



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY PERDUE
GOVERNOR

EUGENE CONTI
SECRETARY

January 6, 2011

MEMORANDUM TO: Mr. Greg Burns, PE
Division Six Engineer

FROM: Philip S. Harris, III, P.E., Unit Head
Natural Environment Unit
Project Development and Environmental Analysis Branch

SUBJECT: Cumberland, Robeson and Hoke Counties, Proposed improvements to
Fayetteville Outer Loop; T.I.P. Numbers X-0002C; Federal Aid Project No.
NHF-DPR-0100(001); WBS No. 34817.1.1

Attached are the modifications to the U.S. Army Corps of Engineers Section 404 Individual and N.C. Division of Water Quality Section 401 Individual Water Quality Certification for the above referenced project. All environmental permits have been received for the construction of this project.

A copy of this permit package will be posted on the NCDOT website at:
<http://www.ncdot.gov/doh/preconstruct/pe/neu/permit.html>

PSH/gyb

Attachment

Cc: W/attachment
Mr. Randy Garris, P.E. State Contract Officer
Mr. James J. Rerko, Division Environmental Officer

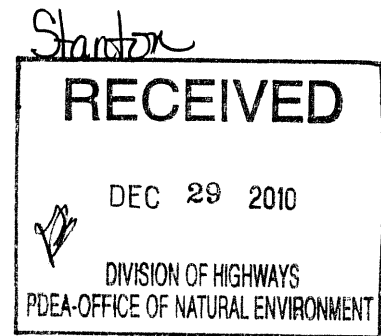
Cc: W/o attachment (see website for attachments)
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Jay Bennett, P.E., Roadway Design
Dr. David Chang, P.E., Hydraulics
Mr. Art McMillan, P.E., Highway Design
Mr. Tom Koch, P.E., Structure Design
Mr. Dewayne Sykes, P.E., Utilities Unit
Mr. Mark Staley, Roadside Environmental
Mr. John F. Sullivan, FHWA
Mr. Ron Hancock, P.E., State Roadway Construction Engineer
Mr. Mike Robinson, P.E., State Bridge Construction Engineer
Ms. Beth Harmon, EEP
Mr. Rob Hanson, P.E., PDEA Eastern Region Unit Head



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343

December 21, 2010



Regulatory Division

Subject: Action ID No. 2008-01413, TIP No. U-2519 and X-0002, Fayetteville Outer Loop, Cumberland, Robeson and Hoke Counties, North Carolina.

Dr. Gregory J. Thorpe, Ph.D.
Environmental Management Director
Project Development and Environmental Analysis
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Dr. Thorpe:

I am responding to your requests dated June 1, 2010 and October 19, 2010 for modifications to the existing Department of the Army (DA) permit issued for the above referenced project on November 4, 2008.

The referenced Section 404 permit authorizes impacts to 48.43 acres of jurisdictional wetlands, 12,346 linear feet of important stream channel and 3.67 acres of open waters. The permit modification is proposed to include additional impacts that were not authorized by the November 4, 2008 Department of the Army permit. The project impacts proposed in the modification request include an additional 0.43 acres of wetland impacts, 410 linear feet of important stream channel impacts and 2.55 acres of open water pond impacts.

I have determined that the proposed project modifications described above are minor and are not contrary to the public interest and therefore, the DA permit is hereby modified. It is understood that all conditions of the original permit remain applicable and that the expiration date is unchanged

The permit modifications are as follows:

1. In order to compensate for impacts to 0.43 acres of riparian, non-riverine wetlands and 410 linear feet of warm-water stream, the permittee shall debit the Privateer Farms Stream and Wetland Mitigation Bank in the amount of 1.29 acres of restoration equivalent riparian, non-riverine wetlands and 615 linear feet of warm-water stream.

In accordance with the NC DOT Umbrella Mitigation Banking Instrument dated September 4, 2009, the permittee shall, within 30-days of the date of this permit

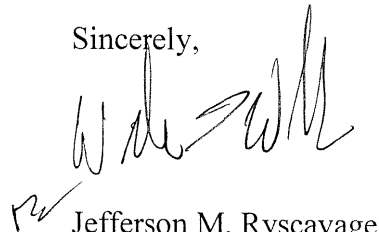
modification, provide two copies of the current debit ledger of the Privateer Farms Stream and Wetland Mitigation Bank to the :

**U.S. Army Corps of Engineers
Wilmington Regulatory Field Office
69 Darlington Avenue, Wilmington North Carolina 28403**

2. All work authorized by this permit modification must be performed in strict compliance with the attached plans, which are part of the permit.

Should you have any questions, please contact Mr. Ronnie Smith, Wilmington Field Office, Regulatory Division, at telephone (910) 251-4829.

Sincerely,



Jefferson M. Ryscavage
Colonel, U.S. Army
District Commander

Enclosures

Copies Furnished (with enclosures):

Mr. Greg Burns, PE
Division Engineer, Division 6
N.C. Department of Transportation
Post Office Box 1150
Fayetteville, North Carolina 28302

U.S. Fish and Wildlife Service
Fish and Wildlife Enhancement
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Mr. Jim Rerko
Division Environmental Officer, Division 6
N.C. Department of Transportation
Post Office Box 1150
Fayetteville, North Carolina 28302

Mr. Ron Sechler
National Marine Fisheries Service
Pivers Island
Beaufort, North Carolina 28516

Pace Wilber, Ph.D., Chief
Charleston (F/SER47)
Southeast Regional Office, NOAA Fisheries
Post Office Box 12559
Charleston, South Carolina 29422-2559

Mr. Doug Huggett
Division of Coastal Management
N.C. Department of Environment
and Natural Resources
400 Commerce Avenue
Morehead City, North Carolina 28557

Copies Furnished (without enclosures):

Mr. Travis W. Wilson
N.C. Wildlife Resource Commission
1142 I-85 Service Road
Creedmoor, North Carolina 27522

Mr. Mason Herndon
N.C. Department of Environment
and Natural Resources
Division of Water Quality
225 Green Street, Suite 214
Fayetteville, North Carolina 28301-5094

Mr. Gary Jordan
U.S. Fish and Wildlife Service
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Mr. Chris Militcher
U.S. Environmental Protection Agency
c/o Federal Highway Administration
310 New Bern Avenue, Room 206
Raleigh, North Carolina 27601

Ms. Renee Gledhill-Early
N.C. Department of Cultural Resources
4617 Mail Service Center
Raleigh, North Carolina 27699



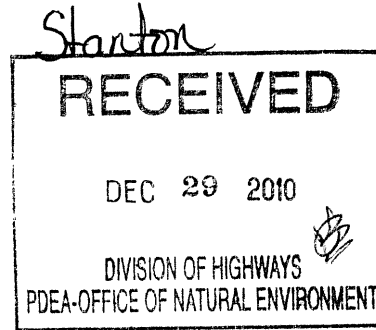
North Carolina Department of Environment and Natural Resources

Division of Water Quality
Coleen H. Sullins
Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

December 16, 2010



Dr. Greg Thorpe, PhD., Manager
Project Development and Environmental Analysis
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina, 27699-1548

Subject: Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for Proposed improvements to Fayetteville Outer Loop in Cumberland, Hoke and Robeson County, Federal Aid Project No. NHF-DPR-0100(001), State Project No. 8.244130, TIP X-002 B & C and U-2519. NCDWQ Project No. 20080737 v. 3

Dear Dr. Thorpe:

Attached hereto is a modification of original Certification No. 3758 issued to The North Carolina Department of Transportation (NCDOT) dated October 6, 2008 and modification dated June 3, 2010.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

Belinda L. Henson

for Coleen H. Sullins
Director

Attachments

- cc: Ronnie Smith, US Army Corps of Engineers, Wilmington Field Office
- Greg Burns, PE, Division 6 Engineer
- Jim Rerko, Division 6 Environmental Officer
- Chris Militscher, Environmental Protection Agency (electronic copy only)
- Travis Wilson, NC Wildlife Resources Commission
- Leilani Paugh, NCDOT, NEU Mitigation
- Sonia Carrillo, NCDWQ Central Office
- File Copy

225 Green St., Suite 714, Fayetteville, NC 28301-5043
Phone: 910-433-3300 \ FAX: 910-486-0707
Internet: www.ncwaterquality.org



Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (NCDWQ) Regulations in 15 NCAC 2H .0500. This certification modification authorizes the NCDOT to impact an additional 0.19 acres of jurisdictional wetlands and 410 linear feet of jurisdictional streams in Cumberland County. The project shall be constructed pursuant to the modification dated received October 14, 2010. The new authorized impacts are as described below:

Revised X-0002C (Site 8) Stream Impacts in the Cape Fear River Basin

Site	Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
Original approved impacts at Site 8	509				509	
New additional impacts with this approval at Site 8	410				410	410
Total	919				919	410

Revised Total Stream Impact for Site 8: 919 linear feet

Revised X-0002C (Site 8) Wetland Impacts in the Cape Fear River Basin (non-riverine)

Site	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Area under Bridge (ac)	Total Wetland Impact (ac)
Original approved impacts at Site 8	0.09			0.04	0.21		0.13
New revised impacts with this approval at Site 8	0.29			0.03	0.00		0.32
Total	0.29			0.03	0.00		0.32

Revised Total Wetland Impact for Site 8: 0.32 acres.

