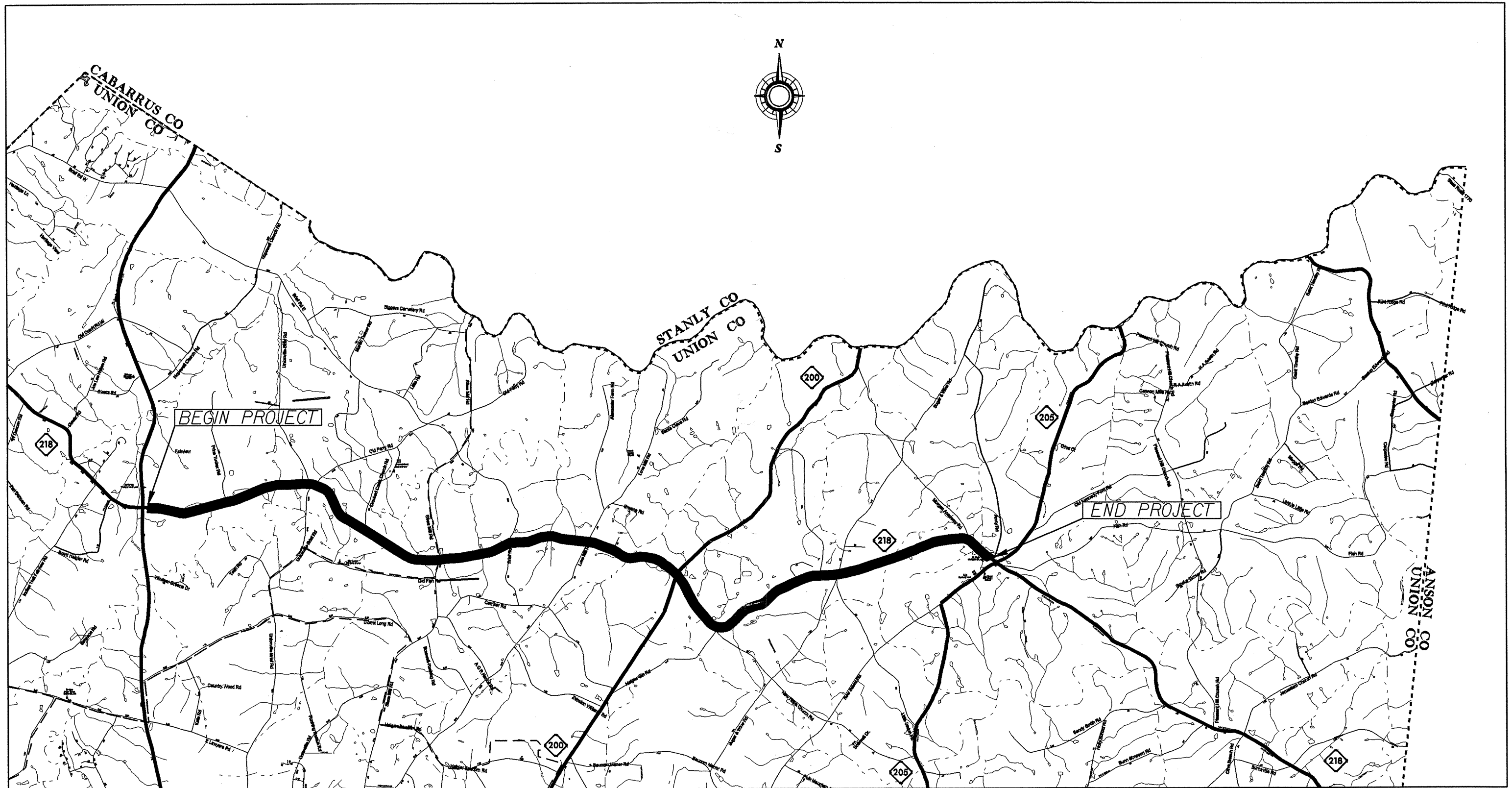


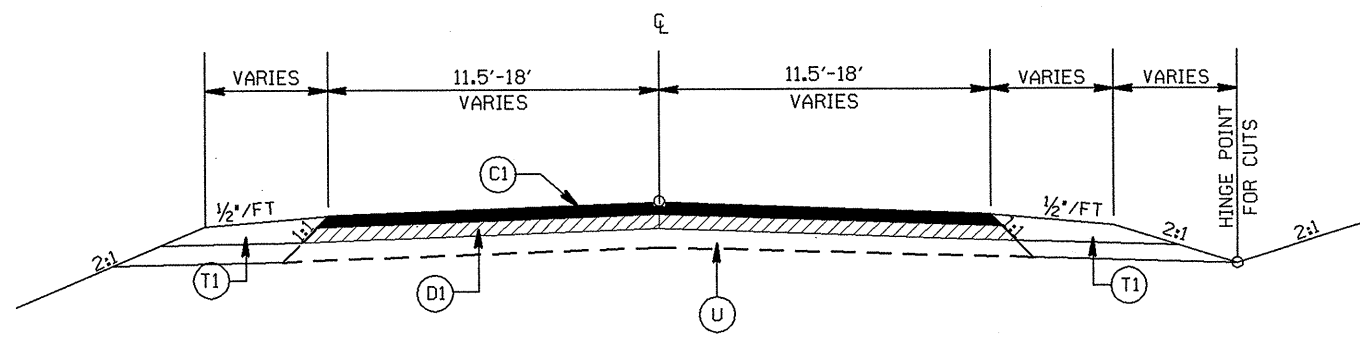
STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-514B	1	6
F.A. PROJECT NO. STM-0218(9)			

# VICINITY MAP

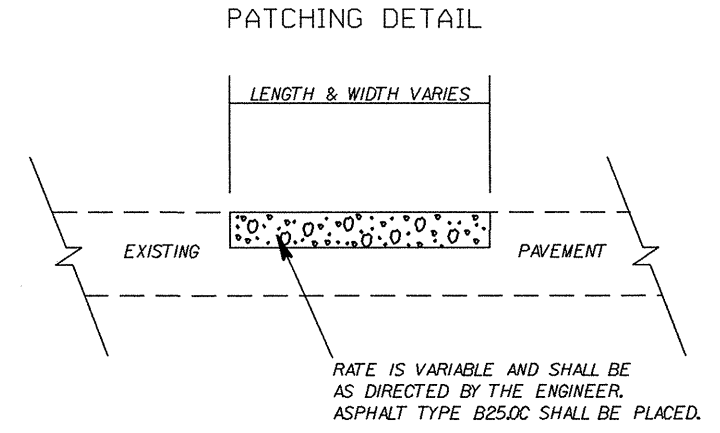
NC 218 FROM THE PAVEMENT JOINT APPROX. 250' EAST OF US 60 TO THE PAVEMENT JOINT 500' WEST OF NC 205 (10.93 MILES)



STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5114B	2	6
F.A. PROJECT NO. STM-0218(9)			



TYPICAL SECTION NO. 1



PAVEMENT SCHEDULE

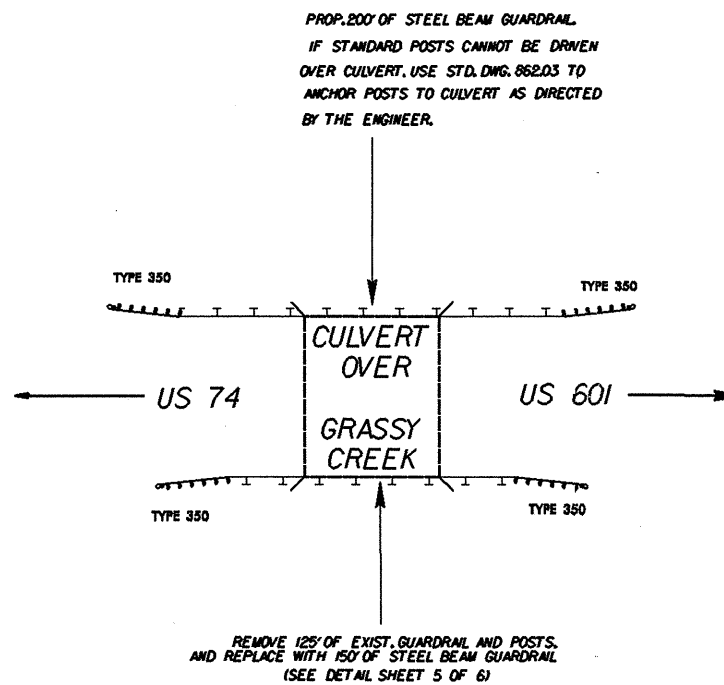
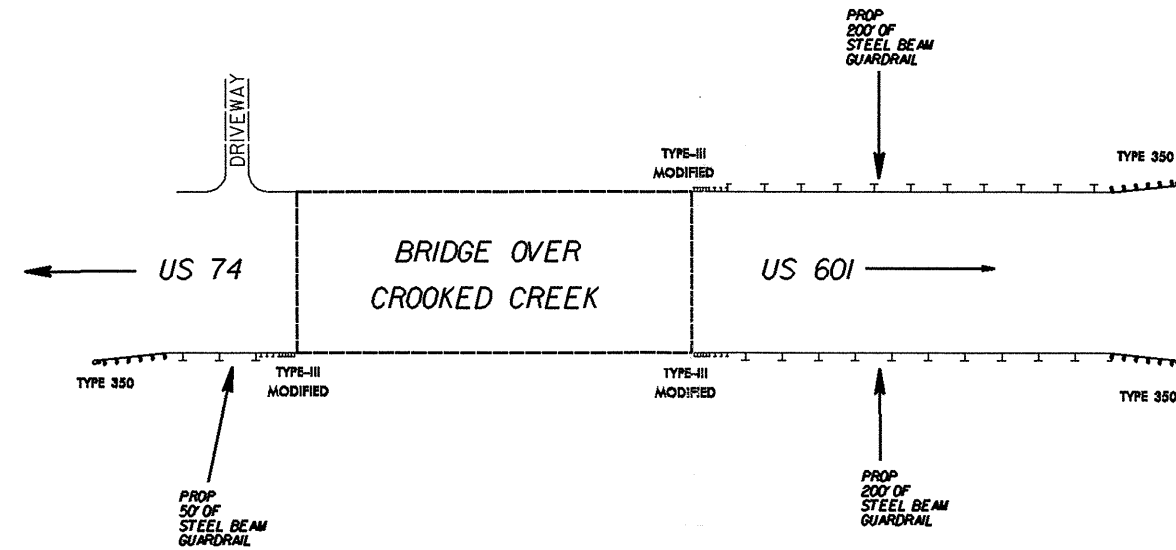
(C1)	PROP. APPROX. 1½" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
(D1)	PROP. APPROX. 3" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
(T1)	SHOULDER RECONSTRUCTION
(U)	EXISTING PAVEMENT

