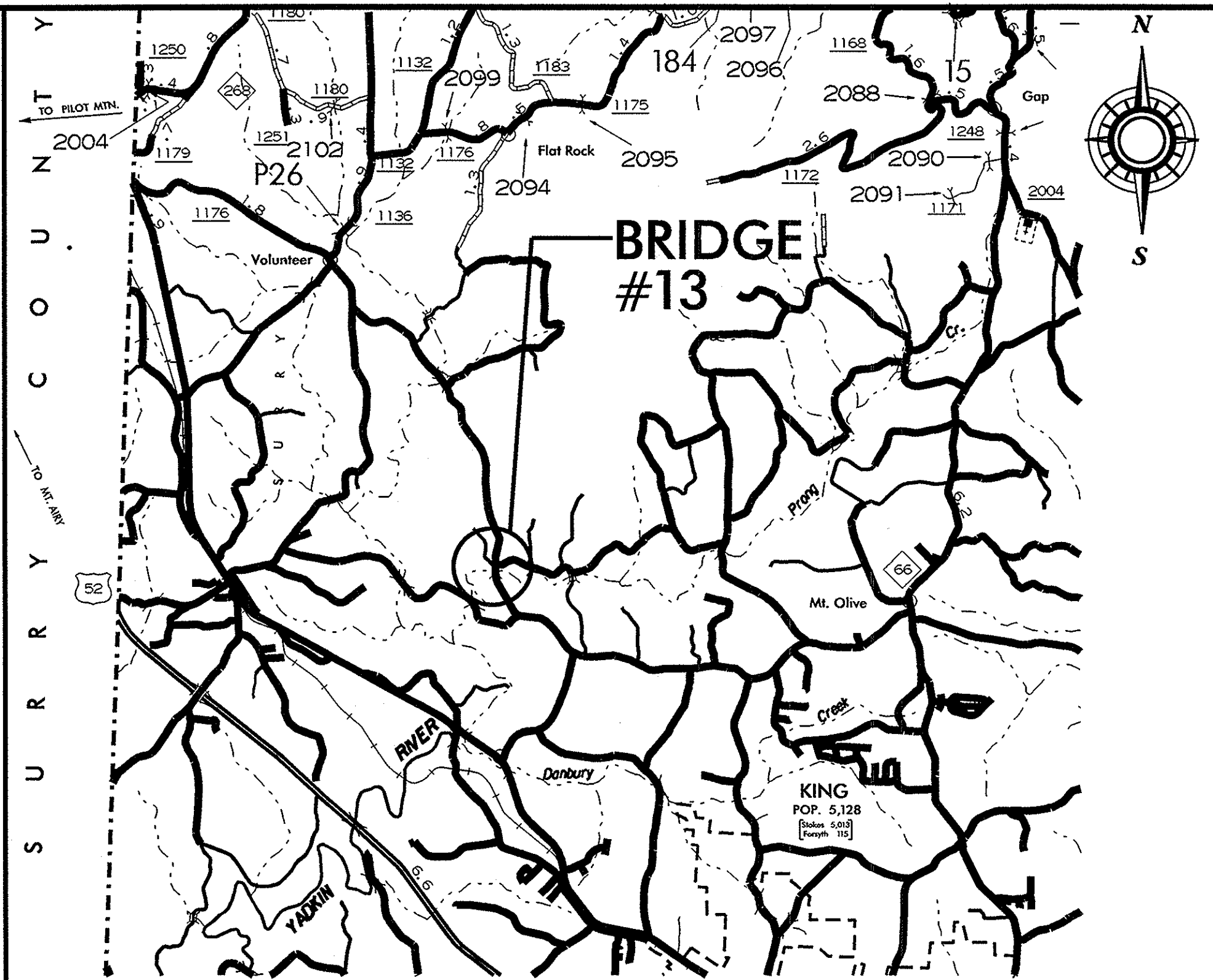


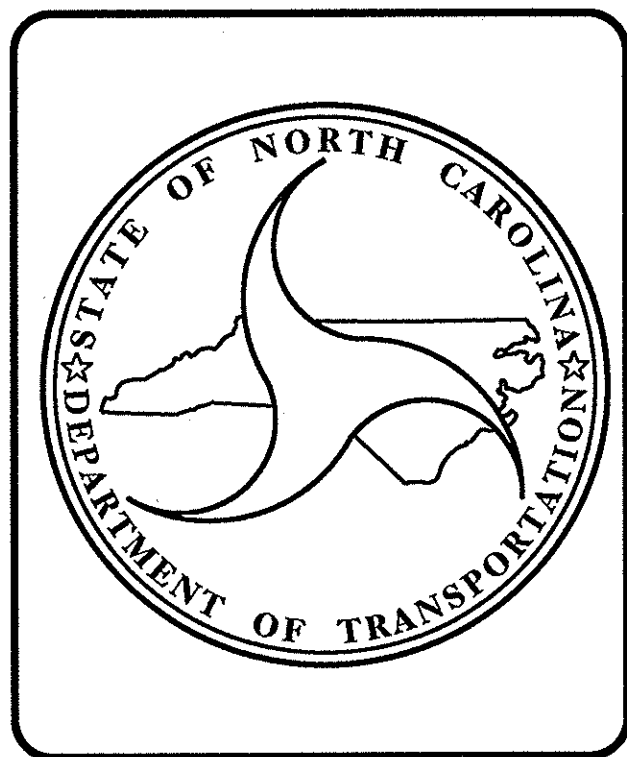
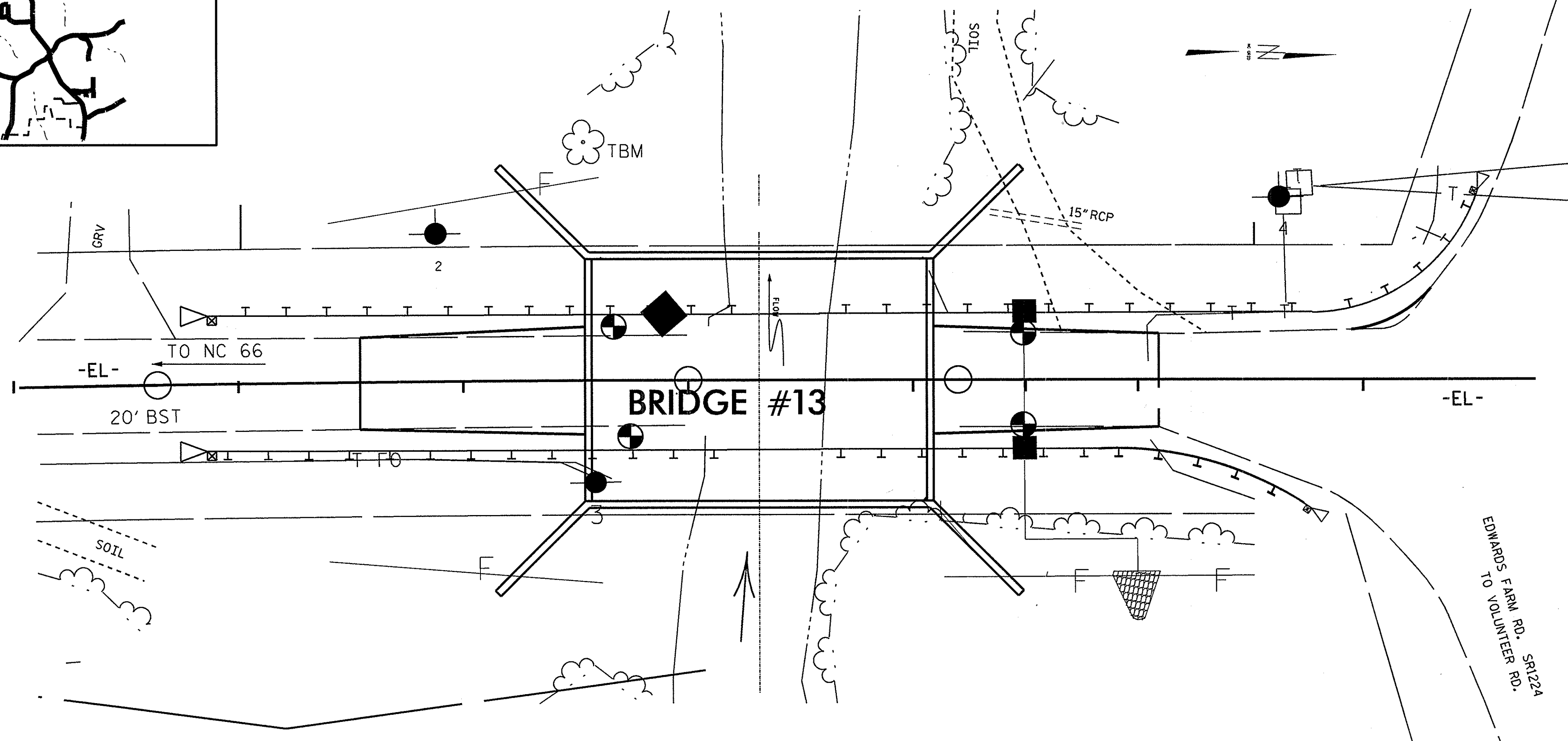
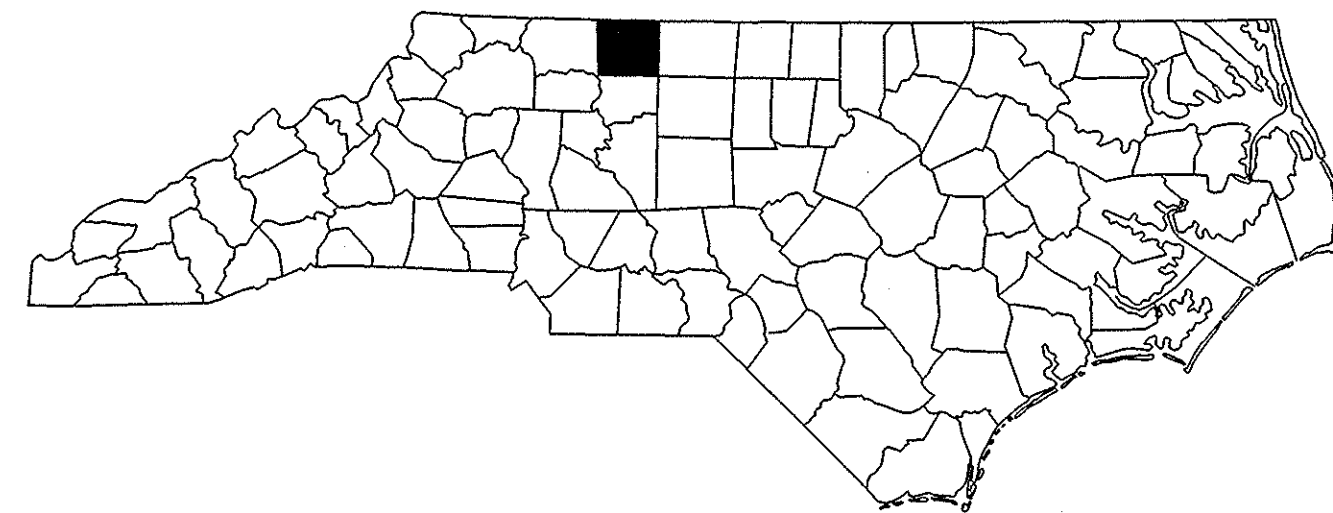
CONTRACT # DO00147 TIP : WBS 17BP.9.R.1



STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
STOKES COUNTY

STATE	STATE PROJECT REFERENCE NO.	TITLE
N.C.	17BP.9.R.1	P.E.
STATE PROJECT NO.	P.A. PROJ. NO.	DESCRIPTION
17BP.9.R.1		

LOCATION: BRIDGE NO. 13 ON SR 1136 OVER LITTLE YADKIN RIVER
TYPE OF WORK: BRIDGE REPLACEMENT WITH THREE SIDED ARCH CULVERT

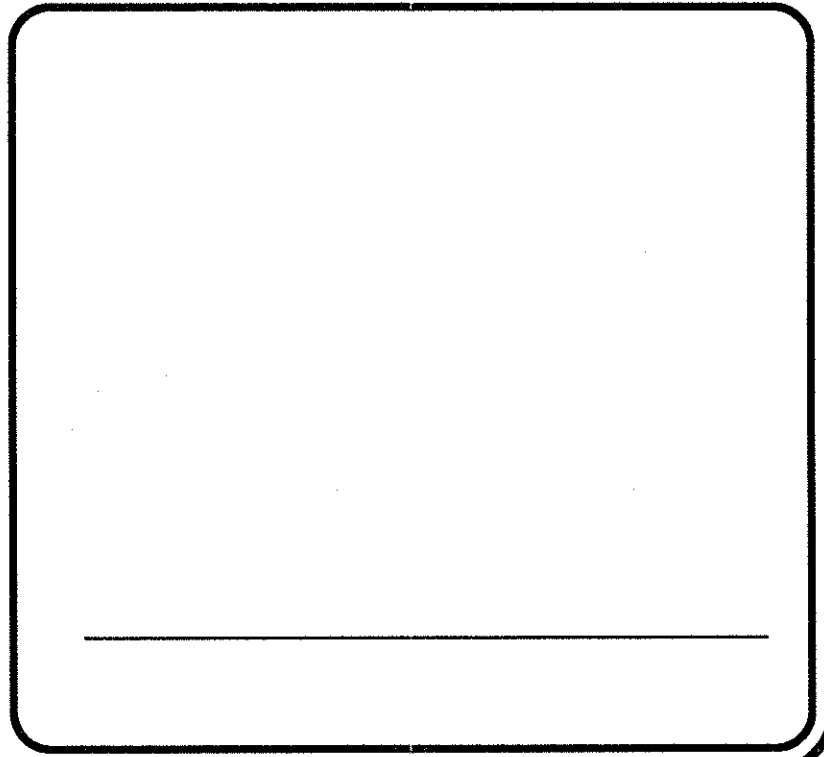


DESIGN DATA	
ADT 2010	= 1000

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT	= 0.095 MILE
LENGTH STRUCTURE TIP PROJECT	= 0.018 MILE
TOTAL LENGTH TIP PROJECT	= 0.095 MILE

Prepared in the Office of: STRUCTURES MANAGEMENT UNIT NORTH CAROLINA DEPARTMENT OF TRANSPORTATION 2006 STANDARD SPECIFICATIONS	
LETTING DATE: JANUARY, 2012	RICK NELSON, PE PROJECT ENGINEER