The application provides adequate assurance that the discharge of fill material into the waters of the **Cape Fear River Basin** in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your modified application dated received October 14, 2010. All the authorized activities and conditions of certification associated with the original Water Quality Certification dated October 6, 2008 and modification dated June 3, 2010 still apply except where superceded by this certification. Should your project change, you are required to notify NCDWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Condition(s) of Certification:

1. Compensatory mitigation for the additional 0.19 acres of wetland impacts is required at a 2:1 ratio. Compensatory mitigation for the additional 410 feet of stream impacts is required at 1.5:1 ratio. We understand that you have chosen to debit mitigation from Privateer Farm Mitigation Bank. This certification gives you approval to debit 0.38 acres of wetland mitigation and 615 ft of stream mitigation from the Privateer Mitigation Site to satisfy the mitigation requirements of this permit modification.
2. All other conditions written into previous Water Quality Certifications dated October 6, 2008 and June 3, 2010 for this project still apply.

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission. The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings
6714 Mail Service Center
Raleigh, NC 27699-6714
Telephone: (919)-733-2698, Facsimile: (919)-733-3478

A copy of the petition must also be served on DENR as follows:

Ms. Mary Penny Thompson, General Counsel
Department of Environment and Natural Resources
1601 Mail Service Center
Raleigh, NC 27699-1601

This the 16th day of December 2010

DIVISION OF WATER QUALITY

Coleen H. Sullins
Director

NCDWQ Project No.: _____ County: _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Quality, 1650 Mail Service Center, Raleigh, NC, 27699-1650. This form may be returned to NCDWQ by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Engineer's Certification

_____ Partial _____ Final

I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project, for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature _____ Registration No. _____

Date _____



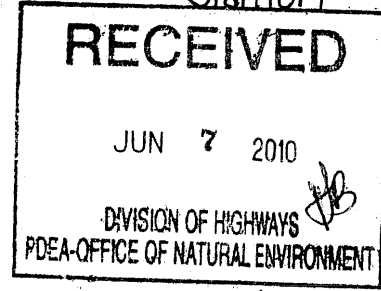
North Carolina Department of Environment and Natural Resources

Division of Water Quality
Coleen H. Sullins
Director

Beverly Eaves Perdue
Governor

Stanton

Dee Freeman
Secretary



June 3, 2010

Dr. Greg Thorpe, PhD., Manager
Project Development and Environmental Analysis
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina, 27699-1548

Subject: Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water with ADDITIONAL CONDITIONS for Proposed Fayetteville Outer Loop in Cumberland, Hoke and Robeson Counties, Federal Aid Project No. NHF-DPR-0100(001), State Project No. 8.2441301, TIP Nos. X-002 B&C and U-2519.
DWQ Project No. 20080737 ver. 2.

Dear Dr. Thorpe:

Attached hereto is a modification of Certification No. 3758 issued to The North Carolina Department of Transportation (NCDOT) originally dated October 6, 2008.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

for Coleen H. Sullins
Director

Attachments

- cc: Tom Walker, US Army Corps of Engineers, Wilmington Field Office
- Jim Rerko, Division 6 Environmental Officer
- LeiLani Paugh, NCDOT NEU
- NCDWQ Fayetteville Regional Office
- File Copy

**Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act
with ADDITIONAL CONDITIONS**

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (NCDWQ) Regulations in 15 NCAC 2H .0500. This certification modification authorizes the NCDOT to impact an additional 0.24 acres of jurisdictional wetlands in Cumberland County. The project shall be constructed pursuant to the modification dated received May 27, 2010. The new authorized impacts are as described below:

Additional Section X-002 C Wetland Impacts in the Cape Fear River Basin

Site	Permanent Fill (ac)	Excavation (ac)	Mechanized Clearing (ac)	Total Wetland Impact (ac)
10	0.19	0.01	0.04	0.24
Total	0.19	0.01	0.04	0.24

Total Additional Wetland Impact for Section X-002 C: 0.24 acres.

Revised Section X-002 C Open Water (Ponds) Impacts in the Cape Fear River Basin

Site	Permanent Fill in Open Waters (ac)
3	0.73
9	2.53
Total	3.26

Revised Total Open Water Impact for Section X-002 C: 3.26 acres.

The application provides adequate assurance that the discharge of fill material into the waters of the Cape Fear River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your modified application dated received May 27, 2010. All the authorized activities and conditions of certification associated with the original Water Quality Certification dated October 6, 2008 still apply except where superceded by this certification. Should your project change, you are required to notify NCDWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Conditions of Certification:

1. Compensatory mitigation for 0.24 acres of wetlands is required at a 2:1 ratio. We understand that you have chosen to debit mitigation from the Privateer Farm Mitigation Bank. This certification gives approval to the debiting of 0.48 acres of wetland mitigation from the Privateer Farms Mitigation Site in order to satisfy the mitigation requirements of this project modification.
2. All other conditions written into previous Water Quality Certification dated October 6, 2008 for this project still apply.


Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

If this Certification is unacceptable to you have the right to an adjudicatory hearing upon written request within sixty (60) days following receipt of this Certification. This request must be in the form of a written petition conforming to Chapter 150B of the North Carolina General Statutes and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. If modifications are made to an original Certification, you have the right to an adjudicatory hearing on the modifications upon written request within sixty (60) days following receipt of the Certification. Unless such demands are made, this Certification shall be final and binding.

This the 3rd day of June 2010

DIVISION OF WATER QUALITY



 Coleen H. Sullins
Director

WQC No. 3758

NCDWQ Project No.: _____

County: _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Quality, 1650 Mail Service Center, Raleigh, NC, 27699-1650. This form may be returned to NCDWQ by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Engineer's Certification

_____ Partial _____ Final

I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project, for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature _____ Registration No. _____

Date _____

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS					
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Natural Stream Design - (ft)		
1	83+50-85+00 -L-	72" RCP	1.11		0.03	0.10			0.04			279	
2	92+90-93+80 -L-	42" RCP	0.50		0.02	0.08							
3	105+15-105+70 -L-	2 @ 6' x 7' RCBC	0.76			0.05			0.86			775	
4	117+95-118+70 -L-	325' Bridge	0.36			0.08	0.55						
5	129+60-130+20 -L-	54" RCP	0.69			0.06			0.02			361	
6	135+55-137+00 -L-	60" RCP	1.68			0.09			0.04			479	
7	141+30-142+30 -L-	36" RCP	1.55			0.05			0.01			213	
8	144+45-144+90 -L-	48" RCP	0.29			0.03			0.11			919	
9	14+20 -Y-Rev	2 @ 6' x 7' RCBC							2.54			98	
10	13+66-14+06 -Y1-	48" RCP	0.19		0.01	0.04			0.01			207	
TOTALS:			7.12		0.06	0.59	0.55		3.63			3332	

SITE 10: LATERAL EFFECT ON WETLAND DUE TO EXCAVATION = 0.01 ac

FILL IN SURFACE WATERS (POND)

SITE 3: 0.73 ac

SITE 9: 2.53 ac

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
CUMBERLAND COUNTY
WBS - 35196.1.2 (X-0002C)