NOTES: MILL APPROX. 150' FROM THE CONCRETE BRIDGE DECK AS WELL AS THE BEGINNING & ENDING OF NC 218 PROJECT TO PROVIDE A SMOOTH TIE-IN.  
 NO ASPHALT WILL BE PLACED ON NC 218 FROM STA. 342+50 TO 353+60 DUE TO NCDOT PROJECT \* W-5012  
 INCIDENTAL MILLING TO BE USED AT INTERSECTIONS

NC 218 FROM THE PAV'T JOINT  
 APPROX. 250' EAST OF US 601  
 TO THE PAV'T JOINT 500' WEST OF NC 205  
 (SECTION B)

SCALE	-NA-		REVISIONS
DATE	01/09		
DWG. BY	TWB		
DESIGN BY	TWB		
APPROVED	RWB		

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-51MB	3	6
F.A. PROJECT NO. STM-0218(9)			

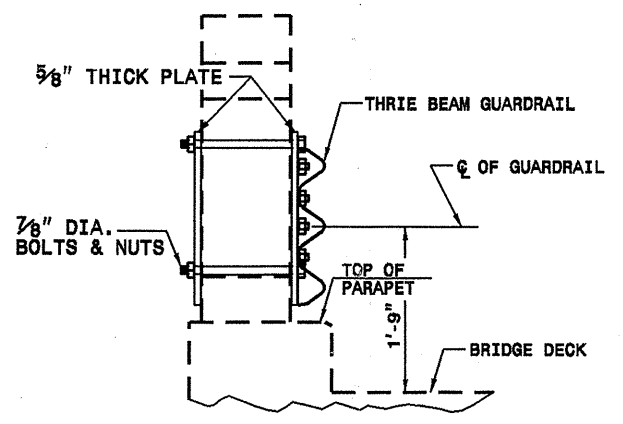
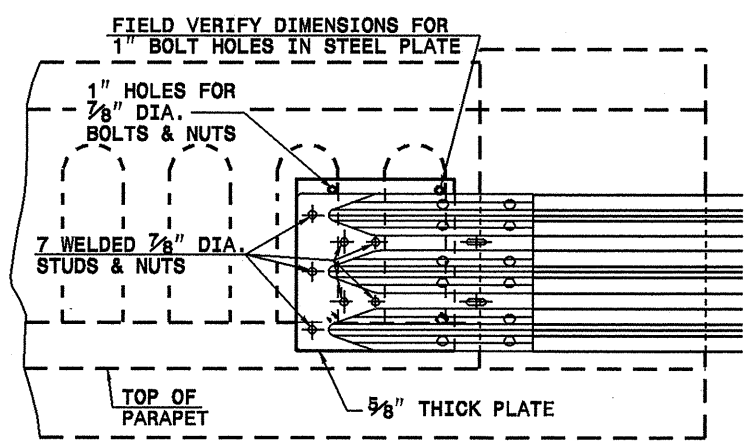
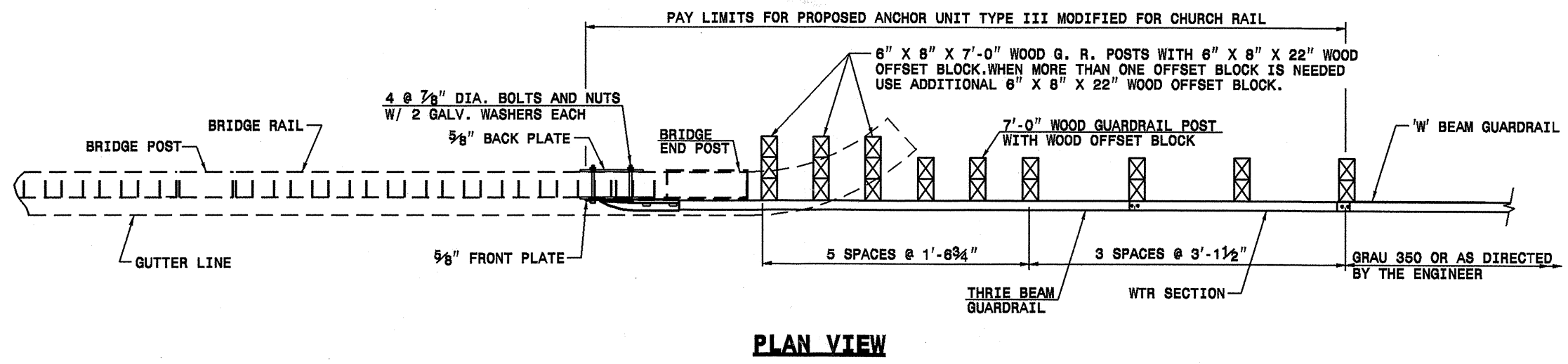
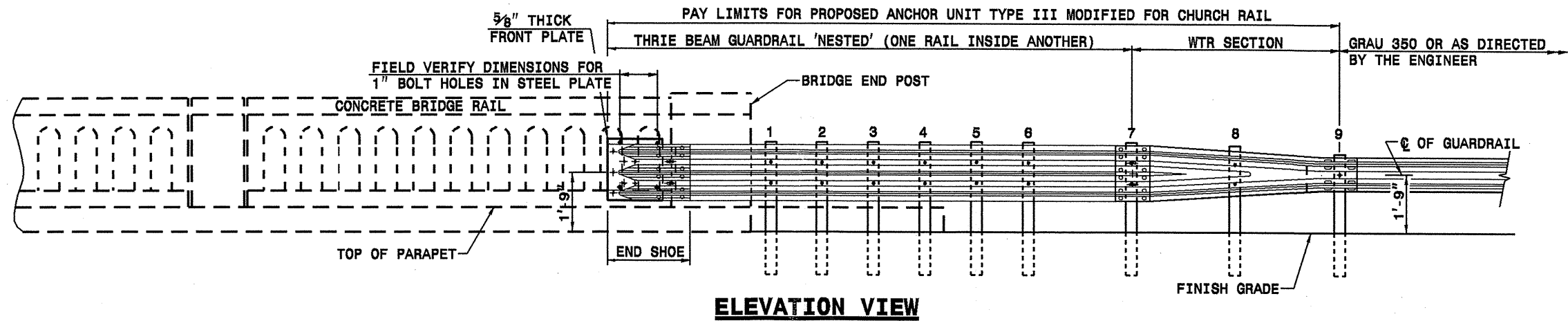


NC218 FROM PAV'T JOINT 250' EAST  
OF US 601 TO PAV'T JOINT 500' WEST  
OF NC 205.  
(SECTION B)

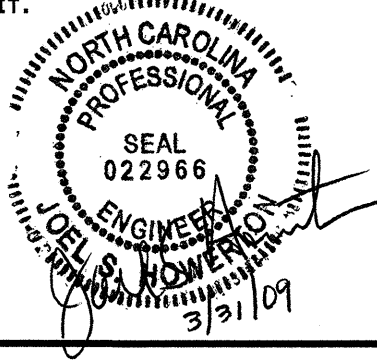
SCALE	-NA-
DATE	1-27-09
DWG. BY	TWB
DESIGN BY	TWB
APPROVED	RWB



