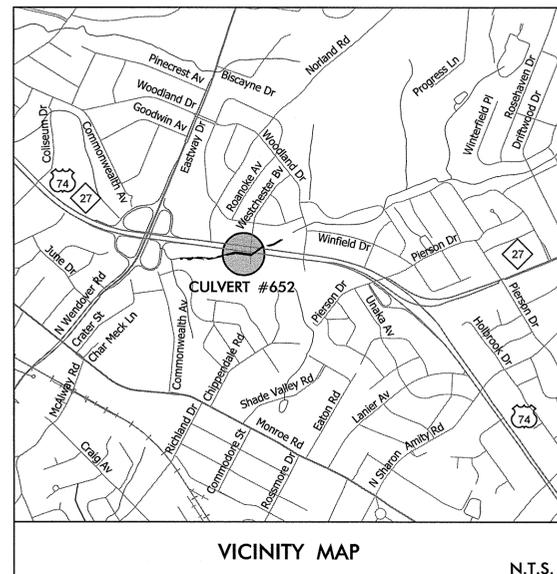


**PROJECT: 17BP.10.H.3**

See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Standard Symbology Sheet



**FINAL PLANS**

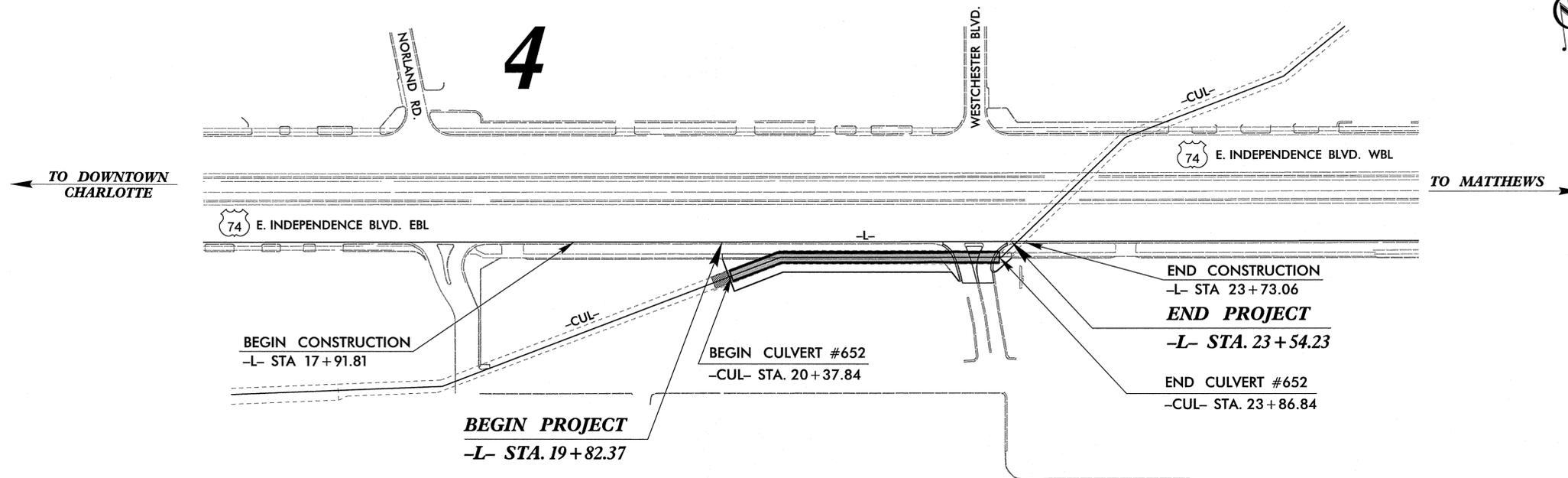
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# MECKLENBURG COUNTY

**LOCATION: CULVERT #652 UNDER US 74, CHARLOTTE**

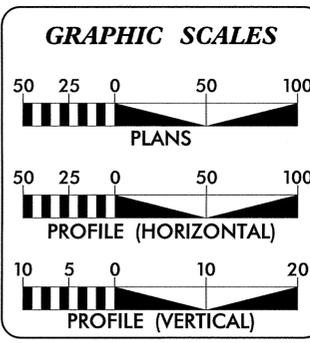
**TYPE OF WORK: CULVERT REHABILITATION: CULVERT REPLACEMENT,  
DRAINAGE, PAVING AND CURB & GUTTER**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.10.H.3	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.10.H.3	NA	PE	
17BP.10.H.3	NA	CONSTR.	



**THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDRIES OF THE CITY OF CHARLOTTE. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.**

**CONTRACT:**



**DESIGN DATA**  
ADT 2008 = 88,000

**PROJECT LENGTH**

LENGTH OF ROADWAY PROJECT = 0.004 MILES  
LENGTH OF STRUCTURE CULVERT #652 = 0.066 MILES  
TOTAL LENGTH OF PROJECT = 0.070 MILES

**PLANS PREPARED FOR THE NCDOT BY:**  
STV / Ralph Whitehead Associates, Inc.  
900 West Trade St., Ste. 715  
Charlotte, NC 28202  
NC License Number F-0991

2012 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:** NIKKI T. HONETCUTT, PE  
PROJECT ENGINEER

**LETTING DATE:** MARCH 5, 2014  
MAAMOON ABDELAZIZ  
PROJECT DESIGNER

**HYDRAULICS ENGINEER**  
SEAL 22503  
1-30-14  
SIGNATURE: [Signature]

**ROADWAY DESIGN ENGINEER**  
SEAL 039234  
SIGNATURE: [Signature]





STV / Ralph Whitehead Associates, Inc.  
 900 West Trade St., Ste. 715  
 Charlotte, NC 28202  
 NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
17BP10.H.3	1-A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

## INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
2	TYPICAL SECTIONS AND DETAILS
3 THRU 3-A	SUMMARY SHEETS
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-6	TRAFFIC MANAGEMENT PLANS
EC-1 THRU EC-4	EROSION CONTROL PLANS
S-1 THRU S-5	STRUCTURE PLANS
UC-1 THRU UC-4	UTILITY PLANS

## GENERAL NOTES

GENERAL NOTES: 2012 SPECIFICATIONS  
EFFECTIVE: 01-17-2012

GRADE LINE:  
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

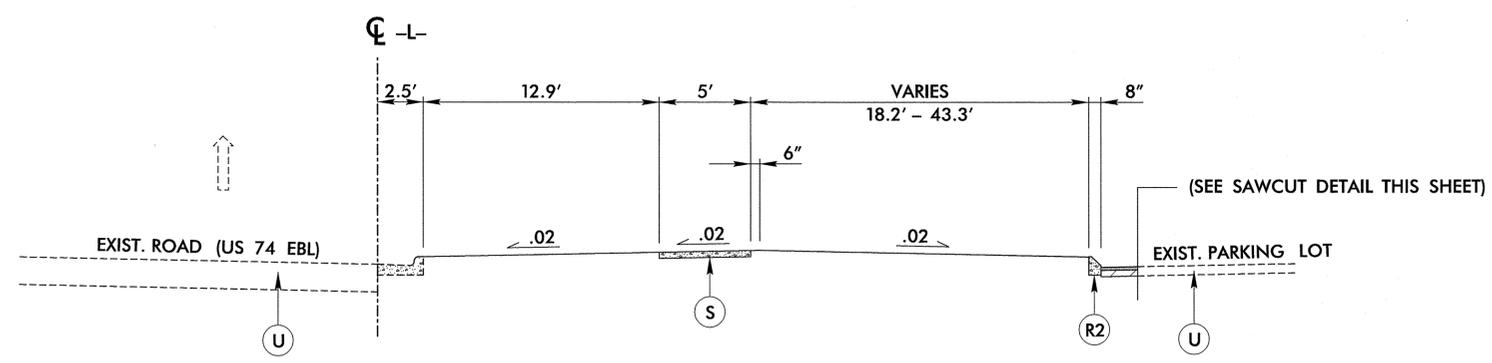
## STANDARD DRAWINGS

2012 ROADWAY ENGLISH STANDARD DRAWINGS EFF. January, 2012

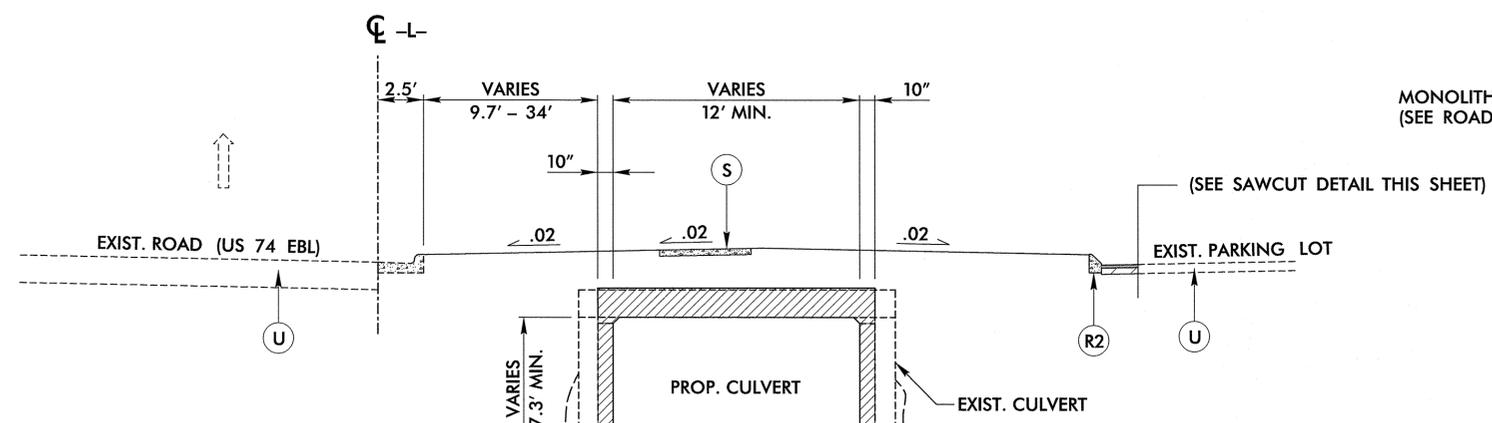
The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 8 - INCIDENTALS	
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets
DIVISION 11 - WORK ZONE TRAFFIC CONTROL	
1110.01	Stationary Work Zone Signs - Mounting Height & Lateral Clearance
1145.01	Barricades - Type III
DIVISION 16 - EROSION CONTROL AND ROADSIDE DEVELOPMENT	
1605.01	Temporary Silt Fence
1606.01	Special Sediment Control Fence

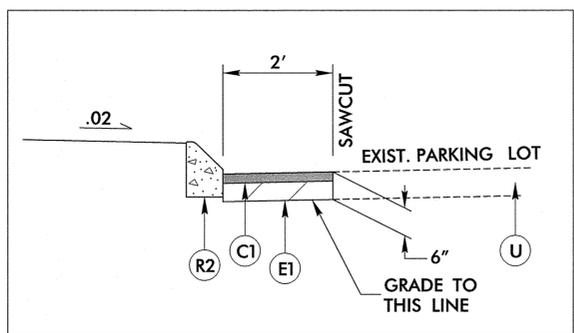




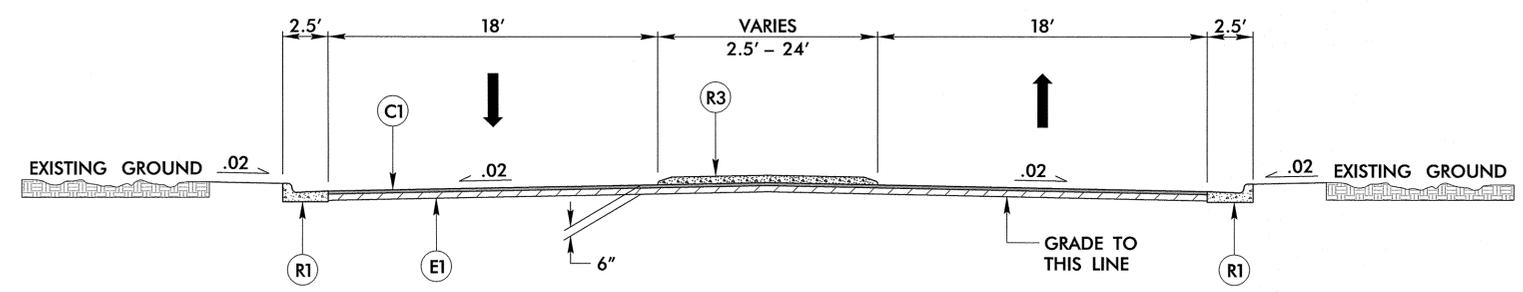
**TYPICAL SECTION #1**  
 -L- STA. 19+82.37 TO STA. 23+54.23



