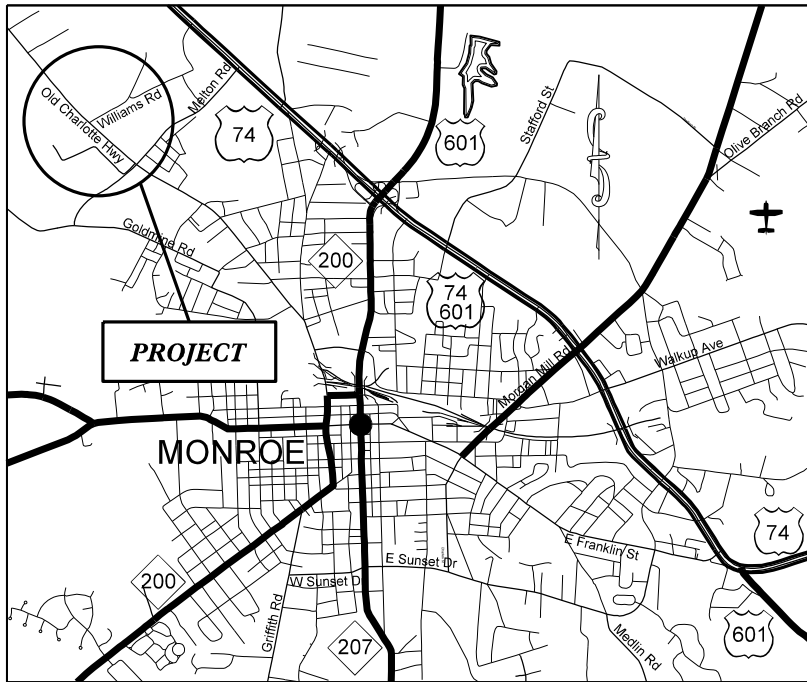


PROJECT: 44856.3.42 TIP: W-5710AN

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	44856.3.42	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
44856.1.42	HSIP-1009(024)	P.E.	
44856.2.42	HSIP-1009(024)	R/W	
44856.3.42	HSIP-1009(024)	CONST.	

