

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
HIGHWAY DIVISION 6

# PLANS

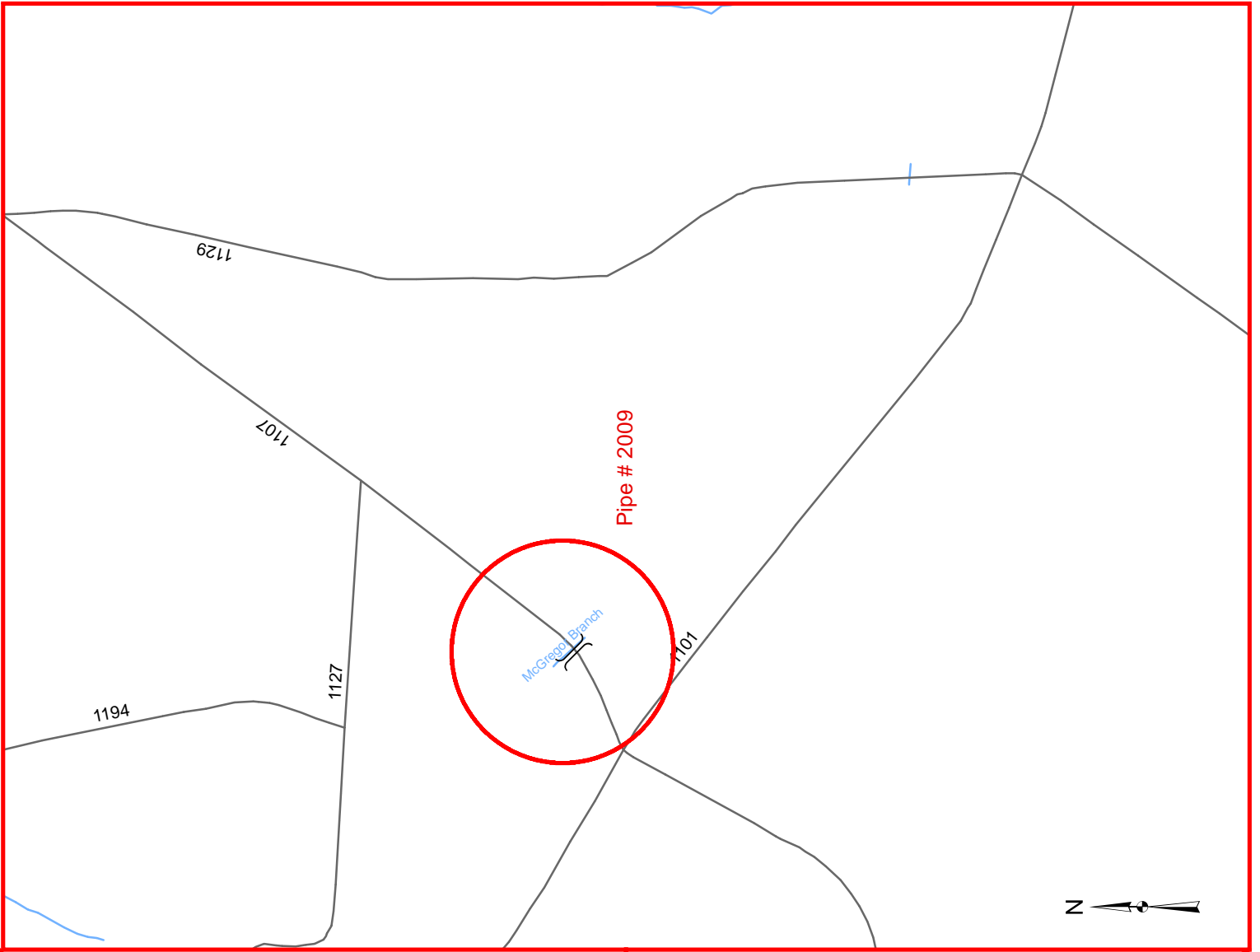
**WBS ELEMENT NO.:** 17BP.6.R.80

**COUNTY:** ROBESON

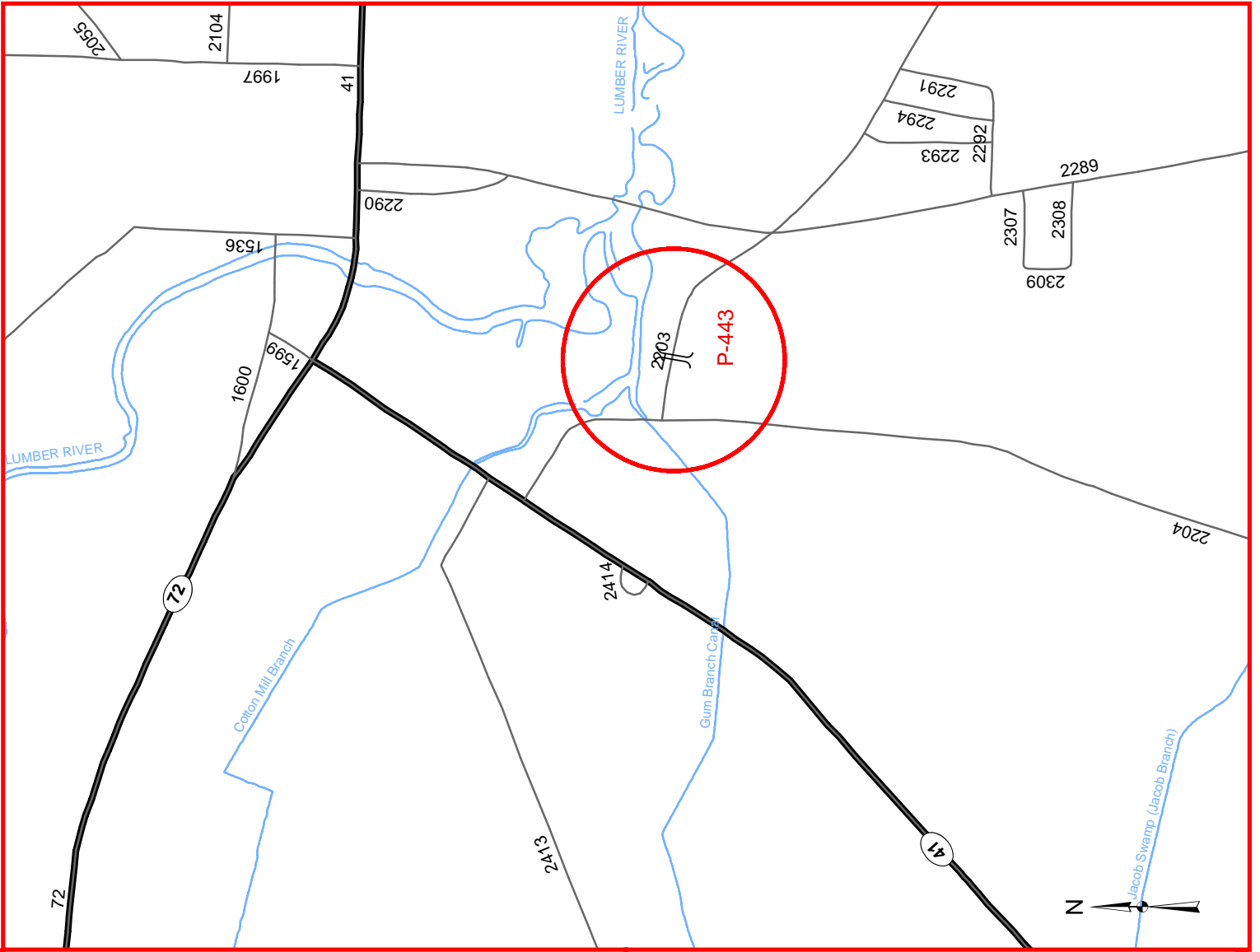
**ROUTE NO.:** SR 1107 & SR 2203

**LOCATION:** PIPE #2009 – 0.2 MI. NORTH OF SR 1127  
PIPE #443 – 0.2 MI. EAST OF SR 2204

**TYPE OF WORK:** PIPE REPLACEMENTS



**Robeson County**  
**VICINITY MAP**  
**SR 1107**  
**0.2 MI North of SR 1127**  
**Pipe #2009**

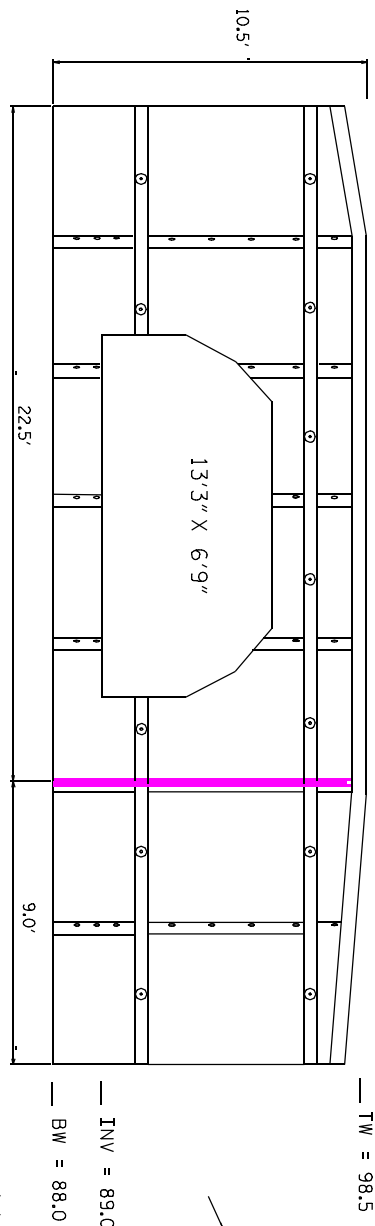


