TIP PROJECT: I-5314

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| N.C. | I-5314 | EC-1 | |

| STATE PROJ. NO. | F. A. PROJ. NO. | DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

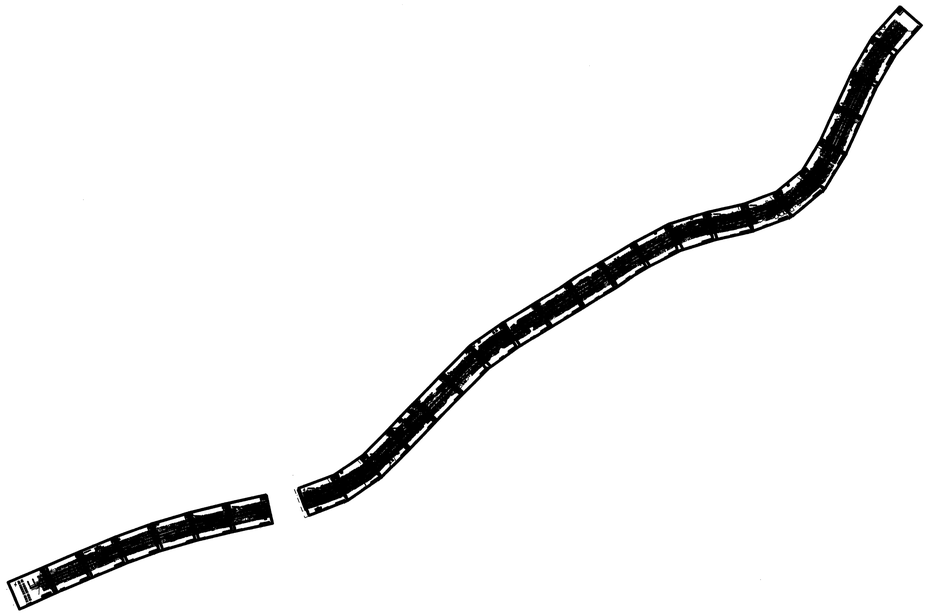
# STATE OF NORTH CAROLINA

## DIVISION OF HIGHWAYS

## PLAN FOR PROPOSED
## HIGHWAY EROSION CONTROL

# RANDOLPH COUNTY

LOCATION: I-85 FROM THE DAVISION COUNTY LINE TO EAST OF US 311
TYPE OF WORK: GRADING, DRAINAGE, & PAVING



## EROSION AND SEDIMENT CONTROL MEASURES

| Std. # | Description | Symbol |
|---|---|---|
| 1630.03 | Temporary Silt Ditch | TSD |
| 1630.05 | Temporary Diversion | TD |
| 1605.01 | Temporary Silt Fence | |
| 1606.01 | Special Sediment Control Fence | |
| 1622.01 | Temporary Berms and Slope Drains | |
| 1630.02 | Silt Basin Type B | |
| 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 / Coir Fiber Wattle | SW CFW |
| | Wattle / Coir Fiber Wattle with Polyacrylamide (PAM) | |
| 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 | |
| 1630.04 | Stilling Basin | |
| 1630.06 | Special Stilling Basin | |
| | Rock Inlet Sediment Trap: | |
| 1632.01 | Type A | A |
| 1632.02 | Type B | B |
| 1632.03 | Type C | C |
| | Skimmer Basin | |
| | Tiered Skimmer Basin | |
| | Infiltration Basin | |

**THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.**

***GRAPHIC SCALE***

0
PLANS
0
PROFILE (HORIZONTAL)
0
PROFILE (VERTICAL)

***ROADSIDE ENVIRONMENTAL UNIT***
***DIVISION OF HIGHWAYS***
***STATE OF NORTH CAROLINA***

***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.***

*Prepared In the Office of:*

***ROADSIDE ENVIRONMENTAL UNIT***
*1 South Wilmington St.*
*Raleigh, NC 27611*

***2012 STANDARD SPECIFICATIONS***

**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 January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.**

| | | | |
|---|---|---|---|
| 1604.01 | Railroad Erosion Control Detail | 1632.01 | Rock Inlet Sediment Trap Type A |
| 1605.01 | Temporary Silt Fence | 1632.02 | Rock Inlet Sediment Trap Type B |
| 1606.01 | Special Sediment Control Fence | 1632.03 | Rock Inlet Sediment Trap Type C |
| 1607.01 | Gravel Construction Entrance | 1633.01 | Temporary Rock Silt Check Type A |
| 1622.01 | Temporary Berms and Slope Drains | 1633.02 | Temporary Rock Silt Check Type B |
| 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 | 1640.01 | Coir Fiber Baffle |
| 1630.06 | Special Stilling Basin | 1645.01 | Temporary Stream Crossing |
| 1631.01 | Matting Installation | | |

11-MAR-2013 14:29
c:\ta\rdy\projects\I-5314\vash\ecp\I5314_EC1.dgn_tsh.dgn
Client: NCDOT Project: 6.248174

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-2 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

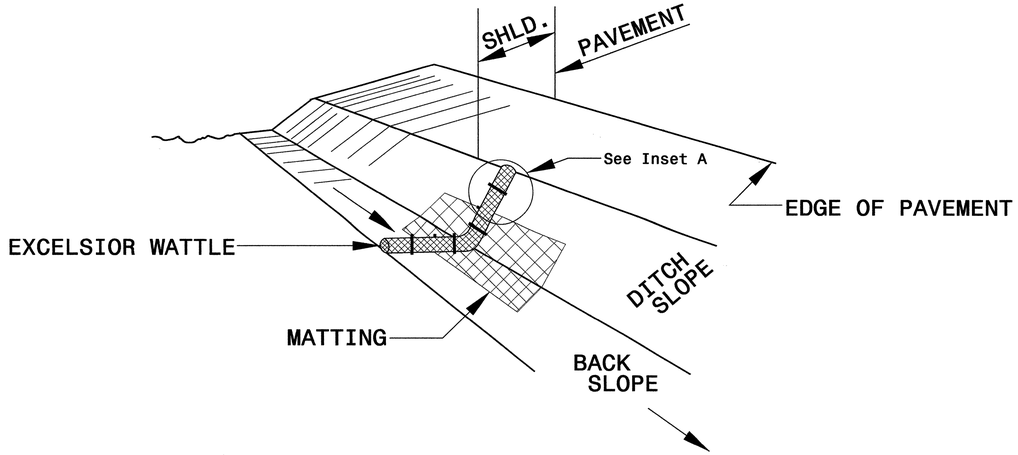
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

# *SOIL STABILIZATION TIMEFRAMES*

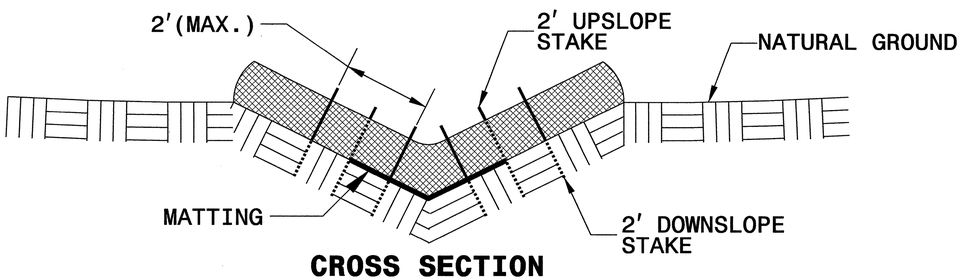
| SITE DESCRIPTION | STABILIZATION TIME | TIMEFRAME EXCEPTIONS |
|---|---|---|
| PERIMETER DIKES, SWALES, DITCHES AND SLOPES | 7 DAYS | NONE |
| HIGH QUALITY WATER (HQW) ZONES | 7 DAYS | NONE |
| SLOPES STEEPER THAN 3:1 | 7 DAYS | IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS 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. |

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-2A |

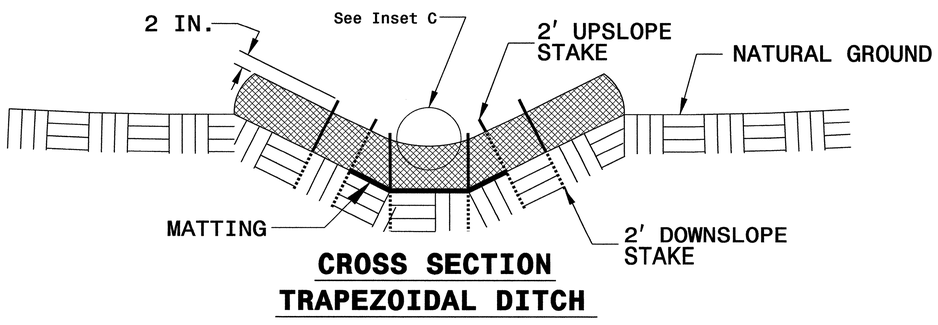
# WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL




**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. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

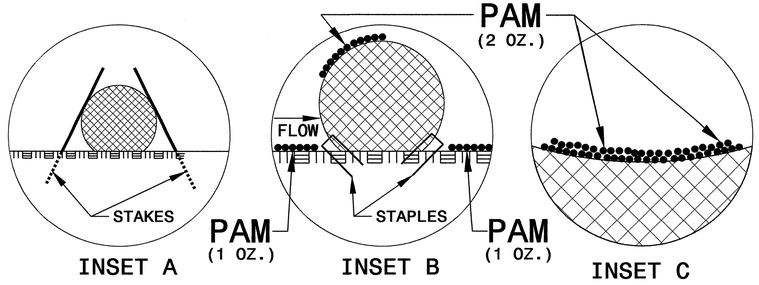
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

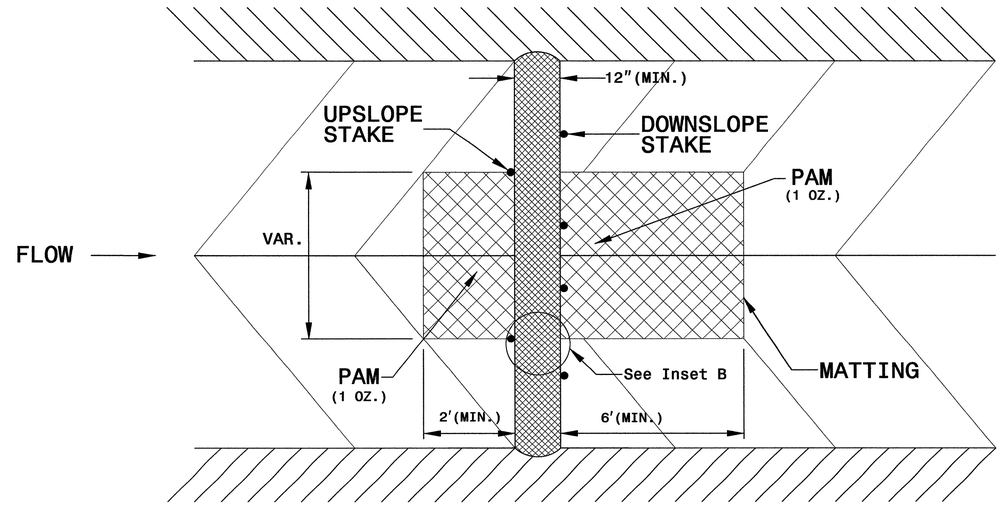
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

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.




