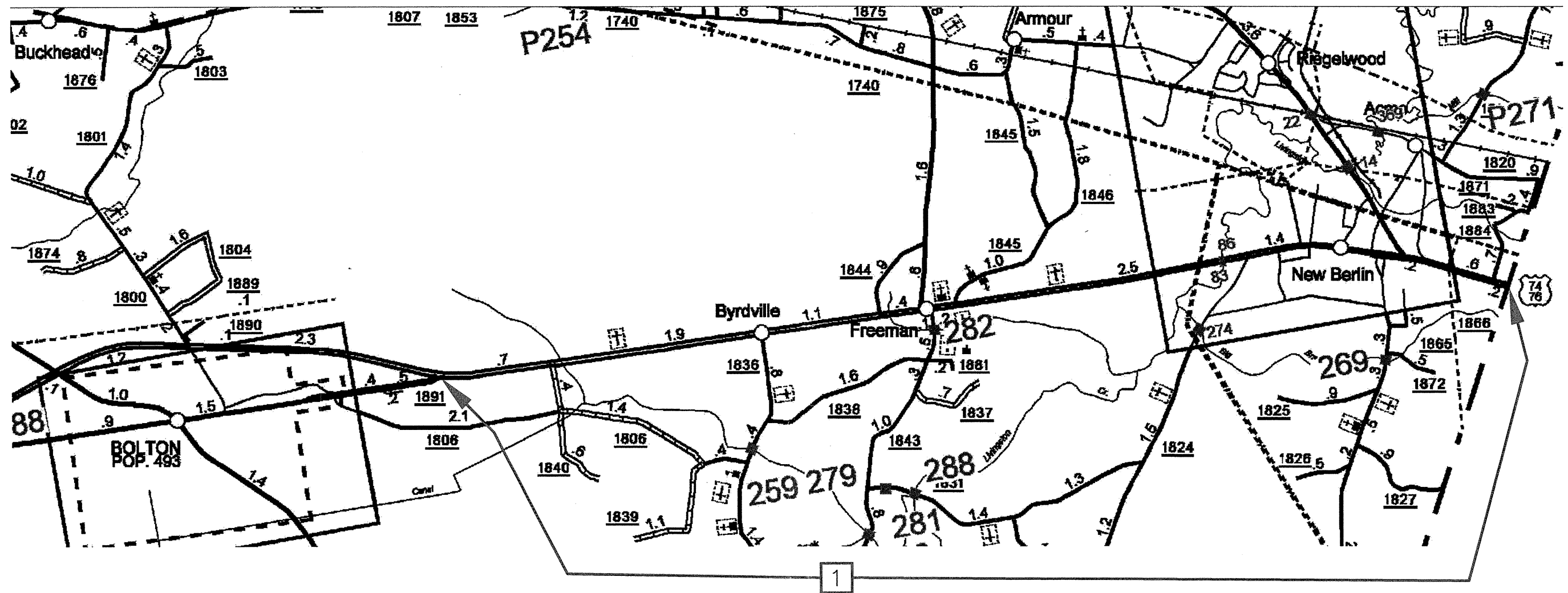
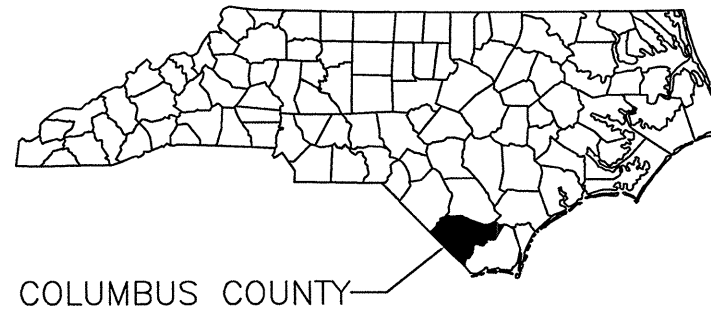


RESURFACING MAP – COLUMBUS COUNTY



10/26/98

PROJECT REFERENCE #	SHEET #
R-5507	1-A

2012 ROADWAY ENGLISH STANDARD DRAWINGS

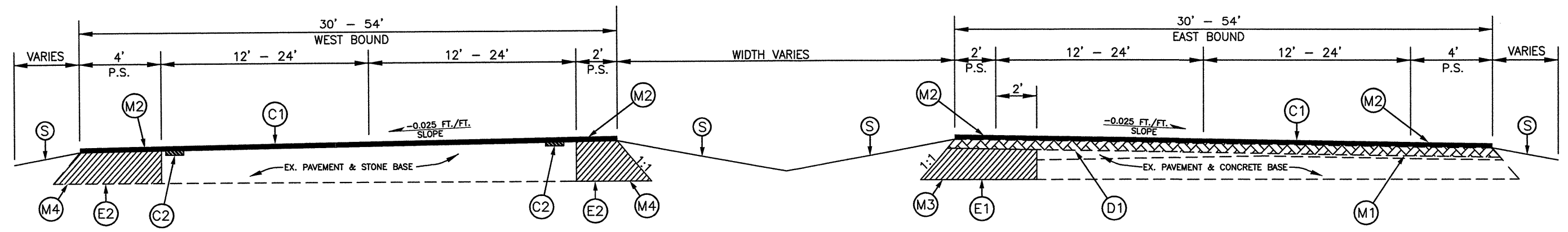
The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
300.01	Method of Pipe Installation
310.02	Parallel Pipe End Section - Precast Concrete Section for 15" to 24" Pipe
665.01	Asphalt Shoulders - Milled Rumble Strips
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.22	Frames and Wide Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.28	Brick Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.45	Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
852.01	Concrete Islands
852.10	Median Construction - with Curb and Gutter
862.02	Guardrail Installation
862.03	Structure Anchor Units

Other Standard Drawings

- 1205.01
- 1205.02
- 1205.03
- 1205.04
- 1205.05
- 1205.08
- 1205.10
- 1205.12
- 1250.01
- 1251.01
- 1262.01
- 1605.01
- 1631.01
- 1632.03

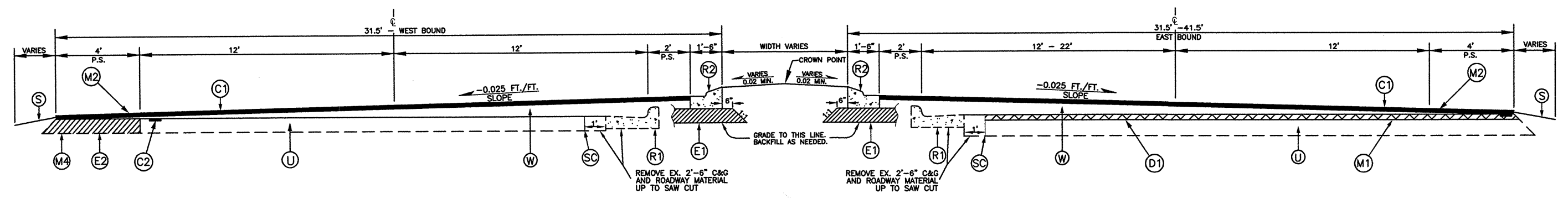
10/26/98



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
 -L- STA. 1085+00 TO -L- STA. 1301+95
 -L- STA. 1330+10 TO -L- STA. 1488+00

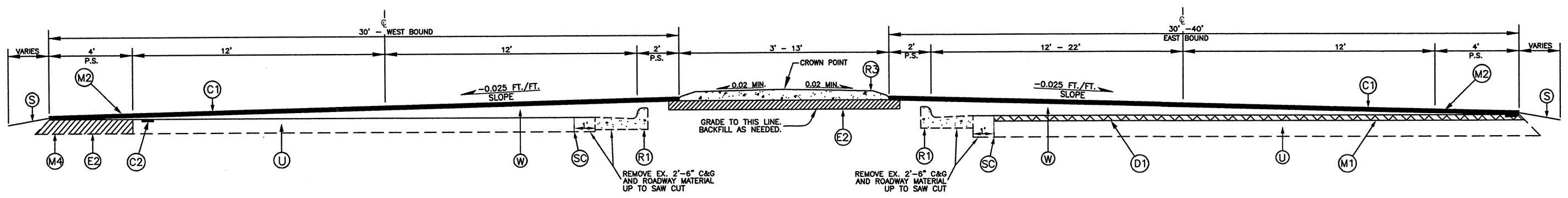
- NOTES:
1. INCLUDES MILLING ON ASPHALT BRIDGE DECKS & BRIDGE APPROACHES, AS NEEDED, OR AS DIRECTED BY THE ENGINEER. SEE DETAIL 2.
 2. INCLUDES INCIDENTAL MILLING AT THE ENDS OF SECTIONS FOR SMOOTH TIE-INS, CURB RADII, AND STREET INTERSECTIONS, AS NEEDED, OR AS DIRECTED BY THE ENGINEER. SEE DETAIL 3.



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
 -L- STA. 1301+95 TO -L- STA. 1304+45
 -L- STA. 1324+00 TO -L- STA. 1330+10

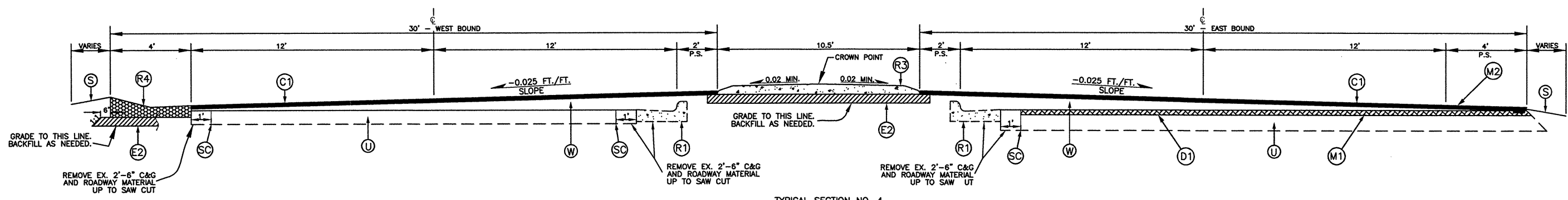
- NOTES:
1. INCLUDES REMOVAL OF EXISTING 2'-6" CURB & GUTTER, AND REPLACEMENT WITH NEW 1'-6" CURB & GUTTER. SEE CURB & GUTTER REPLACEMENT DETAIL.
 2. INCLUDES INCIDENTAL MILLING AT THE ENDS OF SECTIONS FOR SMOOTH TIE-INS, CURB RADII, AND STREET INTERSECTIONS, AS NEEDED, OR AS DIRECTED BY THE ENGINEER. SEE DETAIL 3.



