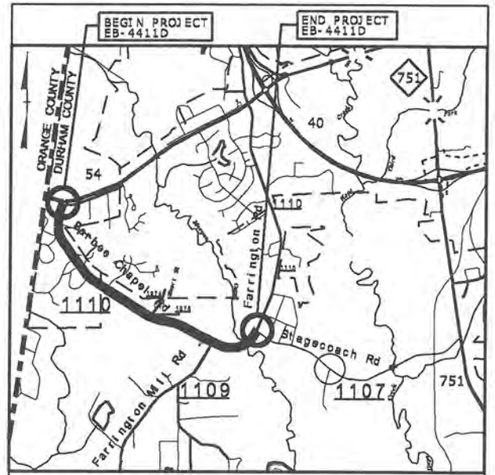
See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DURHAM COUNTY

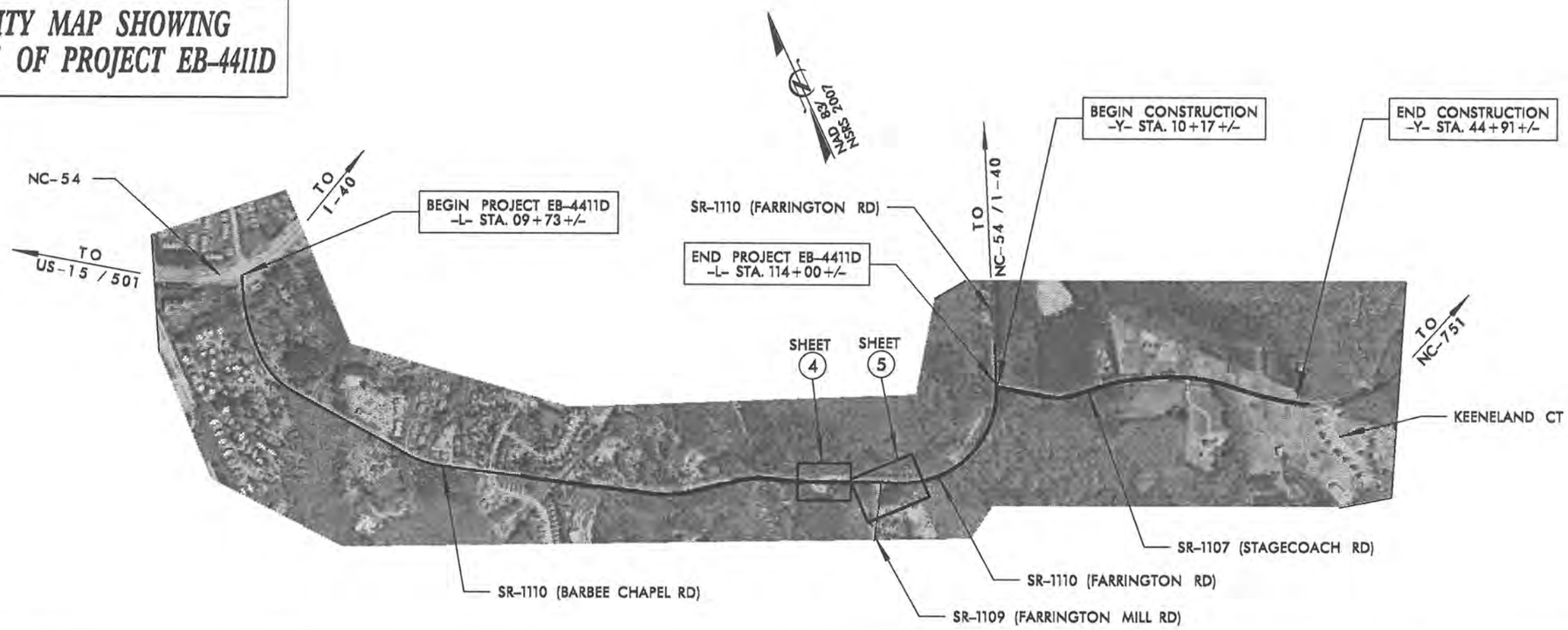
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	EB-4411D	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
36333.1.1	STPEB-000S(752)	P. E.
36333.3.FD4	STPEB-000S(752)	CONST.



VICINITY MAP SHOWING
LOCATION OF PROJECT EB-4411D

LOCATION: SR-1110 (BARBEE CHAPEL RD /FARRINGTON RD) FROM NC-54 TO SR-1107 (STAGECOACH RD)
TYPE OF WORK: GRADING, DRAINAGE, AND PAVING.



PROJECT LENGTH

LENGTH ROADWAY PROJECT EB-4411D = 1.975 MILES

Prepared In the Office of:
DIVISION OF HIGHWAYS
2612 N. DUKE ST

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: N /A

LETTING DATE:

BEN UPSHAW
PROJECT ENGINEER

BOB WILLIAMS / SUNIL PATEL
PROJECT DESIGN ENGINEER

DIVISION DESIGN ENGINEER
ROADWAY DESIGN AND HYDRAULICS

NORTH CAROLINA PROFESSIONAL SEAL 030459 ENGINEER BEN UPSHAW
6/13/14

SIGNATURE P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
FIFTH DIVISION
J. WALLY BOWMAN, P.E.
DIVISION ENGINEER

DIVISION OF HIGHWAYS DIVISION FIVE STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION DESIGN UNIT

CONTRACT: DE00100 PROJECT: EB-4411D

09/08/99

12-JUN-2014 16:20
R:\Roadway\Proj\EB4411D_Rdy_SHT-1.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
EB-4411D	1-A

DIVISION FIVE DESIGN

NORTH CAROLINA PROFESSIONAL SEAL 030459 ENGINEER BEN UPSHAW

6/26/14

P.E.

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
2 THRU 2-D	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
3-A	DRAINAGE SUMMARY
4 THRU 5	PLAN SHEETS
TMP-1 THRU TMP-4	TRANSPORTATION MANAGEMENT PLANS
PM-1	PAVEMENT MARKING & SIGNING PLANS
EC-2 THRU EC-4	EROSION CONTROL PLANS
X-1 THRU X-3	CROSS-SECTIONS
S-1	BRIDGE FENCE DETAILS

2012 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01-17-2012
REV. 10-30-2012

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

DIVISION 2 - EARTHWORK

200.02 Method of Clearing - Method II
225.02 Guide for Grading Subgrade - Secondary and Local

DIVISION 3 - PIPE CULVERTS

300.01 Method of Pipe Installation

DIVISION 5 - SUBGRADE, BASES AND SHOULDERS

560.01 Method of Shoulder Construction - High Side of Superelevated Curve - Method I

DIVISION 8 - INCIDENTALS

815.03 Pipe Underdrain and Blind Drain
838.01 Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11 Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
840.19 Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.24 Frames and Narrow 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
840.66 Drainage Structure Steps
848.05 Curb Ramp - Proposed Curb & Gutter
848.06 Curb Ramp - Existing Curb & Gutter
862.01 Guardrail Placement
862.02 Guardrail Installation

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 07/30/12

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

UNDERDRAINS:

UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

GUARDRAIL:

EXISTING GUARDRAIL SHALL BE REPLACED OR REMOVED AND RESET AT LOCATIONS DIRECTED BY THE ENGINEER.

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$$$$USERNAME$$$$
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12/05/11

PROJECT REFERENCE NO.	SHEET NO.
EB-4411D	1-B

Note: Not to Scale

**S.U.E. = Subsurface Utility Engineering*

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — PCM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line
- Proposed Right of Way Line with Iron Pin and Cap Marker
- Proposed Right of Way Line with Concrete or Granite R/W Marker
- Proposed Control of Access Line with Concrete C/A Marker
- Existing Control of Access
- Proposed Control of Access
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line
- Designated U/G Water Line (S.U.E.*)
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — T
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

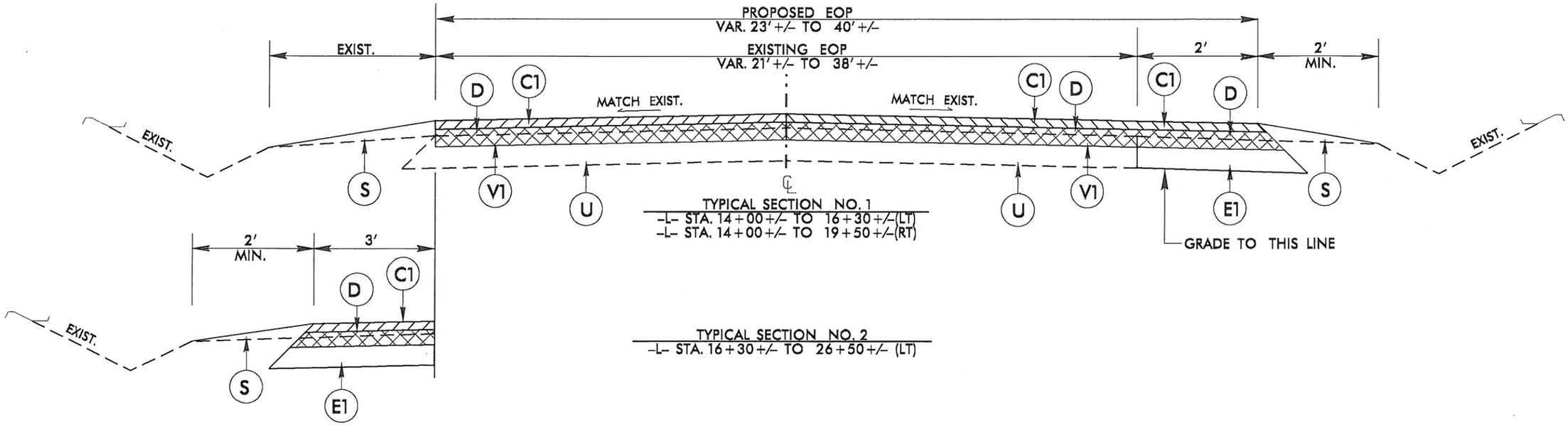
SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

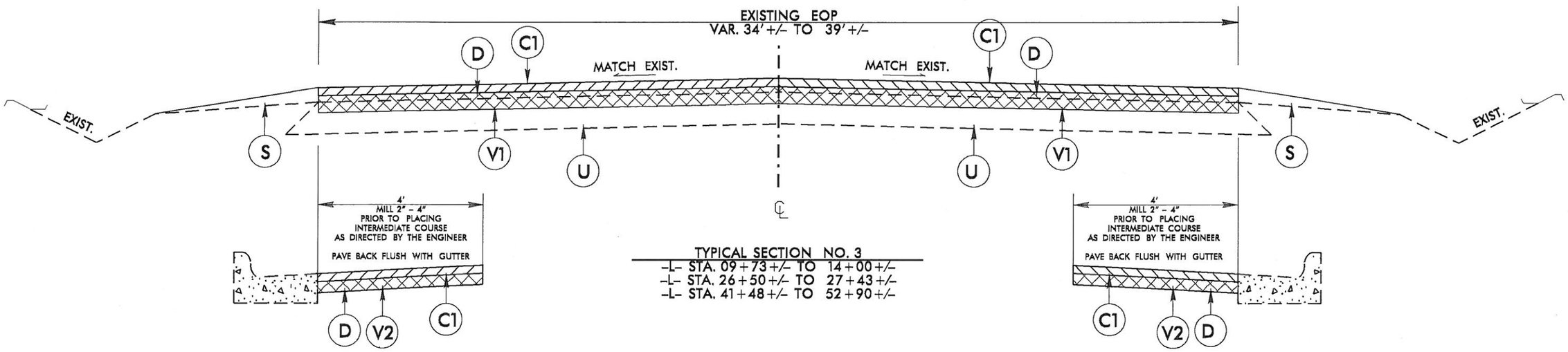
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

PROJECT REFERENCE NO.	SHEET NO.
EB-4411D	2



TYPICAL SECTION NO. 1
-L- STA. 14+00 +/- TO 16+30 +/- (LT)
-L- STA. 14+00 +/- TO 19+50 +/- (RT)

TYPICAL SECTION NO. 2
-L- STA. 16+30 +/- TO 26+50 +/- (LT)



TYPICAL SECTION NO. 3
-L- STA. 09+73 +/- TO 14+00 +/-
-L- STA. 26+50 +/- TO 27+43 +/-
-L- STA. 41+48 +/- TO 52+90 +/-

PAVEMENT SCHEDULE

NOTES:
1). PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	S	SHOULDER RECONSTRUCTION
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
D	2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	V1	MILL EXIST. PAVEMENT, 2" DEPTH
E1	PROP. APPROX. 9" ASPHALT CONCRETE BASE COURSE, TYPE B25.0, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	V2	MILL EXIST. PAVEMENT, 2"-4" DEPTH
E2	PROP. APPROX. 10.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0, AT AN AVERAGE RATE OF 598.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS		

DIVISION FIVE DESIGN

NORTH CAROLINA PROFESSIONAL SEAL 030459 ENGINEER BEN UPSHAW

6/26/14

SIGNATURE P.E.

