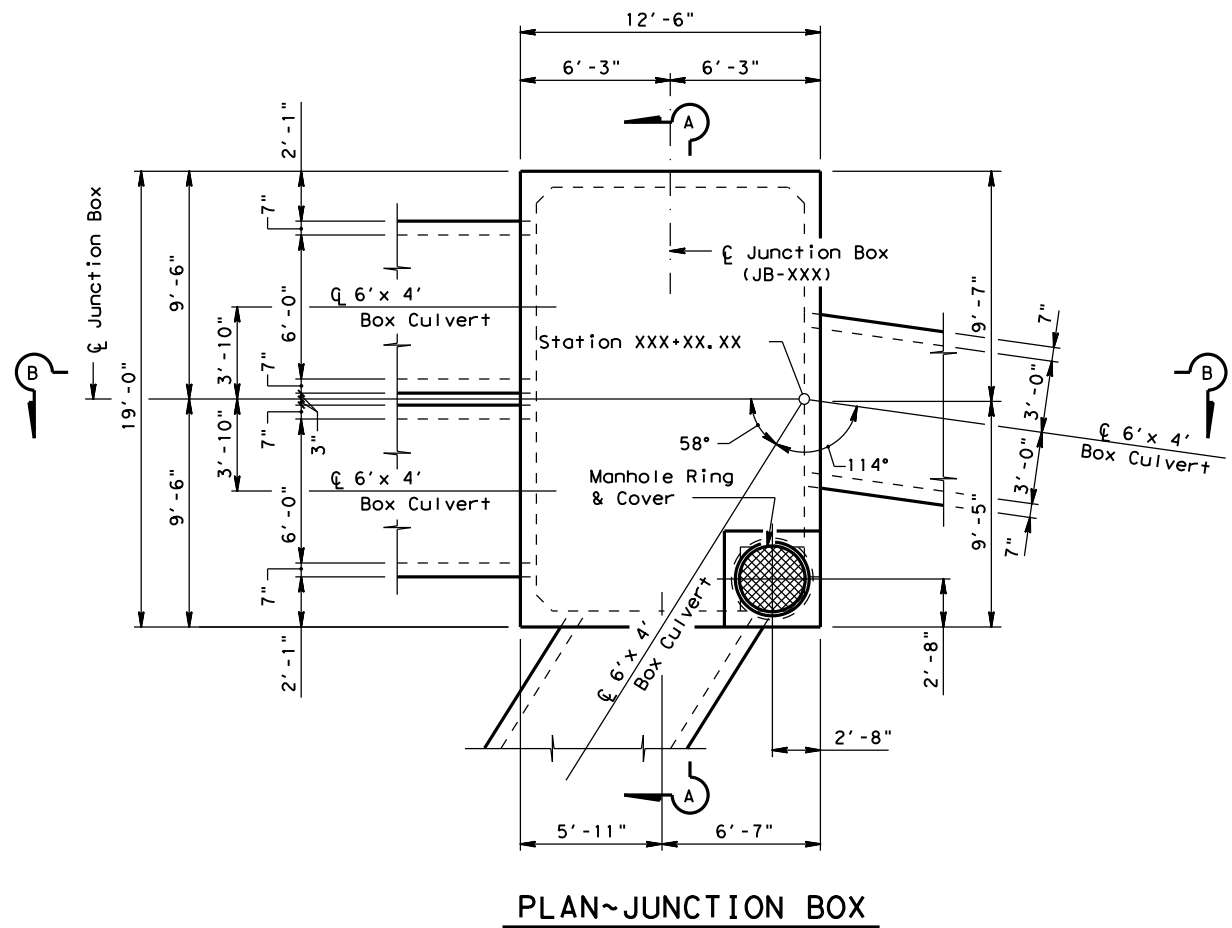
