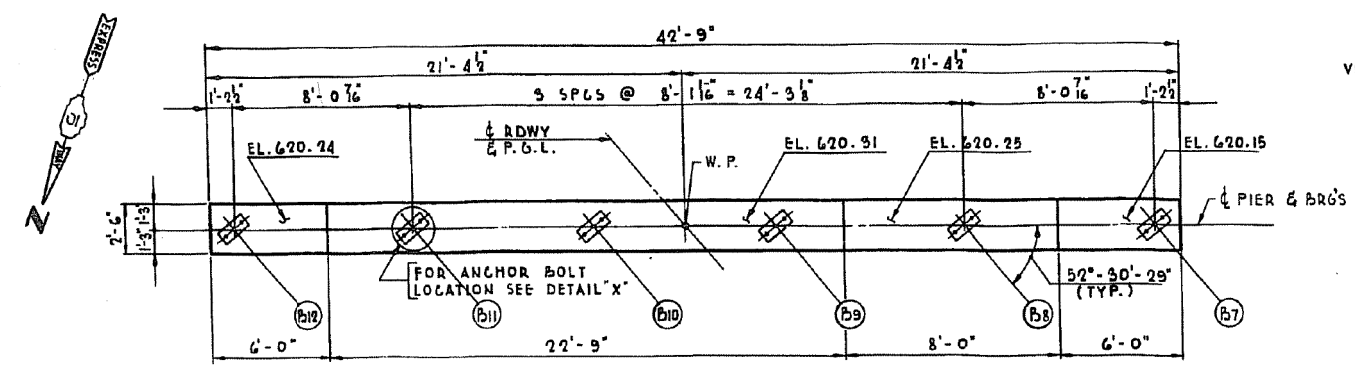
EXISTING PLANS PIER 18  
STRUCTURE NO. 016-0487

SHEET NO. SFX15 OF SFX46 SHEETS

FOR INFORMATION ONLY

|                           |             |        |              |                    |
|---------------------------|-------------|--------|--------------|--------------------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
| 373                       | 2013-037B-R | COOK   | 787          | 637                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

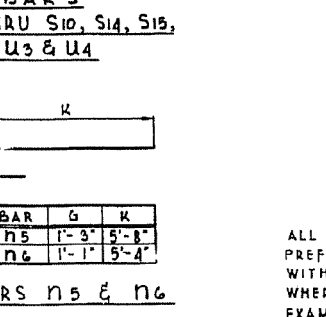
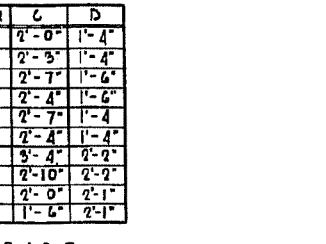
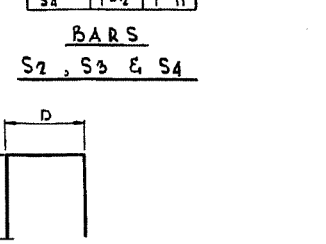
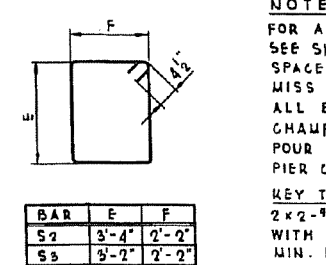
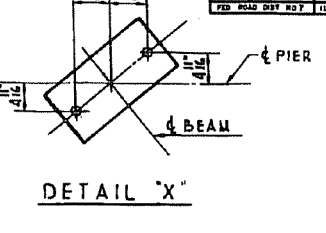
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| PILE DATA          |         |
|--------------------|---------|
| PILE TYPE          | 8 BP 36 |
| MIN. CAPACITY TONS | 29      |
| NO. REQUIRED       | 16*     |
| EST. LENGTH FEET   | 17      |
| CUT OFF ELEV.      | 596.00  |

\*INCLUDES 1 TEST PILE

| BILL OF MATERIAL               |        |          |
|--------------------------------|--------|----------|
| ITEM                           | UNIT   | QUANTITY |
| CLASS A EXCAVATION             | CU YD  | 60       |
| CLASS X CONCRETE               | CU YD  | 92.9     |
| REINFORCEMENT BARS             | POUND  | 9210     |
| FURNISHING STEEL PILES 8 BP 36 | LIN FT | 255      |
| TEST PILE STEEL 8 BP 36        | EACH   | 1        |
| DRIVING STEEL PILES            | LIN FT | 255      |



**NOTE:**  
FOR ANCHOR BOLT PROJECTION SEE SH. 25.  
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.  
ALL EDGES TO HAVE STD. 3/4" CHAMFER EXCEPT AS NOTED.  
POUR STEPS MONOLITHICALLY WITH PIER CAP.

**KEY TO BAR INDICATION:**  
2x2-#5 ETC. MEANS 2 LINES OF BARS WITH 2 LENGTHS PER LINE.  
MIN. BAR LAP = 20 DIA.

| BAR LIST |      |              |         |
|----------|------|--------------|---------|
| BAR NO.  | SIZE | LENGTH/SHAPE |         |
| h17      | 8    | 5            | 21'-9"  |
| h18      | 8    | 9            | 28'-9"  |
| h19      | 6    | 5            | 28'-9"  |
| m3       | 28   | 9            | 6'-11"  |
| m6       | 12   | 8            | 6'-5"   |
| p5       | 8    | 10           | 11'-6"  |
| p8       | 8    | 5            | 7'-9"   |
| p9       | 6    | 10           | 28'-6"  |
| p10      | 5    | 10           | 28'-9"  |
| p11      | 6    | 10           | 16'-6"  |
| s2       | 21   | 4            | 11'-9"  |
| s3       | 7    | 4            | 11'-5"  |
| s4       | 48   | 4            | 6'-11"  |
| s5       | 40   | 4            | 5'-4"   |
| s6       | 40   | 4            | 5'-10"  |
| s7       | 64   | 4            | 6'-8"   |
| s8       | 64   | 4            | 6'-2"   |
| s9       | 92   | 4            | 6'-6"   |
| s10      | 92   | 4            | 6'-0"   |
| s14      | 30   | 6            | 8'-10"  |
| s15      | 30   | 6            | 7'-10"  |
| t1       | 92   | 6            | 5'-6"   |
| u3       | 6    | 6            | 6'-1"   |
| u4       | 8    | 5            | 5'-1"   |
| v13      | 28   | 9            | 18'-6"  |
| v14      | 12   | 8            | 18'-5"  |
| w4       | 7    | 7            | 30'-11" |

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: 19P9 MEANS BARS P9 FOR PIER 19

|                               |      |
|-------------------------------|------|
| ILLINOIS DIVISION OF HIGHWAYS |      |
| SOUTHWEST EXPRESSWAY          |      |
| LAWDALE AVE OVER RAMP E       |      |
| PIER 19                       |      |
| SCALE: AS NOTED               | DATE |

DE LEW, CATHER & CO. ENGINEERS  
DESIGNED BY Y.M. HUD  
DRAWN BY F. BOBINAS  
CHECKED BY E.S. MARTINEZ  
IN CHARGE E.S. MARTINEZ  
APPROVED L.N. RIAN

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 = jsurber   | DESIGNED - AJK | REVISED - |
| 0160487.60W75.X16.exist.Pier.19.dgn | PLOT SCALE =          | CHECKED - JLS  | REVISED - |
|                                     | PLOT DATE = 6/17/2015 | DRAWN - AJK    | REVISED - |
|                                     |                       | CHECKED - JLS  | REVISED - |

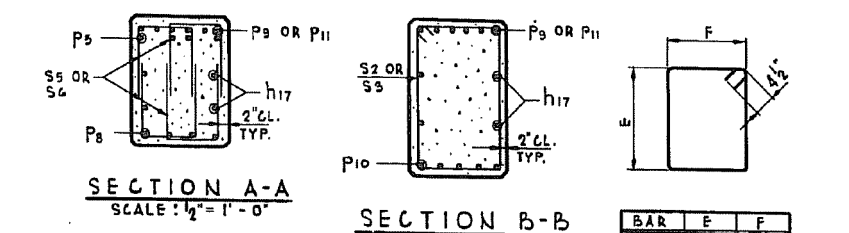
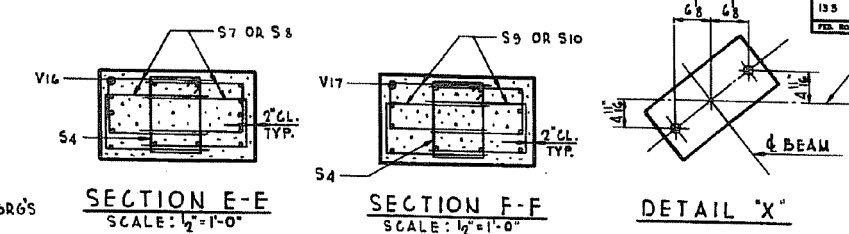
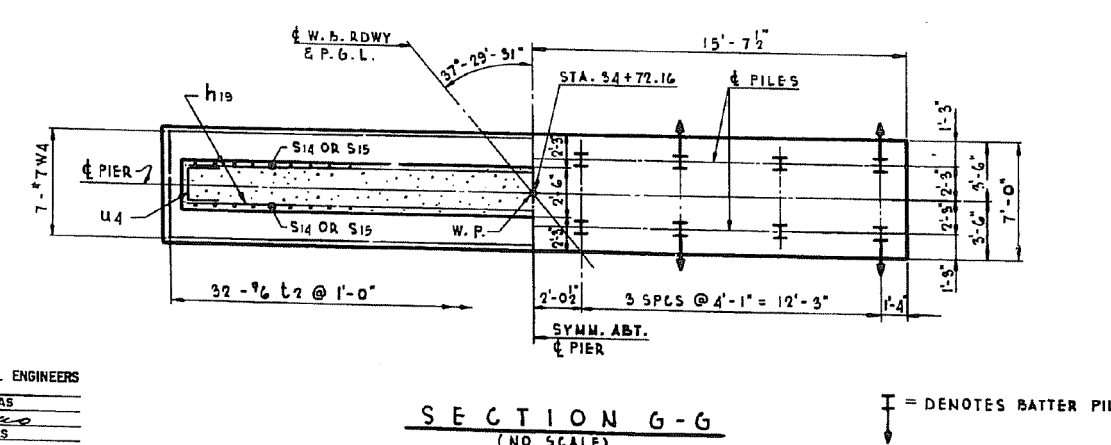
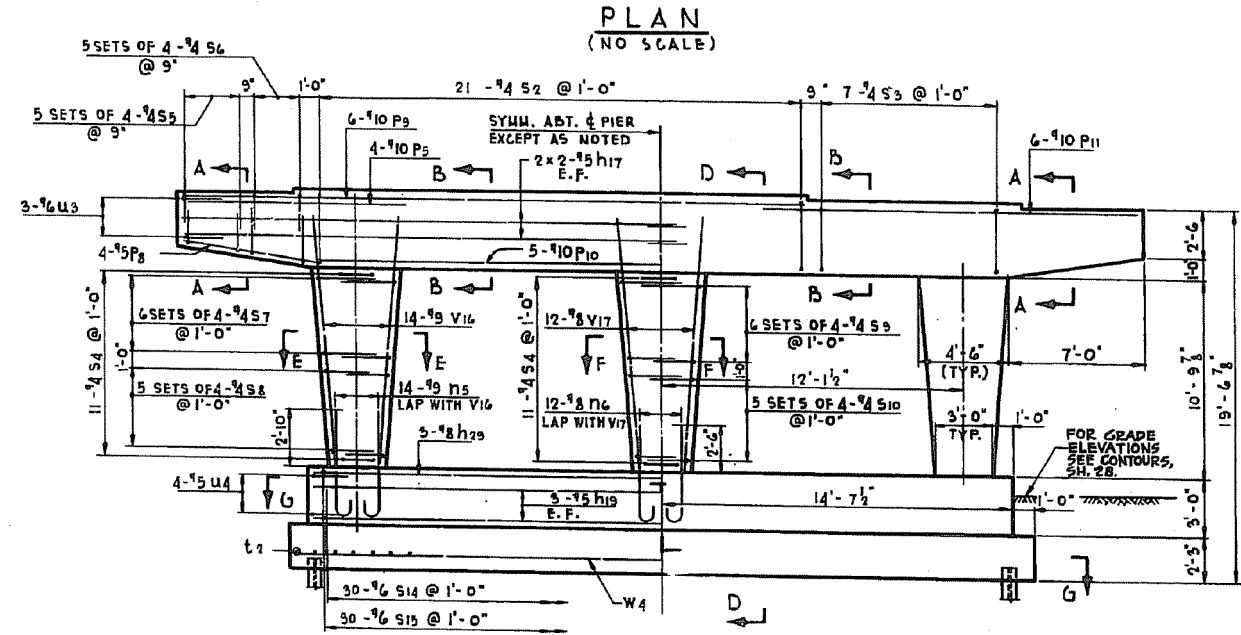
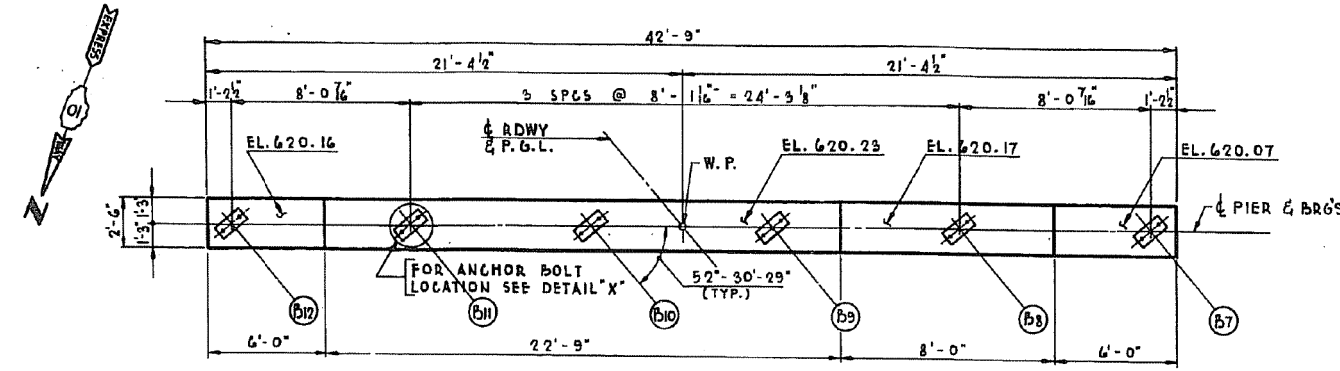
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS PIER 19  
STRUCTURE NO. 016-0487

SHEET NO. SFX16 OF SFX46 SHEETS

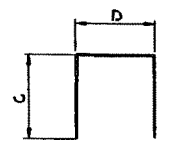
FOR INFORMATION ONLY

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 373                       | 2013-037B-R | COOK   | 787          | 638       |
| CONTRACT NO. 60W75        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |



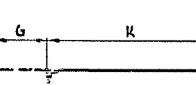
| BAR | E     | F      |
|-----|-------|--------|
| S2  | 3'-4" | 2'-2"  |
| S3  | 3'-2" | 2'-2"  |
| S4  | 1'-2" | 1'-11" |

**BARS**  
S2, S3 & S4



| BAR | C      | D     |
|-----|--------|-------|
| S5  | 2'-0"  | 1'-4" |
| S6  | 2'-3"  | 1'-4" |
| S7  | 2'-7"  | 1'-6" |
| S8  | 2'-4"  | 1'-6" |
| S9  | 2'-7"  | 1'-4" |
| S10 | 2'-4"  | 1'-4" |
| S14 | 3'-4"  | 2'-2" |
| S15 | 2'-10" | 2'-2" |
| U3  | 2'-0"  | 2'-1" |
| U4  | 1'-6"  | 2'-1" |

**BARS**  
S5 THRU S10, S14, S15, U3 & U4



| BAR | G     | K     |
|-----|-------|-------|
| n5  | 1'-3" | 5'-8" |
| n6  | 1'-1" | 5'-4" |

**BARS**  
n5 & n6

| PILE DATA          |          |
|--------------------|----------|
| PILE TYPE          | 8 B P 36 |
| MIN. CAPACITY TONS | 30       |
| NO. REQUIRED       | 16       |
| EST. LENGTH FEET   | 28       |
| CUT OFF ELEV.      | 601.00   |

| BILL OF MATERIAL                |               |
|---------------------------------|---------------|
| ITEM                            | UNIT QUANTITY |
| CLASS A EXCAVATION              | CU YD 58      |
| CLASS X CONCRETE                | CU YD 50.1    |
| REINFORCEMENT BARS              | POUND 8237    |
| FURNISHING STEEL PILES 8 B P 36 | LIN FT 368    |
| DRIVING STEEL PILES             | LIN FT 368    |

**NOTE:**  
FOR ANCHOR BOLT PROJECTION SEE SH. 25.  
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.  
ALL EDGES TO HAVE STD. 3/4" CHAMFER EXCEPT AS NOTED.  
POUR STEPS MONOLITHICALLY WITH PIER CAP.

**KEY TO BAR INDICATION:**  
2x2-#5 ETC. MEANS 2 LINES OF BARS WITH 2 LENGTHS PER LINE.  
MIN. BAR LAP = 20 DIA.

| BAR LIST |     |      |         |       |
|----------|-----|------|---------|-------|
| BAR      | NO. | SIZE | LENGTH  | SHAPE |
| h17      | 8   | 5    | 21'-9"  |       |
| h19      | 6   | 5    | 28'-9"  |       |
| h29      | 3   | 8    | 28'-9"  |       |
| n5       | 28  | 9    | 6'-11"  |       |
| n6       | 12  | 8    | 6'-5"   |       |
| P5       | 8   | 10   | 11'-6"  |       |
| P8       | 8   | 5    | 7'-9"   |       |
| P9       | 6   | 10   | 28'-6"  |       |
| P10      | 5   | 10   | 28'-9"  |       |
| P11      | 6   | 10   | 16'-6"  |       |
| S2       | 21  | 4    | 11'-9"  |       |
| S3       | 7   | 4    | 11'-5"  |       |
| S4       | 33  | 4    | 6'-11"  |       |
| S5       | 40  | 4    | 5'-4"   |       |
| S6       | 40  | 4    | 5'-10"  |       |
| S7       | 48  | 4    | 6'-8"   |       |
| S8       | 40  | 4    | 6'-2"   |       |
| S9       | 24  | 4    | 6'-6"   |       |
| S10      | 20  | 4    | 6'-0"   |       |
| S14      | 30  | 6    | 8'-10"  |       |
| S15      | 30  | 6    | 7'-10"  |       |
| t2       | 32  | 6    | 6'-6"   |       |
| U3       | 6   | 6    | 6'-1"   |       |
| U4       | 8   | 5    | 5'-1"   |       |
| V16      | 28  | 9    | 15'-6"  |       |
| V17      | 12  | 8    | 13'-3"  |       |
| W4       | 7   | 7    | 30'-11" |       |

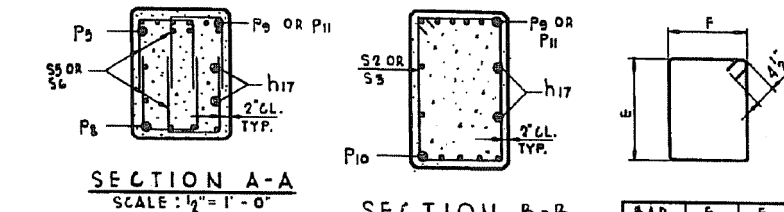
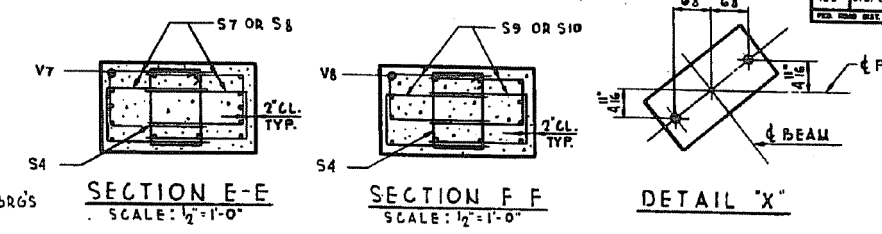
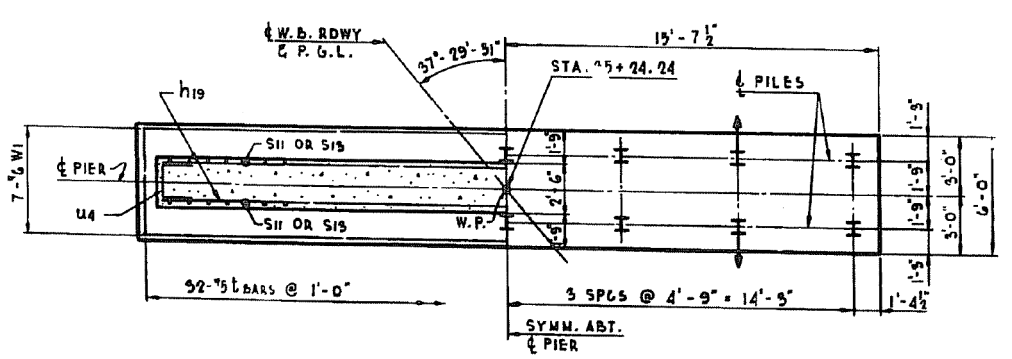
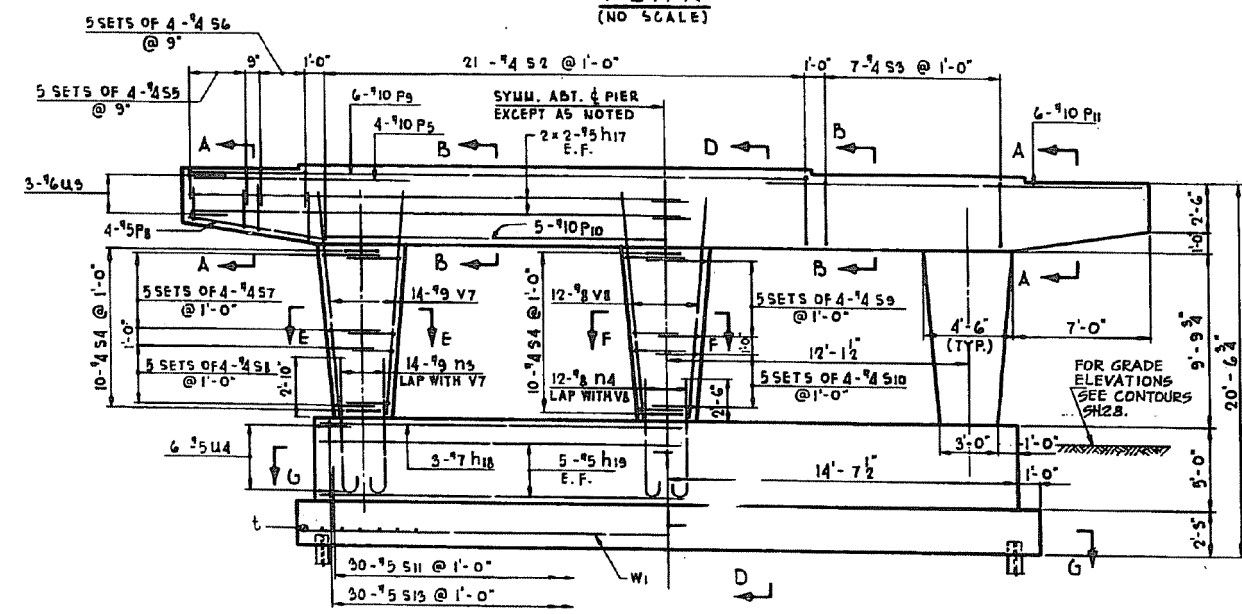
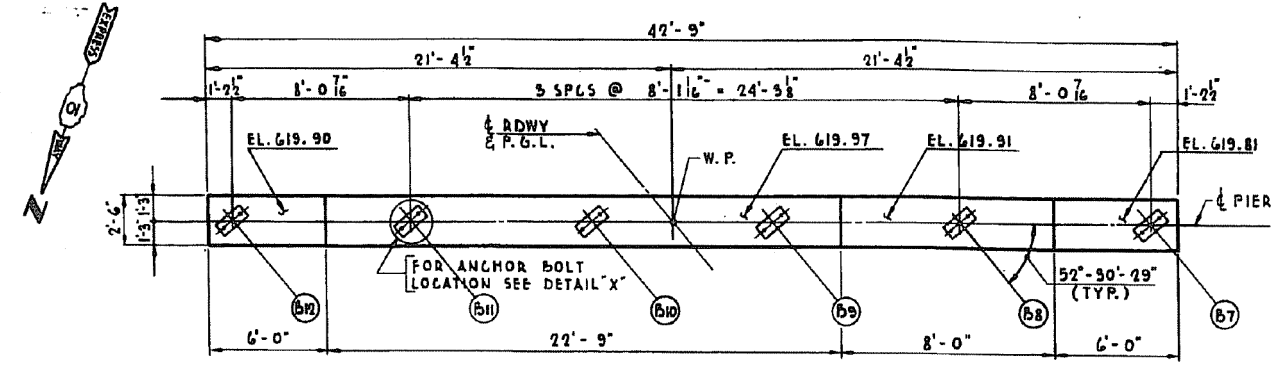
ALL BAR DIMENSIONS ARE OUT TO OUT. PREFIX ALL BAR MARKS FOR SHIPMENT WITH A NUMBER INDICATING THE PIER WHERE THE BARS WILL BE USED. EXAMPLE: 20P10 MEANS BARS P10 FOR PIER 20.

ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
**LAWDALE AVE. OVER RAMP**  
PIER 20

DE LEW, CATHY & CO. ENGINEERS  
DESIGNED BY L.N. RIANO  
DRAWN BY F. BOBBINS  
CHECKED BY E.S. MARTINS  
IN CHARGE E.S. MARTINS  
APPROVED L.N. RIANO

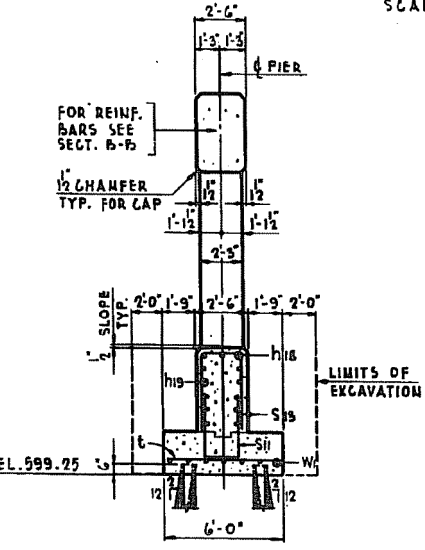
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|---|-----------------------|----------------|-----------|
| FILE NAME = 0160487.60W75.X17.exist.Pier.20.dgn | USER NAME = jsurber   | DESIGNED - AJK | REVISED - |
| PLOT SCALE =                                    | PLOT DATE = 6/17/2015 | CHECKED - JLS  | REVISED - |
|   |                       | DRAWN - AJK    | REVISED - |
|   |                       | CHECKED - JLS  | REVISED - |

| FOR INFORMATION ONLY      |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 373                       | 2013-037B-R | COOK   | 787          | 639       |
| CONTRACT NO. 60W75        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |



| BAR | E     | F      |
|-----|-------|--------|
| S2  | 3'-4" | 2'-2"  |
| S3  | 3'-2" | 2'-2"  |
| S4  | 1'-2" | 1'-11" |

BARS  
S2, S3 & S4



| BAR | C      | D     |
|-----|--------|-------|
| S5  | 2'-0"  | 1'-4" |
| S6  | 2'-9"  | 1'-4" |
| S7  | 2'-7"  | 1'-6" |
| S8  | 2'-4"  | 1'-6" |
| S9  | 2'-7"  | 1'-4" |
| S10 | 2'-4"  | 1'-4" |
| S11 | 3'-0"  | 2'-2" |
| S15 | 4'-10" | 2'-2" |
| U3  | 2'-0"  | 2'-1" |
| U4  | 1'-6"  | 2'-1" |

BARS  
S5 THRU S11,  
S15, U3 & U4

| PILE DATA          |                 |
|--------------------|-----------------|
| PILE TYPE          | 8 BP 36         |
| MIN. CAPACITY TONS | 30              |
| NO. REQUIRED       | 14 <sup>W</sup> |
| EST. LENGTH FEET   | 24              |
| CUT OFF ELEV.      | 599.75          |

\*INCLUDES 1 TEST PILE

| BAR | G     | K     |
|-----|-------|-------|
| M3  | 1'-5" | 7'-7" |
| M4  | 1'-1" | 7'-5" |

BARS M3 & M4

| BILL OF MATERIAL              |        |          |
|-------------------------------|--------|----------|
| ITEM                          | UNIT   | QUANTITY |
| CLASS A EXCAVATION            | CU YD  | 82       |
| CLASS X CONCRETE              | CU YD  | 52.0     |
| REINFORCEMENT BARS            | POUND  | 8003     |
| FURNISHING STEEL PILES 8BP 36 | LIN FT | 312      |
| TEST PILE STEEL 8BP 36        | EACH   | 1        |
| DRIVING STEEL PILES           | LIN FT | 312      |

NOTE:  
FOR ANCHOR BOLT PROJECTION SEE SM. 25  
SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.  
ALL EDGES TO HAVE STD. 3/4" CHAMFER EXCEPT AS NOTED.  
POUR STEPS MONOLITHICALLY WITH PIER CAP.

KEY TO BAR INDICATION:  
2 X 2-#5 ETC. MEANS 2 LINES OF BARS WITH 2 LENGTHS PER LINE.  
MIN. BAR LAP = 20 DIA.

| BAR LIST |     |      |         |       |
|----------|-----|------|---------|-------|
| BAR      | NO. | SIZE | LENGTH  | SHAPE |
| h17      | 8   | 5    | 21'-9"  | —     |
| h18      | 5   | 7    | 28'-9"  | —     |
| h19      | 10  | 5    | 28'-9"  | —     |
| m3       | 28  | 9    | 8'-10"  | —     |
| m4       | 12  | 8    | 8'-4"   | —     |
| P5       | 8   | 10   | 11'-6"  | —     |
| P6       | 8   | 5    | 7'-5"   | —     |
| P9       | 6   | 10   | 28'-6"  | —     |
| P10      | 5   | 10   | 28'-9"  | —     |
| P11      | 6   | 10   | 16'-6"  | —     |
| S2       | 21  | 4    | 11'-9"  | □     |
| S3       | 7   | 4    | 11'-9"  | □     |
| S4       | 30  | 4    | 6'-11"  | □     |
| S5       | 40  | 4    | 5'-4"   | □     |
| S6       | 40  | 4    | 5'-10"  | □     |
| S7       | 40  | 4    | 6'-8"   | □     |
| S8       | 40  | 4    | 6'-2"   | □     |
| S9       | 20  | 4    | 6'-6"   | □     |
| S10      | 20  | 4    | 6'-0"   | □     |
| S11      | 30  | 5    | 8'-2"   | □     |
| S15      | 50  | 5    | 11'-10" | □     |
| U3       | 6   | 6    | 6'-1"   | □     |
| U4       | 12  | 5    | 5'-1"   | □     |
| V7       | 28  | 9    | 12'-6"  | —     |
| V8       | 12  | 8    | 12'-5"  | —     |
| W1       | 7   | 6    | 25'-11" | —     |

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: 21P5 MEANS BARS P5 FOR PIER 21

ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
LAWDALE AVE. OVER RAMP E  
PIER 21

SCALE: AS NOTED DATE

DE LEW, CATHY & CO. ENGINEERS  
DESIGNED BY Y.N. HUO  
DRAWN BY E. BOBINAS  
CHECKED *Jillan Dwyer*  
IN CHARGE E.S. MARTIN  
APPROVED L.N. RIAN

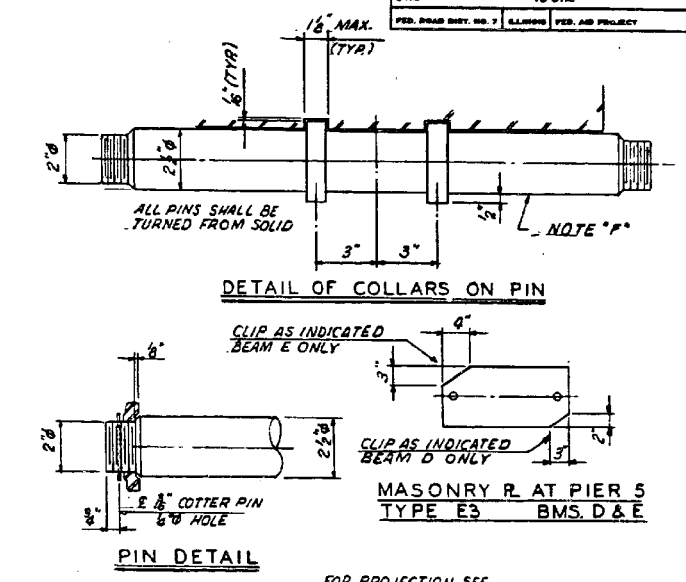
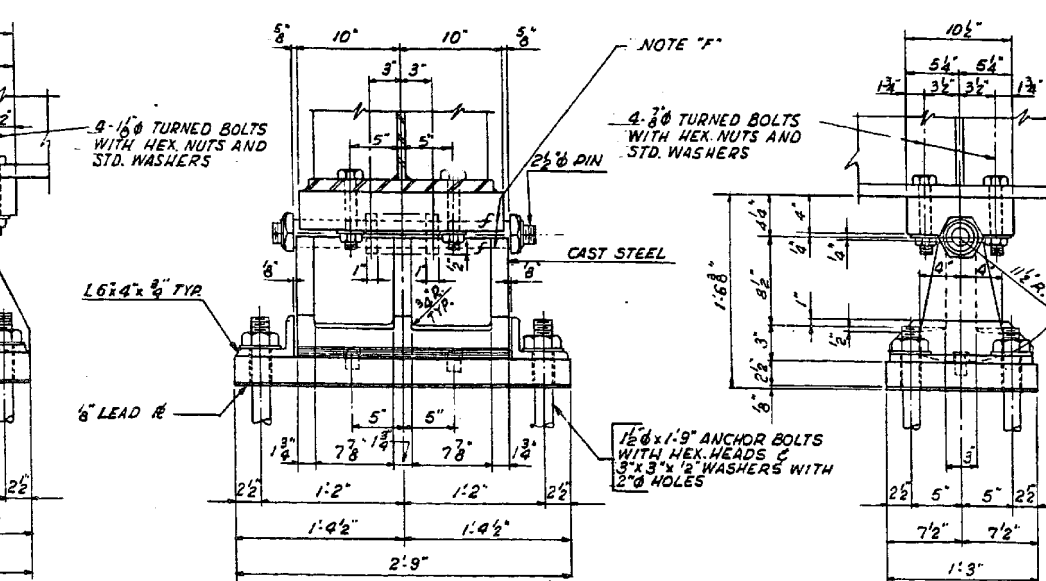
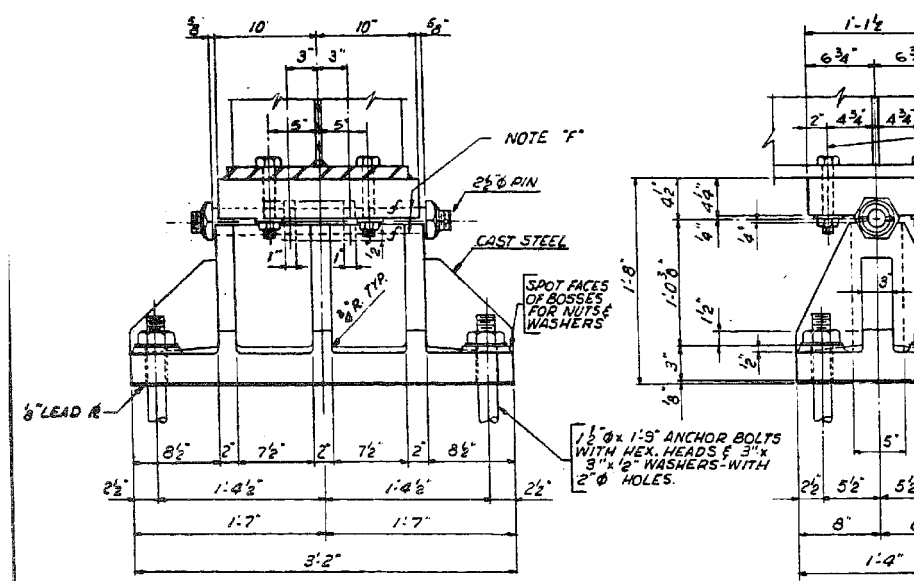
JOB NO. 1179

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|                                     |                     | DRAWN - AJK    | REVISED - |
|                                     |                     | CHECKED - JLS  | REVISED - |

| FOR INFORMATION ONLY      |             |        |              |                    |
|---------------------------|-------------|--------|--------------|--------------------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
| 373                       | 2013-037B-R | COOK   | 787          | 640                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |



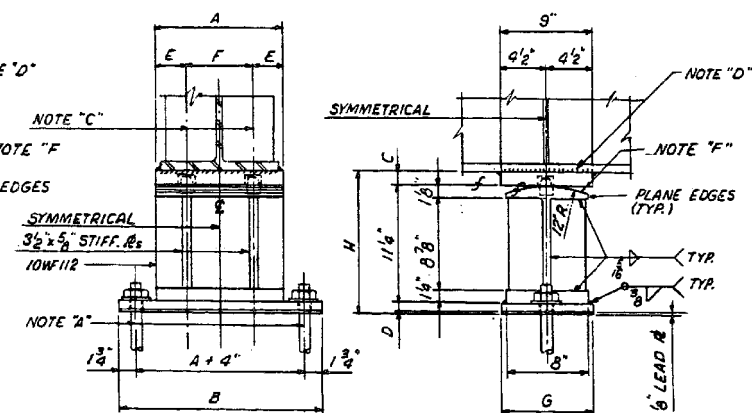
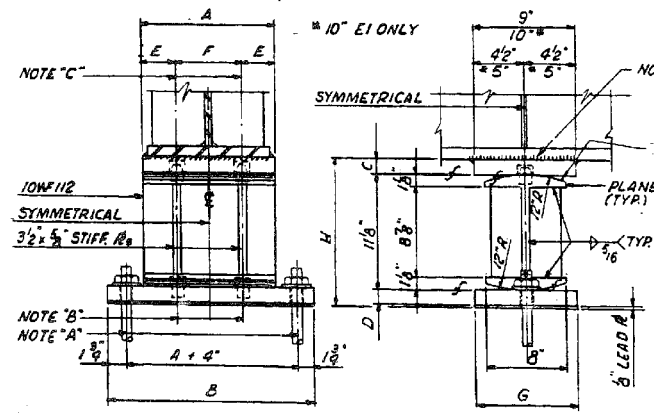
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|--|-----------|------------------|--------------|-----------|
| F.A.P. RT. 133 OVER CHICAGO SANITARY AND SHIP CANAL SECTION 0707 - 626 B BEARING - DETAILS | SECTION   | EXPRESSWAY       | TOTAL SHEETS | SHEET NO. |
| 133  | 0707-626B | SOUTHWEST        | 95           | 53        |
| STA.   | TO STA.   |                  |              |           |
| FED. ROAD DIST. NO. 7  | ILLINOIS  | FED. AID PROJECT |              |           |



TYPE A - TYPICAL ALL GIRDERS - PIERS 4 & 15  
FIXED BEARING  
1/3 REQUIRED

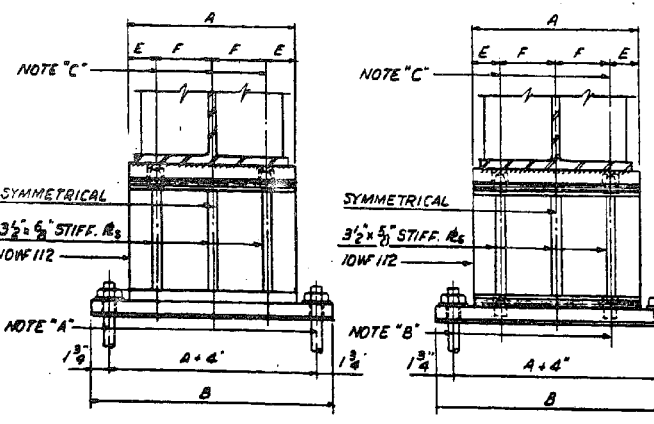
TYPE B - TYPICAL ALL GIRDERS - PIERS 3 & 14  
EXPANSION BEARING  
1/3 REQUIRED

NOTE: ALL CASTINGS SHALL BE ASTM A27-60 GRADE 65-35, FULLY ANNEALED. ALL PINS SHALL BE FORGED & SHALL BE ASTM A235, CLASS 'F'.  
NOTE 'F' - COAT WITH ANTI-RUST COMPOUND OR LACQUER.

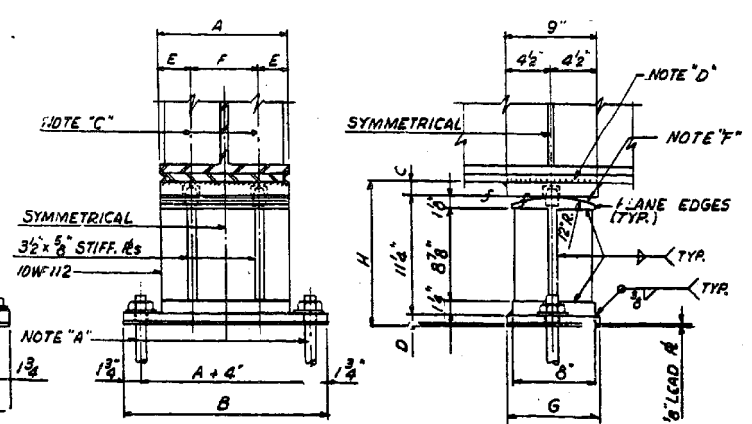


EXPANSION BEARING - TYPE E1, E2, E3, E4

FIXED BEARING - TYPE F2, F4, F5



SIDE VIEW TYPE F2



SIDE VIEW TYPE E4

| LOCATION                                    | A      | B      | C     | D     | E     | F     | G  | H      | C.F.M. | REQ | WT. | TYPE |
|---|--------|--------|-------|-------|-------|-------|----|--------|--------|-----|-----|------|
| EAST ABUT. - ALL BEAMS                      | 12 1/2 | 20     | 1     | 1 1/2 | 3     | 6 1/2 | 9  | 13 1/2 | 2      | 14  | 268 | E2   |
| PIER 1 BEAMS B THRU G                       | 11 1/2 | 19     | 1 1/2 | 1     | 3     | 5 1/2 | 9  | 13 1/2 | 2      | 6   | 240 | F1   |
| PIERS 1 & 12 - BMS. A, F, H                 | 12 1/2 | 20     | 1 1/2 | 1 1/2 | 3     | 6 1/2 | 9  | 13 1/2 | 2      | 8   | 248 | F4   |
| PIERS 2 & 13 ALL BEAMS - EAST               | 12 1/2 | 20     | 1     | 1 1/2 | 3     | 6 1/2 | 9  | 13 1/2 | 2      | 14  | 268 | E2   |
| PIERS 2 & 13 ALL BEAMS - WEST               | 13     | 20 1/2 | 1 1/2 | 1 1/2 | 3 1/2 | 6 1/2 | 10 | 14 1/2 | 2      | 13  | E1  | E1   |
| PIERS 5 & 16 ALL BEAMS - EAST               | 13     | 20 1/2 | 1 1/2 | 1 1/2 | 3 1/2 | 6 1/2 | 10 | 14 1/2 | 2      | 13  | E1  | E1   |
| PIERS 5 & 16 ALL BEAMS - WEST               | 17     | 24 1/2 | 1     | 1 1/2 | 3     | 5 1/2 | 9  | 13 1/2 | 2      | 4   | 343 | E4   |
| PIERS 3 & 14 WEST BEAMS H, J, K, N, O, P, Q | 11 1/2 | 19     | 1     | 1 1/2 | 3     | 5 1/2 | 9  | 13 1/2 | 2      | 8   | 250 | E3   |
| PIER 8 - RAMP BEAMS A THRU E                | 11 1/2 | 19     | 1 1/2 | 1 1/2 | 3     | 5 1/2 | 9  | 13 1/2 | 2      | 10  | 231 | F5   |
| PIERS 6 & 17 BEAMS F, G, L, M               | 16 1/2 | 24     | 1 1/2 | 1     | 2 1/2 | 5 1/2 | 9  | 13 1/2 | 2      | 4   | 344 | F2   |
| PIERS 6 & 17 BEAMS H, I, N, D               | 10 1/2 | 18     | 1     | 1 1/2 | 2 1/2 | 5 1/2 | 9  | 13 1/2 | 2      | 4   | 207 | F3   |
| PIERS 6 & 17 BMS. J, K, R, Q                | 11 1/2 | 19     | 1 1/2 | 1 1/2 | 3     | 5 1/2 | 9  | 13 1/2 | 2      | 4   | 231 | F5   |
| RAMP ABUTMENT BEAMS A THRU E                | 11 1/2 | 19     | 1     | 1 1/2 | 3     | 5 1/2 | 9  | 13 1/2 | 2      | 5   | 250 | E3   |
| PIER 7 - BEAMS F & G                        | 17     | 24 1/2 | 1     | 1 1/2 | 3     | 5 1/2 | 9  | 13 1/2 | 2      | 2   | 343 | E4   |
| PIER 7 - BEAMS H, I, J & K                  | 11 1/2 | 19     | 1     | 1 1/2 | 3     | 5 1/2 | 9  | 13 1/2 | 2      | 4   | 250 | E3   |
| PIER 18 - BEAMS L & M                       | 17     | 24 1/2 | 1     | 1 1/2 | 3     | 5 1/2 | 9  | 13 1/2 | 2      | 2   | 343 | E4   |
| PIER 18 BEAMS N, O, P, Q                    | 11 1/2 | 19     | 1     | 1 1/2 | 3     | 5 1/2 | 9  | 13 1/2 | 2      | 4   | 250 | E3   |

NOTE 'A' - 1/2\"/>

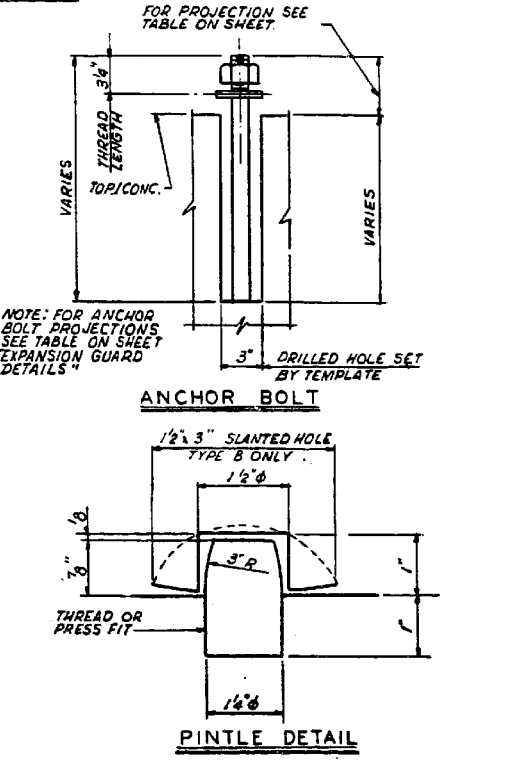
NOTE 'B' - 1/2\"/>

NOTE 'C' - 1/2\"/>

NOTE 'D' - CONT. FILLET WELD 4 SIDES - SEE TABLE OF DIMENSIONS & LOCATIONS THIS SHEET FOR SIZE.

NOTE 'E' - FOR THICKNESS OF REQUIRED SHIMPLATES, SEE SUMMARY OF BEAMS.

NOTE 'F' - COAT WITH ANTI-RUST COMPOUND OR LACQUER.



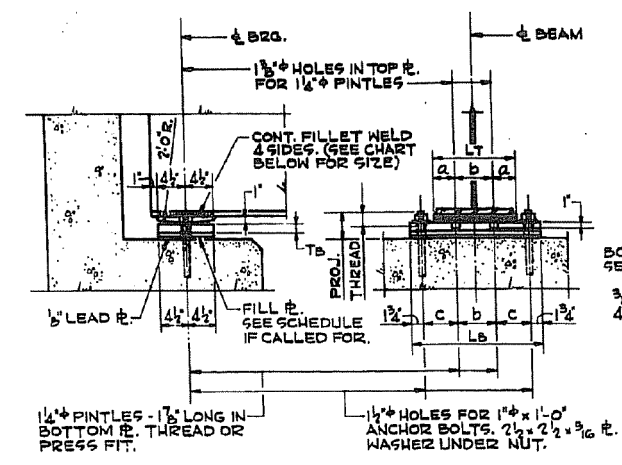
WEIGHT OF BEARING DEVICES = 88,360 LBS. (SHIMPLATES INCLUDED)

|  |                                  |
|--|----------------------------------|
| ILLINOIS DIVISION OF HIGHWAYS  |                                  |
| SOUTHWEST EXPRESSWAY   |                                  |
| F.A. RT. 133 OVER CHICAGO SANITARY AND SHIP CANAL SECTION 0707 - 626 B BEARING - DETAILS |                                  |
| DESIGNED ST-PX   | SCALE: HORIZ. VERT. DATE: 8-5-89 |
| REVIEWED CWW   | DRAWN BY J.M. CHECKED BY L.D.B.  |

|  |                       |                |               |
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| FILE NAME = 0160487.60W75.X19.exst.brget.dgn | USER NAME = jsurber   | DESIGNED - AJK | REVISIONS     |
| PLOT SCALE =                                 | PLOT DATE = 6/17/2015 | CHECKED - JLS  | CHECKED - JLS |
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|  |                       | CHECKED - JLS  | REVIEWED -    |

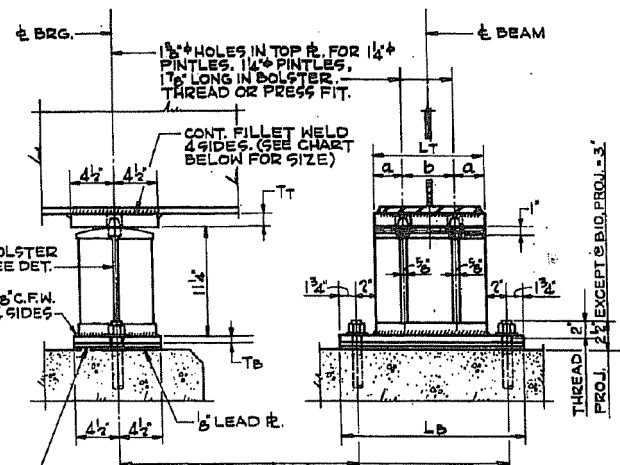
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| FOR INFORMATION ONLY   |             |        |              |           |
| F.A.P. RT. 133 OVER CHICAGO SANITARY AND SHIP CANAL SECTION 0707 - 626 B BEARING - DETAILS | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 373  | 2013-037B-R | COOK   | 787          | 641       |
| CONTRACT NO. 60W75   |             |        |              |           |
| ILLINOIS FED. AID PROJECT  |             |        |              |           |

Y:\chicago\100005\100093\Eng\_Docs\_Phase II\SN\_016\_0486\_0487\_1st\_Ave\_over\_Canal\Final\Final\_0487\_0160487\_60W75\_X19.exst.brget.dgn 4:40:22 PM 6/17/2015



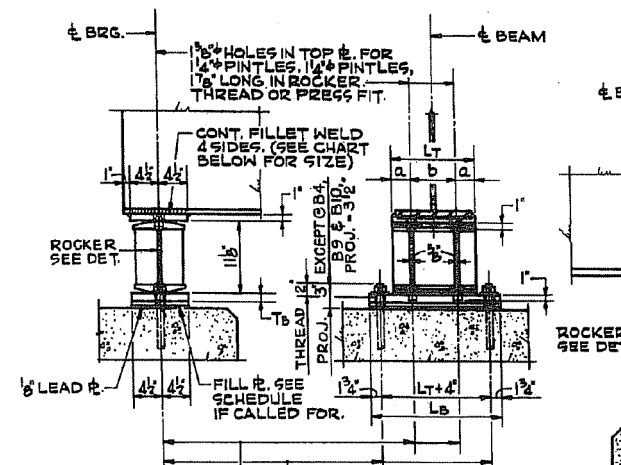
| TYPE | NO. REQ'D | LT | LB | C.F.W. | Tt | a | b | c | TOTAL WEIGHT# |
|------|-----------|----|----|--------|----|---|---|---|---------------|
| NONE |           |    |    |        |    |   |   |   |               |

FIXED BEARINGS AT ABUTMENTS  
SCALE: 1"=1'-0"



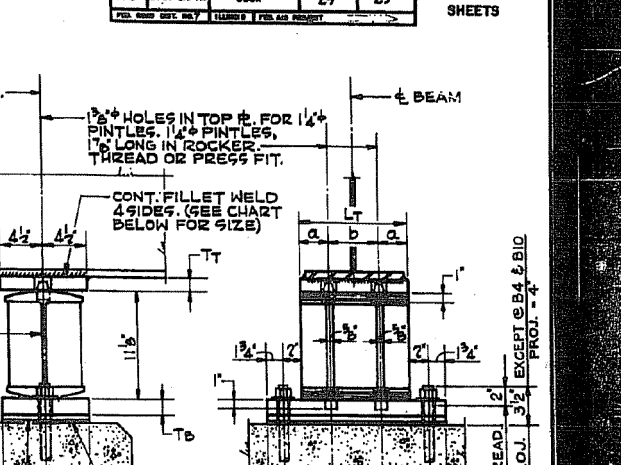
| TYPE | NO. REQ'D | LT      | LB    | Tt     | Tb     | a  | b      | c      | C.F.W. | TOTAL WEIGHT# |
|------|-----------|---------|-------|--------|--------|----|--------|--------|--------|---------------|
| F2   | 6         | 11 1/2' | 1'-7" | 1 3/8" | 3 3/4" | 3' | 5 1/2' | 1 1/2' |        | 231 LBS.      |

FIXED BEARINGS AT PIER 20  
SCALE: 1 1/2"=1'-0"



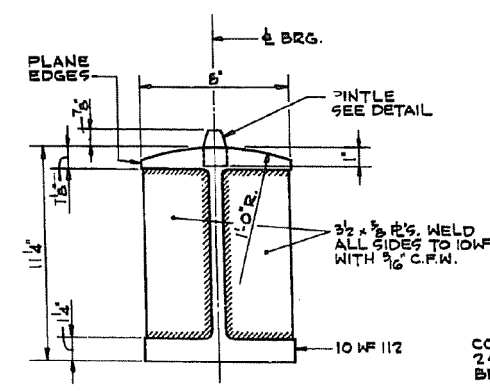
| TYPE | NO. REQ'D | LT      | LB    | C.F.W. | Tt     | a  | b      | TOTAL WEIGHT# |
|------|-----------|---------|-------|--------|--------|----|--------|---------------|
| E1   | 24        | 11 1/2' | 1'-7" | 3/8"   | 1 3/8" | 3' | 5 1/2' | 250 LBS.      |

EXPANSION BEARINGS AT ABUTMENTS AND AT PIERS 7 & 18  
SCALE: 1"=1'-0"



| TYPE | NO. REQ'D | LT      | LB    | Tt     | Tb     | a  | b      | C.F.W. | TOTAL WEIGHT# |
|------|-----------|---------|-------|--------|--------|----|--------|--------|---------------|
| E2   | 24        | 11 1/2' | 1'-7" | 1 3/8" | 1 3/4" | 3' | 5 1/2' | 1 1/2' | 280 LBS.      |

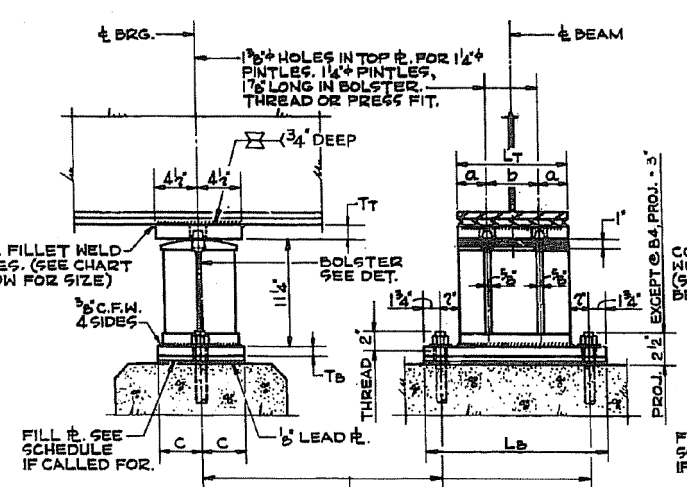
EXPANSION BEARINGS AT PIERS 8, 11, 19 & 21  
SCALE: 1 1/2"=1'-0"



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

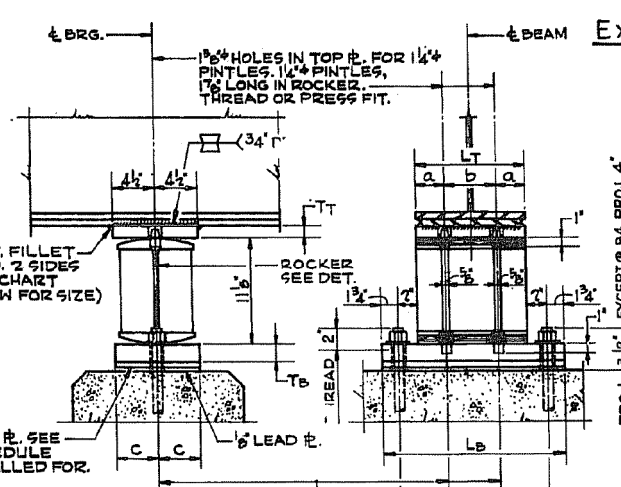
| FILL R. SCHEDULE           |      |                   |
|----------------------------|------|-------------------|
| LOCATION                   | BEAM | FILL R. THICKNESS |
| E.B. ROADWAY, ALL SUPPORTS | B4   | 3/4"              |
|                            | B5   | 1/8"              |
| W.B. ROADWAY, ALL SUPPORTS | B9   | 5/16"             |
|                            | B10  | 1/2"              |

TOTAL WEIGHT OF FILL R.'S = 455 LBS.



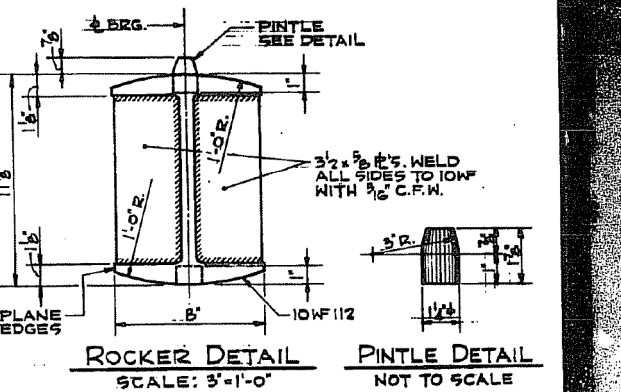
| TYPE | NO. REQ'D | LT      | LB    | Tt | Tb     | a      | b      | c      | C.F.W. | TOTAL WEIGHT# |
|------|-----------|---------|-------|----|--------|--------|--------|--------|--------|---------------|
| F1   | 6         | 10 1/2' | 1'-6" | 1" | 3 3/4" | 2 1/2" | 5 1/2' | 4 1/2' | 1 1/2' | 207 LBS.      |

FIXED BEARINGS AT PIER 10  
SCALE: 1 1/2"=1'-0"



| TYPE | NO. REQ'D | LT      | LB    | Tt | Tb     | a      | b      | c      | C.F.W. | TOTAL WEIGHT# |
|------|-----------|---------|-------|----|--------|--------|--------|--------|--------|---------------|
| E3   | 6         | 10 1/2' | 1'-6" | 1" | 1 3/4" | 2 1/2" | 5 1/2' | 4 1/2' | 1 1/2' | 253 LBS.      |

EXPANSION BEARINGS AT PIER 9  
SCALE: 1 1/2"=1'-0"



| BILL OF MATERIAL                         |       |          |
|--|-------|----------|
| ITEM                                     | UNIT  | QUANTITY |
| FURNISHING AND ERECTING STRUCTURAL STEEL | POUND | 17,321   |

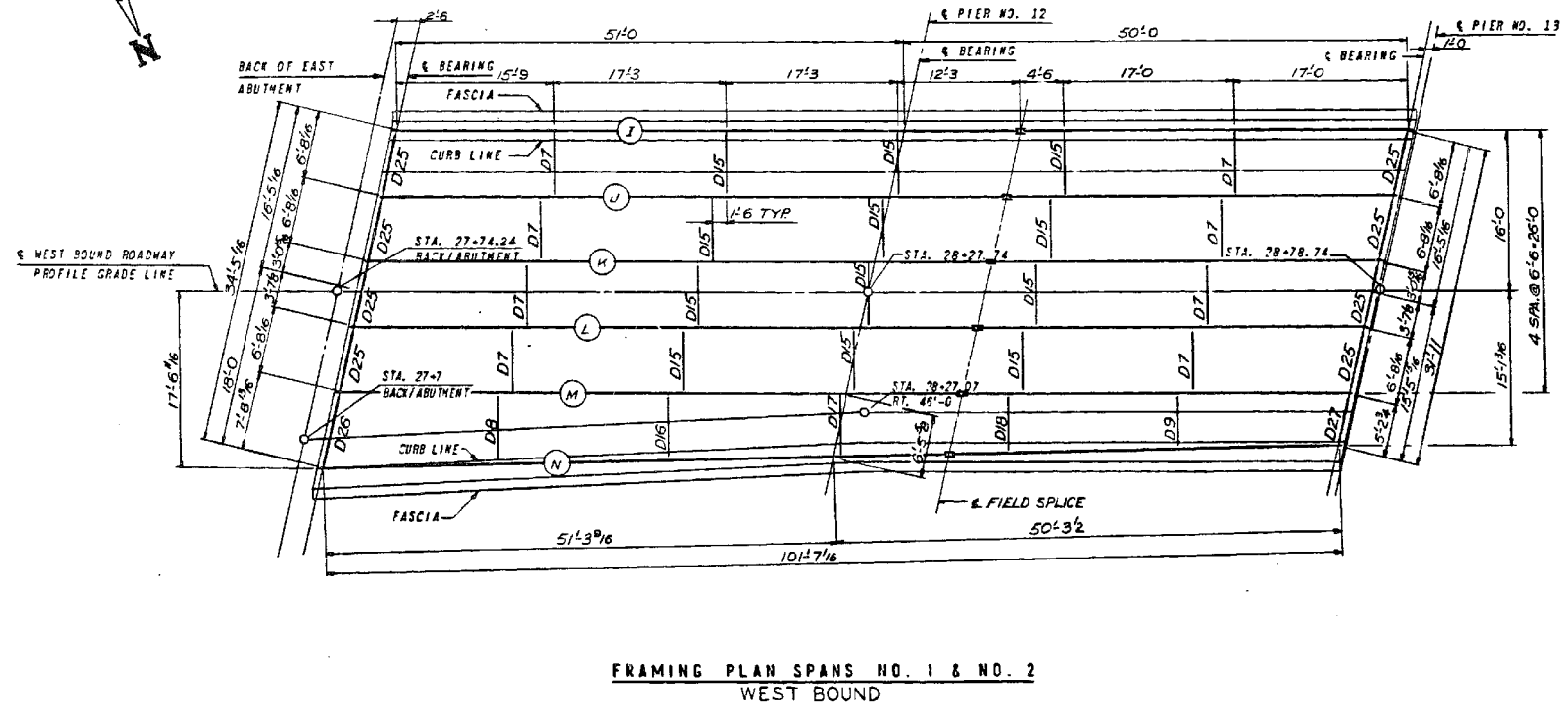
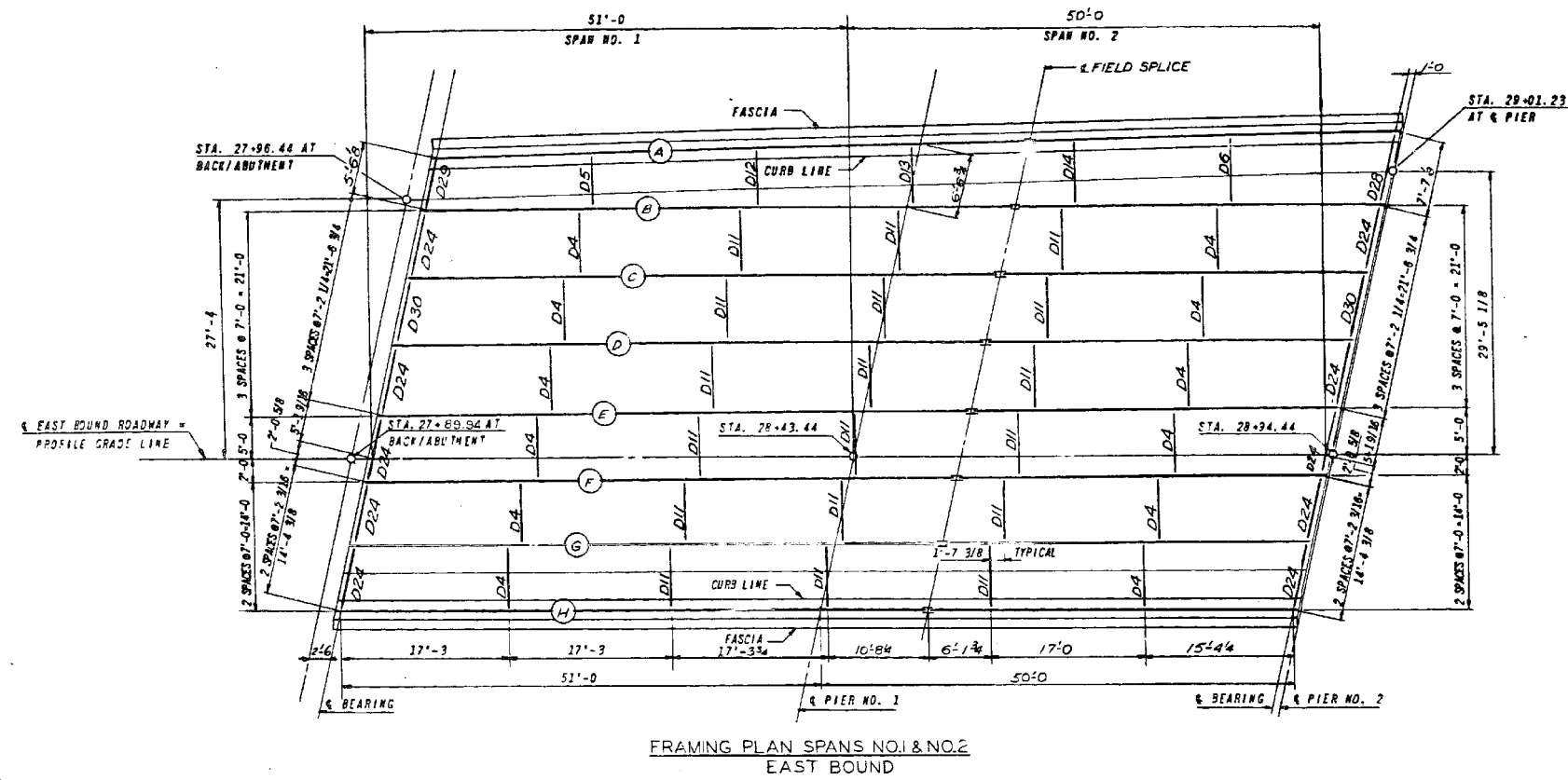
ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
LAWDALE AVE. OVER RAMP E  
BEARING DETAILS  
SCALE: AS NOTED DATE

DE LEW, CATHER & CO. ENGINEERS  
DESIGNED BY: E.C. BRIDGEMAN  
DRAWN BY: J.A. CHALKIN  
CHECKED: J.S. MARTIN  
IN CHARGE: E.S. MARTIN  
APPROVED: L.R. BRIAN

\* 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.

JOB NO. 1179

| F.A. RTE.             | SECTION    | EXPRESSWAY                | TOTAL SHEETS | SHEET NO. |
|-----------------------|------------|---------------------------|--------------|-----------|
| 133                   | 0707-626 B | SOUTHWEST                 | 95           | 54        |
| STA.                  |            | TO STA.                   |              |           |
| PER. ROAD DIST. NO. 7 |            | ILLINOIS FED. AID PROJECT |              |           |



| REVISIONS |      | F.A. RT. 133<br>LAWDALE AVE. STRUCTURE OVER<br>CHICAGO SANITARY AND SHIP CANAL<br>SECTION 0707-626B<br>FRAMING PLAN SPANS 1 AND 2 E.B. & W.B.<br>SCALE: HORIZ. 1"=10'-0"<br>VERT. 1"=1'-0"<br>DATE 8-5-63 | DRAWN BY E.G.<br>CHECKED BY L.D.B. |
|-----------|------|---|------------------------------------|
| NAME      | DATE |   |                                    |
|           |      |   |                                    |
| DESIGNED  | ST.  |   |                                    |
| REVIEWED  | CWW  |   |                                    |

| ILLINOIS DIVISION OF HIGHWAYS          |  |  |  |
|--|--|--|--|
| SOUTHWEST EXPRESSWAY                   |  |  |  |
| F.A. RT. 133                           |  |  |  |
| LAWDALE AVE. STRUCTURE OVER            |  |  |  |
| CHICAGO SANITARY AND SHIP CANAL        |  |  |  |
| SECTION 0707-626B                      |  |  |  |
| FRAMING PLAN SPANS 1 AND 2 E.B. & W.B. |  |  |  |
| SCALE: HORIZ. 1"=10'-0"                |  |  |  |
| VERT. 1"=1'-0"                         |  |  |  |
| DATE 8-5-63                            |  |  |  |
| DRAWN BY E.G.                          |  |  |  |
| CHECKED BY L.D.B.                      |  |  |  |

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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 =                           | USER NAME = jsurber   | DESIGNED - AJK | REVISED - |
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|                                       | PLOT SCALE =          | DRAWN - AJK    | REVISED - |
|                                       | PLOT DATE = 6/17/2015 | CHECKED - JLS  | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FRAMING PLAN SPANS 1 AND 2  
STRUCTURE NO. 016-0487

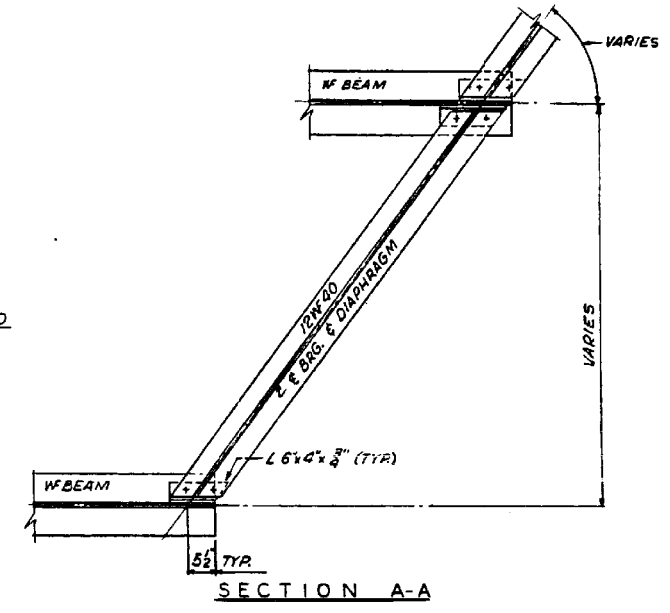
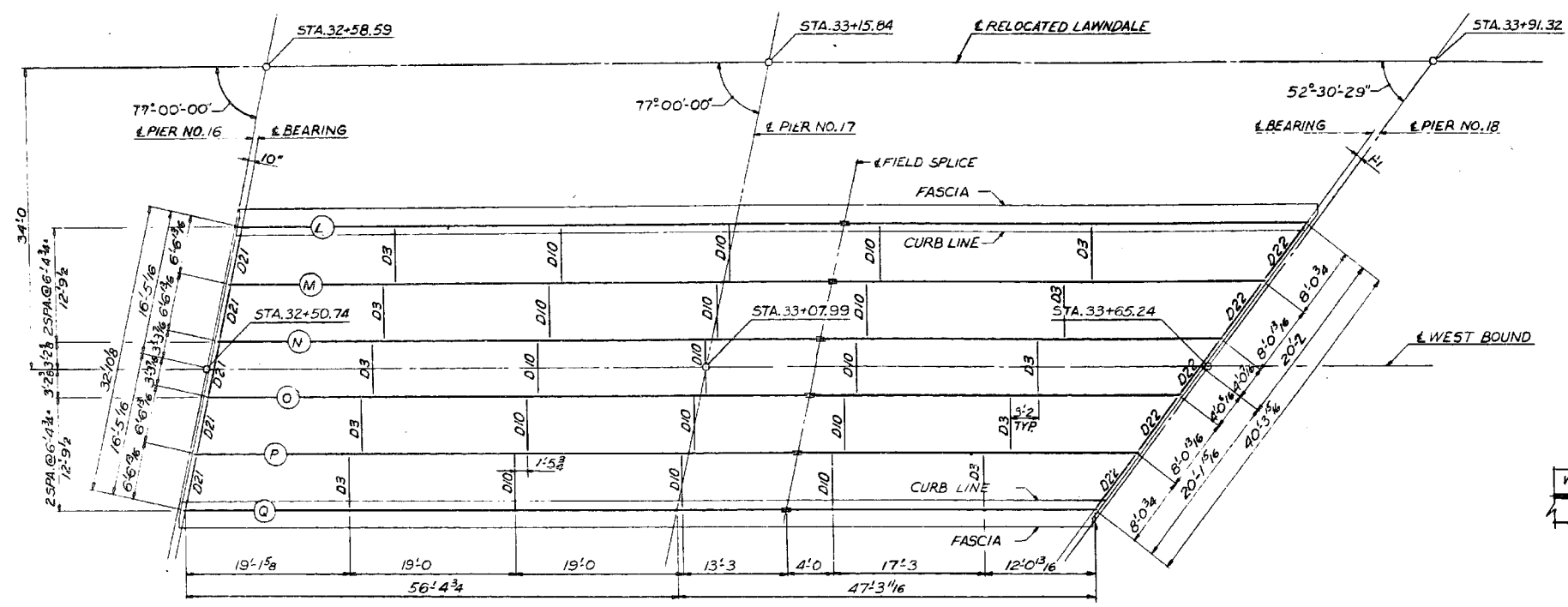
SHEET NO. SFX21 OF SFX46 SHEETS

FOR INFORMATION ONLY

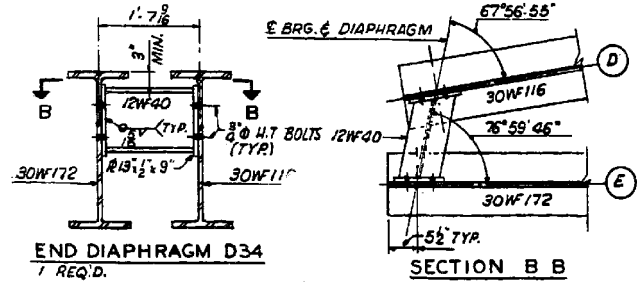
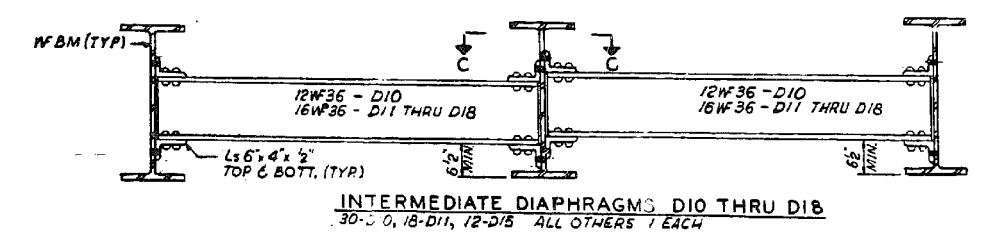
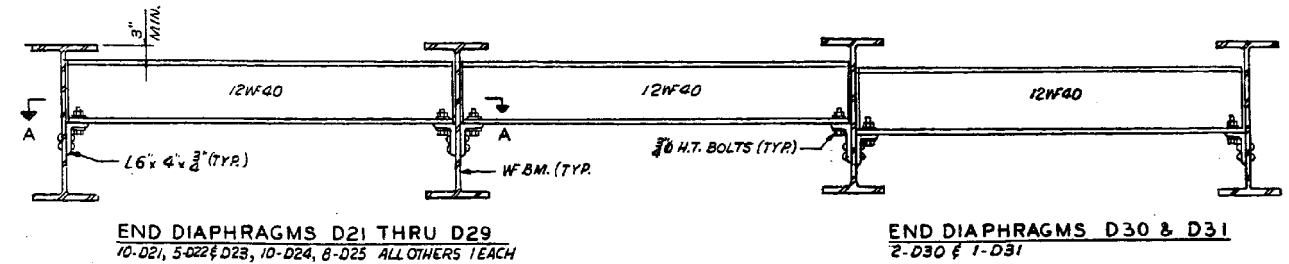
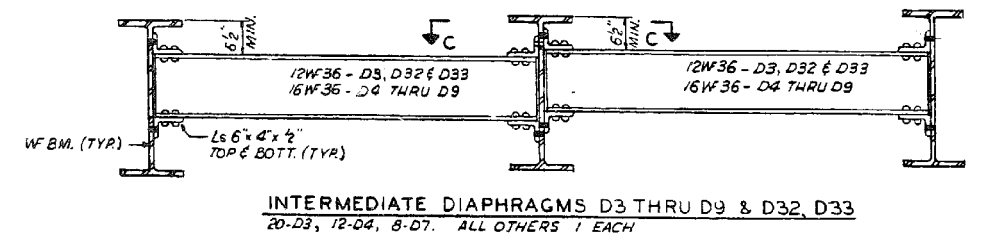
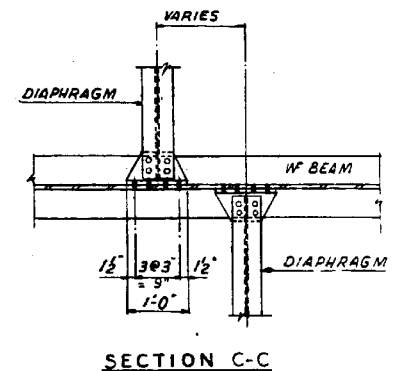
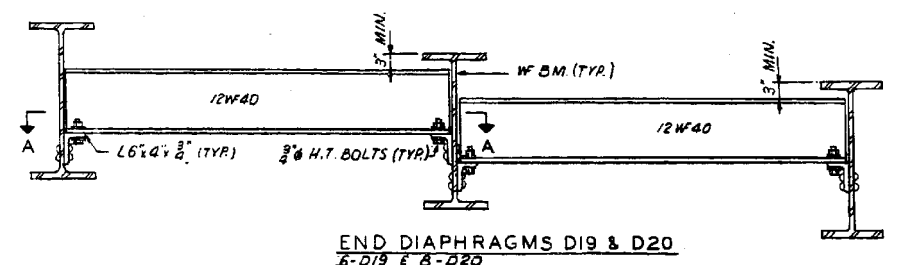
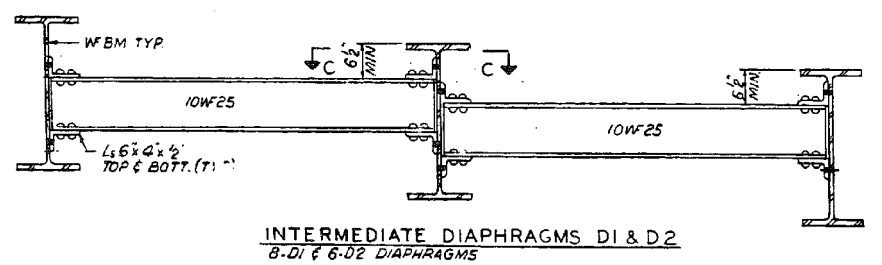
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-------------|--------|--------------|-----------|
| 373                       | 2013-037B-R | COOK   | 787          | 643       |
| CONTRACT NO. 60W75        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

Y:\chicago\100005\10093\Eng\_Docs\Phase\_1\SN\_016\_0486\_0487.lst.Ave.over.Canal\Final\Final\_0487\_0160487\_60W75\_X21.exist.framing12.dgn 4:40:58 PM 6/17/2015

|                       |           |                  |              |           |
|-----------------------|-----------|------------------|--------------|-----------|
| F.A. RT.              | SECTION   | EXPRESSWAY       | TOTAL SHEETS | SHEET NO. |
| 133                   | 0707-626B | SOUTHWEST        | 95           | 53        |
| STA.                  | TO STA.   |                  |              |           |
| FED. ROAD DIST. NO. 7 | ALNOM.    | FED. AID PROJECT |              |           |



FRAMING PLAN SPAN NO. 6 & NO.7 WEST BOUND



SECTION B B

| REVISIONS       |                     |
|-----------------|---------------------|
| NAME            | DATE                |
|                 |                     |
| DESIGNED ST.    | SCALE: VERT. HORIZ. |
| REVIEWED C.W.W. | DATE 8-5-63         |

ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
F.A. RT. 133  
LAWDALE AVE. STRUCTURE OVER  
CHICAGO SANITARY AND SHIP CANAL  
SECTION 0707 - 626B  
FRAMING PLAN SPAN 6 AND 7. W.B.  
SCALE: VERT. HORIZ.  
DATE 8-5-63  
DRAWN BY D.U.  
CHECKED BY L.D.B.

