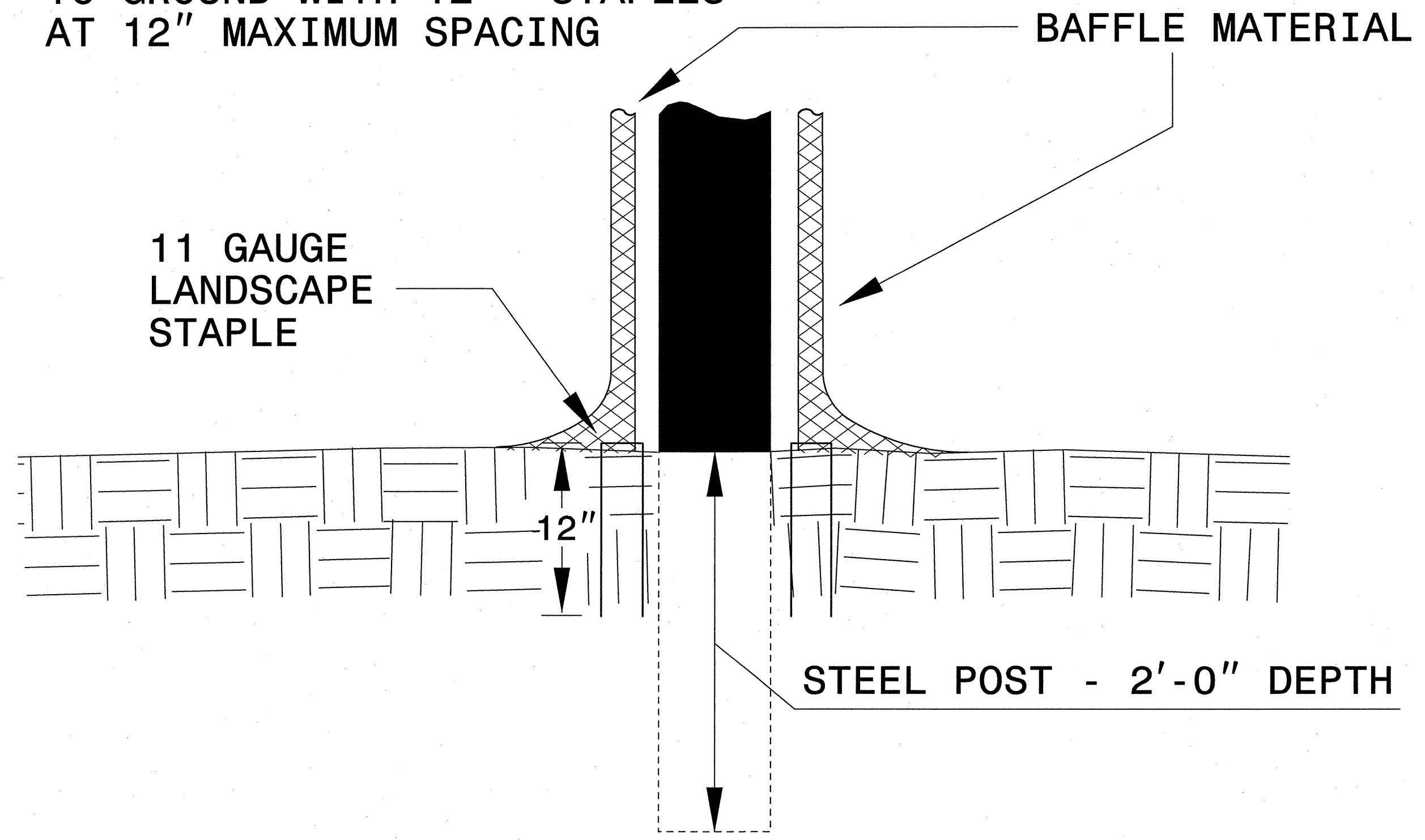
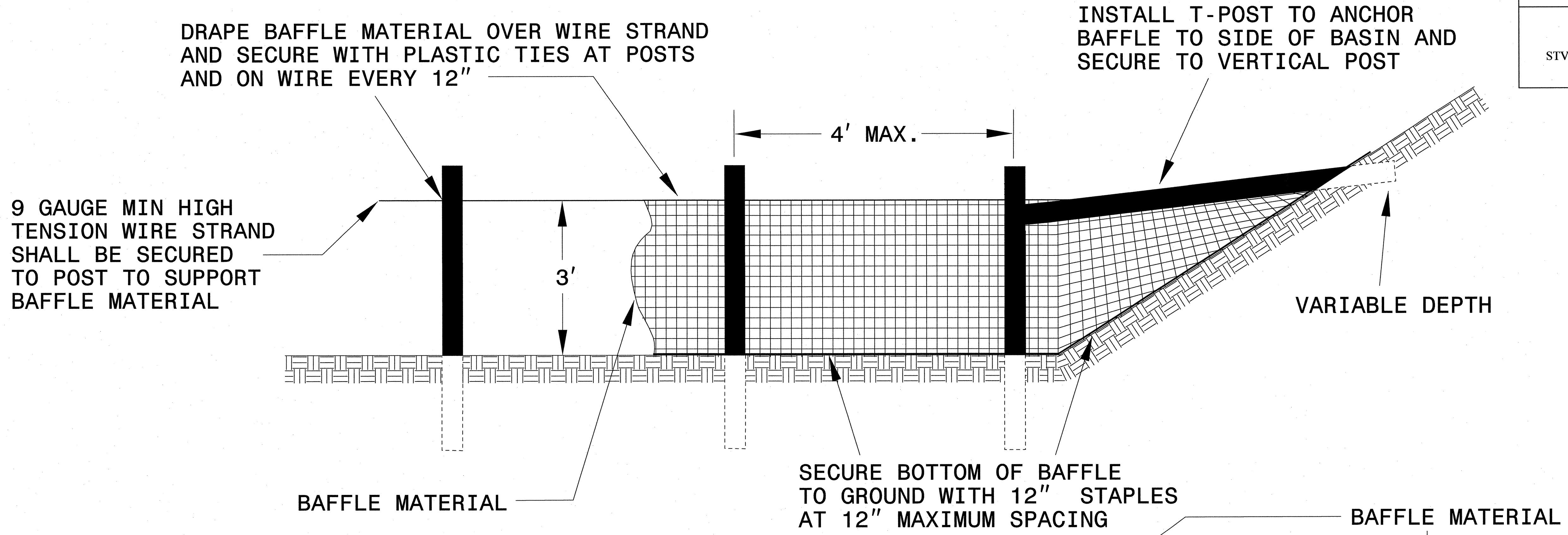


| | |
|---|---------------------|
| PROJECT REFERENCE NO. R-5185 | SHEET NO. EC-2A |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | |
| | |
| STV/Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991 | |

COIR FIBER BAFFLE DETAIL



NOTES:

1. INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF $\frac{1}{4}$ THE BASIN LENGTH.
2. TWO(2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF $\frac{1}{3}$ THE BASIN LENGTH.
3. TOP HEIGHT OF COIR FIBER BAFFLES SHALL NOT BE BELOW BASE OF EMERGENCY SPILLWAY ELEVATION.

BAFFLE MATERIAL SHALL BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 12" LANDSCAPE STAPLES

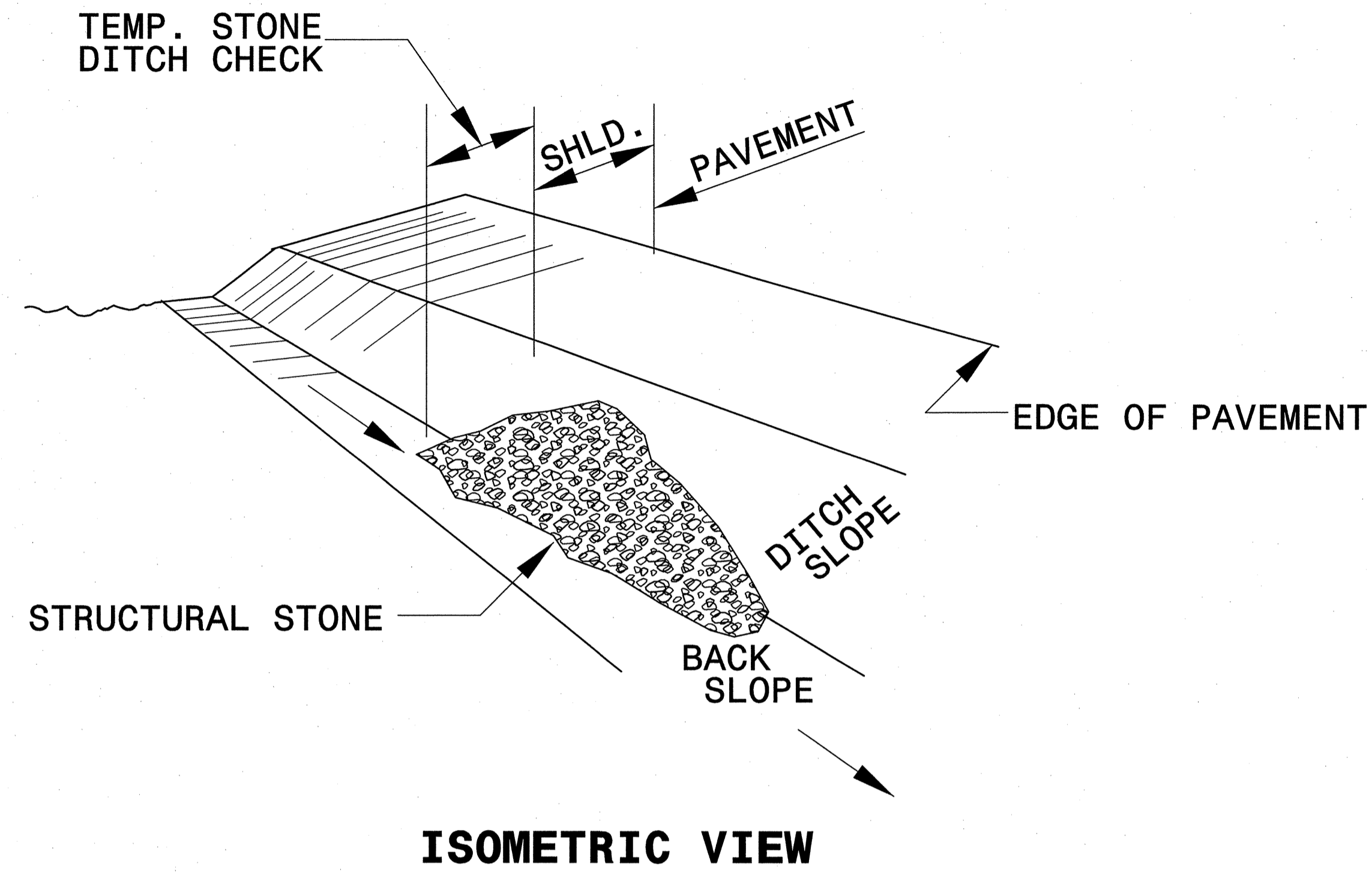
8/17/99

REVISIONS

3/9/2011
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| | |
|---|---------------------|
| PROJECT REFERENCE NO. R-5185 | SHEET NO. EC-2B |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | |
| | |
| STV/Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991 | |

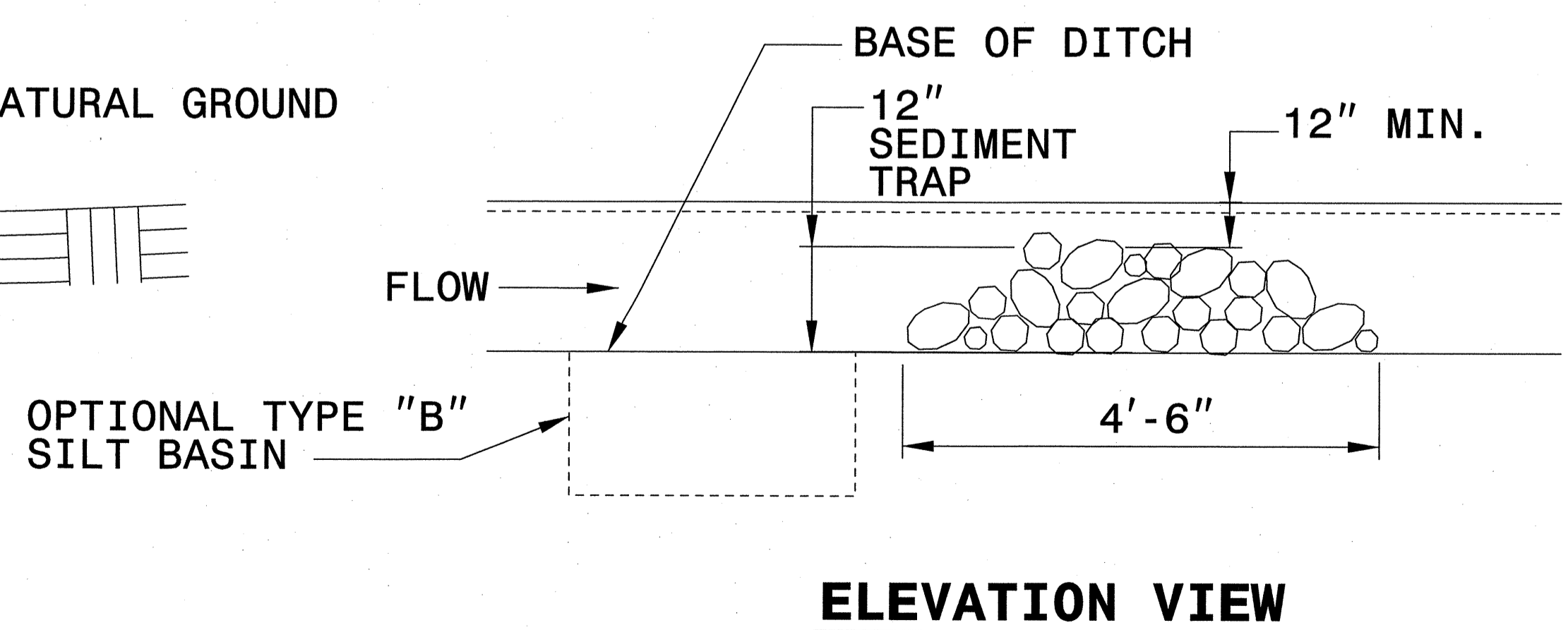
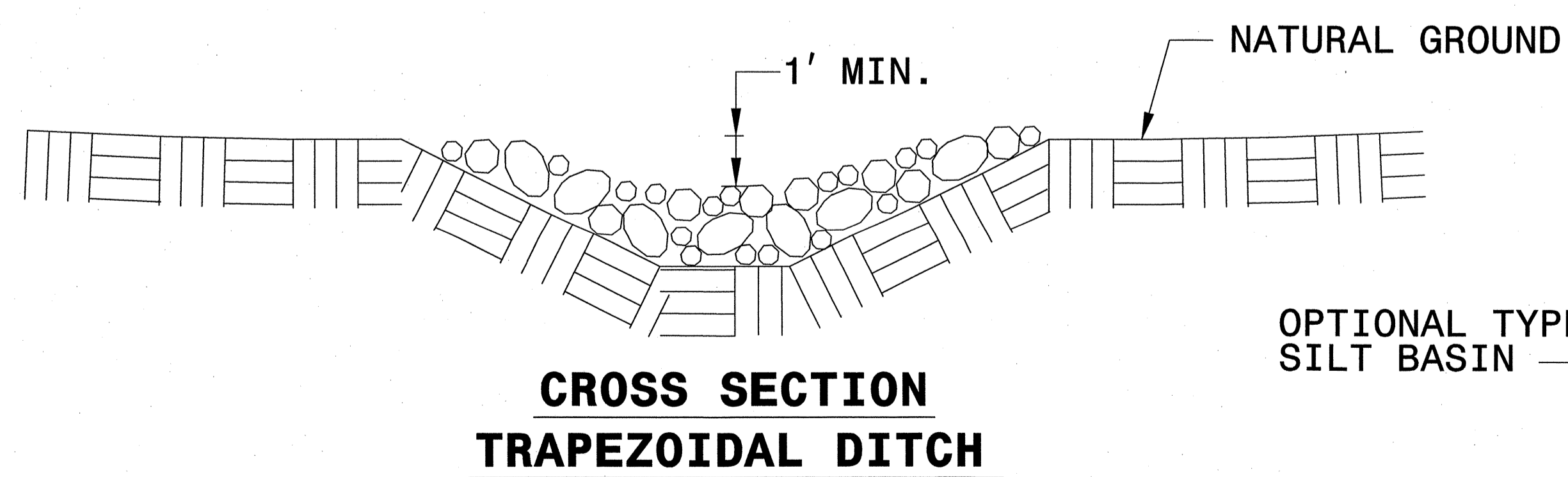
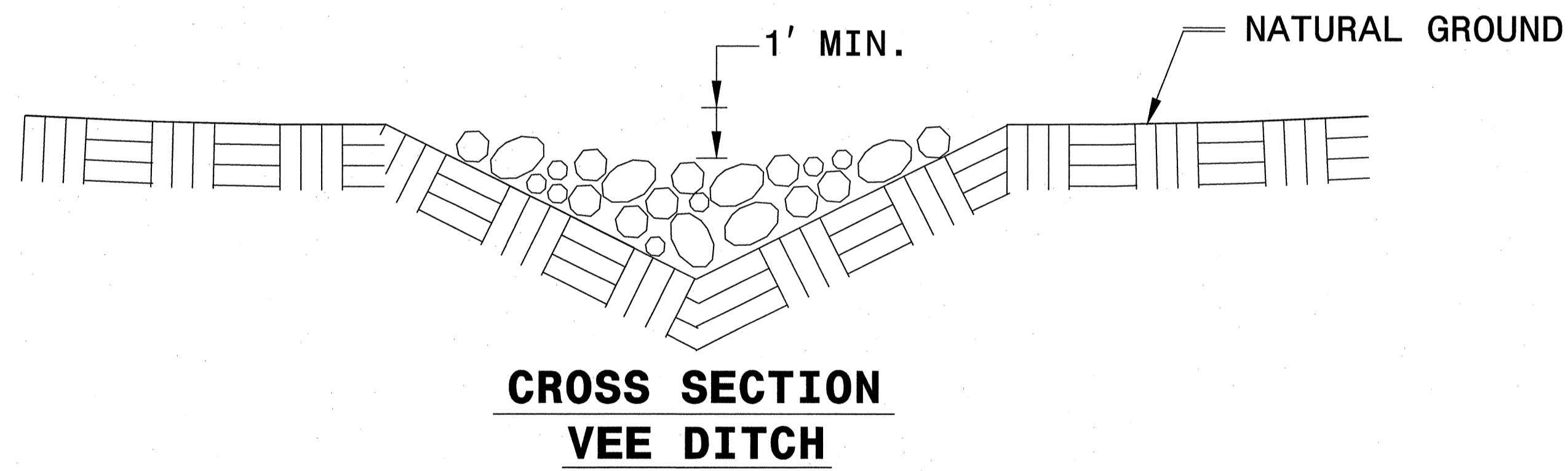
TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL



NOTES:

USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.

THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



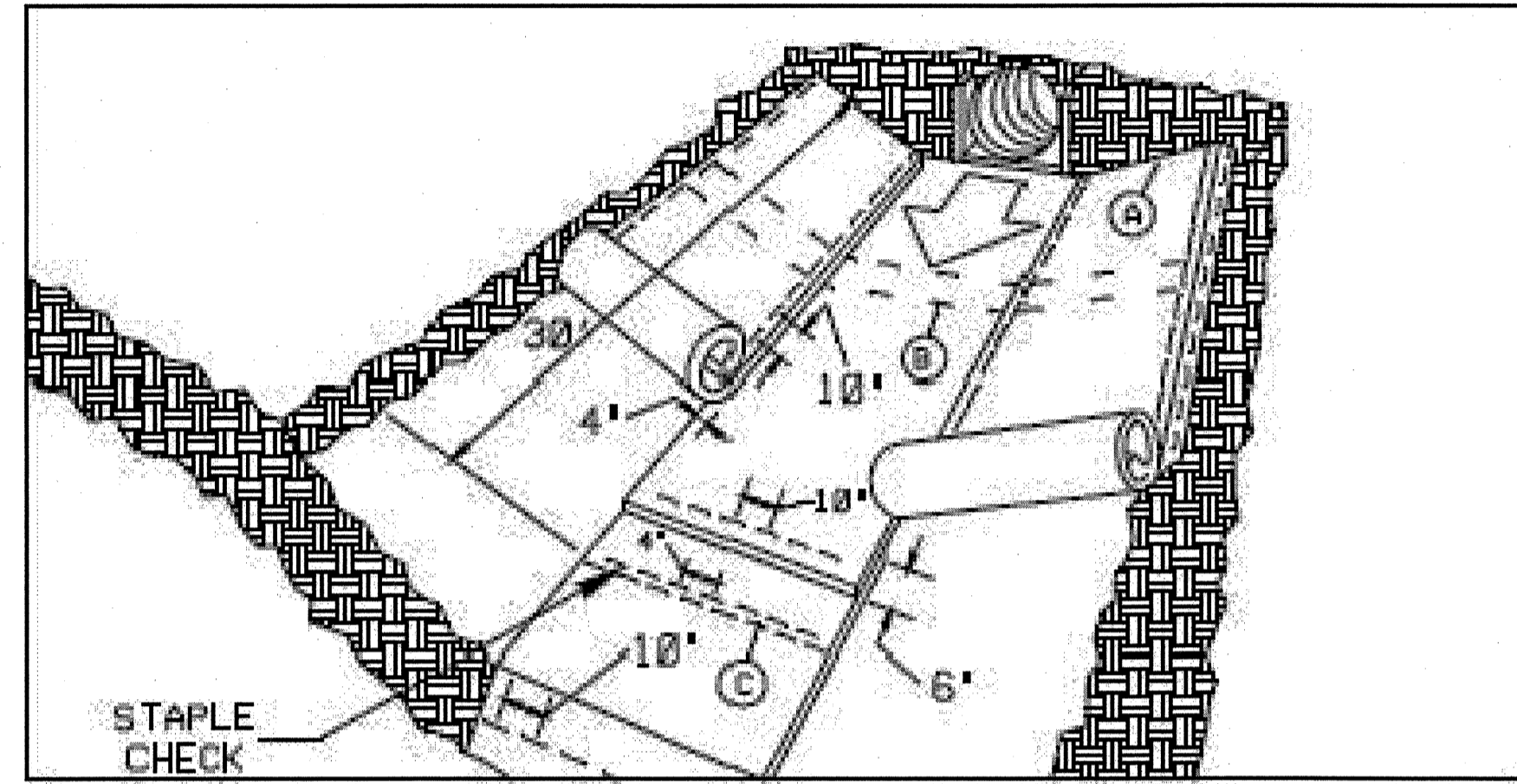
REVISIONS

8/17/99

3/9/2011
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 02/10/2011

MATTING INSTALLATION DETAIL

| | |
|---|---------------------|
| PROJECT REFERENCE NO. R-5185 | SHEET NO. EC-2C |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | |
| | |
| STV/Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991 | |



MATTING IN DITCHES

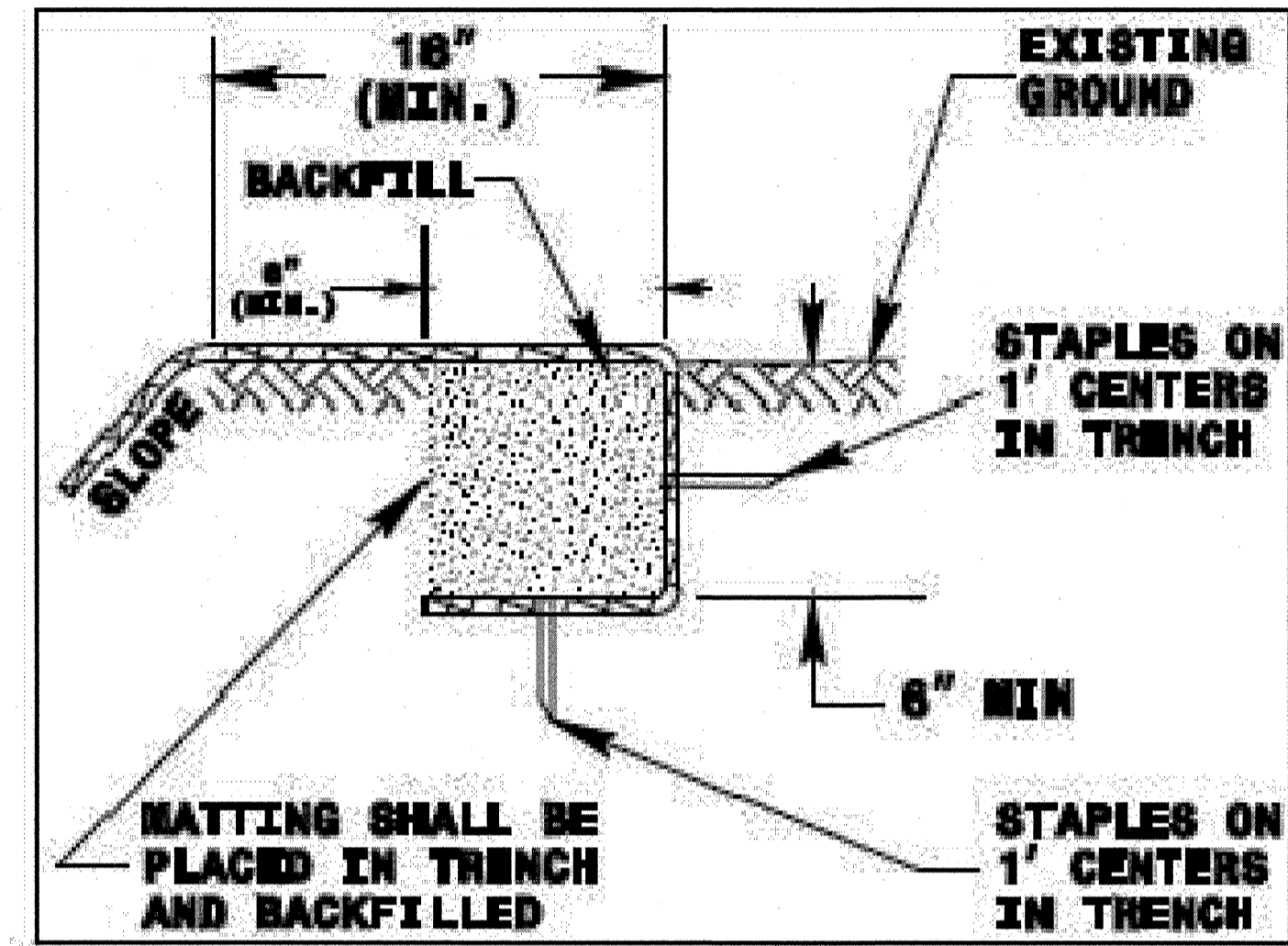
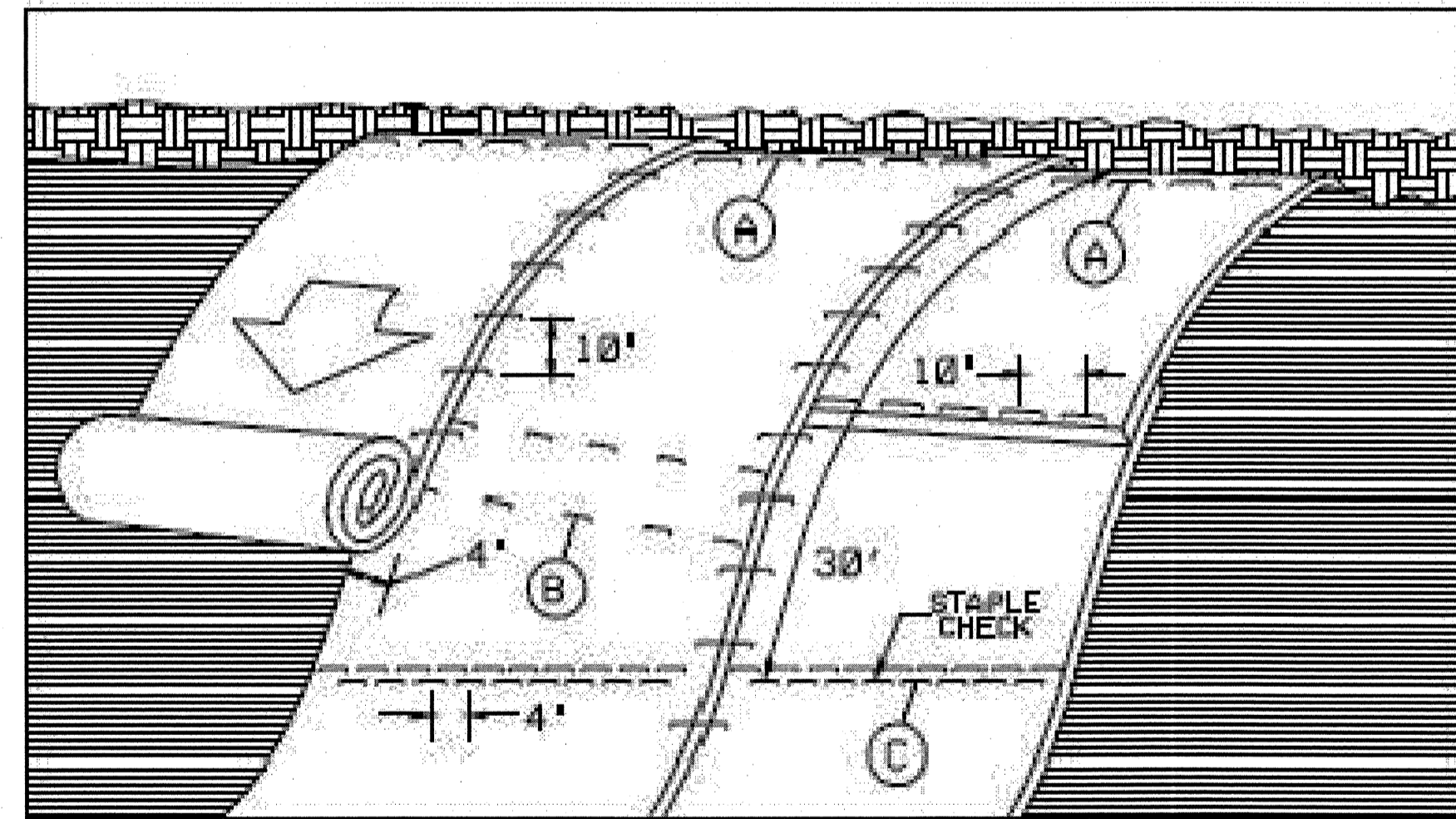


DIAGRAM (A)



MATTING ON SLOPES

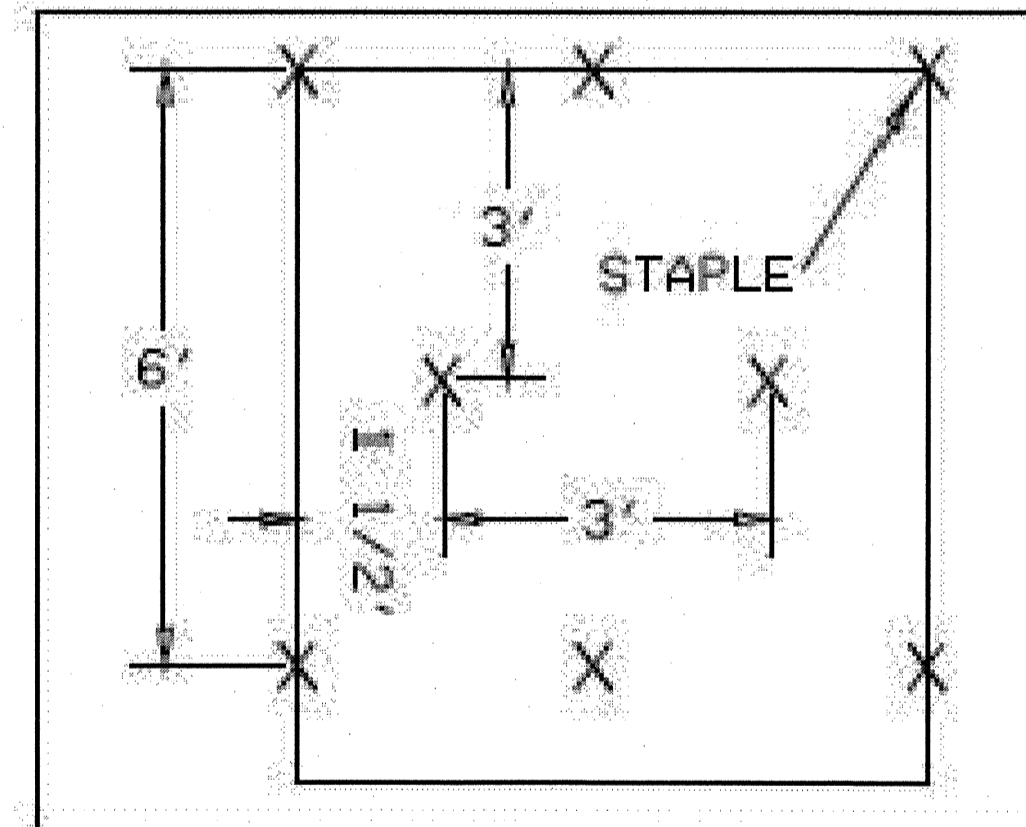


DIAGRAM (B)

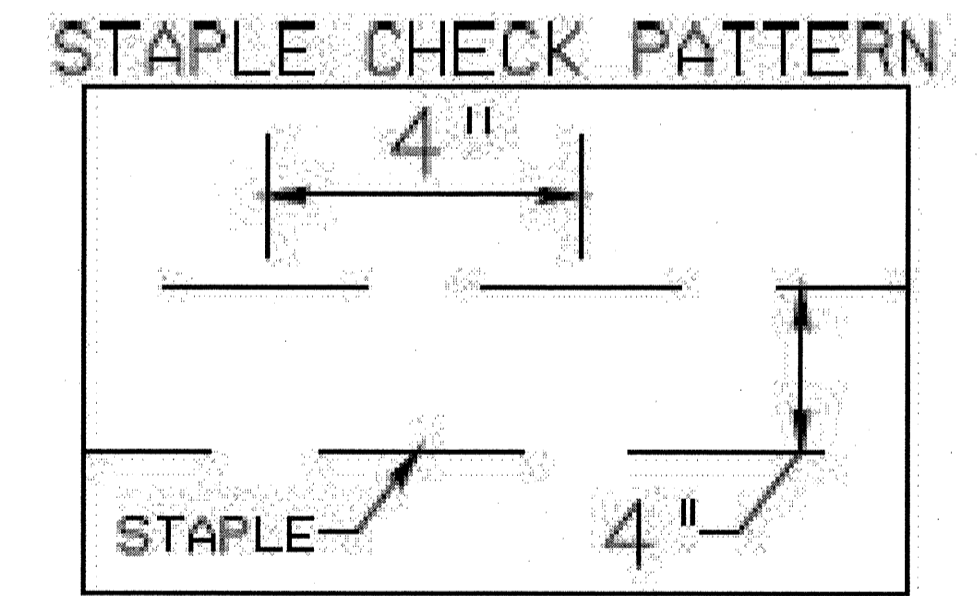


DIAGRAM (C)

NOT TO SCALE

NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.
 STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

REVISIONS

8/17/99
 3/9/2011
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| | |
|---|---------------------|
| PROJECT REFERENCE NO. R-5185 | SHEET NO. EC-4 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | |
| | |
| STV / Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991 | |

**EROSION CONTROL -
CLEARING AND GRUBBING PHASE**

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "R-5185-2"
 WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
 NORTHING: 610137.8282(±) EASTING: 2054546.3064(±)
 ELEVATION: 159.51(±)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999874446
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R-5185-2" TO -L- STATION 8+75.00 IS
 S 33° 10' 07.51" E 82.6267 (±)
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