JMD Revised 2/03/05

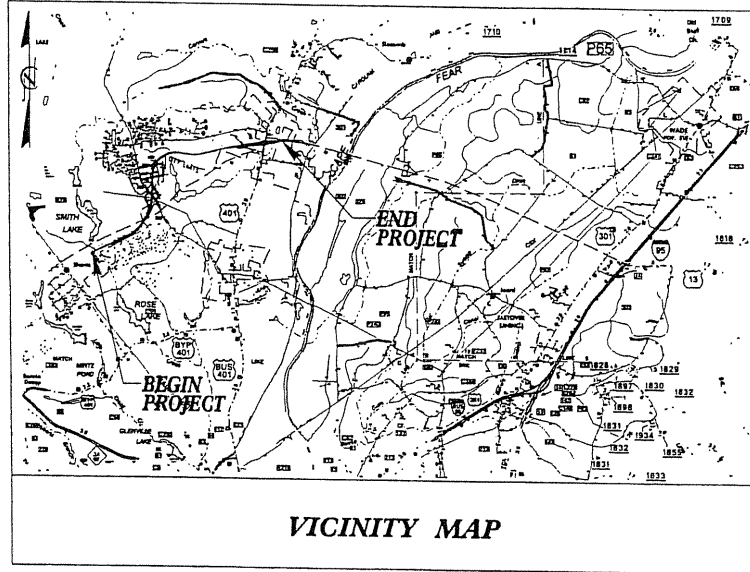
SHEET

REV. 7/28/2010

Permit Drawing
Sheet 3 of 64

CONTRACT: C201979 TIP PROJECT: X-0002C

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
CUMBERLAND COUNTY

**LOCATION: NC 24 EXTENSION (FAYETTEVILLE OUTER LOOP)
 FROM 1.3 MILES EAST OF NC87-NC210 TO WEST OF US401**

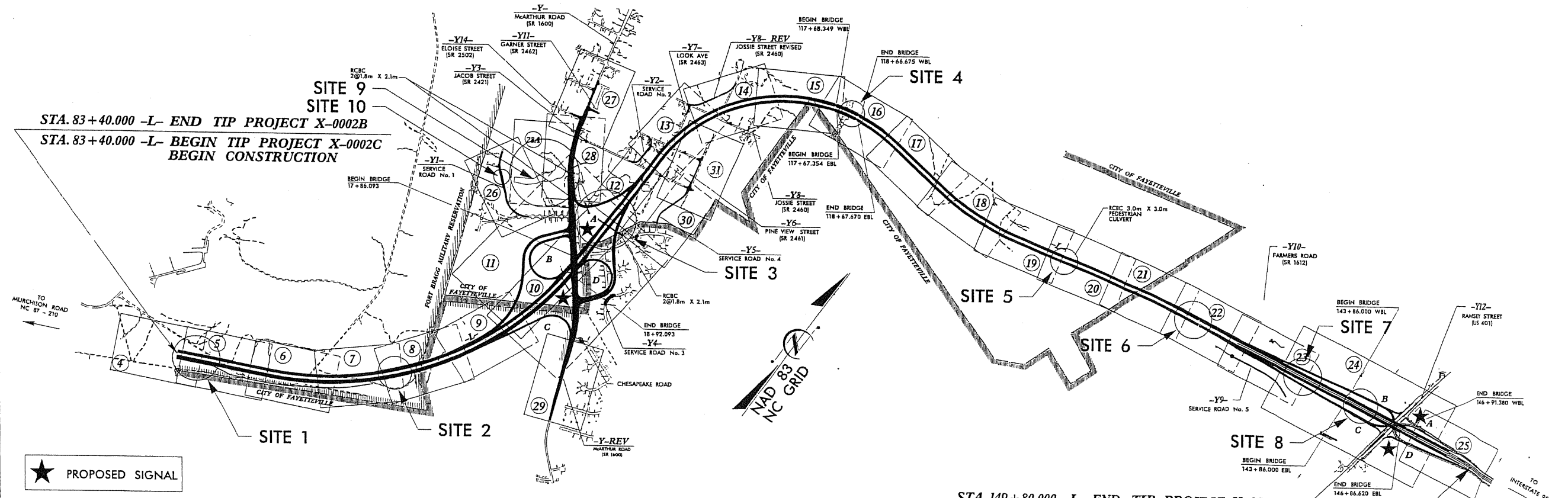
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES,
 SIGNING AND SIGNALS**

ALL DIMENSIONS IN
 THESE PLANS ARE IN METERS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	X-0002C	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
35196.1.2	NHF-DPR-0100(002)	P.E.	
35196.2.4		ROW & UTIL	
35196.3.16		CONST.	

**WETLAND/STREAM
 IMPACTS**

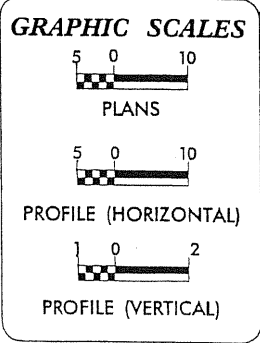
Permit Drawing REV. 4/27/10
 Sheet 6 of 64



★ PROPOSED SIGNAL
**THIS IS A CONTROLLED ACCESS PROJECT
 WITH ACCESS LIMITED TO INTERCHANGES**

**STA. 149+80.000 -L- END TIP PROJECT X-0002C
 END CONSTRUCTION**

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



DESIGN DATA

ADT 2008 =	34,700
ADT 2030 =	59,600
DHV =	9 %
D =	55 %
T =	10 % *
V =	110 km/h
* (TTST 4 % DUAL 6 %)	
FUNC. CLASS =	INTERSTATE

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT X-0002C	=	6.166 km
LENGTH STRUCTURES TIP PROJECT X-0002C	=	0.404 km*
TOTAL LENGTH OF TIP PROJECT X-0002C	=	6.570 km

* NOTE: LENGTH BASED ON WBL BRIDGES

Prepared in the Office of:

1615 EAST MILLBROOK ROAD, SUITE 160
 RALEIGH, NORTH CAROLINA 27609
 919.781.4626 VOICE 919.781.4663 FAX

2006 METRIC STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 31, 2006

LETTING DATE:
NOVEMBER 18, 2008

T.R. REID, P.E.
 PROJECT ENGINEER

T.E. HUFFMAN, P.E.
 PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

Sungate Design Group, P.A.
 915-A JONES FARM ROAD
 ROSELAND, N.C. 27068

SEAL 9334
 PROFESSIONAL ENGINEER
 STATE OF NORTH CAROLINA
 W. WENTWELL, L.L.P.

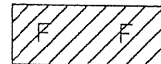

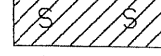
ROADWAY DESIGN ENGINEER

1615 EAST MILLBROOK ROAD, SUITE 160
 RALEIGH, NORTH CAROLINA 27609
 919.781.4626 VOICE 919.781.4663 FAX

SEAL 15869
 PROFESSIONAL ENGINEER
 STATE OF NORTH CAROLINA
 L. & V. EID

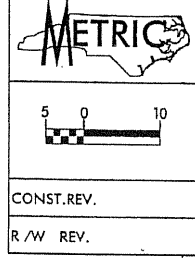
**DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA**

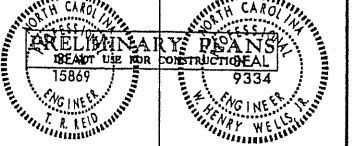
STATE HIGHWAY DESIGN ENGINEER

 DENOTES FILL IN WETLAND
 DENOTES MECHANIZED CLEARING
 DENOTES IMPACTS IN SURFACE WATER

110

SITE 8

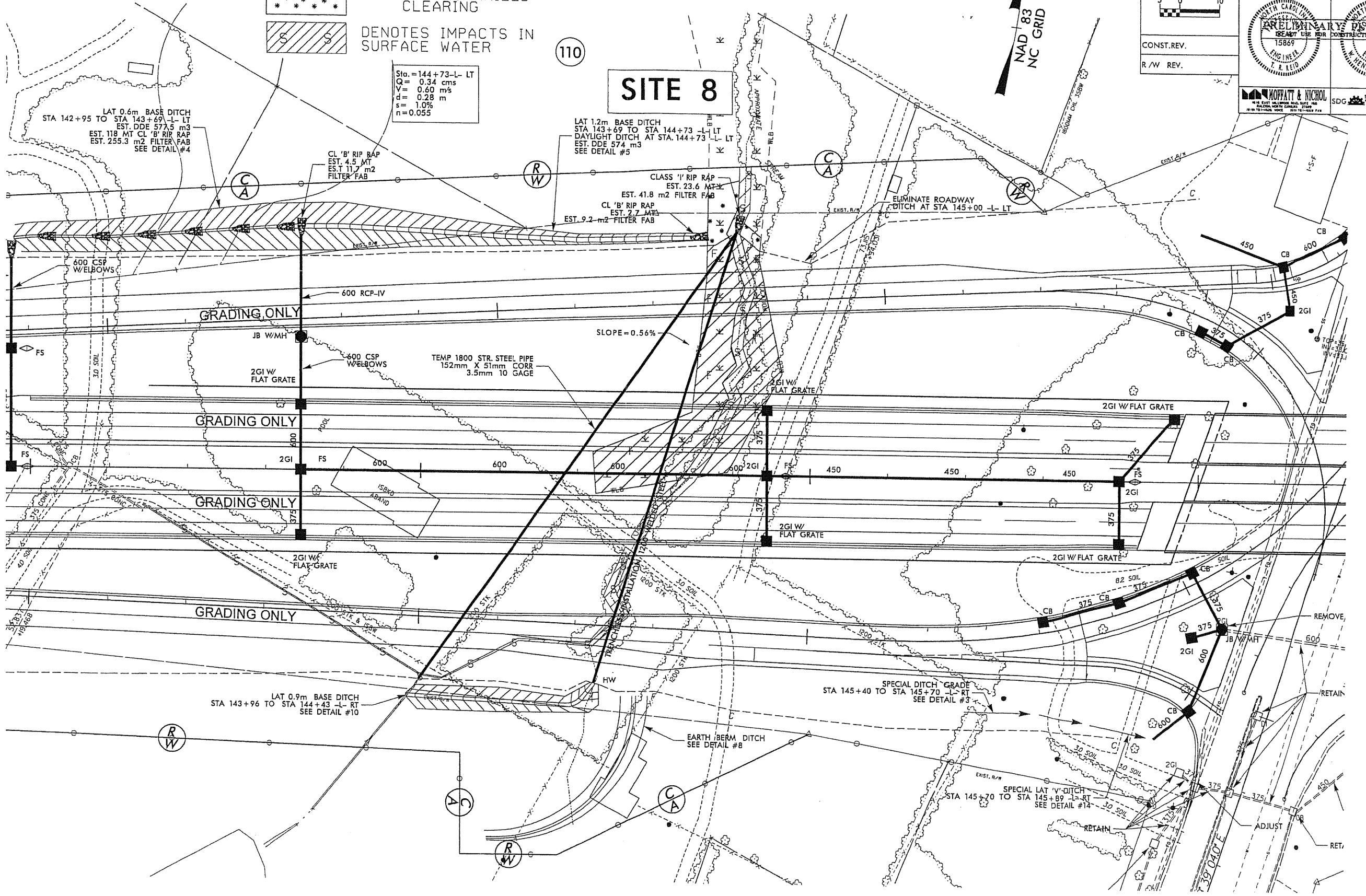


PROJECT REFERENCE NO. X-0002CB	SHEET NO. BLOW UP
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	ENGINEER 15869
CONST. REV.	R/W REV.
	

