STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

November 30, 2005

U.S. Army Corps of Engineers
Raleigh Regulatory Field Office
6508 Falls of the Neuse Road, Suite 120
Raleigh, North Carolina 27615

ATTN: Mr. John Thomas
NCDOT Coordinator

SUBJECT: **Permit Modification Request for Change in Construction Method for TIP I-2511CB,** I-85 Improvements from North of SR 1002 to North of SR 2120 Near the Town of Spencer in Rowan County, State Project No. 8.1631503, Tip No. I-2511CB. Debit $475 for Major WQC modification from WBS Element No. 34163.1.1.

REFERENCE: - 404 Individual Permit issued October 7, 2004 (modified September 20, 2005), USACE Action ID 200221534

- 401 Water Quality Certification No. 3456 issued April 20, 2004 (modified January 7, 2005, February 9, 2005, and October 6, 2005), DWQ Project No. 040271

Dear Sir:

The North Carolina Department of Transportation (NCDOT) is providing notification of a proposed change in construction method for SR 1915 (Old Union Church Road) associated with the relocated portion of Town Creek located at permit Site 5 for the above referenced project.

The NCDOT along with our design build partner have identified an alternate method to the temporary crossing of the relocated Town Creek channel that has been proposed and permitted. In the permit modification request submitted on August 8, 2005, and approved on September 20, 2005, a procedure was outlined in which a series of parallel temporary box culverts and a temporary bridge slab structure would be placed in a portion of the relocated Town Creek in order to maintain traffic during the construction of the new section of SR 1915. Based on

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-733-3141
FAX: 919-733-9794
WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

observations of actual field conditions, NCDOT has determined that an alternate method for the temporary construction is possible that will greatly reduce construction activities within the relocated portion of Town Creek once flow has been diverted into the new channel, and provide an opportunity to utilize substrate from the abandoned channel in the newly constructed channel.

The revised construction method does not compromise NCDOT's compliance with the existing permit conditions. No new impact sites or additional impacts at existing sites will result from the change in construction methods. The construction modifications have been evaluated for compliance with the avoidance/minimization criteria and are in compliance with all previous Individual Permit factors, including the following:

- Protected Species,
- Cultural Resources,
- Aquatic Life passage, and
- FEMA compliance.

Summary of Impact Changes

This change in construction method does not have any associated changes to previously permitted impacts at Permit Site 5.

Site 5, Sheets 12 through 20 of 35
Station 18+00 – CRP1B – through 26+00 – CRP1A – (LT)
Placement of clean fill material in Town Creek. Original Permanent Impact: 864 linear feet; New Permanent Impact: 864 linear feet.
Impact change: Permanent stream impact = no change

Below, in the section titled "On-Site Mitigation Strategy", is a description of the design modifications and the associated changes to previously permitted Site 5, Town Creek channel relocation.

On-Site Mitigation Strategy

On August 8, 2005, NCDOT requested modifications to the permit for the above project which resulted in a net reduction to impacts for the project. A permit modification was issued on September 20, 2005. As part of the modification, a procedure was outlined for temporary roadway construction at Site 5 within the relocated portion of Town Creek. The procedure included the installation of a temporary crossing utilizing a combination of box culverts and concrete slabs. This temporary crossing was required to maintain traffic on an existing section of SR 1915 during the construction of the new SR 1915 over Town Creek. This process required that the temporary crossing remain in place for a period of time after the water of Town Creek

was diverted into the new channel. The removal of the temporary crossing would thus be accomplished while the creek was active.

Since the time the permit modification was submitted, an alternate method to construct the new stream channel and maintain traffic on SR 1915 has been developed. The new method is outlined below and illustrated on the attached revised permit drawings.

- Construct and establish the new Town Creek channel from existing SR 1915 (-T1- STA 16+29) in a northeasterly direction to the downstream tie with existing Town Creek (-T1- STA 24+00). Maintain SR 1915 traffic on the existing roadway. Construct the new SR 1915 bridge over the relocated portion of Town Creek.

- Construct a temporary channel for Town Creek from a point immediately downstream of the existing SR 1915 bridge crossing of Town Creek to the newly constructed portion of relocated Town Creek. Stabilize the temporary channel.

- Divert Town Creek into the temporary channel and the portion of permanent channel constructed in stages above. Remove and stockpile existing rock and cobble from the abandoned Town Creek channel, in accordance with Condition 13 of the North Carolina Division of Water Quality (NCDWQ) Water Quality Certification Modification No. 3456, dated October 6, 2005. Fill abandoned channel and construct remainder of relocated SR 1915 while maintaining traffic on existing SR 1915.

- Move traffic onto the completed portion of relocated SR 1915. Excavate remaining portion of the new Town Creek channel located to the southwest of temporary channel and relocated portion of SR 1915. Utilize stockpiled substrate from the abandoned Town Creek channel for construction of relocated channel. Establish vegetation on the channel banks.

- Divert Town Creek into remaining portion of relocated channel. Remove the existing bridge over the abandoned portion of Town Creek, and fill the remainder of the abandoned Town Creek channel and temporary channel.

In addition to providing a safer condition to the traveling public by eliminating some of the temporary traffic shifts on SR 1915, the modified construction method outlined above offers several advantages to the previously approved method that will provide environmental benefits such as:

- It eliminates the temporary crossing in the relocated Town Creek channel;

- It eliminates the need to perform work in the live stream channel for removal of the temporary crossing; and,

- It allows for use of recovered substrate materials from existing stream channel in the construction of portions of the new channel.

The temporary channel design has been analyzed utilizing HEC-RAS to insure its stability during heavy rain events. The table below summarizes the anticipated velocities as well as the shear stresses associated with the 2, 5 and 10-year events.

Design Storm Event	Design Velocity	Design Shear Stress
2 year	5.6 ft/sec	2.1 lb/ft
5 year	6 ft/sec	2.3 lb/ft
10 year	8.2 ft/sec	4.1 lb/ft

The temporary channel design is properly sized, and riprap and fiber matting protection will be installed to accommodate the anticipated velocities and stresses.

Regulatory Approval

The NCDOT respectfully requests that the referenced Section 404 Permit be modified to reflect the construction method change outlined in this letter. The change produces no change to impacts in permitted areas. NCDOT is also hereby requesting a modification to the 401 Water Quality Certification from the NCDWQ. In compliance with Section 143-215.3D(e) of the NCAC, we have provided a method of debiting $475, as noted in the subject line of this application, as payment for processing the Section 401 permit modification application. We are providing seven copies of this modification application to the NCDWQ for their review. Attached please find the updated permit drawings and half-size plan sheets of permit areas Site 5 and Site 5A. If you have any questions or need additional information, please contact Bill Barrett at (919) 715-1624.

Respectfully,

Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA

Attachments:
Revised Permit Drawings – 2 of 35, 12 of 35, 12a of 35 (new), 14 of 35, 15 of 35 and 15a of 35 (new)
Half Size Plan Sheets – 9A, 9D

