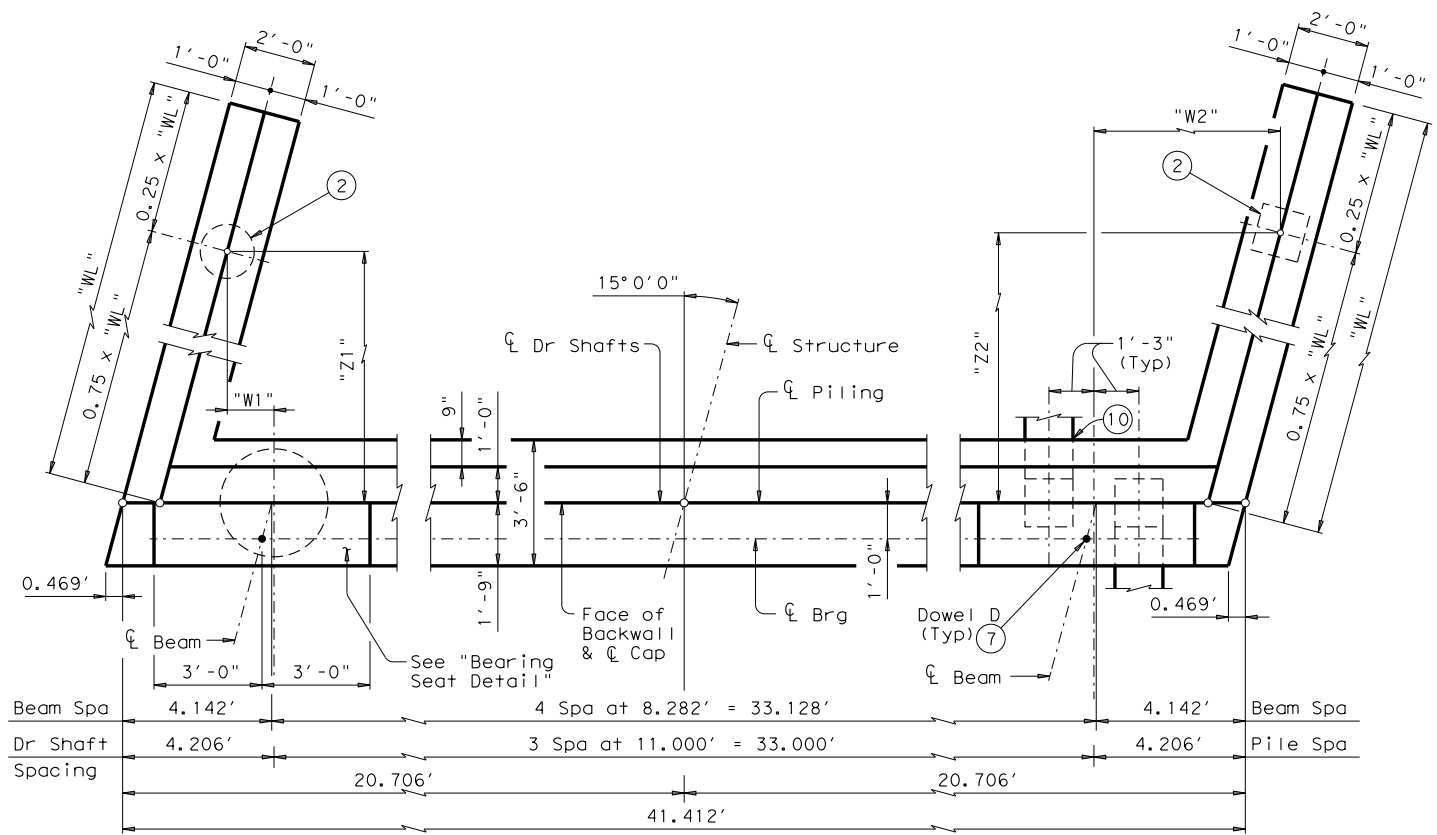
