

NOTES

DETAILS FOR MATERIALS, FABRICATION, CONSTRUCTION AND DESIGN OF PRECAST BOX CULVERTS NOT SHOWN OR STATED ON THIS DRAWING SHALL BE IN ACCORDANCE WITH THE CURRENT ASTM SPECIFICATION C1577, AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS; WISCONSIN DOT BRIDGE MANUAL; WISCONSIN DOT STANDARD SPECIFICATIONS & APPLICABLE SPECIAL PROVISIONS, EXCEPT THAT THE CONCRETE MIXTURE SHALL CONTAIN NOT LESS THAN 565 LBS. OF CEMENTITIOUS MATERIALS PER CUBIC YARD.

THE DESIGN OF PRECAST BOX CULVERTS WITH ALL FILL HEIGHTS SHALL BE AS STATED IN ASTM C1577.

THE JOINT ON ALL SIDES OF THE CULVERT SHALL BE SEALED WITH A PREFORMED BUTYL RUBBER SEALANT IN CONFORMANCE WITH ASTM C990 SECTION 6.2. A 2'-0" STRIP OF GEOTEXTILE TYPE OF SCHEDULE 4 SHALL BE PLACED OVER THE JOINTS ON THE TOP AND ON THE SIDES OF THE CULVERT. THE GEOTEXTILE SHALL CONFORM TO SECTION 645.2.2.4 OF THE STANDARD SPECIFICATION. (FABRIC NOT REQUIRED OVER INSIDE WALL JOINTS OF MULTICELL INSTALLATION.)

PRECAST CONCRETE SECTIONS SHALL BE PLACED ON A BEDDING OF "STRUCTURE BACKFILL TYPE B" OF 6" MINIMUM DEPTH AND AS APPROVED BY THE ENGINEER.

THE COVER OF CONCRETE OVER THE REINFORCEMENT SHALL BE 1 INCH OR 2 INCHES AS SHOWN WITH AN ALLOWABLE VARIATION OF $\pm\frac{1}{8}"$ TO $\pm\frac{1}{4}"$.

THE SPACING CTR. TO CTR. OF THE CIRCUMFERENTIAL WIRES SHALL NOT BE LESS THAN 2 INCHES NOR MORE THAN 4 INCHES. THE SPACING CTR. TO CTR. OF THE LONGIT. WIRES SHALL NOT BE MORE THAN 8 INCHES. PROVIDE 0.03 SQ. IN./FT. MINIMUM LONG. REINFORCEMENT AT EACH FACE IN SLABS AND WALLS.

NOT MORE THAN FOUR (4) HOLES MAY BE CAST, DRILLED OR OTHERWISE NEATLY MADE IN THE SHELL OF EACH PIECE OF BOX SECTION FOR HANDLING. THE HOLES SHALL BE TAPERED UNLESS DRILLED. HOLES SHALL BE FILLED WITH PORTLAND CEMENT MORTAR EXCEPT TAPERED HOLES MAY BE FILLED WITH CONCRETE. PLUGS SECURED WITH PORTLAND CEMENT MORTAR OR OTHER APPROVED ADHESIVE.

WHEN TWO OR MORE BARRELS ARE UTILIZED IN PARALLEL FOR MULTICELL INSTALLATIONS THE CLEAR SPACING BETWEEN BARRELS SHALL BE 6 INCHES AND THE SPACE BETWEEN ADJACENT BARRELS FROM TOP OF BEDDING TO TOP OF TOP SLAB SHALL BE FILLED WITH GRADE "B" CONCRETE.

SHOP DRAWINGS SHALL PROVIDE "BOX CULVERT BARREL DATA" WITH REQUIRED AND ACTUAL REINFORCEMENT AREAS.

MATERIAL PROPERTIES:

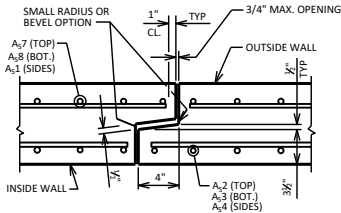
PRECAST CONCRETE $F_c = 5,000$ P.S.I.
BAR STEEL REINFORCEMENT $f_y = 60,000$ P.S.I.
STEEL REINFORCEMENT (WIRE) $f_y = 65,000$ P.S.I.

DESIGNER NOTES:

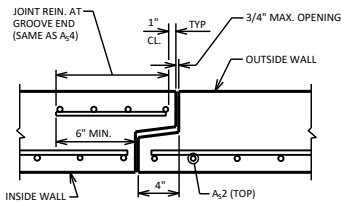
PROVIDE PRECAST DETAILS WHEN SPECIAL DETAILS ARE REQUIRED OR WHEN A PRECAST ONLY DESIGN IS PROVIDED. SEE STD. 36.02 FOR ADDITIONAL INFORMATION.

PROVIDE "BOX CULVERT BARREL DATA" ON CONTRACT PLANS WHEN BOX CULVERT BARREL SECTIONS WARRANT DESIGN REQUIREMENTS BEYOND ASTM C1577 "TABLE A". SEE BRIDGE MANUAL SECTION 36.12 FOR SPECIAL CONDITIONS WARRANTING A SEPARATE ANALYSIS.