**Robeson County**  
**VICINITY MAP**  
**SR 2203**  
**0.2 MI East of SR 2204**  
**Pipe #443**

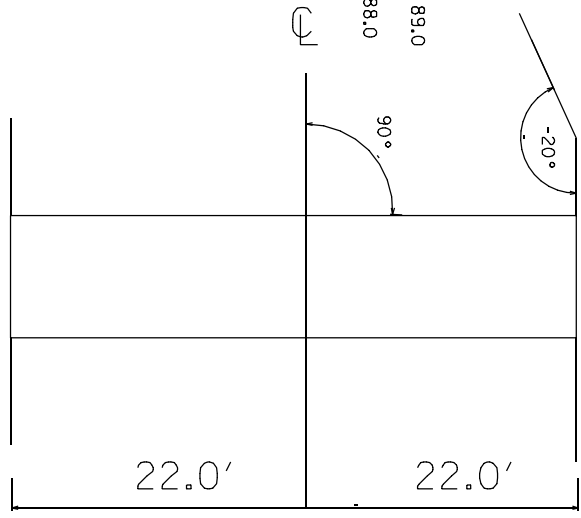
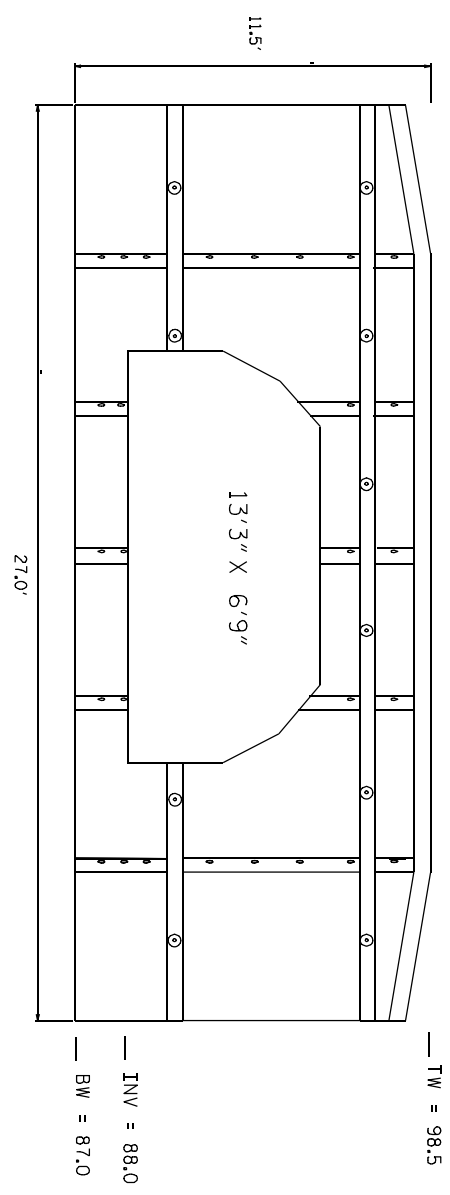
COUNTY:	ROBESON
LOCATION:	SR 1107
EXISTING:	2= 72" CMP W/Concrete HEADWALLS
PROPOSED:	1= 13'3"X6'9" ALUM. BOX W/HEADWALL
ESTIMATE:	TBA