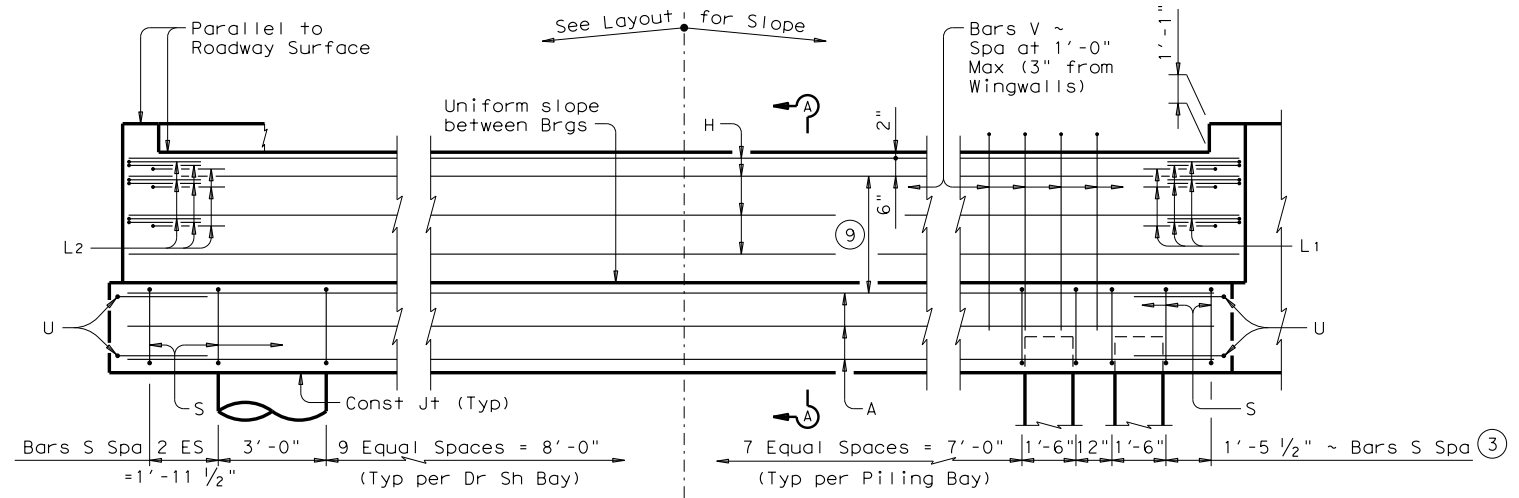