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
 -L- STA. 1304+45 TO -L- STA. 1309+30
 -L- STA. 1321+50 TO -L- STA. 1324+00

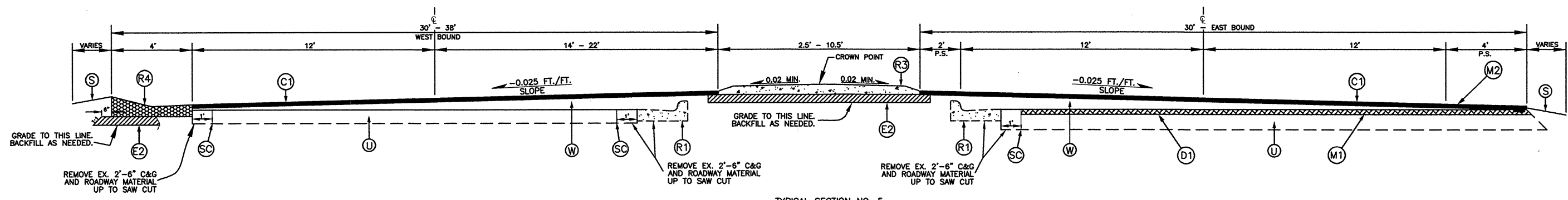
- NOTES:
1. INCLUDES REMOVAL OF EXISTING 2'-6" CURB & GUTTER, AND REPLACEMENT WITH NEW 5" MONOLITHIC CONCRETE ISLAND. SEE CURB & GUTTER REPLACEMENT WITH MONOLITHIC ISLAND DETAIL.
 2. INCLUDES INCIDENTAL MILLING AT THE ENDS OF SECTIONS FOR SMOOTH TIE-INS, CURB RADII, AND STREET INTERSECTIONS, AS NEEDED, OR AS DIRECTED BY THE ENGINEER. SEE DETAIL 3.



TYPICAL SECTION NO. 4

- NOTES:
1. INCLUDES REMOVAL OF EXISTING 2'-6" CURB & GUTTER, AND REPLACEMENT WITH NEW 5" MONOLITHIC CONCRETE ISLAND. SEE CURB & GUTTER REPLACEMENT WITH MONOLITHIC ISLAND DETAIL.
 2. INCLUDES REMOVAL OF EXISTING 2'-6" CURB & GUTTER, AND REPLACEMENT WITH NEW 4' EXPRESSWAY GUTTER. SEE CURB & GUTTER REPLACEMENT WITH 4' EXPRESSWAY GUTTER DETAIL.
 3. INCLUDES INCIDENTAL MILLING AT THE ENDS OF SECTIONS FOR SMOOTH TIE-INS, CURB RADII, AND STREET INTERSECTIONS, AS NEEDED, OR AS DIRECTED BY THE ENGINEER. SEE DETAIL 3.

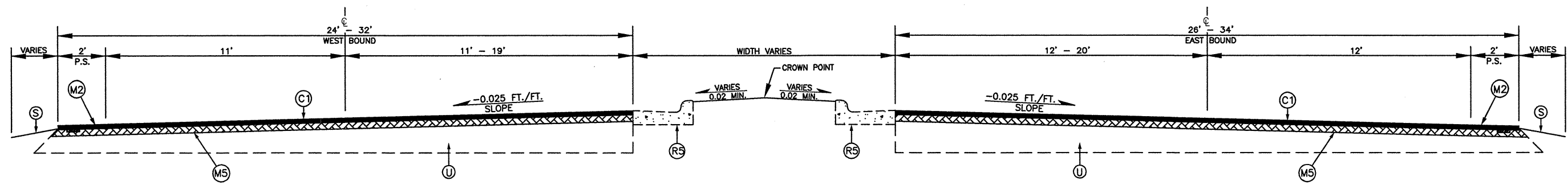
USE TYPICAL SECTION NO. 4
 -L- STA. 1309+30 TO -L- STA. 1312+05
 -L- STA. 1316+05 TO -L- STA. 1321+50



TYPICAL SECTION NO. 5

- NOTES:
1. INCLUDES REMOVAL OF EXISTING 2'-6" CURB & GUTTER, AND REPLACEMENT WITH NEW 5" MONOLITHIC CONCRETE ISLAND. SEE CURB & GUTTER REPLACEMENT WITH MONOLITHIC ISLAND DETAIL.
 2. INCLUDES REMOVAL OF EXISTING 2'-6" CURB & GUTTER, AND REPLACEMENT WITH NEW 4' EXPRESSWAY GUTTER. SEE CURB & GUTTER REPLACEMENT WITH 4' EXPRESSWAY GUTTER DETAIL.
 3. INCLUDES INCIDENTAL MILLING AT THE ENDS OF SECTIONS FOR SMOOTH TIE-INS, CURB RADII, AND STREET INTERSECTIONS, AS NEEDED, OR AS DIRECTED BY THE ENGINEER. SEE DETAIL 3.

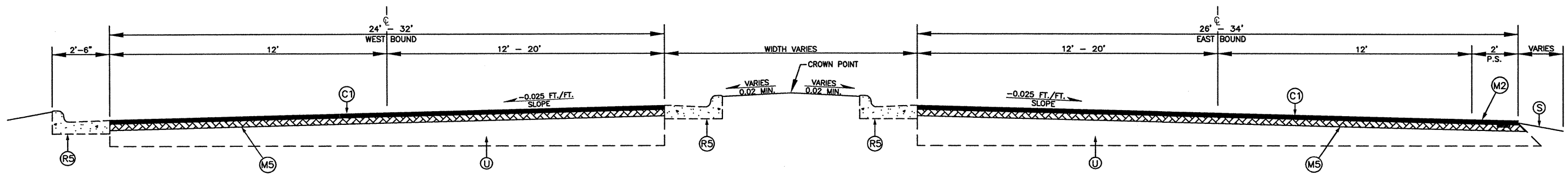
USE TYPICAL SECTION NO. 5
 -L- STA. 1312+05 TO -L- STA. 1316+05



TYPICAL SECTION NO. 6

- NOTES:
1. INCLUDES INCIDENTAL MILLING AT THE ENDS OF SECTIONS FOR SMOOTH TIE-INS, CURB RADII, AND STREET INTERSECTIONS, AS NEEDED, OR AS DIRECTED BY THE ENGINEER. SEE DETAIL 3.

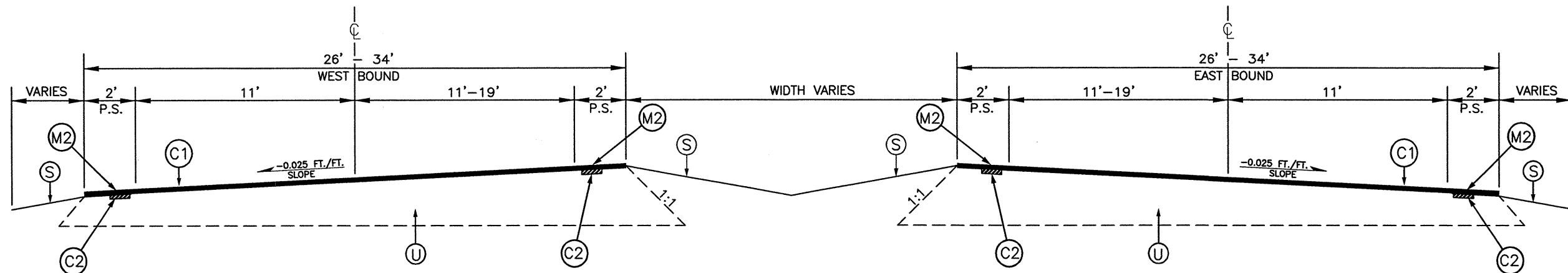
USE TYPICAL SECTION NO. 6
 -L- STA. 1488+00 TO -L- STA. 1496+50
 -L- STA. 1533+40 TO -L- STA. 1550+75



TYPICAL SECTION NO. 7

NOTES:
1. INCLUDES INCIDENTAL MILLING AT THE ENDS OF SECTIONS FOR SMOOTH TIE-INS, CURB RADII, AND STREET INTERSECTIONS, AS NEEDED, OR AS DIRECTED BY THE ENGINEER. SEE DETAIL 3.

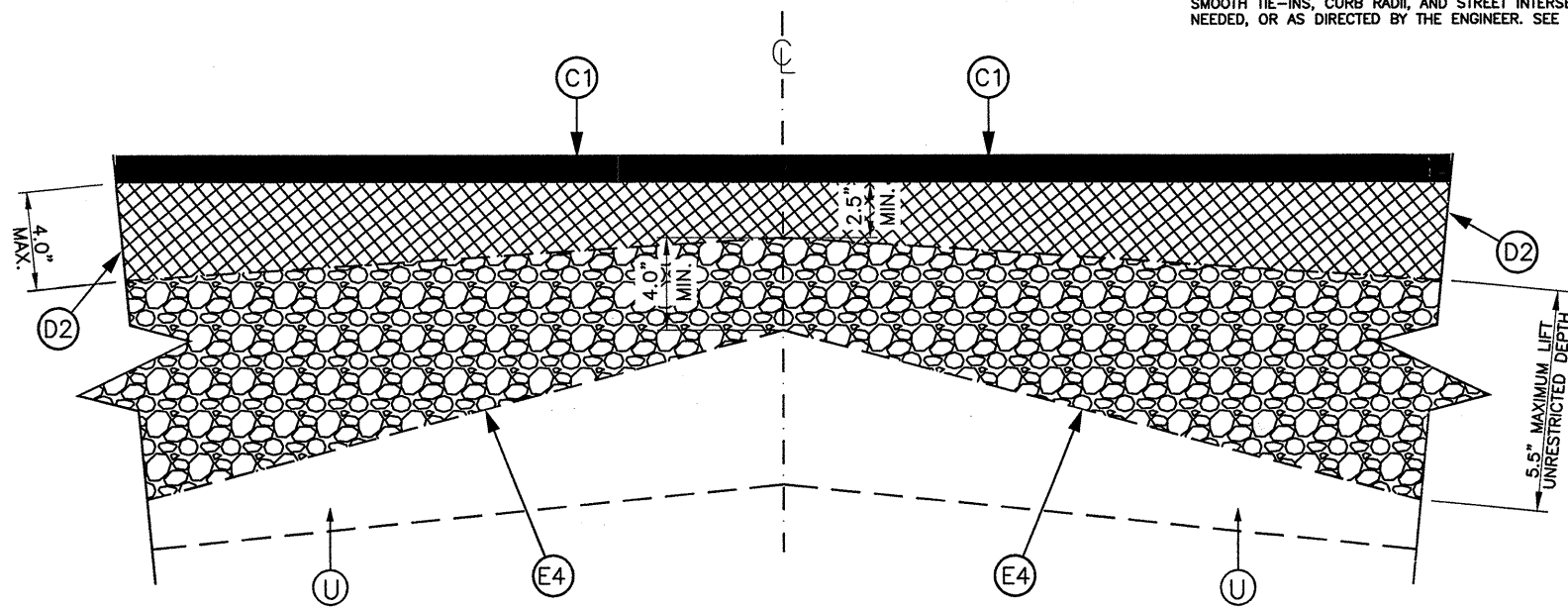
USE TYPICAL SECTION NO. 7
-L- STA. 1496+50 TO -L- STA. 1533+50



TYPICAL SECTION NO. 8

NOTES:
1. INCLUDES INCIDENTAL MILLING AT THE ENDS OF SECTIONS FOR SMOOTH TIE-INS, CURB RADII, AND STREET INTERSECTIONS, AS NEEDED, OR AS DIRECTED BY THE ENGINEER. SEE DETAIL 3.