WIDEN FOR BIKE LANES ON
SR-1110 (BARBEE CHAPEL RD /FARRINGTON RD)
AND SR-1107 (STAGECOACH RD)
FROM NC-54 TO WEST OF KEENELAND CT.

DIVISION 05 DURHAM COUNTY

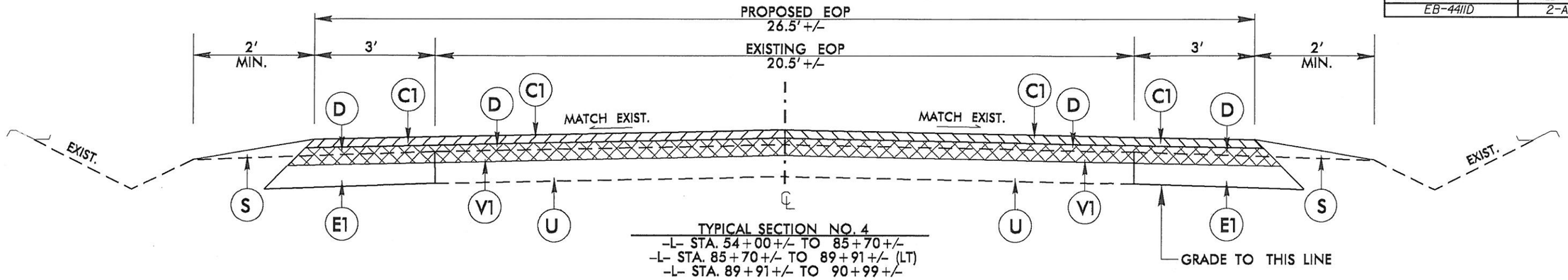
REVISIONS	INIT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

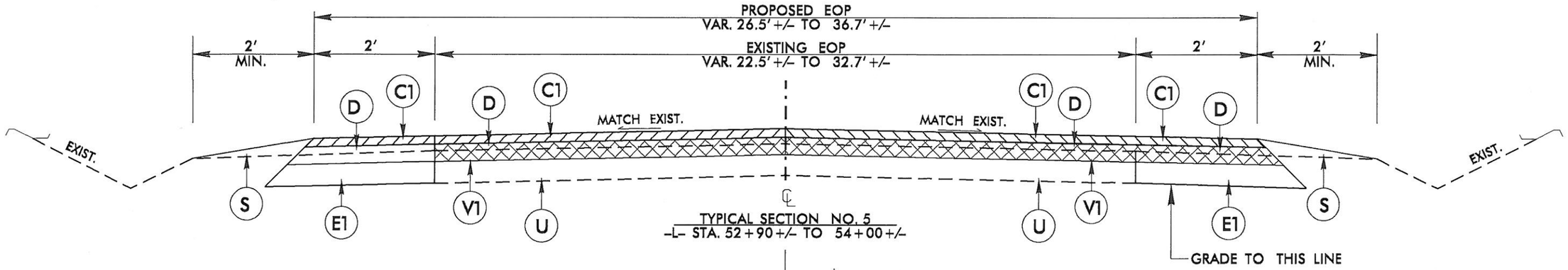
DIVISION OF HIGHWAYS · DIVISION FIVE · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · DESIGN UNIT

SCALE:	NTS	DATE:	04/2014
PREPARED BY:	SUNIL PATEL		
REVIEWED BY:	BEN UPSHAW		
REVIEWED BY:			

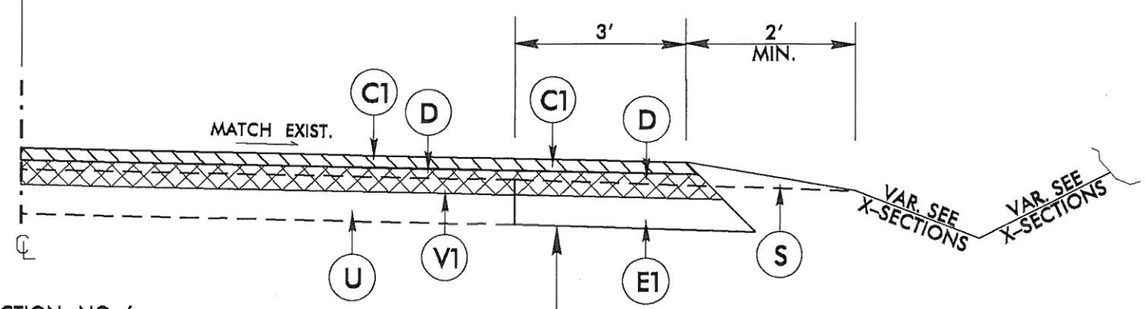
PROJECT REFERENCE NO.	SHEET NO.
EB-4411D	2-A



TYPICAL SECTION NO. 4
-L- STA. 54+00+/- TO 85+70+/-
-L- STA. 85+70+/- TO 89+91+/- (LT)
-L- STA. 89+91+/- TO 90+99+/-



TYPICAL SECTION NO. 5
-L- STA. 52+90+/- TO 54+00+/-



TYPICAL SECTION NO. 6
-L- STA. 85+70+/- TO 89+91+/- (RT) (SEE X-SECTION)

PAVEMENT SCHEDULE

NOTES:
1). PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	S	SHOULDER RECONSTRUCTION
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
D	2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	V1	MILL EXIST. PAVEMENT, 2" DEPTH
E1	PROP. APPROX. 9" ASPHALT CONCRETE BASE COURSE, TYPE B25.0, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	V2	MILL EXIST. PAVEMENT, 2"-4" DEPTH
E2	PROP. APPROX. 10.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0, AT AN AVERAGE RATE OF 598.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS		

DIVISION FIVE DESIGN

NORTH CAROLINA PROFESSIONAL SEAL 030459 ENGINEER BEN UPSHAW

4/26/14

SIGNATURE P.E.

WIDEN FOR BIKE LANES ON
SR-1110 (BARBEE CHAPEL RD /FARRINGTON RD)
AND SR-1107 (STAGECOACH RD)
FROM NC-54 TO WEST OF KEENELAND CT.

DIVISION 05 DURHAM COUNTY

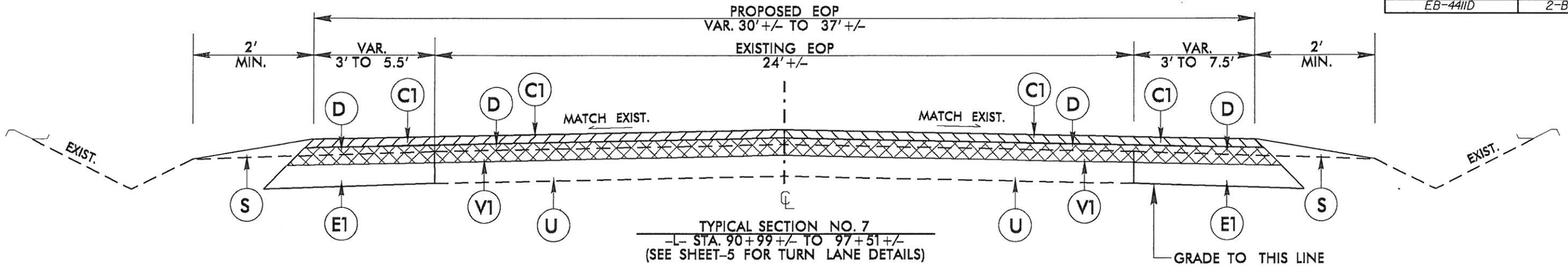
REVISIONS	INIT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

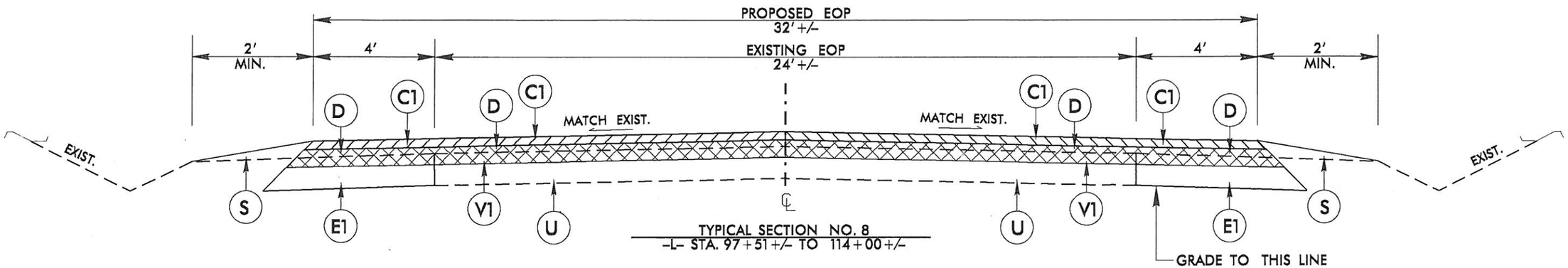
DIVISION OF HIGHWAYS DIVISION FIVE STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION DESIGN UNIT

SCALE:	NTS	DATE:	04/2014
PREPARED BY:	SUNIL PATEL		
REVIEWED BY:	BEN UPSHAW		
REVIEWED BY:			

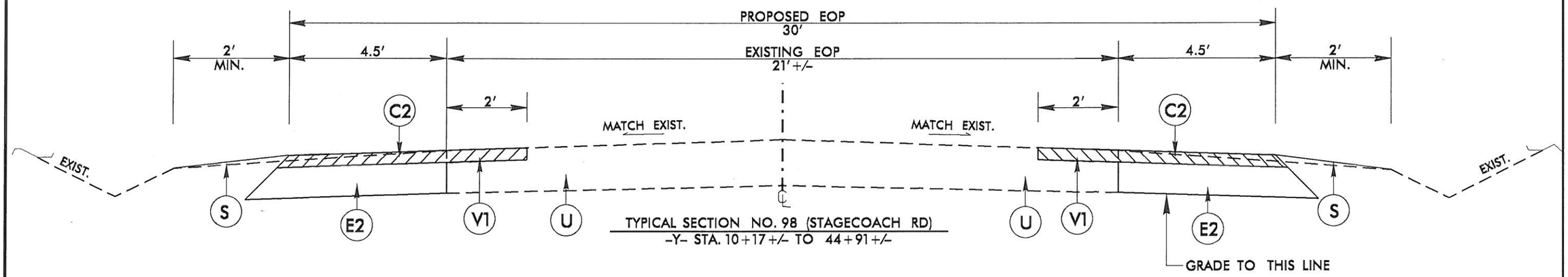
PROJECT REFERENCE NO.	SHEET NO.
EB-4411D	2-B



TYPICAL SECTION NO. 7
-L- STA. 90+99+/- TO 97+51+/-
(SEE SHEET-5 FOR TURN LANE DETAILS)



TYPICAL SECTION NO. 8
-L- STA. 97+51+/- TO 114+00+/-



TYPICAL SECTION NO. 98 (STAGECOACH RD)
-Y- STA. 10+17+/- TO 44+91+/-

PAVEMENT SCHEDULE

NOTES:
1). PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	S	SHOULDER RECONSTRUCTION
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
D	2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	V1	MILL EXIST. PAVEMENT, 2" DEPTH
E1	PROP. APPROX. 9" ASPHALT CONCRETE BASE COURSE, TYPE B25.0, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	V2	MILL EXIST. PAVEMENT, 2"-4" DEPTH
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DIVISION FIVE DESIGN

NORTH CAROLINA PROFESSIONAL SEAL 030459 ENGINEER BEN UPSHAW

6/26/14

SIGNATURE P.E.

WIDEN FOR BIKE LANES ON
SR-1110 (BARBEE CHAPEL RD /FARRINGTON RD)
AND SR-1107 (STAGECOACH RD)
FROM NC-54 TO WEST OF KEENELAND CT.

