CONTRACT: C205159 TIP PROJECT: A-0009CD

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	A-0009CD	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
32572.1.15		PE
32572.3.19	0028011	CONST.

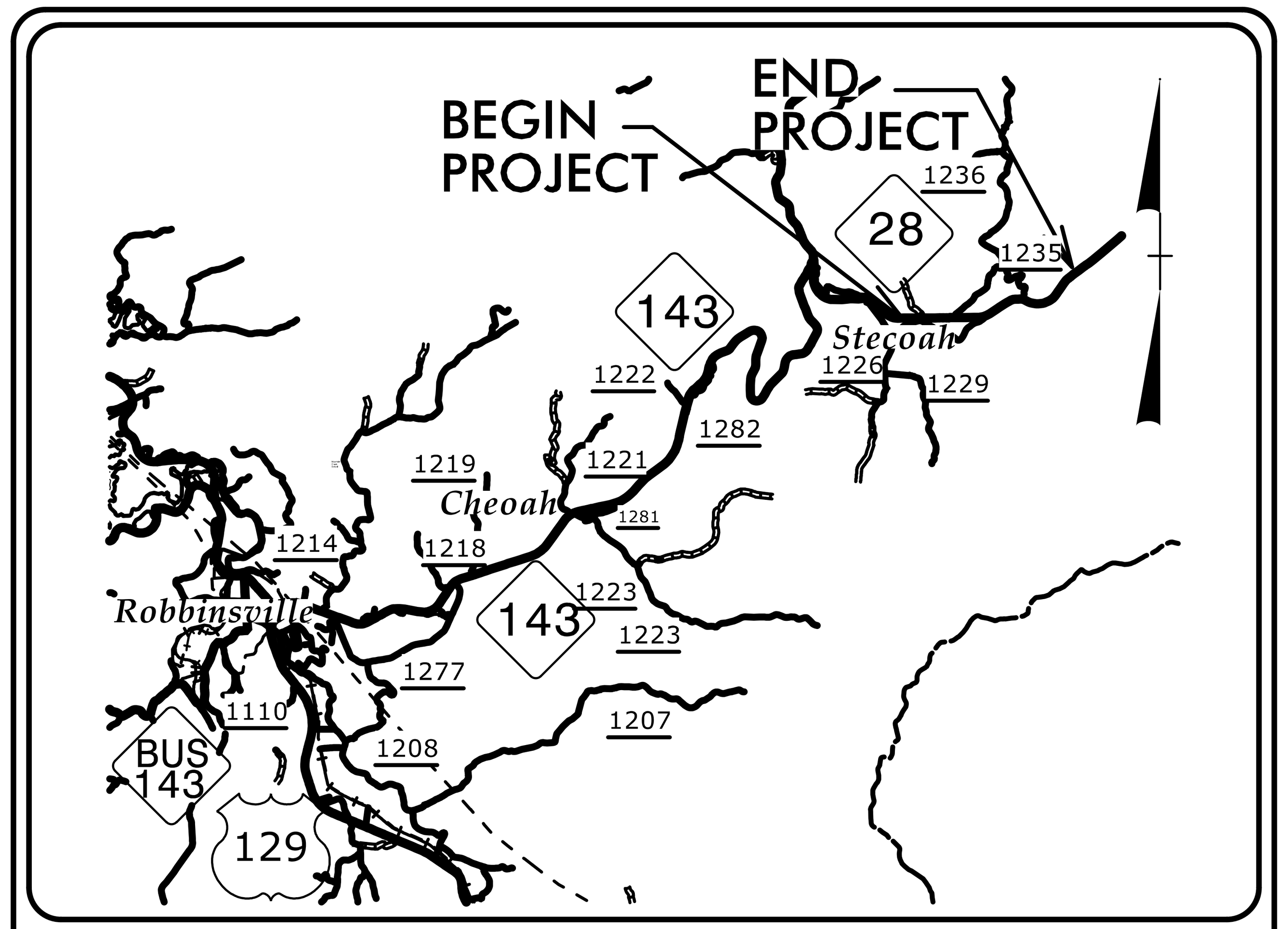
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

GRAHAM COUNTY

LOCATION: NC 28 FROM WEST OF SR 1228 (STECOAH RD) TO SR 1235 (GUNTERS GAP RD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, CULVERTS, & RETAINING WALLS

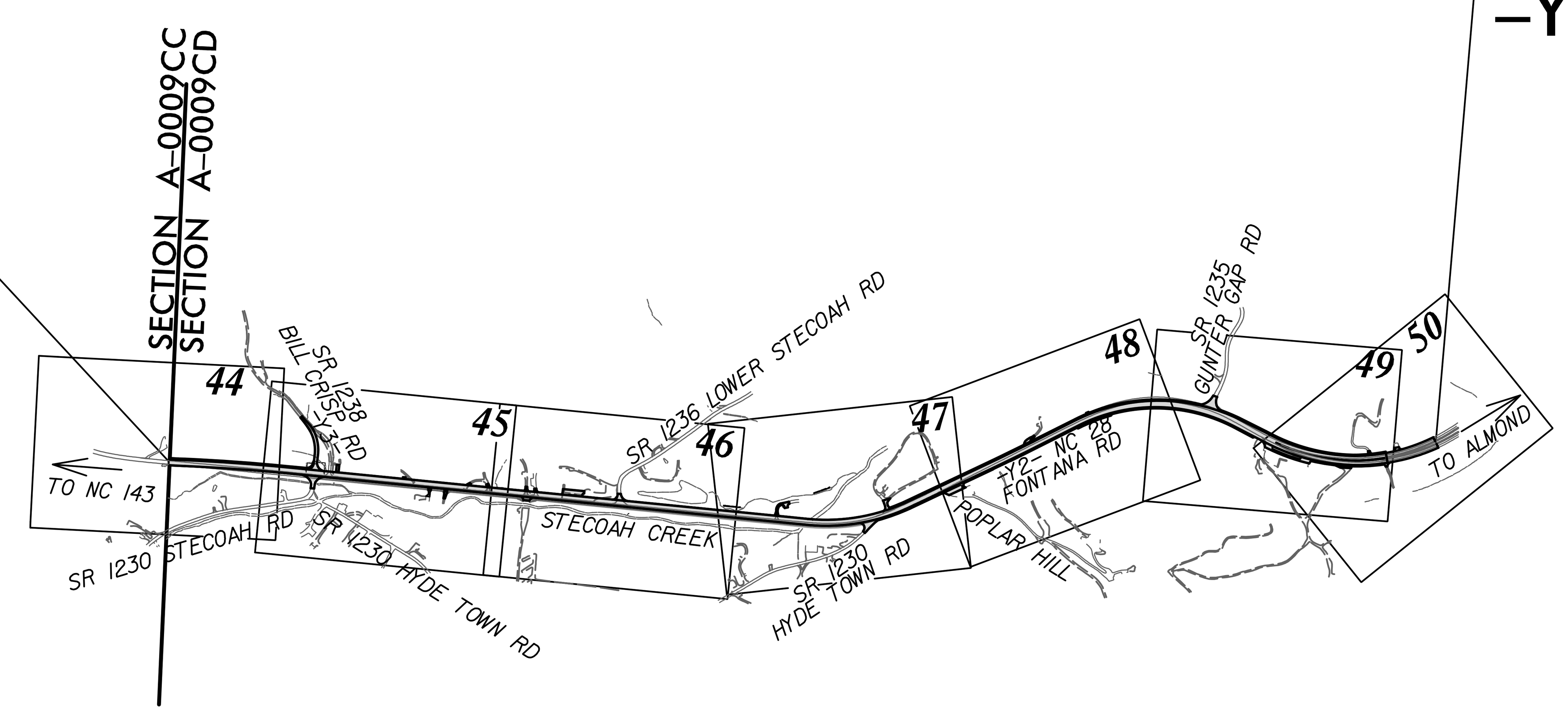


VICINITY MAP
NOT TO SCALE

NAD 83/2011

BEGIN TIP PROJECT A–0009CD
–Y2– STA. 89 + 80.00

END TIP PROJECT A–0009CD
–Y2– STA. 169 + 60.00



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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.

GRAPHIC SCALE

50 25 0 50 100

PLANS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG 010000 GENERAL STORMWATER CONSTRUCTION PERMIT ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES.

TGS ENGINEERS

Prepared In the Office of:

TGS ENGINEERS

201 W. MARION ST–STE 200
SHELBY, NC 28150

Designed by:

Andrew H. Cochrane, PE — *3015*

NAME — LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

The "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2024 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-02
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

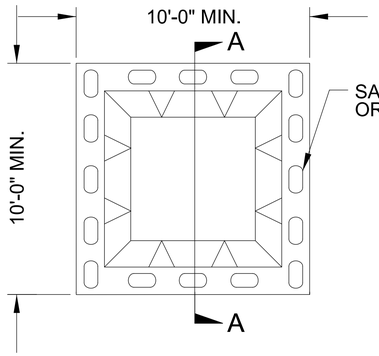
EROSION & SEDIMENT CONTROL LEGEND

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	TSD
1630.04	Stilling Basin	
1630.05	Temporary Diversion	TD
1630.06	Special Stilling Basin	
1630.07	Skimmer Basin	
1630.08	Tiered Skimmer Basin	
1630.09	Earthen Dam with Skimmer	
	Infiltration Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C

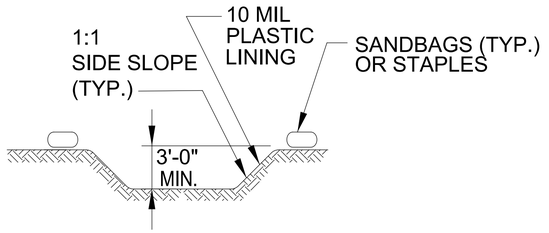
Std. #	Description	Symbol
1633.01	Temporary Rock Silt Check Type A	
1633.02	Temporary Rock Silt Check Type B	
1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1634.01	Temporary Rock Sediment Dam Type A	
1634.02	Temporary Rock Sediment Dam Type B	
1635.01	Rock Pipe Inlet Sediment Trap Type A	A
1635.02	Rock Pipe Inlet Sediment Trap Type B	B
1636.01	Excelsior Wattle Check	
1636.01	Excelsior Wattle Check with Flocculant	
1636.01	Coir Fiber Wattle Check	
1636.01	Coir Fiber Wattle Check with Flocculant	
1636.02	Silt Fence Excelsior Wattle Break	EW
	Silt Fence Coir Fiber Wattle Break	CFW
1636.03	Excelsior Wattle Barrier	EW EW EW
1636.03	Coir Fiber Wattle Barrier	CFW CFW CFW

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PLAN



SECTION A-A

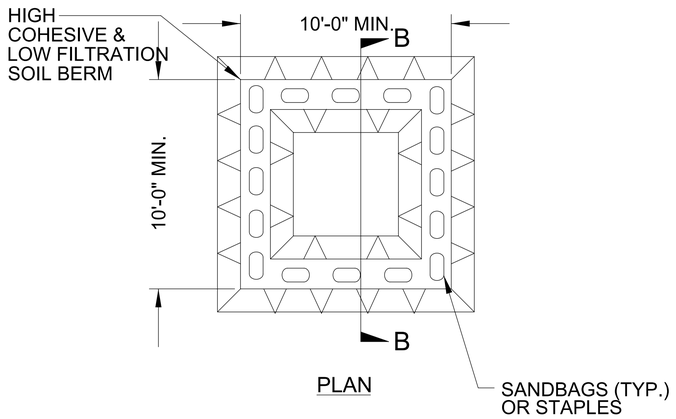
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

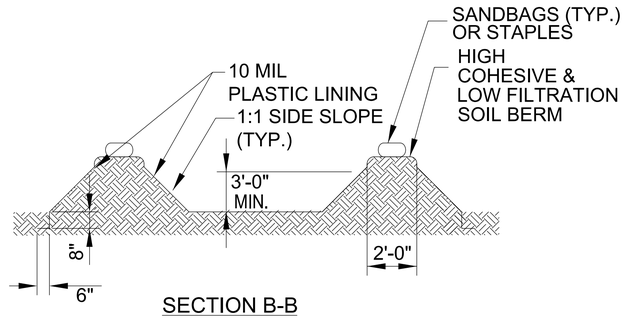
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE



PLAN



SECTION B-B

NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

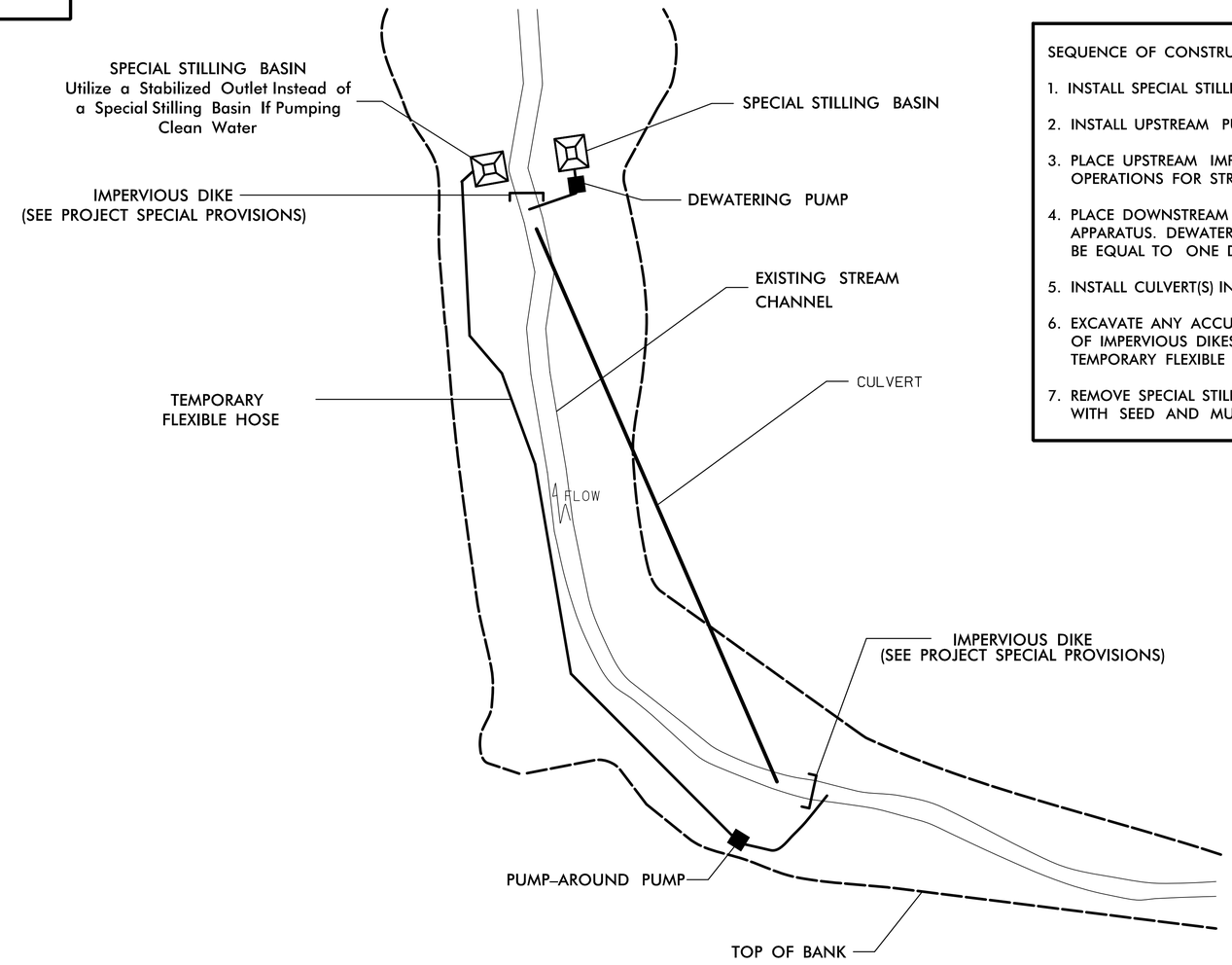
ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

EXAMPLE OF PUMP–AROUND OPERATION

NOTES:
1) All excavation shall be performed in only dry or isolated areas of the work zone.
2) Impervious dikes are to be used to isolate work from stream flow when necessary.
3) Maintenance of stream flow operations shall be incidental to the work. This includes polyethylene sheeting, diversion pipes, pumps and hoses.
4) Pumps and hoses shall be of sufficient size to dewater the work area.