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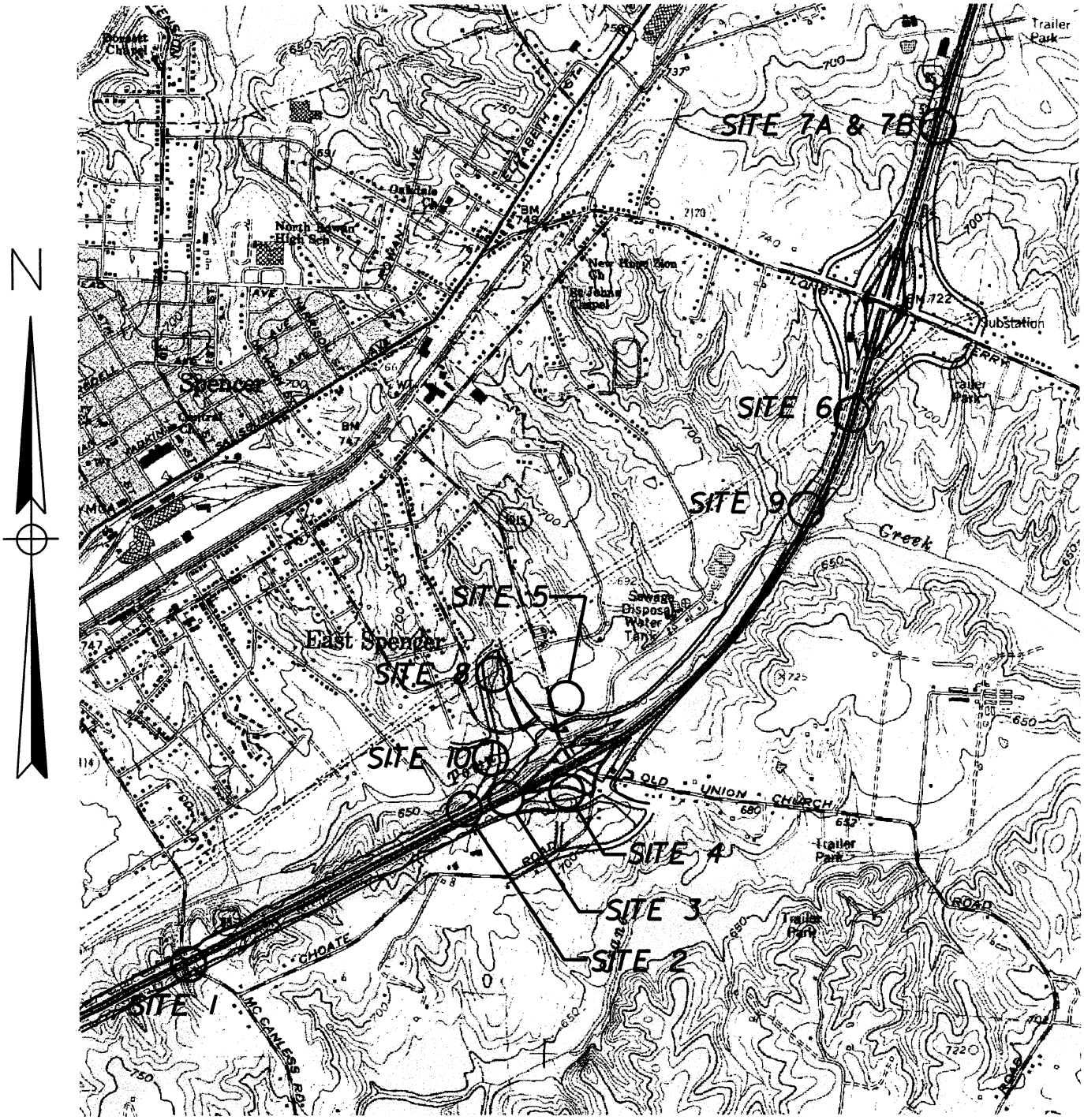
SITE MAP

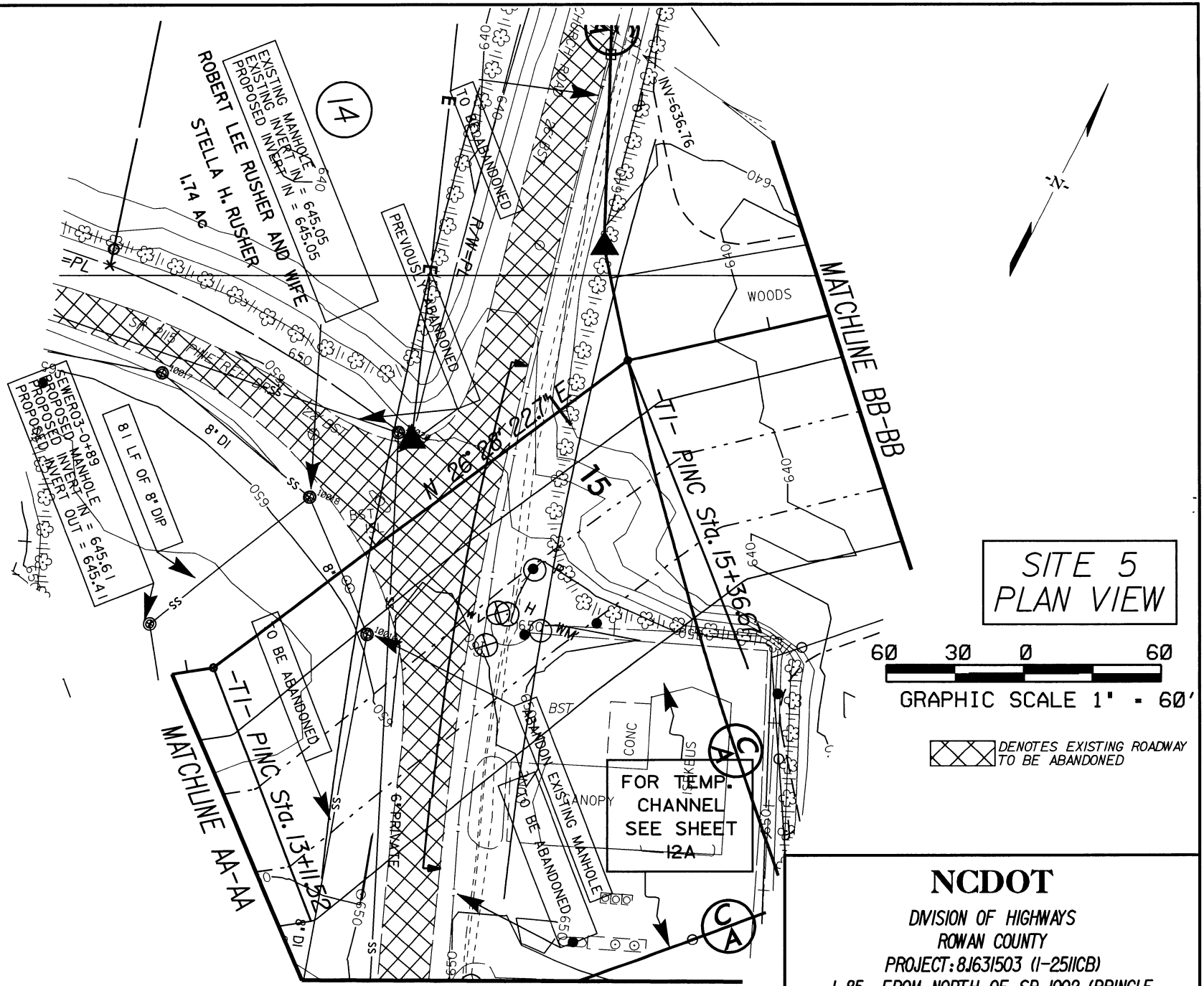


SALISBURY, NC QUAD MAP

NORTH CAROLINA

NCDOT

DIVISION OF HIGHWAYS
ROWAN COUNTY
PROJECT: 8J631503 (I-2511CB)
I-85 FROM NORTH OF SR 1002 (BRINGLE FERRY RD) TO NORTH OF SR 2120 (LONG FERRY RD) NEAR SPENCER
SHEET 2 OF 35
DATE 8/10/05



SITE 5 PLAN VIEW

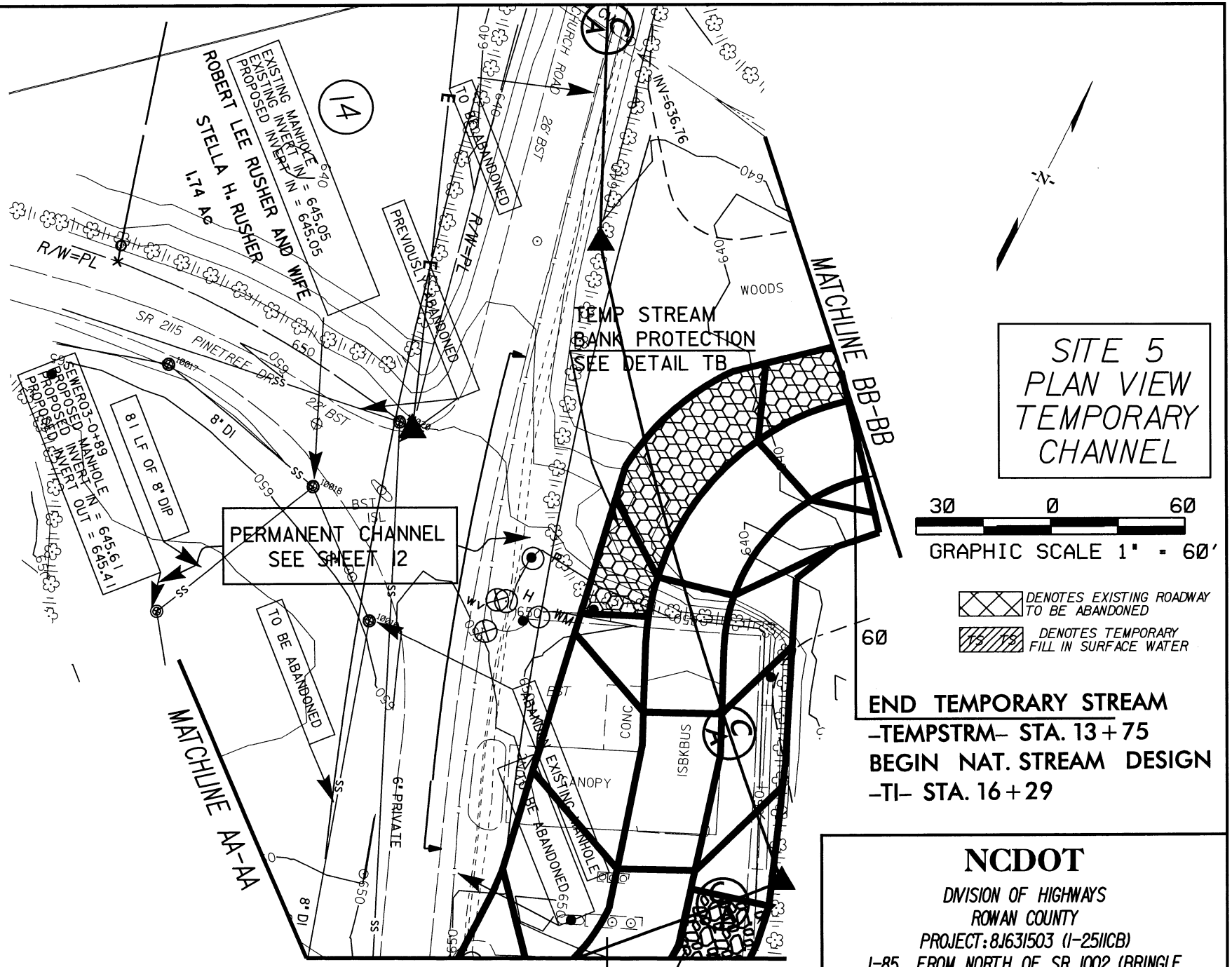
60 30 0 60

GRAPHIC SCALE 1" - 60'

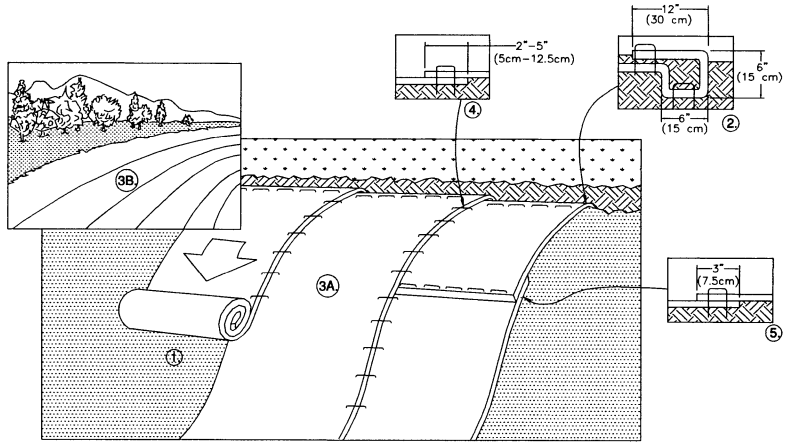
DENOTES EXISTING ROADWAY TO BE ABANDONED

NCDOT

DIVISION OF HIGHWAYS
ROWAN COUNTY
PROJECT: 8J631503 (I-2511CB)
I-85 FROM NORTH OF SR 1002 (BRINGLE FERRY RD) TO NORTH OF SR 2120 (LONG FERRY RD) NEAR SPENCER
SHEET 12 OF 35
REVISED 11/23/05

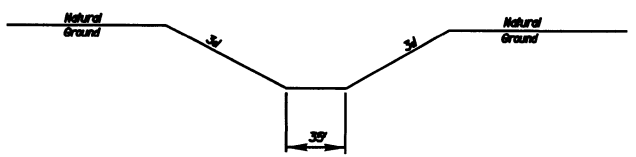

SITE 5
PLAN VIEW
TEMPORARY
CHANNEL
30 0 60
GRAPHIC SCALE 1" = 60'
DENOTES EXISTING ROADWAY TO BE ABANDONED
DENOTES TEMPORARY FILL IN SURFACE WATER
END TEMPORARY STREAM
-TEMPSTRM- STA. 13+75
BEGIN NAT. STREAM DESIGN
-TI- STA. 16+29
NCDOT
DIVISION OF HIGHWAYS
ROWAN COUNTY
PROJECT: 8J631503 (I-2511CB)
I-85 FROM NORTH OF SR 1002 (BRINGLE FERRY RDJ TO NORTH OF SR 2120 (LONG FERRY RDJ NEAR SPENCER
SHEET 12A OF 35
REVISED 11/23/05
ROBERT LEE RUSHER AND WIFE
STELLA H. RUSHER
1.74 Ac
EXISTING MANHOLE
EXISTING INVERT IN = 645.05
PROPOSED INVERT IN = 645.05
SEWER03-0+89
PROPOSED MANHOLE
PROPOSED INVERT IN = 645.61
PROPOSED INVERT OUT = 645.41
81 LF OF 8" DIP
PERMANENT CHANNEL
SEE SHEET 12
TEMP STREAM
BANK PROTECTION
SEE DETAIL TB
MATCHLINE BB-BB
MATCHLINE AA-AA
MATCHLINE AA-AA
PROPOSED
TEMPORARY
CHANNEL
SEE DETAIL TA
TEMP STREAM
BANK RIP RAP
SEE DETAIL TC
TO BE ABANDONED
EXISTING MANHOLE TO BE ABANDONED
PREVIOUSLY ABANDONED
SR 2115 PINETREE DR
CHURCH ROAD
WOODS
CANOPY
CONC
ISBKBUS
INV=636.76
R/W=PL
6" PRIVATE
8" DI
24" BST
26" BST

DETAIL TB
SLOPE INSTALLATION

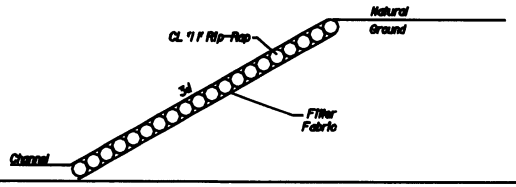


1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
   NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP's.
3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM™ . STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2" – 5" (5 CM – 12.5 CM) OVERLAP DEPENDING ON RECP's TYPE.
5. CONSECUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP's WIDTH.
   NOTE:
   *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.

DETAIL TA
TEMPORARY STREAM CHANNEL
(Not to Scale)



DETAIL TC
TEMPORARY STREAM BANK RIP-RAP
(Not to Scale)

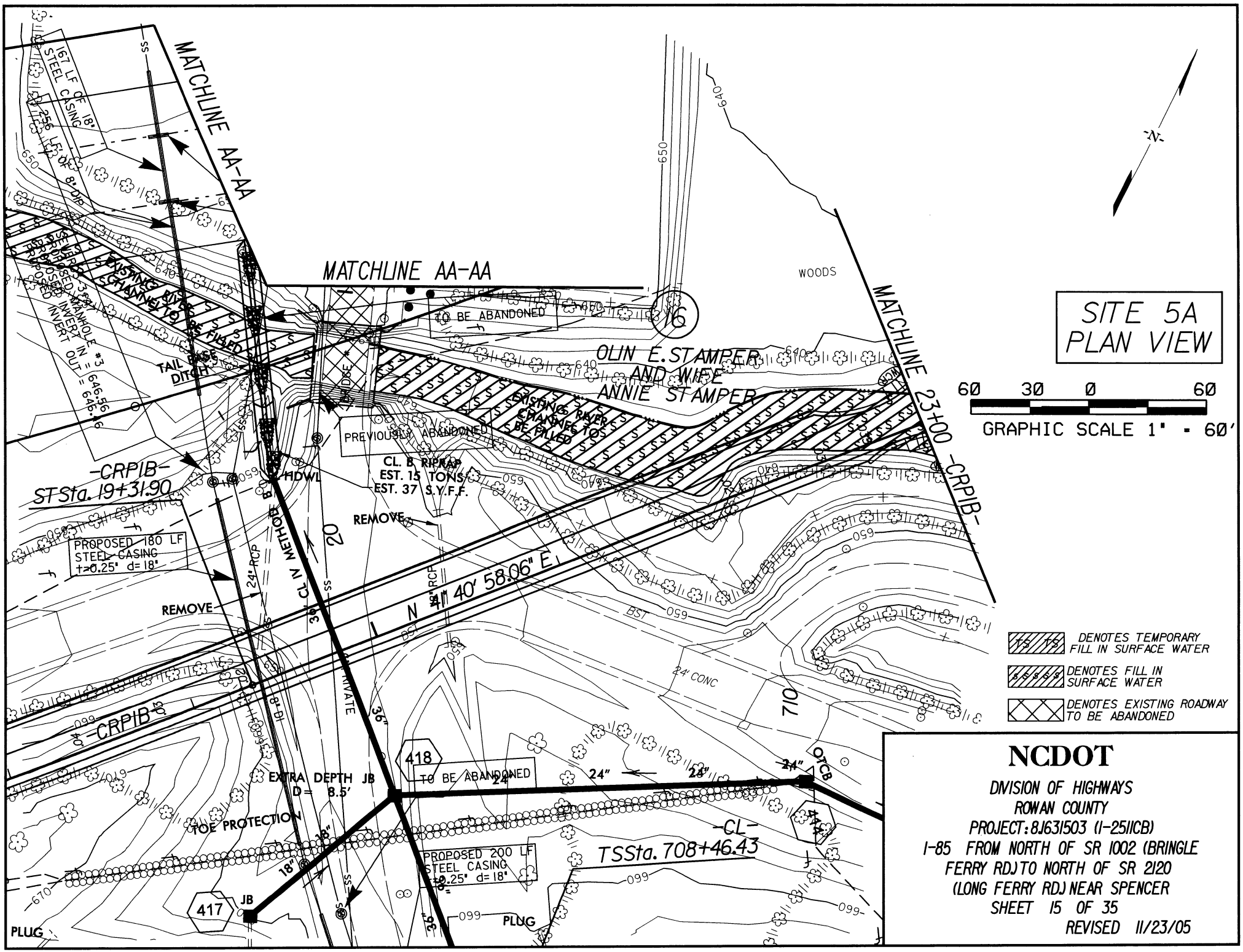


SITE 5
DETAILS
TEMPORARY CHANNEL

NTS

NCDOT

DIVISION OF HIGHWAYS
ROWAN COUNTY
PROJECT: 8J631503 (I-2511CB)
I-85 FROM NORTH OF SR 1002 (BRINGLE FERRY RD) TO NORTH OF SR 2120 (LONG FERRY RD) NEAR SPENCER
SHEET 14 OF 35
REVISED 11/23/05



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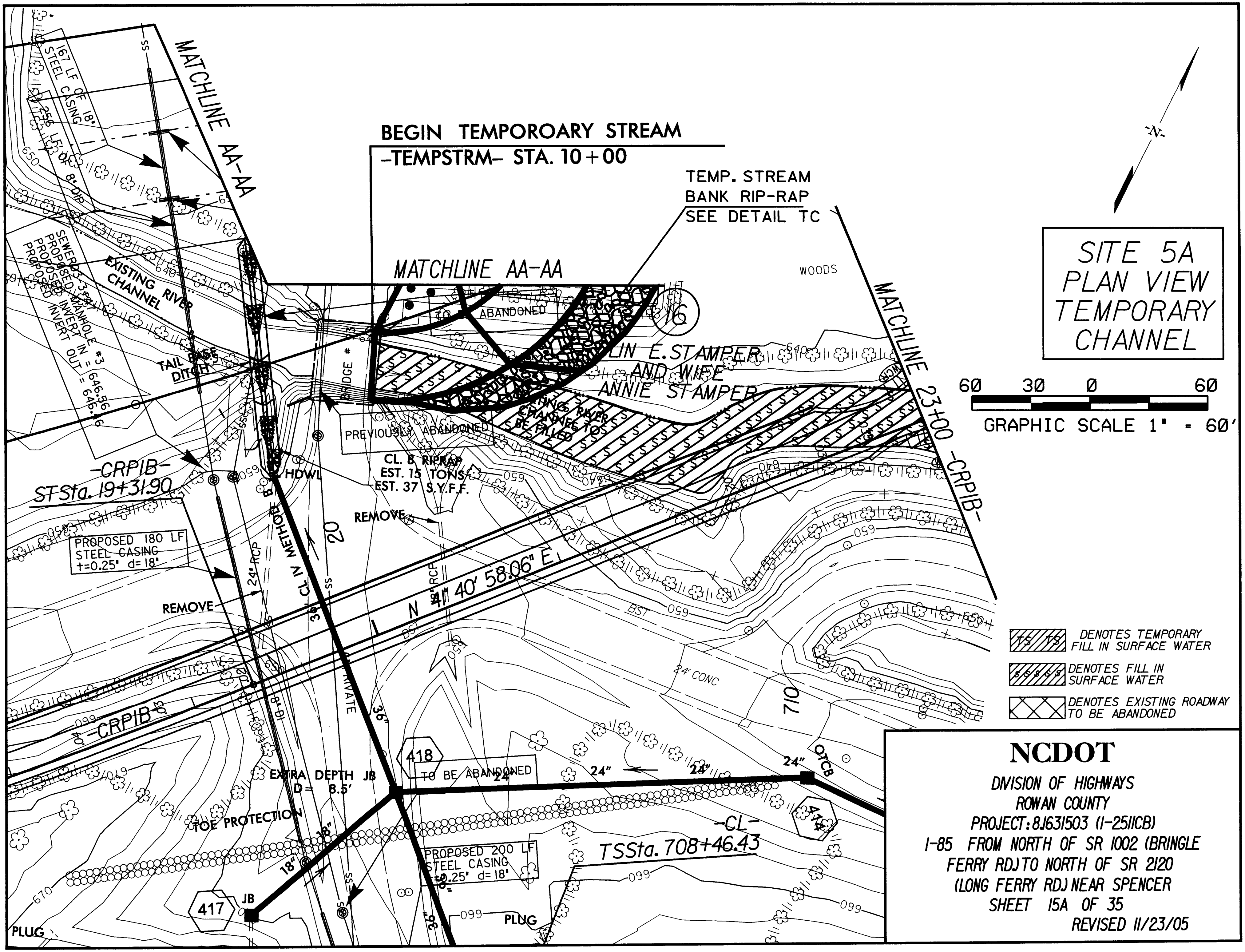
SITE 5A
PLAN VIEW
TEMPORARY
CHANNEL
60 30 0 60
GRAPHIC SCALE 1" = 60'
BEGIN TEMPOROARY STREAM
-TEMPSTRM- STA. 10+00
TEMP. STREAM
BANK RIP-RAP
SEE DETAIL TC
MATCHLINE AA-AA
MATCHLINE 23+00 -CRPIB-
WOODS
ABANDONED
LIN E. STAMPER
AND WIFE
ANNIE STAMPER
EXISTING RIVER CHANNEL TO BE FILLED
EXISTING RIVER
CHANNEL
TAIL BASE
DITCH
BRIDGE #
PREVIOUSLY ABANDONED
CL. B RIPRAP
EST. 15 TONS
EST. 37 S.Y.F.F.
HDWL
REMOVE
-CRPIB-
STSta. 19+31.90
PROPOSED 180 LF
STEEL CASING
t=0.25" d= 18"
167 LF OF 18"
STEEL CASING
256 LF OF 8" DIP
SEWER03-3
PROPOSED MANHOLE #3
PROPOSED INVERT IN = 646.56
PROPOSED INVERT OUT = 646.16
24" RCP
36" CL IV METHOD B
N 41° 40' 58.06" E
BST
24' CONC
710
PRIVATE
36"
418
TO BE ABANDONED
24"
OTCB
414
EXTRA DEPTH JB
D= 8.5'
TOE PROTECTION
18"
-CL-
TSSta. 708+46.43
PROPOSED 200 LF
STEEL CASING
t=0.25" d= 18"
417
JB
PLUG
DENOTES TEMPORARY
FILL IN SURFACE WATER
DENOTES FILL IN
SURFACE WATER
DENOTES EXISTING ROADWAY
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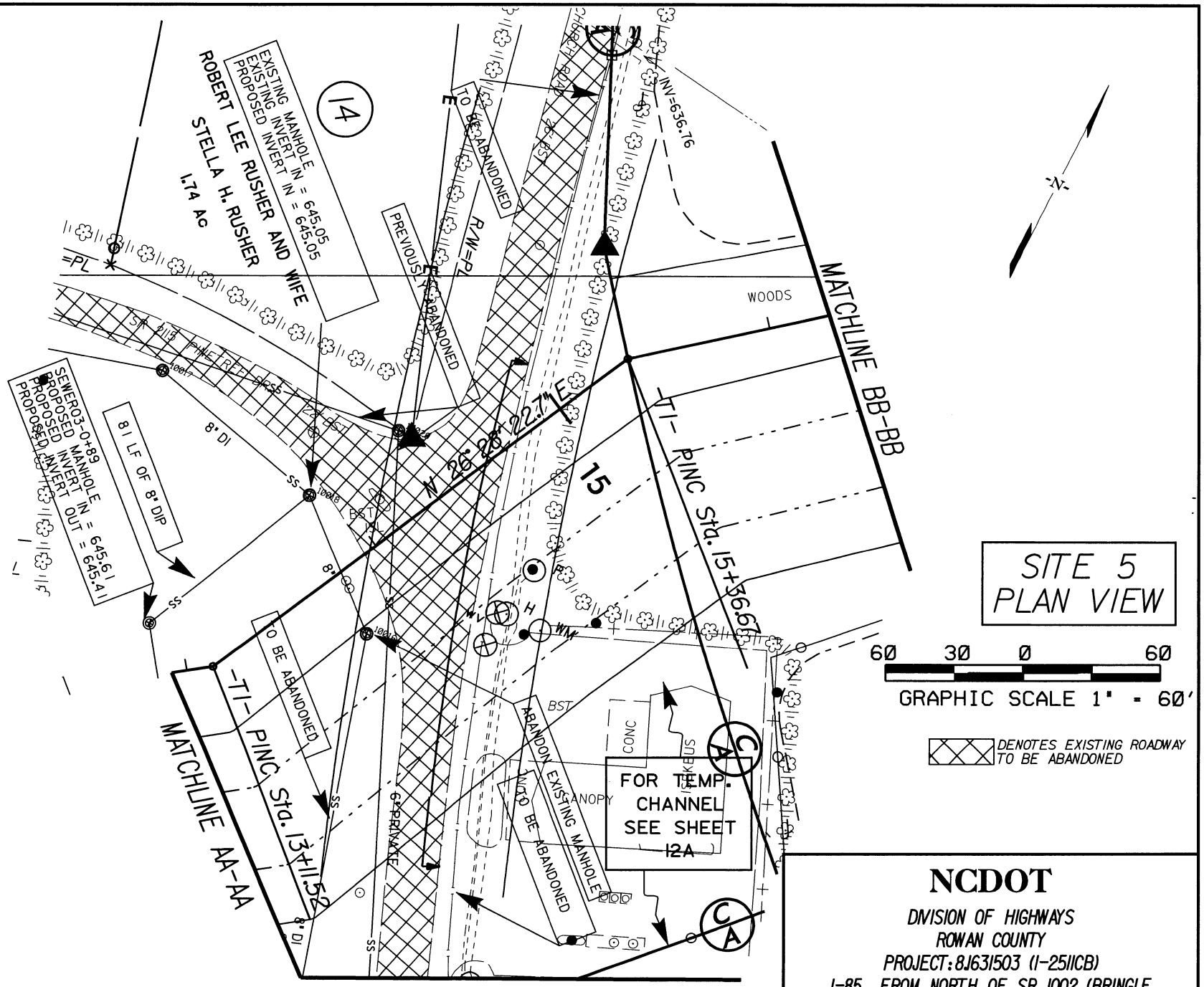