**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 = jsurber   | DESIGNED - AJK | REVISIONS - |
| 0160487.60W75.X22.exist.diaphragms.dgn | PLOT SCALE =          | CHECKED - JLS  | REVISIONS - |
|  | PLOT DATE = 6/17/2015 | DRAWN - AJK    | REVISIONS - |
|  |                       | CHECKED - JLS  | REVISIONS - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

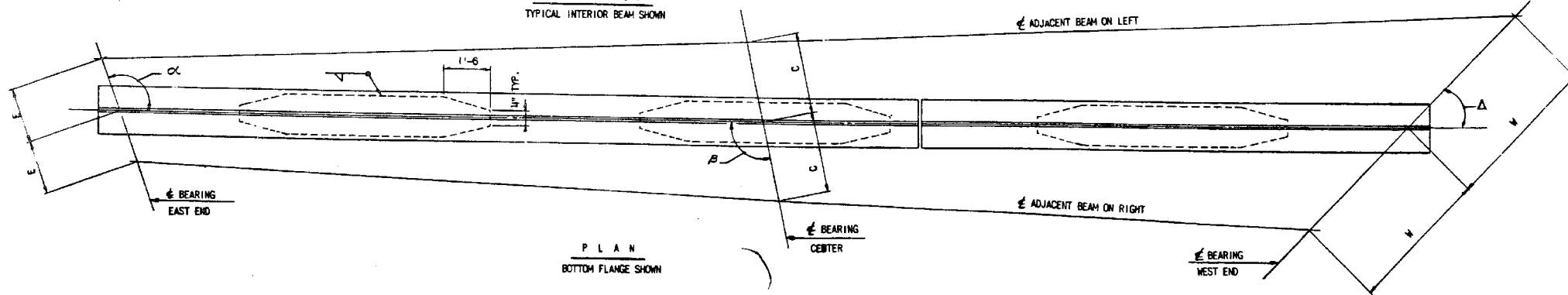
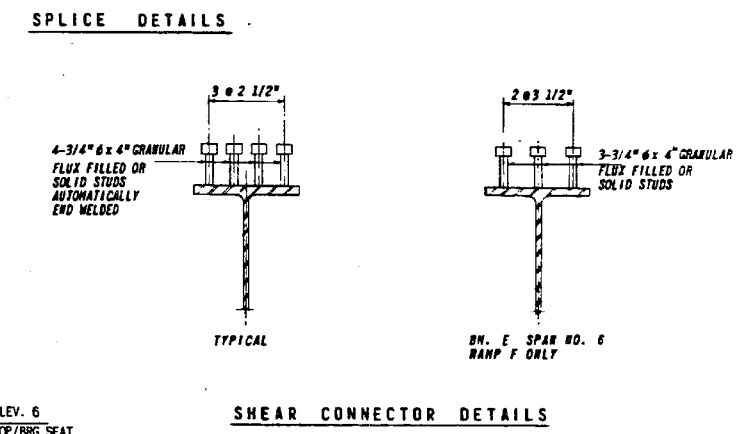
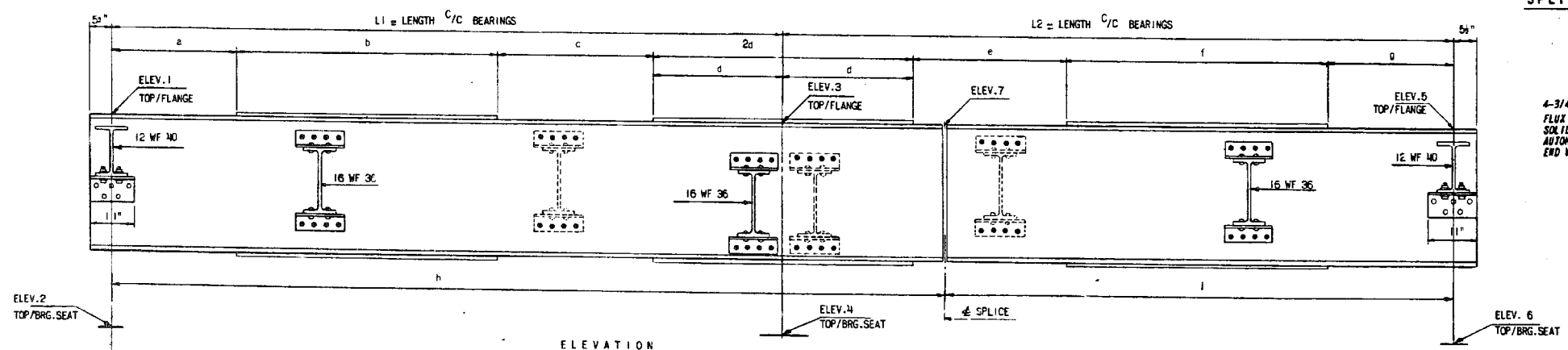
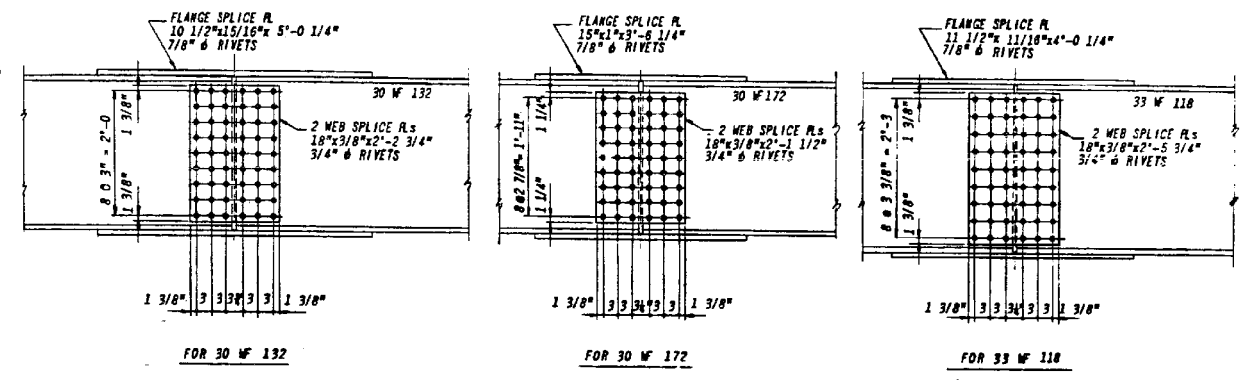
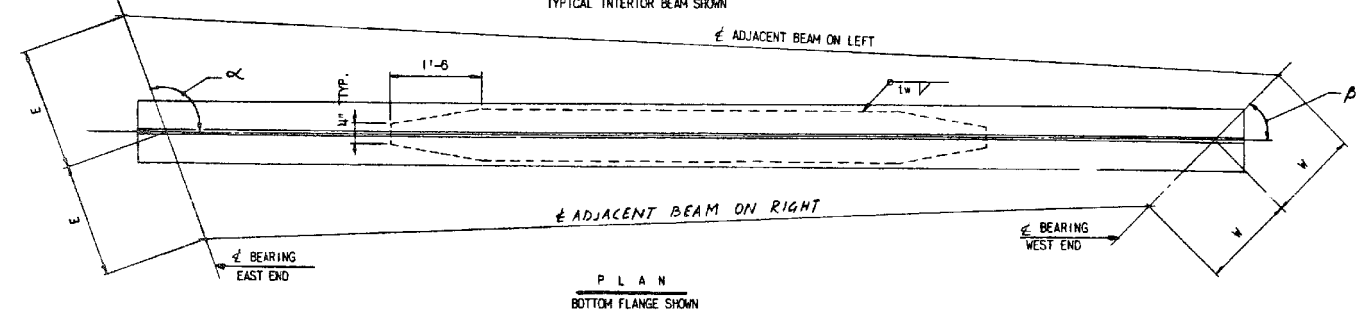
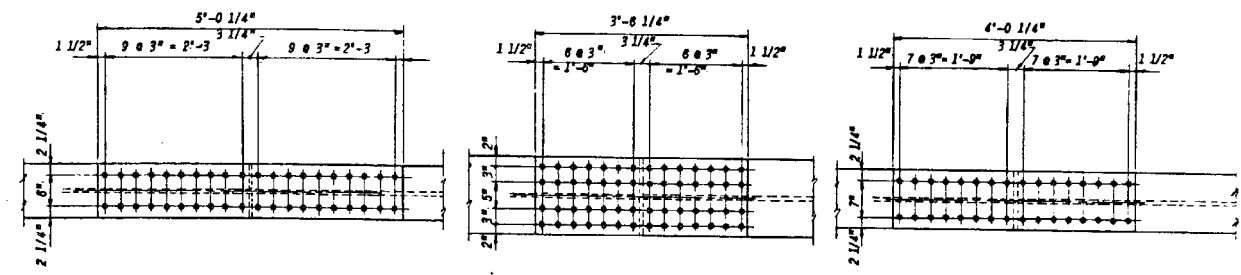
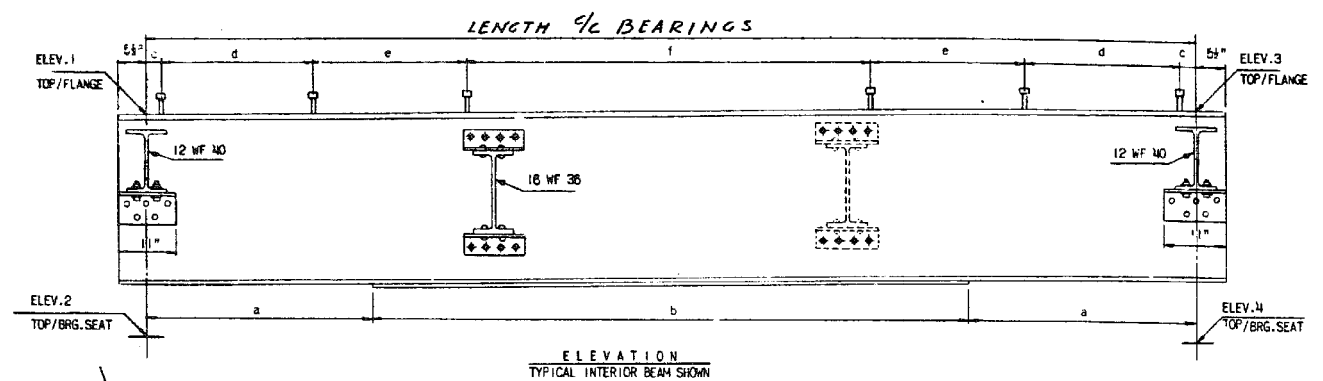
EXISTING PLANS FRAMING PLAN SPANS 6 AND 7  
AND DIAPHRAGM DETAILS SPANS 1-2 AND 6-7  
STRUCTURE NO. 016-0487  
SHEET NO. SF222 OF SF46 SHEETS

FOR INFORMATION ONLY

|                           |             |        |              |                    |
|---------------------------|-------------|--------|--------------|--------------------|
| F.A.P. RT.                | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
| 373                       | 2013-037B-R | COOK   | 787          | 644                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

Y:\chicago\100005\10093\Eng\_Docs\Phase.I\11SN.016.0486.0487.lst.Ave.over.Canal\Final\Final.0487.0160487.60W75.X22.exist.diaphragms.dgn 4:40:59 PM 6/17/2015

|   |           |             |              |           |
|---|-----------|-------------|--------------|-----------|
| F.A. RTE.                                       | SECTION   | EXPRESSWAYS | TOTAL SHEETS | SHEET NO. |
| 133   | 0707-626B | SOUTHWEST   | 95           | 57        |
| STA.  |           | TO STA.     |              |           |
| FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT |           |             |              |           |



NOTE: SEE SHEET "ELECTRICAL DETAILS" FOR BRACKET SUPPORTS FOR CONDUITS ATTACHED TO STRUCTURE.

| REVISIONS       |      | ILLINOIS DIVISION OF HIGHWAYS                               |                |
|-----------------|------|---|----------------|
| NAME            | DATE | SOUTHWEST EXPRESSWAY  |                |
|                 |      | F.A. RT. 133  |                |
|                 |      | LAWDALE AVE. STRUCTURE OVER CHICAGO SANITARY AND SHIP CANAL |                |
|                 |      | SECTION 0707 - 626B   |                |
|                 |      | BEAM DETAILS  |                |
| DESIGNED ST-PK  |      | SCALE: HORIZ. VERT.   | DRAWN BY J.S.  |
| REVIEWED C.W.W. |      | DATE 8-5-63   | CHECKED BY LDB |

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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 - AJK | REVISED - |
|                       |                     | CHECKED - JLS  | REVISED - |
|                       |                     | DRAWN - AJK    | REVISED - |
|                       |                     | CHECKED - JLS  | REVISED - |
| PLOT SCALE =          |                     |                |           |
| PLOT DATE = 6/17/2015 |                     |                |           |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS BEAM DETAILS  
STRUCTURE NO. 016-0487

SHEET NO. SFX23 OF SFX46 SHEETS

FOR INFORMATION ONLY

|                           |             |        |              |                    |
|---------------------------|-------------|--------|--------------|--------------------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
| 373                       | 2013-037B-R | COOK   | 787          | 645                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

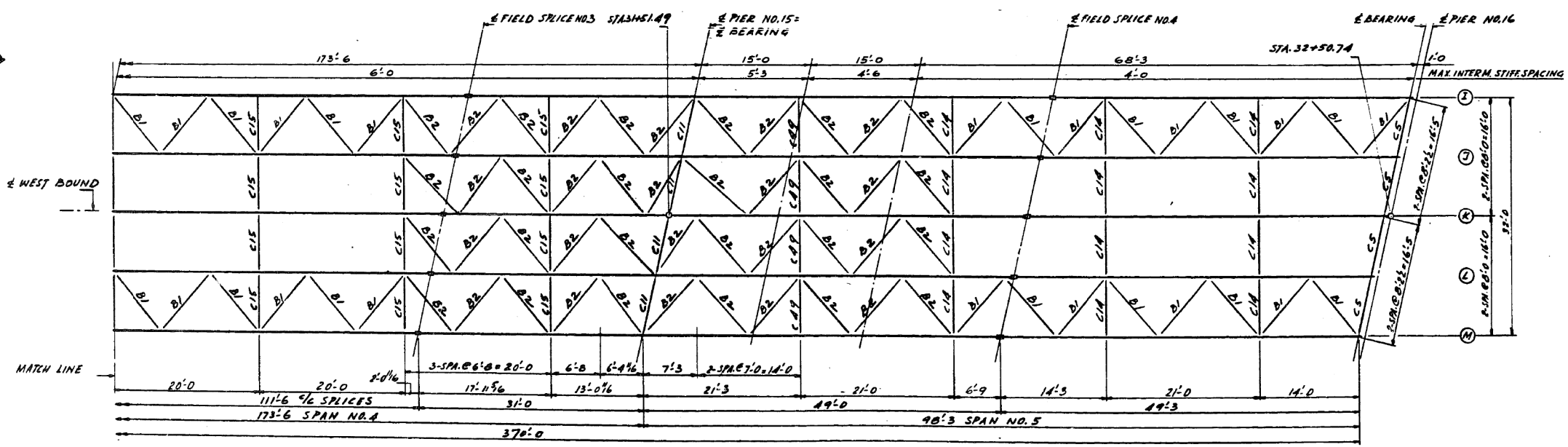
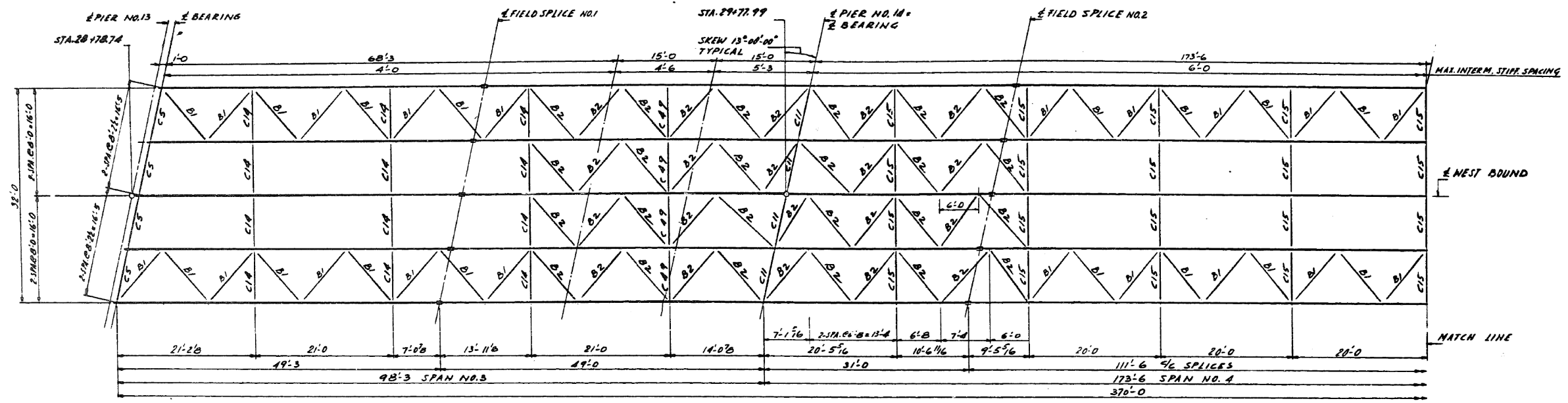
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|                       |            |            |                  |           |
|-----------------------|------------|------------|------------------|-----------|
| F.A. RT.              | SECTION    | EXPRESSWAY | TOTAL SHEETS     | SHEET NO. |
| 133                   | 0707-626 B | SOUTHWEST  | 95               | 58        |
| STA.                  |            | TO STA.    |                  |           |
| FED. ROAD DIST. NO. 7 |            | ILLINOIS   | FED. AID PROJECT |           |

| SPAN                 | BEAM | EAST END DATA |           |         | WEST END DATA |       |           | BEAM DATA |             |           |                    |               |                        |        |                         |        |         |            |            | BEAM      | REMARKS   |           |           |   |                       |  |
|----------------------|------|---------------|-----------|---------|---------------|-------|-----------|-----------|-------------|-----------|--------------------|---------------|------------------------|--------|-------------------------|--------|---------|------------|------------|-----------|-----------|-----------|-----------|---|-----------------------|--|
|                      |      | E             | ELEVATION |         | ANGLE         | W     | ELEVATION |           | ANGLE       | BEAM SIZE | LENGTH C/C BEARING | FLANGE PLATES |                        |        | SHEAR CONNECTOR SPACING |        |         | EAST END   |            |           |           | WEST END  |           |   |                       |  |
|                      |      |               | 1         | 2       | $\alpha$      |       | 3         | 4         | $\beta$     |           |                    | SIZE          | WELD "t <sub>w</sub> " | a      | b                       | c      | d       | e          | f          | BRG. TYPE | SHIMPLATE | BRG. TYPE | SHIMPLATE |   |                       |  |
| RAMP F<br>SPAN NO. 6 | A    | 7'-3          | 623.217   | 619.581 | 67°-56'-55"   | 7'-3  | 622.701   | 619.017   | 67°-56'-55" | 30 W 116  | 58'-6 13/16"       | 9 1/2x7/8"    | 5/16"                  | 12'-9" | 33'-0 13/16"            | 3 3/8" | 1 0 6"  | 12 0 1'-0" | 22 0 1'-6" | E 3       | -         | F 5       | 11/16"    | A |                       |  |
|                      | B    | 7'-3          | 623.595   | 619.960 | do            | 7'-3  | 623.175   | 619.550   | do          | do        | do                 | do            | do                     | 8'-9"  | 41'-0 13/16"            | 3 3/8" | 20 0 6" | 12 0 9"    | 20 0 1'-0" | E 3       | -         | F 5       | -         | B |                       |  |
|                      | C    | 7'-3          | 623.065   | 620.329 | do            | 7'-3  | 623.638   | 620.013   | do          | do        | do                 | do            | do                     | 8'-9"  | 41'-0 13/16"            | 3 3/8" | 20 0 6" | 12 0 9"    | 20 0 1'-0" | E 3       | -         | F 5       | -         | C |                       |  |
|                      | D    | 1'-7 9/16     | 624.326   | 620.677 | 67°-56'-55"   | 11'-1 | 624.091   | 620.453   | 67°-56'-55" | 30 W 124  | 58'-6 13/16"       | 9 1/2x1"      | 5/16"                  | 10'-3" | 38'-0 13/16"            | 3 3/8" | 23 0 6" | 10 0 9"    | 20 0 1'-0" | E 3       | -         | F 5       | -         | D |                       |  |
|                      | E    |               | 624.287   | 620.677 | 76°-59'-46"   |       | 624.210   | 620.600   | 76°-59'-46" | 30 W 108  | 55'-8 9/16"        | -             | -                      | -      | -                       | 4 1/4" | -       | 14 0 1'-0" | 18 0 1'-6" | E 3       | -         | F 5       | -         | E | 3 STUDS EACH ROW ONLY |  |
| RAMP F<br>SPAN NO. 7 | A    | 6'-6          | 622.642   | 619.017 | 61°-54'-10"   | 6'-6  | 622.118   | 618.483   | 61°-54'-10" | 30 W 116  | 62'-4 11/16"       | 9 1/2x7/8"    | 5/16"                  | 13'-8" | 35'-0 11/16"            | 5 5/8" | 1 0 9"  | 12 0 1'-0" | 12 0 1'-6" | F 5       | -         | E 3       | -         | A |                       |  |
|                      | B    | do            | 623.070   | 619.445 | do            | do    | 622.590   | 618.555   | do          | do        | do                 | do            | do                     | 10'-8" | 41'-0 11/16"            | 2 5/8" | 20 0 6" | 12 0 9"    | 12 0 1'-0" | F 5       | -         | E 3       | -         | B |                       |  |
|                      | C    | do            | 623.490   | 619.865 | do            | do    | 623.063   | 619.428   | do          | do        | do                 | do            | do                     | do     | do                      | do     | do      | do         | do         | F 5       | -         | E 3       | -         | C |                       |  |
|                      | D    | do            | 623.901   | 620.276 | do            | do    | 623.538   | 619.902   | do          | do        | do                 | do            | do                     | do     | do                      | do     | do      | do         | do         | do        | F 5       | -         | E 3       | - | D                     |  |
|                      | E    | 6'-6          | 624.244   | 620.600 | 61°-54'-10"   | 6'-6  | 623.993   | 620.258   | 61°-54'-10" | 30 W 116  | 62'-4 11/16"       | 9 1/2x7/8"    | 5/16"                  | 13'-8" | 35'-0 11/16"            | 5 5/8" | 1 0 9"  | 12 0 1'-0" | 12 0 1'-6" | F 5       | 1/4"      | E 3       | -         | E |                       |  |

| SPAN                             | BEAM       | EAST END DATA |            |             | CENTER DATA |            |            | WEST END DATA |             |            | BEAM DATA  |             |             |             |                    |              |             |              |        |        |       |              | BEAM   | REMARKS    |              |              |               |           |           |           |           |           |           |       |       |   |
|----------------------------------|------------|---------------|------------|-------------|-------------|------------|------------|---------------|-------------|------------|------------|-------------|-------------|-------------|--------------------|--------------|-------------|--------------|--------|--------|-------|--------------|--------|------------|--------------|--------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-------|-------|---|
|                                  |            | E             | ELEVATIONS |             | ANGLE       | C          | ELEVATIONS |               | ANGLE       | W          | ELEVATIONS |             | ANGLE       | BEAM SIZE   | LENGTH C/C BEARING | COVER PLATES |             |              | SPLICE |        |       | EAST END     |        |            | CENTER       |              | WEST END      |           |           |           |           |           |           |       |       |   |
|                                  |            |               | 1          | 2           | $\alpha$    |            | 3          | 4             | $\beta$     |            | 5          | 6           | $\gamma$    |             | L1                 | L2           | SIZE        | a            | b      | c      | d     | e            | f      | g          | h            | i            | ELEV. 7       | BRG. TYPE | SHIMPLATE | BRG. TYPE | SHIMPLATE | BRG. TYPE | SHIMPLATE |       |       |   |
| EAST BOUND<br>SPAN NO. 1 & NO. 2 | A          | 5'-6 1/8      | 625.012    | 622.039     | 75°-51'-13" | 6'-6 3/4   | 625.703    | 621.840       | 75°-51'-13" | 7'-7 1/8   | 625.498    | 621.625     | 75°-51'-13" | 33 W 118    | 51'-2 15/16"       | 50'-2 7/8"   | -           | 51'-2 15/16" | -      | -      | -     | -            | -      | -          | 50'-2 7/8"   | 62'-9 9/16"  | 38'-8 1/4"    | 625.656   | E 2       | -         | F 4       | -         | E 2       | -     | A     |   |
|                                  | B          | 7'-2 1/4      | 626.024    | 622.351     | 77°-00'-00" | 7'-2 1/4   | 625.837    | 621.932       | 77°-00'-00" | 7'-2 1/8   | 625.653    | 621.779     | 77°-00'-00" | do          | 51'-0"             | 50'-0"       | 9" x 3/8"   | 46'-9"       | -      | -      | -     | -            | -      | -          | 45'-9"       | 62'-6"       | 38'-6"        | 625.794   | E 2       | -         | F 1       | -         | E 2       | -     | B     |   |
|                                  | C          | do            | 626.170    | 622.297     | do          | do         | 626.983    | 622.078       | do          | do         | 625.799    | 621.925     | do          | do          | do                 | do           | do          | do           | do     | do     | do    | do           | do     | do         | do           | do           | do            | 625.840   | E 2       | -         | F 1       | -         | E 2       | -     | C     |   |
|                                  | D          | do            | 626.316    | 622.443     | do          | do         | 626.129    | 622.224       | do          | do         | 625.945    | 622.071     | do          | do          | do                 | do           | do          | do           | do     | do     | do    | do           | do     | do         | do           | do           | do            | do        | 626.086   | E 2       | -         | F 1       | -         | E 2   | -     | D |
|                                  | E          | 7'-2 1/4      | 626.392    | 622.519     | do          | 7'-2 1/4   | 626.205    | 622.300       | do          | 7'-2 1/4   | 626.021    | 622.147     | do          | do          | do                 | do           | do          | do           | do     | do     | do    | do           | do     | do         | do           | do           | do            | do        | 626.162   | E 2       | -         | F 1       | -         | E 2   | -     | E |
|                                  | F          | 7'-2 3/16     | 626.428    | 622.519     | do          | 7'-2 3/16  | 626.241    | 622.300       | do          | 7'-2 3/16  | 626.057    | 622.147     | do          | do          | do                 | do           | do          | do           | do     | do     | do    | do           | do     | do         | do           | do           | do            | do        | 626.198   | E 2       | 7/16"     | F 1       | 11/16"    | E 2   | 7/16" | F |
|                                  | G          | do            | 626.364    | 622.456     | do          | do         | 626.177    | 622.237       | do          | do         | 625.993    | 622.084     | do          | do          | do                 | do           | do          | do           | do     | do     | do    | do           | do     | do         | do           | do           | do            | 626.134   | E 2       | 3/8"      | F 1       | 7/16"     | E 2       | 7/16" | G     |   |
|                                  | H          | 7'-2 3/16     | 626.280    | 622.393     | 77°-00'-00" | 7'-2 3/16  | 626.092    | 622.174       | 77°-00'-00" | 7'-2 3/16  | 625.908    | 622.021     | 77°-00'-00" | 33 W 118    | 51'-0"             | 50'-0"       | -           | 51'-0"       | -      | -      | -     | -            | -      | -          | 50'-0"       | 62'-6"       | 38'-6"        | 626.050   | E 2       | 1/8"      | F 4       | 3/16"     | E 2       | 3/16" | H     |   |
| WEST BOUND<br>SPAN NO. 1 & NO. 2 | I          | 6'-8 1/16     | 626.311    | 622.437     | 77°-00'-00" | 6'-8 1/16  | 626.123    | 622.260       | 77°-00'-00" | 6'-8 1/16  | 625.939    | 622.065     | 77°-00'-00" | 33 W 118    | 51'-0"             | 50'-0"       | -           | 51'-0"       | -      | -      | -     | -            | -      | -          | 50'-0"       | 62'-6"       | 38'-6"        | 626.081   | E 2       | -         | F 4       | -         | E 2       | -     | I     |   |
|                                  | J          | do            | 626.401    | 622.528     | do          | do         | 626.214    | 622.350       | do          | do         | 626.030    | 622.156     | do          | do          | do                 | do           | do          | do           | do     | do     | do    | do           | do     | do         | do           | do           | 626.171       | E 2       | -         | F 4       | -         | E 2       | -         | J     |       |   |
|                                  | K          | do            | 626.472    | 622.598     | do          | do         | 626.284    | 622.421       | do          | do         | 626.100    | 622.226     | do          | do          | do                 | do           | do          | do           | do     | do     | do    | do           | do     | do         | do           | do           | do            | 626.242   | E 2       | -         | F 4       | -         | E 2       | -     | K     |   |
|                                  | L          | do            | 626.472    | 622.598     | do          | do         | 626.284    | 622.421       | do          | do         | 626.101    | 622.226     | do          | do          | do                 | do           | do          | do           | do     | do     | do    | do           | do     | do         | do           | do           | do            | 626.242   | E 2       | -         | F 4       | -         | E 2       | -     | L     |   |
|                                  | M          | 6'-8 1/16     | 626.413    | 622.528     | 77°-00'-00" | 6'-8 1/16  | 626.225    | 622.338       | 77°-00'-00" | 6'-8 1/16  | 626.041    | 622.155     | 77°-00'-00" | do          | 51'-0"             | 50'-0"       | -           | 51'-0"       | -      | -      | -     | -            | -      | -          | 50'-0"       | 62'-6"       | 38'-6"        | 626.183   | E 2       | 1/8"      | F 4       | 3/16"     | E 2       | 1/8"  | M     |   |
| N                                | 7'-8 13/16 | 626.339       | 622.465    | 75°-37'-33" | 6'-5 5/8    | 626.150    | 622.245    | 75°-37'-33"   | 5'-2 3/4    | 625.965    | 622.092    | 75°-37'-33" | 33 W 118    | 51'-3 9/16" | 50'-3 1/2"         | -            | 51'-3 9/16" | -            | -      | -      | -     | -            | -      | 50'-3 1/2" | 62'-10 3/8"  | 38'-8 11/16" | 626.108       | E 2       | -         | F 4       | -         | E 2       | -         | N     |       |   |
| EAST BOUND<br>SPAN NO. 6 & NO. 7 | F          | 6'-6 13/16    | 624.505    | 620.490     | 77°-00'-00" | 6'-6 13/16 | 624.298    | 620.600       | 77°-00'-00" | 6'-6 13/16 | 624.058    | 620.430     | 49°-53'-25" | 30 W 172    | 56'-4 3/4          | 65'-7 7/16"  | -           | 56'-4 3/4"   | -      | -      | -     | -            | -      | -          | 65'-7 7/16"  | 70'-5 5/8"   | 51'-7 9/16"   | 624.248   | E 4       | 5/8"      | F 2       | -         | E 4       | 1/8"  | F     |   |
|                                  | G          | do            | 624.595    | 620.681     | do          | do         | 624.387    | 620.741       | do          | do         | 624.180    | 620.540     | do          | 30 W 172    | do                 | 61'-8 7/16"  | -           | 56'-4 3/4"   | -      | -      | -     | -            | -      | -          | 61'-8 7/16"  | do           | 47'-8 9/16"   | 624.335   | E 4       | 1/4"      | F 2       | -         | E 4       | -     | G     |   |
|                                  | H          | 6'-6 7/8      | 624.684    | 620.681     | do          | 6'-6 7/8   | 624.467    | 620.807       | do          | do         | 624.244    | do          | do          | 30 W 132    | do                 | 57'-9 1/2"   | 9"x3/8"     | 15'-10 3/4"  | 13'-8" | 21'-0" | 6'-0" | 21'-0 1/2"   | 13'-6" | 16'-6"     | do           | 43'-9 5/8"   | 624.405       | E 3       | 1/2"      | F 3       | -         | E 3       | 1/2"      | H     |       |   |
|                                  | I          | do            | 624.670    | 620.681     | do          | do         | 624.462    | 620.807       | do          | do         | 624.284    | do          | do          | do          | do                 | 53'-10 1/2"  | 9"x3/8"     | 52'-4 3/4"   | -      | -      | 4'-0" | -            | -      | -          | 49'-10 1/2"  | do           | 39'-10 5/8"   | 624.410   | E 3       | 1/2"      | F 3       | -         | E 3       | 3/4"  | I     |   |
|                                  | J          | 6'-6 13/16    | 624.611    | 620.698     | do          | 6'-6 13/16 | 624.404    | 620.744       | do          | do         | 624.220    | 620.540     | do          | do          | do                 | 49'-11 9/16" | -           | 56'-4 3/4"   | -      | -      | -     | -            | -      | -          | 49'-11 9/16" | do           | 35'-11 11/16" | 624.352   | E 3       | 5/8"      | F 5       | 1/8"      | E 3       | 1/4"  | J     |   |
| K                                | 6'-6 13/16 | 624.533       | 620.435    | 77°-00'-00" | 6'-6 13/16  | 624.325    | 620.675    | 77°-00'-00"   | 6'-6 13/16  | 624.156    | 620.480    | 49°-53'-25" | 30 W 132    | 56'-4 3/4   | 48'-0 5/8"         | -            | 56'-4 3/4"  | -            | -      | -      | -     | -            | -      | 48'-0 5/8" | 70'-4 5/8"   | 32'-0 3/4    | 624.273       | E 3       | 7/16"     | F 5       | -         | E 3       | 3/16"     | K     |       |   |
| WEST BOUND<br>SPAN NO. 6 & NO. 7 | L          | 6'-8 13/16    | 624.583    | 620.848     | 77°-00'-00" | 6'-8 13/16 | 624.356    | 620.709       | 77°-00'-00" | 6'-8 13/16 | 624.118    | 620.503     | 52°-30'-29" | 30 W 172    | 56'-4 3/4          | 64'-5 9/16"  | -           | 56'-4 3/4"   | -      | -      | -     | -            | -      | -          | 64'-5 9/16"  | 70'-4 5/8"   | 50'-5 11/16"  | 624.304   | E 4       | -         | F 2       | -         | E 4       | -     | L     |   |
|                                  | M          | 6'-8 13/16    | 624.653    | 621.009     | do          | 6'-8 13/16 | 624.445    | 620.799       | do          | do         | 624.221    | 620.579     | do          | 30 W 172    | do                 | 61'-0 3/8"   | -           | 56'-4 3/4"   | -      | -      | -     | -            | -      | -          | 61'-0 3/8"   | do           | 47'-0 1/2"    | 624.393   | E 4       | 3/8"      | F 2       | -         | E 4       | 5/16" | M     |   |
|                                  | N          | do            | 624.722    | 621.009     | do          | do         | 624.515    | 620.864       | do          | do         | 624.303    | 620.642     | do          | do          | do                 | 57'-7 3/16"  | 9"x3/8"     | 15'-10 3/4"  | 13'-8" | 21'-0" | 6'-0" | 21'-10 3/16" | 13'-6" | 16'-3"     | do           | 43'-7 5/16"  | 624.483       | E 3       | 11/16"    | F 3       | -         | E 3       | -         | N     |       |   |
|                                  | O          | 6'-8 13/16    | 624.728    | 621.009     | do          | 6'-8 13/16 | 624.520    | 620.864       | do          | do         | 624.321    | 620.642     | do          | do          | do                 | 54'-3"       | 9"x3/8"     | 52'-4 3/4"   | -      | -      | 4'-0" | -            | -      | -          | 50'-2"       | do           | 40'-2 1/8"    | 624.468   | E 3       | 11/16"    | F 3       | 1/16"     | E 3       | 3/16" | O     |   |
|                                  | P          | 6'-8 13/16    | 624.689    | 621.009     | do          | 6'-8 13/16 | 624.461    | 620.801       | do          | do         | 624.275    | 620.570     | do          | do          | do                 | 50'-8 13/16" | -           | 56'-4 3/4"   | -      | -      | -     | -            | -      | -          | 50'-8 13/16" | do           | 36'-8 15/16"  | 624.409   | E 3       | -         | F 5       | 1/8"      | E 3       | 1/2   |       |   |

|  |                   |            |                 |              |
|--|-------------------|------------|-----------------|--------------|
| F.A. RT. 133                                     | SECTION 0707-626B | EXPRESSWAY | TOTAL SHEETS 95 | SHEET NO. 62 |
| STA. 28+78.74                                    |                   | TO STA.    |                 |              |
| FED. ROAD DIST. DIV. 7 ILLINOIS FED. AID PROJECT |                   |            |                 |              |



| REVISIONS      |                           |
|----------------|---------------------------|
| NAME           | DATE                      |
|                |                           |
|                |                           |
|                |                           |
| DESIGNED ST-PR | SCALE: HORIZ. DATE 8-5-63 |
| REVIEWED CW-W  | VERT. DATE 8-5-63         |

| ILLINOIS DIVISION OF HIGHWAYS   |                   |
|---------------------------------|-------------------|
| SOUTHWEST EXPRESSWAY            |                   |
| F.A. RT. 133                    |                   |
| LAWDALE AVE. STRUCTURE OVER     |                   |
| CHICAGO SANITARY AND SHIP CANAL |                   |
| SECTION 0707-626B               |                   |
| FRAMING PLAN SPAN 3 THRU 5 W.B. |                   |
| DESIGNED BY J.W.                | DRAWN BY J.W.     |
| CHECKED BY L.D.S.               | CHECKED BY L.D.S. |

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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 = 0160487.60W75.X25.exist.framing35.dgn | USER NAME = jsurber | DESIGNED - AJK | REVISIONS - |
|   |                     | CHECKED - JLS  | REVISIONS - |
|   |                     | DRAWN - AJK    | REVISIONS - |
|   |                     | CHECKED - JLS  | REVISIONS - |
|   |                     |                | REVISIONS - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FRAMING PLAN SPANS 3 THRU 5  
STRUCTURE NO. 016-0487

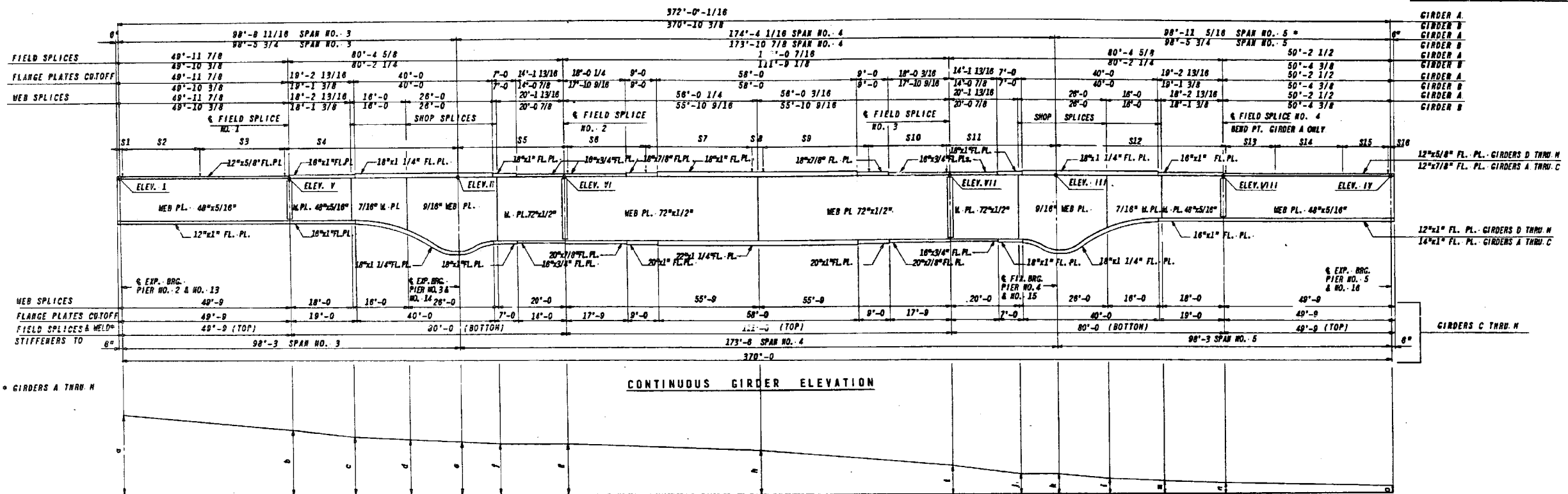
SHEET NO. SFX25 OF SFX46 SHEETS

FOR INFORMATION ONLY

| F.A.P. RT.                | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 373                       | 2013-037B-R | COOK   | 787          | 647                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

Y:\chicago\100005\10093\Eng\_Docs\_Phase\_1\1\SN\_016\_0486\_0487\_1st\_Ave.over\_Canal\Final\Final\_0487\0160487\_60W75.X25.exist.framing35.dgn 4:41:05 PM 6/17/2015

|                       |           |                           |              |           |
|-----------------------|-----------|---------------------------|--------------|-----------|
| F.A. RT.              | SECTION   | EXPRESSWAY                | TOTAL SHEETS | SHEET NO. |
| 133                   | 0707-626B | SOUTHWEST                 | 95           | 63        |
| STA.                  |           | TO STA.                   |              |           |
| FED. ROAD DIST. NO. 1 |           | ILLINOIS FED. AID PROJECT |              |           |



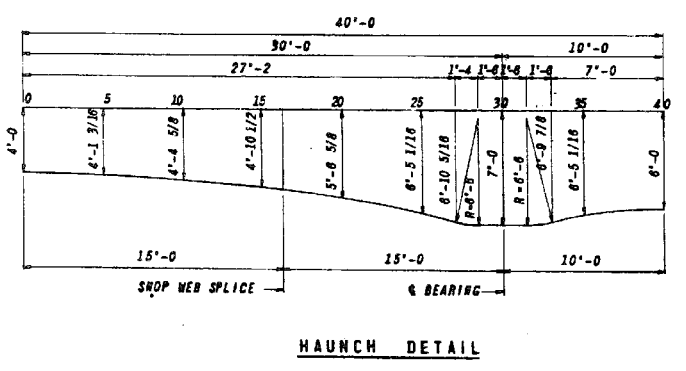
**BLOCKING DIAGRAM**

**CONTINUOUS GIRDER BLOCKING DIAGRAM SPAN NO. 3 THRU NO. 5 EAST BOUND & WEST BOUND**

| GIRDER | TOP OF WEB ELEVATIONS* AT |       |       |       |       |       |       |       | BLOCKING AT |           |            |            |           |            |           |            |            |             |            |            |            |           |           |    |    |
|--------|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------------|-----------|------------|------------|-----------|------------|-----------|------------|------------|-------------|------------|------------|------------|-----------|-----------|----|----|
|        | I                         | II    | III   | IV    | V     | VI    | VII   | VIII  | a           | b         | c          | d          | e         | f          | g         | h          | i          | j           | k          | l          | m          | n         | o         |    |    |
| A      | 5.385                     | 4.883 | 3.949 | 3.118 | 5.191 | 4.967 | 4.332 | 3.650 | 2'-3 3/16   | 2'-0 7/8  | 1'-11 7/16 | 1'-10 5/8  | 1'-10 3/8 | 1'-10 3/16 | 1'-9 7/16 | 1'-2 9/16  | 0'-11 3/16 | 0'-10 11/16 | 0'-8 13/16 | 0'-8 13/16 | 0'-5 3/16  | 0'-4 1/4  | 0'-3 1/16 | 0  |    |
| B      | 5.497                     | 5.116 | 4.225 | 3.658 | 5.304 | 5.085 | 4.623 | 3.913 | 1'-10 1/16  | 1'-7 3/4  | 1'-8 5/8   | 1'-5 13/16 | 1'-5 1/2  | 1'-5 1/4   | 1'-5 1/8  | 1'-3 11/16 | 0'-10 3/8  | 0'-7 7/8    | 0'-6 13/16 | 0'-5 3/8   | 0'-4 1/4   | 0'-3 1/16 | 0         |    |    |
| C      | 5.609                     | 5.247 | 4.493 | 4.131 | 5.428 | 5.220 | 4.735 | 4.230 | 1'-5 3/4    | 1'-9 9/16 | 1'-2 3/16  | 1'-1 9/16  | 1'-1 3/8  | 1'-1 1/4   | 1'-1 1/8  | 1'-0       | 0'-7 1/4   | 0'-5 5/16   | 0'-4 3/8   | 0'-3 1/8   | 0'-2 5/16  | 0'-1 3/16 | 0         |    |    |
| D      | 5.771                     | 5.409 | 4.171 | 4.409 | 5.697 | 5.387 | 4.868 | 4.607 | 1'-4 5/16   | 1'-2 1/4  | 1'-1 3/16  | 1'-0 11/16 | 1'-0      | 0'-11 1/2  | 0'-11 1/2 | 0'-10 9/16 | 0'-8 11/16 | 0'-4 15/16  | 0'-4 5/16  | 0'-3 7/16  | 0'-2 15/16 | 0'-2 3/8  | 0         |    |    |
| E      | 5.885                     | 5.623 | 4.885 | 4.623 | 5.711 | 5.481 | 5.080 | 4.721 | do          | do        | do         | do         | do        | do         | do        | do         | do         | do          | do         | do         | do         | do        | do        | do |    |
| F      | 5.959                     | 5.697 | 4.859 | 4.597 | 5.785 | 5.555 | 5.154 | 4.795 | do          | do        | do         | do         | do        | do         | do        | do         | do         | do          | do         | do         | do         | do        | do        | do | do |
| G      | 5.888                     | 5.626 | 4.888 | 4.626 | 5.714 | 5.484 | 5.083 | 4.724 | do          | do        | do         | do         | do        | do         | do        | do         | do         | do          | do         | do         | do         | do        | do        | do | do |
| H      | 5.797                     | 5.435 | 4.797 | 4.435 | 5.623 | 5.393 | 4.992 | 4.633 | do          | do        | do         | do         | do        | do         | do        | do         | do         | do          | do         | do         | do         | do        | do        | do | do |
| I      | 5.827                     | 5.465 | 4.827 | 4.465 | 5.654 | 5.424 | 5.023 | 4.664 | do          | do        | do         | do         | do        | do         | do        | do         | do         | do          | do         | do         | do         | do        | do        | do | do |
| J      | 5.934                     | 5.673 | 4.934 | 4.573 | 5.841 | 5.711 | 5.310 | 4.951 | do          | do        | do         | do         | do        | do         | do        | do         | do         | do          | do         | do         | do         | do        | do        | do | do |
| K      | 6.021                     | 5.659 | 5.021 | 4.659 | 5.947 | 5.817 | 5.216 | 4.857 | do          | do        | do         | do         | do        | do         | do        | do         | do         | do          | do         | do         | do         | do        | do        | do | do |
| L      | 5.948                     | 5.686 | 4.948 | 4.586 | 5.774 | 5.644 | 5.243 | 4.784 | do          | do        | do         | do         | do        | do         | do        | do         | do         | do          | do         | do         | do         | do        | do        | do | do |
| M      | 5.855                     | 5.493 | 4.855 | 4.493 | 5.681 | 5.451 | 5.050 | 4.691 | 1'-4 5/16   | 1'-2 1/4  | 1'-1 3/16  | 1'-0 11/16 | 1'-0      | 0'-11 1/2  | 0'-11 1/2 | 0'-10 9/16 | 0'-8 11/16 | 0'-4 15/16  | 0'-4 5/16  | 0'-3 7/16  | 0'-2 15/16 | 0'-2 3/8  | 0         |    |    |

\* ADD 620 TO ALL ELEVATIONS

STRUCTURAL STEEL SPAN NO. 3 THRU NO. 5 EAST BOUND AND WEST BOUND:  
 WEIGHT OF STUDS 7,499 LBS.  
 WEIGHT OF BEARING DEVICES 62,114 LBS.  
 WEIGHT OF EXPANSION CHAIRS 21,734 LBS.  
 FRAMING STEEL 1,380,470 LBS.  
 FURNISHING AND ERECTING STRUCTURAL STEEL 1,471,817 LBS.



**SHEAR CONNECTOR SPACINGS**

| GIRDER | S1    | S2         | S3         | S4          | S5         | S6          | S7         | S8         | S9         | S10         | S11        | S12        | S13        | S14        | S15        | S16       |
|--------|-------|------------|------------|-------------|------------|-------------|------------|------------|------------|-------------|------------|------------|------------|------------|------------|-----------|
| A      | -     | 28 @ 0'-0" | 21 @ 1'-3" | -           | -          | 28 @ 0'-11" | -          | 34 @ 1'-8" | -          | 34 @ 0'-11" | -          | 13 @ 1'-1" | 12 @ 1'-0" | 29 @ 0'-8" | -          | -         |
| B      | -     | do         | do         | 20'-11 3/4" | 33'-0 1/2" | do          | do         | do         | do         | do          | 33'-0 3/8" | 52'-1 3/8" | do         | do         | 29 @ 0'-8" | 0'-5 3/8" |
| C      | -     | 28 @ 0'-0" | 21 @ 1'-3" | -           | -          | 28 @ 0'-11" | -          | 34 @ 1'-8" | -          | 34 @ 0'-11" | -          | 13 @ 1'-1" | 12 @ 1'-0" | 29 @ 0'-8" | -          | -         |
| D      | -     | 33 @ 0'-0" | 18 @ 1'-3" | -           | -          | 48 @ 0'-0"  | 10 @ 1'-0" | 9 @ 1'-10" | 10 @ 1'-0" | 48 @ 0'-0"  | -          | 18 @ 1'-3" | 33 @ 0'-0" | -          | -          | -         |
| THRU H | 0'-3" | 24'-8"     | 22'-8"     | 30'-8"      | 33'-0"     | =30'-0"     | =15'-0"    | =5'-8"     | =15'-0"    | =30'-0"     | 33'-0"     | 30'-8"     | 22'-8"     | 24'-8"     | -          | 0'-3"     |

**ILLINOIS DIVISION OF HIGHWAYS**  
**SOUTHWEST EXPRESSWAY**

F.A. RT. 133  
 LAWDALE AVE. STRUCTURE OVER  
 CHICAGO SANITARY AND SHIP CANAL  
 SECTION 0707 - 626 B  
 CONTINUOUS GIRDER DETAILS

DESIGNED P.K.S.  
 REVIEWED C.W.W.

SCALE: HORIZ.  
 DATE 8-5-63

DRAWN BY D.W.U.  
 CHECKED BY L.D.B.



|             |                     |                |           |
|-------------|---------------------|----------------|-----------|
| FILE NAME = | USER NAME = jsurber | DESIGNED - AJK | REVISED - |
|             |                     | CHECKED - JLS  | REVISED - |
|             |                     | DRAWN - AJK    | REVISED - |
|             |                     | CHECKED - JLS  | REVISED - |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS GIRDER ELEVATION  
 STRUCTURE NO. 016-0487

SHEET NO. SF26 OF SF46 SHEETS

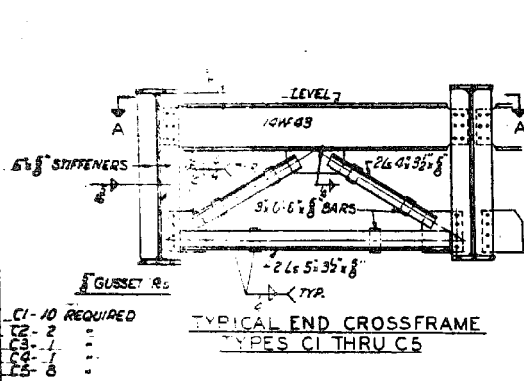
FOR INFORMATION ONLY

|                           |             |        |              |                    |
|---------------------------|-------------|--------|--------------|--------------------|
| F.A.P. RT.                | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
| 373                       | 2013-037B-R | COOK   | 787          | 648                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

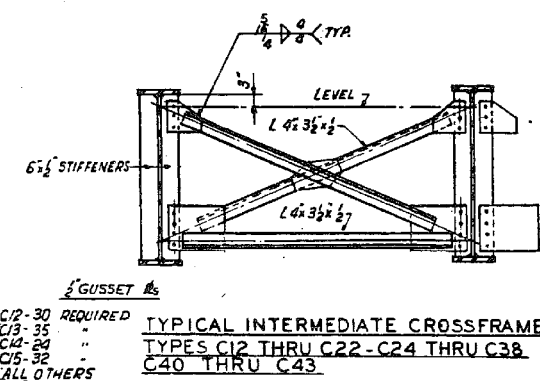
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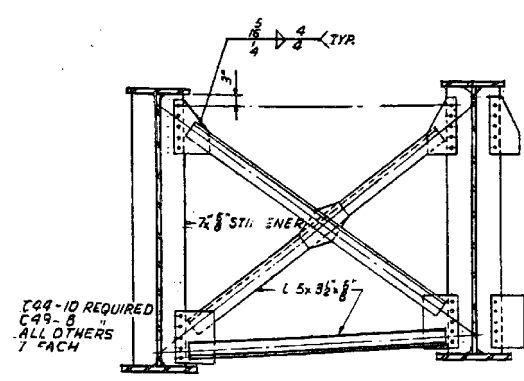
| F.A. RT.              | SECTION   | EXPRESSWAY | TOTAL SHEETS     | SHEET NO. |
|-----------------------|-----------|------------|------------------|-----------|
| 133                   | 0707-626B | SOUTHWEST  | 95               | 64        |
| WTA                   |           | TO STA.    |                  |           |
| FED. ROAD DIST. NO. 7 |           | ILLINOIS   | FED. AID PROJECT |           |



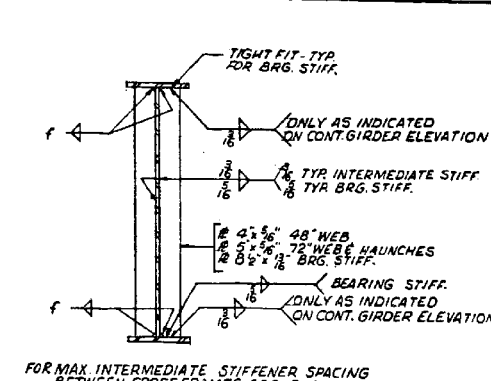
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C2-2  
C3-1  
C4-1  
C5-8



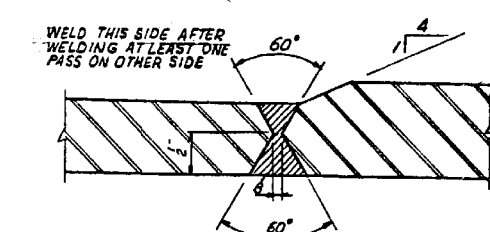
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C13-35  
C14-24  
C15-32  
ALL OTHERS  
1 EACH



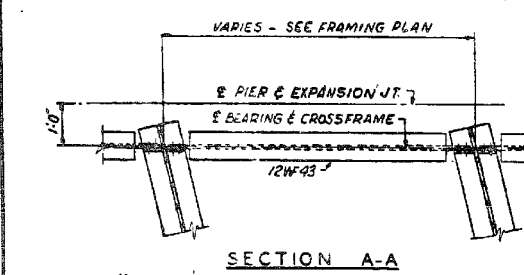
C44-10 REQUIRED  
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7 EACH



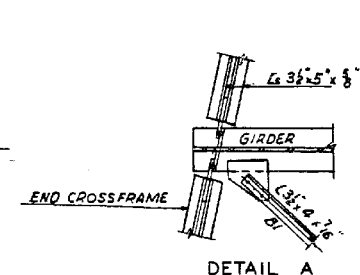
FOR MAX. INTERMEDIATE STIFFENER SPACING BETWEEN CROSSFRAMES SEE FRAMING PLANS



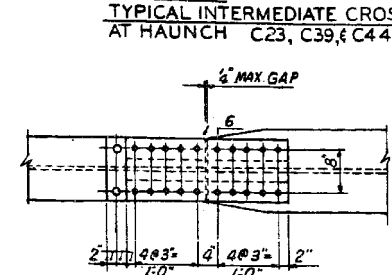
FLANGE SHOP WELD



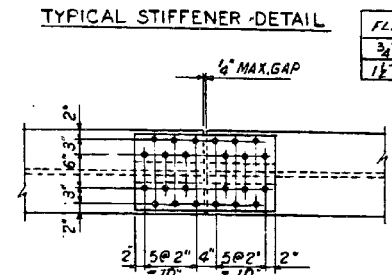
SECTION A-A



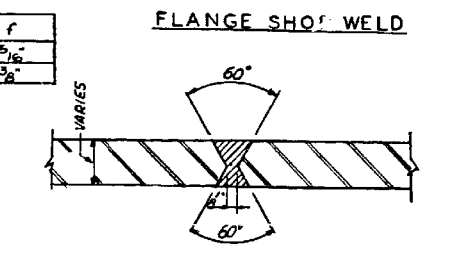
DETAIL A



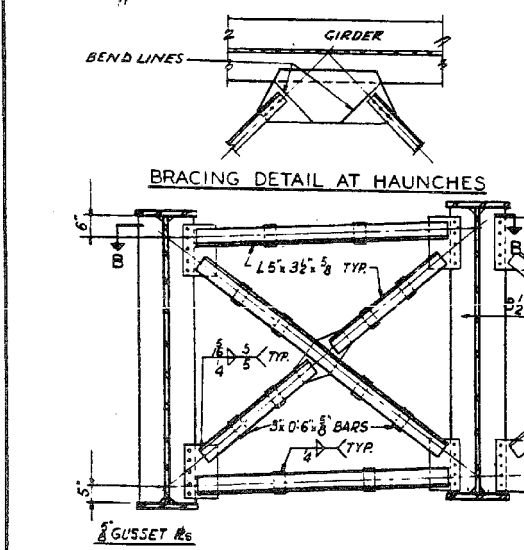
TOP VIEW



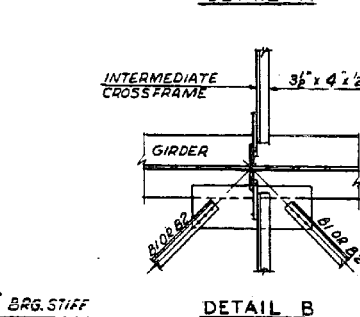
TOP VIEW



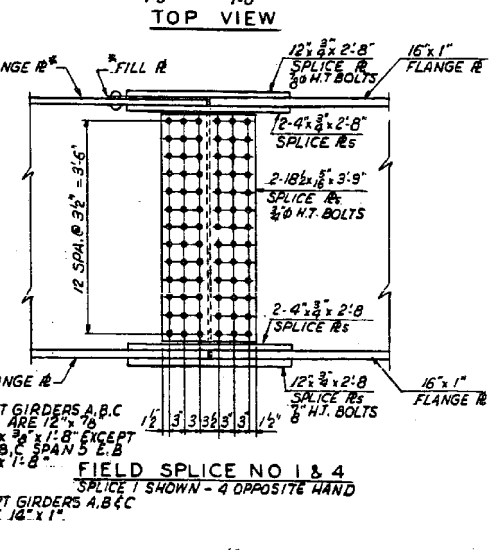
WEB SHOP WELD



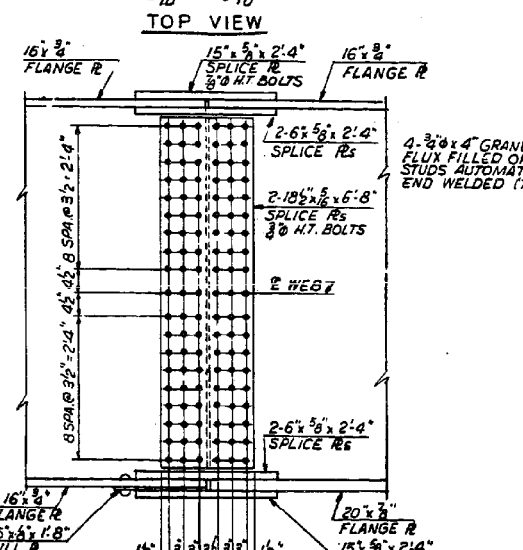
BRACING DETAIL AT HAUNCHES



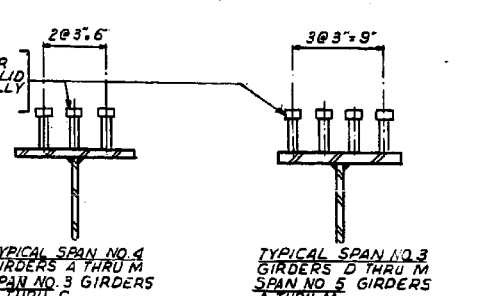
DETAIL B



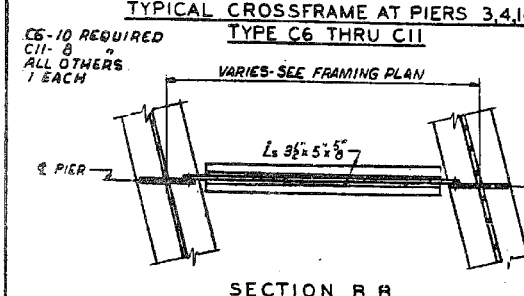
\*\* FLANGE #  
EXCEPT GIRDERS A, B, C SPAN 5 E.B. ARE 12\"/>



\*\* FLANGE #  
EXCEPT GIRDERS A, B, C SPAN 5 E.B. ARE 12\"/>

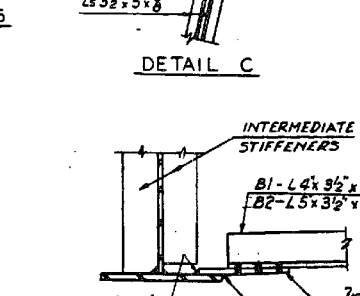


SHEAR CONNECTOR DETAILS

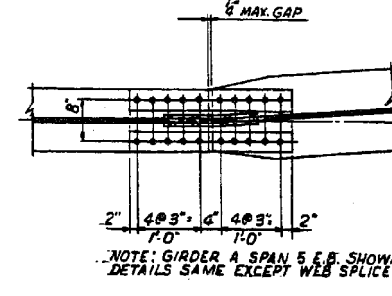


C6-10 REQUIRED  
C11-8  
ALL OTHERS  
1 EACH

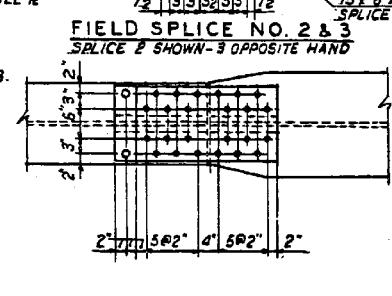
SECTION B-B



DETAIL C



BOTTOM VIEW



BOTTOM VIEW



WELD DETAIL

NOTE: SEE SHEET "ELECTRICAL DETAILS" FOR BRACKET SUPPORTS FOR CONDUITS ATTACHED TO STRUCTURE

| REVISIONS      |               |
|----------------|---------------|
| NAME           | DATE          |
|                |               |
|                |               |
| DESIGNED ST-PL | SCALE: HORIZ. |
| REVIEWED CNW   | DATE 6-5-03   |

| ILLINOIS DIVISION OF HIGHWAYS                               |                   |
|---|-------------------|
| SOUTHWEST EXPRESSWAY  |                   |
| F.A. RT. 133  |                   |
| LAWDALE AVE. STRUCTURE OVER CHICAGO SANITARY AND SHIP CANAL |                   |
| SECTION 0707 - 626 B  |                   |
| STRUCTURAL STEEL DETAILS                                    |                   |
| DRAWN BY L.A.   | CHECKED BY L.D.B. |

**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 = jsurber   | DESIGNED - AJK | REVISIONS - |
| 0160487.60W75.X27.exist.steel.det.dgn |                       | CHECKED - JLS  | REVISIONS - |
|                                       | PLOT SCALE =          | DRAWN - AJK    | REVISIONS - |
|                                       | PLOT DATE = 6/17/2015 | CHECKED - JLS  | REVISIONS - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

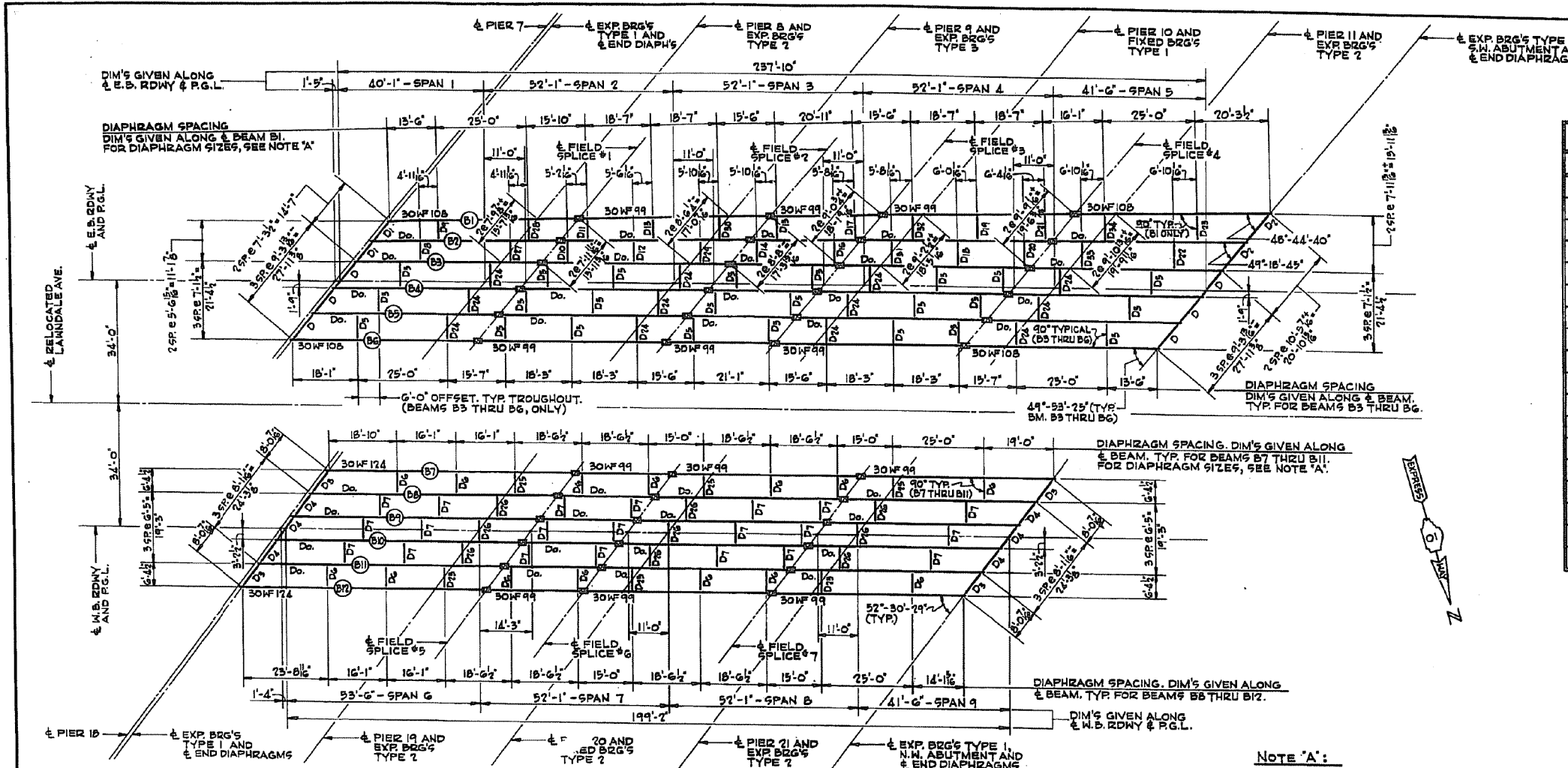
EXISTING PLANS STEEL DETAILS  
STRUCTURE NO. 016-0487

SHEET NO. SFX27 OF SFX46 SHEETS

FOR INFORMATION ONLY

| F.A.P. RT.                | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 373                       | 2013-037B-R | COOK   | 787          | 649                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

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**TABLE I**

| DIAPH. | LENGTH     | NO. REQ'D | DIAPH. | LENGTH     | NO. REQ'D |
|--------|------------|-----------|--------|------------|-----------|
| D1     | 9'-3 1/2"  | 6         | D18    | 7'-2 3/8"  | 1         |
| D2     | 7'-3 1/2"  | 2         | D19    | 7'-1 3/8"  | 1         |
| D3     | 10'-5 1/2" | 2         | D20    | 7'-4 1/8"  | 1         |
| D4     | 8'-0 1/2"  | 4         | D21    | 7'-3 1/8"  | 1         |
| D5     | 8'-1 1/2"  | 6         | D22    | 7'-9 1/2"  | 1         |
| D6     | 7'-1 1/2"  | 24        | D23    | 7'-8 3/4"  | 1         |
| D7     | 6'-4 1/2"  | 14        | D24    | 7'-1 1/2"  | 12        |
| D8     | 6'-5"      | 21        | D25    | 6'-4 1/2"  | 6         |
| D9     | 5'-8 1/2"  | 1         | D26    | 6'-5"      | 9         |
| D10    | 5'-7 1/2"  | 1         | D27    | 5'-11 1/2" | 1         |
| D11    | 6'-0 1/2"  | 1         | D28    | 5'-10 1/2" | 1         |
| D12    | 6'-3 1/2"  | 1         | D29    | 6'-5 1/2"  | 1         |
| D13    | 6'-3"      | 1         | D30    | 6'-5 1/2"  | 1         |
| D14    | 6'-7 1/2"  | 1         | D31    | 7'-0 3/4"  | 1         |
| D15    | 6'-7 1/2"  | 1         | D32    | 6'-11 1/2" | 1         |
| D16    | 6'-10 1/2" | 1         | D33    | 7'-6 1/2"  | 1         |
| D17    | 6'-9 1/2"  | 1         | D34    | 7'-5 1/2"  | 1         |

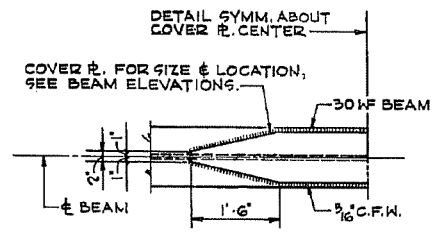
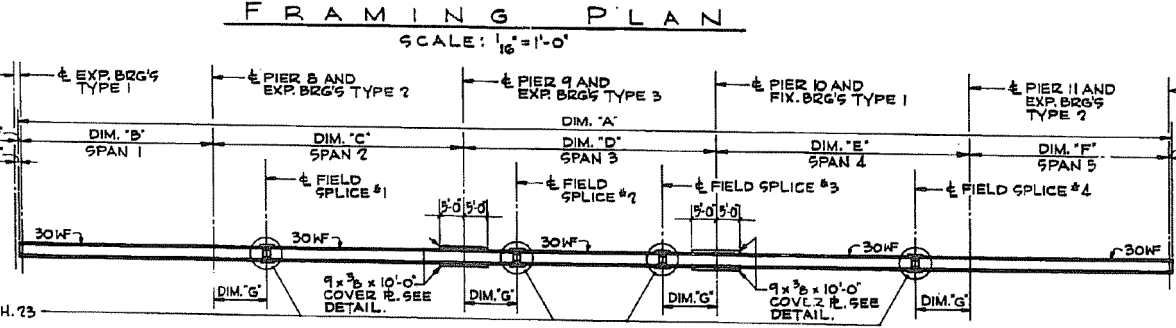
\* \* DIMENSION GIVEN IS  $\epsilon$  TO  $\epsilon$  OF BEAMS.

**TABLE II**

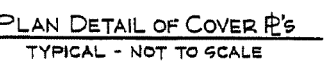
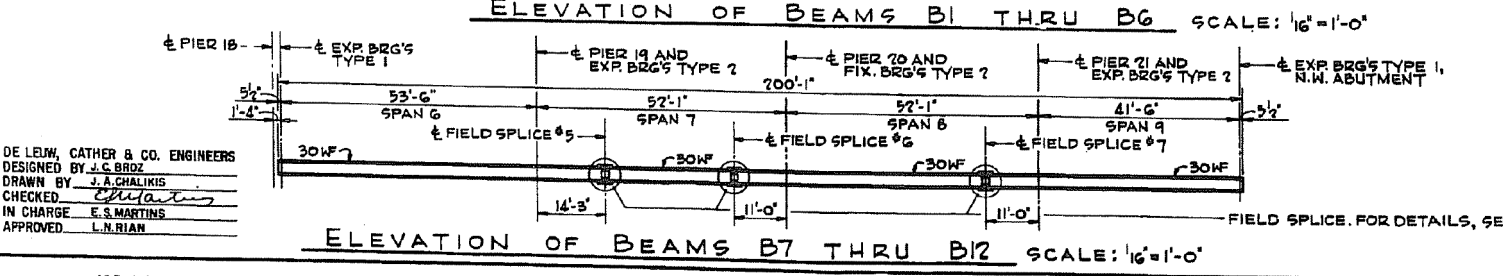
| BEAM DIM. | B1          | B2          | B3 THRU B6 |
|-----------|-------------|-------------|------------|
| "A"       | 74'-10 1/2" | 74'-9 3/8"  | 73'-8 1/4" |
| "B"       | 40'-9 1/2"  | 40'-5 1/2"  | 40'-1"     |
| "C"       | 52'-11 1/2" | 52'-6 3/8"  | 52'-1"     |
| "D"       | 52'-11 1/2" | 52'-6 3/8"  | 52'-1"     |
| "E"       | 52'-11 1/2" | 52'-6 3/8"  | 52'-1"     |
| "F"       | 42'-2 3/8"  | 41'-10 3/8" | 41'-6"     |
| "G"       | 11'-2 3/8"  | 11'-1 1/2"  | 11'-0"     |

**NOTE 'A':**  
DIAPHRAGMS D THRU D4 - 12 WF 40  
DIAPHRAGMS D5 THRU D34 - 16 WF 36  
FOR DIAPHRAGM LENGTHS, SEE TABLE I.

**NOTE:**  
FOR DIMENSIONS NOT GIVEN ON BEAM ELEVATIONS, SEE TABLE II.



**NOTES:**  
FOR STRUCTURAL STEEL DESIGNATION, SEE GENERAL NOTES, SH. 3  
FOR TABLES OF MOMENTS & REACTIONS, SEE SH. 23  
FOR TABLE 'TOP' / WF ELEVATIONS, SEE SH. 23  
FOR DIAPHRAGM DETAILS, SEE SH. 23



**BILL OF MATERIAL #**

| ITEM                                     | UNIT  | QUANTITY |
|--|-------|----------|
| FURNISHING AND ERECTING STRUCTURAL STEEL | POUND | 337,953  |

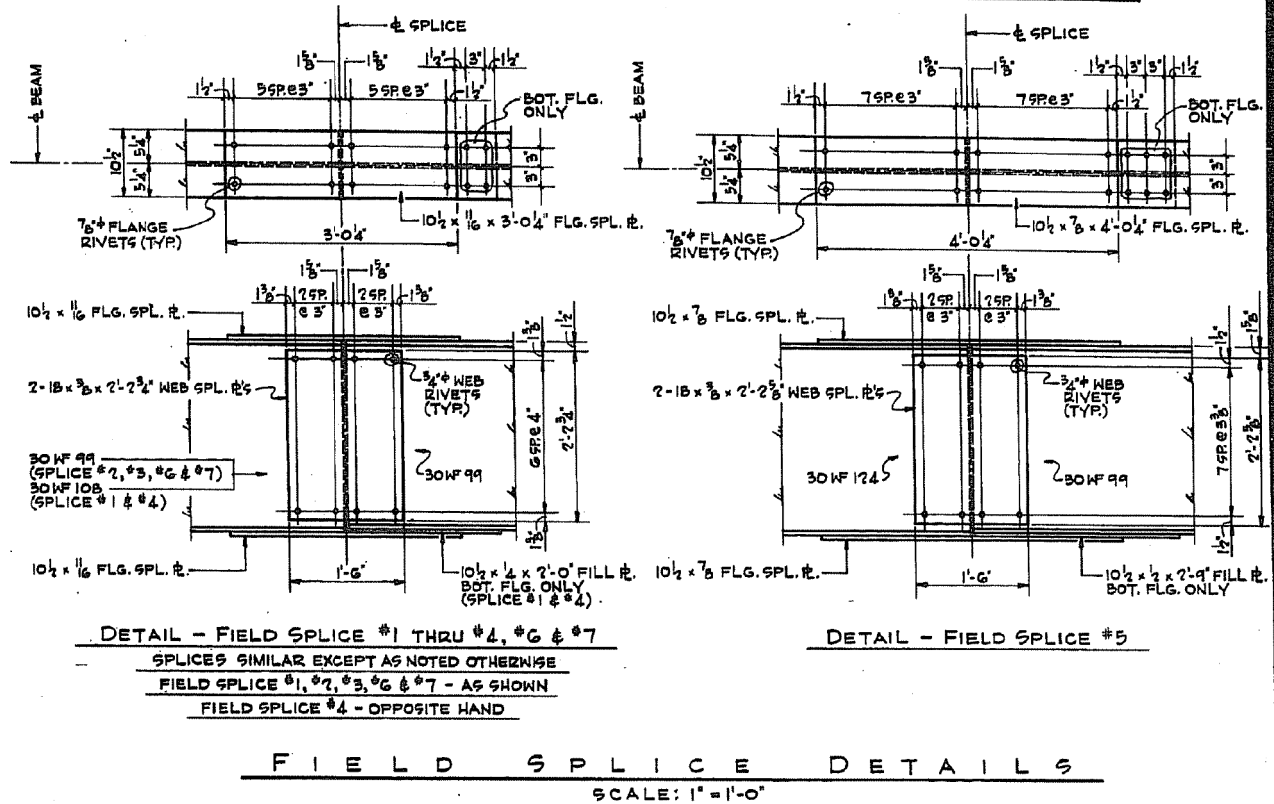
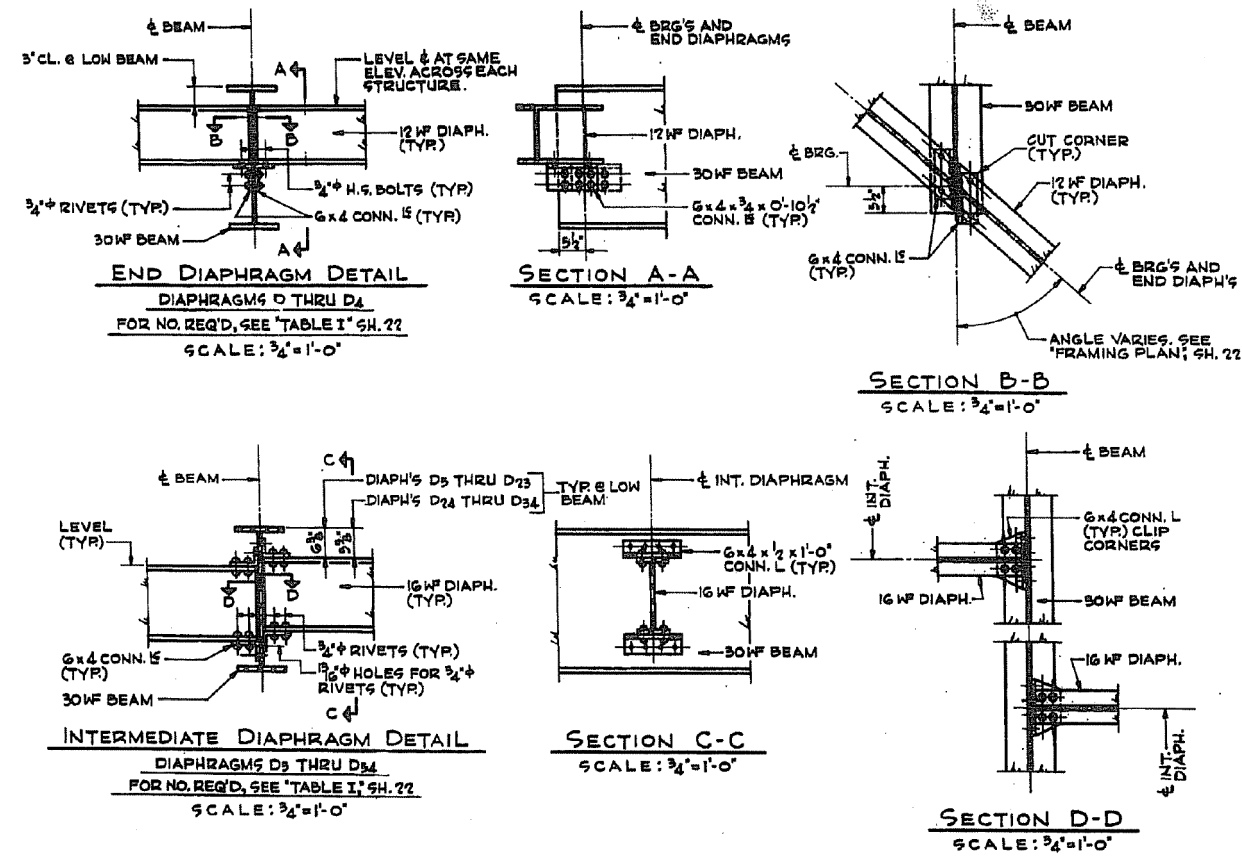
\* INCLUDES ALL STRUCTURAL STEEL SHOWN ON THIS SHEET AND SHEET 23.

ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
**LAWDALE AVE. OVER RAMP E**  
FRAMING PLAN  
SCALE: AS NOTED DATE: 7-20-63

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

JOB NO. 1179

Y:\chicago\100005\100093\Eng\_Docs\Phase II\NSN\_016\_0486\_0487\_1st\_Ave.over.Canon\Final\Final\_0487\_0160487\_60W75\_X28\_exist Framing8\_11.dgn 4:42:38 PM 6/17/2015



| TOP/WF ELEVATIONS * |                     |       |       |       |       |       |       |                     |       |       |       |       |       |       |
|---------------------|---------------------|-------|-------|-------|-------|-------|-------|---------------------|-------|-------|-------|-------|-------|-------|
| LOCATION            |                     | BEAM  |       |       |       |       |       | LOCATION            |       |       |       |       | BEAM  |       |
|                     |                     | B1    | B2    | B3    | B4    | B5    | B6    | B7                  | B8    | B9    | B10   | B11   | B12   |       |
| E.B. ROADWAY        | ± BRG'S, PIER 7     | 3.886 | 4.050 | 4.169 | 4.227 | 4.178 | 4.109 | ± BRG'S, PIER 18    | 4.056 | 4.158 | 4.240 | 4.259 | 4.213 | 4.147 |
|                     | ± PIER 8            | 3.738 | 3.903 | 4.021 | 4.080 | 4.030 | 3.961 | ± PIER 19           | 3.860 | 3.961 | 4.044 | 4.062 | 4.016 | 3.950 |
|                     | ± FIELD SPLICE #1   | 3.698 | 3.862 | 3.981 | 4.039 | 3.990 | 3.921 | ± FIELD SPLICE #5   | 3.807 | 3.909 | 3.991 | 4.009 | 3.963 | 3.897 |
|                     | ± PIER 9            | 3.546 | 3.711 | 3.830 | 3.888 | 3.839 | 3.770 | ± FIELD SPLICE #6   | 3.708 | 3.810 | 3.892 | 3.911 | 3.865 | 3.799 |
|                     | ± FIELD SPLICE #2   | 3.506 | 3.671 | 3.789 | 3.847 | 3.798 | 3.729 | ± PIER 20           | 3.668 | 3.770 | 3.852 | 3.870 | 3.824 | 3.758 |
|                     | ± FIELD SPLICE #3   | 3.395 | 3.560 | 3.678 | 3.737 | 3.687 | 3.618 | ± FIELD SPLICE #7   | 3.517 | 3.618 | 3.701 | 3.719 | 3.673 | 3.607 |
|                     | ± PIER 10           | 3.355 | 3.519 | 3.638 | 3.696 | 3.647 | 3.578 | ± PIER 21           | 3.476 | 3.578 | 3.660 | 3.678 | 3.632 | 3.567 |
|                     | ± FIELD SPLICE #4   | 3.204 | 3.368 | 3.487 | 3.545 | 3.496 | 3.427 | ± BRG'S, N.E. ABUT. | 3.374 | 3.475 | 3.558 | 3.576 | 3.480 | 3.414 |
|                     | ± PIER 11           | 3.163 | 3.328 | 3.446 | 3.504 | 3.455 | 3.386 |                     |       |       |       |       |       |       |
|                     | ± BRG'S, S.W. ABUT. | 3.010 | 3.175 | 3.293 | 3.352 | 3.303 | 3.233 |                     |       |       |       |       |       |       |

\* ADD 620.000 TO ALL TOP/WF ELEVATIONS GIVEN.

DE LEHN, CATHER & CO. ENGINEERS  
DESIGNED BY J.C. BRZY  
DRAWN BY J.A. CHALKIS  
CHECKED *[Signature]*  
IN CHARGE E.S. MARTINS  
APPROVED L.N. RIAN

JOB NO. 1179

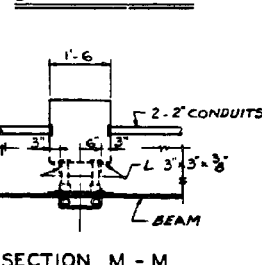
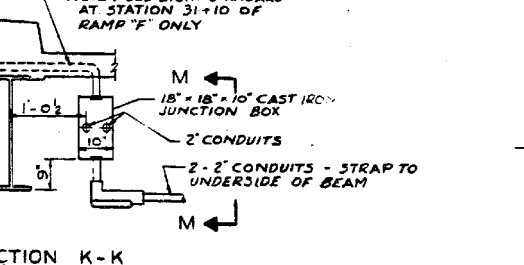
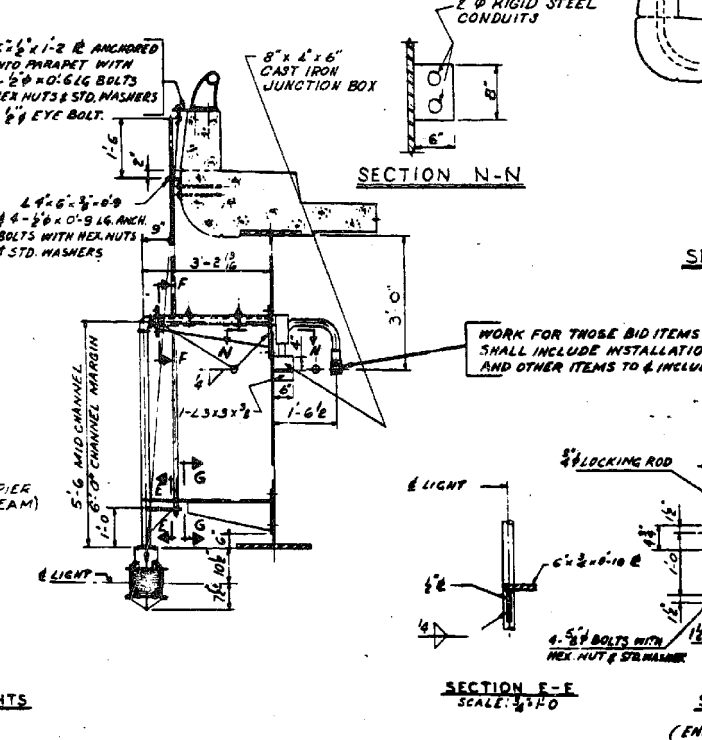
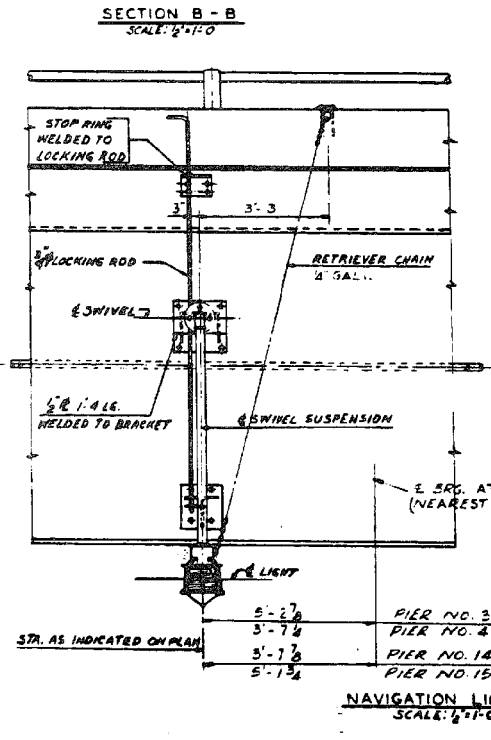
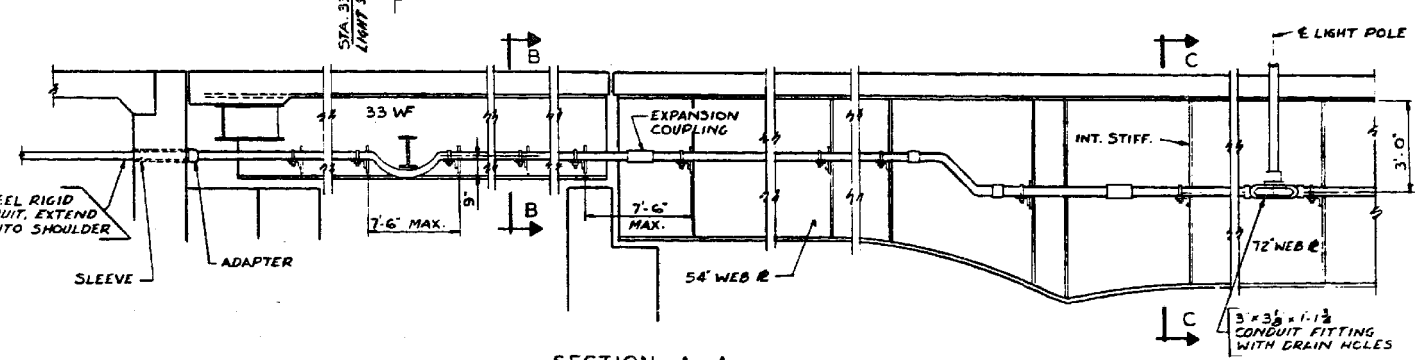
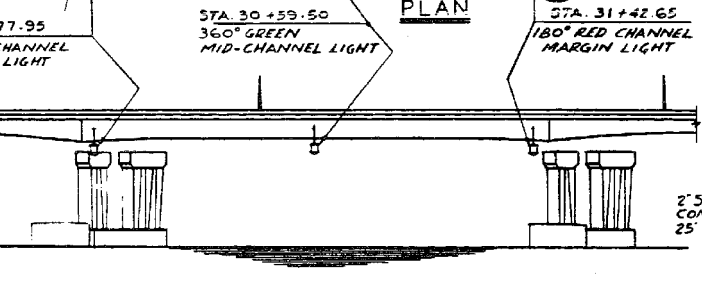
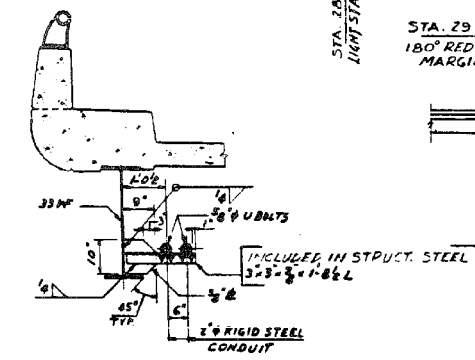
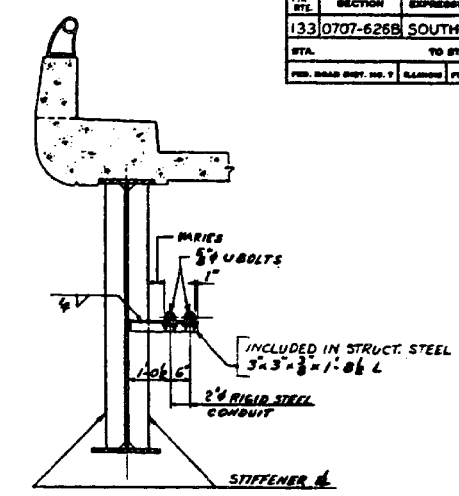
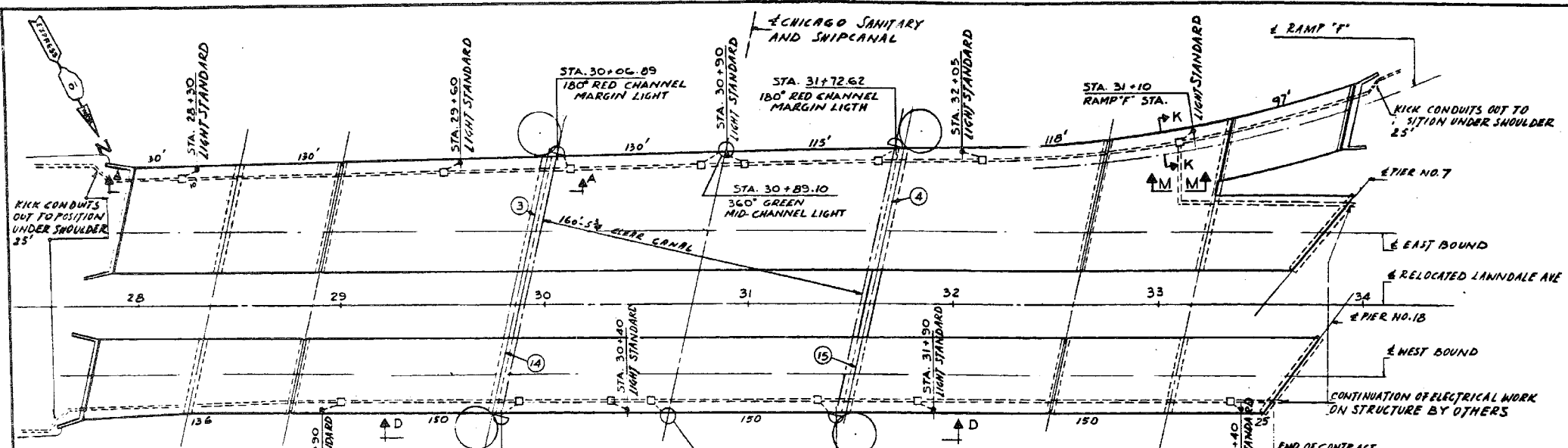
| TABLE OF MOMENTS & REACTIONS - TYP. INTERIOR BEAM - EAST BOUND ROADWAY |                    |        |           |        |           |         |           |                  |           |         |         |         |         |            |
|--|--------------------|--------|-----------|--------|-----------|---------|-----------|------------------|-----------|---------|---------|---------|---------|------------|
|  | MOMENTS (FT. KIPS) |        |           |        |           |         |           | REACTIONS (KIPS) |           |         |         |         |         |            |
|  | .4.SPAN 1          | PIER 8 | .5.SPAN 2 | PIER 9 | .5.SPAN 3 | PIER 10 | .5.SPAN 4 | PIER 11          | .6.SPAN 5 | PIER 12 | PIER 13 | PIER 14 | PIER 15 | N.W. ABUT. |
| DEAD LOAD  | 95                 | -194   | 106       | -212   | 92        | -216    | 101       | -202             | 107       | 13      | 47      | 48      | 43      | 14         |
| LIVE LOAD  | 234                | -202   | 261       | -230   | 255       | -238    | 254       | -211             | 249       | 34      | 43      | 43      | 43      | 34         |
| IMPACT   | 70                 | -59    | 74        | -65    | 72        | -67     | 71        | -62              | 75        | 10      | 13      | 12      | 13      | 10         |
| TOTAL  | 399                | -455   | 441       | -507   | 419       | -521    | 426       | -475             | 431       | 57      | 103     | 103     | 103     | 58         |

| TABLE OF MOMENTS & REACTIONS - TYP. INTERIOR BEAM - WEST BOUND ROADWAY |                    |         |           |         |           |         |           |                  |         |         |         |            |  |  |
|--|--------------------|---------|-----------|---------|-----------|---------|-----------|------------------|---------|---------|---------|------------|--|--|
|  | MOMENTS (FT. KIPS) |         |           |         |           |         |           | REACTIONS (KIPS) |         |         |         |            |  |  |
|  | .4.SPAN 1          | PIER 19 | .5.SPAN 2 | PIER 20 | .5.SPAN 3 | PIER 21 | .6.SPAN 4 | PIER 18          | PIER 19 | PIER 20 | PIER 21 | N.W. ABUT. |  |  |
| DEAD LOAD  | 169                | -255    | 73        | -175    | 105       | -190    | 100       | 18               | 91      | 42      | 45      | 13         |  |  |
| LIVE LOAD  | 320                | -233    | 236       | -197    | 236       | -187    | 223       | 33               | 40      | 39      | 39      | 31         |  |  |
| IMPACT   | 90                 | -65     | 67        | -55     | 67        | -54     | 67        | 9                | 11      | 11      | 11      | 9          |  |  |
| TOTAL  | 599                | -553    | 376       | -427    | 408       | -431    | 390       | 60               | 102     | 92      | 95      | 53         |  |  |

NOTE:  
FOR 'BILL OF MATERIAL', SEE SH. 22

ILLINOIS DIVISION OF HIGHWAYS  
SOUTHWEST EXPRESSWAY  
LAWDALE AVE. OVER RAMP E  
STEEL DETAILS AND ELEVATIONS  
SCALE: AS NOTED DATE 7-20-63

| F.A. RTE.    | SECTION   | EXPRESSWAY            | TOTAL SHEETS | SHEET NO. |
|--------------|-----------|-----------------------|--------------|-----------|
| 133          | 0707-626B | SOUTHWEST             | 99           | 68        |
| STA. TO STA. |           | FED. ROAD DIST. NO. 7 |              |           |
|              |           | PLAN. AND PROFILE     |              |           |



| BILL OF MATERIAL                                 |          |          |
|--|----------|----------|
| ITEM   | UNIT     | QUANTITY |
| CONDUIT IN TRENCH 2" DIA. GALV. STEEL            | LIN. FT. | 50       |
| CONDUIT ATTACHED TO STRUCTURE 1 1/2" GALV. STEEL | LIN. FT. | 30       |
| CONDUIT ATTACHED TO STRUCTURE 2" GALV. STEEL     | LIN. FT. | 2750     |
| CONDUIT IN CONCRETE 1 1/2" GALV. STEEL           | LIN. FT. | 45       |
| TRENCH & BACKFILL                                | LIN. FT. | 75       |
| NAVIGATIONAL LIGHT 360 GREEN MID-CHANNEL         | EACH     | 2        |
| NAVIGATIONAL LIGHT 180 REC CHANNEL MARGIN        | EACH     | 4        |
| POLE FOUNDATION, SPECIAL                         | EACH     | 3        |
| CONDUIT IN CONCRETE 2" DIA. GALV. STEEL          | LIN. FT. | 12       |
| JUNCTION BOX 18x18x10" CAST IRON                 | EACH     | 1        |

**NOTE:**  
 - POLE FOUNDATION SPECIAL INCLUDES THE COMPLETE INSTALLATION OF 4-1 1/2" X 2'-6" LONG ANCHOR BOLTS AT EACH LIGHT POLE.  
 - SEE LIGHT STANDARD BASE DETAILS ON SHEET "PARAPET AND HANDRAIL DETAILS"  
 - PRICE PER UNIT FOOT OF CONDUIT SHALL INCLUDE ALL COUPLINGS, ELBOWS, FITTINGS ETC. NECESSARY TO COMPLETE INSTALLATION.

|  |                                  |
|--|----------------------------------|
| ILLINOIS DIVISION OF HIGHWAYS  |                                  |
| SOUTHWEST EXPRESSWAY   |                                  |
| F.A. RT. 133   |                                  |
| LAWDALE AVE STRUCTURE OVER CHICAGO SANITARY AND SHIP CANAL SECTION 07C7-626B |                                  |
| ELECTRICAL DETAILS   |                                  |
| DESIGNED ST.   | SCALE: HORIZ. VERT. DATE: 6-6-13 |
| DRAWN BY J.S.  | CHECKED BY L.D.B.                |

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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 - AJK | REVISIONS - |
| 0160487.60W75.X30.exist.electdet.dgn |                     | CHECKED - JLS  | REVISIONS - |
|                                      |                     | DRAWN - AJK    | REVISIONS - |
|                                      |                     | CHECKED - JLS  | REVISIONS - |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

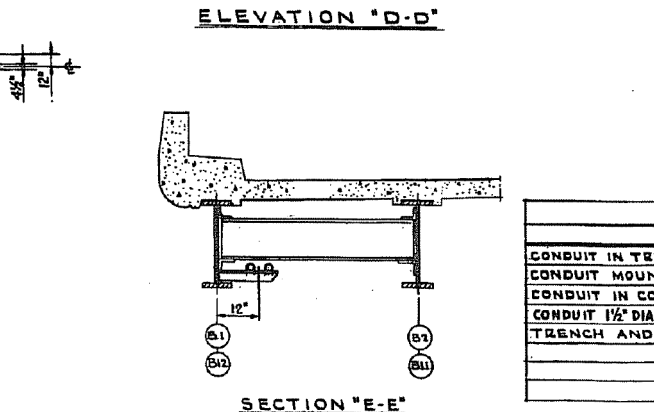
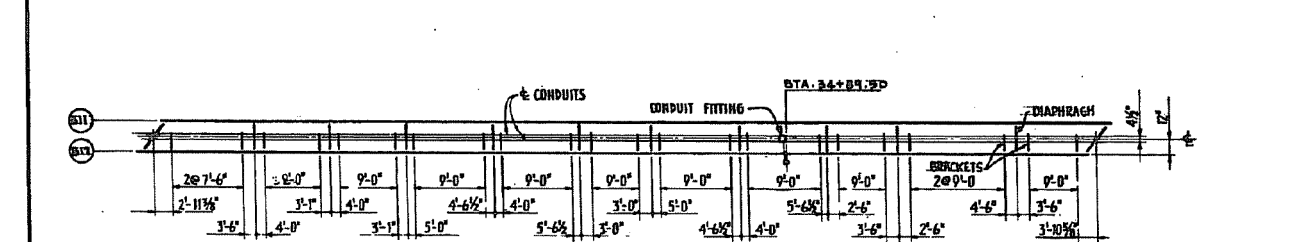
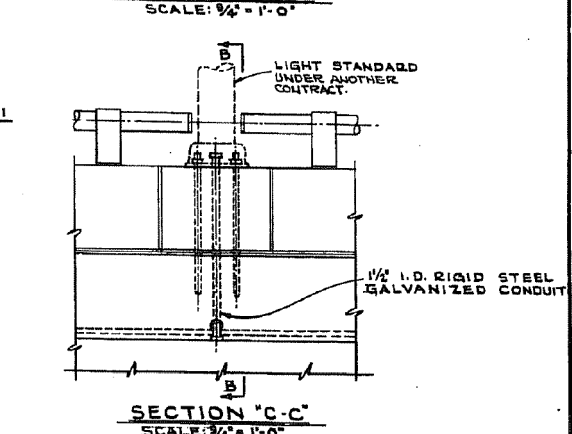
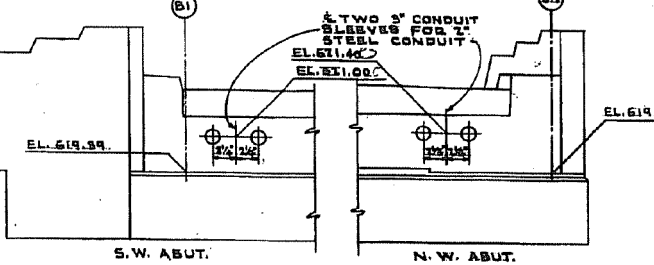
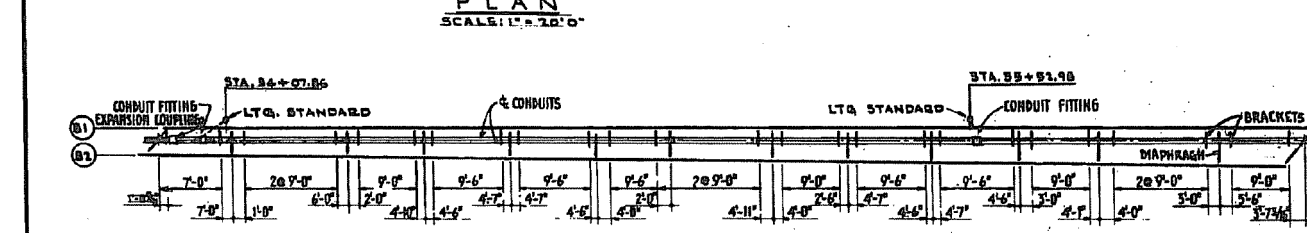
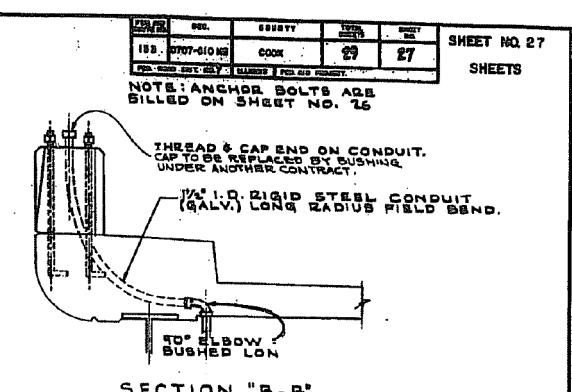
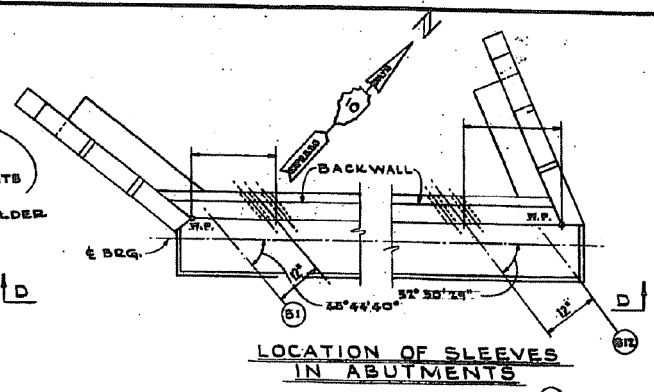
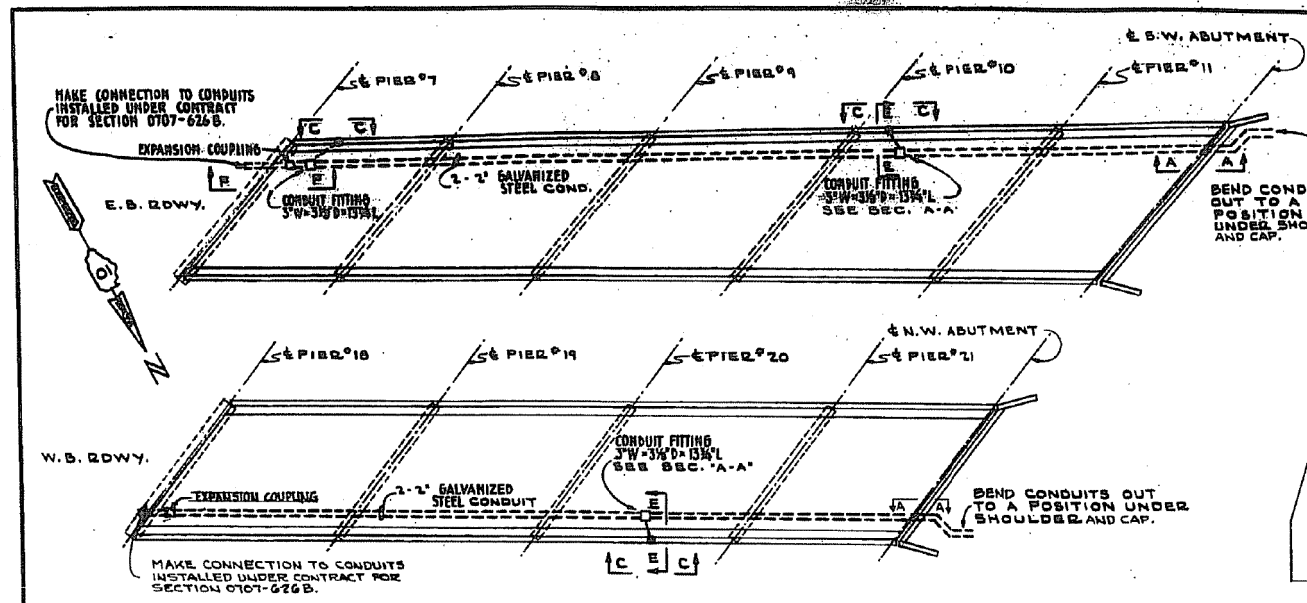
EXISTING PLANS ELECTRICAL DETAILS  
 STRUCTURE NO. 016-0487

SHEET NO. SF30 OF SF46 SHEETS

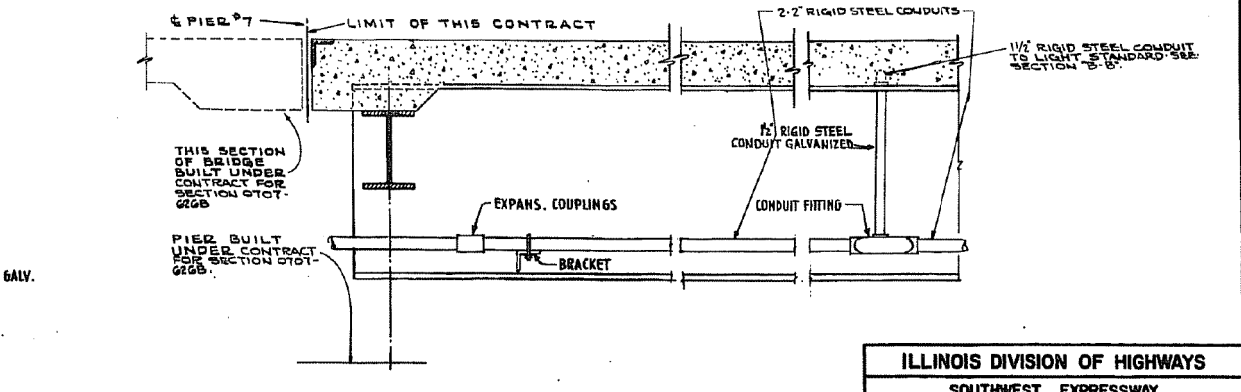
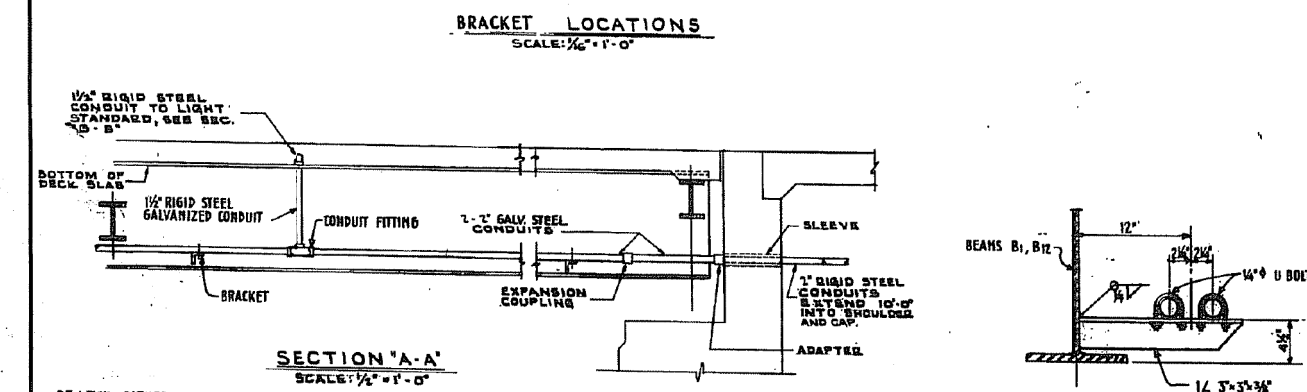
FOR INFORMATION ONLY

| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 373                       | 2013-037B-R | COOK   | 787          | 652                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

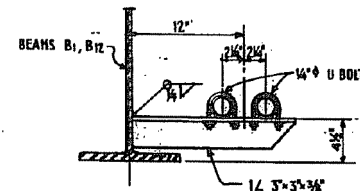
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| BILL OF MATERIAL                                  |          |          |
|---|----------|----------|
| ITEM  | UNIT     | QUANTITY |
| CONDUIT IN TRENCH, 2" DIA. GALVANIZED STEEL       | LIN. FT. | 40       |
| CONDUIT MOUNTED, 2" DIA. GALVANIZED STEEL         | LIN. FT. | 934      |
| CONDUIT IN CONCRETE, 1 1/2" DIA. GALVANIZED STEEL | LIN. FT. | 23       |
| CONDUIT 1 1/2" DIA. GALVANIZED STEEL              | LIN. FT. | 6        |
| TRENCH AND BACKFILL                               | LIN. FT. | 20       |



DE LEW, CATHY & CO. ENGINEERS  
 DESIGNED BY G.R.F.  
 DRAWN BY G.R.F.  
 CHECKED E.H.  
 IN CHARGE E.S. MARTINS  
 APPROVED L.N. MAH



ILLINOIS DIVISION OF HIGHWAYS  
 SOUTHWEST EXPRESSWAY  
 LAWDALE AVE. OVER RAMP E  
 ELECTRICAL DETAILS  
 SCALE: AS NOTED DATE 7-20-63

**benesch**  
 engineers · scientists · planners

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

FILE NAME = 0160487.60W75.X31.exist.elecdet.dgn  
 USER NAME = jsurber  
 PLOT SCALE =  
 PLOT DATE = 6/17/2015

DESIGNED - AJK  
 CHECKED - JLS  
 DRAWN - AJK  
 CHECKED - JLS

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS ELECTRICAL DETAILS  
 STRUCTURE NO. 016-0487  
 SHEET NO. SFX31 OF SFX46 SHEETS

| FOR INFORMATION ONLY      |             |        |                    |           |
|---------------------------|-------------|--------|--------------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
| 373                       | 2013-037B-R | COOK   | 787                | 653       |
|                           |             |        | CONTRACT NO. 60W75 |           |
| ILLINOIS FED. AID PROJECT |             |        |                    |           |

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 6/17/2015

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SHEET 1 OF 52

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS     | SHEET NO. |
|-----------|---------|--------|------------------|-----------|
| IL 171    | **      | COOK   | 263              | 254       |
| ILLINOIS  |         |        | FED. AID PROJECT |           |

\*\* SECTION 0707-626 B (BR)

EXIST DUAL STRUCTURES (016-0486 & 016-0487)  
 BASE LINE STA. 30+72.59 BUILT 1964, 7" CONC. SLAB  
 S.N. 016-0486 12 SPANS W/ RAMP, S.N. 016-0487 11 SPANS  
 WF BEAM & WELDED PLATE GIRDER BRIDGES, 0.-0. DECK VARIES  
 SUPPORTED BY COLUMN CONC PIERS ON SPREAD FOOTINGS  
 SPILL THRU ABUTS W/ STL PILES.

TRAFFIC SHALL BE MAINTAINED UTILIZING STAGE CONSTRUCTION.

PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING  
 STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS  
 AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS.  
 IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY  
 SUCH DIMENSIONS AND DETAILS IN THE FIELD 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 THE SCOPE OF THE WORK. HOWEVER, THE CONTRACTOR  
 WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT  
 THE UNIT PRICE BID FOR THE WORK.

SEE SHEET 2 OF 52 FOR TYPICAL EXIST. DECK CROSS SECTIONS.

REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS  
 OF AASHTO M-31 M-42 OR M-53 GRADE 60.

ANY REINFORCEMENT BARS THAT ARE DAMAGED DURING  
 CONCRETE REMOVAL SHALL BE REPLACED WITH AN APPROVED  
 BAR SPLICER OR ANCHORAGE SYSTEM. COST INCIDENTAL TO  
 "CONCRETE REMOVAL".

ALL NEW STRUCTURAL STEEL SHALL CONFORM TO AASHTO  
 CLASSIFICATION M-270 GR. 36

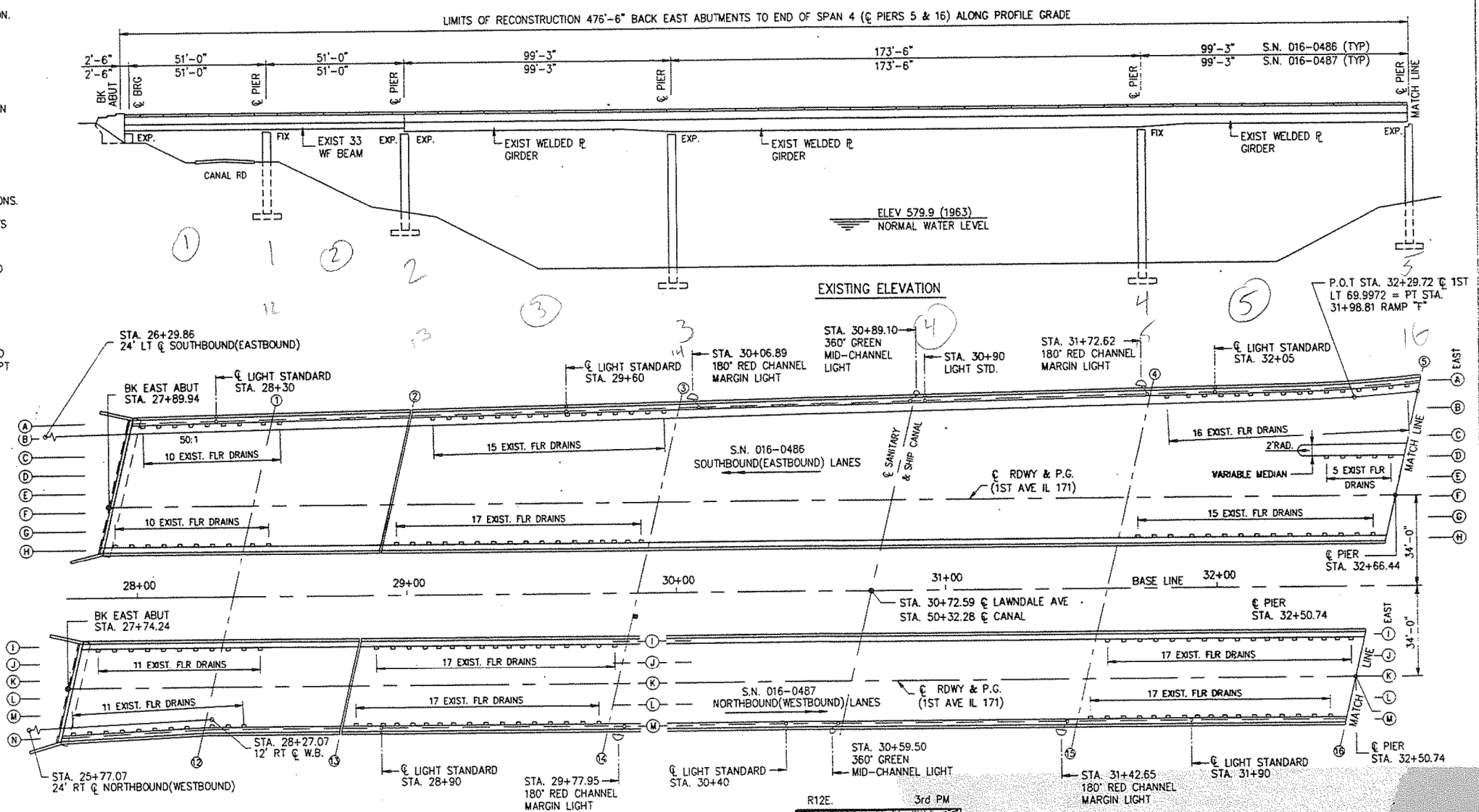
THE ZINC-SILICATE AND VINYL PAINT SYSTEM SHALL BE USED  
 FOR SHOP AND FIELD PAINTING OF STRUCTURAL STEEL EXCEPT  
 WHERE OTHERWISE NOTED. THE COLOR OF THE VINYL FINISH  
 COAT SHALL BE MUNSELL NO. 10YR 7/1 (LIGHT GREY).

PRIOR TO POURING THE NEW CONCRETE FOR THE DECK,  
 ALL LOOSE RUST, LOOSE MILL SCALE, AND ALL OTHER  
 LOOSE DETRIMENTAL FOREIGN MATERIAL SHALL BE  
 REMOVED FROM THE EMBEDDED PORTION OF FLANGES OF  
 GIRDERS. THE REMOVAL SHALL BE ACCOMPLISHED  
 IN ACCORDANCE WITH THE REQUIREMENTS OF THE SSPC  
 SURFACE PREPARATION SPECIFICATIONS SP-3 FOR POWER  
 TOOL CLEANING OR SP-2 FOR HAND TOOL CLEANING.  
 COST SHALL BE INCIDENTAL TO CONCRETE REMOVAL.

BRIDGE SEAT SEALER SHALL BE APPLIED TO THE SEAT  
 AREA OF THE ABUTMENTS, AND PIERS 2,5,7,13,16,18  
 AND WEST ABUTMENT RAMP F.

THE STRUCTURAL STEEL BEARING PLATES OF THE  
 ELASTOMERIC BEARING ASSEMBLY SHALL CONFORM  
 TO THE REQUIREMENTS OF AASHTO M270 GRADE 50.

BRIDGE DECK MICROSILICA CONCRETE OVERLAY (SPECIAL)  
 AND CONCRETE BRIDGE DECK SURFACE REMOVAL (METHOD  
 3) SHALL BE PERFORMED IN ACCORDANCE WITH "SPECIAL  
 PROVISION FOR BRIDGE DECK OVERLAY (EFFECTIVE OCTOBER  
 1, 1983; REVISED OCTOBER 2, 1991)", EXCEPT AS MODIFIED  
 BY "SPECIAL PROVISION FOR BRIDGE DECK OVERLAY  
 (SPECIAL)".



**EXISTING PLAN**

GRAPHIC SCALE: 0, 20, 40'

**PROPOSED RECONSTRUCTION LOCATION SKETCH**

**REGISTERED STRUCTURAL ENGINEER**  
 DIANE L. SIEGHELD  
 STATE OF ILLINOIS  
 4700  
 EXPIRES 11-30-94

**ILLINOIS DEPARTMENT OF TRANSPORTATION**  
**GENERAL PLAN & ELEVATION**  
**(EAST SPANS)**  
 BRIDGE REPAIRS  
 1ST AVE (IL 171) S.N. 016-0486 & 016-0487  
 OVER CHICAGO SANITARY & SHIP CANAL  
 F.A.U. RT. 1505 SECTION 0707-626 B (BR)  
 COOK CO. IL  
 STA. 30+72.59

|                                      |                                   |
|--------------------------------------|-----------------------------------|
| 11/20/93 05:42:54 P.M. 486(B)TLE.DWG | 1993                              |
| EXAMINED                             | ENGINEER OF STRUCTURAL SERVICES   |
| PASSED                               | ENGINEER OF BRIDGE AND STRUCTURES |
| APPROVED                             | DIRECTOR OF HIGHWAYS              |

**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 = jsurber   |
| PLOT SCALE = | PLOT DATE = 6/17/2015 |

|                |          |
|----------------|----------|
| DESIGNED - AJK | REVISD - |
| CHECKED - JLS  | REVISD - |
| DRAWN - AJK    | REVISD - |
| CHECKED - JLS  | REVISD - |

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

**EXISTING PLANS (1993) - GPE**  
**STRUCTURE NO. 016-0487**  
 SHEET NO. SF32 OF SF46 SHEETS

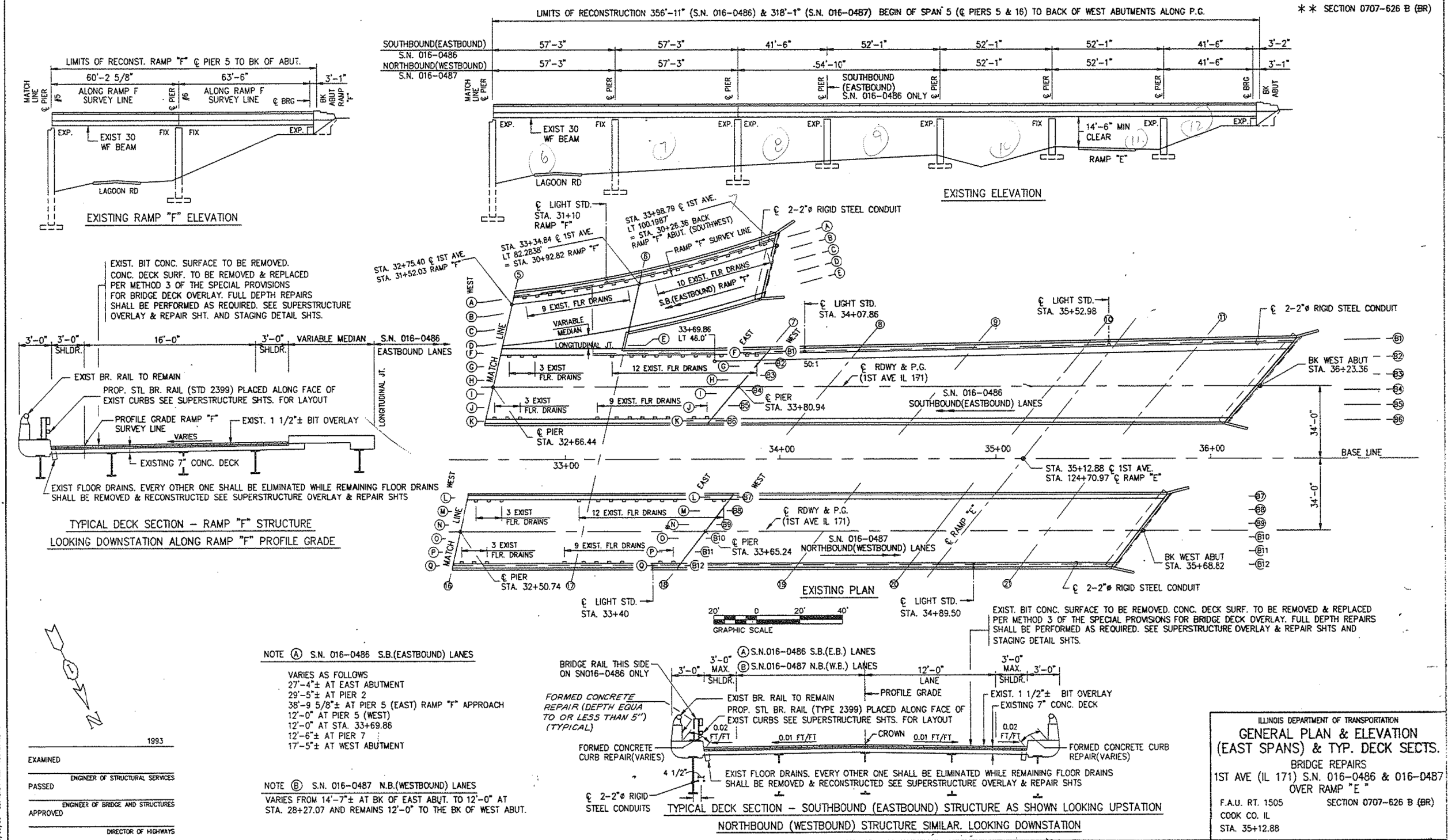
**FOR INFORMATION ONLY**

| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-------------|--------|--------------|-----------|
| 373                       | 2013-037B-R | COOK   | 787          | 654       |
| CONTRACT NO. 60W75        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

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| ROUTE NO. | SECTION | COUNTY   | TOTAL SHEETS     | SHEET NO. |
|-----------|---------|----------|------------------|-----------|
| IL 171    | **      | COOK     | 205              | 155       |
|           |         | ILLINOIS | FED. AID PROJECT |           |

\*\* SECTION 0707-626 B (BR)



|             |                     |                |           |
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|             |                     | CHECKED - JLS  | REVISED - |
|             |                     | DRAWN - AJK    | REVISED - |
|             |                     | CHECKED - JLS  | REVISED - |

| F.A.P. RTE. | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|-------------|-------------|--------|--------------|--------------------|
| 373         | 2013-037B-R | COOK   | 787          | 655                |
|             |             |        |              | CONTRACT NO. 60W75 |

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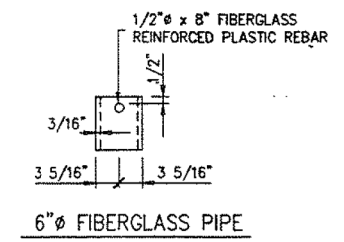
| ROUTE NO. | SECTION | COUNTY   | TOTAL SHEETS     | SHEET NO. |
|-----------|---------|----------|------------------|-----------|
| IL 171    | **      | COOK     | 383              | 256       |
|           |         | ILLINOIS | FED. AID PROJECT |           |

\*\* SECTION 0707-626 B (BR)

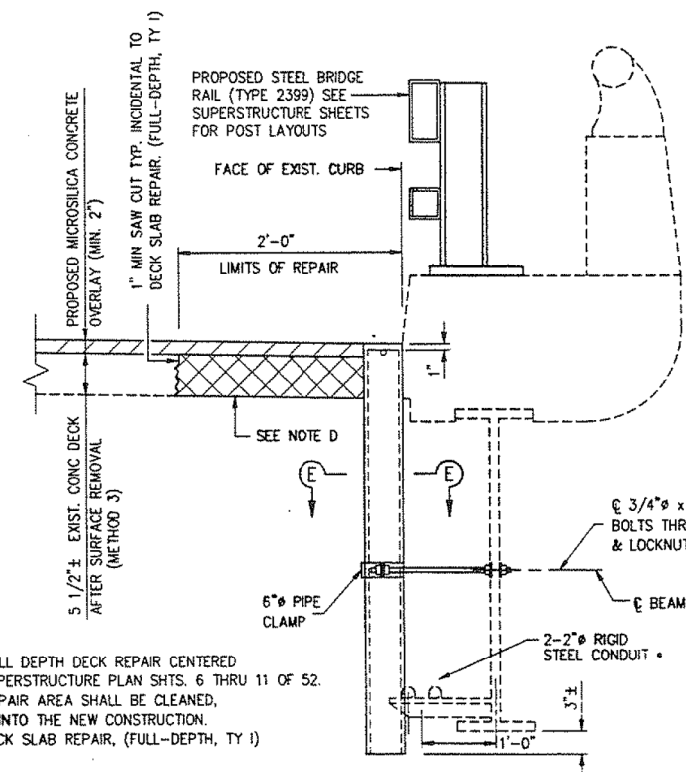
TOTAL BILL OF MATERIALS

| ITEM  | UNIT   | TOTAL |
|---|--------|-------|
| STEEL BRIDGE RAIL                                       | LIN FT | 568   |
| REINFORCEMENT BARS EPOXY COATED                         | POUNDS | 14600 |
| DECK SLAB REPAIR (FULL DEPTH, TYPE I)                   | SQ YD  | 156   |
| BRIDGE DECK MICROSILICA CONCRETE OVERLAY (SPECIAL)      | SQ YD  | 6688  |
| JACK AND REMOVE EXIST BEARINGS                          | EACH   | 122   |
| CONCRETE REMOVAL  | CU YD  | 90    |
| CLASS X CONCRETE SUPERSTRUCTURE                         | CU YD  | 93    |
| FURNISHING & ERECTING STRUCTURAL STEEL                  | POUNDS | 29160 |
| BITUMINOUS CONCRETE SURFACE REMOVAL (ASBESTOS)          | SQ YD  | 6998  |
| BAR SPLICERS  | EACH   | 184   |
| EPOXY CRACK SEALING                                     | LIN FT | 86    |
| FORMED CONCRETE REPAIR (DEPTH EQUAL TO OR LESS THAN 5") | SQ FT  | 2977  |
| CONCRETE BRIDGE DECK SURFACE REMOVAL (METHOD 3)         | SQ YD  | 6688  |
| ELASTOMERIC BEARING ASSEMBLY, TYPE I                    | EACH   | 75    |
| ELASTOMERIC BEARING ASSEMBLY, TYPE II                   | EACH   | 37    |
| FLOOR DRAINS  | EACH   | 99    |
| BRIDGE SEAT SEALER                                      | SQ FT  | 1860  |
| NEOPRENE EXPANSION JOINT 2"                             | LIN FT | 237   |
| NEOPRENE EXPANSION JOINT 2 1/2"                         | LIN FT | 46    |
| NEOPRENE EXPANSION JOINT 4"                             | LIN FT | 142   |
| PREFORMED JOINT SEAL 1 3/4"                             | LIN FT | 32    |
| PREFORMED JOINT SEAL 2 1/2"                             | LIN FT | 95    |
| FORMED CONCRETE CURB REPAIR (VARIES)                    | LIN FT | 611   |
| FORMED CONCRETE REPAIR (DEPTH GREATER THAN 5")          | SQ FT  | 6     |

\*\*\* 311 SQ FT SUPER  
2660 SQ FT SUB

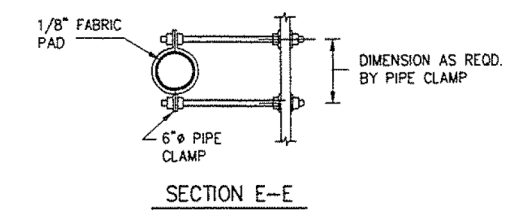
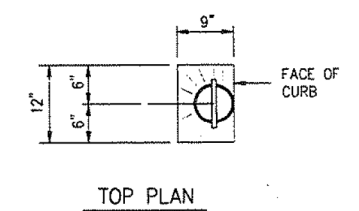


NOTE: FIBERGLASS PIPE SHALL CONFORM TO ASTM: D2996, WITH SHORT-TIME RUPTURE STRENGTH HOOP TENSILE STRESS OF 30,000 PSI MINIMUM. THE SURFACE OF THE FIBERGLASS PIPE SHALL BE FREE OF BOND INHIBITING AGENTS.



NOTE D  
DOUBLE HATCH AREA INDICATES FULL DEPTH DECK REPAIR CENTERED AT DECK DRAIN LOCATIONS SEE SUPERSTRUCTURE PLAN SHTS. 6 THRU 11 OF 52. REINFORCEMENT EXTENDING INTO REPAIR AREA SHALL BE CLEANED, STRAIGHTENED AND INCORPORATED INTO THE NEW CONSTRUCTION. COST SHALL BE INCIDENTAL TO "DECK SLAB REPAIR, (FULL-DEPTH, TY I)" SEE SPECIAL PROVISIONS

\* THE CONTRACTOR SHALL RELOCATE ACTIVE CONDUITS AND REMOVE PORTIONS OF INACTIVE CONDUITS THAT ARE IN CONFLICT WITH THE NEW FLOOR DRAINS. SEE SHEETS 1 & 2 OF 52 FOR THE PLAN LOCATIONS OF EXISTING CONDUITS. THE ENGINEER SHALL PROVIDE INFORMATION ON WHICH CONDUITS ARE ACTIVE AND WHICH ARE INACTIVE. COST FOR THIS WORK SHALL BE INCIDENTAL TO FLOOR DRAINS (EACH).



12/03/93 03:01:13 P.M. 67D.TLS.DWG

1993  
EXAMINED  
PASSED  
APPROVED  
DIRECTOR OF HIGHWAYS

ILLINOIS DEPARTMENT OF TRANSPORTATION  
BILL OF MATERIAL & MISC. DETAILS  
BRIDGE REPAIRS  
1ST AVE (IL 171) S.N. 016-0486 & 016-0487  
OVER CHICAGO SANITARY & SHIP CANAL  
AND RAMP "E"  
SECTION 0707-626 B (BR)  
F.A.U. RT. 1505  
COOK CO. IL  
STA. 30+72.59  
STA. 35+12.88

|  |                     |                |           |
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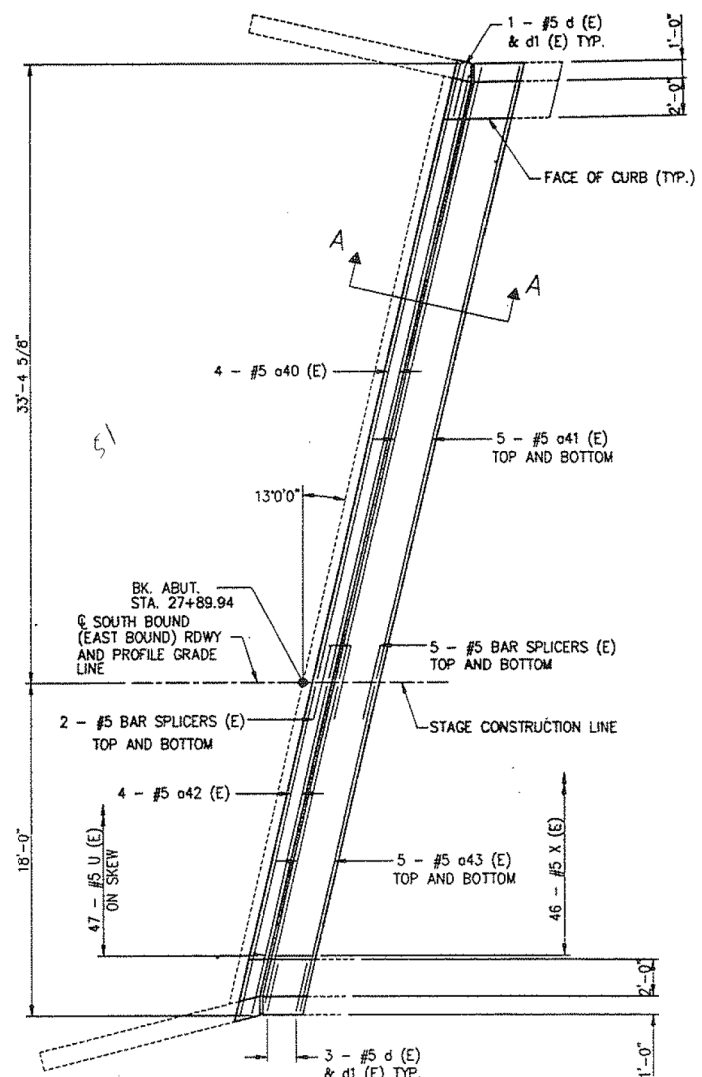
FOR INFORMATION ONLY

| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 373                       | 2013-037B-R | COOK   | 787          | 656                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

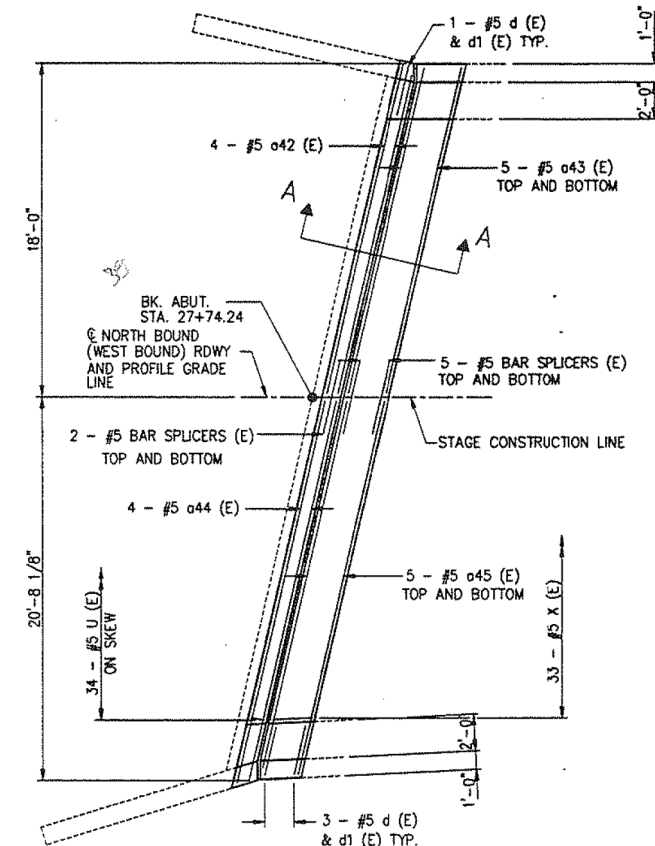
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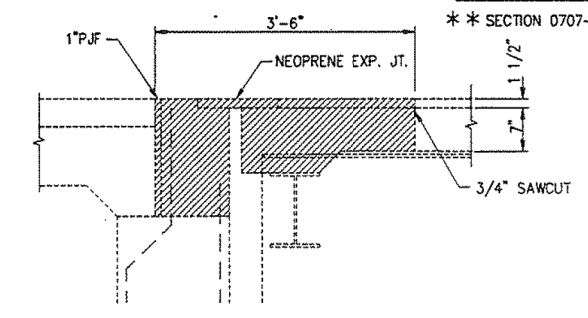
| ROUTE NO. | SECTION | COUNTY   | TOTAL SHEETS     | SHEET NO. |
|-----------|---------|----------|------------------|-----------|
| IL 171    | **      | COOK     | 303              | 265       |
|           |         | ILLINOIS | FED. AID PROJECT |           |



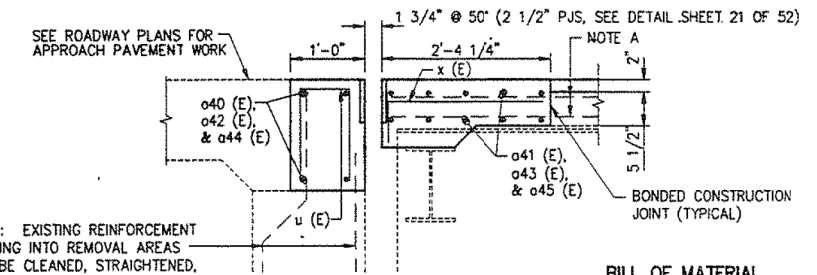
EAST ABUTMENT SOUTH BOUND (EAST BOUND) - PLAN VIEW



EAST ABUTMENT NORTH BOUND (WEST BOUND) - PLAN VIEW



SECTION A-A EXISTING  
HATCHED AREAS TO BE REMOVED



SECTION A-A PROPOSED

NOTE A: EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREAS SHALL BE CLEANED, STRAIGHTENED, AND INCORPORATED INTO THE NEW CONSTRUCTION.

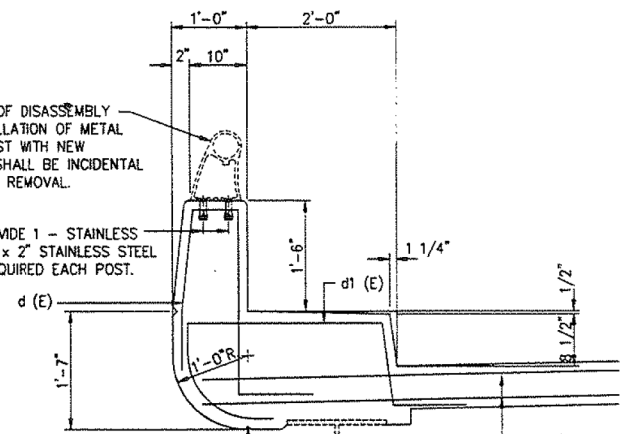
**BILL OF MATERIAL**

| BAR                             | NO. | SIZE | LENGTH    | SHAPE |
|---------------------------------|-----|------|-----------|-------|
| o40 (E)                         | 4   | #5   | 34'-0"    |       |
| o41 (E)                         | 10  | #5   | 33'-9"    |       |
| o42 (E)                         | 8   | #5   | 18'-2"    |       |
| o43 (E)                         | 20  | #5   | 17'-11"   |       |
| o44 (E)                         | 4   | #5   | 20'-11"   |       |
| o45 (E)                         | 10  | #5   | 20'-7"    |       |
| d (E)                           | 16  | #5   | 6'-0"     | U     |
| d1 (E)                          | 16  | #5   | 6'-8"     | U     |
| u (E)                           | 81  | #5   | 2'-9"     | U     |
| x (E)                           | 79  | #5   | 2'-7"     | U     |
| REINFORCEMENT BARS EPOXY COATED |     |      | LBS.      | 1980  |
| CONCRETE REMOVAL                |     |      | C.U. YDS. | 13.3  |
| CLASS X CONCRETE SUPERSTRUCTURE |     |      | C.U. YDS. | 14.0  |
| STRUCTURAL STEEL                |     |      | POUND     | 3750  |
| BAR SPLICERS                    |     |      | EACH      | 28    |
| PREFORMED JOINT SEAL 2 1/2"     |     |      | LIN. FT.  | 95    |

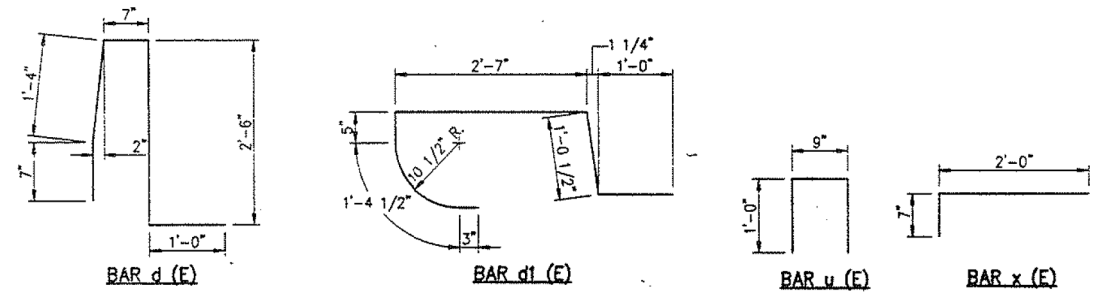
REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

NOTE: COST OF DISASSEMBLY AND REINSTALLATION OF METAL RAIL AND POST WITH NEW ANCHORAGE SHALL BE INCIDENTAL TO CONCRETE REMOVAL.

5/8" THREADED INSERTS PROVIDE 1 - STAINLESS STEEL WASHER AND 1 - 5/8" x 2" STAINLESS STEEL BOLT WITH EACH INSERT. 4 REQUIRED EACH POST.



PROPOSED  
TYPICAL SECTION AT CURB



|          |                                   |
|----------|-----------------------------------|
| EXAMINED | 1993                              |
| PASSED   | ENGINEER OF STRUCTURAL SERVICES   |
| APPROVED | ENGINEER OF BRIDGE AND STRUCTURES |
|          | DIRECTOR OF HIGHWAYS              |

10/20/93 05:03:17 P.M. 488-763.DWG 0486 & 0487 PREFORMED JOINT SEAL EAST ABUTMENTS

**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 = jsurber | DESIGNED - AJK | REVISED - |
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|                                      |                     | DRAWN - AJK    | REVISED - |
|                                      |                     | CHECKED - JLS  | REVISED - |
|                                      |                     |                |           |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (1993) - EXPANSION JOINT EAST ABUTMENT  
STRUCTURE NO. 016-0487

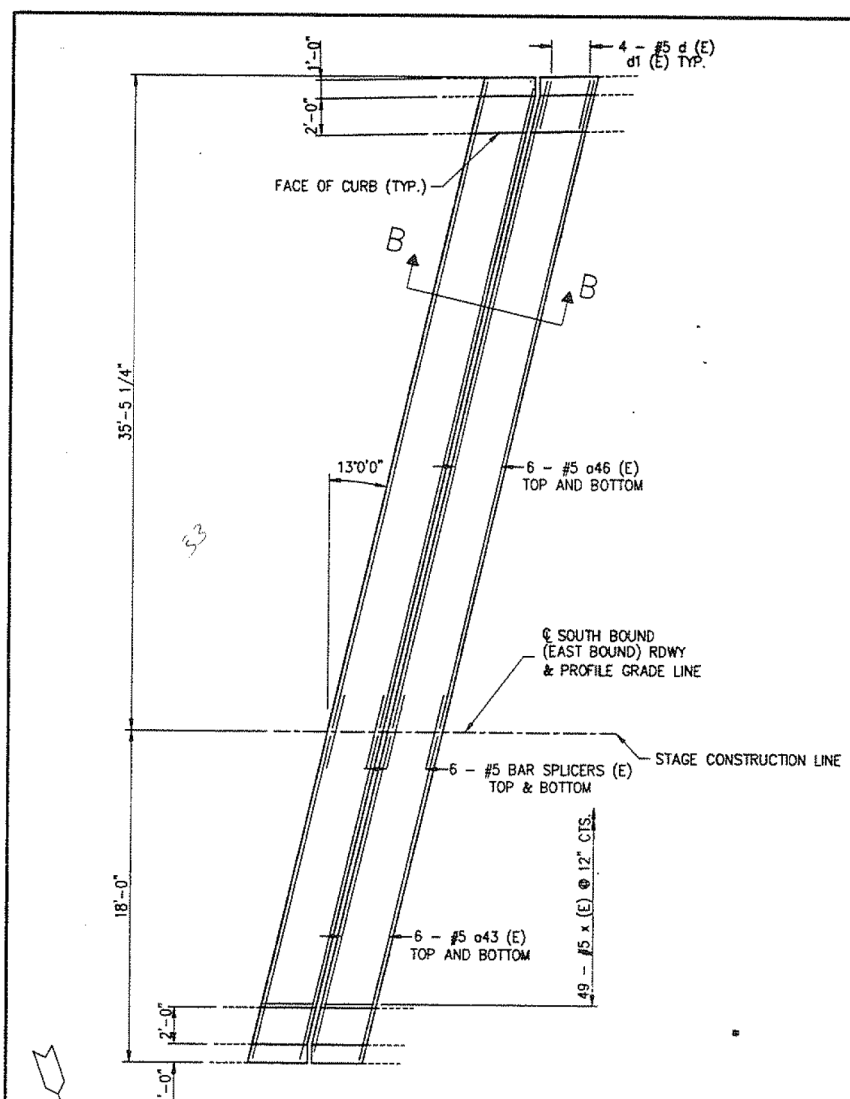
SHEET NO. SFX35 OF SFX46 SHEETS

|                           |             |        |                    |           |
|---------------------------|-------------|--------|--------------------|-----------|
| FOR INFORMATION ONLY      |             |        |                    |           |
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
| 373                       | 2013-037B-R | COOK   | 787                | 657       |
|                           |             |        | CONTRACT NO. 60W75 |           |
| ILLINOIS FED. AID PROJECT |             |        |                    |           |

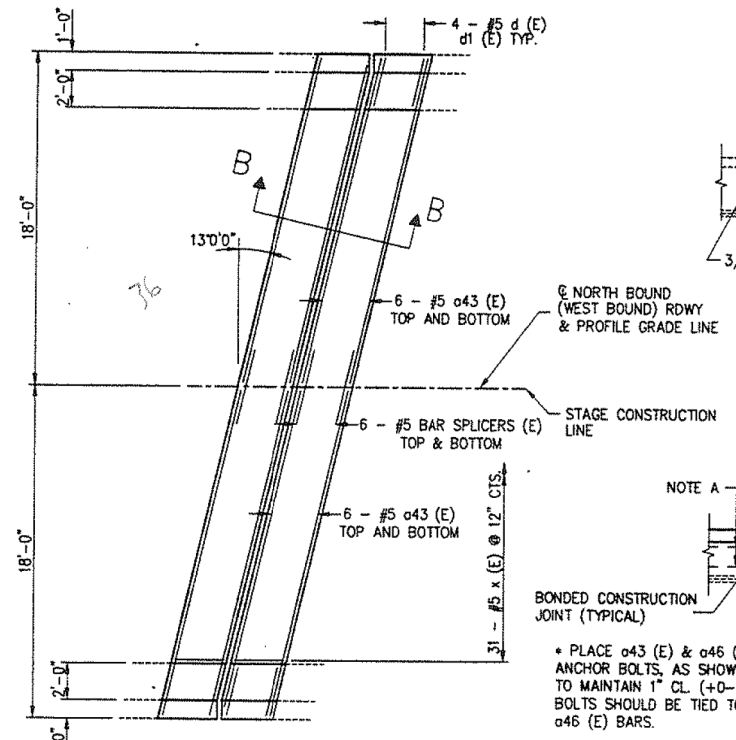
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| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS     | SHEET NO. |
|-----------|---------|--------|------------------|-----------|
| 171       | **      | COOK   | 583              | 266       |
| ILLINOIS  |         |        | FED. AID PROJECT |           |

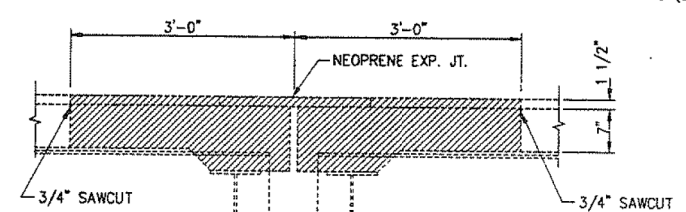
\*\* SECTION 0707-B (BR)



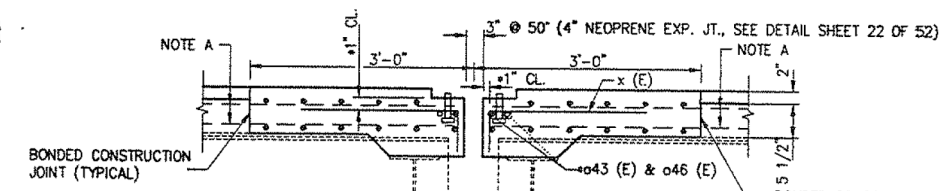
**PIER 2 SOUTH BOUND (EAST BOUND) - PLAN VIEW**  
NOTE: REINFORCEMENT IS SAME BOTH SIDES OF JOINT



**PIER 13 NORTH BOUND (WEST BOUND) - PLAN VIEW**  
NOTE: REINFORCEMENT IS SAME BOTH SIDES OF JOINT



**SECTION B-B EXISTING**  
HATCHED AREAS TO BE REMOVED



**SECTION B-B PROPOSED**  
NOTE: REINFORCEMENT IS SAME BOTH SIDES OF JOINT

\* PLACE o43 (E) & o46 (E) BARS IN BACK OF ANCHOR BOLTS, AS SHOWN, IF REQUIRED TO MAINTAIN 1" CL. (+0-1/8"). ANCHOR BOLTS SHOULD BE TIED TO o43 (E) AND o46 (E) BARS.

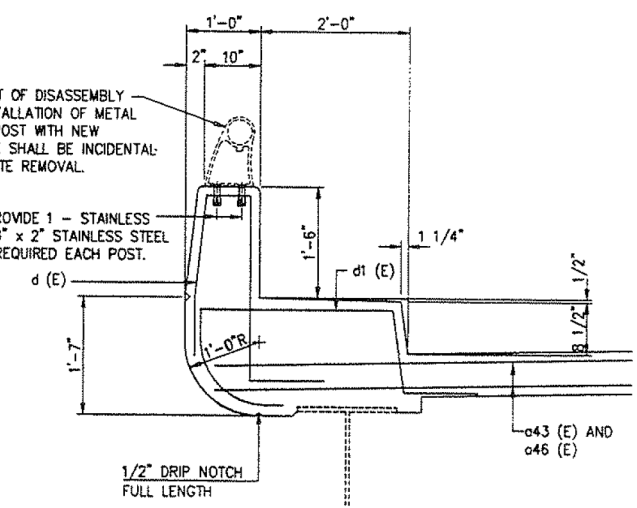
**BILL OF MATERIAL**

| BAR                              | NO. | SIZE | LENGTH  | SHAPE     |      |
|----------------------------------|-----|------|---------|-----------|------|
| o43 (E)                          | 72  | #5   | 17'-11" |           |      |
| o46 (E)                          | 24  | #5   | 35'-10" |           |      |
| d (E)                            | 32  | #5   | 6'-0"   | U         |      |
| d1 (E)                           | 32  | #5   | 6'-8"   | U         |      |
| x (E)                            | 160 | #5   | 2'-7"   |           |      |
| REINFORCEMENT BARS EPOXY COATED. |     |      |         | LBS.      | 3100 |
| CONCRETE REMOVAL                 |     |      |         | C.U. YDS. | 17.5 |
| CLASS X CONCRETE, SUPERSTRUCTURE |     |      |         | C.U. YDS. | 18.5 |
| BAR SPlicERS                     |     |      |         | EACH      | 48   |
| NEOPRENE EXPANSION JOINT 4"      |     |      |         | LIN. FT.  | 94   |

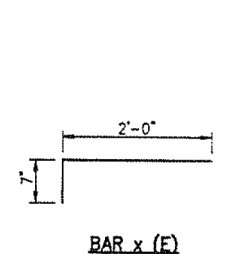
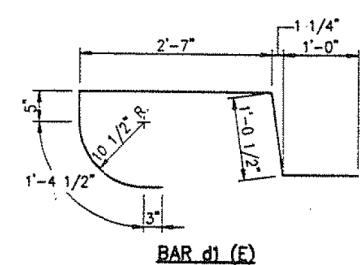
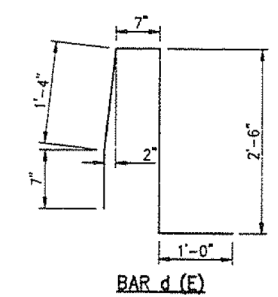
REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

NOTE: COST OF DISASSEMBLY AND REINSTALLATION OF METAL RAIL AND POST WITH NEW ANCHORAGE SHALL BE INCIDENTAL TO CONCRETE REMOVAL.

5/8" THREADED INSERTS PROVIDE 1 - STAINLESS STEEL WASHER AND 1 - 5/8" x 2" STAINLESS STEEL BOLT WITH EACH INSERT. 4 REQUIRED EACH POST.



**PROPOSED TYPICAL SECTION AT CURB**



10/29/93 02:38:44 P.M. HEP:RJDJMG  
0486 & 0487 PREFORMED JOINT SEAL EAST ABUTMENTS

1993  
EXAMINED \_\_\_\_\_  
ENGINEER OF STRUCTURAL SERVICES  
PASSED \_\_\_\_\_  
ENGINEER OF BRIDGE AND STRUCTURES  
APPROVED \_\_\_\_\_  
DIRECTOR OF HIGHWAYS

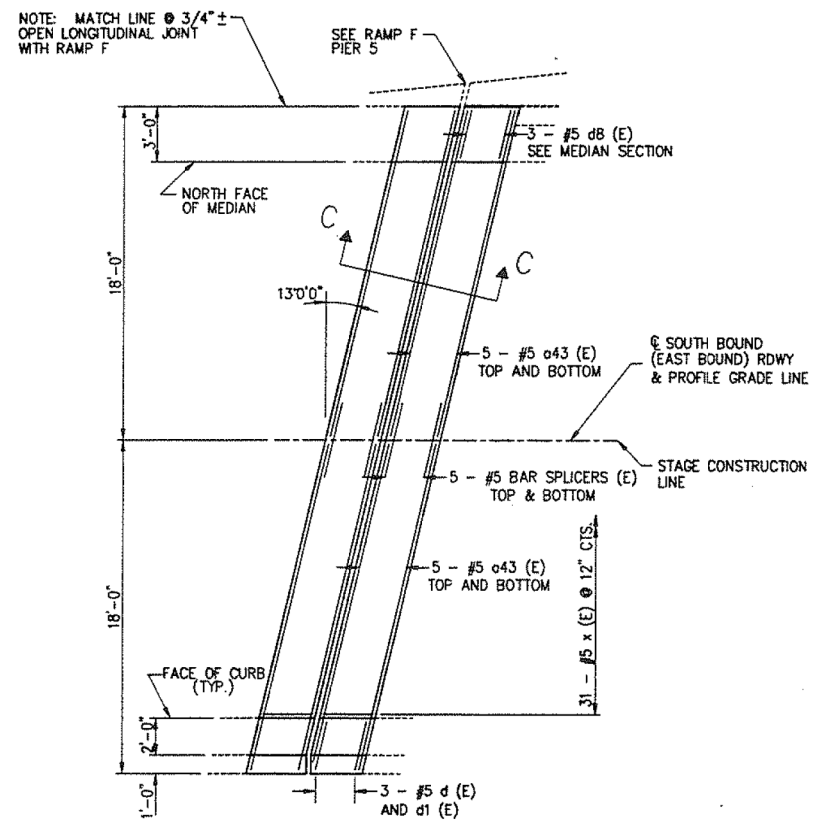
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**NEOPRENE EXPANSION JOINT**  
**PIER 2 AND PIER 13**  
BRIDGE REPAIRS  
1ST AVE (IL 171) S.N. 016-0486 & 016-0487  
OVER SANITARY & SHIP CANAL  
AND RAMP 'E'  
SECTION 0707-626B (BR)  
F.A.U. RT. 1505  
COOK CO. IL  
STA. 304+72.59  
STA. 35+12.88

|                |          |
|----------------|----------|
| DESIGNED - AJK | REVISD - |
| CHECKED - JLS  | REVISD - |
| DRAWN - AJK    | REVISD - |
| CHECKED - JLS  | REVISD - |

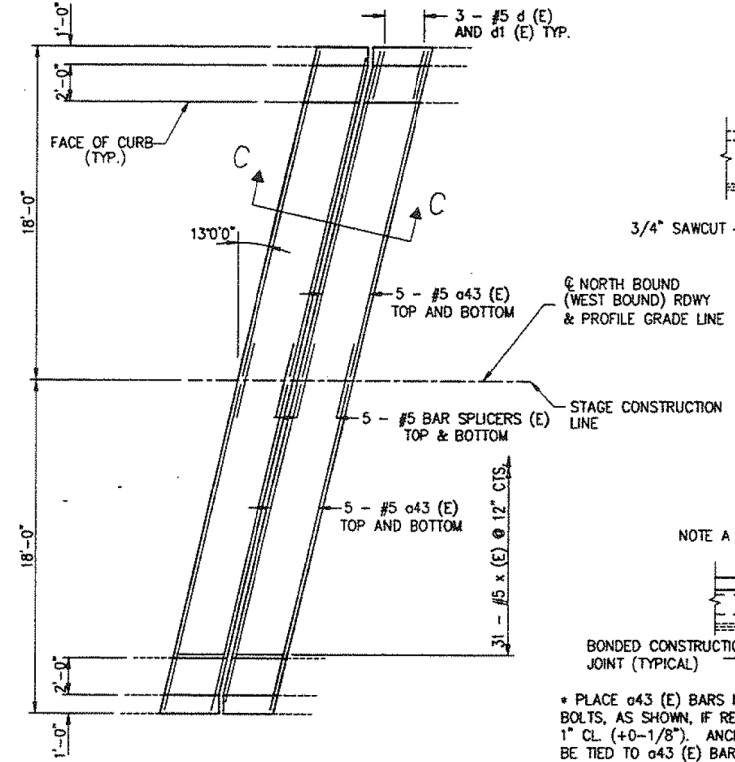
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 373                       | 2013-037B-R | COOK   | 787          | 658                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO.       |
|-----------|---------|--------|--------------|-----------------|
| IL 171    | **      | COOK   | 383          | 267             |
|           |         |        | ILLINOIS     | FED. AID PROJEC |

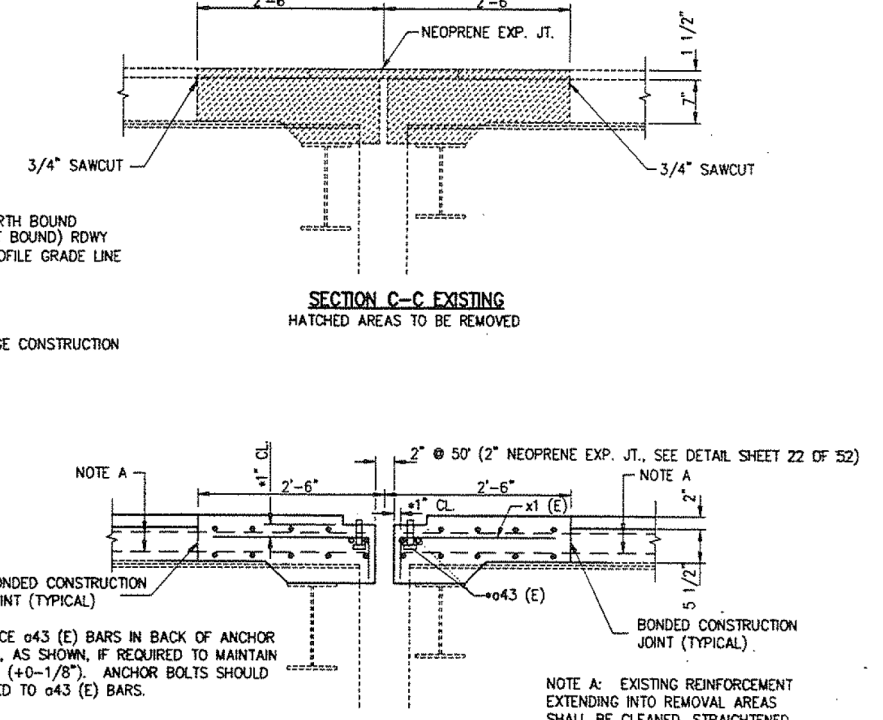
\*\* SECTION 0707-626B (BR)



**PIER 5 SOUTH BOUND (EAST BOUND) - PLAN VIEW**  
NOTE: REINFORCEMENT IS SAME BOTH SIDES OF JOINT



**PIER 16 NORTH BOUND (WEST BOUND) - PLAN VIEW**  
NOTE: REINFORCEMENT IS SAME BOTH SIDES OF JOINT

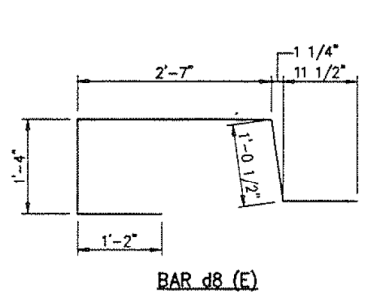


\* PLACE o43 (E) BARS IN BACK OF ANCHOR BOLTS, AS SHOWN, IF REQUIRED TO MAINTAIN 1" CL (+0-1/8"). ANCHOR BOLTS SHOULD BE TIED TO o43 (E) BARS.

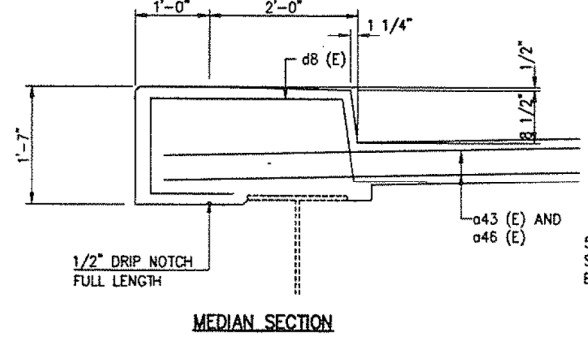
NOTE A: EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREAS SHALL BE CLEANED, STRAIGHTENED, AND INCORPORATED INTO THE NEW CONSTRUCTION.

11/30/03 07:04:14 P.M. NE:SP16.DWG  
0486 & 0487 NEOPRENE EXPANSION JOINTS PIERS 5 AND 16

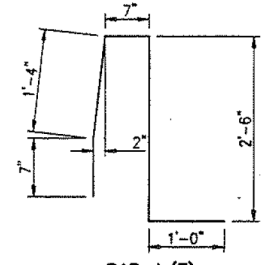
1993  
EXAMINED  
ENGINEER OF STRUCTURAL SERVICES  
PASSED  
ENGINEER OF BRIDGE AND STRUCTURES  
APPROVED  
DIRECTOR OF HIGHWAYS



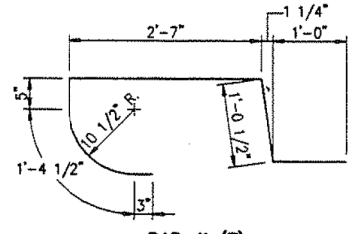
BAR dB (E)



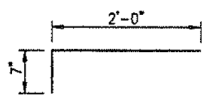
MEDIAN SECTION



BAR d (E)



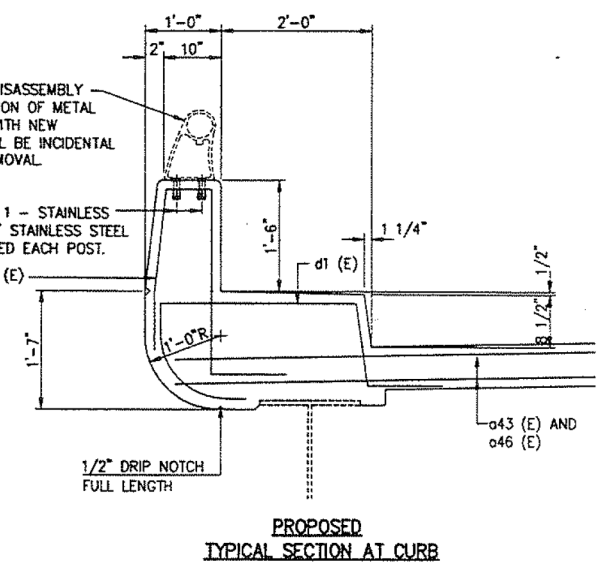
BAR d1 (E)



BAR x (E)

NOTE: COST OF DISASSEMBLY AND REINSTALLATION OF METAL RAIL AND POST WITH NEW ANCHORAGE SHALL BE INCIDENTAL TO CONCRETE REMOVAL.

5/8" THREADED INSERTS PROVIDE 1 - STAINLESS STEEL WASHER AND 1 - 5/8" x 2" STAINLESS STEEL BOLT WITH EACH INSERT. 4 REQUIRED EACH POST.



PROPOSED TYPICAL SECTION AT CURB

**BILL OF MATERIAL**

| BAR                              | NO. | SIZE      | LENGTH  | SHAPE |
|----------------------------------|-----|-----------|---------|-------|
| o43 (E)                          | 80  | #5        | 17'-11" |       |
| d (E)                            | 18  | #5        | 6'-0"   | U     |
| d1 (E)                           | 18  | #5        | 6'-8"   | S     |
| dB (E)                           | 6   | #5        | 7'-1"   |       |
| x (E)                            | 124 | #5        | 2'-7"   |       |
| REINFORCEMENT BARS EPOXY COATED  |     | LBS.      |         | 2110  |
| CONCRETE REMOVAL                 |     | C.U. YDS. |         | 12.6  |
| CLASS X CONCRETE, SUPERSTRUCTURE |     | C.U. YDS. |         | 13.1  |
| BAR SPLICERS                     |     | EACH      |         | 40    |
| NEOPRENE EXPANSION JOINT 2"      |     | LIN. FT.  |         | 76    |

REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

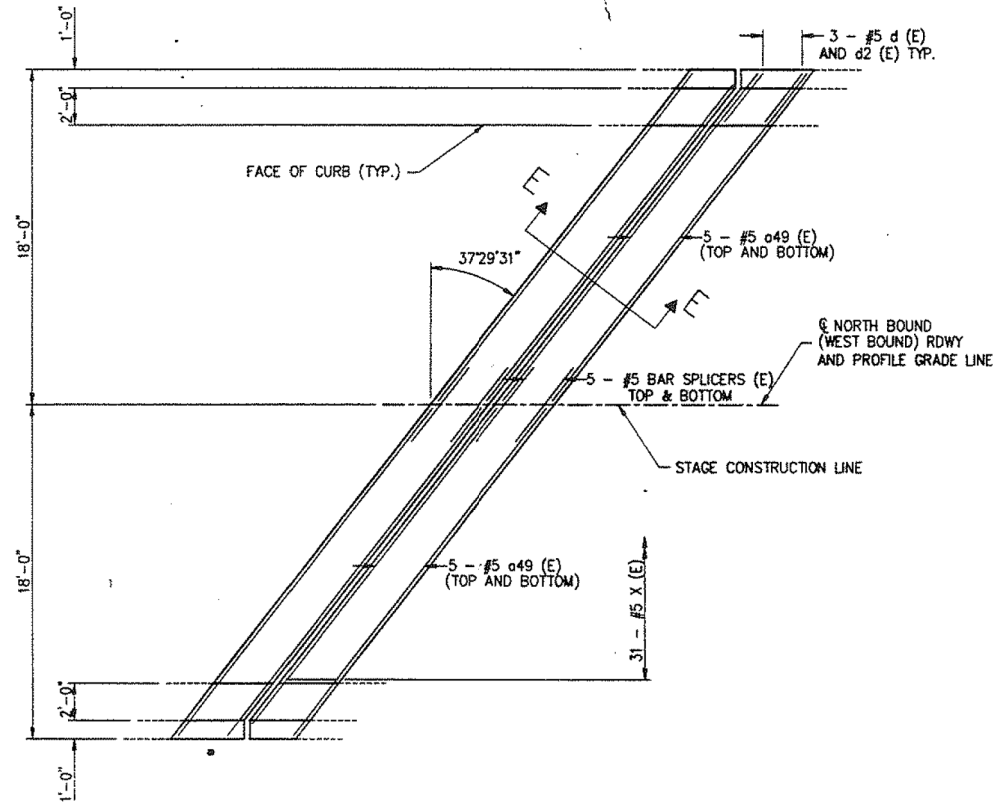
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**NEOPRENE EXPANSION JOINT**  
**PIER 5 AND PIER 16**  
BRIDGE REPAIRS  
1ST AVE (IL 171) S.N. 016-0486 & 016-0487  
OVER SANITARY & SHIP CANAL  
AND RAMP "E"  
F.A.U. RT. 1505  
COOK CO. IL  
STA. 30+72.59  
STA. 35+12.88  
SECTION 0707-626B (BR)

|                       |                |           |
|-----------------------|----------------|-----------|
| USER NAME = jsurber   | DESIGNED - AJK | REVISED - |
| PLOT SCALE =          | CHECKED - JLS  | REVISED - |
| PLOT DATE = 6/17/2015 | DRAWN - AJK    | REVISED - |
|                       | CHECKED - JLS  | REVISED - |

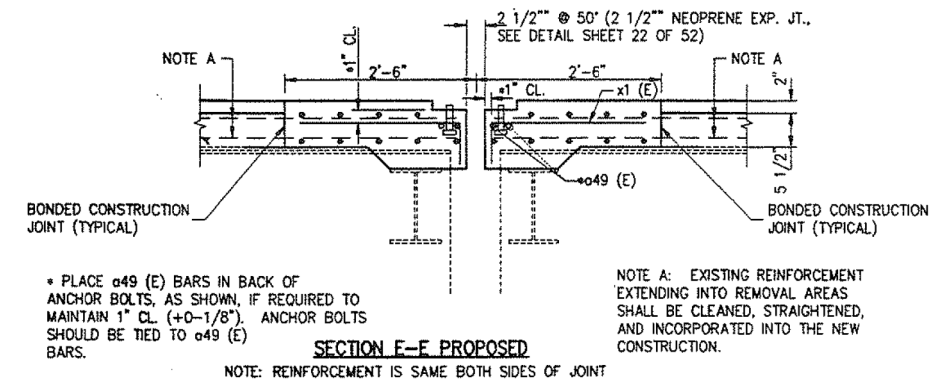
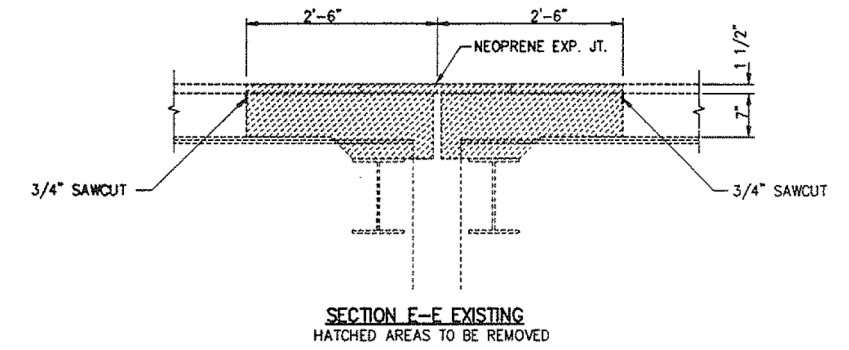
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 373                       | 2013-037B-R | COOK   | 787          | 659                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

| ROUTE NO. | SECTION | COUNTY   | TOTAL SHEETS     | SHEET NO. |
|-----------|---------|----------|------------------|-----------|
| IL 171    | **      | COOK     | 263              | 269       |
|           |         | ILLINOIS | FED. AID PROJECT |           |

\*\* SECTION 0707-626B (BR)



**PIER 18 NORTH BOUND (WEST BOUND: S.N. 016-0487) - PLAN VIEW**  
NOTE: REINFORCEMENT IS SAME BOTH SIDES OF JOINT



\* PLACE #49 (E) BARS IN BACK OF ANCHOR BOLTS, AS SHOWN, IF REQUIRED TO MAINTAIN 1" CL. (+0-1/8"). ANCHOR BOLTS SHOULD BE TIED TO #49 (E) BARS.

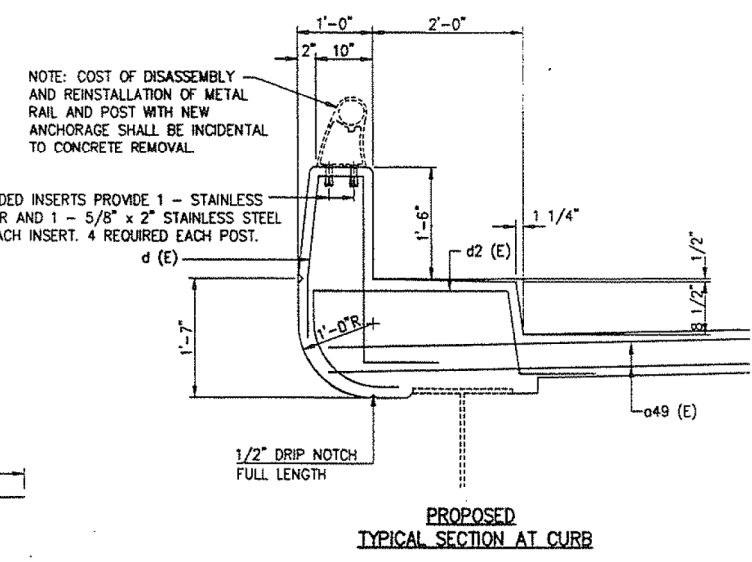
NOTE A: EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREAS SHALL BE CLEANED, STRAIGHTENED, AND INCORPORATED INTO THE NEW CONSTRUCTION.

NOTE: REINFORCEMENT IS SAME BOTH SIDES OF JOINT

**BILL OF MATERIAL**

| BAR                              | NO. | SIZE      | LENGTH | SHAPE |
|----------------------------------|-----|-----------|--------|-------|
| #49 (E)                          | 40  | #5        | 22'-0" | —     |
| d (E)                            | 12  | #5        | 6'-0"  | U     |
| d2 (E)                           | 12  | #5        | 7'-7"  | U     |
| x1 (E)                           | 62  | #5        | 3'-6"  | —     |
| REINFORCEMENT BARS EPOXY COATED  |     | LBS.      | 1310   |       |
| CONCRETE REMOVAL                 |     | C.U. YDS. | 8.0    |       |
| CLASS X CONCRETE, SUPERSTRUCTURE |     | C.U. YDS. | 8.3    |       |
| BAR SPLICERS                     |     | EACH      | 20     |       |
| NEOPRENE EXPANSION JOINT 2 1/2"  |     | LIN. FT.  | 46     |       |

REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.



NOTE: COST OF DISASSEMBLY AND REINSTALLATION OF METAL RAIL AND POST WITH NEW ANCHORAGE SHALL BE INCIDENTAL TO CONCRETE REMOVAL.

5/8" THREADED INSERTS PROVIDE 1 - STAINLESS STEEL WASHER AND 1 - 5/8" x 2" STAINLESS STEEL BOLT WITH EACH INSERT. 4 REQUIRED EACH POST.

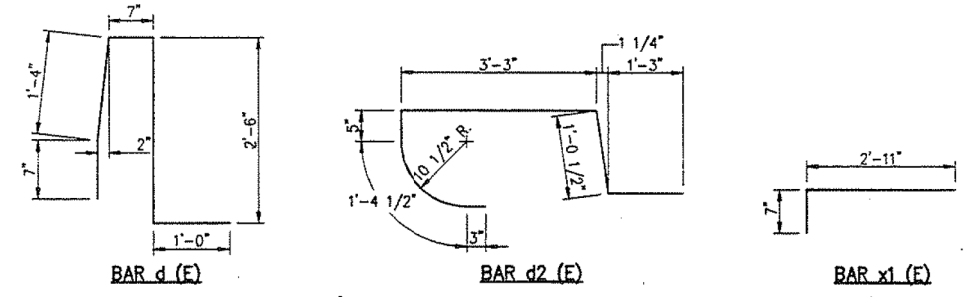
10/29/93 03:05:39 P.M. REVISIONS:  
0486 & 0487 NEOPRENE EXPANSION JOINT - PIER 18

1993

EXAMINED \_\_\_\_\_  
ENGINEER OF STRUCTURAL SERVICES

PASSED \_\_\_\_\_  
ENGINEER OF BRIDGE AND STRUCTURES

APPROVED \_\_\_\_\_  
DIRECTOR OF HIGHWAYS



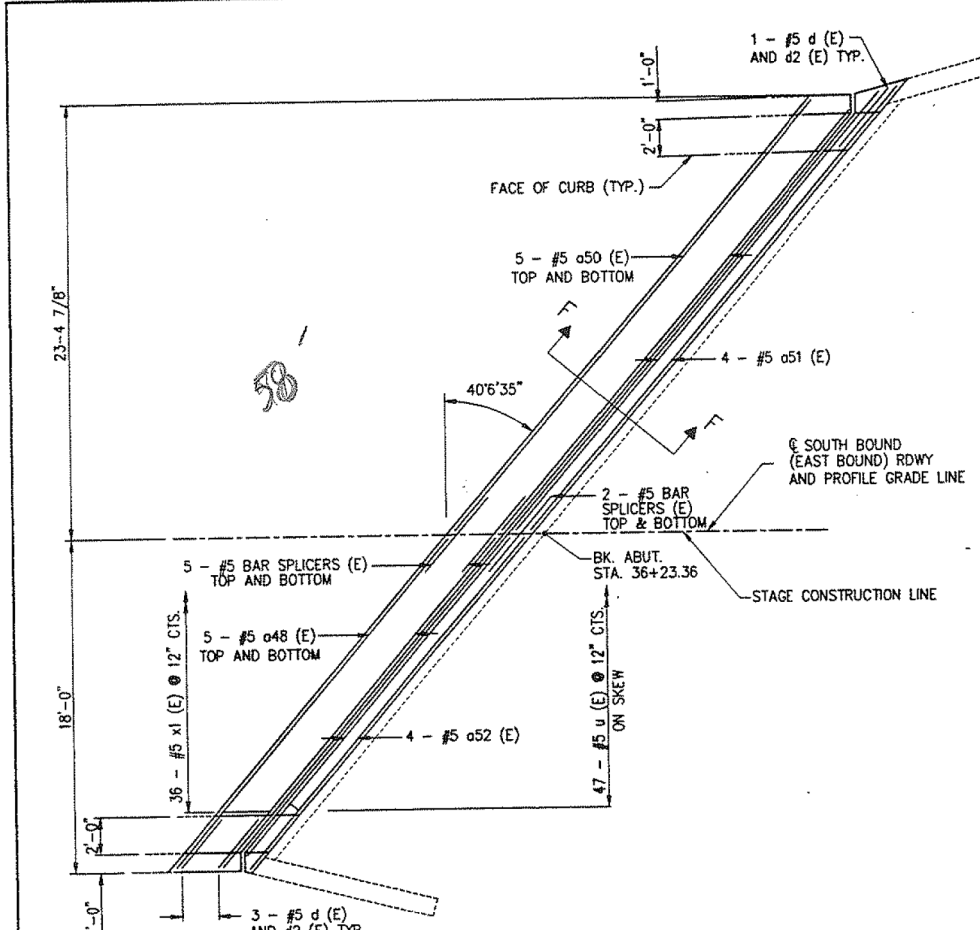
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**NEOPRENE EXPANSION JOINT**  
PIER 18  
BRIDGE REPAIRS  
1ST AVE (IL 171) S.N. 016-0486 & 016-0487  
OVER SANITARY & SHIP CANAL  
AND RAMP "E"  
SECTION 0707-626B (BR)  
F.A.U. RT. 1505  
COOK CO. IL  
STA. 30+72.59  
STA. 35+12.88

|                       |                |           |
|-----------------------|----------------|-----------|
| USER NAME = jsurber   | DESIGNED - AJK | REVISED - |
| PLOT SCALE =          | CHECKED - JLS  | REVISED - |
| PLOT DATE = 6/17/2015 | DRAWN - AJK    | REVISED - |
|                       | CHECKED - JLS  | REVISED - |

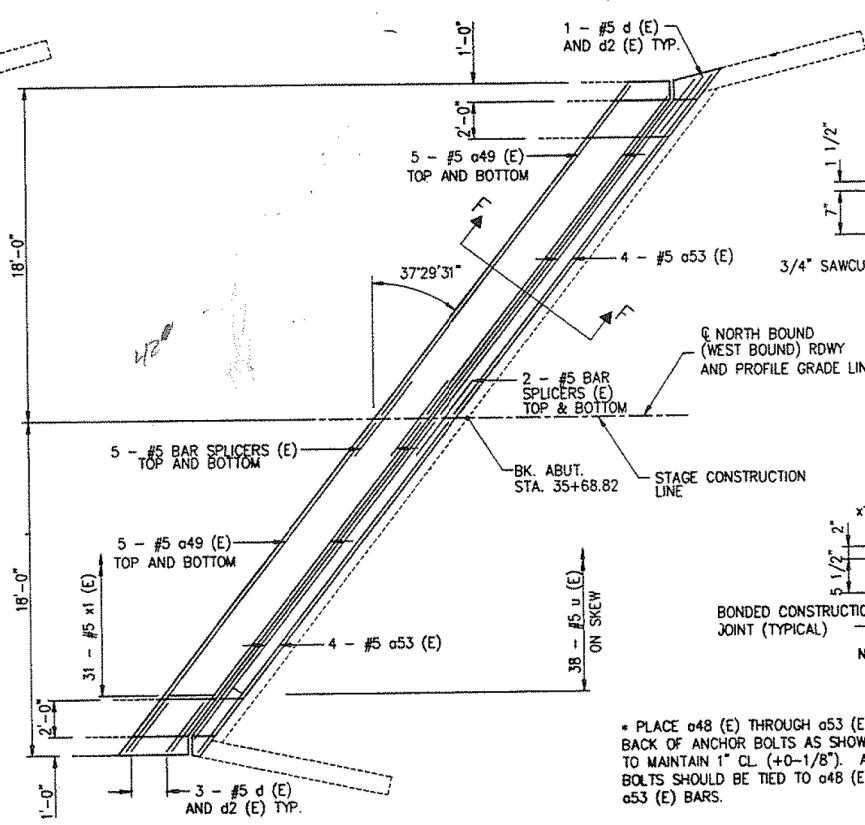
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 373                       | 2013-037B-R | COOK   | 787          | 660                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

|                           |         |        |              |           |
|---------------------------|---------|--------|--------------|-----------|
| ROUTE NO.                 | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| IL 171                    | *       | COOK   | 965          | 272       |
| ILLINOIS FED. AID PROJECT |         |        |              |           |

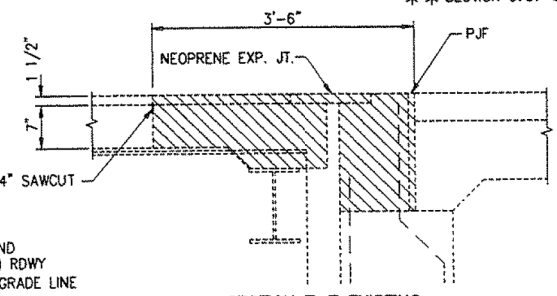
\*\* SECTION 0707-626B (BR)



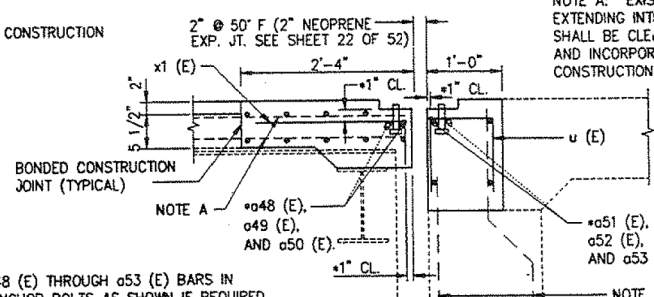
WEST ABUTMENT SOUTH BOUND (EAST BOUND) - PLAN VIEW



WEST ABUTMENT NORTH BOUND (WEST BOUND) - PLAN VIEW



SECTION F-F EXISTING  
HATCHED AREAS TO BE REMOVED



SECTION F-F PROPOSED

NOTE A: EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREAS SHALL BE CLEANED, STRAIGHTENED, AND INCORPORATED INTO THE NEW CONSTRUCTION.

\* PLACE o48 (E) THROUGH o53 (E) BARS IN BACK OF ANCHOR BOLTS AS SHOWN IF REQUIRED TO MAINTAIN 1\"/>

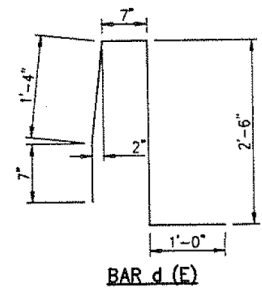
**BILL OF MATERIAL**

| BAR                              | NO. | SIZE      | LENGTH  | SHAPE |
|----------------------------------|-----|-----------|---------|-------|
| o48 (E)                          | 10  | #5        | 22'-10" |       |
| o49 (E)                          | 20  | #5        | 22'-0"  |       |
| o50 (E)                          | 10  | #5        | 29'-11" |       |
| o51 (E)                          | 4   | #5        | 30'-3"  |       |
| o52 (E)                          | 4   | #5        | 23'-2"  |       |
| o53 (E)                          | 8   | #5        | 22'-4"  |       |
| d (E)                            | 16  | #5        | 6'-0"   | U     |
| d2 (E)                           | 16  | #5        | 7'-7"   | U     |
| u (E)                            | 85  | #5        | 2'-9"   | U     |
| x1 (E)                           | 67  | #5        | 3'-6"   | I     |
| REINFORCEMENT BARS EPOXY COATED. |     | LBS.      | 2130    |       |
| CONCRETE REMOVAL                 |     | C.U. YDS. | 14.0    |       |
| CLASS X CONCRETE, SUPERSTRUCTURE |     | C.U. YDS. | 14.7    |       |
| BAR SPLICERS                     |     | EACH      | 28      |       |
| NEOPRENE EXPANSION JOINT 2"      |     | LIN. FT.  | 100     |       |

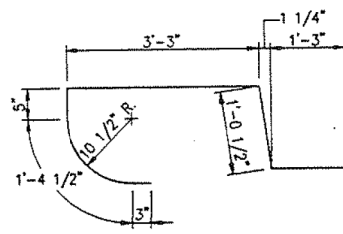
REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

NOTE: COST OF DISASSEMBLY AND REINSTALLATION OF METAL RAIL AND POST WITH NEW ANCHORAGE SHALL BE INCIDENTAL TO CONCRETE REMOVAL.

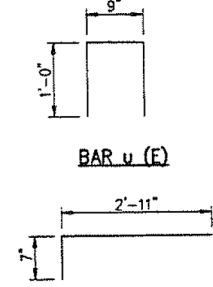
5/8" THREADED INSERTS PROVIDE 1 - STAINLESS STEEL WASHER AND 1 - 5/8" x 2" STAINLESS STEEL BOLT WITH EACH INSERT. 4 REQUIRED EACH POST.



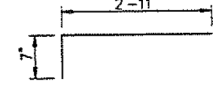
BAR d (E)



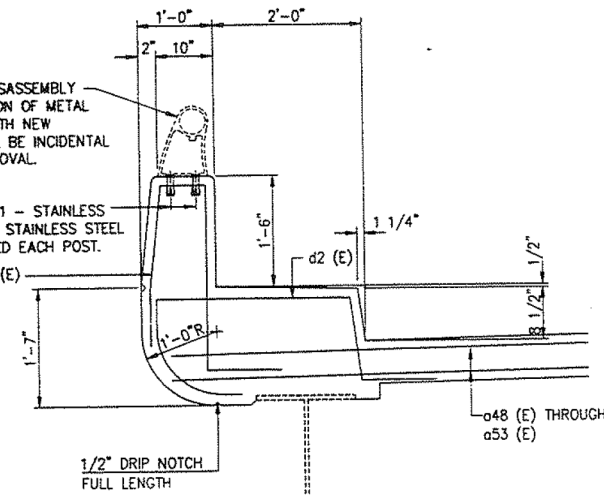
BAR d2 (E)



BAR u (E)



BAR x1 (E)



PROPOSED TYPICAL SECTION AT CURB

12/03/93 04:18:39 P.M. NEWABUT.DWG  
0486 & 0487 NEOPRENE EXPANSION JOINT - WEST ABUTMENTS

|          |                                   |
|----------|-----------------------------------|
| EXAMINED | 1993                              |
| PASSED   | ENGINEER OF STRUCTURAL SERVICES   |
| APPROVED | ENGINEER OF BRIDGE AND STRUCTURES |
|          | DIRECTOR OF HIGHWAYS              |

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**NEOPRENE EXPANSION JOINT WEST ABUTMENTS**  
BRIDGE REPAIRS  
1ST AVE (IL 171) S.N. 016-0486 & 016-0487  
OVER SANITARY & SHIP CANAL AND RAMP "E"  
SECTION 0707-626B (BR)  
F.A.U. RT. 1505  
COOK CO. IL  
STA. 30+72.59  
STA. 35+12.88

**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 = jsurber | DESIGNED - AJK | REVISED - |
| 0160487.60W75.X39.exist.93.wabut.dgn |                     | CHECKED - JLS  | REVISED - |
|                                      |                     | DRAWN - AJK    | REVISED - |
|                                      |                     | CHECKED - JLS  | REVISED - |
|                                      |                     |                |           |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (1993) - EXPANSION JOINT WEST ABUTMENT  
STRUCTURE NO. 016-0487

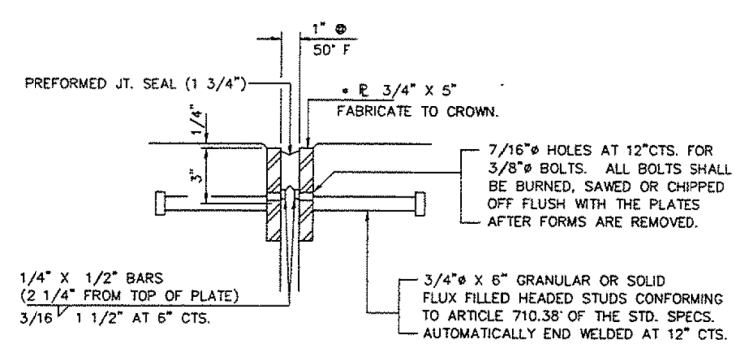
SHEET NO. SFX39 OF SFX46 SHEETS

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| FOR INFORMATION ONLY      |             |        |              |           |
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 373                       | 2013-037B-R | COOK   | 787          | 661       |
| CONTRACT NO. 60W75        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

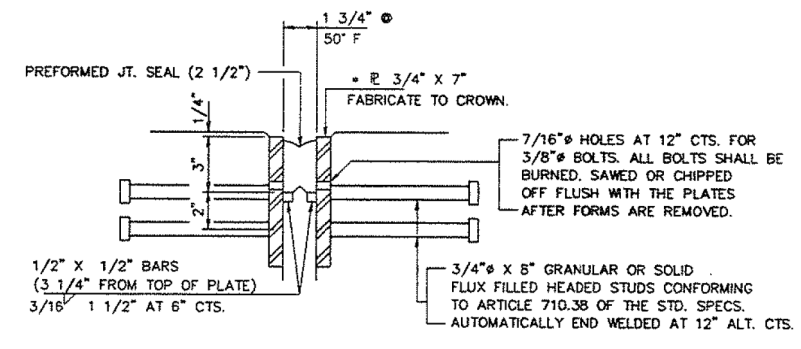
Y:\chicago\100005\100093\Eng\_Docs\Phase 1\11N.016.0486.0487.1st.Ave.over.Canal\Final\Final.0487\0160487.60W75.X39.exist.93.wabut.dgn 4:45:46 PM 6/17/2015

|           |         |          |                  |           |
|-----------|---------|----------|------------------|-----------|
| ROUTE NO. | SECTION | COUNTY   | TOTAL SHEETS     | SHEET NO. |
| IL 171    | **      | COOK     | 583              | 274       |
|           |         | ILLINOIS | FED. AID PROJECT |           |

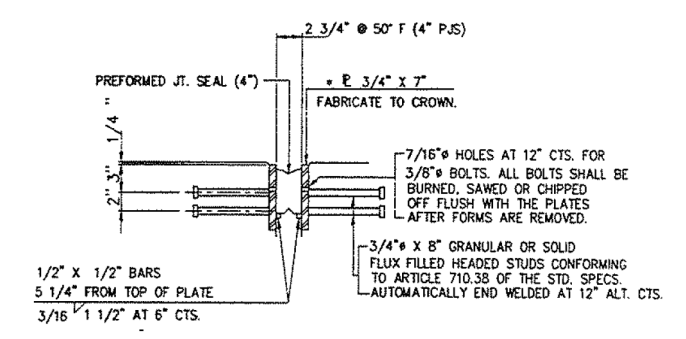
\*\* SECTION 0707-626B (BR)



**1 3/4" PREFORMED JOINT SEAL DETAIL**



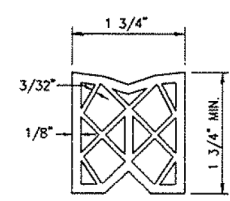
**2 1/2" PREFORMED JOINT SEAL DETAIL**



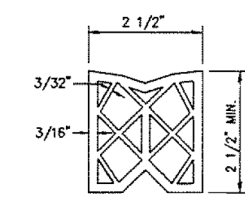
**4" PREFORMED JOINT SEAL DETAIL**

\*\* FURNISH IN SEGMENTS OF 20 FT. MAXIMUM LENGTH. MAXIMUM SPACE BETWEEN INSTALLED SEGMENTS SHALL BE 3/16". SEAL SPACE WITH SILICONE SEALANT SUITABLE FOR STRUCTURAL STEEL.

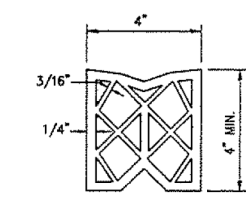
NOTES:  
AFTER FABRICATION ALL SURFACES OF THE STEEL PLATES SHALL BE GIVEN ONE SHOP COAT OF PAINT SPECIFIED FOR STRUCTURAL STEEL. NO FIELD PAINTING REQUIRED.



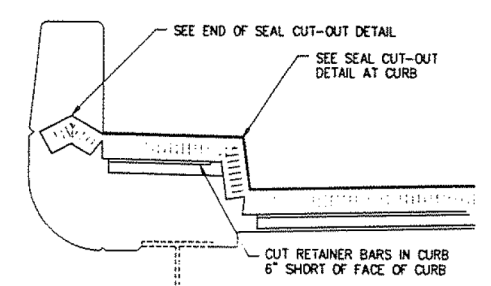
**PREFORMED JOINT SEAL (1 3/4")**



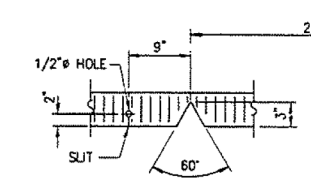
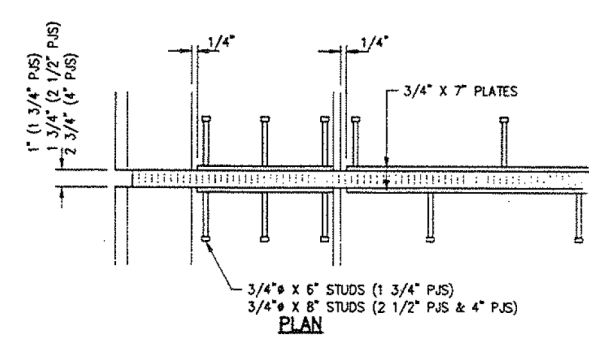
**PREFORMED JOINT SEAL (2 1/2")**



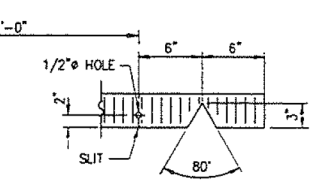
**PREFORMED JOINT SEAL (4")**



**SECTION TYPICAL SEAL TREATMENTS AT CURB**  
FOR DETAIL OF CURB SEE SHEET 12 OF 52



**SEAL CUT-OUT @ CURB**



**END OF SEAL CUT-OUT**

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PREFORMED JOINT SEAL DETAILS**  
BRIDGE REPAIRS  
1ST AVE (IL 171) S.N. 016-0486 & 016-0487  
OVER SANITARY & SHIP CANAL AND RAMP "E"  
SECTION 0707-626B (BR)  
F.A.U. RT. 1505  
COOK CO., IL  
STA. 30+72.59  
STA. 35+12.88

10/27/93 01:13:53 P.M. 486-7R.S.DWG  
0486 & 0487 PREFORMED JOINT SEAL DETAILS

1993  
EXAMINED \_\_\_\_\_  
PASSED \_\_\_\_\_  
APPROVED \_\_\_\_\_  
DIRECTOR OF HIGHWAYS

**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 = jsurber | DESIGNED - AJK | REVISED - |
| 0160487.60W75.X40.exist.93.pjsdets.dgn |                     | CHECKED - JLS  | REVISED - |
|  |                     | DRAWN - AJK    | REVISED - |
|  |                     | CHECKED - JLS  | REVISED - |
|  |                     |                |           |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**EXISTING PLANS (1993) - PREFORMED JOINT SEAL DETAILS  
STRUCTURE NO. 016-0487**

SHEET NO. SFX40 OF SFX46 SHEETS

**FOR INFORMATION ONLY**

|                           |             |        |                    |           |
|---------------------------|-------------|--------|--------------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
| 373                       | 2013-037B-R | COOK   | 787                | 662       |
|                           |             |        | CONTRACT NO. 60W75 |           |
| ILLINOIS FED. AID PROJECT |             |        |                    |           |

Y:\chicago\100005\100093\Eng\_Docs\Phase\_1\1\SN\_016\_0486\_0487\_1st\_Ave\_over\_Canal\Final\Final\_0487\_0160487\_60W75\_X40.exist\_93.pjsdets.dgn 4:45:59 PM 6/17/2015

| Joint Size | "C" at 50F | "D" at 50F  |
|------------|------------|-------------|
| 2"         | 2"         | 1 1/2" Min. |
| 2 1/2"     | 2 1/2"     | 1 3/4" Min. |
| 4"         | 3"         | 2 1/2" Min. |

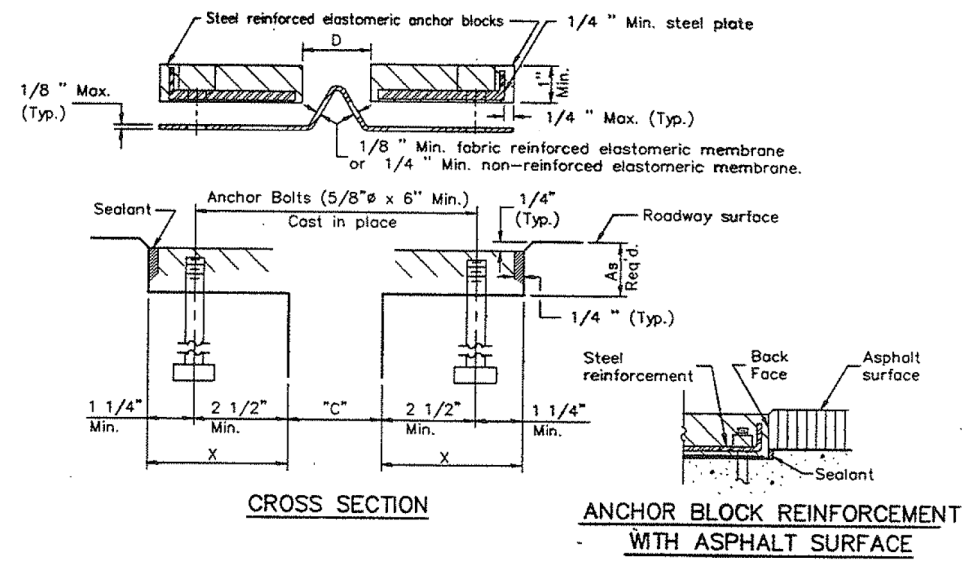
**INSTALLATION NOTES**

- Install sponge mandrels into positions shown to form flap convolution.
- Install parapet or sidewalk piece (trim roadway flap to fit before applying epoxy).
- Install continuous seal in roadway.
- Install anchor blocks as indicated.

NOTE A: Maximum spacing of anchor bolts shall be 12" centers.

**SKEW LIMITATIONS**

The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews. For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D", might require modifications to insure a minimum clearance of 1 1/2" from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at ±12" cts.



**GENERAL NOTES**

Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane.

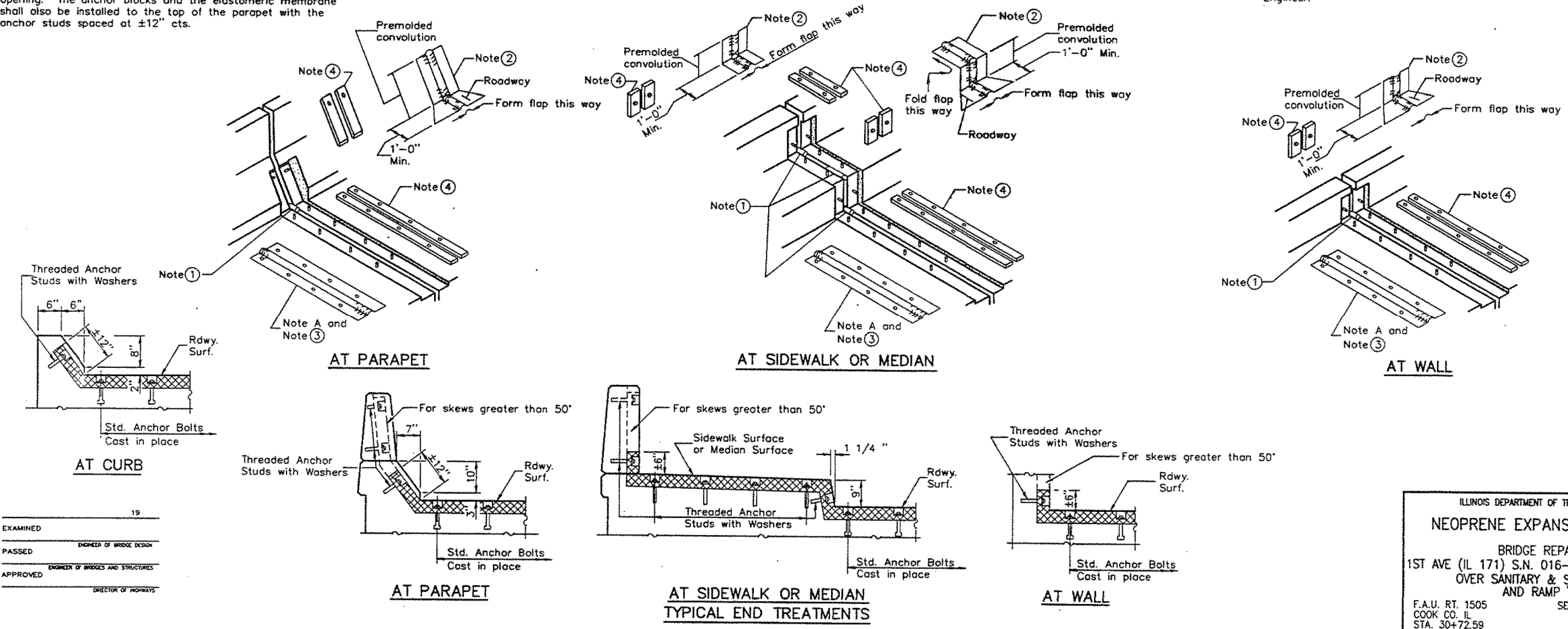
The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

The steel reinforcement must extend up the back face of anchor blocks when asphalt surfaces are used but is optional in concrete blockout.

The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

Joint openings shall be adjusted in accordance with Article 503.07(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.

The parapet and sidewalk flaps may be furnished factory vulcanized to the roadway membrane provided the centerline of the convolution is maintained and the process and method meet the approval of the Engineer.



10/27/93 01:31:46 P.M. NEEDLS.DWG  
D486 & 0487 NEOPRENE EXPANSION JOINT DETAILS

|          |                                    |
|----------|------------------------------------|
| EXAMINED | 19                                 |
| PASSED   | ENGINEER OF BRIDGE DESIGN          |
| APPROVED | ENGINEER OF BRIDGES AND STRUCTURES |
|          | DIRECTOR OF HIGHWAYS               |

ILLINOIS DEPARTMENT OF TRANSPORTATION

**NEOPRENE EXPANSION JOINT**

BRIDGE REPAIRS  
1ST AVE (IL 171) S.N. 016-0486 & 016-0487  
OVER SANITARY & SHIP CANAL  
AND RAMP "E"

F.A.U. RT. 1505  
COOK CO. IL  
STA. 30+72.59  
STA. 35+12.88

SECTION 0707-626B (BR)

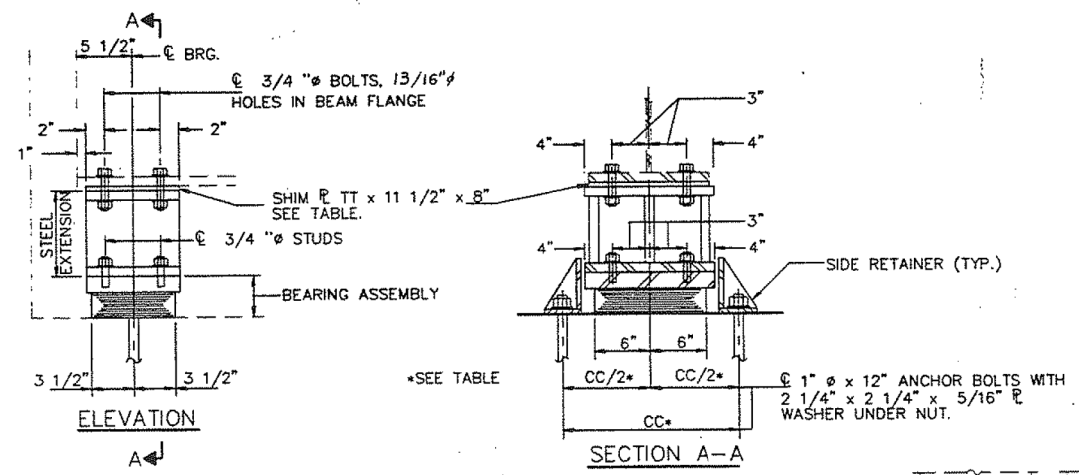
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|                       |                     | CHECKED - JLS  | REVISED - |
| PLOT SCALE =          |                     |                |           |
| PLOT DATE = 6/17/2015 |                     |                |           |

| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 373                       | 2013-037B-R | COOK   | 787          | 663                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

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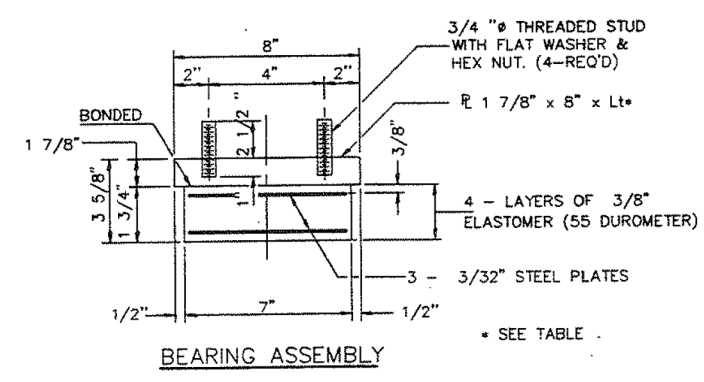
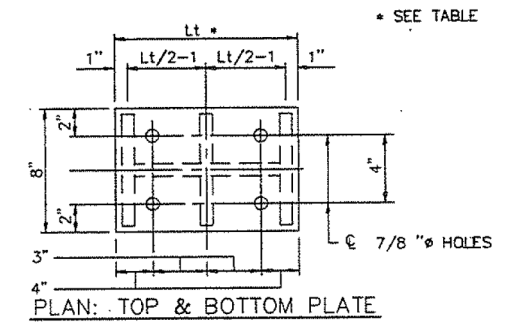
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|----------------|--|-----------|---------|----------|------------------|-----------|
| SHEET 23 OF 52 |  | ROUTE NO. | SECTION | COUNTY   | TOTAL SHEETS     | SHEET NO. |
|                |  | IL 171    | **      | COOK     | 983              | 276       |
|                |  |           |         | ILLINOIS | FED. AID PROJECT |           |

\*\* SECTION 0707-626B (BR)

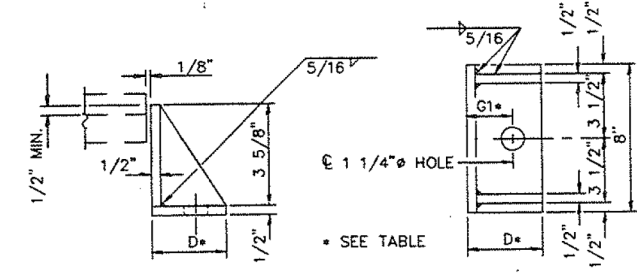


TYPE I ELASTOMERIC EXP. BRG.

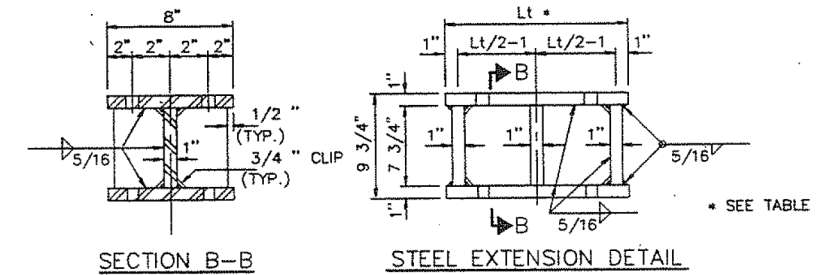
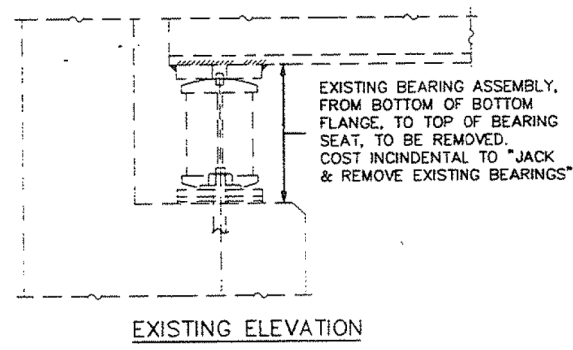
NOTES: DIAPHRAGM REMOVAL AND REPLACEMENT MAY BE REQUIRED TO FACILITATE DRILLING HOLES IN THE BOTTOM FLANGE FOR BEARING ATTACHMENT. COST IS INCIDENTAL TO "FURNISHING AND ERECTING STRUCTURAL STEEL".  
 NEW STEEL EXTENSIONS, SIDE RETAINERS, LEAD PLATES, CONNECTION BOLTS AND ANCHOR BOLTS ARE INCLUDED IN "FURNISHING AND ERECTING STRUCTURAL STEEL".  
 SEE SHEET S2 OF S2 FOR ANCHOR BOLT INSTALLATION.  
 BEFORE INSTALLING THE NEW BEARING, THE TOP PLATE OF THE EXISTING BEARING ASSEMBLY SHALL BE REMOVED FROM THE BOTTOM FLANGE USING THE AIR-ARC METHOD. GRIND SMOOTH ALL WELD MATERIAL REMAINING ON THE BOTTOM FLANGE. BURN EXISTING ANCHOR BOLTS FLUSH WITH EXISTING CONCRETE SURFACE. GRIND EXISTING ANCHOR BOLT SMOOTH AND SEAL WITH EPOXY. COST IS INCIDENTAL TO FURNISHING AND ERECTING STRUCTURAL STEEL.  
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 PRIOR TO ORDERING ANY MATERIAL, THE CONTRACTOR SHALL VERIFY IN THE FIELD ALL BEARING HEIGHT AND SHIM DIMENSIONS.  
 SEE SUPERSTRUCTURE OVERLAY & REPAIR PLANS FOR BEAM LOCATIONS.



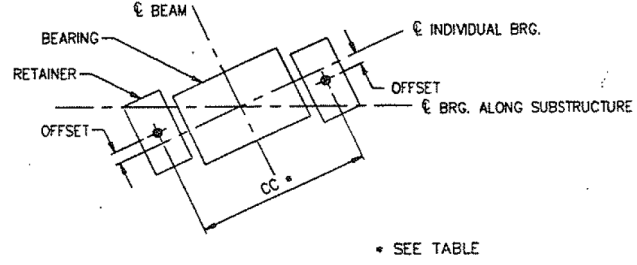
NOTE: SHIM PLATES SHALL NOT BE PLACED UNDER BEARING ASSEMBLY.



EQUIVALENT ROLLED ANGLE WITH STIFFENERS WILL BE ALLOWED IN LIEU OF WELDED PLATES.



| SHIM P THICKNESS, TT. SIZES SHOWN ARE IN ADDITION TO THE 1/8" SHIM P TO BE FURNISHED @ ALL LOCATIONS. |       |               |             |             |             |        |               |               |              |              |              |        |
|---|-------|---------------|-------------|-------------|-------------|--------|---------------|---------------|--------------|--------------|--------------|--------|
| LOCATION BEAM   | DIM.  | EAST BOUND    |             |             |             | RAMP F | LOCATION BEAM | WEST BOUND    |              |              |              |        |
|   |       | EAST ABUTMENT | PIER 2 EAST | PIER 5 WEST | PIER 7 EAST |        |               | EAST ABUTMENT | PIER 13 EAST | PIER 16 WEST | PIER 18 EAST |        |
| A-E   | (IN.) | 1/8           | 1/8         |             |             | 1/8    | I-K           | 1/8           | 1/8          |              |              |        |
| F   | (IN.) | 9/16          | 9/16        | 5/8         | 1/8         |        | L             | 1/8           | 1/8          | 0            | 0            |        |
| G   | (IN.) | 1/2           | 9/16        | 1/4         | 0           |        | M             | 1/4           | 1/4          | 3/8          | 5/16         |        |
| H   | (IN.) | 1/4           | 5/16        | 5/8         | 5/8         |        | N             | 1/8           | 1/8          | 13/16        | 1/8          |        |
| I   | (IN.) |               |             | 5/8         | 7/8         |        | O             |               |              | 13/16        | 5/16         |        |
| J   | (IN.) |               |             | 3/4         | 3/8         |        | P             |               |              | 1/8          | 5/8          |        |
| K   | (IN.) |               |             | 9/16        | 5/16        |        | Q             |               |              | 1/8          | 11/16        |        |
| <b>REACTIONS</b>  |       |               |             |             |             |        |               |               |              |              |              |        |
| DL  | (K)   | 21.7          | 21.7        | 23.6        | 27.4        | 31     |               | 20.1          | 20.1         | 23.6         | 27.4         |        |
| LL  | (K)   | 40.2          | 40.2        | 37.7        | 37.7        | 33.4   |               | 37.4          | 37.4         | 37.7         | 37.7         |        |
| IMP   | (K)   | 11.4          | 11.4        | 10.4        | 10.4        | 8.9    |               | 10.8          | 10.8         | 10.4         | 10.4         |        |
| TOTAL   | (K)   | 73.3          | 73.3        | 71.7        | 75.5        | 73.3   |               | 68.3          | 68.3         | 71.7         | 75.5         |        |
| <b>VARIABLE DIMENSIONS:</b>   |       |               |             |             |             |        |               |               |              |              |              |        |
| BEAMS   |       | A-H           | A-H         | F,G         | H-K         | F-K    | A-E           | I-N           | I-N          | LM           | N-O          | L-O    |
| CC  | (IN.) | 22 1/2        | 22 1/2      | 27          | 21 1/2      | 19 1/2 | 21 1/2        | 22 1/2        | 22 1/2       | 27           | 21 1/2       | 19 1/2 |
| G1  | (IN.) | 4 1/8         | 4 1/8       | 5 7/8       | 3 1/8       | 2 1/8  | 3 5/8         | 4 1/8         | 4 1/8        | 5 7/8        | 3 1/8        | 2 1/8  |
| D   | (IN.) | 6             | 6           | 7 3/4       | 5           | 4      | 5 1/2         | 6             | 6            | 7 3/4        | 5            | 4      |
| Lt  | (IN.) | 1'-2"         | 1'-2"       | 1'-3"       | 1'-3"       | 1'-3"  | 1'-2"         | 1'-2"         | 1'-2"        | 1'-3"        | 1'-3"        | 1'-3"  |
| OFFSET  | (IN.) | 0             | 0           | 0           | 1 1/2"      |        |               | 0             | 0            | 0            | 2            |        |



| BILL OF MATERIAL                    |      |       |
|-------------------------------------|------|-------|
| ITEM                                | UNIT | TOTAL |
| ELASTOMERIC BEARING ASSEMBLY TYPE I | EACH | 57    |
| JACK & REMOVE EXISTING BEARINGS     | EACH | 57    |
| FURNISH & ERECT STRUCTURAL STEEL    | LBS  | 10400 |

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 EAST ABUTMENTS  
 PIERS 2, 7, 13, & 18 EAST  
 PIERS 5 & 16 WEST  
 RAMP F, WEST ABUTMENT  
 7 X 12, TYPE I BEARINGS  
 BRIDGE REPAIRS  
 1ST AVE (IL 171) S.N. 016-0486 & 016-0487  
 OVER SANITARY & SHIP CANAL  
 AND RAMP "E"  
 SECTION 0707-626B (BR)  
 F.A.U. RT. 1505  
 COOK CO. IL  
 STA. 30+72.59  
 STA. 35+12.88

11/01/93 03:18:57 P.M. 7X12.DWG  
 7 X 12 TYPE I BEARINGS

EXAMINED \_\_\_\_\_  
 PASSED \_\_\_\_\_  
 APPROVED \_\_\_\_\_

10-25-93

**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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|   |                     | CHECKED - JLS  | REVISED - |
|   |                     |                |           |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (1993) - BEARING DETAILS TYPE I  
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 SHEET NO. SFX42 OF SFX46 SHEETS

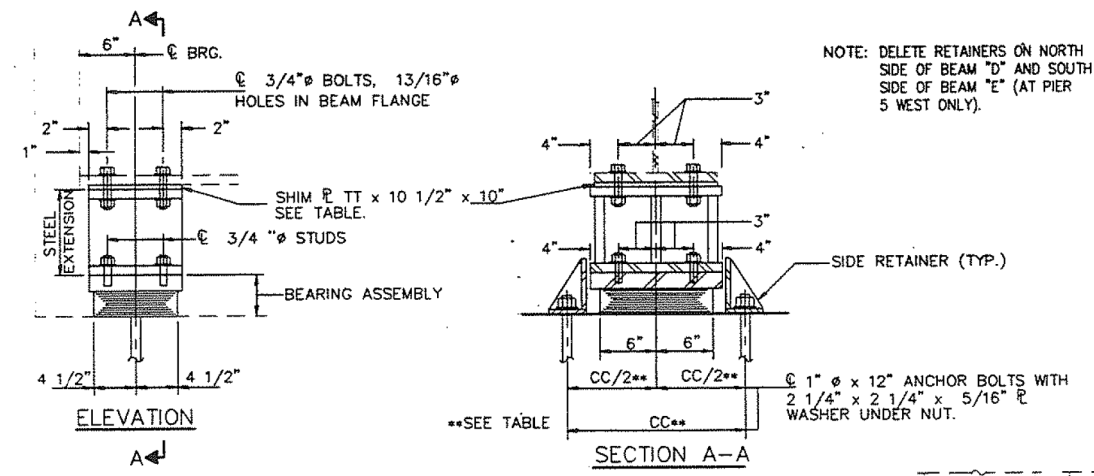
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| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
| 373                       | 2013-037B-R | COOK   | 787                | 664       |
|                           |             |        | CONTRACT NO. 60W75 |           |
| ILLINOIS FED. AID PROJECT |             |        |                    |           |

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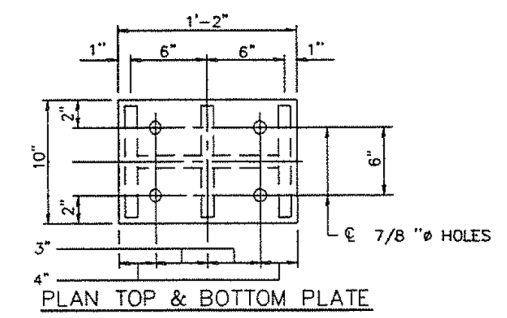
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|-----------|---------|----------|------------------|-----------|
| ROUTE NO. | SECTION | COUNTY   | TOTAL SHEETS     | SHEET NO. |
| IL 171    | **      | COOK     | 983              | 277       |
|           |         | ILLINOIS | FED. AID PROJECT |           |

\*\* SECTION 0707-626B (BR)

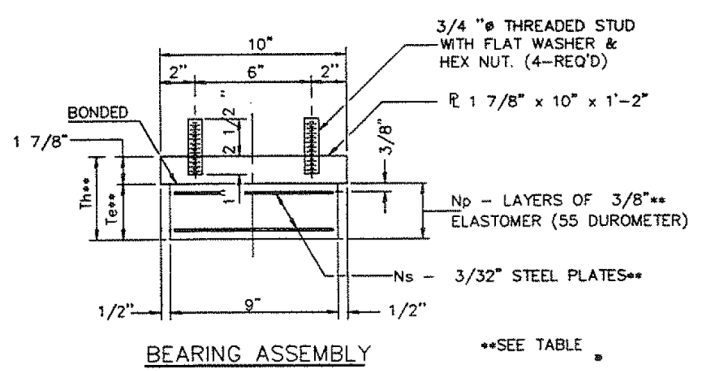


NOTE: DELETE RETAINERS ON NORTH SIDE OF BEAM "D" AND SOUTH SIDE OF BEAM "E" (AT PIER 5 WEST ONLY).

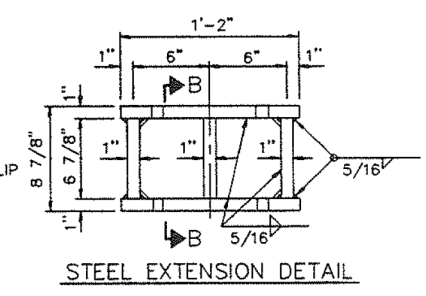
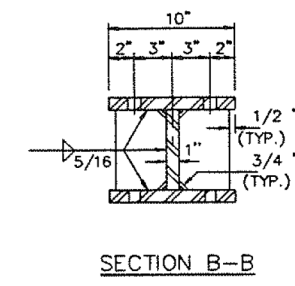
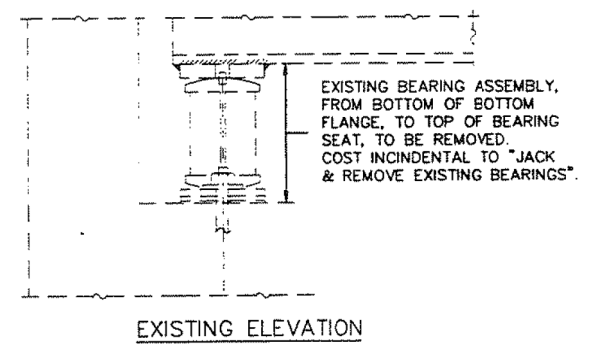
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 PRIOR TO ORDERING ANY MATERIAL, THE CONTRACTOR SHALL VERIFY IN THE FIELD ALL BEARING HEIGHT AND SHIM DIMENSIONS. SEE SUPERSTRUCTURE OVERLAY & REPAIR PLANS FOR BEAM LOCATIONS.



TYPE I ELASTOMERIC EXP. BRG.



NOTE: SHIM PLATES SHALL NOT BE PLACED UNDER BEARING ASSEMBLY.



12/03/93 04:28:21 P.M. 9X12TYPE1 BEARINGS

EXAMINED \_\_\_\_\_  
 PASSED \_\_\_\_\_  
 APPROVED \_\_\_\_\_

SIDE RETAINER  
 EQUIVALENT ROLLED ANGLE WITH STIFFENERS WILL BE ALLOWED IN LIEU OF WELDED PLATES.

| LOCATION BEAM        | DIM.  | SHIM THICKNESS, TI: * |            |
|----------------------|-------|-----------------------|------------|
|                      |       | EAST BOUND            | WEST BOUND |
| A                    | (IN.) | 1/2                   | 3/16       |
| B                    | (IN.) | 1/2                   | 3/16       |
| C                    | (IN.) | 1/2                   | 3/16       |
| D                    | (IN.) | 1/2                   | 3/16       |
| E                    | (IN.) | 1/2                   | 3/16       |
| REACTIONS            |       |                       |            |
| DL                   | (K)   | 42.9                  | 34.0       |
| LL                   | (K)   | 37.0                  | 50.2       |
| IMP                  | (K)   | 10.0                  | 11.2       |
| TOTAL                | (K)   | 89.9                  | 95.4       |
| VARIABLE DIMENSIONS: |       |                       |            |
| BEARING TYPE         |       | 9x12,1,a              | 9x12,1,b   |
| CC                   | (IN.) | 21 1/2                | 23         |
| G1                   | (IN.) | 3 5/8                 | 4 3/8      |
| D                    | (IN.) | 5 1/2                 | 6 1/4      |
| Np                   | (IN.) | 5                     | 7          |
| Ns                   | (IN.) | 4                     | 6          |
| Te                   | (IN.) | 2 1/4                 | 3 3/16     |
| Th                   | (IN.) | 4 1/8                 | 5 1/16     |

\* SIZES SHOWN ARE IN ADDITION TO THE 1/8" SHIM TO BE FURNISHED AT ALL LOCATIONS

BILL OF MATERIAL

| ITEM                                | UNIT | TOTAL |
|-------------------------------------|------|-------|
| ELASTOMERIC BEARING ASSEMBLY TYPE I | EACH | 10    |
| JACK & REMOVE EXISTING BEARINGS     | EACH | 10    |
| FURNISH & ERECT STRUCTURAL STEEL    | LBS  | 2090  |

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 RAMP F, PIER 5 WEST  
 PIER 16 EAST  
 9 X 12, TYPE I BEARINGS  
 BRIDGE REPAIRS  
 1ST AVE (IL 171) S.N. 016-0486 & 016-0487  
 OVER SANITARY & SHIP CANAL  
 AND RAMP "E"  
 SECTION 0707-626B (BR)  
 F.A.U. RT. 1505  
 COOK CO. IL  
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**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 - AJK    | REVISED - |
|                                       |                     | CHECKED - JLS  | REVISED - |
|                                       |                     |                |           |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (1993) - BEARING DETAILS PIER 16  
 STRUCTURE NO. 016-0487

SHEET NO. SFX43 OF SFX46 SHEETS

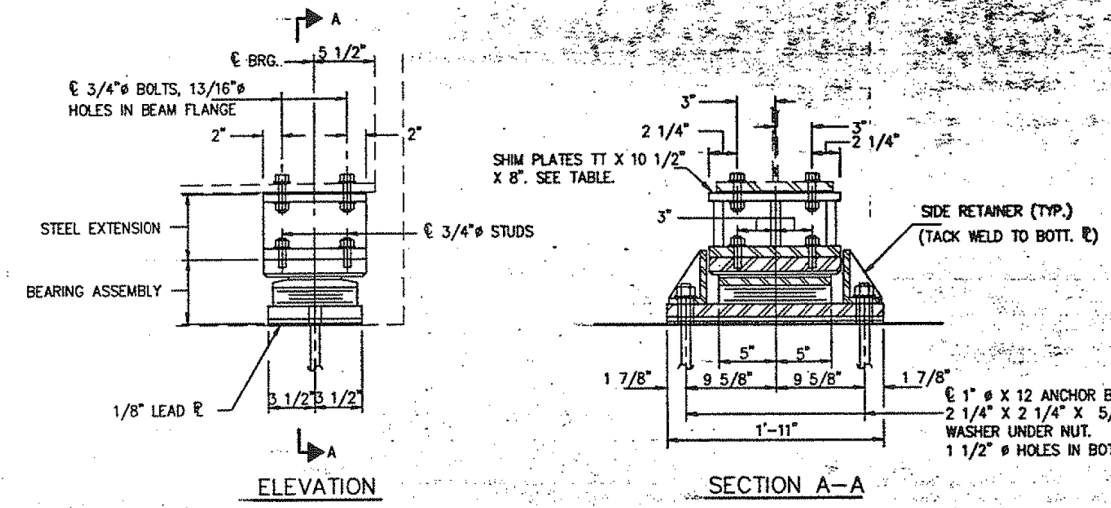
FOR INFORMATION ONLY

|                           |             |        |              |           |
|---------------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 373                       | 2013-037B-R | COOK   | 787          | 665       |
| CONTRACT NO. 60W75        |             |        |              |           |
| ILLINOIS FED. AID PROJECT |             |        |              |           |

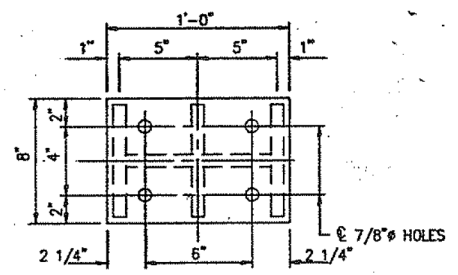
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|           |         |          |                  |           |
|-----------|---------|----------|------------------|-----------|
| ROUTE NO. | SECTION | COUNTY   | TOTAL SHEETS     | SHEET NO. |
| IL 171    | **      | COOK     | 985              | 479       |
|           |         | ILLINOIS | FED. AID PROJECT |           |

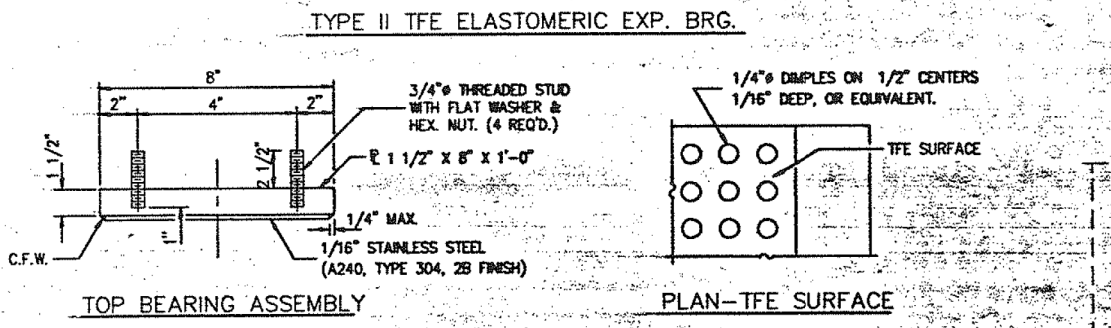
\*\* SECTION 0707-6268 (BR)



NOTES: DIAPHRAGM REMOVAL AND REPLACEMENT MAY BE REQUIRED TO FACILITATE DRILLING HOLES IN THE BOTTOM FLANGE FOR BEARING ATTACHMENT. COST IS INCIDENTAL TO FURNISHING AND ERECTING STRUCTURAL STEEL.  
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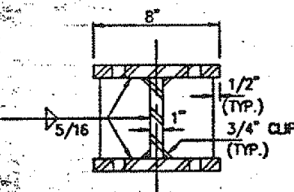


PLAN TOP & BOTTOM PLATES

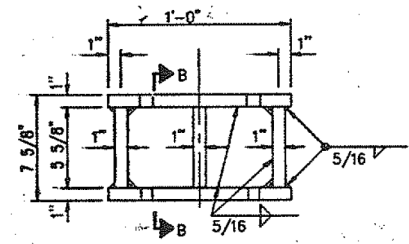


TOP BEARING ASSEMBLY

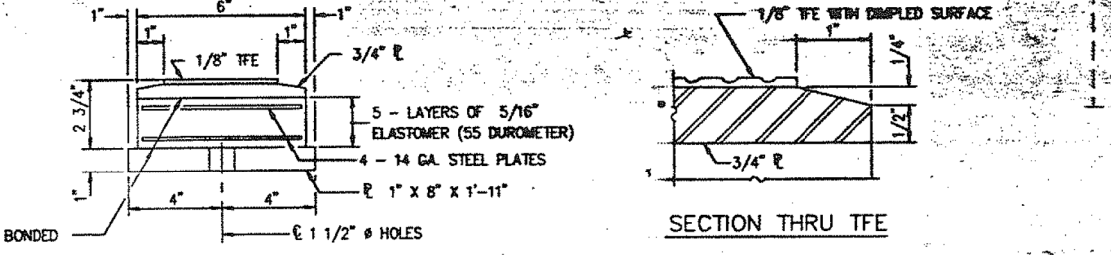
PLAN-TFE SURFACE



SECTION B-B

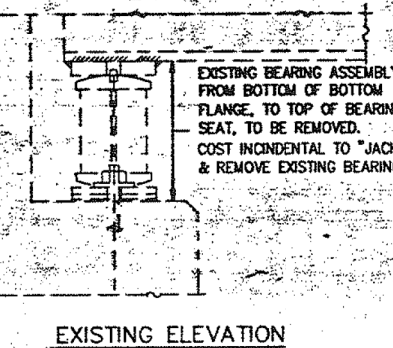


STEEL EXTENSION DETAIL



BOTTOM BEARING ASSEMBLY

SECTION THRU TFE



EXISTING ELEVATION

| LOCATION      | SHIM THICKNESS, TI:      |
|---------------|--------------------------|
| BEAM          | WEST ABUTMENT WEST BOUND |
| B7,B8,B11,B12 | 1/2"                     |
| B9            | 13/16"                   |
| B10           | 1"                       |
| REACTIONS     |                          |
| R D (K)       | 14.6                     |
| R L (K)       | 31.0                     |
| IMP. (K)      | 9.0                      |
| R (TOTAL) (K) | 54.6                     |

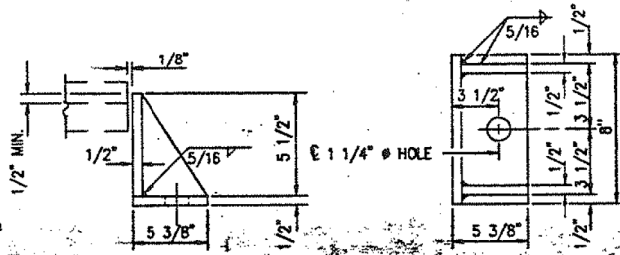
\* IN ADDITION TO 1/8" SHIMS TO BE PROVIDED AT ALL BEARING LOCATIONS

NOTE: THE 1/8" TFE 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" TFE SHEET DURING VULCANIZING PROCESS WILL BE PERMITTED PROVIDED THE PROCESS AND METHOD OF ADJUSTING ASSEMBLY HEIGHT IS APPROVED BY THE ENGINEER.

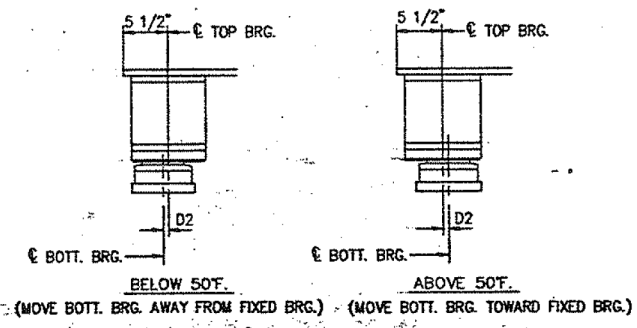
11/20/03 10:46:24 A.M. 610102.DWG 6 X 10 TYPE II BEARINGS

EXAMINED: \_\_\_\_\_  
 PASSED: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_



SIDE RETAINER

EQUIVALENT ROLLED ANGLE WITH STIFFENERS WILL BE ALLOWED IN LIEU OF WELDED PLATES.



SETTING ANCHOR BOLTS AT EXP. BRG.

D2 = 1/8" PER EACH 100' OF EXPANSION FOR EVERY 15' TEMP. CHANGE FROM THE NORMAL TEMP. OF 50°F.

BILL OF MATERIAL

| ITEM                                 | UNIT | TOTAL |
|--------------------------------------|------|-------|
| ELASTOMERIC BEARING ASSEMBLY TYPE II | EACH | 6     |
| JACK & REMOVE EXISTING BEARINGS      | EACH | 6     |
| FURNISH & ERECT STRUCTURAL STEEL     | LBS  | 1030  |

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**WEST ABUTMENT (WEST BOUND)**  
**6 X 10, TYPE II BEARINGS**  
 BRIDGE REPAIRS  
 1ST AVE (IL 171) S.N. 016-0486 & 016-0487  
 OVER SANITARY & SHIP CANAL AND RAMP "E"  
 SECTION 0707-6268 (BR)  
 F.A.U. RT. 1505  
 COOK CO. IL  
 STA. 30+72.59  
 STA. 35+12.88

**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 - AJK    | REVISED - |
|                                      |                     | CHECKED - JLS  | REVISED - |
|                                      |                     |                |           |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (1993) - BEARING DETAILS WEST ABUTMENT  
 STRUCTURE NO. 016-0487

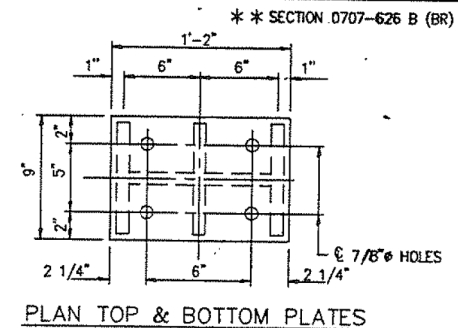
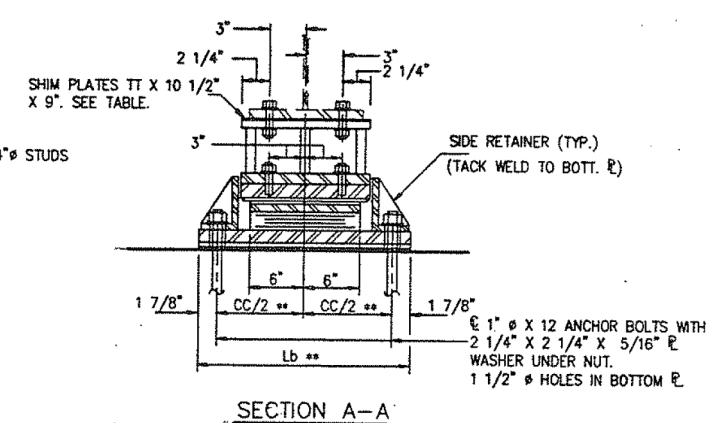
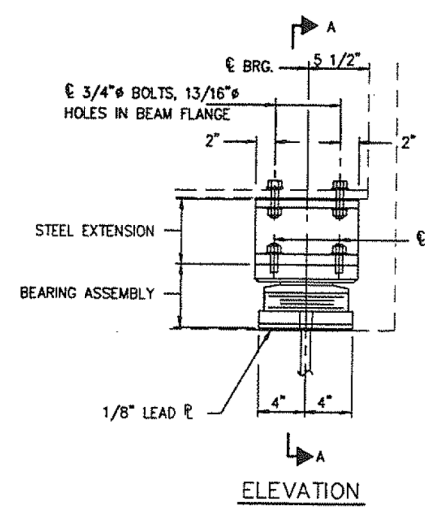
SHEET NO. SFX44 OF SFX46 SHEETS

FOR INFORMATION ONLY

|                           |             |        |              |                    |
|---------------------------|-------------|--------|--------------|--------------------|
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
| 373                       | 2013-037B-R | COOK   | 787          | 666                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

Y:\chicago\100005\100093\Eng\_Docs\Phase II\SN 016-0486-0487-1st-Ave-over-Canal\Final\Final\_0487\0160487-60W75-X44.exist.93.brgII.dgn 4:46:52 PM 6/17/2015

|           |         |        |                  |           |
|-----------|---------|--------|------------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS     | SHEET NO. |
| IL 171    | **      | COOK   | 285              | 250       |
| ILLINOIS  |         |        | FED. AID PROJECT |           |



NOTES: DIAPHRAGM REMOVAL AND REPLACEMENT MAY BE REQUIRED TO FACILITATE DRILLING HOLES IN THE BOTTOM FLANGE FOR BEARING ATTACHMENT. COST IS INCIDENTAL TO "FURNISHING AND ERECTING STRUCTURAL STEEL".

NEW STEEL EXTENSIONS, SIDE RETAINERS, LEAD PLATES, CONNECTION BOLTS AND ANCHOR BOLTS ARE INCLUDED IN "FURNISHING AND ERECTING STRUCTURAL STEEL".

SEE SHEET S2 OF S2 FOR ANCHOR BOLT INSTALLATION.

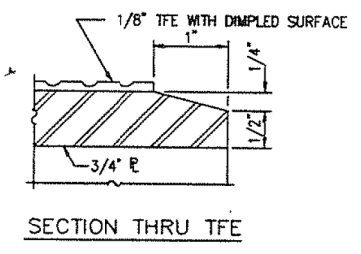
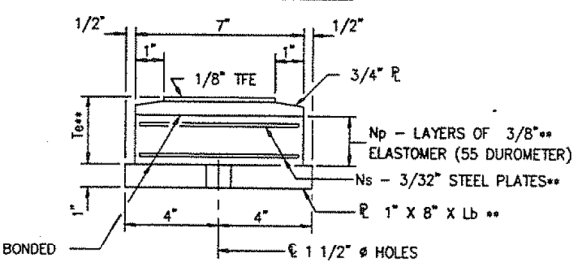
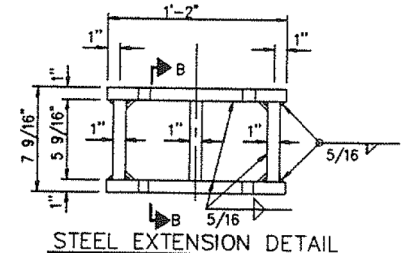
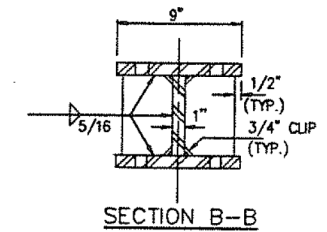
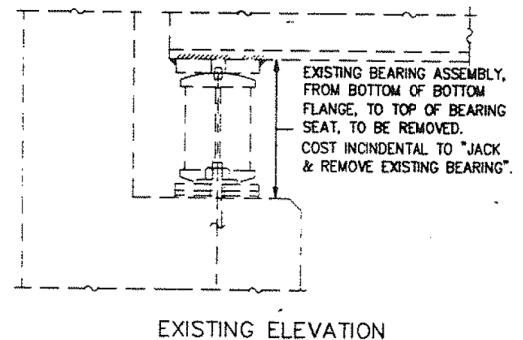
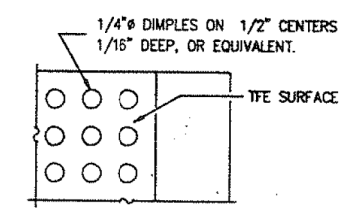
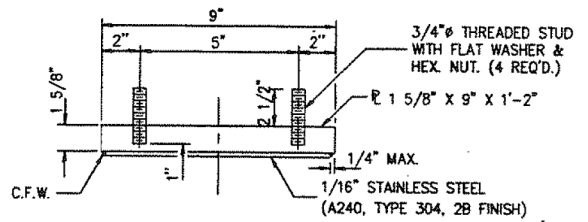
BEFORE INSTALLING THE NEW BEARING, THE TOP PLATE OF THE EXISTING BEARING ASSEMBLY SHALL BE REMOVED FROM THE BOTTOM FLANGE USING THE AIR-ARC METHOD. GRIND SMOOTH ALL WELD MATERIAL REMAINING ON THE BOTTOM FLANGE. BURN EXISTING ANCHOR BOLTS FLUSH WITH EXISTING CONCRETE SURFACE. GRIND EXISTING ANCHOR BOLT SMOOTH AND SEAL WITH EPOXY. COST IS INCIDENTAL TO FURNISHING AND ERECTING STRUCTURAL STEEL.

TRAFFIC SHALL BE REMOVED FROM THE PORTION OF THE STRUCTURE TO BE JACKED PRIOR TO COMMENCING JACKING OPERATIONS. TRAFFIC SHALL BE KEPT OFF THAT PORTION OF THE STRUCTURE DURING THE ENTIRE BEARING REPLACEMENT OPERATION. DIFFERENTIAL JACKING HEIGHT NOT TO EXCEED 1/8" TRANSVERSELY BETWEEN ADJACENT BEAMS OR 1/4" LONGITUDINALLY BETWEEN ADJACENT SUPPORTS.

PRIOR TO ORDERING ANY MATERIAL, THE CONTRACTOR SHALL VERIFY IN THE FIELD ALL BEARING HEIGHT AND SHIM DIMENSIONS.

SEE SUPER STRUCTURE OVERLAY & REPAIR PLANS FOR BEAM LOCATIONS.

TYPE II TFE ELASTOMERIC EXP. BRG.



| LOCATION BEAM | DIM. | SHIM THICKNESS, TI * |               |            |              |
|---------------|------|----------------------|---------------|------------|--------------|
|               |      | EAST BOUND           |               | WEST BOUND |              |
|               |      | PIER 7 WEST          | WEST ABUTMENT | BEAM       | PIER 18 WEST |
| B1 (IN.)      | 0    | 0                    | 1/2           | B7         | 1/2          |
| B2 (IN.)      | 0    | 0                    | 1/2           | B8         | 1/2          |
| B3 (IN.)      | 0    | 0                    | 1/2           | B9         | 13/16        |
| B4 (IN.)      | 3/4  | 1 1/4                | 1             | B10        | 1            |
| B5 (IN.)      | 1/8  | 5/8                  | 1/2           | B11        | 1/2          |
| B6 (IN.)      | 0    | 1/2                  | 1/2           | B12        | 1/2          |

| REACTIONS |      |      |      |
|-----------|------|------|------|
| DL (K)    | 14.6 | 15.7 | 20.2 |
| LL (K)    | 34.0 | 34.0 | 33.0 |
| IMP (K)   | 10.0 | 10.0 | 9.0  |
| TOTAL (K) | 58.6 | 59.7 | 62.2 |

| VARIABLE DIMENSIONS: |             |             |             |
|----------------------|-------------|-------------|-------------|
| BEARING TYPE         | 7x12, II, C | 7x12, II, B | 7x12, II, B |
| Np (IN.)             | 5           | 4           | 4           |
| Ns (IN.)             | 4           | 3           | 3           |
| Te (IN.)             | 3 1/8       | 2 5/8       | 2 5/8       |
| CC (IN.)             | 18 1/2      | 19 1/4      | 18 1/2      |
| Lb (IN.)             | 22 1/4      | 23          | 22 1/4      |
| G1 (IN.)             | 2 1/8       | 2 1/2       | 2 1/8       |
| D (IN.)              | 4           | 4 3/8       | 4           |

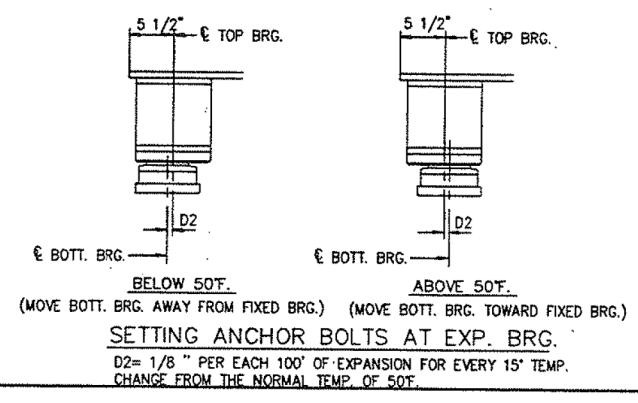
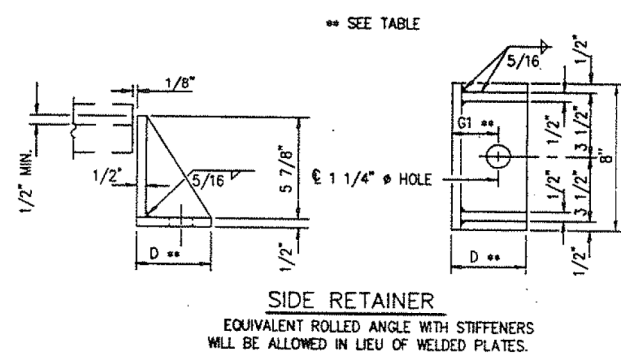
\* IN ADDITION TO 1/8" SHIMS TO BE PROVIDED @ ALL BEARING LOCATIONS.

\*\* SEE TABLE

NOTE: THE 1/8" TFE 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" TFE SHEET DURING VULCANIZING PROCESS WILL BE PERMITTED PROVIDED THE PROCESS AND METHOD OF ADJUSTING ASSEMBLY HEIGHT IS APPROVED BY THE ENGINEER.

|          |                                    |
|----------|------------------------------------|
| EXAMINED | 19                                 |
| PASSED   | ENGINEER OF BRIDGE DESIGN          |
| APPROVED | ENGINEER OF BRIDGES AND STRUCTURES |
|          | DIRECTOR OF HIGHWAYS               |



| BILL OF MATERIAL                     |      |       |
|--------------------------------------|------|-------|
| ITEM                                 | UNIT | TOTAL |
| ELASTOMERIC BEARING ASSEMBLY TYPE II | EACH | 18    |
| JACK & REMOVE EXISTING BEARINGS      | EACH | 18    |
| FURNISH & ERECT STRUCTURAL STEEL     | LBS  | 3410  |

ILLINOIS DEPARTMENT OF TRANSPORTATION

PIER 7 WEST, WEST ABUTMENT (EAST BOUND), PIER 18 WEST

7 X 12, TYPE II BEARINGS

BRIDGE REPAIRS

1ST AVE (IL 171) S.N. 016-0486 & 016-0487

OVER SANITARY & SHIP CANAL AND RAMP "E"

F.A.U. RT. 1505 COOK CO. IL STA. 30+72.59 STA. 35+12.88

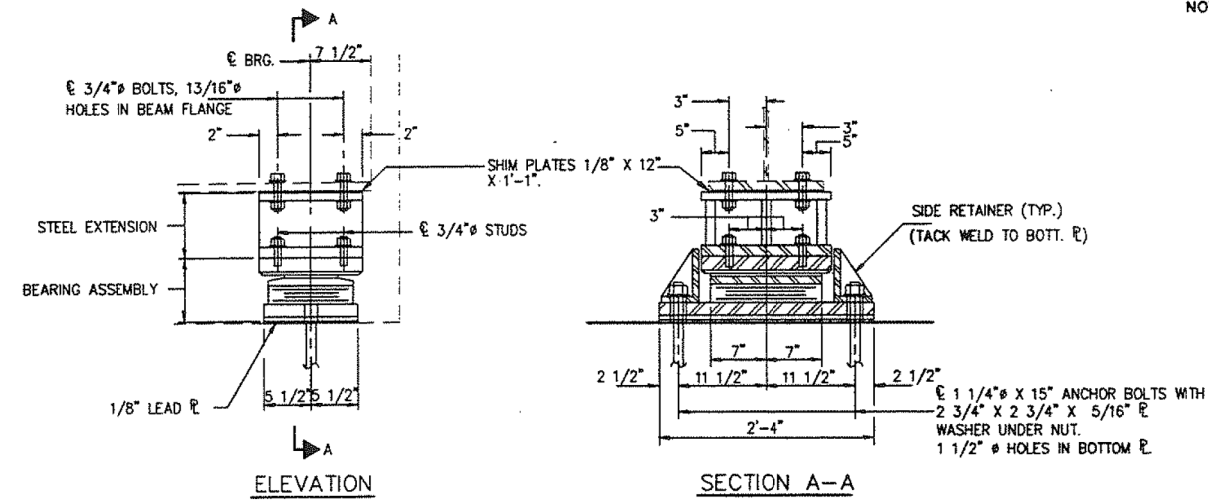
SECTION 0707-626 B (BR)

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| 0160487.60W75.X45.exist.93.brgII.2.dgn | PLOT SCALE =          | CHECKED - JLS  | REVISED - |
|  | PLOT DATE = 6/17/2015 | DRAWN - AJK    | REVISED - |
|  |                       | CHECKED - JLS  | REVISED - |

|                           |             |        |              |                    |
|---------------------------|-------------|--------|--------------|--------------------|
| FOR INFORMATION ONLY      |             |        |              |                    |
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
| 373                       | 2013-037B-R | COOK   | 787          | 667                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO.        |
|-----------|---------|--------|--------------|------------------|
| E 171     | **      | COOK   | 965          | 281              |
|           |         |        | ILLINOIS     | FED. AID PROJECT |

\*\* SECTION 0707-626B (BR)



NOTES: DIAPHRAGM REMOVAL AND REPLACEMENT MAY BE REQUIRED TO FACILITATE DRILLING HOLES IN THE BOTTOM FLANGE FOR BEARING ATTACHMENT. COST IS INCIDENTAL TO "FURNISHING AND ERECTING STRUCTURAL STEEL".

NEW STEEL EXTENSIONS, SIDE RETAINERS, LEAD PLATES, CONNECTION BOLTS AND ANCHOR BOLTS ARE INCLUDED IN "FURNISHING AND ERECTING STRUCTURAL STEEL".

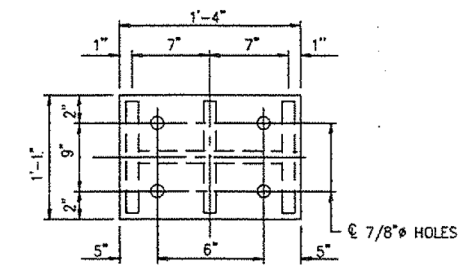
SEE SHEET 52 FOR ANCHOR BOLT INSTALLATION.

BEFORE INSTALLING THE NEW BEARING, THE TOP PLATE OF THE EXISTING BEARING ASSEMBLY SHALL BE REMOVED FROM THE BOTTOM FLANGE USING THE AIR-ARC METHOD. GRIND SMOOTH ALL WELD MATERIAL REMAINING ON THE BOTTOM FLANGE. BURN EXISTING ANCHOR BOLTS FLUSH WITH EXISTING CONCRETE SURFACE. GRIND EXISTING ANCHOR BOLT SMOOTH AND SEAL WITH EPOXY. COST IS INCIDENTAL TO FURNISHING AND ERECTING STRUCTURAL STEEL.

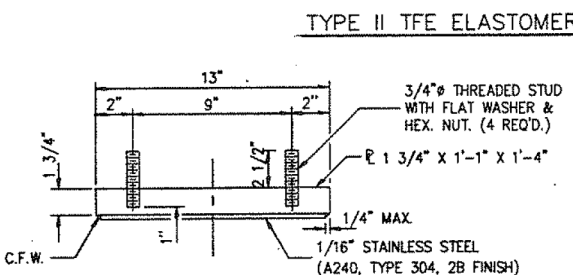
TRAFFIC SHALL BE REMOVED FROM THE PORTION OF THE STRUCTURE TO BE JACKED PRIOR TO COMMENCING JACKING OPERATIONS. TRAFFIC SHALL BE KEPT OFF THAT PORTION OF THE STRUCTURE DURING THE ENTIRE BEARING REPLACEMENT OPERATION. DIFFERENTIAL JACKING HEIGHT NOT TO EXCEED 1/8" TRANSVERSELY BETWEEN ADJACENT BEAMS OR 1/4" LONGITUDINALLY BETWEEN ADJACENT SUPPORTS.

PRIOR TO ORDERING ANY MATERIAL, THE CONTRACTOR SHALL VERIFY IN THE FIELD ALL BEARING HEIGHT AND SHIM DIMENSIONS.

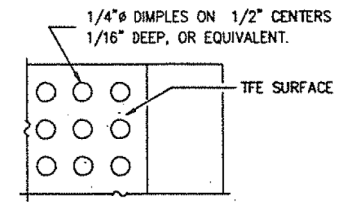
SEE SUPERSTRUCTURE OVERLAY & REPAIR PLANS FOR BEAM LOCATIONS.



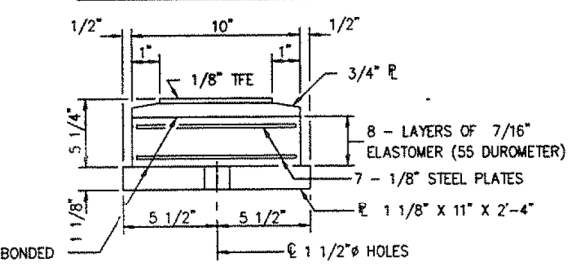
PLAN TOP & BOTTOM PLATES



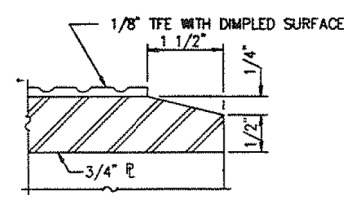
TOP BEARING ASSEMBLY



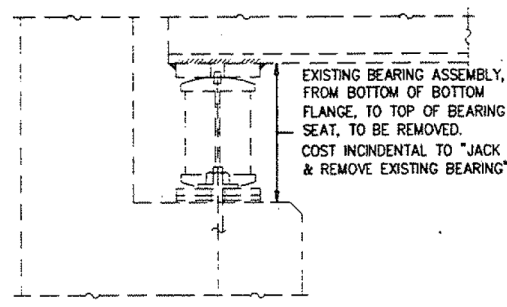
PLAN-TFE SURFACE



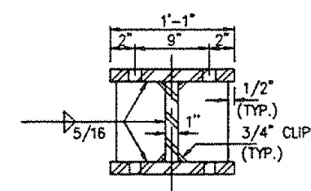
BOTTOM BEARING ASSEMBLY



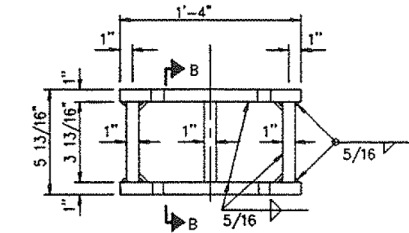
SECTION THRU TFE



EXISTING ELEVATION



SECTION B-B



STEEL EXTENSION DETAIL

| REACTIONS      |          |
|----------------|----------|
| R <sub>D</sub> | (K) 34.0 |
| R <sub>L</sub> | (K) 50.2 |
| IMP.           | (K) 11.2 |
| R (TOTAL)      | (K) 95.4 |

NOTE: REACTIONS ARE THE SAME FOR BOTH LOCATIONS

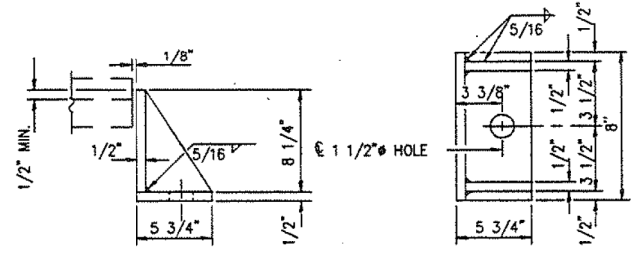
BILL OF MATERIAL

| ITEM                                 | UNIT | TOTAL |
|--------------------------------------|------|-------|
| ELASTOMERIC BEARING ASSEMBLY TYPE II | EACH | 13    |
| JACK & REMOVE EXISTING BEARINGS      | EACH | 13    |
| FURNISH & ERECT STRUCTURAL STEEL     | LBS  | 3300  |

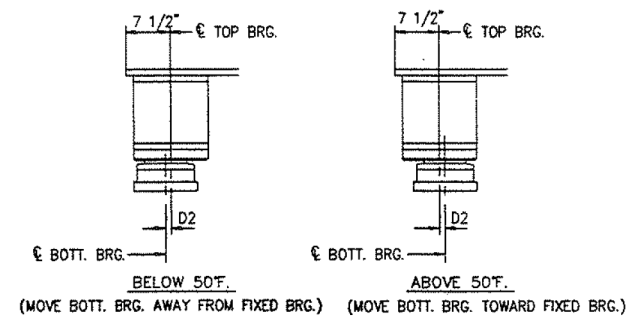
NOTE: THE 1/8" TFE SHEET SHALL BE BONDED DIRECTLY TO THE TOP STEEL PLATE WITH A TWO-COMPONENT, MEDIUM VISCOSITY EPOXY RESIN, CONFORMING TO THE REQUIREMENTS OF THE FEDERAL SPECIFICATION MMM-A-134, TYPE I. THE BOND AGENT SHALL BE APPLIED ON THE FULL AREA OF THE CONTACT SURFACES.

BONDING OF 1/8" TFE SHEET DURING VULCANIZING PROCESS WILL BE PERMITTED PROVIDED THE PROCESS AND METHOD OF ADJUSTING ASSEMBLY HEIGHT IS APPROVED BY THE ENGINEER.

|          |                                    |
|----------|------------------------------------|
| EXAMINED | 19                                 |
| PASSED   | ENGINEER OF BRIDGE DESIGN          |
| APPROVED | ENGINEER OF BRIDGES AND STRUCTURES |
|          | DIRECTOR OF HIGHWAYS               |



SIDE RETAINER  
EQUIVALENT ROLLED ANGLE WITH STIFFENERS - WILL BE ALLOWED IN LIEU OF WELDED PLATES.



SETTING ANCHOR BOLTS AT EXP. BRG.  
D2= 1/8" PER EACH 100' OF EXPANSION FOR EVERY 15° TEMP. CHANGE FROM THE NORMAL TEMP. OF 50°F.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
PIER 2 WEST, PIER 13 WEST  
10 X 14, TYPE II BEARINGS  
BRIDGE REPAIRS  
1ST AVE (IL 171) S.N. 016-0486 & 016-0487  
OVER SANITARY & SHIP CANAL AND RAMP "E"  
SECTION 0707-626B (BR)  
F.A.U. RT. 1505  
COOK CO. IL  
STA. 30+72.59  
STA. 35+12.88

|  |                     |                |           |
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| FILE NAME =                            | USER NAME = jsurber | DESIGNED - AJK | REVISED - |
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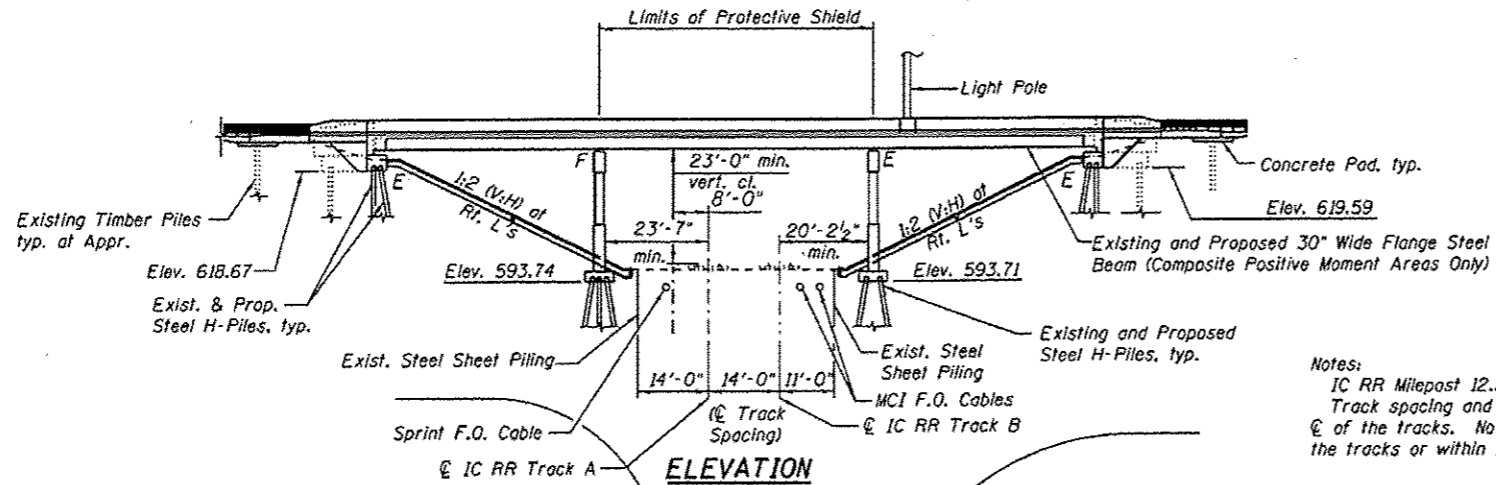
| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 373                       | 2013-037B-R | COOK   | 787          | 668                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |

Y:\chicago\100005\10093\Eng\_Docs\Phase II\SN 016\_0486\_0487\_1st\_Ave\_over\_Canal\Final\Final\_0487\_0160487\_60W75\_X46.exist.93.brgII.3.dgn 4:47:21 PM 6/17/2015

Bench Marks: Chiseled square on N.E. corner of N.B. IL-171 bridge wing wall over IC RR, El. 630.58

Existing Structure: S.N. 016-0489 (N.B.) was built in 1963 as F.A. Rte. 133, Section 0707-617 VB at Sta. 22+90.24. Existing dual structures each consist of three continuous span reinforced concrete decks on eight steel 30" WF beams in all three spans. The reinforced concrete deck is 8" thick, including a 2" microsilica concrete overlay. The abutments are reinforced concrete stub abutments founded on steel H-piles. Each pier is reinforced concrete consisting of a cap beam, multiple trapezoidal columns on a crashwall supported by a continuous spread footing on steel piles. The structure is 166'-6" back-to-back of abutments and the out-to-out deck width varies 48'-0" to 48'-9" in Span 3. Structure has a 12° 42' 19" skew. Traffic will be maintained utilizing crossovers. All Elevations in the proposed plans are based on NAVD88 Datum. Elevations in the existing plans are based on the NGVD29 Datum. NGVD29 Elev. 594.02 = NAVD88 Elev. 593.74.

No Salvage. O.H. Wire N.B. Sta. 22+28.49 Low Wire Elev. 665.26  
O.H. Wire N.B. Sta. 22+37.03 Low Wire Elev. 665.88



Notes:  
IC RR Milepost 12.25 is located approximately at the @ of IL-171. Track spacing and horizontal clearances are at right angles to the @ of the tracks. No free fall drains will be permitted in the span over the tracks or within 10 feet of cross arms of a railroad pole line.

**SCOPE OF WORK**

1. Remove the existing concrete deck and microsilica concrete overlay and replace with new 8" reinforced concrete deck.
2. Widen abutments, piers, and sloped walls to the outside.
3. Remove and replace approach slabs and wingwalls as shown for new deck width and semi-integral abutments.
4. Add one additional steel beam line to outside of the structure.
5. Repair spalls, delaminations and open cracks in substructures using formed concrete repair and epoxy crack injection. Replace failed sloped wall panels.
6. Remove and replace existing roadway lighting.
7. Retrofit cover plates on the top flanges of steel beams.
8. Perform miscellaneous repairs including debris/vegetation removal.
9. Re-set the steel expansion rocker bearings at Pier 2.
10. Remove existing backwalls and convert abutments to semi-integral.
11. Remove and dispose of existing electrical conduits and junction boxes attached to the beams and/or deck.

**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 (Exlst. Construction)**  
f'c = 3,500 psi  
fy = 40,000 psi (Reinforcement)  
fy = 36,000 psi (Structural Steel)

**SEISMIC DATA**

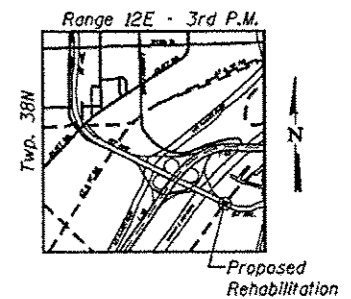
Seismic Performance Category (SPC) = A  
Bedrock Acceleration Coefficient (A) = 0.04g  
Site Coefficient (S) = 1.0

**LOADING HS20-44**

No future wearing surface allowed.

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications for Highway Bridges



**LOCATION SKETCH**

STATION 22+90.24  
RE-BUILT 20... BY  
STATE OF ILLINOIS  
F.A.P. RT. 373  
SEC. 2013-037B-R  
LOADING HS20  
STR. NO. 016-0489

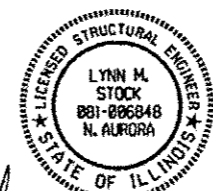
**NAME PLATE**

(See Std. 515001)

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

**APPROVED**  
For Structural Adequacy Only

*[Signature]*  
Engineer of Bridges & Structures



Lynn M. Stock  
Licensed Structural Engineer  
State of Illinois No. 081-006848  
Expires 11/30/2016

6/18/15  
Date

**EXISTING UTILITY LEGEND**

- Underground Storm Sewer
- Aerial Electric Line
- Underground Gas Line
- Underground Fiber Optic Line

**GENERAL PLAN AND ELEVATION**  
**NB IL-171 OVER IC RR**  
**FAP 373 - SECTION 2013-037B-R**  
**COOK COUNTY**  
**STATION 22+90.24**  
**STRUCTURE NO. 016-0489**



Exist. pipe drains, and section and drainage structure to be removed. See Roadway Plans, typ.

\*\* Vaires 12'-0" to 12'-9 5/8" Lane  
\*\*\* Vaires 11'-0" to 10'-2 3/8" Shoulder

**ENGINEERING, LTD.**  
Consulting Engineers  
11111 North

USER NAME = Lm28.Msh  
FILE NAME = 2013037B-R  
PLOT SCALE = 1/8" = 1'-0"  
PLOT DATE = 6/18/2015

DESIGNED - BOC  
CHECKED - RGB  
DRAWN - RMH  
CHECKED - LMS

REVISOR  
REVISION  
REVISION  
REVISION

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SHEET NO. SGI OF S038 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
| 373                | 2013-037B-R | COOK   | 787                       | 669       |
| CONTRACT NO. 60W75 |             |        | ILLINOIS FED. AID PROJECT |           |

**GENERAL NOTES**

- Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 7/8" dia., holes 15/16" dia., unless otherwise noted.
- Calculated weight of Structural Steel =  
M270 Grade 36: 1,340 lbs  
M270 Grade 50: 18,920 lbs
- No field welding is permitted except as specified in the contract documents.
- The Contractor shall test the existing welds by non-destructive methods within 2 ft. of the end of the existing cover plates for cracks after removal of the existing concrete deck. Dye penetrant (PT), magnetic particle (MT), or other approved testing method shall be performed by qualified personnel approved by the Engineer. If cracks are found, report them to the Bureau of Bridges and Structures for disposition. The cost of testing is included in Removal of Existing Concrete Deck. The cost of crack repair, if necessary, will be paid for according to Article 109.04 of the Standard Specifications.
- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring the new concrete deck and end diaphragms of the abutments, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.  
  
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 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.
- 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 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- The top flange of the existing structural steel is anticipated to have been painted with lead paint. Lead paint removal shall be completed in areas of the top flange that are to receive proposed stud shear connectors. See Special Provisions for "Containment and Disposal of Lead Paint Cleaning Residues".

- 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 bearings. Only Inorganic Zinc Rich Primer shall be applied to the new structural steel and the steel portions of the new elastomeric bearings in the shop under this contract and is included in the respective steel or bearing pay items. 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 abutments.

**INDEX OF SHEETS**

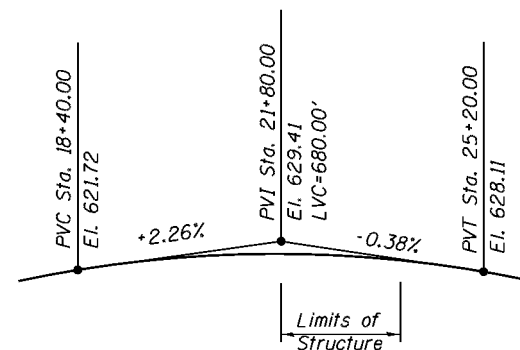
|           |  |
|-----------|--|
| SG1       | General Plan and Elevation                           |
| SG2       | General Notes, Bill of Material, and Index of Sheets |
| SG3       | Details  |
| SG4       | Sloped Wall Repair Details                           |
| SG5       | Footing Layout                                       |
| SG6       | Stage Construction Details                           |
| SG7       | Temporary Concrete Barrier for Stage Construction    |
| SG8       | Top of Slab Elevations Plan                          |
| SG9-SG11  | Top of Slab Elevations                               |
| SG12-SG13 | Top of Approach Slab Elevations                      |
| SG14      | Superstructure                                       |
| SG15-SG16 | Superstructure Details                               |
| SG17      | Concrete Parapet Slip Forming Option                 |
| SG18      | Semi-Integral Abutment Diaphragm Details             |
| SG19-SG21 | Bridge Approach Slab Details                         |
| SG22      | Framing Plan   |
| SG23      | Structural Steel Details                             |
| SG24      | Abutment Bearing Details                             |
| SG25      | Pier Bearing Details                                 |
| SG26      | Partial Abutment Removal and Repair Details          |
| SG27-SG28 | South Abutment Widening                              |
| SG29-SG30 | North Abutment Widening                              |
| SG31      | Pier Repair Details                                  |
| SG32      | Pier 1 Widening                                      |
| SG33      | Pier 2 Widening                                      |
| SG34      | HP Pile Details                                      |
| SG35-SG38 | Boring Logs  |

For existing bridge plans, see Sheets SGX1 thru SGX14 immediately following Sheet SG38.

**TOTAL BILL OF MATERIAL**

| ITEM  | UNIT    | SUPER   | SUB   | TOTAL   |
|---|---------|---------|-------|---------|
| Concrete Removal  | Cu. Yd. |         | 42.9  | 42.9    |
| Slope Wall Removal  | Sq. Yd. |         | 661   | 661     |
| Removal of Existing Concrete Deck No. 5                                 | Each    | 1       |       | 1       |
| Protective Shield   | Sq. Yd. | 330     |       | 330     |
| Structure Excavation  | Cu. Yd. |         | 279   | 279     |
| Floor Drains  | Each    | 4       |       | 4       |
| Concrete Structures   | Cu. Yd. |         | 111.7 | 111.7   |
| Concrete Superstructure   | Cu. Yd. | 506.7   |       | 506.7   |
| Bridge Deck Grooving  | Sq. Yd. | 1,274   |       | 1,274   |
| Concrete Encasement   | Cu. Yd. |         | 1.4   | 1.4     |
| Protective Coat   | Sq. Yd. | 1,514   |       | 1,514   |
| * Furnishing and Erecting Structural Steel                              | L Sum   | 0.05    |       | 0.05    |
| Stud Shear Connectors   | Each    | 5,751   |       | 5,751   |
| Reinforcement Bars, Epoxy Coated  | Pound   | 111,450 | 9,120 | 120,570 |
| Slope Wall 4 Inch   | Sq. Yd. |         | 802   | 802     |
| Furnishing Steel Piles HP12x53  | Foot    |         | 322   | 322     |
| Driving Piles   | Foot    |         | 322   | 322     |
| Test Pile Steel HP12x53   | Each    |         | 4     | 4       |
| Pile Shoes  | Each    |         | 14    | 14      |
| Name Plates   | Each    | 1       |       | 1       |
| Elastomeric Bearing Assembly, Type I                                    | Each    | 2       |       | 2       |
| Elastomeric Bearing Assembly, Type II                                   | Each    | 1       |       | 1       |
| Anchor Bolts, 3/4"  | Each    | 4       |       | 4       |
| Anchor Bolts, 1"  | Each    | 2       |       | 2       |
| ** Epoxy Crack Injection  | Foot    |         | 18    | 18      |
| Geocomposite Wall Drain   | Sq. Yd. |         | 91    | 91      |
| Remove Conduit Attached to Structure                                    | Foot    | 498     |       | 498     |
| Granular Backfill for Structures  | Cu. Yd. |         | 325   | 325     |
| Adjust Rocker and Sole Plate  | Each    | 8       |       | 8       |
| Structural Steel Repair   | Pound   | 6,460   |       | 6,460   |
| Containment and Disposal of Lead Paint Cleaning Residues No. 5          | L. Sum  | 1       |       | 1       |
| Cleaning Bridge Seats   | Sq. Ft. |         | 524   | 524     |
| ** Structural Repair of Concrete (Depth Equal to or Less than 5 Inches) | Sq. Ft. |         | 59    | 59      |
| ** Structural Repair of Concrete (Depth Greater than 5 Inches)          | Sq. Ft. |         | 12    | 12      |
| Pipe Underdrains for Structures 4"                                      | Foot    |         | 164   | 164     |
| *** Selective Clearing  | Unit    |         | 2     | 2       |
| Temporary Soil Retention System   | Sq. Ft. |         | 781   | 781     |

- \* Remainder of this item is installed with other structures in this Contract. See 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 inspections (2008-09). Actual repair areas will be determined by the Engineer in the field.
- \*\*\* The quantity for this work is estimated. The intent for this work is to remove accumulations of rubbish, vegetation, etc. on the existing sloped walls. See Special Provisions.

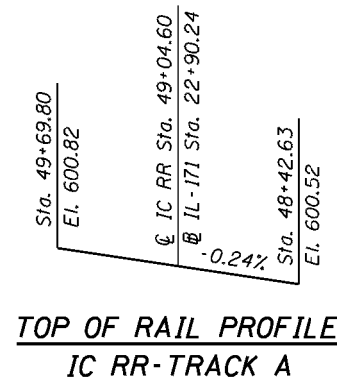


**PROFILE GRADE NB IL-171**

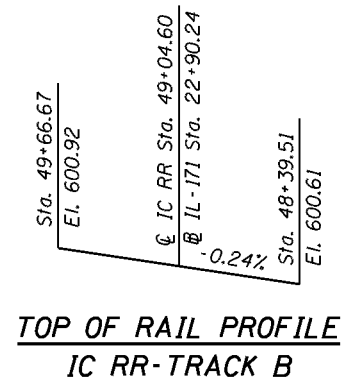
(Along @ NB IL-171)

**CURVE RAMP D-1**

P.I. STA = 24+31.17  
 $\Delta = 10^{\circ}48'56''$  (RT)  
 $D = 3^{\circ}56'58''$   
 $R = 1,450.69'$   
 $T = 137.33'$   
 $L = 273.84'$   
 $E = 6.49'$   
 $e = 4.6\%$   
 P.C. STA = 22+93.84  
 P.C.C. STA = 25+67.68



**TOP OF RAIL PROFILE  
IC RR-TRACK A**



**TOP OF RAIL PROFILE  
IC RR-TRACK B**



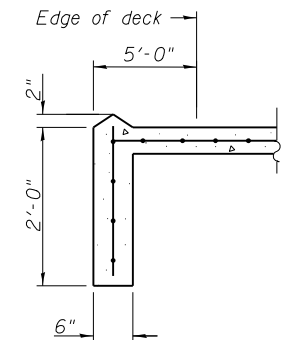
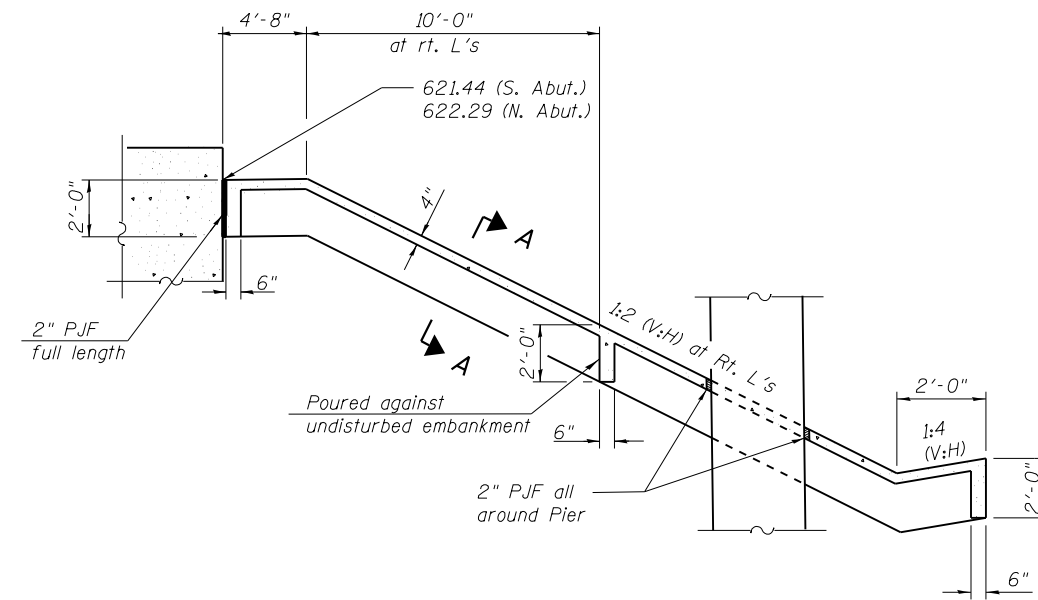
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| PLOT DATE = 6/18/2015  | CHECKED - LMS  | REVISED |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**GENERAL NOTES, BILL OF MATERIAL, AND INDEX OF SHEETS  
STRUCTURE NO. 016-0489**

SHEET NO. SG2 OF SG38 SHEETS

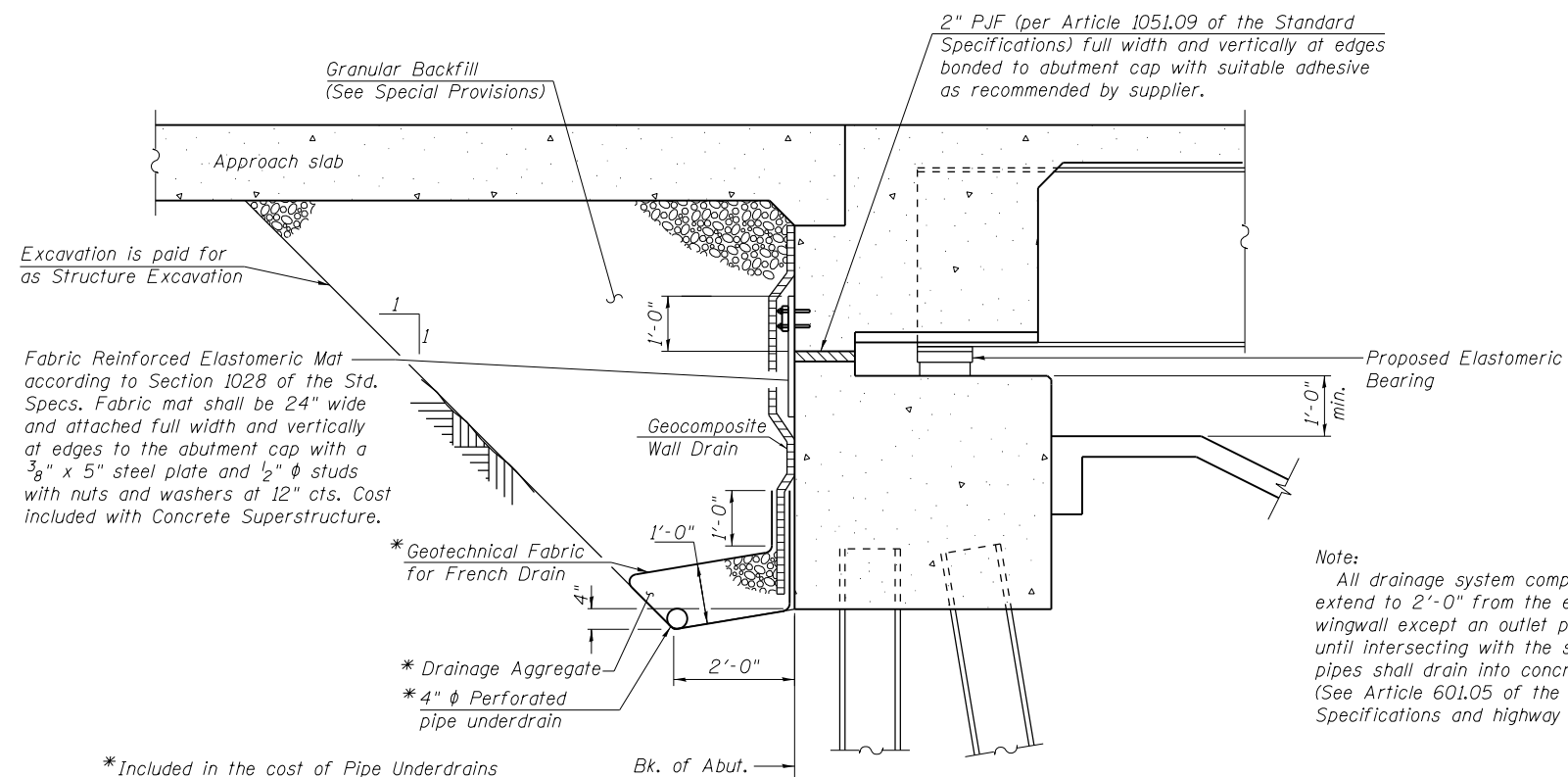
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
| 373                | 2013-0378-R | COOK   | 787                       | 670       |
| CONTRACT NO. 60W75 |             |        | ILLINOIS FED. AID PROJECT |           |



**SECTION THRU  
CONCRETE SLOPEWALL**

**SECTION A-A**

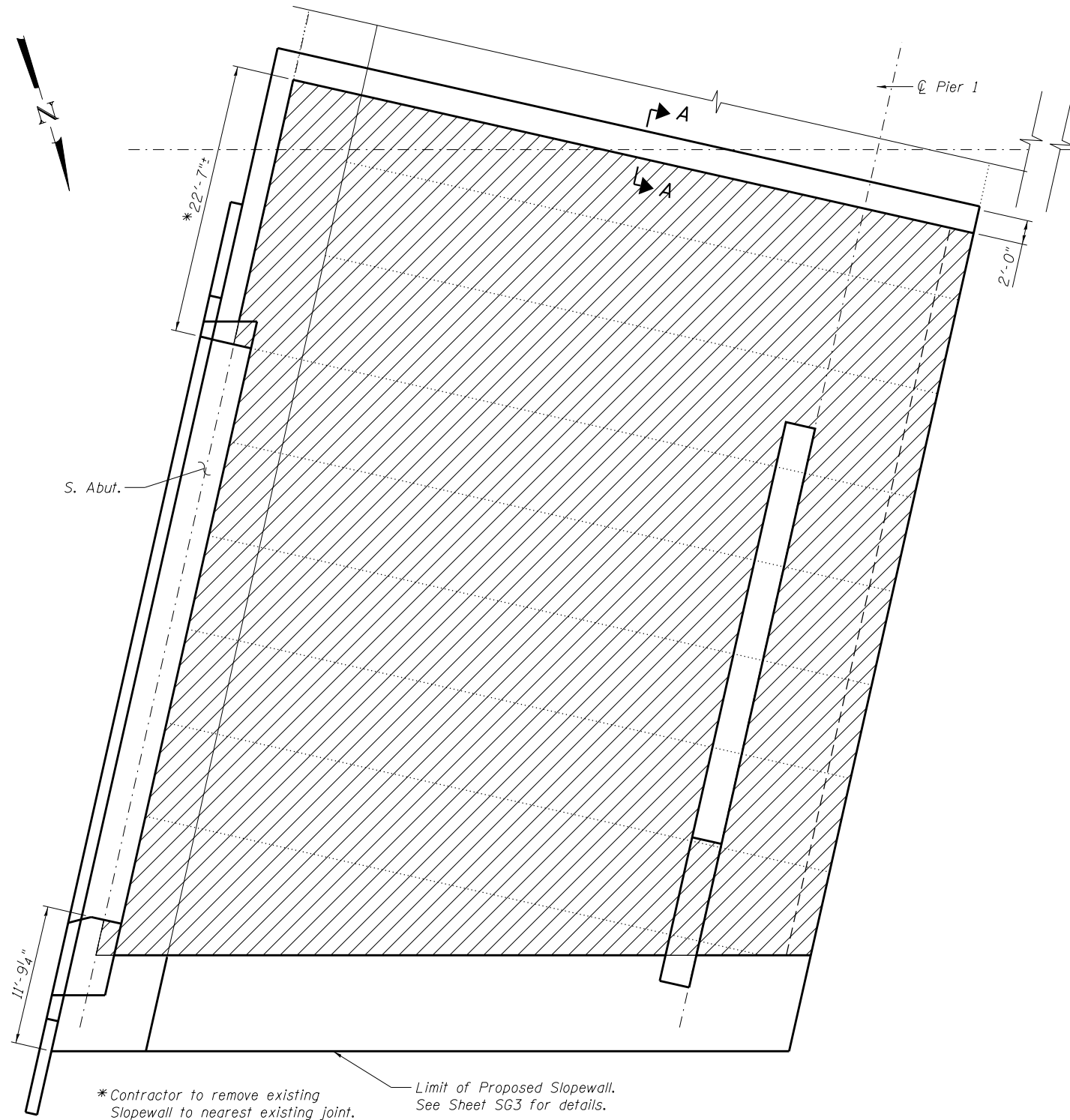
Note:  
Slope wall shall be reinforced with welded wire fabric, 6 in. x 6 in. W4.0 x W4.0, weighing 58 lbs per 100 sq. ft.



Note:  
All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and highway Standard 601101).

**SECTION THRU SEMI-INTEGRAL ABUTMENTS**

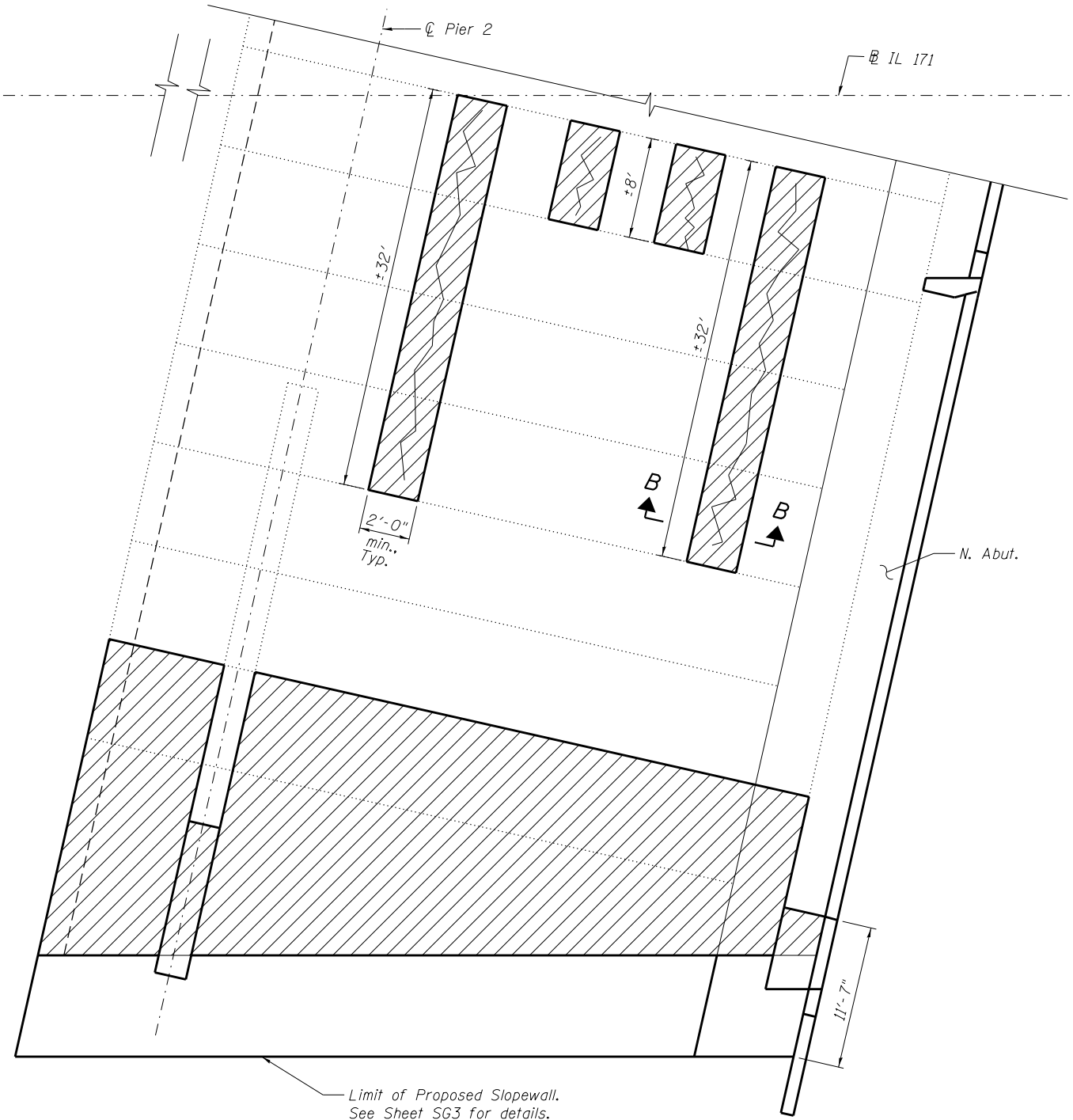
(Horiz. dim. @ Rt. L's)



\*Contractor to remove existing Slopewall to nearest existing joint. See Sheet SG3 for details.

**PLAN**

(South Abutment)



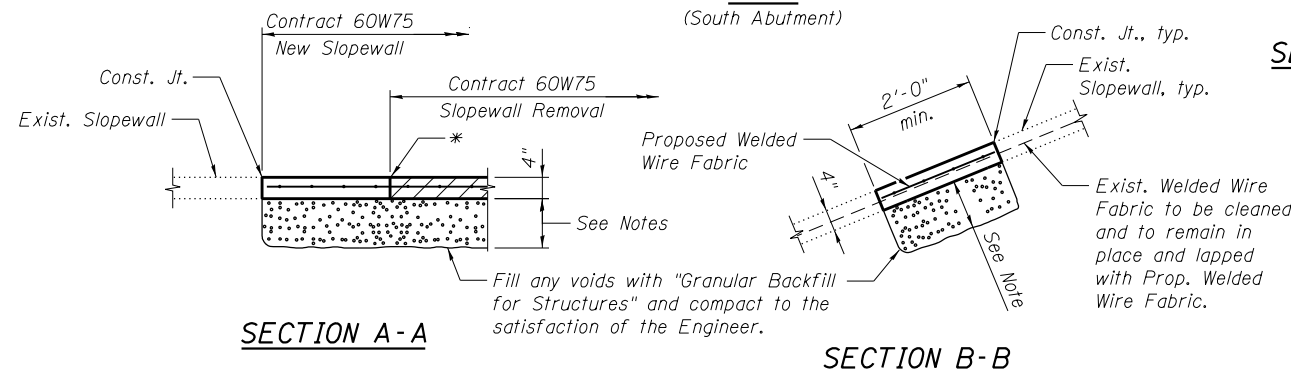
Limit of Proposed Slopewall. See Sheet SG3 for details.

**PLAN**

(North Abutment)

**LEGEND**

- Slope Wall Removal
- Crack



**SECTION A-A**

**SECTION B-B**

**SLOPEWALLS**

**BILL OF MATERIAL**

| ITEM                             | UNIT    | TOTAL |
|----------------------------------|---------|-------|
| Slope Wall Removal               | Sq. Yd. | 661   |
| Granular Backfill for Structures | Cu. Yd. | 143   |
| Slope Wall 4 Inch                | Sq. Yd. | 802   |

Notes:  
 Slope wall shall be reinforced with welded wire fabric, 6 in. x 6 in. W4.0 x W4.0, weighing 58 lbs per 100 sq. ft.  
 Any voids found under the slopewall shall be filled with Granular Backfill and compacted to the satisfaction of the Engineer. Quantity of Granular Backfill based on an estimate assuming an average of 2' of required fill under all damaged slopewall areas, and 6" required fill under remaining removal.  
 Embankment required for the slopewall widening shall be paid for as "Furnished Excavation". See Roadway Plans.



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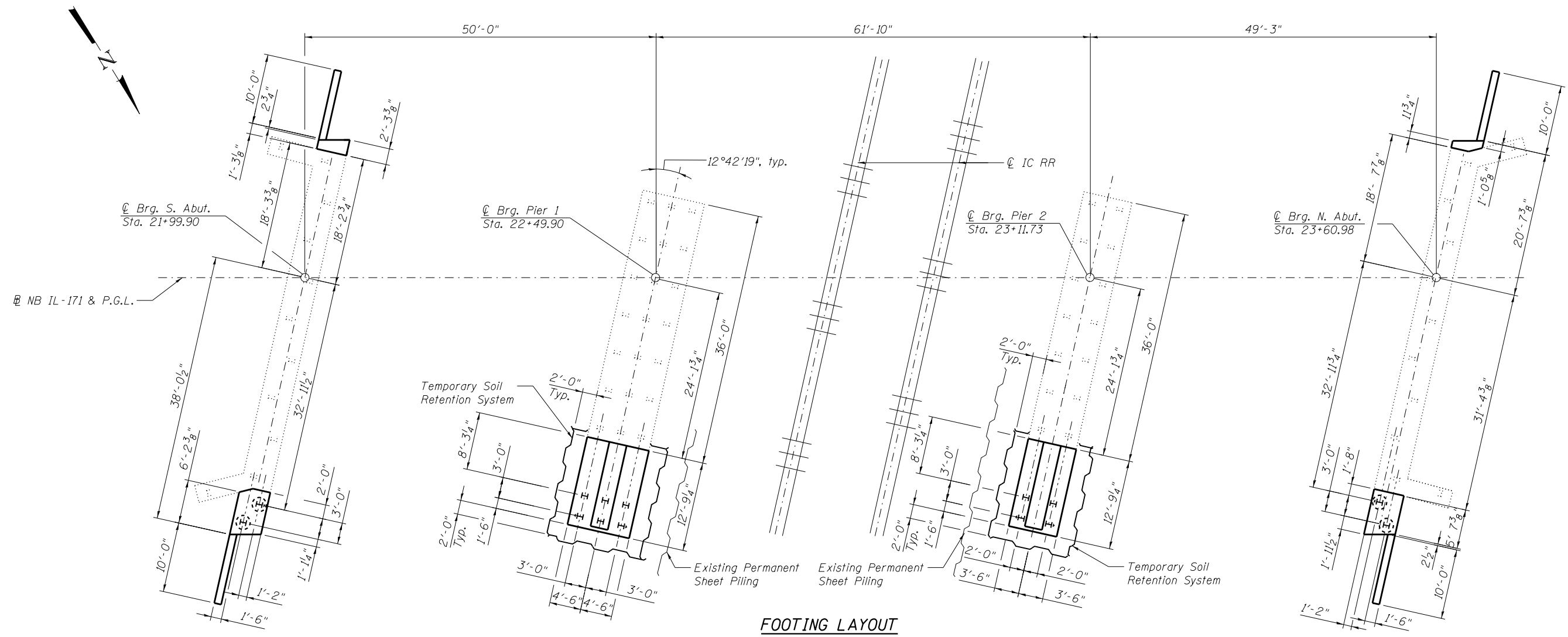
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**SLOPEWALL REPAIR DETAILS  
 STRUCTURE NO. 016-0489**

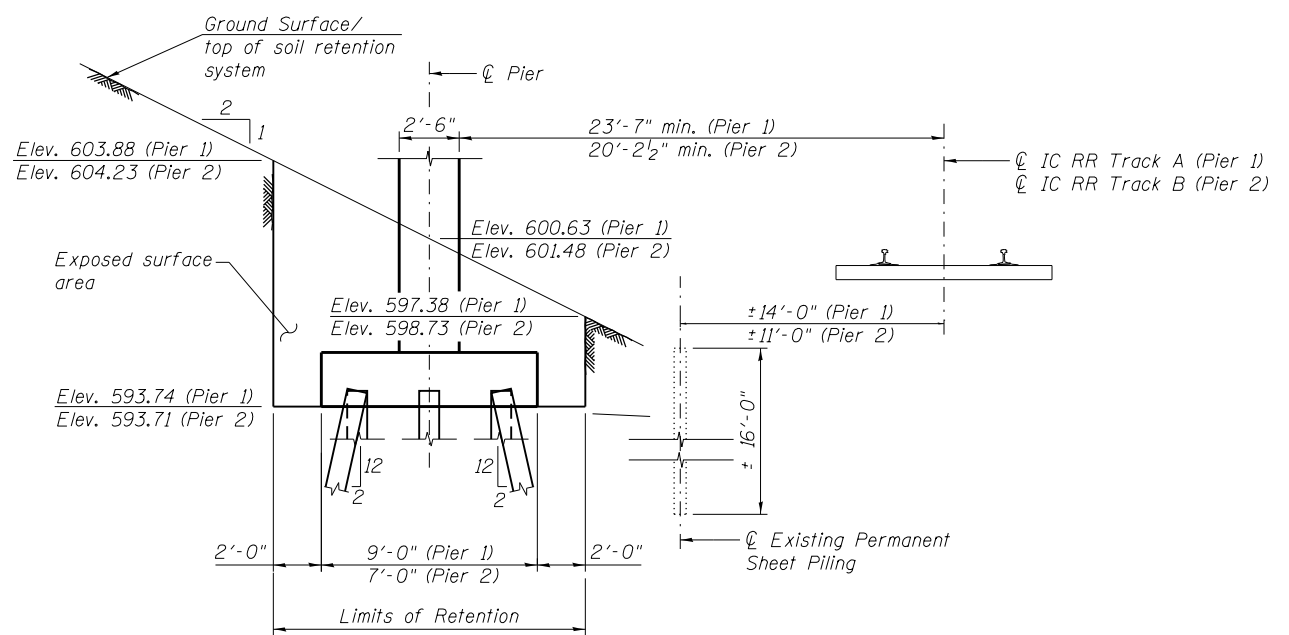
SHEET NO. SG4 OF SG38 SHEETS

|                           |                     |             |                  |               |
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| CONTRACT NO. 60W75        |                     |             |                  |               |
| ILLINOIS FED. AID PROJECT |                     |             |                  |               |





**FOOTING LAYOUT**



**TEMPORARY SOIL RETENTION SYSTEM**

Pier 1 shown, Pier 2 similar  
All dimensions perpendicular to skew unless otherwise noted.

**BILL OF MATERIAL**

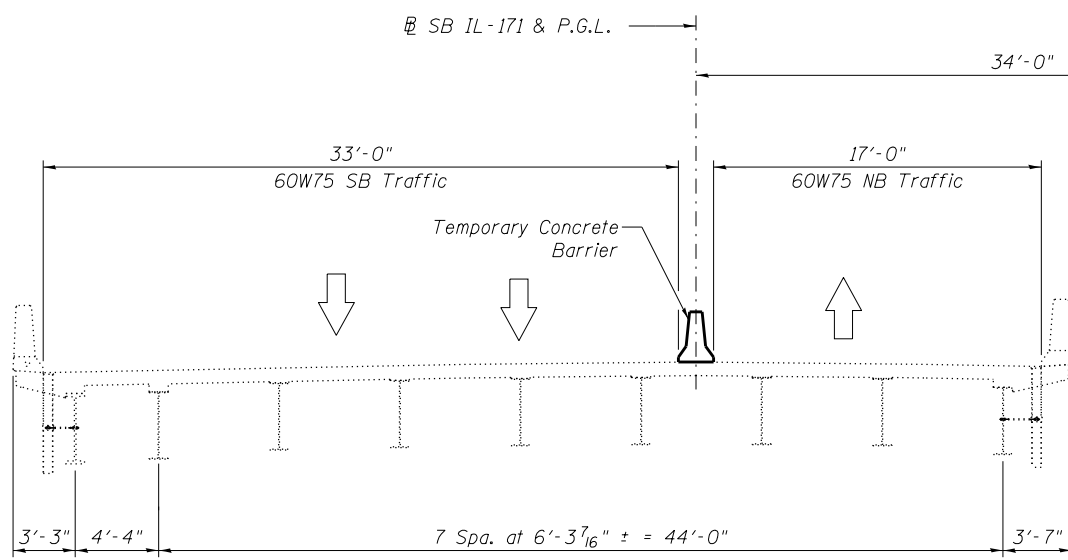
| ITEM                            | UNIT    | TOTAL |
|---------------------------------|---------|-------|
| Temporary Soil Retention System | Sq. Ft. | 781   |

**LEGEND**

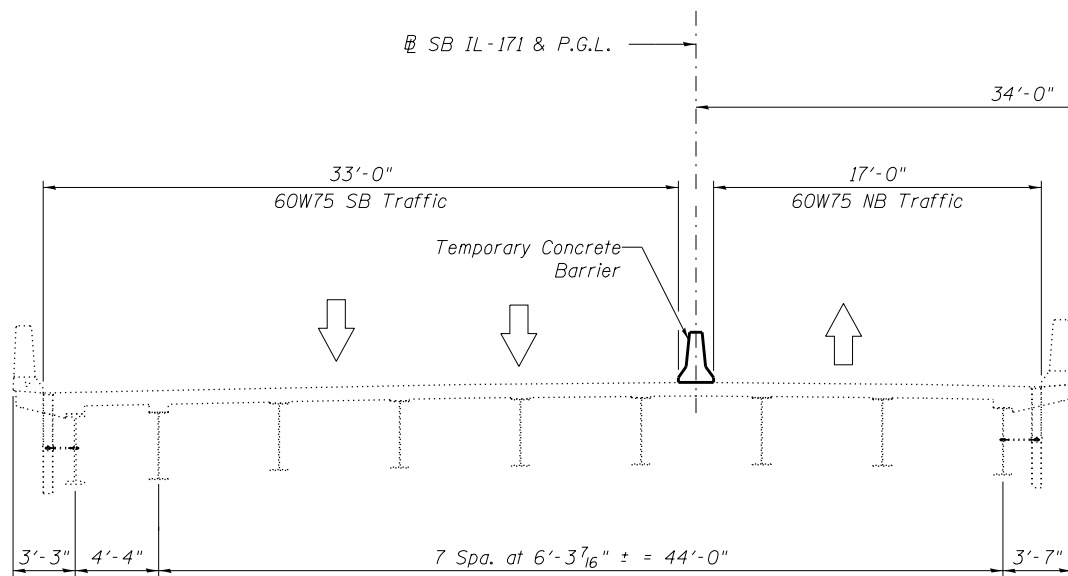
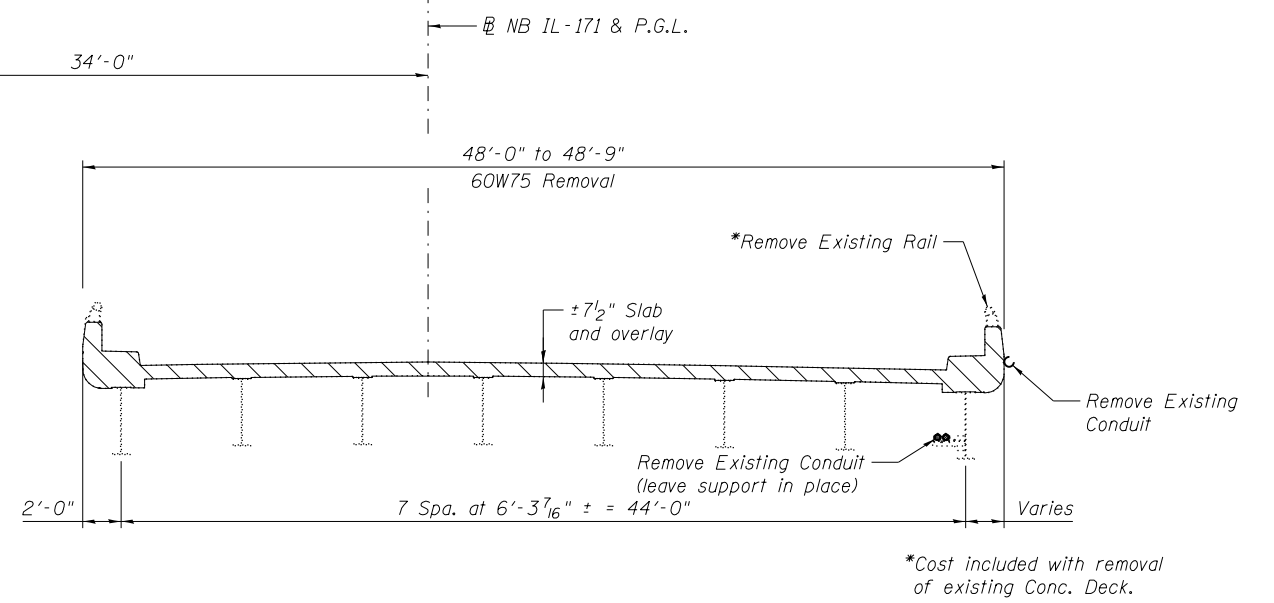
- ⊥ Indicates vertical pile
- ⊕ Indicates battered pile 12:2 (V:H)
- ⊙ Indicates Concrete Encasement

**Notes:**

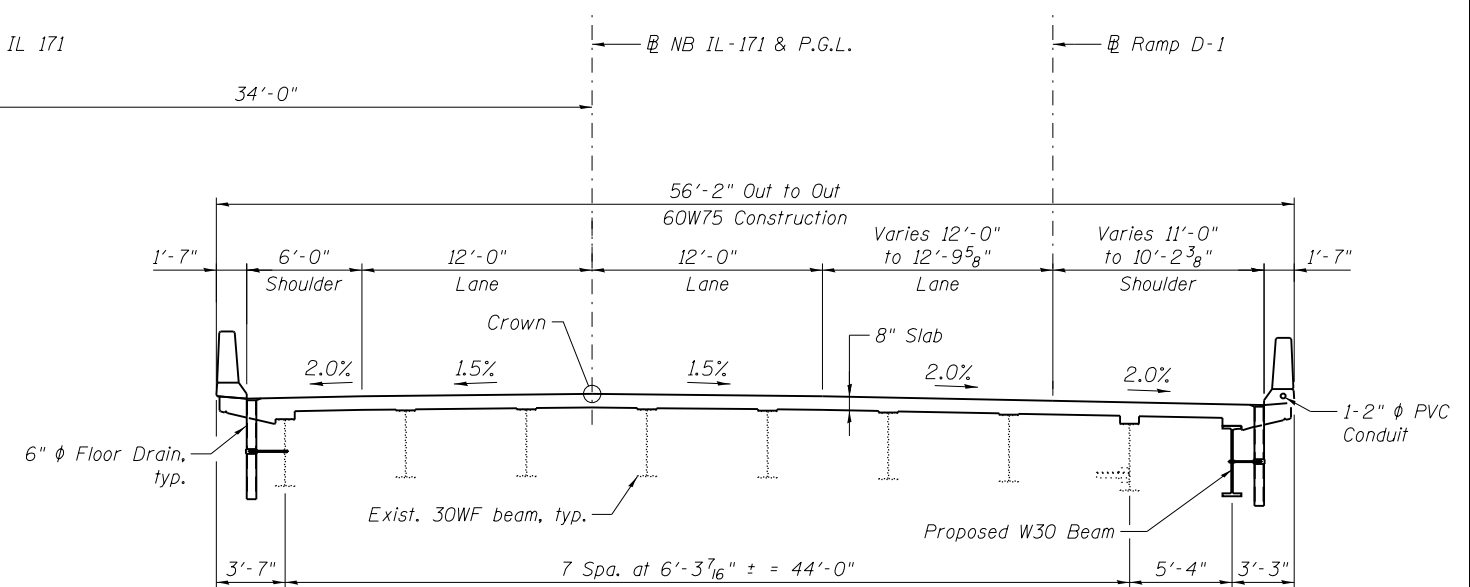
For abutment details, see sheets SG27 thru SG30.  
For pier details, see sheets SG32 and SG33.  
For HP Pile Details, see sheet SG34.  
A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.



**CONTRACT 60W75 REMOVAL**  
(Looking Upstation)



**CONTRACT 60W75 CONSTRUCTION**  
(Looking Upstation)



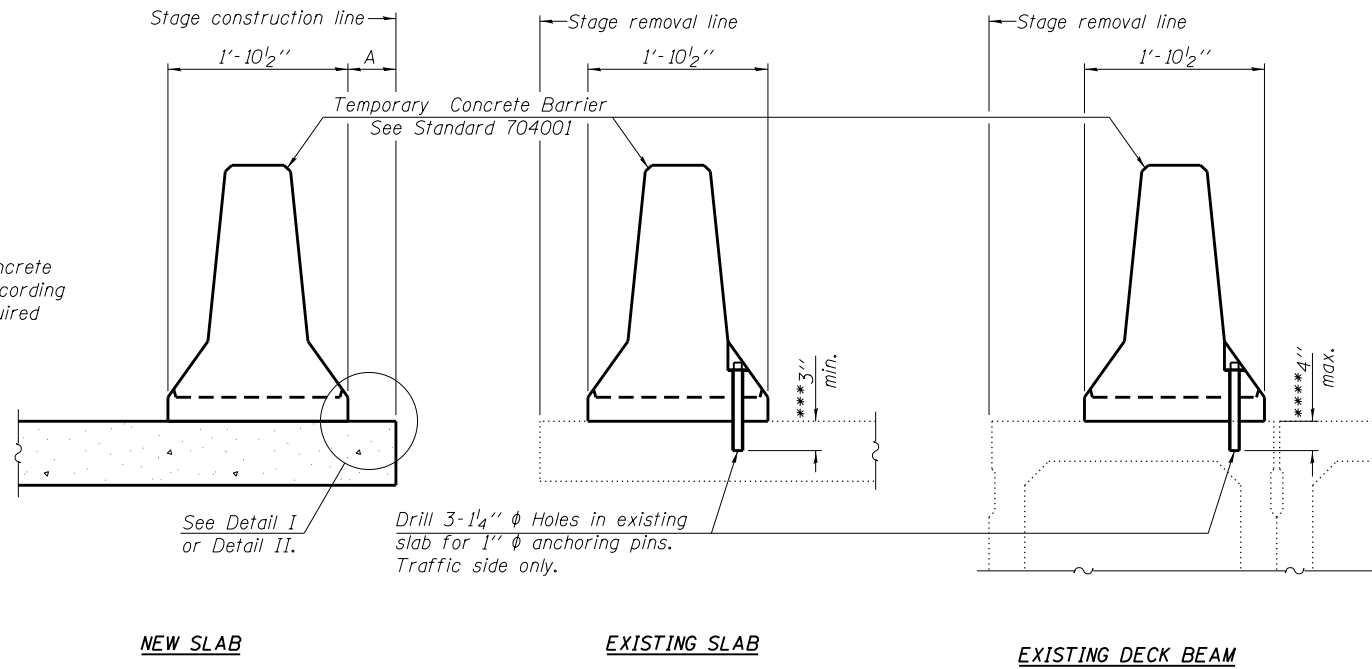
**BILL OF MATERIAL**

| ITEM                                    | UNIT | TOTAL |
|---|------|-------|
| Removal of Existing Concrete Deck No. 5 | Each | 1     |

Notes:  
 The Contractor shall use extreme caution during concrete deck removal so as not to damage the existing Steel Beams. Contractor shall repair any damage to Steel Beams at no additional cost. See Special Provision for "Removal of Existing Concrete Deck".  
 Temporary Concrete Barrier shall not be anchored to the deck. Refer to Sheet SG7 for Temporary Concrete Barrier.  
 See Roadway Plans for Maintenance of Traffic and Pay Item for Temporary Concrete Barrier.

Indicates Removal of Existing Concrete Deck

When "A" is 3'-1" 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'-1".



**SECTIONS THRU SLAB OR DECK BEAM**

**NOTES**

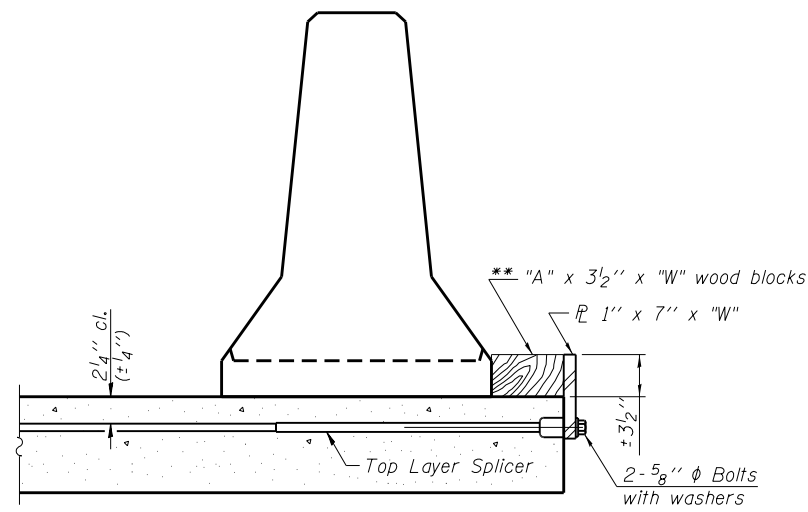
Detail I - With Bar Splicer or Couplers:  
Connect one (1) 1" x 7" x "W" steel PL to the top layer of couplers with 2-5/8" φ bolts screwed to coupler at approximate C of each barrier panel.

Detail II - With Extended Reinforcement Bars:  
Connect one (1) 1" x 7" x "W" steel PL to the concrete slab or concrete wearing surface with 2-5/8" φ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate C of each barrier panel.

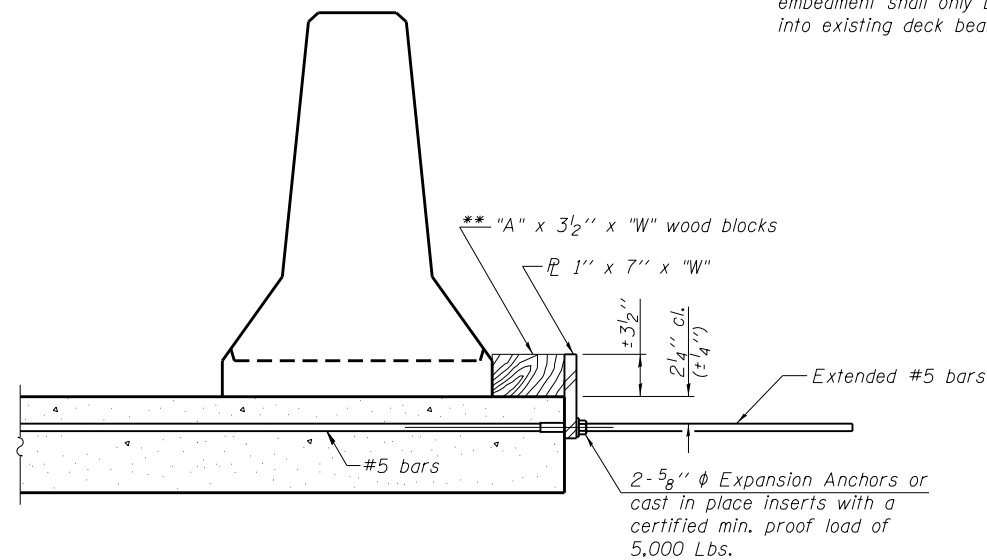
Cost of retainer assembly is included with Temporary Concrete Barrier. The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

\*\*\* 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.

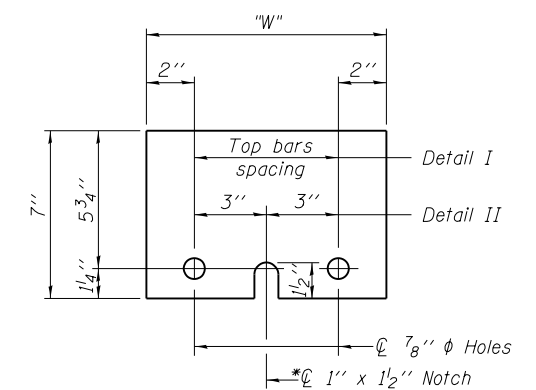
\*\*\*\* If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



**DETAIL I**



**DETAIL II**



**STEEL RETAINER PL 1" x 7" x "W"**

\* Required only with Detail II

**RETAINER ASSEMBLY**

\*\* 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.

R-27

1-12-15



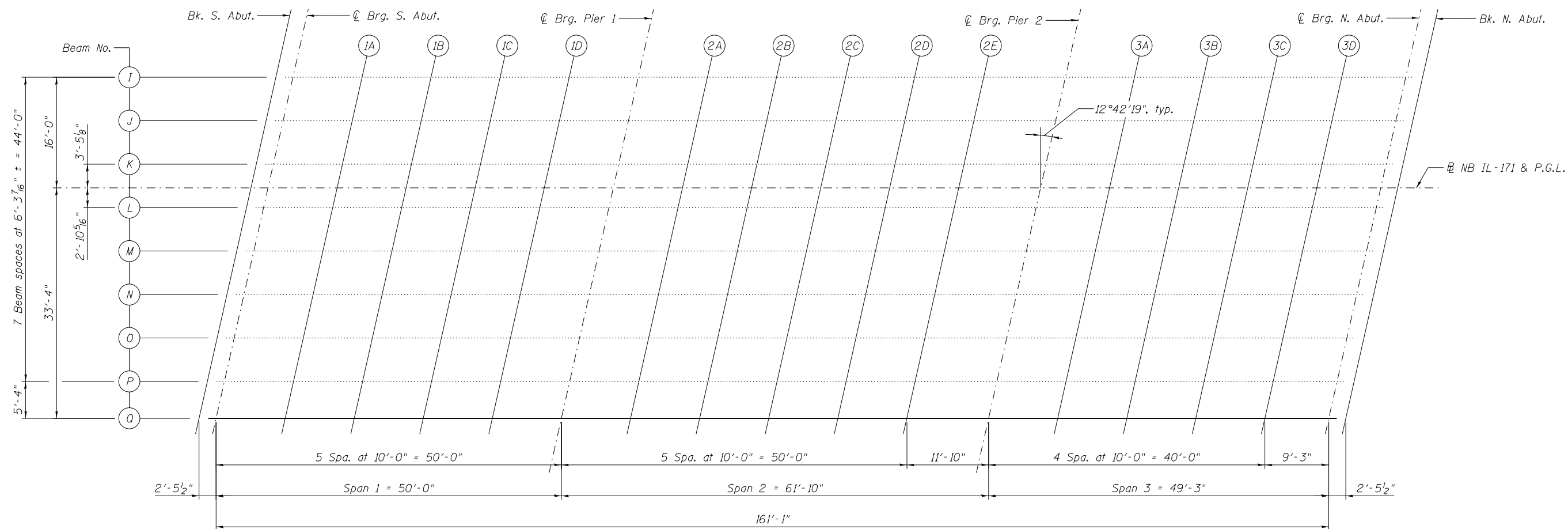
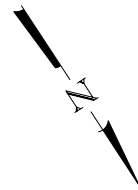
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| PLOT DATE = 6/18/2015   | CHECKED - LMS  | REVISED |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION  
STRUCTURE NO. 016-0489**

SHEET NO. SG7 OF SG38 SHEETS

| F.A.P. RE.         | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
| 373                | 2013-037B-R | COOK   | 787                       | 675       |
| CONTRACT NO. 60W75 |             |        | ILLINOIS FED. AID PROJECT |           |

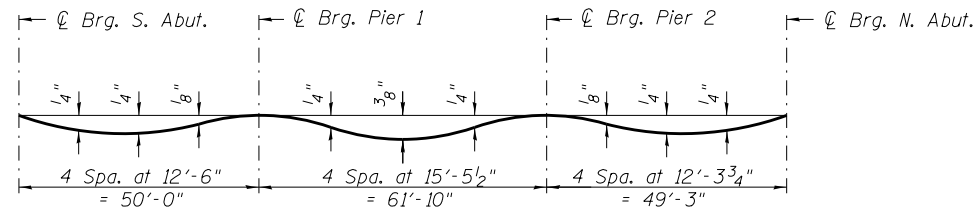


PLAN

Note:  
Contractor shall supply top of steel elevation survey data at all screed points to the Engineer for approval before beginning deck formwork operations.

|  |                |         |
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| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
| 373                | 2013-037B-R | COOK   | 787                       | 676       |
| CONTRACT NO. 60W75 |             |        | ILLINOIS FED. AID PROJECT |           |

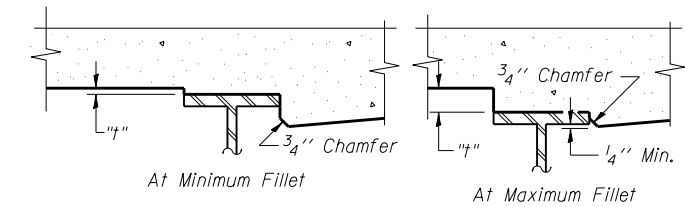


**DEAD LOAD DEFLECTION DIAGRAM**

(Includes weight of concrete only.)

Note:

The above deflections are not to be used in the field if the engineer is working from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" as shown on this sheet and Sheets SG10 and SG11.



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 Sheet SGB. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown below and on Sheets SG10 and SG11, minus slab thickness, equals the fillet heights "t" above top flange of beams.

**FILLET HEIGHTS**

**BEAM I**

| Location        | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|----------|--------|------------------------------|--|
| BK. S. ABUT.    | 22+01.05 | -16.00 | 627.08                       | 627.08   |
| ☉ BRG. S. ABUT. | 22+03.51 | -16.00 | 627.10                       | 627.10   |
| 1A              | 22+13.51 | -16.00 | 627.18                       | 627.20   |
| 1B              | 22+23.51 | -16.00 | 627.26                       | 627.29   |
| 1C              | 22+33.51 | -16.00 | 627.34                       | 627.36   |
| 1D              | 22+43.51 | -16.00 | 627.41                       | 627.42   |
| ☉ BRG. PIER 1   | 22+53.51 | -16.00 | 627.48                       | 627.48   |
| 2A              | 22+63.51 | -16.00 | 627.54                       | 627.55   |
| 2B              | 22+73.51 | -16.00 | 627.60                       | 627.62   |
| 2C              | 22+83.51 | -16.00 | 627.65                       | 627.69   |
| 2D              | 22+93.51 | -16.00 | 627.71                       | 627.73   |
| 2E              | 23+03.51 | -16.00 | 627.75                       | 627.77   |
| ☉ BRG. PIER 2   | 23+15.34 | -16.00 | 627.81                       | 627.81   |
| 3A              | 23+25.34 | -16.00 | 627.85                       | 627.85   |
| 3B              | 23+35.34 | -16.00 | 627.88                       | 627.90   |
| 3C              | 23+45.34 | -16.00 | 627.91                       | 627.94   |
| 3D              | 23+55.34 | -16.00 | 627.94                       | 627.96   |
| ☉ BRG. N. ABUT. | 23+64.59 | -16.00 | 627.96                       | 627.96   |
| BK. N. ABUT.    | 23+67.05 | -16.00 | 627.97                       | 627.97   |

**BEAM J**

| Location        | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|----------|--------|------------------------------|--|
| BK. S. ABUT.    | 21+99.63 | -9.71  | 627.19                       | 627.19   |
| ☉ BRG. S. ABUT. | 22+02.09 | -9.71  | 627.21                       | 627.21   |
| 1A              | 22+12.09 | -9.71  | 627.29                       | 627.31   |
| 1B              | 22+22.09 | -9.71  | 627.37                       | 627.40   |
| 1C              | 22+32.09 | -9.71  | 627.45                       | 627.47   |
| 1D              | 22+42.09 | -9.71  | 627.52                       | 627.53   |
| ☉ BRG. PIER 1   | 22+52.09 | -9.71  | 627.58                       | 627.58   |
| 2A              | 22+62.09 | -9.71  | 627.65                       | 627.66   |
| 2B              | 22+72.09 | -9.71  | 627.71                       | 627.73   |
| 2C              | 22+82.09 | -9.71  | 627.77                       | 627.79   |
| 2D              | 22+92.09 | -9.71  | 627.82                       | 627.84   |
| 2E              | 23+02.09 | -9.71  | 627.87                       | 627.88   |
| ☉ BRG. PIER 2   | 23+13.92 | -9.71  | 627.92                       | 627.92   |
| 3A              | 23+23.92 | -9.71  | 627.96                       | 627.97   |
| 3B              | 23+33.92 | -9.71  | 628.00                       | 628.02   |
| 3C              | 23+43.92 | -9.71  | 628.03                       | 628.05   |
| 3D              | 23+53.92 | -9.71  | 628.06                       | 628.07   |
| ☉ BRG. N. ABUT. | 23+63.17 | -9.71  | 628.08                       | 628.08   |
| BK. N. ABUT.    | 23+65.63 | -9.71  | 628.08                       | 628.08   |

**BEAM K**

| Location        | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|----------|--------|------------------------------|--|
| BK. S. ABUT.    | 21+98.21 | -3.43  | 627.27                       | 627.27   |
| ☉ BRG. S. ABUT. | 22+00.67 | -3.43  | 627.29                       | 627.29   |
| 1A              | 22+10.67 | -3.43  | 627.38                       | 627.39   |
| 1B              | 22+20.67 | -3.43  | 627.46                       | 627.48   |
| 1C              | 22+30.67 | -3.43  | 627.53                       | 627.55   |
| 1D              | 22+40.67 | -3.43  | 627.61                       | 627.61   |
| ☉ BRG. PIER 1   | 22+50.67 | -3.43  | 627.67                       | 627.67   |
| 2A              | 22+60.67 | -3.43  | 627.74                       | 627.75   |
| 2B              | 22+70.67 | -3.43  | 627.80                       | 627.82   |
| 2C              | 22+80.67 | -3.43  | 627.86                       | 627.88   |
| 2D              | 22+90.67 | -3.43  | 627.91                       | 627.93   |
| 2E              | 23+00.67 | -3.43  | 627.96                       | 627.97   |
| ☉ BRG. PIER 2   | 23+12.50 | -3.43  | 628.01                       | 628.01   |
| 3A              | 23+22.50 | -3.43  | 628.05                       | 628.06   |
| 3B              | 23+32.50 | -3.43  | 628.09                       | 628.11   |
| 3C              | 23+42.50 | -3.43  | 628.12                       | 628.15   |
| 3D              | 23+52.50 | -3.43  | 628.15                       | 628.17   |
| ☉ BRG. N. ABUT. | 23+61.75 | -3.43  | 628.17                       | 628.17   |
| BK. N. ABUT.    | 23+64.21 | -3.43  | 628.18                       | 628.18   |

(Sheet 1 of 3)



USER NAME = Lin20\_Nick  
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STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS  
 STRUCTURE NO. 016-0489

SHEET NO. S09 OF S038 SHEETS

| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
|---------------------------|-------------|--------|--------------------|-----------|
| 373                       | 2013-037B-R | COOK   | 787                | 677       |
|                           |             |        | CONTRACT NO. 60W75 |           |
| ILLINOIS FED. AID PROJECT |             |        |                    |           |

**NB IL-171 P.G.L. & CROWN**

| Location        | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|----------|--------|------------------------------|--|
| BK. S. ABUT.    | 21+97.44 | 0.00   | 627.32                       | 627.32   |
| ☉ BRG. S. ABUT. | 21+99.90 | 0.00   | 627.34                       | 627.34   |
| 1A              | 22+09.90 | 0.00   | 627.42                       | 627.44   |
| 1B              | 22+19.90 | 0.00   | 627.50                       | 627.53   |
| 1C              | 22+29.90 | 0.00   | 627.58                       | 627.60   |
| 1D              | 22+39.90 | 0.00   | 627.65                       | 627.66   |
| ☉ BRG. PIER 1   | 22+49.90 | 0.00   | 627.72                       | 627.72   |
| 2A              | 22+59.90 | 0.00   | 627.79                       | 627.80   |
| 2B              | 22+69.90 | 0.00   | 627.85                       | 627.87   |
| 2C              | 22+79.90 | 0.00   | 627.91                       | 627.93   |
| 2D              | 22+89.90 | 0.00   | 627.96                       | 627.98   |
| 2E              | 22+99.90 | 0.00   | 628.01                       | 628.02   |
| ☉ BRG. PIER 2   | 23+11.73 | 0.00   | 628.06                       | 628.06   |
| 3A              | 23+21.73 | 0.00   | 628.10                       | 628.11   |
| 3B              | 23+31.73 | 0.00   | 628.14                       | 628.16   |
| 3C              | 23+41.73 | 0.00   | 628.17                       | 628.20   |
| 3D              | 23+51.73 | 0.00   | 628.20                       | 628.22   |
| ☉ BRG. N. ABUT. | 23+60.98 | 0.00   | 628.23                       | 628.23   |
| BK. N. ABUT.    | 23+63.44 | 0.00   | 628.23                       | 628.23   |

**BEAM L**

| Location        | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|----------|--------|------------------------------|--|
| BK. S. ABUT.    | 21+96.80 | 2.86   | 627.27                       | 627.27   |
| ☉ BRG. S. ABUT. | 21+99.25 | 2.86   | 627.29                       | 627.29   |
| 1A              | 22+09.25 | 2.86   | 627.37                       | 627.39   |
| 1B              | 22+19.25 | 2.86   | 627.45                       | 627.48   |
| 1C              | 22+29.25 | 2.86   | 627.53                       | 627.55   |
| 1D              | 22+39.25 | 2.86   | 627.60                       | 627.61   |
| ☉ BRG. PIER 1   | 22+49.25 | 2.86   | 627.67                       | 627.67   |
| 2A              | 22+59.25 | 2.86   | 627.74                       | 627.75   |
| 2B              | 22+69.25 | 2.86   | 627.80                       | 627.82   |
| 2C              | 22+79.25 | 2.86   | 627.86                       | 627.89   |
| 2D              | 22+89.25 | 2.86   | 627.91                       | 627.93   |
| 2E              | 22+99.25 | 2.86   | 627.96                       | 627.97   |
| ☉ BRG. PIER 2   | 23+11.09 | 2.86   | 628.01                       | 628.01   |
| 3A              | 23+21.09 | 2.86   | 628.06                       | 628.06   |
| 3B              | 23+31.09 | 2.86   | 628.09                       | 628.11   |
| 3C              | 23+41.09 | 2.86   | 628.13                       | 628.15   |
| 3D              | 23+51.09 | 2.86   | 628.16                       | 628.17   |
| ☉ BRG. N. ABUT. | 23+60.34 | 2.86   | 628.18                       | 628.18   |
| BK. N. ABUT.    | 23+62.80 | 2.86   | 628.19                       | 628.19   |

**BEAM M**

| Location        | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|----------|--------|------------------------------|--|
| BK. S. ABUT.    | 21+95.38 | 9.14   | 627.16                       | 627.16   |
| ☉ BRG. S. ABUT. | 21+97.84 | 9.14   | 627.18                       | 627.18   |
| 1A              | 22+07.84 | 9.14   | 627.26                       | 627.28   |
| 1B              | 22+17.84 | 9.14   | 627.35                       | 627.37   |
| 1C              | 22+27.84 | 9.14   | 627.42                       | 627.44   |
| 1D              | 22+37.84 | 9.14   | 627.50                       | 627.50   |
| ☉ BRG. PIER 1   | 22+47.84 | 9.14   | 627.57                       | 627.57   |
| 2A              | 22+57.84 | 9.14   | 627.63                       | 627.64   |
| 2B              | 22+67.84 | 9.14   | 627.69                       | 627.71   |
| 2C              | 22+77.84 | 9.14   | 627.75                       | 627.78   |
| 2D              | 22+87.84 | 9.14   | 627.81                       | 627.83   |
| 2E              | 22+97.84 | 9.14   | 627.86                       | 627.87   |
| ☉ BRG. PIER 2   | 23+09.67 | 9.14   | 627.91                       | 627.91   |
| 3A              | 23+19.67 | 9.14   | 627.95                       | 627.96   |
| 3B              | 23+29.67 | 9.14   | 627.99                       | 628.01   |
| 3C              | 23+39.67 | 9.14   | 628.02                       | 628.05   |
| 3D              | 23+49.67 | 9.14   | 628.05                       | 628.07   |
| ☉ BRG. N. ABUT. | 23+58.92 | 9.14   | 628.08                       | 628.08   |
| BK. N. ABUT.    | 23+61.38 | 9.14   | 628.08                       | 628.08   |

(Sheet 2 of 3)



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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS  
 STRUCTURE NO. 016-0489**

SHEET NO. SG10 OF SG38 SHEETS

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 373                | 2013-037B-R | COOK   | 787                       | 678       |
| CONTRACT NO. 60W75 |             |        | ILLINOIS FED. AID PROJECT |           |

**BEAM N**

| Location        | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|----------|--------|------------------------------|--|
| BK. S. ABUT.    | 21+93.96 | 15.43  | 627.03                       | 627.03   |
| ☉ BRG. S. ABUT. | 21+96.42 | 15.43  | 627.05                       | 627.05   |
| 1A              | 22+06.42 | 15.43  | 627.14                       | 627.15   |
| 1B              | 22+16.42 | 15.43  | 627.22                       | 627.24   |
| 1C              | 22+26.42 | 15.43  | 627.30                       | 627.32   |
| 1D              | 22+36.42 | 15.43  | 627.37                       | 627.38   |
| ☉ BRG. PIER 1   | 22+46.42 | 15.43  | 627.44                       | 627.44   |
| 2A              | 22+56.42 | 15.43  | 627.51                       | 627.51   |
| 2B              | 22+66.42 | 15.43  | 627.57                       | 627.59   |
| 2C              | 22+76.42 | 15.43  | 627.63                       | 627.66   |
| 2D              | 22+86.42 | 15.43  | 627.68                       | 627.71   |
| 2E              | 22+96.42 | 15.43  | 627.73                       | 627.74   |
| ☉ BRG. PIER 2   | 23+08.25 | 15.43  | 627.79                       | 627.79   |
| 3A              | 23+18.25 | 15.43  | 627.83                       | 627.84   |
| 3B              | 23+28.25 | 15.43  | 627.87                       | 627.89   |
| 3C              | 23+38.25 | 15.43  | 627.90                       | 627.93   |
| 3D              | 23+48.25 | 15.43  | 627.93                       | 627.95   |
| ☉ BRG. N. ABUT. | 23+57.50 | 15.43  | 627.96                       | 627.96   |
| BK. N. ABUT.    | 23+59.96 | 15.43  | 627.96                       | 627.96   |

**BEAM O**

| Location        | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|----------|--------|------------------------------|--|
| BK. S. ABUT.    | 21+92.54 | 21.71  | 626.88                       | 626.88   |
| ☉ BRG. S. ABUT. | 21+95.00 | 21.71  | 626.91                       | 626.91   |
| 1A              | 22+05.00 | 21.71  | 626.99                       | 627.01   |
| 1B              | 22+15.00 | 21.71  | 627.08                       | 627.10   |
| 1C              | 22+25.00 | 21.71  | 627.15                       | 627.17   |
| 1D              | 22+35.00 | 21.71  | 627.23                       | 627.24   |
| ☉ BRG. PIER 1   | 22+45.00 | 21.71  | 627.30                       | 627.30   |
| 2A              | 22+55.00 | 21.71  | 627.37                       | 627.37   |
| 2B              | 22+65.00 | 21.71  | 627.43                       | 627.45   |
| 2C              | 22+75.00 | 21.71  | 627.49                       | 627.52   |
| 2D              | 22+85.00 | 21.71  | 627.54                       | 627.57   |
| 2E              | 22+95.00 | 21.71  | 627.59                       | 627.61   |
| ☉ BRG. PIER 2   | 23+06.84 | 21.71  | 627.65                       | 627.65   |
| 3A              | 23+16.84 | 21.71  | 627.69                       | 627.70   |
| 3B              | 23+26.84 | 21.71  | 627.73                       | 627.75   |
| 3C              | 23+36.84 | 21.71  | 627.77                       | 627.79   |
| 3D              | 23+46.84 | 21.71  | 627.80                       | 627.81   |
| ☉ BRG. N. ABUT. | 23+56.09 | 21.71  | 627.82                       | 627.82   |
| BK. N. ABUT.    | 23+58.54 | 21.71  | 627.83                       | 627.83   |

**BEAM P**

| Location        | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|----------|--------|------------------------------|--|
| BK. S. ABUT.    | 21+91.13 | 28.00  | 626.74                       | 626.74   |
| ☉ BRG. S. ABUT. | 21+93.59 | 28.00  | 626.76                       | 626.76   |
| 1A              | 22+03.59 | 28.00  | 626.85                       | 626.87   |
| 1B              | 22+13.59 | 28.00  | 626.93                       | 626.96   |
| 1C              | 22+23.59 | 28.00  | 627.01                       | 627.03   |
| 1D              | 22+33.59 | 28.00  | 627.09                       | 627.09   |
| ☉ BRG. PIER 1   | 22+43.59 | 28.00  | 627.16                       | 627.16   |
| 2A              | 22+53.59 | 28.00  | 627.23                       | 627.23   |
| 2B              | 22+63.59 | 28.00  | 627.29                       | 627.31   |
| 2C              | 22+73.59 | 28.00  | 627.35                       | 627.38   |
| 2D              | 22+83.59 | 28.00  | 627.40                       | 627.43   |
| 2E              | 22+93.59 | 28.00  | 627.46                       | 627.47   |
| ☉ BRG. PIER 2   | 23+05.42 | 28.00  | 627.51                       | 627.51   |
| 3A              | 23+15.42 | 28.00  | 627.56                       | 627.56   |
| 3B              | 23+25.42 | 28.00  | 627.60                       | 627.61   |
| 3C              | 23+35.42 | 28.00  | 627.63                       | 627.65   |
| 3D              | 23+45.42 | 28.00  | 627.66                       | 627.68   |
| ☉ BRG. N. ABUT. | 23+54.67 | 28.00  | 627.69                       | 627.69   |
| BK. N. ABUT.    | 23+57.13 | 28.00  | 627.70                       | 627.70   |

**BEAM Q**

| Location        | Station  | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|----------|--------|------------------------------|--|
| BK. S. ABUT.    | 21+89.92 | 33.33  | 626.62                       | 626.62   |
| ☉ BRG. S. ABUT. | 21+92.38 | 33.33  | 626.64                       | 626.64   |
| 1A              | 22+02.38 | 33.33  | 626.73                       | 626.75   |
| 1B              | 22+12.38 | 33.33  | 626.81                       | 626.84   |
| 1C              | 22+22.38 | 33.33  | 626.89                       | 626.91   |
| 1D              | 22+32.38 | 33.33  | 626.97                       | 626.98   |
| ☉ BRG. PIER 1   | 22+42.38 | 33.33  | 627.04                       | 627.04   |
| 2A              | 22+52.38 | 33.33  | 627.11                       | 627.12   |
| 2B              | 22+62.38 | 33.33  | 627.17                       | 627.19   |
| 2C              | 22+72.38 | 33.33  | 627.23                       | 627.26   |
| 2D              | 22+82.38 | 33.33  | 627.29                       | 627.31   |
| 2E              | 22+92.38 | 33.33  | 627.34                       | 627.35   |
| ☉ BRG. PIER 2   | 23+04.22 | 33.33  | 627.40                       | 627.40   |
| 3A              | 23+14.22 | 33.33  | 627.44                       | 627.45   |
| 3B              | 23+24.22 | 33.33  | 627.48                       | 627.50   |
| 3C              | 23+34.22 | 33.33  | 627.52                       | 627.54   |
| 3D              | 23+44.22 | 33.33  | 627.55                       | 627.56   |
| ☉ BRG. N. ABUT. | 23+53.47 | 33.33  | 627.57                       | 627.57   |
| BK. N. ABUT.    | 23+55.92 | 33.33  | 627.58                       | 627.58   |

(Sheet 3 of 3)



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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS  
 STRUCTURE NO. 016-0489**

SHEET NO. SG11 OF SG38 SHEETS

|                    |             |        |                           |           |
|--------------------|-------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 373                | 2013-037B-R | COOK   | 787                       | 679       |
| CONTRACT NO. 60W75 |             |        | ILLINOIS FED. AID PROJECT |           |

**EDGE OF INSIDE SHOULDER**

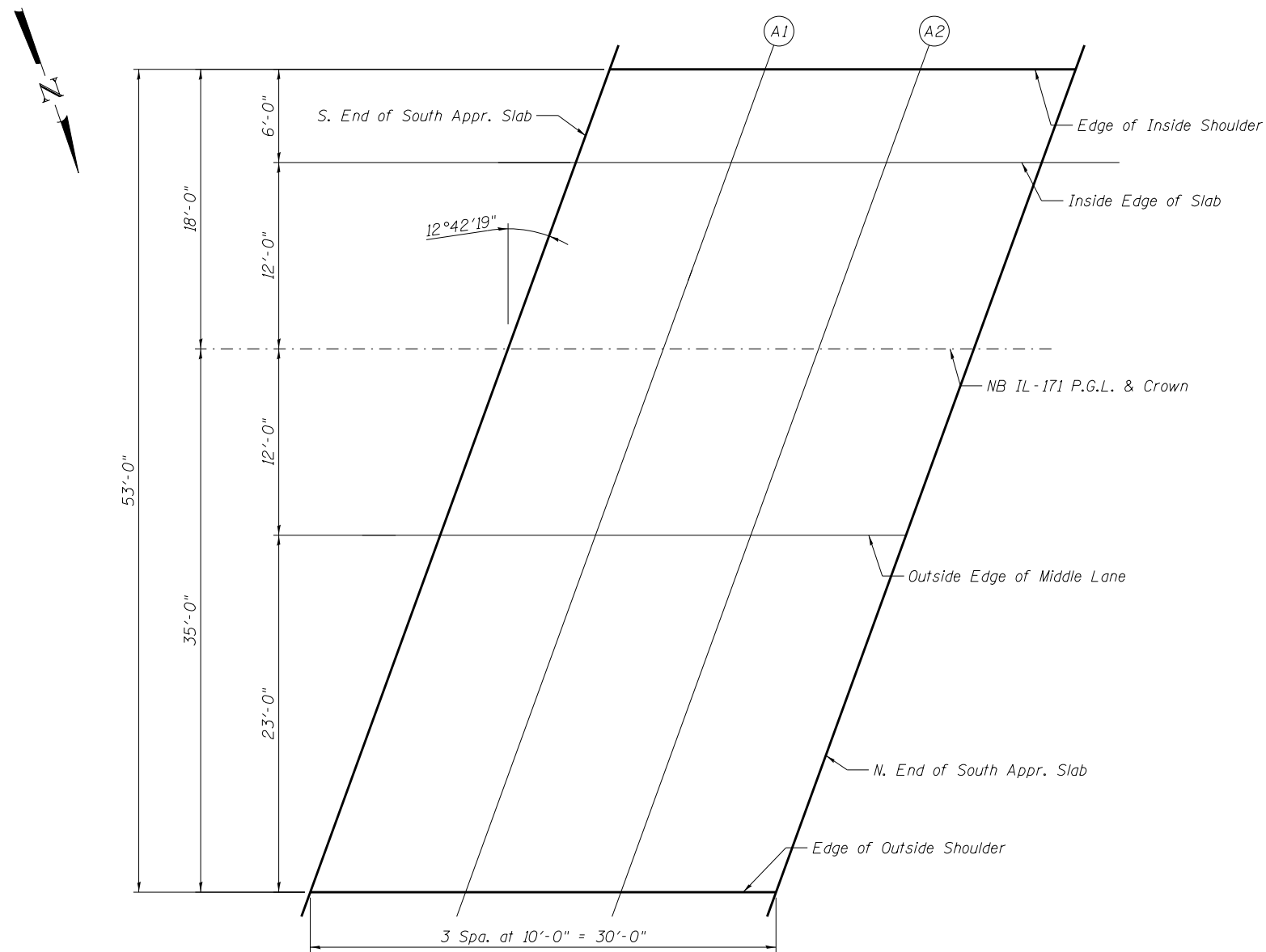
| Location                | Station  | Offset | Theoretical Grade Elevations |
|-------------------------|----------|--------|------------------------------|
| S. End South Appr. Slab | 21+72.52 | -18.00 | 626.78                       |
| A1                      | 21+82.52 | -18.00 | 626.87                       |
| A2                      | 21+92.52 | -18.00 | 626.96                       |
| N. End South Appr. Slab | 22+02.52 | -18.00 | 627.05                       |

**INSIDE EDGE OF SLAB**

| Location                | Station  | Offset | Theoretical Grade Elevations |
|-------------------------|----------|--------|------------------------------|
| S. End South Appr. Slab | 21+71.17 | -12.00 | 626.89                       |
| A1                      | 21+81.17 | -12.00 | 626.98                       |
| A2                      | 21+91.17 | -12.00 | 627.08                       |
| N. End South Appr. Slab | 22+01.17 | -12.00 | 627.16                       |

**NB IL-171 P.G.L. & CROWN**

| Location                | Station  | Offset | Theoretical Grade Elevations |
|-------------------------|----------|--------|------------------------------|
| S. End South Appr. Slab | 21+68.47 | 0.00   | 627.05                       |
| A1                      | 21+78.47 | 0.00   | 627.15                       |
| A2                      | 21+88.47 | 0.00   | 627.24                       |
| N. End South Appr. Slab | 21+98.47 | 0.00   | 627.33                       |



**PLAN**  
(South Approach)

**OUTSIDE EDGE OF MIDDLE LANE**

| Location                | Station  | Offset | Theoretical Grade Elevations |
|-------------------------|----------|--------|------------------------------|
| S. End South Appr. Slab | 21+65.76 | 12.00  | 626.83                       |
| A1                      | 21+75.76 | 12.00  | 626.93                       |
| A2                      | 21+85.76 | 12.00  | 627.03                       |
| N. End South Appr. Slab | 21+95.76 | 12.00  | 627.12                       |

**EDGE OF OUTSIDE SHOULDER**

| Location                | Station  | Offset | Theoretical Grade Elevations |
|-------------------------|----------|--------|------------------------------|
| S. End South Appr. Slab | 21+60.57 | 35.00  | 626.30                       |
| A1                      | 21+70.57 | 35.00  | 626.40                       |
| A2                      | 21+80.57 | 35.00  | 626.50                       |
| N. End South Appr. Slab | 21+90.57 | 35.00  | 626.59                       |

(Sheet 1 of 2)



|                         |                |         |
|-------------------------|----------------|---------|
| USER NAME = Lin20_Nick  | DESIGNED - RGB | REVISED |
| FILE NAME = #FILEABREV# | CHECKED - LMS  | REVISED |
| PLOT SCALE =            | DRAWN - RMH    | REVISED |
| PLOT DATE = 6/18/2015   | CHECKED - LMS  | REVISED |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TOP OF APPROACH SLAB ELEVATIONS  
STRUCTURE NO. 016-0489**

SHEET NO. SG12 OF SG38 SHEETS

|                    |                       |               |                           |                 |
|--------------------|-----------------------|---------------|---------------------------|-----------------|
| F.A.P. RTE. = 373  | SECTION = 2013-037B-R | COUNTY = COOK | TOTAL SHEETS = 787        | SHEET NO. = 680 |
| CONTRACT NO. 60W75 |                       |               | ILLINOIS FED. AID PROJECT |                 |



**EDGE OF INSIDE SHOULDER**

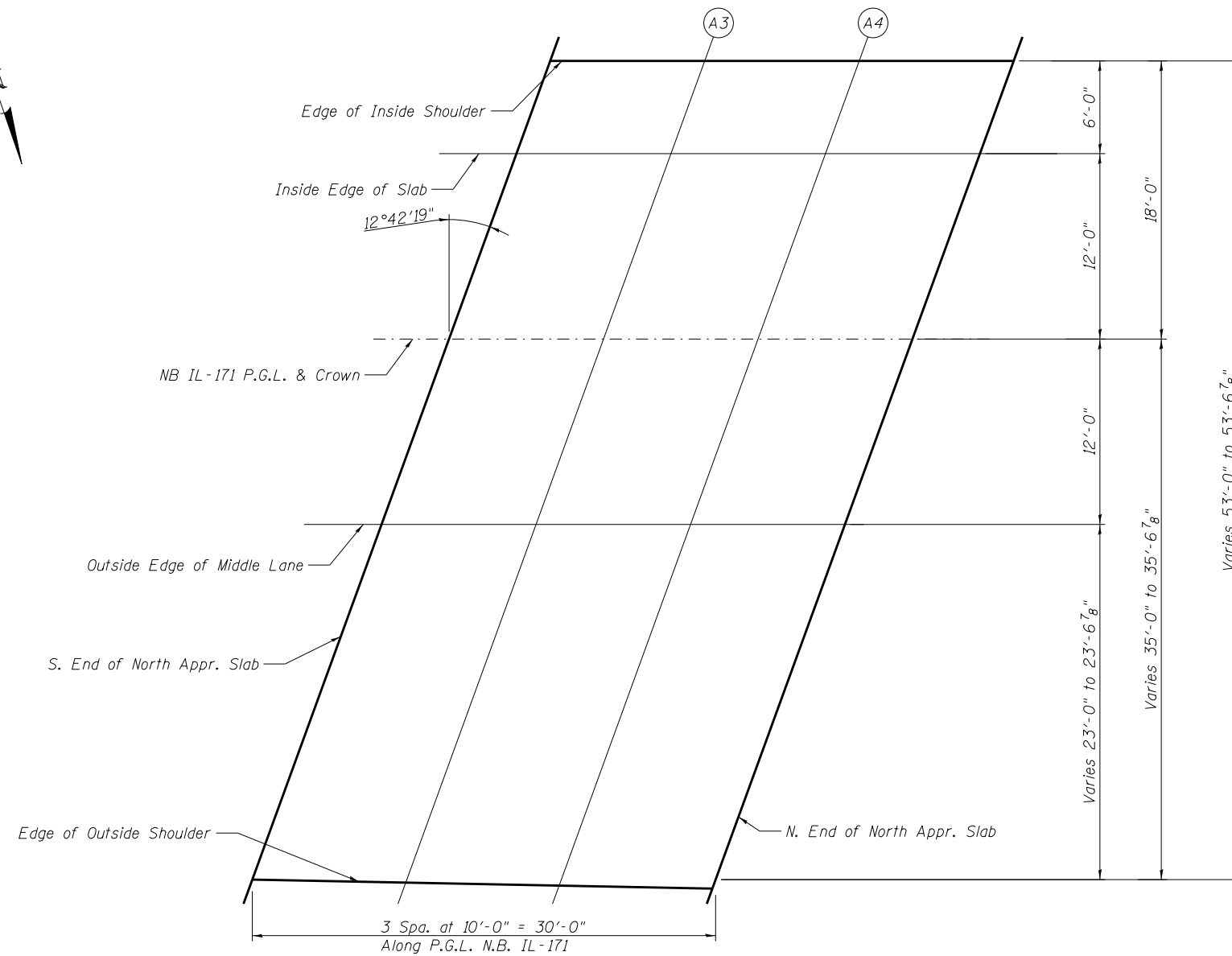
| Location                | Station  | Offset | Theoretical Grade Elevations |
|-------------------------|----------|--------|------------------------------|
| S. End North Appr. Slab | 23+66.47 | -18.00 | 627.93                       |
| A3                      | 23+76.47 | -18.00 | 627.95                       |
| A4                      | 23+86.47 | -18.00 | 627.96                       |
| N. End North Appr. Slab | 23+96.47 | -18.00 | 627.97                       |

**INSIDE EDGE OF SLAB**

| Location                | Station  | Offset | Theoretical Grade Elevations |
|-------------------------|----------|--------|------------------------------|
| S. End North Appr. Slab | 23+65.12 | -12.00 | 628.05                       |
| A3                      | 23+75.12 | -12.00 | 628.07                       |
| A4                      | 23+85.12 | -12.00 | 628.08                       |
| N. End North Appr. Slab | 23+95.12 | -12.00 | 628.10                       |

**NB IL-171 P.G.L. & CROWN**

| Location                | Station  | Offset | Theoretical Grade Elevations |
|-------------------------|----------|--------|------------------------------|
| S. End North Appr. Slab | 23+62.41 | 0.00   | 628.23                       |
| A3                      | 23+72.41 | 0.00   | 628.25                       |
| A4                      | 23+82.41 | 0.00   | 628.27                       |
| N. End North Appr. Slab | 23+92.41 | 0.00   | 628.28                       |



**PLAN**  
(North Approach)

**OUTSIDE EDGE OF MIDDLE LANE**

| Location                | Station  | Offset | Theoretical Grade Elevations |
|-------------------------|----------|--------|------------------------------|
| S. End North Appr. Slab | 23+59.71 | 12.00  | 628.03                       |
| A3                      | 23+69.71 | 12.00  | 628.06                       |
| A4                      | 23+79.71 | 12.00  | 628.08                       |
| N. End North Appr. Slab | 23+89.71 | 12.00  | 628.09                       |

**EDGE OF OUTSIDE SHOULDER**

| Location                | Station  | Offset | Theoretical Grade Elevations |
|-------------------------|----------|--------|------------------------------|
| S. End North Appr. Slab | 23+54.52 | 35.00  | 627.54                       |
| A3                      | 23+64.48 | 35.19  | 627.56                       |
| A4                      | 23+74.44 | 35.38  | 627.58                       |
| N. End North Appr. Slab | 23+84.40 | 35.57  | 627.59                       |

(Sheet 2 of 2)



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FILE NAME = #FILEABREV#  
PLOT SCALE =  
PLOT DATE = 6/18/2015

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CHECKED - LMS

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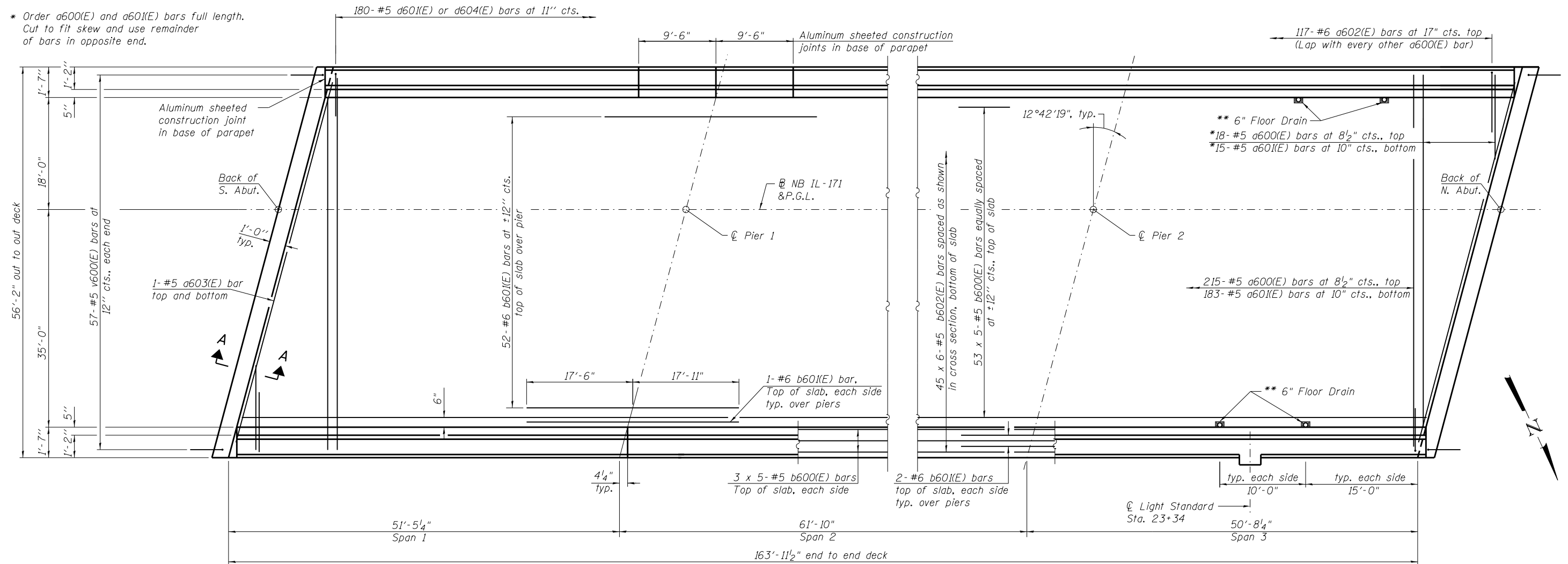
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TOP OF APPROACH SLAB ELEVATIONS  
STRUCTURE NO. 016-0489**

SHEET NO. SG13 OF SG38 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
| 373                | 2013-037B-R | COOK   | 787                       | 681       |
| CONTRACT NO. 60W75 |             |        | ILLINOIS FED. AID PROJECT |           |

\* Order a600(E) and a601(E) bars full length.  
Cut to fit skew and use remainder  
of bars in opposite end.



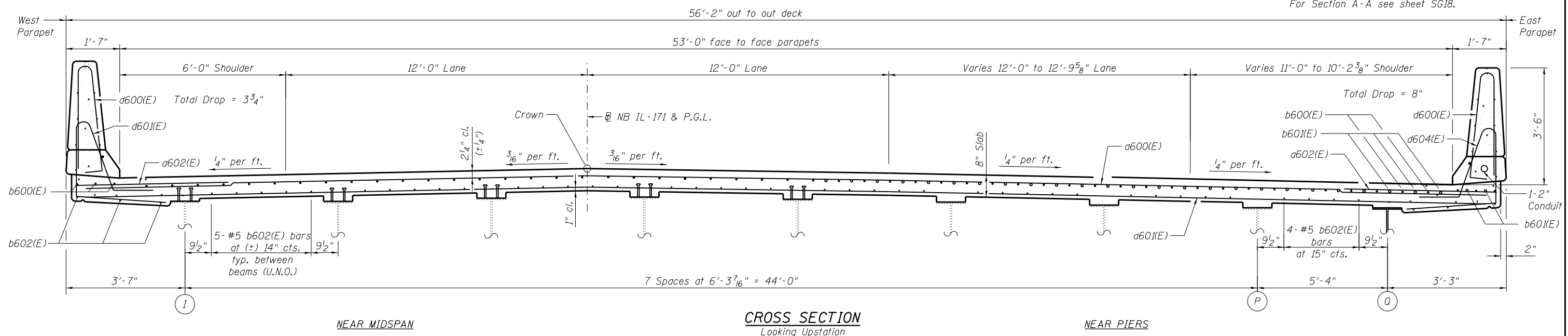
**PLAN**

\*\* See SGI for locations.

**MINIMUM BAR LAP**

#5 bar = 2'-7"

Notes:  
See Sheet SG15 and SG16 for superstructure details and Bill of Material.  
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.  
See Sheet SG15 for parapet reinforcement.  
For Section A-A see sheet SG18.



**CROSS SECTION**

Looking Upstream

NEAR PIERS

NEAR MIDSPAN



USER NAME = Lin20\_Nick  
FILE NAME = #FILEABREV#  
PLOT SCALE =  
PLOT DATE = 6/18/2015

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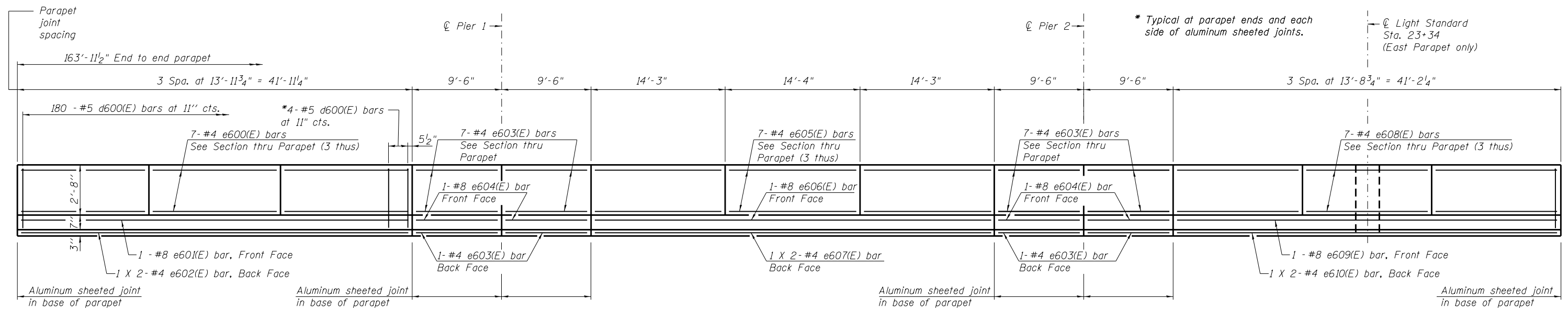
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE  
STRUCTURE NO. 016-0489

SHEET NO. SG14 OF SG38 SHEETS

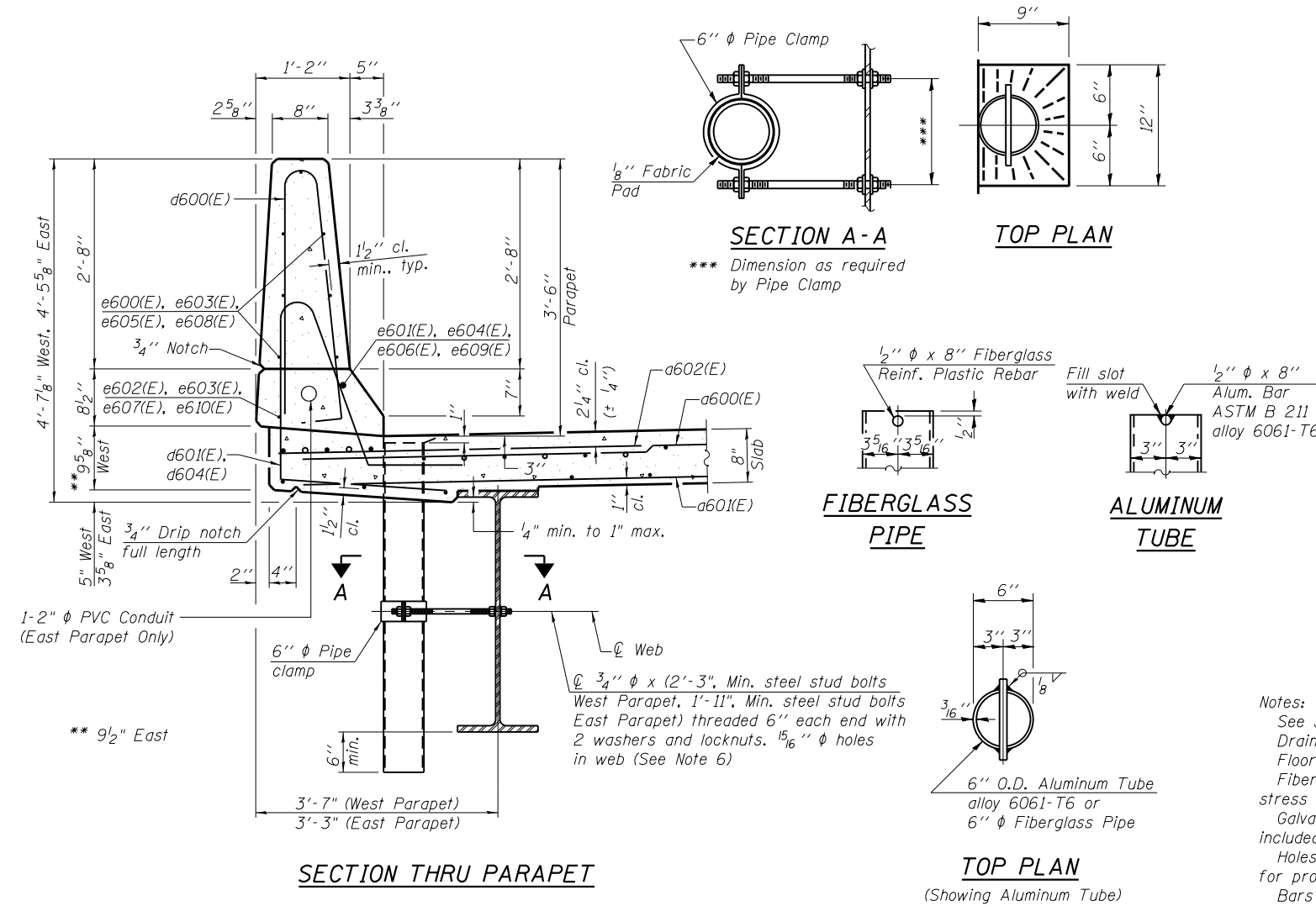
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|--------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
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| CONTRACT NO. 60W75 |             |        |              |           |

ILLINOIS FED. AID PROJECT

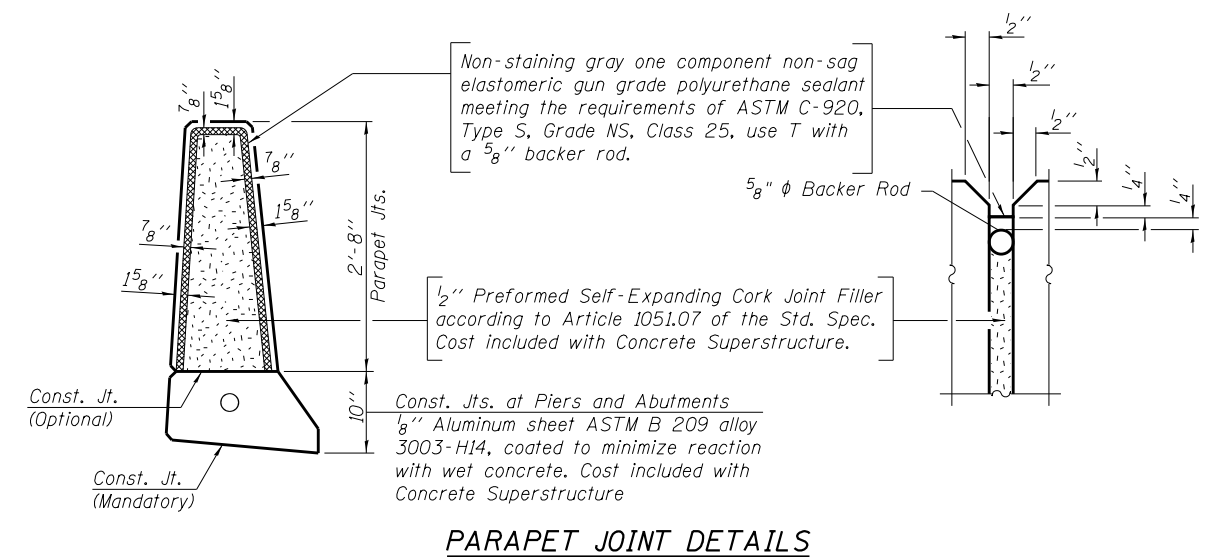


**INSIDE ELEVATION OF PARAPET**  
West Parapet Shown, East Parapet similar

**MINIMUM BAR LAP**  
#4 bar = 2'-0"



**Notes:**  
See sheet SG16 for Bill of Material.  
Drains shall be located clear of all diaphragms.  
Floor Drains need not be painted.  
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 inserts is included with Floor Drains.  
Holes shall be drilled in field for existing beam and may be either field drilled or shop drilled for proposed beam. Cost of field drilling included in "Furnishing and Erecting Structural Steel".  
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.



(Sheet 1 of 2)



USER NAME = Lin20\_Nick  
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PLOT SCALE =  
PLOT DATE = 6/18/2015

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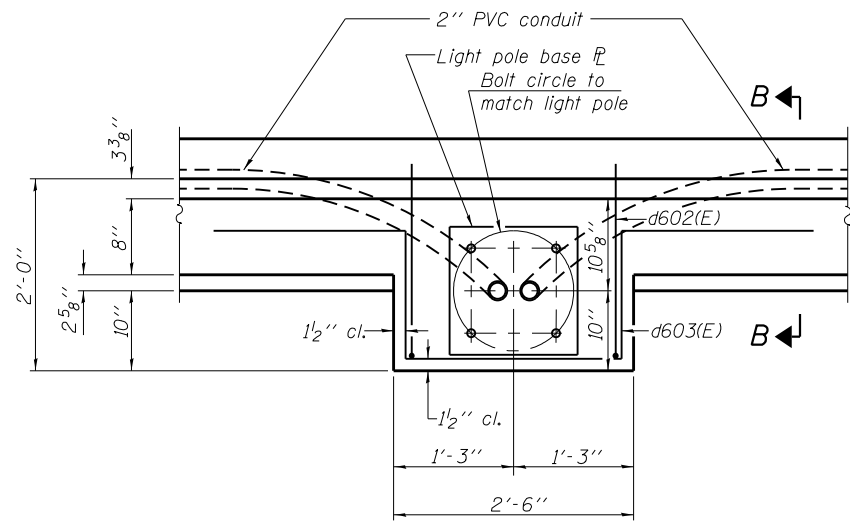
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS  
STRUCTURE NO. 016-0489**

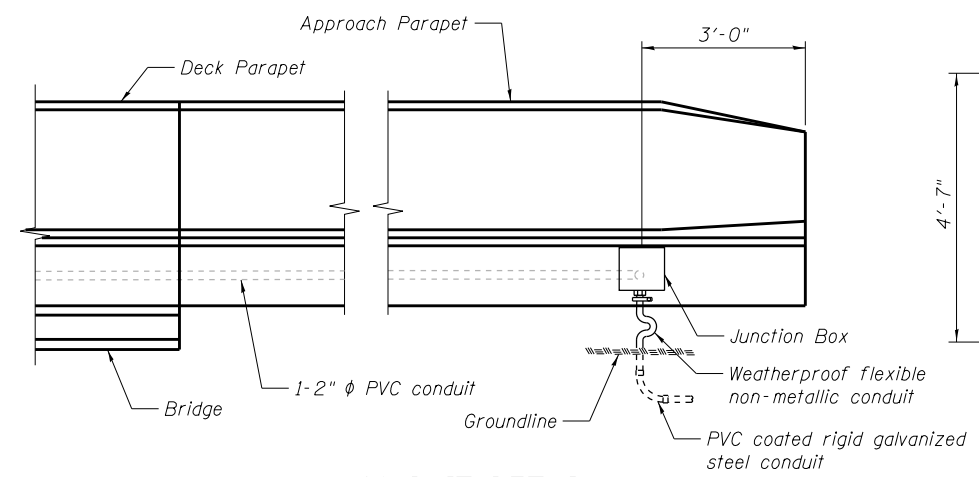
SHEET NO. SG15 OF SG38 SHEETS

| F.A.P. RTE.               | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO.          |
|---------------------------|-------------|--------|--------------|--------------------|
| 373                       | 2013-037B-R | COOK   | 787          | 683                |
|                           |             |        |              | CONTRACT NO. 60W75 |
| ILLINOIS FED. AID PROJECT |             |        |              |                    |



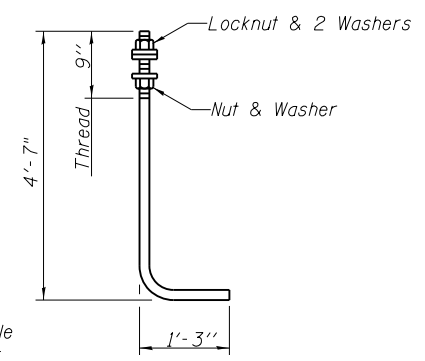
**PLAN**  
(East Parapet only)

Note:  
Cost of anchor rods is included with Concrete Superstructure.



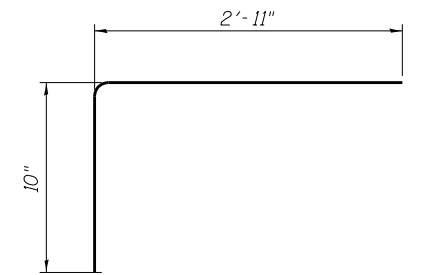
**CONDUIT DETAIL**

(North approach shown, South approach opposite hand)  
(East parapet only - see Lighting Plans)



**ANCHOR ROD**

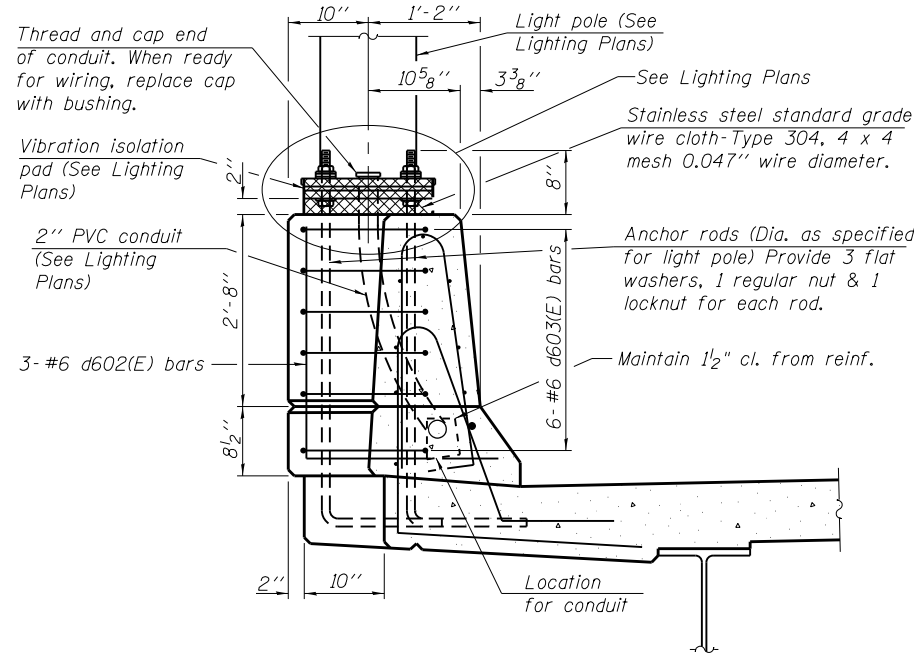
Diameter as specified for light poles.  
(ASTM F 1554 Grade 105) Full length hot dipped galvanized.



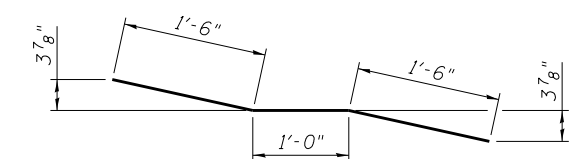
**BAR v600(E)**

**SUPERSTRUCTURE  
BILL OF MATERIAL**

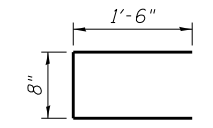
| Bar                              | No. | Size    | Length  | Shape  |
|----------------------------------|-----|---------|---------|--------|
| d600(E)                          | 233 | #5      | 55'-6"  | —      |
| d601(E)                          | 198 | #5      | 55'-6"  | —      |
| d602(E)                          | 234 | #6      | 6'-6"   | —      |
| d603(E)                          | 4   | #5      | 57'-0"  | —      |
| b600(E)                          | 295 | #5      | 34'-11" | —      |
| b601(E)                          | 116 | #6      | 35'-5"  | —      |
| b602(E)                          | 270 | #5      | 29'-7"  | —      |
| d600(E)                          | 472 | #5      | 6'-10"  | ┌      |
| d601(E)                          | 180 | #5      | 8'-5"   | ┌      |
| d602(E)                          | 3   | #6      | 5'-1"   | ┌      |
| d603(E)                          | 6   | #6      | 8'-11"  | ┌      |
| d604(E)                          | 180 | #5      | 8'-0"   | ┌      |
| e600(E)                          | 42  | #4      | 13'-8"  | —      |
| e601(E)                          | 2   | #8      | 41'-7"  | —      |
| e602(E)                          | 4   | #4      | 21'-10" | —      |
| e603(E)                          | 64  | #4      | 9'-2"   | —      |
| e604(E)                          | 8   | #8      | 9'-2"   | —      |
| e605(E)                          | 42  | #4      | 14'-0"  | —      |
| e606(E)                          | 2   | #8      | 42'-6"  | —      |
| e607(E)                          | 4   | #4      | 22'-3"  | —      |
| e608(E)                          | 42  | #4      | 13'-5"  | —      |
| e609(E)                          | 2   | #8      | 40'-10" | —      |
| e610(E)                          | 4   | #4      | 21'-6"  | —      |
| m600(E)                          | 32  | #6      | 30'-6"  | —      |
| m601(E)                          | 36  | #5      | 4'-0"   | —      |
| m602(E)                          | 56  | #6      | 6'-1"   | —      |
| m603(E)                          | 8   | #6      | 5'-1"   | —      |
| m604(E)                          | 8   | #6      | 2'-9"   | —      |
| m605(E)                          | 8   | #6      | 3'-1"   | —      |
| s600(E)                          | 110 | #5      | 7'-4"   | ┌      |
| s601(E)                          | 110 | #5      | 9'-3"   | ┌      |
| u600(E)                          | 114 | #5      | 3'-8"   | ┌      |
| v600(E)                          | 114 | #5      | 3'-9"   | ┌      |
| Concrete Superstructure          |     | Cu. Yd. |         | 328.3  |
| Reinforcement Bars, Epoxy Coated |     | Pound   |         | 66,900 |
| Bridge Deck Grooving             |     | Sq. Yd. |         | 930    |
| Protective Coat                  |     | Sq. Yd. |         | 1,124  |
| Floor Drains                     |     | Each    |         | 4      |



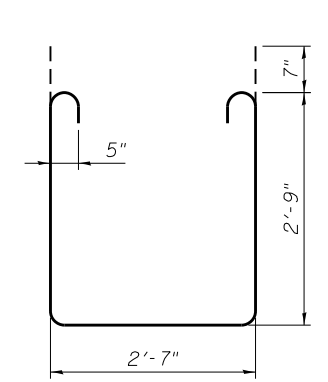
**SECTION B-B**



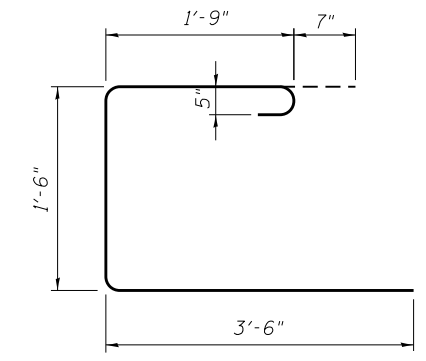
**BAR m601(E)**



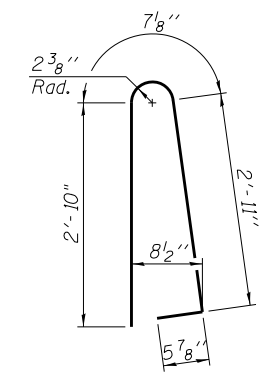
**BAR u600(E)**



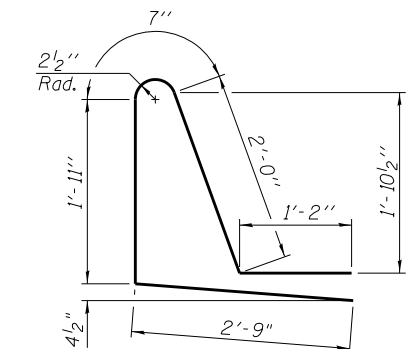
**BAR s601(E)**



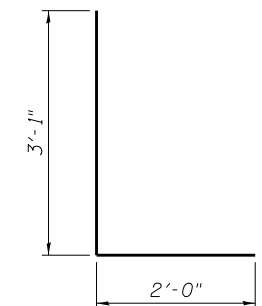
**BAR s600(E)**



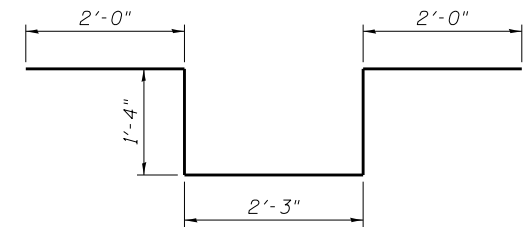
**BAR d600(E)**



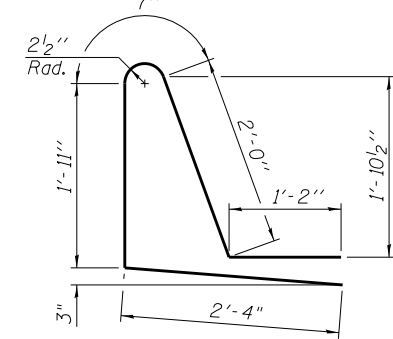
**BAR d601(E)**



**BAR d602(E)**



**BAR d603(E)**



**BAR d604(E)**

(Sheet 2 of 2)



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PLOT SCALE =  
PLOT DATE = 6/18/2015

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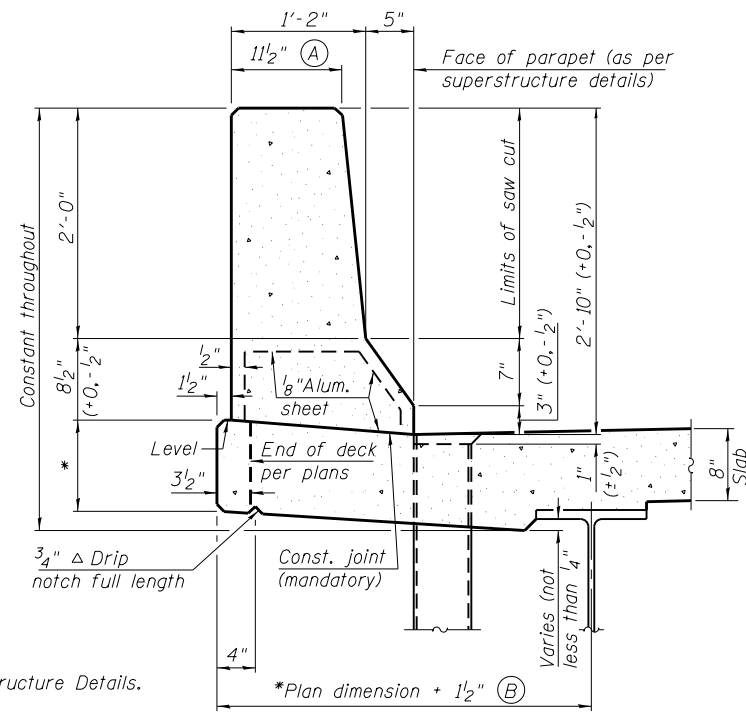
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS  
STRUCTURE NO. 016-0489**

SHEET NO. SG16 OF SG38 SHEETS

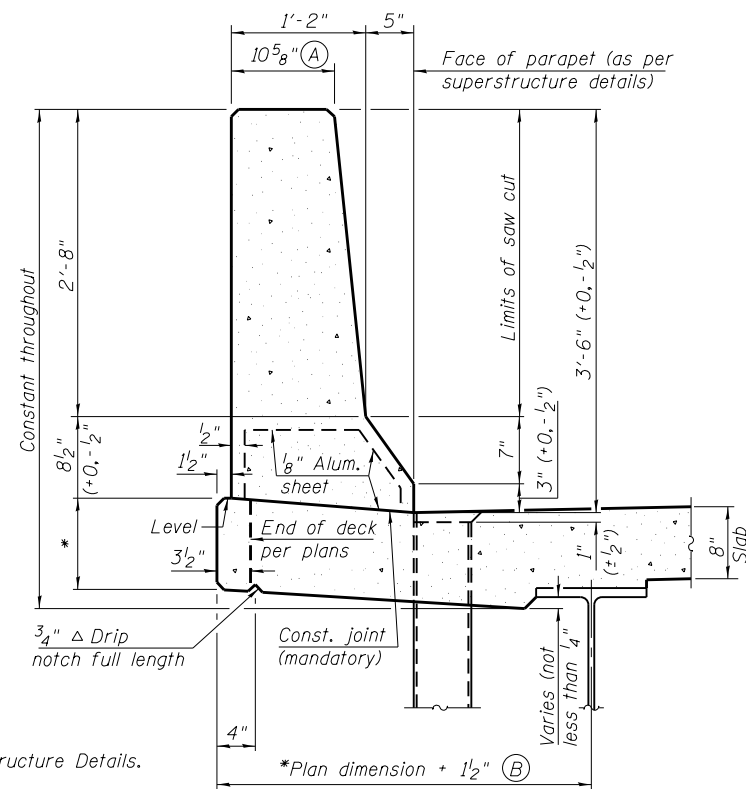
| F.A.P. RTE. | SECTION     | COUNTY | TOTAL SHEETS       | SHEET NO. |
|-------------|-------------|--------|--------------------|-----------|
| 373         | 2013-037B-R | COOK   | 787                | 684       |
|             |             |        | CONTRACT NO. 60W75 |           |

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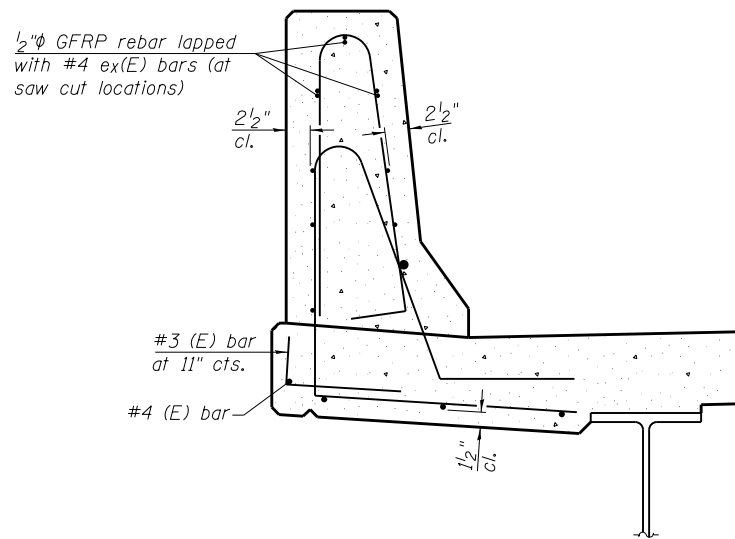
**34" F SHAPE PARAPET SECTION**  
(Showing dimensions)

\*See Superstructure Details.



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

\*See Superstructure Details.

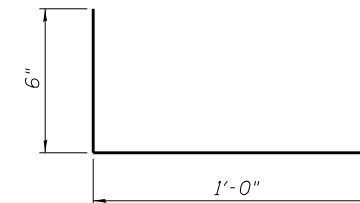


**SECTION**

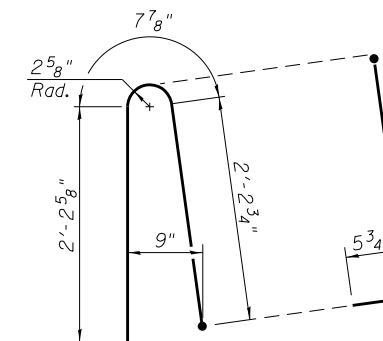
(34" parapet shown - 42" parapet similar)  
(Showing reinforcement clearances for slip forming and additional reinforcement bars)

**GENERAL NOTES**

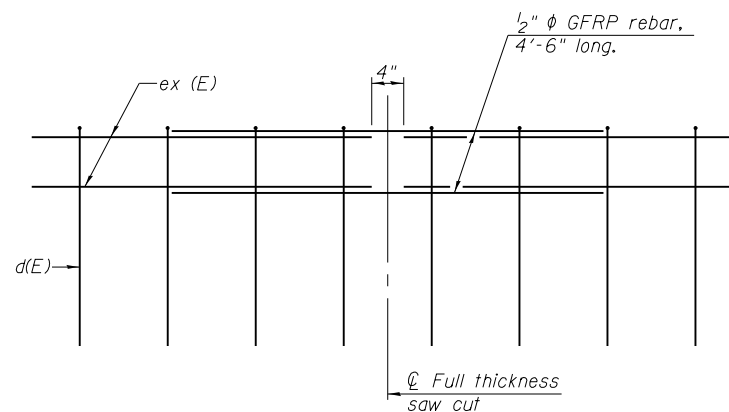
All dimensions shall remain the same as shown on superstructure details, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B = 0.0165 cu. yds./ft. for 34" parapet or = 0.0223 cu. yds./ft. for 42" parapet. Place 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**

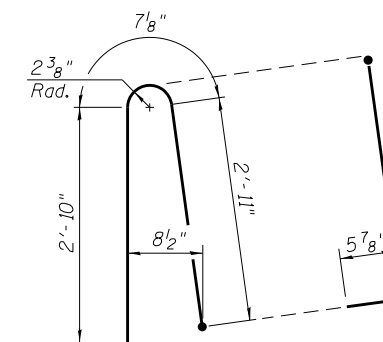


**ALTERNATE BAR d(E)**  
(For 34" parapet when conduit is present)



**GFRP REBAR STIFFENING DETAIL**

(Place as shown in parapet section at each parapet joint location.)



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

SFP 34-42

8-16-12



USER NAME = Lin20\_Nick  
FILE NAME = #FILEABREV#  
PLOT SCALE =  
PLOT DATE = 6/18/2015

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

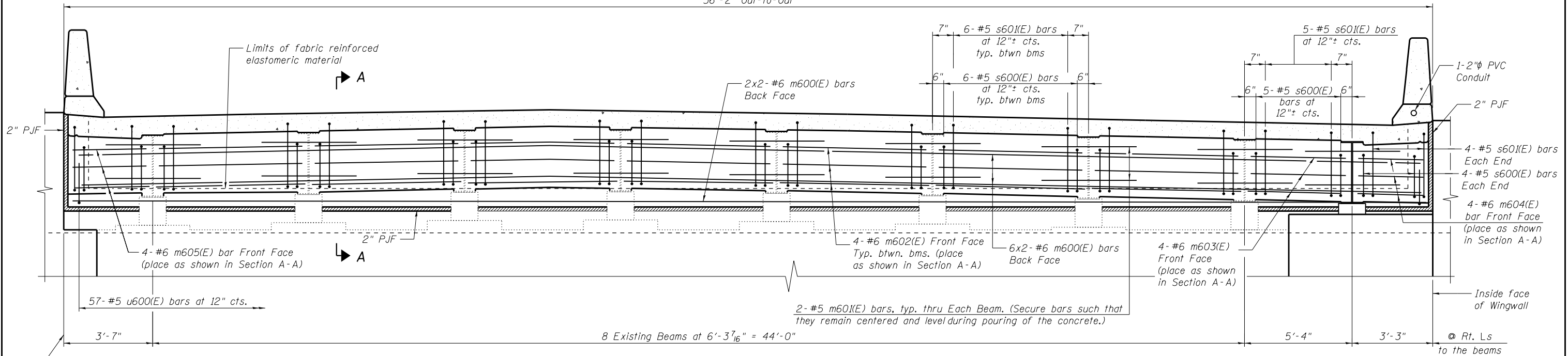
CONCRETE PARAPET SLIP FORMING OPTION  
STRUCTURE NO. 016-0489

SHEET NO. SG17 OF SG38 SHEETS

|                    |             |        |              |           |
|--------------------|-------------|--------|--------------|-----------|
| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
| 373                | 2013-037B-R | COOK   | 787          | 685       |
| CONTRACT NO. 60W75 |             |        |              |           |

ILLINOIS FED. AID PROJECT

56'-2" Out-to-Out



**DIAPHRAGM ELEVATION AT ABUTMENT**

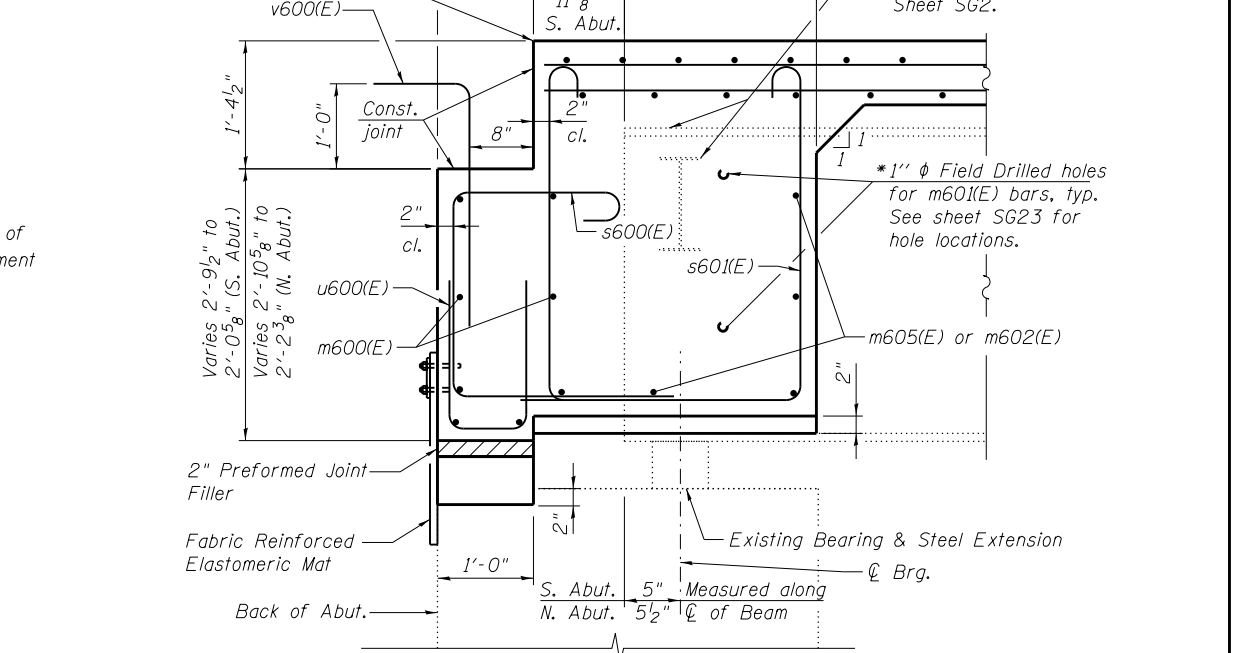
(North Abutment shown looking Upstation)  
(South Abutment - Opposite Hand)  
Measured at Rt. Angles to Superstructure

**Notes:**

Reinforcement bars in diaphragm are billed with Superstructure on sheet SG16.  
Concrete in diaphragm is included with Concrete Superstructure on sheet SG16.  
For bar bend details, see sheet SG16.  
The s600(E), s601(E) and u600(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.  
For bearing details, see sheets SG24.  
The approach slab ledge shall have a constant slope determined from the control points shown.

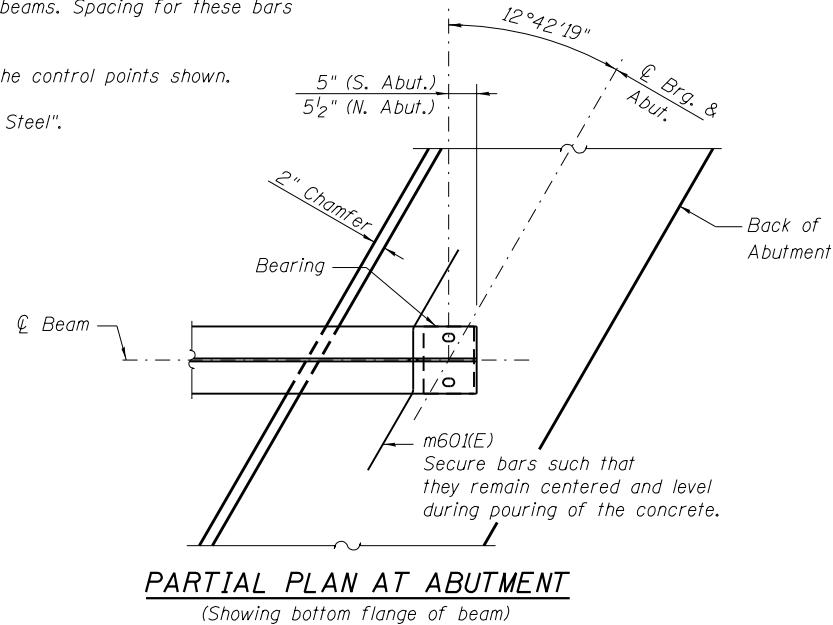
\*Cost of Field Drilling included with "Furnishing and Erecting Structural Steel".

1/4"x3/4" Formed Joint with Bridge relief Joint sealer (full width)

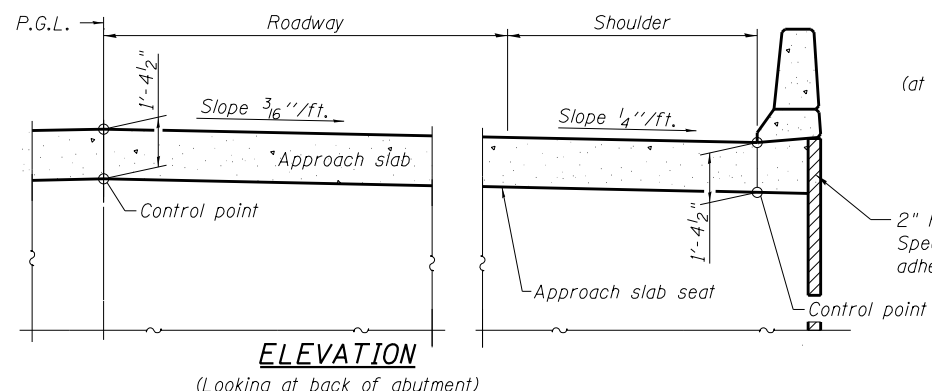


**SECTION A-A**  
(at existing abutment, dim. at Rt. L's except as noted)

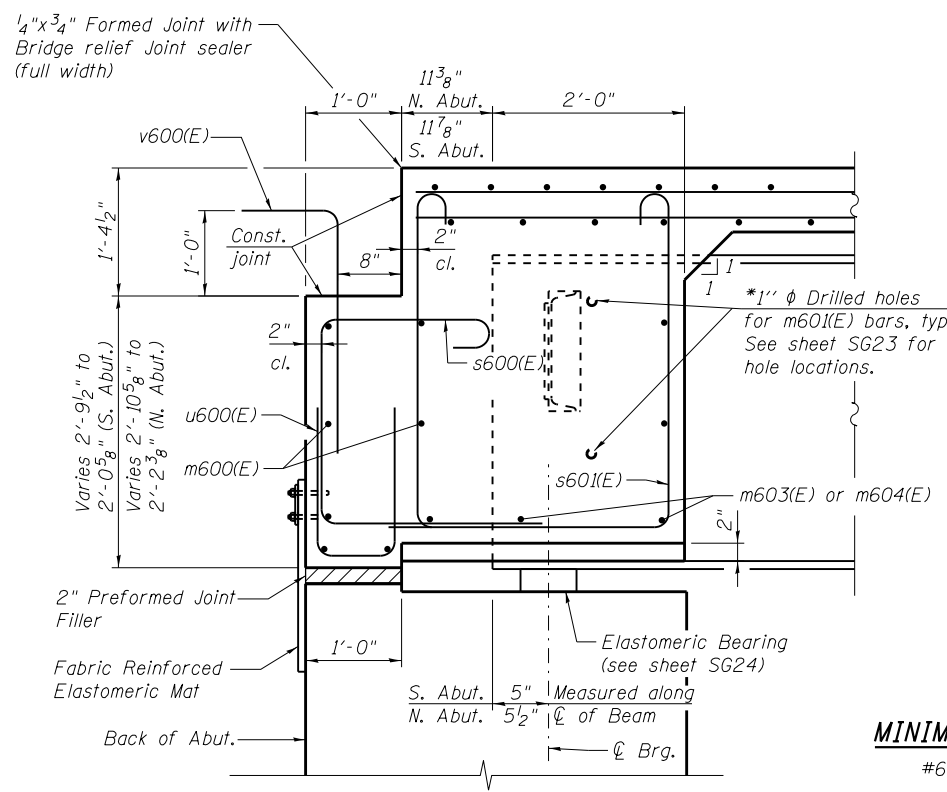
2" PJF (per Article 1051.09 of the Standard Specifications) bonded to wingwall with suitable adhesive as recommended by supplier.



**PARTIAL PLAN AT ABUTMENT**  
(Showing bottom flange of beam)



**ELEVATION**  
(Looking at back of abutment)



**SECTION A-A**

(at abutment widening, dim. at Rt. L's to Abutment except as noted)

**MINIMUM BAR LAP**  
#6 bar = 3'-0"



USER NAME = Lin20\_Nick  
FILE NAME = #FILE#REV#\*  
PLOT SCALE =  
PLOT DATE = 6/18/2015

DESIGNED - BDC  
CHECKED - LMS  
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CHECKED - LMS

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REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SEMI-INTEGRAL ABUTMENT DIAPHRAGM DETAILS  
STRUCTURE NO. 016-0489

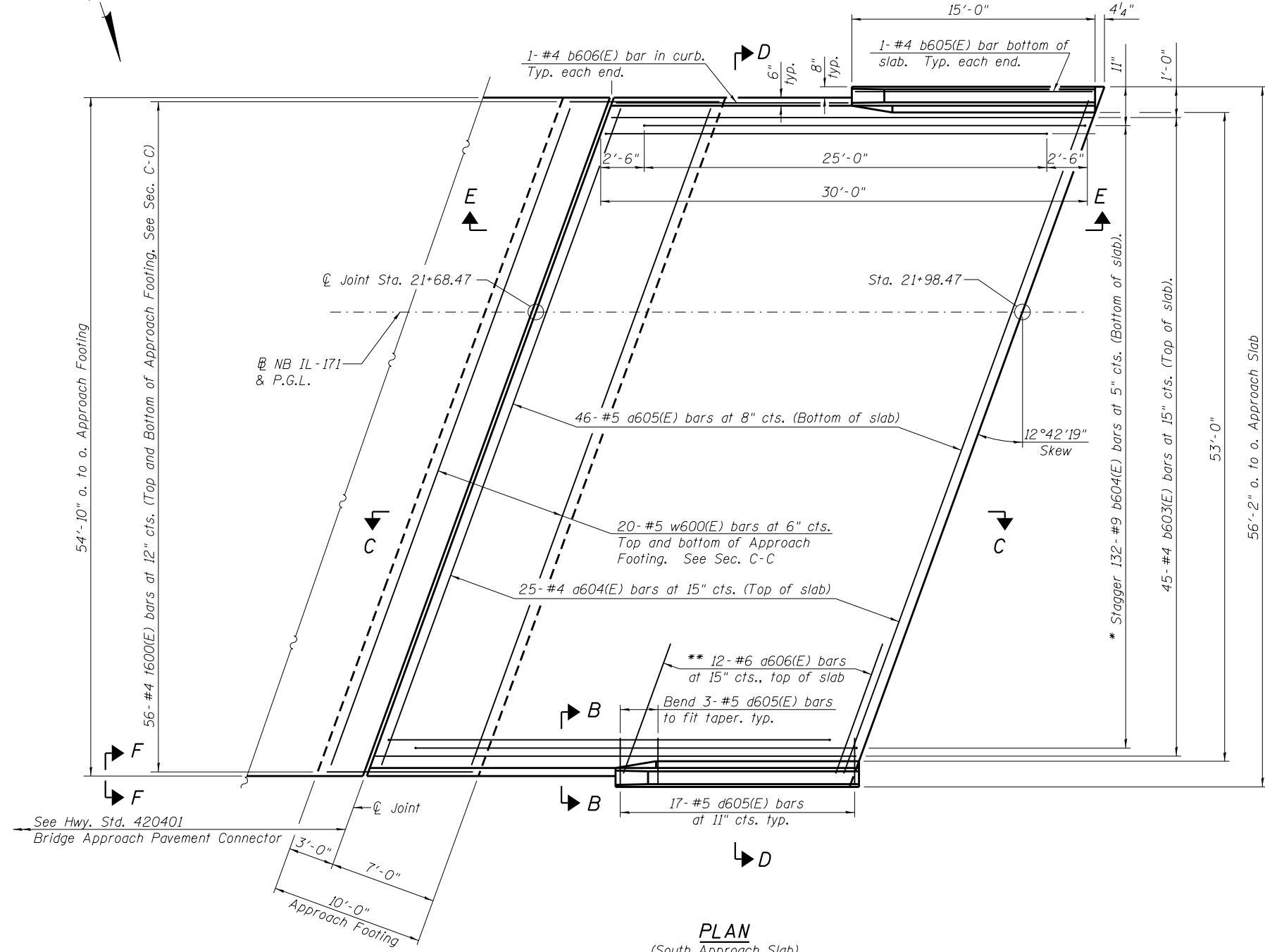
SHEET NO. SG18 OF SG38 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|-------------|--------|--------------|-----------|
| 373                | 2013-037B-R | COOK   | 787          | 686       |
| CONTRACT NO. 60W75 |             |        |              |           |

ILLINOIS FED. AID PROJECT

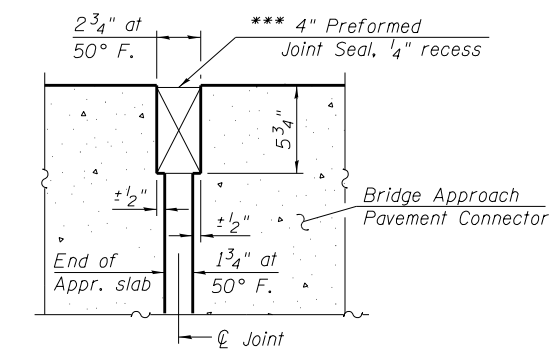


Notes:  
 See sheet SG21 for Sections C-C & D-D and View E-E.  
 a604(E) and a605(E) bar spacings measured along  $\phi$  Rdwy.  
 The joint opening shall be determined per Article 520.04 of the Standard Specifications except that on jointless structures, the distance described as the bridge length between the nearest fixed bearings each way from the joint shall be taken as half the bridge length plus the approach slab length. The minimum dimension shall be 12" for installation purposes.

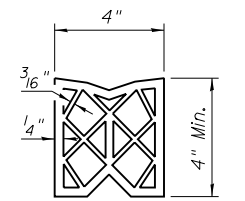


\* Tilt #9 b604(E) bars as required to maintain clearance.  
 \*\* Space between a604(E) bars, typ. each parapet.

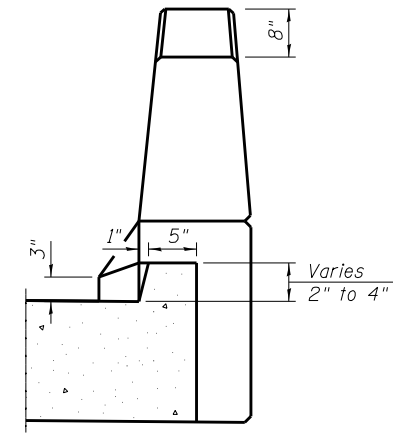
\*\*\* Cost included with Concrete Superstructure.



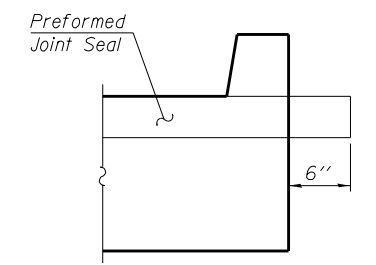
DETAIL A



PREFORMED JOINT SEAL



VIEW B-B



VIEW F-F

(Sheet 1 of 3)



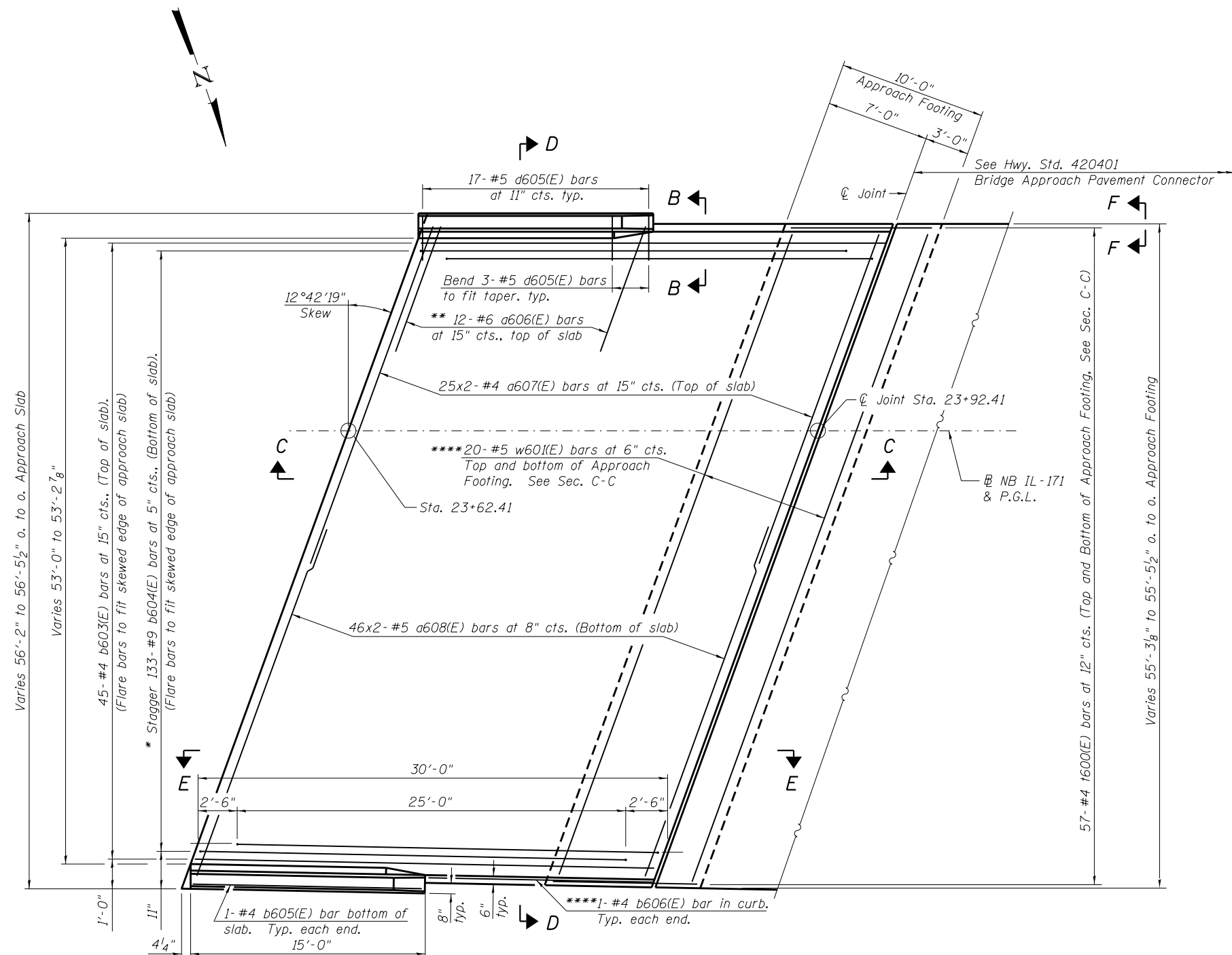
|                         |                |         |
|-------------------------|----------------|---------|
| USER NAME = Lin20_Nick  | DESIGNED - RGB | REVISED |
| FILE NAME = #FILEABREV# | CHECKED - LMS  | REVISED |
| PLOT SCALE =            | DRAWN - RMH    | REVISED |
| PLOT DATE = 6/18/2015   | CHECKED - LMS  | REVISED |

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS  
 STRUCTURE NO. 016-0489

SHEET NO. SG19 OF SG38 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS              | SHEET NO. |
|--------------------|-------------|--------|---------------------------|-----------|
| 373                | 2013-037B-R | COOK   | 787                       | 687       |
| CONTRACT NO. 60W75 |             |        | ILLINOIS FED. AID PROJECT |           |

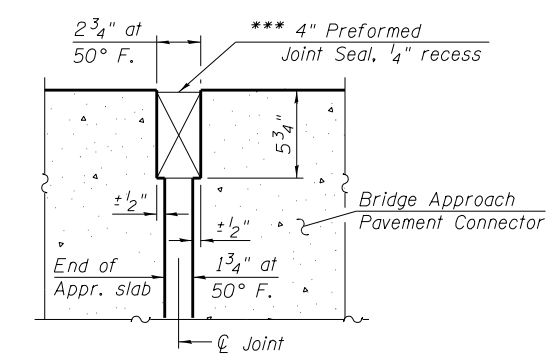


**PLAN**  
(North Approach Slab)

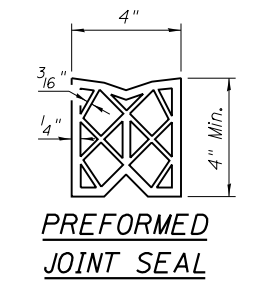
- \* Tilt #9 b604(E) bars as required to maintain clearance.
- \*\* Space between a607(E) bars, typ. each parapet.
- \*\*\*\* Cut to fit at flared end.

Notes:  
See sheet SG21 for Sections C-C & D-D and View E-E.  
a607(E) and a608(E) bar spacings measured along  $\phi$  Rdwy.  
The joint opening shall be determined per Article 520.04 of the Standard Specifications except that on jointless structures, the distance described as the bridge length between the nearest fixed bearings each way from the joint shall be taken as half the bridge length plus the approach slab length. The minimum dimension shall be 1 1/2' for installation purposes.  
Bars indicated thus 20x3-#5 etc. indicates 20 line of bars with 3 lengths per line.

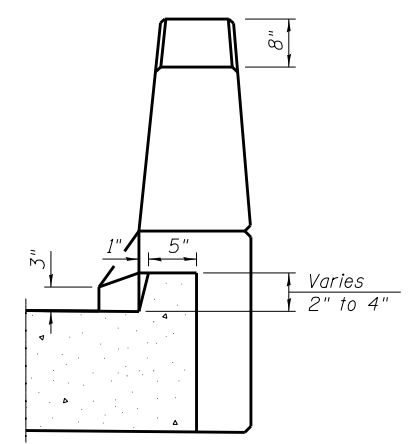
\*\*\* Cost included with Concrete Superstructure.



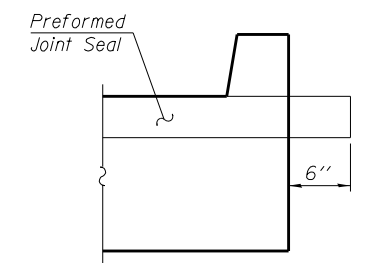
**DETAIL A**



**PREFORMED JOINT SEAL**



**VIEW B-B**



**VIEW F-F**

**MINIMUM BAR LAP**

- #4 bar = 2'-1"
- #5 bar = 2'-7"

(Sheet 2 of 3)



USER NAME = Lin20\_Nick  
FILE NAME = #FILEABREV#  
PLOT SCALE =  
PLOT DATE = 6/18/2015

DESIGNED - RGB  
CHECKED - LMS  
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CHECKED - LMS

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BRIDGE APPROACH SLAB DETAILS  
STRUCTURE NO. 016-0489**

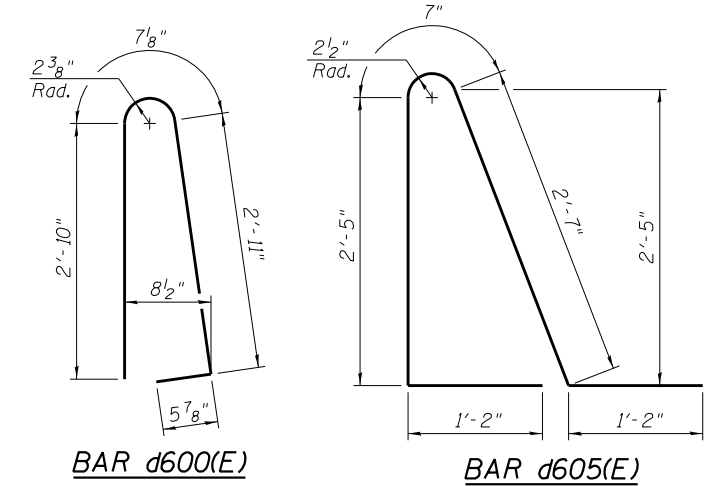
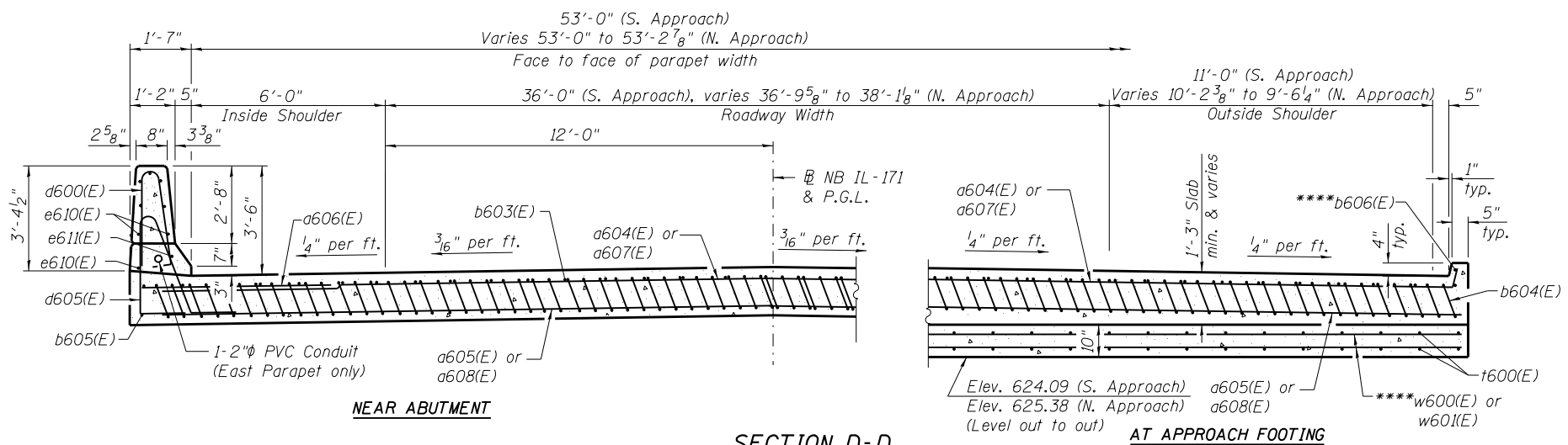
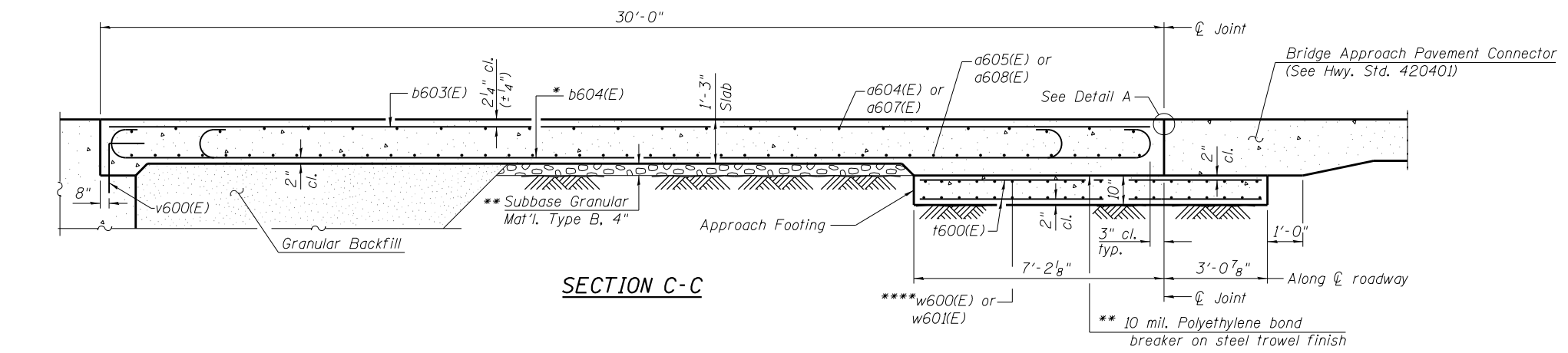
SHEET NO. SG20 OF SG38 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|-------------|--------|--------------|-----------|
| 373                | 2013-037B-R | COOK   | 787          | 688       |
| CONTRACT NO. 60W75 |             |        |              |           |

ILLINOIS FED. AID PROJECT



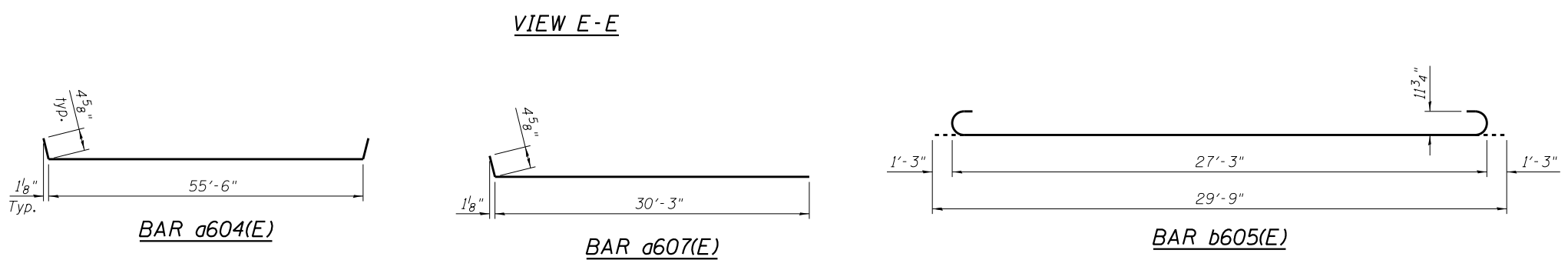
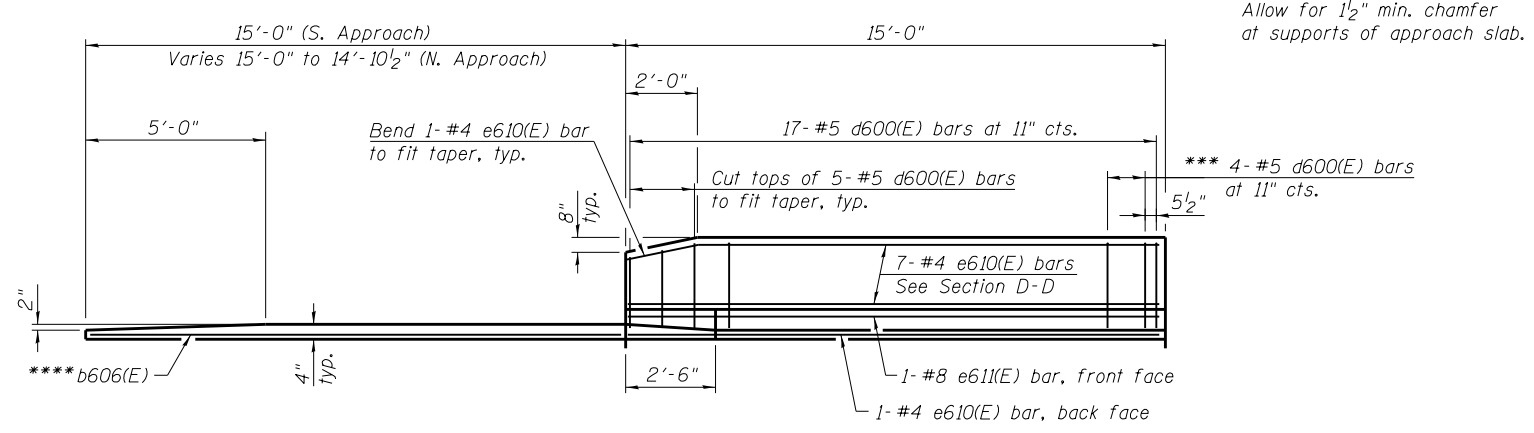
Notes:  
 See sheet SG19 or SG20 for Detail A and View B-B.  
 Approach slab and parapet concrete shall be paid for as Concrete Superstructure.  
 Approach footing concrete shall be paid for as Concrete Structures.  
 Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.  
 For v600(E) bar details, see sheet SG16.  
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.  
 Cost of excavation for approach footing included with Concrete Structures.  
 For Granular Backfill and drainage treatment details, see sheet SG3.  
 For additional parapet details, see sheet SG15.  
 Existing approach slabs supported by timber piles. Remove top 2' of existing timber piles before pouring approach footing. Cost included with Approach Slab Removal.  
 See Special Provision For Approach Slab Removal.  
 See Sheet SG16 for lighting conduit and junction box details.



- \* Tilt #9 b604(E) bars as required to maintain clearance.
- \*\* Cost included with Concrete Superstructure.
- \*\*\* Typical of parapet ends and each side of aluminum sheeted joints.
- \*\*\*\* Cut to fit at flared end of N. Approach.

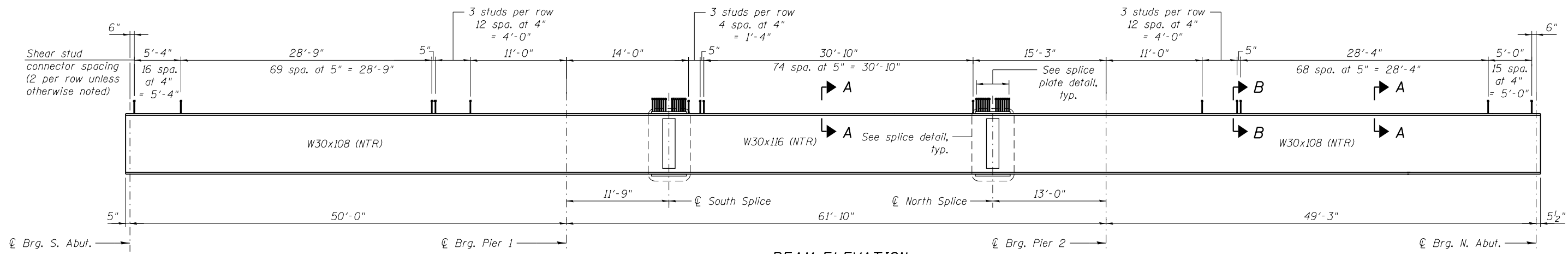
**TWO APPROACHES  
BILL OF MATERIAL**

| Bar                              | No. | Size    | Length  | Shape |
|----------------------------------|-----|---------|---------|-------|
| a604(E)                          | 25  | #4      | 56'-4"  | —     |
| a605(E)                          | 46  | #5      | 55'-10" | —     |
| a606(E)                          | 48  | #6      | 6'-6"   | —     |
| a607(E)                          | 50  | #4      | 30'-8"  | —     |
| a608(E)                          | 92  | #5      | 29'-7"  | —     |
| b603(E)                          | 90  | #4      | 29'-8"  | —     |
| b604(E)                          | 265 | #9      | 29'-9"  | —     |
| b605(E)                          | 4   | #4      | 14'-8"  | —     |
| b606(E)                          | 4   | #4      | 14'-6"  | —     |
| d600(E)                          | 100 | #5      | 6'-10"  | —     |
| d605(E)                          | 68  | #5      | 7'-11"  | —     |
| e610(E)                          | 32  | #4      | 14'-8"  | —     |
| e611(E)                          | 4   | #8      | 14'-8"  | —     |
| t600(E)                          | 226 | #4      | 9'-11"  | —     |
| w600(E)                          | 40  | #5      | 55'-10" | —     |
| w601(E)                          | 40  | #5      | 56'-6"  | —     |
| Concrete Superstructure          |     | Cu. Yd. | 178.4   |       |
| Concrete Structures              |     | Cu. Yd. | 35.0    |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 44,550  |       |
| Bridge Deck Grooving             |     | Sq. Yd. | 344     |       |
| Protective Coat                  |     | Sq. Yd. | 390     |       |



(Sheet 3 of 3)



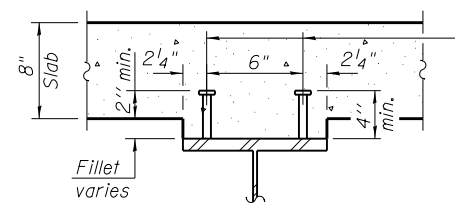


**BEAM ELEVATION**  
(Proposed beam)  
New beam shall be AASHTO M270 Grade 50

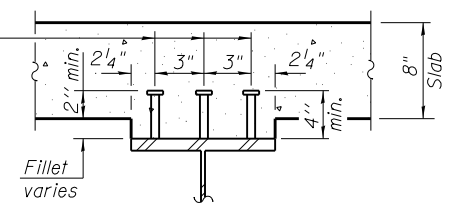
**\*TOP OF BEAM ELEVATIONS**

| Location          | Beam Q |
|-------------------|--------|
| CL. Brg. S. Abut. | 625.79 |
| CL. Brg. Pier 1   | 626.16 |
| South Splice      | 626.25 |
| North Splice      | 626.48 |
| CL. Brg. Pier 2   | 626.52 |
| CL. Brg. N. Abut. | 626.70 |

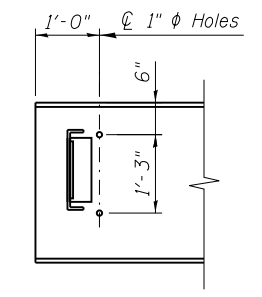
\*For Fabrication Only



**SECTION A-A**



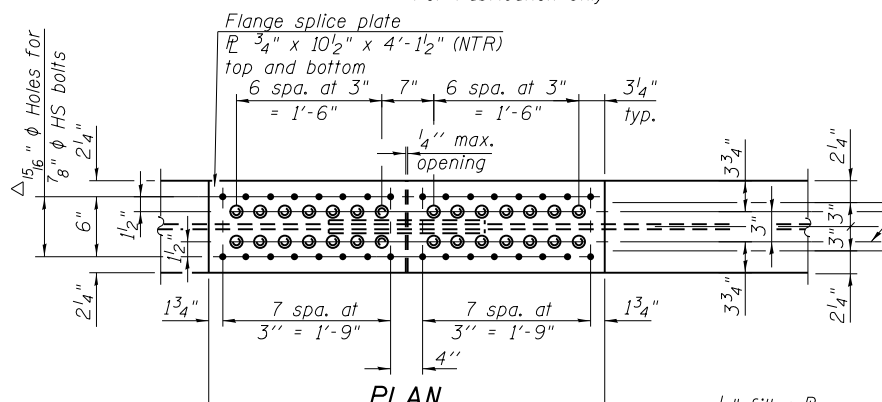
**SECTION B-B**



**END ELEVATION**

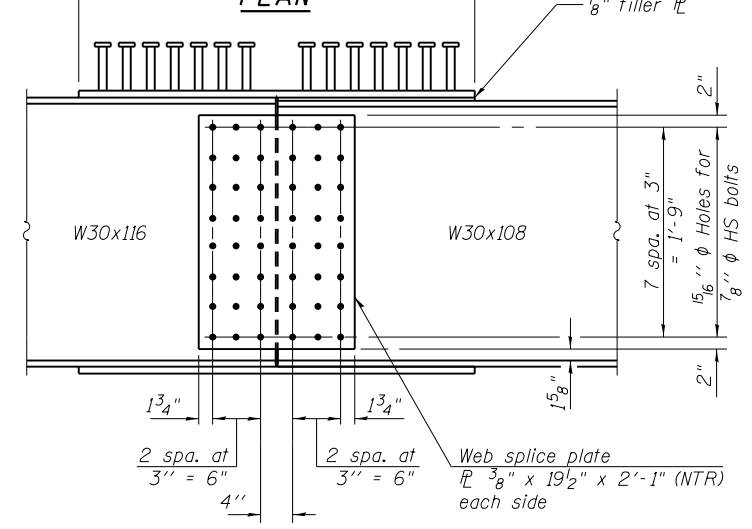
Proposed beam shown  
Existing beams similar

$\Delta 7/8$ "  $\phi$  rivets on existing beams



**PLAN**

$\phi 3/4$ " shear stud connectors to be welded to top flange and splice plate. Typ. for proposed beam and existing beams.



**ELEVATION**

**SPLICE DETAIL**

(2 Required)

All splice plates shall be AASHTO M270 Grade 50.  
North splice shown, South splice opposite hand.

**EXISTING EXTERIOR BEAM I MOMENT TABLE**

|                                     | 0.4 Sp. 1<br>0.6 Sp. 3 | Pier 1 or 2 | 0.5 Sp. 2 |
|-------------------------------------|------------------------|-------------|-----------|
| $I_s$                               | 4470                   | 6007        | 4930      |
| $I_c(n)$                            | 16284                  | ---         | 17455     |
| $I_c(3n)$                           | 11641                  | ---         | 12390     |
| $S_s$                               | 299                    | 393         | 329       |
| $S_c(n)$                            | 531                    | ---         | 573       |
| $S_c(3n)$                           | 473                    | ---         | 509       |
| $\phi$                              | 1.012                  | 1.137       | 1.020     |
| $M \phi$                            | 155.2                  | 325.1       | 146.5     |
| $s \phi$                            | 0.117                  | ---         | 0.117     |
| $M_s \phi$                          | 22.8                   | ---         | 25.3      |
| $M \ddagger$                        | 303.3                  | 171.0       | 337.9     |
| $M IM$                              | 86.7                   | 47.3        | 90.4      |
| $\ddagger_3 [M \ddagger + i]$       | 650                    | 364         | 714       |
| $M_a$                               | 1076                   | 895         | 1151      |
| $M_u$                               | 1559                   | ---         | 1979      |
| $f_s \phi$ non-comp                 | 6.2                    | 9.9         | 5.3       |
| $f_s \phi$ (comp)                   | 0.6                    | ---         | 0.6       |
| $f_s \ddagger_3 [M \ddagger + M_I]$ | 14.7                   | 11.1        | 14.9      |
| $f_s$ (Overload)                    | 21.5                   | 21.0        | 20.9      |
| $f_s$ (Total)                       | ---                    | 27.3        | ---       |
| VR                                  | 36.5                   | ---         | 37.7      |

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

**EXISTING EXTERIOR BEAM I REACTION TABLE**

|              | Abut. | Pier   |
|--------------|-------|--------|
| $R_{DL}$     | 50.25 | 64.29  |
| $R \ddagger$ | 32.04 | 38.39  |
| $R_I$        | 9.15  | 8.11   |
| $R_{Total}$  | 91.44 | 110.79 |

\*\*\* Reaction includes approach slab and concrete diaphragm

**PROPOSED EXTERIOR BEAM Q MOMENT TABLE**

|                                     | 0.4 Sp. 1<br>0.6 Sp. 3 | Pier 1 or 2 | 0.5 Sp. 2 |
|-------------------------------------|------------------------|-------------|-----------|
| $I_s$                               | 4470                   | 4470        | 4930      |
| $I_c(n)$                            | 14593                  | ---         | 15644     |
| $I_c(3n)$                           | 10405                  | ---         | 11092     |
| $S_s$                               | 299                    | 299         | 329       |
| $S_c(n)$                            | 500                    | ---         | 540       |
| $S_c(3n)$                           | 445                    | ---         | 479       |
| $\phi$                              | 0.841                  | 0.958       | 0.849     |
| $M \phi$                            | 136.0                  | 272.9       | 134.3     |
| $s \phi$                            | 0.117                  | ---         | 0.117     |
| $M_s \phi$                          | 23.0                   | ---         | 25.9      |
| $M \ddagger$                        | 262.5                  | 142.4       | 293.2     |
| $M IM$                              | 75.0                   | 39.4        | 78.5      |
| $\ddagger_3 [M \ddagger + i]$       | 562                    | 303         | 619       |
| $M_a$                               | 938                    | 749         | 1013      |
| $M_u$                               | 2572                   | ---         | 2520      |
| $f_s \phi$ non-comp                 | 5.5                    | 11.0        | 4.9       |
| $f_s \phi$ (comp)                   | 0.6                    | ---         | 0.6       |
| $f_s \ddagger_3 [M \ddagger + M_I]$ | 13.5                   | 12.2        | 13.8      |
| $f_s$ (Overload)                    | 19.6                   | 23.1        | 19.3      |
| $f_s$ (Total)                       | ---                    | 30.0        | ---       |
| VR                                  | 31.4                   | ---         | 32.5      |

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

**PROPOSED EXTERIOR BEAM Q REACTION TABLE**

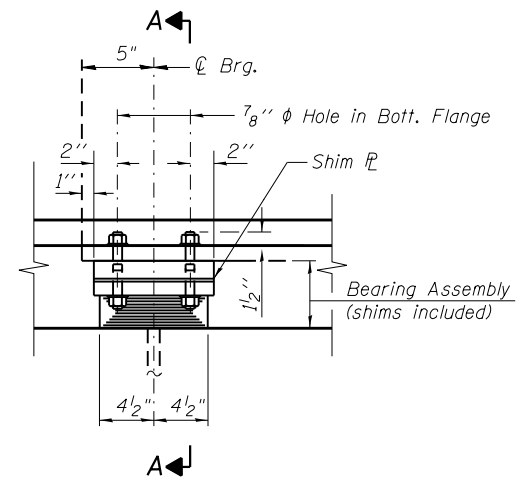
|              | Abut. | Pier  |
|--------------|-------|-------|
| $R_{DL}$     | 47.89 | 55.70 |
| $R \ddagger$ | 27.58 | 32.86 |
| $R_I$        | 7.88  | 6.94  |
| $R_{Total}$  | 83.35 | 95.50 |

\*\*\* Reaction includes approach slab and concrete diaphragm

Notes:

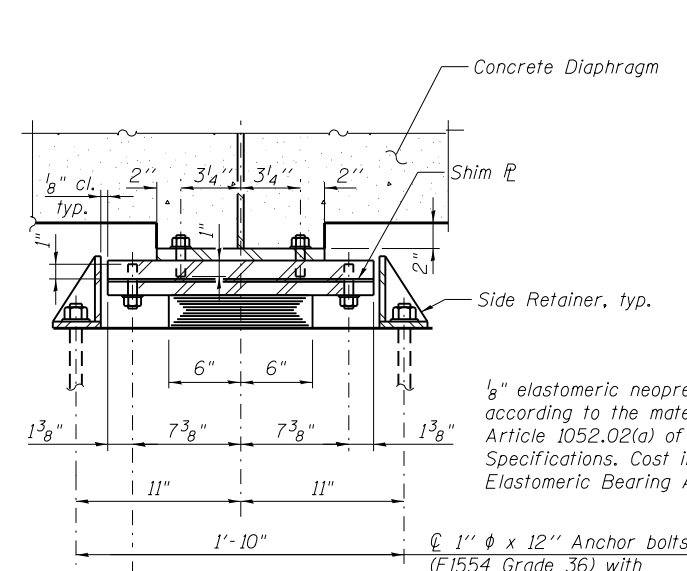
Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.  
Stud shear connectors shall be welded to all existing beams at the same spacing as shown for the proposed beam. Cost included with Stud Shear Connectors.

$I_s, S_s$ : 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>).  
 $\phi$ : Un-factored non-composite dead load (kips/ft.).  
 $M \phi$ : Un-factored moment due to non-composite dead load (kip-ft.).  
 $s \phi$ : Un-factored long-term composite (superimposed) dead load (kips/ft.).  
 $M_s \phi$ : Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).  
 $M \ddagger$ : Un-factored live load moment (kip-ft.).  
 $M_I$ : Un-factored moment due to impact (kip-ft.).  
 $M_a$ : Factored design moment (kip-ft.).  
 $1.3 [M \phi + M_s \phi + \frac{2}{3} (M \ddagger + M_I)]$   
 $M_u$ : 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).  
 $M \phi + M_s \phi + \frac{2}{3} (M \ddagger + M_I)$   
 $f_s$  (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).  
 $1.3 [M \phi + M_s \phi + \frac{2}{3} (M \ddagger + M_I)]$   
VR: Maximum  $\ddagger$  + impact shear range within the composite portion of the span for stud shear connector design (kips).



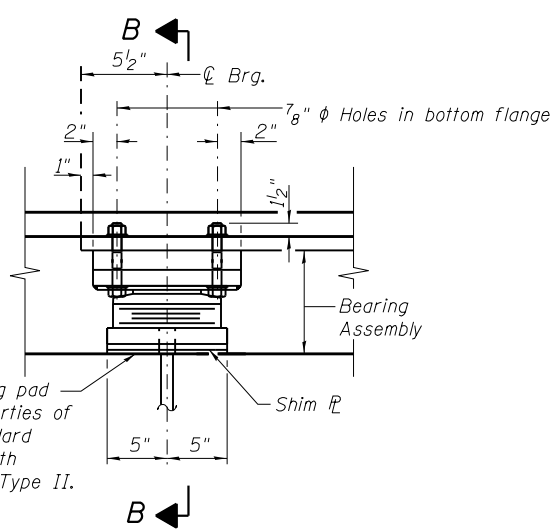
ELEVATION AT ABUT.

2-3/4" H.S. Bolts w/lock washers (Typ. ea. side) (Coat bolts with anti-seize compound)  
Tapped holes in top flange: 7/8" holes in bearing flange



SECTION A-A

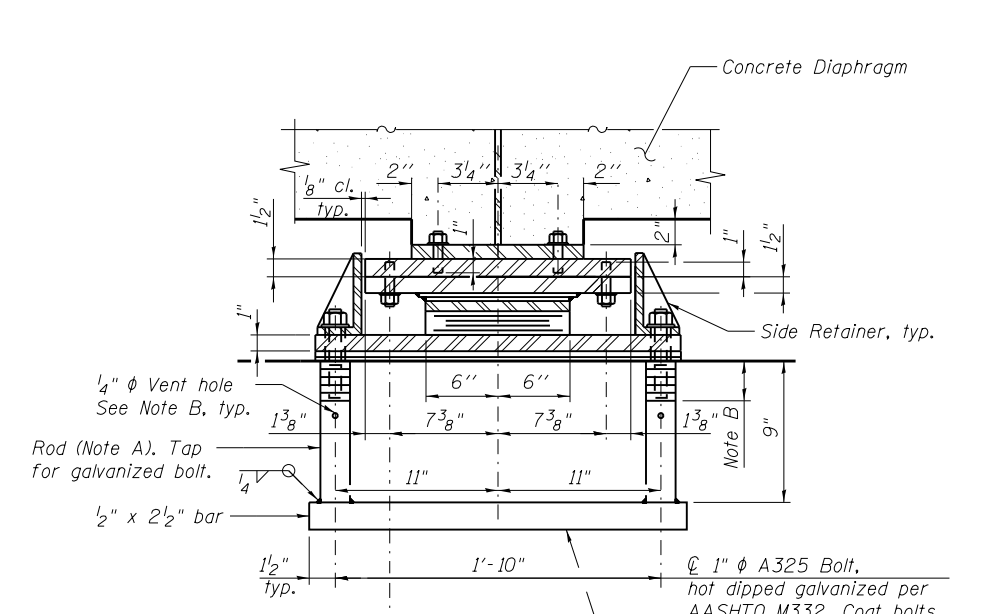
1/8" elastomeric neoprene leveling pad according to the material properties of Article 1052.02(a) of the Standard Specifications. Cost included with Elastomeric Bearing Assembly, Type II.



ELEVATION AT ABUT.

Note A: AASHTO M270 Gr. 50, 50W or similar material. Rod dia. = 1 3/4"

Note B: Bolt engagement 1 1/4" min., 1 5/8" max., allowing up to 3/8" adjustment shims. Tap full threads in rod 1 3/4" deep. Provide 1/4" galvanized vent hole below full thread.

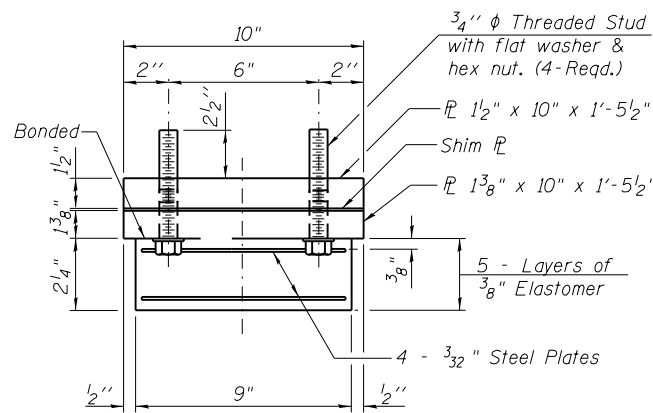


SECTION B-B

2-3/4" H.S. Bolts w/lock washers (Typ. ea. side) (Coat bolts with anti-seize compound) Tapped holes in top flange: 7/8" holes in bearing flange

Anchorage assembly to be galvanized after fabrication according to AASHTO M 111 or M232 (as applicable). Anchorage assembly shall be paid for as Furnishing and Erecting Structural Steel.

TYPE I ELASTOMERIC EXP. BRG. SOUTH ABUTMENT (1 Required)



BEARING ASSEMBLY

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

BILL OF MATERIAL

| Item                                  | Unit | Total |
|---------------------------------------|------|-------|
| Elastomeric Bearing Assembly, Type I  | Each | 1     |
| Elastomeric Bearing Assembly, Type II | Each | 1     |
| Anchor Bolts, 1"                      | Each | 2     |

Notes: 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 I bearing side retainers may be cast in place or installed in holes drilled before or after members are in place.

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.

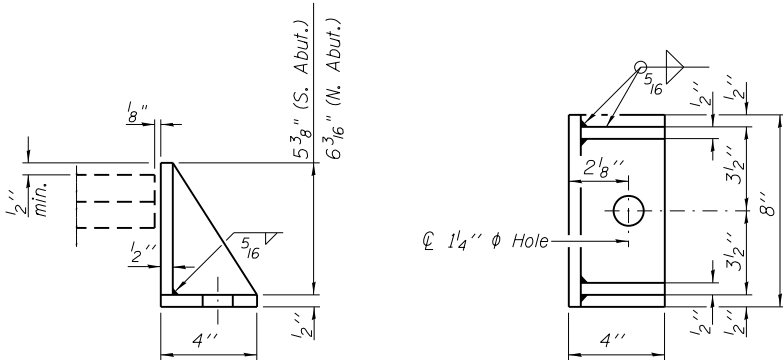
Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I or Type II.

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 Assembly shall conform to the requirements of AASHTO M 270 Grade 50.

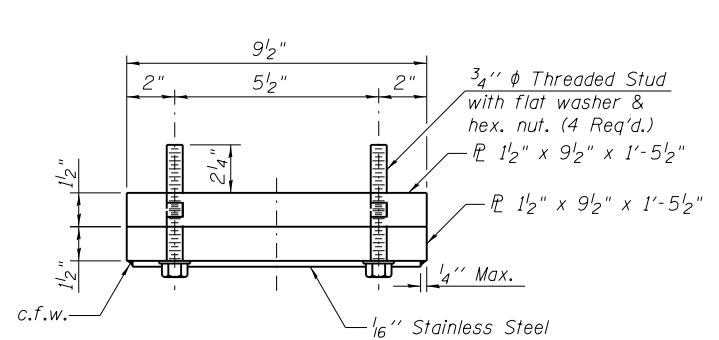
Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.



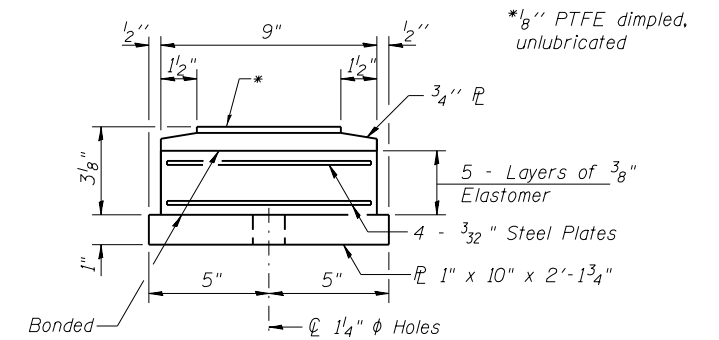
SIDE RETAINER

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

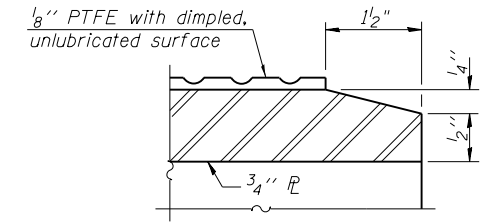
TYPE II ELASTOMERIC EXP. BRG. NORTH ABUTMENT (1 Required)



TOP BEARING ASSEMBLY

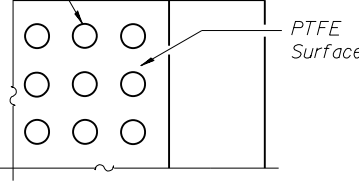


BOTTOM BEARING ASSEMBLY

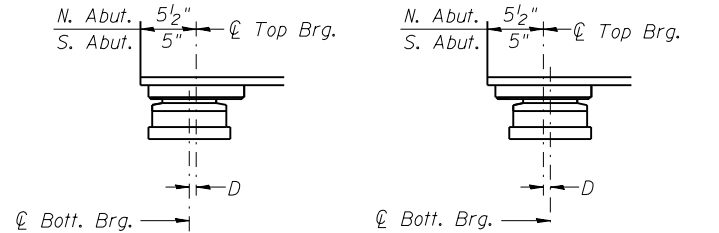


SECTION THRU PTFE

1/4" dimples on 1/2" centers 1/16" deep, or equivalent.



PLAN-PTFE SURFACE



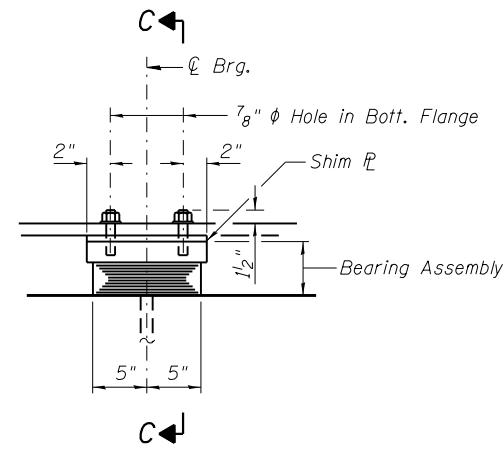
BELOW 50°F.

ABOVE 50°F.

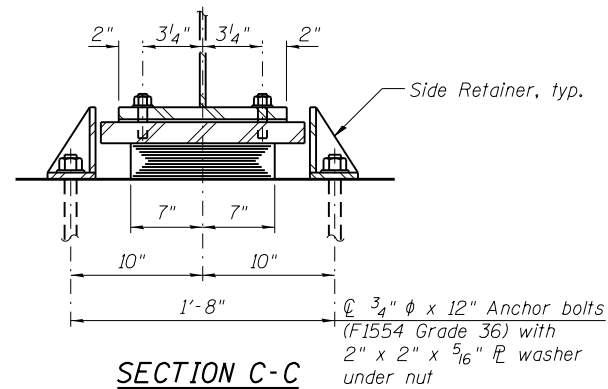
(Move bott. brg. away from fixed brg.) (Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

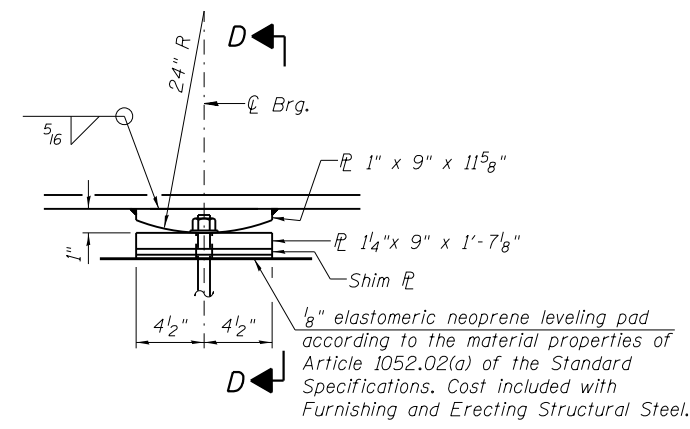
D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.



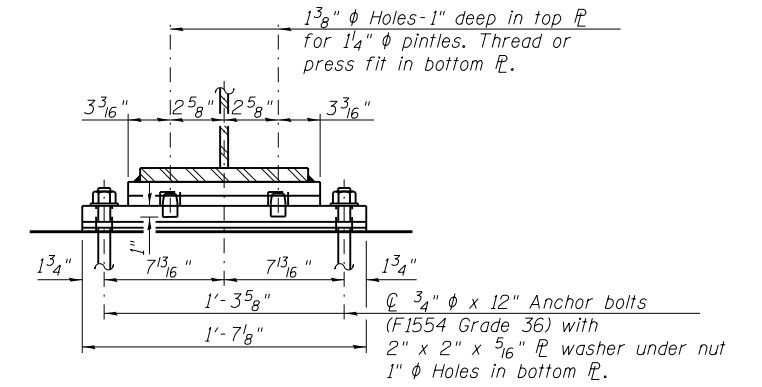
ELEVATION AT PIER



SECTION C-C

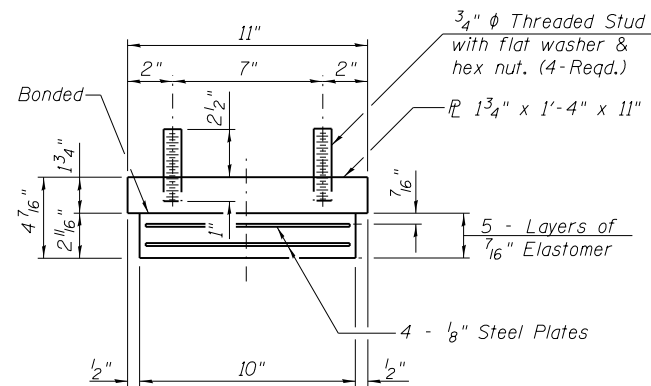


ELEVATION AT PIER



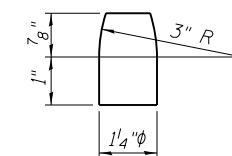
SECTION D-D

**TYPE I ELASTOMERIC EXP. BRG. PIER 2**  
(1 Required)



BEARING ASSEMBLY

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



PINTLE

**FIXED BEARING AT PIER 1**  
(1 Required)

Notes:

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.

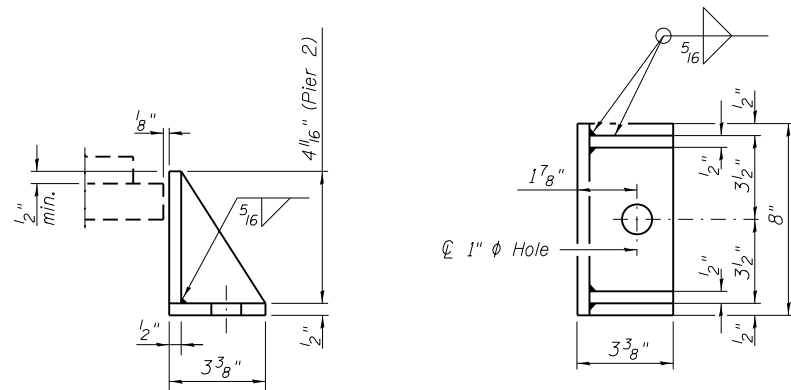
Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

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 shall meet the requirements of AASHTO M270 Grade 50.

Steel plates and pintles required for the fixed bearing shall be included in the cost of "Furnishing and Erecting Structural Steel".

Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

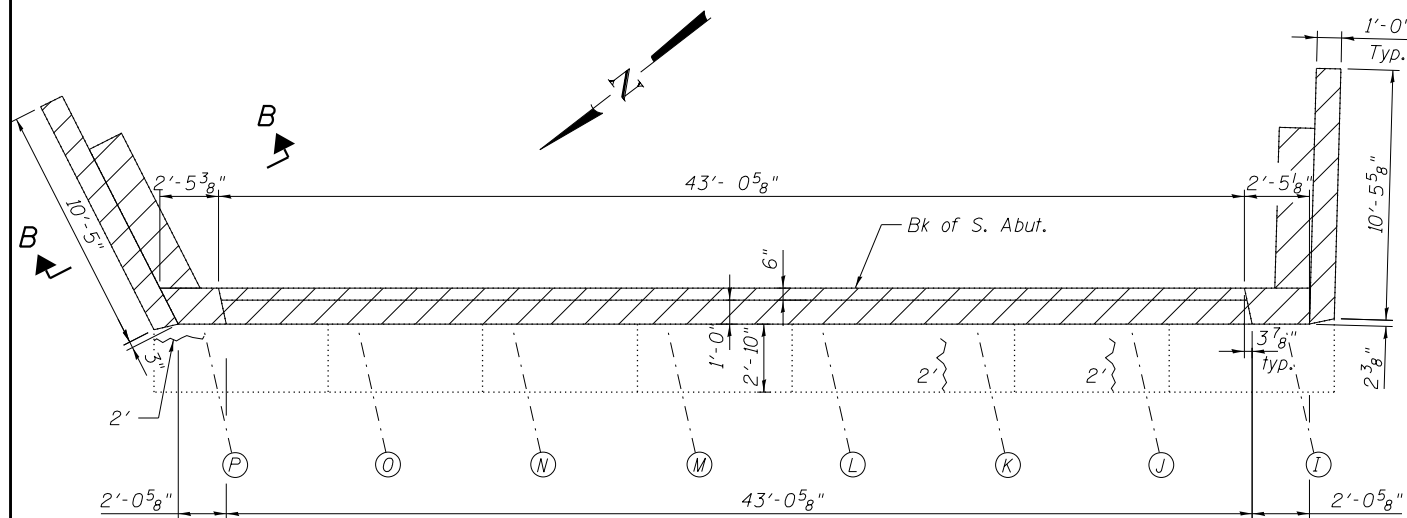


SIDE RETAINER

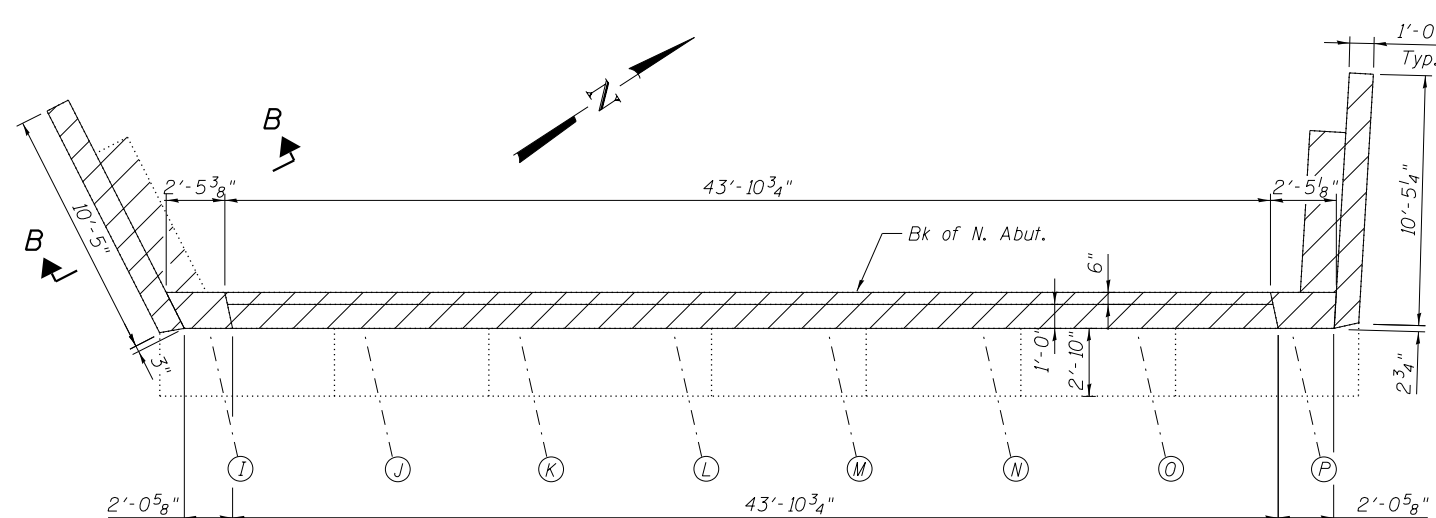
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

**BILL OF MATERIAL**

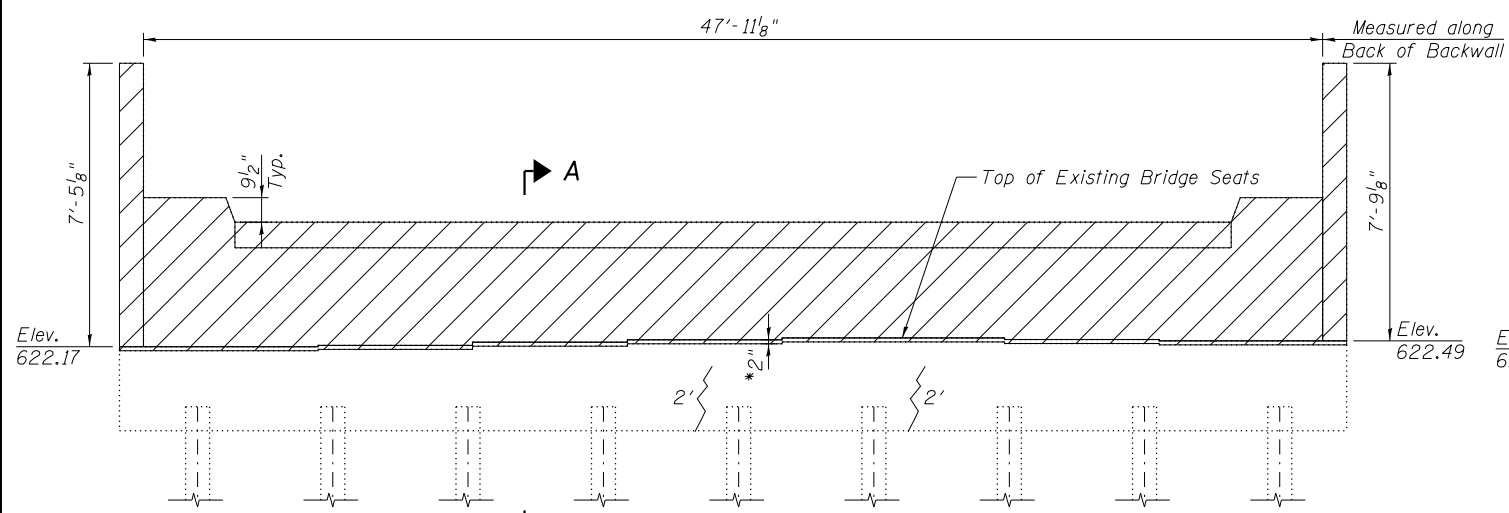
| Item                                 | Unit | Total |
|--------------------------------------|------|-------|
| Elastomeric Bearing Assembly, Type I | Each | 1     |
| Anchor Bolts, 3/4"                   | Each | 4     |



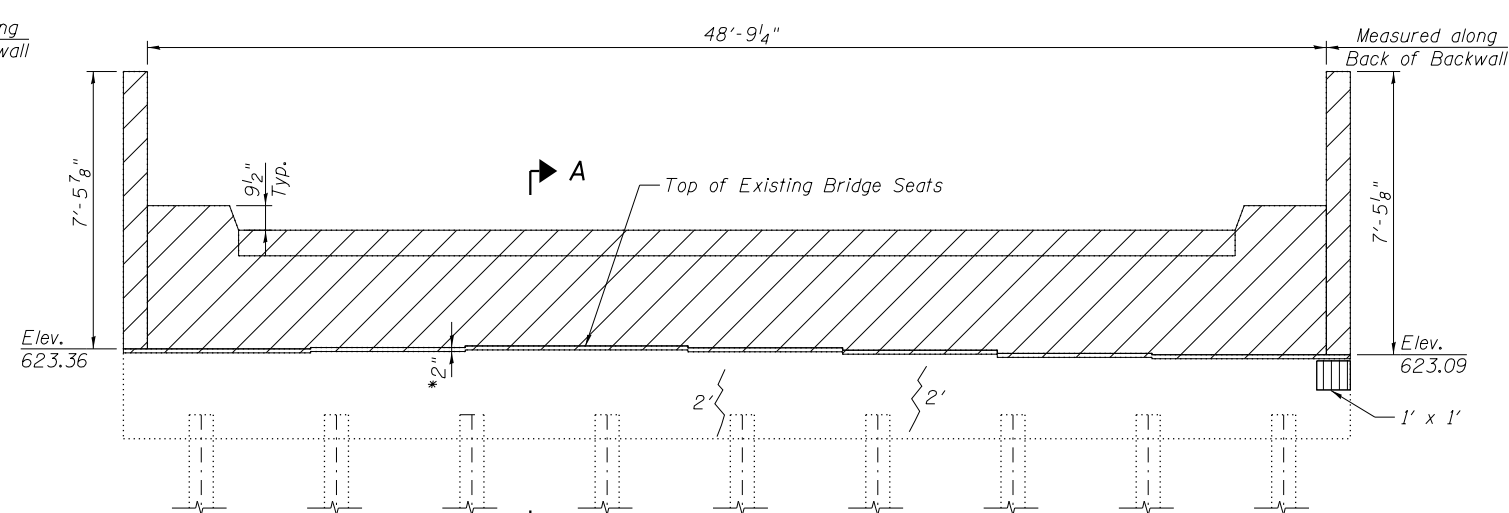
**PLAN**  
(South Abutment)



**PLAN**  
(North Abutment)



**ELEVATION**  
(South Abutment)



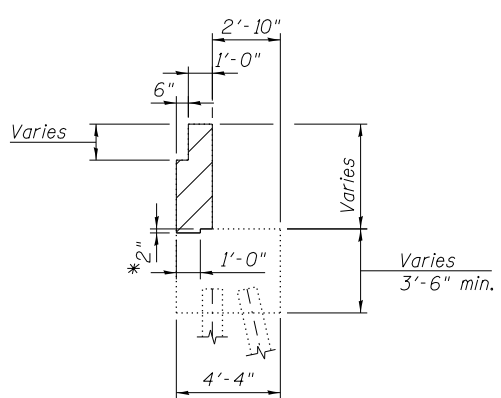
**ELEVATION**  
(North Abutment)

**EXISTING BEARING SEAT ELEVATIONS**

| Beam No. | N. Abut. | S. Abut. |
|----------|----------|----------|
| I        | 623.36   | 622.49   |
| J        | 623.43   | 622.55   |
| K        | 623.49   | 622.61   |
| L        | 623.49   | 622.61   |
| M        | 623.43   | 622.54   |
| N        | 623.33   | 622.43   |
| O        | 623.20   | 622.29   |
| P        | 623.09   | 622.17   |

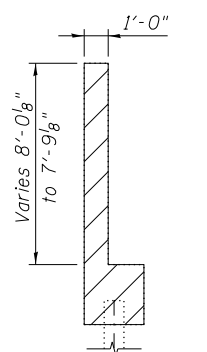
**BILL OF MATERIAL**

| ITEM   | UNIT    | TOTAL |
|--|---------|-------|
| Concrete Removal   | Cu. Yd. | 42.9  |
| Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches) | Sq. Ft. | 1     |
| Epoxy Crack Injection  | Foot    | 14    |



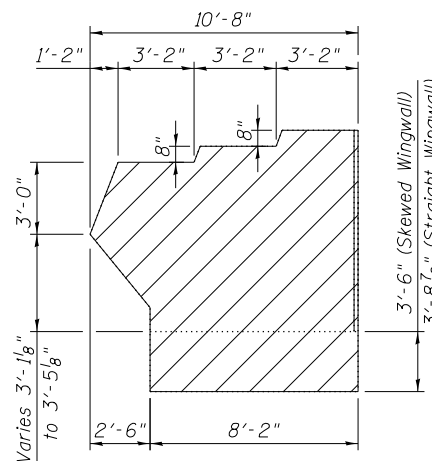
**SECTION A-A**

\*Remove backwall  
2" into bridge  
abutment seat.



**SECTION B-B**

The contractor shall take precautions not to  
damage the existing stirrups in the Abutment cap.

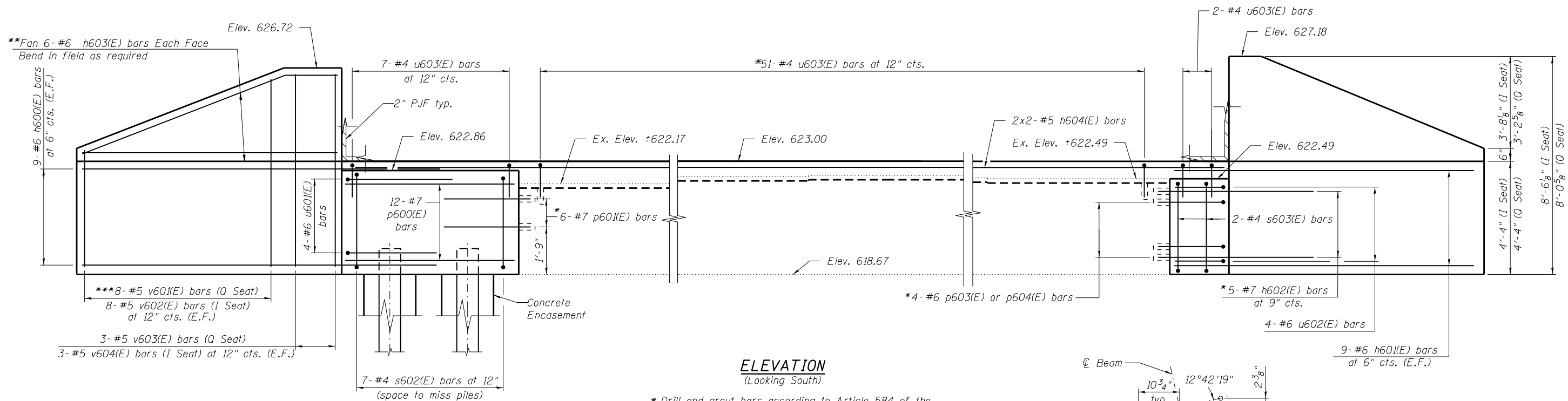


**WINGWALL ELEVATION**

**LEGEND**

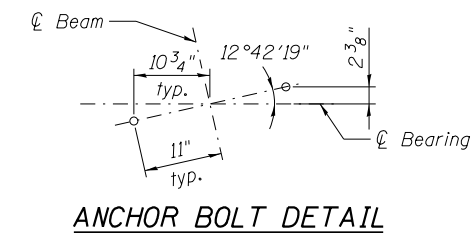
- Concrete Removal
- Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)
- Epoxy Crack Injection

Note:  
Existing vertical reinforcement shall be cut flush with the  
concrete removal surface. Cost included with "Concrete Removal".  
Any exposed rebar shall be sealed with epoxy. Cost included  
with "Concrete Removal".

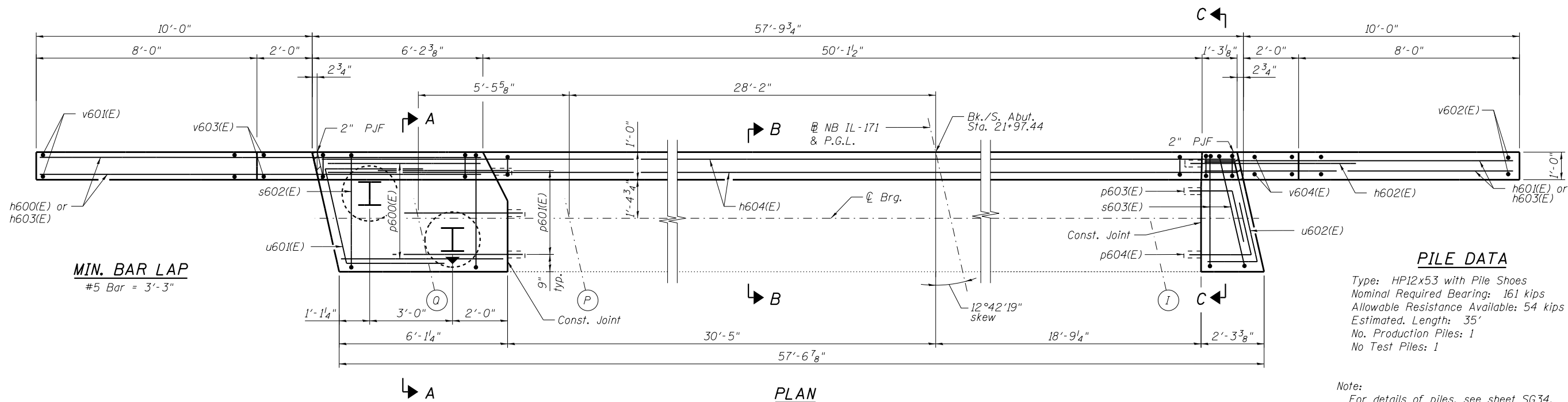
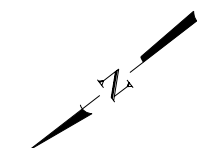


**ELEVATION**  
(Looking South)

\* Drill and grout bars according to Article 584 of the Standard Specifications. See Embedment Depth table for hole depth. Cost to be included in "Concrete Structures".  
 \*\* Cut as required to fit.  
 \*\*\* See Sheet SG28 for bar cutting Diagram.



**ANCHOR BOLT DETAIL**



**MIN. BAR LAP**  
#5 Bar = 3'-3"

**PLAN**

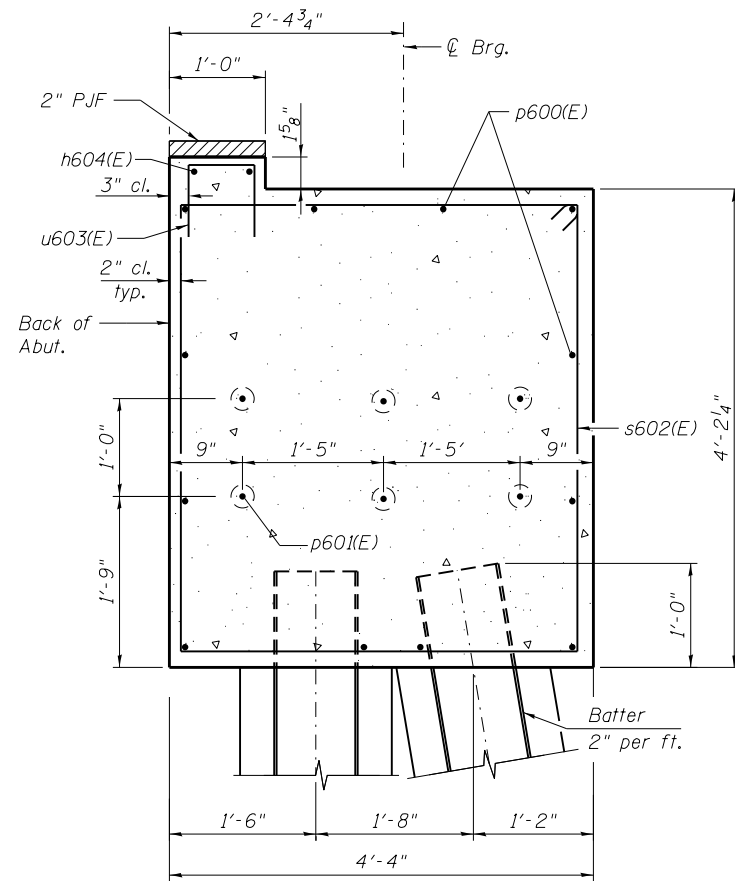
**PILE DATA**

Type: HP12x53 with Pile Shoes  
 Nominal Required Bearing: 161 kips  
 Allowable Resistance Available: 54 kips  
 Estimated Length: 35'  
 No. Production Piles: 1  
 No Test Piles: 1

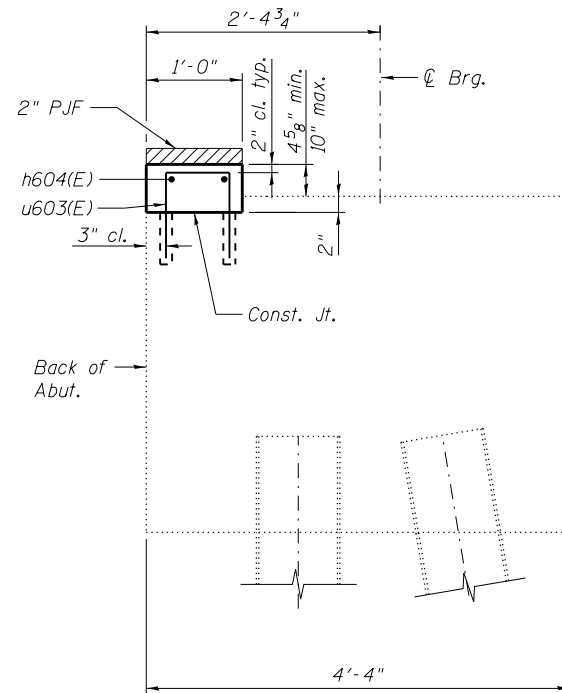
Note:  
 For details of piles, see sheet SG34.  
 u603(E) bars not shown in plan for clarity.  
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.  
 For concrete encasement details, see sheet SG34.

(Sheet 1 of 2)

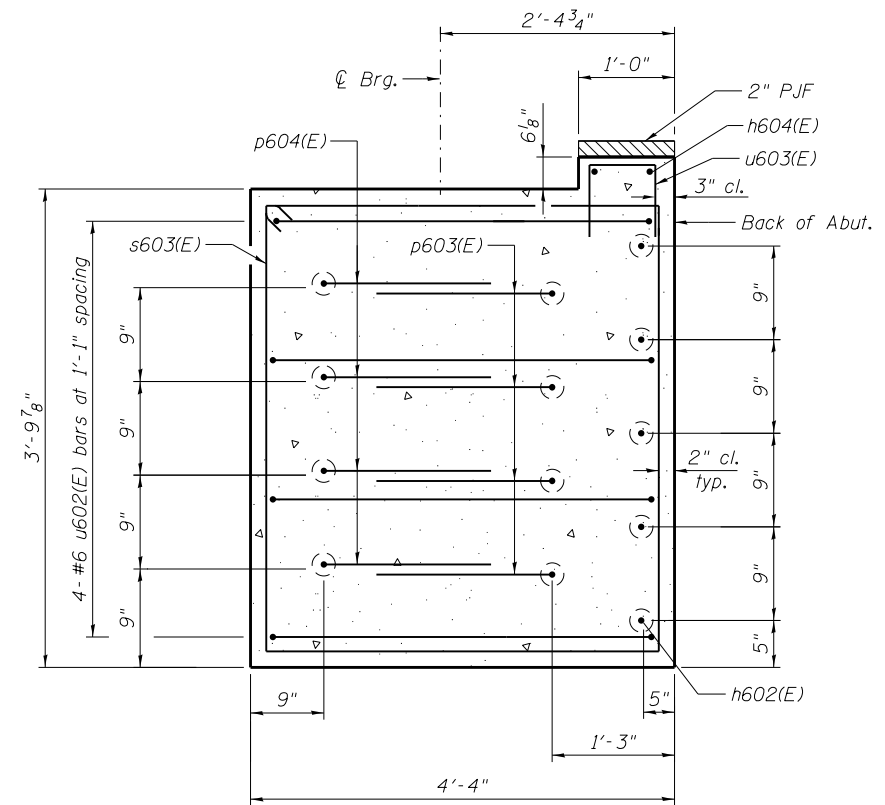
|  |                         |                |         |   |   |                           |                       |               |                    |                 |  |
|--|-------------------------|----------------|---------|---|---|---------------------------|-----------------------|---------------|--------------------|-----------------|--|
| <p>LIN ENGINEERING, LTD.<br/>Consulting Engineers<br/>Westmont, Illinois</p> | USER NAME = Lin20.Nick  | DESIGNED - BDC | REVISED | <b>STATE OF ILLINOIS</b><br><b>DEPARTMENT OF TRANSPORTATION</b> | <b>SOUTH ABUTMENT WIDENING</b><br><b>STRUCTURE NO. 016-0489</b> | F.A.P. RT. = 373          | SECTION = 2013-037B-R | COUNTY = COOK | TOTAL SHEETS = 787 | SHEET NO. = 695 |  |
|  | FILE NAME = #FILEABREV* | CHECKED - LMS  | REVISED |   |   | CONTRACT NO. 60W75        |                       |               |                    |                 |  |
|  | PLOT SCALE =            | DRAWN - RMH    | REVISED |   |   | ILLINOIS FED. AID PROJECT |                       |               |                    |                 |  |
|  | PLOT DATE = 6/18/2015   | CHECKED - LMS  | REVISED |   |   |                           |                       |               |                    |                 |  |



**SECTION A-A**



**SECTION B-B**

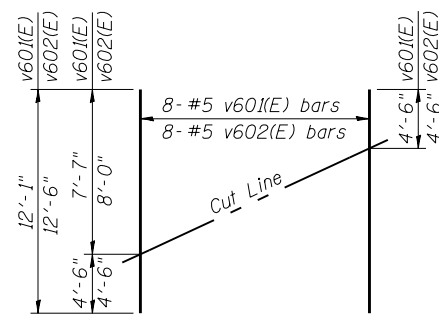


**SECTION C-C**

**BILL OF MATERIAL**

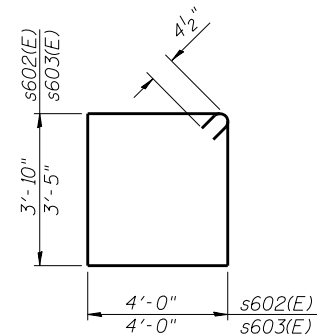
| Bar                              | No. | Size | Length  | Shape |
|----------------------------------|-----|------|---------|-------|
| h600(E)                          | 18  | #6   | 13'-10" | —     |
| h601(E)                          | 18  | #6   | 11'-2"  | —     |
| h602(E)                          | 5   | #7   | 6'-0"   | —     |
| h603(E)                          | 24  | #6   | 10'-7"  | —     |
| h604(E)                          | 4   | #5   | 30'-6"  | —     |
| p600(E)                          | 12  | #7   | 5'-10"  | —     |
| p601(E)                          | 6   | #7   | 5'-3"   | —     |
| p603(E)                          | 4   | #6   | 4'-6"   | ┘     |
| p604(E)                          | 4   | #6   | 5'-0"   | ┘     |
| s602(E)                          | 7   | #4   | 16'-5"  | □     |
| s603(E)                          | 2   | #4   | 15'-7"  | □     |
| u601(E)                          | 4   | #6   | 11'-9"  | ┘     |
| u602(E)                          | 4   | #6   | 6'-8"   | ┘     |
| u603(E)                          | 60  | #4   | 3'-9"   | ┘     |
| v601(E)                          | 8   | #5   | 12'-1"  | —     |
| v602(E)                          | 8   | #5   | 12'-6"  | —     |
| v603(E)                          | 6   | #5   | 7'-9"   | —     |
| v604(E)                          | 6   | #5   | 8'-2"   | —     |
| Structure Excavation             |     |      | Cu. Yd. | 91    |
| Concrete Structures              |     |      | Cu. Yd. | 11.0  |
| Reinforcement Bars, Epoxy Coated |     |      | Pound   | 2,180 |
| Test Pile Steel HPI2x53          |     |      | Each    | 1     |
| Pile Shoes                       |     |      | Each    | 2     |
| Furnishing Steel Piles, HPI2x53  |     |      | Foot    | 35    |
| Driving Piles                    |     |      | Foot    | 35    |
| Concrete Encasement              |     |      | Cu. Yd. | 0.7   |
| Cleaning Bridge Seats            |     |      | Sq. Ft. | 140   |

Note:  
For details of piles, see sheet SG34.

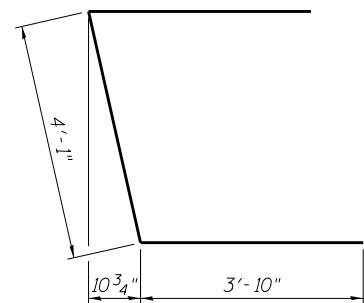


**FIELD CUTTING DIAGRAM**

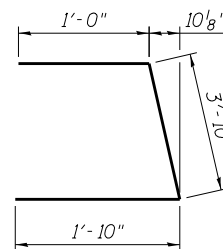
Order v601(E) and v602(E) full length.  
Cut as shown and use remainder of bars in opposite face.



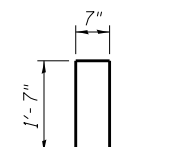
**BARS s602(E) & s603(E)**



**BAR u601(E)**



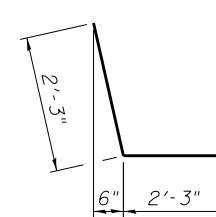
**BAR u602(E)**



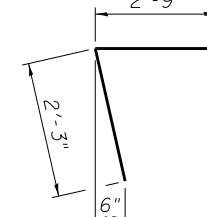
**BAR u603(E)**

**EMBEDMENT DEPTH**

| Bar Size | Embedment |
|----------|-----------|
| #4       | 9"        |
| #6       | 10"       |
| #7       | 12"       |



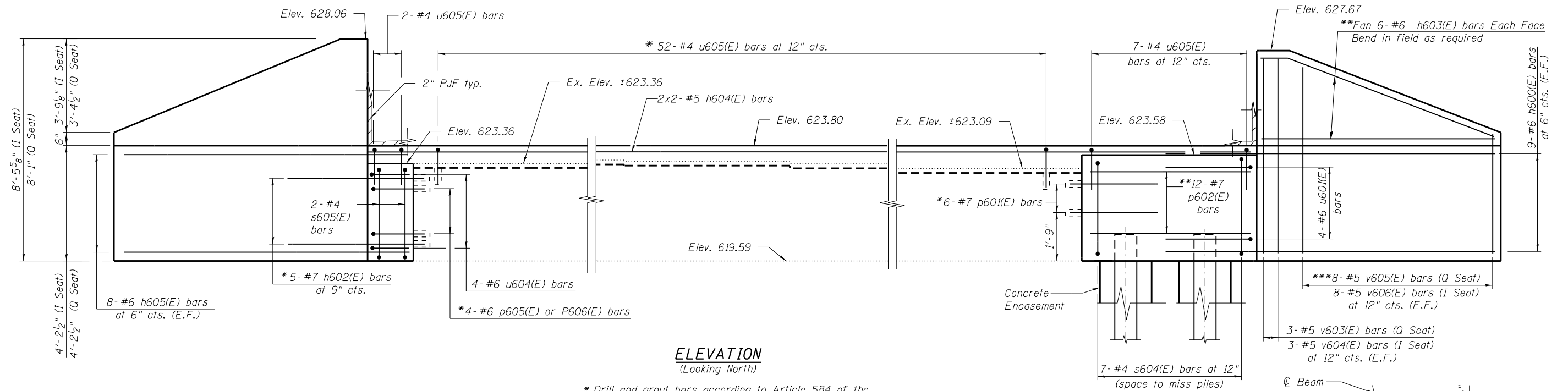
**BAR p603(E)**



**BAR p604(E)**

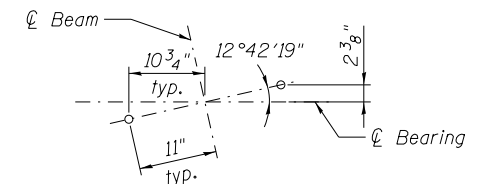
(Sheet 2 of 2)



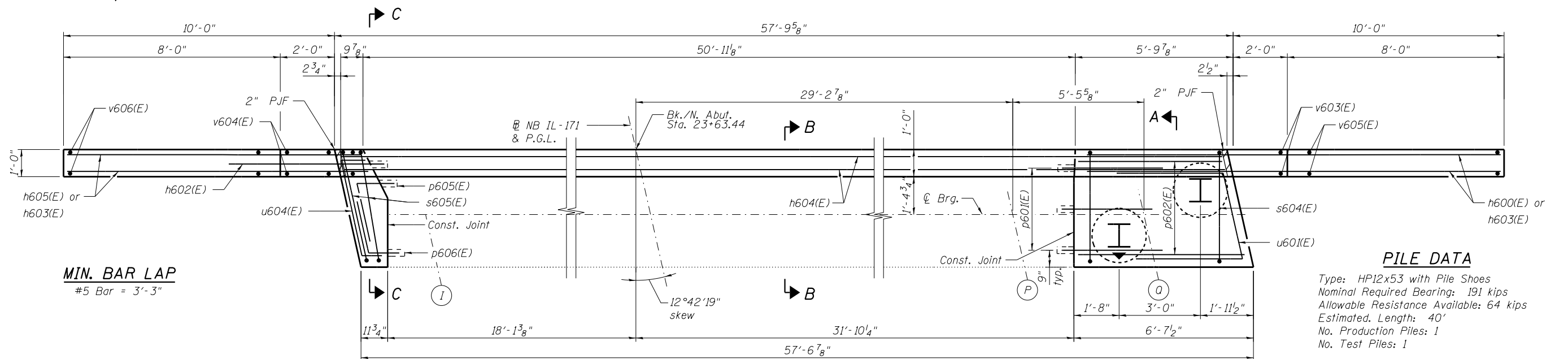


**ELEVATION**  
(Looking North)

\* Drill and grout bars according to Article 584 of the Standard Specifications. See Embedment Depth table for hole depth. Cost to be included in "Concrete Structures".  
 \*\* Cut as required to fit.  
 \*\*\* See Sheet SG30 for bar cutting Diagram.



**ANCHOR BOLT DETAIL**



**MIN. BAR LAP**  
#5 Bar = 3'-3"

**PILE DATA**

Type: HP12x53 with Pile Shoes  
 Nominal Required Bearing: 191 kips  
 Allowable Resistance Available: 64 kips  
 Estimated Length: 40'  
 No. Production Piles: 1  
 No. Test Piles: 1

Note:  
 For details of piles, see sheet SG34.  
 u603(E) bars not shown in plan for clarity.  
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.  
 For concrete encasement details, see sheet SG34.

(Sheet 1 of 2)



USER NAME = Lin20\_Nick  
 FILE NAME = #FILEABREV#  
 PLOT SCALE =  
 PLOT DATE = 6/18/2015

DESIGNED - BDC  
 CHECKED - LMS  
 DRAWN - RMH  
 CHECKED - LMS

REVISED  
 REVISED  
 REVISED  
 REVISED

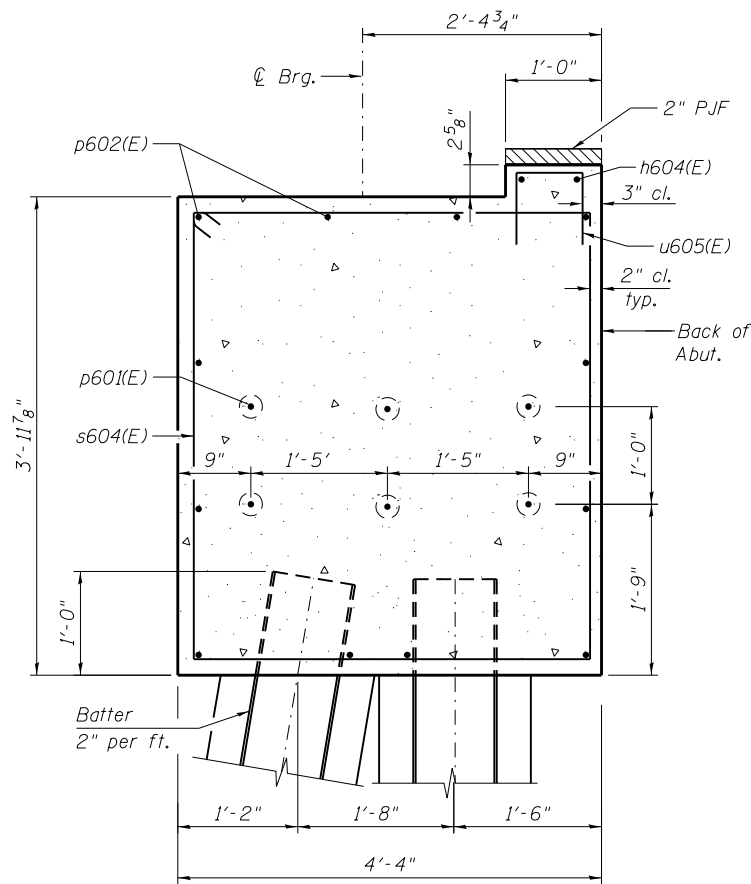
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT WIDENING  
 STRUCTURE NO. 016-0489

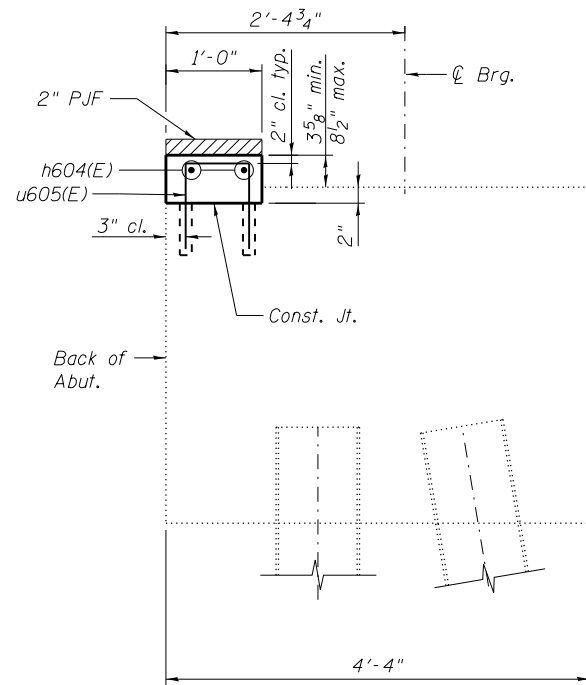
SHEET NO. SG29 OF SG38 SHEETS

| F.A.P. RTE.        | SECTION     | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|-------------|--------|--------------|-----------|
| 373                | 2013-037B-R | COOK   | 787          | 697       |
| CONTRACT NO. 60W75 |             |        |              |           |

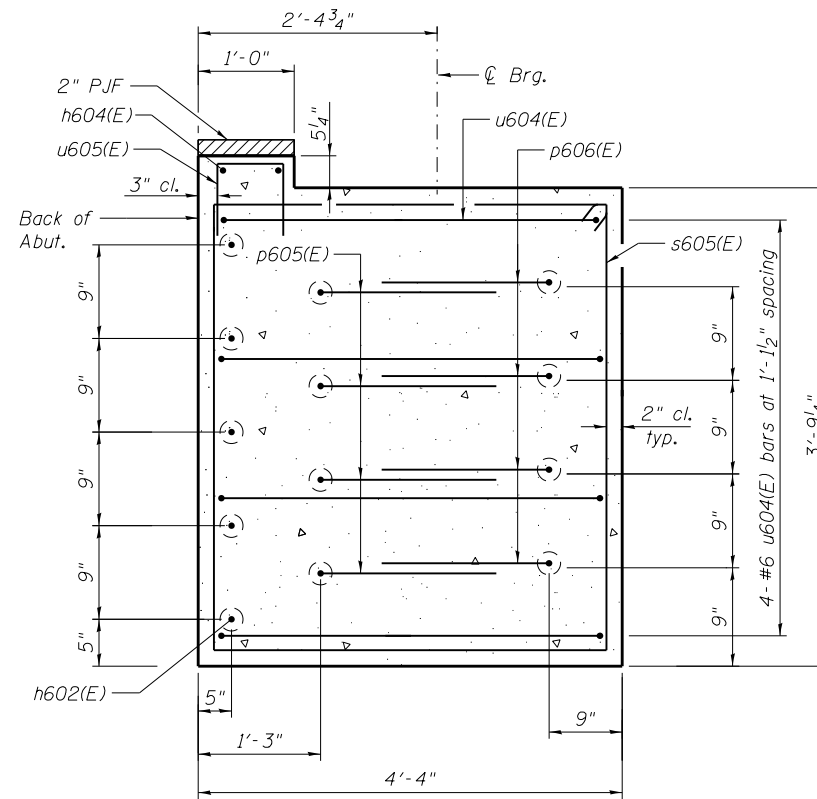
ILLINOIS FED. AID PROJECT



**SECTION A-A**



**SECTION B-B**

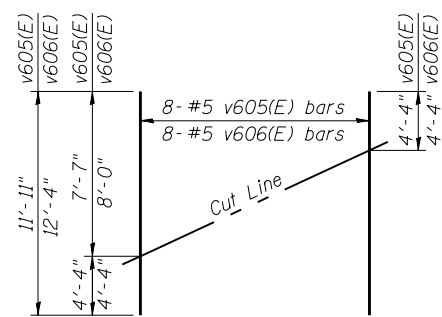


**SECTION C-C**

**BILL OF MATERIAL**

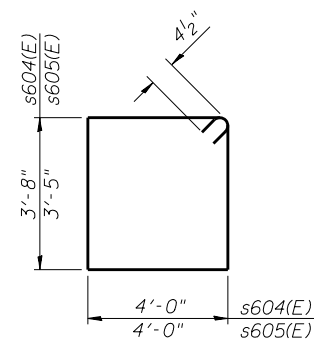
| Bar                              | No. | Size    | Length  | Shape |
|----------------------------------|-----|---------|---------|-------|
| h600(E)                          | 18  | #6      | 13'-10" | —     |
| h602(E)                          | 5   | #7      | 6'-0"   | —     |
| h603(E)                          | 24  | #6      | 10'-7"  | —     |
| h604(E)                          | 4   | #5      | 30'-6"  | —     |
| h605(E)                          | 16  | #6      | 10'-8"  | —     |
| p601(E)                          | 6   | #7      | 5'-3"   | —     |
| p602(E)                          | 12  | #7      | 6'-3"   | —     |
| p605(E)                          | 4   | #6      | 4'-3"   | —     |
| p606(E)                          | 4   | #6      | 4'-0"   | —     |
| s604(E)                          | 7   | #4      | 16'-1"  | □     |
| s605(E)                          | 2   | #4      | 15'-7"  | □     |
| u601(E)                          | 4   | #6      | 11'-9"  | —     |
| u604(E)                          | 4   | #6      | 5'-4"   | —     |
| u605(E)                          | 61  | #4      | 3'-7"   | —     |
| v603(E)                          | 6   | #5      | 7'-9"   | —     |
| v604(E)                          | 6   | #5      | 8'-2"   | —     |
| v605(E)                          | 8   | #5      | 11'-11" | —     |
| v606(E)                          | 8   | #5      | 12'-4"  | —     |
| Structure Excavation             |     | Cu. Yd. | 91      |       |
| Concrete Structures              |     | Cu. Yd. | 11.0    |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 2,120   |       |
| Test Pile Steel HP12x53          |     | Each    | 1       |       |
| Pile Shoes                       |     | Each    | 2       |       |
| Furnishing Steel Piles, HP12x53  |     | Foot    | 40      |       |
| Driving Piles                    |     | Foot    | 40      |       |
| Concrete Encasement              |     | Cu. Yd. | 0.7     |       |
| Cleaning Bridge Seats            |     | Sq. Ft. | 140     |       |

Note: For details of piles, see sheet SG34.

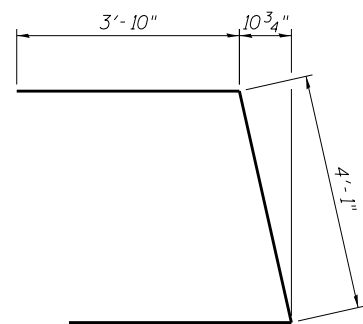


**FIELD CUTTING DIAGRAM**

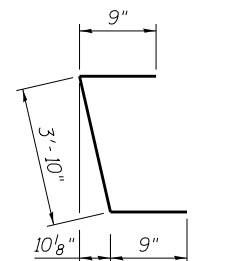
Order v605(E) and v606(E) full length. Cut as shown and use remainder of bars in opposite face.



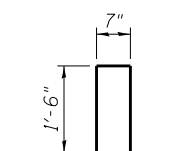
**BARS s604(E) & s605(E)**



**BAR u601(E)**



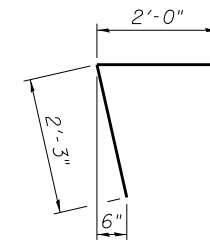
**BAR u604(E)**



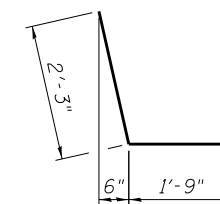
**BAR u605(E)**

**EMBEDMENT DEPTH**

| Bar Size | Embedment |
|----------|-----------|
| #4       | 9"        |
| #6       | 10"       |
| #7       | 12"       |

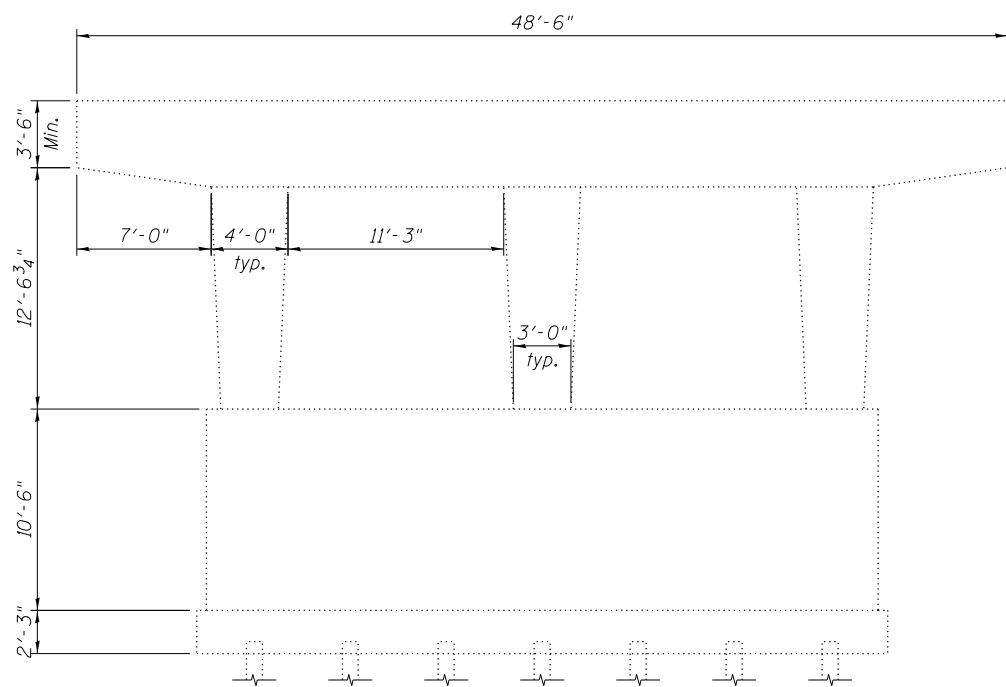


**BAR p605(E)**

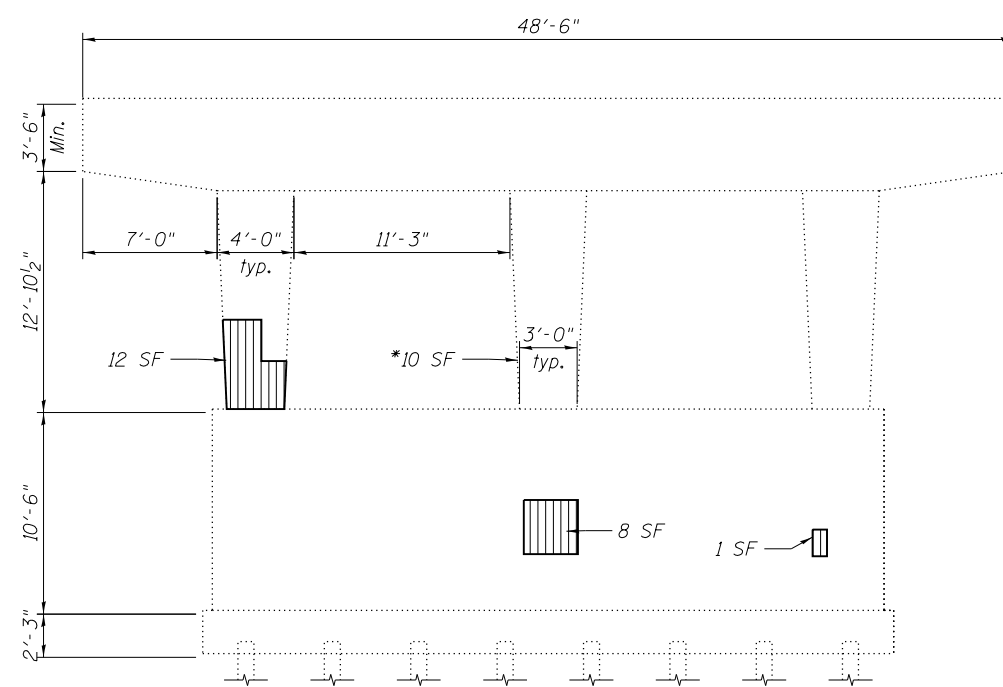


**BAR p606(E)**

(Sheet 2 of 2)

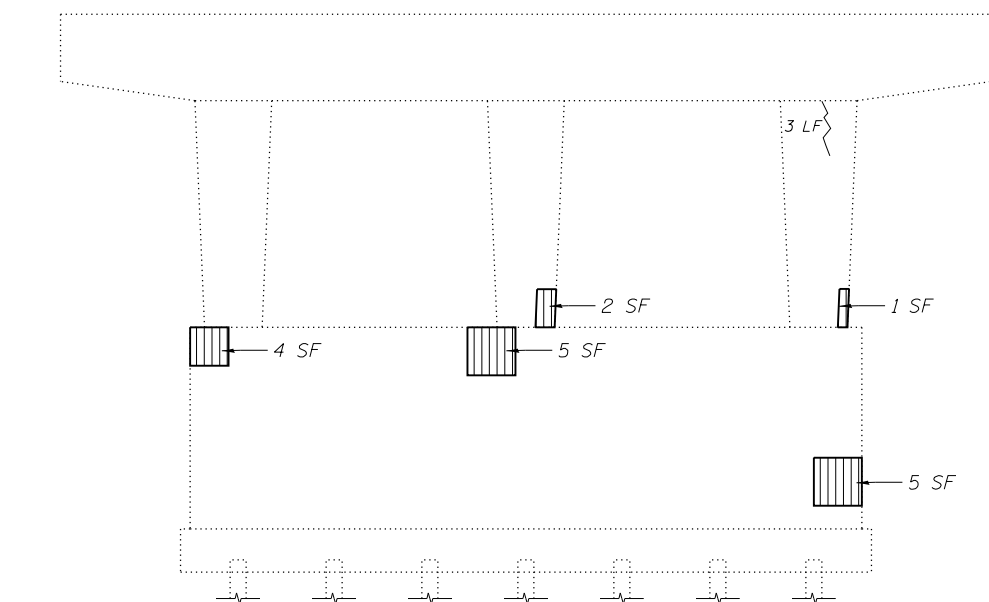


**PIER 1**  
(Looking East)

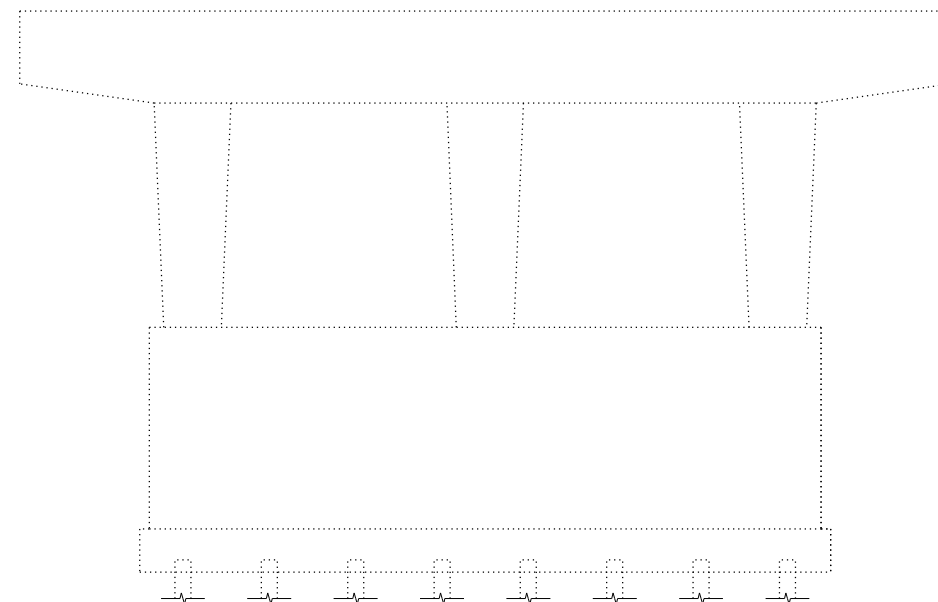


**PIER 2**  
(Looking East)

\* Defect located along the side of column

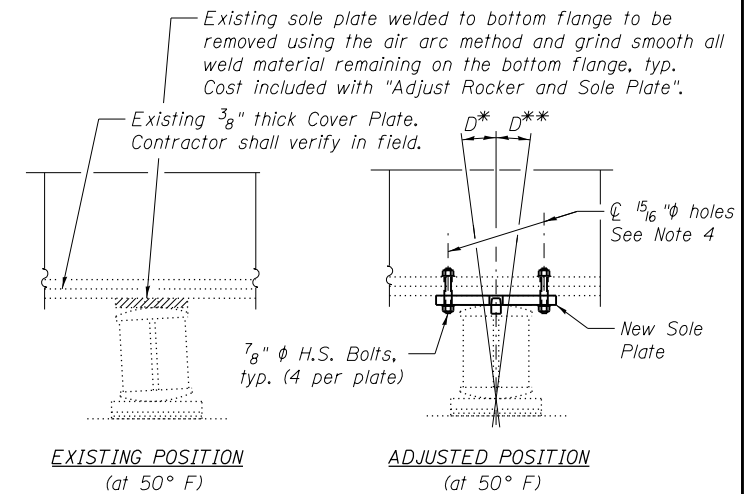


**PIER 1**  
(Looking West)



**PIER 2**  
(Looking West)

Structural Repair of Concrete (Depth equal to or less than 5")



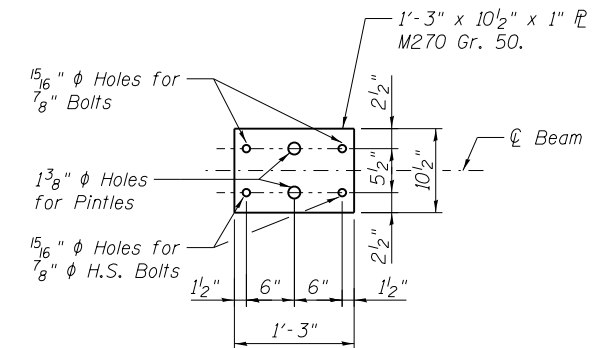
**REPOSITION EXISTING BEARINGS AT PIER 2**  
8 Required

$D^* = \frac{1}{8}$ " per each 100' of expansion for every 15° rise above the normal temp of 50° F.

$D^{**} = \frac{1}{8}$ " per each 100' of expansion for every 15° fall below the normal temp of 50° F.

**Notes:**

Jacking shall not commence until the deck has been removed entirely. The service steel dead load reaction for each bearing location at Pier 2 is 8.01 kips. Min. Jack capacity = 12 kips. For jacking and cribbing and other requirements, see special provision for "Adjust Rocker and Sole Plate". Field drill holes in existing bottom flange using new sole plate as a template. Cost of field drilling included with "Adjust Rocker and Sole Plate".

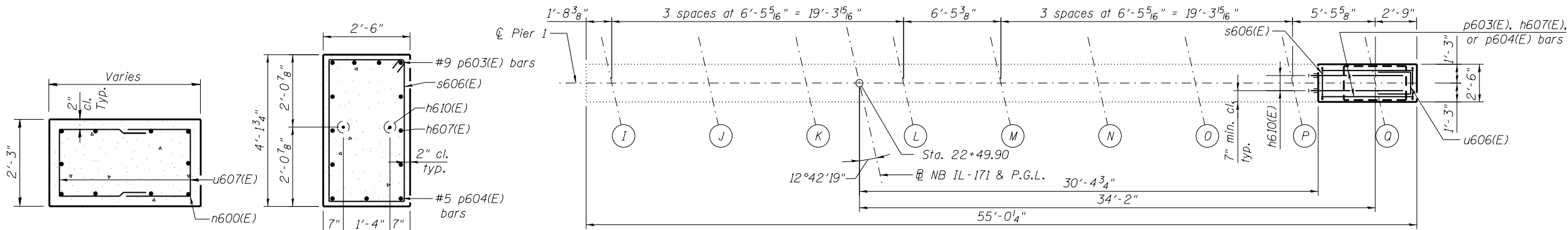


**NEW SOLE PLATE**

Shop paint with inorganic zinc primer per Section 506 of the Standard Specifications. Cost included with "Adjust Rocker and Sole Plate".

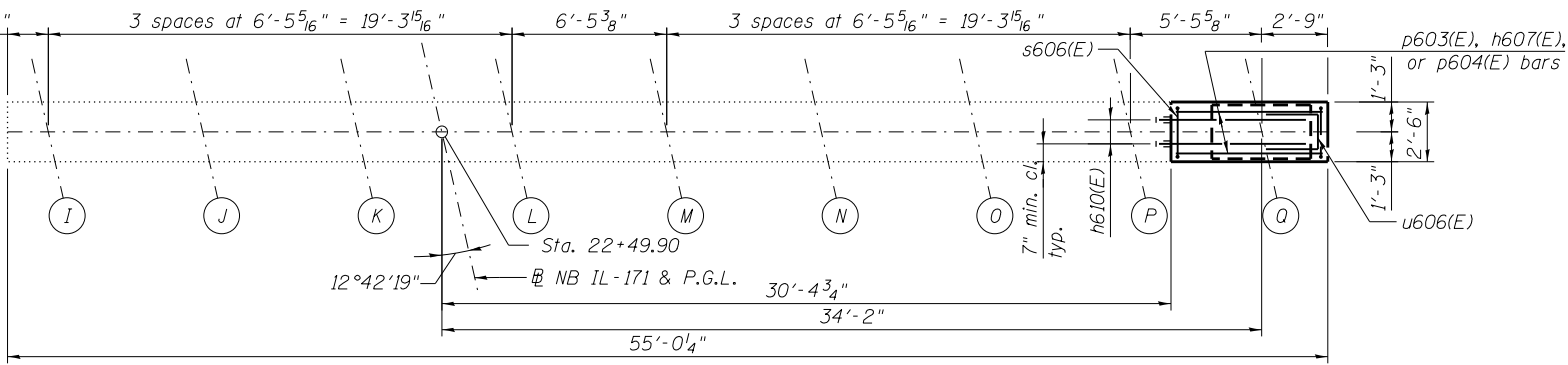
**BILL OF MATERIAL**

| ITEM   | UNIT    | TOTAL |
|--|---------|-------|
| Structural Repair of Concrete (Depth equal to or less than 5") | Sq. Ft. | 48    |
| Epoxy Crack Injection  | Foot    | 3     |
| Adjust Rocker and Sole Plate                                   | Each    | 8     |

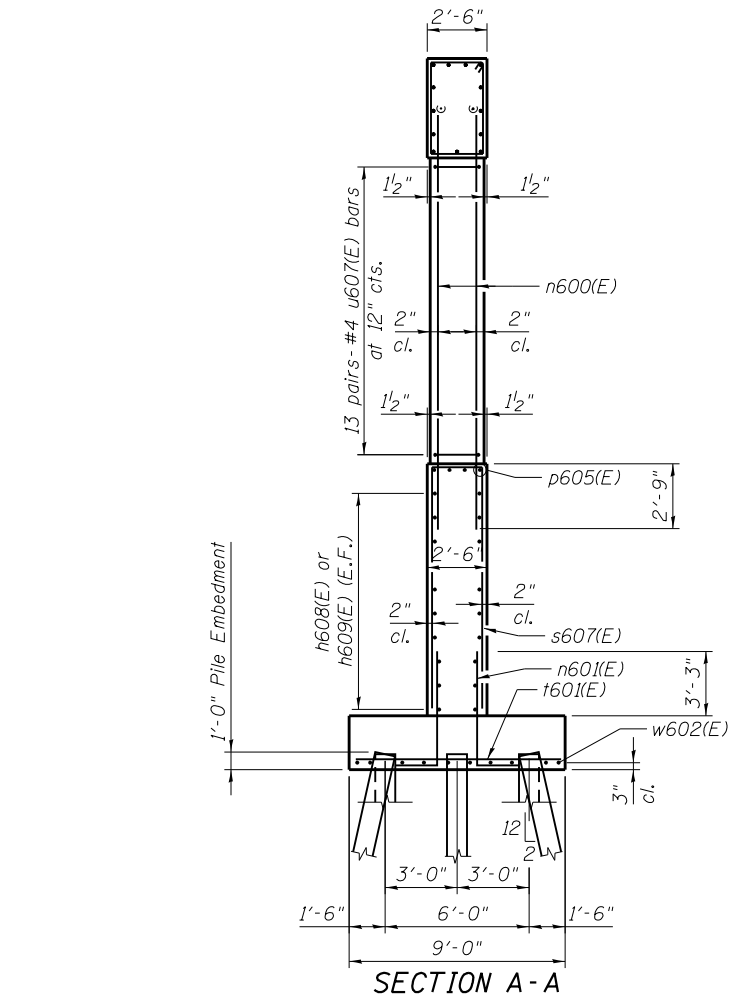


SECTION B-B

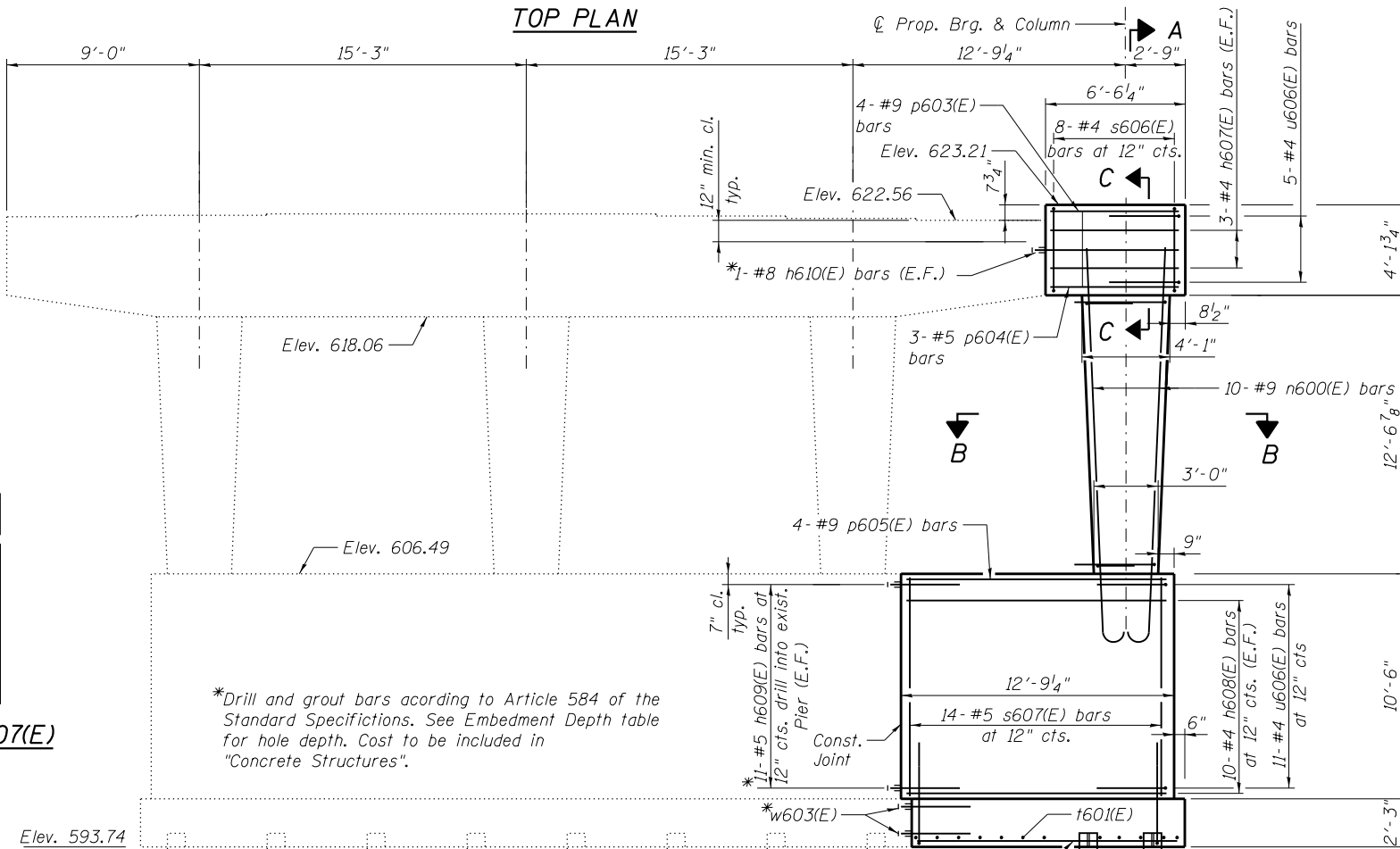
SECTION C-C



TOP PLAN



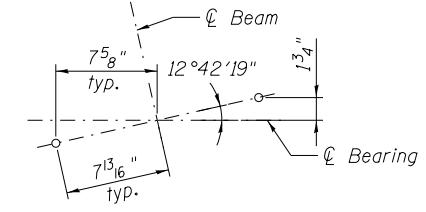
SECTION A-A



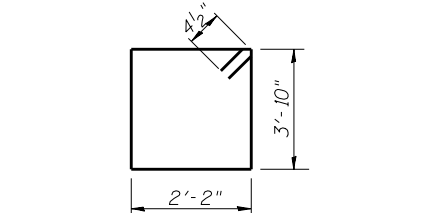
FOOTING PLAN

**BILL OF MATERIAL**

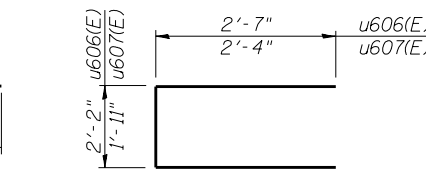
| Bar                              | No.     | Size | Length | Shape |
|----------------------------------|---------|------|--------|-------|
| h607(E)                          | 6       | #4   | 6'-3"  | —     |
| h608(E)                          | 20      | #4   | 12'-6" | —     |
| h609(E)                          | 22      | #5   | 4'-0"  | —     |
| h610(E)                          | 2       | #8   | 3'-0"  | —     |
| n600(E)                          | 10      | #9   | 18'-7" | —     |
| n601(E)                          | 24      | #5   | 6'-3"  | —     |
| p603(E)                          | 4       | #9   | 6'-3"  | —     |
| p604(E)                          | 3       | #5   | 6'-3"  | —     |
| p605(E)                          | 4       | #9   | 12'-6" | —     |
| s606(E)                          | 8       | #4   | 12'-9" | —     |
| s607(E)                          | 14      | #5   | 22'-8" | —     |
| t601(E)                          | 14      | #7   | 8'-8"  | —     |
| u606(E)                          | 16      | #4   | 7'-4"  | —     |
| u607(E)                          | 26      | #4   | 6'-7"  | —     |
| w602(E)                          | 10      | #6   | 12'-6" | —     |
| w603(E)                          | 18      | #5   | 4'-0"  | —     |
| Structure Excavation             | Cu. Yd. |      | 50     |       |
| Concrete Structures              | Cu. Yd. |      | 28.3   |       |
| Reinforcement Bars, Epoxy Coated | Pound   |      | 2,470  |       |
| Furnishing Steel Piles HP12x53   | Foot    |      | 145    |       |
| Driving Piles                    | Foot    |      | 145    |       |
| Test Pile Steel HP12x53          | Each    |      | 1      |       |
| Pile Shoes                       | Each    |      | 6      |       |
| Cleaning Bridge Seats            | Sq. Ft. |      | 122    |       |



ANCHOR BOLT DETAIL



BAR s606(E)

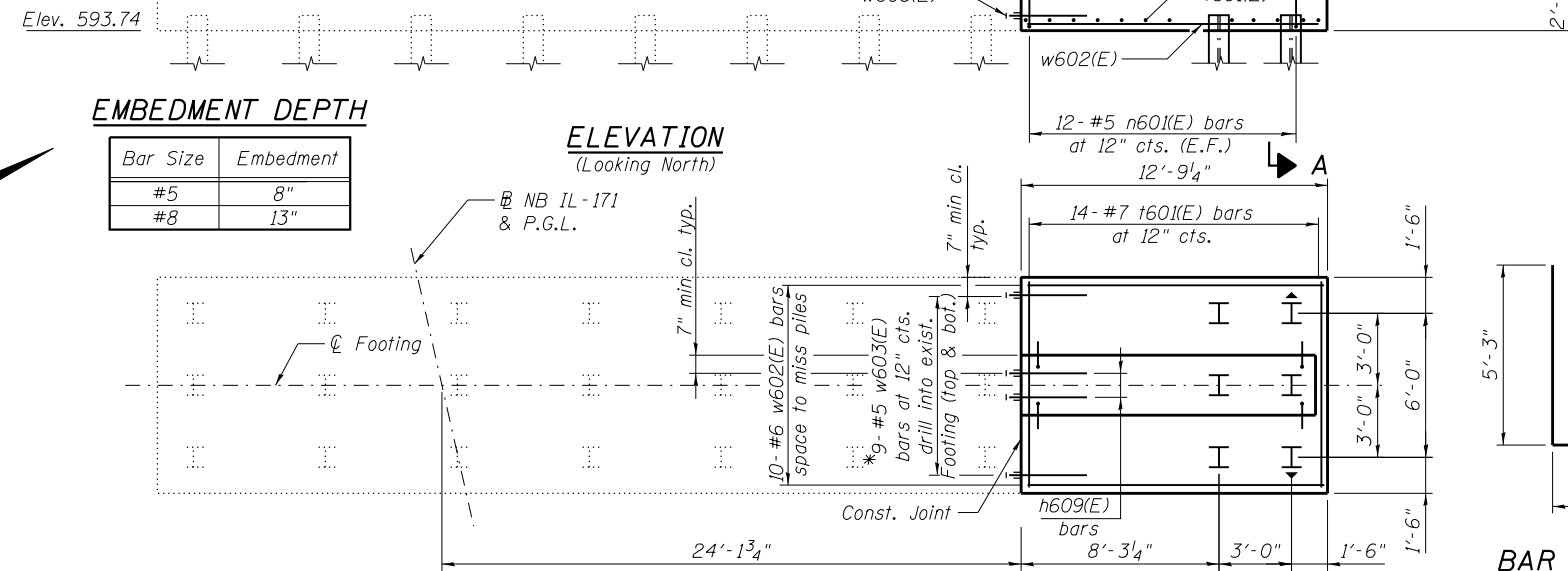


BAR n601(E) BARS u606(E) & u607(E)

**EMBEDMENT DEPTH**

| Bar Size | Embedment |
|----------|-----------|
| #5       | 8"        |
| #8       | 13"       |

**ELEVATION (Looking North)**



Notes:  
Space reinforcement in cap to miss anchor bolts.  
For details of piles, see sheet SG34.

**PILE DATA**

Type: HP12x53 with Pile Shoes  
Nominal Required Bearing: 210 kips  
Allowable Resistance Available: 70 kips  
Estimated Length: 29'  
Number of Production Piles: 5  
Number of Test Piles: 1

BAR n600(E)