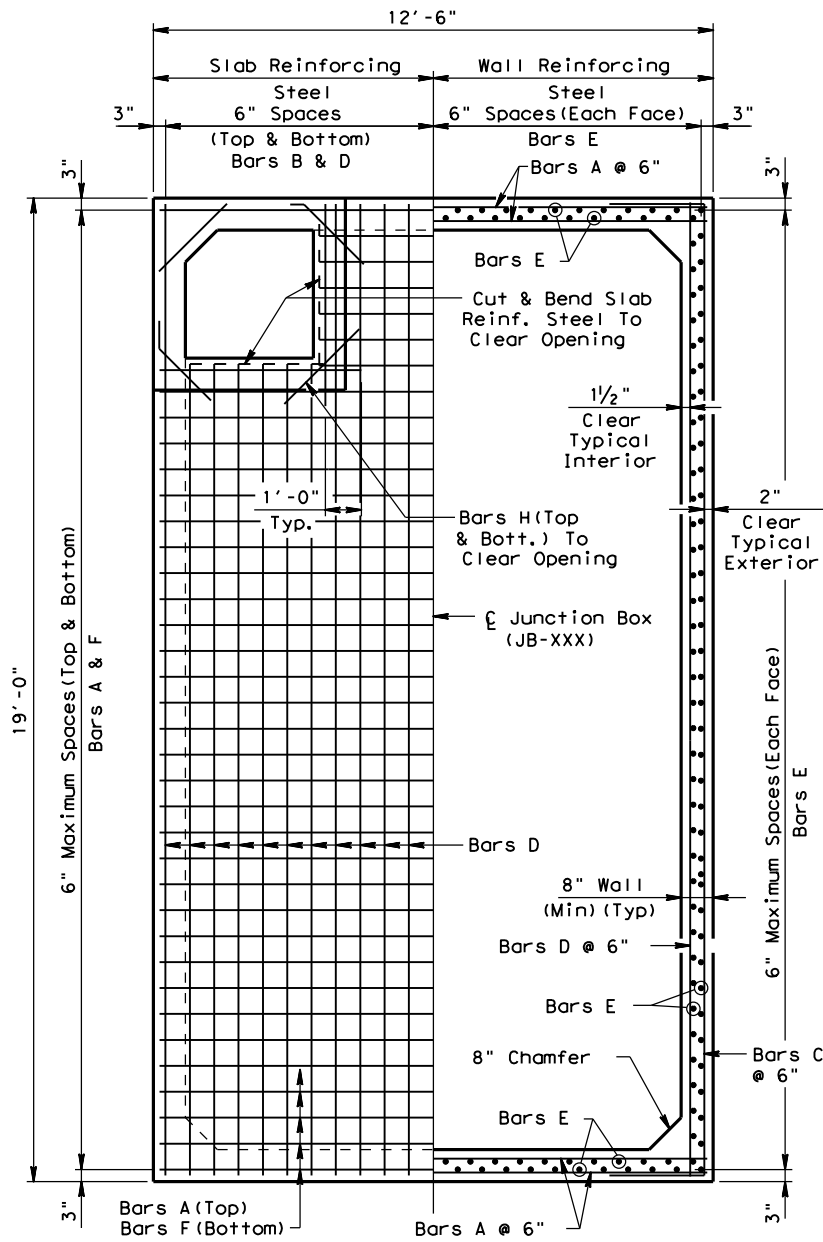


