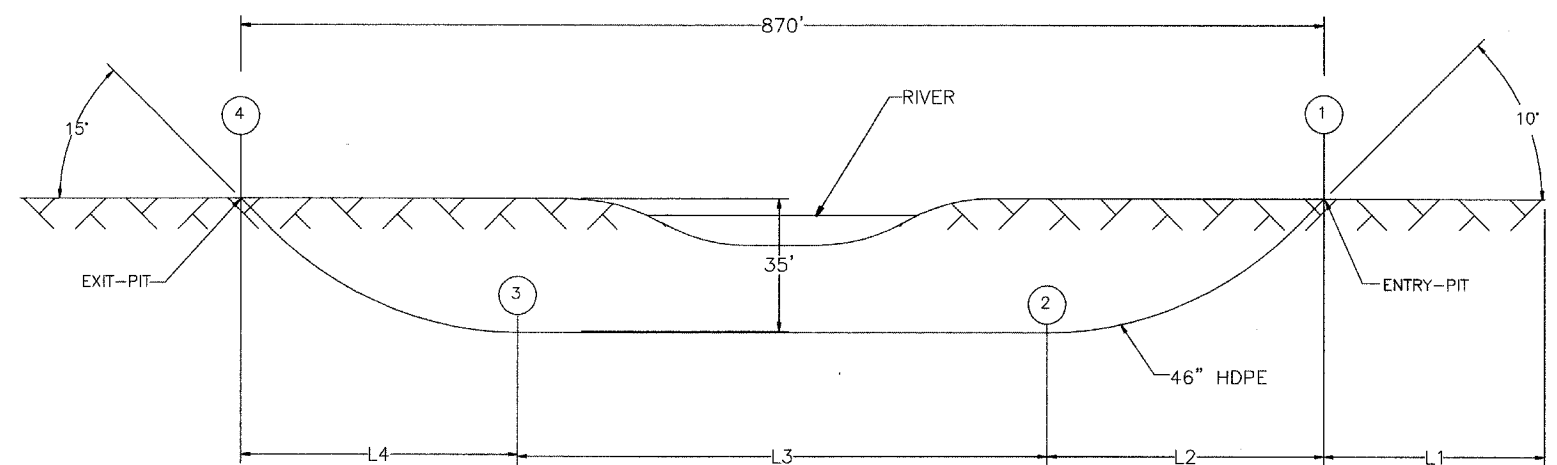


F.A. RTE. 2552	SECTION 00-0014-00-PV	COUNTY DUPAGE	TOTAL SHEETS 563	SHEET NO. 306
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
CONTRACT 63024				

**GUIDED HORIZONTAL DRILLING SYSTEM (HDD) (CONTINUED)**

**TYPICAL BORE FOR A CROSSING RIVER**



TYPICAL RIVER CROSSING, ASSUME THE HDPE PIPE IS 35' DEEP AND APPROXIMATELY 870' LONG WITH A 10 DEG. ENTRY ANGLE AND A 15 DEG. EXIT ANGLE. ACTUAL PULL BACK FORCE WILL VARY DEPENDING ON HACKCREAMER SIZE SELECTION, AND USE; BORE HOLE STAYING OPEN; SOIL CONDITIONS; LUBRICATION WITH BENTONITE, DRILLER EXPERTISE, AND OTHER APPLICATION CIRCUMSTANCES.

- L1 = 100' DRAG.
- L2 = DISTANCE TO ACHIEVE DEPTH
- L3 = 870-L2-L4
- L4 = DISTANCE TO ACHIEVE DEPTH

**MINIMUM BEND RADIUS AS A FUNCTION OF DIAMETER AND STANDARD DIMENSION RATIO**

SDR 13.5				
SIZE	OD in.	WALL in.	MIN. RADIUS in.	WALL in.
3	3.500	.259	40.9	.226
5	-	-	-	-
6	6.625	.491	54.4	.427

OVALIZATION IS INDEPENDENT OF TENSILE STRENGTH OF MODULUS, BUT IS CONTROLLED BY DIAMETER, WALL THICKNESS AND BENDING RADIUS. THE RADIUS LISTED ABOVE ARE ESTIMATED, AS THE MINIMUM UNSUPPORTED BENDING RADIUS REQUIRED PRODUCING A 5% OVALIZATION. THE VALUES IN THE ABOVE TABLE ARE CALCULATED BASED ON MINIMUM WALL THICKNESS AND ARE A FIRST APPROXIMATION TO OVALITY IN THE BENDING CONDUIT (ACTUAL BENDING RADIUS MAY BE SLIGHTLY SMALLER).  
 OVALITY IS CALCULATED AS: OVALITY = [(MAX. OD-MIN. OD)/AVG. OD] X 100.

NAPERVILLE PUBLIC UTILITIES DEPARTMENT ELECTRIC STANDARDS	<b>SPECIFICATION FOR THE INSTALLATION OF HDPE CONDUIT BY THE HORIZONTAL DRILLING SYSTEM (HDD)</b>	DATE: 02-19-08 PAGE: 25 OF 25 C30-1950
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<b>WF# INFORMATION</b>		<b>CITY OF NAPERVILLE/DEPARTMENT OF PUBLIC UTILITIES - ELECTRIC</b>			
WF# 59481 WASHINGTON ST. 75TH TO OLYMPUS DR. EAST SIDE	JOB 1 EU-73	CALL J.U.U.I.F. 48 HRS. PRIOR TO CONSTRUCTION		MAP NO.:	CAD FILE:
WF# 59482 75TH WASHINGTON ST. TO OLYMPUS DR. NORTH SIDE	JOB 2 EU-73	<b>75TH ST. AND WASHINGTON ST. ROAD IMPROVEMENTS</b>		0056270001.DES.DWG	
WF# 59484 75TH WASHINGTON ST. TO CLYDE DR. SOUTH SIDE	JOB 3 EU-73	TRENCH SECTION DETAILS		PROJECT NO.:	COMPLETED BY:
WF# 59485 WASHINGTON ST. 75TH TO BAILEY RD. EAST SIDE	JOB 4 EU-73	DATE: 4-01-08	ISSUED	56270	SCALE: NTS
	ENGINEER: RPS	APPROVED:	REVISION: 1 2 3		SHEET 65 OF 73