REVISIONS	



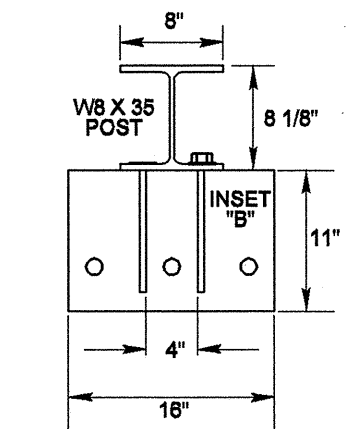
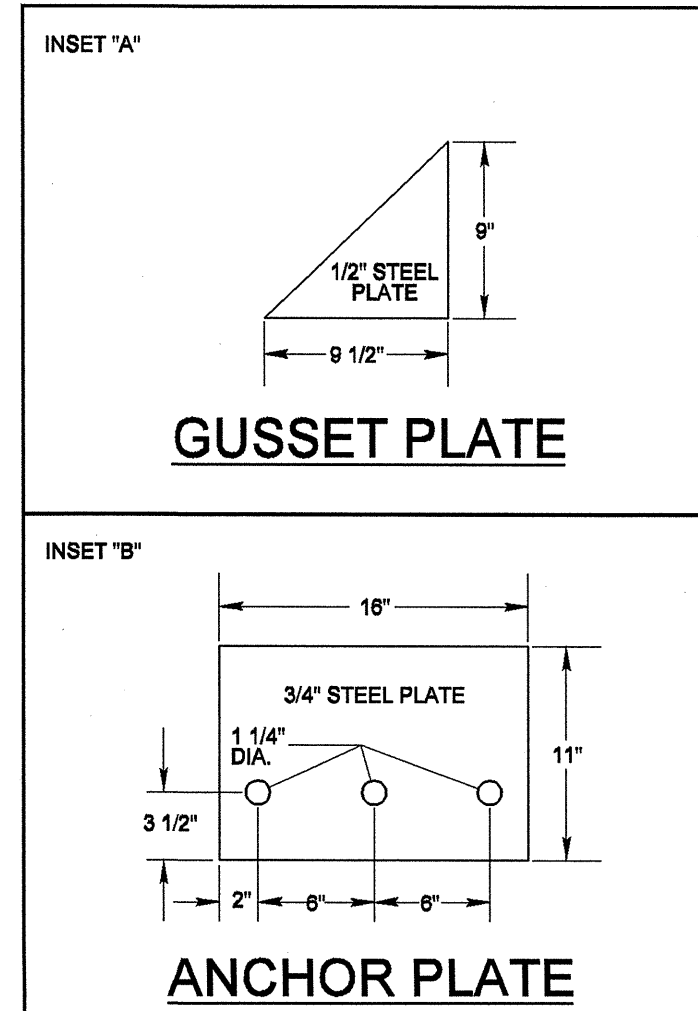
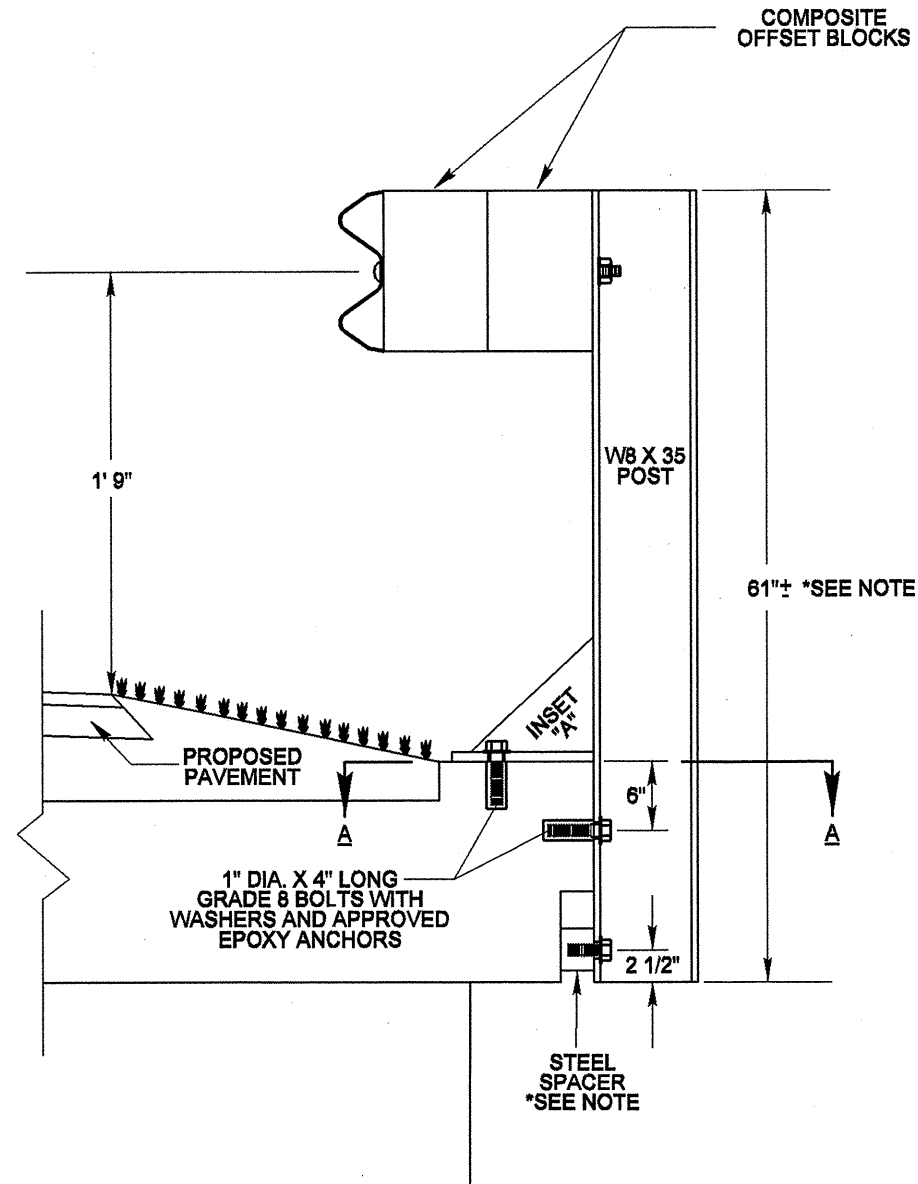
- GENERAL NOTES:
1. USE NUTS, BOLTS, AND WASHERS CONFORMING TO THE REQUIREMENTS OF A.S.T.M. A-307 AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF STAND. SPECS.
  2. TAP NUTS FOR THE 7/8" DIA. STUDS AND BOLTS AFTER GALVANIZING SEE A.S.T.M. A-563.
  3. USE PLATES AND TUBES CONFORMING TO THE REQUIREMENTS OF A.S.T.M. A-36 AND GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH SECTION 1078 OF STAND. SPECS.
  4. ADDITIONAL FIELD HOLES MAY BE DRILLED IN STEEL RAIL AS DIRECTED BY THE ENGINEER.
  5. INSTALL FACE OF GUARDRAIL AS NEAR AS POSSIBLE TO PLUMB WITH THE PARAPET FACE AT BRIDGE END POST SPACER TUBE LOCATION BY USING STANDARD OR ALTERED SPACER TUBES OR A COMBINATION THEREOF OR AS DIRECTED BY THE ENGINEER. FOR VERY SMALL PARAPET WIDTHS, GUARDRAIL MAY BE INSTALLED AGAINST BRIDGE RAIL WITHOUT SPACER TUBES.
  6. DO NOT DRILL BRIDGE RAIL IN ORDER TO INSTALL GUARDRAIL ANCHOR UNIT.
  7. ATTACH THREADED STUDS TO PLATE WITH 1/4" WELDS ALL AROUND.
  8. PROVIDE SHOP DRAWINGS OF THE PLATES TO THE ENGINEER FOR APPROVAL BEFORE FABRICATING THE PLATES.
  9. LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
  10. SEE ROADWAY STANDARD DRAWING 862.03 SHEET 4 FOR ADDITIONAL INFORMATION ON THE TYPE III ANCHOR UNIT.