DIVISION 05 DURHAM COUNTY

REVISIONS	INIT.	DATE

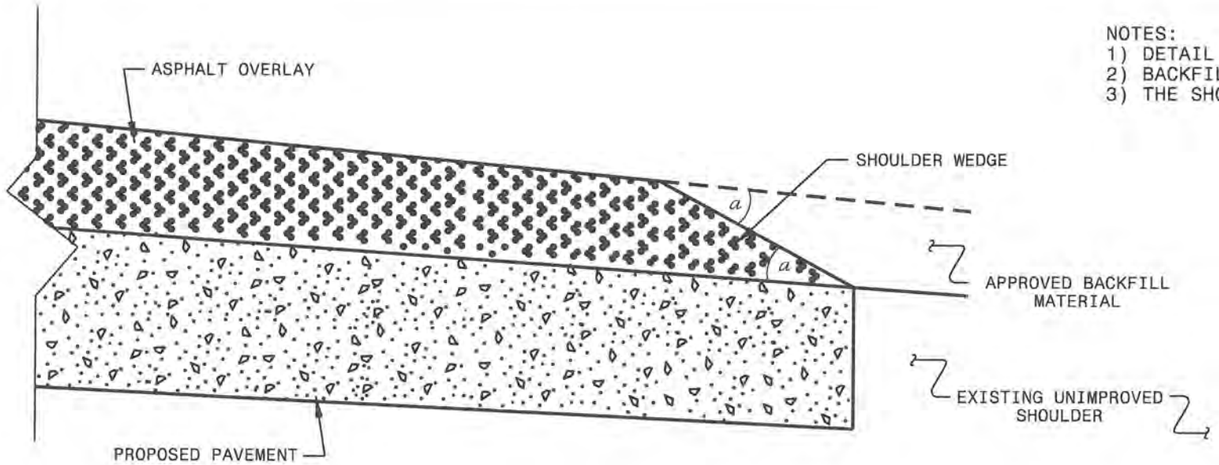
N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

DIVISION OF HIGHWAYS · DIVISION FIVE · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · DIVISION DESIGN UNIT

SCALE: NTS	DATE: 04/2014
PREPARED BY:	SUNIL PATEL
REVIEWED BY:	BEN UPSHAW
REVIEWED BY:	

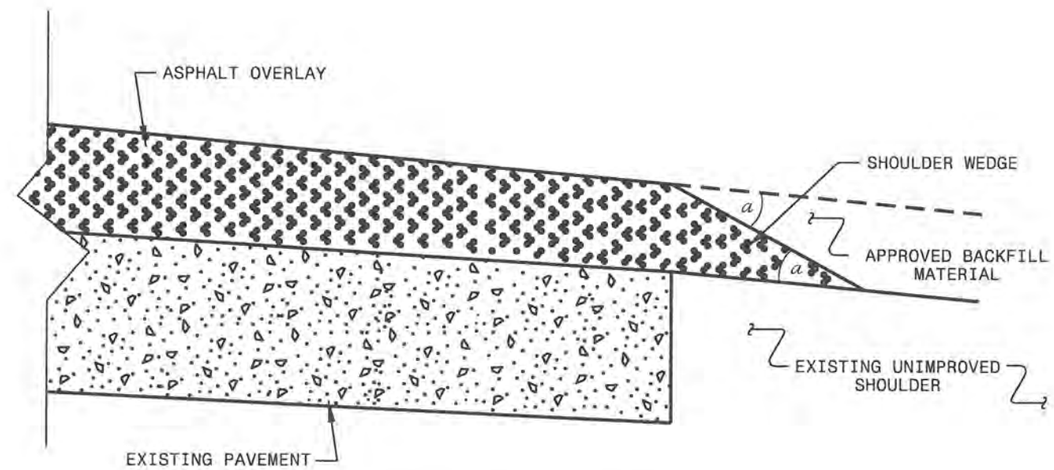
PROJECT REFERENCE NO.	SHEET NO.
EB-4411D	2-C

NOTES:
1) DETAIL DOES NOT APPLY TO OGAFC AND ULTRA-THIN BONDED WEARING COURSE.
2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



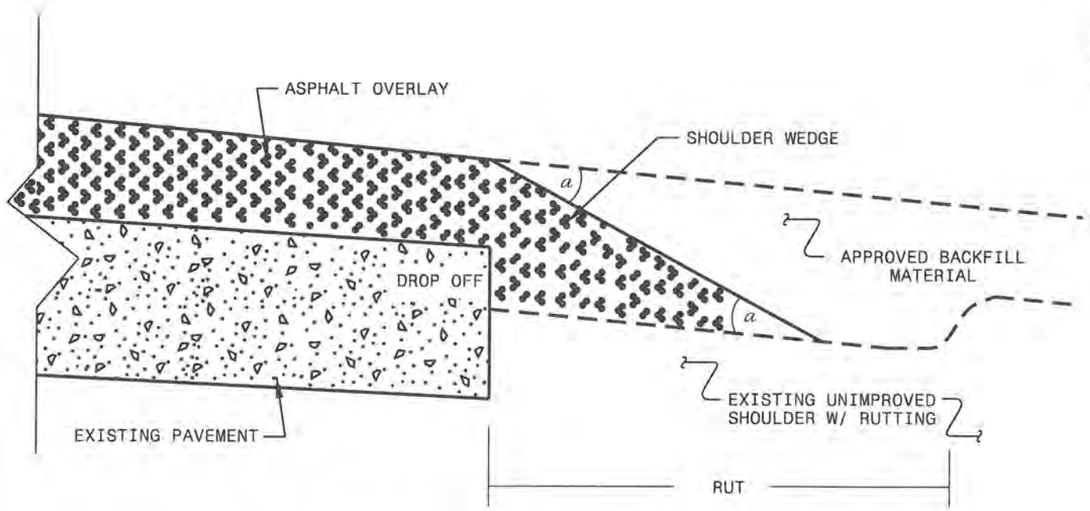
SHOULDER WEDGE DETAIL

(Resurfacing Projects w/ Widening or with Existing Paved Shoulder having no dropoffs)



SHOULDER WEDGE DETAIL

(Resurfacing Projects w/ NO Widening)



SHOULDER WEDGE DETAIL

(Resurfacing Adjacent to Rutted Shoulder)

- SHOULDER WEDGE ANGLE = 30°

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

SHOULDER WEDGE DETAILS

ORIGINAL BY:	T.SPELL	DATE:	7-19-11
MODIFIED BY:		DATE:	10/16/12
CHECKED BY:		DATE:	
FILE SPEC.:	$user/details/stand/shoulderwedgedetail.dgn		

$$$$$$$SYSTIME$$$$$$
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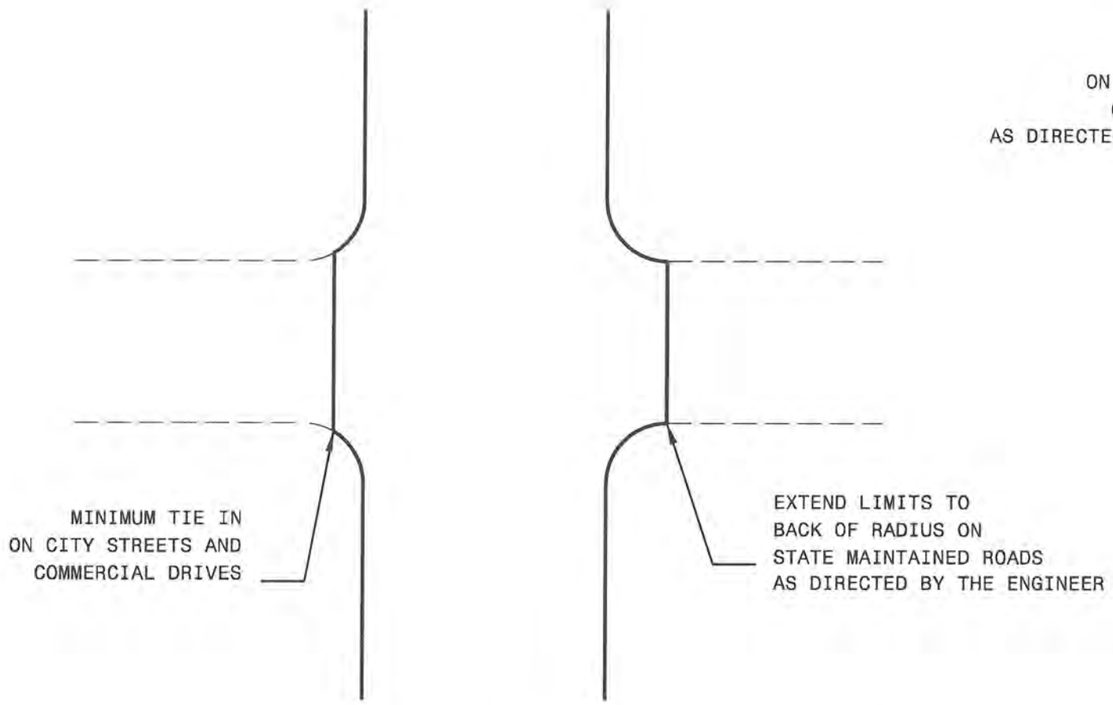
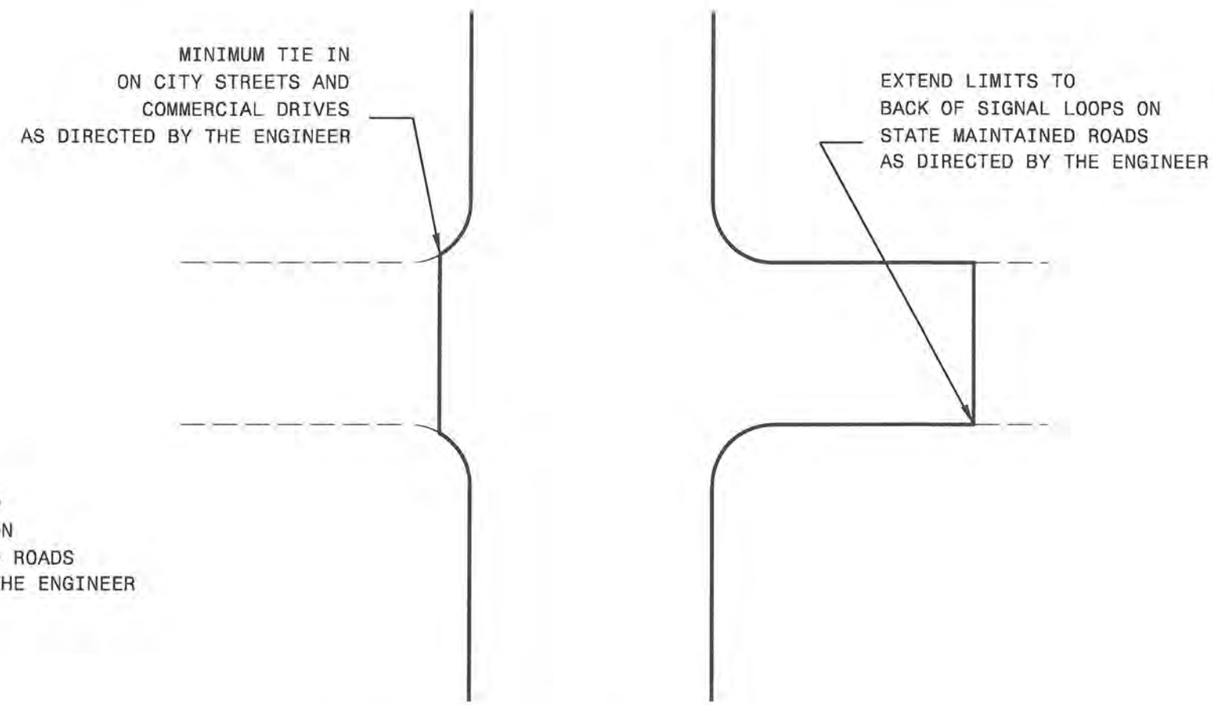
PROJECT REFERENCE NO.	SHEET NO.
EB-4411D	2-D