**TOP VIEW**

8/17/99

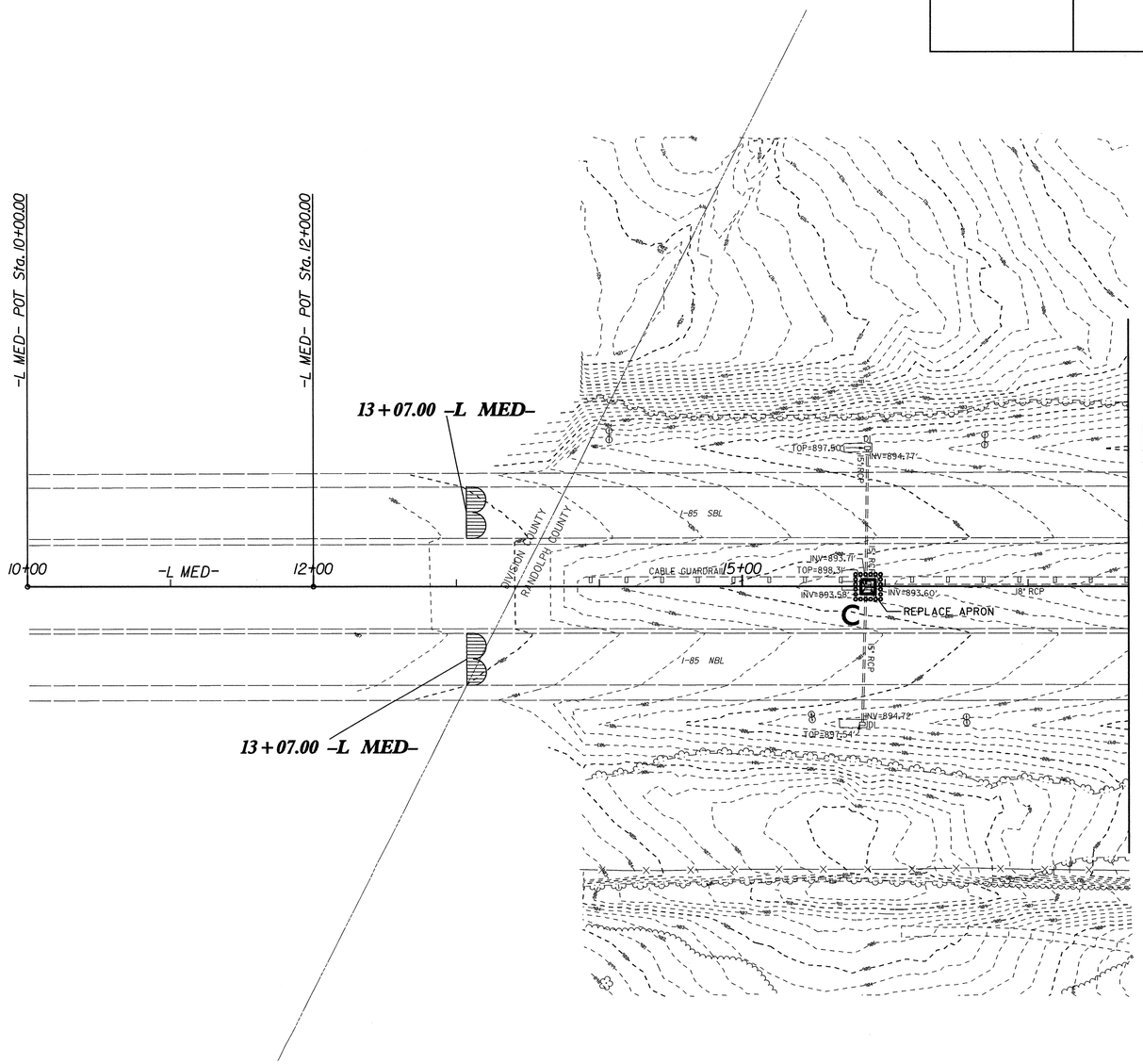
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-3/CONST.4 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

| L 1 SUPER ELEVATION CHANGES RIGHT | | L 1 SUPER ELEVATION CHANGES LEFT | |
|---|---|---|---|
| 29+30.000000 | 1.5000 | 31+40.000000 | -2.0000 |
| 29+60.000000 | 2.0000 | 31+90.000000 | -2.0000 |
| 31+40.000000 | 2.0000 | 32+50.000000 | -2.0000 |
| 31+90.000000 | 2.0000 | 33+10.000000 | -1.0000 |
| 32+50.000000 | 2.0000 | 33+70.000000 | 0.0000 |
| 33+10.000000 | -1.0000 | 34+40.000000 | 1.0000 |
| 33+70.000000 | 0.0000 | 35+40.000000 | 2.0000 |
| 34+40.000000 | -1.0000 | 36+00.000000 | 1.6000 |
| 35+40.000000 | -2.0000 | | |
| 36+00.000000 | -2.0000 | | |
| | | | |
| 72+40.000000 | -2.140 | 72+40.000000 | 1.550 |
| 73+00.000000 | -2.000 | 73+00.000000 | 2.000 |
| 73+60.000000 | -1.000 | 73+60.000000 | 1.000 |
| 74+20.000000 | 0.000 | 74+20.000000 | 0.000 |
| 74+80.000000 | 1.000 | 74+80.000000 | -1.000 |
| 75+40.000000 | 2.000 | 75+40.000000 | -2.000 |
| 76+40.000000 | 1.060 | 76+40.000000 | -2.130 |
| | | | |
| 185+60.000000 | 1.0200 | 185+60.000000 | -2.2100 |
| 186+20.000000 | 2.0000 | 186+20.000000 | -2.0000 |
| 186+80.000000 | 1.0000 | 186+80.000000 | -1.0000 |
| 187+40.000000 | 0.0000 | 187+40.000000 | 0.0000 |
| 188+00.000000 | -1.0000 | 188+00.000000 | 1.0000 |
| 188+60.000000 | -2.0000 | 188+60.000000 | 2.0000 |
| 189+20.000000 | -3.4500 | 189+20.000000 | 2.2500 |
| | | | |
| 201+92.000000 | -2.3800 | 201+92.000000 | 2.3800 |
| 202+52.000000 | -2.0000 | 202+52.000000 | 2.0000 |
| 203+12.000000 | -1.0000 | 203+12.000000 | 1.0000 |
| 203+72.000000 | 0.0000 | 203+72.000000 | 0.0000 |
| 204+32.000000 | 1.0000 | 204+32.000000 | -1.0000 |
| 204+92.000000 | 2.0000 | 204+92.000000 | -2.0000 |
| 205+52.000000 | 2.3300 | 205+52.000000 | -2.3300 |
| | | | |
| 253+95.000000 | 1.5100 | 253+95.000000 | -2.3100 |
| 254+55.000000 | 2.0000 | 254+55.000000 | -2.0000 |
| 255+15.000000 | 1.0000 | 255+15.000000 | -1.0000 |
| 255+75.000000 | 0.0000 | 255+75.000000 | 0.0000 |
| 256+35.000000 | -1.0000 | 256+35.000000 | 1.0000 |
| 256+95.000000 | -2.0000 | 256+95.000000 | 2.0000 |
| 257+55.000000 | -2.0400 | 257+55.000000 | 1.0400 |
| | | | |
| 287+15.000000 | -3.3500 | 287+15.000000 | 2.5900 |
| 287+75.000000 | -2.0000 | 287+75.000000 | 2.0000 |
| 288+35.000000 | -1.0000 | 288+35.000000 | 1.0000 |
| 288+95.000000 | 0.0000 | 288+95.000000 | 0.0000 |
| 289+55.000000 | 1.0000 | 289+55.000000 | -1.0000 |
| 290+15.000000 | 2.0000 | 290+15.000000 | -2.0000 |
| 290+75.000000 | 0.8100 | 290+75.000000 | -2.2300 |

| L 2 SUPER ELEVATION CHANGES RIGHT | | L 2 SUPER ELEVATION CHANGES LEFT | |
|---|---|---|---|
| 103+25.000000 | 1.7600 | 103+25.000000 | -1.9400 |
| 103+85.000000 | 2.0000 | 103+85.000000 | -2.0000 |
| 104+45.000000 | 1.0000 | 104+45.000000 | -1.0000 |
| 105+05.000000 | 0.0000 | 105+05.000000 | 0.0000 |
| 105+65.000000 | -1.0000 | 105+65.000000 | 1.0000 |
| 106+25.000000 | -2.0000 | 106+25.000000 | 2.0000 |
| 106+85.000000 | -3.1000 | 106+85.000000 | 2.6200 |
| | | | |
| 141+35.000000 | -2.610 | 141+35.000000 | 2.070 |
| 141+95.000000 | -2.000 | 141+95.000000 | 2.000 |
| 142+55.000000 | -1.000 | 142+55.000000 | 1.000 |
| 143+15.000000 | 0.000 | 143+15.000000 | 0.000 |
| 143+75.000000 | 1.000 | 143+75.000000 | -1.000 |
| 144+35.000000 | 2.000 | 144+35.000000 | -2.000 |
| 144+95.000000 | 1.650 | 144+95.000000 | -1.890 |
| | | | |
| 287+55.000000 | 2.7900 | 287+55.000000 | -3.1500 |
| 288+15.000000 | 2.0000 | 288+15.000000 | -2.0000 |
| 288+75.000000 | 1.0000 | 288+75.000000 | -1.0000 |
| 289+35.000000 | 0.0000 | 289+35.000000 | 0.0000 |
| 289+95.000000 | -1.0000 | 289+95.000000 | 1.0000 |
| 290+55.000000 | -2.0000 | 290+55.000000 | 2.0000 |
| 291+15.000000 | -0.7000 | 291+15.000000 | 0.2200 |

50' 0 50' 100'

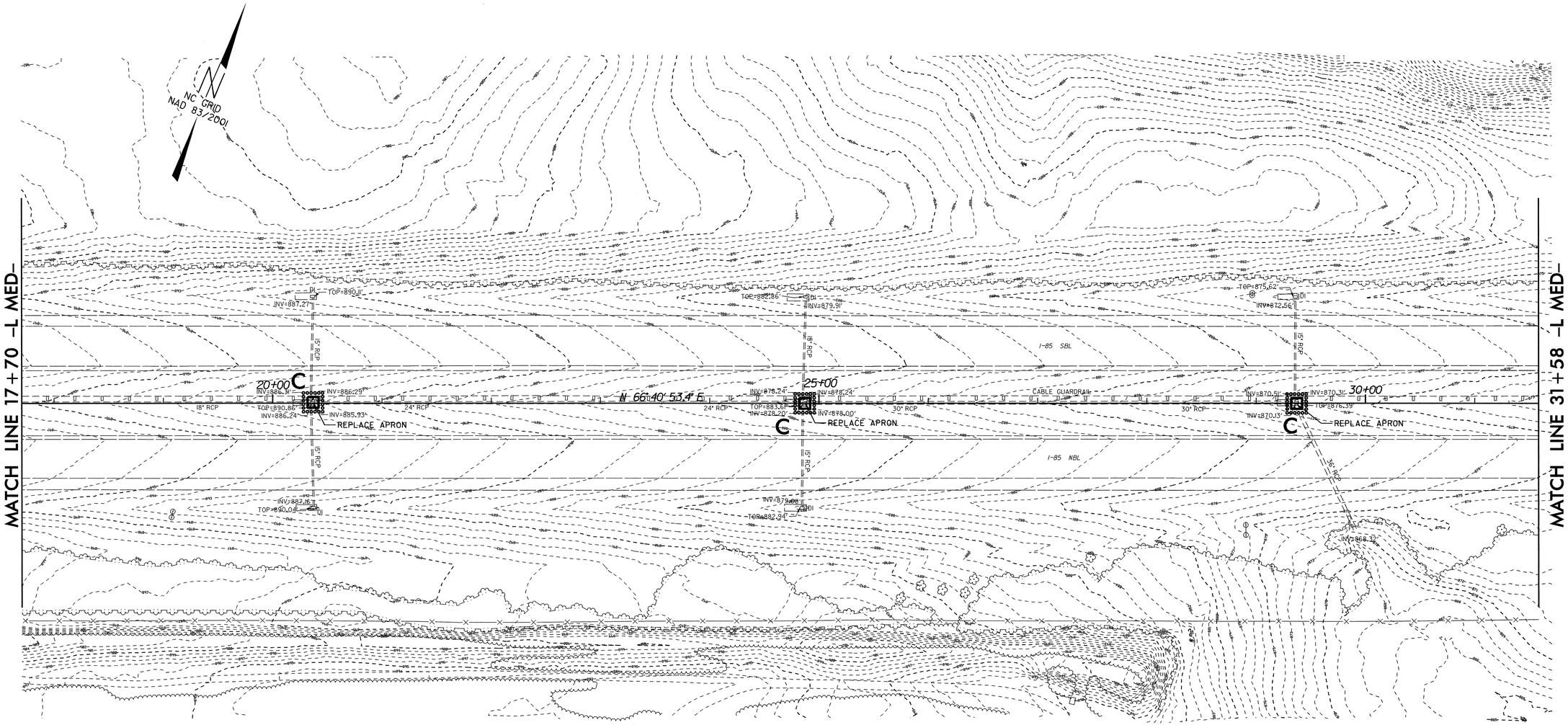



NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:49
C:\dot\projects\rdu\randolph\I-5314\psh\ecp\I-5314_EC3.dgn_psh_4.dgn
microter
ATP Name: 246474

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-4/CONST.5 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |




**NOTE:**
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

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microstation

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-5/CONST.6 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

REMOVE EXISTING FUNNEL DRAINS, REMOVE PIPES OR FILL WITH FLOWABLE FILL AND STABILIZE SLOPE AS DIRECTED BY THE ENGINEER

CULVERT #1
ONE BARREL

| | NORTH | EAST | ELEV. |
|---|---|---|---|
| CUL1 | 770888.56 | 1691133.92 | 837.01 |
| CUL2 | 770890.83 | 1691139.40 | 837.01 |
| CE1 | 770889.11 | 1691136.39 | 841.88 |
| HW1 | 770894.23 | 1691135.21 | 845.34 |
| CUL3 | 770635.26 | 1691230.13 | 833.60 |
| CUL4 | 770637.43 | 1691235.68 | 833.61 |
| CE2 | 770636.07 | 1691231.99 | 838.60 |
| HW2 | 770636.20 | 1691232.43 | 840.60 |