PROJECT SERVICES UNIT STANDARDS AND SPECIAL DESIGN Office 919-250-4128 FAX 919-250-4119	
<b>GUARDRAIL ANCHOR UNIT TYPE III MODIFIED FOR CHURCH RAIL</b>	
ORIGINAL BY: E.E. WARD	DATE: 10-02
MODIFIED BY: E.E. WARD	DATE: 02-04
CHECKED BY:	DATE:
FILE SPEC: user\details\stand\br11.dgn	

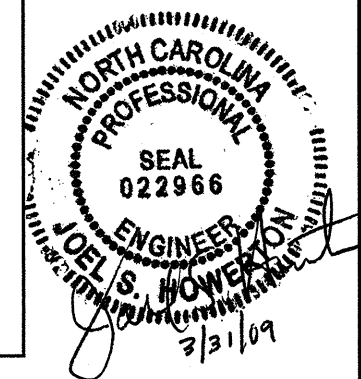
**GUARDRAIL ATTACHMENT  
TO BRIDGE POST**

5/14/09 SYSTEMS \*\*\*\*\* USE NAME \*\*\*\*\*



**SECTION A-A**

- NOTES:**
- \* BOLT POST TO STEEL SPACER. DO NOT ANCHOR INTO CONCRETE CULVERT.
  - \* LENGTH OF PROPOSED W8 X 35 GUARDRAIL POST IS APPROXIMATE. ACTUAL LENGTH SHOULD BE VERIFIED IN THE FIELD AFTER PROPOSED PAVEMENT IS PLACED.
  - \* A W8 X 31 GUARDRAIL POST MAY BE USED IN LIEU OF THE W8 X 35 POST AS DIRECTED BY THE ENGINEER.
  - \* WELD 1/2" STEEL GUSSET TO 3/4" ANCHOR PLATE WITH APPROVED WELD
  - \* WELD 1/2" STEEL GUSSET TO FACE OF GUARDRAIL POST WITH APPROVED WELD
  - \* REFER TO SEC. 862 OF STANDARD SPECIFICATIONS



**PROJECT SERVICES UNIT  
STANDARDS AND SPECIAL DESIGN**  
Office 919-250-4128 FAX 919-250-4119

**GUARDRAIL POST DETAIL  
AT GRASSY CREEK NC 218**

ORIGINAL BY: K KEMPF	DATE: 3/30/2009
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: DETAIL\KEMPF\ENGLISH\GUARDRAIL PLATES.DGN	

PROJECT NO.	SHEET NO.	TOTAL NO.
R-5114B	6	6
42297.3.ST2		

### SUMMARY OF QUANTITIES

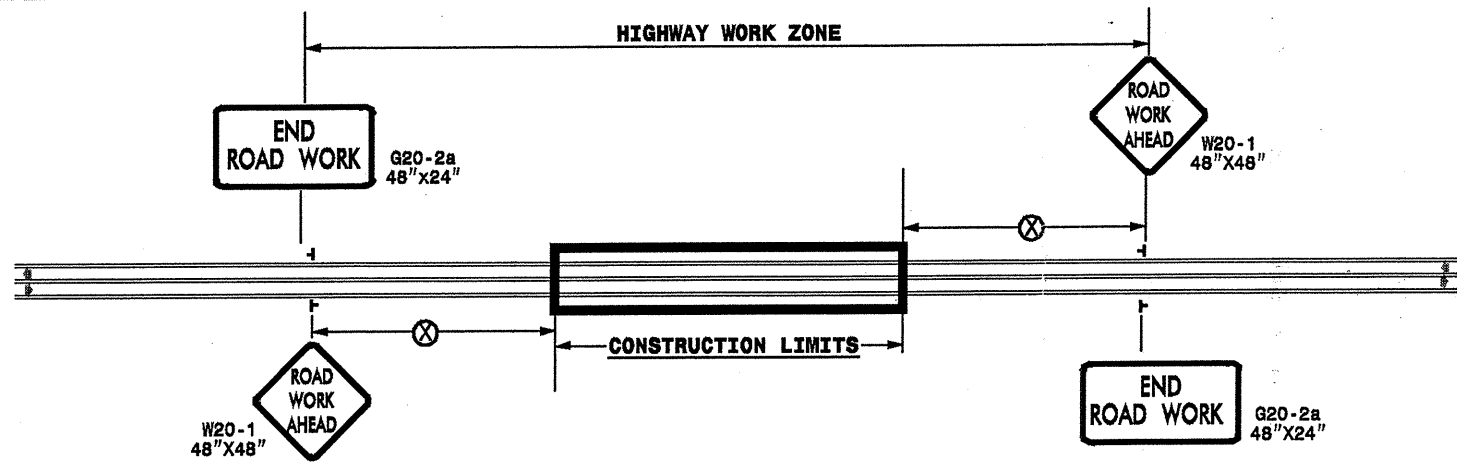
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	LENGTH MI	WIDTH FT	BORROW CY	FOUNDATION CONDITIONING MATERIAL TONS	15" RCP, CLASS III LF	18" RCP, CLASS III LF	24" RCP, CLASS III LF	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTR. SMI	DITCHING LF	0" TO 4.5" MILLING SY	INCIDENTAL MILLING SY	INTERMEDIATE COURSE, I19.0C TONS	SURFACE COURSE, S9.5C TONS	PG 64-22 PLANT MIX TONS	PG 70-22 PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	PIPE COLLARS CY
R-5114B	Union	1	NC 218	FROM PAVT JOINT 250' EAST US 601 TO THE PAVT JOINT 500' WEST OF NC 205	1	10.93	23.5	180	30	16	24	12	3,275	21.86	2,000	1,600	903	29,800	15,375	1,401	923	5,465	3.5
<b>TOTAL FOR PROJ NO. R-5114B</b>						<b>10.93</b>		<b>180</b>	<b>30</b>	<b>16</b>	<b>24</b>	<b>12</b>	<b>3,275</b>	<b>21.86</b>	<b>2,000</b>	<b>1,600</b>	<b>903</b>	<b>29,800</b>	<b>15,375</b>	<b>1,401</b>	<b>923</b>	<b>5,465</b>	<b>3.5</b>
<b>GRAND TOTAL</b>						<b>10.93</b>		<b>180</b>	<b>30</b>	<b>16</b>	<b>24</b>	<b>12</b>	<b>3,275</b>	<b>21.86</b>	<b>2,000</b>	<b>1,600</b>	<b>903</b>	<b>29,800</b>	<b>15,375</b>	<b>1,401</b>	<b>923</b>	<b>5,465</b>	<b>3.5</b>

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	LENGTH MI	WIDTH FT	6" DRIVEWAYS SY	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA	STEEL BEAM GUARDRAIL LF	GUARDRAIL ANCHOR UNITS, TYPE III MODIFIED EA	GUARDRAIL ANCHOR UNITS, TYPE 350 EA	REMOVE EXISTING GUARDRAIL LF	TEMPORARY SILT FENCE LF	STONE FOR EROSION CONTROL, CLASS B TONS	SEDIMENT CONTROL STONE TONS	MATTING FOR EROSION CONTROL SY	WATTLE LF	POLYACRYLAMIDE (PAM) LBS	SEED & MULCHING AC
R-5114B	Union	1	NC 218	FROM PAVT JOINT 250' EAST US 601 TO THE PAVT JOINT 500' WEST OF NC 205	1	10.93	23.5	725	1	1	800	3	7	125	200	500	150	1,500	2,800	30.0	11.0
<b>TOTAL FOR PROJ NO. R-5114B</b>						<b>10.93</b>		<b>725</b>	<b>1</b>	<b>1</b>	<b>800</b>	<b>3</b>	<b>7</b>	<b>125</b>	<b>200</b>	<b>500</b>	<b>150</b>	<b>1,500</b>	<b>2,800</b>	<b>30.0</b>	<b>11.0</b>
<b>GRAND TOTAL</b>						<b>10.93</b>		<b>725</b>	<b>1</b>	<b>1</b>	<b>800</b>	<b>3</b>	<b>7</b>	<b>125</b>	<b>200</b>	<b>500</b>	<b>150</b>	<b>1,500</b>	<b>2,800</b>	<b>30.0</b>	<b>11.0</b>

### THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	4589000000-N TRAFFIC CONTROL LS	4685000000-E 4" X 90 M WHITE THERMO LF	4686000000-E 4" X 120 M YELLOW THERMO LF	4710000000-E 24" X 120 M WHITE THERMO LF	4721000000-E THERMO MSG STOP 120 M EA	4810000000-E 4" YELLOW PAINT LF	4900000000-N YELLOW & YELLOW MARKERS EA
R-5114B	Union	1	NC 218	FROM PAVT JOINT 250' EAST US 601 TO THE PAVT JOINT 500' WEST OF NC 205	1	118,000	115,350	400	8	111,000	800
<b>TOTAL FOR PROJ NO. R-5114B</b>					<b>1</b>	<b>118,000</b>	<b>115,350</b>	<b>400</b>	<b>8</b>	<b>111,000</b>	<b>800</b>
<b>GRAND TOTAL</b>					<b>1</b>	<b>118,000</b>	<b>115,350</b>	<b>400</b>	<b>8</b>	<b>111,000</b>	<b>800</b>

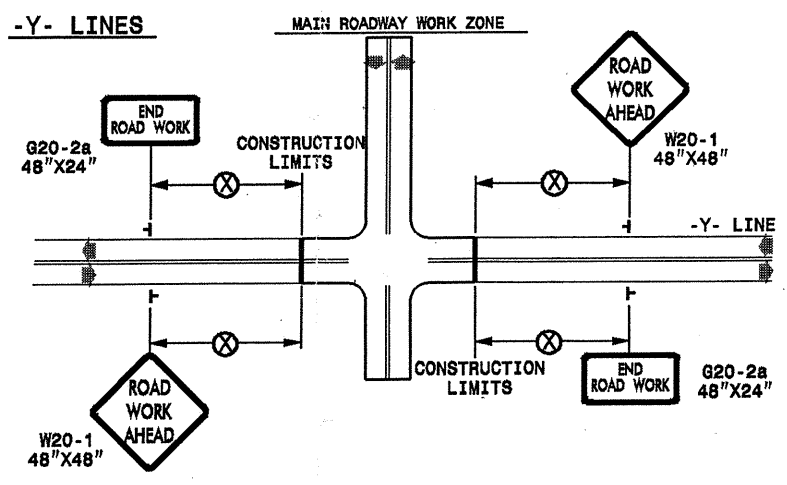
**TWO-WAY UNDIVIDED \*\* (L-LINES)**



POSTED SPEED LIMIT (M.P.H.)	RECOMMENDED MINIMUM SIGN SPACING
≤ 50	500'
≥ 55	1000'

STATE OF NORTH CAROLINA  
 DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.

**ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)**



**GENERAL NOTES**

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.
- \*\* TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

**LEGEND**

┌ STATIONARY SIGN

▬ DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1

DETAIL DRAWING FOR  
 TWO-WAY UNDIVIDED  
 WORK ZONE WARNING SIGNS

APPROVED: _____ DATE: _____	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS		REVISIONS	
SEAL			SCALE: NONE	7-98
	DWG. BY:	10-98	03/04	
	DESIGN BY:	01/01	11/04	
	REVIEWED BY:			

23-MAR-2009 12:17 P:05:55:39 c:\working\030509\resurfacing\2009\div10\c202295-422973st2\_r-5114b\_2way\_undiv\_&\_urban\_freways\_stationary.dgn  
 0101121 AT 10:22:53

**PROJECT: R-5114B**

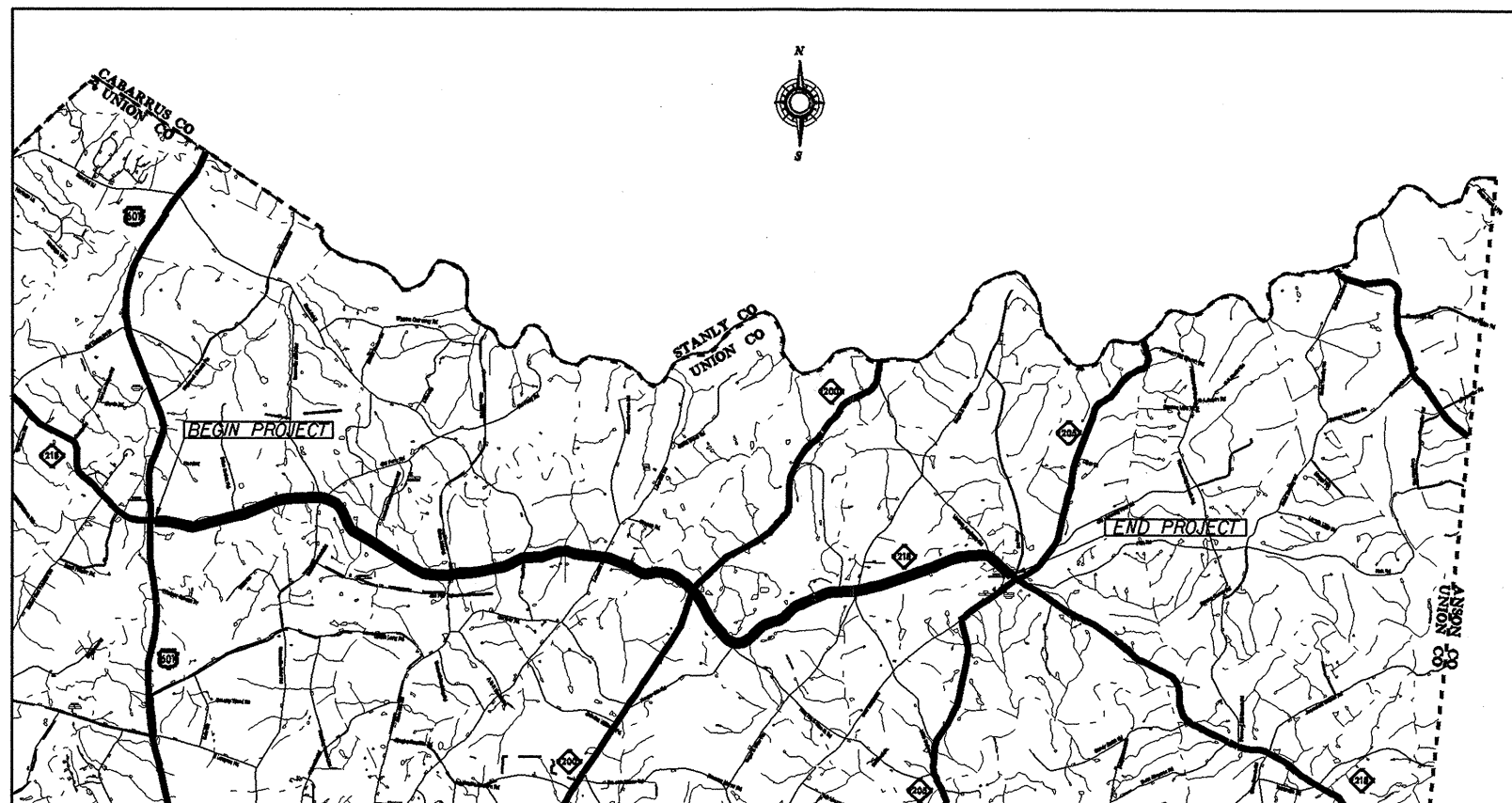
STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
 PLAN FOR PROPOSED  
 HIGHWAY EROSION CONTROL  
**UNION CO.**

*Description: NC 218 FROM THE PAV'T JOINT APPROX. 250' EAST OF US 601  
 TO THE PAV'T JOINT 500' WEST OF NC 205 (SECTION B)*

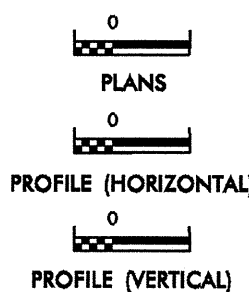
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5114B	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
42297.3.ST2	STM-0218(9)	CONST.	

**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
	Reforestation	XXXX
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1622.01	Temporary Berms and Slope Drains	T
1630.01	Silt Basin Type A	⊙
1630.02	Silt Basin Type B	///
1633.01	Temporary Rock Silt Check Type-A	⊗
1633.02	Temporary Rock Silt Check Type-B	⊗
1634.01	Temporary Rock Sediment Dam Type-A	▶
1634.02	Temporary Rock Sediment Dam Type-B	◻
1635.01	Rock Pipe Inlet Sediment Trap Type-A	⊕
1635.02	Rock Pipe Inlet Sediment Trap Type-B	⊕
1636.01	Rock Silt Screen	⊕
1630.04	Stilling Basin	⊕
	Rock Inlet Sediment Trap:	
1632.01	Type A	A □ OR A)
1632.02	Type B	B □ OR B)
1632.03	Type C	C □ OR C)
SP	Wattle	⌒



**GRAPHIC SCALE**



ROADSIDE ENVIRONMENTAL UNIT  
 DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA

P.E.  
 ROADSIDE ENVIRONMENTAL ENGINEER

Prepared In the Office of:  
**DDC UNIT DIVISION 10**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
**2006 STANDARD SPECIFICATIONS**

TERRY W. BURLESON                      141  
 EROSION CONTROL DESIGNER            LEVEL III-A CERTIFICATION #

**Roadway Standard Drawings**

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated July 18, 2006 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

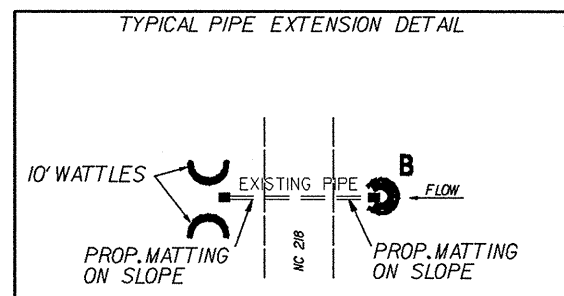
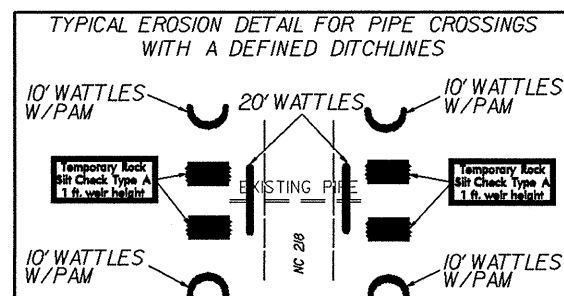
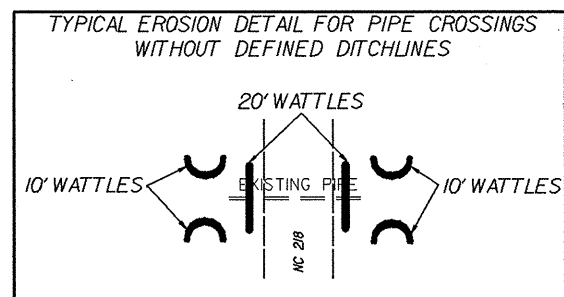
- |  |  |
|--|--|
| 1604.01 Railroad Erosion Control Detail  | 1630.06 Special Stilling Basin               |
| 1605.01 Temporary Silt Fence             | 1632.01 Rock Inlet Sediment Trap Type A      |
| 1606.01 Special Sediment Control Fence   | 1632.02 Rock Inlet Sediment Trap Type B      |
| 1607.01 Gravel Construction Entrance     | 1632.03 Rock Inlet Sediment Trap Type C      |
| 1622.01 Temporary Berms and Slope Drains | 1633.01 Temporary Rock Silt Check Type A     |
| 1630.01 Riser Basin                      | 1634.01 Temporary Rock Sediment Dam Type A   |
| 1630.02 Silt Basin Type B                | 1634.02 Temporary Rock Sediment Dam Type B   |
| 1630.03 Temporary Silt Ditch             | 1635.01 Rock Pipe Inlet Sediment Trap Type A |
| 1630.04 Stilling Basin                   | 1635.02 Rock Pipe Inlet Sediment Trap Type B |
| 1630.05 Temporary Diversion              |  |