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

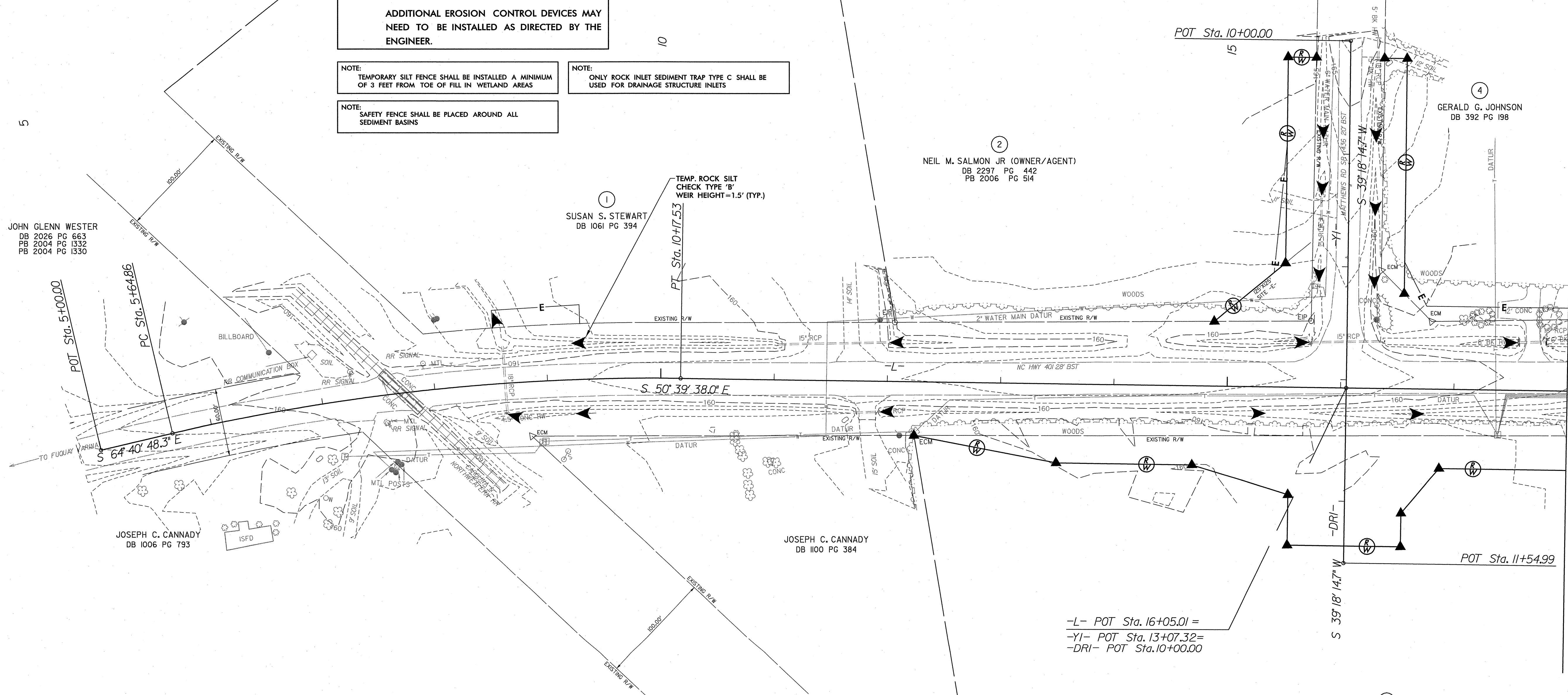
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

NOTE: TEMPORARY SILT FENCE SHALL BE INSTALLED A MINIMUM OF 3 FEET FROM TOE OF FILL IN WETLAND AREAS

NOTE: ONLY ROCK INLET SEDIMENT TRAP TYPE C SHALL BE USED FOR DRAINAGE STRUCTURE INLETS

NOTE: SAFETY FENCE SHALL BE PLACED AROUND ALL SEDIMENT BASINS

REVISIONS

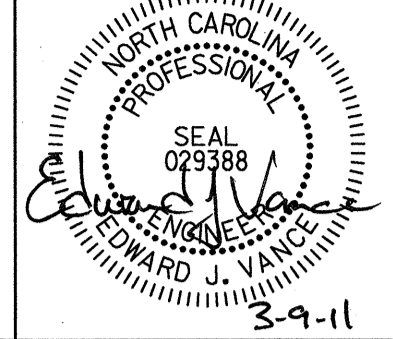



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3/9/2011 \\hwy\proj\ec\R5185-EC-05.dgn
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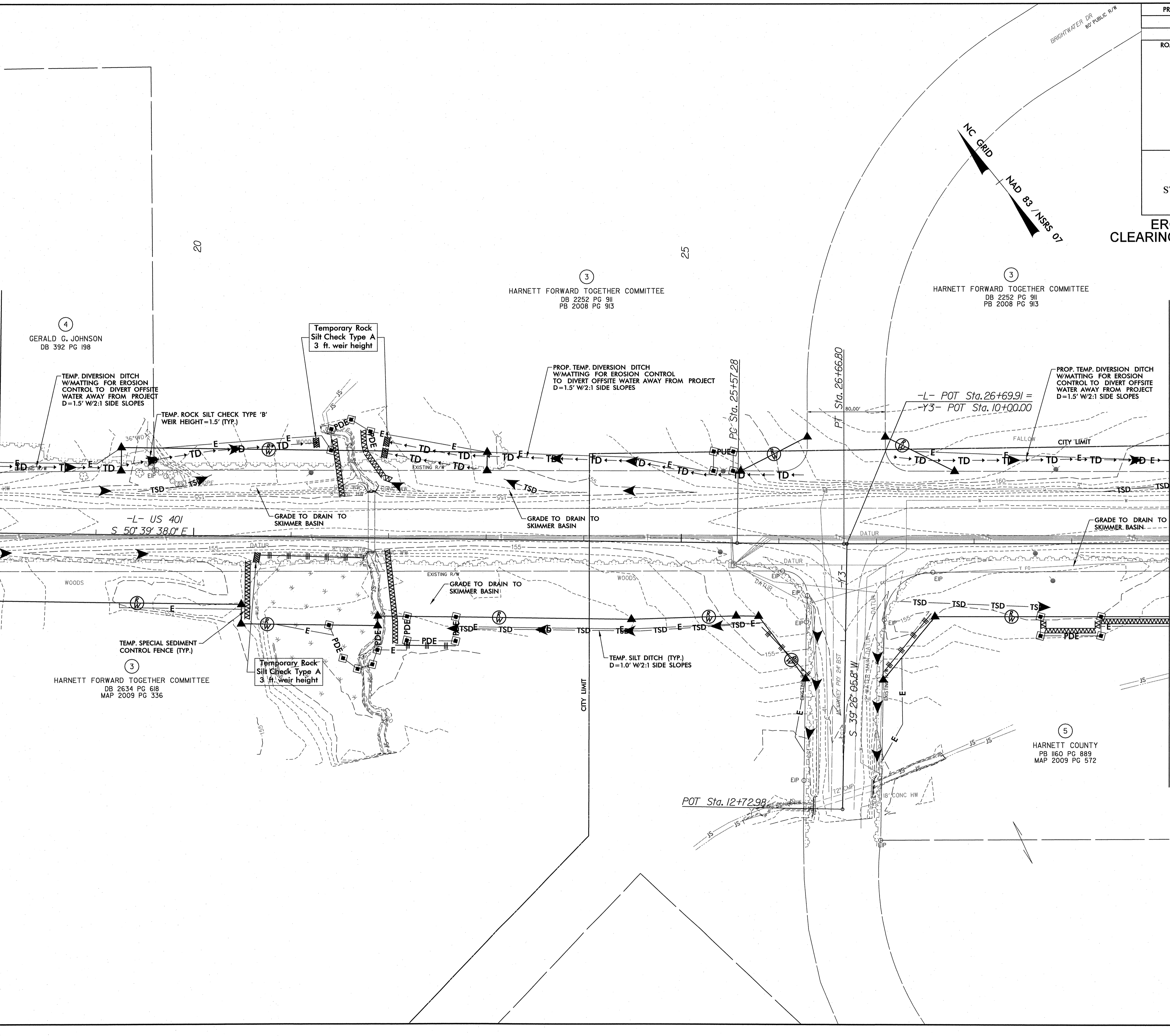
REVISIONS

| | |
|---|--------------------------|
| PROJECT REFERENCE NO. <i>R-5185</i> | SHEET NO. <i>EC-5</i> |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
|  EDWARD J. VANCE 3-9-11 | |
|  STV/Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991 | |

EROSION CONTROL - CLEARING AND GRUBBING PHASE

MATCHLINE -L- STA 18+00.00 (SHEET EC-4)

MATCHLINE -L- STA 30+00.00 (SHEET EC-6)



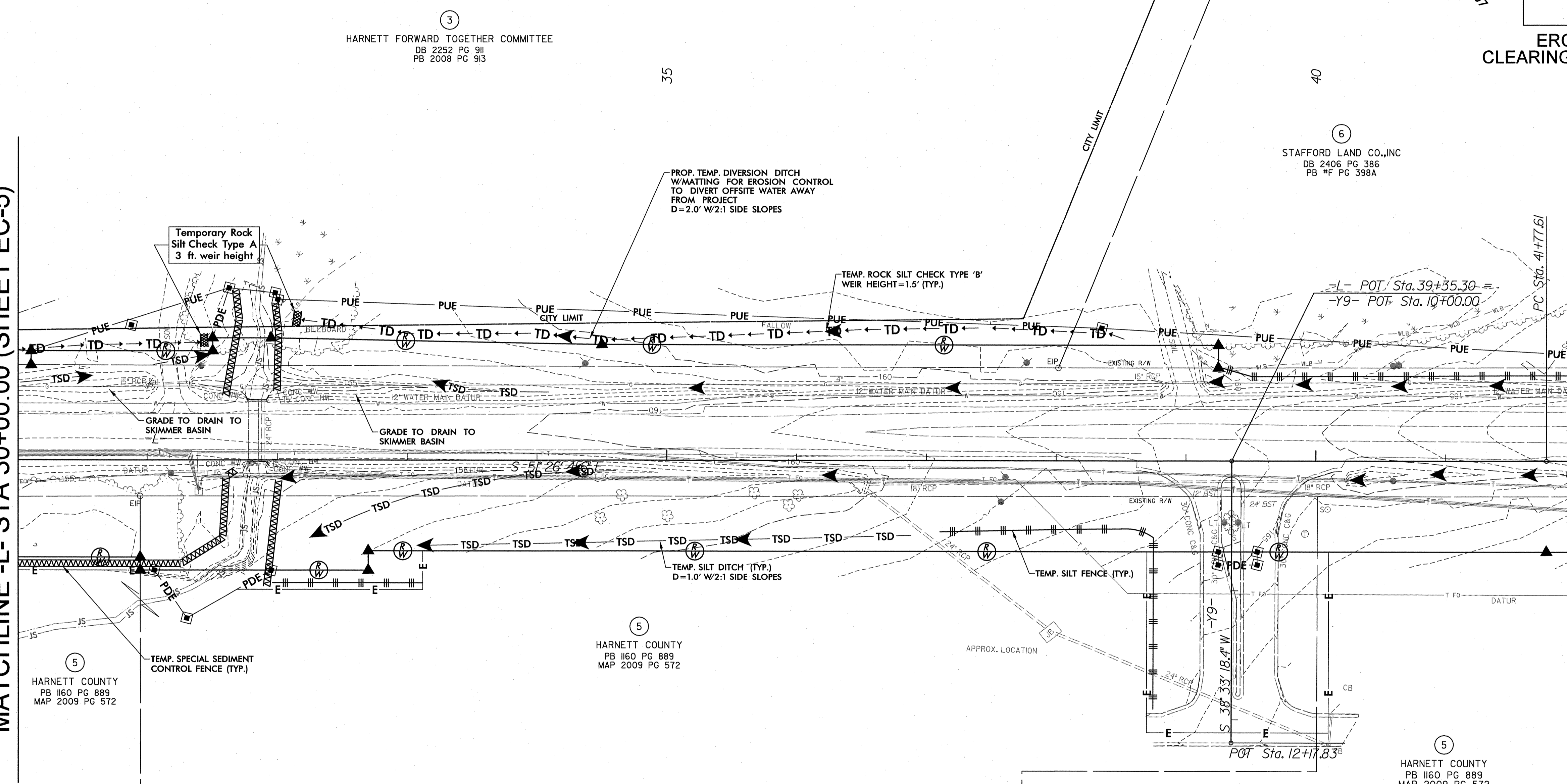
8/17/99

| | |
|---|---------------------|
| PROJECT REFERENCE NO. R-5185 | SHEET NO. EC-6 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | |
| | |
| STV / Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991 | |

**EROSION CONTROL -
CLEARING AND GRUBBING PHASE**

MATCHLINE -L- STA 30+00.00 (SHEET EC-5)

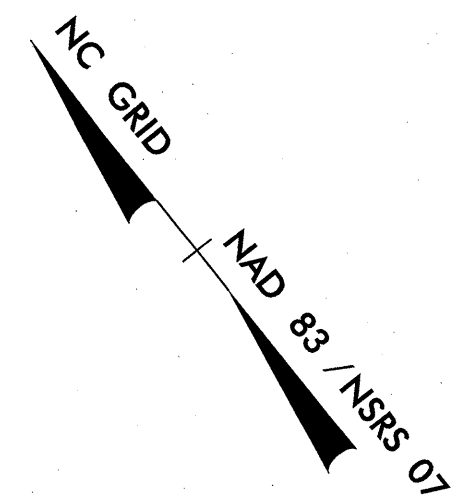
MATCHLINE -L- STA 42+00.00 (SHEET EC-7)



REVISIONS

3/9/2011
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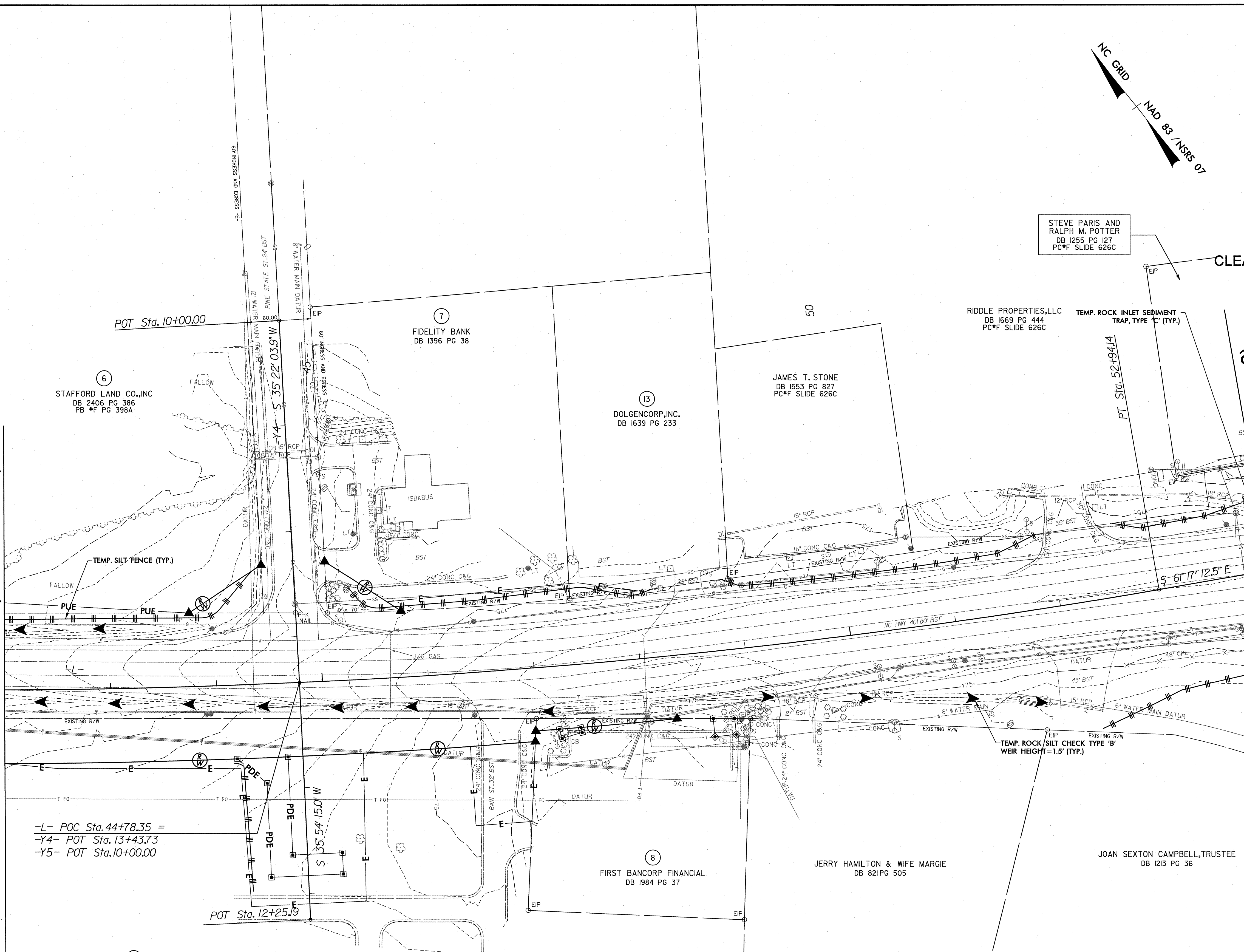
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|--|---------------------|
| PROJECT REFERENCE NO. R-5185 | SHEET NO. EC-7 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | |
| | |
| STV / Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991 | |



**EROSION CONTROL -
CLEARING AND GRUBBING PHASE**

MATCHLINE -L- STA 42+00.00 (SHEET EC-6)

MATCHLINE -L- STA 54+00.00 (SHEET EC-8)



STEVE PARIS AND
RALPH M. POTTER
DB 1255 PG 127
PC*F SLIDE 626C

RIDDLE PROPERTIES, LLC
DB 1669 PG 444
PC*F SLIDE 626C

TEMP. ROCK INLET SEDIMENT
TRAP, TYPE 'C' (TYP.)

TEMP. ROCK SILT CHECK TYPE 'B'
WEIR HEIGHT=1.5' (TYP.)

-L- POC Sta. 44+78.35 =
-Y4- POT Sta. 13+43.73
-Y5- POT Sta. 10+00.00

5
HARNETT COUNTY
PB 1160 PG 889
MAP 2009 PG 572

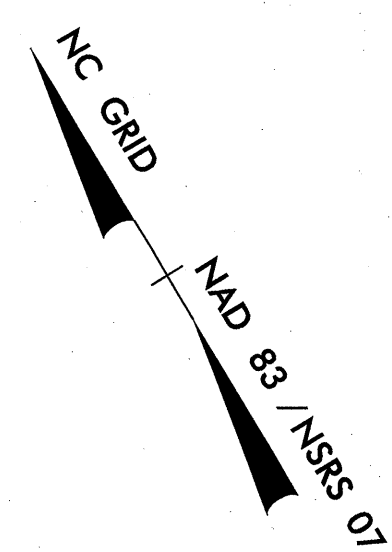
REVISIONS

8/17/99

3/9/2011
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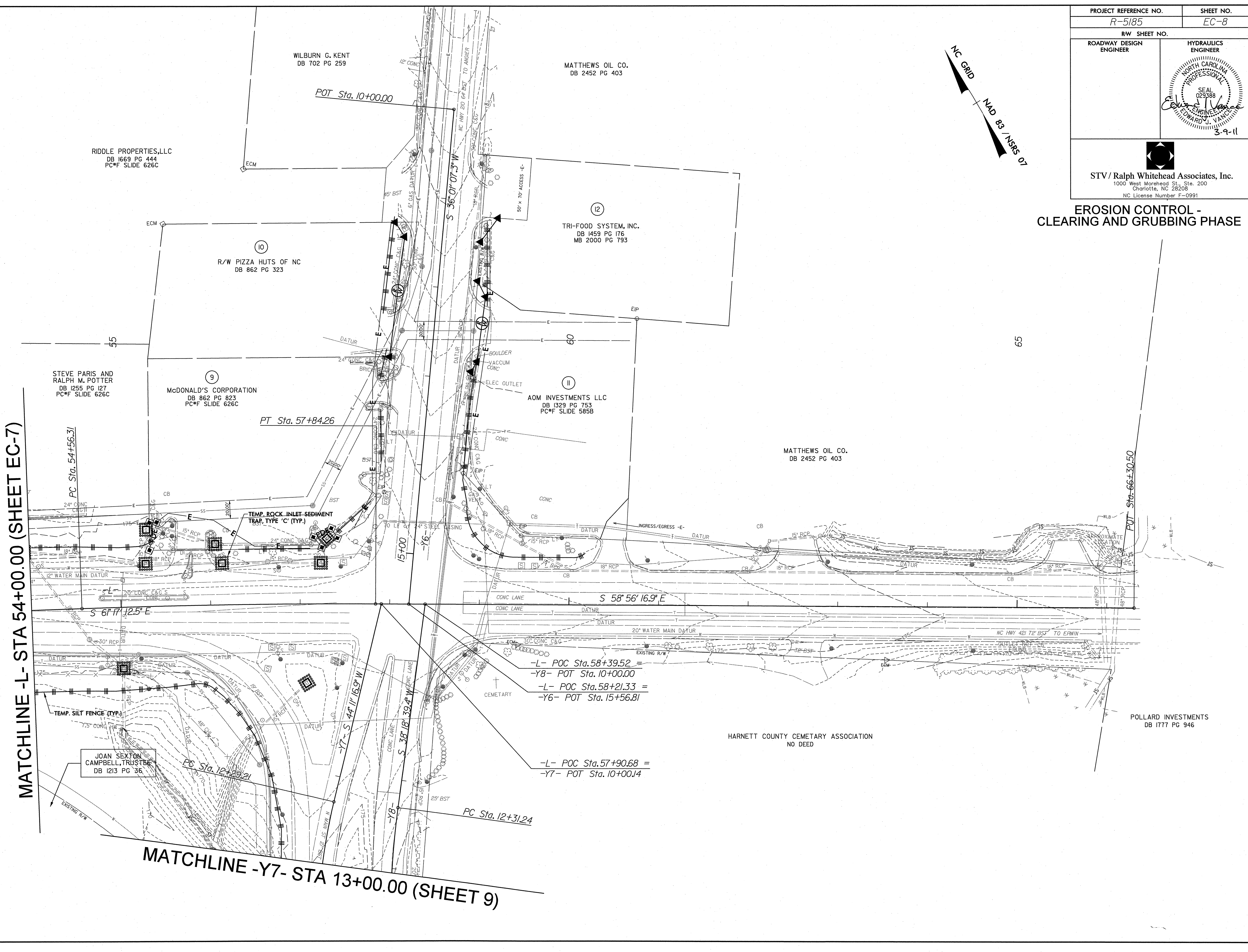
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|--|--------------------------|
| PROJECT REFERENCE NO. <i>R-5185</i> | SHEET NO. <i>EC-8</i> |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | |
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| STV/Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991 | |

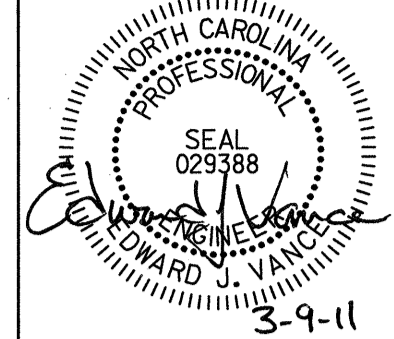
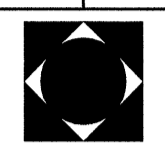
**EROSION CONTROL -
CLEARING AND GRUBBING PHASE**



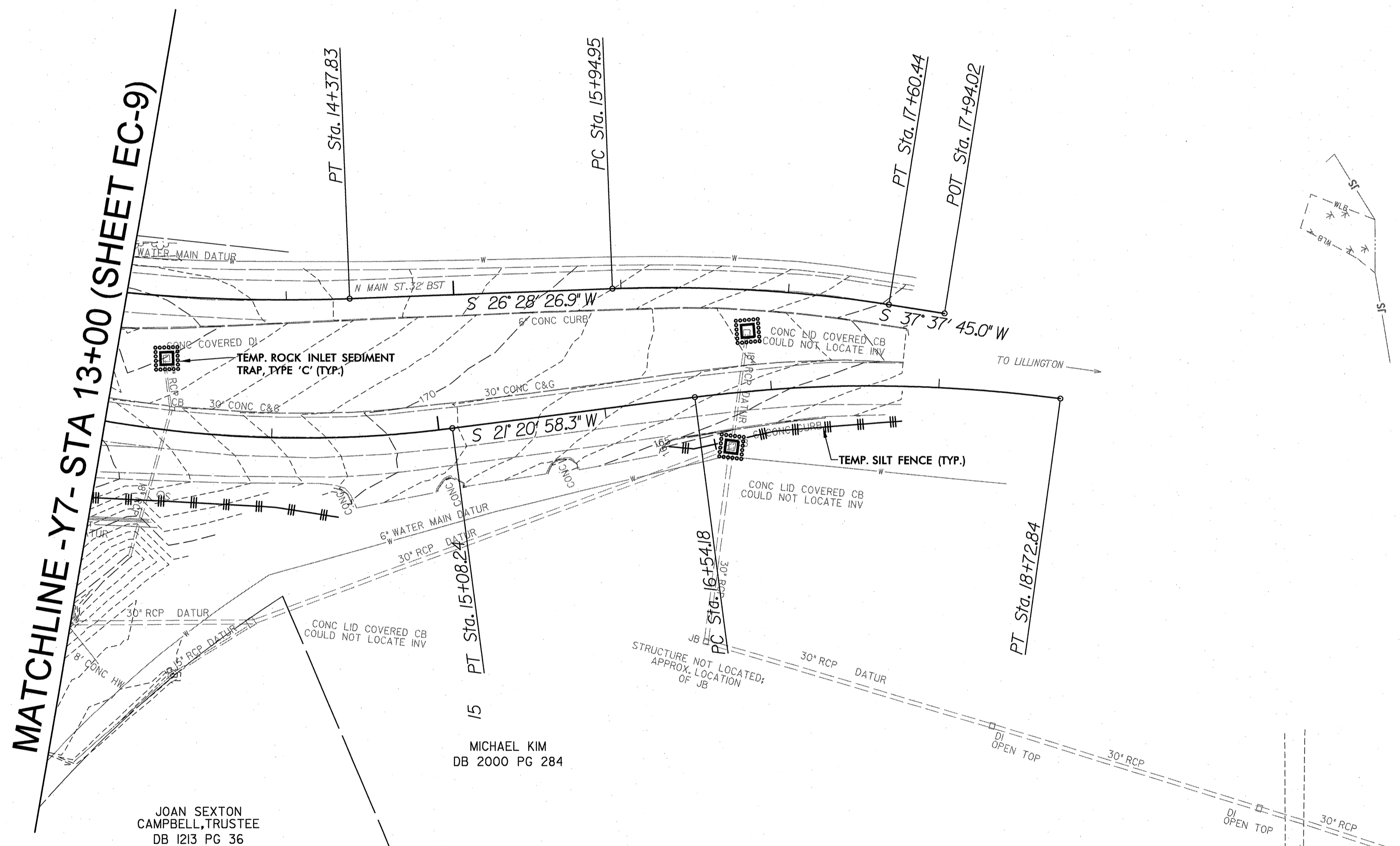
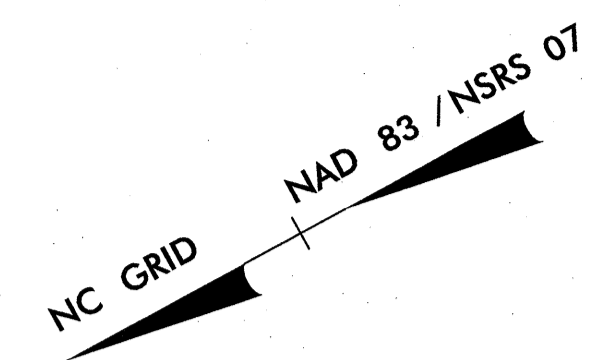
MATCHLINE -L- STA 54+00.00 (SHEET EC-7)

MATCHLINE -Y7- STA 13+00.00 (SHEET 9)



| | |
|---|---|
| PROJECT REFERENCE NO. R-5185 | SHEET NO. EC-9 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| |  |
|  STV/Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991 | |

**EROSION CONTROL -
CLEARING AND GRUBBING PHASE**



MICHAEL KIM
DB 2000 PG 284

JOAN SEXTON
CAMPBELL, TRUSTEE
DB 1213 PG 36

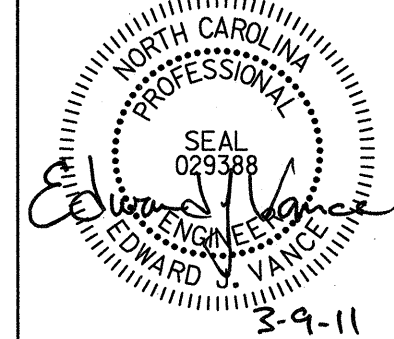
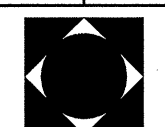
REVISIONS

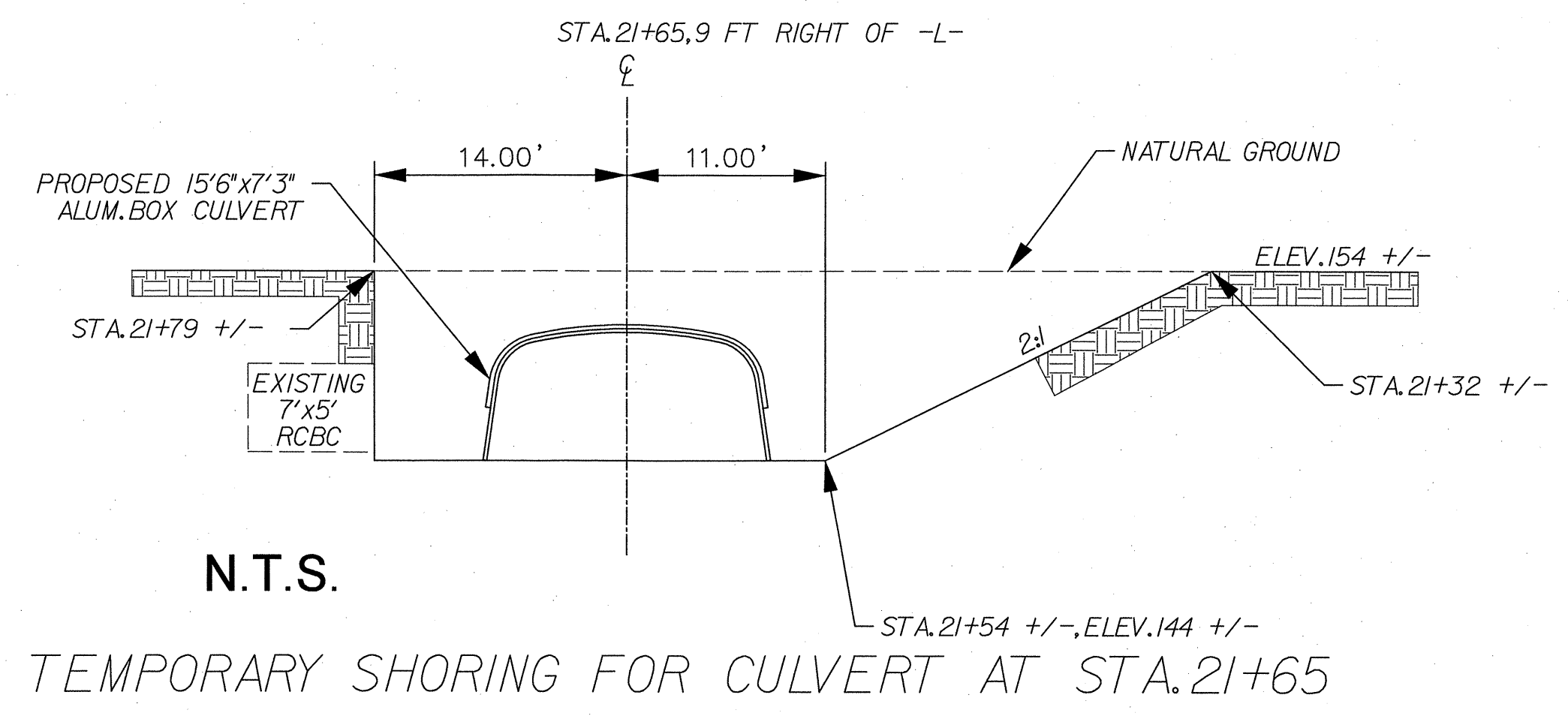
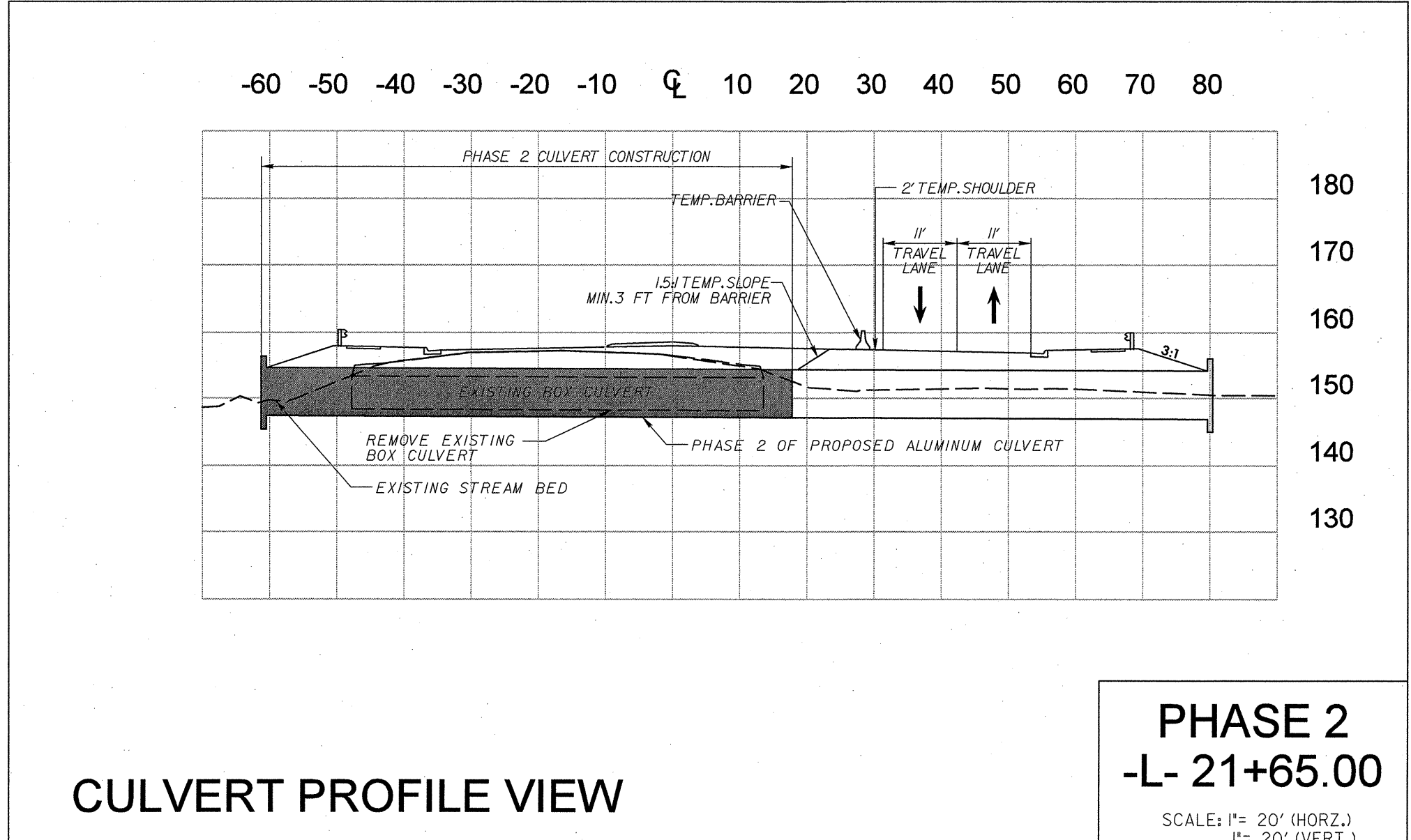
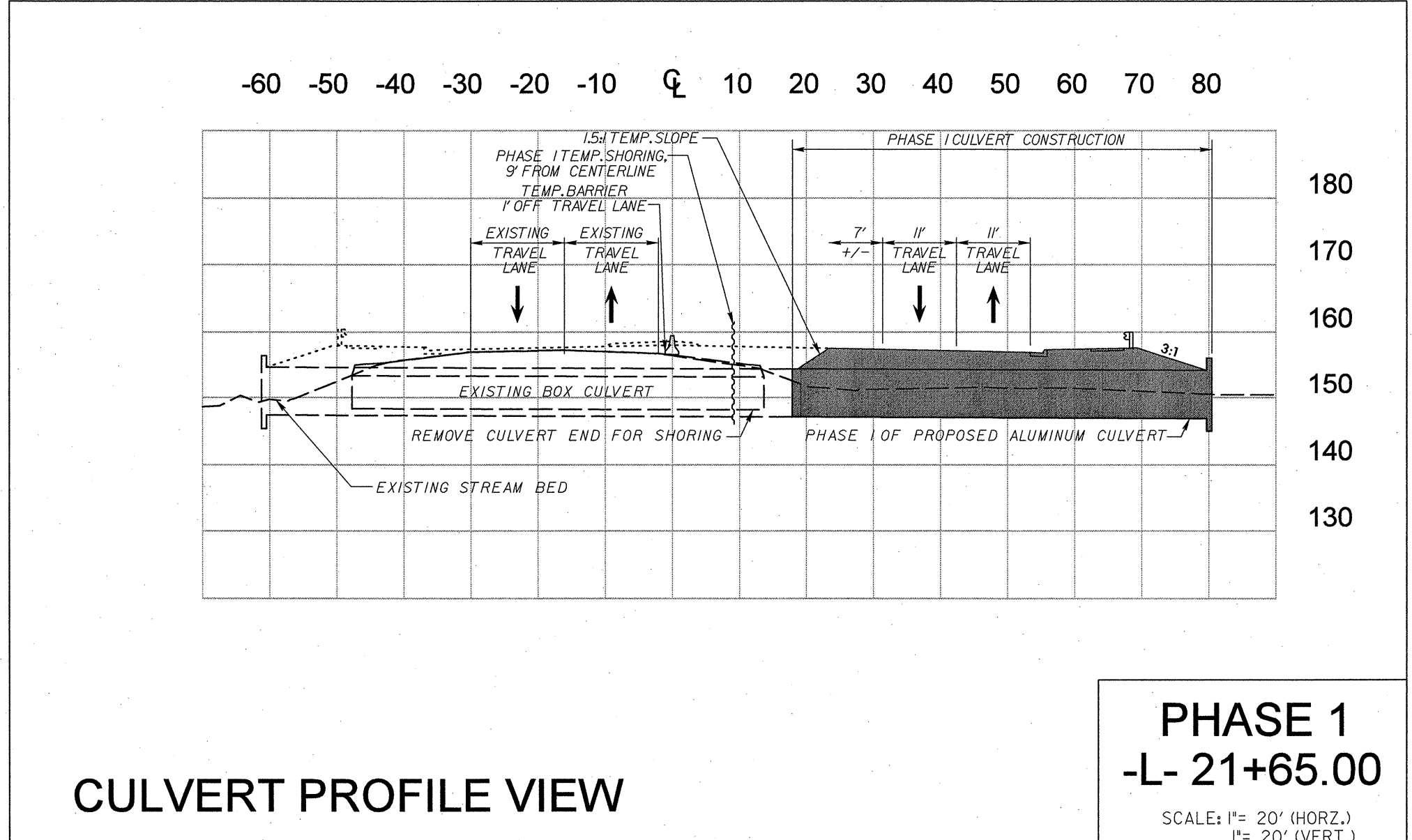
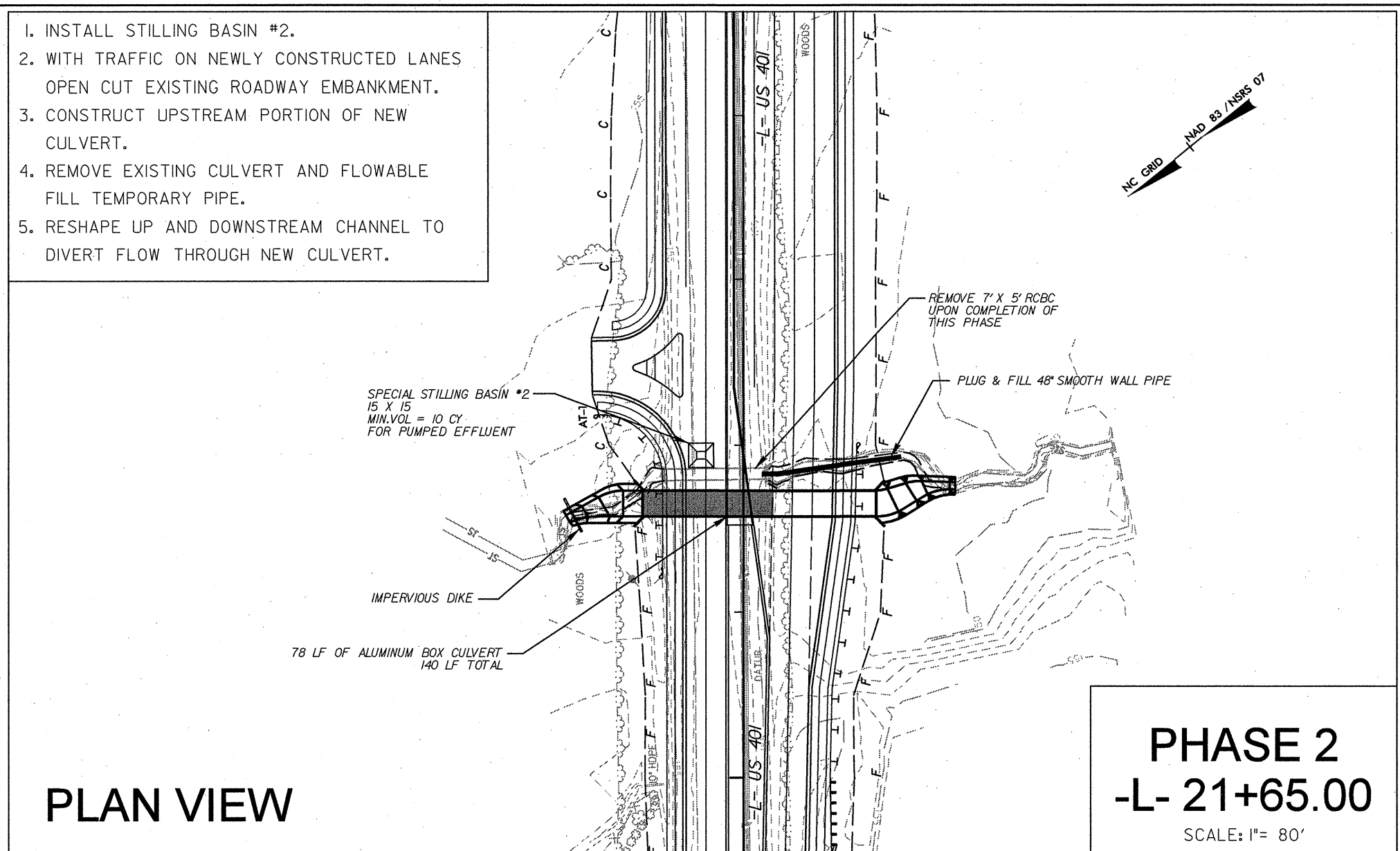
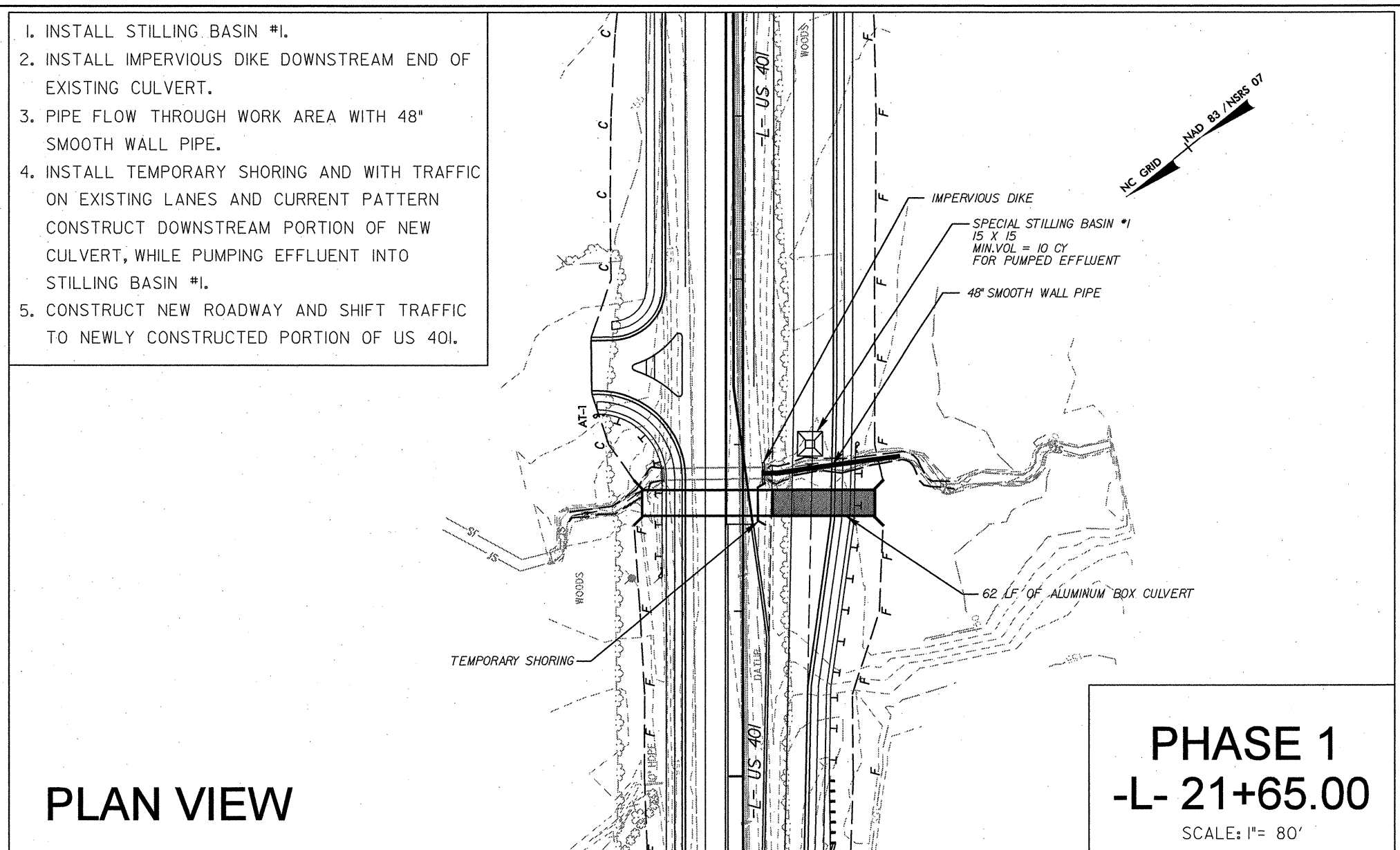
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8/17/99