DA= .18
C= 0.9
Hr= 4.0
Spread= 8.7
Bypass= N/A
Rdwy. Grade= 0.0
Cross Slope= .02

L-1 SUPER ELEVATION CHANGES RIGHT

| | |
|---|---|
| 29+30.000000 | 1.5000 |
| 29+60.000000 | 2.0000 |
| 31+40.000000 | 2.0000 |
| 31+90.000000 | 2.0000 |
| 32+50.000000 | 2.0000 |
| 33+10.000000 | -1.0000 |
| 33+70.000000 | 0.0000 |
| 34+40.000000 | -1.0000 |
| 35+40.000000 | -2.0000 |
| 36+00.000000 | -2.0000 |

L-1 SUPER ELEVATION CHANGES LEFT

| | |
|---|---|
| 31+40.000000 | -2.0000 |
| 31+90.000000 | -2.0000 |
| 32+50.000000 | -2.0000 |
| 33+10.000000 | -1.0000 |
| 33+70.000000 | 0.0000 |
| 34+40.000000 | 1.0000 |
| 35+40.000000 | 2.0000 |
| 36+00.000000 | 1.6000 |

MATCH LINE 31+58 -L MED-

34+57.65 -L MED-
28+70.00 -L1-
BEGIN WIDENING
BEGIN WEDGING

42+38.21 -L MED-
28+70.00 -L1-
END WIDENING

44+86.75 -L MED-
39+00.00 -L1-
END WEDGING

MATCH LINE 45+46 -L MED-

DA= .17
C= 0.9
Hr= 4.0
Spread= 6.3
Bypass= 0.1
Rdwy. Grade= .0067
Cross Slope= .02

DA= .2
C= 0.9
Hr= 4.0
Spread= 5.7
Bypass= .2
Rdwy. Grade= .02
Cross Slope= .02

DA= .2
C= 0.9
Hr= 4.0
Spread= 7.1
Bypass= 0.1
Rdwy. Grade= .005
Cross Slope= .02

(0612) CL I RIP-RAP
ELBOW
RING HW & WW
ROD AND LUG WITH SLEEVE GASKETS
Existing Slope Drain
RAMP LEADING TO CULVERT
End EG Sta. 41+00

(06H) CL I RIP-RAP
ELBOW
ROD AND LUG WITH SLEEVE GASKETS
REMOVE & REPLACE EXIST PR
REMOVE EXIST CURB
Begin EG Sta. 35+25
Existing Slope Drain
TB 2GI
(0601) 15" RCP-IV
(0610) 15" RCP-IV
(0602) 15" RCP-IV
(0603) 15" RCP-IV
(0604) 15" RCP-IV
EXIST
MATCH EXIST

SEE CROSS SECTIONS FOR PAVED SHOULDER SUPER ELEVATIONS

35+00
-L MED-
40+00
45+00
CULVERT BOX
INV=867.40
INV=866.02
INV=860.11
-L-MED- PC Sta. 39+38.86
REPLACE APRON

(0605) 15" RCP-IV
(0606) 15" RCP-IV
(0607) 15" RCP-IV
(0608) 15" RCP-IV
ELBOW
Begin EG Sta. 35+50
Existing Slope Drain
ROD AND LUG WITH SLEEVE GASKETS
REMOVE & REPLACE EXIST GR
REMOVE EXIST CURB
(0609) ELBOW
RING HW & WW
CL I RIP RAP
End EG Sta. 40+80
INV=861.23
36" RCP

34+54.76 -L MED-
28+67.10 -L2-
BEGIN WIDENING

41+24.63 -L MED-
35+36.60 -L2-
END WIDENING

DA= .38
C= 0.9
Hr= 4.0
Spread= 6.8
Bypass= 0.1
Rdwy. Grade= 0.005
Cross Slope= .02

DA= 0.11
C= 0.9
Hr= 4.0
Spread= 7.3
Bypass= 0.1
Rdwy. Grade= .002
Cross Slope= .02

DA= 0.7
C= 0.9
Hr= 4.0
Spread= 7.4
Bypass= N/A
Rdwy. Grade= 0.0
Cross Slope= .02

DA= .14
C= 0.9
Hr= 4.0
Spread= 6.4
Bypass= 0.1
Rdwy. Grade= .004
Cross Slope= .02

50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:49
C:\Projects\ncdot\projects\I-5314\psh\ecp\I-5314_EC5.dsn_psh_6.dgn
nitrotan
ORIGINAL SHEET - ANSI D (22.00 IN x 34.00 IN)

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-6/CONST.7 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

MATCH LINE 45+46 –L MED–

MATCH LINE 59+34 –L MED–

**49+54.83 –L MED–**
**END UBWC**
**ON RAMP**

**47+66.46 –L MED–**
**END UBWC**
**ON RAMP**

50+00

55+00

REMOVE AND REPLACE 2GI

REPLACE APRON

GRADE TO DRAIN

LOCATION APPROXIMATE

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

50' 0 50' 100'

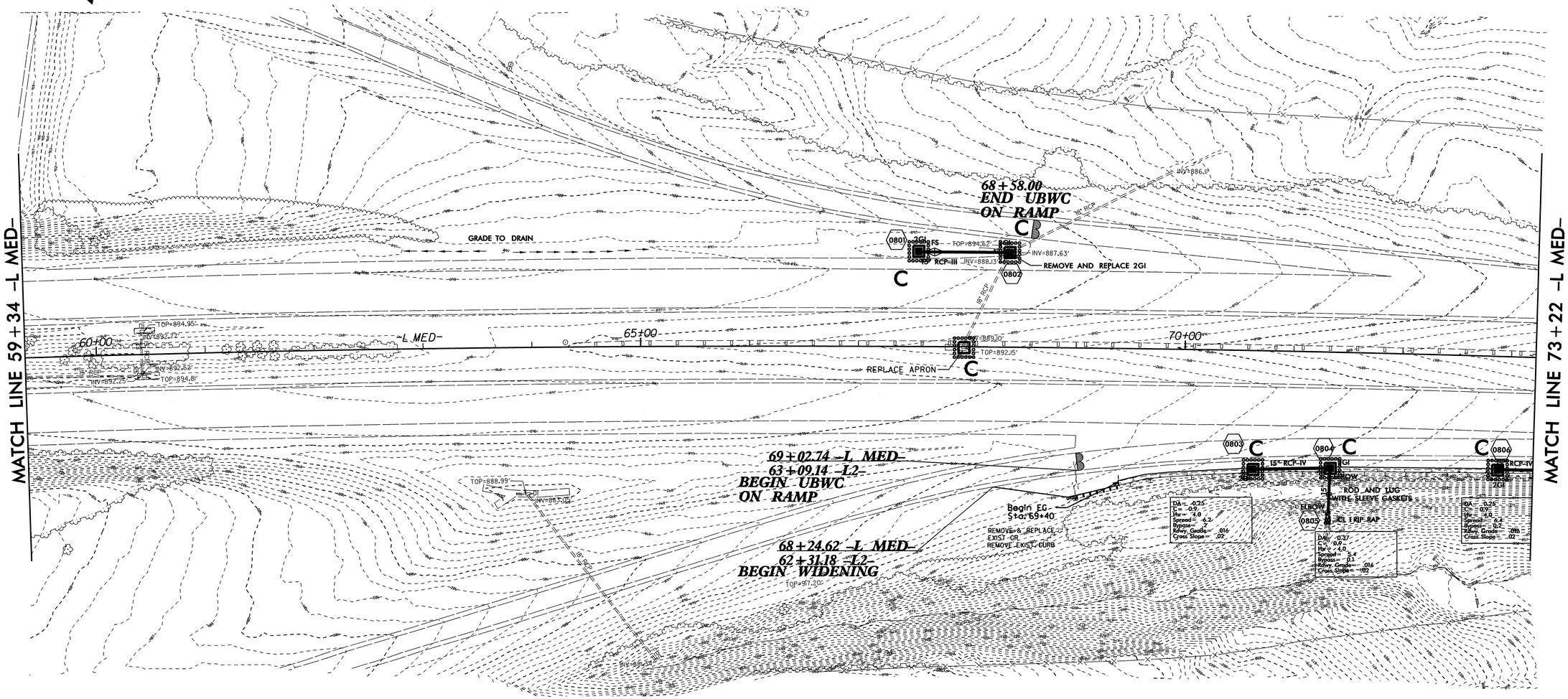
08-MAR-2013 13:49
c:\div\8_pro\ec\dgn\i-5314_ec6.dgn
c:\div\8_pro\ec\psh\i-5314_psh\ecp\i-5314_EC6.dsn_psh_7.dgn

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-7/CONST.8 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

-L MED-
PI Sta 59+68.73
△ = 10° 06' 22.4" (RT)
D = 0° 14' 58.5"
L = 4,049.20'
T = 2,029.87'
R = 22,956.34'

NC GRID
NAD 83/2001




50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:49
C:\Projects\mcordy\scandolph\I-5314\psh\ecp\i-5314_EC7_dsn_psh_8.dgn
mtrotter

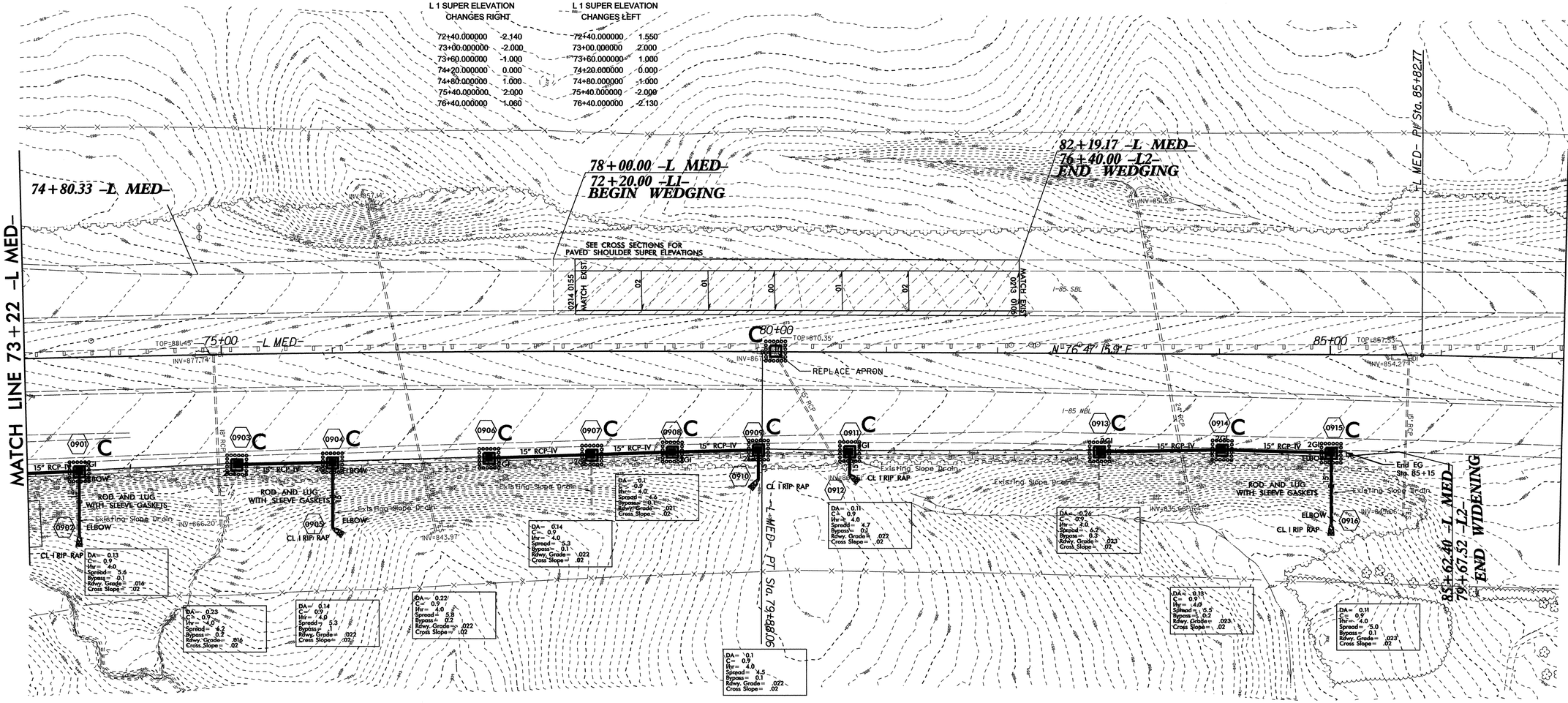
8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-8/CONST.9 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