USE TYPICAL SECTION NO. 8
-L- STA. 1550+75 TO -L- STA. 1592+50

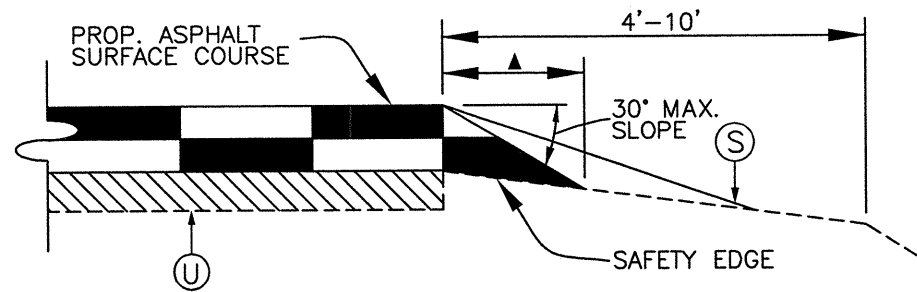


WEDGING DETAIL



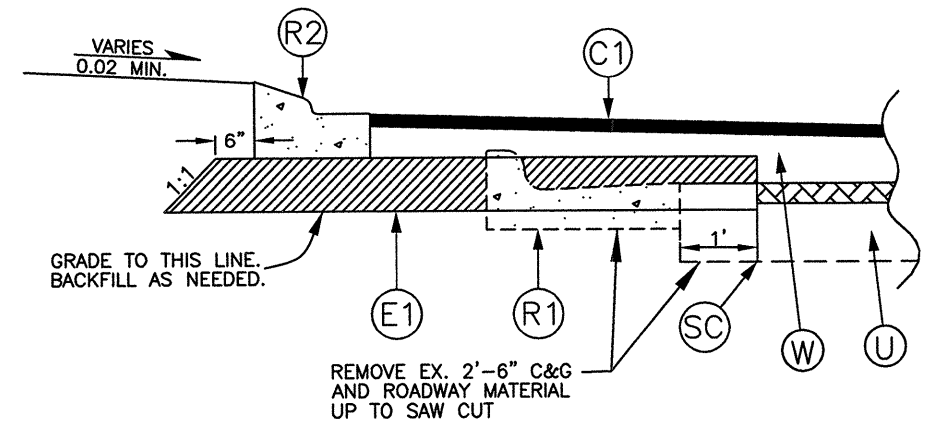
DETAIL 2
MILLING APPROACHES

NOTE:
MILLING SHALL BE PERFORMED AT BRIDGE APPROACHES AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THIS DETAIL.

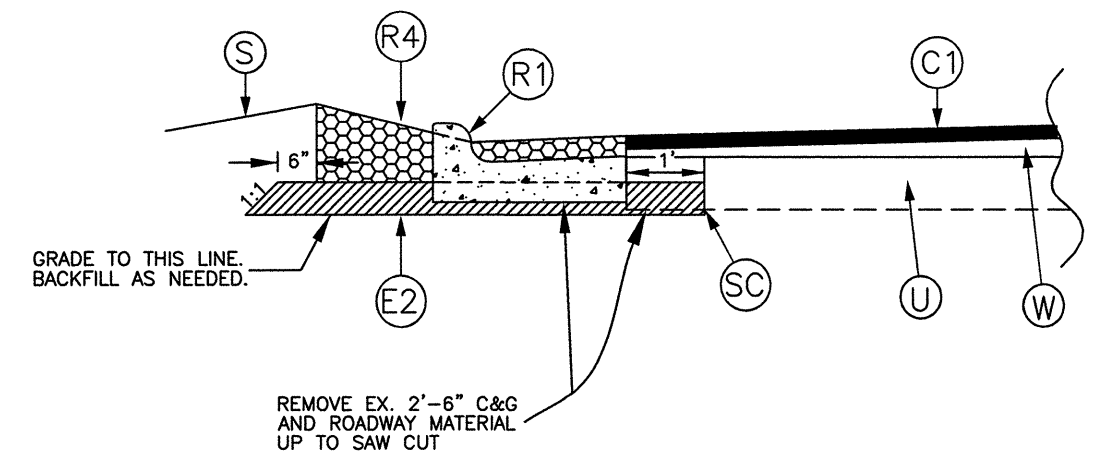


DETAIL 1
SHOULDER WEDGE / SAFETY EDGE

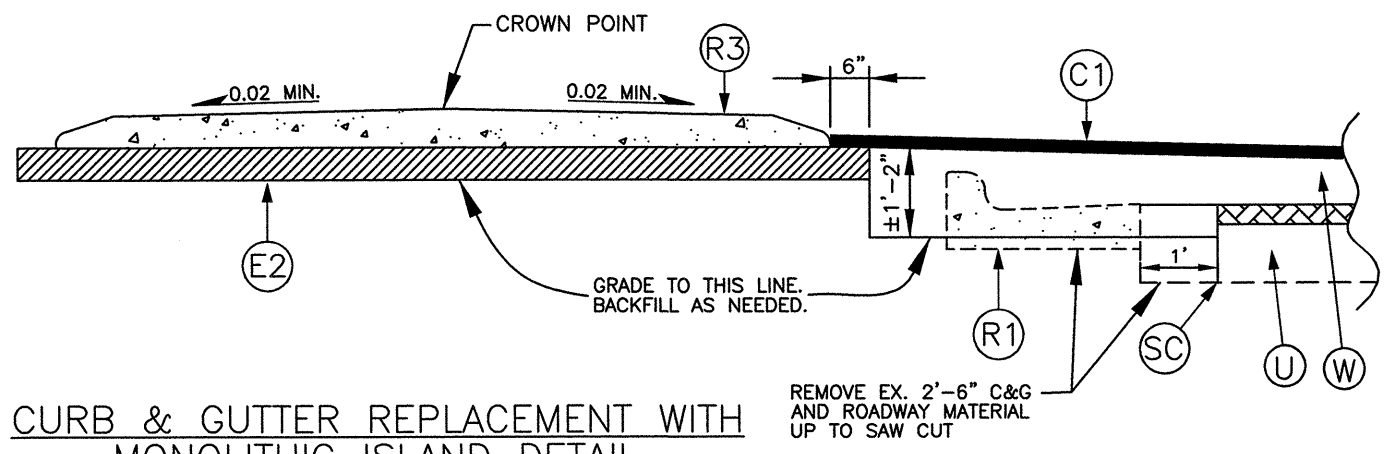
- NOTE:
1. SAFETY EDGE SHALL BE CONSTRUCTED AS PART OF THE ROADWAY PAVEMENT. A SHOULDER WEDGE DEVICE SHALL BE ADDED TO THE SCREED OF THE PAVING MACHINE.
 2. SAFETY EDGE SHALL BE INCLUDED ON ALL TYPICALS EXCEPT FOR CURB & GUTTER SECTIONS, OR AS DIRECTED OTHERWISE BY ENGINEER.
 3. SAFETY EDGE SHALL BE USED ON THE SURFACE LAYER ONLY.
 4. SAFETY EDGE MAY BE CONSTRUCTED BY HAND WHEN NECESSARY FOR TRANSITIONS AND TURNOUTS.
 5. THE CONSTRUCTION OF THE SAFETY EDGE, AS WELL AS ANY ADDITIONAL SITE PREPARATION OR EARTHWORK REQUIRED, WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE ASPHALT CONCRETE SURFACE COURSE.