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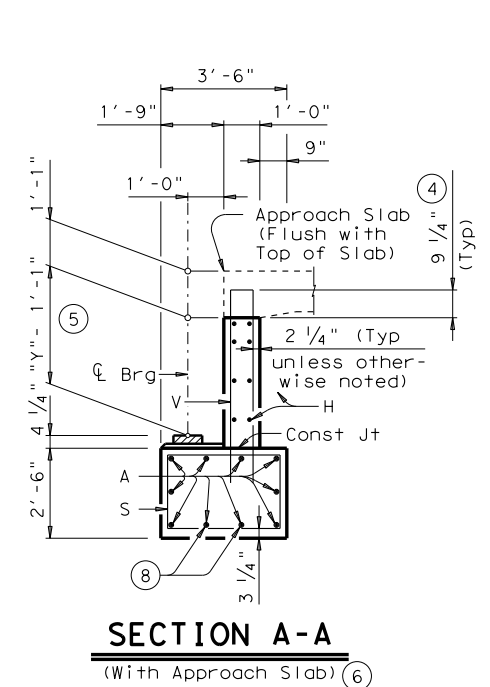


SHOWING DRILLED SHAFTS PLAN 1 SHOWING PILES



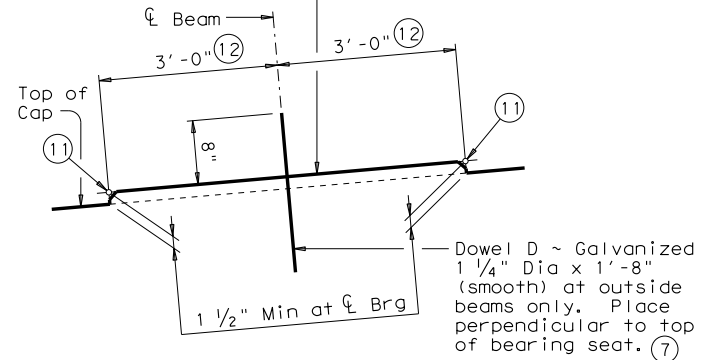
SHOWING DRILLED SHAFTS ELEVATION SHOWING PILES

| Header Slope | Beam Type | Wingwall Type | Wingwall Lgth "WL" | "W1"           | "Z1" | "W2" | "Z2" |        |         |        |         |
|--------------|-----------|---------------|--------------------|----------------|------|------|------|--------|---------|--------|---------|
| 2:1          | XB20      | Cantilevered  | 7.000'             | Not Applicable |      |      |      |        |         |        |         |
|              | XB28      | Cantilevered  | 8.000'             |                |      |      |      |        |         |        |         |
|              | XB34      | Cantilevered  | 9.000'             |                |      |      |      |        |         |        |         |
|              | XB40      | Cantilevered  | 10.000'            |                |      |      |      |        |         |        |         |
| 3:1          | XB20      | Cantilevered  | 10.000'            | Not Applicable |      |      |      |        |         |        |         |
|              | XB28      | Cantilevered  | 12.000'            |                |      |      |      |        |         |        |         |
|              | XB34      | Founded       | 14.000'            |                |      |      |      | 0.453' | 10.142' | 5.888' | 10.142' |
|              | XB40      | Founded       | 15.000'            |                |      |      |      | 0.259' | 10.867' | 6.082' | 10.867' |



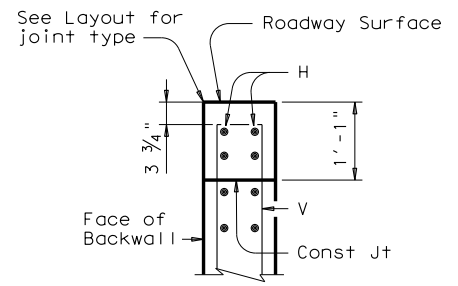
SECTION A-A (With Approach Slab) 6

Level along a line perpendicular to backwall. Uniform slope between Left and Right Bearing Seat Elevations with wood float finish.



BEARING SEAT DETAIL

(Bearing surface must be clean and free of all loose material before placing bearing pad.)



BACKWALL DETAIL

(Without Approach Slab) 6

- See Table A for variable dimensions based on header slope and beam type.
- See Table A to determine if wingwall foundations are required.
- For Piling larger than 16" adjust Bars S spacing as required to avoid Piling.
- Increase as required to maintain 3 3/4" from Finished Grade.
- See Span details for "Y" value.
- See Bridge Layout to determine if Approach Slab is present.
- Omit Dowels D at end of unit. Deduct 14 lbs from reinforcing steel total.
- With pile foundations, move Bars A shown to clear piles.
- Spacing based on beam type:  
XB20 ~ 2 Equal Spaces  
XB28 ~ 3 Equal Spaces  
XB34 ~ 3 Equal Spaces  
XB40 ~ 3 Equal Spaces
- See Detail A on FD standard.
- Right and left elevations and locations are provided elsewhere.
- Measured along C of Bearing.

| Span Length | Beam Types 5XB20 Thru 5XB40 |           |
|-------------|-----------------------------|-----------|
|             | Tons/Shaft                  | Tons/Pile |
| 40          | 67                          | 51        |
| 45          | 71                          | 53        |
| 50          | 76                          | 55        |
| 55          | 81                          | 58        |
| 60          | 85                          | 60        |
| 65          | 90                          | 62        |
| 70          | 94                          | 65        |
| 75          | 98                          | 67        |
| 80          | 103                         | 69        |
| 85          | 107                         | 71        |
| 90          | 111                         | 74        |
| 95          | 115                         | 76        |
| 100         | 120                         | 78        |
| 105         | 124                         | 80        |