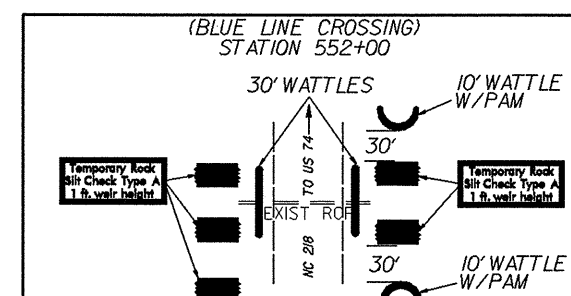
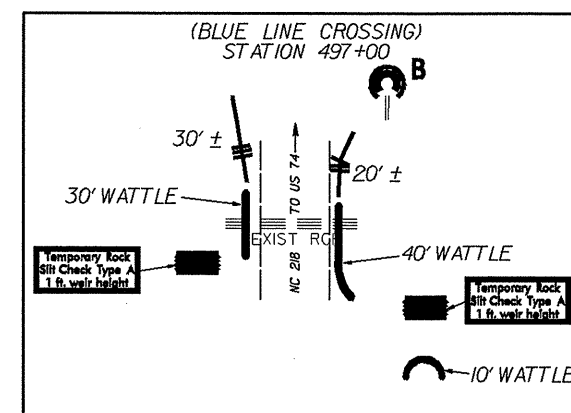
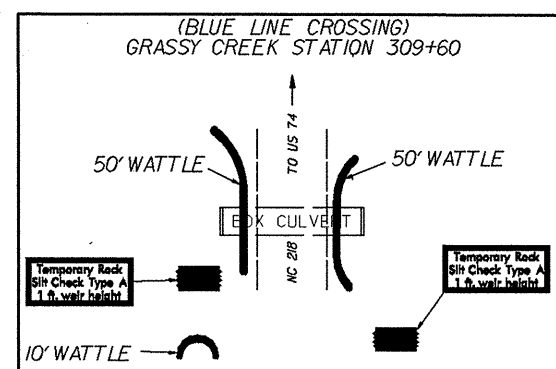
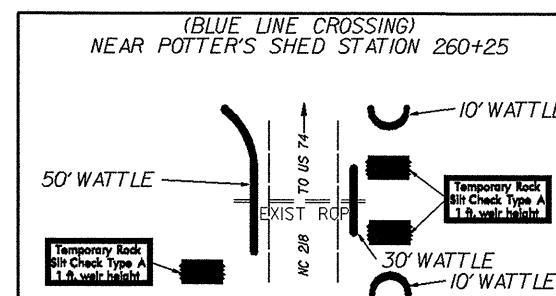
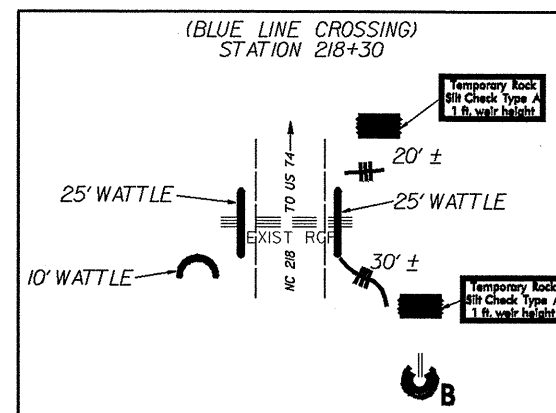
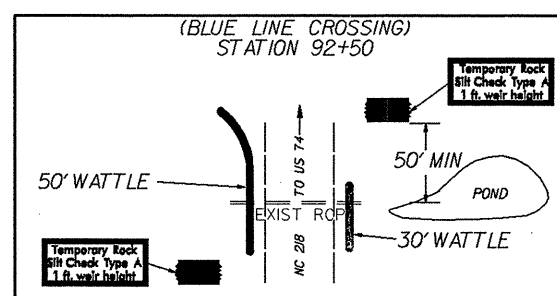
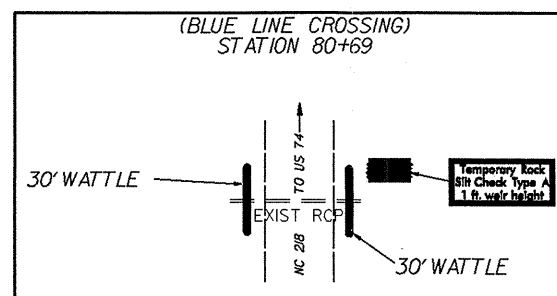
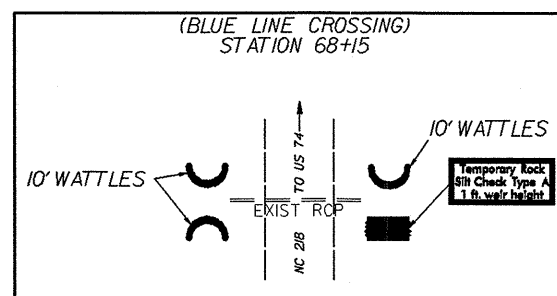
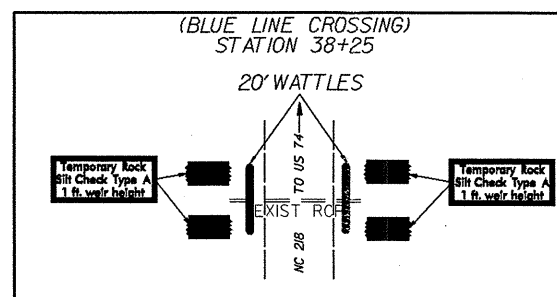
STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5114B	EC-2	
F.A. PROJECT NO. STM-0218(9)			