Sta. = 144+73-L- LT
 $Q = 0.34 \text{ cms}$
 $V = 0.60 \text{ m/s}$
 $d = 0.28 \text{ m}$
 $s = 1.0\%$
 $n = 0.055$

LAT 0.6m BASE DITCH
 STA 142+95 TO STA 143+69 -L- LT
 EST. DDE 577.5 m³
 EST. 118 MT CL 'B' RIP RAP
 EST. 255.3 m² FILTER FAB
 SEE DETAIL #4

LAT 1.2m BASE DITCH
 STA 143+69 TO STA 144+73 -L- LT
 DAYLIGHT DITCH AT STA. 144+73 -L- LT
 EST. DDE 574 m³
 SEE DETAIL #5



GRADING ONLY

GRADING ONLY

GRADING ONLY

GRADING ONLY

SLOPE = 0.56%

ELIMINATE ROADWAY DITCH AT STA 145+00 -L- LT

LAT 0.9m BASE DITCH
 STA 143+96 TO STA 144+43 -L- RT
 SEE DETAIL #10

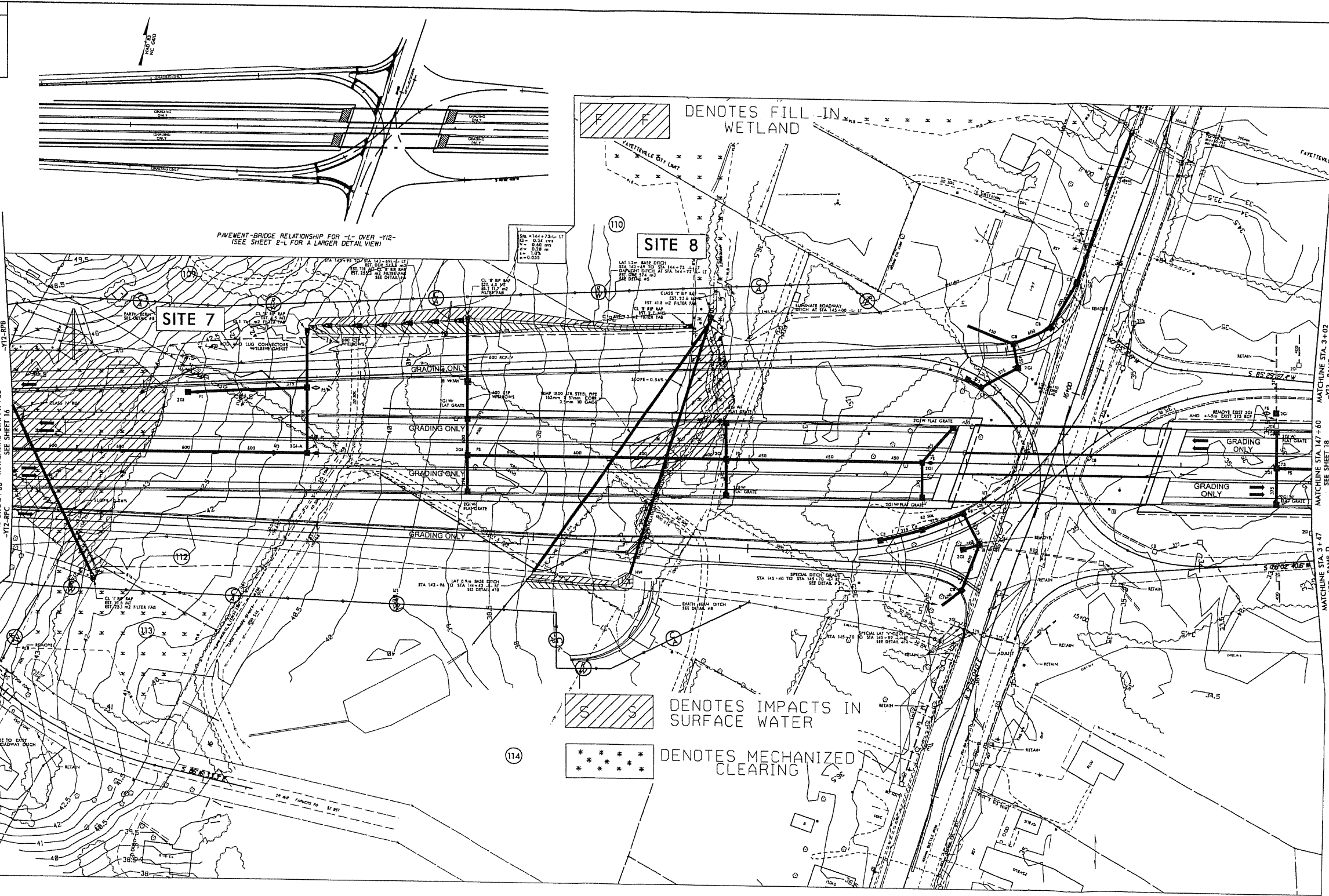
SPECIAL DITCH GRADE
 STA 145+40 TO STA 145+70 -L- RT
 SEE DETAIL #3

SPECIAL LAT 'V'-DITCH
 STA 145+70 TO STA 145+89 -L- RT
 SEE DETAIL #14

8/17/21

REVISIONS

12/2006 - PARCEL # - CHANGED TO 10



□ DENOTES FILL IN WETLAND

□ DENOTES IMPACTS IN SURFACE WATER

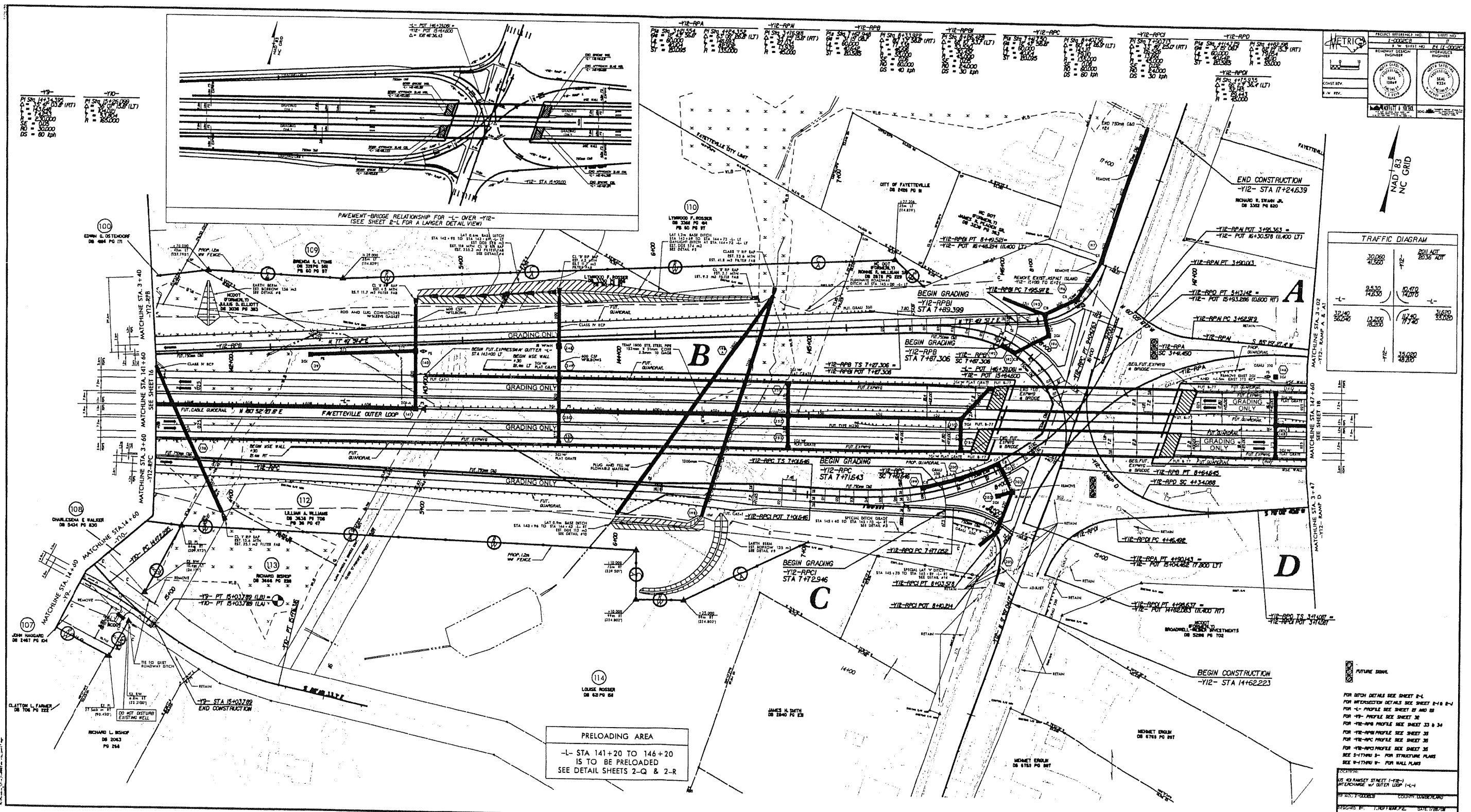
* * * * * DENOTES MECHANIZED CLEARING

METRIX PROJECT REFERENCE NO. 2417-0000P SHEET NO. 7
TODORWAY DESIGN ENGINEER HYDRAULIC ENGINEER
SEAL 461806378 PLAN
COUNTY CUMBERLAND
DATE 7/26/08