CONSTRUCTION PHASING FOR CULVERT AT STA.21+65

| | |
|--|---------------------|
| PROJECT REFERENCE NO. R-5185 | SHEET NO. EC-10 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
|  | |
|  | |
| STV / Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991 | |



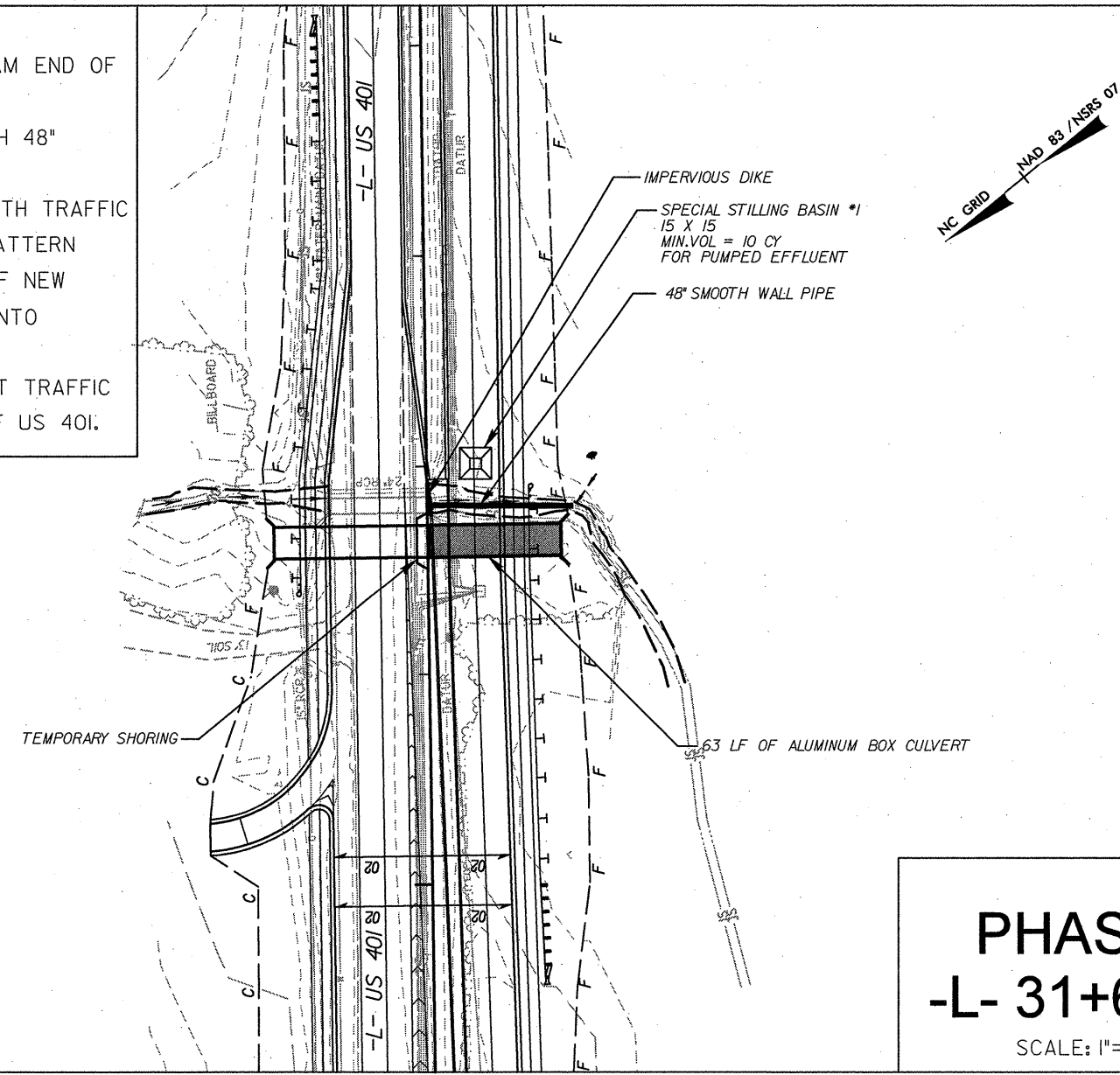
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8/17/99

CONSTRUCTION PHASING FOR CULVERT AT STA. 31+64

| | |
|---|---------------------------|
| PROJECT REFERENCE NO. <i>R-5185</i> | SHEET NO. <i>EC-11</i> |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | |
| | |
| STV/Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991 | |

1. INSTALL STILLING BASIN #1.
2. INSTALL IMPERVIOUS DIKE DOWNSTREAM END OF EXISTING CULVERT.
3. PIPE FLOW THROUGH WORK AREA WITH 48" SMOOTH WALL PIPE.
4. INSTALL TEMPORARY SHORING AND WITH TRAFFIC ON EXISTING LANES AND CURRENT PATTERN CONSTRUCT DOWNSTREAM PORTION OF NEW CULVERT, WHILE PUMPING EFFLUENT INTO STILLING BASIN #1.
5. CONSTRUCT NEW ROADWAY AND SHIFT TRAFFIC TO NEWLY CONSTRUCTED PORTION OF US 401.

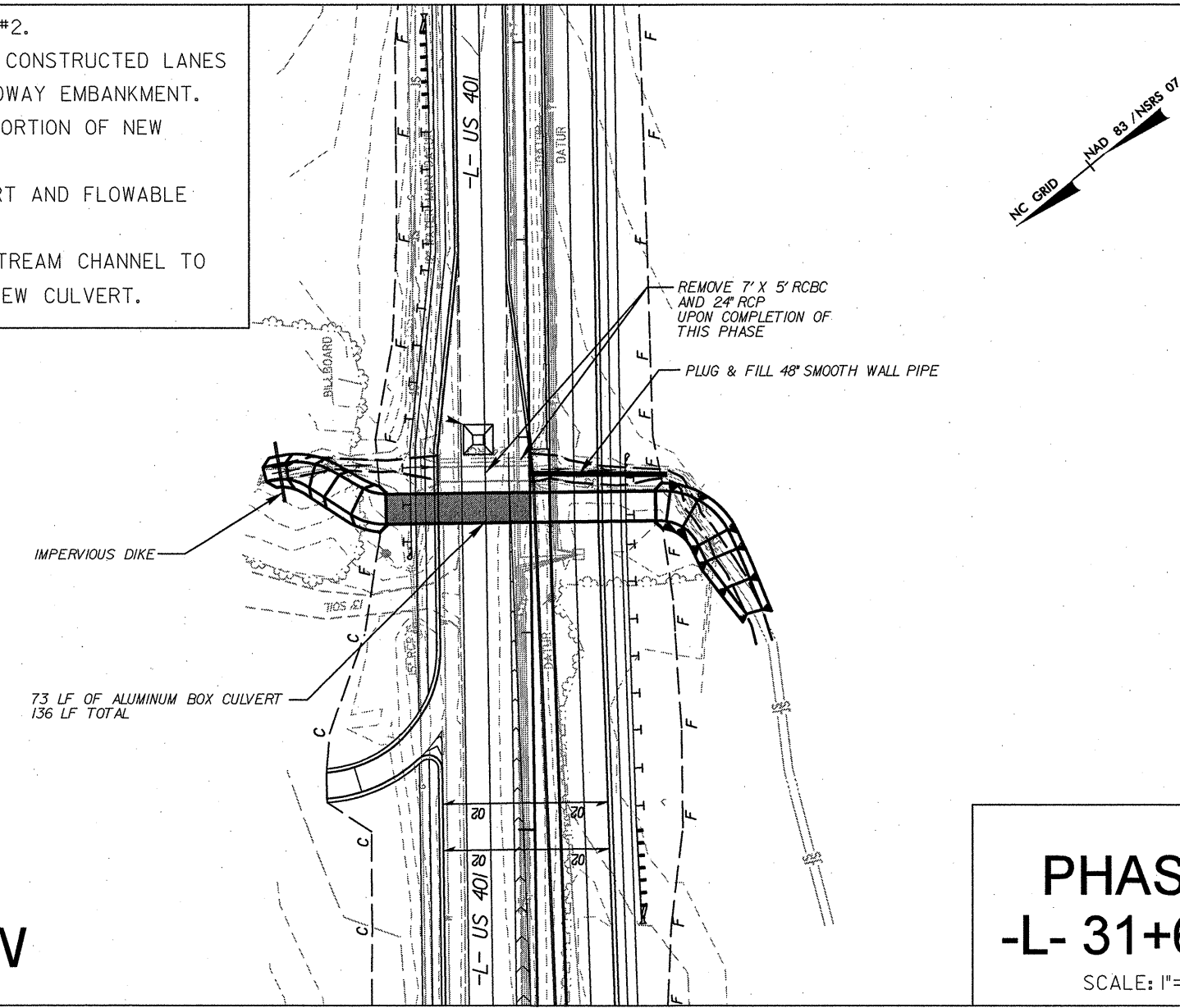


PLAN VIEW

PHASE 1
-L- 31+64.00

SCALE: 1"= 80'

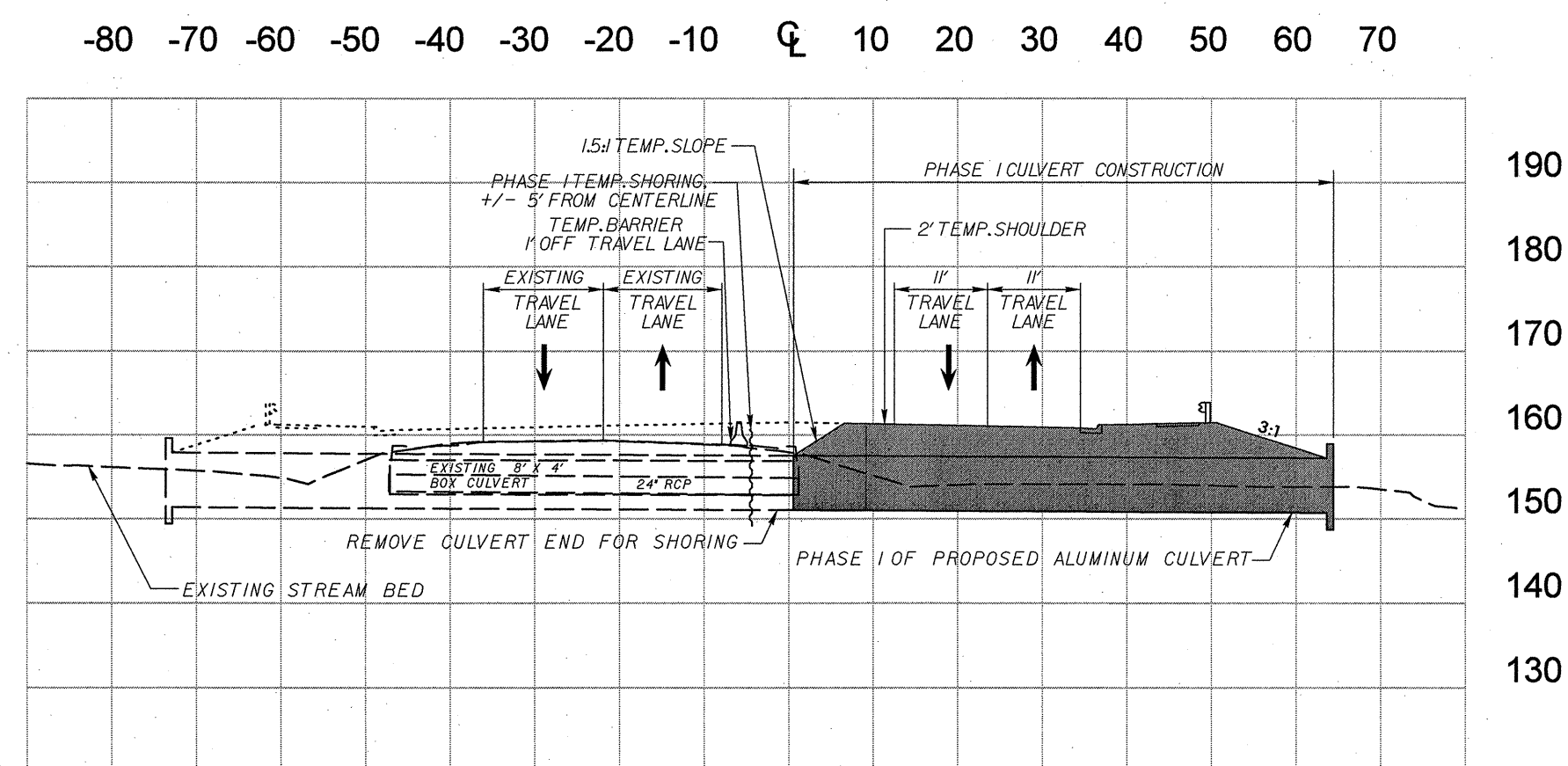
1. INSTALL STILLING BASIN #2.
2. WITH TRAFFIC ON NEWLY CONSTRUCTED LANES OPEN CUT EXISTING ROADWAY EMBANKMENT.
3. CONSTRUCT UPSTREAM PORTION OF NEW CULVERT.
4. REMOVE EXISTING CULVERT AND FLOWABLE FILL TEMPORARY PIPE.
5. RESHAPE UP AND DOWNSTREAM CHANNEL TO DIVERT FLOW THROUGH NEW CULVERT.



PLAN VIEW

PHASE 2
-L- 31+64.00

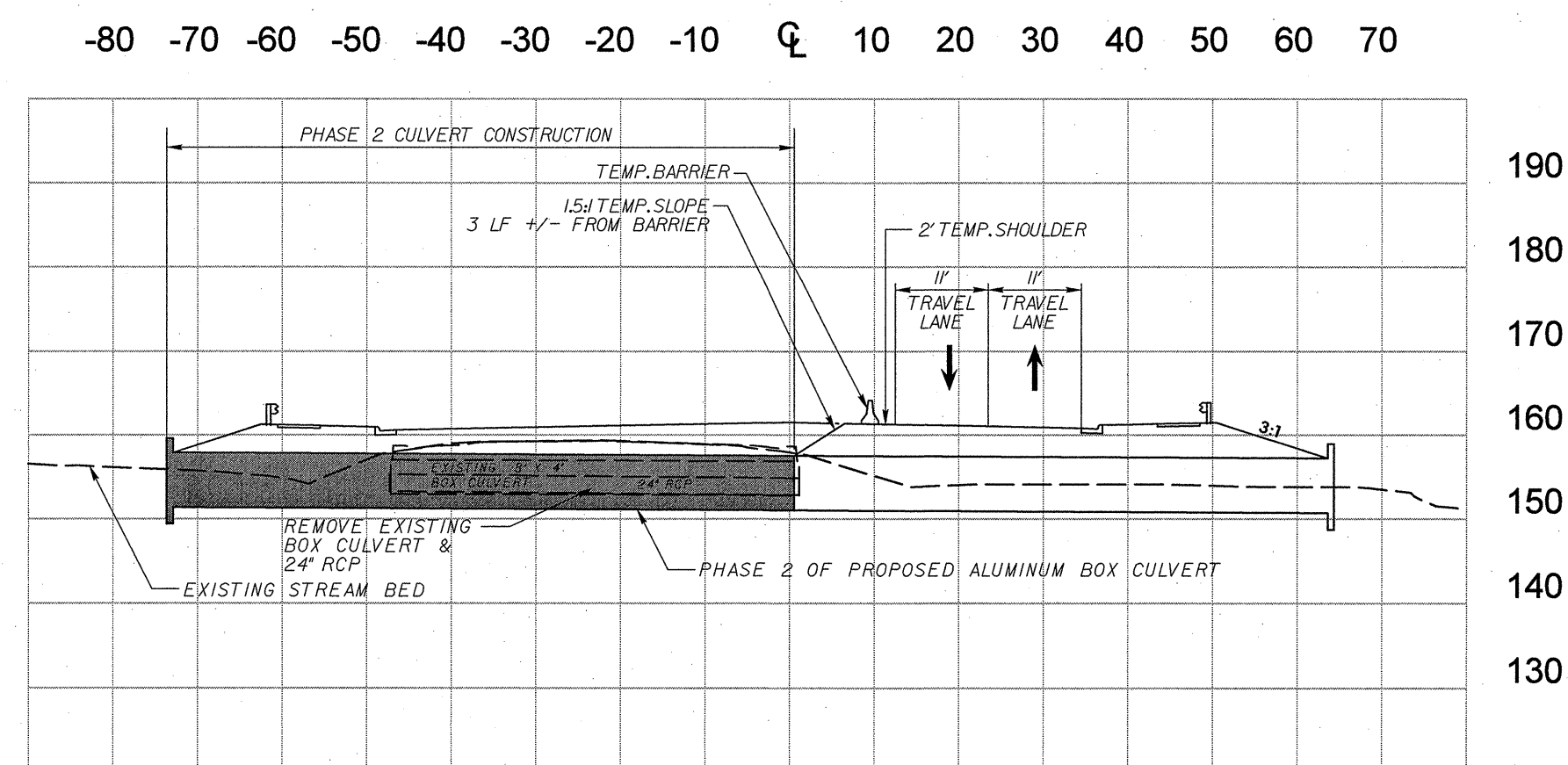
SCALE: 1"= 80'



CULVERT PROFILE VIEW

PHASE 1
-L- 31+64.00

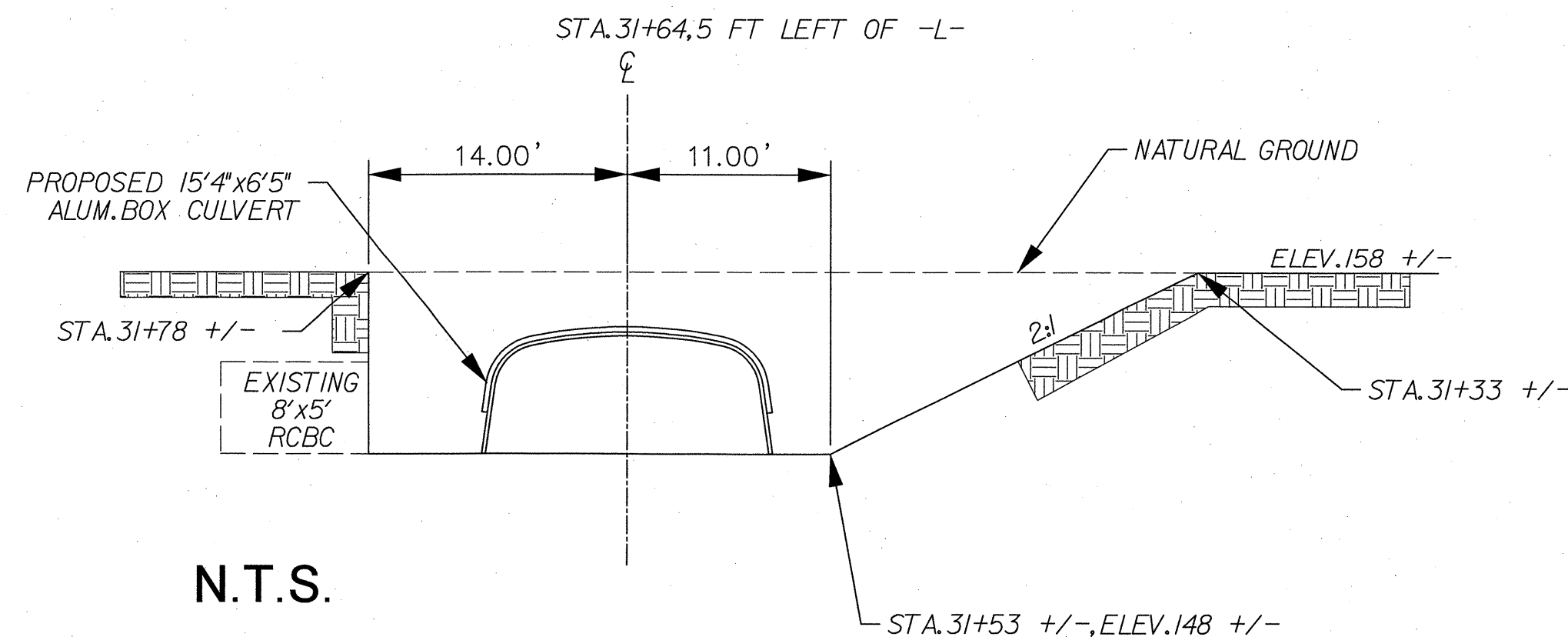
SCALE: 1"= 20' (HORZ.)
1"= 20' (VERT.)



CULVERT PROFILE VIEW

PHASE 2
-L- 31+64.00

SCALE: 1"= 20' (HORZ.)
1"= 20' (VERT.)



N.T.S.

TEMPORARY SHORING FOR CULVERT AT STA. 31+64

3/9/2011 1:17:04 PM C:\work\proj\ec\11\1185\EC-11.dgn

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "R-5185-2"

WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
 NORTHING: 610137.8282(±) EASTING: 2054546.3064(±)
 ELEVATION: 159.51(±)

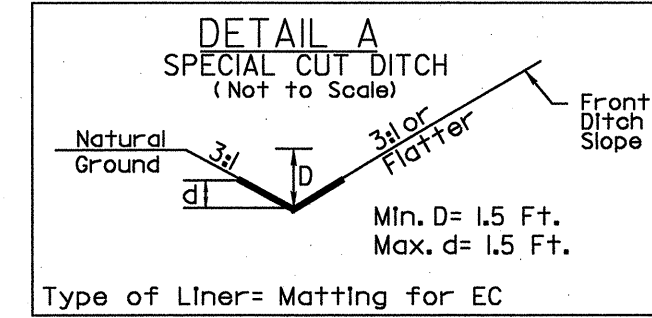
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999874446

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R-5185-2" TO -L- STATION 8+75.00 IS
 S 33° 10' 07.51" E 82.6267 (±)

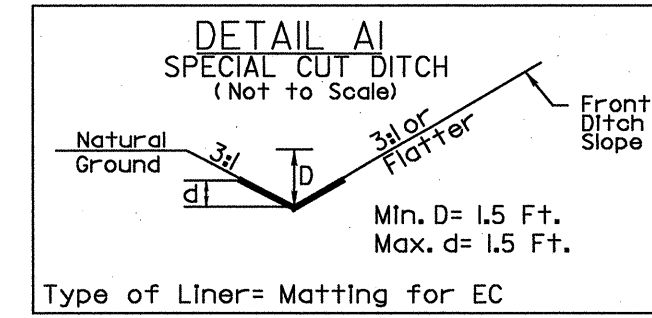
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

-L- CURVE DATA

PI Sta 7+92.33
 $\Delta = 14^{\circ} 01' 10.2" (RT)$
 $D = 3^{\circ} 05' 49.4"$
 $L = 452.67'$
 $T = 227.47'$
 $R = 1,850.00'$
 $DS = 50 MPH$
 $e = EXIST$
 $RUNOFF = 53'$

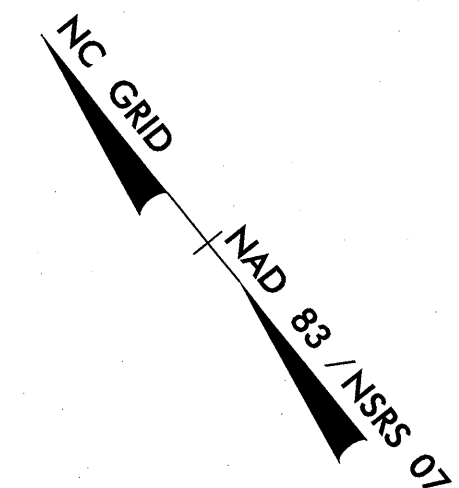


Type of Liner= Matting for EC
 FROM -L- STA. 8+62 TO STA. 15+28 (LT)
 FROM -L- STA. 17+00 TO STA. 17+46 (LT)
 FROM -L- STA. 8+63 TO STA. 15+50 (RT)



Type of Liner= Matting for EC
 FROM -Y1- STA. 10+17 TO STA. 12+00 (LT)
 FROM -Y1- STA. 12+00 TO STA. 12+58 (RT)

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.



EROSION CONTROL - FINAL PHASE

BEGIN CONSTRUCTION
 -Y1- POT STA. 10+13.12
 (TIE TO WORK BY OTHERS)

END CONSTRUCTION
 -DRI- POT STA. 11+32.14

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

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

NOTE: TEMPORARY SILT FENCE SHALL BE INSTALLED A MINIMUM OF 3 FEET FROM TOE OF FILL IN WETLAND AREAS

NOTE: ONLY ROCK INLET SEDIMENT TRAP TYPE C SHALL BE USED FOR DRAINAGE STRUCTURE INLETS

NOTE: SAFETY FENCE SHALL BE PLACED AROUND ALL SEDIMENT BASINS

57' x 28' x 3'
1.5 inch Skimmer
with 1.125 inch Orifice Diameter
20 ft. weir
ID 4.1

①
 SUSAN S. STEWART
 DB 1061 PG 394

②
 NEIL M. SALMON JR (OWNER/AGENT)
 DB 2297 PG 442
 PB 2006 PG 514

④
 GERALD G. JOHNSON
 DB 392 PG 198

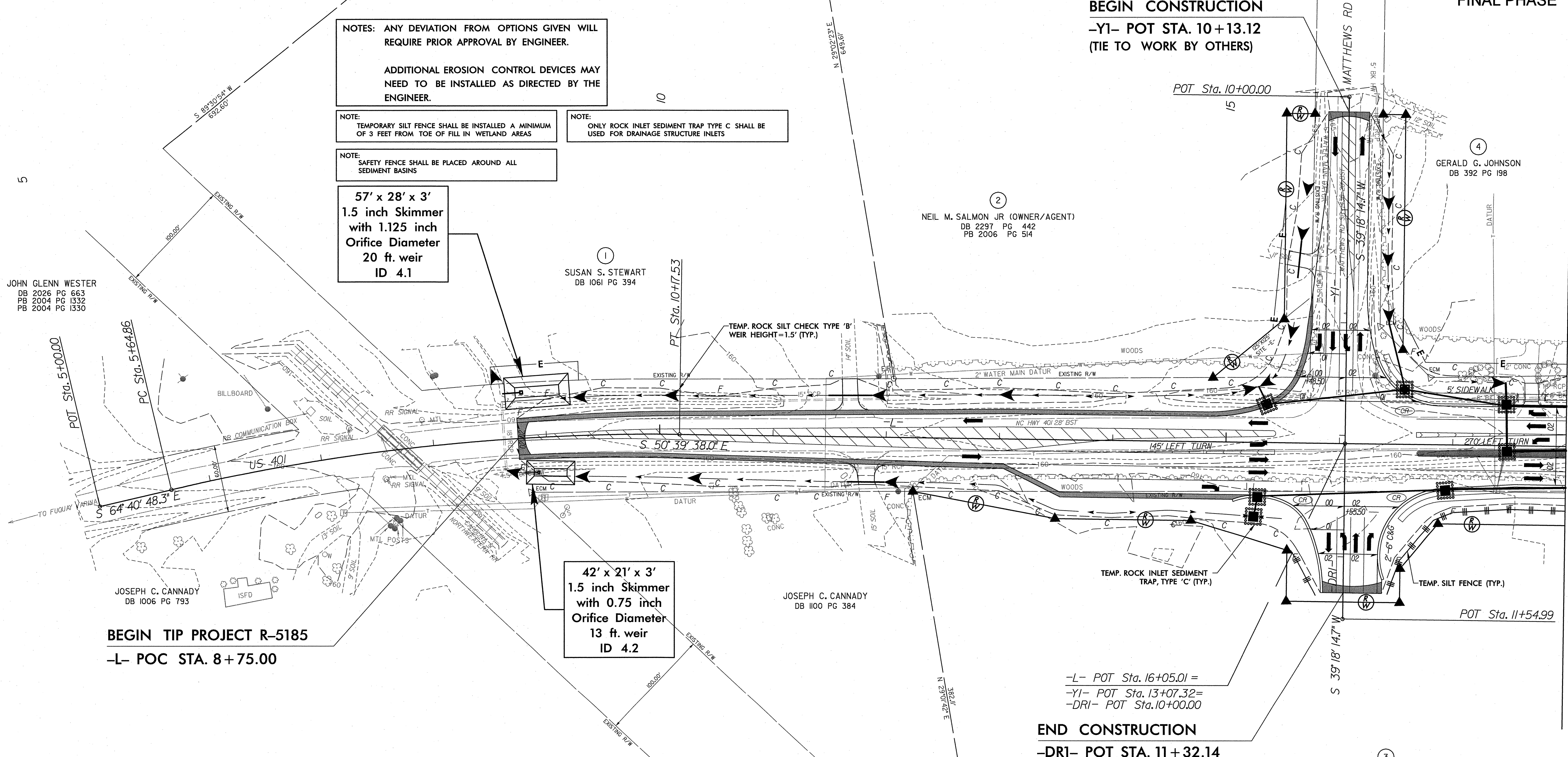
42' x 21' x 3'
1.5 inch Skimmer
with 0.75 inch Orifice Diameter
13 ft. weir
ID 4.2

JOSEPH C. CANNADY
 DB 1100 PG 384

JOHN GLENN WESTER
 DB 2026 PG 663
 PB 2004 PG 1332
 PB 2004 PG 1330

BEGIN TIP PROJECT R-5185
-L- POC STA. 8+75.00

③
 HARNETT FORWARD TOGETHER COMMITTEE
 DB 2634 PG 618
 MAP 2009 PG 336



MATCHLINE -L- STA 18+00.00 (SHEET EC-13)

REVISIONS

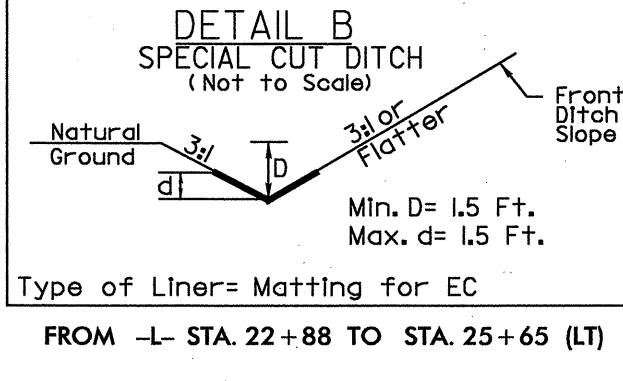
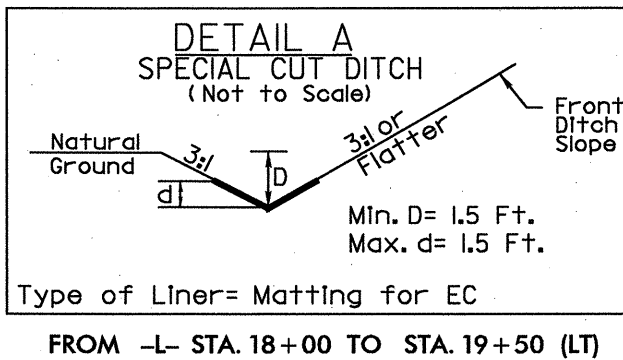
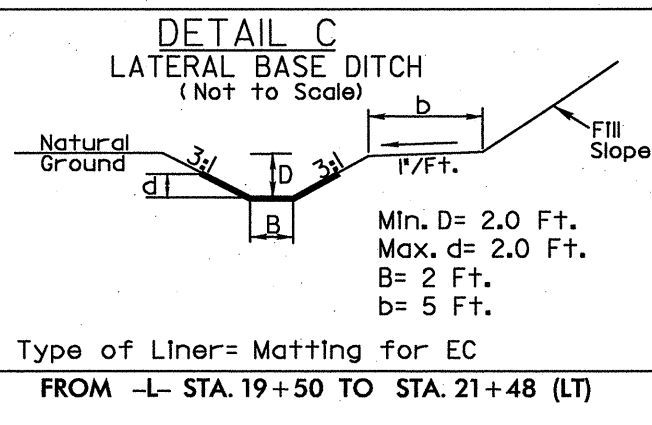
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EROSION CONTROL - FINAL PHASE

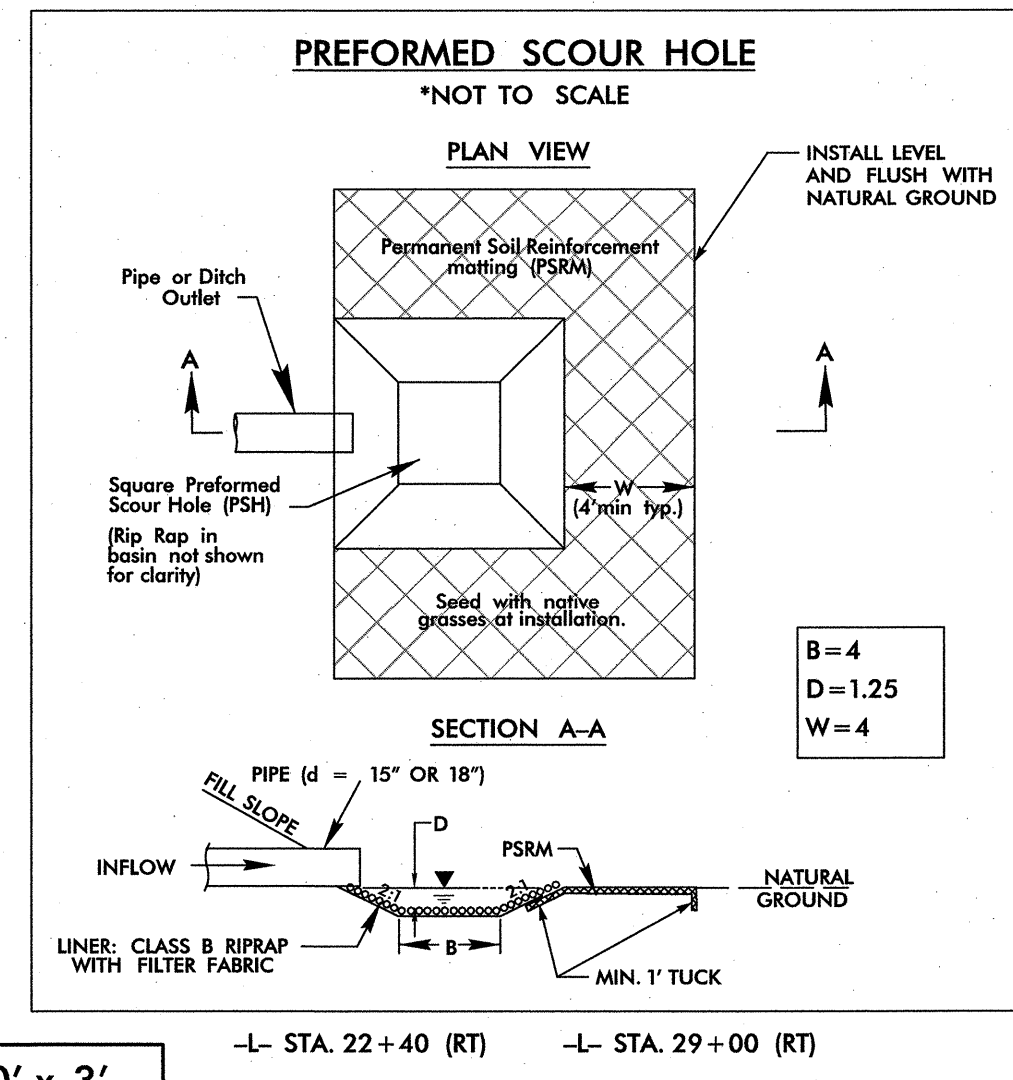
INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.



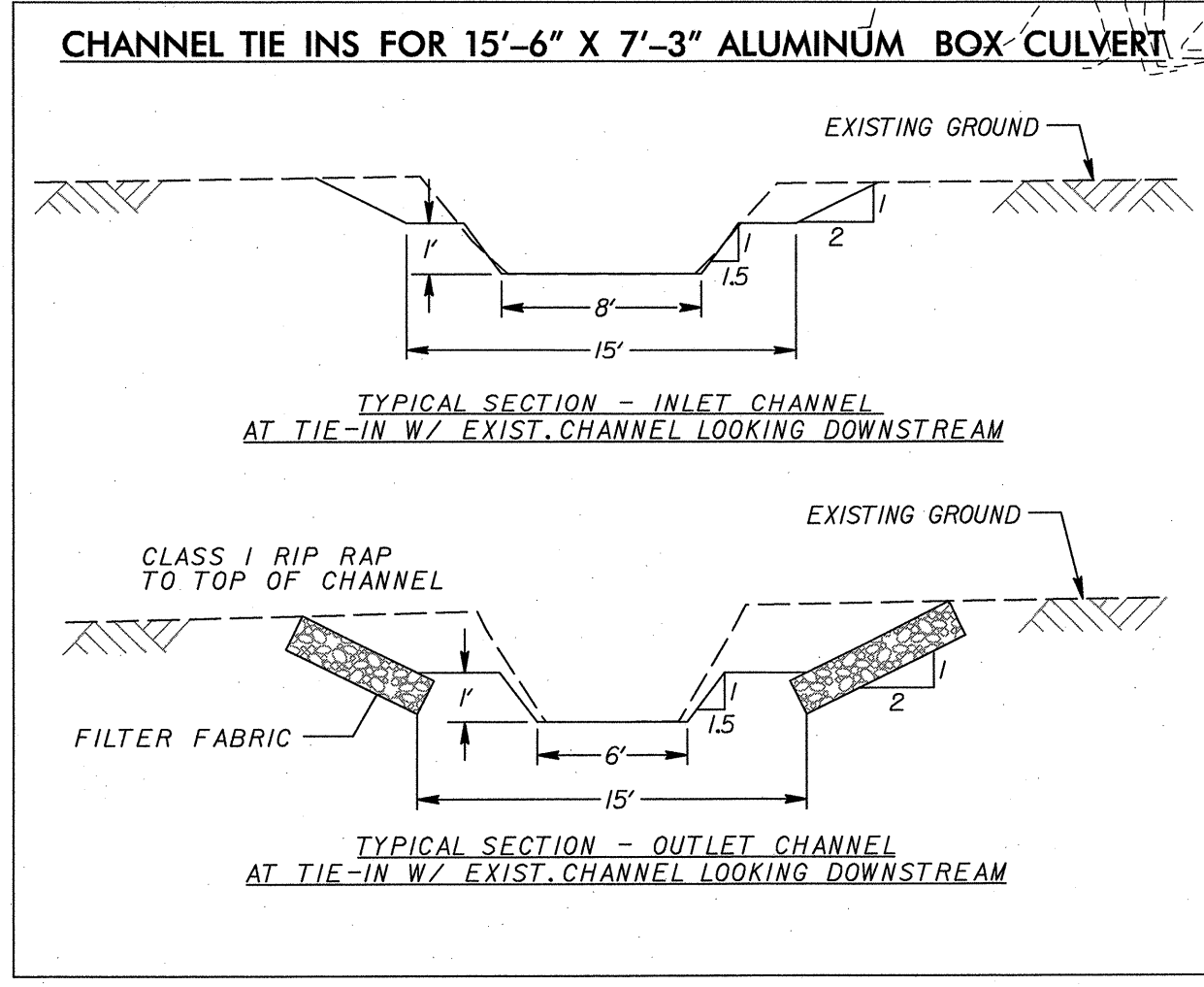
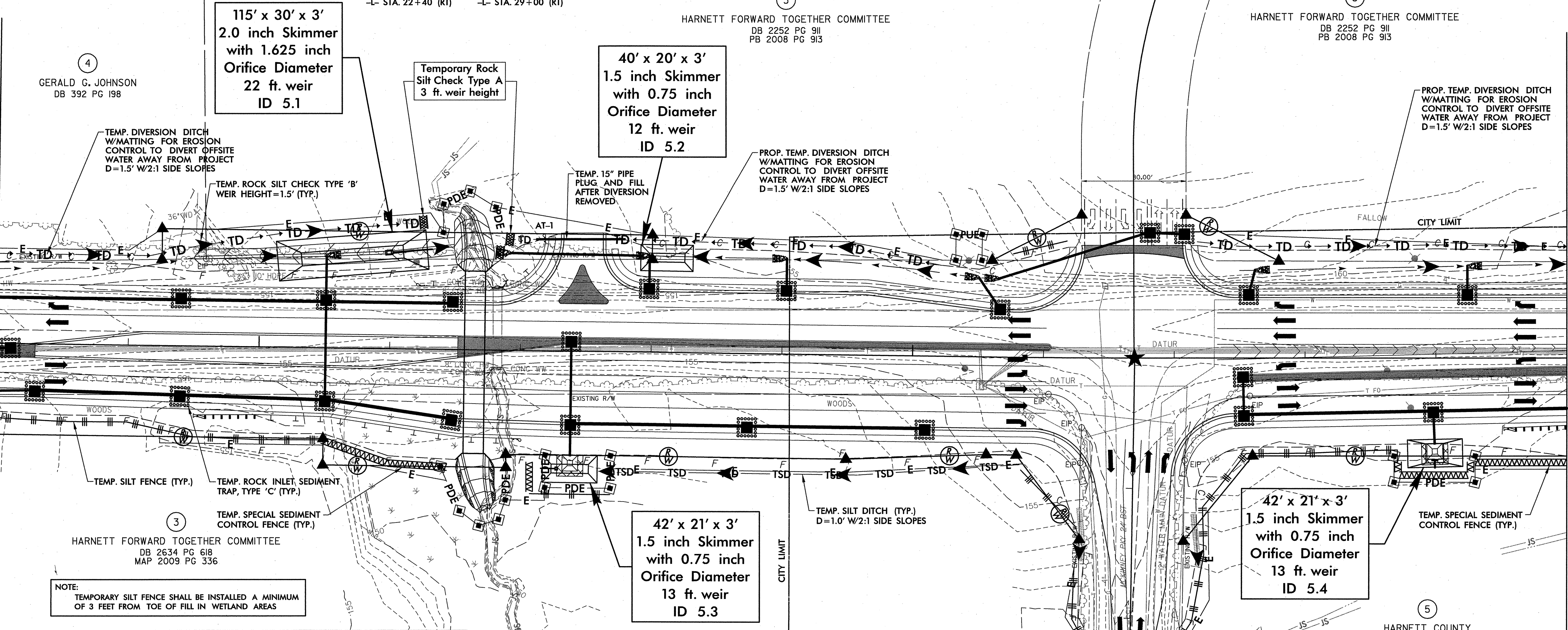
-L- CURVE DATA

PI Sta 26+12.04
 $\Delta = 0^\circ 47' 03.6''$ (LT)
 $D = 0^\circ 42' 58.3''$
 $L = 109.5'$
 $R = 54.76'$
 $DS = 50$ MPH
 $e = NC$



MATCHLINE -L- STA 18+00.00 (SHEET EC-12)

MATCHLINE -L- STA 30+00.00 (SHEET EC-14)



NOTE: TEMPORARY SILT FENCE SHALL BE INSTALLED A MINIMUM OF 3 FEET FROM TOE OF FILL IN WETLAND AREAS

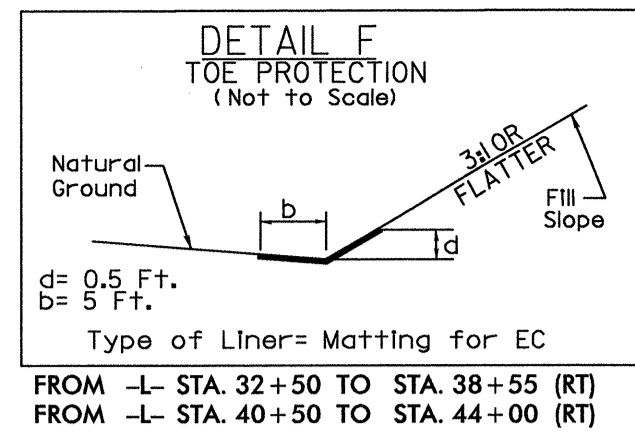
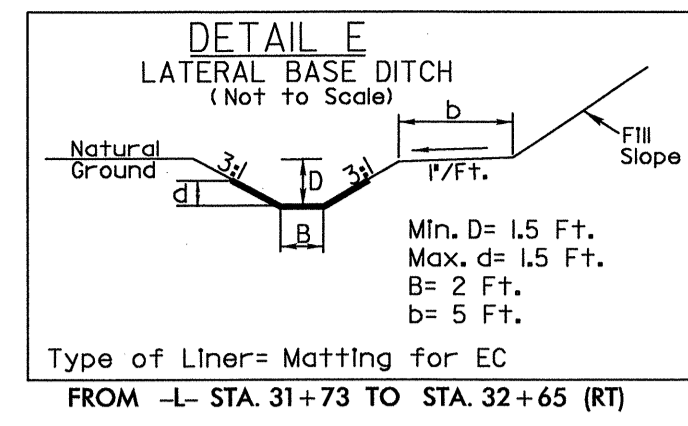
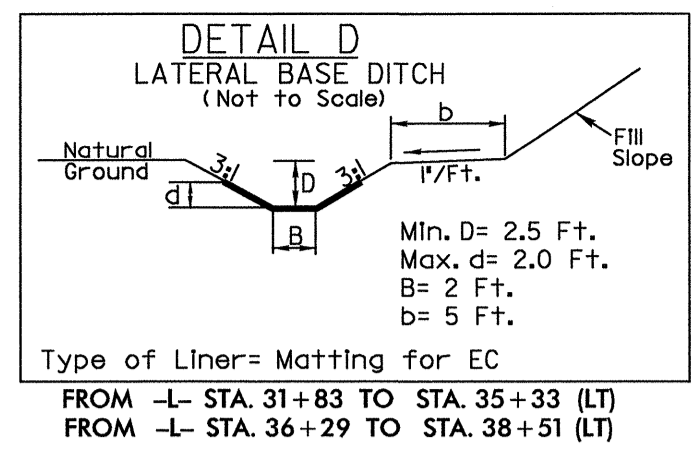
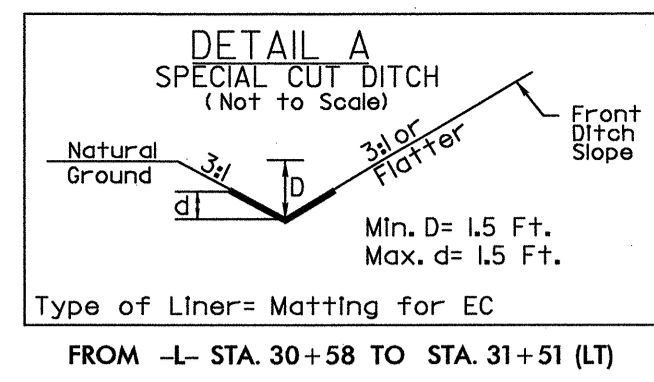
REVISIONS

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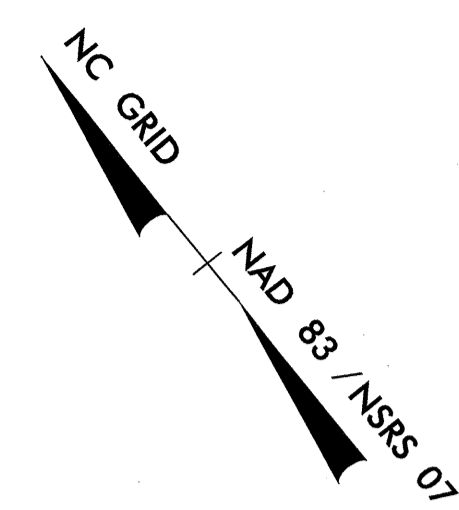
| | |
|---|---------------------|
| PROJECT REFERENCE NO. R-5185 | SHEET NO. EC-14 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | |
| | |
| STV/Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991 | |



INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

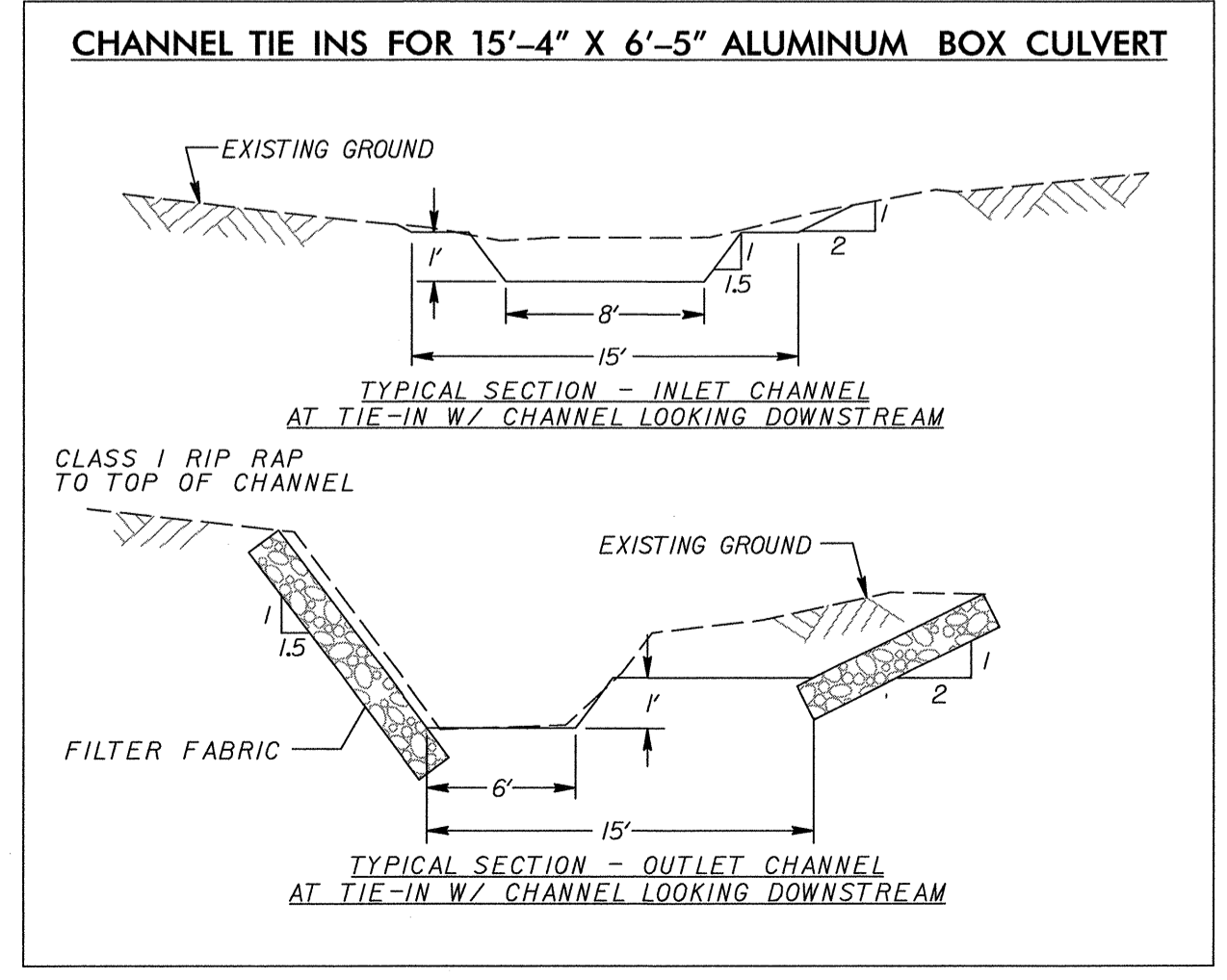
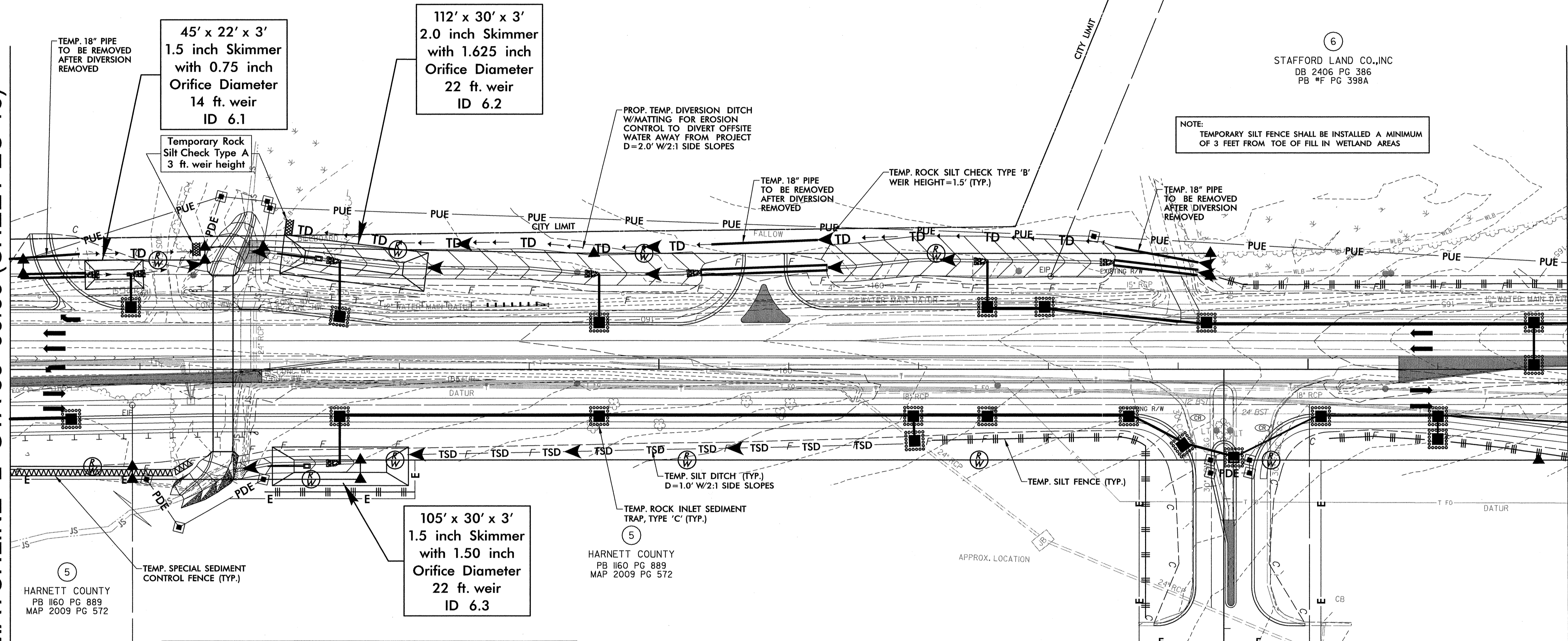
3
HARNETT FORWARD TOGETHER COMMITTEE
DB 2252 PG 911
PB 2008 PG 913



EROSION CONTROL - FINAL PHASE

MATCHLINE -L- STA 30+00.00 (SHEET EC-13)

MATCHLINE -L- STA 42+00.00 (SHEET EC-15)



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| | |
|--|---------------------|
| PROJECT REFERENCE NO. R-5185 | SHEET NO. EC-15 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | |
| | |
| STV/Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991 | |

EROSION CONTROL - FINAL PHASE

-L- CURVE DATA
 PI Sta 47+37.25
 $\Delta = 9^{\circ} 50' 30.9" (LT)$
 $D = 0^{\circ} 52' 53.3"$
 $L = 1,116.53'$
 $T = 559.64'$
 $R = 6,500.00'$
 $DS = 50 MPH$
 $e = RC$
 $RUNOFF = 92'$

STEVE PARIS AND RALPH M. POTTER
 DB 1255 PG 127
 PC*F SLIDE 626C

RIDDLE PROPERTIES,LLC
 DB 1669 PG 444
 PC*F SLIDE 626C

JAMES T. STONE
 DB 1553 PG 827
 PC*F SLIDE 626C

DOLGENCORP,INC.
 DB 1639 PG 233

FIDELITY BANK
 DB 1396 PG 38

STAFFORD LAND CO.,INC
 DB 2406 PG 386
 PB *F PG 398A

FIRST BANCORP FINANCIAL
 DB 1984 PG 37

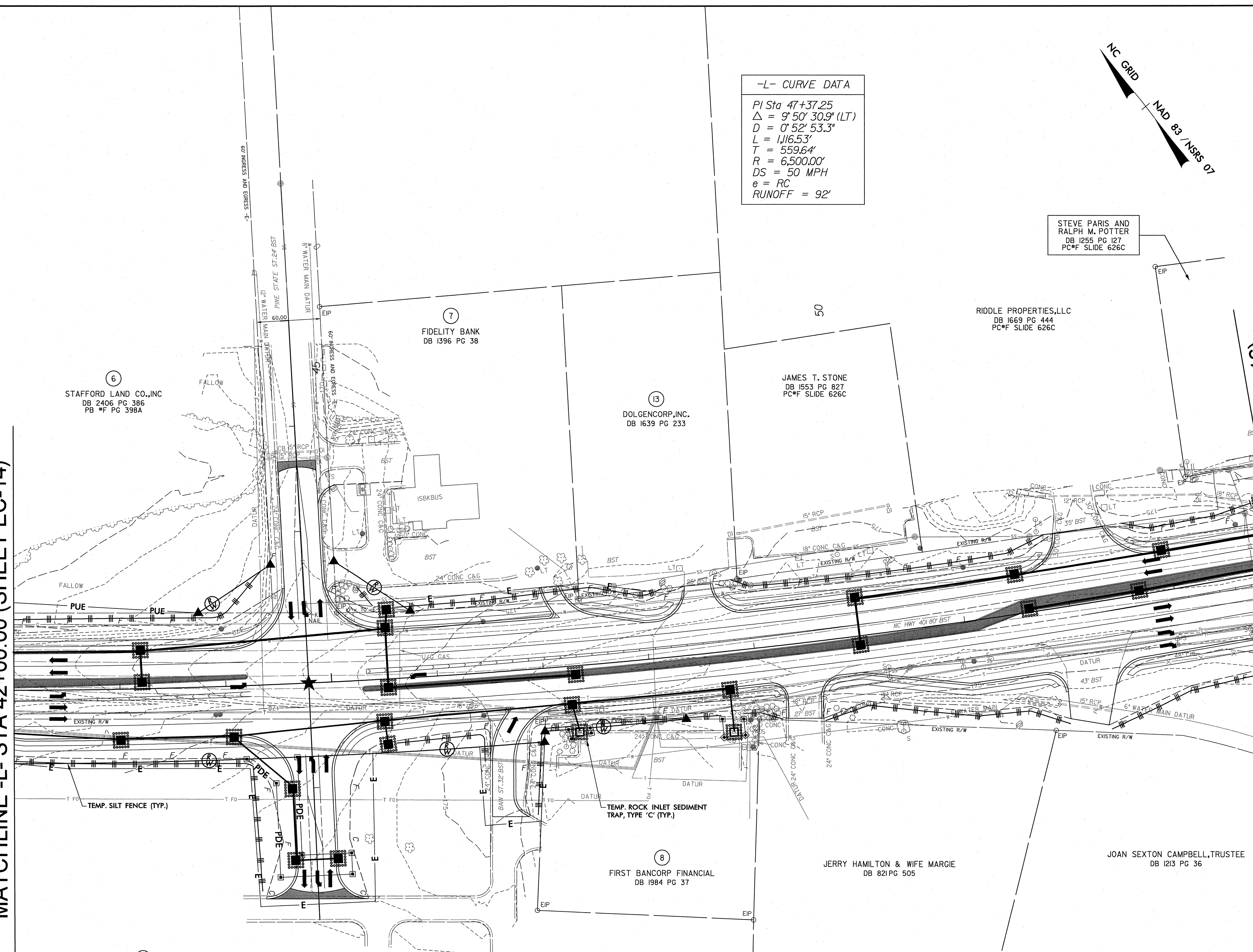
JERRY HAMILTON & WIFE MARGIE
 DB 821 PG 505

JOAN SEXTON CAMPBELL,TRUSTEE
 DB 1213 PG 36

HARNETT COUNTY
 PB 1160 PG 889
 MAP 2009 PG 572

MATCHLINE -L- STA 42+00.00 (SHEET EC-14)

MATCHLINE -L- STA 54+00.00 (SHEET EC-16)

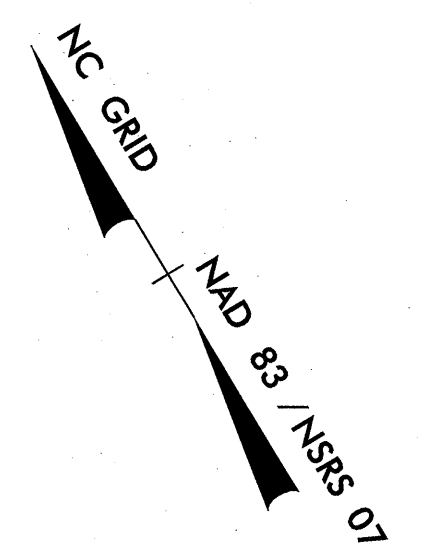


REVISIONS

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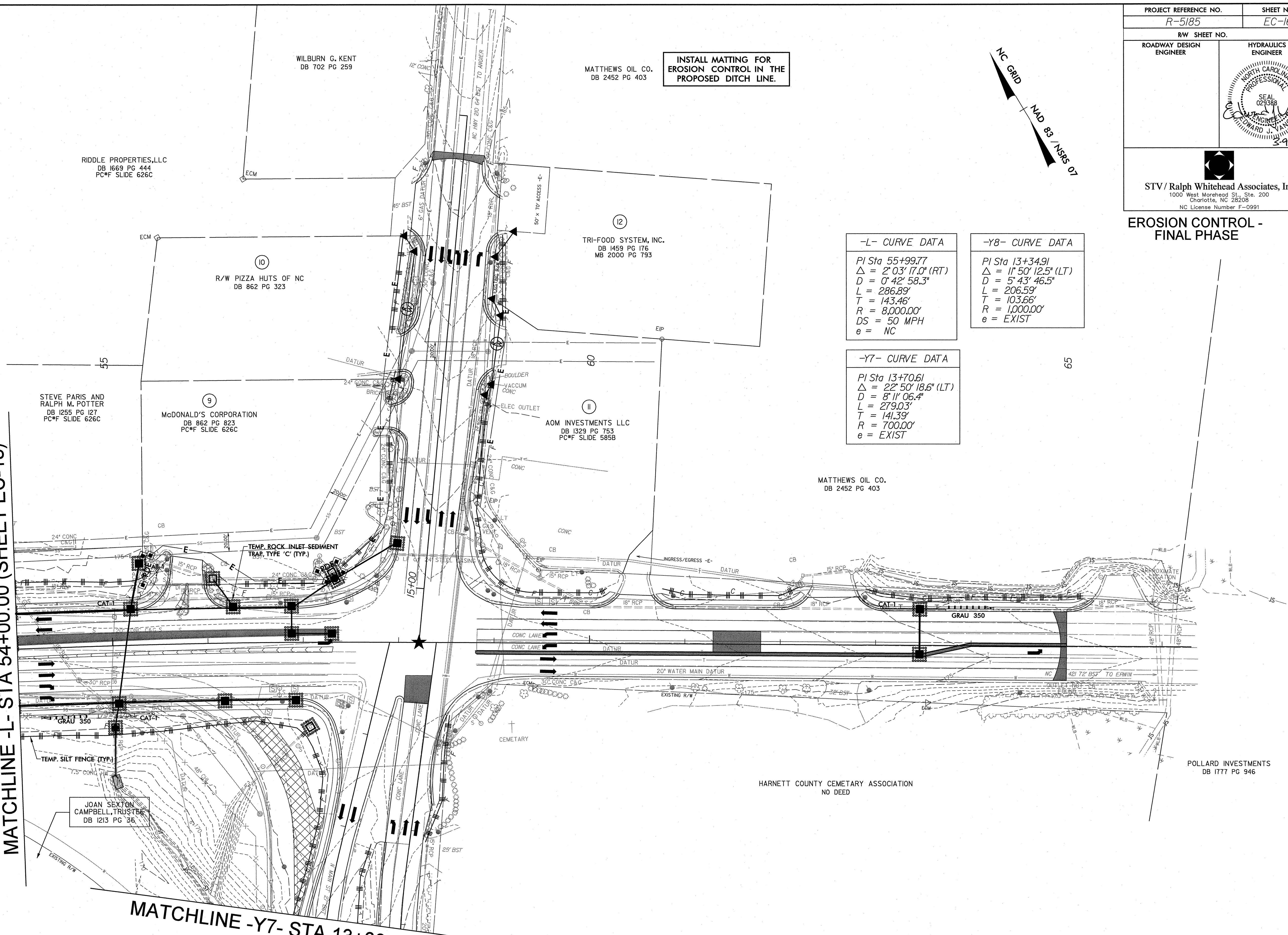
EROSION CONTROL - FINAL PHASE



| -L- CURVE DATA | -Y8- CURVE DATA |
|---|---|
| PI Sta 55+99.77 $\Delta = 2^{\circ} 03' 17.0''$ (RT) $D = 0^{\circ} 42' 58.3''$ $L = 286.89'$ $T = 143.46'$ $R = 8,000.00'$ $DS = 50$ MPH $e = NC$ | PI Sta 13+34.91 $\Delta = 1^{\circ} 50' 12.5''$ (LT) $D = 5^{\circ} 43' 46.5''$ $L = 206.59'$ $T = 103.66'$ $R = 1,000.00'$ $e = EXIST$ |
| -Y7- CURVE DATA | |
| PI Sta 13+70.61 $\Delta = 22^{\circ} 50' 18.6''$ (LT) $D = 8^{\circ} 11' 06.4''$ $L = 279.03'$ $T = 141.39'$ $R = 700.00'$ $e = EXIST$ | |

MATCHLINE -L- STA 54+00.00 (SHEET EC-15)

MATCHLINE -Y7- STA 13+00.00 (SHEET 17)



INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.

REVISIONS

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3/9/2011
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POLLARD INVESTMENTS
 DB 1777 PG 946

HARNETT COUNTY CEMETERY ASSOCIATION
 NO DEED