# EROSION DETAILS

## GENERAL DETAILS



## SITE SPECIFIC DETAILS



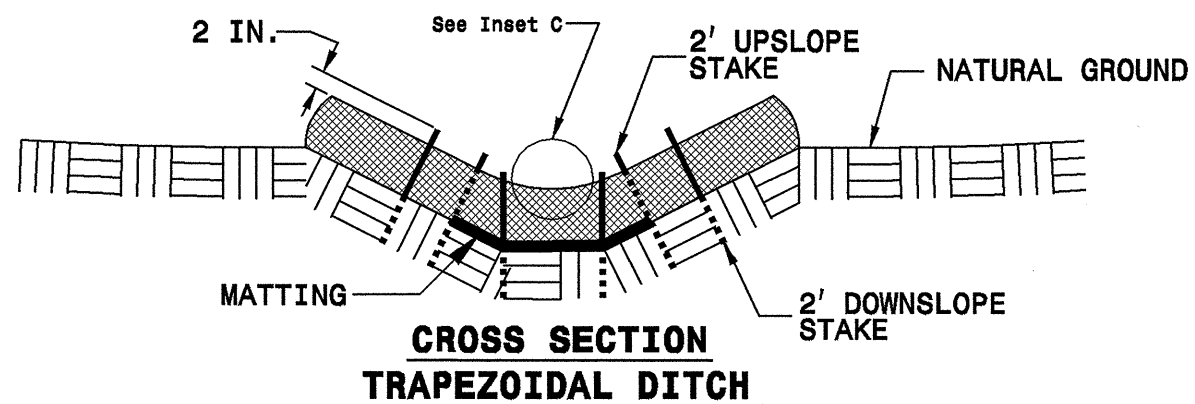
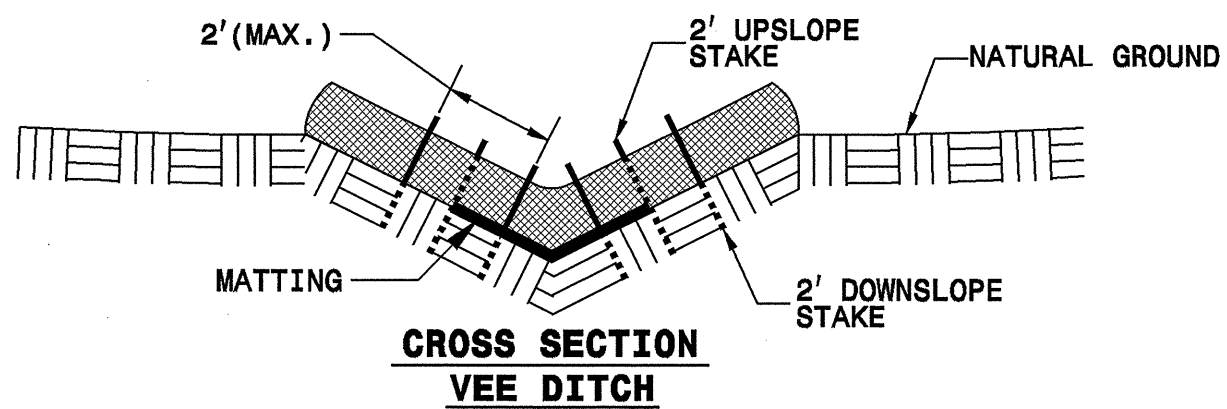
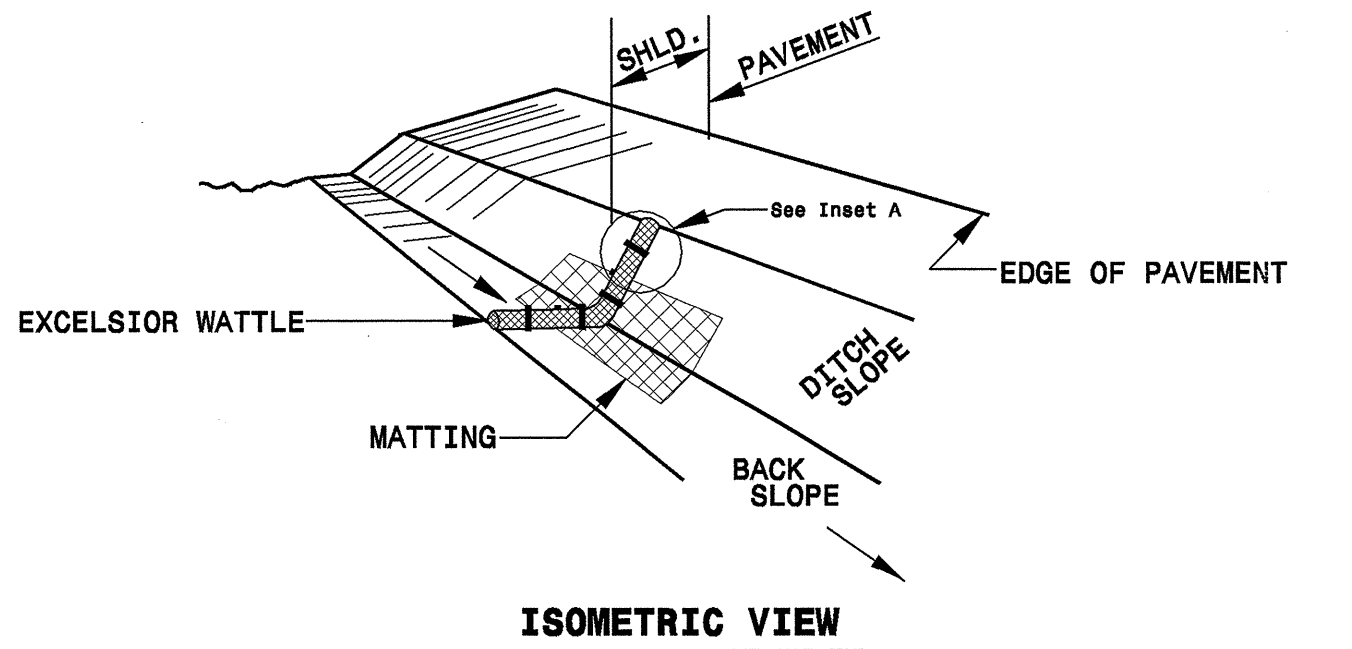
NOTES: FIELD MODIFICATIONS MAY BE NECESSARY AS DIRECTED BY THE ENGINEER.  
WATTLE LENGTHS MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.  
EROSION CONTROL MATTING SHALL BE USED IN THE CONSTRUCTION OF DITCHLINE WATTLES. SEE SHEET EC-3  
POLYACRYLAMIDE (PAM) SHOULD NOT BE USED ON WATTLES THAT WILL OUTLET DIRECTLY TO JURISDICTIONAL STREAMS.

NC 218 FROM THE PAV'T JOINT APPROX.  
250' EAST OF US 60 TO THE PAV'T JOINT  
500' WEST OF NC 205  
(SECTION B)

SCALE	-NA-		REVISIONS
DATE	03/09		
DWG. BY	TWB		
DESIGN BY	TWB		
APPROVED	RWB		

PROJECT REFERENCE NO. R-5114B	SHEET NO. EC-3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# WATTLE WITH POLYACRYLAMIDE DETAIL



**NOTES:**

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. CROSS SECTION.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

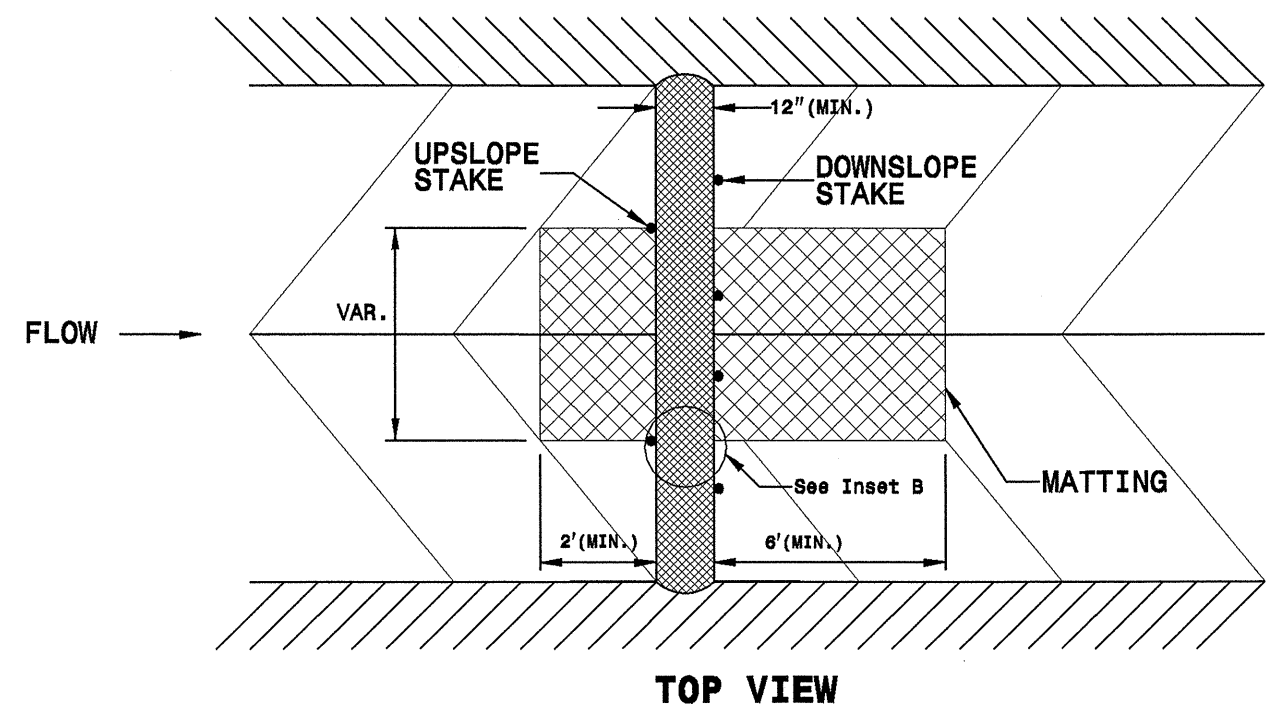
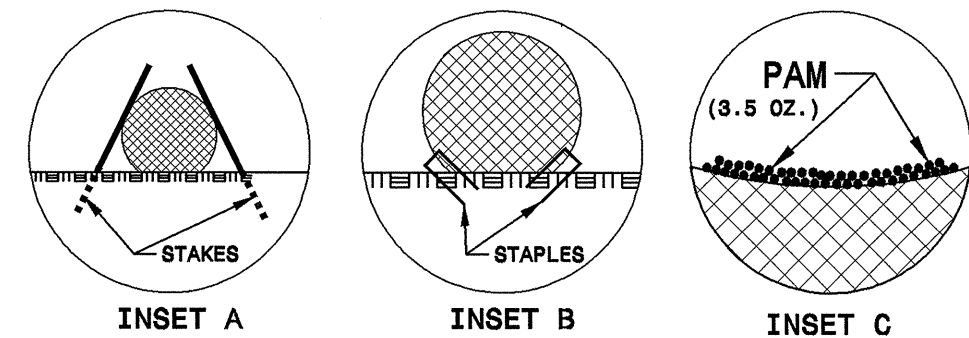
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