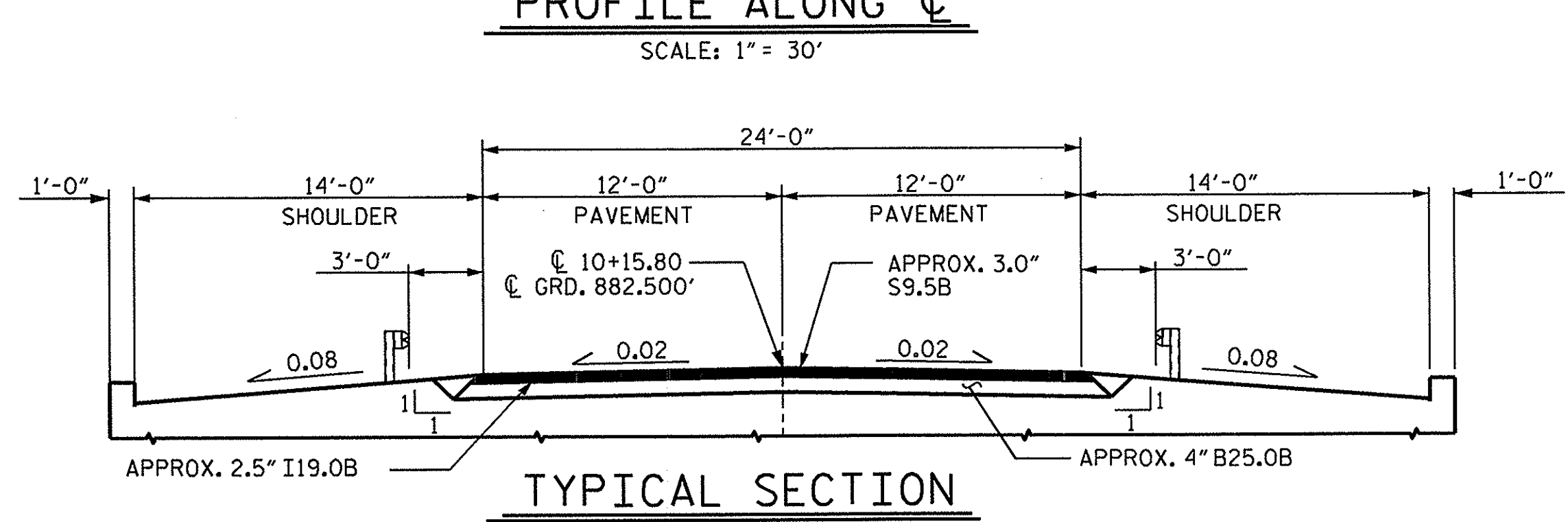
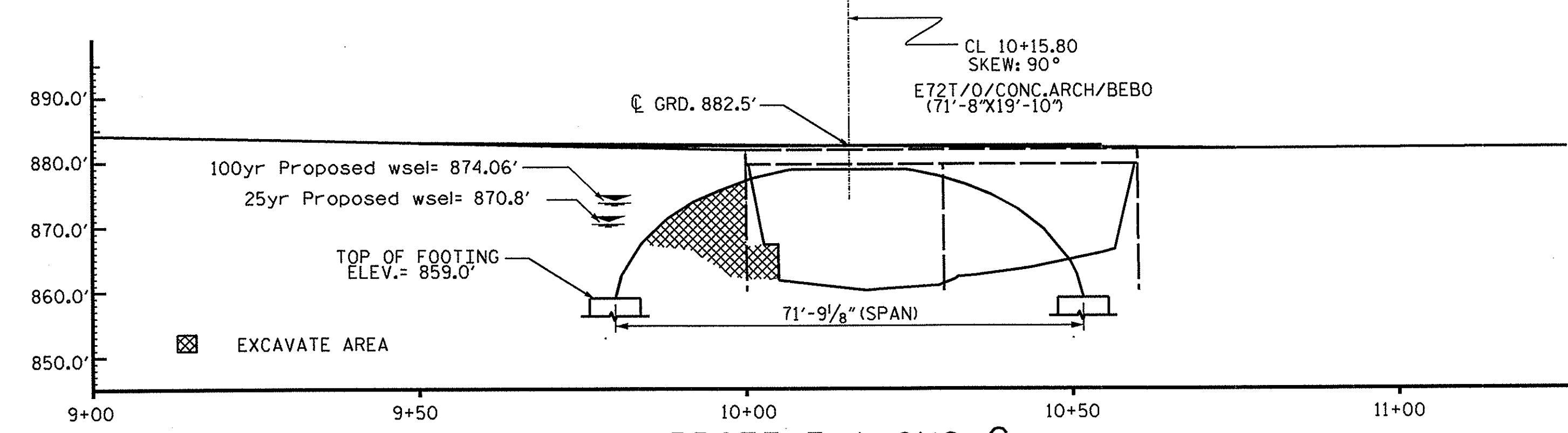
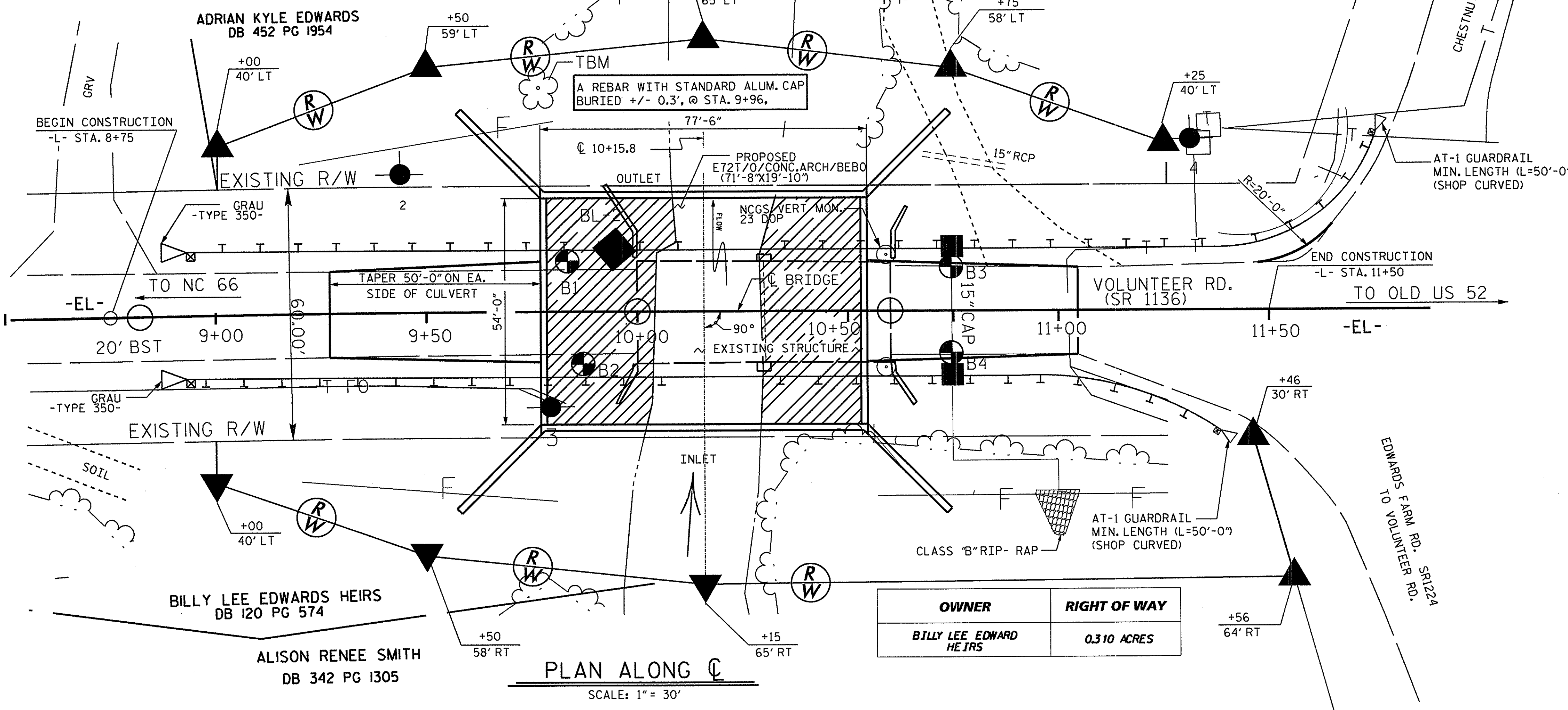
FARZIN ASEFNIA, PE
PROJECT DESIGN ENGINEER



CONTROL POINTS

PT#	NORTH	EAST	ELEV
BL-1	942139.044	1588833.953	914.01

*DECK SHOTS REPRESENT GUTTER ELEVATIONS ON BRIDGE DECK, ACTUAL EP IS HIGHER (REFER TO DTM FILE)



NOTES

- ASSUME LIVE LOAD = HL-93 OR ALTERNATE.
- E72T/O/CONC. ARCH/BEBO CULVERT TO BE DESIGNED BY A N.C. REGISTERED ENGINEER IN ACCORDANCE WITH APPLICABLE PORTIONS OF STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES ADOPTED BY AASHTO. CONSTRUCTION SHALL MEET THE APPLICABLE SECTIONS OF THE NC DOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- KEY FOOTING AT LEAST 6" INTO CRYSTALLINE ROCK OR 12" INTO WEATHERED ROCK.
- REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. IN ACCORDANCE WITH ARTICLE 402-2 OF STANDARD SPECIFICATION.
- INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR 'REMOVAL OF EXISTING STRUCTURE AT STATION..'
- FOR BLASTING ADJACENT TO HIGHWAY STRUCTURES, SEE ARTICLE 410-9 OF THE STANDARD SPECIFICATIONS
- THE GUARDRAIL SHALL BE ADEQUATELY DESIGNED BY A N.C. REGISTERED ENGINEER TO WITHSTAND ALL THE REQUIRED FORCES AND PROVIDE PROPER CLEARANCES FROM THE HEADWALL.

DESCRIPTION OF THE EXISTING BRIDGE

TWO SPANS @ 30'-6" TIMBER DECK ON I-BEAMS,
SUBSTRUCTURE : ABUTS: RC FULL HEIGHT,
INT. BENT: TIMBER CAP & PILE CONC

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT 'B13-2' WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 942719.775(FT) EASTING: 1588754.680(FT) ELEVATION: 881.32(FT) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00001304 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM 'B13-2' TO -L- STATION IS ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

HYDRAULIC DATA

DESIGN DISCHARGE	= 2725 CFS.
FREQUENCY OF DESIGN FLOOD	= 25 YRS.
DESIGN HIGH WATER ELEV.	= 870.800 FT.
DRAINAGE AREA	= 14.6 SQ. MI.
BASIC DISCHARGE (0 100)	= 4731 CFS.
BASIC HIGH WATER ELEV.	= 874.05 FT.

OVERTOPPING INFORMATION

ELEVATION = 882.1'
FREQUENCY = 500yr. +
DISCHARGE = 9500cfs

BANK STABILIZATION AREA (FLOODPLAIN BENCH CONSTRUCTION):

RIPRAP SHALL BE PUSHED INTO THE EXISTING SOIL OR SOIL SHALL BE REPLACED WITH RIPRAP.
THE RIPRAP LAYER SHALL BE 2 FEET THICK.
CLASS 2 RIPRAP MEETING THE REQUIREMENTS OF SECTION 1042 OF THE NCDOT SPECIFICATIONS SHOULD BE USED.
ROCK FROM THE FOUNDATION EXCAVATION MEETING THESE REQUIREMENTS SHOULD BE USED PRIOR TO USING RIPRAP.