DETAIL OF PROJECT LIMITS AT
UNSIGNALIZED Y LINES



DETAIL OF PROJECT LIMITS AT
SIGNALIZED Y LINES

COMPUTED BY: SP DATE: 05 /2014
CHECKED BY: BU DATE: 05 /2014

PROJECT REFERENCE NO.	SHEET NO.
EB-4411D	3-A

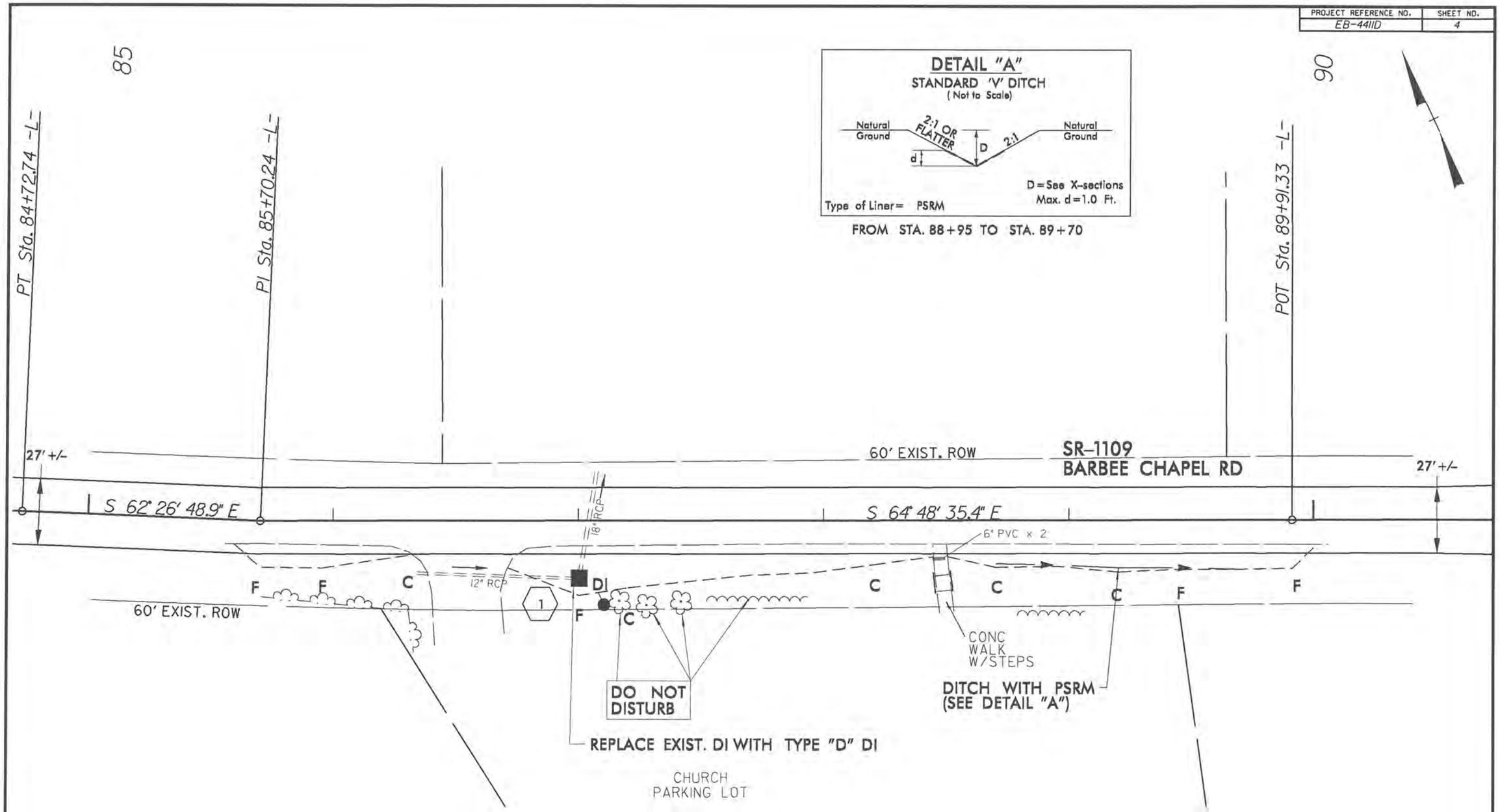
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

| STATION / SIZE / THICKNESS OR GAUGE | LOCATION (LT,RT, OR CL) | STRUCTURE NO. FROM | STRUCTURE NO. TO | TOP ELEVATION | INVERT ELEVATION | INVERT ELEVATION | SLOPE CRITICAL | DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | C.S. PIPE 12" | 15" | 18" | 24" | 36" | 42" | 48" | R.C. PIPE (CLASS III) 15" | 18" | 24" | 30" | 36" | 42" | 48" | R.C. PIPE (CLASS IV) 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | *** R.C. PIPE (CLASS V) | *** R.C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE | *** R.C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE | 15" SIDE DRAIN PIPE | 18" SIDE DRAIN PIPE | ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P. | C.S.P. | QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') LIN. *FT. PER EACH (0' THRU 5.0') | A 5.0' THRU 10.0' | B 10.0' AND ABOVE | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E | F | G | CONCRETE TRANSITIONAL SECTION CATCH BASIN | DROP INLET | GRATED DROP INLET STD. 840.19 OR 840.28 | G.D.I. FRAME WITH GRATE STD. 840.22 | G.D.I. FRAME WITH TWO GRATES STD. 840.22 | G.D.I. FRAME WITH GRATE STD. 840.24 | G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24 | T.B.J.B. STD. 840.34 | M. H. FRAME & COVER ST. 840.54 | CONC. COLLARS CL. "B" C.Y. STD 840.72 | PIPE ELBOWS (15", C.A.A.) | PIPE REMOVAL LIN.FT. | REMARKS |
|---|---|---

PROJECT REFERENCE NO.	SHEET NO.
EB-4411D	4



SCALE 1" = 40'

40' 0 40' 80'

DIVISION FIVE DESIGN

NORTH CAROLINA PROFESSIONAL SEAL 030439 ENGINEER BEN UPSHAW

6/13/14

SIGNATURE P.E.

WIDEN FOR BIKE LANES ON
SR-1110 (BARBEE CHAPEL RD /FARRINGTON RD)
AND SR-1107 (STAGECOACH RD)
FROM NC-54 TO WEST OF KEENELAND CT.

DIVISION 05 DURHAM COUNTY

REVISIONS	INIT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · DIVISION DESIGN UNIT

SCALE: 1"-40' DATE: 02/2014
PREPARED BY: BOB WILLIAMS
REVIEWED BY: BEN UPSHAW
REVIEWED BY:

PROJECT REFERENCE NO.	SHEET NO.
EB-4411D	5

95

PI Sta. 92+18.86 -L-

PC Sta. 96+74.61 -L-

S 64° 48' 35.4" E

S 64° 40' 31.2" E

60' EXIST ROW

120' EXIST. ROW

REPLACE

90+99 +/- (-L-) 13.5 +/-

27' +/-

93+75 +/- (-L-) 17.5 +/-

35.4' +/-

37' +/-

93+27 +/- (-L-) 18.6 +/-

R 60'

11'

95+88 +/- (-L-) 17.5 +/-

24' +/-

37' +/-

R 40'

94+75 +/- (-L-) 19.5 +/-

93+75 +/- (-L-) 81.1 +/-

94+43 +/- (-L-) 36.4 +/-

95+88 +/- (-L-) 19.5 +/-

97+51 +/- (-L-) 16.0 +/-

32' +/-

93+88 +/- (-L-) 148.6 +/-

SR-1110 BARBEE CHAPEL RD

ADJUST MANHOLE

SR-1109 FARRINGTON MILL RD

SR 1110 FARRINGTON RD

SCALE 1" = 50'

50' 0 50' 100'

DIVISION FIVE DESIGN

NORTH CAROLINA PROFESSIONAL SEAL 030459 ENGINEER BEN UPSHAW

6/16/14

SIGNATURE P.E.

WIDEN FOR TURN LANE ON
SR 1110 (BARBEE CHAPEL RD /FARRINGTON RD)
AT SR-1109 (FARRINGTON RD)

DIVISION 05 DURHAM COUNTY

REVISIONS	INIT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

DIVISION OF HIGHWAYS · DIVISION FIVE · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · DIVISION DESIGN UNIT

SCALE: 1"=50' DATE: 06/2014
PREPARED BY: SUNIL PATEL
REVIEWED BY: BEN UPSHAW
REVIEWED BY:

STATE PROJECT REFERENCE NO.		SHEET NO.
EB-4411D		TMP-1
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
36333.1.1	STPEB-0005(752)	P.E.
36333.3.FD4	STPEB-0005(752)	CONST.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN
DURHAM COUNTY

PROJECT: EB-4411D

ROADWAY STANDARD DRAWINGS

REV. SEPTEMBER 2011

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
1150.01	FLAGGING DEVICES
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, INDEX OF SHEETS AND LEGEND
TMP-2	PROJECT NOTES
TMP-3	RESURFACING ADVACE WARNING SIGNS FOR RURAL AND SUBURBAN 2-LANE ROADWAYS
TMP-4	RESURFACING ADVACE WARNING SIGNS FOR URBAN AND SUBURBAN FACILITIES

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- NORTH ARROW
- PROPOSED PVMT. - - - - EXIST. PVMT.
- WORK AREA
- REMOVAL OF EXISTING PAVEMENT

TRAFFIC CONTROL DEVICES

- TYPE I BARRICADE
- TYPE II BARRICADE
- TYPE III BARRICADE
- CONE
- DRUM
- FLASHING ARROW PANEL (TYPE C)
- TYPE 'B' WARNING LIGHT
- STATIONARY SIGN
- PORTABLE SIGN
- WARNING FLAGS
- CRASH CUSHION
- CHANGEABLE MESSAGE SIGN
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- POLICE
- FLAGGER

PAVEMENT MARKINGS

- CRYSTAL PAVEMENT MARKER
- YELLOW/YELLOW PAVEMENT MARKER
- CRYSTAL/RED PAVEMENT MARKER
- PAVEMENT MARKING SYMBOLS

STATE PROJECT REFERENCE NO.		SHEET NO.
EB-4411D		TMP-2
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
36333.1.1	STPEB-000S(752)	P.E.
36333.3.FD4	STPEB-000S(752)	CONST.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

DURHAM COUNTY

PROJECT: EB-4411D

PROJECT NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
NC-54	MONDAY THRU FRIDAY 7 AM TO 9 AM & 4 PM TO 6 PM
SR-1110 (BARBEE CHAPEL RD)	MONDAY THRU FRIDAY 7 AM TO 9 AM & 4 PM TO 6 PM
SR-1110 (FARRINGTON RD)	MONDAY THRU FRIDAY 7 AM TO 9 AM & 4 PM TO 6 PM
SR-1109 (FARRINGTON MILL RD)	MONDAY THRU FRIDAY 7 AM TO 9 AM & 4 PM TO 6 PM
SR-1107 (STAGECOACH RD)	MONDAY THRU FRIDAY 7 AM TO 9 AM & 4 PM TO 6 PM

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME

NC-54
SR-1110 (BARBEE CHAPEL RD)
SR-1110 (FARRINGTON RD)
SR-1109 (FARRINGTON MILL RD)
SR-1107 (STAGECOACH RD)

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.

2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31st TO 7:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 7:00 P.M. THE FOLLOWING TUESDAY.

3. FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 7:00 P.M. MONDAY.

4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 7:00 P.M. TUESDAY.

5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.

6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 7:00 P.M. TUESDAY.

7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 7:00 P.M. MONDAY.

8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

LANE AND SHOULDER CLOSURE REQUIREMENTS

C) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

   WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

G) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

H) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

PAVEMENT EDGE DROP OFF REQUIREMENTS

I) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

   BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

   BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

   BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

J) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 100 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

K) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

L) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

M) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

N) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

PAVEMENT MARKINGS AND MARKERS

O) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

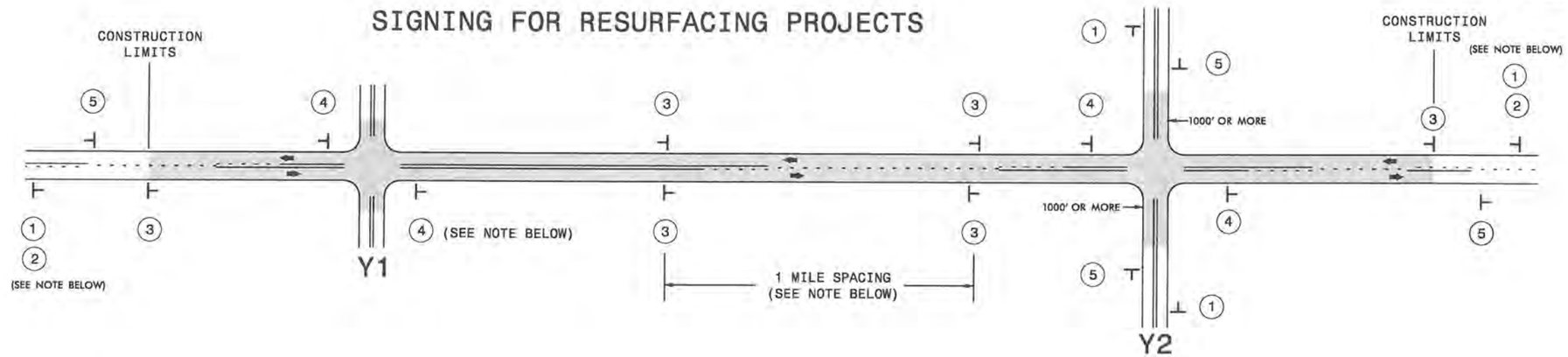
ROAD NAME	MARKING	MARKER
ALL ROADS	PAINT	RAISED REFLECTIVE

P) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

Q) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

PROJ. REFERENCE NO.	SHEET NO.
EB-4411D	TMP-3

SIGNING FOR RESURFACING PROJECTS



LEGEND
- ⊢ STATIONARY SIGN
- ⬅ DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION

1	ROAD WORK AHEAD W20-1 48" X 48"	PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.
2	NEXT XX MILES W7-3aP 24" X 18"	#2 SIGN ONLY USED WHEN RESURFACING LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER.(NO FRACTIONAL OR DECIMAL NUMBERS)
3	LOW/SOFT SHOULDER SP 13107 48" X 48"	PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACED 1 MILE APART THEREAFTER. IF NO -Y- LINES EXIST, PLACE 2ND SET ½ MILE FROM THE CONSTRUCTION LIMITS AND THEN SPACE 1 MILE THEREAFTER.
4	ROAD UNDER CONST SP 13106 48" X 48"	THESE ARE FOR -Y- LINES THAT ARE "THROUGH" ROADWAYS. DEAD END AND SUBDIVISION ROADS ARE NOT "THROUGH" ROADWAYS. INSTALL 500' +/- FROM EACH -Y- LINE APPROACH AS SHOWN ABOVE. FOR MULTIPLE -Y- LINES THAT ARE SEPARATED BY 0.25 MILES OR LESS, TREAT AS A SINGLE UNIT AND INSTALL WITHIN 500' OF EACH APPROACH. A MAXIMUM OF 2 SIGN SETS PER MILE. DO NOT INSTALL WHEN -Y- LINES ARE WITHIN 0.5 MILES FROM "END ROAD WORK" SIGN.
5	END ROAD WORK G20-2 A 48" X 24"	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.

-Y- LINE SIGNING

NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:

1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE
2) SUBDIVISION ROADS
3) DEAD END ROADS

WHEN PAVING/CONSTRUCTION ACTIVITIES PROCEED ACROSS AN UNSIGNED -Y- LINE, ADVANCE WARNING PORTABLE SIGNS SHALL BE USED ALONG THE -Y- LINE AS SHOWN BELOW. REMOVE UPON COMPLETION OF WORK.

ROAD WORK AHEAD
W20-1
48" X 48"

PLACED 500' IN ADVANCE OF FLAGGER.

W20-7 A
48" X 48"

PLACED 250' IN ADVANCE OF FLAGGER.

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

RESURFACING
ADVANCE WARNING SIGNS
FOR
RURAL AND SUBURBAN
2 LANE ROADWAYS

8/8/2013
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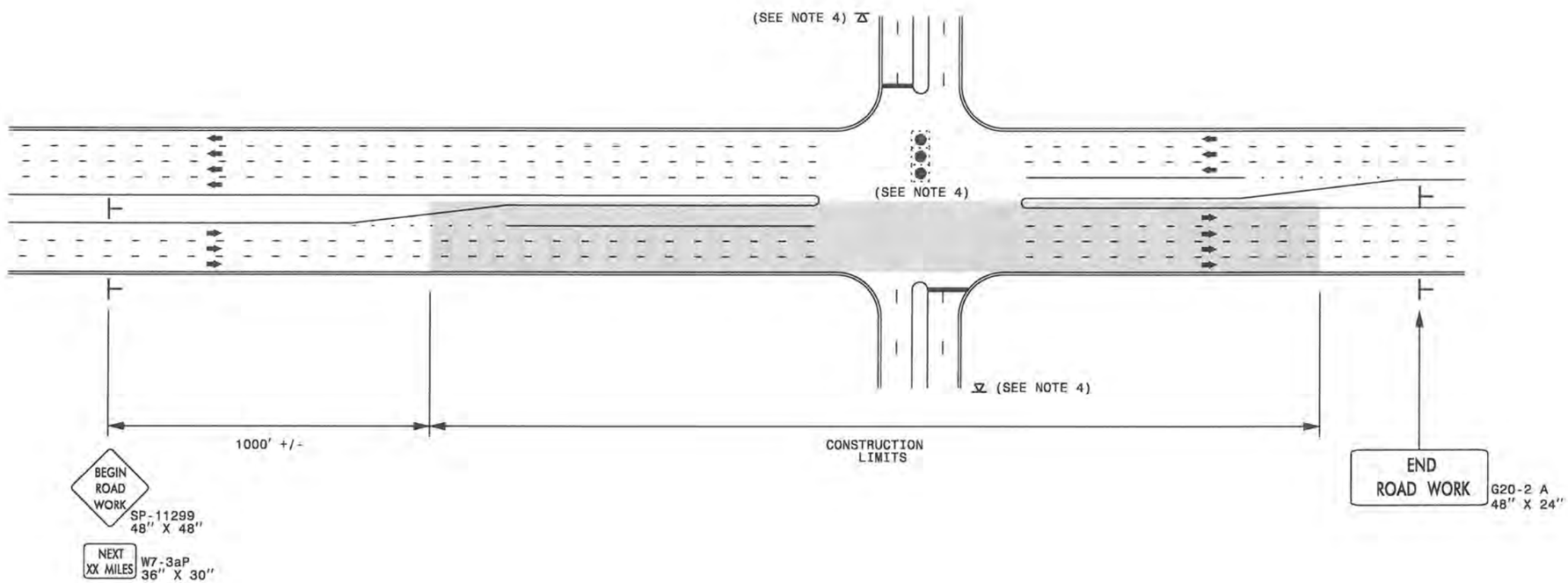
User:rmgarrett

PROJ. REFERENCE NO.	SHEET NO.
EB-4411D	TMP-4

URBAN / SUBURBAN WORKZONES



NOTES:

1) 48" x 48" SIZED SIGNS (SP- 11299) MAY BE REDUCED TO 36" X 36" ON ROADWAYS WITH SPEED LIMITS OF 40 MPH OR LESS.
2) MOUNT SIGNS THAT ARE LARGER THAN 10 SQUARE FEET IN AREA ON TWO OR MORE WOOD OR U-CHANNEL SUPPORTS. PERFORATED SQUARE TUBING SUPPORT SYSTEMS MAY SUPPORT LARGER AREAS ON A SINGLE SUPPORT. FOLLOW MANUFACTURER'S RECOMMENDATIONS. THESE SYSTEMS SHALL BE NCHRP 350 COMPLIANT AND NCDOT APPROVED.
3) ADVANCE WARNING SIGNS NOT REQUIRED ON NON-SIGNALIZED SIDE STREETS.
4) MAY USE LAW ENFORCEMENT TO CONTROL TRAFFIC AT SIGNALIZED INTERSECTIONS AS DIRECTED BY THE ENGINEER. PROVIDE PORTABLE "ROAD WORK AHEAD" (W20-1) SIGNS 500' IN ADVANCE ALONG BOTH APPROACHES FROM THE SIDE STREETS WHEN PAVING PROCEEDS THROUGH THE INTERSECTION.
5) LATERAL CLEARANCE AT ALL SIGN LOCATIONS SHALL BE 2' AS MEASURED FROM THE EDGE OF PAVEMENT OR THE FACE OF THE CURB. WHEN UNABLE TO OBTAIN THE LATERAL CLEARANCE WITHIN THE MEDIAN AREA USE SHOULDER MOUNTS ONLY.
6) SIGN MOUNT LOCATIONS SHALL NOT BLOCK SIDEWALKS OR DRIVEWAYS.
7) IF STATIONARY GENERAL WARNING SIGNS ARE USED, THEY WILL BE PAID FOR PER SECTION 104 OF THE NCDOT STANDARD SPECIFICATIONS AS EXTRA WORK.
8) IF MILLED AREAS ARE NOT PAVED BACK BY THE END OF THE WORK DAY, PORTABLE SIGNS SHALL BE USED TO WARN DRIVERS OF THE PRESENT CONDITIONS. THESE ARE TO INCLUDE, BUT NOT LIMITED TO "ROUGH ROAD" W8-8, "UNEVEN LANES" W8-11, "GROOVED PAVEMENT" W8-15 w/MOTORCYCLE PLAQUE MOUNTED BELOW. THESE ARE TO BE DOUBLE INDICATED ON MULTI-LANE ROADWAYS WITH SPEED LIMITS 45 MPH AND GREATER WHERE LATERAL CLEARANCE CAN BE OBTAINED WITHIN THE MEDIAN AREAS.THESE PORTABLE SIGNS ARE INCIDENTAL TO THE OTHER ITEMS OF WORK INCLUDED IN THE TEMPORARY TRAFFIC CONTROL (LUMP SUM) PAY ITEM.

LEGEND

- STATIONARY SIGN
- DIRECTION OF TRAFFIC FLOW

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

RESURFACING ADVANCE WARNING SIGNS FOR URBAN / SUBURBAN FACILITIES

2/24/2014
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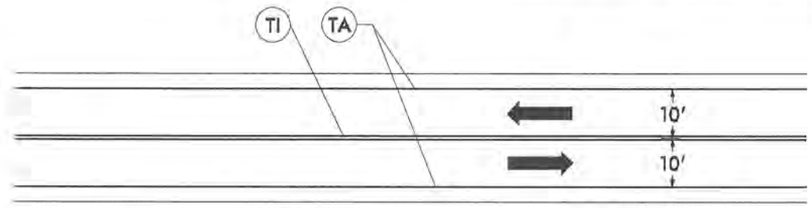
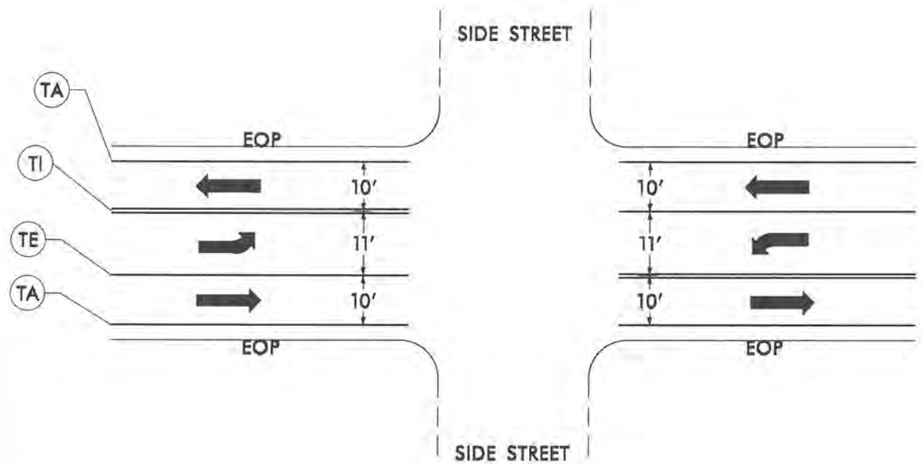
TYPICAL PAVEMENT MARKINGS

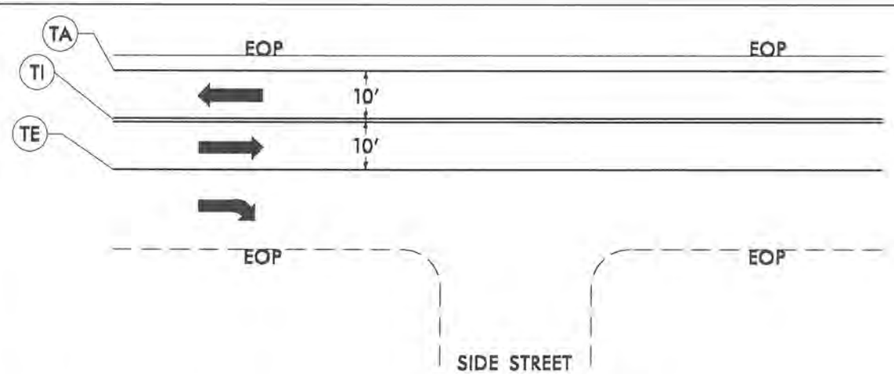
PROJECT REFERENCE NO.	SHEET NO.
EB-4411D	PM-1



NOTE: USE THIS TYPICAL MARKINGS FOR ALL 2-LANE SECTIONS ON
SR-1110 (BARBEE CHAPEL RD / FARRINGTON RD) (-L-)
SR-1107 (STAGECOACH RD) (-Y-)



NOTE: USE THIS TYPICAL MARKINGS AT ALL LEFT OR 2-WAY LEFT TURN LANE SECTIONS
ON SR-1110 (BARBEE CHAPEL RD / FARRINGTON RD) (-L-)



NOTE: USE THIS TYPICAL MARKINGS AT RIGHT TURN LANE SECTION
ON SR-1110 (BARBEE CHAPEL RD) AT FINLEY FOREST DR. (-L-)

LEGEND

- (TA) 4", 90 MILS - THERMOPLASTIC WHITE EDGE LINE
- (TE) 4", 90 MILS - THERMOPLASTIC WHITE LANE LINE
- (TI) 4", 120 MILS - THERMOPLASTIC YELLOW DOUBLE CENTER LINE

NOTES:
1). USE EDGELINES THROUGHOUT CURB & GUTTER SECTIONS
AS WELL AS PAVED SHOULDER SECTIONS ON SR-1110 (BARBEE CHAPEL RD.)
2). FROM STA. 27+43+/- TO STA. 41+48+/- PLACE OUTSIDE EDGELINE ONLY.

DIVISION FIVE DESIGN

NORTH CAROLINA PROFESSIONAL SEAL 030459 ENGINEER BEN UPSHAW

6/20/14

P.E.

SIGNATURE

WIDEN FOR BIKE LANES ON
SR-1110 (BARBEE CHAPEL RD /FARRINGTON RD)
AND SR-1107 (STAGECOACH RD)
FROM NC-54 TO WEST OF KEENELAND CT.

DIVISION 05 DURHAM COUNTY

REVISIONS	INIT.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

DIVISION OF HIGHWAYS · DIVISION FIVE · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · DESIGN UNIT

SCALE: NONE DATE: 05/2014
PREPARED BY: SUNIL PATEL
REVIEWED BY: BEN UPSHAW
REVIEWED BY:

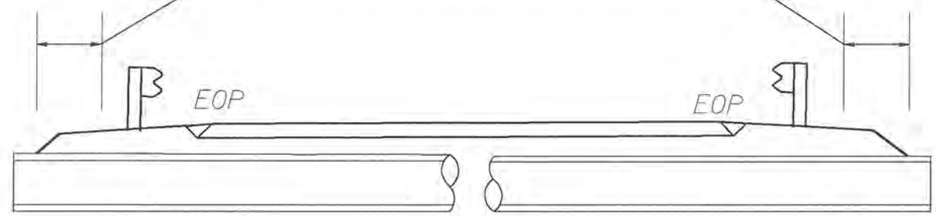
PROJECT REFERENCE NO.	SHEET NO.
EB-4411D	EC-2

EROSION CONTROL DETAIL

NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

BMP Options: Wattle or Silt Fence

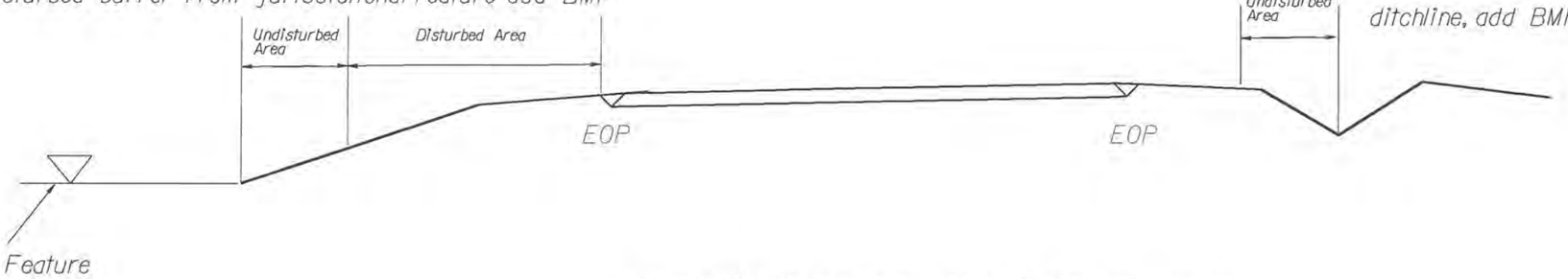
< 5' - 10' Undisturbed buffer add BMP



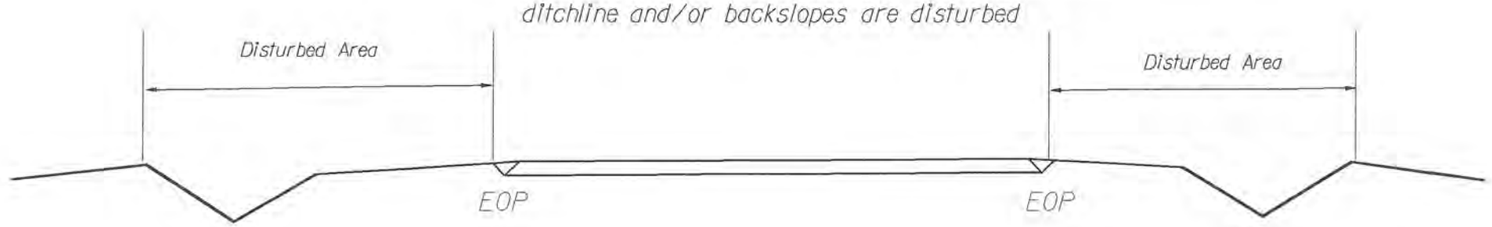
Pipe/Culvert

< 5' - 10' Undisturbed buffer from jurisdictional feature add BMP

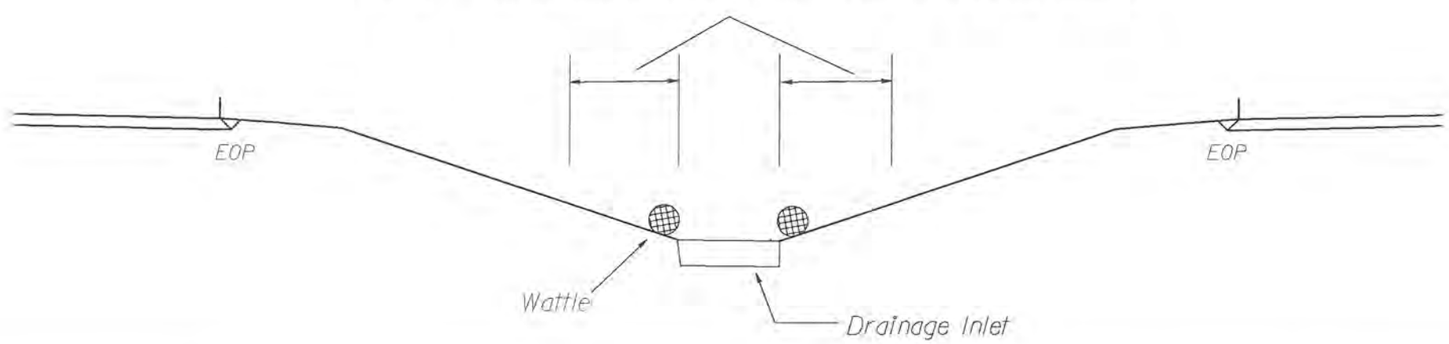
< 5' - 10' Undisturbed buffer from ditchline, add BMP



Use BMP's if shoulders and/or frontslopes and/or ditchline and/or backslopes are disturbed



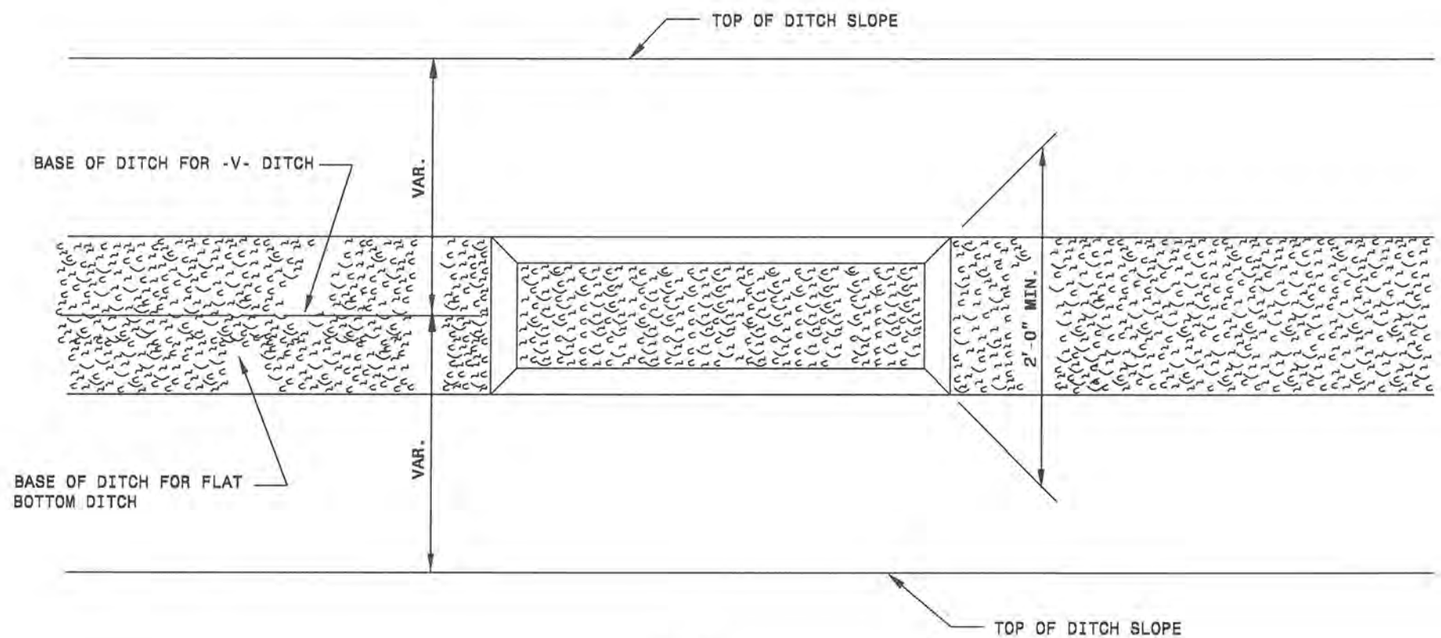
< 5' - 10' Undisturbed buffer from inlet, add wattle



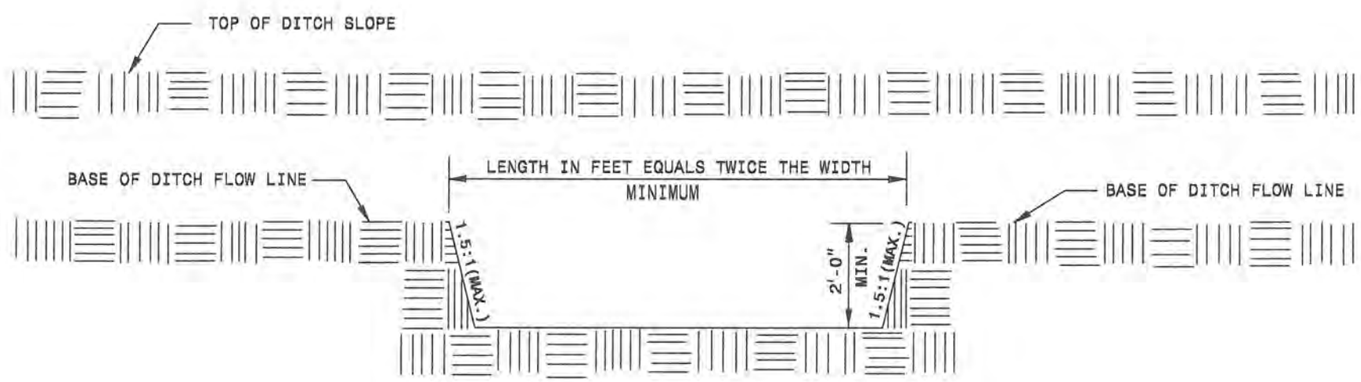
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
EB-441ID	EC-2A

