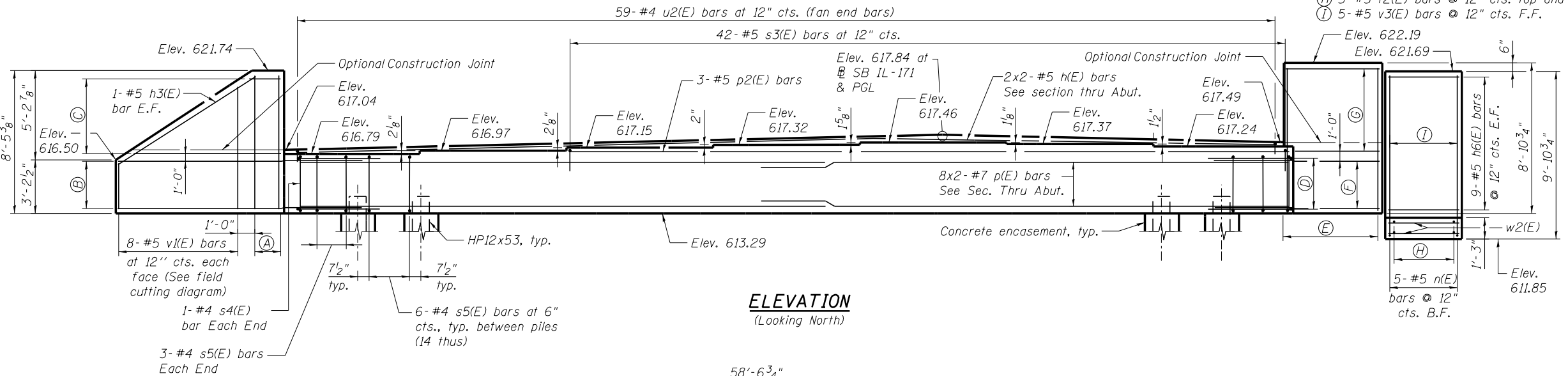


- (A) 3- #5 v(E) bars @ 10" cts. E.F.
- (B) 7- #6 h1(E) bars @ 6" cts. E.F.
- (C) 5- #5 h2(E) bars @ 12" cts. E.F.  
(See field cutting diagram)

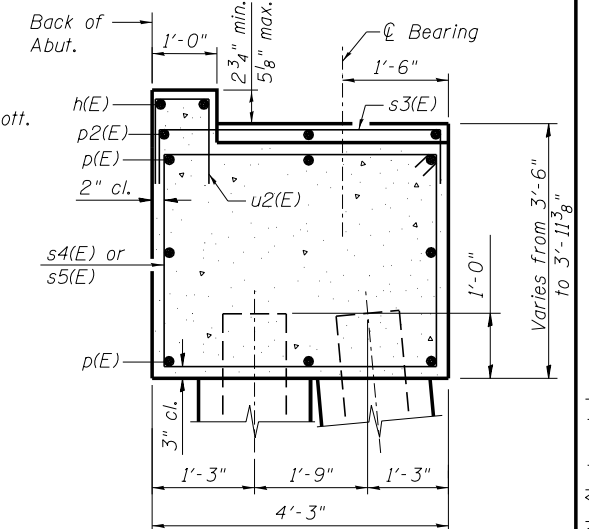
**MINIMUM BAR LAP**

#5 bar = 3'-3"  
#7 bar = 5'-2"

- (D) 3- #6 u(E) bars each end
- (E) 7- #5 v2(E) bars @ 12" cts. E.F.
- (F) 7- #5 h4(E) bars @ 6" cts. E.F.
- (G) 5- #5 h5(E) bars @ 12" cts. E.F.
- (H) 5- #5 t2(E) bars @ 12" cts. top and bott.
- (I) 5- #5 v3(E) bars @ 12" cts. F.F.