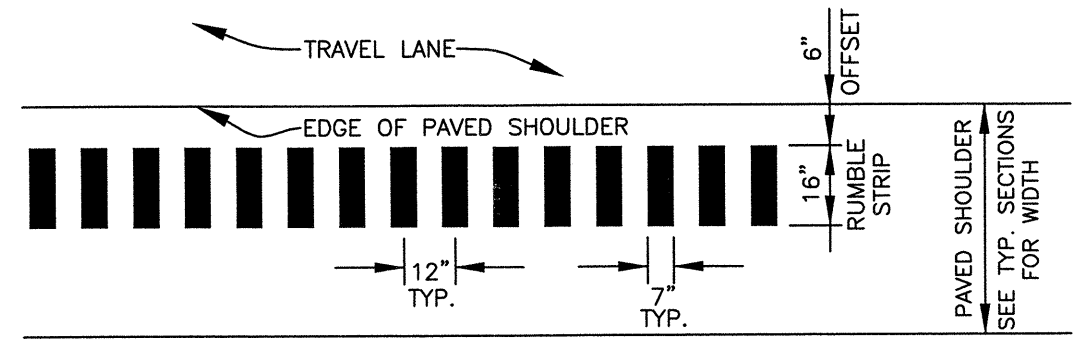
CURB & GUTTER REPLACEMENT DETAIL



CURB & GUTTER REPLACEMENT WITH 4' EXPRESSWAY GUTTER DETAIL

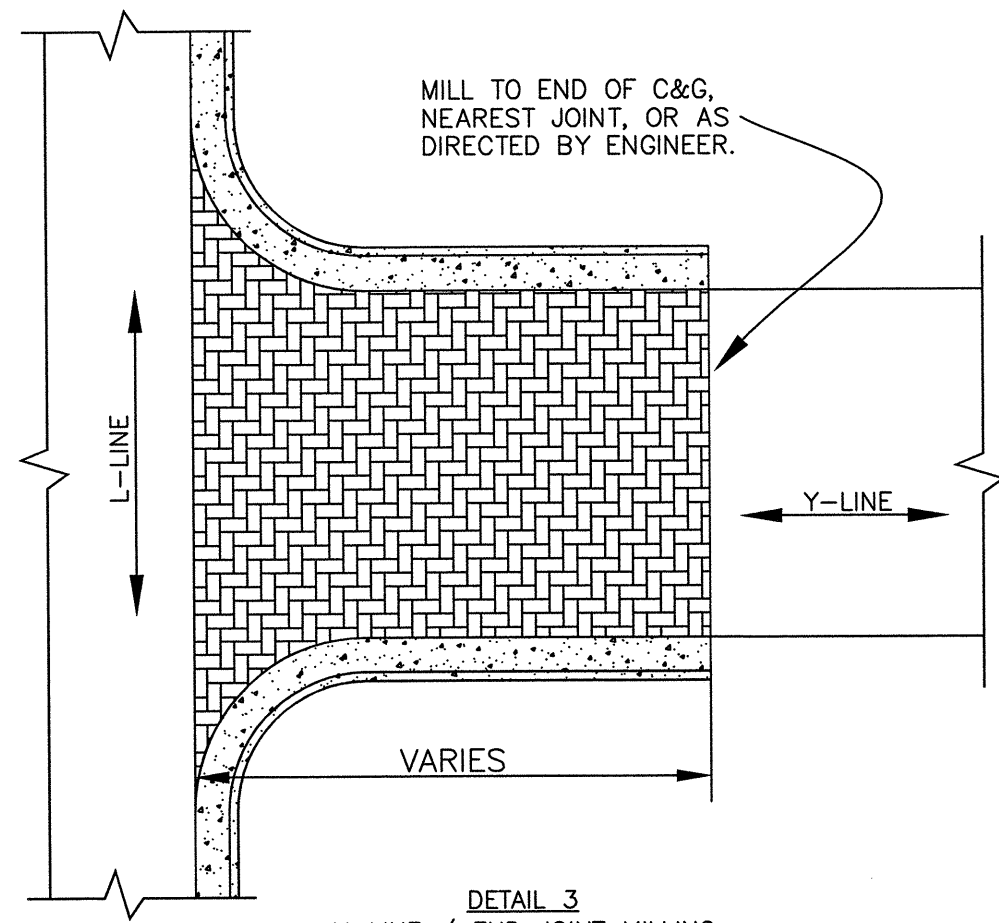


CURB & GUTTER REPLACEMENT WITH MONOLITHIC ISLAND DETAIL

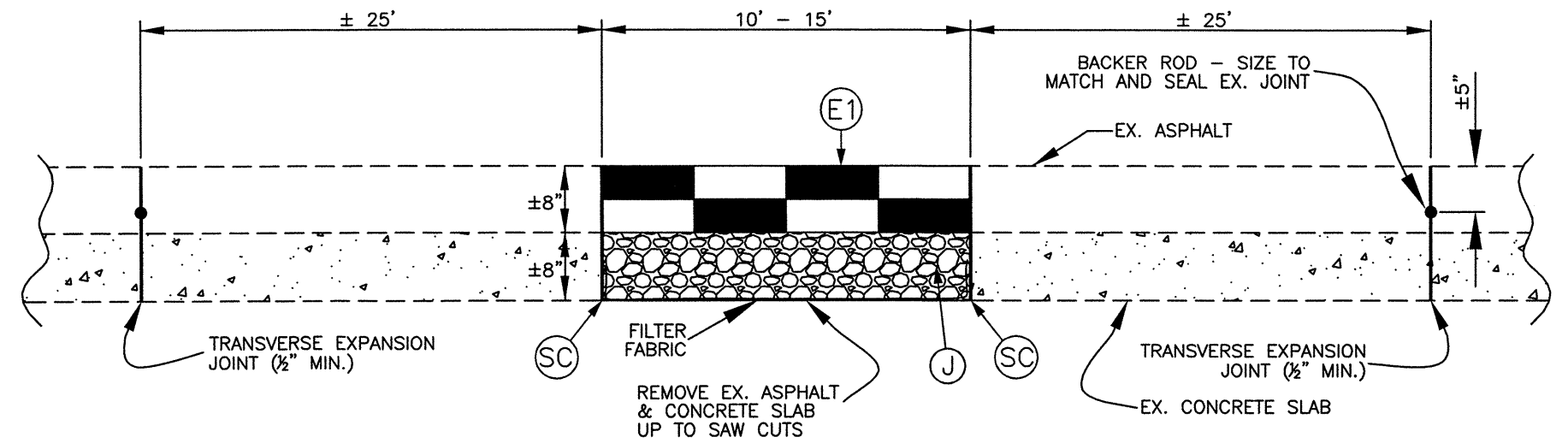


DETAIL 4
PAVED SHOULDER - PLAN VIEW

NOTE:
REFER TO STD. DWG. NO. 665.01 - "ASPHALT SHOULDERS MILLED RUMBLE STRIPS", IN THE NCDOT ROADWAY STANDARD DRAWINGS, LATEST EDITION, FOR ADDITIONAL INFORMATION.



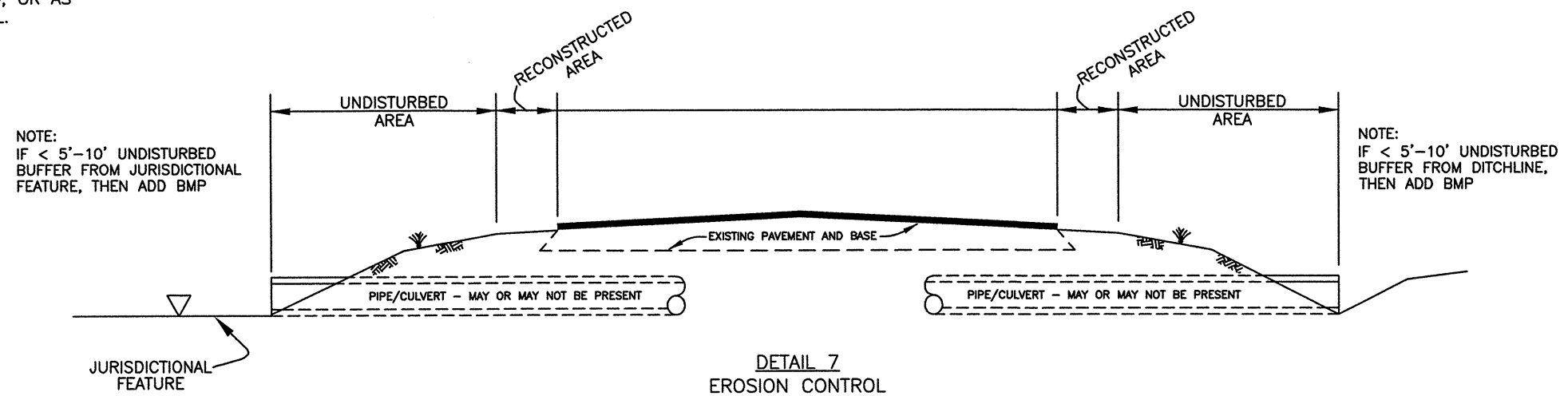
NOTE: INCLUDES INCIDENTAL MILLING AT THE ENDS OF SECTIONS FOR SMOOTH TIE-INS, CURB RADII, AND STREET INTERSECTIONS, AS NEEDED, OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THIS DETAIL.



EXISTING CRACK REPAIR DETAIL

NOTES:

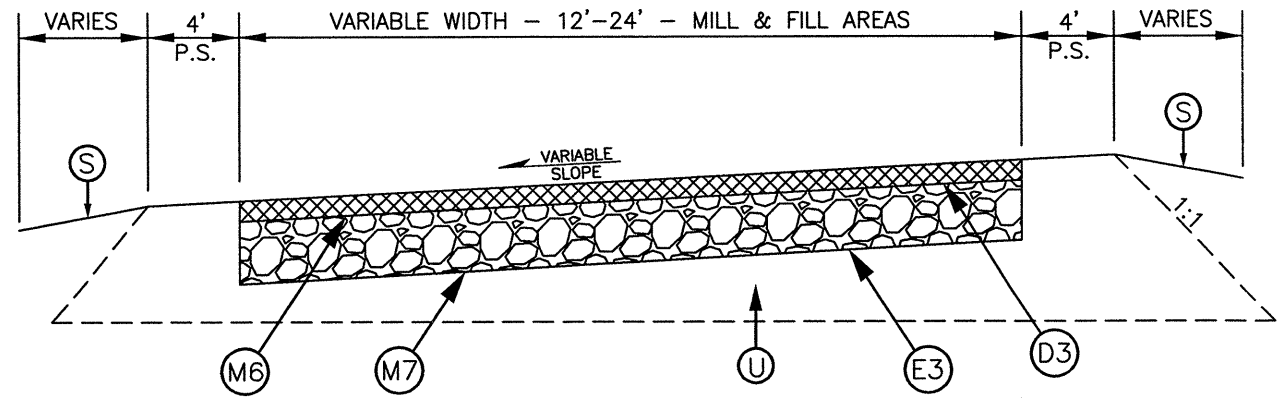
- Cracks to be repaired are major, transverse cracks that extend from edge of pavement to edge of pavement. They will be designated by the Engineer in the field.
- Total crack repair width shall be 10' minimum, up to 15' maximum.
- Saw cut joints on each side of the area to be repaired to the bottom of the concrete slab. This work shall be considered incidental to the cost of the repair.
- Remove all material to the bottom of the existing concrete slab.
- Line the bottom of the trench with filter fabric. This work shall be considered incidental to the cost of the repair.
- Install aggregate base course flush with the top of the existing concrete slab.
- Saw cut transverse expansion joints, 1/2" wide min., approximately 25' from the edge of the crack repair in each direction. Joint should extend to the bottom of the concrete slab. The actual location of the joint will be designated by the Engineer in the field. This work shall be considered incidental to the cost of the repair.
- Install backer rod approx. 5" below surface. Size of rod shall be based on actual width of joint to ensure a tight seal. This backer rod shall be considered incidental to the cost of the repair.



**DETAIL 7
EROSION CONTROL**

NOTES:

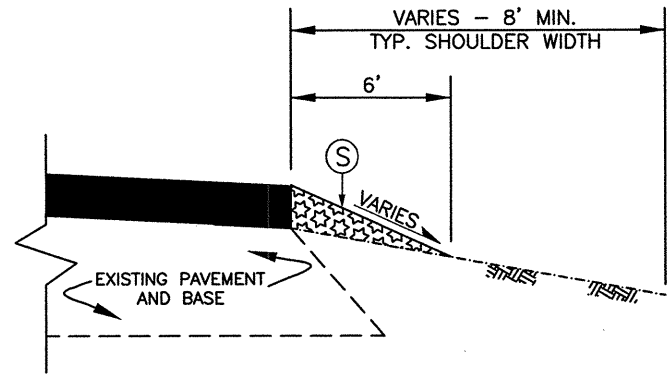
- IF A 5'-10' VEGETATED, UNDISTURBED BUFFER FROM ROW, DITCHLINE, WATER FEATURE OR DRAINAGE INLET CAN BE MAINTAINED, THEN NO BMP'S NEEDED.
- IF < 5'-10' UNDISTURBED BUFFER FROM ROW, DITCHLINE, WATER FEATURE OR DRAINAGE INLET, THEN ADD BMP'S.
- BMP OPTIONS:
 - MATting MAY BE APPLIED AS SHOWN IN NCDOT STD. DWG. 1631.01 TO ESTABLISH BUFFER.
 - IF MATting IS NOT PRACTICAL, OR THERE IS NOT ENOUGH SHOULDER WIDTH, THEN INSTALL TEMPORARY SILT FENCE AS SHOWN IN NCDOT STD. DWG. 1605.01, AND WATTLES WITH POLYACRYLAMIDE (PAM).



DETAIL 5
MILL & FILL PATCHING

NOTE:

1. DISTRESSED AREAS TO BE MILL & FILL PATCHED SHALL BE DESIGNATED BY THE ENGINEER.
2. SOME AREAS MAY REQUIRE MILLING ONLY TO A DEPTH OF 2½". OTHERS MAY REQUIRE MILLING AN ADDITIONAL 6½". MILLING REQUIREMENTS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD, AS CONDITIONS WARRANT.
3. FILL MILLED AREAS WITH ASPHALT BASE COURSE, AS NEEDED, AND ASPHALT INTERMEDIATE COURSE BACK FLUSH WITH THE EXISTING ASPHALT LEFT IN PLACE, PRIOR TO PLACEMENT OF PROPOSED ASPHALT SURFACE COURSE.



DETAIL 8
SHOULDER RECONSTRUCTION

NOTES:

1. SHOULDER SHALL BE RECONSTRUCTED FROM THE EDGE OF PAVEMENT OUT TO A WIDTH OF 6', WITH A VARIABLE SLOPE, TYING BACK INTO THE EXISTING SHOULDER. REFER TO ROADWAY STD. DWG. 560.01 FOR MORE DETAIL.
2. THE EXISTING SHOULDER SHALL BE SCARIFIED PRIOR TO ADDING BORROW MATERIAL TO PROVIDE A GOOD BOND BETWEEN LAYERS. SHOULDER SHALL BE PROPERLY COMPACTED AFTER SOIL PLACEMENT.
3. BORROW MATERIAL SHALL BE PLACED USING A WIDENING MACHINE OR SIMILAR DEVICE.
4. A VEGETATIVE BUFFER SHALL BE MAINTAINED BETWEEN THE DISTURBED AREA ALONG THE EDGE OF PAVEMENT AND THE DITCH SHOULDER POINT TO MINIMIZE EROSION. PULLING DITCHES OR CUTTING SHOULDERS TO GENERATE BORROW MATERIAL WILL NOT BE ALLOWED.
5. REQUIRED BORROW MATERIAL MAY BE OBTAINED BY THE CONTRACTOR FROM WIDENING OPERATIONS WITHIN THE PROJECT LIMITS, FROM NCDOT APPROVED BORROW PITS OR FROM NCDOT STOCKPILES. ANY EXCESS MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR IN AN APPROVED DISPOSAL SITE.