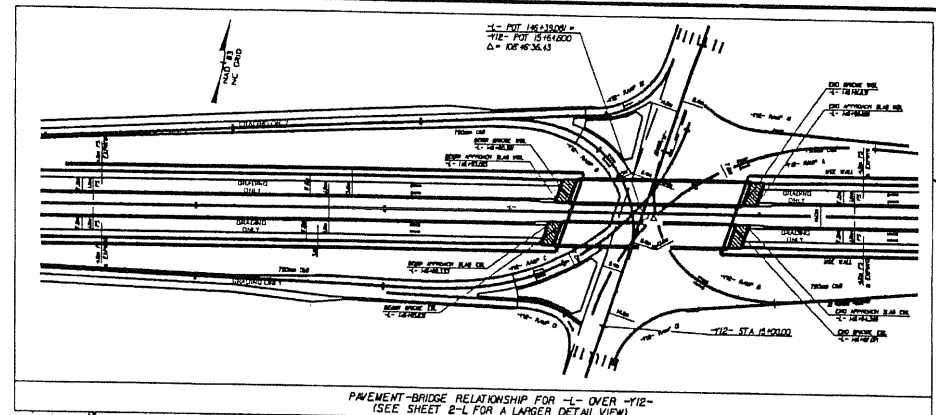
MATCHLINE STA. 3+02 -112- RAMP A & A1
MATCHLINE STA. 147+60 -112- RAMP A & A1
MATCHLINE STA. 147+60 -112- RAMP D
MATCHLINE STA. 3+47 -112- RAMP D

LOCATION: US 40 RAMP STREET I-17E-1 INTERCHANGE W/ OFFER LOOP I-40
SHEET NO. 7-00000 COUNTY CUMBERLAND
DESIGNED BY: T.M.P.F. DATE 7/26/08
CHECKED BY: T.M.P.F. DATE 7/30/08



Vertical curve data for stations 140+00 to 141+00:

Station	PI	PG	PG2	PG3	PG4	PG5	PG6	PG7	PG8	PG9	PG10
140+00	140+00	140+00	140+00	140+00	140+00	140+00	140+00	140+00	140+00	140+00	140+00



Vertical curve data for stations 141+00 to 142+00:

Station	PI	PG	PG2	PG3	PG4	PG5	PG6	PG7	PG8	PG9	PG10
141+00	141+00	141+00	141+00	141+00	141+00	141+00	141+00	141+00	141+00	141+00	141+00

PROJECT INFORMATION: PROJECT NO. 1-000000, SHEET NO. 141-100000

DESIGNER: METRIC ENGINEERS

DATE: 08/18/11

SCALE: AS SHOWN

CONTRACT NO. 1-000000

CONTRACT DESCRIPTION: I-4 OVER I-12 INTERCHANGE

CONTRACT LOCATION: FAYETTEVILLE, NC

CONTRACT DATE: 08/18/11

CONTRACT VALUE: \$1,000,000

CONTRACT OWNER: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION





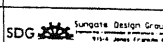
TRAFFIC DIAGRAM

30,060	41,500	20,170	20,170
9,530	14,630	10,470	10,470
32,140	13,000	17,400	17,400
38,040	13,000	17,400	17,400
15,000	15,000	15,000	15,000

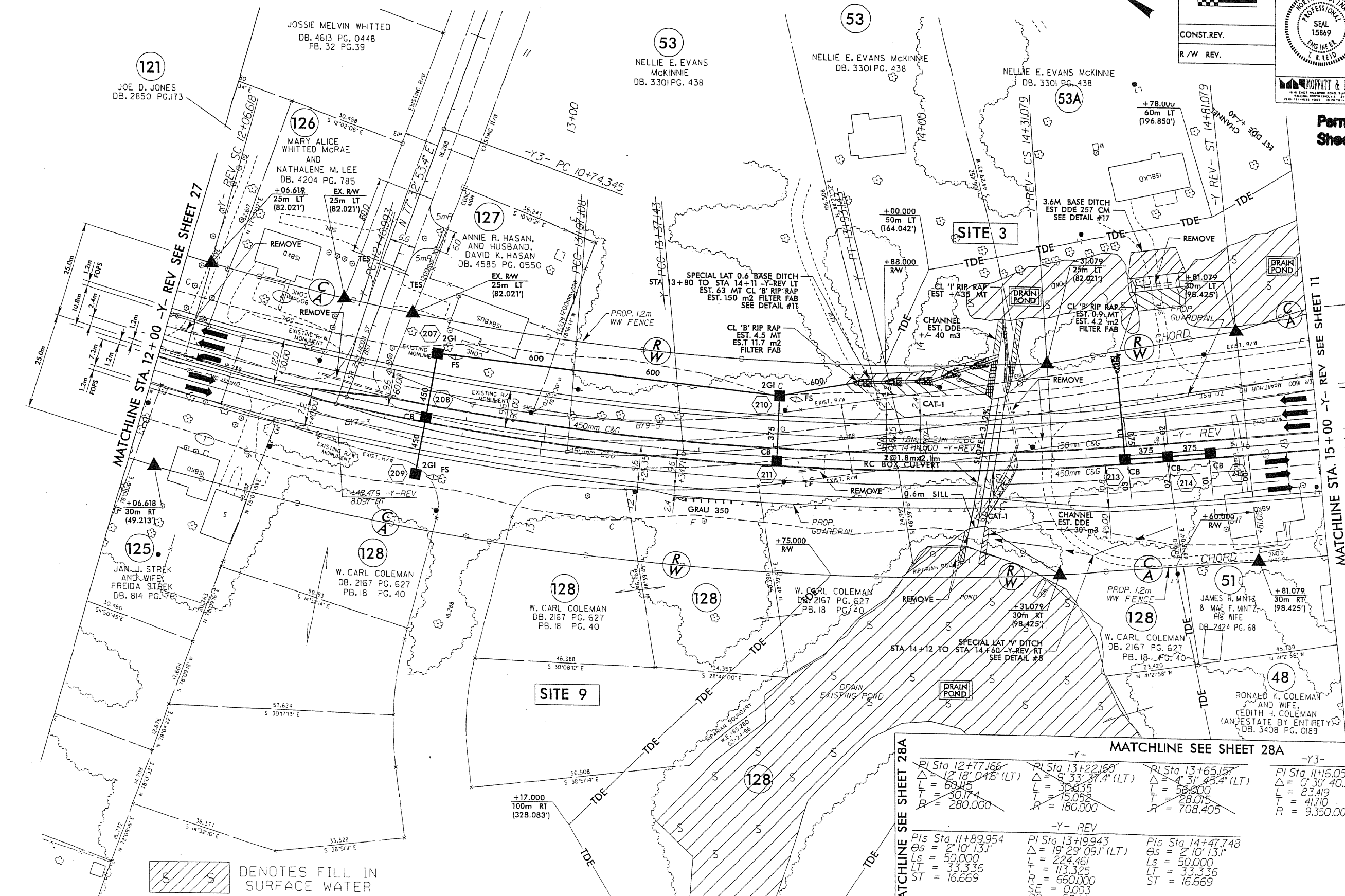
PRELOADING AREA
 -L- STA 141+20 TO 146+20
 IS TO BE PRELOADED
 SEE DETAIL SHEETS 2-Q & 2-R

FOR DITCH DETAILS SEE SHEET 2-L
 FOR INTERSECTION DETAILS SEE SHEET 2-B & 2-C
 FOR I-4 PROFILE SEE SHEET 2-D
 FOR I-12 PROFILE SEE SHEET 2-E
 FOR I-4/I-12 PROFILE SEE SHEET 2-F & 2-G
 FOR I-4/I-12 PROFILE SEE SHEET 2-H
 FOR I-4/I-12 PROFILE SEE SHEET 2-I
 FOR I-4/I-12 PROFILE SEE SHEET 2-J
 FOR I-4/I-12 PROFILE SEE SHEET 2-K
 FOR I-4/I-12 PROFILE SEE SHEET 2-L
 FOR I-4/I-12 PROFILE SEE SHEET 2-M
 FOR I-4/I-12 PROFILE SEE SHEET 2-N
 FOR I-4/I-12 PROFILE SEE SHEET 2-O
 FOR I-4/I-12 PROFILE SEE SHEET 2-P
 FOR I-4/I-12 PROFILE SEE SHEET 2-Q
 FOR I-4/I-12 PROFILE SEE SHEET 2-R

100022c - civil - 28.dgn
 08/17/21

		PROJECT REFERENCE NO. X-0002C	SHEET NO. 28
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
			
CONST. REV.		R/W REV.	
			

