

GUIDED HORIZONTAL DRILLING SYSTEM (HDD) (CONTINUED)		
PVC AND HDPE MATERIAL SPECIFICATION		
TABLE 1 RESIN PROPERTIES (THE RESIN PROPERTIES SHALL BEET OR EXCEED THE VALUES LISTED BELOW FOR HDPE.		
SDR 13.5-ASTM D3035/F2160/NEMA TC-7		
ASTM TEST	DESCRIPTION	VALUES HDPE
D-1505	DENSITY g/CM ³	.941-.951
D-1238	MELT INDEX, g/10 MIN CONDITION E	.05-.50
D-790	FLEXURAL MODULUS, MPa (PSI)	80,000 MIN
D-638	TENSILE STRENGTH AT YIELD (PSI)	3000 MIN
D-1693	ENVIRONMENTAL STRESS CRACK RESISTANCE CONDITION B,F ₁₀	96 HR.MIN.
D-746	BRITTLINESS TEMPERATURE	-75°C

TABLE 2 HDPE SPECIFICATION STANDARD LENGTH AND SIZE - REELS AND COILS FOR HDPE											
NOM. SIZE	NOM. ID	NOM.OD OD	MIN.WALL OD	WEIGHT 100 FT.	PULL TENSILE SAFE LBS.	COLOR	TYPE	WALL	REEL SIZE	REEL LENGTH (FT.) NOTE 5	FULL WT./EA. (LBS.) REEL
3"	2.982	3.500	0.259	113.120	2945	BLACK	S/S	SDR 13.5	96X45X68	1000	1364
									102X54X64	1500	1945
									114X45X85	1500	2100
5"	4.738	5.562	0.412	285.394	7444	BLACK	S/S	SDR 13.5	114X45X85	480	1842
									120X45X78	550/750	2067/2637
6"	5.643	6.625	0.491	405.869	10566	BLACK	S/S	SDR 13.5	120X45X85	450/500	2296/2525

TABLE 3 SCHEDULE 40 PVC SPECIFICATION					
NOM. SIZE	NOM. ID	NOM.OD OD	MIN.WALL WALL	WEIGHT 100 FT.	PULL TENSILE SAFE LBS.
3"	3.068	3.500	0.216	95.591	2488
5"	5.046	5.562	0.258	184.410	4801
6"	6.065	6.625	0.280	239.415	6233

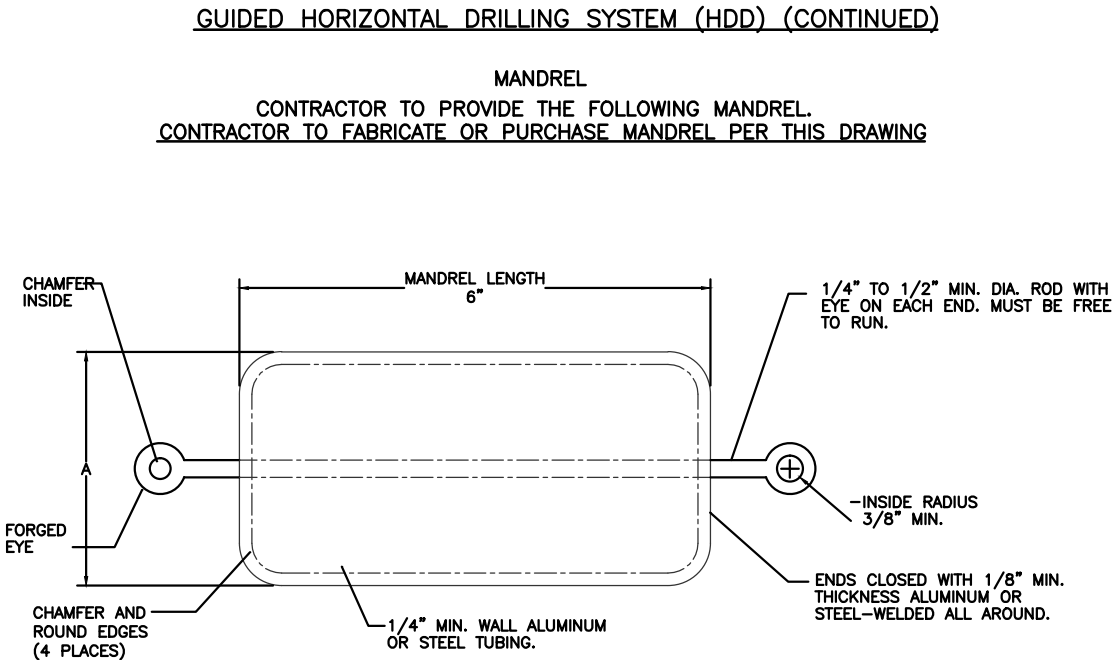
NOTES:

- 1) HDPE DUCT IS SMOOTH WALL TYPE. SMOOTH INTERIOR AND SMOOTH EXTERIOR.
- 2) ALL REELS AND NON-RETURNABLE STEEL REELS
- 3) ASTM F 2160 - SOLID WALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT BASED ON CONTROLLED OUTSIDE DIAMETER (OD).
ASTM D 2239 - POLYETHYLENE (PE) PLASTIC PIPE (SIDR) BASED ON CONTROLLED INSIDE DIAMETER.
ASTM D 3035 - POLYETHYLENE (PE) PLASTIC PIPE (SDR) BASED ON CONTROLLED OUTSIDE DIAMETER.
NEMA TC-7 - SMOOTH WALL COILABLE POLYETHYLENE ELECTRICAL PLASTIC CONDUIT.
- 4) S/S - SMOOTH INSIDE SURFACE AND SMOOTH OUTSIDE SURFACE.
- 5) LENGTHS ARE ±10%.

PULL TENSILE SAFE=BASED ON PLASTIC PIPE INSTITUTE TENSILE CALCULATIONS AND MAXI MAXIMUM TENSILE STRESS RECOMMENDATION OF 1/3 YIELD TENSILE FOR PULLS OF 30 TO 60 MINUTES APPLICATIONS AND PULLING.

NAPERVILLE PUBLIC UTILITIES DEPARTMENT ELECTRIC STANDARDS	SPECIFICATION FOR THE INSTALLATION OF HDPE CONDUIT BY THE HORIZONTAL DRILLING SYSTEM (HDD)	DATE: 02-19-08
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	-2011-035-I-	DUPAGE		
FED.ROAD.DIST.NO.		ILLINOIS	CONTRACT 60P42 FED. AID PROJECT	



CONDUIT MANDREL DATA

NOM. CONDUIT SIZE	DIMENSION "A" (MANDREL LENGTH)		WEIGHT (LBS)
	TYPE I	TYPE II	
3"	2-3/4"	2.375"	2
5"	4-3/4"	4.400"	3
6"	5-3/4"	5.263"	4

- 1) TYPE I MANDRELS ARE USED IN SCHEDULE 40 PLASTIC CONDUITS.
- 2) TYPE II MANDRELS ARE ONLY TO BE USED IN SCHEDULE 80 AND HDPE PLASTIC CONDUITS.
- 3) CONTRACTOR TO FURNISH 3", 5" OR 6" MANDRELS IN THE QUANTITY REQUIRED TO COMPLETE THE PROJECT.

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PROJECT TITLE ROUTE 59 ROAD IMPROVEMENTS			
PROJECT DESCRIPTION DETAILS AND STANDARDS			
ENGINEER BCC	DRAFTING DATE 5-11-12	MAP # 4211,4212,4223	SCALE N.T.S.
GIS DESIGN BY DL	DRAFTED BY PSM	AT&T JOINT AGREEMENT # N/A	PROJECT # EU-12
CHECKED BY	APPROVED BY	CAD FILE 0060648001D151.DWG	SHEET # 51 OF 63
Naperville Department of Public Utilities Electric Division			WORK REQUEST # 60468