PAVEMENT SCHEDULE

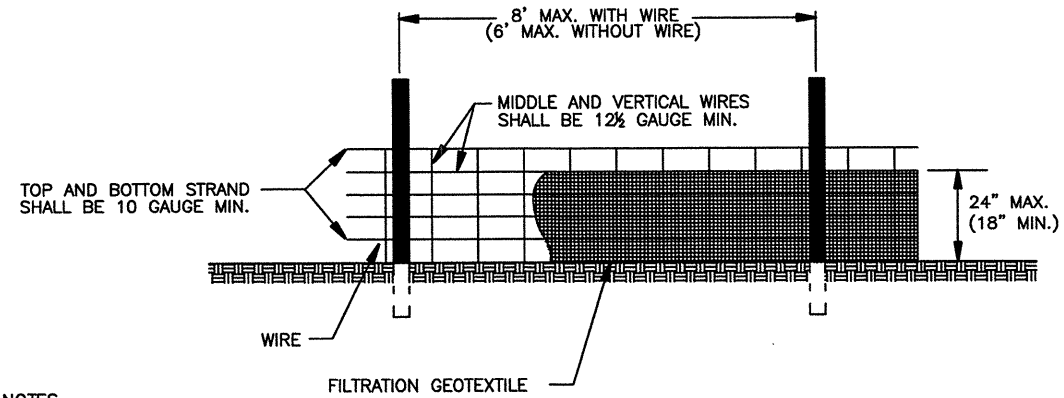
C1	Proposed approximately 2" of Asphalt Concrete Surface Course, Type S-9.5-C, at an average rate of 224 pounds per square yard.
C2	Proposed approximately ½" of Asphalt Concrete Surface Course, Type S-4.75-A, at an average rate of 50 pounds per square yard, for filling existing Milled Rumble Strips prior to placement of C1.
D1	Proposed approximately 3" of Asphalt Concrete Intermediate Course, Type I-19.0-C, at an average rate of 342 pounds per square yard.
D2	Proposed variable depth Asphalt Concrete Intermediate Course, Type I-19.0-C, at an average rate of 114 lbs. per sq. yd. per 1" depth, to be placed in layers not less than a depth of 2½", nor greater than 4" in depth, with a max. total depth of 4.0".
D3	Proposed approximately 2½" of Asphalt Concrete Intermediate Course, Type I-19.0-C, at an average rate of 285 pounds per square yard.
E1	Proposed approximately 8" of Asphalt Concrete Base Course, Type B-25.0-C, placed in two lifts of 4" each, at an average rate of 456 pounds per square yard per lift, for standard widening.
E2	Proposed approximately 5½" of Asphalt Concrete Base Course, Type B-25.0-C, at an average rate of 627 pounds per square yard for standard widening.
E3	Proposed approximately 6½" of Asphalt Concrete Base Course, Type B-25.0-C, placed in two lifts of 3¼" each, at an average rate of 370.5 pounds per square yard per lift.
E4	Proposed variable depth Asphalt Concrete Base Course, Type B-25.0-C, at an average rate of 114 lbs. per sq. yd. per 1" depth, to be placed in layers not less than a depth of 4", nor greater than 5½" in depth, with no max. total depth.
J	Compacted Aggregate Base Course
M1	Milling Depth 3" for the entire width of the roadway, or as Directed by the Engineer.
M2	Proposed Milled Rumble Strips in accordance with Standard Drawing 665.01 of the Roadway Standard Drawings.
M3	Milling Depth 8", with a width of 4' where indicated by Typical, for standard widening.
M4	Milling Depth 5½", with a width of 2' or 4' where indicated by Typical, for standard widening.
M5	Milling Depth 2" for the entire width of the roadway, or as Directed by the Engineer.
M6	Milling Depth 2½" at all designated Mill & Fill Patch Areas, with a variable width from 12' to 24', or as Directed by the Engineer.
M7	Milling Depth 9" at all designated Mill & Fill Patch Areas, with a variable width from 12' to 24', or as Directed by the Engineer.
M8	Milling Depth 0" - 5" at all Bridge Approaches, for the entire width of the roadway, or as Directed by the Engineer.
R1	Existing 2'-6" Curb & Gutter to be removed.
R2	Proposed 1'-6" Curb & Gutter to be installed.
R3	Proposed 5' Monolithic Island to be installed.
R4	Proposed 4' Expressway Gutter to be installed.
R5	Existing 2'-6" Curb & Gutter to remain in place.
SC	Saw Cut pavement 1' inside the existing edge of pavement to allow removal of existing 2'-6" curb & gutter.
S	Shoulder Reconstruction
U	Existing Pavement and Base or Earth Subgrade.
W	Variable Depth Asphalt Pavement (See Wedging Detail)

DRAWINGS NOT TO SCALE

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

ENGLISH STANDARD DRAWING FOR TEMPORARY SILT FENCE

SHEET 1 OF 1 1605.01



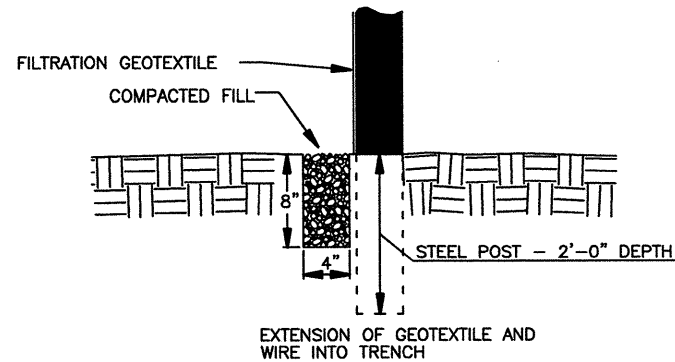
NOTES

USE FILTRATION GEOTEXTILE A MINIMUM OF 36" IN WIDTH AND FASTEN ADEQUATELY TO THE POSTS AND WIRE AS DIRECTED.

USE WIRE A MINIMUM OF 32" IN WIDTH AND WITH A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.

PROVIDE 5'-0" STEEL POST OF THE SELF-FASTENER ANGLE STEEL TYPE.

FOR MECHANICAL SLICING METHOD INSTALLATION, GEOTEXTILE SHALL BE A MAXIMUM OF 18" ABOVE GROUND SURFACE.

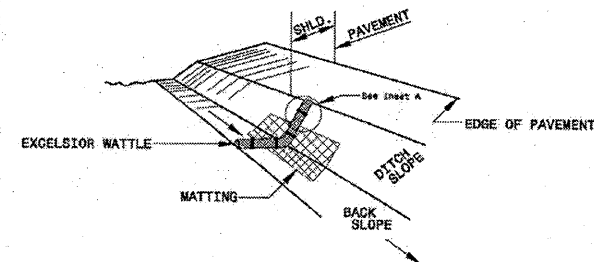


STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

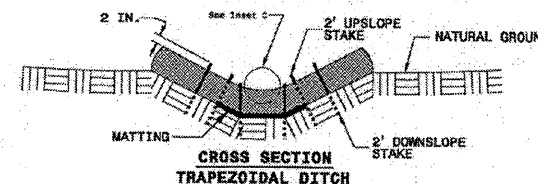
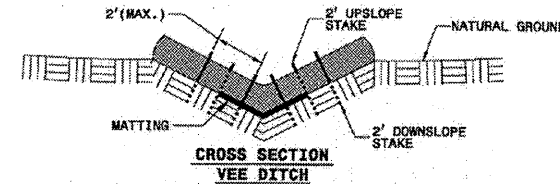
ENGLISH STANDARD DRAWING FOR TEMPORARY SILT FENCE

SHEET 1 OF 1 1605.01

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



NOTES:

USE MINIMUM 12 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.

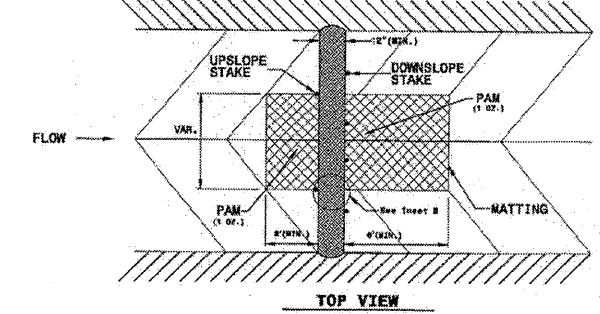
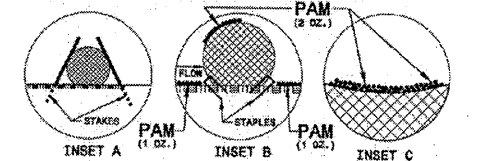
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 18" IN LENGTH.

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 1601 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.

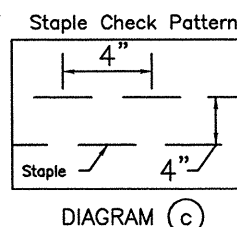
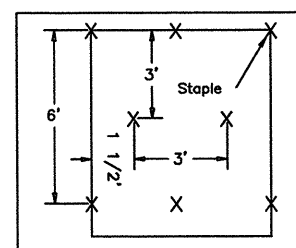
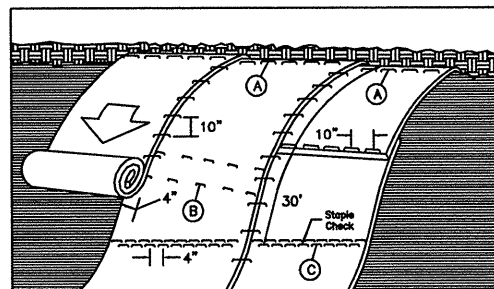
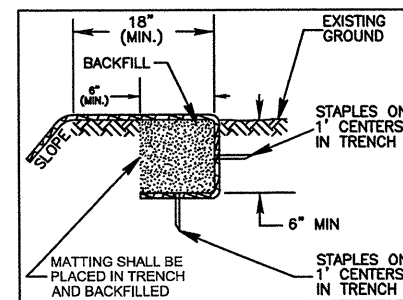
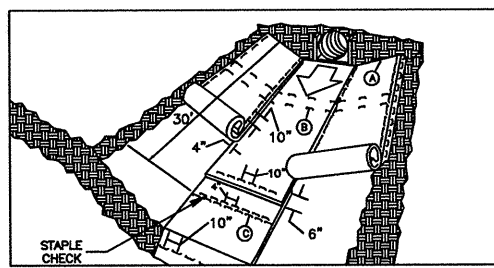
INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



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

ENGLISH STANDARD DRAWING FOR MATTING INSTALLATION

SHEET 1 OF 1 1631.01



NOTES:

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

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

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

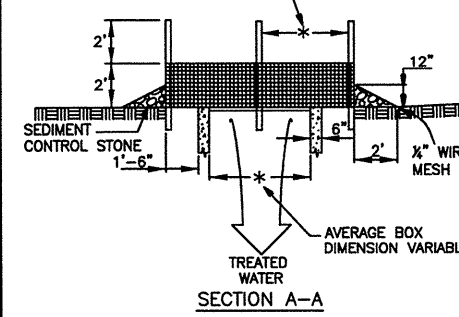
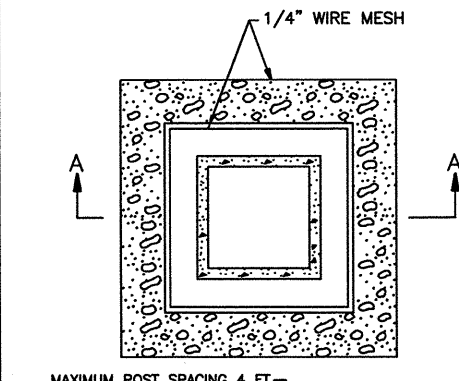
ENGLISH STANDARD DRAWING FOR MATTING INSTALLATION

SHEET 1 OF 1 1631.01

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

ENGLISH STANDARD DRAWING FOR ROCK INLET SEDIMENT TRAP TYPE C

SHEET 1 OF 1 1632.03



MULTI-DIRECTIONAL FLOW

NOTES

USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.

