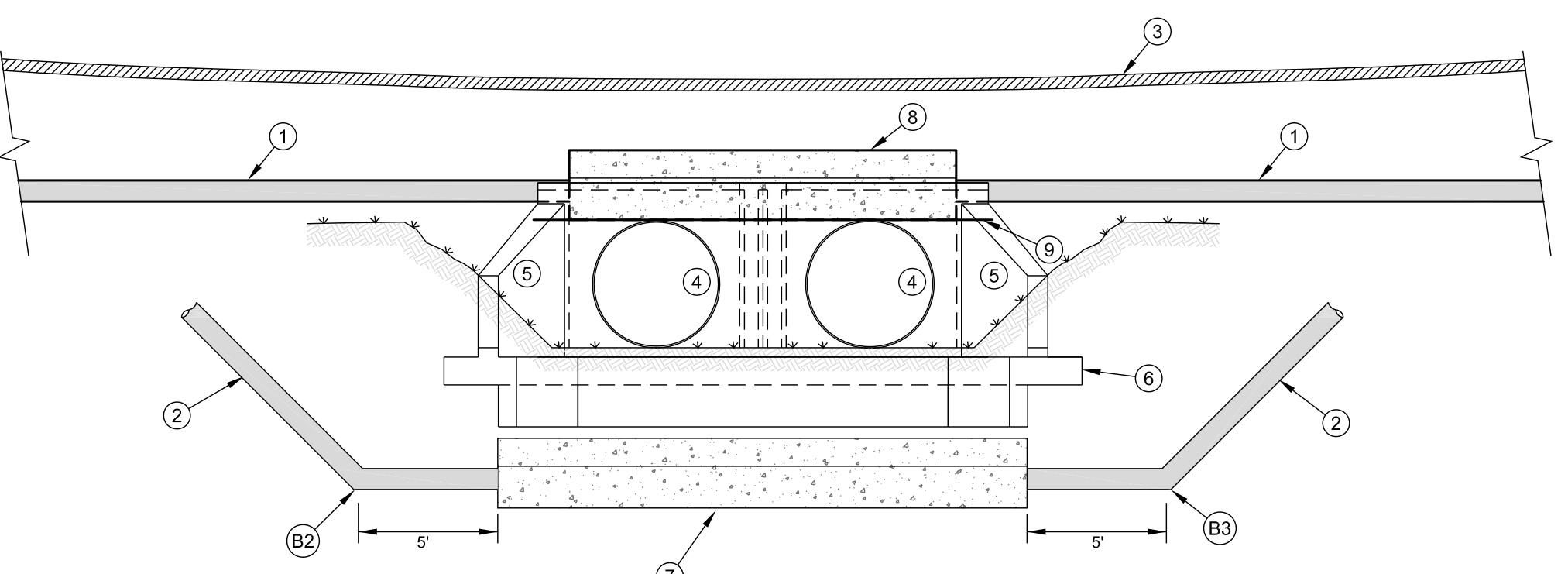


TYPICAL PLAN VIEW



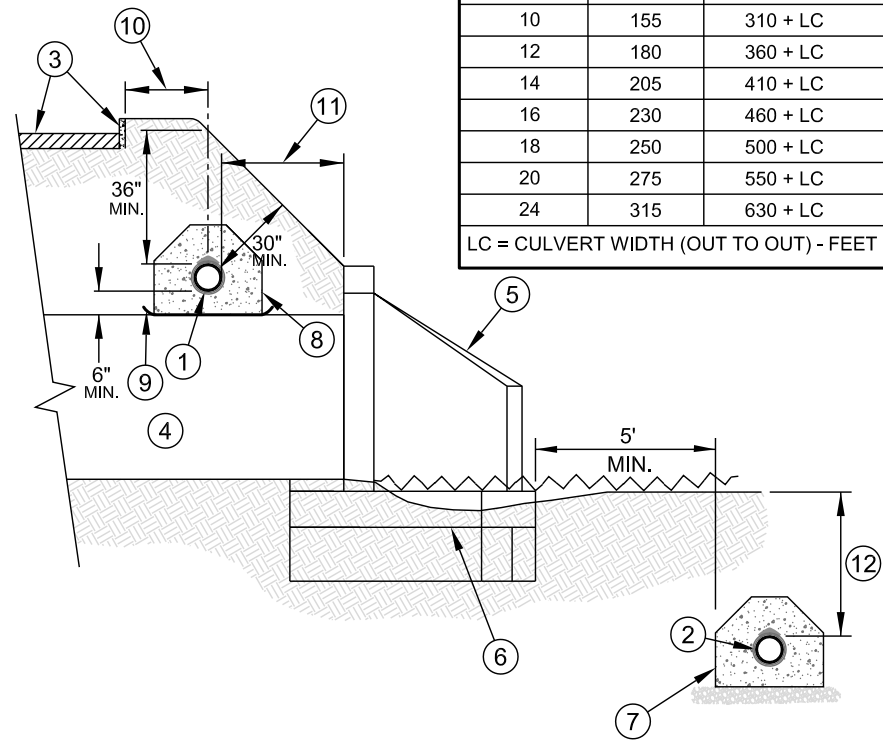
TYPICAL ELEVATION VIEW

- | NO. | DESCRIPTION  |
|-----|--|
| 1   | PROPOSED R.J. D.I.P. WATER MAIN - PREFERRED LOCATION   |
| 2   | PROPOSED R.J. D.I.P. WATER MAIN - OPTIONAL LOCATION  |
| 3   | ROAD WITH CURB AND GUTTER OR EDGE OF PAVEMENT  |
| 4   | CULVERT - PIPE OR BOX  |
| 5   | CULVERT WING WALL  |
| 6   | CULVERT FOOTING  |
| 7   | CONCRETE ENCASUREMENT - SEE STANDARD DETAIL - REQUIRED   |
| 8   | CONCRETE ENCASUREMENT - SEE STANDARD DETAIL - REQUIRED WHEN 30-INCHES COVER ON PIPE CAN NOT BE MAINTAINED Lc (MIN.) OR AS DETERMINED BY THE ENGINEER |
| 9   | 8 MILS HDPE PLASTIC FILM (HDCLPE PER ASTM C105-4MILS EACH LAYER) - SEPARATE CONCRETE ENCASUREMENT FROM CULVERT AND HEADWALL                          |
| 10  | DISTANCE AS INDICATED ON CONSTRUCTION PLANS  |
| 11  | PIPE MAY BE LOCATED TO 12-INCHES OF HEADWALL - CONCRETE ENCASUREMENT SHALL NOT BOND TO CULVERT OR HEADWALL - SEE NO. 9                               |