REMOVE EXISTING FUNNEL DRAINS, REMOVE PIPES
OR FILL WITH FLOWABLE FILL AND STABILIZE SLOPE
AS DIRECTED BY THE ENGINEER

| L 1 SUPER ELEVATION CHANGES RIGHT | | L 1 SUPER ELEVATION CHANGES LEFT | |
|---|---|---|---|
| 72+40.000000 | -2.140 | 72+40.000000 | 1.550 |
| 73+00.000000 | -2.000 | 73+00.000000 | 2.000 |
| 73+60.000000 | -1.000 | 73+60.000000 | 1.000 |
| 74+20.000000 | 0.000 | 74+20.000000 | 0.000 |
| 74+80.000000 | 1.000 | 74+80.000000 | -1.000 |
| 75+40.000000 | 2.000 | 75+40.000000 | -2.000 |
| 76+40.000000 | 1.060 | 76+40.000000 | -2.130 |




50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

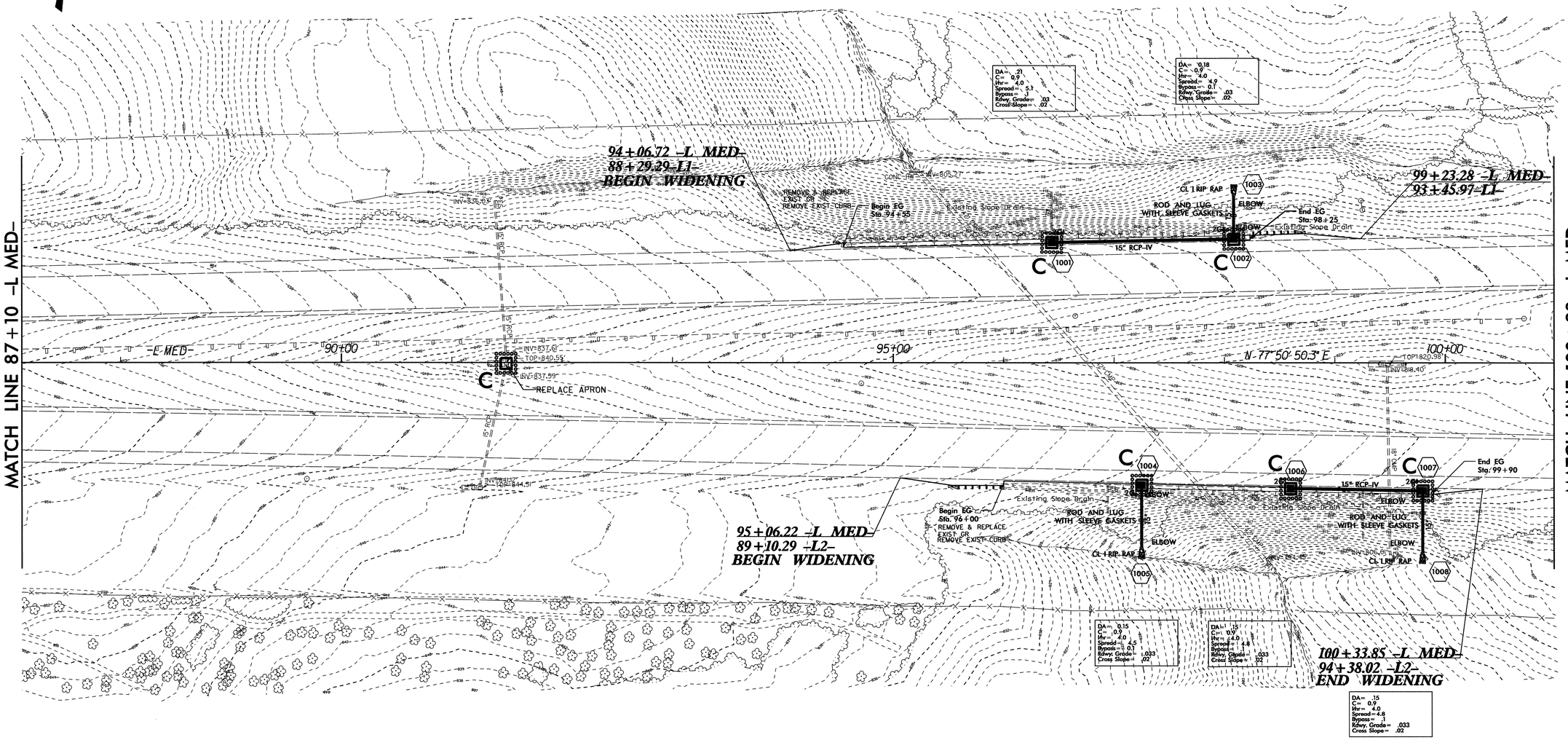
08-MAR-2013 13:49
C:\Sive.pro\pw_pwdata\pjh\i-5314\psh\ecp\i-5314_EC8_dsn_psh_9.dgn
dscott
$$$$ 1.00 $$$$ 2.00 $$$$ 3.00 $$$$ 4.00

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-9/CONST.10 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

REMOVE EXISTING FUNNEL DRAINS, REMOVE PIPES
OR FILL WITH FLOWABLE FILL AND STABILIZE SLOPE
AS DIRECTED BY THE ENGINEER




NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

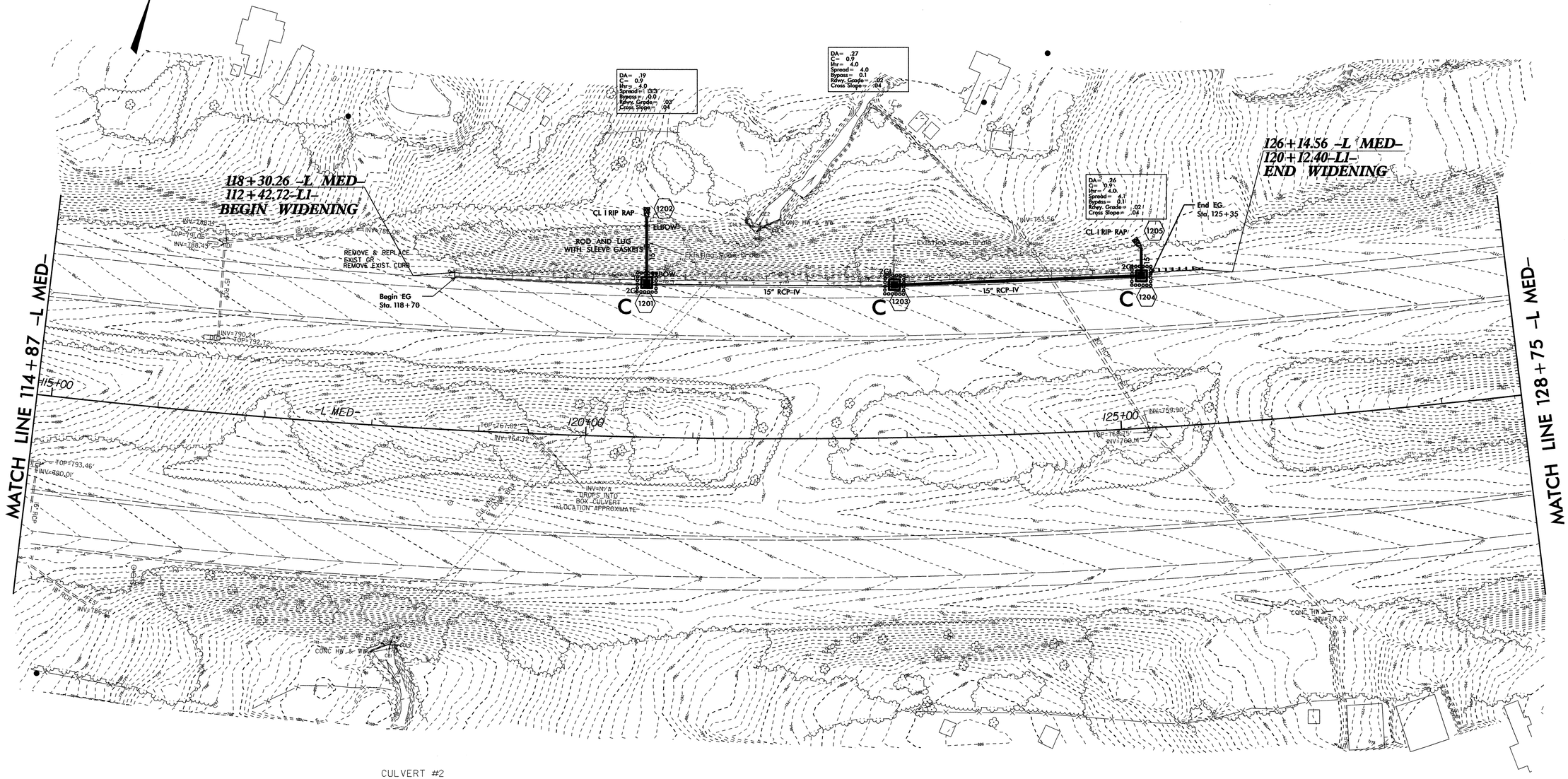
08-MAR-2013 13:49
C:\Projects\randolph\I-5314\psh\ecp\I-5314_EC9_dsn_psh_10.dgn
mjotter
ATT1 (DOT) 2364742

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-10/CONST.12 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

REMOVE EXISTING FUNNEL DRAINS, REMOVE PIPES
OR FILL WITH FLOWABLE FILL AND STABILIZE SLOPE
AS DIRECTED BY THE ENGINEER




CULVERT #2
ONE BARREL

| | NORTH | EAST | ELEV. |
|---|---|---|---|
| CUL1 | 772721.29 | 1698915.59 | 754.10 |
| CUL2 | 772723.91 | 1698923.76 | 754.03 |
| CE1 | 772722.59 | 1698919.73 | 760.04 |
| HW1 | 772723.13 | 1698919.27 | 762.15 |
| CUL3 | 773209.94 | 1699099.07 | 748.57 |
| CUL4 | 773212.54 | 1699107.20 | 748.52 |
| CE2 | 773211.32 | 1699102.89 | 754.59 |
| HW2 | 773211.67 | 1699104.62 | 756.64 |

50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

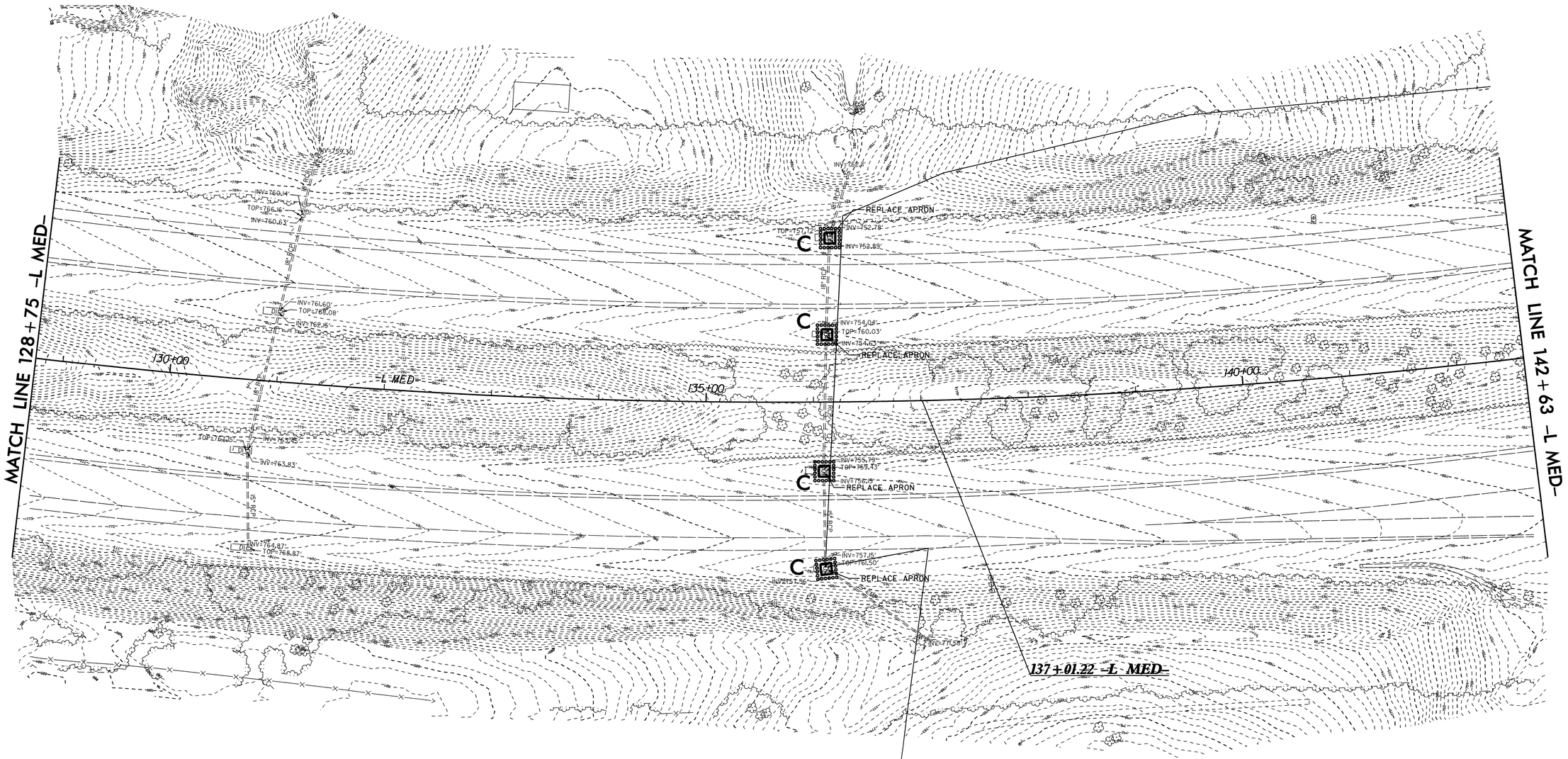
08-MAR-2013 13:49
C:\Projects\roadway\randolph\I-5314\psh\ecp\I-5314_EC10_dsn_psh_12.dgn
mtrotter
Default