\*NOT TO SCALE

INLET

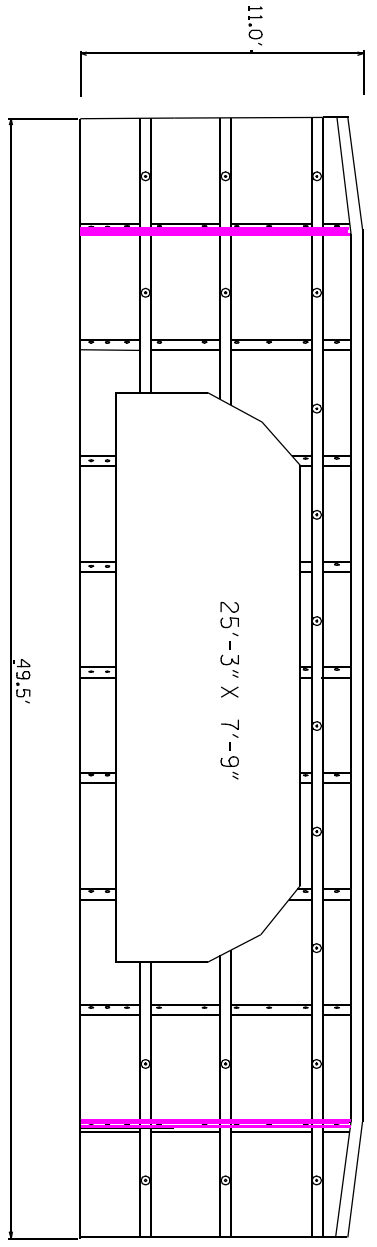


OUTLET



COUNTY:	ROBESON
LOCATION:	SR 2203, Pipe #443
EXISTING:	2=137"x87" CMP W/Sandbag HW
PROPOSED:	1= 25'3"x7'9" ALUM. BOX W/HEADWALL
ESTIMATE:	TBA