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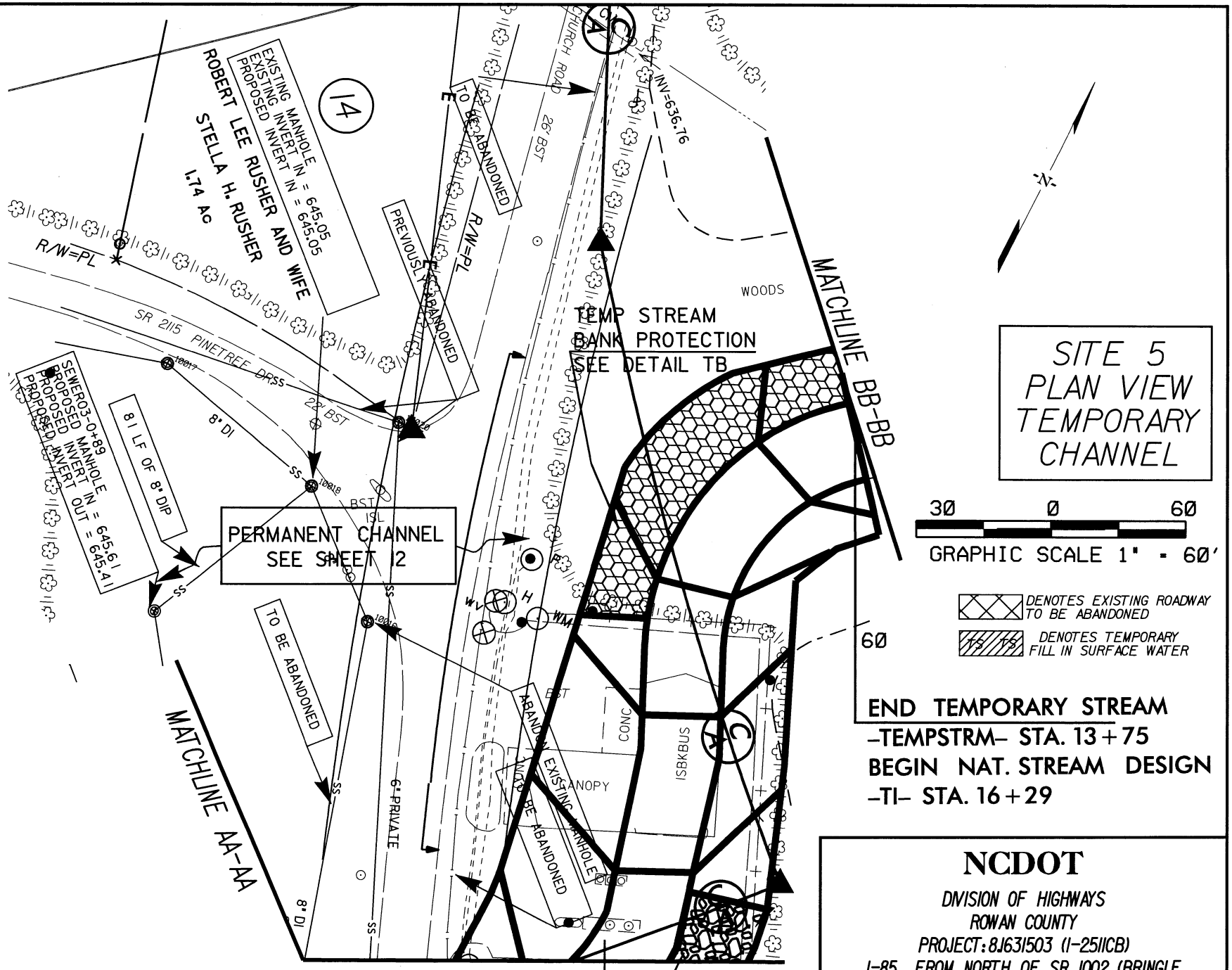
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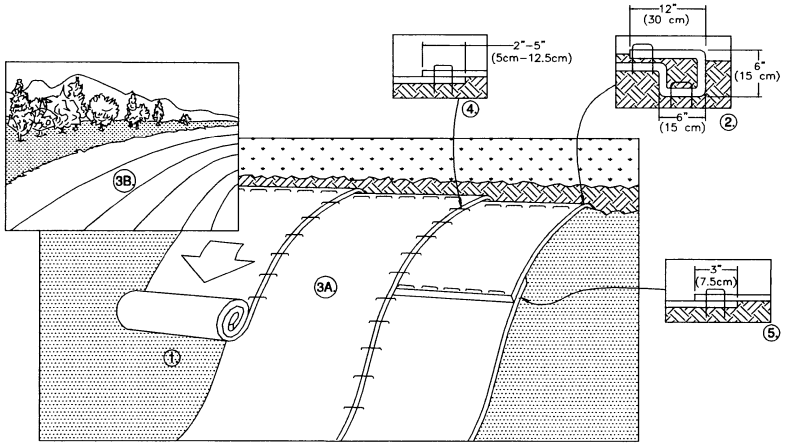
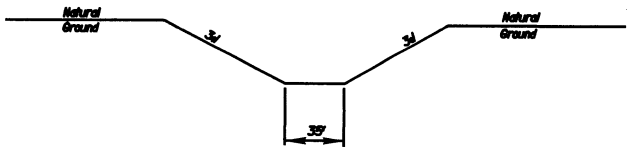
DENOTES EXISTING ROADWAY TO BE ABANDONED
DENOTES TEMPORARY FILL IN SURFACE WATER
END TEMPORARY STREAM
-TEMPSTRM- STA. 13+75
BEGIN NAT. STREAM DESIGN
-TI- STA. 16+29
NCDOT
DIVISION OF HIGHWAYS
ROWAN COUNTY
PROJECT: 8J631503 (I-2511CB)
I-85 FROM NORTH OF SR 1002 (BRINGLE FERRY RD) TO NORTH OF SR 2120 (LONG FERRY RD) NEAR SPENCER
SHEET 12A OF 35
REVISED 11/23/05
ROBERT LEE RUSHER AND WIFE
STELLA H. RUSHER
1.74 AC
EXISTING MANHOLE
EXISTING INVERT IN = 645.05
PROPOSED INVERT IN = 645.05
R/W=PL
SR 2115 PINETREE DR
22" BST
8" DI
81 LF OF 8" DIP
SEWER03-0+89
PROPOSED MANHOLE
PROPOSED INVERT IN = 645.61
PROPOSED INVERT OUT = 645.41
PERMANENT CHANNEL
SEE SHEET 12
TO BE ABANDONED
PREVIOUSLY ABANDONED
CHURCH ROAD
INV=636.76
WOODS
TEMP STREAM
BANK PROTECTION
SEE DETAIL TB
MATCHLINE BB-BB
MATCHLINE AA-AA
6" PRIVATE
ABANDON EXISTING MANHOLE
CONC
ISBKBUS
CANOPY
PROPOSED
TEMPORARY
CHANNEL
SEE DETAIL TA
TEMP STREAM
BANK RIP RAP
SEE DETAIL TC

DETAIL TB
SLOPE INSTALLATION

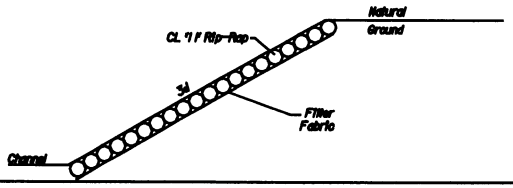


1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
   NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP's.
3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM™ , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2" – 5" (5 CM – 12.5 CM) OVERLAP DEPENDING ON RECP's TYPE.
5. CONSECUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP's WIDTH.
   NOTE:
   *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.

DETAIL TA
TEMPORARY STREAM CHANNEL
(Not to Scale)



DETAIL TC
TEMPORARY STREAM BANK RIP-RAP
(Not to Scale)

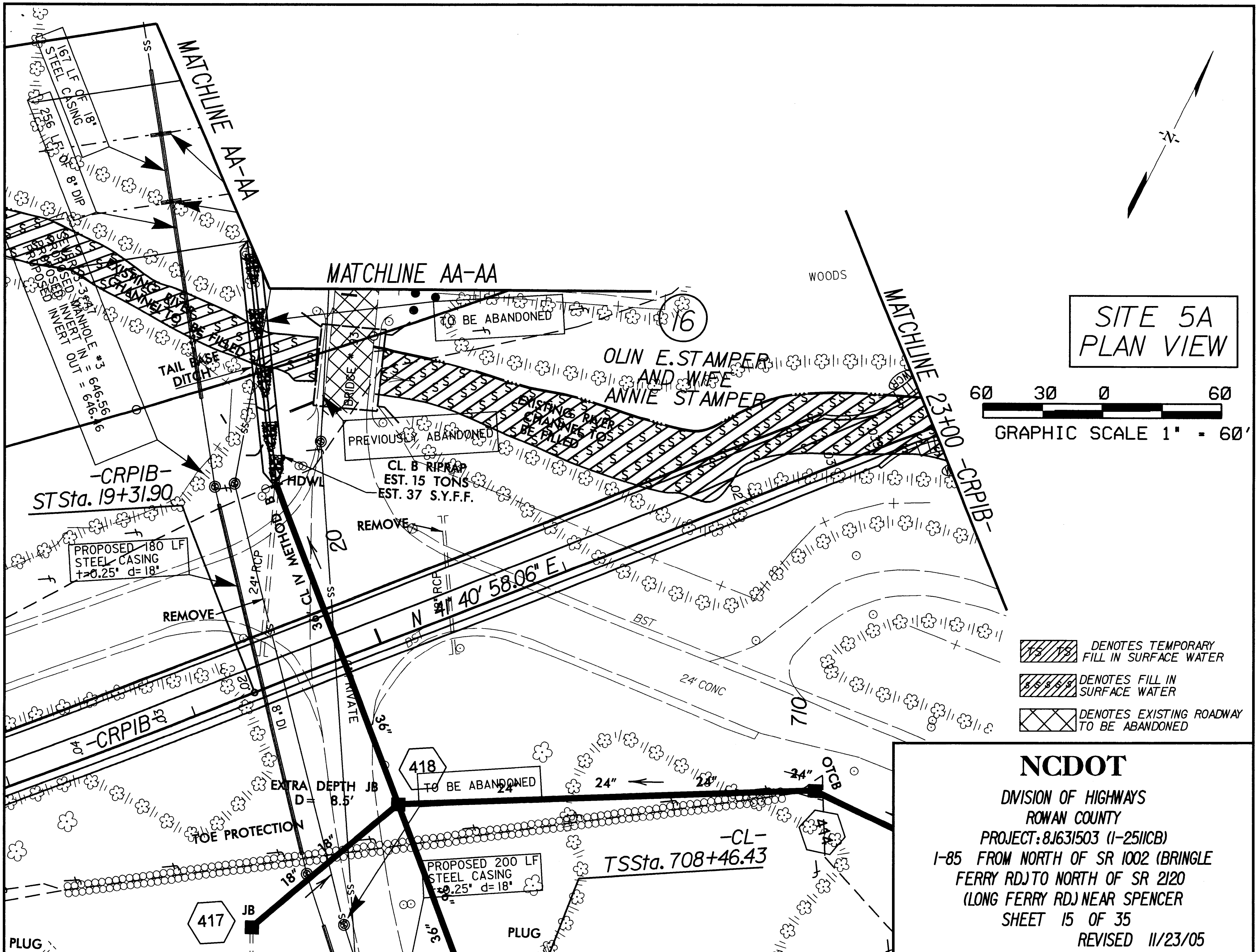


SITE 5
DETAILS
TEMPORARY CHANNEL

NTS

NCDOT

DIVISION OF HIGHWAYS
ROWAN COUNTY
PROJECT: 8J631503 (I-2511CB)
I-85 FROM NORTH OF SR 1002 (BRINGLE FERRY RD) TO NORTH OF SR 2120 (LONG FERRY RD) NEAR SPENCER
SHEET 14 OF 35
REVISED 11/23/05



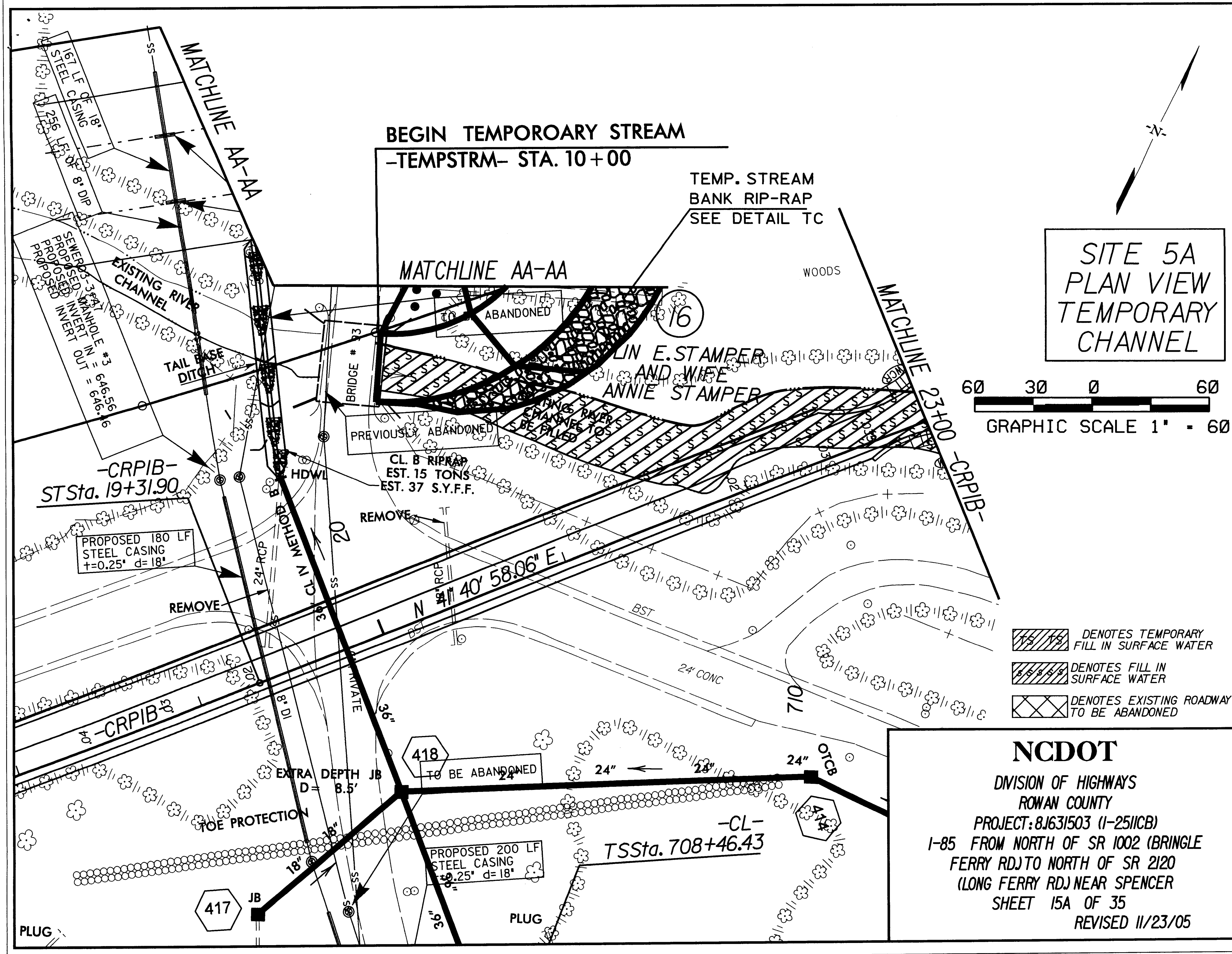
DENOTES TEMPORARY FILL IN SURFACE WATER

DENOTES FILL IN SURFACE WATER

DENOTES EXISTING ROADWAY TO BE ABANDONED

NCDOT

DIVISION OF HIGHWAYS
ROWAN COUNTY
PROJECT: 8J631503 (I-2511CB)
I-85 FROM NORTH OF SR 1002 (BRINGLE FERRY RD) TO NORTH OF SR 2120 (LONG FERRY RD) NEAR SPENCER
SHEET 15 OF 35
REVISED 11/23/05


SITE 5A
PLAN VIEW
TEMPORARY
CHANNEL
60 30 0 60
GRAPHIC SCALE 1" = 60'
BEGIN TEMPOROARY STREAM
-TEMPSTRM- STA. 10+00
TEMP. STREAM
BANK RIP-RAP
SEE DETAIL TC
MATCHLINE AA-AA
MATCHLINE AA-AA
MATCHLINE 23+00 -CRPIB-
WOODS
16
LIN E. STAMPER
AND WIFE
ANNIE STAMPER
TO BE ABANDONED
PREVIOUSLY ABANDONED
EXISTING RIVER CHANNEL TO BE FILLED
BRIDGE # 93
CL. B RIPRAP
EST. 15 TONS
EST. 37 S.Y.F.F.
HDWL
REMOVE
REMOVE
167 LF OF 18" STEEL CASING
256 LF OF 8" DIP
SEWER03-3+47
PROPOSED MANHOLE #3
PROPOSED INVERT IN = 646.56
PROPOSED INVERT OUT = 646.16
EXISTING RIVER CHANNEL
TAIL BASE DITCH
-CRPIB-
ST Sta. 19+31.90
PROPOSED 180 LF
STEEL CASING
t=0.25" d=18"
36" CL IV METHOD B
N 41° 40' 58.06" E
BST
24' CONC
710
-CRPIB-
PRIVATE
36"
418
TO BE ABANDONED
EXTRA DEPTH JB
D = 8.5'
TOE PROTECTION
24"
24"
24"
OTCB
414
-CL-
TS Sta. 708+46.43
PROPOSED 200 LF
STEEL CASING
t=0.25" d=18"
417
JB
PLUG
PLUG
DENOTES TEMPORARY FILL IN SURFACE WATER
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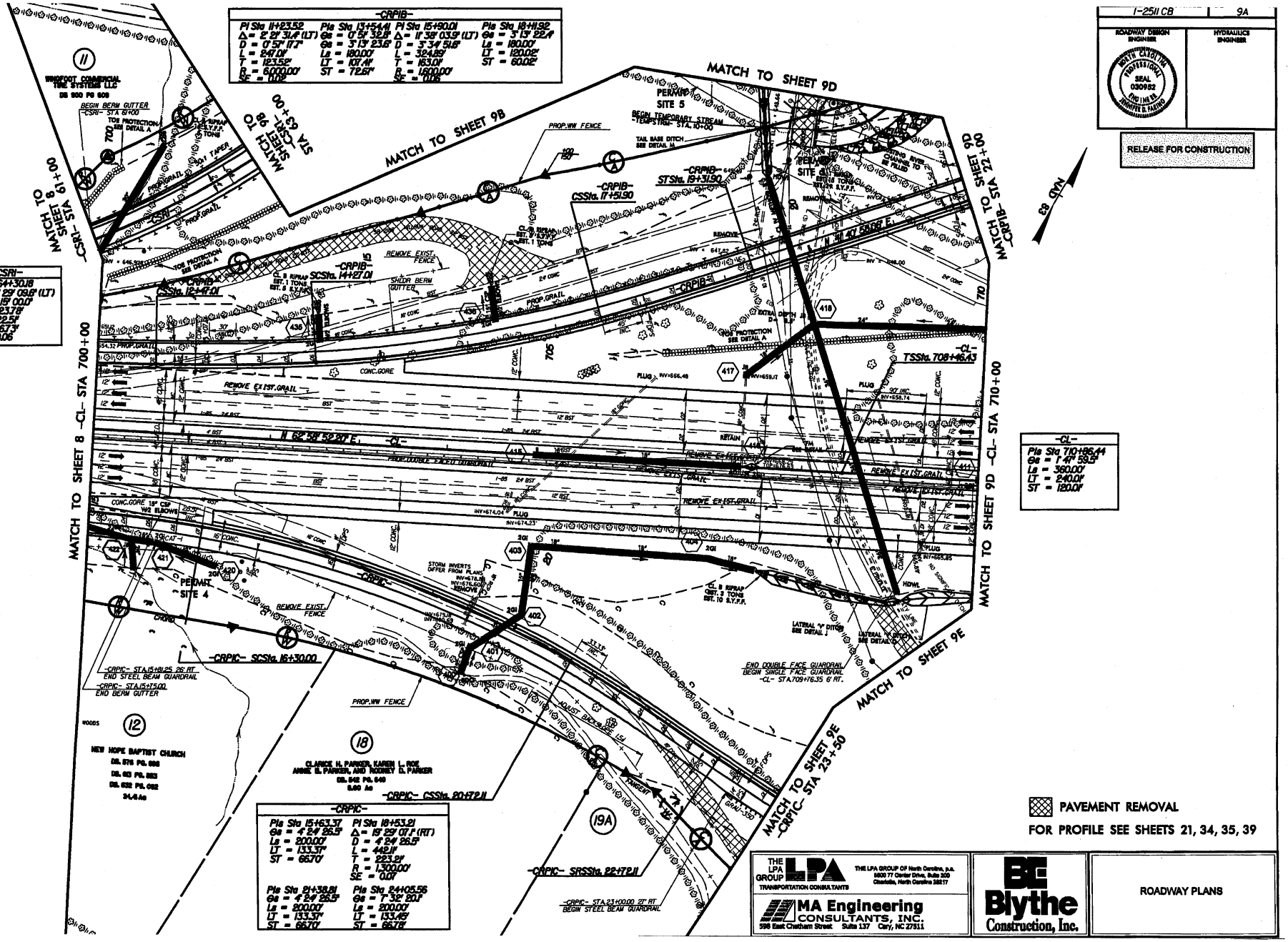
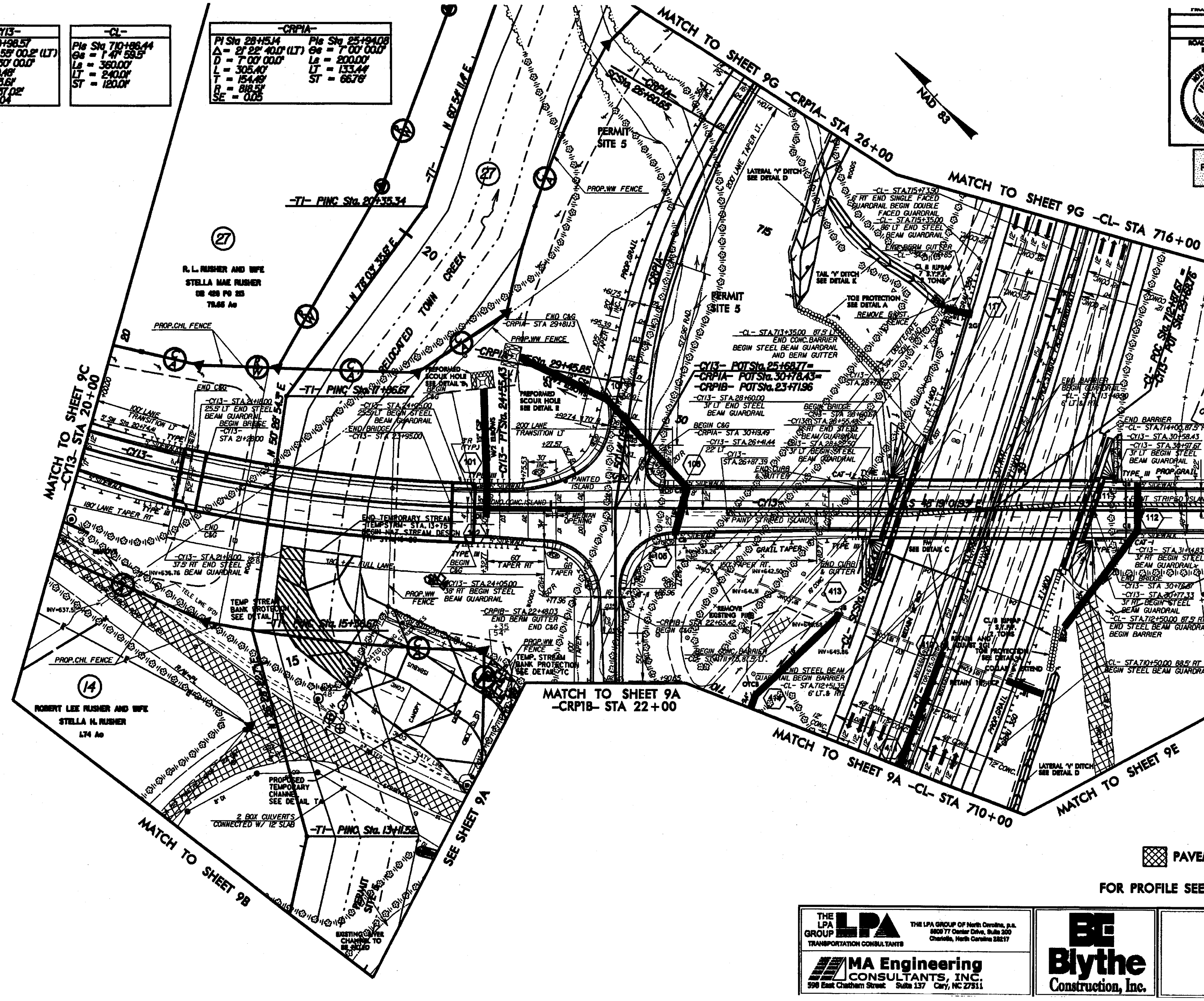

MATCH TO SHEET 8 -CL- STA 700+00
MATCH TO SHEET 9B
MATCH TO SHEET 9D
MATCH TO SHEET 9D -CL- STA 710+00
MATCH TO SHEET 9E
MATCH TO SHEET 9E -CRPIC- STA 23+50
-CSRI-
-CRPIB-
-CRPIC-
-CL-
PERMIT SITE 4
PERMIT SITE 5
PAVEMENT REMOVAL
FOR PROFILE SEE SHEETS 21, 34, 35, 39
RELEASE FOR CONSTRUCTION
ROADWAY PLANS
MA Engineering CONSULTANTS, INC.
Blythe Construction, Inc.
THE LPA GROUP
NAD 83

-CY13-
PI Sta 19+98.57
Δ = 32° 55' 00.2" (LT)
D = 3° 30' 00.0"
L = 940.46'
T = 483.61'
R = 1637.02'
SE = 0.04

-CL-
PIs Sta 710+86.44
θs = 1° 47' 59.5"
Ls = 360.00'
LT = 240.01'
ST = 120.01'

-CRP1A-	
PI Sta 28+15.14	PIs Sta 25+94.08
Δ = 21° 22' 40.0" (LT)	θs = 7° 00' 00.0"
D = 7° 00' 00.0"	Ls = 200.00'
L = 305.40'	LT = 133.44'
T = 154.49'	ST = 66.76'
R = 818.51'	
SE = 0.05	



PAVEMENT REMOVAL

FOR PROFILE SEE SHEETS 22, 31, 33, 34

PROJECT REFERENCE NO.	SHEET NO.
I-2511CB	90
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030952 ENGINEER JENNIFER B. FAKINO

RELEASE FOR CONSTRUCTION

THE LPA GROUP TRANSPORTATION CONSULTANTS — THE LPA GROUP OF North Carolina, p.a. 8809 77 Center Drive, Suite 200 Charlotte, North Carolina 28217

MA Engineering CONSULTANTS, INC. 598 East Chatham Street Suite 137 Cary, NC 27511

Blythe Construction, Inc.

ROADWAY PLANS

REVISIONS

8/17/99

4-OCT-2005 16:36
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ibeysden AT LP62638