STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROBESON COUNTY

LOCATION: BRIDGE NO.143 OVER ASHPOLE SWAMP ON SR 1146
(PURVIS ROAD) BETWEEN SR 1148 (BRAYBOY ROAD) AND SR 1144 (ADAMS ROAD).
TYPE OF WORK: GRADING, PAVING, DRAINAGE, UTILITIES
AND STRUCTURE.
<table>
<thead>
<tr>
<th>Sheet No.</th>
<th>B-4249</th>
<th></th>
<th></th>
<th>Original Ground</th>
<th></th>
<th>Var FDPS</th>
<th>0 to 5.5'</th>
<th>11'</th>
<th>Var FDPS</th>
<th>0 to 5.5'</th>
<th>5'</th>
<th>5'</th>
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</thead>
<tbody>
<tr>
<td>C1</td>
<td>PROP. APPROX. 2&quot; ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF 2 LAYERS.</td>
<td>R</td>
<td>SHOULDER TERM GUTTER - MODIFIED TO 5&quot; DEPTCH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>C2</td>
<td>PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF 2 LAYERS.</td>
<td>T</td>
<td>EARTH MATERIAL.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>E1</td>
<td>PROP. APPROX. 6&quot; ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 240 LBS. PER SQ. YD. IN EACH OF 5 LAYERS.</td>
<td>U</td>
<td>EXISTING PAVEMENT.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E2</td>
<td>PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 180 LBS. PER SQ. YD. IN EACH OF 2 LAYERS.</td>
<td>W</td>
<td>VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**ROADWAY TYPICAL SECTION**

- L - 12+00.00 TO 15+19.00 (BEGIN BRIDGE)
- L - 15+19.00 TO 18+93.00 (END BRIDGE)

**STRUCTURE TYPICAL SECTION**

- L - 15+19.00 (WORK POINT 1) TO 15+81.25 (WORK POINT 2)

**NOTE:** SEE SHEET NO. 7 FOR PAVEMENT DEPTH ON TOP OF BRIDGE.

**USE INSET 1 AT THE FOLLOWING LOCATIONS:**

- L - 14+89.00 TO 15+08.00 (BEGIN APPROACH SLAB) (RIGHT)

- L - 15+08.00 TO 15+92.25 (END APPROACH SLAB) TO 16+11.00 (RIGHT)

**SHOULDER BERM GUTTER - MODIFIED TO 8" DEPTH**

**W/ 1" OVERHANG**

**1' FLAT FACE RAIL**

**VAR 1:5 TO 4:1**

**V A R 2:1 TO 4:1**

**VAR FDPS**

**ORIGINAL GROUND**

**DETAIL SHOWING METHOD OF WEDGING**
EROSION CONTROL PLAN

TEMPORARY SILT FENCE (STD. 1605.01)
TEMPORARY SILT CHECK, TYPE A (STD. 1603.01)
ROCK INLET SEDIMENT TRAP, TYPE C (STD. 1632.03)
TEMPORARY SILT CHECK, TYPE A (STD. 1603.01)
TEMPORARY SILT FENCE (STD. 1605.01)
ROCK INLET SEDIMENT TRAP, TYPE C (STD. 1632.03)

PT SHIM-302C

TEMPORARY SILT FENCE (STD. 1605.01)
TEMPORARY SILT FENCE (STD. 1605.01)
TEMPORARY SILT FENCE (STD. 1605.01)
TEMPORARY SILT FENCE (STD. 1605.01)
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TEMPORARY SILT FENCE (STD. 1605.01)
TEMPORARY SILT FENCE (STD. 1605.01)
TEMPORARY SILT FENCE (STD. 1605.01)

S 70° 23' 12.3" E
C-2A
PT STA. 14+39.25

BEGIN APPROACH SLAB
-POT 15+08.00
-END APPROACH SLAB
-POT 15+92.25

Z. V. PATE, INC.
DEED BOOK 8-O, PAGE 38
"PURVIS PLACE"

WOODS
WINGWALLS
WOODEN
2 SPANS
BRIDGE #143
UNDERWATER
EXIST. 6" U/G WATERLINE

APPROX. U/G WATERLINE LOCATION

WOODS
**PROJECT REFERENCE NO.**

ROADWAY DESIGN ENGINEER

**ROADWAY PROJECT**

**USER:** 

B-4249

**DESIGN HYDRAULIC DATA**

- **DESIGN DISCHARGE:** 330 cfs
- **DESIGN FREQUENCY:** 25 yrs
- **DESIGN HW ELEVATION:** 125.02'
- **BASE DISCHARGE:** 481 cfs
- **BASE FREQUENCY:** 100 yrs
- **BASE HW ELEVATION:** 125.25'
- **OVERTOPPING DISCHARGE:** > 701 cfs
- **OVERTOPPING FREQUENCY:** 500+ yrs
- **OVERTOPPING ELEVATION:** 126.2'
ELASTOMERIC BEARING DETAILS

Elastomer in all bearings shall be 50 durometer hardness.

DETAIL - A -

SECTION B-B

NOT TO SCALE

PROJECT NO. B-4249
ROBESON COUNTY
STATION: 15+50.13 - L -

SUPERSTRUCTURE
PLAN OF SPAN AND DETAILS

STEWART
3-12-12

DIM. B OF 1-5
ELEVATION AT EXPANSION JOINTS

BARREL RAIL DETAILS

SECTION AT END BENT

SECTION S-S

SECTION THRU RAIL (LAYOUT NOT SHOWN)

REINFORCING BARS TYPICAL

BAR DIMENSIONS ARE OUT TO OUT

NOTES

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

EXPOSED CONTRACT JOINTS, 12" IN DEPTH, SHALL BE TOLED ON ALL EXPOSED FACES OF THE RAIL, AND IN ACCORDANCE WITH ARTICLE 901.28.2 OF THE STANDARD SPECIFICATIONS THE CONTRACT JUMP SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACT JOINT IS REQUIRED AT ONE EIGHTY-FOURTH POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. IN NO CASE SHALL TWO CONTRACT JOINTS BE REQUIRED FOR ANY CONTRACT JUMP BETWEEN BARRIER RAIL EXPANSION JOINTS.

CONCRETE CHAMFERS

UNLESS OTHERWISE NOTED ON THE PLANS ALL EXPOSED CORNERS ON CONCRETE STRUCTURES SHALL BE CHAMPLED 4" X 4" WITH THE FOLLOWING EXCEPTIONS: CEMENTitous MATERIALS BUILT INTO CURB FORMS CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE CHAMPLED WITH A 1/4" CHAMFER TOOL UNLESS OTHERWISE REQUIRED ON PLANS. ALL CORNERS OF EXPANSION JOINTS IN THE BARRIER RAILS FACES OF THE BARREL RAILS SHALL BE CHAMPLED TO A 1/2" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE NOTED ON THE PLANS.

CORED SLABS REQUIRED

BILL OF MATERIAL

FOR VERTICAL CONCRETE BARRIER RAIL ONLY

BAR NO. INDEX | LENGTH | WEIGHT
--- | --- | ---
3  | 120" | 300
4  | 60" | 300
5  | 60" | 300
6  | 240" | 600

BILL OF MATERIAL FOR ONE 60' CORED SLAB UNIT

EXTERIOR UNIT | INNER UNIT
--- | ---
LENGTH | WEIGHT | LENGTH | WEIGHT
240" | 600 | 120" | 300
60" | 300 | 60" | 300
240" | 600 | 120" | 300
60" | 300 | 60" | 300

REINFORCING STEEL

BAR | LENGTH | WEIGHT
--- | --- | ---
6  | 4 | 240 | 4
4  | 4 | 120 | 4
3  | 4 | 60 | 4
2  | 4 | 30 | 4
1  | 4 | 15 | 4
3  | 4 | 60 | 4
2  | 4 | 30 | 4
1  | 4 | 15 | 4

ALL JOINTS SHOWN ARE OPEN JOINTS AND ARE TO BE USED ONLY WHEN SLIP FORM IS NOT USED.
LATERAL GUIDE DETAILS

NOTES:

1. STIRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELs.

THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE REPAIRED UNTIL AFTER CONCRETE SLAB UNITS ARE IN PLACE.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE ADDED AS NECESSARY TO CLEAR THE DRAIN PIPE.

ELEVATION OF CAP

<table>
<thead>
<tr>
<th>TOP OF PILE ELEVATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PILE NO.</td>
</tr>
<tr>
<td>P1</td>
</tr>
<tr>
<td>P2</td>
</tr>
<tr>
<td>P3</td>
</tr>
<tr>
<td>P4</td>
</tr>
<tr>
<td>P5</td>
</tr>
<tr>
<td>P6</td>
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</table>

PROJECT NO. B-4249
ROBESON COUNTY
STATION: 15+50.13 +L-

SHEETS 1 OF 2

DEPARTMENT OF TRANSPORTATION
STATE OF NORTH CAROLINA

SUBSTRUCTURE END BENT 1

STEWART
**PLAN**

LATERAL GUIDE DETAILS

- LATERAL GUIDE (Typ)
  - SEE DETAIL

- WORK LINE

- 4-AREA COVER PILES
  - See Detail

- EL. 123.69

- HP 14 X 73 STEEL PILES

- HP 14 X 73 STEEL BRACE PILES

- 2-MIS (Typ, EA, PILE)

- 2-MIS (EA, FACE)

- B-MIS & 4-52 @ 10'

- EL. 123.69

- EL. 126.69

- EL. 129.51

- EL. 129.61

- EL. 130.01

- EL. 130.51

- EL. 130.61

- EL. 133.21

- EL. 135.79

- EL. 135.93

- EL. 136.0

- EL. 136.2

- EL. 136.3

- EL. 136.4

- EL. 136.5

ELEVATION OF CAP

**TOP OF PILE ELEVATIONS**

<table>
<thead>
<tr>
<th>PILE NO.</th>
<th>ELEVATION</th>
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<tbody>
<tr>
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<td>24.87</td>
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<tr>
<td>P2</td>
<td>24.13</td>
</tr>
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<td>P3</td>
<td>24.64</td>
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<tr>
<td>P4</td>
<td>24.79</td>
</tr>
<tr>
<td>P5</td>
<td>24.35</td>
</tr>
</tbody>
</table>

**NOTES:**

STAMPED IN CAP MAY BE SHIFTED AS NEEDED TO CLEAR DOWELS.

THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE DELETED UNTIL AFTER CORED SLAB UNITS ARE IN PLACE.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4-DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR DESIGNATED BRIDGE APPROACH FILLS. SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHAPED AS NEEDED TO CLEAR THE DRAIN PIPE.

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**PROJECT NO.** B-4249

**ROBESON** COUNTY

**STATION:** 15+50.13 - L-

**SHEET 1 OF 2**

---

**DEPARTMENT OF TRANSPORTATION**

**SUBSTRUCTURE END BENT 2**

---

**STEWART**

---

**S**

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**200 TOWN HALL DR**

**CONROE, TX 77301**

**F 713.652.9190**

**F 713.333.8150**

**WWW.stewartseng.com**

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS
ROBESON COUNTY

LOCATION: BRIDGE NO.143 OVER ASHPOLE SWAMP ON SR 1146
(PURVIS ROAD) BETWEEN SR 1148 (BRAYBOY ROAD)
AND SR 1144 (ADAMS ROAD)

TYPE OF WORK: BRIDGE REPLACEMENT, GRADING, PAVING, DRAINAGE,
GUARDRAIL, AND UTILITY CONSTRUCTION

WATER AND SEWER OWNERS ON PROJECT
(i) ROBESON COUNTY

SEAL

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DO NOT USE FOR CONSTRUCTION

PRELIMINARY PLANS

INDEX OF SHEETS

SHEET NO. DESCRIPTION
UC-4 TITLE SHEET
UC-2 UTILITY CONSTRUCTION PLAN SHEETS
UC-4 PROFILE SHEET
UC-4 DETAILS SHEET

STEWART ENGINEERING, INC.
Prepared in the Office of:
OF TRANSPORTATION
FOR: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEPLOYED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "GPS-1" WITH NO 1850001 STATE PLANE GRID COORDINATES OF NORTHING: 304,653.61(ft) EASTING: 1,924,531.86(ft).

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT GROUND TO GRID IS: 0.99993270.

THE N.C. LAMBERT GRID SEASONS AND LOCALIZED HORIZONTAL DISTANCE FROM "GPS-1" TO L STATION 12+05.00 IS 1,503.20 FEET @ N63° 23' 18.5" E.

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

<table>
<thead>
<tr>
<th>60.00'</th>
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</thead>
<tbody>
<tr>
<td>B</td>
</tr>
<tr>
<td>P</td>
</tr>
<tr>
<td>C</td>
</tr>
</tbody>
</table>

PLUG & DIP WATERLINE

PROP. 6" GATE VALVE STA. 12+05.00

ABANDON 310 LF OF 6" WATER LINE

Z. V. PATE, INC.
DEED BOOK B-O, PAGE 38 PURVIS PLACE

PUT VIS PLACE
DEED BOOK B-O, PAGE 38

S70° 23' 12.3" E

E X I S T . R/W

Z. V. PATE, INC.

"PUT VIS PLACE"

P O U R V I S P L A C E "

P U R V I S R D
S.R. 1146
APPROX. U/G WATERLINE LOCATION

22.5°

3.50'

PLUG

STOP APPROACH SLAB

STA 15+08.00

END BRIDGE

STA 15+81.25

END APPROACH SLAB

STA 15+92.25

BEGIN APPROACH SLAB

STA 10+56.22

22.5°

22.5°

OF 6" WATER LINE

ABANDON 310 LF

EXISTING

ABANDON

200' OF TRENCHLESS INSTALLATION

USE RJ WATER PIPE

USE RJ WATER PIPE

PLUG

PROP. 6" GATE VALVE STA. 15+80.00

Open cut

USE RJ WATER PIPE

USE RJ WATER PIPE

REVISI ONS

SHEET NO.

PROJECT REFERENCE NO.

3 /1 3/201 2

. .
 PROJ/B 4249_ U t _u c 2_p s h .dgn

8 /1 7 /99

B-4249

DATUM DESCRIPTION

VERTICAL DATUM USED IS NAVD 88.

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES.

1,203.20 FEET @ N83° 23' 18.5"

GROUND DISTANCE FROM "GPS-1" TO L STATION 12+05.00 IS THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL (GROUND TO GRID) IS: 0.99993270.

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT NORTHING: 304,653.61(ft) EASTING: 1,924,531.86(ft).

NAD 1983/2001 STATE PLANE GRID COORDINATES OF ESTABLISHED BY OTHERS FOR MONUMENT "GPS-1" WITH NO 1850001 STATE PLANE GRID COORDINATES OF

THE LOCALIZED COORDINATE SYSTEM DEPLOYED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "GPS-1" WITH NO 1850001 STATE PLANE GRID COORDINATES OF

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT GROUND TO GRID IS: 0.99993270.

THE N.C. LAMBERT GRID SEASONS AND LOCALIZED HORIZONTAL DISTANCE FROM "GPS-1" TO L STATION 12+05.00 IS 1,503.20 FEET @ N63° 23' 18.5" E.

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

ELEV. 129.98
-L- STA. 18+93.00
END PROJECT

-L- POT 15+19.00
@ FILL FACE END BENT 1
WORK POINT 1

-L- POT 15+81.25
@ FILL FACE END BENT 2
WORK POINT 2

EX. 6" DIP
WATERLINE

TRENCHLESS INSTALLATION
NOTE:
The Contractor's attention is directed to Sections 102, 107, and 1550 of the Standards and Specifications concerning the Trenchless Installation. No damage is allowed to buffer zones, wetlands, or streams by the Trenchless Installation.

NOTE:
If HDPE pipe is used for the Trenchless Installation, pipe must conform to NCDOT Standard Specifications Section 1036-3 Plastic Pipe.

If PVC pipe is used for the Trenchless Installation, pipe must conform to NCDOT Standard Specifications Section 1036-3 Plastic Pipe.
**Bill of Materials**

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Qty.</th>
<th>Unit</th>
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</thead>
<tbody>
<tr>
<td>Concrete Thrust Collar</td>
<td>2</td>
<td>EA</td>
</tr>
<tr>
<td>6&quot; Gate Valve</td>
<td>2</td>
<td>EA</td>
</tr>
<tr>
<td>Plugs</td>
<td>2</td>
<td>EA</td>
</tr>
<tr>
<td>Backfill</td>
<td>2</td>
<td>EA</td>
</tr>
<tr>
<td>Open trench restrained joint</td>
<td>2</td>
<td>EA</td>
</tr>
<tr>
<td>540 LF Trenchless Install of 6&quot; waterline</td>
<td>200</td>
<td>LF</td>
</tr>
<tr>
<td>140 LF Open trench restrained joint 6&quot; DIP waterline</td>
<td>200</td>
<td>LF</td>
</tr>
<tr>
<td>Abandon 6&quot; Waterline</td>
<td>310</td>
<td>LF</td>
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**Maximum Trench Width**

<table>
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<tr>
<th>Nominal Pipe Size (Inches)</th>
<th>Nominal Trench Width (Inches)</th>
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</thead>
<tbody>
<tr>
<td>4</td>
<td>24</td>
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<tr>
<td>6</td>
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<td>16</td>
<td>42</td>
</tr>
<tr>
<td>18</td>
<td>44</td>
</tr>
</tbody>
</table>

**Trench Detail**

- **HDPE Pipe**
- **Trench Wall**
- **Undisturbed Soil**
- **Concrete Thrust Collar**
- **Reinforcing**
- **Backfill**
- **Pipe Bedding**
- **Foundation Conditioning Fabric**

Note: Bottom of trench needs to be stabilized to support the weight of the thrust collar.

**Concrete Thrust Collar Detail - 6" Water Lines**

- HDPE Mechanical Joint Adapter with Stiffening Insert
- Ductile Iron Concentric Reducer
- HDPE Mechanical Joint with Restricted Retainer Gland

Note: See separate detail for concrete thrust collar.

**Transition Detail from HDPE to DI Water Pipe**

- HDPE Pipe
- Trench Wall
- Undisturbed Soil
- See Thrust Collar Below

Note: See separate detail for concrete thrust collar.

**Plan & Section**

- 6" MAIN: 12-No. 4 bars
- Bars placed as shown