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DATE: FILE:



PLAN~JUNCTION BOX



TYPICAL TOP SLAB/WALL SECTION

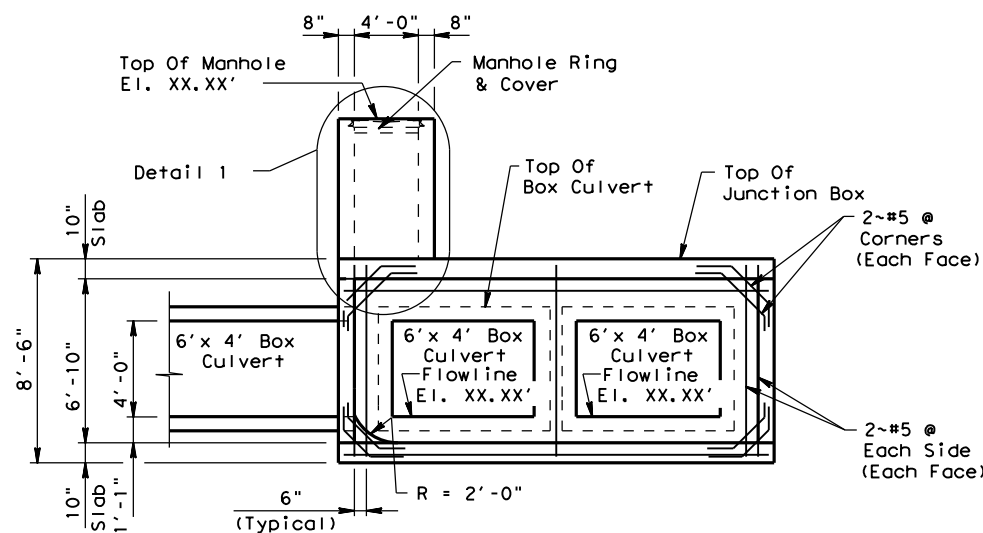
**JUNCTION BOX DESIGN PROCEDURE**

(Do not show on the plans)

1. Sketch centerlines of storm sewers, points of intersection and angular orientation.
2. Determine junction box plan view dimensions and wall positions with respect to centerline storm sewer intersection point. Minimum wall thickness should be 8". Provide 8" vertical wall corner chamfers. Junction boxes do not have to be centered on intersection point of skewed culverts. Adjust junction box location and orientation with respect to storm sewer centerline intersection point so as to minimize overall size.
3. Junction box walls should extend laterally, far enough beyond culverts, so that culvert walls clear the vertical corner chamfers. Round up exterior junction box dimensions to the nearest 6".
4. Determine interior junction box wall height so as to provide a minimum of 6" of wall below and 12" above all culvert exterior surfaces. Minimum top and bottom slab thicknesses should be 10". Do not provide chamfers between walls and slabs due to the complexity of forming chamfer intersections.
5. Analyze junction box as a continuous single box culvert oriented along the long axis of the junction box in plan view. Software to be utilized is at the discretion of the Engineer.
6. Perform two separate analyses. The first analysis should include the actual junction box dimensions as to model exterior wall conditions with no intersecting culverts. The second analysis should be exactly the same, except the exterior walls should be modeled as 1" thick to conservatively determine the top slab positive moments with reduced sidewall stiffness (roughly simply supported at exterior walls).
7. Design reinforcing based on moments, shears and axial forces from both analysis. Iteration of analyses may be required if slab or wall thicknesses are revised.
8. Slab shear resistance should be provided by concrete only without shear reinforcing steel. Thicken slab if necessary.
9. Other rational methods of analysis are acceptable at the Engineer's discretion.
10. Detail risers and manholes as required. Analysis of riser perforations through junction box top slabs is not usually required due to the stiffening characteristics of the reinforced concrete riser.
11. Direct inlet openings, without risers, in top slabs will require additional analysis and reinforcing.
12. Detail circular unreinforced concrete chamfers with 2' radiuses at the bottom slab of each box culvert to minimize accumulation of silt and debris.
13. Designer should call for HPC Concrete and increased concrete clear cover in situations where the structure will be exposed to salty or brackish water.

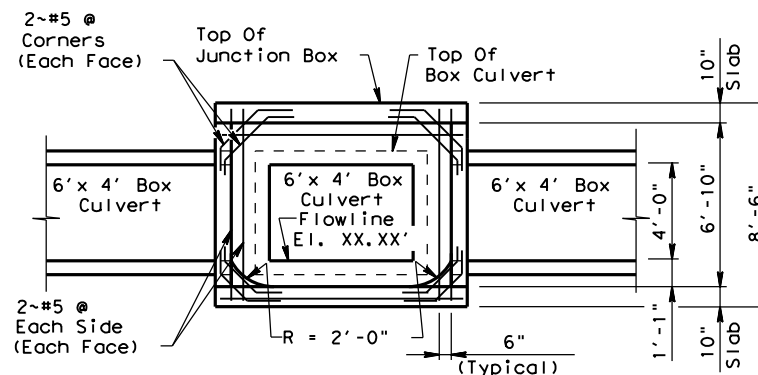
**WORKING DRAWING / EXAMPLE ONLY  
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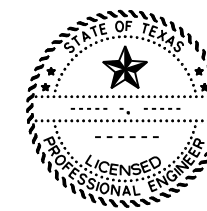
SECTION A-A

NOTE: Cut And Bend Wall Reinforcing Steel To Clear Openings



SECTION B-B

NOTE: Cut And Bend Wall Reinforcing Steel To Clear Openings



HL-93 LOADING SHEET 1 OF 2



**JUNCTION BOX DETAILS  
JB-XXX  
(STATION XXX+XX.XX)**

JB-25 (HOU)

FILE: JB-25 (HOU).DGN	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
© TXDOT May 2025	CONT	SECT	JOB	HIGHWAY
REVISIONS				
03/2015: 2014 SPECS				
05/2025: 2024 Spec Updates				
DIST	COUNTY			SHEET NO.

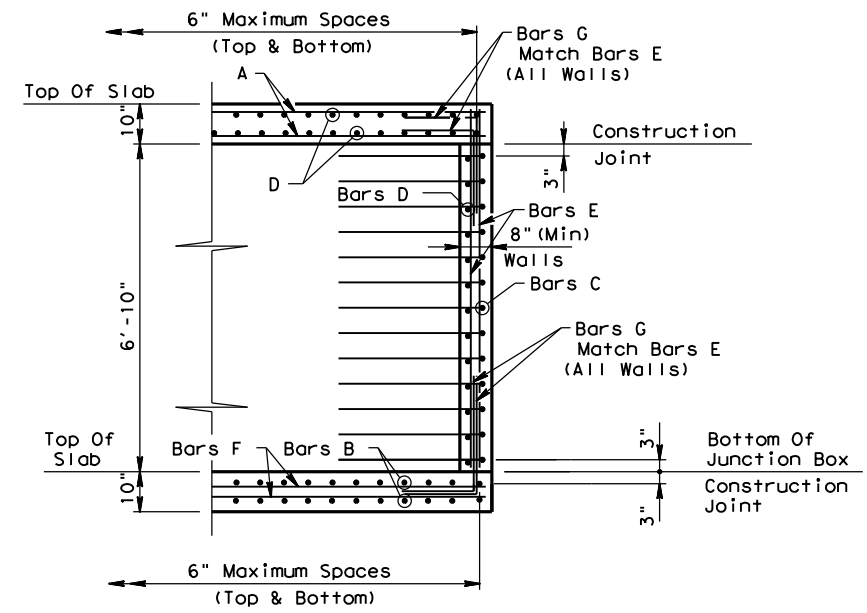
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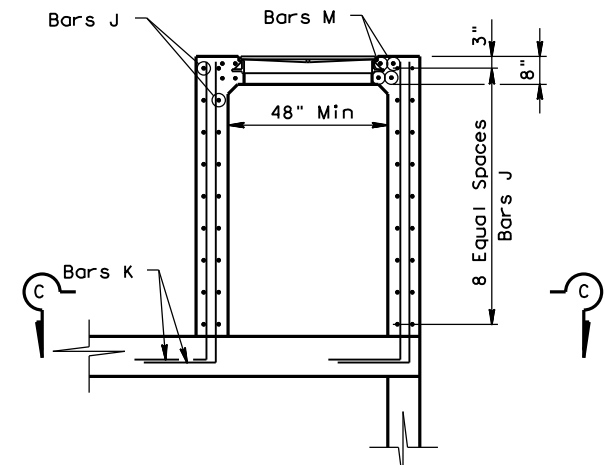
**ESTIMATED QUANTITIES**

ITEM	UNIT	QUANTITY
Jct Box (COMPL) (SPL)	EA	1
① Class "C" Conc	CY	XX.X

① For Contractor's information only.

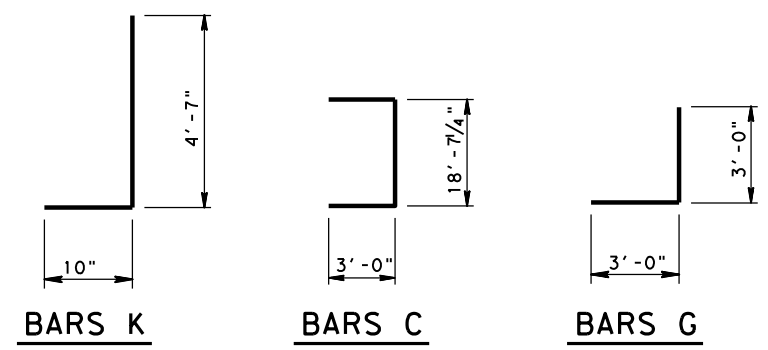


**TYPICAL REINFORCING DETAIL**



**DETAIL 1**

NOTE: Orient Bar K Tails Within Exterior Walls



**BAR TABLE**

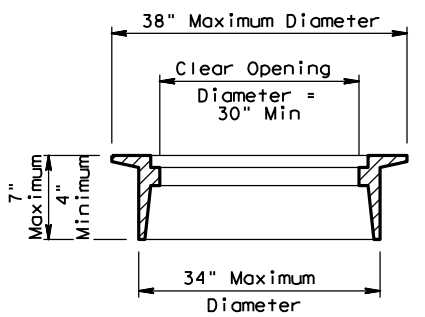
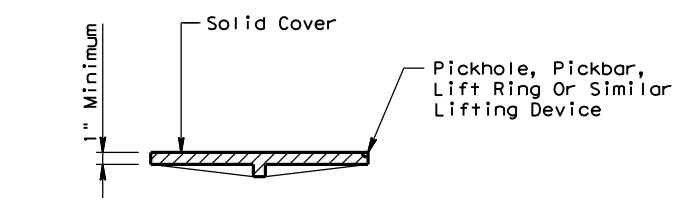
BARS	SIZE
A	#6
B	#5
C	#5
D	#5
E	#5
F	#6
G	#5
H	#5
J	#5
K	#5
M	#5

**GENERAL NOTES:**

Ring and cover shall conform to the requirements of AASHTO M 306-10, "Standard Specification for Drainage, Sewer, Utility, and Related Castings". Materials shall conform to ASTM A48, Class 35B for gray iron castings or ASTM A536, Grade 65-45-12 for ductile iron castings. Aluminum alloy castings shall not be permitted.

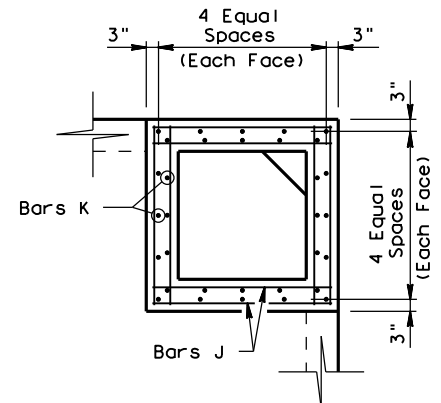
Provide Class "C" Concrete for C.I.P or Class "H" Concrete for Precast Elements With Modifications Per Item 465. Provide Min f'c=3,600psi.

Provide Grade 60 Reinforcing Steel.

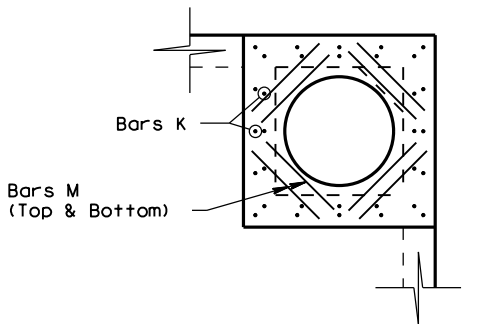


**RING AND COVER DETAILS**

Approximate Weight = 345 lbs.  
Provide an approved cast iron cover and frame. Refer to the TxDOT Bridge Division standards website for approved product sheets.  
<https://ftp.dot.state.tx.us/pub/txdot-info/cmd/cserve/standard/bridge/preciron.pdf>  
Provide Cover With Bolts If Located Within Travel Lane.

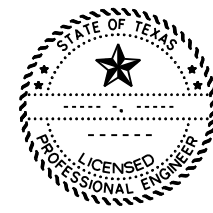


**SECTION C-C**



**TOP OF MANHOLE**

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**JUNCTION BOX DETAILS  
JB-XXX  
(STATION XXX+XX.XX)**

**JB-25 (HOU)**

FILE: JB-25 (HOU).DGN	DN: TXDOT	CK: TXDOT	DW: TXDOT	CR: TXDOT
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