PROJECT NO. WBS.17BP.9.R.1

STOKES COUNTY

STATION: 13

SHEET OF

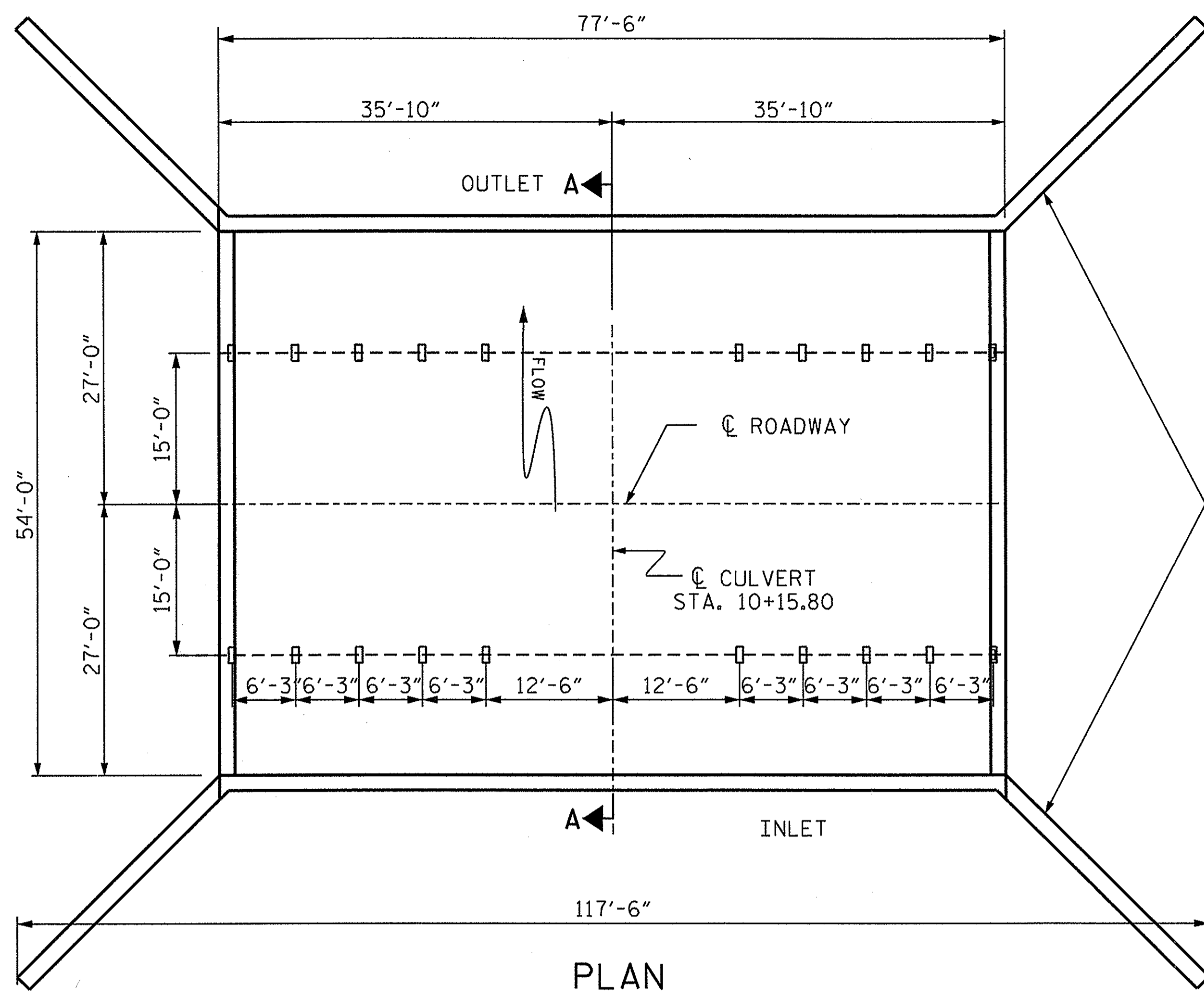
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**BRIDGE #13 ON SR. 1136
OVER LITTLE YADKIN
CREEK**
24' CL. ROADWAY 90°-00' SKEW

REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

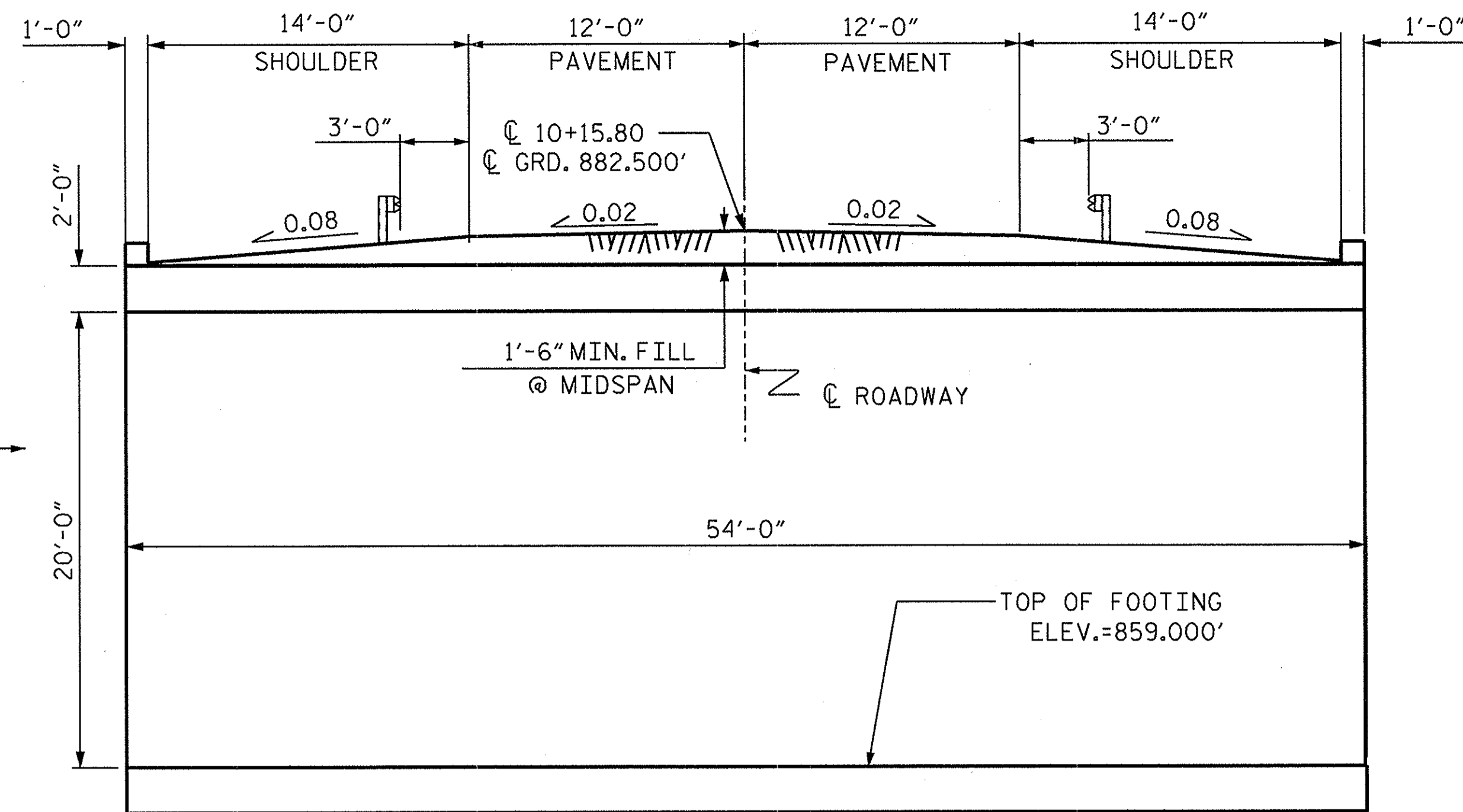
TOTAL SHEETS: 2



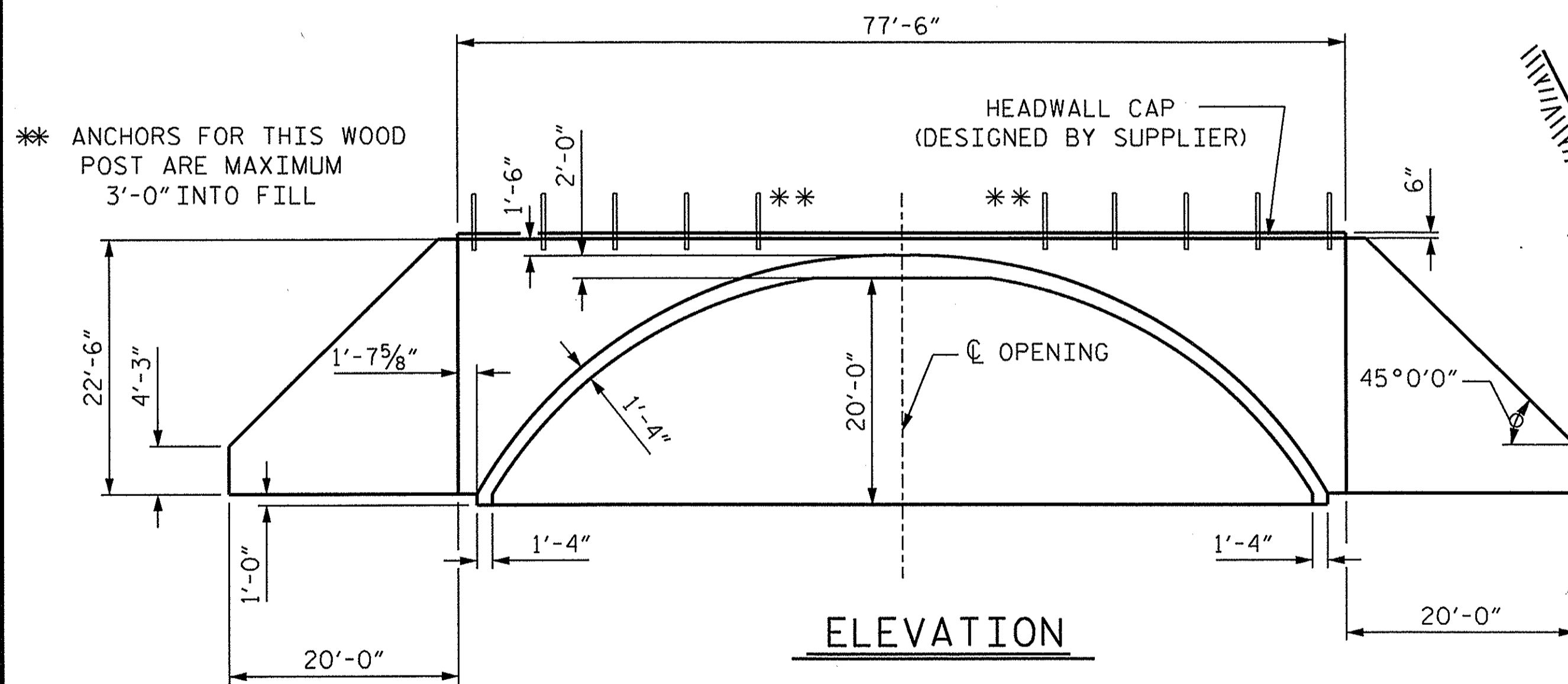
DRAWN BY: S.SANDOR DATE: 12/2011
CHECKED BY: R. WEISZ DATE: 12/2011



PLAN



(CULVERT SECTION NORMAL TO ROADWAY) SECTION A-A

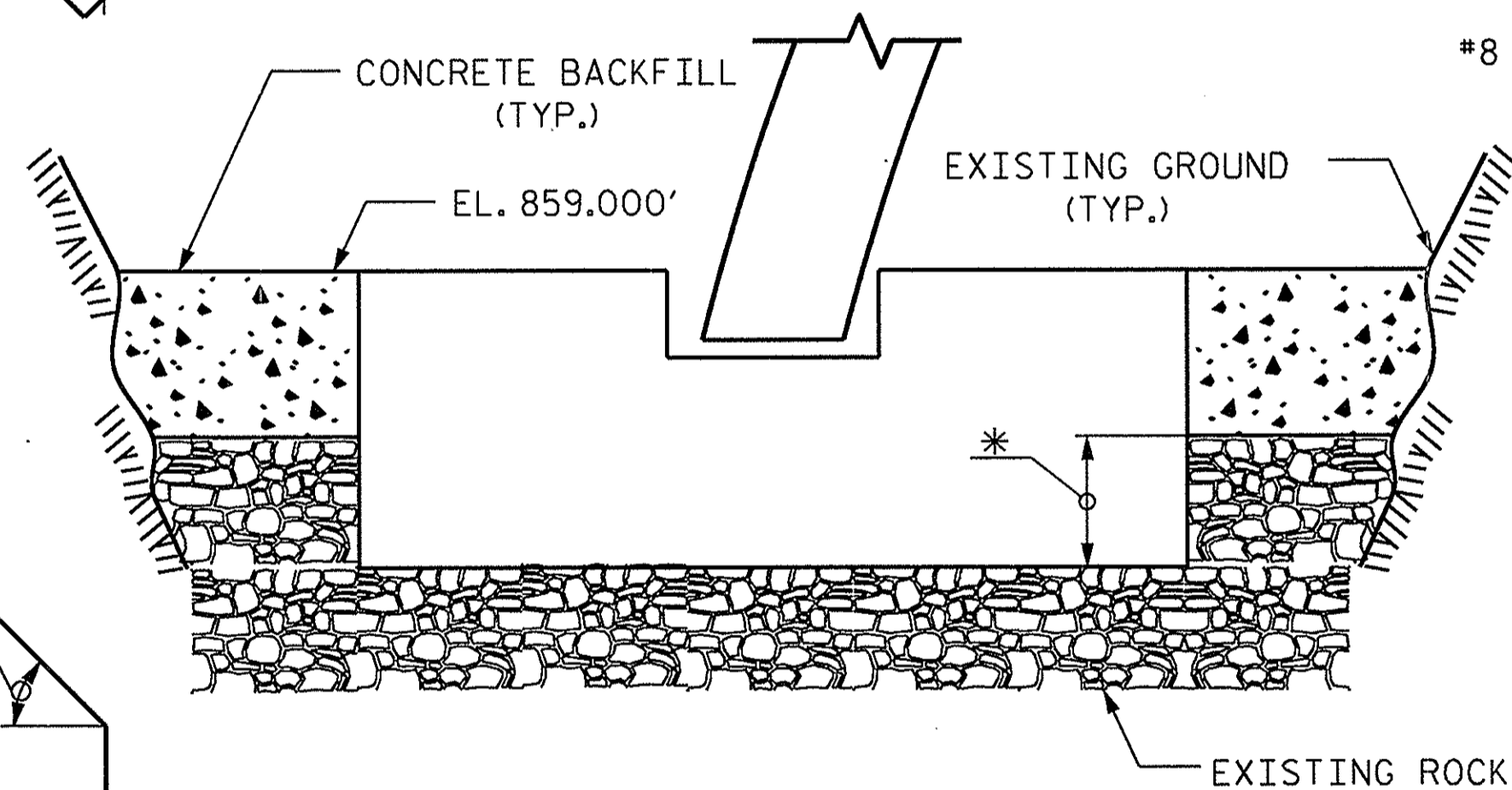


ELEVATION

** ANCHORS FOR THIS WOOD POST ARE MAXIMUM 3'-0" INTO FILL

NOTES

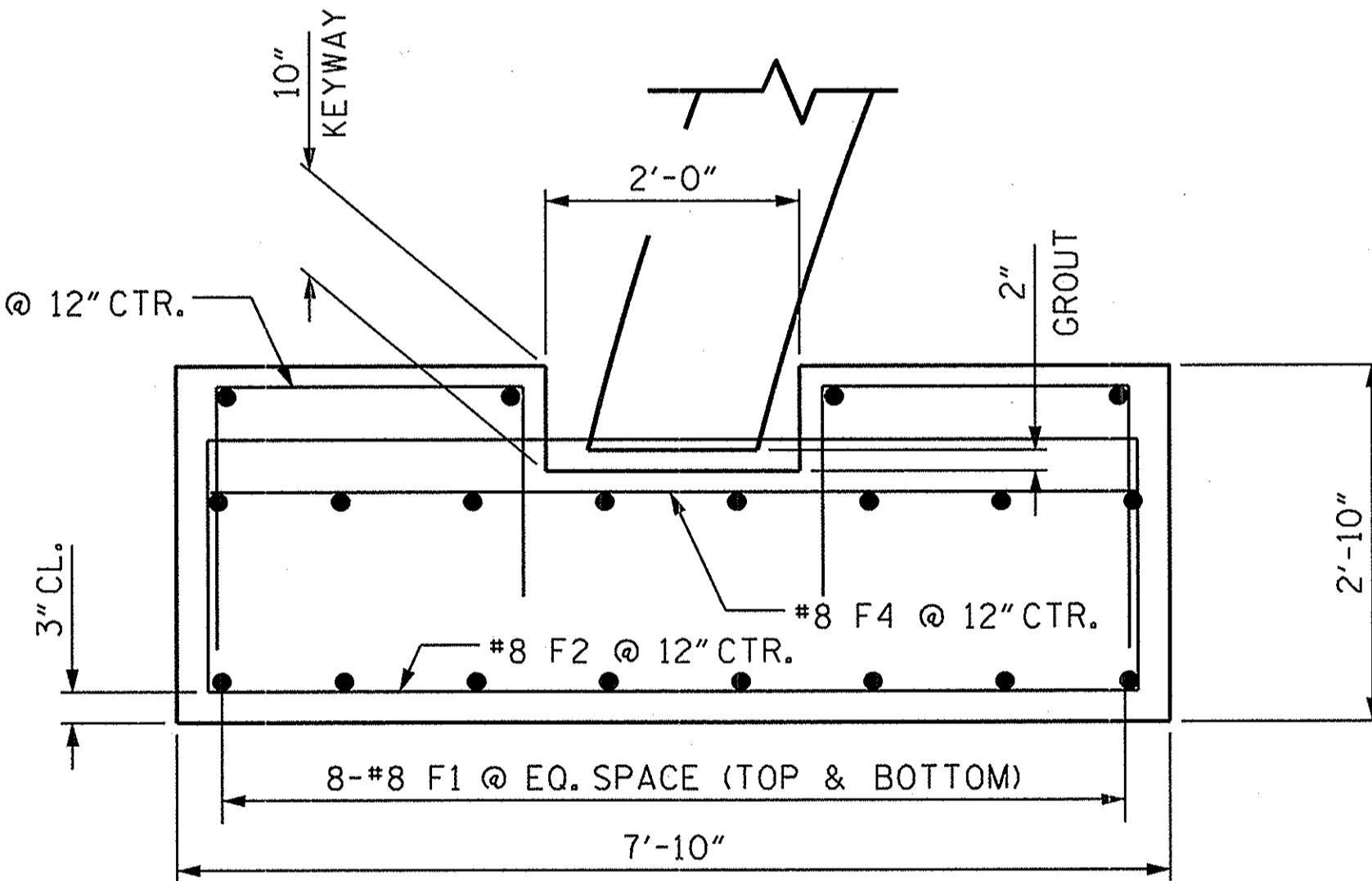
GUARDRAIL TO BE PLACED ACCORDING TO ROADWAY STANDARD 862.01, SHEET 9 OF 11 25'-0" CLEAR SPAN
 WING WALL FOOTING TO BE SPLICED TO THE CULVERT FOOTING
 WINGWALL FOOTING AND DETAIL TO BE DESIGNED BY OTHERS.



DETAIL OF CONCRETE BACKFILL

(SEE SPECIAL PROVISIONS)

* FOR ROCK KEY IN, SEE NOTES



CULVERT FOOTING

BAR TYPES		BILL OF MATERIAL			
		FOR ONE FOOTING (2 REQ'D)			
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
F1	24	8	STR. 56'-6"	3621	
F2	59	8	1 11'-4"	1785	
F3	59	8	2 6'-2"	971	
F4	59	8	STR. 7'-4"	1155	
REINFORCING STEEL			LBS.	7532	
CLASS AA CONCRETE			C. Y.	47.0	

PROJECT NO. WBS. 17BP.9.R.1

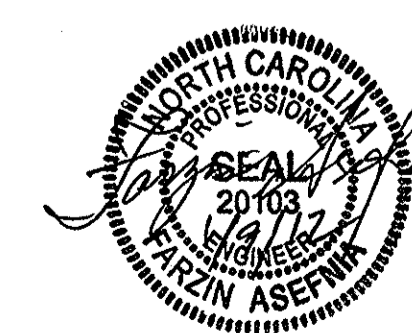
STOKES COUNTY

STATION: 10+15.80-EL-

SHEET OF

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE ARCH CULVERT
 (71'-8" X 19'-10")



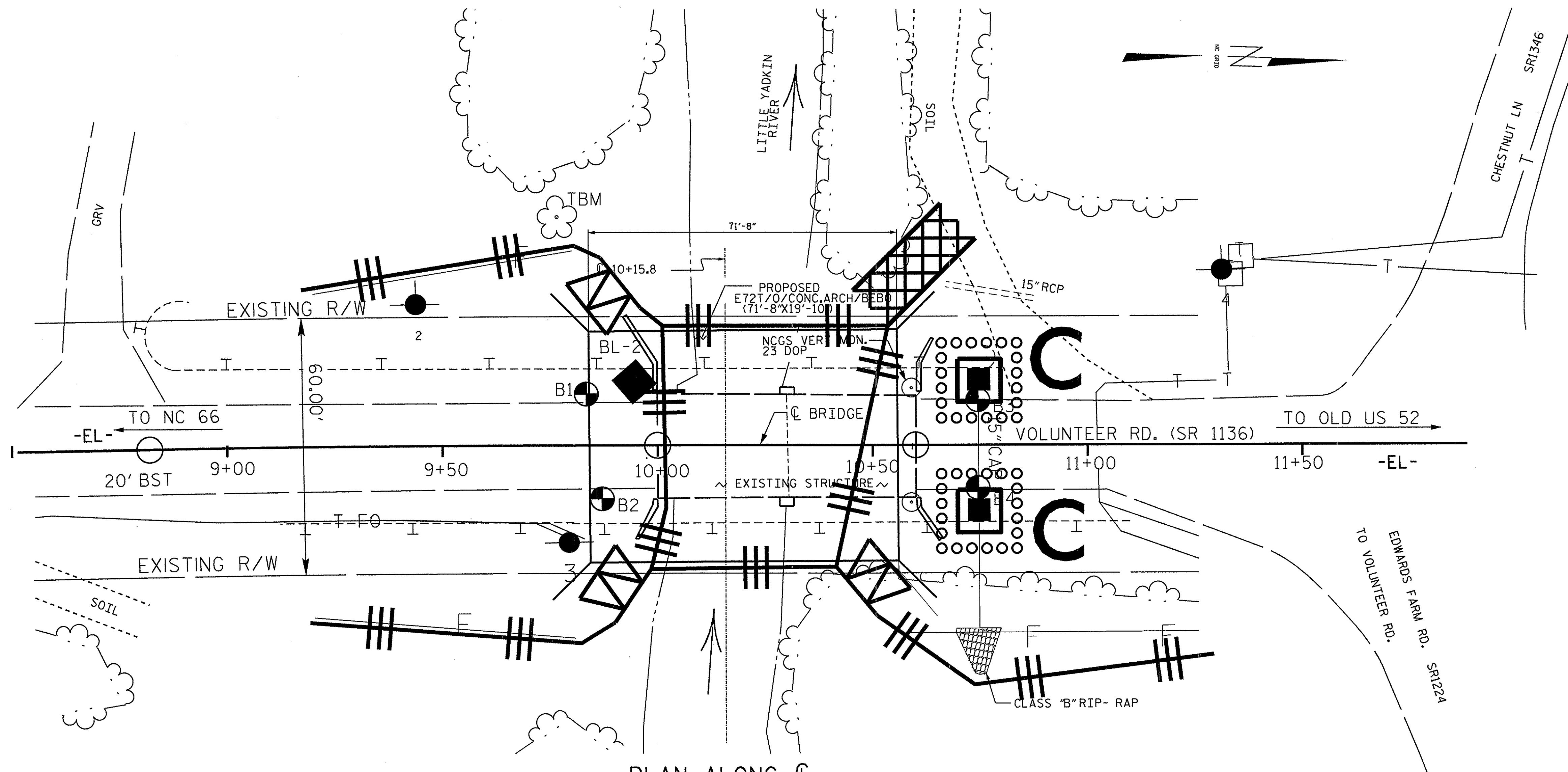
REVISIONS					SHEET NO. S-2
NO.	BY:	DATE:	NO.	DATE:	
1			3		TOTAL SHEETS 2
2			4		

DRAWN BY: S SANDOR DATE: DEC. 11
 CHECKED BY: R. WEISZ DATE: DEC. 11

EROSION CONTROL PLAN

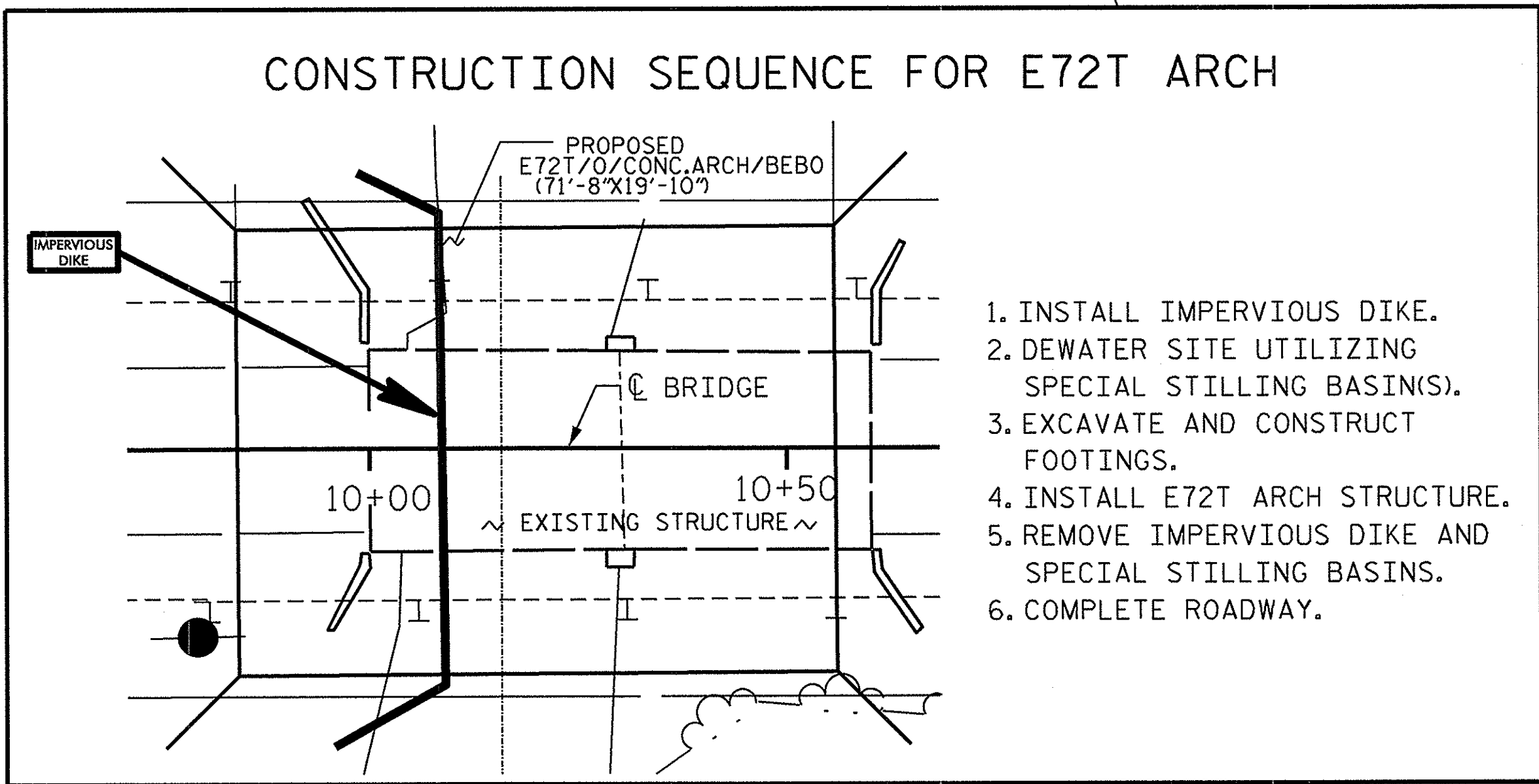
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.



PLAN ALONG C
SCALE: 1" = 30'

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	▤ ▤ ▤ ▤ ▤
1622.01	Temporary Berms and Slope Drains	— T —
1630.02	Silt Basin Type B	▨
1630.03	Temporary Silt Ditch	— TSD —
1630.05	Temporary Diversion	— TD —
1632.03	Rock Inlet Sediment Trap Type C	□
1633.01	Temporary Rock Silt Check Type-A	▤ ▤ ▤ ▤ ▤
	Temporary Rock Silt Check Type-B	▤ ▤ ▤ ▤ ▤
1634.02	Temporary Rock Sediment Dam Type-B	▤ ▤ ▤ ▤ ▤
1635.01	Rock Pipe Inlet Sediment Trap Type-A	C



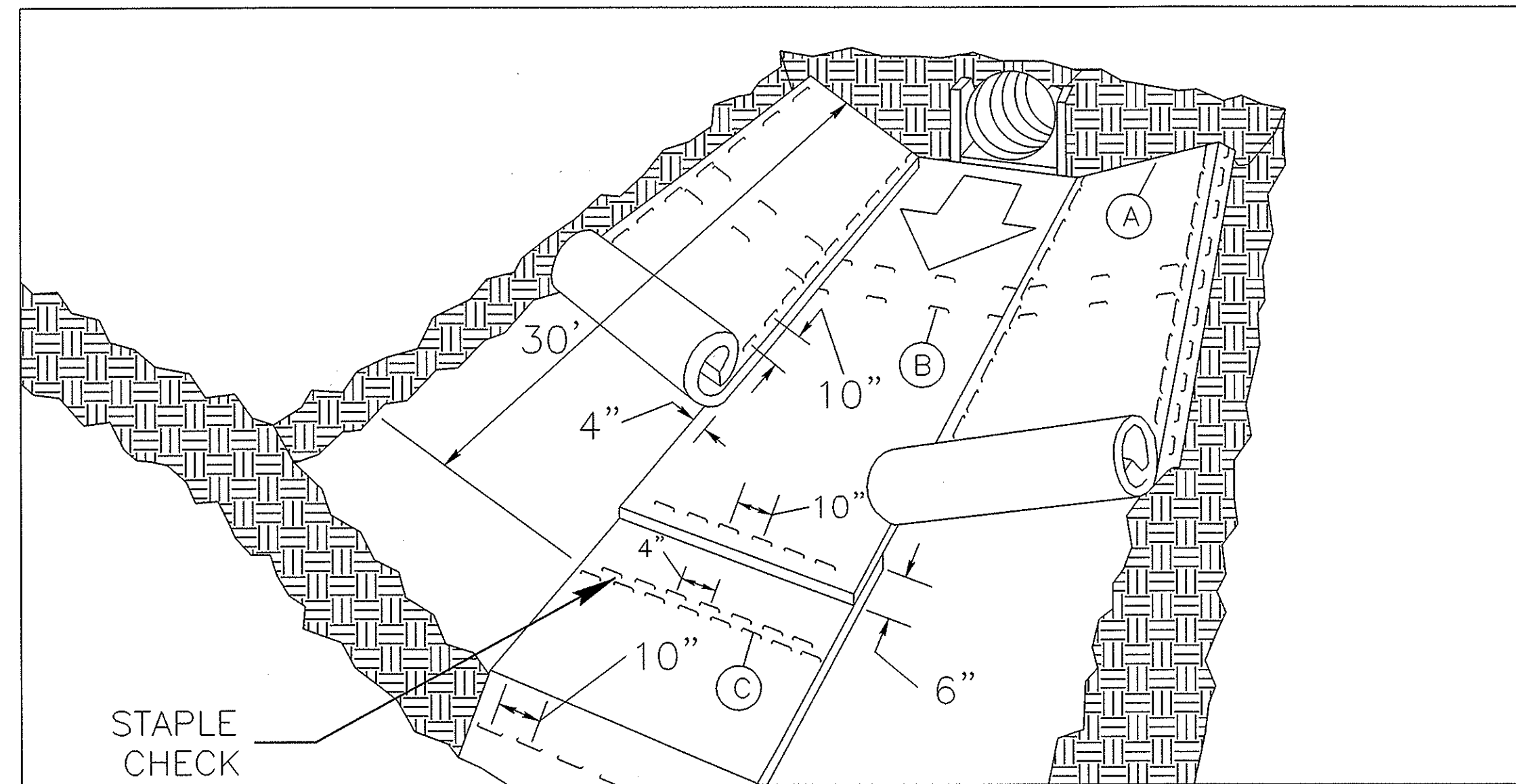
1. INSTALL IMPERVIOUS DIKE.
2. DEWATER SITE UTILIZING SPECIAL STILLING BASIN(S).
3. EXCAVATE AND CONSTRUCT FOOTINGS.
4. INSTALL E72T ARCH STRUCTURE.
5. REMOVE IMPERVIOUS DIKE AND SPECIAL STILLING BASINS.
6. COMPLETE ROADWAY.

PROJECT NO. WBS.17BP.9PE.1
COUNTY: STOKES
BRIDGE NO. 13

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BRIDGE #13 ON SR. 1136
OVER LITTLE YADKIN
CREEK
24' CL. ROADWAY 90°-00' SKEW

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	EC-1
1			3			TOTAL SHEETS
2			4			2

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

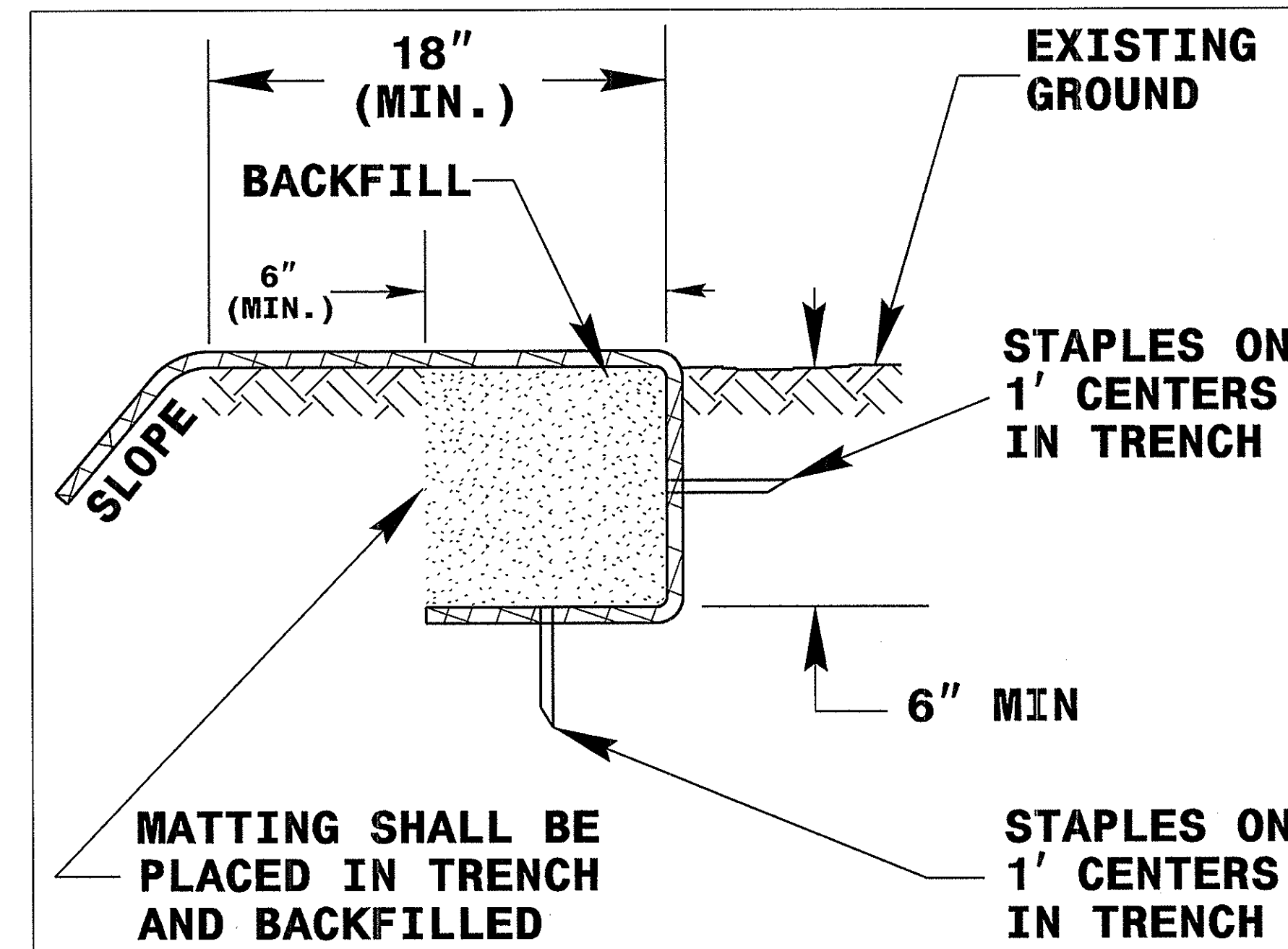
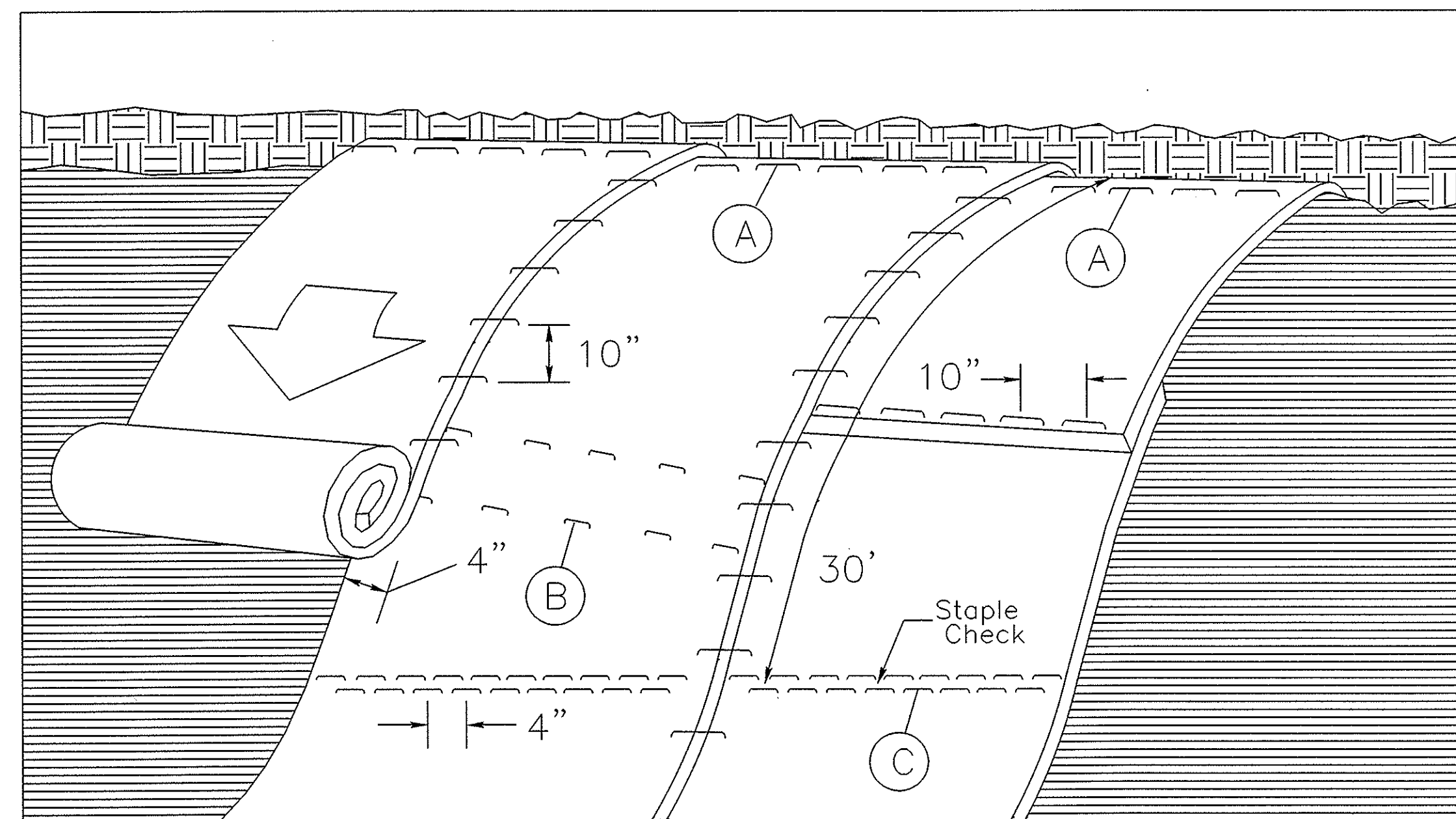