SEQUENCE OF CONSTRUCTION FOR TYPICAL WORK AREA

1. INSTALL SPECIAL STILLING BASIN(S).
2. INSTALL UPSTREAM PUMP AND TEMPORARY FLEXIBLE HOSE.
3. PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
4. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DEWATER ENTRAPPED AREA. AREA TO BE DEWATERED SHALL BE EQUAL TO ONE DAY'S WORK.
5. INSTALL CULVERT(S) IN ACCORDANCE WITH THE PLANS.
6. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES. REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSE. (DOWNSTREAM IMPERVIOUS DIKES FIRST).
7. REMOVE SPECIAL STILLING BASIN(S) AND BACKFILL. STABILIZE DISTURBED AREA WITH SEED AND MULCH.

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

SLOPE STRAW MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
44	Y2	89+80	92+00	RT	835
44	Y2	91+00	98+50	LT	2,796
45	Y2	106+00	106+50	RT	88
45	Y3	13+00	13+50	RT	75
46	Y2	118+00	126+50	LT	4,224
47	Y2	127+50	133+50	LT	1,491
47	Y2	134+50	142+50	LT	3,976
48	Y2	139+50	141+50	RT	746

DITCHLINE STRAW MATTING FOR EROSION CONTROL

44	Y2	89+00	90+50	LT	235
45	Y3	12+00	12+00	LT	25
47	Y2	129+00	132+06	RT	310
47	Y2	132+09	132+75	LT	460
47	Y2	133+50	137+50	RT	540
48	Y2	149+00	158+00	RT	1295
49	Y2	156+00	165+00	LT	1390

DITCHLINE EXCELSIOR MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
45	Y3	11+00	11+50	RT	80
45	Y3	11+50	12+00	RT	80
45	Y3	12+00	13+00	LT	155
48	Y2	144+50	146+50	RT	310
	SLOPE STRAW MATTING SUBTOTAL				14,231
	DITCHLINE STRAW MATTING SUBTOTAL				4,255
	DITCHLINE EXCELSIOR MATTING SUBTOTAL				625
	MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER				95,144
				TOTAL	114,255

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-3A
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 TO 4:1	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH WITH SLOPES STEEPER THAN 4:1. 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 44

MINIMIZE CLEARING AND GRUBBING
SAFETY FENCE

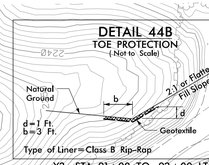
PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-04/CONST.44
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

NAD 83/2011

MATCH LINE STA –Y2– 82+00.00
MATCH TO SHEET NO. 43

DETAIL 44B
TOE PROTECTION
(Not to Scale)



Type of Liner = Class B Rip-Rap
–Y2– STA. 91+00 TO 92+00 LT

CLEAN WATER DIVERSIONS ARE INDEPENDENT OF OTHER EC DITCH LINES AND TERMINATE INTO A SC–A.

2 @ 55 x 20 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
8 ft. weir
ID 44.2

PROP. RETAINING WALL #35
W/CONCRETE DITCH
BEGIN –Y2– STA. 77+94±
END –Y2– STA. 88+25±

BEGIN TIP PROJECT A–0009CD
–Y2– STA. 89+80.00

–Y2– PT 88+29.49

962.03' TAPER

SINGLE FACED CONCRETE BARRIER

PROP. DRIVE

139 THOMAS E. SCHIESSLE

143 PATRICIA LYNN EDWARDS
JOHN CRAIG EDWARDS
AND MAXINE M. EDWARDS

LEON CABLE

PROP RETAINING WALL
W/CONCRETE DITCH PLACED
DURING A–0009CC CONSTRUCTION

–Y2– 90+52+/–
REMOVE GUARDRAIL ANCHOR
PLACED DURING A–0009CC
CONSTRUCTION
TIE PROP GUARDRAIL TO EXIST.

TOE PROTECTION
SEE DETAIL 44B
CLASS B RIPRAP
25 TONS, 56 SY GEO

200' TAPER

JAMIE A. LAIL, ET AL

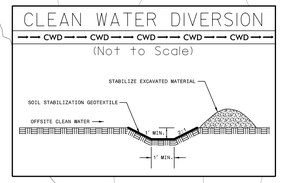
PROP. SOIL DRIVE

144 FLOYD J. CODY

145 LEON CABLE

WOODEN FENCE POSTS

CLEAN WATER DIVERSION
(Not to Scale)



END TIP PROJECT A–0009CC
–Y2– STA. 89+80.00

–Y2– PC 90+73.25

WALLACE D. JENKINS

CLASS B RIPRAP
1 TONS, 5 SY GEO

CLASS B RIPRAP
1 TON, 5 SY GEO

100' TAPER

NINA Y. JOHNSTON

DO NOT DISTURB
CARVER BRANCH

CLASS B RIPRAP
1 TON, 5 SY GEO

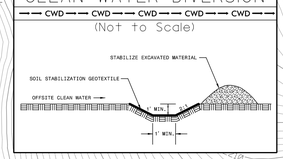
WALLACE JENKINS

STECOAH CREEK

UT TO CARVER BRANCH POND

MATCH LINE STA –Y2– 96+00.00
MATCH TO SHEET NO. 45

SECTION A–0009CC



PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-05/CONST.45
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

▨ ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

-Y2- CURVE DATA
PI Sta 93+85.36
Δ = 3° 06' 33.3" (RT)
D = 0° 29' 53.6"
L = 624.07'
T = 312.11'
R = 11,500.00'
SE = 0.02
DS = 70 MPH

-Y3- CURVE DATA
PI Sta 10+46.10
Δ = 5° 04' 03.3" (LT)
D = 5° 30' 00.0"
L = 92.14'
T = 46.10'
R = 1,041.74'
SE = EXIST.

PI Sta 12+06.60
Δ = 49° 12' 03.3" (RT)
D = 22° 55' 05.9"
L = 214.68'
T = 114.46'
R = 250.00'
SE = 0.02
DS = 30 MPH
① -Y3- PT 13+06.82

CLEAN WATER DIVERSION
(Not to Scale)
STABILIZE EXCAVATED MATERIAL
SOIL STABILIZATION GEOTEXTILE
OFFSITE CLEAN WATER
1' MIN.
2:1
1' MIN.

CLEAN WATER DIVERSIONS ARE INDEPENDENT OF OTHER EC DITCH LINES AND TERMINATE INTO A SC-A.

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

2 @ 52 x 13 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
5 ft. weir
ID 45.1

2 @ 58 x 14 x 2
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
6 ft. weir
ID 45.2

28 x 14 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
4 ft. weir
ID 45.3

36" CMP WAS INSTALLED FOR A-0009CE & PLUGGED AFTER PUMP-AROUND. REMOVE PLUGS & USE FOR A-0009CD PUMP-AROUND. ONCE COMPLETE, FILL WITH FLOWABLE FILL AS SHOWN.

DETAIL 45G
UP AND DOWNSTREAM
FLOODPLAIN BENCH
(Not to Scale)
NATURAL GROUND
1.5:1
0'-4.5'
3'
CLASS I RIP RAP
HEIGHT=0.5'+/-
EST. 24 CY DDE
EST. 18 TONS CLASS I RIP RAP

-Y2- STA. 99+76 LT (U/S LENGTH=24 FT)
-Y2- STA. 99+90 RT (D/S LENGTH=12 FT)

DETAIL 45A
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
2:1
D
4:1 or Flatter
Front Ditch Slope
Min. D=2 Ft.

-Y3- STA 11+50 TO 12+00 RT
SEE PFL FOR DITCH GRADE (7.6%)

DETAIL 45B
STANDARD 'V' DITCH
(Not to Scale)
Natural Ground
2:1
D
2:1
Natural Ground
Min. D=1.5 Ft.

-Y3- STA 12+00(29' LT) TO 12+00(54' LT)
DAYLIGHT AT 1.0% SLOPE

DETAIL 45C
FALSE SUMP
(Not to Scale)
1.5' Min.
Outside Ditch
Traffic Flow
4:1
4:1
PIPE
S
S=Ditch Slope
℄ Proposed Ditch

-Y3- STA. 12+10 RT

DETAIL 45F
CHANNEL CHANGE
(Not to Scale)
b
Natural Ground
2:1
D
2:1
1"/Ft.
Proposed Fill Slope
Natural Ground
Exist. Channel
B
Min. D=2 Ft.
B=3 Ft.
Min. b=3 Ft.
Type of Liner=Grass

-Y2- STA 99+04 TO 99+74 LT
SEE PFL FOR CHANNEL CHANGE GRADE (0.5%)

DETAIL 45I
UP AND DOWNSTREAM
FLOODPLAIN BENCH
(Looking Downstream, Not to Scale)
NATURAL GROUND
1.5:1
6'
0'-6'
HEIGHT=1'+/-
1.5:1
NATURAL GROUND
CLASS II RIP RAP (TYP.)
EST. 20 CY DDE
EST. 42 TONS CLASS II RIP RAP

-Y2- STA. 98+12 TO 98+39 RT (U/S L=27 FT)
-Y2- STA. 98+89 TO 99+12 RT (D/S L=23 FT)

—◇— SAFETY FENCE

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 45

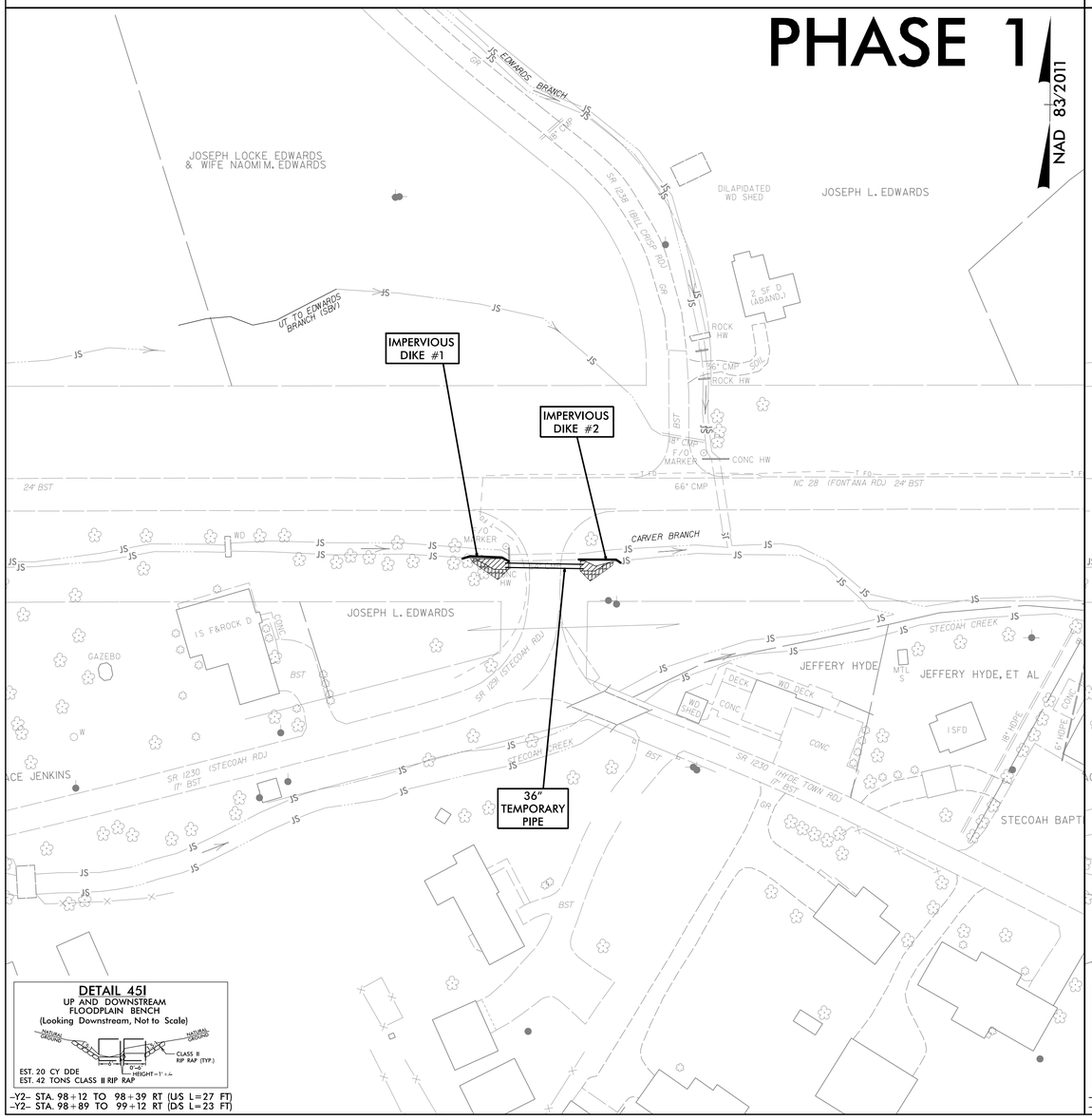
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CULVERT CONSTRUCTION SEQUENCE STA. 10+67 –Y3A–

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-05A/CONST.45
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

1. CLOSE STECOAH RD AS SHOWN ON TMP–9 AND DETOUR TRAFFIC. UTILIZE OFF–SITE DETOUR AS SHOWN ON TMP–10.
2. INSTALL IMPERVIOUS DIKES #1 & #2, DIRECTING DIRECT FLOW THROUGH EXISTING 54" CMP.
3. DEWATER WORK SITE AS NEEDED INTO SPECIAL STILLING BASIN(S).
4. EXCAVATE SOUTHERNMOST FLOODPLAIN BENCH AS SHOWN IN DETAIL 45I.
5. INSTALL 36" TEMPORARY PIPE IN EXCAVATED AREA.

PHASE 1



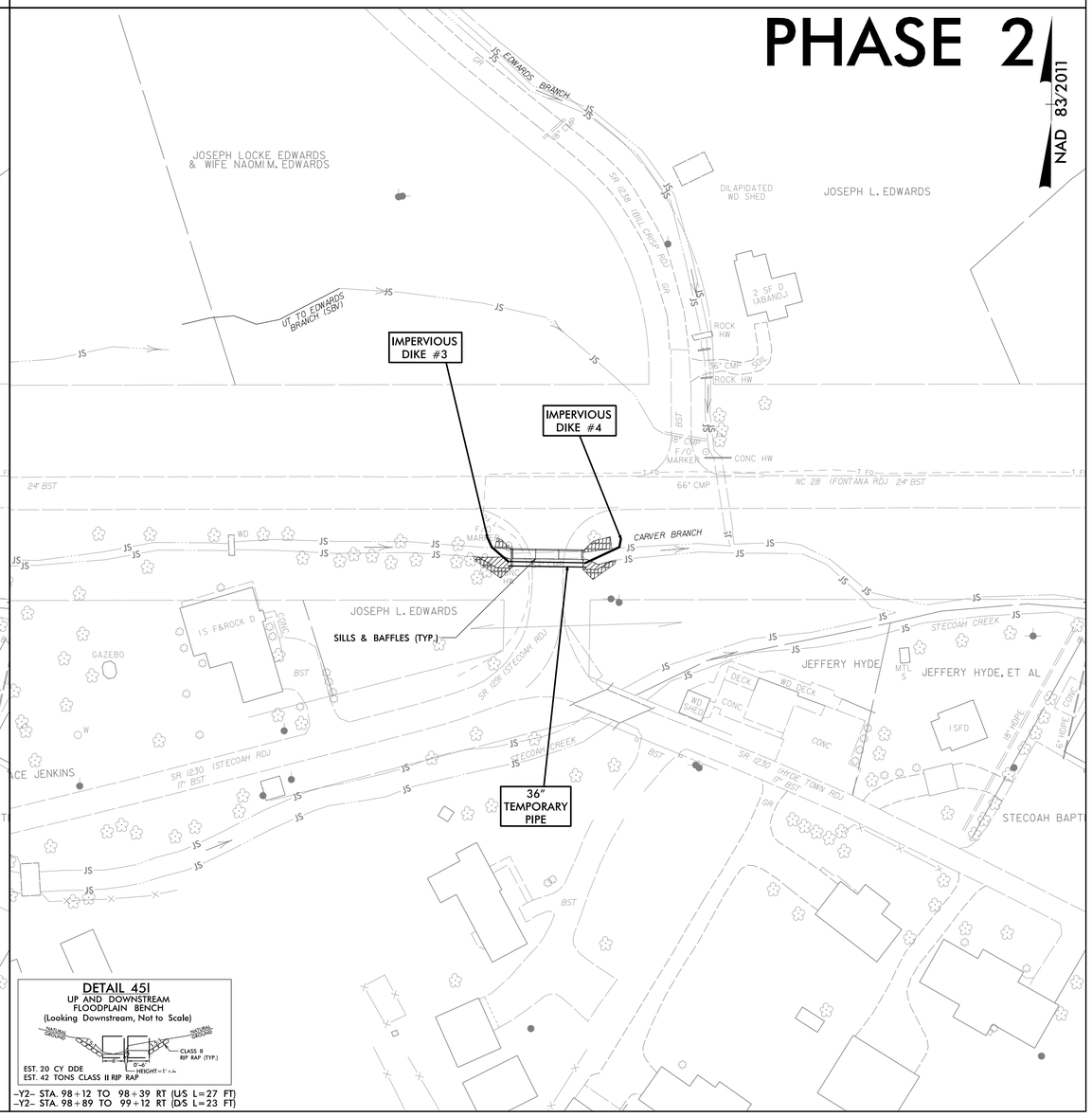
DETAIL 45I
UP AND DOWNSTREAM FLOODPLAIN BENCH
(Looking Downstream, Not to Scale)

EST. 20 CY DDE
EST. 42 TONS CLASS II RIP RAP

–Y2– STA. 98+12 TO 98+39 RT (US L=27 FT)
–Y2– STA. 98+89 TO 99+12 RT (DS L=23 FT)

1. REMOVE IMPERVIOUS DIKES #1 & #2 AND INSTALL IMPERVIOUS DIKES #3 & #4, DIRECTING FLOW THROUGH 36" TEMPORARY PIPE.
2. REMOVE EXISTING 54" CMP.
3. EXCAVATE NORTHERNMOST FLOODPLAIN BENCH.
4. INSTALL NORTHERNMOST 6' X 6' RCBC.

PHASE 2



DETAIL 45I
UP AND DOWNSTREAM FLOODPLAIN BENCH
(Looking Downstream, Not to Scale)

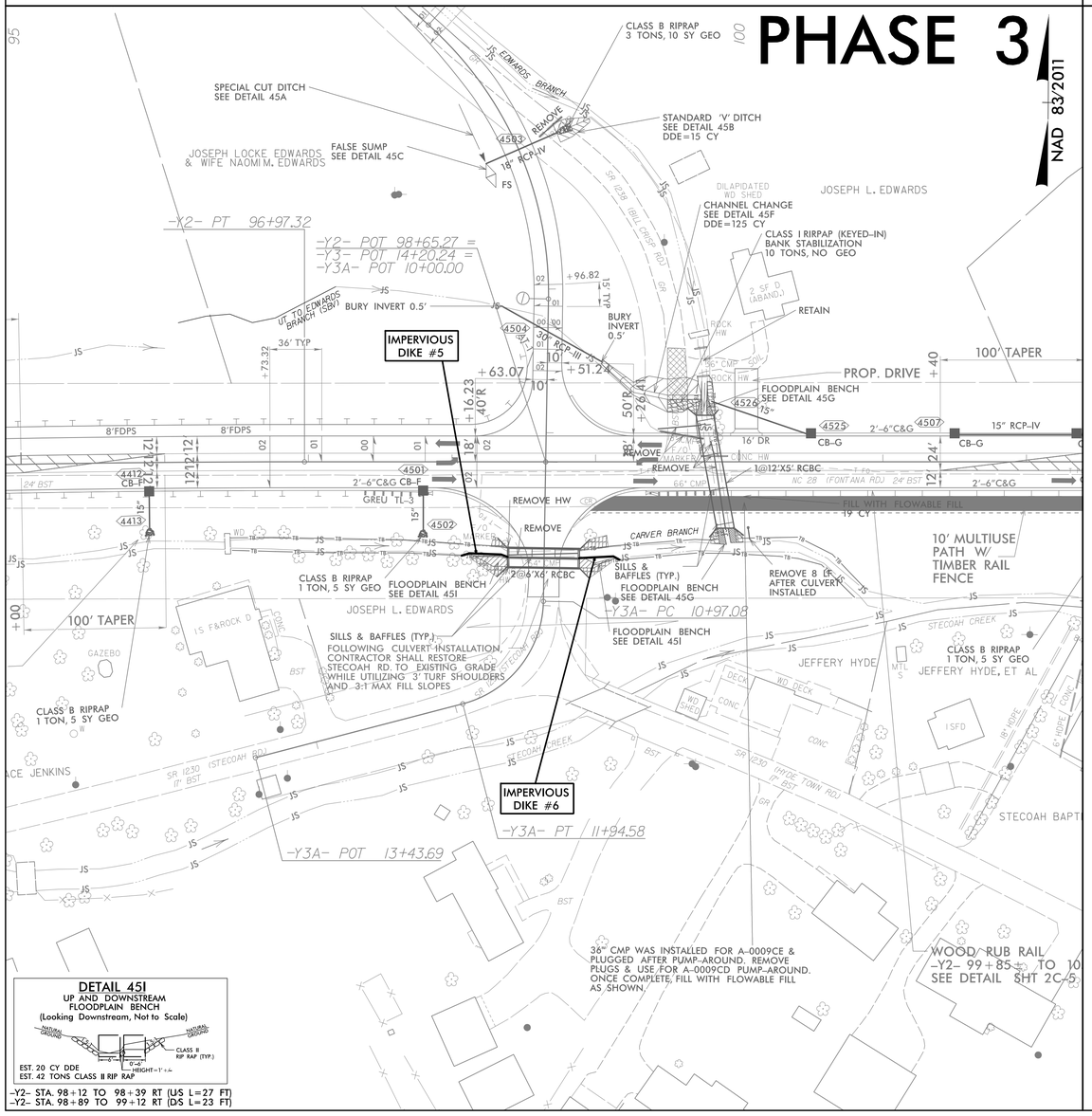
EST. 20 CY DDE
EST. 42 TONS CLASS II RIP RAP

–Y2– STA. 98+12 TO 98+39 RT (US L=27 FT)
–Y2– STA. 98+89 TO 99+12 RT (DS L=23 FT)

CULVERT CONSTRUCTION SEQUENCE STA. 10+67 –Y3A–

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-05B/CONST.45
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

1. REMOVE IMPERVIOUS DIKES #3 & #4 AND INSTALL IMPERVIOUS DIKES #5 & #6, DIRECTING FLOW THROUGH NORTHERNMOST 6′ X 6′ RCBC.
2. REMOVE 36″ TEMPORARY PIPE AND INSTALL SOUTHERNMOST 6′ X 6′ RCBC.
3. COMPLETE INLET/OUTLET CHANNEL IMPROVEMENTS.
4. REMOVE IMPERVIOUS DIKES AND ANY REMAINING SPECIAL STILLING BASINS AND REESTABLISH STREAM.
5. COMPLETE ROADWAY CONSTRUCTION ACCORDING TO TRAFFIC CONTROL PLANS.



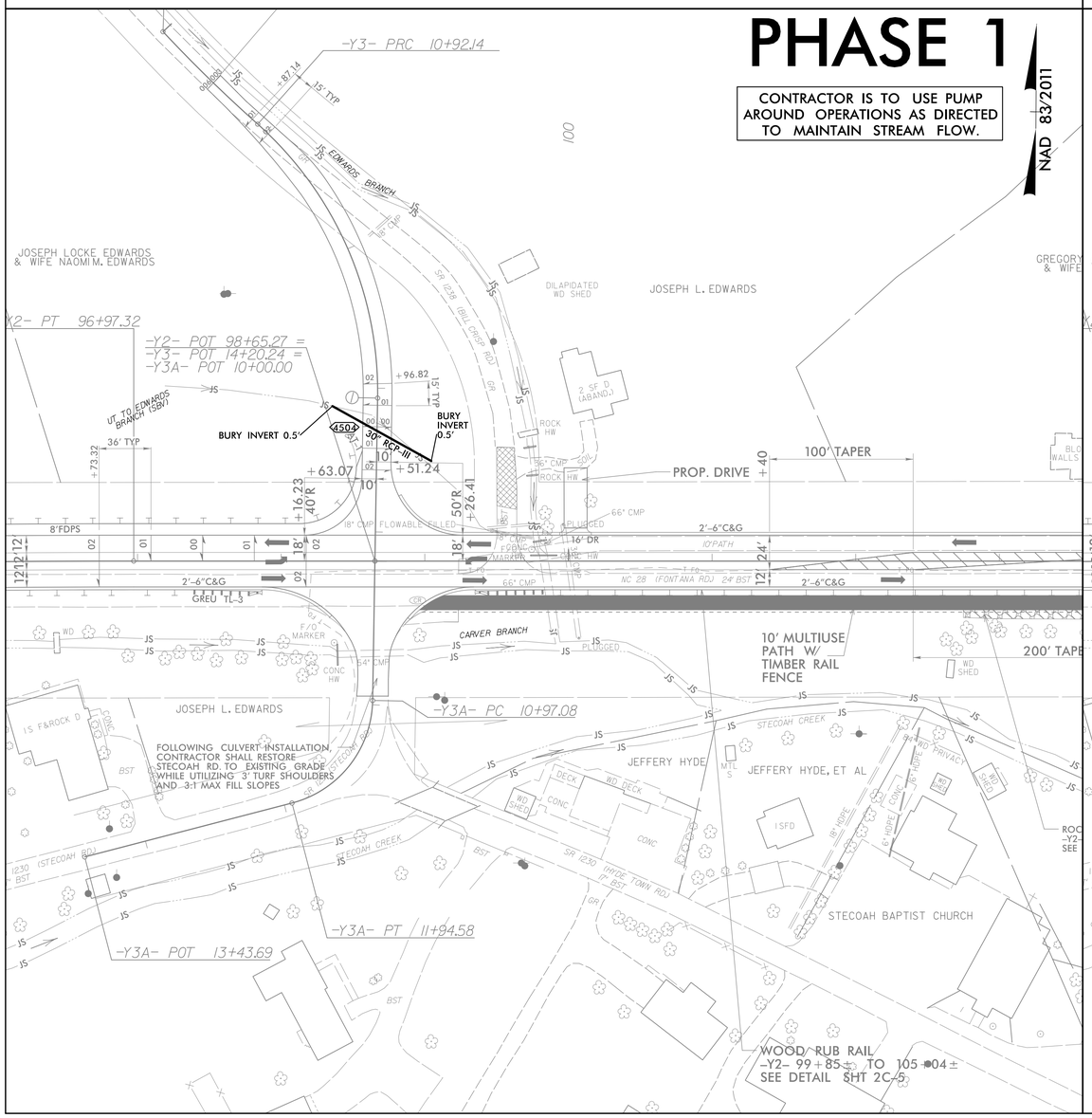
PIPE CONSTRUCTION SEQUENCE STA. 99+82 –Y2–

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-05C/CONST.45
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

1. INSTALL 30" RCP–III #4504 VIA PUMP AROUND. SEE EC–2B FOR EXAMPLE OF PUMP–AROUND OPERATION.
2. CONSTRUCT –Y3– (SR 1238 BILL CRISP RD) AS SHOWN ON TRAFFIC CONTROL PLAN TMP–7.
3. STOP PUMP AROUND OPERATION.

PHASE 1

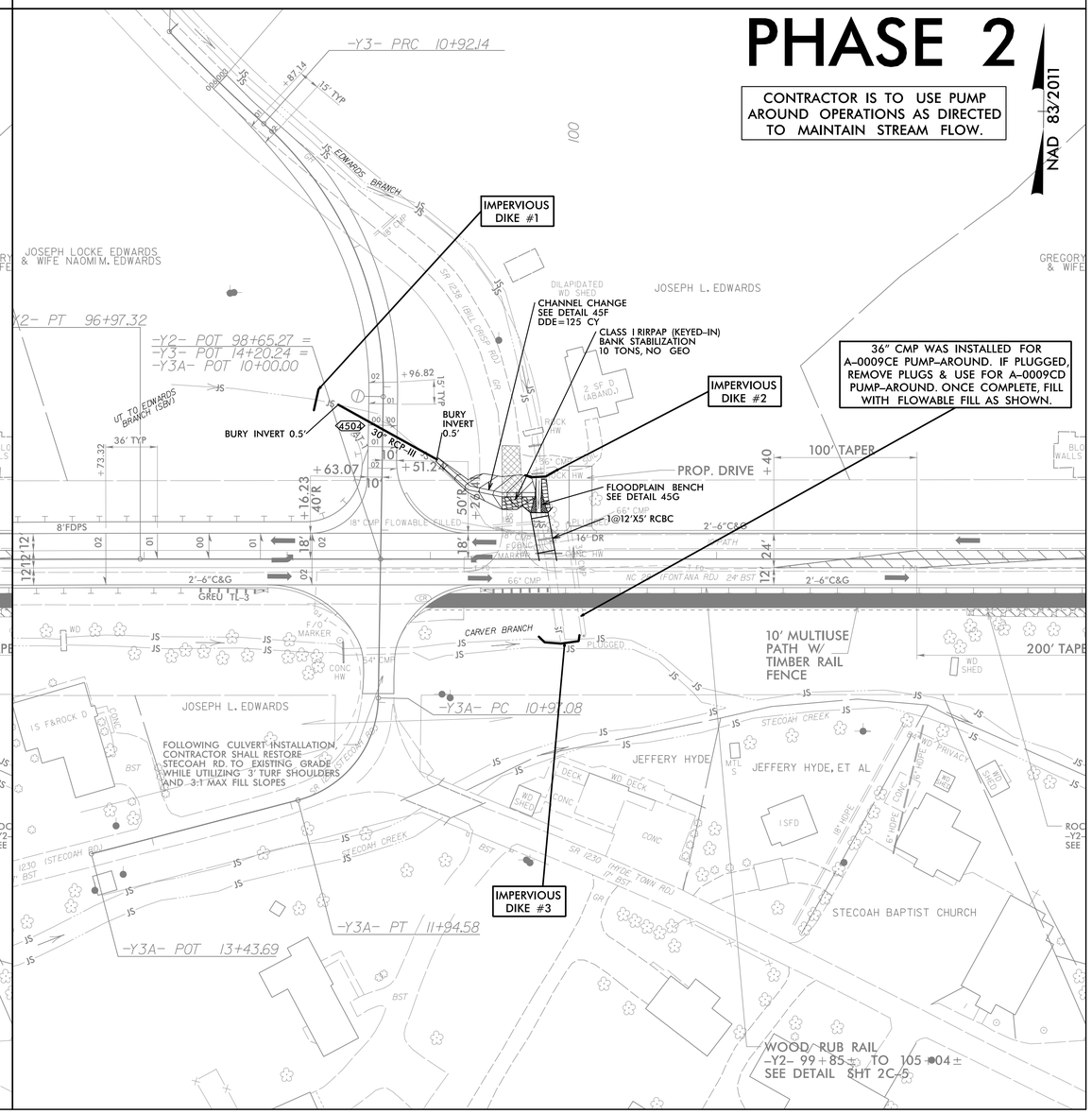
CONTRACTOR IS TO USE PUMP AROUND OPERATIONS AS DIRECTED TO MAINTAIN STREAM FLOW.



1. SHIFT TRAFFIC TO NEWLY CONSTRUCTED –Y3– AND CLOSE EXISTING SECTION OF SR 1238 AS SHOWN ON TMP–7.
2. INSTALL IMPERVIOUS DIKE #1 AND PUMP FLOW THROUGH NEW 30" RCP–III #4504. PUMP WATER TO EDWARDS BRANCH BETWEEN EXISTING 36" CMP AND IMPERVIOUS DIKE #2.
3. INSTALL IMPERVIOUS DIKES #2 & #3 AND PUMP FLOW TO TEMPORARY 36" CMP UNDER NC 28.
4. DEWATER WORK SITE AS NEEDED INTO SPECIAL STILLING BASIN(S).
5. REMOVE EXISTING PAVEMENT ON SR 1238 AND CONSTRUCT CHANNEL CHANGE PER DETAIL 45F.
6. CONSTRUCT APPROXIMATELY 34 LF OF UPSTREAM PORTION OF 12'X5' RCBC ALONG WITH INLET CHANNEL IMPROVEMENTS AND NORTHERN PORTION OF ROADWAY.

PHASE 2

CONTRACTOR IS TO USE PUMP AROUND OPERATIONS AS DIRECTED TO MAINTAIN STREAM FLOW.



PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-05D/CONST.45
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

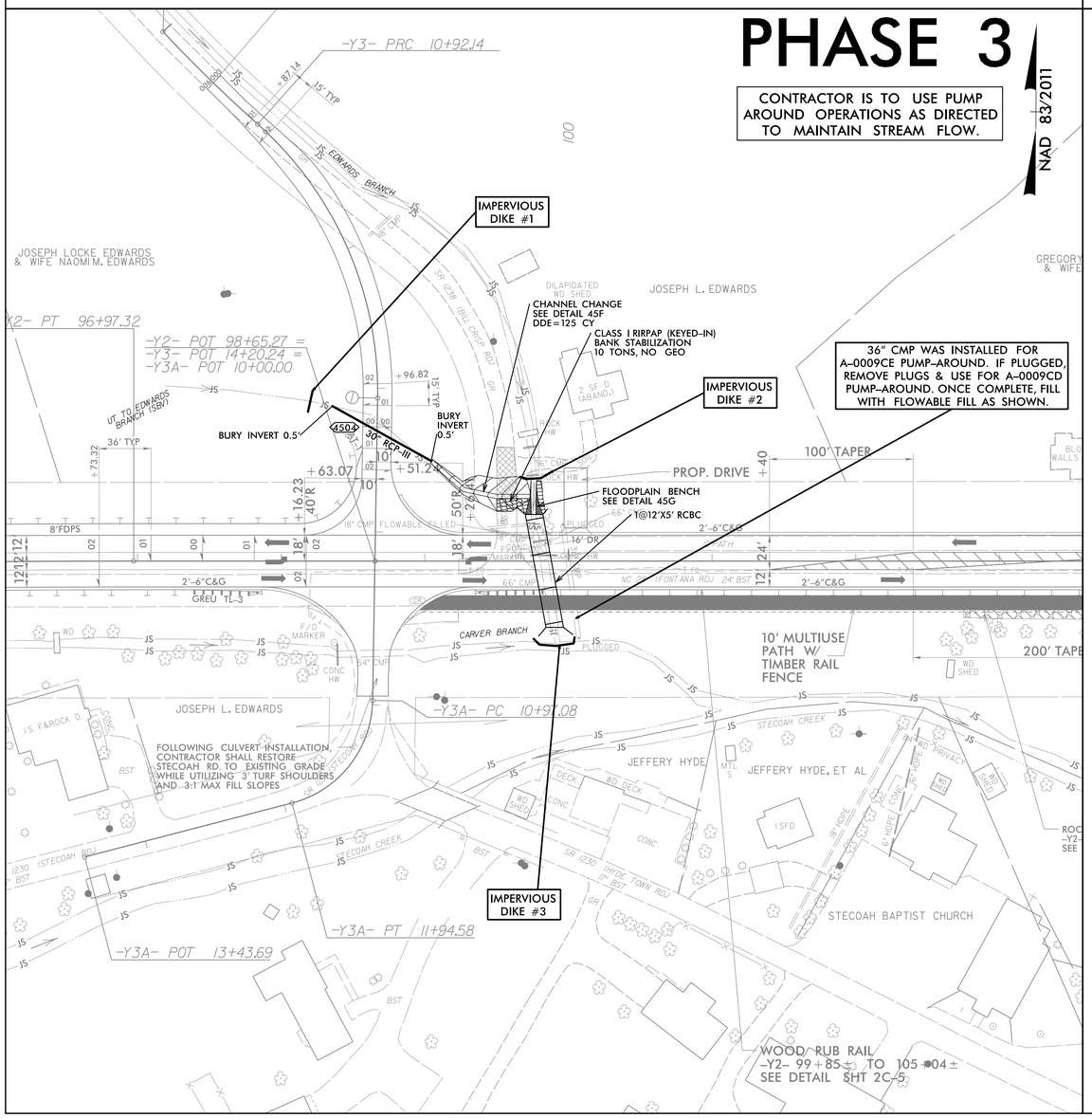
PIPE CONSTRUCTION SEQUENCE STA. 99+82 –Y2–

1. SHIFT TRAFFIC ONTO NEW UPSTREAM PORTION OF 12'X5' RCBC ACCORDING TO TMP–9.
2. REMOVE 66" CMP AND CONSTRUCT REMAINDER OF 12'X5' RCBC AND OUTLET CHANNEL IMPROVEMENTS.
3. REMOVE IMPERVIOUS DIKES, PUMP–AROUND OPERATION, AND ANY REMAINING SPECIAL STILLING BASINS AND REESTABLISH STREAM.
4. COMPLETE ROADWAY CONSTRUCTION ACCORDING TO TRAFFIC CONTROL PLANS.

PHASE 3

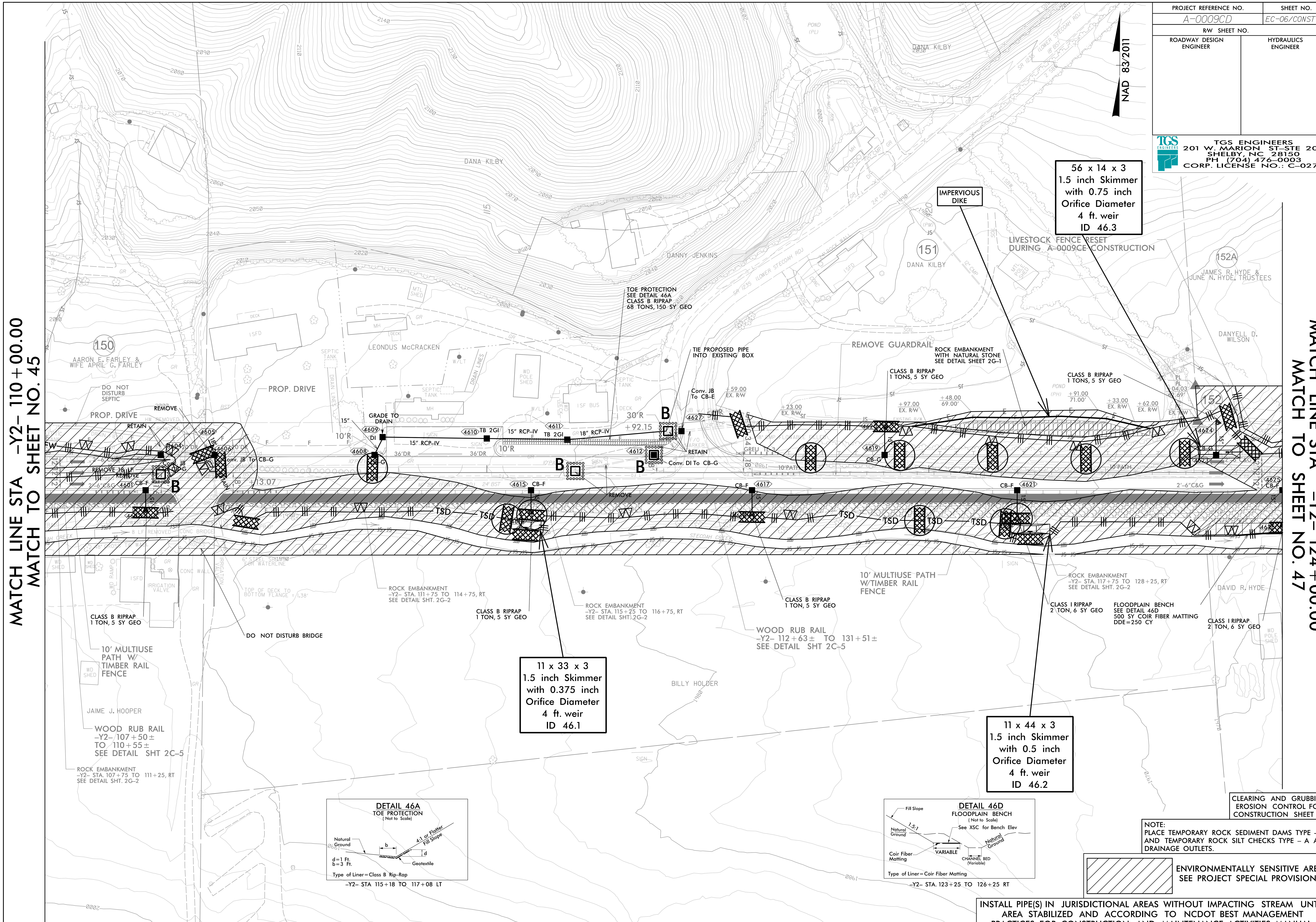
CONTRACTOR IS TO USE PUMP AROUND OPERATIONS AS DIRECTED TO MAINTAIN STREAM FLOW.

NAD 83/2011



PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-06/CONST.46
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275


NAD 83/2011
MATCH LINE STA -Y2- 110+00.00
MATCH TO SHEET NO. 45
MATCH LINE STA -Y2- 124+00.00
MATCH TO SHEET NO. 47
56 x 14 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
4 ft. weir
ID 46.3
IMPERVIOUS DIKE
LIVESTOCK FENCE RESET DURING A-0009CE CONSTRUCTION
TOE PROTECTION
SEE DETAIL 46A
CLASS B RIPRAP
68 TONS, 150 SY GEO
TIE PROPOSED PIPE INTO EXISTING BOX
REMOVE GUARDRAIL
ROCK EMBANKMENT WITH NATURAL STONE SEE DETAIL SHEET 2G-1
CLASS B RIPRAP 1 TONS, 5 SY GEO
PROP. DRIVE
DO NOT DISTURB SEPTIC
GRADE TO DRAIN
15" RCP-IV
18" RCP-IV
Conv. JB To CB-E
Conv. JB To CB-G
Conv. DI To CB-G
RETAIN
REMOVE
TSD
ROCK EMBANKMENT -Y2- STA. 111+75 TO 114+75, RT SEE DETAIL SHT. 2G-2
ROCK EMBANKMENT -Y2- STA. 115+25 TO 116+75, RT SEE DETAIL SHT. 2G-2
ROCK EMBANKMENT -Y2- STA. 117+75 TO 128+25, RT SEE DETAIL SHT. 2G-2
ROCK EMBANKMENT -Y2- STA. 107+75 TO 111+25, RT SEE DETAIL SHT. 2G-2
CLASS B RIPRAP 1 TON, 5 SY GEO
CLASS I RIPRAP 2 TON, 6 SY GEO
FLOODPLAIN BENCH SEE DETAIL 46D 500 SY COIR FIBER MATTING DDE=250 CY
10' MULTIUSE PATH W/TIMBER RAIL FENCE
WOOD RUB RAIL -Y2- 112+63± TO 131+51± SEE DETAIL SHT 2C-5
WOOD RUB RAIL -Y2- 107+50± TO 110+55± SEE DETAIL SHT 2C-5
DO NOT DISTURB BRIDGE
11 x 33 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
4 ft. weir
ID 46.1
11 x 44 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
4 ft. weir
ID 46.2
DANA KILBY
DANNY JENKINS
LEONDUS McCRACKEN
AARON E. FARLEY & WIFE APRIL G. FARLEY
JAMES R. HYDE & JUNE N. HYDE, TRUSTEES
DANYELL D. WILSON
DAVID R. HYDE
BILLY HOLDER
JAIME J. HOOPER
DETAIL 46A
TOE PROTECTION
(Not to Scale)
Natural Ground
4:1 or Flatter Fill Slope
Geotextile
d=1 Ft.
b=3 Ft.
Type of Liner=Class B Rip-Rap
-Y2- STA 115+18 TO 117+08 LT
DETAIL 46D
FLOODPLAIN BENCH
(Not to Scale)
Fill Slope
Natural Ground
See XSC for Bench Elev
Coir Fiber Matting
VARIABLE
CHANNEL BED (Variable)
Type of Liner=Coir Fiber Matting
-Y2- STA. 123+25 TO 126+25 RT

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 46

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-07/CONST.47
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

-Y2- CURVE DATA
PI Sta 132+08.73
Δ = 30° 56' 09.8" (LT)
D = 4° 48' 53.2"
L = 642.52'
T = 329.30'
R = 1,190.00'
SE = 0.04
DS = 55 MPH

DETAIL 47A
TOE PROTECTION
(Not to Scale)

Natural Ground; 2:1 or Flatter Fill Slope; b; d; Geotextile
d=1 Ft.
b=3 Ft.
Type of Liner= Class B Rip-Rap
-Y2- STA 128+50 TO 129+00 LT

DETAIL 47B
LATERAL GRASSED SWALE
(Not to Scale)

Natural Ground; 3:1; D; B; 3:1; b; 1'-Ft.; Fill Slope
Min. D=1.6 Ft.
B=5 Ft.
b=3 Ft.
-Y2- STA 130+29 TO 132+75 LT
SEE PFL FOR DITCH GRADE (0.4%)

DETAIL 47E
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground; 4:1; D; 4:1 or Flatter; Front Ditch Slope
Min. D=1.0 Ft.
-Y2- STA 129+00 TO 132+06 RT
SEE PFL FOR DITCH GRADE (1.34%)

34 x 17 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 47.1

2 @ 24 x 12 x 2
1.5 inch Skimmer
with 0.25 inch
Orifice Diameter
4 ft. weir
ID 47.2

60 x 12 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 47.3

NAD 83/2011

MATCH LINE STA -Y2- 124+00.00
MATCH TO SHEET NO. 46

MATCH LINE STA -Y2- 138+00.00
MATCH TO SHEET NO. 48

LIVESTOCK FENCE RESET DURING A-0009CE CONSTRUCTION

152A
JAMES R. HYDE & JUNE N. HYDE, TRUSTEES

DO NOT DISTURB WELL (APPROX. LOCATION)

PROP. DRIVE

CLASS B RIPRAP
1 TONS, 5 SY GEO

TOE PROTECTION
SEE DETAIL 47A
CLASS B RIPRAP
13 TONS, 28 SY GEO

-Y2- PC 128+79.43

RCBC EXTENSION PLACED DURING PROJECT A-0009CE CONSTRUCTION

LATERAL GRASSED SWALE
SEE DETAIL 47B
DDE=320 CY

-Y2- PT 135+21.96

BOBBY EDWARDS

UT TO STECOAH CREEK

STECOAH CREEK

OLD STECOAH CREEK "STEAM BED"

642.53' TAPER

DO NOT DISTURB SIGN

PROP. DRIVE
DO NOT DISTURB WELL & WATER LINE (APPROX. LOCATION)

154
KICKSTAND LODGE, LTD.

POND (PG)

REMOVE GUARDRAIL

153
SUSAN B. IVEY

CLASS I RIPRAP
11 TONS,22 SY GEO

REMOVE 29 LF

CLASS B RIPRAP
2 TONS, 7 SY GEO

CLASS B RIPRAP
2 TONS, 7 SY GEO

ABANDON

GRADE TO DRAIN

RETAIN

REMOVE

REMOVE DI

18" RCP-IV

15" RCP-IV

50" RCP-IV

TB 2GI

PROP. DRIVE

SHOULDER BERM GUTTER
-Y2- STA. 132+22 TO 133+60, RT

DOUBLE FACED CONCRETE BARRIER TYPE T-2
-Y2- STA. 133+60 to 137+50, RT

CLASS B RIPRAP
2 TONS, 7 SY GEO

CLASS B RIPRAP
3 TONS, 10 SY GEO

155
CIRCLE G MANAGEMENT, LLC

10' MULTIUSE PATH W/TIMBER RAIL FENCE

MICHAEL CABLE, ET AL

FLOODPLAIN BENCH
SEE DETAIL 46D

DAVID R. HYDE

10' MULTIUSE PATH W/TIMBER RAIL FENCE

WOOD RUB RAIL
-Y2- 112+63± TO 131+51±
SEE DETAIL SHT 2C-5

ROCK EMBANKMENT
-Y2- STA. 117+75 TO 128+25, RT
SEE DETAIL SHT. 2G-2

CLASS I RIPRAP
2 TON, 6 SY GEO

SPECIAL CUT DITCH
SEE DETAIL 47E

JAMES R. HYDE, TRUSTEE

GRAHAM WELL DRILLING, LLC

WILLIAM M. HYDE

I.S. MTL BUS (STORAGE UNITS)

SEPTIC TANK

DRAIN LINES

SR 1230 (HYDE TOWN RD)

REMOVE GUARDRAIL

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 47

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-08/CONST.48
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

NAD 83/2011

–Y2– SURVEY DATA
PI Sta 142+30.76 JS
Δ = 124°23'1" (LT)
D = 0°28'38.9"
L = 294.56'
T = 147.29'
R = 12,000.00'
SE = NC
DS = 60 MPH

PI Sta 152+17.13
Δ = 54°14'50" (RT)
D = 5°21'1.1"
L = 1,013.07'
T = 548.10'
R = 1,070.00'
SE = 0.08
DS = 55 MPH

DETAIL 48A
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, 2:1, 3:1, D, Front Ditch Slope
Min. D=1.0 Ft.

–Y2– STA. 139+00 TO 139+34 RT
SEE PFL FOR DITCH GRADE (0.5%)

DETAIL 48B
OUTLET CHANNEL STABILIZATION
(Not to Scale)

Natural Ground, Erosion Stone, Filter Stone, d, CLASS I RIP-RAP KEYED-IN (TYP.), CHANNEL BED (Variable)
Length = 20 Ft.
Min. d = 3 Ft.

–Y2– STA 141+75(134' LT) TO 141+86(151' LT)

DETAIL 48C
SPECIAL CUT DITCH
(Not to Scale)

8dH, Natural Ground, 2:1, d, D, 4:1, Front Ditch Slope, Geotextile
Type of Liner = Class B Rip-Rap
Min. D = 2 Ft.
d = 1.5 Ft.

–Y2– STA. 143+50 TO 144+50 RT
SEE XSC FOR DITCH GRADE

DETAIL 48D
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow, 8:1, 4:1, 2', 0.5' Min. 1.0' Max., GI etc., S
S = Ditch Slope
℄ Proposed Ditch

–Y2– STA. 145+87 RT
–Y2– STA. 151+10 RT

DETAIL 48E
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow, MIN. ELEV = 1997.0, 2:1, 2:1, 1.0', S
S = Toe of Slope
TOE OF FILL

–L– STA. 142+67 RT

DETAIL 48F
TOE PROTECTION
(Not to Scale)

Natural Ground, b, 2:1 or Flatter Fill Slope, d, Geotextile
d = 1 Ft.
b = 3 Ft.
Type of Liner = Class I Rip-Rap

–Y2– STA 139+34 TO 141+09 RT
–Y2– STA 141+20 TO 142+25 RT

DETAIL 48G
CONCRETE DITCH BEHIND RETAINING WALL
(Not to Scale)

RETAINING WALL, BOND BREAKER, VARIES, D, B, 2:1, NATURAL GROUND, 4"
D = 1.0'
B = 2.0'

–Y2– STA. 146+60 TO 148+80 RT
(SEE WALL ENVELOPES FOR DITCH GRADE)

2 @ 48 x 12 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
4 ft. weir
ID 48.1

3 @ 30 x 12 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 48.4

4 @ 56 x 14 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
6 ft. weir
ID 48.5

2 @ 36 x 12 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 48.3

50 x 12 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 48.2

MATCH LINE STA –Y2– 138+00.00
MATCH TO SHEET NO. 47

MATCH LINE STA –Y2– 152+00.00
MATCH TO SHEET NO. 49

LIVESTOCK FENCING TO BE RESET BY CONTRACTOR

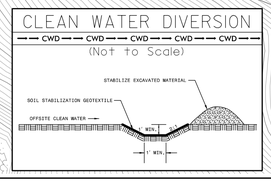
–Y2– PC 140+83.47
–Y2– PT 143+78.03
–Y2– PC 146+69.03

154 KICKSTAND LODGE, LTD.
156 ESTATE OF T. J. EDWARDS
155 CIRCLE G MANAGEMENT, LLC
157 MICHAEL HOLDER & WIFE, DELORES HOLDER

OUTLET CHANNEL STABILIZATION SEE DETAIL 48B CLASS I RIPRAP 30 TONS, NO GEO
CLASS B RIPRAP 2 TONS, 7 GEOTECH
DO NOT BURY INVERT
FILL WITH FLOWABLE FILL EST 108 CY
FILL WITH FLOWABLE FILL EST 5 CY
REMOVE 20 LF
CLASS B RIPRAP 3 TONS, 10 SY GEO
CLASS I RIPRAP 4 TONS, 10 GEOTECH
1045' LANE DROP TAPER
REMOVE HW
SPECIAL CUT DITCH SEE DETAIL 48A
FALSE SUMP SEE DETAIL 48E
CUT TO FILL TRANSISTION CLASS II RIPRAP 40 TONS, 42 SY GEO
TOE PROTECTION SEE DETAIL 48F CLASS I RIPRAP 57 TONS, 80 SY GEO
SPECIAL CUT DITCH SEE DETAIL 48C CLASS B RIPRAP 45 TONS, 100 SY GEO
FALSE SUMP SEE DETAIL 48D
CLASS B RIP-RAP 3 TONS, 7 SY GEO
CONC. DITCH BEHIND RETAINING WALL SEE DETAIL 48G
PRECAST REINFORCED CONC. BARRIER, SINGLE FACED –Y2– STA. 146+60± TO 148+80±, RT
PROP. RETAINING WALL #41 W/CONCRETE DITCH BEGIN –Y2– STA. 146+60± END –Y2– STA. 148+80±
SHOULDER BERM GUTTER –Y2– STA. 139+50 TO 142+00, RT
DO NOT DISTURB PUMPS
DO NOT DISTURB SHED
TOE PROTECTION SEE DETAIL 48F CLASS I RIPRAP 80 TONS, 112 SY GEO
PROP. DRIVE
DO NOT DISTURB
MICHAEL HOLDER
BATH HOUSE
CONTRACTOR TO REPAVE POPLAR HILL DRIVE IF DAMAGED DURING CONSTRUCTION

CLEAN WATER DIVERSIONS ARE INDEPENDENT OF OTHER EC DITCH LINES AND TERMINATE INTO A SC–A.

CLEAN WATER DIVERSION
(Not to Scale)



CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 48

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

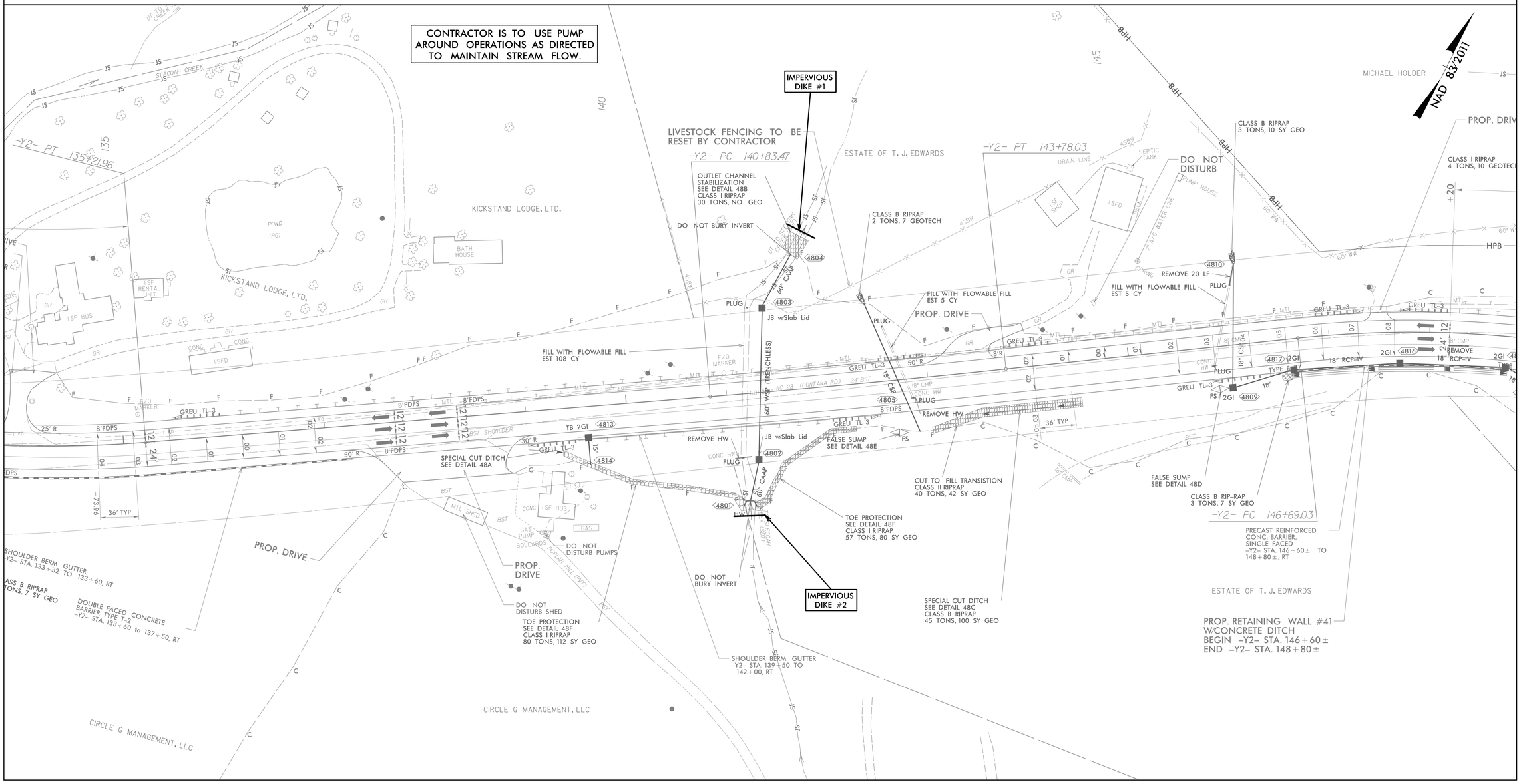
ENVIRONMENTALLY SENSITIVE AREA SEE PROJECT SPECIAL PROVISIONS

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

CULVERT CONSTRUCTION SEQUENCE STA. 141+20 –Y2–

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-08A/CONST.48
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

1. INSTALL IMPERVIOUS DIKES #1 & #2 AND BEGIN PUMP AROUND THROUGH EXISTING 60" CMP. SEE EC–2B FOR EXAMPLE OF PUMP–AROUND OPERATION.
2. DEWATER WORK SITE AS NEEDED INTO SPECIAL STILLING BASIN(S).
3. INSTALL 60" WELDED STEEL PIPE USING TRENCHLESS INSTALLATION.
4. INSTALL JB W/SLAB LID #4802 & 60" CAAP.
5. INSTALL JB W/SLAB LID #4803 & 60" CAAP.
6. COMPLETE ANY NECESSARY INLET/OUTLET CHANNEL IMPROVEMENTS.
7. REMOVE IMPERVIOUS DIKES #1 & #2, SHIFTING FLOW INTO NEW PIPE SYSTEM.
8. PLUG AND FILL EXISTING 60" CMP.
9. REESTABLISH STREAM ACCORDING TO CONST. PLANS.
10. REMOVE ANY REMAINING SPECIAL STILLING BASINS.



PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-09/CONST.49
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 49

CLEAN WATER DIVERSIONS ARE INDEPENDENT OF OTHER EC DITCH LINES AND TERMINATE INTO A SC–A.

NAD 83/2011

–Y2– CURVE DATA
PI Sta 152+17.13
△ = 54° 14' 50.1" (RT)
D = 5° 21' 17.1"
L = 1,013.07'
T = 548.10'
R = 1,070.00'
SE = 0.08
DS = 55 MPH

PI Sta 167+46.16
△ = 72° 53' 32.5" (LT)
D = 4° 58' 56.1"
L = 1,463.04'
T = 849.
R = 1,150.00'
SE = 0.06
DS = 55 MPH

DETAIL 49A
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
4:1
4:1
2'
0.5' Min. 1.0' Max.
GI etc.
S
S=Ditch Slope
℄ Proposed Ditch
–Y2– STA. 153+86 RT

CLEAN WATER DIVERSION
CWD CWD CWD CWD CWD
(Not to Scale)
STABILIZE EXCAVATED MATERIAL
SOIL STABILIZATION GEOTEXTILE
OFFSITE CLEAN WATER
MIN.
1' MIN.

–Y2– 152+00.00
SHEET NO. 48

MATCH LINE STA –Y2– 166+00.00
MATCH TO SHEET NO. 50

2 @ 90 x 15 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
7 ft. weir
ID 49.1

FOR CONCRETE ISLAND LAYOUT SEE DETAIL SHT 2B–1

TIE PROPOSED SYSTEM INTO EXISTING 15" CMP (UNKNOWN INVERT). CONTRACTOR SHALL CONFIRM HORIZONTAL & VERTICAL LOCATION OF EXISTING 15" CMP PRIOR TO ORDERING STR# 4905.

TIE PROPOSED SYSTEM INTO EXISTING 24" CMP (UNKNOWN INVERT). CONTRACTOR SHALL CONFIRM ELEVATIONS PRIOR TO ORDERING STR #4907.

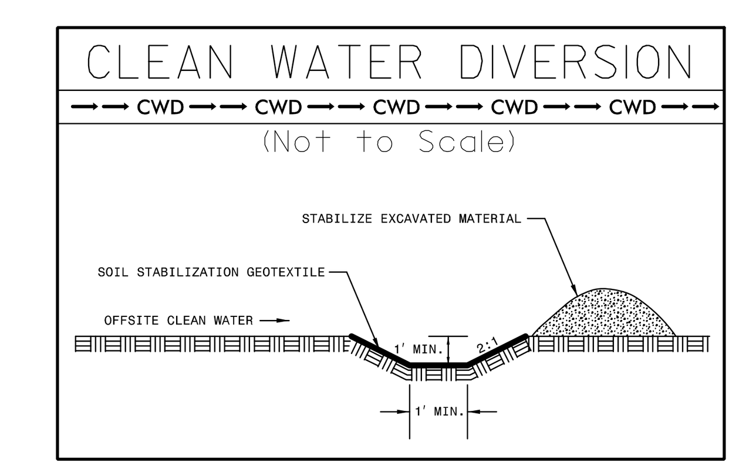
FOR CONCRETE CURB & DRIVE LAYOUT SEE DETAIL SHT 2B–1

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-10/CONST.50
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 50



CLEAN WATER DIVERSIONS ARE INDEPENDENT OF OTHER EC DITCH LINES AND TERMINATE INTO A SC-A.

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-II/CONST.44
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

INSTALL MATTING FOR EROSION CONTROL ON ALL GRADED DITCHES AND GRADED SLOPES THAT DO NOT ALREADY CALL FOR OTHER MEANS OF PERMANENT OR TEMPORARY STABILIZATION

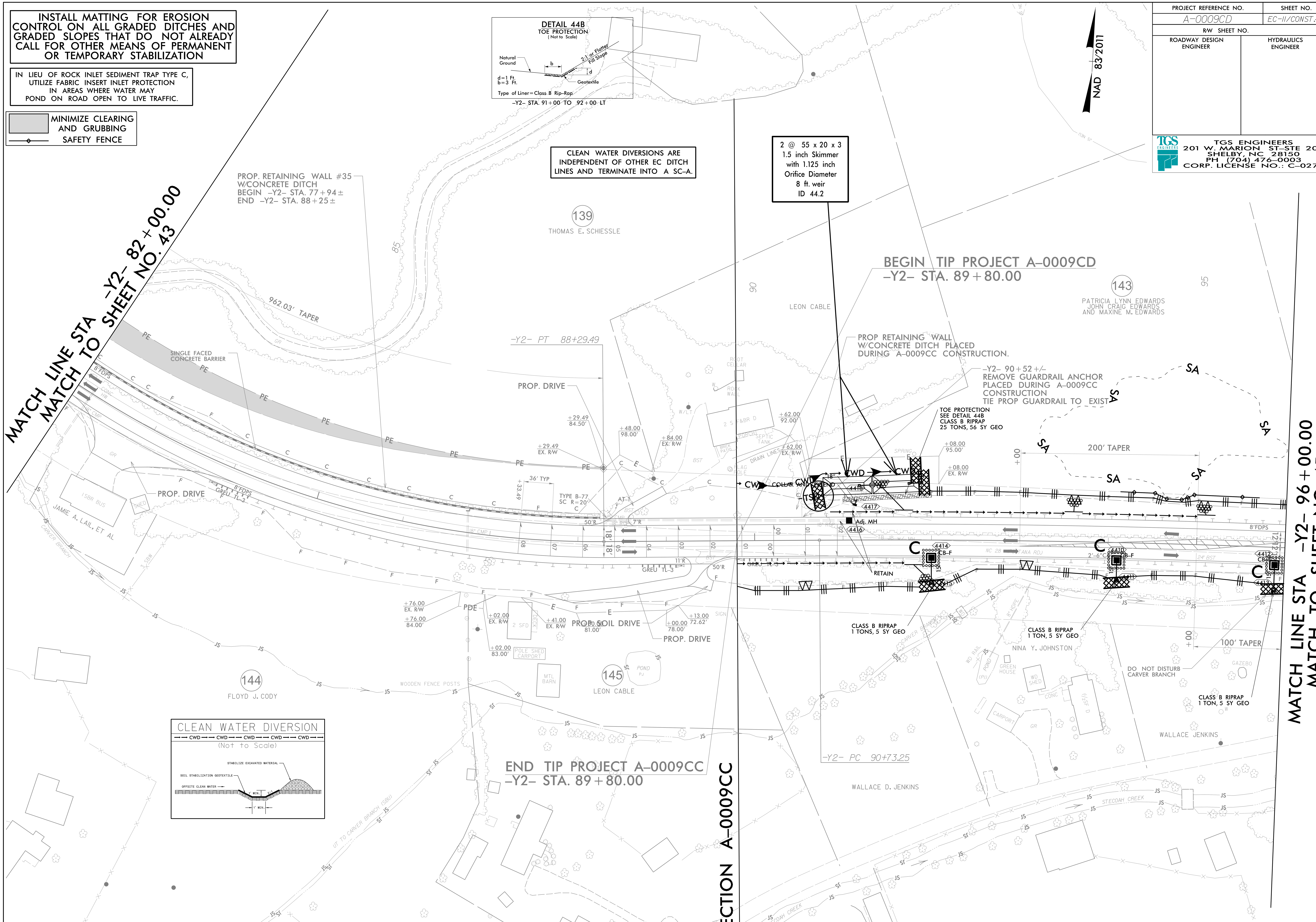
IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

MINIMIZE CLEARING AND GRUBBING

SAFETY FENCE

CLEAN WATER DIVERSIONS ARE INDEPENDENT OF OTHER EC DITCH LINES AND TERMINATE INTO A SC-A.

2 @ 55 x 20 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
8 ft. weir
ID 44.2


DETAIL 44B
TOE PROTECTION
(Not to Scale)
Natural Ground
2:1 or Flatter Fill Slope
d=1 Ft.
b=3 Ft.
Geotextile
Type of Liner=Class B Rip-Rap
-Y2- STA. 91+00 TO 92+00 LT
NAD 83/2011
MATCH LINE STA -Y2- 82+00.00
MATCH TO SHEET NO. 43
MATCH LINE STA -Y2- 96+00.00
MATCH TO SHEET NO. 45
PROP. RETAINING WALL #35
W/CONCRETE DITCH
BEGIN -Y2- STA. 77+94±
END -Y2- STA. 88+25±
139
THOMAS E. SCHIESSLE
BEGIN TIP PROJECT A-0009CD
-Y2- STA. 89+80.00
143
PATRICIA LYNN EDWARDS
JOHN CRAIG EDWARDS
AND MAXINE M. EDWARDS
LEON CABLE
962.03' TAPER
-Y2- PT 88+29.49
SINGLE FACED CONCRETE BARRIER
PROP. DRIVE
PROP RETAINING WALL
W/CONCRETE DITCH PLACED
DURING A-0009CC CONSTRUCTION.
-Y2- 90+52+/-
REMOVE GUARDRAIL ANCHOR
PLACED DURING A-0009CC
CONSTRUCTION
TIE PROP GUARDRAIL TO EXIST
TOE PROTECTION
SEE DETAIL 44B
CLASS B RIPRAP
25 TONS, 56 SY GEO
200' TAPER
JAMIE A. LAIL, ET AL
PROP. DRIVE
TYPE B-77
SC R=20'
AT-1
CLASS B RIPRAP
1 TONS, 5 SY GEO
CLASS B RIPRAP
1 TON, 5 SY GEO
NINA Y. JOHNSTON
100' TAPER
DO NOT DISTURB
CARVER BRANCH
CLASS B RIPRAP
1 TON, 5 SY GEO
WALLACE JENKINS
PROP. SOIL DRIVE
PROP. DRIVE
144
FLOYD J. CODY
145
LEON CABLE
END TIP PROJECT A-0009CC
-Y2- STA. 89+80.00
-Y2- PC 90+73.25
WALLACE D. JENKINS
SECTION A-0009CC
CLEAN WATER DIVERSION
(Not to Scale)
STABILIZE EXCAVATED MATERIAL
SOIL STABILIZATION GEOTEXTILE
OFFSITE CLEAN WATER
STEDCOAH CREEK

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-12/CONST.45
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

NAD 83/2011

MATCH LINE STA –Y2– 96+00.00
MATCH TO SHEET NO. 44

MATCH LINE STA –Y2– 110+00.00
MATCH TO SHEET NO. 46

–Y2– CURVE DATA
PI Sta 93+85.36
△ = 3°06' 33.3" (RT)
D = 0°29' 53.6"
L = 624.07'
T = 312.11'
R = 11,500.00'
SE = 0.02
DS = 70 MPH

–Y3– CURVE DATA
PI Sta 10+46.10
△ = 5°04' 03.3" (LT)
D = 5°30' 00.0"
L = 92.14'
T = 46.10'
R = 1,041.74'
SE = EXIST.

PI Sta 12+06.60
△ = 49°12' 03.3" (RT)
D = 22°55' 05.9"
L = 214.68'
T = 114.46'
R = 250.00'
SE = 0.02
DS = 30 MPH
Ⓘ –Y3– PT 13+06.82

CLEAN WATER DIVERSION
CWD CWD CWD CWD CWD
(Not to Scale)
STABILIZE EXCAVATED MATERIAL
SOIL STABILIZATION GEOTEXTILE
OFFSITE CLEAN WATER
1' MIN.
1' MIN.

CLEAN WATER DIVERSIONS ARE INDEPENDENT OF OTHER EC DITCH LINES AND TERMINATE INTO A SC–A.

INSTALL MATTING FOR EROSION CONTROL ON ALL GRADED DITCHES AND GRADED SLOPES THAT DO NOT ALREADY CALL FOR OTHER MEANS OF PERMANENT OR TEMPORARY STABILIZATION

REFER TO EC–18 FOR STREAMBANK REFORESTATION AREAS

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

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

BEGIN CONSTRUCTION
–Y3– STA. 10+50.00

–Y3– PC 10+00.00
–Y3– PRC 10+92.14
–X2– PT 96+97.32
–Y2– POT 98+65.21
–Y3– POT 14+20.24
–Y3A–3 POT 10+00.00
–Y3A– PC 10+97.08
–Y3A– PT 11+94.58
–Y3A– POT 13+43.69

CLASS B RIPRAP 3 TONS, 10 SY GEO
SPECIAL CUT DITCH SEE DETAIL 45A
STANDARD 'V' DITCH SEE DETAIL 45B DDE=15 CY
FALSE SUMP SEE DETAIL 45C
CHANNEL CHANGE SEE DETAIL 45F DDE=125 CY
CLASS I RIRPAP (KEYED–IN) BANK STABILIZATION 10 TONS, NO GEO
BURY INVERT 0.5'
RETAIN
FLOODPLAIN BENCH SEE DETAIL 45G
100' TAPER
REMOVE 22 LF
TIE PROPOSED PIPE INTO EXISTING BOX
TIE PRIVATE DRAIN LINE INTO BOX 4517
REMOVE 20 LF
REMOVE HW
REMOVE
1@12'X5' RCBC
6'X6' RCBC
FILL WITH FLOWABLE FILL
CLASS B RIPRAP 1 TON, 5 SY GEO
FLOODPLAIN BENCH SEE DETAIL 45I
SILLS & BAFFLES (TYP.)
FOLLOWING CULVERT INSTALLATION, CONTRACTOR SHALL RESTORE STECOAH RD. TO EXISTING GRADE WHILE UTILIZING 3' TURF SHOULDERS AND 3:1 MAX FILL SLOPES
REMOVE 8 LF AFTER CULVERT INSTALLED
10' MULTIUSE PATH W/ TIMBER RAIL FENCE
200' TAPER
CLASS B RIPRAP 3 TON, 10 SY GEO
CLASS B RIPRAP 1 TON, 5 SY GEO
ROCK EMBANKMENT –Y2– STA. 102+75 TO 103+75, RT SEE DETAIL SHT 2G–2
ROCK EMBANKMENT –Y2– STA. 107+75 TO 111+25, RT SEE DETAIL SHT. 2G–2
PROP. CONCRETE DRIVE
PROP. DRIVE
WOOD RUB RAIL –Y2– 99+85± TO 105+04± SEE DETAIL SHT 2C–5
WOOD RUB RAIL –Y2– 107+50± TO 110+56± SEE DETAIL SHT 2C–5
36" CMP WAS INSTALLED FOR A–0009CE & PLUGGED AFTER PUMP–AROUND. REMOVE PLUGS & USE FOR A–0009CD PUMP–AROUND. ONCE COMPLETE, FILL WITH FLOWABLE FILL AS SHOWN.
28 x 14 x 3
1.5 inch Skimmer
with 0.375 inch
Orifice Diameter
4 ft. weir
ID 45.3

JOSEPH LOCKE EDWARDS & WIFE NAOMI M. EDWARDS (146)
JOSEPH L. EDWARDS (146)
GREGORY DALE BURCHFIELD & WIFE VICKI BURCHFIELD (147)
WILLIAM CARR & WIFE TAMMY C. CARR (148)
ROANNE GORDON (BY WILL) (149)
(150)
JOSEPH L. EDWARDS
GREGORY D. BURCHFIELD
JEFFERY HYDE
JEFFERY HYDE, ET AL
ODELL LOVIN
STECOAH BAPTIST CHURCH
ROANNE GORDON
JAIME J. HOOPER
LEONARD BRIDGES

DETAIL 45G
UP AND DOWNSTREAM FLOODPLAIN BENCH
(Not to Scale)
EST. 24 CY DDE
EST. 18 TONS CLASS I RIP RAP
–Y2– STA. 99+76 LT (US LENGTH=24 FT)
–Y2– STA. 99+90 RT (DS LENGTH=12 FT)

DETAIL 45A
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
2:1
D
4:1 or Flatter
Front Ditch Slope
Min. D=2 Ft.
–Y3– STA 11+50 TO 12+00 RT
SEE PFL FOR DITCH GRADE (7.6%)

DETAIL 45B
STANDARD 'V' DITCH
(Not to Scale)
Natural Ground
2:1
D
2:1
Natural Ground
Min. D=1.5 Ft.
–Y3– STA. 12+00(29' LT) TO 12+00(54' LT)
DAYLIGHT AT 1.0% SLOPE

DETAIL 45C
FALSE SUMP
(Not to Scale)
1.5' Min.
Outside Ditch Traffic Flow
4:1
4:1
PIPE
S
S=Ditch Slope
℄ Proposed Ditch
–Y3– STA. 12+10 RT

