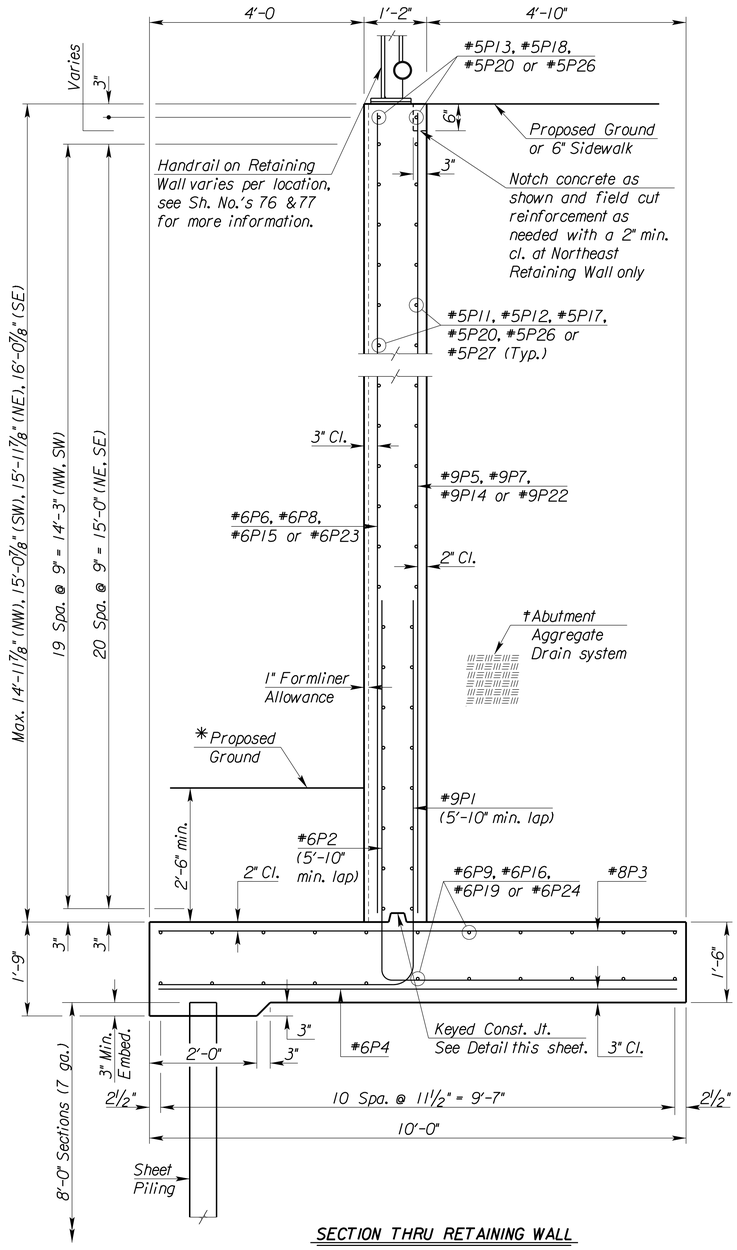



SECTION THRU RETAINING WALL

*Backfilling of soil in front of the Retaining Wall to the Proposed Ground shall be included in the bid item "Excavation (Class III)".

**NORTHWEST RETAINING WALL**

Bill of Reinforcing Steel

| Straight bars | | | | Bent bars | | | |
|---|---|---|---|---|---|---|---|
| Mark | Size | No. | Length | Mark | Size | No. | Length |
| P5 | #9 | 34 | ◔ | P1 | #9 | 39 | 12'-1" |
| P7 | #9 | 5 | 14'-8" | | | | |
| | | | | P2 | #6 | 39 | 12'-10" |
| P3 | #8 | 42 | 9'-8" | | | | |
| | | | | P10 | #5 | 42 | 2'-6" |
| P4 | #6 | 42 | 9'-8" | | | | |
| P6 | #6 | 34 | ◔ | | | | |
| P8 | #6 | 5 | 14'-8" | | | | |
| P9 | #6 | 22 | ◔ | | | | |
| | | | | | | | |
| P11 | #5 | 20 | 23'-9" | | | | |
| P12 | #5 | 20 | ◔ | | | | |
| P13 | #5 | 2 | 24'-10" | | | | |