**GENERAL NOTES:**  
 Designed according to AASHTO LRFD Specifications.  
 Concrete strength f'c = 3,600 psi.  
 All cap and wall reinforcement must be Grade 60.  
 Galvanize dowel bars D.  
 See Bridge Layout for header slope and foundation type, size and length.  
 See Foundation Detail Standard Sheet, FD, for all foundation details and notes.  
 See Concrete Riprap Standard Sheet, CRR, for riprap attachment details, if applicable.  
 See applicable rail details for rail anchorage in wingwalls.  
 Details are drawn showing right forward skew. See Bridge Layout for actual skew direction.  
 These abutment details may be used with Standard SXB-38-15 only.

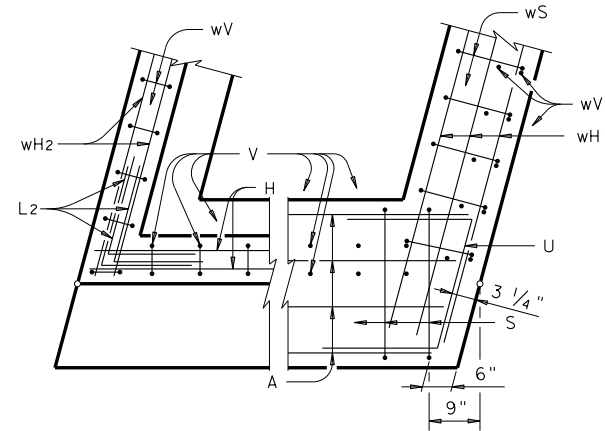
HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation  
 Bridge Division Standard

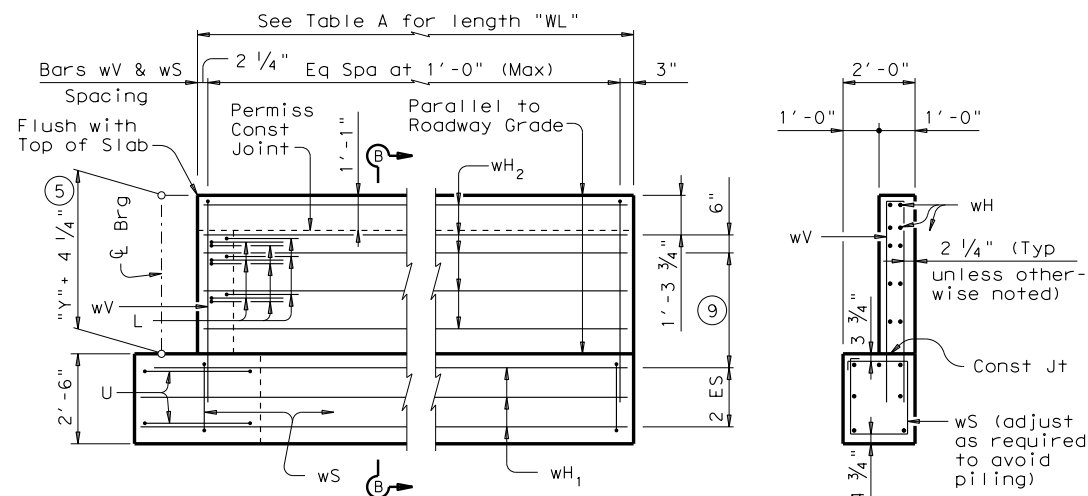
**ABUTMENTS**  
 TYPE 5XB20 THRU 5XB40  
 PRESTR CONC X-BEAMS  
 38' ROADWAY 15° SKEW  
 AXB-38-15

|                   |         |        |         |           |
|-------------------|---------|--------|---------|-----------|
| FILE: xbstde2.dgn | DN: JMH | CK: AM | DW: JTR | CK: JMH   |
| ©TxDOT June 2011  | CONT    | SECT   | JOB     | HIGHWAY   |
| REVISIONS         |         |        |         |           |
|                   | DIST    | COUNTY |         | SHEET NO. |