SILT BASIN 'B' DETAIL



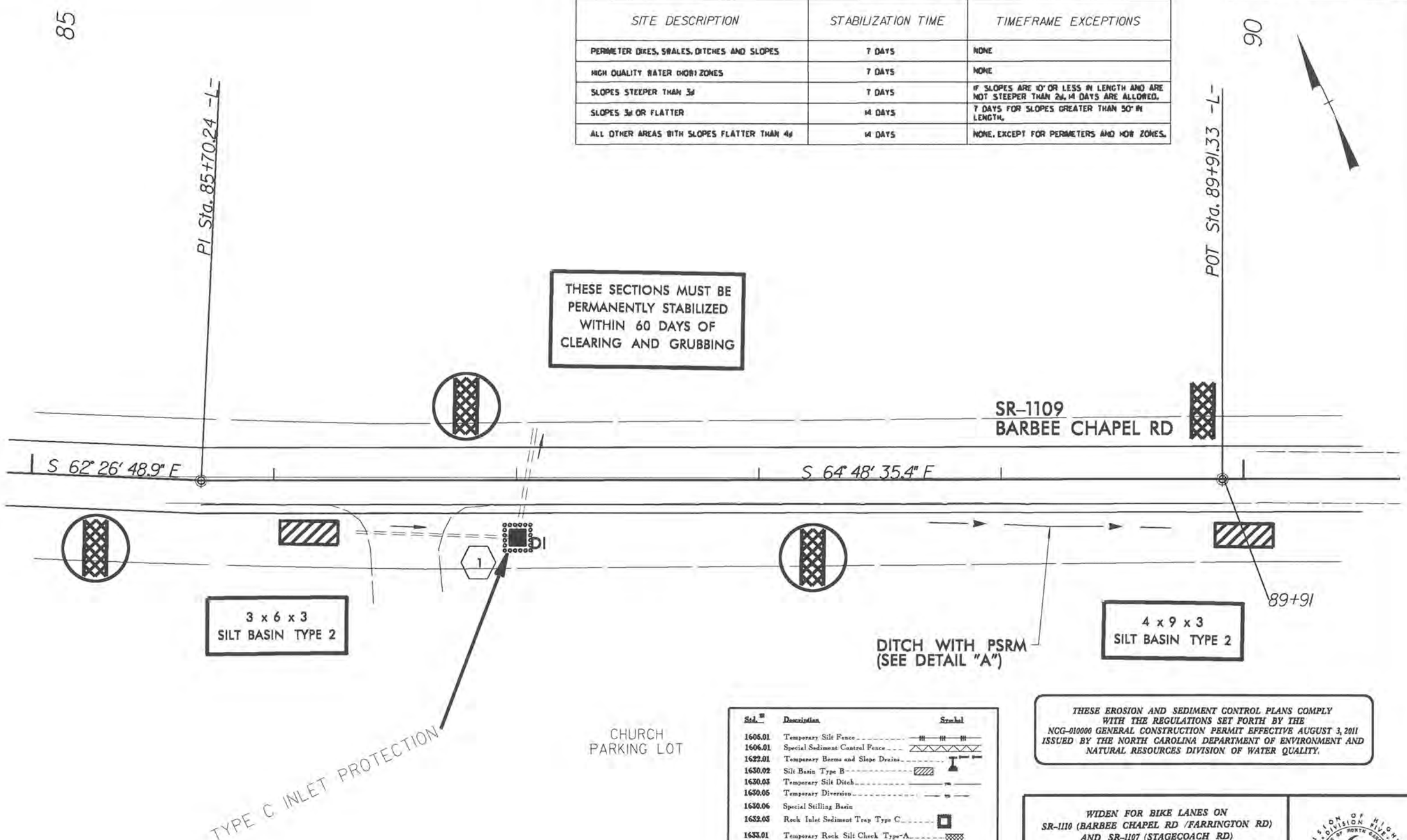
PLAN



ELEVATION

PROJECT REFERENCE NO.	SHEET NO.
EB-4411D	EC-4

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.



SCALE 1" = 40'

40' 0 40' 80'

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	
1630.05	Temporary Diversion	
1630.06	Special Stilling Basin	
1632.03	Rock Inlet Sediment Trap Type C	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle	
	Wattle with Polyacrylamide (PAM)	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

WIDEN FOR BIKE LANES ON SR-1110 (BARBEE CHAPEL RD /FARRINGTON RD) AND SR-1107 (STAGECOACH RD) FROM NC-54 TO WEST OF KEENELAND CT.

DIVISION 05 DURHAM COUNTY

REVISIONS	INIT.	DATE

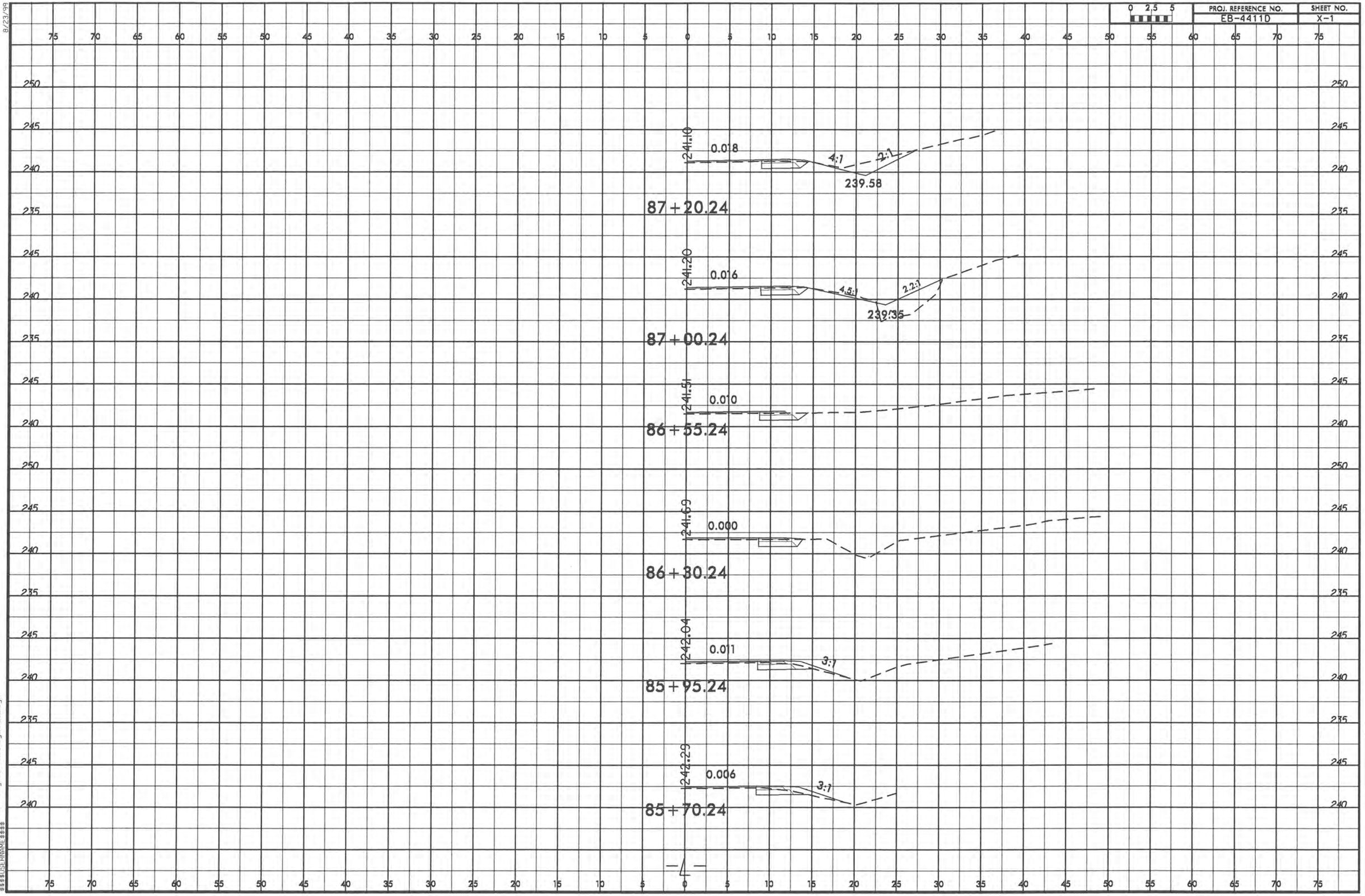
N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · DIVISION DESIGN UNIT

SCALE: 1"=40'	DATE: 2/26/2014
PREPARED BY:	DWD
REVIEWED BY:	
REVIEWED BY:	

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	EB-4411D	X-1



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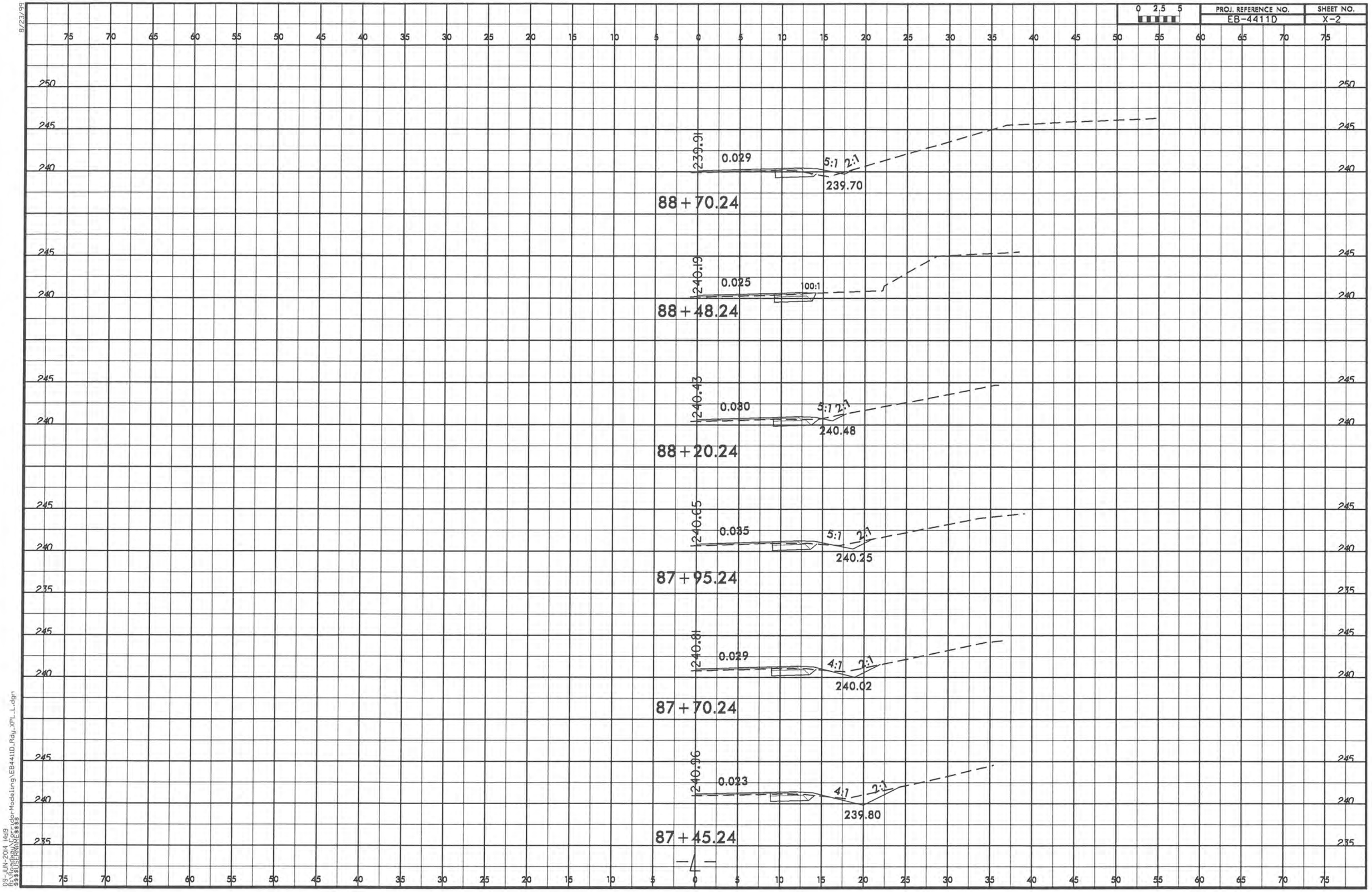