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-11/CONST.13 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

-L MED-
PI Sta 130+58.63
△ = 33° 42' 19.1" (LT)
D = 0° 59' 30.4"
L = 3,398.44'
T = 1,749.98'
R = 5,777.03'

NC GRID
NAD 83/2001




NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

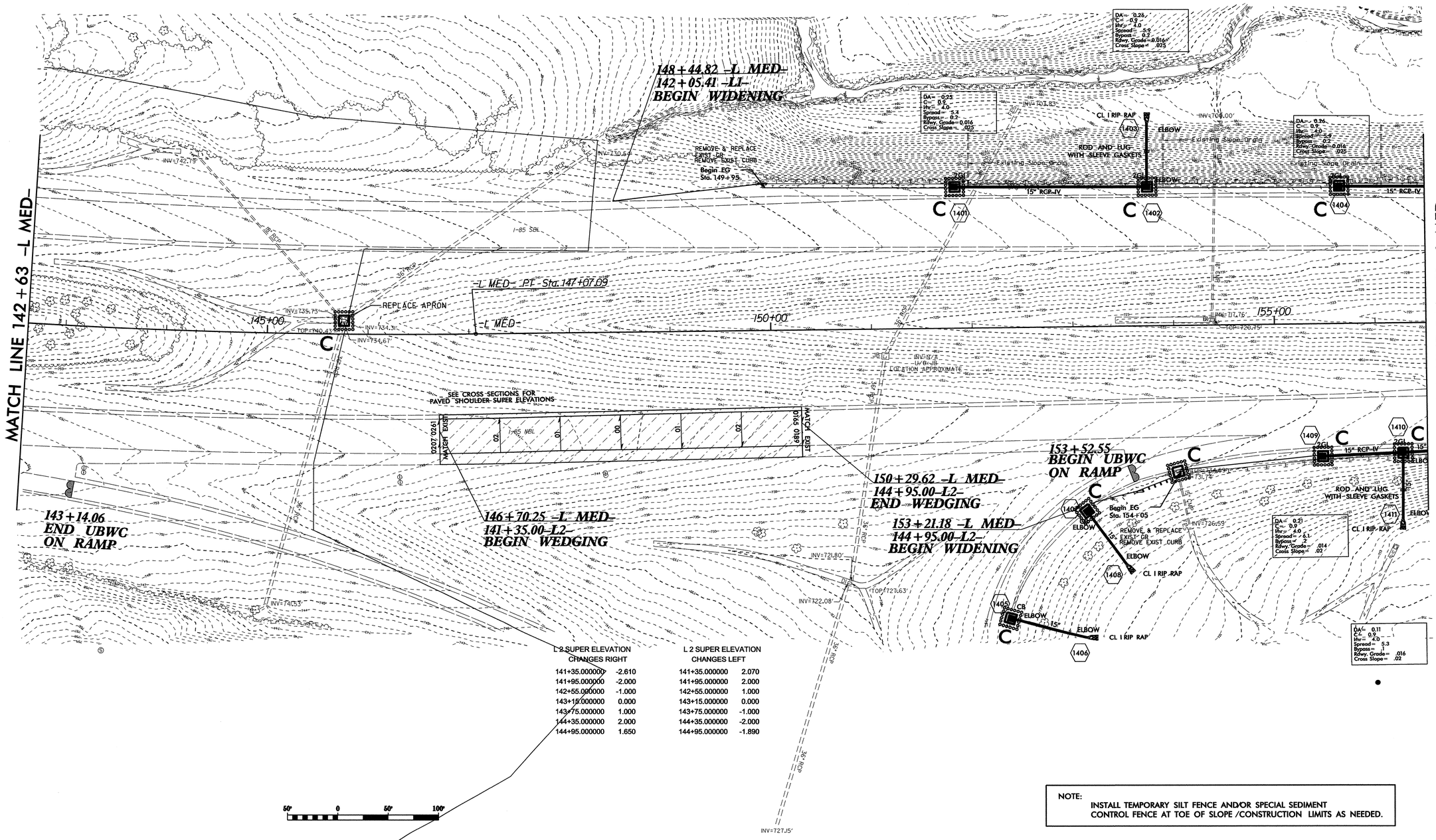
08-MAR-2013 13:49
Z:\Projects\I-5314\roadway\psh\I-5314_EC11_dsn_psh_13.dgn
Printer: HP Officejet Pro 8625

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-12/CONST.14 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

REMOVE EXISTING FUNNEL DRAINS, REMOVE PIPES
OR FILL WITH FLOWABLE FILL AND STABILIZE SLOPE
AS DIRECTED BY THE ENGINEER




| L 2 SUPER ELEVATION CHANGES RIGHT | | L 2 SUPER ELEVATION CHANGES LEFT | |
|---|---|---|---|
| 141+35.000000 | -2.610 | 141+35.000000 | 2.070 |
| 141+95.000000 | -2.000 | 141+95.000000 | 2.000 |
| 142+55.000000 | -1.000 | 142+55.000000 | 1.000 |
| 143+15.000000 | 0.000 | 143+15.000000 | 0.000 |
| 143+75.000000 | 1.000 | 143+75.000000 | -1.000 |
| 144+35.000000 | 2.000 | 144+35.000000 | -2.000 |
| 144+95.000000 | 1.650 | 144+95.000000 | -1.890 |

50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:49
C:\div8.projects\raleigh\I-5314\psh\ecp\i-5314_EC12_dsn_psh_14.dgn
mtroter
AT DATA-216474

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-13/CONST.15 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID NAD 83/2001

REMOVE EXISTING FUNNEL DRAINS, REMOVE PIPES OR FILL WITH FLOWABLE FILL AND STABILIZE SLOPE AS DIRECTED BY THE ENGINEER

CULVERT #3
TWO BARRELS

| | NORTH | EAST | ELEV. |
|---|---|---|---|
| CUL1 | 775620.52 | 1702179.45 | 686.18 |
| CUL2 | 775627.46 | 1702186.23 | 686.17 |
| CUL3 | 775628.05 | 1702186.97 | 686.15 |
| CUL4 | 775634.99 | 1702193.77 | 686.13 |
| CE1 | 775628.41 | 1702187.09 | 694.23 |
| HW1 | 775628.26 | 1702186.96 | 696.29 |
| CUL5 | 775372.16 | 1702484.21 | 684.66 |
| CUL6 | 775381.95 | 1702493.33 | 685.02 |
| CUL7 | 775382.76 | 1702494.03 | 684.71 |
| CUL8 | 775393.53 | 1702503.87 | 684.80 |
| CE2 | 775387.65 | 1702498.57 | 692.85 |
| HW2 | 775381.90 | 1702492.97 | 694.98 |

CULVERT #4
TWO BARRELS

| | NORTH | EAST | ELEV. |
|---|---|---|---|
| CUL1 | 776096.74 | 1702218.17 | 692.66 |
| CUL2 | 776096.66 | 1702226.67 | 692.62 |
| CUL3 | 776096.56 | 1702227.62 | 692.61 |
| CUL4 | 776096.06 | 1702235.85 | 692.57 |
| CE1 | 776096.53 | 1702227.40 | 699.62 |
| HW1 | 776096.76 | 1702227.19 | 701.32 |
| CUL5 | 776212.96 | 1702263.86 | 693.61 |
| CUL6 | 776213.82 | 1702271.99 | 693.66 |
| CUL7 | 776213.99 | 1702272.94 | 693.71 |
| CUL8 | 776214.70 | 1702281.73 | 693.68 |
| CE2 | 776213.10 | 1702271.83 | 700.67 |
| HW2 | 776213.64 | 1702272.63 | 702.38 |

CONC HW & WW
CUL1
HW1
CE1
CUL2
CUL3
CUL4
DUAL 15" CMP
TOP=705.98'
INV=703.06'
CULVERT #4 DOUBLE 8' X 7' CONC BOX
INV=696.89'
INV=698.63'
15" CMP
INV=701.15'
TOP=704.00'

MATCH LINE 156+51 -L MED-

MATCH LINE 170+39 -L MED-

DA= 0.1
C= 0.9
Thr= 4.0
Spread= 3.8
Bypass= 0.0
Rdwy. Grade= 0.018
Cross Slope= .03

DA= 0.14
C= 0.9
Thr= 4.0
Spread= 4.5
Bypass= 0.1
Rdwy. Grade= 0.018
Cross Slope= .03

DA= 0.45
C= 0.9
Thr= 4.0
Spread= 7.6
Bypass= 0.5
Rdwy. Grade= 0.017
Cross Slope= .02

DA= 0.19
C= 0.9
Thr= 4.0
Spread= 7.0
Bypass= 0.3
Rdwy. Grade= .014
Cross Slope= .02

DA= 0.09
C= 0.9
Thr= 4.0
Spread= 5.2
Bypass= 0.1
Rdwy. Grade= .014
Cross Slope= .02

DA= 0.18
C= 0.9
Thr= 4.0
Spread= 5.2
Bypass= 0.1
Rdwy. Grade= 0.018
Cross Slope= .03

INV=697.80'
1504
CL I RIP RAP
ELBOW
ROD AND LUG WITH SLEEVE GASKETS
End EG Sta. 158+23
20° ELBOW
15" RCP-IV
1501
1502
1503
1505
REMOVE AND REPLACE w/TB 2GI STEEL GRATE
1506
1507
1508
CL I RIP RAP
End EG
Sta. 163+55
2GI
Begin EG Sta. 161+63
EX 18" Hdwy Slope Drain
INV=698.49'
INV=704.40'

164+61.72 -L MED-
158+22.27 -L1-
END WIDENING

165+50.00
BEGIN UBWC ON RAMP

165+50.00 -L MED-
159+10.55 -L1-

INV=693.36'
15" CMP
INV=693.39'
TOP=696.03'
CONC HW & WW
CUL1

160+00
-L MED-
TOP=718.79'
INV=712.72'

165+00
TOP=705.82'
INV=703.35'

170+00
N 44°08'31.2" A

1509
1510
1511
1512
1513
1514
1515
1516
1517
1518
1519
1520
1521
1522
End EG Sta. 157+06
Begin EG Sta. 159+99
TOP=727.70'
REMOVE AND REPLACE w/TB 2GI STEEL GRATE
Existing Slope Drain
END OF CULVERT HAS A 12' RADIUS ACCORDING TO PLANS
INV=695.90'
CONC HW & WW
ROD AND LUG WITH SLEEVE GASKETS
ELBOW
CL I RIP RAP
Existing Slope Drain
ROD AND LUG WITH SLEEVE GASKETS
CL I RIP RAP
Existing Slope Drain
Grass Lined TEMP Slope Drain

DA= .12
C= 0.9
Thr= 4.0
Spread= 5.9
Bypass= .1
Rdwy. Grade= .016
Cross Slope= .02

DA= .38
C= 0.9
Thr= 4.0
Spread= 7.3
Bypass= .4
Rdwy. Grade= .017
Cross Slope= .02

DA= .15
C= 0.9
Thr= 4.0
Spread= 6.1
Bypass= .2
Rdwy. Grade= .017
Cross Slope= .02

DA= .14
C= 0.9
Thr= 4.0
Spread= 6.0
Bypass= .1
Rdwy. Grade= .017
Cross Slope= .02

DA= .18
C= 0.9
Thr= 4.0
Spread= 5.9
Bypass= 0.1
Rdwy. Grade= .017
Cross Slope= .02

DA= .18
C= 0.9
Thr= 4.0
Spread= 5.9
Bypass= 0.1
Rdwy. Grade= .017
Cross Slope= .02