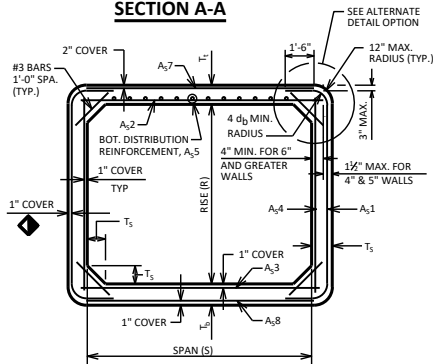
JOINT TIES ARE REQUIRED BETWEEN THE LAST TWO BARREL SECTIONS ON SKEWED SKEWED STRUCTURES. WHEN JOINT TIES ARE REQUIRED IN OTHER LOCATIONS, AS DETERMINED BY THE ENGINEER, PROVIDE A PLAN NOTE OR LIMITS IDENTIFYING REQUIRED JOINT TIE LOCATIONS. SITES SUSCEPTIBLE TO DIFFERENTIAL SETTLEMENT MAY WARRANT THE REQUIREMENT OF JOINT TIES THROUGHOUT THE BOX CULVERT LENGTH.



JOINT DETAIL

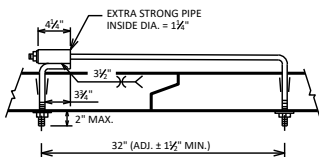


SECTION A-A

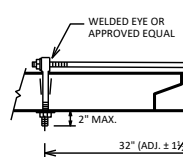


SECTION THRU BARREL

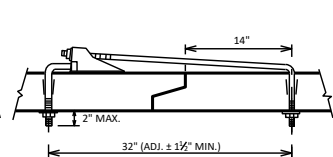
FILL HEIGHT LESS THAN 2 FEET
(LONG. REIN. NOT SHOWN FOR CLARITY)



WELDED PIPE TIE

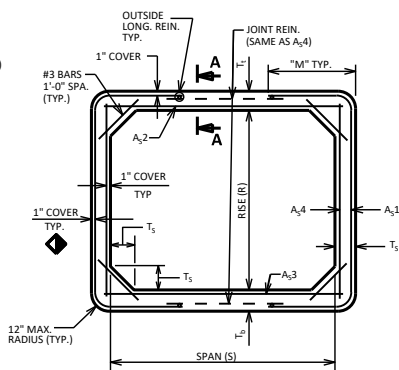


EYE BOLT TIE



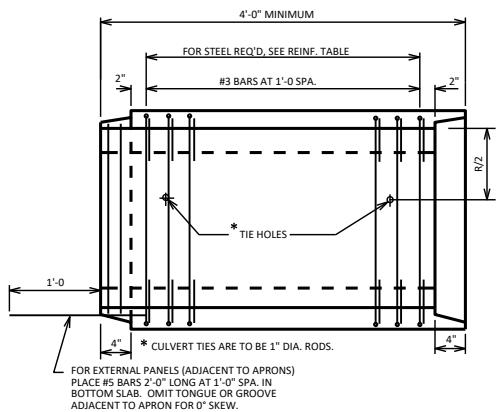
CANOPY TIE

NOTES:
EITHER EYE BOLT TIES, WELDED PIPE TIES, OR CANOPY TIES MAY BE USED.
THREADS MAY BE CUT OR ROLLED. TIE NUTS SHALL BE TIGHTENED AS DIRECTED BY THE ENGINEER. (2 TIES REQ'D. PER JOINT.) (TIES TO BE GALVANIZED.)

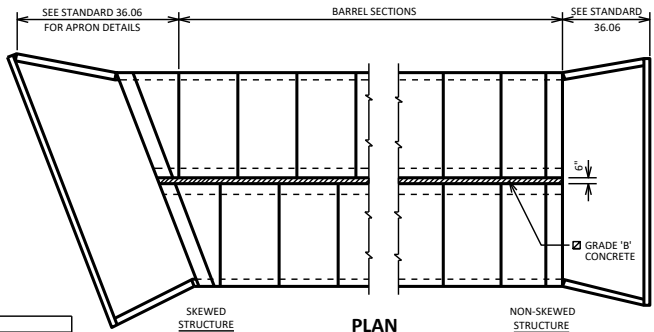


SECTION THRU BARREL

FILL HEIGHT 2'-0" OR GREATER
(LONG. REIN. NOT SHOWN FOR CLARITY, UNLESS NOTED OTHERWISE.)



LONGITUDINAL SECTION



PLAN
MULTICELL INSTALLATION

ALTERNATE DETAIL OPTION

BOX CULVERT BARREL DATA

DIMENSIONS						REINFORCEMENT (IN ² /FT)													
FILL HEIGHT (FT)	R (FT)	S (FT)	T ₁ (IN)	T ₂ (IN)	T ₃ (IN)	A ₁		A ₂		A ₃		A ₄		A ₅		A ₇		A ₈	
						REQ'D	ACT.	M (IN)	REQ'D	ACT.	REQ'D	ACT.	REQ'D	ACT.	REQ'D	ACT.	REQ'D	ACT.	REQ'D
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PRECAST CONCRETE BOX CULVERT BARREL DETAILS



BUREAU OF STRUCTURES

APPROVED: *Laura Shadewald*

DATE:
7-24