Summary of Quantities

| | |
|---|---|
| Concrete (Gr. 4.0)(AE) | 27.1 C.Y. |
| Reinforcing Steel (Gr. 60)(Epoxy Coated) | 7,970 Lbs. |
| Excavation (Class III) | 158 C.Y. |
| Bridge Handrail (3'-6") | 26.8 L.F. |
| Piles (Steel Sheet) | 26.0 L.F. |

**NORTHEAST RETAINING WALL**

Bill of Reinforcing Steel

| Straight bars | | | | Bent bars | | | |
|---|---|---|---|---|---|---|---|
| Mark | Size | No. | Length | Mark | Size | No. | Length |
| P22 | #9 | 30 | 15'-8" | P1 | #9 | 30 | 12'-1" |
| | | | | | | | |
| P3 | #8 | 30 | 9'-8" | P2 | #6 | 30 | 12'-10" |
| | | | | | | | |
| P4 | #6 | 30 | 9'-8" | P21 | #5 | 44 | 3'-7" |
| P19 | #6 | 22 | 17'-8" | | | | |
| P23 | #6 | 30 | 15'-8" | | | | |
| | | | | | | | |
| P20 | #5 | 44 | 17'-8" | | | | |

Summary of Quantities

| | |
|---|---|
| Concrete (Gr. 4.0)(AE) | 23.2 C.Y. |
| Reinforcing Steel (Gr. 60)(Epoxy Coated) | 6,880 Lbs. |
| Excavation (Class III) | 142 C.Y. |
| Bridge Handrail (3'-6") | 21.3 L.F. |
| Piles (Steel Sheet) | 18.0 L.F. |

**SOUTHWEST RETAINING WALL**

Bill of Reinforcing Steel

| Straight bars | | | | Bent bars | | | |
|---|---|---|---|---|---|---|---|
| Mark | Size | No. | Length | Mark | Size | No. | Length |
| P14 | #9 | 31 | ◔ | P1 | #9 | 36 | 12'-1" |
| P7 | #9 | 5 | 14'-8" | | | | |
| | | | | P2 | #6 | 36 | 12'-10" |
| P3 | #8 | 39 | 9'-8" | | | | |
| | | | | P10 | #5 | 42 | 2'-6" |
| P4 | #6 | 39 | 9'-8" | | | | |
| P8 | #6 | 5 | 14'-8" | | | | |
| P15 | #6 | 31 | ◔ | | | | |
| P16 | #6 | 22 | ◔ | | | | |
| | | | | | | | |
| P17 | #5 | 22 | 21'-9" | | | | |
| P18 | #5 | 2 | 22'-9" | | | | |
| P27 | #5 | 18 | ◔ | | | | |

Summary of Quantities

| | |
|---|---|
| Concrete (Gr. 4.0)(AE) | 25.4 C.Y. |
| Reinforcing Steel (Gr. 60)(Epoxy Coated) | 7,430 Lbs. |
| Excavation (Class III) | 151 C.Y. |
| Bridge Handrail (4'-6") | 24.8 L.F. |
| Piles (Steel Sheet) | 24.0 L.F. |

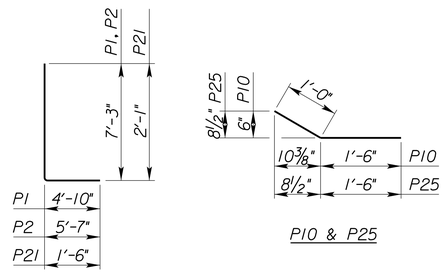
**SOUTHEAST RETAINING WALL**

Bill of Reinforcing Steel

| Straight bars | | | | Bent bars | | | |
|---|---|---|---|---|---|---|---|
| Mark | Size | No. | Length | Mark | Size | No. | Length |
| P22 | #9 | 39 | 15'-8" | P1 | #9 | 39 | 12'-1" |
| | | | | | | | |
| P3 | #8 | 43 | 9'-8" | P2 | #6 | 39 | 12'-10" |
| | | | | | | | |
| P4 | #6 | 43 | 9'-8" | P25 | #5 | 44 | 2'-6" |
| P23 | #6 | 39 | 15'-8" | | | | |
| P24 | #6 | 22 | ◔ | | | | |
| | | | | | | | |
| P26 | #5 | 44 | 23'-9" | | | | |