INLET

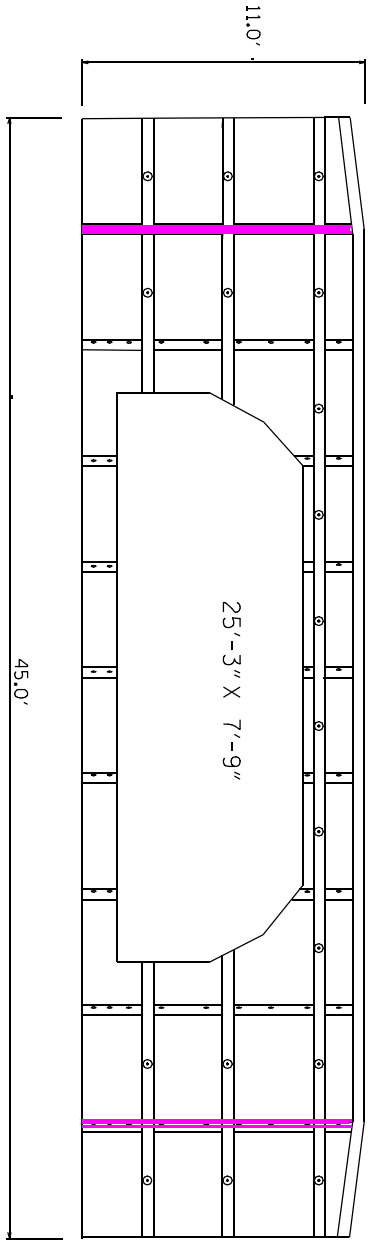


— TW = 99.0

— INV = 89.0

— BW = 88.0

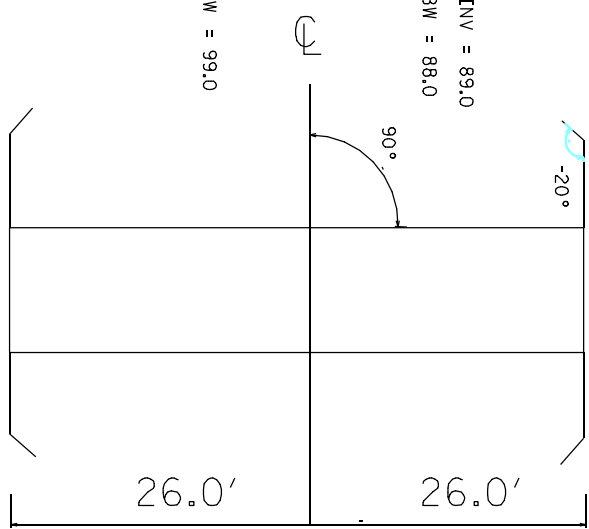
OUTLET



— TW = 99.0

— INV = 89.0

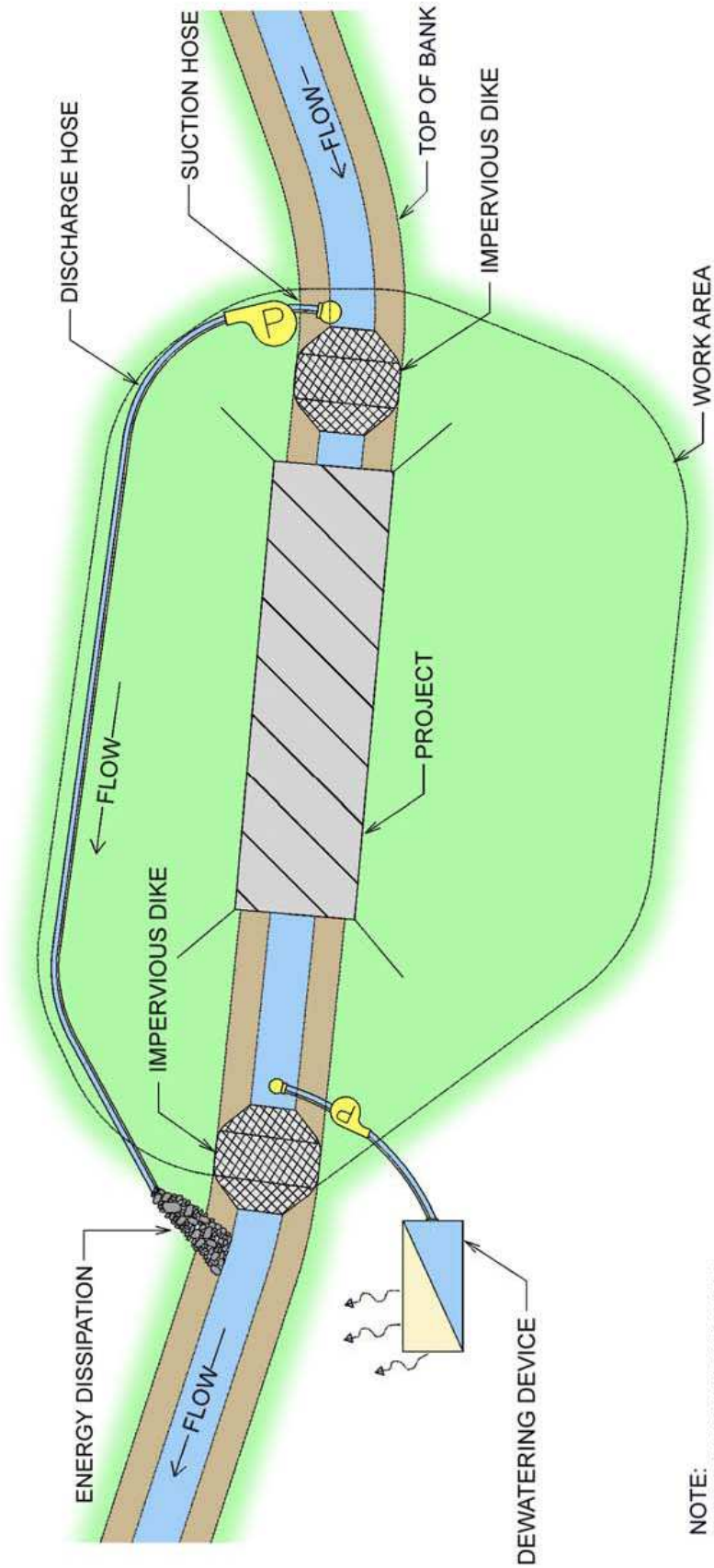
— BW = 88.0



\* NOT TO SCALE  
\* Whole Beam locations as needed

**BYPASS PUMPING**

**MANAGING THE WATERCOURSE:  
BYPASS PUMPING**



NOTE:  
ENSURE TO ANCHOR ALL  
PUMPS AND PIPES SECURELY.

