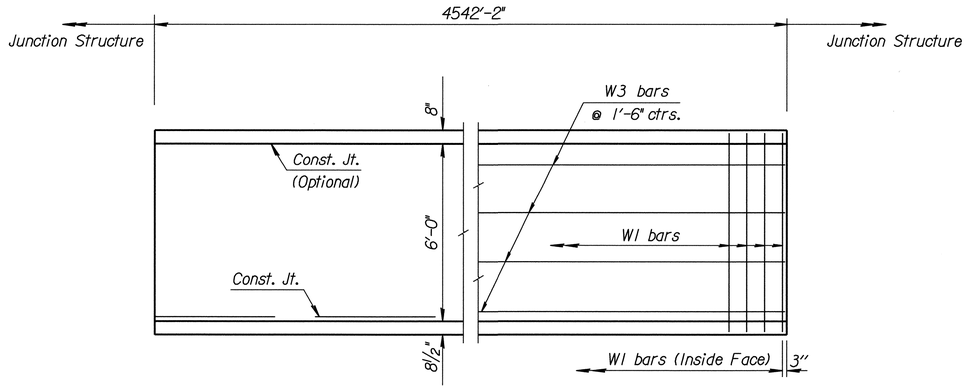
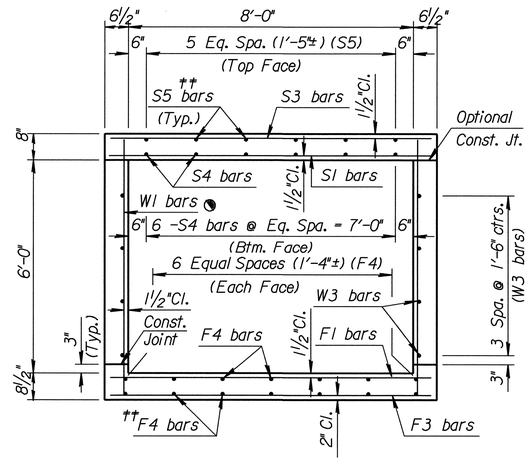
| STATE | PROJECT NO. | YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| KANSAS | 87 N-0353-01 | 2005 | 75 | 162 |




SECTION AND ELEVATION

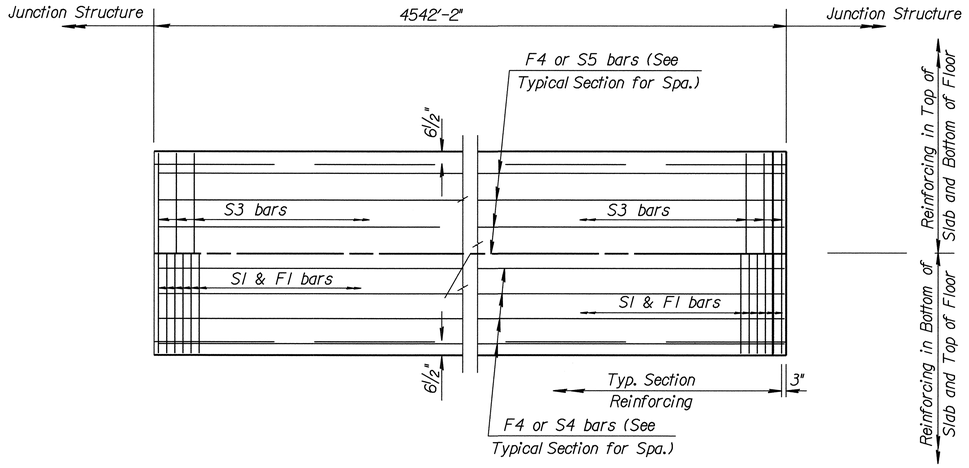



TYPICAL SECTION

◔ See RCB Auxillary Details for Optional Splice.
Note:
S3 bars omitted unless grade box or slab thickness is greater than or equal to 12".

Note:
F3 bars omitted unless floor thickness is greater than or equal to 12.".

†† Omit S5 bars when S3 bars are omitted and omit the bottom layer of F4 bars when F3 bars are omitted.




PLAN

Note: Precast Concrete Box Culverts will be allowed.

RCB to be bid by the Linear Foot. All labor, equipment and material required shall be subsidiary.

## GENERAL NOTES

LOADING: HS20-44 AASHTO Specifications, 1983 Edition.
UNIT STRESSES: Grade 4.0 Concrete; f'c = 4,000 p.s.i.
Reinforcing Steel; fy = 60,000 p.s.i.
FILL HEIGHT: Unless otherwise noted, the Design Fill Height is measured from the riding surface at the culvert and shall include the surfacing.
CONCRETE: Grade 4.0 Concrete shall be used throughout. Bevel all exposed edges with a ¾ inch triangular moulding. Where Grade 4.0 Concrete (AE) is specified, it shall be placed in the top slab above the Construction Joint.
REINFORCING: All reinforcing shall conform to ASTM A615, Grade 60. All dimensions relative to reinforcing steel shall be to centerline of bar unless otherwise noted.
EXCAVATION: Excavation shall not be paid for directly but shall be subsidiary to the bid item.
SEAL COURSE: A Seal Course may be required by the Engineer. The Seal Course shall be unreinforced Concrete (Commercial Grade) to a minimum depth of 3 inches or as determined by the Engineer. Concrete for the seal course shall not be paid for directly but shall be subsidiary to the bid item.
FOUNDATION STABILIZATION: Foundation Stabilization may be required as directed by the Engineer. The depth of Foundation Stabilization shall be determined by the Engineer. Foundation Stabilization shall not be paid directly but shall be subsidiary to the bid item.
QUANTITIES: The quantities shown in the Culvert Summary include apron and/or soil saver quantities when their construction is required by the plans.
GRANULAR BACKFILL (WINGWALLS): Special backfill procedures may be required at the direction of the Engineer. See Auxiliary Details Sheet.

### CULVERT SUMMARY

| Flow Line Elev. Lt. | Flow Line Elev. Rt. | Crown Gr. Elev. | Design Fill Ht. | Skew | Left Wings | Right Wings | Scour Apron | Soil Saver | Concrete Barrel (Cu.Yds.) | Concrete Wings (Cu.Yds.) | Concrete Total (Cu.Yds.) | Reinf. Steel (Gr. 60) Barrel (Lbs.) | Reinf. Steel (Gr. 60) Wings (Lbs.) | Reinf. Steel (Gr. 60) Total (Lbs.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 111.58 | 107.21 | 130.00 | 10 | 0 | NONE | NONE | NO | NO | 3192.8 | | 3192.8 | 282480 | | 282480 |

### BAR SCHEDULE

| F1 Size | Spa. | No. | Length | F3 Size | Spa. | No. | Length | F4 Size | Spa. | No. | Length | S1 Size | Spa. | No. | Length | S3 Size | Spa. | No. | Length | S4 Size | Spa. | No. | Length | S5 Size | No. | Length |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 7" | 7784 | 8'-9" | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 4 | 826 | 39'-10 | 6 | 7" | 7784 | 8'-9" | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 4 | 708 | 39'-10 | N/A | N/A | N/A |

| K1 Size | Spa. | No. | Length | K2 Size | Spa. | No. | Length | W1 Size | Spa. | No. | Length | W3 Size | No. | Length | Size | No. | Length | Size | No. | Length | Size | Spa. | No. | Length |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N/A | N/A | N/A | | N/A | N/A | N/A | | 4 | 7½" | 14528 | 7'-1" | 4 | 944 | 39'-10 | N/A | N/A | N/A | | | | | | | |

| Minimum Splice Lengths | |
|---|---|
| #4 | 1'-4" |
| #5 | 1'-8" |
| #6 | 2'-0" |

FOR INFORMATION ONLY
SUMMARY OF QUANTITIES

| | |
|---|---|
| Concrete (Grade 4.0) | 3192.8 C.Y. |
| Concrete (Grade 4.0)(AE) | 0.0 C.Y. |
| Reinforcing Steel (Gr. 60) | 282480 Lbs. |
| Reinforcing Steel (Epoxy Coated) | 0 Lbs. |
| Class III Excavation | Subsidiary |
| Foundation Stabilization | Subsidiary |
| Concrete for Seal Course | Subsidiary |
| Granular Backfill (Wingwalls) | Subsidiary |

| NO. | DATE | REVISIONS | BY | APP'D |
|---|---|---|---|---|

KANSAS DEPARTMENT OF TRANSPORTATION

Sta. 34+05.50 - Sta. 79+50.00
SINGLE 8 ft x 6 ft RCB

Sedgwick Co.

| | | | |
|---|---|---|---|
| FHWA APPROVAL | 6-5-91 | APP'D | KENNETH F. HURST |
| DESIGNED | DETAILED | QUANTITIES | TRACED |
| DESIGN CK. | DETAIL CK. | QUAN.CK. | TRACE CK. |

Plotted By: $$USERNAME$$ | Plot Location: $UNIT$
File: $$$$$$$$$$$$$$DGNSPEC$$$$$$$$$$$$$$
Plot Date: $$$$$SYTIME$$$$$$