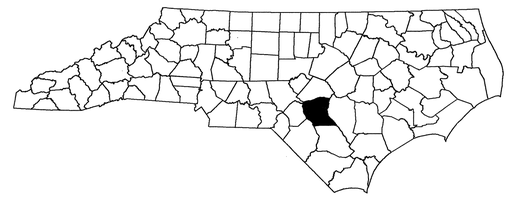
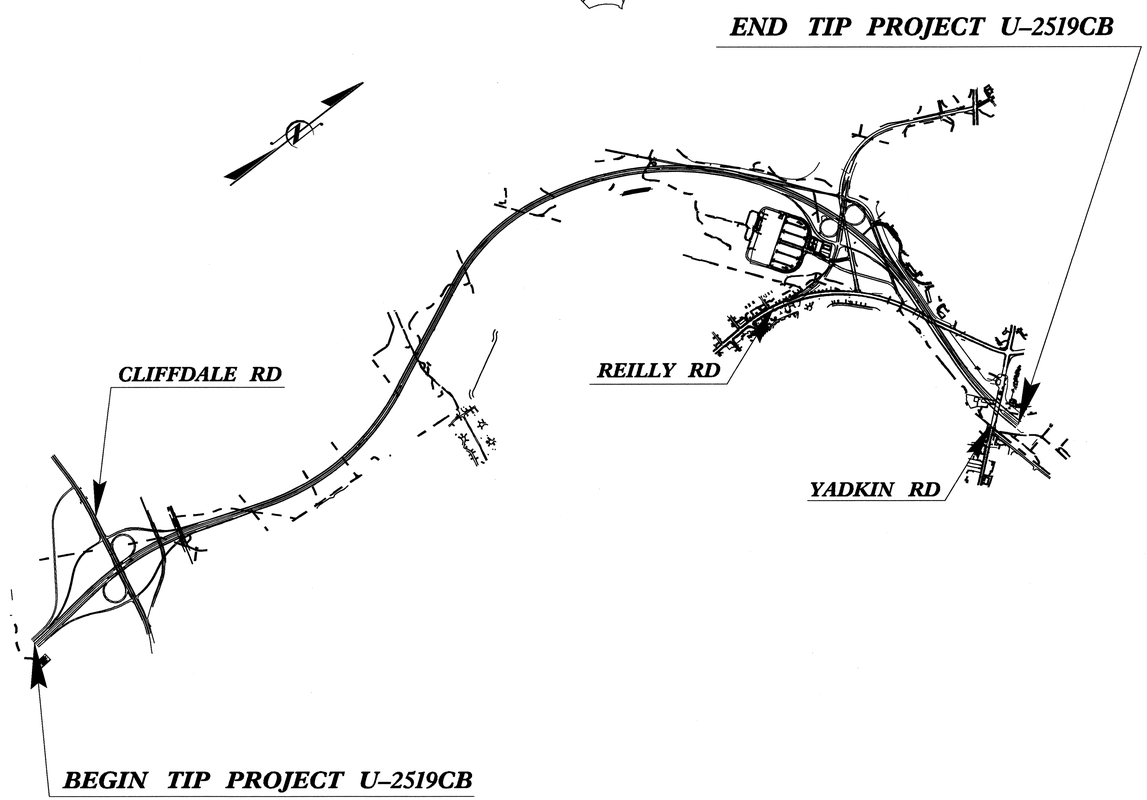
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

CUMBERLAND COUNTY





INDEX OF SHEETS

SHEET NO.	TITLE
TMP-01	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-01A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-01B THRU 01C	TRANSPORTATION OPERATIONS PLAN: (GENERAL NOTES AND LOCAL NOTES)
TMP-02	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
TMP-02A	TEMPORARY SHORING DATA
TMP-03 THRU TMP-03B	TEMPORARY TRAFFIC CONTROL OFFSITE DETOUR SHEETS
TMP-4	TEMPORARY TRAFFIC CONTROL AREA OVERVIEW
TMP-5	TEMPORARY TRAFFIC CONTROL AREA 1-WRITTEN PHASING
TMP-6	TEMPORARY TRAFFIC CONTROL AREA 1-PHASE I OVERVIEW
TMP-7 THRU TMP-8	TEMPORARY TRAFFIC CONTROL AREA 1-PHASE I DETAILS
TMP-9	TEMPORARY TRAFFIC CONTROL AREA 1-PHASE II OVERVIEW
TMP-10 THRU TMP-11	TEMPORARY TRAFFIC CONTROL AREA 1-PHASE II DETAILS
TMP-12	TEMPORARY TRAFFIC CONTROL AREA 2-WRITTEN PHASING
TMP-13 THRU TMP-14	TEMPORARY TRAFFIC CONTROL AREA 2-PHASE I OVERVIEW
TMP-15 THRU TMP-25	TEMPORARY TRAFFIC CONTROL AREA 2-PHASE I DETAILS
TMP-26	TEMPORARY TRAFFIC CONTROL AREA 2-PHASE IA OVERVIEW
TMP-27 THRU TMP-36	TEMPORARY TRAFFIC CONTROL AREA 2-PHASE IA DETAILS
TMP-37	TEMPORARY TRAFFIC CONTROL AREA 2-PHASE II OVERVIEW
TMP-38 THRU TMP-40	TEMPORARY TRAFFIC CONTROL AREA 2-PHASE II DETAILS
TMP-41	TEMPORARY TRAFFIC CONTROL AREA 2-PHASE IIA OVERVIEW
TMP-42 THRU TMP-45	TEMPORARY TRAFFIC CONTROL AREA 2-PHASE IIA DETAILS
TMP-46	TEMPORARY TRAFFIC CONTROL AREA 2-PHASE IIB OVERVIEW
TMP-47 THRU TMP-50	TEMPORARY TRAFFIC CONTROL AREA 2-PHASE IIB DETAILS
TMP-51	TEMPORARY TRAFFIC CONTROL AREA 2-PHASE IIC OVERVIEW
TMP-52 THRU TMP-55	TEMPORARY TRAFFIC CONTROL AREA 2-PHASE IIC DETAILS
TMP-56	TEMPORARY TRAFFIC CONTROL AREA 3-WRITTEN PHASING
TMP-57 THRU TMP-61	TEMPORARY TRAFFIC CONTROL AREA 3-DETAILS

SHEET NO.
TMP-01

U-2519CB

TIP PROJECT:

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

Prepared in the Office of:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: Tim Arey
DATE: 09/04/14

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-01A

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN 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
1101.03	TEMPORARY ROAD 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
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMPS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL
- TEMPORARY PAVEMENT WEDGING

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

PAVEMENT MARKINGS PAINT(4")

PA WHITE EDGELINE
PB YELLOW EDGELINE
PC 10 FT. WHITE SKIP
PD 3 FT. - 9 FT./SP WHITE MINISKIP
PE WHITE SOLID LANE LINE
PF 10 FT. YELLOW SKIP
PH YELLOW SINGLE CENTER
PI YELLOW DOUBLE CENTER

COLD APPLIED PLASTIC (TYPE IV) (4")

CA WHITE EDGELINE
CC 10 FT. WHITE SKIP

PAINT(8")

PS WHITE GORELINE
PV YELLOW DIAGONAL

PAINT(24")

P2 WHITE STOPBAR

MARKING SYMBOLS

QA LEFT TURN ARROW
QB RIGHT TURN ARROW
QC STRAIGHT ARROW
QE COMBO.STRAIGHT/RIGHT
QI ALPHANUMERIC CHAR.
QP MERGE ARROW

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: DATE: 06/04/14
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREL

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS & LEGEND

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-01B

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 UNDESIRED 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
ANY ROAD	MON-FRI: 5:00AM-9:00AM, 4:00PM-6:00PM

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

ROAD NAME
ANY ROAD

HOLIDAY

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 5:00AM DECEMBER 31st TO 6:00PM JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6:00PM THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 5:00AM THURSDAY AND 6:00PM MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 5:00AM FRIDAY TO 6:00PM TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 5:00AM THE DAY BEFORE INDEPENDENCE DAY AND 6:00PM THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 5:00AM THE THURSDAY BEFORE INDEPENDENCE DAY AND 6:00PM THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 5:00AM FRIDAY AND 6:00PM TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 5:00AM TUESDAY TO 6:00PM MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 5:00AM THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00PM THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
9. FOR THE FORT BRAGG FAIR OCCURRING AT THE FORT BRAGG FAIRGROUNDS BETWEEN 24 HOURS BEFORE THE START AND 24 HOURS AFTER THE END OF THE FORT BRAGG FAIR.
10. FOR OKTOBERFEST OCCURRING AT THE FORT BRAGG FAIRGROUNDS BETWEEN 24 HOURS BEFORE THE START AND 24 HOURS AFTER THE END OF OKTOBERFEST.
11. FOR THE ALL-AMERICAN MARATHON BETWEEN 24 HOURS BEFORE THE START AND 24 HOURS AFTER THE END OF THE MARATHON.

C) DO NOT CLOSE ROADS AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
CLIFFDALE RD	MON-SUN: 5:00AM TO 9:00PM
ALL AMERICAN FREEWAY	MON 4:00AM TO FRI 9:00PM

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.

PAVEMENT EDGE DROP OFF REQUIREMENTS

J) 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.

K) 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) 350 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

L) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

M) 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.

N) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

   PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

O) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

   COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

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

Q) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 350 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC BARRIER

R) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

   DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

   ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

   INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

   INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

S) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

   PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS: (SEE ALSO 1101.05)

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT
55	25 FT
60 MPH or HIGHER	30 FT

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: DATE: 05/04/14
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-01C

GENERAL NOTES

TRAFFIC CONTROL DEVICES

T) 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.

U) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

V) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES DRUMS PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
ALL ROADS (ASPHALT)	PAINT	TEMPORARY RAISED
ALL ROADS (STRUCTURES)	TEMPORARY TAPE	TEMPORARY RAISED

X) 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.

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

Z) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

AA) TRACE THE EXISTING AND PROPOSED MONOLITHIC ISLAND LOCATIONS WITH PROPER COLOR PAVEMENT MARKINGS PRIOR TO REMOVAL AND INSTALLATION. PLACE DRUMS TO DELINEATE ANY EXISTING AND PROPOSED MONOLITHIC ISLANDS AFTER REMOVAL AND BEFORE INSTALLATION.

MISCELLANEOUS

BB) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

CC) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) 350 FT AND 700 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

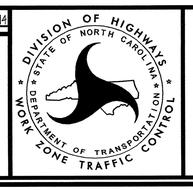
DD) ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.

EE) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: Tim Arey DATE: 06/04/14

SEAL



TRANSPORTATION MANAGEMENT PLAN
GENERAL NOTES

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-02

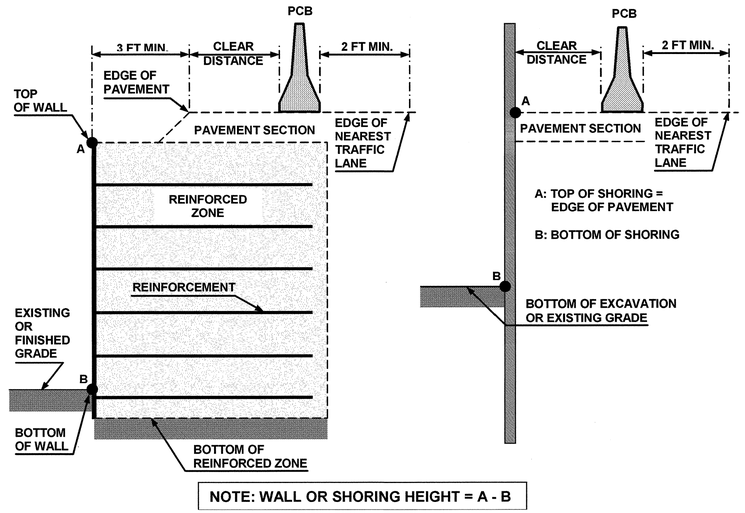


FIGURE A

NOTES

1- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.

2- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).

3- PCB IS REQUIRED IF TEMPORARY SHORING IS LOCATED WITHIN THE CLEAR ZONE IN ACCORDANCE WITH THE AASHTO ROADSIDE DESIGN GUIDE. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).

4- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED OR ANCHORED PCB FROM THE TABLE SHOWN IN FIGURE B. CLEAR DISTANCE IS DEFINED AS SHOWN IN FIGURE A AND OFFSET IS DEFINED AS SHOWN IN FIGURE B.

5- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET PCB NEXT TO AND UP AGAINST THE TRAFFIC SIDE OF THE TEMPORARY SHORING EXCEPT FOR BARRIER ABOVE TEMPORARY WALLS. PCB WITH THE MINIMUM REQUIRED CLEAR DISTANCE IS REQUIRED ABOVE TEMPORARY WALLS.

6- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.

7- PCB REQUIREMENTS FOR TEMPORARY WALLS APPLY TO TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS AND TEMPORARY SOIL NAIL WALLS.

8- SET PCB WITH A MINIMUM HORIZONTAL DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A UNLESS OTHERWISE SHOWN IN THE PLANS AND OR AS APPROVED BY THE ENGINEER.

9- FOR PCB ABOVE AND BEHIND TEMPORARY WALLS, PROVIDE A MINIMUM DISTANCE OF 3 FT BETWEEN THE EDGE OF PAVEMENT AND THE WALL FACE AS SHOWN IN FIGURE A. IF THESE MINIMUM REQUIRED DISTANCES ARE NOT AVAILABLE, CONTACT THE ENGINEER.

10- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS. BARRIER DEFLECTIONS AND RESULTING MINIMUM REQUIRED CLEAR DISTANCES MIGHT VARY SIGNIFICANTLY FOR LARGER HEAVIER VEHICLES, RUNS OF BARRIER LESS THAN 200 FT IN LENGTH AND WET OR DRY PAVEMENT.

MINIMUM REQUIRED CLEAR DISTANCE, inches

Barrier Type	Pavement Type	Offset * ft	Design Speed, mph <30	31-40	41-50	51-60	61-70	71-80
Unanchored PCB	Asphalt	<8	24	26	29	32	36	40
		8-14	26	28	31	35	38	42
		14-20	27	29	34	36	39	43
		20-26	28	31	35	38	40	44
		26-32	29	32	36	39	42	45
		32-38	30	34	38	41	43	46
		38-44	31	34	41	43	45	48
		44-50	31	35	41	43	46	49
		50-56	32	36	42	44	47	50
		>56	32	36	42	45	47	51
	Concrete	<8	17	18	21	22	25	26
		8-14	19	20	23	25	26	29
		14-20	22	22	24	26	28	31
		20-26	23	24	26	27	30	34
		26-32	24	25	27	28	32	35
		32-38	24	26	27	30	33	36
		38-44	25	26	28	30	34	37
		44-50	26	26	28	32	35	37
		50-56	26	26	28	32	35	38
		>56	26	27	29	32	36	38
Anchored PCB	Asphalt	All Offsets	24 for All Design Speeds					
Anchored PCB	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds					

* See Figure Below

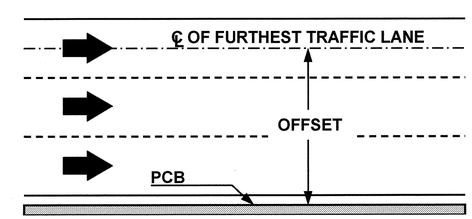


FIGURE B

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: DATE: 05/04/14
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-02A

Shoring Location No. 1

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -Y1- 65+00+/-, 128.0 FT RIGHT, TO STATION -Y1- 65+85+/-, 128.0 FT RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:
UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 174.2 FT

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -Y1- 65+00+/-, 128.0 FT RIGHT, TO STATION -Y1- 65+85+/-, 128.0 FT RIGHT.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -Y1- 65+00+/-, 128.0 FT RIGHT, TO STATION -Y1- 65+85+/-, 128.0 FT RIGHT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

Shoring Location No. 2

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -Y1- 66+00+/-, 128.0 FT RIGHT, TO STATION -Y1- 67+60+/-, 128.0 FT RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:
UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 183.7 FT

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -Y1- 66+00+/-, 128.0 FT RIGHT, TO STATION -Y1- 67+60+/-, 128.0 FT RIGHT.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -Y1- 66+00+/-, 128.0 FT RIGHT, TO STATION -Y1- 67+60+/-, 128.0 FT RIGHT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

Shoring Location No. 3

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -Y1- 65+60+/-, 67.0 FT RIGHT, TO STATION -Y1- 66+40+/-, 67.0 FT RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:
UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 188.0 FT

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -Y1- 65+60+/-, 67.0 FT RIGHT, TO STATION -Y1- 66+40+/-, 67.0 FT RIGHT.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -Y1- 65+60+/-, 67.0 FT RIGHT, TO STATION -Y1- 66+40+/-, 67.0 FT RIGHT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

Shoring Location No. 4

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -Y1- 67+90+/-, 70.0 FT LEFT, TO STATION -Y1- 68+90+/-, 70.0 FT LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:
UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 192.9 FT

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -Y1- 67+90+/-, 70.0 FT LEFT, TO STATION -Y1- 68+90+/-, 70.0 FT LEFT.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM ST STATION -Y1- 67+90+/-, 70.0 FT LEFT, TO STATION -Y1- 68+90+/-, 70.0 FT LEFT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

Shoring Location No. 5

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -Y1- 66+60+/-, 21.0 FT RIGHT, TO STATION -Y1- 67+85+/-, 21.0 FT RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:
UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 189.6 FT

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -Y1- 66+60+/-, 21.0 FT RIGHT, TO STATION -Y1- 67+85+/-, 21.0 FT RIGHT.

AT THE CONTRACTOR*S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -Y1- 66+60+/-, 21.0 FT RIGHT, TO STATION -Y1- 67+85+/-, 21.0 FT RIGHT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

Shoring Location No. 6

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -Y1- 66+60+/-, 21.0 FT LEFT, TO STATION -Y1- 67+85+/-, 21.0 FT LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:
UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 189.6 FT

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -Y1- 66+60+/-, 21.0 FT LEFT, TO STATION -Y1- 67+85+/-, 21.0 FT LEFT.

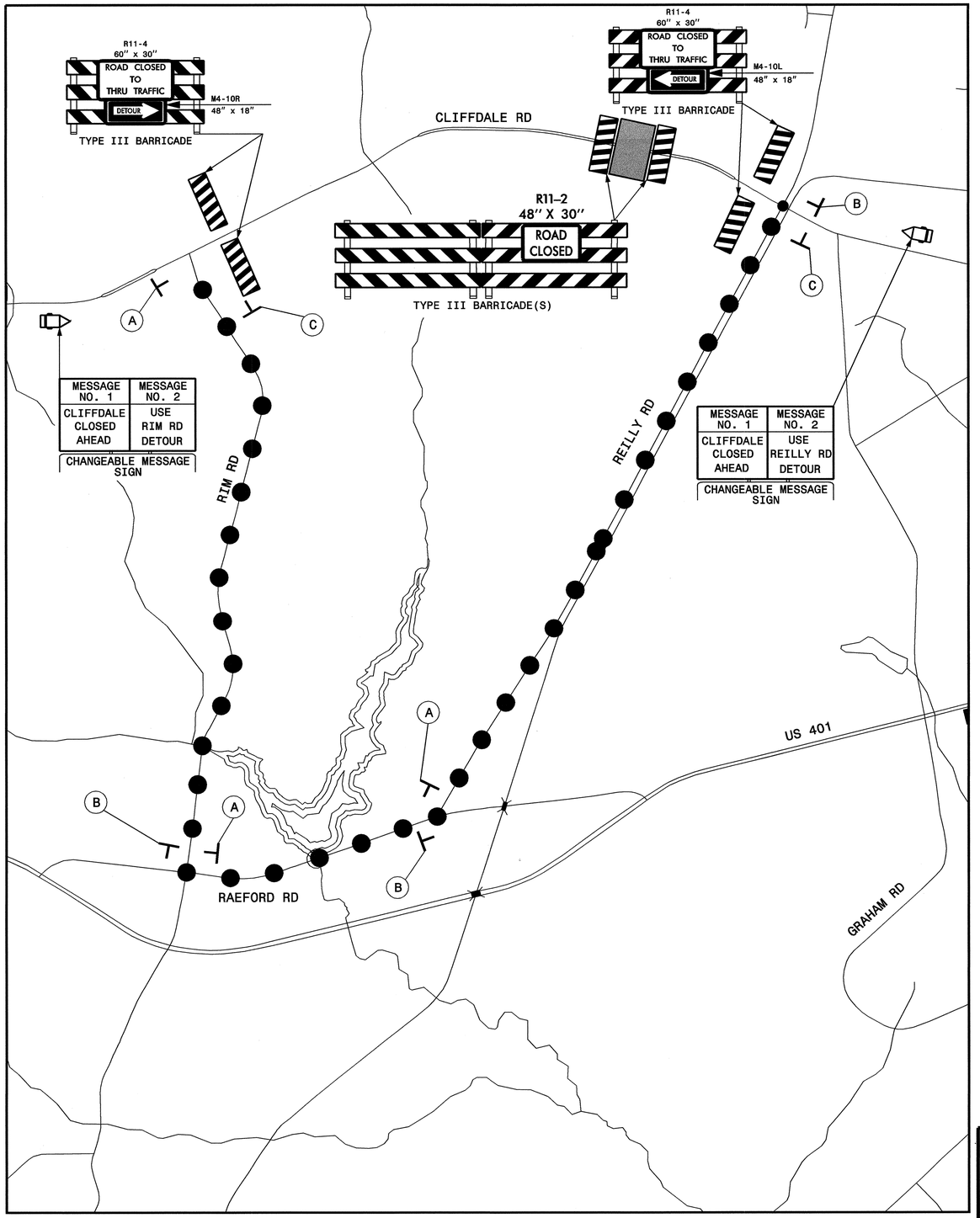
AT THE CONTRACTOR*S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -Y1- 66+60+/-, 21.0 FT LEFT, TO STATION -Y1- 67+85+/-, 21.0 FT LEFT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

THE TEMPORARY SHORING NOTES SHOWN ON THEIS SHEET WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE WZTC SECTION ON JANUARY 29, 2014 , AND SEALED BY A PROFESSIONAL ENGINEER, JINYOUNG PARK, PE, NC #032171

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
TEMPORARY SHORING DATA

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-03



SIGN NUMBER: name
TYPE: D
QUANTITY: SEE PLANS

SIGN WIDTH: 36"
HEIGHT: 12"
TOTAL AREA: 3.0 Sq.Ft.

BORDER TYPE: FLUSH
RADII: 1.5"
WIDTH: 0.63"
RECESS: 0.47"

NO. Z BARS:
LENGTH:

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

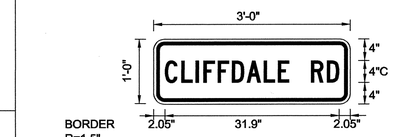
SYMBOL	X	Y	WID	HT

MAT'L: 0.063" (1.6MM) ALUMINUM
0.080" (2.0MM) ALUMINUM
0.125" (3.2MM) ALUMINUM

DESIGN BY: PDG
CHECKED BY: PDG
PROJECT ID: U-2519CB
DIV: 6
DATE: JAN 14, 2014

USE NOTES

1. Legend and border shall be direct applied Type VII, VIII, or IX reflective sheeting.
2. Background shall be Type VII, VIII, or IX reflective sheeting.



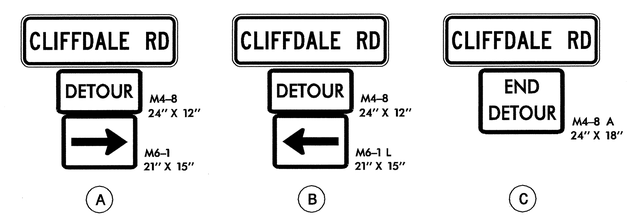
BORDER
R=1.5"
TH=0.63"
IN=0.47"

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

	C	L	I	F	F	D	A	L	E		R	D										Series/Size Text Length
2	3	2.6	1.4	2.6	2.6	2.7	3.1	2.6	2	4	2.9	2.2	2									C 2000 31.9



NOTES:
1. ALL DETOUR SIGN LOCATIONS ARE APPROXIMATE. FINAL PLACEMENT AS DIRECTED BY THE ENGINEER.
2. USE NCDOT RSD 1101.03, SHEET 1 OF 9 FOR ADDITIONAL ROAD CLOSURE SIGNAGE.

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

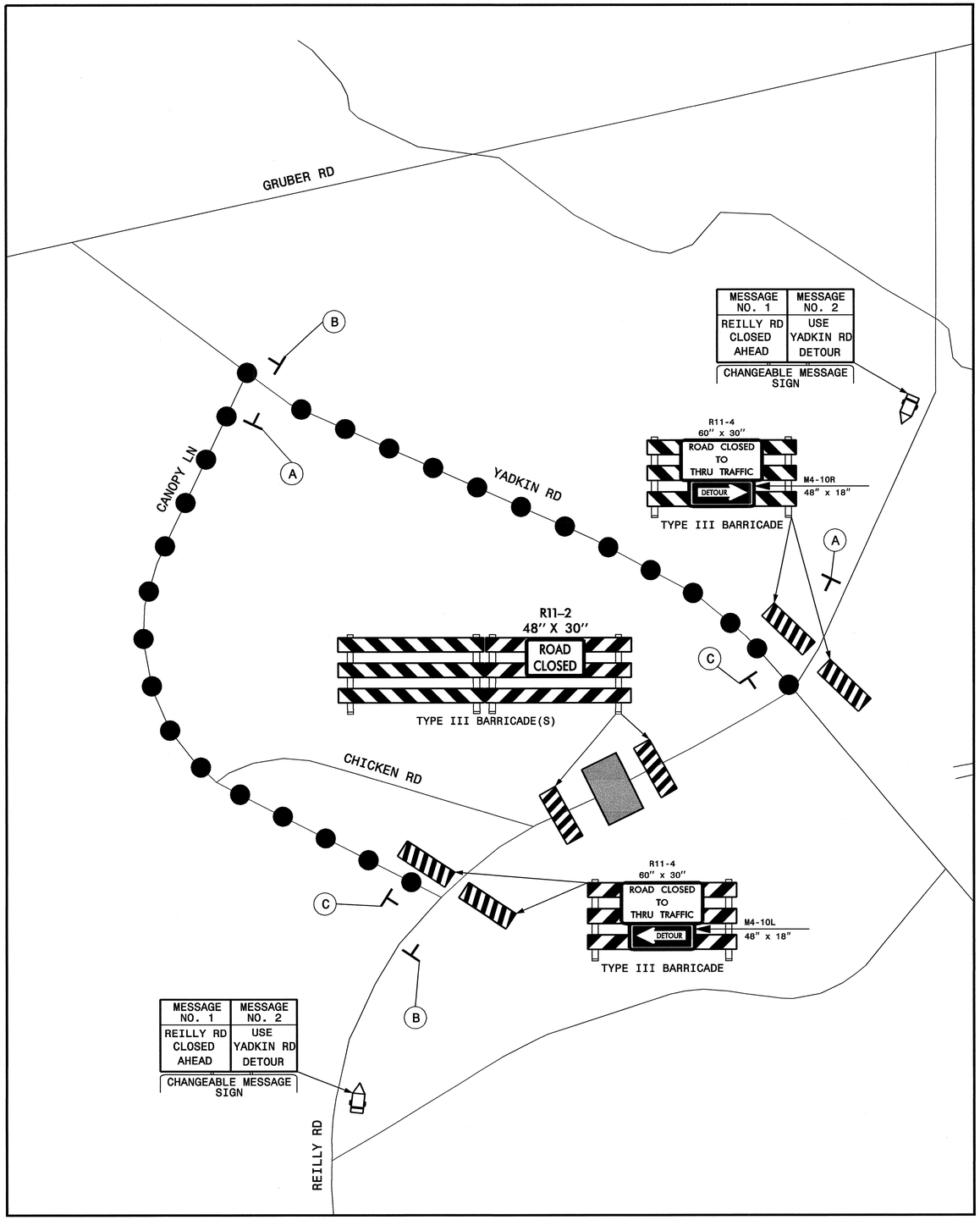
APPROVED: Tim Arey DATE: 06/04/14

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
OFFSITE DETOUR SHEET

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-03A



SIGN NUMBER: name
TYPE: D
QUANTITY: SEE PLANS

SIGN WIDTH: 30"
HEIGHT: 12"
TOTAL AREA: 2.5 Sq.Ft.

BORDER TYPE: FLUSH
RADII: 1.5"
WIDTH: 0.63"
RECESS: 0.47"

NO. Z BARS:
LENGTH:

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

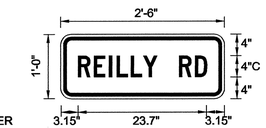
SYMBOL	X	Y	WID	HT

MAT'L: 0.063" (1.6MM) ALUMINUM
0.080" (2.0MM) ALUMINUM
0.125" (3.2MM) ALUMINUM

DESIGN BY: PDG
CHECKED BY: PDG
PROJECT ID: U-2519CB
DIV: 6
DATE: JAN 14, 2014

USE NOTES

1. Legend and border shall be direct applied Type VII, VIII, or IX reflective sheeting.
2. Background shall be Type VII, VIII, or IX reflective sheeting.



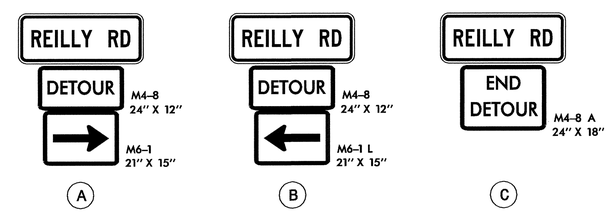
BORDER
R=1.5"
TH=0.63"
IN=0.47"

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

R	E	I	L	L	Y		R	D		Series/Size Text Length
3.2	2.9	2.7	1.4	2.6	2.3	2.6	4	2.9	2.2	3.2	C 2000 23.7



NOTES:
1. ALL DETOUR SIGN LOCATIONS ARE APPROXIMATE. FINAL PLACEMENT AS DIRECTED BY THE ENGINEER.
2. USE NCDOT RSD 1101.03, SHEET 1 OF 9 FOR ADDITIONAL ROAD CLOSURE SIGNAGE.

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: [signature] DATE: 06/04/14

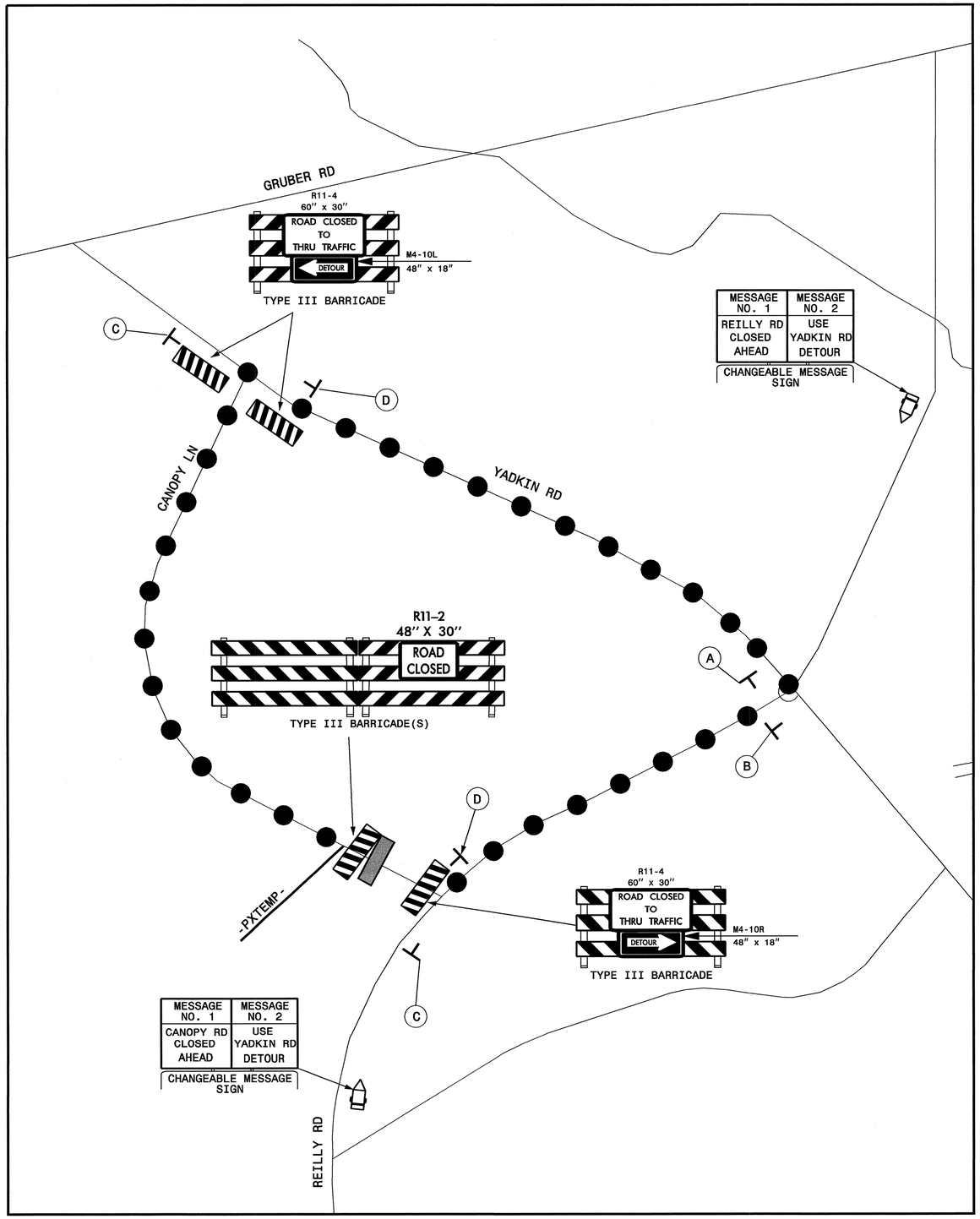
SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 025465 TIM AREY

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
OFFSITE DETOUR SHEET

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-03B



SIGN NUMBER: name
TYPE: D
QUANTITY: 1

SIGN WIDTH: 3'-6"
HEIGHT: 1'-6"
TOTAL AREA: 5.3 Sq.Ft.

BORDER TYPE: FLUSH
RECESS: 0.47"
WIDTH: 0.63"
RADII: 1.5"

NO. Z BARS:
LENGTH:

BACKG COLOR: Orange
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L: 0.063" (1.6 mm) ALUMINUM
0.080" (2.0 mm) ALUMINUM
0.125" (3.2 mm) ALUMINUM

DESIGN BY: none
PROJECT ID: ID
CHECKED BY: CHECKED
DIV: DIV
DATE: May 05, 2014

NOTES:
1. Legend and border shall be direct applied Type IX reflective sheeting.
2. Background shall be Type IX reflective sheeting.

CANOPY LANE

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

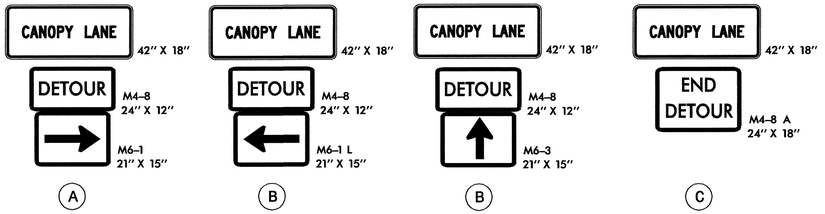
Letter widths are shown

C	A	N	O	P	Y		L	A	N	E
2.2	2.6	2.2	2.4	2.2	2.6		2	2.6	2.2	2

Series/Size
Text Length
C 2000
30.9

FILENAME: Hammond Rd

NORTH CAROLINA D.O.T. SIGN DETAIL

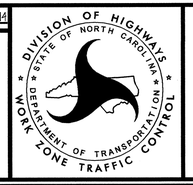


NOTES:
1. ALL DETOUR SIGN LOCATIONS ARE APPROXIMATE. FINAL PLACEMENT AS DIRECTED BY THE ENGINEER.
2. USE NCDOT RSD 1101.03, SHEET 1 OF 9 FOR ADDITIONAL ROAD CLOSURE SIGNAGE.

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

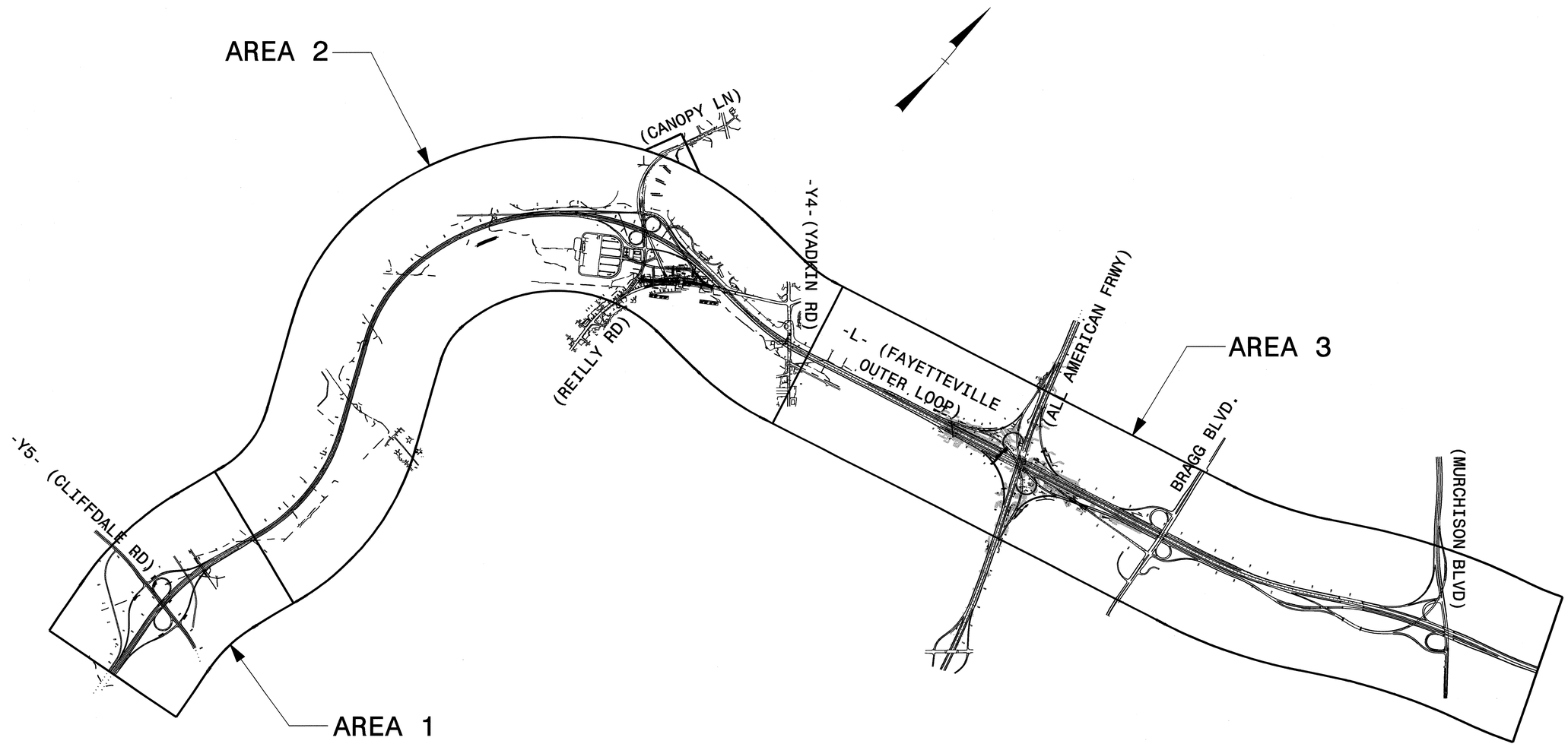
APPROVED: Tim Arey DATE: 05/04/14

SEAL



TRANSPORTATION MANAGEMENT PLAN
OFFSITE DETOUR SHEET

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-04



PLAN PREPARED IN THE OFFICE OF:

PROGRESSIVE DESIGN GROUP, INC.

ENGINEERS • CONSULTANTS

APPROVED: Jim Arey DATE: 06/04/14

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER JIM AREY

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA OVERVIEW

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-05

AREA 1 PHASING

PHASE I

STEP 1: INSTALL WORK ZONE ADVANCE WARNING SIGNS ON ALL ROADWAYS WITHIN THE PROJECT LIMITS ACCORDING TO ROADWAY STANDARD DRAWING NO. 1101.01. SEE GENERAL NOTE 'M' ON SHEET TMP-1B FOR ADDITIONAL GUIDANCE.

STEP 2: BEGIN CONSTRUCTION ON -L-, -RPA1-, -LPA1-, -RPB1-, -RPC1-, -LPC1-, -RPD1-, AND -Y23- IN THE LOCATIONS SHOWN ON SHEETS TMP-06 THRU TMP-08. KEEP RAMPS AND LOOPS CLOSED WITH DRUMS AND TYPE III BARRICADES AS SHOWN ON SHEETS TMP-07 AND TMP-08.

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, BEGIN CONSTRUCTION ON THE PROPOSED DECEL LANES FOR -RPB1- AND -RPD1- IN THE LOCATIONS SHOWN ON SHEETS TMP-07 AND TMP-08.

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, CONSTRUCT THE PROPOSED DECEL LANES FOR -LPA1- AND -LPC1- IN THE LOCATIONS SHOWN ON SHEETS TMP-07 AND TMP-08.

STEP 3: INSTALL PERMANENT GUARDRAIL ALONG THE OUTSIDE OF THE NEWLY CONSTRUCTED DECEL LANES FOR -LPA1- AND -LPC1- IN THE LOCATIONS SHOWN ON SHEETS TMP-07 AND TMP-08 AND CONSTRUCT THE PROPOSED END BENTS FOR THE -L- LINE BRIDGES OVER -Y5- AS SHOWN ON SHEET TMP-08.

PHASE II

STEP 1: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, INSTALL THE WARNING SIGNS AND THE TEMPORARY PAVEMENT MARKINGS AND MARKERS ON -Y5- IN THE LOCATIONS SHOWN ON SHEETS TMP-10 AND TMP-11. PLACE -Y5- TRAFFIC IN THE PATTERN SHOWN ON SHEETS TMP-10 AND TMP-11.

STEP 2: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, INSTALL PORTABLE CONCRETE BARRIER AND TEMPORARY CRASH CUSHIONS ALONG THE MEDIAN SECTIONS OF -Y5- IN THE LOCATIONS SHOWN ON SHEETS TMP-10 AND TMP-11.

STEP 3: CONSTRUCT THE PROPOSED -L- BRIDGES OVER -Y5- (MINUS GIRDER INSTALLATION) AS SHOWN ON SHEET TMP-11. INSTALL TRAFFIC CONTROL DEVICES AND SIGNS FOR THE -Y5- OFF SITE DETOUR AS SHOWN ON SHEET TMP-03. SEE GENERAL NOTE 'O' FOR COVERING REQUIREMENTS.

COMPLETE THE WORK REQUIRED OF STEP 4 IN ACCORDANCE WITH GENERAL NOTE "C". (SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES)

STEP 4: UNCOVER THE OFFSITE DETOUR SIGNS AND DEVICES FOR THE -Y5- OFFSITE DETOUR SHOWN ON SHEET TMP-03 AND PLACE -Y5- TRAFFIC INTO THE OFFSITE DETOUR PATTERN. INSTALL THE GIRDERS FOR THE -L- BRIDGES OVER -Y5- AND REOPEN -Y5- TO TRAFFIC BY THE COMPLETION TIME ALLOWED IN THE INTERMEDIATE CONTRACT TIME.

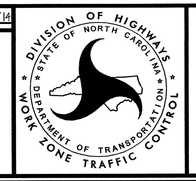
PHASE III

STEP 1: COMPLETE REMAINING CONSTRUCTION ON ALL ROADWAYS IN AREA 1. USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, AS REQUIRED, PLACE THE FINAL LAYER OF SURFACE COURSE, FINAL PAVEMENT MARKINGS AND MARKERS, AND PERMANENT SIGNING ON ALL ROADWAYS WITHIN AREA 1 AS SHOWN IN THE PAVEMENT MARKING AND SIGNING PLANS. CLOSE THE -RPB1- AND -LPA1- DECEL LANES ALONG -Y5- WITH YELLOW TUBULAR MARKERS AS SHOWN IN THE PAVEMENT MARKING PLANS. ACTIVATE THE PROPOSED -Y5- SIGNAL AT THE -Y5-/-RPA1- INTERSECTION AND OPEN ALL ROADWAYS TO THE FINAL TRAFFIC PATTERN. COORDINATE ROADWAY OPENINGS WITH OTHER AREAS IN THE PROJECT LIMITS AND REMOVE ALL TRAFFIC CONTROL DEVICES.

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

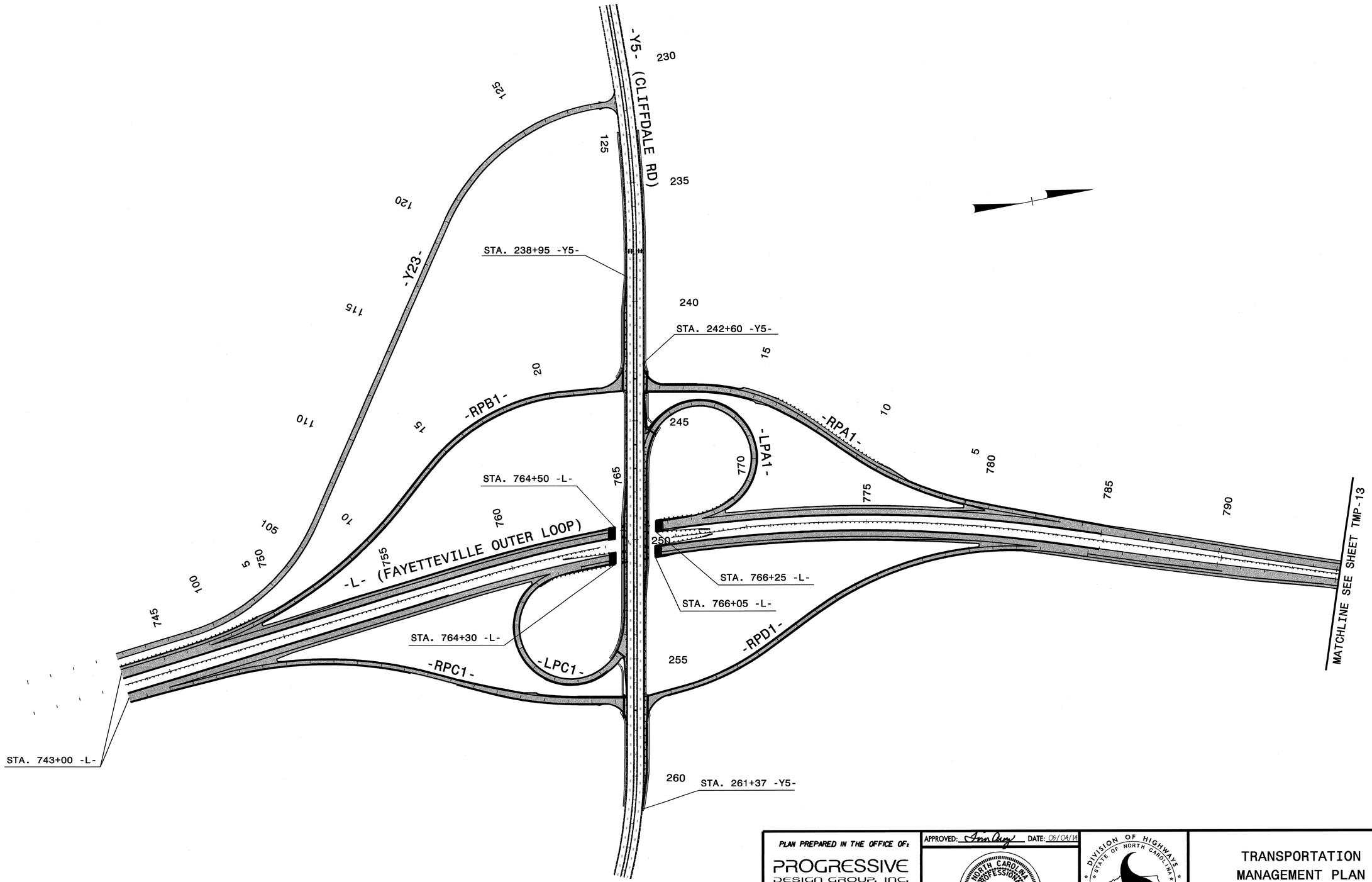
APPROVED: Jim Arey DATE: 06/04/14

SEAL



TRANSPORTATION MANAGEMENT PLAN
AREA 1 WRITTEN PHASING

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-06



PLAN PREPARED IN THE OFFICE OF:

PROGRESSIVE DESIGN GROUP, INC.

ENGINEERS • CONSULTANTS

APPROVED: Jim Arey DATE: 06/04/14

SEAL

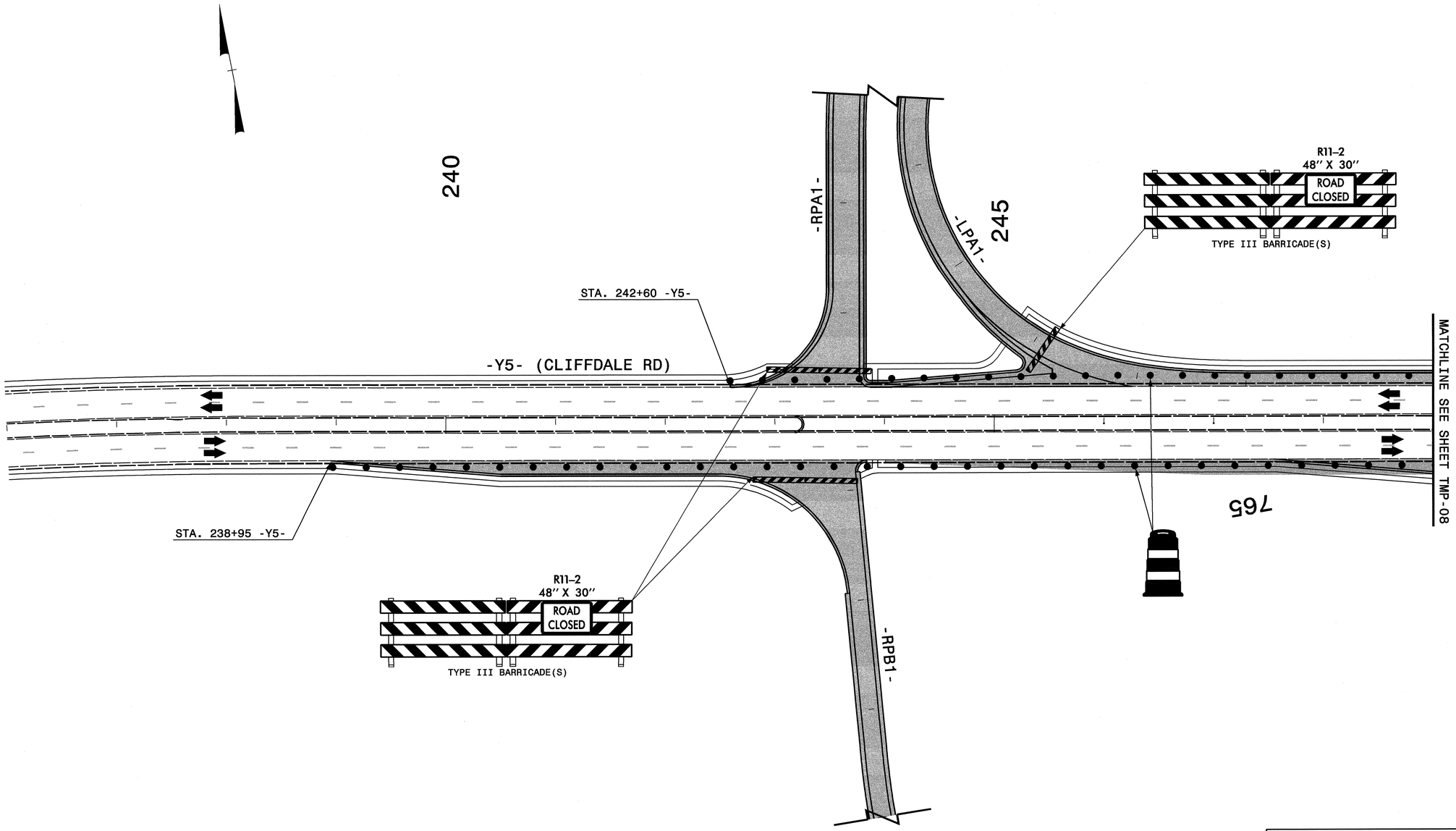
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER JIM AREY

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN

AREA 1-PHASE I OVERVIEW

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-07



ALL PAVEMENT MARKINGS ARE EXISTING MARKINGS UNLESS OTHERWISE NOTED

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

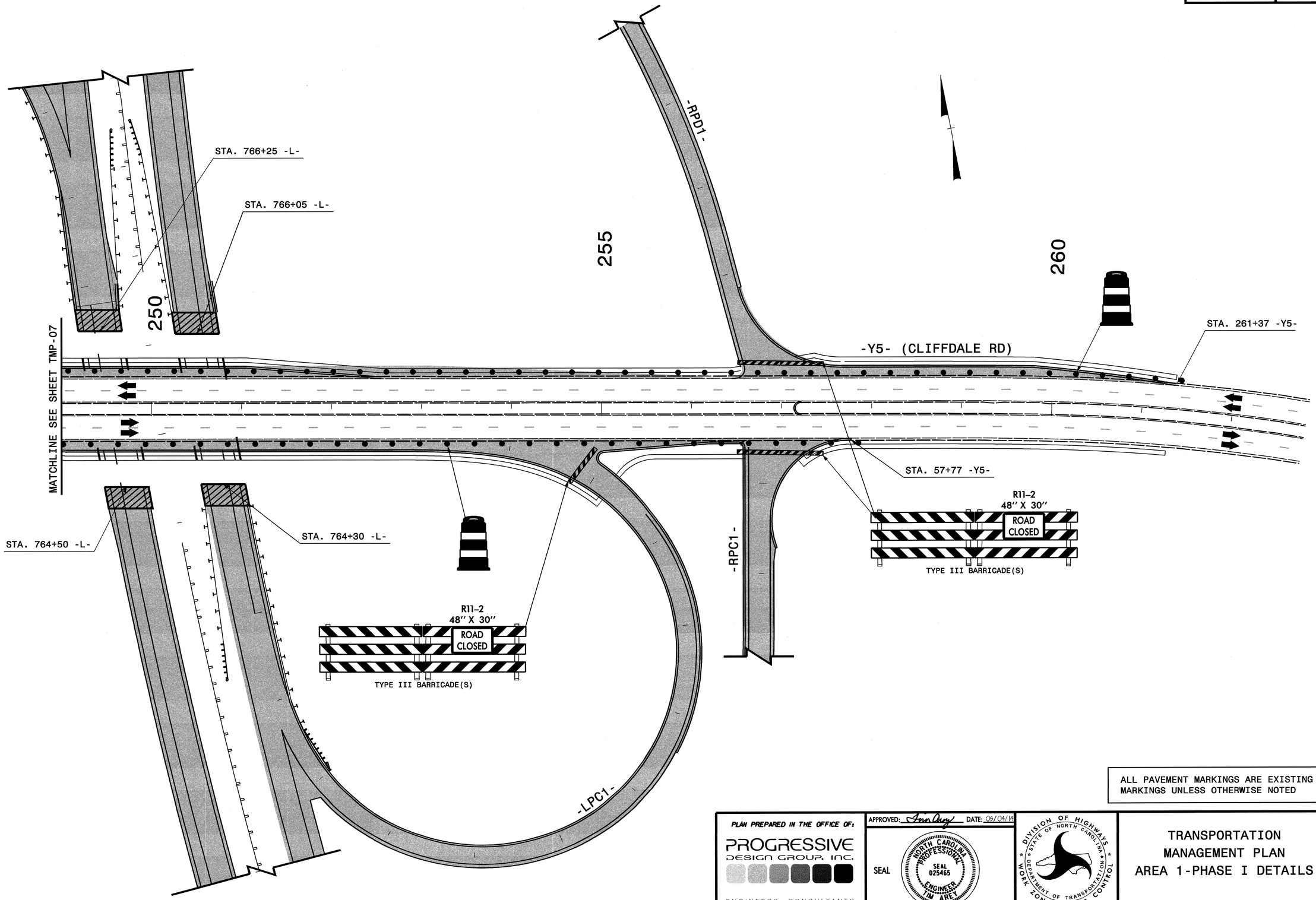
APPROVED: Tim Arey DATE: 05/04/14

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 1-PHASE I DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-08



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PLAN PREPARED IN THE OFFICE OF:

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ENGINEERS • CONSULTANTS

APPROVED: Tim Arey DATE: 05/04/14

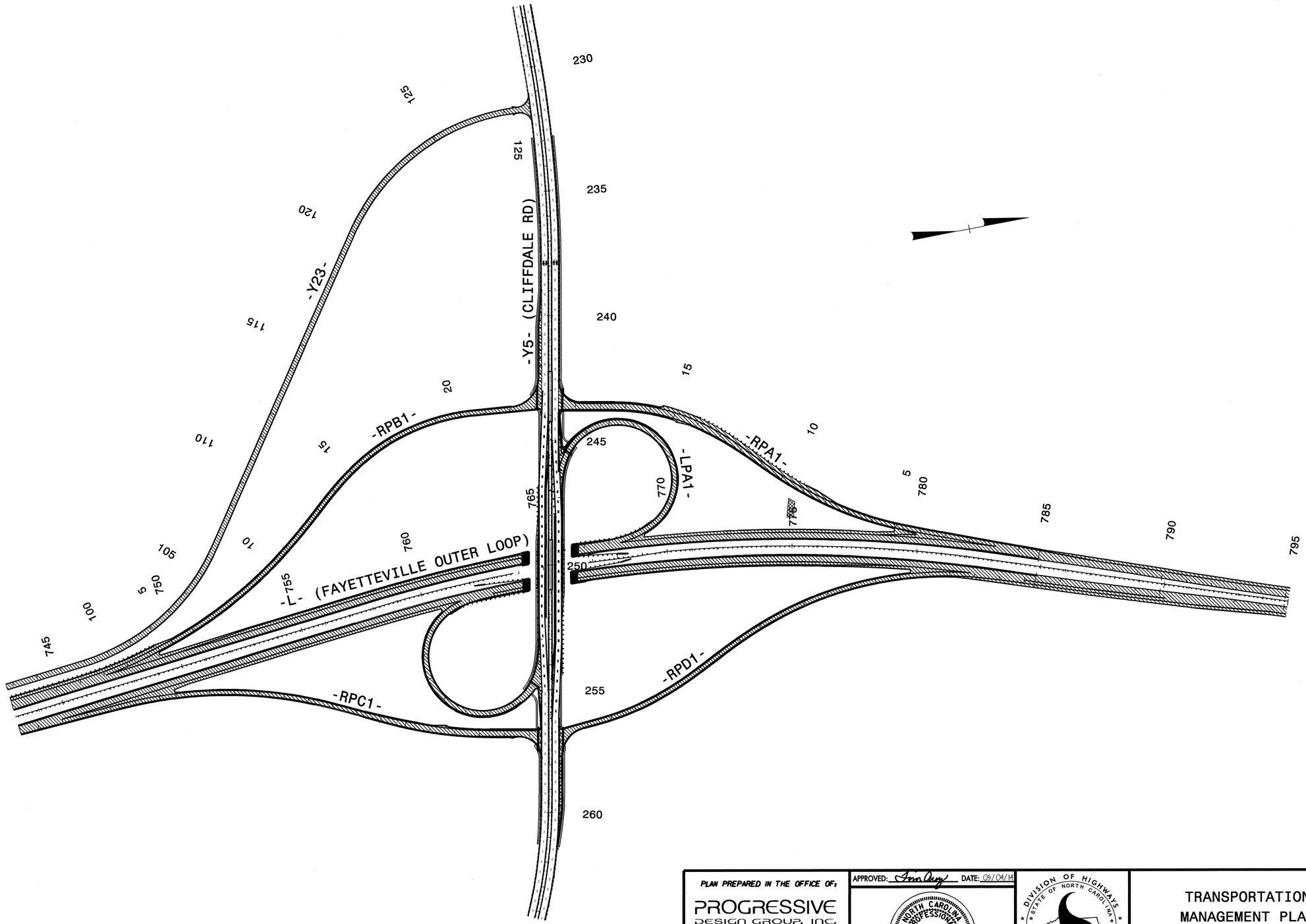
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 1-PHASE I DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-09



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APPROVED: Tim Arey DATE: 05/04/14

SEAL

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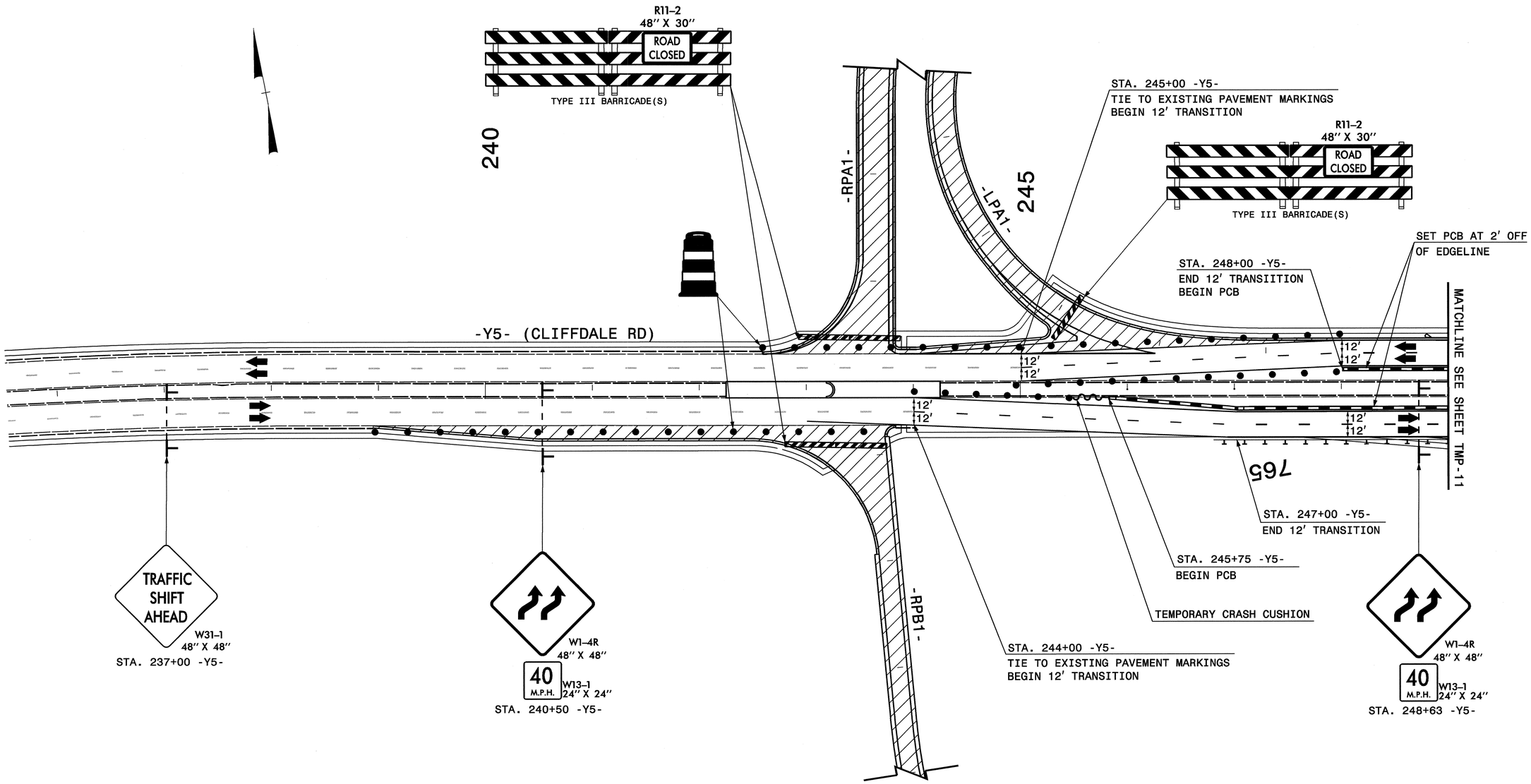
TRANSPORTATION MANAGEMENT PLAN
AREA 1-PHASE II OVERVIEW

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-10



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APPROVED: Jim Ayers DATE: 06/04/14

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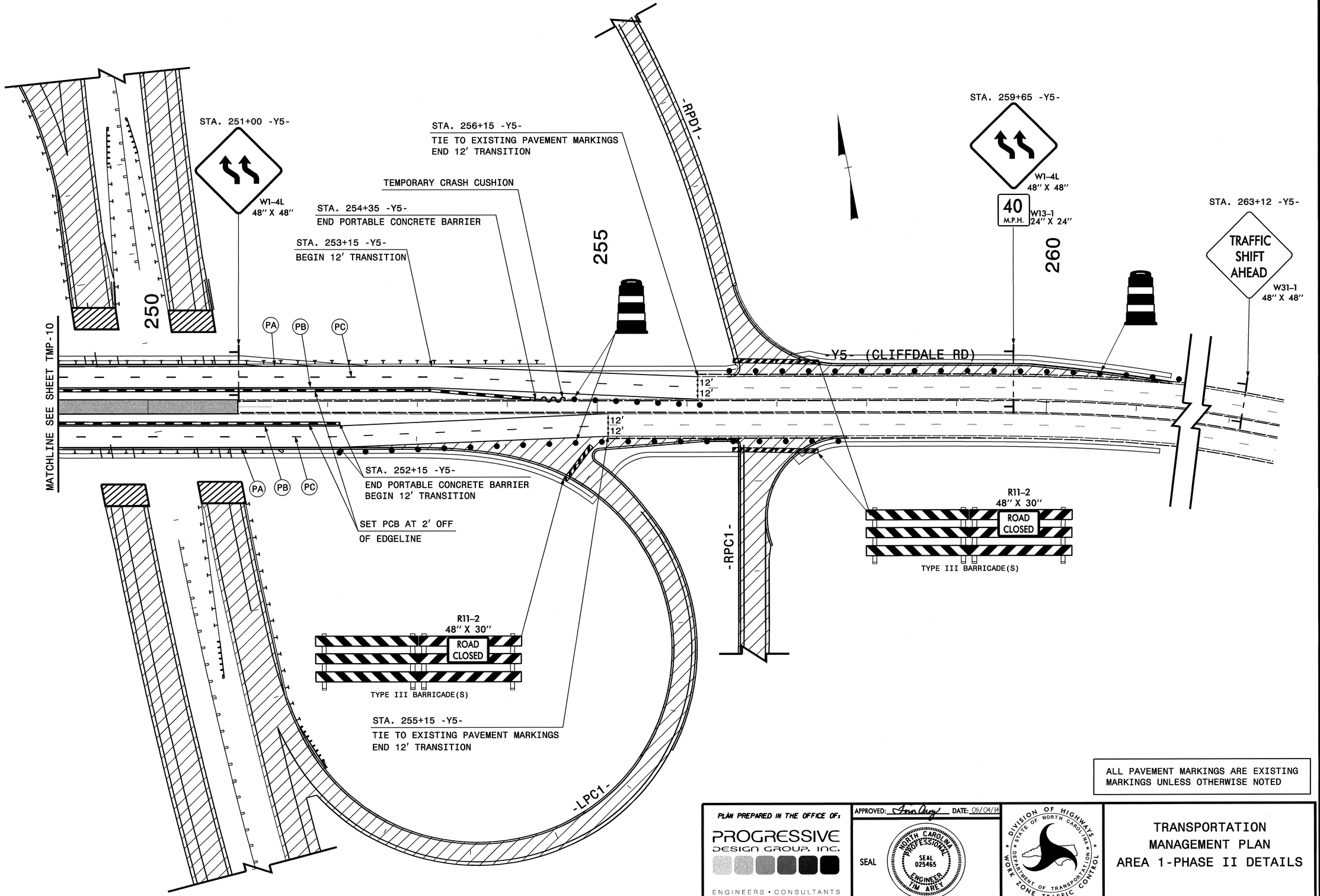
DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 1-PHASE II DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-11



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NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER JIM AREY

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 1-PHASE II DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-12

AREA 2 PHASING

PHASE I

STEP 1: INSTALL WORK ZONE ADVANCE WARNING SIGNS ON ALL ROADWAYS WITHIN THE PROJECT LIMITS ACCORDING TO ROADWAY STANDARD DRAWING NO. 1101.01. SEE GENERAL NOTE 'M' ON SHEET TMP-1B FOR ADDITIONAL GUIDANCE.

STEP 2: PERMANENTLY CLOSE THE FOLLOWING ROADS:
- CHICKEN RD: FROM LEFT OF STA. 902+00+/- -L- TO THE EXISTING CANOPY LANE INTERSECTION. SEE TMP-17 FOR ADDITIONAL GUIDANCE.
- CHICKEN RD: FROM THE EXISTING CANOPY LANE INTERSECTION TO THE EXISTING REILLY ROAD INTERSECTION.

STEP 3: BEGIN CONSTRUCTION ON -L-, -RPA2-, -LPA2-, -RPB2-, -RPC2-, -LPC2-, -RPD2-, -Y1-, -Y1REV-, -Y2- AND -Y2REV- WITHOUT INTERFERING WITH EXISTING TRAFFIC PATTERNS IN THE LOCATIONS SHOWN ON SHEETS TMP-13 THRU TMP-23. BEGIN CONSTRUCTION ON THE PROPOSED TRAFFIC SIGNALS AT THE -Y1-/-RPA2-, -Y1-/-RPD2-, AND THE -Y1-/-Y2- INTERSECTIONS.

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, BEGIN CONSTRUCTION ON -PXDET- AS SHOWN ON SHEET TMP-19.

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, INSTALL TEMPORARY PAVEMENT MARKINGS AND MARKERS ALONG -Y1- IN THE PATTERN AND LOCATIONS SHOWN ON SHEETS TMP-15 THRU TMP-19 AND SHIFT -Y1- TRAFFIC INTO THE PATTERN SHOWN ON SHEETS TMP-15 THRU TMP-19. USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, INSTALL THE WATER FILLED BARRIER ON -Y1- IN THE LOCATIONS SHOWN ON SHEETS TMP-16 AND TMP-17. BEGIN CONSTRUCTION ON PROPOSED -Y1-, -Y1REV- AND -Y1DET- IN THE LOCATIONS SHOWN ON SHEETS TMP-16 THRU TMP-19. USE ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15 AS REQUIRED DURING THE CONSTRUCTION OF -Y1DET- IN THE VICINITY OF STA. 12+00+/- -Y1DET-.

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, BEGIN CONSTRUCTION ON -Y3DET- IN THE LOCATIONS SHOWN ON SHEETS TMP-22 AND TMP-23.

STEP 4: INSTALL TRAFFIC CONTROL DEVICES AND SIGNS FOR THE -Y2- OFF SITE DETOUR AS SHOWN ON SHEET TMP-03A. SEE GENERAL NOTE 'O' FOR COVERING REQUIREMENTS.

INTERMEDIATE CONTRACT TIME: THE CONTRACTOR SHALL COMPLETE THE WORK REQUIRED OF AREA 2, PHASE I, STEP 5 BEGINNING ON A FRIDAY AT 11:00PM AND COMPLETING BY THE FOLLOWING MONDAY AT 5:00AM. (SEE INTERMEDAITE CONTRACT TIME AND LIQUIDATED DAMAGES)

STEP 5: UNCOVER THE OFFSITE DETOUR SIGNS AND DEVICES FOR THE -Y2- OFFSITE DETOUR SHOWN ON SHEET TMP-03A AND PLACE -Y2- TRAFFIC INTO THE OFFSITE DETOUR PATTERN. INSTALL THE PROPOSED 66" RCP UNDER EXISTING -Y2- AT STA. 30+50+/- -Y2-. INSTALL PAINT PAVEMENT MARKINGS AND MARKERS ON -Y2- IN THE LOCATIONS AND PATTERNS SHOWN ON SHEET TMP-21. INSTALL WATER FILLED BARRIER ALONG -Y2- IN THE LOCATIONS SHOWN ON SHEET TMP-21 AND REOPEN -Y2- TO THE TRAFFIC PATTERN SHOWN ON SHEET TMP-21 BY THE COMPLETION TIME ALLOWED IN THE INTERMEDIATE CONTRACT TIME.

STEP 6: BEGIN CONSTRUCTION ON THE PROPOSED -L- BRIDGES OVER -Y2- (MINUS GIRDER INSTALLATION) AS SHOWN ON SHEET TMP-21.

COMPLETE CONSTRUCTION ON -Y1-, -Y1REV- AND -Y1DET- IN THE LOCATIONS SHOWN ON SHEETS TMP-16 THRU TMP-19.

STEP 7: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEETS 1 AND 3 OF 15, INSTALL TEMPORARY PAVEMENT MARKINGS AND MARKERS ALONG -Y1- IN THE PATTERN AND LOCATIONS SHOWN ON SHEETS TMP-27 THRU TMP-31 AND SHIFT -Y1- TRAFFIC INTO THE PATTERN SHOWN ON SHEETS TMP-27 THRU TMP-31.

BEGIN CONSTRUCTION ON THE PROPOSED -Y1- BRIDGE OVER -L- AND THE ROADWAY SECTIONS OF -L-, -Y1-, -Y1REV- AND -RPB2- SHOWN ON SHEETS TMP-28 THRU TMP-30.

COMPLETE CONSTRUCTION ON -Y3DET- IN THE LOCATIONS SHOWN ON SHEETS TMP-22 AND TMP-23.

STEP 8: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEETS 1 AND 3 OF 15, INSTALL TEMPORARY PAVEMENT MARKINGS AND MARKERS ALONG -Y3DET- IN THE PATTERN AND LOCATIONS SHOWN ON SHEETS TMP-34 AND TMP-35 AND SHIFT -Y3DET- TRAFFIC INTO THE PATTERN SHOWN ON SHEETS TMP-34 AND TMP-35.

BEGIN CONSTRUCTION ON THE PROPOSED -Y3- BRIDGE OVER -L- AND THE ROADWAY SECTIONS OF -L-, AND -Y3- SHOWN ON SHEET TMP-35.

COMPLETE CONSTRUCTION ON -PXDET- IN THE LOCATIONS SHOWN ON SHEET TMP-19.

STEP 9: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, INSTALL TEMPORARY PAVEMENT MARKINGS AND MARKERS ALONG -PXDET- IN THE PATTERN AND LOCATIONS SHOWN ON SHEET TMP-31 AND SHIFT -PXDET- TRAFFIC INTO THE PATTERN SHOWN ON SHEET TMP-31.

BEGIN CONSTRUCTION ON THE PROPOSED -PXROAD- BRIDGE OVER -Y1- AND THE ROADWAY SECTIONS OF -Y1- SHOWN ON SHEET TMP-31.

COMPLETE CONSTRUCTION ON THE PROPOSED -L- BRIDGES OVER -Y2- (MINUS GIRDER INSTALLATION) AS SHOWN ON SHEET TMP-21. COMPLETE CONSTRUCTION ON PROPOSED RIGHT SIDE OF -Y2REV- FROM STA. 30+00+/- -Y2REV- TO THE EXISTING CANOPY LANE INNTERSECTION AS SHOWN ON SHEETS TMP-20 AND TMP-21. INSTALL TRAFFIC CONTROL DEVICES AND SIGNS FOR THE -Y2- OFF SITE DETOUR AS SHOWN ON SHEET TMP-03A. SEE GENERAL NOTE 'O' FOR COVERING REQUIREMENTS.

INTERMEDIATE CONTRACT TIME: THE CONTRACTOR SHALL COMPLETE THE WORK REQUIRED OF AREA 2, PHASE I, STEP 10 BEGINNING ON A FRIDAY AT 11:00PM AND COMPLETING BY THE FOLLOWING MONDAY AT 5:00AM. (SEE INTERMEDAITE CONTRACT TIME AND LIQUIDATED DAMAGES)

STEP 10: UNCOVER THE OFFSITE DETOUR SIGNS AND DEVICES FOR THE -Y2- OFFSITE DETOUR SHOWN ON SHEET TMP-03A AND PLACE -Y2- TRAFFIC INTO THE OFFSITE DETOUR PATTERN. INSTALL THE GIRDERS FOR THE -L- BRIDGES OVER -Y2-. INSTALL TEMPORARY PAVEMENT MARKINGS, MARKERS, AND WATER FILLED BARRIER ALONG THE RIGHT SIDE OF PROPOSED -Y2REV- FROM STA. 30+00+/- -Y2REV- TO THE EXISTING CANOPY LANE INTERSECTION AS SHOWN ON SHEETS TMP-32 AND TMP-33. REOPEN -Y2- TO THE TRAFFIC PATTERN SHOWN ON SHEETS TMP-32 AND TMP-33 BY THE COMPLETION TIME ALLOWED IN THE INTERMEDIATE CONTRACT TIME.

STEP 11: BEGIN CONSTRUCTION ON THE PROPOSED LEFT SIDE OF -Y2REV- FROM STA. 29+35+/- -Y2REV- TO STA. 41+45+/- -Y2REV- AS SHOWN ON SHEETS TMP-32 AND TMP-33.

PHASE II

STEP 1: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEETS 1 AND 3 OF 15, INSTALL TEMPORARY PAVEMENT MARKINGS AND MARKERS ALONG EXISTING REILLY ROAD IN THE PATTERN AND LOCATIONS SHOWN ON SHEETS TMP-38 THRU TMP-39 AND SHIFT EXISTING REILLY ROAD TRAFFIC INTO THE PATTERN SHOWN ON SHEETS TMP-38 THRU TMP-39.

CONSTRUCT THE PROPOSED RIGHT SIDE OF -Y2- IN THE LOCATIONS SHOWN ON SHEET TMP-38.

COMPLETE CONSTRUCTION ON THE FOLLOWING:
- PROPOSED -Y1- BRIDGE OVER -L-
- PROPOSED -Y1- AND -Y1REV- FROM STA. 23+60+/- -Y1- TO STA. 67+00+/-.
- PROPOSED TRAFFIC SIGNAL AT THE -Y1-/-Y2- INTERSECTION.

INSTALL TRAFFIC CONTROL DEVICES AND SIGNS FOR THE CANOPY LANE OFF SITE DETOUR AS SHOWN ON SHEET TMP-03B. SEE GENERAL NOTE 'O' FOR COVERING REQUIREMENTS.

WITHOUT INTERFERING WITH EXISTING TRAFFIC PATTERNS INSTALL AS MUCH OF THE PROPOSED TEMPORARY PAVEMENT MARKINGS AND MARKERS ALONG -Y1- AND -Y1REV- SHOWN ON SHEETS TMP-41 THRU TMP-45 FOR THE UPCOMING PHASE IIA TRAFFIC SHIFT SHOWN ON SHEETS TMP-41 THRU TMP-45.

INTERMEDIATE CONTRACT TIME: THE CONTRACTOR SHALL COMPLETE THE WORK REQUIRED OF AREA 2, PHASE II, STEP 2 THROUGH STEP 5 IN 17 CONSECUTIVE DAYS BEGINNING ON A FRIDAY AT 9:00PM AND COMPLETING BY THE FOLLOWING MONDAY (17 DAYS LATER) AT 5:00AM. (SEE INTERMEDAITE CONTRACT TIME AND LIQUIDATED DAMAGES)

STEP 2: UNCOVER THE OFFSITE DETOUR SIGNING FOR CANOPY LANE SHOWN ON SHEET TMP-03B AND CLOSE EXISTING CANOPY LANE AT STA. 44+50+/- AND AT THE EXISTING REILLY ROAD/CANOPY LANE INTERSECTION USING TYPE III BARRICADES AND DRUMS. USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEETS 1 AND 3 OF 15, INSTALL THE REMAINING PAVEMENT MARKINGS AND MARKERS WITHIN THE TIE IN AREAS OF -Y1- AND -PXDET- AS SHOWN ON SHEETS TMP-42 THRU TMP-45 AND PLACE -Y1- TRAFFIC IN THE PATTERN SHOWN ON SHEETS TMP-41 THRU TMP-45.

STEP 3: CONSTRUCT PROPOSED -PXROAD- FROM STA. 25+00+/- TO STA. 26+70+/- AS SHOWN ON SHEET TMP-45.

STEP 4: WITHOUT INTERFERING WITH EXISTING TRAFFIC PATTERNS INSTALL AS MUCH OF THE PROPOSED TEMPORARY PAVEMENT MARKINGS AND MARKERS ALONG -Y1-, -Y2-, AND -PXROAD- SHOWN ON SHEETS TMP-46 THRU TMP-49 FOR THE UPCOMING PHASE IIB TRAFFIC SHIFT SHOWN ON SHEETS TMP-46 THRU TMP-49.

ACTIVATE THE PROPOSED TRAFFIC SIGNAL AT THE PROPOSED -Y1-/-Y2- INTERSECTION.

STEP 5: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEETS 1 AND 3 OF 15, INSTALL TEMPORARY PAVEMENT MARKINGS AND MARKERS ALONG -Y1-, -Y2-, AND -PXROAD- IN THE PATTERN AND LOCATIONS SHOWN ON SHEETS TMP-47 THRU TMP-49 AND SHIFT -Y1-, -Y2-, AND -PXROAD- TRAFFIC INTO THE PATTERN SHOWN ON SHEETS TMP-47 THRU TMP-49.

STEP 6: COMPLETE CONSTRUCTION ON -Y1- IN THE LOCATIONS SHOWN ON SHEET TMP-47.

STEP 7: REMOVE EXISTING CANOPY LANE, -Y1DET-, EXISTING REILLY ROAD, AND -PXDET- IN THE LOCATIONS SHOWN ON SHEETS TMP-51, TMP-52, TMP-53, AND TMP-55.

STEP 8: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, INSTALL TEMPORARY PAVEMENT MARKINGS AND MARKERS ALONG -Y1- IN THE PATTERN AND LOCATIONS SHOWN ON SHEETS TMP-52 AND TMP-53 AND SHIFT -Y1- TRAFFIC INTO THE PATTERN SHOWN ON SHEETS TMP-52 AND TMP-53.

CONSTRUCT THE REMAINING SECTIONS OF -Y2REV-, -RPA2-, -LPA2-, -L-, AND -RPD2- AS SHOWN ON SHEETS TMP-51, TMP-53, TMP-54, AND TMP-55.

PHASE III

STEP 1: COMPLETE REMAINING CONSTRUCTION ON ALL ROADWAYS IN AREA 2. USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, AS REQUIRED, PLACE THE FINAL LAYER OF SURFACE COURSE, FINAL PAVEMENT MARKINGS AND MARKERS, AND PERMANENT SIGNING ON ALL ROADWAYS WITHIN AREA 2 AS SHOWN IN THE PAVEMENT MARKING AND SIGNING PLANS. COORDINATE ROADWAY OPENINGS WITH OTHER AREAS IN THE PROJECT LIMITS AND REMOVE ALL TRAFFIC CONTROL DEVICES UPON COMPLETION OF ROADWAY OPENINGS.

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APPROVED: Tim Arey DATE: 05/04/14

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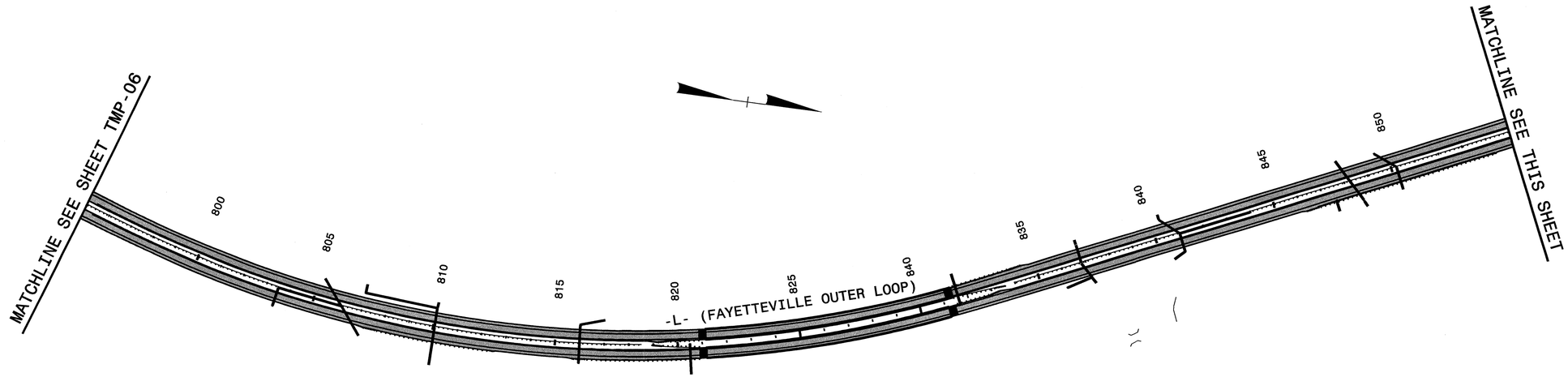
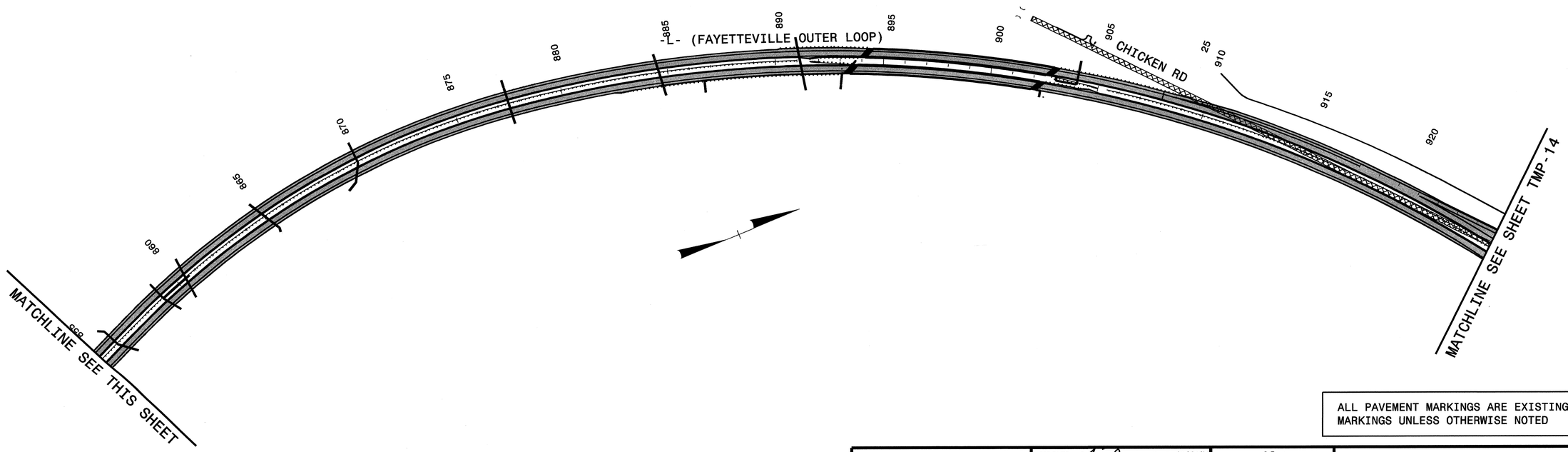
DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2 WRITTEN PHASING

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-13





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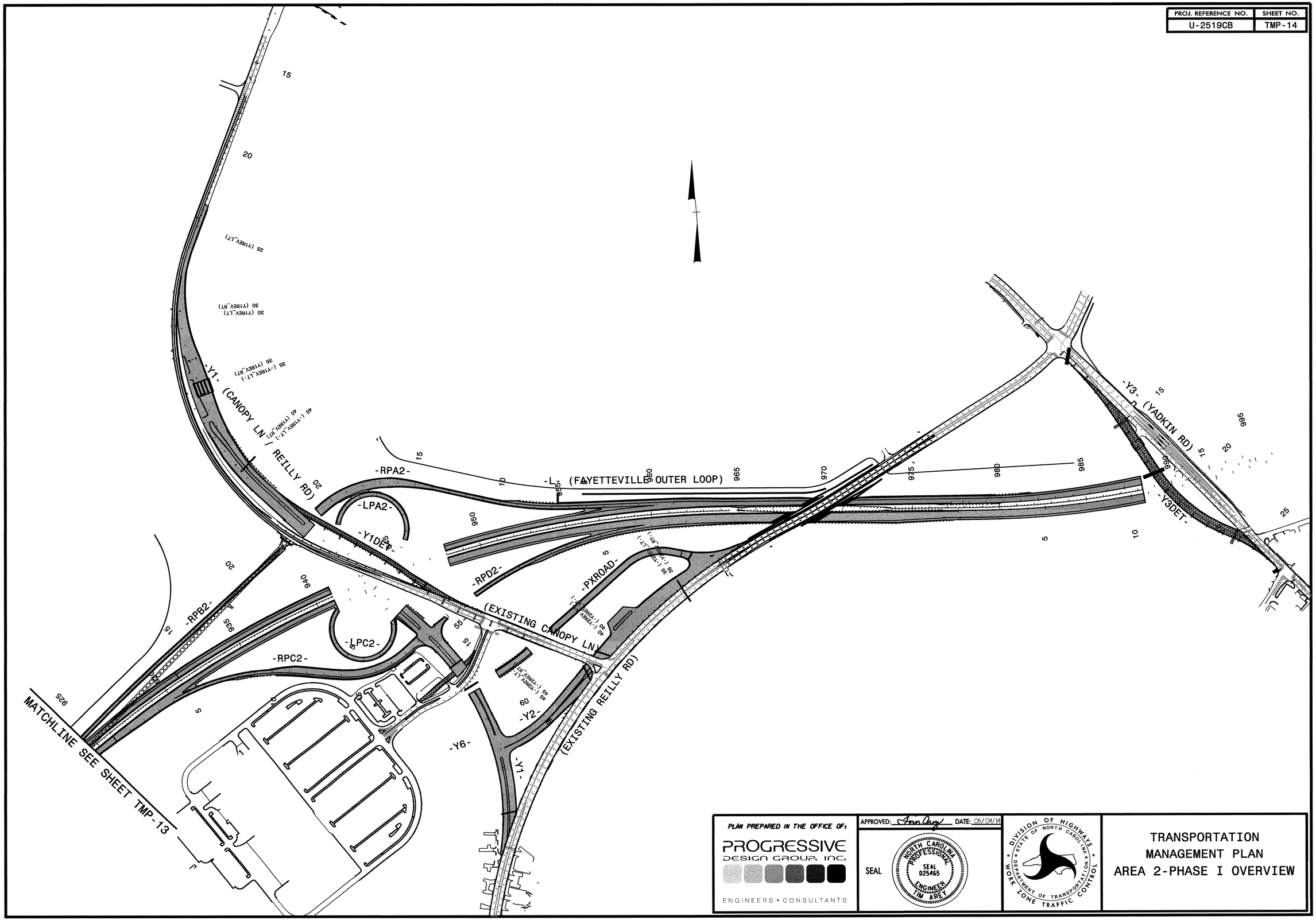
TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE I OVERVIEW

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-14



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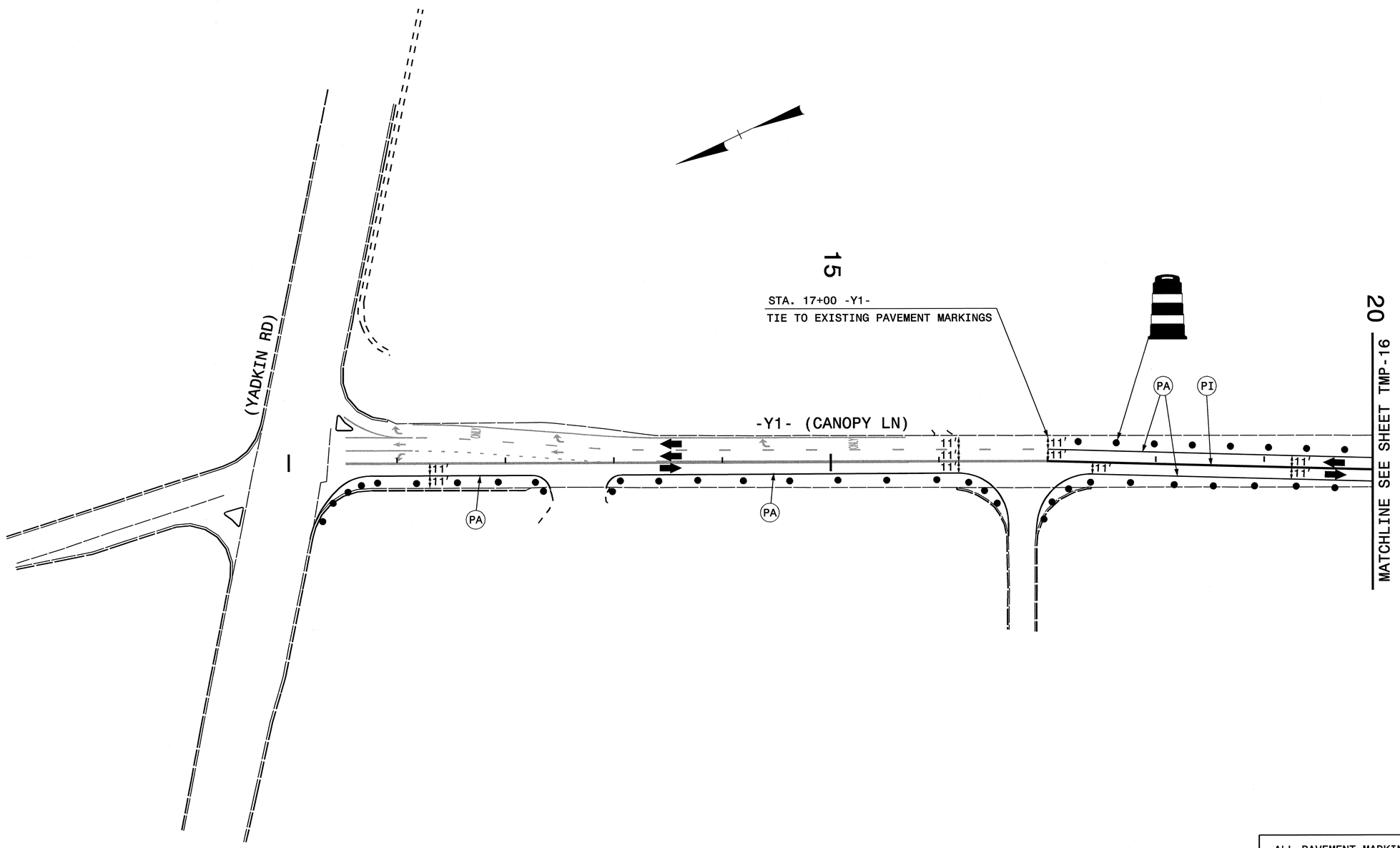
TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE I OVERVIEW

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-15



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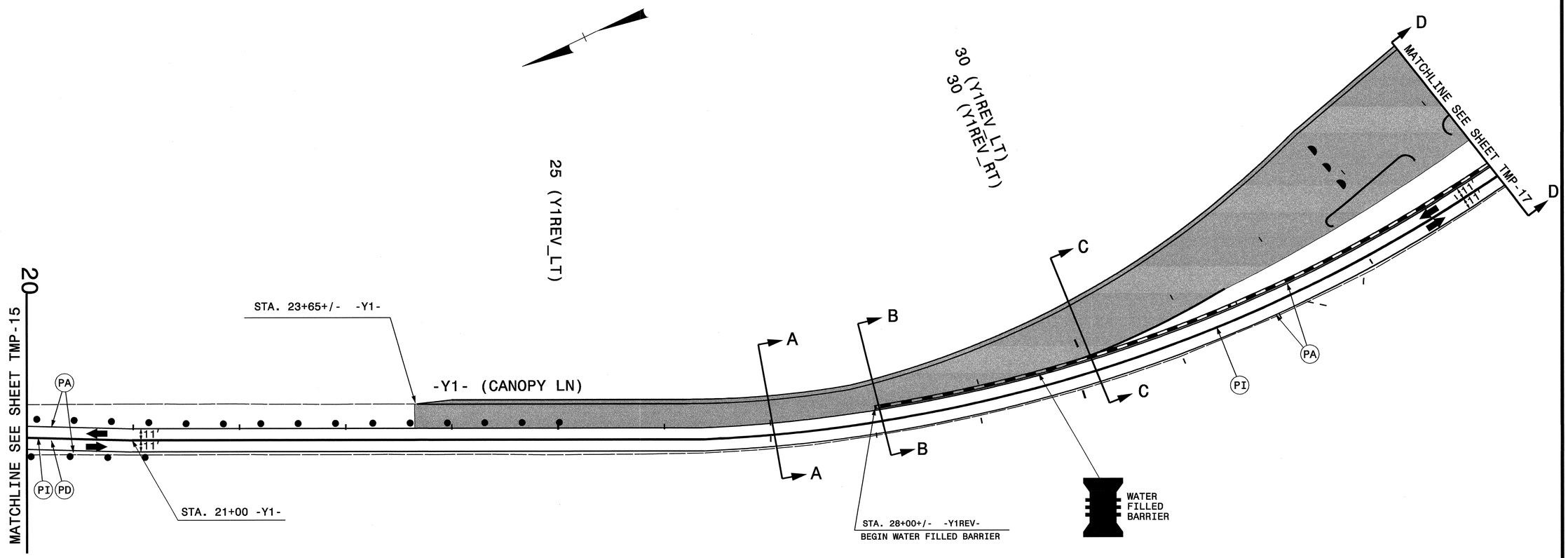
TRANSPORTATION MANAGEMENT PLAN

AREA 2-PHASE I DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-16



NOTE:
SEE SHEET TMP-24 FOR CROSS SECTIONS.

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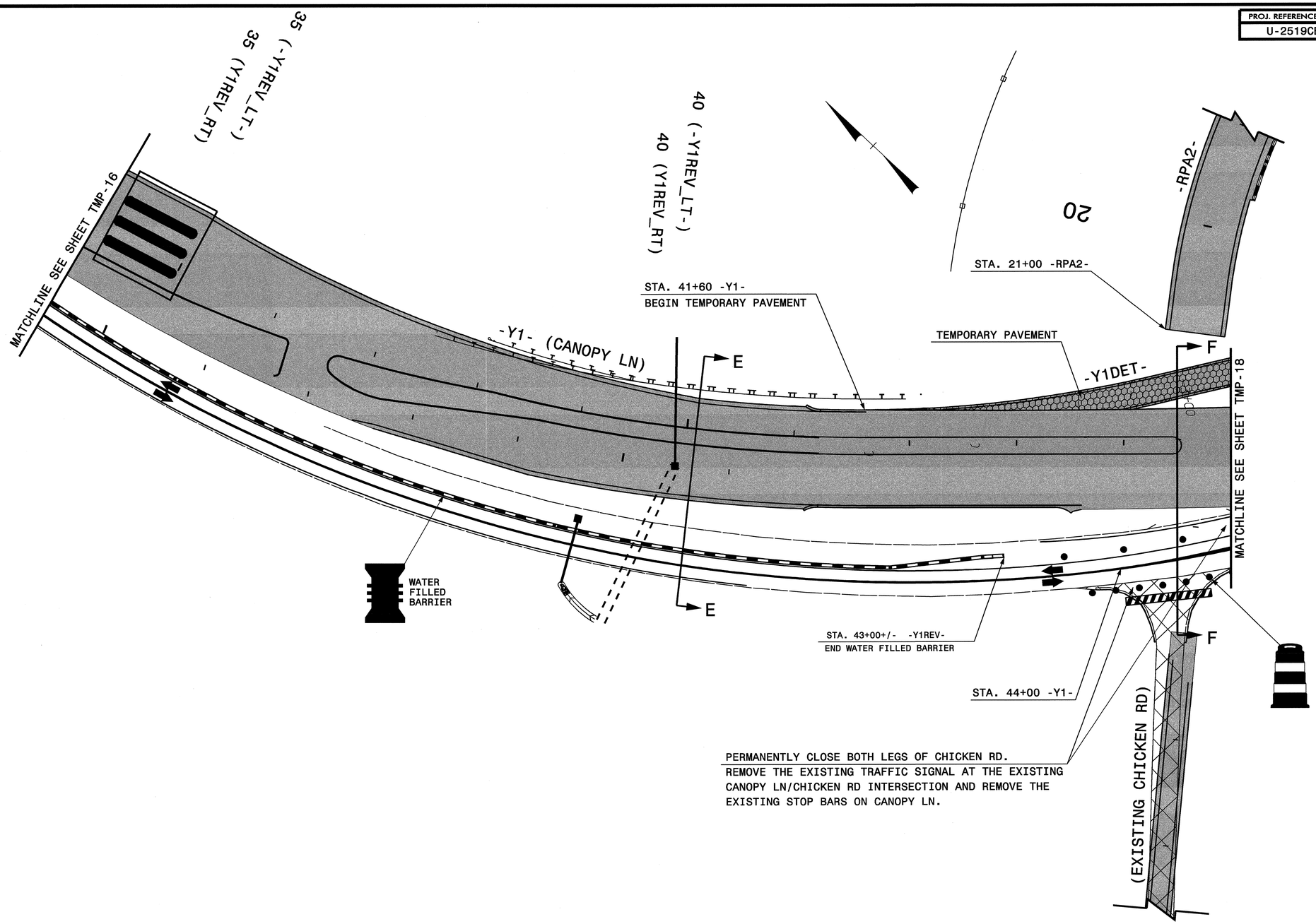
TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE I DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-17



NOTE:
SEE SHEET TMP-25 FOR CROSS SECTIONS.

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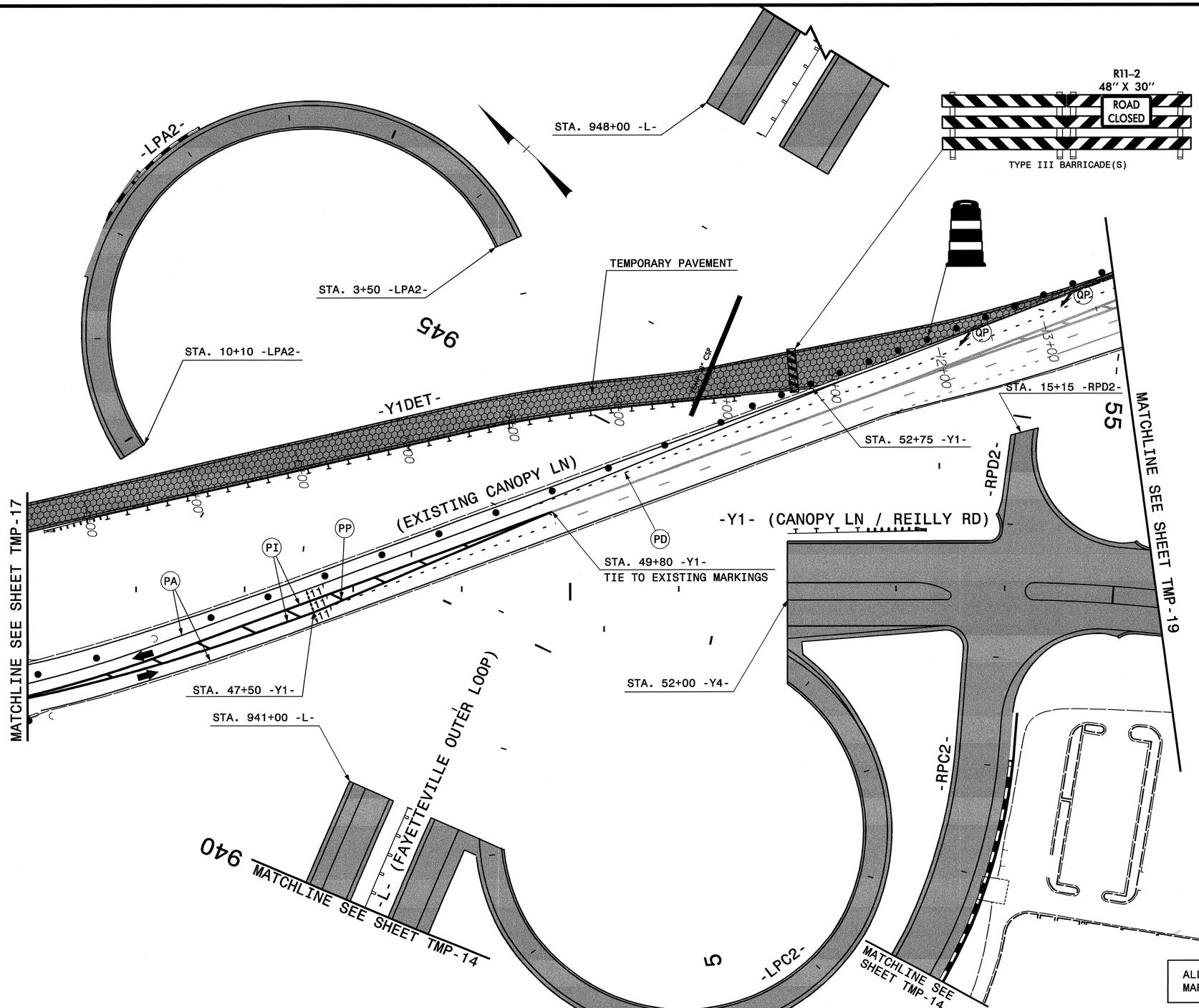
TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE I DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-18



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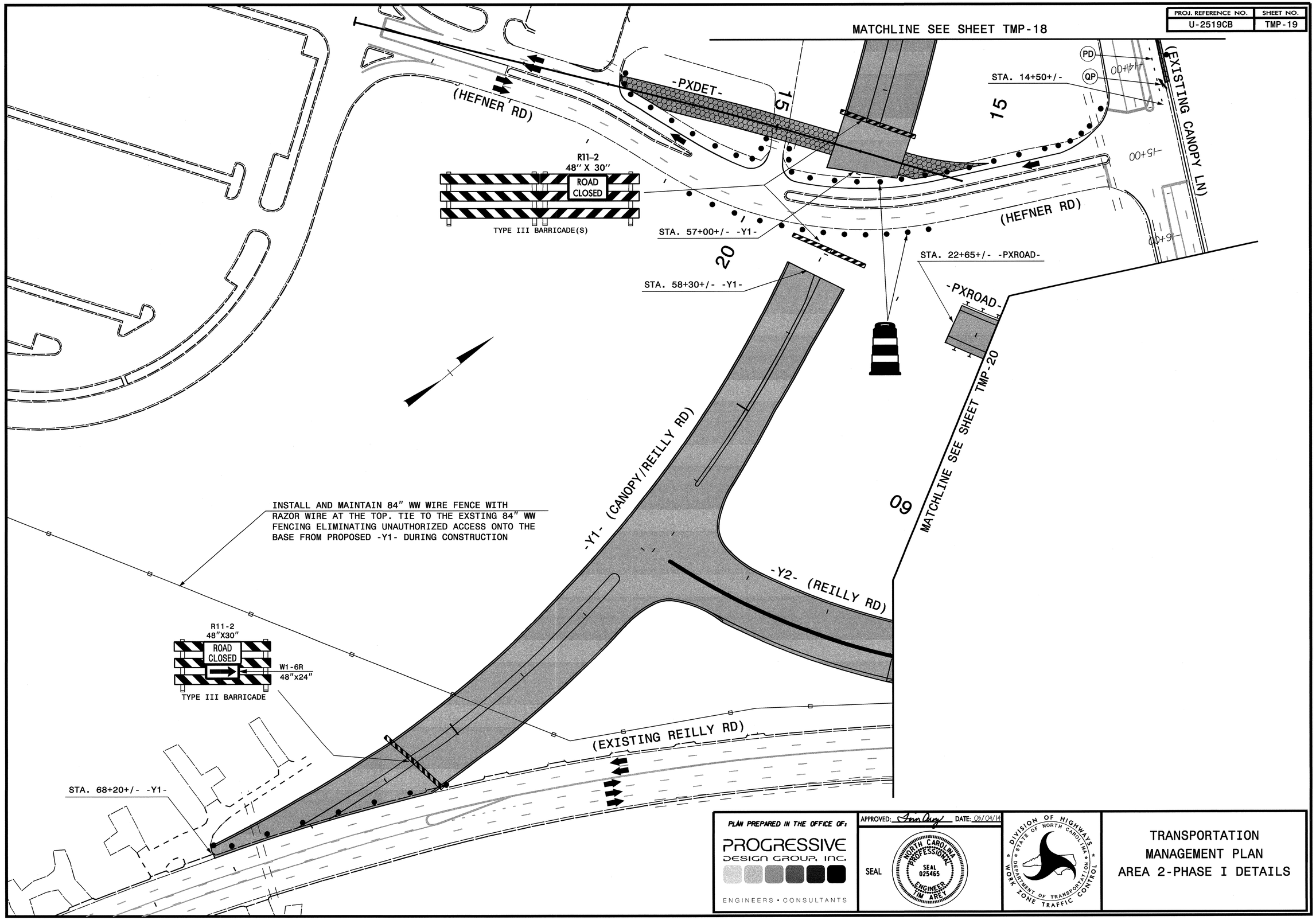
AREA 2-PHASE I DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-19



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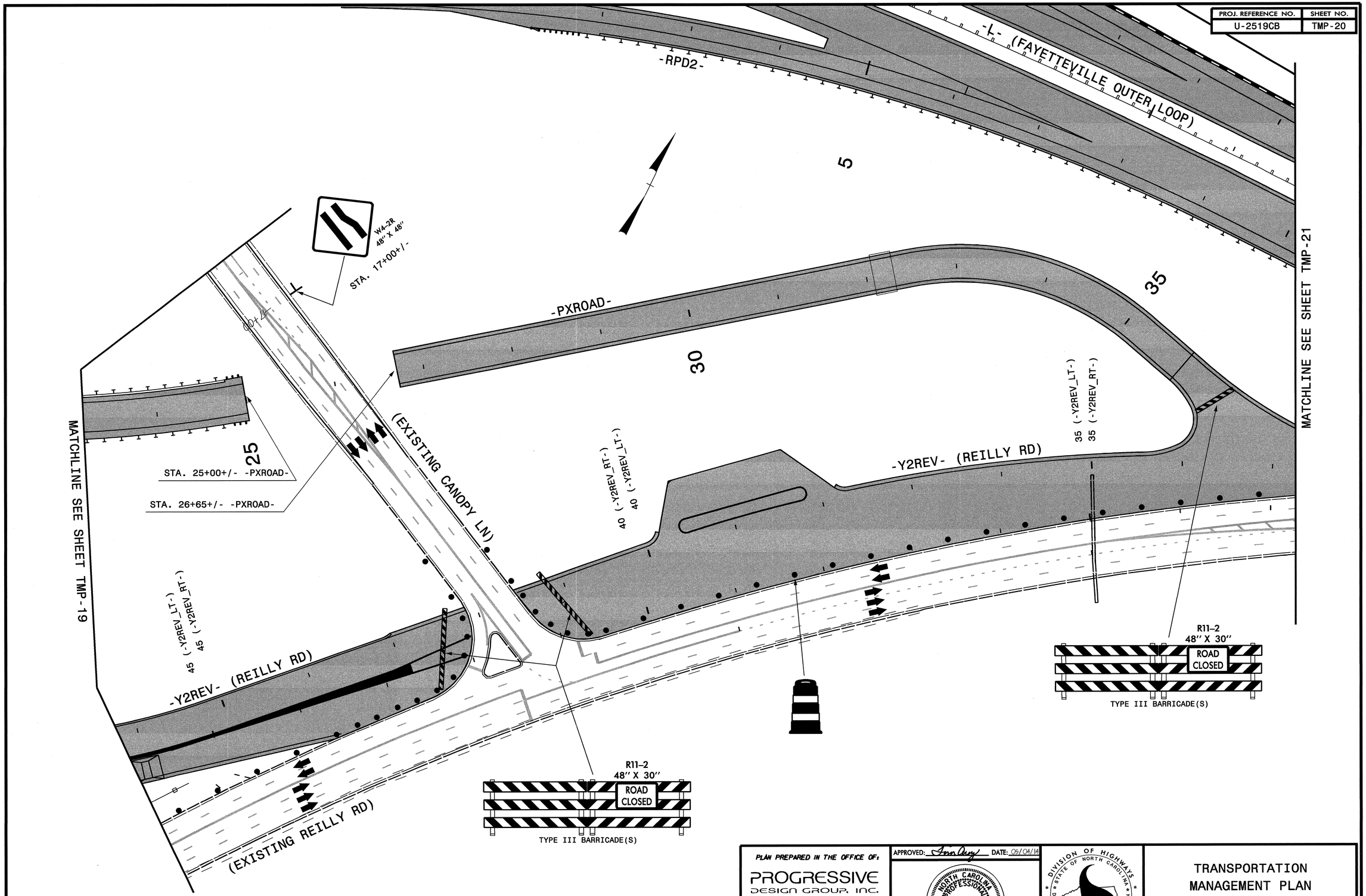
AREA 2-PHASE I DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-20



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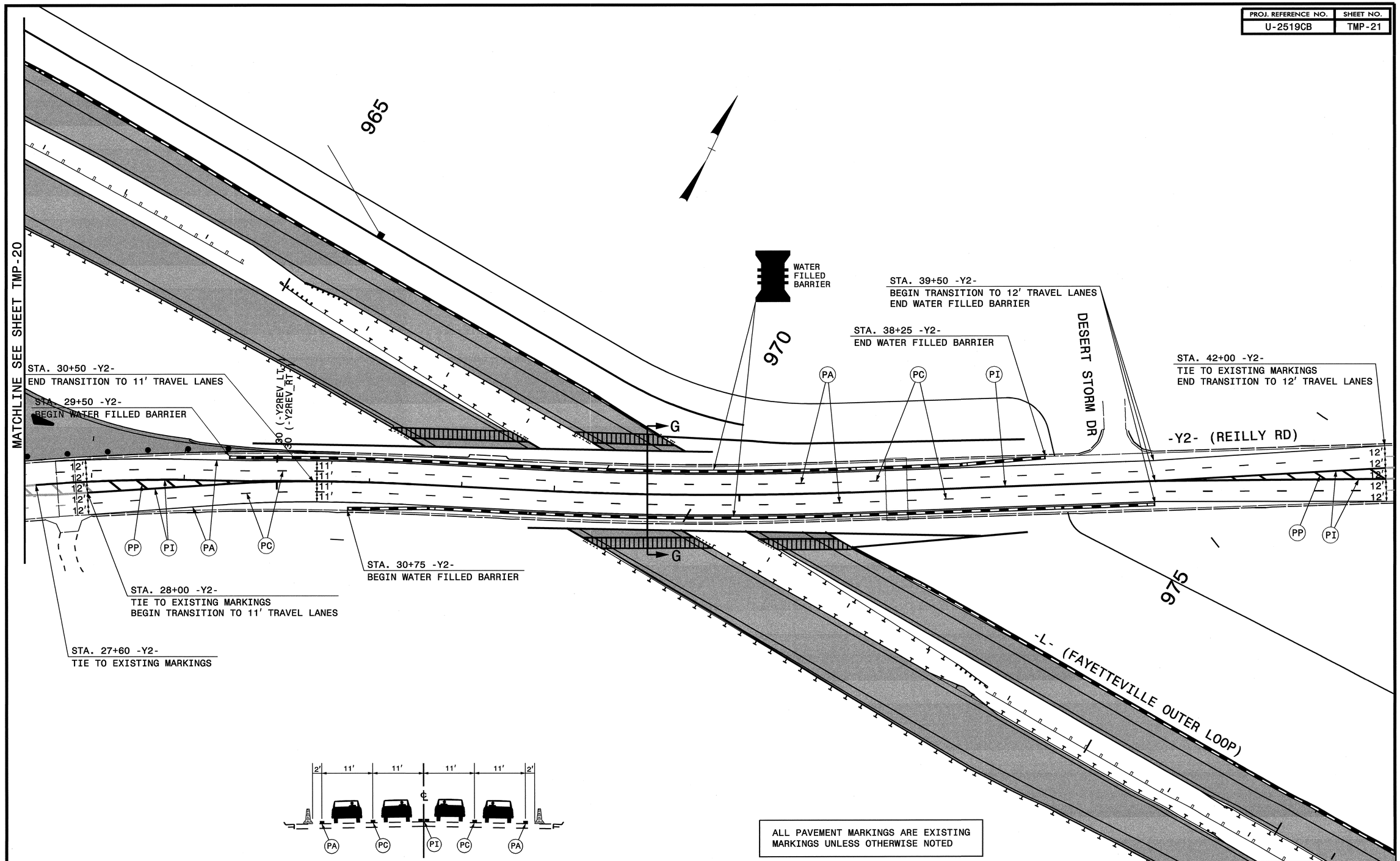
TRANSPORTATION MANAGEMENT PLAN
AREA 2 PHASE I DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-21



STA. 34+00 +/- -Y2-
SECTION G-G

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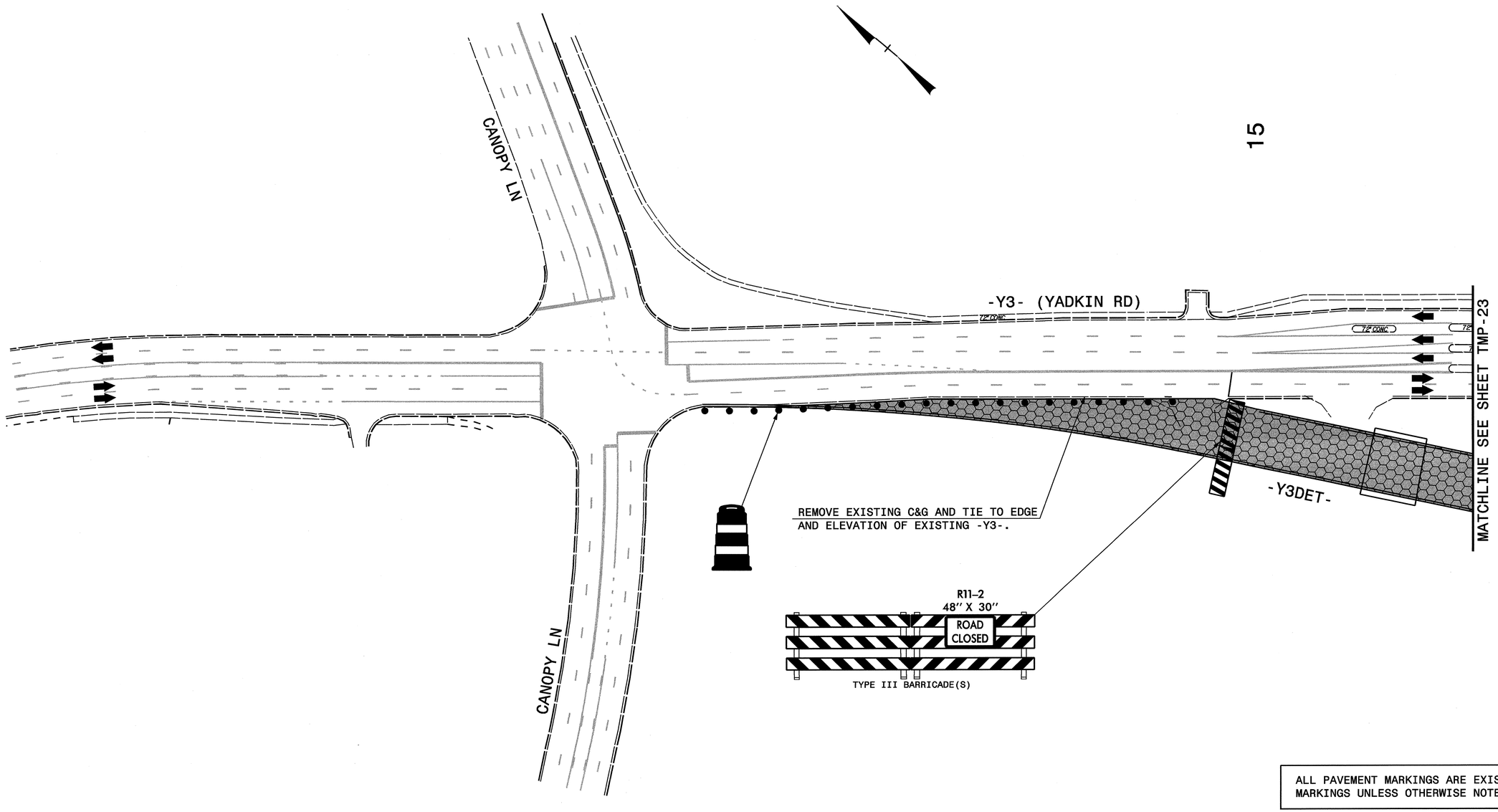
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE I DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-22



15

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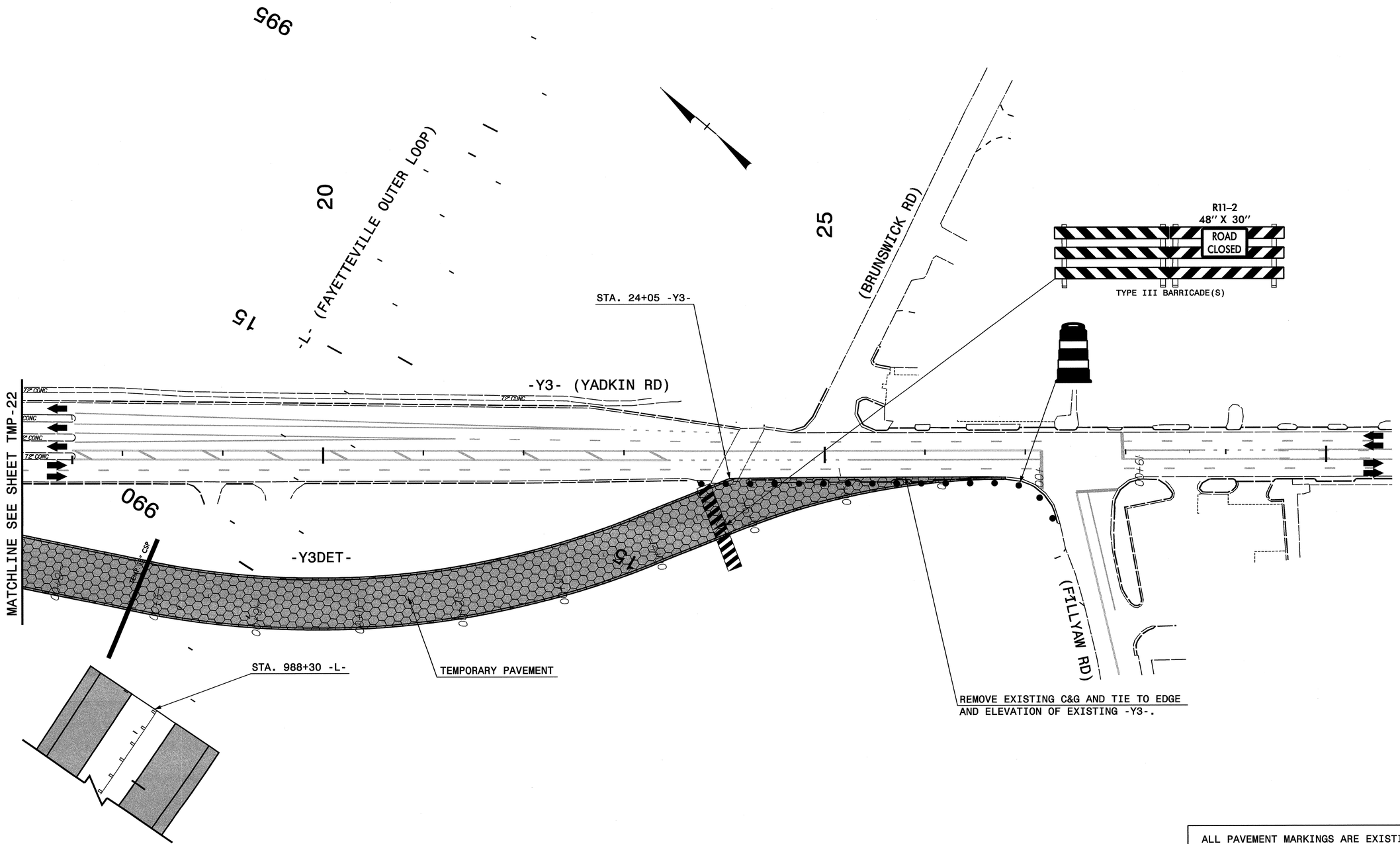
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER JIM AREY

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE I DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-23



ALL PAVEMENT MARKINGS ARE EXISTING MARKINGS UNLESS OTHERWISE NOTED

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: Tim Arey DATE: 06/04/14

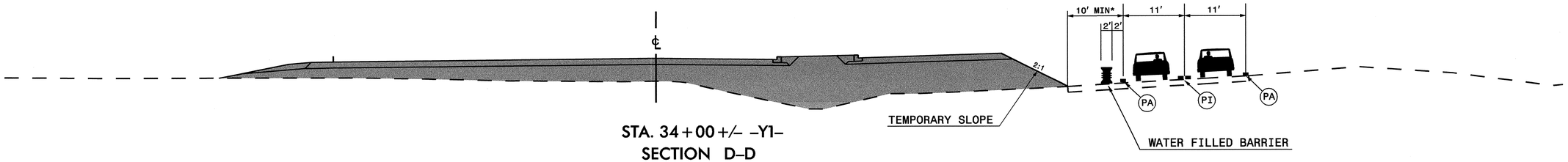
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

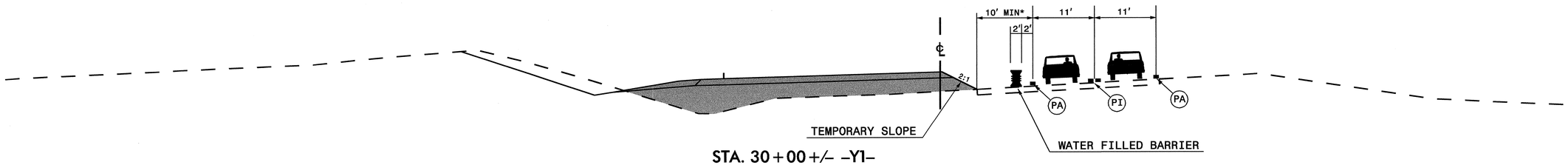
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE I DETAILS

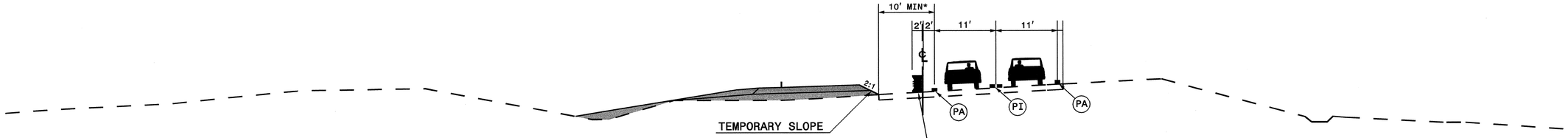
PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-24



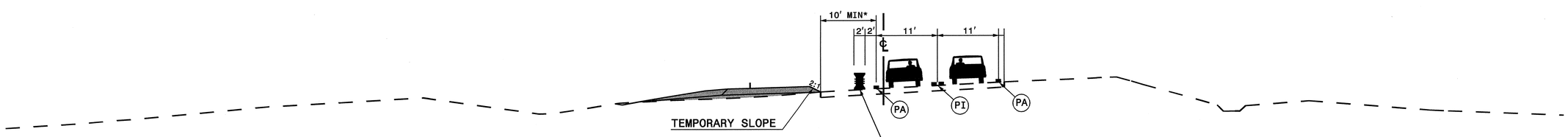
STA. 34+00+/- -Y1-
SECTION D-D



STA. 30+00+/- -Y1-
SECTION C-C



STA. 28+00+/- -Y1-
SECTION B-B



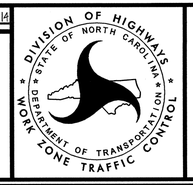
STA. 27+00+/- -Y1-
SECTION A-A

* PROVIDE 10' MINIMUM OFFSET TO CONTAIN STORMWATER SPREAD OUTSIDE OF TRAVEL LANE.

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

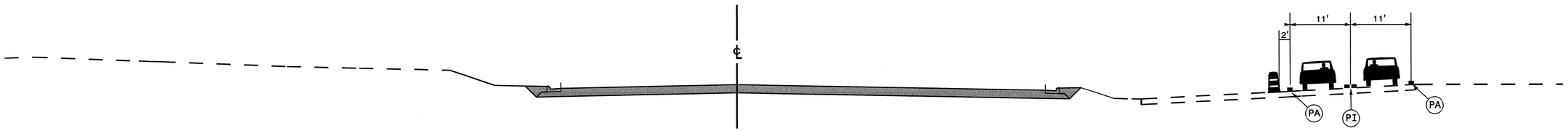
APPROVED: Tim Arey DATE: 03/04/14

SEAL

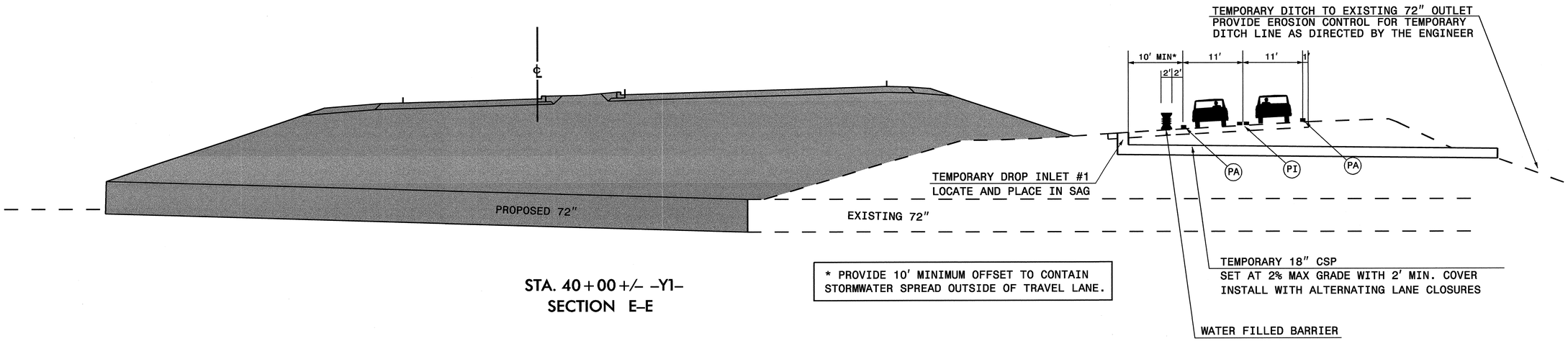


TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE I
CROSS SECTIONS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-25



STA. 44+50 +/- -Y1-
SECTION F-F



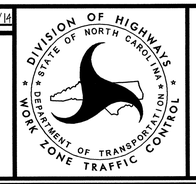
STA. 40+00 +/- -Y1-
SECTION E-E

* PROVIDE 10' MINIMUM OFFSET TO CONTAIN STORMWATER SPREAD OUTSIDE OF TRAVEL LANE.

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

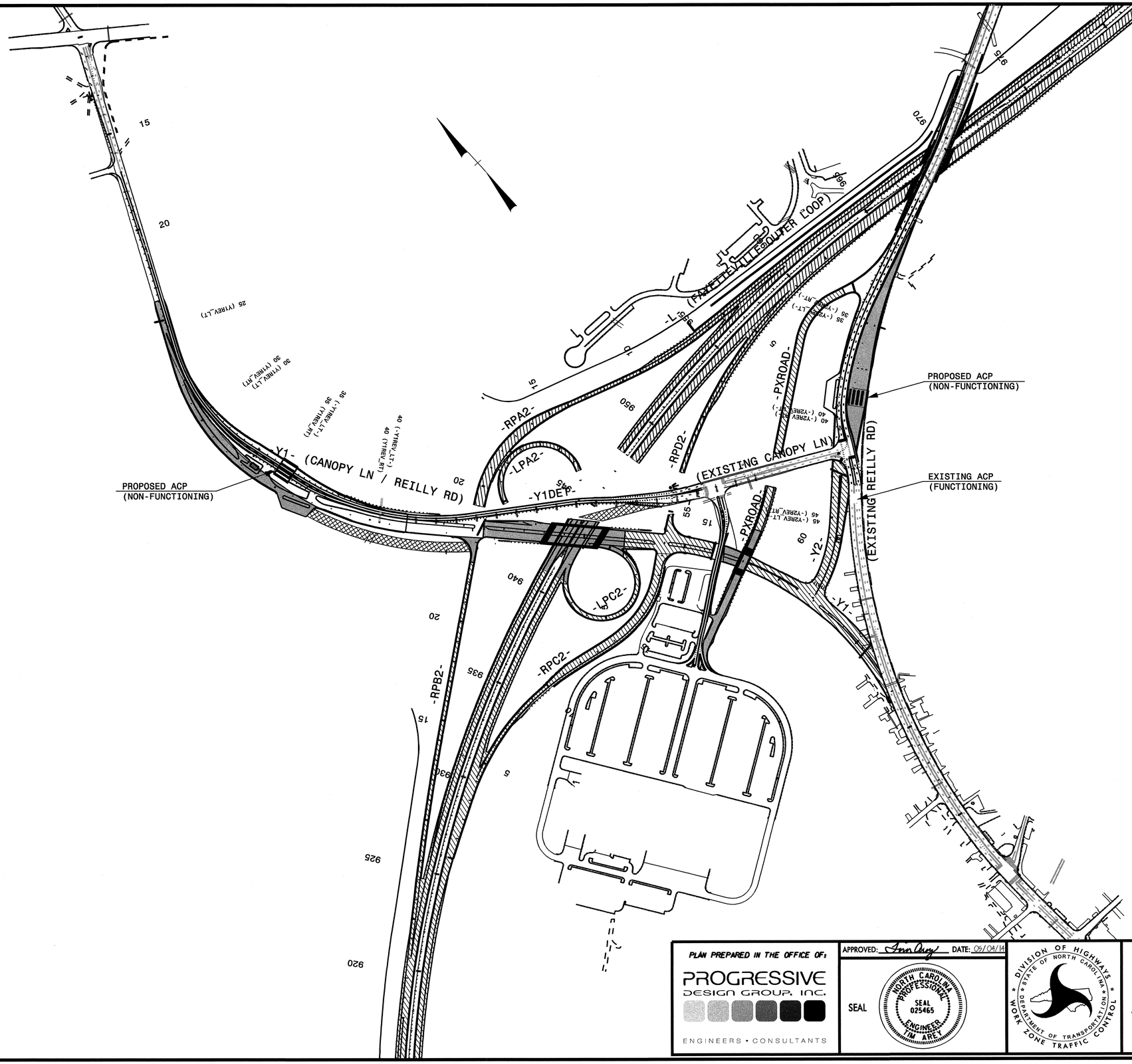
APPROVED: Tim Arey DATE: 05/04/14

SEAL



TRANSPORTATION
MANAGEMENT PLAN
AREA 2-PHASE I
CROSS SECTIONS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-26



PLAN PREPARED IN THE OFFICE OF:

PROGRESSIVE DESIGN GROUP, INC.

ENGINEERS • CONSULTANTS

APPROVED: Tim Arey DATE: 06/04/14

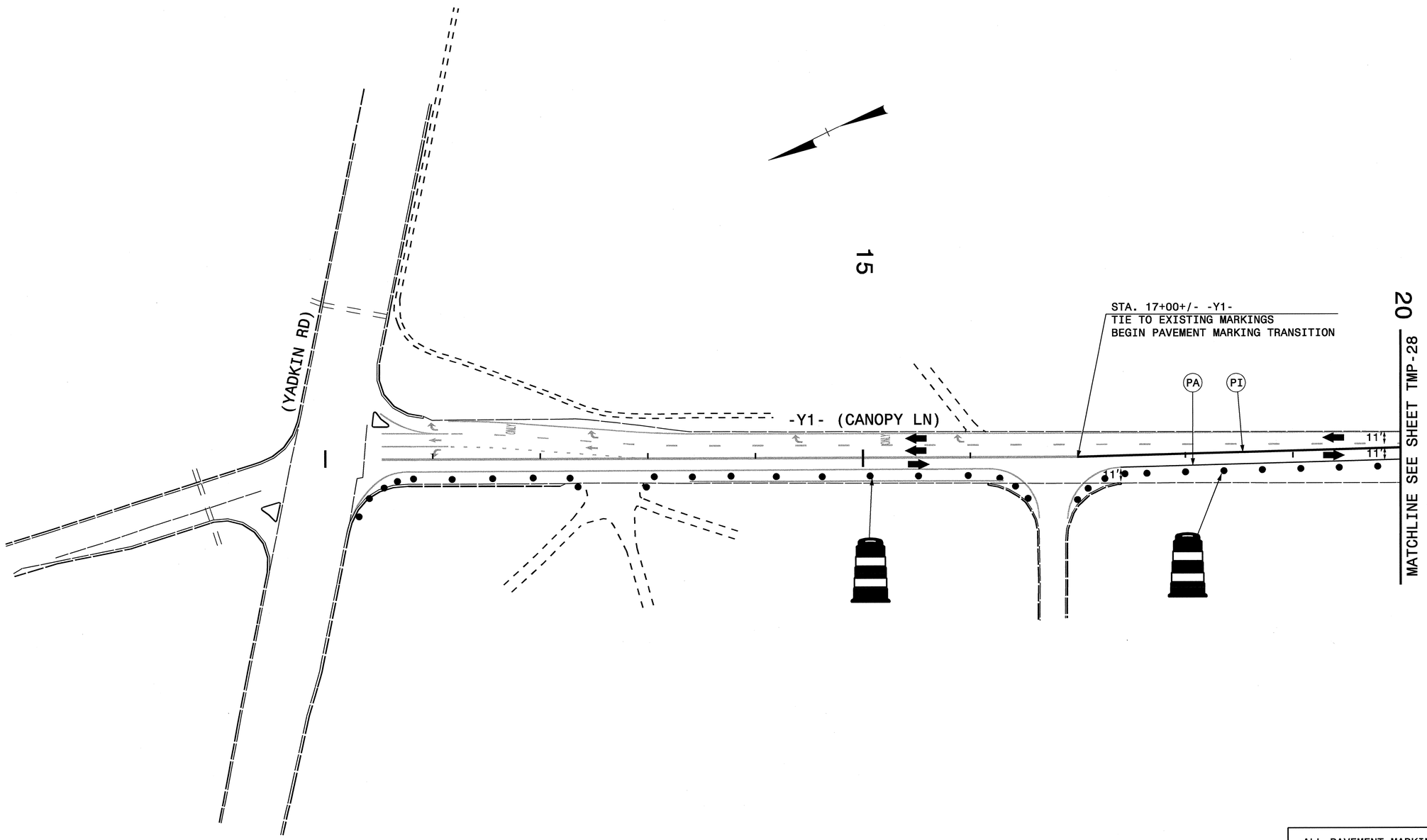
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IA OVERVIEW

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-27



ALL PAVEMENT MARKINGS ARE EXISTING MARKINGS UNLESS OTHERWISE NOTED

PLAN PREPARED IN THE OFFICE OF:

PROGRESSIVE DESIGN GROUP, INC.

ENGINEERS • CONSULTANTS

APPROVED: Jim Arey DATE: 05/04/14

SEAL

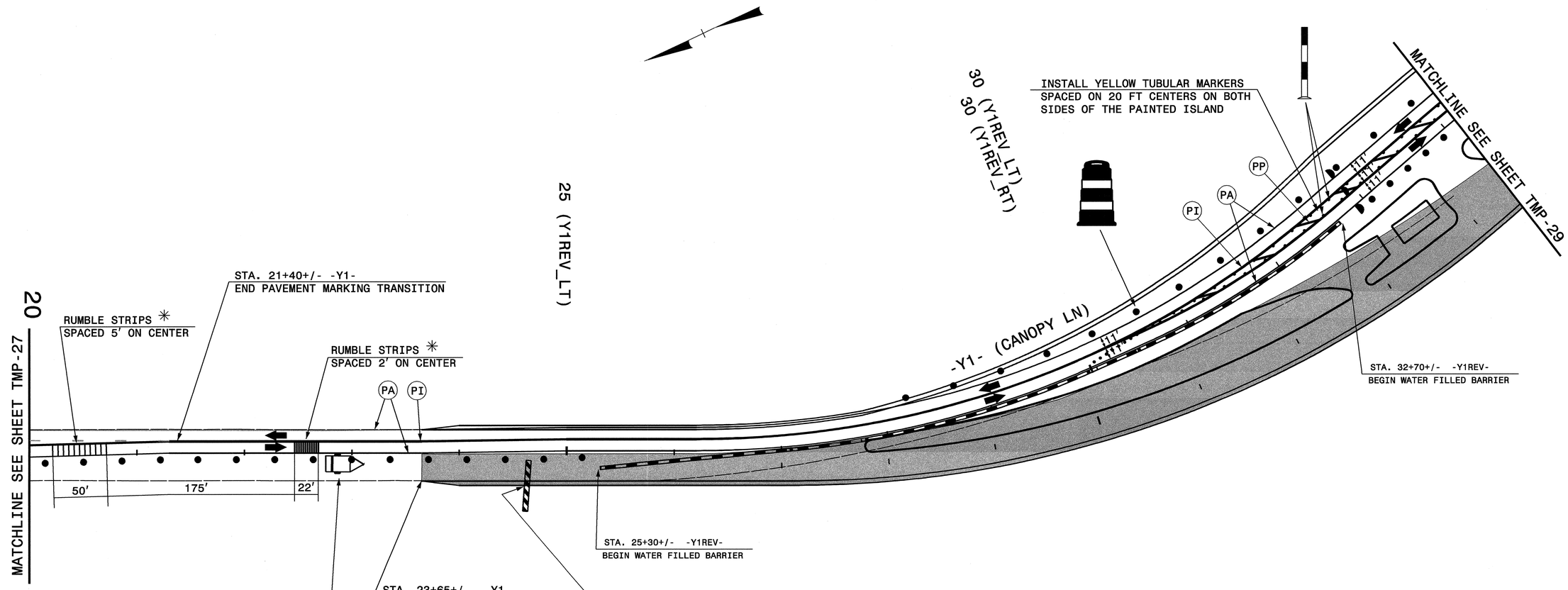
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER JIM AREY

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN

AREA 2-PHASE IA DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-28



✳ ALL RUMBLE STRIPS SHALL BE CENTERED IN THE LANE AND SHALL BE 2 FEET LESS THAN THE WIDTH

RUMBLE STRIPS SHALL BE PLACED USING 4" X 240 MIL WHITE THERMOPLASTIC PAVEMENT MARKING MATERIAL

ALL PAVEMENT MARKINGS ARE EXISTING MARKINGS UNLESS OTHERWISE NOTED

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: DATE: 06/04/14

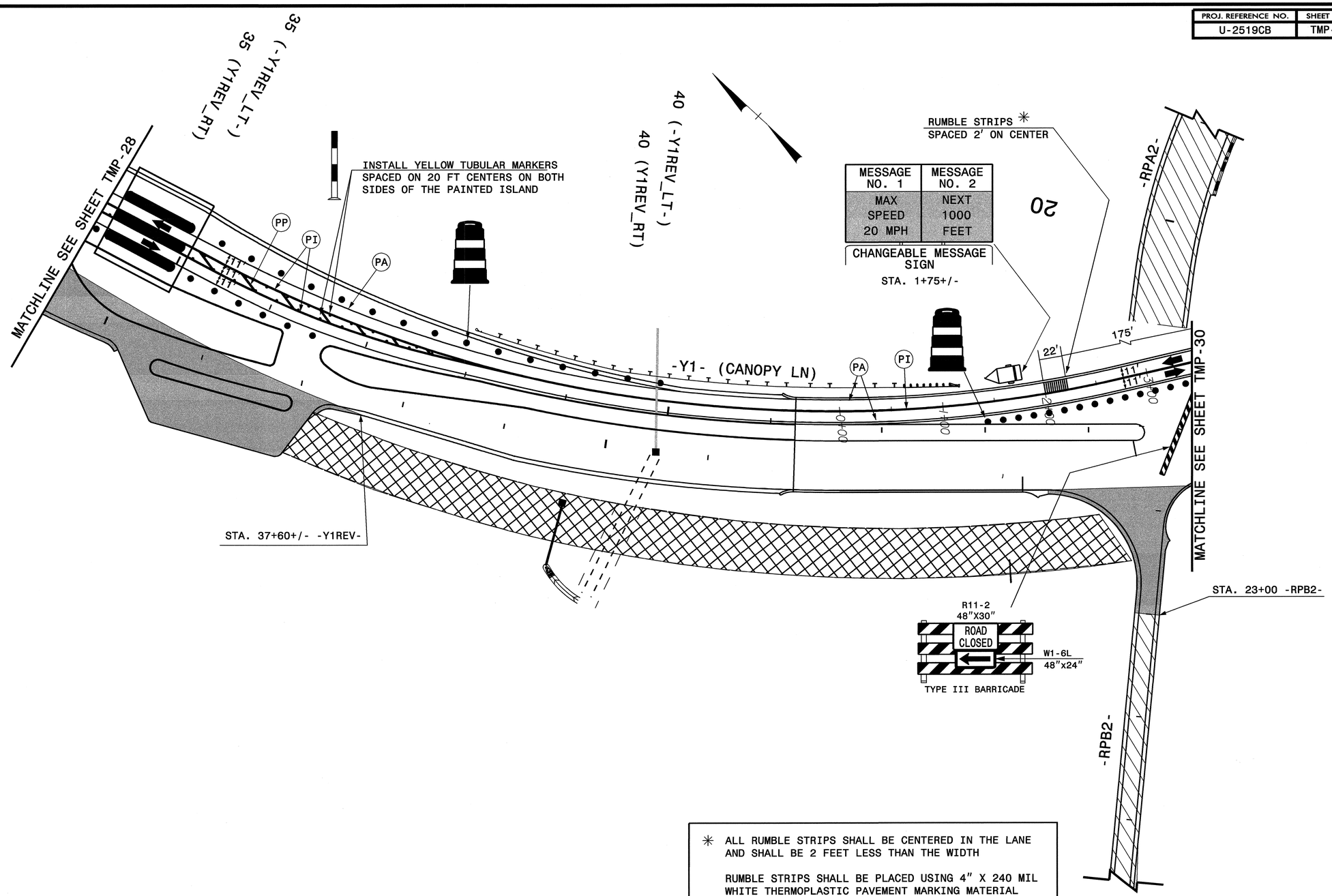
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IA DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-29



✳ ALL RUMBLE STRIPS SHALL BE CENTERED IN THE LANE AND SHALL BE 2 FEET LESS THAN THE WIDTH

RUMBLE STRIPS SHALL BE PLACED USING 4" X 240 MIL WHITE THERMOPLASTIC PAVEMENT MARKING MATERIAL

ALL PAVEMENT MARKINGS ARE EXISTING MARKINGS UNLESS OTHERWISE NOTED

PLAN PREPARED IN THE OFFICE OF:

PROGRESSIVE DESIGN GROUP, INC.

ENGINEERS • CONSULTANTS

APPROVED: Tim Arey DATE: 05/04/14

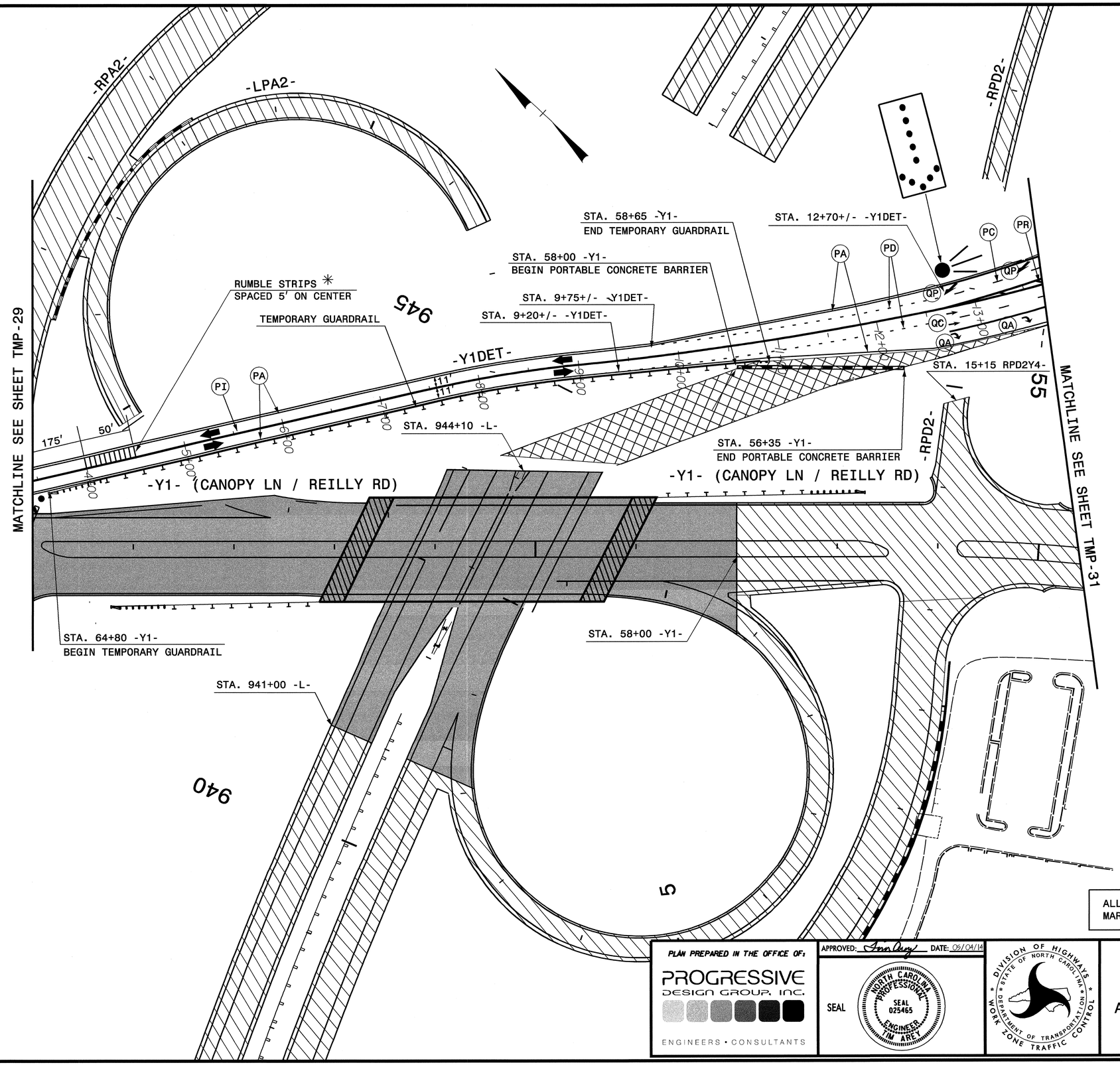
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IA DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-30



ALL PAVEMENT MARKINGS ARE EXISTING MARKINGS UNLESS OTHERWISE NOTED

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: Tim Arey DATE: 06/04/14

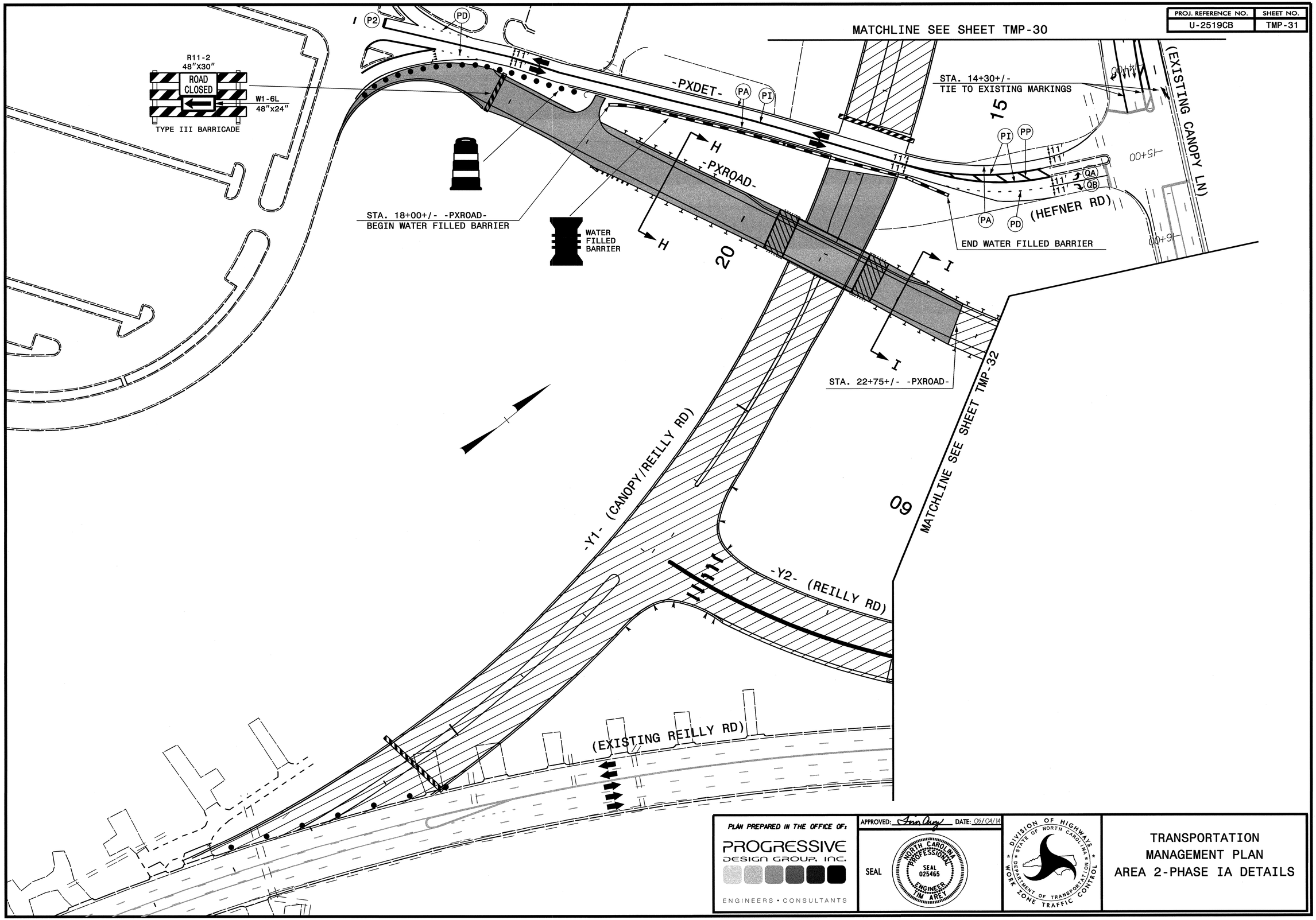
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IA DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-31



PLAN PREPARED IN THE OFFICE OF:

PROGRESSIVE DESIGN GROUP, INC.

ENGINEERS • CONSULTANTS

APPROVED: Tim Arey DATE: 09/04/14

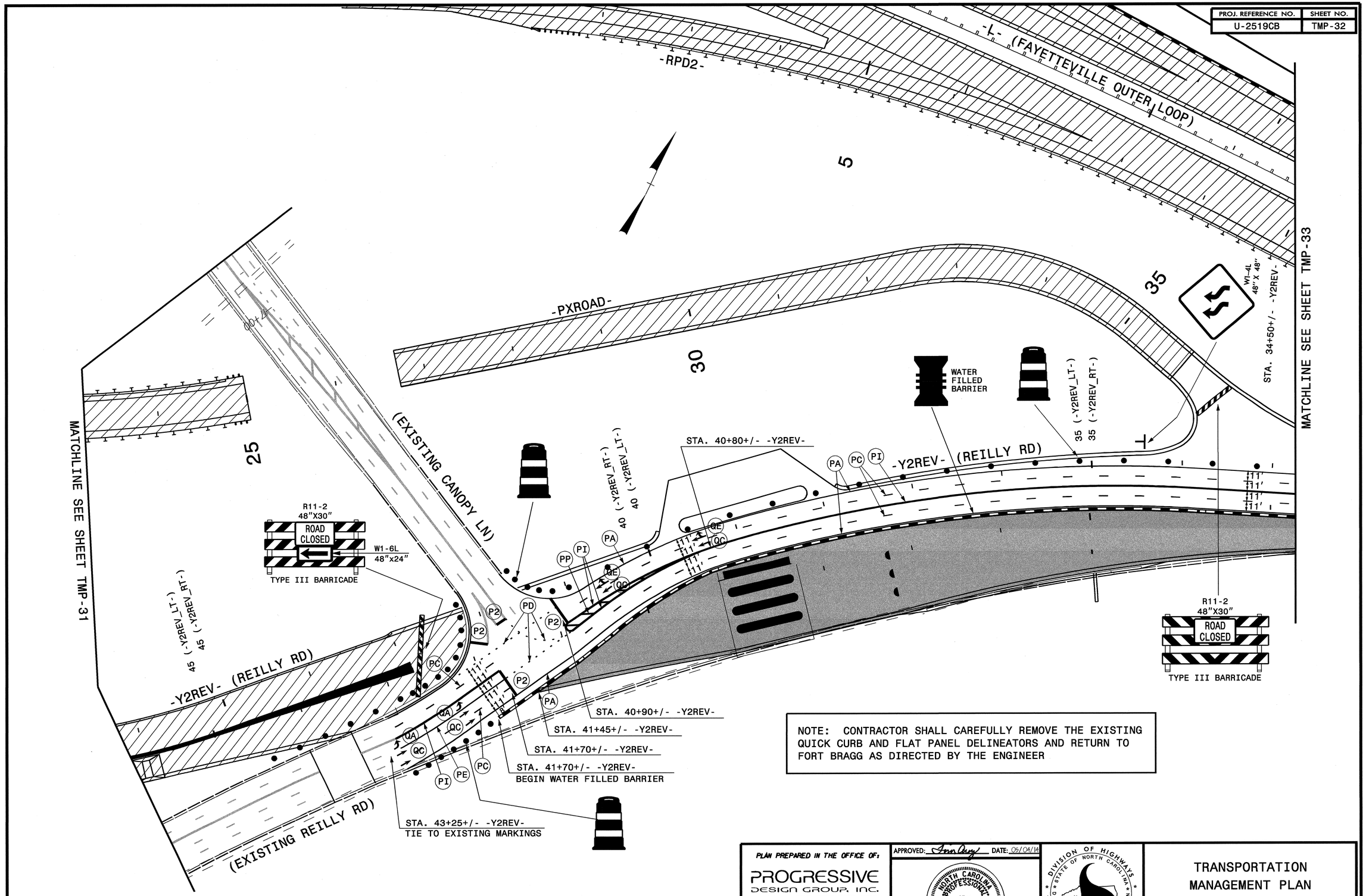
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IA DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-32



NOTE: CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING QUICK CURB AND FLAT PANEL DELINEATORS AND RETURN TO FORT BRAGG AS DIRECTED BY THE ENGINEER

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: Jim Ray DATE: 05/04/14

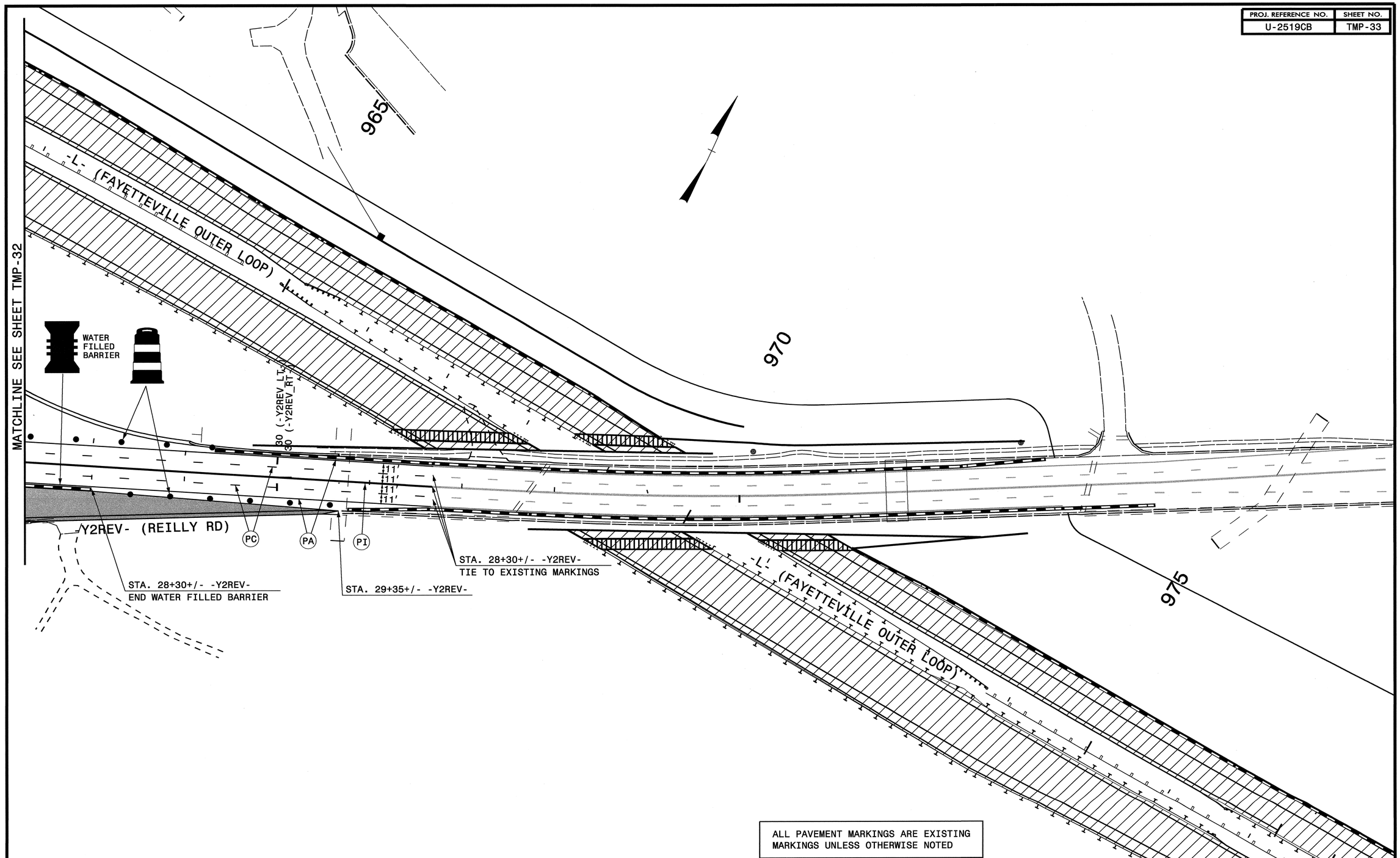
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER JIM AREY

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2 PHASE IA DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-33



ALL PAVEMENT MARKINGS ARE EXISTING MARKINGS UNLESS OTHERWISE NOTED

PLAN PREPARED IN THE OFFICE OF:

PROGRESSIVE DESIGN GROUP, INC.

ENGINEERS • CONSULTANTS

APPROVED: Jon Ory DATE: 06/04/14

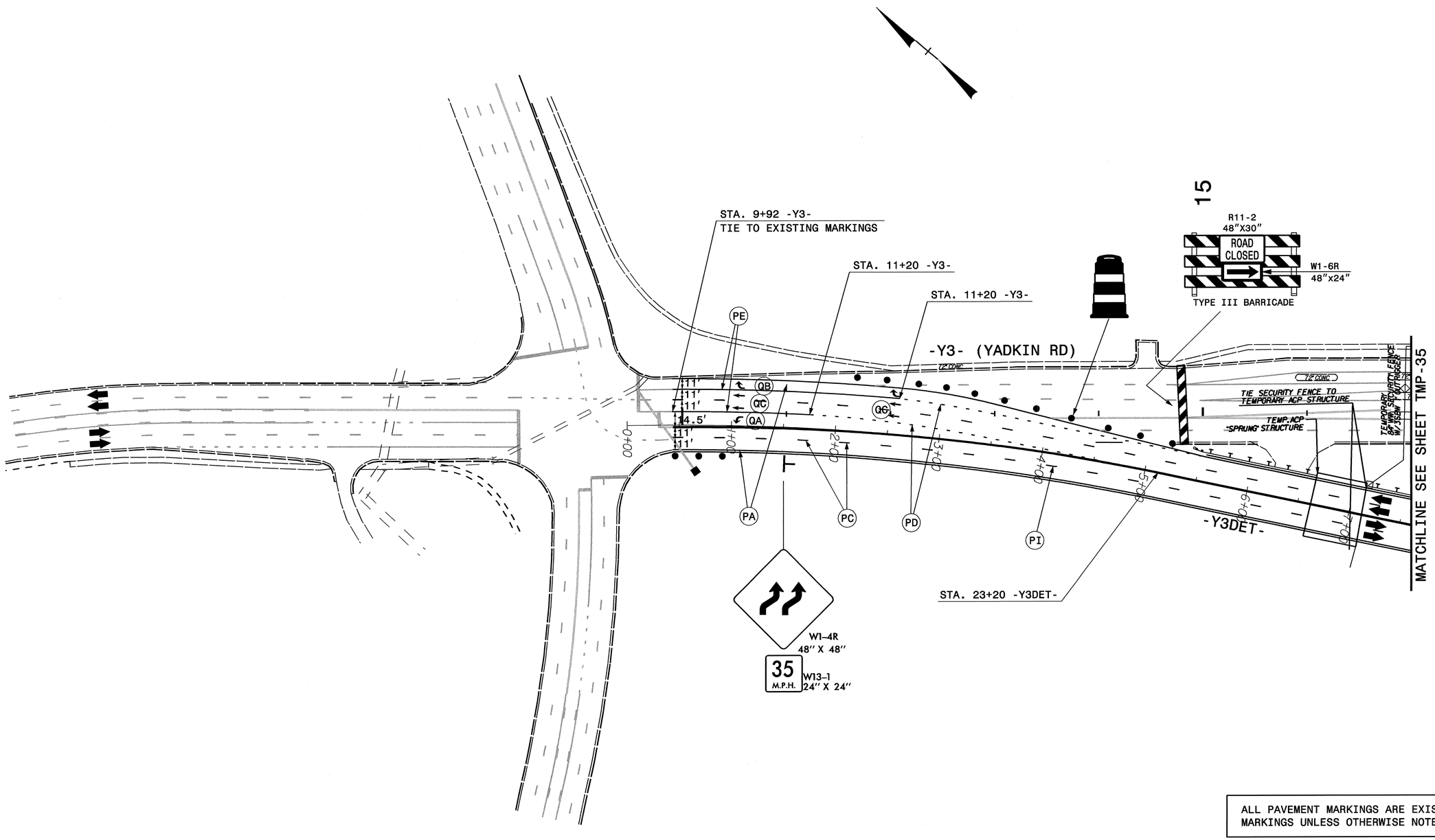
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER JIM AREY

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IA DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-34



ALL PAVEMENT MARKINGS ARE EXISTING MARKINGS UNLESS OTHERWISE NOTED

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: Jim Arey DATE: 05/04/14

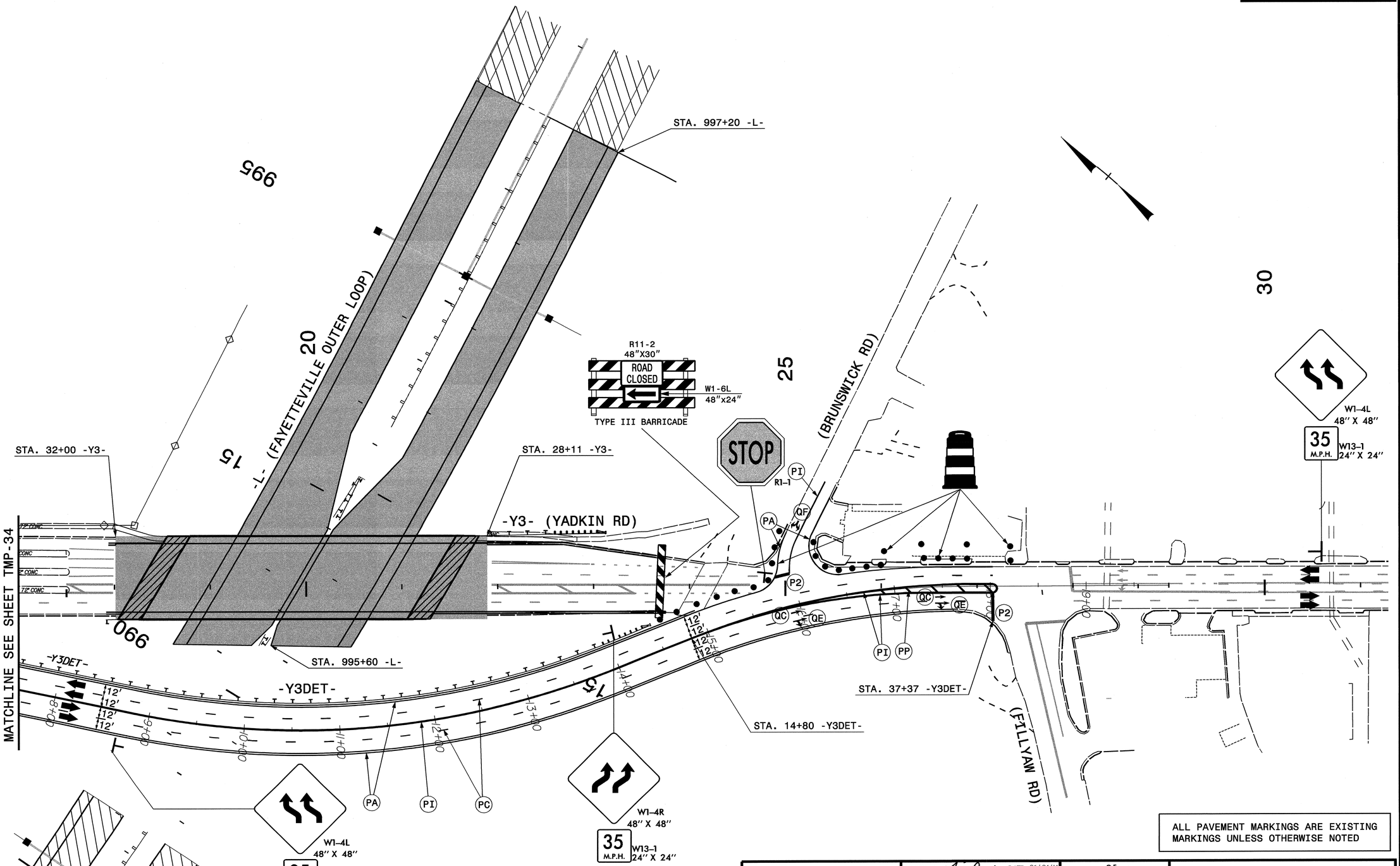
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER JIM AREY

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IA DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-35



ALL PAVEMENT MARKINGS ARE EXISTING MARKINGS UNLESS OTHERWISE NOTED

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: Tim Arey DATE: 05/04/14

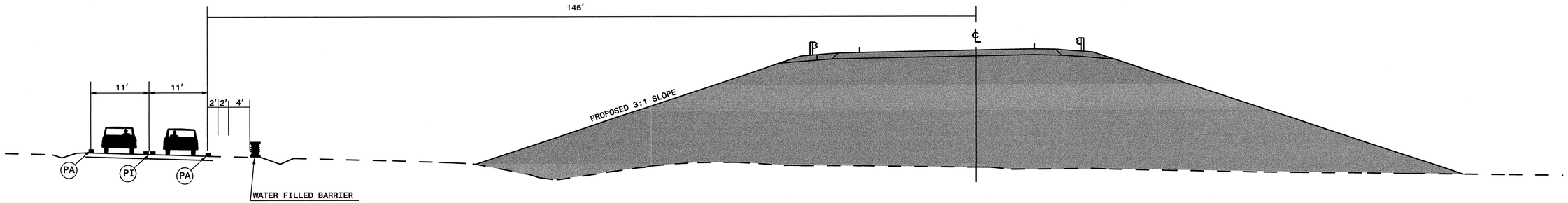
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

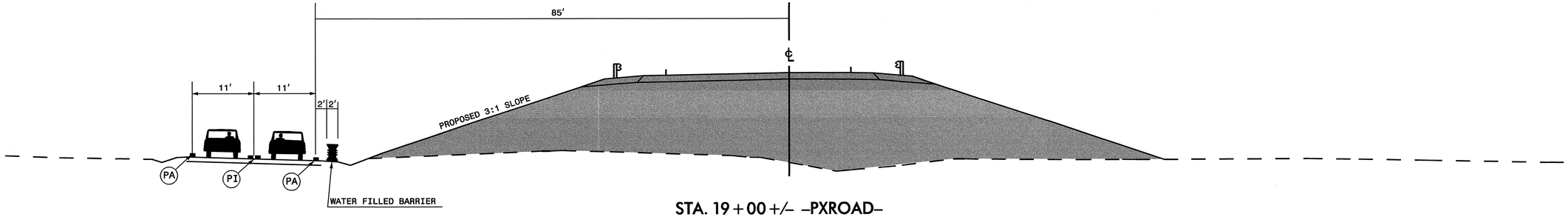
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IA DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-36



STA. 22+00+/- -PXROAD-
SECTION I-I



STA. 19+00+/- -PXROAD-
SECTION H-H

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: Jim Arey DATE: 05/04/14

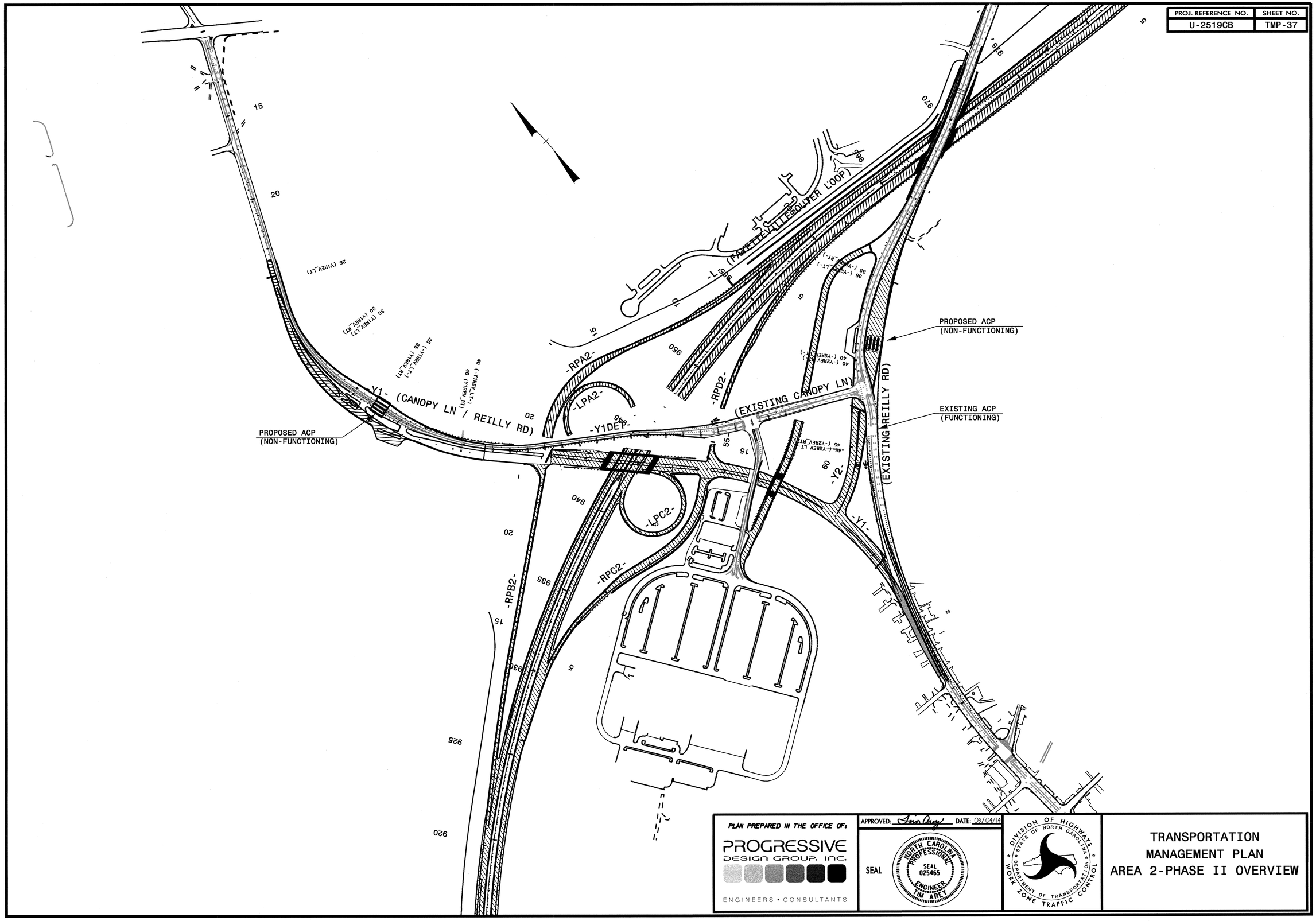
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER JIM AREY

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION
MANAGEMENT PLAN
AREA 2-PHASE IA
CROSS SECTIONS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-37



PLAN PREPARED IN THE OFFICE OF:

PROGRESSIVE DESIGN GROUP, INC.

ENGINEERS • CONSULTANTS

APPROVED: DATE: 06/04/14

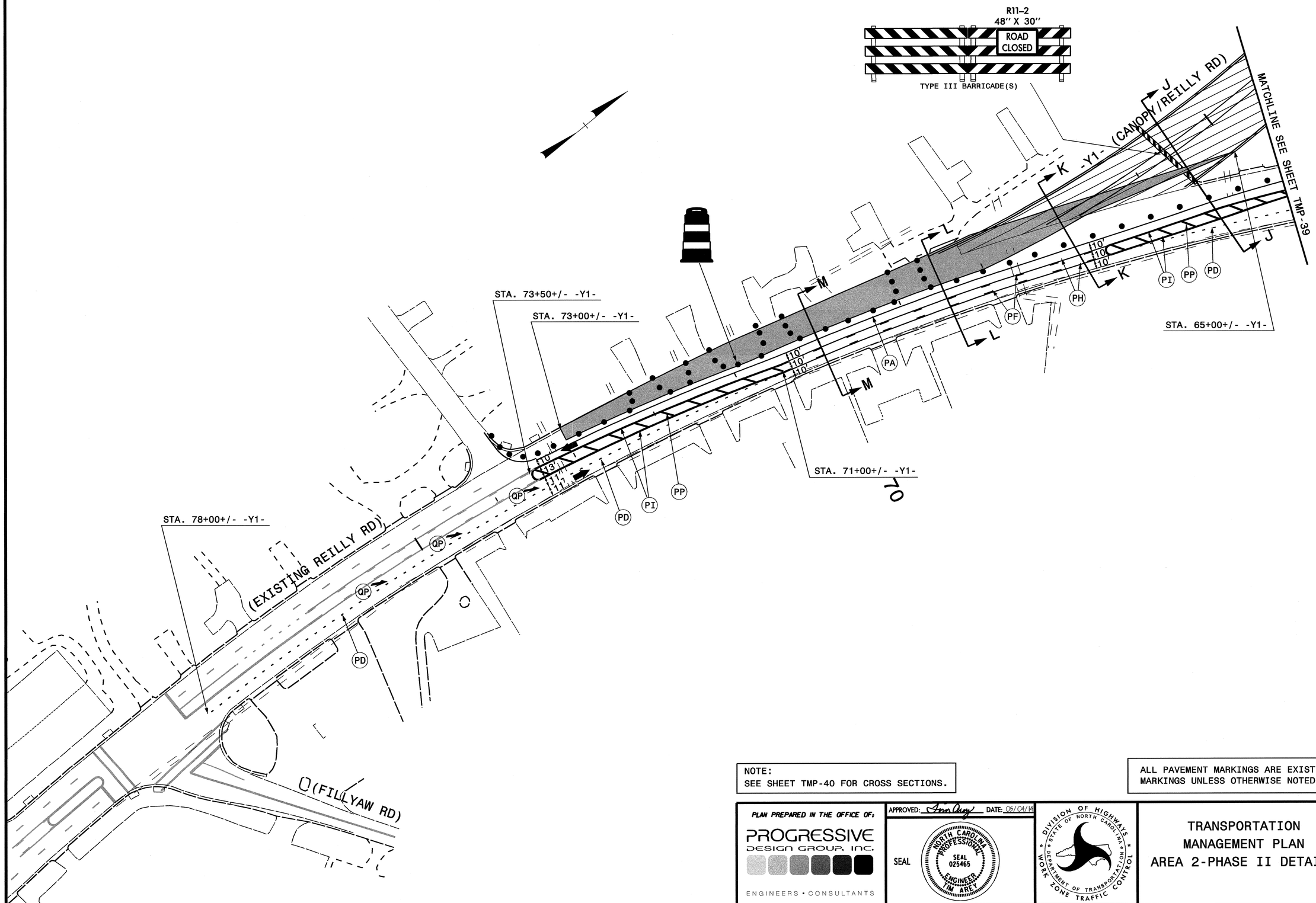
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE II OVERVIEW

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-38



NOTE:
SEE SHEET TMP-40 FOR CROSS SECTIONS.

ALL PAVEMENT MARKINGS ARE EXISTING MARKINGS UNLESS OTHERWISE NOTED

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

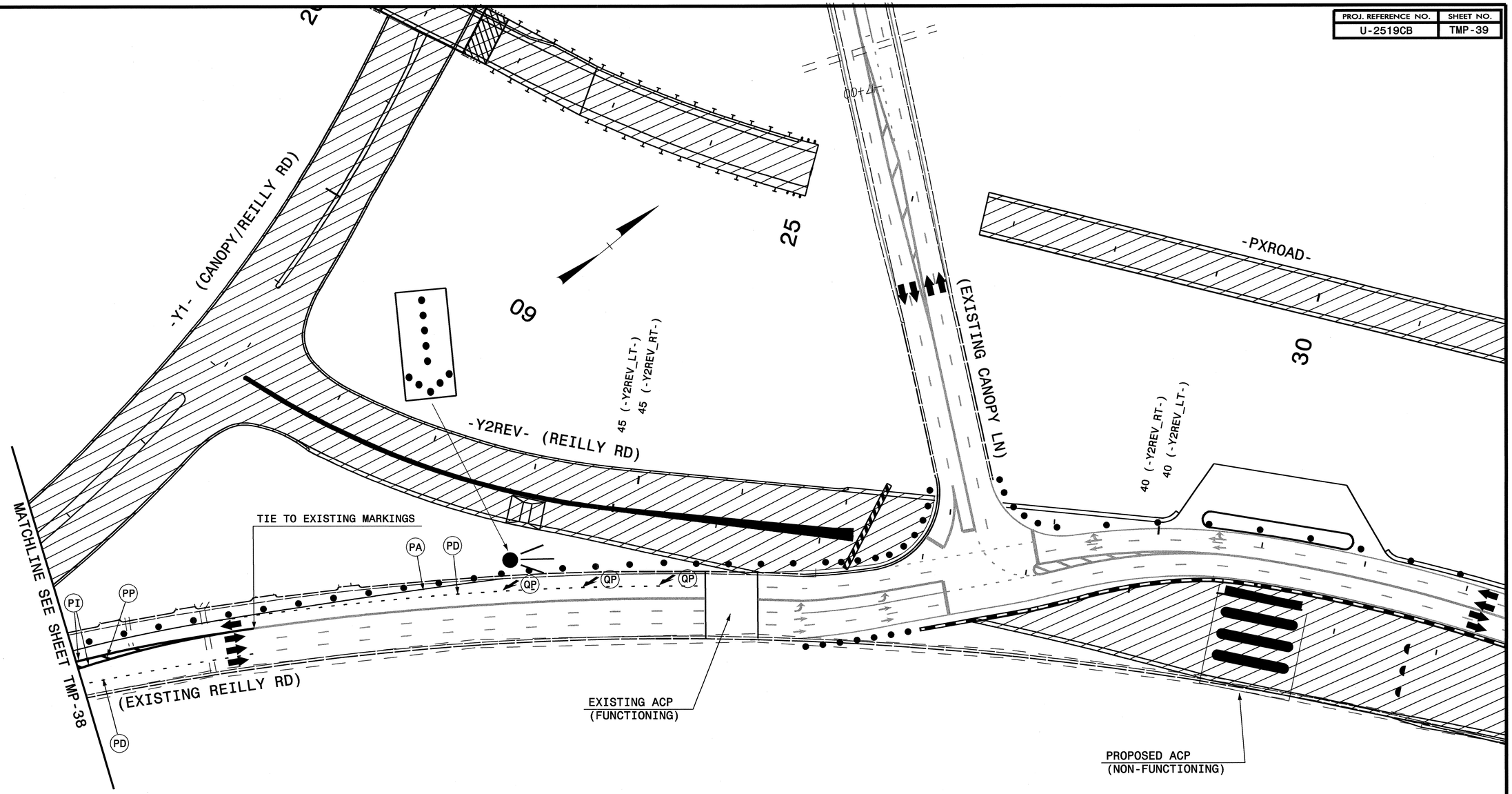
APPROVED: Tim Arey DATE: 06/04/14

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE II DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-39



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PLAN PREPARED IN THE OFFICE OF:

PROGRESSIVE DESIGN GROUP, INC.

ENGINEERS • CONSULTANTS

APPROVED: Tim Arey DATE: 06/04/14

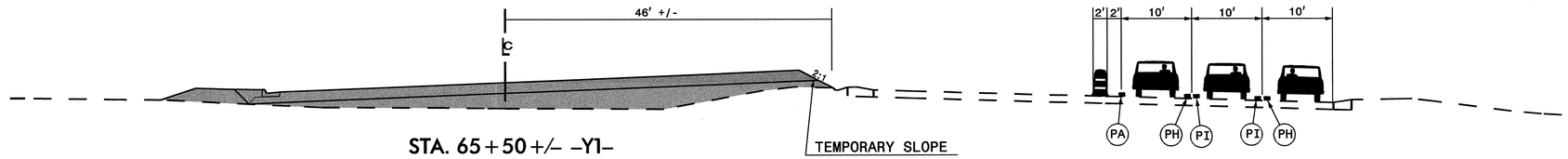
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

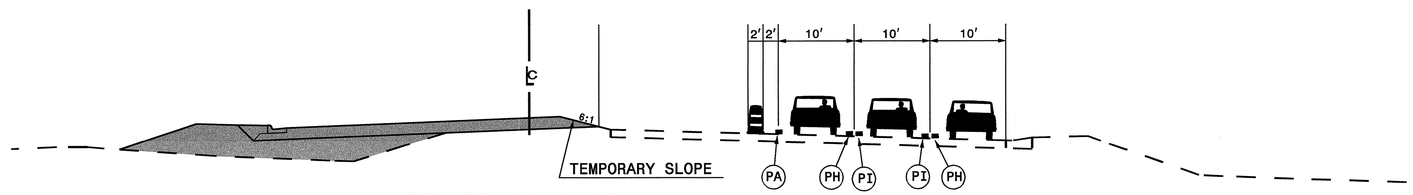
DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE II DETAILS

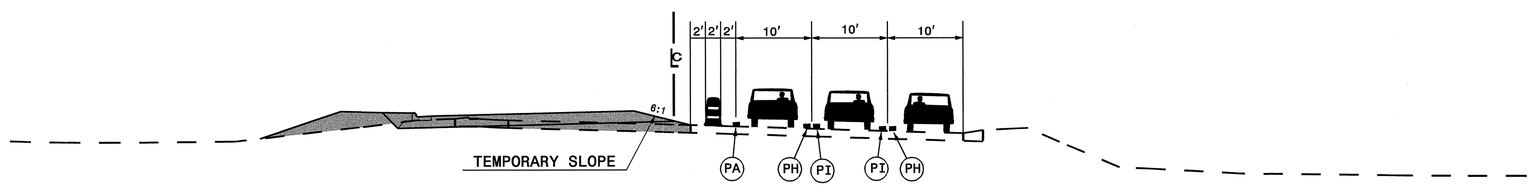
PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-40



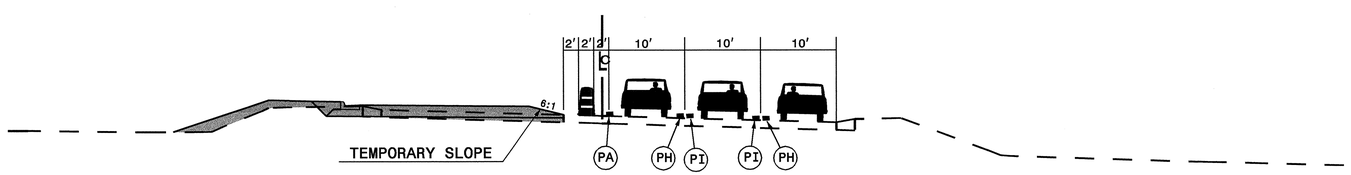
STA. 65+50+/- -Y1-
SECTION J-J



STA. 67+00+/- -Y1-
SECTION K-K



STA. 68+50+/- -Y1-
SECTION L-L

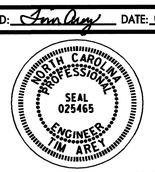


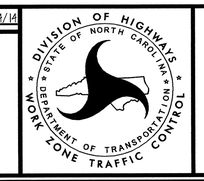
STA. 70+00+/- -Y1-
SECTION M-M

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: Tim Arey DATE: 05/04/14

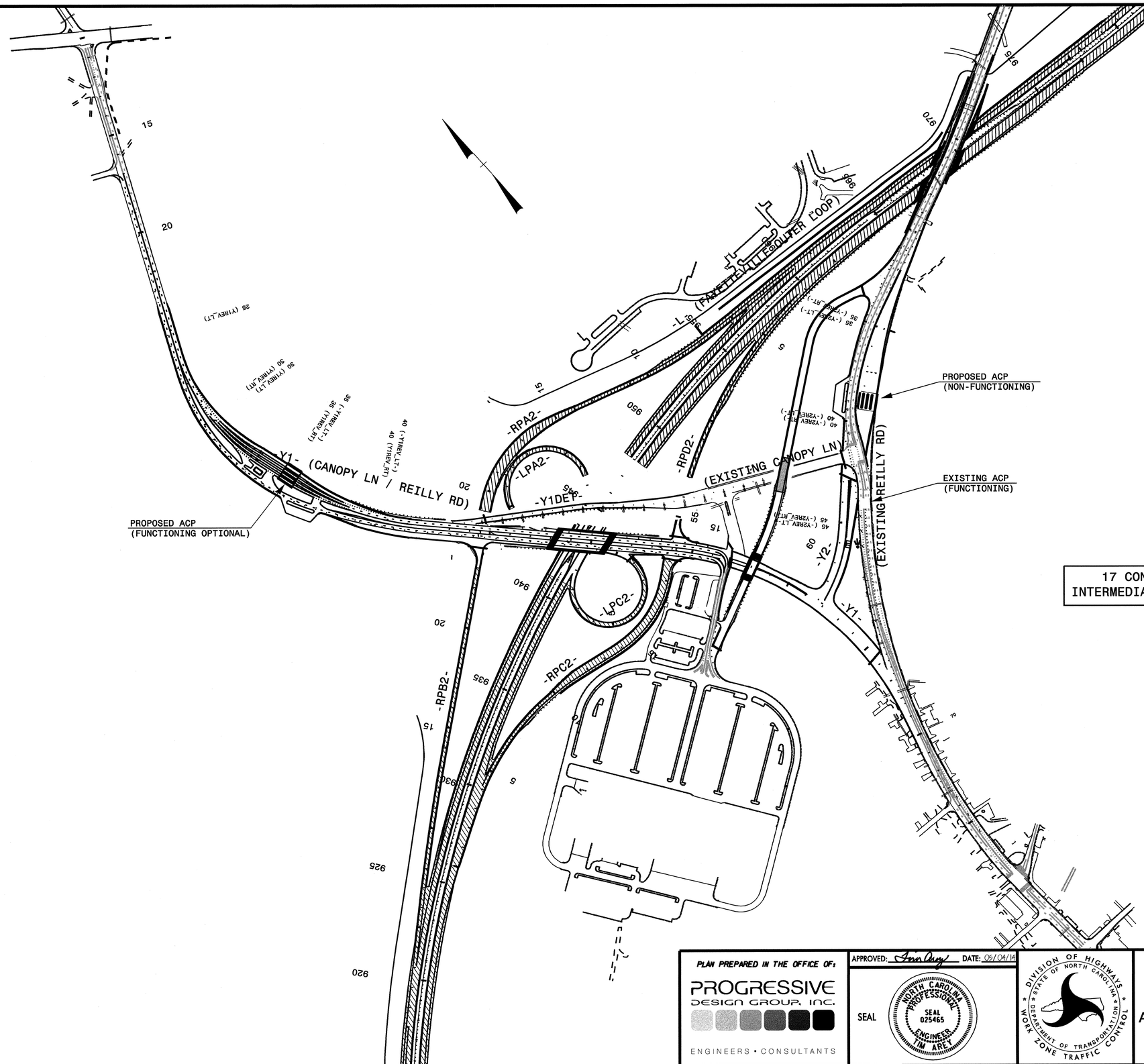
SEAL





TRANSPORTATION
MANAGEMENT PLAN
AREA 2-PHASE II
CROSS SECTIONS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-41



17 CONSECUTIVE DAY
INTERMEDIATE CONTRACT TIME

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: Tim Arey DATE: 06/04/14

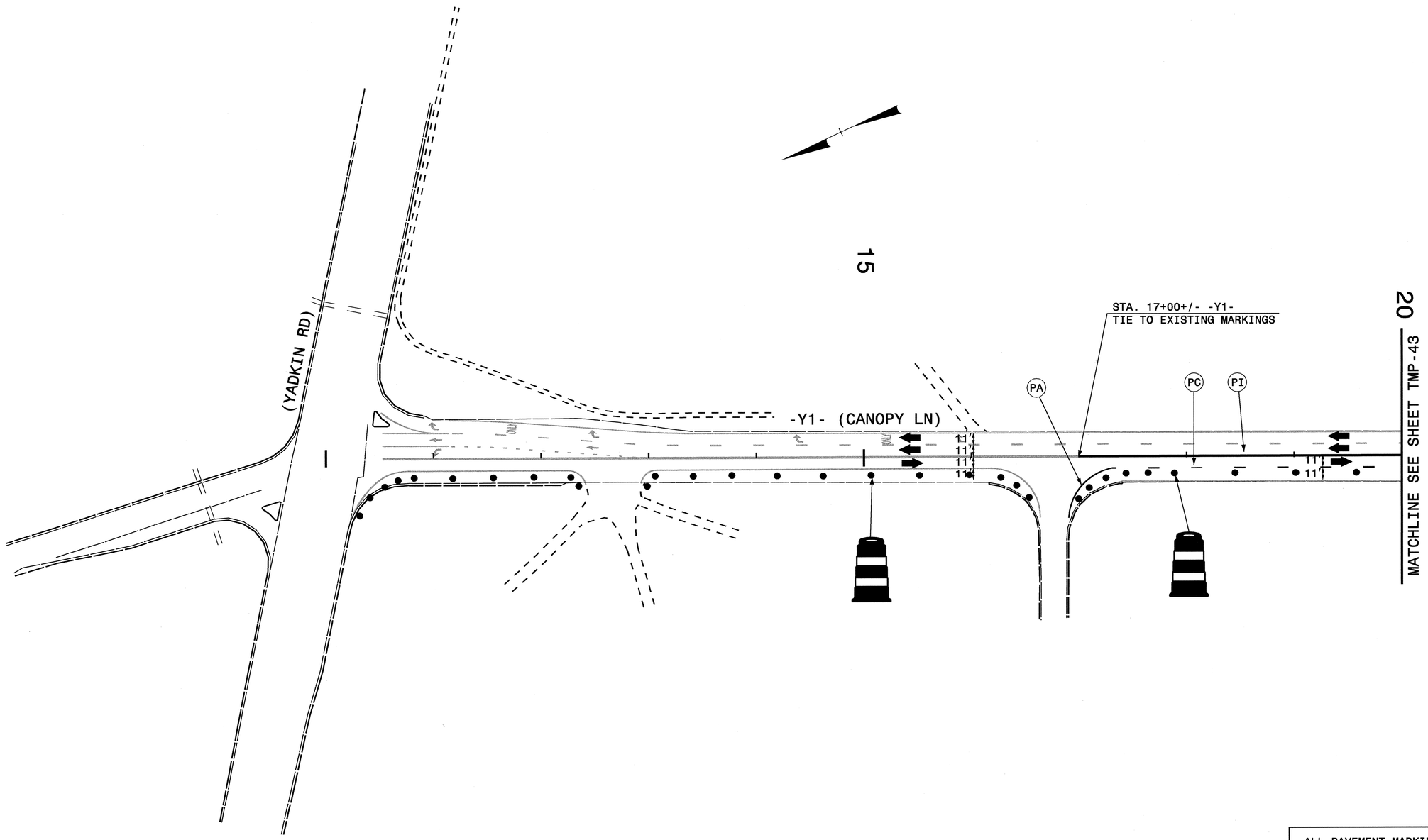
SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 025465 TIM AREY

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION
MANAGEMENT PLAN
AREA 2-PHASE IIA OVERVIEW

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-42



ALL PAVEMENT MARKINGS ARE EXISTING MARKINGS UNLESS OTHERWISE NOTED

PLAN PREPARED IN THE OFFICE OF:

PROGRESSIVE DESIGN GROUP, INC.

ENGINEERS • CONSULTANTS

APPROVED: Jim Ary DATE: 05/04/14

SEAL

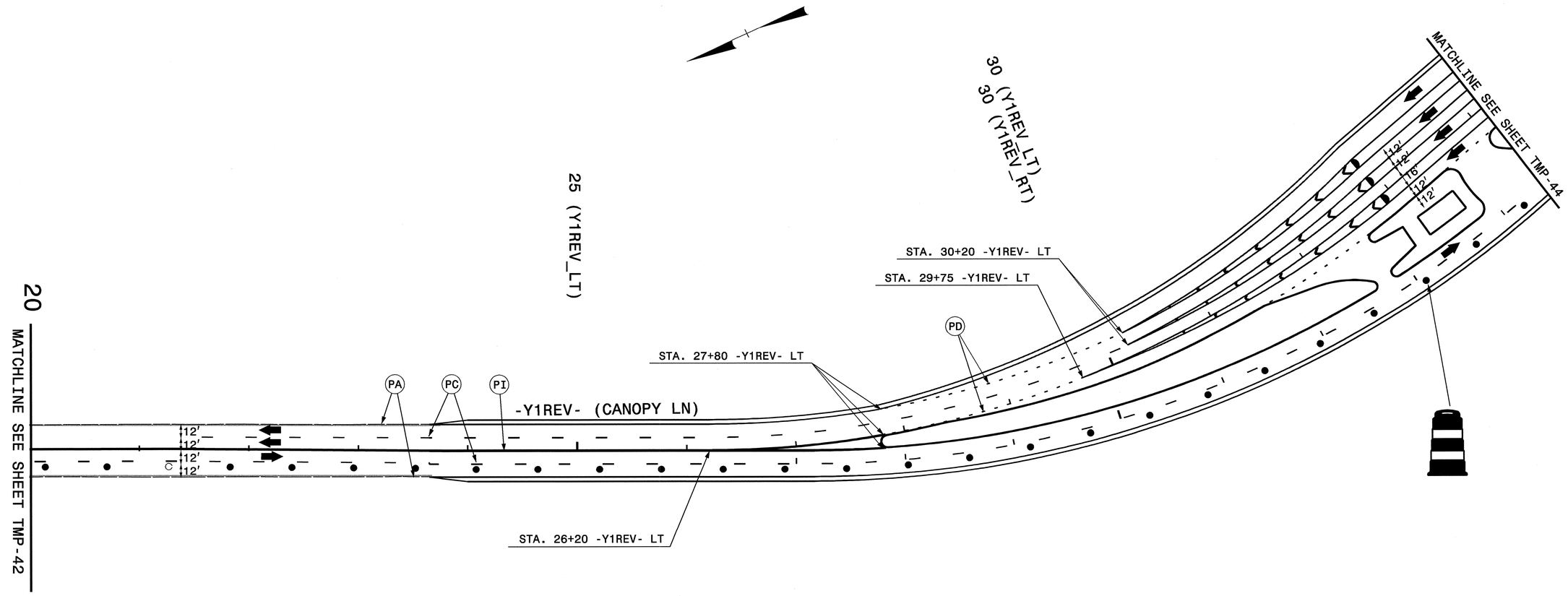
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN

AREA 2-PHASE IIA DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-43



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APPROVED: DATE: 09/04/14

SEAL

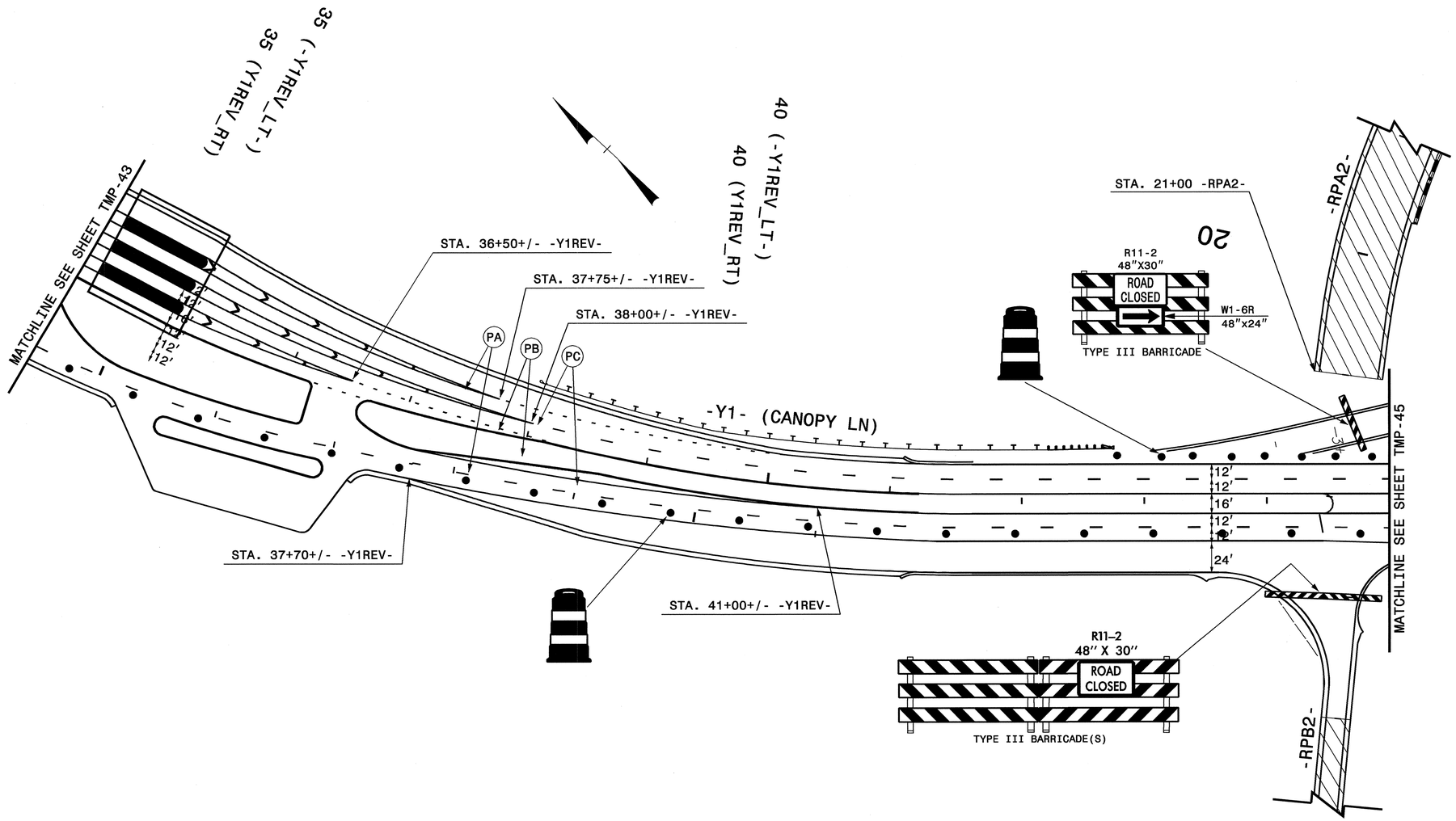
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN

AREA 2-PHASE IIA DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-44



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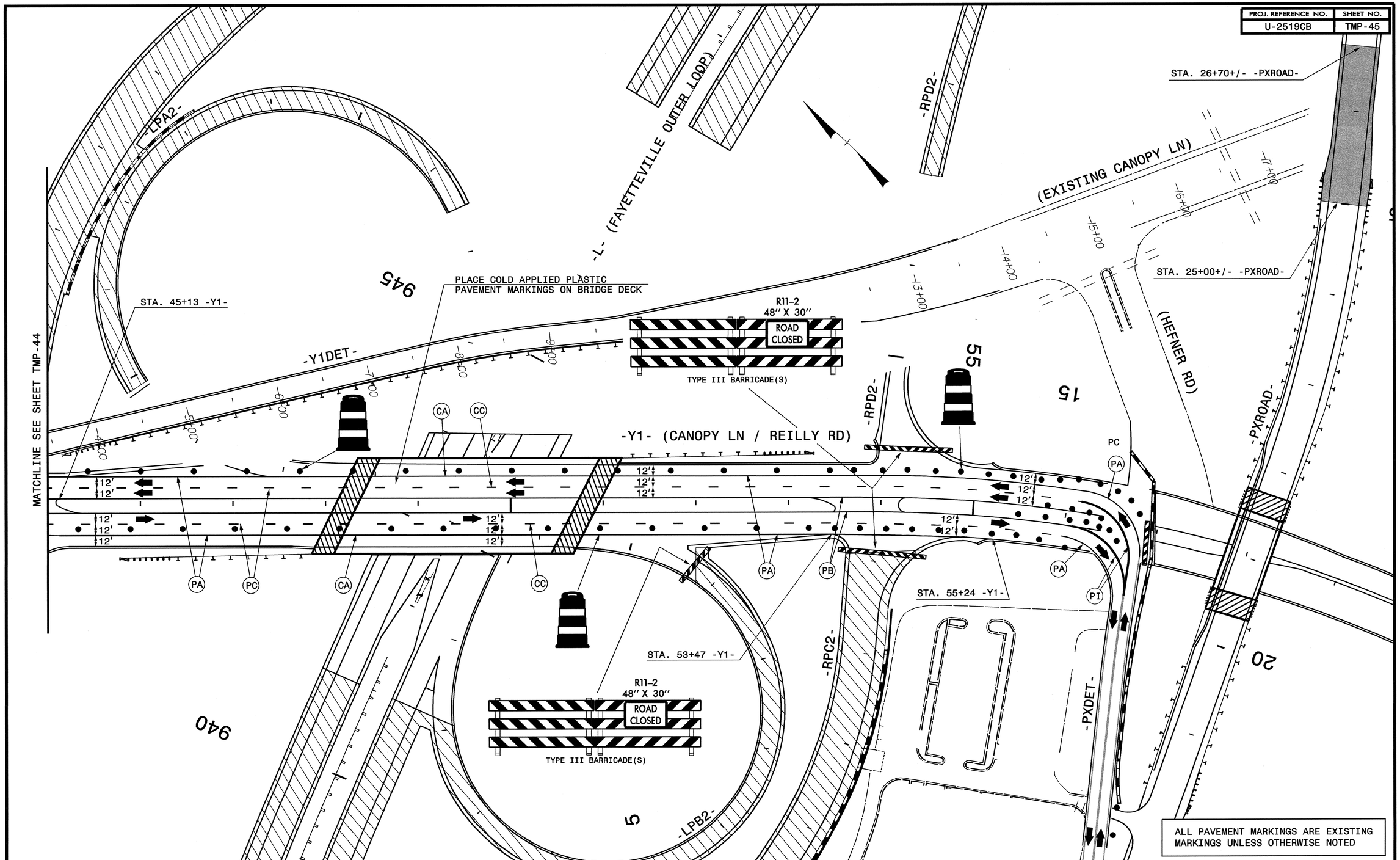
TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IIA DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-45



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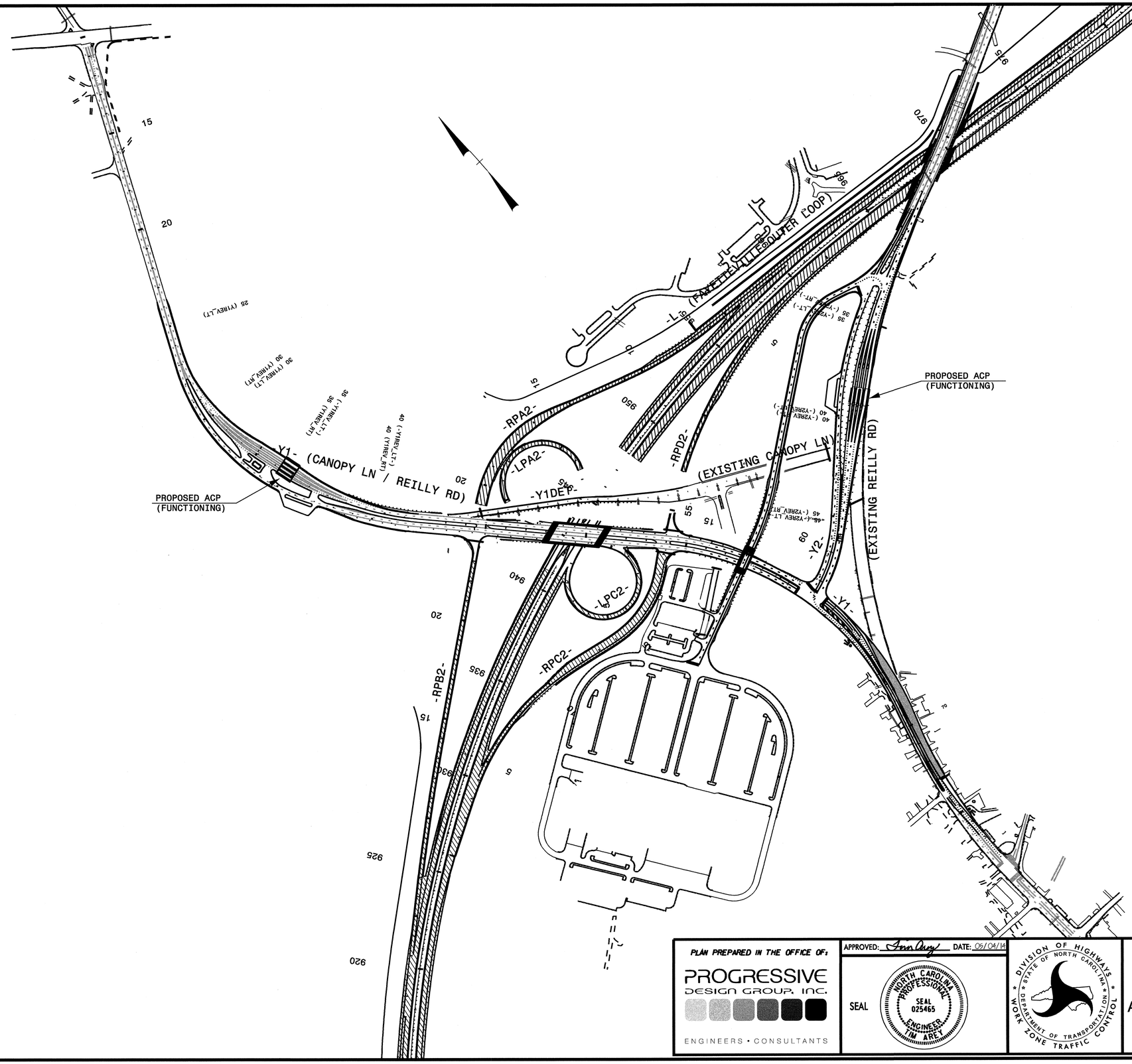
TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IIA DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-46



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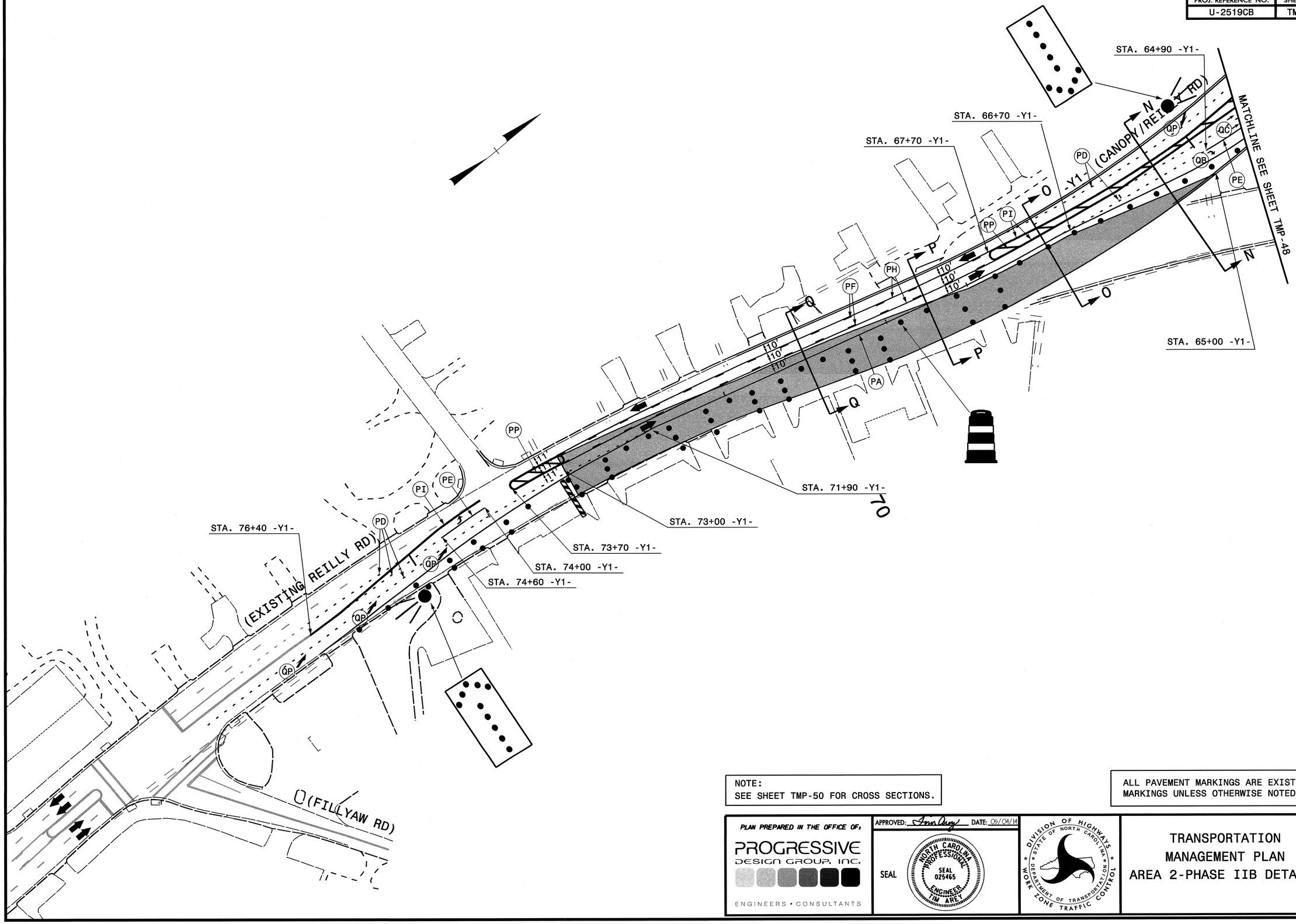
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IIB OVERVIEW

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-47



NOTE:
SEE SHEET TMP-50 FOR CROSS SECTIONS.

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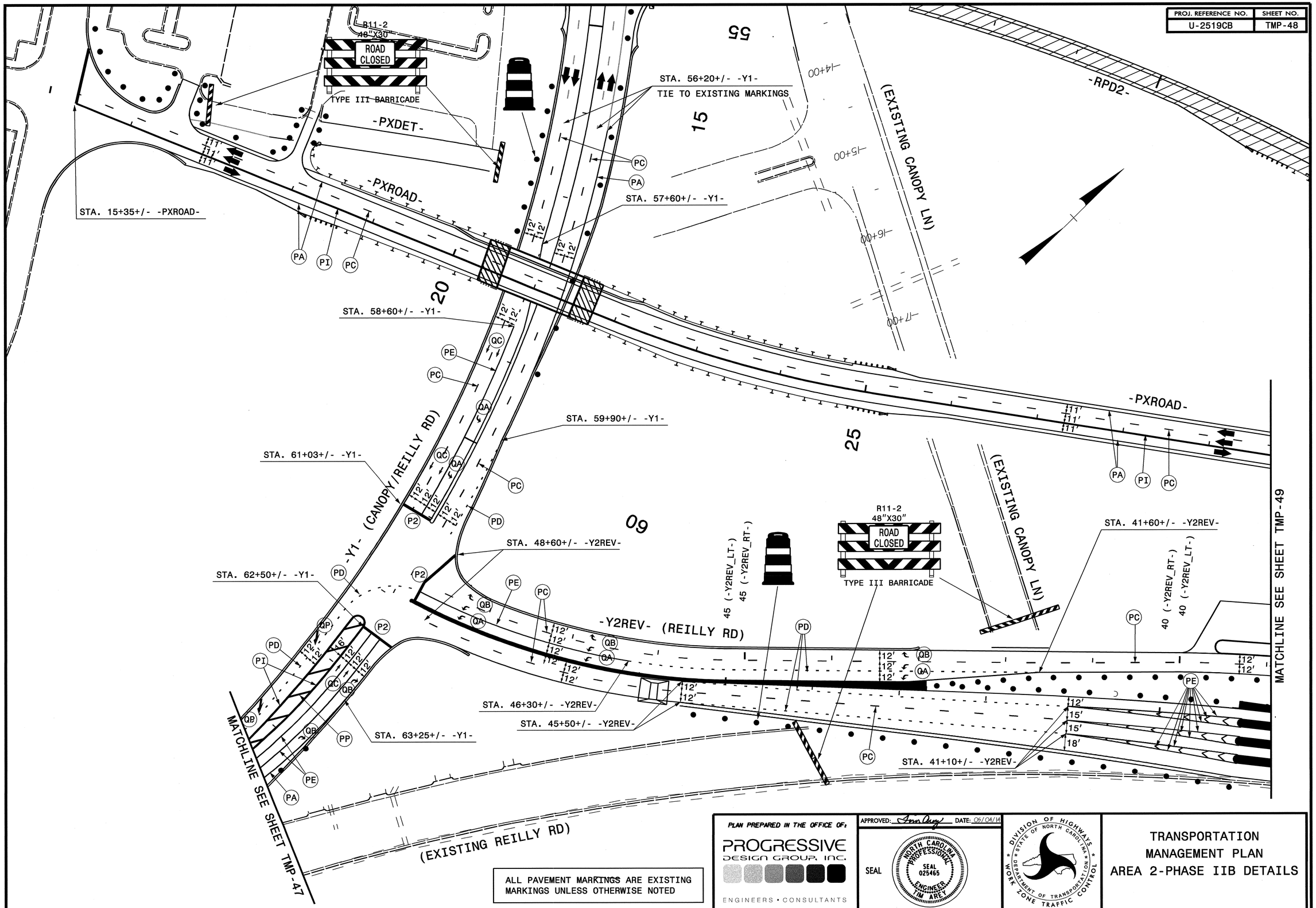
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IIB DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-48



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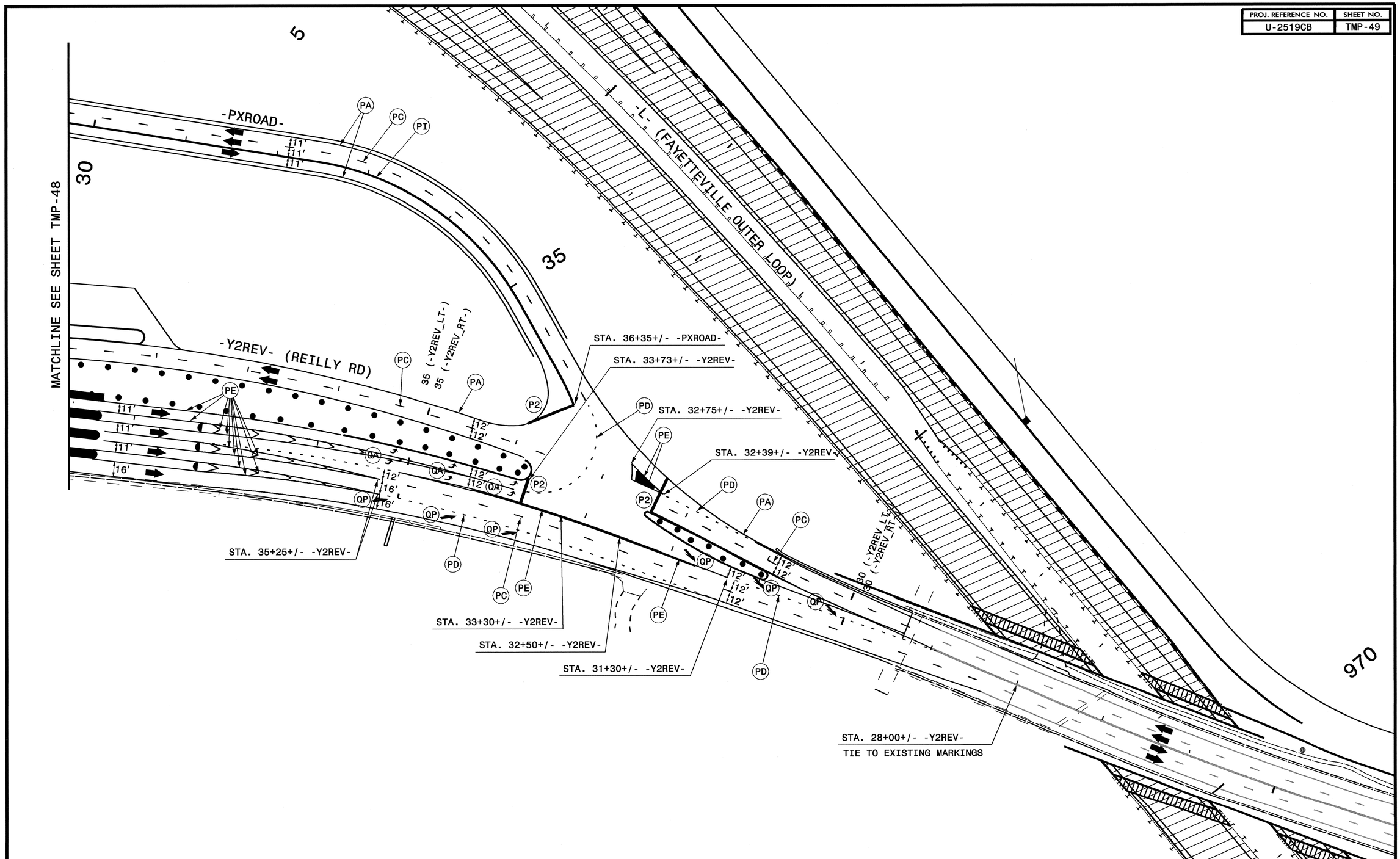
TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IIB DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-49



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APPROVED: Jim Ray DATE: 06/04/14

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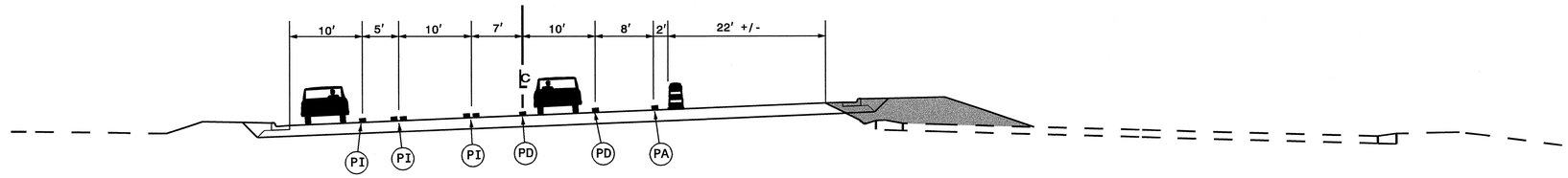
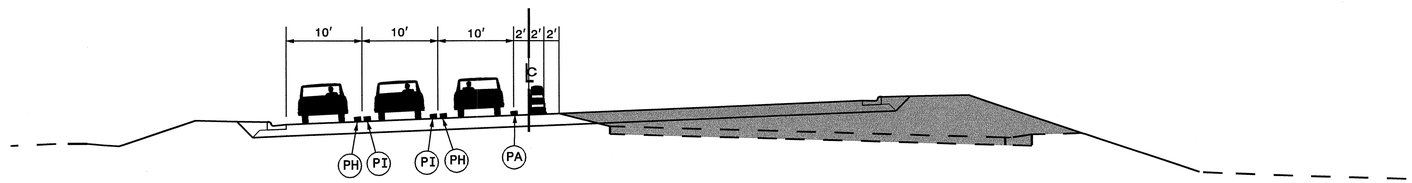
TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IIB DETAILS

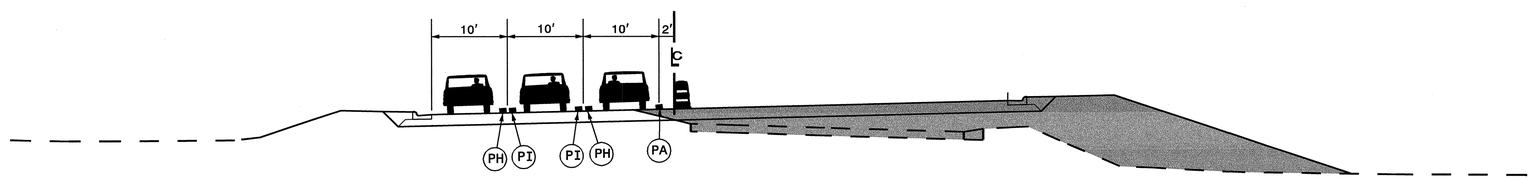
PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-50



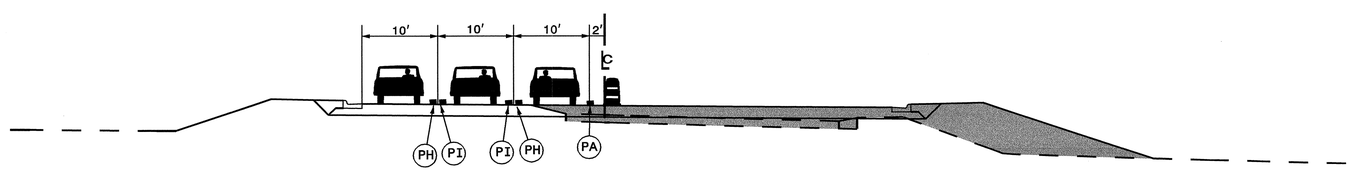
STA. 65+50+/- -Y1-
SECTION N-N



STA. 67+00+/- -Y1-
SECTION O-O



STA. 68+50+/- -Y1-
SECTION P-P



STA. 70+00+/- -Y1-
SECTION Q-Q

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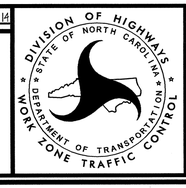
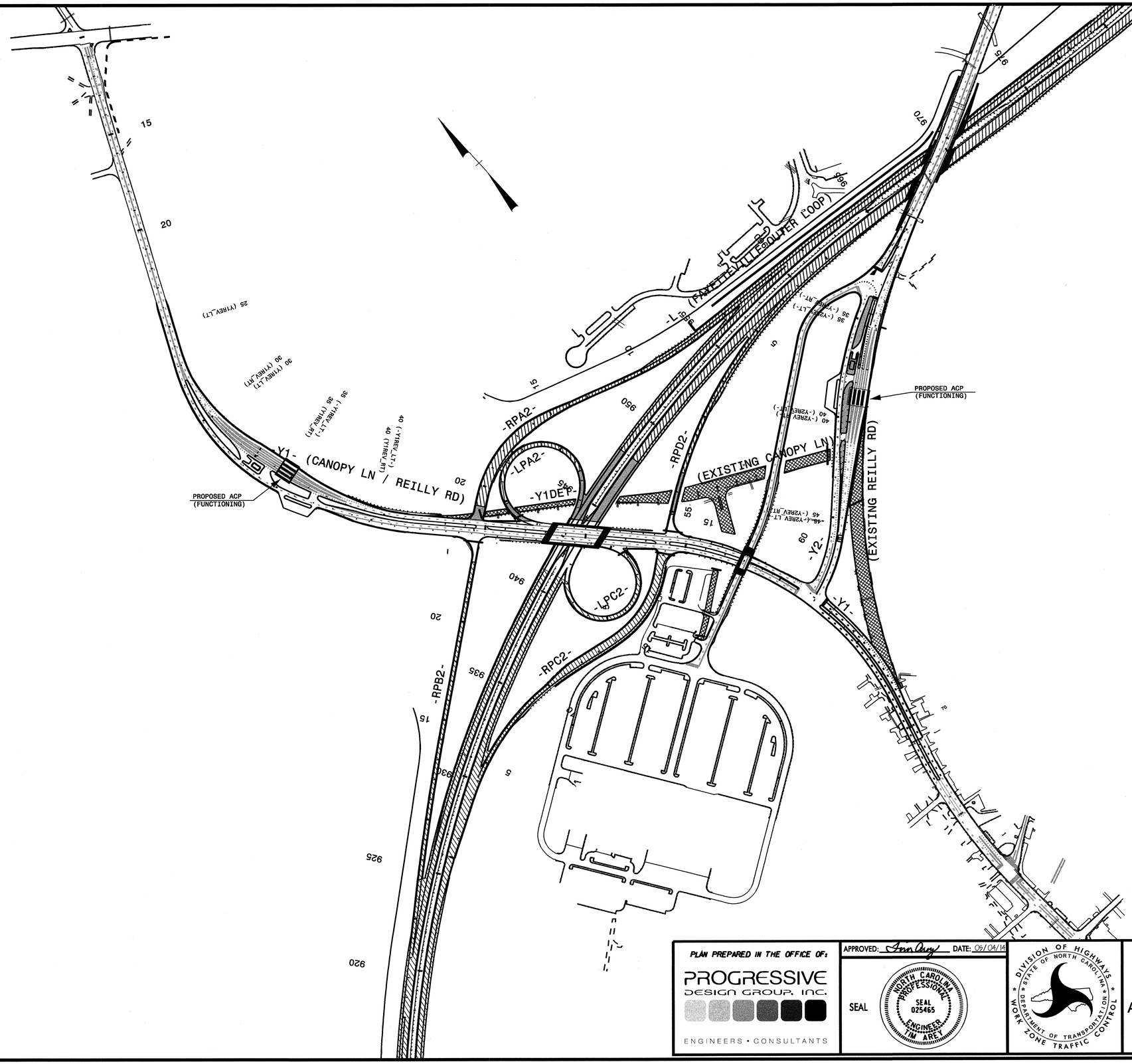


TRANSPORTATION
MANAGEMENT PLAN
AREA 2-PHASE IIB
CROSS SECTIONS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-51



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APPROVED: Jim Ayers DATE: 05/04/14

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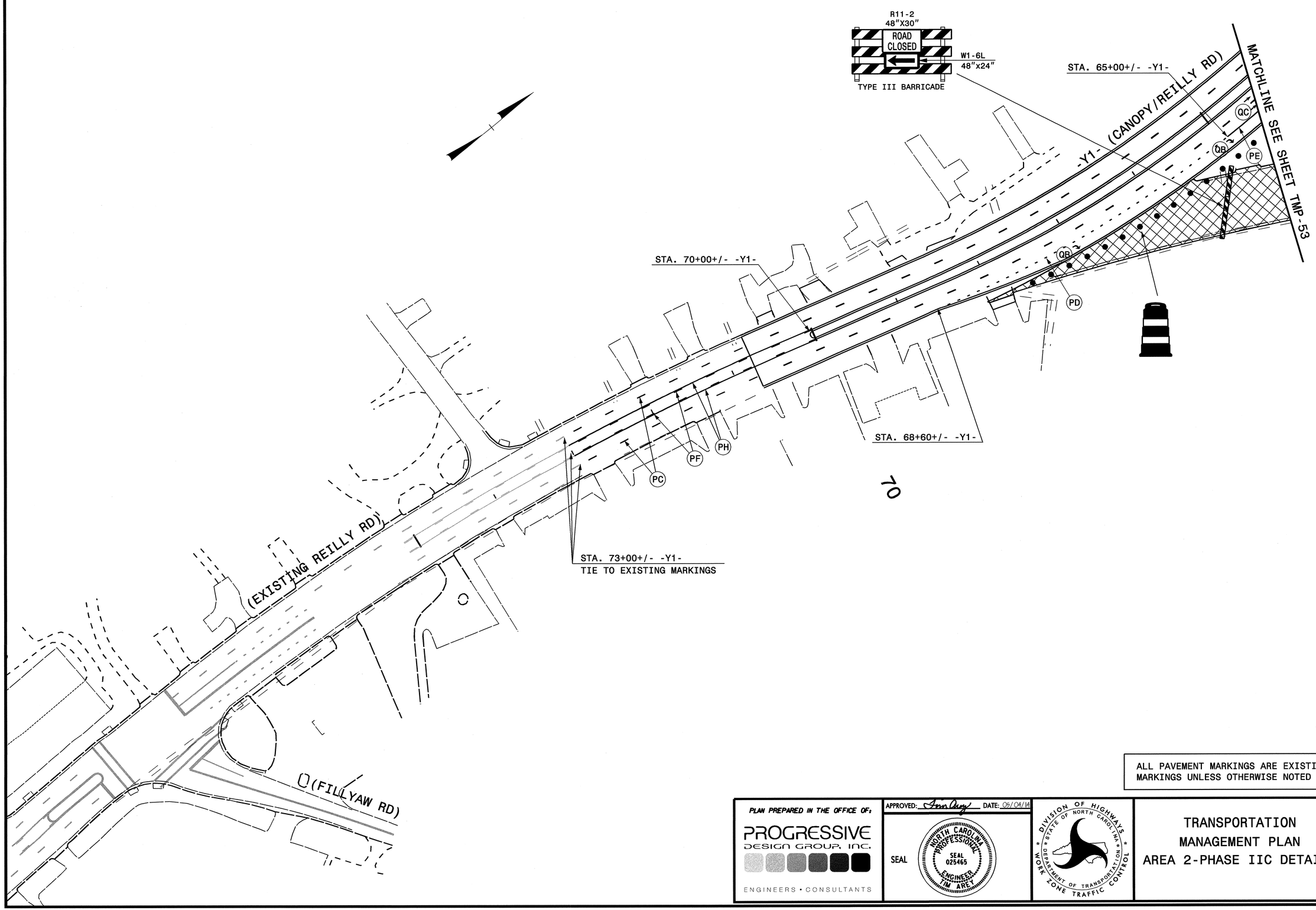
DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IIC OVERVIEW

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-52



70

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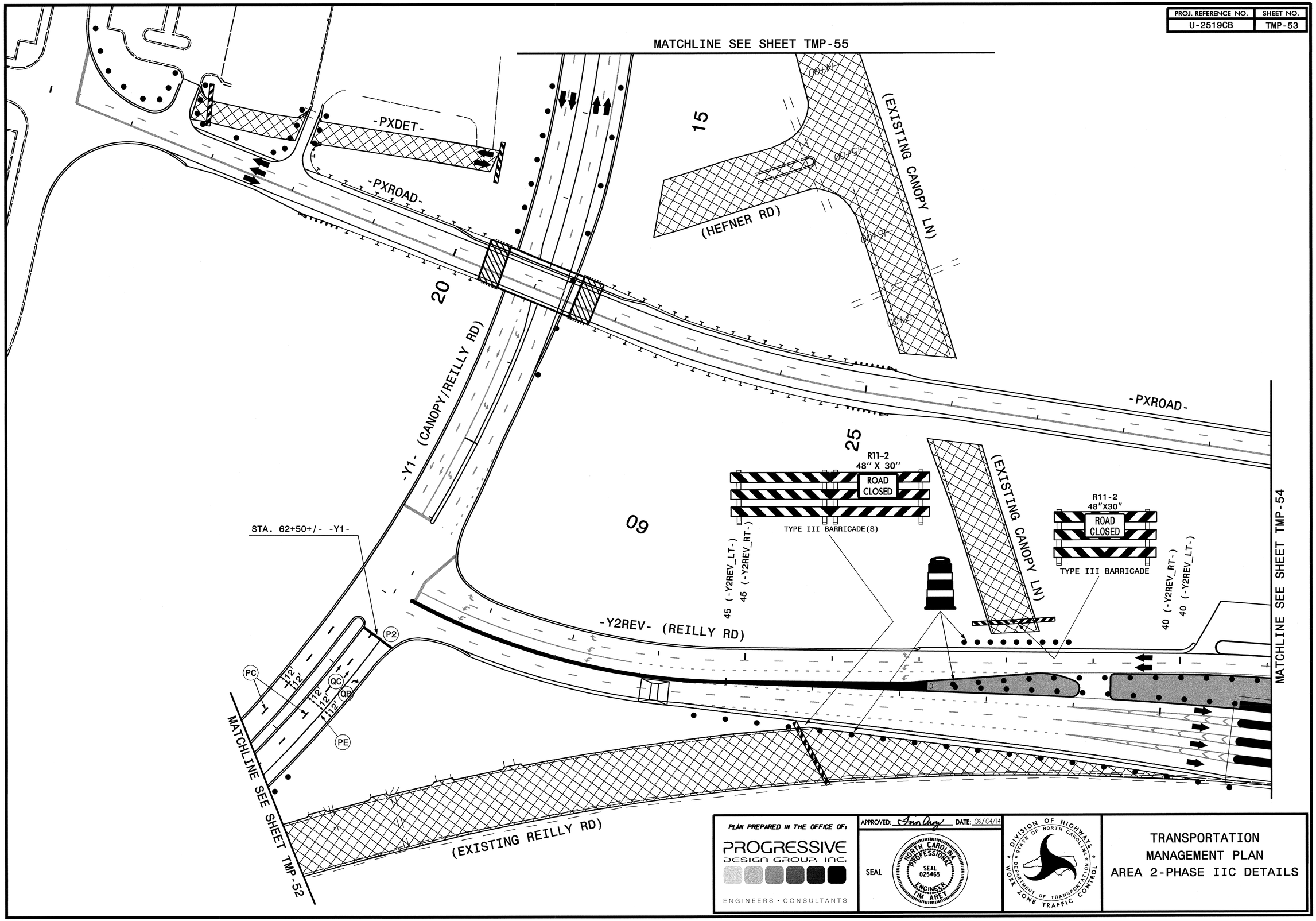
TRANSPORTATION MANAGEMENT PLAN

AREA 2-PHASE IIC DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-53



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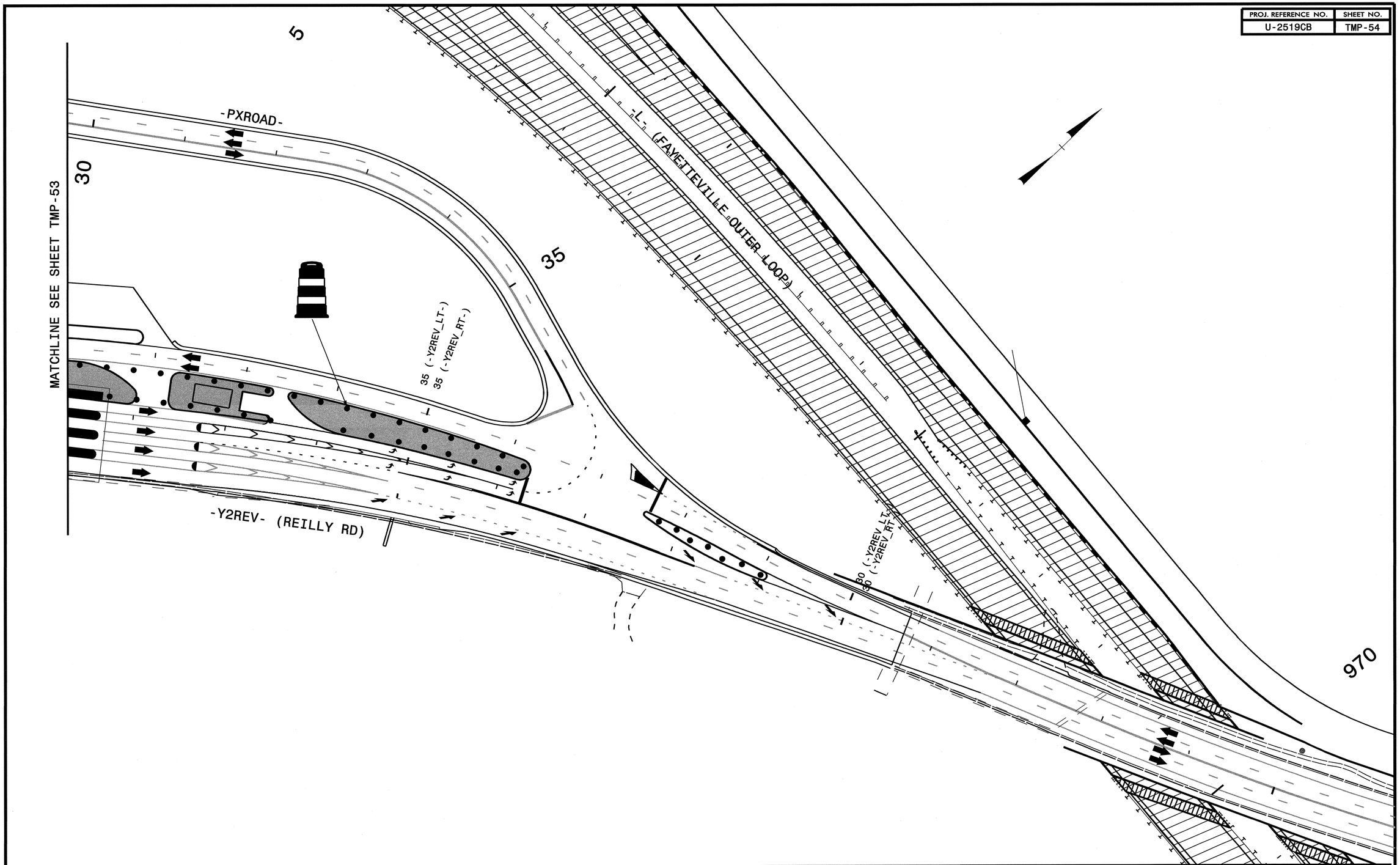
TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IIC DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-54



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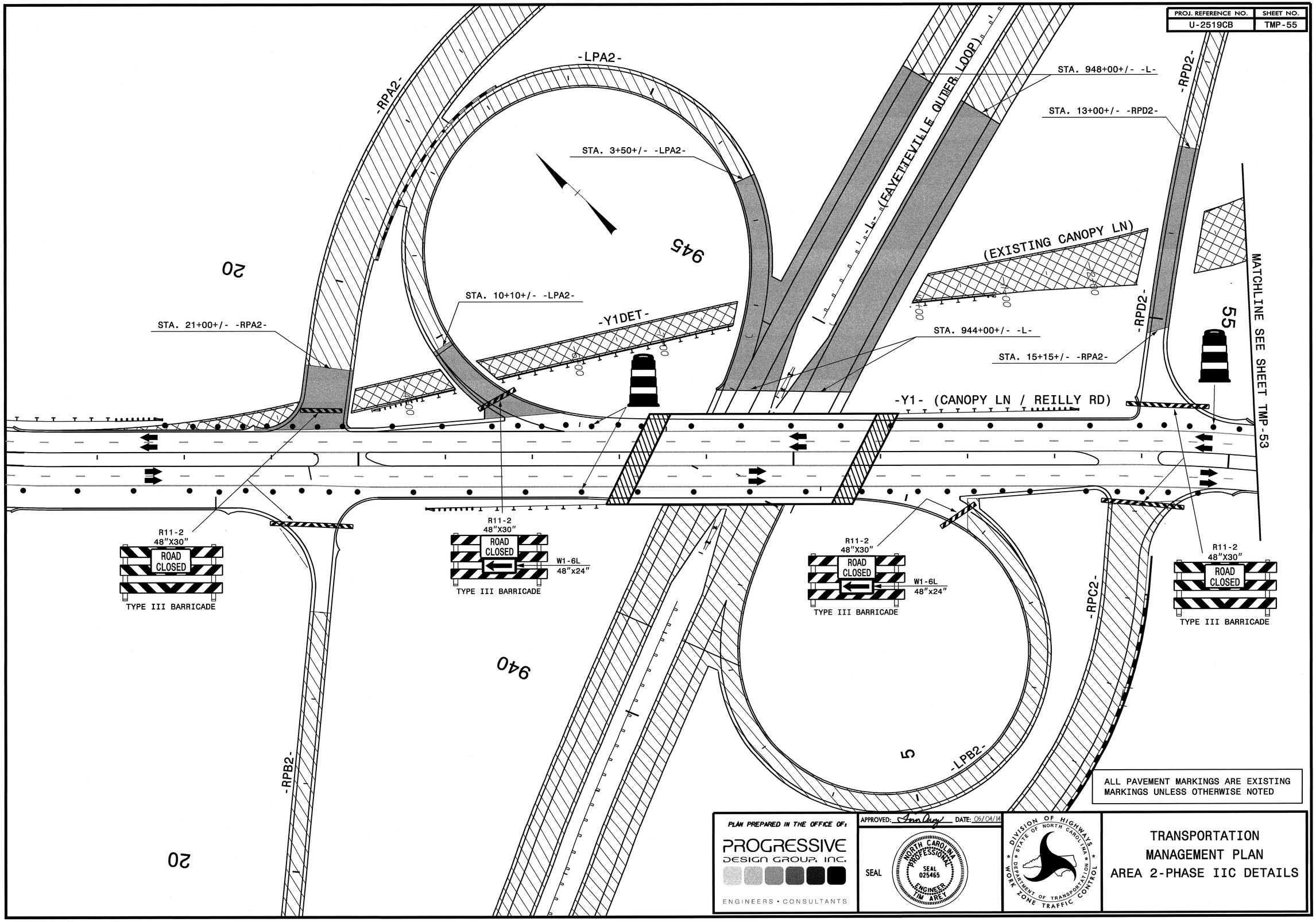
TRANSPORTATION MANAGEMENT PLAN

AREA 2-PHASE IIC DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-55



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STATE OF NORTH CAROLINA
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WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 2-PHASE IIC DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-56

AREA 3 PHASING

PHASE I

STEP 1: INSTALL WORK ZONE ADVANCE WARNING SIGNS ON ALL ROADWAYS WITHIN THE PROJECT LIMITS ACCORDING TO ROADWAY STANDARD DRAWING NO. 1101.01. SEE GENERAL NOTE 'M' ON SHEET TMP-1B FOR ADDITIONAL GUIDANCE.

STEP 2: INSTALL THE PROPOSED BRIDGE FOOTINGS SHOWN ON SHEETS TMP-57 THRU TMP-61. UTILIZE THE APPROPRIATE TRAFFIC CONTROL DEVICES SHOWN ON SHEETS TMP-57 THRU TMP-61 DURING THE BRIDGE FOOTING CONSTRUCTION PROCESS.

PHASE II

STEP 1: CONSTRUCT TEMPORARY MEDIAN CROSSOVERS. (SEE SPECIAL PROVISIONS)

STEP 2: INSTALL BRIDGE GIRDERS OVER ALL AMERICAN FREEWAY. (SEE SPECIAL PROVISIONS)

PHASE III

STEP 1: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, AS REQUIRED, PLACE THE FINAL LAYER OF SURFACE COURSE, FINAL PAVEMENT MARKINGS AND MARKERS, AND PERMANENT SIGNING ON ALL ROADWAYS WITHIN AREA 3 AS SHOWN IN THE PAVEMENT MARKING AND SIGNING PLANS. COORDINATE ROADWAY OPENINGS WITH OTHER AREAS IN THE PROJECT LIMITS AND REMOVE ALL TRAFFIC CONTROL DEVICES UPON COMPLETION OF ROADWAY OPENINGS.

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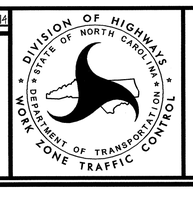
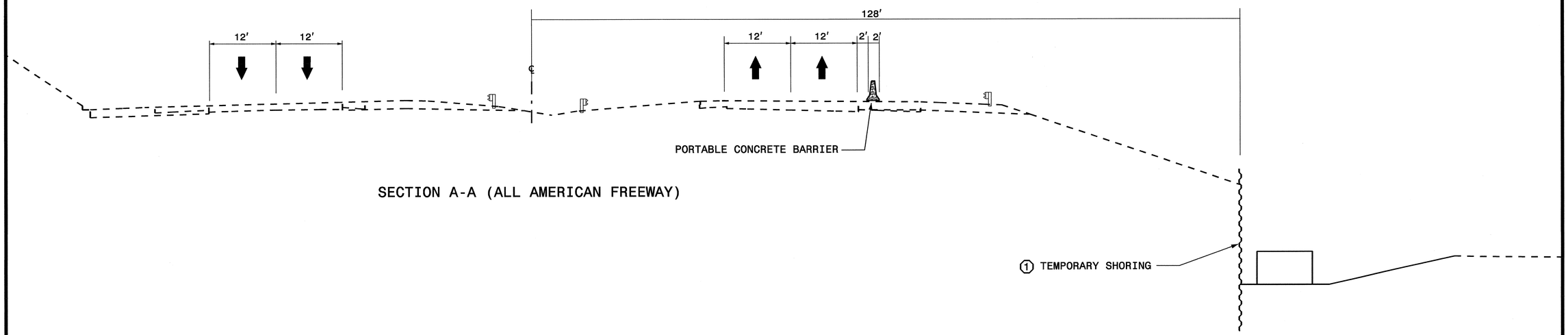
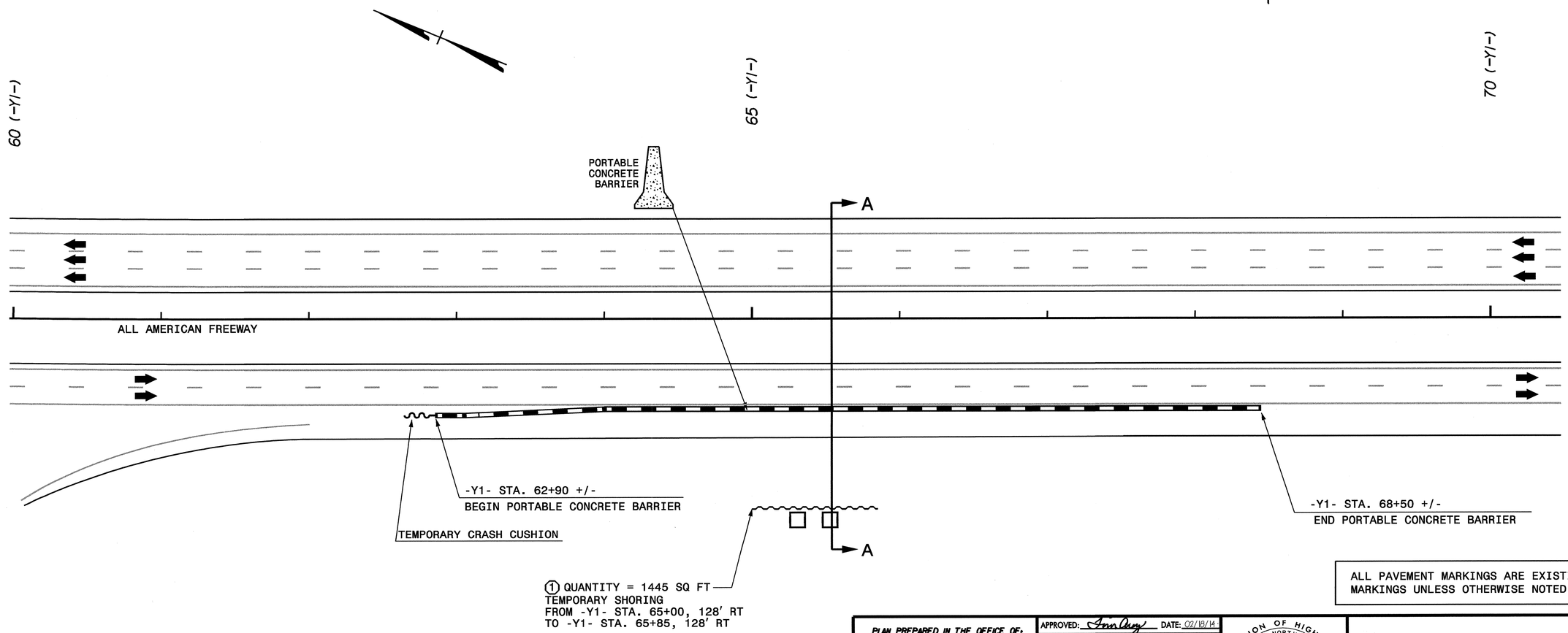


TRANSPORTATION
MANAGEMENT PLAN
AREA 3 WRITTEN PHASING

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-57



SECTION A-A (ALL AMERICAN FREEWAY)



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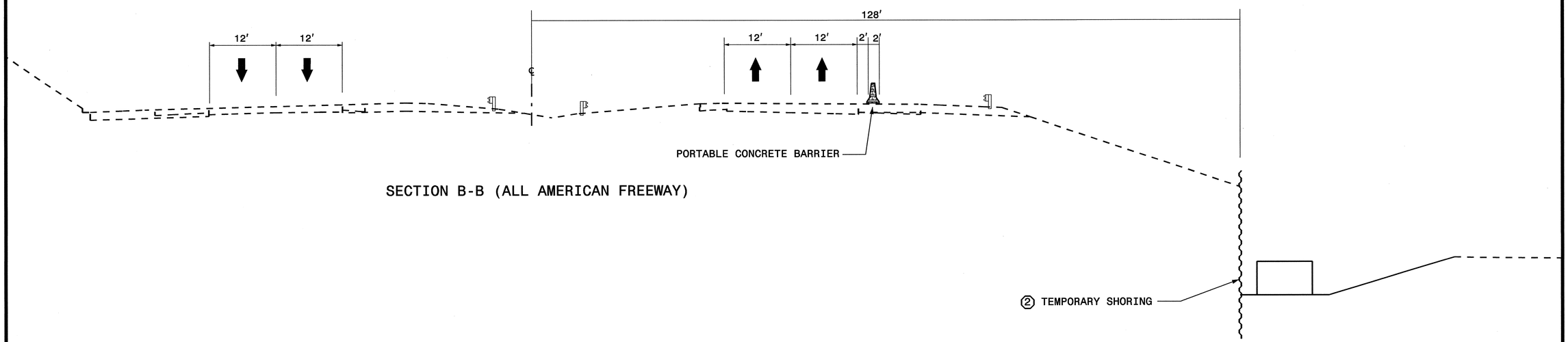
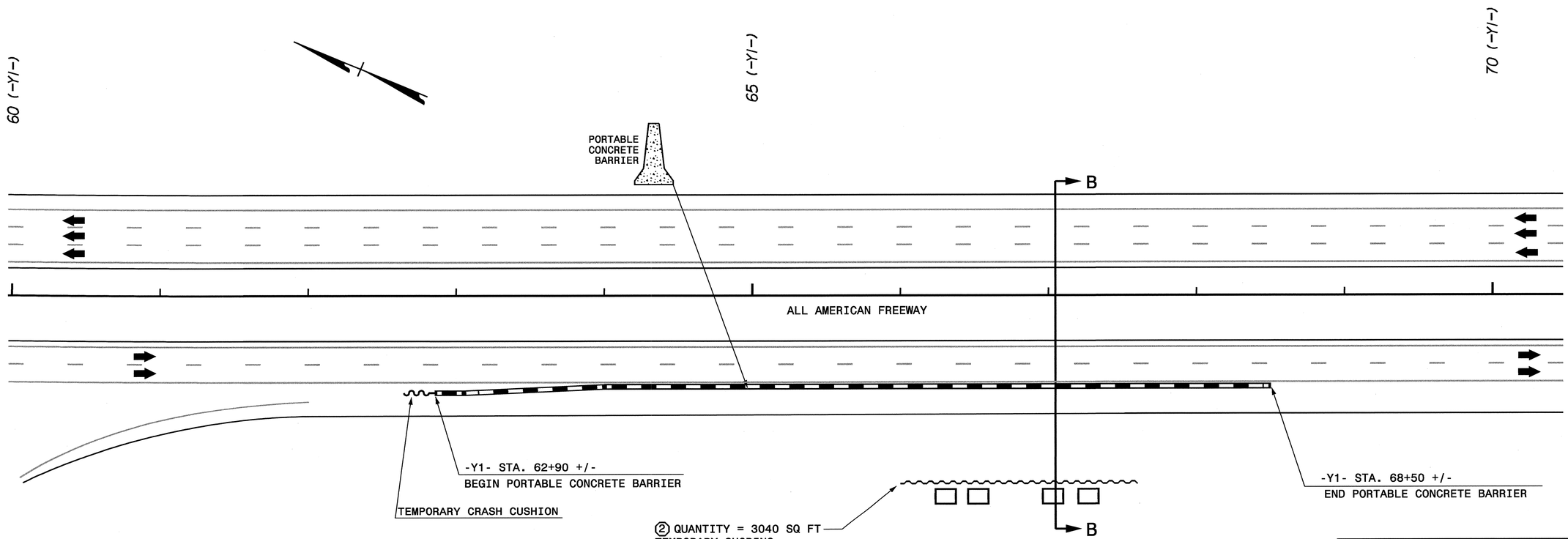
DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 3 DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-58



SECTION B-B (ALL AMERICAN FREEWAY)



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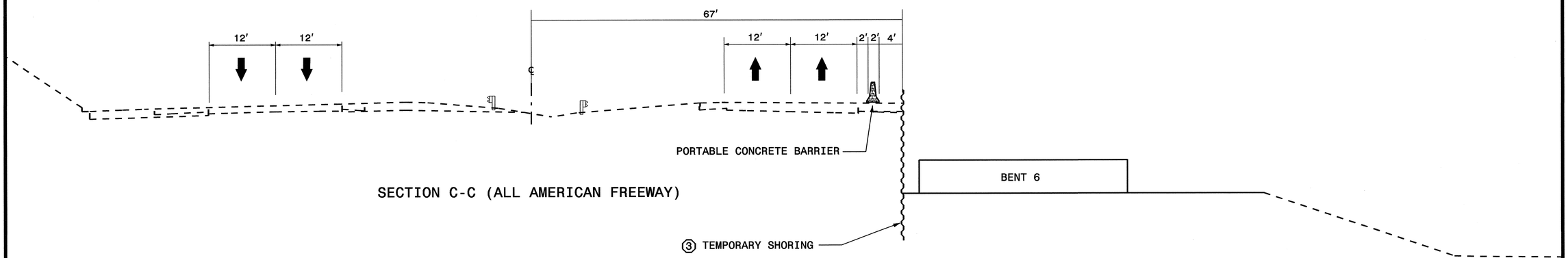
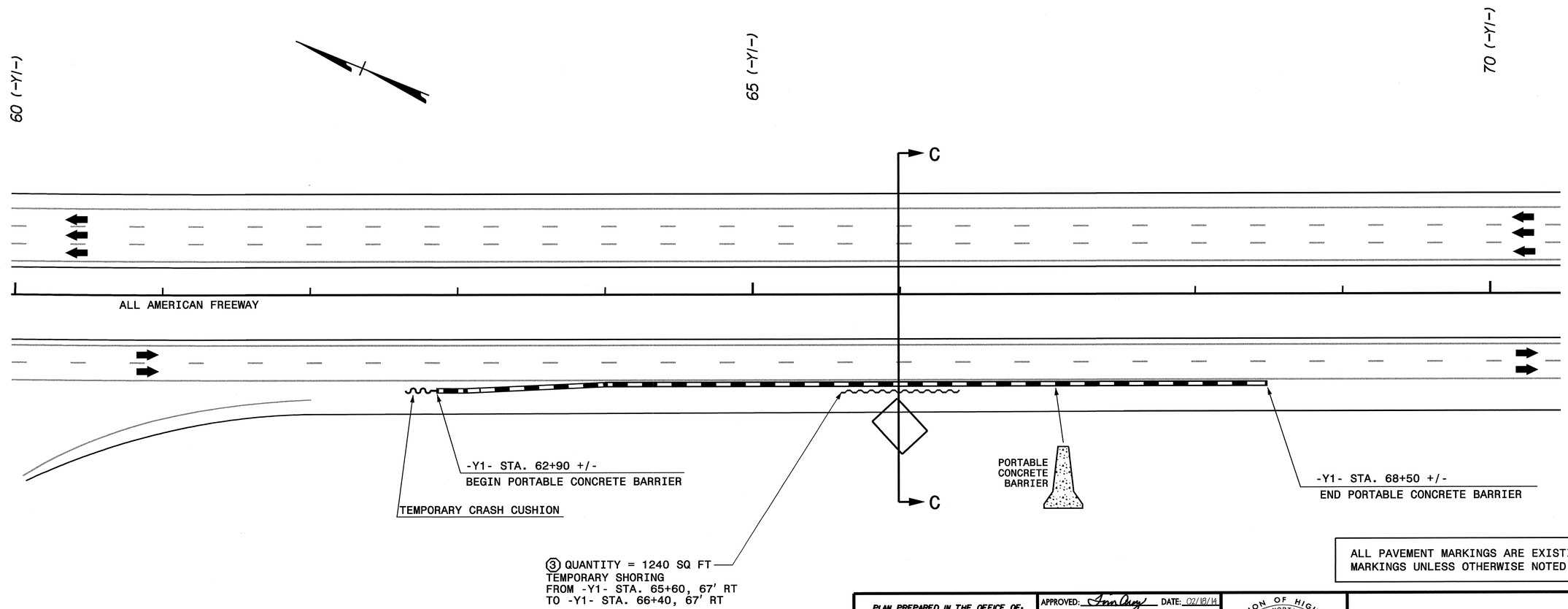
TRANSPORTATION MANAGEMENT PLAN
AREA 3 DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-59





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DIVISION OF HIGHWAYS
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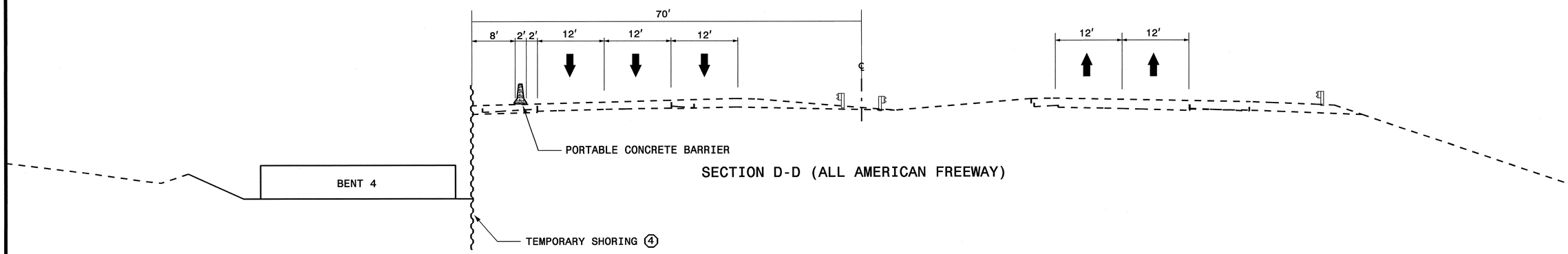
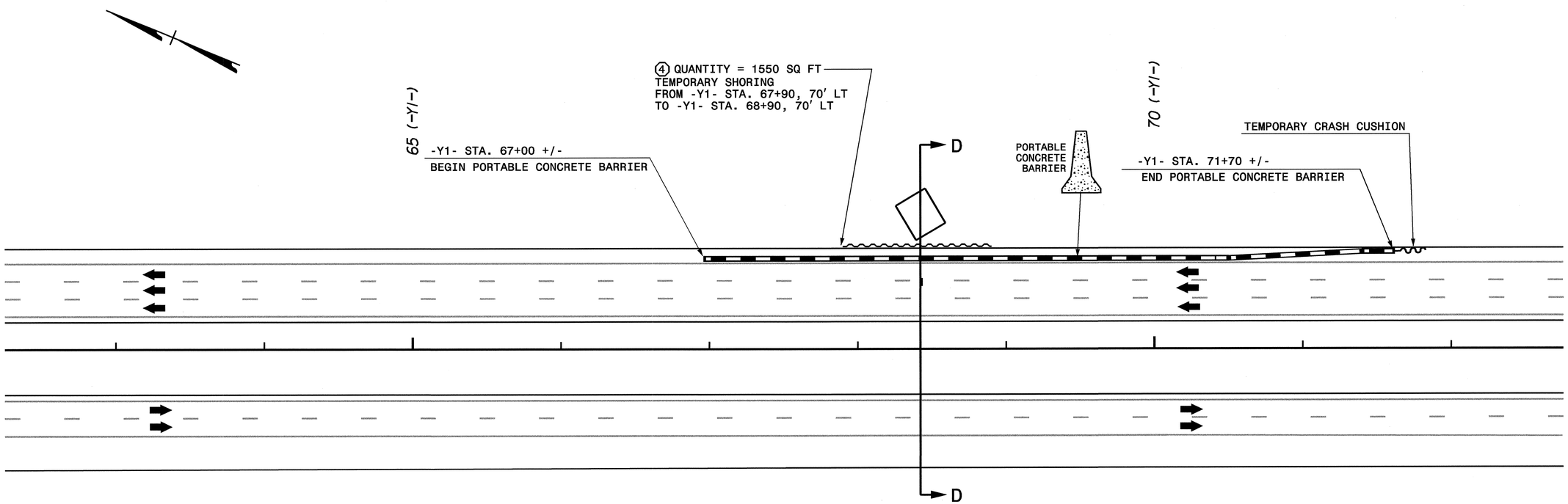
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN AREA 3 DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-60



SECTION D-D (ALL AMERICAN FREEWAY)



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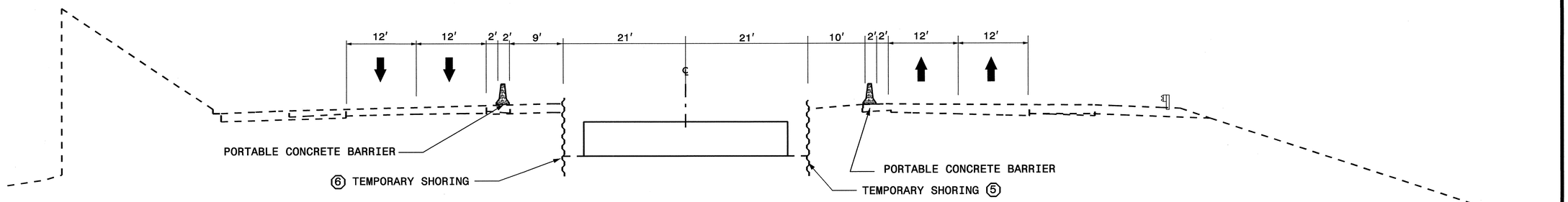
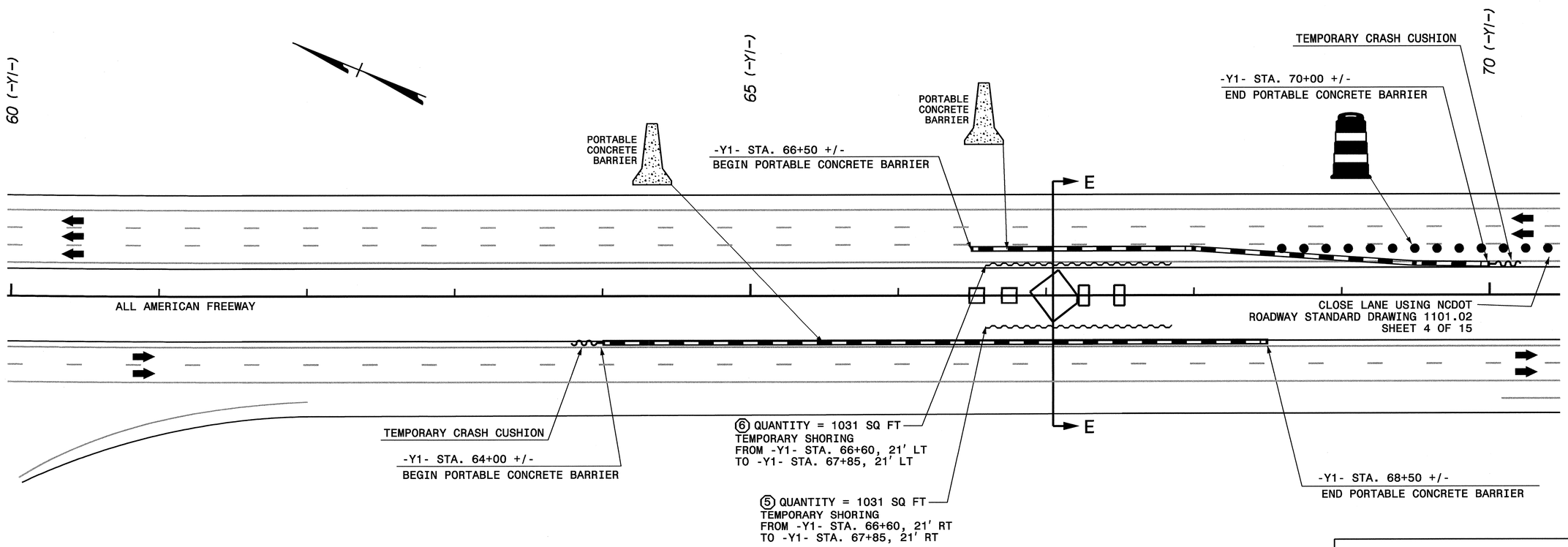
TRANSPORTATION MANAGEMENT PLAN
AREA 3 DETAILS

PROJ. REFERENCE NO.	SHEET NO.
U-2519CB	TMP-61



SECTION E-E (ALL AMERICAN FREEWAY)



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WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
AREA 3 DETAILS