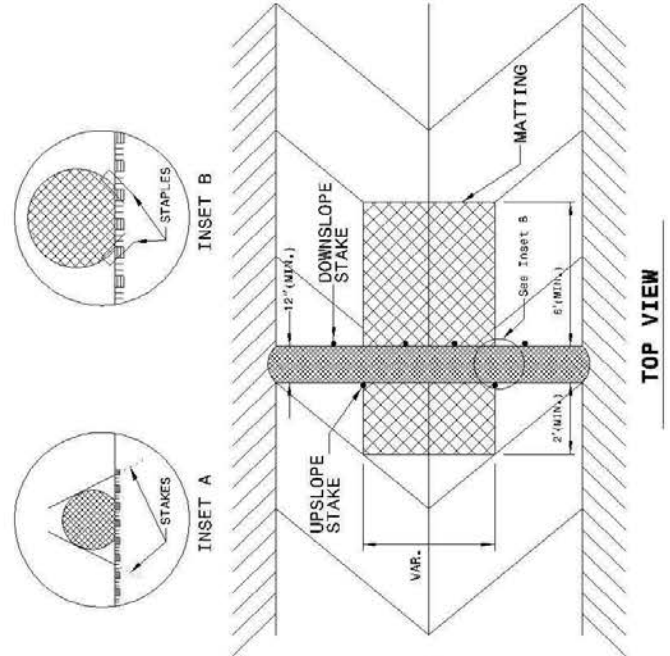
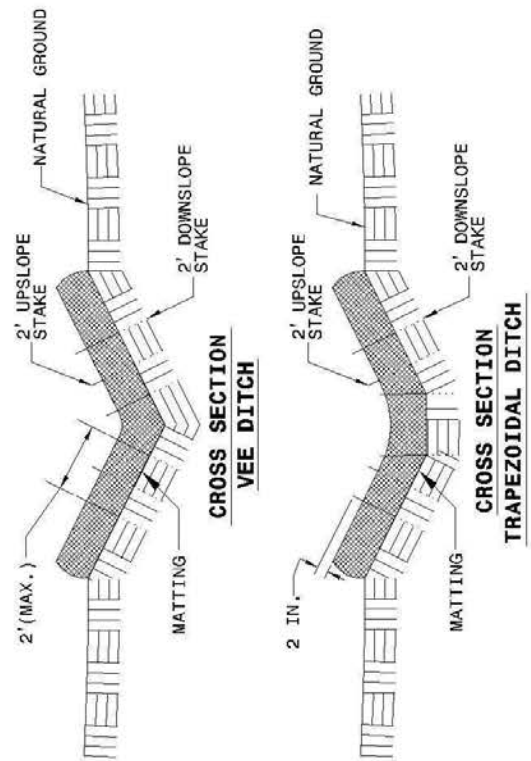
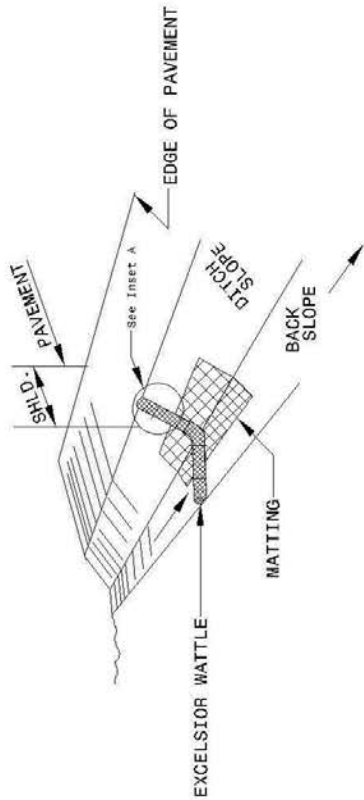