| 12  | 4 FEET MIN. BELOW CREEK BED  |
| Bx  | BENDS - AS REQUIRED  |

- NOTES:
- A. ALL PIPE SHALL BE RESTRAINED JOINT DUCTILE IRON PIPE FROM BEND B1 TO B4.
  - B. RESTRAINED LENGTHS LB1 AND LB4 SHALL BE DETERMINED BY THE ENGINEER.
  - C. CONCRETE ENCASEMENT #8 MAY NOT BE REQUIRED WHEN MIN. COVERS ARE PROVIDED AS SHOWN IN SECTION VIEW.

MINIMUM RESTRAINED LENGTH FOR PREFERRED LOCATION #1		
PIPE DIAMETER (INCHES)	LR (FEET)	TOTAL RESTRAINED LENGTH (FEET)
6	100	200 + LC
8	125	250 + LC
10	155	310 + LC
12	180	360 + LC
14	205	410 + LC
16	230	460 + LC
18	250	500 + LC
20	275	550 + LC
24	315	630 + LC

LC = CULVERT WIDTH (OUT TO OUT) - FEET



SECTION VIEW

NO SCALE

STANDARD NO. JJ-1  
 VERSION NO. 1.0  
 VERSION DATE 8.30.2011

WATER MAIN LOCATIONS AT CULVERTS USING CONCRETE ENCASUREMENT 6-INCH THROUGH 24-INCH MAINS

CHARLOTTE-MECKLENBURG UTILITIES  
 STANDARD DETAILS  
 WATER