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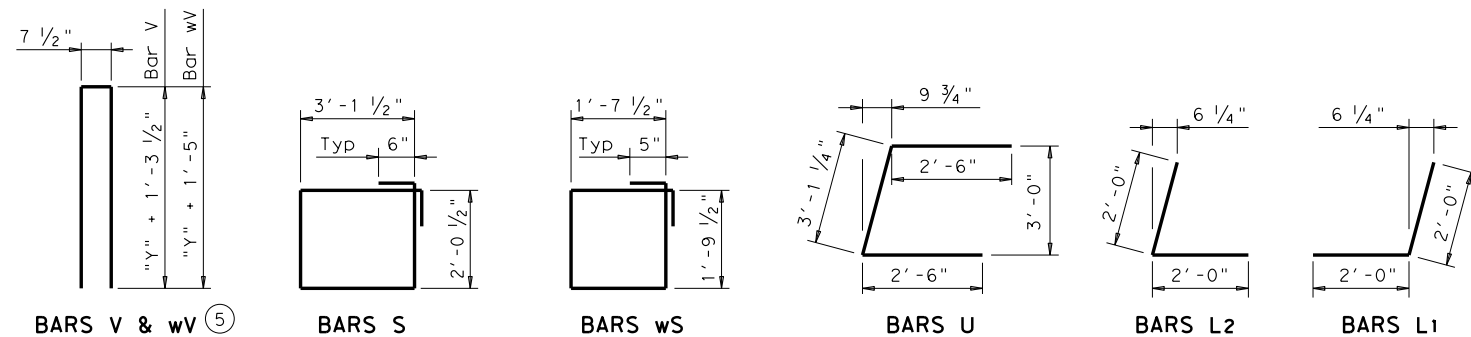


BACKWALL CAP  
CORNER DETAILS



WINGWALL ELEVATION

SECTION B-B



BARS V & wV

BARS S

BARS wS

BARS U

BARS L2

BARS L1

- ⑤ See Span details for "Y" value.
- ⑦ Omit Dowels D at end of unit. Deduct 14 lbs from reinforcing steel total.
- ⑨ Spacing based on beam type:  
XB20 ~ 2 Equal Spaces  
XB28 ~ 3 Equal Spaces  
XB34 ~ 3 Equal Spaces  
XB40 ~ 3 Equal Spaces
- ⑬ Quantities shown are for one Abutment only (with Approach Slab). With no Approach Slab, add 1.6 CY Class "C" Concrete and 247 Lbs Reinforcing Steel for 4 additional H bars.

