DETAILS OF CONCRETE COLLAR FOR PRECAST BOX CULVERT

REMOVE PORTION OF EXISTING HEADWALL DOWN TO 12" BELOW FINISHED GRADE

¾"Ø X 18" EXPANSION BOLTS @ 18" CTS TYP ALL FOUR SIDES COST INCIDENTAL TO PRECAST BOX CULVERT 5' X 2' OR 6' X 4'

12"

6"

EXISTING BOX CULVERT

S

PROPOSED BOX CULVERT

8"

SIDE VIEW

SPAN

RISE

6"

6"

6"

8"

2-#5 S BARS TYP COST INCIDENTAL TO PRECAST BOX CULVERT 5' X 2' OR 6' X 4'

END VIEW

SPAN X RISE	CL SI CONCRETE CU YD (EST)
5' X 2'	0.41
6' X 4'	0.54

THE CONCRETE COLLAR AS DETAIL AND REMOVAL OF SUCH PORTIONS OF THE EXISTING HEADWALL AND WINGWALLS AS MAY BE REQUIRED ARE INCIDENTAL TO PRECAST CONCRETE BOX CULVERT 5' X 2' OR 6' X 4'. CLASS SI CONCRETE SHALL BE USED THROUGHOUT.

PRECAST CONCRETE BOX CULVERT ELBOW 5'x2' DETAIL

STANDARD REINFORCEMENT

TRANSVERSE SECTION

6'-0"

DEGREE OF ELBOW 20° 2

8" MIN

1'-9" MIN

3'-0"

3'-0"

PLAN FOR ELBOW CUT

REMOVE CONCRETE IN BOX ALONG THESE LINES. CLEAN REINFORCEMENT FOR WELDED LAPS OF LONGITUDINAL AND CIRCUMFERENTIAL REINFORCEMENT

¾" WELDED LAP

DETAIL A

1½" MIN
6" MAX

GROUT WITH MORTAR MORTAR SHALL BE FLUSH WITH BOX

SEE DETAIL A FOR LAPS

20°

PLAN

GENERAL NOTES

REINFORCED CONCRETE BOX CULVERT SHALL CONFORM TO AASHTO M-259 AND ASTM C 783.

ADDITIONAL REINFORCEMENT SHALL CONFORM TO AASHTO M-31 OR M-53 GRADE 60

CEMENT MORTAR WITH BONDING AGENT SHALL BE APPROVED BY THE ENGINEER.

DEGREE OF ELBOW AND CULVERT SIZE REQUIRED SHALL BE AS INDICATED ON THE PLAN DETAIL FOR EACH INDIVIDUAL INSTALLATION.

THE CONCRETE ELBOW AS DETAILED IS INCIDENTAL TO PRECAST CONCRETE BOX CULVERT, 5' X 2'

SEE DETAIL A

SEE DETAIL B

SECTION LENGTH

A

1'

1'

1'

1'

2" Ø HOLES FOR LIFTING DEVICE (IN TOP ONLY)

WHEN EXTENDING AN EXISTING BOX, PLACE THIS END AGAINST THE EXISTING HEADWALL

PLAN
LOCATION OF LIFTING HOLES MAY BE VARIED AS NEEDED TO CLEAR REINFORCEMENT.

SECTION LENGTH

B

ELEVATION

2"

D*

T/2

T/2

T

1"R.

1"R.

1"R.

D*

2"

2"

DETAIL A (TYP. INLET END)   DETAIL B (TYP. OUTLET END)

NOTE: INLET AND OUTLET ENDS SHALL BE COMPATIBLE
* THE D DIMENSION SHALL CONFORM TO THE MANUFACTURER'S STANDARDS.

1½" MIN

CLASS SI CONCRETE

MULTIPLE UNIT PLACEMENT

DETAIL OF PRECAST CONCRETE BOX CULVERT SECTION
(WITH COVER 2 FEET OR GREATER
ASTM DESIGNATION C-789)
DESIGN LOADING: HS-20-44

A

1" CL (TYP)

EXTERIOR FACE

A_{S2}

1" CL (TYP)

A_{S1}

C (TYP)

C (TYP)

T

T

SPAN

RISE

INTERIOR FACE

1" CL (TYP)

A_{S1}

B

1" CL (TYP)

A_{S3}

T

1" CHAMFER OR 2" RADIUS (TYP)

LONGITUDINAL REINFORCEMENT

CROSS SECTION

GENERAL NOTES

SHOP PLANS FOR THE REINFORCEMENT SHALL BE SUBMITTED IN ACCORDANCE WITH THE REQUIREMENTS OF ARTICLE 504.04(A) OF THE STANDARD SPECIFICATIONS.

MINIMUM CONCRETE STRENGTH SHALL BE 5000 PSI AFTER 28 DAYS.

THE JOINTS OF THE PRECAST BOX SECTIONS SHALL BE SEALED WITH MASTIC IN ACCORDANCE WITH ARTICLE 755.01 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

LIFTING HOLES SHALL BE FILLED WITH CONCRETE PLUGS AND MASTIC AFTER THE BOX SECTIONS ARE IN PLACE.

THE TERMS AS1, AS2, AND AS3 DENOTE THE REQUIRED STEEL AREAS FOR REINFORCEMENT AS SPECIFIED IN ASTM C 789. REINFORCEMENT SHALL BE OF WELDED WIRE FABRIC CONFORMING TO ASTM SPECIFICATIONS S 185.

DRAINAGE OPENINGS SHALL BE PROVIDED IN ACCORDANCE WITH ARTICLE 503.12 OF THE STANDARD SPECIFICATIONS. LOCATION AND SPACING OF THE OPENINGS SHALL BE SHOWN ON THE SHOP DRAWINGS.

DIMENSIONS

SPAN X RISE	T (INCHES)	A (FT-IN)	B (FT-IN)	C (INCHES)
5' X 2'	6"	6'-0"	3'-0"	6"

REVISIONS	
NAME	DATE

DRAWN BY:

ILLINOIS DEPARTMENT OF TRANSPORTATION

DRAINAGE DETAILS

FAI ROUTE 70
SECTION 60-10K-1, 60-10HB
MADISON COUNTY