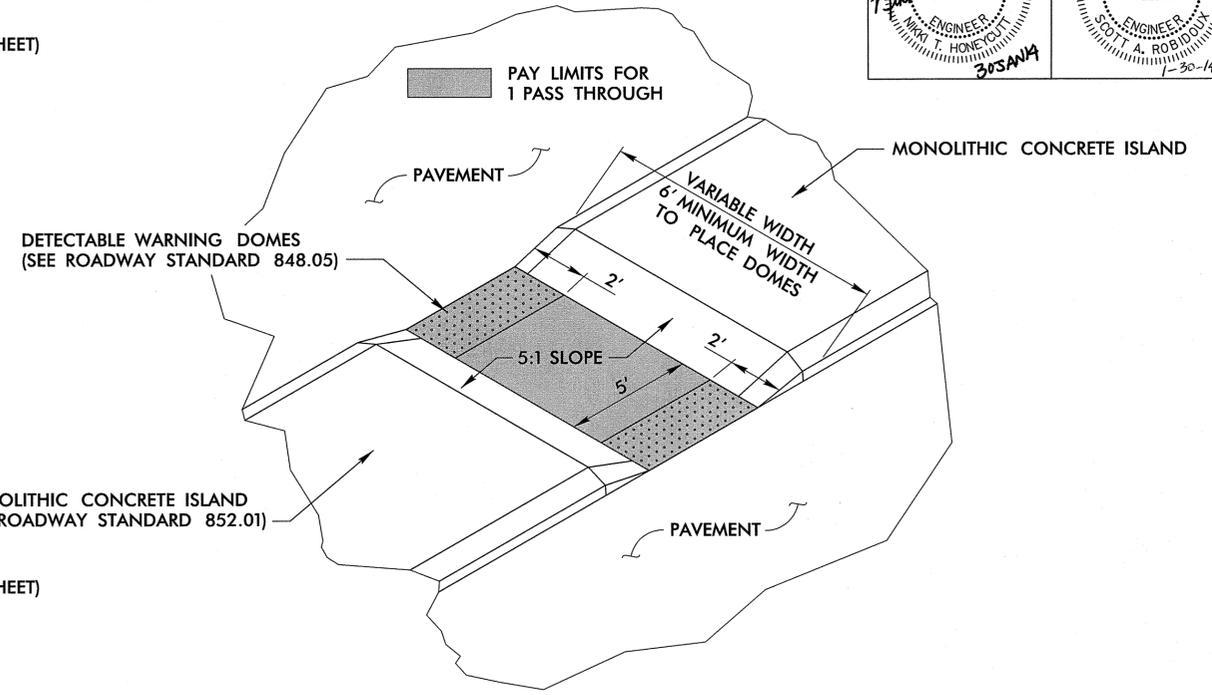
**TYPICAL SECTION #2**  
 C.I.P. CULVERT



**SAWCUT DETAIL**



**TYPICAL SECTION #3**  
 ENTRANCE TO THE PARKING LOT



**MEDIAN ISLAND WITH CUT THROUGH**

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ.YD.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ.YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ.YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ.YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" OR GREATER THAN 5.5" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER
R2	8" X 12" CONCRETE CURB
R3	5" MONOLITHIC CONCRETE ISLAND
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT (SEE WEDGING DETAIL THIS SHEET)

ALL PAVEMENT SLOPES 1:1 UNLESS NOTED OTHERWISE

1/30/2014 10:50:00 AM C:\Users\perry\Documents\Projects\SH\T\Culvert.rvt\_rdg\_psh02.dgn

PROJECT REFERENCE NO.	SHEET NO.
17BP10.H.3	3
RW SHEET NO.	

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**SUMMARY OF QUANTITIES**

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mccallqb

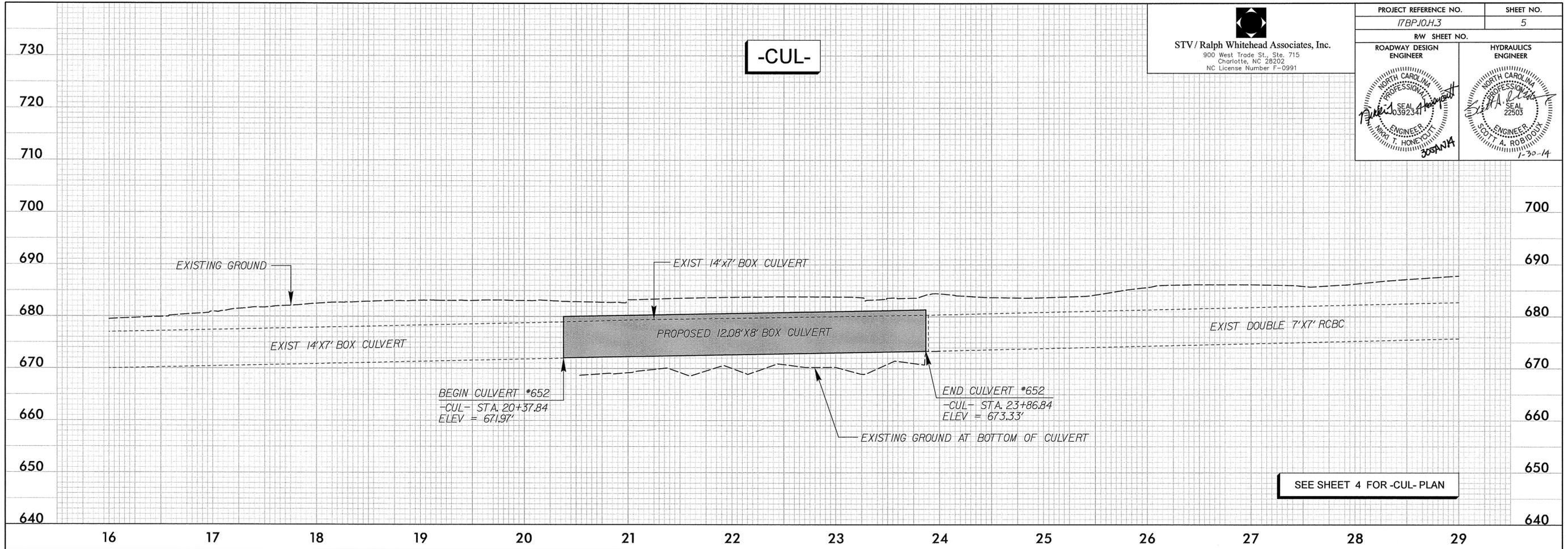




  
**STV / Ralph Whitehead Associates, Inc.**  
 900 West Trade St., Ste. 715  
 Charlotte, NC 28202  
 NC License Number F-0991

PROJECT REFERENCE NO.		SHEET NO.	
17BP10.H.3		5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
 SCOTT T. HONE 1-30-14		 SCOTT A. ROBIDOU 1-30-14	

**-CUL-**



SEE SHEET 4 FOR -CUL- PLAN

SEE SHEET 4 FOR -L- PLAN

1/30/2014  
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 mccc@stv.com



# ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1180.01	SKINNY - DRUM
1261.01	GUARDRAIL AND BARRIER DELINEATORS
1261.02	GUARDRAIL AND BARRIER DELINEATORS
1262.01	GUARDRAIL END DELINEATION

# LEGEND

## GENERAL

-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  EXIST. PVMT.
-  NORTH ARROW
-  PROPOSED PVMT.

-  WORK AREA
-  REMOVAL
-  TEMPORARY PAVEMENT
-  WEDGING

## TRAFFIC CONTROL DEVICES

-  BARRICADE (TYPE III)
-  CONE
-  DRUM  SKINNY DRUM  TUBULAR MARKER
-  TEMPORARY CRASH CUSHION
-  FLASHING ARROW PANEL (TYPE C)
-  FLAGGER
-  LAW ENFORCEMENT
-  TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
-  CHANGEABLE MESSAGE SIGN

## TEMPORARY SIGNING

-  PORTABLE SIGN
-  STATIONARY SIGN
-  STATIONARY OR PORTABLE SIGN

## SIGNALS

-  EXISTING
-  PROPOSED
-  TEMPORARY

## PAVEMENT MARKINGS

-  EXISTING LINES
-  TEMPORARY LINES

## PAVEMENT MARKERS

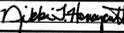
-  CRYSTAL/CRYSTAL
-  CRYSTAL/RED
-  YELLOW/YELLOW

## PAVEMENT MARKING SYMBOLS

-  PAVEMENT MARKING SYMBOLS

## TEMPORARY PAVEMENT MARKING

- PAINT 4"
- PA WHITE EDGELINE
  - PB YELLOW EDGELINE
  - PI YELLOW DOUBLE CENTERLINE

APPROVED:  DATE: 13AUG13	 DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL	ROADWAY STANDARD DRAWINGS & LEGEND
SEAL  NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039234 W. T. HONEYCUTT		

## GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

### TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
US 74 (-L-)	MON-SUN 6:00 A.M. - 8:00 P.M.

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME
US 74 (-L-)

### HOLIDAY AND HOLIDAY WEEKEND

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31st TO 8:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 8:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 8:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 8:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 8:00 P.M. THE DAY AFTER INDEPENDENCE DAY.
6. IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 8:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
7. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 8:00 P.M. TUESDAY.
8. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 8:00 P.M. MONDAY.
9. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 8:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
10. FOR CAROLINA PANTHERS HOME FOOTBALL GAMES, BETWEEN THE HOURS OF 6:00 A.M. THE DAY OF THE GAME AND 4 HOURS AFTER THE END OF THE FOOTBALL GAME.
11. FOR CHARLOTTE BOBCATS HOME BASKETBALL GAMES, BETWEEN 2 HOURS BEFORE THE START AND 2 HOURS AFTER THE END OF THE BASKETBALL GAME.
12. FOR PERFORMANCES AT OVEN'S AUDITORIUM AND BOJANGLES' COLISEUM, BETWEEN 2 HOURS BEFORE THE START OF THE EVENT AND 2 HOURS AFTER THE END OF THE EVENT.
13. FOR LOCAL HIGH SCHOOL GRADUATIONS, BETWEEN 2 HOURS BEFORE THE START OF THE EVENT AND 2 HOURS AFTER THE END OF THE EVENT.

C) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
US 74 (-L-)	NEVER

D) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

### LANE AND SHOULDER CLOSURE REQUIREMENTS

E) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

H) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

I) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

J) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING BY THE DEPARTMENT.

### PAVEMENT EDGE DROP OFF REQUIREMENTS

K) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

L) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 500 ft IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

### TRAFFIC PATTERN ALTERATIONS

M) NOTIFY THE ENGINEER AND CITY OF CHARLOTTE TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

### SIGNING

N) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

O) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

### TRAFFIC CONTROL DEVICES

P) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

### PAVEMENT MARKINGS AND MARKERS

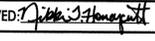
Q) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING
US 74 (-L-)	PAINT

R) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.

S) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

T) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

APPROVED:  DATE: 3/24/12		<b>GENERAL NOTES</b>
		



# PROJECT PHASING

## PHASE I

**STEP 1**  
 INSTALL WORK ZONE ADVANCE WARNING SIGNS ALONG US 74 / INDEPENDENCE BOULEVARD,  
 IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 1101.01 (SHEET 2 OF 3).

**STEP 2**  
 CLOSE EASTBOUND RIGHT LANE ON US 74 / INDEPENDENCE BOULEVARD  
 FOR NIGHT TIME CONSTRUCTION IN ACCORDANCE WITH  
 ROADWAY STANDARD DRAWING 1101.02 (SHEET 3 OF 15).

REMOVE EXISTING CURBS AND ISLANDS AS NECESSARY TO INSTALL TEMPORARY GUARDRAIL.  
 INSTALL TEMPORARY GUARDRAIL AND PERFORM UTILITY WORK WITHIN TRAVEL LANE DURING  
 LANE CLOSURE.

ONCE TEMPORARY GUARDRAIL HAS BEEN INSTALLED, REMOVE SIGNS AND DEVICES  
 AND REOPEN EASTBOUND RIGHT LANE ON US 74 / INDEPENDENCE BOULEVARD.

## PHASE II

**STEP 1**  
 PERFORM CONSTRUCTION ON CULVERT, PAVEMENT, ISLAND AND CURBS  
 IN AREAS BEHIND THE TEMPORARY GUARDRAIL AND AWAY FROM TRAFFIC.

## PHASE III

**STEP 1**  
 CLOSE EASTBOUND RIGHT LANE ON US 74 / INDEPENDENCE BOULEVARD  
 FOR NIGHT TIME CONSTRUCTION IN ACCORDANCE WITH  
 ROADWAY STANDARD DRAWING 1101.02 (SHEET 3 OF 15).

PERFORM UTILITY WORK WITHIN TRAVEL LANE DURING LANE CLOSURE.  
 REMOVE TEMPORARY GUARDRAIL.

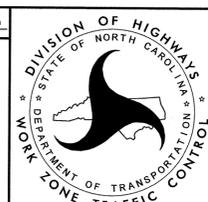
COMPLETE ALL REMAINING CONSTRUCTION ADJACENT TO THE EASTBOUND RIGHT LANE  
 ON US 74 / INDEPENDENCE BOULEVARD AND REPAIR ANY DAMAGES INCURRED DURING  
 TEMPORARY GUARDRAIL PLACEMENT AND CONSTRUCTION.

REMOVE SIGNS AND DEVICES AND REOPEN EASTBOUND RIGHT LANE ON  
 US 74 / INDEPENDENCE BOULEVARD.