TABLES OF ESTIMATED QUANTITIES WITH 2:1 HEADER SLOPE ⑬

| TYPE 5XB20 BEAMS   |     |         |        |        | TYPE 5XB28 BEAMS |                    |         |        |        | TYPE 5XB34 BEAMS |       |                    |        |        | TYPE 5XB40 BEAMS |     |         |                    |        |  |  |    |       |
|--------------------|-----|---------|--------|--------|------------------|--------------------|---------|--------|--------|------------------|-------|--------------------|--------|--------|------------------|-----|---------|--------------------|--------|--|--|----|-------|
| Bar                | No. | Size    | Length | Weight | Bar              | No.                | Size    | Length | Weight | Bar              | No.   | Size               | Length | Weight | Bar              | No. | Size    | Length             | Weight |  |  |    |       |
| A                  | 10  | #11     | 40'-5" | 2,147  | A                | 10                 | #11     | 40'-5" | 2,147  | A                | 10    | #11                | 40'-5" | 2,147  | A                | 10  | #11     | 40'-5"             | 2,147  |  |  |    |       |
| D ⑦                | 2   | 1 1/4"D | 1'-8"  | 14     | D ⑦              | 2                  | 1 1/4"D | 1'-8"  | 14     | D ⑦              | 2     | 1 1/4"D            | 1'-8"  | 14     | D ⑦              | 2   | 1 1/4"D | 1'-8"              | 14     |  |  |    |       |
| H                  | 6   | #6      | 41'-1" | 370    | H                | 8                  | #6      | 41'-1" | 494    | H                | 8     | #6                 | 41'-1" | 494    | H                | 8   | #6      | 41'-1"             | 494    |  |  |    |       |
| L1                 | 9   | #6      | 4'-0"  | 54     | L1               | 9                  | #6      | 4'-0"  | 54     | L1               | 9     | #6                 | 4'-0"  | 54     | L1               | 9   | #6      | 4'-0"              | 54     |  |  |    |       |
| L2                 | 9   | #6      | 4'-0"  | 54     | L2               | 9                  | #6      | 4'-0"  | 54     | L2               | 9     | #6                 | 4'-0"  | 54     | L2               | 9   | #6      | 4'-0"              | 54     |  |  |    |       |
| S                  | 36  | #5      | 11'-4" | 426    | S                | 36                 | #5      | 11'-4" | 426    | S                | 36    | #5                 | 11'-4" | 426    | S                | 36  | #5      | 11'-4"             | 426    |  |  |    |       |
| U                  | 4   | #6      | 8'-1"  | 49     | U                | 4                  | #6      | 8'-1"  | 49     | U                | 4     | #6                 | 8'-1"  | 49     | U                | 4   | #6      | 8'-1"              | 49     |  |  |    |       |
| V                  | 40  | #5      | 8'-5"  | 351    | V                | 40                 | #5      | 9'-9"  | 407    | V                | 40    | #5                 | 10'-9" | 448    | V                | 40  | #5      | 11'-9"             | 490    |  |  |    |       |
| wH1                | 14  | #6      | 8'-5"  | 177    | wH1              | 14                 | #6      | 9'-5"  | 198    | wH1              | 14    | #6                 | 10'-5" | 219    | wH1              | 14  | #6      | 11'-5"             | 240    |  |  |    |       |
| wH2                | 16  | #6      | 6'-8"  | 160    | wH2              | 20                 | #6      | 7'-8"  | 230    | wH2              | 20    | #6                 | 8'-8"  | 260    | wH2              | 20  | #6      | 9'-8"              | 290    |  |  |    |       |
| wS                 | 16  | #4      | 7'-8"  | 82     | wS               | 18                 | #4      | 7'-8"  | 92     | wS               | 20    | #4                 | 7'-8"  | 102    | wS               | 22  | #4      | 7'-8"              | 113    |  |  |    |       |
| wV                 | 16  | #5      | 8'-8"  | 145    | wV               | 18                 | #5      | 10'-0" | 188    | wV               | 20    | #5                 | 11'-0" | 229    | wV               | 22  | #5      | 12'-0"             | 275    |  |  |    |       |
| Reinforcing Steel  |     |         |        | Lb     | 4,029            | Reinforcing Steel  |         |        |        | Lb               | 4,353 | Reinforcing Steel  |        |        |                  | Lb  | 4,496   | Reinforcing Steel  |        |  |  | Lb | 4,646 |
| Class "C" Concrete |     |         |        | CY     | 19.8             | Class "C" Concrete |         |        |        | CY               | 21.8  | Class "C" Concrete |        |        |                  | CY  | 23.5    | Class "C" Concrete |        |  |  | CY | 25.3  |

