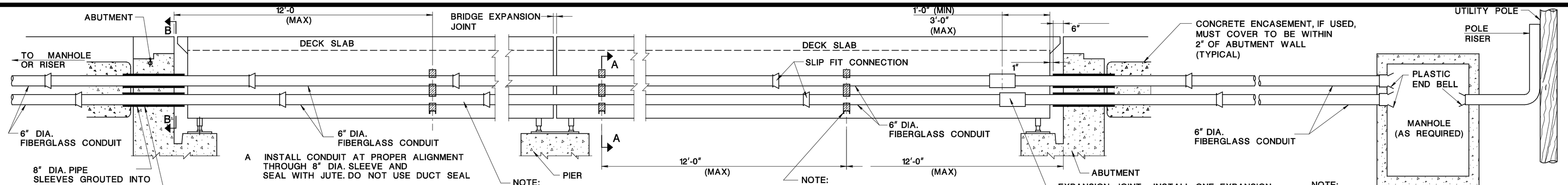


A INSTALL CONDUIT AT PROPER ALIGNMENT THROUGH 8" DIA. SLEEVE AND SEAL WITH JUTE. DO NOT USE DUCT SEAL

B FACTORY INTEGRAL BELL END CAPPED IF CONDUIT RUN TO MANHOLE IS NOT DONE AT SAME TIME AS BRIDGE WORK

C FIBERGLASS CONDUIT IS TO EXTEND UP TO THE FIRST MANHOLE ON EITHER SIDE OF THE BRIDGE

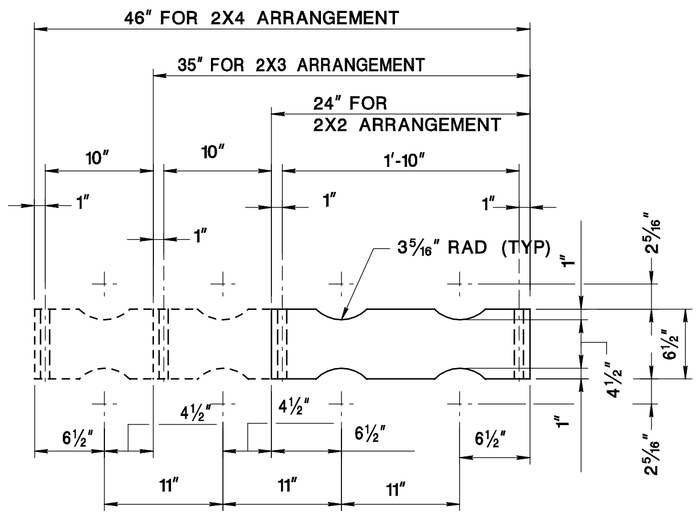
NOTE: BEGIN JOB BY USING FULL 10' LENGTH AT ONE END AND WORKING TOWARDS THE OTHER END. INSTALL EXPANSION JOINT LAST (SEE OTHER END)

NOTE: CONDUIT PACKAGE MUST NOT BE SUSPENDED BELOW BRIDGE STRINGERS - IF BOLTS ARE TOO LONG THEY MUST BE CUT OFF AND ENDS GALVANIZED

EXPANSION JOINT - INSTALL ONE EXPANSION (NOTES 3, 4 & 8) JOINT PER CONDUIT AS NEAR AS PRACTICAL TO BRIDGE ABUTMENT ON ONE SIDE ONLY. INSTALL THIS ITEM LAST (SEE OTHER END)

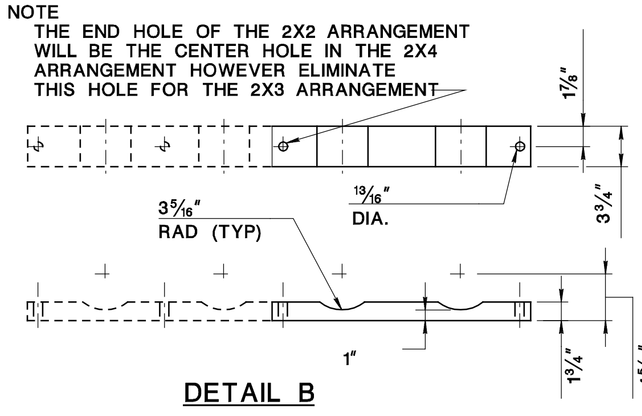
NOTE: DETAILS FOR MANHOLE(S) OR RISERS AS SPECIFIED BY THE DESIGNATED GPU ENERGY REPRESENTATIVE

PROFILE



DETAIL A

NOTE
THE END HOLE OF THE 2X2 ARRANGEMENT WILL BE THE CENTER HOLE IN THE 2X4 ARRANGEMENT HOWEVER ELIMINATE THIS HOLE FOR THE 2X3 ARRANGEMENT