Permit Drawing Rev. 4/17/21
 Sheet 33 of 64

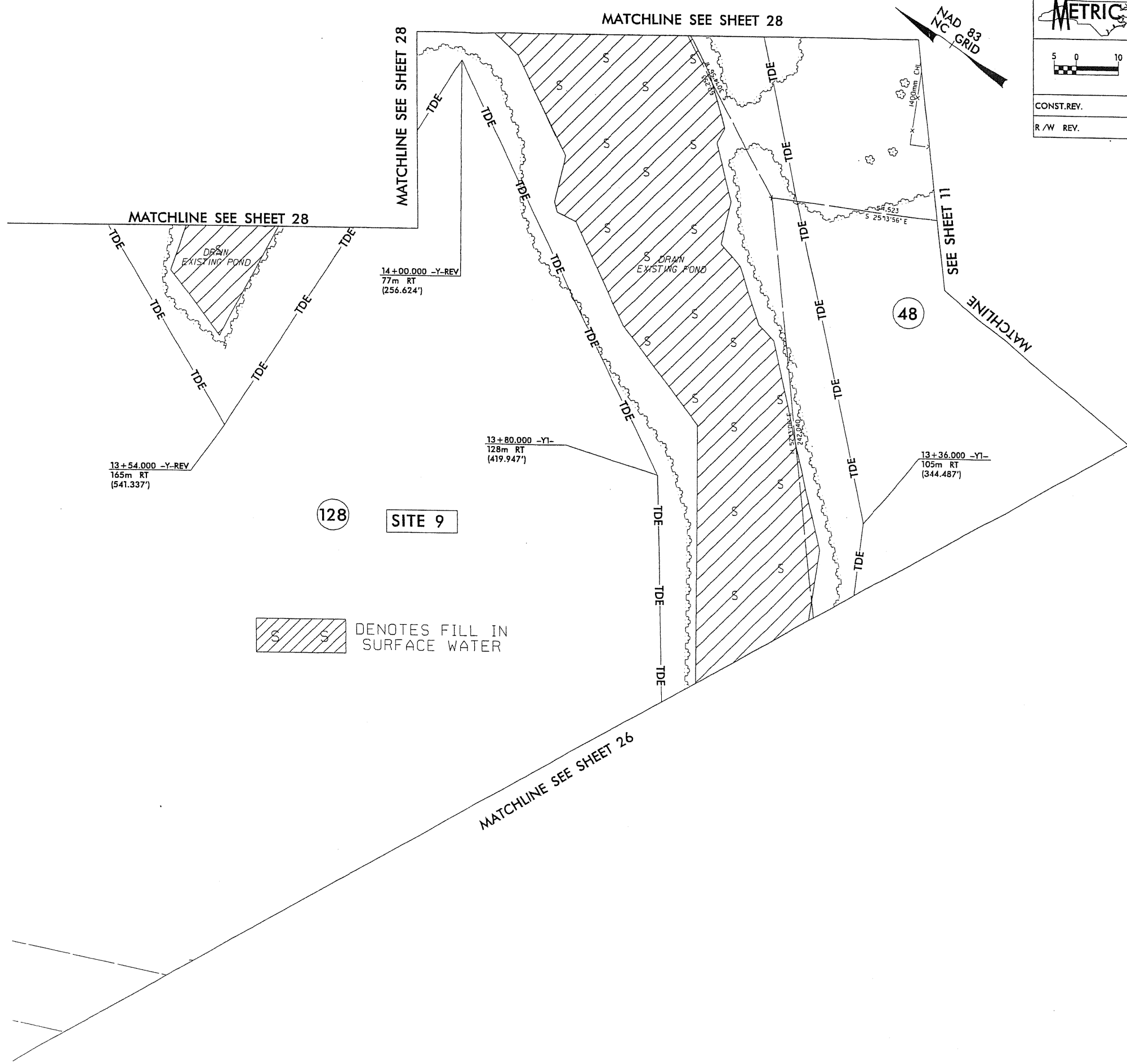


 DENOTES FILL IN SURFACE WATER

MATCHLINE SEE SHEET 28A $PI\ Sta\ 12+77.166$ $\Delta = 12' 18" 04.5" (LT)$ $L = 66.45$ $T = 30.174$ $R = 280.000$	$PI\ Sta\ 13+22.160$ $\Delta = 9' 33" 31.4" (LT)$ $L = 30.835$ $T = 15.052$ $R = 180.000$	$PI\ Sta\ 13+65.157$ $\Delta = 4' 31" 45.4" (LT)$ $L = 56.600$ $T = 28.075$ $R = 708.405$	$PI\ Sta\ 14+16.055$ $\Delta = 0' 30" 40.3" (RT)$ $L = 83.419$ $T = 41.710$ $R = 9.350.000$
$PIs\ Sta\ 11+89.954$ $Os = 2' 10" 13.1"$ $Ls = 50.000$ $LT = 33.336$ $ST = 16.669$	$PI\ Sta\ 13+19.943$ $\Delta = 19' 29" 09.1" (LT)$ $L = 224.461$ $T = 113.325$ $R = 660.000$ $SE = 0.003$ $RO = 50.000$ $DS = 80\ kph$	$PIs\ Sta\ 14+47.748$ $Os = 2' 10" 13.1"$ $Ls = 50.000$ $LT = 33.336$ $ST = 16.669$	

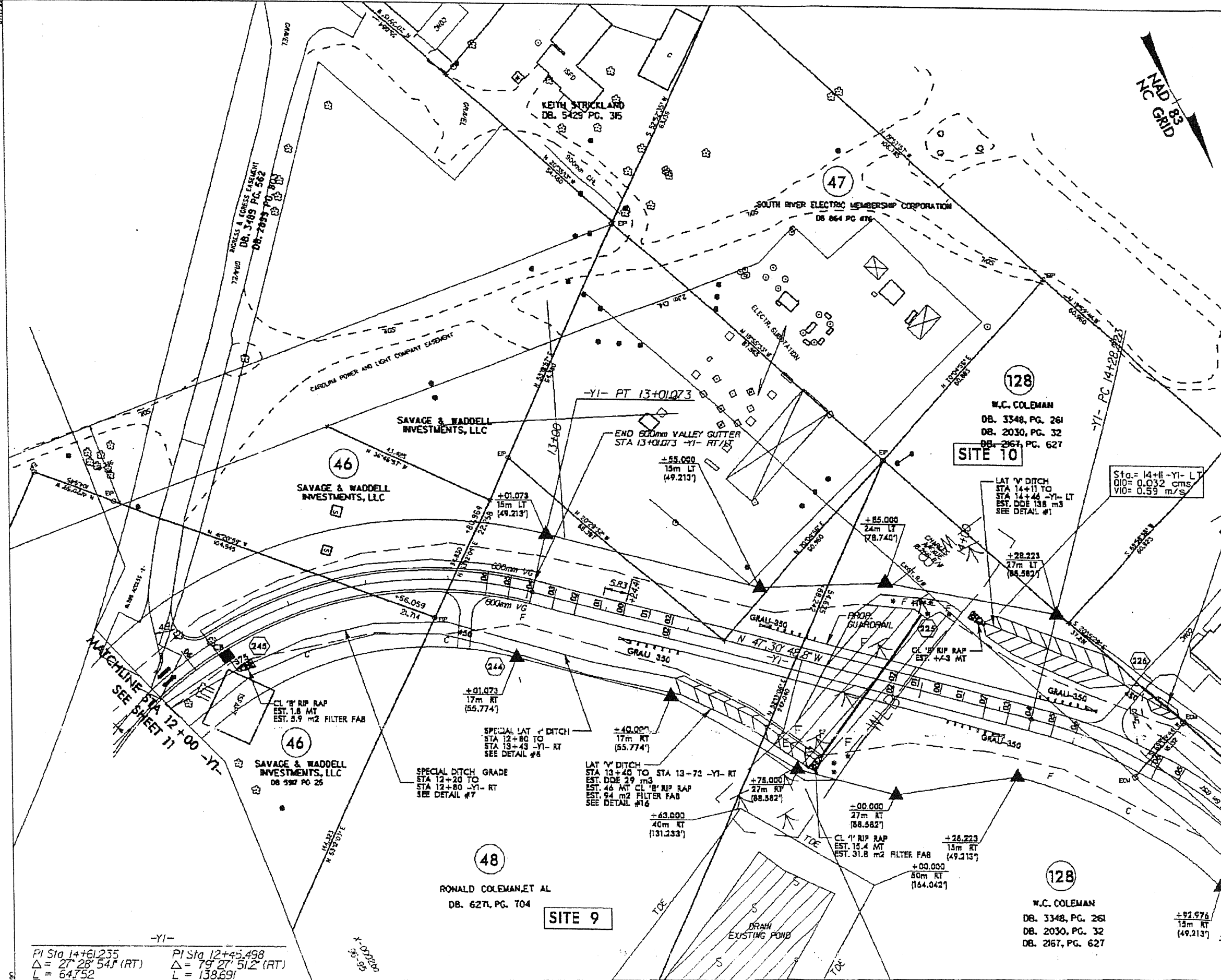
FOR DITCH DETAILS SEE SHEET 2-T
 FOR -Y- REV PROFILE SEE SHEET 54 & 55
 SEE C-1 THRU C- FOR CULVERT PLANS

8/17/09
X:\002C_r.dwg



METRIC 5 0 10 CONST. REV. R / W REV.	PROJECT REFERENCE NO. X-0002C	SHEET NO. 28A
	R / W SHEET NO.	
	ROADWAY DESIGN ENGINEER T. R. REID SEAL 15869	HYDRAULICS ENGINEER W. HENRY WELLS, JR. SEAL 9334
	NOFFATT & NICHOL 1015 EAST WASHINGTON STREET, SUITE 100 RALEIGH, NORTH CAROLINA 27601 919-781-4555 VOICEMAIL 919-781-4555 FAX	SDG Strategic Design Group, P.A. 1015 EAST WASHINGTON STREET, SUITE 100 RALEIGH, NORTH CAROLINA 27601 919-781-4555 FAX

Rev. 4/27/10
Permit Drawing
Sheet 33A of 64



METRIC

PROJECT REFERENCE NO. X-0002C SHEET NO. 25

R/W SHEET NO.

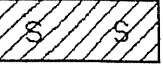
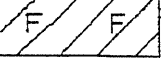
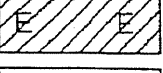
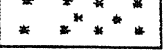
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

CONST. REV. R/W REV.

PROFESSIONAL SEAL 15869 ENGINEER L & E I.D.

PROFESSIONAL SEAL 9334 ENGINEER L & E I.D.

W. H. HARRATT & ASSOCIATES, INC. SDG

-  DENOTES FILL IN SURFACE WATER
-  DENOTES FILL IN WETLAND
-  DENOTES EXCAVATION IN WETLAND
-  DENOTES MECHANIZED CLEARING

Permit Drawing Rev. 4/27/14
Sheet 33B of 104

PI Sta 14+61.235	PI Sta 12+45.498
$\Delta = 27' 28" 54"$ (RT)	$\Delta = 79' 27" 512"$ (RT)
L = 64.752	L = 138.691
T = 33.011	T = 83.116
R = 135.000	R = 100.000
SE = 0.06	SE = 0.06
RO = 36.000	RO = 36.000
DS = 60 kph	DS = 50 kph

DUE TO STEEPNESS OF DITCH, NON-EROSIVE VELOCITIES COULD NOT BE ACHIEVED. LATERAL EFFECT OF DITCH IN WETLAND WAS CALCULATED USING SKAGG'S METHOD (5.7m).

FAR DITCH DETAILS SEE SHEET 33C

METRIC

PROJECT REFERENCE NO. X-0002CA SHEET NO. 12

R/W SHEET NO. 12 (X-0002CA)

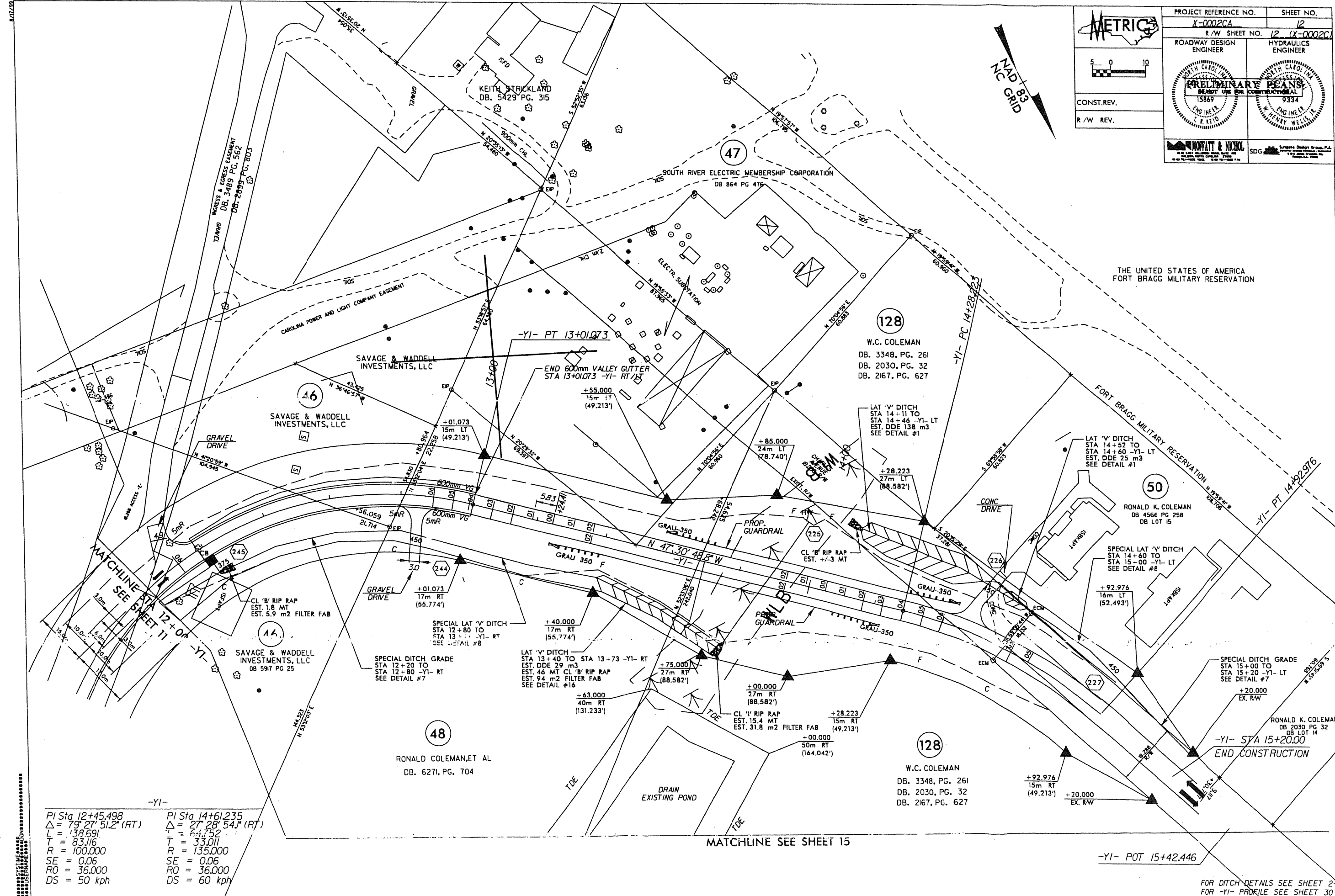
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS

CONST. REV. R/W REV.

MORFITT & NICOLA

SDG

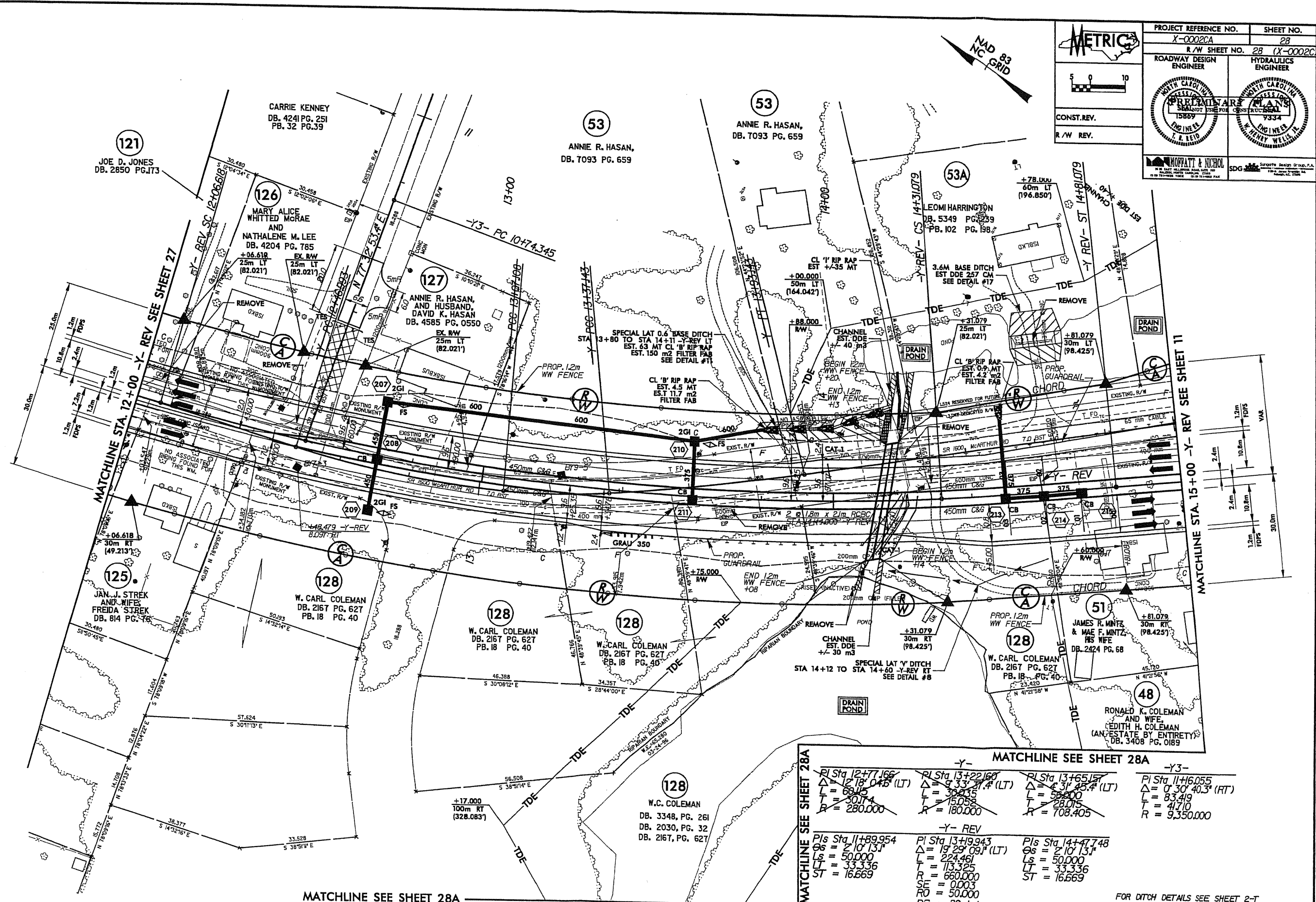


-YI-

PI Sta 12+45.498	PI Sta 14+61.235
$\Delta = 79^\circ 27' 51.2" (RT)$	$\Delta = 27^\circ 28' 54.1" (RT)$
$L = 138.691$	$L = 64.752$
$T = 83.116$	$T = 33.011$
$R = 100.000$	$R = 135.000$
$SE = 0.06$	$SE = 0.06$
$RO = 36.000$	$RO = 36.000$
$DS = 50 \text{ kph}$	$DS = 60 \text{ kph}$

FOR DITCH DETAILS SEE SHEET 2-K
FOR -YI- PROFILE SEE SHEET 30

4/25/2010 11:00 AM R:\Projects\1000000000\1000000000.dwg



PROJECT REFERENCE NO. X-0002CA		SHEET NO. 28	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
CONST. REV.		R/W REV.	
R/W REV.		R/W REV.	

PRELIMINARY PLANS

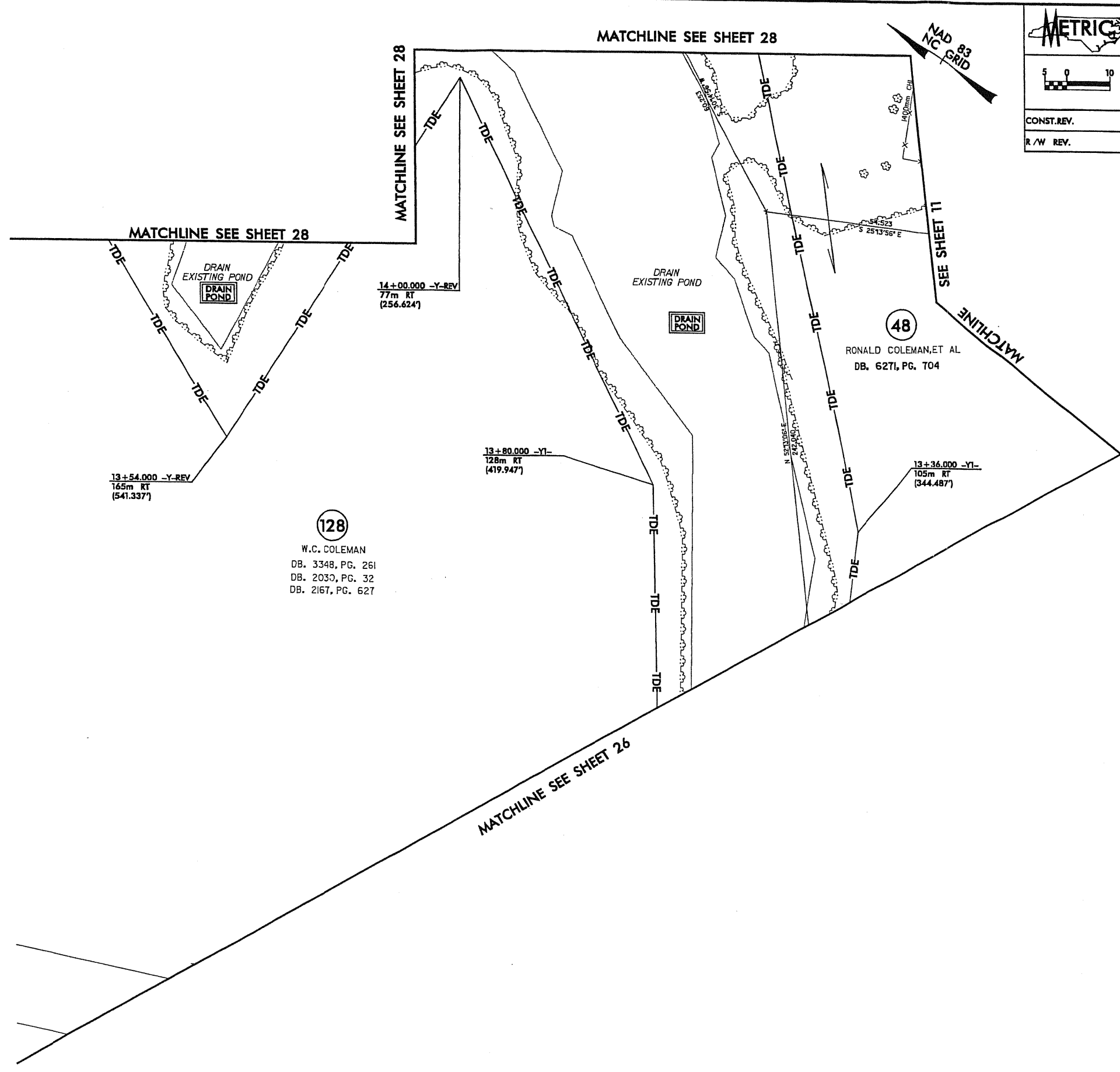
PRELIMINARY PLANS

MATCHLINE SEE SHEET 28A		MATCHLINE SEE SHEET 28A		MATCHLINE SEE SHEET 28A	
PI Sta 12+77.166	$\Delta = 12' 18" 04.5" (LT)$	PI Sta 13+22.160	$\Delta = 9' 33" 37.4" (LT)$	PI Sta 13+65.157	$\Delta = 4' 31" 45.4" (RT)$
L = 68.000	L = 30.000	L = 50.000	L = 50.000	L = 50.000	L = 83.419
T = 30.174	T = 15.058	T = 28.015	T = 28.015	T = 28.015	T = 41.710
R = 280.000	R = 180.000	R = 708.405	R = 708.405	R = 708.405	R = 9,350.000
-Y-		-Y- REV		-Y3-	
PIs Sta 11+89.954	PI Sta 13+19.943	PIs Sta 14+47.748			
$\Delta = 2' 10" 13.1"$	$\Delta = 19' 29" 09.1" (LT)$	$\Delta = 2' 10" 13.1"$			
Ls = 50.000	L = 224.461	Ls = 50.000			
LT = 33.325	LT = 33.325	LT = 33.325			
ST = 16.669	R = 660.000	ST = 16.669			
	SE = 0.003				
	RO = 50.000				
	DS = 80 kph				

FOR DITCH DETAILS SEE SHEET 2-T
FOR -Y- REV PROFILE SEE SHEET 54 & 55
SEE C-THRU C- FOR CULVERT PLANS

14/7/20

R:\A\2\200\1468020a_rdy_psh-28a.dgn
14/07/2008 11:28:00

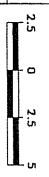
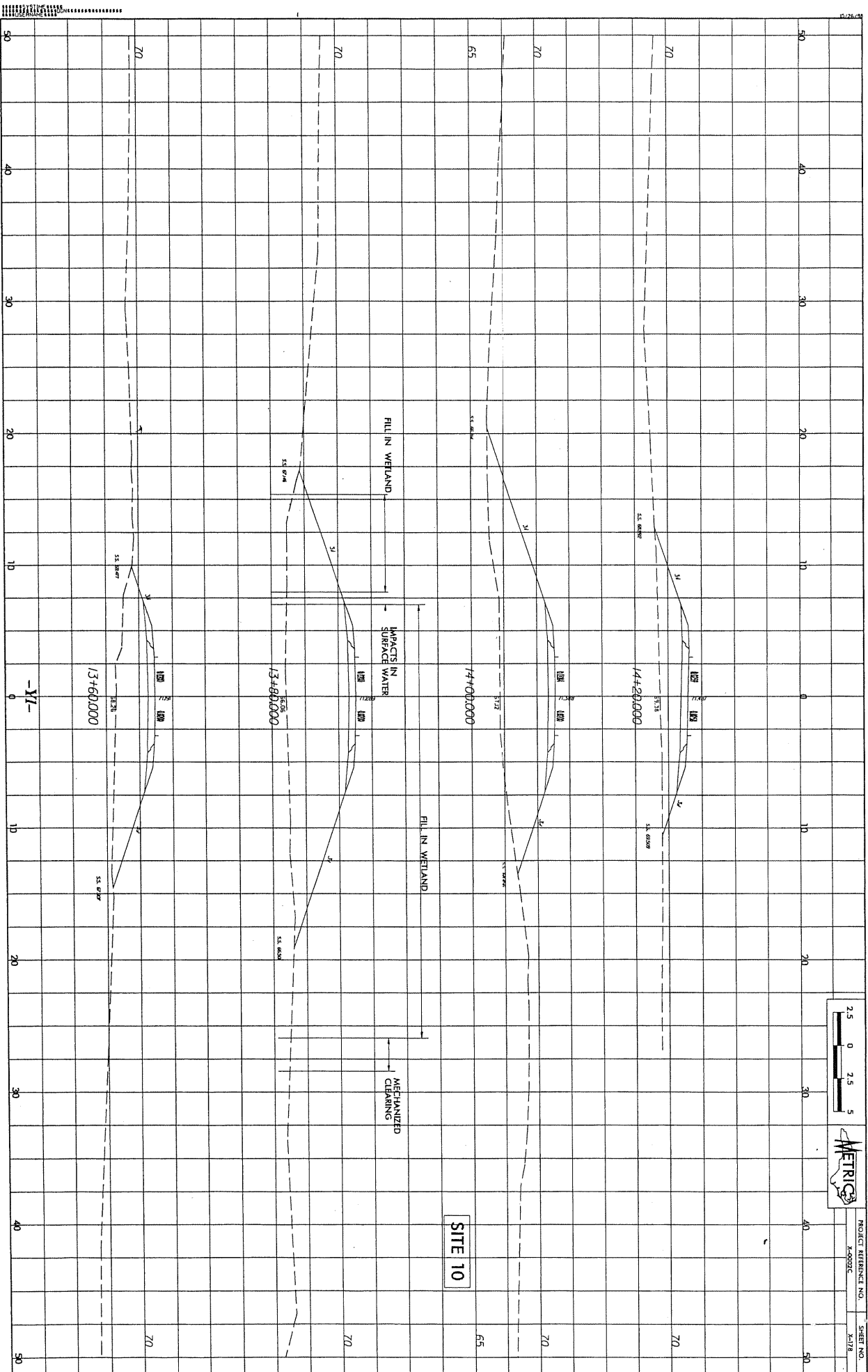


CONST.REV.
R/W REV.

PROJECT REFERENCE NO. XX-600027A	SHEET NO. 28/28A
R/W SHEET NO. 28A(X-0002C)	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

128
W.C. COLEMAN
DB. 3348, PG. 261
DB. 2030, PG. 32
DB. 2167, PG. 627

48
RONALD COLEMAN, ET AL
DB. 627I, PG. 704



PROJECT REFERENCE NO. X-0903C
SHEET NO. X-178

SITE 10

FILL IN WETLAND

IMPACTS IN SURFACE WATER

FILL IN WETLAND

MECHANIZED CLEARING

-X1-