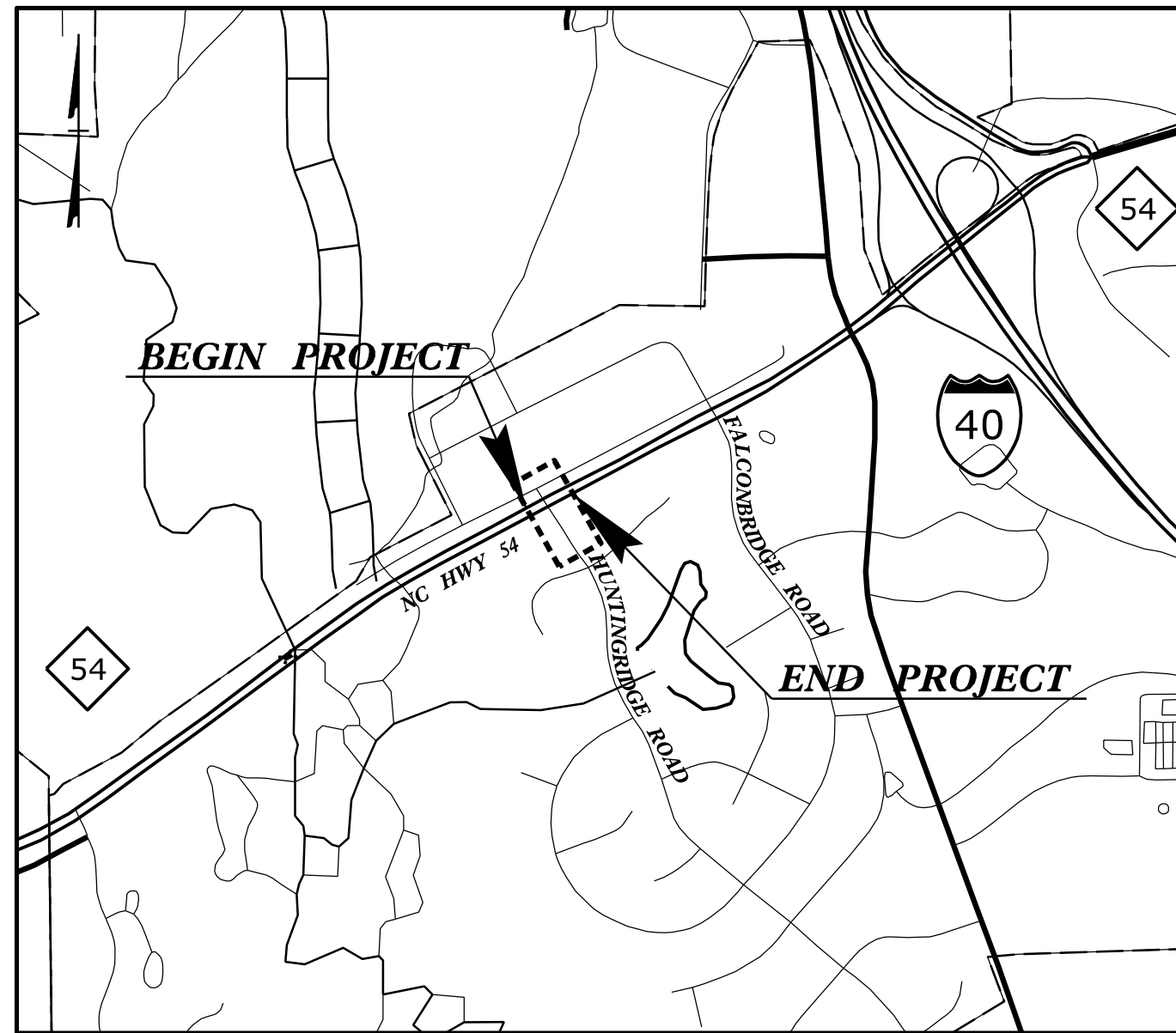


See Sheet 1B For Conventional Symbols



VICINITY MAP NTS

PUBLIC WORKS CONDITION OF APPROVAL:

1. THE DESIGNING PROFESSIONAL (A NCPE, NCPLS, OR NCRLA - AS REQUIRED) SHALL SUBMIT THREE (3) SETS OF CONSTRUCTION DRAWINGS TO THE PUBLIC WORKS DEPARTMENT - DEVELOPMENT REVIEW FOR REVIEW AND APPROVAL. CONSTRUCTION DRAWING APPROVAL IS REQUIRED PRIOR TO COMMENCING CONSTRUCTION (SEE CONSTRUCTION PLAN APPROVAL PROCESS). THE APPROVAL OF CONSTRUCTION DRAWINGS IS SEPARATE FROM SITE PLAN APPROVAL. CITY OFFICIALS SHALL REVIEW ALL SIZES, MATERIALS, SLOPES, LOCATIONS, EXTENSIONS AND DEPTHS FOR ALL PROPOSED UTILITIES (WATERLINES, SANITARY SEWER LINES AND STORM DRAINAGE CONVEYANCE SYSTEMS) FOR COMPLIANCE WITH ALL APPLICABLE REGULATORY STANDARDS, SPECIFICATIONS, AND BEST MANAGEMENT PRACTICES.
2. THE DESIGNING PROFESSIONAL (A NCPE, NCPLS, OR NCRLA - AS REQUIRED) SHALL SUBMIT ONE (1) SET OF AS-BUILT DRAWINGS TO THE PUBLIC WORKS DEPARTMENT - DEVELOPMENT REVIEW FOR REVIEW AND APPROVAL. AS-BUILT DRAWING APPROVAL IS REQUIRED PRIOR TO WATER METER INSTALLATION AND/OR SANITARY SEWER SERVICE CONNECTION AND PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
3. A CONSTRUCTION ON CITY RIGHT-OF-WAY/PRIVATE PROPERTY PERMIT MAY BE REQUIRED. CONTACT THE PUBLIC WORKS CUSTOMER SERVICE DESK AT 560-4326.

NOTES:

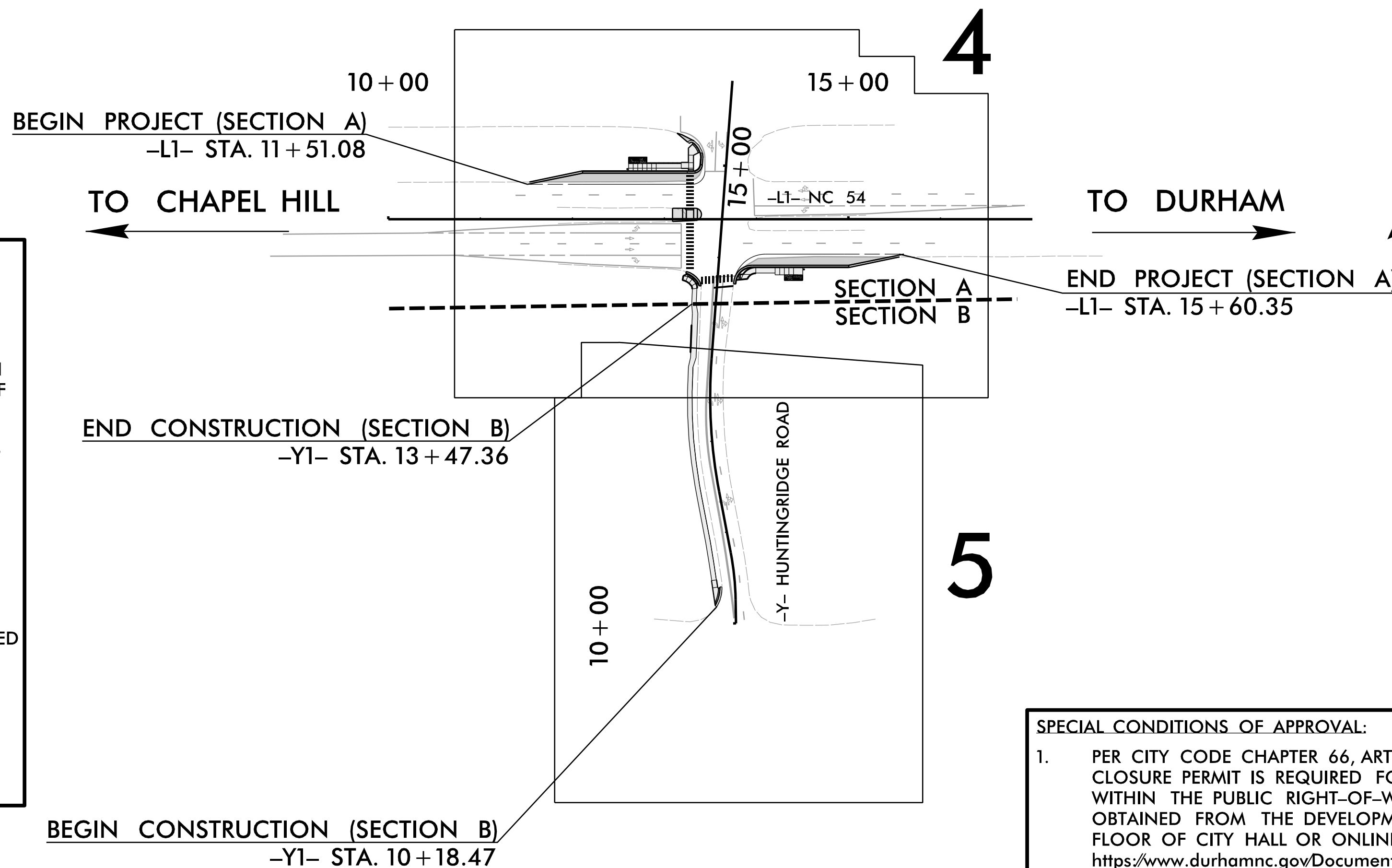
1. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
2. EXISTING CONDITIONS SURVEY PERFORMED BY DRMP.
3. ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH CURRENT CITY OF DURHAM AND/OR NCDOT STANDARDS.
4. THIS PROJECT IS LOCATED WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF DURHAM.

DURHAM COUNTY

HUNTINGRIDGE AND NC 54 IMPROVEMENTS DTP - PRIORITY GOTRIANGLE BUS STOP SAFETY IMPROVEMENTS IN DURHAM (PROJECT CD-21-01-D28)

LOCATION: NC HWY 54 AT HUNTINGRIDGE ROAD

TYPE OF WORK: GRADING, PAVING, CURB & GUTTER, DRAINAGE, & SIDEWALK



INDEX OF SHEETS	
SHEET NUMBER	DESCRIPTION
1	COVER SHEET
1B	CONVENTIONAL SYMBOLS
2A-1	TYPICAL SECTIONS
2B	ROADWAY DETAIL SHEET
3D-1	DRAINAGE SUMMARY SHEET
4 THRU 5	ROADWAY PLAN SHEETS
TMP-1A THRU TMP-3	TRAFFIC CONTROL PHASING NOTES
PMP-1	PAVEMENT MARKING & SIGNING PLANS
EC-1 THRU EC-7	EROSION CONTROL PLANS
SIG-1.0 THRU SIG-1.5	SIGNAL PLANS
X-1 THRU X-7	CROSS SECTION SHEETS

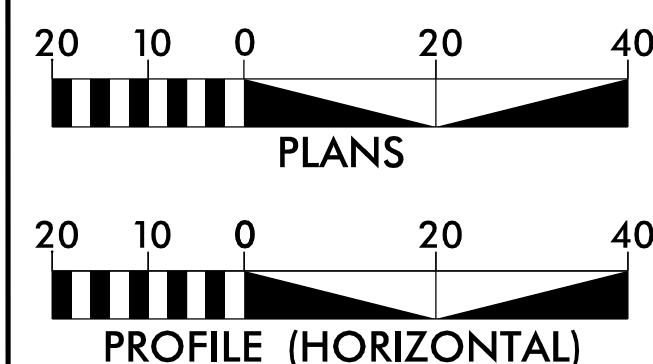
PROJECT DATA:

PROPERTY OWNER: FALCONBRIDGE HOA & PUBLIC RIGHT-OF-WAY
DEVELOPMENT TIER: SUBURBAN
ZONE: RS-M
REGULATORY BASIN: FALLS LAKE
RIVER BASIN: NEUSE
PARCEL ID: 142469, 142533, & PUBLIC RIGHT-OF-WAY
SITE ACREAGE: 8.734 & 20.556
SECTION 1
TOTAL AREA OF DISTURBANCE: 14093 SF
IN ROW: 14093 SF
TOTAL INCREASE IN IMPERVIOUS: 4552 SF
IN ROW: 4552 SF
SECTION 2
TOTAL AREA OF DISTURBANCE: 3373 SF
IN ROW: 3373 SF
TOTAL INCREASE IN IMPERVIOUS: 1664 SF
IN ROW: 1664 SF

SPECIAL CONDITIONS OF APPROVAL:

1. PER CITY CODE CHAPTER 66, ARTICLE VII, SECTION 66-431, A TEMPORARY CLOSURE PERMIT IS REQUIRED FOR ALL STREET AND SIDEWALK CLOSURES WITHIN THE PUBLIC RIGHT-OF-WAY. THE PERMIT APPLICATION CAN BE OBTAINED FROM THE DEVELOPMENT SERVICES CENTER ON THE GROUND FLOOR OF CITY HALL OR ONLINE AT <https://www.durhamnc.gov/DocumentCenter/View/28695/Closure-Permit-Application?bidId=> PRIOR TO ANY ROADWAY CLOSURES, REMOVAL OF ON-STREET PARKING, OR SIDEWALK CLOSURES, TRAFFIC CONTROL PLAN(S) SHALL BE SUBMITTED FOR REVIEW/APPROVAL WITH THE TEMPORARY CLOSURE PERMIT APPLICATION A MINIMUM OF FOUR (4) WEEKS IN ADVANCE OF THE ANTICIPATED CLOSURE. TRAFFIC CONTROL PLANS SHALL INCLUDE NEW OR TEMPORARY CIRCULATION ROUTES AND PROTECTION MEASURES AS APPROPRIATE.

GRAPHIC SCALES



DESIGN DATA

ADT 2019 = 46,000
V = 50 MPH
FUNC. CLASS = PRINCIPAL ARTERIAL

PROJECT LENGTH

-L1- (NC HWY 54) = .077 MILES
-Y1- (HUNTINGRIDGE ROAD) = .062 MILES

GOTRIANGLE CONTACT: RICHARD MAJOR
DIRECTOR - CAPITAL DEVELOPMENT
(919)485-7483

NCDOT CONTACT: JOHN SANDOR, PE
DISTRICT ENGINEER
(919)317-4770

PLANS PREPARED BY:



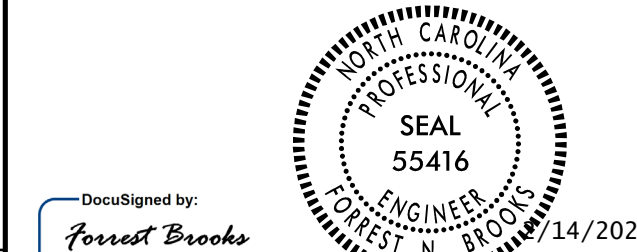
DRMP, INC.
5808 FARMINGTON PLACE
RALEIGH, NC 27609
NC LICENSE NO. F-1524 (919) 872-5115

2024 STANDARD SPECIFICATIONS

BENJAMIN R. LENNON, PE
PROJECT ENGINEER

ERIC H. ALSAUGH
PROJECT DESIGNER

HYDRAULICS ENGINEER




ROADWAY DESIGN ENGINEER



CITY OF DURHAM

PROJECT: CD-21-01-D28 (DRMP PROJ. 19275-12)

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. 1B
PLANS PREPARED BY:  DRMP <small>DRMP, INC. 5888 FARMINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. P-1024 (919) 872-4115</small>	

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Computed Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	⑫③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	MLB
Proposed Wetland Boundary	MLB
Existing Endangered Animal Boundary	EAB
Existing Endangered Plant Boundary	EPB
Existing Historic Property Boundary	HPB
Known Contamination Area: Soil	☠ S
Potential Contamination Area: Soil	☠ S
Known Contamination Area: Water	☠ W
Potential Contamination Area: Water	☠ W
Contaminated Site: Known or Potential	☠ ?

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	□

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	JS
Buffer Zone 1	BZ 1
Buffer Zone 2	BZ 2
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Wetland	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	◆
Exist Permanent Easment Pin and Cap	◇
New Permanent Easment Pin and Cap	◆
Vertical Benchmark	⊠
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	-----
New Right of Way Line with Pin and Cap	◆
New Right of Way Line with Concrete or Granite RW Marker	◆
New Control of Access Line with Concrete C/A Marker	⊠
Existing Control of Access	⊠
New Control of Access	⊠
Existing Easement Line	E
New Temporary Construction Easement	E
New Temporary Drainage Easement	TDE
New Permanent Drainage Easement	PDE
New Permanent Drainage / Utility Easement	DUE
New Permanent Utility Easement	PUE
New Temporary Utility Easement	TUE
New Aerial Utility Easement	AUE

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	C
Proposed Slope Stakes Fill	F
Proposed Curb Ramp	CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊙
Pavement Removal	⊠

VEGETATION:

Single Tree	○
Single Shrub	○

Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊙
Storm Sewer	S

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊙
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	-----
H-Frame Pole	●
U/G Power Line LOS B (S.U.E.*)	-----
U/G Power Line LOS C (S.U.E.*)	-----
U/G Power Line LOS D (S.U.E.*)	-----

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊙
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	-----
U/G Telephone Cable LOS B (S.U.E.*)	-----
U/G Telephone Cable LOS C (S.U.E.*)	-----
U/G Telephone Cable LOS D (S.U.E.*)	-----
U/G Telephone Conduit LOS B (S.U.E.*)	-----
U/G Telephone Conduit LOS C (S.U.E.*)	-----
U/G Telephone Conduit LOS D (S.U.E.*)	-----
U/G Fiber Optics Cable LOS B (S.U.E.*)	-----
U/G Fiber Optics Cable LOS C (S.U.E.*)	-----
U/G Fiber Optics Cable LOS D (S.U.E.*)	-----

WATER:

Water Manhole	⊙
Water Meter	○
Water Valve	⊗
Water Hydrant	⊙
U/G Water Line LOS B (S.U.E.*)	-----
U/G Water Line LOS C (S.U.E.*)	-----
U/G Water Line LOS D (S.U.E.*)	-----
Above Ground Water Line	A/G Water
TV:	
TV Pedestal	⊠
TV Tower	⊗
U/G TV Cable Hand Hole	-----
U/G TV Cable LOS B (S.U.E.*)	-----
U/G TV Cable LOS C (S.U.E.*)	-----
U/G TV Cable LOS D (S.U.E.*)	-----
U/G Fiber Optic Cable LOS B (S.U.E.*)	-----
U/G Fiber Optic Cable LOS C (S.U.E.*)	-----
U/G Fiber Optic Cable LOS D (S.U.E.*)	-----

GAS:

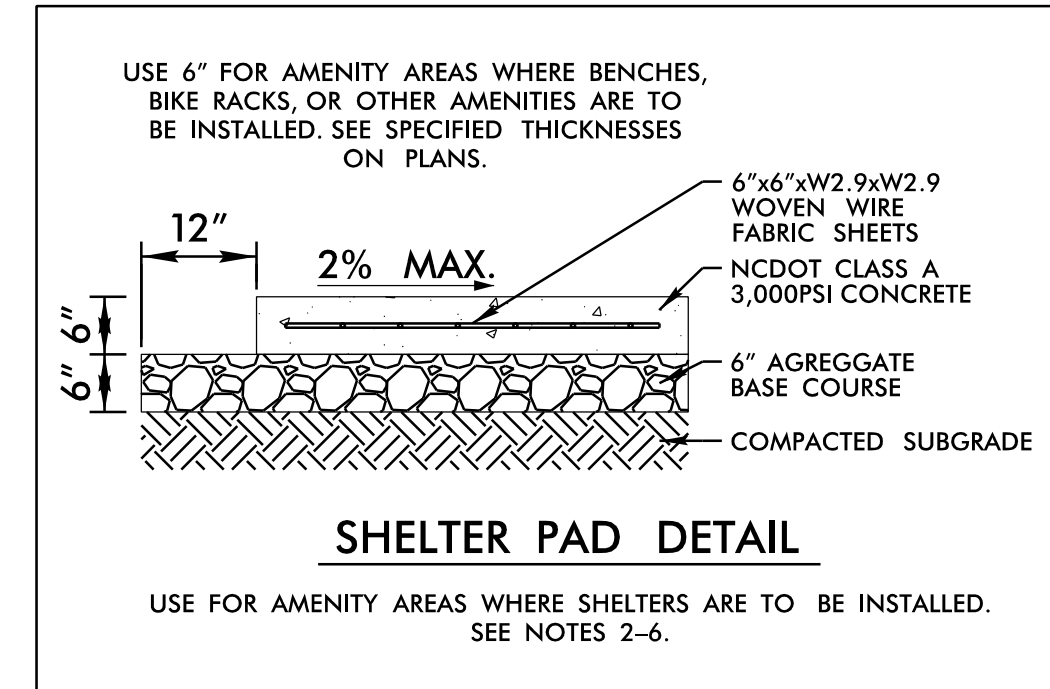
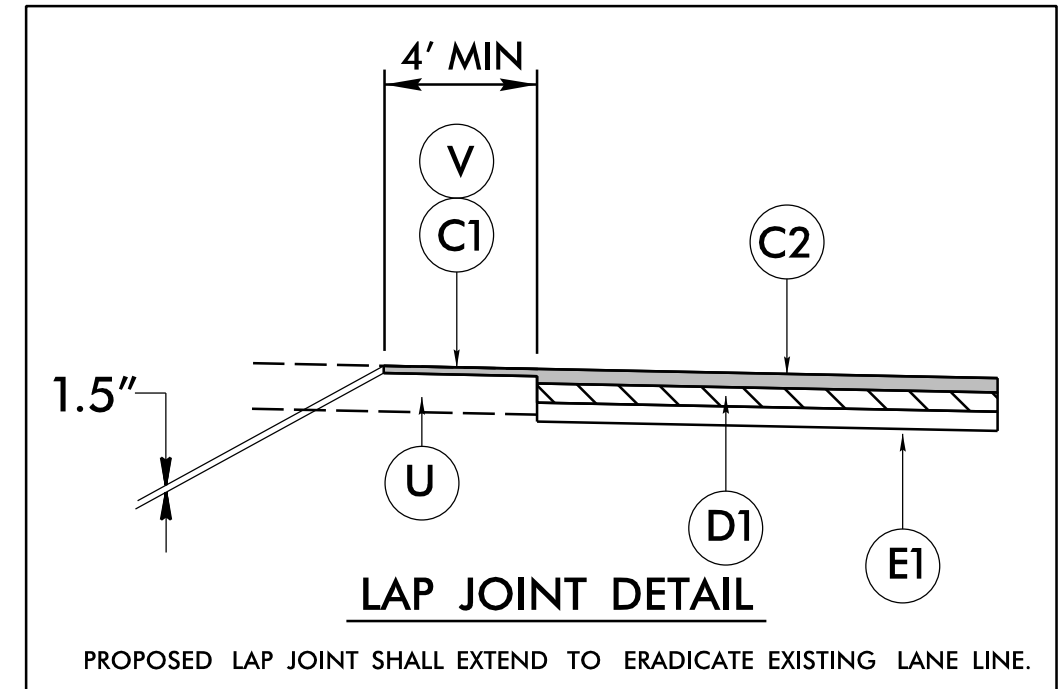
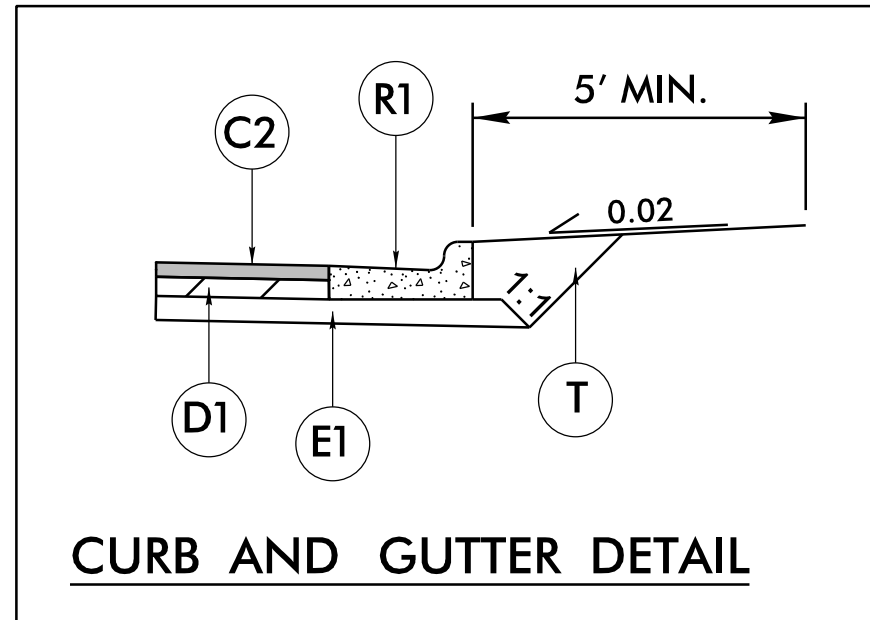
Gas Valve	◇
Gas Meter	⊙
U/G Gas Line LOS B (S.U.E.*)	-----
U/G Gas Line LOS C (S.U.E.*)	-----
U/G Gas Line LOS D (S.U.E.*)	-----
Above Ground Gas Line	A/G Gas
SANITARY SEWER:	
Sanitary Sewer Manhole	⊙
Sanitary Sewer Cleanout	⊙
U/G Sanitary Sewer Line	SS
Above Ground Sanitary Sewer	A/G Sanitary Sewer
SS Forced Main Line LOS B (S.U.E.*)	-----
SS Forced Main Line LOS C (S.U.E.*)	-----
SS Forced Main Line LOS D (S.U.E.*)	-----

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	-----
U/G Tank; Water, Gas, Oil	-----
Underground Storage Tank, Approx. Loc.	UST
A/G Tank; Water, Gas, Oil	-----
Geoenvironmental Boring	⊙
U/G Test Hole LOS A (S.U.E.*)	⊙
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

PAVEMENT SCHEDULE	
C1	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER INCH
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
J	6" AGGREGATE BASE COURSE
R1	2'-6" CONCRETE CURB AND GUTTER (NCDOT 846.01)
S1	4" CONCRETE SIDEWALK (CITY OF DURHAM 402.02)
S2	6" CONCRETE SIDEWALK (CITY OF DURHAM 402.02)
S3	6" CONCRETE SHELTER PAD WITH WIRE FABRIC (SEE DETAIL)
T	COMPACTED EARTH MATERIAL
U	EXISTING PAVEMENT
V	1.5" MILLING

- NOTES: 1. ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE SPECIFIED.
 2. REINFORCE SHELTER PAD WITH WOVEN WIRE FABRIC SHEETS. WOVEN WIRE FABRIC SHEETS SHALL HAVE MINIMUM 6" OVERLAPS AND PLACED WITHIN 3" ON ALL SIDES.
 3. EXTEND AGGREGATE BASE COURSE 12" BEYOND EDGE OF PAD IN ALL DIRECTIONS EXCEPT WHERE BORDERED BY EXISTING PAVEMENTS.
 4. AGGREGATE BASE COURSE SHALL MEET NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
 5. SUBGRADE AND AGGREGATE BASE COURSE SHALL BE PROPERLY COMPACTED WITH PLATE TAMPERS PRIOR TO PLACING CONCRETE.
 6. CROSS SLOPE OF AMENITY AREA PAVEMENTS SHALL BE A MAXIMUM OF 2% UNLESS OTHERWISE APPROVED, OR NOTED ON THE PLANS.



PROJECT REFERENCE NO. CD-21-01-D28 SHEET NO. 2A-1

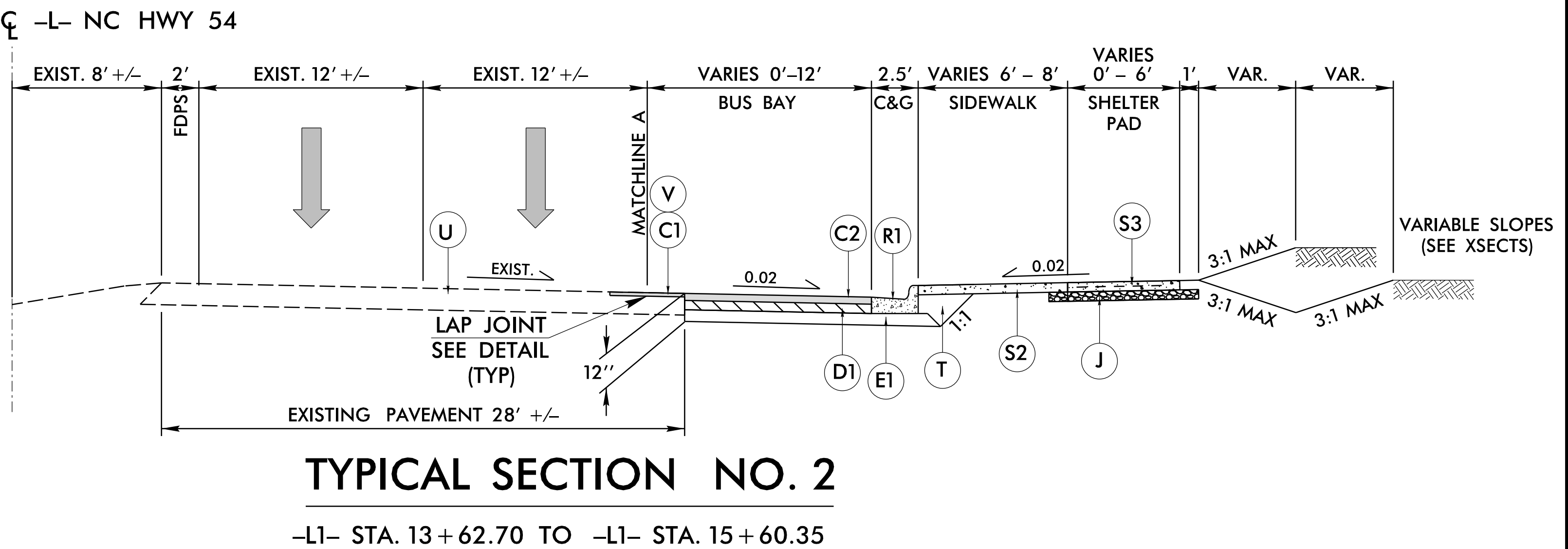
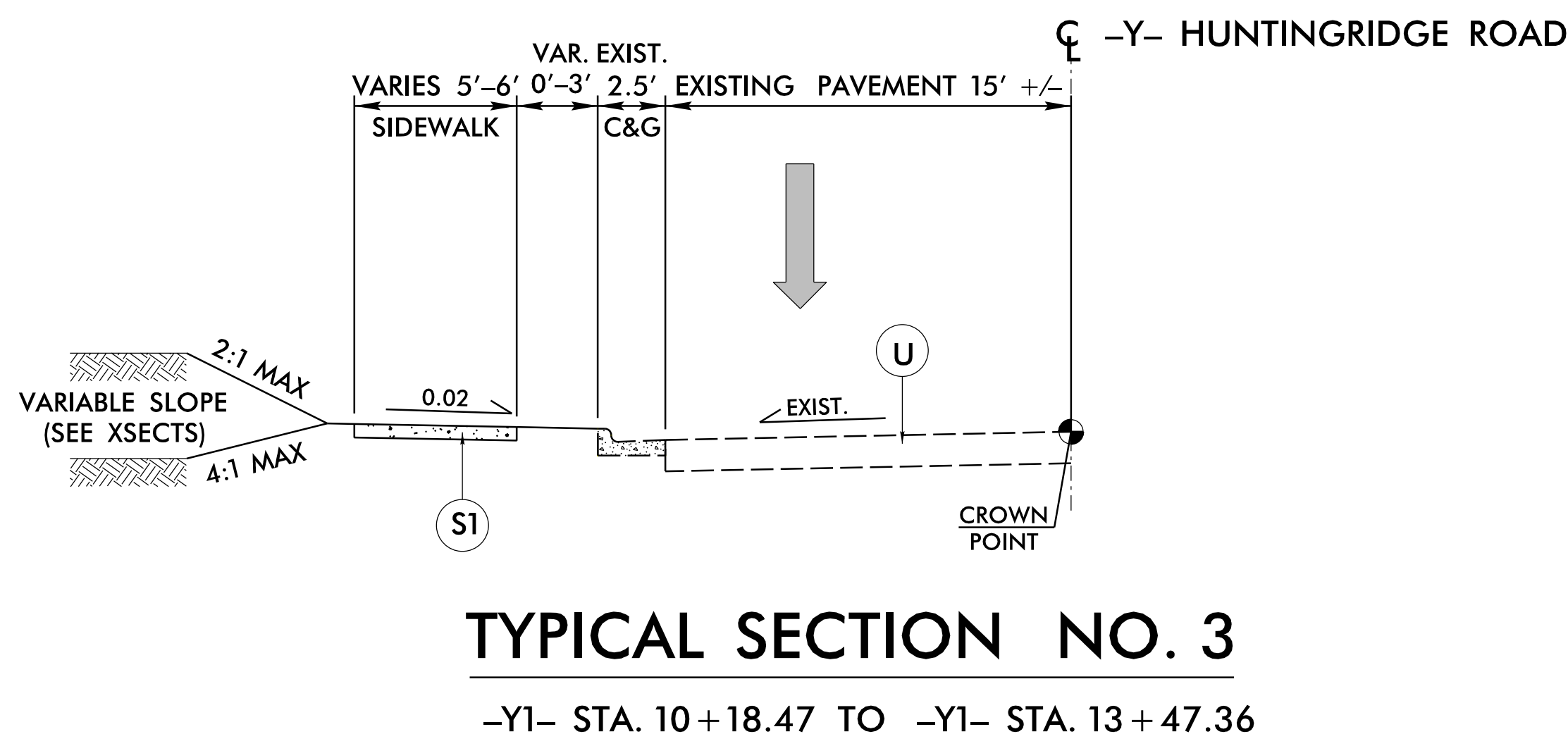
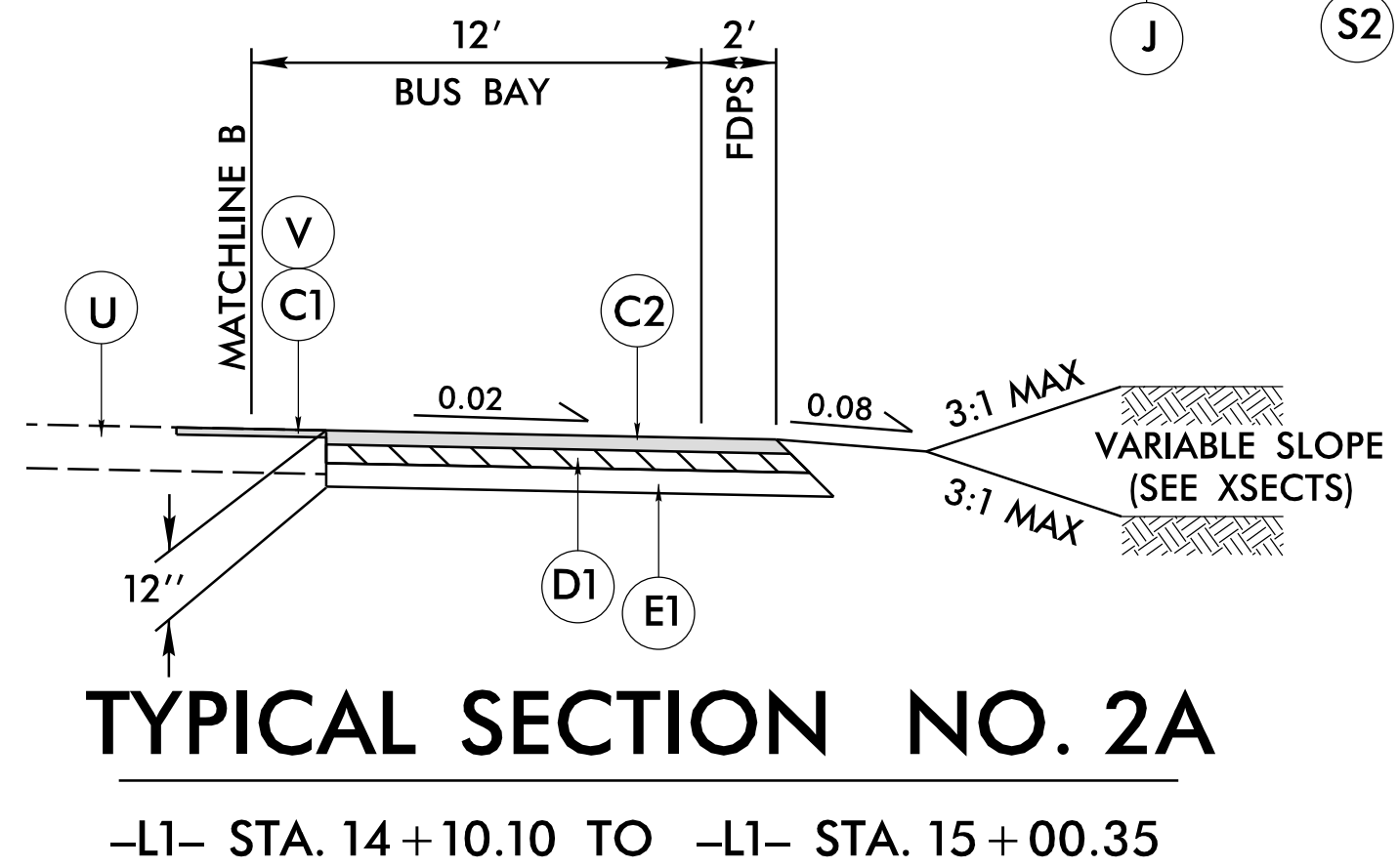
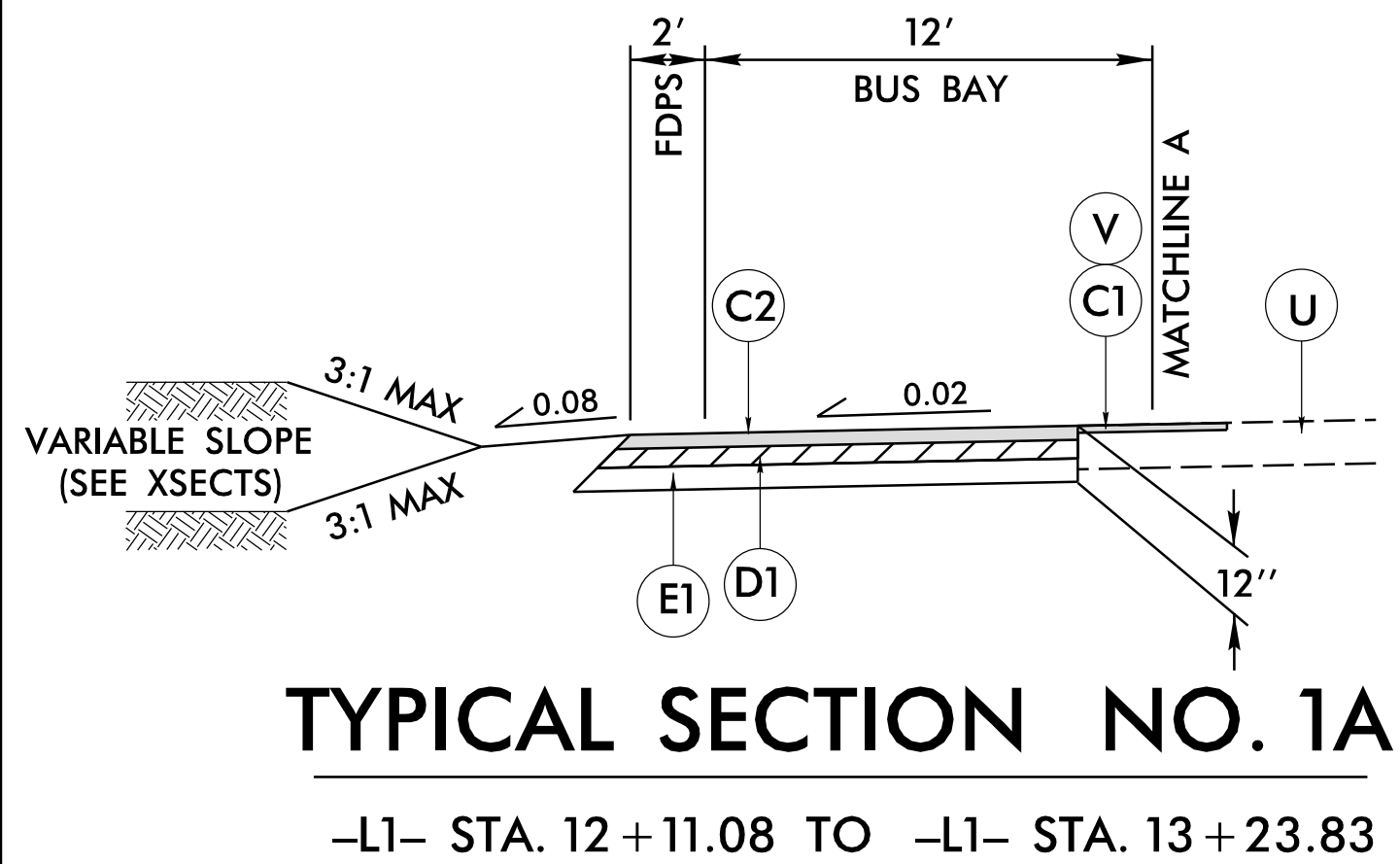
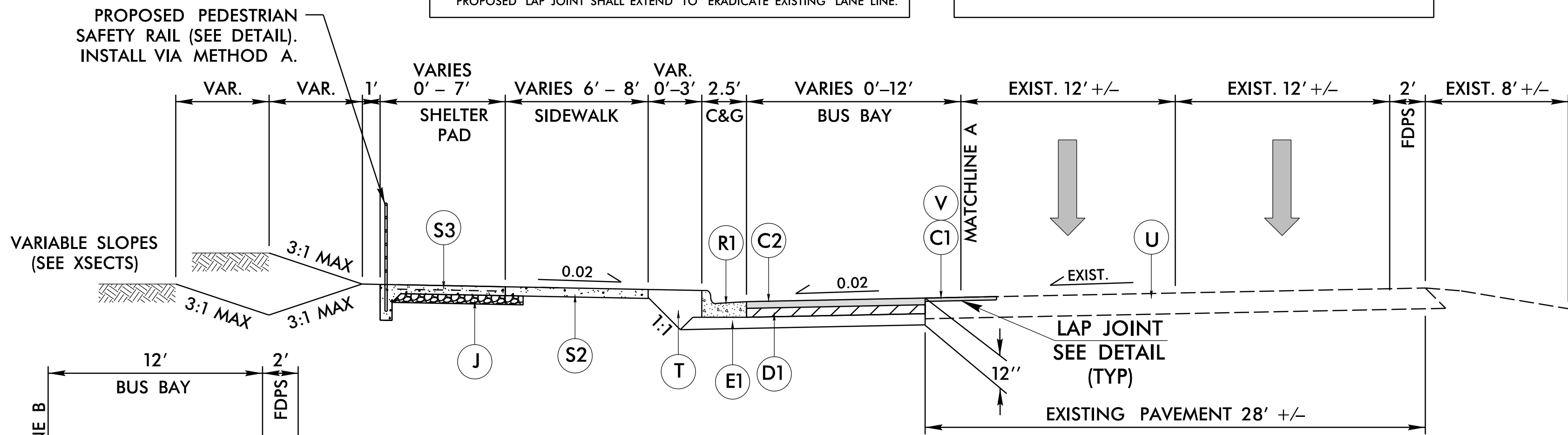
ROADWAY DESIGN ENGINEER

Signed by: Benjamin Lawson, S.E. 037438

DRMP

PLANS PREPARED BY: DRMP, INC. 588 FARMINGTON PLACE RALEIGH, NC 27603 NC LICENSE NO. F-1524 (919) 872-0115

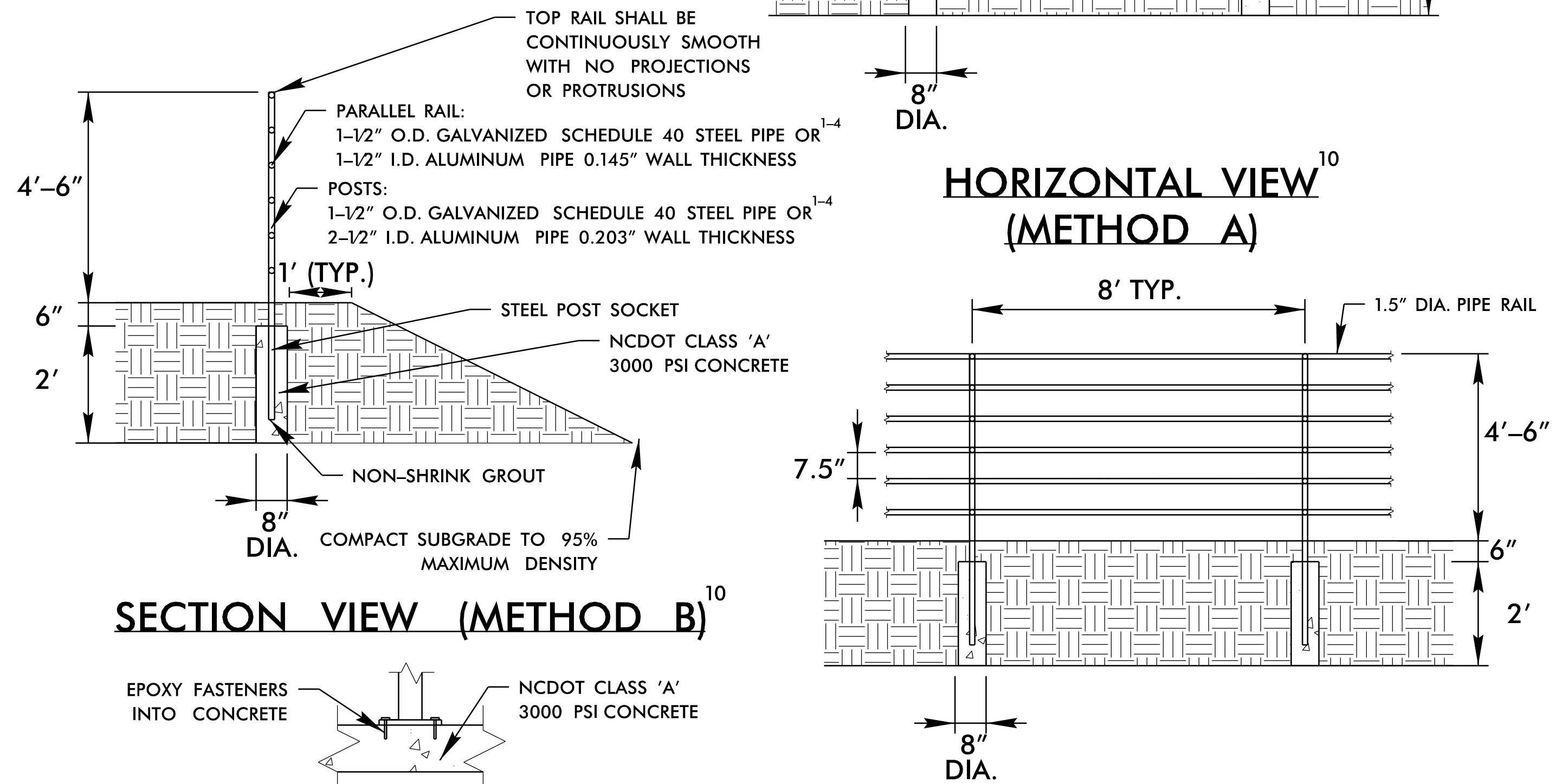
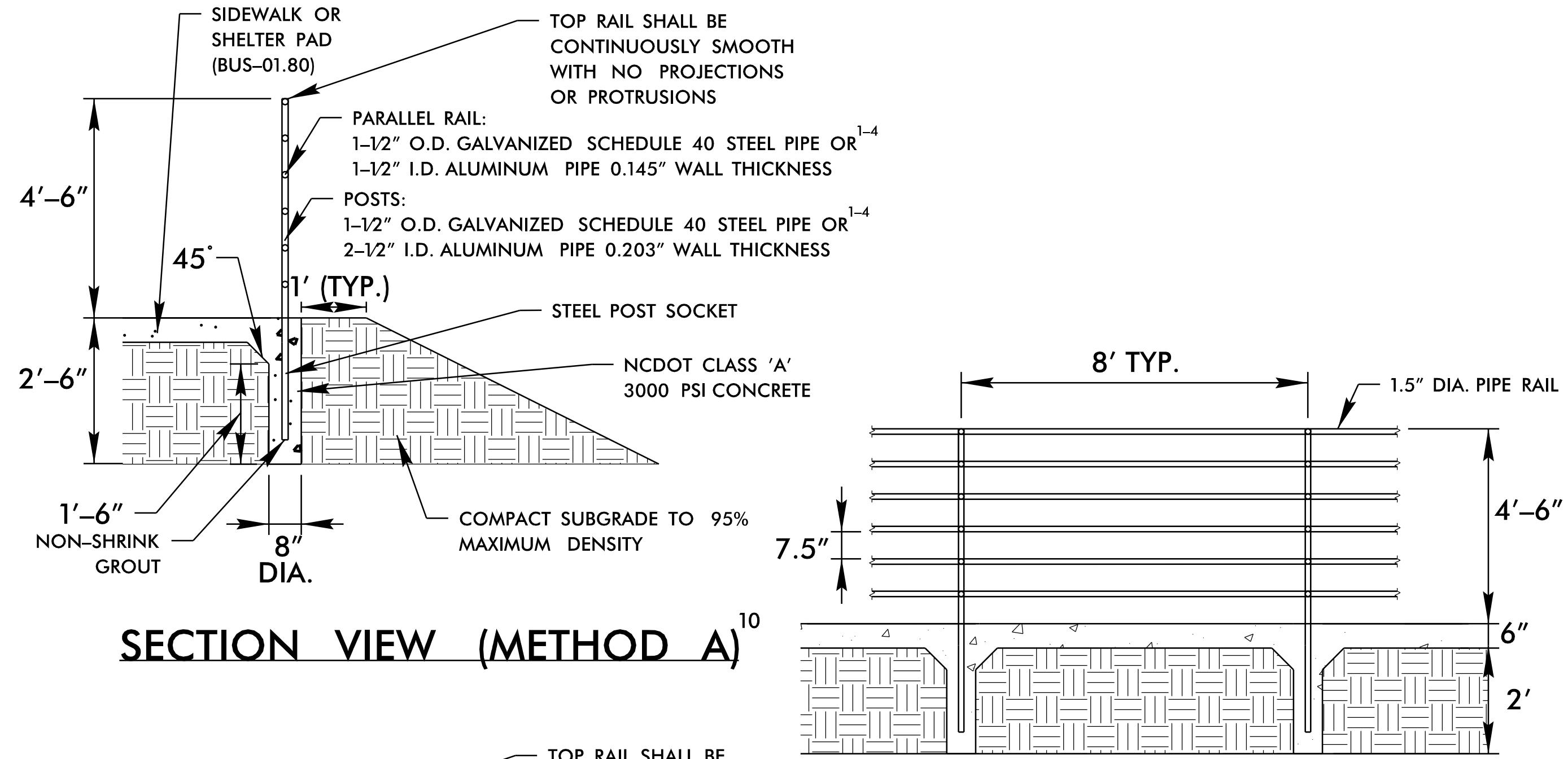
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. 2B
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PLANS PREPARED BY: 	
DRMP, INC. 5808 FARRINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F-1524 (1919) 072-0115	

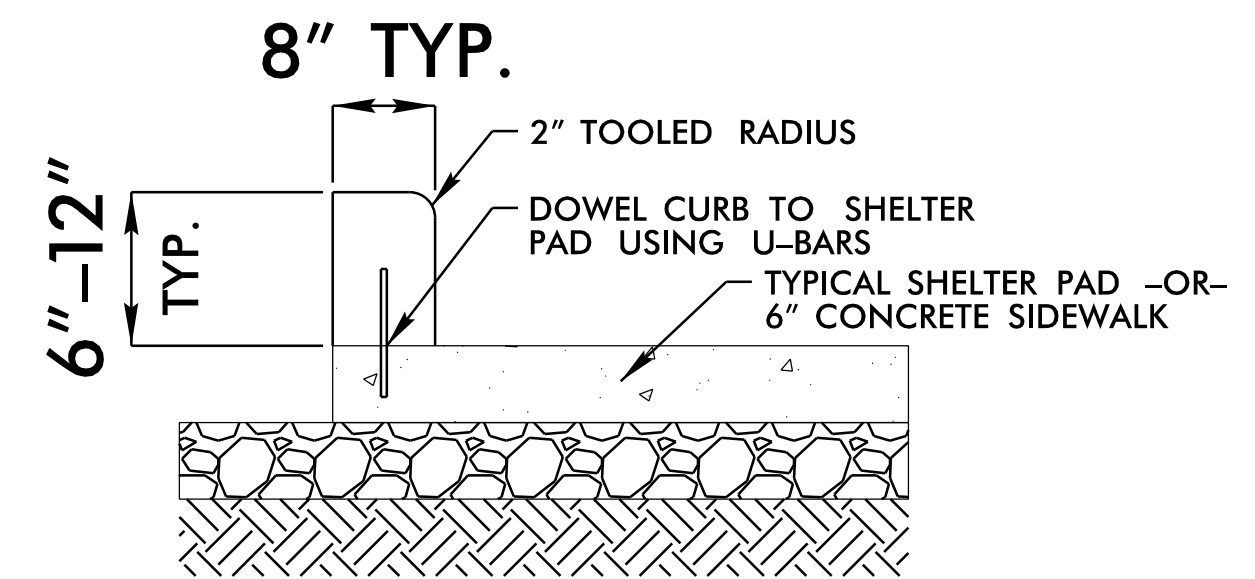
PEDESTRIAN SAFETY RAIL



ALUMINUM POST MOUNT (METHOD C) HORIZONTAL VIEW (METHOD B)

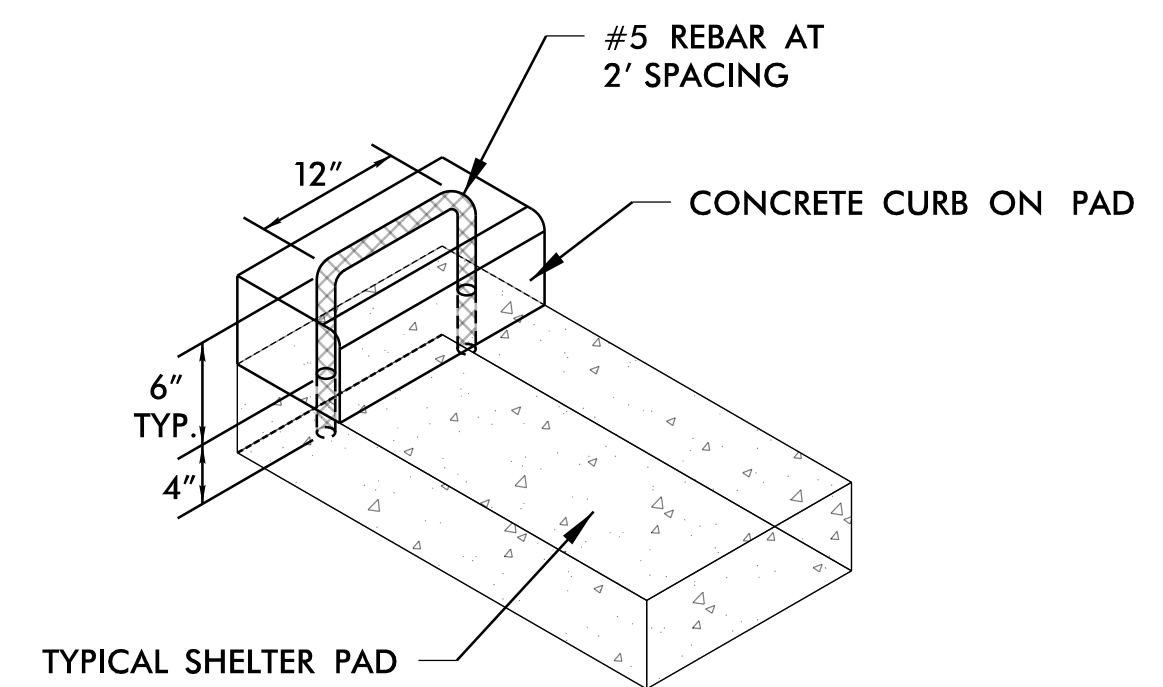
- NOTES:
1. CONSTRUCT PROPOSED STEEL PIPE RAIL OF 1.5" DIAMETER SCHEDULE 40 PLAIN END GALVANIZED STEEL PIPE MEETING REQUIREMENTS OF ASTM A53.
 2. REPAIR GALVANIZING IN ACCORDANCE WITH SECTION 1076 OF THE NCDOT STANDARD SPECIFICATIONS.
 3. PAINT, IF REQUIRED BY ENGINEER, IN ACCORDANCE WITH SECTION 1080 OF THE NCDOT SPECIFICATIONS.
 4. WELD IN ACCORDANCE WITH ARTICLE 1072-18 OF THE NCDOT STANDARD SPECIFICATIONS.
 5. GOTRIANGLE WILL BE REQUIRED TO PERFORM A SAFETY AND SECURITY REVIEW FOR ALL BUS STOP LOCATIONS. CONTACT GOTRIANGLE'S PLANNING & CAPITAL DEVELOPMENT STAFF AT 919-314-8746 TO SCHEDULE A REVIEW.
 6. SHOP DRAWINGS OF PEDESTRIAN SAFETY RAIL ARE TO BE PROVIDED TO GOTRIANGLE FOR REVIEW PRIOR TO APPROVAL.
 7. EARTH SLOPES STEEPER THAN 2:1 ADJACENT TO TRANSIT PASSENGER AREAS ARE NOT RECOMMENDED AND WOULD REQUIRE SUPPORTING CALCULATIONS AND APPROVAL BY GOTRIANGLE.
 8. PLACEMENT OF SAFETY RAIL IN RELATION TO SHOULDER BREAK POINT AND SIDEWALK MAY BE MODIFIED AS DIRECTED BY THE ENGINEER.
 9. EXCEPTIONS TO THE REQUIREMENTS STATED MAY BE CONSIDERED ON A CASE-BY-CASE BASIS WITH DOCUMENTATION BY THE ENGINEER AND APPROVAL BY GOTRIANGLE.
 10. PREFERRED METHOD OF INSTALLATION IS TO BE DETERMINED BY GOTRIANGLE.

SURFACE MOUNTED CONCRETE CURB



SURFACE MOUNTED CONCRETE CURB

HEIGHT & WIDTH MAY VARY BASED ON FIELD CONDITIONS. SEE SPECIFIED HEIGHTS ON PLANS.

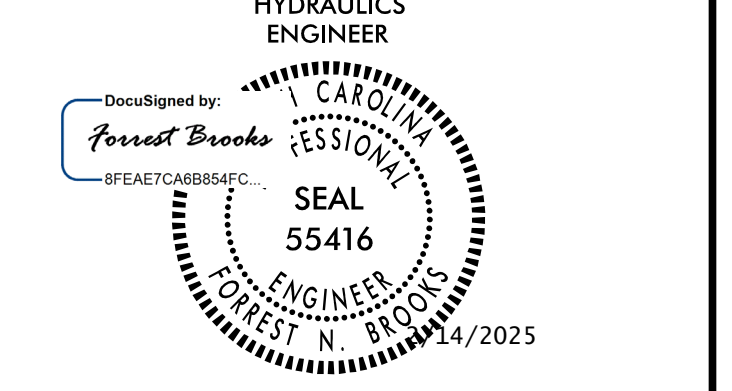


U-BAR DETAIL

ADJUST U-BAR HEIGHT TO PROVIDE MINIMUM 2" COVER WHERE CURB HEIGHT VARIES



PROJECT REFERENCE NO. CD-21-01-D28 SHEET NO. 3D-1



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

COMPUTED BY: FNB DATE: 4/24/24
CHECKED BY: MDB DATE: 4/24/24

PROJECT NO. 19275 SHEET NO. 3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications for Roads and Structures, Section 300-5".

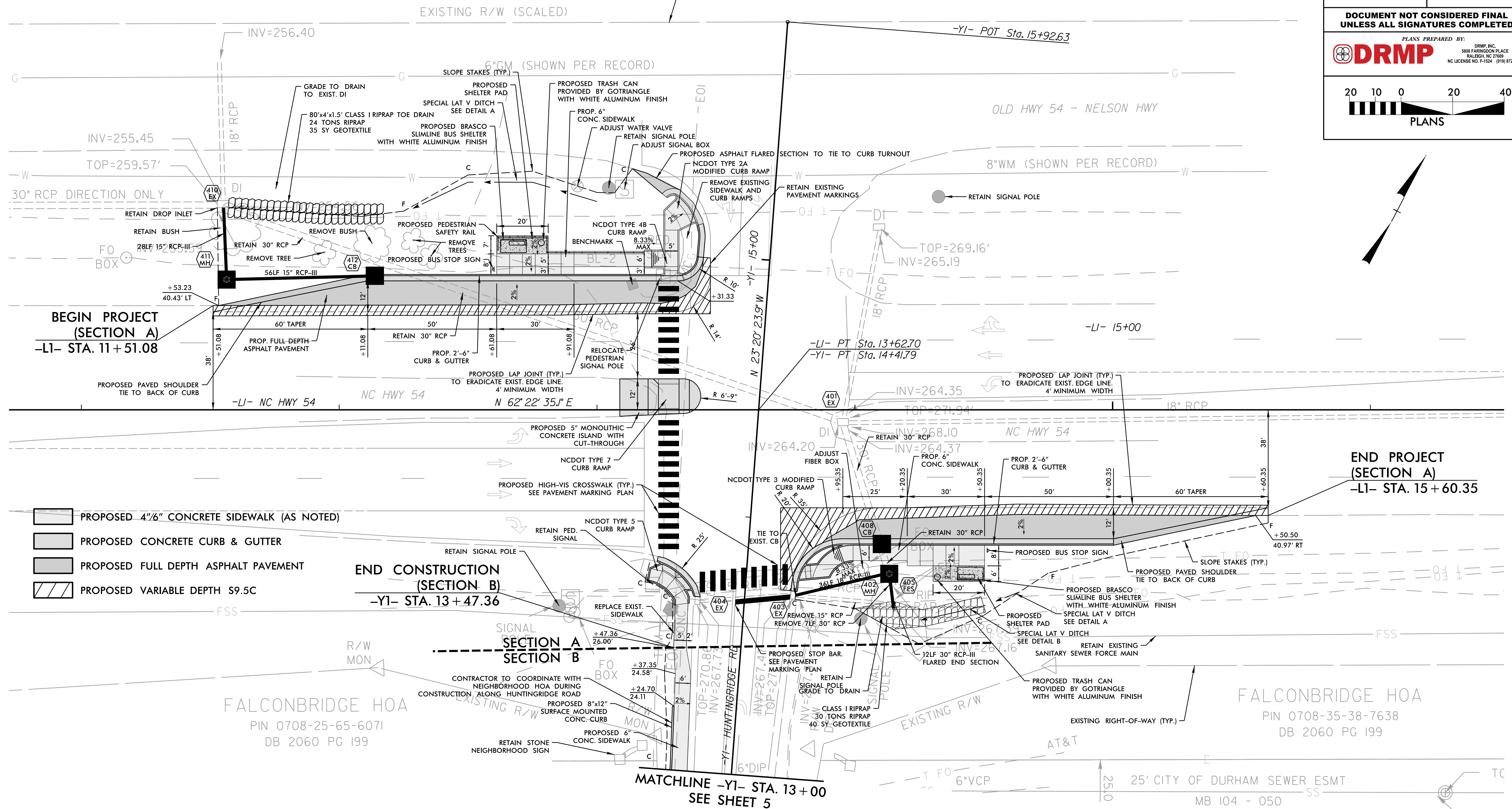
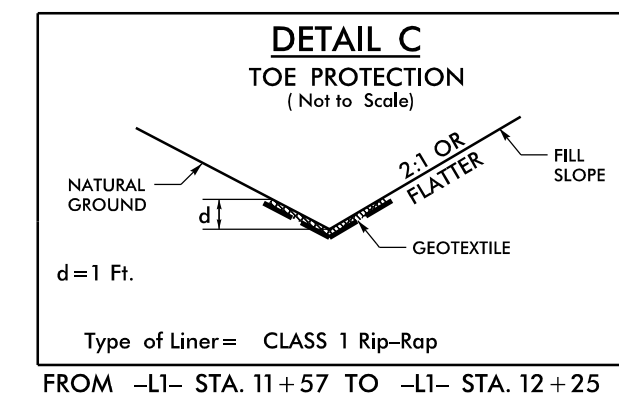
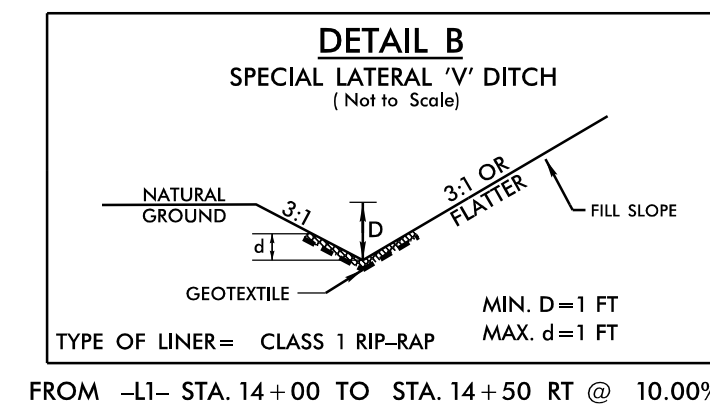
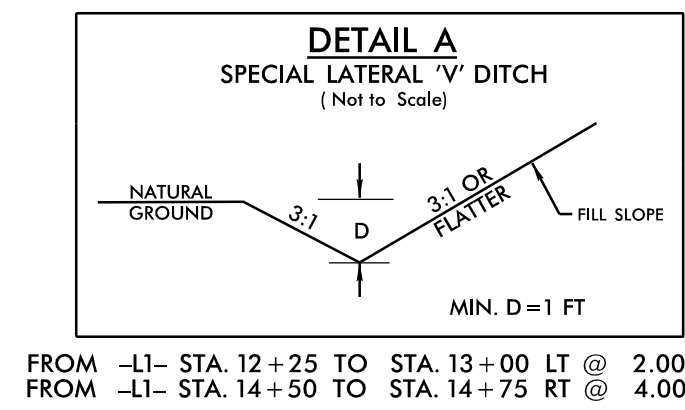
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns: LINE & STATION, SIZE, THICKNESS OR GAUGE, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, R. C. PIPE CLASS III, ENDWALLS, REINFORCED ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, GRADE TYPE, and REMARKS. Includes summary rows for SHEET TOTALS and PROJECT TOTALS.

2/14/2025 3D\19275-12_hyd_3D-1.dgn User: ealispough

NOTES:

- EXISTING CONDITIONS SURVEY PERFORMED BY DRMP.
- NO RIGHT-OF-WAY OR EASEMENTS HAVE BEEN ACQUIRED ON ADJACENT PROPERTIES. COMPLETE ALL WORK WITHIN EXISTING RIGHT-OF-WAY.
- WORK FOR SIDEWALK ALONG HUNTINGRIDGE ROAD (SECTION B) IS AN ADD ALTERNATE FOR BIDDING PURPOSES. CONTRACTOR SHALL NOT BEGIN CONSTRUCTION UNTIL NOTICE TO PROCEED IS GIVEN BY GOTRIANGLE.



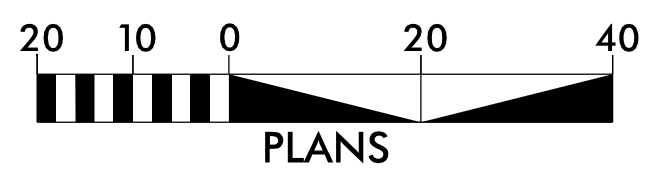
PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. 4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<i>Benjamin Linnan</i> SEAL 037438 ENGINEER BENJAMIN R. LINNAN 2025	<i>Forrest Brooks</i> SEAL 55416 ENGINEER FORREST N. BROOKS 2025
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PLANS PREPARED BY: DRMP, INC. 5808 FARMINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F-1524 (P18) 872-5115	
20 10 0 20 40 PLANS	

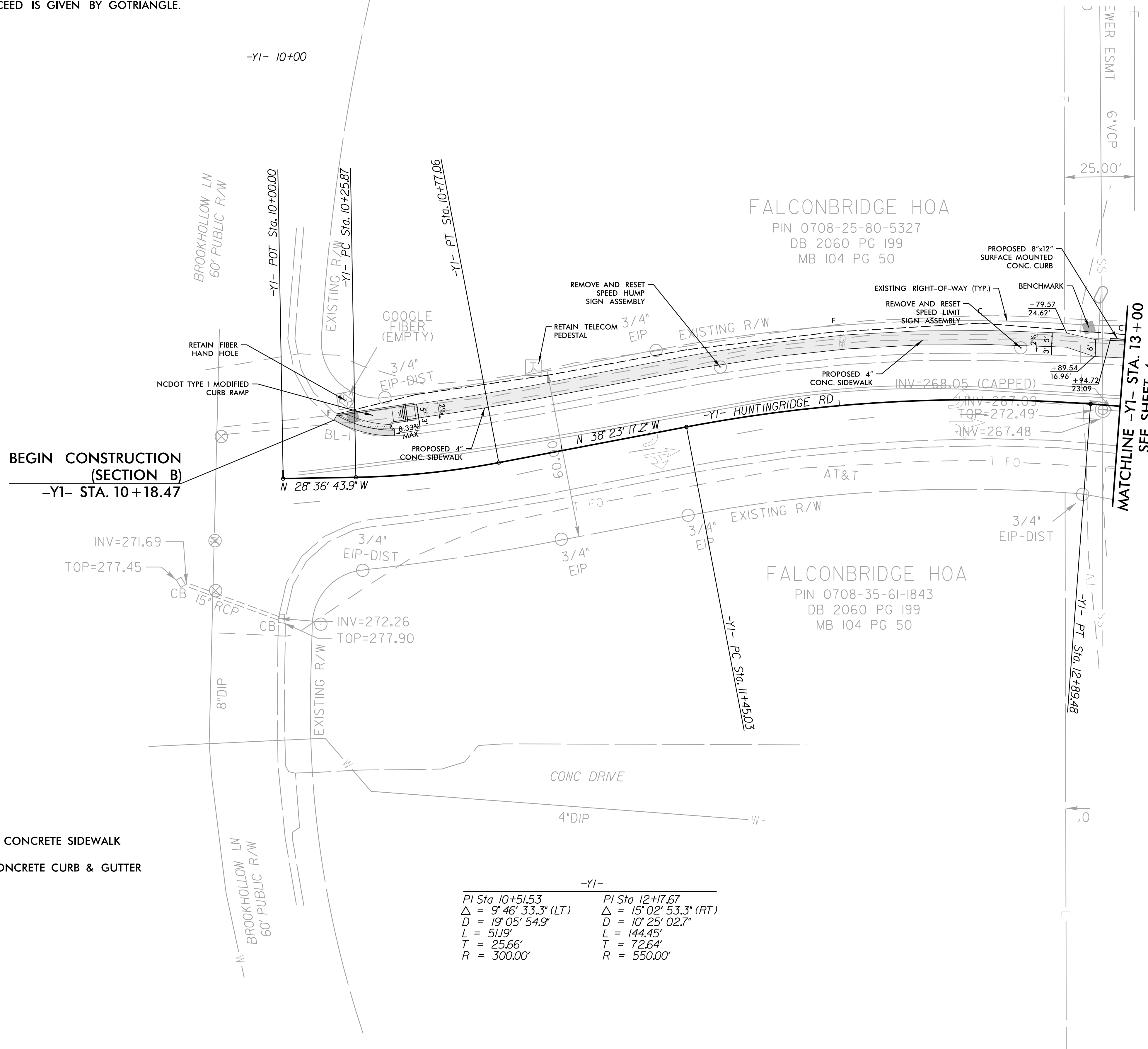
REVISIONS

2/14/2025
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User: eolispough

NOTES:

1. EXISTING CONDITIONS SURVEY PERFORMED BY DRMP.
2. NO RIGHT-OF-WAY OR EASEMENTS HAVE BEEN ACQUIRED ON ADJACENT PROPERTIES. COMPLETE ALL WORK WITHIN EXISTING RIGHT-OF-WAY.
3. WORK FOR SIDEWALK ALONG HUNTINGRIDGE ROAD (SECTION B) IS AN ADD ALTERNATE FOR BIDDING PURPOSES. CONTRACTOR SHALL NOT BEGIN CONSTRUCTION UNTIL NOTICE TO PROCEED IS GIVEN BY GOTRIANGLE.

PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. 5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER Benjamin Lannon SEAL 037438 ENGINEER BENJAMIN LANNON 02/25	HYDRAULICS ENGINEER Forrest Brooks SEAL 55416 ENGINEER FORREST BROOKS 02/25
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
<small>PLANS PREPARED BY:</small> DRMP DRMP, INC. 508 FARMINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F-1524 (919) 873-5115	
 20 10 0 20 40 PLANS	



- PROPOSED 4" CONCRETE SIDEWALK
- PROPOSED CONCRETE CURB & GUTTER

-YI-	
PI Sta 10+51.53	PI Sta 12+17.67
$\Delta = 9^{\circ} 46' 33.3''$ (LT)	$\Delta = 15^{\circ} 02' 53.3''$ (RT)
$D = 19^{\circ} 05' 54.9''$	$D = 10^{\circ} 25' 02.7''$
$L = 51.9'$	$L = 144.45'$
$T = 25.66'$	$T = 72.64'$
$R = 300.00'$	$R = 550.00'$

REVISIONS

2/14/2025
User: ealspaugh

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
NC 54	MONDAY-FRIDAY 6AM-9AM AND 4PM-6PM
HUNTINGRIDGE ROAD	MONDAY-FRIDAY 6AM-9AM AND 4PM-6PM

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

ROAD NAME
NC 54
HUNTINGRIDGE 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 6:00 A.M. DECEMBER 31st TO 6:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 6:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 6:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 6:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

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 6:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 6:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 6:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) 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

- D) 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.
- E) 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.
- F) 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.
- G) 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.
- H) 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.
- I) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON NC 54 AND/OR HUNTINGRIDGE ROAD.

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

PROJ. REFERENCE NO. CD-21-01-D28	SHEET NO. TMP-1A
PLANS PREPARED BY: DRMP <small>DRMP, INC. 8808 FARMINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F-1524 (919) 872-5115</small>	

APPROVED: <small>DocuSigned by: Zachary M. Esposito 5647D076D4884E8</small> DATE: 10/30/2024 SEAL			<h2 style="margin: 0;">TRAFFIC MANAGEMENT PLAN</h2> <h3 style="margin: 0;">GENERAL NOTES</h3>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

GENERAL NOTES

PROJ. REFERENCE NO.	SHEET NO.
CD-21-01-D28	TMP-1B
<small>PLANS PREPARED BY:</small>  <small>DRMP, INC. 5808 FAIRMINGDON PLACE RALEIGH, NC 27609 NC LICENSE NO. F-1524 (919) 872-9115</small>	

TRAFFIC PATTERN ALTERATIONS

L) NOTIFY THE ENGINEER THIRTY (30) 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) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

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

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


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

MISCELLANEOUS

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

T) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

<p>APPROVED: <i>Zachary M. Esposito</i> <small>DocuSigned by: 2647D7D7D4884E8...</small></p> <p>DATE: 10/30/2024</p> <p>SEAL</p> 		<p align="center">TRAFFIC MANAGEMENT PLAN</p> <p align="center">GENERAL NOTES</p>
<p align="center">DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>		

PROJ. REFERENCE NO.	SHEET NO.
CD-21-01-D28	TMP-2
PLANS PREPARED BY:  DRMP, INC. 8808 FARMINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F-1524 (919) 872-5115	

PHASING NOTES

BEFORE BEGINNING ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL INSTALL ALL ADVANCE WARNING SIGNS AND TRAFFIC CONTROL DEVICES (RSD 1101.01). FIELD VERIFY LOCATIONS WITH THE ENGINEER PRIOR TO INSTALLATION.

MAINTAIN VEHICULAR ACCESS TO ALL RESIDENCES, SCHOOLS, BUS STOPS, EMERGENCY SERVICES, AND BUSINESSES DURING THE LIFE OF THE CONTRACT, PRIOR TO INCORPORATION, OBTAIN WRITTEN APPROVAL FROM THE ENGINEER ON METHOD TO MAINTAIN ACCESS.

COMPLETE ANY PROPOSED OR TEMPORARY WIDENING IN SUCH A MANNER THAT NO PONDING OF WATER WILL OCCUR WITHIN THE TRAVEL LANE.

WHEN USING LANE CLOSURES (RSD 1101.02), RETURN TRAFFIC TO EXISTING AND/OR TEMPORARY TRAFFIC PATTERN UPON ACTIVITIES COMPLETION, UNLESS OTHERWISE NOTED IN THE PHASING PLANS.

WHEN PHASING STATES TO USE LANE CLOSURES, REFER TO THE FOLLOWING FOR ALL EXISTING AND PROPOSED ROADS:

- ALL TWO-LANE/TWO-WAY FACILITIES SEE RSD 1101.02 SHEET 1 OF 14
- ALL MULTI-LANE FACILITIES POSTED < 60 MPH SEE RSD 1101.02 SHEET 3 OF 14

COMPLETE PAVING UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE UNTIL STATED TO PLACE FINAL LAYER IN THE PHASING PLANS.

WHEN WEDGING OVER EXISTING PAVEMENT, WEDGE TO PROPOSED ELEVATION (LESS THE FINAL LAYER OF SURFACE COURSE), OR WEDGE AS NEEDED TO MAINTAIN TRAFFIC. MAINTAIN POSITIVE DRAINAGE AND MAINTAIN A MAXIMUM 0.04 ROLLOVER IN BOTH EXISTING AND/OR TEMPORARY TRAVEL LANES.

REPLACE MARKINGS AND RETURN TRAFFIC TO THE CURRENT TRAFFIC PATTERN AT THE END OF EACH WORK PERIOD UNLESS OTHERWISE NOTED IN THE PHASING OR DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL NOTE 1:
FOR THE DURATION OF CONSTRUCTION, ENSURE ALL DRIVEWAY ACCESS IS MAINTAINED.

TRAFFIC CONTROL NOTE 2:
THE ORDER OF PHASE I AND PHASE II CONSTRUCTION CAN BE ADJUSTED, AS NEEDED. ONCE A PHASE HAS BEGUN, THE CONTRACTOR MUST COMPLETE THE CONSTRUCTION PHASE PRIOR TO MOVING ONTO THE NEXT PHASE.

TRAFFIC CONTROL NOTE 3:
FOR THE DURATION OF PHASE I CONSTRUCTION, ENSURE EXISTING PEDESTRIAN TRAFFIC IS NOT IMPACTED.

PHASING PLAN

PHASE I - STEP A

STEP A:
INSTALL WORK ZONE ADVANCE WARNING SIGNS (RSD 1101.01).

USING LANE CLOSURES AS NEEDED, SHIFT TRAFFIC TO THE PHASE I - STEP A TRAFFIC PATTERN. PHASE I - STEP A TRAFFIC PATTERN ENTAILS CLOSING THE EASTBOUND OUTERMOST THROUGH AND RIGHT TURN LANE ALONG NC 54 TO HELP SAFELY CONSTRUCT EASTBOUND NC 54 BUS STOP LOCATION. EASTBOUND NC 54 TRAFFIC WILL BE ALLOWED TO TAKE RIGHTS ONTO HUNTINGRIDGE ROAD FROM THE FURTHEST THROUGH LANE FOR THE DURATION OF THIS PHASE.

ONCE SHIFTED, BEHIND DRUMS AND AWAY FROM TRAFFIC, START AND FINISH EASTBOUND NC 54 BUS STOP LOCATION.

PHASE I - STEP B

STEP B:
MAINTAIN NECESSARY WORK ZONE ADVANCE WARNING SIGNS (RSD 1101.01).

USING LANE CLOSURES AS NEEDED, SHIFT TRAFFIC TO THE PHASE I - STEP B TRAFFIC PATTERN. PHASE I - STEP B TRAFFIC PATTERN ENTAILS CLOSING THE WESTBOUND THROUGH-RIGHT LANE ALONG NC 54 TO HELP SAFELY CONSTRUCT WESTBOUND NC 54 BUS STOP LOCATION. WESTBOUND NC 54 TRAFFIC WILL BE ALLOWED TO TAKE RIGHTS ONTO NELSON HIGHWAY FROM THE THROUGH LANE FOR THE DURATION OF THIS PHASE.

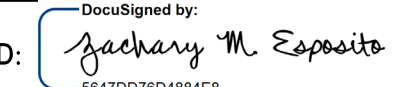

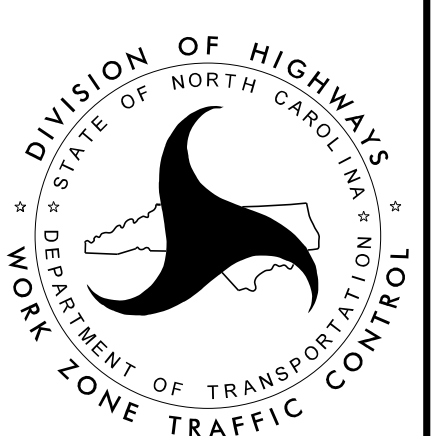
ONCE SHIFTED, BEHIND DRUMS AND AWAY FROM TRAFFIC, START AND FINISH WESTBOUND NC 54 BUS STOP LOCATION.

PHASE II


STEP 1:
INSTALL WORK ZONE ADVANCE WARNING SIGNS ALONG HUNTINGRIDGE ROAD (RSD 1101.01).

USING LANE CLOSURES AND FLAGGERS AS NEEDED, SHIFT TRAFFIC TO THE PHASE II PATTERN. PHASE II TRAFFIC PATTERN ENTAILS CLOSING SOUTHBOUND HUNTINGRIDGE ROAD FROM NC 54 TO BROOKHOLLOW LANE AND UTILIZING FLAGGERS TO MAINTAIN TRAFFIC FLOW. TRAFFIC WILL BE SHIFTED INTO THE NORTHBOUND HUNTINGRIDGE ROAD THROUGHOUT THIS PHASE.

ONCE SHIFTED, BEHIND DRUMS AND AWAY FROM TRAFFIC, START AND FINISH HUNTINGRIDGE ROAD SIDEWALK IMPROVEMENTS.

APPROVED:  DATE: 10/30/2024 SEAL			<h2 style="margin: 0;">PHASING NOTES AND PLAN</h2>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

PHASING PLAN

PROJ. REFERENCE NO.	SHEET NO.
CD-21-01-D28	TMP-3
<small>PLANS PREPARED BY:</small>  <small>DRMP, INC. 8808 FARMINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F-1524 (919) 872-5115</small>	

PHASE III

STEP 1:
INSTALL WORK ZONE ADVANCE WARNING SIGNS (RSD 1101.01).

USING LANE CLOSURES AS NEEDED, SHIFT TRAFFIC TO THE PHASE III TRAFFIC PATTERN. PHASE III TRAFFIC PATTERN ENTAILS CLOSING THE EASTBOUND LEFT TURN LANE AT THE INTERSECTION OF NC 54 AND HUNTINGRIDGE ROAD AND THE WESTBOUND INNERMOST THROUGH LANE ALONG NC 54 TO HELP SAFELY CONSTRUCT THE MEDIAN REFUGE ON NC 54. EASTBOUND NC 54 TRAFFIC WILL HAVE TO UTILIZE THE NEXT INTERSECTION TO MAKE A LEFT ONTO NELSON HIGHWAY FOR THE DURATION OF THIS PHASE.

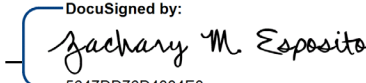


ONCE SHIFTED, BEHIND DRUMS AND AWAY FROM TRAFFIC, START AND FINISH THE MEDIAN REFUGE ON NC 54.

PHASE IV

STEP 1:
MAINTAIN NECESSARY WORK ZONE ADVANCE WARNING SIGNS (RSD 1101.01).

AWAY FROM TRAFFIC, USING LANE CLOSURES AS NEEDED, COMPLETE PAVING, INCLUDING FINAL SURFACE COURSE AND INSTALL FINAL PAVEMENT MARKINGS AND MARKERS.

REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES AND ALLOW NORMAL TRAFFIC OPERATION.

<p>APPROVED:  <small>DocuSigned by: Zachary M. Espinoza 36472076D4884E8...</small></p> <p>DATE: 10/30/2024</p> <p>SEAL</p>			<p>PHASING NOTES AND PLAN</p>
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>			

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES

PAVEMENT MARKING NOTES

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.

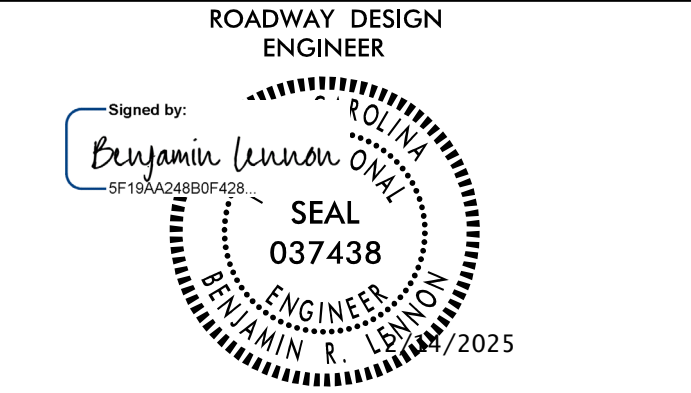
- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
ALL ROADS	THERMOPLASTIC	RAISED
- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- D) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.
- E) REFER TO APPROVED SIGNAL PLANS FOR STOP BAR LOCATIONS AT SIGNALIZED INTERSECTIONS.
- F) MAINTAIN WESTERN LIMITS OF EXISTING CROSSWALK ACROSS NC 54 WHEN STRIPING PROPOSED CROSSWALK.

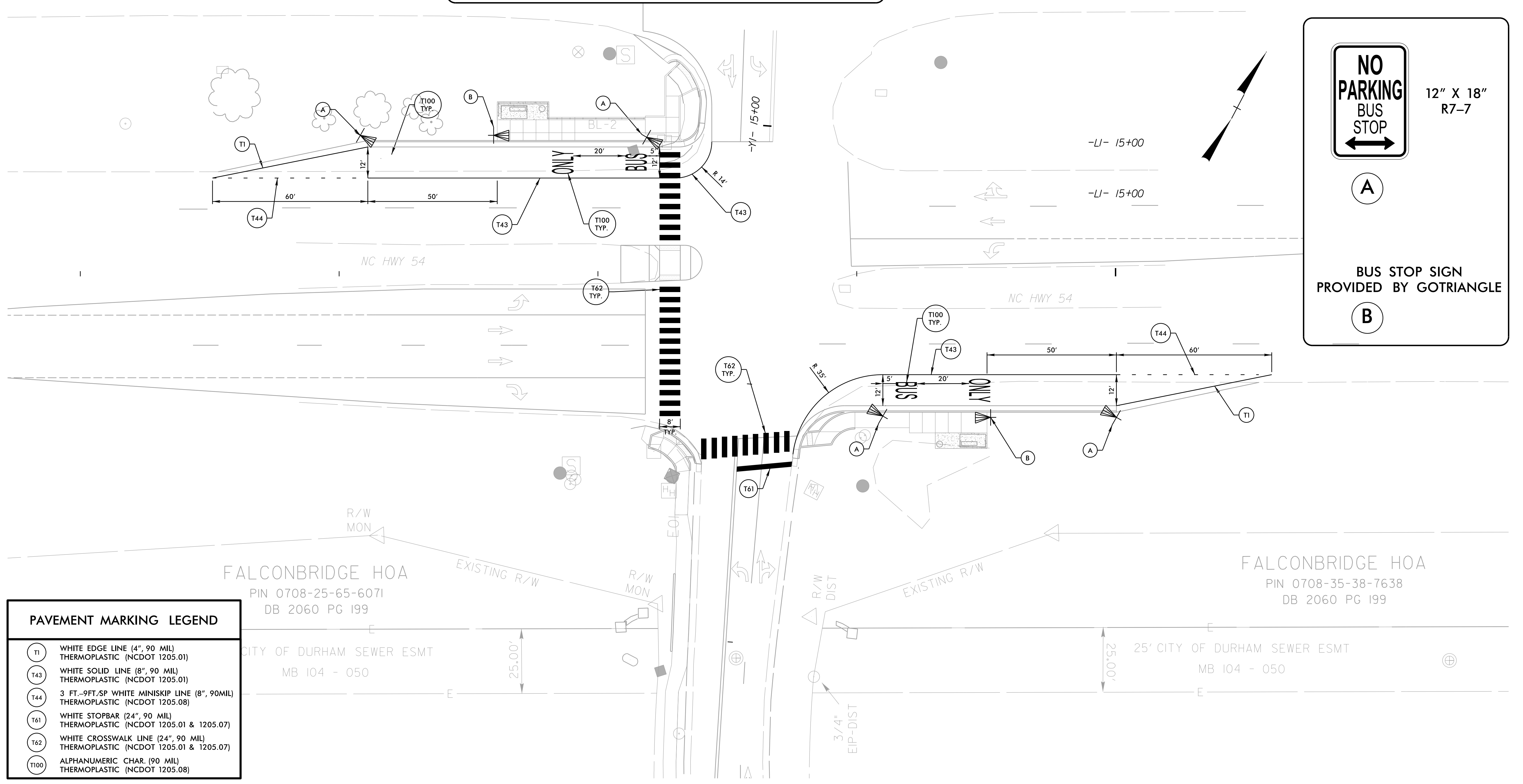
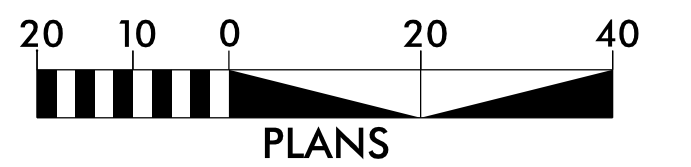
SIGNAGE NOTES

- 1. MOUNT SIGNS 84" ABOVE SIDEWALK, 2' MIN. & 8' MAX. CLEAR FROM EDGE OF PAVEMENT TO EDGE OF SIGN.
- 2. INSTALL SIGN POST MOUNTED LIGHTING SYSTEM ON BUS STOP SIGN POSTS ACCORDING TO DETAIL.

PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. PMP-1
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NO PARKING BUS STOP

12" X 18"
R7-7

(A)

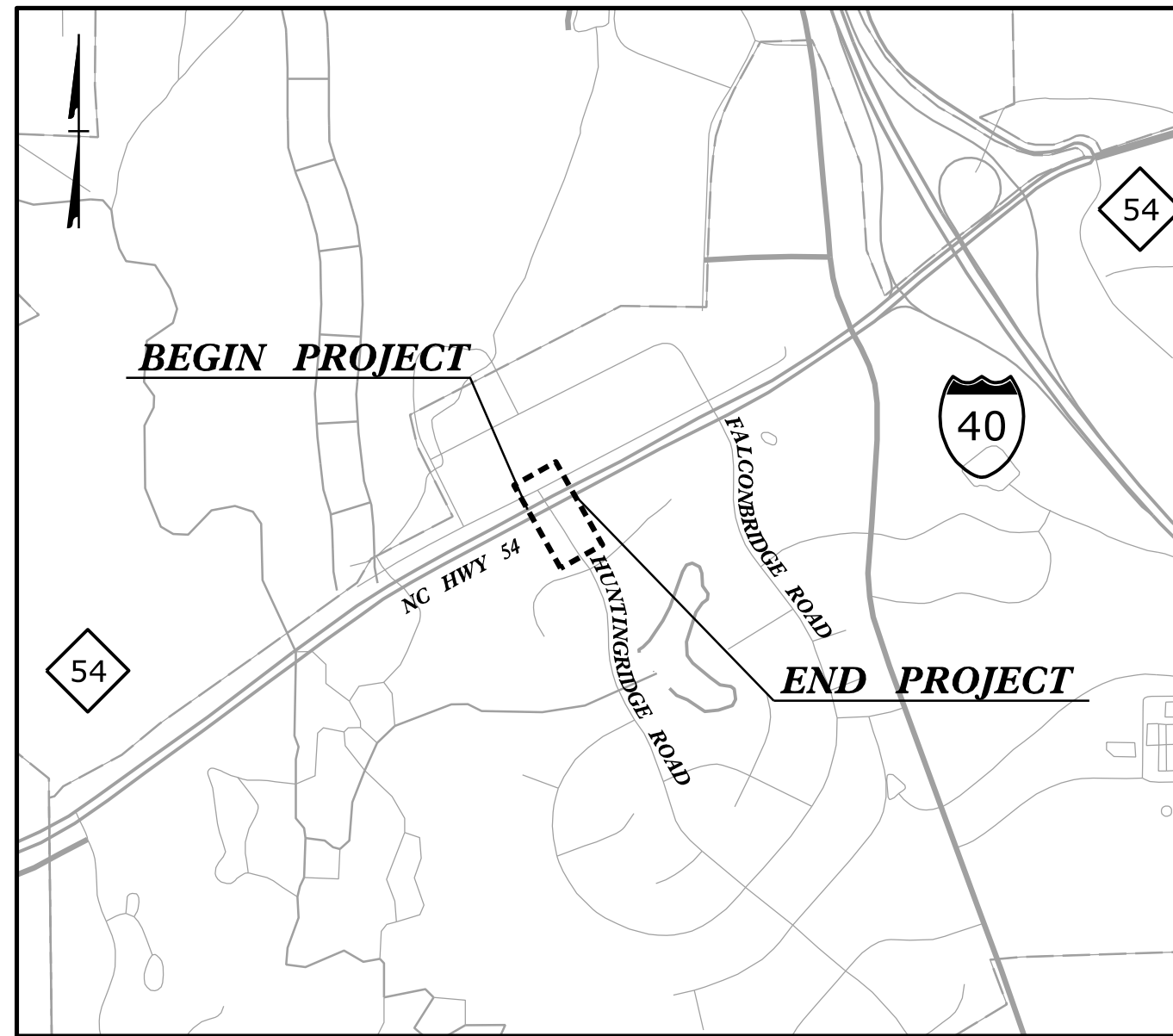
BUS STOP SIGN PROVIDED BY GOTRIANGLE

(B)

PAVEMENT MARKING LEGEND	
(T1)	WHITE EDGE LINE (4", 90 MIL) THERMOPLASTIC (NCDOT 1205.01)
(T43)	WHITE SOLID LINE (8", 90 MIL) THERMOPLASTIC (NCDOT 1205.01)
(T44)	3 FT.-9FT.SP WHITE MINISKIP LINE (8", 90MIL) THERMOPLASTIC (NCDOT 1205.08)
(T61)	WHITE STOPBAR (24", 90 MIL) THERMOPLASTIC (NCDOT 1205.01 & 1205.07)
(T62)	WHITE CROSSWALK LINE (24", 90 MIL) THERMOPLASTIC (NCDOT 1205.01 & 1205.07)
(T100)	ALPHANUMERIC CHAR. (90 MIL) THERMOPLASTIC (NCDOT 1205.08)

2/14/2025 10:45:12 TC_pmp&sign.dgn User: ealspaugh

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



VICINITY MAP N.T.S.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DURHAM COUNTY

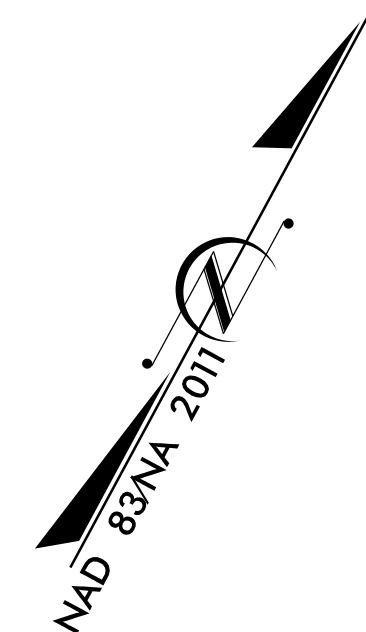
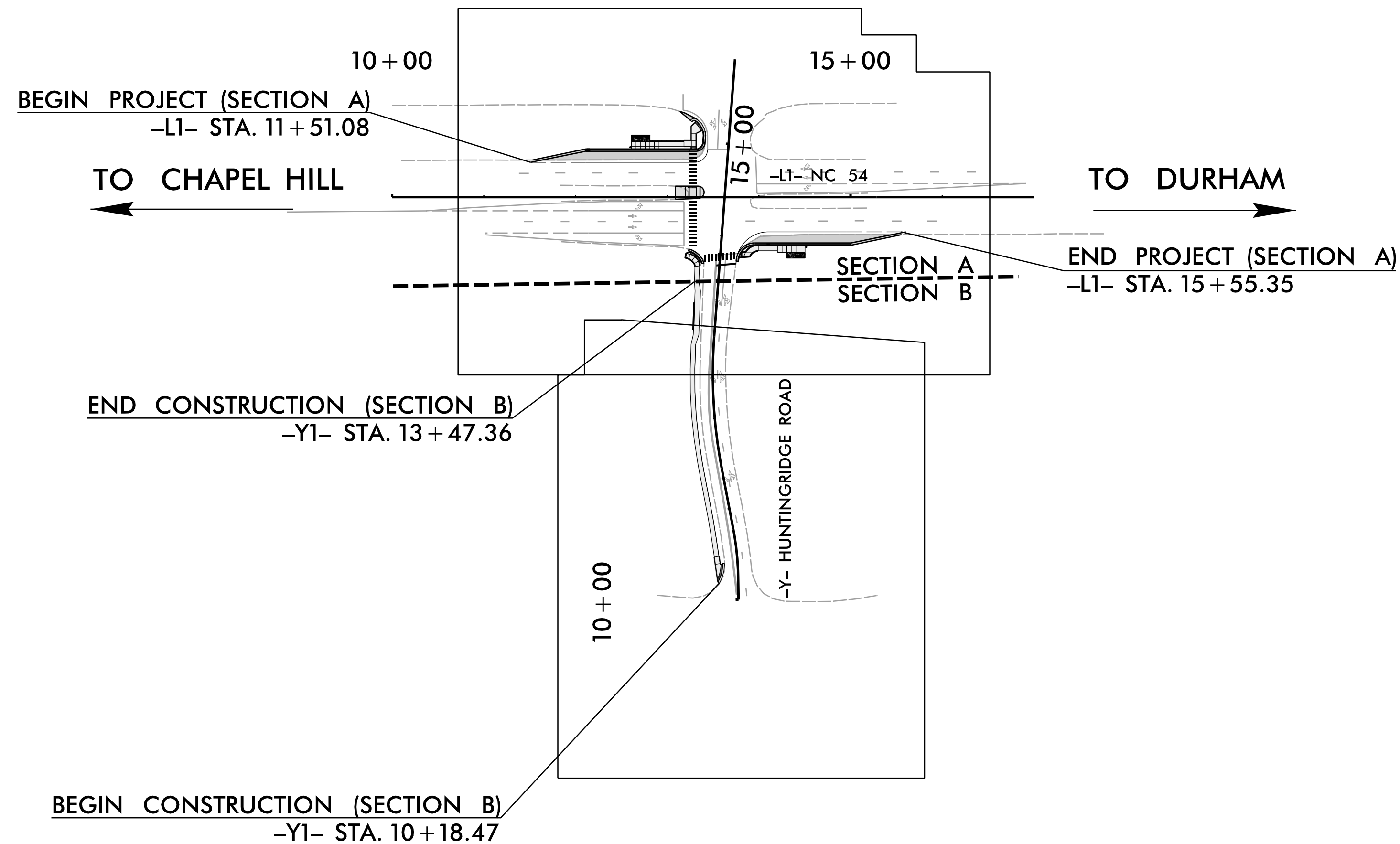
LOCATION: NC HWY 54 AT HUNTINGRIDGE ROAD

TYPE OF WORK: GRADING, PAVING, CURB & GUTTER, DRAINAGE, & SIDEWALK

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

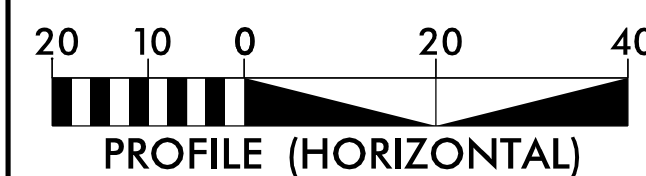
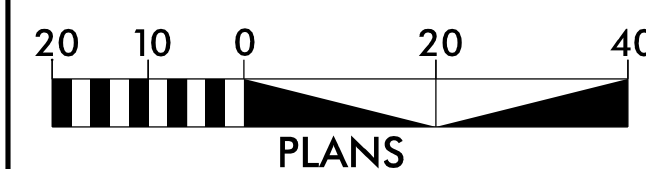
DISTURBED AREA
0.62 ACRES

EC-4



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

GRAPHIC SCALES



DESIGN DATA

ADT 2019 = 46,000

V = 50 MPH

FUNC. CLASS = PRINCIPAL
ARTERIAL

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY
WITH THE REGULATIONS SET FORTH BY THE
NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019
ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES DIVISION OF WATER QUALITY.

SEE GENERAL PERMIT FOR REQUIREMENTS
RELATED TO INSPECTIONS AND REPORTING

PLANS PREPARED BY:

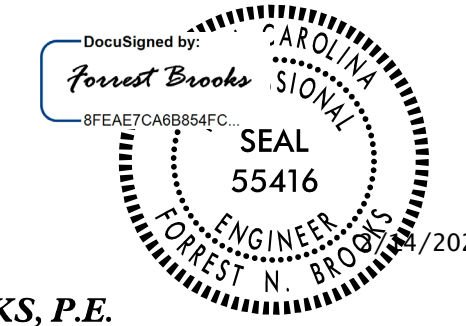


DRMP, INC.
5808 FARMINGTON PLACE
RALEIGH, NC 27609
NC LICENSE NO. F-1524 (919) 872-5115

Designed by:
ERIC ALSPAUGH

Reviewed by:
FORREST N. BROOKS, P.E.

NAME



4039
LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2024 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

- 1605.01 Temporary Silt Fence
- 1632.03 Rock Inlet Sediment Trap Type C
- 1633.01 Temporary Rock Silt Check Type A
- 1636.01 Wattle Check

PROJECT: CD-21-01-D28 (DRMP PROJ. 19275-12)

PROJECT REFERENCE NO.	SHEET NO.
CD-21-01-D28	EC-2
R/W SHEET NO.	
FORREST N. BROOKS, P.E. LEVEL III NAME	
4039	LEVEL III CERTIFICATION NO.
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
<small>PLANS PREPARED BY:</small> 	

GENERAL NOTES

- THESE EROSION CONTROL PLANS ARE ONLY FOR DISTURBED AREAS DELINEATED ON THE PLANS. EROSION CONTROL PLANS FOR ANY STOCKPILE LOCATIONS, MATERIAL LAY-DOWN AREAS, STAGING AREAS, DIRT OR WASTE PILE, BORROW AREAS, CONTRACTOR OFFICE TRAILER, OR ANY OTHER DISTURBED AREA NOT SHOWN ON THESE PLANS ARE THE RESPONSIBILITY OF THE THE CONTRACTOR. NO SOIL STOCKPILE SHOULD BE WITHIN 50' OF ANY DRAINAGE STRUCTURE OR WATERCOURSE. OFFSITE BORROW OR WASTE SHOULD BE FROM A PERMITTED SITE.
- GROUND COVER DEADLINES AND STABILIZATION REQUIREMENTS SHALL BE ESTABLISHED IN ACCORDANCE WITH THE STABILIZATION TIMEFRAMES SHOWN ON THIS SHEET. ALL EXPOSED SLOPES AND OTHER DISTURBED AREAS SHALL BE VEGETATED AS NOTED BELOW. THE VEGETATION REQUIREMENTS ALSO APPLY TO NEWLY CONSTRUCTED EROSION CONTROL MEASURES (TEMPORARY DIVERSIONS, PERIMETER DITCHES, ETC.)
- ALL SEDIMENT LADEN RUNOFF SHALL BE DIRECTED TO AN APPROVED EROSION CONTROL DEVICE. THE CONTRACTOR SHALL USE ASPHALT BERMS OR OTHER METHODS TO ENSURE SEDIMENT LADEN RUNOFF DOES NOT ENTER OR CROSS ROADS AND DRIVEWAYS.
- ALL CONSTRUCTION TRAFFIC LEAVING THE SITE AND ENTERING ANY PUBLIC ROADWAY MUST UTILIZE A GRAVEL CONSTRUCTION ENTRANCE. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF CONSTRUCTION ENTRANCES WITH THE TRAFFIC MANAGEMENT PLANS.
- MAINTAIN ALL EROSION CONTROL DEVICES AS PER THE PLANS AND SPECIFICATIONS FOR THE DURATION OF CONSTRUCTION. INSPECT ALL DEVICES AT THE END OF EACH DAY AND AFTER ALL RAINFALL EVENTS.
- THESE EROSION AND SEDIMENT CONTROL PLANS SHOW DEVICES REQUIRED FOR THE CLEARING & GRUBBING PHASE AND FINAL GRADING. IT IS THE CONTRACTOR'S RESPONSIBILITY FOR TRANSITION BETWEEN THE PHASES AND MAKING SURE ALL SEDIMENT LADEN RUNOFF IS TREATED BEFORE LEAVING THE LIMITS OF DISTURBANCE. THERE MAY BE INTERMEDIATE GRADES IN WHICH ADDITIONAL TEMPORARY DIVERSIONS, NOT SHOWN ON THE PLANS, ARE REQUIRED TO DIRECT RUNOFF TO BASINS OR ADDITIONAL SILT FENCE TO KEEP SEDIMENT ON SITE.
- MEASURES AND STORMWATER DISCHARGE OUTFALLS MUST BE INSPECTED AT LEAST ONCE PER 7 CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT GREATER THAN 0.5 INCH PER 24 HOUR PERIOD. ADDITIONALLY, GROUND STABILIZATION MUST BE RECORDED AFTER EACH PHASE OF GRADING. A RECORD COPY OF EACH INSPECTION AND MONITORING REPORT MUST BE KEPT ON SITE.
- CONCRETE TRUCK WASHOUT SLURRY GENERATED FOR THIS PROJECT MUST STAY ON THIS PROJECT OR ANOTHER AREA MUST BE DESIGNATED AS A CONCRETE WASHOUT AREA. RECOMMENDED AREA FOR CONCRETE WASHOUT MUST BE LOCATED WITHIN LIMITS OF DISTURBANCE AS INDICATED ON THE PLANS AND BE AT LEAST 50' AWAY FROM STORM DRAIN INLETS AND SURFACE WATERS.
- IF THE CONTRACTOR CHOOSES TO PROVIDE A CONSTRUCTION STAGING AREA OUTSIDE OF THE PROJECT LIMITS, THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR OBTAINING THE NECESSARY PERMITS AND EASEMENTS.
- SELF INSPECTION MUST BE CONDUCTED AND DOCUMENTED IN THE INSPECTION & MONITORING FORM PROVIDED BY NCDEQ PER STORMWATER GENERAL PERMIT NCG 010000. MEASURES MUST BE INSPECTED AT LEAST ONCE PER 7 CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT GREATER THAN 0.5 INCH PER 24 HOUR PERIOD. ADDITIONALLY, GROUND STABILIZATION MUST BE RECORDED AFTER EACH PHASE OF GRADING. A COPY OF THE NPDES PERMIT WITH A MINIMUM OF 30 DAYS OF SELF-INSPECTION REPORTS MUST BE KEPT ON SITE UNTIL PROJECT CLOSURE BY THE NCDEQ RALEIGH REGIONAL OFFICE. THE SELF INSPECTION FORM CAN BE FOUND AT: <https://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms>

PERMANENT SEEDING SCHEDULE (EAST)

SEEDING MIXTURE RATE

MARCH 1ST - AUGUST 31ST		SEPTEMBER 1ST - FEBRUARY 28	
LB/ACRE	TYPE	LB/ACRE	TYPE
50	TALL FESCUE	50	TALL FESCUE
10	CENTIPEDE	10	CENTIPEDE
25	BERMUDAGRASS (HULLED)	35	BERMUDAGRASS (UNHULLED)

ON CUT AND FILL SLOPES 2:1 OR STEEPER CENTIPEDE SHALL BE APPLIED AT THE RATE OF 5 LBS/ACRE AND ADD 20 LBS/ACRE OF SERICEA LESPEDEZA FROM JANUARY 1ST TO DECEMBER 31ST

FERTILIZER TOP DRESSING

FERTILIZER USED FOR TOPDRESSING ON ALL ROADWAY AREAS EXCEPT SLOPES 2:1 AND STEEPER SHALL BE 10-20-20 GRADE AND SHALL BE APPLIED AT THE RATE OF 500 LBS/ACRE. A DIFFERENT ANALYSIS OF FERTILIZER MAY BE USED PROVIDED THE 1-2-2 RATIO IS MAINTAINED AND THE RATE OF APPLICATION ADJUSTED TO PROVIDE THE SAME AMOUNT OF PLANT FOOD AS 10-20-20 ANALYSIS AND AS DIRECTED.

FERTILIZER USED FOR TOPDRESSING ON SLOPES 2:1 AND STEEPER AND WASTE AND BORROW AREAS SHALL BE 16-8-8 GRADE AND SHALL BE APPLIED AT THE RATE OF 500 LBS/ACRE. A DIFFERENT ANALYSIS OF FERTILIZER MAY BE USED PROVIDED THE 2-1-1 RATIO IS MAINTAINED AND RATE OF APPLICATION ADJUSTED TO PROVIDE THE SAME AMOUNT OF PLANT FOOD AS 16-8-8 ANALYSIS AND AS DIRECTED.

MULCHING

APPLY 2 TONS/ACRE GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ANCHOR STRAW BY TACKING WITH ASPHALT AT A RATE OF 400 GALLONS OF ASPHALT PER ACRE.

MAINTENANCE

REFERTILIZE IN THE SECOND YEAR UNLESS GROWTH IS FULLY ADEQUATE. MAY BE MOWED ONCE OR TWICE A YEAR, BUT MOWING IS NOT NECESSARY. THE MINIMUM MOWING HEIGHT SHALL BE 4". RESEED, FERTILIZE, AND MULCH DAMAGED AREAS IMMEDIATELY.

SEEDBED PREPARATION

SEEDBED PREPARATION SHALL BE IN ACCORDANCE WITH NCDOT 2024 STANDARDS & SPECIFICATIONS SECTION 1620-3.

BUFFER NOTES

THE FERTILIZER RATIO WITHIN 100 FT. OF ANY EXISTING STREAM SHALL BE 1/2 OF THE TYPICALLY REQUIRED AMOUNT.

EROSION CONTROL DEVICE LEGEND

Description	Std. #	Symbol
TEMPORARY SILT FENCE	NCDOT-1605.01	
ROCK INLET SEDIMENT TRAP	NCDOT-1632.03	
TEMPORARY ROCK SILT CHECK TYPE-A	NCDOT-1633.01	
WATTLE/COIR FIBER WATTLE	NCDOT-1636.01	
TREE PROTECTION FENCE	SHEET EC-2B	TPF
CONCRETE WASHOUT	SHEET EC-2B	
EXISTING INLET PROTECTION	SHEET EC-2B	⊙○○○○
*TEMPORARY SILT & TREE PROTECTION FENCE	SP.	TPF-TPF
*USE ORANGE SILT FENCE THAT MEETS NCDOT SPECIFICATIONS (SECTION 1605) & ATTACH SIGN SHOWN ON TREE PROTECTION FENCE DETAIL		
LIMITS OF DISTURBANCE	---	LOD

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HOW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HOW ZONES.

PROVIDE TEMPORARY MATTING ON ALL FILL SLOPES

TEMPORARY SEEDING SCHEDULE (EAST)

FERTILIZER SHALL BE THE SAME ANALYSIS AS SPECIFIED FOR SEEDING AND MULCHING AND APPLIED AT THE RATE OF 400 POUNDS AND SEEDED AT THE RATE OF 50 POUNDS PER ACRE. SWEET SUDAN GRASS, GERMAN MILLET, OR BROWNTOP MILLET SHALL BE USED IN SUMMER MONTHS AND 120 POUNDS PER ACRE OF RYE GRAIN DURING THE REMAINDER OF THE YEAR. THE ENGINEER WILL DETERMINE THE EXACT DATES FOR USING EACH KIND OF SEED. APPLY 4,000 POUNDS PER ACRE OF STRAW. ANCHOR BY TACKING WITH ASPHALT (400 GALLONS PER ACRE), COMMERCIALY AVAILABLE TACKING SOLUTION (AT MANUFACTURER'S RATE), NETTING OR A MULCH ANCHORING TOOL.

SOIL PREPARATION

FOR AREAS THAT ARE TO BE SEEDDED ALL STONES LARGER THAN 3 INCHES, STICKS, ROOTS, AND OTHER MATERIALS SHALL BE REMOVED. AREAS TO BE SEEDDED OR PLANTED SHALL BE TILLED OR RIPPED TO A MINIMUM DEPTH OF 4 INCHES. LIME AND FERTILIZER SHALL BE APPLIED AS SPECIFIED IN THE SEEDING SCHEDULE.

LAWN FINISH

ALL AREAS ADJACENT TO LAWNS MUST BE HAND FINISHED AS DIRECTED TO GIVE A LAWN TYPE APPEARANCE. REMOVE ALL TRASH, DEBRIS, AND STONES ** AND LARGER IN DIAMETER OR OTHER OBSTRUCTIONS THAT COULD INTERFERE WITH PROVIDING A SMOOTH LAWN TYPE APPEARANCE. THESE AREAS SHALL BE RESEEDDED TO MATCH THEIR ORIGINAL VEGETATIVE CONDITIONS, UNLESS DIRECTED OTHERWISE BY THE FIELD OPERATIONS ENGINEER.

NURSE CROP SEEDING

PREPARATION FOR PRIMARY/PERMANENT STABILIZATION SHALL NOT BEGIN UNTIL ALL CONSTRUCTION AND UTILITY WORK WITHIN THE PREPARATION AREA IS COMPLETE. HOWEVER, IT MAY BE NECESSARY TO PREPARE FOR NURSE CROPS PRIOR TO COMPLETION OF CONSTRUCTION AND INSTALLATION OF UTILITIES.

A QUICKLY GERMINATING NURSE CROP OF NON-INVASIVE, NON-COMPETITIVE ANNUAL GRASS SPECIES SHOULD BE USED ALONG WITH NATIVE SEEDING AND/OR MATTING. THESE TEMPORARY MEASURES SHOULD BE PLANTED AT MINIMUM DENSITY AS TO NOT INHIBIT THE GROWTH AND ESTABLISHMENT OF THE PERMANENT, NATIVE SPECIES. REFER TO THE TEMPORARY SEEDING SCHEDULE FOR SPECIFIC NURSE CROP SPECIES AND SEEDING RATES.

MAINTENANCE REQUIREMENTS

- EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL OR AT A MINIMUM ONCE A WEEK. IF REPAIRS ARE NEEDED THEY WILL BE DONE SO IMMEDIATELY.
- SEDIMENT WILL BE REMOVED FROM BEHIND SILT FENCING WHEN IT BECOMES 0.5 FT DEEP OR GREATER. SILT FENCING WILL BE REPLACED AS NECESSARY TO MAINTAIN AN ADEQUATE BARRIER.
- EROSION AND SEDIMENT CONTROL PRACTICES INCLUDING: SILT CHECKS AND WATTLES WILL BE CLEANED OUT AS NECESSARY.
- ALL SEEDDED AREAS WILL BE FERTILIZED, RESEEDDED AS NECESSARY, AND MULCHED ACCORDING TO THE SPECIAL PROVISIONS IN ORDER TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
- A RAIN GAUGE IS TO BE INSTALLED ON SITE AND RAINFALL IS TO BE RECORDED DAILY EVEN IF IT IS ZERO INCHES.

CONSTRUCTION SEQUENCE

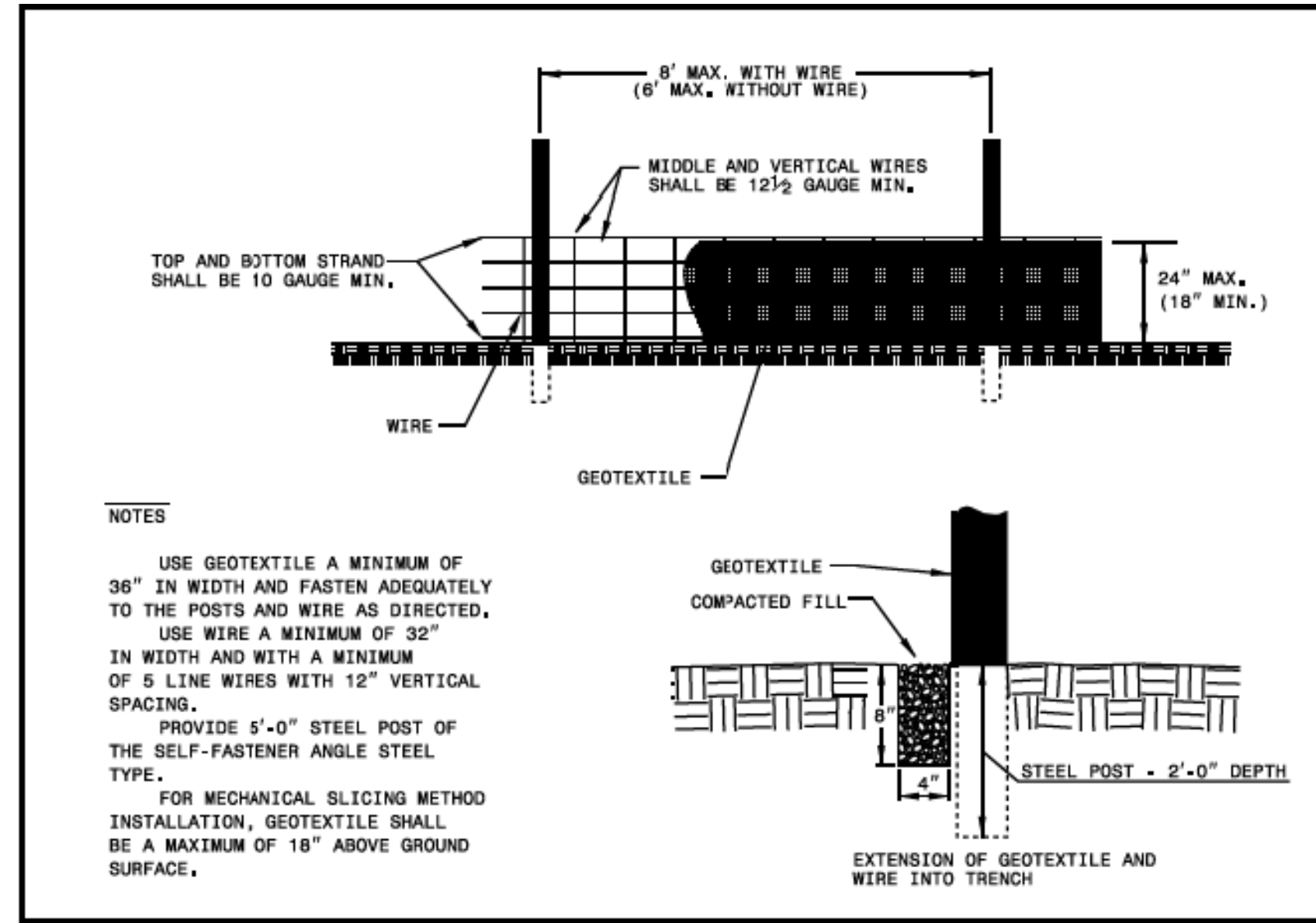
- ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED, IF NEEDED AT LEAST ONCE PER WEEK AND AFTER EVERY RAINFALL EVENT.
- SITE STABILIZATION IS REQUIRED WITHIN 14 CALENDAR DAYS OF COMPLETION OF ANY PHASE OF GRADING OR INACTIVITY ON PROJECT SITE.
- FLAG WORK LIMITS AND INSTALL TEMPORARY SILT FENCE AND OTHER MEASURES AS SHOWN ON THE CLEARING AND GRUBBING PLAN. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. NO CLEARING CAN TAKE PLACE UNTIL EROSION CONTROL MEASURES ARE INSTALLED AND IF CLEARING IS REQUIRED TO INSTALL EROSION CONTROL MEASURES, ONLY CLEAR THE AREA NEEDED TO INSTALL THE EROSION CONTROL DEVICES.
- COMPLETE SITE CLEARING AND GRUBBING FOR ENTIRE PROJECT. MAINTAIN AND ADJUST DEVICES AS NEEDED.
- PERFORM GRADING OPERATIONS AND INSTALL PROPOSED DRAINAGE NETWORK. INSTALL FINAL GRADING EROSION CONTROL DEVICES AS THE DRAINAGE NETWORK IS CONSTRUCTED. FOLLOWING THE CONSTRUCTION OF ANY DITCHES, ALL TEMPORARY MATTING OR RIP RAP MUST BE INSTALLED WITHIN 7 DAYS AS SPECIFIED BY NCG-010000. CULVERTS THAT REQUIRE IMPERVIOUS DIKES AND SPECIAL STILLING BASINS WILL BE INSTALLED FOLLOWING CLEARING AND GRUBBING PRIOR TO THE INSTALLATION OF FINAL GRADE EROSION CONTROL DEVICES.
- ALL AREAS WHERE GRADING IS NOT DEFINED BY THE DRAINAGE PLANS MUST BE GRADED TO DRAIN.
- STABILIZE ALL DENUDEED AREAS. STABILIZATION FOR THIS PROJECT SHALL COMPLY WITH THE TIME FRAME GUIDELINES AS SPECIFIED BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY. TEMPORARY OR PERMANENT GROUND COVER STABILIZATION SHALL OCCUR WITHIN 7 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY OR IN CRITICAL AREAS, BY THE END OF EACH DAY.
- AFTER THE SITE IS STABILIZED, REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES, PERFORM FINISH GRADING AND INSTALL PERMANENT VEGETATION ON THE DISTURBED AREAS.
- SEE INDIVIDUAL PLAN SHEETS FOR ADDITIONAL SPECIFIC PHASING NOTES.

REVISIONS

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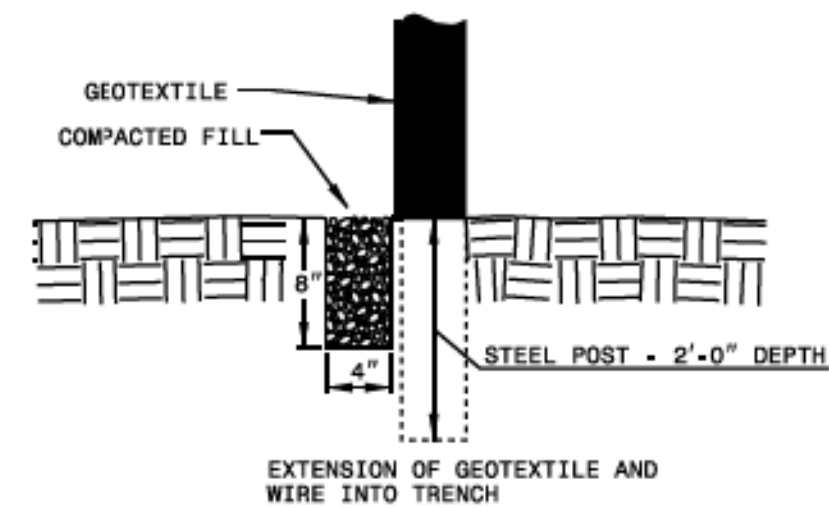
PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. EC-2A
RW SHEET NO.	
FORREST N. BROOKS, P.E. LEVEL III NAME	
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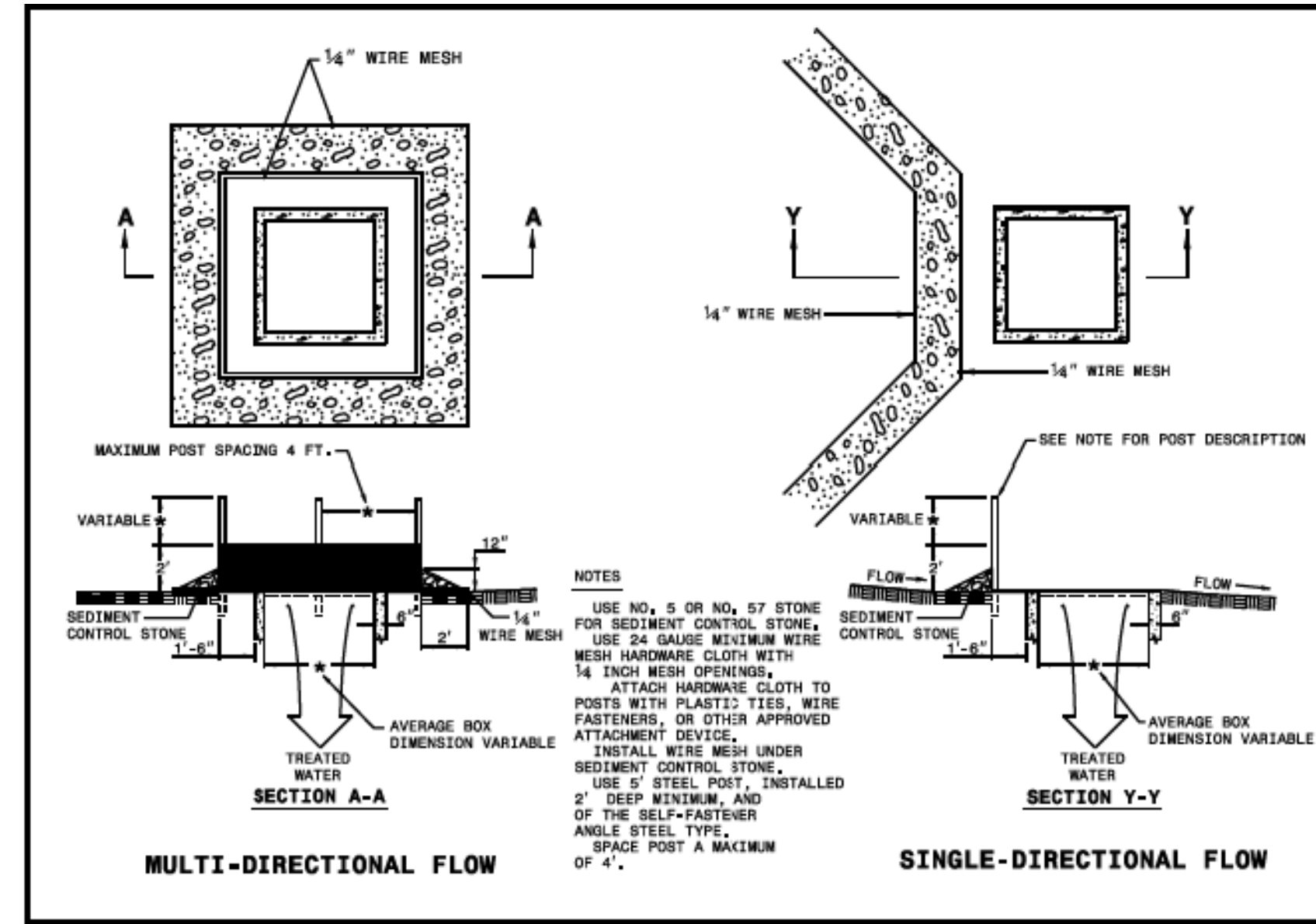


NOTES

USE GEOTEXTILE A MINIMUM OF 36" IN WIDTH AND FASTEN ADEQUATELY TO THE POSTS AND WIRE AS DIRECTED. USE WIRE A MINIMUM OF 32" IN WIDTH AND WITH A MINIMUM OF 5 LINE WIRES WITH 12" VERTICAL SPACING. PROVIDE 5'-0" STEEL POST OF THE SELF-FASTENER ANGLE STEEL TYPE. FOR MECHANICAL SLICING METHOD INSTALLATION, GEOTEXTILE SHALL BE A MAXIMUM OF 18" ABOVE GROUND SURFACE.



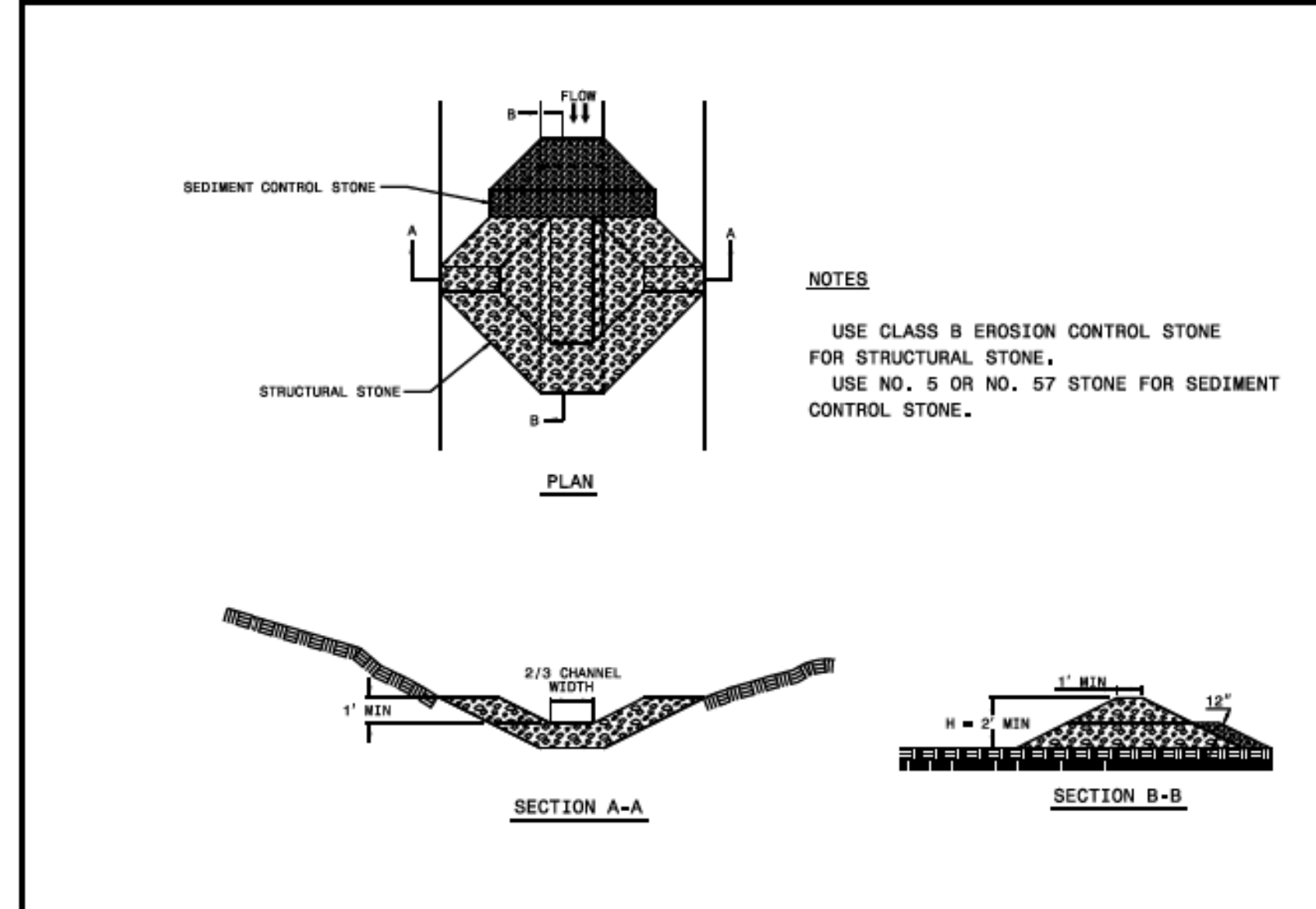
ROADWAY STANDARD DRAWING FOR
TEMPORARY SILT FENCE
SHEET 1 OF 1
1605.01



NOTES

USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE. USE 24 GAUGE MINIMUM WIRE MESH HARDWARE CLOTH WITH 1/4" SIZES MESH OPENINGS. ATTACH HARDWARE CLOTH TO POSTS WITH PLASTIC TIES, WIRE FASTENERS, OR OTHER APPROVED ATTACHMENT DEVICE. INSTALL WIRE MESH UNDER SEDIMENT CONTROL STONE. USE 5" STEEL POST, INSTALLED 2' DEEP MINIMUM, AND OF THE SELF-FASTENER ANGLE STEEL TYPE. SPACE POST A MAXIMUM OF 4'.

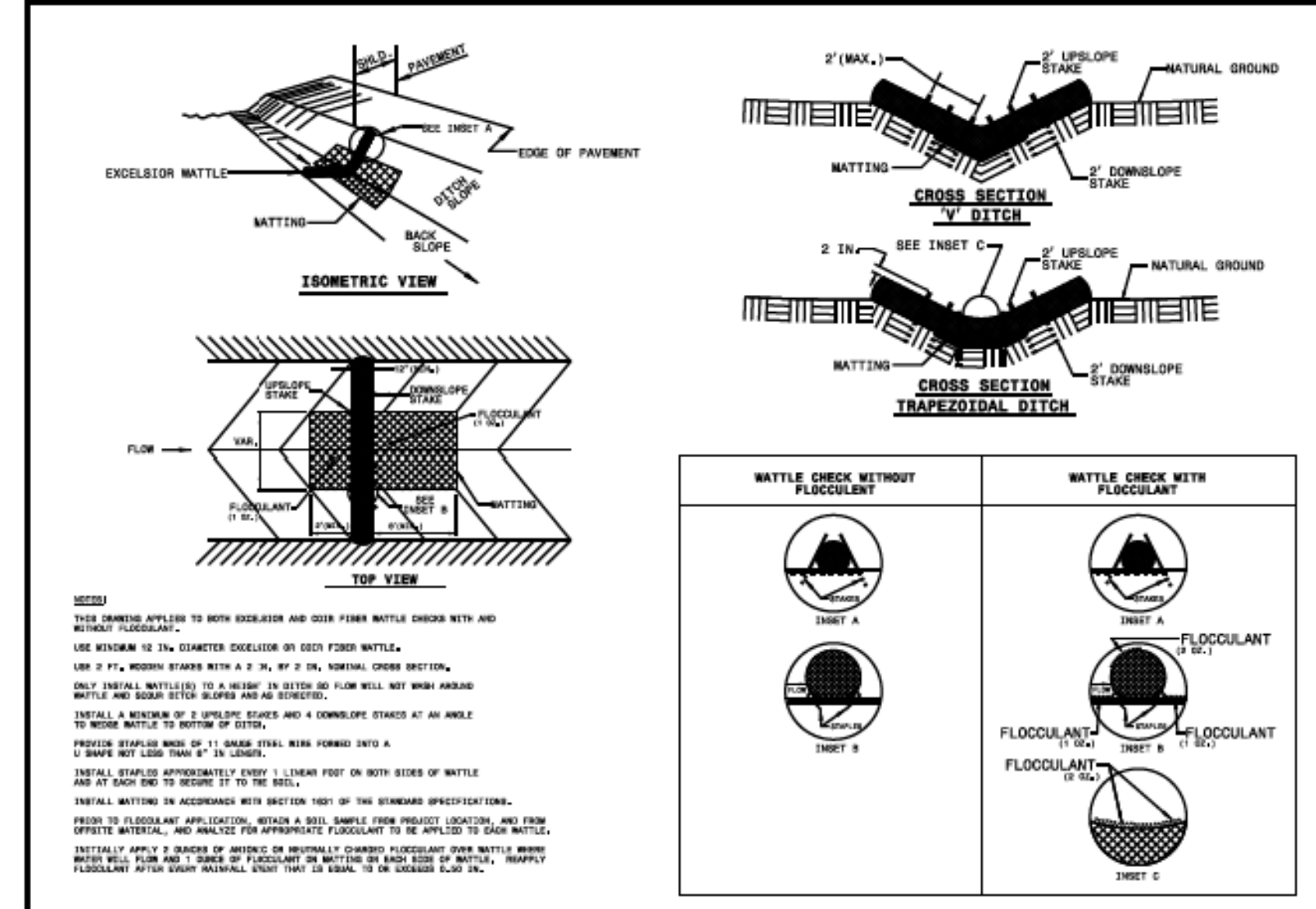
ROADWAY STANDARD DRAWING FOR
ROCK INLET SEDIMENT TRAP TYPE C
SHEET 1 OF 1
1632.03



NOTES

USE CLASS B EROSION CONTROL STONE FOR STRUCTURAL STONE. USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.

ROADWAY STANDARD DRAWING FOR
TEMPORARY ROCK SILT CHECK TYPE A
SHEET 1 OF 1
1633.01



NOTES

THESE DIMENSIONS APPLY TO BOTH EXCELSIOR AND OTHER FIBER WATTLE CHECKS WITH AND WITHOUT FLOCCULANT. USE MINIMUM 1/4" DIAMETER EXCELSIOR OR OTHER FIBER WATTLE. USE 2 PLY WATTLE STAPLES WITH A 2 1/2" BY 2" 1/4" NOMINAL CHANNEL WIDTH. ONLY HORIZONTAL MATTING IS TO BE USED. IN EITHER CASE FLOW WILL NOT BEHIND WATTLE AND SHOULD BEHIND STAPLES AND BE DIRECTED. INSTALL A MINIMUM OF 2 LINES OF STAPLES AND 4 FIBER MATTING STAPLES AT AN ANGLE TO WATTLE TO BOTTOM OF DITCH. FIBER MATTING STAPLES SHOULD BE 1/4" LONGER THAN WATTLE AND AT EACH END TO SECURE IT TO THE SOIL. FIBER MATTING IS ACCORDANCE WITH SECTION 707 OF THE STANDARD SPECIFICATIONS. PRIOR TO FIBER MATTING APPLICATION, REMOVE A SOIL SAMPLE FROM PROPOSED LOCATION, AND FROM OPPOSITE MATERIAL, AND ANALYZE FOR APPROPRIATE FLOCCULANT TO BE APPLIED TO EACH WATTLE. CONTRACTOR SHALL APPLY 2 BARRELS OF FLOCCULANT OR EQUIVALENT TO EACH FLOCCULANT PER WATTLE BEFORE WATTLE IS LAYED AND 1 BARREL OF FLOCCULANT TO WATTLE ON EACH SIDE OF WATTLE. THOROUGHLY FLOCCULANT WITH SHORT INTERVAL, FIRST TIME IT IS LAYED, TO BE APPLIED TO EACH SIDE.

ROADWAY STANDARD DRAWING FOR
WATTLE CHECK
SHEET 1 OF 1
1636.01

MAINTENANCE NOTES

WATTLE

THE UPSTREAM SIDE OF THE WATTLE SHOULD BE MAINTAINED TO ALLOW THE WATER TO FLOW THROUGH, REDUCE VELOCITY, DISTRIBUTE FLOCCULANT AND ALLOW SEDIMENTATION TO OCCUR. IF THE NATURAL FIBERS OF THE WATTLE BECOME TOO SATURATED WITH DEBRIS, SEDIMENT, ETC., AND REMOVAL OF THESE ITEMS IS NOT POSSIBLE, WATTLES SHOULD BE REPLACED. STAPLES SHOULD BE USED TO ANCHOR THE WATTLE ADEQUATELY TO THE GROUND TO PREVENT SCOURING AND WASHOUT DURING STORM EVENTS. THE EXCELSIOR PAD BENEATH THE WATTLES IS CRITICAL TO THE PROPER FUNCTIONING OF THE WATTLES.

TEMPORARY SILT FENCE

INSPECT THE SILT FENCE ON A REGULAR BASIS AND AFTER EACH SIGNIFICANT RAINFALL. MAKE ANY REPAIRS IMMEDIATELY. INSPECT THE SILT FENCE TO BE SURE THE BOTTOM OF THE GEOTEXTILE IS KEPT IN PROPERLY. AT A MINIMUM, REMOVE AND DISPOSE OF ALL SILT ACCUMULATIONS WHEN DEPTH REACHES 1/2 THE HEIGHT OF THE GEOTEXTILE. DO NOT UNDERMINE THE FENCE DURING CLEANOUT. DISPOSE OF SEDIMENT BY HAULING IT TO AN APPROVED WASTE SITE WITH APPROPRIATE PERIMETER PROTECTION. REMOVE AND REPLACE DETERIORATED OR CLOGGED SILT FENCE. REPLACE SILT FENCE REMOVED FOR ACCESS AT THE END OF EACH DAY'S OPERATION. INSTALL ADDITIONAL POSTS OR WIRE BACKING IF FENCE IS SAGGING.

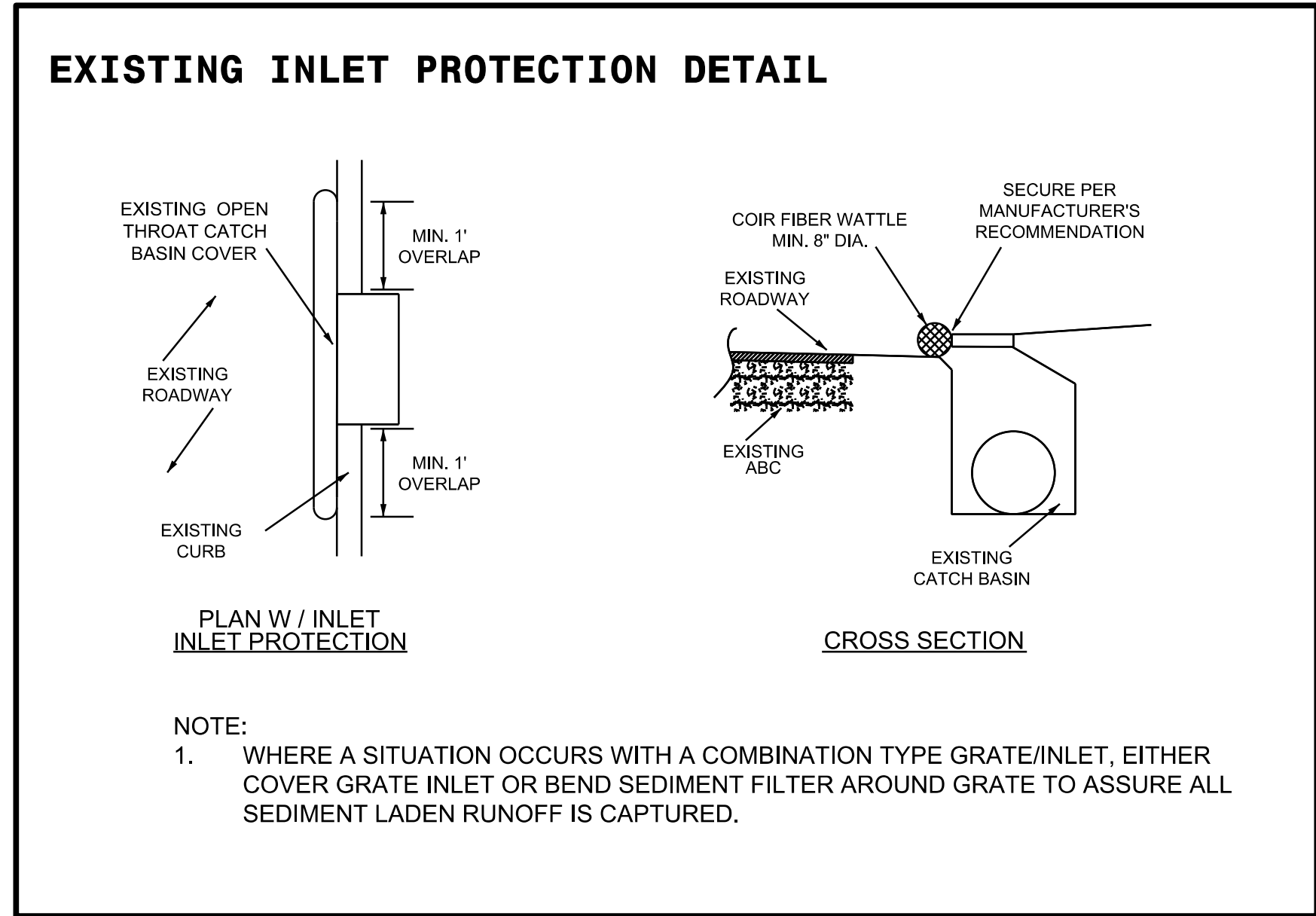
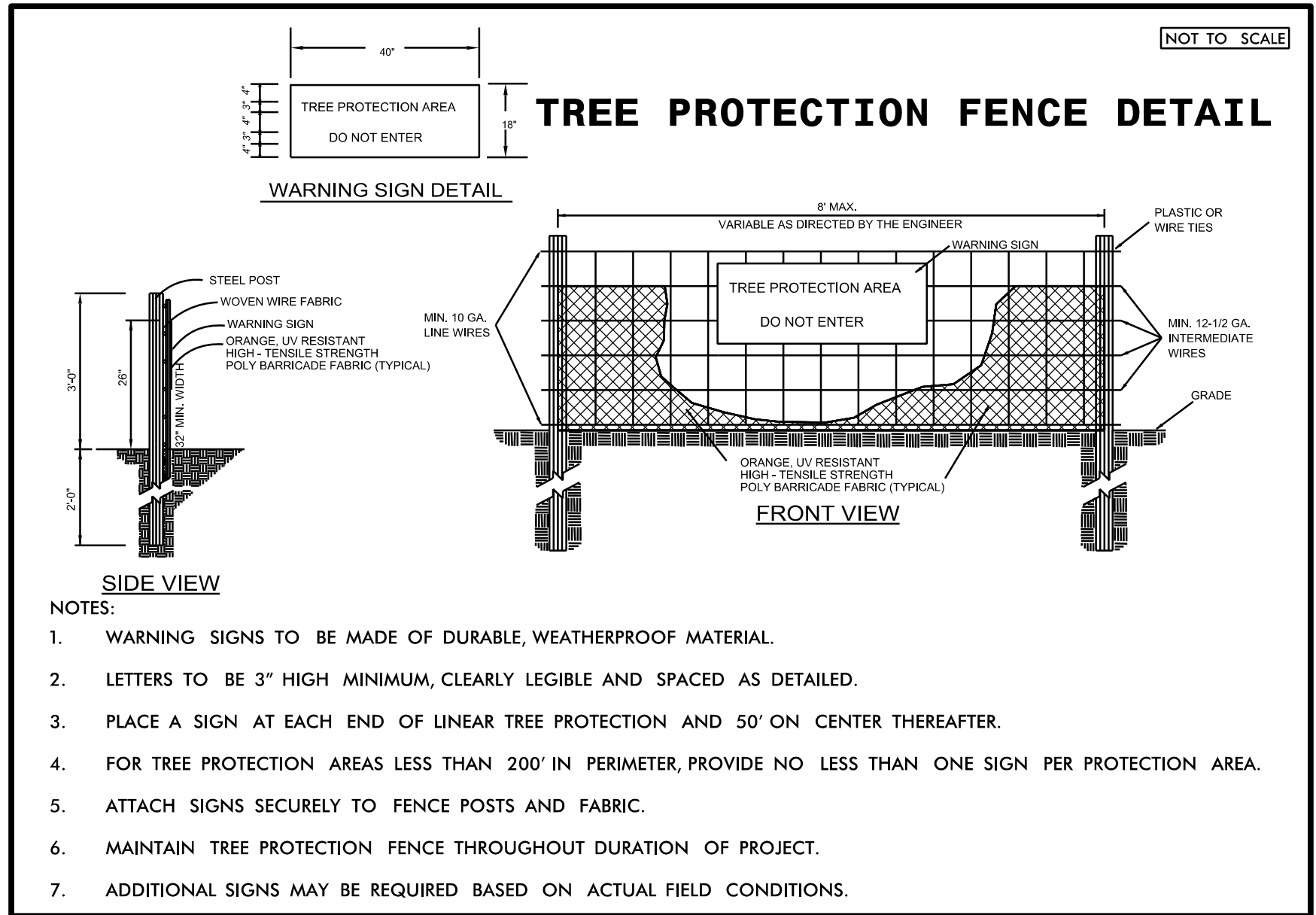
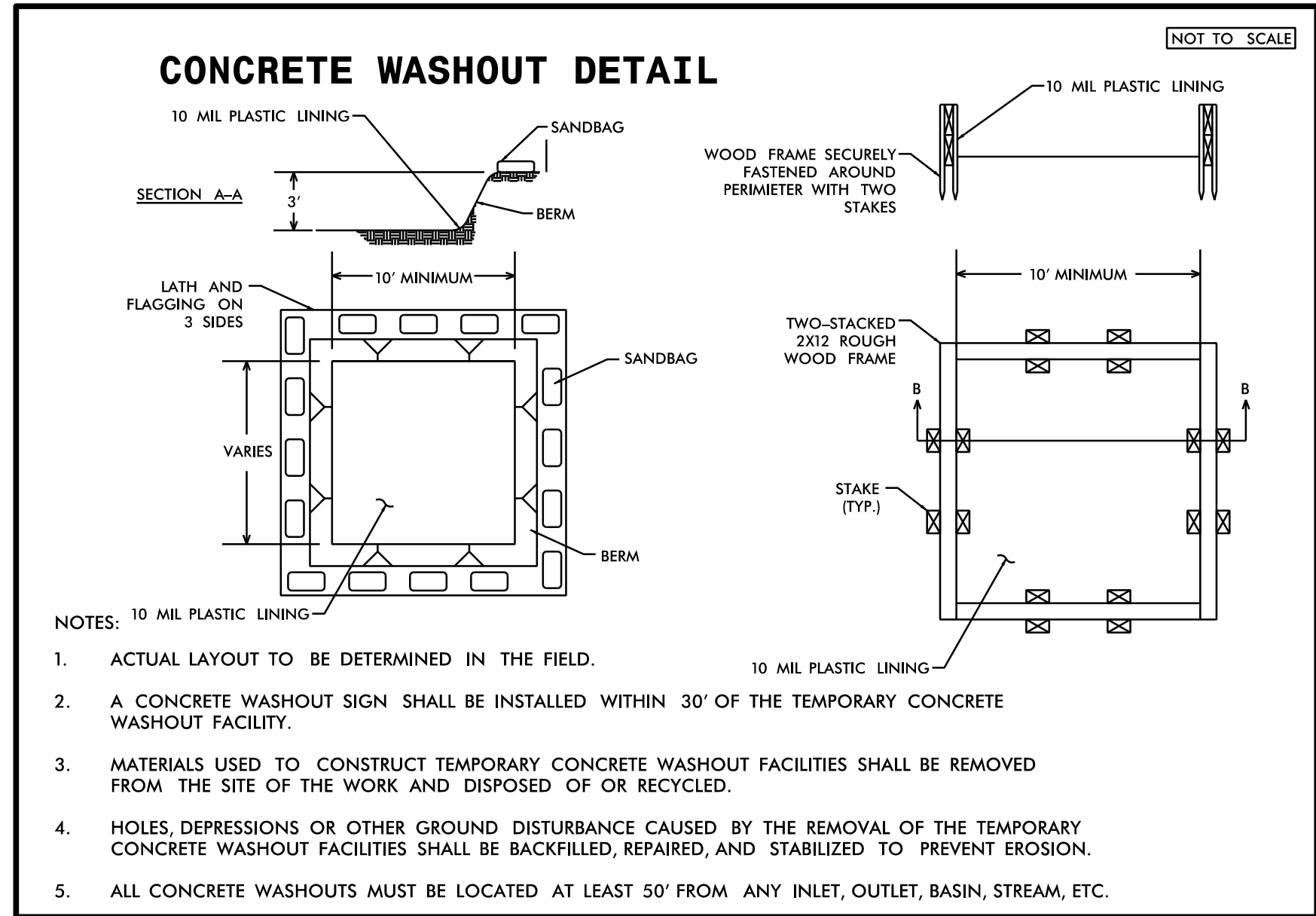
ROCK INLET SEDIMENT TRAP TYPE 'A,B,C'

INSPECT THE DEVICE AFTER EACH SIGNIFICANT RAINFALL EVENT FOR DAMAGE, SEDIMENT ACCUMULATION AND PROPER FUNCTION. REMOVE SEDIMENT FROM THE DEVICE WHEN ACCUMULATIONS REACH ONE-HALF THE HEIGHT OF THE SEDIMENT CONTROL STONE. REPLACE OR CLEAN THE SEDIMENT CONTROL STONE AS NEEDED TO ALLOW WATER TO DRAIN THROUGH THE DEVICE BETWEEN RAINFALL EVENTS. REBUILD AND/OR REPAIR THE DEVICE WHEN IT IS DAMAGED. IF THE DEVICE IS TO REMAIN AFTER PROJECT COMPLETION, IT SHOULD BE CLEAN AND IN PROPER SHAPE AT THE TIME OF FINAL INSPECTION. IF IT IS REMOVED, ALL ACCUMULATED SILT SHOULD BE REMOVED TO KEEP IT FROM ENTERING THE DRAINAGE SYSTEM.

TEMPORARY ROCK SILT CHECK TYPE 'A,B,C'

INSPECT ROCK CHECK AFTER EACH SIGNIFICANT RAINFALL. REMOVE SILT FROM DEVICE WHEN IT ACCUMULATES. REBUILD AND RESHAPE DEVICE AND WEIR WHEN DAMAGED OR AS NECESSARY. CLEANOUT WHEN CLOGGED BY STRAW, LIMBS OR OTHER DEBRIS.

REVISIONS



MAINTENANCE NOTES

ROCK PIPE INLET PROTECTION

INSPECT ROCK PIPE INLET PROTECTION AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN THE DESIGNATED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING. CHECK THE STRUCTURE FOR DAMAGE. ANY RIPRAP DISPLACED FROM THE STONE HORSESHOE MUST BE REPLACED IMMEDIATELY. AFTER ALL THE SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND PROVIDE PERMANENT GROUND COVER (SURFACE STABILIZATION).

CONCRETE WASHOUT

REGULARLY INSPECT THE PERIMETER BARRIER FOR DAMAGE BUT WEEKLY AS A MINIMUM. REPLACE SANDBAG ACHORS OR WOOD FRAME IF DAMAGED. REPLACE PLASTIC LINING IF DAMAGED AND NO LONGER WATERTIGHT. REMOVE CONCRETE AND REPAIR ANY DAMAGE TO LINER OR FRAME WHEN VOLUME HAS BEEN REDUCED BY HALF OF THE ORIGINAL VOLUME.

TREE PROTECTION FENCE

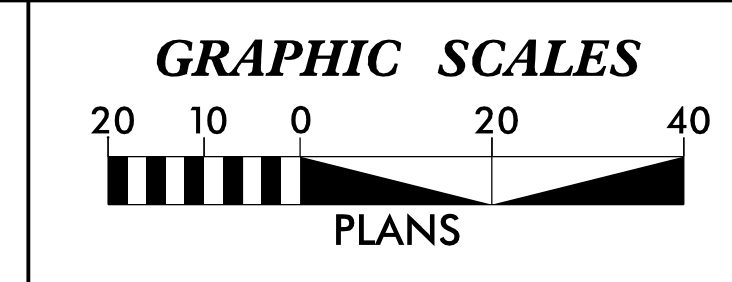
INSPECT THE TREE PROTECTION FENCE ON A REGULAR BASIS BUT WEEKLY AS A MINIMUM. MAKE ANY REPAIRS IMMEDIATELY. AT A MINIMUM, REMOVE AND DISPOSE OF ALL DEBRIS ACCUMULATIONS WHEN DEPTH REACHES 1/2 THE HEIGHT OF THE FENCE.

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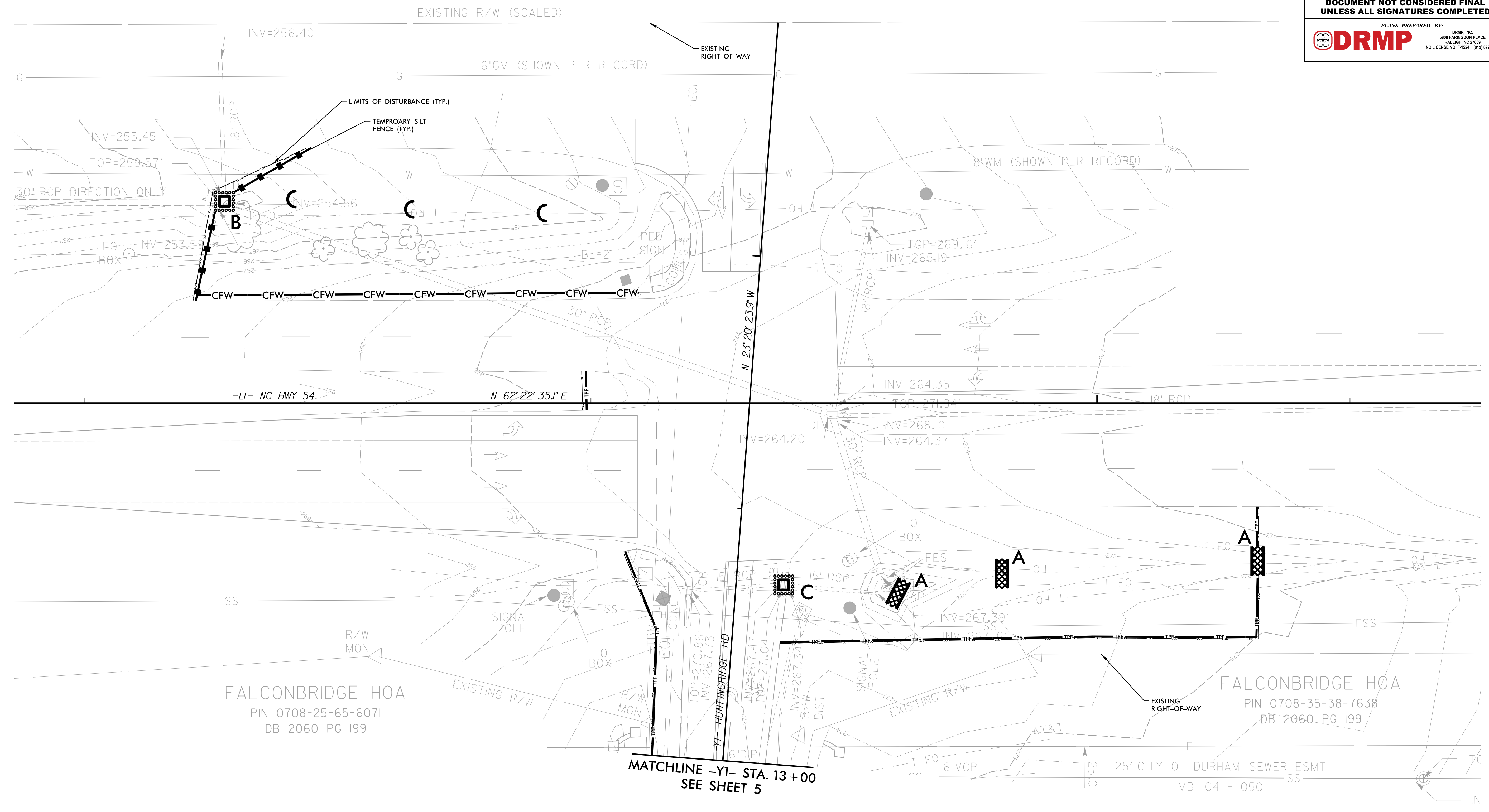
CLEARING AND GRUBBING PHASE

- NOTES:
1. CONTRACTOR TO INSTALL EROSION CONTROL MEASURES BEFORE CONSTRUCTION BEGINS AND MAINTAIN THROUGHOUT CONSTRUCTION.
 2. CONTRACTOR IS TO KEEP ALL DEBRIS WITHIN THE WORK AREA AND OUTSIDE OF THE THROUGH LINES.
 3. CONTRACTOR TO COORDINATE WITH ENGINEER IF FIELD CONDITIONS VARY FROM PLANS OR CONFLICTING EROSION CONTROL MEASURES ARE INSTALLED WITH THE ADJACENT SITE CONSTRUCTION.



PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. EC-4
RW SHEET NO.	
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PLANS PREPARED BY: 	

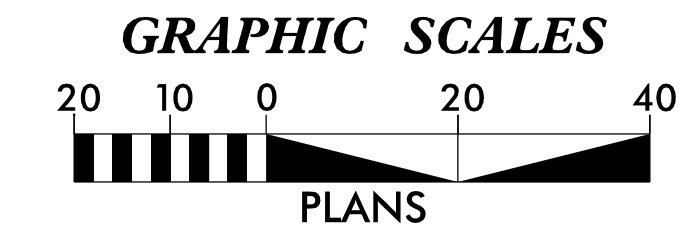
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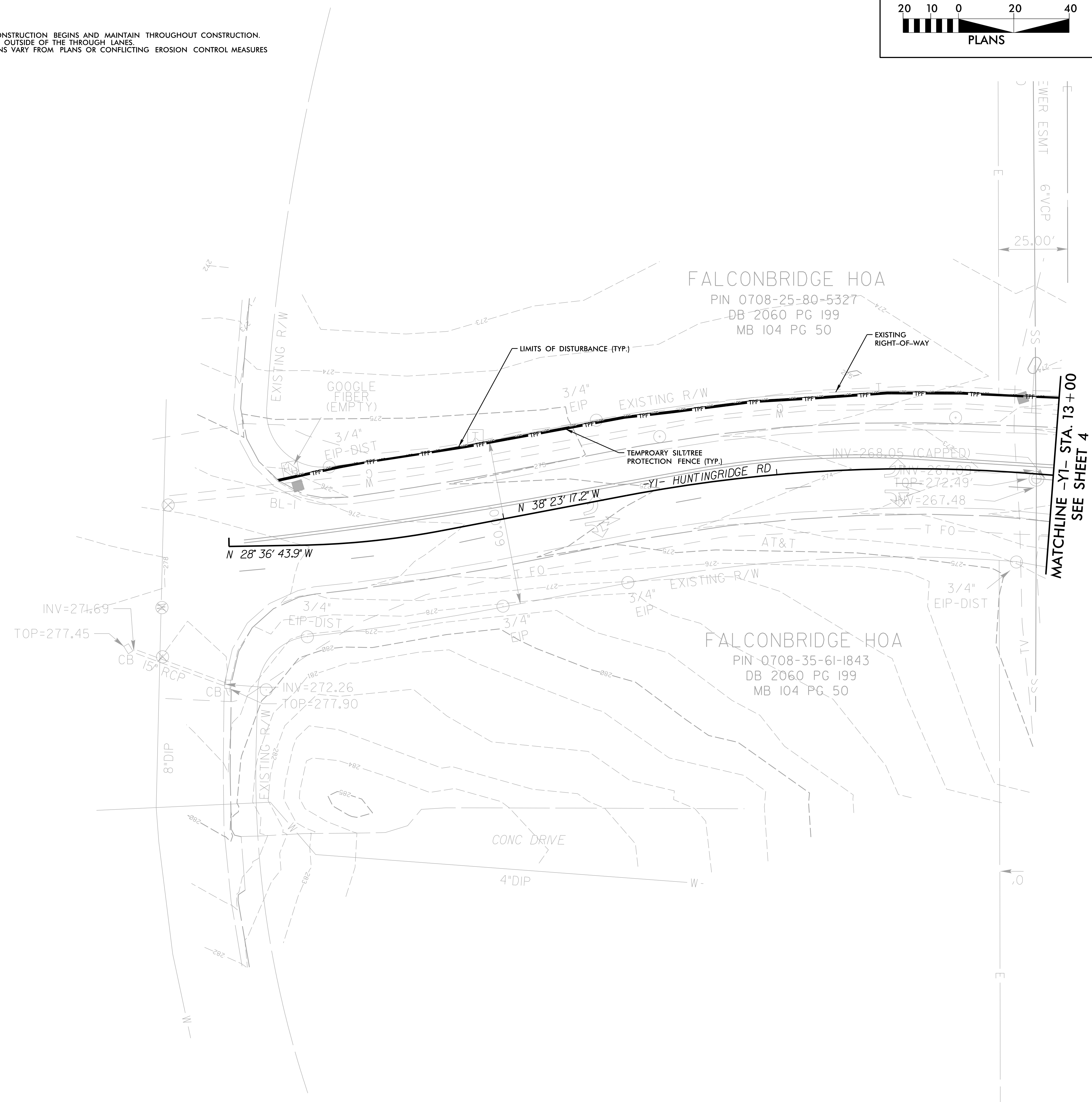
CLEARING AND GRUBBING PHASE

- NOTES:
1. CONTRACTOR TO INSTALL EROSION CONTROL MEASURES BEFORE CONSTRUCTION BEGINS AND MAINTAIN THROUGHOUT CONSTRUCTION.
 2. CONTRACTOR IS TO KEEP ALL DEBRIS WITHIN THE WORK AREA AND OUTSIDE OF THE THROUGH LANES.
 3. CONTRACTOR TO COORDINATE WITH ENGINEER IF FIELD CONDITIONS VARY FROM PLANS OR CONFLICTING EROSION CONTROL MEASURES ARE INSTALLED WITH THE ADJACENT SITE CONSTRUCTION.



PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. EC-5
R/W SHEET NO.	
FORREST N. BROOKS, P.E. LEVEL III NAME	
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PLANS PREPARED BY: 	
<small>DRMP, INC. 5808 FARMINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. E-1524 (P) 817-5115</small>	

REVISIONS

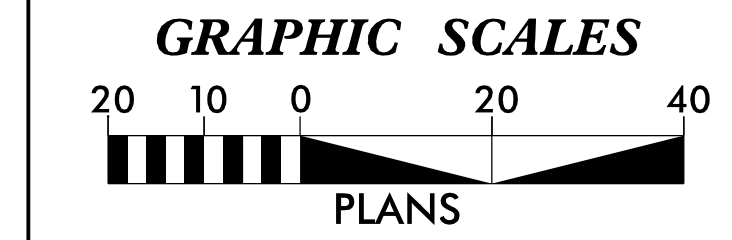


MATCHLINE -Y1- STA. 13+00
SEE SHEET 4

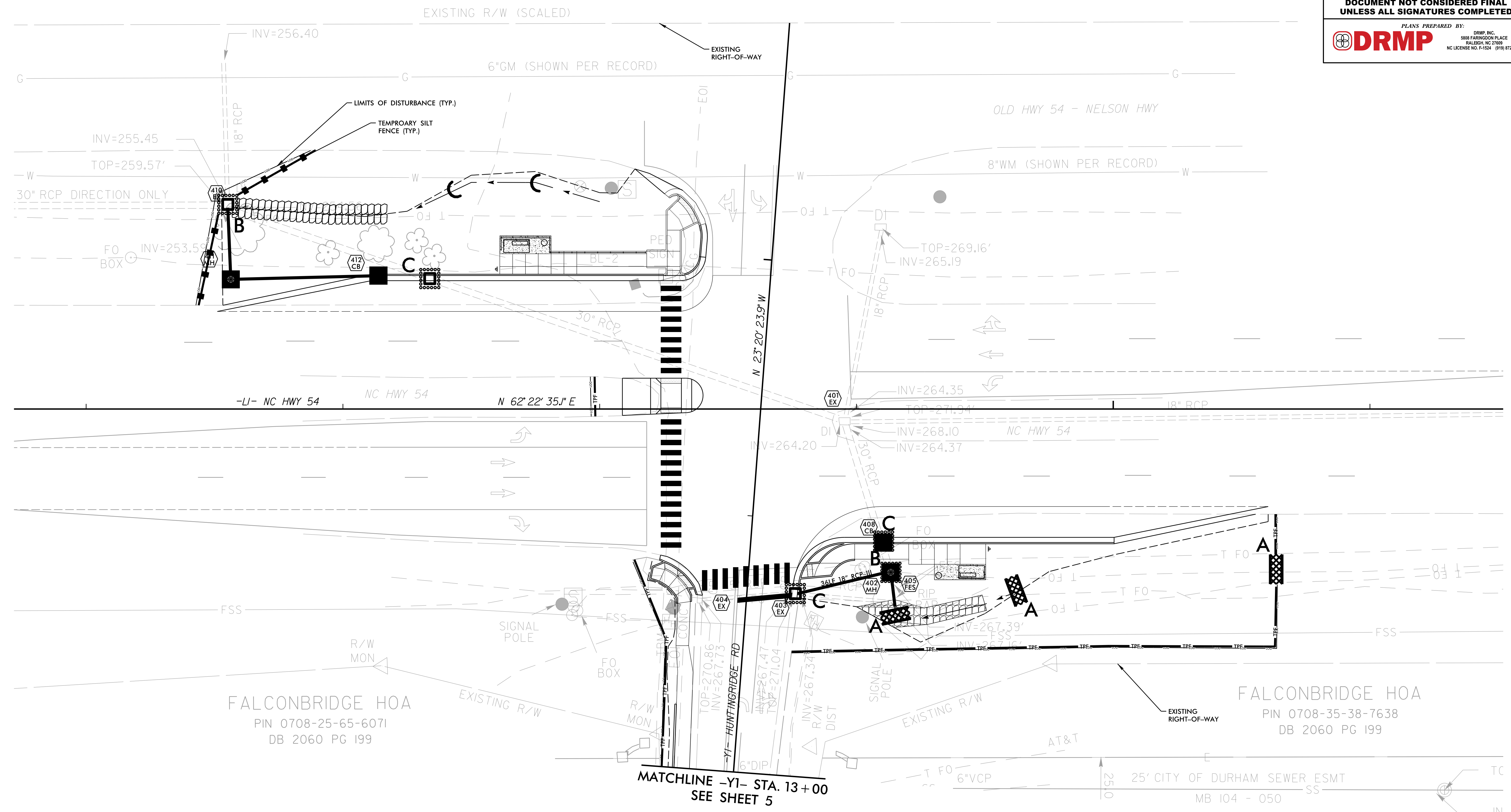
2/14/2025
User: colspaugh

FINAL PHASE

- NOTES:
1. CONTRACTOR TO SHIFT EROSION CONTROL MEASURES DURING CONSTRUCTION TO MAINTAIN INLET PROTECTION AROUND THE EXISTING AND PROPOSED INLETS. WATTLES SHALL BE SHIFTED TO THE NEW DITCHLINE UNTIL EARTH IS STABILIZED.
 2. CONTRACTOR IS TO KEEP ALL DEBRIS WITHIN THE WORK AREA AND OUTSIDE OF THE THROUGH LANES.
 3. CONTRACTOR TO COORDINATE WITH ENGINEER IF FIELD CONDITIONS VARY FROM PLANS OR CONFLICTING EROSION CONTROL MEASURES ARE INSTALLED WITH THE ADJACENT SITE CONSTRUCTION.



PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. EC-6
R/W SHEET NO.	
FORREST N. BROOKS, P.E. LEVEL III NAME	
4039 LEVEL III CERTIFICATION NO.	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PLANS PREPARED BY: 	



REVISIONS

FALCONBRIDGE HOA
PIN 0708-25-65-6071
DB 2060 PG 199

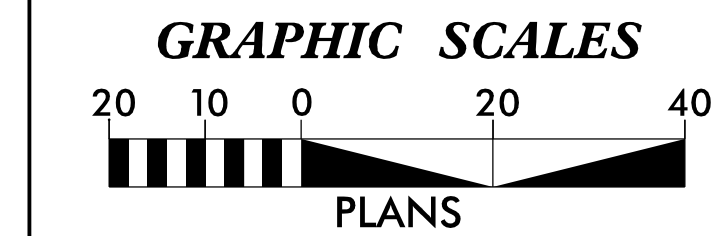
FALCONBRIDGE HOA
PIN 0708-35-38-7638
DB 2060 PG 199

MATCHLINE -Y1- STA. 13+00
SEE SHEET 5

2/14/2025
T:\19276\12_EC_pah04.F.inl.dgn
Jserf.eolspough

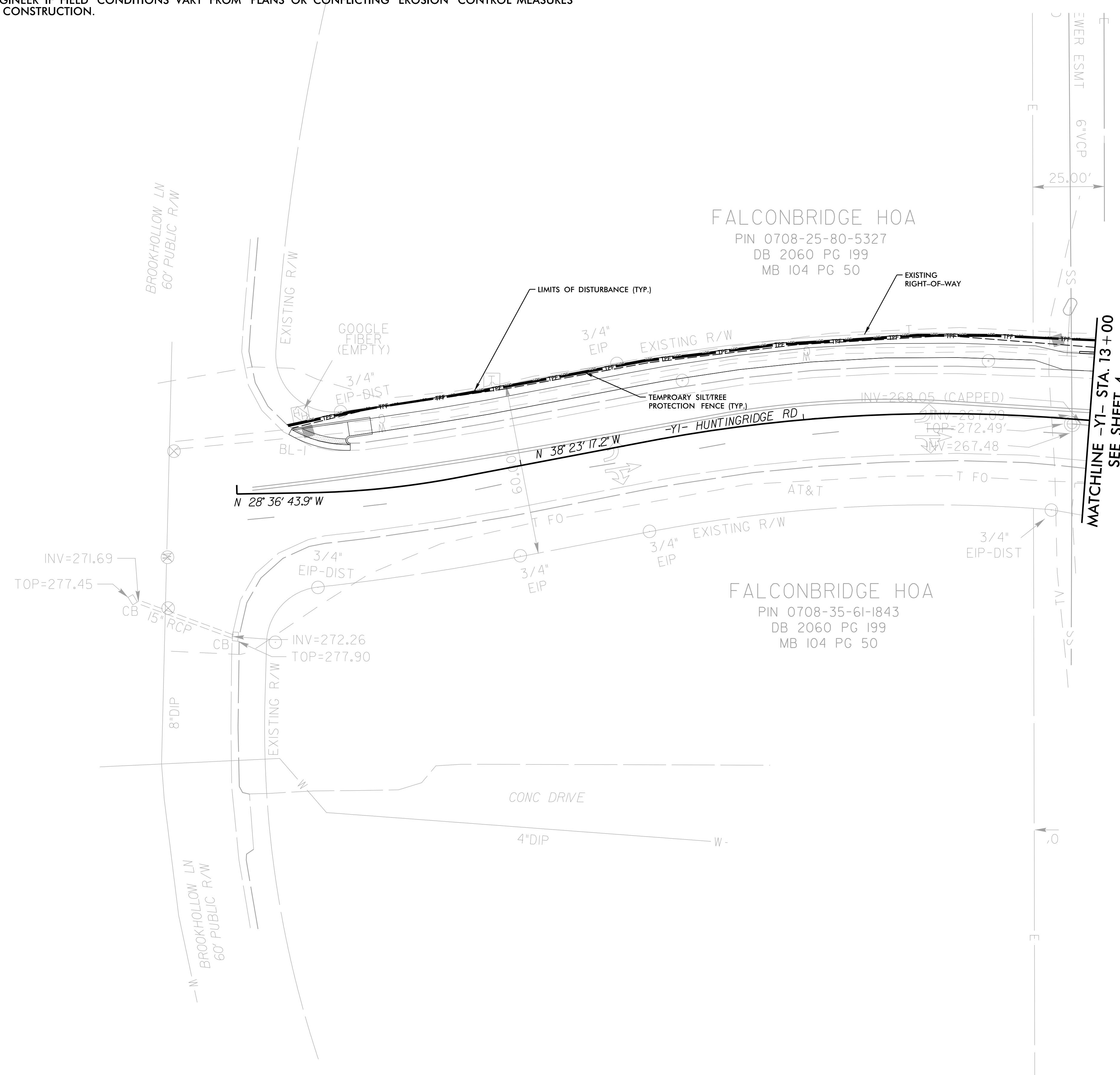
FINAL PHASE

- NOTES:
1. CONTRACTOR TO SHIFT EROSION CONTROL MEASURES DURING CONSTRUCTION TO MAINTAIN INLET PROTECTION AROUND THE EXISTING AND PROPOSED INLETS. WATTLES SHALL BE SHIFTED TO THE NEW DITCHLINE UNTIL EARTH IS STABILIZED.
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PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. EC-7
R/W SHEET NO.	
FORREST N. BROOKS, P.E. LEVEL III NAME	
4039 LEVEL III CERTIFICATION NO.	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
<small>PLANS PREPARED BY:</small> 	

REVISIONS

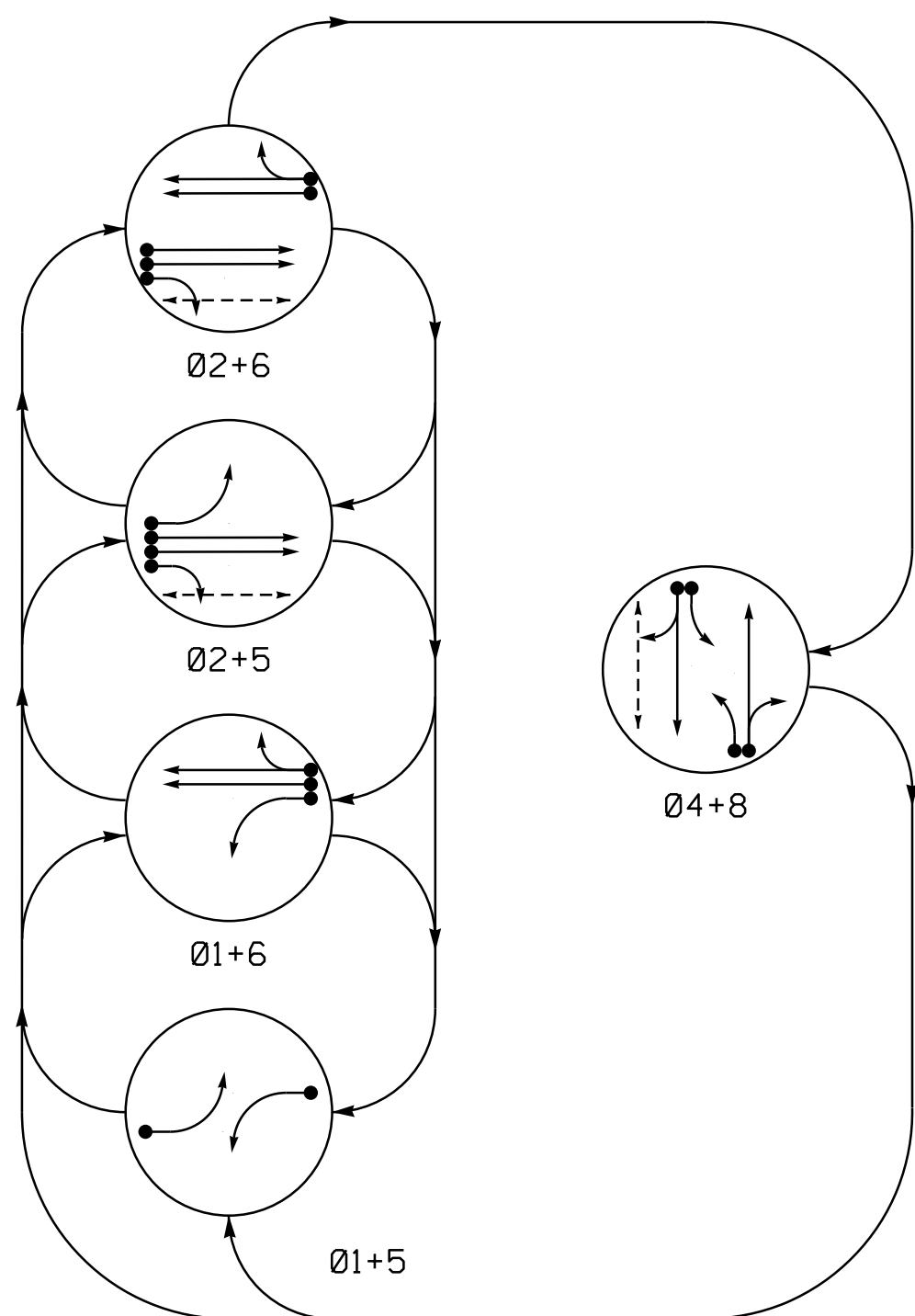
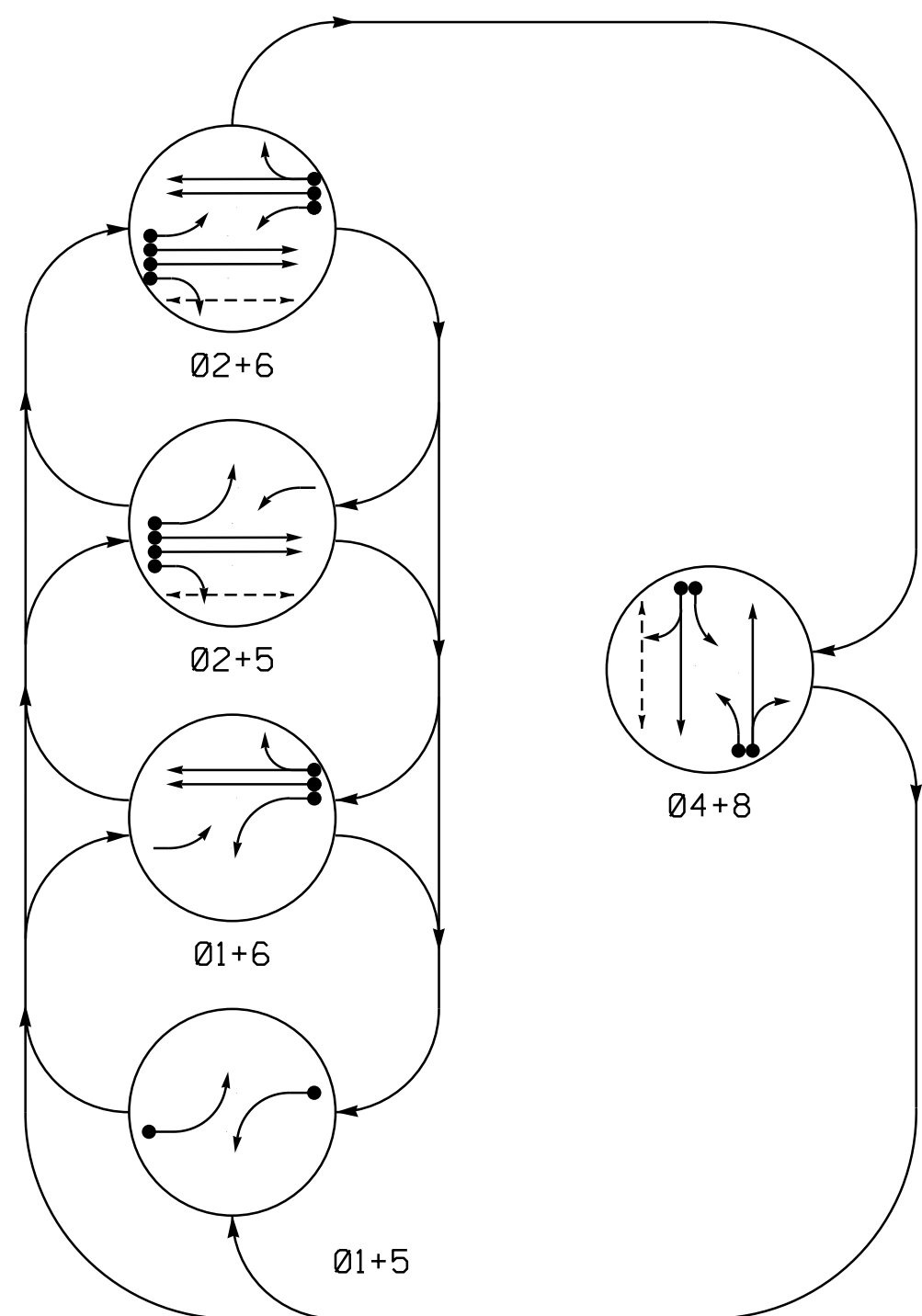


MATCHLINE -Y1- STA. 13+00
SEE SHEET 4

2/14/2025
User: colspaugh

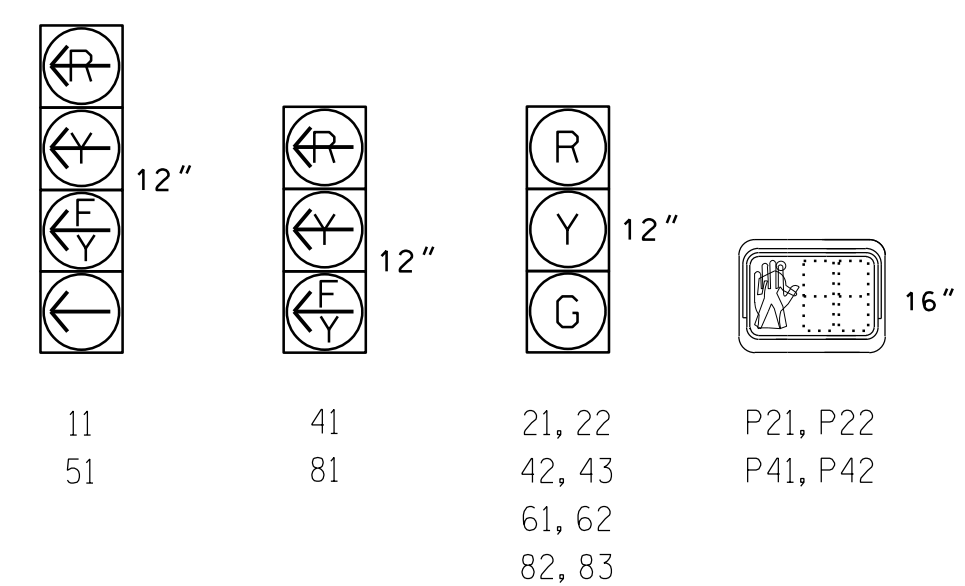
DEFAULT PHASING DIAGRAM

ALTERNATE PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND
 ← ● DETECTED MOVEMENT
 ← ○ UNDETECTED MOVEMENT (OVERLAP)
 - - - UNSIGNALIZED MOVEMENT
 ← - - - PEDESTRIAN MOVEMENT

SIGNAL FACE I.D.
 All Heads L.E.D.



ASC/3 EV PREEMPT

FUNCTION	PRE 3
Exit Phase(s)	2+6
Preempt Override	OFF
Delay Time	0
Ped Clear Through Yellow	Y
Terminate Phases	N
Entrance Walk	1
Entrance Ped Clear	255*
Entrance Min Green	1
Entrance Yellow Change	25.5*
Entrance Red Clear	25.5*
Minimum Dwell Time	7
Preempt Input Extension Time **	2.0
Preempt Max Time	120
Exit Yellow Change	25.5*
Exit Red Clear	25.5*

* Time defaults to time used for phase during normal operation.
 ** Program timing on GPS detector unit.

ASC/3 DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING							
					PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
1A	6X40	+5	2-4-2	-	1	Yes	-	15*	-	N	-	-
2A	6X6	285	EXIST	-	2	Yes	-	-	X	N	-	-
2B	6X6	285	EXIST	-	2	Yes	-	-	X	N	-	-
4A	6X40	0	2-4-2	-	4	Yes	-	3	-	N	-	-
4B	6X40	0	2-4-2	-	4	Yes	-	10	-	N	-	-
5A	6X40	+18	2-4-2	X	5	Yes	-	15*	-	N	-	-
6A	6X6	300	EXIST	-	6	Yes	-	-	X	N	-	-
6B	6X6	300	EXIST	-	6	Yes	-	-	X	N	-	-
8A	6X40	0	2-4-2	X	8	Yes	-	3	-	N	-	-
8B	6X40	0	2-4-2	X	8	Yes	-	10	-	N	-	-

* Disable delay during Alternate Phasing operation.
 # Disable phase call for loop during Alternate Phasing operation.

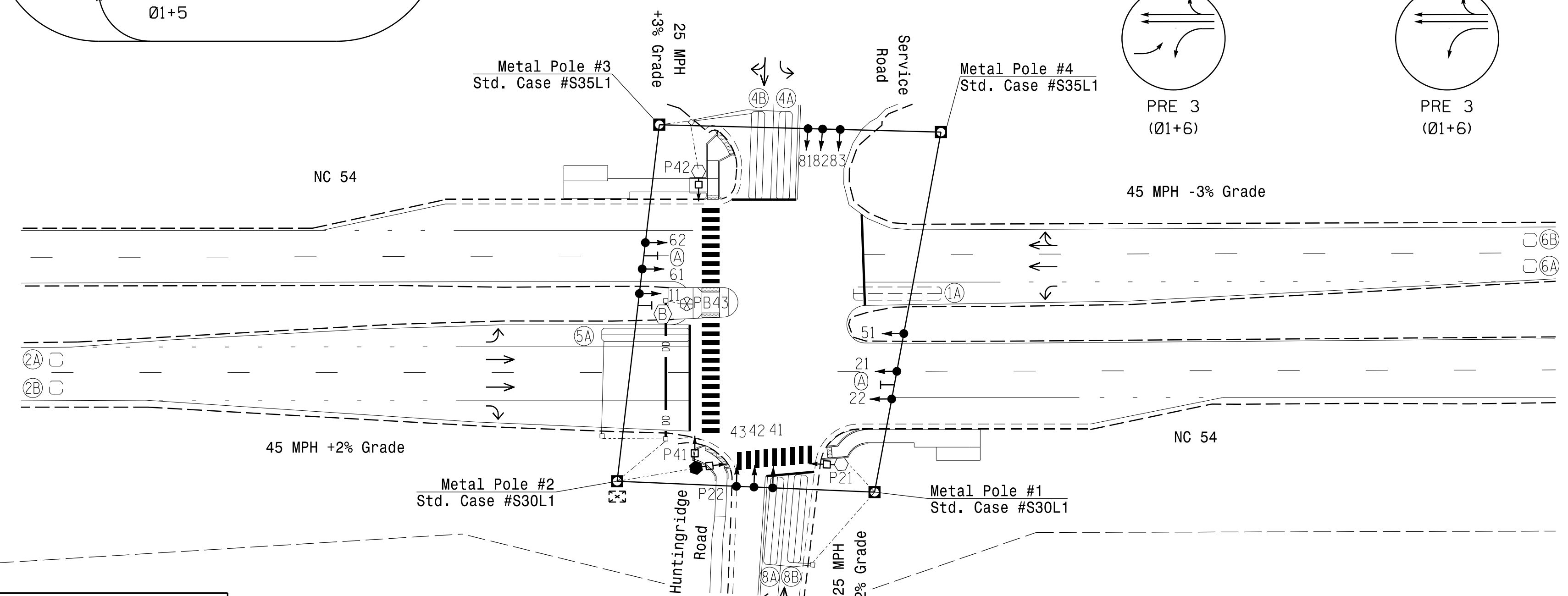
DEFAULT PHASING EV PREEMPT DIAGRAM (Medium Priority)
ALTERNATE PHASING EV PREEMPT DIAGRAM (Medium Priority)



5 Phase Fully Actuated w/ Emergency Vehicle Preemption (Durham Signal System)

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: <https://connect.ncdot.gov/resources/safety/pages/ITS-Design-Resources.aspx>
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Set all detector units to presence mode.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- This intersection features a GPS preemption system.
- The Division (City) Traffic Engineer will determine the hours of use for each phasing plan.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- See pavement marking plan for pavement marking locations.



LEGEND

PROPOSED	EXISTING		
○	●	Traffic Signal Head	N/A
○	○	Modified Signal Head	N/A
○	○	Sign	N/A
○	○	Pedestrian Signal Head With Push Button & Sign	N/A
○	○	Signal Pole with Guy	N/A
○	○	Signal Pole with Sidewalk Guy	N/A
○	○	Inductive Loop Detector	N/A
○	○	Controller & Cabinet	N/A
○	○	Junction Box	N/A
○	○	2-in Underground Conduit	N/A
N/A	→	Right of Way	N/A
→	→	Directional Arrow	N/A
→	→	Directional Drill	N/A
○	○	Metal Strain Pole	N/A
○	○	Type I Pushbutton Post	N/A
○	○	Type II Signal Pedestal	N/A
○	○	Street Name Sign (D3-1)	N/A
○	○	"TURNING VEHICLES YIELD TO PEDESTRIANS" Sign (R10-11)	N/A

ASC/3 TIMING CHART

FEATURE	PHASE							
	1	2	4	5	6	8		
Min Green *	7	12	7	7	12	7		
Delayed Green	-	6	7	-	-	-		
Walk *	-	13	14	-	-	-		
Ped Clear	-	9	30	-	-	-		
Veh. Extension *	2.0	6.0	2.0	3.0	6.0	2.0		
Max 1 *	15	90	45	15	90	45		
Yellow	3.0	4.8	3.3	3.0	4.8	3.3		
Red Clear	3.1	1.8	3.2	3.1	1.8	3.2		
Actuations B4 Add *	-	-	-	-	-	-		
Seconds / Actuation *	-	1.5	-	-	1.5	-		
Max Initial *	-	33	-	-	34	-		
Time Before Reduction *	-	15	-	-	15	-		
Time To Reduce *	-	45	-	-	45	-		
Minimum Gap	-	2.8	-	-	3.0	-		
Locking Detector	-	X	-	-	X	-		
Recall Position	-	VEH. RECALL	-	-	VEH. RECALL	-		
Dual Entry	-	-	X	-	-	X		
Simultaneous Gap	X	X	X	X	X	X		

DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE							
	01	02	04	05	PRE	FL	08	03
11	←	←	←	←	←	←	←	←
21, 22	R	R	G	G	R	R	R	R
41	←	←	←	←	←	←	←	←
42, 43	R	R	R	R	G	R	R	R
51	←	←	←	←	←	←	←	←
61, 62	R	G	R	G	R	G	R	R
81	←	←	←	←	←	←	←	←
82, 83	R	R	R	R	G	R	R	R
P21, P22	DW	DW	W	W	DW	DW	DRK	DRK
P41, P42	DW	DW	DW	DW	W	DW	DRK	DRK

ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE							
	01	02	04	05	PRE	FL	08	03
11	←	←	←	←	←	←	←	←
21, 22	R	R	G	G	R	R	R	R
41	←	←	←	←	←	←	←	←
42, 43	R	R	R	R	G	R	R	R
51	←	←	←	←	←	←	←	←
61, 62	R	G	R	G	R	G	R	R
81	←	←	←	←	←	←	←	←
82, 83	R	R	R	R	G	R	R	R
P21, P22	DW	DW	W	W	DW	DW	DRK	DRK
P41, P42	DW	DW	DW	DW	W	DW	DRK	DRK

NC Dept of Transportation
 Division of Highways
 Final Drawing Date: 9/10/2024
 Documented by: *Chang Bai*
 TSMO unit

THIS PLAN SUPERSEDES THE PLAN SIGNED AND SEALED ON 12/14/2023



Signal Upgrade

Prepared For: **NC 54 at Huntingridge Road / Service Road**

Division 5 Durham County Durham

PLAN DATE: September 2024 REVIEWED BY: ZM Esposito

PREPARED BY: DS Griffith DRMP PROJ. NO.: 19275 (120)

REVISIONS: INIT. DATE

DRMP INC. 2024 UNIVERSITY EXECUTIVE PARK DR. NC LICENSE NO. F-1524 CHARLOTTE, NC 28262 PHONE: 704-549-4200

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 054155

DocuSigned by: *Jachary M. Esposito* 2024

SIG. INVENTORY NO. 05-1744

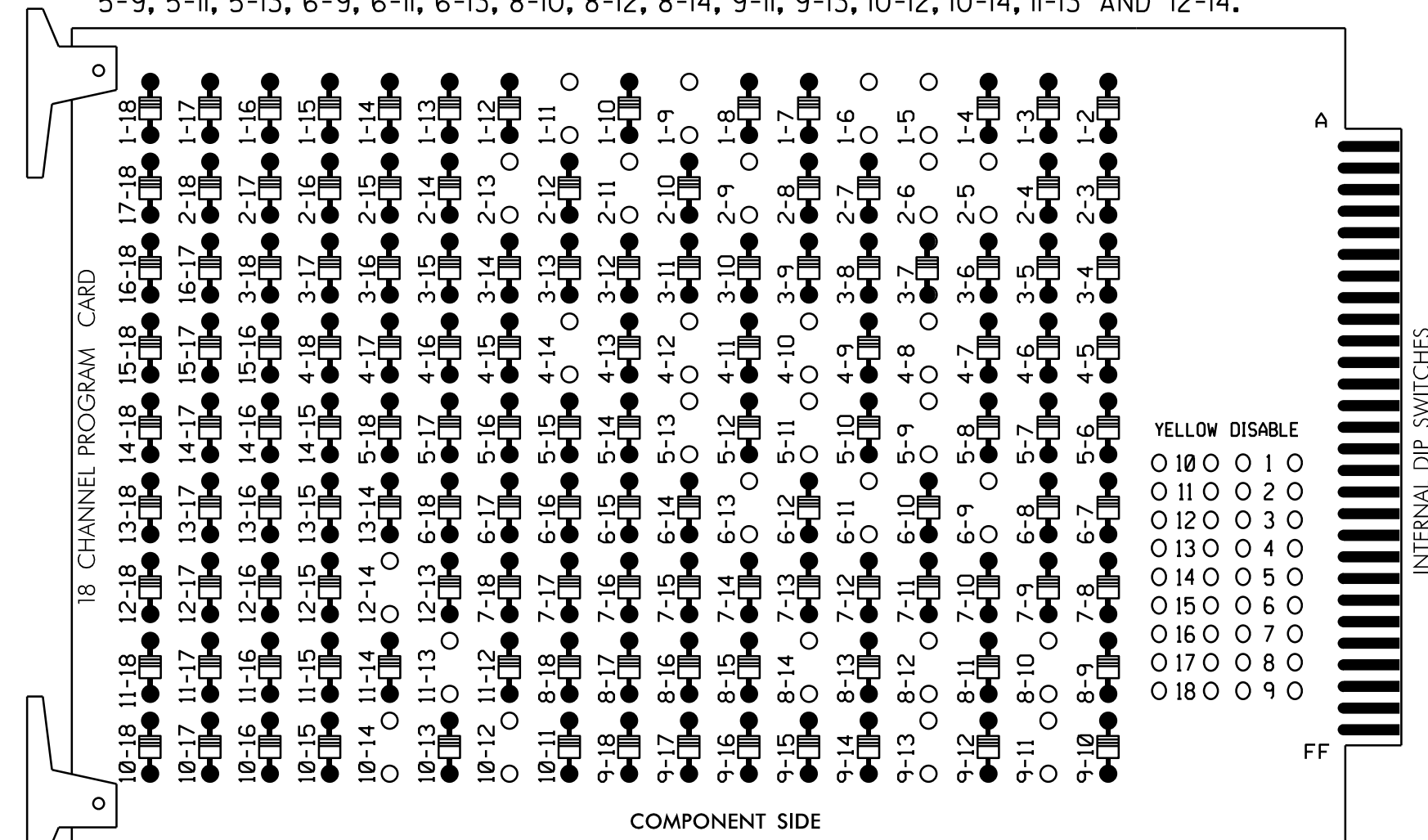
* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

18 CHANNEL CONFLICT MONITOR

PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-11, 2-5, 2-6, 2-9, 2-11, 2-13, 4-8, 4-10, 4-12, 4-14, 5-9, 5-11, 5-13, 6-9, 6-11, 6-13, 8-10, 8-12, 8-14, 9-11, 9-13, 10-12, 10-14, 11-13 AND 12-14.



REMOVE JUMPERS AS SHOWN

NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
- Ensure that Red Enable is active at all times during normal operation.
- Integrate monitor with Ethernet network in cabinet.

■ = DENOTES POSITION OF SWITCH

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Program phases 4 and 8 for Dual Entry.
- Program controller to start up in phase 2 green and phase 6 green.
- The cabinet and controller are part of the Durham Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070LX
 CABINET.....332 W/ AUX
 SOFTWARE.....ECONOLITE ASC/3-2070
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. FILE
 LOAD SWITCHES USED.....S1,S2,S3,S5,S6,S7,S8,S11,
 AUX S1,AUX S2,AUX S4,AUX S5
 PHASES USED.....1,2,2PED,4,4PED,5,6,8
 OVERLAP "A".....*
 OVERLAP "B".....*
 OVERLAP "C".....*
 OVERLAP "D".....*

* See overlap programming detail on sheet 2.

PROJECT REFERENCE NO.	SHEET NO.
36249.4646	Sig-1.1

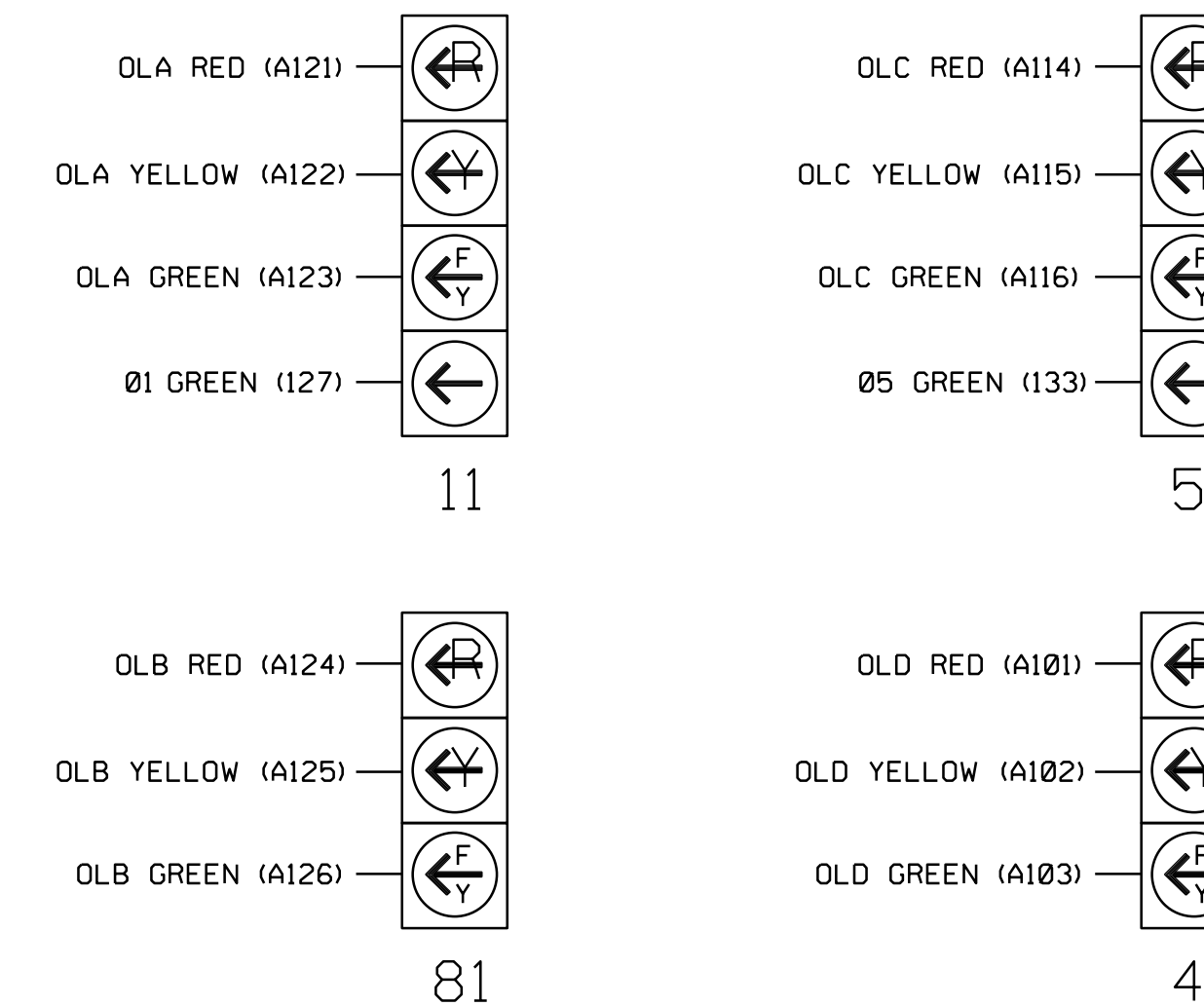
SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11	21,22	P21, P22	NU	42,43	P41, P42	51	61,62	NU	NU	82,83	NU	11	81	NU	51	41	NU
RED		128			101			134			107							
YELLOW	*	129			102		*	135			108							
GREEN		130			103			136			109							
RED ARROW													A121	A124		A114	A101	
YELLOW ARROW													A122	A125		A115	A102	
FLASHING YELLOW ARROW													A123	A126		A116	A103	
GREEN ARROW	127							133										
Hand			113				104											
Walking								106										

NU = Not Used
 * Denotes install load resistor. See load resistor installation detail this sheet.
 ★ See pictorial of head wiring in detail below.

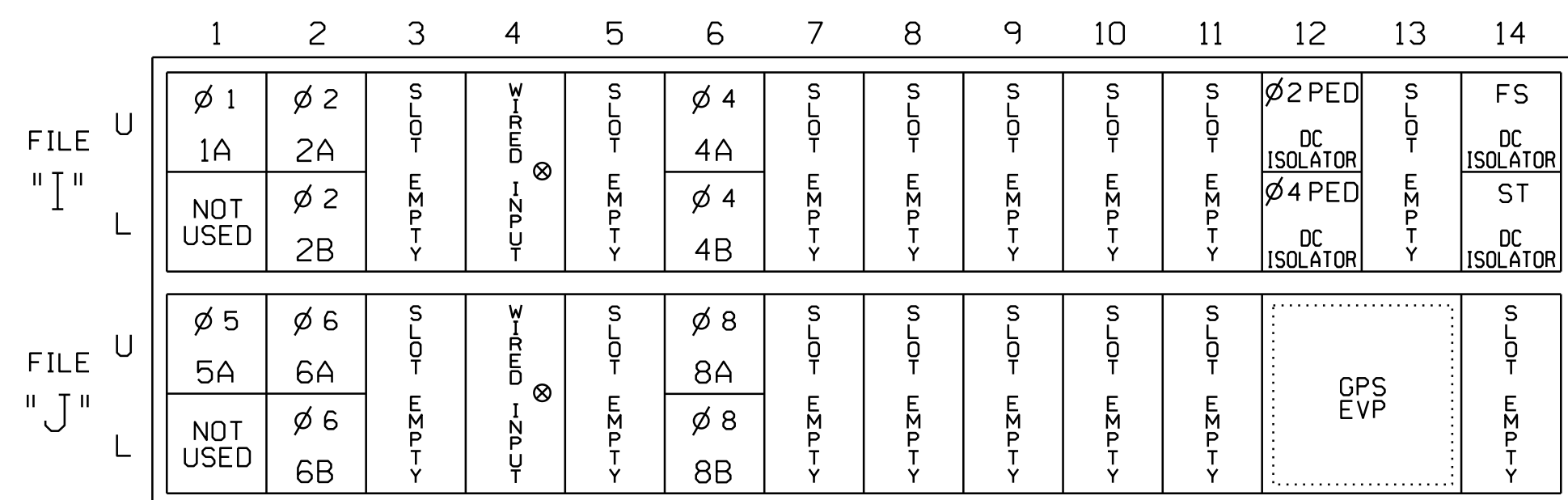
FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



INPUT FILE POSITION LAYOUT

(front view)



EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
 ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

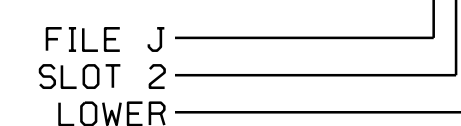
INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	ADDED INITIAL	DETECTOR TYPE
1A ¹	TB1-1,2	I1U	56	1 ★	1	YES		15		N
	-	J4U	48	26 ★	6	YES		3		G
2A	TB2-5,6	I2U	39	2	2	YES			X	N
2B	TB2-7,8	I2L	43	12	2	YES			X	N
4A	TB4-9,10	I6U	41	4	4	YES		3		N
4B	TB4-11,12	I6L	45	14	4	YES		10		N
5A ²	TB3-1,2	J1U	55	5 ★	5	YES		15		N
	-	J1U	47	22 ★	2	YES		3		G
6A	TB3-5,6	J2U	40	6	6	YES			X	N
6B	TB3-7,8	J2L	44	16	6	YES			X	N
8A	TB5-9,10	J6U	42	8	8	YES		3		N
8B	TB5-11,12	J6L	46	18	8	YES		10		N
PED PUSH BUTTONS										
P21,P22	TB8-4,6	I12U	67	PED 2	2 PED					
P41,P42, PB43	TB8-5,6	I12L	69	PED 4	4 PED					

NOTE:
 INSTALL DC ISOLATORS IN INPUT FILE SLOT 112.

- Add jumper from I1-W to J4-W, on rear of input file.
 - Add jumper from J1-W to I4-W, on rear of input file.
- ★ For the detectors to work as shown on the signal design plan, see the Vehicle Detector Setup Programming Detail for Alternate Phasing on sheet 2.

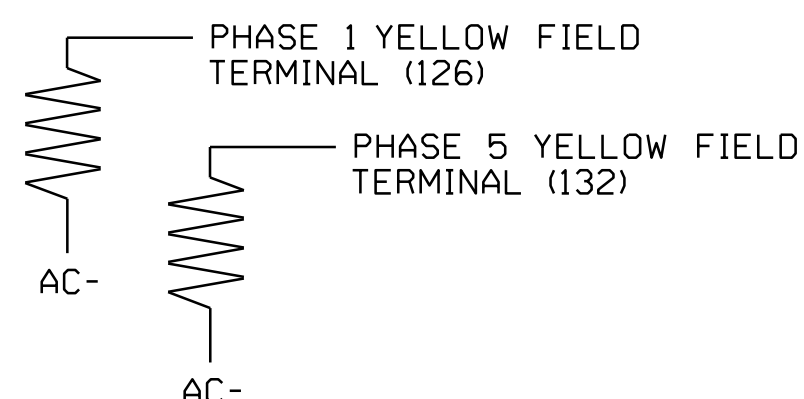
INPUT FILE POSITION LEGEND: J2L



LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.



DRMP, INC.
 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220
 CHARLOTTE, NC 28262
 PHONE: 704-548-2260

THIS PLAN SUPERSEDES THE PLAN SIGNED AND SEALED ON 12/14/2023

NC Dept of Transportation
 Division of Highways
 Final Drawing Date: 9/10/2024
 Drawn by: Chang Baek
 TSMO Unit

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 05-1744
 DESIGNED: Sep 2024
 SEALED: 9/6/2024
 REVISED: N/A

Electrical Detail - Sheet 1 of 5

	NC 54 at Huntingridge Road / Service Road		
	Division 5 Durham County Durham PLAN DATE: September 2024 REVIEWED BY: ZM Esposito PREPARED BY: DS Griffith DRMP PROJ. NO.: 19275 (122)	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL (program controller as shown)

- From Main Menu select **2. CONTROLLER**
- From CONTROLLER Submenu select **2. VEHICLE OVERLAPS**

OVERLAP A
Select TMG VEH OVLP [A] and 'PPLT FYA'

```

TMG VEH OVLP...[A] TYPE: ....[PPLT FYA]
PROTECTED LEFT TURN... PHASE 1
OPPOSING THROUGH..... PHASE 2

FLASHING ARROW OUTPUT.....CH9 ISOLATE
DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE..... 1
  
```

← NOTICE ACTION PLAN SF BIT 1

Toggle Once

OVERLAP B
Select TMG VEH OVLP [B] and 'OTHER/ECONOLITE'

```

TMG VEH OVLP...[B] TYPE:[OTHER/ECONOLITE]
PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . . X . . . . .
PROTECT . . . . .
PED PRTC . . . . .
NOT OVLP . . . . .
FLSH GRN . . . 1 . . . . .
LAG X PH . . . . .
LAG 2 PH . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0
  
```

Toggle Once

OVERLAP C
Select TMG VEH OVLP [C] and 'PPLT FYA'

```

TMG VEH OVLP...[C] TYPE: ....[PPLT FYA]
PROTECTED LEFT TURN... PHASE 5
OPPOSING THROUGH..... PHASE 6

FLASHING ARROW OUTPUT.....CH11 ISOLATE
DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE..... 5
  
```

← NOTICE ACTION PLAN SF BIT 5

Toggle Once

OVERLAP D
Select TMG VEH OVLP [D] and 'OTHER/ECONOLITE'

```

TMG VEH OVLP...[D] TYPE:[OTHER/ECONOLITE]
PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . . . . X . . . . .
PROTECT . . . . .
PED PRTC . . . . .
NOT OVLP . . . . .
FLSH GRN . . . . . 1 . . . . .
LAG X PH . . . . .
LAG 2 PH . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0
  
```

END PROGRAMMING

ECONOLITE ASC/3-2070 VEHICLE DETECTOR SETUP PROGRAMMING DETAIL FOR ALTERNATE PHASING LOOPS 1A & 5A (program controller as shown)

IMPORTANT!

Program detectors per the input file connection and programming chart shown on sheet 1 before proceeding.

- From Main Menu select **8. UTILITIES**
- From UTILITIES Submenu select **1. COPY/CLEAR**
- Copy from DETECTOR PLAN "1" to DETECTOR PLAN "2".

```

COPY / CLEAR UTILITY
FROM          TO
PHASE TIMING... > PHASE TIMING...
TIMING PLAN... > TIMING PLAN...
PH DET OPT PLAN... > PH DET OPT PLAN...
DETECTOR PLAN.. 1 > DETECTOR PLAN.. 2
TOGGLE TO SELECT A "FROM" AND A "TO"
THEN PRESS ENTER
  
```

- From Main Menu select **6. DETECTORS**
- From DETECTOR Submenu select **2. VEHICLE DETECTOR SETUP**
- Place cursor in VEH DET PLAN [] position and enter "2".

Place cursor in VEH DETECTOR [] position and enter "1".
Set delay time to "0".

```

VEH DETECTOR [ 1]  VEH DET PLAN [ 2]
TYPE: N-NTCIP
TS2 DETECTOR..... ECPI LOG..... NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
1 1 . . . . .
CALL OPTION.... YES DELAY TIME... 0.0
EXT OPTION. PASSAGE EXTENSION TIME. 0.0
USE ADDED INITIAL . CROSS SWITCH PH.. 0
LOCK IN..... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY. NO
  
```

← NOTICE VEH DET PLAN 2

← ENSURE DELAY IS SET TO '0'

Place cursor in VEH DETECTOR [] position and enter "26".
Set assigned phase to "0".

```

VEH DETECTOR [26]  VEH DET PLAN [ 2]
TYPE: G-GREEN EXTENSION/DELAY
TS2 DETECTOR..... ECPI LOG..... NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
26 0 . . . . .
EXTEND TIME.... 0.0 DELAY TIME... 3.0
USE ADDED INITIAL . CROSS SWITCH PH.. 0
LOCK IN..... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY- NO
  
```

← NOTICE VEH DET PLAN 2

← ENSURE PHASE IS SET TO "0"

- Place cursor in VEH DETECTOR [] position and enter "5".
- Set delay time to "0".

```

VEH DETECTOR [ 5]  VEH DET PLAN [ 2]
TYPE: N-NTCIP
TS2 DETECTOR..... ECPI LOG..... NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
5 5 . . . . .
CALL OPTION.... YES DELAY TIME... 0.0
EXT OPTION. PASSAGE EXTENSION TIME. 0.0
USE ADDED INITIAL . CROSS SWITCH PH.. 0
LOCK IN..... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY. NO
  
```

← NOTICE VEH DET PLAN 2

← ENSURE DELAY IS SET TO '0'

- Place cursor in VEH DETECTOR [] position and enter "22".
- Set assigned phase to "0".

```

VEH DETECTOR [22]  VEH DET PLAN [ 2]
TYPE: G-GREEN EXTENSION/DELAY
TS2 DETECTOR..... ECPI LOG..... NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
22 0 . . . . .
EXTEND TIME.... 0.0 DELAY TIME... 3.0
USE ADDED INITIAL . CROSS SWITCH PH.. 0
LOCK IN..... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY- NO
  
```

← NOTICE VEH DET PLAN 2

← ENSURE PHASE IS SET TO "0"

END PROGRAMMING

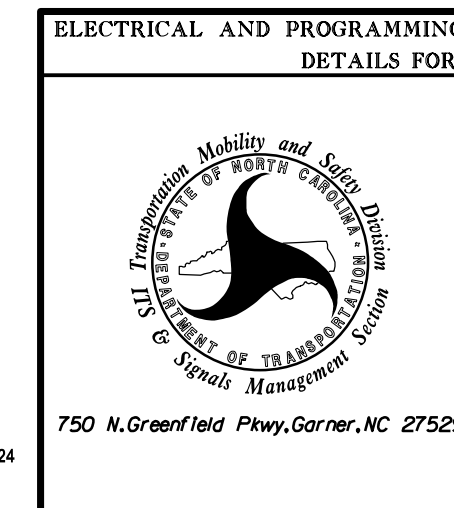
THIS PLAN SUPERSEDES THE PLAN SIGNED AND SEALED ON 12/14/2023

NC Dept of Transportation
Division of Highways
Final Drawing Date: 9/10/2024
DocuSigned by:
Chang Park
90E5AF607F246D
TSMU Unit

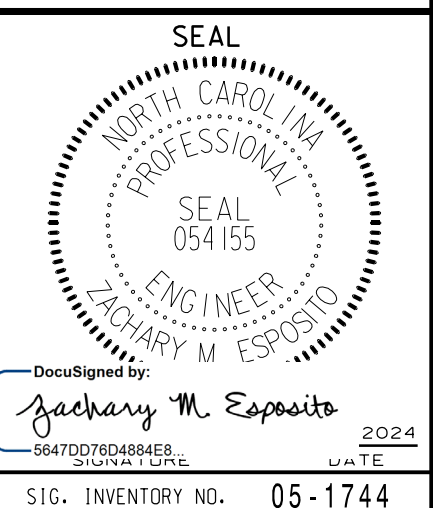
THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 05-1744
DESIGNED: Sep 2024
SEALED: 9/6/2024
REVISED: N/A

Electrical Detail - Sheet 2 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



ELECTRICAL AND PROGRAMMING DETAILS FOR:		NC 54 at Huntingridge Road / Service Road	
Division 5	Durham County	Durham	
PLAN DATE: September 2024	REVIEWED BY: ZM Esposito		
PREPARED BY: DS Griffith	DRMP PROJ. NO.: 19275 (122)		
REVISIONS	INIT.	DATE	



DocuSigned by:
Zachary M. Esposito
054155
2024
SIC. INVENTORY NO. 05-1744

ECONOLITE ASC/3-2070 ACTION PLAN PROGRAMMING DETAIL

1. From Main Menu select 5. TIME BASE
2. From TIME BASE Submenu select 2. ACTION PLAN

ACTION PLAN...[*]	
PATTERN.....AUTO	SYS OVERRIDE.... NO
TIMING PLAN..... 0	SEQUENCE..... 0
VEH DETECTOR PLAN.. 2	DET LOG.....NONE
FLASH..... --	RED REST..... NO
VEH DET DIAG PLN... 0	PED DET DIAG PLN..0
DIMMING ENABLE.. NO	PRIORITY RETURN. NO
PED PR RETURN.. NO	QUEUE DELAY..... NO
PMT COND DELAY	NO
PHASE	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PED RCL	. . . . .
WALK 2	. . . . .
VEX 2	. . . . .
VEH RCL	. . . . .
MAX RCL	. . . . .
MAX 2	. . . . .
PHASE	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
MAX 3	. . . . .
CS INH	. . . . .
OMIT	. . . . .
SPC FCT	X . . . X . . . (1-8)
AUX FCT	. . . (1-3)
	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
LP 1-15	. . . . .
LP 16-30	. . . . .
LP 31-45	. . . . .
LP 46-60	. . . . .
LP 61-75	. . . . .
LP 76-90	. . . . .
LP 91-100	. . . . .

* The Action Plan number(s) are to be determined by the Division and/or City Traffic Engineer.

ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING FREE RUN - PROGRAM CHANGES (SHOWN BELOW) IN A TIME BASED ACTION PLAN. SCHEDULE A DAY PLAN THAT INCLUDES THE ACTION PLAN PROGRAMMED TO SELECT VEH DET PLAN 2 AND ENABLE SF BITS 1 AND 5.

TO RUN ALT. PHASING DURING COORDINATION - SELECT THE TIME BASED ACTION PLAN THAT IS PROGRAMMED TO SELECT VEH DET PLAN 2 AND ENABLE SF BITS 1 AND 5.

PHASING	VEH DET PLAN	SF BITS ENABLED
ACTIONS REQUIRED TO RUN <u>DEFAULT PHASING</u>	1	NONE
ACTIONS REQUIRED TO RUN <u>ALTERNATE PHASING</u>	2	1,5

IMPORTANT: IF ALT. PHASING IS USED DURING FREE RUN AND COORDINATION, DO NOT OPERATE TIME OF DAY EVENTS CONCURRENTLY WITH COORDINATION PLAN EVENTS IN THE EVENT SCHEDULER. (EX. FREE RUN EVENT SHOULD END BEFORE COORDINATION PLAN EVENT STARTS AND VICE-VERSA).

ALTERNATE PHASING CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN SF BIT 5 AND VEH DET PLAN 2 ACTIVATE TO CALL THE "ALTERNATE PHASING":

SF BIT 1: Modifies overlap parent phases for heads 11 and 51 to run protected turns only.

VEH DET PLAN 2: Disables phase 6 call on loop 1A and reduces delay time for phase 1 call on loop 1A to 0 seconds.

Disables phase 2 call on loop 5A and reduces delay time for phase 5 call on loop 5A to 0 seconds.

FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

1. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
2. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
3. REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

THIS PLAN SUPERSEDES THE PLAN SIGNED AND SEALED ON 12/14/2023

NC Dept of Transportation
Division of Highways

Final Drawing Date: 9/10/2024

Chang Baik
DESIGNED BY

TSMO Unit

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 05-1744
DESIGNED: Sep 2024
SEALED: 9/6/2024
REVISED: N/A

Electrical Detail - Sheet 3 of 5



NC 54
at
Huntingridge Road / Service Road

Division 5 Durham County Durham

PLAN DATE: September 2024 REVIEWED BY: ZM Esposito

PREPARED BY: DS Griffith DRMP PROJ. NO.: 19275 (122)

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 054155

Zachary M. Esposito
ZACHARY M. ESPOSITO

2024

SIC. INVENTORY NO. 05-1744

ECONOLITE ASC/3-2070 EMERGENCY VEHICLE PREEMPT PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select 4. PREEMPTOR/TSP
2. From PREEMPTOR/TSP/SCP Submenu select 1. PREEMPT PLAN 1-10

Place cursor in [] next to Preempt Plan and press 3. Then press the right cursor arrow and toggle the controller to YES. Next cursor down. This will select Emergency Vehicle Preempt #3.

```

PREEMPT PLAN [ 3]  ENABLE....YES
VEH/PED 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
OVERLAP A B C D E F G H I J K L M N O P
TRKCLR V . . . . .
TRKCLR O . . . . .
ENA TRL . . . . .
DWEL VEH X . . . . X . . . . .
DWEL PED . . . . .
DWEL OLPF1 .F1 . . . . .
CYC VEH . . . . .
CYC PED . . . . .
CYC OLP . . . . .
EXIT PH . X . . . . X . . . . .
EXIT CAL . . . . .
SP FUNC . . . . .

ENABLE... YESIPMT OVRIDE..IINTERLOCK. NO
DET LOCK... XIDELAY.. OIINHIBIT... 0
OVERRIDE FL. .IDURATION OICLR-GRN... NO
TERM OLP. NOIPC>YEL YESITERM PH NO
PED DARK.. NOITC RESRV NOIDWELL FL OFF
LINK PMT...OIX FLCOLR REDIEXIT OPT. OFF
X TMG PLN...OIRE-SERV.. OIFLT TYPE.HARD
FREE DUR PMTIR1 NOIR2 NOIR3 NOIR4 NO
--TIMING----WALKIPED CLIMN GRI YELI RED
ENTRANCE TM. 1I 255I 1I25.5I25.5
-----MIN GRIEXT GRIMX GRI YELI RED
TRACK CLEAR 0I 0I 0I25.5I25.5
-----MIN DLIPMTEXTIMX TMI YELI RED
DWL/CYC-EXIT 7I 0.0I 120I25.5I25.5
PMT ACTIVE OUT..ON PMT ACT DWELL...NO
OTHER - PRI PMT.OFF NON-PRI PMT.....OFF
INH EXT TIME... 0.0 PED PR RETURN...OFF
PRIORITY RETURN.OFF QUEUE DELAY.... OFF
COND DELAY.....OFF
PHASES 1 2 3 4 5 6 7 8
PR RTN% 0 0 0 0 0 0 0 0
PHASES 9 10 11 12 13 14 15 16
PR RTN% 0 0 0 0 0 0 0 0
    
```

PROGRAM EXTEND TIME ON GPS DETECTOR UNITS FOR 2.0 SEC.

ECONOLITE ASC/3-2070 PREEMPT FILTERING PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select 4. PREEMPTOR/TSP
2. From PREEMPT/TSP/SCP Submenu select 2. ENABLE PREEMPT FILTERING & TSP/SCP

```

ENABLE PREEMPT FILTERING & TSP/SCP
FILTERED SOLID PULSING
1 ...BYPASSED... ..BYPASSED..
2 ...BYPASSED... ..BYPASSED..
3 ..PREEMPT 3. ...BYPASSED..
4 ...BYPASSED... ..BYPASSED..
5 ...BYPASSED... ..BYPASSED..
6 ...BYPASSED... ..BYPASSED..
7 ...BYPASSED... ..BYPASSED..
8 ...BYPASSED... ..BYPASSED..
9 ...BYPASSED... ..BYPASSED..
10 ...BYPASSED... ..BYPASSED..
    
```

ECONOLITE ASC/3-2070 STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select 2. CONTROLLER
2. From CONTROLLER Submenu select 5. START/FLASH

```

START/FLASH DATA
-----START UP-----
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASE G G
A B C D E F G H I J K L M N O P
OVERLAP X X X X X X X X X X X X X X X X
FLASH>MON. NO FL TIME.. 0 ALL RED... 6
PWR START SEQ.. 1 MUTCD> YES Y- G: NO
    
```

Scroll down on this screen and set "Exit Fl" to Green "G"

THIS PLAN SUPERSEDES THE PLAN
SIGNED AND SEALED ON 12/14/2023

NC Dept of Transportation
Division of Highways
Final Drawing Date: 9/10/2024
DocuSigned by:
Chary Beck
TSMU 0000000724460

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 05-1744
DESIGNED: Sep 2024
SEALED: 9/6/2024
REVISED: N/A

Electrical Detail - Sheet 4 of 5

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



NC 54	
at Huntingridge Road / Service Road	
Division 5 Durham County Durham	
PLAN DATE: September 2024	REVIEWED BY: ZM Esposito
PREPARED BY: DS Griffith	DRMP PROJ. NO.: 19275 (122)
REVISIONS	INIT. DATE

SEAL

NORTH CAROLINA
PROFESSIONAL
ENGINEER
SEAL
054155
ZACHARY M. ESPOSITO

DocuSigned by:
Zachary M. Esposito
064700760484868
202409141517

SIC - INVENTORY NO. 05-1744

ECONOLITE ASC/3-2070 LOGIC PROCESSOR PROGRAMMING DETAIL FOR LEADING PED INTERVAL (DELAYED GREEN)

(program controller as shown)

The following logic processor configuration holds the FYA's on signal heads 11 and 81 red for the duration of the delayed green time (leading ped interval) when serving a ped call on the opposing through phase.

- From Main Menu select **1. CONFIGURATION**
- From CONFIGURATION Submenu select **8. LOGIC PROCESSOR**
- From the LOGIC PROCESSOR Submenu select **2. LOGIC STATEMENTS**

ENTER A "1" IN THE LP# FIELD, PRESS 'ENTER', AND PROGRAM AS SHOWN.

LP#:	1	COPY FROM:	1	ACTIVE:	M	(T/F)
IF	PED ON PH WALK		2	IS	ON	
AND	VEH GREEN ON PH		2	IS	OFF	
THEN	SIG SET OLP RED		1		ON	
	SIG SET OLP YELLOW		1		OFF	
	SIG SET OVLP GREEN		1		OFF	
ELSE						

HOLD SIGNAL HEAD 11 FYA RED DURING THE PHASE 2 DELAYED GREEN TIME (LEADING PED INTERVAL)

- From Main Menu select **1. CONFIGURATION**
- From CONFIGURATION Submenu select **8. LOGIC PROCESSOR**
- From the LOGIC PROCESSOR Submenu select **1. LOGIC STATEMENT CONTROL**

ENABLE LOGIC PROCESSOR STATEMENTS 1-4 BY POSITIONING THE CURSOR OVER THE FIELDS SHOWN BELOW AND USING THE TOGGLE KEY TO ENABLE THEM .

LOGIC STATEMENT CONTROL	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6
LP 1-15	E	E	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30
LP 31-45
LP 46-60
LP 61-75
LP 76-90

END PROGRAMMING

ENTER A "2" IN THE LP# FIELD, PRESS 'ENTER', AND PROGRAM AS SHOWN.

LP#:	2	COPY FROM:	2	ACTIVE:	M	(T/F)
IF	PED ON PH WALK		4	IS	ON	
AND	VEH GREEN ON PH		4	IS	OFF	
THEN	SIG SET OLP RED		2		ON	
	SIG SET OLP YELLOW		2		OFF	
	SIG SET OVLP GREEN		2		OFF	
ELSE						

HOLD SIGNAL HEAD 81 FYA RED DURING THE PHASE 4 DELAYED GREEN TIME (LEADING PED INTERVAL)

ECONOLITE ASC/3-2070 LOAD SWITCH ASSIGNMENT DETAIL

(program controller as shown)

All channels must be programmed to flash red in controller for red-red flash operation as shown below. Notice "AUT" for all channels is programmed for RED.

- From Main Menu select **1. CONFIGURATION**
- From CONFIGURATION Submenu select **3. LOAD SW ASSIGN**

LD SWITCH ASSIGN	PHASE	DIMMING	---FLASH---
/OVLP	TYPE	R Y G D PWR	AUT TGR
1	1	V . . . +	A R X
2	2	V . . . +	A R .
3	3	V . . . +	A R X
4	4	V . . . +	A R .
5	5	V . . . -	A R .
6	6	V . . . -	A R X
7	7	V . . . -	A R .
8	8	V . . . -	A R X
9	1	O . . . +	A R X
10	2	O . . . +	A R X
11	3	O . . . -	A R .
12	4	O . . . -	A R .
13	2	P . . . +	A . .
14	4	P . . . -	A . .
15	6	P . . . +	A . .
16	8	P . . . -	A . .

ASC/3 FLASH SENSE INPUT CONTROL FOR RED-RED FLASH

*The NCDOT default database is programmed to address Yellow-Red flash. Logic Statement 100 must be modified as shown when running Red-Red flash.

- From Main Menu select **1. CONFIGURATION**
- From CONFIGURATION Submenu select **8. LOGIC PROCESSOR**
- From LOGIC PROCESSOR Submenu select **2. LOGIC STATEMENTS**

Change the "LP" to 100 and move the cursor down. Delete the two "CTR-SET" statements by moving the cursor over them and hitting the "C" key, then hit "ENTER", select "LP SET CIB ON", hit "ENT", and then set the number to 427.

LP#:	100	COPY FROM:	100	ACTIVE:	M	FALSE
IF	LP CIB CODE ON		331	F		
THEN	LP DELAY FOR		1.0 SECONDS			
	LP SET CIB ON		427			
ELSE						

THIS STATEMENT IS USED TO CONTROL THE FLASH SENSE INPUT WHEN RUNNING RED-RED FLASH OPERATION.

Hit "ESC", then 1 for "LOGIC STATEMENT CONTROL", next verify that LP#100 is ENABLED.


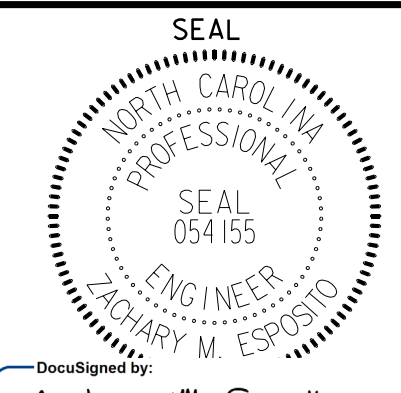
END PROGRAMMING

THIS PLAN SUPERSEDES THE PLAN
SIGNED AND SEALED ON 12/14/2023

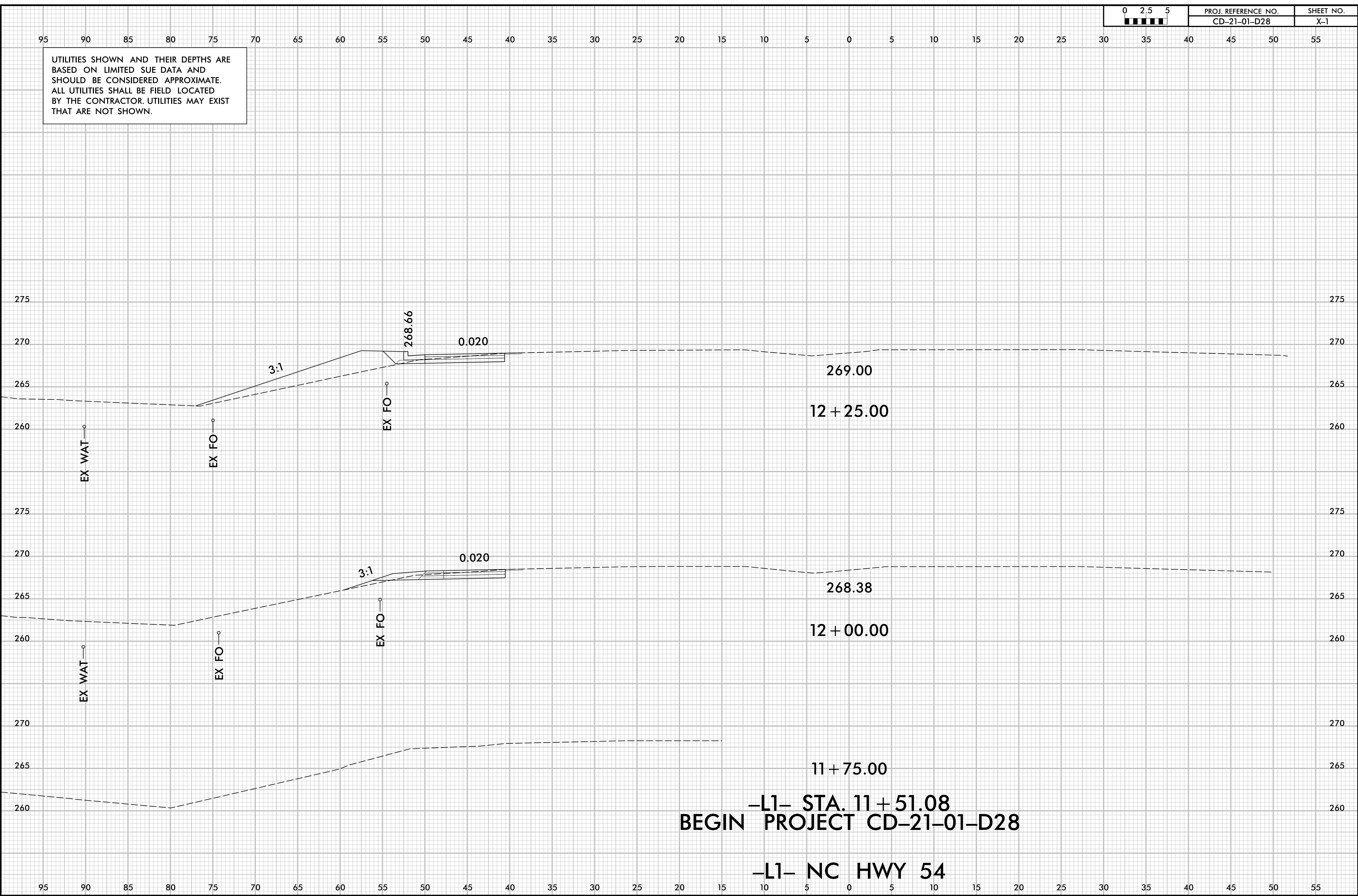
NC Dept of Transportation
Division of Highways
Final Drawing Date: 9/10/2024
DocuSigned by: *Chang Park*
6055AF60724A6D
TSMO Unit

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 05-1744
DESIGNED: Sep 2024
SEALED: 9/6/2024
REVISED: N/A

Electrical Detail - Sheet 5 of 5

 DRMP INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 PHONE: 704-545-4200	NC 54 at Huntingridge Road / Service Road Durham County Durham		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED  SEAL NORTH CAROLINA PROFESSIONAL ENGINEER ZACHARY M. ESPOSITO 054155
	Division 5	PREPARED BY: DS Griffith DRMP PROJ. NO.: 19275 (122)		REVIEWED BY: ZM Esposito DATE: 2024
REVISIONS			INIT. DATE _____ _____
DocuSigned by: <i>Zachary M. Esposito</i> 05470D707D48A8E8 2024			SIG. INVENTORY NO. 05-1744

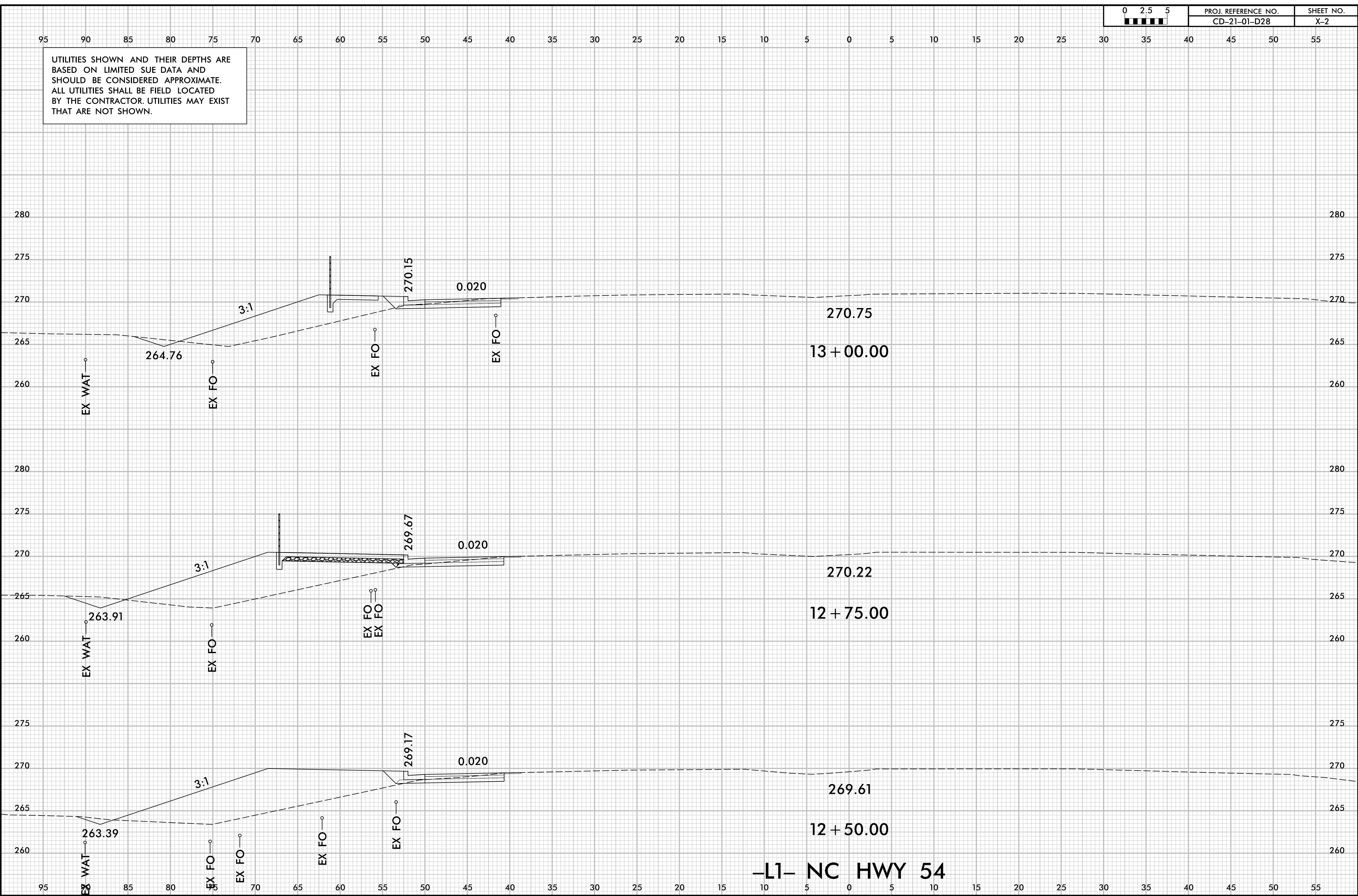
UTILITIES SHOWN AND THEIR DEPTHS ARE BASED ON LIMITED SUE DATA AND SHOULD BE CONSIDERED APPROXIMATE. ALL UTILITIES SHALL BE FIELD LOCATED BY THE CONTRACTOR. UTILITIES MAY EXIST THAT ARE NOT SHOWN.



2/14/2025
I:\XSC\19275_12_L_Rdy_XPL.dgn
User: ealispagh

-L1- STA. 11 + 51.08
BEGIN PROJECT CD-21-01-D28
-L1- NC HWY 54

UTILITIES SHOWN AND THEIR DEPTHS ARE BASED ON LIMITED SUE DATA AND SHOULD BE CONSIDERED APPROXIMATE. ALL UTILITIES SHALL BE FIELD LOCATED BY THE CONTRACTOR. UTILITIES MAY EXIST THAT ARE NOT SHOWN.

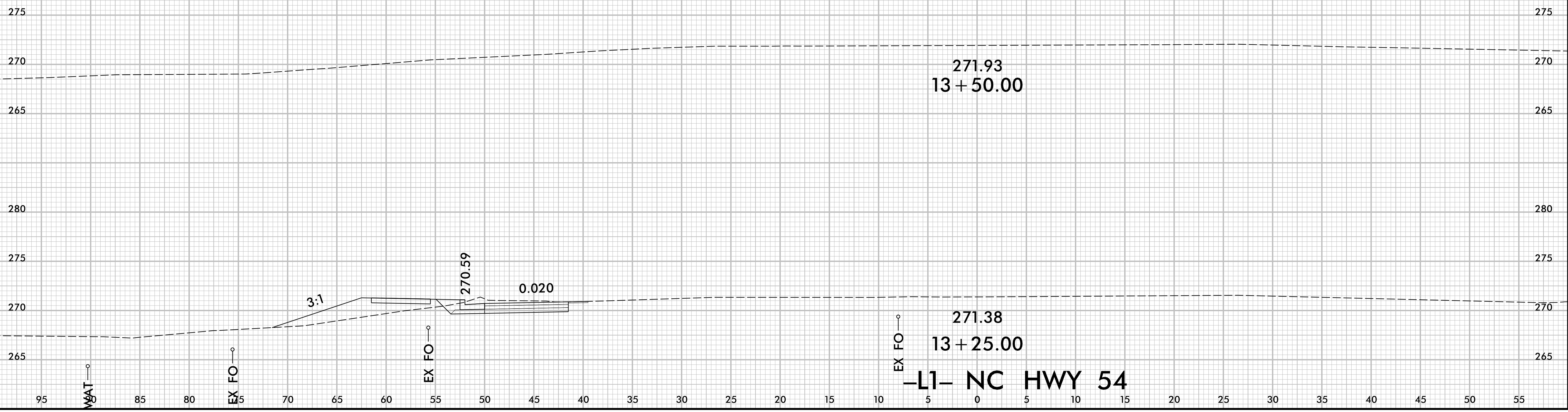


-L1- NC HWY 54

2/14/2025
I:\XSC\19275_12_L_Rdy_XPL.dgn
User: ealispagh

95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55

UTILITIES SHOWN AND THEIR DEPTHS ARE
BASED ON LIMITED SUE DATA AND
SHOULD BE CONSIDERED APPROXIMATE.
ALL UTILITIES SHALL BE FIELD LOCATED
BY THE CONTRACTOR. UTILITIES MAY EXIST
THAT ARE NOT SHOWN.

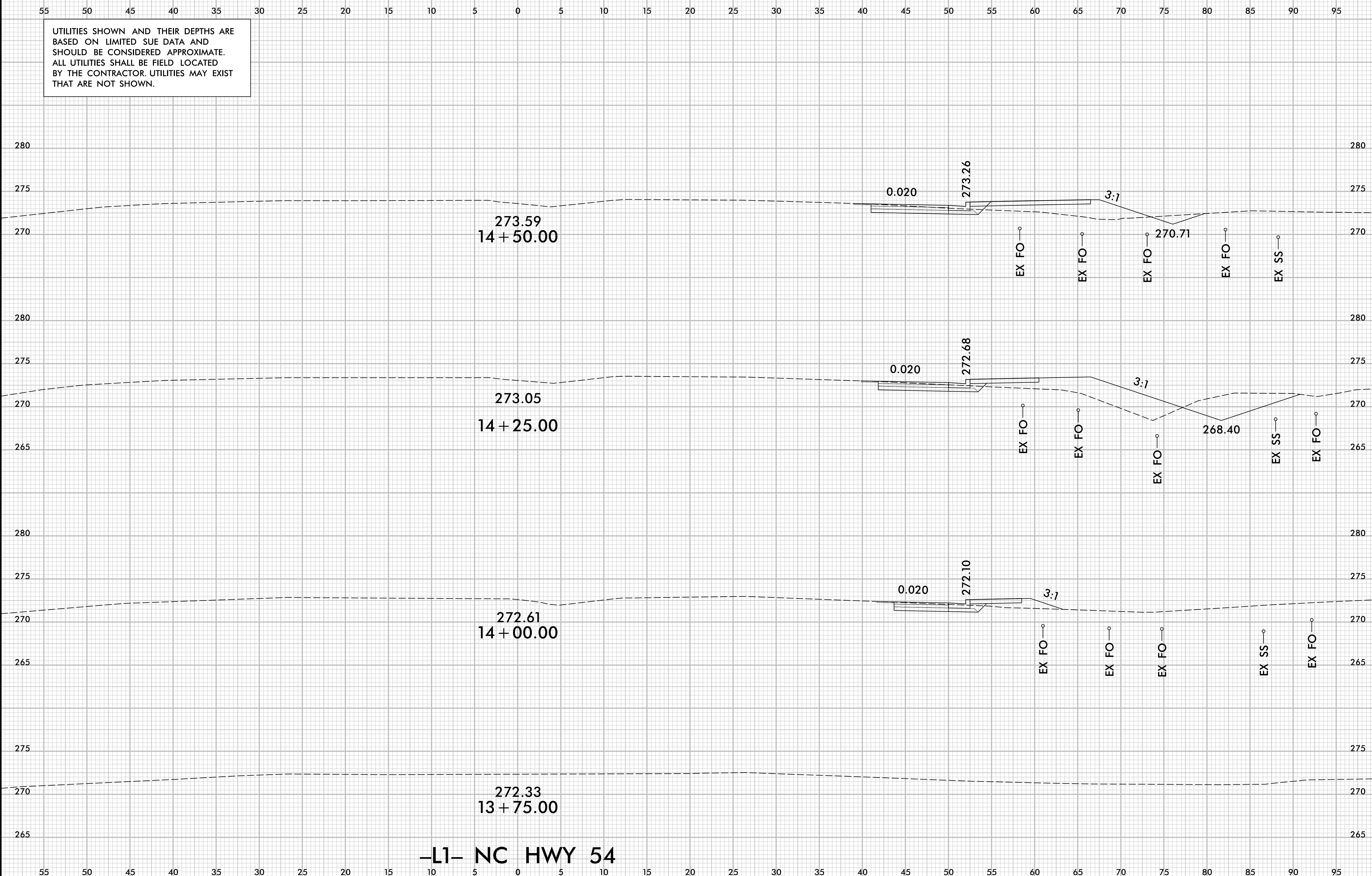


2/14/2025
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User: ealispagh

95 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55

-L1- NC HWY 54

UTILITIES SHOWN AND THEIR DEPTHS ARE BASED ON LIMITED SUE DATA AND SHOULD BE CONSIDERED APPROXIMATE. ALL UTILITIES SHALL BE FIELD LOCATED BY THE CONTRACTOR. UTILITIES MAY EXIST THAT ARE NOT SHOWN.

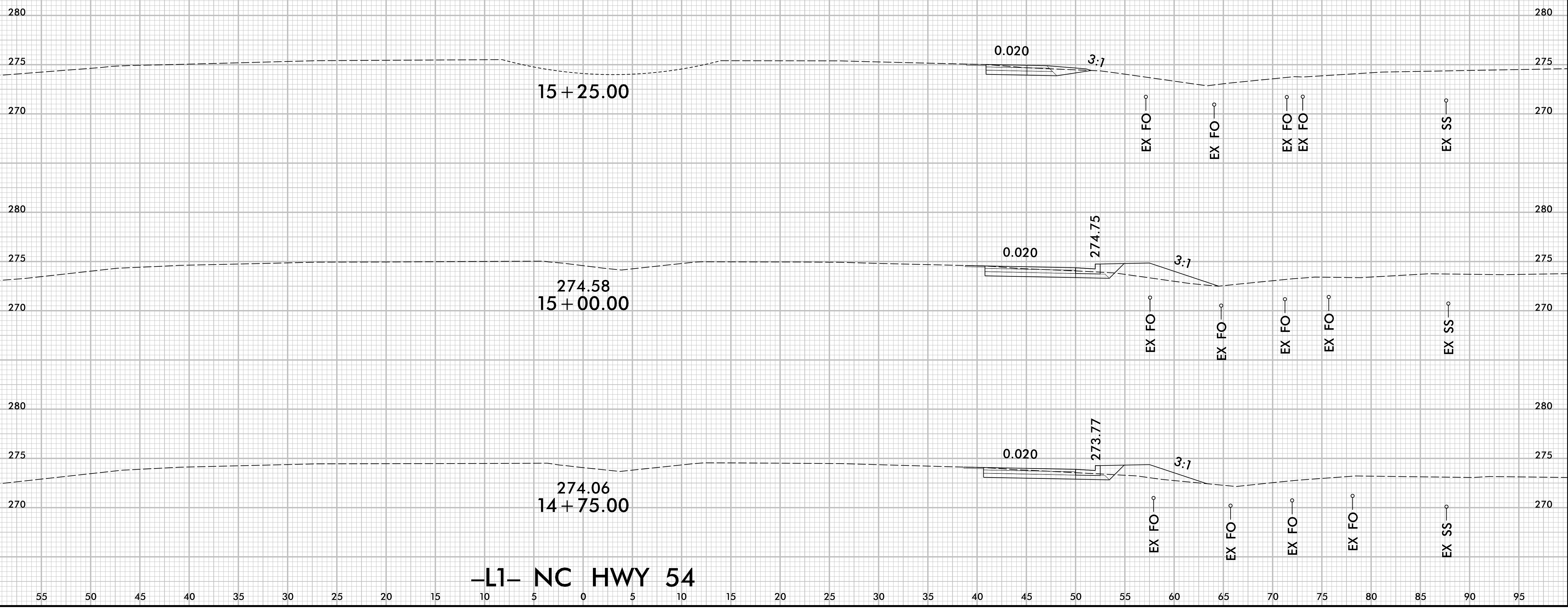


-L1- NC HWY 54

2/14/2025
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UTILITIES SHOWN AND THEIR DEPTHS ARE BASED ON LIMITED SUE DATA AND SHOULD BE CONSIDERED APPROXIMATE. ALL UTILITIES SHALL BE FIELD LOCATED BY THE CONTRACTOR. UTILITIES MAY EXIST THAT ARE NOT SHOWN.

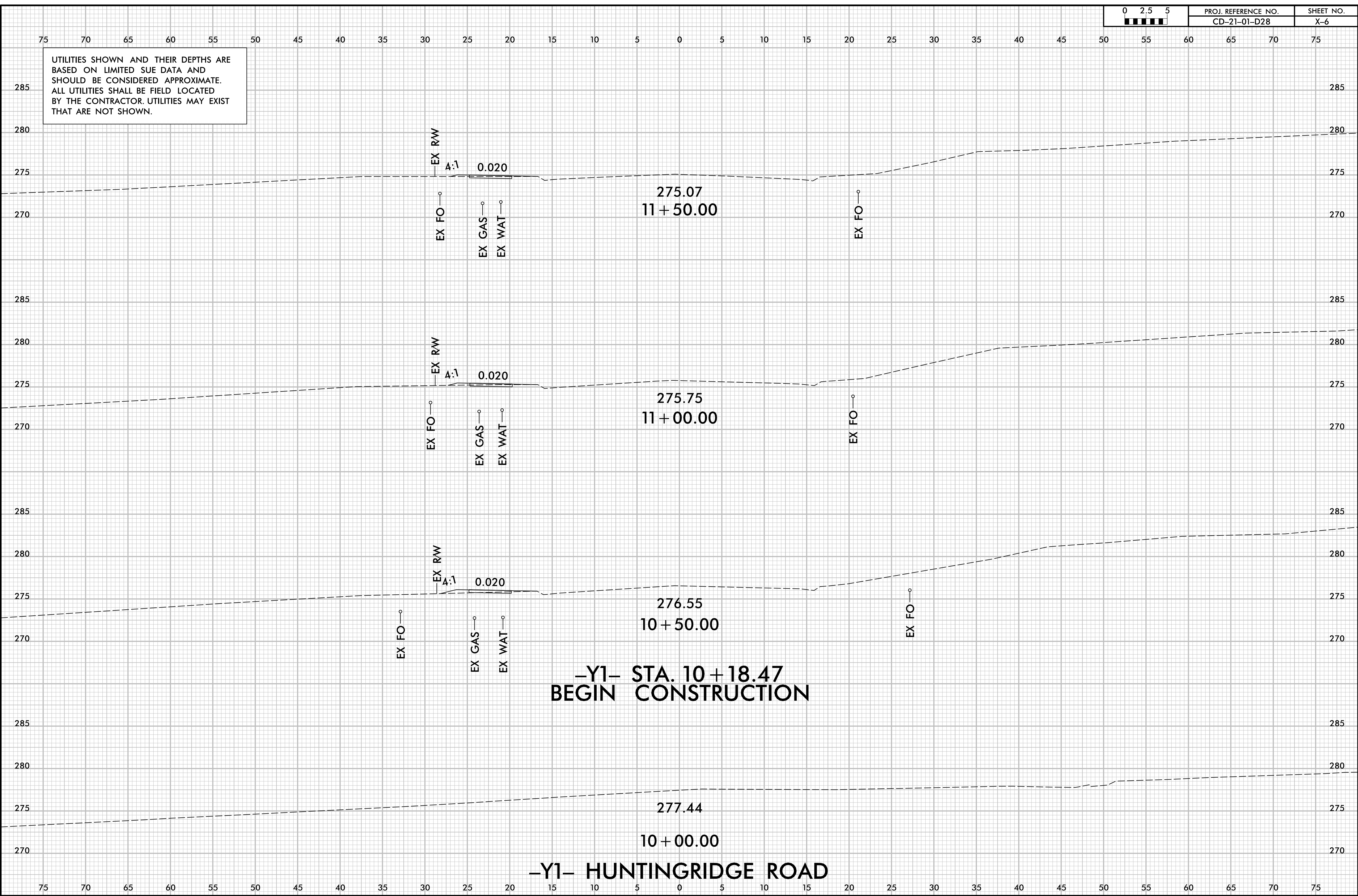
-L1- STA. 15 + 55.35
END PROJECT CD-21-01-D28



-L1- NC HWY 54

2/14/2025
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User: ealispugh

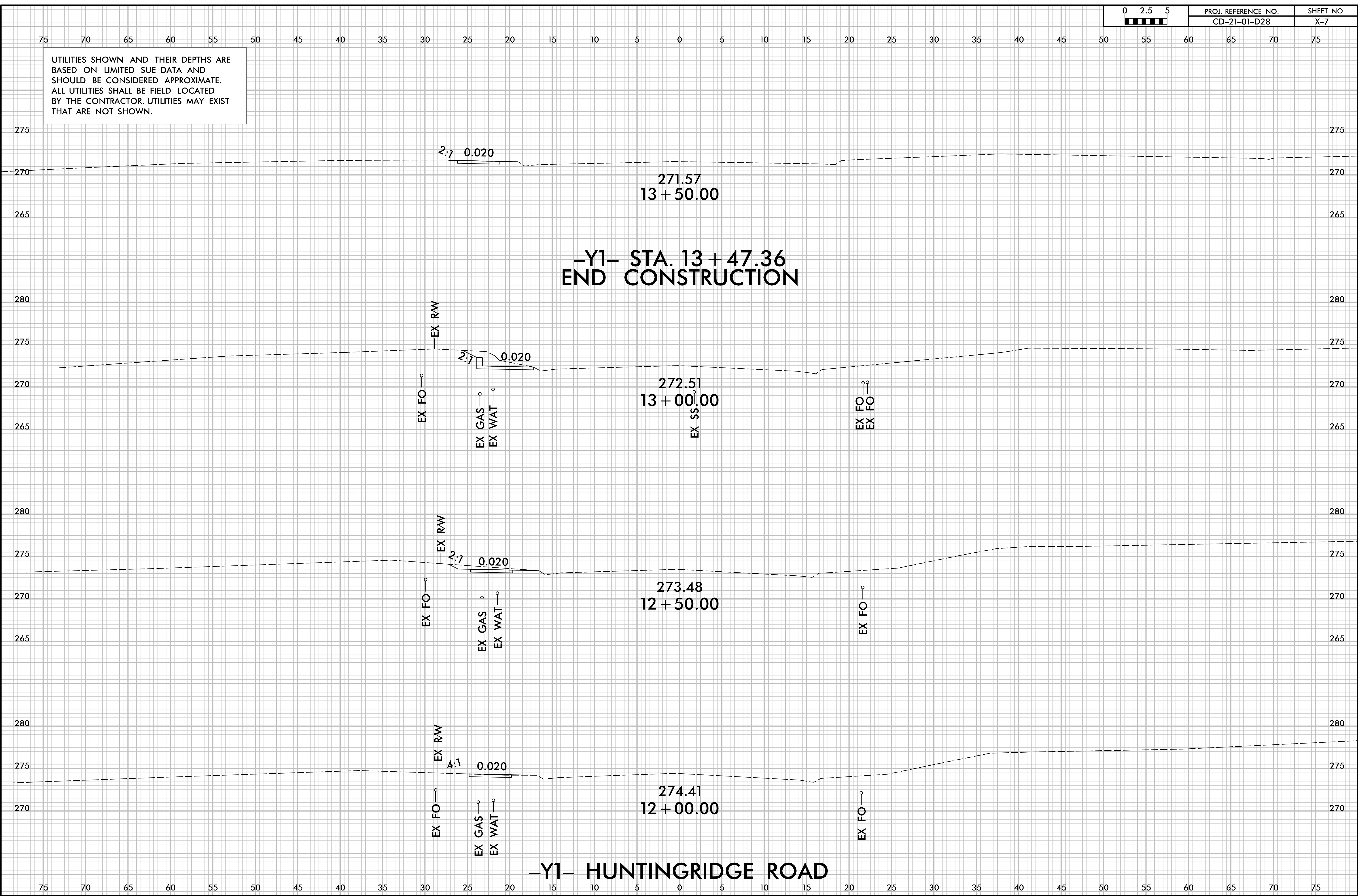
UTILITIES SHOWN AND THEIR DEPTHS ARE BASED ON LIMITED SUE DATA AND SHOULD BE CONSIDERED APPROXIMATE. ALL UTILITIES SHALL BE FIELD LOCATED BY THE CONTRACTOR. UTILITIES MAY EXIST THAT ARE NOT SHOWN.



**-Y1- STA. 10+18.47
BEGIN CONSTRUCTION**

-Y1- HUNTINGRIDGE ROAD

UTILITIES SHOWN AND THEIR DEPTHS ARE BASED ON LIMITED SUE DATA AND SHOULD BE CONSIDERED APPROXIMATE. ALL UTILITIES SHALL BE FIELD LOCATED BY THE CONTRACTOR. UTILITIES MAY EXIST THAT ARE NOT SHOWN.



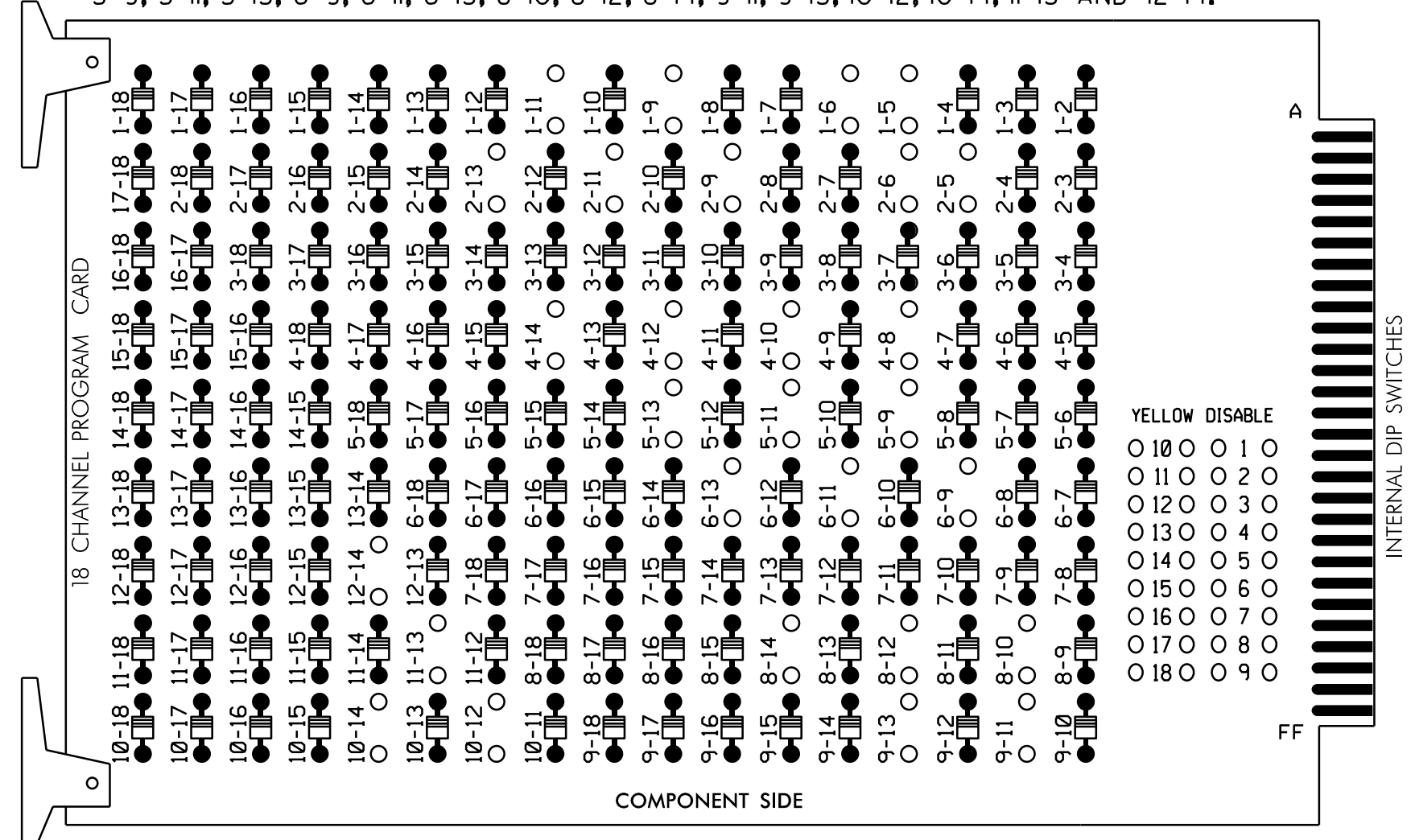
2/14/2025
I:\XSC\19275_12_Y_RdJ_XPL.dgn
User: ealispugh

18 CHANNEL CONFLICT MONITOR

PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

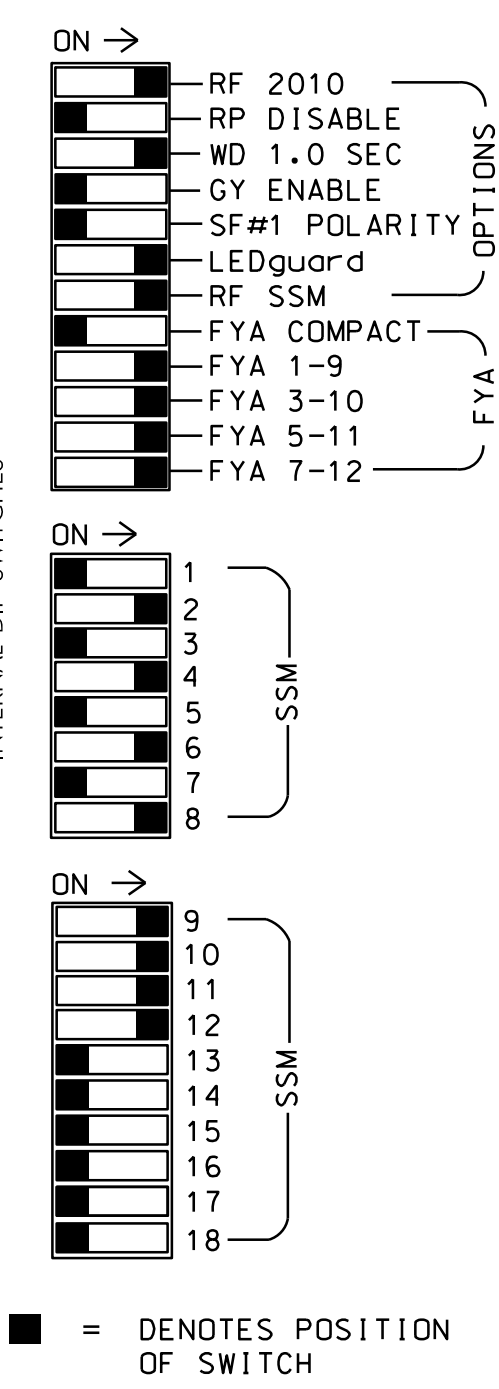
REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-11, 2-5, 2-6, 2-9, 2-11, 2-13, 4-8, 4-10, 4-12, 4-14, 5-9, 5-11, 5-13, 6-9, 6-11, 6-13, 8-10, 8-12, 8-14, 9-11, 9-13, 10-12, 10-14, 11-13 AND 12-14.



REMOVE JUMPERS AS SHOWN

NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
- Ensure that Red Enable is active at all times during normal operation.
- Integrate monitor with Ethernet network in cabinet.



NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Program phases 4 and 8 for Dual Entry.
- Program controller to start up in phase 2 green and phase 6 green.
- The cabinet and controller are part of the Durham Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070LX
 CABINET.....332 W/ AUX
 SOFTWARE.....ECONOLITE ASC/3-2070
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. FILE
 LOAD SWITCHES USED.....S1,S2,S3,S5,S6,S7,S8,S11,
 AUX S1,AUX S2,AUX S4,AUX S5
 PHASES USED.....1,2,2PED,4,4PED,5,6,8
 OVERLAP "A".....*
 OVERLAP "B".....*
 OVERLAP "C".....*
 OVERLAP "D".....*

* See overlap programming detail on sheet 2.

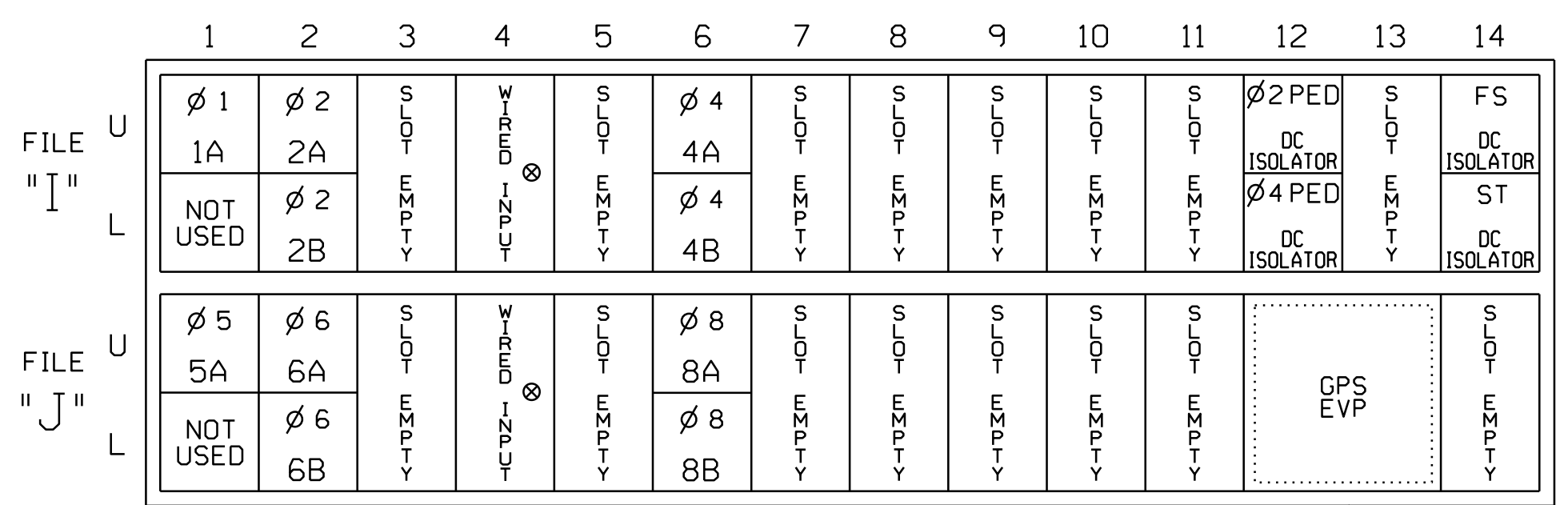
SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11	21,22	P21, P22	NU	42,43	P41, P42	51	61,62	NU	NU	82,83	NU	11	81	NU	51	41	NU
RED		128			101			134			107							
YELLOW	*	129			102		*	135			108							
GREEN		130			103			136			109							
RED ARROW													A121	A124		A114	A101	
YELLOW ARROW													A122	A125		A115	A102	
FLASHING YELLOW ARROW													A123	A126		A116	A103	
GREEN ARROW	127							133										
Hand icon			113				104											
Person icon								106										

NU = Not Used
 * Denotes install load resistor. See load resistor installation detail this sheet.
 ★ See pictorial of head wiring in detail below.

INPUT FILE POSITION LAYOUT

(front view)



EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

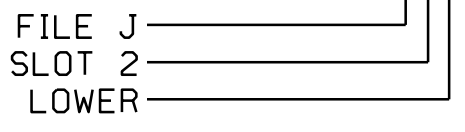
INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	ADDED INITIAL	DETECTOR TYPE
1A ¹	TB1-1,2	I1U	56	1 ★	1	YES		15		N
	-	J4U	48	26 ★	6	YES		3		G
2A	TB2-5,6	I2U	39	2	2	YES			X	N
2B	TB2-7,8	I2L	43	12	2	YES			X	N
4A	TB4-9,10	I6U	41	4	4	YES		3		N
4B	TB4-11,12	I6L	45	14	4	YES		10		N
5A ²	TB3-1,2	J1U	55	5 ★	5	YES		15		N
	-	J1U	47	22 ★	2	YES		3		G
6A	TB3-5,6	J2U	40	6	6	YES			X	N
6B	TB3-7,8	J2L	44	16	6	YES			X	N
8A	TB5-9,10	J6U	42	8	8	YES		3		N
8B	TB5-11,12	J6L	46	18	8	YES		10		N
PED PUSH BUTTONS										
P21,P22	TB8-4,6	I12U	67	PED 2	2 PED					
P41,P42, PB43	TB8-5,6	I12L	69	PED 4	4 PED					

NOTE:
INSTALL DC ISOLATORS IN INPUT FILE SLOT 112.

- Add jumper from I1-W to J4-W, on rear of input file.
 - Add jumper from J1-W to I4-W, on rear of input file.
- ★ For the detectors to work as shown on the signal design plan, see the Vehicle Detector Setup Programming Detail for Alternate Phasing on sheet 2.

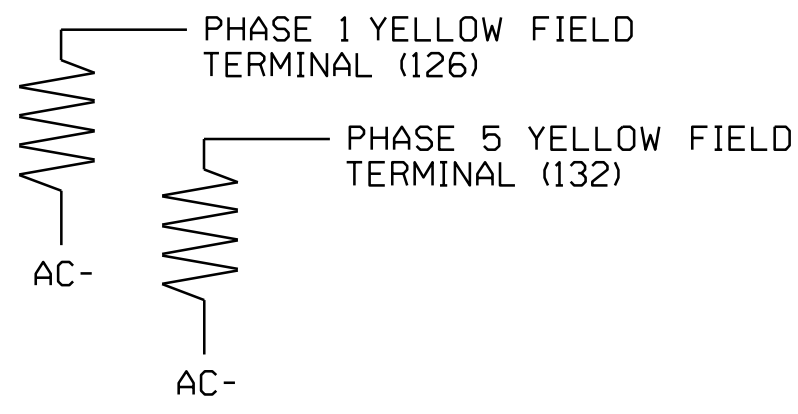
INPUT FILE POSITION LEGEND: J2L



LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



COUNTDOWN PEDESTRIAN SIGNAL OPERATION

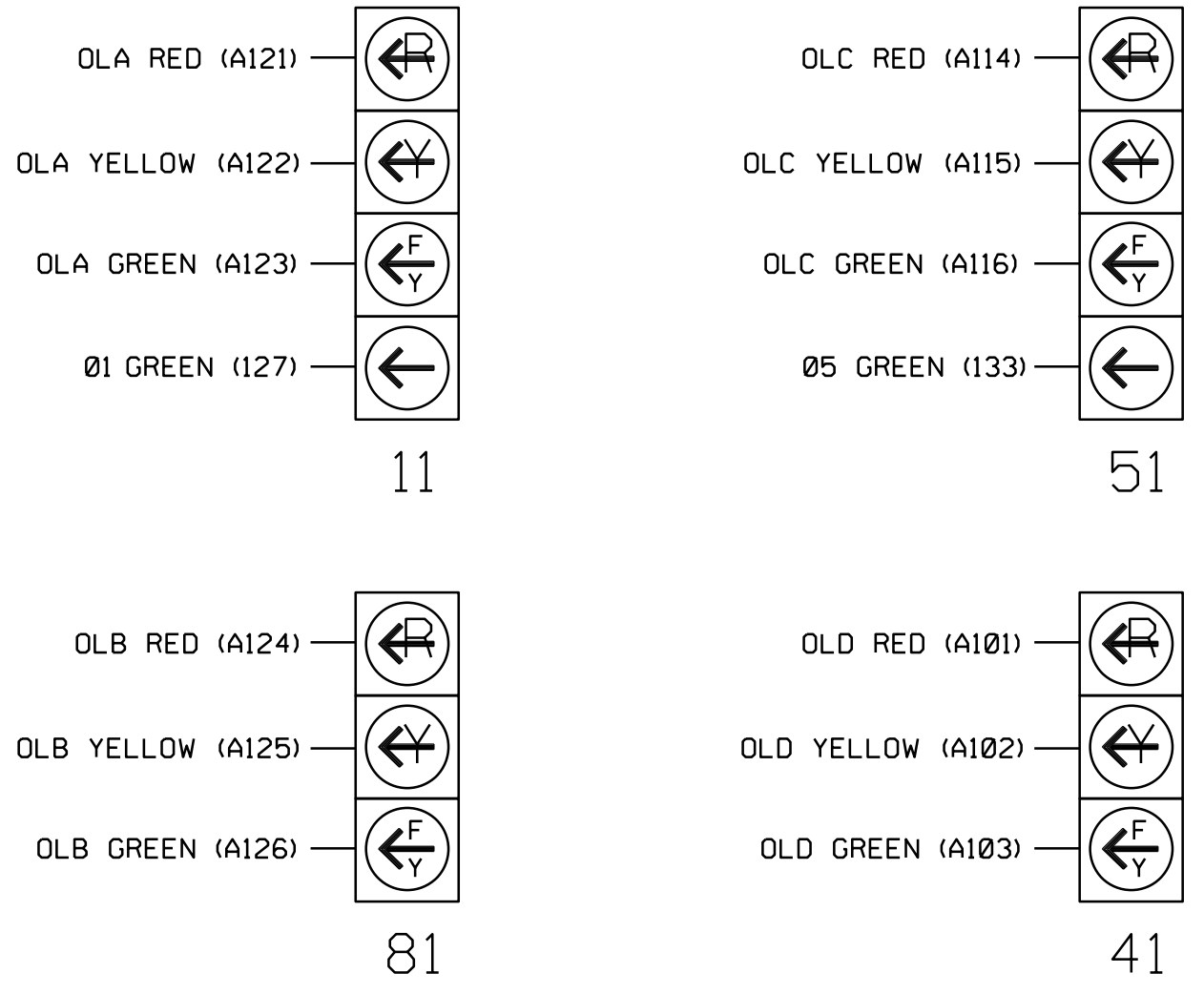
Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.



DRMP, INC.
 6210 UNIVERSITY EXECUTIVE PARK DR.
 SUITE 220
 CHARLOTTE, NC 28262
 PHONE: 704-548-2260
 NC LICENSE NO. F-1524
 www.drmp.com

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



THIS PLAN SUPERSEDES THE PLAN SIGNED AND SEALED ON 12/14/2023

NC Dept of Transportation
 Division of Highways
 Final Drawing Date: 9/10/2024
 Drawn by: *Chang Baek*
 TSMO Unit

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 05-1744
 DESIGNED: Sep 2024
 SEALED: 9/6/2024
 REVISED: N/A

Electrical Detail - Sheet 1 of 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL NORTH CAROLINA PROFESSIONAL ENGINEER JACOBARY M. ESPOSITO

Division 5 Durham County Durham
 at
 Huntingridge Road / Service Road
 PLAN DATE: September 2024 REVIEWED BY: ZM Esposito
 PREPARED BY: DS Griffith DRMP PROJ. NO.: 19275 (122)

REVISIONS	INIT.	DATE

Sig. Inventory No. 05-1744

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL (program controller as shown)

- From Main Menu select **2. CONTROLLER**
- From CONTROLLER Submenu select **2. VEHICLE OVERLAPS**

OVERLAP A
Select TMG VEH OVLP [A] and 'PPLT FYA'

```

TMG VEH OVLP...[A] TYPE: ....[PPLT FYA]
PROTECTED LEFT TURN... PHASE 1
OPPOSING THROUGH..... PHASE 2

FLASHING ARROW OUTPUT.....CH9 ISOLATE
DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE..... 1
  
```

Toggle Once

OVERLAP B
Select TMG VEH OVLP [B] and 'OTHER/ECONOLITE'

```

TMG VEH OVLP...[B] TYPE:[OTHER/ECONOLITE]
PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . . X . . . . .
PROTECT . . . . .
PED PRTC . . . . .
NOT OVLP . . . . .
FLSH GRN . . . 1 . . . . .
LAG X PH . . . . .
LAG 2 PH . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0
  
```

Toggle Once

OVERLAP C
Select TMG VEH OVLP [C] and 'PPLT FYA'

```

TMG VEH OVLP...[C] TYPE: ....[PPLT FYA]
PROTECTED LEFT TURN... PHASE 5
OPPOSING THROUGH..... PHASE 6

FLASHING ARROW OUTPUT.....CH11 ISOLATE
DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE..... 5
  
```

Toggle Once

OVERLAP D
Select TMG VEH OVLP [D] and 'OTHER/ECONOLITE'

```

TMG VEH OVLP...[D] TYPE:[OTHER/ECONOLITE]
PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . . . . X . . . . .
PROTECT . . . . .
PED PRTC . . . . .
NOT OVLP . . . . .
FLSH GRN . . . . . 1 . . . . .
LAG X PH . . . . .
LAG 2 PH . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0
  
```

END PROGRAMMING

ECONOLITE ASC/3-2070 VEHICLE DETECTOR SETUP PROGRAMMING DETAIL FOR ALTERNATE PHASING LOOPS 1A & 5A (program controller as shown)

IMPORTANT!

Program detectors per the input file connection and programming chart shown on sheet 1 before proceeding.

- From Main Menu select **8. UTILITIES**
- From UTILITIES Submenu select **1. COPY/CLEAR**
- Copy from DETECTOR PLAN "1" to DETECTOR PLAN "2".

```

COPY / CLEAR UTILITY
FROM          TO
PHASE TIMING... > PHASE TIMING...
TIMING PLAN... > TIMING PLAN...
PH DET OPT PLAN. > PH DET OPT PLAN.
DETECTOR PLAN.. 1 > DETECTOR PLAN.. 2
TOGGLE TO SELECT A "FROM" AND A "TO"
THEN PRESS ENTER
  
```

- From Main Menu select **6. DETECTORS**
- From DETECTOR Submenu select **2. VEHICLE DETECTOR SETUP**
- Place cursor in VEH DET PLAN [] position and enter "2".

- Place cursor in VEH DETECTOR [] position and enter "1".
- Set delay time to "0".

```

VEH DETECTOR [ 1] VEH DET PLAN [ 2]
TYPE: N-NTCIP
TS2 DETECTOR..... ECPI LOG..... NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
1 1 . . . . .
CALL OPTION.... YES DELAY TIME... 0.0
EXT OPTION. PASSAGE EXTENSION TIME. 0.0
USE ADDED INITIAL . CROSS SWITCH PH.. 0
LOCK IN..... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY. NO
  
```

ENSURE DELAY IS SET TO '0'

- Place cursor in VEH DETECTOR [] position and enter "26".
- Set assigned phase to "0".

```

VEH DETECTOR [26] VEH DET PLAN [ 2]
TYPE: G-GREEN EXTENSION/DELAY
TS2 DETECTOR..... ECPI LOG..... NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
26 0 . . . . .
EXTEND TIME.... 0.0 DELAY TIME... 3.0
USE ADDED INITIAL . CROSS SWITCH PH.. 0
LOCK IN..... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY- NO
  
```

ENSURE PHASE IS SET TO "0"

- Place cursor in VEH DETECTOR [] position and enter "5".
- Set delay time to "0".

```

VEH DETECTOR [ 5] VEH DET PLAN [ 2]
TYPE: N-NTCIP
TS2 DETECTOR..... ECPI LOG..... NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
5 5 . . . . .
CALL OPTION.... YES DELAY TIME... 0.0
EXT OPTION. PASSAGE EXTENSION TIME. 0.0
USE ADDED INITIAL . CROSS SWITCH PH.. 0
LOCK IN..... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY. NO
  
```

NOTICE VEH DET PLAN 2
ENSURE DELAY IS SET TO '0'

- Place cursor in VEH DETECTOR [] position and enter "22".
- Set assigned phase to "0".

```

VEH DETECTOR [22] VEH DET PLAN [ 2]
TYPE: G-GREEN EXTENSION/DELAY
TS2 DETECTOR..... ECPI LOG..... NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
22 0 . . . . .
EXTEND TIME.... 0.0 DELAY TIME... 3.0
USE ADDED INITIAL . CROSS SWITCH PH.. 0
LOCK IN..... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY- NO
  
```

ENSURE PHASE IS SET TO "0"
NOTICE VEH DET PLAN 2

END PROGRAMMING

THIS PLAN SUPERSEDES THE PLAN SIGNED AND SEALED ON 12/14/2023

NC Dept of Transportation
Division of Highways
Final Drawing Date: 9/10/2024
DocuSigned by:
Chang Park
90E5AF607F246D
TSMU Unit

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 05-1744
DESIGNED: Sep 2024
SEALED: 9/6/2024
REVISED: N/A

Electrical Detail - Sheet 2 of 5



ELECTRICAL AND PROGRAMMING DETAILS FOR:		NC 54 at Huntingridge Road / Service Road	
Division 5	Durham County	Durham	
PLAN DATE: September 2024	REVIEWED BY: ZM Esposito		
PREPARED BY: DS Griffith	DRMP PROJ. NO.: 19275 (122)		
REVISIONS	INIT.	DATE	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 054155
ZACHARY M. ESPOSITO

DocuSigned by:
Zachary M. Esposito
5647C079D4848A
2024

SIG. INVENTORY NO. 05-1744



ECONOLITE ASC/3-2070 ACTION PLAN PROGRAMMING DETAIL

1. From Main Menu select 5. TIME BASE
2. From TIME BASE Submenu select 2. ACTION PLAN

ACTION PLAN... [*]	
PATTERN.....AUTO	SYS OVERRIDE.... NO
TIMING PLAN..... 0	SEQUENCE..... 0
VEH DETECTOR PLAN.. 2	DET LOG.....NONE
FLASH..... --	RED REST..... NO
VEH DET DIAG PLN... 0	PED DET DIAG PLN..0
DIMMING ENABLE.. NO	PRIORITY RETURN. NO
PED PR RETURN.. NO	QUEUE DELAY..... NO
PMT COND DELAY	NO
PHASE	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PED RCL	. . . . .
WALK 2	. . . . .
VEX 2	. . . . .
VEH RCL	. . . . .
MAX RCL	. . . . .
MAX 2	. . . . .
PHASE	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
MAX 3	. . . . .
CS INH	. . . . .
OMIT	. . . . .
SPC FCT	X . . . X . . . (1-8)
AUX FCT	. . . (1-3)
	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
LP 1-15	. . . . .
LP 16-30	. . . . .
LP 31-45	. . . . .
LP 46-60	. . . . .
LP 61-75	. . . . .
LP 76-90	. . . . .
LP 91-100	. . . . .

* The Action Plan number(s) are to be determined by the Division and/or City Traffic Engineer.

ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING FREE RUN - PROGRAM CHANGES (SHOWN BELOW) IN A TIME BASED ACTION PLAN. SCHEDULE A DAY PLAN THAT INCLUDES THE ACTION PLAN PROGRAMMED TO SELECT VEH DET PLAN 2 AND ENABLE SF BITS 1 AND 5.

TO RUN ALT. PHASING DURING COORDINATION - SELECT THE TIME BASED ACTION PLAN THAT IS PROGRAMMED TO SELECT VEH DET PLAN 2 AND ENABLE SF BITS 1 AND 5.

PHASING	VEH DET PLAN	SF BITS ENABLED
ACTIONS REQUIRED TO RUN <u>DEFAULT PHASING</u>	1	NONE
ACTIONS REQUIRED TO RUN <u>ALTERNATE PHASING</u>	2	1,5

IMPORTANT: IF ALT. PHASING IS USED DURING FREE RUN AND COORDINATION, DO NOT OPERATE TIME OF DAY EVENTS CONCURRENTLY WITH COORDINATION PLAN EVENTS IN THE EVENT SCHEDULER. (EX. FREE RUN EVENT SHOULD END BEFORE COORDINATION PLAN EVENT STARTS AND VICE-VERSA).

ALTERNATE PHASING CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN SF BIT 5 AND VEH DET PLAN 2 ACTIVATE TO CALL THE "ALTERNATE PHASING":

SF BIT 1: Modifies overlap parent phases for heads 11 and 51 to run protected turns only.

VEH DET PLAN 2: Disables phase 6 call on loop 1A and reduces delay time for phase 1 call on loop 1A to 0 seconds.

 Disables phase 2 call on loop 5A and reduces delay time for phase 5 call on loop 5A to 0 seconds.

FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

1. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
2. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
3. REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

THIS PLAN SUPERSEDES THE PLAN SIGNED AND SEALED ON 12/14/2023

NC Dept of Transportation
Division of Highways

Final Drawing Date: 9/10/2024

Chang Baek
DESIGNED BY

TSMO Unit

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 05-1744
DESIGNED: Sep 2024
SEALED: 9/6/2024
REVISED: N/A

Electrical Detail - Sheet 3 of 5



NC 54
at
Huntingridge Road / Service Road

Division 5 Durham County Durham

PLAN DATE: September 2024 REVIEWED BY: ZM Esposito

PREPARED BY: DS Griffith DRMP PROJ. NO.: 19275 (122)

REVISIONS	INIT.	DATE

750 N. Greenleaf Pkwy, Garner, NC 27529

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SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 054155
ZACHARY M. ESPOSITO

Zachary M. Esposito
2024

SIC. INVENTORY NO. 05-1744

ECONOLITE ASC/3-2070 EMERGENCY VEHICLE PREEMPT PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select 4. PREEMPTOR/TSP
2. From PREEMPTOR/TSP/SCP Submenu select 1. PREEMPT PLAN 1-10

Place cursor in [] next to Preempt Plan and press 3. Then press the right cursor arrow and toggle the controller to YES. Next cursor down. This will select Emergency Vehicle Preempt #3.

```

PREEMPT PLAN [ 3]  ENABLE....YES
VEH/PED 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
OVERLAP A B C D E F G H I J K L M N O P
TRKCLR V . . . . .
TRKCLR O . . . . .
ENA TRL . . . . .
DWEL VEH X . . . . X . . . . .
DWEL PED . . . . .
DWEL OLPF1 .F1 . . . . .
CYC VEH . . . . .
CYC PED . . . . .
CYC OLP . . . . .
EXIT PH . X . . . . X . . . . .
EXIT CAL . . . . .
SP FUNC . . . . .

ENABLE... YESIPMT OVRIDE..IINTERLOCK. NO
DET LOCK... XIDELAY.. OIINHIBIT... 0
OVERRIDE FL. .IDURATION OICLR-GRN... NO
TERM OLP. NOIPC>YEL YESITERM PH NO
PED DARK.. NOITC RESRV NOIDWELL FL OFF
LINK PMT...OIX FLCOLR REDIEXIT OPT. OFF
X TMG PLN...OIRE-SERV.. OIFLT TYPE.HARD
FREE DUR PMTIR1 NOIR2 NOIR3 NOIR4 NO
--TIMING----WALKIPED CLIMN GRI YELI RED
ENTRANCE TM. 11 2551 1125.5125.5
-----MIN GRIEXT GRIMX GRI YELI RED
TRACK CLEAR 01 01 0125.5125.5
-----MIN DLIPMTEXTIMX TMI YELI RED
DWL/CYC-EXIT 71 0.01 120125.5125.5
PMT ACTIVE OUT..ON PMT ACT DWELL...NO
OTHER - PRI PMT.OFF NON-PRI PMT.....OFF
INH EXT TIME... 0.0 PED PR RETURN...OFF
PRIORITY RETURN.OFF QUEUE DELAY.... OFF
COND DELAY.....OFF
PHASES 1 2 3 4 5 6 7 8
PR RTN% 0 0 0 0 0 0 0 0
PHASES 9 10 11 12 13 14 15 16
PR RTN% 0 0 0 0 0 0 0 0
    
```

PROGRAM EXTEND TIME ON GPS DETECTOR UNITS FOR 2.0 SEC.

ECONOLITE ASC/3-2070 PREEMPT FILTERING PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select 4. PREEMPTOR/TSP
2. From PREEMPT/TSP/SCP Submenu select 2. ENABLE PREEMPT FILTERING & TSP/SCP

```

ENABLE PREEMPT FILTERING & TSP/SCP
FILTERED SOLID PULSING
1 ...BYPASSED... ..BYPASSED..
2 ...BYPASSED... ..BYPASSED..
3 ..PREEMPT 3. ...BYPASSED..
4 ...BYPASSED... ..BYPASSED..
5 ...BYPASSED... ..BYPASSED..
6 ...BYPASSED... ..BYPASSED..
7 ...BYPASSED... ..BYPASSED..
8 ...BYPASSED... ..BYPASSED..
9 ...BYPASSED... ..BYPASSED..
10 ...BYPASSED... ..BYPASSED..
    
```

ECONOLITE ASC/3-2070 STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

(program controller as shown)

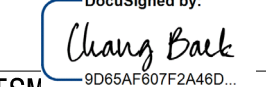
1. From Main Menu select 2. CONTROLLER
2. From CONTROLLER Submenu select 5. START/FLASH

```

START/FLASH DATA
-----START UP-----
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASE G G
A B C D E F G H I J K L M N O P
OVERLAP X X X X X X X X X X X X X X X X
FLASH>MON. NO FL TIME.. 0 ALL RED... 6
PWR START SEQ.. 1 MUTCD> YES Y- G: NO
    
```

Scroll down on this screen and set "Exit Fl" to Green "G"

THIS PLAN SUPERSEDES THE PLAN SIGNED AND SEALED ON 12/14/2023

NC Dept of Transportation
 Division of Highways
 Final Drawing Date: 9/10/2024
 Documented by:

 Cheryl Beck
 TSMU 00002/00724460...

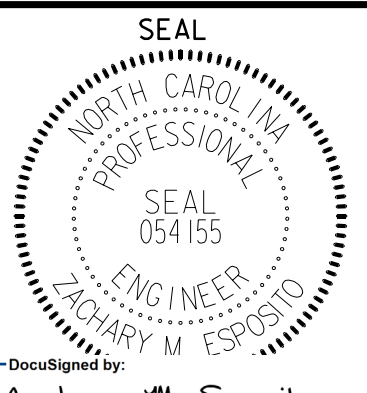
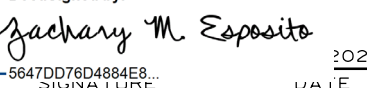
THIS ELECTRICAL DETAIL IS FOR
 THE SIGNAL DESIGN: 05-1744
 DESIGNED: Sep 2024
 SEALED: 9/6/2024
 REVISED: N/A

Electrical Detail - Sheet 4 of 5



NC 54
 at
Huntingridge Road / Service Road
 Division 5 Durham County Durham
 PLAN DATE: September 2024 REVIEWED BY: ZM Esposito
 PREPARED BY: DS Griffith DRMP PROJ. NO.: 19275 (122)

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

 Documented by:

 Zachary M. Esposito
 054155
 S.C. ENGINEER
 S.C. LICENSE NO. 054155
 S.C. EXPIRES 12/31/2024
 S.C. INVENTORY NO. 05-1744

ECONOLITE ASC/3-2070 LOGIC PROCESSOR PROGRAMMING DETAIL FOR LEADING PED INTERVAL (DELAYED GREEN)

(program controller as shown)

The following logic processor configuration holds the FYA's on signal heads 11 and 81 red for the duration of the delayed green time (leading ped interval) when serving a ped call on the opposing through phase.

1. From Main Menu select 1. CONFIGURATION
2. From CONFIGURATION Submenu select 8. LOGIC PROCESSOR
3. From the LOGIC PROCESSOR Submenu select 2. LOGIC STATEMENTS

ENTER A "1" IN THE LP# FIELD, PRESS 'ENTER', AND PROGRAM AS SHOWN.

LP#:	1	COPY FROM:	1	ACTIVE:	M	(T/F)
IF	PED ON PH WALK		2	IS	ON	
AND	VEH GREEN ON PH		2	IS	OFF	
THEN	SIG SET OLP RED		1		ON	
	SIG SET OLP YELLOW		1		OFF	
	SIG SET OVLP GREEN		1		OFF	
ELSE						

HOLD SIGNAL HEAD 11 FYA RED DURING THE PHASE 2 DELAYED GREEN TIME (LEADING PED INTERVAL)

1. From Main Menu select 1. CONFIGURATION
2. From CONFIGURATION Submenu select 8. LOGIC PROCESSOR
3. From the LOGIC PROCESSOR Submenu select 1. LOGIC STATEMENT CONTROL

ENABLE LOGIC PROCESSOR STATEMENTS 1-4 BY POSITIONING THE CURSOR OVER THE FIELDS SHOWN BELOW AND USING THE TOGGLE KEY TO ENABLE THEM .

LOGIC STATEMENT CONTROL																
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6
LP 1-15	E	E	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

END PROGRAMMING

ENTER A "2" IN THE LP# FIELD, PRESS 'ENTER', AND PROGRAM AS SHOWN.

LP#:	2	COPY FROM:	2	ACTIVE:	M	(T/F)
IF	PED ON PH WALK		4	IS	ON	
AND	VEH GREEN ON PH		4	IS	OFF	
THEN	SIG SET OLP RED		2		ON	
	SIG SET OLP YELLOW		2		OFF	
	SIG SET OVLP GREEN		2		OFF	
ELSE						

HOLD SIGNAL HEAD 81 FYA RED DURING THE PHASE 4 DELAYED GREEN TIME (LEADING PED INTERVAL)

ECONOLITE ASC/3-2070 LOAD SWITCH ASSIGNMENT DETAIL

(program controller as shown)

All channels must be programmed to flash red in controller for red-red flash operation as shown below. Notice "AUT" for all channels is programmed for RED.

1. From Main Menu select 1. CONFIGURATION
2. From CONFIGURATION Submenu select 3. LOAD SW ASSIGN

LD SWITCH ASSIGN										
	PHASE		DIMMING			---FLASH---				
	/OVLP	TYPE	R	Y	G	D	PWR	AUT	TGR	
1	1	V	.	.	.	.	+	A	R	X
2	2	V	.	.	.	.	+	A	R	.
3	3	V	.	.	.	.	+	A	R	X
4	4	V	.	.	.	.	+	A	R	.
5	5	V	.	.	.	.	-	A	R	.
6	6	V	.	.	.	.	-	A	R	X
7	7	V	.	.	.	.	-	A	R	.
8	8	V	.	.	.	.	-	A	R	X
9	1	O	.	.	.	.	+	A	R	X
10	2	O	.	.	.	.	+	A	R	X
11	3	O	.	.	.	.	-	A	R	.
12	4	O	.	.	.	.	-	A	R	.
13	2	P	.	.	.	.	+	A	.	.
14	4	P	.	.	.	.	-	A	.	.
15	6	P	.	.	.	.	+	A	.	.
16	8	P	.	.	.	.	-	A	.	.

ASC/3 FLASH SENSE INPUT CONTROL FOR RED-RED FLASH

*The NCDOT default database is programmed to address Yellow-Red flash. Logic Statement 100 must be modified as shown when running Red-Red flash.

1. From Main Menu select 1. CONFIGURATION
2. From CONFIGURATION Submenu select 8. LOGIC PROCESSOR
3. From LOGIC PROCESSOR Submenu select 2. LOGIC STATEMENTS

Change the "LP" to 100 and move the cursor down. Delete the two "CTR-SET" statements by moving the cursor over them and hitting the "C" key, then hit "ENTER", select "LP SET CIB ON", hit "ENT", and then set the number to 427.

LP#:	100	COPY FROM:	100	ACTIVE:	M	FALSE
IF	LP CIB CODE ON				331	F
THEN	LP DELAY FOR				1.0 SECONDS	
	LP SET CIB ON				427	
ELSE						

THIS STATEMENT IS USED TO CONTROL THE FLASH SENSE INPUT WHEN RUNNING RED-RED FLASH OPERATION.

Hit "ESC", then 1 for "LOGIC STATEMENT CONTROL", next verify that LP#100 is ENABLED.

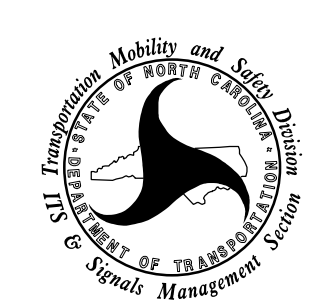
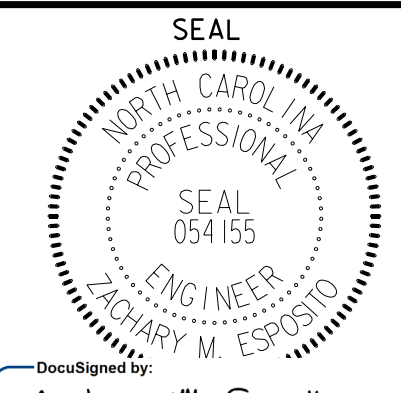

END PROGRAMMING

THIS PLAN SUPERSEDES THE PLAN
SIGNED AND SEALED ON 12/14/2023

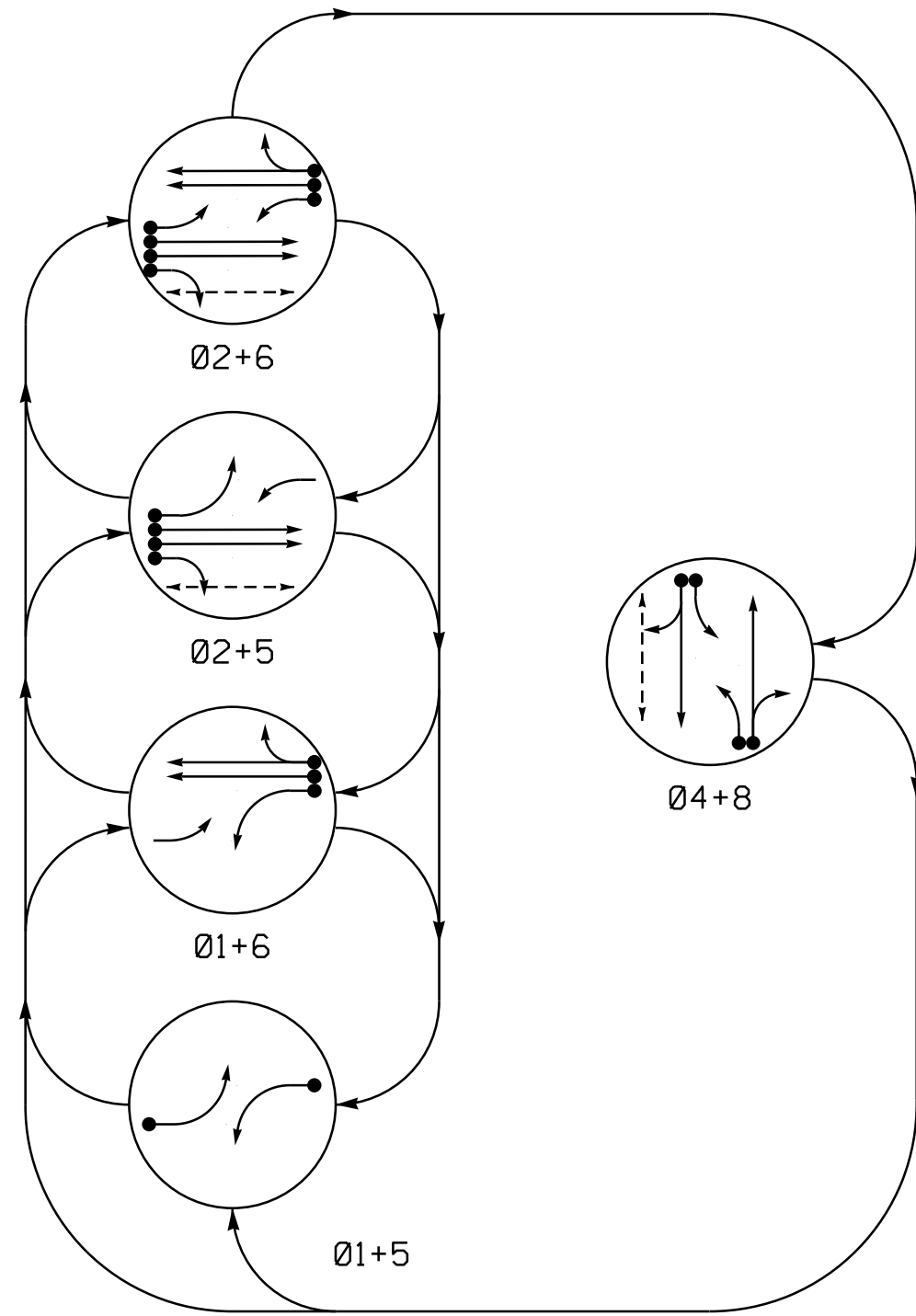
NC Dept of Transportation
Division of Highways
Final Drawing Date: 9/10/2024
DocuSigned by: *Chang Park*
6055AF6072440D
TSMO Unit

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 05-1744
DESIGNED: Sep 2024
SEALED: 9/6/2024
REVISED: N/A

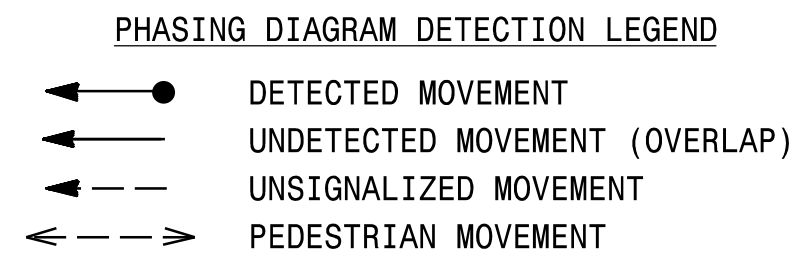
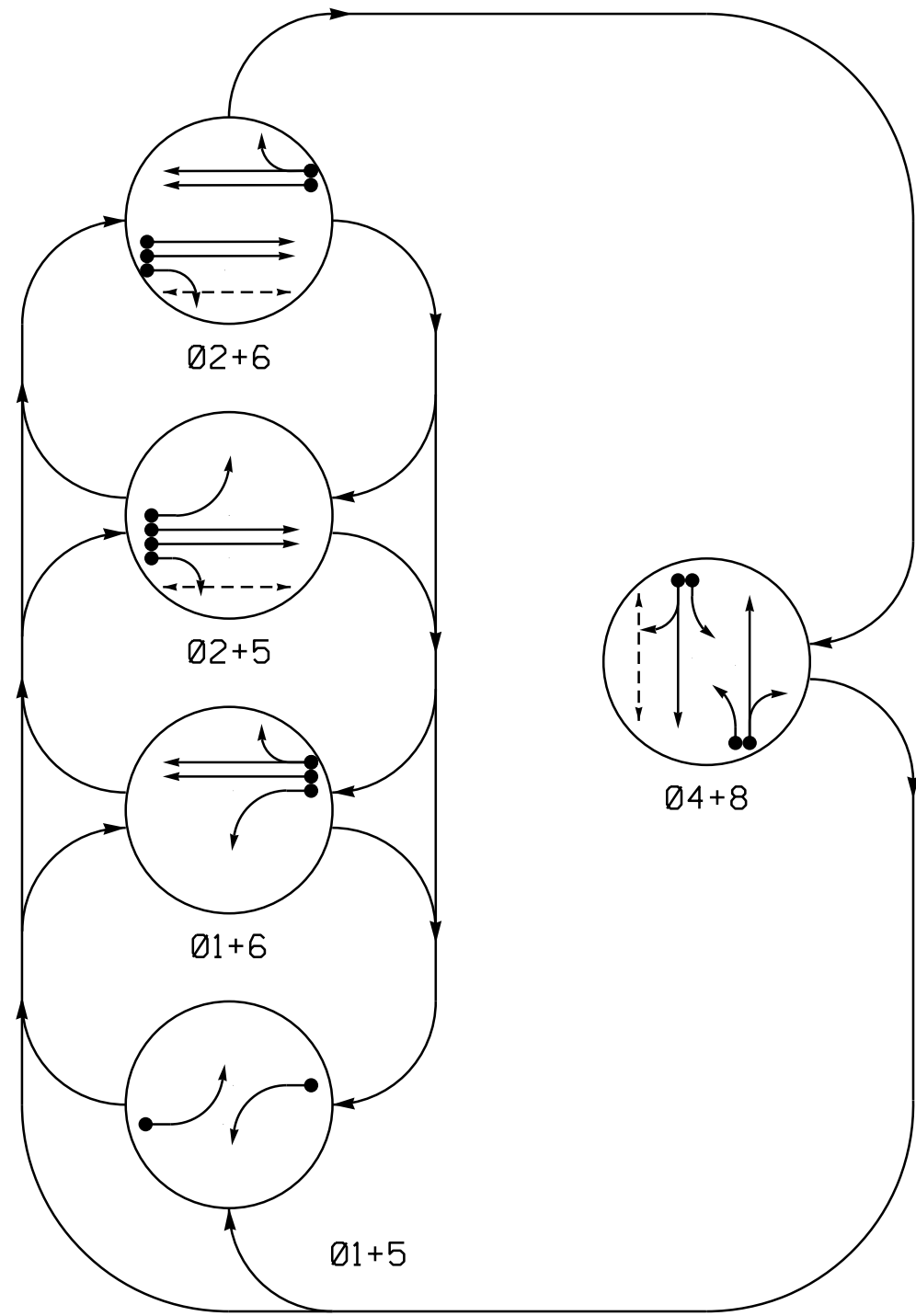
Electrical Detail - Sheet 5 of 5

 DRMP INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 PHONE: 704-545-4200	NC 54 at Huntingridge Road / Service Road Division 5 Durham County Durham PLAN DATE: September 2024 REVIEWED BY: ZM Esposito PREPARED BY: DS Griffith DRMP PROJ. NO.: 19275 (122)	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED  SEAL NORTH CAROLINA PROFESSIONAL ENGINEER ZACHARY M. ESPOSITO 054155
 DRMP 750 N. Greenleaf Pkwy, Garner, NC 27529	REVISIONS INIT. DATE DocuSigned by: <i>Zachary M. Esposito</i> 05470D7FD48A8E8 2024 SIG. INVENTORY NO. 05-1744	

DEFAULT PHASING DIAGRAM

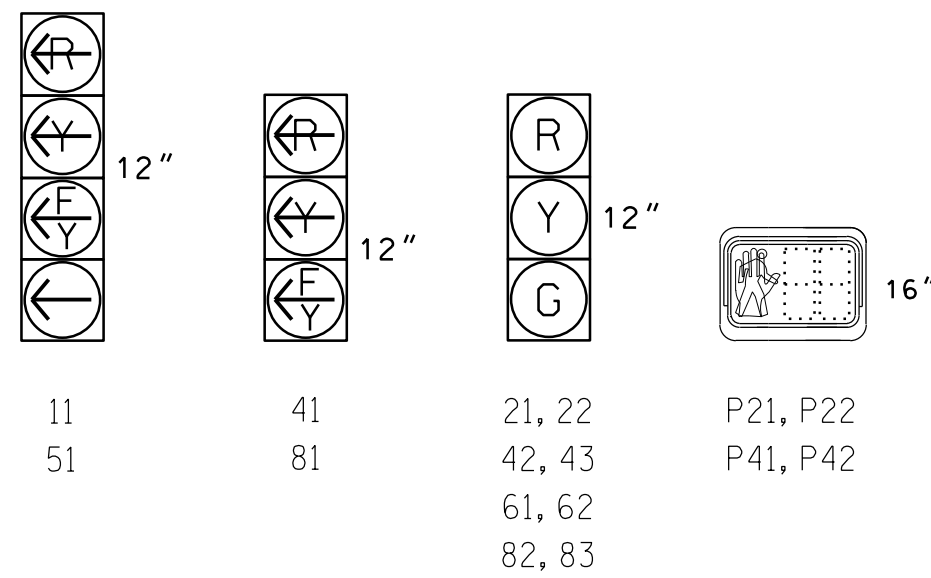


ALTERNATE PHASING DIAGRAM



SIGNAL FACE I.D.

All Heads L.E.D.



ASC/3 EV PREEMPT table with columns for FUNCTION and PRE 3, listing parameters like Exit Phase(s), Preempt Override, Delay Time, etc.

* Time defaults to time used for phase during normal operation. ** Program timing on GPS detector unit.

ASC/3 DETECTOR INSTALLATION CHART table with columns for DETECTOR and PROGRAMMING, listing loop details and programming parameters.

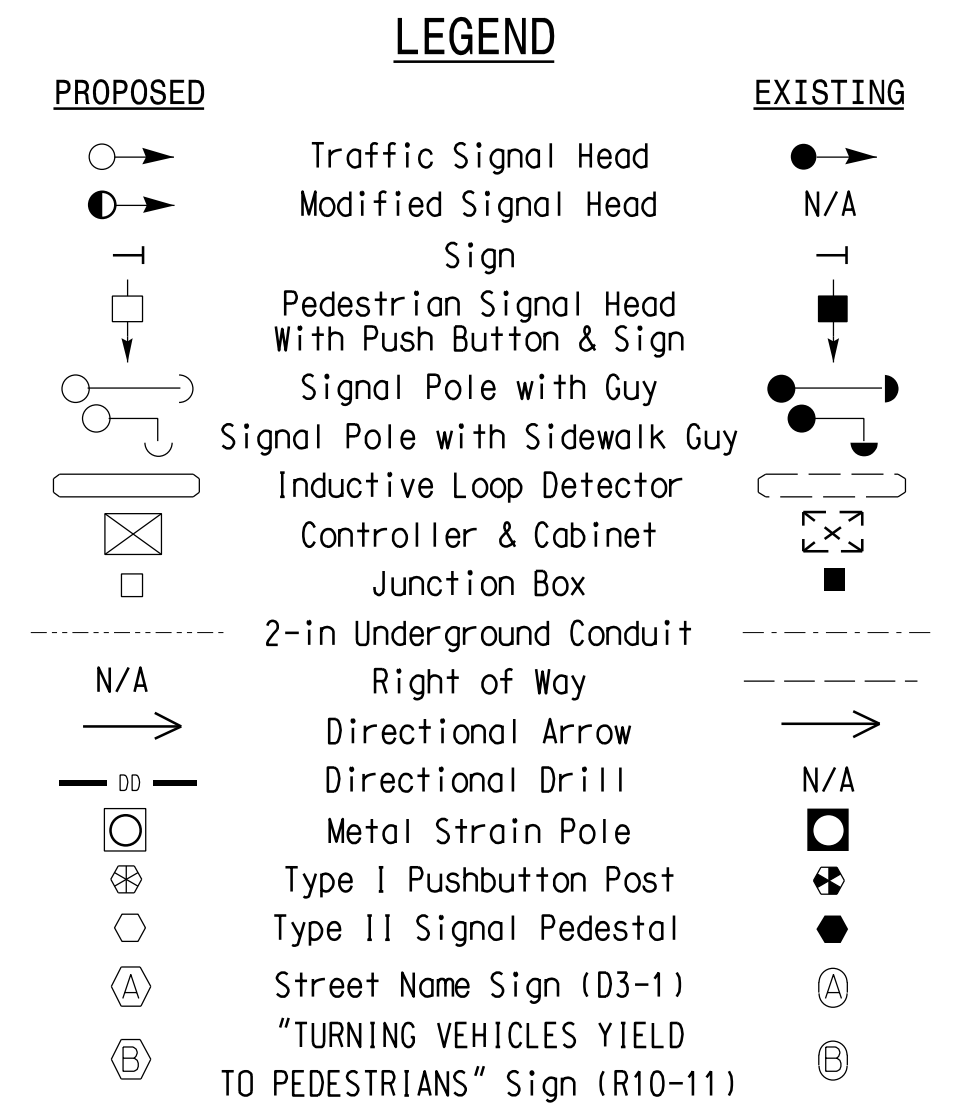
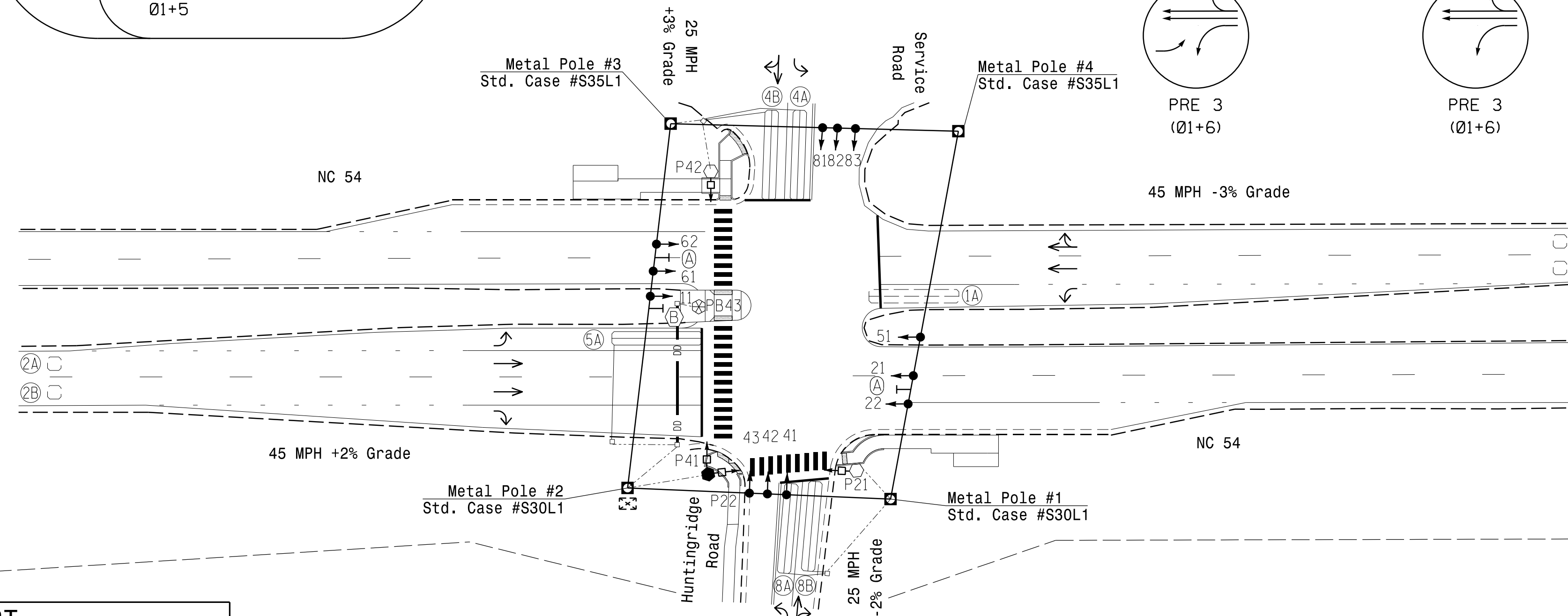
* Disable delay during Alternate Phasing operation. # Disable phase call for loop during Alternate Phasing operation.



5 Phase Fully Actuated w/ Emergency Vehicle Preemption (Durham Signal System)

NOTES

- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: https://connect.ncdot.gov/resources/safety/pages/ITS-Design-Resources.aspx
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. Set all detector units to presence mode.
5. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
6. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
7. This intersection features a GPS preemption system.
8. The Division (City) Traffic Engineer will determine the hours of use for each phasing plan.
9. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
10. See pavement marking plan for pavement marking locations.



ASC/3 TIMING CHART table with columns for FEATURE and PHASE (1, 2, 4, 5, 6, 8), listing timing parameters like Min Green, Delayed Green, Walk, Ped Clear, etc.

DEFAULT PHASING TABLE OF OPERATION

Table of operation for default phasing showing signal face configurations for directions 11, 21, 22, 41, 42, 43, 51, 61, 62, 81, 82, 83, P21, P22, P41, P42.

ALTERNATE PHASING TABLE OF OPERATION

Table of operation for alternate phasing showing signal face configurations for directions 11, 21, 22, 41, 42, 43, 51, 61, 62, 81, 82, 83, P21, P22, P41, P42.

NC Dept of Transportation Division of Highways Final Drawing Date: 9/10/2024

THIS PLAN SUPERSEDES THE PLAN SIGNED AND SEALED ON 12/14/2023

Signal Upgrade

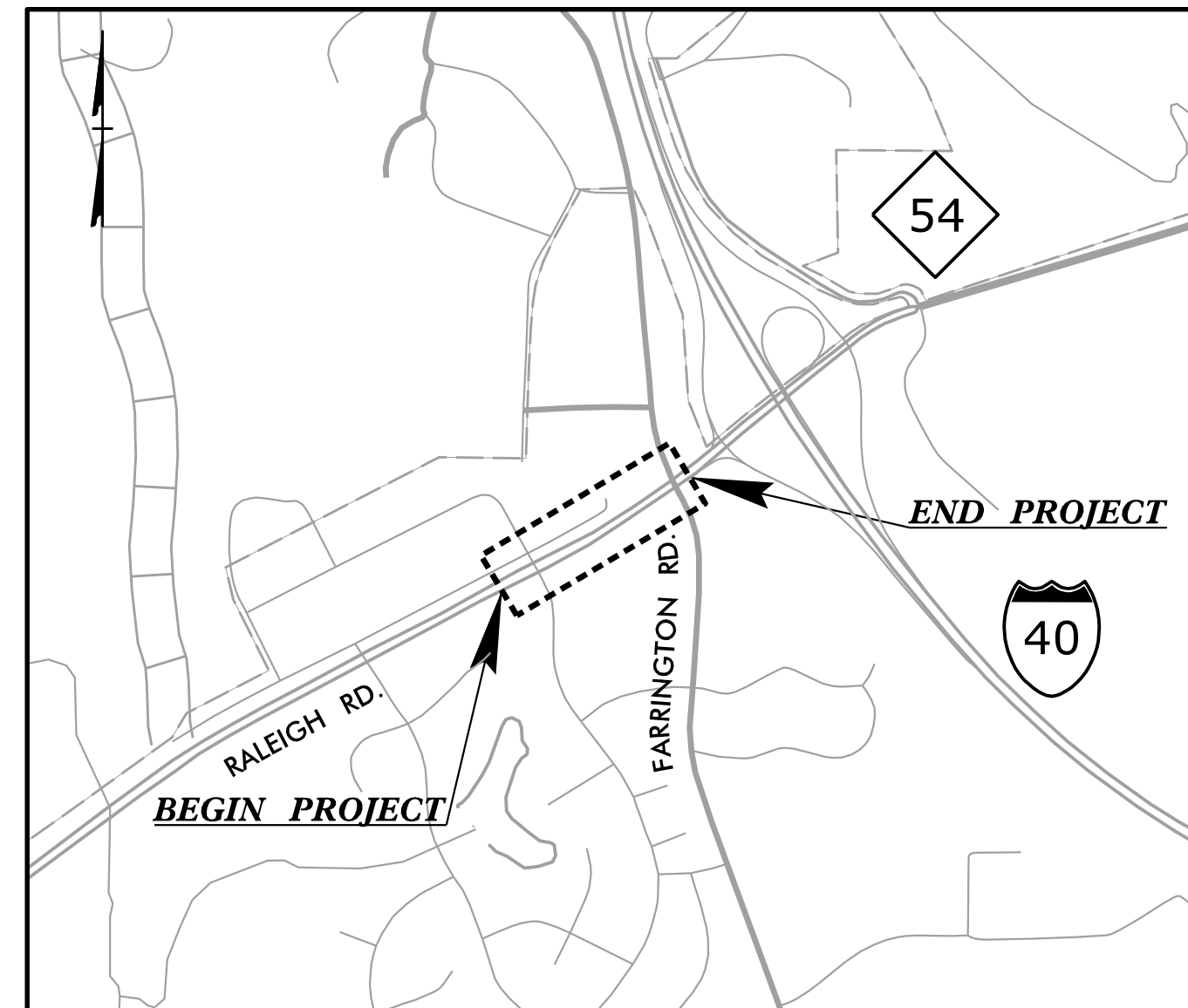
Professional Engineer seal for Zachary M. Esposito, State of North Carolina, License No. 054165. Includes project details for NC 54 at Huntingridge Road / Service Road, Durham County, Durham, prepared by DS Griffith on September 24, 2024, reviewed by ZM Esposito.



DRMP INC. 2024 UNIVERSITY EXECUTIVE PARK DR. CHARLOTTE, NC 28262 PHONE: 704-549-4200

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

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



VICINITY MAP
N.T.S.

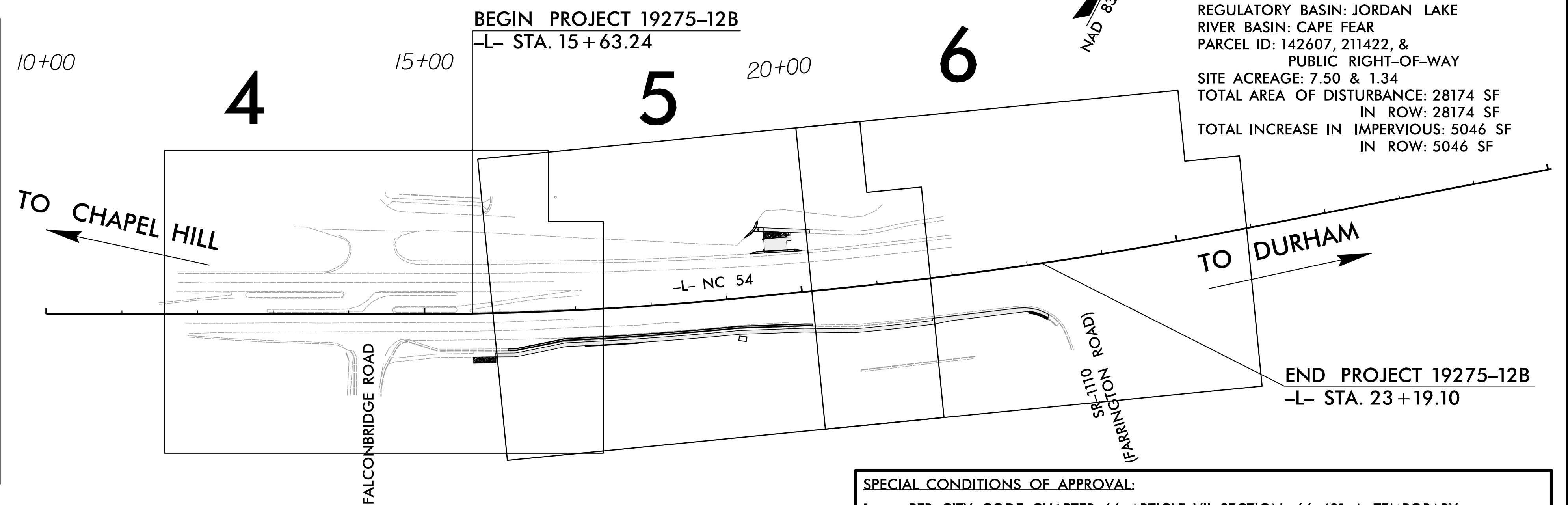
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
DURHAM COUNTY

LOCATION: NC 54 FROM FALCONBRIDGE ROAD TO SR-1110 (FARRINGTON ROAD)
TYPE OF WORK: GRADING, CURB & GUTTER, SIDEWALK, DRAINAGE, & SIGNALS

INDEX OF SHEETS	
1	TITLE SHEET
1A	GENERAL NOTES & STANDARDS
1B	CONVENTIONAL SYMBOLS
2A-1	TYPICAL SECTION
2B	ROADWAY DETAILS
3D-1	DRAINAGE SUMMARY SHEET
4-6	ROADWAY PLAN SHEET
TMP-1 THRU TMP-12	TRAFFIC CONTROL PHASING NOTES
EC-1 THRU EC-9	EROSION CONTROL PLANS
X-1 THRU X-10	CROSS SECTIONS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

- PUBLIC WORKS CONDITION OF APPROVAL:**
- THE DESIGNING PROFESSIONAL (A NCPE, NCPLS, OR NCRLA - AS REQUIRED) SHALL SUBMIT THREE (3) SETS OF CONSTRUCTION DRAWINGS TO THE PUBLIC WORKS DEPARTMENT - DEVELOPMENT REVIEW FOR REVIEW AND APPROVAL. CONSTRUCTION DRAWING APPROVAL IS REQUIRED PRIOR TO COMMENCING CONSTRUCTION (SEE CONSTRUCTION PLAN APPROVAL PROCESS). THE APPROVAL OF CONSTRUCTION DRAWINGS IS SEPARATE FROM SITE PLAN APPROVAL. CITY OFFICIALS SHALL REVIEW ALL SIZES, MATERIALS, SLOPES, LOCATIONS, EXTENSIONS AND DEPTHS FOR ALL PROPOSED UTILITIES (WATERLINES, SANITARY SEWER LINES AND STORM DRAINAGE CONVEYANCE SYSTEMS) FOR COMPLIANCE WITH ALL APPLICABLE REGULATORY STANDARDS, SPECIFICATIONS, AND BEST MANAGEMENT PRACTICES.
 - THE DESIGNING PROFESSIONAL (A NCPE, NCPLS, OR NCRLA - AS REQUIRED) SHALL SUBMIT ONE (1) SET OF AS-BUILT DRAWINGS TO THE PUBLIC WORKS DEPARTMENT - DEVELOPMENT REVIEW FOR REVIEW AND APPROVAL. AS-BUILT DRAWING APPROVAL IS REQUIRED PRIOR TO WATER METER INSTALLATION AND/OR SANITARY SEWER SERVICE CONNECTION AND PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
 - A CONSTRUCTION ON CITY RIGHT-OF-WAY/PRIVATE PROPERTY PERMIT MAY BE REQUIRED. CONTACT THE PUBLIC WORKS CUSTOMER SERVICE DESK AT 560-4326.



PROJECT DATA:
PROPERTY OWNER: PUBLIC RIGHT-OF-WAY
DEVELOPMENT TIER: LEIGH VILLAGE CN
ZONE: CC & RS-M
REGULATORY BASIN: JORDAN LAKE
RIVER BASIN: CAPE FEAR
PARCEL ID: 142607, 211422, &
PUBLIC RIGHT-OF-WAY
SITE ACREAGE: 7.50 & 1.34
TOTAL AREA OF DISTURBANCE: 28174 SF
IN ROW: 28174 SF
TOTAL INCREASE IN IMPERVIOUS: 5046 SF
IN ROW: 5046 SF

- NOTES:**
- CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II SHOWN ON NCDOT RSD 200.02.
 - EXISTING CONDITIONS SURVEY PERFORMED BY DRMP.
 - ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH CURRENT CITY OF DURHAM AND/OR NCDOT STANDARDS.
 - THIS PROJECT IS LOCATED WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF DURHAM.

- SPECIAL CONDITIONS OF APPROVAL:**
- PER CITY CODE CHAPTER 66, ARTICLE VII, SECTION 66-431, A TEMPORARY CLOSURE PERMIT IS REQUIRED FOR ALL STREET AND SIDEWALK CLOSURES WITHIN THE PUBLIC RIGHT-OF-WAY. THE PERMIT APPLICATION CAN BE OBTAINED FROM THE DEVELOPMENT SERVICES CENTER ON THE GROUND FLOOR OF CITY HALL OR ONLINE AT <https://www.durhamnc.gov/DocumentCenter/View/28695/Closure-Permit-Application?bidId=>. PRIOR TO ANY ROADWAY CLOSURES, REMOVAL OF ON-STREET PARKING, OR SIDEWALK CLOSURES, TRAFFIC CONTROL PLAN(S) SHALL BE SUBMITTED FOR REVIEW/APPROVAL WITH THE TEMPORARY CLOSURE PERMIT APPLICATION A MINIMUM OF FOUR (4) WEEKS IN ADVANCE OF THE ANTICIPATED CLOSURE. TRAFFIC CONTROL PLANS SHALL INCLUDE NEW OR TEMPORARY CIRCULATION ROUTES AND PROTECTION MEASURES AS APPROPRIATE.

GRAPHIC SCALES

PLANS

DESIGN DATA

ADT 2019 = 46,000
V = 50 MPH

PROJECT LENGTH

LENGTH ROADWAY PROJECT 19275-12B = 0.141 MILES

GOTRIANGLE CONTACT: RICHARD MAJOR
DIRECTOR - CAPITAL DEVELOPMENT
(919)485-7483

NCDOT CONTACT: JOHN SANDOR, PE
DISTRICT ENGINEER
(919)317-4770

Prepared In the Office of:

BENJAMIN R. LENNON, P.E.
PROJECT ENGINEER

ERIC ALSPAUGH
PROJECT DESIGNER

HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

CITY OF DURHAM

PROJECT: CD-21-01-D28 (DRMP PROJECT 19275-12B)



PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. 1A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
Signed by: <i>Benjamin Linn</i> SEAL 037438 ENGINEER BENJAMIN L. LINN 0025	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

GENERAL NOTES AND 2024 ROADWAY ENGLISH STANDARD DRAWINGS

GENERAL NOTES 2024 SPECIFICATIONS EFF. 01-16-2024

GRADING:

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.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE: NCDOT, MCI, SEGRA, FRONTIER, GOOGLE FIBER, AT&T, DOMINION ENERGY CONTRACTOR TO COORDINATE ANY RELOCATIONS NEEDED DIRECTLY WITH UTILITY OWNER.

2024 ROADWAY ENGLISH STANDARD DRAWINGS EFF. 01-16-2024

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" HIGHWAY DESIGN BRANCH – N.C. DEPARTMENT OF TRANSPORTATION – RALEIGH, N.C., DATED JANUARY, 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

<u>STD. NO.</u>	<u>TITLE</u>	<u>STD. NO.</u>	<u>TITLE</u>
DIVISION 2 – EARTHWORK		DIVISION 9 – SIGNING	
200.02	METHOD OF CLEARING – METHOD II	904.10	ORIENTATION OF GROUND MOUNTED SIGNS
240.01	GUIDE FOR BERM DITCH CONSTRUCTION	904.50	MOUNTING OF TYPE 'D' 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS
DIVISION 3 – PIPE CULVERTS		DIVISION 11 – WORK ZONE TRAFFIC CONTROL	
300.01	METHOD OF PIPE INSTALLATION	1101.01	WORK ZONE ADVANCE WARNING SIGNS
310.02	PARALLEL PIPE END SECTION – PRECAST CONCRETE SECTION FOR 15" TO 24" PIPE	1101.02	TEMPORARY LANE CLOSURE
310.03	CROSS PIPE END SECTION – PRECAST CONCRETE SECTION FOR 18" TO 30" PIPE	1101.04	TEMPORARY SHOULDER CLOSURES
DIVISION 6 – ASPHALT BASES AND PAVEMENTS		1101.11	TRAFFIC CONTROL DESIGN TABLES
654.01	PAVEMENT REPAIRS	1110.01	STATIONARY WORK ZONE SIGNS
DIVISION 8 – INCIDENTALS		1110.02	PORTABLE WORK ZONE SIGNS
840.01	BRICK CATCH BASIN – 12" TRHU 54" PIPE	1115.01	FLASHING ARROW BOARDS
840.02	CONCRETE CATCH BASIN – 12" THRU 54" PIPE	1130.01	DRUMS
840.03	FRAME, GRATES AND HOOD – FOR USE ON STANDARD CATCH BASIN	1145.01	BARRICADES – TYPE III
840.45	PRECAST DRAINAGE STRUCTURE	DIVISION 16 – EROSION CONTROL AND ROADSIDE DEVELOPMENT	
840.72	PIPE COLLAR	1605.01	TEMPORARY SILT FENCE
846.01	CONCRETE CURB, GUTTER, AND CURB & GUTTER	1632.03	ROCK INLET SEDIMENT TRAP TYPE C
848.01	CONCRETE SIDEWALK	1633.01	TEMPORARY ROCK SILT CHECK TYPE A
		1635.02	ROCK PIPE INLET SEDIMENT TRAP TYPE B
		1636.01	WATTLE CHECK

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS



Note: Not to Scale

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin (EIP)	○
Computed Property Corner	×
Existing Concrete Monument (ECM)	□
Parcel/Sequence Number	⑩23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---MLB---
Proposed Wetland Boundary	---MLB---
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---
Existing Historic Property Boundary	---HPB---
Known Contamination Area: Soil	---S---
Potential Contamination Area: Soil	---S---
Known Contamination Area: Water	---W---
Potential Contamination Area: Water	---W---
Contaminated Site: Known or Potential	☠ ?

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○
Small Mine	×
Foundation	□
Area Outline	□
Cemetery	+
Building	□
School	□
Church	□
Dam	—

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	□
Jurisdictional Stream	---JS---
Buffer Zone 1	---BZ 1---
Buffer Zone 2	---BZ 2---
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	---
Proposed Lateral, Tail, Head Ditch	---
False Sump	---

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY & PROJECT CONTROL:

Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	●
Secondary Horiz and Vert Control Point	◆
Vertical Benchmark	⊠
Existing Right of Way Monument	△
Proposed Right of Way Monument (Rebar and Cap)	▲
Proposed Right of Way Monument (Concrete)	▲
Existing Permanent Easement Monument	◇
Proposed Permanent Easement Monument (Rebar and Cap)	◆
Existing C/A Monument	▲
Proposed C/A Monument (Rebar and Cap)	▲
Proposed C/A Monument (Concrete)	▲
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Existing Control of Access Line	-----
Proposed Control of Access Line	-----
Proposed ROW and CA Line	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage/Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	---C---
Proposed Slope Stakes Fill	---F---
Proposed Curb Ramp	---CR---
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----

VEGETATION:

Single Tree	○
Single Shrub	○
Hedge	-----

Woods Line	-----
Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	-----
Paved Ditch Gutter	-----
Storm Sewer Manhole	-----
Storm Sewer	-----

UTILITIES:

* SUE - Subsurface Utility Engineering
LOS - Level of Service - A,B,C or D (Accuracy)

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○
Power Line Tower	□
Power Transformer	□
U/G Power Cable Hand Hole	○
H-Frame Pole	●
U/G Power Line Test Hole (SUE - LOS A)*	⊕
U/G Power Line (SUE - LOS B)*	-----P-----
U/G Power Line (SUE - LOS C)*	-----P-----
U/G Power Line (SUE - LOS D)*	-----P-----

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○
Telephone Pedestal	□
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	○
U/G Telephone Test Hole (SUE - LOS A)*	⊕
U/G Telephone Cable (SUE - LOS B)*	-----T-----
U/G Telephone Cable (SUE - LOS C)*	-----T-----
U/G Telephone Cable (SUE - LOS D)*	-----T-----
U/G Telephone Conduit (SUE - LOS B)*	-----TC-----
U/G Telephone Conduit (SUE - LOS C)*	-----TC-----
U/G Telephone Conduit (SUE - LOS D)*	-----TC-----
U/G Fiber Optics Cable (SUE - LOS B)*	-----TF-----
U/G Fiber Optics Cable (SUE - LOS C)*	-----TF-----
U/G Fiber Optics Cable (SUE - LOS D)*	-----TF-----

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line Test Hole (SUE - LOS A)*	⊕
U/G Water Line (SUE - LOS B)*	-----W-----
U/G Water Line (SUE - LOS C)*	-----W-----
U/G Water Line (SUE - LOS D)*	-----W-----
Above Ground Water Line	-----A/G Water-----

TV:

TV Pedestal	□
TV Tower	⊗
U/G TV Cable Hand Hole	○
U/G TV Test Hole (SUE - LOS A)*	⊕
U/G TV Cable (SUE - LOS B)*	-----TV-----
U/G TV Cable (SUE - LOS C)*	-----TV-----
U/G TV Cable (SUE - LOS D)*	-----TV-----
U/G Fiber Optic Cable (SUE - LOS B)*	-----TV FO-----
U/G Fiber Optic Cable (SUE - LOS C)*	-----TV FO-----
U/G Fiber Optic Cable (SUE - LOS D)*	-----TV FO-----

GAS:

Gas Valve	◇
Gas Meter	◇
U/G Gas Line Test Hole (SUE - LOS A)*	⊕
U/G Gas Line (SUE - LOS B)*	-----G-----
U/G Gas Line (SUE - LOS C)*	-----G-----
U/G Gas Line (SUE - LOS D)*	-----G-----
Above Ground Gas Line	-----A/G Gas-----

SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	-----SS-----
Above Ground Sanitary Sewer	-----A/G Sanitary Sewer-----
SS Force Main Line Test Hole (SUE - LOS A)*	⊕
SS Force Main Line (SUE - LOS B)*	-----FSS-----
SS Force Main Line (SUE - LOS C)*	-----FSS-----
SS Force Main Line (SUE - LOS D)*	-----FSS-----

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown U/G Line (SUE - LOS B)*	-----TUUL-----
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	□
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.



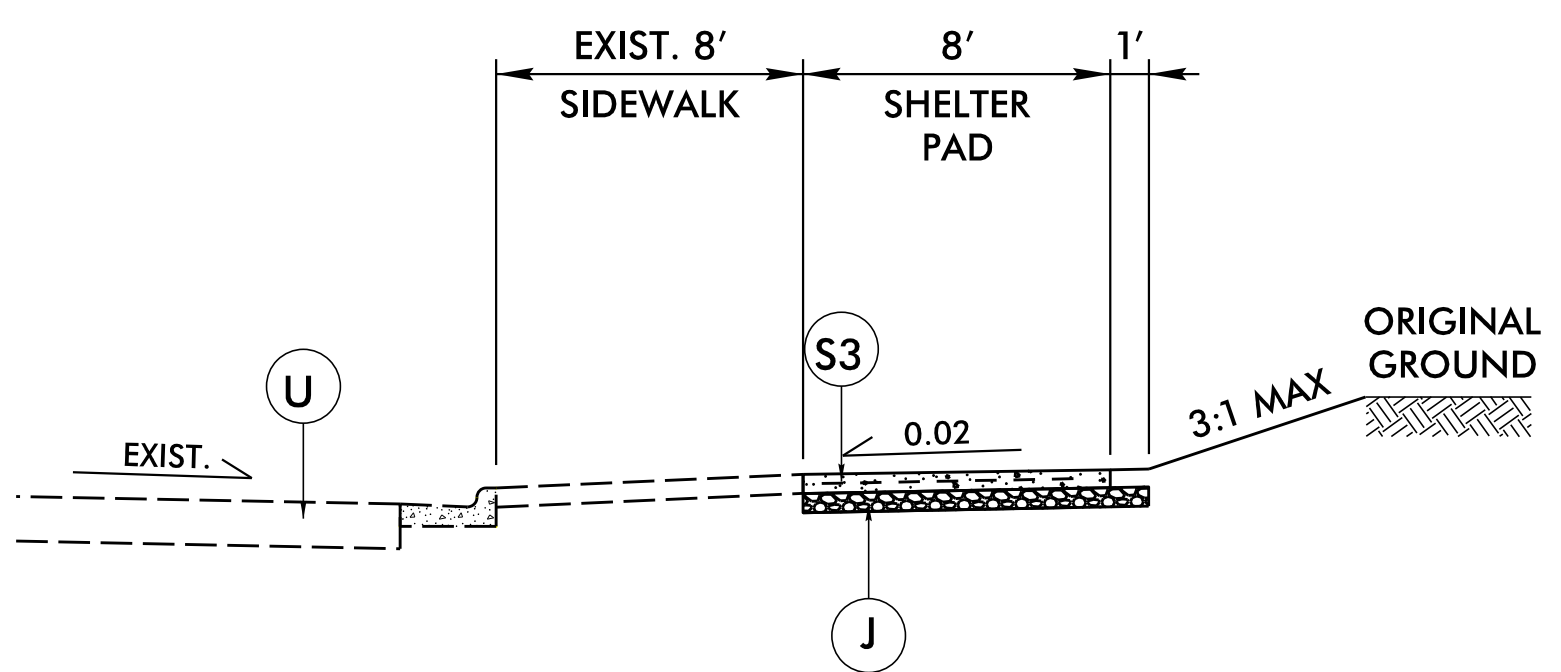
DRMP, INC.
5808 PARKINGTON PLACE
RALEIGH, NC 27609
(919) 872-5115

NC LICENSE NO. F-1534
www.drmp.com

PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER <i>Benjamin Lennon</i> 037438	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

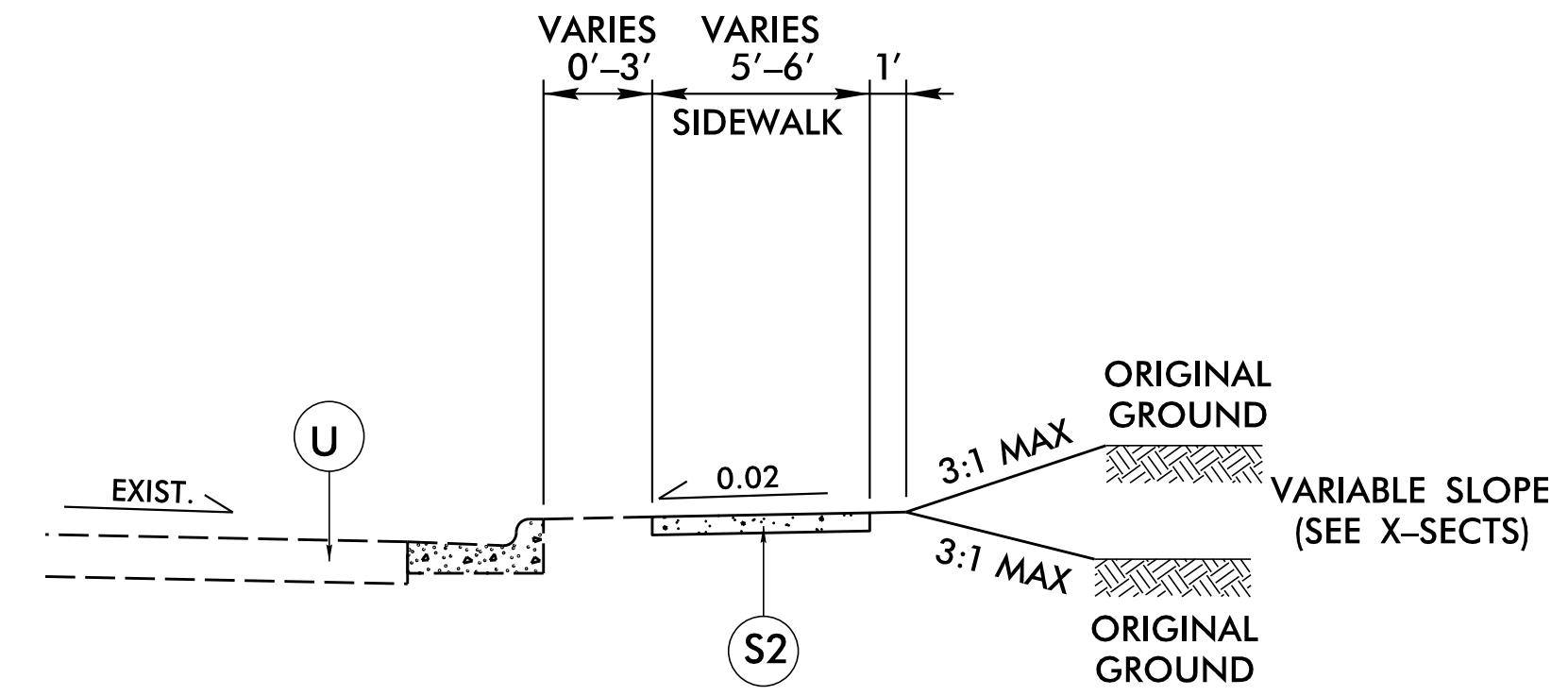
PAVEMENT SCHEDULE	
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
J	6" AGGREGATE BASE COURSE
R1	2'-6" CURB AND GUTTER (NCDOT 846.01)
R2	SURFACE MOUNTED CONCRETE CURB
S2	CONCRETE SIDEWALK (CITY OF DURHAM 402.02/NCDOT 848.01)
S3	6" CONCRETE SHELTER PAD WITH WIRE FABRIC (SEE DETAIL)
T	COMPACTED EARTH MATERIAL
U	EXISTING PAVEMENT

- NOTES:
1. ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE SPECIFIED.
 2. REINFORCE SHELTER PAD WITH WOVEN WIRE FABRIC SHEETS. WOVEN WIRE FABRIC SHEETS SHALL HAVE MINIMUM 6" OVERLAPS AND PLACED WITHIN 3" ON ALL SIDES.
 3. EXTEND AGGREGATE BASE COURSE 12" BEYOND EDGE OF PAD IN ALL DIRECTIONS EXCEPT WHERE BORDERED BY EXISTING PAVEMENTS.
 4. AGGREGATE BASE COURSE SHALL MEET NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
 5. SUBGRADE AND AGGREGATE BASE COURSE SHALL BE PROPERLY COMPACTED WITH PLATE TAMPERS PRIOR TO PLACING CONCRETE.
 6. CROSS SLOPE OF AMENITY AREA PAVEMENTS SHALL BE A MAXIMUM OF 2% UNLESS OTHERWISE APPROVED, OR NOTED ON THE PLANS.



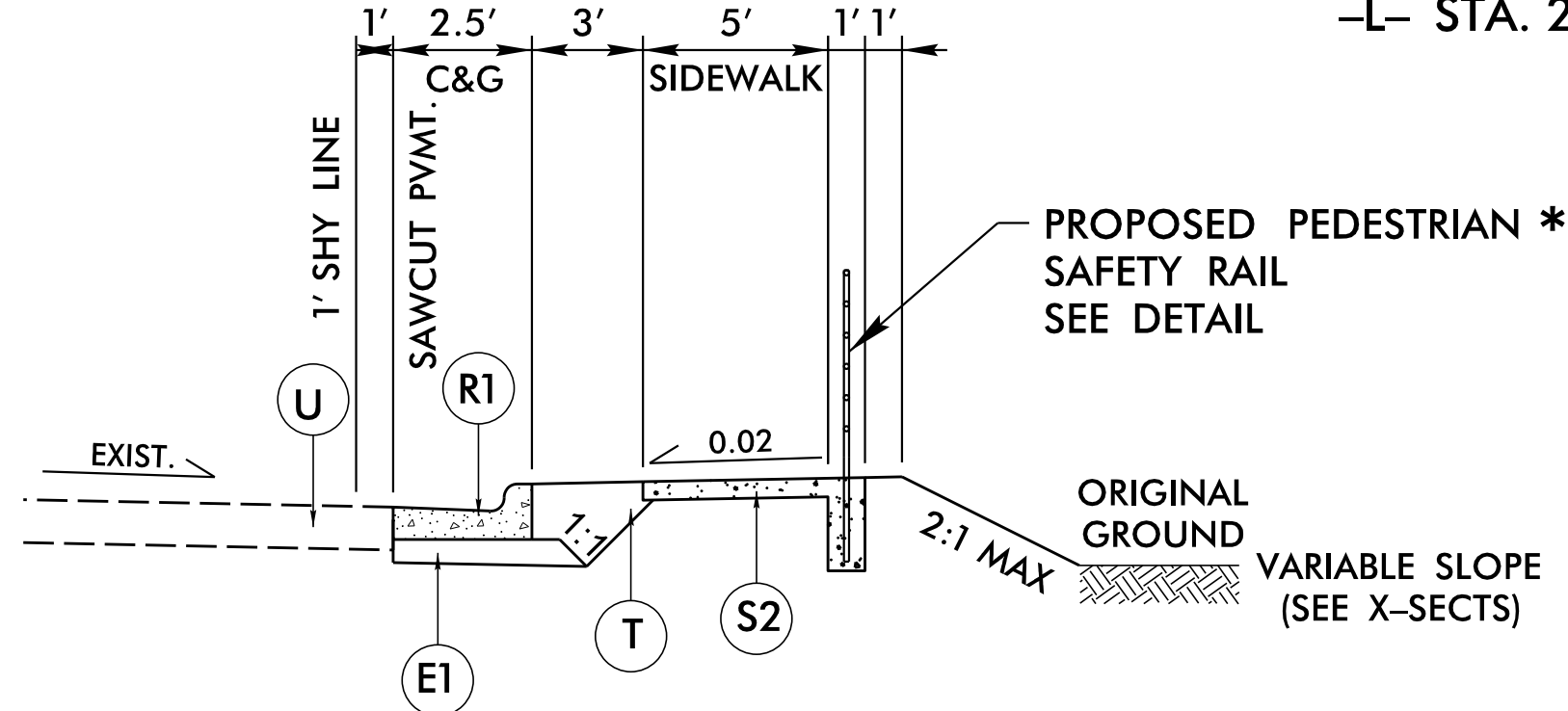
TYPICAL SECTION NO. 1

-L- STA. 15+63.24 TO -L- STA. 15+92.90



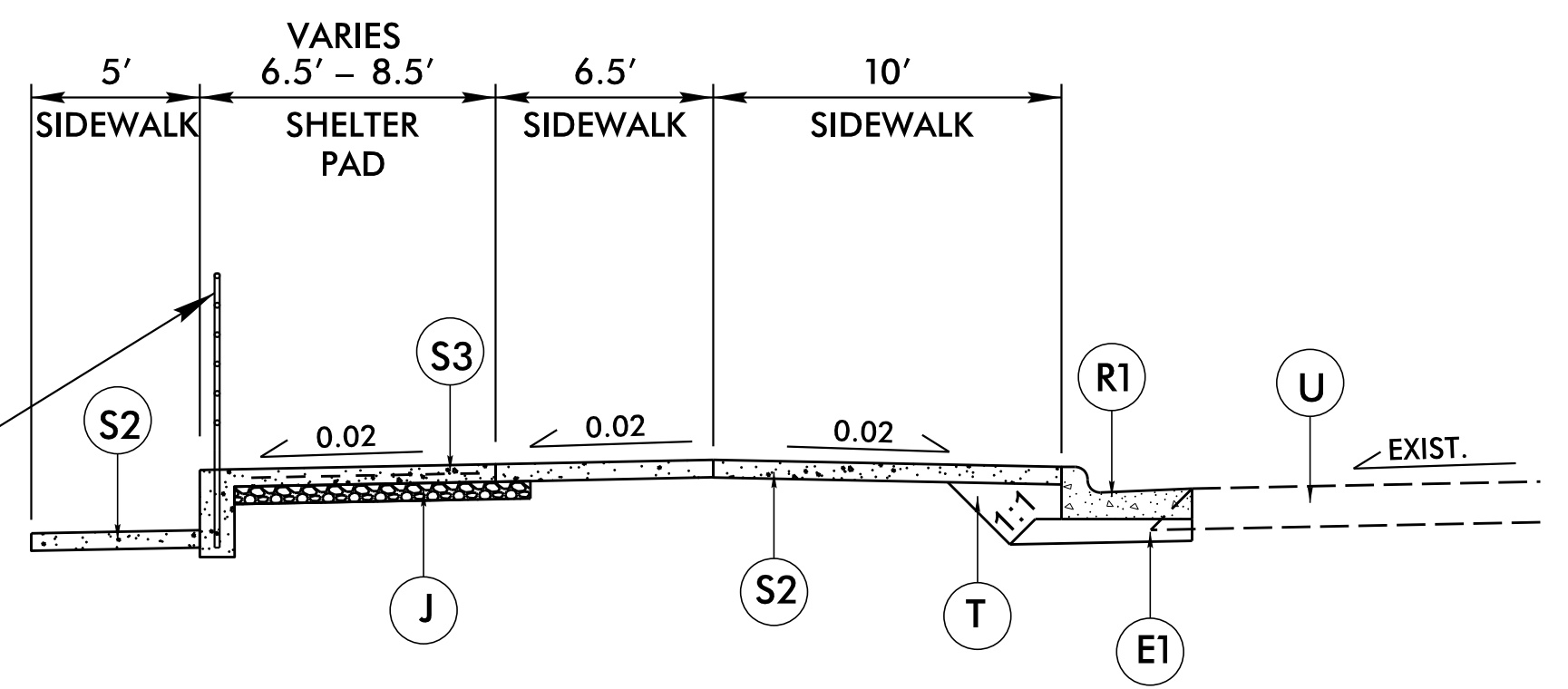
TYPICAL SECTION NO. 2

-L- STA. 15+92.90 TO -L- STA. 16+09.36
-L- STA. 20+10.11 TO -L- STA. 22+92.89



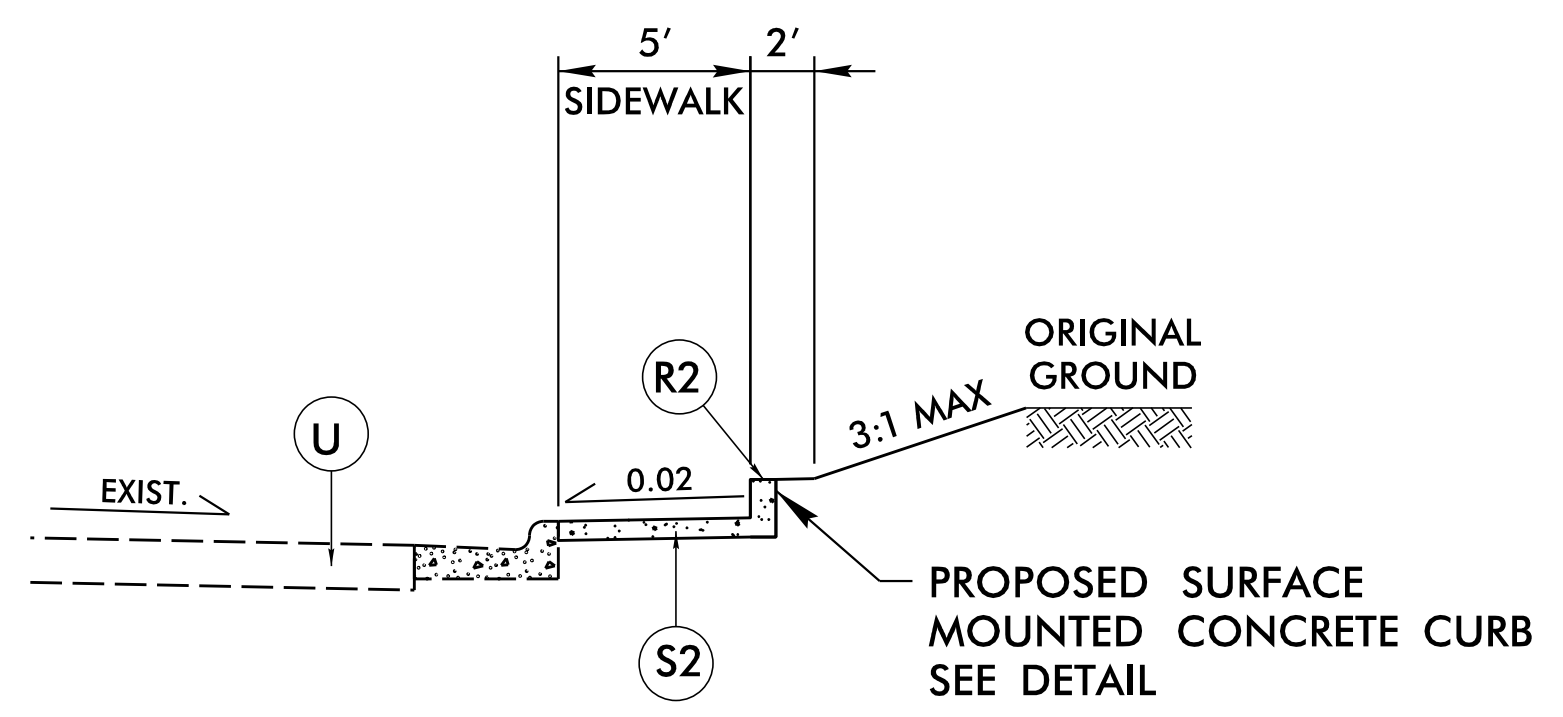
TYPICAL SECTION NO. 3

-L- STA. 16+09.36 TO -L- STA. 20+10.11
* -L- STA. 17+10.00 TO -L- STA. 17+80.00



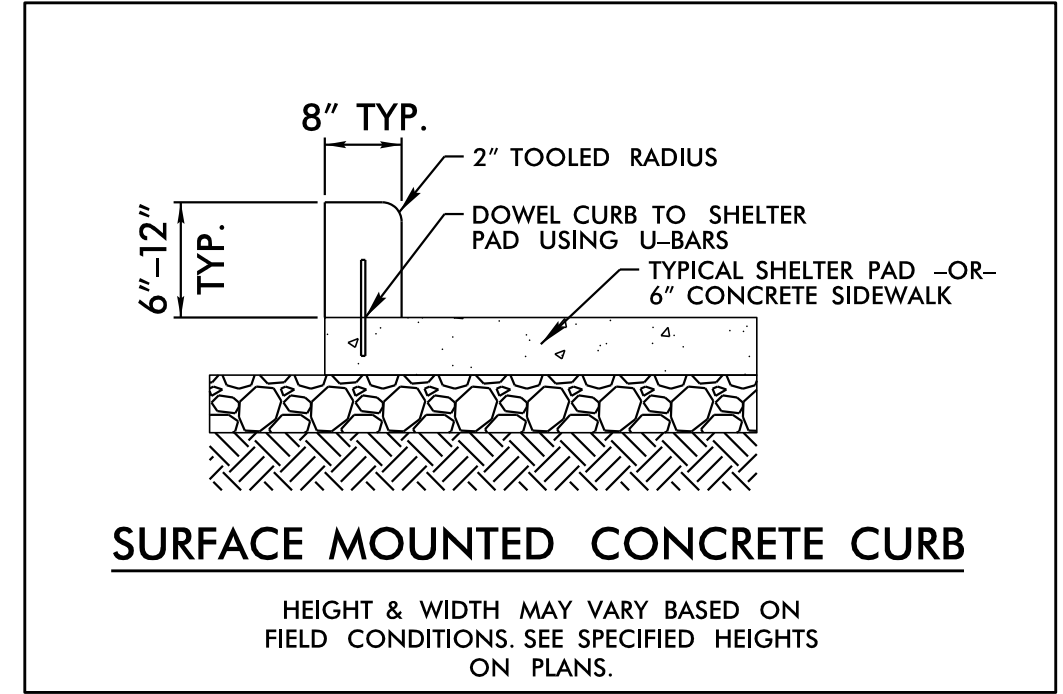
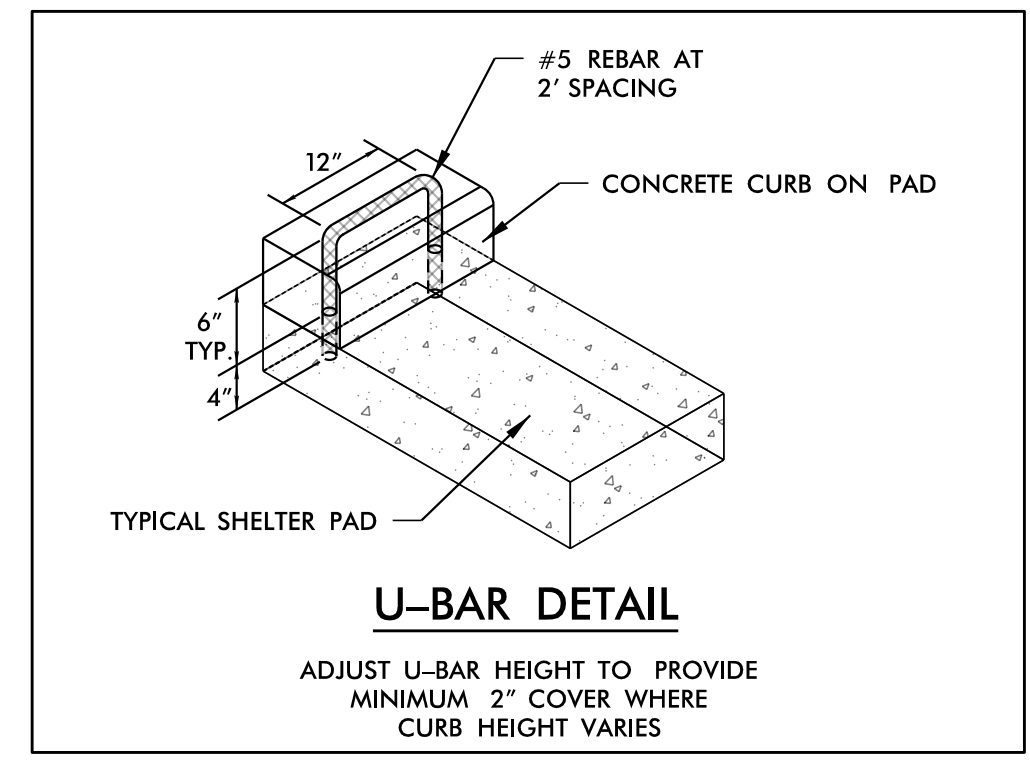
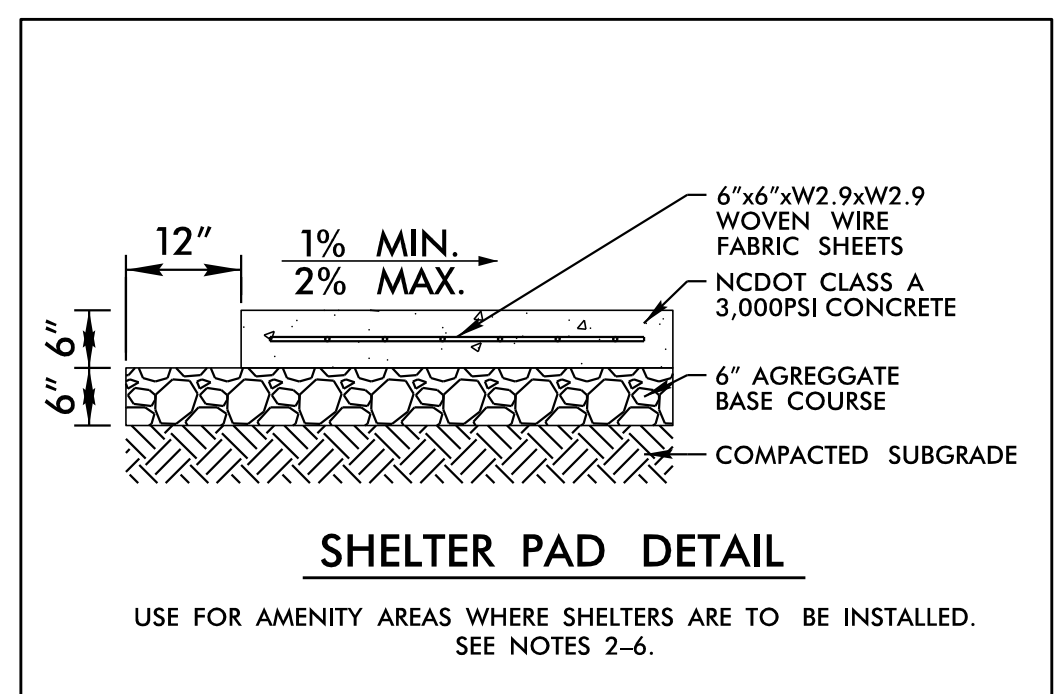
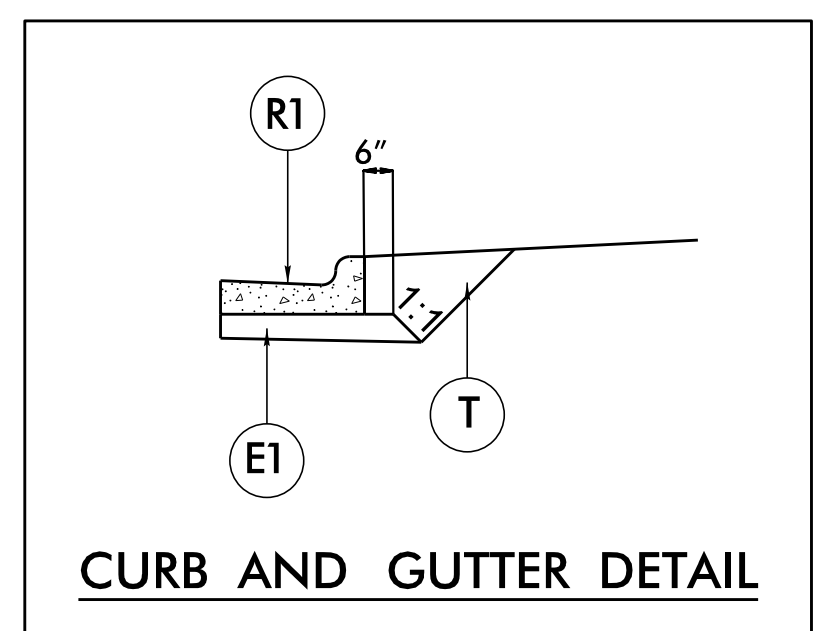
TYPICAL SECTION NO. 4

-L- STA. 19+55.93 TO -L- STA. 19+85.93



TYPICAL SECTION NO. 5

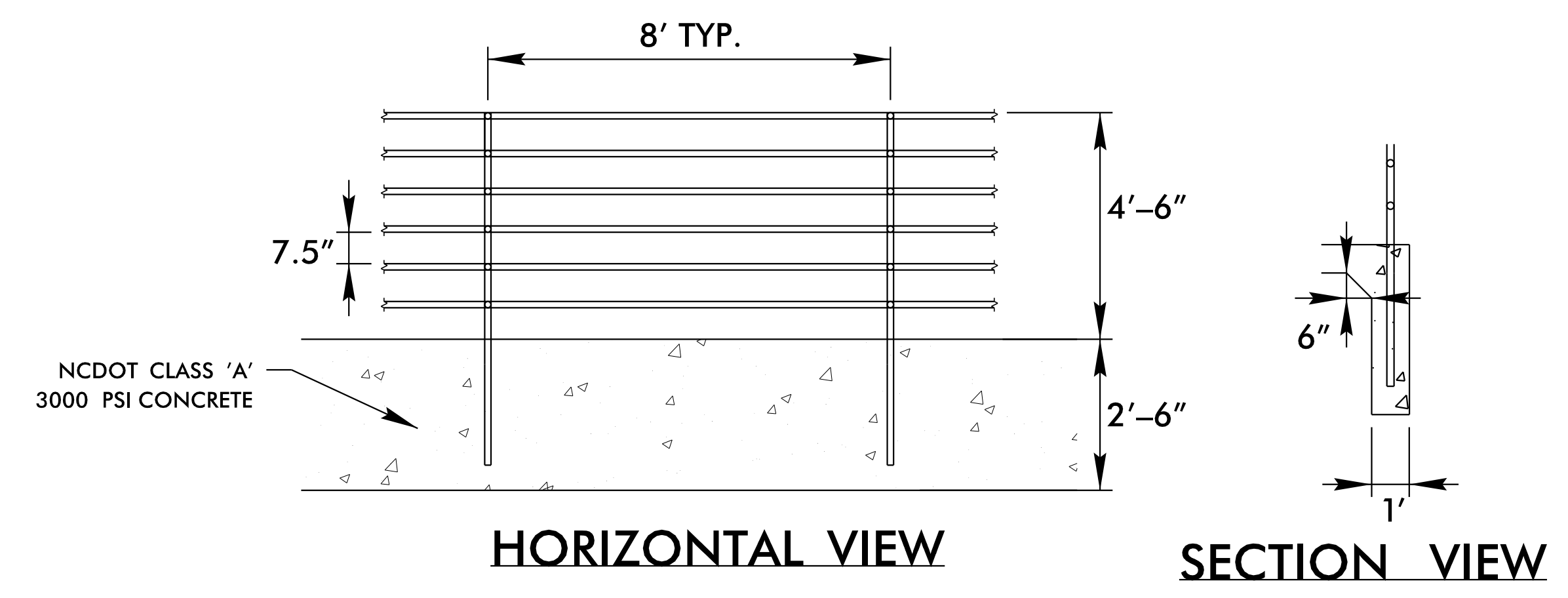
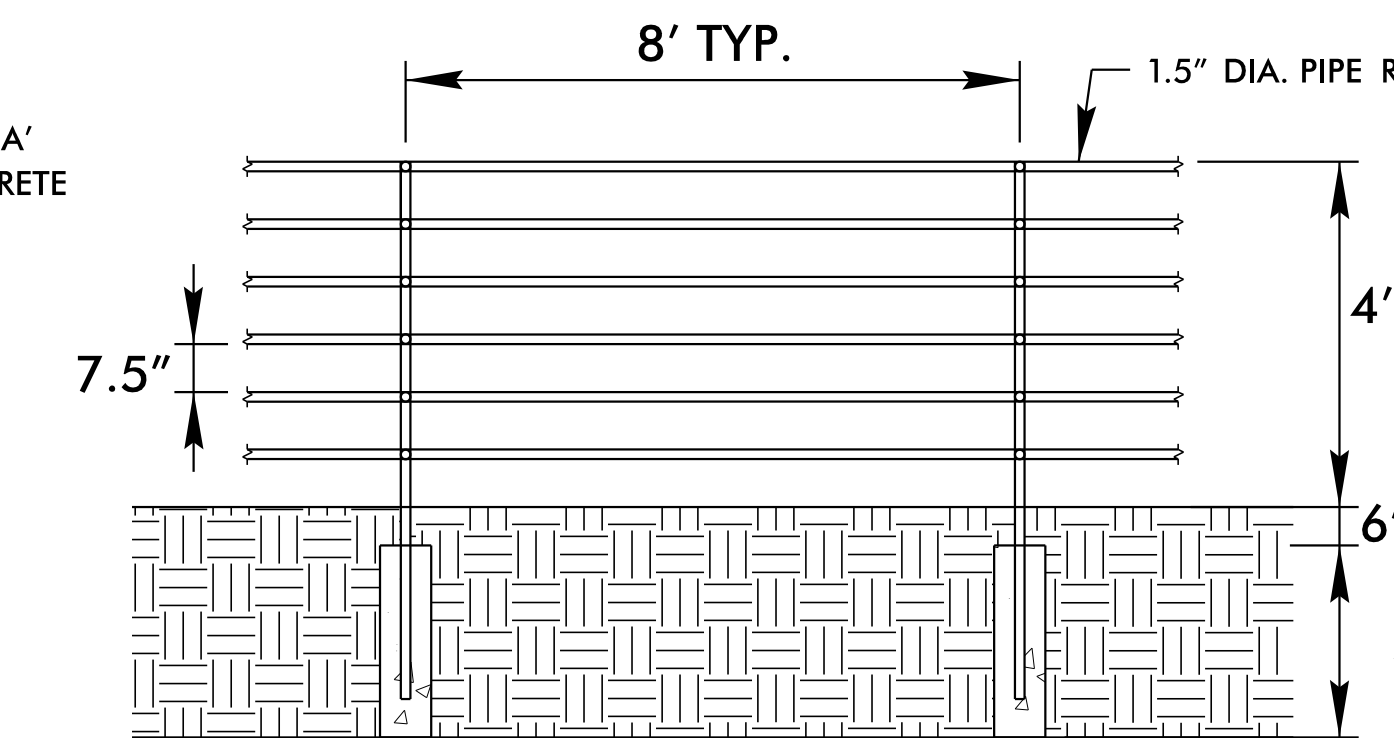
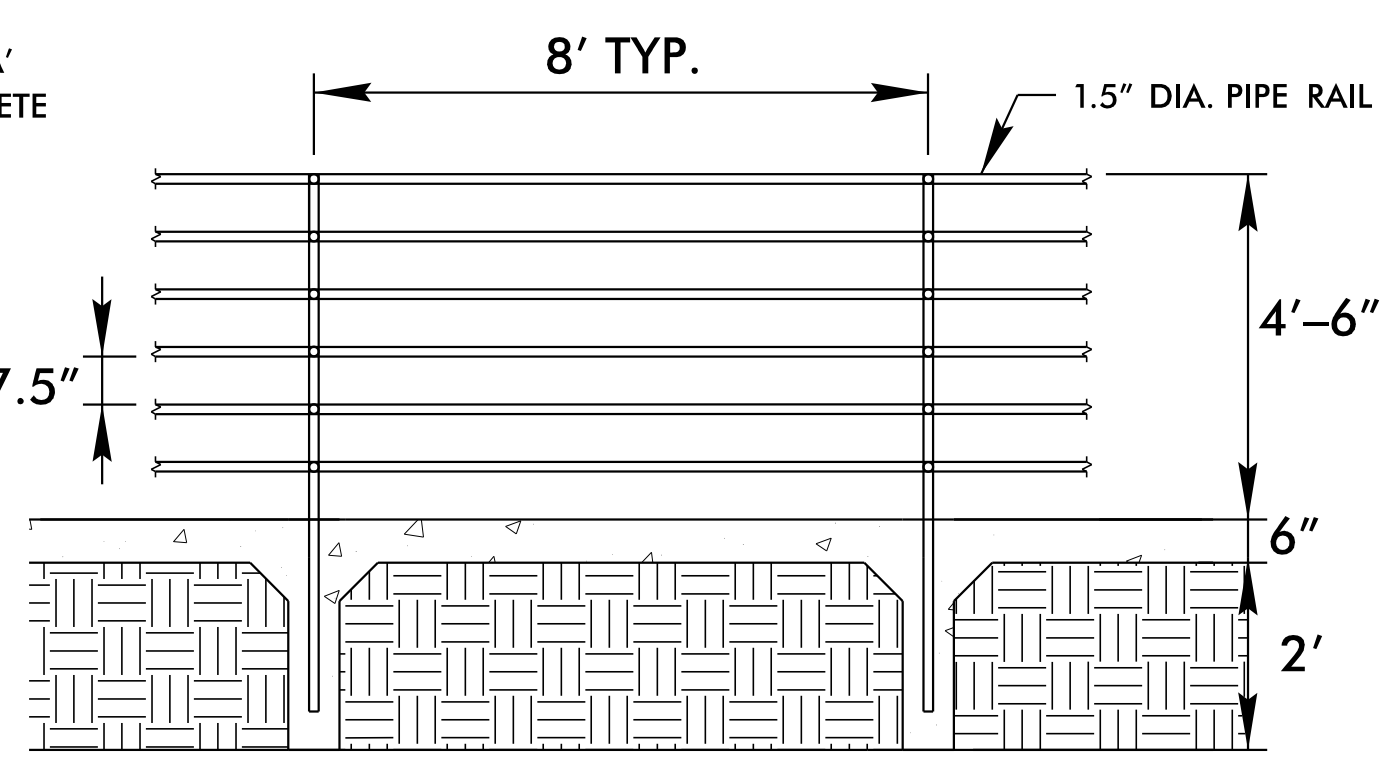
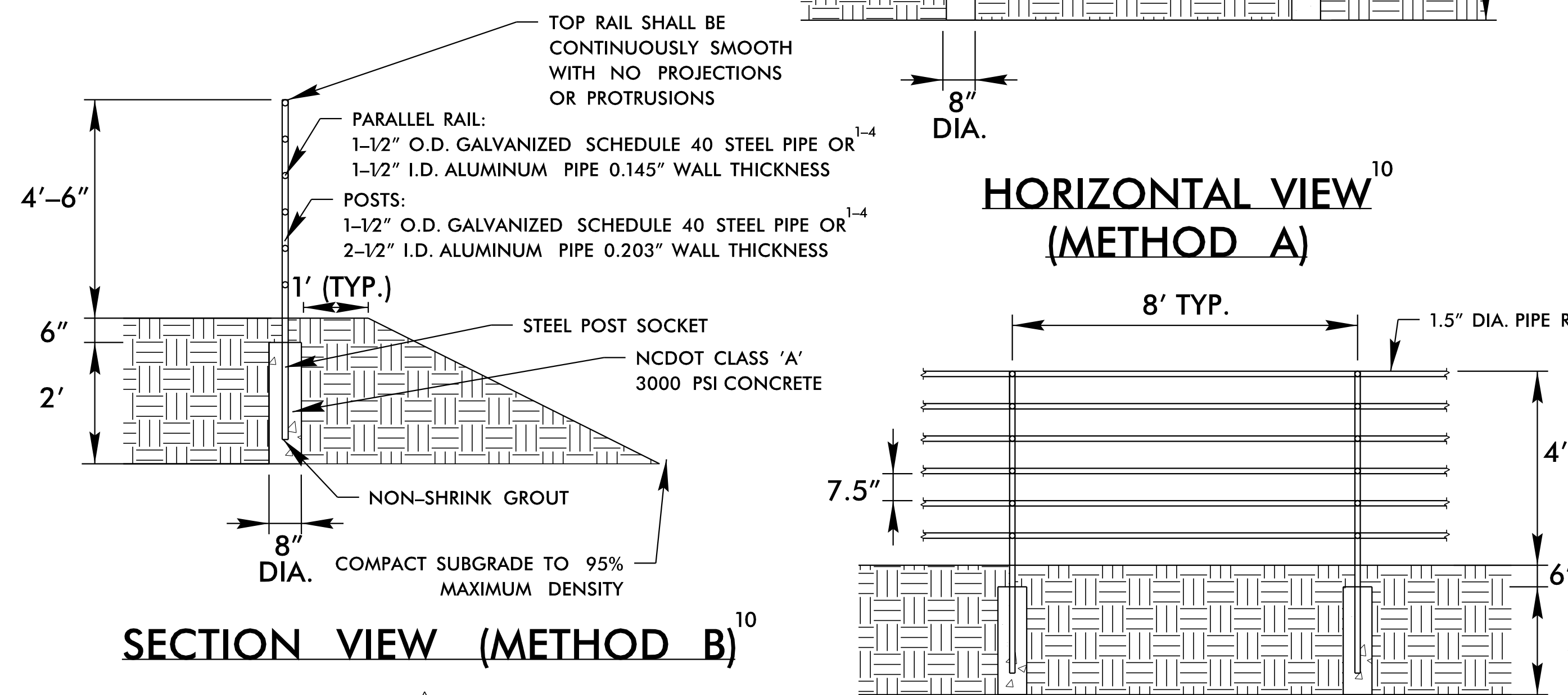
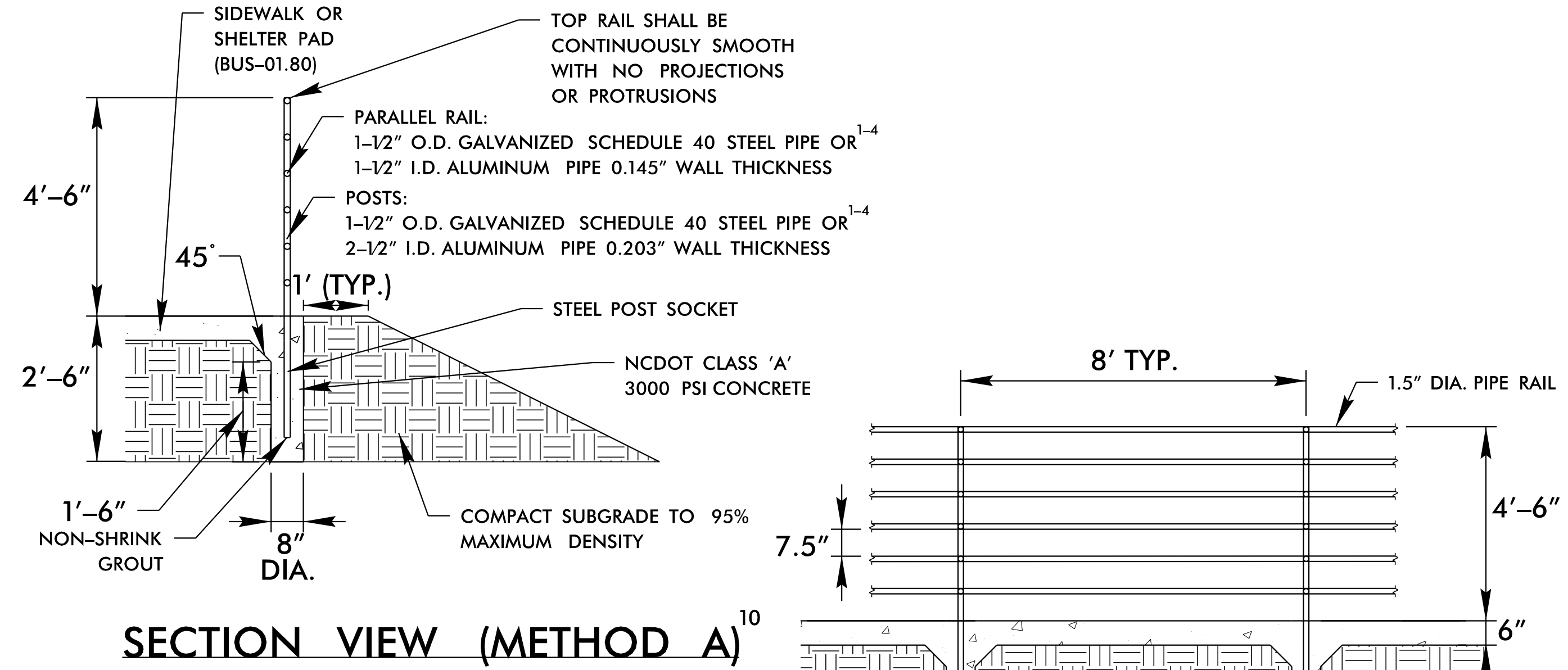
-L- STA. 22+92.89 TO -L- STA. 23+19.10



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 User: ealispough

PEDESTRIAN SAFETY RAIL

PROJECT REFERENCE NO. CD-21-01-D28		SHEET NO. 2B
ROADWAY DESIGN ENGINEER		PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



- CONSTRUCTION NOTES:
1. CONTRACTOR IS TO INSTALL SAFETY RAIL ACCORDING TO METHOD A UNLESS OTHERWISE DIRECTED BY GOTRIANGLE OR THE ENGINEER.
 2. CONTRACTOR SHALL MODIFY METHOD A AS SHOWN ABOVE BETWEEN -L- STA. 19+55.93 TO -L- STA. 19+85.93, AROUND THE SHELTER PAD.
 3. 1' CONCRETE WIDTH CONTAINING SAFETY RAIL IS TO BE POURED MONOLITHICALLY WITH THE SHELTER PAD.

ALUMINUM POST MOUNT (METHOD C) HORIZONTAL VIEW (METHOD B)

- NOTES:
1. CONSTRUCT PROPOSED STEEL PIPE RAIL OF 1.5" DIAMETER SCHEDULE 40 PLAIN END GALVANIZED STEEL PIPE MEETING REQUIREMENTS OF ASTM A53.
 2. REPAIR GALVANIZING IN ACCORDANCE WITH SECTION 1076 OF THE NCDOT STANDARD SPECIFICATIONS.
 3. PAINT, IF REQUIRED BY ENGINEER, IN ACCORDANCE WITH SECTION 1080 OF THE NCDOT SPECIFICATIONS.
 4. WELD IN ACCORDANCE WITH ARTICLE 1072-18 OF THE NCDOT STANDARD SPECIFICATIONS.
 5. GOTRIANGLE WILL BE REQUIRED TO PERFORM A SAFETY AND SECURITY REVIEW FOR ALL BUS STOP LOCATIONS. CONTACT GOTRIANGLE'S PLANNING & CAPITAL DEVELOPMENT STAFF AT 919-314-8746 TO SCHEDULE A REVIEW.
 6. SHOP DRAWINGS OF PEDESTRIAN SAFETY RAIL ARE TO BE PROVIDED TO GOTRIANGLE FOR REVIEW PRIOR TO APPROVAL.
 7. EARTH SLOPES STEEPER THAN 2:1 ADJACENT TO TRANSIT PASSENGER AREAS ARE NOT RECOMMENDED AND WOULD REQUIRE SUPPORTING CALCULATIONS AND APPROVAL BY GOTRIANGLE.
 8. PLACEMENT OF SAFETY RAIL IN RELATION TO SHOULDER BREAK POINT AND SIDEWALK MAY BE MODIFIED AS DIRECTED BY THE ENGINEER.
 9. EXCEPTIONS TO THE REQUIREMENTS STATED MAY BE CONSIDERED ON A CASE-BY-CASE BASIS WITH DOCUMENTATION BY THE ENGINEER AND APPROVAL BY GOTRIANGLE.
 10. PREFERRED METHOD OF INSTALLATION IS TO BE DETERMINED BY GOTRIANGLE.

1/23/2025
 User: eolispough

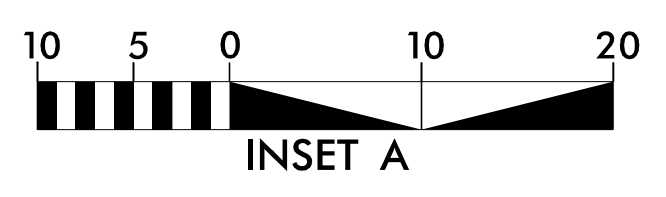
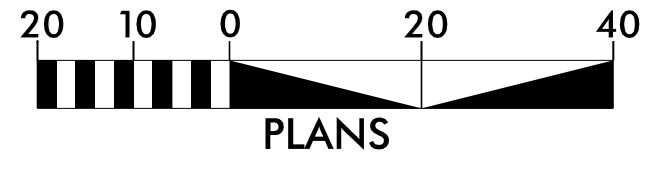


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(919) 872-5115

NC LICENSE NO. F-1534
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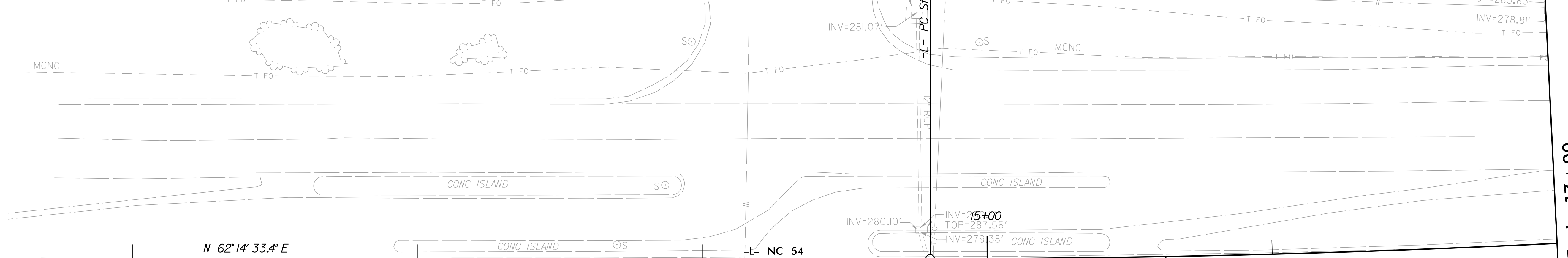
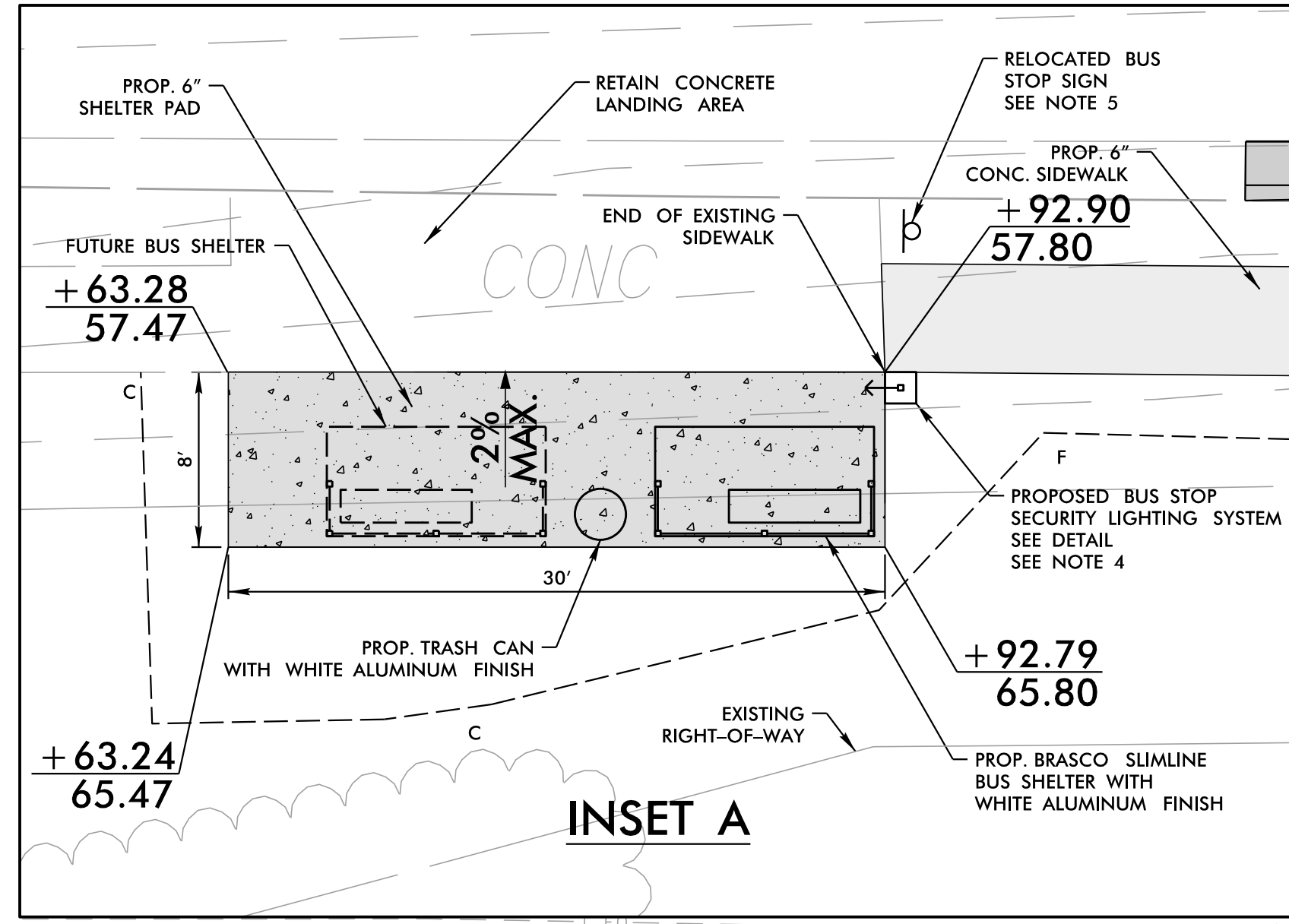
PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. 4
ROADWAY DESIGN ENGINEER <i>Benjamin Luman</i> 037438	HYDRAULICS ENGINEER <i>Forrest Brooks</i> 55416

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



NOTES:

- EXISTING CONDITIONS SURVEY PERFORMED BY DRMP.
- NO RIGHT-OF-WAY OR EASEMENTS HAVE BEEN ACQUIRED ON ADJACENT PROPERTIES. COMPLETE ALL WORK WITHIN EXISTING RIGHT-OF-WAY.
- CONTRACTOR TO SAWCUT SMOOTH EDGE ALONG PROPOSED CURB & GUTTER LOCATIONS. SAWCUT SHOULD BE FULL DEPTH OF ASPHALT.
- BUS STOP SECURITY LIGHTING SYSTEM ACTIVATION BUTTON IS TO FACE WEST TOWARD THE PROPOSED SHELTER PAD. PUSH BUTTON TO BE MAXIMUM 10" FROM EDGE OF SHELTER PAD. MOUNT SIGN 84" ABOVE SIDEWALK, 2' MIN. & 8' MAX. CLEAR FROM EDGE OF PAVEMENT TO EDGE OF SIGN.



BEGIN PROJECT
-L- STA. 15 + 63.24



- PROPOSED CONCRETE SIDEWALK
- PROPOSED 6" SHELTER PAD WITH 6" ABC & WIRE FABRIC
- PROPOSED CONCRETE CURB & GUTTER

FALCONBRIDGE OFFICES OWNERS ASSOCIATION INC
PID 142610
DB 222 - 265
PB 135 - 46

M M FOWLER INC
PID 142615
DB 8157 - 856
PB 127 - 115

-L-
PI Sta 17+00.43
Δ = 5' 36" 37.8" (LT)
D = 116' 23.7"
L = 440.65'
T = 220.50'
R = 4,500.00'

MATCHLINE -L- 17 + 00
SEE PLAN SHEET 5

REVISIONS

1/23/2025
User: eolspough

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 RALEIGH, NC 27609
 (919) 872-5115
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 www.drmp.com

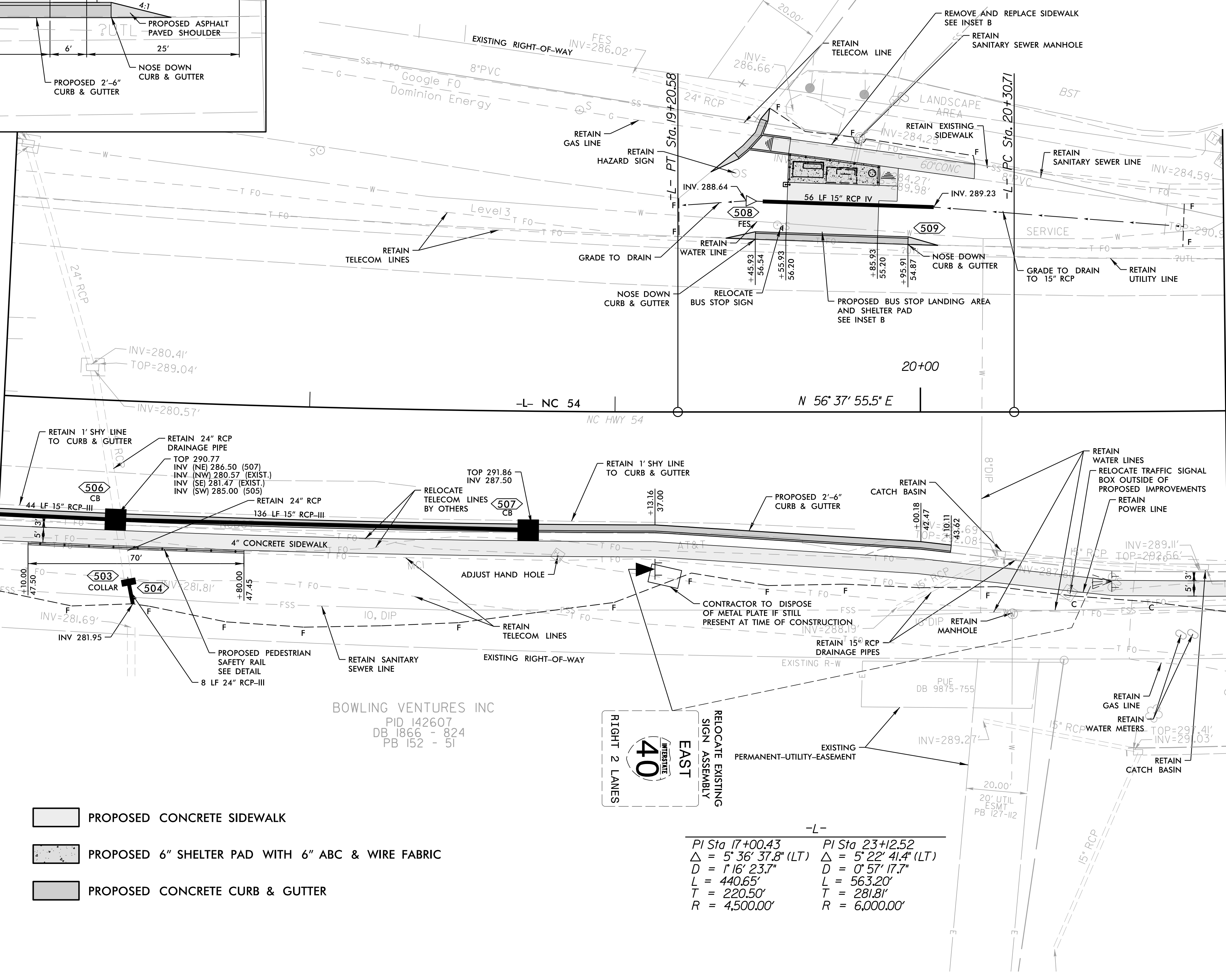
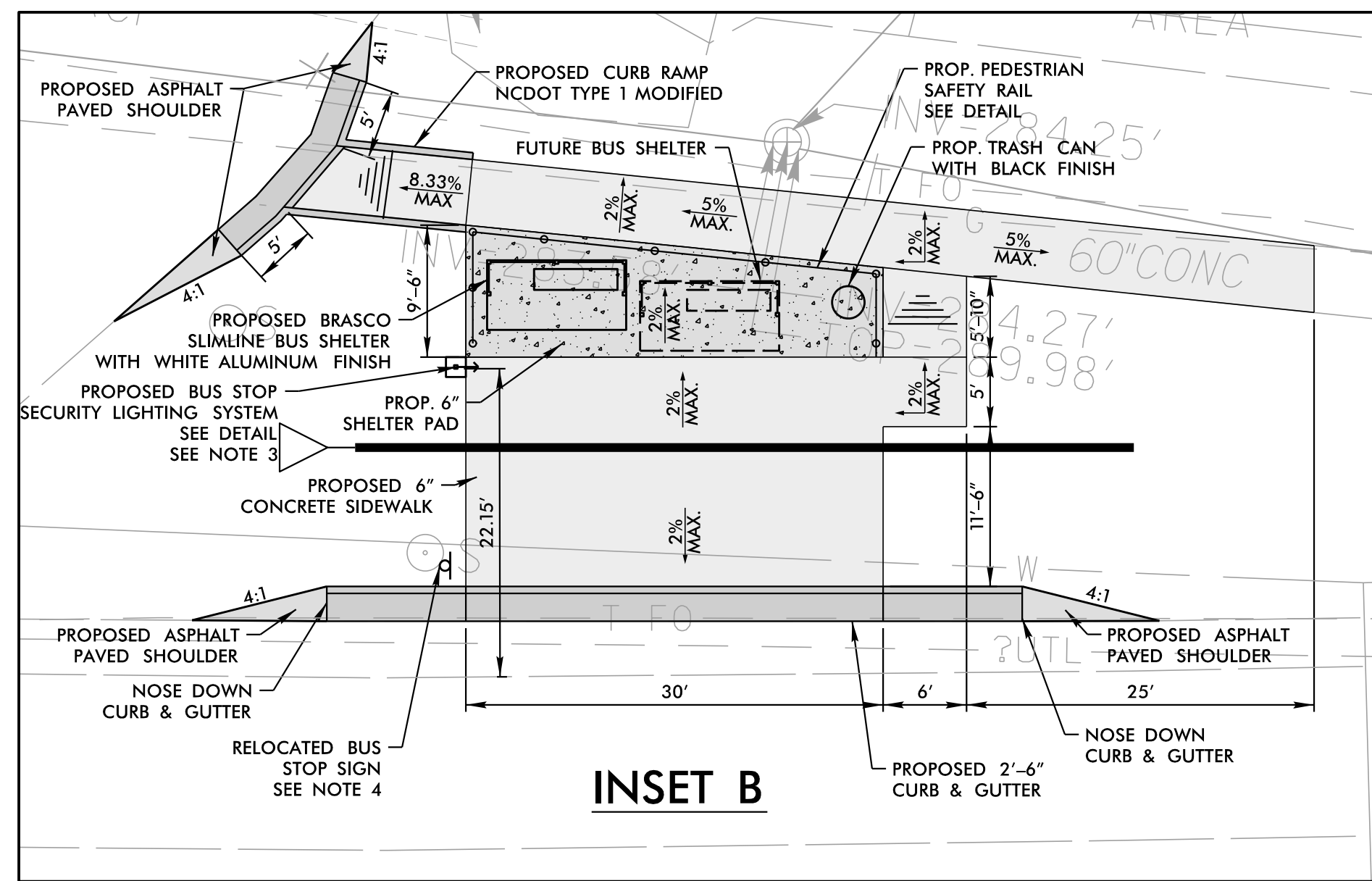
PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. 5
ROADWAY DESIGN ENGINEER <i>Benjamin Lennen</i> 037438	HYDRAULICS ENGINEER <i>Forrest Brooks</i> 55416

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

PLANS

INSET B

- NOTES:
- EXISTING CONDITIONS SURVEY PERFORMED BY DRMP.
 - NO RIGHT-OF-WAY OR EASEMENTS HAVE BEEN ACQUIRED ON ADJACENT PROPERTIES. COMPLETE ALL WORK WITHIN EXISTING RIGHT-OF-WAY.
 - BUS STOP SECURITY LIGHTING SYSTEM ACTIVATION BUTTON IS TO FACE EAST TOWARD THE PROPOSED SHELTER PAD. PUSH BUTTON TO BE MAXIMUM 10" FROM EDGE OF SHELTER PAD. MOUNT SIGN 84" ABOVE SIDEWALK. 2' MIN. & 8' MAX. CLEAR FROM EDGE OF PAVEMENT TO EDGE OF SIGN.



MATCHLINE -L- 17+00
SEE PLAN SHEET 4

MATCHLINE -L- 21+00
SEE PLAN SHEET 6

- PROPOSED CONCRETE SIDEWALK
- PROPOSED 6" SHELTER PAD WITH 6" ABC & WIRE FABRIC
- PROPOSED CONCRETE CURB & GUTTER



-L-

PI Sta 17+00.43	PI Sta 23+12.52
$\Delta = 5^{\circ} 36' 37.8''$ (LT)	$\Delta = 5^{\circ} 22' 41.4''$ (LT)
$D = 1^{\circ} 16' 23.7''$	$D = 0^{\circ} 57' 17.7''$
$L = 440.65'$	$L = 563.20'$
$T = 220.50'$	$T = 281.81'$
$R = 4,500.00'$	$R = 6,000.00'$

REVISIONS

1/23/2025
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 User: eol.sp.ugh

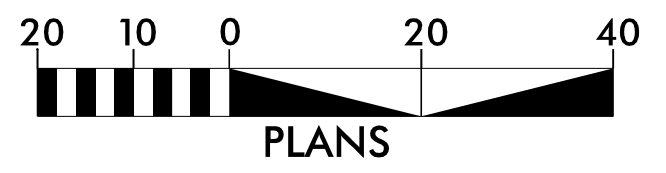


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(919) 872-5115

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PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
Signed by: <i>Benjamin Linnon</i> 037438	Signed by: <i>Forrest Brooks</i> 55416

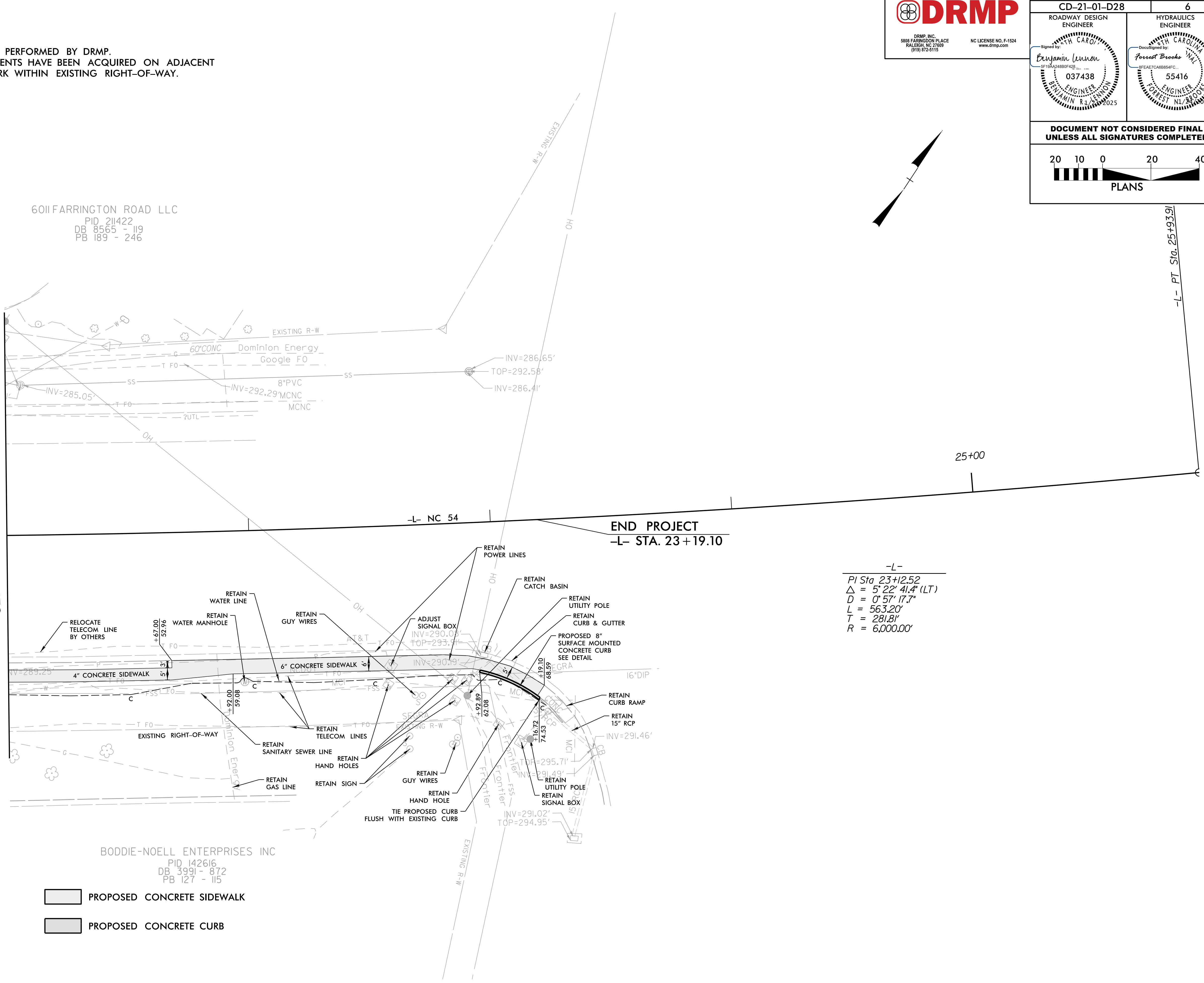
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



- NOTES:
- EXISTING CONDITIONS SURVEY PERFORMED BY DRMP.
 - NO RIGHT-OF-WAY OR EASEMENTS HAVE BEEN ACQUIRED ON ADJACENT PROPERTIES. COMPLETE ALL WORK WITHIN EXISTING RIGHT-OF-WAY.

6011 FARRINGTON ROAD LLC
PID 211422
DB 8565 - 119
PB 189 - 246

MATCHLINE -L- 21+00
SEE PLAN SHEET 5



-L- NC 54
END PROJECT
-L- STA. 23+19.10

-L-
 PI Sta 23+12.52
 $\Delta = 5' 22'' 41.4'' (LT)$
 $D = 0' 57'' 17.7''$
 $L = 563.20'$
 $T = 281.81'$
 $R = 6,000.00'$

BODDIE-NOELL ENTERPRISES INC
PID 142616
DB 3991 - 872
PB 127 - 115

- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE CURB

REVISIONS

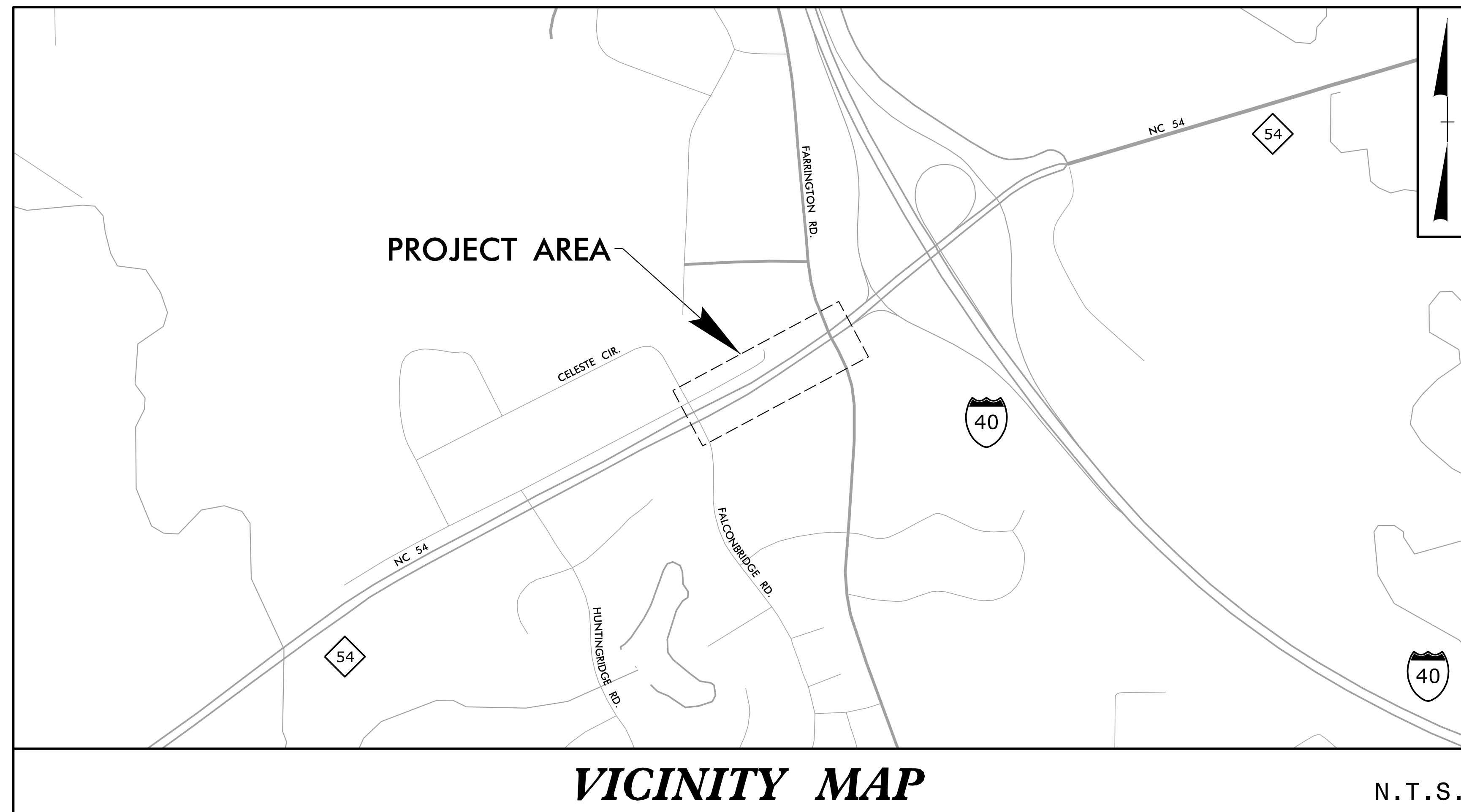
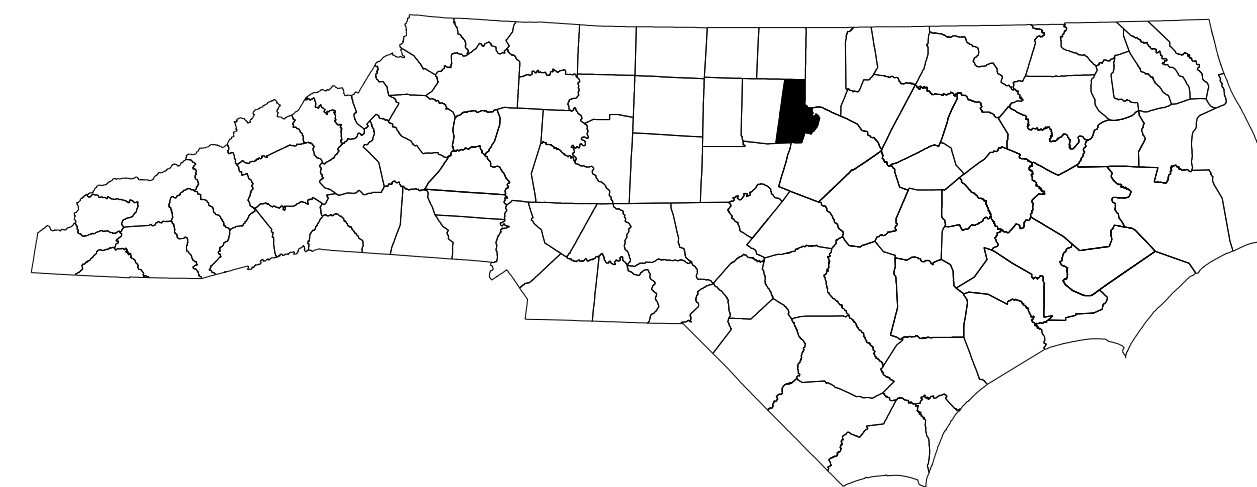
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User: eolispough

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

DURHAM COUNTY

NC 54 & FALCONBRIDGE ROAD



VICINITY MAP

N.T.S.

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-2	ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-3A-3B	GENERAL NOTES
TMP-4	TRANSPORTATION MANAGEMENT STRATEGIES AND PHASING PLAN
TMP-5-7	PHASE I - CONSTRUCTION
TMP-8-12	PHASE II - CONSTRUCTION

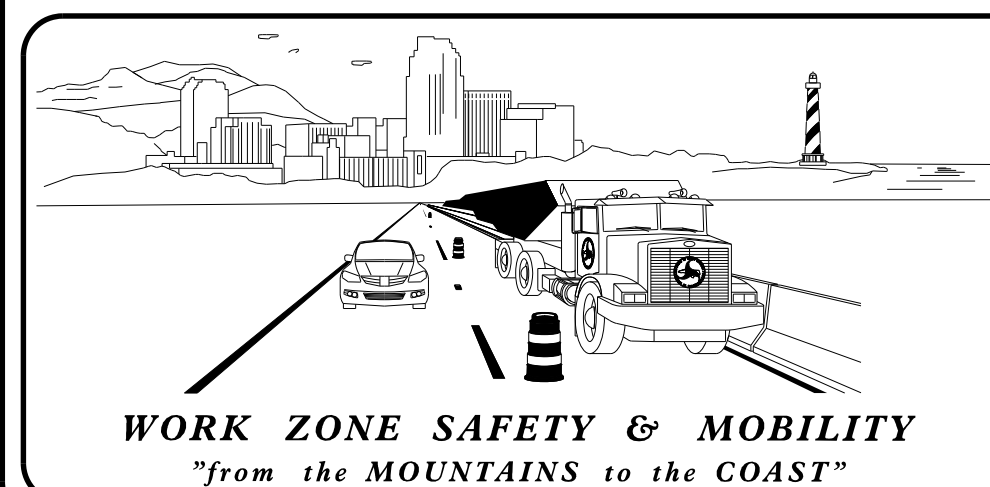
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TMP-1

CD-21-01-D28

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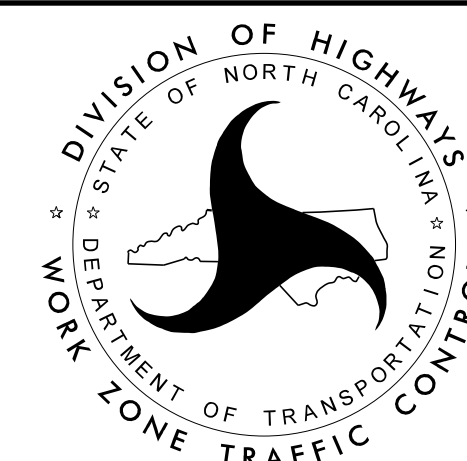
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PLANS PREPARED BY:

ZACHARY M. ESPOSITO, PE, TCDS
PROJECT ENGINEER

ERIC H. ALSPAUGH
PROJECT DESIGN ENGINEER



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5808 FARMINGTON PLACE
RALEIGH, NC 27609
(919) 872-5115

NC LICENSE NO. F-1524
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APPROVED *Zachary M. Esposito*

DATE: 1/23/2025

SEAL



1/23/2025
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user: esalpaugh

PROJ. REFERENCE NO. CD-21-01-D28	SHEET NO. TMP-2
PLANS PREPARED BY: DRMP DRMP, INC. 5808 FARMINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F1524 (919) 872-5115	

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 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 ACCESS
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
1165.01	TRUCK MOUNTED ATTENUATOR
1180.01	SKINNY - DRUMS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES

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

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

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

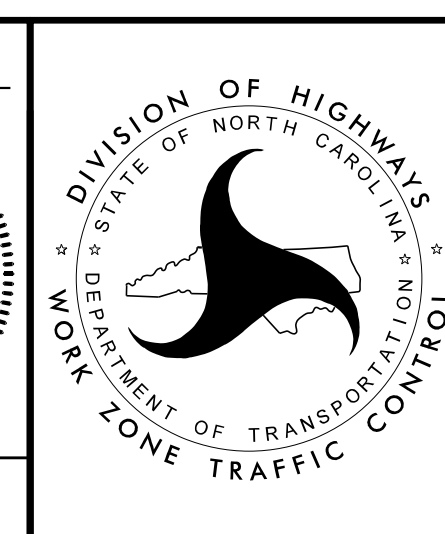
PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

APPROVED
 DATE: 1/23/2025

SEAL

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



**ROADWAY STANDARD
DRAWINGS & LEGEND**

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
NC 54	MONDAY-FRIDAY 6AM-9AM AND 4PM-6PM
FALCONBRIDGE ROAD	MONDAY-FRIDAY 6AM-9AM AND 4PM-6PM

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

ROAD NAME
NC 54
FALCONBRIDGE 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 6:00 A.M. DECEMBER 31st TO 6:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 6:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 6:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 6:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

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 6:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 6:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 6:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) 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

- D) 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.
- E) 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.
- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 10 FT OF AN OPEN TRAVEL LANE ON A DIVIDED FACILITY, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- G) 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.
- H) 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.
- I) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON NC 54 AND/OR FALCONBRIDGE ROAD.

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

PROJ. REFERENCE NO. CD-21-01-D28	SHEET NO. TMP-3A
PLANS PREPARED BY: DRMP <small>DRMP, INC. 8808 FARMINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F-1524 (919) 872-5115</small>	

APPROVED DATE: 1/23/2025 SEAL			<h2 style="margin: 0;">GENERAL NOTES</h2>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

GENERAL NOTES

PROJ. REFERENCE NO. CD-21-01-D28	SHEET NO. TMP-3B
<small>PLANS PREPARED BY:</small> DRMP	
DRMP, INC. 5808 FAIRMINGDON PLACE RALEIGH, NC 27609 NC LICENSE NO. F-1524 (919) 872-9115	

TRAFFIC PATTERN ALTERATIONS

L) NOTIFY THE ENGINEER THIRTY (30) 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) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

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

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

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

MISCELLANEOUS

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

T) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

APPROVED <small>Signed by: Zachary M. Espinoza 06470D76D488AE8...</small> DATE: 1/23/2025	SEAL 		<h2 style="margin: 0;">GENERAL NOTES</h2>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

PROJ. REFERENCE NO.	SHEET NO.
CD-21-01-D28	TMP-4
PLANS PREPARED BY: DRMP, INC. 8808 FARRINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F-1524 (919) 872-5115	

TRANSPORTATION MANAGEMENT STRATEGIES

THE FOLLOWING LISTED WORK ZONE STRATEGIES ARE RECOMMENDED FOR INCLUSION WITHIN THIS TRANSPORTATION MANAGEMENT PLAN (TMP).

- TRAFFIC MANAGEMENT STRATEGIES:
- LANE SHIFTS OR CLOSURES
 - WORK HOUR RESTRICTIONS FOR PEAK TRAVEL
 - SHOULDER CLOSURES
 - INTERMEDIATE CONTRACT TIMES / LIQUIDATED DAMAGES

GENERAL TRAFFIC CONTROL NOTES

BEFORE BEGINNING ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL INSTALL ALL ADVANCE WARNING SIGNS AND TRAFFIC CONTROL DEVICES (RSD 1101.01). FIELD VERIFY LOCATIONS WITH THE ENGINEER PRIOR TO INSTALLATION.

MAINTAIN VEHICULAR ACCESS TO ALL RESIDENCES, SCHOOLS, BUS STOPS, EMERGENCY SERVICES, AND BUSINESSES DURING THE LIFE OF THE CONTRACT, PRIOR TO INCORPORATION, OBTAIN WRITTEN APPROVAL FROM THE ENGINEER ON METHOD TO MAINTAIN ACCESS.

THE NC 54 IMPROVEMENTS WILL BE CONSTRUCTED DURING THE DAY USING TEMPORARY TRAFFIC PATTERNS. LONG TERM LANE AND SHOULDER CLOSURES WILL BE USED, AS NECESSARY, TO COMPLETE CONSTRUCTION. THE CONTRACTOR WILL BE REQUIRED TO COORDINATE WORK IMPACTING THE INTERSECTION VEHICULAR AND PEDESTRIAN TRAFFIC.

TRAFFIC CONTROL NOTE:
FOR THE DURATION OF CONSTRUCTION, ENSURE ALL DRIVEWAY ACCESS IS MAINTAINED.

PHASING PLAN

PHASE I

STEP 1: (SEE TMP 5 TO TMP 7)

INSTALL WORK ZONE ADVANCE WARNING SIGNS (RSD 1101.01).

USING LANE CLOSURES AS NEEDED, SHIFT TRAFFIC TO THE PHASE I TRAFFIC PATTERN. PHASE I TRAFFIC PATTERN ENTAILS CLOSING THE EASTBOUND OUTERMOST THROUGH AND RIGHT TURN LANE ALONG NC 54 FROM FALCONBRIDGE ROAD TO THE INTERSECTION OF NC 54 AT FARRINGTON ROAD. EASTBOUND NC 54 TRAFFIC WILL BE ALLOWED TO TAKE RIGHTS ONTO FARRINGTON ROAD FROM THE OUTERMOST THROUGH LANE FOR THE DURATION OF THIS PHASE.

ONCE SHIFTED, BEHIND DRUMS AND AWAY FROM TRAFFIC, START AND FINISH EASTBOUND NC 54 BUS STOP AND SIDEWALK IMPROVEMENTS. CONSTRUCTION SHALL BE COMPLETED ALONG THE STATIONS BELOW:

-L- STA. 15+63 +/- TO -L- STA. 23+20 +/- (SEE TMP-5 THRU TMP-7)

ICT NOTE:
CONTRACTOR SHALL COMPLETE ALL WORK REQUIRED OF PHASE I IN TWENTY ONE (21) CONSECUTIVE DAYS. SEE ICTS FOR MORE DETAILS.

PHASE II

STEP 1: (SEE TMP 8 TO TMP 12)

INSTALL WORK ZONE ADVANCE WARNING SIGNS (RSD 1101.01).

USING LANE CLOSURES AS NEEDED, SHIFT TRAFFIC TO THE PHASE II TRAFFIC PATTERN. PHASE II TRAFFIC PATTERN ENTAILS CLOSING THE WESTBOUND OUTERMOST RIGHT TURN LANE ALONG NC 54 FROM THE INTERSECTION OF NC 54 AT FARRINGTON ROAD TO 200' BEFORE CELESTE CIRCLE. WESTBOUND NC 54 TRAFFIC WILL BE ALLOWED TO TAKE RIGHTS ONTO CELESTE CIRCLE THROUGHOUT THE DURATION OF THIS PHASE.

ONCE SHIFTED, BEHIND DRUMS AND AWAY FROM TRAFFIC, START AND FINISH WESTBOUND NC 54 BUS STOP AND SIDEWALK IMPROVEMENTS. CONSTRUCTION SHALL BE COMPLETED ALONG THE STATIONS BELOW:

-L- STA. 19+31 +/- TO -L- STA. 20+18 +/- (SEE TMP-9)


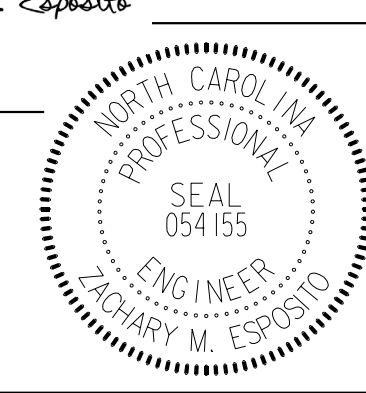
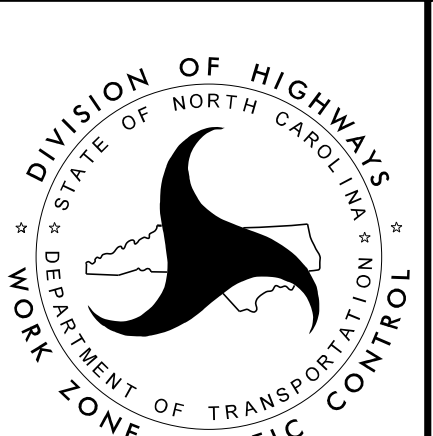
PHASE III

STEP 1:

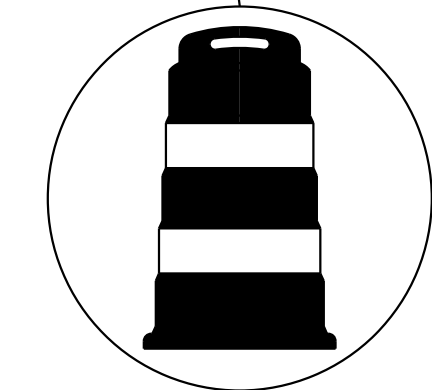
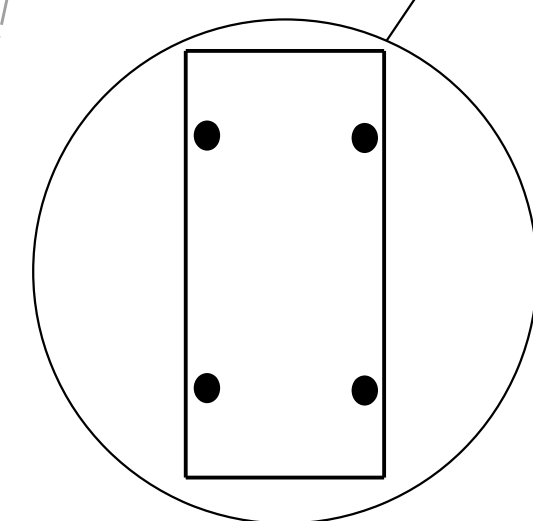
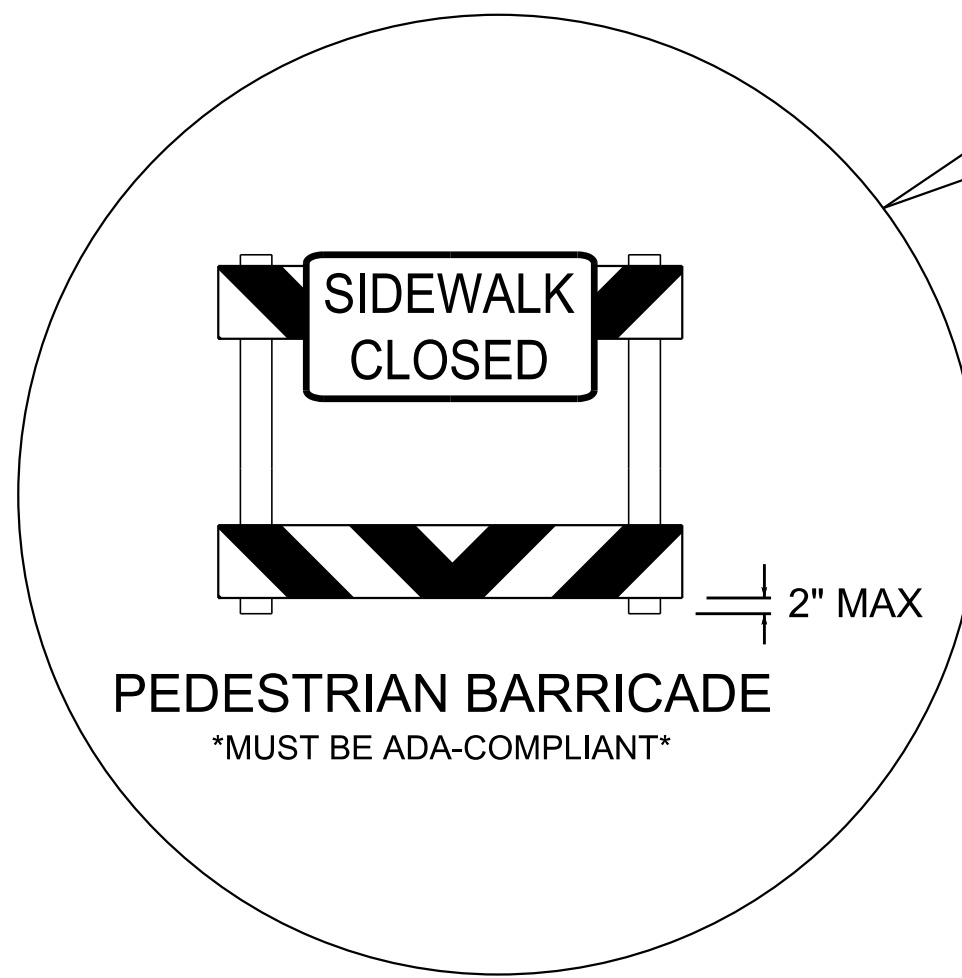
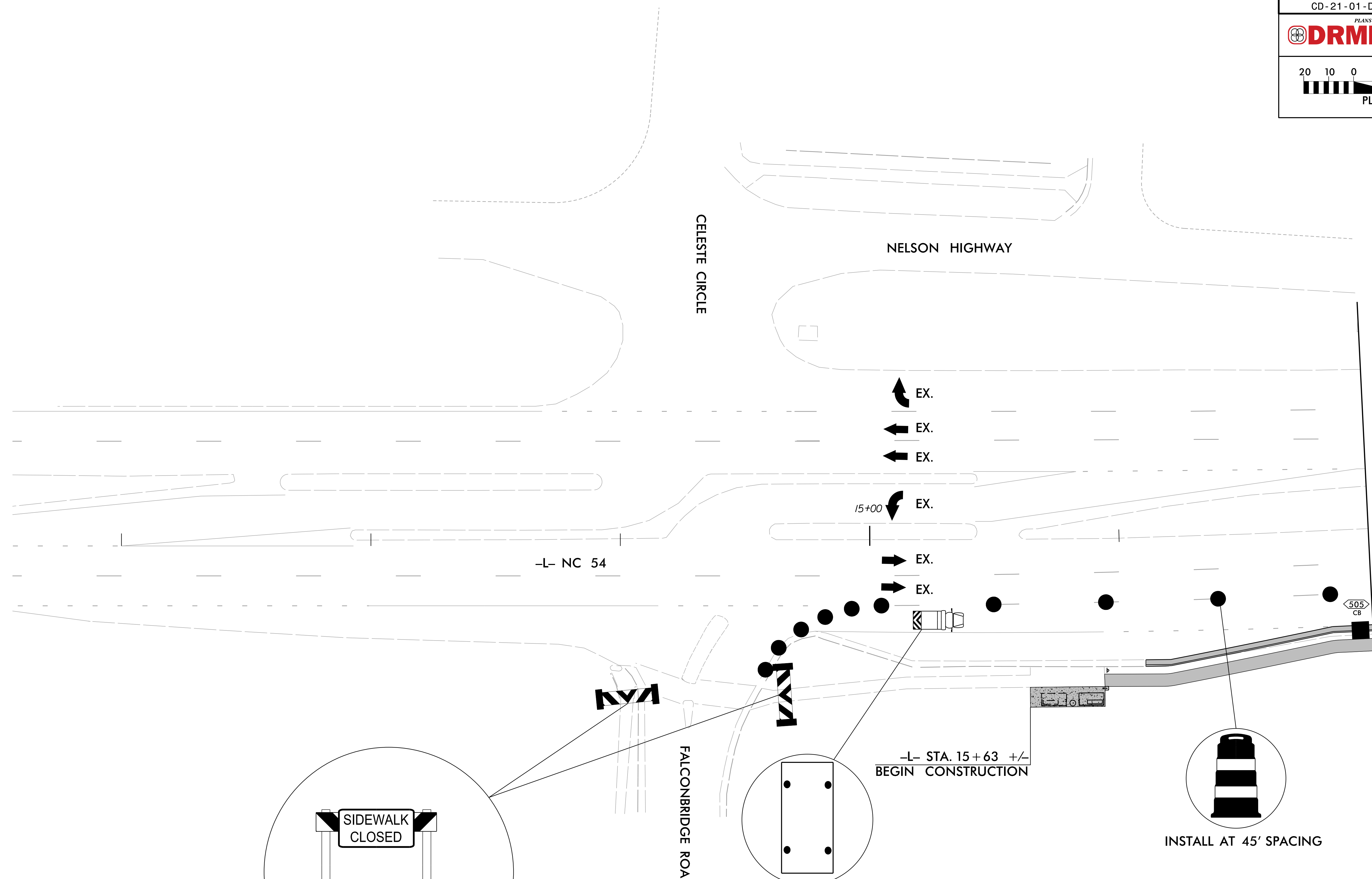
MAINTAIN NECESSARY WORK ZONE ADVANCE WARNING SIGNS (RSD 1101.01).

AWAY FROM TRAFFIC, USING LANE CLOSURES AS NEEDED, PLACE ANY REMAINING PAVEMENT MARKINGS AND MARKERS. SEE PAVEMENT MARKING PLAN FOR MORE DETAILS.

REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES AND ALLOW NORMAL TRAFFIC OPERATION.

APPROVED  DATE: 1/23/2025 SEAL			<h3>TRANSPORTATION MANAGEMENT STRATEGIES AND PHASING PLAN</h3>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

PROJ. REFERENCE NO. CD-21-01-D28	SHEET NO. TMP-5
PLANS PREPARED BY: DRMP DRMP, INC. 8808 FARMINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F1524 (919) 872-5115	
<p>PLANS</p>	





APPROVED *Zachary M. Esposito*
1/23/2025

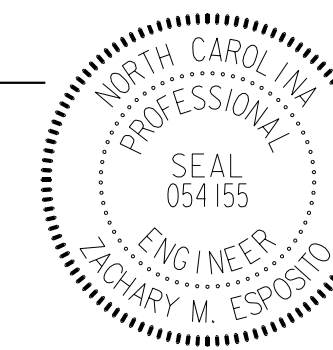

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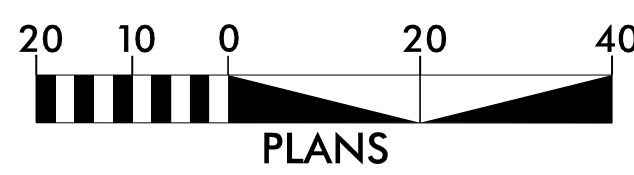
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PHASE I - CONSTRUCTION

PROJ. REFERENCE NO. CD-21-01-D28	SHEET NO. TMP-6
PLANS PREPARED BY:  DRMP <small>DRMP, INC. 8808 FARMINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F1524 (919) 872-5115</small>	
 PLANS	

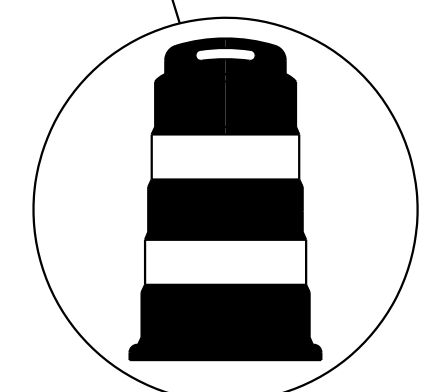
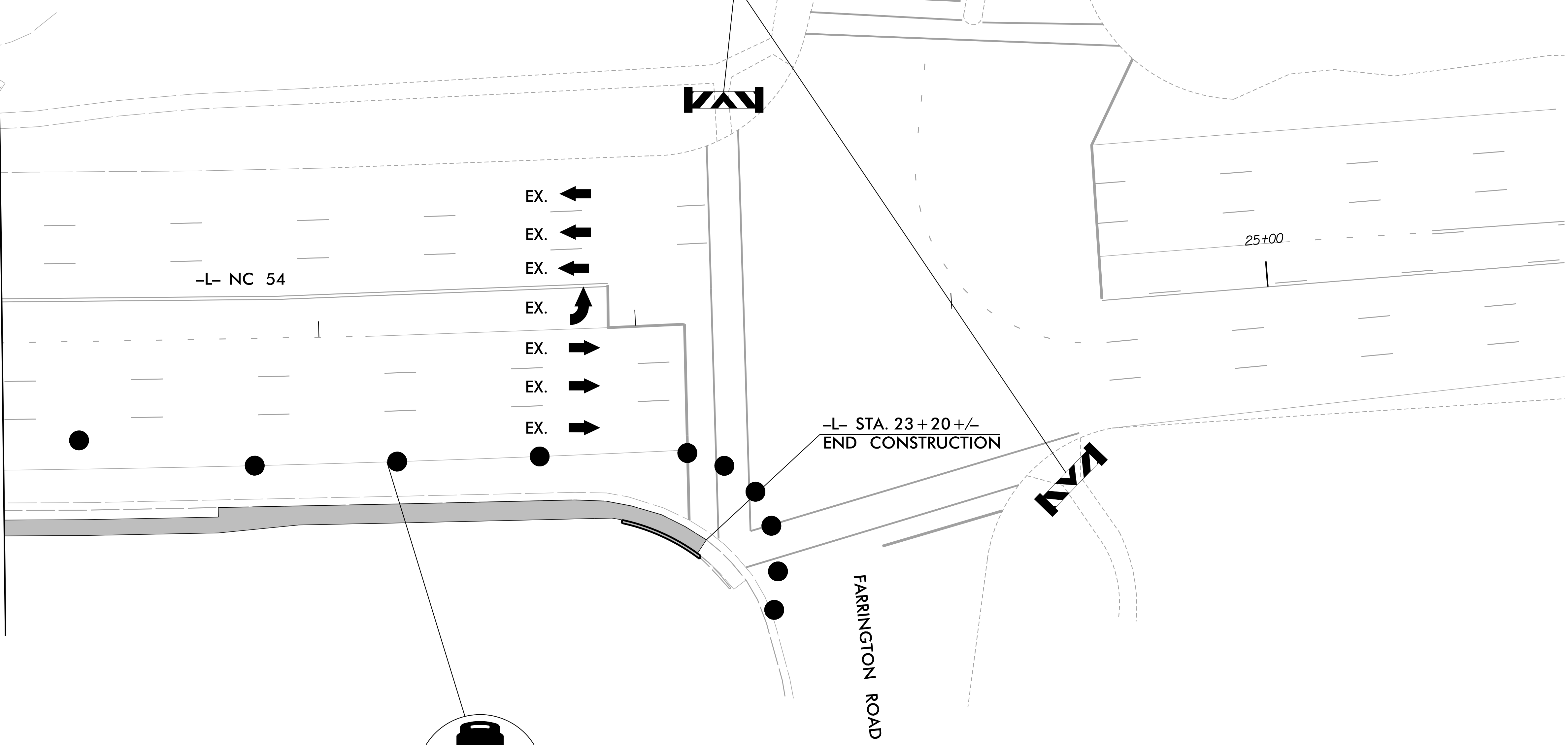


APPROVED Signed by: <i>Zachary M. Esposito</i> <small>0647DD76D48BAEB...</small> DATE: 1/23/2025 SEAL			PHASE I - CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			


PROJ. REFERENCE NO. CD-21-01-D28	SHEET NO. TMP-7
PLANS PREPARED BY:  DRMP <small>DRMP, INC. 8808 FARRINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F1524 (919) 872-5115</small>	
	



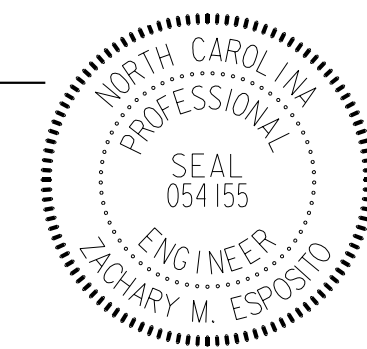
MATCHLINE -L- 21+00
SEE TMP-6



INSTALL AT 45' SPACING

APPROVED 
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 DATE: 1/23/2025

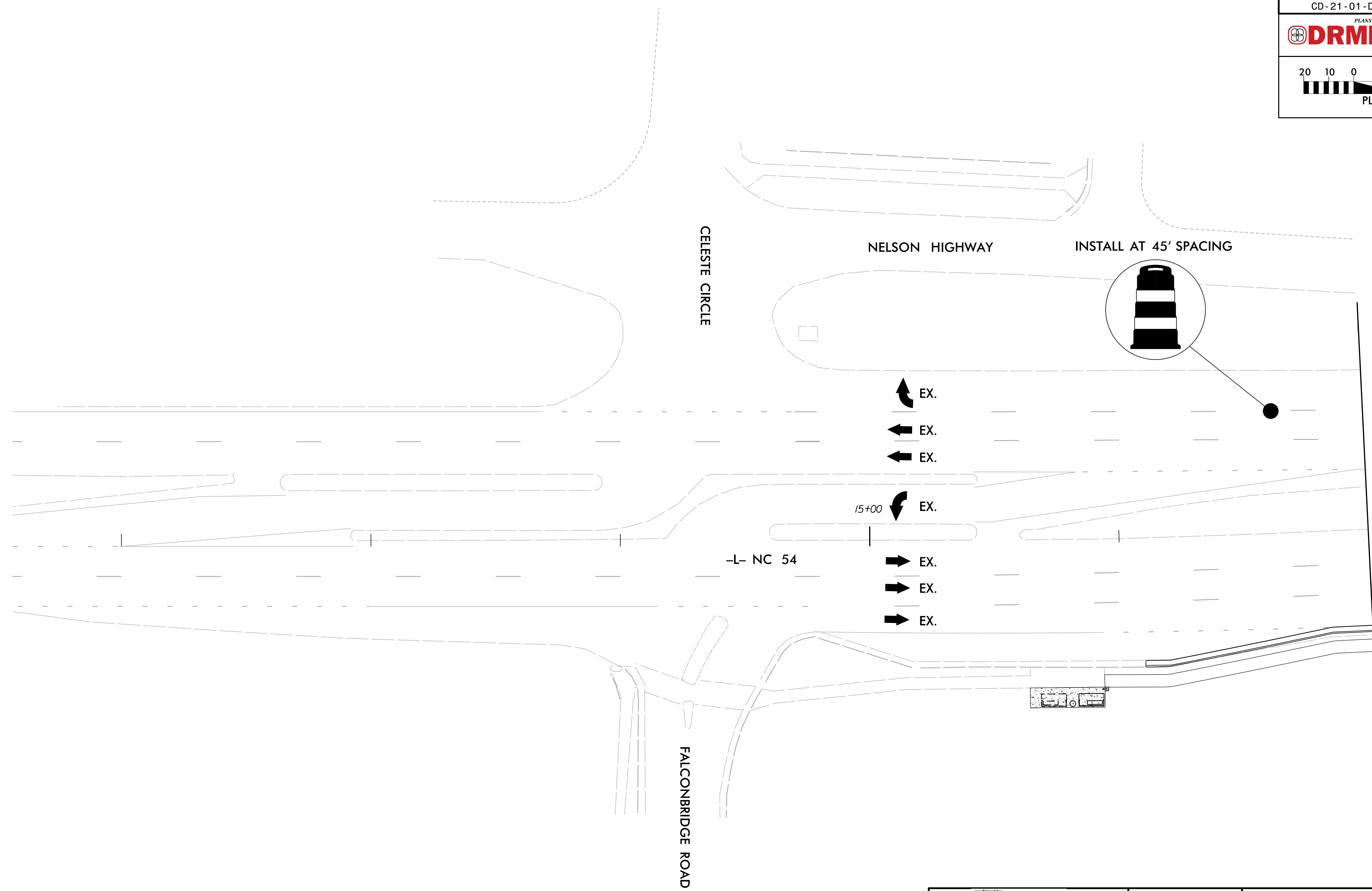
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PHASE I - CONSTRUCTION

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

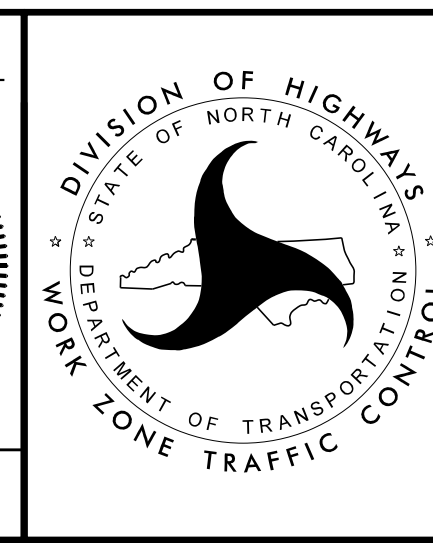
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PLANS PREPARED BY: DRMP DRMP, INC. 8808 FARMINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F1524 (919) 872-5115	
<p>PLANS</p>	



APPROVED *Zachary M. Esposito*
0647DD76D48BAE8
 DATE: 1/23/2025

SEAL

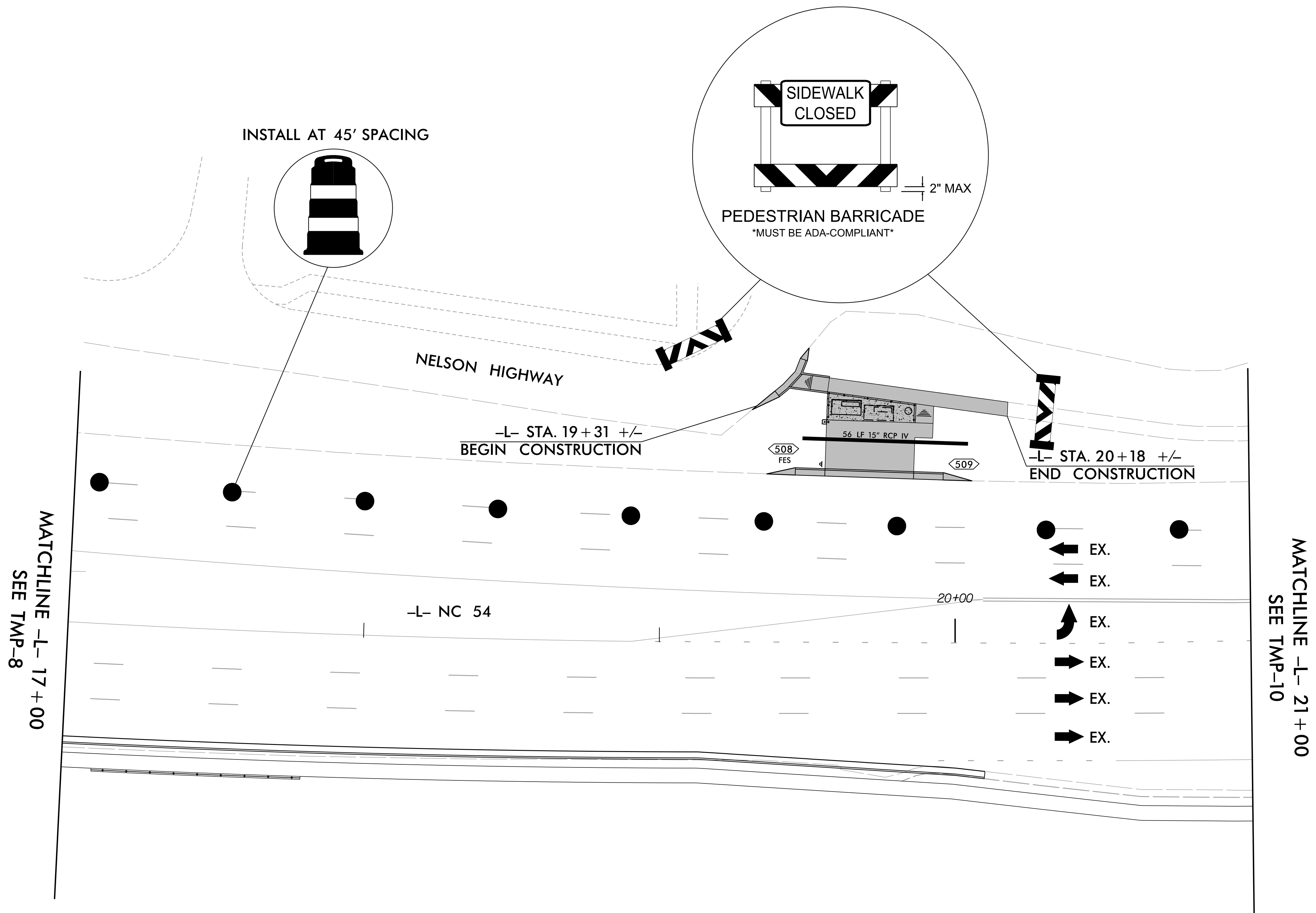
SEAL
 NORTH CAROLINA
 PROFESSIONAL
 ENGINEER
 054155
 ZACHARY M. ESPOSITO



**PHASE II -
CONSTRUCTION**

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

PROJ. REFERENCE NO. CD-21-01-D28	SHEET NO. TMP-9
PLANS PREPARED BY: DRMP DRMP, INC. 5808 FARMINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F1524 (919) 872-5115	
<p>PLANS</p>	



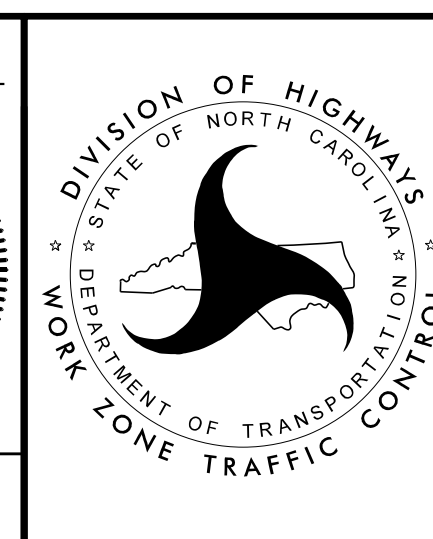
MATCHLINE -L- 17+00
SEE TMP-8

MATCHLINE -L- 21+00
SEE TMP-10


APPROVED *Zachary M. Espino*
0647DD70D48BAEB...
 DATE: 1/23/2025

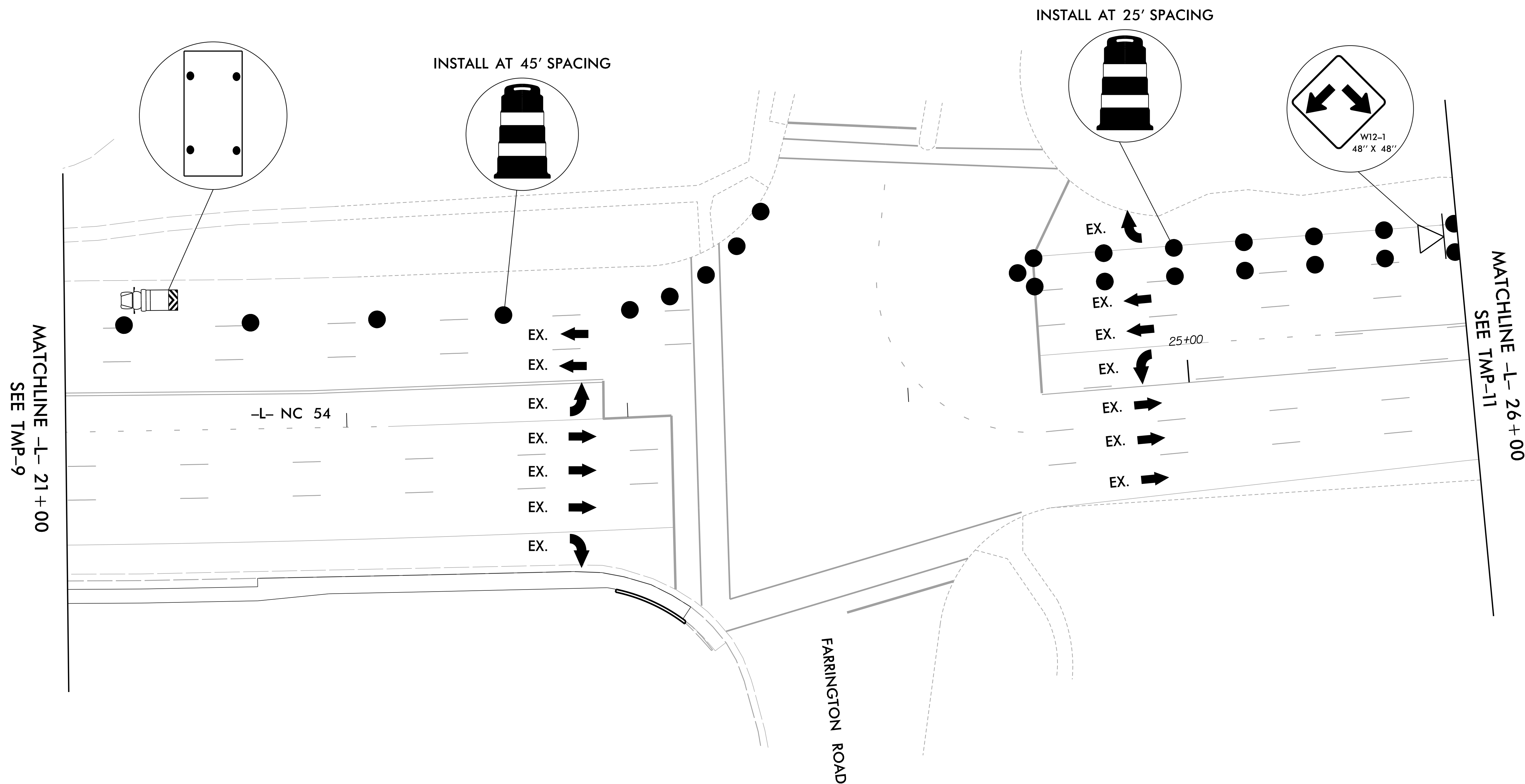
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**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

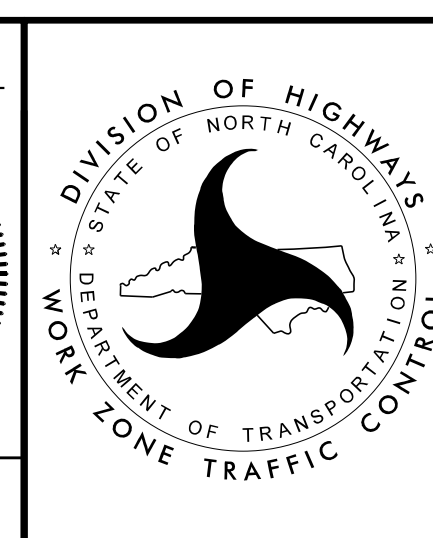
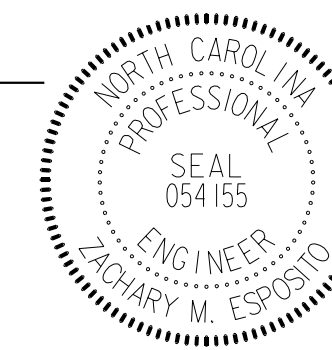


**PHASE II -
CONSTRUCTION**

PROJ. REFERENCE NO. CD-21-01-D28	SHEET NO. TMP-10
PLANS PREPARED BY: DRMP DRMP, INC. 5808 FARRINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F1524 (919) 872-5115	
 <p>PLANS</p>	



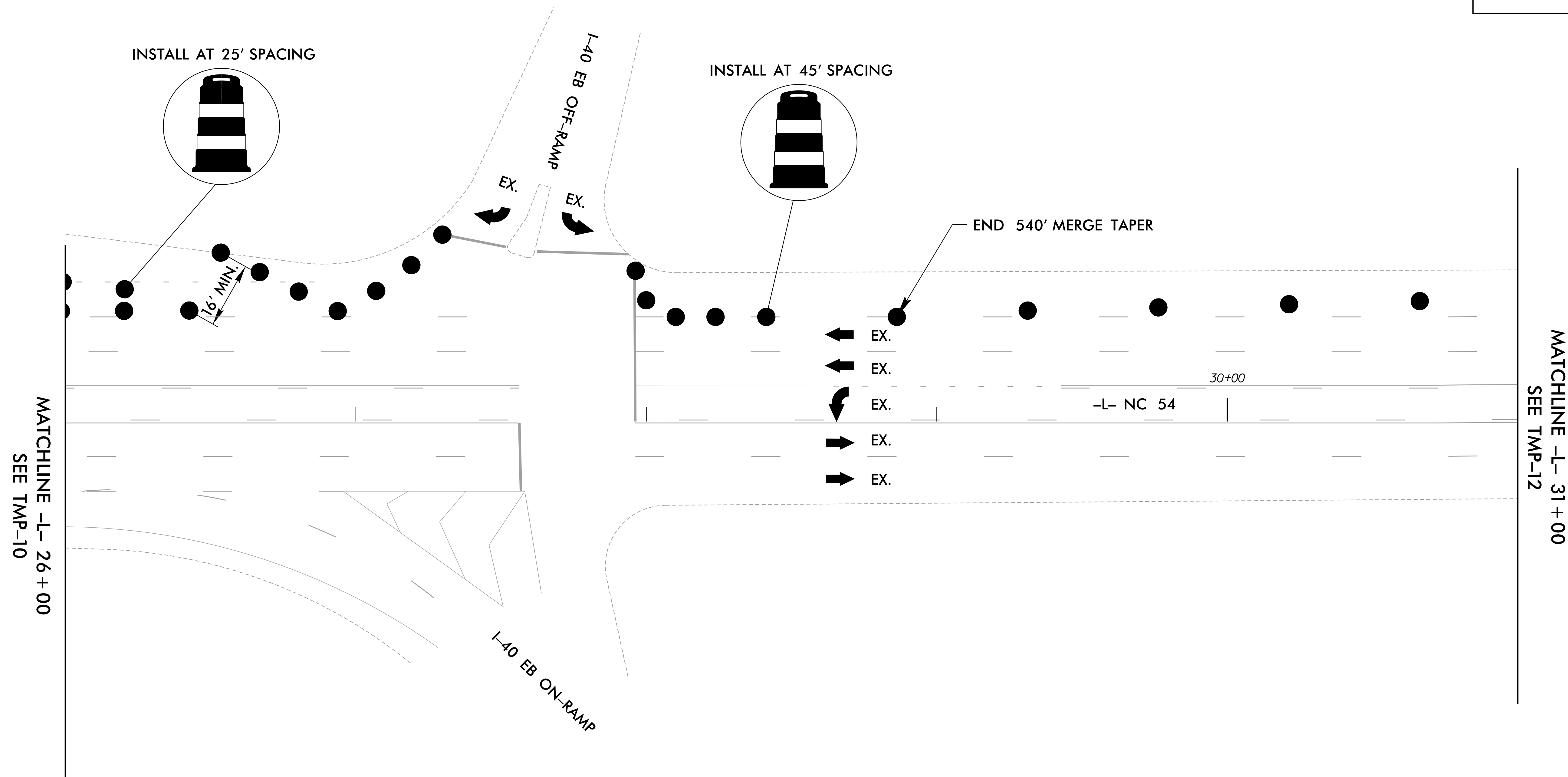
APPROVED *Zachary M. Espinoza*
0647DD76D48BAE8...
 DATE: 1/23/2025
 SEAL



**PHASE II -
CONSTRUCTION**

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

PROJ. REFERENCE NO. CD-21-01-D28	SHEET NO. TMP-11
PLANS PREPARED BY: DRMP DRMP, INC. 5808 FARMINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F1524 (919) 872-5115	
<p>PLANS</p>	



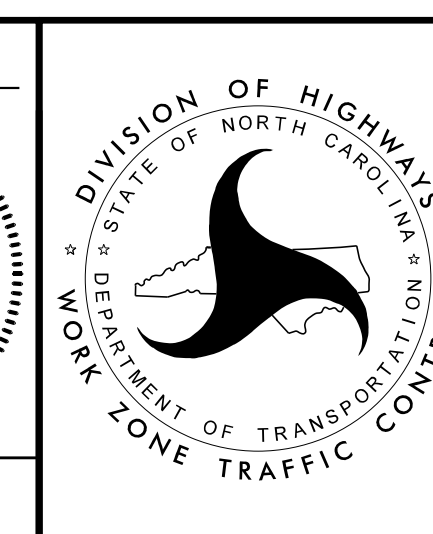
APPROVED *Zachary M. Esposto*
1/23/2025

DATE: 1/23/2025



SEAL

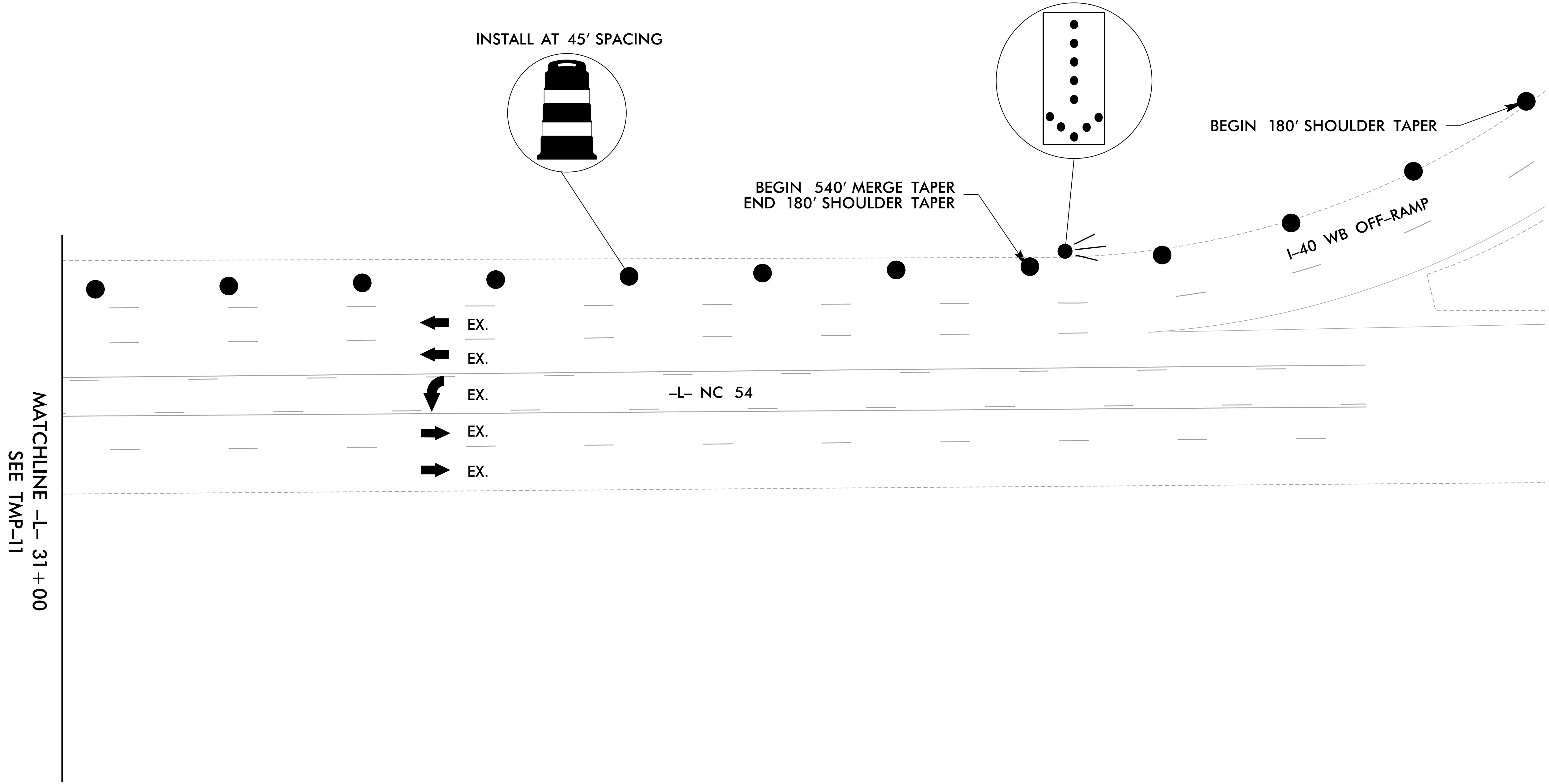
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 054155
ZACHARY M. ESPOSTO

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PHASE II - CONSTRUCTION

PROJ. REFERENCE NO. CD-21-01-D28	SHEET NO. TMP-12
PLANS PREPARED BY:  DRMP, INC. 5808 FARMINGTON PLACE RALEIGH, NC 27609 NC LICENSE NO. F1524 (919) 872-5115	
 PLANS	



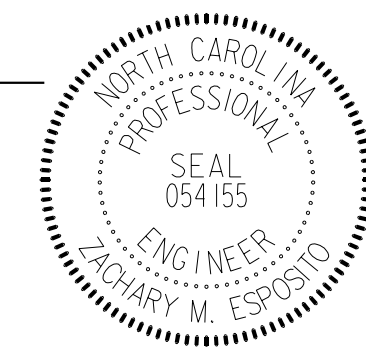
350' 350' 350'

RIGHT LANE CLOSED AHEAD W20-5 R 48" X 48"
 RIGHT LANE CLOSED W4-2R 48" X 48"
 RIGHT LANE CLOSED W20-5 R 48" X 48"

INSTALL ADVANCED WARNING SIGNS ALONG I-40 WESTBOUND OFF-RAMP AS SHOWN ABOVE. END INSTALLATION NEAR FLASHING ARROW BOARD.

APPROVED *Zachary M. Esposito*
 DATE: 1/23/2025

SEAL

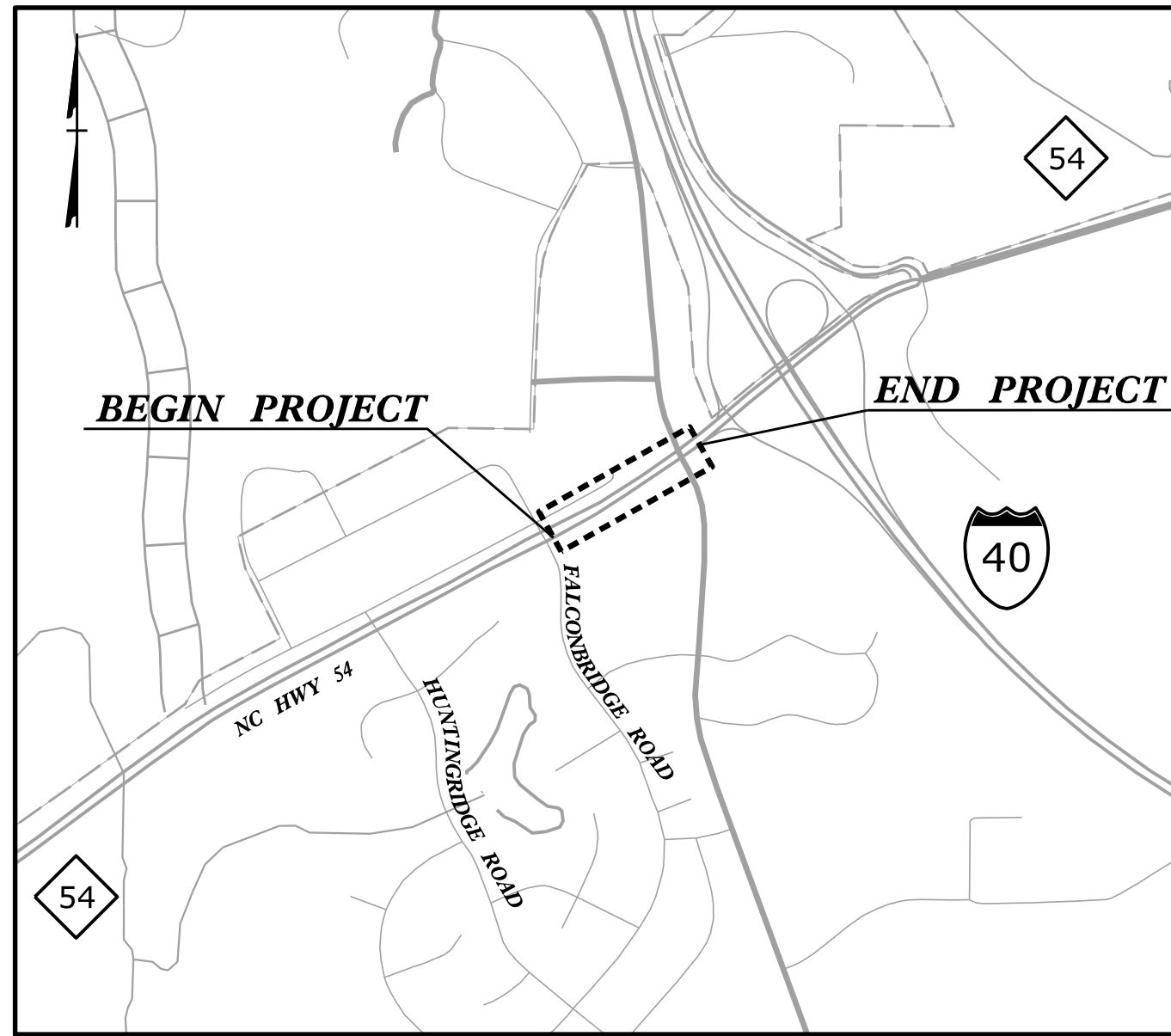


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PHASE II - CONSTRUCTION

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



VICINITY MAP N.T.S.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DURHAM COUNTY

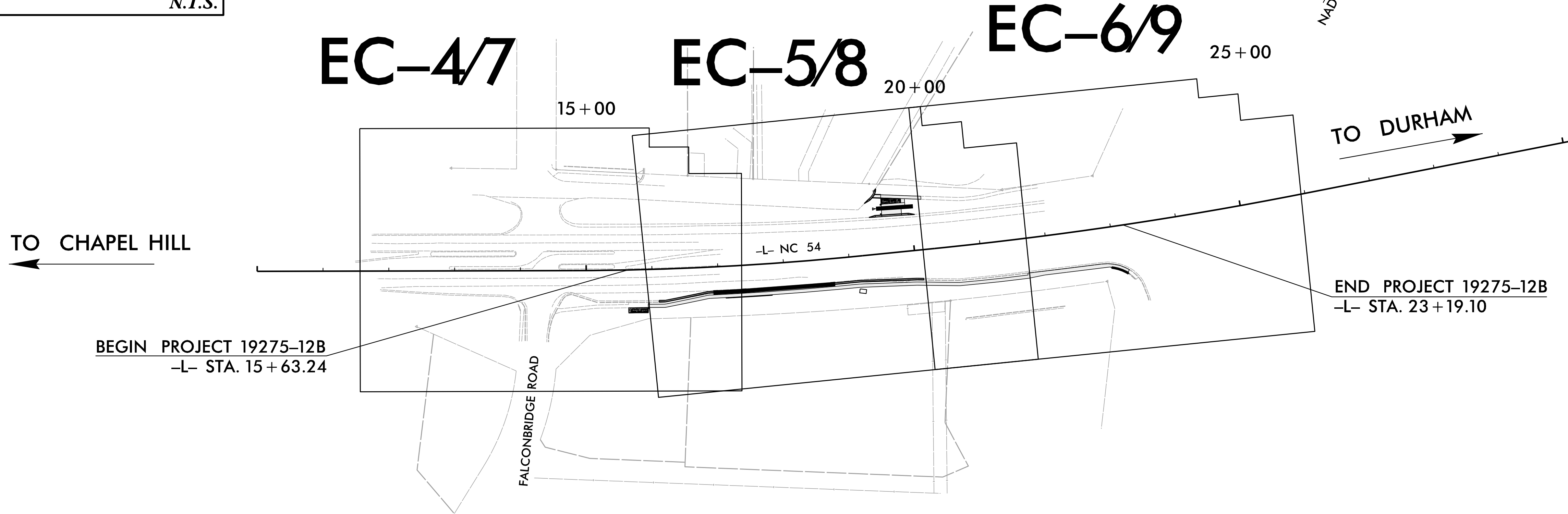
LOCATION: NC HWY 54 AT FALCONBRIDGE ROAD

TYPE OF WORK: GRADING, CURB & GUTTER, DRAINAGE, & SIDEWALK

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

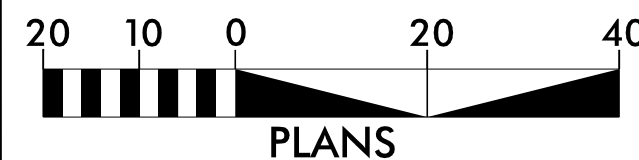
DISTURBED AREA
0.65 ACRES

PROJECT: CD-21-01-D28 (DRMP PROJ. 19275-12B)



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

GRAPHIC SCALES



DESIGN DATA

ADT 2019 = 46,000

V = 50 MPH

FUNC. CLASS = PRINCIPAL
ARTERIAL

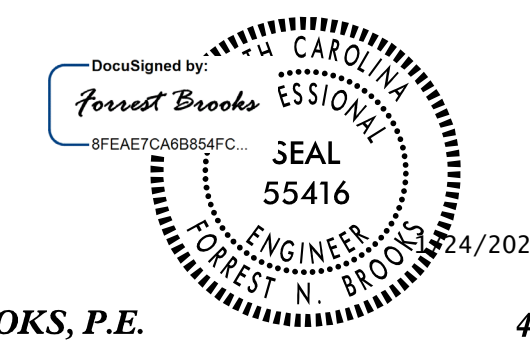
THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY
WITH THE REGULATIONS SET FORTH BY THE
NCG 010000 GENERAL STORMWATER CONSTRUCTION PERMIT
ISSUED BY THE NORTH
CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION
OF ENERGY, MINERAL, AND LAND RESOURCES

Prepared in the Office of:

DRMP, INC.
5808 Faringdon Place, Ste. 100, Raleigh NC, 27609
2024 STANDARD SPECIFICATIONS

Designed by:
ERIC ALSPAUGH

Reviewed by:
FORREST N. BROOKS, P.E.



NAME LEVEL III CERTIFICATION NO. 4039

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2024 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

- 1605.01 Temporary Silt Fence
- 1632.03 Rock Inlet Sediment Trap Type C
- 1633.01 Temporary Rock Silt Check Type A
- 1635.02 Rock Pipe Inlet Sediment Trap Type 3
- 1636.01 Wattle Check



PROJECT REFERENCE NO.	SHEET NO.
CD-21-01-D28	EC-2
RW SHEET NO.	
FORREST N. BROOKS, P.E. LEVEL III NAME	
4039	LEVEL III CERTIFICATION NO.
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
GRAPHIC SCALES 	

- ### GENERAL NOTES
- THESE EROSION CONTROL PLANS ARE ONLY FOR DISTURBED AREAS DELINEATED ON THE PLANS. EROSION CONTROL PLANS FOR ANY STOCKPILE LOCATIONS, MATERIAL LAY-DOWN AREAS, STAGING AREAS, DIRT OR WASTE PILE, BORROW AREAS, CONTRACTOR OFFICE TRAILER, OR ANY OTHER DISTURBED AREA NOT SHOWN ON THESE PLANS ARE THE RESPONSIBILITY OF THE THE CONTRACTOR. NO SOIL STOCKPILE SHOULD BE WITHIN 50' OF ANY DRAINAGE STRUCTURE OR WATERCOURSE. OFFSITE BORROW OR WASTE SHOULD BE FROM A PERMITTED SITE.
 - GROUND COVER DEADLINES AND STABILIZATION REQUIREMENTS SHALL BE ESTABLISHED IN ACCORDANCE WITH THE STABILIZATION TIMEFRAMES SHOWN ON THIS SHEET. ALL EXPOSED SLOPES AND OTHER DISTURBED AREAS SHALL BE VEGETATED AS NOTED BELOW. THE VEGETATION REQUIREMENTS ALSO APPLY TO NEWLY CONSTRUCTED EROSION CONTROL MEASURES (TEMPORARY DIVERSIONS, PERIMETER DITCHES, ETC.)
 - ALL SEDIMENT LADEN RUNOFF SHALL BE DIRECTED TO AN APPROVED EROSION CONTROL DEVICE. THE CONTRACTOR SHALL USE ASPHALT BERMS OR OTHER METHODS TO ENSURE SEDIMENT LADEN RUNOFF DOES NOT ENTER OR CROSS ROADS AND DRIVEWAYS.
 - ALL CONSTRUCTION TRAFFIC LEAVING THE SITE AND ENTERING ANY PUBLIC ROADWAY MUST UTILIZE A GRAVEL CONSTRUCTION ENTRANCE. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF CONSTRUCTION ENTRANCES WITH THE TRAFFIC MANAGEMENT PLANS.
 - MAINTAIN ALL EROSION CONTROL DEVICES AS PER THE PLANS AND SPECIFICATIONS FOR THE DURATION OF CONSTRUCTION. INSPECT ALL DEVICES AT THE END OF EACH DAY AND AFTER ALL RAINFALL EVENTS.
 - THESE EROSION AND SEDIMENT CONTROL PLANS SHOW DEVICES REQUIRED FOR THE CLEARING & GRUBBING PHASE AND FINAL GRADING. IT IS THE CONTRACTOR'S RESPONSIBILITY FOR TRANSITION BETWEEN THE PHASES AND MAKING SURE ALL SEDIMENT LADEN RUNOFF IS TREATED BEFORE LEAVING THE LIMITS OF DISTURBANCE. THERE MAY BE INTERMEDIATE GRADES IN WHICH ADDITIONAL TEMPORARY DIVERSIONS, NOT SHOWN ON THE PLANS, ARE REQUIRED TO DIRECT RUNOFF TO BASINS OR ADDITIONAL SILT FENCE TO KEEP SEDIMENT ON SITE.
 - MEASURES AND STORMWATER DISCHARGE OUTFALLS MUST BE INSPECTED AT LEAST ONCE PER 7 CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT GREATER THAN 0.5 INCH PER 24 HOUR PERIOD. ADDITIONALLY, GROUND STABILIZATION MUST BE RECORDED AFTER EACH PHASE OF GRADING. A RECORD COPY OF EACH INSPECTION AND MONITORING REPORT MUST BE KEPT ON SITE.
 - CONCRETE TRUCK WASHOUT SLURRY GENERATED FOR THIS PROJECT MUST STAY ON THIS PROJECT OR ANOTHER AREA MUST BE DESIGNATED AS A CONCRETE WASHOUT AREA. RECOMMENDED AREA FOR CONCRETE WASHOUT MUST BE LOCATED WITHIN LIMITS OF DISTURBANCE AS INDICATED ON THE PLANS AND BE AT LEAST 50' AWAY FROM STORM DRAIN INLETS AND SURFACE WATERS.
 - IF THE CONTRACTOR CHOOSES TO PROVIDE A CONSTRUCTION STAGING AREA OUTSIDE OF THE PROJECT LIMITS, THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR OBTAINING THE NECESSARY PERMITS AND EASEMENTS.
 - SELF INSPECTION MUST BE CONDUCTED AND DOCUMENTED IN THE INSPECTION & MONITORING FORM PROVIDED BY NCDEQ PER STORMWATER GENERAL PERMIT NCG 010000. MEASURES MUST BE INSPECTED AT LEAST ONCE PER 7 CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT GREATER THAN 0.5 INCH PER 24 HOUR PERIOD. ADDITIONALLY, GROUND STABILIZATION MUST BE RECORDED AFTER EACH PHASE OF GRADING. A COPY OF THE NPDES PERMIT WITH A MINIMUM OF 30 DAYS OF SELF-INSPECTION REPORTS MUST BE KEPT ON SITE UNTIL PROJECT CLOSURE BY THE NCDEQ RALEIGH REGIONAL OFFICE. THE SELF INSPECTION FORM CAN BE FOUND AT: <https://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms>

PERMANENT SEEDING SCHEDULE (EAST)

SEEDING MIXTURE RATE

MARCH 1ST – AUGUST 31ST		SEPTEMBER 1ST – FEBRUARY 28	
LB/ACRE	TYPE	LB/ACRE	TYPE
50	TALL FESCUE	50	TALL FESCUE
10	CENTPEDE	10	CENTPEDE
25	BERMUDAGRASS (HULLED)	35	BERMUDAGRASS (UNHULLED)

ON CUT AND FILL SLOPES 2:1 OR STEEPER CENTPEDE SHALL BE APPLIED AT THE RATE OF 5 LBS/ACRE AND ADD 20 LBS/ACRE OF SERICEA LESPEDEZA FROM JANUARY 1ST TO DECEMBER 31ST

FERTILIZER TOP DRESSING

FERTILIZER USED FOR TOPDRESSING ON ALL ROADWAY AREAS EXCEPT SLOPES 2:1 AND STEEPER SHALL BE 10-20-20 GRADE AND SHALL BE APPLIED AT THE RATE OF 500 LBS/ACRE. A DIFFERENT ANALYSIS OF FERTILIZER MAY BE USED PROVIDED THE 1-2-2 RATIO IS MAINTAINED AND THE RATE OF APPLICATION ADJUSTED TO PROVIDE THE SAME AMOUNT OF PLANT FOOD AS 10-20-20 ANALYSIS AND AS DIRECTED.

FERTILIZER USED FOR TOPDRESSING ON SLOPES 2:1 AND STEEPER AND WASTE AND BORROW AREAS SHALL BE 16-8-8 GRADE AND SHALL BE APPLIED AT THE RATE OF 500 LBS/ACRE. A DIFFERENT ANALYSIS OF FERTILIZER MAY BE USED PROVIDED THE 2-1-1 RATIO IS MAINTAINED AND RATE OF APPLICATION ADJUSTED TO PROVIDE THE SAME AMOUNT OF PLANT FOOD AS 16-8-8 ANALYSIS AND AS DIRECTED.

MULCHING

APPLY 2 TONS/ACRE GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ACHOR STRAW BY TACKING WITH ASPHALT AT A RATE OF 400 GALLONS OF ASPHALT PER ACRE.

MAINTENANCE

REFERTILIZE IN THE SECOND YEAR UNLESS GROWTH IS FULLY ADEQUATE. MAY BE MOWED ONCE OR TWICE A YEAR, BUT MOWING IS NOT NECESSARY. THE MINIMUM MOWING HEIGHT SHALL BE 4". RESEED, FERTILIZE, AND MULCH DAMAGED AREAS IMMEDIATELY.

SEEDBED PREPARATION

SEEDBED PREPARATION SHALL BE IN ACCORDANCE WITH NCDOT 2018 STANDARDS & SPECIFICATIONS SECTION 1620-3.

BUFFER NOTES

THE FERTILIZER RATIO WITHIN 100 FT. OF ANY EXISTING STREAM SHALL BE ½ OF THE TYPICALLY REQUIRED AMOUNT.

EROSION CONTROL DEVICE LEGEND

Description	Std. #	Symbol
TEMPORARY SILT FENCE	NCDOT-1605.01	
ROCK INLET SEDIMENT TRAP	NCDOT-1632.03	
TEMPORARY ROCK SILT CHECK TYPE-A	NCDOT-1633.01	
WATTLE/COIR FIBER WATTLE	NCDOT-1636.01	
TREE PROTECTION FENCE	SHEET EC-2B	TPF
CONCRETE WASHOUT	SHEET EC-2B	
EXISTING INLET PROTECTION	SHEET EC-2B	⊙⊙⊙⊙
*TEMPORARY SILT & TREE PROTECTION FENCE	SP.	
*USE ORANGE SILT FENCE THAT MEETS NCDOT SPECIFICATIONS (SECTION 1605) & ATTACH SIGN SHOWN ON TREE PROTECTION FENCE DETAIL		
LIMITS OF DISTURBANCE	---	LOD
ROCK PIPE INLET SEDIMENT TRAP	NCDOT-1635.02	

REVISIONS

NURSE CROP SEEDING

PREPARATION FOR PRIMARY/PERMANENT STABILIZATION SHALL NOT BEGIN UNTIL ALL CONSTRUCTION AND UTILITY WORK WITHIN THE PREPARATION AREA IS COMPLETE. HOWEVER, IT MAY BE NECESSARY TO PREPARE FOR NURSE CROPS PRIOR TO COMPLETION OF CONSTRUCTION AND INSTALLATION OF UTILITIES.

A QUICKLY GERMINATING NURSE CROP OF NON-INVASIVE, NON-COMPETITIVE ANNUAL GRASS SPECIES SHOULD BE USED ALONG WITH NATIVE SEEDING AND/OR MATTING. THESE TEMPORARY MEASURES SHOULD BE PLANTED AT MINIMUM DENSITY AS TO NOT INHIBIT THE GROWTH AND ESTABLISHMENT OF THE PERMANENT, NATIVE SPECIES. REFER TO THE TEMPORARY SEEDING SCHEDULE FOR SPECIFIC NURSE CROP SPECIES AND SEEDING RATES.

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HOW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HOW ZONES.

- ### MAINTENANCE REQUIREMENTS
- EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL OR AT A MINIMUM ONCE A WEEK. IF REPAIRS ARE NEEDED THEY WILL BE DONE SO IMMEDIATELY.
 - SEDIMENT WILL BE REMOVED FROM BEHIND SILT FENCING WHEN IT BECOMES 0.5 FT DEEP OR GREATER. SILT FENCING WILL BE REPLACED AS NECESSARY TO MAINTAIN AN ADEQUATE BARRIER.
 - EROSION AND SEDIMENT CONTROL PRACTICES INCLUDING: SILT CHECKS AND WATTLES WILL BE CLEANED OUT AS NECESSARY.
 - ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO THE SPECIAL PROVISIONS IN ORDER TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
 - A RAIN GAUGE IS TO BE INSTALLED ON SITE AND RAINFALL IS TO BE RECORDED DAILY EVEN IF IT IS ZERO INCHES.

PROVIDE TEMPORARY MATTING ON ALL FILL SLOPES

TEMPORARY SEEDING SCHEDULE (EAST)

FERTILIZER SHALL BE THE SAME ANALYSIS AS SPECIFIED FOR SEEDING AND MULCHING AND APPLIED AT THE RATE OF 400 POUNDS AND SEEDED AT THE RATE OF 50 POUNDS PER ACRE. SWEET SUDAN GRASS, GERMAN MILLET, OR BROWNTOP MILLET SHALL BE USED IN SUMMER MONTHS AND 120 POUNDS PER ACRE OF RYE GRAIN DURING THE REMAINDER OF THE YEAR. THE ENGINEER WILL DETERMINE THE EXACT DATES FOR USING EACH KIND OF SEED. APPLY 4,000 POUNDS PER ACRE OF STRAW, ANCHOR BY TACKLING WITH ASPHALT (400 GALLONS PER ACRE), COMMERCIALY AVAILABLE TACKLING SOLUTION (AT MANUFACTURER'S RATE), NETTING OR A MULCH ANCHORING TOOL.

SOIL PREPARATION

FOR AREAS THAT ARE TO BE SEEDED ALL STONES LARGER THAN 3 INCHES, STICKS, ROOTS, AND OTHER MATERIALS SHALL BE REMOVED. AREAS TO BE SEEDED OR PLANTED SHALL BE TILLED OR RIPPED TO A MINIMUM DEPTH OF 4 INCHES. LIME AND FERTILIZER SHALL BE APPLIED AS SPECIFIED IN THE SEEDING SCHEDULE.

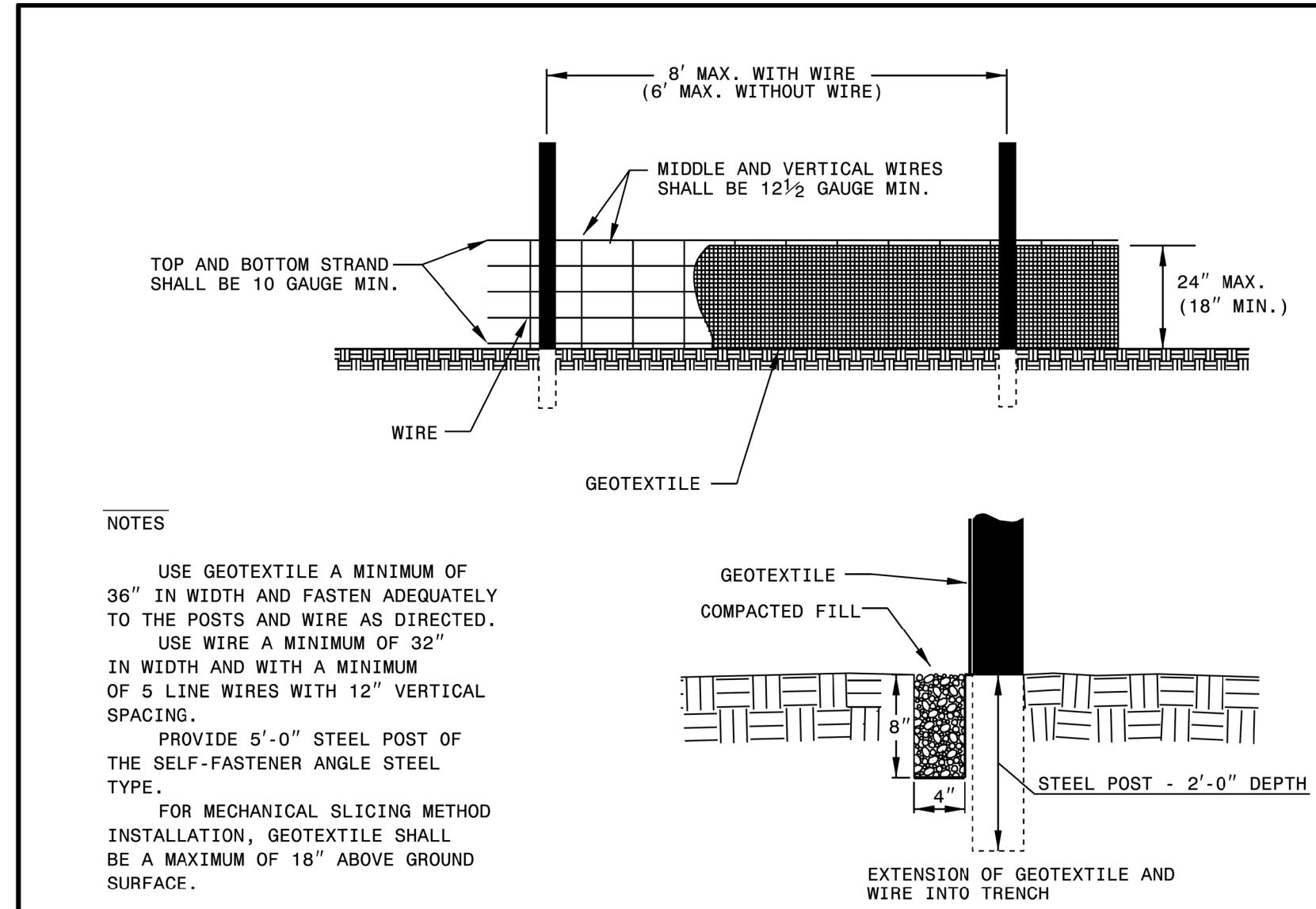
LAWN FINISH

ALL AREAS ADJACENT TO LAWNS MUST BE HAND FINISHED AS DIRECTED TO GIVE A LAWN TYPE APPEARANCE. REMOVE ALL TRASH, DEBRIS, AND STONES ** AND LARGER IN DIAMETER OR OTHER OBSTRUCTIONS THAT COULD INTERFERE WITH PROVIDING A SMOOTH LAWN TYPE APPEARANCE. THESE AREAS SHALL BE RESEED TO MATCH THEIR ORIGINAL VEGETATIVE CONDITIONS, UNLESS DIRECTED OTHERWISE BY THE FIELD OPERATIONS ENGINEER.

- ### CONSTRUCTION SEQUENCE
- ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED, IF NEEDED AT LEAST ONCE PER WEEK AND AFTER EVERY RAINFALL EVENT.
 - SITE STABILIZATION IS REQUIRED WITHIN 14 CALENDAR DAYS OF COMPLETION OF ANY PHASE OF GRADING OR INACTIVITY ON PROJECT SITE.
 - FLAG WORK LIMITS AND INSTALL TEMPORARY SILT FENCE AND OTHER MEASURES AS SHOWN ON THE CLEARING AND GRUBBING PLAN. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. NO CLEARING CAN TAKE PLACE UNTIL EROSION CONTROL MEASURES ARE INSTALLED AND IF CLEARING IS REQUIRED TO INSTALL EROSION CONTROL MEASURES, ONLY CLEAR THE AREA NEEDED TO INSTALL THE EROSION CONTROL DEVICES.
 - COMPLETE SITE CLEARING AND GRUBBING FOR ENTIRE PROJECT. MAINTAIN AND ADJUST DEVICES AS NEEDED.
 - PERFORM GRADING OPERATIONS AND INSTALL PROPOSED DRAINAGE NETWORK. INSTALL FINAL GRADING EROSION CONTROL DEVICES AS THE DRAINAGE NETWORK IS CONSTRUCTED. FOLLOWING THE CONSTRUCTION OF ANY DITCHES, ALL TEMPORARY MATTING OR RIP RAP MUST BE INSTALLED WITHIN 7 DAYS AS SPECIFIED BY NCG-010000. CULVERTS THAT REQUIRE IMPERVIOUS DIKES AND SPECIAL STILLING BASINS WILL BE INSTALLED FOLLOWING CLEARING AND GRUBBING PRIOR TO THE INSTALLATION OF FINAL GRADE EROSION CONTROL DEVICES.
 - ALL AREAS WHERE GRADING IS NOT DEFINED BY THE DRAINAGE PLANS MUST BE GRADED TO DRAIN.
 - STABILIZE ALL DENUDEED AREAS. STABILIZATION FOR THIS PROJECT SHALL COMPLY WITH THE TIME FRAME GUIDELINES AS SPECIFIED BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY. TEMPORARY OR PERMANENT GROUND COVER STABILIZATION SHALL OCCUR WITHIN 7 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY OR IN CRITICAL AREAS, BY THE END OF EACH DAY.
 - AFTER THE SITE IS STABILIZED, REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES, PERFORM FINISH GRADING AND INSTALL PERMANENT VEGETATION ON THE DISTURBED AREAS.
 - SEE INDIVIDUAL PLAN SHEETS FOR ADDITIONAL SPECIFIC PHASING NOTES.

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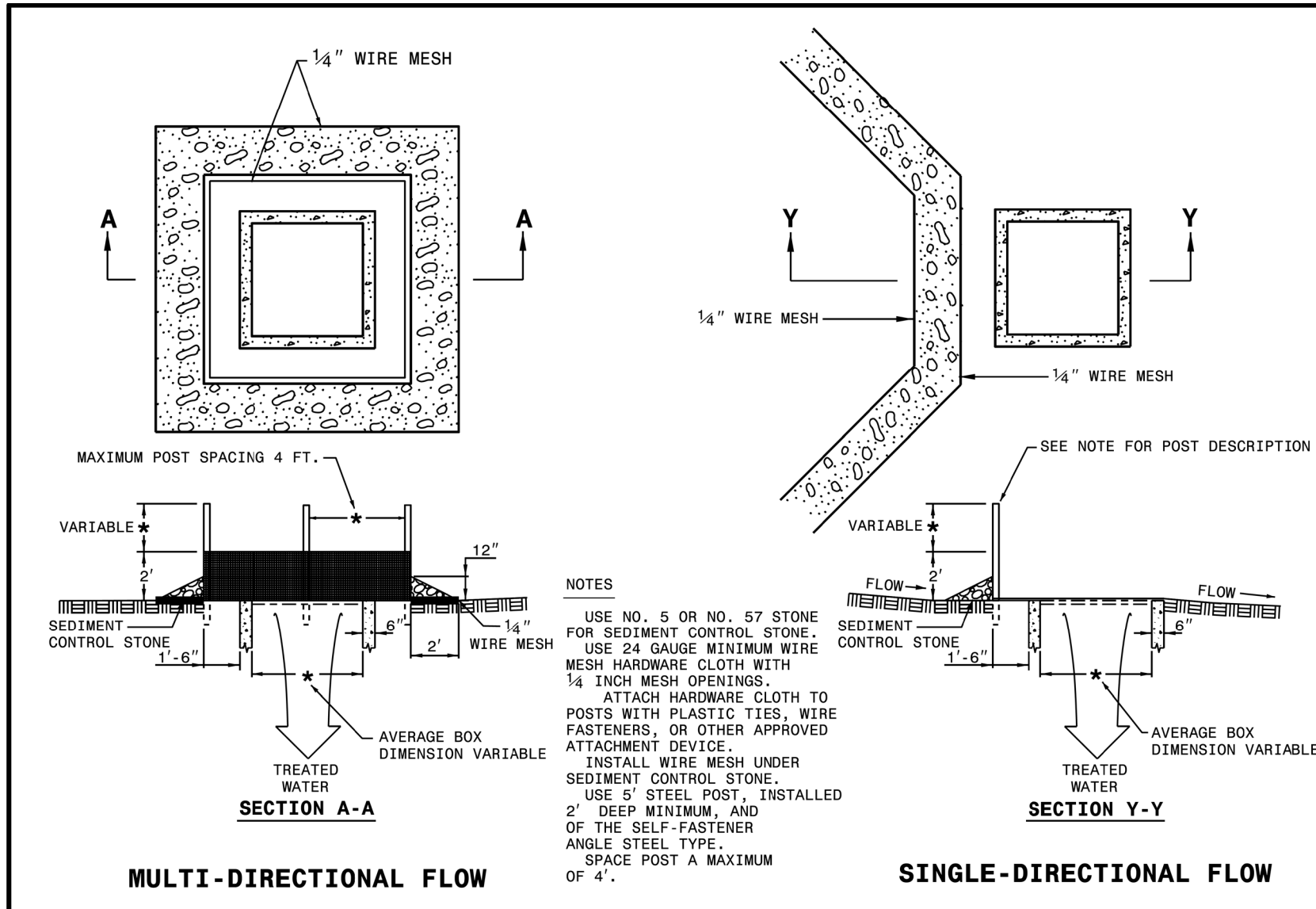
REVISIONS



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

ROADWAY STANDARD DRAWING FOR
TEMPORARY SILT FENCE

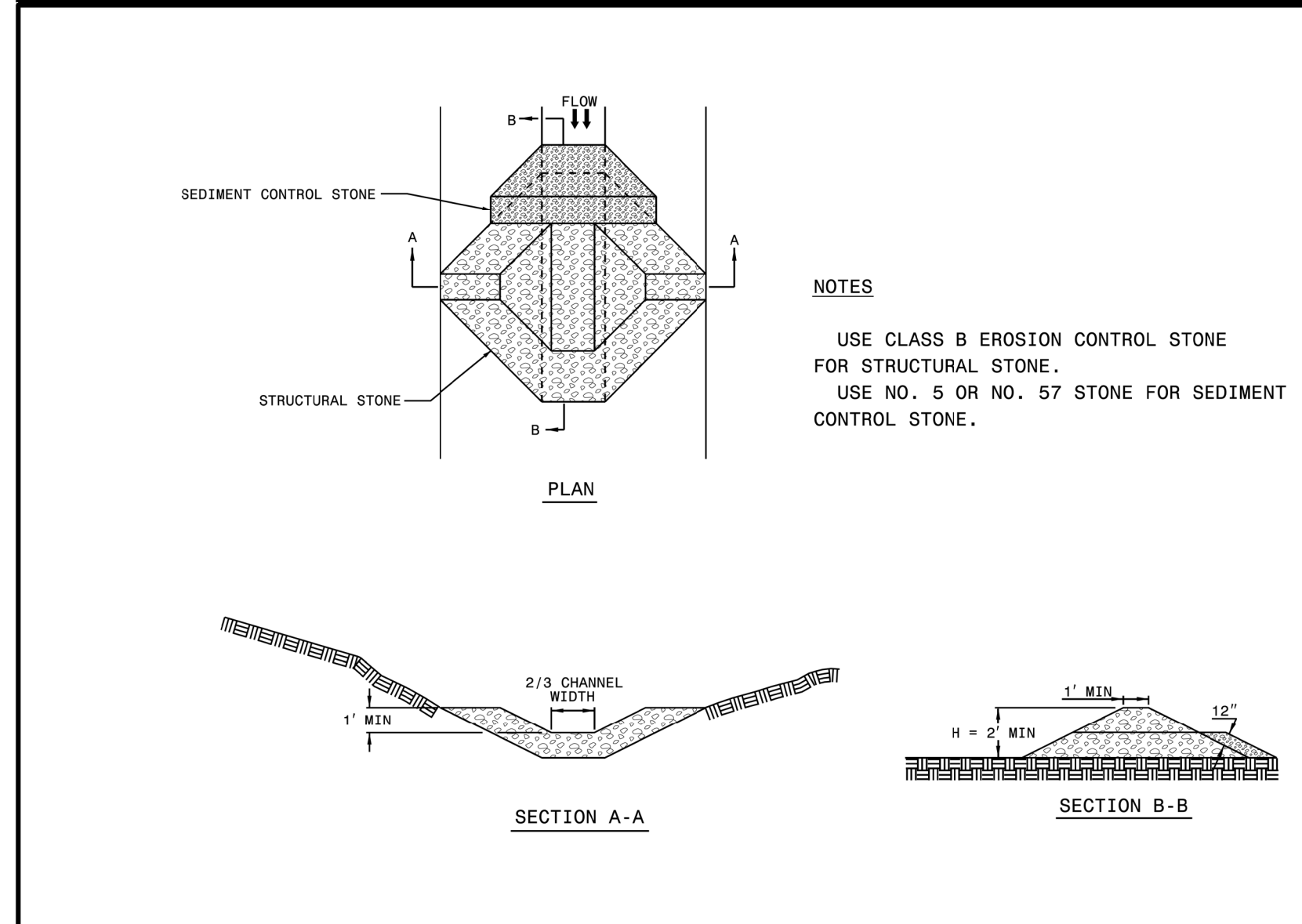
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STATE OF NORTH CAROLINA
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
ROCK INLET SEDIMENT TRAP TYPE C

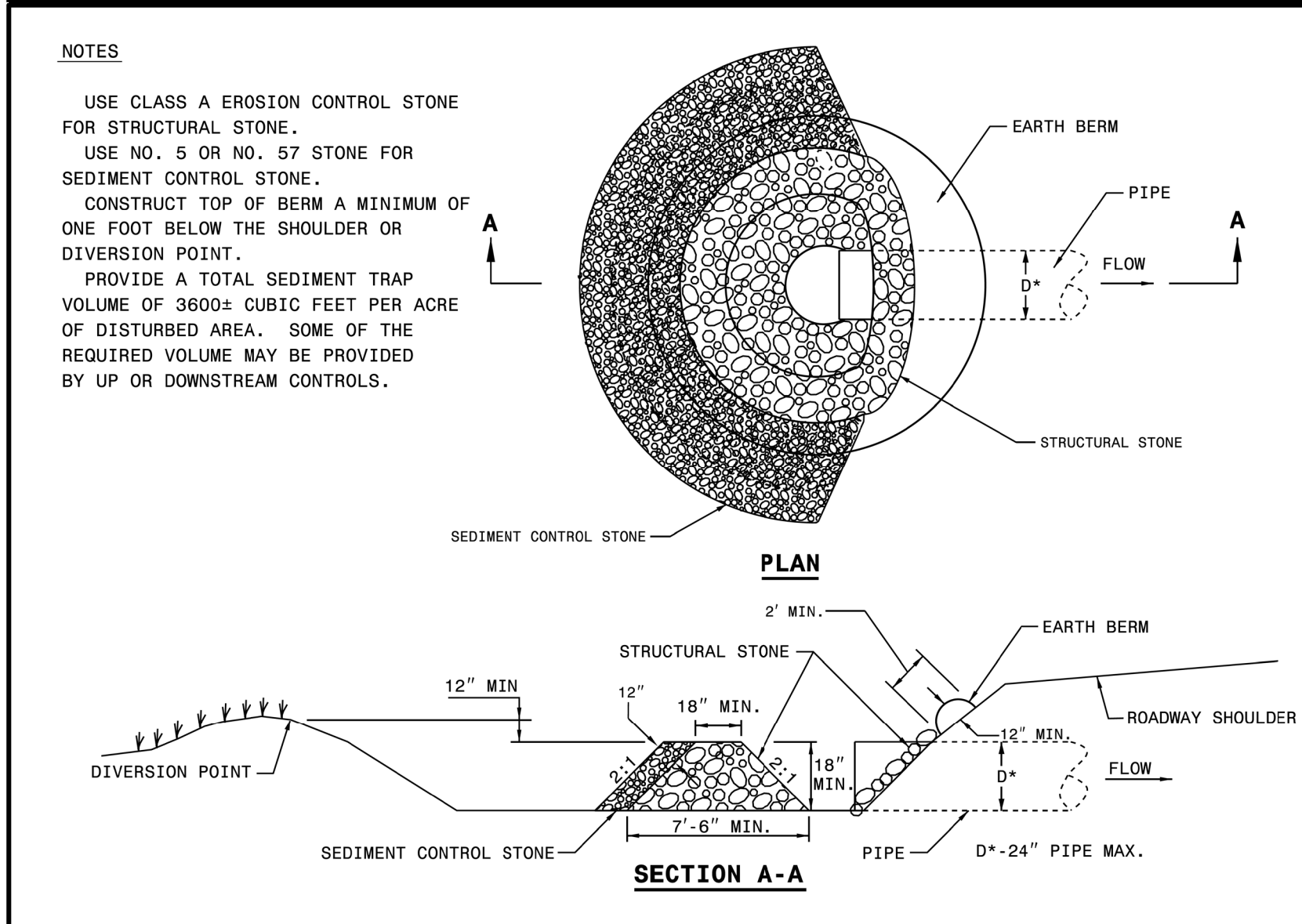
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
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RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
TEMPORARY ROCK SILT CHECK TYPE A

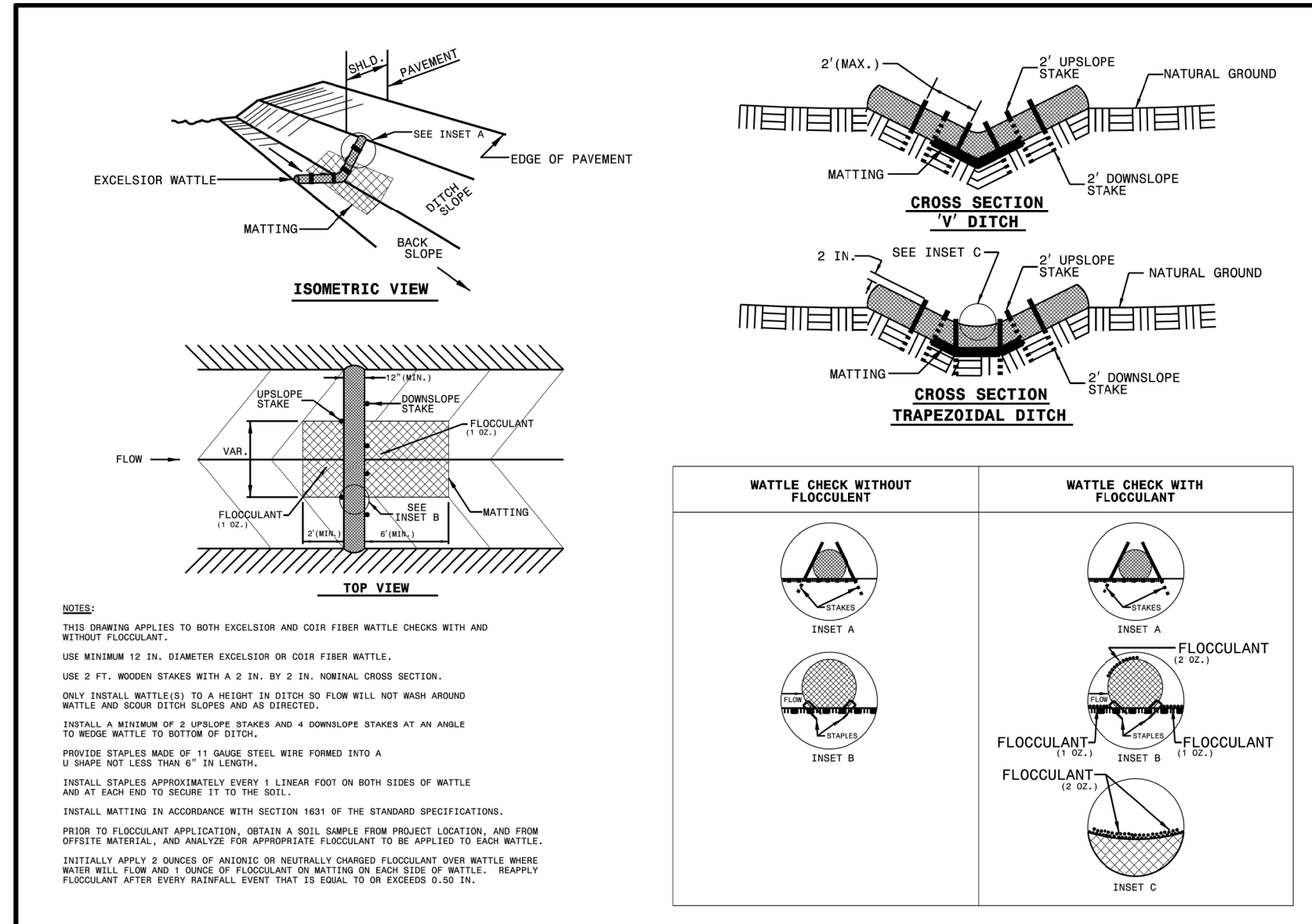
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STATE OF NORTH CAROLINA
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ROADWAY STANDARD DRAWING FOR
ROCK PIPE INLET SEDIMENT TRAP TYPE B

SHEET 1 OF 1
1635.02



STATE OF NORTH CAROLINA
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ROADWAY STANDARD DRAWING FOR
WATTLE CHECK

SHEET 1 OF 1
1636.01



PROJECT REFERENCE NO. CD-21-01-D28 SHEET NO. EC-2A
RW SHEET NO.

FORREST N. BROOKS, P.E.
LEVEL III NAME
1/24/2025
LEVEL III CERTIFICATION NO. 4039

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GRAPHIC SCALES
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PLANS

MAINTENANCE NOTES

WATTLE

THE UPSTREAM SIDE OF THE WATTLE SHOULD BE MAINTAINED TO ALLOW THE WATER TO FLOW THROUGH, REDUCE VELOCITY, DISTRIBUTE FLOCCULANT AND ALLOW SEDIMENTATION TO OCCUR. IF THE NATURAL FIBERS OF THE WATTLE BECOME TOO SATURATED WITH DEBRIS, SEDIMENT, ETC., AND REMOVAL OF THESE ITEMS IS NOT POSSIBLE, WATTLES SHOULD BE REPLACED. STAKES SHOULD BE USED TO ANCHOR THE WATTLE ADEQUATELY TO THE GROUND TO PREVENT SCOURING AND WASHOUT DURING STORM EVENTS. THE EXCELSIOR PAD BENEATH THE WATTLES IS CRITICAL TO THE PROPER FUNCTIONING OF THE WATTLES.

TEMPORARY SILT FENCE

INSPECT THE SILT FENCE ON A REGULAR BASIS AND AFTER EACH SIGNIFICANT RAINFALL. MAKE ANY REPAIRS IMMEDIATELY. INSPECT THE SILT FENCE TO BE SURE THE BOTTOM OF THE GEOTEXTILE IS KEYS IN PROPERLY. AT A MINIMUM, REMOVE AND DISPOSE OF ALL SILT ACCUMULATIONS WHEN DEPTH REACHES 1/2 THE HEIGHT OF THE GEOTEXTILE. DO NOT UNDERMINE THE FENCE DURING CLEANOUT. DISPOSE OF SEDIMENT BY HAULING IT TO AN APPROVED WASTE SITE WITH APPROPRIATE PERIMETER PROTECTION. REMOVE AND REPLACE DETERIORATED OR CLOGGED SILT FENCE. REPLACE SILT FENCE REMOVED FOR ACCESS AT THE END OF EACH DAY'S OPERATION. INSTALL ADDITIONAL POSTS OR WIRE BACKING IF FENCE IS SAGGING.

ROCK INLET SEDIMENT TRAP TYPE 'A,B,C'

INSPECT THE DEVICE AFTER EACH SIGNIFICANT RAINFALL EVENT FOR DAMAGE, SEDIMENT ACCUMULATION AND PROPER FUNCTION. REMOVE SEDIMENT FROM THE DEVICE WHEN ACCUMULATIONS REACH ONE-HALF THE HEIGHT OF THE SEDIMENT CONTROL STONE. REPLACE OR CLEAN THE SEDIMENT CONTROL STONE AS NEEDED TO ALLOW WATER TO DRAIN THROUGH THE DEVICE BETWEEN RAINFALL EVENTS. REBUILD AND/OR REPAIR THE DEVICE WHEN IT IS DAMAGED. IF THE DEVICE IS TO REMAIN AFTER PROJECT COMPLETION, IT SHOULD BE CLEAN AND IN PROPER SHAPE AT THE TIME OF FINAL INSPECTION. IF IT IS REMOVED, ALL ACCUMULATED SILT SHOULD BE REMOVED TO KEEP IT FROM ENTERING THE DRAINAGE SYSTEM.

TEMPORARY ROCK SILT CHECK TYPE 'A,B,C'

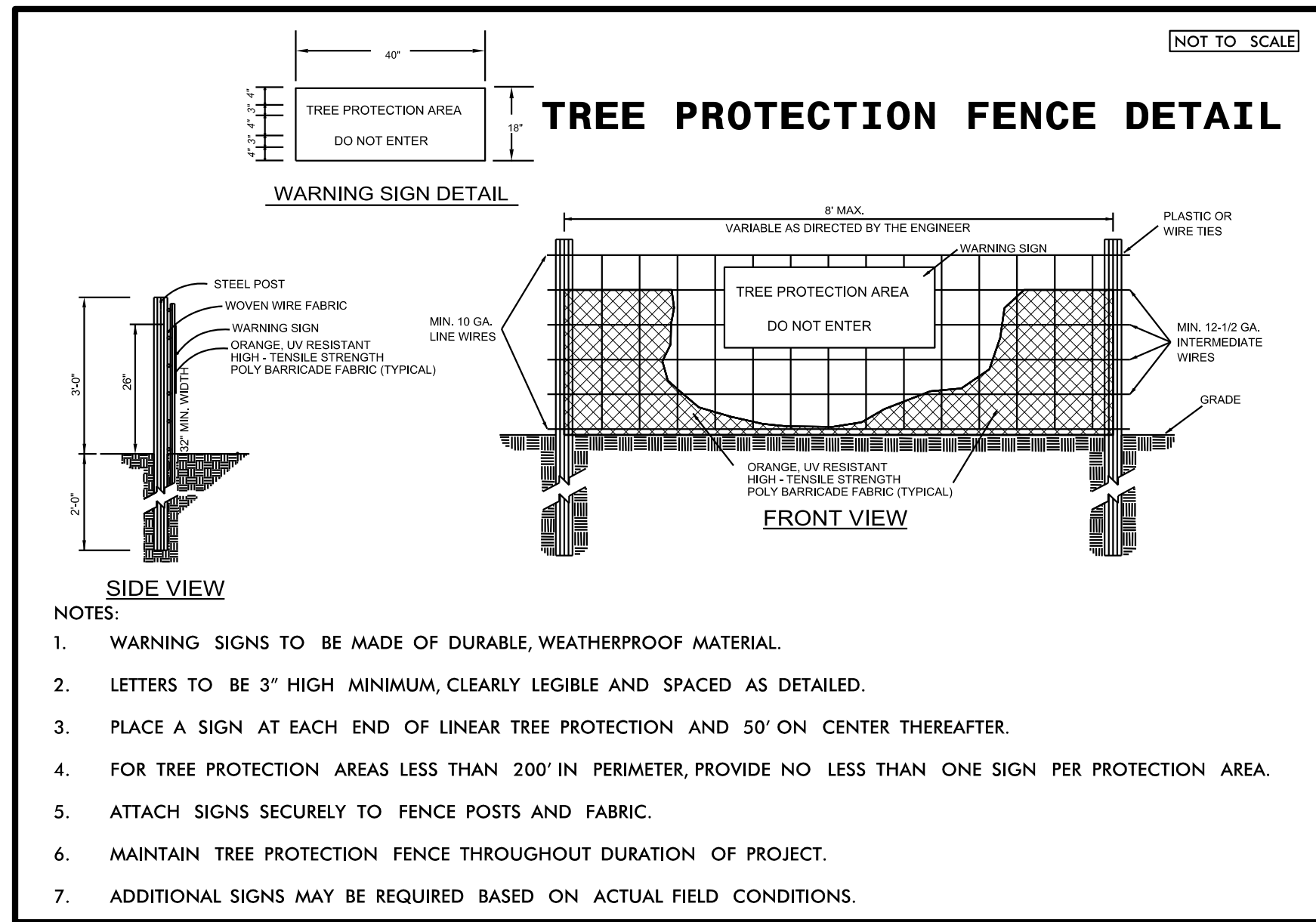
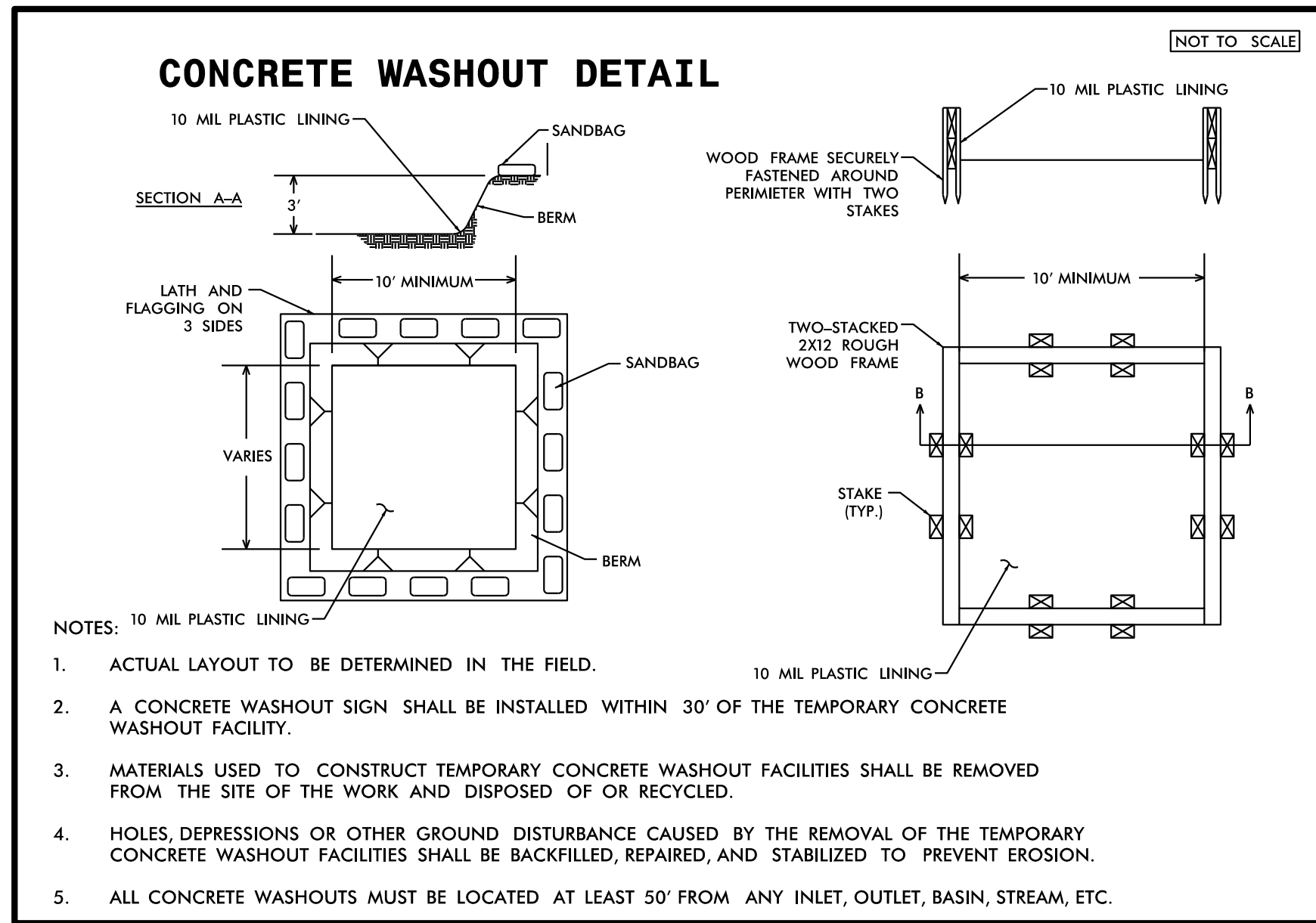
INSPECT ROCK CHECK AFTER EACH SIGNIFICANT RAINFALL. REMOVE SILT FROM DEVICE WHEN IT ACCUMULATES. REBUILD AND RESHAPE DEVICE AND WEIR WHEN DAMAGED OR AS NECESSARY. CLEANOUT WHEN CLOGGED BY STRAW, LIMBS OR OTHER DEBRIS.

ROCK PIPE INLET SEDIMENT TRAP TYPE 'A,B'

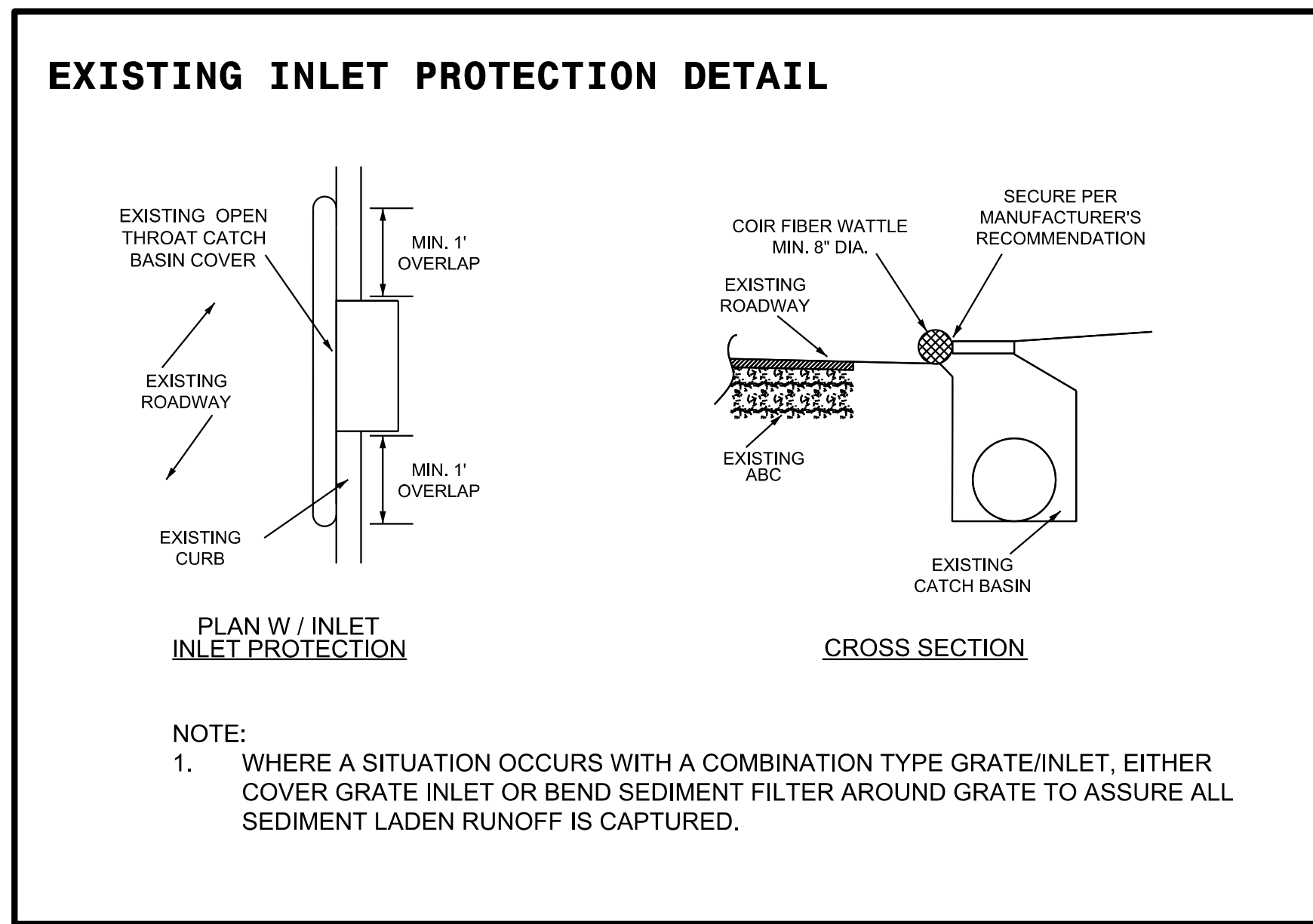
INSPECT THE DEVICE AFTER EACH SIGNIFICANT RAINFALL EVENT FOR DAMAGE, SEDIMENT ACCUMULATION AND PROPER FUNCTION. REMOVE SEDIMENT FROM THE DEVICE WHEN ACCUMULATIONS REACH ONE-HALF THE HEIGHT OF THE SEDIMENT CONTROL STONE. REPLACE OR CLEAN THE SEDIMENT CONTROL STONE AS NEEDED TO ALLOW WATER TO DRAIN THROUGH THE DEVICE BETWEEN RAINFALL EVENTS. REBUILD AND/OR REPAIR THE DEVICE WHEN IT IS DAMAGED. IF THE DEVICE IS TO REMAIN AFTER PROJECT COMPLETION, IT SHOULD BE CLEAN AND IN PROPER SHAPE AT THE TIME OF FINAL INSPECTION. IF IT IS REMOVED, ALL ACCUMULATED SILT SHOULD BE REMOVED TO KEEP IT FROM ENTERING THE DRAINAGE SYSTEM.

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REVISIONS



PROJECT REFERENCE NO.	SHEET NO.
CD-21-01-D28	EC-2B
RW SHEET NO.	
FORREST N. BROOKS, P.E.	
LEVEL III NAME	
4039	
LEVEL III CERTIFICATION NO.	
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GRAPHIC SCALES	
PLANS	



MAINTENANCE NOTES

ROCK PIPE INLET PROTECTION

INSPECT ROCK PIPE INLET PROTECTION AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN THE DESIGNATED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING. CHECK THE STRUCTURE FOR DAMAGE. ANY RIPRAP DISPLACED FROM THE STONE HORSESHOE MUST BE REPLACED IMMEDIATELY. AFTER ALL THE SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND PROVIDE PERMANENT GROUND COVER (SURFACE STABILIZATION).

CONCRETE WASHOUT

REGULARLY INSPECT THE PERIMETER BARRIER FOR DAMAGE BUT WEEKLY AS A MINIMUM. REPLACE SANDBAG ACHORS OR WOOD FRAME IF DAMAGED. REPLACE PLASTIC LINING IF DAMAGED AND NO LONGER WATERTIGHT. REMOVE CONCRETE AND REPAIR ANY DAMAGE TO LINER OR FRAME WHEN VOLUME HAS BEEN REDUCED BY HALF OF THE ORIGINAL VOLUME.

TREE PROTECTION FENCE

INSPECT THE TREE PROTECTION FENCE ON A REGULAR BASIS BUT WEEKLY AS A MINIMUM. MAKE ANY REPAIRS IMMEDIATELY. AT A MINIMUM, REMOVE AND DISPOSE OF ALL DEBRIS ACCUMULATIONS WHEN DEPTH REACHES 1/2 THE HEIGHT OF THE FENCE.

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CLEARING AND GRUBBING PHASE

- NOTES:
1. CONTRACTOR TO INSTALL EROSION CONTROL MEASURES BEFORE CONSTRUCTION BEGINS AND MAINTAIN THROUGHOUT CONSTRUCTION.
 2. CONTRACTOR IS TO KEEP ALL DEBRIS WITHIN THE WORK AREA AND OUTSIDE OF THE THROUGH LANES.
 3. CONTRACTOR TO COORDINATE WITH ENGINEER IF FIELD CONDITIONS VARY FROM PLANS OR CONFLICTING EROSION CONTROL MEASURES ARE INSTALLED WITH THE ADJACENT SITE CONSTRUCTION.



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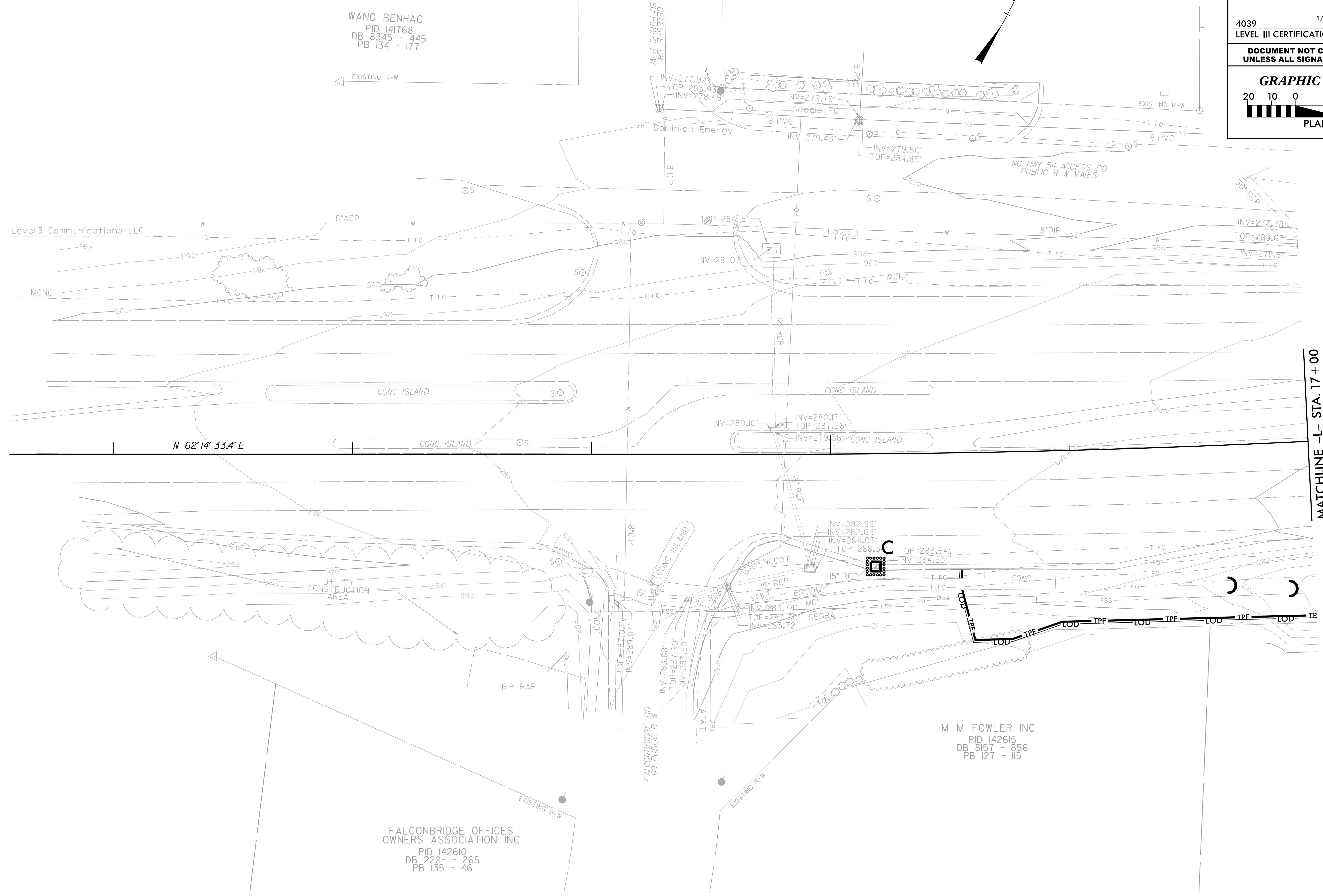
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R/W SHEET NO.	
FORREST N. BROOKS, P.E. LEVEL III NAME	
4039 LEVEL III CERTIFICATION NO.	
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GRAPHIC SCALES PLANS	

WILLGOLD LLC
PID 198785
DB 4367 - 793
CB 6 - 17

WANG BENHAO
PID 141768
DB 8345 - 445
PB 134 - 177

M M FOWLER INC
PID 142615
DB 8157 - 856
PB 127 - 115

FALCONBRIDGE OFFICES
OWNERS ASSOCIATION INC
PID 142610
DB 222 - 265
PB 135 - 46



REVISIONS

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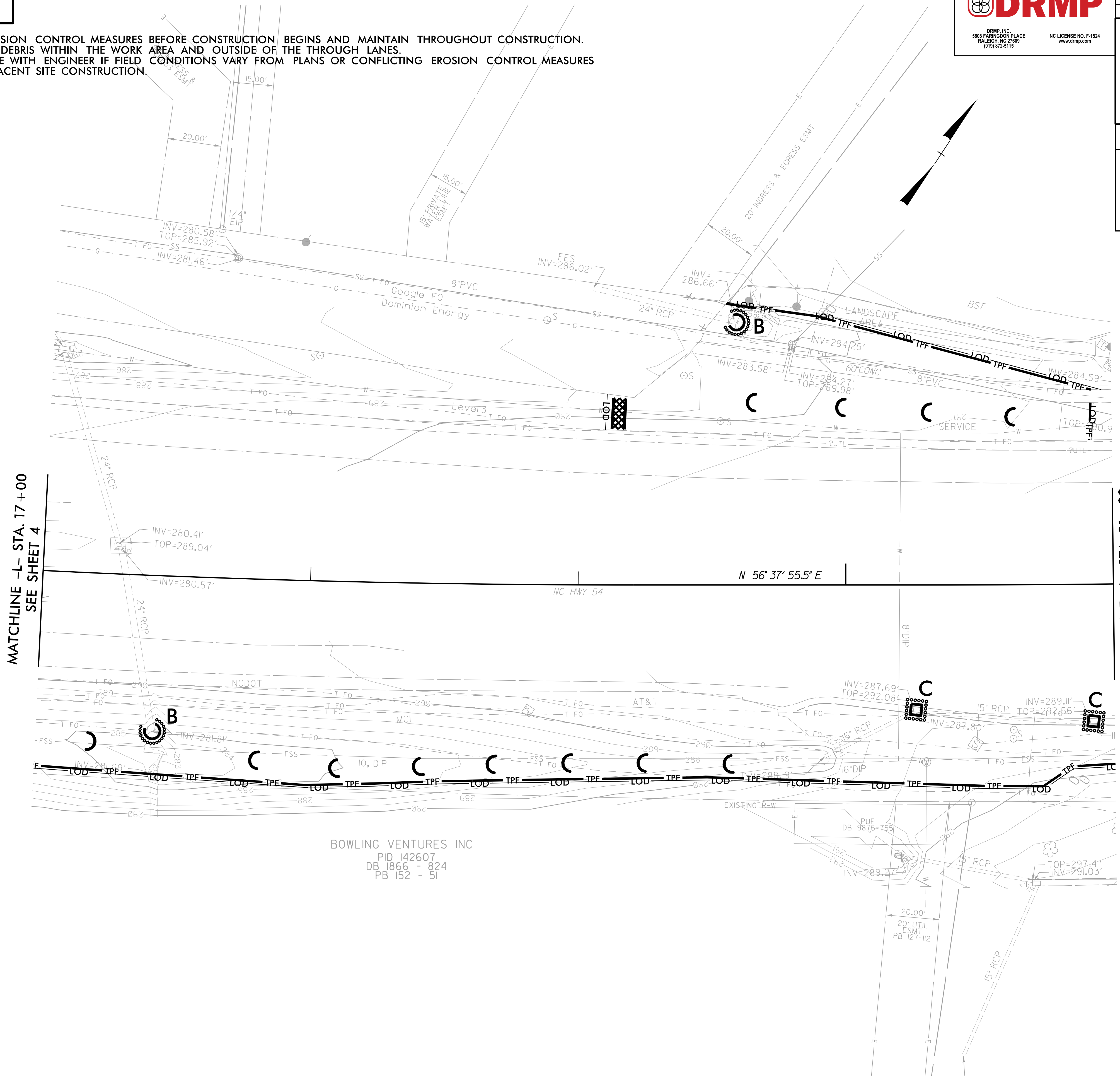
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CLEARING AND GRUBBING PHASE

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PROJECT REFERENCE NO.	SHEET NO.
CD-21-01-D28	EC-5/CONST-5
RW SHEET NO.	
FORREST N. BROOKS, P.E.	
LEVEL III NAME	
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<p>GRAPHIC SCALES</p> <p>PLANS</p>	



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BOWLING VENTURES INC
 PID 142607
 DB 1866 - 824
 PB 152 - 51

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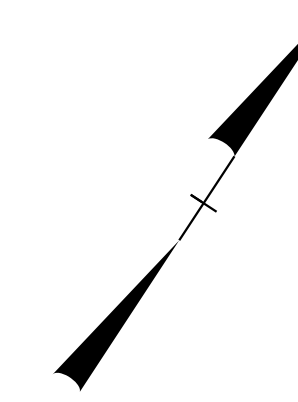
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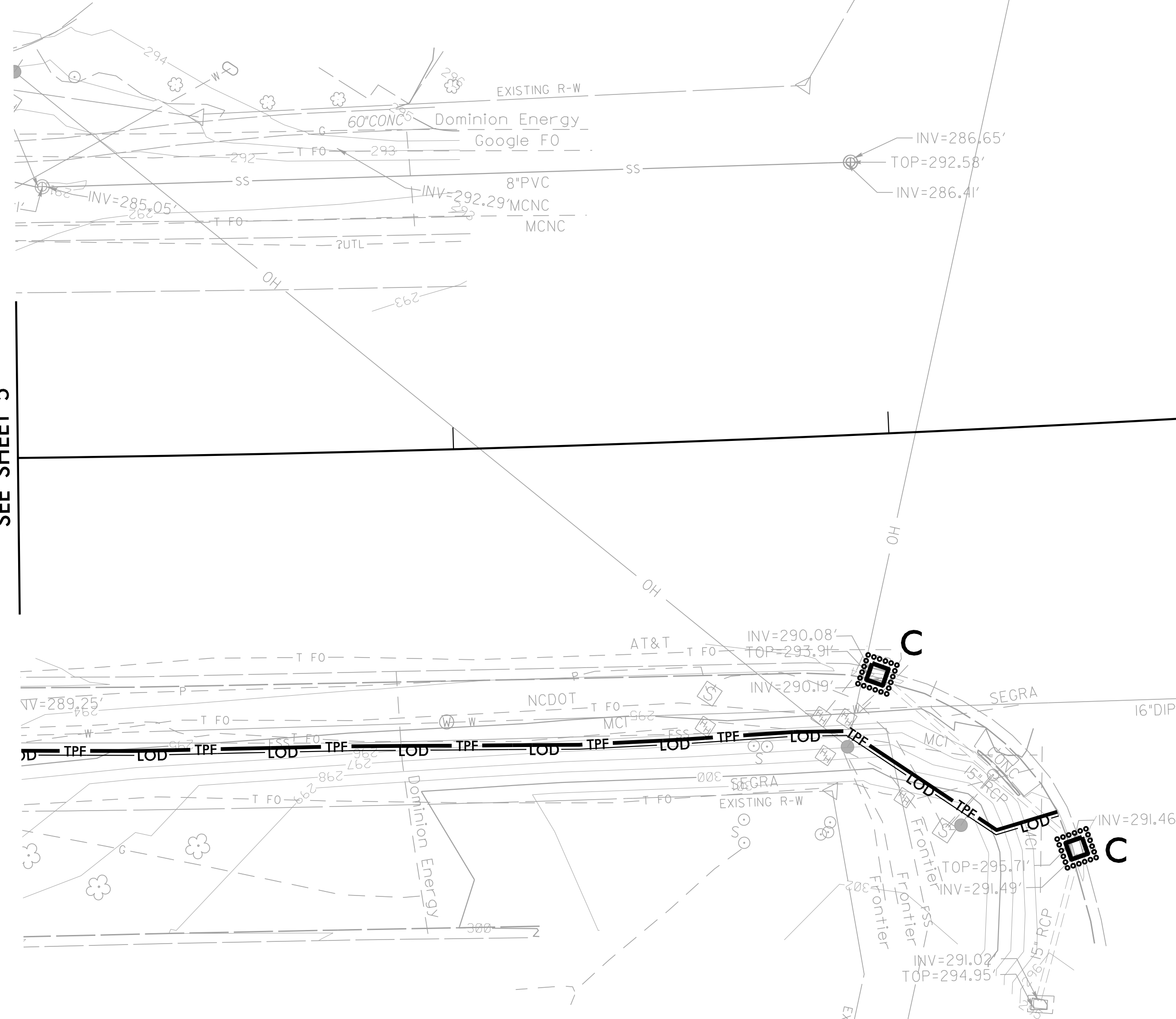
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PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. EC-6/CONST-6
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LEVEL III CERTIFICATION NO.	
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GRAPHIC SCALES PLANS	



6011 FARRINGTON ROAD LLC
PID 211422
DB 8565 - 119
PB 189 - 246



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BODDIE-NOELL ENTERPRISES INC
PID 142616
DB 3991 - 872
PB 127 - 115

REVISIONS

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FINAL PHASE

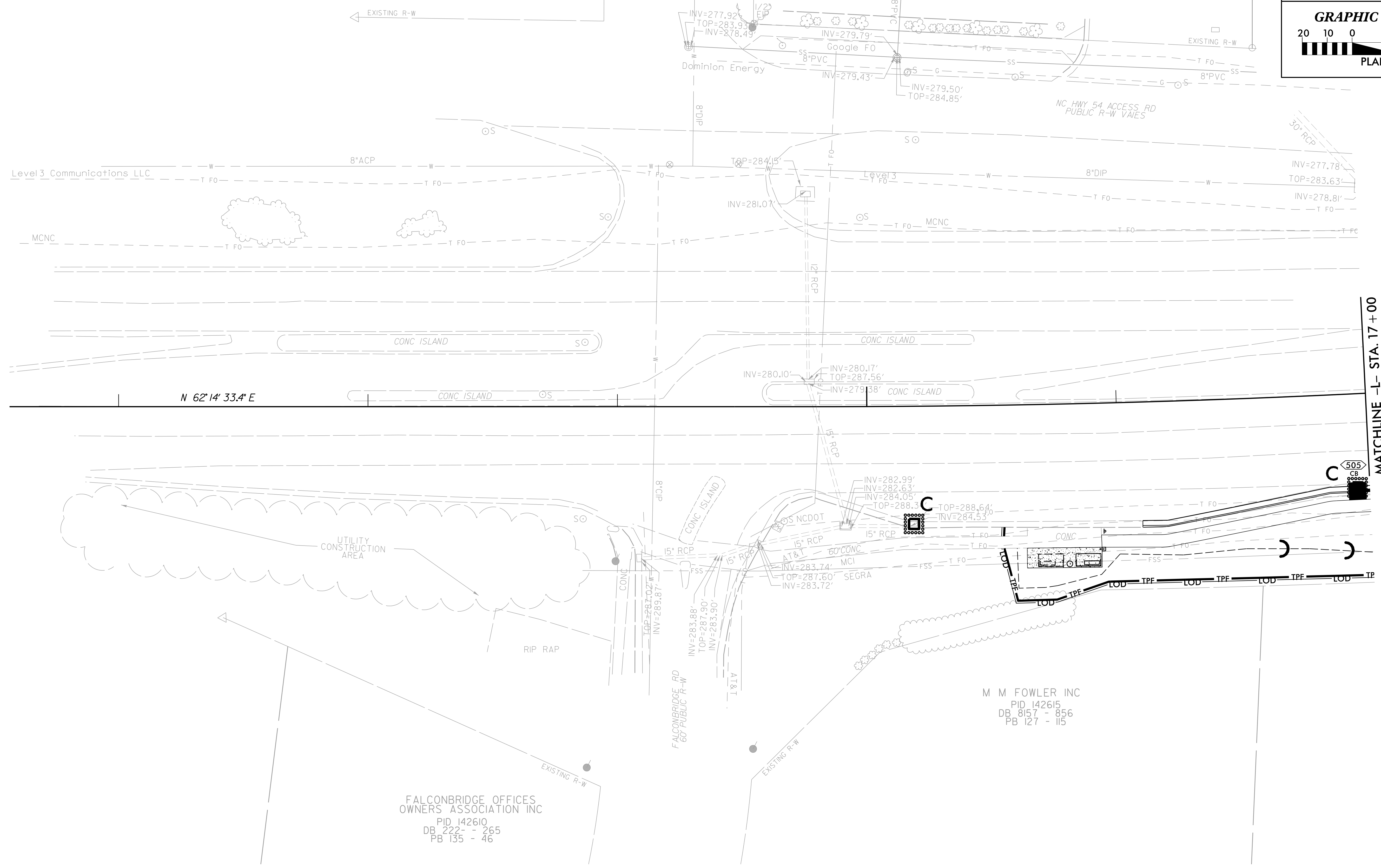
- NOTES:
1. CONTRACTOR TO SHIFT EROSION CONTROL MEASURES DURING CONSTRUCTION TO MAINTAIN INLET PROTECTION AROUND THE EXISTING AND PROPOSED INLETS. WATTLES SHALL BE SHIFTED TO THE NEW DITCHLINE UNTIL EARTH IS STABILIZED.
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WANG BENHAO
 PID 141768
 DB 8345 - 445
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R/W SHEET NO.	
FORREST N. BROOKS, P.E. LEVEL III NAME	
4039 LEVEL III CERTIFICATION NO.	
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GRAPHIC SCALES PLANS	



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FALCONBRIDGE OFFICES
 OWNERS ASSOCIATION INC
 PID 142610
 DB 222 - 265
 PB 135 - 46

M M FOWLER INC
 PID 142615
 DB 8157 - 856
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FINAL PHASE

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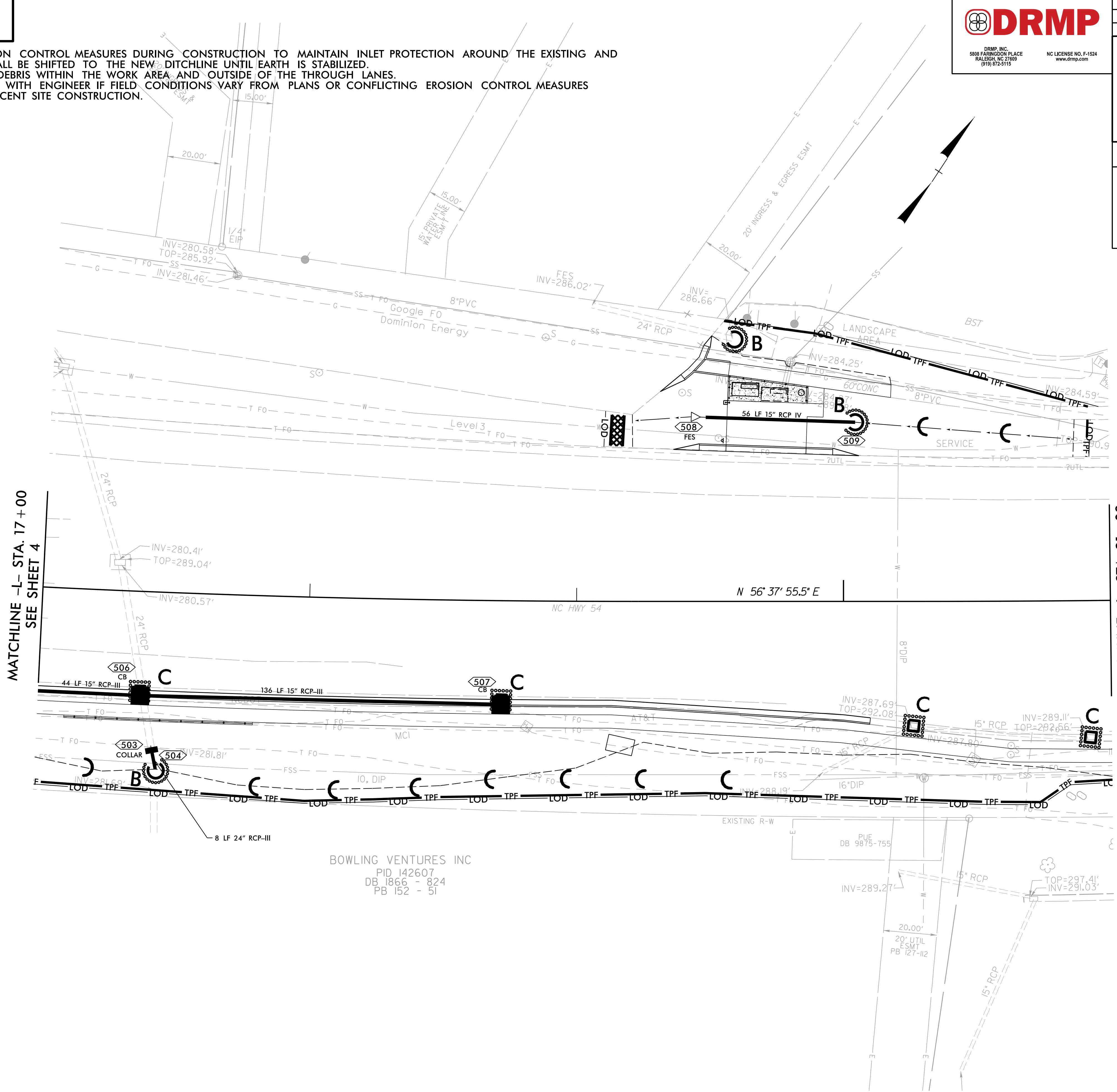
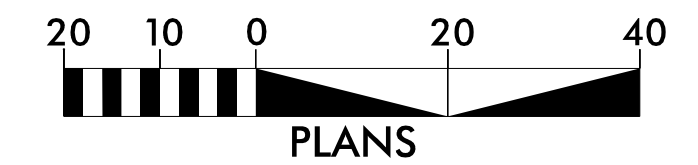
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FORREST N. BROOKS, P.E.
LEVEL III NAME
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Forrest Brooks
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1/24/2022
FORREST N. BROOKS
ENGINEER

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GRAPHIC SCALES



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PID 142607
DB 1866 - 824
PB 152 - 51

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FINAL PHASE

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1. CONTRACTOR TO SHIFT EROSION CONTROL MEASURES DURING CONSTRUCTION TO MAINTAIN INLET PROTECTION AROUND THE EXISTING AND PROPOSED INLETS. WATTLES SHALL BE SHIFTED TO THE NEW DITCHLINE UNTIL EARTH IS STABILIZED.
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R/W SHEET NO.	

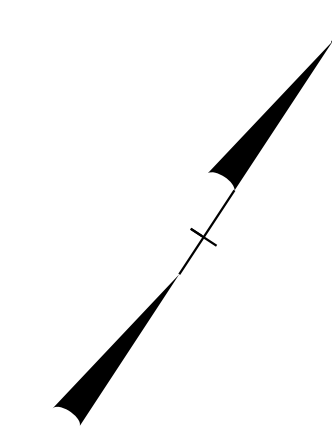
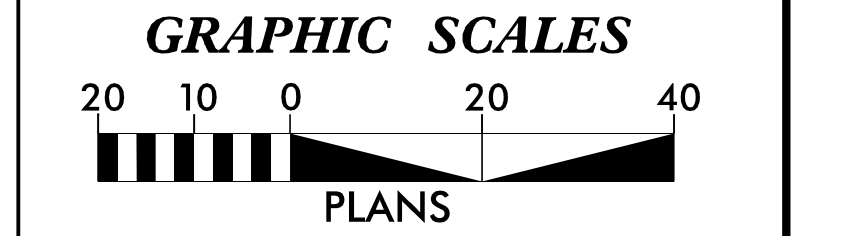
FORREST N. BROOKS, P.E.
LEVEL III NAME

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Forrest Brooks
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PROFESSIONAL SEAL
55416
1/24/2022
FORREST N. BROOKS
ENGINEER

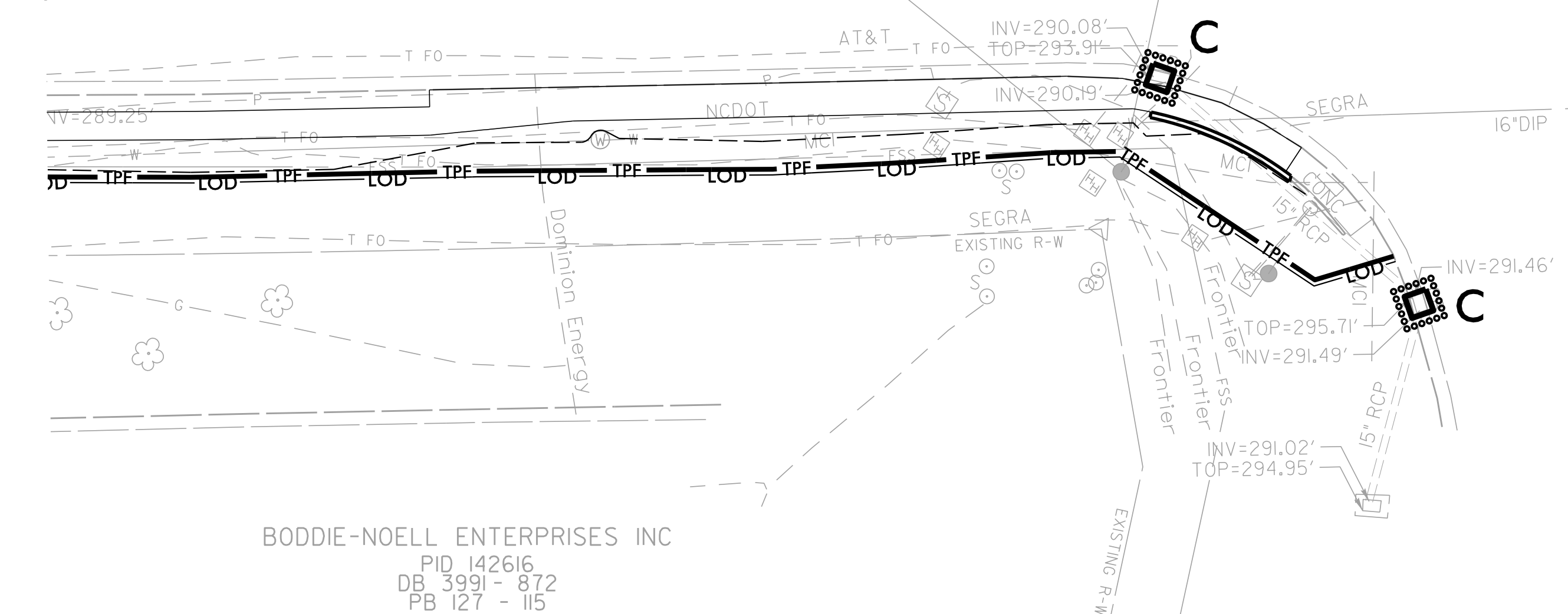
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BODDIE-NOELL ENTERPRISES INC
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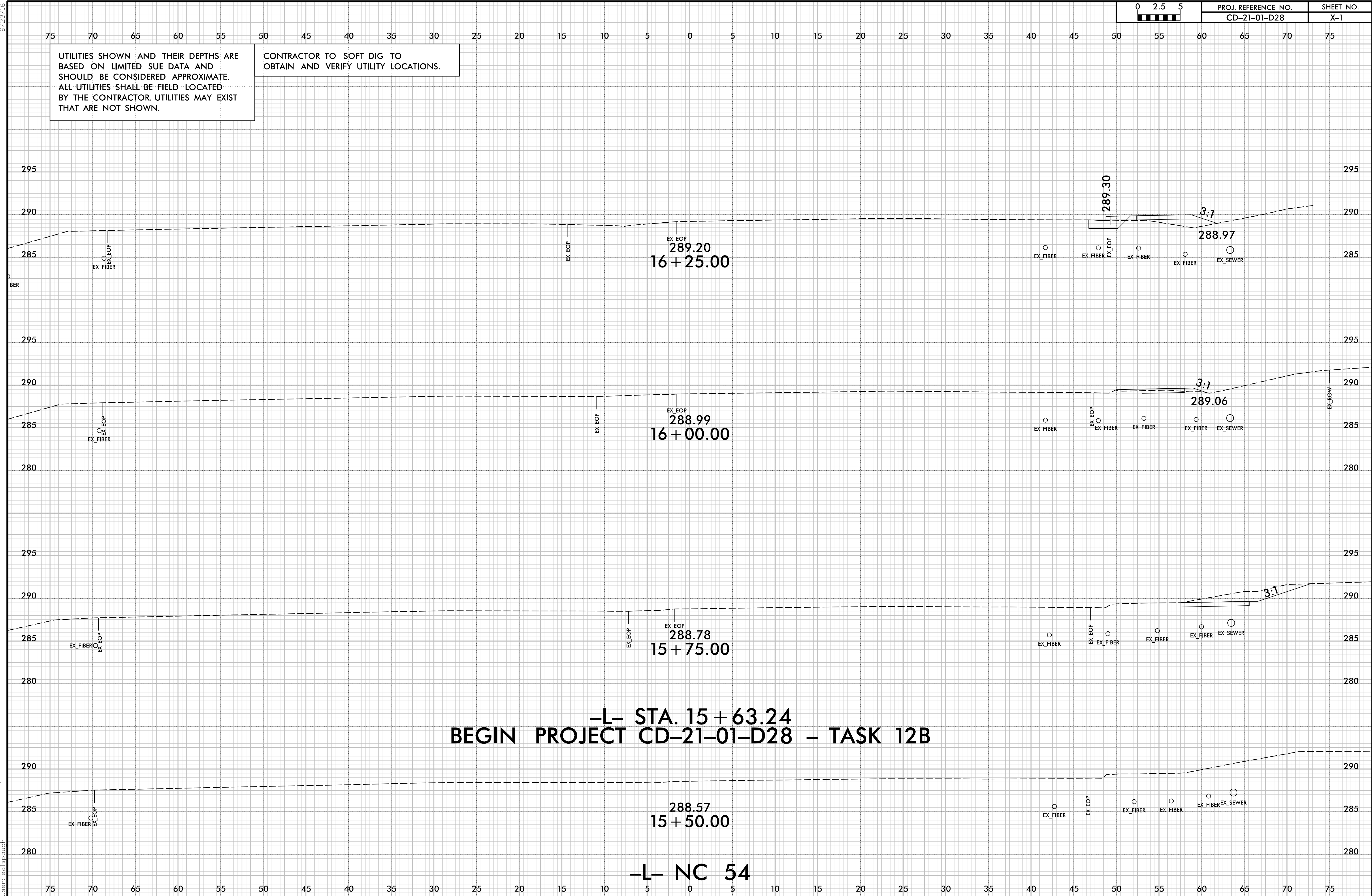
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User: eolspough

6/23/16

0 2.5 5	PROJ. REFERENCE NO. CD-21-01-D28	SHEET NO. X-1
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UTILITIES SHOWN AND THEIR DEPTHS ARE BASED ON LIMITED SUE DATA AND SHOULD BE CONSIDERED APPROXIMATE. ALL UTILITIES SHALL BE FIELD LOCATED BY THE CONTRACTOR. UTILITIES MAY EXIST THAT ARE NOT SHOWN.

CONTRACTOR TO SOFT DIG TO OBTAIN AND VERIFY UTILITY LOCATIONS.

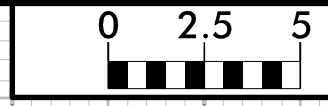


-L- STA. 15 + 63.24
 BEGIN PROJECT CD-21-01-D28 - TASK 12B

-L- NC 54

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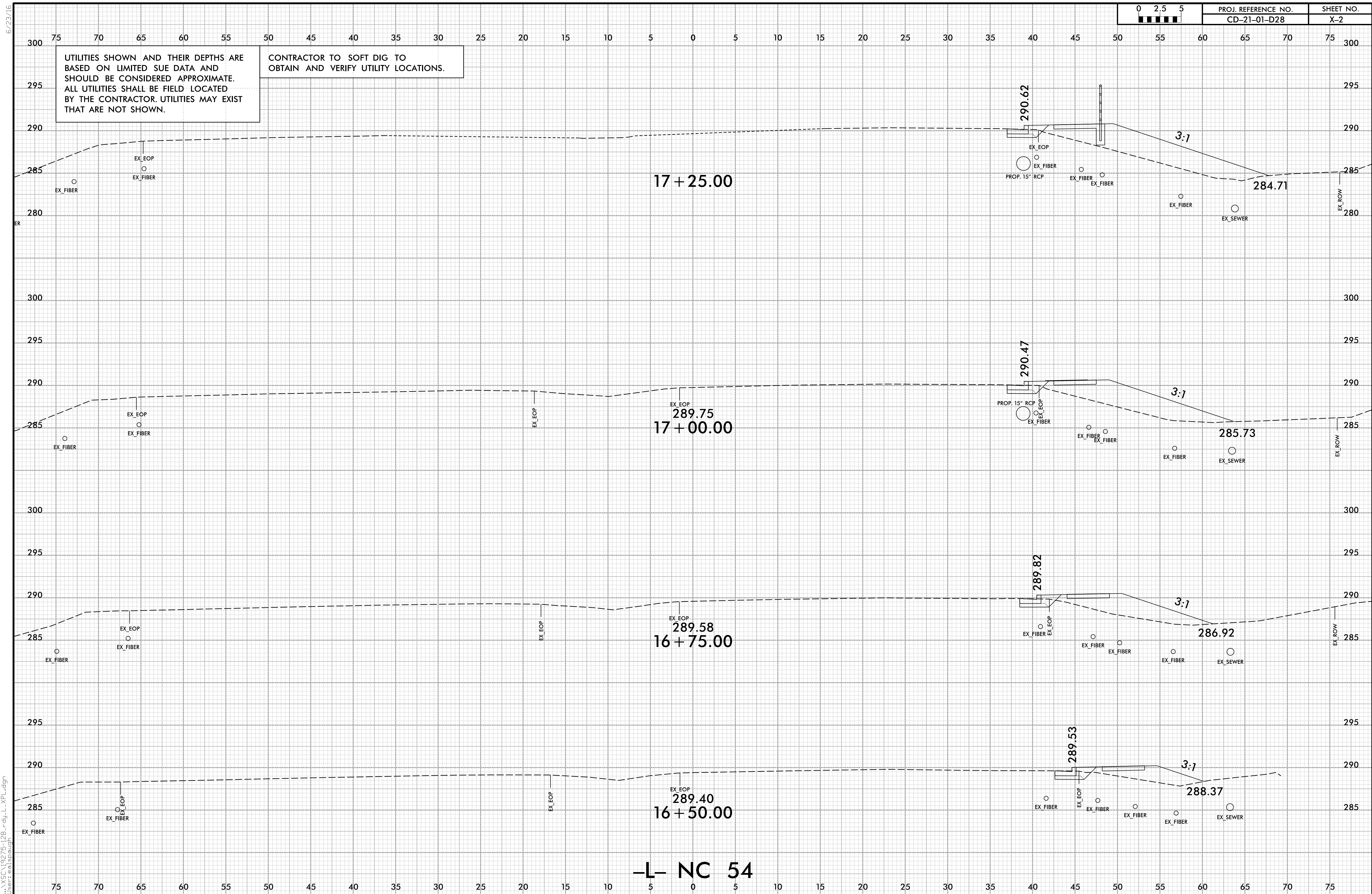


PROJ. REFERENCE NO.
CD-21-01-D28

SHEET NO.
X-2

UTILITIES SHOWN AND THEIR DEPTHS ARE BASED ON LIMITED SUE DATA AND SHOULD BE CONSIDERED APPROXIMATE. ALL UTILITIES SHALL BE FIELD LOCATED BY THE CONTRACTOR. UTILITIES MAY EXIST THAT ARE NOT SHOWN.

CONTRACTOR TO SOFT DIG TO OBTAIN AND VERIFY UTILITY LOCATIONS.



-L- NC 54

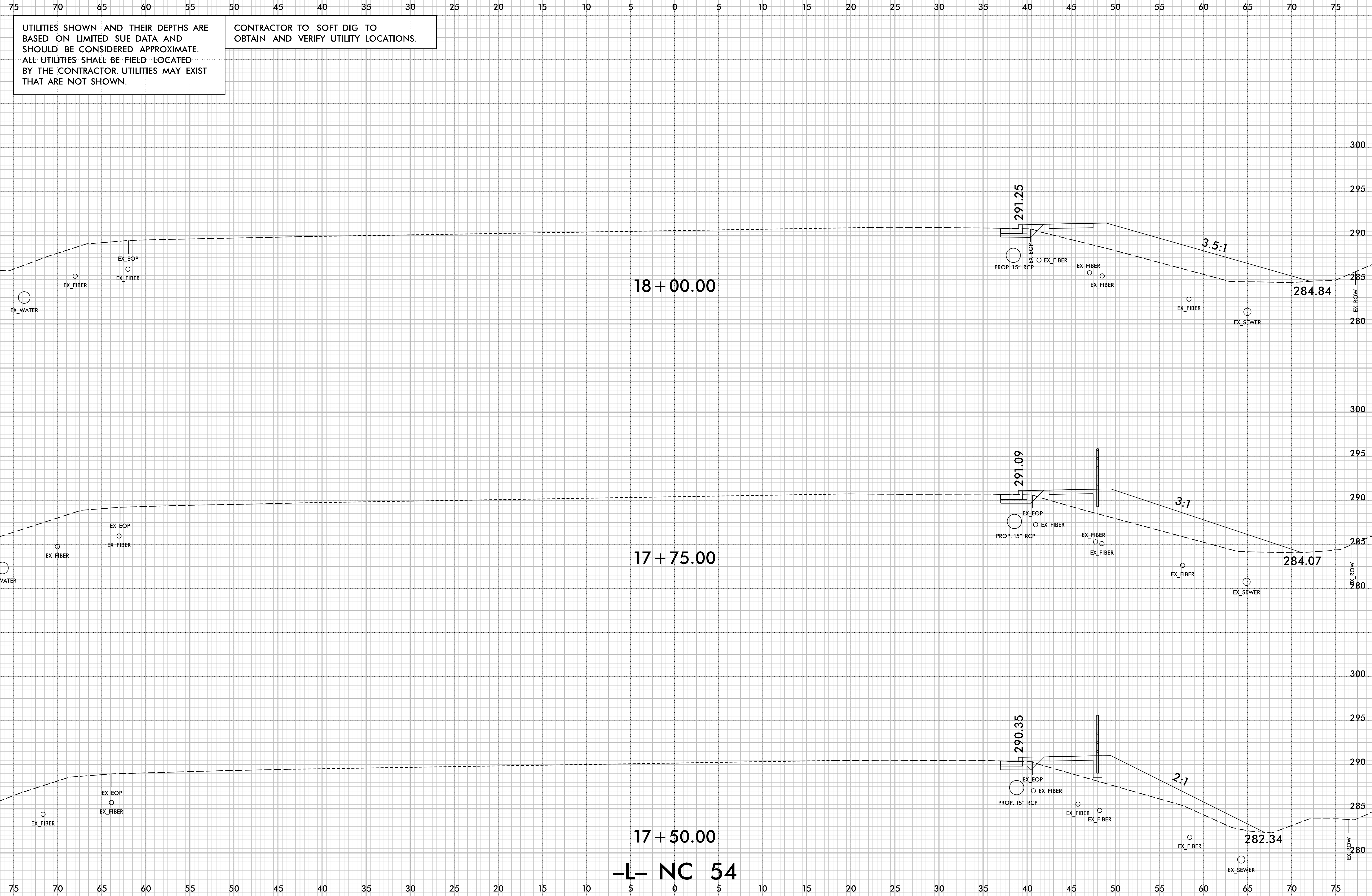
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PROJ. REFERENCE NO.
CD-21-01-D28

SHEET NO.
X-3



UTILITIES SHOWN AND THEIR DEPTHS ARE BASED ON LIMITED SUE DATA AND SHOULD BE CONSIDERED APPROXIMATE. ALL UTILITIES SHALL BE FIELD LOCATED BY THE CONTRACTOR. UTILITIES MAY EXIST THAT ARE NOT SHOWN.

CONTRACTOR TO SOFT DIG TO OBTAIN AND VERIFY UTILITY LOCATIONS.

18 + 00.00

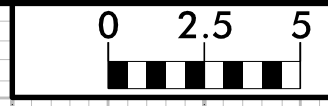
17 + 75.00

17 + 50.00

-L- NC 54

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6/23/16

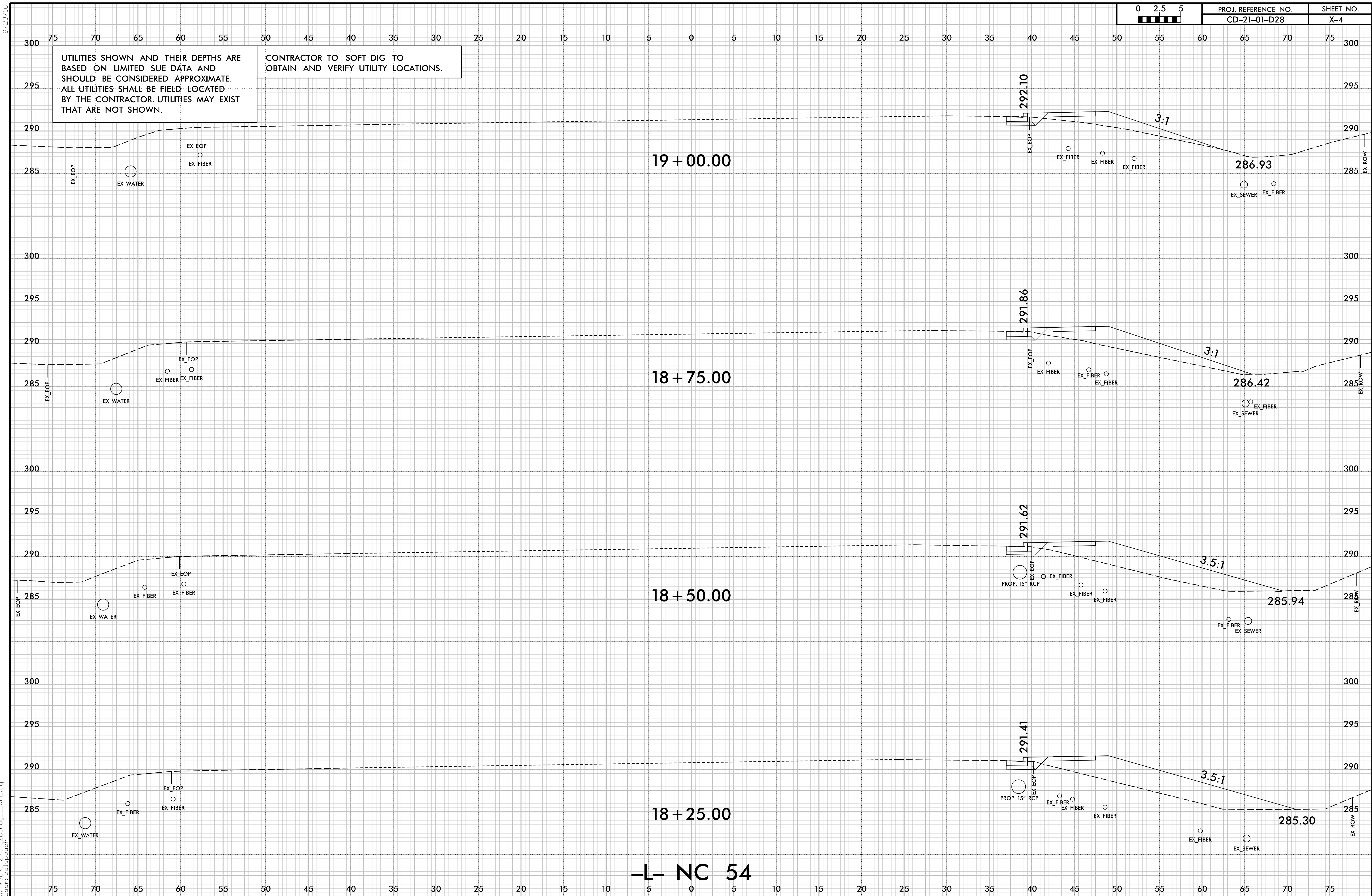


PROJ. REFERENCE NO.
CD-21-01-D28

SHEET NO.
X-4

UTILITIES SHOWN AND THEIR DEPTHS ARE
BASED ON LIMITED SUE DATA AND
SHOULD BE CONSIDERED APPROXIMATE.
ALL UTILITIES SHALL BE FIELD LOCATED
BY THE CONTRACTOR. UTILITIES MAY EXIST
THAT ARE NOT SHOWN.

CONTRACTOR TO SOFT DIG TO
OBTAIN AND VERIFY UTILITY LOCATIONS.



19 + 00.00

18 + 75.00

18 + 50.00

18 + 25.00

-L- NC 54

292.10

291.86

291.62

291.41

286.93

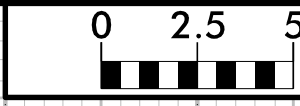
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285.94

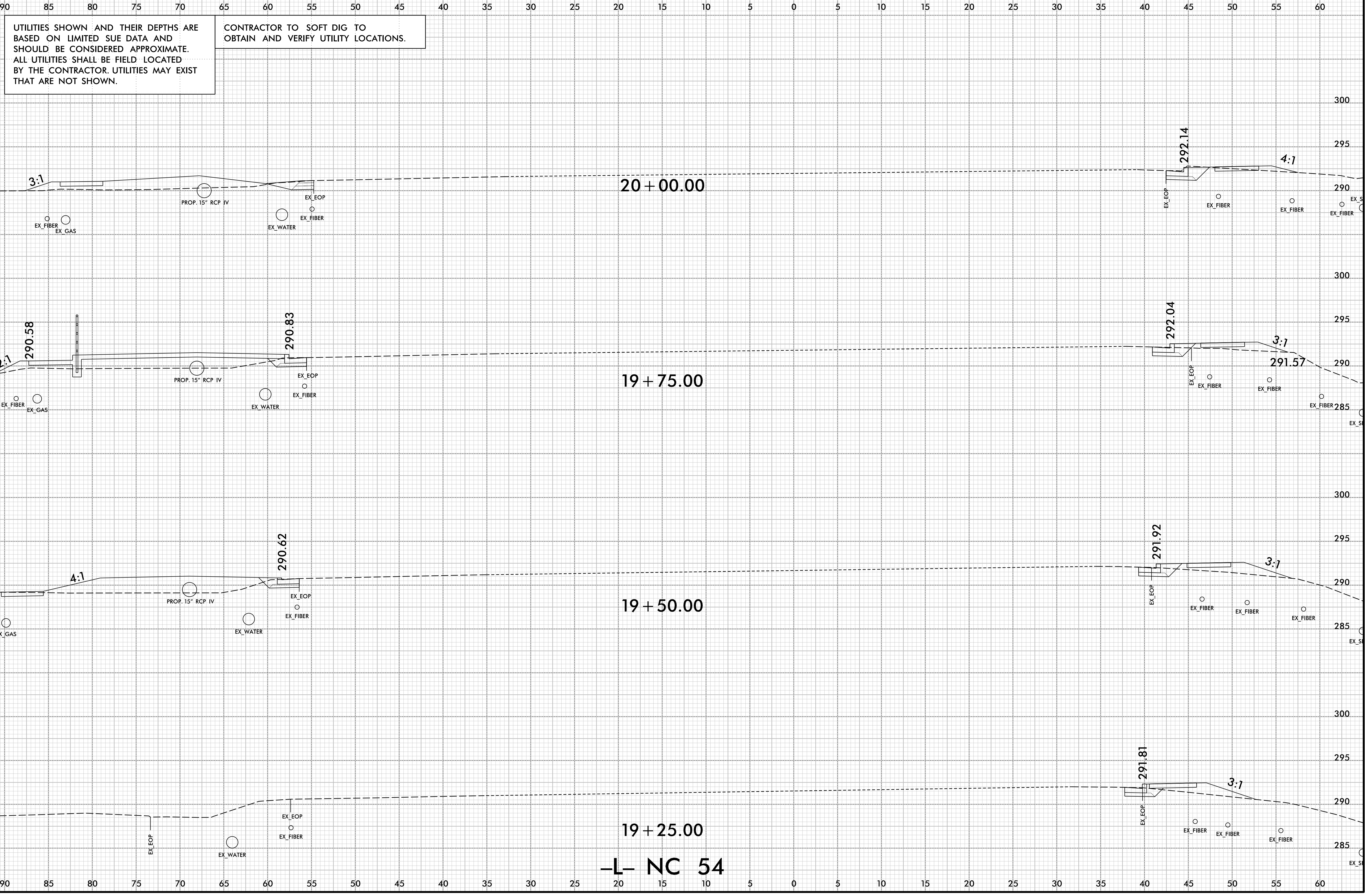
285.30

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6/23/16



PROJ. REFERENCE NO. CD-21-01-D28	SHEET NO. X-5
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UTILITIES SHOWN AND THEIR DEPTHS ARE BASED ON LIMITED SUE DATA AND SHOULD BE CONSIDERED APPROXIMATE. ALL UTILITIES SHALL BE FIELD LOCATED BY THE CONTRACTOR. UTILITIES MAY EXIST THAT ARE NOT SHOWN.

CONTRACTOR TO SOFT DIG TO OBTAIN AND VERIFY UTILITY LOCATIONS.

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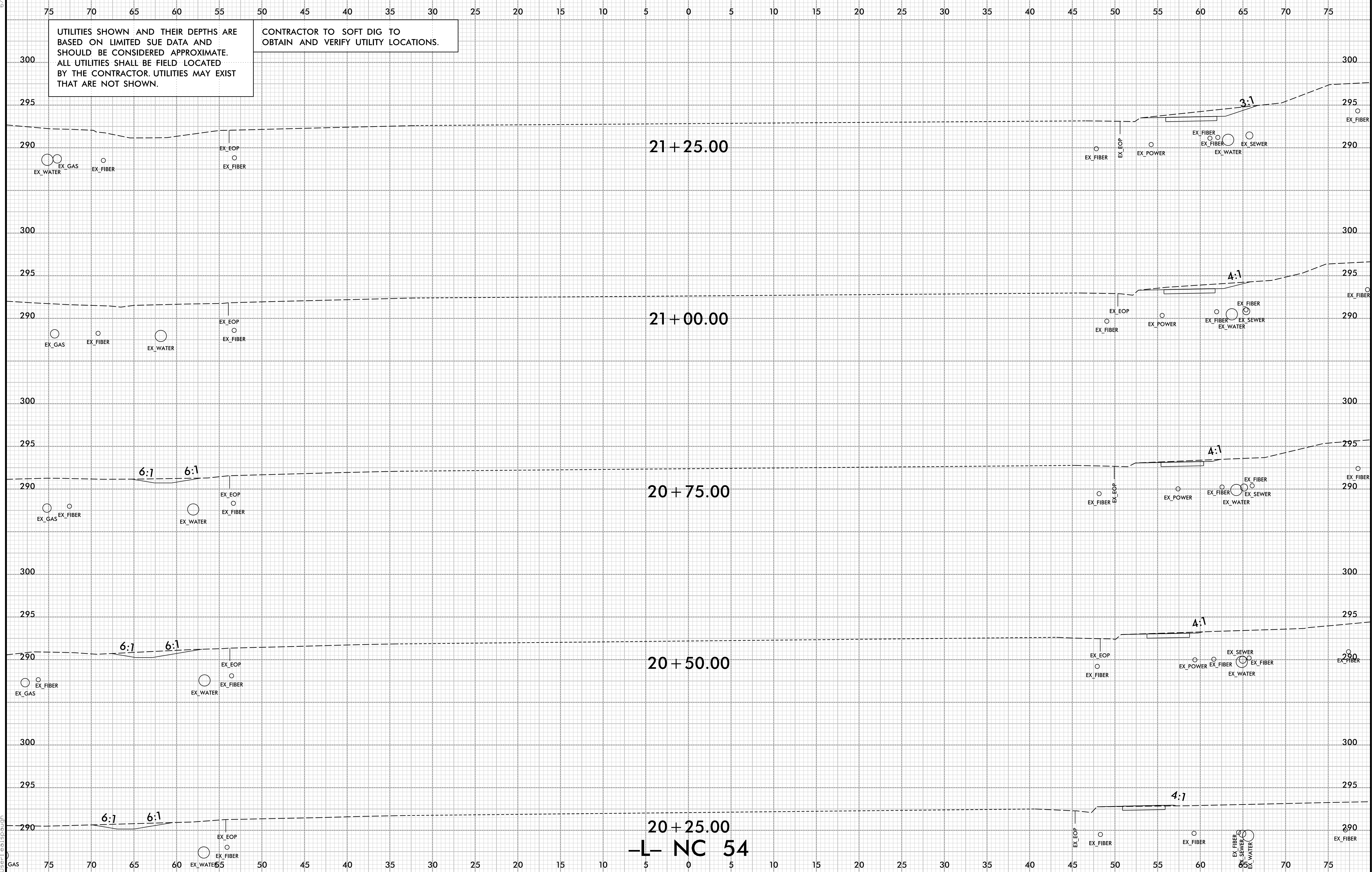
19 + 25.00
 -L- NC 54

6/23/16

0 2.5 5	PROJ. REFERENCE NO. CD-21-01-D28	SHEET NO. X-6
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UTILITIES SHOWN AND THEIR DEPTHS ARE BASED ON LIMITED SUE DATA AND SHOULD BE CONSIDERED APPROXIMATE. ALL UTILITIES SHALL BE FIELD LOCATED BY THE CONTRACTOR. UTILITIES MAY EXIST THAT ARE NOT SHOWN.

CONTRACTOR TO SOFT DIG TO OBTAIN AND VERIFY UTILITY LOCATIONS.

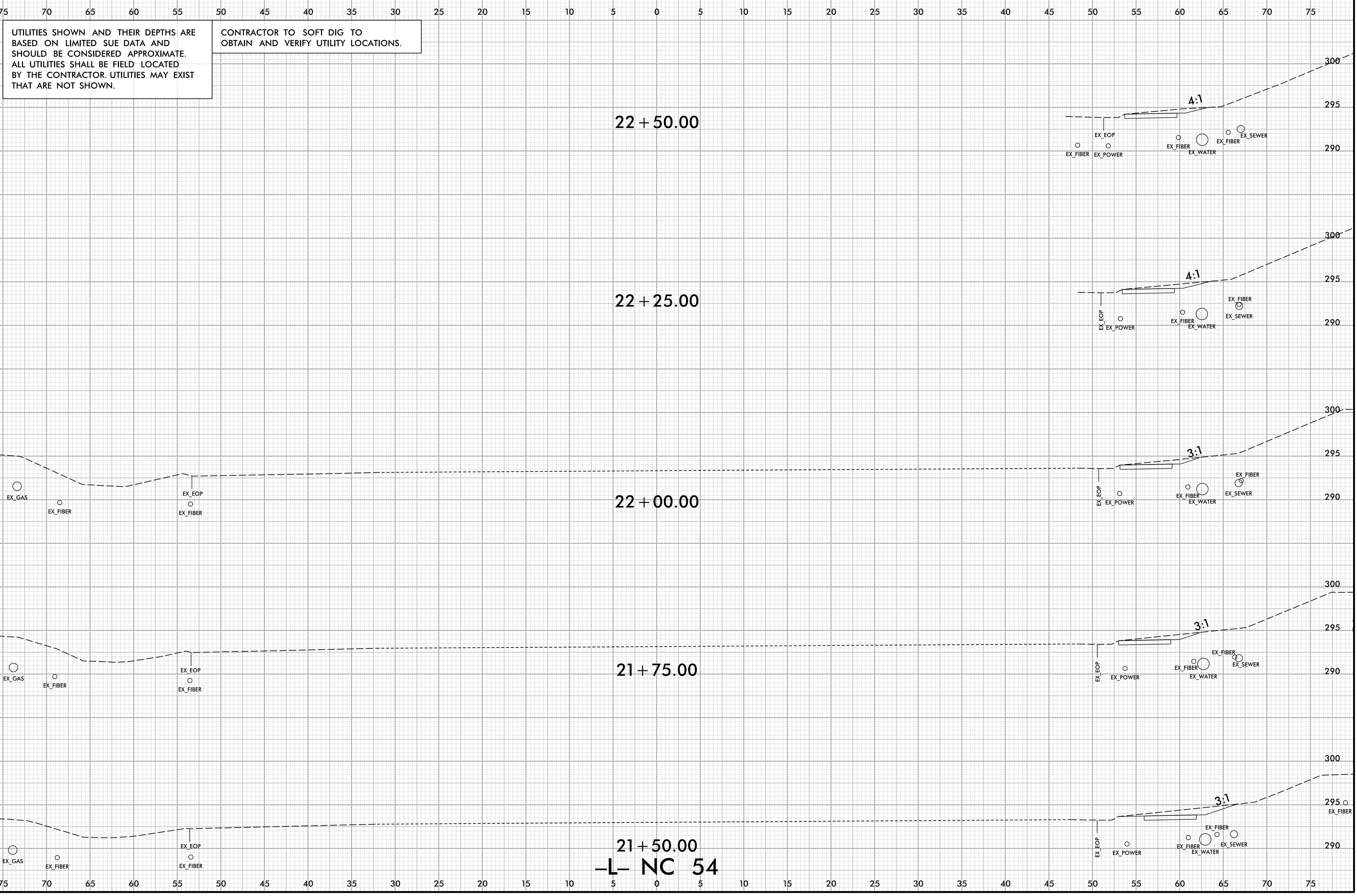


20+25.00
-L- NC 54

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6/23/16

0 2.5 5	PROJ. REFERENCE NO. CD-21-01-D28	SHEET NO. X-7
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UTILITIES SHOWN AND THEIR DEPTHS ARE BASED ON LIMITED SUE DATA AND SHOULD BE CONSIDERED APPROXIMATE. ALL UTILITIES SHALL BE FIELD LOCATED BY THE CONTRACTOR. UTILITIES MAY EXIST THAT ARE NOT SHOWN.

CONTRACTOR TO SOFT DIG TO OBTAIN AND VERIFY UTILITY LOCATIONS.

22 + 50.00

22 + 25.00

22 + 00.00

21 + 75.00

21 + 50.00
-L- NC 54

1/23/2015
User: eal
User: eal

6/23/16



PROJ. REFERENCE NO. CD-21-01-D28

SHEET NO. X-8

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

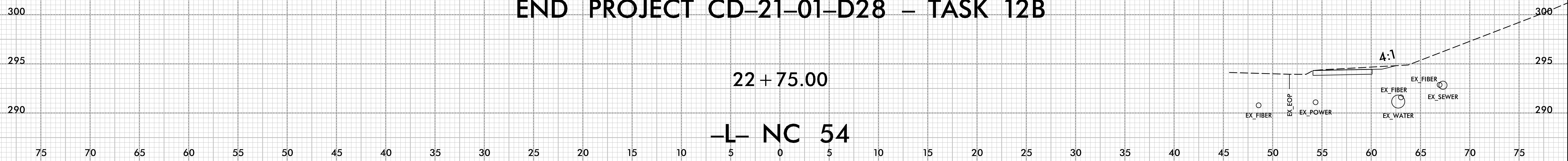
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CONTRACTOR TO SOFT DIG TO OBTAIN AND VERIFY UTILITY LOCATIONS.

-L- STA. 23+19.10
 END PROJECT CD-21-01-D28 - TASK 12B

22+75.00

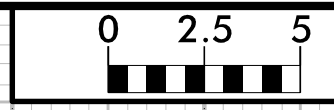
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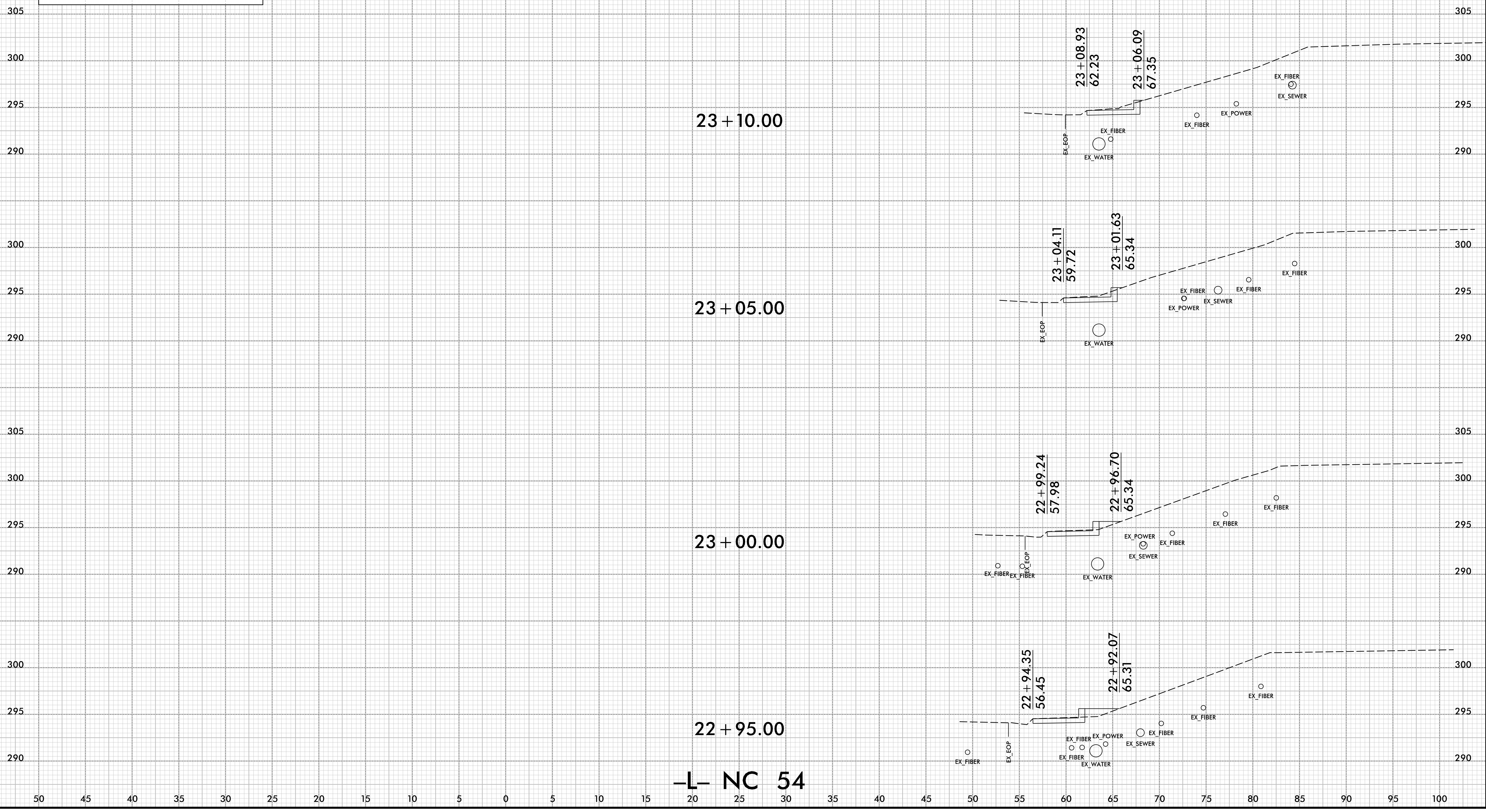
PROJ. REFERENCE NO. CD-21-01-D28	SHEET NO. X-9
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UTILITIES SHOWN AND THEIR DEPTHS ARE BASED ON LIMITED SUE DATA AND SHOULD BE CONSIDERED APPROXIMATE. ALL UTILITIES SHALL BE FIELD LOCATED BY THE CONTRACTOR. UTILITIES MAY EXIST THAT ARE NOT SHOWN.

CONTRACTOR TO SOFT DIG TO OBTAIN AND VERIFY UTILITY LOCATIONS.

CROSS SECTIONS FROM 22+75 TO 23+20 ARE CUT PERPENDICULAR TO THE CURVE/CURB LINE.



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CD-21-01-D28

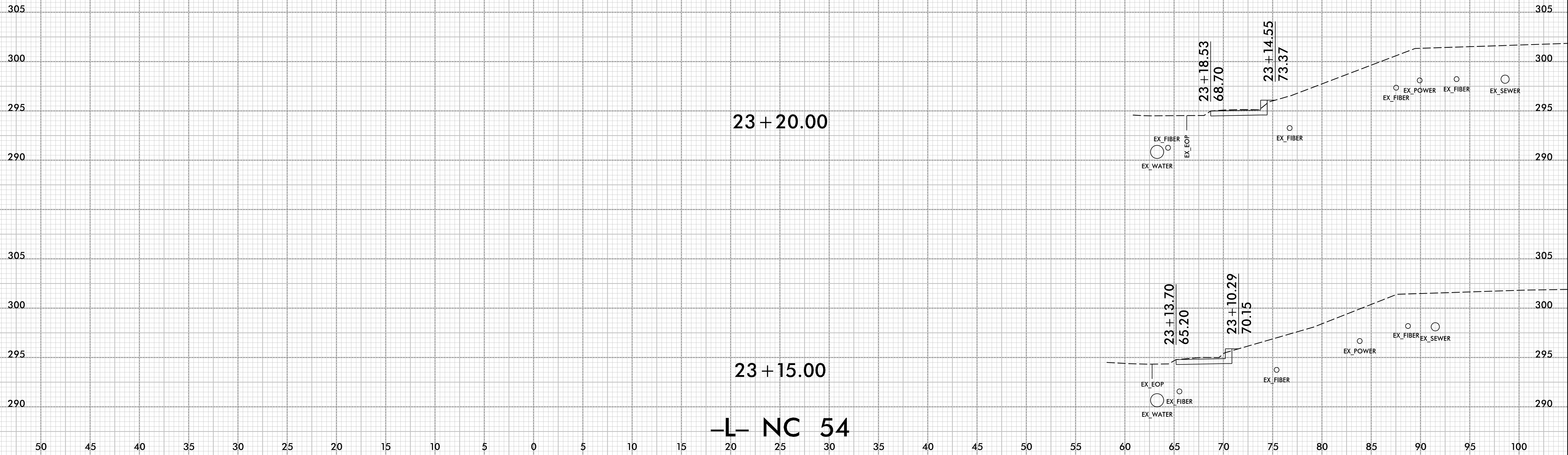
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X-10

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UTILITIES SHOWN AND THEIR DEPTHS ARE BASED ON LIMITED SUE DATA AND SHOULD BE CONSIDERED APPROXIMATE. ALL UTILITIES SHALL BE FIELD LOCATED BY THE CONTRACTOR. UTILITIES MAY EXIST THAT ARE NOT SHOWN.

CONTRACTOR TO SOFT DIG TO OBTAIN AND VERIFY UTILITY LOCATIONS.

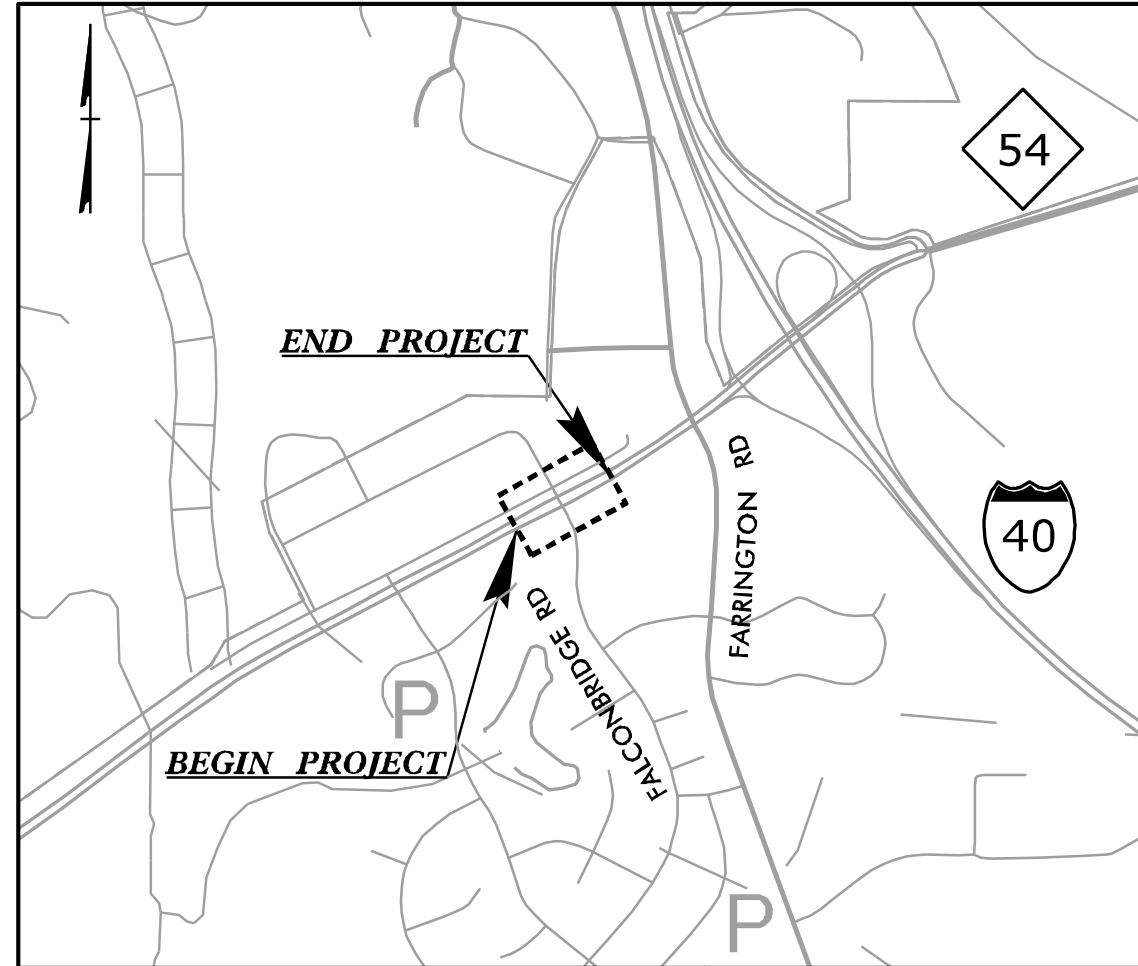
CROSS SECTIONS FROM 22+75 TO 23+20 ARE CUT PERPENDICULAR TO THE CURVE/CURB LINE.



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User: ealispugh

PROJECT: CD-21-01-D28 (DRMP PROJECT 19275-12C)

See Sheet 1B For Conventional Symbols



VICINITY MAP
N.T.S.

- PUBLIC WORKS CONDITION OF APPROVAL:**
1. THE DESIGNING PROFESSIONAL (A NCPE, NCPLS, OR NCRLA - AS REQUIRED) SHALL SUBMIT THREE (3) SETS OF CONSTRUCTION DRAWINGS TO THE PUBLIC WORKS DEPARTMENT - DEVELOPMENT REVIEW FOR REVIEW AND APPROVAL. CONSTRUCTION DRAWING APPROVAL IS REQUIRED PRIOR TO COMMENCING CONSTRUCTION (SEE CONSTRUCTION PLAN APPROVAL PROCESS). THE APPROVAL OF CONSTRUCTION DRAWINGS IS SEPARATE FROM SITE PLAN APPROVAL. CITY OFFICIALS SHALL REVIEW ALL SIZES, MATERIALS, SLOPES, LOCATIONS, EXTENSIONS AND DEPTHS FOR ALL PROPOSED UTILITIES (WATERLINES, SANITARY SEWER LINES AND STORM DRAINAGE CONVEYANCE SYSTEMS) FOR COMPLIANCE WITH ALL APPLICABLE REGULATORY STANDARDS, SPECIFICATIONS, AND BEST MANAGEMENT PRACTICES.
 2. THE DESIGNING PROFESSIONAL (A NCPE, NCPLS, OR NCRLA - AS REQUIRED) SHALL SUBMIT ONE (1) SET OF AS-BUILT DRAWINGS TO THE PUBLIC WORKS DEPARTMENT - DEVELOPMENT REVIEW FOR REVIEW AND APPROVAL. AS-BUILT DRAWING APPROVAL IS REQUIRED PRIOR TO WATER METER INSTALLATION AND/OR SANITARY SEWER SERVICE CONNECTION AND PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
 3. A CONSTRUCTION ON CITY RIGHT-OF-WAY/PRIVATE PROPERTY PERMIT MAY BE REQUIRED. CONTACT THE PUBLIC WORKS CUSTOMER SERVICE DESK AT 560-4326.

100% PLANS
SUBMITTAL DATE: 05-29-2025

NOTES:

1. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II SHOWN ON NCDOT RSD 200.02.
2. EXISTING CONDITIONS SURVEY PERFORMED BY DRMP.
3. ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH CURRENT CITY OF DURHAM AND/OR NCDOT STANDARDS.
4. THIS PROJECT IS LOCATED WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF DURHAM.

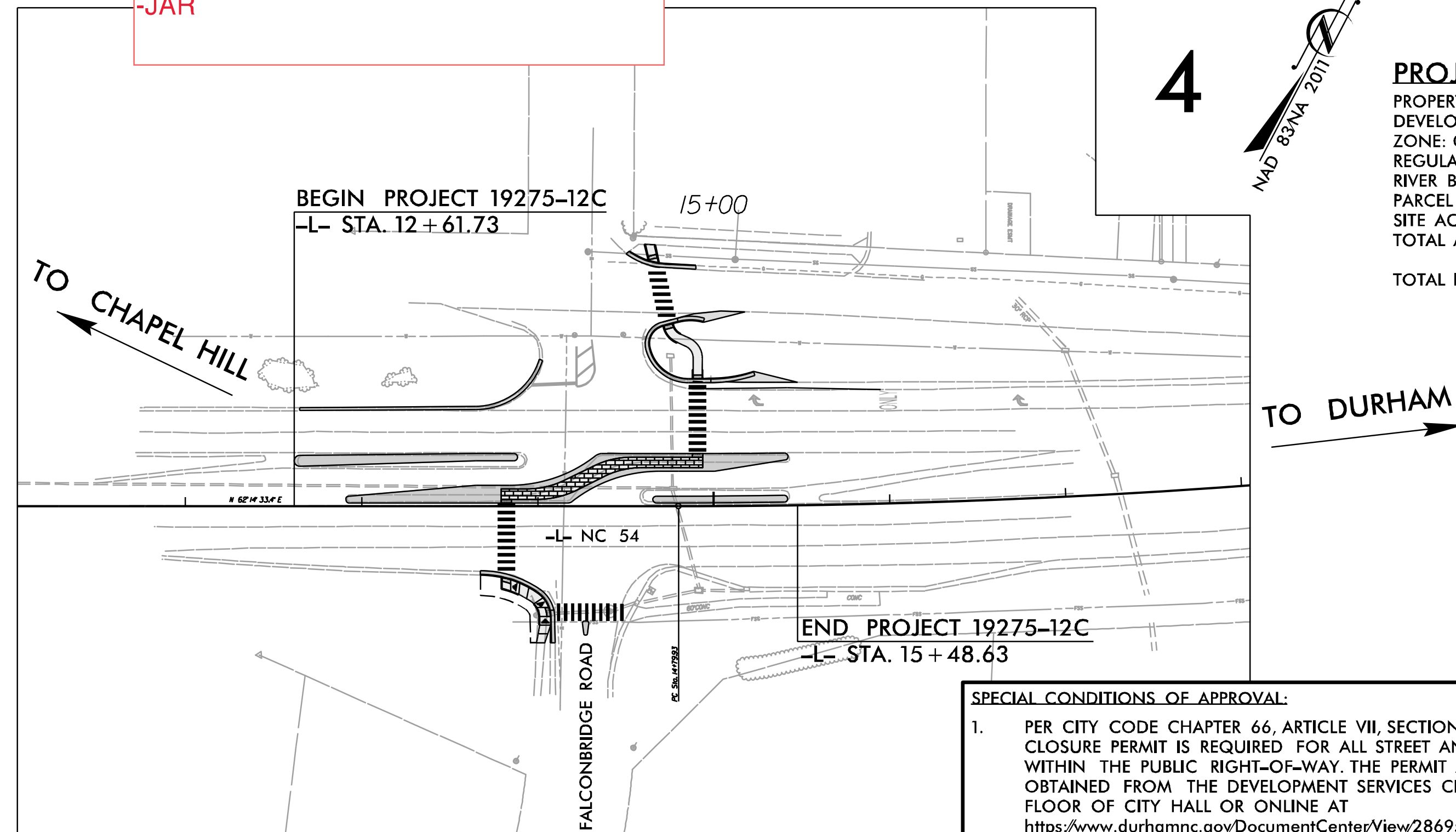
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
DURHAM COUNTY

LOCATION: AT THE INTERSECTION OF NC 54 AND FALCONBRIDGE ROAD

TYPE OF WORK: GRADING, PAVING, DRAINAGE, & SIGNALS

Approved with comments 6/10/2025

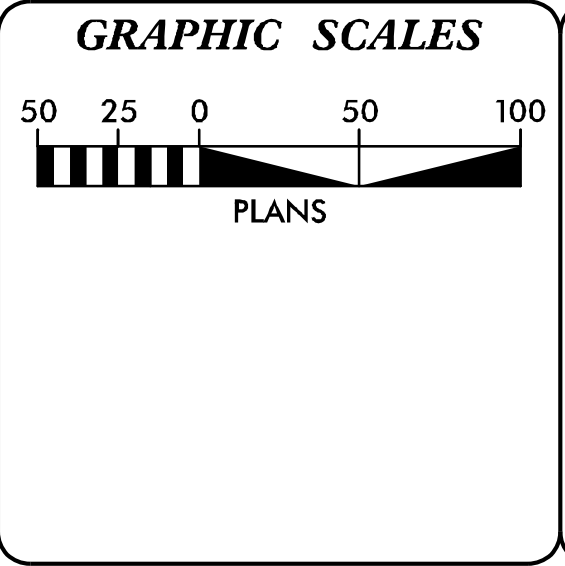
-JAR



PROJECT DATA:
PROPERTY OWNER: PUBLIC RIGHT-OF-WAY
DEVELOPMENT TIER: LEIGH VILLAGE CN
ZONE: CC & O(D)
REGULATORY BASIN: JORDAN LAKE
RIVER BASIN: CAPE FEAR
PARCEL ID: PUBLIC RIGHT-OF-WAY
SITE ACREAGE: N/A
TOTAL AREA OF DISTURBANCE: 21513 SF
IN ROW: 21513 SF
TOTAL INCREASE IN IMPERVIOUS: 1042 SF
IN ROW: 1042 SF

SPECIAL CONDITIONS OF APPROVAL:

1. PER CITY CODE CHAPTER 66, ARTICLE VII, SECTION 66-431, A TEMPORARY CLOSURE PERMIT IS REQUIRED FOR ALL STREET AND SIDEWALK CLOSURES WITHIN THE PUBLIC RIGHT-OF-WAY. THE PERMIT APPLICATION CAN BE OBTAINED FROM THE DEVELOPMENT SERVICES CENTER ON THE GROUND FLOOR OF CITY HALL OR ONLINE AT <https://www.durhamnc.gov/DocumentCenter/View/28695/Closure-Permit-Application?bidId=>. PRIOR TO ANY ROADWAY CLOSURES, REMOVAL OF ON-STREET PARKING, OR SIDEWALK CLOSURES, TRAFFIC CONTROL PLAN(S) SHALL BE SUBMITTED FOR REVIEW/APPROVAL WITH THE TEMPORARY CLOSURE PERMIT APPLICATION A MINIMUM OF FOUR (4) WEEKS IN ADVANCE OF THE ANTICIPATED CLOSURE. TRAFFIC CONTROL PLANS SHALL INCLUDE NEW OR TEMPORARY CIRCULATION ROUTES AND PROTECTION MEASURES AS APPROPRIATE.



DESIGN DATA
ADT 2019 = 46,000
V = 50 MPH

PROJECT LENGTH
LENGTH ROADWAY PROJECT 19275-12C = 0.054 MILES

GOTRIANGLE CONTACT: RICHARD MAJOR
SENIOR ENGINEER - CAPITAL DEVELOPMENT
(919)485-7483

NCDOT CONTACT: JOHN SANDOR, PE
DISTRICT ENGINEER
(919)317-4770

PLANS PREPARED BY:

DRMP
ENGINEERS SURVEYORS PLANNERS SUBMITTERS

BENJAMIN R. LENNON, P.E.
PROJECT ENGINEER

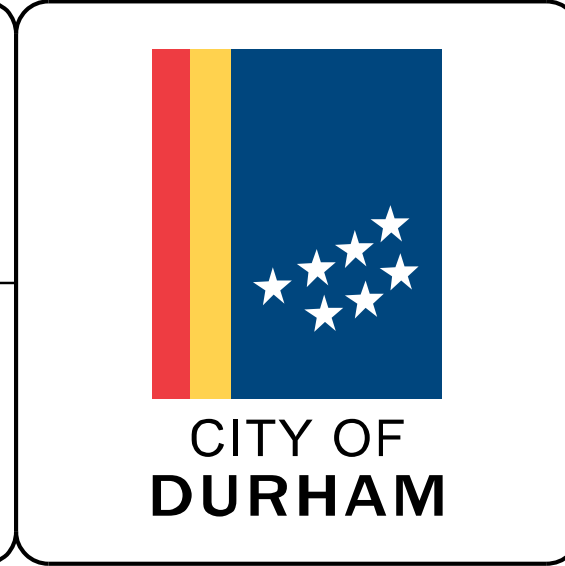
ERIC ALSPAUGH
PROJECT DESIGNER

HYDRAULICS ENGINEER

BENJAMIN R. LENNON, P.E.
SEAL 037438
6/10/2025

ROADWAY DESIGN ENGINEER

BENJAMIN R. LENNON, P.E.
SEAL 037438
6/10/2025



INDEX OF SHEETS	
1	TITLE SHEET
1A	GENERAL NOTES & STANDARDS
1B	CONVENTIONAL SYMBOLS
2A-1	TYPICAL SECTION
3D-1	DRAINAGE SUMMARY SHEET
4	ROADWAY PLAN SHEET
TMP-1 THRU TMP-4	TRAFFIC CONTROL PHASING NOTES
PMP-1 THRU PMP-2	PAYEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
X-1 THRU X-4	CROSS SECTIONS

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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GENERAL NOTES AND 2024 ROADWAY ENGLISH STANDARD DRAWINGS

GENERAL NOTES 2024 SPECIFICATIONS EFF. 01-16-2024

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/METHOD III/MODIFIED METHOD III.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01/02.

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

STREET TURNOUT:

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

UTILITIES

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.


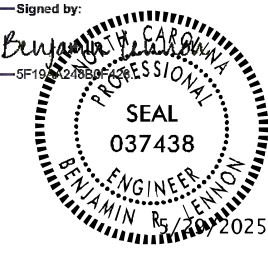

CURB RAMPS:

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS IN ACCORDANCE WITH STD. 848.06.

2024 ROADWAY ENGLISH STANDARD DRAWINGS EFF. 01-16-2024

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" CONTRACTS STANDARDS AND DEVELOPEMENT UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 16, 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE	STD. NO.	TITLE
DIVISION 2 - EARTHWORK		DIVISION 8 - INCIDENTALS	
200.02	METHOD OF CLEARING - METHOD II	840.02	CONCRETE CATCH BASIN - 12" THRU 54" PIPE
DIVISION 3 - PIPE CULVERTS		840.03	FRAME, GRATES AND HOOD - FOR USE ON STANDARD CATCH BASIN
300.01 METHOD OF PIPE INSTALLATION		840.14	CONCRETE DROP INLET - 12" THRU 30" PIPE
DIVISION 6 - ASPHALT BASES AND PAVEMENTS		840.16	DROP INLET FRAME AND GRATES - FOR USE WITH STD. DWG 840.14 AND 840.15
654.01	PAVEMENT REPAIRS	840.25	ANCHORAGE FOR FRAMES - BRICK OR CONCRETE OR PRECAST
		840.31	CONCRETE JUNCTION BOX - 12" THRU 66" PIPE
		840.45	PRECAST DRAINAGE STRUCTURE
		840.46	TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE
		840.52	PRECAST MANHOLE - 4', 5', AND 6' DIAMETER 12" THRU 48" PIPE
		840.54	MANHOLE FRAME AND COVER
		840.55	MANHOLE FRAME AND COVER (FLUSH WITH SLAB FOR OPEN THROAT CATCH BASIN)
		846.01	CONCRETE CURB, GUTTER, AND CURB & GUTTER
		848.01	CONCRETE SIDEWALK
		848.06	CURB RAMP
		852.01	CONCRETE ISLANDS
		852.06	METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS

PROJECT REFERENCE NO. 19275-12C	SHEET NO. 1A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
Signed by:   SEAL 037438 ENGINEER EXPIRES 01/16/2025	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PLANS PREPARED BY:  DRMP, INC. 5008 FARMWOOD PLACE RALEIGH, NC 27608 NC LICENSE NO. 40288 (P) (S) 07/24/15	

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

PROJECT REFERENCE NO. 19275-12C	SHEET NO. 1B
PLANS PREPARED BY: DRMP DRMP INC. 9000 FARMWOOD PLACE RALEIGH, NC 27605 NC LICENSE NO. 151024 (P) 01/07/2015	

Note: Not to Scale

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin (EIP)	⊙
Computed Property Corner	×
Existing Concrete Monument (ECM)	⊠
Parcel/Sequence Number	⑫
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	-o-o-o-
Proposed Chain Link Fence	-□-□-□-
Proposed Barbed Wire Fence	-◇-◇-◇-
Existing Wetland Boundary	-W-W-W-
Proposed Wetland Boundary	-W-W-W-
Existing Endangered Animal Boundary	-E-A-E-
Existing Endangered Plant Boundary	-E-P-E-
Existing Historic Property Boundary	-H-P-B-
Known Contamination Area: Soil	-S-S-S-
Potential Contamination Area: Soil	-S-S-S-
Known Contamination Area: Water	-W-W-W-
Potential Contamination Area: Water	-W-W-W-
Contaminated Site: Known or Potential	☠ ☠

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	⊙
Sign	⊙
Well	⊙
Small Mine	⊗
Foundation	⊠
Area Outline	⊠
Cemetery	⊠
Building	⊠
School	⊠
Church	⊠
Dam	⊠

HYDROLOGY:

Stream or Body of Water	~~~~~
Hydro, Pool or Reservoir	⊠
Jurisdictional Stream	-JS-
Buffer Zone 1	-BZ 1-
Buffer Zone 2	-BZ 2-
Flow Arrow	←
Disappearing Stream	→
Spring	⊙
Wetland	⊠
Proposed Lateral, Tail, Head Ditch	⊠
False Sump	⊠

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	⊙
Switch	⊠
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY & PROJECT CONTROL:

Primary Horiz Control Point	⊙
Primary Horiz and Vert Control Point	⊙
Secondary Horiz and Vert Control Point	⊙
Vertical Benchmark	⊠
Existing Right of Way Monument	⊠
Proposed Right of Way Monument (Rebar and Cap)	⊠
Proposed Right of Way Monument (Concrete)	⊠
Existing Permanent Easement Monument	⊠
Proposed Permanent Easement Monument (Rebar and Cap)	⊠
Existing C/A Monument	⊠
Proposed C/A Monument (Rebar and Cap)	⊠
Proposed C/A Monument (Concrete)	⊠
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Existing Control of Access Line	-----
Proposed Control of Access Line	-----
Proposed ROW and CA Line	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage/Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Curb Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊙
Pavement Removal	⊠

VEGETATION:

Single Tree	⊙
Single Shrub	⊙
Hedge	-----

Woods Line	-----
Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

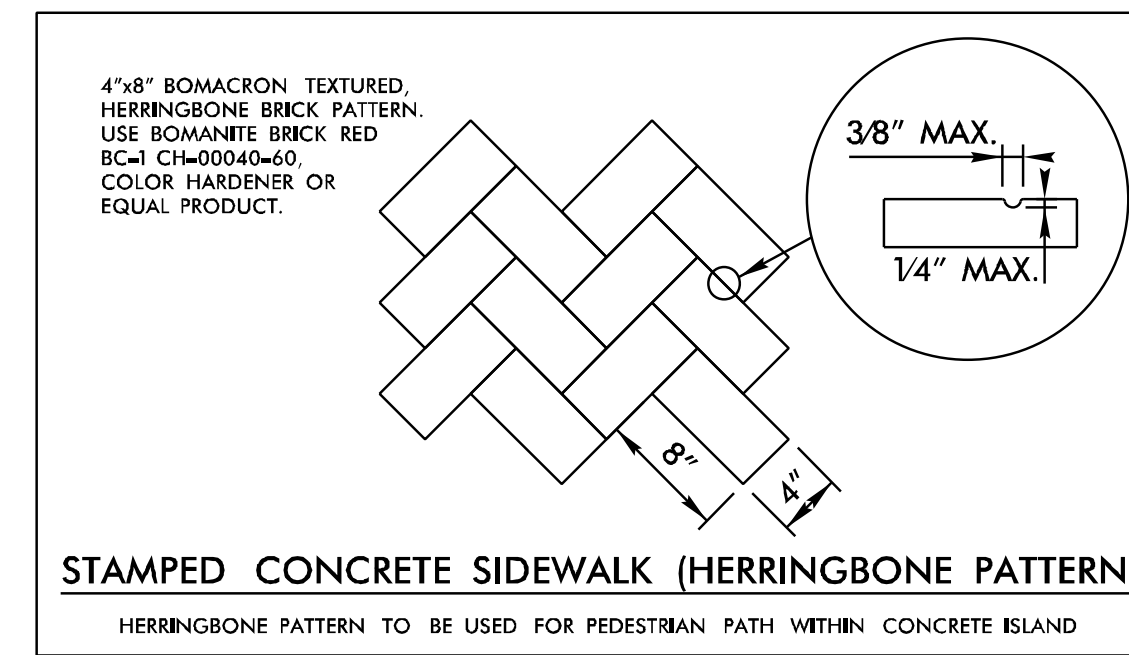
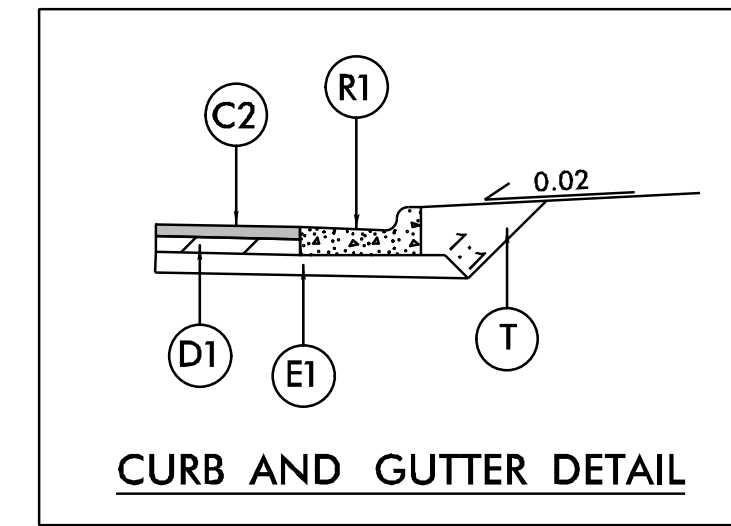
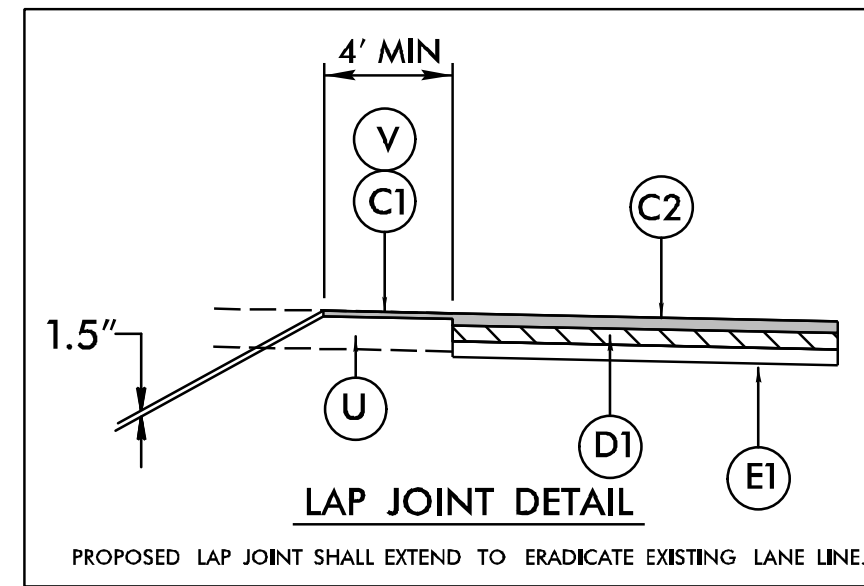
MAJOR:	-----
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	-----
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	-----
Paved Ditch Gutter	-----
Storm Sewer Manhole	-----
Storm Sewer	-----

UTILITIES:
* SUE - Subsurface Utility Engineering
LOS - Level of Service - A, B, C or D (Accuracy)

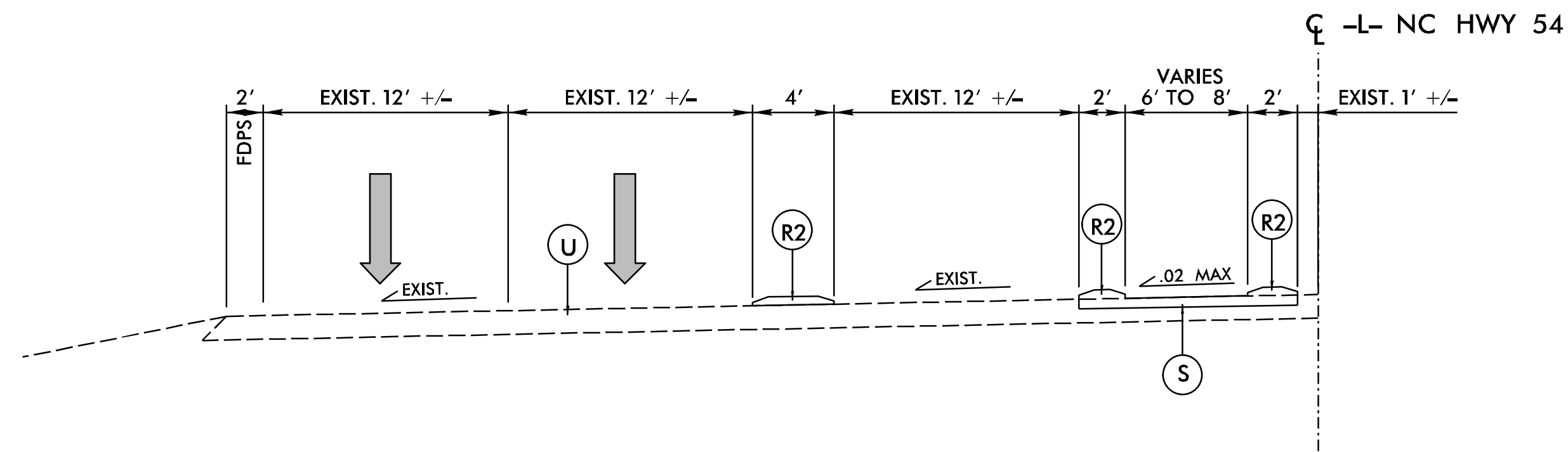
POWER:	-----
Existing Power Pole	-----
Proposed Power Pole	-----
Existing Joint Use Pole	-----
Proposed Joint Use Pole	-----
Power Manhole	-----
Power Line Tower	-----
Power Transformer	-----
U/G Power Cable Hand Hole	-----
H-Frame Pole	-----
U/G Power Line Test Hole (SUE - LOS A)*	-----
U/G Power Line (SUE - LOS B)*	-----
U/G Power Line (SUE - LOS C)*	-----
U/G Power Line (SUE - LOS D)*	-----
TELEPHONE:	-----
Existing Telephone Pole	-----
Proposed Telephone Pole	-----
Telephone Manhole	-----
Telephone Pedestal	-----
Telephone Cell Tower	-----
U/G Telephone Cable Hand Hole	-----
U/G Telephone Test Hole (SUE - LOS A)*	-----
U/G Telephone Cable (SUE - LOS B)*	-----
U/G Telephone Cable (SUE - LOS C)*	-----
U/G Telephone Cable (SUE - LOS D)*	-----
U/G Telephone Conduit (SUE - LOS B)*	-----
U/G Telephone Conduit (SUE - LOS C)*	-----
U/G Telephone Conduit (SUE - LOS D)*	-----
U/G Fiber Optics Cable (SUE - LOS B)*	-----
U/G Fiber Optics Cable (SUE - LOS C)*	-----
U/G Fiber Optics Cable (SUE - LOS D)*	-----

WATER:	-----
Water Manhole	-----
Water Meter	-----
Water Valve	-----
Water Hydrant	-----
U/G Water Line Test Hole (SUE - LOS A)*	-----
U/G Water Line (SUE - LOS B)*	-----
U/G Water Line (SUE - LOS C)*	-----
U/G Water Line (SUE - LOS D)*	-----
Above Ground Water Line	-----
TV:	-----
TV Pedestal	-----
TV Tower	-----
U/G TV Cable Hand Hole	-----
U/G TV Test Hole (SUE - LOS A)*	-----
U/G TV Cable (SUE - LOS B)*	-----
U/G TV Cable (SUE - LOS C)*	-----
U/G TV Cable (SUE - LOS D)*	-----
U/G Fiber Optic Cable (SUE - LOS B)*	-----
U/G Fiber Optic Cable (SUE - LOS C)*	-----
U/G Fiber Optic Cable (SUE - LOS D)*	-----
GAS:	-----
Gas Valve	-----
Gas Meter	-----
U/G Gas Line Test Hole (SUE - LOS A)*	-----
U/G Gas Line (SUE - LOS B)*	-----
U/G Gas Line (SUE - LOS C)*	-----
U/G Gas Line (SUE - LOS D)*	-----
Above Ground Gas Line	-----
SANITARY SEWER:	-----
Sanitary Sewer Manhole	-----
Sanitary Sewer Cleanout	-----
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
SS Force Main Line Test Hole (SUE - LOS A)*	-----
SS Force Main Line (SUE - LOS B)*	-----
SS Force Main Line (SUE - LOS C)*	-----
SS Force Main Line (SUE - LOS D)*	-----
MISCELLANEOUS:	-----
Utility Pole	-----
Utility Pole with Base	-----
Utility Located Object	-----
Utility Traffic Signal Box	-----
Utility Unknown U/G Line (SUE - LOS B)*	-----
U/G Tank; Water, Gas, Oil	-----
Underground Storage Tank, Approx. Loc.	-----
A/G Tank; Water, Gas, Oil	-----
Geoenvironmental Boring	-----
Abandoned According to Utility Records	-----
End of Information	-----

PAVEMENT SCHEDULE	
C1	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER INCH
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
R1	2'-6" CURB AND GUTTER (NCDOT 846.01)
R2	MONOLITHIC CONCRETE ISLAND (NCDOT 852.01)
S	6" CONCRETE SIDEWALK (CITY OF DURHAM 402.02/NCDOT 848.01)
T	COMPACTED EARTH MATERIAL
U	EXISTING PAVEMENT
V	1.5" MILLING



- NOTES: 1. ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE SPECIFIED.
 2. STAMPED PEDESTIAN PATHWAY WITHIN CONCRETE ISLAND IS TO USE HERRINGBONE PATTERN AS SHOWN ON THIS SHEET.
 3. STAMPED PEDESTRIAN PATHWAY CONTRACTION AND EXPANSION JOINTS TO MATCH CONCRETE ISLAND CONTRACTION AND EXPANSION JOINT SPACING. FOLLOW NCDOT STD. 852.01.



TYPICAL SECTION NO. 1

-L1- STA. 12 + 61.73 TO -L1- STA. 15 + 48.63

RKA PROJECT REFERENCE NO. 19275-12C	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
Signed by: <i>[Signature]</i> PROFESSIONAL SEAL 037438 ENGINEER EXPIRES 12/31/2025	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PLANS PREPARED BY: DRMP DRMP, INC. 5008 FARMWOOD PLACE RALEIGH, NC 27609 NC LICENSE NO. 44288 (P) 03/07/2015	

NOTES:





1. EXISTING CONDITIONS SURVEY PERFORMED BY DRMP.
2. NO RIGHT-OF-WAY OR EASEMENTS HAVE BEEN ACQUIRED ON ADJACENT PROPERTIES. COMPLETE ALL WORK WITHIN EXISTING RIGHT-OF-WAY.
3. CONTRACTOR TO SAWCUT SMOOTH EDGE ALONG PROPOSED CURB & GUTTER LOCATIONS. SAWCUT SHOULD BE FULL DEPTH OF ASPHALT.
4. CONCRETE MEDIAN ISLANDS ARE TO BE CONSTRUCTED ACCORDING TO NCDOT STD. 852.01.
5. SEE PAVEMENT MARKING PLANS FOR MARKINGS ASSOCIATED WITH LANE SHIFTS.

WANG BENHAO
 PID 141768
 DB 8345 - 445
 PB 134 - 177

DRMP PROJECT REFERENCE NO. 19275-12C	SHEET NO. 4
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 03743B
HYDRAULICS ENGINEER	SEAL 03743B
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PLANS PREPARED BY: DRMP	

REVISIONS

Resurface limits of work area.
 Paving limits to be determined by NCDOT personnel once concrete and signal work is complete.

-  PROPOSED 6" CONCRETE SIDEWALK WITH STAMPED RED BRICK PATTERN
-  PROPOSED 6" CONCRETE SIDEWALK
-  PROPOSED ASPHALT PAVEMENT
-  PROPOSED CONCRETE MEDIAN OR CURB & GUTTER

FALCONBRIDGE OFFICES OWNERS ASSOCIATION INC
 PID 142610
 DB 222 - 265
 PB 135 - 46

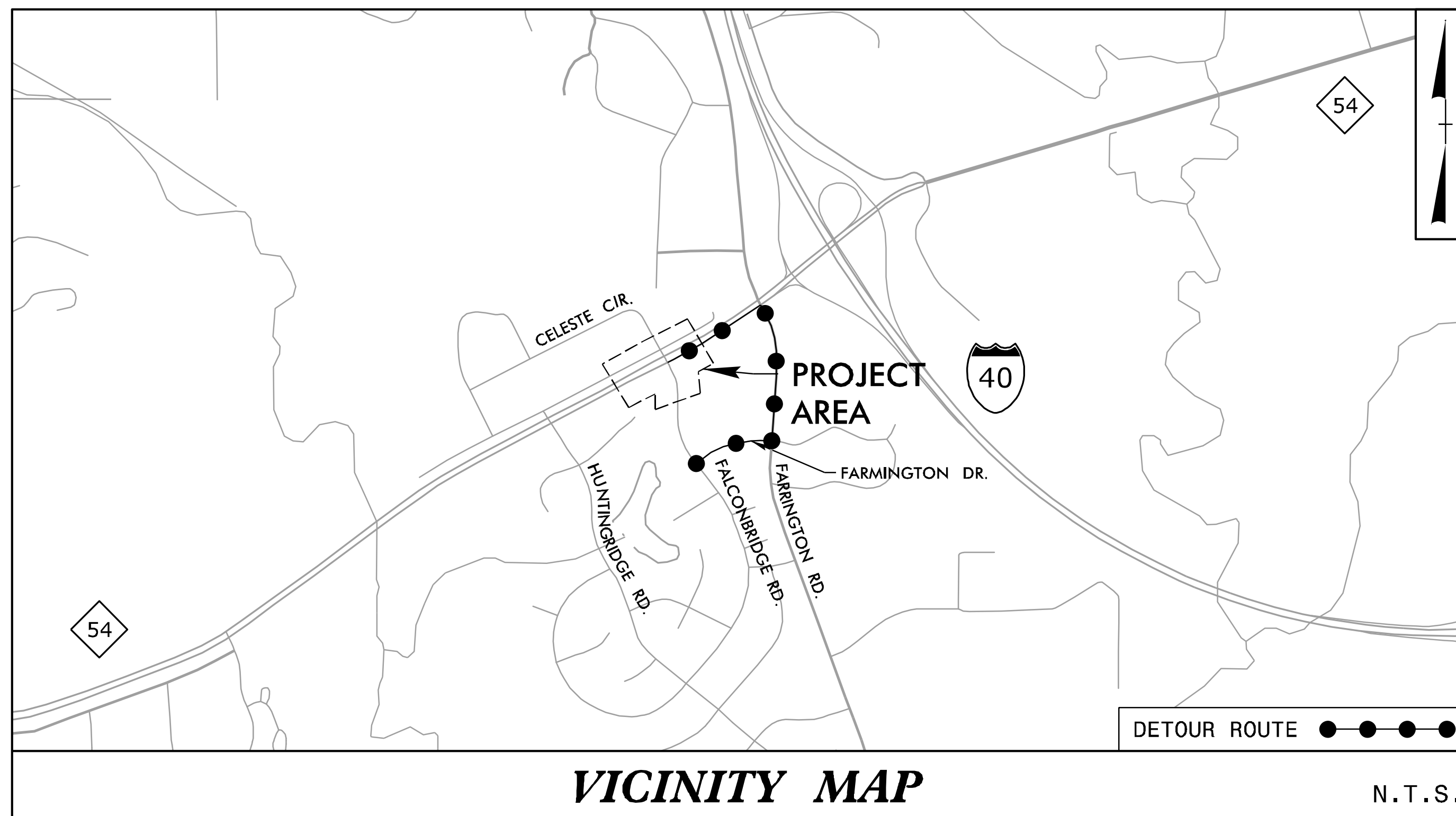
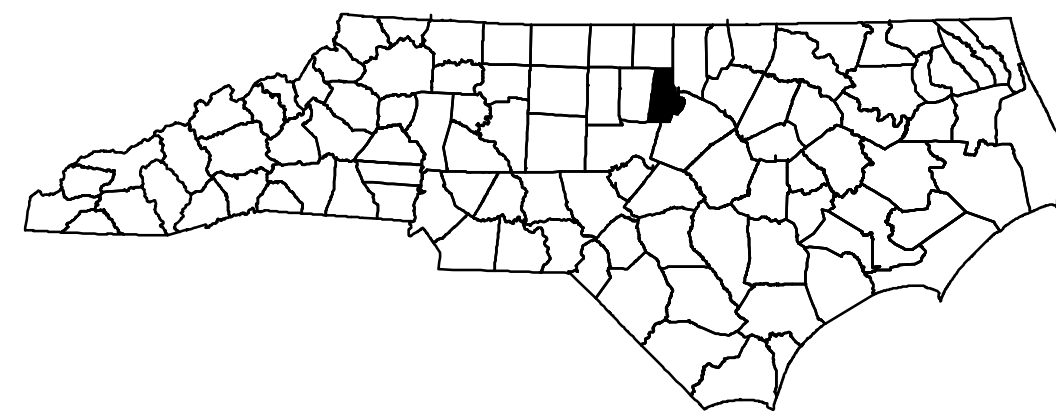
M M FOWLER INC
 PID 142615
 DB 8157 - 856
 PB 127 - 115

-L-
 PI Sta 17+00.43
 $\Delta = 5' 36' 37.8" (LT)$
 $D = 116' 23.7"$
 $L = 440.65'$
 $T = 220.50'$
 $R = 4,500.00'$

5/29/2025 11:47:01 AM 19275-12C_r-dj_psh04.dgn User: eastpaugh

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
TRANSPORTATION MANAGEMENT PLAN

DURHAM COUNTY
 NC 54 & FALCONBRIDGE ROAD



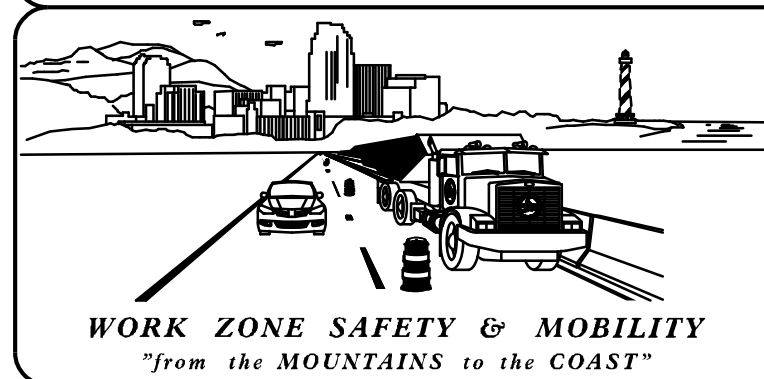
INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-2A-2B	GENERAL NOTES
TMP-3	TRANSPORTATION MANAGEMENT STRATEGIES AND PHASING PLAN
TMP-4	DETOUR ROUTE

SHEET NO.
 TMP - 1

DRMP PROJECT NUMBER: 19275-12C

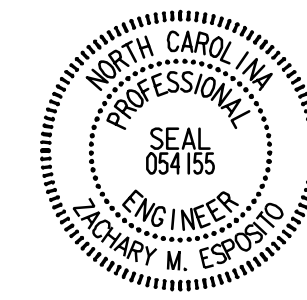
DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED



PLANS PREPARED BY:
 ZACHARY M. ESPOSITO, PE, TCDS
 PROJECT ENGINEER
 ERIC ALSPAUGH
 PROJECT DESIGN ENGINEER



APPROVED: *Zachary M. Esposito*
 DATE: 4/10/2025



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
NC 54	MONDAY-FRIDAY 6AM-9AM AND 3PM-7PM, SUNDAY 6AM-2PM
FALCONBRIDGE ROAD	MONDAY-FRIDAY 6AM-9AM AND 3PM-7PM, SUNDAY 6AM-2PM
NELSON HIGHWAY	MONDAY-FRIDAY 6AM-9AM AND 3PM-7PM, SUNDAY 6AM-2PM

LANE CLOSURE RESTRICTIONS DO NOT APPLY TO FALCONBRIDGE ROAD DURING PHASE II CONSTRUCTION. SEE ICTS AND PHASING NOTES FOR MORE INFORMATION.

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

ROAD NAME
ALL ROADS

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 6:00 A.M. DECEMBER 31st TO 7:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 7:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 7:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 7:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

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 7:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.

6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 7:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 7:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) 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

D) 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.

E) 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.

F) 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.

G) 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.


H) 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.

I) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON NC 54, NELSON HIGHWAY, AND/OR FALCONBRIDGE ROAD.

PROJ. REFERENCE NO. 19275-12C	SHEET NO. TMP-2A
DRMP INC. 5808 FARMWOOD PLACE RALEIGH, NC 27612 (919) 8726115	
NC LICENSE NO. F-1524 www.drmp.com	

APPROVED: <i>Zachary M. Esposito</i> DATE: 4/10/2025 SEAL		
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GENERAL NOTES		

PROJ. REFERENCE NO. 19275-12C	SHEET NO. TMP-2B
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5808 FARMINGTON PLACE
DALLAS, NC 27024
(919) 8726115

NC LICENSE NO. F-1524
www.drmp.com

GENERAL NOTES (CONT.)

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

TRAFFIC PATTERN ALTERATIONS

L) NOTIFY THE ENGINEER THIRTY (30) 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) 350FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES

R) 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.

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

PAVEMENT MARKINGS AND MARKERS

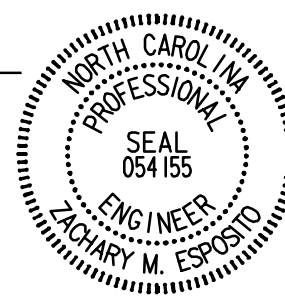

T) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

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

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

MISCELLANEOUS

W) 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.).

APPROVED: <i>Zachary M. Esposito</i> <small>REGISTERED PROFESSIONAL ENGINEER</small> DATE: 4/10/2025 SEAL			<h2>GENERAL NOTES</h2>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 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
1101.11	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
1180.01	SKINNY - DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.15	PAVEMENT MARKINGS - SUPERSTREETS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)

TRANSPORTATION MANAGEMENT STRATEGIES

THE FOLLOWING LISTED WORK ZONE STRATEGIES ARE RECOMMENDED FOR INCLUSION WITHIN THIS TRANSPORTATION MANAGEMENT PLAN (TMP).

TRAFFIC MANAGEMENT STRATEGIES:	
-FULL ROADWAY CLOSURES	-WORK HOUR RESTRICTIONS FOR PEAK TRAVEL
-LANE SHIFTS OR CLOSURES	-SHOULDER CLOSURES
-ONE-LANE, TWO WAY OPERATION (FLAGGING)	-OFF-SITE DETOURS / USE OF ALTERNATIVE ROUTES

GENERAL TRAFFIC CONTROL NOTES

BEFORE BEGINNING ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL INSTALL ALL ADVANCE WARNING SIGNS AND TRAFFIC CONTROL DEVICES (RSD 1101.01). FIELD VERIFY LOCATIONS WITH THE ENGINEER PRIOR TO INSTALLATION.


MAINTAIN VEHICULAR ACCESS TO ALL RESIDENCES, SCHOOLS, BUS STOPS, EMERGENCY SERVICES, AND BUSINESSES DURING THE LIFE OF THE CONTRACT, PRIOR TO INCORPORATION, OBTAIN WRITTEN APPROVAL FROM THE ENGINEER ON METHOD TO MAINTAIN ACCESS.

THE NC 54, NELSON HIGHWAY, AND FALCONBRIDGE ROAD IMPROVEMENTS WILL BE CONSTRUCTED DURING THE DAY USING DETOURS AND TEMPORARY TRAFFIC PATTERNS. TEMPORARY LANE AND SHOULDER CLOSURES WILL BE USED AS NECESSARY TO COMPLETE CONSTRUCTION. THE CONTRACTOR WILL BE REQUIRED TO COORDINATE WORK IMPACTING THE INTERSECTION VEHICULAR AND PEDESTRIAN TRAFFIC. AT THE END OF EACH WORK PERIOD, DRUMS SHALL BE PULLED BACK TO THE EDGE OF PAVEMENT (EOP) AND TRAFFIC SHALL UTILIZE NORMAL CONDITIONS UNLESS OTHERWISE SPECIFIED.

TRAFFIC CONTROL NOTE #1:
CONTRACTOR SHALL COORDINATE WITH SIGNAL CONTRACTOR THROUGHOUT CONSTRUCTION FOR THE INSTALLATION OF THE FINAL SIGNALS, AND TO ENSURE ALL SIGNAL EQUIPMENT IS INSTALLED AND SIGNALS ARE FULLY OPERATIONAL PRIOR TO COMPLETING PHASE IV.

TRAFFIC CONTROL NOTE #2:
THE ORDER OF THE PHASES CAN BE ADJUSTED IN THE FIELD, AS NEEDED. ONCE A PHASE HAS BEGUN, IT MUST BE COMPLETED PRIOR TO MOVING ONTO ANOTHER PHASE.

PHASING PLAN

PROJ. REFERENCE NO. 19275-12C	SHEET NO. TMP-3
	
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PHASE I

STEP 1:

INSTALL NECESSARY WORK ZONE ADVANCE WARNING SIGNS (RSD 1101.01).

USING LANE CLOSURES, AS NEEDED, SHIFT TO THE PHASE I TRAFFIC PATTERN. THE PHASE I TRAFFIC PATTERN ENTAILS CLOSING THE EASTBOUND AND WESTBOUND INNERMOST THROUGH LANES ALONG NC 54 FROM 500' BEFORE AND AFTER THE INTERSECTION OF NC 54 AT FALCONBRIDGE ROAD. EASTBOUND AND WESTBOUND NC 54 TRAFFIC TRYING TO MAKE LEFT TURNS AT THE INTERSECTION OF NC 54 AND FALCONBRIDGE ROAD WILL BE DIRECTED TO THE NEXT COORESPONDING INTERSECTION.

ONCE SHIFTED, BEHIND DRUMS, START AND FINISH MEDIAN ISLAND IMPROVEMENTS ON NC 54.

PHASE II

STEP 1:

MAINTAIN ALL NECESSARY WORK ZONE ADVANCE WARNING SIGNS (RSD 1101.01).

PRIOR TO BEGINNING PHASE II, INSTALL DETOUR SIGNAGE FOR FALCONBRIDGE ROAD. COVER AND BAG DETOUR SIGNAGE UNTIL SHIFTED INTO PHASE II TRAFFIC PATTERN (SEE TMP-4 FOR DETOUR ROUTE).

USING LANE AND ROAD CLOSURES, UNBAG DETOUR SIGNAGE AND SHIFT TO THE PHASE II TRAFFIC PATTERN. THE PHASE II TRAFFIC PATTERN ENTAILS CLOSING THE NC 54 EASTBOUND RIGHT TURN LANE AT THE INTERSECTION OF NC 54 AT FALCONBRIDGE ROAD ALONG WITH CLOSING FALCONBRIDGE ROAD. FALCONBRIDGE ROAD TRAFFIC WILL FOLLOW THE DETOUR SIGNAGE AND ROUTE FOR THE DURATION OF THIS PHASE.

ONCE SHIFTED, BEHIND DRUMS, START AND FINISH MEDIAN ISLAND AND CURB RAMP IMPROVEMENTS ON FALCONBRIDGE ROAD.

ICT NOTE:
ONCE PHASE II HAS BEGUN, CONTRACTOR SHALL COMPLETE ALL WORK ASSOCIATED WITH THE FALCONBRIDGE IMPROVEMENTS IN ONE (1) WEEKEND (FRIDAY 7PM TO MONDAY 6AM). SEE ICTS FOR MORE DETAILS.

PHASE III

STEP 1:

REMOVE DETOUR SIGNAGE AND ALLOW NORMAL TRAFFIC CONDITIONS FOR FALCONBRIDGE ROAD.

MAINTAIN ALL NECESSARY WORK ZONE ADVANCE WARNING SIGNS (RSD 1101.01).

USING FLAGGERS AND LANE CLOSURES, AS NEEDED, SHIFT TO THE PHASE III TRAFFIC PATTERN. THE PHASE III TRAFFIC PATTERN ENTAILS CLOSING THE NC 54 WESTBOUND RIGHT TURN LANE 500' BEFORE THE INTERSECTION OF NC 54 AT FALCONBRIDGE ROAD ALONG WITH CLOSING EASTBOUND NELSON HIGHWAY. NC 54 WESTBOUND TRAFFIC WILL BE ALLOWED TO MAKE RIGHT TURNS FROM THE EXISTING OUTERMOST THROUGH LANE ONTO NELSON HIGHWAY. FLAGGERS WILL BE POSTED ALONG NELSON HIGHWAY AND HELP GUIDE TRAFFIC THROUGH THE CONSTRUCTION ZONE VIA THE WESTBOUND LANE.

ONCE SHIFTED, BEHIND DRUMS, START AND FINISH SIDEWALK AND CURB RAMP IMPROVEMENTS ON NC 54 AND NELSON HIGHWAY.

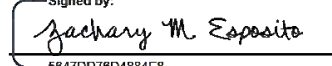
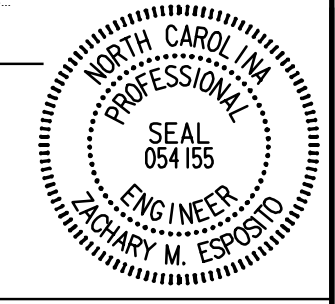

PHASE IV

STEP 1:

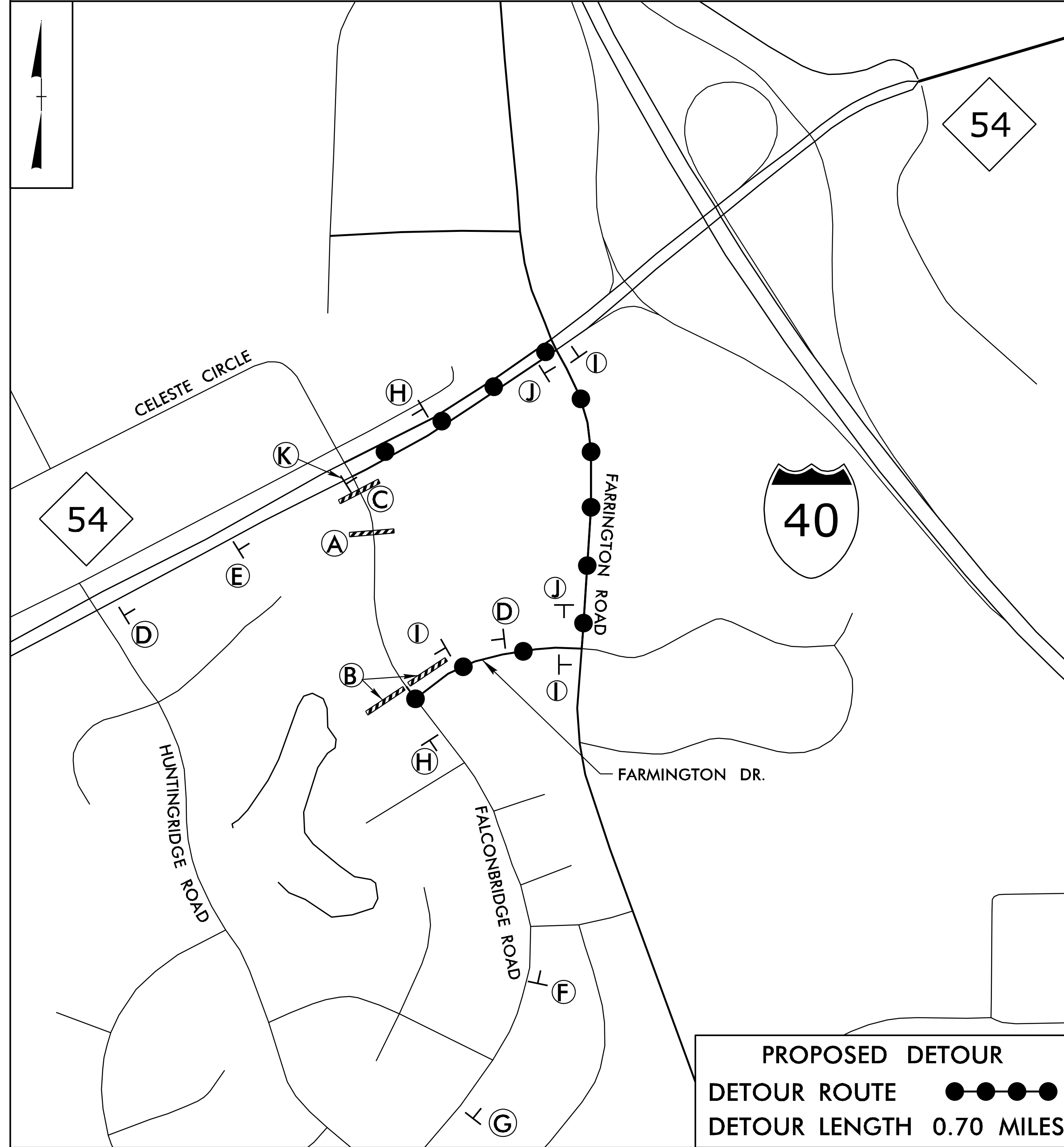
MAINTAIN ALL NECESSARY WORK ZONE ADVANCE WARNING SIGNS (RSD 1101.01).

USING LANE CLOSURES AS NEEDED, COMPLETE REMAINING CONSTRUCTION, PLACE FINAL SURFACE COURSE AND INSTALL FINAL PAVEMENT MARKINGS AND MARKERS. SEE PAVEMENT MARKING PLANS FOR MORE DETAILS.

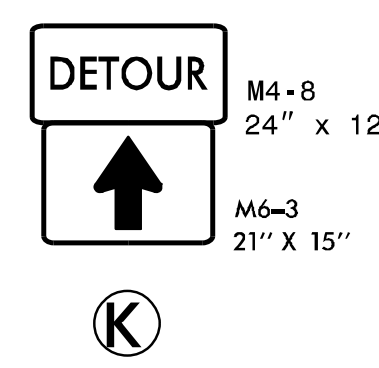
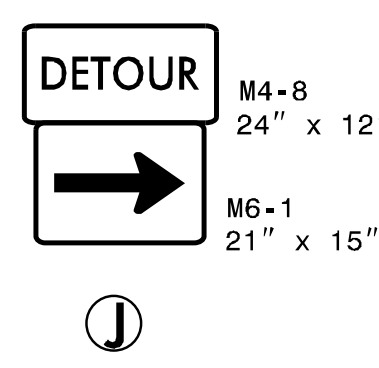
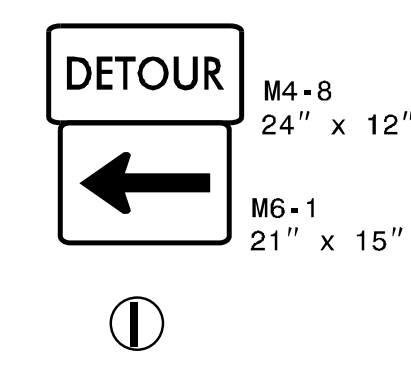
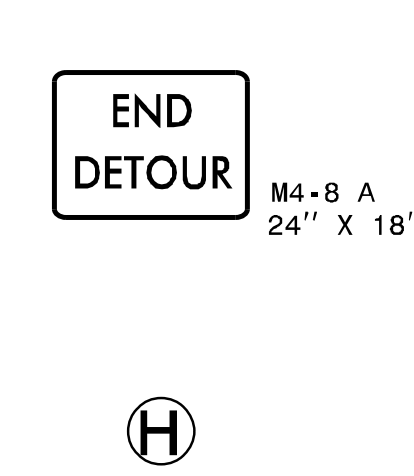
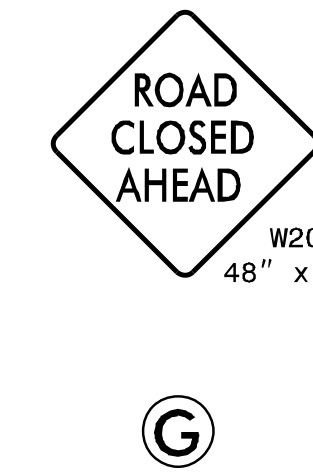
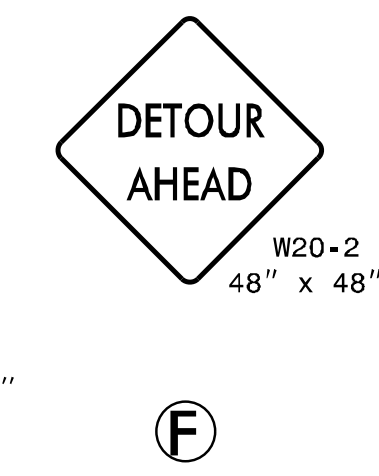
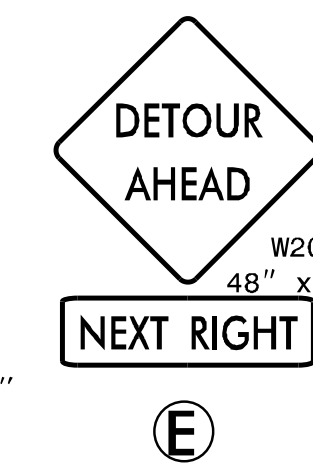
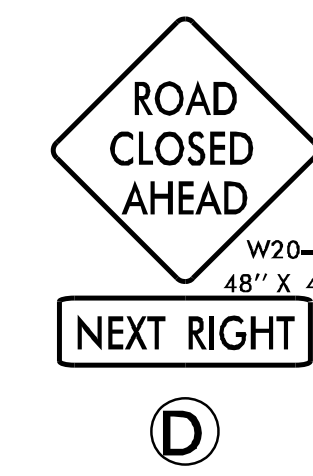
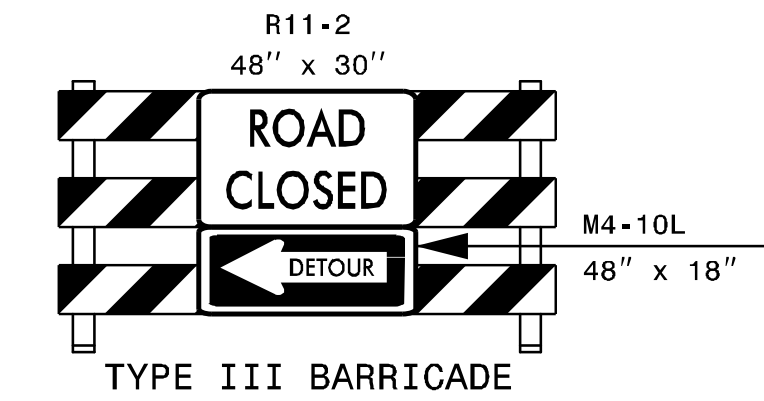
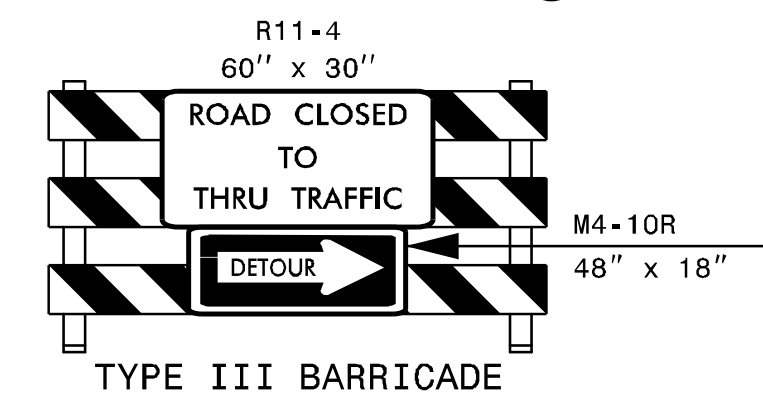
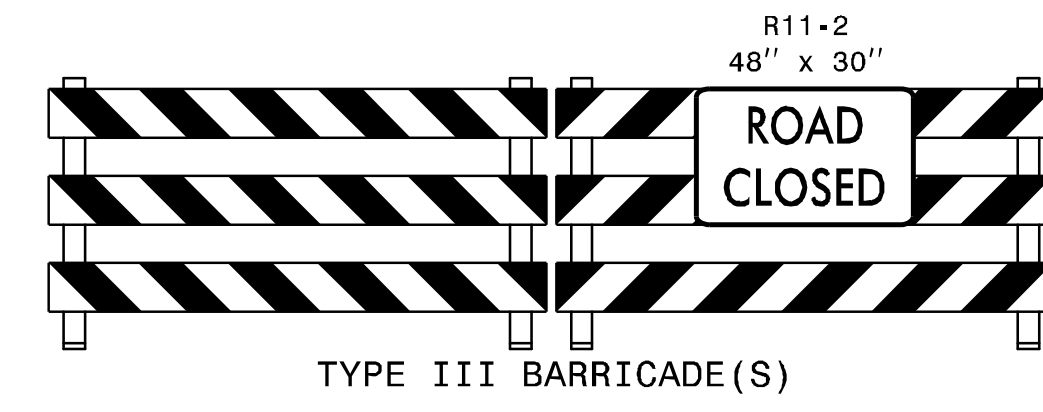
REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES AND ALLOW NORMAL TRAFFIC OPERATION.

APPROVED:  DATE: 4/10/2025 SEAL 		TRANSPORTATION MANAGEMENT STRATEGIES AND PHASING PLAN
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

FALCONBRIDGE ROAD DETOUR VIA FALCONBRIDGE ROAD AND FARRINGTON ROAD



PROJ. REFERENCE NO. 19275-12C	SHEET NO. TMP-4
<small>DRMP INC. 5808 FARRINGTON PLACE DALLAS, NC 27024 (919) 8726115</small>	



PROPOSED DETOUR
 DETOUR ROUTE ●●●●●
 DETOUR LENGTH 0.70 MILES

APPROVED: *Zachary M. Esposito*
 DATE: 4/10/2025

SEAL

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

DETOUR ROUTE


DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING AND SIGNING PLAN
DURHAM COUNTY**

LOCATION: AT THE INTERSECTION OF NC 54 AND FALCONBRIDGE ROAD

PROJ. REFERENCE NO.	SHEET NO.
19275-12C	PMP-1
APPROVED: <i>Zachary M. Esposito</i>	
DATE: 4/10/2025	



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
903.10	GROUND MOUNTED SIGN SUPPORTS
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E', AND 'F' SIGNS ON 'U' CHANNEL SUPPORTS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.15	PAVEMENT MARKINGS - REDUCED CONFLICT INTERSECTIONS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
THERMOPLASTIC (4", 90 MILS)	
T1	WHITE EDGELINE
T3	10 FT. WHITE SKIP
T5	2 FT.-6 FT./SP WHITE MINISKIP
T10	YELLOW EDGELINE
T14	2 FT.-6 FT./SP YELLOW MINISKIP
THERMOPLASTIC (8", 90 MILS)	
T40	WHITE GORELINE
T41	WHITE DIAGONAL
T43	WHITE SOLID LANE LINE
T44	3 FT.-9 FT./SP WHITE MINISKIP
THERMOPLASTIC (24", 90 MILS)	
T61	WHITE STOP BAR
T62	WHITE CROSSWALK LINE
THERMOPLASTIC PAVEMENT MARKING SYMBOLS (90 MILS)	
T70	LEFT TURN ARROW

SIGNAGE NOTES

- SIGNS FURNISHED BY CONTRACTOR.
- MOUNT SIGNS 84" ABOVE SIDEWALK. 2' MIN. & 8' MAX. CLEAR FROM EDGE OF PAVEMENT TO EDGE OF SIGN.
- WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER.
- ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
- THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.

SUMMARY OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	QTY.	UNIT
4072000000	904 SUPPORT, 3-LB STEEL U-CHANNEL	30	L.F.
4102000000	904 SIGN ERECTION, TYPE E	2	E.A.
4116100000	904 SIGN ERECTION, RELOCATE TYPE E (GROUND MOUNTED)	1	E.A.
4186000000	907 DISPOSAL OF SIGN SYSTEM, U-CHANNEL	2	E.A.
4685000000	1205 THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	1250	L.F.
4695000000	1205 THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)	650	L.F.
4891000000	1205 THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MILS)	525	L.F.
4725000000	1205 THERMOPLASTIC PAVEMENT MARKING SYMBOLS (90 MILS)	4	E.A.
4900000000	1251 PERMANENT RAISED MARKER	60	E.A.

PAVEMENT MARKING NOTES

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.

- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS (SEE PMP-2):

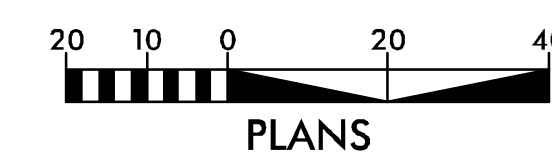
ROAD NAME	MARKING	MARKER
NC 54	THERMOPLASTIC	RAISED
FALCONBRIDGE ROAD	THERMOPLASTIC	N/A
NELSON HIGHWAY	THERMOPLASTIC	N/A

- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
 C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
 D) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.
 E) UNLESS OTHERWISE SPECIFIED, HEATED-IN-PLACE THERMOPLASTIC MAY BE USED IN LIEU OF EXTRUDED THERMOPLASTIC FOR STOP BARS, SYMBOLS, CHARACTERS AND DIAGONALS. IF HEATED-IN-PLACE IS USED, IT SHALL BE PAID FOR USING THE EXTRUDED THERMOPLASTIC PAY ITEM.

INDEX

SHEET NO.	DESCRIPTION
PMP-1	TITLE SHEET
PMP-2	PAVEMENT MARKING AND SIGNING DETAIL

GRAPHIC SCALE



PROJECT: 19275-12C

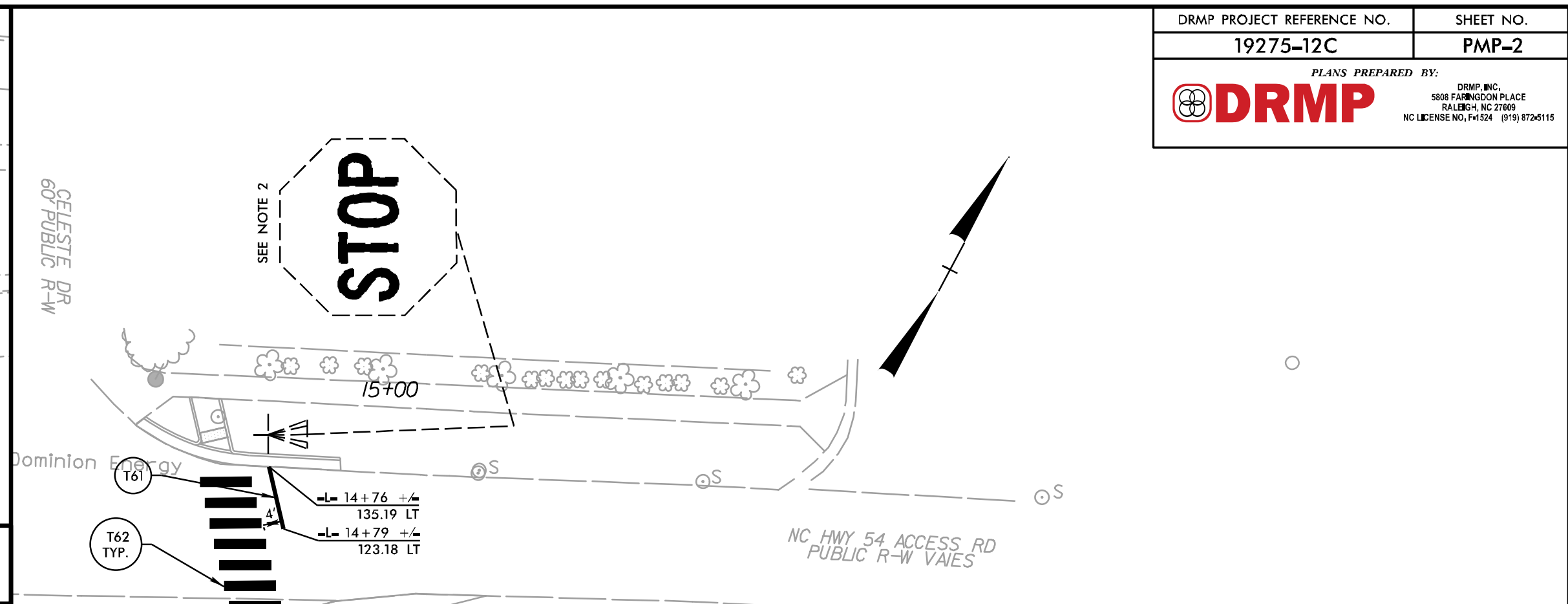
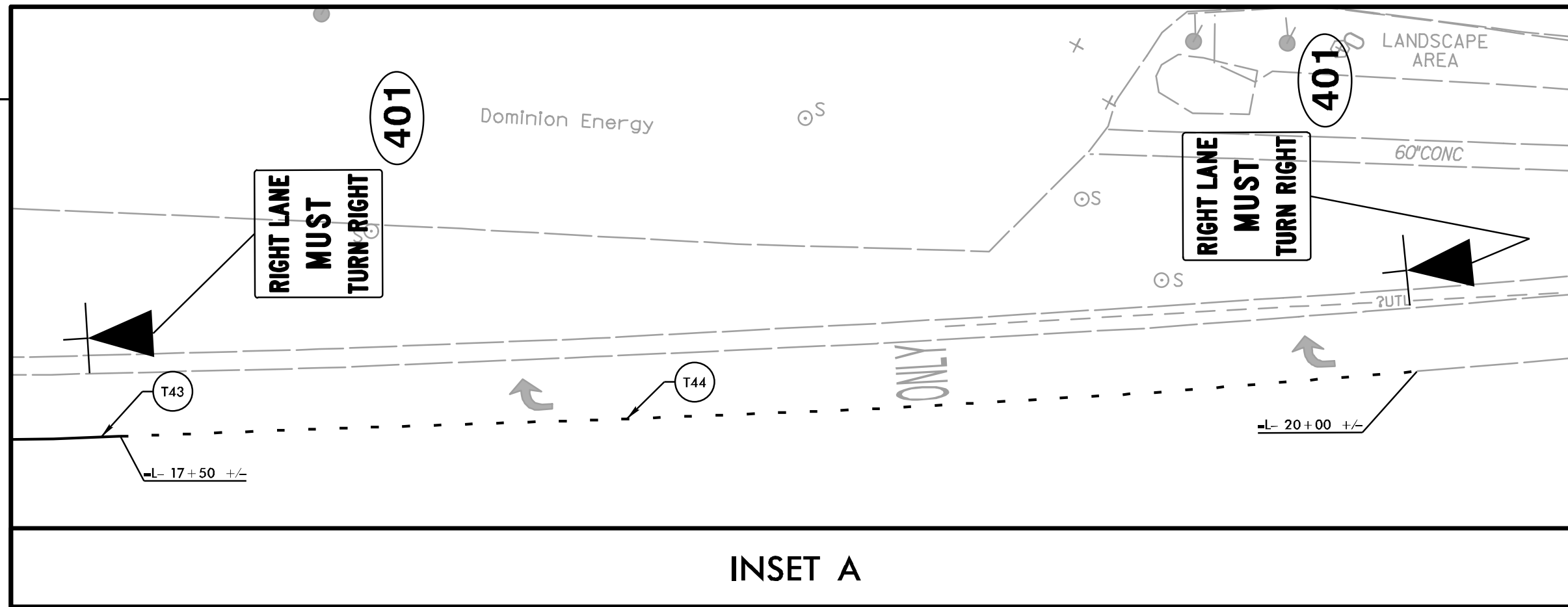
PLAN PREPARED BY: DRMP, INC.

ZACHARY M. ESPOSITO, PE, TCDS PROJECT MANAGER
ERIC H. ALSPAUGH PROJECT ENGINEER

PLANS PREPARED BY:

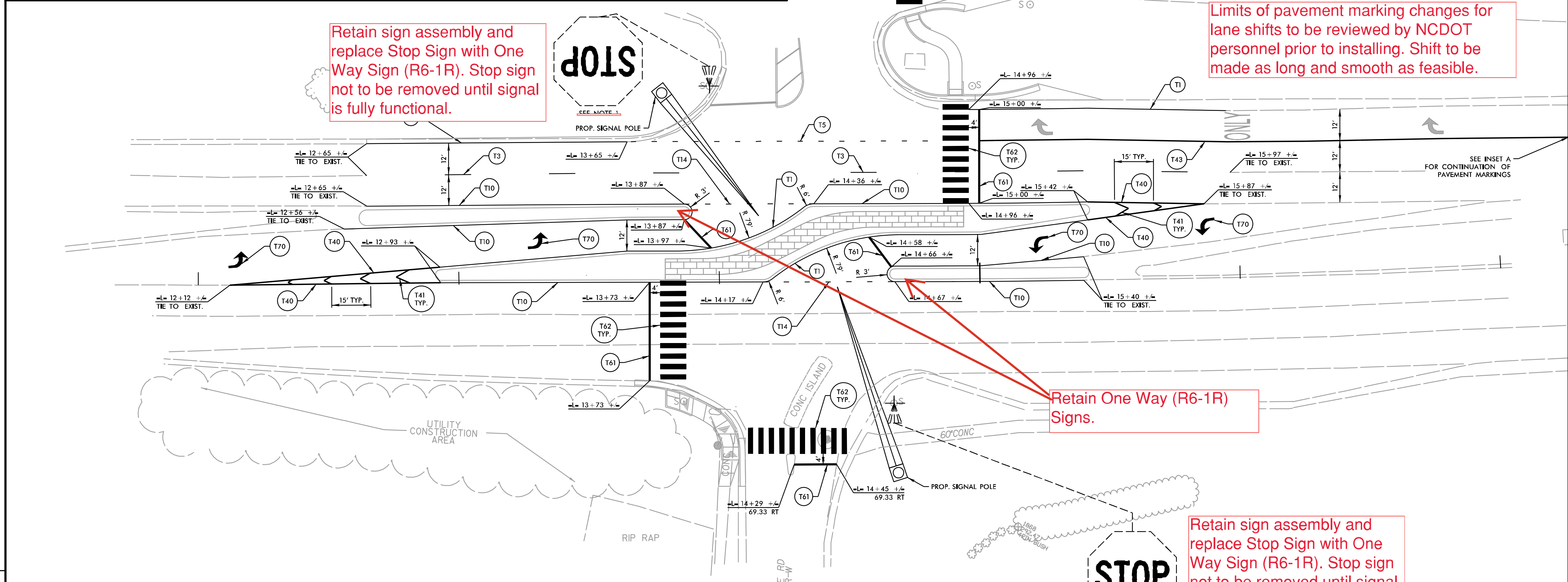


DRMP, INC.
 5808 FARMINGTON PLACE
 RALEIGH, NC 27609
 NC LICENSE NO. P-1524 (919) 872-5115



Retain sign assembly and replace Stop Sign with One Way Sign (R6-1R). Stop sign not to be removed until signal is fully functional.

Limits of pavement marking changes for lane shifts to be reviewed by NCDOT personnel prior to installing. Shift to be made as long and smooth as feasible.



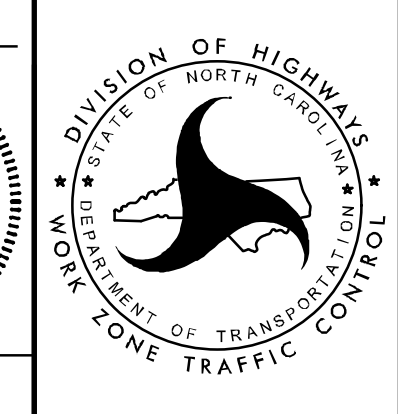
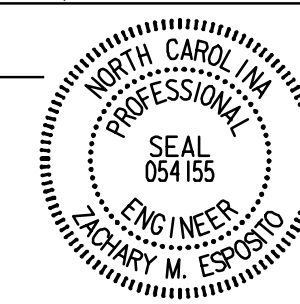
Retain One Way (R6-1R) Signs.

Retain sign assembly and replace Stop Sign with One Way Sign (R6-1R). Stop sign not to be removed until signal is fully functional.

SIGN LEGEND	
	R3-7 36" X 36" ONE "U" POST PER SIGN
	R6-1R

- PROJECT NOTES**
- DISPOSE SIGN SYSTEM, U-CHANNEL
 - RELOCATE EXISTING SIGNS ON EXISTING U-CHANNEL

APPROVED: *Anthony M. Espino*
DATE: 4/10/2025
SEAL



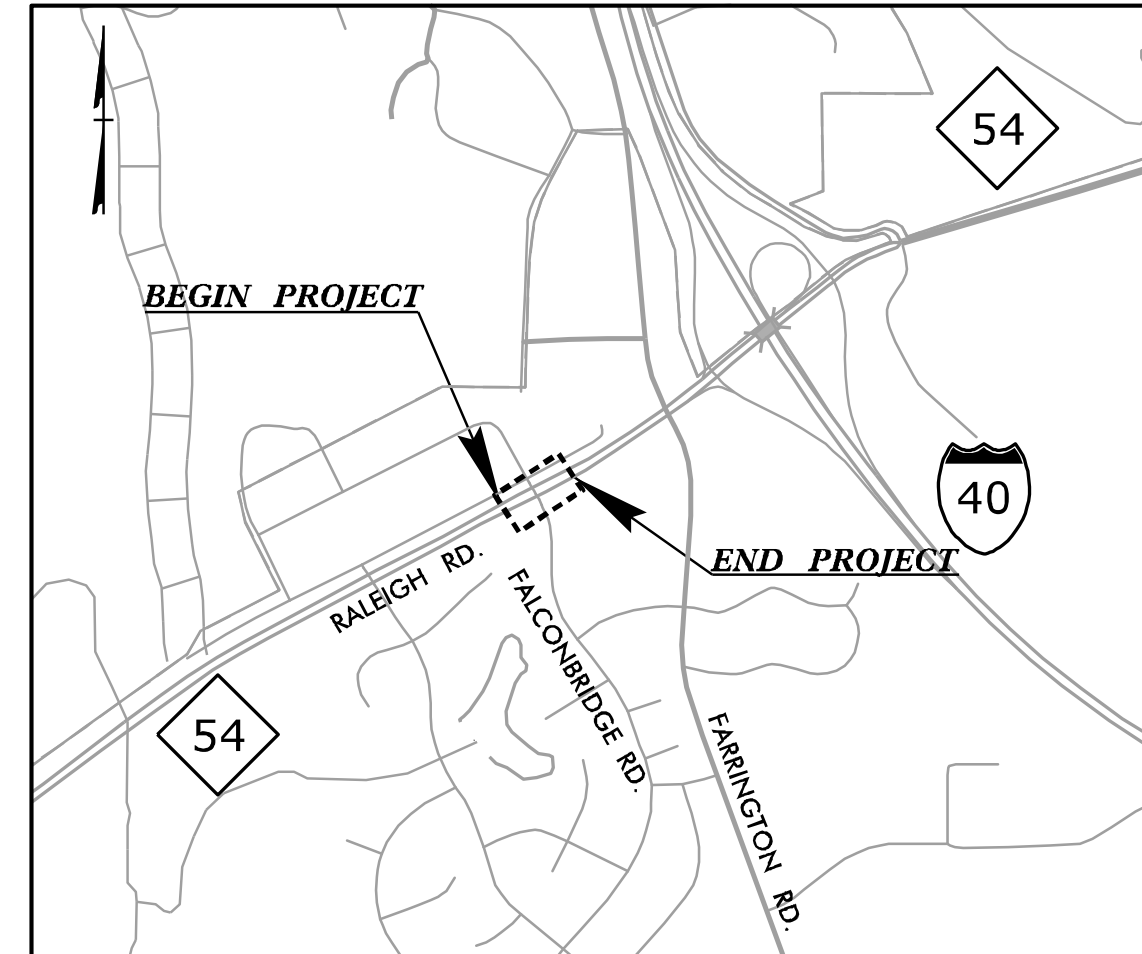
PAVEMENT MARKING PLAN

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

4/9/2025
19275-12C-PMP_pmp02.dgn
User: eastpaugh

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



VICINITY MAP
N.T.S.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

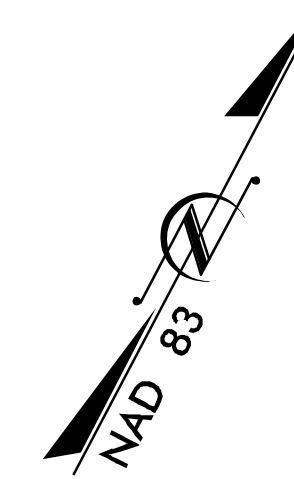
DURHAM COUNTY

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

DISTURBED AREA
0.49 ACRES

LOCATION: AT THE INTERSECTION OF NC 54 AND
FALCONBRIDGE ROAD

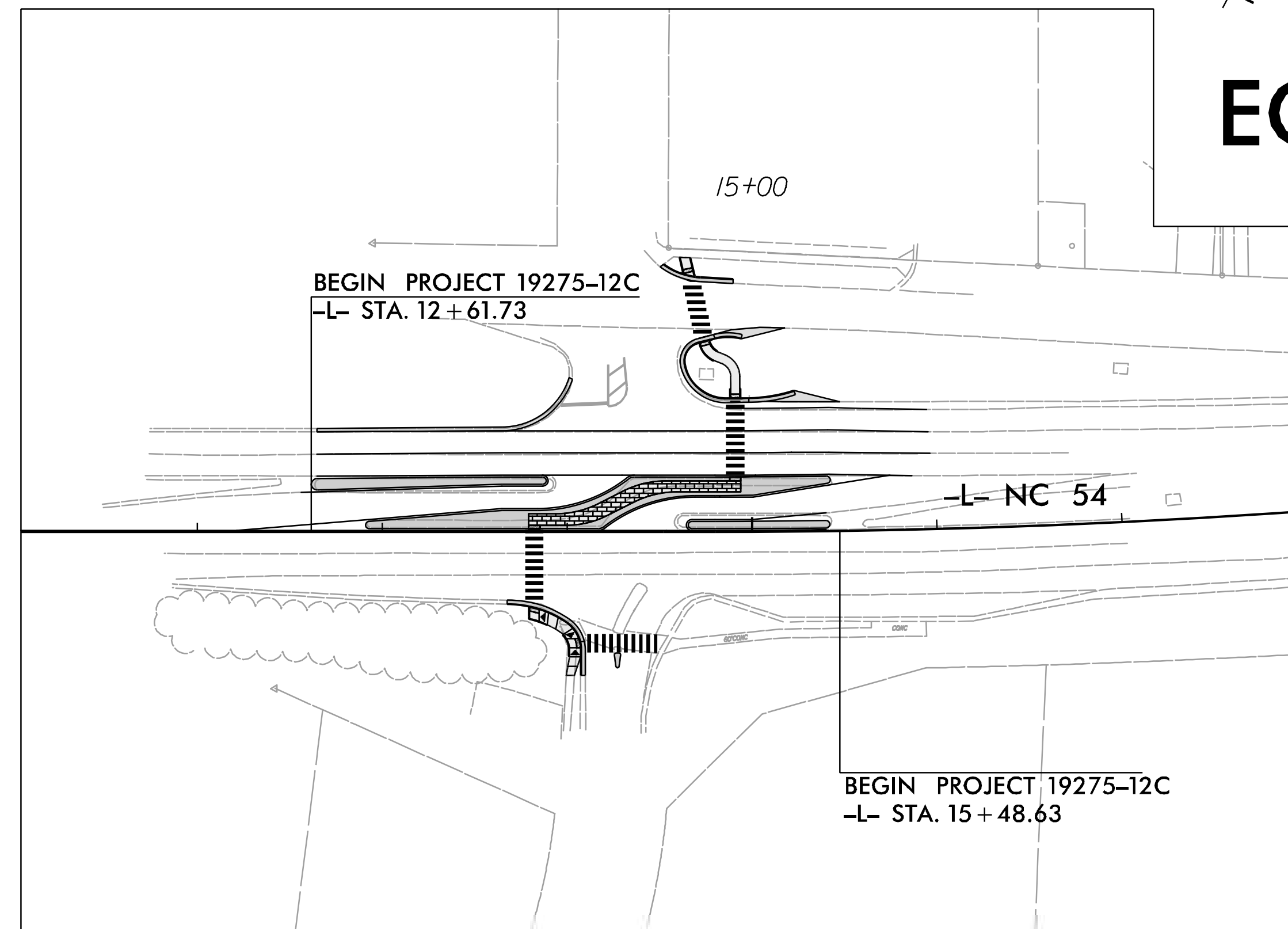
TYPE OF WORK: EROSION & SEDIMENT CONTROL



EC-4/5

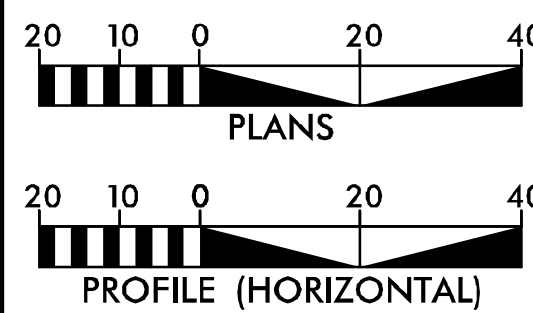
TO CHAPEL HILL

TO DURHAM



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

GRAPHIC SCALES



DESIGN DATA

ADT 2019 = 46,000

V = 50 MPH

FUNC. CLASS = PRINCIPAL
ARTERIAL

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY
WITH THE REGULATIONS SET FORTH BY THE
NCG 010000 GENERAL STORMWATER CONSTRUCTION PERMIT
ISSUED BY THE NORTH
CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION
OF ENERGY, MINERAL, AND LAND RESOURCES

PLANS PREPARED BY:

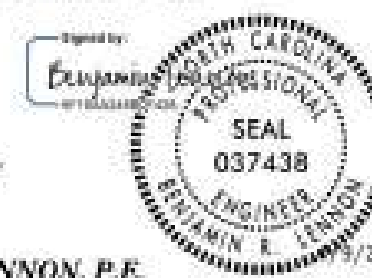


DRMP, INC.
5800 FARMINGTON PLACE
RALEIGH, NC 27609
NC LICENSE NO. F-1524 (1/19) 872-0115

Designed by:
ERIC ALSPAUGH

Reviewed by:
BENJAMIN R. LENNON, P.E.

NAME



Roadway Standard Drawings

The following roadway English standards as appear in "Roadway Standard Drawings" - Roadway Design Unit - N.C. Department of Transportation - Raleigh, N.C., dated January 2024 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

- 1605.01 Temporary Silt Fence
- 1606.01 Special Sediment Control Fence
- 1362.02 Rock Inlet Sediment Trap Type 3
- 1632.03 Rock Inlet Sediment Trap Type C
- 1636.01 Wattle Check

4/9/2025
I:\192715-12C_EC_TSH.dgn
User: E.alspaugh

PROJECT: CD-21-01-D28 (DRMP PROJ. 19275-12C)

REVISIONS

GENERAL NOTES

- THESE EROSION CONTROL PLANS ARE ONLY FOR DISTURBED AREAS DELINEATED ON THE PLANS. EROSION CONTROL PLANS FOR ANY STOCKPILE LOCATIONS, MATERIAL LAY-DOWN AREAS, STAGING AREAS, DIRT OR WASTE PILE, BORROW AREAS, CONTRACTOR OFFICE TRAILER, OR ANY OTHER DISTURBED AREA NOT SHOWN ON THESE PLANS ARE THE RESPONSIBILITY OF THE THE CONTRACTOR. NO SOIL STOCKPILE SHOULD BE WITHIN 50' OF ANY DRAINAGE STRUCTURE OR WATERCOURSE. OFFSITE BORROW OR WASTE SHOULD BE FROM A PERMITTED SITE.
- GROUND COVER DEADLINES AND STABILIZATION REQUIREMENTS SHALL BE ESTABLISHED IN ACCORDANCE WITH THE STABILIZATION TIMEFRAMES SHOWN ON THIS SHEET. ALL EXPOSED SLOPES AND OTHER DISTURBED AREAS SHALL BE VEGETATED AS NOTED BELOW. THE VEGETATION REQUIREMENTS ALSO APPLY TO NEWLY CONSTRUCTED EROSION CONTROL MEASURES (TEMPORARY DIVERSIONS, PERIMETER DITCHES, ETC.)
- ALL SEDIMENT LADEN RUNOFF SHALL BE DIRECTED TO AN APPROVED EROSION CONTROL DEVICE. THE CONTRACTOR SHALL USE ASPHALT BERMS OR OTHER METHODS TO ENSURE SEDIMENT LADEN RUNOFF DOES NOT ENTER OR CROSS ROADS AND DRIVEWAYS.
- ALL CONSTRUCTION TRAFFIC LEAVING THE SITE AND ENTERING ANY PUBLIC ROADWAY MUST UTILIZE A GRAVEL CONSTRUCTION ENTRANCE. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF CONSTRUCTION ENTRANCES WITH THE TRAFFIC MANAGEMENT PLANS.
- MAINTAIN ALL EROSION CONTROL DEVICES AS PER THE PLANS AND SPECIFICATIONS FOR THE DURATION OF CONSTRUCTION. INSPECT ALL DEVICES AT THE END OF EACH DAY AND AFTER ALL RAINFALL EVENTS.
- THESE EROSION AND SEDIMENT CONTROL PLANS SHOW DEVICES REQUIRED FOR THE CLEARING & GRUBBING PHASE AND FINAL GRADING. IT IS THE CONTRACTOR'S RESPONSIBILITY FOR TRANSITION BETWEEN THE PHASES AND MAKING SURE ALL SEDIMENT LADEN RUNOFF IS TREATED BEFORE LEAVING THE LIMITS OF DISTURBANCE. THERE MAY BE INTERMEDIATE GRADES IN WHICH ADDITIONAL TEMPORARY DIVERSIONS, NOT SHOWN ON THE PLANS, ARE REQUIRED TO DIRECT RUNOFF TO BASINS OR ADDITIONAL SILT FENCE TO KEEP SEDIMENT ON SITE.
- MEASURES AND STORMWATER DISCHARGE OUTFALLS MUST BE INSPECTED AT LEAST ONCE PER 7 CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT GREATER THAN 0.5 INCH PER 24 HOUR PERIOD. ADDITIONALLY, GROUND STABILIZATION MUST BE RECORDED AFTER EACH PHASE OF GRADING. A RECORD COPY OF EACH INSPECTION AND MONITORING REPORT MUST BE KEPT ON SITE.
- CONCRETE TRUCK WASHOUT SLURRY GENERATED FOR THIS PROJECT MUST STAY ON THIS PROJECT OR ANOTHER AREA MUST BE DESIGNATED AS A CONCRETE WASHOUT AREA. RECOMMENDED AREA FOR CONCRETE WASHOUT MUST BE LOCATED WITHIN LIMITS OF DISTURBANCE AS INDICATED ON THE PLANS AND BE AT LEAST 50' AWAY FROM STORM DRAIN INLETS AND SURFACE WATERS.
- IF THE CONTRACTOR CHOOSES TO PROVIDE A CONSTRUCTION STAGING AREA OUTSIDE OF THE PROJECT LIMITS, THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR OBTAINING THE NECESSARY PERMITS AND EASEMENTS.
- SELF INSPECTION MUST BE CONDUCTED AND DOCUMENTED IN THE INSPECTION & MONITORING FORM PROVIDED BY NCDCEQ PER STORMWATER GENERAL PERMIT NCG-010000. MEASURES MUST BE INSPECTED AT LEAST ONCE PER 7 CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT GREATER THAN 0.5 INCH PER 24 HOUR PERIOD. ADDITIONALLY, GROUND STABILIZATION MUST BE RECORDED AFTER EACH PHASE OF GRADING. A COPY OF THE NPDES PERMIT WITH A MINIMUM OF 30 DAYS OF SELF-INSPECTION REPORTS MUST BE KEPT ON SITE UNTIL PROJECT CLOSURE BY THE NCDCEQ RALEIGH REGIONAL OFFICE. THE SELF INSPECTION FORM CAN BE FOUND AT: <https://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms>

PERMANENT SEEDING SCHEDULE (EAST)

SEEDING MIXTURE RATE

MARCH 1ST - AUGUST 31ST		SEPTEMBER 1ST - FEBRUARY 28	
LB/ACRE	TYPE	LB/ACRE	TYPE
50	TALL FESCUE	50	TALL FESCUE
10	CENTPEDE	10	CENTPEDE
25	BERMUDAGRASS (HULLED)	35	BERMUDAGRASS (UNHULLED)

ON CUT AND FILL SLOPES 2:1 OR STEEPER CENTPEDE SHALL BE APPLIED AT THE RATE OF 5 LBS/ACRE AND ADD 20 LBS/ACRE OF SERICEA LESPEDEZA FROM JANUARY 1ST TO DECEMBER 31ST

FERTILIZER TOP DRESSING

FERTILIZER USED FOR TOPDRESSING ON ALL ROADWAY AREAS EXCEPT SLOPES 2:1 AND STEEPER SHALL BE 10-20-20 GRADE AND SHALL BE APPLIED AT THE RATE OF 500 LBS/ACRE. A DIFFERENT ANALYSIS OF FERTILIZER MAY BE USED PROVIDED THE 1-2-2 RATIO IS MAINTAINED AND THE RATE OF APPLICATION ADJUSTED TO PROVIDE THE SAME AMOUNT OF PLANT FOOD AS 10-20-20 ANALYSIS AND AS DIRECTED.

FERTILIZER USED FOR TOPDRESSING ON SLOPES 2:1 AND STEEPER AND WASTE AND BORROW AREAS SHALL BE 16-8-8 GRADE AND SHALL BE APPLIED AT THE RATE OF 500 LBS/ACRE. A DIFFERENT ANALYSIS OF FERTILIZER MAY BE USED PROVIDED THE 2-1-1 RATIO IS MAINTAINED AND RATE OF APPLICATION ADJUSTED TO PROVIDE THE SAME AMOUNT OF PLANT FOOD AS 16-8-8 ANALYSIS AND AS DIRECTED.

MULCHING

APPLY 2 TONS/ACRE GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ANCHOR STRAW BY TACKING WITH ASPHALT AT A RATE OF 400 GALLONS OF ASPHALT PER ACRE.

MAINTENANCE

REFERTILIZE IN THE SECOND YEAR UNLESS GROWTH IS FULLY ADEQUATE. MAY BE MOWED ONCE OR TWICE A YEAR, BUT MOWING IS NOT NECESSARY. THE MINIMUM MOWING HEIGHT SHALL BE 4". RESEED, FERTILIZE, AND MULCH DAMAGED AREAS IMMEDIATELY.

SEEDBED PREPARATION

SEEDBED PREPARATION SHALL BE IN ACCORDANCE WITH NCDOT 2018 STANDARDS & SPECIFICATIONS SECTION 1620-3.

BUFFER NOTES

THE FERTILIZER RATIO WITHIN 100 FT. OF ANY EXISTING STREAM SHALL BE 1/2 OF THE TYPICALLY REQUIRED AMOUNT.



PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. EC-2
RWY SHEET NO.	
BENJAMIN R. LENNON, P.E.	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

EROSION CONTROL DEVICE LEGEND

Description	Std. #	Symbol
TEMPORARY SILT FENCE	NCDOT-1605.01	
ROCK INLET SEDIMENT TRAP	NCDOT-1632.03	
TEMPORARY ROCK SILT CHECK TYPE-A	NCDOT-1633.01	
WATTLE/COIR FIBER WATTLE	NCDOT-1636.01	
TREE PROTECTION FENCE	SHEET EC-2B	
CONCRETE WASHOUT	SHEET EC-2B	
EXISTING INLET PROTECTION	SHEET EC-2B	
*TEMPORARY SILT & TREE PROTECTION FENCE	SP.	
*USE ORANGE SILT FENCE THAT MEETS NCDOT SPECIFICATIONS (SECTION 1605) & ATTACH SIGN SHOWN ON TREE PROTECTION FENCE DETAIL		
LIMITS OF DISTURBANCE	---	

SOIL STABILIZATION TIMEFRAMES

NURSE CROP SEEDING

PREPARATION FOR PRIMARY/PERMANENT STABILIZATION SHALL NOT BEGIN UNTIL ALL CONSTRUCTION AND UTILITY WORK WITHIN THE PREPARATION AREA IS COMPLETE. HOWEVER, IT MAY BE NECESSARY TO PREPARE FOR NURSE CROPS PRIOR TO COMPLETION OF CONSTRUCTION AND INSTALLATION OF UTILITIES.

A QUICKLY GERMINATING NURSE CROP OF NON-INVASIVE, NON-COMPETITIVE ANNUAL GRASS SPECIES SHOULD BE USED ALONG WITH NATIVE SEEDING AND/OR MATTING. THESE TEMPORARY MEASURES SHOULD BE PLANTED AT MINIMUM DENSITY AS TO NOT INHIBIT THE GROWTH AND ESTABLISHMENT OF THE PERMANENT, NATIVE SPECIES. REFER TO THE TEMPORARY SEEDING SCHEDULE FOR SPECIFIC NURSE CROP SPECIES AND SEEDING RATES.

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HOW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HOW ZONES.

PROVIDE TEMPORARY MATTING ON ALL FILL SLOPES

MAINTENANCE REQUIREMENTS

- EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL OR AT A MINIMUM ONCE A WEEK IF REPAIRS ARE NEEDED THEY WILL BE DONE SO IMMEDIATELY.
- SEDIMENT WILL BE REMOVED FROM BEHIND SILT FENCING WHEN IT BECOMES 0.5 FT DEEP OR GREATER. SILT FENCING WILL BE REPLACED AS NECESSARY TO MAINTAIN AN ADEQUATE BARRIER.
- EROSION AND SEDIMENT CONTROL PRACTICES INCLUDING: SILT CHECKS AND WATTLES WILL BE CLEANED OUT AS NECESSARY.
- ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO THE SPECIAL PROVISIONS IN ORDER TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
- A RAIN GAUGE IS TO BE INSTALLED ON SITE AND RAINFALL IS TO BE RECORDED DAILY EVEN IF IT IS ZERO INCHES.

TEMPORARY SEEDING SCHEDULE (EAST)

FERTILIZER SHALL BE THE SAME ANALYSIS AS SPECIFIED FOR SEEDING AND MULCHING AND APPLIED AT THE RATE OF 400 POUNDS AND SEEDED AT THE RATE OF 50 POUNDS PER ACRE. SWEET SUDAN GRASS, GERMAN MILLET, OR BROWNTOP MILLET SHALL BE USED IN SUMMER MONTHS AND 120 POUNDS PER ACRE OF RYE GRAIN DURING THE REMAINDER OF THE YEAR. THE ENGINEER WILL DETERMINE THE EXACT DATES FOR USING EACH KIND OF SEED. APPLY 4,000 POUNDS PER ACRE OF STRAW. ANCHOR BY TACKLING WITH ASPHALT (400 GALLONS PER ACRE), COMMERCIALY AVAILABLE TACKLING SOLUTION (AT MANUFACTURER'S RATE), NETTING OR A MULCH ANCHORING TOOL.

SOIL PREPARATION

FOR AREAS THAT ARE TO BE SEEDED ALL STONES LARGER THAN 3 INCHES, STICKS, ROOTS, AND OTHER MATERIALS SHALL BE REMOVED. AREAS TO BE SEEDED OR PLANTED SHALL BE TILLED OR RIPPED TO A MINIMUM DEPTH OF 4 INCHES. LIME AND FERTILIZER SHALL BE APPLIED AS SPECIFIED IN THE SEEDING SCHEDULE.

LAWN FINISH

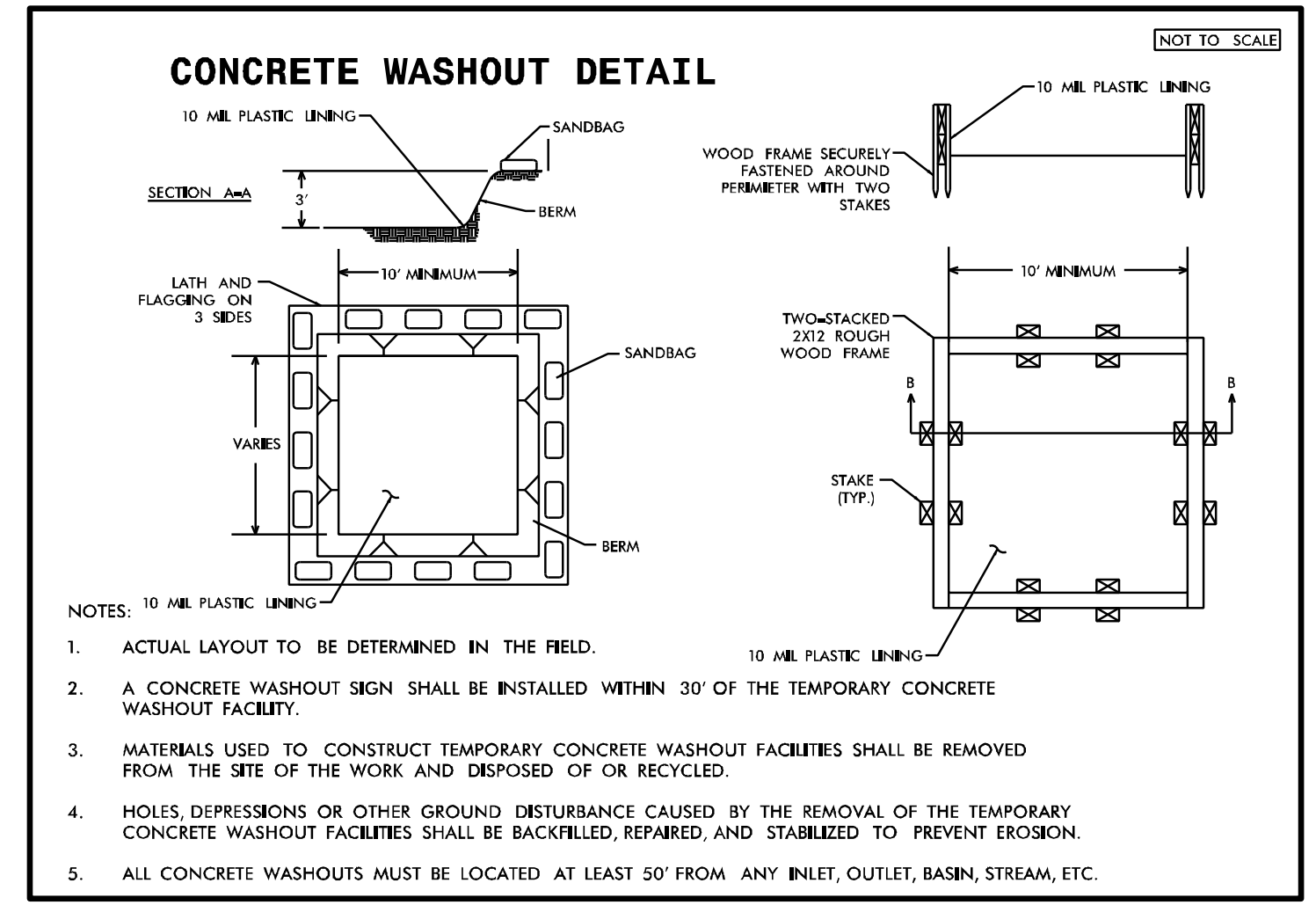
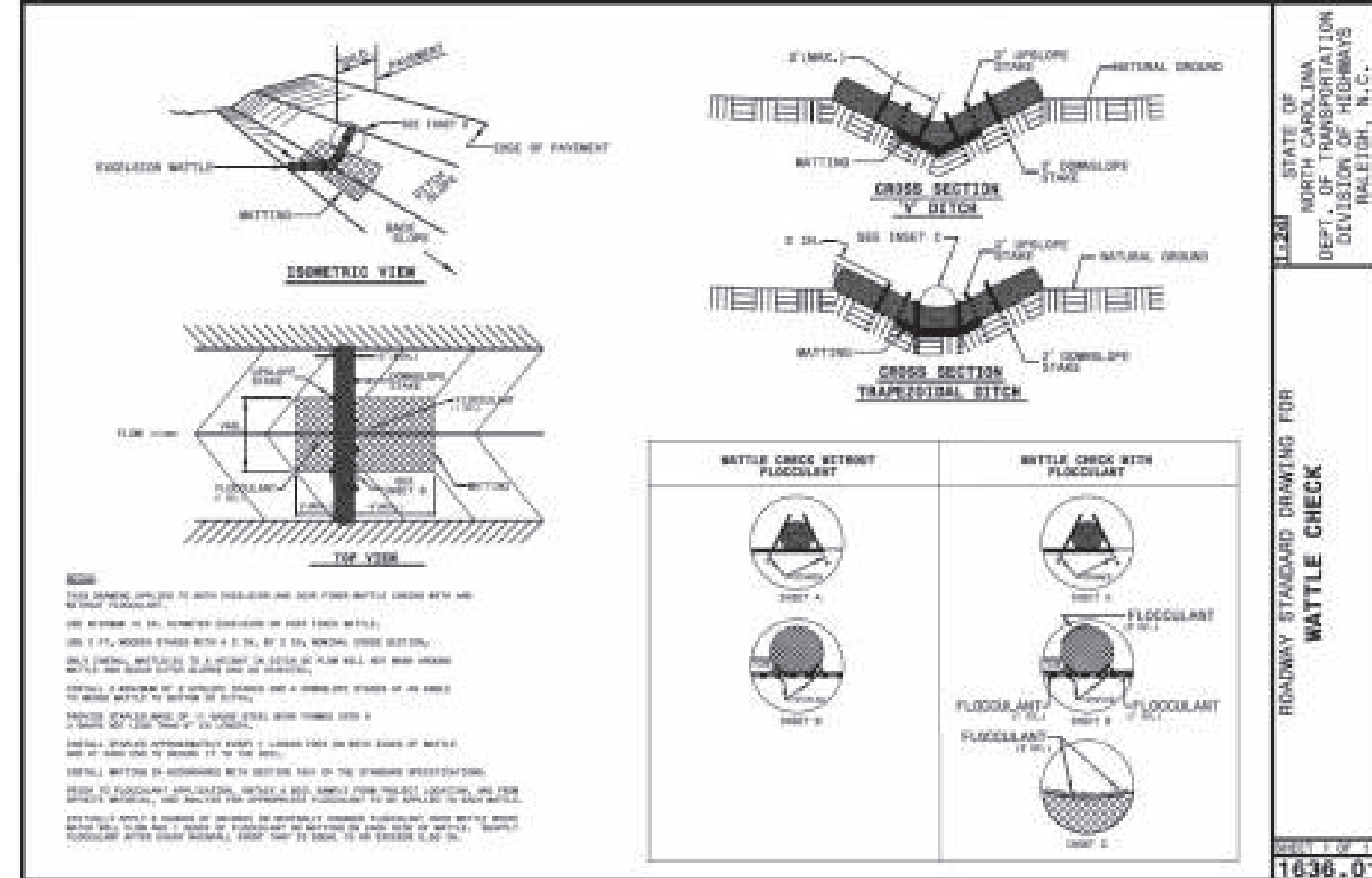
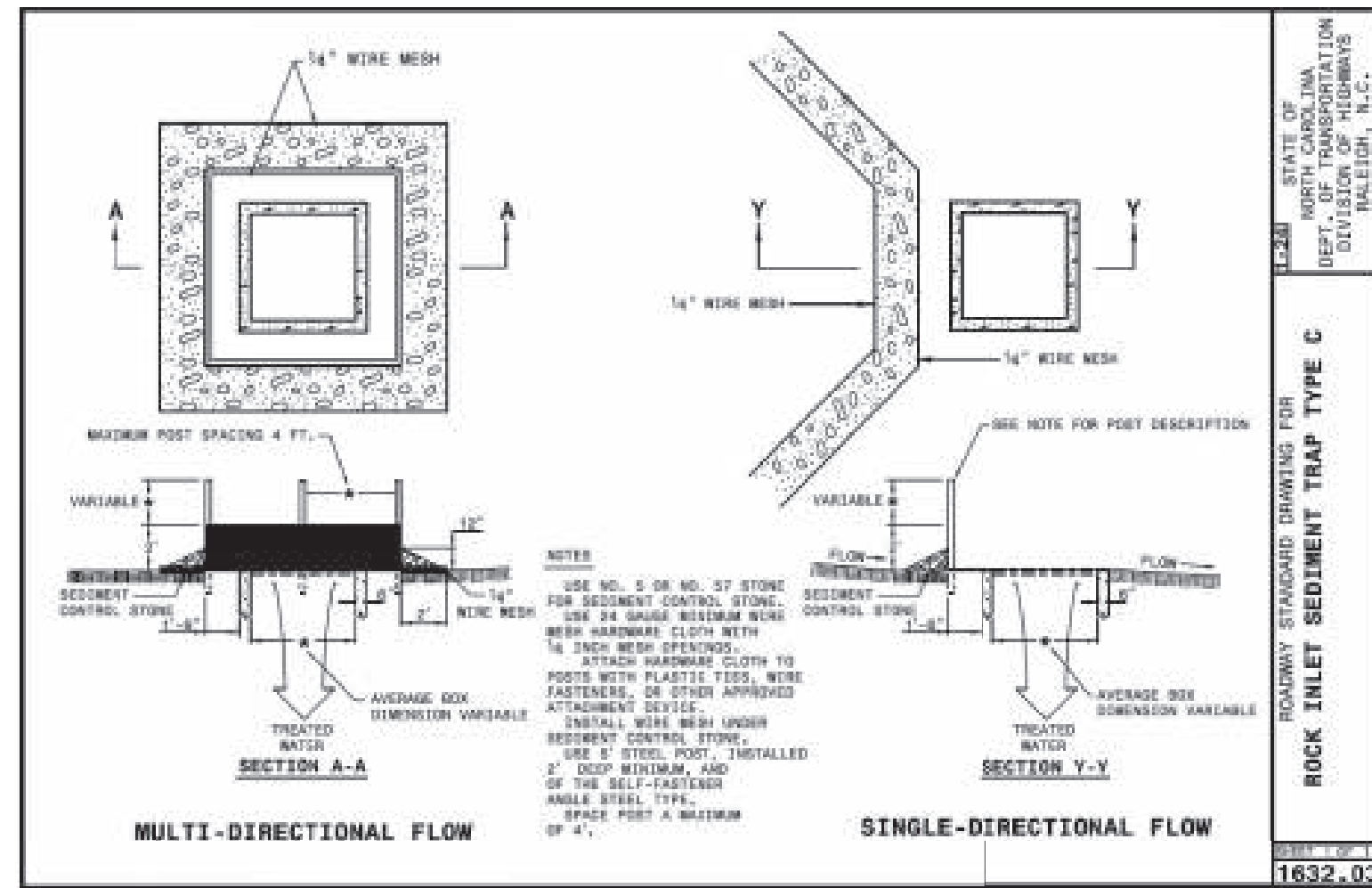
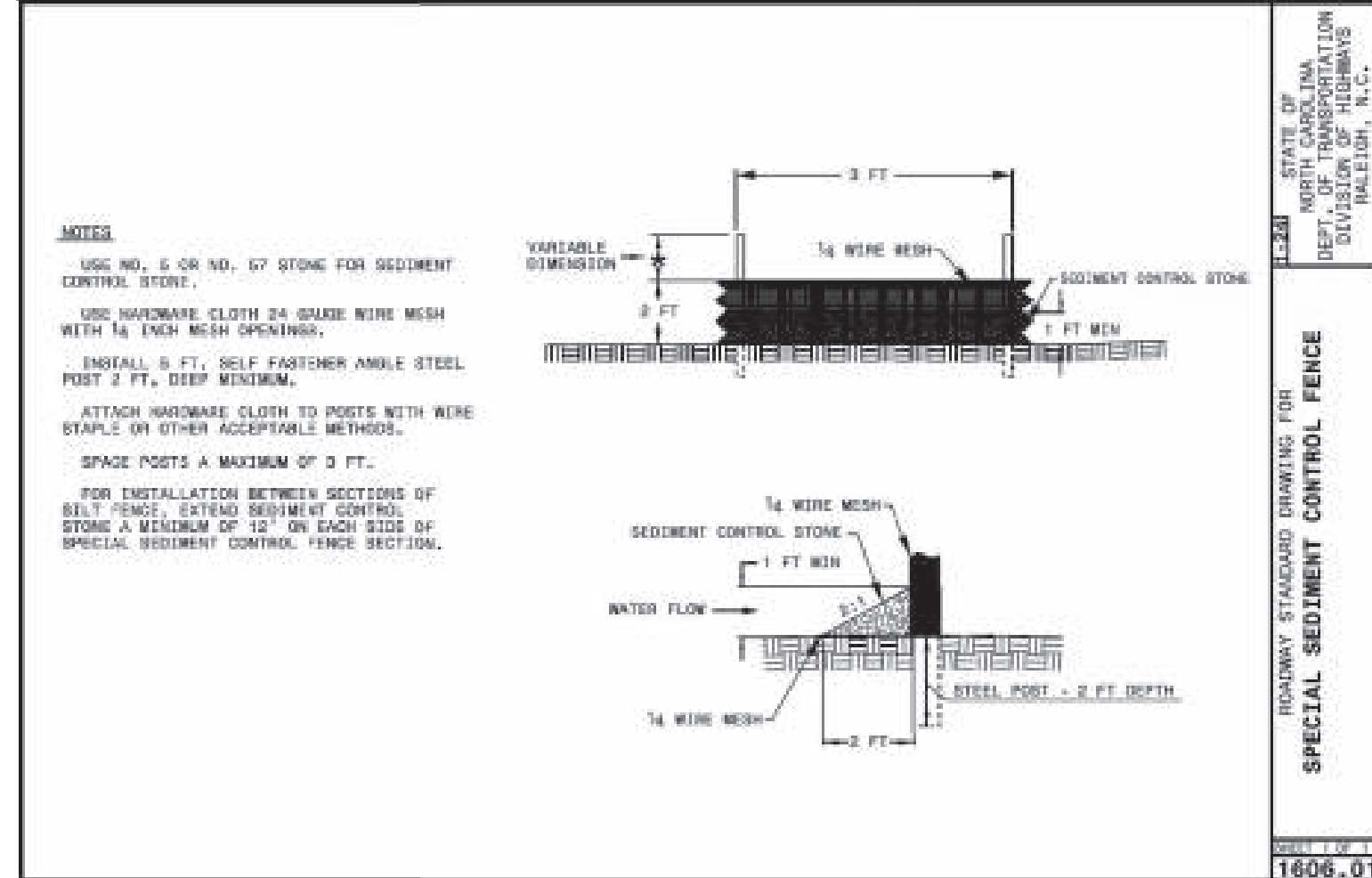
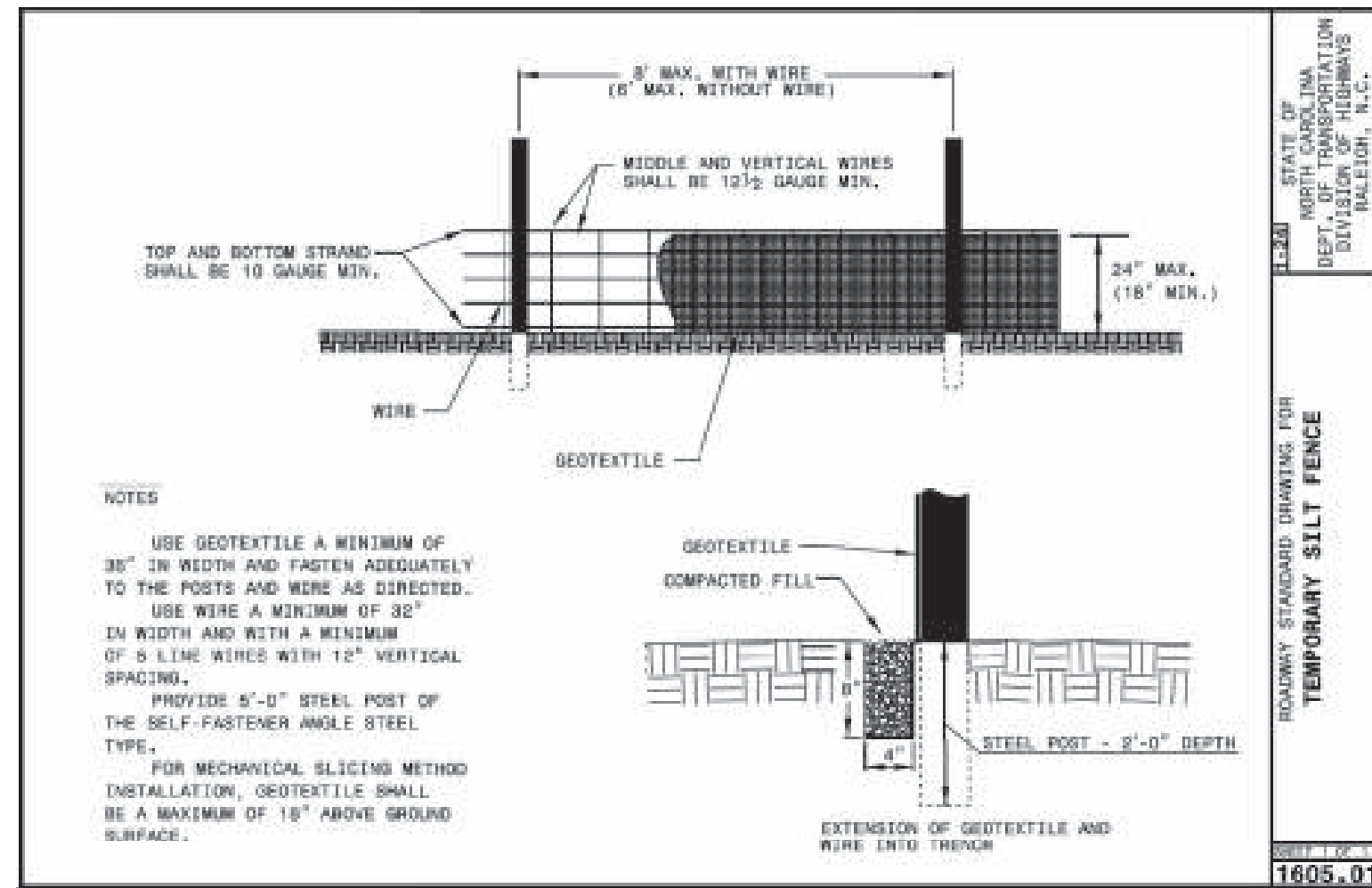
ALL AREAS ADJACENT TO LAWNS MUST BE HAND FINISHED AS DIRECTED TO GIVE A LAWN TYPE APPEARANCE. REMOVE ALL TRASH, DEBRIS, AND STONES 1" AND LARGER IN DIAMETER OR OTHER OBSTRUCTIONS THAT COULD INTERFERE WITH PROVIDING A SMOOTH LAWN TYPE APPEARANCE. THESE AREAS SHALL BE RESEED TO MATCH THEIR ORIGINAL VEGETATIVE CONDITIONS UNLESS DIRECTED OTHERWISE BY THE FIELD OPERATIONS ENGINEER.

CONSTRUCTION SEQUENCE

- ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED, IF NEEDED AT LEAST ONCE PER WEEK AND AFTER EVERY RAINFALL EVENT.
- SITE STABILIZATION IS REQUIRED WITHIN 14 CALENDAR DAYS OF COMPLETION OF ANY PHASE OF GRADING OR INACTIVITY ON PROJECT SITE.
- FLAG WORK LIMITS AND INSTALL TEMPORARY SILT FENCE AND OTHER MEASURES AS SHOWN ON THE CLEARING AND GRUBBING PLAN. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. NO CLEARING CAN TAKE PLACE UNTIL EROSION CONTROL MEASURES ARE INSTALLED AND IF CLEARING IS REQUIRED TO INSTALL EROSION CONTROL MEASURES, ONLY CLEAR THE AREA NEEDED TO INSTALL THE EROSION CONTROL DEVICES.
- COMPLETE SITE CLEARING AND GRUBBING FOR ENTIRE PROJECT. MAINTAIN AND ADJUST DEVICES AS NEEDED.
- PERFORM GRADING OPERATIONS AND INSTALL PROPOSED DRAINAGE NETWORK. INSTALL FINAL GRADING EROSION CONTROL DEVICES AS THE DRAINAGE NETWORK IS CONSTRUCTED. FOLLOWING THE CONSTRUCTION OF ANY DITCHES, ALL TEMPORARY MATTING OR RIP RAP MUST BE INSTALLED WITHIN 7 DAYS AS SPECIFIED BY NCG-010000. CULVERTS THAT REQUIRE IMPERVIOUS DIKES AND SPECIAL STILLING BASINS WILL BE INSTALLED FOLLOWING CLEARING AND GRUBBING PRIOR TO THE INSTALLATION OF FINAL GRADE EROSION CONTROL DEVICES.
- ALL AREAS WHERE GRADING IS NOT DEFINED BY THE DRAINAGE PLANS MUST BE GRADED TO DRAIN.
- STABILIZE ALL DENUDEED AREAS. STABILIZATION FOR THIS PROJECT SHALL COMPLY WITH THE TIME FRAME GUIDELINES AS SPECIFIED BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY. TEMPORARY OR PERMANENT GROUND COVER STABILIZATION SHALL OCCUR WITHIN 7 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY OR IN CRITICAL AREAS, BY THE END OF EACH DAY.
- AFTER THE SITE IS STABILIZED, REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES, PERFORM FINISH GRADING AND INSTALL PERMANENT VEGETATION ON THE DISTURBED AREAS.
- SEE INDIVIDUAL PLAN SHEETS FOR ADDITIONAL SPECIFIC PHASING NOTES.

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REVISIONS



MAINTENANCE NOTES

WATTLE

THE UPSTREAM SIDE OF THE WATTLE SHOULD BE MAINTAINED TO ALLOW THE WATER TO FLOW THROUGH, REDUCE VELOCITY, DISTRIBUTE FLOCCULANT AND ALLOW SEDIMENTATION TO OCCUR. IF THE NATURAL FIBERS OF THE WATTLE BECOME TOO SATURATED WITH DEBRIS, SEDIMENT, ETC., AND REMOVAL OF THESE ITEMS IS NOT POSSIBLE, WATTLES SHOULD BE REPLACED. STAKES SHOULD BE USED TO ANCHOR THE WATTLE ADEQUATELY TO THE GROUND TO PREVENT SCOURING AND WASHOUT DURING STORM EVENTS. THE EXCELSIOR PAD BENEATH THE WATTLES IS CRITICAL TO THE PROPER FUNCTIONING OF THE WATTLES.

TEMPORARY SILT FENCE

INSPECT THE SILT FENCE ON A REGULAR BASIS AND AFTER EACH SIGNIFICANT RAINFALL MAKE ANY REPAIRS IMMEDIATELY. INSPECT THE SILT FENCE TO BE SURE THE BOTTOM OF THE GEOTEXTILE IS KEPT IN PROPERLY. AT A MINIMUM, REMOVE AND DISPOSE OF ALL SILT ACCUMULATIONS WHEN DEPTH REACHES 1/2 THE HEIGHT OF THE GEOTEXTILE. DO NOT UNDERMINE THE FENCE DURING CLEANOUT. DISPOSE OF SEDIMENT BY HAULING IT TO AN APPROVED WASTE SITE WITH APPROPRIATE PERIMETER PROTECTION. REMOVE AND REPLACE DETERIORATED OR CLOGGED SILT FENCE. REPLACE SILT FENCE REMOVED FOR ACCESS AT THE END OF EACH DAY'S OPERATION. INSTALL ADDITIONAL POSTS OR WIRE BACKING IF FENCE IS SAGGING.

SPECIAL SEDIMENT CONTROL FENCE

INSPECT THE DEVICE PERIODICALLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT FOR DAMAGE AND SEDIMENT ACCUMULATION TO CONFIRM THE DEVICE IS FUNCTIONING PROPERLY. AT A MINIMUM, REMOVE SEDIMENT FROM THE DEVICE WHEN ACCUMULATIONS REACH ONE-HALF THE HEIGHT OF THE SEDIMENT CONTROL STONE. REPLACE OR CLEAN THE SEDIMENT CONTROL STONE AS NEEDED TO ALLOW WATER TO DRAIN THROUGH THE DEVICE BETWEEN RAINFALL EVENTS. REBUILD AND/OR REPAIR THE DEVICE WHEN IT IS DAMAGED. REPAIR AREAS WHERE SSCF BECOMES UNDERMINED DUE TO CONCENTRATED FLOWS.

ROCK INLET SEDIMENT TRAP TYPE 'A,B,C'

INSPECT THE DEVICE AFTER EACH SIGNIFICANT RAINFALL EVENT FOR DAMAGE, SEDIMENT ACCUMULATION AND PROPER FUNCTION. REMOVE SEDIMENT FROM THE DEVICE WHEN ACCUMULATIONS REACH ONE-HALF THE HEIGHT OF THE SEDIMENT CONTROL STONE. REPLACE OR CLEAN THE SEDIMENT CONTROL STONE AS NEEDED TO ALLOW WATER TO DRAIN THROUGH THE DEVICE BETWEEN RAINFALL EVENTS. REBUILD AND/OR REPAIR THE DEVICE WHEN IT IS DAMAGED. IF THE DEVICE IS TO REMAIN AFTER PROJECT COMPLETION, IT SHOULD BE CLEAN AND IN PROPER SHAPE AT THE TIME OF FINAL INSPECTION. IF IT IS REMOVED, ALL ACCUMULATED SILT SHOULD BE REMOVED TO KEEP IT FROM ENTERING THE DRAINAGE SYSTEM.

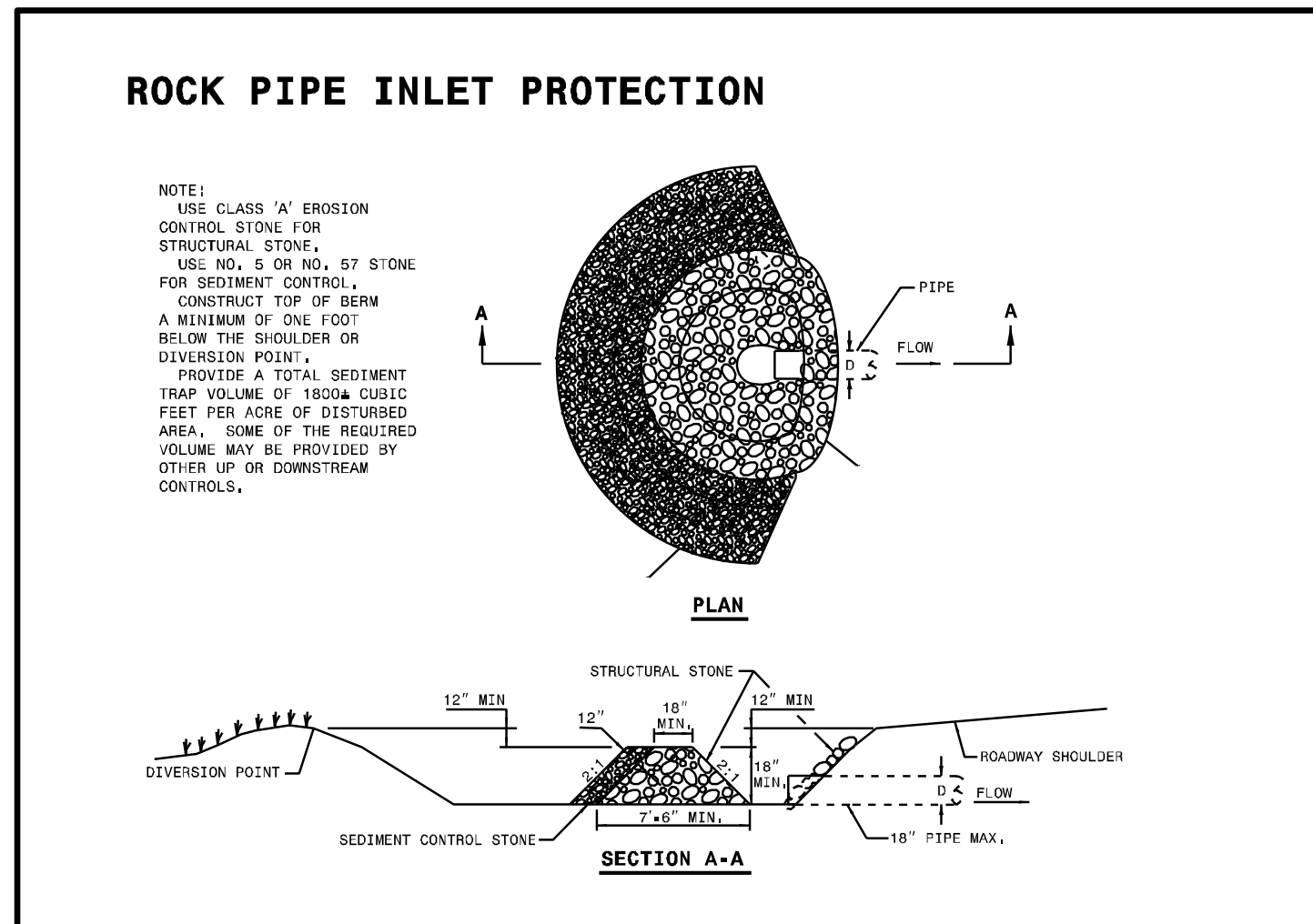
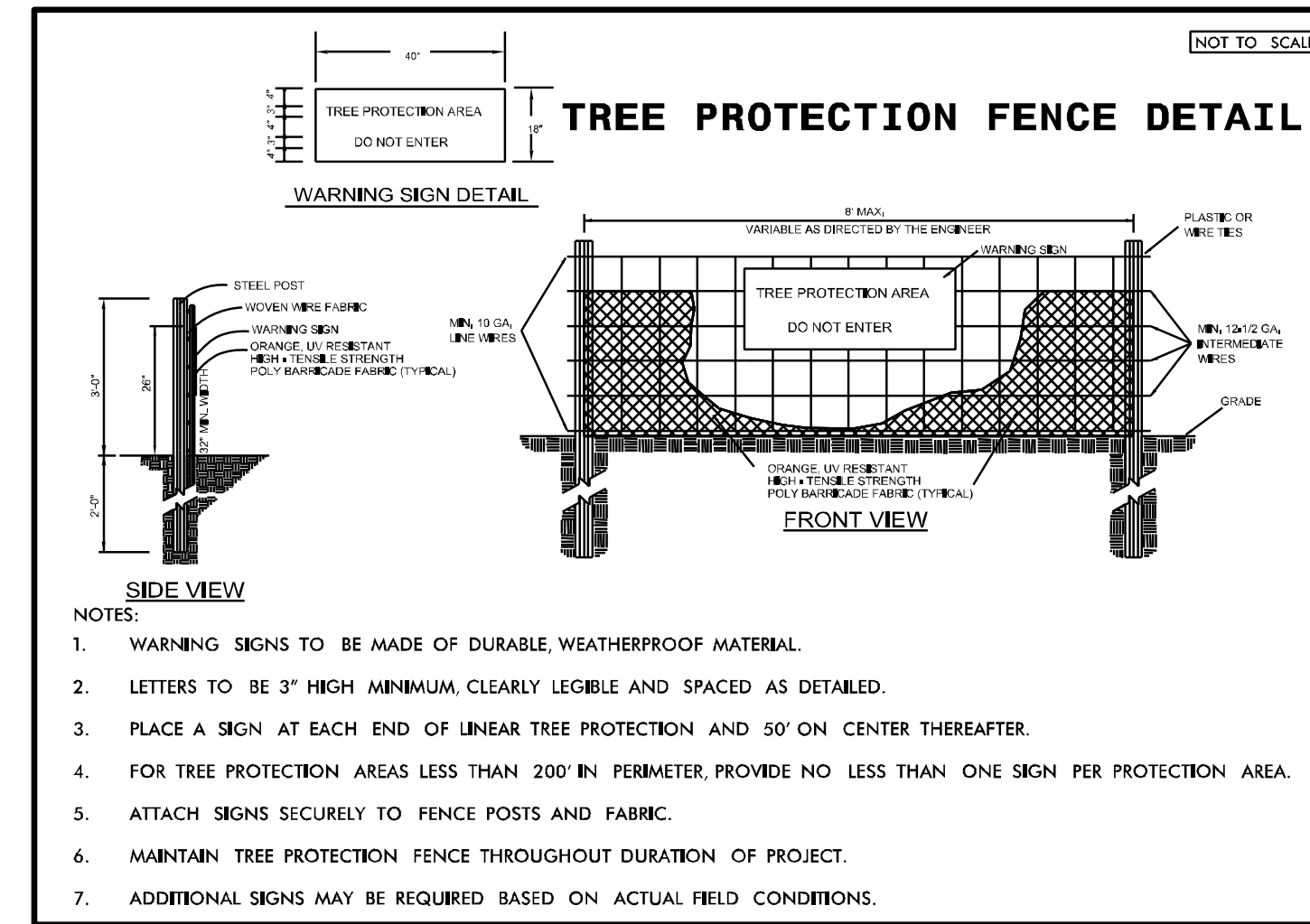
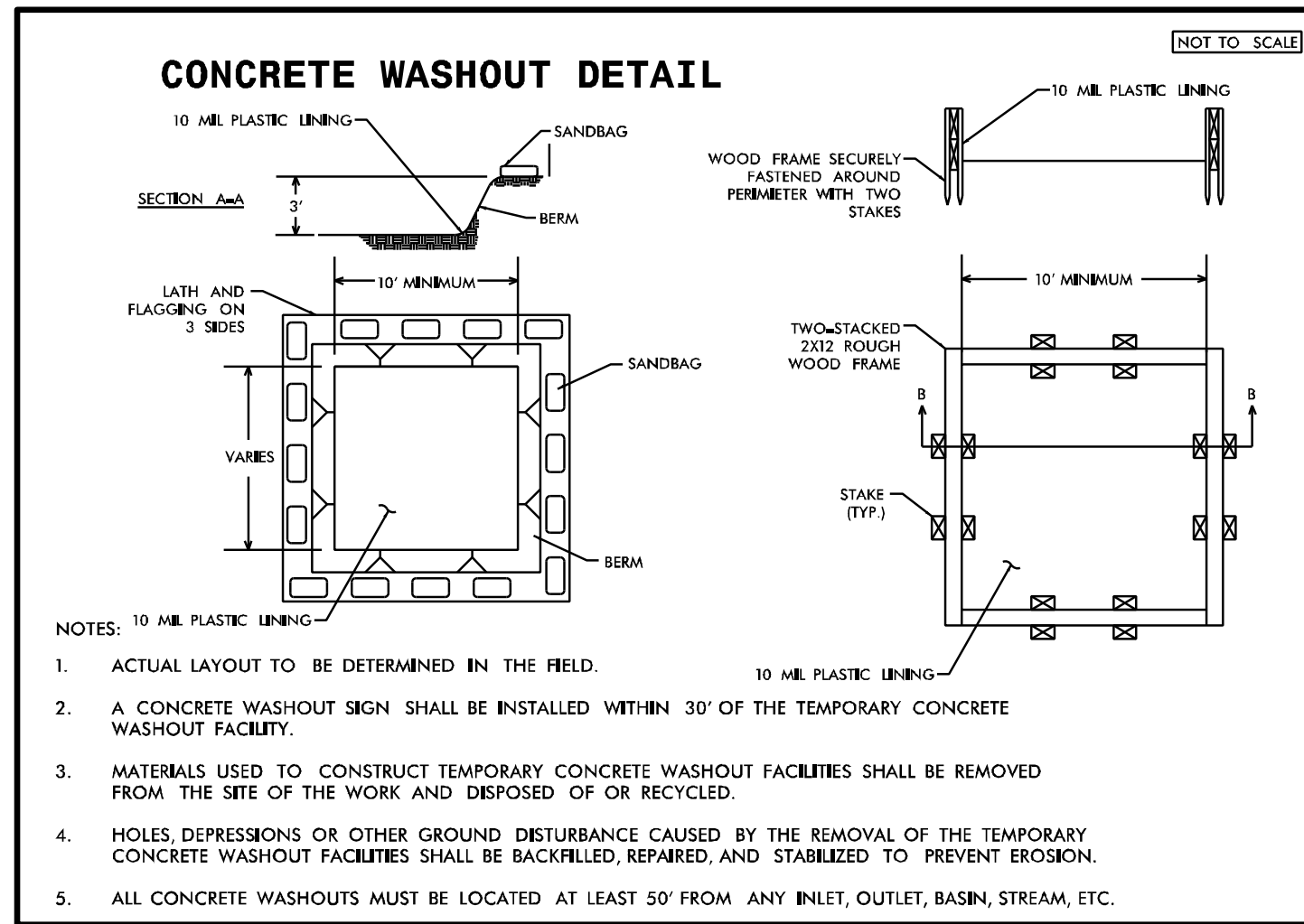
CONCRETE WASHOUT

REGULARLY INSPECT THE PERIMETER BARRIER FOR DAMAGE BUT WEEKLY AS A MINIMUM. REPLACE SANDBAG ACHORS OR WOOD FRAME IF DAMAGED. REPLACE PLASTIC LINING IF DAMAGED AND NO LONGER WATERTIGHT. REMOVE CONCRETE AND REPAIR ANY DAMAGE TO LINER OR FRAME WHEN VOLUME HAS BEEN REDUCED BY HALF OF THE ORIGINAL VOLUME.

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PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. EC-2A
RW SHEET NO.	
BENJAMIN R. LENNON, P.E.	
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	
<p>PLANS PREPARED BY: DRMP 5000 FARMWOOD PLACE RALEIGH, NC 27608 NC LICENSE NO. 14524 (P) 818724115</p>	

REVISIONS



MAINTENANCE NOTES

ROCK PIPE INLET PROTECTION

INSPECT ROCK PIPE INLET PROTECTION AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN THE DESIGNATED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING. CHECK THE STRUCTURE FOR DAMAGE. ANY RIPRAP DISPLACED FROM THE STONE HORSESHOE MUST BE REPLACED IMMEDIATELY. AFTER ALL THE SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND PROVIDE PERMANENT GROUND COVER (SURFACE STABILIZATION).

CONCRETE WASHOUT

REGULARLY INSPECT THE PERIMETER BARRIER FOR DAMAGE BUT WEEKLY AS A MINIMUM. REPLACE SANDBAG ANCHORS OR WOOD FRAME IF DAMAGED. REPLACE PLASTIC LINING IF DAMAGED AND NO LONGER WATERTIGHT. REMOVE CONCRETE AND REPAIR ANY DAMAGE TO LINER OR FRAME WHEN VOLUME HAS BEEN REDUCED BY HALF OF THE ORIGINAL VOLUME.

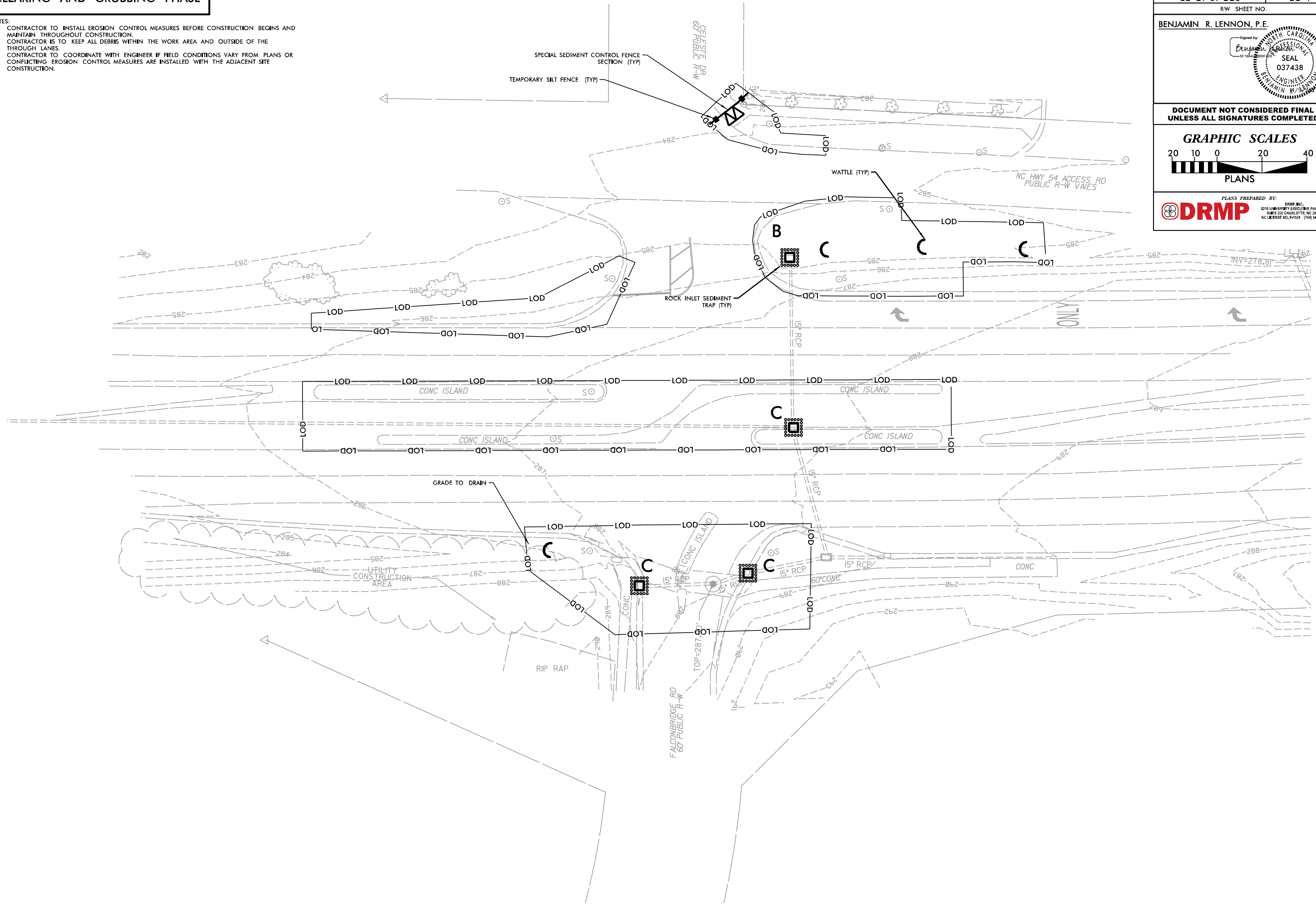


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BENJAMIN R. LENNON, P.E.	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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CLEARING AND GRUBBING PHASE

- NOTES:
1. CONTRACTOR TO INSTALL EROSION CONTROL MEASURES BEFORE CONSTRUCTION BEGINS AND MAINTAIN THROUGHOUT CONSTRUCTION.
 2. CONTRACTOR IS TO KEEP ALL DEBRIS WITHIN THE WORK AREA AND OUTSIDE OF THE THROUGH LANES.
 3. CONTRACTOR TO COORDINATE WITH ENGINEER IF FIELD CONDITIONS VARY FROM PLANS OR CONFLICTING EROSION CONTROL MEASURES ARE INSTALLED WITH THE ADJACENT SITE CONSTRUCTION.

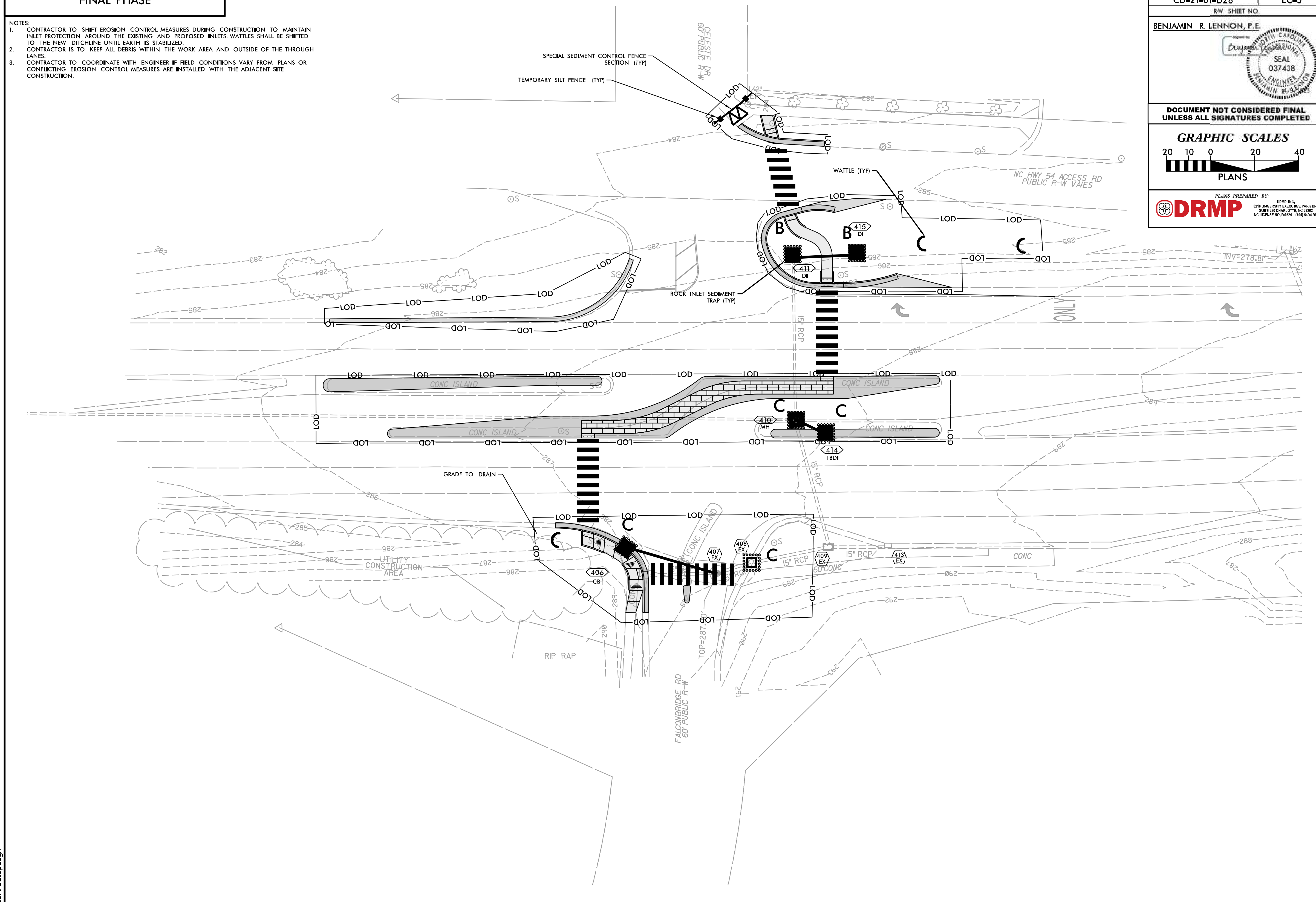


PROJECT REFERENCE NO. CD-21-01-D28	SHEET NO. EC-4
RW SHEET NO.	
Signed by BENJAMIN R. LENNON, P.E.	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
GRAPHIC SCALES PLANS	
PLANS PREPARED BY: 	

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FINAL PHASE

- NOTES:
1. CONTRACTOR TO SHIFT EROSION CONTROL MEASURES DURING CONSTRUCTION TO MAINTAIN INLET PROTECTION AROUND THE EXISTING AND PROPOSED INLETS. WATTLES SHALL BE SHIFTED TO THE NEW DITCHLINE UNTIL EARTH IS STABILIZED.
 2. CONTRACTOR IS TO KEEP ALL DEBRIS WITHIN THE WORK AREA AND OUTSIDE OF THE THROUGH LANES.
 3. CONTRACTOR TO COORDINATE WITH ENGINEER IF FIELD CONDITIONS VARY FROM PLANS OR CONFLICTING EROSION CONTROL MEASURES ARE INSTALLED WITH THE ADJACENT SITE CONSTRUCTION.

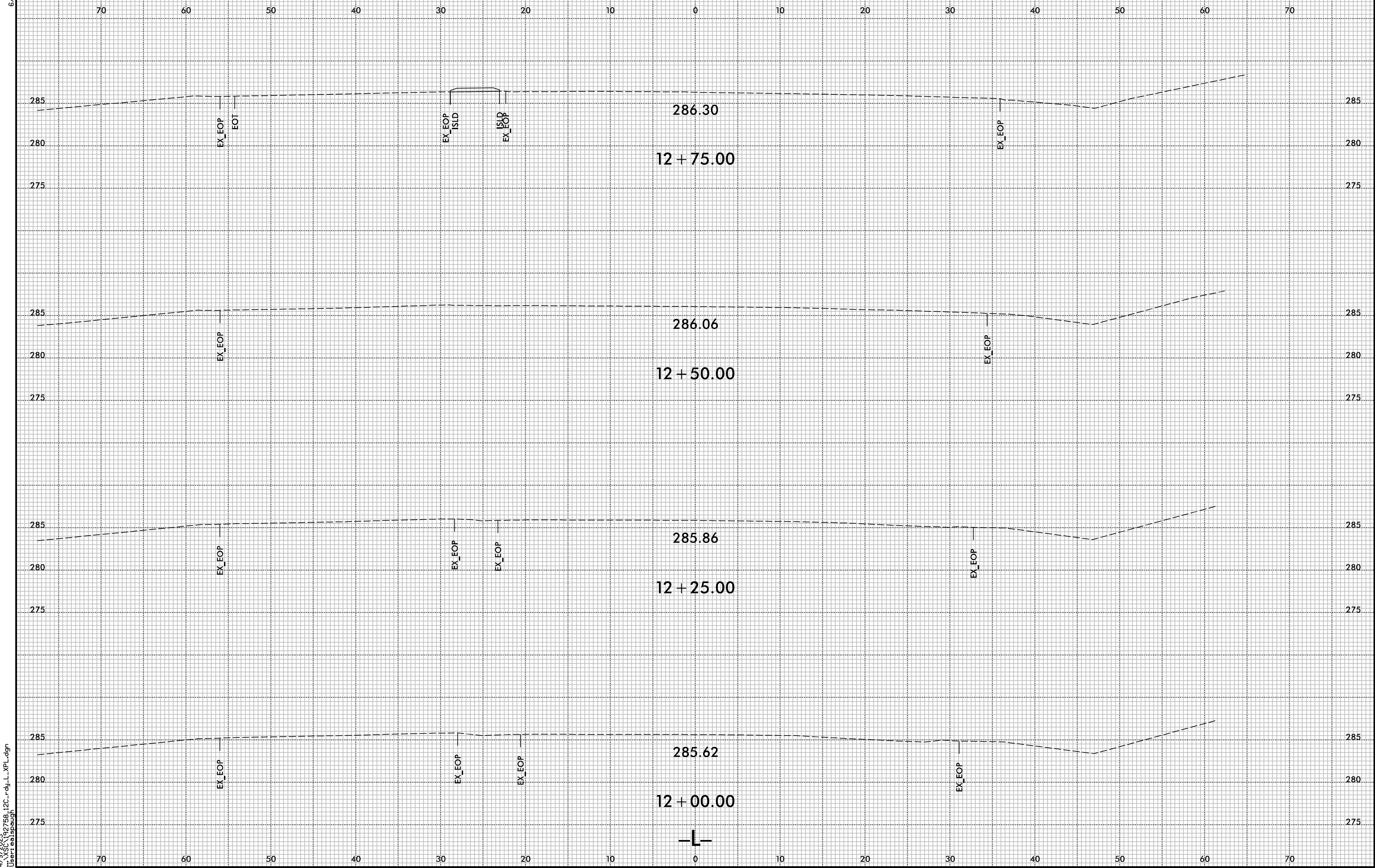


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B/W SHEET NO.	
BENJAMIN R. LENNON, P.E.	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
GRAPHIC SCALES PLANS	
PLANS PREPARED BY: DRMP INC. 8315 UNIVERSITY EXECUTIVE PARK DR. SUITE 100 CHARLOTTE, NC 28217 NC LICENSE NO. 94154 1756 944206	

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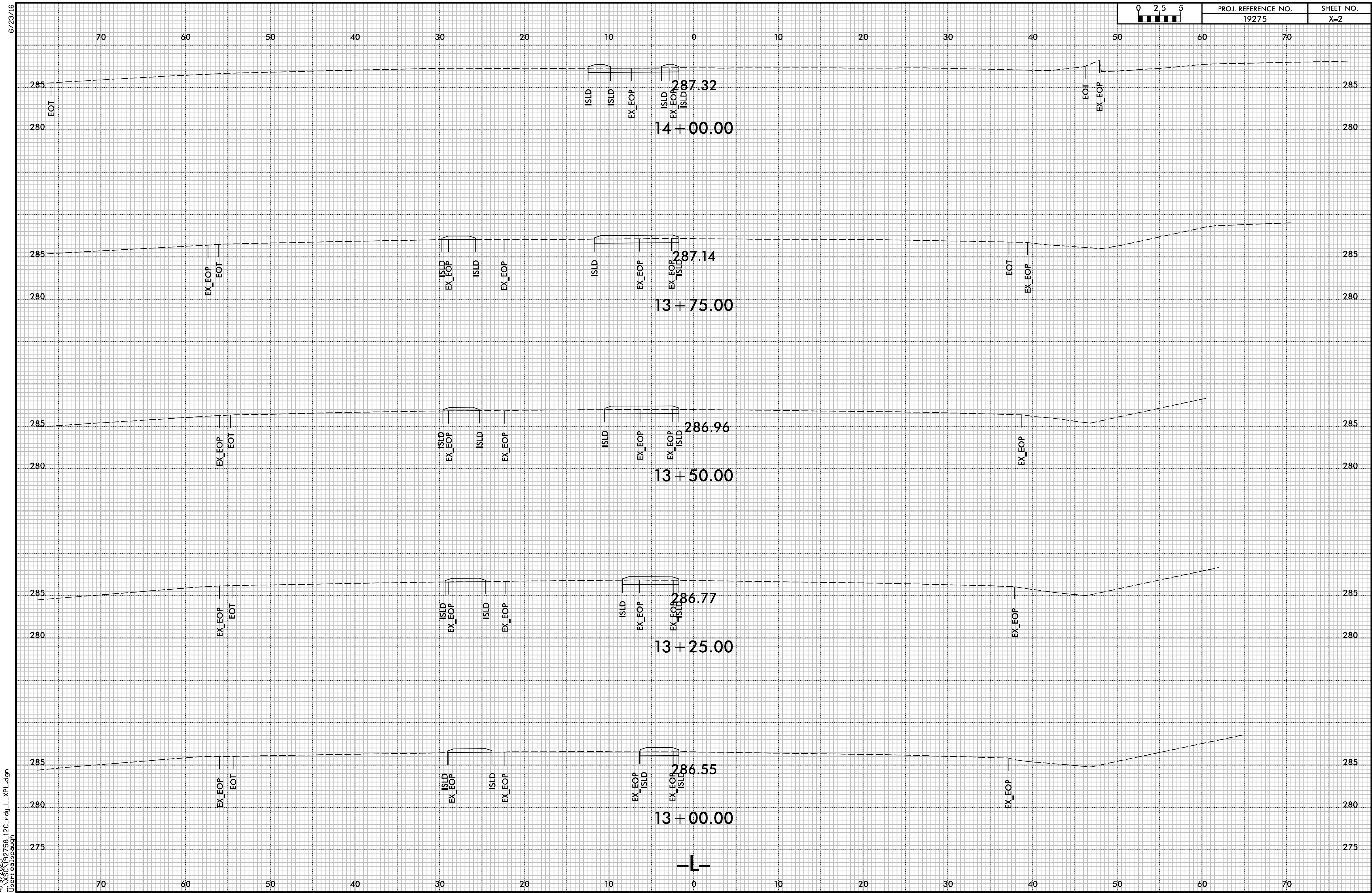
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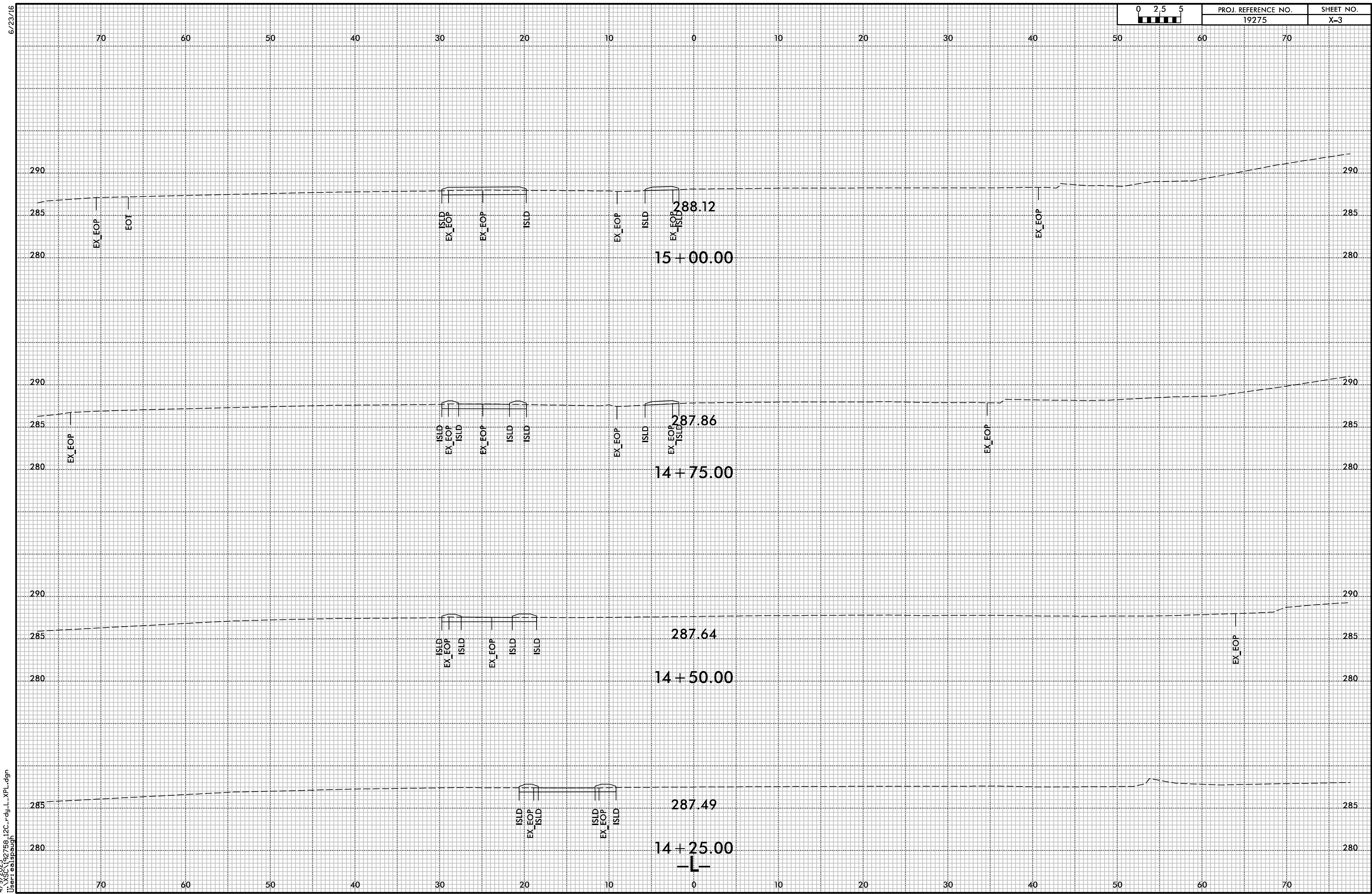
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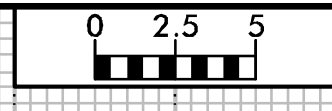
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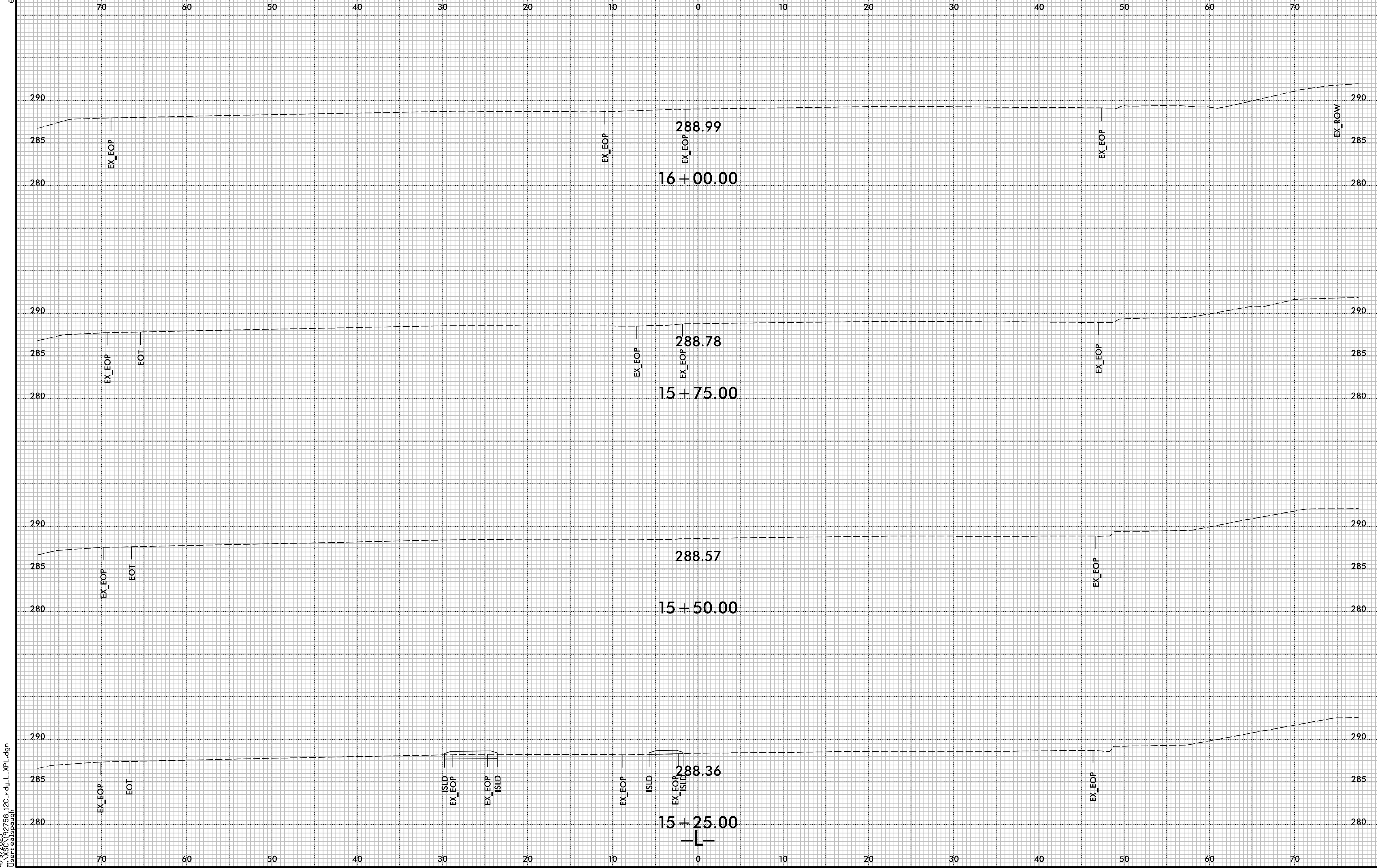
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PROJ. REFERENCE NO.
19275

SHEET NO.
X-4



4/9/2005
User: eshaugh

- 1 INSTALL COAX CABLE
- 2 INSTALL ETHERNET CABLE
- 3 EXISTING ETHERNET (OR COAX) CABLE
- 4 INSTALL SMFO CABLE
- 5 EXISTING SMFO CABLE
- 6 INSTALL FIBER OPTIC DROP CABLE
- 7 INSTALL TRACER WIRE
- 8 TRENCH
- 9 INSTALL PVC CONDUIT
- 10 INSTALL RIGID, GALVANIZED STEEL CONDUIT
- 11 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
- 12 INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL
- 13 INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
- 14 INSTALL POLYETHYLENE CONDUIT
- 15 DIRECTIONAL DRILL CONDUIT
- 16 BORE AND JACK CONDUIT
- 17 INSTALL CABLE(S) IN EXISTING CONDUIT
- 18 INSTALL CABLE(S) IN NEW CONDUIT
- 19 INSTALL CABLE(S) IN EXISTING RISER
- 20 INSTALL CABLE(S) IN NEW RISER
- 21 INSTALL CABLE(S) IN EXISTING CONDUIT STUB-OUTS
- 22 INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 23 INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 24 INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET
- 25 INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET
- 26 INSTALL NEW ETHERNET EDGE SWITCH
- 27 INSTALL NEW FIBER OPTIC TRANSCEIVER
- 28 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS AND FUSION SPLICE CABLE IN CABINET
- 29 INSTALL UNDERGROUND SPLICE ENCLOSURE
- 30 INSTALL AERIAL SPLICE ENCLOSURE
- 31 MODIFY EXISTING INTERCONNECT CENTER /SPLICE ENCLOSURE
- 32 INSTALL POLE MOUNTED SPLICE CABINET
- 33 INSTALL BASE MOUNTED SPLICE CABINET
- 34 INSTALL CABINET FOUNDATION

- 35 INSTALL CCTV CAMERA POLE MOUNTED CABINET
- 36 INSTALL CCTV CAMERA ASSEMBLY
- 37 INSTALL CCTV CAMERA WOOD POLE
- 38 INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
- 39 INSTALL JUNCTION BOX
- 40A INSTALL OVERSIZED JUNCTION BOX
- 40B INSTALL SPECIAL OVERSIZED JUNCTION BOX (36" x 24" x 24")
- 41 REMOVE EXISTING JUNCTION BOX
- 42 INSTALL WOOD POLE
- 43 REMOVE EXISTING WOOD POLE
- 44 INSTALL AERIAL GUY ASSEMBLY
- 45 INSTALL STANDARD GUY ASSEMBLY
- 46 INSTALL SIDEWALK GUY ASSEMBLY
- 47 INSTALL MESSENGER CABLE
- 48A REMOVE EXISTING COMMUNICATIONS AND MESSENGER CABLE
- 48B REMOVE EXISTING COMMUNICATIONS CABLE
- 49 BACK PULL EXISTING COMMUNICATIONS CABLE
- 50 INSTALL CELL MODEM AND ANTENNA
- 51 INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
- 52A INSTALL DELINEATOR MARKER
- 52B INSTALL JUNCTION BOX MARKER
- 53A STORE 20 FEET OF COMMUNICATIONS CABLE
- 53B STORE 50 FEET OF EACH COMMUNICATIONS CABLE
- 54 LASH CABLE(S) TO EXISTING COMMUNICATIONS CABLE
- 55 LASH CABLE(S) TO EXISTING MESSENGER CABLE
- 56 LASH CABLE(S) TO NEW MESSENGER CABLE
- 57 MODIFY EXISTING ELECTRICAL SERVICE
- 58 INSTALL NEW ELECTRICAL SERVICE
- 59 INSTALL NEW EQUIPMENT CABINET DISCONNECT
- 60 BOND TRACER WIRE TO EQUIPMENT GROUND BUS
DO NOT BOND TRACER WIRE TO EQUIPMENT GROUND BUS
- 61 BOND RISER AND MESSENGER CABLE TO POLE GROUND
- 62 BOND RISER TO POLE GROUND
- 63 BOND MESSENGER CABLE TO POLE GROUND
- 64 BOND MESSENGER CABLE TO POLE GROUND
- 65 INSTALL HEAT SHRINK TUBING RETROFIT KIT
- 66 INSTALL MOLDABLE DUCT SEAL
- 67 SLACK SPAN
- 68 INTERCEPT EXISTING CONDUIT

LEGEND

NEW		EXISTING
	OVERSIZED JUNCTION BOX	
	WOOD POLE	
	AERIAL SPLICE ENCLOSURE	
	UNDERGROUND SPLICE ENCLOSURE	
	METAL POLE	
	CCTV ASSEMBLY	
	STANDARD GUY ASSEMBLY	
	SIDEWALK GUY ASSEMBLY	
	CABLE STORAGE RACKS (SNOW SHOES)	
	SIGNAL/EQUIPMENT CABINET	
	SPLICE CABINET	
	SIGNAL POLE	
	SIGNAL INVENTORY NUMBER	
	FIBER OPTIC COMMUNICATIONS CABLE	
	EXISTING COMMUNICATIONS CABLE TO BE REMOVED	
	AERIAL GUY ASSEMBLY CONDUIT	
	DIRECTIONAL DRILLED CONDUIT	
	METAL POLE W/MAST ARM	
	YAGI ANTENNA (SINGLE)	
	YAGI ANTENNA (DOUBLE) FOR REPEATER OPERATION	
	OMNI ANTENNA	

NC Dept of Transportation
Division of Highways
Final Drawing Date: 11/21/2025
TSMO Unit

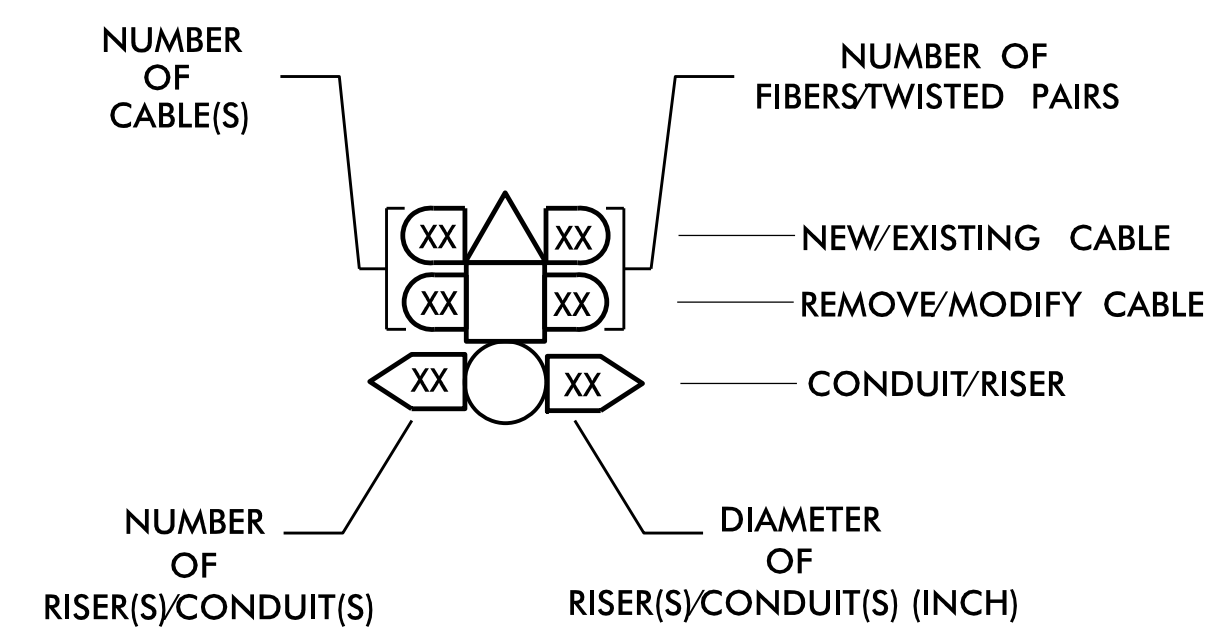
CONSTRUCTION NOTE SYMBOLOGY KEY

- INDICATES NUMBER OF CABLES, LOOPS, ETC.
- INDICATES NUMBER OF FIBERS PER CABLE, TWISTED PAIRS PER CABLE, ETC.
- INDICATES NUMBER OF RISER(S)/CONDUIT(S)
- INDICATES DIAMETER OF RISER(S)/CONDUIT(S) (INCH)

ATTACHMENT POINT:

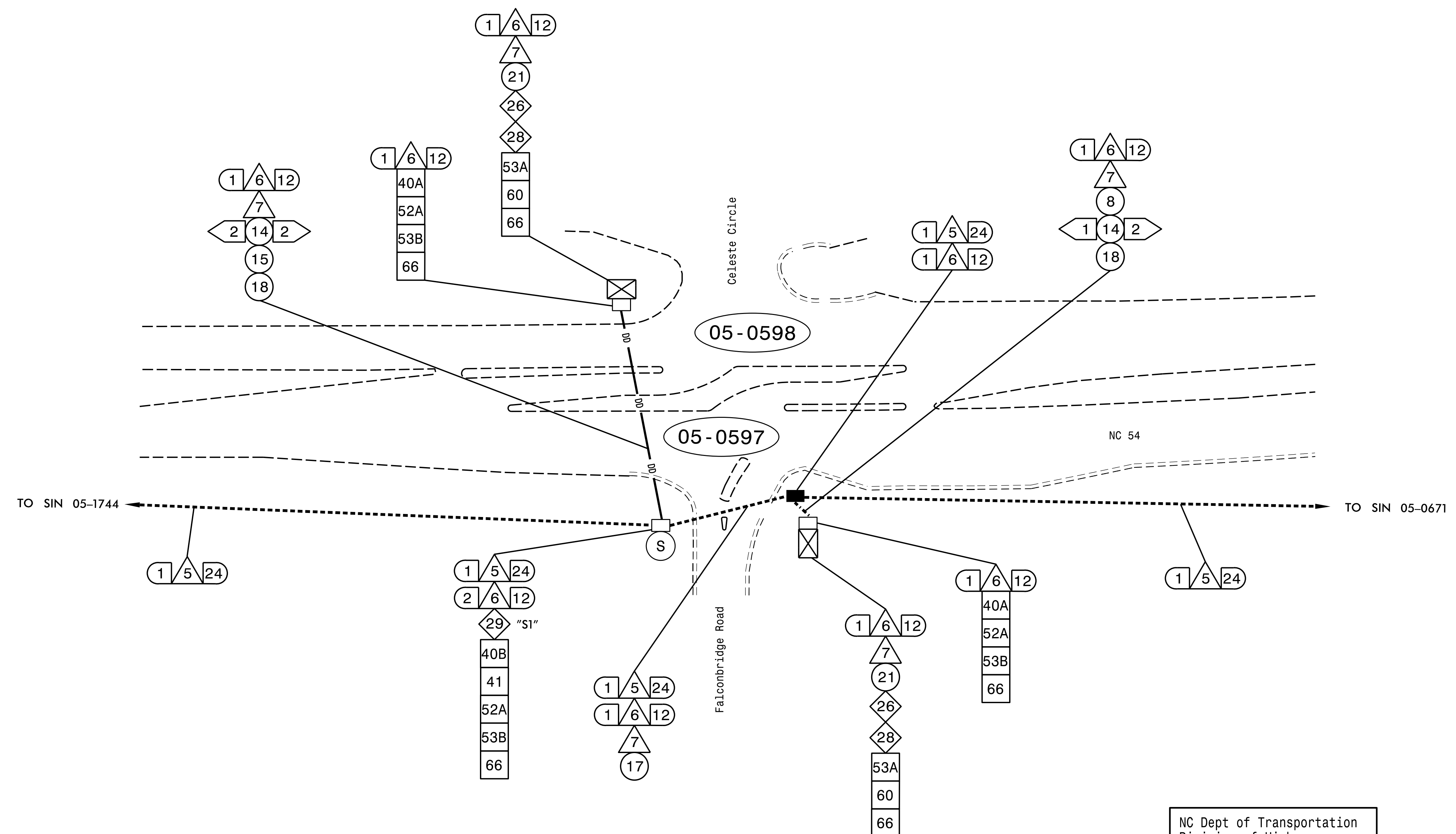
- DISTANCE ABOVE (IN)/ATTACHMENT POINT REFERENCE POINT
- REFERENCE POINT DISTANCE BELOW (IN)/ATTACHMENT POINT

"SS" REFERENCE LOCATION
FS = FRONT SIDE OF POLE
BS = BACK SIDE OF POLE



 DRMP, INC. 6210 UNIVERSITY EXECUTIVE PARK DR. SUITE 200 CHARLOTTE, NC 28262 PHONE: 704-549-4269	Prepared For: Durham City	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
	Construction Notes: Durham City System	SEAL ZACHARY M. ESPOSITO
	Division 5 Durham County Durham	PLAN DATE: November 2025 REVIEWED BY: ZM Esposito
	PREPARED BY: DS Griffith DRMP PROJ NO.: 19275(122)	REVISIONS INIT. DATE

11/18/2025
DATE



NC Dept of Transportation
 Division of Highways
 Final Drawing Date: 11/21/2025
 TSMO Unit

- 1) FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE FIBER OPTIC CABLE RELATED TO THE CITY OF DURHAM TRAFFIC SIGNAL SYSTEM, CONTACT THE CITY'S SIGNAL SYSTEM COORDINATOR AT (919) 560-4366 TO ARRANGE FOR THE CITY TO PROGRAM THE NEW FIELD ETHERNET SWITCHES WITH THE NECESSARY NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO: THE PROJECT IP ADDRESS, DEFAULT GATEWAY, SUBNET MASK AND VLAN ID INFORMATION. NOTIFY THE SIGNAL SYSTEM ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.
- 2) CONTRACTOR TO RECORD EXISTING SPLICE ARRANGEMENT FOR COMPARISON TO THE SUPPLIED SPLICE DETAILS. IF DISCREPANCIES EXIST, CONTACT THE ENGINEER TO DETERMINE HOW TO PROCEED WITH RESPLICING. PROVIDE AS-BUILT PLANS TO THE ENGINEER IF FINAL SPLICE ARRANGEMENT DIFFERS FROM THE SUPPLIED SPLICE DETAILS.



	Prepared For: Communications Cable and Conduit Routing Plan: Durham Signal System		
	Division 5 PLAN DATE: November 2025 PREPARED BY: DS Griffith	Durham County REVIEWED BY: ZM Esposito DRMP PROJ. NO.: 19275(122)	
SCALE: N/A		REVISIONS:	INIT. DATE:

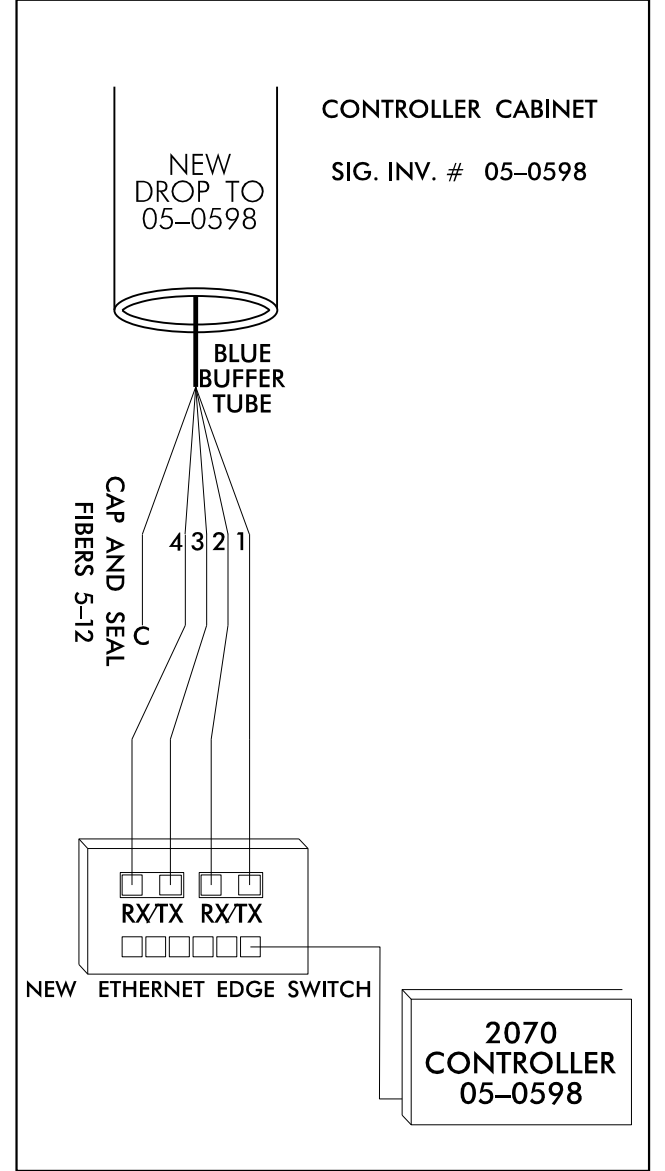
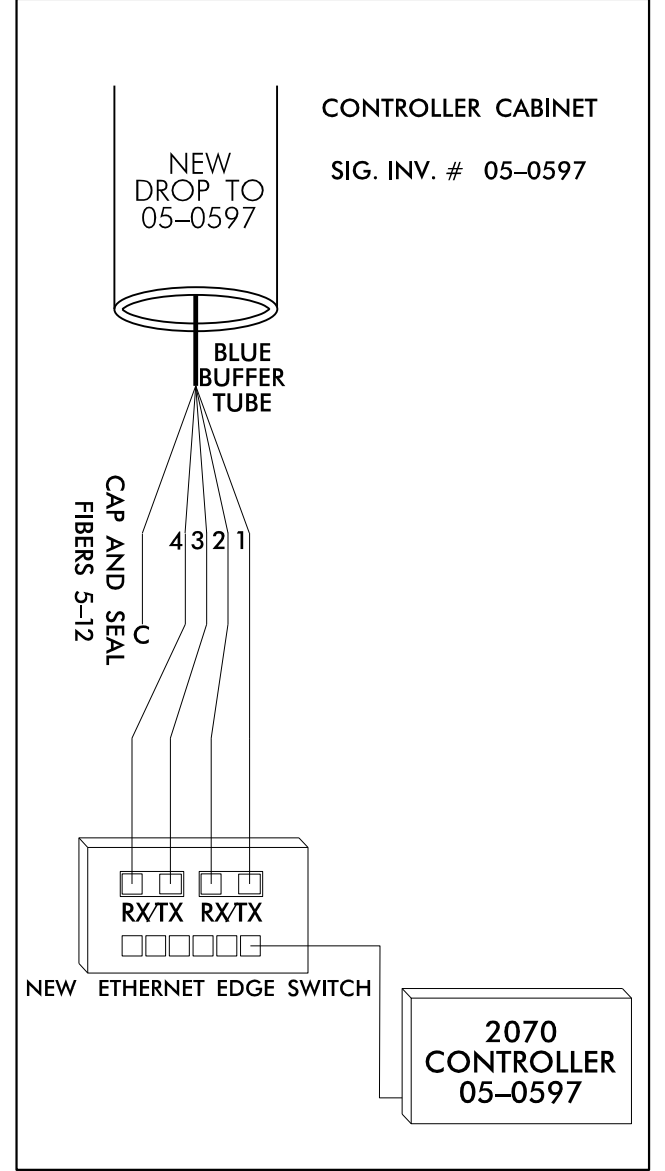
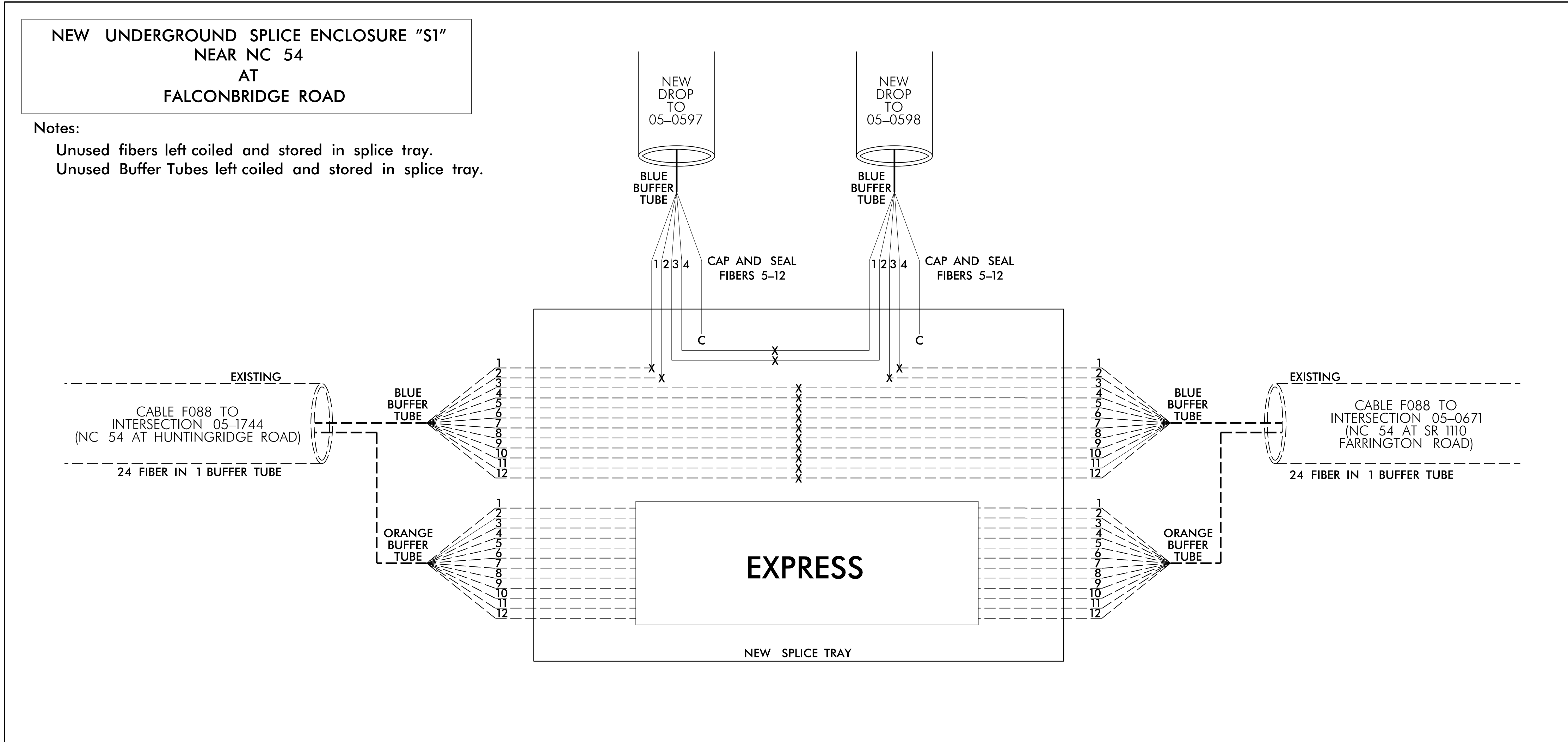
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LEGEND

COLOR CODE TIA/EIA 598-B	
(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA

X	=	FUSION SPLICE INDIVIDUAL FIBER
C	=	CAP IN TRAY

EXPRESS	EXPRESS ENTIRE BUFFER TUBE /FIBERS THROUGH WITHOUT CUTTING
BUFFER SPLICE	SPLICE ALL FIBERS IN BUFFER TUBE COLOR TO COLOR
EXISTING	EXISTING BUFFER TUBE /FIBERS. DO NOT MODIFY EXISTING SPLICES OR EXPRESSED FIBERS.



- FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE FIBER OPTIC CABLE RELATED TO THE CITY OF DURHAM TRAFFIC SIGNAL SYSTEM, CONTACT THE CITY'S SIGNAL SYSTEM COORDINATOR AT (919) 560-4366 TO ARRANGE FOR THE CITY TO PROGRAM THE NEW FIELD ETHERNETSWITCH WITH THE NECESSARY NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO: THE PROJECT IP ADDRESS, DEFAULT GATEWAY, SUBNET MASK AND VLAN ID INFORMATION. NOTIFY THE SIGNAL SYSTEM ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.
- CONTRACTOR TO RECORD EXISTING SPLICE ARRANGEMENT FOR COMPARISON TO THE SUPPLIED SPLICE DETAILS. IF DISCREPANCIES EXIST, CONTACT THE ENGINEER TO DETERMINE HOW TO PROCEED WITH RESPLICING. PROVIDE AS-BUILT PLANS TO THE ENGINEER IF FINAL SPLICE ARRANGEMENT DIFFERS FROM THE SUPPLIED SPLICE DETAILS.
- ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING \ ENSURING PROPER TERMINATIONS.
- INCLUDE ON THE COVER OF EACH SPLICE TRAY THE FOLLOWING: REFERENCE SECTION 1731 "FIBER OPTIC SPLICE ENCLOSURE"
 - SPLICE LOCATION
 - DATE
 - COMPANY NAME
 - NAME OF INDIVIDUAL PERFORMING THE SPLICING

PRIOR TO INSTALLING THE COVER ON THE SPLICE TRAY TAKE A DIGITAL PHOTOGRAPH SHOWING THE SPLICE TRAY AND INFORMATION SHOWN ABOVE (1-4) AND SUBMIT PHOTOGRAPH ALONG WITH OTDR TEST RESULTS.

NC Dept of Transportation
Division of Highways
Final Drawing Date: 11/21/2025
TSMO Unit



Prepared For: 	Splice Details: Durham Signal System		SEAL SEAL ZACHARY M. ESPOSITO ENGINEER 11/18/2025 DATE
	Division 5 Durham County Durham PLAN DATE: November 2025 REVIEWED BY: ZM Esposito PREPARED BY: DS Griffith DRMP PROJ NO: 19275 (122)	REVISIONS INIT. DATE	

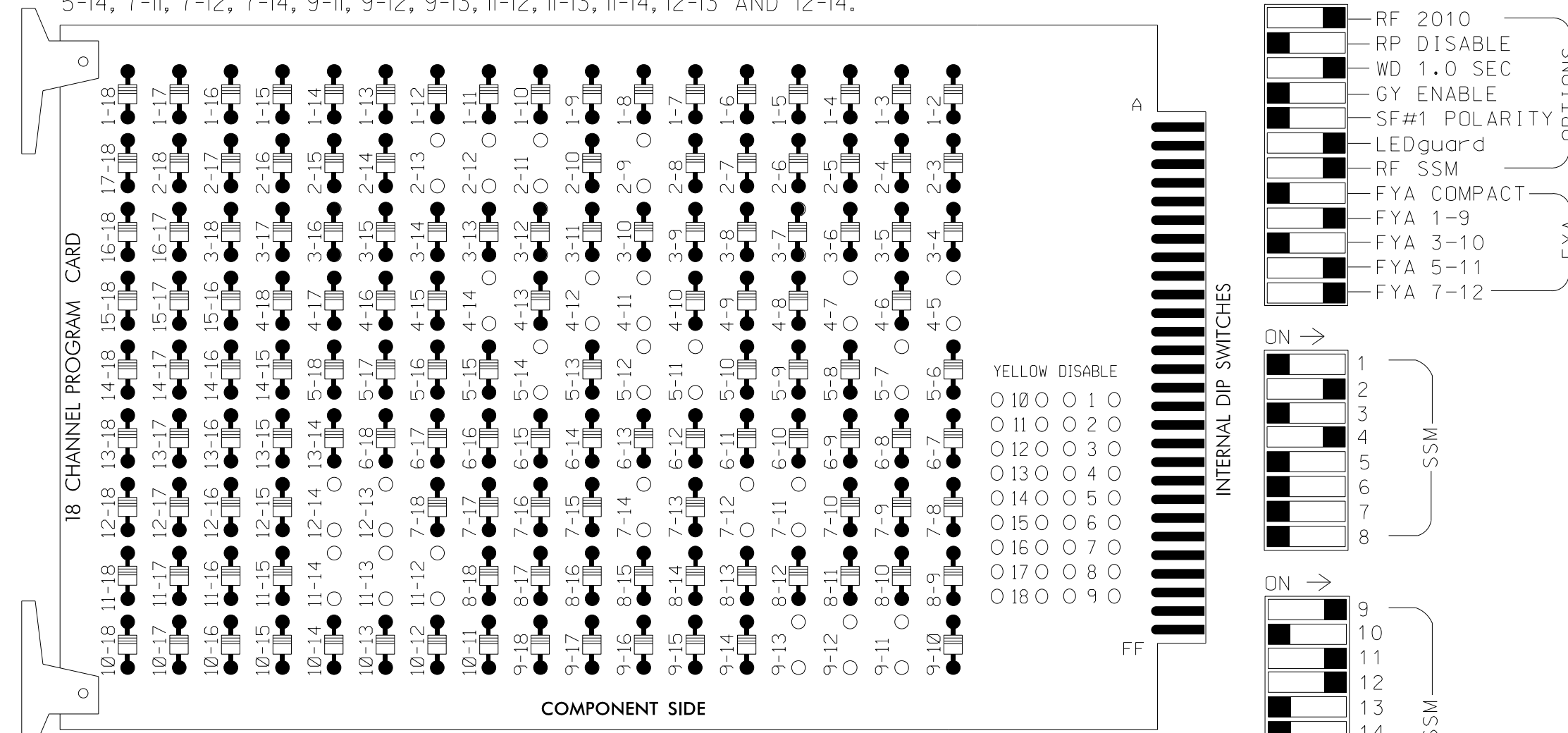
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

18 CHANNEL IP CONFLICT MONITOR

PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS: 2-9, 2-11, 2-12, 2-13, 4-5, 4-7, 4-11, 4-12, 4-14, 5-7, 5-11, 5-12, 5-14, 7-11, 7-12, 7-14, 9-11, 9-12, 9-13, 11-12, 11-13, 11-14, 12-13 AND 12-14.



REMOVE JUMPERS AS SHOWN

NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
- Ensure that Red Enable is active at all times during normal operation.
- Integrate monitor with Ethernet network in cabinet.

■ = DENOTES POSITION OF SWITCH

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Program phases 4 and 7 for Dual Entry.
- Program controller to start up in phase 2 Green.
- The cabinet and controller are part of the Durham Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070LX
 CABINET.....332 W/ AUX
 SOFTWARE.....ECONOLITE ASC/3-2070
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. FILE
 LOAD SWITCHES USED.....S2,S3,S5,S6,S7,S10,
 AUX S1,AUX S4,AUX S5

PHASES USED.....2,2PED,4,4PED,7**
 OVERLAP "A".....*
 OVERLAP "B".....NOT USED
 OVERLAP "C".....*
 OVERLAP "D".....*
 OVERLAP "E".....NOT USED
 OVERLAP "F".....NOT USED
 OVERLAP "G".....*
 OVERLAP "H".....*

* See overlap programming detail on sheet 3.
 ** Phase used for timing purposes only.

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	OLG	6	6 PED	OLH	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	NU	21	22	P21, P22	NU	41,42	P41, P42	72	★	NU	★	NU	★	NU	★	★	★	★
RED		128	128										A121					
YELLOW		129	129					*			*							
GREEN			130															
RED ARROW						101										A114	A101	
YELLOW ARROW						102							A122			A115	A102	
FLASHING YELLOW ARROW													A123			A116	A103	
GREEN ARROW		130				103	133			124								
Hand icon					113		104											
Walking person icon					115		106											

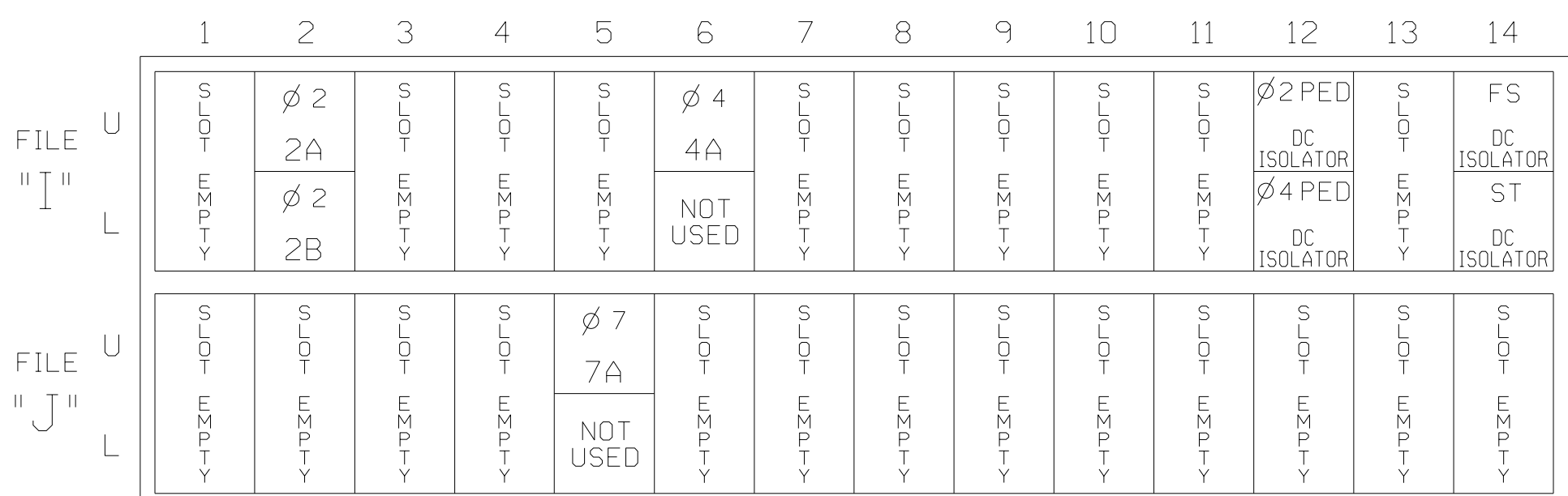
NU = Not Used

* Denotes install load resistor. See load resistor installation detail this sheet.

★ See pictorial of head wiring in detail below.

INPUT FILE POSITION LAYOUT

(front view)



EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
 ST = STOP TIME

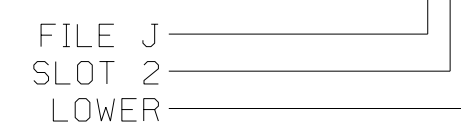
INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	ADDED INITIAL	DETECTOR TYPE
2A	TB2-5,6	I2U	39	2	2	YES			X	N
2B	TB2-7,8	I2L	43	12	2	YES			X	N
4A	TB4-9,10	I6U	41	4	4	YES				N
7A	TB5-5,6	J5U	57	7	★	YES		15.0		N
PED PUSH BUTTONS										
P21,P22	TB8-4,6	I12U	67	PED 2	2	PED				
P41,P42	TB8-5,6	I12L	69	PED 4	4	PED				

NOTE:
 INSTALL DC ISOLATORS
 IN INPUT FILE SLOT 112.

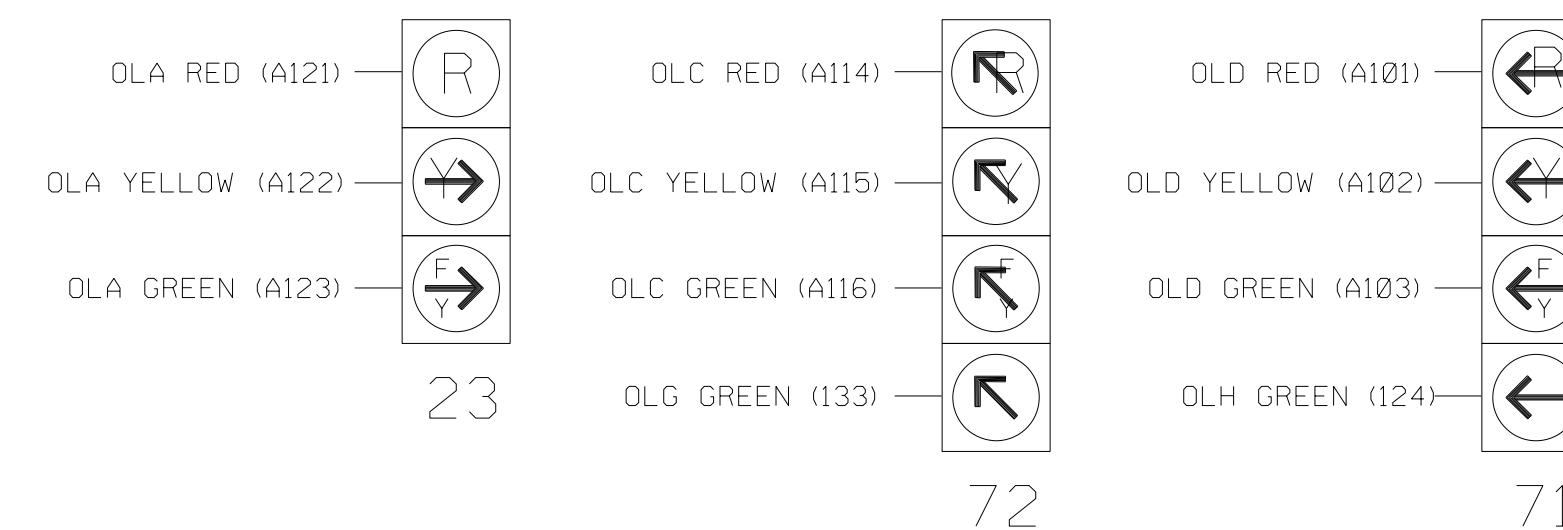
★ For the detector to work as shown on the signal design plan, see the Vehicle Detector Setup Programming Detail for Alternate Phasing on sheet 3.

INPUT FILE POSITION LEGEND: J2L



FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)

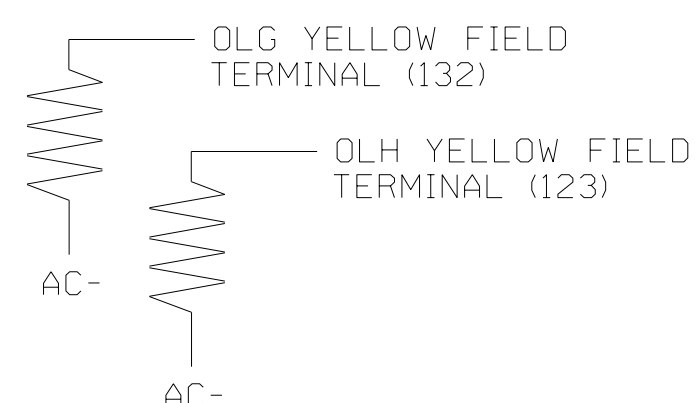


LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

NC Dept of Transportation
 Division of Highways
 Final Drawing Date: 11/21/2025
 TSMO Unit

THIS ELECTRICAL DETAIL IS FOR
 THE SIGNAL DESIGN: 05-0597
 DESIGNED: Nov 2025
 SEALED: 11/18/2025
 REVISED: N/A

Electrical Detail - Sheet 1 of 3

<p>DRMP INC. 6210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 PHONE: 704-545-4260</p>	<p>NC 54 Eastbound at Falconbridge Road</p>		<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>				
	<p>Division 5 Durham County Durham</p> <p>PLAN DATE: November 2025 REVIEWED BY: ZM Esposito</p> <p>PREPARED BY: DS Griffith DRMP PROJ. NO.: 19275(122)</p>	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>NO.</th> <th>INIT.</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		NO.	INIT.	DATE	
NO.	INIT.	DATE					
<p>750 N. Greenfield Pkwy, Garner, NC 27529</p>		<p>SIGNATURE: _____ DATE: 11/18/2025</p>	<p>SIG. INVENTORY NO. 05-0597</p>				

ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING FREE RUN - PROGRAM CHANGES (SHOWN BELOW) IN A TIME BASED ACTION PLAN. SCHEDULE A DAY PLAN THAT INCLUDES THE ACTION PLAN PROGRAMMED TO SELECT VEH DET PLAN 2 AND ENABLE SF BIT 7.

TO RUN ALT. PHASING DURING COORDINATION - SELECT THE TIME BASED ACTION PLAN THAT IS PROGRAMMED TO SELECT VEH DET PLAN 2 AND ENABLE SF BIT 7.

PHASING	VEH DET PLAN	SF BITS ENABLED
ACTIONS REQUIRED TO RUN <u>DEFAULT PHASING</u>	1	NONE
ACTIONS REQUIRED TO RUN <u>ALTERNATE PHASING</u>	2	7

IMPORTANT: IF ALT. PHASING IS USED DURING FREE RUN AND COORDINATION, DO NOT OPERATE TIME OF DAY EVENTS CONCURRENTLY WITH COORDINATION PLAN EVENTS IN THE EVENT SCHEDULER. (EX. FREE RUN EVENT SHOULD END BEFORE COORDINATION PLAN EVENT STARTS AND VICE-VERSA).

ALTERNATE PHASING CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN SF BIT 7 AND VEH DET PLAN 2 ACTIVATE TO CALL THE "ALTERNATE PHASING":

SF BIT 7: Modifies overlap parent phases for heads 71 and 72 to run protected turns only.

VEH DET PLAN 2: Reduces delay time for phase 7 call on loop 7A to 0 seconds.

ECONOLITE ASC/3-2070 STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

(program controller as shown)

- From Main Menu select **2. CONTROLLER**
- From CONTROLLER Submenu select **5. START/FLASH**

```

START/FLASH DATA
-----START UP-----
      1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASE  . G . . . . .
      A B C D E F G H I J K L M N O P
OVERLAP X X X X X X X X X X X X X X X X
FLASH>MON. NO FL TIME.. 0 ALL RED... 6
PWR START SEQ.. 1 MUTCD> NO
    
```

Scroll down on this screen and set "Exit Fl" to Green "G"

NOTE: Do not use programmed (controller) flash when MUTCD is set to "NO".

ASC/3 FLASH SENSE INPUT CONTROL FOR RED-RED FLASH

*The NCDOT default database is programmed to address Yellow-Red flash. Logic Statement 100 must be modified as shown when running Red-Red flash.

- From Main Menu select **1. CONFIGURATION**
- From CONFIGURATION Submenu select **8. LOGIC PROCESSOR**
- From LOGIC PROCESSOR Submenu select **2. LOGIC STATEMENTS**

Change the "LP" to 100 and move the cursor down. Delete the two "CTR-SET" statements by moving the cursor over them and hitting the "C" key, then hit "ENTER", select "LP SET CIB ON", hit "ENT", and then set the number to 427.

```

LP#:100 COPY FROM:100 ACTIVE: M FALSE
IF LP CIB CODE ON 331 F

THEN LP DELAY FOR 1.0 SECONDS
LP SET CIB ON 427

ELSE
    
```

THIS STATEMENT IS USED TO CONTROL THE FLASH SENSE INPUT WHEN RUNNING RED-RED FLASH OPERATION.

Hit "ESC", then 1 for "LOGIC STATEMENT CONTROL", next verify that LP#100 is ENABLED.

END PROGRAMMING

NC Dept of Transportation
Division of Highways
Final Drawing Date: 11/21/2025
TSMO Unit

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 05-0597
DESIGNED: Nov 2025
SEALED: 11/18/2025
REVISED: N/A

ACCESSIBLE PEDESTRIAN SIGNAL (APS) INSTALLATION NOTES

- Install push buttons and APS equipment per manufacturer's instructions.
- Provide a dedicated cable to each push button per manufacturer's instructions.
- If APS equipment is mounted in cabinet, use filtered power (i.e., Controller Receptacle) to power APS equipment. Do not use Equipment Receptacle, which is a GFCI outlet.
- Never attempt to operate a standard contact closure push button with the APS system unless cabinet is re-wired for standard button operation or unless explicitly allowed by the manufacturer.
- Place manufacturer's instructions in cabinet with cabinet prints, signal plans, and electrical details.
- An APS push button station that is designed to work without the need for interfacing with a pedestrian signal head shall be installed for applications where a push button is installed in a median without a pedestrian signal head.
- A push button with a single tactile arrow that points in both directions of travel shall be installed if the median separates two parallel crosswalks.

ECONOLITE ASC/3-2070 LOAD SWITCH ASSIGNMENT DETAIL

(program controller as shown)

All channels must be programmed to flash red in controller for red-red flash operation as shown below. Notice "AUT" for all channels is programmed for RED.

- From Main Menu select **1. CONFIGURATION**
- From CONFIGURATION Submenu select **3. LOAD SW ASSIGN**

LD SWITCH	ASSIGN	PHASE	DIMMING	---FLASH---				
/OVLP	TYPE	R	Y	G	D	PWR	AUT	TGR
1	1	V	. . .	+	A	R	X	.
2	2	V	. . .	+	A	R	X	.
3	3	V	. . .	+	A	R	X	.
4	4	V	. . .	+	A	R	.	.
5	7	O	. . .	-	A	R	.	.
6	6	V	. . .	-	A	R	X	.
7	8	O	. . .	-	A	R	.	.
8	8	V	. . .	-	A	R	X	.
9	1	O	. . .	+	A	R	X	.
10	2	O	. . .	+	A	R	X	.
11	3	O	. . .	-	A	R	.	.
12	4	O	. . .	-	A	R	.	.
13	2	P	. . .	+	A	.	.	.
14	4	P	. . .	-	A	.	.	.
15	6	P	. . .	+	A	.	.	.
16	8	P	. . .	-	A	.	.	.

NOTICE OVERLAP G ASSIGNED TO LD SWITCH 5 →

NOTICE OVERLAP H ASSIGNED TO LD SWITCH 7 →



DRMP, INC.
2110 UNIVERSITY EXECUTIVE PARK DR. SUITE 220
CHARLOTTE, NC 28262
PHONE: 704-545-4292

Electrical Detail - Sheet 2 of 3

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SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 054155
ZACHARY M. ESPOSITO

NC 54 Eastbound at Falconbridge Road

Division 5 Durham County Durham

PLAN DATE: November 2025 REVIEWED BY: ZM Esposito
PREPARED BY: DS Griffith DRMP PROJ. NO.: 19275(122)

REVISIONS	INIT.	DATE

SIGNATURE: _____ DATE: 11/18/2025
SIC. INVENTORY NO. 05-0597

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL

(program controller as shown)

- From Main Menu select **2. CONTROLLER**
- From CONTROLLER Submenu select **2. VEHICLE OVERLAPS**

Toggle to reach Overlap 'G'
OVERLAP G

Select TMG VEH OVLP [G] and 'NORMAL'

```

TMG VEH OVLP...[G] TYPE: ....[NORMAL]
PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . . . . X . . . . .
LAG GRN 0.0 YEL 0.0 RED 0.0
    
```

Toggle Once
OVERLAP H

Select TMG VEH OVLP [H] and 'NORMAL'

```

TMG VEH OVLP...[H] TYPE: ....[NORMAL]
PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . . . . X . . . . .
LAG GRN 0.0 YEL 0.0 RED 0.0
    
```

Toggle to reach Overlap 'A'
OVERLAP A

Select TMG VEH OVLP [A] and 'OTHER/ECONOLITE'

```

TMG VEH OVLP...[A] TYPE:[OTHER/ECONOLITE]
PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . X . . . . .
PROTECT . . . . .
PED PRTC . . . . .
NOT OVLP . . . . .
FLSH GRN . 1 . . . . .
LAG X PH . . . . .
LAG 2 PH . . . . .
LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0
    
```

Toggle Twice
OVERLAP C

Select TMG VEH OVLP [C] and 'PPLT FYA'

```

TMG VEH OVLP...[C] TYPE: ....[PPLT FYA]
PROTECTED LEFT TURN.... OVERLAP G
OPPOSING THROUGH..... PHASE 2

FLASHING ARROW OUTPUT....CH11 ISOLATE
DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE..... 7
    
```

Toggle Once
OVERLAP D

Select TMG VEH OVLP [D] and 'PPLT FYA'

```

TMG VEH OVLP...[D] TYPE: ....[PPLT FYA]
PROTECTED LEFT TURN.... OVERLAP H
OPPOSING THROUGH..... PHASE 2

FLASHING ARROW OUTPUT....CH12 ISOLATE
DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE..... 7
    
```

END PROGRAMMING

← NOTICE ACTION PLAN SF BIT DISABLE

← NOTICE ACTION PLAN SF BIT DISABLE

ECONOLITE ASC/3-2070 ACTION PLAN PROGRAMMING DETAIL

- From Main Menu select **5. TIME BASE**
- From TIME BASE Submenu select **2. ACTION PLAN**

```

ACTION PLAN...[ *]
PATTERN.....AUTO   SYS OVERRIDE.... NO
TIMING PLAN..... 0   SEQUENCE..... 0
VEH DETECTOR PLAN.. 2   DET LOG.....NONE
FLASH..... --   RED REST..... NO
VEH DET DIAG PLN... 0   PED DET DIAG PLN..0
DIMMING ENABLE.. NO   PRIORITY RETURN. NO
PED PR RETURN.. NO   QUEUE DELAY..... NO
PMT COND DELAY   NO

PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PED RCL . . . . .
WALK 2 . . . . .
VEX 2 . . . . .
VEH RCL . . . . .
MAX RCL . . . . .
MAX 2 . . . . .
PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
MAX 3 . . . . .
CS INH . . . . .
OMIT . . . . .
SPC FCT . . . . . X . (1-8)
AUX FCT . . . (1-3)

1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
LP 1-15 . . . . .
LP 16-30 . . . . .
LP 31-45 . . . . .
LP 46-60 . . . . .
LP 61-75 . . . . .
LP 76-90 . . . . .
LP 91-100 . . . . .
    
```

* The Action Plan number(s) are to be determined by the Division and/or City Traffic Engineer.

ECONOLITE ASC/3-2070 VEHICLE DETECTOR SETUP PROGRAMMING DETAIL FOR ALTERNATE PHASING LOOP 7A

(program controller as shown)

IMPORTANT!

Program detectors per the input file connection and programming chart shown on sheet 1 before proceeding.

- From Main Menu select **8. UTILITIES**
- From UTILITIES Submenu select **1. COPY/CLEAR**
- Copy from DETECTOR PLAN "1" to DETECTOR PLAN "2".

```

COPY / CLEAR UTILITY
FROM          TO
PHASE TIMING... > PHASE TIMING...
TIMING PLAN... > TIMING PLAN...
PH DET OPT PLAN. > PH DET OPT PLAN.
DETECTOR PLAN... 1 > DETECTOR PLAN... 2
TOGGLE TO SELECT A "FROM" AND A "TO"
THEN PRESS ENTER
    
```

- From Main Menu select **6. DETECTORS**
- From DETECTOR Submenu select **2. VEHICLE DETECTOR SETUP**
- Place cursor in VEH DET PLAN [] position and enter "2".
- Place cursor in VEH DETECTOR [] position and enter "7".
- Set delay time to "0".

```

VEH DETECTOR [ 7] VEH DET PLAN [ 2]
TYPE: N-NTCIP
TS2 DETECTOR..... X ECPI LOG..... NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
7 7 . . . . .
CALL OPTION... YES DELAY TIME... 0.0
EXT OPTION. PASSAGE EXTENSION TIME. 0.0
USE ADDED INITIAL . CROSS SWITCH PH.. 0
LOCK IN..... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY. NO
    
```

← NOTICE VEH DET PLAN 2

← ENSURE DELAY IS SET TO '0'

END PROGRAMMING

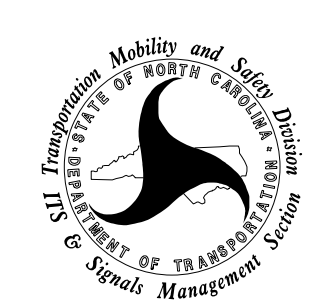
NC Dept of Transportation
Division of Highways
Final Drawing Date: 11/21/2025
TSMO Unit

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 05-0597
DESIGNED: Nov 2025
SEALED: 11/18/2025
REVISED: N/A

Electrical Detail - Sheet 3 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:



DRMP INC.
8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220
CHARLOTTE, NC 28262
PHONE: 704-549-4260

NC LICENSE NO. F-1524
www.drmp.com


NC 54 Eastbound at Falconbridge Road

Division 5 Durham County Durham

PLAN DATE: November 2025 REVIEWED BY: ZM Esposito
PREPARED BY: DS Griffith DRMP PROJ. NO.: 19275(122)

REVISIONS	INIT.	DATE

SEAL



ZACHARY M. ESPOSITO
ENGINEER
054155

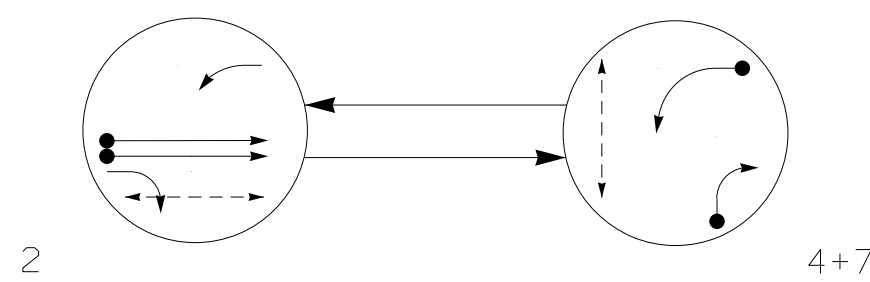
SIGNATURE: _____ DATE: 11/18/2025
SIG. INVENTORY NO. 05-0597



DRMP INC.
8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220
CHARLOTTE, NC 28262
PHONE: 704-549-4260

NC LICENSE NO. F-1524
www.drmp.com

DEFAULT PHASING DIAGRAM

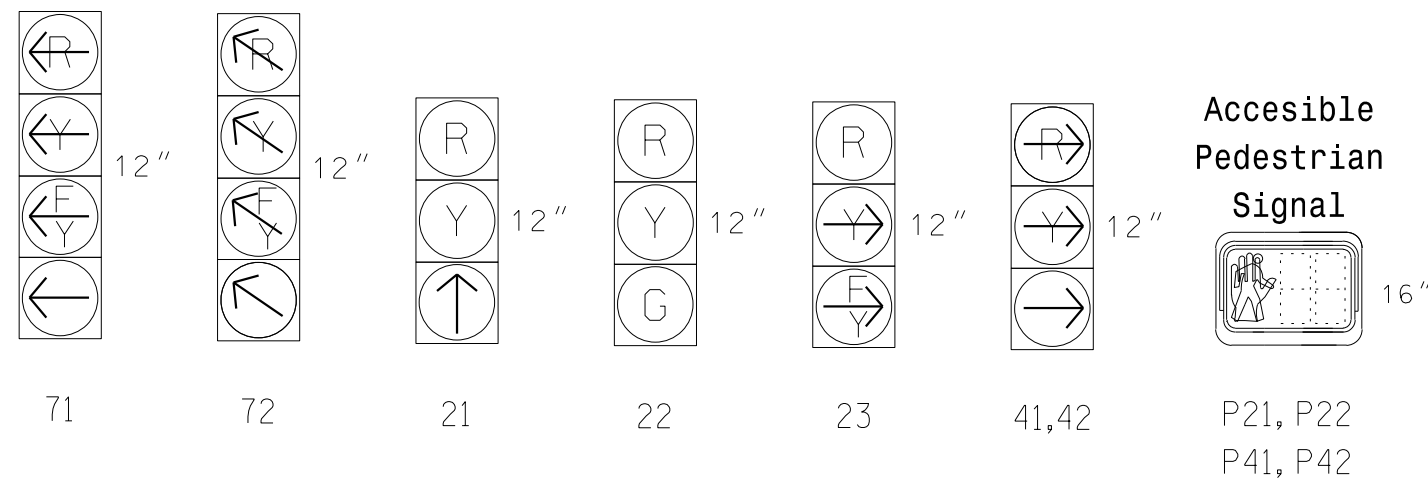


DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE		
	2	4	7
21	↑	R	R
22	G	R	R
23	←	R	R
41,42	←	→	→
71	←	←	←
72	←	←	←
P21,P22	W	DW	DRK
P41,422	DW	W	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



ASC/3 DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING							
					PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
2A	6X6	300	5	X	2	Yes	-	-	X	N	-	X
2B	6X6	300	5	X	2	Yes	-	-	X	N	-	X
4A	6X40	0	2-4-2	X	4	Yes	-	-	-	N	-	X
7A	6X40	0	2-4-2	X	7	Yes	-	15.0*	-	N	-	X

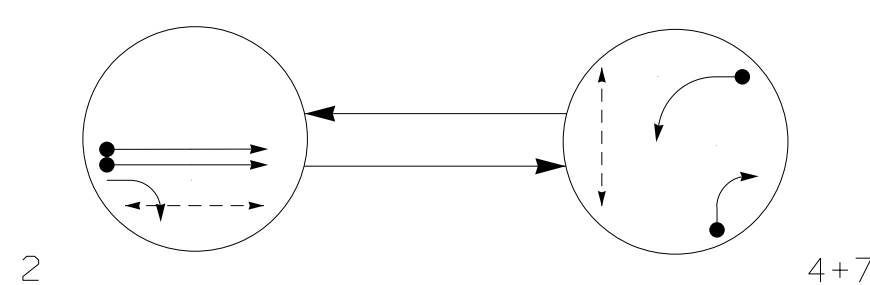
* Disable delay during Alternate Phasing operation.

2 Phase Fully Actuated (Durham Signal System)

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: <https://connect.ncdot.gov/resources/safety/pages/TSMO-Design-Resources.aspx>
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- This intersection features accessible pedestrian signals utilizing percussive tone walk indications and/or speech messages.
- The Division (City) Traffic Engineer will determine the hours of use for each phasing plan.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.

ALTERNATE PHASING DIAGRAM



ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE		
	2	4	7
21	↑	R	R
22	G	R	R
23	←	R	R
41,42	←	→	→
71	←	←	←
72	←	←	←
P21,P22	W	DW	DRK
P41,422	DW	W	DRK

PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- ← UNDETECTED MOVEMENT (OVERLAP)
- ← UNSIGNALIZED MOVEMENT
- ← PEDESTRIAN MOVEMENT

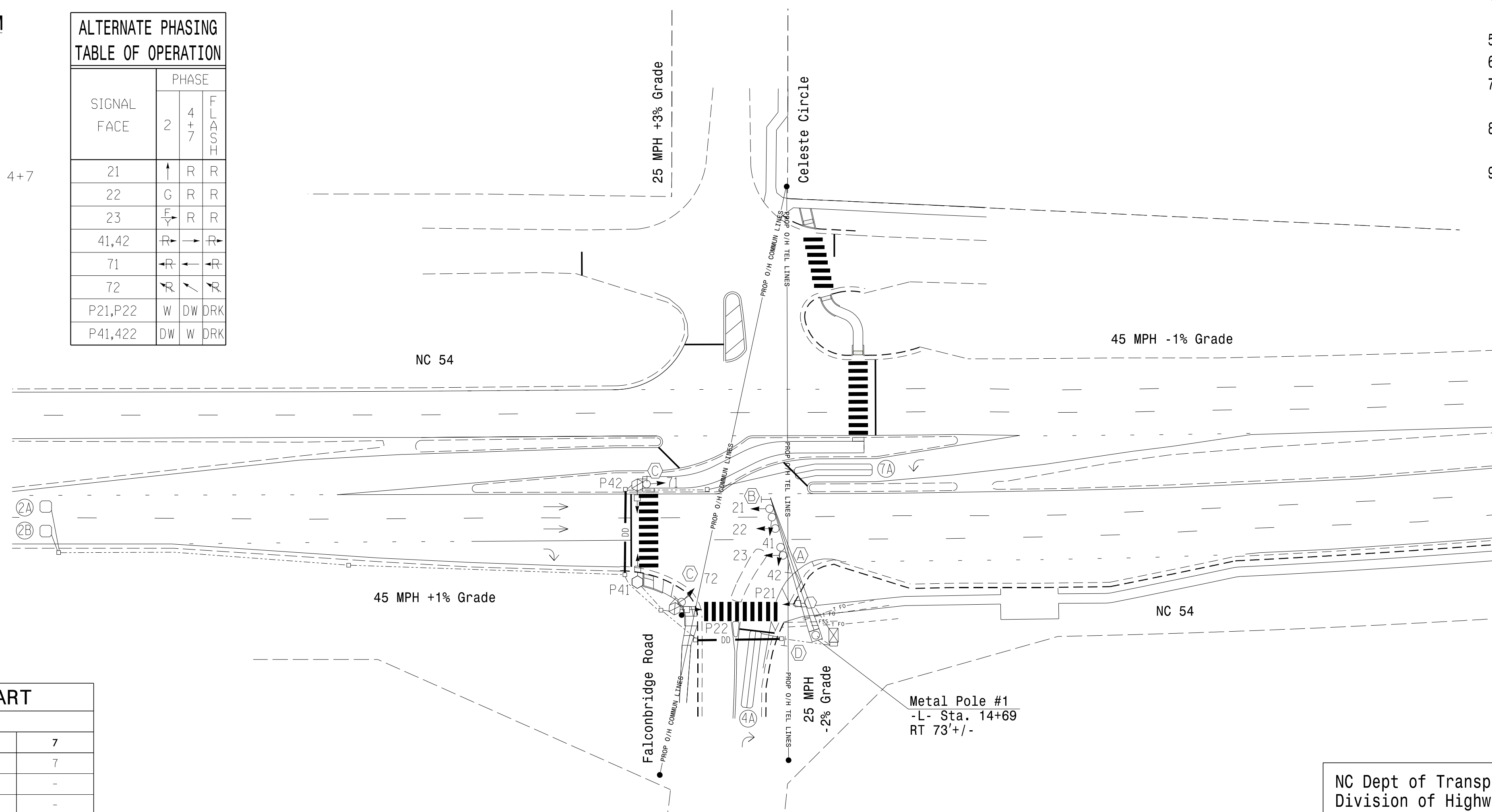
ASC/3 TIMING CHART

FEATURE	PHASE		
	2	4	7
Min Green *	12	7	7
Delayed Green	7	-	-
Walk *	7	7	-
Ped Clear	10	10	-
Veh. Extension *	6.0	2.0	2.0
Max I *	75	30	30
Yellow	4.4	3.0	3.0
Red Clear	1.5	2.9	2.9
Actuations B4 Add *	-	-	-
Seconds /Actuation *	1.5	-	-
Max Initial *	34	-	-
Time Before Reduction *	15	-	-
Time To Reduce *	45	-	-
Minimum Gap	3.0	-	-
Locking Detector	X	-	-
Recall Position	MIN RECALL	-	-
Dual Entry	-	X	X
Simultaneous Gap	X	X	X

* These values may be field adjusted. Do not adjust Min Green and Extension times for phase 2 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

ACCESSIBLE PEDESTRIAN SIGNAL OPERATION

SIGNAL FACE	VOICE	TONES	INTERVAL	SPEECH MESSAGE
P21	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait to cross Falconbridge.
P22	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait to cross Falconbridge.
P41	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait to cross NC 54.
P42	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait to cross NC 54.



LEGEND

- | PROPOSED | EXISTING |
|--|----------|
| ○ Traffic Signal Head | ● N/A |
| ○ Modified Signal Head | ○ N/A |
| ○ Sign | ○ N/A |
| ○ Pedestrian Signal Head With Push Button & Sign | ○ N/A |
| ○ Signal Pole with Guy | ○ N/A |
| ○ Signal Pole with Sidewalk Guy | ○ N/A |
| ○ Inductive Loop Detector | ○ N/A |
| ○ Controller & Cabinet | ○ N/A |
| ○ Junction Box | ○ N/A |
| ○ Oversized Junction Box | ○ N/A |
| ○ 2-in Underground Conduit | ○ N/A |
| ○ Right of Way | ○ N/A |
| ○ Directional Arrow | ○ N/A |
| ○ Directional Drill | ○ N/A |
| ○ Metal Pole with Mastarm | ○ N/A |
| ○ Type II Signal Pedestal | ○ N/A |
| ○ Type III Signal Pedestal | ○ N/A |
| ○ Underground Telephone | ○ N/A |
| ○ Fiber Optic | ○ N/A |
| ○ Sewer | ○ N/A |
| ○ Overhead Communications | ○ N/A |
| ○ Overhead Telephone | ○ N/A |
| ○ Fiber Optics | ○ N/A |
| ○ "NO TURN ON RED" (R10-11) | ○ (A) |
| ○ No Left Turn Sign (R3-2) | ○ (B) |
| ○ "U-TURN YIELD TO RIGHT TURN" Sign (R10-16) | ○ (C) |
| ○ "STOP HERE ON RED" Sign (R10-6) | ○ (D) |

NC Dept of Transportation
Division of Highways
Final Drawing Date: 11/21/2025
TSMO Unit

New Installation

NC 54 Eastbound at Falconbridge Road

Division 5 Durham County Durham
 PLAN DATE: November 2025 REVIEWED BY: ZM Esposito
 PREPARED BY: DS Griffith DRMP PROJ. NO.: 19275(122)

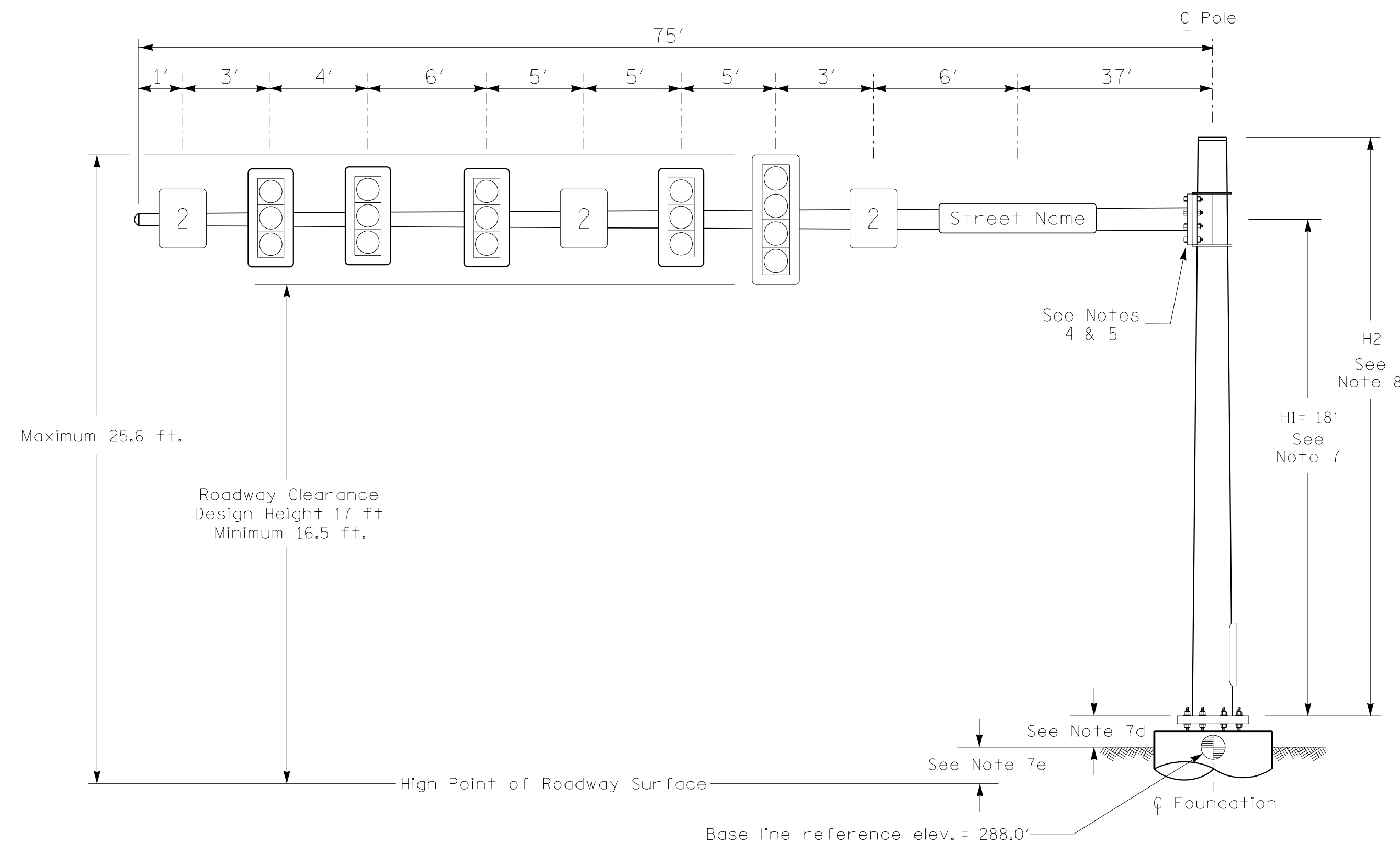
REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 054155
 ENGINEER
 SIGNATURE: M. ESPOSITO
 DATE: 11/18/2025
 SIG. INVENTORY NO. 05-0597

DRMP
 DRMP, INC.
 6210 UNIVERSITY EXECUTIVE PARK DR., NC LICENSE NO. F-1524
 SUITE 200 CHARLOTTE, NC 28262 www.drmp.com
 PHONE: 704-545-4260

Design Loading for METAL POLE NO.1



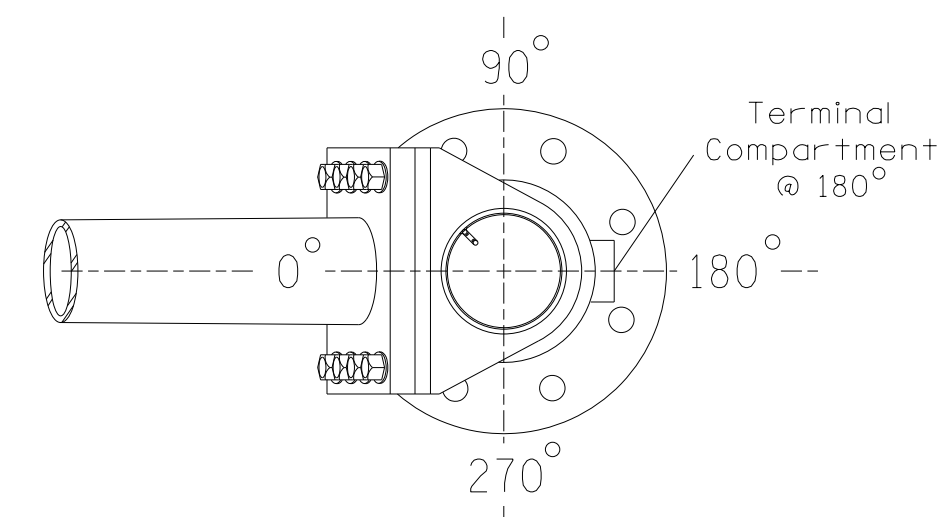
Elevation View

SPECIAL NOTE

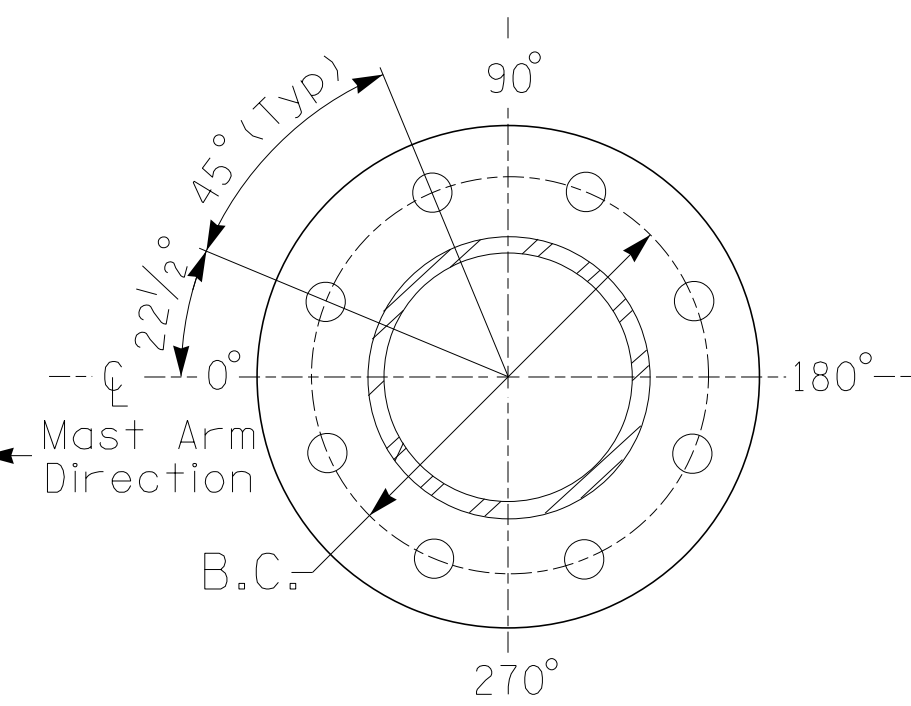
The contractor is responsible for verifying that the mast arm attachment height (H1) will provide the "Design Height" clearance from the roadway before submitting final shop drawings for approval. Verify elevation data below which was obtained by field measurement or from available project survey data.

Elevation Data for Mast Arm Attachment (H1)

Elevation Differences for:		Pole 1
Baseline reference point at Cl Foundation @ ground level		288.0 ft.
Elevation difference at High point of roadway surface		-1.0 ft.
Elevation difference at Edge of travelway or face of curb		-1.0 ft.

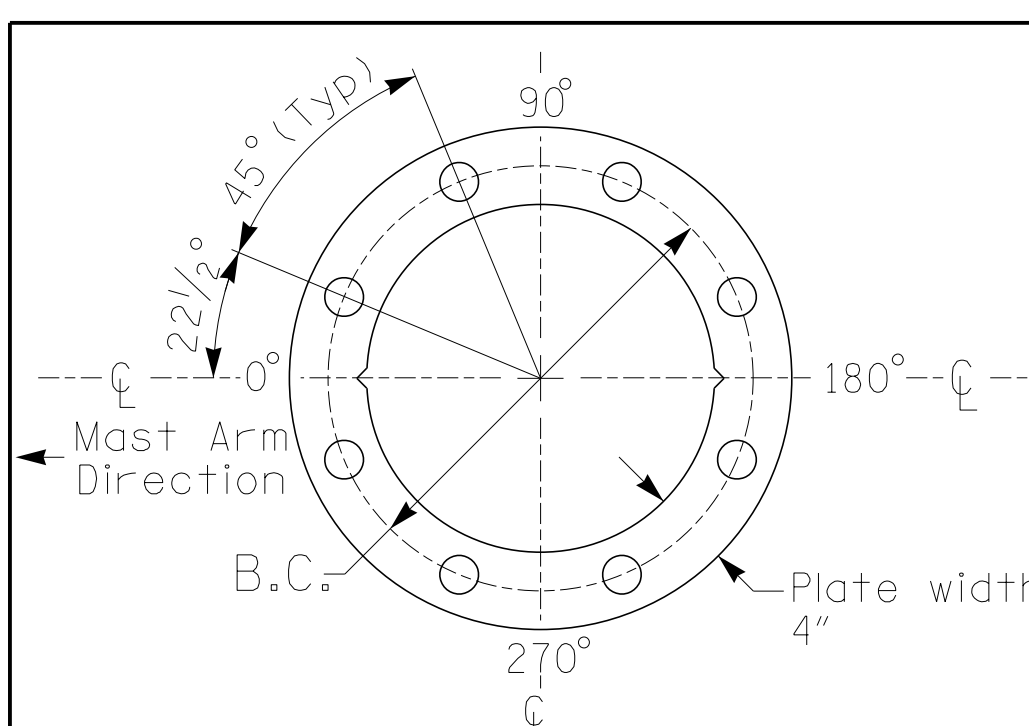


POLE RADIAL ORIENTATION



8 BOLT BASE PLATE DETAIL

See Note 6



BASE PLATE TEMPLATE & ANCHOR BOLT LOCK PLATE DETAIL
For 8 Bolt Base Plate

METAL POLE No. 1

PROJECT REFERENCE NO.	SHEET NO.
36249.4852	Sig-1.4

MAST ARM LOADING SCHEDULE

LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25.5"W X 52.5"L	60 LBS
	RIGID MOUNTED SIGNAL HEAD 12"-4 SECTION-WITH BACKPLATE	11.5 S.F.	25.5"W X 66.0"L	74 LBS
	SIGN RIGID MOUNTED	7.5 S.F.	30.0"W X 36.0"L	14 LBS
	STREET NAME SIGN RIGID MOUNTED	16.0 S.F.	24.0"W X 96.0"L	36 LBS

NOTES

DESIGN REFERENCE MATERIAL

- Design the traffic signal structure and foundation in accordance with:
 - The 1st Edition 2015 AASHTO LRFD "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
 - The 2024 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions.
 - The 2024 NCDOT Roadway Standard Drawings.
 - The traffic signal project plans and special provisions.
 - The NCDOT "Metal Pole Standards" located at the following NCDOT website: <https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx>

DESIGN REQUIREMENTS

- Design the traffic signal structure using the loading conditions shown in the elevation views. These are anticipated worst case "design loads" and may not represent the actual loads that will be applied at the time of the installation. The contractor should refer to the traffic signal plans for the actual loads that will be applied at the time of the installation.
- Design all signal supports using force ratios that do not exceed 0.9.
- The camber design for the mast arm deflection should provide an appearance of a low pitched arch where the tip or the free end of the mast arm does not deflect below horizontal when fully loaded.
- A clamp-type bolted mast arm-to-pole connection may be used instead of the welded ring stiffened box connection shown as long as the connection meets all of the design requirements.
- Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
- The mast arm attachment height (H1) shown is based on the following design assumptions:
 - Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.
 - Signal heads are rigidly mounted and vertically centered on the mast arm.
 - The roadway clearance height for design is as shown in the elevation views.
 - The top of the pole base plate is 0.75 feet above the ground elevation.
 - Refer to the Elevation Data Chart for the elevation differences between the proposed foundation ground level and the high point of the roadway.
- The pole manufacturer will determine the total height (H2) of each pole using the greater of the following:
 - Mast arm attachment height (H1) plus 2 feet, or
 - H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot.
- If pole location adjustments are required, the contractor must gain approval from the Engineer as this may affect the mast arm lengths and arm attachment heights. The contractor may contact the Signal Design Section Senior Structural Engineer for assistance at (919) 814-5000.
- The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
- The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

NC Dept of Transportation
Division of Highways

Final Drawing Date: 11/21/2025

TSMO Unit



DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 220
CHARLOTTE, NC 28262
PHONE: 704-549-4260
www.drmp.com

NCDOT Wind Zone 5 (110 mph)

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

	Prepared For: NC 54 Eastbound at Falconbridge Road		
	Division 5 PLAN DATE: November 2025 PREPARED BY: DS Griffith	Durham County REVIEWED BY: ZM Esposito DRMP PROJ. NO.: 19275(122)		Durham DATE:
SCALE: N/A	REVISIONS:	INIT.:	DATE:

SIG. INVENTORY NO. 05-0597

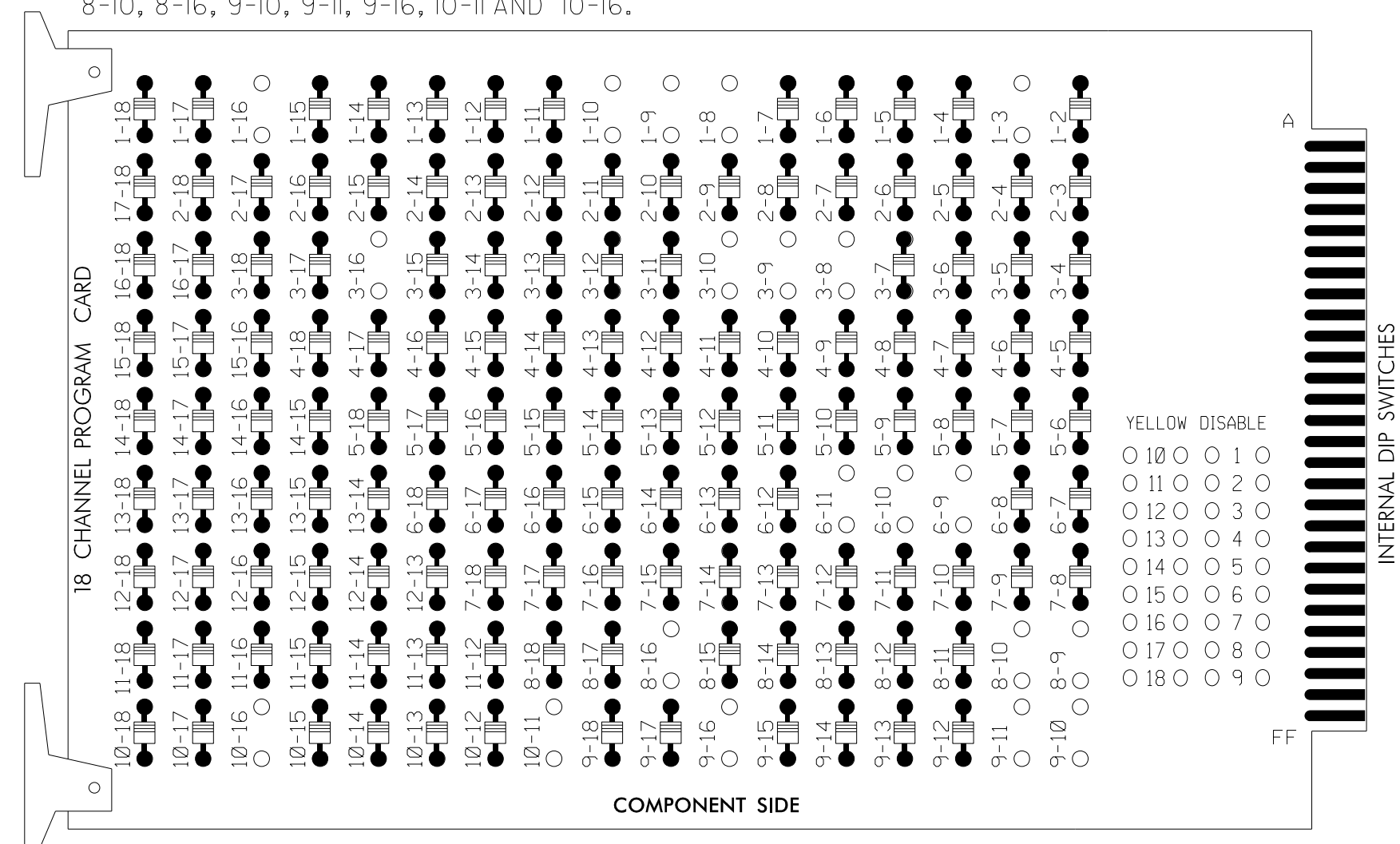
11/17/2025 10:48:10 AM User: jgpf

18 CHANNEL IP CONFLICT MONITOR

PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

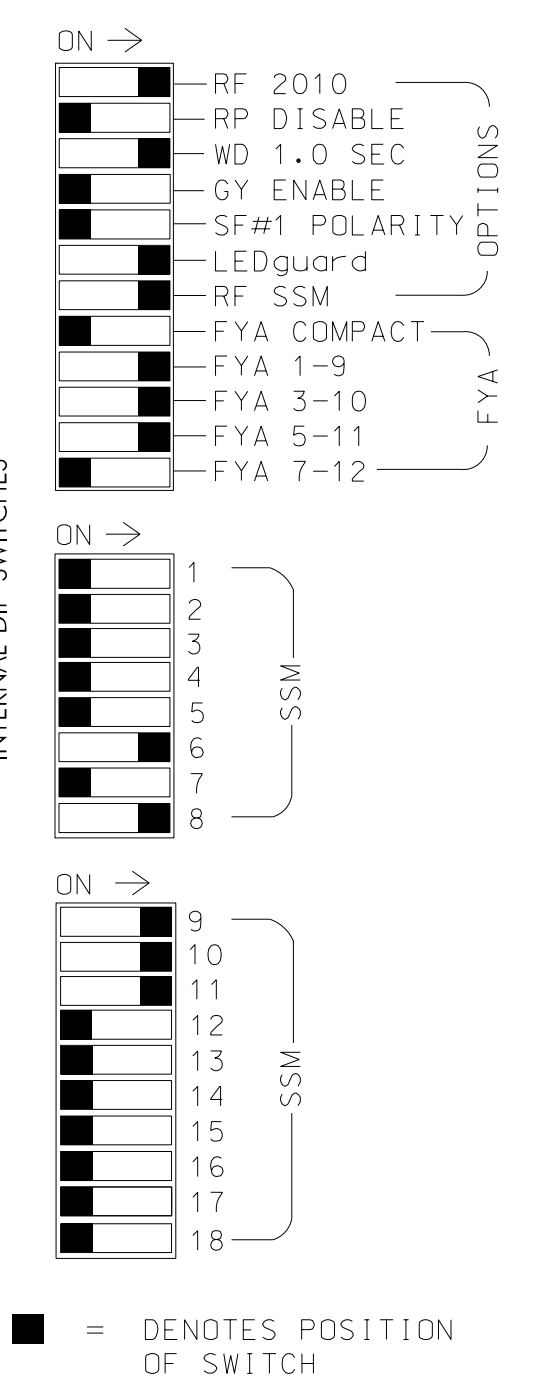
REMOVE DIODE JUMPERS: 1-3, 1-8, 1-9, 1-10, 1-16, 3-8, 3-9, 3-10, 3-16, 6-9, 6-10, 6-11, 8-9, 8-10, 8-16, 9-10, 9-11, 9-16, 10-11 AND 10-16.



REMOVE JUMPERS AS SHOWN

NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
- Ensure that Red Enable is active at all times during normal operation.
- Integrate monitor with Ethernet network in cabinet.



■ = DENOTES POSITION OF SWITCH

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Program phases 3 and 8 for Dual Entry.
- Program controller to start up in phase 6 Green.
- The cabinet and controller are part of the Durham Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070LX
 CABINET.....332 W/ AUX
 SOFTWARE.....ECONOLITE ASC/3-2070
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. FILE
 LOAD SWITCHES USED.....S1,S4,S8,S11,S12,
 AUX S1,AUX S2,AUX S4

PHASES USED.....3**,6,8,8PED
 OVERLAP "A".....*
 OVERLAP "B".....*
 OVERLAP "C".....*
 OVERLAP "D".....NOT USED
 OVERLAP "E".....NOT USED
 OVERLAP "F".....NOT USED
 OVERLAP "G".....*
 OVERLAP "H".....*

* See overlap programming detail on sheet 3.
 ** Phase used for timing purposes only.

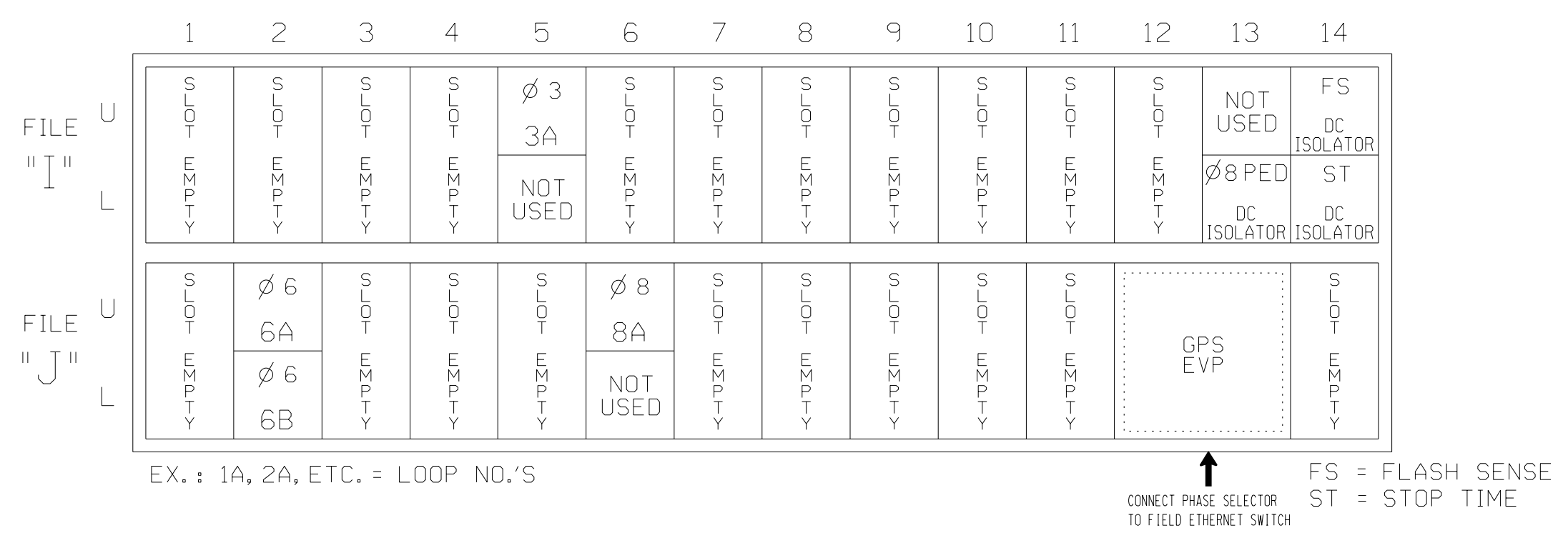
SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	OLG	2	2 PED	OLH	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	32	NU	NU	31	NU	NU	NU	61	62	NU	NU	81,82	P81, P82	32	31	NU	63	NU
RED								134	134			107						A114
YELLOW	*			*				135	135									
GREEN									136									
RED ARROW																		A121 A124
YELLOW ARROW												108						A122 A125 A115
FLASHING YELLOW ARROW																		A123 A126 A116
GREEN ARROW	127			118				136				109						
Hand												110						
Walking												112						

NU = Not Used
 * Denotes install load resistor. See load resistor installation detail this sheet.
 * See pictorial of head wiring in detail below.

INPUT FILE POSITION LAYOUT

(front view)



EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
 ST = STOP TIME

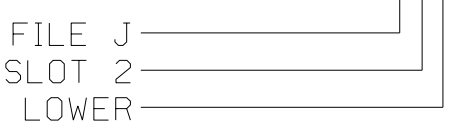
INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	ADDED INITIAL	DETECTOR TYPE
3A	TB4-5,6	15U	58	3	*	3	YES	15.0		N
6A	TB3-5,6	J2U	40	6	6	6	YES		X	N
6B	TB3-7,8	J2L	44	16	6	6	YES		X	N
8A	TB5-9,10	J6U	42	8	8	8	YES	15.0		N
PED PUSH BUTTONS										
P81,P82	TB8-8,9	I13L	70	PED 8	8	8				

NOTE:
 INSTALL DC ISOLATORS IN INPUT FILE SLOT 113.

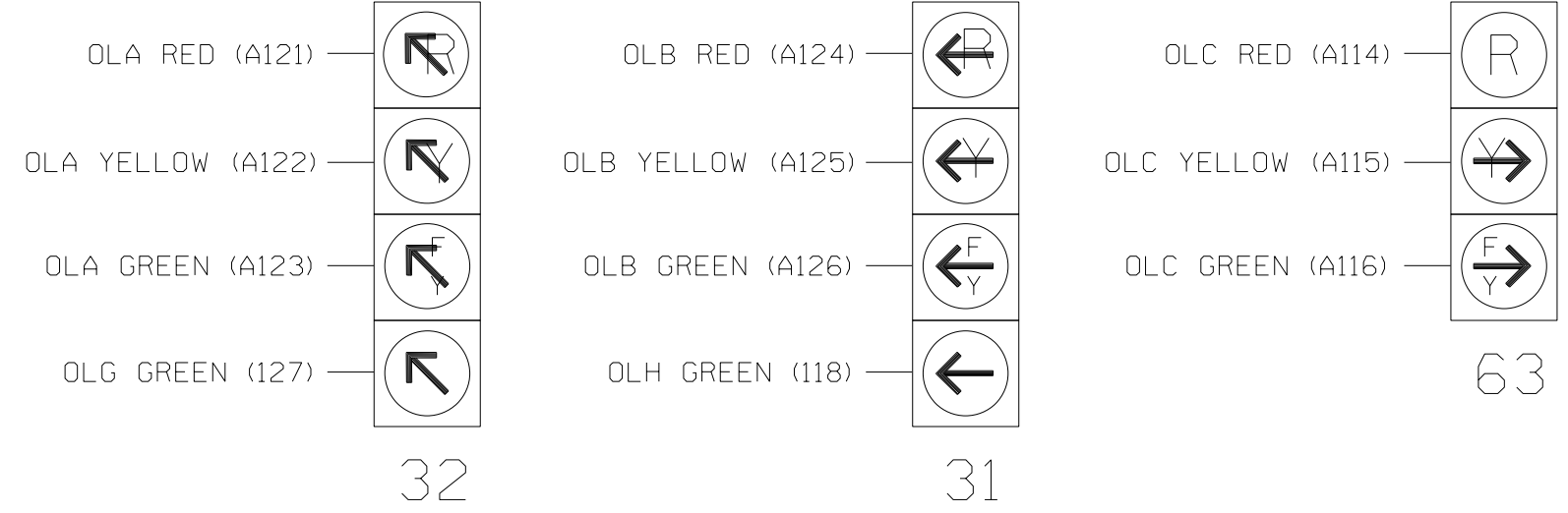
* For the detector to work as shown on the signal design plan, see the Vehicle Detector Setup Programming Detail for Alternate Phasing on sheet 3.

INPUT FILE POSITION LEGEND: J2L



FYA SIGNAL WIRING DETAIL

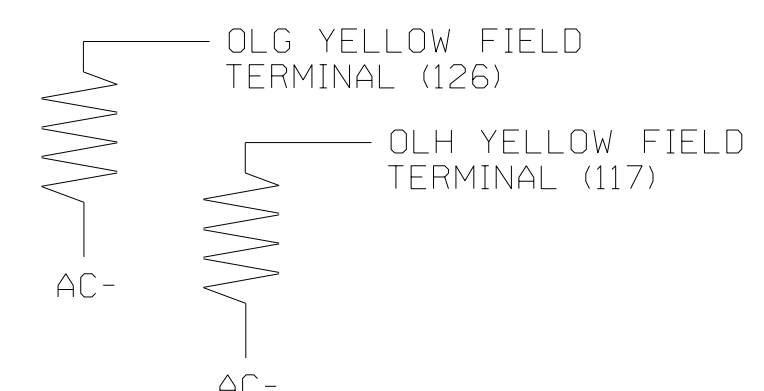
(wire signal heads as shown)



LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

ACCEPTABLE VALUES	
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



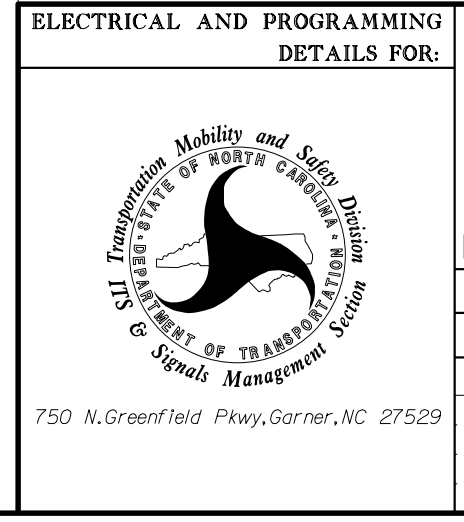
COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

NC Dept of Transportation
 Division of Highways
 Final Drawing Date: 11/21/2025
 TSMO Unit

THIS ELECTRICAL DETAIL IS FOR
 THE SIGNAL DESIGN: 05-0598
 DESIGNED: Nov 2025
 SEALED: 11/18/2025
 REVISED: N/A

Electrical Detail - Sheet 1 of 4



ELECTRICAL AND PROGRAMMING DETAILS FOR:	
NC 54 Westbound at Celeste Circle	
Division 5	Durham County Durham
PLAN DATE: November 2025	REVIEWED BY: ZM Esposito
PREPARED BY: DS Griffith	DRMP PROJ. NO.: 19275 (122)
REVISIONS	INIT. DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SIGNATURE: _____ DATE: 11/18/2025
 SIG. INVENTORY NO. 05-0598



DRMP INC.
 8210 UNIVERSITY EXECUTIVE PARK DR. NC LICENSE NO. F-1524
 SUITE 220 CHARLOTTE, NC 28262 www.drmp.com
 PHONE: 704-545-4200

ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING FREE RUN - PROGRAM CHANGES (SHOWN BELOW) IN A TIME BASED ACTION PLAN. SCHEDULE A DAY PLAN THAT INCLUDES THE ACTION PLAN PROGRAMMED TO SELECT VEH DET PLAN 2 AND ENABLE SF BIT 3.

TO RUN ALT. PHASING DURING COORDINATION - SELECT THE TIME BASED ACTION PLAN THAT IS PROGRAMMED TO SELECT VEH DET PLAN 2 AND ENABLE SF BIT 3.

PHASING	VEH DET PLAN	SF BITS ENABLED
ACTIONS REQUIRED TO RUN <u>DEFAULT PHASING</u>	1	NONE
ACTIONS REQUIRED TO RUN <u>ALTERNATE PHASING</u>	2	3

IMPORTANT: IF ALT. PHASING IS USED DURING FREE RUN AND COORDINATION, DO NOT OPERATE TIME OF DAY EVENTS CONCURRENTLY WITH COORDINATION PLAN EVENTS IN THE EVENT SCHEDULER. (EX. FREE RUN EVENT SHOULD END BEFORE COORDINATION PLAN EVENT STARTS AND VICE-VERSA).

ALTERNATE PHASING CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN SF BIT 3 AND VEH DET PLAN 2 ACTIVATE TO CALL THE "ALTERNATE PHASING":

SF BIT 3: Modifies overlap parent phases for heads 31 and 32 to run protected turns only.

VEH DET PLAN 2: Reduces delay time for phase 3 call on loop 3A to 0 seconds.

ECONOLITE ASC/3-2070 ACTION PLAN PROGRAMMING DETAIL

- From Main Menu select 5. TIME BASE
- From TIME BASE Submenu select 2. ACTION PLAN

```

ACTION PLAN...[ *]
PATTERN.....AUTO   SYS OVERRIDE.... NO
TIMING PLAN..... 0   SEQUENCE..... 0
VEH DETECTOR PLAN.. 2   DET LOG.....NONE
FLASH..... --   RED REST..... NO
VEH DET DIAG PLN... 0   PED DET DIAG PLN..0
DIMMING ENABLE.. NO   PRIORITY RETURN. NO
PED PR RETURN.. NO   QUEUE DELAY..... NO
PMT COND DELAY   NO
  PHASE  1  2  3  4  5  6  7  8  9  0  1  2  3  4  5  6
PED RCL  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
WALK 2   .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
VEX 2    .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
VEH RCL  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
MAX RCL  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
MAX 2    .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
  PHASE  1  2  3  4  5  6  7  8  9  0  1  2  3  4  5  6
MAX 3    .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
CS INH   .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
OMIT     .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
SPC FCT  .  .  X  .  .  .  .  .  .  .  .  .  .  .  .  .
AUX FCT  .  .  .  (1-3)
  PHASE  1  2  3  4  5  6  7  8  9  0  1  2  3  4  5
LP 1-15  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 16-30 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 31-45 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 46-60 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 61-75 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 76-90 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 91-100 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
    
```

* The Action Plan number(s) are to be determined by the Division and/or City Traffic Engineer.

ASC/3 FLASH SENSE INPUT CONTROL FOR RED-RED FLASH

*The NCDOT default database is programmed to address Yellow-Red flash. Logic Statement 100 must be modified as shown when running Red-Red flash.

- From Main Menu select 1. CONFIGURATION
- From CONFIGURATION Submenu select 8. LOGIC PROCESSOR
- From LOGIC PROCESSOR Submenu select 2. LOGIC STATEMENTS

Change the "LP" to 100 and move the cursor down. Delete the two "CTR-SET" statements by moving the cursor over them and hitting the "c" key. then hit "ENTER", select "LP SET CIB ON", hit "ENT", and then set the number to 427.

```

LP#:100 COPY FROM:100 ACTIVE: M FALSE
IF LP CIB CODE ON 331 F

THEN LP DELAY FOR 1.0 SECONDS
LP SET CIB ON 427

ELSE
    
```

THIS STATEMENT IS USED TO CONTROL THE FLASH SENSE INPUT WHEN RUNNING RED-RED FLASH OPERATION.

Hit "ESC", then 1 for "LOGIC STATEMENT CONTROL", next verify that LP#100 is ENABLED.

END PROGRAMMING

ECONOLITE ASC/3-2070 STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

(program controller as shown)

- From Main Menu select 2. CONTROLLER
- From CONTROLLER Submenu select 5. START/FLASH

```

START/FLASH DATA
-----START UP-----
  PHASE  1  2  3  4  5  6  7  8  9  0  1  2  3  4  5  6
          .  .  .  .  G  .  .  .  .  .  .  .  .  .  .  .
          A  B  C  D  E  F  G  H  I  J  K  L  M  N  O  P
OVERLAP  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X  X
FLASH>MON. NO FL TIME.. 0 ALL RED... 6
PWR START SEQ.. 1 MUTCD> NO
    
```

Scroll down on this screen and set "Exit Fl" to Green "G"

NOTE: Do not use programmed (controller) flash when MUTCD is set to "NO".


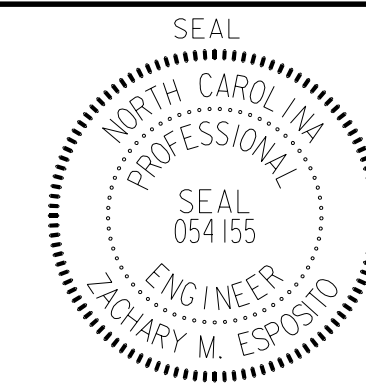
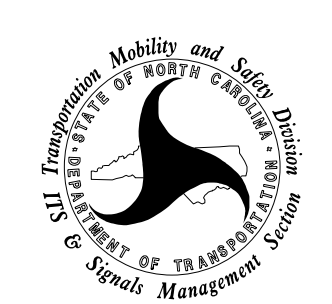
NC Dept of Transportation
Division of Highways
Final Drawing Date: 11/21/2025

TSMO Unit

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: **05-0598**
DESIGNED: Nov 2025
SEALED: 11/18/2025
REVISED: N/A

Electrical Detail - Sheet 2 of 4

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

 <p>DRMP INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 PHONE: 704-549-4260</p>	NC 54 Westbound at Celeste Circle		
	Division 5 Durham County Durham	PLAN DATE: November 2025 REVIEWED BY: ZM Esposito	
	PREPARED BY: DS Griffith DRMP PROJ. NO.: 19275 (122)	REVISIONS	INIT. DATE
SIGNATURE DATE		SIG. INVENTORY NO. 05-0598	

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL

(program controller as shown)

- From Main Menu select **2. CONTROLLER**
- From CONTROLLER Submenu select **2. VEHICLE OVERLAPS**

Toggle to reach Overlap 'G'

```

OVERLAP G
Select TMG VEH OVLP [G] and 'NORMAL'
TMG VEH OVLP...[G] TYPE: .....NORMAL
PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . X . . . . .
LAG GRN 0.0 YEL 0.0 RED 0.0
    
```

Toggle Once

```

OVERLAP H
Select TMG VEH OVLP [H] and 'NORMAL'
TMG VEH OVLP...[H] TYPE: .....NORMAL
PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . X . . . . .
LAG GRN 0.0 YEL 0.0 RED 0.0
    
```

Toggle to reach Overlap 'A'

```

OVERLAP A
Select TMG VEH OVLP [A] and 'PPLT FYA'
TMG VEH OVLP...[A] TYPE: .....PPLT FYA
PROTECTED LEFT TURN.... OVERLAP G
OPPOSING THROUGH..... PHASE 6
FLASHING ARROW OUTPUT.....CH9 ISOLATE
DELAY START DF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE..... 3
    
```

Toggle Once

```

OVERLAP B
Select TMG VEH OVLP [B] and 'PPLT FYA'
TMG VEH OVLP...[B] TYPE: .....PPLT FYA
PROTECTED LEFT TURN.... OVERLAP H
OPPOSING THROUGH..... PHASE 6
FLASHING ARROW OUTPUT.....CH10 ISOLATE
DELAY START DF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE..... 3
    
```

Toggle Once

```

OVERLAP C
Select TMG VEH OVLP [C] and 'OTHER/ECONOLITE'
TMG VEH OVLP...[C] TYPE: OTHER/ECONOLITE
PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . . . . X . . . . .
PROTECT . . . . .
PED PRTC . . . . .
NOT OVLP . . . . .
FLSH GRN . . . . . 1 . . . . .
LAG X PH . . . . .
LAG 2 PH . . . . .
LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0
    
```

END PROGRAMMING

ECONOLITE ASC/3-2070 VEHICLE DETECTOR SETUP PROGRAMMING DETAIL FOR ALTERNATE PHASING LOOP 3A

(program controller as shown)

IMPORTANT!

Program detectors per the input file connection and programming chart shown on sheet 1 before proceeding.

- From Main Menu select **8. UTILITIES**
- From UTILITIES Submenu select **1. COPY/CLEAR**
- Copy from DETECTOR PLAN "1" to DETECTOR PLAN "2".

```

COPY / CLEAR UTILITY
FROM          TO
PHASE TIMING.... > PHASE TIMING....
TIMING PLAN.... > TIMING PLAN....
PH DET OPT PLAN. > PH DET OPT PLAN.
DETECTOR PLAN... 1 > DETECTOR PLAN... 2
TOGGLE TO SELECT A "FROM" AND A "TO"
THEN PRESS ENTER
    
```

- From Main Menu select **6. DETECTORS**
- From DETECTOR Submenu select **2. VEHICLE DETECTOR SETUP**
- Place cursor in VEH DET PLAN [] position and enter "2".

- Place cursor in VEH DETECTOR [] position and enter "3".
- Set delay time to "0".

```

VEH DETECTOR [ 3]  VEH DET PLAN [ 2]
TYPE: N-NTCIP
TS2 DETECTOR..... X ECP1 LOG..... NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
3 3 . . . . .
CALL OPTION.... YES DELAY TIME... 0.0
EXT OPTION. PASSAGE EXTENSION TIME. 0.0
USE ADDED INITIAL . CROSS SWITCH PH.. 0
LOCK IN..... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY. NO
    
```

END PROGRAMMING

NOTICE VEH DET PLAN 2

ENSURE DELAY IS SET TO '0'

ECONOLITE ASC/3-2070 LOAD SWITCH ASSIGNMENT DETAIL

(program controller as shown)

All channels must be programmed to flash red in controller for red-red flash operation as shown below. Notice "AUT" for all channels is programmed for RED.

- From Main Menu select **1. CONFIGURATION**
- From CONFIGURATION Submenu select **3. LOAD SW ASSIGN**

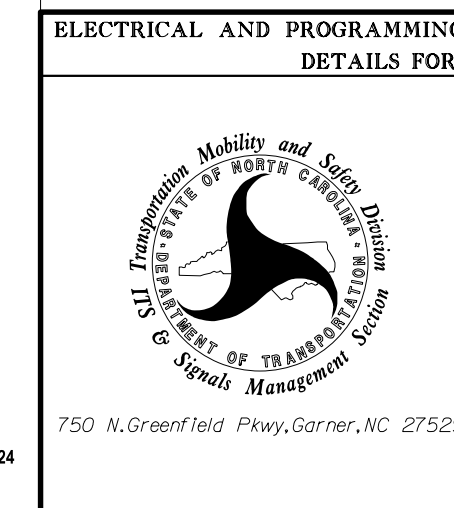
NOTICE OVERLAP G ASSIGNED TO LD SWITCH 1	LD SWITCH ASSIGN	PHASE /OVLP	DIMMING TYPE	R	Y	G	D	---FLASH---	PWR	AUT	TGR
→	1	7	O	.	.	.	+	A	R	X	.
	2	2	V	.	.	.	+	A	R	.	.
→	3	8	O	.	.	.	+	A	R	X	.
→	4	4	V	.	.	.	+	A	R	.	.
	5	5	V	.	.	.	-	A	R	.	.
	6	6	V	.	.	.	-	A	R	X	.
	7	7	V	.	.	.	-	A	R	.	.
	8	8	V	.	.	.	-	A	R	X	.
	9	1	O	.	.	.	+	A	R	X	.
	10	2	O	.	.	.	+	A	R	X	.
	11	3	O	.	.	.	-	A	R	.	.
	12	4	O	.	.	.	-	A	R	.	.
	13	2	P	.	.	.	+	A	.	.	.
	14	4	P	.	.	.	-	A	.	.	.
	15	6	P	.	.	.	+	A	.	.	.
	16	8	P	.	.	.	-	A	.	.	.

NC Dept of Transportation
Division of Highways
Final Drawing Date: 11/21/2025
TSMO Unit

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 05-0598
DESIGNED: Nov 2025
SEALED: 11/18/2025
REVISED: N/A

Electrical Detail - Sheet 3 of 4

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



ELECTRICAL AND PROGRAMMING DETAILS FOR:		NC 54 Westbound at Celeste Circle	
Division 5	Durham County	Durham	
PLAN DATE: November 2025	REVIEWED BY: ZM Esposito		
PREPARED BY: DS Griffith	DRMP PROJ. NO.: 19275 (122)		
REVISIONS	INJT.	DATE	



DRMP
750 N. Greenfield Pkwy, Garner, NC 27529
DRMP INC. 8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220 CHARLOTTE, NC 28262 PHONE: 704-545-4260 NC LICENSE NO. F-1524 www.drmp.com

SIGNATURE: ZACHARY M. ESPOSITO
DATE: 11/18/2025
SIG. INVENTORY NO.: 05-0598

ECONOLITE ASC/3-2070 PREEMPT FILTERING PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select 4. PREEMPTOR/TSP
2. From PREEMPT/TSP/SCP Submenu select 2. ENABLE PREEMPT FILTERING & TSP/SCP

```

ENABLE PREEMPT FILTERING & TSP/SCP
FILTERED SOLID PULSING
1 ...BYPASSED... ...BYPASSED..
2 ...BYPASSED... ...BYPASSED..
3 ..PREEMPT 3. ...BYPASSED..
4 ...BYPASSED... ...BYPASSED..
5 ...BYPASSED... ...BYPASSED..
6 ...BYPASSED... ...BYPASSED..
7 ...BYPASSED... ...BYPASSED..
8 ...BYPASSED... ...BYPASSED..
9 ...BYPASSED... ...BYPASSED..
10 ...BYPASSED... ...BYPASSED..
    
```

ECONOLITE ASC/3-2070 EMERGENCY VEHICLE PREEMPT PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select 4. PREEMPTOR/TSP
2. From PREEMPTOR/TSP/SCP Submenu select 1. PREEMPT PLAN 1-10

Place cursor in [] next to Preempt Plan and press 3. Then press the right cursor arrow and toggle the controller to YES. Next cursor down. This will select Emergency Vehicle Preempt #3.

```

PREEMPT PLAN [ 3] ENABLE....YES
VEH/PED 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
OVERLAP A B C D E F G H I J K L M N O P
TRKCLR V . . . . .
TRKCLR O . . . . .
ENA TRL . . . . .
DWEL VEH . . . . . X . . . . .
DWEL PED . . . . .
DWEL OLP F1F1F1. . . . .
CYC VEH . . . . .
CYC PED . . . . .
CYC OLP . . . . .
EXIT PH . . . . . X . . . . .
EXIT CAL . . . . .
SP FUNC . . . . .
    
```

```

ENABLE... YESIPMT OVRIDE..INTERLOCK. NO
DET LOCK... XIDELAY.. OINHIBIT... 0
OVERRIDE FL. .IDURATION OICLR-GRN... NO
TERM OLP. NOIPC>YEL YESITERM PH NO
PED DARK.. NOITC RESRV NOIDWELL FL OFF
LINK PMT...OIX FLCOLR REDIEXIT OPT. OFF
X TMG PLN...OIRE-SERV.. OIFLT TYPE.HARD
FREE DUR PMTIR1 NOIR2 NOIR3 NOIR4 NO
--TIMING-----WALKIPED CLIMN GRI YELI RED
ENTRANCE TM. 11 255I 1125.5I25.5
-----MIN GRIEXT GRIMX GRI YELI RED
TRACK CLEAR 01 01 0125.5I25.5
-----MIN DLIPMTEXTIMX TMI YELI RED
DWL/CYC-EXIT 7I 0.0I 120125.5I25.5
PMT ACTIVE OUT..ON PMT ACT DWELL...NO
OTHER - PRI PMT.OFF NON-PRI PMT....OFF
INH EXT TIME... 0.0 PED PR RETURN...OFF
PRIORITY RETURN.OFF QUEUE DELAY.... OFF
COND DELAY.....OFF
PHASES 1 2 3 4 5 6 7 8
PR RTN% 0 0 0 0 0 0 0 0
PHASES 9 10 11 12 13 14 15 16
PR RTN% 0 0 0 0 0 0 0 0
    
```

PROGRAM EXTEND TIME ON GPS DETECTOR UNITS FOR 2.0 SEC.

ACCESSIBLE PEDESTRIAN SIGNAL (APS) INSTALLATION NOTES

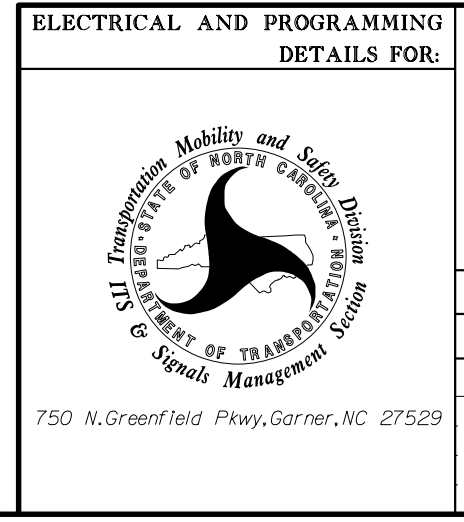
1. Install push buttons and APS equipment per manufacturer's instructions.
2. Provide a dedicated cable to each push button per manufacturer's instructions.
3. If APS equipment is mounted in cabinet, use filtered power (i.e., Controller Receptacle) to power APS equipment. Do not use Equipment Receptacle, which is a GFCI outlet.
4. Never attempt to operate a standard contact closure push button with the APS system unless cabinet is re-wired for standard button operation or unless explicitly allowed by the manufacturer.
5. Place manufacturer's instructions in cabinet with cabinet prints, signal plans, and electrical details.
6. An APS push button station that is designed to work without the need for interfacing with a pedestrian signal head shall be installed for applications where a push button is installed in a median without a pedestrian signal head.
7. A push button with a single tactile arrow that points in both directions of travel shall be installed if the median separates two parallel crosswalks.

NC Dept of Transportation
 Division of Highways
 Final Drawing Date: 11/21/2025
 TSMO Unit

THIS ELECTRICAL DETAIL IS FOR
 THE SIGNAL DESIGN: 05-0598
 DESIGNED: Nov 2025
 SEALED: 11/18/2025
 REVISED: N/A

Electrical Detail - Sheet 4 of 4

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

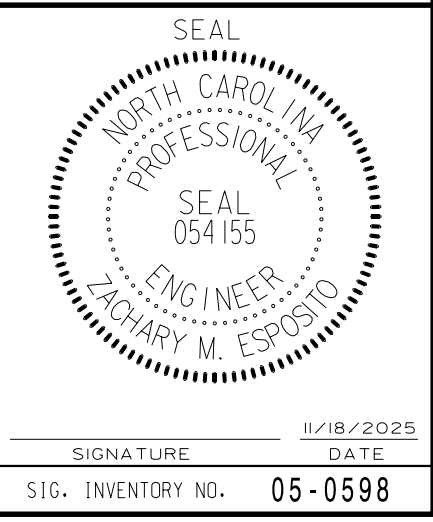


**NC 54 Westbound
at
Celeste Circle**

Division 5 Durham County Durham

PLAN DATE: November 2025 REVIEWED BY: ZM Esposito
 PREPARED BY: DS Griffith DRMP PROJ. NO.: 19275 (122)

REVISIONS	INIT.	DATE

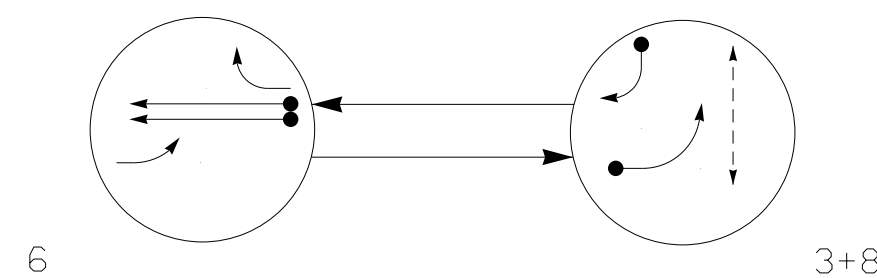


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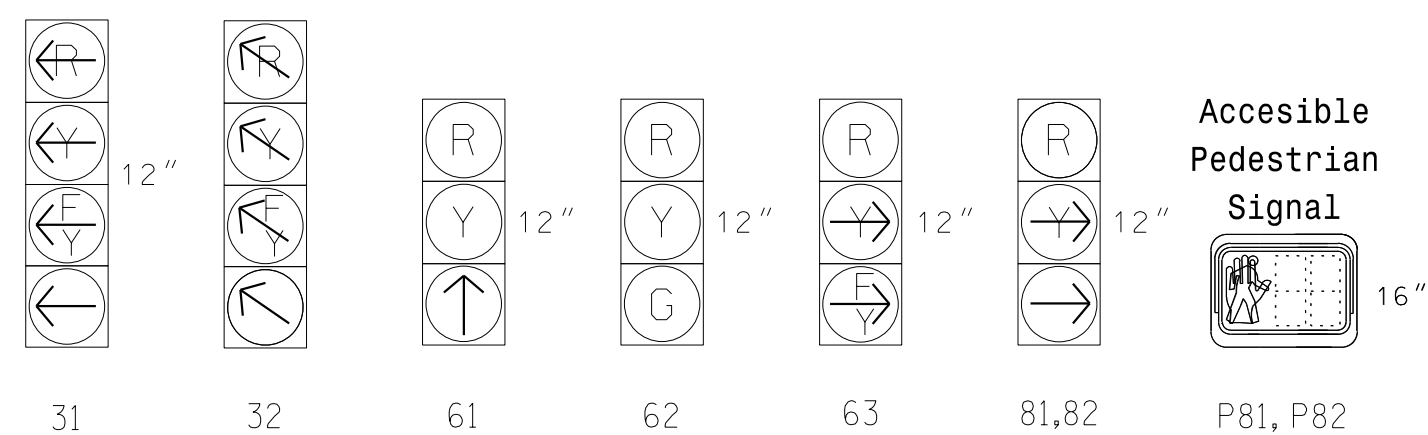
DEFAULT PHASING DIAGRAM



SIGNAL FACE	PHASE			
	6	3	8	T
31	←	←	←	←
32	←	←	←	←
61	↑	R	R	
62	G	R	R	
63	←	R	R	
81,82	R	→	R	
P81, P82	DW	W	DRK	

SIGNAL FACE I.D.

All Heads L.E.D.



ASC/3 DETECTOR INSTALLATION CHART												
DETECTOR					PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
3A	6X40	+5	2-4-2	X	3	Yes	-	15.0*	-	N	-	X
6A	6X6	300	5	X	6	Yes	-	-	X	N	-	X
6B	6X6	300	5	X	6	Yes	-	-	X	N	-	X
8A	6X40	0	2-4-2	X	8	Yes	-	15.0	-	N	-	X

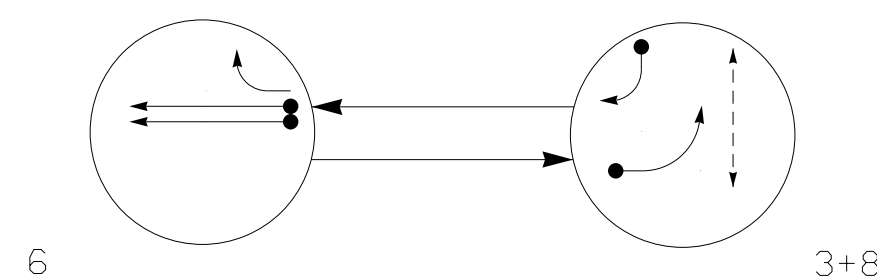
* Disable delay during Alternate Phasing operation.

2 Phase Fully Actuated w/ Emergency Vehicle Preemption (Durham Signal System)

NOTES

- Refer to "Roadway Standard Drawings NCDOT" date January 2024 and "Standard Specifications for Roads and Structures" dated January 2024, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: <https://connect.ncdot.gov/resources/safety/pages/TSMO-Design-Resources.aspx>
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- This intersection features accessible pedestrian signals utilizing percussive tone walk indications and/or speech messages.
- This intersection features a GPS preemption system.
- The Division (City) Traffic Engineer will determine the hours of use for each phasing plan.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.

ALTERNATE PHASING DIAGRAM

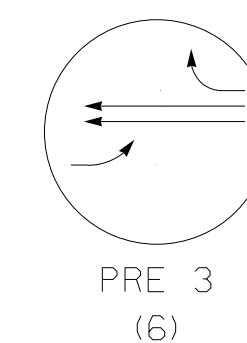


SIGNAL FACE	PHASE			
	6	3	8	T
31	←	←	←	←
32	←	←	←	←
61	↑	R	R	
62	G	R	R	
63	←	R	R	
81,82	R	→	R	
P81, P82	DW	W	DRK	

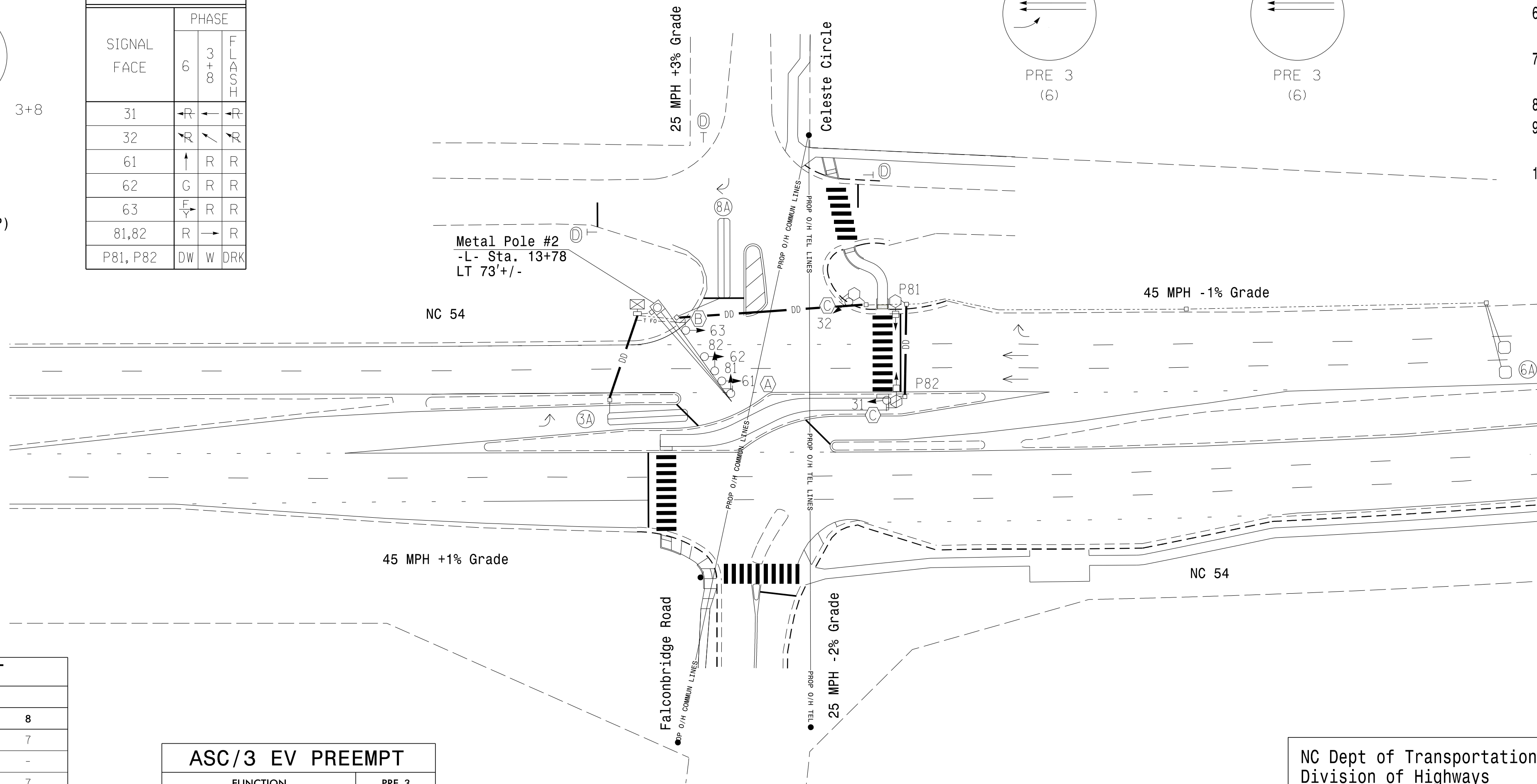
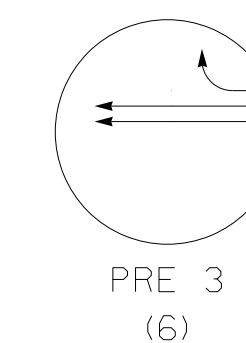
PHASING DIAGRAM DETECTION LEGEND

- ← ● DETECTED MOVEMENT
- ← ○ UNDETECTED MOVEMENT (OVERLAP)
- ← ○ UNSIGNALIZED MOVEMENT
- ← ○ PEDESTRIAN MOVEMENT

DEFAULT PHASING EV PREEMPT DIAGRAM (Medium Priority)



ALTERNATE PHASING EV PREEMPT DIAGRAM (Medium Priority)



FEATURE	PHASE		
	3	6	8
Min Green *	7	12	7
Delayed Green	-	-	-
Walk *	-	-	7
Ped Clear	-	-	8
Veh. Extension *	2.0	6.0	2.0
Max I *	30	75	30
Yellow	3.0	4.6	3.0
Red Clear	2.8	1.8	2.8
Actuations B4 Add *	-	-	-
Seconds /Actuation *	-	1.5	-
Max Initial *	-	34	-
Time Before Reduction *	-	15	-
Time To Reduce *	-	45	-
Minimum Gap	-	3.0	-
Locking Detector	-	X	-
Recall Position	-	MIN. RECALL	-
Dual Entry	X	-	X
Simultaneous Gap	X	X	X

* These values may be field adjusted. Do not adjust Min Green and Extension times for phase 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

ASC/3 EV PREEMPT	
FUNCTION	PRE 3
Exit Phase(s)	6
Preempt Override	OFF
Delay Time	0
Ped Clear Through Yellow	Y
Terminate Phases	N
Entrance Walk	1
Entrance Ped Clear	25.5*
Entrance Min Green	1
Entrance Yellow Change	25.5*
Entrance Red Clear	25.5*
Minimum Dwell Time	7
Preempt Input Extension Time **	2.0
Preempt Max Time	120
Exit Yellow Change	25.5*
Exit Red Clear	25.5*

* Time defaults to time used for phase during normal operation.
** Program timing on GPS detector unit.

ACCESSIBLE PEDESTRIAN SIGNAL OPERATION				
SIGNAL FACE	VOICE TONES	INTERVAL	SPEECH MESSAGE	
P81	- X	Walk	(Percussive Tone)	
	X -	Flashing Don't Walk / Don't Walk	Wait to cross NC 54.	
P82	- X	Walk	(Percussive Tone)	
	X -	Flashing Don't Walk / Don't Walk	Wait to cross NC 54.	

NC Dept of Transportation
Division of Highways
Final Drawing Date: 11/21/2025
TSMO Unit

LEGEND	
PROPOSED	EXISTING
○ → Traffic Signal Head	● → N/A
○ → Modified Signal Head	○ → N/A
○ → Sign	○ → N/A
○ → Pedestrian Signal Head With Push Button & Sign	○ → N/A
○ → Signal Pole with Guy	○ → N/A
○ → Signal Pole with Sidewalk Guy	○ → N/A
○ → Inductive Loop Detector	○ → N/A
○ → Controller & Cabinet	○ → N/A
○ → Junction Box	○ → N/A
○ → Oversized Junction Box	○ → N/A
○ → 2-in Underground Conduit	○ → N/A
○ → Right of Way	○ → N/A
○ → Directional Arrow	○ → N/A
○ → Directional Drill	○ → N/A
○ → Metal Pole with Mastarm	○ → N/A
○ → Type I Pushbutton Post	○ → N/A
○ → Type II Signal Pedestal	○ → N/A
○ → Type III Signal Pedestal	○ → N/A
○ → Undergro Telephone Fiber Optic	○ → N/A
○ → Overhead Communications Fiber Optic	○ → N/A
○ → Overhead Telephone Fiber Optic	○ → N/A
○ → No Left Turn Sign (R3-2)	○ → N/A
○ → Right Arrow "ONLY" Sign (R3-5R)	○ → N/A
○ → "U-TURN YIELD TO RIGHT TURN" Sign (R10-16)	○ → N/A
○ → "STOP" Sign (R1-1)	○ → N/A

New Installation

NC 54 Westbound at Celeste Circle	
Division 5	Durham County
PLAN DATE: November 2025	REVIEWED BY: ZM Esposito
PREPARED BY: DS Griffith	DRMP PROJ. NO.: 19275 (122)
REVISIONS	INIT. DATE

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SIGNATURE: _____ DATE: 11/18/2025
SIG. INVENTORY NO. 05-0598