DA= .17
C= 0.9
Thr= 4.0
Spread= 5.9
Bypass= 0.1
Rdwy. Grade= .013
Cross Slope= .02

DA= .17
C= 0.9
Thr= 4.0
Spread= 6.2
Bypass= 0.1
Rdwy. Grade= .010
Cross Slope= .02

DA= .17
C= 0.9
Thr= 4.0
Spread= 6.1
Bypass= 0.1
Rdwy. Grade= .011
Cross Slope= .02

DA= .14
C= 0.9
Thr= 4.0
Spread= 5.7
Bypass= 0.1
Rdwy. Grade= .011
Cross Slope= .02

50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:48
C:\projects\randolph\I-5314\psh\ecp\i-5314_EC13_dsn_psh_15.dgn
mtaylor
$$$$ 246474

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-14/CONST.16 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

MATCH LINE 170+39 -L MED-

MATCH LINE 184+27 -L MED-

175+40.00 -L MED-
169+00.00 -LI-

175+40.00
END UBWC
ON RAMP

182+20.75 -L MED-
175+81.55 -LI-
BEGIN WIDENING

DA= 0.17
C= 0.9
Itc= 4.0
Spread= 6.4
Bypass= 0.1
Rdwy. Grade= .006
Cross Slope= .02

REMOVE & REPLACE EXIST GR.
REMOVE EXIST CURB

Begin EQ
Sta. 182+50

(1602)
CL I RIP RAP
ELBOW
ROD AND LUG
WITH SLEEVE GASKETS
ELBOW
(1601)

REPLACE APRON

-L MED-

175+00

180+00

171+25.79 -L MED-
165+90.92-L2-
END WIDENING

183+53.11 -L MED-
178+18.31 -L2-
BEGIN WIDENING

50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:48
c:\projects\rdu\randolph\i-5314\psh\ecp\i-5314_EC14_dsn_psh_16.dgn
microstation v8 (dgn 248174)

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-15/CONST.17 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

REMOVE EXISTING FUNNEL DRAINS, REMOVE PIPES OR FILL WITH FLOWABLE FILL AND STABILIZE SLOPE AS DIRECTED BY THE ENGINEER

L 1 SUPER ELEVATION CHANGES RIGHT

| | |
|---|---|
| 185+60.000000 | 1.0200 |
| 186+20.000000 | 2.0000 |
| 186+80.000000 | 1.0000 |
| 187+40.000000 | 0.0000 |
| 188+00.000000 | -1.0000 |
| 188+60.000000 | -2.0000 |
| 189+20.000000 | -3.4500 |

L 1 SUPER ELEVATION CHANGES LEFT

| | |
|---|---|
| 185+60.000000 | -2.2100 |
| 186+20.000000 | -2.0000 |
| 186+80.000000 | -1.0000 |
| 187+40.000000 | 0.0000 |
| 188+00.000000 | 1.0000 |
| 188+60.000000 | 2.0000 |
| 189+20.000000 | 2.2500 |

***183+53.11 –L MED–***
***185+20.07 –L2–***
***END WIDENING***

***191+99.16 –L MED–***
***185+60.00 –L2–***
***BEGIN WEDGING***

***195+55.05 –L MED–***
***189+20.00 –L2–***
***END WEDGING***

***188+10.78 –L MED–***
***182+76.01 –L2–***
***END WIDENING***

MATCH LINE –L MED– 184+27

MATCH LINE –L MED– 198+15

MATCH LINE –L MED– STA. 223+36

DA= 0.17 C= 0.9 Hw= 4.0 Spread= 6.6 Bypass= 0.1 Rdwy. Grade= .007 Cross Slope= .02

DA= 0.17 C= 0.9 Hw= 4.0 Spread= 6.6 Bypass= 0.1 Rdwy. Grade= .007 Cross Slope= .02

DA= 0.17 C= 0.9 Hw= 4.0 Spread= 7.8 Bypass= 0.1 Rdwy. Grade= .003 Cross Slope= .02

DA= 0.11 C= 0.9 Hw= 4.0 Spread= 7.3 Bypass= 0.1 Rdwy. Grade= .002 Cross Slope= .02

DA= 0.06 C= 0.9 Hw= 4.0 Spread= 6.2 Bypass= 0.0 Rdwy. Grade= .002 Cross Slope= .02

DA= 0.06 C= 0.9 Hw= 4.0 Spread= 5.6 Bypass= 0.0 Rdwy. Grade= .002 Cross Slope= .02

DA= 0.21 C= 0.9 Hw= 4.0 Spread= 5.6 Bypass= 0.2 Rdwy. Grade= 0.0% Cross Slope= .02

DA= 0.11 C= 0.9 Hw= 4.0 Spread= 5.9 Bypass= 0.1 Rdwy. Grade= .009 Cross Slope= .02

(1701) (1702) (1703) (1704) (1705) (1706) (1707) (1708) (1709) (1710) (1711)

15" RCP-IV

ROD AND LUG WITH SLEEVE GASKETS

ELBOW

CL I RIP RAP

Existing Slope Drain

End EG Sta. 190+75

End EG Sta. 187+50

Begin EG Sta. 194+50

REMOVE & REPLACE EXIST OR REMOVE EXIST CURB

REPLACE APRON

185+00

190+00

195+00

–L MED–

SEE CROSS SECTIONS FOR PAVED SHOULDER SUPER ELEVATIONS

MATCH EXIST 0102 0221

02 01 00 1 02

0045 0225 MATCH EXIST

50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:48
c:\dgn8_pro\ASF Branch\sandy.phn\I-5314\psh\eop\i-5314_EC15_dsn_psh_17.dgn
mnolen
ASF Branch 26674

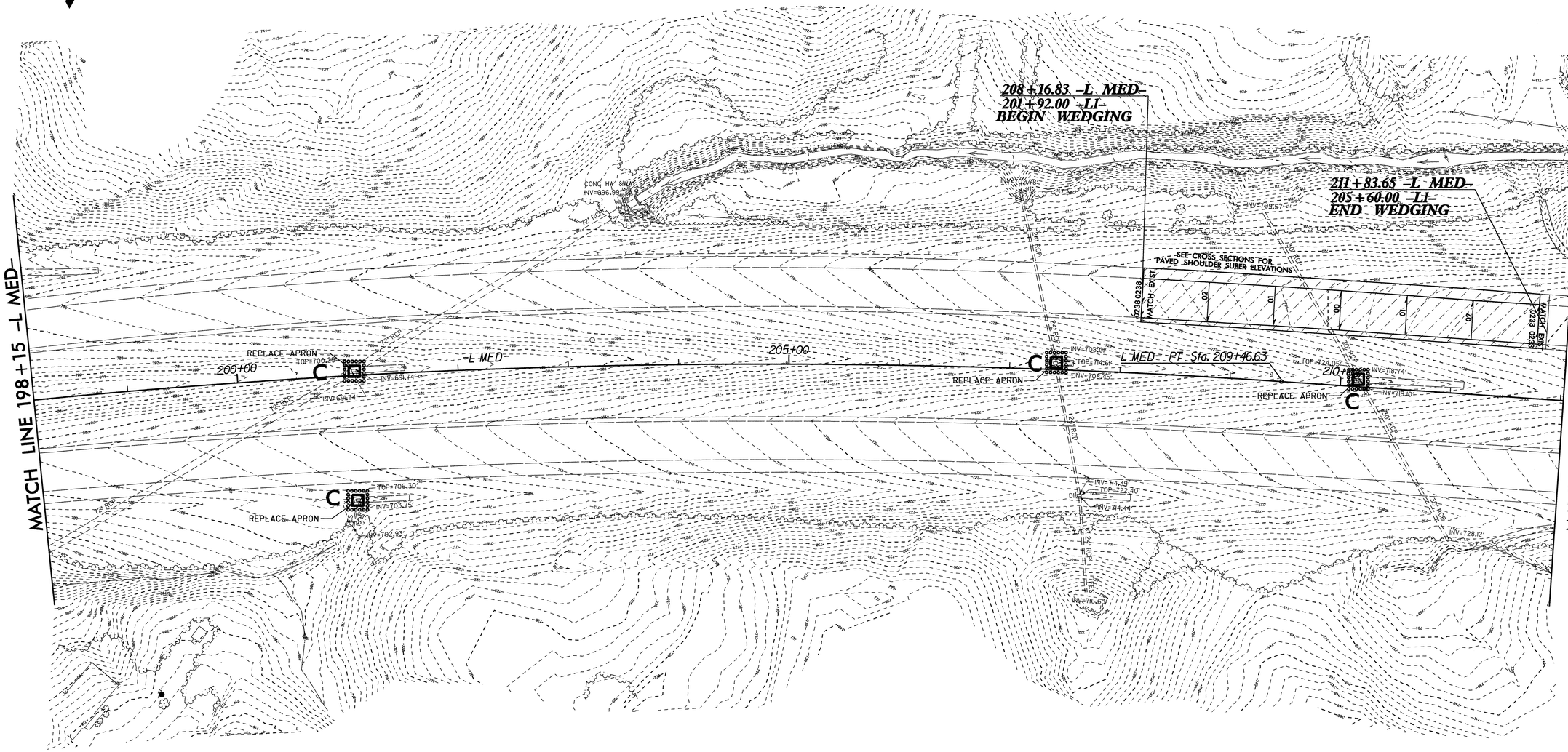
8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-16/CONST.18 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

-L MED-
PI Sta 200+89.85
△ = 14° 28' 02.8" (RT)
D = 0° 50' 23.2"
L = 1,722.78'
T = 866.00'
R = 6,822.77'

| L 1 SUPER ELEVATION CHANGES RIGHT | | L 1 SUPER ELEVATION CHANGES LEFT | |
|---|---|---|---|
| 201+92.000000 | -2.3800 | 201+92.000000 | 2.3800 |
| 202+52.000000 | -2.0000 | 202+52.000000 | 2.0000 |
| 203+12.000000 | -1.0000 | 203+12.000000 | 1.0000 |
| 203+72.000000 | 0.0000 | 203+72.000000 | 0.0000 |
| 204+32.000000 | 1.0000 | 204+32.000000 | -1.0000 |
| 204+92.000000 | 2.0000 | 204+92.000000 | -2.0000 |
| 205+52.000000 | 2.3300 | 205+52.000000 | -2.3300 |




50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:48
C:\Projects\randolph\I-5314\psh\ecp\i-5314_EC16_dsn_psh_18.dgn
microstation 08.11.07.443

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-17/CONST.19 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

MATCH LINE 212+03 -L MED-

MATCH LINE 225+91 -L MED-

SR 1564 MEADOWBROOK DR

GRADE TO DRAIN

INV=734.39'

215+00

-L MED-

INV=748.75'
TOP=752.09'
15" RCP

INV=742.79'

220+00

30" RCP

INV=743.89'

24" RCP

INV=748.89'
TOP=754.84'
INV=745.09'
15" RCP

INV=750.62'

24" RCP

TOP=763.98'
INV=763.15'

15" RCP

INV=761.18'
30" RCP
INV=759.33'
INV=761.18'

TOP=765.16'

225+00

24" RCP

INV=760.45'

REPLACE APRON

C

15" RCP

TOP=768.65'
INV=766.00'
INV=766.15'

INV=789.91'

50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 15:48
C:\Projects\randolph\I-5314\psh\ecp\I-5314_EC17_dsn_psh_19.dgn
mlovette
Plotted @ 24.00

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-18/CONST.20 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

MATCH LINE 225+91 -L MED-

MATCH LINE 239+79 -L MED-

-L MED-

230+00

235+00

C

TOP=779.06
INV=771.65
DROP
24" RCP
INV=774.50
INV=775.21
TOP=779.60
INV=775.26
TOP=782.17
INV=779.46
DROP
15" RCP
TOP=793.82
INV=791.14
DROP
15" RCP
INV=788.97
TOP=793.47
INV=787.78
30" RCP
INV=788.34
REPLACE APRON
30" RCP
N 58° 36' 34.0" E
15" RCP
INV=785.86

50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:48
C:\dv8_projects\rdu\randolph\I-5314\psh\ecp\i-5314_EC18_dsn_psh_20.dgn
mroster
At Date=2464.74

8/17/09

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-19/CONST.21 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

MATCH LINE 239+79 -L MED-

MATCH LINE 253+67 -L MED-

240+00

245+00

250+00

-L MED-

TOP=801.29'
INV=798.63'
15" RCP
INV=797.26'
INV=797.49'
24" RCP
INV=796.88'
TOP=801.90'
INV=797.26'
C
REPLACE APRON
TOP=802.34'
INV=799.59'

TOP=805.88'
INV=802.75'
18" RCP
TOP=806.20'
24" RCP
INV=801.79'
INV=801.28'
C
REPLACE APRON
INV=801.90'
INV=802.90'
TOP=805.78'