USE 24 GAUGE MINIMUM WIRE MESH HARDWARE CLOTH WITH 1/4 INCH MESH OPENINGS.

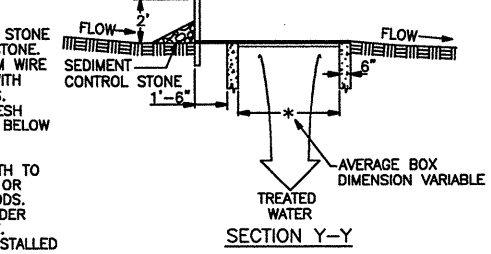
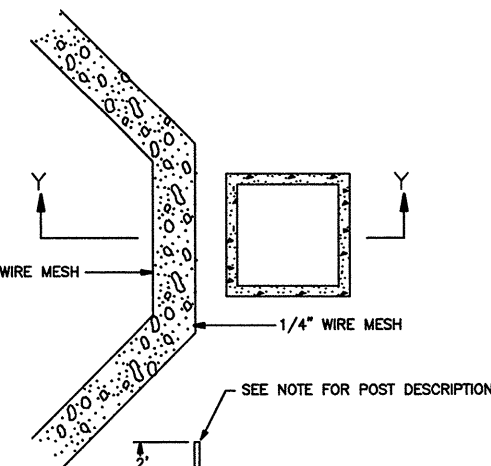
PLACE TOP OF WIRE MESH A MINIMUM OF ONE FOOT BELOW THE SHOULDER OR ANY DIVERSION POINT.

ATTACH HARDWARE CLOTH TO POSTS WITH WIRE STAPLE OR OTHER ACCEPTABLE METHODS.

INSTALL WIRE MESH UNDER SEDIMENT CONTROL STONE.

USE 5" STEEL POST, INSTALLED 1.5' DEEP MINIMUM, AND OF THE SELF-FASTENER ANGLE STEEL TYPE.

SPACE POST A MAXIMUM OF 4'.

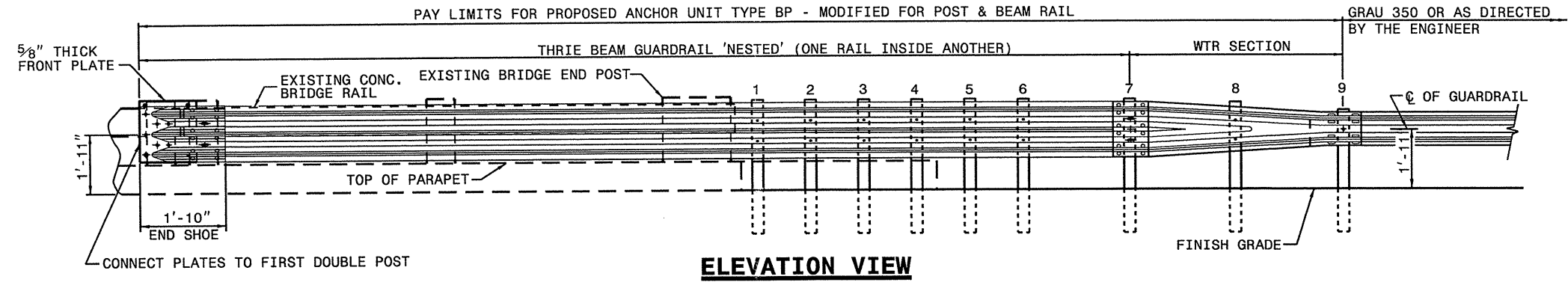


SINGLE-DIRECTIONAL FLOW

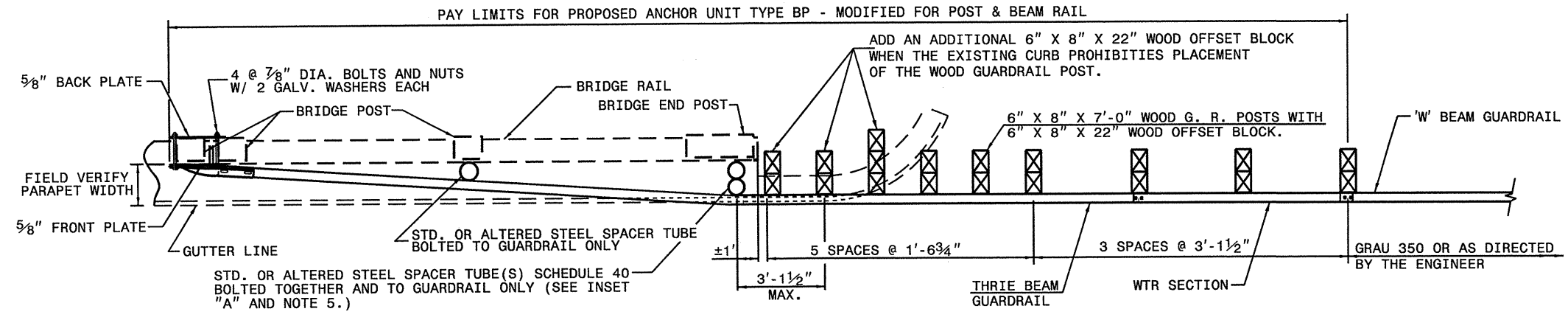
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR ROCK INLET SEDIMENT TRAP TYPE C

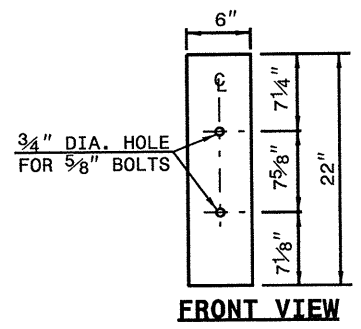
SHEET 1 OF 1 1632.03



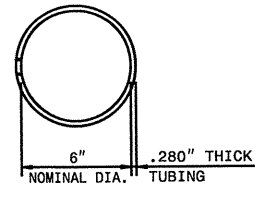
ELEVATION VIEW



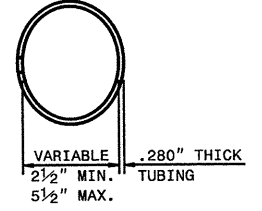
PLAN VIEW



FRONT VIEW

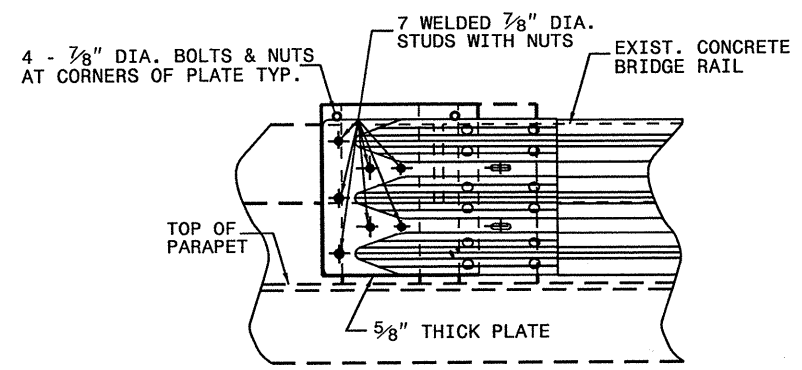


PLAN VIEW

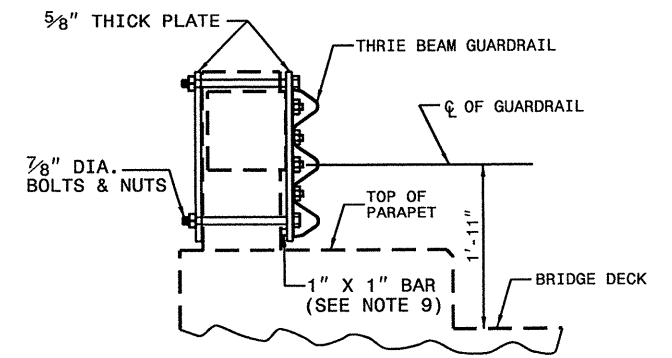


**PLAN VIEW
INSET "A"**

STEEL SPACER TUBE

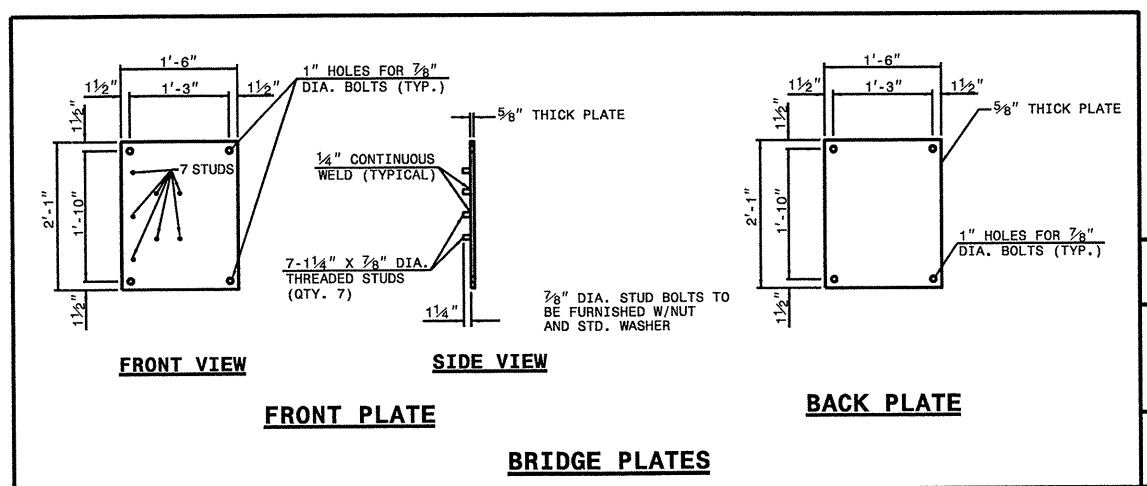


ELEVATION VIEW



SECTION VIEW

- 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 1076 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. USE THIS DETAIL ONLY FOR BRIGES WITH POST AND BEAM TYPE RAIL.
 8. ATTACH 1" X 1" BAR AND THREADED STUDS TO PLATE WITH 1/4" WELDS ALL AROUND.
 9. 1" X 1" BAR MAY NOT BE NEEDED ON BRIDGE RAILS WHERE FACE OF RAIL DOES NOT PROJECT BEYOND FACE OF POST.
 10. PROVIDE SHOP DRAWINGS OF THE PLATES TO THE ENGINEER FOR APPROVAL BEFORE FABRICATING THE PLATES.
 11. LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 12. SEE ROADWAY STARDARD DRAWING 862.03 SHEET 3 FOR ADDITIONAL INFORMATION ON THE TYPE III ANCHOR UNIT



FRONT VIEW

SIDE VIEW

FRONT PLATE

BACK PLATE

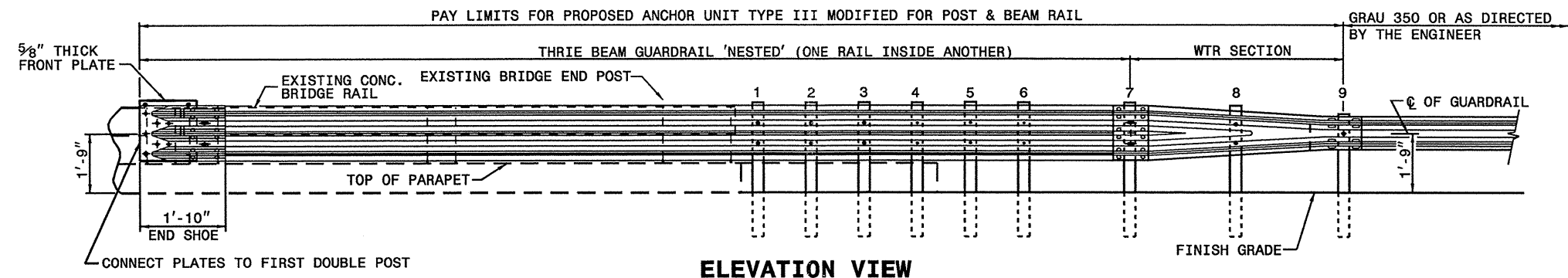
BRIDGE PLATES

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

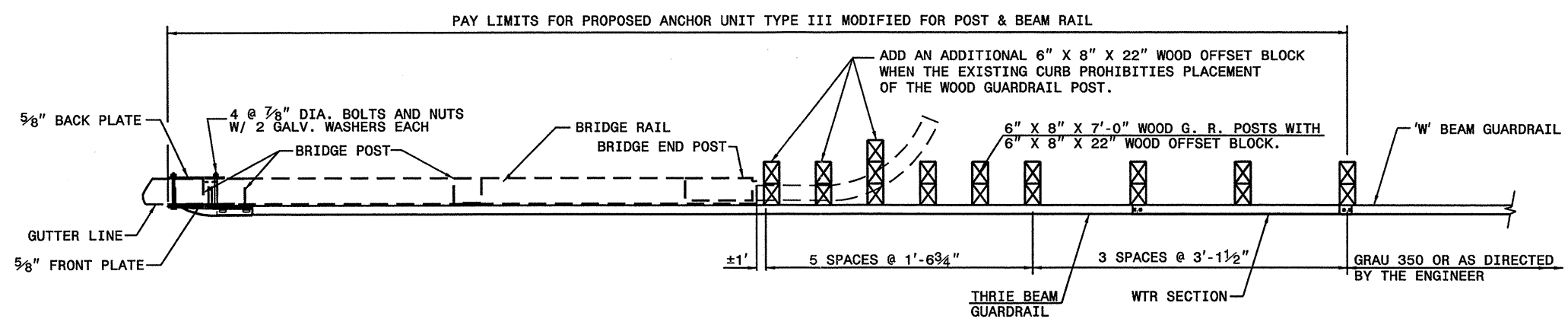
TYPE III MODIFIED FOR POST AND BEAM RAIL

ORIGINAL BY: E.E. WARD DATE: 01-03
 MODIFIED BY: E.E. WARD DATE: 02-04
 CHECKED BY: DATE:
 FILE SPEC.: s:\details\stand\bp111 original.dgn

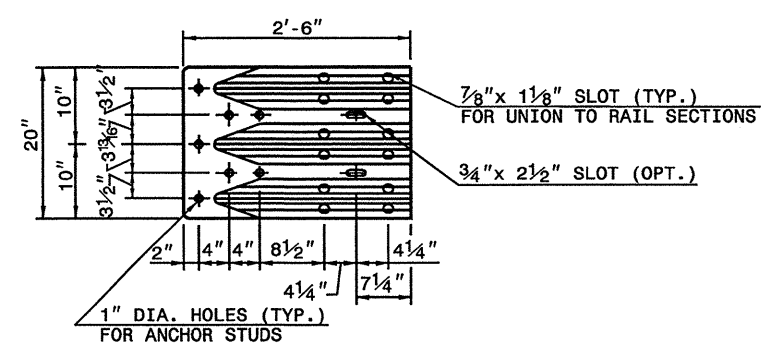
07-DEC-2010 09:06 S:\CONTRACTS\Contract\Special Details\view\stand\bp 111 original.dgn \$\$\$USER\$###



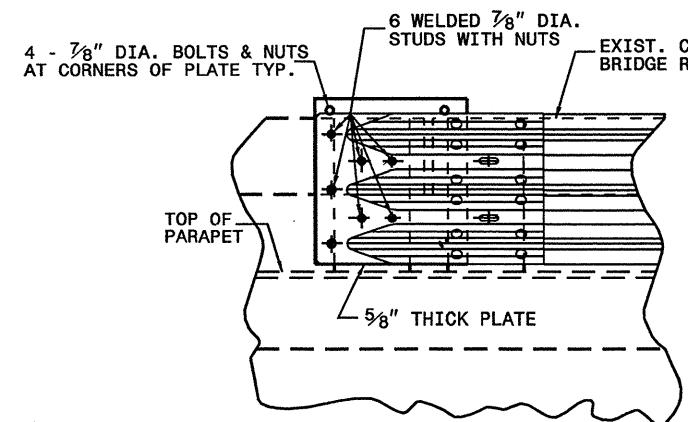
ELEVATION VIEW



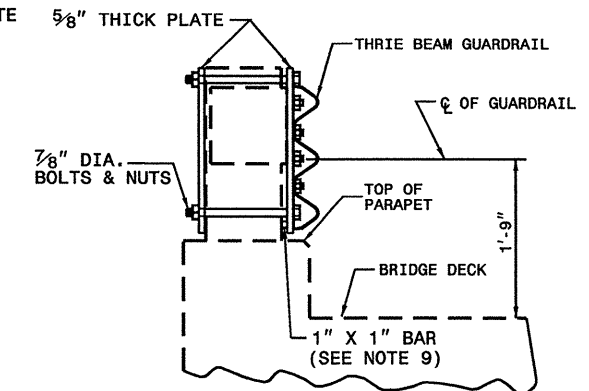
PLAN VIEW



END SHOE



ELEVATION VIEW



SECTION VIEW

**GUARDRAIL ATTACHMENT
TO BRIDGE POST**

- 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 1076 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. USE THIS DETAIL ONLY FOR BRIGES WITH POST AND BEAM TYPE RAIL.
 8. ATTACH 1" X 1" BAR AND THREADED STUDS TO PLATE WITH 1/4" WELDS ALL AROUND.
 9. 1" X 1" BAR MAY NOT BE NEEDED ON BRIDGE RAILS WHERE FACE OF RAIL DOES NOT PROJECT BEYOND FACE OF POST.
 10. PROVIDE SHOP DRAWINGS OF THE PLATES TO THE ENGINEER FOR APPROVAL BEFORE FABRICATING THE PLATES.
 11. LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 12. SEE ROADWAY STARDARD 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	
GUARDRAIL ANCHOR UNIT	
TYPE III MODIFIED	
FOR POST & BEAM RAIL	
ORIGINAL BY: C.O. CUEVAS	DATE: 12-00
MODIFIED BY: E.E. WARD	DATE: 02-04
CHECKED BY:	DATE:
FILE SPEC.: \usr\details\stand\bp11i.dgn	

22-FEB-2010 14:06:10 \\server\projects\special_details\vericard\usr\details\stand\bp 11i original.dgn

PROJECT NO.	SHEET NO.	TOTAL NO.
R-5507	11	

SUMMARY OF QUANTITIES

PROJECT NO.	COUNTY	MAP NO.	ROUTE	DESCRIPTION	TYP	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	CONSTRUCTION SURVEYING LS	UNDERCUT EXCAVATION CY	GRADING LS	BORROW EXCAVATION CY	REMOVAL OF EXISTING CONCRETE PAVEMENT SY	SELECT GRANULAR MATERIAL CY	GEOTEXTILE FOR SOIL STABILIZATION SY	FOUND. COND. MATERIAL, MINOR STRUCT. TON	FOUND. COND. GEO-TEXTILE SY	15" RC PIPE CULVERTS, CLASS III LF	18" RC PIPE CULVERTS, CLASS III LF	24" RC PIPE CULVERTS, CLASS III LF	30" RC PIPE CULVERTS, CLASS III LF	36" RC PIPE CULVERTS, CLASS III LF	24" PARALLEL PIPE END SECTION EA	15" PARALLEL PIPE END SECTION EA	18" PARALLEL PIPE END SECTION EA	SHALLOW UNDERCUT CY	CLASS IV SUBGRADE STABILIZATION TON	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	
R-5507	Columbus	1	US 74	FROM NC 214 (STA 1085+00) TO NC 11 (STA 1301+95)	1	NO	4.11	60																					99	16.44
		"	"	FROM NC 11 (STA 1301+95) TO NC 11 (STA 1304+45)	2	NO	0.05	63																					1	0.10
		"	"	FROM NC 11 (STA 1304+45) TO NC 11 (STA 1309+30)	3	NO	0.09	60																					2	0.18
		"	"	FROM NC 11 (STA 1309+30) TO NC 11 (STA 1312+05)	4	NO	0.05	60																					1	0.10
		"	"	FROM NC 11 (STA 1312+15) TO NC 11 (STA 1316+05)	5	NO	0.08	60																					2	0.16
		"	"	FROM NC 11 (STA 1316+05) TO NC 11 (STA 1321+50)	4	NO	0.1	60																					2	0.20
		"	"	FROM NC 11 (STA 1321+50) TO NC 11 (STA 1324+00)	3	NO	0.05	60																					1	0.10
		"	"	FROM NC 11 (STA 1324+11) TO NC 11 (STA 1330+10)	2	NO	0.12	63																					3	0.24
		"	"	FROM NC 11 (STA 1333+10) TO NC 11 (STA 1488+00)	2	NO	2.99	60																					72	11.96
		"	"	FROM DELCO (STA 1488+00) TO DELCO (STA 1496+50)	6	NO	0.16	50																					4	0.32
		"	"	FROM DELCO (STA 1496+50) TO DELCO (STA 1533+40)	7	NO	0.7	50																					17	1.40
		"	"	FROM DELCO (STA 1533+40) TO DELCO (STA 1550+75)	6	NO	0.33	50																					8	
		"	"	FROM DELCO (STA 1550+75) TO BRUNSWICK CO LINE (STA 1592+50)	8	NO	0.79	52																					19	3.16
		"	"	FROM NC 214 (STA 1085+00) TO BRUNSWICK CO LINE (STA 1592+50)		NO	9.61	50	1.00	200	1	20,000	9,700	100	1,400	120	360	92	64	784	92	16	21	2	4	300	500			
TOTAL FOR MAP NO. 1							9.61		1.00	200	1	20,000	9,700	100	1,400	120	360	92	64	784	92	16	21	2	4	300	500	231	34.36	
TOTAL FOR PROJ NO. R-5507							9.61		1.00	200	1	20,000	9,700	100	1,400	120	360	92	64	784	92	16	21	2	4	300	500	231	34.36	
GRAND TOTAL							9.61		1.00	200	1	20,000	9,700	100	1,400	120	360	92	64	784	92	16	21	2	4	300	500	231	34.36	

PROJECT NO.	SHEET NO.	TOTAL NO.
R-5507	12	

SUMMARY OF QUANTITIES

PROJECT NO.	COUNTY	MAP NO.	ROUTE	DESCRIPTION	TYP	MILLING ASPHALT PAVEMENT, 3"DEPTH	MILLING ASPHALT PAVEMENT, 8"DEPTH	MILLING ASPHALT PAVEMENT, 5.5"DEPTH	MILLING ASPHALT PAVEMENT, 2"DEPTH	MILLING ASPHALT PAVEMENT, 0" TO 5"	MILLING ASPHALT PAVEMENT, 0" TO 2.5" DEPTH	MILLING ASPHALT PAVEMENT, 2.5" TO 9"	INCIDENTAL MILLING	ASPHALT CONC BASE COURSE, B25.0C	ASPHALT CONC BASE COURSE WEDGING, B25.0C	ASPHALT CONC BASE COURSE UNDER C&G, B25.0C	ASPHALT CONC INTERM. COURSE, I19.0C	ASPHALT CONC INTERM. COURSE WEDGING, I19.0C	ASPHALT CONC INTERM. COURSE, I19.0C (LEVELING COURSE)	ASPHALT CONC SURFACE COURSE, S9.5C	ASPHALT CONC SURFACE COURSE, TYPE S9.5C (LEVELING COURSE)	ASPHALT CONC SURFACE COURSE, TYPE S4.75A	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT	MILLED RUMBLE STRIPS (ASPHALT CEMENT CONCRETE)	GENERIC PAVING ITEM-AGGREGATE BASE COURSE, CRACK REPAIR	GENERIC PAVING ITEM-ASPHALT CONC BASE COURSE, CRACK REPAIR		
NO		NO			NO	SY	SY	SY	SY	SY	SY	SY	SY	TONS	TON	TONS		TONS	TON	TONS	TON	TONS	TONS	TONS	LF	TON	TON		
R-5507	Columbus	1	US 74	FROM NC 214 (STA 1085+00) TO NC 11 (STA 1301+95)	1	62,691	9,645	14,467					3,167	8,931			12,369			17,537		163	2,033	123					
		"	"	FROM NC 11 (STA 1301+95) TO NC 11 (STA 1304+45)	2	821		117					167	212	201		291	50		248	39	1	52	1					
		"	"	FROM NC 11 (STA 1304+45) TO NC 11 (STA 1309+30)	3	1,478		211					167	304	361		161	92	361	413	71	2	88	3					
		"	"	FROM NC 11 (STA 1309+30) TO NC 11 (STA 1312+05)	4	821							167	187	201		289	52		232	39		50						
		"	"	FROM NC 11 (STA 1312+15) TO NC 11 (STA 1316+05)	5	1,314							500	271	803		414	132		349	63		98	2					
		"	"	FROM NC 11 (STA 1316+05) TO NC 11 (STA 1321+50)	4	1,643							167	370	401		580	102		444	79		98						
		"	"	FROM NC 11 (STA 1321+50) TO NC 11 (STA 1324+00)	3	821		117					167	157	201		291	50		213	39	1	48	1					
		"	"	FROM NC 11 (STA 1324+11) TO NC 11 (STA 1330+10)	2	1,971		282					167	518	482		697	122	95	519		2	120	3					
		"	"	FROM NC 11 (STA 1333+10) TO NC 11 (STA 1488+00)	2	45,607	7,017	10,525		2,640	14,080	2,112	2,000	7,282			11,005			12,712		118	1,607	90					
		"	"	FROM DELCO (STA 1488+00) TO DELCO (STA 1496+50)	6				4,693				833							626			37	5					
		"	"	FROM DELCO (STA 1496+50) TO DELCO (STA 1533+40)	7				20,533				1,667							2,592			153	21					
		"	"	FROM DELCO (STA 1533+40) TO DELCO (STA 1550+75)	6				9,680				1,333							1,261			74	10					
		"	"	FROM DELCO (STA 1550+75) TO BRUNSWICK CO LINE (STA 1592+50)	8								1,167							2,974		63	180	24					
		"	"	FROM NC 214 (STA 1085+00) TO BRUNSWICK CO LINE (STA 1592+50)												1,796							80		180,000	2,100	2,200		
TOTAL FOR MAP NO. 1						117,167	16,662	25,719	34,906	2,640	14,080	2,112	11,669	18,232	2,650	1,796	26,097	600	361	95	40,120	330	350	4,718	283	180,000	2,100	2,200	
TOTAL FOR PROJ NO. R-5507						117,167	16,662	25,719	34,906	2,640	14,080	2,112	11,669		22,678			26,697		361	95	40,120	330	350	4,718	283	180,000	2,100	2,200
GRAND TOTAL						117,167	16,662	25,719	34,906	2,640	14,080	2,112	11,669		22,678			26,697		361	95	40,120	330	350	4,718	283	180,000	2,100	2,200

PROJECT NO.	SHEET NO.	TOTAL NO.
R-5507	13	

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	PIPE COLLARS CY	MASONRY DRAINAGE STRUCTURES EA	FRAME WITH GRATE, STD 840.22 EA	FRAME WITH COVER, STD 840.54 EA	1'-6" CURB & GUTTER LF	CONCRETE EXPRESS-WAY GUTTER LF	5" MONOLITHIC CONCRETE ISLANDS (KEYED IN) SY	STEEL BM GUARDRAIL (WITH STEEL POSTS) LF	GUARDRAIL ANCHOR UNITS, TYPE 350 EA	GUARDRAIL ANCHOR UNITS, TYPE III MOD FOR POST & BEAM RAIL EA	GUARDRAIL ANCHOR UNITS, TYPE III EA	REMOVE EXISTING GUARDRAIL LF	TEMP. SILT FENCE LF	SEDIMENT CONTROL STONE TON	SILT EXCAVATION CY	MATTING FOR EROSION CONTROL SY	1/4" HARDWARE CLOTH LF	WATTLE LF	POLYACRYL-AMIDE (PAM) LB	SEEDING & MULCHING ACR
R-5507	Columbus	1	US 74	FROM NC 214 (STA 1085+00) TO NC 11 (STA 1301+95)	1																				20
		"	"	FROM NC 11 (STA 1301+95) TO NC 11 (STA 1304+45)	2																				0
		"	"	FROM NC 11 (STA 1304+45) TO NC 11 (STA 1309+30)	3																				0
		"	"	FROM NC 11 (STA 1309+30) TO NC 11 (STA 1312+05)	4																				0
		"	"	FROM NC 11 (STA 1312+15) TO NC 11 (STA 1316+05)	5																				0
		"	"	FROM NC 11 (STA 1316+05) TO NC 11 (STA 1321+50)	4																				1
		"	"	FROM NC 11 (STA 1321+50) TO NC 11 (STA 1324+00)	3																				0
		"	"	FROM NC 11 (STA 1324+11) TO NC 11 (STA 1330+10)	2																				1
		"	"	FROM NC 11 (STA 1333+10) TO NC 11 (STA 1488+00)	2																				15
		"	"	FROM DELCO (STA 1488+00) TO DELCO (STA 1496+50)	6																				1
		"	"	FROM DELCO (STA 1496+50) TO DELCO (STA 1533+40)	7																				3
		"	"	FROM DELCO (STA 1533+40) TO DELCO (STA 1550+75)	6																				2
		"	"	FROM DELCO (STA 1550+75) TO BRUNSWICK CO LINE (STA 1592+50)	8																				4
		"	"	FROM NC 214 (STA 1085+00) TO BRUNSWICK CO LINE (STA 1592+50)		20	18	8	10	1,800	1,300	2,500	5,000	28	3	3	5,000	2,900	75	300	780	1,000	1,400	60	47
TOTAL FOR MAP NO. 1						20	18	8	10	1,800	1,300	2,500	5,000	28	3	3	5,000	2,900	75	300	780	1,000	1,400	60	47
TOTAL FOR PROJ NO. R-5507						20	18	8	10	1,800	1,300	2,500	5,000	28	3	3	5,000	2,900	75	300	780	1,000	1,400	60	47
GRAND TOTAL						20	18	8	10	1,800	1,300	2,500	5,000	28	3	3	5,000	2,900	75	300	780	1,000	1,400	60	47

Note: There may be situations where the Contractor will need to anchor guardrail posts on box culverts.

PROJECT NO.	SHEET NO.	TOTAL NO.
R-5507	14	

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	LENGTH	WIDTH	4399000000-N	4688000000-E		4690000000-E	4700000000-E	4710000000-E	4721000000-E	4725000000-E					4775000000-E	4810000000-E		4850000000-E	4900000000-N
							TEMP. TRAFFIC CONTROL	6" X 90 M YELLOW THERMO	6" X 90 M WHITE THERMO	6" X 120 M WHITE THERMO	12" X 90 M WHITE THERMO	24" X 120 M WHITE THERMO	THERMO MSG SCHOOL 120 M	THERMO STR & RT ARROW 90 M	THERMO STR ARROW 90 M	THERMO RT ARROW 90 M	THERMO LT ARROW 90 M	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE III (6")	4" WHITE PAINT	4" YELLOW PAINT	4" LINE REMOVAL	CRYSTAL & RED MARKERS	
							LS	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	LF	LF	LF	EA		
R-5507	Columbus	1	US 74	FROM NC 214 (STA 1085+00) TO NC 11 (STA 1301+95)	4.11	60																	
		"	"	FROM NC 11 (STA 1301+95) TO NC 11 (STA 1304+45)	0.05	63																	
		"	"	FROM NC 11 (STA 1304+45) TO NC 11 (STA 1309+30)	0.09	60																	
		"	"	FROM NC 11 (STA 1309+30) TO NC 11 (STA 1312+05)	0.05	60																	
		"	"	FROM NC 11 (STA 1312+15) TO NC 11 (STA 1316+05)	0.08	60																	
		"	"	FROM NC 11 (STA 1316+05) TO NC 11 (STA 1321+50)	0.1	60																	
		"	"	FROM NC 11 (STA 1321+50) TO NC 11 (STA 1324+00)	0.05	60																	
		"	"	FROM NC 11 (STA 1324+11) TO NC 11 (STA 1330+10)	0.12	63																	
		"	"	FROM NC 11 (STA 1333+10) TO NC 11 (STA 1488+00)	2.99	60																	
		"	"	FROM DELCO (STA 1488+00) TO DELCO (STA 1496+50)	0.16	50																	
		"	"	FROM DELCO (STA 1496+50) TO DELCO (STA 1533+40)	0.7	50																	
		"	"	FROM DELCO (STA 1533+40) TO DELCO (STA 1550+75)	0.33	50																	
		"	"	FROM DELCO (STA 1550+75) TO BRUNSWICK CO LINE (STA 1592+50)	0.79	52																	
		"	"	FROM NC 214 (STA 1085+00) TO BRUNSWICK CO LINE (STA 1592+50)	9.61	50	1	104,000	104,000	31,300	1,450	340	12	22	253	1	57	550	110,000	45,000	550	1,750	
TOTAL FOR MAP NO. 1					19.23		1	104,000	104,000	31,300	1,450	340	12	22	253	1	57	550	110,000	45,000	550	1,750	
R-5507					19.23		1	104,000	104,000	31,300	1,450	340	12	22	253	1	57	550	110,000	45,000	550	1,750	
								208,000					333					155,000					