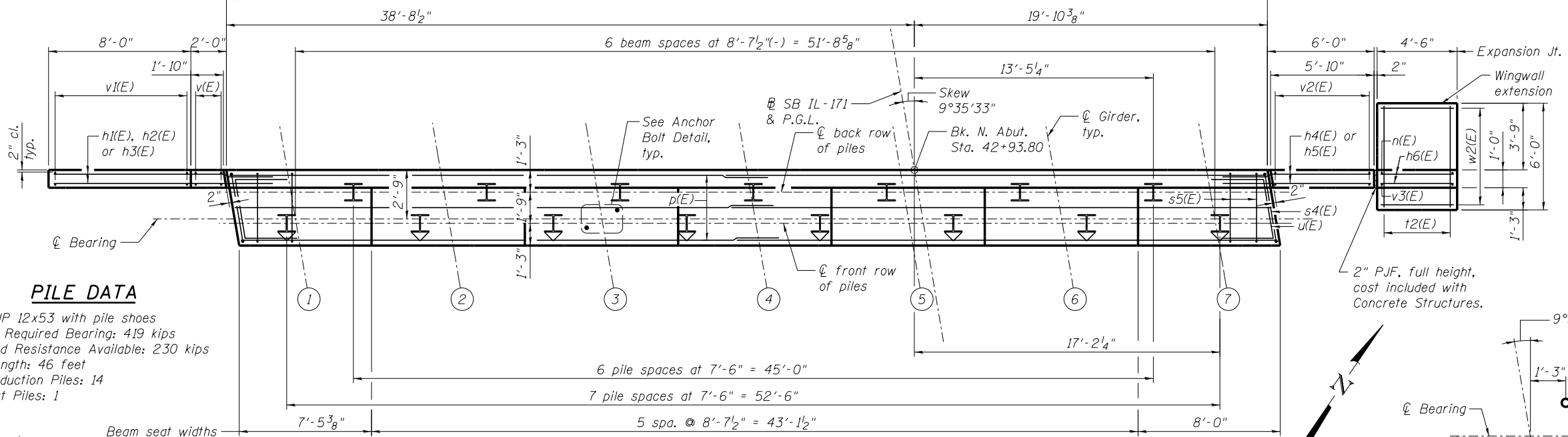


**ELEVATION**  
(Looking North)



**SEC. THRU ABUT.**

- NOTES:**
1. Pour steps monolithically with cap.
  2. Space reinforcement to miss anchor bolts.
  3. For details of piles, see sheet SA37.
  4. See sheet SA30 for expansion joint details for wingwall extension.
  5. Ashlar Limestone Pattern (with natural concrete color) shall be applied to the entire front face of the wingwalls and wingwall extension. Paid for as Form Liner Textured Surface.



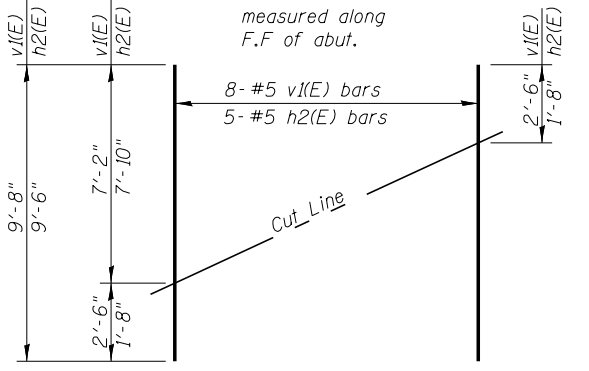
**PLAN**

**PILE DATA**

Type: HP 12x53 with pile shoes  
Nominal Required Bearing: 419 kips  
Factored Resistance Available: 230 kips  
Est. Length: 46 feet  
No. Production Piles: 14  
No. Test Piles: 1