INV=806.93'
INV=806.22'
INV=805.
TOP=809.8

50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:48
c:\drv8_pr0\pw_work\pwadmin\jph\i-5314\psh\eop\i-5314_EC19_dsn_psh_21.dgn
mcostes
$I(08)=24.0(11)$

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-20/CONST.22 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

| L 1 SUPER ELEVATION CHANGES RIGHT | |
|---|---|
| 253+95.000000 | 1.5100 |
| 254+55.000000 | 2.0000 |
| 255+15.000000 | 1.0000 |
| 255+75.000000 | 0.0000 |
| 256+35.000000 | -1.0000 |
| 256+95.000000 | -2.0000 |
| 257+55.000000 | -2.0400 |

| L 1 SUPER ELEVATION CHANGES LEFT | |
|---|---|
| 253+95.000000 | -2.3100 |
| 254+55.000000 | -2.0000 |
| 255+15.000000 | -1.0000 |
| 255+75.000000 | 0.0000 |
| 256+35.000000 | 1.0000 |
| 256+95.000000 | 2.0000 |
| 257+55.000000 | 1.0400 |

MATCH LINE 253+67 -L MED-

MATCH LINE 267+55 -L MED-

260+18.63 -L MED- 253+95.00 -LT- BEGIN WEDGING

263+78.63 -L MED- 257+55.00 -LT- END WEDGING

SEE CROSS SECTIONS FOR PAVED SHOULDER SUPER ELEVATIONS

0151 0231 MATCH EXIST

0151 0204 MATCH EXIST

I-85 SBL

I-85 NBL

SR 1004 TRINITY ROAD

SOUTHERN RAILROAD

GRADE TO DRAIN

255+00

260+00

265+00

-L MED-

REPLACE APRON

INV=805.27'

INV=804.48'

INV=809.62'

INV=804.29'

INV=804.41'

INV=803.09'

INV=796.46'

TOP=809.39'

TOP=812.63'

810.73'

24" RCP

18" RCP

15" RCP

50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

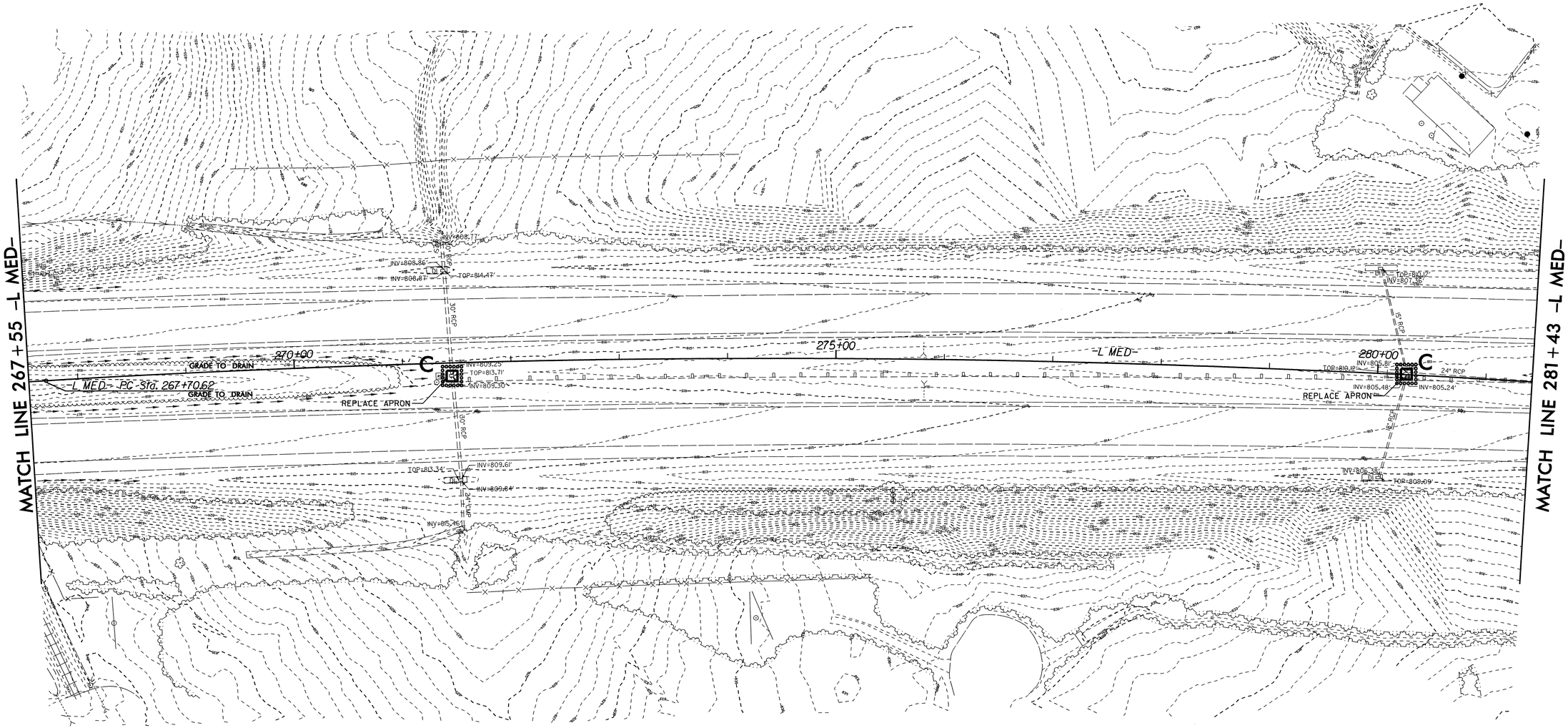
08-MAR-2013 13:48
C:\Projects\randolph\I-5314\psh\eop\I-5314_EC20_dsn_psh_22.dgn
mtaylor

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-21/CONST.23 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

-L MED-
PI Sta 275+75.81
Δ = 8° 11' 12.6" (RT)
D = 0° 30' 33.3"
L = 1,607.65'
T = 805.19'
R = 11,251.17'




50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:48
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microstation v8i (8.11.09.444)

8/17/06

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-22/CONST.24 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

-L MED-
PI Sta 289+00.07
Δ = 13° 16' 53.1" (RT)
D = 1° 16' 42.1"
L = 1,038.93'
T = 521.80'
R = 4,481.92'

NC GRID
NAD 83/2001

| L 1 SUPER ELEVATION CHANGES RIGHT | | L 1 SUPER ELEVATION CHANGES LEFT | |
|---|---|---|---|
| 287+15.000000 | -3.3500 | 287+15.000000 | 2.5900 |
| 287+75.000000 | -2.0000 | 287+75.000000 | 2.0000 |
| 288+35.000000 | -1.0000 | 288+35.000000 | 1.0000 |
| 288+95.000000 | -0.0000 | 288+95.000000 | 0.0000 |
| 289+55.000000 | 1.0000 | 289+55.000000 | -1.0000 |
| 290+15.000000 | 2.0000 | 290+15.000000 | -2.0000 |
| 290+75.000000 | 0.8100 | 290+75.000000 | -2.2300 |

293+20.44 -L MED-
287+15.00 -L1-
BEGIN WIDENING

MATCH LINE 281+43 -L MED-

MATCH LINE 295+31 -L MED-

INV=793.48'

INV=795.33'

INV=775

SEE CROSS SECTIONS FOR PAVED SHOULDER SUPER-ELEVATIONS

0335.0259
MATCH EXIST

02

01

-85 SBL

285+00

290+00

295+00

INV=801.32'

INV=801.22'

INV=801.50'

TOP=806.62'

22" RCP

45° SKEW

REPLACE APRON

-L MED- PCC Sta. 283+78.27

-L MED- PT Sta. 294+17.20

TOP=804.53'

INV=801.86'

0315.0272
MATCH EXIST

02 TBST

01

-85 NBL

INV=802.26'

TOP=804.92'

SEE CROSS SECTIONS FOR PAVED SHOULDER SUPER-ELEVATIONS

INV=795.38'

CMP

| L 2 SUPER ELEVATION CHANGES RIGHT | | L 2 SUPER ELEVATION CHANGES LEFT | |
|---|---|---|---|
| 287+55.000000 | 2.7900 | 287+55.000000 | -3.1500 |
| 288+15.000000 | 2.0000 | 288+15.000000 | -2.0000 |
| 288+75.000000 | 1.0000 | 288+75.000000 | -1.0000 |
| 289+35.000000 | 0.0000 | 289+35.000000 | 0.0000 |
| 289+95.000000 | -1.0000 | 289+95.000000 | 1.0000 |
| 290+55.000000 | -2.0000 | 290+55.000000 | 2.0000 |
| 291+15.000000 | -0.7000 | 291+15.000000 | 0.2200 |

293+18.84 -L MED-
287+55.00 -L2-
BEGIN WEDGING

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

50' 0 50' 100'

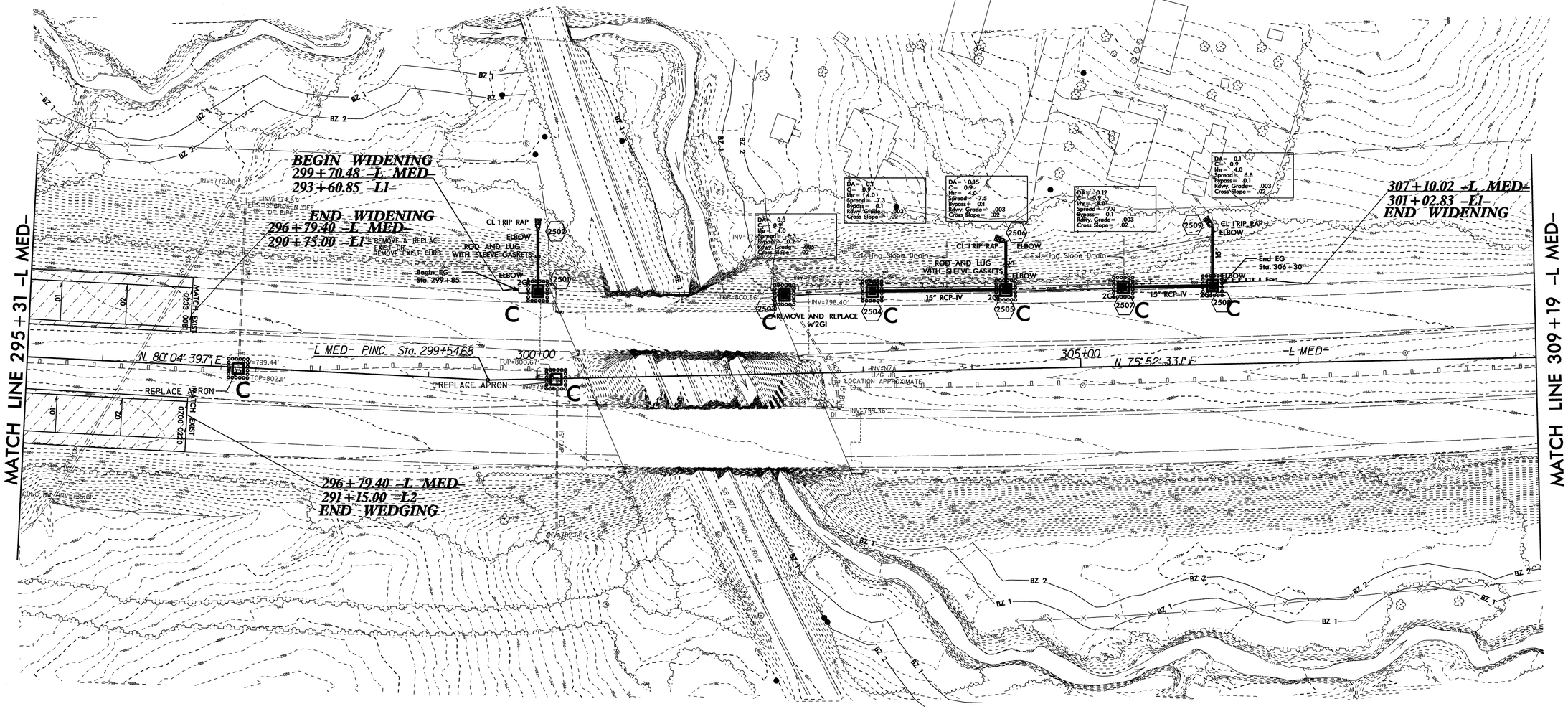
08-MAR-2013 13:48
c:\projects\randolph\i-5314\psh\ecp\i-5314_EC22_dsn_psh_24.dgn
microstation 8.1 [dgn 246474]

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-23/CONST.25 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