DIAGRAM (A)



MATTING ON SLOPES

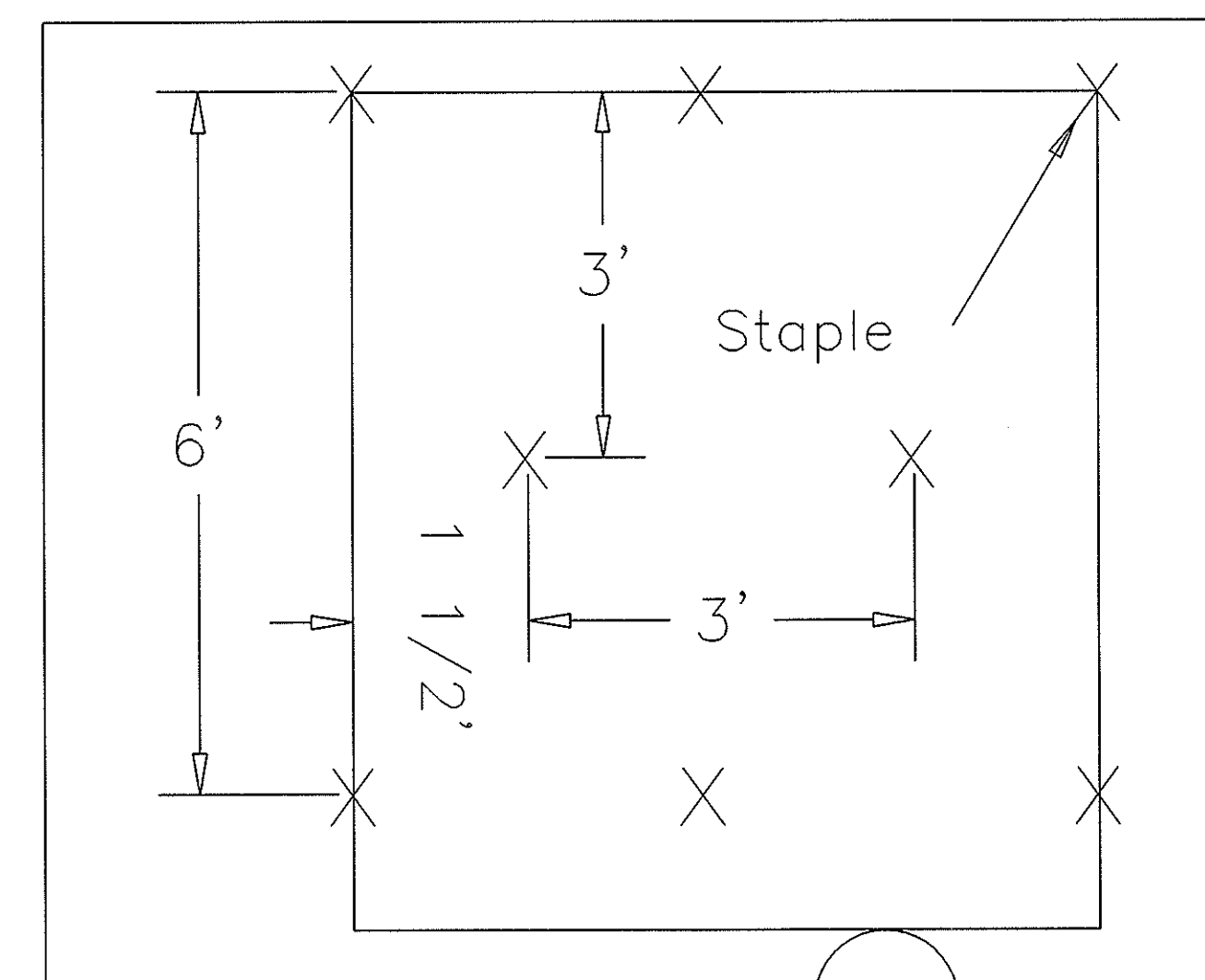


DIAGRAM (B)

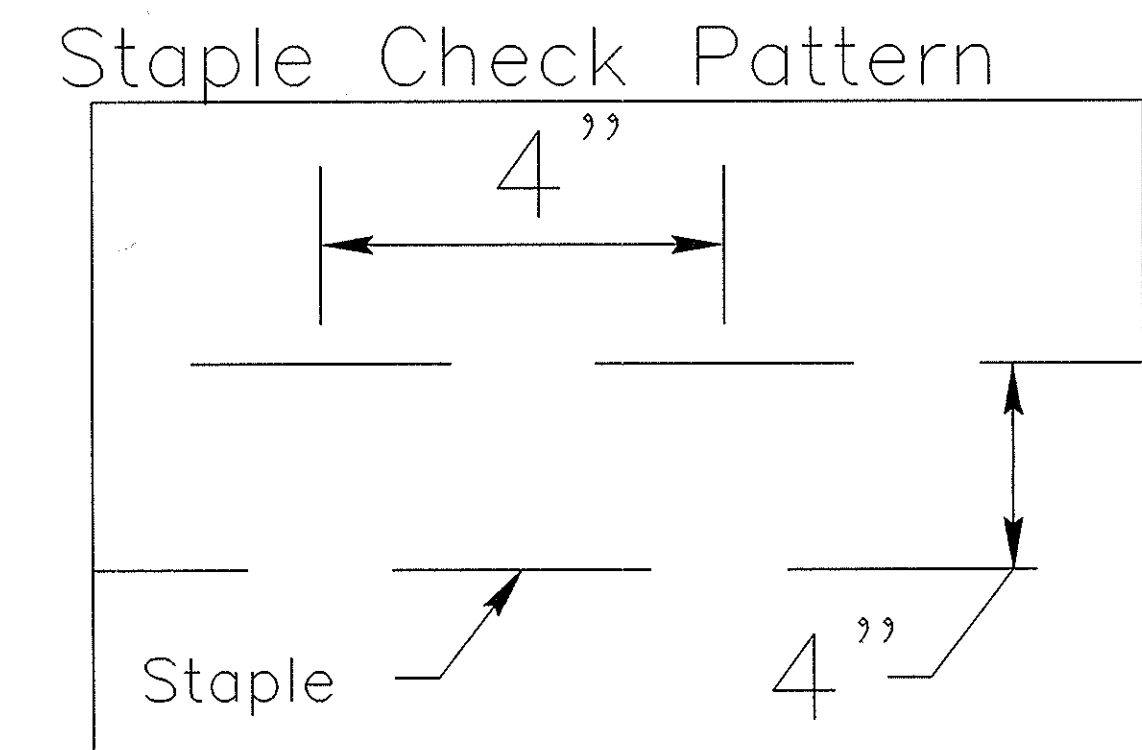


DIAGRAM (C)

NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE