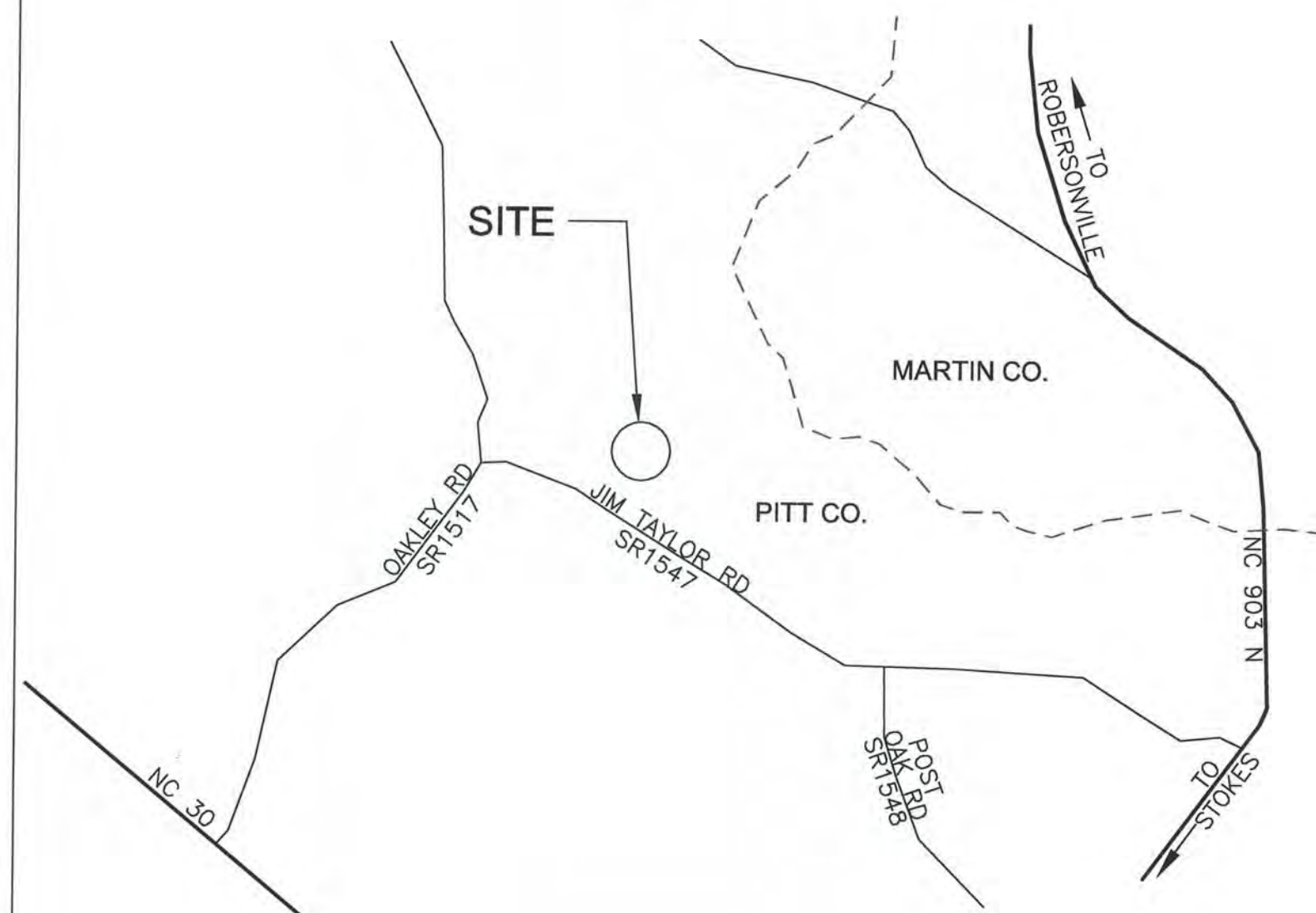


### VICINITY MAP



### SHEET INDEX

- SHEET 1- TITLE, VICINITY MAP, SHEET INDEX, AND GENERAL NOTES
- SHEET 2- 0+00 TO 12+00 PLAN VIEW
- SHEET 3 - 12+00 TO 26+00 PLAN VIEW
- SHEET 4 - 26+00 TO 39+25 PLAN VIEW
- SHEET 5 - LONG PROFILE
- SHEET 6 - CROSS-SECTIONS

### SURVEY NOTES

1. ALL DISTANCES ARE HORIZONTAL UNLESS OTHERWISE NOTED.
2. THE VERTICAL DATUM IS NAVD88.
3. THE BASIS OF BEARINGS IS NCGS STATE PLANE GRID COORDINATES NAD83 (NSRS 2007) DATUM.
4. CONTROL SET USING RTK GPS METHODS AND THE NCGS CORS NETWORK. CONTROL ESTABLISHED AND VERIFIED THROUGH AVERAGED 180 EPOCH RTK OBSERVATIONS MADE AT A MINIMUM OF TWO HOURS APART. RTK GPS UNIT USED WAS SPECTRA EPOCH 35 GPS ROVER OPERATING AT 450-470 MHZ.
5. THIS MAP IS NOT FOR RECORDATION, SALES, OR CONVEYANCES AND DOES NOT COMPLY WITH G.S. 47-30 MAPPING REQUIREMENTS.
6. ALL CROSS-SECTIONS ARE FROM LEFT BANK TO RIGHT BANK (FACING DOWNSTREAM).
7. THE LONGITUDINAL STATIONING SHOWN ON THE PLAN VIEW IS THE AS-BUILT SURVEY LENGTH WHICH MAY VARY FROM THE FINAL DESIGN LENGTH.

U:\171300129\Construction\Redlines\REDLINES.dwg  
 2011/08/04 3:29 PM By: Correll, CW

Revision	By	Appd.	YY.MM.DD
#1	EEP	Comments	7-18-11
	C.W.G.	C.W.G.	11.08.05

Seal



Consultants  
 Contractor  
 Ecosystems Grading Solutions, Inc.

Surveyor  
 Turner Land Surveying, PLLC



Stantec  
 801 Jones Franklin St.  
 Suite 300  
 Raleigh, Nc 27606  
 Tel. 919.851-6866  
 Fax. 919.518.7024  
 www.stantec.com

Client/Project  
 NC Ecosystem Enhancement Program

Oakley Crossroads Stream & Wetland Restoration

Pitt County, NC

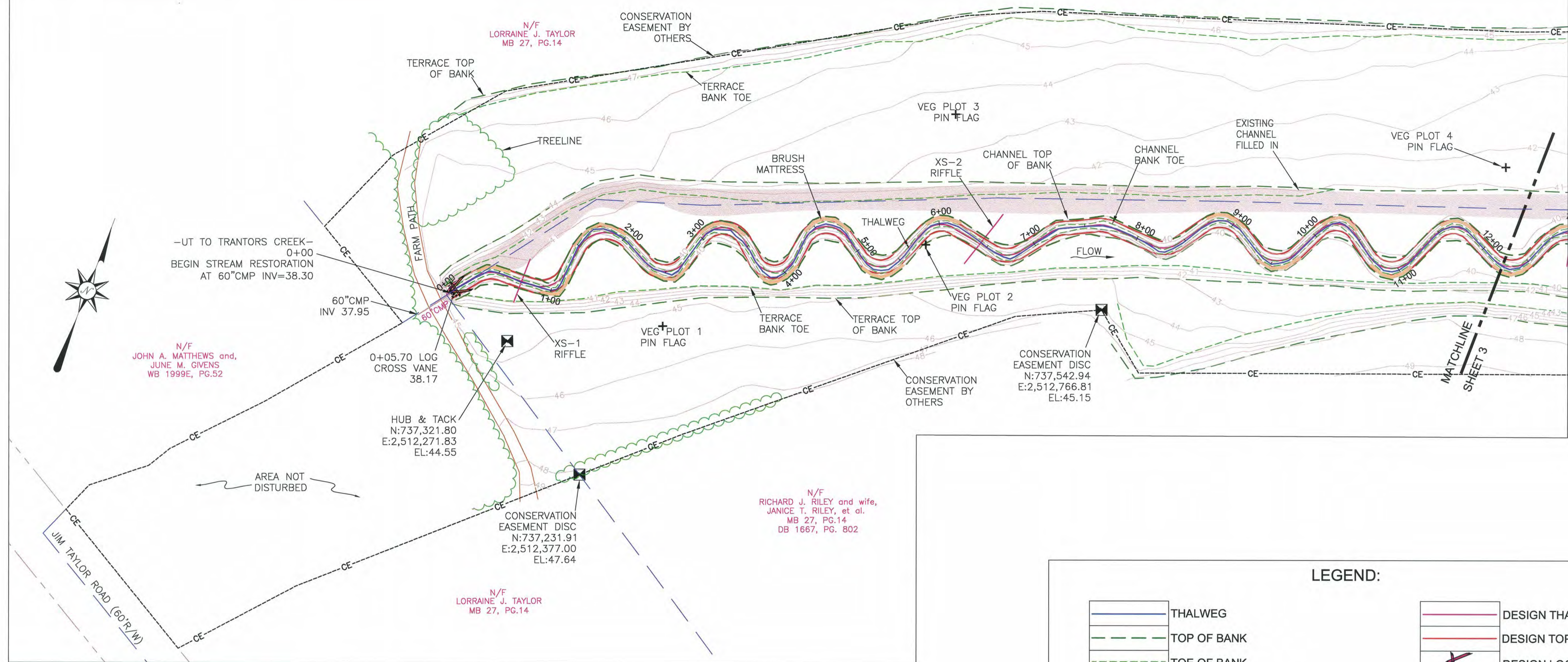
Title  
 Redline Plan Sheets

Project No. 171300129  
 Drawing No.

Scale 1" = 150'  
 Sheet

Revision

File Name: REDLINES.DWG	CWG	CWG	N/A	11.07.11
	Dwn.	Chkd.	Desgn.	YY.MM.DD



-UT TO TRANTORS CREEK-  
0+00  
BEGIN STREAM RESTORATION  
AT 60°CMP INV=38.30

N/F  
JOHN A. MATTHEWS and,  
JUNE M. GIVENS  
WB 1999E, PG.52

60°CMP  
INV 37.95

0+05.70 LOG  
CROSS VANE  
38.17

AREA NOT  
DISTURBED

JIM TAYLOR ROAD (60°R/W)

CONSERVATION  
EASEMENT DISC  
N:737,231.91  
E:2,512,377.00  
EL:47.64

N/F  
LORRAINE J. TAYLOR  
MB 27, PG.14

N/F  
RICHARD J. RILEY and wife,  
JANICE T. RILEY, et al.  
MB 27, PG.14  
DB 1667, PG. 802

CONSERVATION  
EASEMENT DISC  
N:737,542.94  
E:2,512,766.81  
EL:45.15

MATCHLINE  
SHEET 3

**DEVIATION FROM DESIGN PLAN VIEW IS WITHIN DESIGN TOLERANCES.**

**STRUCTURE ELEVATIONS ARE WITHIN DESIGN TOLERANCES.**

**ALL REVISIONS TO THE DESIGN HAVE BEEN INCORPORATED AS THE FINAL DESIGN SHOWN ON THESE SHEETS.**

**THIS PROJECT IS A PRIORITY II STREAM RESTORATION.**

**LEGEND:**

	THALWEG		DESIGN THALWEG
	TOP OF BANK		DESIGN TOP OF BANK
	TOE OF BANK		DESIGN LOG CROSS VANE
	CENTERLINE DITCH		DESIGN LOG SILL
	EXISTING WETLANDS		DESIGN LOG VANE WITH ROCK SILL
	CONSERVATION EASEMENT		BENCH MARK/CONTROL PT
	PROPERTY LINE NOT SURVEYED		LOG SILL
	BENCH MARK/CONTROL PT		LOG VANE WITH ROCK SILL
	LOG SILL		LOG CROSS VANE
	LOG VANE WITH ROCK SILL		OPEN WATER
	LOG CROSS VANE		

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 20/11/08/04 2:29 PM By: Gaskill, CW

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

Seal

C.W. Gaskill 8-5-11

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Contractor  
Ecosystems Grading Solutions, Inc.

Surveyor  
Turner Land Surveying, PLLC

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Client/Project  
NC Ecosystem Enhancement Program

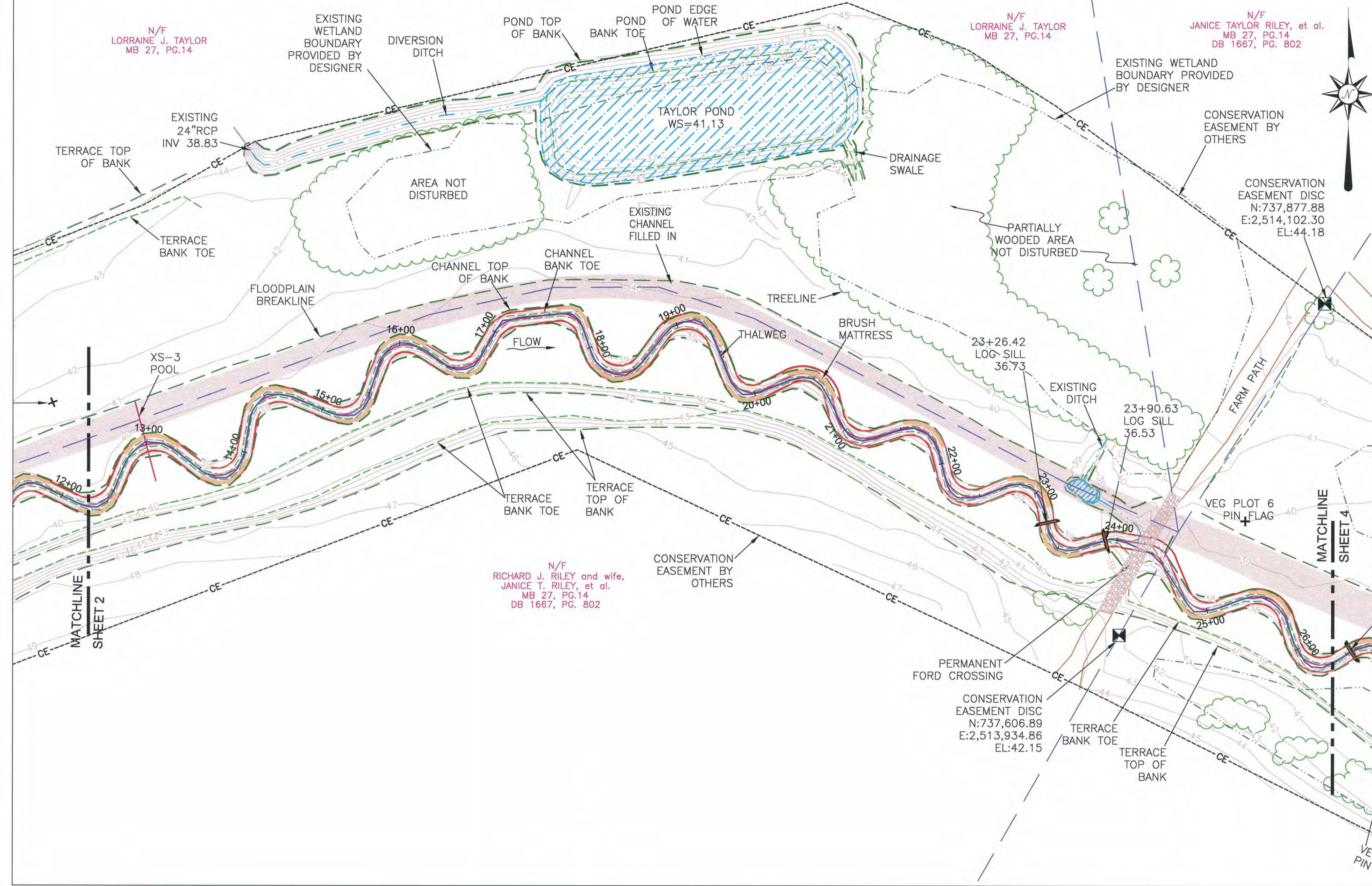
Oakley Crossroads Stream & Wetland Restoration

Pitt County, NC

File Name: REDLINES.DWG

CWG	CWG	N/A	11.07.11
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title		0+00 TO 12+00 PLAN VIEW	
Project No.	Scale	1" = 50'	
171300129			
Drawing No.	Sheet	Revision	
	2 of 6		



**DEVIATION FROM DESIGN PLAN VIEW IS WITHIN DESIGN TOLERANCES.**

**STRUCTURE ELEVATIONS ARE WITHIN DESIGN TOLERANCES.**

**ALL REVISIONS TO THE DESIGN HAVE BEEN INCORPORATED AS THE FINAL DESIGN SHOWN ON THESE SHEETS.**

**THIS PROJECT IS A PRIORITY II STREAM RESTORATION.**

**LEGEND:**

	THALWEG
	TOP OF BANK
	TOE OF BANK
	CENTERLINE DITCH
	EXISTING WETLANDS
	CONSERVATION EASEMENT
	PROPERTY LINE NOT SURVEYED
	BENCH MARK/CONTROL PT
	LOG SILL
	LOG VANE WITH ROCK SILL
	LOG CROSS VANE
	OPEN WATER
	DESIGN THALWEG
	DESIGN TOP OF BANK
	DESIGN LOG CROSS VANE
	DESIGN LOG SILL
	DESIGN LOG VANE WITH ROCK SILL

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 2011/08/04 9:29 AM By: Gaskill, CW

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

Seal

*C.W. Gaskill 8-5-11*

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Client/Project  
 NC Ecosystem Enhancement Program

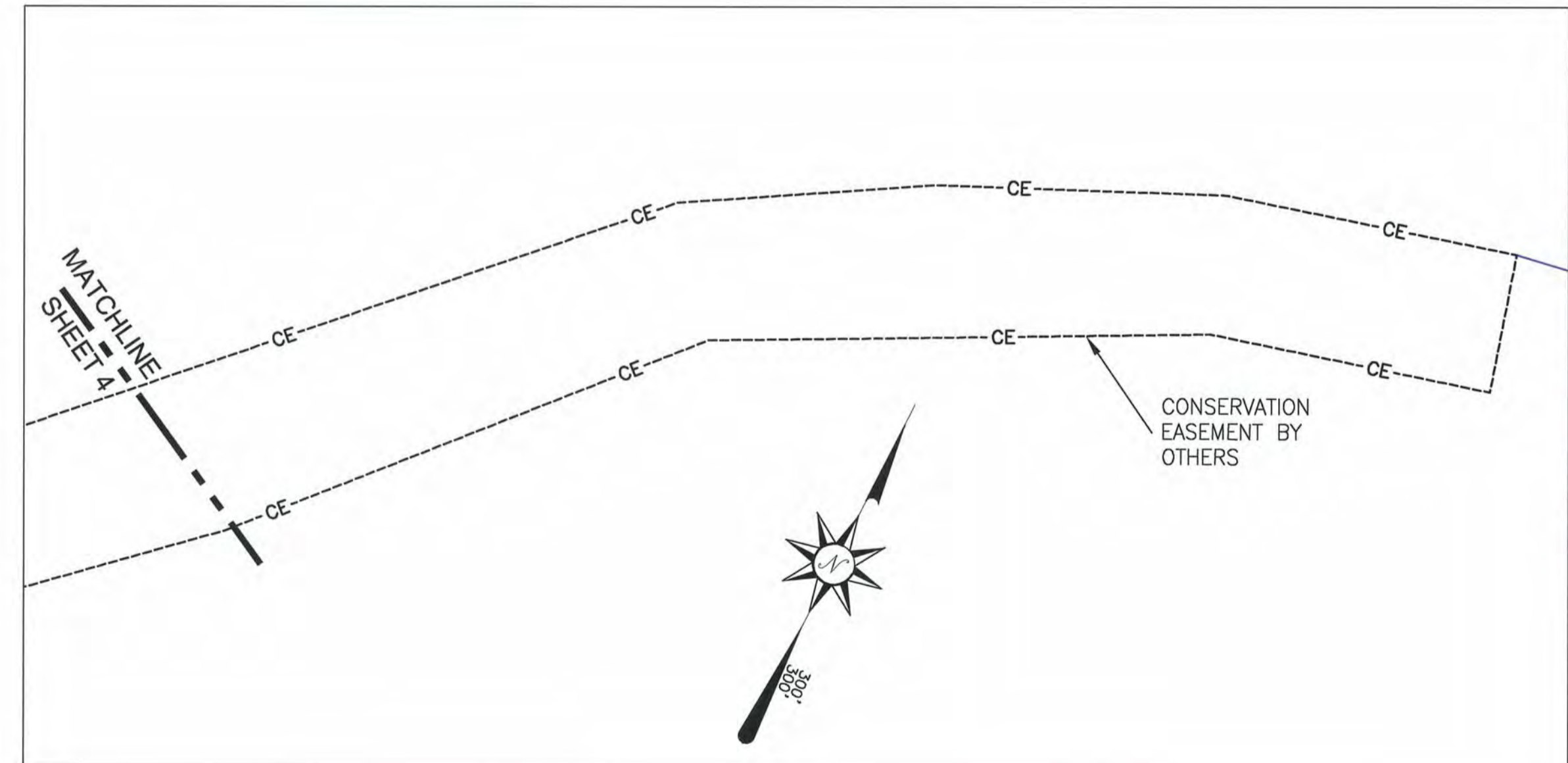
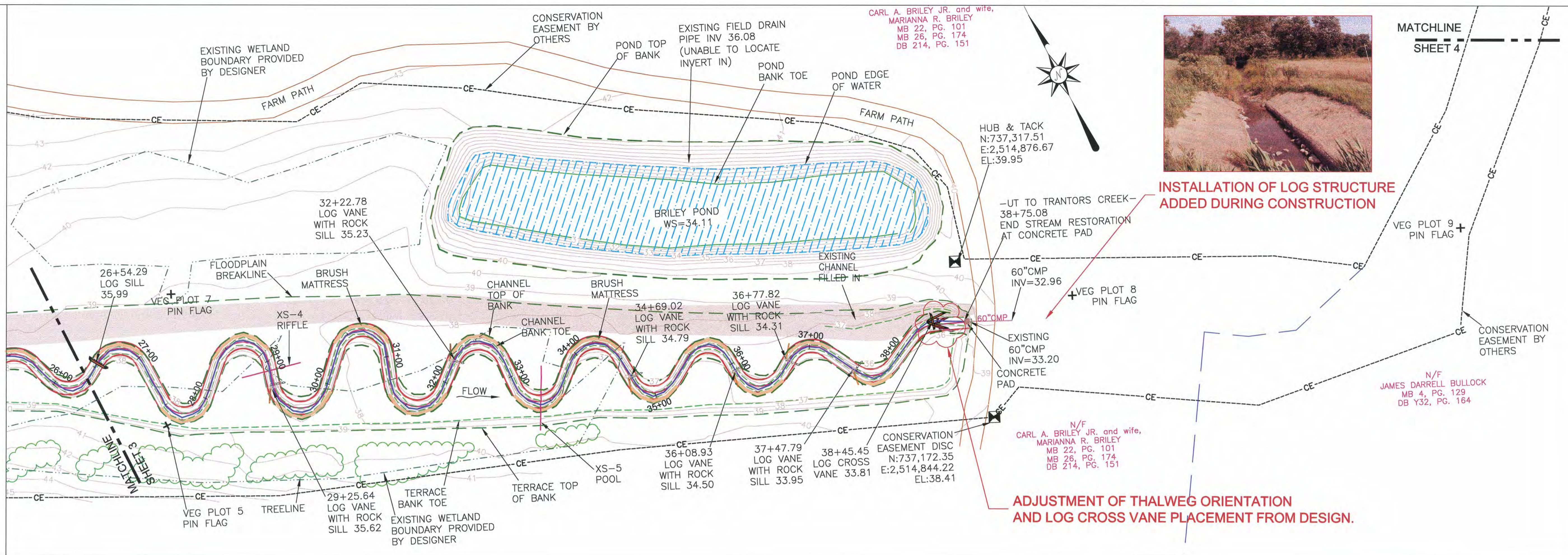
Oakley Crossroads Stream & Wetland Restoration

Pitt County, NC

File Name: REDLINES.DWG

CWG	CWG	N/A	11.07.11
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title 12+00 TO 26+00 PLAN VIEW		
Project No. 171300129	Scale 1" = 50'	
Drawing No.	Sheet 3 of 6	Revision



**DEVIATION FROM DESIGN PLAN VIEW IS WITHIN DESIGN TOLERANCES.**

**STRUCTURE ELEVATIONS ARE WITHIN DESIGN TOLERANCES.**

**ALL REVISIONS TO THE DESIGN HAVE BEEN INCORPORATED AS THE FINAL DESIGN SHOWN ON THESE SHEETS.**

**THIS PROJECT IS A PRIORITY II STREAM RESTORATION.**

**LEGEND:**

	THALWEG		DESIGN THALWEG
	TOP OF BANK		DESIGN TOP OF BANK
	TOE OF BANK		DESIGN LOG CROSS VANE
	CENTERLINE DITCH		DESIGN LOG SILL
	EXISTING WETLANDS		DESIGN LOG VANE WITH ROCK SILL
	CONSERVATION EASEMENT		
	PROPERTY LINE NOT SURVEYED		
	BENCH MARK/CONTROL PT		
	LOG SILL		
	LOG VANE WITH ROCK SILL		
	LOG CROSS VANE		
	OPEN WATER		

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Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

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 NC Ecosystem Enhancement Program

Oakley Crossroads Stream & Wetland Restoration

Pitt County, NC

File Name: REDLINES.DWG      CWG      CWG      N/A      11.07.11  
 Dwn.      Chkd.      Dsgn.      YY.MM.DD

Title  
 26+00 TO 39+25 PLAN VIEW

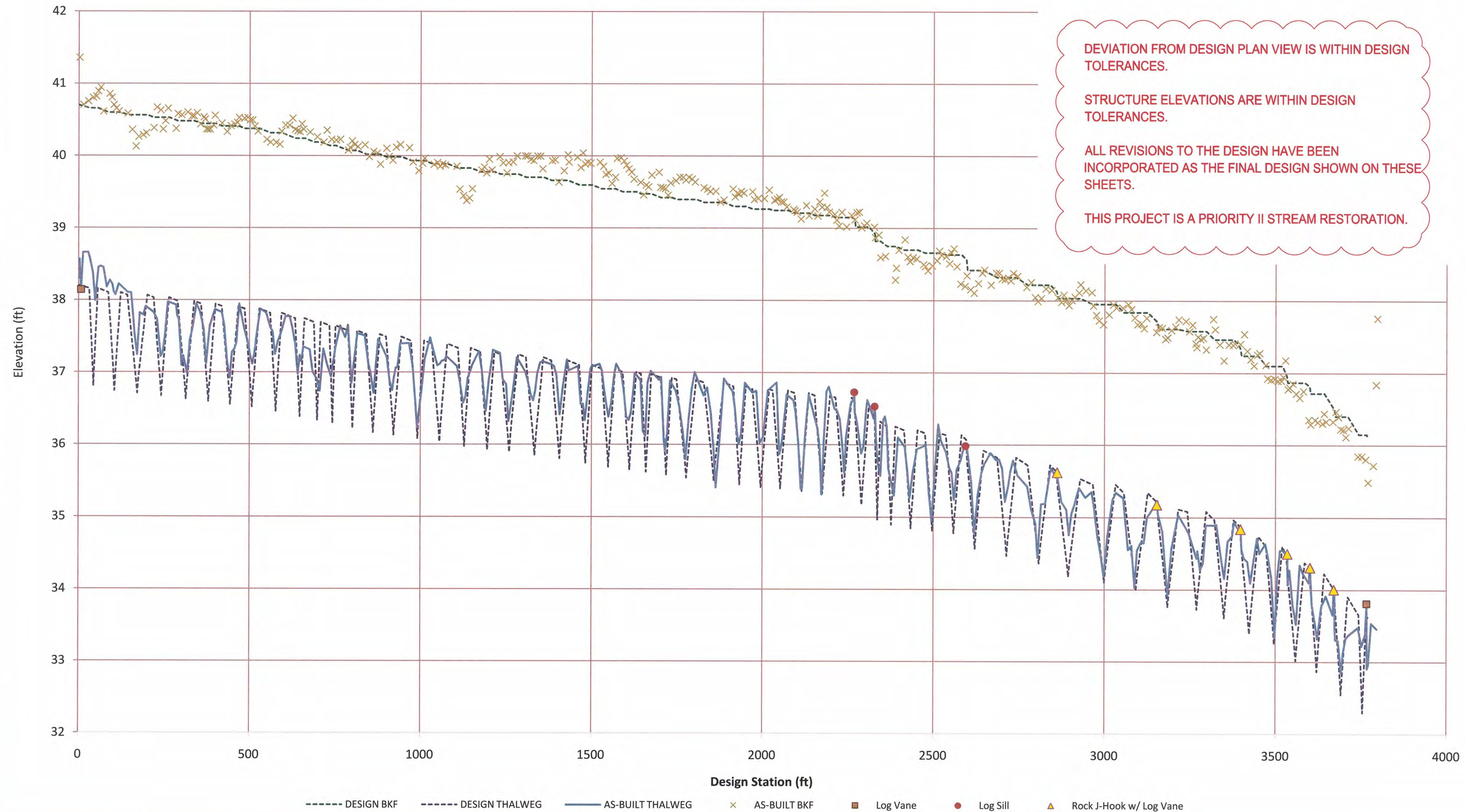
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 171300129

Scale  
 1" = 50'

Drawing No.  
 4 of 6

Revision  
 6

# Oakley Profile As-Built



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 Redlines REDLINES.dwg

Revision	By	Appd.	YY.MM.DD	Issued	By	Appd.	YY.MM.DD

Seal

*C.W. Gaskill 8-5-11*

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 NC Ecosystem Enhancement Program

Oakley Crossroads Stream & Wetland Restoration

Pitt County, NC

File Name: REDLINES.DWG  
 CWG Dwn.  
 CWG Chkd.  
 N/A Dsgn.  
 11.07.11 YY.MM.DD

Title  
 Long Profile

Project No.  
 171300129

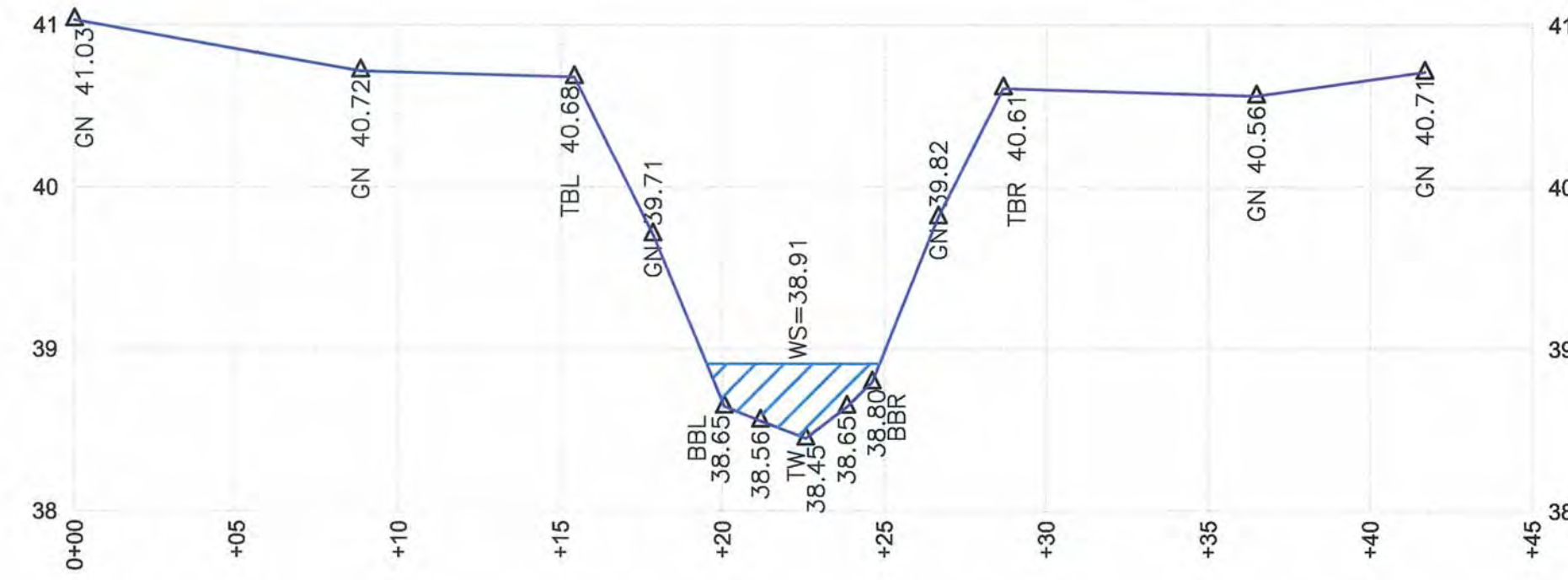
Drawing No.  
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Scale  
 NONE

Sheet  
 5 of 6

Revision  
 6

CROSS SECTION 1 - RIFFLE



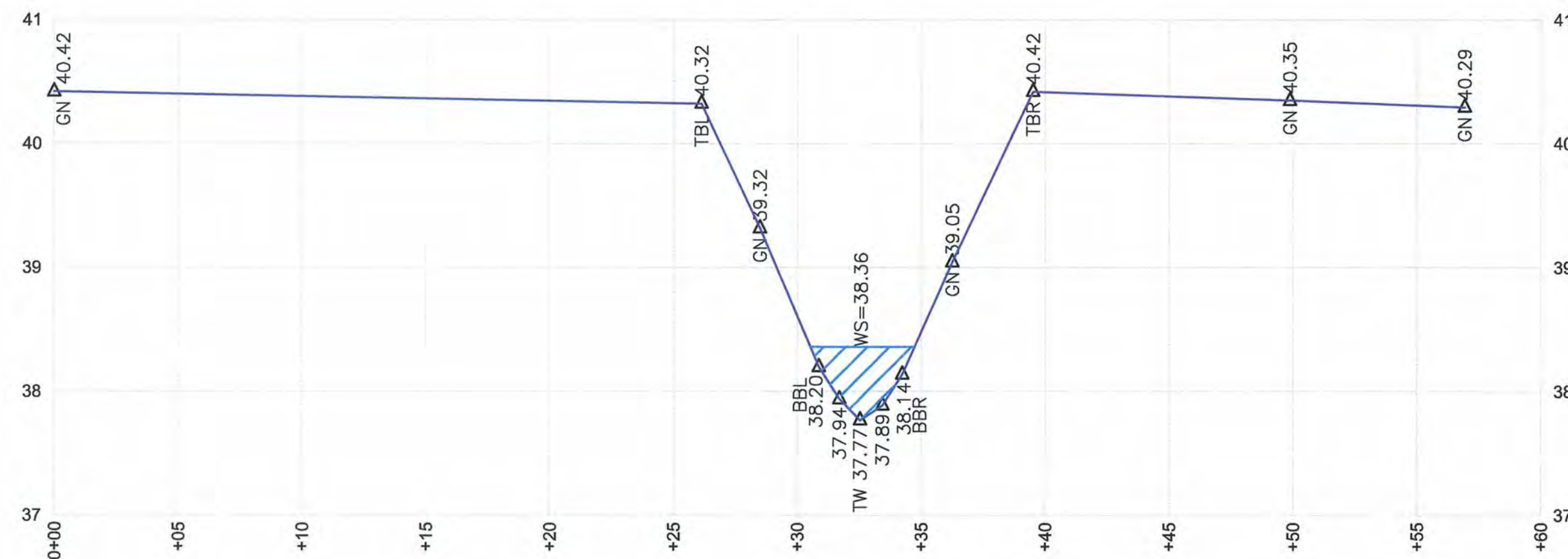
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STRUCTURE ELEVATIONS ARE WITHIN DESIGN TOLERANCES.

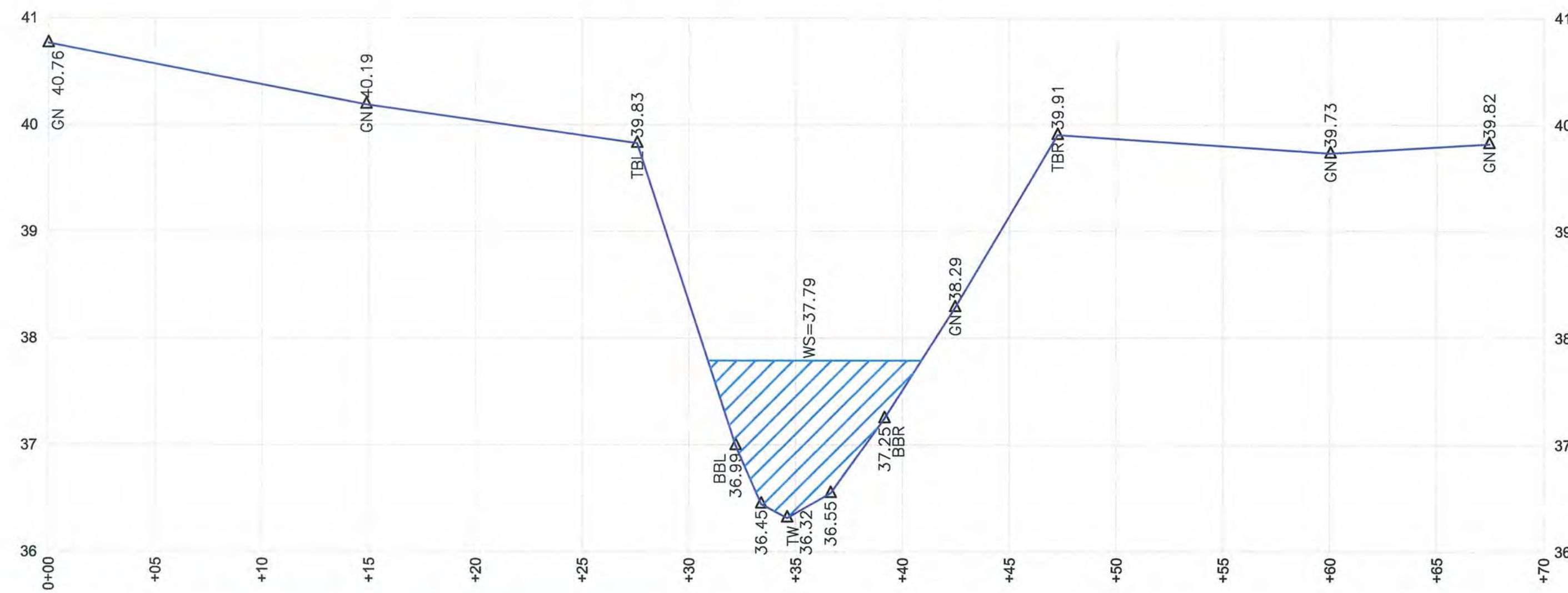
ALL REVISIONS TO THE DESIGN HAVE BEEN INCORPORATED AS THE FINAL DESIGN SHOWN ON THESE SHEETS.

THIS PROJECT IS A PRIORITY II STREAM RESTORATION.

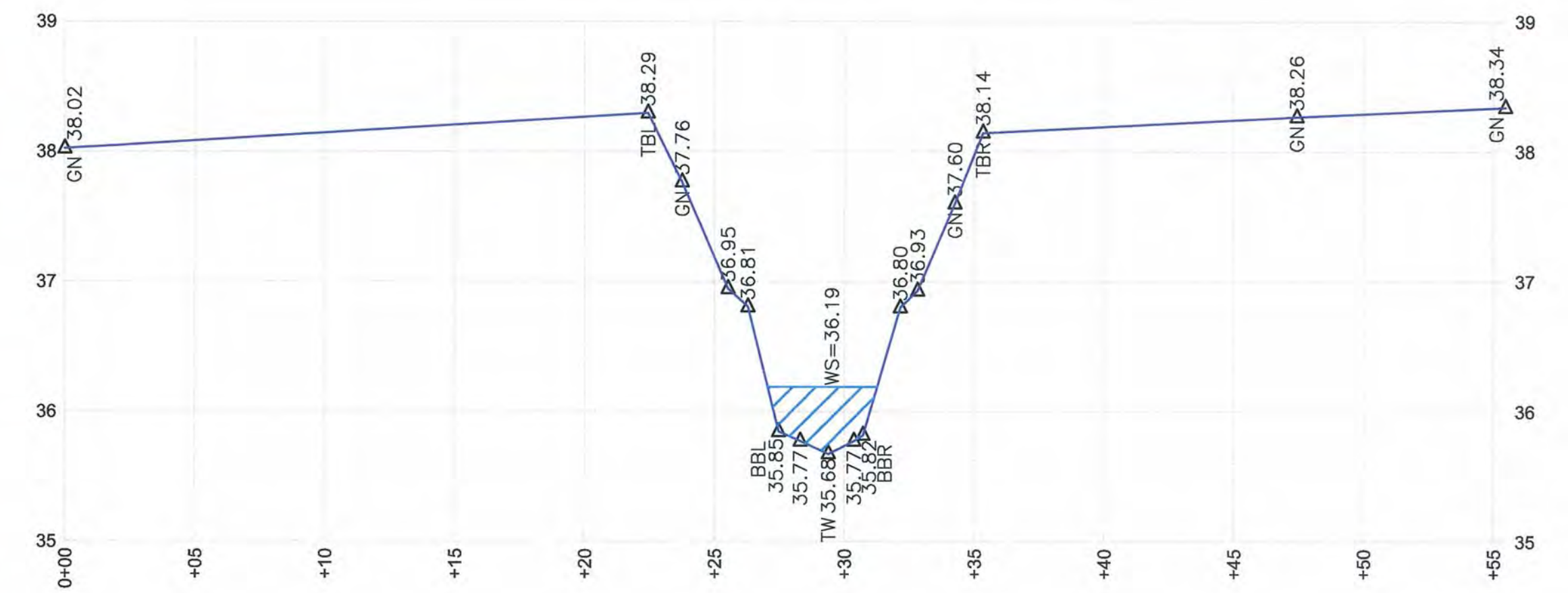
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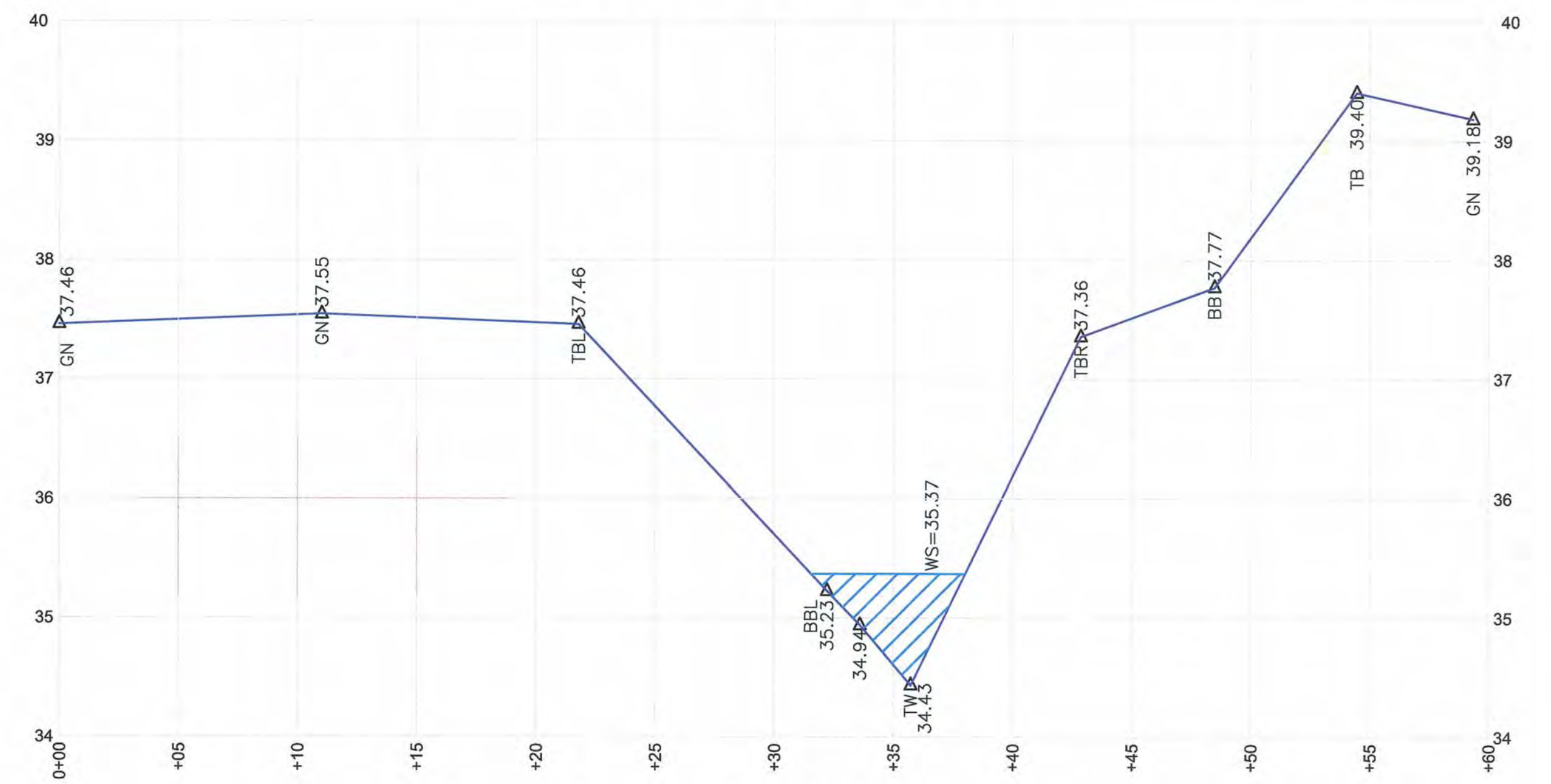
CROSS SECTION 3 - POOL



CROSS SECTION 4 - RIFFLE



CROSS SECTION 5 - POOL

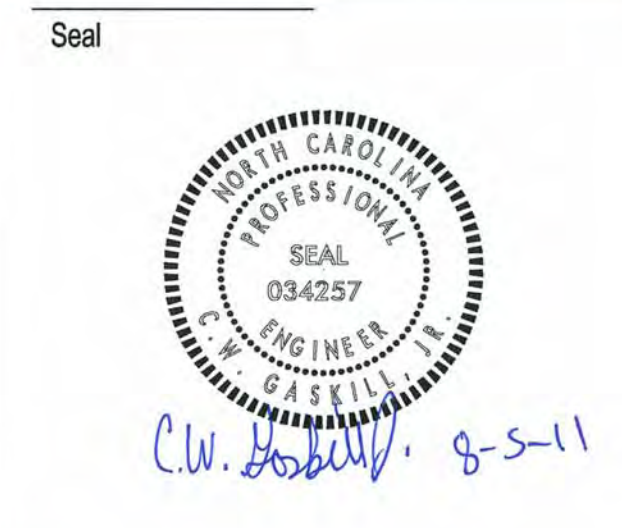


GN-GROUND  
 TBL-CHANNEL LEFT TOP OF BANK  
 TBR-CHANNEL RIGHT TOP OF BANK  
 BBL-CHANNEL LEFT BANK TOE  
 BBR-CHANNEL RIGHT BANK TOE  
 TW-THALWEG  
 WS-WATER SURFACE

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Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD



Seal

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 NC Ecosystem Enhancement Program

Oakley Crossroads Stream & Wetland Restoration

Pitt County, NC

File Name: REDLINES.DWG

CWG	CWG	N/A	11.07.11
Dwn.	Chkd.	Degn.	YY.MM.DD

Title  
 Cross-Sections

Project No.  
 171300129

Scale  
 HORZ: 1" = 5' ; VERT: 1" = 1'

Drawing No.  
 6

Sheet  
 6 of 6

Revision  
 6

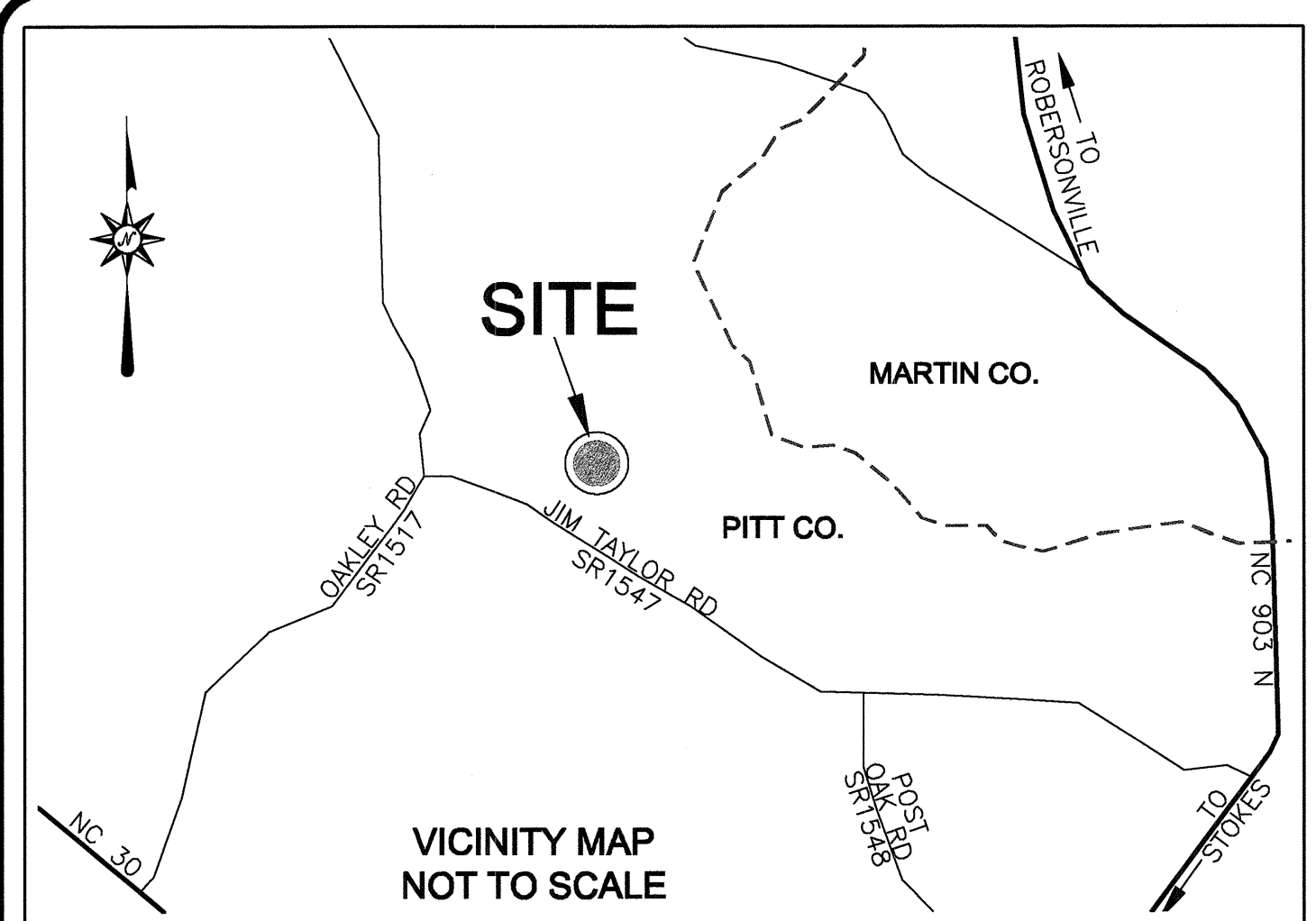
# AS-BUILT SURVEY OF OAKLEY CROSSROADS STREAM & WETLAND RESTORATION

SCO# 05-06597-01  
PITT COUNTY

**REFERENCES:**  
**OWNER:**  
 NORTH CAROLINA ECOSYSTEM ENHANCEMENT PROGRAM  
 1652 MAIL SERVICE CENTER  
 RALEIGH, NC 27099-1652  
 (919)715-0476  
 EEP PROJ. MGR.: JESSICA KEMP  
 EEP REVIEW COORDINATOR: LIN XU

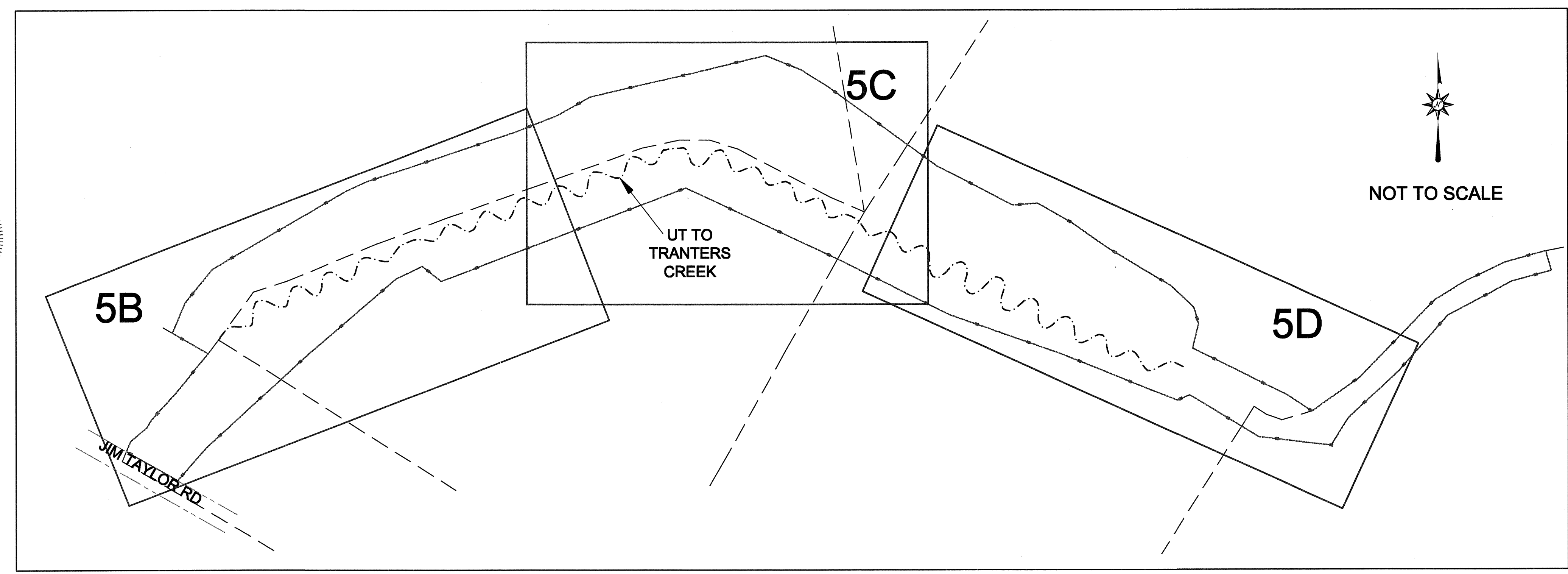
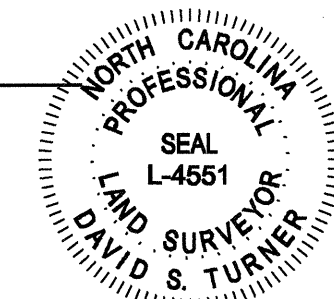
**CONTRACTOR:**  
 ECOSYSTEMS GRADING SOLUTIONS, INC.  
 MORGANTON, NC  
 (828)584-3018

**DESIGNER:**  
 STANTEC CONSULTING SERVICES, INC.  
 RALEIGH, NC  
 (919)851-6866



I, DAVID S. TURNER, AS A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF NORTH CAROLINA, HEREBY CERTIFY THAT THE DATA SHOWN ON THIS DRAWING, WAS OBTAINED UNDER MY SUPERVISION, IS AN ACCURATE AND COMPLETE REPRESENTATION OF WHAT WAS CONSTRUCTED IN THE FIELD, AND THAT THE PHYSICAL DIMENSIONS OR ELEVATIONS SHOWN THUS ARE AS-BUILT CONDITIONS EXCEPT WHERE OTHERWISE NOTED HEREON. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER, AND SEAL THIS 16th DAY OF JUNE, 2011.

*David S. Turner*  
 DAVID S. TURNER, P.L.S. # 4551



**SHEET INDEX**  
 SHEET 5A - TITLE, VICINITY MAP, SHEET INDEX, AND GENERAL NOTES  
 SHEET 5B - 0+00 TO 12+00 PLAN VIEW, PROFILE TO AND CROSS SECTIONS 1-2  
 SHEET 5C - 12+00 TO 26+00 PLAN VIEW, PROFILE AND CROSS SECTION 3  
 SHEET 5D - 26+00 TO 39+25 PLAN VIEW, PROFILE AND CROSS SECTIONS 4-5

**GENERAL NOTES**

1. ALL DISTANCES ARE HORIZONTAL UNLESS OTHERWISE NOTED.
2. THE VERTICAL DATUM IS NAVD88.
3. THE BASIS OF BEARINGS IS NCGS STATE PLANE GRID COORDINATES NAD83 (NSRS 2007) DATUM.
4. CONTROL SET USING RTK GPS METHODS AND THE NCGS CORS NETWORK. CONTROL ESTABLISHED AND VERIFIED THROUGH AVERAGED 180 EPOCH RTK OBSERVATIONS MADE AT A MINIMUM OF TWO HOURS APART. RTK GPS UNIT USED WAS SPECTRA EPOCH 35 GPS ROVER OPERATING AT 450-470 MHZ.
5. THIS MAP IS NOT FOR RECORDATION, SALES, OR CONVEYANCES AND DOES NOT COMPLY WITH G.S. 47-30 MAPPING REQUIREMENTS.
6. ALL CROSS-SECTIONS ARE FROM LEFT BANK TO RIGHT BANK (FACING DOWNSTREAM).

I, DAVID S. TURNER, CERTIFY THAT THIS MAP WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL GPS SURVEY MADE UNDER MY SUPERVISION AND THE FOLLOWING INFORMATION WAS USED TO PERFORM THE SURVEY:

- (1) CLASS OF SURVEY: CLASS C
- (2) POSITIONAL ACCURACY AT 95% CONFIDENCE LEVEL: HORIZONTAL= 0.054 USFT. VERTICAL= 0.106 USFT.
- (3) TYPE OF GPS FIELD PROCEDURE: REAL-TIME KINEMATIC/RVS
- (4) DATES OF SURVEY: APRIL 7-8 & MAY 5-7
- (5) DATUM/EPOCH: NAD83 (2007)
- (6) PUBLISHED/FIXED CONTROL USE: TLS#3HT NORTHING=737321.911 USFT. EASTING=2512271.868 USFT, ELEV=44.56 USFT.
- (7) GEOID MODEL: GEOID 03
- (8) COMBINED GRID FACTOR: 0.99991504
- (9) UNITS: US FEET

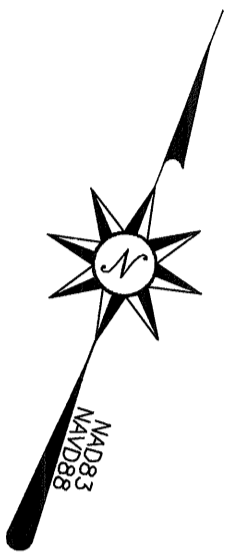
*David S. Turner*  
 DAVID S. TURNER, P.L.S. # 4551



REVISIONS, DATE AND INITIAL:		NORTH CAROLINA
<p><b>TITLE</b></p> <p>AS-BUILT SURVEY OF  <b>OAKLEY CROSSROADS STREAM &amp;                  WETLAND RESTORATION</b>                  SCO# 05-06597-01</p>		
<p>TURNER LAND SURVEYING, PLLC                  3201 Glenridge Drive, Raleigh, NC 27604 - (919)875-1378                  P-0702 - Lturner@tnc.rr.com - Dturner119@tnc.rr.com                  www.TURNERLANDSURVEYING.com</p>		
<p>PITT COUNTY</p>		
<p>DATE: 5/10/2011</p> <p>SURVEYED BY: DST/EGT</p> <p>DRAWN BY: DST/EGT</p> <p>REVIEWED BY: DST/EGT</p> <p>PROJECT: TLS-10-010</p> <p>FILE: OAKLEY CROSSROADS_273_AB_TLS_F</p> <p>SCALE: AS SHOWN</p>		
SHEET 5A		

I, DAVID S. TURNER, AS A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF NORTH CAROLINA, HEREBY CERTIFY THAT THE DATA SHOWN ON THIS DRAWING, WAS OBTAINED UNDER MY SUPERVISION, IS AN ACCURATE AND COMPLETE REPRESENTATION OF WHAT WAS CONSTRUCTED IN THE FIELD, AND THAT THE PHYSICAL DIMENSIONS OR ELEVATIONS SHOWN THUS ARE AS-BUILT CONDITIONS EXCEPT WHERE OTHERWISE NOTED HEREON. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER, AND SEAL THIS 16th DAY OF JUNE, 2011.

*David S. Turner*  
 DAVID S. TURNER, P.L.S. #L-4551



-UT TO TRANTORS CREEK-  
 0+00 BEGIN STREAM RESTORATION  
 AT 60°CMP INV=38.30

N/F JOHN A. MATTHEWS and,  
 JUNE M. GIVENS  
 WB 1999E, PG.52

HUB & TACK  
 N:737,321.80  
 E:2,512,271.83  
 EL:44.55

60°CMP  
 INV 37.95

0+05.70 LOG  
 CROSS VANE  
 38.17

XS-1  
 RIFFLE

CONSERVATION  
 EASEMENT DISC  
 N:737,231.91  
 E:2,512,377.00  
 EL:47.64

N/F RICHARD J. RILEY and wife,  
 JANICE T. RILEY, et al.  
 MB 27, PG.14  
 DB 1667, PG. 802

N/F LORRAINE J. TAYLOR  
 MB 27, PG.14

N/F LORRAINE J. TAYLOR  
 MB 27, PG.14

CONSERVATION  
 EASEMENT BY  
 OTHERS

TERRACE TOP  
 OF BANK

TERRACE BANK  
 TOE

TREELINE

BRUSH  
 MATTRESS

VEG PLOT 3  
 PIN FLAG

XS-2  
 RIFFLE

CHANNEL TOP  
 OF BANK

CHANNEL BANK  
 TOE

VEG PLOT 4  
 PIN FLAG

THALWEG

VEG PLOT 2  
 PIN FLAG

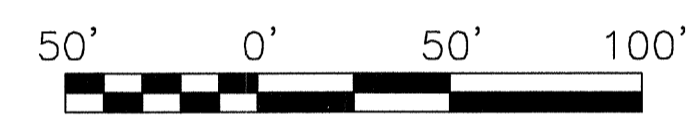
TERRACE BANK  
 TOE

TERRACE TOP  
 OF BANK

CONSERVATION  
 EASEMENT DISC  
 N:737,542.94  
 E:2,512,766.81  
 EL:45.15

SEE SHEET 5A FOR GENERAL NOTES

AS-BUILT SURVEY BY:  
 TURNER LAND SURVEYING, PLLC  
 SURVEYED MAY 2011



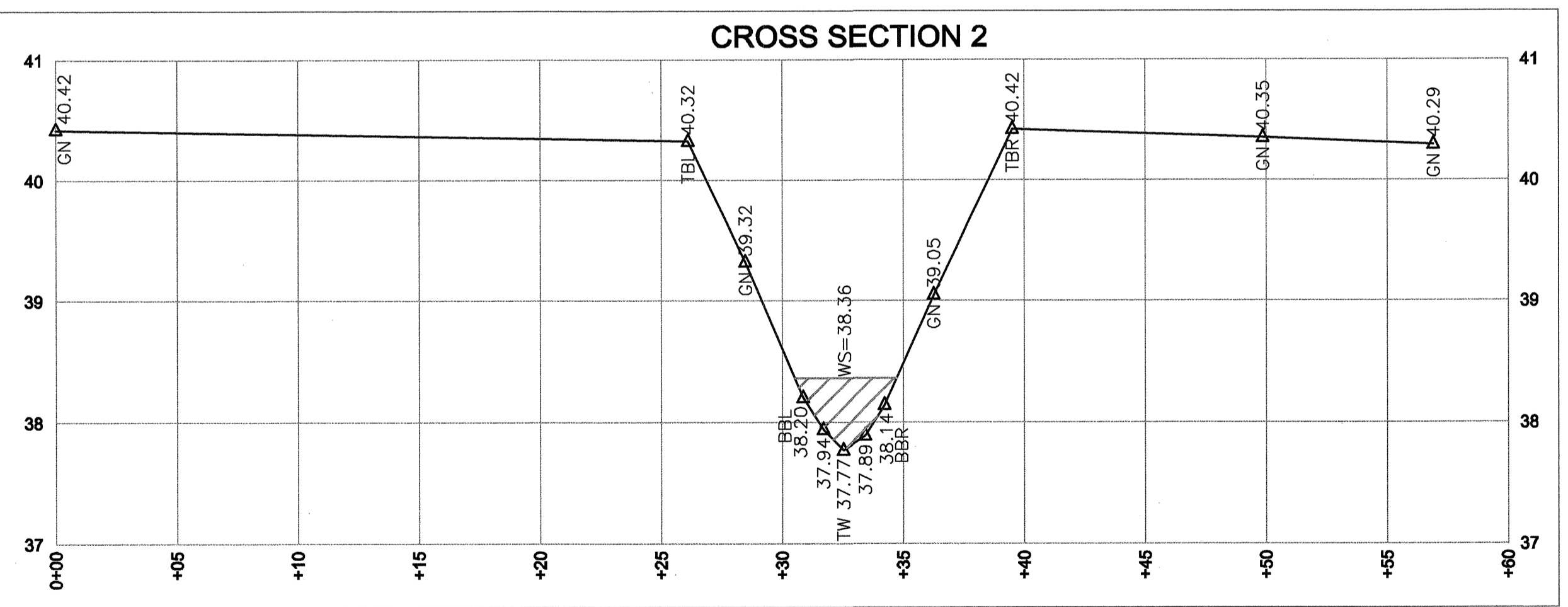
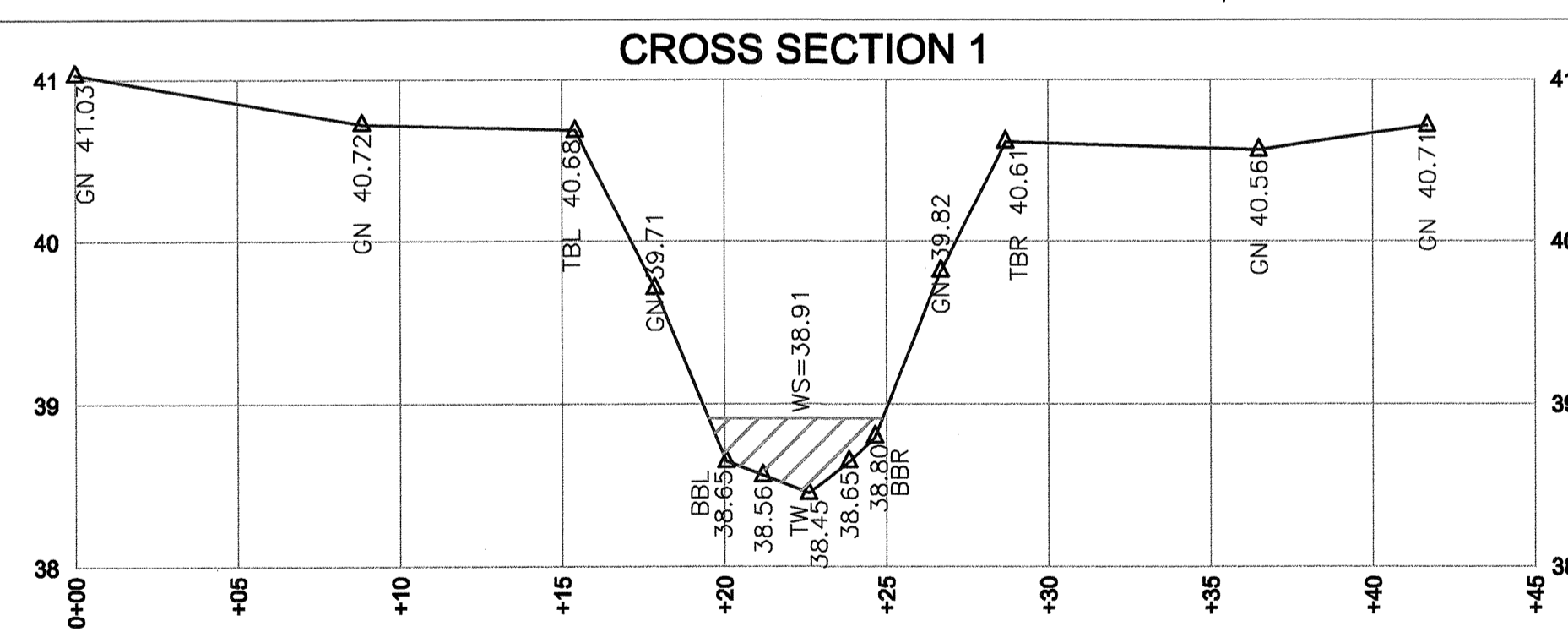
SCALE: 1"=50' (22x34)  
 1"=100' (11x17)  
 CONTOUR INTERVAL = 1'

**LEGEND:**

- THALWEG
- TOP OF BANK
- TOE OF BANK
- CENTERLINE DITCH
- - - - CONSERVATION EASEMENT
- - - - PROPERTY LINE NOT SURVEYED
- ▲ LOG CROSS VANE
- ▴ BENCH MARK/CONTROL PT

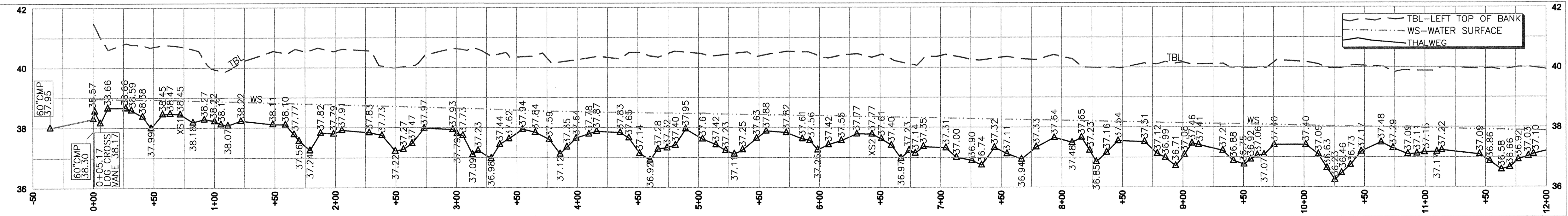
CROSS SECTION SCALE  
 HORIZONTAL: 1"=5' (22x34)  
 1"=10' (11x17)  
 VERTICAL: 1"=1' (22x34)  
 1"=2' (11x17)

GN-GROUND  
 TBL-CHANNEL LEFT TOP OF BANK  
 TBR-CHANNEL RIGHT TOP OF BANK  
 BBL-CHANNEL LEFT BANK TOE  
 BBR-CHANNEL RIGHT BANK TOE  
 TW-THALWEG  
 WS-WATER SURFACE



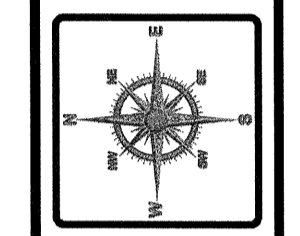
AS-BUILT  
 LONGITUDINAL  
 PROFILE STA  
 0+00 TO 12+00

PROFILE SCALE  
 HORIZONTAL: 1"=50' (22x34)  
 1"=100' (11x17)  
 VERTICAL: 1"=2' (22x34)  
 1"=4' (11x17)



REVISIONS: DATE AND INITIAL:

**TURNER LAND SURVEYING, PLLC**  
 3201 Glenridge Drive, Raleigh, NC 27604 - (919)875-1378  
 P-0702 - Lturner@tlr.com - Dturner119@nc.tlr.com  
 www.TURNERLANDSURVEYING.com



**PLAN VIEW**  
 AS-BUILT SURVEY OF  
 OAKLEY CROSSROADS STREAM &  
 WETLAND RESTORATION  
 SCO# 05-06597-01

DATE:	5/10/2011
SURVEYED BY:	DST/EJT
DRAWN BY:	DST/EJT
REVIEWED BY:	DST/EJT
PROJECT:	TLS-10-010
FILE:	OAKLEY CROSSROADS_273_AB_TLS_F
SCALE:	AS SHOWN
SHEET	<b>5B</b>

NORTH CAROLINA  
 PITT COUNTY



I, DAVID S. TURNER, AS A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF NORTH CAROLINA, HEREBY CERTIFY THAT THE DATA SHOWN ON THIS DRAWING, WAS OBTAINED UNDER MY SUPERVISION, IS AN ACCURATE AND COMPLETE REPRESENTATION OF WHAT WAS CONSTRUCTED IN THE FIELD, AND THAT THE PHYSICAL DIMENSIONS OR ELEVATIONS SHOWN THUS ARE AS-BUILT CONDITIONS EXCEPT WHERE OTHERWISE NOTED HEREON. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER, AND SEAL THIS 16th DAY OF JUNE 2011.

*David S. Turner*  
DAVID S. TURNER, P.L.S. #L-4551

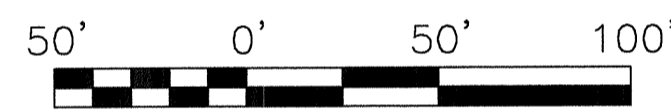


**LEGEND:**

- THALWEG
- TOP OF BANK
- TOE OF BANK
- CENTERLINE DITCH
- EXISTING WETLANDS
- CE --- CONSERVATION EASEMENT
- PROPERTY LINE NOT SURVEYED
- ⊠ BENCH MARK/CONTROL PT
- ⊠ LOG SILL
- ⊠ LOG VANE WITH ROCK SILL
- ⊠ LOG CROSS VANE
- ▨ OPEN WATER

SEE SHEET 5A FOR GENERAL NOTES

AS-BUILT SURVEY BY:  
TURNER LAND SURVEYING, PLLC  
SURVEYED MAY 2011

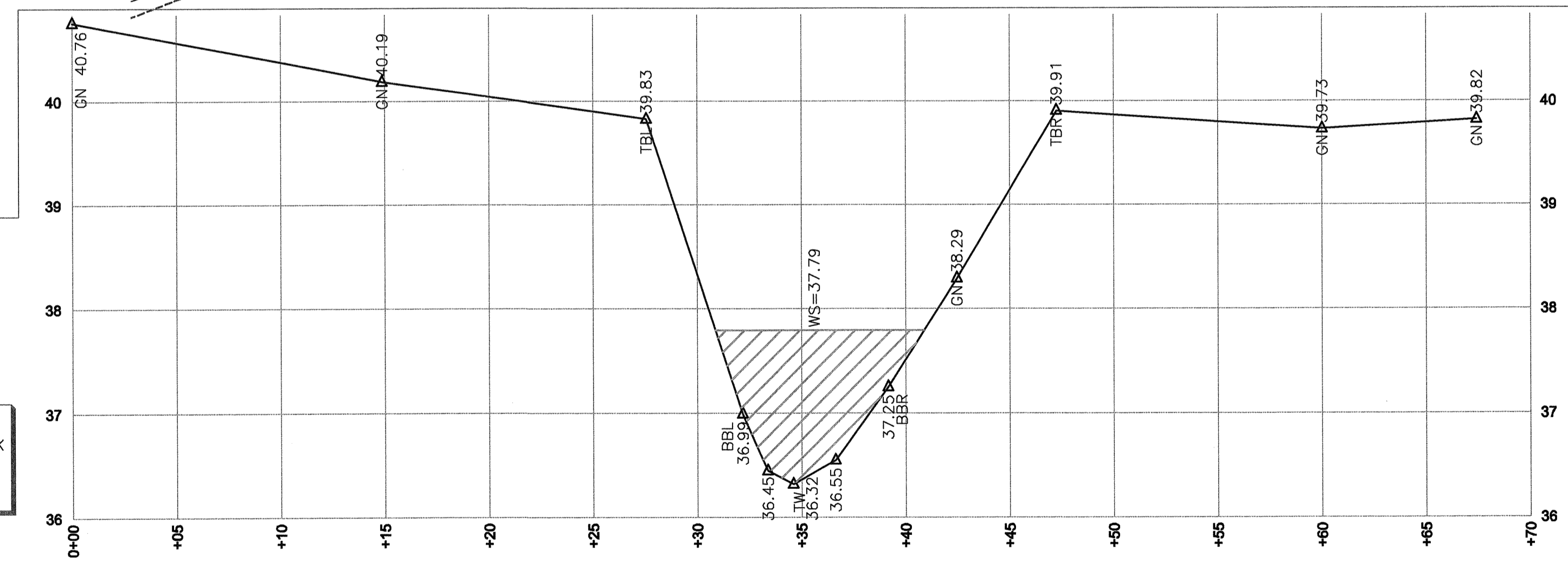


SCALE: 1"=50' (22x34)  
1"=100' (11x17)  
CONTOUR INTERVAL = 1'

**CROSS SECTION 3**

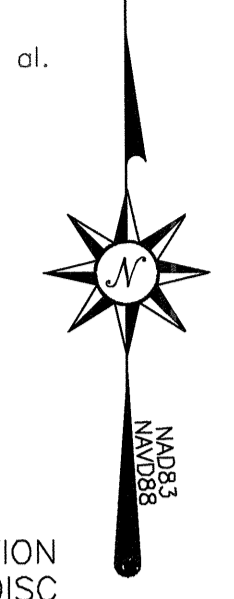
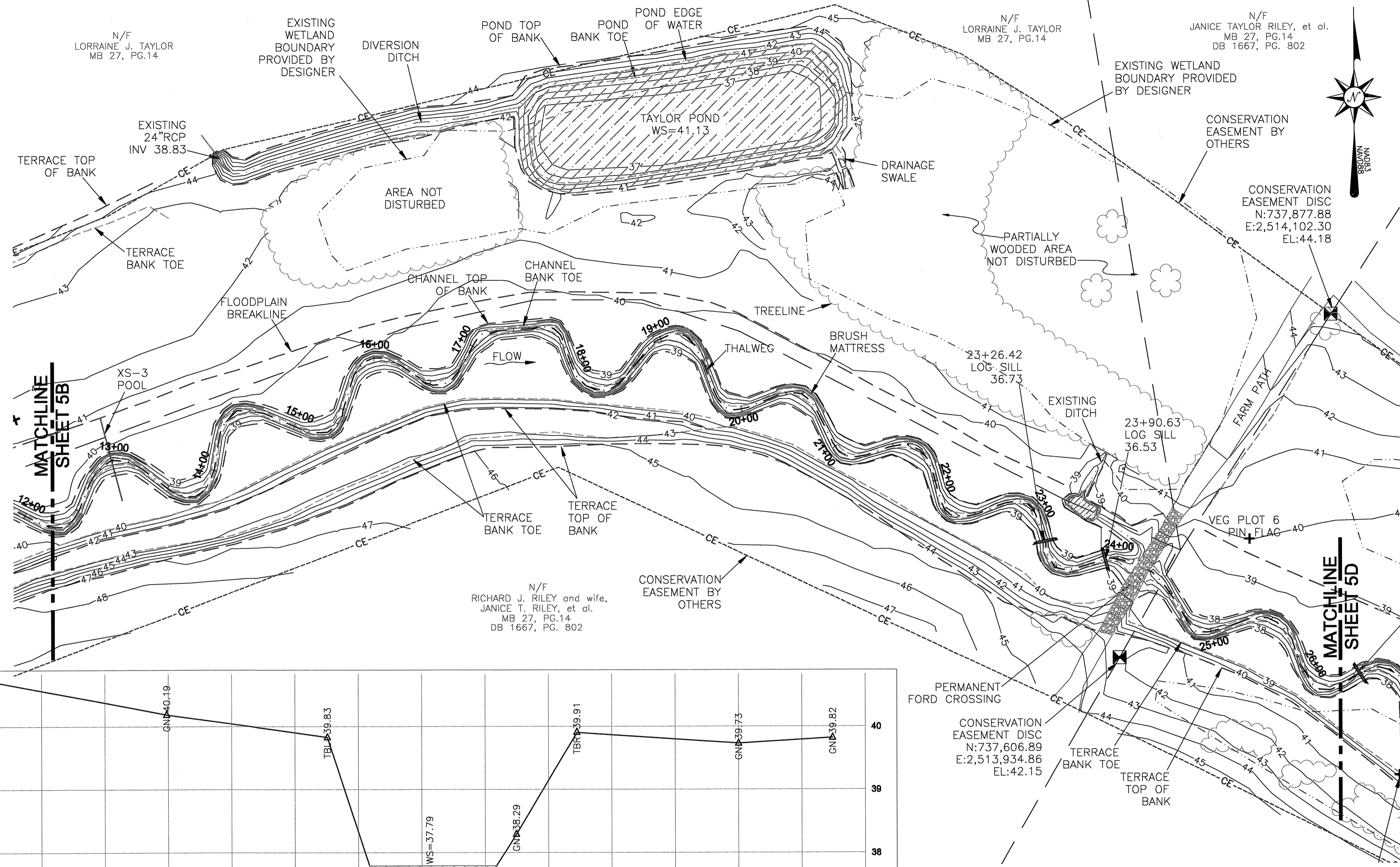
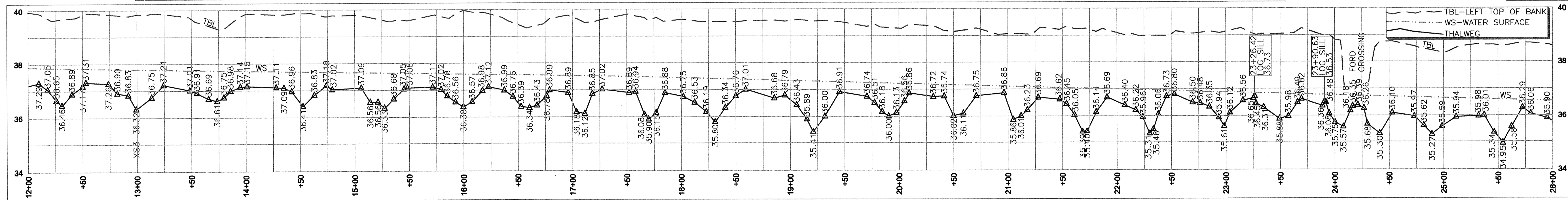
CROSS SECTION SCALE  
HORIZONTAL: 1"=5' (22x34)  
VERTICAL: 1"=1' (11x17)  
1"=2' (11x17)

GN-GROUND  
TBL-CHANNEL LEFT TOP OF BANK  
TBR-CHANNEL RIGHT TOP OF BANK  
BBL-CHANNEL LEFT BANK TOE  
BBR-CHANNEL RIGHT BANK TOE  
TW-THALWEG  
WS-WATER SURFACE



**AS-BUILT LONGITUDINAL PROFILE STA 12+00 TO 26+00**

PROFILE SCALE  
HORIZONTAL: 1"=50' (22x34)  
VERTICAL: 1"=2' (22x34)  
1"=4' (11x17)

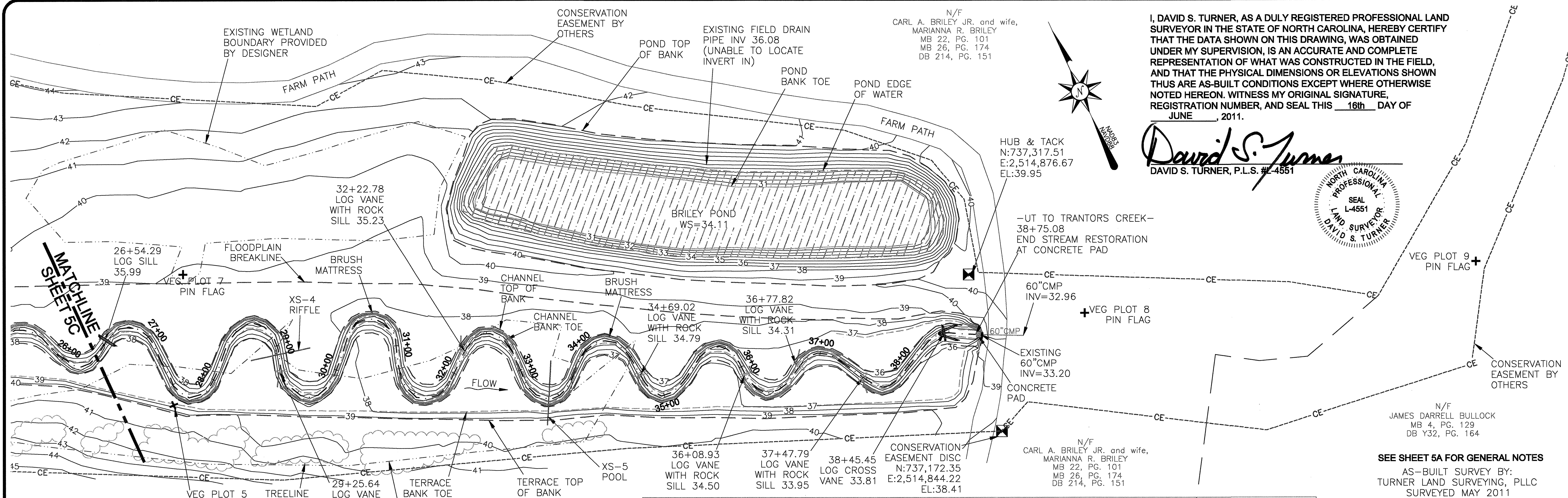


REVISIONS, DATE AND INITIAL:

**TURNER LAND SURVEYING, PLLC**  
3201 Glenridge Drive, Raleigh, NC 27604 - (919)875-1378  
P-0702 - Ltuner@tlns.com - Dturner119@ncr.com  
www.TURNERLANDSURVEYING.com

**PLAN VIEW**  
AS-BUILT SURVEY OF  
**OAKLEY CROSSROADS STREAM & WETLAND RESTORATION**  
SC# 05-06597-01  
NORTH CAROLINA  
PITT COUNTY

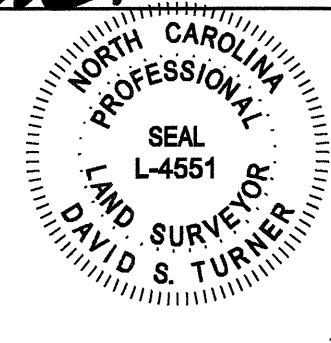
DATE:	5/10/2011
SURVEYED BY:	DST/EGT
DRAWN BY:	DST/EGT
REVIEWED BY:	DST/EGT
PROJECT:	TLS-10-010
FILE:	OAKLEY CROSSROADS_273_AB_TLS_F
SCALE:	AS SHOWN
SHEET	<b>5C</b>



N/F  
 CARL A. BRILEY JR. and wife,  
 MARIANNA R. BRILEY  
 MB 22, PG. 101  
 MB 26, PG. 174  
 DB 214, PG. 151

I, DAVID S. TURNER, AS A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF NORTH CAROLINA, HEREBY CERTIFY THAT THE DATA SHOWN ON THIS DRAWING, WAS OBTAINED UNDER MY SUPERVISION, IS AN ACCURATE AND COMPLETE REPRESENTATION OF WHAT WAS CONSTRUCTED IN THE FIELD, AND THAT THE PHYSICAL DIMENSIONS OR ELEVATIONS SHOWN THUS ARE AS-BUILT CONDITIONS EXCEPT WHERE OTHERWISE NOTED HEREON. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER, AND SEAL THIS 16th DAY OF JUNE, 2011.

*David S. Turner*  
 DAVID S. TURNER, P.L.S. # L-4551

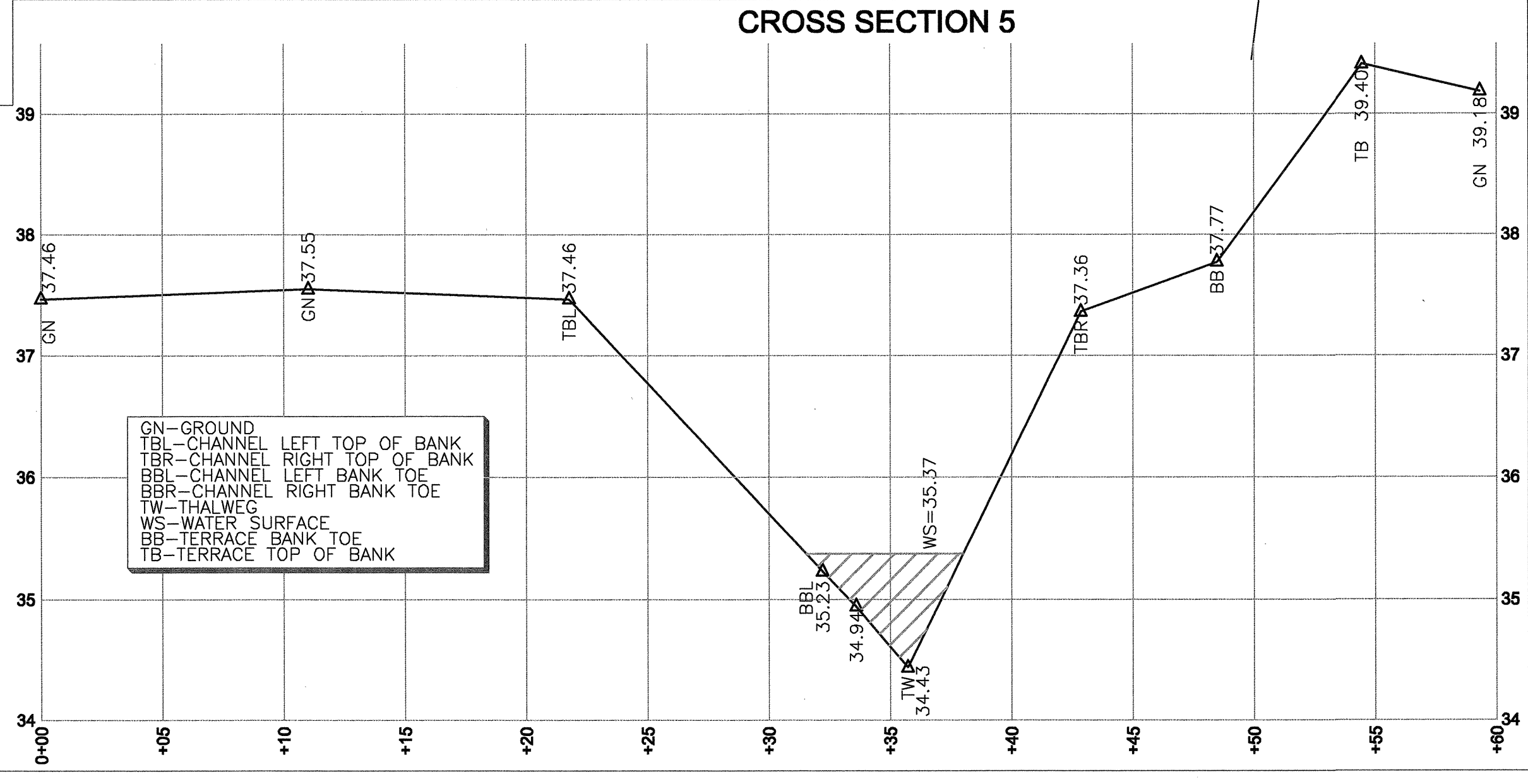
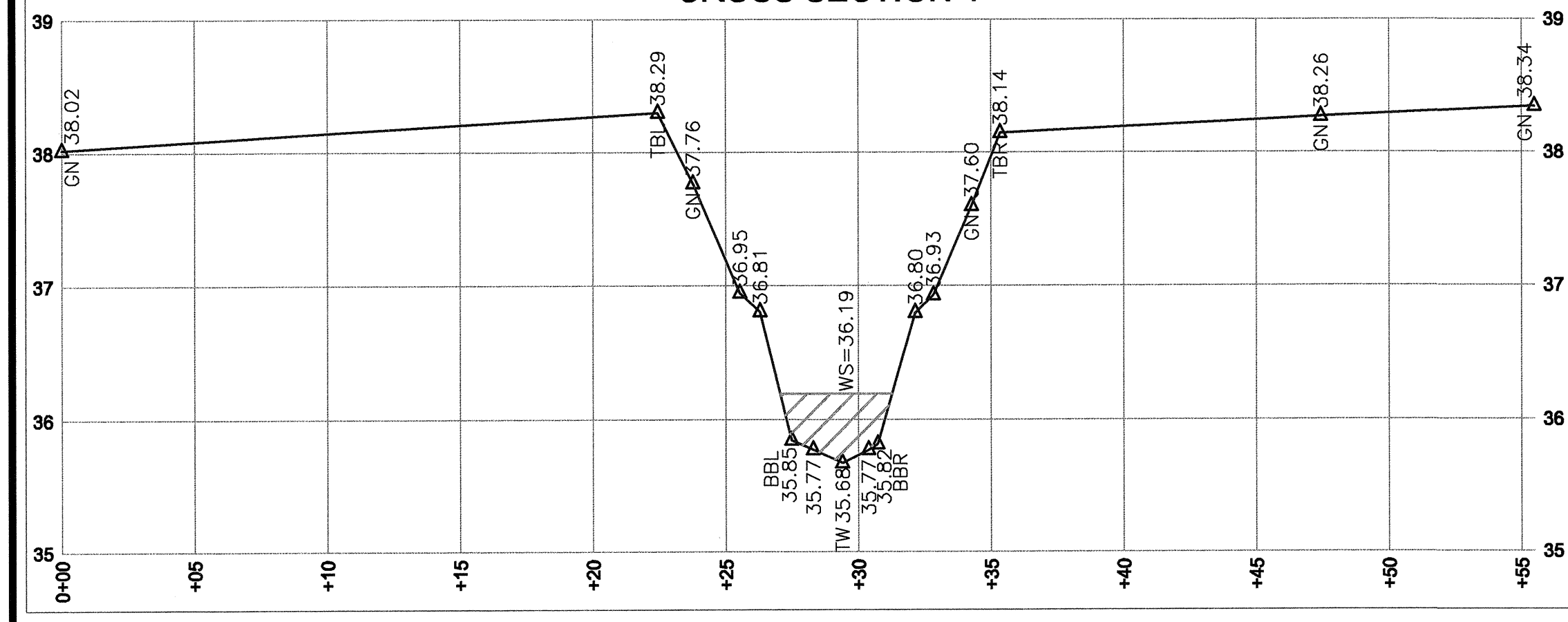


HUB & TACK  
 N:737,317.51  
 E:2,514,876.67  
 EL:39.95

N/F  
 JAMES DARRELL BULLOCK  
 MB 4, PG. 129  
 DB Y32, PG. 164

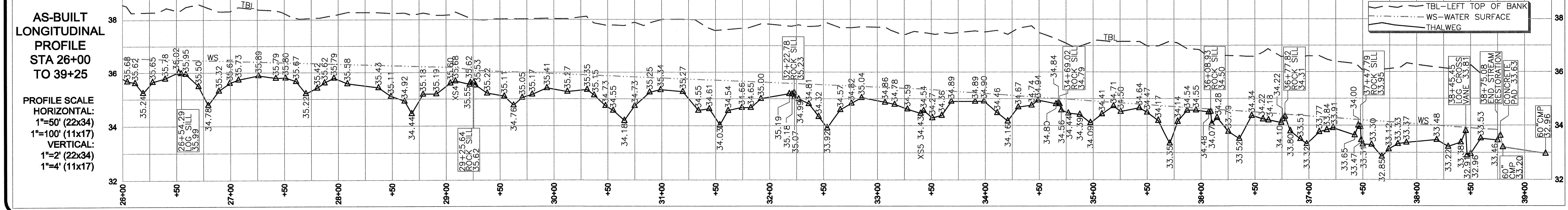
SEE SHEET 5A FOR GENERAL NOTES  
 AS-BUILT SURVEY BY:  
 TURNER LAND SURVEYING, PLLC  
 SURVEYED MAY 2011

CROSS SECTION SCALE  
 HORIZONTAL: 1"=5' (22x34) VERTICAL: 1"=1' (22x34)  
 1"=10' (11x17) 1"=2' (11x17)



**LEGEND:**

- THALWEG
- - - TOP OF BANK
- - - TOE OF BANK
- CENTERLINE DITCH
- - - EXISTING WETLANDS
- - - CE CONSERVATION EASEMENT
- PROPERTY LINE NOT SURVEYED
- ⊠ BENCH MARK/CONTROL PT
- LOG SILL
- LOG VANE WITH ROCK SILL
- LOG CROSS VANE
- OPEN WATER



TBL-LEFT TOP OF BANK  
 WS-WATER SURFACE  
 THALWEG

AS-BUILT LONGITUDINAL PROFILE  
 STA 26+00 TO 39+25

PROFILE SCALE  
 HORIZONTAL: 1"=50' (22x34)  
 1"=100' (11x17)  
 VERTICAL: 1"=2' (22x34)  
 1"=4' (11x17)

REVISIONS, DATE AND INITIAL:

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 3201 Glenridge Drive, Raleigh, NC 27604 - (919)875-1378  
 P-0702 - Ltturner21@ncrr.com - Dturner119@ncrr.com  
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PLAN VIEW  
 AS-BUILT SURVEY OF  
 OAKLEY CROSSROADS STREAM &  
 WETLAND RESTORATION  
 SCO# 05-06597-01

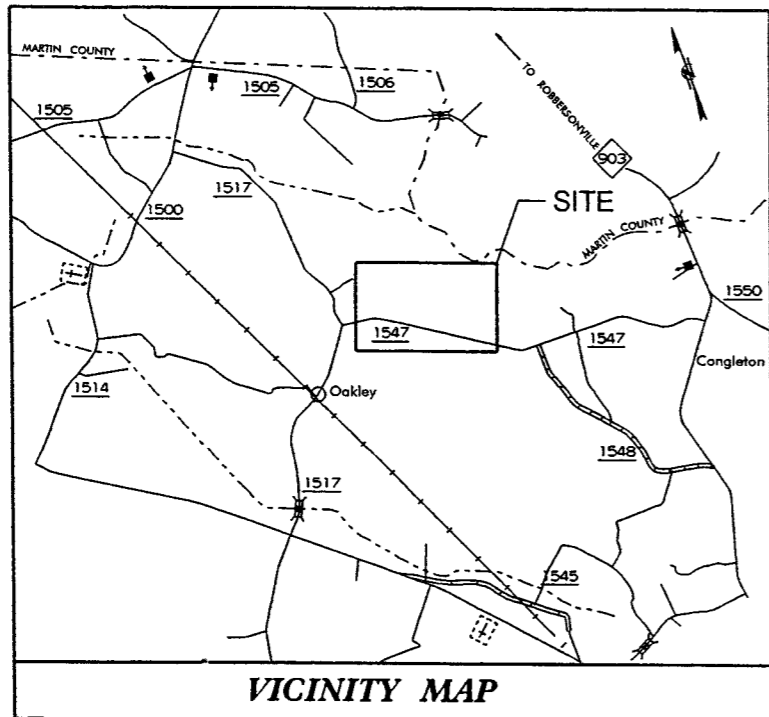
DATE: 5/10/2011  
 SURVEYED BY: DST/EGT  
 DRAWN BY: DST/EGT  
 REVIEWED BY: DST/EGT  
 PROJECT: TLS-10-010  
 FILE: OAKLEY CROSSROADS\_273\_AB\_TLS\_F  
 SCALE: AS SHOWN  
 SHEET: 5D

STATE OF NORTH CAROLINA  
ECOSYSTEM ENHANCEMENT PROGRAM

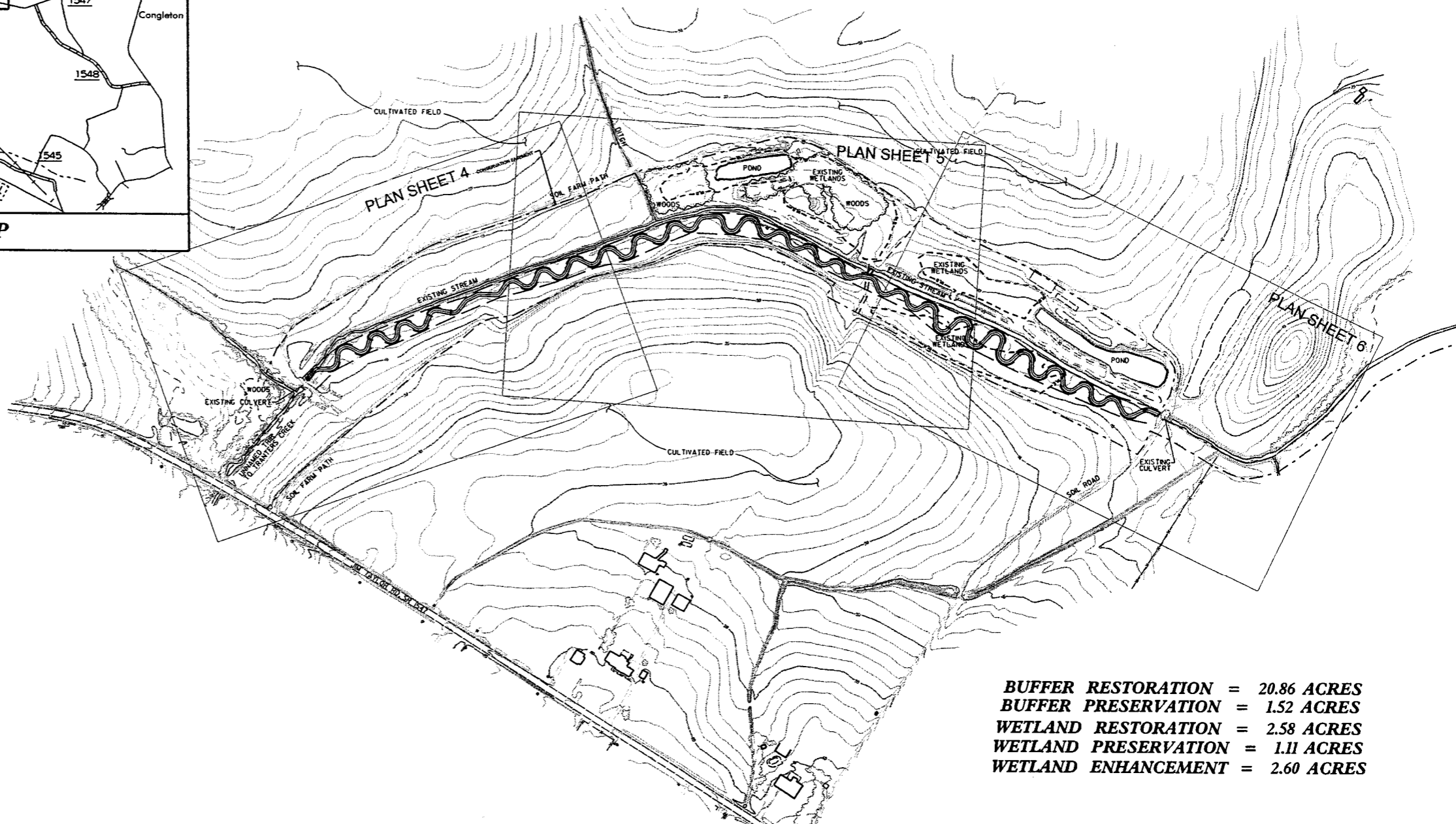
STATE	EEP PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SCO-050659701	1	

**OAKLEY CROSSROADS  
STREAM AND WETLAND RESTORATION**

LOCATION: PITT COUNTY, NC



VICINITY MAP  
PITT COUNTY, NC

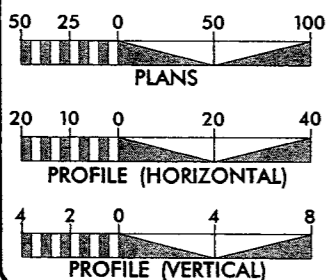


INDEX OF SHEETS

TITLE SHEET.....	1
DETAILS.....	2-2J
SEQUENCE OF CONST.....	3
PLAN SHEETS.....	4-6
EROSION CONTROL PLANS.....	EC-1 - EC- 4
PLANTING PLANS.....	PL- 1- PL-2

**BUFFER RESTORATION = 20.86 ACRES**  
**BUFFER PRESERVATION = 1.52 ACRES**  
**WETLAND RESTORATION = 2.58 ACRES**  
**WETLAND PRESERVATION = 1.11 ACRES**  
**WETLAND ENHANCEMENT = 2.60 ACRES**

GRAPHIC SCALES



DESIGN DATA

DESIGN STREAM TYPE = E5  
 BANKFULL CROSS-SECTIONAL AREA (FT<sup>2</sup>) = 19.0  
 BANKFULL WIDTH (FT) = 12.3  
 WIDTH TO DEPTH RATIO = 8.0

PROJECT LENGTH

EXISTING STREAM LENGTH = 2940'  
 PROPOSED DESIGN STREAM LENGTH = 3799'  
 PRIORITY I RESTORATION = 3799'  
 LIMITS OF DISTURBANCE = 14.2 ACRES

PROJECT MANAGER JESSICA KEMP  
 PROJECT COORDINATOR LIN XU



Prepared in the Office of:  
 Stantec Consulting Services Inc.  
 Suite 300, 801 Jones Franklin Road  
 Raleigh, NC 27606  
 Tel. 919.851.6566 Fax. 919.851.7024  
 www.stantec.com

LETTING DATE:

BRAD FAIRLEY  
 PROJECT MANAGER

NATHAN E. JEAN, PE  
 PROJECT DESIGN ENGINEER

PROJECT DESIGN ENGINEER



SIGNATURE

P.E.

PROJECT: SCO-050659701 | OAKLEY

4/29/2009 4:55:49 AM J:\17320025\em\design\plan\Oakley.sm.1.rpt.dgn

# STREAM CONSTRUCTION DETAILS



**Stantec**

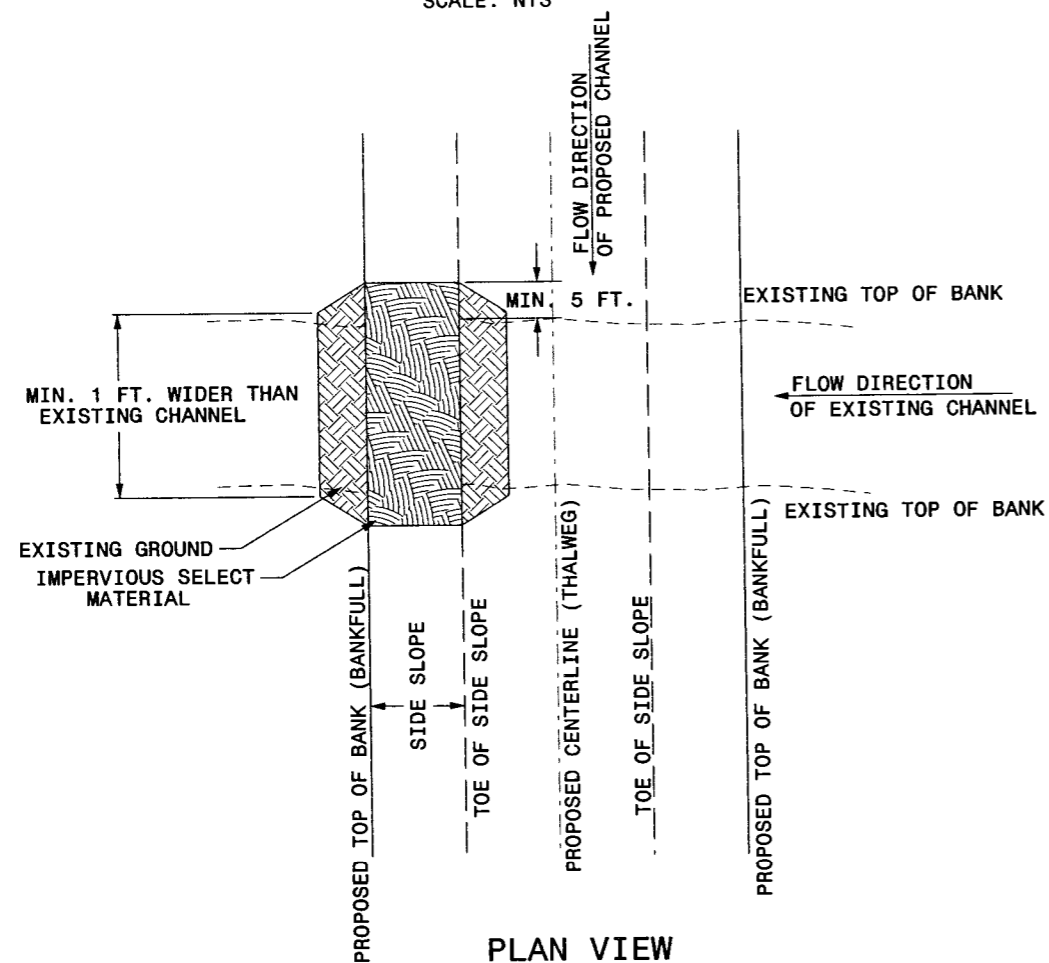
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PROJECT REFERENCE NO. SCO-050659701	SHEET NO. 2
PROJECT ENGINEER	

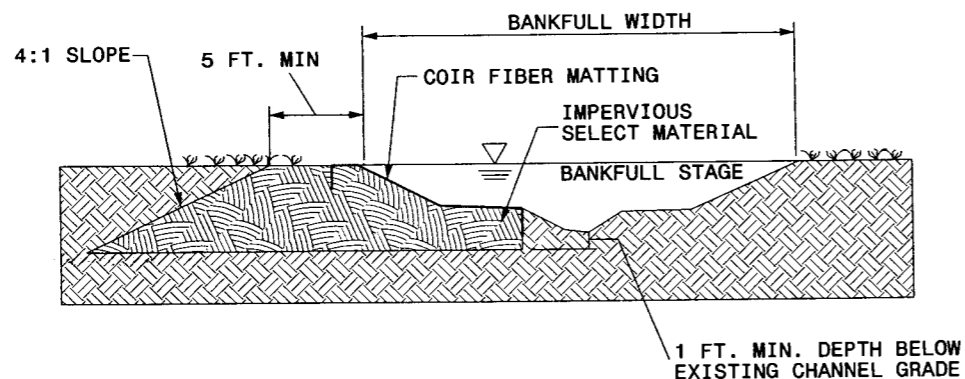
*06/28/2010*

## IMPERVIOUS STREAM CHANNEL PLUG

SCALE: NTS

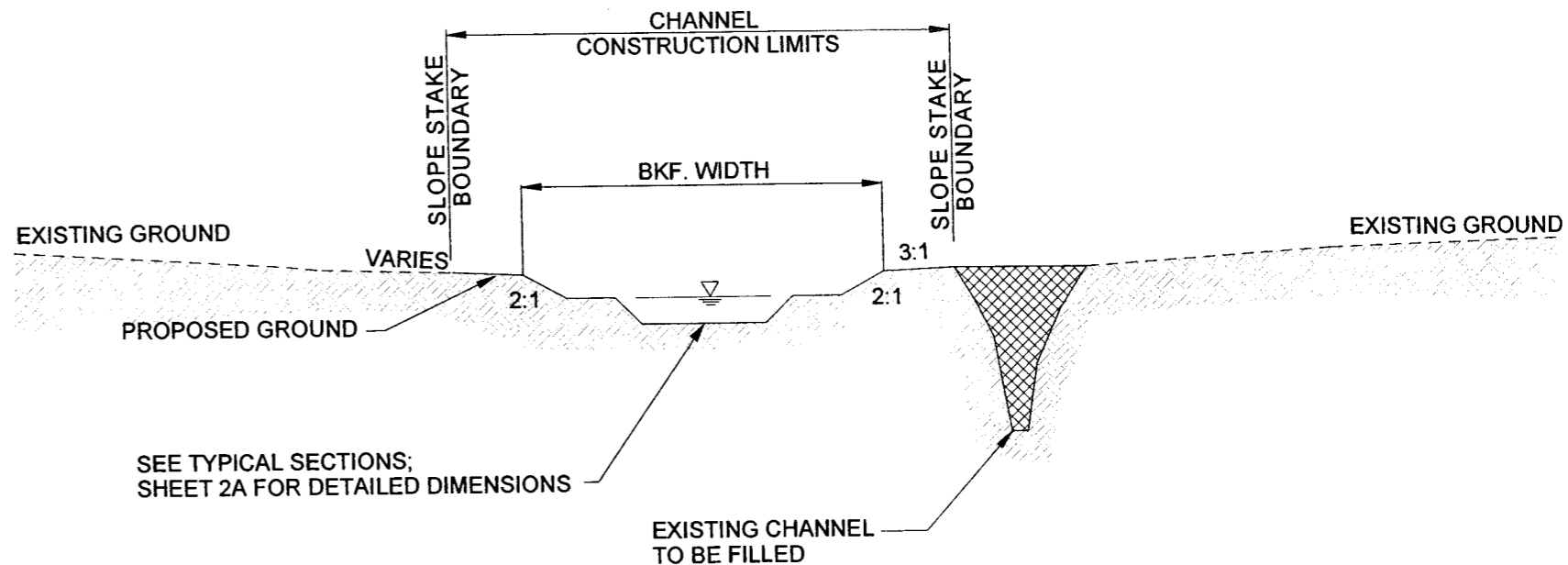


**PLAN VIEW**



**CROSS-SECTION**

## PRIORITY I TYPICAL CHANNEL SECTION



4/18/2009  
 10:00:00 AM  
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 User: [Name]

LOCATION STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS	
PROJECT NO. SCO-050659701	COUNTY PITT
DESIGNED BY NEJ	DRAWN BY CGM
CHECKED BY BAM	DATE REV. 06/18/2010

# STREAM CONSTRUCTION DETAILS



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PROJECT REFERENCE NO. SCO-050659701	SHEET NO. 2A
PROJECT ENGINEER	

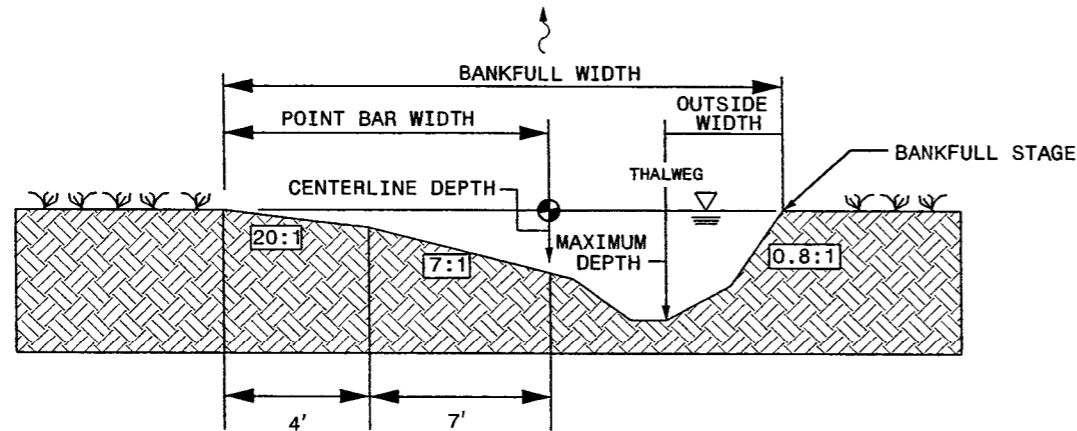
*Nathan Jean*

## TYPICAL SECTION - POOL RIGHT

MIRROR ABOUT CENTERLINE FOR POOL LEFT

BANKFULL WIDTH	21.0
POINT BAR WIDTH	11.0
MAX DEPTH (THALWEG)	4.0
OUTSIDE WIDTH	3.2
CENTERLINE DEPTH	1.2

ALL UNITS ARE IN FEET



THALWEG (DEEPEST POINT IN A CROSS SECTION) IS LOCATED IN THE MIDDLE OF THE BASE WIDTH.

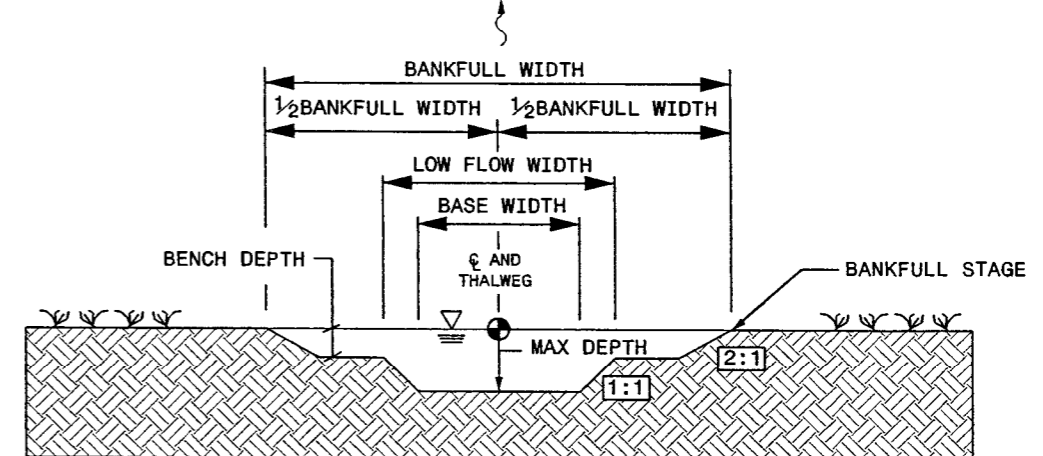
NOTES: - ALL CROSS SECTIONS ARE SHOWN LOOKING IN THE DOWNSTREAM DIRECTION  
 -  $\oplus$  - GRADE POINT IS THE CENTERLINE OF THE STREAM  
 - ALL SHARP CORNERS SHOULD BE ROUNDED

SCALE: NTS

## TYPICAL SECTION - RIFFLE

BANKFULL WIDTH	12.5
BASE WIDTH	3.4
MAXIMUM DEPTH	2.5
LOW FLOW WIDTH	5.6
BENCH DEPTH	1.4

ALL UNITS ARE IN FEET



THALWEG (DEEPEST POINT IN CROSS SECTION) IS LOCATED IN CENTER OF CHANNEL IN A RIFFLE.

NOTES: - ALL CROSS SECTIONS ARE SHOWN LOOKING IN THE DOWNSTREAM DIRECTION  
 -  $\oplus$  - GRADE POINT IS THE CENTERLINE OF THE STREAM  
 - ALL SHARP CORNERS SHOULD BE ROUNDED

SCALE: NTS

LOCATION: STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS	
PROJECT NO.: SCO-050659701	COUNTY: PITT
DRAWN BY: NEJ	DESIGN BY: CGM
CHECKED BY: BAM	DATE:

# STREAM CONSTRUCTION DETAILS

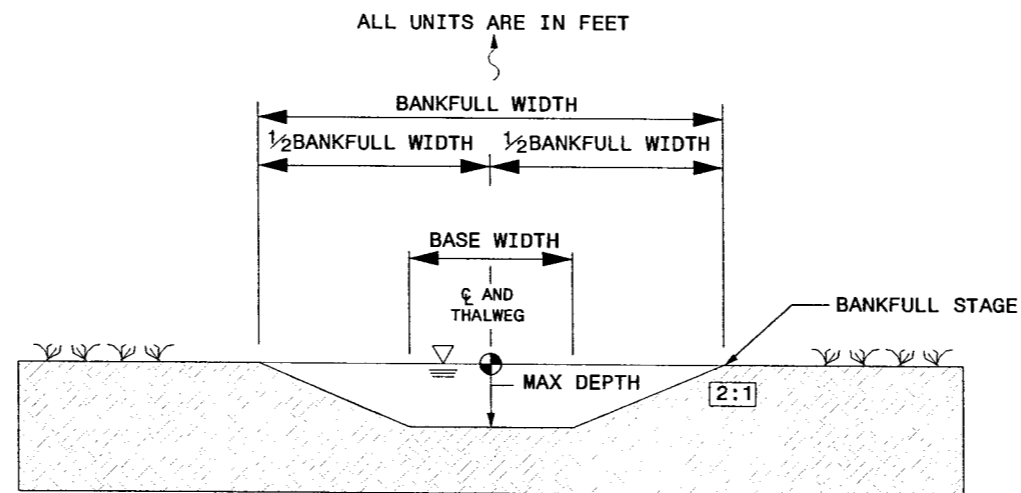


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PROJECT REFERENCE NO. SCO-050659701	SHEET NO. 2A-1
PROJECT ENGINEER	

## REVISED TYPICAL SECTION - RIFFLE

BANKFULL WIDTH 12.5  
 BASE WIDTH 2.3  
 MAXIMUM DEPTH 2.5



THALWEG (DEEPEST POINT IN CROSS SECTION) IS LOCATED IN CENTER OF CHANNEL IN A RIFFLE.

- NOTES:
- ALL CROSS SECTIONS ARE SHOWN LOOKING IN THE DOWNSTREAM DIRECTION
  - ε - GRADE POINT IS THE CENTERLINE OF THE STREAM
  - ALL SHARP CORNERS SHOULD BE ROUNDED

SCALE: NTS

CONTRACTOR IS TO USE THIS ALTERNATIVE CROSS SECTION ONLY WHEN FIELD CONDITIONS MAKE CONSTRUCTING THE ORIGINALLY DESIGNED CROSS SECTION IMPRACTICABLE. FINAL DETERMINATION WILL BE MADE BY THE ON-SITE CONSTRUCTION ADMINISTRATOR.

8/10/2010 4:00:17 PM 0:11:00:00

LOCATION: STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS	
PROJECT NO. SCO-050659701	COUNTY: PITT
DESIGNED BY: NEJ	DRAWN BY: NEJ
CHECKED BY: BAM	DATE: 08/10/2010

# STREAM CONSTRUCTION DETAILS



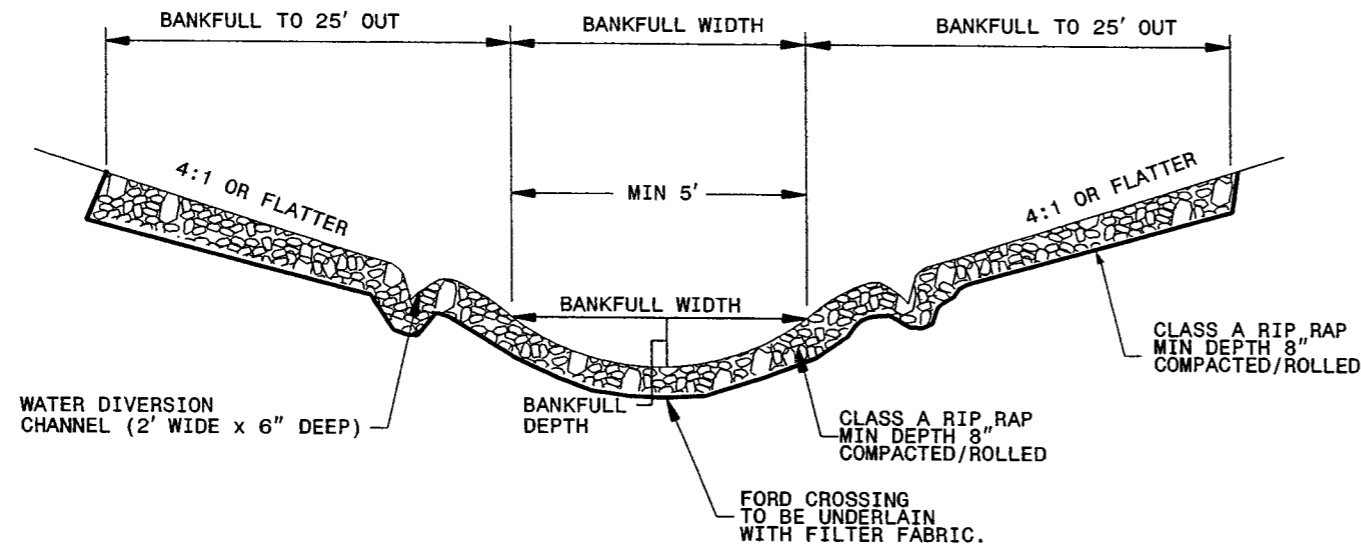
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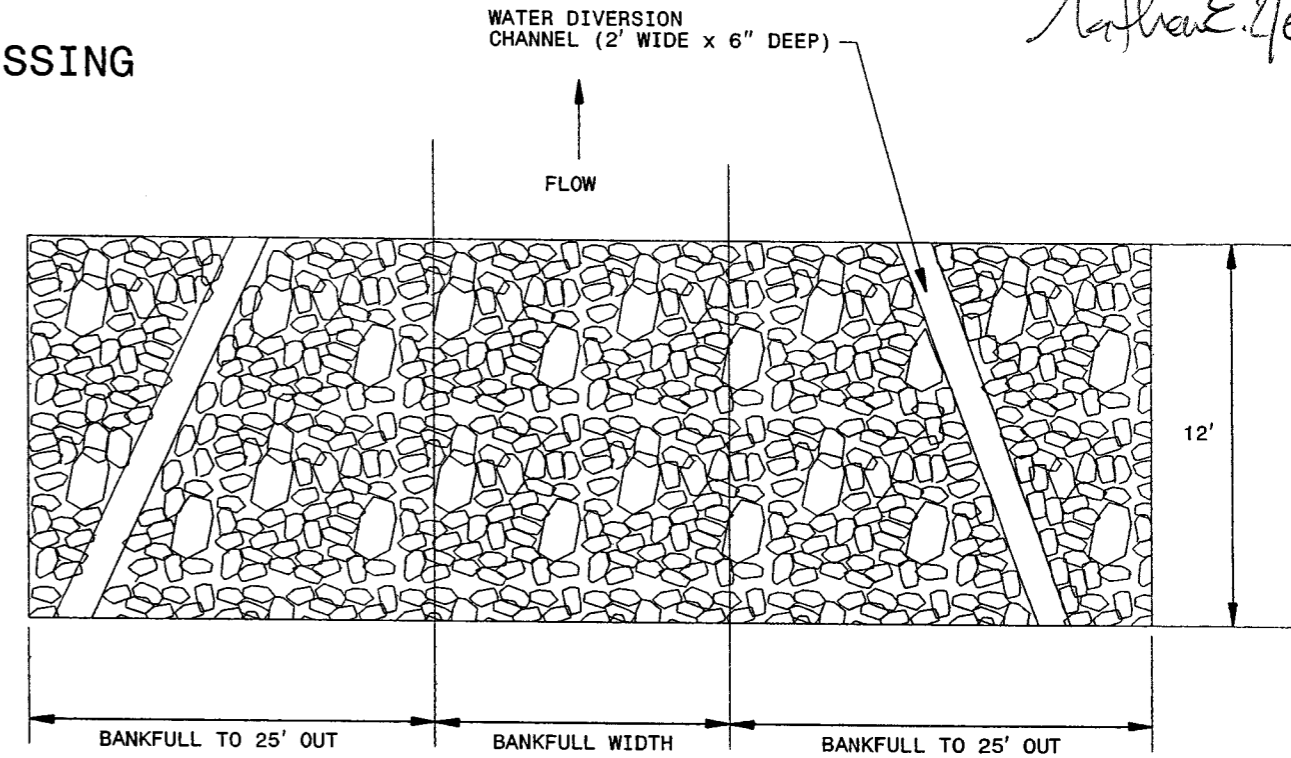
PROJECT REFERENCE NO. SCO-050659701	SHEET NO. 2B
PROJECT ENGINEER	

## PERMANENT FORD CROSSING

SCALE: N.T.S.



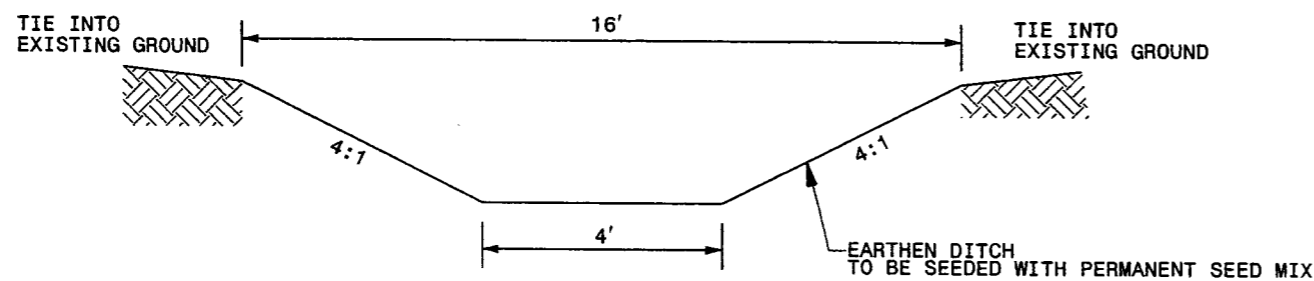
**CROSS-SECTION**



**PLAN VIEW**

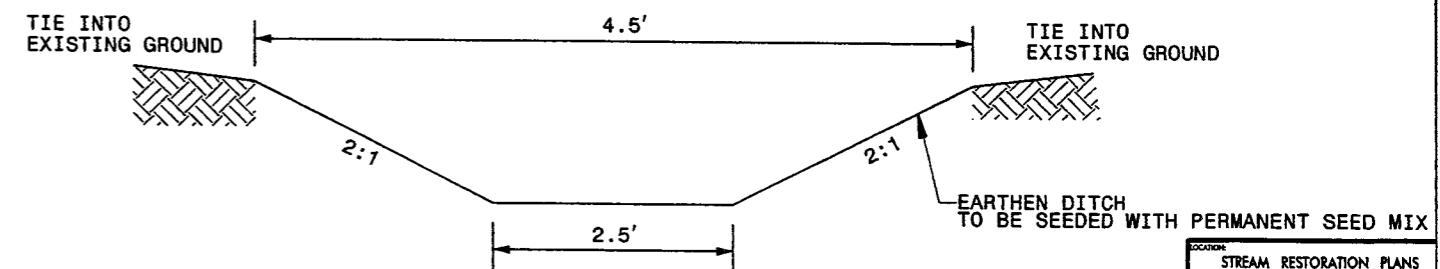
## DIVERSION DITCH

SCALE: N.T.S.



## DIVERSION DITCH 2

SCALE: N.T.S.



LOCATION STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS	
PROJECT NO. SCO-050659701	COUNTY PITT
DESIGNED BY NEJ	DRAWN BY CGM
CHECKED BY BAM	DATE

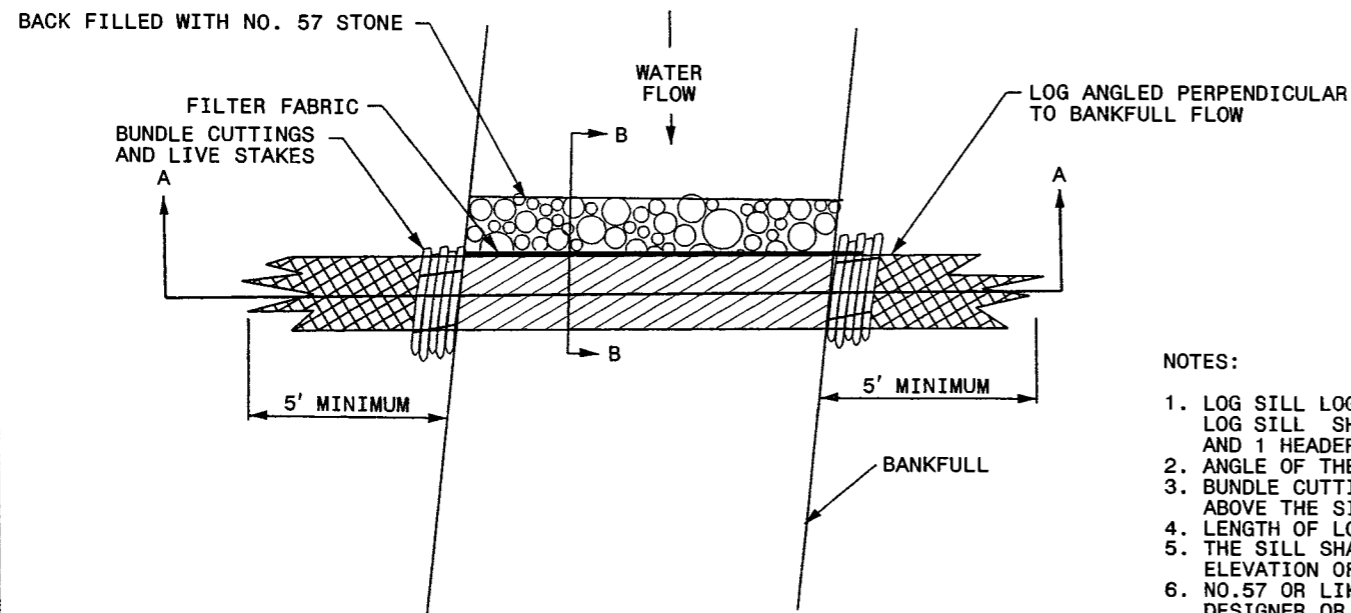
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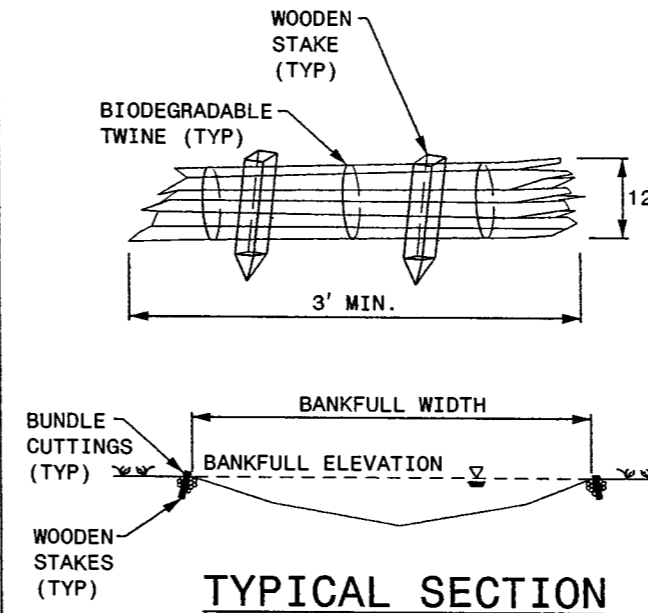
PROJECT REFERENCE NO. SCO-050659701	SHEET NO. 2C
PROJECT ENGINEER	

**LOG SILL**  
SCALE: NTS



**PLAN VIEW**

**BUNDLE CUTTINGS**  
SCALE: NTS



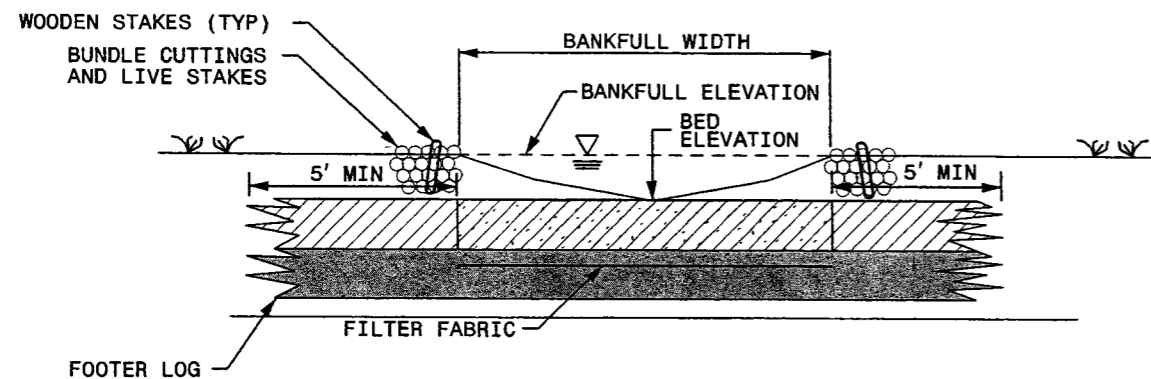
NOTES:

1. BUNDLE CUTTINGS SHALL BE COMPOSED OF CUTTINGS FROM VEGETATION USED FOR LIVE STAKING.
2. THE BUNDLE SHALL BE A MINIMUM OF 12" IN DIAMETER AND A MINIMUM OF 3' LONG.
3. TWO WOODEN STAKES SHALL BE DRIVEN THROUGH THE BUNDLE TO ANCHOR THE BUNDLES TO THE GROUND.
4. APPROXIMATELY 2" OF TOP SOIL SHALL BE FILLED ON TOP OF THE BUNDLE CUTTINGS AFTER INSTALLATION.
5. STAKE SHALL BE 1"X2" AND SHALL BE DRIVEN IN TO A DEPTH SUFFICIENT TO SECURE BUNDLE CUTTING.

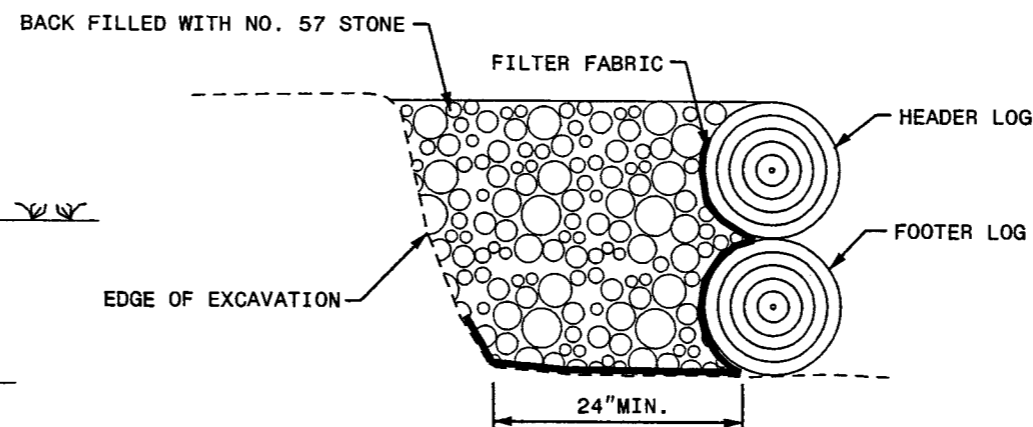
**TYPICAL SECTION**

NOTES:

1. LOG SILL LOGS SHALL BE AT LEAST 12" IN DIAMETER. LOG SILL SHALL BE CONSTRUCTED WITH 1 FOOTER LOG AND 1 HEADER LOG.
2. ANGLE OF THE SILL SHALL BE PERPENDICULAR TO FLOW.
3. BUNDLE CUTTINGS SHALL BE PLACED AT THE CHANNEL EDGE ABOVE THE SILL ON BOTH THE LEFT AND RIGHT BANKS.
4. LENGTH OF LOG SHALL EXTEND A MINIMUM OF 5' INTO EACH BANK.
5. THE SILL SHALL BE INSTALLED FLUSH WITH THE THALWEG ELEVATION OF THE STREAM.
6. NO.57 OR LIKE STONE SHOULD BE USED AS APPROVED BY THE DESIGNER OR DESIGNERS REPRESENTATIVE



**SECTION A-A**



**SECTION B-B**

LOCATION: STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS	
PROJECT NO. SCO-050659701	DATE: PITT
DESIGNED BY: NEJ	DRAWN BY: CGM
CHECKED BY: BAM	DATE:



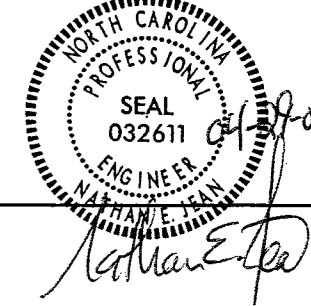
# STREAM CONSTRUCTION DETAILS



**Stantec**

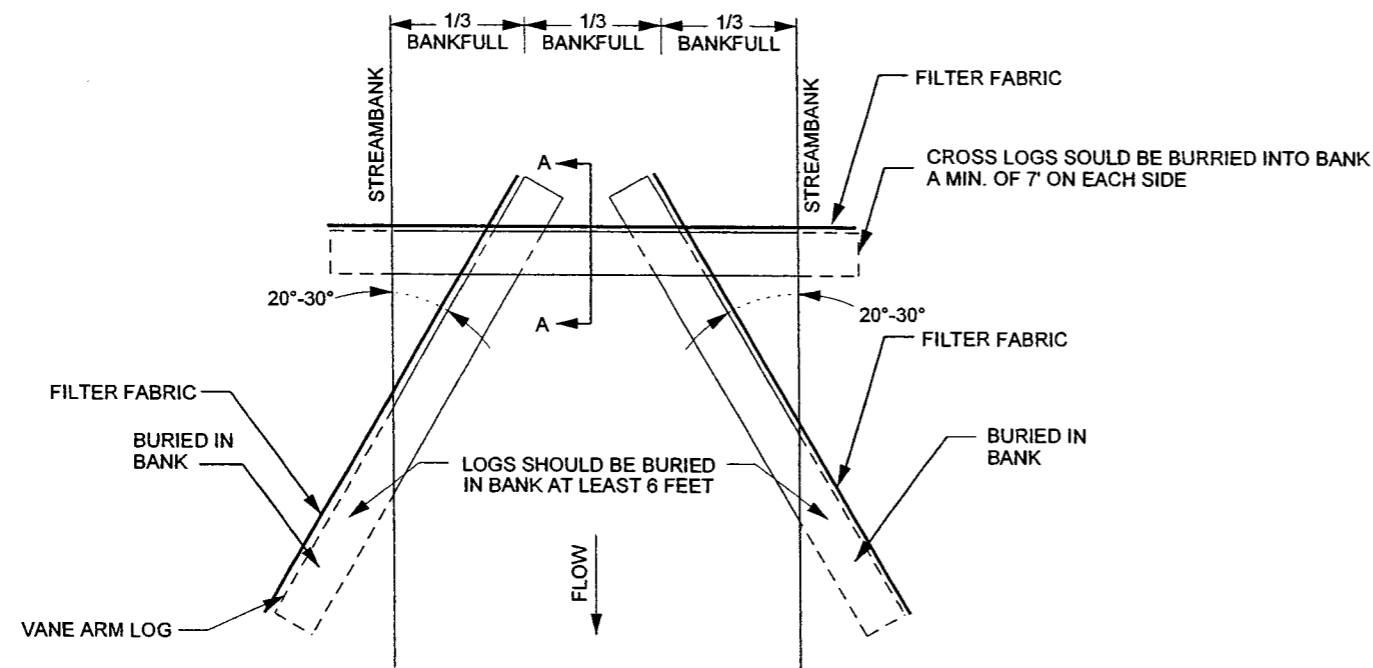
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PROJECT REFERENCE NO. SCO-050659701	SHEET NO. 2D
PROJECT ENGINEER	



## LOG CROSS VANE

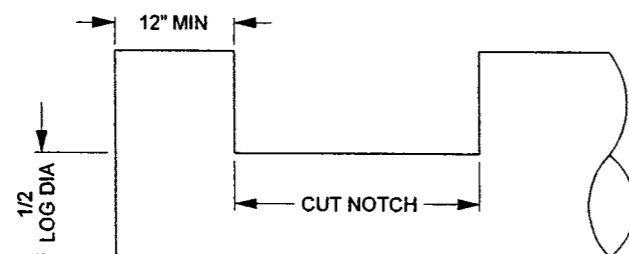
SCALE: NTS



**NOTES:**

- CROSS LOGS SHOULD BE A MINIMUM OF 12" IN DIAMETER. VANE ARM LENGTH SHOULD BE A MINIMUM OF 12" IN DIAMETER. ALL LOGS SHOULD BE RELATIVELY STRAIGHT.
- CROSS LOGS SHOULD BE BURIED INTO BANK A MINIMUM OF 7'.
- VANE ARM LOGS SHOULD BE BURIED INTO THE BANK A MINIMUM OF 6'-10'.

## PLAN VIEW



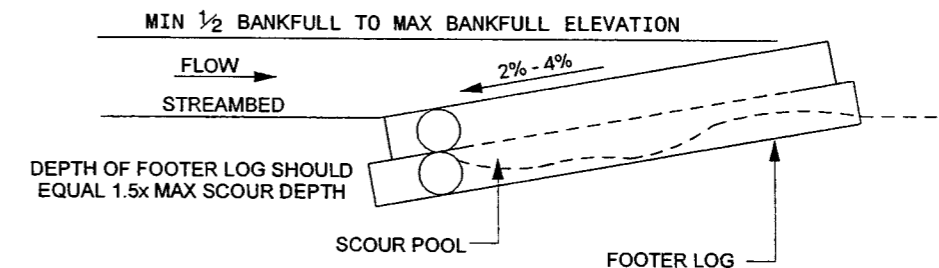
## SIDE VIEW OF NOTCH



## PLAN VIEW OF NOTCH

**NOTES:**

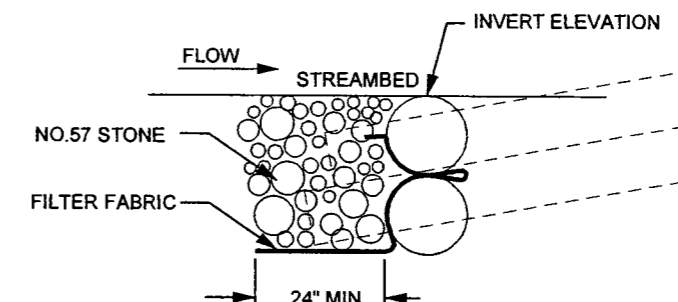
- NOTCH IS FORMED BY MAKING CUTS WITH A CHAINSAW 1-2" APART AND THEN KNOCKING OUT SECTIONS WITH A CHISEL AND HAMMER.
- ANGLE OF NOTCH SHOULD MATCH ANGLE BETWEEN LOG ARMS OF CROSSVANE AND STREAMBANK.
- NOTCHES SHALL BE PLACED ON BOTH CROSS ARM AND VANE ARM.



**NOTE:**

SET ELEVATION OF TOP OF CROSS LOGS OR BOULDERS TO INVERT ELEVATION OF STREAMBED

## ELEVATION VIEW



**NOTES:**

- USE FILTER FABRIC TO SEAL GAPS BETWEEN LOGS.
- NAIL FILTER FABRIC TO TOP OF FOOTER LOG USING 3" 10d GALVANIZED COMMON NAIL ON 2' SPACING ALONG LOG.

## SECTION A-A

STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS	
PROJECT NO. SCO-050659701	COUNTY: PITT
DRAWN BY: NEJ	CHECKED BY: CGM
DATE: BMM	DATE:

# STREAM CONSTRUCTION DETAILS

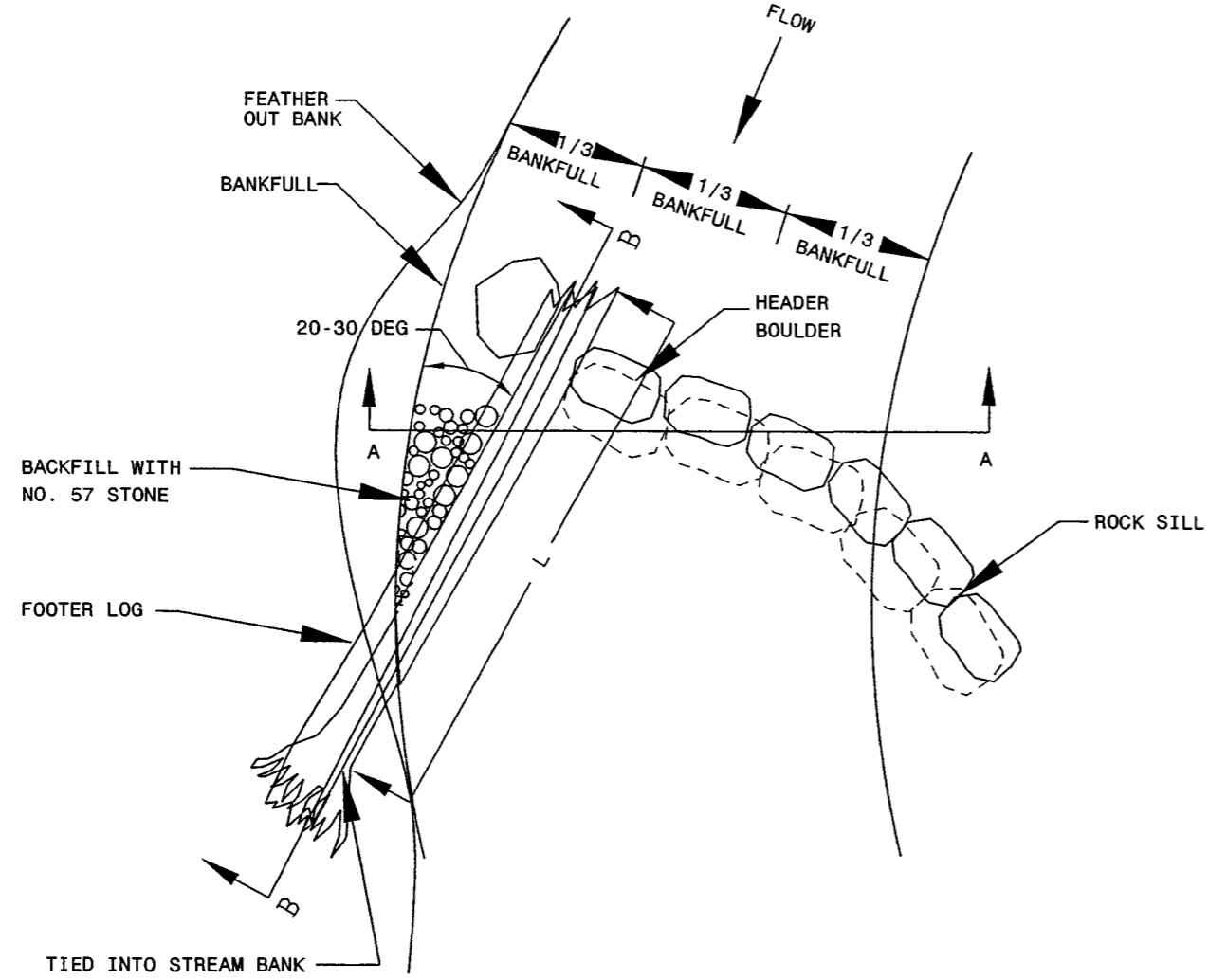
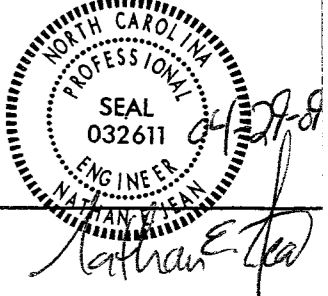
## LOG VANE WITH ROCK J-HOOK

SCALE: NTS

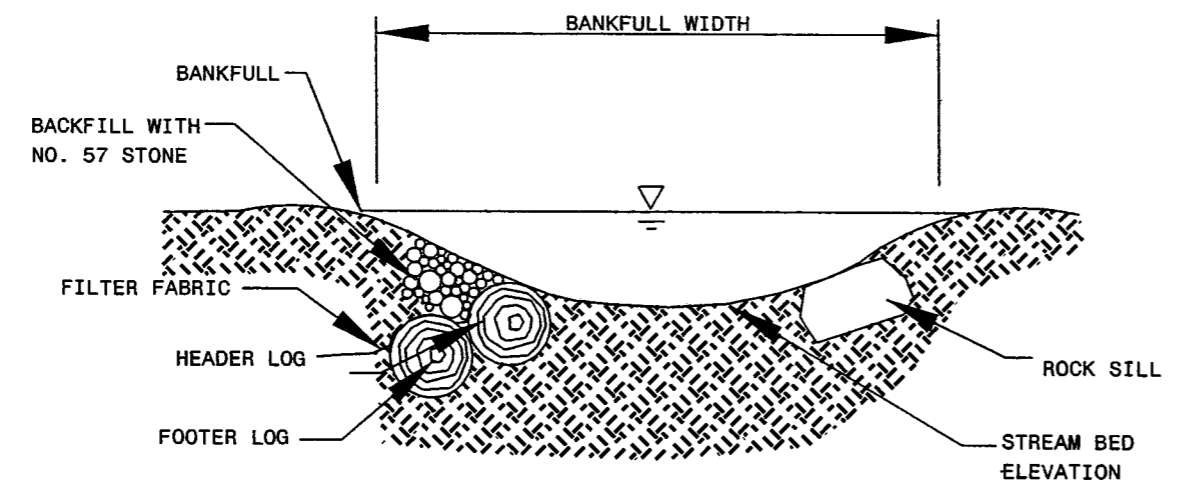


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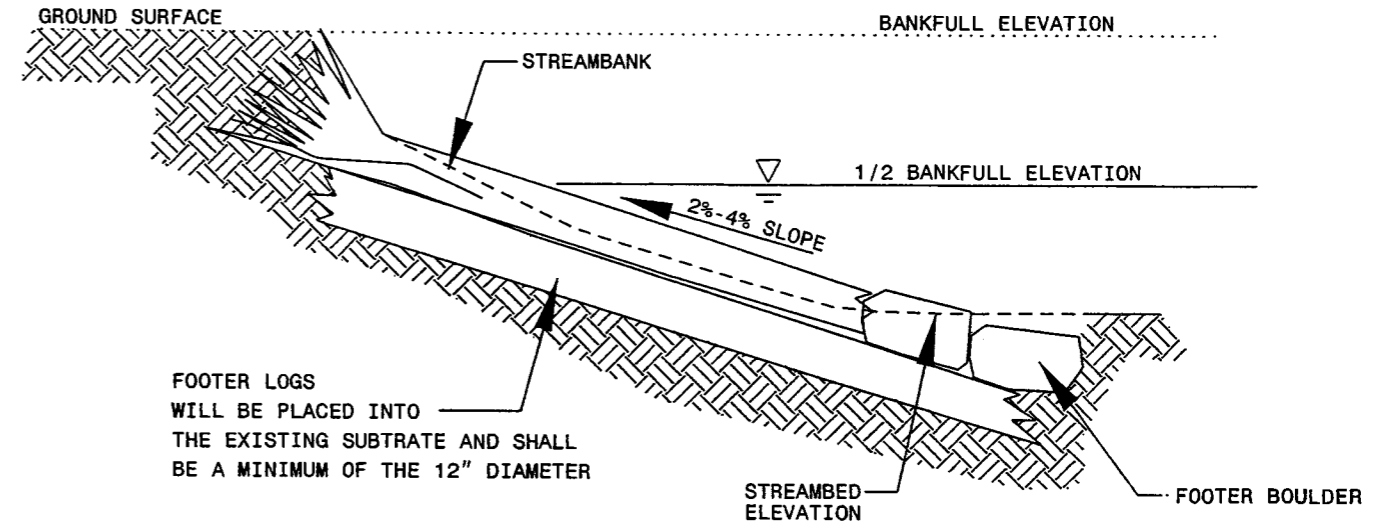
PROJECT REFERENCE NO. SCO-050659701	SHEET NO. 2E
PROJECT ENGINEER	



**PLAN VIEW**



**SECTION A-A**



**SECTION B-B**

- INSTALLATION OF J-HOOK VANE**
1. FILTER FABRIC SHALL BE PLACED ON THE UPSTREAM SIDE OF THE STRUCTURE. DIAMETER FROM THE TOP OF THE LOG. THE NAILS SHALL BE ON 12 INCH CENTERS. FILTER FABRIC SHALL BE BURIED IN THE BOTTOM OF THE CHANNEL AND SHALL BE PLACED THE ENTIRE LENGTH OF STRUCTURE.
  2. A HYDRAULIC EXCAVATOR, WITH A BUCKET THAT CONTAINS A HYDRAULIC THUMB, SHALL BE USED TO PLACE BOULDERS AND LOGS WITH THE SUPERVISION OF THE ENGINEER.
  3. SEE SPECIAL PROVISIONS FOR HEADER AND FOOTER DIMENSIONS.
  4. FOOTER LOG SHALL BE PLACED FIRST WITH HEADER LOG PLACED ON TOP PRIOR TO BACKFILLING THE TRENCH WITH NO. 57 STONE. FILTER FABRIC SHALL BE PLACED ON THE UPSTREAM SIDE OF THE VANE STRUCTURE TO PREVENT WASHOUT OF SEDIMENT THROUGH LOG GAPS. FILTER FABRIC SHALL EXTEND FROM THE BOTTOM OF THE FOOTER LOG TO THE FINISHED GRADE ELEVATION AND SHALL BE PLACED THE ENTIRE LENGTH OF STRUCTURE. ALL LOGS SHALL BE A MIN. OF 12" IN DIAMETER AND CAN EITHER BE HARD OR SOFT WOOD.
  5. 1/3 OF THE WAY ACROSS THE CHANNEL FROM THE OUTSIDE BANK THE HEADER ROCK SHALL BE PLACED AT 0.2 FT ABOVE THE CHANNEL INVERT ELEVATION.
  6. THERE SHALL BE NO GAPS BETWEEN THE HEADER ROCKS.
  7. HEADER LOGS AND FOOTER LOGS SHALL BE PLACED AT THE HEAD OF THE VANE, TO 1/2 BANKFULL ELEVATION AT A SLOPE OF 2%-4%. HEADER AND FOOTER LOGS SHALL BE TIED SECURELY INTO THE BANK IN SUCH A WAY THAT ELIMINATES THE POSSIBILITY OF STREAMFLOW DIVERTING AROUND THEM.
  8. ANY SOIL DISTURBED DURING THE PLACEMENT OF J-HOOK LOG VANES, SHALL BE SEEDED USING TEMPORARY AND PERMANENT SEEDING METHODS.

STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS	
PROJECT NO. SCO-050659701	DATE: PTT
DESIGNED BY: NEJ	DRAWN BY: CGM
CHECKED BY: BAM	DATE:

# STREAM CONSTRUCTION DETAILS

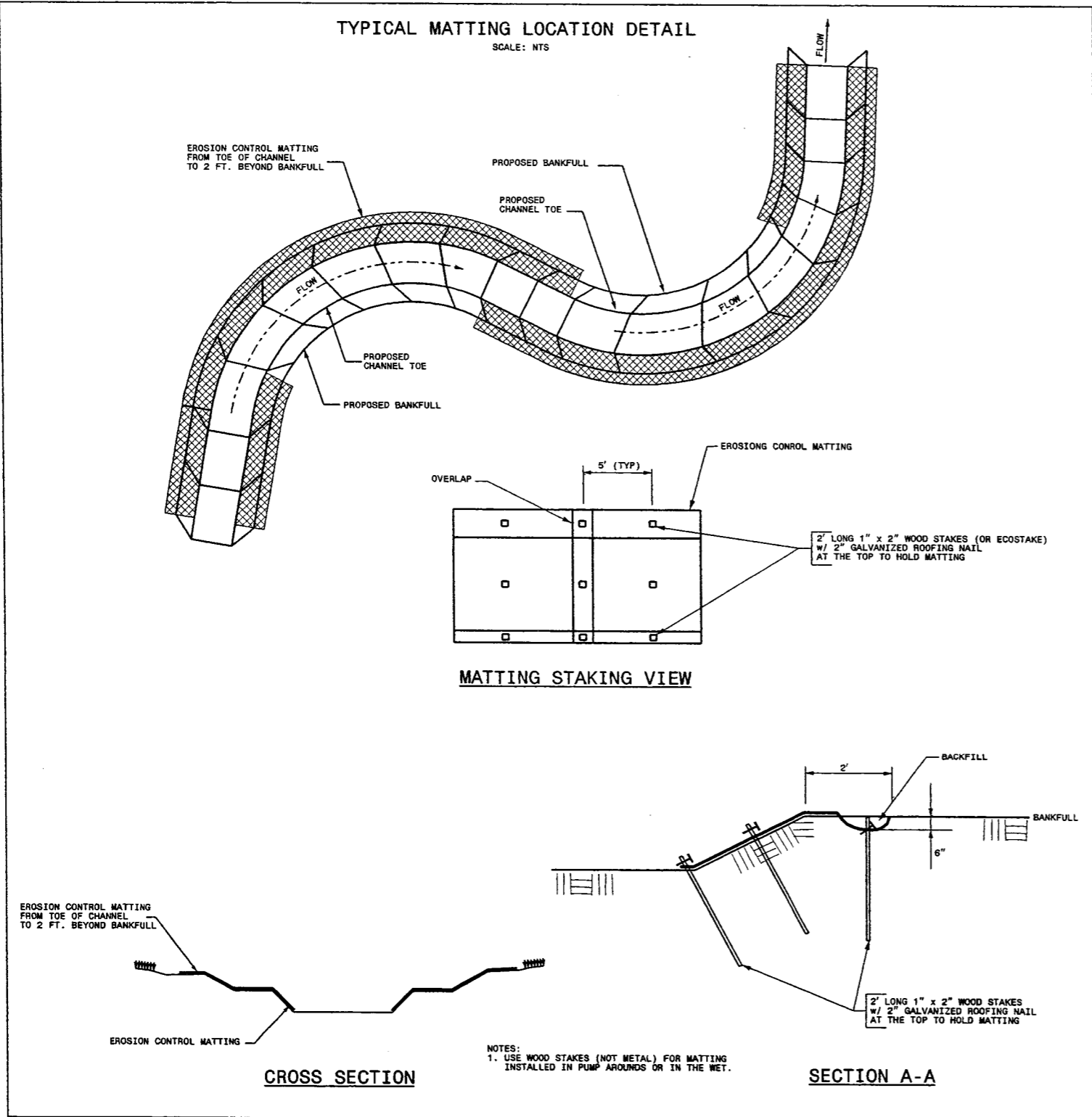


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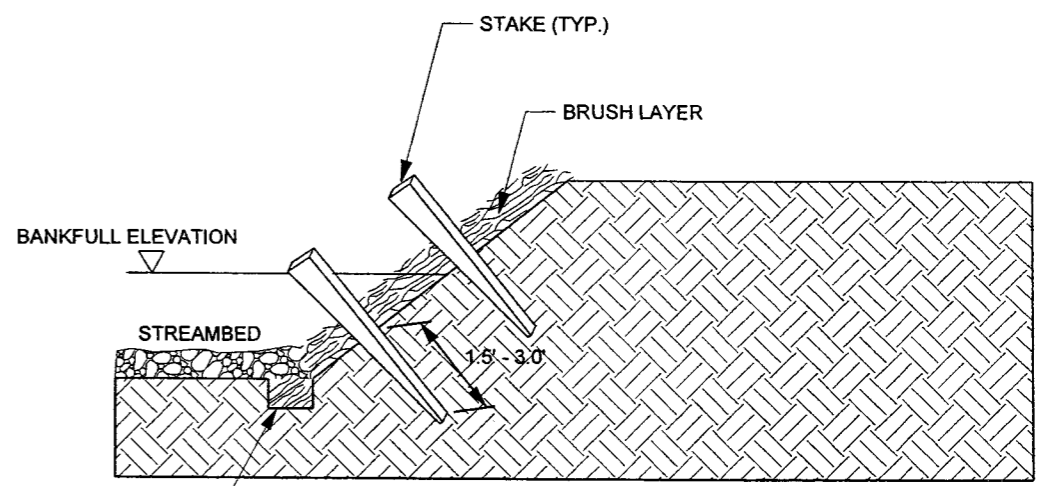
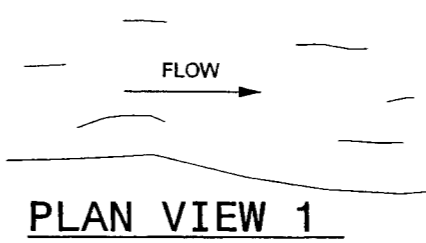
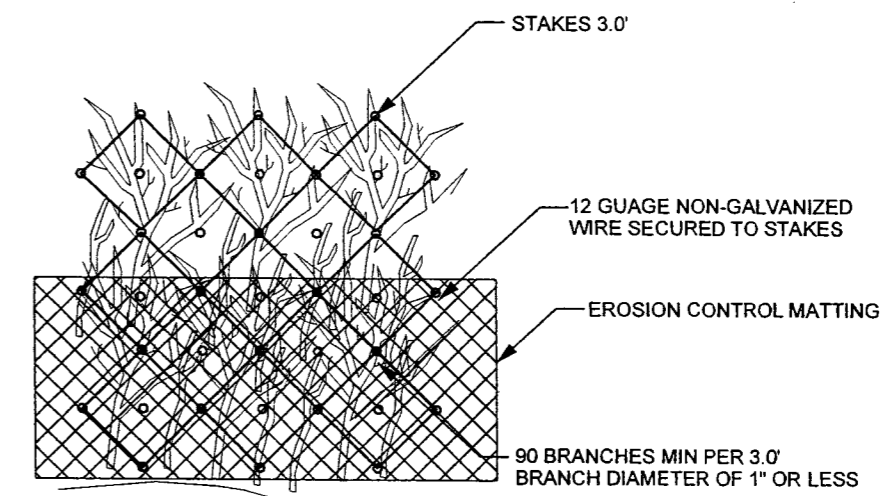
PROJECT REFERENCE NO. SCO-050659701	SHEET NO. 2F
PROJECT ENGINEER	

*Nathan E. Jean*



## BRUSH MATTRESS

SCALE: NTS



EXCAVATE AT TOE OF SLOPE  
 W= 1.5'  
 D= 1.0'  
 (BACK FILL WITH STONE)

- NOTES:**
1. CREATE 12" DEEP TRENCH
  2. STAKE AND WIRE BRUSH LAYER INTO TRENCH
  3. BOARD FOR STAKE SHOULD BE 2" x 2" x 36" OR LONGER
  4. STAKE SHOULD BE EXPOSED A MAX OF 0.5'
  5. NO BLACK WILLOW TO BE USED FOR BRUSH LAYER
  6. SILKY WILLOW SHALL BE USED AS BRUSH LAYERING

## CROSS SECTION

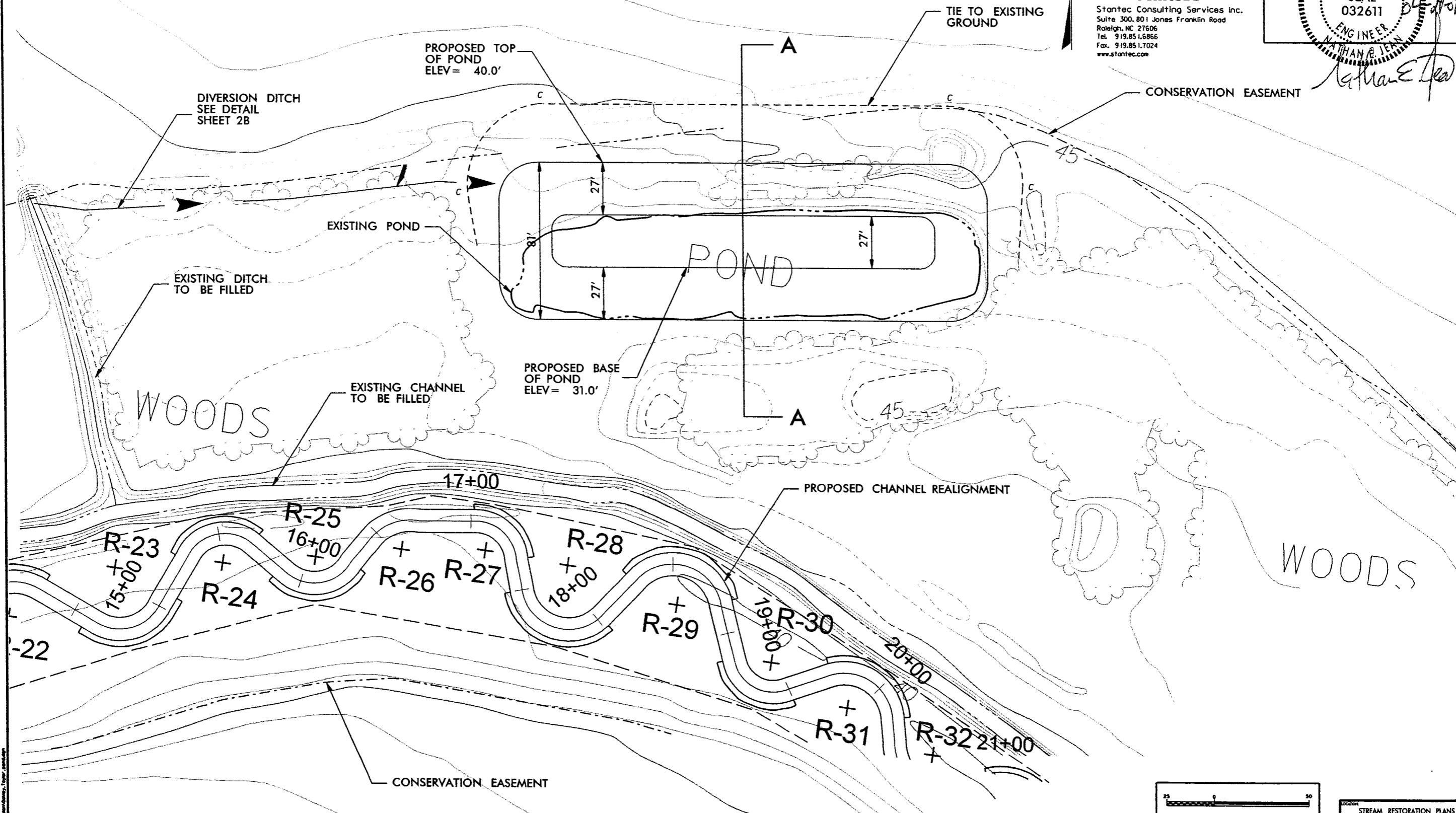
PROJECT: STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS	
PROJECT NO.: SCO-050659701	COUNTY: PITT
DESIGNED BY: NEJ	DRAWN BY: CGM
CHECKED BY: BAM	DATE:

# STREAM CONSTRUCTION DETAIL

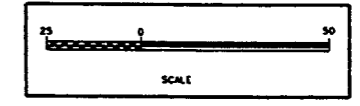
## PROPOSED TAYLOR POND EXCAVATION



PROJECT REFERENCE NO. SCO-050659701	SHEET NO. 2G
PROJECT ENGINEER	



NOTE:  
1. CONTOUR INTERVAL SHOWN 1 FT.  
2. MAPPING INFO PROVIDED BY NCDOT AND IS BASED ON AERIAL PHOTOGRAPHY FLOWN 1-30-02.



STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS	
PROJECT NO. SCO-050659701	COUNTY: PITT
DRAWN BY: NEJ	DATE: CCM
CHECKED BY: BAM	DATE:

# STREAM CONSTRUCTION DETAIL

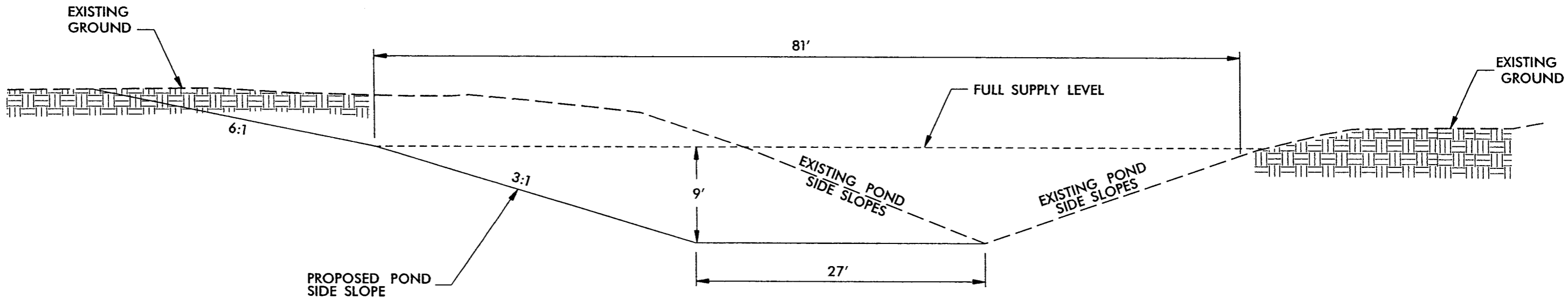
## PROPOSED TYPICAL SECTION FOR THE TAYLOR POND



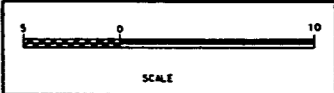
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PROJECT REFERENCE NO. SCO-050659701	SHEET NO. 2H
PROJECT ENGINEER	
NORTH CAROLINA PROFESSIONAL SEAL 032611 ENGINEER NATHAN ZIEGLER	

*Nathan Ziegler*



SECTION A-A



LOCATION STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS	
PROJECT NO. SCO-050659701	COUNTY PITT
DESIGNED BY NEJ	DRAWN BY CGM
CHECKED BY BAM	DATE

# STREAM CONSTRUCTION DETAIL

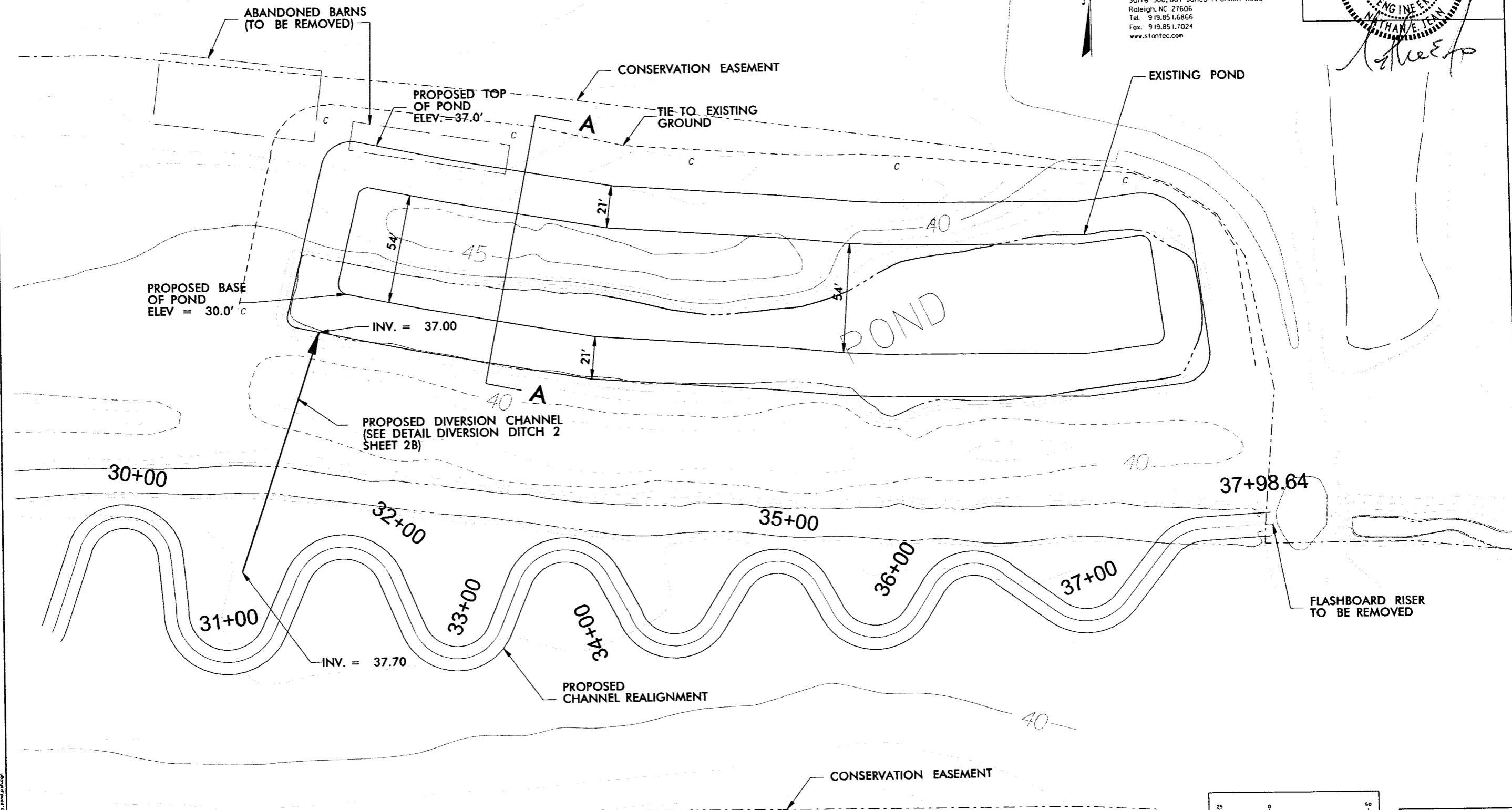
## PROPOSED BRILEY POND EXCAVATION



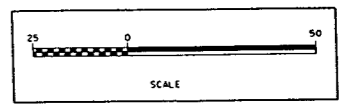
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PROJECT REFERENCE NO. SCO-050659701	SHEET NO. 21
PROJECT ENGINEER	



NOTE:  
 MAPPING INFO PROVIDED BY NCDOT AND IS BASED ON  
 AERIAL PHOTOGRAPHY FLOWN 1-30-02.



LOCATION	STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS
PROJECT NO.	SCO-050659701
COUNTY	PITT
DESIGNED BY	NEJ
DRAWN BY	CGM
CHECKED BY	BAM
DATE	REV. 06/18/2010

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# STREAM CONSTRUCTION DETAIL

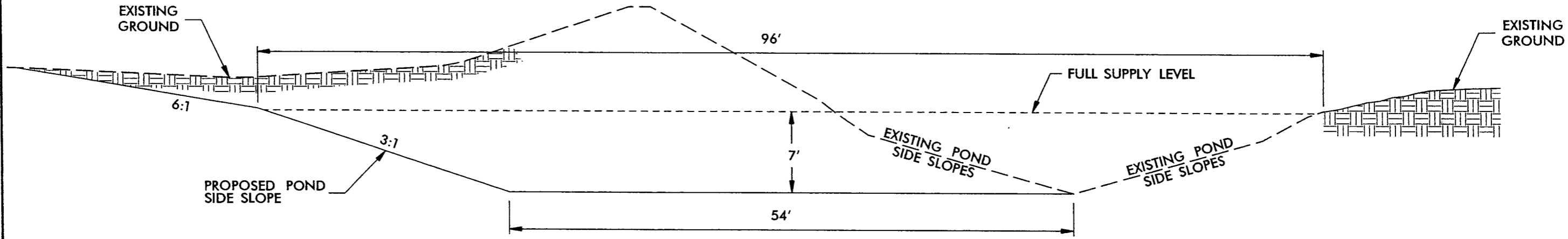


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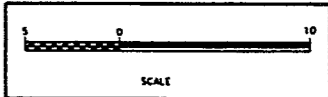
PROJECT REFERENCE NO. SCO-050659701	SHEET NO. 2J
PROJECT ENGINEER	

*Nathan E. Feary*

## PROPOSED TYPICAL SECTION FOR THE BRILEY POND



SECTION A-A



LOCATION: STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS	
PROJECT NO.: SCO-050659701	COUNTY: PITT
DESIGNED BY: NEJ	DRAWN BY: CGM
CHECKED BY: BAM	DATE:

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# SEQUENCE OF CONSTRUCTION



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PROJECT REFERENCE NO. SCO-050659701	SHEET NO. 3
PROJECT ENGINEER	

Nathan E. Jean

## SEQUENCE OF CONSTRUCTION EVENTS

The Contractor is responsible for the following sequence of construction in accordance with the construction plans and the Special Provisions. Any changes or improvements to the sequence of construction must be approved by the design engineer or by an on-site designer's construction manager and the owner before work being done. It is the contractor's responsibility to ensure that an approved field change is issued prior to conducting related work.

### I. Initial Site Preparation

1. Install construction entrances.
2. Prepare staging and stockpiling areas in locations as shown on the construction plans or as approved by the designer or owner.
3. Stake limits of construction as shown on the construction plans or as directed by the designer or owner.
4. Install sediment and erosion control devices.

### II. Channel Construction

1. Note: Project will be constructed from the upstream working in the downstream direction.
2. Install all silt fences as shown on plans.
3. Beginning at Station 0+00 and working downstream construct construction access road on both sides of stream channel as shown on plans. Access road does not require gravel, but is the contractor's responsibility to maintain through out the Sequence of construction. Access road is on both sides of the stream.
4. Construct the proposed stream channel between Stations 0+60 and 37+00. This includes excavation of proposed channel as shown on plans. Construct only that portion of the channel that can be completed and stabilized within the same day. Construct the proposed stream channel to the grade specified. Construct structures as they are encountered. Construct all structures according to details provided and at locations specified on the plan sheets. Designer must approve material for construction of structures before contractor builds structures. Stockpile and separate all soil suitable for fill or topsoil in the area indicated on the construction plans. Any soil unsuitable for fill shall be disposed of as directed in Special Provisions. Any suitable Juncus matting and approved trees and shrubs shall be saved and stockpiled for transplant.
5. Install both pump arounds shown on plans.
6. Construct stream channel between 0+00 and 0+60. Construct only that portion of the channel that can be completed and stabilized within the same day. Construct the proposed stream channel to the grade specified. Construct structures as they are encountered. Construct all structures according to details provided and at locations specified on the plan sheets. Designer must approve all material used for structures before contractor builds structures. Stockpile and separate all soil suitable for fill or topsoil in the area indicated on the construction plans. Any soil unsuitable for fill shall be disposed of as directed in Special Provisions. Any suitable Juncus matting and approved trees and shrubs shall be saved and stockpiled for transplant.
7. Construct stream channel between 37+00 and 37+98.64. Construct only that portion of the channel that can be completed and stabilized within the same day. Construct the proposed stream channel to the grade specified. Construct structures as they are encountered. Construct all structures according to details provided and at locations specified on the plan sheets. Designer must approve material used for structures before contractor builds structures. Stockpile and separate all soil suitable for fill or topsoil in the area indicated on the construction plans. Any soil unsuitable for fill shall be disposed of as directed in Special Provisions. Any suitable Juncus matting and approved trees and shrubs shall be saved and stockpiled for transplant.
8. Construct ford crossing as shown on plans.
9. Turn water into newly constructed channel and remove pump arounds after temporary seeding is installed and established.
10. Install stream channel plug shown on the plans.
11. The flash board riser shall be removed after the channel construction is complete.
12. Expand ponds as shown on the plan sheets.
13. Construct proposed diversion ditches as shown on plans.
14. Fill in existing ditch and old channel.
15. Construct new farm path as shown on plans.
16. Plant the project in accordance to the planting plan provided.

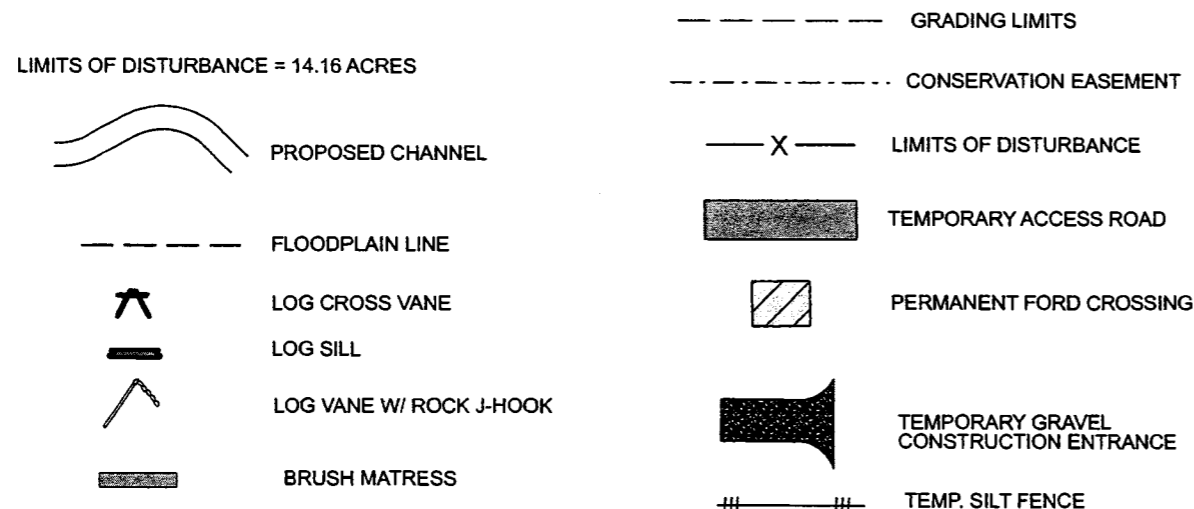
### III. The contractor is responsible for maintaining all erosion control measures:

1. Inspect all measures for stability and operation weekly or within 24 hours after any storm event.
2. Clean out silt traps and sediment basins when half of capacity is reached.
3. Remove sediment from behind silt fence when its height reaches 0.5'.
4. If any erosion and sedimentation control measure is found to be unstable or not functioning properly, repairs should be made immediately to maintain measures as designed or as directed by the engineer.

IV. Remove sediment and erosion control devices, any temporary fencing, staking, sensitive area marking material, trash, etc. from the site as approved by the designer or owner.

V. Seed and mulch staging, stockpiling, and any bare areas with permanent seed mixture.

VI. Site clean up shall occur after all construction processes have been completed. Site clean up shall include pick up of trash and construction materials. The access road will be left in pre-construction conditions or better.



LOCATION: STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS	
PROJECT NO.: SCO-050659701	COUNTY: PITT
DESIGNED BY: NEJ	DRAWN BY: CGM
CHECKED BY: DAB	DATE:

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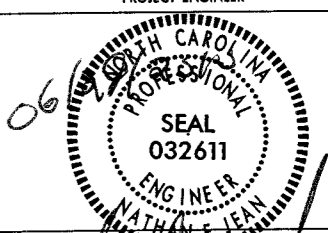


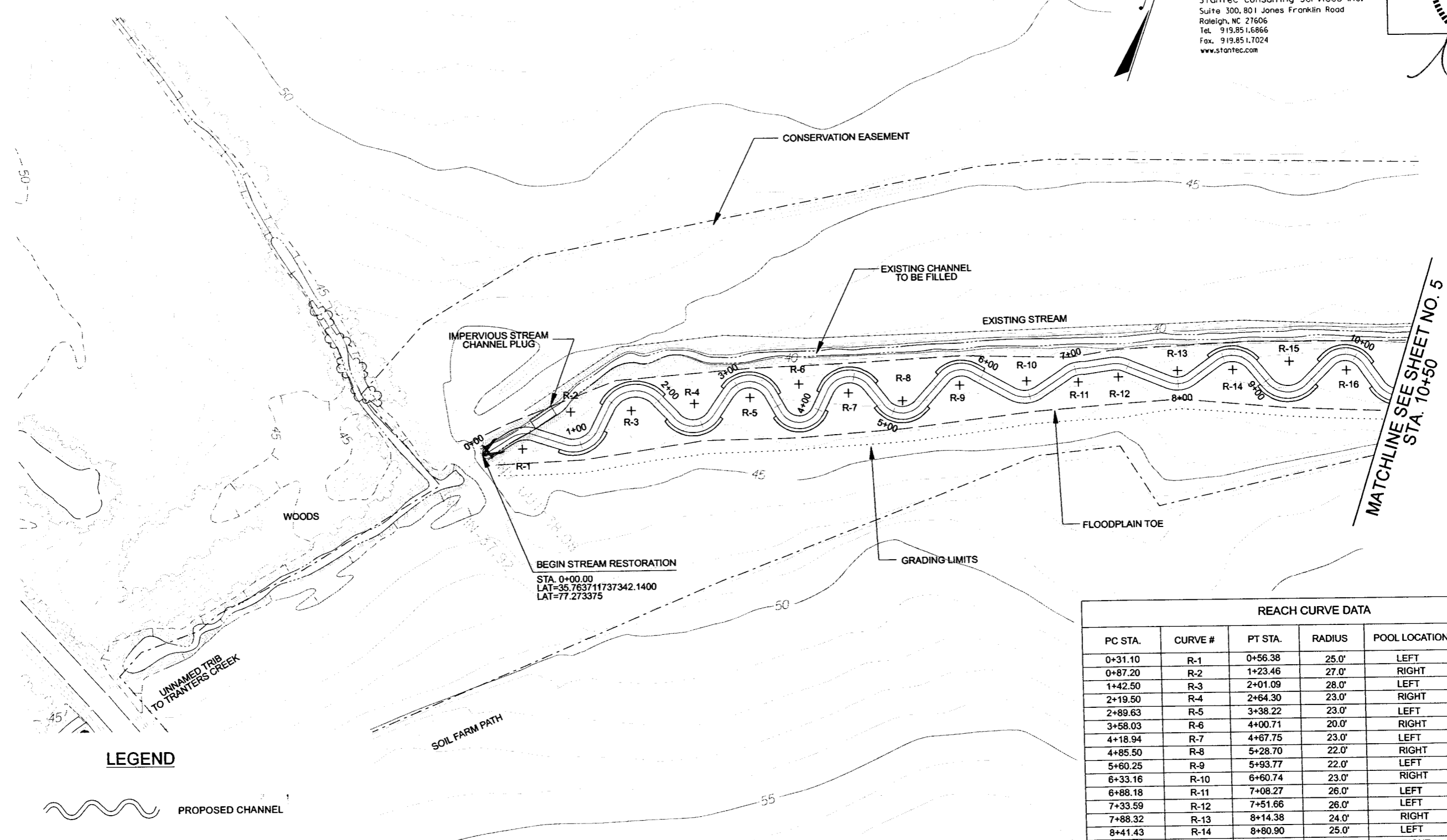
# PLAN VIEW

STRUCTURE LOCATIONS REACH			
STRUCTURE	STA. INV.	INV. ELEV.	BKF. ELEV.
LOG CROSS VANE	0+00	38.20	40.70




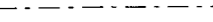


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PROJECT REFERENCE NO. SCO-050659701	SHEET NO. 4
PROJECT ENGINEER	
 SEAL 032611 NATHAN E. JEAN	

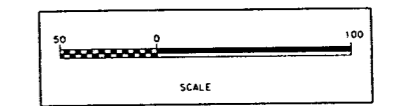


### LEGEND

-  PROPOSED CHANNEL
-  FLOODPLAIN TOE
-  GRADING LIMITS
-  CONSERVATION EASEMENT

- NOTE:
1. CONTOUR INTERVAL SHOWN IS 1 FOOT
  2. MAPPING INFO PROVIDED BY NCDOT AND IS BASED ON AERIAL PHOTOGRAPHY FLOWN 1-30-02.
  3. PRIORITY I STA. 0+00.00 TO 37+98.64
  4. ALL BRUSH MATTRESS SHALL EXTEND FROM PT TO PC

REACH CURVE DATA						
PC STA.	CURVE #	PT STA.	RADIUS	POOL LOCATION	BKF. ELEV.	EXISTING ELEV. @ PC
0+31.10	R-1	0+56.38	25.0'	LEFT	40.65	39.36
0+87.20	R-2	1+23.46	27.0'	RIGHT	40.60	44.11
1+42.50	R-3	2+01.09	28.0'	LEFT	40.56	43.71
2+19.50	R-4	2+64.30	23.0'	RIGHT	40.53	43.77
2+89.63	R-5	3+38.22	23.0'	LEFT	40.48	43.26
3+58.03	R-6	4+00.71	20.0'	RIGHT	40.44	43.27
4+18.94	R-7	4+67.75	23.0'	LEFT	40.41	42.77
4+85.50	R-8	5+28.70	22.0'	RIGHT	40.37	42.97
5+60.25	R-9	5+93.77	22.0'	LEFT	40.31	42.49
6+33.16	R-10	6+60.74	23.0'	RIGHT	40.24	42.88
6+88.18	R-11	7+08.27	26.0'	LEFT	40.19	42.60
7+33.59	R-12	7+51.66	26.0'	LEFT	40.14	42.42
7+88.32	R-13	8+14.38	24.0'	RIGHT	40.07	42.41
8+41.43	R-14	8+80.90	25.0'	LEFT	40.02	41.69
8+99.22	R-15	9+43.66	24.0'	RIGHT	39.98	41.90
9+72.18	R-16	10+10.52	22.0'	LEFT	39.93	41.46
10+32.88	R-17	10+78.13	24.0'	RIGHT	39.89	41.52



LOCATION: STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS

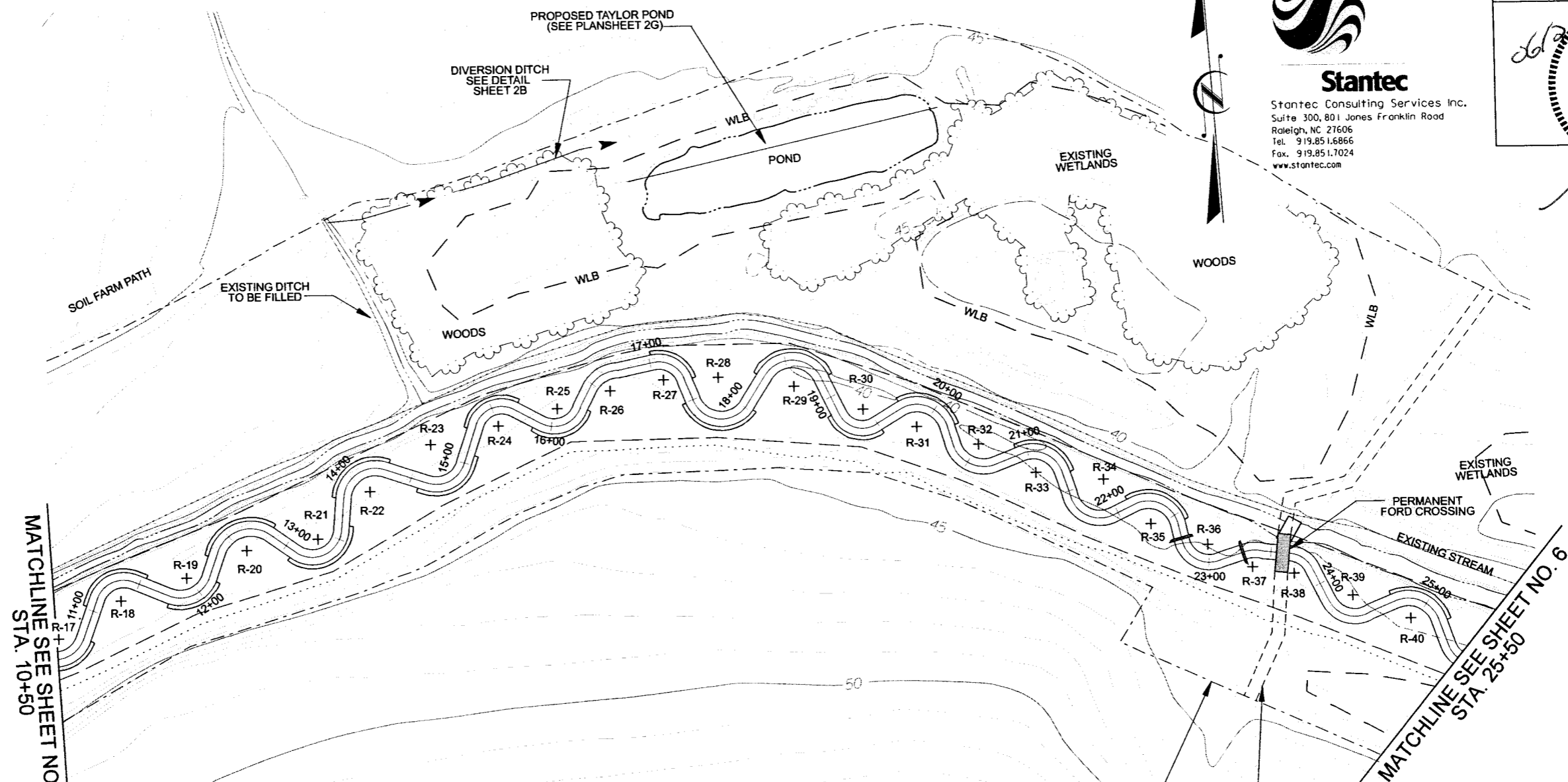
PROJECT NO. SCO-050659701 COUNTY: PITT

DESIGNED BY: NEJ DRAWN BY: JLH

CHECKED BY: BAM DATE: REV. 06/18/21



# PLAN VIEW



MATCHLINE SEE SHEET NO. 4  
STA. 10+50

MATCHLINE SEE SHEET NO. 6  
STA. 25+50

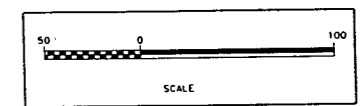
REACH CURVE DATA						
PC STA.	CURVE #	PT STA.	RADIUS	POOL LOCATION	BKF. ELEV.	EXISTING ELEV. @ PC
10+32.88	R-17	10+78.13	24.0'	RIGHT	39.89	41.52
11+09.48	R-18	11+46.81	22.0'	LEFT	39.83	41.13
11+74.76	R-19	12+15.96	24.0'	RIGHT	39.78	41.67
12+33.23	R-20	12+85.59	27.0'	LEFT	39.74	41.12
13+07.77	R-21	13+58.78	23.0'	RIGHT	39.70	41.30
13+82.18	R-22	14+29.80	25.0'	LEFT	39.66	40.89
14+63.13	R-23	15+00.94	23.0'	RIGHT	39.60	41.20
15+28.73	R-24	15+68.59	21.0'	LEFT	39.54	40.56
15+90.58	R-25	16+30.18	22.0'	RIGHT	39.50	41.17
16+44.19	R-26	16+74.04	24.0'	LEFT	39.47	41.03
17+01.70	R-27	17+34.17	21.0'	LEFT	39.42	40.88
17+47.69	R-28	18+05.34	24.0'	RIGHT	39.40	40.84
18+27.72	R-29	18+86.14	25.0'	LEFT	39.35	40.29
19+13.93	R-30	19+50.25	19.0'	RIGHT	39.30	40.45
19+69.61	R-31	20+18.78	25.0'	LEFT	39.27	40.26
20+28.71	R-32	20+73.88	24.0'	RIGHT	39.25	40.42
20+93.18	R-33	21+34.95	24.0'	LEFT	39.21	39.95
21+51.49	R-34	21+96.92	24.0'	RIGHT	39.18	39.98
22+12.49	R-35	22+59.61	24.0'	LEFT	39.15	39.49
22+68.99	R-36	23+10.55	22.0'	RIGHT	39.02	39.84
23+28.11	R-37	23+44.32	20.0'	LEFT	38.82	40.08
23+64.15	R-38	23+88.73	21.0'	LEFT	38.75	40.88
24+14.00	R-39	24+53.46	23.0'	RIGHT	38.70	40.91
24+75.11	R-40	25+17.63	25.0'	LEFT	38.66	39.63
25+36.20	R-41	25+81.77	24.0'	RIGHT	38.63	40.10

## LEGEND

- PROPOSED CHANNEL
- FLOODPLAIN TOE
- GRADING LIMITS
- CONSERVATION EASEMENT

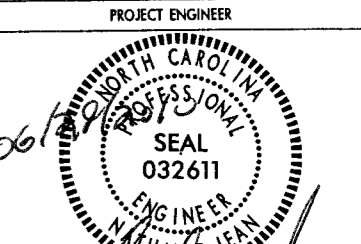
NOTE:  
 1. CONTOUR INTERVAL SHOWN IS 1 FOOT  
 2. MAPPING INFO PROVIDED BY NCDOT AND IS BASED ON AERIAL PHOTOGRAPHY FLOWN 1-30-02.  
 3. PRIORITY STA. 0+00.00 TO 37+98.64  
 4. PROPOSED BRUSH MATTRESS SHALL EXTEND FROM PC TO PT

STRUCTURE LOCATIONS REACH			
STRUCTURE	STA. INV.	INV. ELEV.	BKF. ELEV.
LOG SILL	22+68.99	36.62	39.12
LOG SILL	23+28.11	36.42	38.92



LOCATION: STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS  
 PROJECT NO: SCO-050659701 COUNTY: PITT  
 DESIGNED BY: NEJ DRAWN BY: JLH  
 CHECKED BY: BAM DATE: REV. 06/18/21

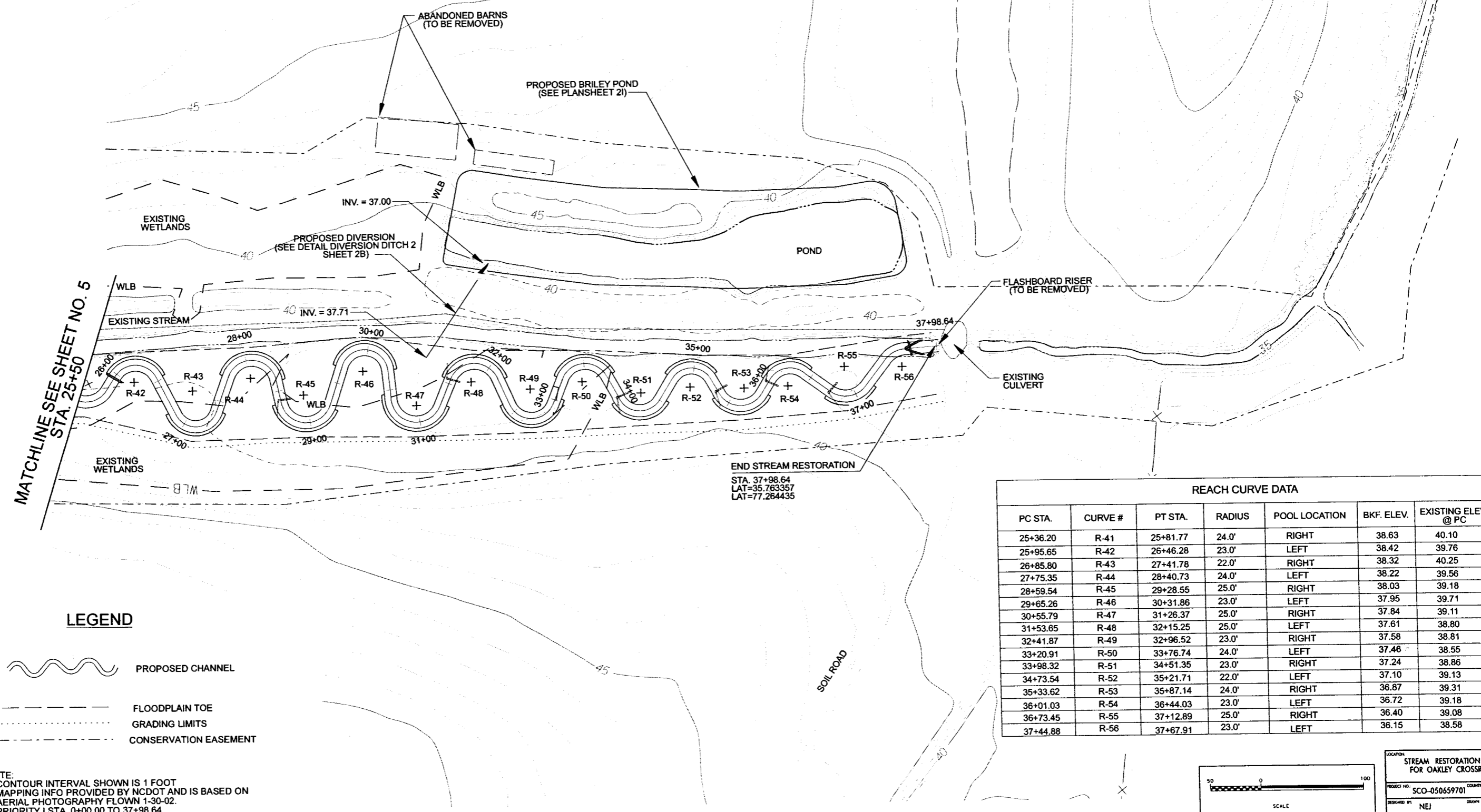
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**PLAN VIEW**

STRUCTURE LOCATIONS REACH			
STRUCTURE	STA. INV.	INV. ELEV.	BKF. ELEV.
LOG SILL	25+95.65	36.07	38.57
LOG VANE WITH ROCK J-HOOK	28+59.54	35.63	38.13
LOG VANE WITH ROCK J-HOOK	31+53.65	35.21	37.71
LOG VANE WITH ROCK J-HOOK	33+98.32	34.84	37.34
LOG VANE WITH ROCK J-HOOK	35+33.62	34.47	36.97
LOG VANE WITH ROCK J-HOOK	36+01.03	34.32	36.82
LOG VANE WITH ROCK J-HOOK	36+73.45	34.00	36.50
LOG CROSS VANE	37+67.91	33.61	36.11



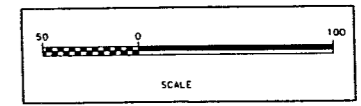
MATCHLINE SEE SHEET NO. 5  
STA. 25+50

**LEGEND**

- PROPOSED CHANNEL
- FLOODPLAIN TOE
- GRADING LIMITS
- CONSERVATION EASEMENT

- NOTE:**
1. CONTOUR INTERVAL SHOWN IS 1 FOOT
  2. MAPPING INFO PROVIDED BY NCDOT AND IS BASED ON AERIAL PHOTOGRAPHY FLOWN 1-30-02.
  3. PRIORITY I STA. 0+00.00 TO 37+98.64
  4. BRUSH MATTRESS SHALL EXTEND FROM PT TO PC

REACH CURVE DATA						
PC STA.	CURVE #	PT STA.	RADIUS	POOL LOCATION	BKF. ELEV.	EXISTING ELEV. @ PC
25+36.20	R-41	25+81.77	24.0'	RIGHT	38.63	40.10
25+95.65	R-42	26+46.28	23.0'	LEFT	38.42	39.76
26+85.80	R-43	27+41.78	22.0'	RIGHT	38.32	40.25
27+75.35	R-44	28+40.73	24.0'	LEFT	38.22	39.56
28+59.54	R-45	29+28.55	25.0'	RIGHT	38.03	39.18
29+65.26	R-46	30+31.86	23.0'	LEFT	37.95	39.71
30+55.79	R-47	31+26.37	25.0'	RIGHT	37.84	39.11
31+53.65	R-48	32+15.25	25.0'	LEFT	37.61	38.80
32+41.87	R-49	32+96.52	23.0'	RIGHT	37.58	38.81
33+20.91	R-50	33+76.74	24.0'	LEFT	37.46	38.55
33+98.32	R-51	34+51.35	23.0'	RIGHT	37.24	38.86
34+73.54	R-52	35+21.71	22.0'	LEFT	37.10	39.13
35+33.62	R-53	35+87.14	24.0'	RIGHT	36.87	39.31
36+01.03	R-54	36+44.03	23.0'	LEFT	36.72	39.18
36+73.45	R-55	37+12.89	25.0'	RIGHT	36.40	39.08
37+44.88	R-56	37+67.91	23.0'	LEFT	36.15	38.58



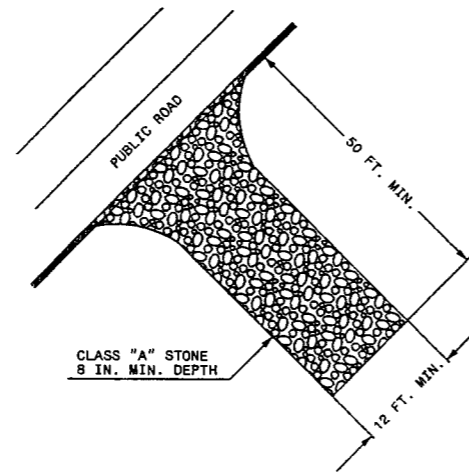
LOCATION: STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS	
PROJECT NO.: SCO-050659701	COUNTY: PITT
DESIGNED BY: NEJ	DRAWN BY: JLH
CHECKED BY: BAM	DATE: REV. 06/18/2

6/27/2008 10:10:20 AM C:\design\open\050659701.dwg (plotted)

# EROSION CONTROL DETAIL

## TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

- NOTES:
- TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS SHALL BE PROVIDED.
  - ENTRANCE(S) SHOULD BE LOCATED TO PROVIDE FOR UTILIZATION BY ALL CONSTRUCTION VEHICLES.
  - MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOP DRESSING WITH STONE WILL BE NECESSARY.
  - ANY MATERIAL TRACKED ONTO THE ROADWAY MUST BE CLEANED UP IMMEDIATELY.
  - GRAVEL CONSTRUCTION ENTRANCE SHALL BE LOCATED AT ALL POINTS OF INGRESS AND EGRESS UNTIL SITE IS STABILIZED. FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE MUST BE PROVIDED.
  - FILTER FABRIC TO BE PLACED BENEATH STONE.



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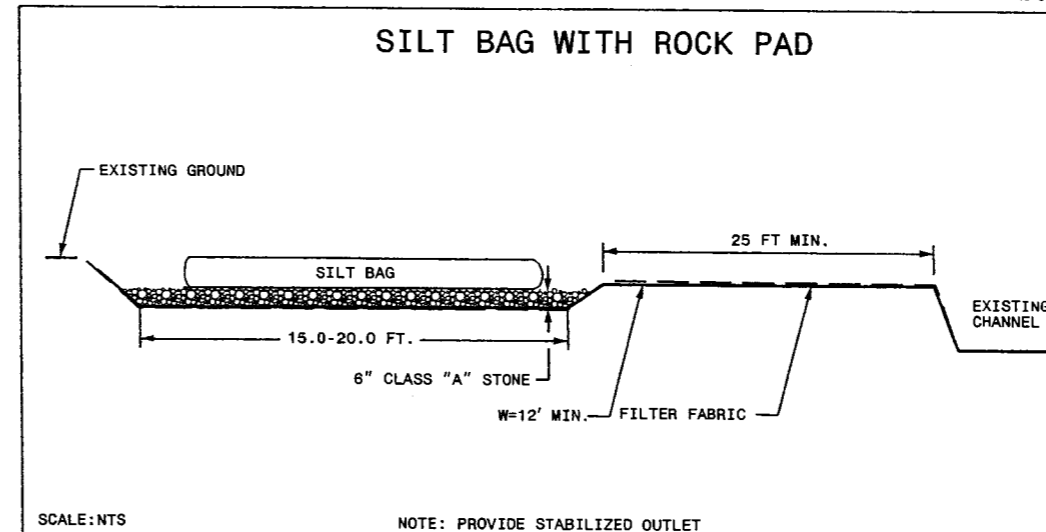
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Tel. 919.851.6866  
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PROJECT REFERENCE NO. SCO-050659701	SHEET NO. EC-1
PROJECT ENGINEER	

## PUMP-AROUND OPERATION

SCALE: NTS

### SILT BAG WITH ROCK PAD

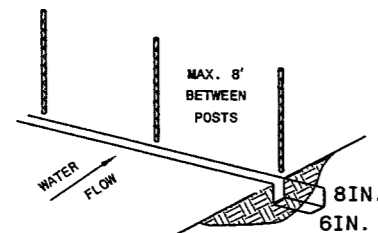


#### SEQUENCE OF CONSTRUCTION FOR TYPICAL WORK AREA

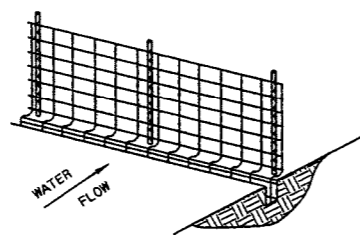
- INSTALL SPECIAL STILLING BASIN(S).
- INSTALL UPSTREAM PUMP AND TEMPORARY FLEXIBLE HOSE.
- PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
- PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DEWATER ENTRAPPED AREA. AREA TO BE DEWATERED SHALL BE EQUAL TO ONE DAY'S WORK.
- PERFORM STREAM RESTORATION WORK IN ACCORDANCE WITH THE PLANS.
- EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES. REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSE. (DOWNSTREAM IMPERVIOUS DIKES FIRST).
- ALL GRADING AND STABILIZATION MUST BE COMPLETED IN ONE DAY WITHIN THE PUMP AROUND AREAS BETWEEN THE IMPERVIOUS DIKES. THE IMPERVIOUS DIKE LOCATIONS AS SHOWN ON THIS SHEET ONLY SHOW THE UPPER AND LOWER EXTENT OF WORK FOR EACH STREAM SEGMENT. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF THE IMPERVIOUS DIKE(S) FOR EACH DAY'S WORK.
- REMOVE SPECIAL STILLING BASIN(S) AND BACKFILL. STABILIZE DISTURBED AREA WITH SEED AND MULCH.

## STANDARD TEMPORARY SILT FENCE

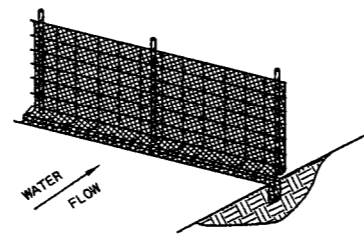
STEP 1:  
DRIVE STEEL POSTS 24IN. INTO GROUND AND EXCAVATE A 6IN. x 6IN. TRENCH UPHILL ALONG THE LINE OF POSTS. WOOD POSTS 4IN. IN DIAMETER MAY BE USED.



STEP 2:  
ATTACH WIRE FENCE TO POSTS AND EXTEND THE BOTTOM OF THE FENCE 8IN. INTO THE EXCAVATED TRENCH.

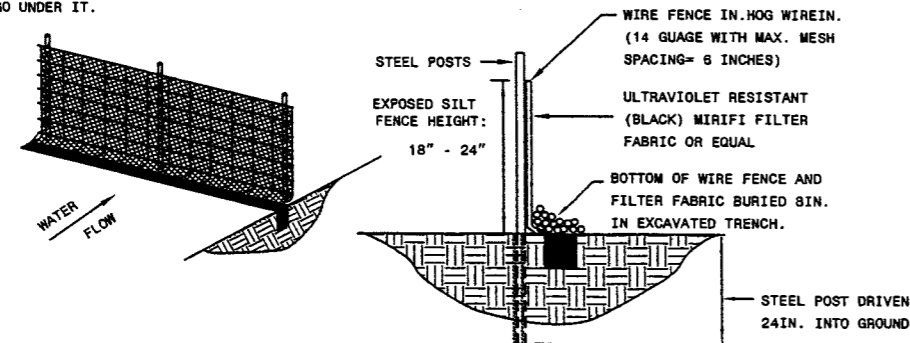


STEP 3:  
ATTACH THE FILTER FABRIC TO THE WIRE FENCE AND EXTEND THE BOTTOM OF THE FABRIC 8IN. INTO THE TRENCH.



### SECTION

STEP 4:  
BACKFILL THE TRENCH AND COMPACT THE SOIL FIRMLY TO ANCHOR THE BOTTOM OF THE SILT FENCE SO THAT RUNOFF IS FORCED TO GO THROUGH THE FENCE AND CANNOT GO UNDER IT.

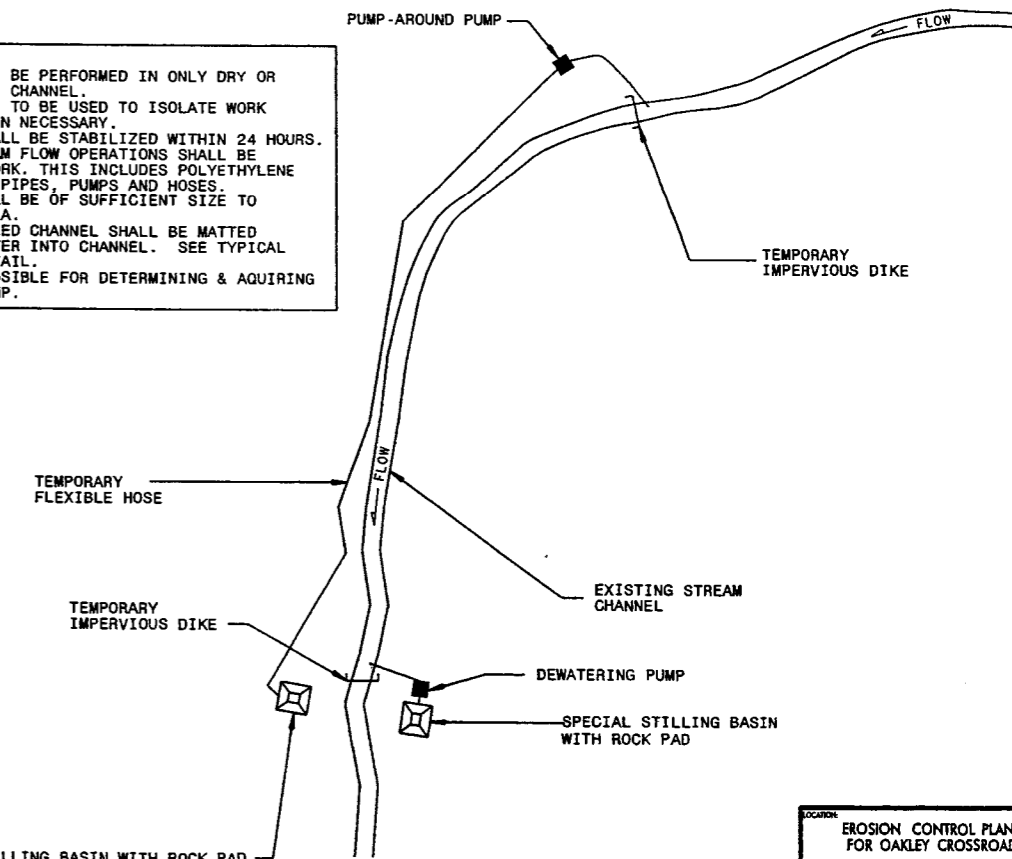


NOTE:  
BOTTOM OF FILTER MUST BE PLACED IN TRENCH AND SECURED BY EITHER BACK-FILLING WITH SOIL MATERIAL AND TAMPING OR BY PLACING WASHED STONE TO A HEIGHT OF 6IN. ABOVE GROUND LEVEL.

#### CONSTRUCTION SPECIFICATIONS

- CONSTRUCT SEDIMENT FENCE ON LOW SIDE OF TOPSOIL STOCKPILE TO PREVENT SEDIMENT FROM BEING WASHED INTO THE DRAINAGE SYSTEM. FENCE TO EXTEND AROUND APPROXIMATELY 70% OF THE PERIMETER OF THE STOCKPILE.
- LOCATE POSTS DOWNSLOPE OF FABRIC TO HELP SUPPORT FENCING.
- BURY TOE OF FENCE APPROXIMATELY 8" DEEP TO PREVENT UNDERCUTTING.
- WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FABRIC AT A SUPPORT POST WITH OVERLAP TO THE NEXT POST.
- FILTER FABRIC TO BE ON NYLON, PLOYESTER, PROPYLENE OR ETHYLENE YARN WITH EXTRA STRENGTH-SOLB/ LTN. 2IN. (MINIMUM) AND WITH A FLOW RATE OF AT LEAST 0.3 GAL./FT. / MINUTE. FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS.

- NOTES:
- ALL EXCAVATION SHALL BE PERFORMED IN ONLY DRY OR ISOLATED SECTIONS OF CHANNEL.
  - IMPERVIOUS DIKES ARE TO BE USED TO ISOLATE WORK FROM STREAM FLOW WHEN NECESSARY.
  - ALL GRADED AREAS SHALL BE STABILIZED WITHIN 24 HOURS.
  - MAINTENANCE OF STREAM FLOW OPERATIONS SHALL BE INCIDENTAL TO THE WORK. THIS INCLUDES POLYETHYLENE SHEETING, DIVERSION PIPES, PUMPS AND HOSES.
  - PUMPS AND HOSES SHALL BE OF SUFFICIENT SIZE TO DEWATER THE WORK AREA.
  - SIDESLOPES OF RESTORED CHANNEL SHALL BE MATTED PRIOR TO TURNING WATER INTO CHANNEL. SEE TYPICAL MATTING LOCATION DETAIL.
  - CONTRACTOR IS RESPONSIBLE FOR DETERMINING & ACQUIRING THE PROPER SIZED PUMP.



SPECIAL STILLING BASIN WITH ROCK PAD (SEE PROJECT SPECIAL PROVISIONS) UTILIZE A STABILIZED OUTLET INSTEAD OF A SPECIAL STILLING BASIN IF PUMPING CLEAN WATER.

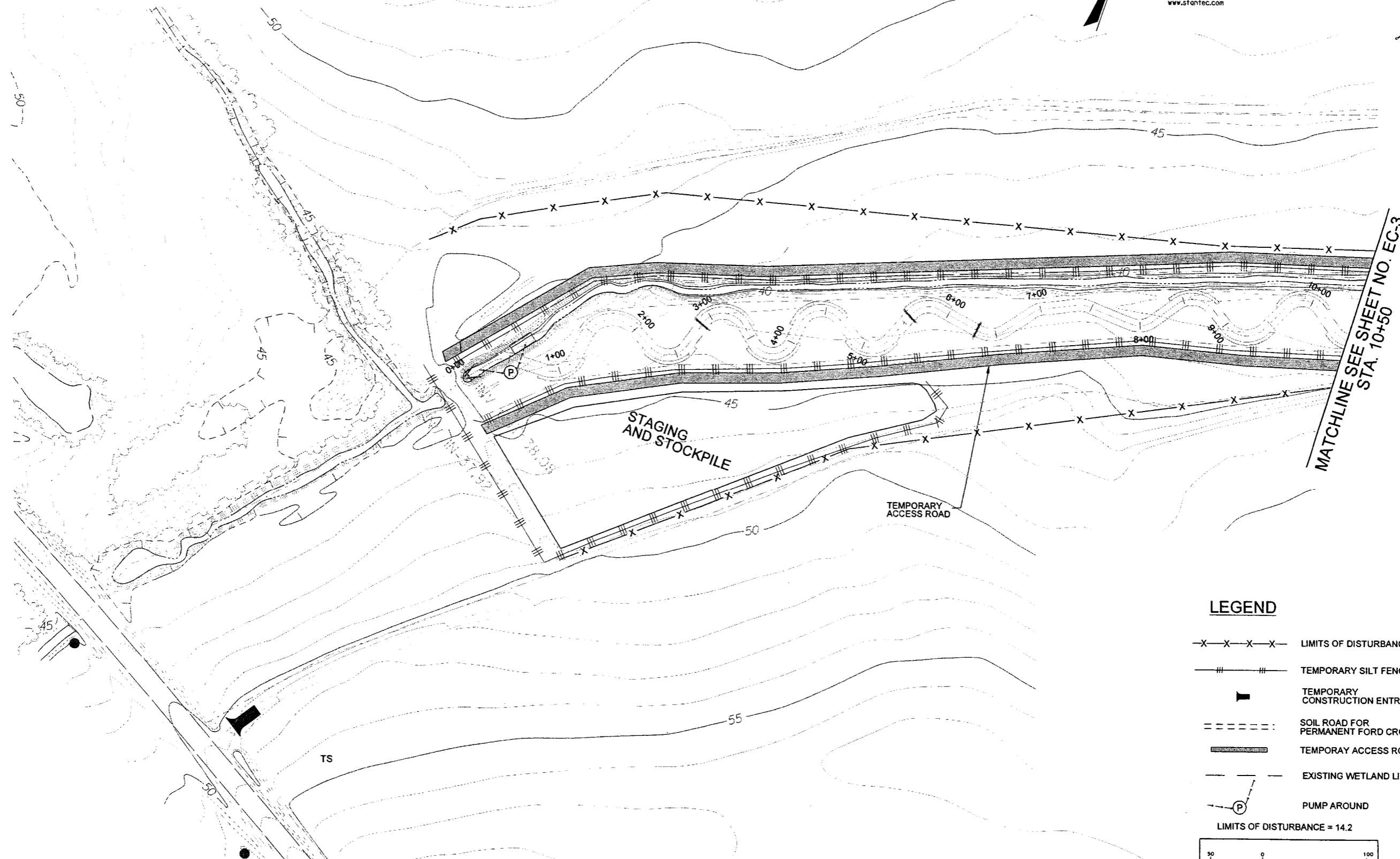
EROSION CONTROL PLANS FOR OAKLEY CROSSROADS	
PROJECT NO.: SCO-050659701	COUNTY: PITT
DESIGNED BY: NEJ	DRAWN BY: CGM
CHECKED BY: BAM	DATE:

# EROSION CONTROL



PROJECT REFERENCE NO. SCO-050659701	SHEET NO. EC 2
PROJECT ENGINEER	

*Nathan E. Jean*

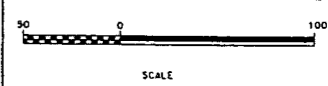


MATCHLINE SEE SHEET NO. EC-3  
 STA. 10+50

## LEGEND

- X-X-X-X- LIMITS OF DISTURBANCE
- ||-||-||-||- TEMPORARY SILT FENCE
- TEMPORARY CONSTRUCTION ENTRANCE
- - - - - SOIL ROAD FOR PERMANENT FORD CROSSING
- ▨ TEMPORARY ACCESS ROAD
- - - - - EXISTING WETLAND LIMITS
- ⊙ PUMP AROUND

LIMITS OF DISTURBANCE = 14.2



LOCATION: STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS	
PROJECT NO.: SCO-050659701	COUNTY: PITT
DESIGNED BY: NEJ	DRAWN BY: JLH
CHECKED BY: BAM	DATE:

4/13/2004  
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# EROSION CONTROL

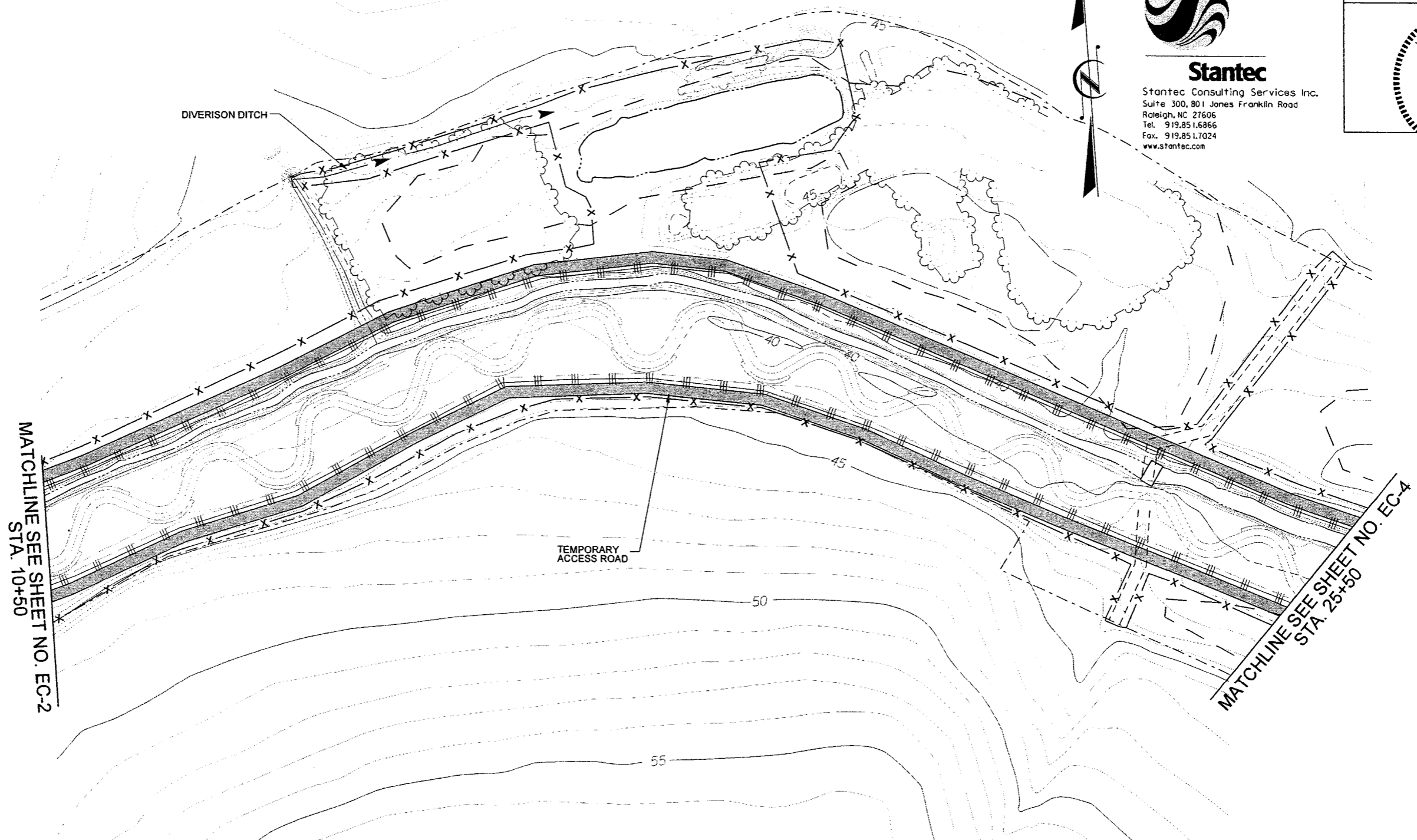


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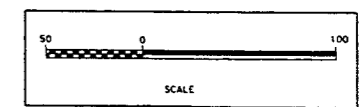
PROJECT REFERENCE NO. SCO-050659701	SHEET NO. EC 3
PROJECT ENGINEER	



## LEGEND

- x-x-x-x- LIMITS OF DISTURBANCE
- ||-||-||-||- TEMPORARY SILT FENCE
- ▬ TEMPORARY CONSTRUCTION ENTRANCE
- SOIL ROAD FOR PERMANENT FORD CROSSING
- ▬ TEMPORARY ACCESS ROAD
- - - - - EXISTING WETLAND LIMITS

LIMITS OF DISTURBANCE = 14.2



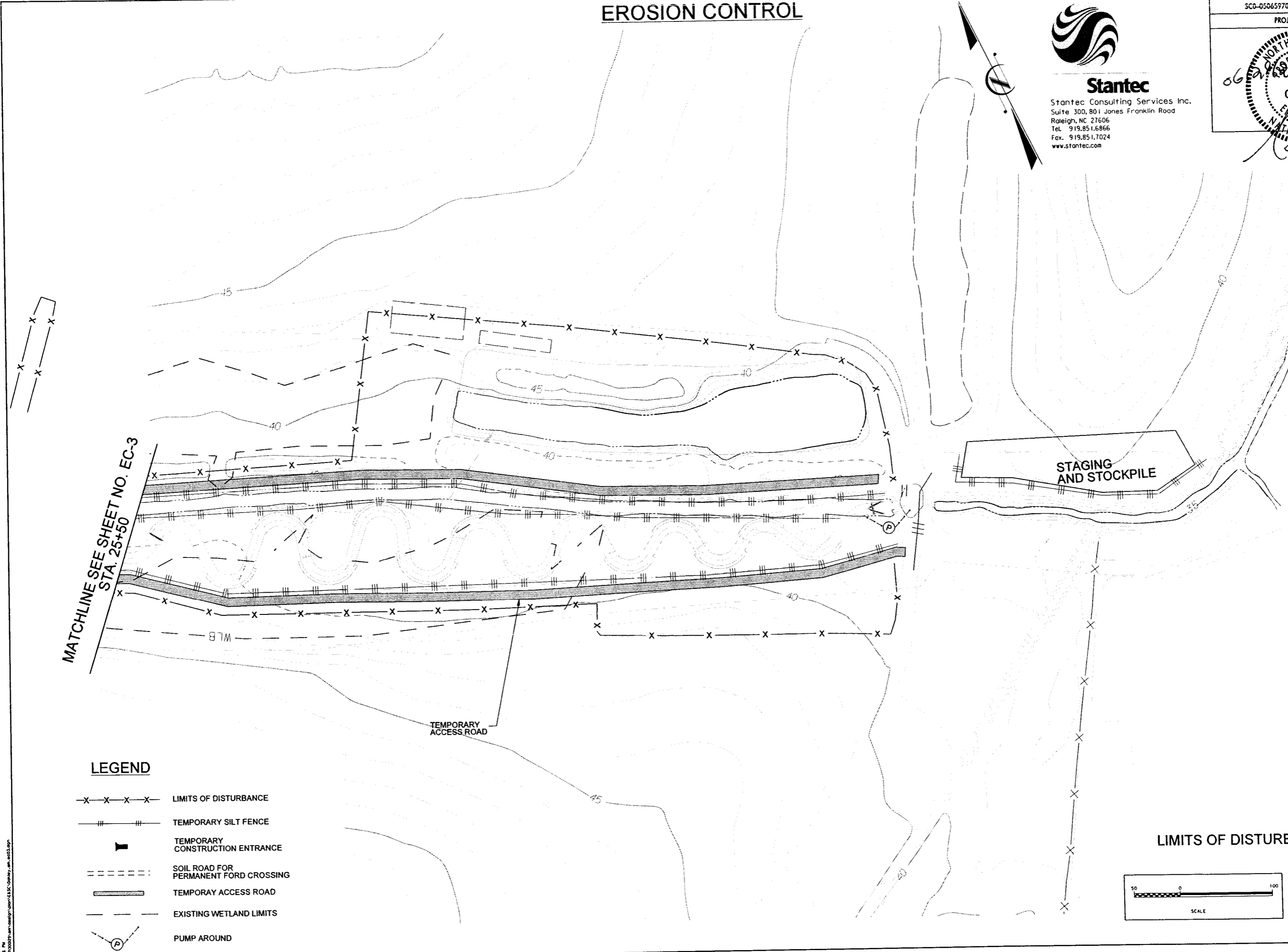
LOCATION: STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS	
PROJECT NO. SCO-050659701	COUNTY: PITT
DESIGNED BY: NEJ	DRAWN BY: JLH
CHECKED BY: BAM	DATE:

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# EROSION CONTROL

PROJECT REFERENCE NO.	SHEET NO.
SCO-050659701	EC 4
PROJECT ENGINEER	

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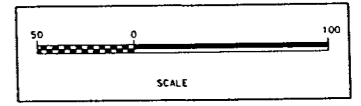


MATCHLINE SEE SHEET NO. EC-3  
 STA. 25+50

## LEGEND

- x-x-x-x- LIMITS OF DISTURBANCE
- === TEMPORARY SILT FENCE
- ▮ TEMPORARY CONSTRUCTION ENTRANCE
- SOIL ROAD FOR PERMANENT FORD CROSSING
- ▬ TEMPORARY ACCESS ROAD
- - - - - EXISTING WETLAND LIMITS
- (P) PUMP AROUND

LIMITS OF DISTURBANCE = 14.2



LOCATION: STREAM RESTORATION PLANS FOR OAKLEY CROSSROADS  
 PROJECT NO.: SCO-050659701 COUNTY: PITT  
 DESIGNED BY: NEJ DRAWN BY: JLH  
 CHECKED BY: BAM DATE:

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Tag Alder, Virginia Willow, Elderberry are Live Stakes  
 Overcup Oak, Swamp Cottonwood, Swamp Chestnut Oak, Swamp Black Gum, Willow Oak, Elderberry are Bare Roots  
 Cherrybark Oak, Green Ash, Black Gum, American Sycamore, Water Oak are Bare Roots  
 Dog-Hobble, Sweet Bay, Wax Myrtle are Shrubs

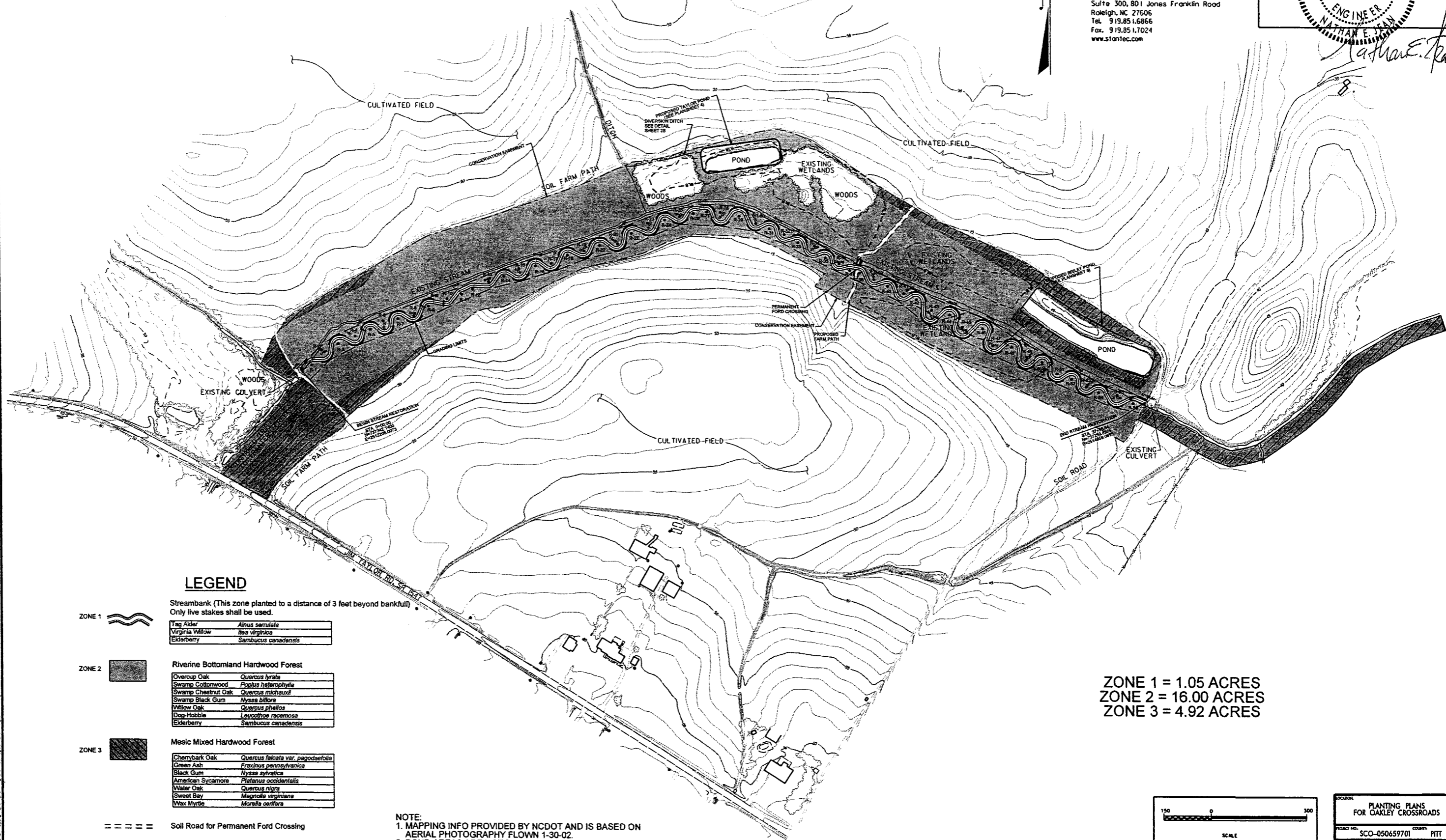
# PLANTING PLAN



**Stantec**

Stantec Consulting Services Inc.  
 Suite 300, 801 Jones Franklin Road  
 Raleigh, NC 27606  
 Tel. 919.851.6866  
 Fax. 919.851.7024  
 www.stantec.com

PROJECT REFERENCE NO. SCO-050659701	SHEET NO. PL-1
PROJECT ENGINEER	

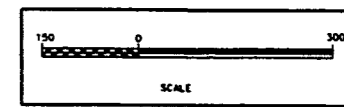


## LEGEND

ZONE 1		Streambank (This zone planted to a distance of 3 feet beyond bankfull) Only live stakes shall be used.														
	<table border="1"> <tr><td>Tag Alder</td><td><i>Alnus serrulata</i></td></tr> <tr><td>Virginia Willow</td><td><i>Salix virginica</i></td></tr> <tr><td>Elderberry</td><td><i>Sambucus canadensis</i></td></tr> </table>	Tag Alder	<i>Alnus serrulata</i>	Virginia Willow	<i>Salix virginica</i>	Elderberry	<i>Sambucus canadensis</i>									
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Virginia Willow	<i>Salix virginica</i>															
Elderberry	<i>Sambucus canadensis</i>															
ZONE 2		Riverine Bottomland Hardwood Forest														
	<table border="1"> <tr><td>Overcup Oak</td><td><i>Quercus lyrata</i></td></tr> <tr><td>Swamp Cottonwood</td><td><i>Populus heterophylla</i></td></tr> <tr><td>Swamp Chestnut Oak</td><td><i>Quercus michauxii</i></td></tr> <tr><td>Swamp Black Gum</td><td><i>Nyssa biflora</i></td></tr> <tr><td>Willow Oak</td><td><i>Quercus phellos</i></td></tr> <tr><td>Dog-Hobble</td><td><i>Leucothoe racemosa</i></td></tr> <tr><td>Elderberry</td><td><i>Sambucus canadensis</i></td></tr> </table>	Overcup Oak	<i>Quercus lyrata</i>	Swamp Cottonwood	<i>Populus heterophylla</i>	Swamp Chestnut Oak	<i>Quercus michauxii</i>	Swamp Black Gum	<i>Nyssa biflora</i>	Willow Oak	<i>Quercus phellos</i>	Dog-Hobble	<i>Leucothoe racemosa</i>	Elderberry	<i>Sambucus canadensis</i>	
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ZONE 3		Mesic Mixed Hardwood Forest														
	<table border="1"> <tr><td>Cherrybark Oak</td><td><i>Quercus falcata</i> var. <i>paucifolia</i></td></tr> <tr><td>Green Ash</td><td><i>Fraxinus pennsylvanica</i></td></tr> <tr><td>Black Gum</td><td><i>Nyssa sylvatica</i></td></tr> <tr><td>American Sycamore</td><td><i>Platanus occidentalis</i></td></tr> <tr><td>Water Oak</td><td><i>Quercus nigra</i></td></tr> <tr><td>Sweet Bay</td><td><i>Magnolia virginiana</i></td></tr> <tr><td>Wax Myrtle</td><td><i>Myrica cerifera</i></td></tr> </table>	Cherrybark Oak	<i>Quercus falcata</i> var. <i>paucifolia</i>	Green Ash	<i>Fraxinus pennsylvanica</i>	Black Gum	<i>Nyssa sylvatica</i>	American Sycamore	<i>Platanus occidentalis</i>	Water Oak	<i>Quercus nigra</i>	Sweet Bay	<i>Magnolia virginiana</i>	Wax Myrtle	<i>Myrica cerifera</i>	
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Wax Myrtle	<i>Myrica cerifera</i>															
=====		Soil Road for Permanent Ford Crossing														

ZONE 1 = 1.05 ACRES  
 ZONE 2 = 16.00 ACRES  
 ZONE 3 = 4.92 ACRES

NOTE:  
 1. MAPPING INFO PROVIDED BY NCDOT AND IS BASED ON AERIAL PHOTOGRAPHY FLOWN 1-30-02.  
 2. POND AREAS ARE NOT PART OF PLANTING.



PLANTING PLANS FOR OAKLEY CROSSROADS	
PROJECT NO. SCO-050659701	COUNTY: PITT
DESIGNED BY: DAB	DRAWN BY: CGM
CHECKED BY: BAM	DATE: