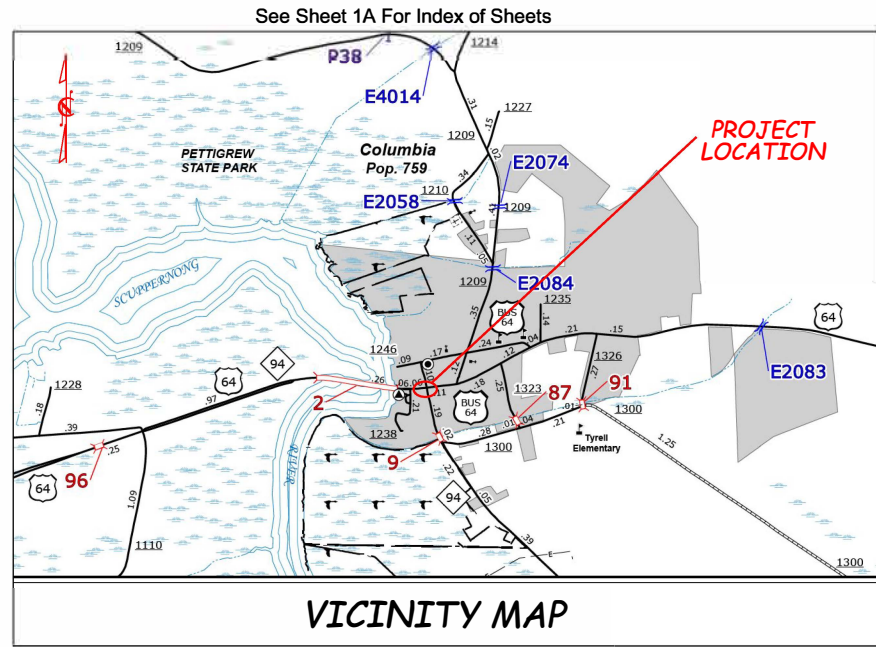


09/08/25

WBS ELEMENT: 80121

CONTRACT: DA00636



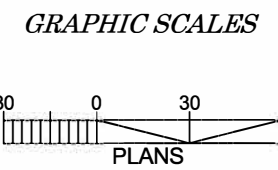
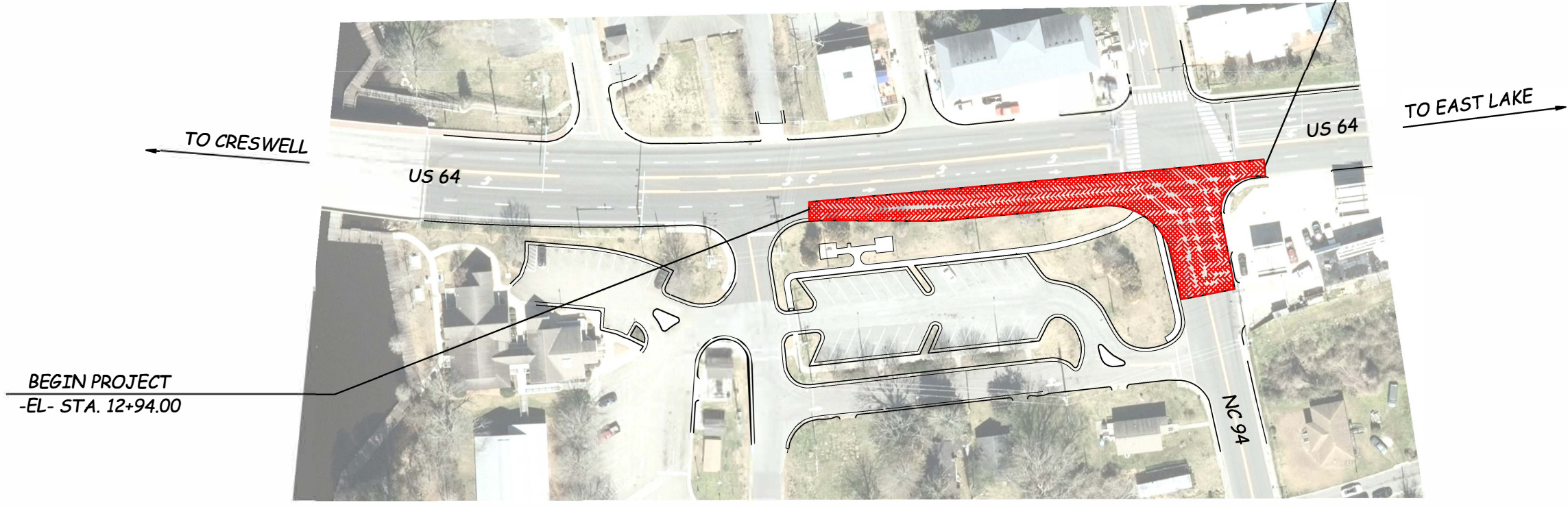
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TYRRELL COUNTY

LOCATION: US 64 & NC 94 IN COLUMBIA

TYPE OF WORK: CONSTRUCTION OF TURN LANE &
INTERSECTION RADIUS IMPROVEMENTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOT. ALL SHEETS
N.C.	80121	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
80121	N/A	P.E., CONST.	



PROJECT LENGTH

LENGTH ROADWAY PROJECT = 0.068 MILES

TOTAL LENGTH OF PROJECT = 0.068 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
113 Airport Drive, Edenton NC, 27932

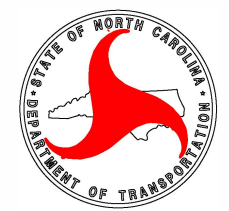
2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
N/A

LETTING DATE:
OCTOBER 29, 2025

W. B. HOBBS, PE
PROJECT ENGINEER

D. H. STALLINGS
PROJECT DESIGN ENGINEER



INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2C-1 THRU 2C-2	SURVEY CONTROL SHEETS
3	ROADWAY DETAILS / SUMMARIES
4	ROADWAY PLAN SHEET
TMP-1	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU 2	PAVEMENT MARKING PLANS
EC-1 THRU EC-4	EROSION CONTROL PLANS
SIG-1	SIGNAL PLANS
UC-1 THRU UC-5	UTILITIES CONSTRUCTION PLANS
S-1 THRU S-5	GEOTECH PLAN SHEETS

GENERAL NOTES:

GRADING & SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

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.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE BRIGHTSPEED, TYRRELL CO. PUBLIC WORKS, TOWN OF COLUMBIA PUBLIC WORKS, DOMINION POWER, & MCNC FIBER

2024 STANDARDS

700.05	TYING PROPOSED PAVEMENT TO EXISTING PAVEMENT
846.01	CONCRETE CURB, GUTTER AND CURB & GUTTER
848.01	CONCRETE SIDEWALK
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE & MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES
1515.02	FIRE HYDRANT
1605.01	TEMPORARY SILT FENCE
1725.01	INDUCTIVE DETECTION LOOPS

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
80121	1B

Note: Not to Scale

CONVENTIONAL PLAN SHEET SYMBOLS

*S.U.E. = Subsurface Utility Engineering

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	⊙ S
Well	⊙ W
Small Mine	x
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	⊕
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◇
Primary Horiz Control Point	⊕
Primary Horiz and Vert Control Point	⊕
Exist Permanent Easement Pin and Cap	◇
New Permanent Easement 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 R/W Marker	△
New Control of Access Line with Iron Pin and Cap Marker	△
New Control of Access Line with Concrete C/A Marker	△
Existing Control of Access	△
New Control of Access	△
Existing Easement Line	-----
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	-G-
Proposed Slope Stakes Fill	-F-
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	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	-----

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:

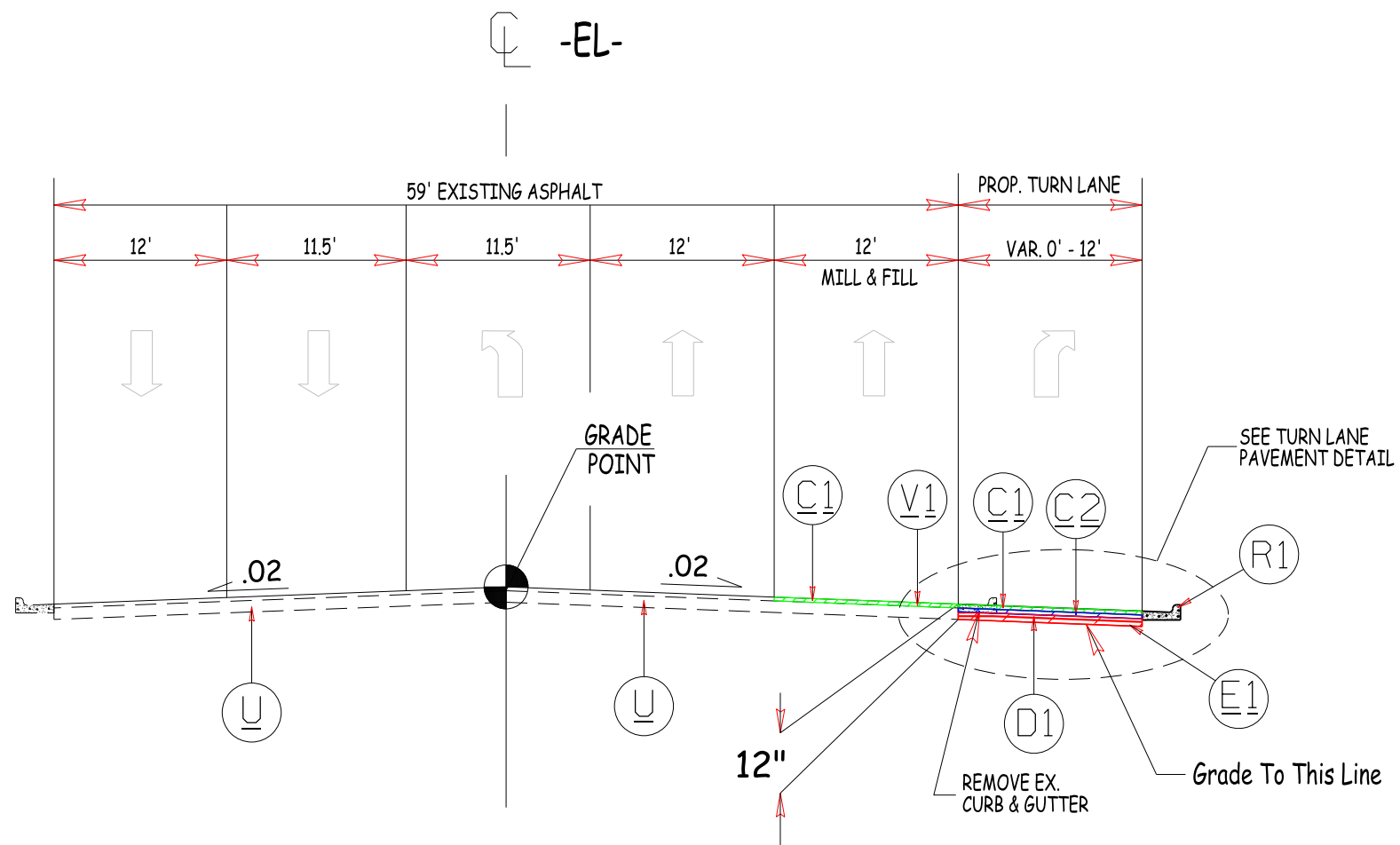
Gas Valve	⊕
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	-----
U/G Gas Line LOS C (S.U.E.*)	-----
U/G Gas Line LOS D (S.U.E.*)	-----
Above Ground Gas Line	A/G Gas

SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	-----
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.*)	-----

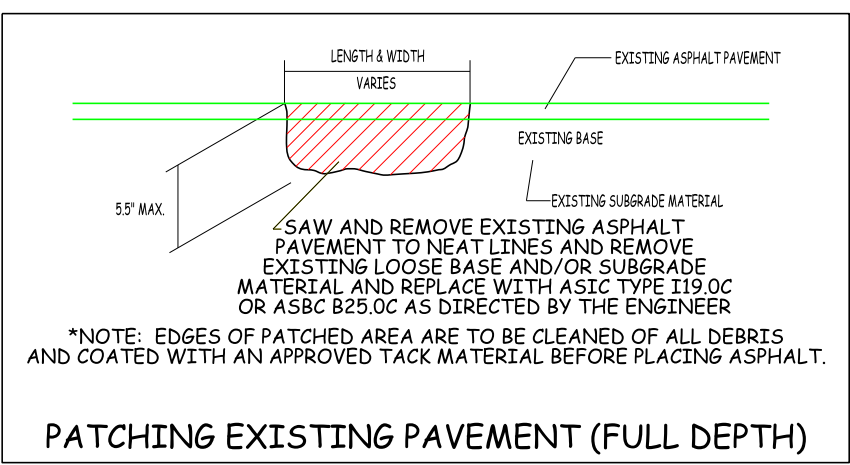
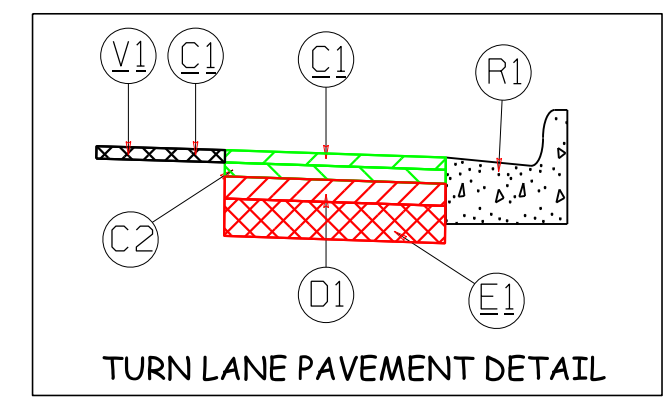
MISCELLANEOUS:

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.



TYPICAL SECTION NO. 1
 -EL- Sta. 12+94.00 to 15+74.59

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D1	PROP. APPROX. 3.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
R1	PROPOSED 2'-6" CONCRETE CURB & GUTTER
U	EXISTING PAVEMENT
V1	INCIDENTAL MILLING ASPHALT PAVEMENT



PATCHING EXISTING PAVEMENT (FULL DEPTH)

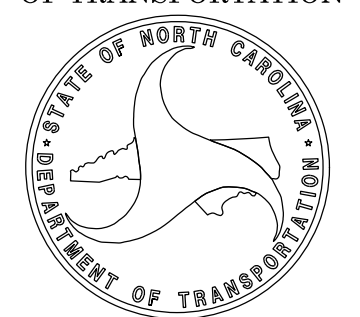
NOTES:

- * MILL & RESURFACE EXISTING OUTSIDE TRAVEL LANE & PROPOSED TURN LANE ONLY
- * CONTRACTOR SHALL PERFORM PATCHING EXISTING PAVEMENT, FULL DEPTH BEFORE APPLICATION OF 1.50" OF S9.5C
- * FINAL SURFACE LAYER SHALL BE FLUSH WITH EXISTING & PROPOSED CURB & GUTTER AT EDGES OF PAVEMENT

SURVEY CONTROL SHEET

W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

US64NC94
 R/W 02C-1
 NORTH CAROLINA
 DEPARTMENT
 OF TRANSPORTATION

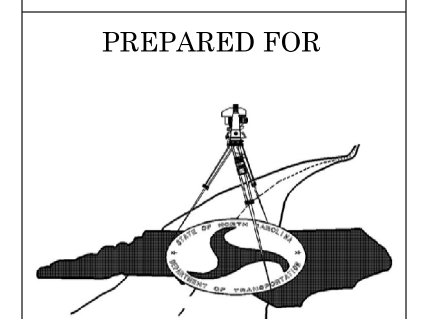


PROFESSIONAL LAND
 SURVEYOR

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL SIGNATURES
 ARE COMPLETED

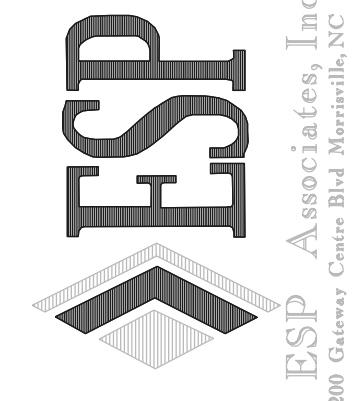
2018 STANDARD
 SPECIFICATIONS

TIP PROJECT: US64NC94
 County: Tyrrell



LOCATION AND
 SURVEYS UNIT

PREPARED BY



ESP Associates, Inc.
 2200 Gateway Center Blvd. Mooresville, NC 27060

I, Toynia E.S. Gibbs, PLS, certify that the Project Control was performed under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

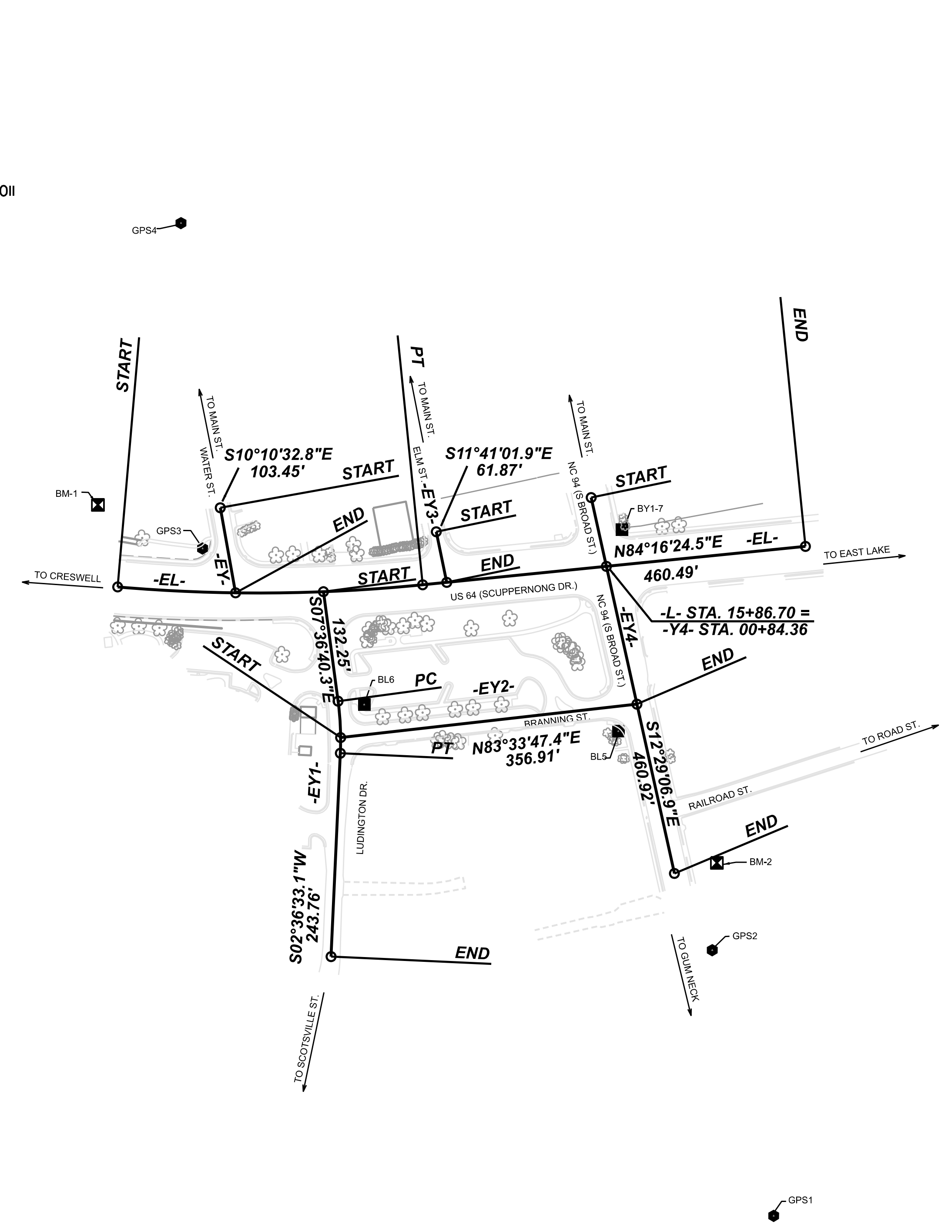
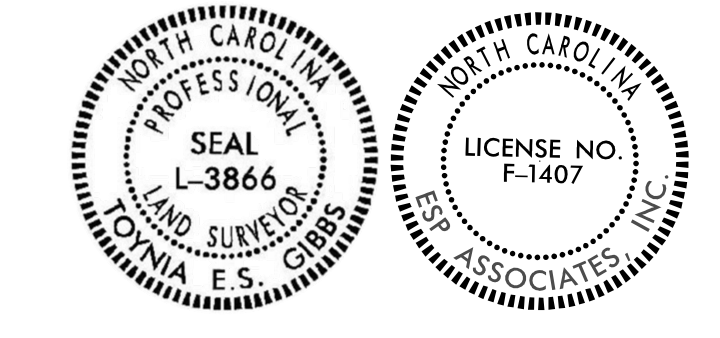
Class of survey: **AA**
 Type of GPS field procedure: NCGS VRS NETWORK
 Dates of survey: August 22, 2023 - August 29, 2023
 Datum/Epoch: NAD 83 (NA 2011)
 Published/Fixed-control use: CORS
 Localized around: GPS3
 Northing: 799716.1523
 Easting: 2813106.1275
 Combined grid factor: 0.9999454277
 Geoid model: GEOID18
 Units: US Survey Feet

I also certify that the Baseline Control for this project was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed from August 22, 2023 to September 11, 2023, and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

Witness my signature and seal this date 10/12/2023 DS

DocuSigned by:
Toynia Gibbs
 2E2F58AA0E0C84DA...

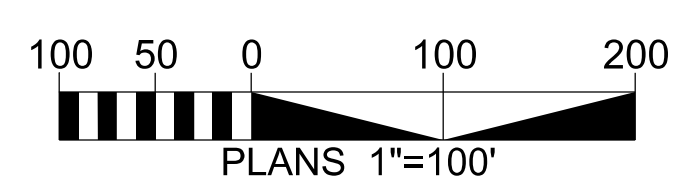
Professional Land Surveyor L-3866



SEE SHEET RW2C-2
 FOR FURTHER
 ALIGNMENT DETAILS

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
3. ALL GPS AND BASELINE POINTS ARE 24" REBAR W/CAP UNLESS OTHERWISE NOTED.



NC GRID
 NAD 83 NA 2011

SURVEY CONTROL SHEET

W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

N89°35'41.4"E									
POINT	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R
PC	799670.088	2813004.496							
CURVE			N89°35'41.4"E	365.13'	10°38'34.4" Left	02°54'38.3"	365.66'	183.36'	1968.50'
PT	799672.670	2813369.616							
LINE			N84°16'24.5"E	460.49'					
END	799718.618	2813827.806							

EXISTING ALIGNMENT NAME:EY									
POINT	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R
START	799764.858	2813127.358							
LINE			S10°10'32.8"E	103.45'					
END	799663.039	2813145.634							

EXISTING ALIGNMENT NAME:EY1									
POINT	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R
START	799664.378	2813250.838							
LINE			S07°36'40.3"E	132.25'					
PC	799533.297	2813268.354							
CURVE			S02°30'03.6"E	62.35'	10°13'13.4" Right	16°22'12.8"	62.43'	31.30'	350.00'
PT	799471.006	2813271.075							
LINE			S02°36'33.1"W	243.77'					
END	799227.494	2813259.978							

EXISTING ALIGNMENT NAME:EY2									
POINT	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R
START	799489.737	2813271.426							
LINE			N83°33'47.4"E	356.91'					
END	799529.749	2813626.082							

EXISTING ALIGNMENT NAME:EY3									
POINT	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R
START	799736.149	2813385.919							
LINE			S11°41'01.9"E	61.87'					
END	799675.561	2813398.448							

EXISTING ALIGNMENT NAME:EY4									
POINT	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R
START	799777.082	2813571.317							
LINE			S12°29'06.9"E	460.92'					
END	799327.060	2813670.962							

BENCHMARKS				
POINT	NORTH	EAST	ELEVATION	DESC
BM1	799768	2812981	2.65'	YELLOW BENCH TIE WITH TAG SET IN 12" CEDAR
BM2	799340	2813722	5.90'	YELLOW BENCH TIE WITH TAG SET IN 24" PINE

BL				
POINT	DESC	NORTH	EAST	ELEVATION
1	GPS1	798917.140	2813789.788	3.44'
2	GPS2	799235.200	2813716.239	3.25'
3	GPS3	799716.152	2813106.127	5.61'
4	GPS4	800105.663	2813080.294	1.72'
5	BL5	799497.398	2813603.826	2.67'
6	BL6	799529.227	2813299.563	4.92'

BY1				
POINT	DESC	NORTH	EAST	ELEVATION
7	BY1-7	799738.764	2813608.332	3.34'

I, Toynia E.S. Gibbs, PLS, certify that the Project Control was performed under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

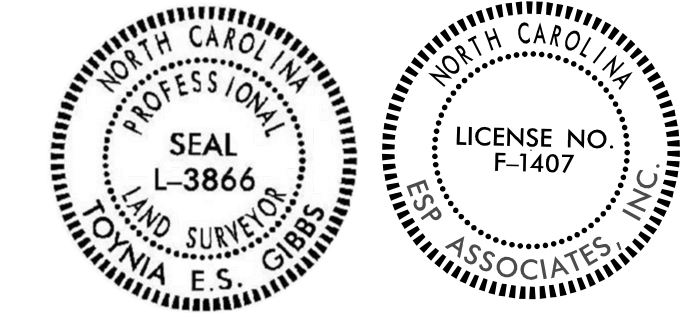
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Witness my signature and seal this date 10/12/2023 DS

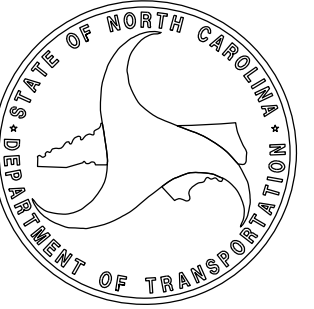
DocuSigned by:
Toynia Gibbs
 2E2F55AA8E634DA

Professional Land Surveyor L-3866



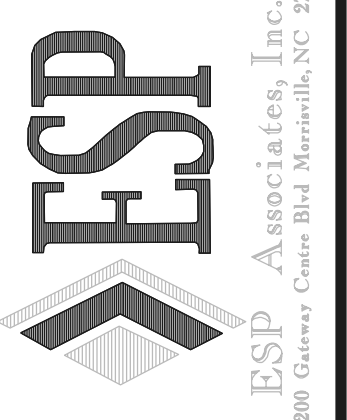
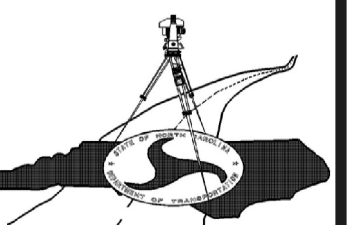
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3. ALL GPS AND BASELINE POINTS ARE 24" REBAR W/CAP UNLESS OTHERWISE NOTED.



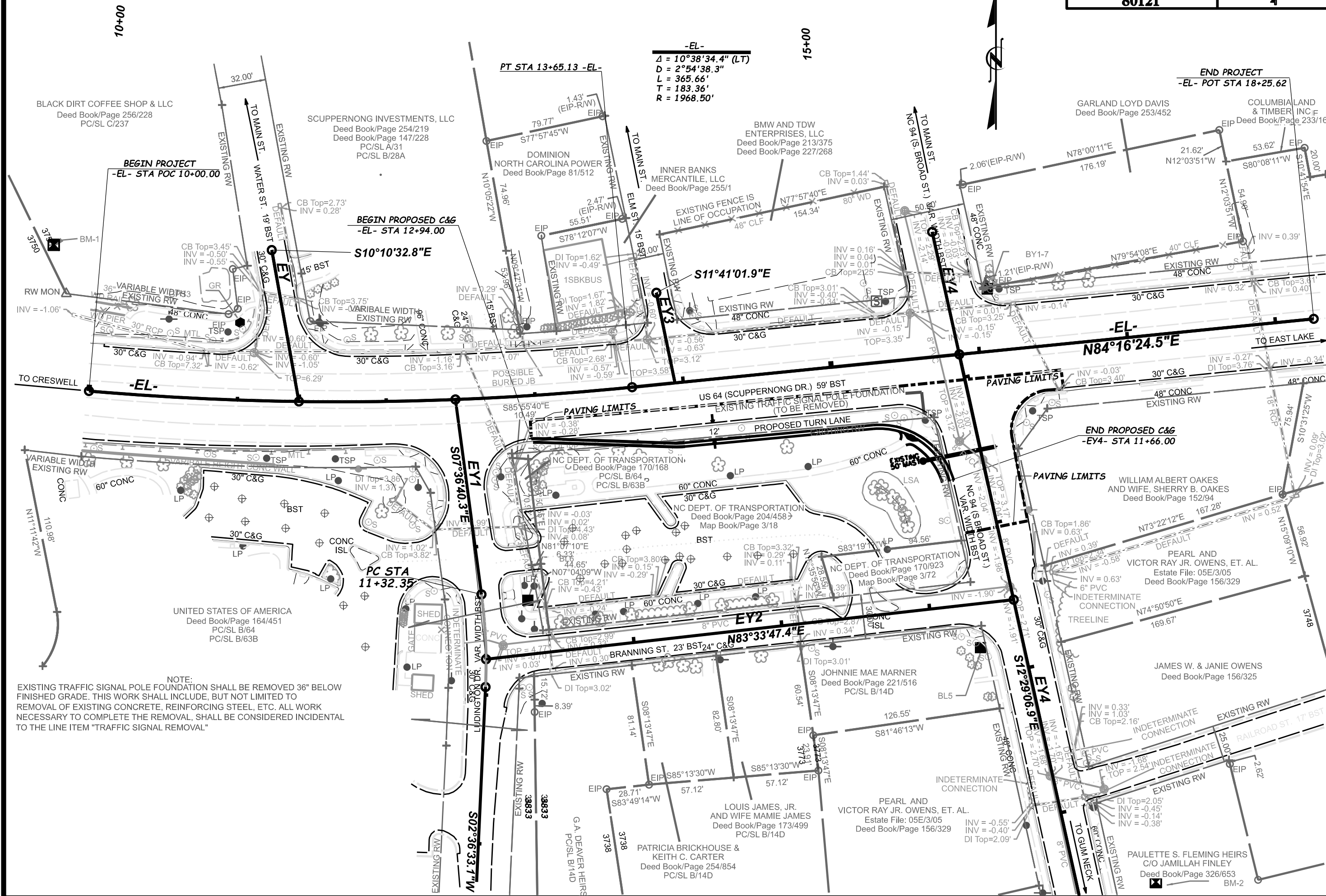
TIP PROJECT: US64NC94

County: Tyrrell



PROPOSED 2'-6" CURB & GUTTER GRADES

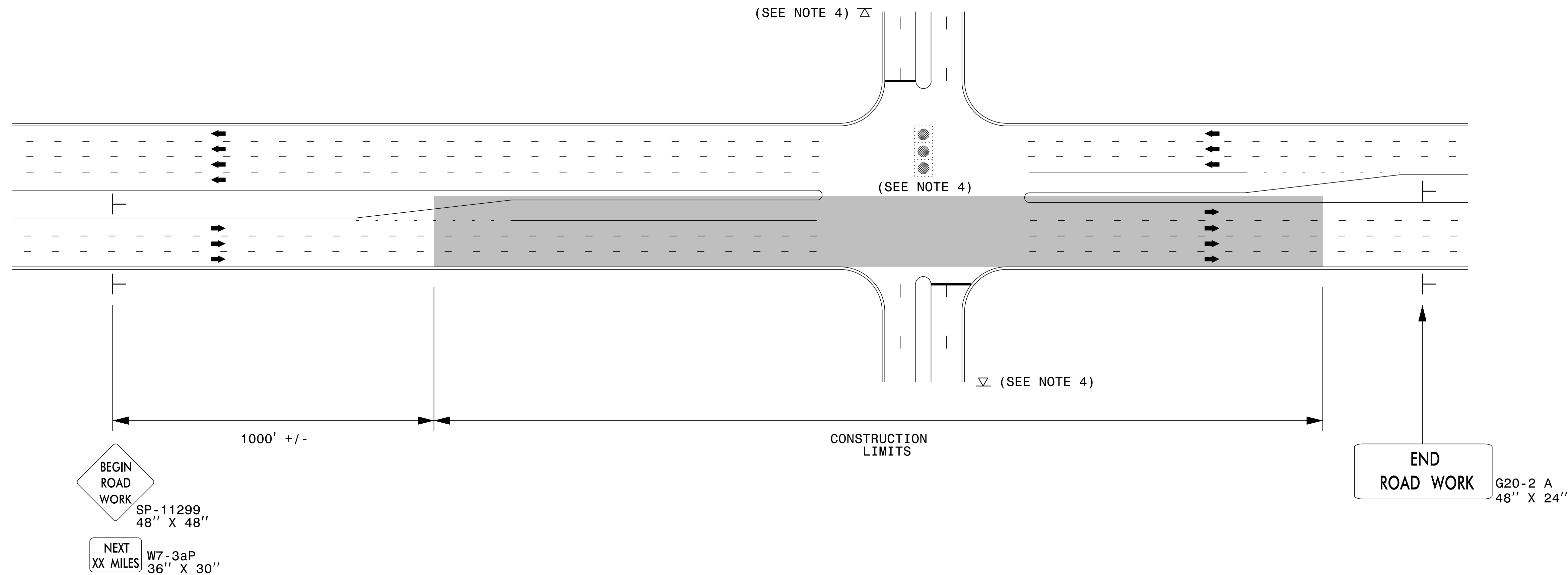
STATION	OFFSET (CL)	LOCATION	T.O.C. ELEVATION	COMMENTS
-EL- 12+94.00	29.0'	RT.	4.80'	TIE TO EXIST. CURBING
-EL- 13+00.00	29.2'	RT.	4.77'	TAPER
-EL- 13+25.00	32.0'	RT.	4.65'	TAPER
-EL- 13+50.00	35.0'	RT.	4.53'	TAPER
-EL- 13+75.00	38.2'	RT.	4.41'	TAPER
-EL- 13+93.00	40.6'	RT.	4.30'	FULL WIDTH (12')
-EL- 14+00.00	40.8'	RT.	4.19'	FULL WIDTH (12')
-EL- 14+25.00	41.0'	RT.	4.08'	FULL WIDTH (12')
-EL- 14+50.00	41.1'	RT.	3.97'	FULL WIDTH (12')
-EL- 14+75.00	41.3'	RT.	3.86'	FULL WIDTH (12')
-EL- 15+00.00	41.4'	RT.	3.75'	FULL WIDTH (12')
-EL- 15+25.00	41.5'	RT.	3.64'	FULL WIDTH (12')
-EL- 15+50.00	49.0'	RT.	3.53'	RADIUS
-EY4- 11+41.00	30.0'	RT.	3.42'	RADIUS
-EY4- 11+66.00	22.0'	RT.	3.32'	TIE TO EXIST. CURBING



-EL-
 $\Delta = 10^{\circ}38'34.4''$ (LT)
 $D = 2^{\circ}54'38.3''$
 $L = 365.66'$
 $T = 183.36'$
 $R = 1968.50'$

NOTE:
 EXISTING TRAFFIC SIGNAL POLE FOUNDATION SHALL BE REMOVED 36" BELOW FINISHED GRADE. THIS WORK SHALL INCLUDE, BUT NOT LIMITED TO REMOVAL OF EXISTING CONCRETE, REINFORCING STEEL, ETC. ALL WORK NECESSARY TO COMPLETE THE REMOVAL, SHALL BE CONSIDERED INCIDENTAL TO THE LINE ITEM "TRAFFIC SIGNAL REMOVAL"

URBAN / SUBURBAN WORKZONES

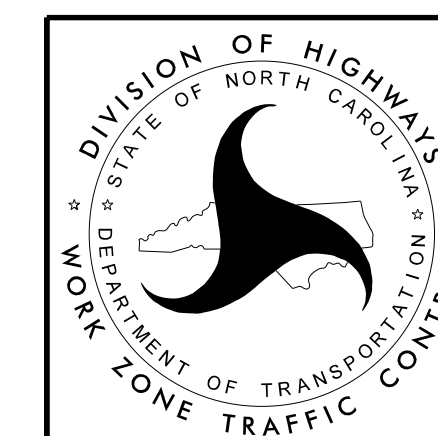


NOTES:

- 1) 48" x 48" SIZED SIGNS (SP- 11299) MAY BE REDUCED TO 36" X 36" ON ROADWAYS WITH SPEED LIMITS OF 40 MPH OR LESS.
- 2) MOUNT SIGNS THAT ARE LARGER THAN 10 SQUARE FEET IN AREA ON TWO OR MORE WOOD OR U-CHANNEL SUPPORTS. PERFORATED SQUARE TUBING SUPPORT SYSTEMS MAY SUPPORT LARGER AREAS ON A SINGLE SUPPORT. FOLLOW MANUFACTURER'S RECOMMENDATIONS. THESE SYSTEMS SHALL BE NCHRP 350 COMPLIANT AND NCDOT APPROVED.
- 3) ADVANCE WARNING SIGNS NOT REQUIRED ON NON-SIGNALIZED SIDE STREETS.
- 4) MAY USE LAW ENFORCEMENT TO CONTROL TRAFFIC AT SIGNALIZED INTERSECTIONS AS DIRECTED BY THE ENGINEER. PROVIDE PORTABLE "ROAD WORK AHEAD" (W20-1) SIGNS 500' IN ADVANCE ALONG BOTH APPROACHES FROM THE SIDE STREETS WHEN PAVING PROCEEDS THROUGH THE INTERSECTION.
- 5) LATERAL CLEARANCE AT ALL SIGN LOCATIONS SHALL BE 2' AS MEASURED FROM THE EDGE OF PAVEMENT OR THE FACE OF THE CURB. WHEN UNABLE TO OBTAIN THE LATERAL CLEARANCE WITHIN THE MEDIAN AREA USE SHOULDER MOUNTS ONLY.
- 6) SIGN MOUNT LOCATIONS SHALL NOT BLOCK SIDEWALKS OR DRIVEWAYS.
- 7) IF STATIONARY GENERAL WARNING SIGNS ARE USED, THEY WILL BE PAID FOR PER SECTION 104 OF THE NCDOT STANDARD SPECIFICATIONS AS EXTRA WORK.
- 8) IF MILLED AREAS ARE NOT PAVED BACK BY THE END OF THE WORK DAY, PORTABLE SIGNS SHALL BE USED TO WARN DRIVERS OF THE PRESENT CONDITIONS. THESE ARE TO INCLUDE, BUT NOT LIMITED TO "ROUGH ROAD" W8-8, "UNEVEN LANES" W8-11, "GROOVED PAVEMENT" W8-15 w/MOTORCYCLE PLAQUE MOUNTED BELOW. THESE ARE TO BE DOUBLE INDICATED ON MULTI-LANE ROADWAYS WITH SPEED LIMITS 45 MPH AND GREATER WHERE LATERAL CLEARANCE CAN BE OBTAINED WITHIN THE MEDIAN AREAS. THESE PORTABLE SIGNS ARE INCIDENTAL TO THE OTHER ITEMS OF WORK INCLUDED IN THE TEMPORARY TRAFFIC CONTROL (LUMP SUM) PAY ITEM.

LEGEND

- ┆ STATIONARY SIGN
- ➔ DIRECTION OF TRAFFIC FLOW



**RESURFACING ADVANCE
WARNING SIGNS FOR
URBAN / SUBURBAN
FACILITIES**

WBS ELEMENT: 80121

CONTRACT: DA00636

STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

PAVEMENT MARKING PLAN

TYRRELL COUNTY

PROJECT REFERENCE NO.	SHEET NO.
80121	PMP-1

INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN TITLE & SCHEDULE SHEET
PMP-2	PAVEMENT MARKING DETAIL

FINAL PAVEMENT MARKING SCHEDULE

MATERIAL	SYMBOL	DESCRIPTION
PAVEMENT MARKING		
THERMOPLASTIC (6" , 90 MILS)		
	T1	WHITE LANE SKIPS
	T2	WHITE SOLID LANE LINE
	T3	WHITE MINI SKIPS
	T4	YELLOW SOLID CENTERLINE
	T5	YELLOW CENTERLINE SKIPS
	T6	YELLOW DOUBLE CENTERLINE
THERMOPLASTIC (24" , 90 MILS)		
	T10	WHITE STOP BAR
	T12	WHITE HI-VISIBILITY CROSSWALK
THERMOPLASTIC PAVEMENT MARKING SYMBOLS		
	T20	LEFT TURN ARROW
	T21	THRU ARROW
	T22	RIGHT TURN ARROW
	T23	THRU/RIGHT TURN ARROW
	T24	THRU/LEFT TURN ARROW
SNOWPLOWABLE PAVEMENT MARKERS (NOT SHOWN)		
	MA	YELLOW & YELLOW
	MB	CRYSTAL & RED

GENERAL NOTES

- THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR AS DIRECTED BY THE ENGINEER.
- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

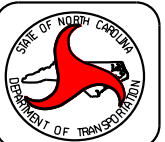
ROAD NAME	MARKING	MARKER
US 64	THERMOPLASTIC	SNOWPLOWABLE
NC 94	THERMOPLASTIC	SNOWPLOWABLE
 - B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
 - C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS & MARKERS.
 - D) UNLESS OTHERWISE SPECIFIED, HEATED-IN-PLACE THERMOPLASTIC MAY BE USED IN LIEU OF EXTRUDED THERMOPLASTIC FOR STOP BARS, SYMBOLS, & CHARACTERS IF HEATED-IN-PLACE IS USED, IT SHALL BE PAID FOR USING EXISTING PAY ITEMS IN THE CONTRACT FOR EACH RESPECTIVE THERMOPLASTIC MARKING. NO ADDITIONAL PAYMENT WILL BE AWARDED FOR USAGE OF HEATED-IN-PLACE THERMOPLASTIC FOR STOP BARS, SYMBOLS, OR CHARACTERS.

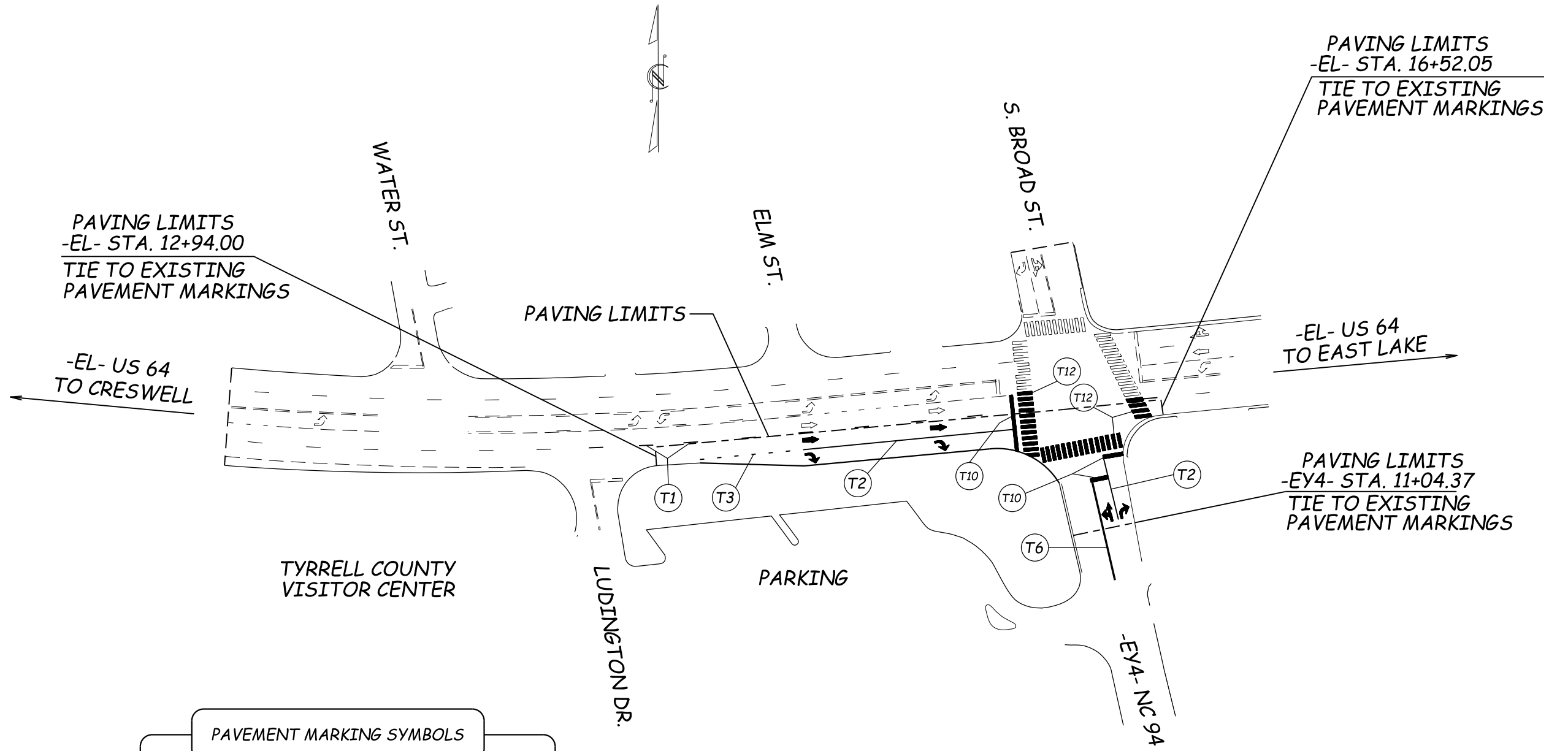
ROADWAY STANDARD DRAWINGS

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

STANDARD NO.	TITLE
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
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1253.01	RAISED PAVEMENT MARKERS - SNOWPLOWABLE

Prepared in the Office of:
HIGHWAY DIVISION ONE - DDC
 113 Airport Dr., suite 100
 Edenton, NC 27932
 Designed by: D. H. STALLINGS





PAVEMENT MARKING SYMBOLS	
TAG NO.	SYMBOL
T20	
T21	
T22	
T23	
T24	

PAVEMENT MARKING DETAIL

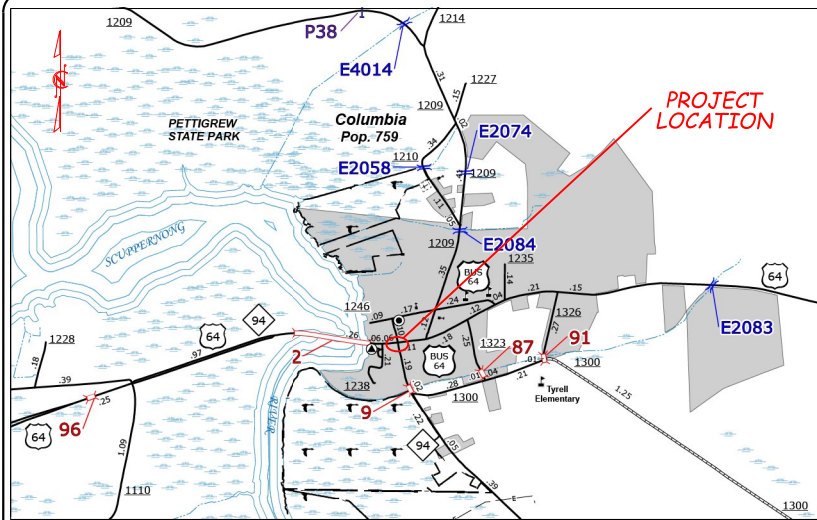
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.
N.C.	80121	EC-1
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
80121		PE, CONST.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

LOCATION: US 64 & NC 94 IN COLUMBIA

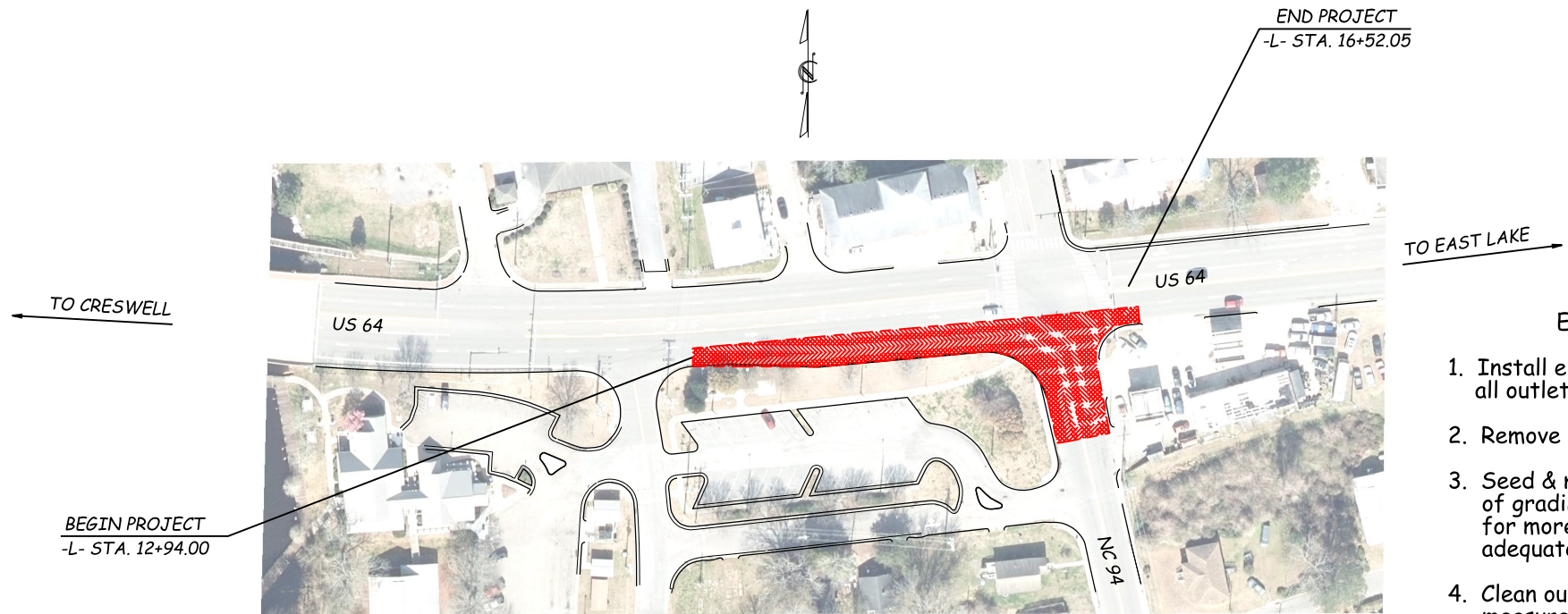
TYPE OF WORK: CONSTRUCTION OF TURN LANE &
INTERSECTION RADIUS IMPROVEMENTS



VICINITY MAP

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	---
1630.05	Temporary Diversion	→
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	---X---
1622.01	Temporary Berms and Slope Drains	---▲---
1630.02	Silt Basin Type B	▨
1633.01	Temporary Rock Silt Check Type-A	▩
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	▩
1633.02	Temporary Rock Silt Check Type-B	▩
	Wattle-Coir Fiber Wattle	▩
	Wattle-Coir Fiber Wattle with Polyacrylamide (PAM)	▩
1634.01	Temporary Rock Sediment Dam Type-A	▩
1634.02	Temporary Rock Sediment Dam Type-B	▩



EROSION CONTROL SCHEDULE

1. Install erosion control measures according to plans at all outlets or discharge points.
2. Remove existing curb and perform grading as necessary.
3. Seed & mulch all disturbed areas as soon as any phase of grading is completed. Exposed areas cannot lay idle for more than 21 calendar days without providing adequate ground cover.
4. Clean out and/or rework all temporary erosion control measures after any significant rainfall event (or as otherwise needed.)
5. All erosion control measures shall be maintained until a permanent vegetative cover is established.

WBS ELEMENT: 80121

CONTRACT: DA00636

GRAPHIC SCALE

NTS

Prepared in the Office of:
HIGHWAY DIVISION ONE
113 Airport Dr., suite 100
Edenton, NC 27932
2024 STANDARD SPECIFICATIONS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Designed by:
D. H. STALLINGS 3868
NAME LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

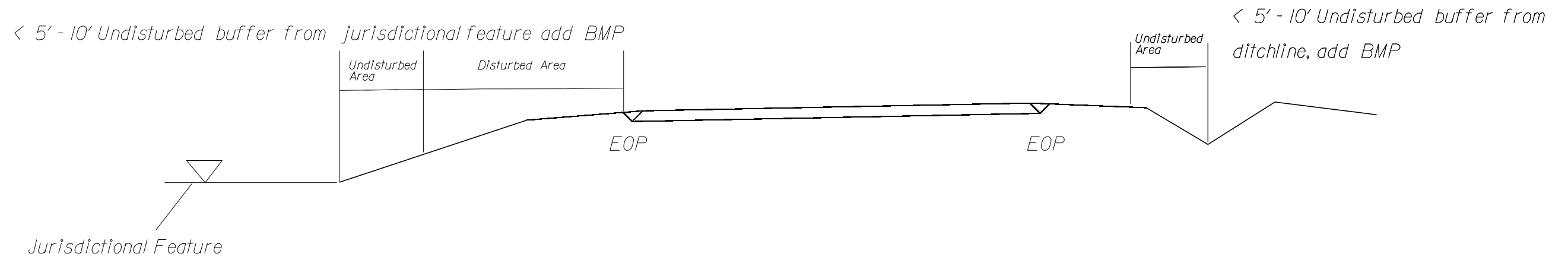
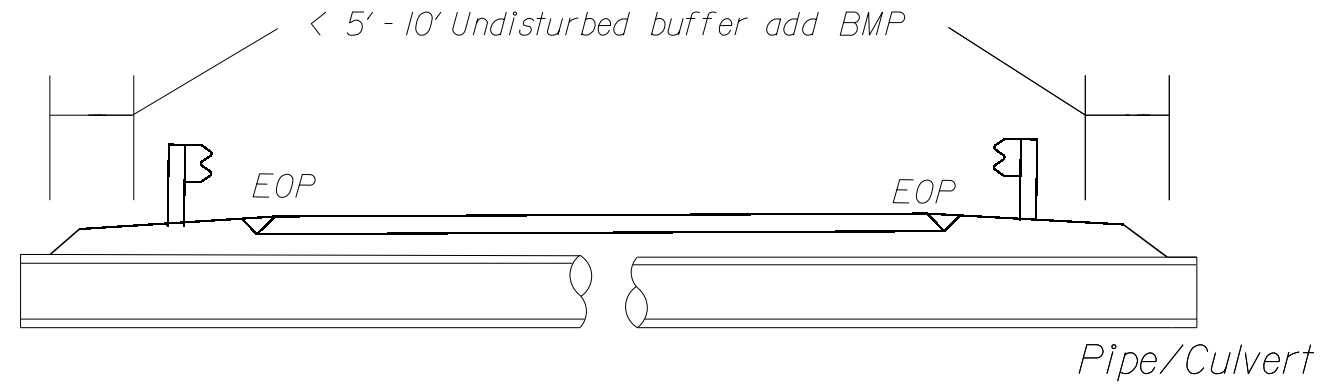
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type A
1622.01 Temporary Berms and Slope Drains	1633.02 Temporary Rock Silt Check Type B
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type B	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Coir Fiber Baffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

BMP Options: Wattle or Silt Fence

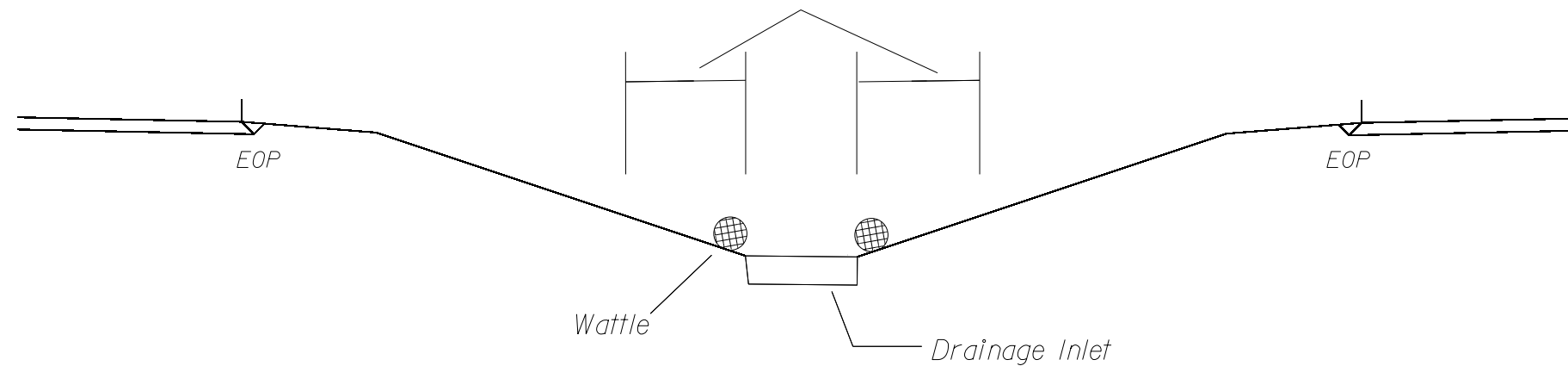
EROSION CONTROL DETAIL



Use BMP's if shoulders and/or frontslopes and/or ditchline and/or backslopes are disturbed

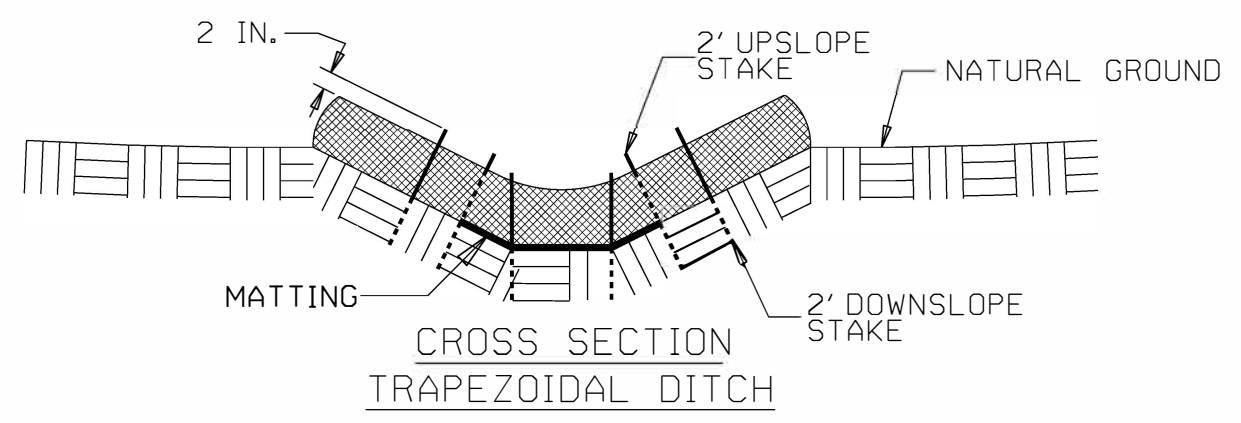
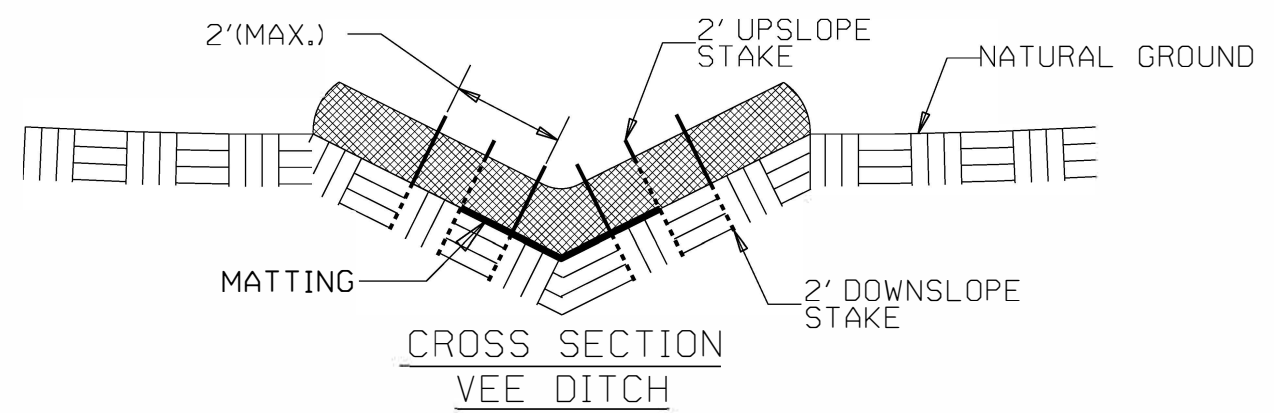
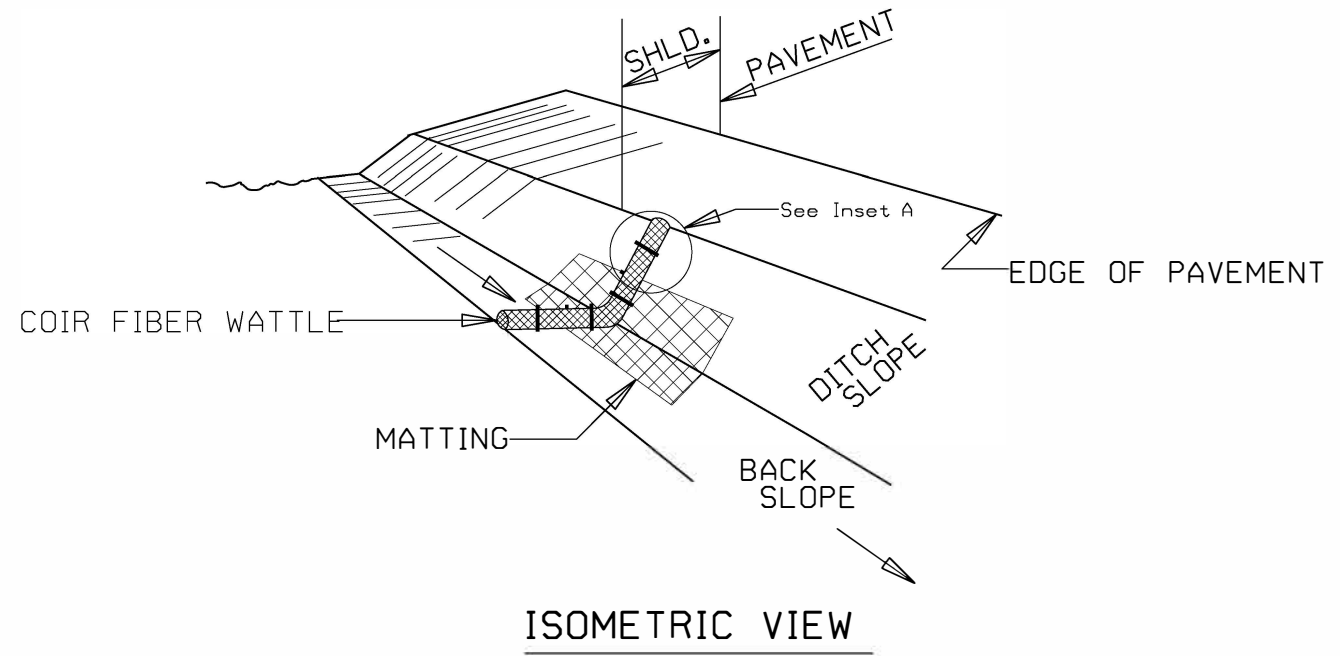


< 5' - 10' Undisturbed buffer from inlet, add wattle



NOT TO SCALE

COIR FIBER WATTLE DETAIL



NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

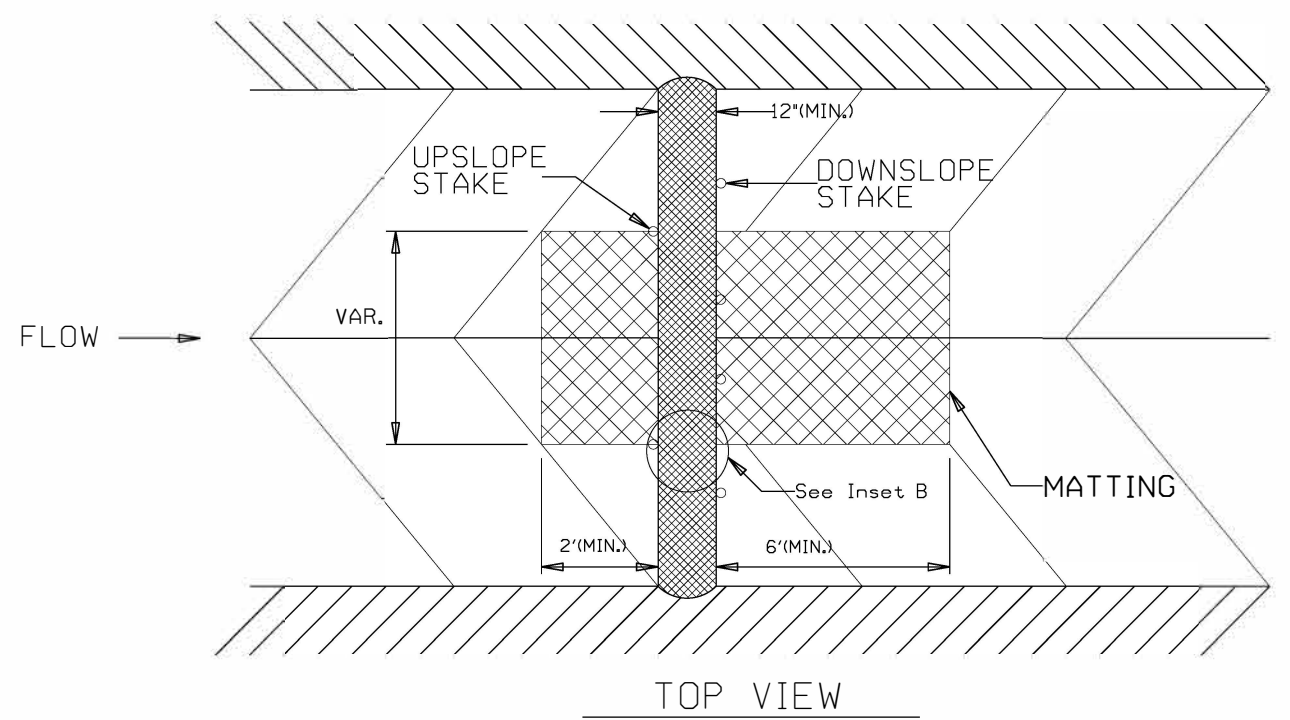
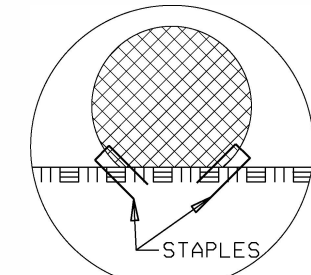
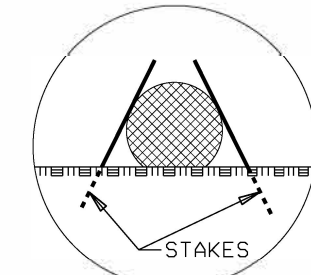
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



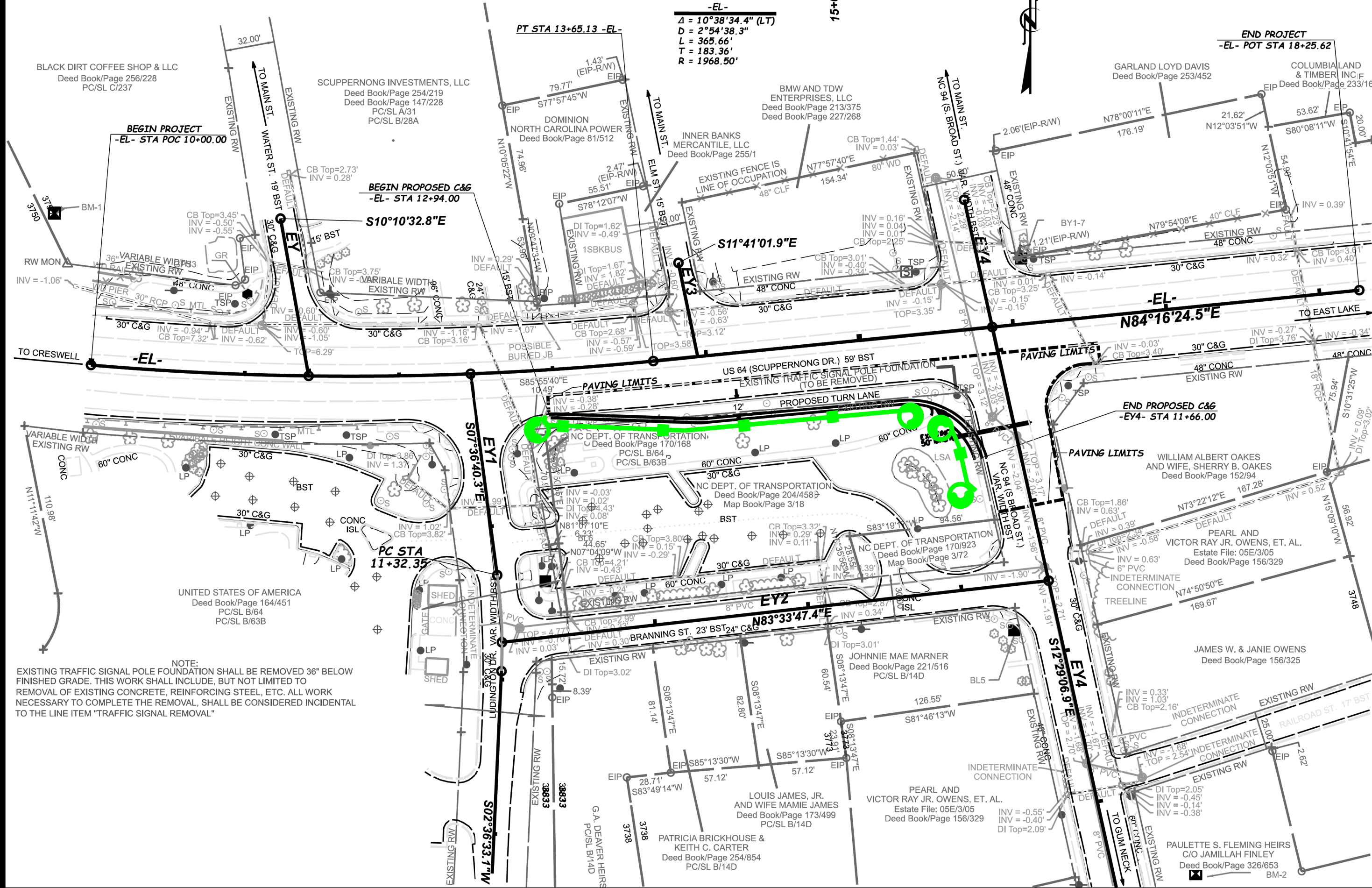
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) 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 HQW ZONES.

10+00

15+00



-EL-
 $\Delta = 10^{\circ}38'34.4''$ (LT)
 $D = 2^{\circ}54'38.3''$
 $L = 365.66'$
 $T = 183.36'$
 $R = 1968.50'$

BEGIN PROJECT
-EL- STA POC 10+00.00

BEGIN PROPOSED C&G
-EL- STA 12+94.00

END PROJECT
-EL- POT STA 18+25.62

-EL-
 $N84^{\circ}16'24.5''E$

END PROPOSED C&G
-EY4- STA 11+66.00

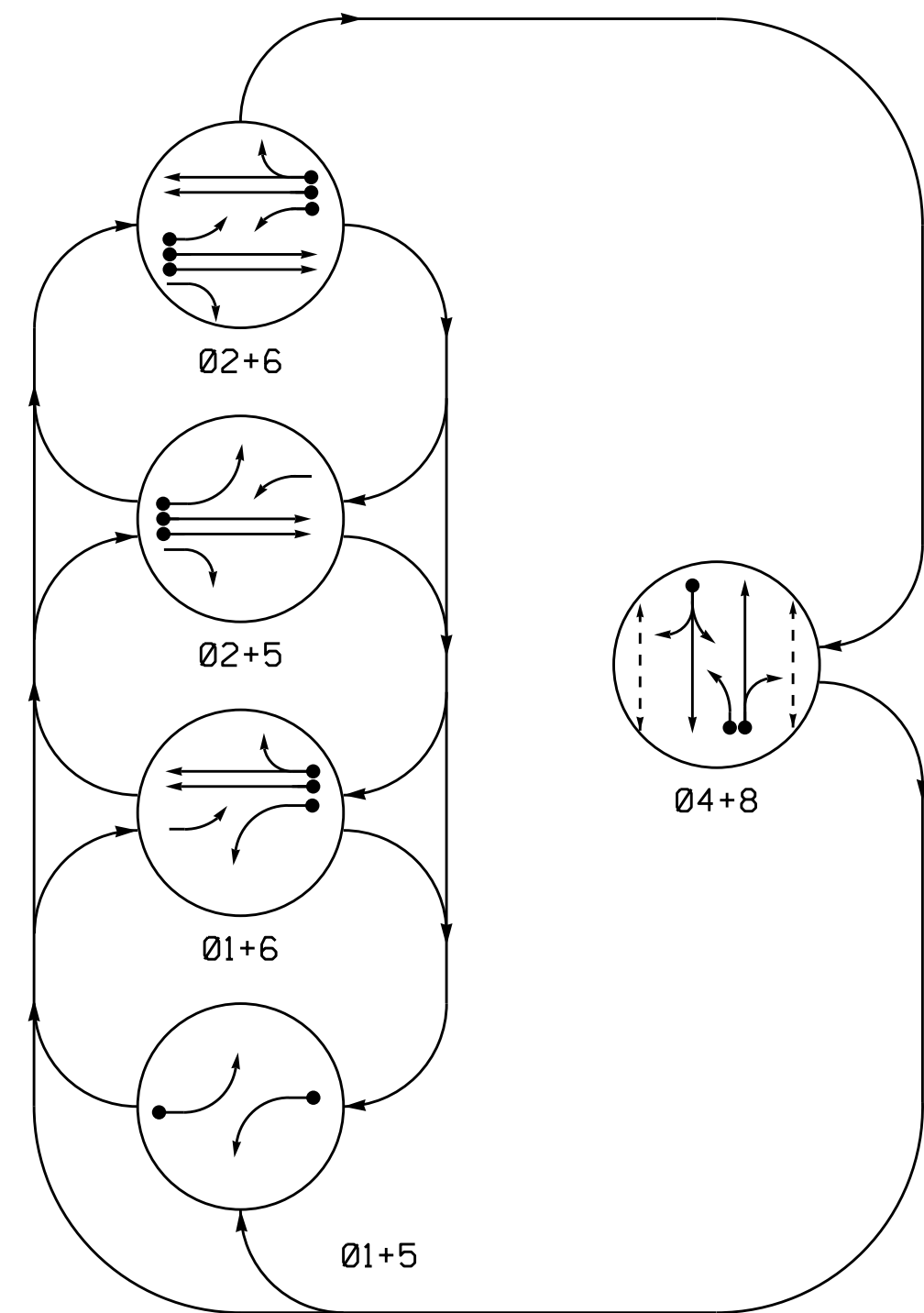
PC STA
11+32.35

$N83^{\circ}33'47.4''E$

$S12^{\circ}29'06.9''E$

NOTE:
 EXISTING TRAFFIC SIGNAL POLE FOUNDATION SHALL BE REMOVED 36" BELOW FINISHED GRADE. THIS WORK SHALL INCLUDE, BUT NOT LIMITED TO REMOVAL OF EXISTING CONCRETE, REINFORCING STEEL, ETC. ALL WORK NECESSARY TO COMPLETE THE REMOVAL, SHALL BE CONSIDERED INCIDENTAL TO THE LINE ITEM "TRAFFIC SIGNAL REMOVAL"

PHASING DIAGRAM



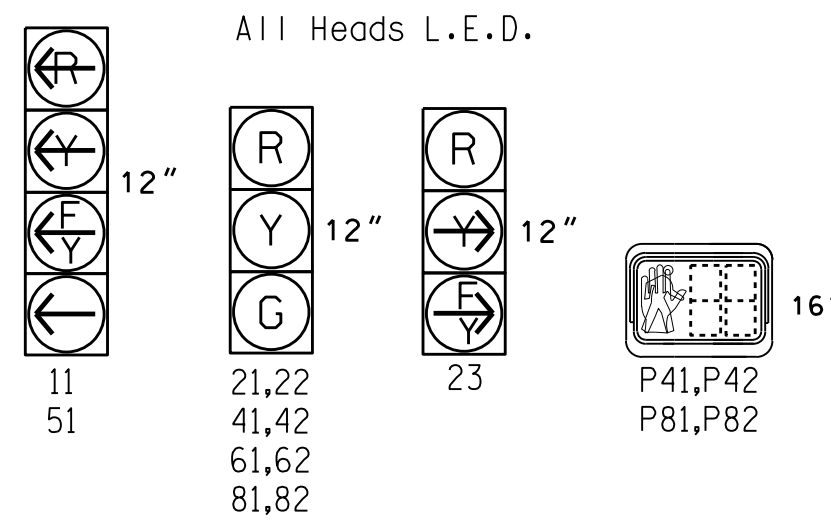
PHASING DIAGRAM DETECTION LEGEND

- ←● DETECTED MOVEMENT
- ← UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- ←→ PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE					FLASH
	Ø1+5	Ø2+5	Ø3+5	Ø4+8	Ø5+6	
11	←	←	←	←	←	Y
21,22	R	R	G	G	R	Y
23	R	R	F	F	R	Y
41,42	R	R	R	R	G	R
51	←	←	←	←	←	Y
61,62	R	G	R	G	R	Y
81,82	R	R	R	R	G	R
P41,42	DW	DW	DW	DW	W	DRK
P81,82	DW	DW	DW	DW	W	DRK

SIGNAL FACE I.D.



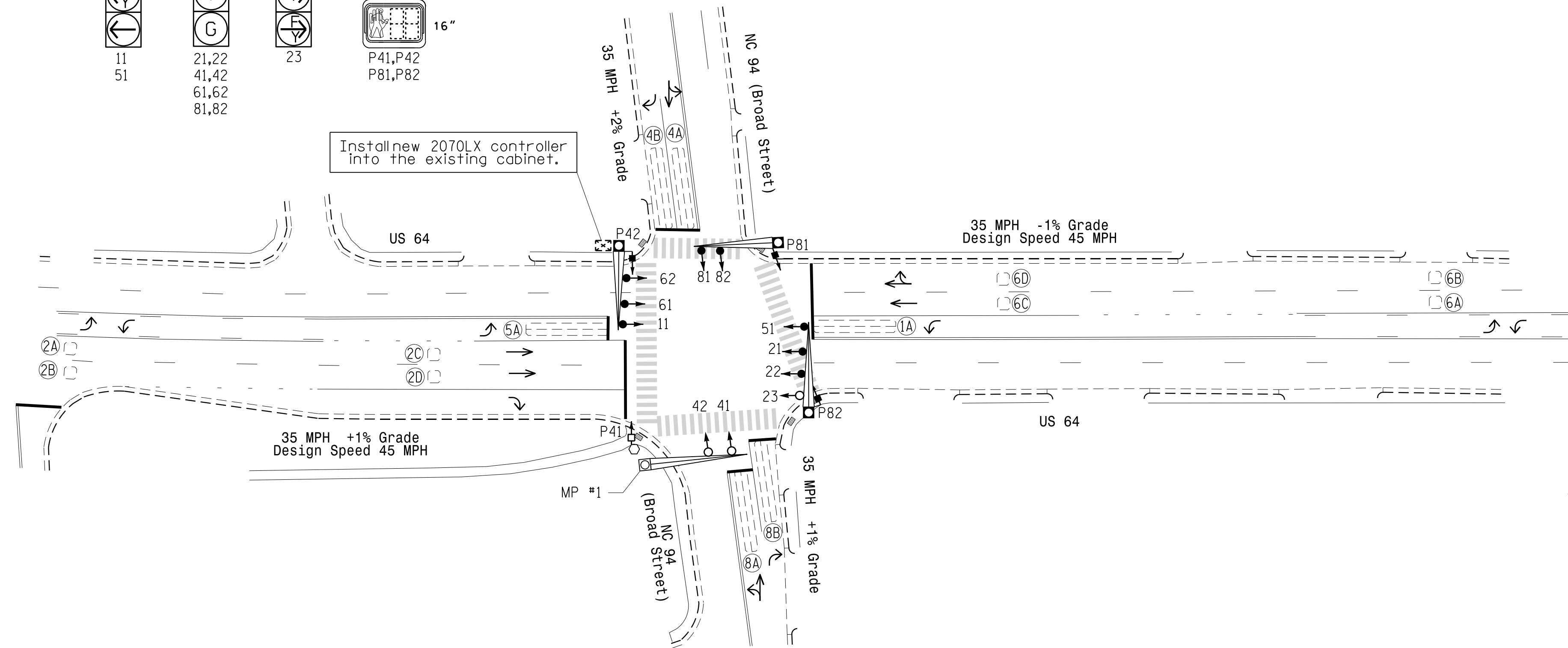
MAXTIME DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING							
					CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	INITIAL	CALL	NEW CARD	
1A	6X40	0	2-4-2	-	1	15	-	X	X	-	-	-
2A,2B	6X6	267	4	-	2	-	1.6	X	X	-	-	-
2C,2D	6X6	90	4	-	2	-	-	X	X	-	-	-
4A	6X40	0	2-4-2	-	4	3	-	X	X	-	-	-
4B	6X40	0	2-4-2	-	4	15	-	X	X	-	-	-
5A	6X40	0	2-4-2	-	5	15	-	X	X	-	-	-
6A,6B	6X6	300	4	-	6	-	1.6	X	X	-	-	-
6C,6D	6X6	90	4	-	6	-	-	X	X	-	-	-
8A	6X40	0	2-4-2	-	8	3	-	X	X	-	-	-
8B	6X40	0	2-4-2	-	8	10	-	X	X	-	-	-

5 Phase Fully Actuated Isolated

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Reposition existing signal heads numbered 21 and 22.
- 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.



LEGEND

- | PROPOSED | EXISTING |
|--|---------------------------------|
| ○→ Traffic Signal Head | ●→ N/A |
| ●→ Modified Signal Head | — Sign |
| ⊥ Pedestrian Signal Head With Push Button & Sign | ⊥ Signal Pole with Guy |
| ⊥ Signal Pole with Guy | ⊥ Signal Pole with Sidewalk Guy |
| ⊥ Inductive Loop Detector | ⊥ Controller & Cabinet |
| ⊥ Junction Box | ⊥ 2-in Underground Conduit |
| --- Right of Way | → Directional Arrow |
| → Metal Pole with Mastarm | → Wheelchair Ramp |
| ○ Type II Signal Pedestal | ● |

FEATURE	PHASE							
	1	2	4	5	6	8		
Walk *	-	-	7	-	-	7		
Ped Clear	-	-	23	-	-	18		
Min Green *	7	12	7	7	12	7		
Passage *	2.0	2.0	2.0	2.0	2.0	2.0		
Max I *	15	45	20	15	45	20		
Yellow Change	3.0	4.6	3.8	3.0	4.6	3.8		
Red Clear	2.3	1.3	2.3	2.3	1.3	2.3		
Added Initial *	-	-	-	-	-	-		
Maximum Initial *	-	-	-	-	-	-		
Time Before Reduction *	-	-	-	-	-	-		
Time To Reduce *	-	-	-	-	-	-		
Minimum Gap	-	-	-	-	-	-		
Advance Walk	-	-	-	-	-	-		
Non Lock Detector	X	-	X	X	-	X		
Vehicle Recall	-	MIN RECALL	-	-	MIN RECALL	-		
Dual Entry	-	-	X	-	-	X		

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

Signal Upgrade

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

US 64 at NC 94 (Broad Street)

Division 1 Tyrrell County Columbia

PLAN DATE: March 2024 REVIEWED BY: BMH

PREPARED BY: Jeff Spence REVIEWED BY:

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

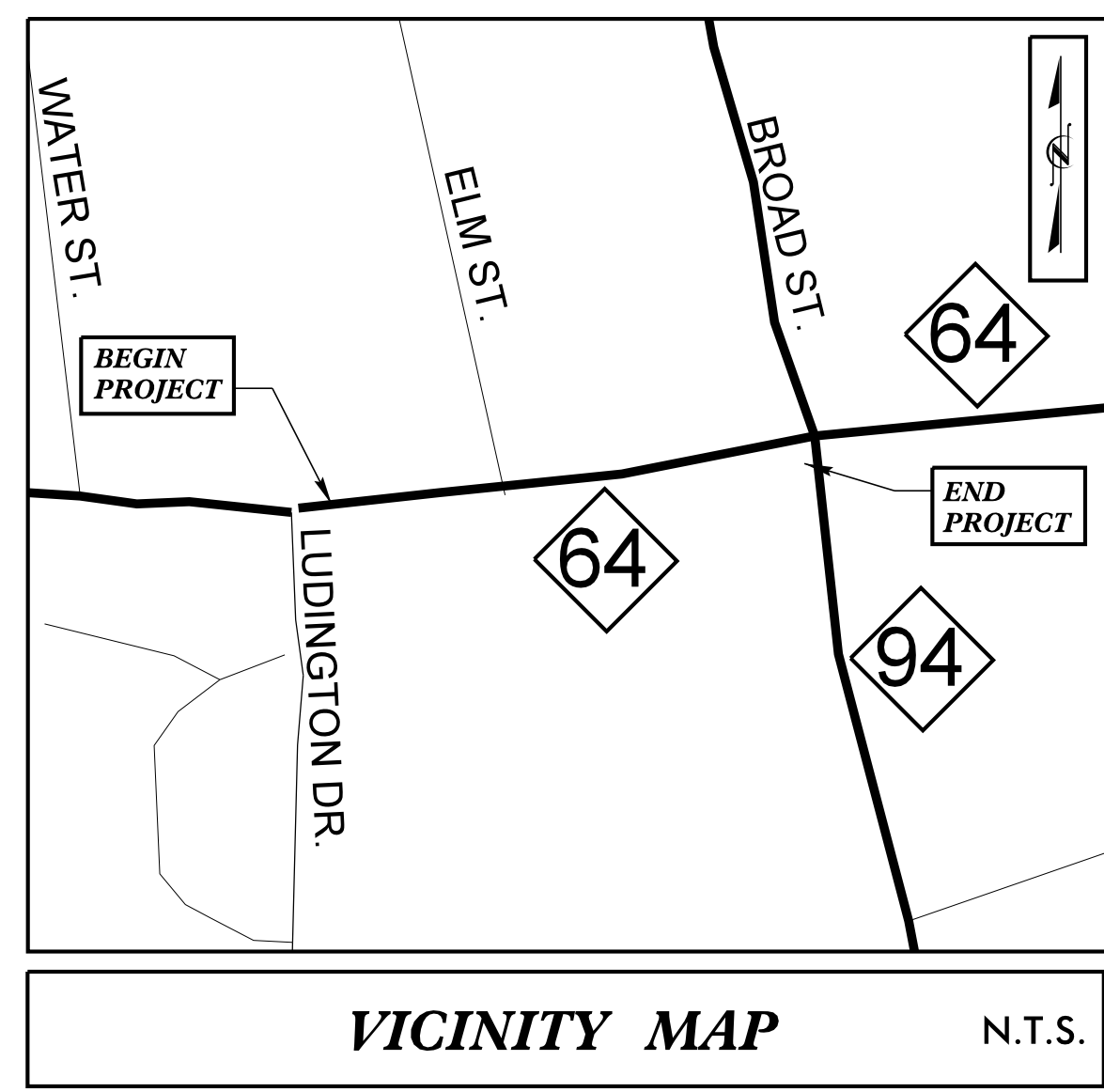
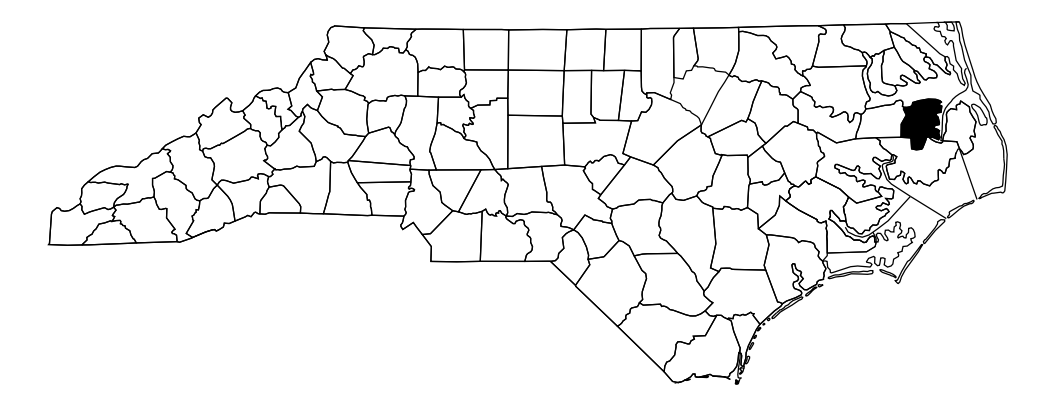
DATE: 04/22/2024

SIG. INVENTORY NO. 01-0132

22-APR-2024 11:35 S:\IT\565\K15\Sig\01\Signal Design\Eastern Region\01\01-0132\010132.sig.dgn, 2024mcds.dgn

TIP PROJECT: US64-NC94

T.I.P. NO.	SHEET NO.
US64-NC94	UC-1



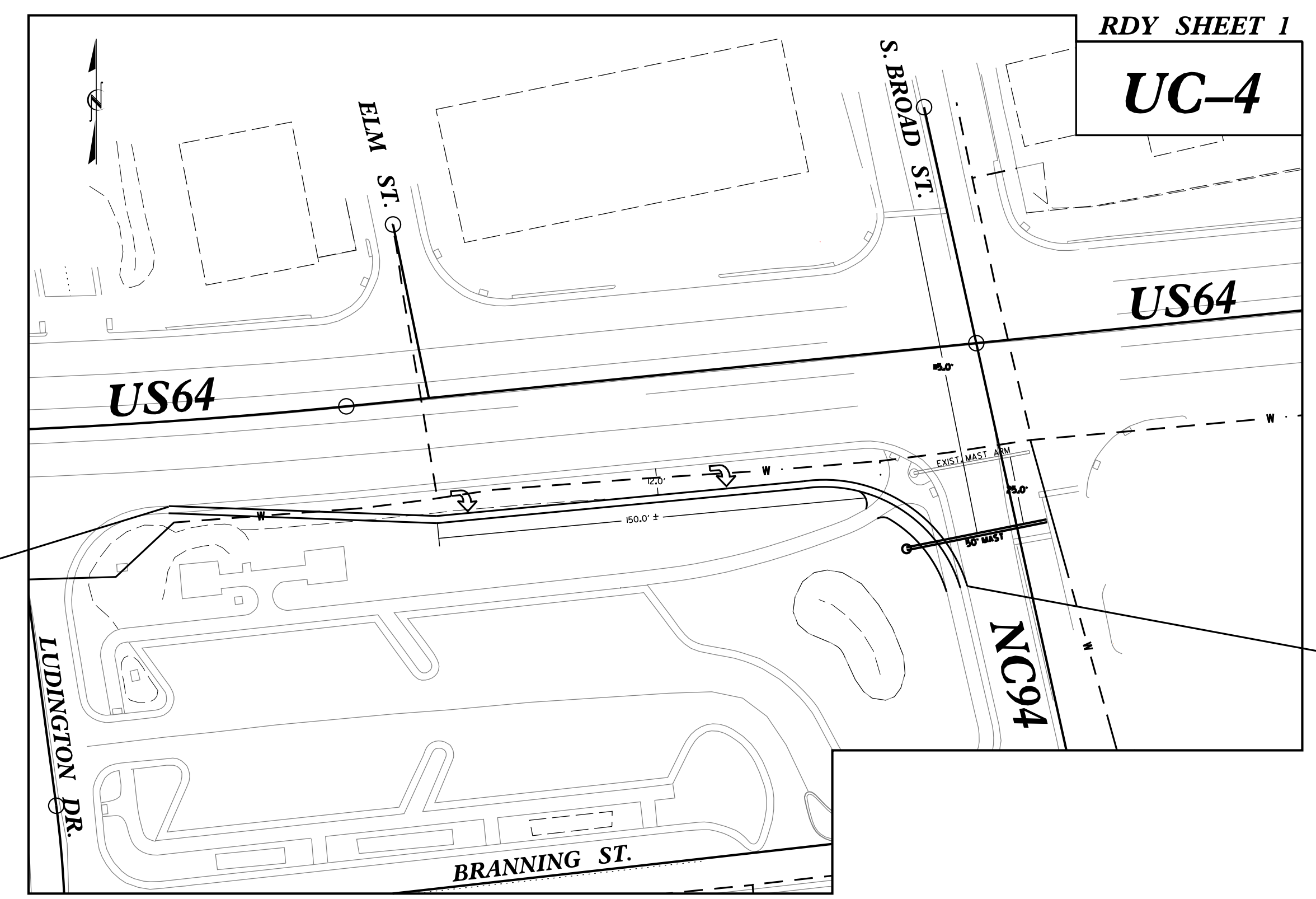
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS TYRRELL COUNTY

**LOCATION: US 64 FROM LUDINGTON DRIVE TO
NC 94 (SOUTH BROAD STREET)**

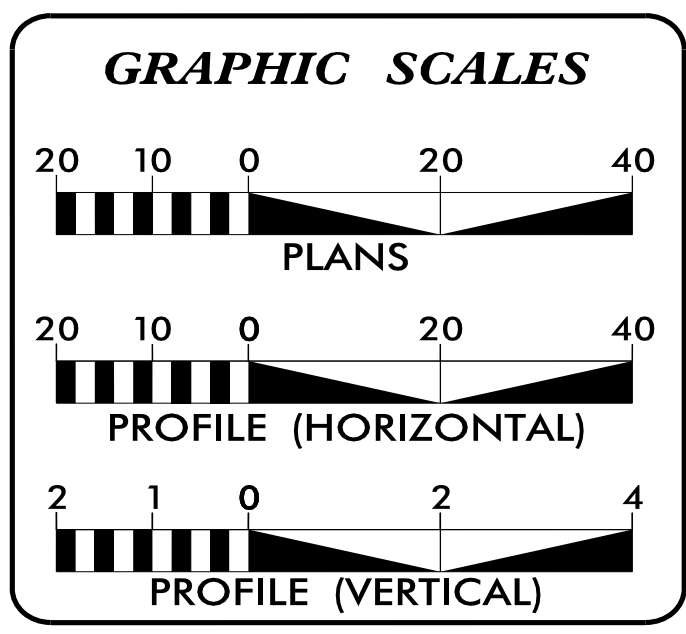
TYPE OF WORK: RELOCATION OF 8" WATER LINES

**BEGIN TIP PROJECT
US64 - NC94**



**END TIP PROJECT
US64 - NC94**

DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED



SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A THRU UC-3B	DETAILS
UC-4	PLAN SHEET
UC-4A	PLAN & PROFILE SHEET

WATER OWNER ON PROJECT

(A) WATER - TOWN OF COLUMBIA

PREPARED IN THE OFFICE OF

**JOHNSON, MIRMIRAN,
& THOMPSON, INC.**

3508 TRENT RD. UNIT A
NEW BERN, NC 28562
(252) 631-5115

MARIE PEEDIN, PE UTILITY PROJECT ENGINEER

EMILY MORRIS, EIT PROJECT UTILITY DESIGNER

SHANE WAIDNER PROJECT UTILITY DESIGNER

SEAL

11/19/2024 | 9:52:13 AM EST

**DIVISION OF HIGHWAYS
UTILITIES DIVISION 1**

113 AIRPORT DR. SUITE 100
EDENTON, NC 27932
PHONE (252) 482-1877
FAX (252) 482-8722

NABIL HAMDAN REGIONAL UTILITIES ENGINEER

HEATH STALLINGS DDC ENGINEER

JOHN ABEL, JR DIVISION TEAM LEAD

DANIEL MERRITT DIVISION UTILITIES COORDINATOR

5/14/23

TYRRELL COUNTY

PROJECT REFERENCE NO. US64-NC94	SHEET NO. UC-3
DESIGNED BY: ELM	
DRAWN BY: ELM	
CHECKED BY: MUP	
APPROVED BY: MUP	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024.
2. THE EXISTING UTILITIES BELONG TO THE TOWN OF COLUMBIA. PLEASE CONTACT MR. RHETT WHITE, TOWN MANAGER OF THE TOWN OF COLUMBIA.
103 MAIN STREET COLUMBIA, NC 27925
(252) 796-2781
Rhett_TownofColumbia@yahoo.com
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

PROJECT SPECIFIC NOTES:

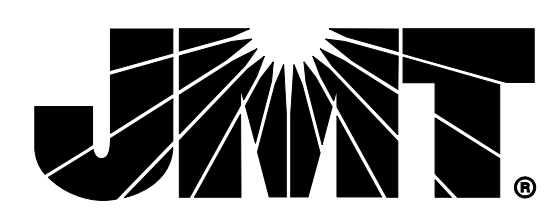
1. DEVIATION FROM THESE PLANS AND NOTES WITHOUT THE PRIOR CONSENT OF THE UTILITY OWNER OR THEIR REPRESENTATIVE OR THE ENGINEER MAY BE CAUSE FOR THE WORK TO BE UNACCEPTABLE.
2. THE LOCATION OF EXISTING UTILITIES SHOWN ON THE PLANS IS FOR THE USE OF THE CONTRACTOR IN PROVIDING PROTECTION FOR THE UTILITIES DURING CONSTRUCTION OPERATIONS. NCDOT, DESIGN CONSULTANT AND/OR AGENT SHALL NOT BE HELD RESPONSIBLE FOR THE ACCURACY OF LOCATION, SIZE, DEPTH, OR COMPLETENESS OF THE INFORMATION. THE CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL COORDINATE ALL WORK WITH UTILITY OWNER AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION, OR AS OTHERWISE SPECIFIED HEREIN.
4. ALL NCDEQ AND LOCAL TESTING MUST BE COMPLETED AND APPROVED PRIOR TO CONNECTING THE NEW CONSTRUCTION TO THE EXISTING WATER LINES.

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LIST OF STANDARD DRAWINGS

- 1515.02 FIRE HYDRANT
- IN-LINE VALVE DETAIL
- VALVE BOX INSTALLATION
- THRUST BLOCKING TABLE
- THRUST BLOCKING
- PIPE RESTRAINT CHARTS
- TYPICAL TRACER WIRE INSTALLATION DETAIL



PROJECT REFERENCE NO.	SHEET NO.
US64-NC94	UC-3A
DESIGNED BY: ELM	
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REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

PROJECT TYPICAL DETAILS

UTILITY CONSTRUCTION

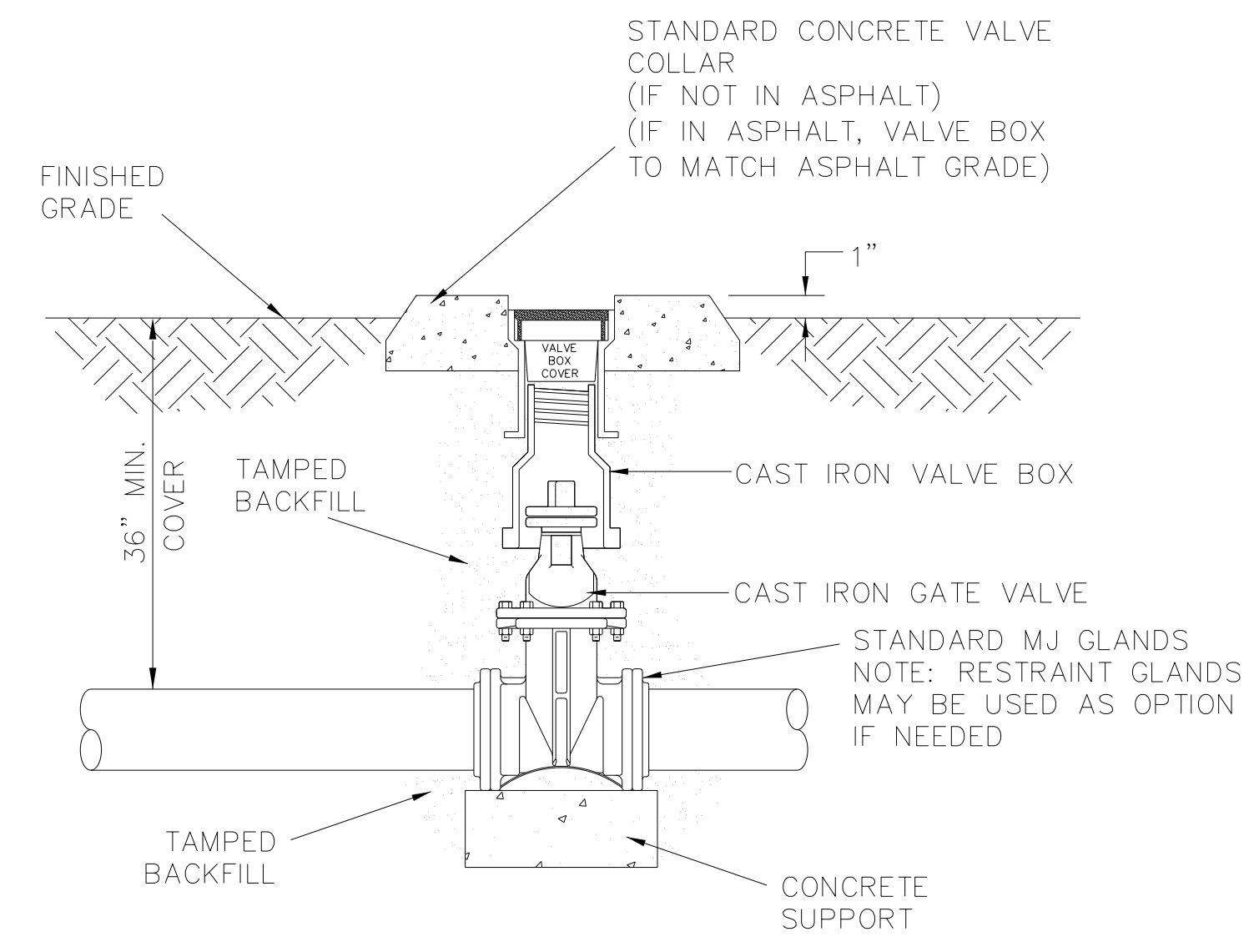
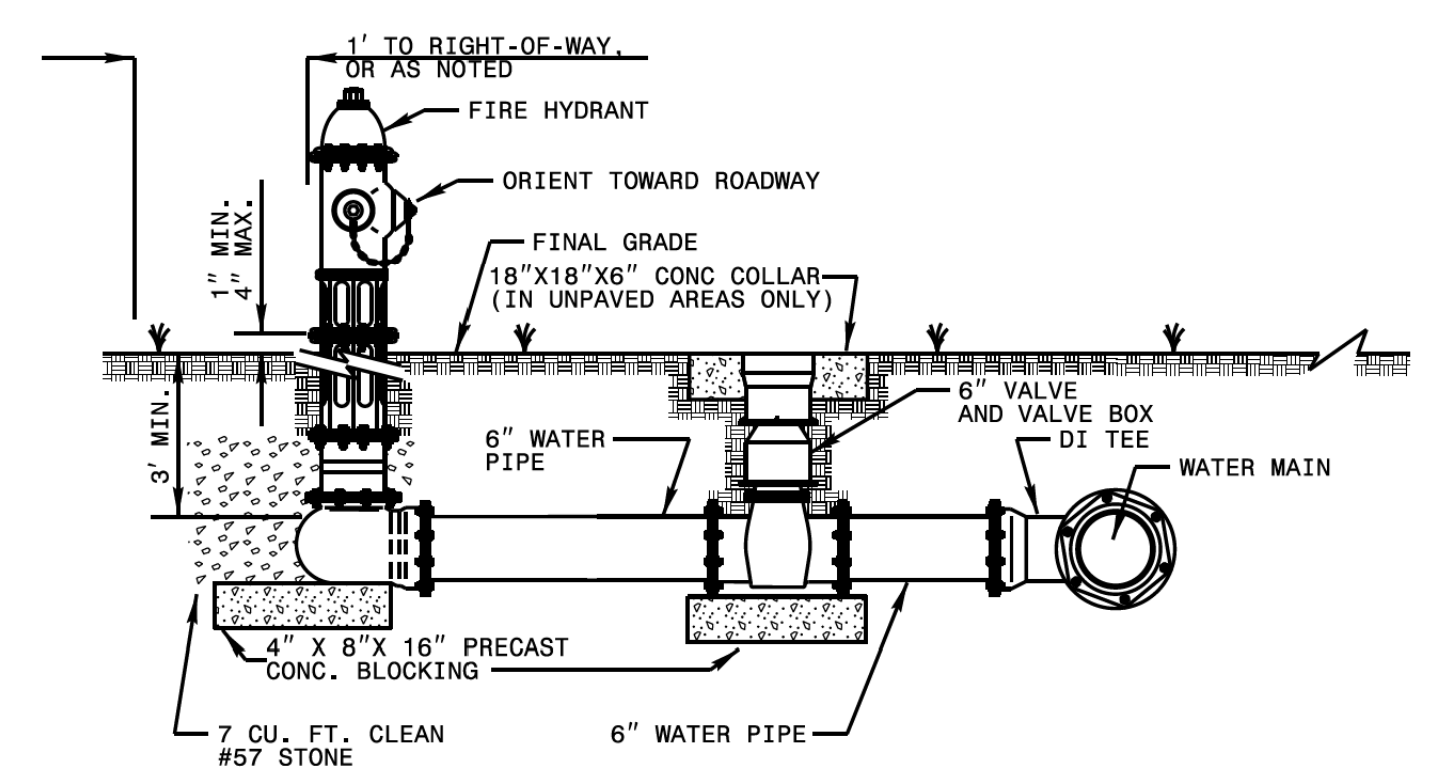
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

- NOTES:**
- THIS DETAIL SHOWS THE TYPICAL FINAL FIRE HYDRANT CONFIGURATION AFTER INSTALLATION OF A PROPOSED FIRE HYDRANT, RECONNECTION OF AN EXISTING FIRE HYDRANT, OR RELOCATION OF A FIRE HYDRANT.
 - KEEP DRAIN PORTS FREE FROM OBSTRUCTION.
 - RESTRAIN ALL PIPE JOINTS AND FITTINGS. ACCEPTABLE TYPES OF RESTRAINT INCLUDE RESTRAINING GLANDS, RESTRAINED PUSH-ON JOINTS, AND 3/4" BITUMINOUS COATED, ALL-THREAD RESTRAINING RODS. THRUST BLOCKS ARE NOT AN ACCEPTABLE TYPE OF RESTRAINT.
 - FOR RELOCATED OR RECONNECTED FIRE HYDRANTS, VERIFY THE VALVE IS RESTRAINED TO THE MAIN. PROVIDE APPROPRIATE RESTRAINT.
 - HYDRANT LOCATION APPLIES TO PROPOSED AND RELOCATED FIRE HYDRANTS.
 - LOCATE FIRE HYDRANT WITH 3' HORIZONTAL CLEARANCE FROM ABOVE GROUND OBJECTS.
 - PROVIDE A MINIMUM OF 3' COVER OVER ALL SECTIONS OF HORIZONTAL PIPE. USE FITTINGS AS NECESSARY.
 - TAPPING SLEEVES MAY BE USED ON EXISTING MAINS IN LIEU OF DI TEES.
 - LOCATE FIRE HYDRANT OUTSIDE OF THE VEHICLE RECOVERY AREA, ADJACENT TO THE R/W LINE, OR IN A PROTECTED AREA.

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

ROADWAY STANDARD DRAWING FOR
FIRE HYDRANT

SHEET 1 OF 1
1515.02

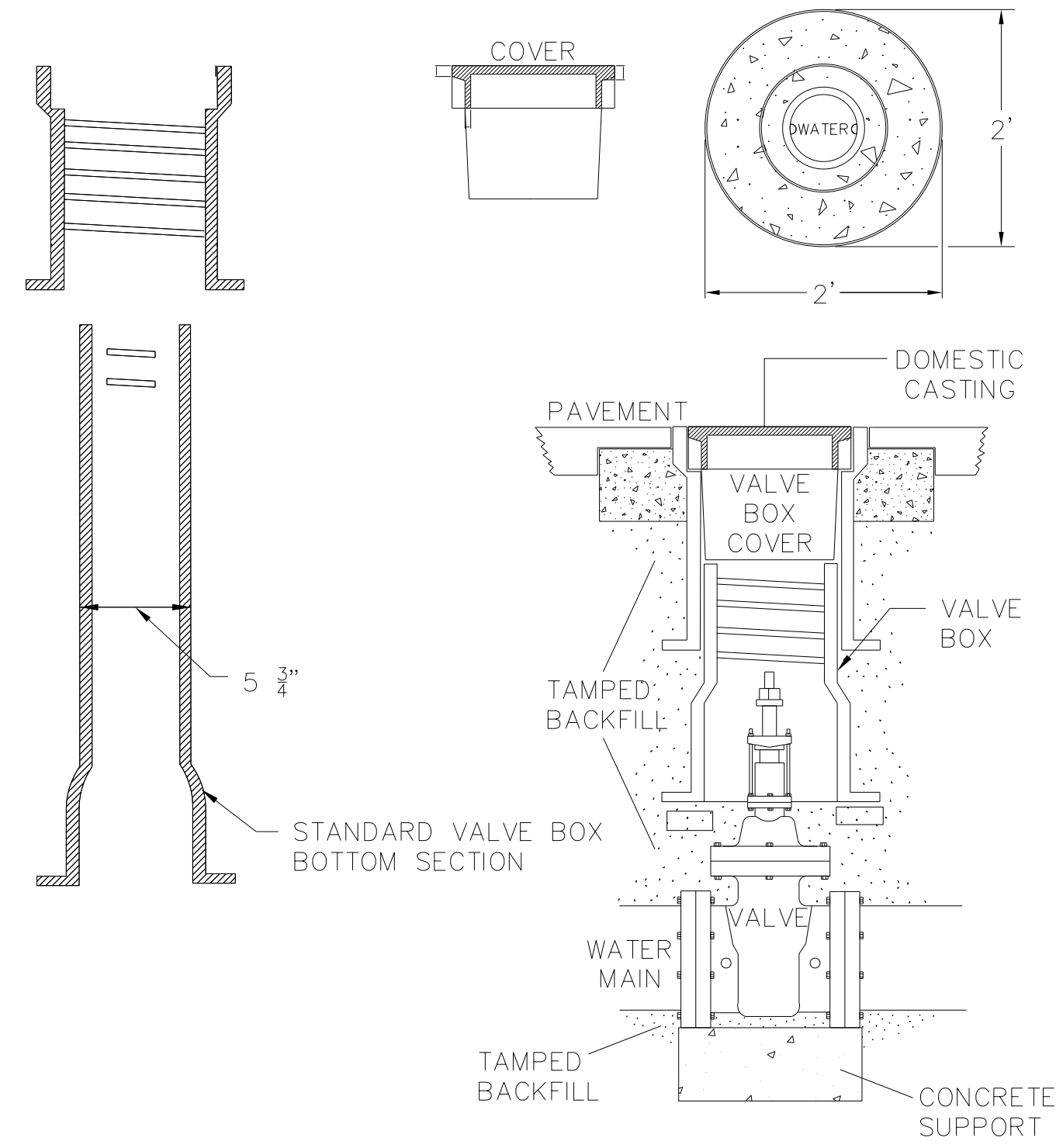


INLINE VALVE DETAIL

NOT TO SCALE

NOTE: CONCRETE VALVE COLLAR REQUIRED ON ALL VALVES.

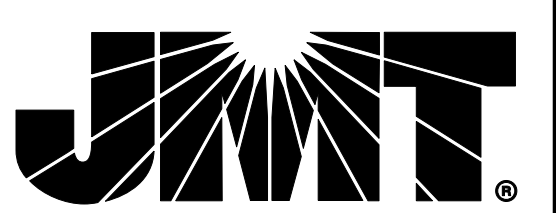
APPROVED METHOD FOR EXTENSION OF VALVE BOX



NOTE: VALVE BOX SHALL BE PER OWNER'S SPECIFICATIONS.

VALVE BOX INSTALLATION

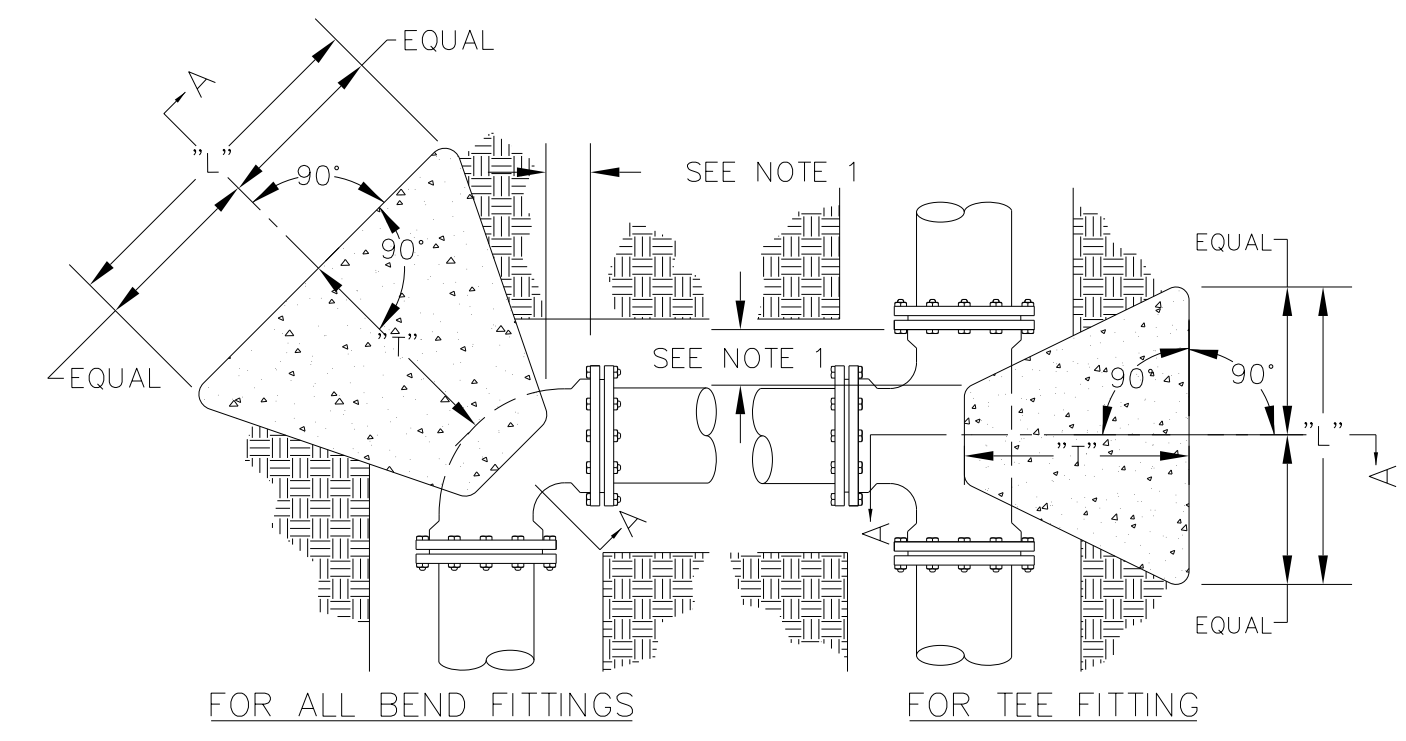
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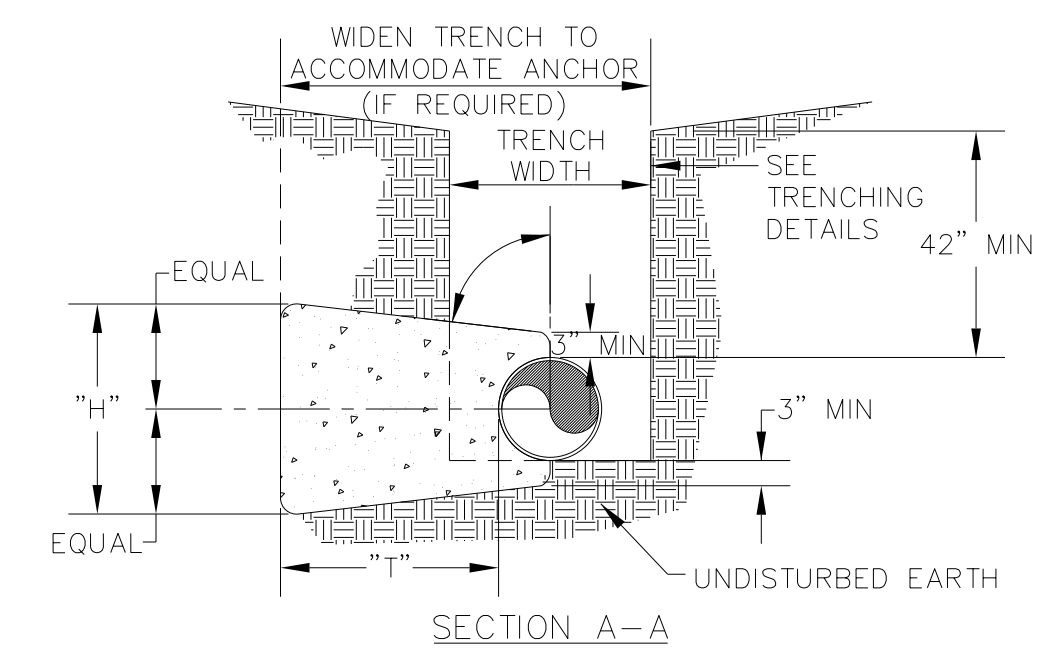
PROJECT REFERENCE NO.	SHEET NO.
US64-NC94	UC-3B
DESIGNED BY: ELM	
DRAWN BY: ELM	
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APPROVED BY: MUP	
REVISED:	
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UTILITY CONSTRUCTION PLANS ONLY	

PROJECT TYPICAL DETAILS

TEST PRESSURE = 200 PSI					
PIPE SIZE	TYPE FITTING	DIMENSIONS (FT)			VOLUME CONCRETE CU. YD.
		"L"	"H"	"T"	
4 INCHES	11 1/4"	1.00	1.00	1.00	0.04
	22 1/2"	1.00	1.00	1.50	0.06
	45"	1.00	1.00	1.50	0.06
	90"	1.50	1.50	2.50	0.15
	TEE	1.50	1.50	2.00	0.12
6 INCHES	11 1/4"	1.00	1.00	2.50	0.09
	22 1/2"	1.00	1.00	2.50	0.09
	45"	1.50	1.50	2.50	0.15
	90"	1.50	1.50	2.50	0.15
	TEE	1.50	1.50	2.00	0.12
8 INCHES	11 1/4"	1.50	1.50	2.50	0.15
	22 1/2"	1.50	1.50	2.50	0.15
	45"	1.50	1.50	2.50	0.15
	90"	2.50	2.00	3.00	0.33
	TEE	2.50	2.00	2.50	0.28
12 INCHES	11 1/4"	2.00	2.00	2.50	0.23
	22 1/2"	2.00	2.00	2.50	0.23
	45"	2.00	2.00	2.75	0.23
	90"	4.00	2.00	3.00	0.50
	TEE	4.00	2.00	2.50	0.42
16 INCHES	11 1/4"	2.00	2.00	3.00	0.28
	22 1/2"	4.00	2.00	3.00	0.50
	45"	5.50	3.00	3.50	1.13
	90"	7.50	4.00	3.50	2.01
	TEE	7.50	4.00	3.00	1.72



FOR ALL BEND FITTINGS FOR TEE FITTING



- NOTES:
1. CONCRETE BLOCKING IS TO BE FORMED TO ENSURE ACCESSIBILITY TO FITTINGS AND POURED AGAINST UNDISTURBED EARTH.
 2. ALL FITTINGS SHALL BE WRAPPED IN POLYETHYLENE TO PREVENT CONCRETE FROM CONTACTING FITTINGS, BOLTS OR ENDS OF MECHANICAL JOINT BENDS.
 3. CONCRETE TO BE MINIMUM 3,000 PSI @ 28 DAYS.
 4. WHEN SACKCRETE IS TO BE USED, IT SHALL BE PROPERLY MIXED PER MANUFACTURER SPECIFICATIONS.
 5. FOR REQUIRED DIMENSIONS, SEE THRUST BLOCKING TABLE.

- CHART NOTES:
1. IF BLOCKING EXCAVATION IS IN LIGHTLY COMPACTED FILL AREAS, OR IN AREAS WHERE BOULDERS OR STUMPS HAVE BEEN REMOVED, BLOCKING SIZE MUST BE RE-SIZED FOR THE SPECIFIC LOCATION/CIRCUMSTANCE BY A NC LICENSED PROFESSIONAL ENGINEER.
 2. BLOCKING SIZES SHOWN IN THESE TABLES ASSUME THE FOLLOWING:
 - a. BLOCKING IS CONSTRUCTED IN RESIDUAL SOILS AS SHOWN IN DETAIL
 - b. SOIL BEARING PRESSURE = 2000 PSF
 - c. VELOCITY OF FLOW = 15 FPS
 3. THIS DETAIL NOT APPLICABLE TO REDUCING BENDS.
 4. NEITHER THE WEIGHT OF THE CONCRETE BLOCKING NOR FRICTION BETWEEN CONCRETE BLOCKING AND SOIL WAS ADDED INTO BLOCKING SIZES COMPUTATION. THEREFORE, BLOCKING SIZE IS CONSERVATIVE.

THRUST BLOCKING TABLE
NOT TO SCALE

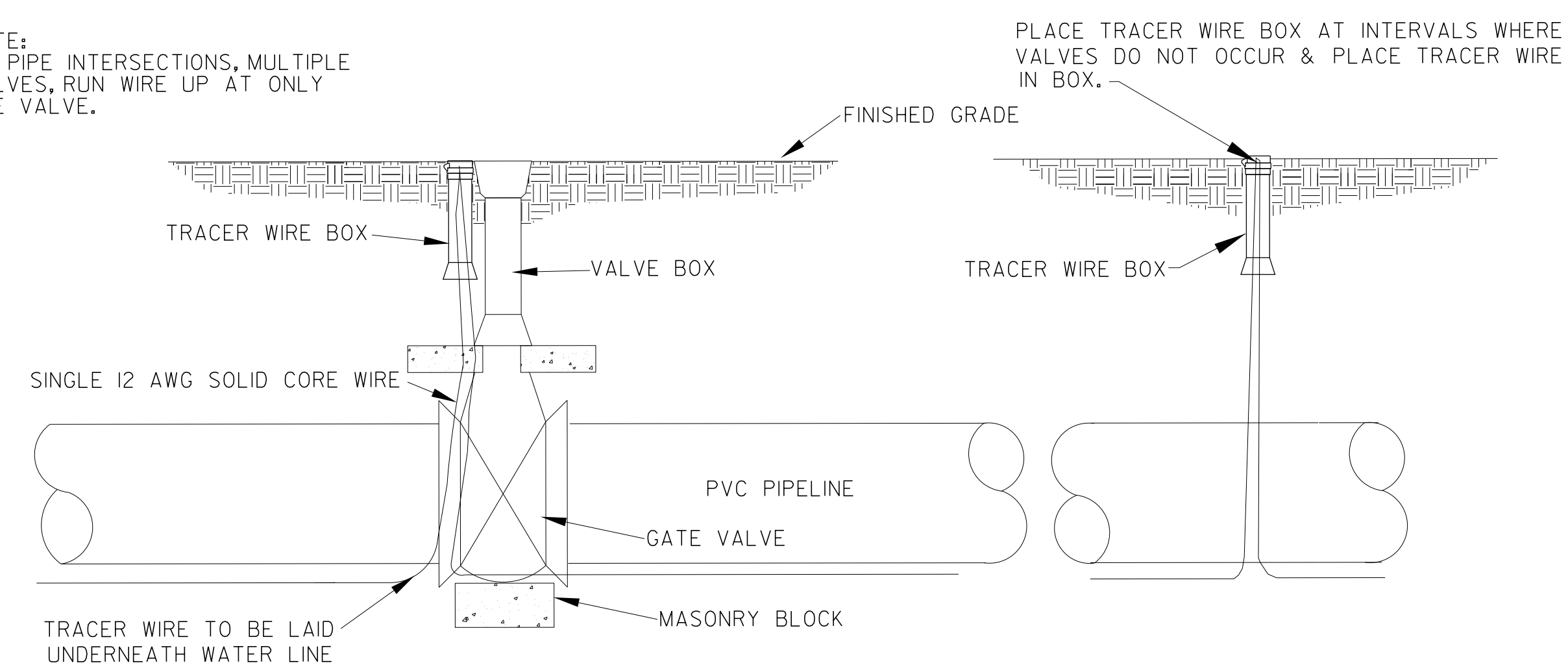
THRUST BLOCKING
NOT TO SCALE

UTILITY CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL
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PIPE RESTRAINT CHARTS

Horizontal & Vertical Up Bends			Vertical Down Bends			Tees, Reducers, Caps		
Pipe Size (inch)	Bend Angle	Pipeline Restraint Req. (feet)	Pipe Size (inch)	Bend Angle	Pipeline Restraint Req. (feet)	Fitting Type	Size (inch)	Pipeline Restraint Req. (feet)
4"	11.25	2	4"	11.25	4	Tee	4	35
	22.5	5		22.5	8		6	32
	30	6		30	11		8	70
	45	10		45	17		10	85
	60	14		60	24		12	101
	90	24		90	41		15	131
6"	11.25	3	6"	11.25	8	Reducer	24	186
	22.5	7		22.5	12		6x4	30
	30	9		30	16		8x6	32
	45	14		45	24		10x4	74
	60	19		60	34		10x6	58
	90	33		90	59		10x8	31
8"	11.25	4	8"	11.25	7	Cap	16x4	128
	22.5	9		22.5	15		16x6	117
	30	11		30	20		16x8	101
	45	18		45	31		16x10	82
	60	25		60	44		24x4	187
	90	43		90	76		24x6	180
10"	11.25	5	10"	11.25	9	24x8	170	
	22.5	10		22.5	18	24x10	160	
	30	14		30	25	24x12	143	
	45	21		45	38	24x16	106	
	60	30		60	53	4	41	
	90	52		90	92	6	59	
12"	11.25	6	12"	11.25	11	8	76	
	22.5	12		22.5	21	10	92	
	30	16		30	29	12	107	
	45	25		45	44	15	136	
	60	35		60	62	24	194	
	90	60		90	107			
16"	11.25	7	16"	11.25	14			
	22.5	13		22.5	28			
	45	27		45	58			
	90	65		90	139			
24"	11.25	9	24"	11.25	20			
	22.5	18		22.5	39			
	45	37		45	81			
	90	90		90	194			

NOTE:
AT PIPE INTERSECTIONS, MULTIPLE VALVES, RUN WIRE UP AT ONLY ONE VALVE.



- NOTES:
1. PLACE TRACER WIRE IN TRACER WIRE BOX AS SHOWN.
 2. NO UNDERGROUND SPLICING WILL BE ALLOWED. DO NOT SPLICE WIRE WHEN BEGINNING A NEW SPOOL. INSTEAD INSTALL A TRACER WIRE BOX AND ATTACH EACH WIRE TO THE BOX.
 3. TRACER WIRE BOXES SHALL BE PLACED NO FARTHER THAN 400' APART

TYPICAL TRACER WIRE INSTALLATION DETAIL
NOT TO SCALE

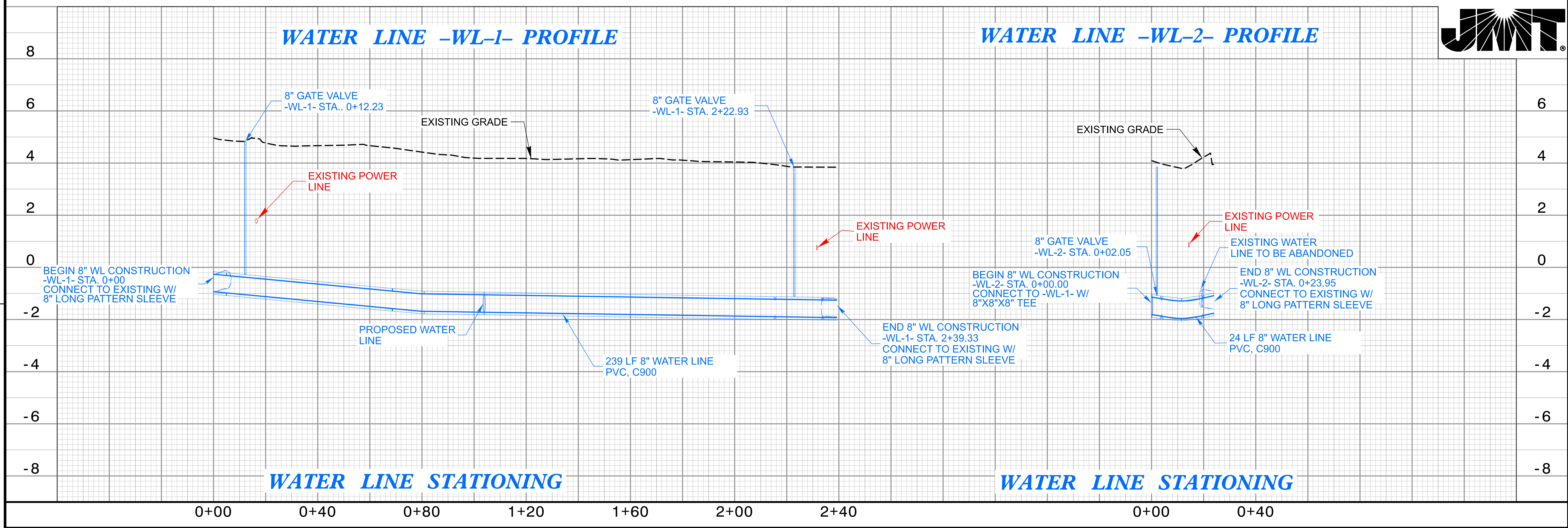
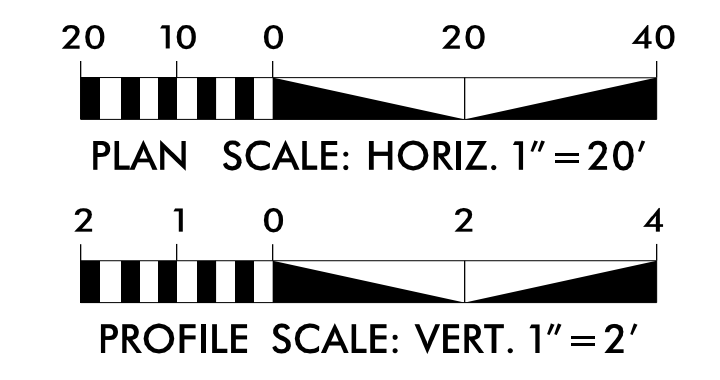
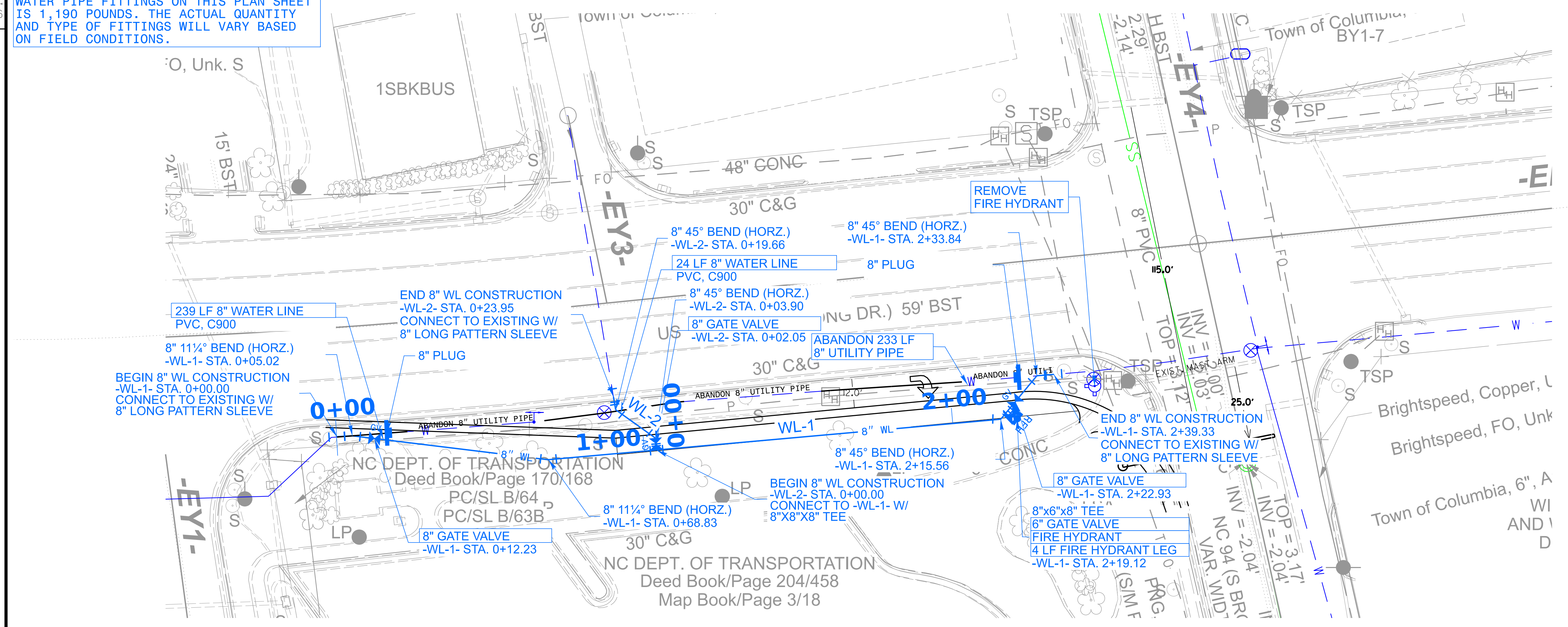


PROJECT REFERENCE NO. US64-NC94	SHEET NO. UC-4A
DESIGNED BY: ELM	
DRAWN BY: ELM	
CHECKED BY: MUP	
APPROVED BY: MUP	
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151
UTILITY CONSTRUCTION PLANS ONLY	
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THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1,190 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

8/17/99

REVISIONS



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	80121	1	5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY TYRRELL
PROJECT DESCRIPTION INTERSECTION OF US 64 AND
NC 94 IN COLUMBIA, SIGNAL POLE ON
SOUTHWEST CORNER
SITE DESCRIPTION METAL SIGNAL POLE WITH
MAST ARM

CONTENTS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	BORE LOG
5	STANDARD FOUNDATION SELECTION FORM

REFERENCE: N/A

PROJECT: 80121

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO PERFORM INDEPENDENT SUBSURFACE INVESTIGATIONS AND MAKE INTERPRETATIONS AS NECESSARY TO CONFIRM CONDITIONS ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

NOTES:

- THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
- BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL

S.N. ZIMARINO

C.M. WALKER

J.M. EDMONDSON

INVESTIGATED BY T.C. BOTTOMS

DRAWN BY T.W. MILLER

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE FEBRUARY 2024



DocuSigned by:

Tyler Bottoms

02/08/2024

48A2D3BD885440

DATE

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

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT**

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS																																																																																																																																																																			
<p>SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (ASTM T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i></p>										<p>WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.</p>										<p>HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:</p>										<p>ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>																																																																																																																																																																			
<p>SOIL LEGEND AND AASHTO CLASSIFICATION</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>GENERAL CLASS.</th> <th colspan="5">GRANULAR MATERIALS (≤ 35% PASSING #200)</th> <th colspan="5">SILT-CLAY MATERIALS (> 35% PASSING #200)</th> <th colspan="5">ORGANIC MATERIALS</th> </tr> <tr> <th>GROUP CLASS.</th> <th>A-1</th> <th>A-1-a</th> <th>A-1-b</th> <th>A-2</th> <th>A-2-4</th> <th>A-2-5</th> <th>A-2-6</th> <th>A-2-7</th> <th>A-4</th> <th>A-5</th> <th>A-6</th> <th>A-7</th> <th>A-1, A-2</th> <th>A-3</th> <th>A-4, A-5</th> <th>A-6, A-7</th> </tr> </thead> <tbody> <tr> <td>SYMBOL</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>% PASSING #10 #200</td> <td>50 MX</td> <td>30 MX</td> <td>15 MX</td> <td>25 MX</td> <td>50 MX</td> <td>10 MN</td> <td>35 MX</td> <td>35 MX</td> <td>35 MX</td> <td>35 MX</td> <td>35 MX</td> <td>35 MX</td> <td>35 MX</td> <td>35 MX</td> <td>35 MX</td> <td>35 MX</td> </tr> <tr> <td>MATERIAL PASSING #40 #200</td> <td>LL</td> <td>PI</td> <td>6 MX</td> <td>NP</td> <td>40 MX</td> <td>41 MN</td> <td>40 MX</td> <td>41 MN</td> <td>40 MX</td> <td>41 MN</td> <td>40 MX</td> <td>41 MN</td> <td>40 MX</td> <td>41 MN</td> <td>40 MX</td> <td>41 MN</td> </tr> <tr> <td>GROUP INDEX</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>4 MX</td> <td>8 MX</td> <td>12 MX</td> <td>16 MX</td> <td>16 MX</td> <td>16 MX</td> <td>16 MX</td> <td>16 MX</td> <td>16 MX</td> <td>16 MX</td> <td>16 MX</td> </tr> <tr> <td>USUAL TYPES OF MAJOR MATERIALS</td> <td>STONE FRAGS. GRAVEL, AND SAND</td> <td>FINE SAND</td> <td>SILTY OR CLAYEY GRAVEL AND SAND</td> <td>SILTY SOILS</td> <td>CLAYEY SOILS</td> <td colspan="5"></td> <td colspan="5">SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER</td> </tr> <tr> <td>GEN. RATING AS SUBGRADE</td> <td colspan="5">EXCELLENT TO GOOD</td> <td colspan="5">FAIR TO POOR</td> <td>FAIR TO POOR</td> <td>POOR</td> <td colspan="4">UNSATURABLE</td> </tr> </tbody> </table> <p>PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30</p>										GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)					SILT-CLAY MATERIALS (> 35% PASSING #200)					ORGANIC MATERIALS					GROUP CLASS.	A-1	A-1-a	A-1-b	A-2	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7	A-1, A-2	A-3	A-4, A-5	A-6, A-7	SYMBOL																	% PASSING #10 #200	50 MX	30 MX	15 MX	25 MX	50 MX	10 MN	35 MX	35 MX	35 MX	35 MX	35 MX	35 MX	35 MX	35 MX	35 MX	35 MX	MATERIAL PASSING #40 #200	LL	PI	6 MX	NP	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	GROUP INDEX	0	0	0	0	0	4 MX	8 MX	12 MX	16 MX	16 MX	16 MX	16 MX	16 MX	16 MX	16 MX	16 MX	USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND	FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND	SILTY SOILS	CLAYEY SOILS						SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER					GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD					FAIR TO POOR					FAIR TO POOR	POOR	UNSATURABLE				<p>ANGULARITY OF GRAINS</p> <p>THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.</p>										<p>WEATHERED ROCK (WR)</p> <p>NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.</p>										<p>CRSTALLINE ROCK (CR)</p> <p>FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.</p>										<p>NON-CRSTALLINE ROCK (NCR)</p> <p>FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.</p>										<p>COASTAL PLAIN SEDIMENTARY ROCK (CP)</p> <p>COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.</p>									
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<p>INDURATION</p> <p>FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.</p> <p>FRIABLE - RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED - GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED - GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED - SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>										<p>BENCH MARK:</p> <p style="text-align: right;">ELEVATION: _____ FEET</p>																																																																																																																																																																																							
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GEOTECHNICAL BORING REPORT

BORE LOG

WBS 80121		TIP N/A		COUNTY TYRRELL		GEOLOGIST Zimarino, S. N.										
SITE DESCRIPTION Metal Signal Pole on Southwest Corner of the Intersection of US 64 and NC 94 in Columbia							GROUND WTR (ft)									
BORING NO. MP-1		STATION N/A		OFFSET N/A		ALIGNMENT N/A										
COLLAR ELEV. 3.6 ft		TOTAL DEPTH 31.5 ft		NORTHING 799,623		EASTING 2,813,565										
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 90% 11/21/2022				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER Walker, C. M.		START DATE 02/06/24		COMP. DATE 02/06/24		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			ELEV. (ft)	DEPTH (ft)		
5																
	3.6	0.0												3.6	GROUND SURFACE	0.0
	2.1	1.5	WOH	5	8									1.1	ROADWAY EMBANKMENT TAN AND BROWN SILTY SAND, MOIST	2.5
0	-0.4	4.0		3	2	5									UNDIVIDED COASTAL PLAIN GRAY SILTY SAND, MOIST TO SATURATED	
	-2.9	6.5		4	6	5								-2.4	GRAY AND TAN SILTY SAND, SATURATED	6.0
-5	-5.4	9.0		1	5	5										
														-8.4	GRAY SILTY CLAY, WET	12.0
-10	-10.4	14.0		1	0	1										
														-13.4	GRAY MICACEOUS SILTY SAND, SATURATED	17.0
-15	-15.4	19.0		3	3	3										
														-19.4	GRAY SILTY CLAY, WET	23.0
-20	-22.4	26.0		1	1	1										
														-24.9	GRAY SILTY SAND, SATURATED	28.5
-25	-26.4	30.0		5	6	7										
														-27.9	Boring Terminated at Elevation -27.9 ft IN MEDIUM DENSE SILTY SAND	31.5

NCDOT BORE DOUBLE 80121.1.1_GEO_MSP.GPJ NC_DOT.GDT 2/8/24



**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING UNIT**

**METAL POLE
STANDARD FOUNDATION
SELECTION FORM**

Revised 11/29/05 (Geotechnical Support Services)

SIGNAL INVENTORY NO.: 80121 **DATE:** 02/08/24

INTERSECTION OF: US 64 and NC 94

BORING LABEL: MP-1 **COUNTY:** TYRRELL

RESIDENT OR DIVISION ENGINEER: JOHN S. ABEL

CONTRACTOR NAME: NCDOT GEOTECHNICAL ENGINEERING UNIT

BORING INFORMATION:

SPT DEPTH	1 ft (0.3 m)	2.5 ft (0.8 m)	5 ft (1.5 m)	7.5 ft (2.3 m)	10 ft (3.0 m)	15 ft (4.6 m)	20 ft (6.1 m)	26 ft (7.9 m)
N-VALUE MIN = 0 MAX = 50	13	15	7	11	10	1	6	2

$N_{AVG} = \frac{(N@1' + N@2.5' + \dots + N@Deepest\ Boring\ Depth^*)}{\text{Total Number of N-values}} = 8.1$

$Y = (N@1')^2 + (N@2.5')^2 + \dots + (N@Deepest\ Boring\ Depth^*)^2 = 705$

$Z = (N@1' + N@2.5' + \dots + N@Deepest\ Boring\ Depth^*) = 65$

*Note: Do not include the N-value at the deepest boring depth if the boring is discontinued because one of the following occurs:

- A total of 100 blows have been applied in any 2 consecutive 6-in. (0.15-m) intervals.
- A total of 50 blows have been applied with < 3-in. (.08-m) penetration.

$N_{STD\ DEV} = \left[\frac{(\text{Total Number of N-values} \times Y) - Z^2}{(\text{Total Number of N-values}) \times (\text{Total Number of N-values} - 1)} \right]^{0.5} = 5.0$

Design N-value = $N_{AVG} - (N_{STD\ DEV} \times 0.45)$ = **5.9**

IS **Design N-value** or THE AVERAGE OF THE N-VALUES AT 1 ft, 2.5 ft, 5 ft and 7.5 ft (0.3 m, 0.8 m, 1.5 m and 2.3 m) LESS THAN 4? Yes No

If yes, standard drilled pier foundation from Foundation Selection Table on plans can not be used.

DESCRIPTION OF SOIL: SILTY SAND, AND SILTY CLAY

DRILLED PIER LENGTH (L): ft **From Foundation Selection Table on Plans**

DEPTH OF BORING: 31.5 ft

IS DRILLED PIER LENGTH, L, GREATER THAN DEPTH OF BORING? Yes No

If yes, standard drilled pier foundation from Foundation Selection Table on plans can not be used.

CONTRACTOR REPRESENTATIVE SIGNATURE: _____

DIVISION REPRESENTATIVE SIGNATURE: _____

PROJECT NO.	SHEET NO.	TOTAL NO.
80121		

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	BEGIN MP	END MP	0000100000-N	0043000000-N	0057000000-E	0195000000-E	0196000000-E	1330000000-E	1491000000-E	1503000000-E	1523000000-E	1575000000-E	1705000000-E	2044000000-E	2549000000-E	2591000000-E	2605000000-N
														MOBILIZATION	GRADING	UNDERCUT EXCAVATION	SELECT GRANULAR MATERIAL	GEOTEXTILE FOR SOIL STABILIZATION	INCIDENTAL MILLING	ASPHALT CONC BASE COURSE, B25.0C	ASPHALT CONC INTERMEDIATE COURSE, I19.0C	ASPHALT CONC SURFACE COURSE, S9.5C	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT (FULL DEPTH)	6" PERFORATED SUBDRAIN PIPE	2'-6" CONCRETE CURB & GUTTER	4" CONCRETE SIDEWALK	CONCRETE CURB RAMPS
										MI	FT			LS	LS	CY	CY	SY	SY	TONS	TONS	TONS	TONS	TONS	LF	LF	SY	EA
80121	Tyrrell	1	US-64	FROM LUDINGTON DRIVE TO NC 94	1	5	MU	NO	NO	0.068	59	0	0.16	1	1	300	300	300	1,050	100	60	125	15	20	200	300	30	1
TOTAL FOR PROJ NO. 80121										0.068				1	300	300	300	1,050	100	60	125	15	20	200	300	30	1	
GRAND TOTAL										0.068				1	300	300	300	1,050	100	60	125	15	20	200	300	30	1	

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	BEGIN MP	END MP	2830000000-N	2845000000-N	4413000000-E	4457000000-N	4688000000-E	4709000000-E	4725000000-E				4810000000-E	4845000000-N			4895000000-N	6000000000-E	6071012000-E	6084000000-E		
												ADJUSTMENT OF MANHOLES	ADJUSTMENT OF METER BOXES OR VALVE BOXES	WORK ZONE ADVANCE / GENERAL WARNING SIGNING	TEMPORARY TRAFFIC CONTROL (SP)	THERMOPLASTIC PAVEMENT MARKING LINES (6", 90 MILS) WHITE	THERMO PAVEMENT MARKING LINES (24" 90 MILS)	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS), RT ARROW	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS), STR ARROW	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS), STR & RT ARROW	PAINT PAVEMENT MARKING LINES (4") WHITE	PAINT PAVEMENT MARKING SYMBOL (RT ARROW)	PAINT PAVEMENT MARKING SYMBOL (STR ARROW)	PAINT PAVEMENT MARKING SYMBOL (STR & RT ARROW)	GENERIC PAVEMENT MARKING ITEM (POLYCARBONATE H-SHAPED MARKERS)	TEMPORARY SILT FENCE	COIR FIBER WATTLE	SEEDING & MULCHING			
										MI	FT			SF	LS	LF	LF	EA	EA	EA	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
80121	Tyrrell	1	US-64	FROM LUDINGTON DRIVE TO NC 94	1	5	MU	0.068	59	0	0.16	3	3	240	1	200	140	3	2	1	200	3	2	1	25	300	60	0.25			
TOTAL FOR PROJ NO. 80121										0.068				3	3	240	1	200	140	3	2	1	200	3	2	1	25	300	60	0.25	
GRAND TOTAL										0.068				3	3	240	1	200	140	3	2	1	200	3	2	1	25	300	60	0.25	

UTILITIES SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	BEGIN MP	END MP	5325800000-E	5329000000-E	5540000000-E	5546000000-E	5672000000-N	5673000000-E	5801000000-E	5815500000-N	7948000000-N
														8" WATER LINE PVC C900	DUCTILE IRON WATER PIPE FITTINGS	6" VALVE	8" VALVE	RELOCATE FIRE HYDRANT	FIRE HYDRANT LEG	ABANDON 8" UTILITY PIPE	REMOVE FIRE HYDRANT	TRAFFIC SIGNAL REMOVAL *FOUNDATION ONLY
										MI	FT			LF	LB	EA	EA	EA	LF	LF	EA	EA
80121	Tyrrell	1	US-64	FROM LUDINGTON DRIVE TO NC 94	1	5	MU	NO	NO	0.068	59	0	0.16	263	1,190	1	3	1	4	233	1	1
TOTAL FOR PROJ NO. 80121										0.068				263	1,190	1	3	1	4	233	1	1
GRAND TOTAL										0.068				263	1,190	1	3	1	4	233	1	1