DETAIL B

NOTE:
UTILITY CROSSARMS MAY BE USED AS SEPARATORS, PROVIDED SEPARATION DISTANCES ARE MAINTAINED, SEE NOTE 5

DETAIL "A" CAN BE MADE BY USING TWO 3½"x4½" CROSSARMS MOUNTED BACK TO BACK

DETAIL "B" CAN BE MADE BY USING A SINGLE 3½"X4½" CROSSARM

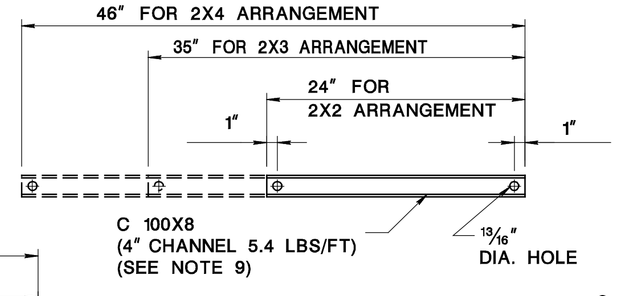
CONDUIT BEVELS CAN THEN BE CUT TO MAINTAIN DESIRED SEPARATIONS

NOTE:
MANUFACTURED CONDUIT SUPPORT SYSTEMS MAY BE SUBSTITUTED FOR THE PRESSURE TREATED WOOD SYSTEM SHOWN. THESE ARE AVAILABLE FROM:

CONDUX INTERNATIONAL - BOX 247
- MANKATO, MINNESOTA 56001
- 800-533-2077

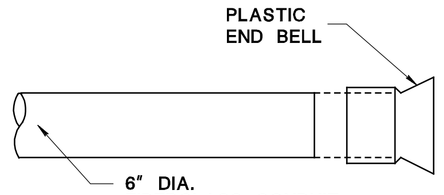
GEORGE-INGRAHAM CORP - PO BOX 1869
- STONE MOUNTAIN, GEORGIA
- 30086-1869
- 800-631-6283
- FAX 404-296-0952

METRA INDUSTRIAL CORP - METRA INDUSTRIAL CORP
P O BOX 30845
COLUMBUS, OHIO 43230
800-872-3828
FAX 614-475-7759

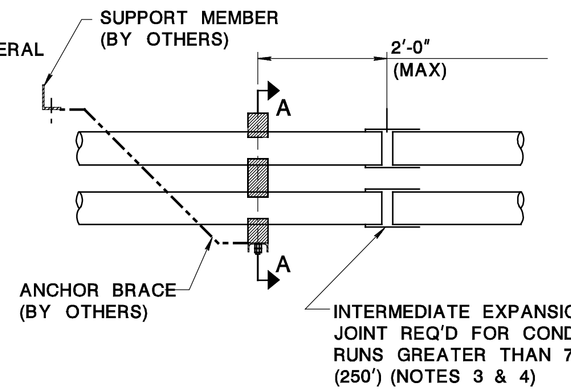


DETAIL C

NOTE:
CONDUIT BEVELS NEED NOT BE SEMI-CIRCULAR, BUT ALL DIMENSIONS MUST BE HELD. THE BEVELS MUST BE SUCH THAT THEY DO NOT ALLOW LATERAL MOVEMENT OF THE CONDUIT



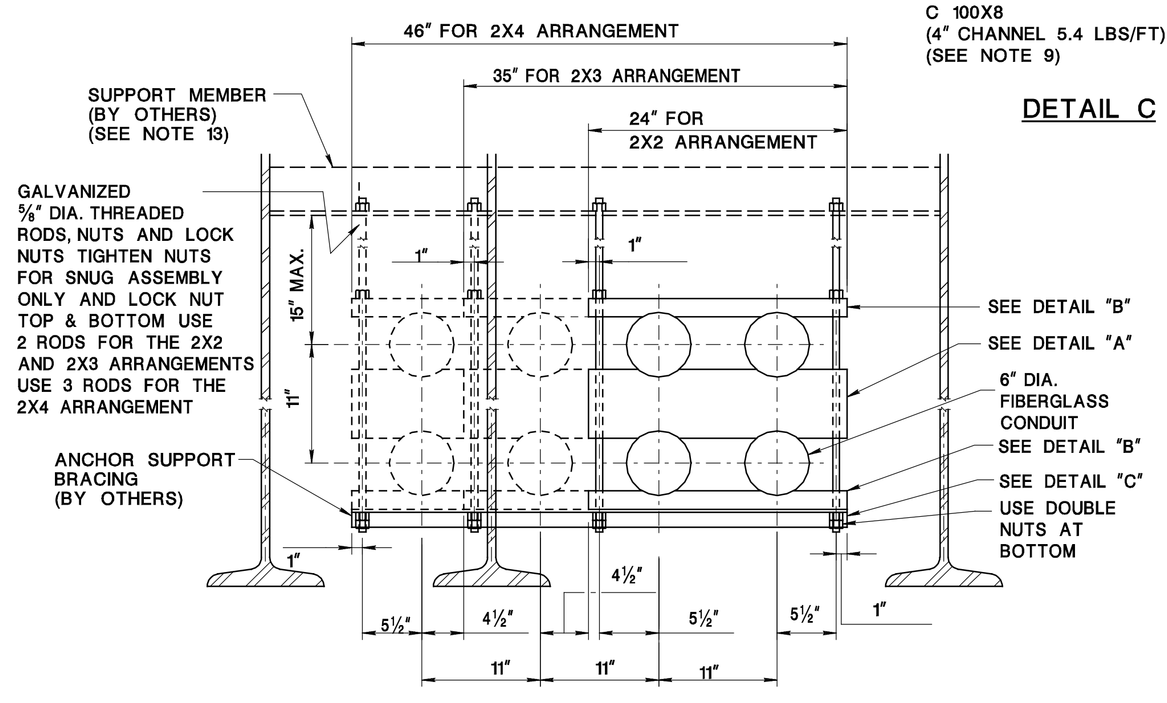
END BELL
(AT MANHOLE LOCATION)
(SEE NOTE 13)