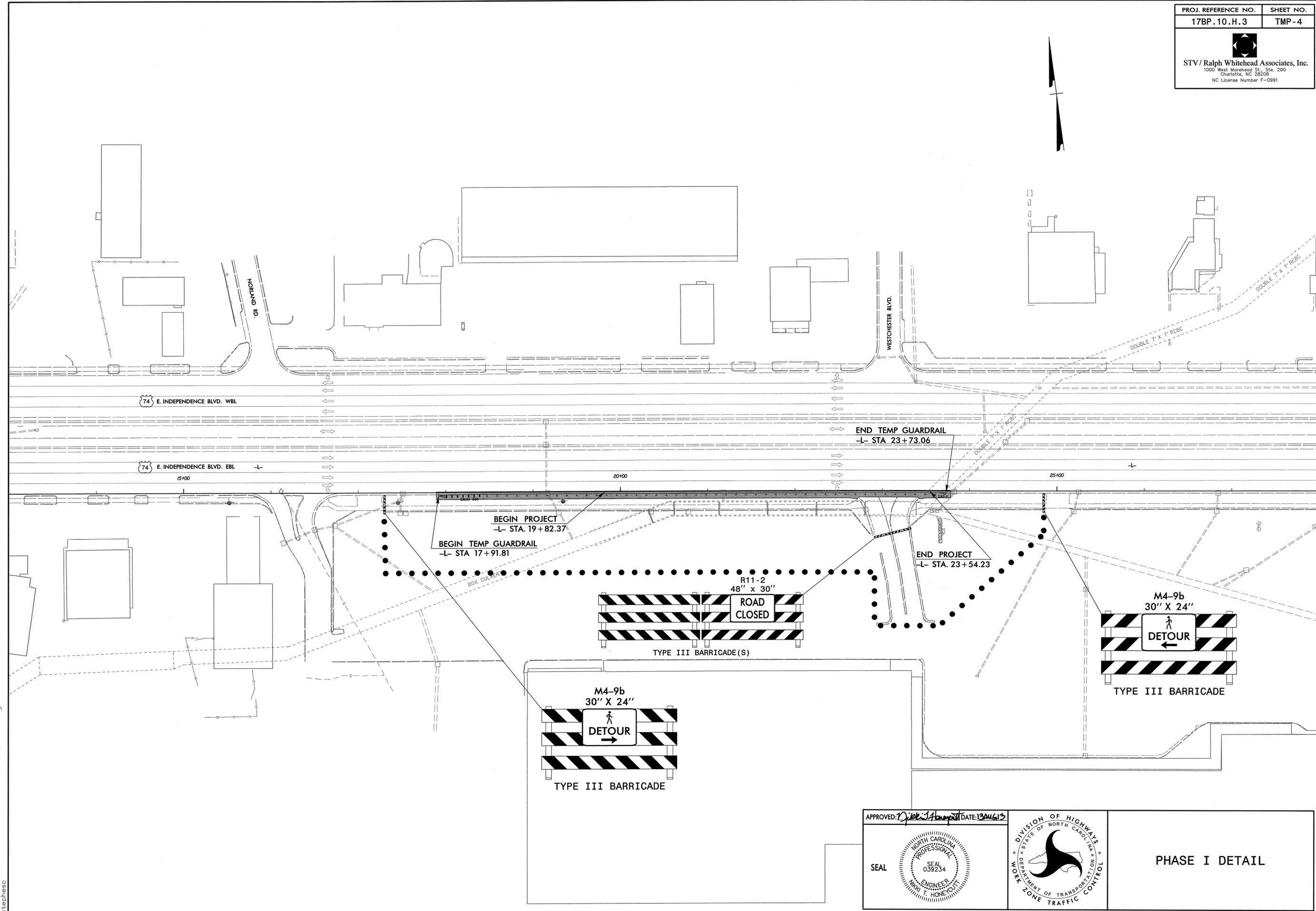
**STEP 2**  
 REMOVE WORK ZONE ADVANCE WARNING SIGNS ALONG US 74 / INDEPENDENCE BOULEVARD.

8/13/2013  
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 stephesc

APPROVED: *Dillon Honeysight* DATE: 12/16/13



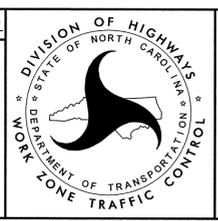
PROJECT PHASING



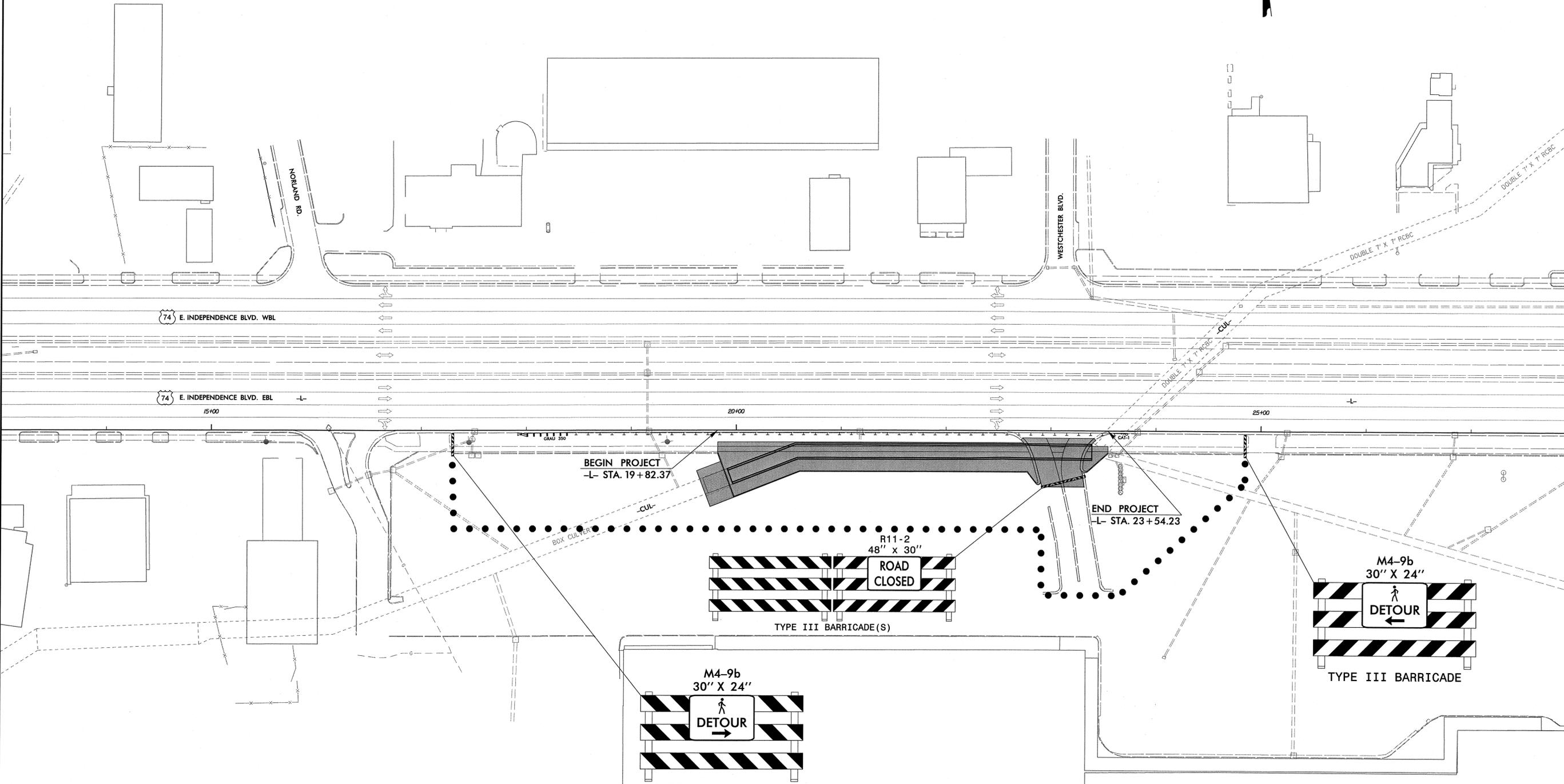
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APPROVED: *Dick Hammett* DATE: 13AUG13

SEAL

PHASE I DETAIL

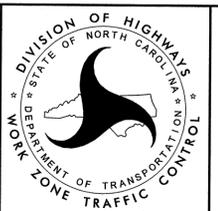


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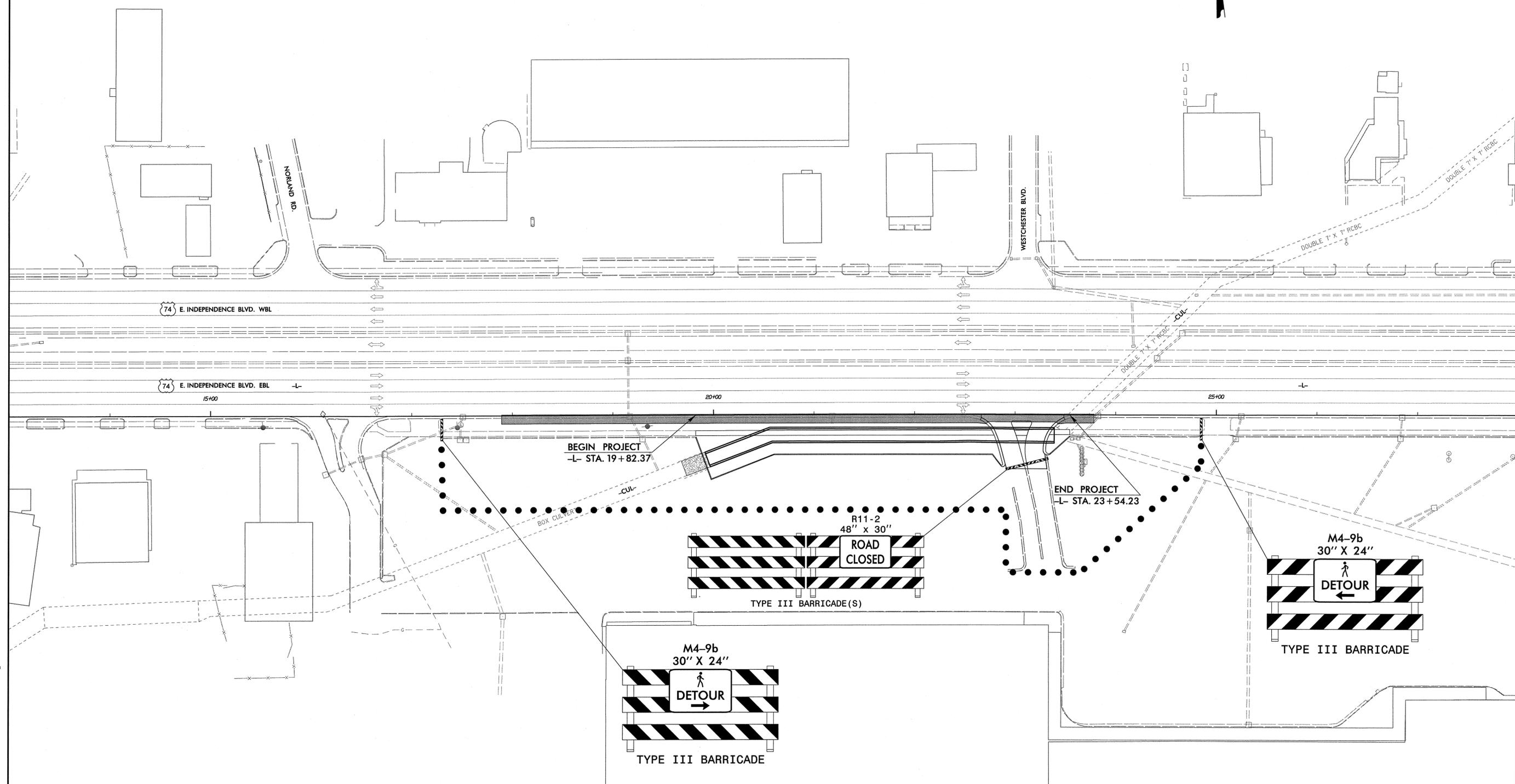
APPROVED: *[Signature]* DATE: 13AUG13

SEAL

  
 NORTH CAROLINA  
 PROFESSIONAL  
 ENGINEER  
 MIKE T. HONECUTT



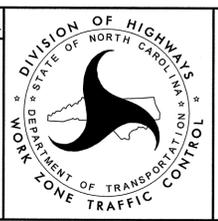
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APPROVED: *[Signature]* DATE: 13 AUG 13

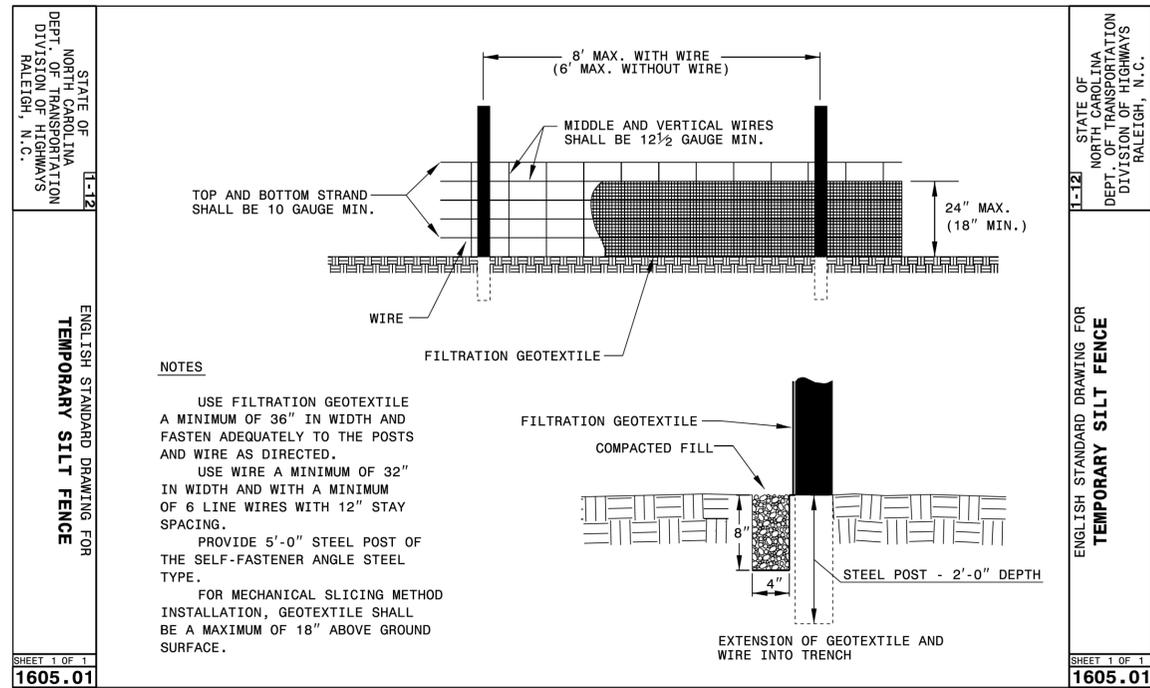
SEAL

PHASE III DETAIL



## TEMPORARY SILT FENCE DETAIL



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR  
**TEMPORARY SILT FENCE**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR  
**TEMPORARY SILT FENCE**



STV/Ralph Whitehead Associates, Inc.  
900 West Trade St., Ste. 715  
Charlotte, NC 28202  
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
17BPJ.O.H.3	EC-2
RW SHEET NO.	

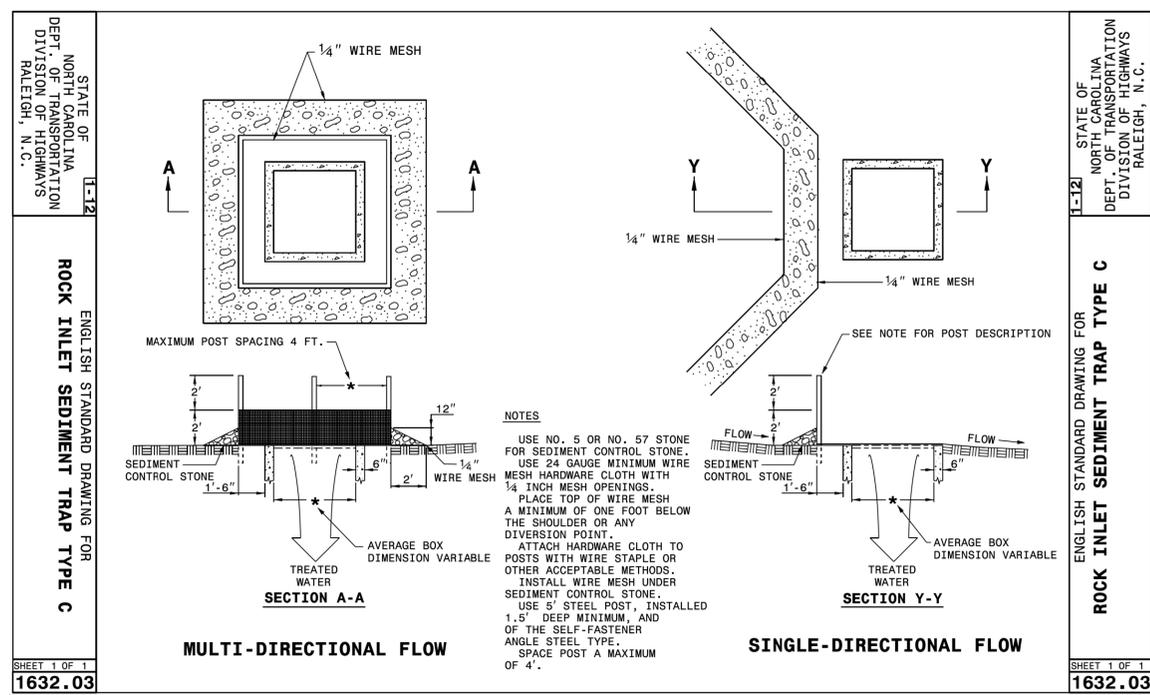
## STABILIZATION REQUIREMENTS

Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit effective August 3, 2011 issued by the North Carolina Department of Environment and Natural Resources Division of Water Quality. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land-disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity:

- Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
- Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
- Slopes 4:1 or flatter

The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. High Quality Water Zones (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

## ROCK INLET SEDIMENT TRAP TYPE 'C'



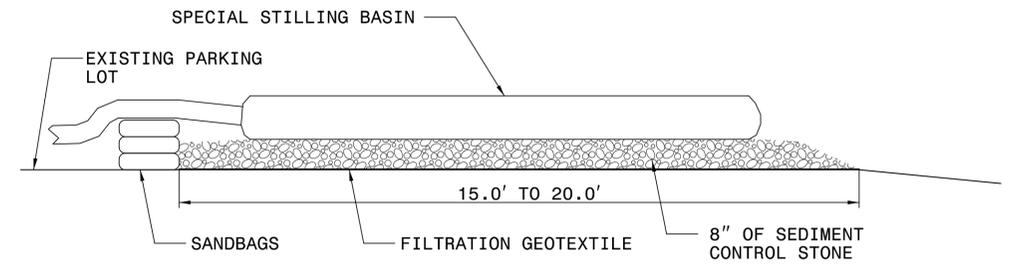
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR  
**ROCK INLET SEDIMENT TRAP TYPE C**

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR  
**ROCK INLET SEDIMENT TRAP TYPE C**

## SPECIAL STILLING BASIN DETAIL



NOTES:  
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.

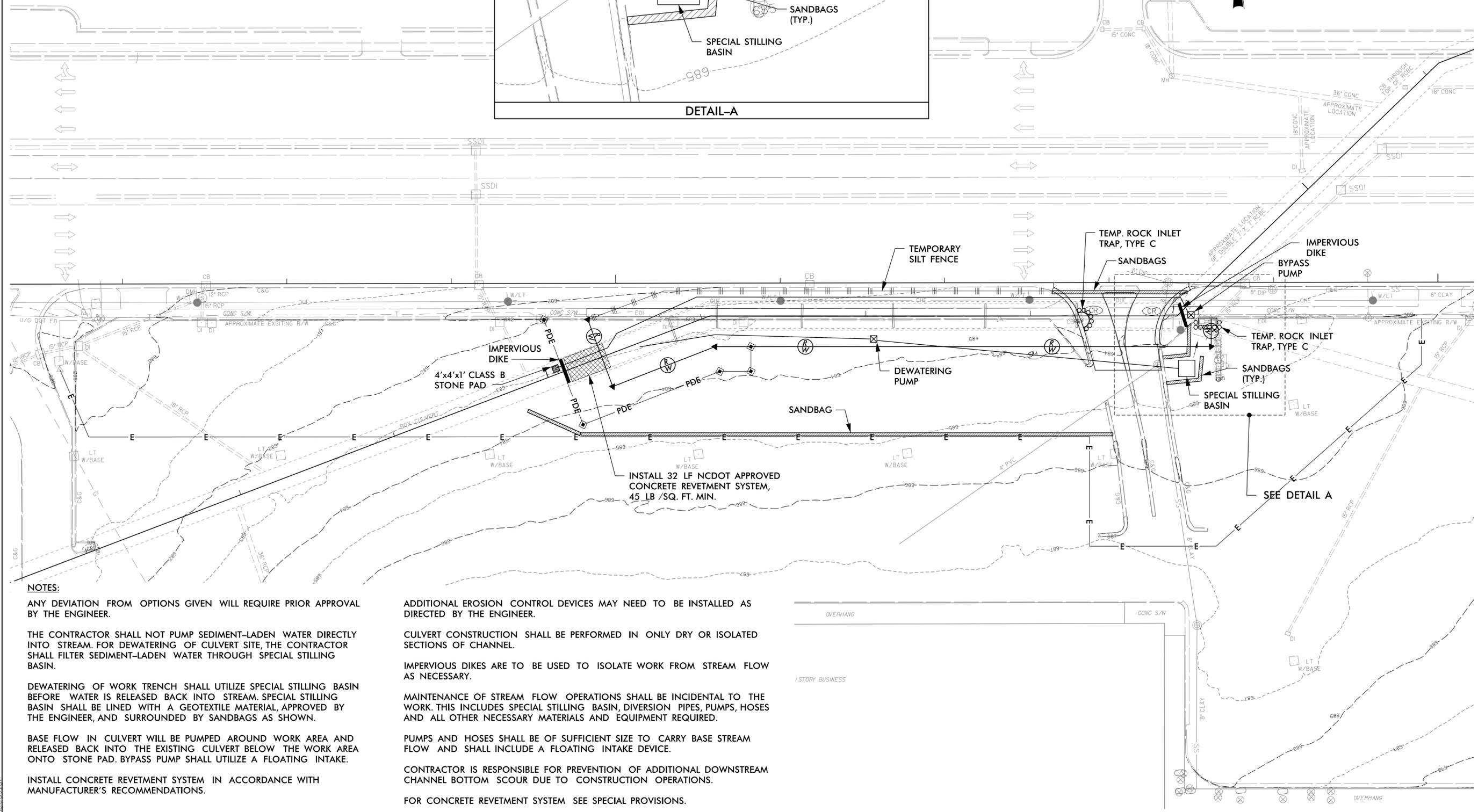
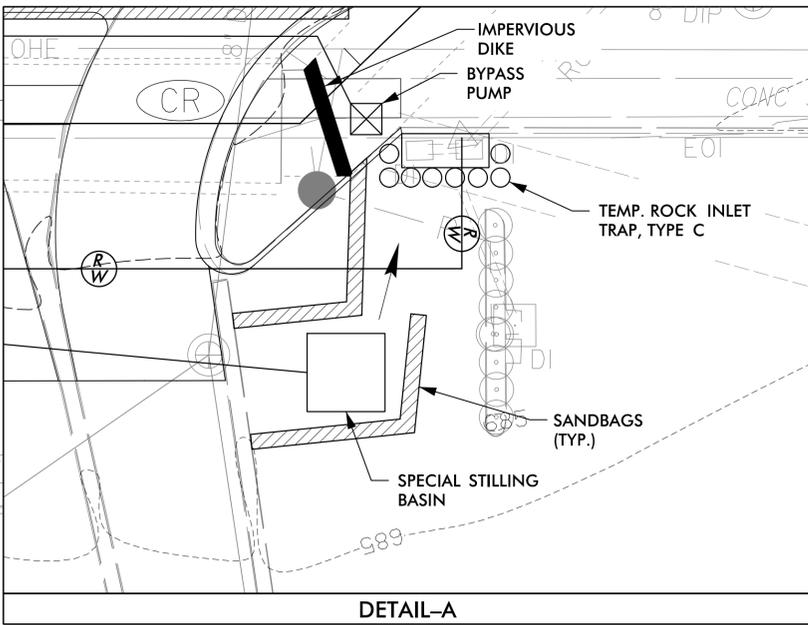
NOT TO SCALE

**CONSTRUCTION SEQUENCE: PHASE I**

1. EXCAVATE DOWN TO TOP OF EXISTING CULVERT, AS NECESSARY, TO ALLOW INSTALLATION OF DEWATERING AND BYPASS SYSTEM.
2. INSTALL IMPERVIOUS DIKES, FILTER BAG, CLASS B STONE PAD AND SANDBAGS AND SET UP PUMPS FOR BYPASS AND DEWATERING OPERATIONS. DIVERT CHANNEL FLOW AROUND SITE.
3. DEWATER WORK AREA AS NECESSARY AND REFER TO CONSTRUCTION SEQUENCE IN SEALED STRUCTURE PLANS FOR CONSTRUCTION OF C.I.P. CULVERT AND INSTALLATION OF REVETMENT SYSTEM.

STV / Ralph Whitehead Associates, Inc.  
 900 West Trade St., Ste. 715  
 Charlotte, NC 28202  
 NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
17BPJ0.H.3	EC-3
RW SHEET NO.	



**NOTES:**

ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY THE ENGINEER.

THE CONTRACTOR SHALL NOT PUMP SEDIMENT-LADEN WATER DIRECTLY INTO STREAM. FOR DEWATERING OF CULVERT SITE, THE CONTRACTOR SHALL FILTER SEDIMENT-LADEN WATER THROUGH SPECIAL STILLING BASIN.

DEWATERING OF WORK TRENCH SHALL UTILIZE SPECIAL STILLING BASIN BEFORE WATER IS RELEASED BACK INTO STREAM. SPECIAL STILLING BASIN SHALL BE LINED WITH A GEOTEXTILE MATERIAL, APPROVED BY THE ENGINEER, AND SURROUNDED BY SANDBAGS AS SHOWN.

BASE FLOW IN CULVERT WILL BE PUMPED AROUND WORK AREA AND RELEASED BACK INTO THE EXISTING CULVERT BELOW THE WORK AREA ONTO STONE PAD. BYPASS PUMP SHALL UTILIZE A FLOATING INTAKE.

INSTALL CONCRETE REVETMENT SYSTEM IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

CULVERT CONSTRUCTION SHALL BE PERFORMED IN ONLY DRY OR ISOLATED SECTIONS OF CHANNEL.

IMPERVIOUS DIKES ARE TO BE USED TO ISOLATE WORK FROM STREAM FLOW AS NECESSARY.

MAINTENANCE OF STREAM FLOW OPERATIONS SHALL BE INCIDENTAL TO THE WORK. THIS INCLUDES SPECIAL STILLING BASIN, DIVERSION PIPES, PUMPS, HOSES AND ALL OTHER NECESSARY MATERIALS AND EQUIPMENT REQUIRED.

PUMPS AND HOSES SHALL BE OF SUFFICIENT SIZE TO CARRY BASE STREAM FLOW AND SHALL INCLUDE A FLOATING INTAKE DEVICE.

CONTRACTOR IS RESPONSIBLE FOR PREVENTION OF ADDITIONAL DOWNSTREAM CHANNEL BOTTOM SCOUR DUE TO CONSTRUCTION OPERATIONS.

FOR CONCRETE REVETMENT SYSTEM SEE SPECIAL PROVISIONS.

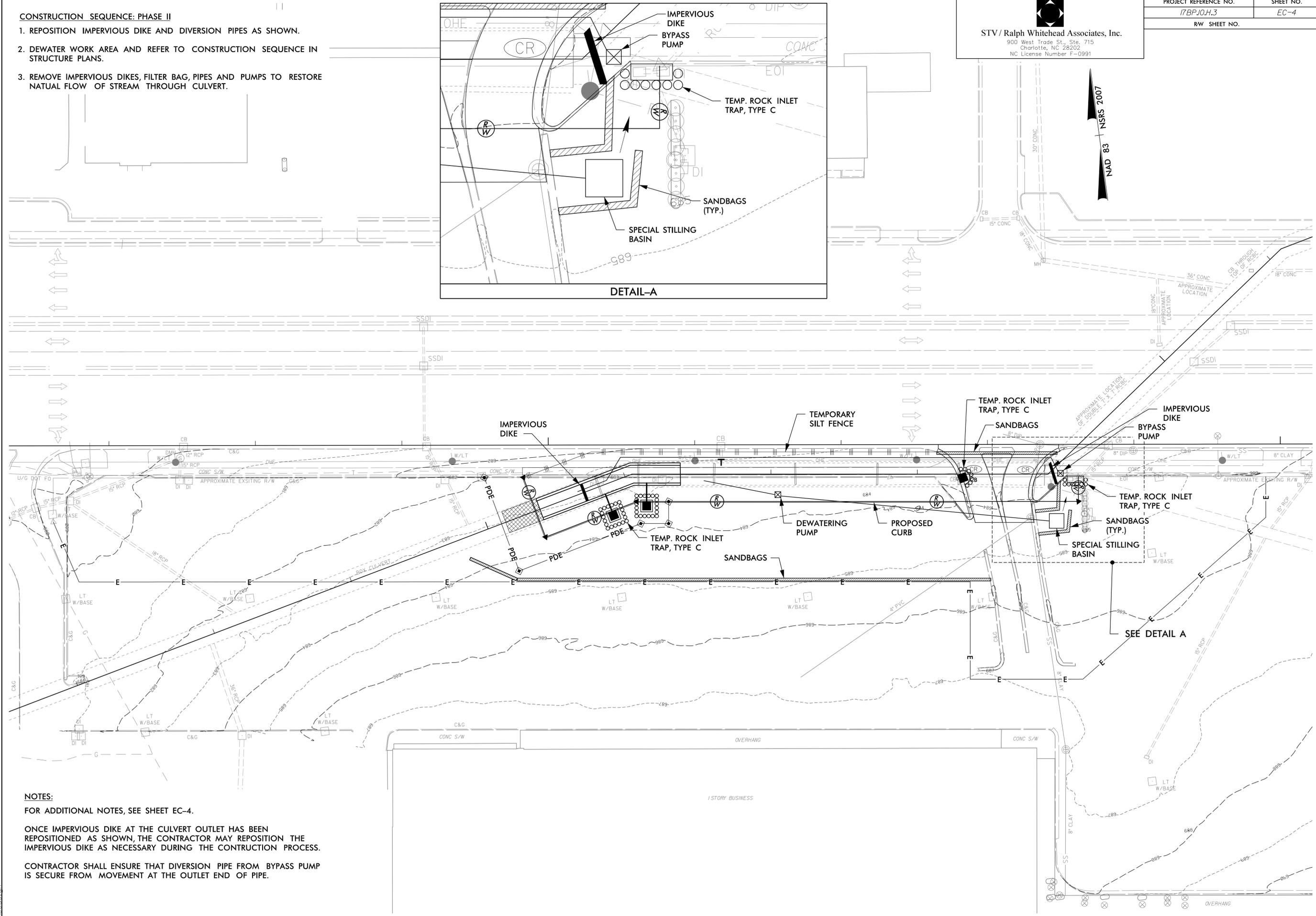
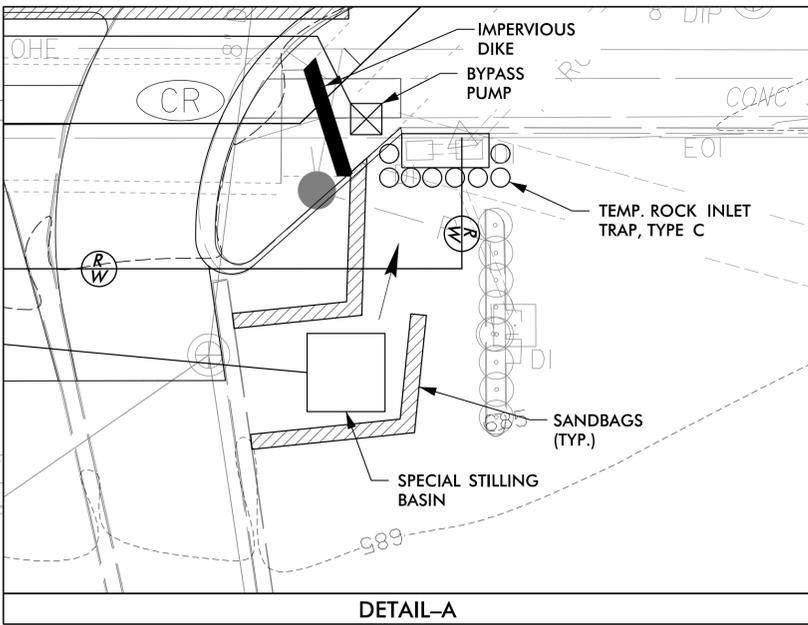
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**CONSTRUCTION SEQUENCE: PHASE II**

1. REPOSITION IMPERVIOUS DIKE AND DIVERSION PIPES AS SHOWN.
2. DEWATER WORK AREA AND REFER TO CONSTRUCTION SEQUENCE IN STRUCTURE PLANS.
3. REMOVE IMPERVIOUS DIKES, FILTER BAG, PIPES AND PUMPS TO RESTORE NATURAL FLOW OF STREAM THROUGH CULVERT.

  
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 900 West Trade St., Ste. 715  
 Charlotte, NC 28202  
 NC License Number F-0991

PROJECT REFERENCE NO. <i>17BPJO.H.3</i>	SHEET NO. <i>EC-4</i>
RW SHEET NO.	



**NOTES:**

- FOR ADDITIONAL NOTES, SEE SHEET EC-4.
- ONCE IMPERVIOUS DIKE AT THE CULVERT OUTLET HAS BEEN REPOSITIONED AS SHOWN, THE CONTRACTOR MAY REPOSITION THE IMPERVIOUS DIKE AS NECESSARY DURING THE CONSTRUCTION PROCESS.
- CONTRACTOR SHALL ENSURE THAT DIVERSION PIPE FROM BYPASS PUMP IS SECURE FROM MOVEMENT AT THE OUTLET END OF PIPE.

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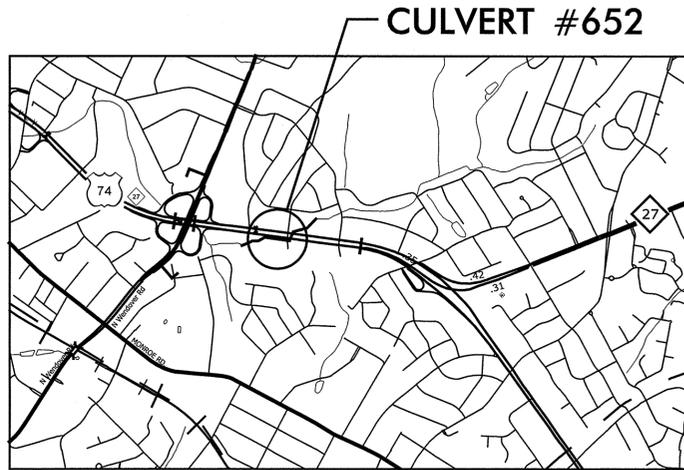
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**PROJECT: 17BP.10.H.3**

**CONTRACT: —**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.10.H.3	1	5
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.10.H.3	NA	PE	
17BP.10.H.3	NA	CONSTR.	

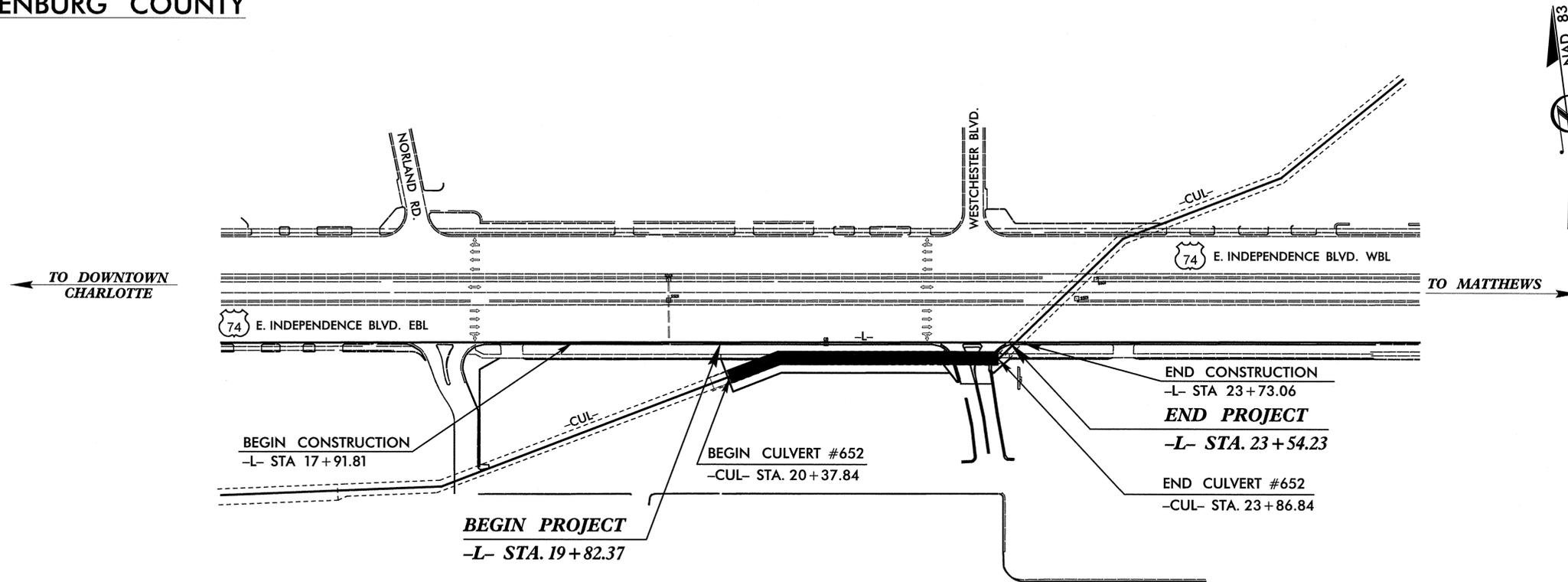


VICINITY MAP  
MECKLENBURG COUNTY

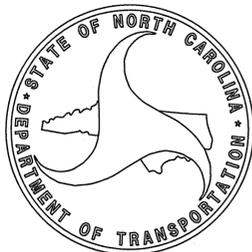
**MECKLENBURG COUNTY**

LOCATION: CULVERT #652 UNDER US 74, MECKLENBURG COUNTY

TYPE OF WORK: CULVERT REHABILITATION: CULVERT REPLACEMENT, DRAINAGE, PAVING AND CURB & GUTTER



STV / Ralph Whitehead Associates, Inc.  
1000 West Morehead St., Ste. 200  
Charlotte, NC 28208  
NC LICENSE NO. F-0991



**TRAFFIC DATA**  
ADT 2008 = 88,000

**PROJECT LENGTH**

CULVERT	LENGTH	STRUCTURE PROJECT
#652	.066 MILE	

Prepared For:  
**STRUCTURES MANAGEMENT UNIT**  
1000 BIRCH RIDGE DR. RALEIGH, NC 27610

2012 STANDARD SPECIFICATIONS

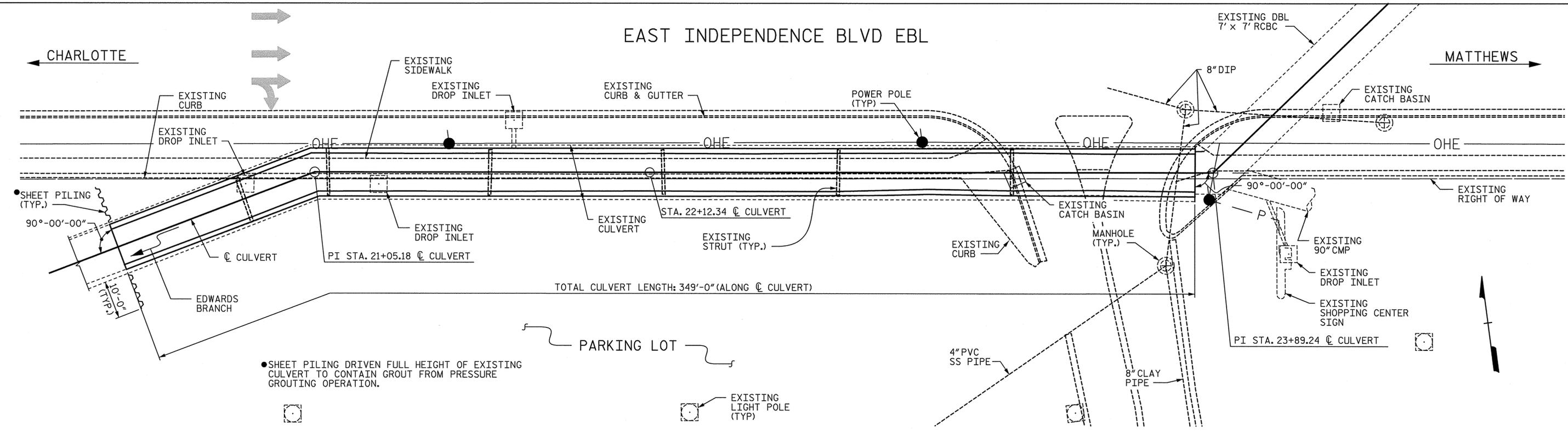
**LETTING DATE:**  
MARCH 5, 2014

PAUL KELLY P.E.  
PROJECT ENGINEER

**ENGINEER**

TIMOTHY M. SHERRILL, P.E.

EAST INDEPENDENCE BLVD EBL



LOCATION SKETCH

NOTES:

- ASSUMED LIVE LOAD -----HL-93 OR ALTERNATIVE LOADING.
- DESIGN FILL-----2.25'
- FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTES SHEET.
- WEEP HOLES TO MATCH NUMBER, SIZE AND LOCATION OF EXISTING WEEP HOLES. INLET OF WEEP HOLES TO BE 1/4" LOWER THAN OUTLET OF EXISTING WEEP HOLE.
- CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:
  - FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
  - THE REMAINING PORTIONS OF THE WALLS FULL HEIGHT FOLLOWED BY ROOF SLAB AND EDGE BEAMS.
- TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FT. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
- AT THE CONTRACTORS OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.
- AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAIL DRAWINGS FOR A PRECAST REINFORCED CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE CULVERT SHOWN ON THE PLANS. THE DESIGN SHALL BE A SINGLE BARREL CULVERT WITH AN OPENING OF AT LEAST 11'-10" WIDE AND 8'-0" HIGH. FOR OPTIONAL PRECAST REINFORCED CONCRETE BOX CULVERT, SEE SPECIAL PROVISIONS.
- CULVERT OUTLET IS LOCATED TO ALLOW A 10 FT BERM ADJACENT AND PARALLEL TO INDEPENDENCE BLVD, AND A 2:1 SLOPE TO THE BOTTOM SLAB AT THE OUTLET OF THE PROPOSED CULVERT.
- THERE ARE POTENTIAL UTILITY CONFLICTS WITH PROPOSED CULVERT. VERIFY LOCATION OF UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER IF THERE ARE ANY POTENTIAL CONFLICTS.
- CULVERT OUTLET SHALL BE LOCATED AT A JOINT BETWEEN EXISTING DOUBLE TEE'S OF THE EXISTING CULVERT ROOF. CULVERT LENGTH MAY INCREASE BY 3 FT. OR DECREASE BY 1 FT. TO ACHIEVE THIS REQUIREMENT. ALL QUANTITIES ARE BASED ON A 352'-0" CULVERT LENGTH.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR PRESSURE GROUTING VOIDS IN SOIL SEE SPECIAL PROVISIONS.

DOWELS SHALL BE USED TO CONNECT THE PROPOSED CULVERT TO THE EXISTING CULVERT AS SHOWN. FOR NOTE REGARDING SETTING OF DOWELS, SEE SHEET SN.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR WATER DIVERSION SYSTEM, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REVETMENT SYSTEM, SEE SPECIAL PROVISIONS.

FOR PARTIAL REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

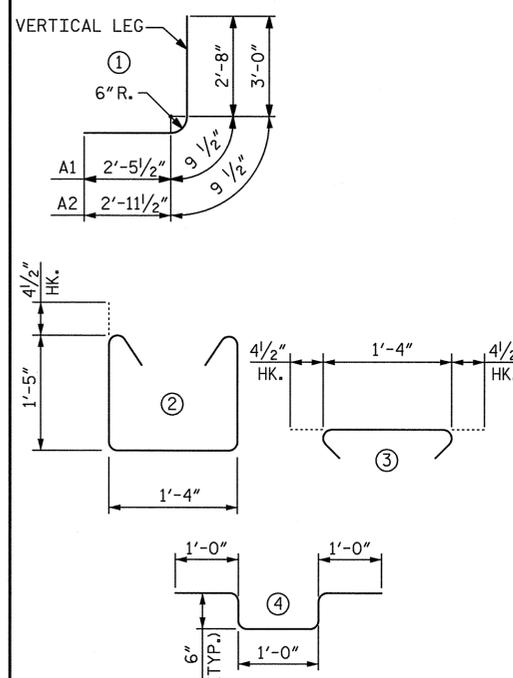
HYDRAULIC DATA

DESIGN DISCHARGE	= 1,283 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 50 YR.
DESIGN HIGH WATER ELEVATION	= 691.4
DRAINAGE AREA	= 1.22 SQ. MI.
BASIC DISCHARGE (Q100)	= 1,471 C.F.S.
BASIC HIGH WATER ELEVATION	= 691.8

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 1,283± C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 50± YRS.
OVERTOPPING FLOOD ELEVATION	= 691.16

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	2770	#5	①	5'-11"	17,094
A2	46	#6	①	6'-9"	466
A100	1402	#7	STR.	9'-1"	26,030
A101	8	#7	STR.	9'-5"	154
A200	1396	#7	STR.	9'-3"	26,394
A201	8	#7	STR.	9'-0"	147
A300	702	#5	STR.	8'-9"	6,407
A301	12	#6	STR.	9'-1"	164
A400	710	#5	STR.	8'-4"	6,171
B1	705	#4	STR.	10'-2"	4,788
B2	1408	#5	STR.	7'-4"	10,769
B3	705	#4	STR.	8'-9"	4,121
C1	142	#4	STR.	24'-0"	2,277
C2	284	#4	STR.	22'-9"	4,316
C3	568	#4	STR.	30'-0"	11,383
C4	27	#5	STR.	46'-6"	1,309
C5	108	#5	STR.	23'-0"	2,591
C6	108	#5	STR.	58'-6"	6,590
C7	4	#4	STR.	15'-0"	40
D1	20	#6	STR.	2'-6"	75
K1	48	#4	STR.	3'-0"	96
S1	12	#8	STR.	10'-8"	342
S2	6	#8	STR.	14'-11"	239
S3	2	#4	STR.	14'-11"	20
S4	16	#4	②	4'-11"	53
S5	16	#4	③	2'-1"	22
S6	15	#4	④	4'-0"	40

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE	
BARREL @ 2.383 CY/FT	838.9 C.Y.
EDGE BEAMS ETC.	2.9 C.Y.
TOTAL	841.8 C.Y.
REINFORCING STEEL	
BARREL	131,422 LBS.
EDGE BEAMS ETC.	676 LBS.
TOTAL	132,098 LBS.
CULVERT EXCAVATION	LUMP SUM
FOUNDATION COND. MAT'L.	727 TONS
PARTIAL REMOVAL OF EXIST. STR.	LUMP SUM
CONCRETE REPAIRS	26 CU. FT.
CONCRETE REVETMENT SYSTEM	512 SQ. FT.
PRESSURE GROUT VOIDS	690 C.Y.

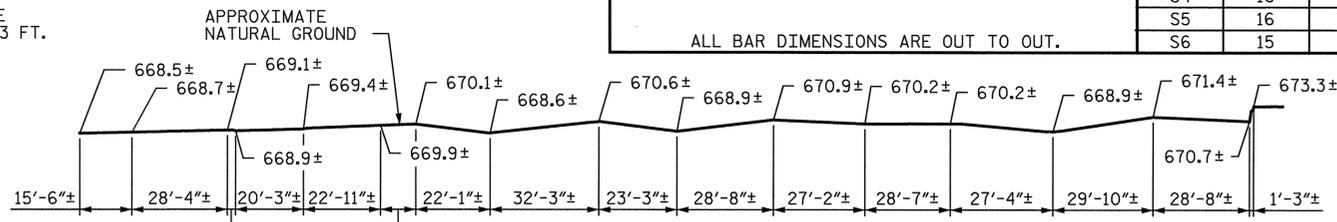
PROJECT NO. 17BP.10.H.3  
MECKLENBURG COUNTY  
CULVERT NO.: 652

REHAB. OF CULVERT #652 SHEET 1 OF 5

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SINGLE BARREL  
12'-1" X 8' CONCRETE  
BOX CULVERT  
90° SKEW

REVISIONS		SHEET NO.	
NO.	DATE	NO.	DATE
1	7-13	3	12-13
2	10-13	4	



PROFILE ALONG C CULVERT



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Charlotte, NC 28208  
NC License No. F-0991

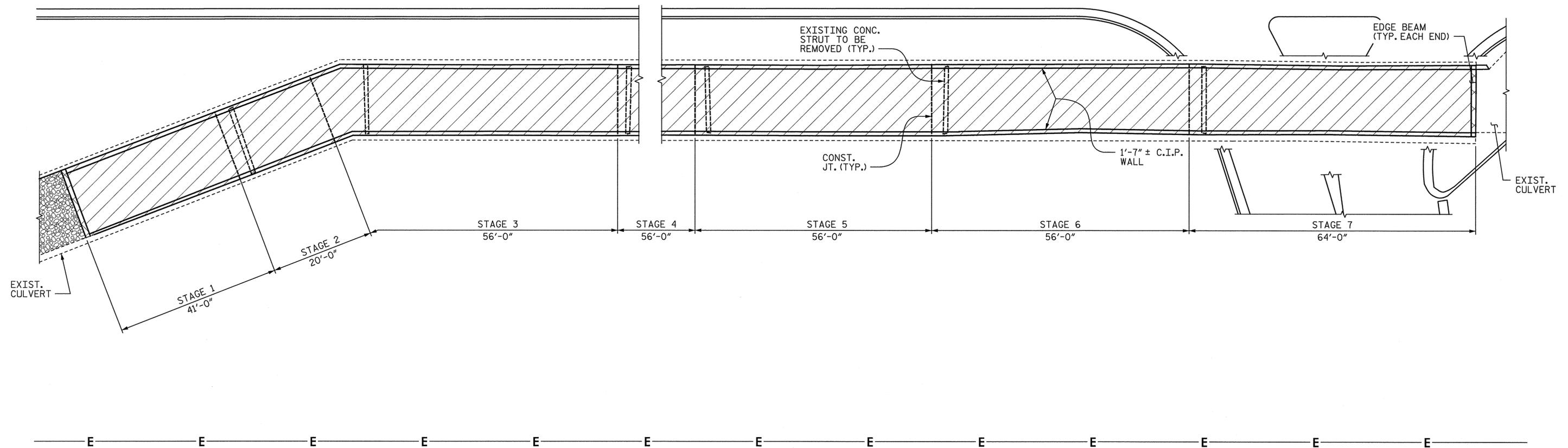
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CHECKED BY : PEK DATE : 1-13

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**NOTES:**

- FOR ADDITIONAL NOTES, SEE SHEET 1 OF 5.
- THE CONTRACTOR MAY PROPOSE AN ALTERNATE CONSTRUCTION SEQUENCE FROM THE ONE SHOWN HERE. DETAILED PLANS OF THE ALTERNATE CONSTRUCTION SEQUENCE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
- EXISTING STRUTS SHALL BE REMOVED FLUSH WITH EXISTING CULVERT.
- DUE TO SCOUR OF THE NATURAL STREAM BED IN THE EXISTING CULVERT, SEVERE SOIL LOSS IS PRESENT UNDER AND BEHIND THE WALLS OF THE EXISTING CULVERT. THE EXISTING CULVERT AND THE NATURAL GROUND AROUND THE CULVERT MAY BE UNSTABLE. CONTRACTOR SHALL PREPARE SHORING PLANS DESIGNED BY A LICENSED ENGINEER IN THE STATE OF NC AND SUBMIT PLANS TO THE ENGINEER FOR APPROVAL.
- FOR IMPERVIOUS DIKE, SEE SPECIAL PROVISIONS.



**CONSTRUCTION SEQUENCE:**

INSTALL IMPERVIOUS DIKE UPSTREAM OF PROJECT INSIDE OF EXISTING DOUBLE 7' X 7' RCBC OR TRANSITION SECTION.

PUMP STREAM FLOW FROM UPSTREAM SIDE OF DIKE AROUND CONSTRUCTION ZONE. OUTLET DOWNSTREAM OF PROJECT.

**STAGE 1:**

- EXCAVATE SOIL ON TOP OF CULVERT TO EXPOSE ROOF.
- REMOVE EXISTING PRECAST DOUBLE TEE'S WITHIN POUR LIMIT. (SHORE EXISTING WALLS AS REQUIRED)
- PLACE AND COMPACT FOUNDATION CONDITIONING MATERIAL.
- CONSTRUCT C.I.P. CULVERT.
- INSTALL CONCRETE REVETMENT SYSTEM, SEE EROSION CONTROL PLANS.

**STAGE 2-7:**

- REPEAT STEPS 1 & 2.
- REMOVE EXISTING CONCRETE STRUT.
- REPEAT STEPS 3 & 4.

**COMPLETED CULVERT:**

- REMOVE IMPERVIOUS DIKE AND ALLOW STREAM TO FLOW THROUGH COMPLETED CULVERT.

**CAST-IN-PLACE CULVERT - STAGING**

PROJECT NO. **17BP.10.H.3**

**MECKLENBURG** COUNTY

CULVERT NO. **652**

REHAB. OF CULVERT #652 SHEET 2 OF 5



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**SINGLE BARREL  
12'-1" X 8' CONCRETE  
BOX CULVERT  
90° SKEW**

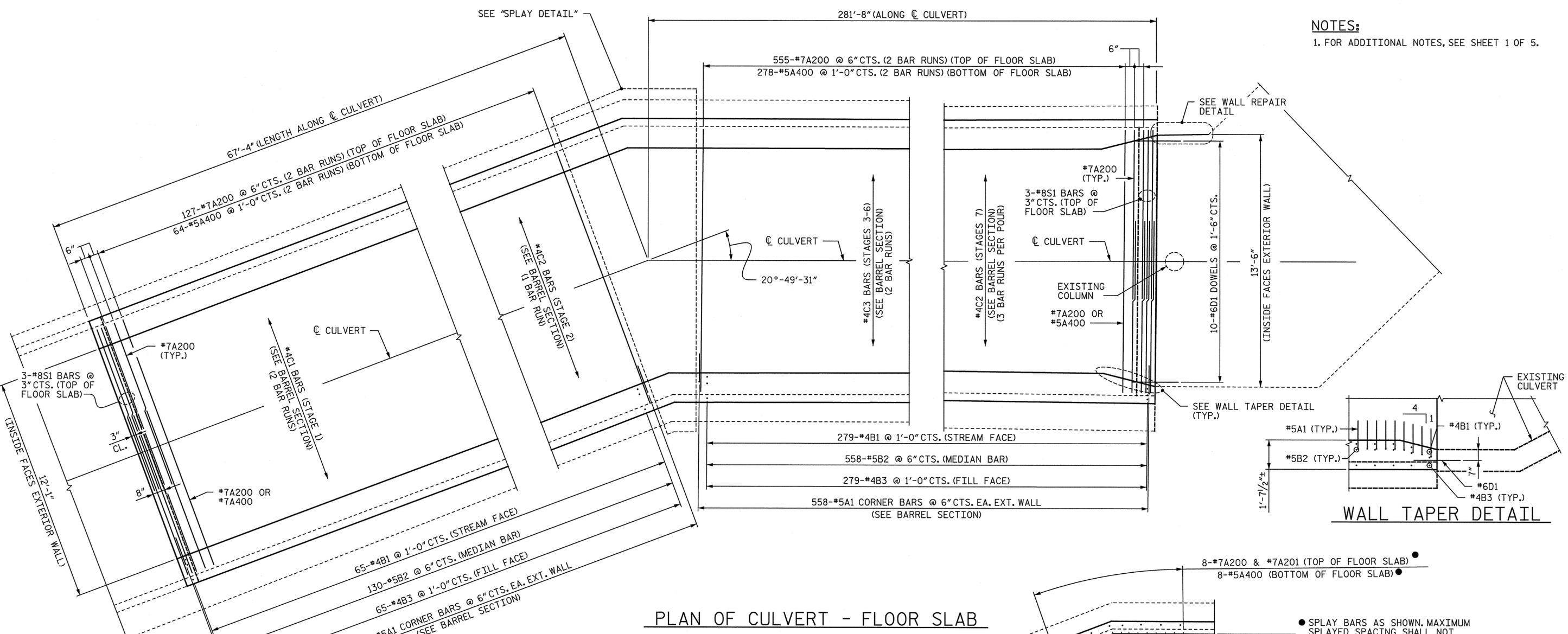
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CHECKED BY : **PEK** DATE : **1-13**

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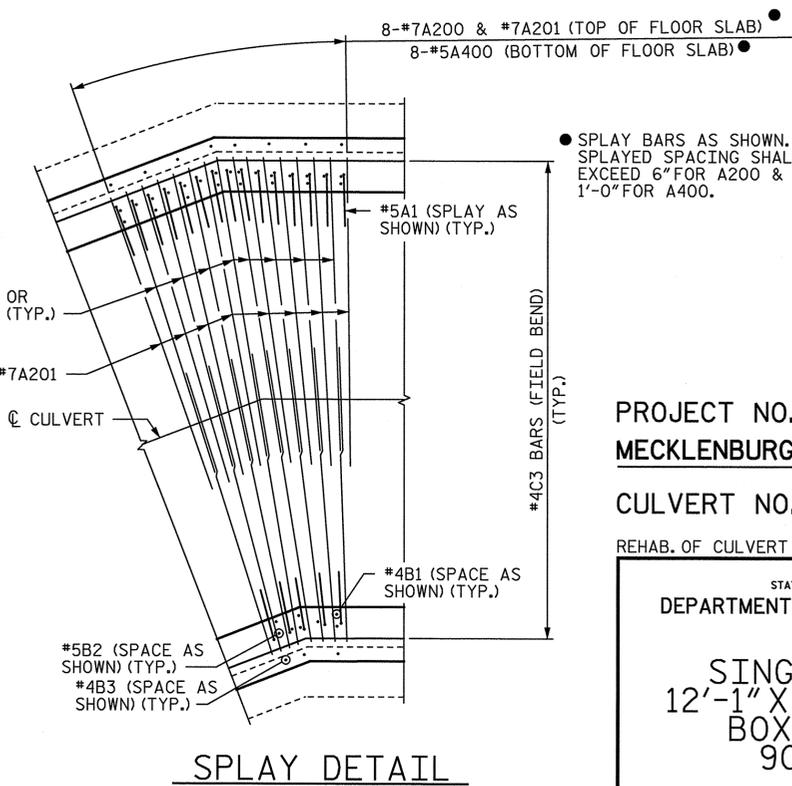
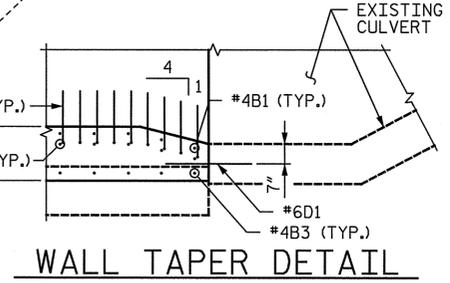
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1	STV	7-13	3			TOTAL SHEETS
2	STV	12-13	4			S-5



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**NOTES:**  
 1. FOR ADDITIONAL NOTES, SEE SHEET 1 OF 5.

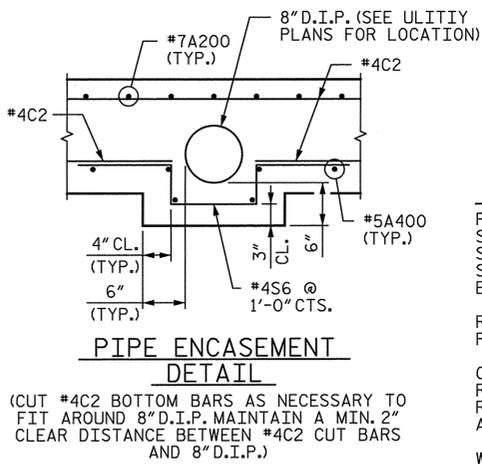


● SPLAY BARS AS SHOWN. MAXIMUM SPLAYED SPACING SHALL NOT EXCEED 6" FOR A200 & A201 AND 1'-0" FOR A400.

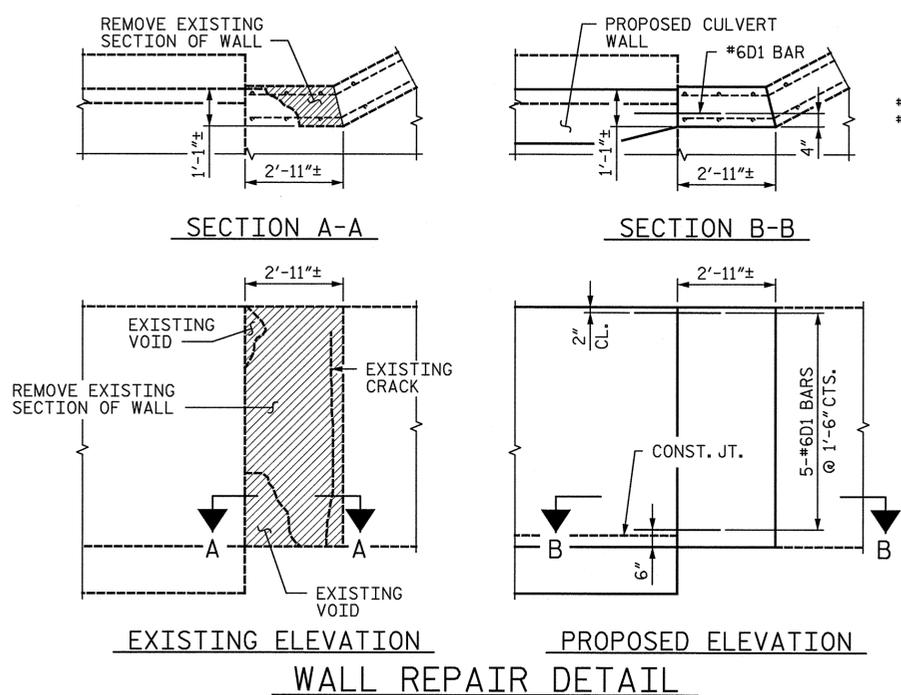


PROJECT NO. **17BP.10.H.3**  
**MECKLENBURG** COUNTY  
 CULVERT NO.: **652**  
 REHAB. OF CULVERT #652 SHEET 4 OF 5

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SINGLE BARREL  
 12'-1" X 8' CONCRETE  
 BOX CULVERT  
 90° SKEW**



**WALL REPAIR NOTES**  
 PRIOR TO WALL REPAIR, THE ROOF SLAB SHALL BE BRACED VERTICALLY. SOIL BEHIND THE WALL MAY REQUIRE SHORING PER THE DIRECTION OF THE ENGINEER.  
 RETAIN HORIZONTAL BARS IN PLACE INTACT.  
 CONTRACTOR SHALL BE PREPARED TO REPAIR/REPLACE ANY DAMAGED REINFORCEMENT IN THE WALL REPAIR AREA OF THE EXISTING CULVERT.  
 WALL REPAIR SHALL BE PAID FOR AS A CONCRETE REPAIR, SEE SPECIAL PROVISIONS.



DRAWN BY: **CLG** DATE: **1-13**  
 CHECKED BY: **PEK** DATE: **1-13**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1	STV	7-13	3			TOTAL SHEETS S-5
2	STV	12-13	4			

**STV / Ralph Whitehead Associates, Inc.**  
 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License No. F-0991



## STANDARD NOTES

### DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION		
GRADE 60	--	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	-----	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR		
UNTREATED - EXTREME FIBER STRESS	-----	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	-----	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	-----	30 LBS. PER CU. FT.
		(MINIMUM)

### MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

### CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

### CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

### DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

### ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

### REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

### STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

### HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

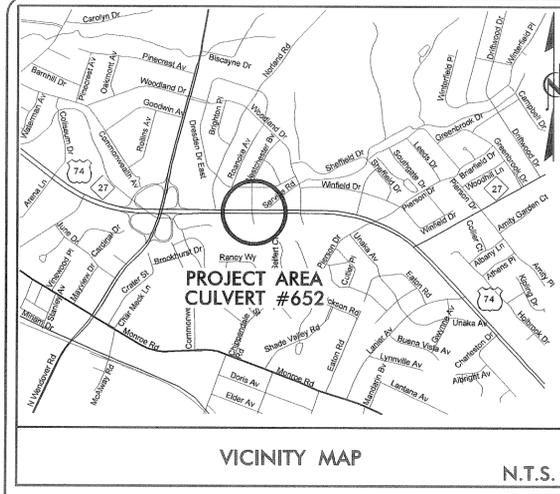
METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

### SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

9/12/13

PROJECT: WBS 17BP.10.H.3



CMU Proj. # 324-13-600

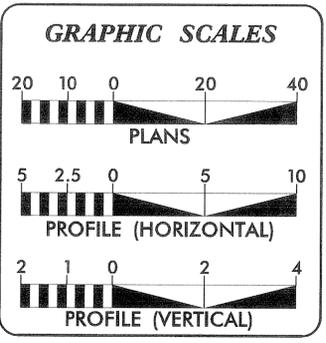
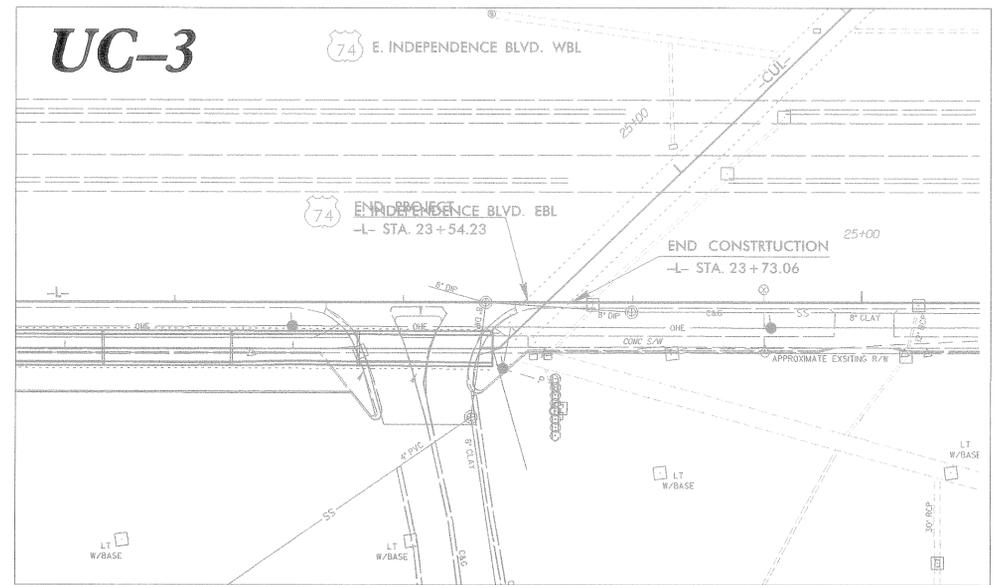
NRS 2007-7 NAD 83

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# UTILITY CONSTRUCTION PLANS MECKLENBURG COUNTY

LOCATION: E. INDEPENDENCE BLVD (EAST BOUND LANE)

TYPE OF WORK: SANITARY SEWER CONSTRUCTION



APPLICATION FOR NON-DISCHARGE PERMIT  
GRAVITY SEWER MAIN EXTENSION  
CHARLOTTE-MECKLENBURG UTILITIES

PROJECT NAME: CULVERT #652 UNDER US 74, CHARLOTTE

CMU PROJECT NO.: 324-13-600

PROJECT TYPE:  NEW CONSTRUCTION  RELOCATION  MODIFICATION OF PERMIT NO.  OTHER MAINTENANCE OF EXISTING MAIN

VOLUME OF WASTEWATER GENERATED BY THIS PROJECT: 0 GALLONS OF WATER PER DAY BASED ON 190 GAL/DAY/SINGLE FAMILY HOUSEHOLD 0 HOUSEHOLDS OR ON 135 GAL/DAY/MULTI-FAMILY UNIT 0 UNITS BASED ON:

WASTEWATER TREATMENT PLANT RECEIVING WASTEWATER:  
 McALPINE CR. (NC0024970)  IRWIN CR. (NC0024945)  McDOWELL CR. (NC0030277)  
 SUGAR CR. (NC0024937)  MALLARD CR. (NC0030210)

NATURE OF WASTEWATER: 0 % DOMESTIC 0 % INDUSTRIAL  
100 % COMMERCIAL 0 % OTHER

ORIGIN OF WASTEWATER:  SUBDIVISION  COMMERCIAL  
 SCHOOL  INDUSTRIAL  
 APARTMENT/CONDOS  OTHER

LIST ANY PARAMETER AND ITS CONCENTRATION THAT WILL BE GREATER THAN NORMAL DOMESTIC LEVELS:  
 N/A

IF WASTEWATER IS NON-DOMESTIC, DESCRIBE LEVEL OF PRETREATMENT:  
 N/A

IF A PRETREATMENT PERMIT IS REQUIRED, HAS ONE BEEN ISSUED: YES  NO  N/A   
 HAS ENGINEER DETERMINED THAT DOWNSTREAM SEWER ARE CAPABLE TO HANDLE THIS FLOW? YES  NO   
 PERMIT NO. FOR SEWERS IMMEDIATELY DOWNSTREAM \_\_\_\_\_  
 PIPE DIAMETER OF SEWERS IMMEDIATELY DOWNSTREAM 8"

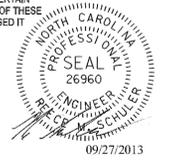
HAS ENGINEER DETERMINED THAT NC DEM AND CMU MINIMUM DESIGN STANDARDS ARE MET BY THIS PROJECT?  YES  NO

COMPLETE NAME AND ADDRESS OF ENGINEERING DESIGN FIRM:  
VAUGHN & MELTON CONSULTING ENGINEERS, INC.  
3089-L BEAM ROAD  
CHARLOTTE, NC 28217

TELEPHONE 704-357-0488

PROFESSIONAL ENGINEER CERTIFICATION:  
 I, REECE M. SCHULER, P.E., P.L.S., ATTEST THAT THIS APPLICATION FOR THE RELOCATION AND CONSTRUCTION OF NEW SEWER LINES WITHIN THE AFOREMENTIONED PROJECT HAS BEEN REVIEWED BY ME AND IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE. I FURTHER ATTEST THAT TO THE BEST OF MY KNOWLEDGE THE PROPOSED DESIGN HAS BEEN PREPARED IN ACCORDANCE WITH THE APPLICABLE REGULATIONS. ALTHOUGH CERTAIN PORTIONS OF THIS SUBMITTAL PACKAGE MAY HAVE BEEN DEVELOPED BY OTHER PROFESSIONALS, INCLUSION OF THESE MATERIALS UNDER MY SIGNATURE AND SEAL SIGNIFIES THAT I HAVE REVIEWED THIS MATERIAL AND HAVE JUDGED IT TO BE CONSISTENT WITH THE PROPOSED DESIGN.

NORTH CAROLINA PROFESSIONAL ENGINEER'S SEAL, SIGNATURE, AND DATE:  
 CMU PERMIT NO. 413-567 ISSUED 10/8/2013  
 PLANT FLOW ALLOCATION RECORDED BY:  
 PERMIT APPROVED BY: Barry Shear  
 BARRY SHEARIN, P.E., CHIEF ENGINEER



CONTRACT:

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	SYMBOLOLOGY SHEET
UC-3	UTILITY PLAN AND PROFILE SHEET
UC-4	NOTES AND DETAIL SHEET

WATER AND SEWER OWNERS ON PROJECT

(1) SANITARY SEWER - CHARLOTTE MECKLENBURG UTILITIES



PREPARED FOR THE OFFICE OF:  
 DIVISION OF HIGHWAYS  
 UTILITIES ENGINEERING SECTION

1591 MAIL SERVICES CENTER  
 RALEIGH NC 27699-1591  
 PHONE (919) 250-4128  
 FAX (919) 250-4119

Roger Worthington, P.E. UTILITIES SECTION ENGINEER  
 Xxxx Xxxx, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER  
 Reece Schuler, PE UTILITIES PROJECT DESIGNER

V&M PROJECT #31014-07 TRANSPORTATION\31014-07\UTILITIES\UC PLANS\UC01.DGN

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**UTILITIES PLAN SHEET SYMBOLS**

**PROPOSED WATER SYMBOLS**

Water Line (Sized as Shown)	
11¼ Degree Bend	
22½ Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	REM FH
Water Meter	
Relocate Water Meter	
Remove Water Meter	REM WM
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

**PROPOSED SEWER SYMBOLS**

Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	

**PROPOSED MISCELLANEOUS UTILITIES SYMBOLS**

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement by Open Cut	
Encasement	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Plan Note	
Pay Item Note	

NOTE  
PAY ITEM

**EXISTING UTILITIES SYMBOLS**

Power Pole	
Telephone Pole	
Joint Use Pole	
Utility Pole	
Utility Pole with Base	
H-Frame Pole	
Power Transmission Line Tower	
Water Manhole	
Power Manhole	
Telephone Manhole	
Sanitary Sewer Manhole	
Hand Hole for Cable	
Power Transformer	
Telephone Pedestal	
CATV Pedestal	
Gas Valve	
Gas Meter	
Located Miscellaneous Utility Object	
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

*Underground Power Line	
*Underground Telephone Cable	
*Underground Telephone Conduit	
*Underground Fiber Optics Telephone Cable	
*Underground TV Cable	
*Underground Fiber Optics TV Cable	
*Underground Gas Pipeline	
Aboveground Gas Pipeline	
*Underground Water Line	
Aboveground Water Line	
*Underground Gravity Sanitary Sewer Line	
Aboveground Gravity Sanitary Sewer Line	
*Underground SS Forced Main Line	
Underground Unknown Utility Line	
SUE Test Hole	
Water Meter	
Water Valve	
Fire Hydrant	
Sanitary Sewer Cleanout	

\*For Existing Utilities  
Utility Line Drawn from Record (Type as Shown)  
Designated Utility Line (Type as Shown)

WMD  
CMB

9/12/13  
V&M PROJECT # 31014-07  
TRANSPORTATION\31014-07\UTILITIES\UC02.DGN  
REV: 2/1/2012



5/14/09

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

UTILITIES NOTES AND DETAILS SHEET

**V&M**  
Vaughn & Melton  
Consulting Engineers

Charlotte, North Carolina  
704-357-0488

Asheville, Carolina  
828-253-2796

Tri-Cities, Tennessee  
423-467-8400

Knoxville, Tennessee  
606-248-6500

Middlesboro, Kentucky  
606-248-6500

Spartanburg, South Carolina  
864-574-4725

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PROJECT REFERENCE NO. <b>17BP.10.H.3</b>	SHEET NO. <b>UC-4</b>
DESIGNED BY: <b>RMS</b>	
DRAWN BY: <b>NVA</b>	
CHECKED BY: <b>RMS</b>	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 250-4128 FAX: (919) 250-4119	
09/27/2013 UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

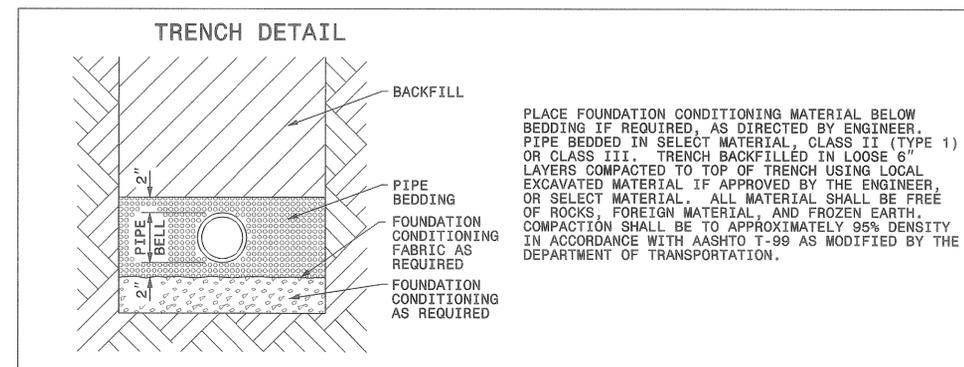
GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2012.
2. THE EXISTING UTILITIES BELONG TO CHARLOTTE MECKLENBURG UTILITIES.
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPT. OF ENVIRONMENTAL AND NATURAL RESOURCES, DIVISION OF WATER QUALITY, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPT. OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF WATER RESOURCES, PRETREATMENT, EMERGENCY RESPONSE AND COLLECTION SYSTEMS UNIT. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPROTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.
6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.

8. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
9. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS USING 2 LINE STOPS AND /OR ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
10. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

TIME RESTRCITIONS:

1. SEE THE PROJECT SPECIAL PROVISIONS FOR THE TIME RESTRICTIONS FOR THE SEWER MAIN CONSTRUCTION.



5/14/09  
CONSTRUCTION

*Handwritten initials/signature*