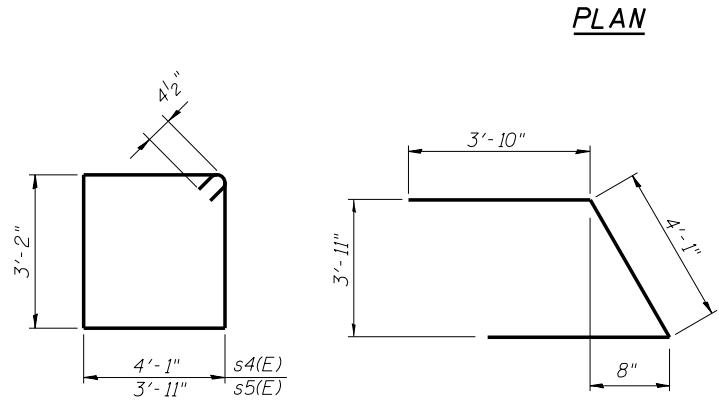
**BILL OF MATERIAL**

| Bar                              | No. | Size    | Length  | Shape |
|----------------------------------|-----|---------|---------|-------|
| h(E)                             | 4   | #5      | 31'-0"  |       |
| h1(E)                            | 14  | #6      | 13'-10" |       |
| h2(E)                            | 5   | #5      | 9'-6"   |       |
| h3(E)                            | 2   | #5      | 9'-5"   |       |
| h4(E)                            | 14  | #5      | 9'-3"   |       |
| h5(E)                            | 10  | #5      | 5'-6"   |       |
| h6(E)                            | 18  | #5      | 4'-2"   |       |
| n(E)                             | 5   | #5      | 9'-10"  | C     |
| p(E)                             | 16  | #7      | 31'-11" |       |
| p2(E)                            | 3   | #5      | 41'-7"  |       |
| s3(E)                            | 42  | #5      | 8'-7"   |       |
| s4(E)                            | 2   | #4      | 15'-3"  |       |
| s5(E)                            | 90  | #4      | 14'-11" |       |
| t2(E)                            | 10  | #5      | 5'-8"   |       |
| u(E)                             | 6   | #6      | 11'-9"  |       |
| u2(E)                            | 59  | #4      | 5'-10"  |       |
| v(E)                             | 6   | #5      | 7'-10"  |       |
| v1(E)                            | 8   | #5      | 9'-8"   |       |
| v2(E)                            | 14  | #5      | 8'-3"   |       |
| v3(E)                            | 5   | #5      | 8'-2"   |       |
| w2(E)                            | 14  | #5      | 4'-2"   |       |
| Pile Shoes                       |     | Each    | 15      |       |
| Concrete Structures              |     | Cu. Yd. | 43.6    |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 4,030   |       |
| Furnishing Steel Piles HP12x53   |     | Foot    | 644     |       |
| Driving Piles                    |     | Foot    | 644     |       |
| Test Pile Steel HP12x53          |     | Each    | 1       |       |
| Form Liner Textured Surface      |     | Sq. Ft. | 154     |       |
| Concrete Encasement              |     | Cu. Yd. | 5.2     |       |



**FIELD CUTTING DIAGRAM**

Order v1(E) & h2(E) bars full length. Cut as shown and use remainder of bars in opposite face.

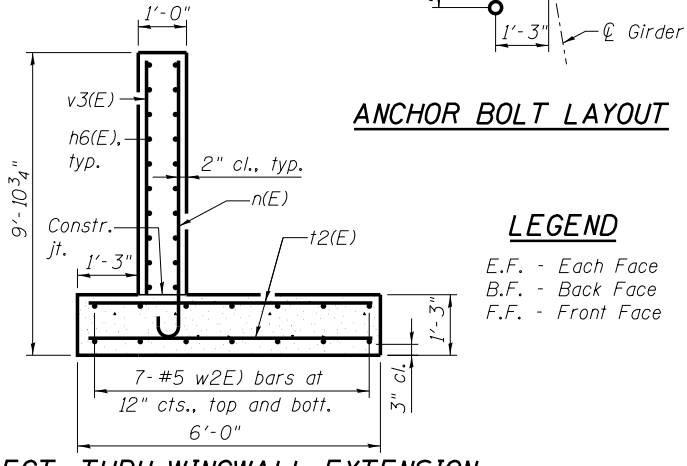


**BARS s4(E) & s5(E)**

**BAR u(E)**

**BAR n(E)**

**BARS s3(E) & u2(E)**



**ANCHOR BOLT LAYOUT**

**LEGEND**

E.F. - Each Face  
B.F. - Back Face  
F.F. - Front Face

**SECT. THRU WINGWALL EXTENSION**

Maximum applied service bearing pressure =  $Q_{max} = 1.8$  ksf



Alfred Benesch & Company  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-965-0450 Job No. 10093

|                                      |                     |                |           |
|--------------------------------------|---------------------|----------------|-----------|
| FILE NAME =                          | USER NAME = ksnyder | DESIGNED - JHG | REVISED - |
| 0161510.60W77.031.North.Abutment.dgn |                     | CHECKED - KWS  | REVISED - |
|                                      |                     | DRAWN - SLV    | REVISED - |
|                                      |                     | CHECKED - KWS  | REVISED - |
|                                      |                     |                |           |

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

**NORTH ABUTMENT DETAILS**  
**STRUCTURE NO. 016-1510**

SHEET NO. SA31 OF SA43 SHEETS

|                    |                    |        |                           |           |
|--------------------|--------------------|--------|---------------------------|-----------|
| F.A.P. RTE.        | SECTION            | COUNTY | TOTAL SHEETS              | SHEET NO. |
| 373                | (0707-608&611)HB-B | COOK   | 177                       | 96        |
| CONTRACT NO. 60W77 |                    |        | ILLINOIS FED. AID PROJECT |           |

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