**WATTLE DETAIL**

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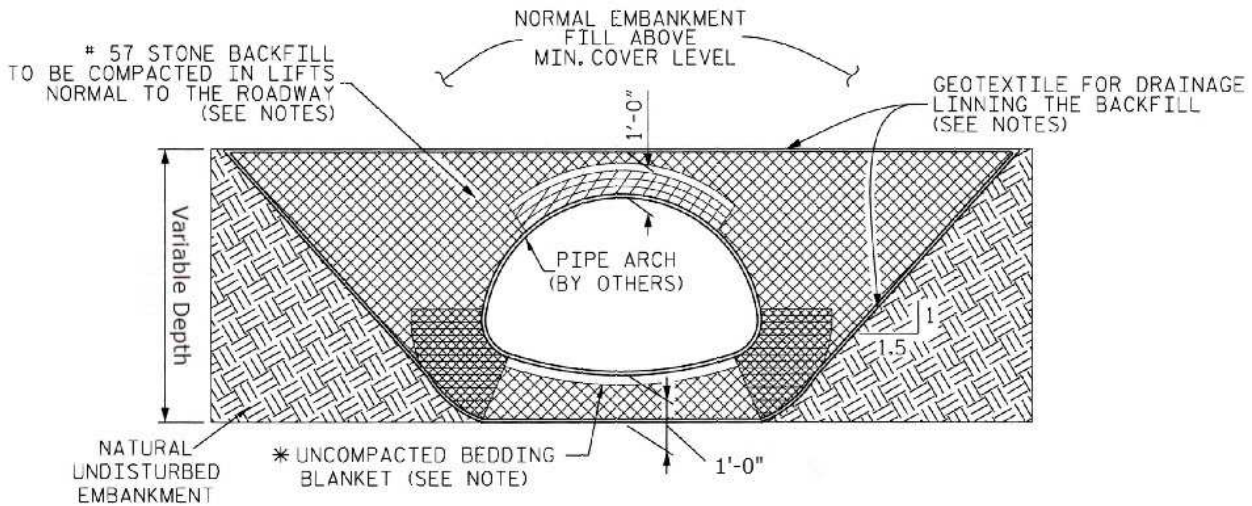
PROJECT REFERENCE NO.	SHEET NO.
17BP.6.R.80	8
DATE	DATE
10/15/11	10/15/11
DESIGNED BY	PREPARED BY
CHANG	CHANG




- NOTES:**
- USE MINIMUM 1/2 IN. DIAMETER EXCELSIOR WATTLE.
  - USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
  - ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
  - INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
  - PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
  - INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
  - INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.





**TYPICAL BACKFILL SECTION**



-  CRITICAL BACKFILL ZONE, PRESSURE ON SOIL GREATEST HERE.
-  INITIAL LIFTS OVER CROWN OF STRUCTURE AS INDICATED BY SHADED AREA TO BE COMPACTED TO REQUIRED DENSITY WITH HAND OPERATED EQUIPMENT
-  # 57 STONE BACKFILL LIMITS.

**NOTES:**

ALL BACKFILL TO BE PLACED IN A BALANCED FASHION IN THIN LIFTS (6"-8" LOOSE TYPICALLY) AND COMPACTED TO 90 PERCENT DENSITY PER AASHTO T-180.

GEOTEXTILE FOR DRAINAGE IN FOUNDATION BEDDING AND BACKFILL IS INCIDENTAL TO COST OF PIPE ARCH.

COMPLETE AND REGULAR MONITORING OF THE CSP ARCH SHAPE IS NECESSARY DURING ALL BACKFILLING OF THE STRUCTURE.

PREVENT EXCESSIVE DISTORTION OF SHAPE AS NECESSARY BY VARYING COMPACTION METHODS AND EQUIPMENT.

\* SHAPED BED FOR A MINIMUM WIDTH OF SPAN/2. MINIMUM BEDDING THICKNESS IS TWICE THE CORRUGATION DEPTH.

EMBANKMENT SLOPE TO BE 1.5:1 MINIMUM SUCH THAT A STABLE EMBANKMENT CAPABLE OF RESISTING SIDE PRESSURES FROM CSP PIPE-ARCH SHAPE WILL BE MAINTAINED THROUGHOUT THE LIFE OF INSTALLATION.

**TYPICAL BACKFILL SECTION ALONG PIPE**

NTS