TABLES OF ESTIMATED QUANTITIES WITH 3:1 HEADER SLOPE ⑬

| TYPE 5XB20 BEAMS   |     |         |        |        | TYPE 5XB28 BEAMS |                    |         |        |        | TYPE 5XB34 BEAMS |       |                    |        |        | TYPE 5XB40 BEAMS |     |         |                    |        |  |  |    |       |
|--------------------|-----|---------|--------|--------|------------------|--------------------|---------|--------|--------|------------------|-------|--------------------|--------|--------|------------------|-----|---------|--------------------|--------|--|--|----|-------|
| Bar                | No. | Size    | Length | Weight | Bar              | No.                | Size    | Length | Weight | Bar              | No.   | Size               | Length | Weight | Bar              | No. | Size    | Length             | Weight |  |  |    |       |
| A                  | 10  | #11     | 40'-5" | 2,147  | A                | 10                 | #11     | 40'-5" | 2,147  | A                | 10    | #11                | 40'-5" | 2,147  | A                | 10  | #11     | 40'-5"             | 2,147  |  |  |    |       |
| D ⑦                | 2   | 1 1/4"D | 1'-8"  | 14     | D ⑦              | 2                  | 1 1/4"D | 1'-8"  | 14     | D ⑦              | 2     | 1 1/4"D            | 1'-8"  | 14     | D ⑦              | 2   | 1 1/4"D | 1'-8"              | 14     |  |  |    |       |
| H                  | 6   | #6      | 41'-1" | 370    | H                | 8                  | #6      | 41'-1" | 494    | H                | 8     | #6                 | 41'-1" | 494    | H                | 8   | #6      | 41'-1"             | 494    |  |  |    |       |
| L1                 | 9   | #6      | 4'-0"  | 54     | L1               | 9                  | #6      | 4'-0"  | 54     | L1               | 9     | #6                 | 4'-0"  | 54     | L1               | 9   | #6      | 4'-0"              | 54     |  |  |    |       |
| L2                 | 9   | #6      | 4'-0"  | 54     | L2               | 9                  | #6      | 4'-0"  | 54     | L2               | 9     | #6                 | 4'-0"  | 54     | L2               | 9   | #6      | 4'-0"              | 54     |  |  |    |       |
| S                  | 36  | #5      | 11'-4" | 426    | S                | 36                 | #5      | 11'-4" | 426    | S                | 36    | #5                 | 11'-4" | 426    | S                | 36  | #5      | 11'-4"             | 426    |  |  |    |       |
| U                  | 4   | #6      | 8'-1"  | 49     | U                | 4                  | #6      | 8'-1"  | 49     | U                | 4     | #6                 | 8'-1"  | 49     | U                | 4   | #6      | 8'-1"              | 49     |  |  |    |       |
| V                  | 40  | #5      | 8'-5"  | 351    | V                | 40                 | #5      | 9'-9"  | 407    | V                | 40    | #5                 | 10'-9" | 448    | V                | 40  | #5      | 11'-9"             | 490    |  |  |    |       |
| wH1                | 14  | #6      | 11'-5" | 240    | wH1              | 14                 | #6      | 13'-5" | 282    | wH1              | 14    | #6                 | 15'-5" | 324    | wH1              | 14  | #6      | 16'-5"             | 345    |  |  |    |       |
| wH2                | 16  | #6      | 9'-8"  | 232    | wH2              | 20                 | #6      | 11'-8" | 350    | wH2              | 20    | #6                 | 13'-8" | 411    | wH2              | 20  | #6      | 14'-8"             | 441    |  |  |    |       |
| wS                 | 22  | #4      | 7'-8"  | 113    | wS               | 26                 | #4      | 7'-8"  | 133    | wS               | 30    | #4                 | 7'-8"  | 154    | wS               | 32  | #4      | 7'-8"              | 164    |  |  |    |       |
| wV                 | 22  | #5      | 8'-8"  | 199    | wV               | 26                 | #5      | 10'-0" | 271    | wV               | 30    | #5                 | 11'-0" | 344    | wV               | 32  | #5      | 12'-0"             | 401    |  |  |    |       |
| Reinforcing Steel  |     |         |        | Lb     | 4,249            | Reinforcing Steel  |         |        |        | Lb               | 4,681 | Reinforcing Steel  |        |        |                  | Lb  | 4,919   | Reinforcing Steel  |        |  |  | Lb | 5,079 |
| Class "C" Concrete |     |         |        | CY     | 21.6             | Class "C" Concrete |         |        |        | CY               | 24.3  | Class "C" Concrete |        |        |                  | CY  | 26.9    | Class "C" Concrete |        |  |  | CY | 28.8  |

ABUTMENTS  
TYPE 5XB20 THRU 5XB40  
PRESTR CONC X-BEAMS  
38' ROADWAY 15° SKEW

AXB-38-15

|                    |         |        |           |         |
|--------------------|---------|--------|-----------|---------|
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