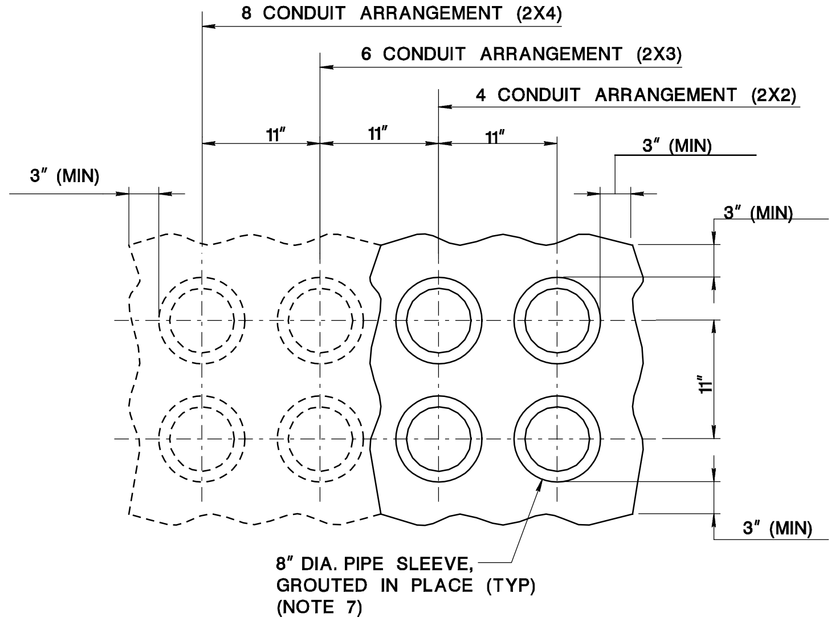
ANCHOR SUPPORT DETAIL
(SEE NOTE 12)

BILL OF MATERIALS

ITEM NO	DESCRIPTION	QUANTITY OF ITEMS NEEDED FOR			
		2 conduits	4 conduits	6 conduits	8 conduits
1	6" AIRTIGHT EXPANSION JOINTS	AS REQUIRED SEE NOTES 3, 4, & 13			
2	6" DIA. FIBERGLASS CONDUIT	NOMINAL 3 M (10') LENGTHS			
3	STAINLESS STEEL OR ALUMINUM PIPE SLEEVES	4	8	12	16
4	FLANGE END BELL, PLASTIC	AS REQUIRED			
5	CONDUIT SUPPORT SYSTEMS	AS REQUIRED			
6	EPOXY CEMENT	AS REQUIRED			



SECTION A - A



SECTION B - B

GENERAL NOTES

1. THE JOINING SYSTEM FOR THE FIBERGLASS CONDUIT SHALL BE NON-ADHESIVE, NON-MECHANICAL SLIP-FIT TYPE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS AND GOOD WORK PRACTICE.
2. WHENEVER FIBERGLASS CONDUIT IS CUT, SMOOTH THE ROUGH (INSIDE AND OUTSIDE) BY SANDING WITH EMORY CLOTH.
3. INSTALL ONE EXPANSION JOINT PER 125' OF CONDUIT RUN. EXPANSION JOINTS SHALL BE CAPABLE OF LONGITUDINAL MOVEMENTS OF 3" (MIN) FOR RUNS OF 250' OR LESS. INSTALL BOTH EXPANSION JOINTS NEAR ABUTMENTS AND INSTALL ONE ANCHOR SUPPORT NEAR MIDPOINT BETWEEN EXPANSION JOINTS (SEE NOTE 11)
4. THE MANUFACTURER WILL AT THE REQUEST OF THE CONTRACTOR, COMPLETELY ASSEMBLE AN EXPANSION JOINT AND INCORPORATE IT INTO A FULL LENGTH OF CONDUIT.
5. PRESSURE TREATED WOOD SEPARATORS SHALL BE MADE FROM "DENSE STRUCTURAL SOUTHERN PINE" OR "DENSE SELECT STRUCTURAL FIR" AND SEPARATORS SHALL BE TREATED WITH PENTACHLOROPHENOL PRESERVATIVE. SIMILARLY TREATED UTILITY CROSSARMS ARE SUITABLE PROVIDED ALL DIMENSIONS SHOWN IN DETAILS "A" AND "B" ARE MAINTAINED.
6. 8" DIA. PIPE SLEEVES WILL BE MADE OF ALUMINUM, SCH 40 (MIN) OR NON - MAGNETIC STAINLESS STEEL, SCH 40 (MIN)
7. CONDUITS AND EXPANSION JOINTS MUST BE INSTALLED SO AS TO MAINTAIN AIRTIGHT INTEGRITY FOR PNEUMATIC LINES.
8. HANGER ASSEMBLY DESIGN AND CONDUIT SUPPORT SPACINGS WERE BASED ON A COMBINED WEIGHT/M (WEIGHT/FOOT) OF CONDUIT AND CABLE OF 11.2 LBS/FT.
9. ALL STRUCTURAL STEEL SHALL MEET THE REQUIREMENTS OF AASHTO M270 GRADE 36 OR 50 UNLESS OTHERWISE NOTED. ALL STRUCTURAL STEEL PLATES, SHAPES, HANGERS AND APPURTENANCES SHALL BE HOT - DIP GALVANIZED.
10. DISTRIBUTOR FOR ALUMINUM & NON - MAGNETIC STAINLESS STEEL PIPE SLEEVES JOSEPH T RYERSON & SON INC , PHILADELPHIA, PA. 215-724-0700
11. TO CONTROL CONDUIT MOVEMENTS DUE TO TEMPERATURE CHANGES AND CABLE PULLING, INSTALL ONE ANCHOR SUPPORT PER 125' OF CONDUIT. ANCHOR SUPPORTS SHALL BE DESIGNED FOR A 600 POUND FORCE IN EITHER DIRECTION OF CONDUIT RUN. THE ANCHOR SUPPORT SHALL USE CLAMPS, CABLE TIES, ETC TO PREVENT LONGITUDINAL MOVEMENTS OF THE CONDUIT AT THIS LOCATION AND SHALL BE APPROVED BY THE DESIGNATED GPU ENERGY REPRESENTATIVE (SEE ANCHOR DETAIL)
12. THE USE OF CAST-IN-PLACE OR DRILLED-IN ANCHORS IN THE DECK SLAB OR PRECAST BEAMS IS STRICTLY PROHIBITED BY THE NEW JERSEY DOT
13. REFER TO ANY SPECIFIC REQUIREMENTS OF THE MANUFACTURER USED, FOR INSTALLATION DETAILS

THIS SHEET FOR DESIGN INFORMATION ONLY. NOT TO BE INCLUDED IN CONTRACT PLANS.

PLATE 2.3-4

CONTRACTORS TO VERIFY WITH SHOP DRAWINGS THAT ALL CONDUITS HAVE THE FOLLOWING MINIMUM PROPERTIES:

PIPE I D = 6.380") IPS-TYPE HW
WALL THICKNESS = 0.09"
TENSILE STRENGTH = 9.0KSI
IMPACT RESISTANCE = 140 FT-LBS AT 70°F
TEMPERATURE RATING OF CONDUIT
50°C OPERATING
100°C EMERGENCY
STIFFNESS = 50 LBF/(IN2)
HEAT DISTORTION = PER ASTM-D648

SUPERCEDED BY:
WORK ORDER NO:

NO	DATE	REVISION	BY	CK	AUT
4	7-13-92	UPDATE TO NEW SPEC	JD	JH	
3	3-3-87	REVISED NOTE 8	AMD	JH	
2	8/86	REDRAWN	MS	DB	
1	10/82	CHANGED MANUFACTURER REP.	WW	KK	

DISTRIBUTION STANDARD

STANDARD INSTALLATION OF 6" FIBERGLASS CONDUIT UNDER HIGHWAY BRIDGES

DRAWN BY: GFG	DATE 12/22/75		SCALE: NONE
CHECKED BY:	DATE	J. L. KANE, JR.	SHT 1 OF 1
APPROVED BY:	DATE	J. M. HOLMES	DRAWING NO. D-68289
		SIGNATURE	DATE

BDC02MB-02 - ORIGINAL SHEET