REMOVE EXISTING FUNNEL DRAINS, REMOVE PIPES OR FILL WITH FLOWABLE FILL AND STABILIZE SLOPE AS DIRECTED BY THE ENGINEER




50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:48
C:\div8_projects\ncdot\randolph\I-5314\psh\eop\i-5314_EC23.dsn_psh_25.dgn
mwatson
PT Default 2.5174

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-24/CONST.26 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

REMOVE EXISTING FUNNEL DRAINS, REMOVE PIPES OR FILL WITH FLOWABLE FILL AND STABILIZE SLOPE AS DIRECTED BY THE ENGINEER

MATCH LINE 309+19 -L MED-

MATCH LINE 323+07 -L MED-

317+05.00 -L MED-
310+89.06 -L1-
BEGIN WIDENING

320+98.19 -L MED-
314+77.27 -L1-
END WIDENING

REMOVE & REPLACE EXIST. DR. REMOVE EXIST. CURB

Begin EG Sta. 317+58

End EG Sta. 320+98

Existing Slope Drain

DA= 0.21
C= 0.9
Thr= 4.0
Spread= 5.3
Bypass= 0.1
Rdwy. Grade= .003
Cross Slope= .04

DA= 0.10
C= 0.9
Thr= 4.0
Spread= 4.8
Bypass= 0.0
Rdwy. Grade= .002
Cross Slope= .04

2603
2601
2602
15" RCP-IV

60' RCP

310+00
TOP=795.94'
INV=793.62'
30" RCP
15" CMP

L MED- PC Sta. 311+83.24

REPLACE APRON

315+00

320+00
TOP=792.41'
INV=784.98'
24" RCP
INV=784.56'

BZ 1
BZ 2

50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:48
C:\Projects\Randolph\I-5314\psh\eop\I-5314_EC24_dsn_psh_26.dgn
mtaylor
ATT1 08DOT_24GX24

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-25/CONST.27 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

-L MED-
PI Sta 331+24.76
△ = 51° 07' 14.0" (LT)
D = 1° 24' 41.1"
L = 3,621.95'
T = 1,941.51'
R = 4,059.47'

MATCH LINE 323+07 -L MED-

324+35.96 -L MED-
318+11.85' -LL-

334+75.29
BEGIN UBWC
ON RAMP

MATCH LINE 336+95 -L MED-

325+00

330+00

335+00

333+27.23 -L MED-

I-85 SBL

I-85 NBL

24" RCP

18" RCP

30" RCP

48" RCP

INV=788.66'
INV=788.78'
TOP=795.51'
INV=789.20'

INV=794.99'
TOP=797.77'

INV=790.24'
TOP=797.75'
INV=789.71'
INV=789.69'

INV=803.87'
INV=790.68'
TOP=793.63'

INV=802.63'
INV=788.89'
TOP=792.04'
INV=788.95'

INV=791.85'
TOP=797.50'

INV=789.00'
TOP=799.25'
INV=790.47'
INV=789.12'

INV=794.06'
INV=781.20'

REPLACE APRON

BZ 1
BZ 2

C

2GI

270°

50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:48
c:\projects\rdu\randolph\i-5314\psh\ecp\i-5314_EC25.dsn_psh_27.dgn
USER: jfrees
plotter: HP Designjet 4500ps

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-26/CONST.28 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID
NAD 83/2001

MATCH LINE 336+95 -L MED-

MATCH LINE 350+83 -L MED-

US 311

INV=794.79'
TOP=804.54'
18" RCP

INV=801.58'
TOP=810.58'
24" RCP

REPLACE APRON

INV=799.84'
18" RCP

INV=799.72'
24" RCP

INV=799.84'
18" RCP

INV=804.23'
18" RCP

-L MED- PT Sta. 348+05.19

350+00

REPLACE APRON

INV=805.21'
TOP=807.67'

343+00.00 -L MED-
END UBWC

GRADE TO DRAIN

GRADE TO DRAIN

340+00

INV=795.44'

INV=795.77'
24" RCP

30" RCP
TOP=801.48'
INV=795.83'

REPLACE APRON

345+00

GRADE TO DRAIN

GRADE TO DRAIN

INV=800.69'
TOP=809.58'
18" RCP

INV=802.56'

338+30.88
END UBWC
ON RAMP

343+92.95 -L MED-
END UBWC

INV=806.36'
TOP=808.90'

INV=794.54'
15" RCP

FS 26

280

50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:48
C:\Projects\Highway\randolph\I-5314\psh\ecp\I-5314_EC26_dsn_psh_28.dgn
mtrotter
$I_dgn 246474

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I–5314 | EC–27/CONST.29 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID NAD 83/2001

MATCH LINE 350+83 –L MED–

MATCH LINE 364+71 –L MED–

355+00

360+00

–L MED–

N 24°45'19"E

INV=806.14'

INV=802.67'

18" RCP

INV=806.11'

15" RCP

INV=805.82'

18" RCP

TOP=808.85'

INV=806.08'

6" RCP

INV=803.19'

TOP=805.88'

INV=803.35'

REMOVE AND REPLACE 2GI

15" RCP

INV=806.80'

TOP=809.39'

TOP=802.18'

INV=799.38'

18" RCP

TOP=802.94'

INV=797.72'

INV=798.18'

INV=798.08'

24" RCP

18" RCP

INV=799.10'

TOP=801.85'

50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:48
User:[PROJECT_ID]
Microstation V8i (08.11.09.443)

8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-28/CONST.30 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

NC GRID NAD 83/2001

REMOVE EXISTING FUNNEL DRAINS, REMOVE PIPES OR FILL WITH FLOWABLE FILL AND STABILIZE SLOPE AS DIRECTED BY THE ENGINEER

CULVERT #6
ONE BARREL

| | NORTH | EAST | ELEV. |
|---|---|---|---|
| CUL1 | 788004.33 | 1718648.54 | 760.65 |
| CUL2 | 788014.67 | 1718653.11 | 760.57 |
| CE1 | 788010.00 | 1718650.95 | 767.75 |
| HW1 | 788009.60 | 1718651.01 | 769.49 |
| CUL3 | 788083.93 | 1718941.33 | 759.43 |
| CUL4 | 788094.25 | 1718945.99 | 759.36 |
| CE2 | 788088.94 | 1718943.46 | 766.52 |
| HW2 | 788088.72 | 1718943.52 | 768.36 |

**371+20.48 –L MED–**
**364+73.03–L1–**
**BEGIN WIDENING**

**378+37.06 –L MED–**
**371+89.61 –L1–**
**END WIDENING**

MATCH LINE 364+71 –L MED–

MATCH LINE 378+59 –L MED–

REMOVE & REPLACE EXIST DR REMOVE EXIST CURB

Begin EG Sta. 370+61

End EG Sta. 377+45

Existing Slope Drain

Existing Slope Drain

CL I RIP RAP

ELBOW

ELBOW

15" RCP-IV

15" RCP-IV

18" RCP-IV

15" CMP

30" RCP

24" RCP

REPLACE APRON

I-85 SB

I-85 NBL

CULVERT #6
ONE BARREL
30" CMP

BZ 1

BZ 2

365+00

370+00

375+00

-L MED-

50' 0 50' 100'

**NOTE:**
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:48
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mrcraver
PT Data: 24x7.4

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-29/CONST.31 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

-L MED-
PI Sta 388+72.65
△ = 17° 50' 06.0" (RT)
D = 1° 00' 00.0"
L = 1,783.49'
T = 899.02'
R = 5,729.54'

NC GRID
NAD 83/2001

MATCH LINE 378 +59 -L MED-

MATCH LINE 392 +47 -L MED-

-L MED- PC Sta. 379+73.64

380+00

385+00

390+00

-L MED-

REPLACE APRON

INV=768.76'

INV=767.39'

TOP=770.47'

INV=766.87'

INV=761.12'

INV=766.18'

INV=756.00'

TOP=765.64'

INV=762.81'

TOP=766.67'

INV=764.02'

INV=757.05'

INV=758.76'

24" RCP

18" RCP

15" RCP

BZ 1

BZ 2

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

50' 0 50' 100'

08-MAR-2013 13:48
C:\Users\rgdavis\Documents\projects\randolph\I-5314\psh\ecp\I-5314_EC29_dsn_psh_31.dgn
mtrotter
$$USER_PROFILE

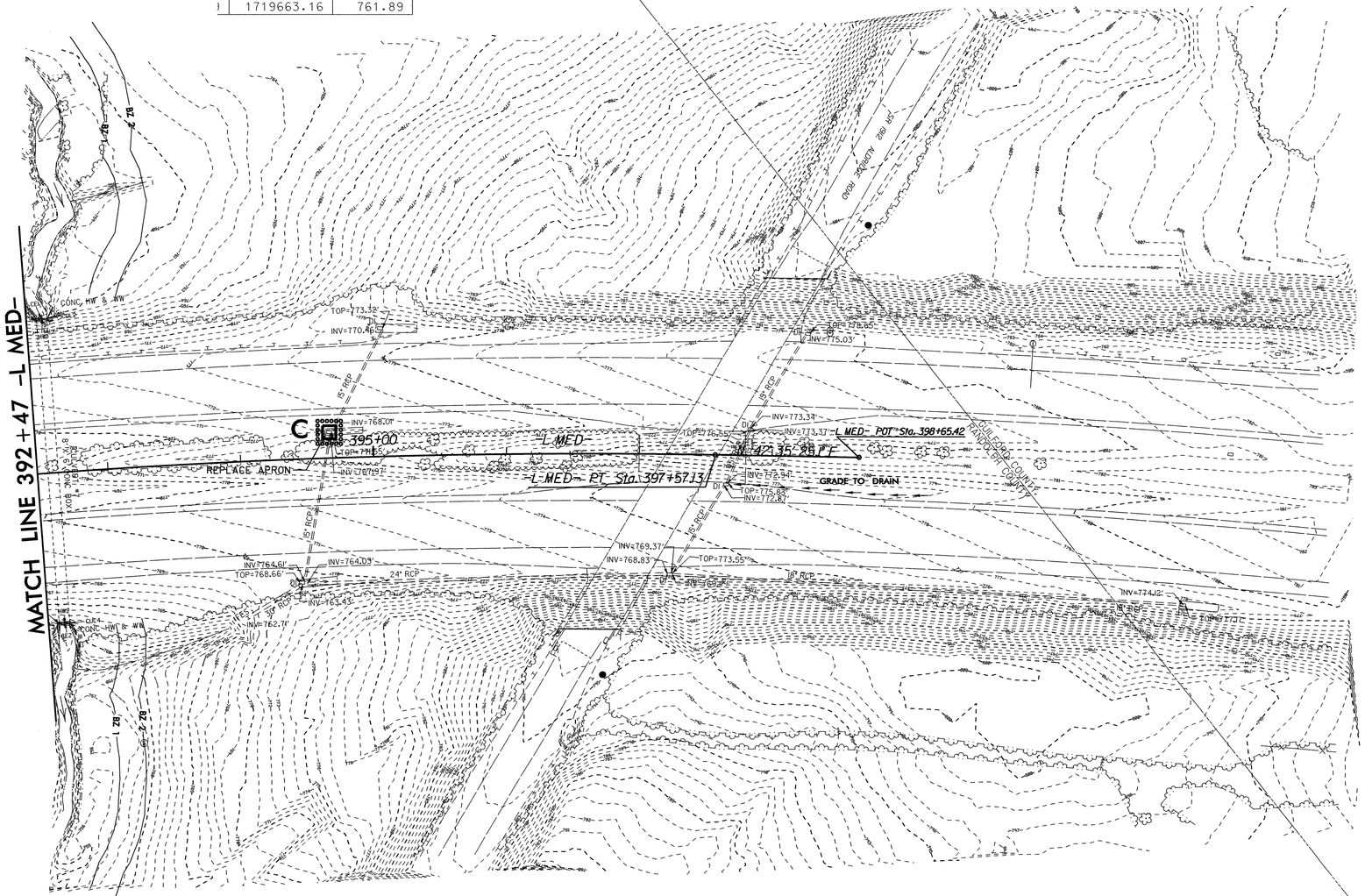
8/17/99

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| I-5314 | EC-30/CONST.32 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

CULVERT #7
ONE BARREL

| | EAST | ELEV. |
|---|---|---|
| ' | 1719477.91 | 754.72 |
| ' | 1719482.97 | 754.70 |
| ' | 1719480.37 | 760.70 |
| ' | 1719480.81 | 762.50 |
| ' | 1719660.87 | 754.12 |
| ' | 1719665.87 | 754.09 |
| ' | 1719663.56 | 760.10 |
| ' | 1719663.16 | 761.89 |

NC GRID
NAD 83/2001




50' 0 50' 100'

NOTE:
INSTALL TEMPORARY SILT FENCE AND/OR SPECIAL SEDIMENT CONTROL FENCE AT TOE OF SLOPE /CONSTRUCTION LIMITS AS NEEDED.

08-MAR-2013 13:48
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mcowan