Summary of Quantities

| | |
|---|---|
| Concrete (Gr. 4.0)(AE) | 31.5 C.Y. |
| Reinforcing Steel (Gr. 60)(Epoxy Coated) | 9,080 Lbs. |
| Excavation (Class III) | 203 C.Y. |
| Bridge Handrail (4'-6") | 26.6 L.F. |
| Piles (Steel Sheet) | 28.0 L.F. |




P1, P2 & P21

P10 & P25

Increase from 7'-4 1/8" to 14'-6 3/4" by 2 5/8" increments (cut 1 each) — P5, P6
Increase from 21'-11" to 27'-4" by 6 1/2" increments (cut 2 each) — P9
Increase from 2'-10" to 23'-1" by 2'-3" increments (cut 2 each) — P12
Increase from 7'-8 1/2" to 14'-7" by 2 3/4" increments (cut 1 each) — P14, P15
Increase from 19'-11" to 25'-4" by 6 1/2" increments (cut 2 each) — P16
Increase from 19'-9" to 26'-5 1/2" by 11 1/2" increments (cut 2 each) and increase from 25'-5" to 27'-4" by 11 1/2" increments (cut 2 each) — P24
Increase from 3'-1" to 21'-1" by 2'-3" increments (cut 2 each) — P27

BENDING DIAGRAMS
(All dimensions are out to out of bars)

P5, P6, P9, P12, P14, P15, P16, P24 & P27

## GENERAL NOTES

All excavation shall be Class III. See the "Bridge Excavation" sheet for the limits of pay excavation.

Structural steel for sheet piling shall meet ASTM A328 (Gr. 36 min.) and shall be a "hot rolled" shape. Cold bent shapes will not be accepted. Corner connections are subsidiary to the bid item "Piles (Steel Sheet)". Welded or mechanical piling splices are only allowed with the Engineer's approval. Variation in the sheet pile alignment may be allowed with the approval of the Engineer. Use 8'-0" sections (7 ga.).

Complete the embankment at the abutments as shown on the Bridge Excavation sheet. Then complete the driving of abutment piling and driving of sheet piling prior to retaining wall construction.

† See Bridge "Abutment Aggregate Drain" sheets. Extend the bridge abutment aggregate drain system to the ends of the retaining walls. Quantities for retaining wall system are included in the bridge system.

Retaining wall concrete is bid as Concrete (Grade 4.0)(AE). Bevel all exposed edges of all concrete with a ¾" triangular molding, except as otherwise noted on the plans. Construction joints are optional with the Contractor, but if used, place only at locations shown, or at locations approved by the Engineer.

Formliner patterning on the front face of the Retaining Wall shall be included in the bid item "Concrete (Grade 4.0)(AE)". See Sh. #44 for pattern selection.

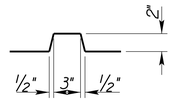
All reinforcing steel dimensions are to the centerline of bars unless otherwise noted. All reinforcing steel shall conform to the requirements of ASTM A615, Grade 60.

Construction Staking is required for retaining wall construction. See KDOT Specifications.

Design Specifications:
AASHTO Specifications, 8th Edition

Unit Stresses:

| | |
|---|---|
| Concrete (Gr. 4.0)(AE) | f'c = 4 ksi |
| Reinforcing Steel (Gr. 60) | fy = 60 ksi |
| Structural Steel (Gr. 36) | fy = 36 ksi |




KEYED CONST. JT. DETAIL

NOTE: All quantities shown for the Retaining Walls are included in the respective road quantities. See Sh. #85 .

◔ See Bending Diagrams.

CITY OF WICHITA

wsp

# RETAINING WALL DETAILS IV

HARRY STREET BRIDGE
OVER ARKANSAS RIVER

STRUCTURE NO. 430400876 30AR40

REVISIONS

| NO. | DATE | DESCRIPTION |
|---|---|---|

| | |
|---|---|
| PROJ NO: | 35838B |
| SCALE: | AS NOTED |
| DATE: | . |
| DESIGNED BY: | -- |
| DRAWN BY: | -- |
| CHECKED BY: | |
| YEAR: | 2019 |

SHEET NO
39
SHEET 39 OF 135

Plotted : 10/3/2019 2:13:07 PM File : T:\35838A-COW_HarryStBridge\Cadd\Sheets\Structures\838WALL03.dgn