DETAIL 45F
CHANNEL CHANGE
(Not to Scale)
b
Natural Ground
2:1
D
2:1
1'/Ft.
Proposed Fill Slope
Natural Ground
Exist. Channel
B
Min. D=2 Ft.
B=3 Ft.
Min. b=3 Ft.
Type of Liner=Grass
–Y2– STA 99+04 TO 99+74 LT
SEE PFL FOR CHANNEL CHANGE GRADE (0.5%)

DETAIL 45I
UP AND DOWNSTREAM FLOODPLAIN BENCH
(Looking Downstream, Not to Scale)
EST. 20 CY DDE
EST. 42 TONS CLASS II RIP RAP
–Y2– STA. 98+12 TO 98+39 RT (US L=27 FT)
–Y2– STA. 98+89 TO 99+12 RT (DS L=23 FT)

SAFETY FENCE

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-13/CONST.46
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

NAD 83/2011

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

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

REFER TO EC–18 FOR STREAMBANK REFORESTATION AREAS

MATCH LINE STA –Y2– 110+00.00
MATCH TO SHEET NO. 45

MATCH LINE STA –Y2– 124+00.00
MATCH TO SHEET NO. 47

DANA KILBY

DANNY JENKINS

LEONDUS McCRACKEN

AARON E. FARLEY & WIFE APRIL G. FARLEY

DANA KILBY

LIVESTOCK FENCE RESET DURING A–0009CE CONSTRUCTION

JAMES R. HYDE & JUNE N. HYDE, TRUSTEES

DANYELL D. WILSON

DAVID R. HYDE

JAIME J. HOOPER

BILLY HOLDER

TOE PROTECTION SEE DETAIL 46A CLASS B RIPRAP 68 TONS, 150 SY GEO

TIE PROPOSED PIPE INTO EXISTING BOX

REMOVE GUARDRAIL

ROCK EMBANKMENT WITH NATURAL STONE SEE DETAIL SHEET 2G–1

CLASS B RIPRAP 1 TONS, 5 SY GEO

CLASS B RIPRAP 1 TONS, 5 SY GEO

PROP. DRIVE

DO NOT DISTURB SEPTIC

REMOVE

RETAIN

GRADE TO DRAIN

15" RCP–IV

18" RCP–IV

Conv. JB To CB–E

Conv. JB To CB–G

Conv. DI To CB–G

REMOVE 18 LF

2'–6"C&G

10' PATH

10' MULTIUSE PATH W/TIMBER RAIL FENCE

WOOD RUB RAIL –Y2– 107+50± TO 110+55± SEE DETAIL SHT 2C–5

WOOD RUB RAIL –Y2– 112+63± TO 131+51± SEE DETAIL SHT 2C–5

ROCK EMBANKMENT –Y2– STA. 107+75 TO 111+25, RT SEE DETAIL SHT. 2G–2

ROCK EMBANKMENT –Y2– STA. 111+75 TO 114+75, RT SEE DETAIL SHT. 2G–2

ROCK EMBANKMENT –Y2– STA. 115+25 TO 116+75, RT SEE DETAIL SHT. 2G–2

ROCK EMBANKMENT –Y2– STA. 117+75 TO 128+25, RT SEE DETAIL SHT. 2G–2

CLASS B RIPRAP 1 TON, 5 SY GEO

CLASS B RIPRAP 1 TON, 5 SY GEO

CLASS I RIPRAP 2 TON, 6 SY GEO

CLASS I RIPRAP 2 TON, 6 SY GEO

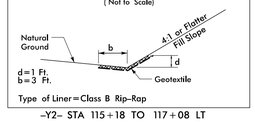
FLOODPLAIN BENCH SEE DETAIL 46D 500 SY COIR FIBER MATTING DDE=250 CY

DO NOT DISTURB BRIDGE

11 x 33 x 3 1.5 inch Skimmer with 0.375 inch Orifice Diameter 4 ft. weir ID 46.1

11 x 44 x 3 1.5 inch Skimmer with 0.5 inch Orifice Diameter 4 ft. weir ID 46.2

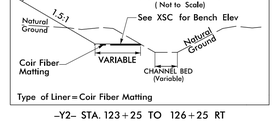
DETAIL 46A
TOE PROTECTION
(Not to Scale)



Type of Liner=Class B Rip–Rap

–Y2– STA 115+18 TO 117+08 LT

DETAIL 46D
FLOODPLAIN BENCH
(Not to Scale)



Type of Liner=Coir Fiber Matting

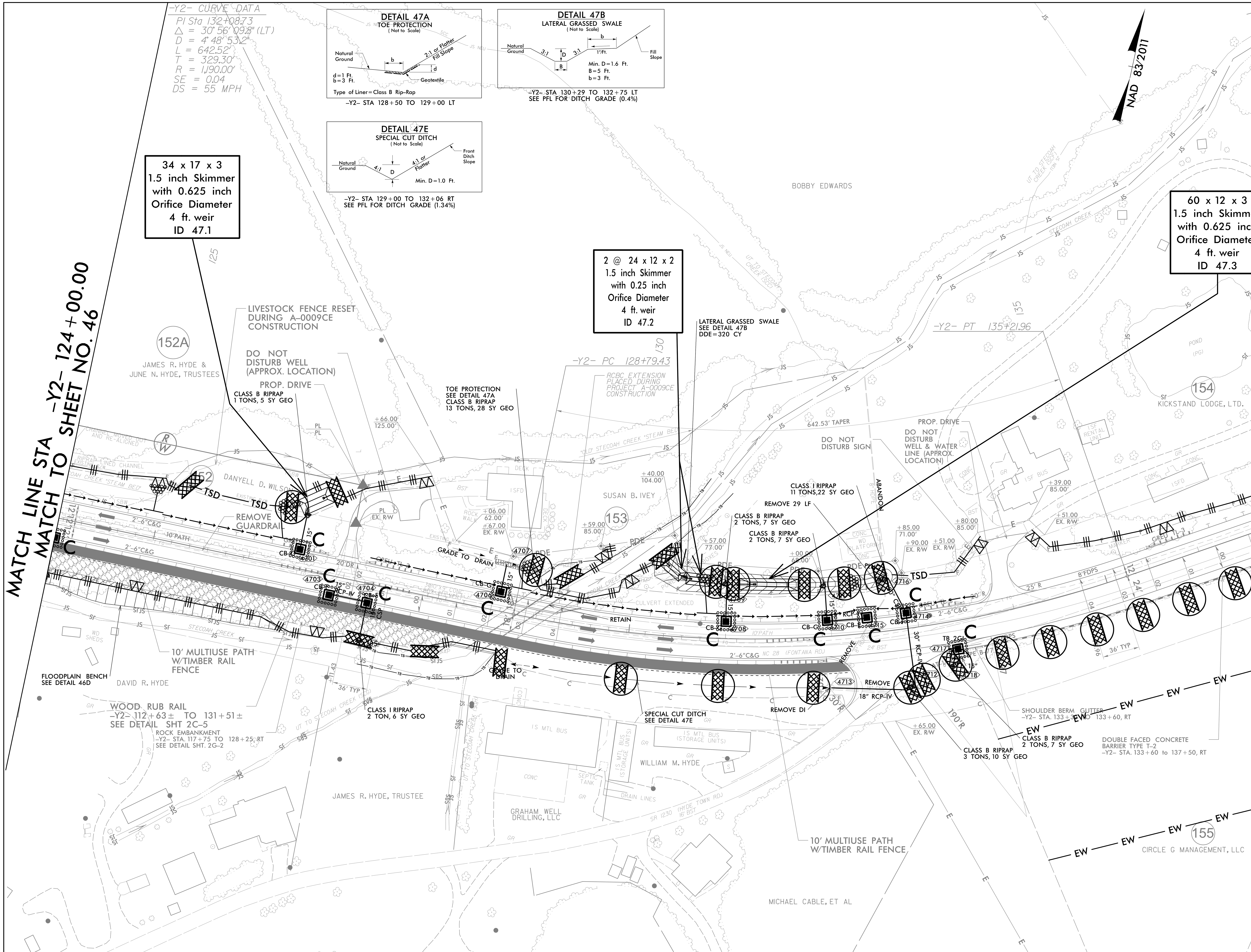
–Y2– STA. 123+25 TO 126+25 RT

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-14/CONST.47

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275



-Y2- CURVE DATA
PI Sta 132+08.73
Δ = 30° 56' 09.8" (LT)
D = 4° 48' 53.2"
L = 642.52'
T = 329.30'
R = 1,190.00'
SE = 0.04
DS = 55 MPH
DETAIL 47A
TOE PROTECTION
(Not to Scale)
Natural Ground
2:1 or Flatter Fill Slope
d=1 Ft.
b=3 Ft.
Geotextile
Type of Liner = Class B Rip-Rap
-Y2- STA 128+50 TO 129+00 LT
DETAIL 47B
LATERAL GRASSED SWALE
(Not to Scale)
Natural Ground
Fill Slope
Min. D=1.6 Ft.
B=5 Ft.
b=3 Ft.
-Y2- STA 130+29 TO 132+75 LT
SEE PFL FOR DITCH GRADE (0.4%)
DETAIL 47E
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
4:1 or Flatter
Front Ditch Slope
Min. D=1.0 Ft.
-Y2- STA 129+00 TO 132+06 RT
SEE PFL FOR DITCH GRADE (1.34%)
NAD 83/2011
34 x 17 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 47.1
2 @ 24 x 12 x 2
1.5 inch Skimmer
with 0.25 inch
Orifice Diameter
4 ft. weir
ID 47.2
60 x 12 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 47.3
MATCH LINE STA -Y2- 124+00.00
MATCH TO SHEET NO. 46
MATCH LINE STA -Y2- 138+00.00
MATCH TO SHEET NO. 48
BOBBY EDWARDS
152A
JAMES R. HYDE & JUNE N. HYDE, TRUSTEES
LIVESTOCK FENCE RESET DURING A-0009CE CONSTRUCTION
DO NOT DISTURB WELL (APPROX. LOCATION)
PROP. DRIVE
CLASS B RIPRAP
1 TONS, 5 SY GEO
TOE PROTECTION
SEE DETAIL 47A
CLASS B RIPRAP
13 TONS, 28 SY GEO
-Y2- PC 128+79.43
RCBC EXTENSION PLACED DURING PROJECT A-0009CE CONSTRUCTION
LATERAL GRASSED SWALE
SEE DETAIL 47B
DDE=320 CY
-Y2- PT 135+21.96
154
KICKSTAND LODGE, LTD.
642.53' TAPER
DO NOT DISTURB SIGN
PROP. DRIVE
DO NOT DISTURB WELL & WATER LINE (APPROX. LOCATION)
DANYELL D. WILSON
SUSAN B. IVEY
153
REMOVE GUARDRAIL
CLASS I RIPRAP
11 TONS, 22 SY GEO
REMOVE 29 LF
CLASS B RIPRAP
2 TONS, 7 SY GEO
CLASS B RIPRAP
2 TONS, 7 SY GEO
ABANDON
GRADE TO DRAIN
RETAIN
CULVERT EXTENDED
TSD
10' MULTIUSE PATH W/TIMBER RAIL FENCE
FLOODPLAIN BENCH
SEE DETAIL 46D
DAVID R. HYDE
WOOD RUB RAIL
-Y2- 112+63± TO 131+51±
SEE DETAIL SHT 2C-5
ROCK EMBANKMENT
-Y2- STA. 117+75 TO 128+25 RT
SEE DETAIL SHT. 2G-2
CLASS I RIPRAP
2 TON, 6 SY GEO
SPECIAL CUT DITCH
SEE DETAIL 47E
REMOVE DI
REMOVE
18" RCP-IV
30" RCP-IV
PROP. DRIVE
36' TYP
SHOULDER BERM GUTTER
-Y2- STA. 133+30 TO 133+60, RT
CLASS B RIPRAP
2 TONS, 7 SY GEO
CLASS B RIPRAP
3 TONS, 10 SY GEO
DOUBLE FACED CONCRETE BARRIER TYPE T-2
-Y2- STA. 133+60 TO 137+50, RT
JAMES R. HYDE, TRUSTEE
GRAHAM WELL DRILLING, LLC
WILLIAM M. HYDE
10' MULTIUSE PATH W/TIMBER RAIL FENCE
MICHAEL CABLE, ET AL
155
CIRCLE G MANAGEMENT, LLC

INSTALL MATTING FOR EROSION CONTROL ON ALL GRADED DITCHES AND GRADED SLOPES THAT DO NOT ALREADY CALL FOR OTHER MEANS OF PERMANENT OR TEMPORARY STABILIZATION

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

REFER TO EC-18 FOR STREAMBANK REFORESTATION AREAS

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-15/CONST.48
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

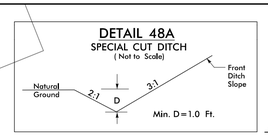
TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

–Y2– SURVEY DATA

PI Sta 142+30.76 –JS
Δ = 1°24'23" (LT)
D = 0°28'38.9"
L = 294.56'
T = 147.29'
R = 12,000.00'
SE = NC
DS = 60 MPH

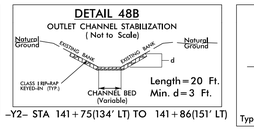
PI Sta 152+17.13 –JS
Δ = 54°14'50" (RT)
D = 5°21' R.P.
L = 1,013.07'
T = 548.10'
R = 1,070.00'
SE = 0.08
DS = 55 MPH

DETAIL 48A
SPECIAL CUT DITCH
(Not to Scale)



–Y2– STA. 139+00 TO 139+34 RT
SEE PFL FOR DITCH GRADE (0.5%)

DETAIL 48B
OUTLET CHANNEL STABLIZATION
(Not to Scale)

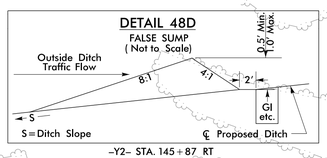


–Y2– STA 141+75(134' LT) TO 141+86(151' LT)

DETAIL 48C
SPECIAL CUT DITCH
(Not to Scale)

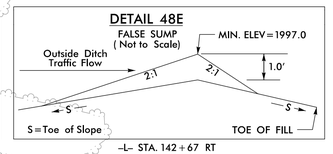
–Y2– STA. 143+50 TO 144+50 RT
SEE XSC FOR DITCH GRADE

DETAIL 48D
FALSE SUMP
(Not to Scale)



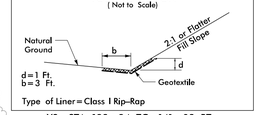
–Y2– STA. 145+87 RT
–Y2– STA. 151+10 RT

DETAIL 48E
FALSE SUMP
(Not to Scale)



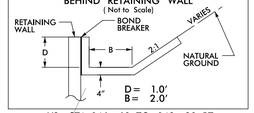
–L– STA. 142+67 RT

DETAIL 48F
TOE PROTECTION
(Not to Scale)



–Y2– STA 139+34 TO 141+09 RT
–Y2– STA 141+20 TO 142+25 RT

DETAIL 48G
CONCRETE DITCH
BEHIND RETAINING WALL
(Not to Scale)



–Y2– STA. 146+60 TO 148+80 RT
(SEE WALL ENVELOPES FOR DITCH GRADE)

NAD 83/2011

2 @ 48 x 12 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
4 ft. weir
ID 48.1

LIVESTOCK FENCING TO BE RESET BY CONTRACTOR

–Y2– PC 140+83.47

–Y2– PT 143+78.03

MATCH LINE STA –Y2– 138+00.00
MATCH TO SHEET NO. 47

MATCH LINE STA –Y2– 152+00.00
MATCH TO SHEET NO. 49

154
KICKSTAND LODGE, LTD.

156
ESTATE OF T. J. EDWARDS

155
CIRCLE G MANAGEMENT, LLC

157
MICHAEL HOLDER &
WIFE DELORES HOLDER

MICHAEL HOLDER

OUTLET CHANNEL STABILIZATION SEE DETAIL 48B
CLASS I RIPRAP
30 TONS, NO GEO

CLASS B RIPRAP
2 TONS, 7 GEOTECH

CLASS B RIPRAP
3 TONS, 10 SY GEO

CLASS I RIPRAP
4 TONS, 10 GEOTECH

DO NOT BURY INVERT

DO NOT DISTURB

PROP. DRIVE

1045' LANE DROP TAPER

FILL WITH FLOWABLE FILL
EST 108 CY

FILL WITH FLOWABLE FILL
EST 5 CY

FILL WITH FLOWABLE FILL
EST 6 CY

REMOVE 20 LF

REMOVE HW

REMOVE
18" RCP–IV

SPECIAL CUT DITCH
SEE DETAIL 48A

FALSE SUMP
SEE DETAIL 48E

FALSE SUMP
SEE DETAIL 48D

CUT TO FILL TRANSISTION
CLASS II RIPRAP
40 TONS, 42 SY GEO

TOE PROTECTION
SEE DETAIL 48F
CLASS I RIPRAP
57 TONS, 80 SY GEO

TOE PROTECTION
SEE DETAIL 48F
CLASS I RIPRAP
80 TONS, 112 SY GEO

SPECIAL CUT DITCH
SEE DETAIL 48C
CLASS B RIPRAP
45 TONS, 100 SY GEO

CLASS B RIP–RAP
3 TONS, 7 SY GEO

CONC. DITCH
BEHIND
RETAINING WALL
SEE DETAIL 48G

–Y2– PC 146+69.03

PRECAST REINFORCED
CONC. BARRIER,
SINGLE FACED
–Y2– STA. 146+60± TO
148+80±, RT

PROP. RETAINING WALL #41
W/CONCRETE DITCH
BEGIN –Y2– STA. 146+60±
END –Y2– STA. 148+80±

SHOULDER BERM GUTTER
–Y2– STA. 139+50 TO
142+00, RT

CONTRACTOR TO REPAVE
POPLAR HILL DRIVE IF
DAMAGED DURING
CONSTRUCTION

2 @ 36 x 12 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 48.3

50 x 12 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 48.2

52 x 13 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 48.1 F

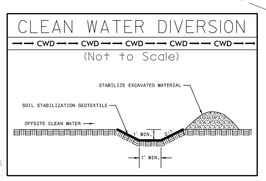
2 @ 65 x 13 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
5 ft. weir
ID 48.2 F

CLEAN WATER DIVERSIONS ARE INDEPENDENT OF OTHER EC DITCH LINES AND TERMINATE INTO A SC–A.

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

INSTALL MATTING FOR EROSION CONTROL ON ALL GRADED DITCHES AND GRADED SLOPES THAT DO NOT ALREADY CALL FOR OTHER MEANS OF PERMANENT OR TEMPORARY STABILIZATION

CLEAN WATER DIVERSION
(Not to Scale)



PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-16/CONST.49
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

NAD 83/2011

CLEAN WATER DIVERSIONS ARE INDEPENDENT OF OTHER EC DITCH LINES AND TERMINATE INTO A SC–A.

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

INSTALL MATTING FOR EROSION CONTROL ON ALL GRADED DITCHES AND GRADED SLOPES THAT DO NOT ALREADY CALL FOR OTHER MEANS OF PERMANENT OR TEMPORARY STABILIZATION

–Y2– CURVE DATA

PI Sta 152+17.13
△ = 54° 14' 50.1" (RT)
D = 5° 21' 17.1"
L = 1,013.07'
T = 548.10'
R = 1,070.00'
SE = 0.08
DS = 55 MPH

PI Sta 167+46.16
△ = 72° 53' 32.5" (LT)
D = 4° 58' 56.1"
L = 1,463.04'
T = 849.[illegible]
R = 1,150.00'
SE = 0.06
DS = 55 MPH

DETAIL 49A
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
4:1
4:1
2'
0.5' Min. 1.0' Max.
GI etc.
S
S=Ditch Slope
℄ Proposed Ditch
–Y2– STA. 153+86 RT

CLEAN WATER DIVERSION
(Not to Scale)
STABILIZE EXCAVATED MATERIAL
SOIL STABILIZATION GEOTEXTILE
OFFSITE CLEAN WATER
MIN.
4:1
1' MIN.

MATCH LINE STA –Y2– 152+00.00
MATCH TO SHEET NO. 48

MATCH LINE STA –Y2– 166+00.00
MATCH TO SHEET NO. 50

ROGER HOLDER

157 MICHAEL HOLDER & WIFE DELORES HOLDER

159 RONALD J. BAKER, JR.

158 LEONDUS McCRACKEN & WIFE DONNA McCRACKEN

160 LEONDUS McCRACKEN

156 ESTATE OF T. J. EDWARDS

WOLF CREEK DEN, LLC

LEONDUS McCRACKEN

SR 1535 (GUNTER GAP RD.) (18' BST)

1045' LANE DROP TAPER

CLASS B RIPRAP
2 TONS, 7 GEOTECH

FILL WITH FLOWABLE FILL
EST 3 CY

100'R

70'R

RETAIN

+08.00
EX. R/W

+85.24
EX. R/W

+03.00
EX. R/W

+55.00
422.00'

+50.00
EX. R/W

+29.00
561.00'

+68.00
556.00'

8'FDPS

PLUG

18" RCP–IV

48" RCP–IV

4908 GI–D

4910

CLASS B RIPRAP
2 TONS, 7 SY GEO

FALSE SUMP
SEE DETAIL 49A

SHOULDER BERM GUTTER
–Y2– STA. 152+95 TO
153+25, RT

DOUBLE FACED CONCRETE
BARRIER TYPE T–2
–Y2– STA. 153+25 TO 158+25, RT

64 x 16 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
4 ft. weir
ID 49.1 F

–Y2– PT 156+82.10

GREU TYPE B

24427

2'6" C&G

18"

GRADE TO DRAIN

CLASS B RIPRAP
2 TONS, 10 SY GEO

TIE TO EX 18" HDPE

REMOVE
29 LF

DO NOT DISTURB

18" HDPE
DIRECTION ONLY

PROP. DRIVE

FOR CONCRETE CURB & DRIVE
LAYOUT SEE DETAIL SHT 2B–1

DOUBLE FACED CONCRETE
BARRIER TYPE T–2
–Y2– STA. 156+50 TO 161+00, LT

–Y2– PC 158+96.87

SHOULDER BERM GUTTER
–Y2– STA. 161+00 TO
161+30, LT

CLASS B RIPRAP
2 TONS, 7 SY GEO

100' TAPER

100' BUFFER

660' LANE DROP TAPER

510' TAPER TO EXISTING

195' ISLAND TAPER TO EXIST.

748.13' TAPER TO EXISTING

FOR CONCRETE ISLAND
LAYOUT SEE DETAIL SHT 2B–1

2 @ 90 x 15 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
7 ft. weir
ID 49.1

PROP. DRIVE

PROP.
GRAVEL DRIVE

REMOVE BLIND JB

REMOVE

15" RCP–IV

TB 2GI

2GI

4905

4907

4908

4909

4910

E491

E492

E494

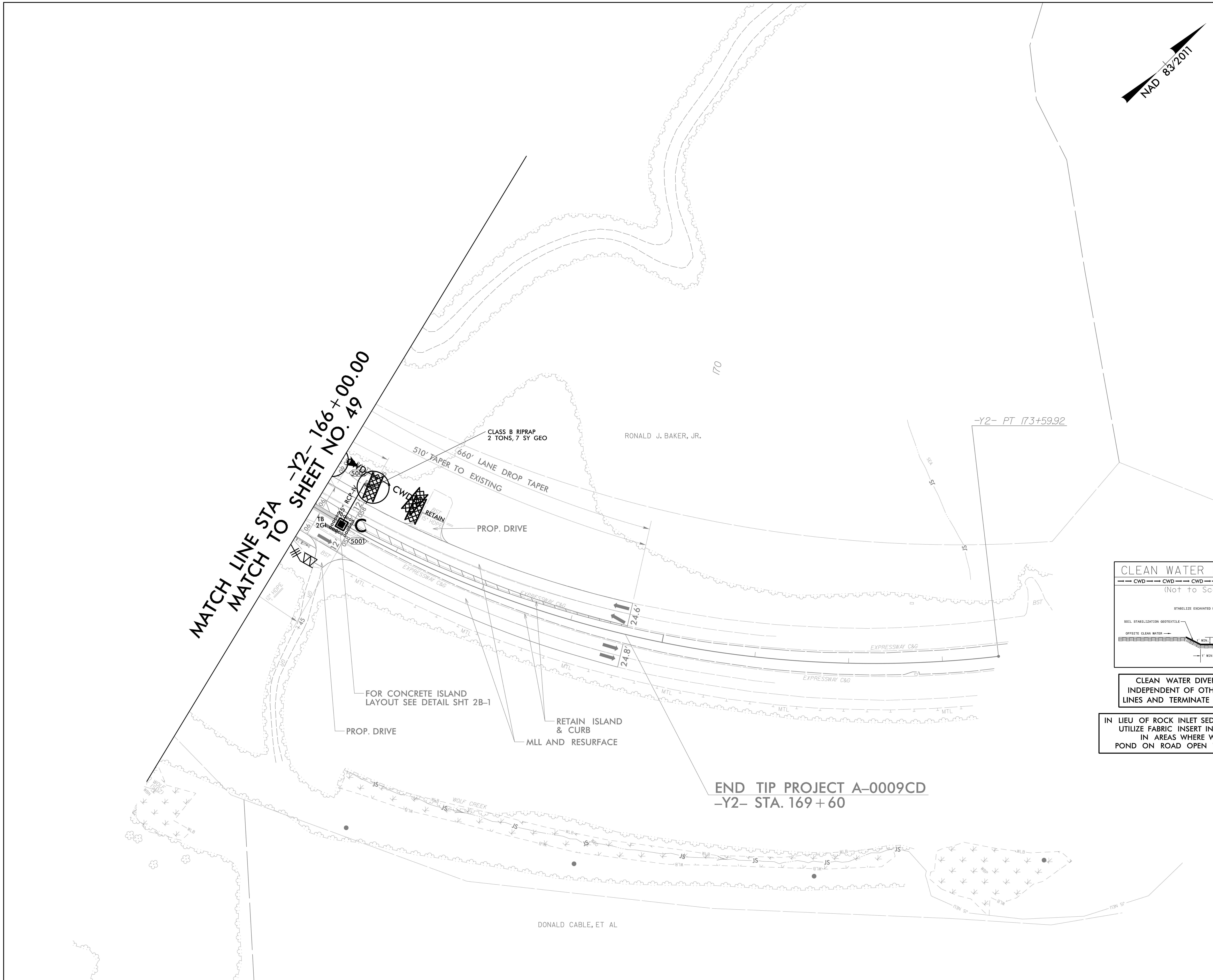
CWD

TIE PROPOSED SYSTEM INTO EXISTING 15" CMP (UNKNOWN INVERT). CONTRACTOR SHALL CONFIRM HORIZONTAL & VERTICAL LOCATION OF EXISTING 15" CMP PRIOR TO ORDERING STR# 4905.

TIE PROPOSED SYSTEM INTO EXISTING 24" CMP (UNKNOWN INVERT). CONTRACTOR SHALL CONFIRM ELEVATIONS PRIOR TO ORDERING STR #4907.

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-17/CONST.50
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

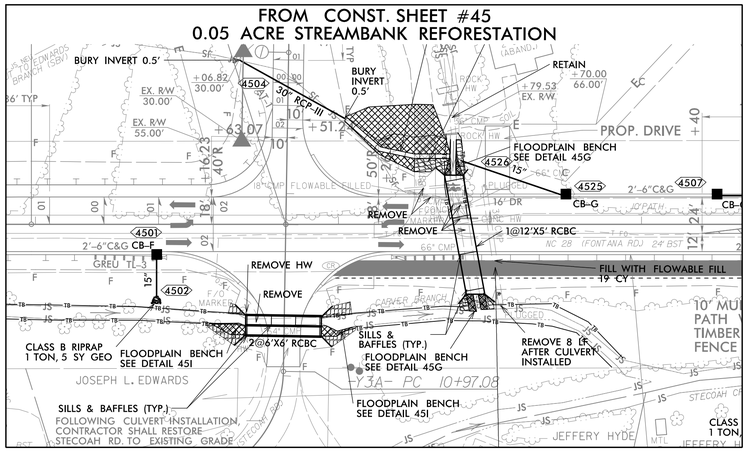

NAD 83/2011
MATCH LINE STA -Y2- 166+00.00
MATCH TO SHEET NO. 49
CLASS B RIPRAP
2 TONS, 7 SY GEO
RONALD J. BAKER, JR.
-Y2- PT 173+59.92
510' TAPER TO EXISTING
660' LANE DROP TAPER
CWD
RETAIN
PROP. DRIVE
24.6'
24.8'
EXPRESSWAY C&G
MTL
BST
FOR CONCRETE ISLAND
LAYOUT SEE DETAIL SHT 2B-1
PROP. DRIVE
RETAIN ISLAND
& CURB
MLL AND RESURFACE
END TIP PROJECT A-0009CD
-Y2- STA. 169+60
WOLF CREEK
DONALD CABLE, ET AL
CLEAN WATER DIVERSION
(Not to Scale)
STABILIZE EXCAVATED MATERIAL
SOIL STABILIZATION GEOTEXTILE
OFFSITE CLEAN WATER
CLEAN WATER DIVERSIONS ARE INDEPENDENT OF OTHER EC DITCH LINES AND TERMINATE INTO A SC-A.
IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

SEE RF–2, RF–3, AND PROJECT SPECIAL PROVISIONS

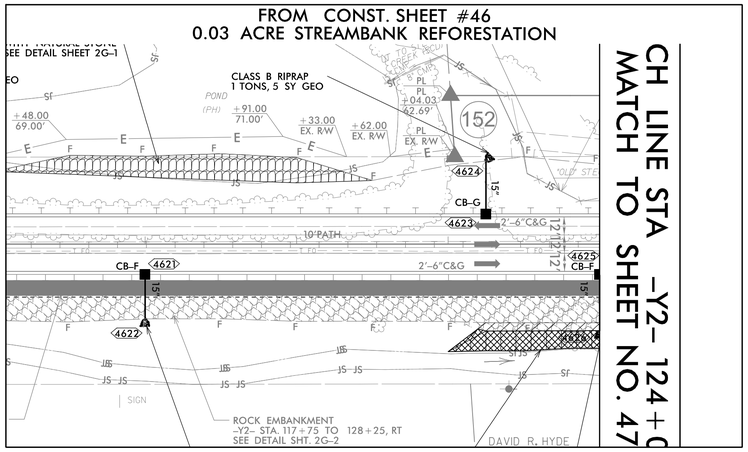
PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	EC-18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
201 W. MARION ST–STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

FROM CONST. SHEET #45
0.05 ACRE STREAMBANK REFORESTATION



FROM CONST. SHEET #46
0.03 ACRE STREAMBANK REFORESTATION



FROM CONST. SHEET #47
0.09 ACRE STREAMBANK REFORESTATION