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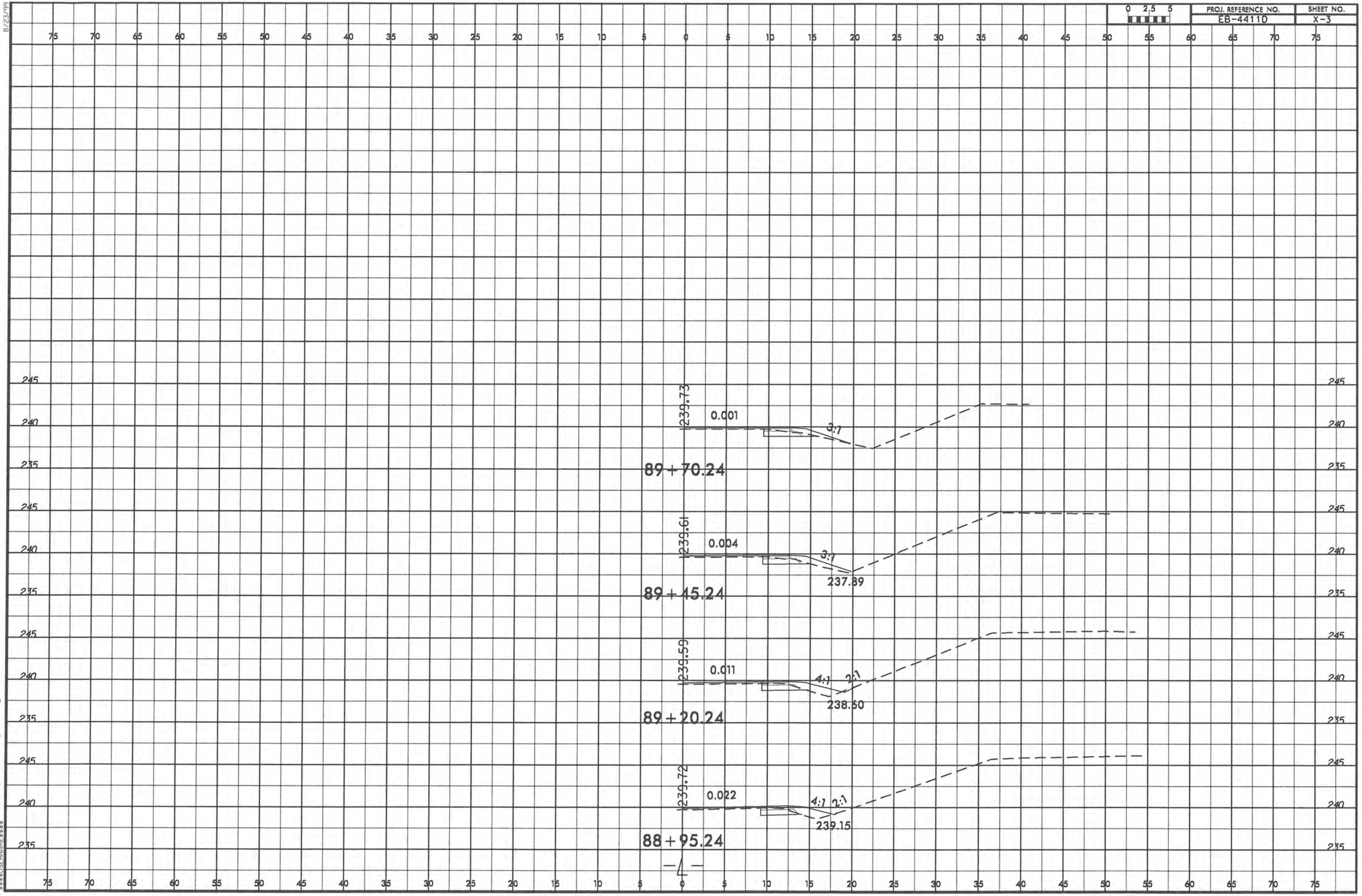

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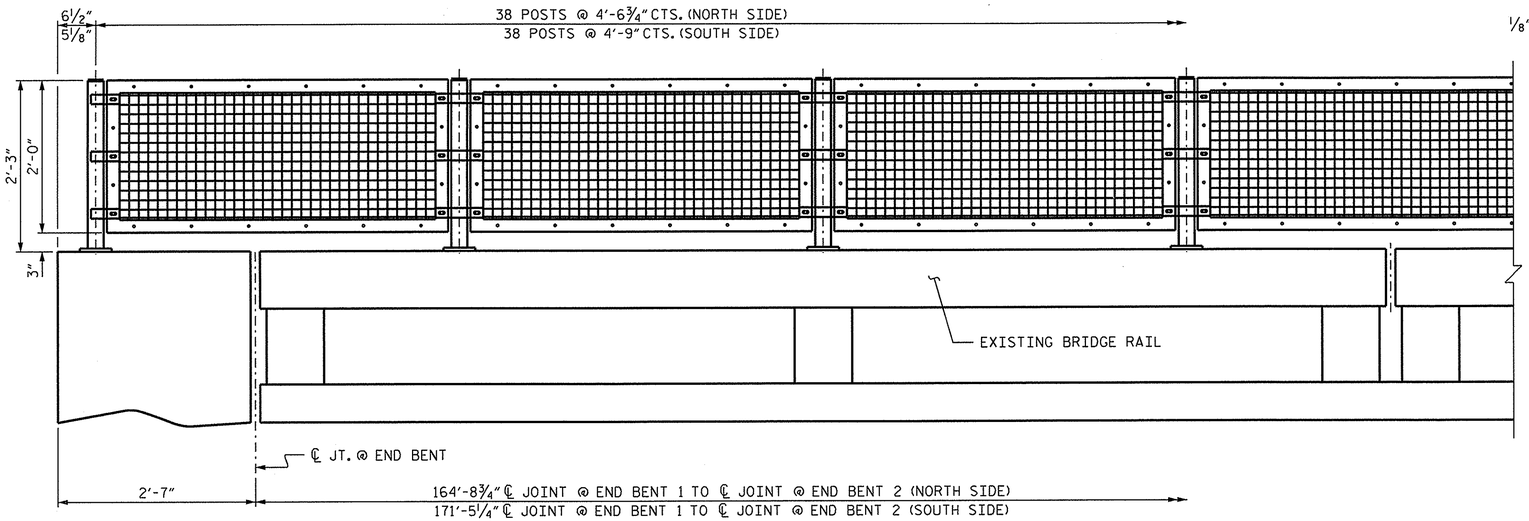
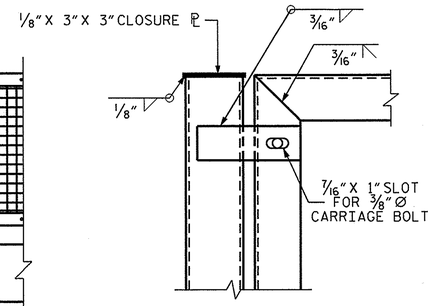
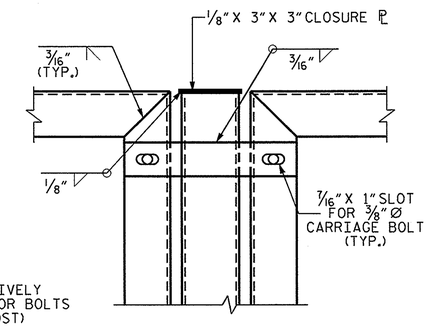


ELEVATION



DETAIL D



DETAIL E

NOTES

ADHERE TO APPLICABLE REQUIREMENTS OF SECTION 1074 OF THE STANDARD SPECIFICATIONS.

POSTS, FRAMES, BASE PLATES AND CONNECTOR PLATES SHALL MEET THE REQUIREMENTS FOR AASHTO M270 GRADE 50 AND SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.

WIRE MESH FENCE SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2453 TYPE 2.

FENCE COMPONENTS SHALL BE PAINTED AFTER GALVANIZATION IN ACCORDANCE WITH SECTION 442 OF THE STANDARD SPECIFICATIONS. THE COLOR SHALL BE BLACK UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL VERIFY DIMENSIONS AND POST SPACINGS IN THE FIELD PRIOR TO FABRICATION AND INSTALLATION OF FENCE.

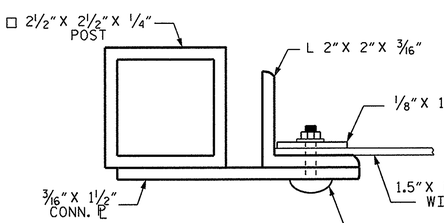
ADHESIVELY ANCHORED ANCHOR BOLTS ARE REQUIRED FOR CONNECTING POST BASE PLATES TO CONCRETE RAIL. LEVEL 1 FIELD TESTING IS REQUIRED AND THE YIELD LOAD OF THE ANCHOR BOLTS IS 3 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS. SEE SECTIONS 420 AND 1081 OF THE STANDARD SPECIFICATIONS.

THERMAL MOVEMENT AT EXPANSION JOINTS SHALL BE ACCOMMODATED AS DIRECTED BY THE ENGINEER.

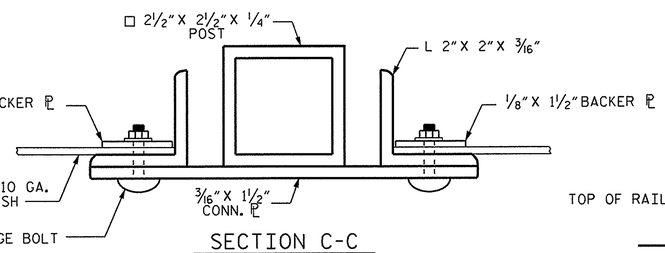
POSTS SHALL BE INSTALLED PLUMB.

FOR BRIDGE FENCE, SEE SPECIAL PROVISIONS.

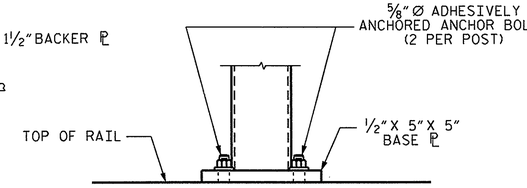
BRIDGE FENCE	
345	LIN. FT.



SECTION B-B



SECTION C-C



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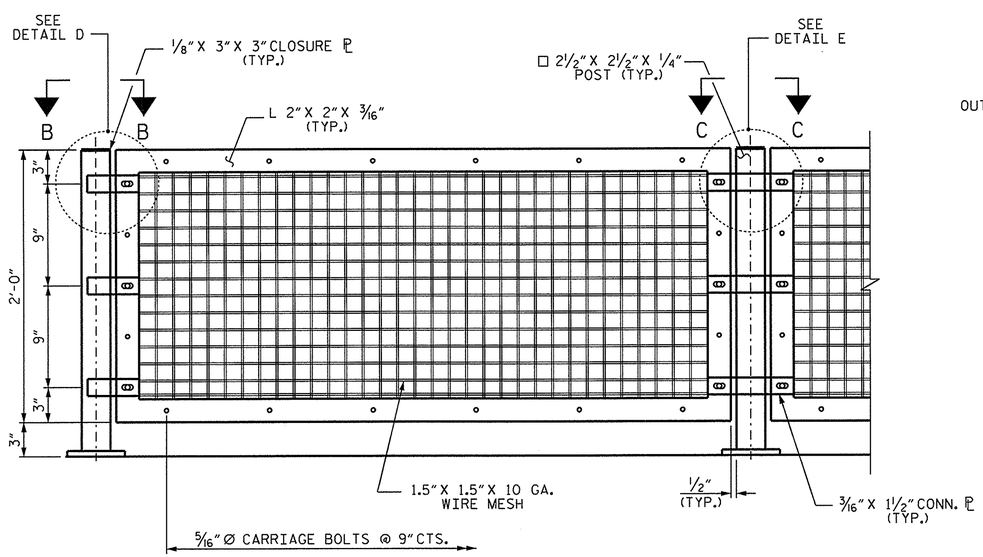
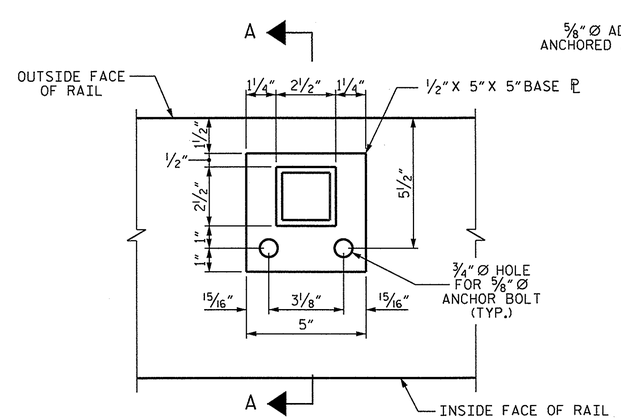
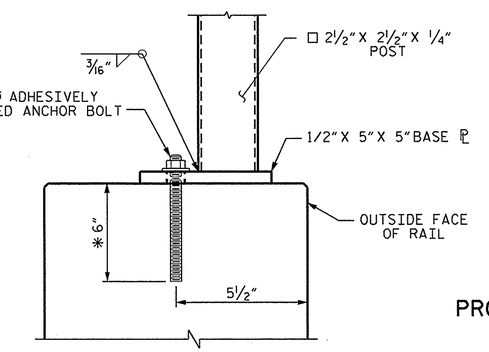


FENCE PANEL



PLAN

FENCE POST BASE PLATE



SECTION A-A

* 6" EMBEDMENT OR AS REQUIRED BY MANUFACTURER

BRIDGE FENCE DETAILS

PROJECT NO. EB-4411D

DURHAM COUNTY

STATION: -

BRIDGE NO. 110

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE FENCE

NORTH CAROLINA PROFESSIONAL SEAL 14855 ENGINEER D. RAGAINS R. CALHOUN
6/12/14

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

DRAWN BY : A. SORSENGINH DATE : 5/2014
CHECKED BY : D. R. CALHOUN DATE : 6/2014

18-JUN-2014 09:34
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asorsenginh