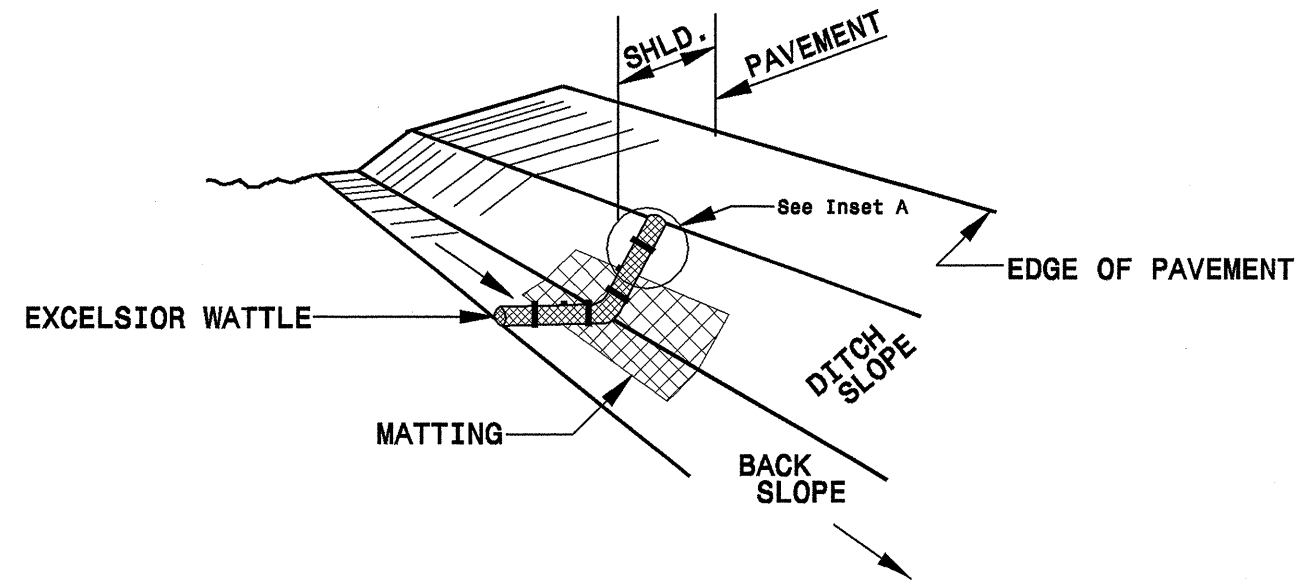
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 3.5 OUNCES OF ANIONIC OR NEUTRALLY CHARGED POLYACRYLAMIDE (PAM) OVER WATTLE WHERE WATER WILL FLOW AND AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

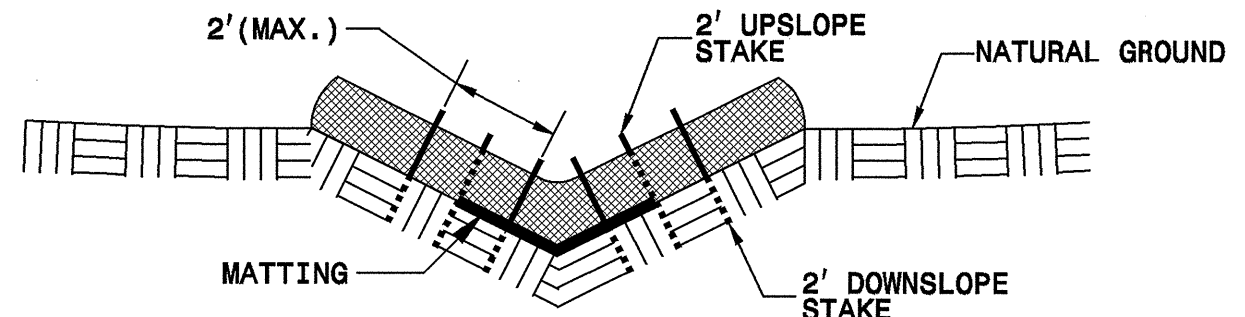


PROJECT REFERENCE NO. R-5114B	SHEET NO. EC-4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

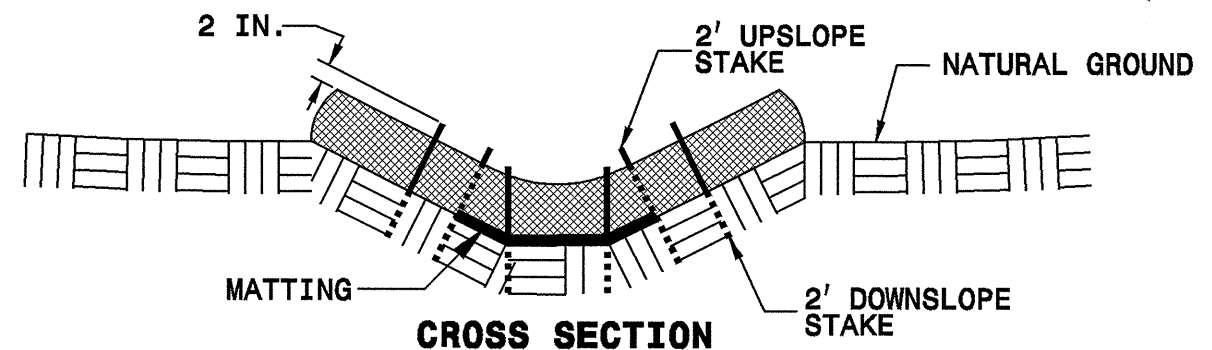
# WATTLE DETAIL



**ISOMETRIC VIEW**



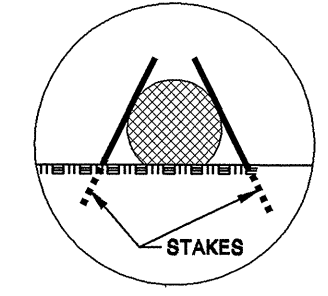
**CROSS SECTION VEE DITCH**



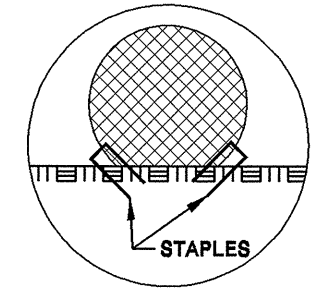
**CROSS SECTION TRAPEZOIDAL DITCH**

**NOTES:**

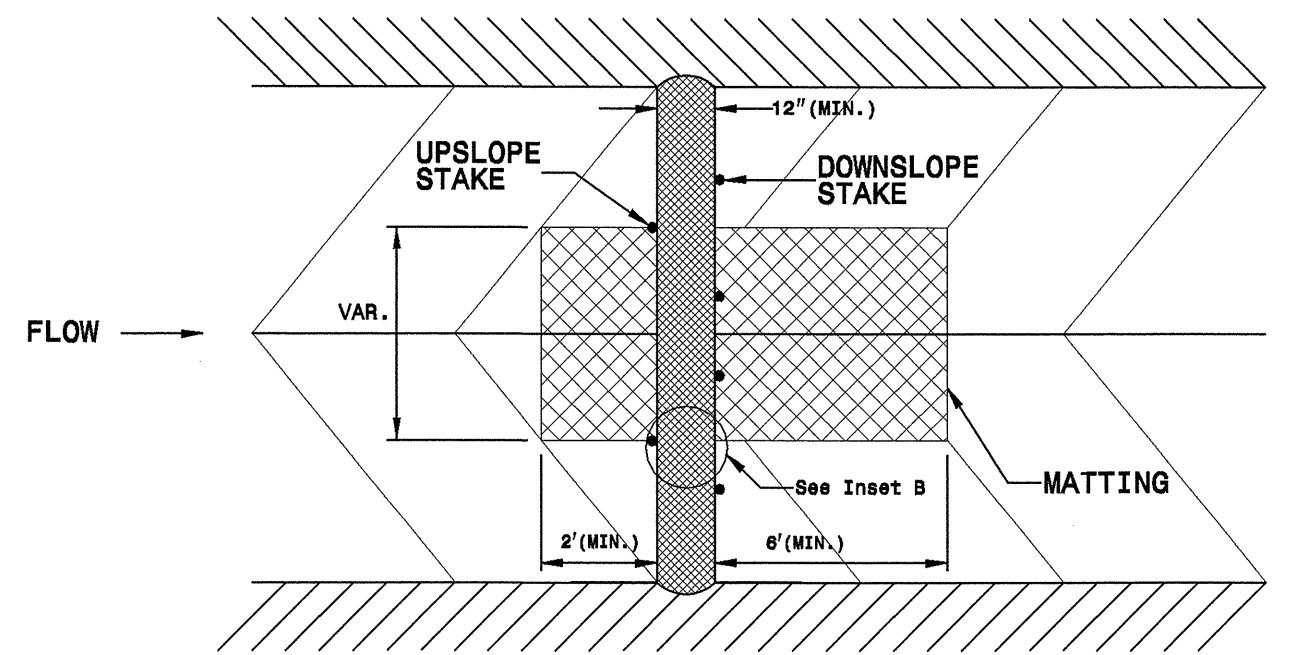
- USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
- PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT 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.



**INSET A**



**INSET B**



**TOP VIEW**