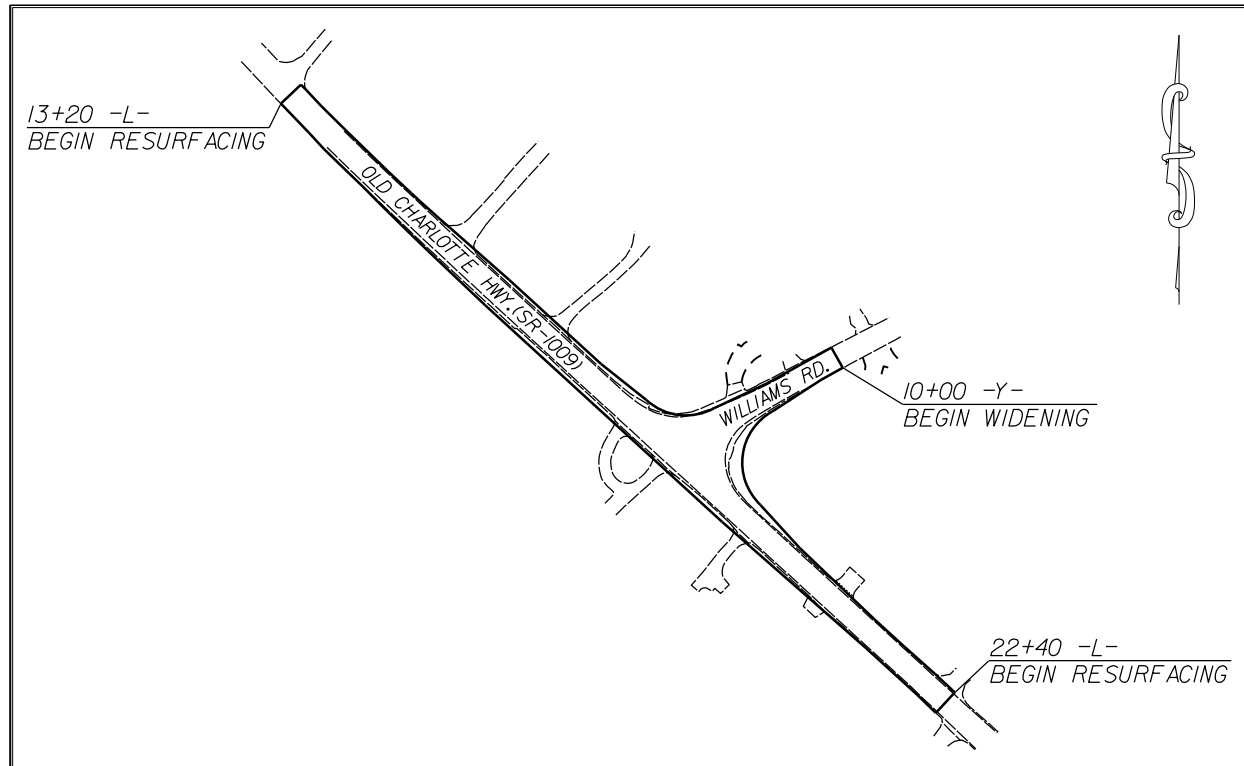


VICINITY MAP NOT TO SCALE

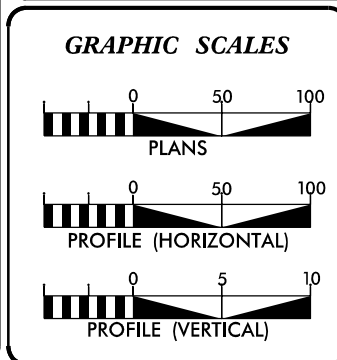
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
UNION COUNTY

LOCATION: INTERSECTION OF OLD CHARLOTTE HWY. (SR-1009)
AND WILLIAMS RD.

TYPE OF WORK: GRADING, PAVING, MILLING, PAVEMENT REMOVAL, DRAINAGE,
THERMOPLASTIC PAVEMENT MARKINGS, AND SIGNAL
INSTALLATION



CLEARING ON THIS PROJECT SHALL BE TO THE LIMITS ESTABLISHED BY METHOD III AS DESCRIBED IN THE NCDOT STANDARD DRAWINGS



DESIGN DATA

ADT	=	
ADT	=	
DHV	=	%
D	=	%
T	=	%
V	=	MPH

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT 44856.3.42	=	0.17 MILES
TOTAL LENGTH OF STATE PROJECT 44856.3.42	=	0.17 MILES

Prepared In the Office of:
DIVISION OF HIGHWAYS
DIVISION TEN
DIVISION DESIGN / CONSTRUCT UNIT

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 9, 2023	DONALD HARWARD PROJECT ENGINEER
LETTING DATE: DECEMBER 6, 2023	TRAVIS LOWDER PROJECT DESIGN ENGINEER



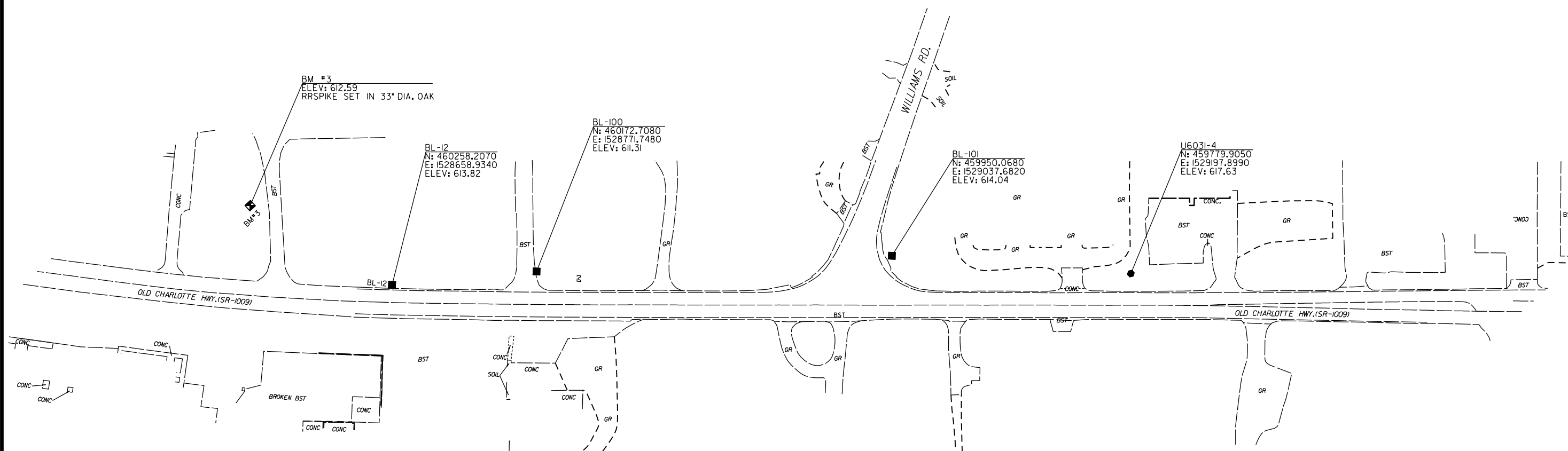
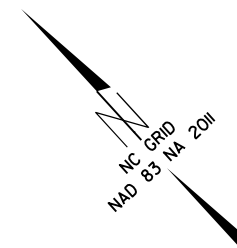
ROADWAY DESIGN ENGINEER
08/30/2023

DocuSigned by:
Travis Preslow

SIGNATURE: 53C1AC7A1FF47B...

SURVEY CONTROL SHEET

PROJECT NO.	SHEET NO.
44856.3.42	IA
F.A. PROJECT NO. HSIP-100910241	



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "190-HLZ" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 458105.433(±) EASTING: 1536443.093(±) ELEVATION: 615.47(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999857653
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "190-HLZ" TO -L- STATION IS

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
U6031-4		459779.9050	1529197.8990	617.63	21+40.77	30.99 LT
BL-101		459950.0680	1529037.6820	614.04	19+07.77	48.37 LT
BL-100		460172.7080	1528771.7480	611.30	15+61.27	33.22 LT
BL-12		460258.2070	1528658.9340	613.82	14+19.62	18.09 LT

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED BY THE DIVISION 10 DDC UNIT. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE DIVISION 10 DDC UNIT.

LEFT TURN LANE WITH SIGNAL
ON OLD CHARLOTTE RD. (SR-1009)
AT WILLIAMS RD.

SCALE	1"=50'		REVISIONS
DATE	12-2020		
DWG. BY	CEB		
DESIGN BY	TBL		
APPROVED	JDH		

PROJECT NO.	SHEET NO.
44856.3.42	1B
F.A. PROJECT NO. HSP-1009(024)	

RIGHT OF WAY, EASEMENT AND PROPOSED ALIGNMENT SHEET

L			
TYPE	STATION	NORTH	EAST
POT	10+00.00	460557.2985	1528365.9015
PC	11+42.43	460448.5502	1528457.8737
PT	15+33.06	460167.2325	1528728.5110
PC	20+59.22	459812.1728	1529116.8139
PT	22+22.98	459701.3992	1529237.4291
POT	28+36.51	459285.4095	1529688.3963

Y			
TYPE	STATION	NORTH	EAST
POT	9+00.00	460093.6707	1529225.8391
POT	11+96.63	459949.5521	1528966.5722

ROW MARKER IRON PIN & CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
L	15+68.41	-40.00	460172.8976	1528781.5915
L	15+68.49	-30.77	460166.0261	1528775.4266
L	16+00.00	40.00	460092.5389	1528750.9221
L	16+00.00	29.27	460100.4554	1528758.1608
L	19+48.00	-40.00	459916.7442	1529061.7278
L	20+63.75	29.85	459787.0915	1529100.0149
L	20+63.83	40.00	459779.5458	1529093.2194
L	21+47.58	-35.00	459778.2425	1529205.6331
L	21+47.59	-30.43	459774.8760	1529202.5470

ROW MARKER IRON PIN & CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
Y	11+00.00	-29.30	459970.8924	1529065.2655
Y	11+50.00	31.29	459999.5547	1528992.1327

ROW MARKER PERMANENT EASEMENT-E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	16+50.00	40.00	460058.7985	1528787.8218
L	16+50.00	59.00	460044.7766	1528775.0004
L	18+09.24	59.00	459937.3225	1528892.5150
L	18+39.34	59.00	459917.0092	1528914.7301
L	18+40.52	45.00	459926.5457	1528925.0474
L	18+51.00	45.00	459919.4715	1528932.7839
L	18+51.00	40.00	459923.1615	1528936.1580

I, Barry D. Davis, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item, R/W and Easement Staking, was performed under my responsible charge meeting NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures as of 2017. Those standards can be found at <https://connect.ncdot.gov/resources/Location/Pages/>.

I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from survey control established under my supervision; that the depicted property data shown herein were surveyed under my supervision; and these monuments denote the right of way and easement boundaries at the time of staking which may be subject to change due to right of way revisions (see deeds for final determination).

Witness my signature, registration number and seal this 24th day of Oct 2022

Barry D. Davis, DocuSigned by: PLS# L-4384
Professional Land Surveyor
Barry Davis
0E2AAE4F48174DC...

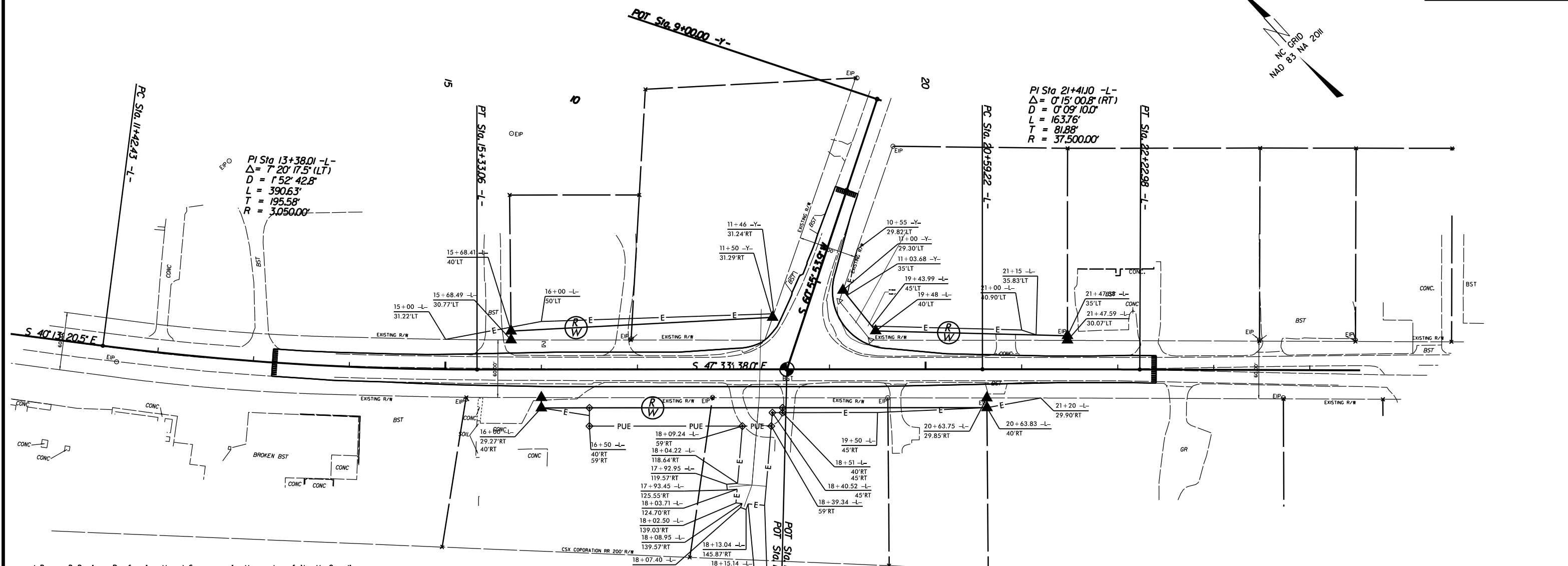
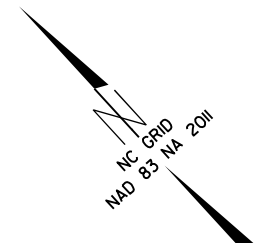


NOTES:

- PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
- THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED BY THE DIVISION IO DDC UNIT. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE DIVISION IO DDC UNIT.

LEFT TURN LANE WITH SIGNAL
ON OLD CHARLOTTE RD.(SR-1009)
AT WILLIAMS RD.

SCALE	N/A		REVISIONS
DATE	3-2021		
DWG. BY	JCB		
DESIGN BY	TBL		
APPROVED	JDH		




I, Barry D. Davis, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item, R/W and Easement Staking, was performed under my responsible charge meeting NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures as of 2017. Those standards can be found at <https://connect.ncdot.gov/resources/Location/Pages/>.

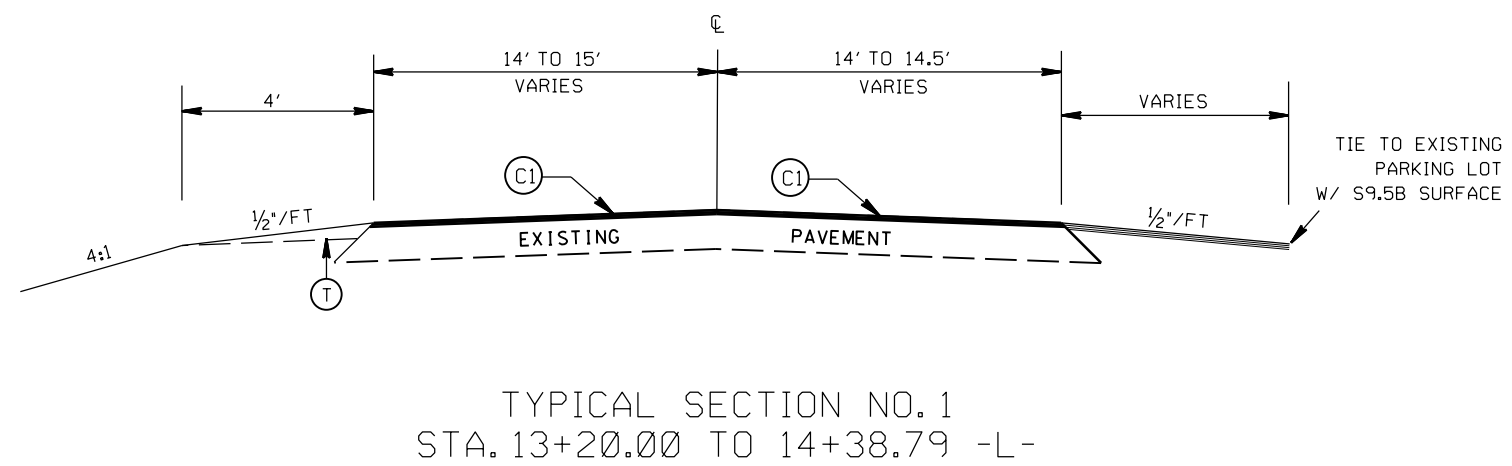
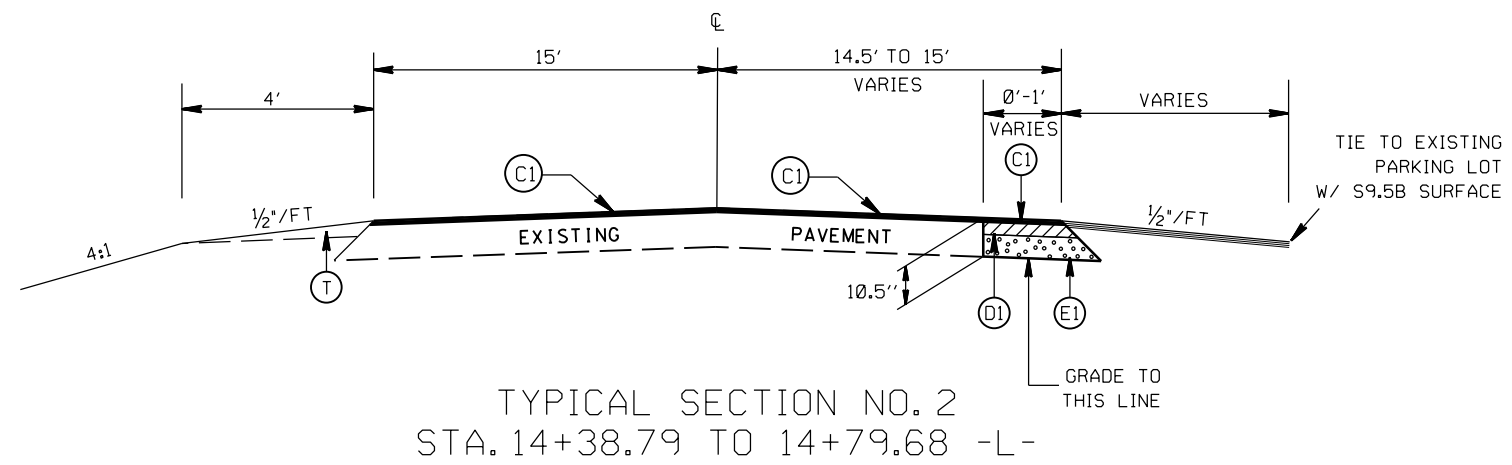
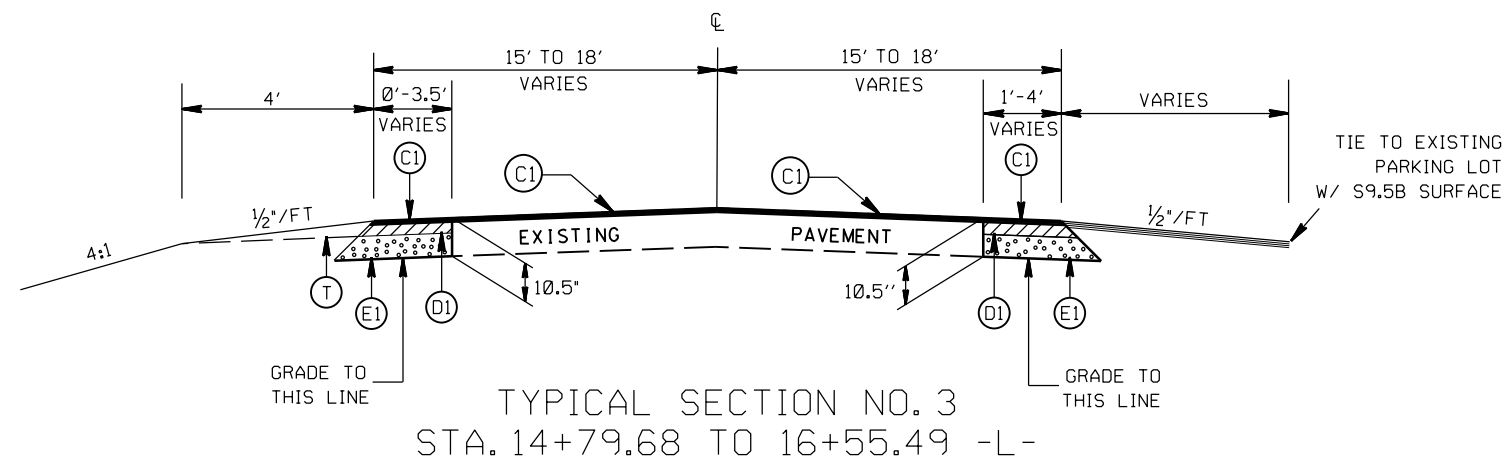
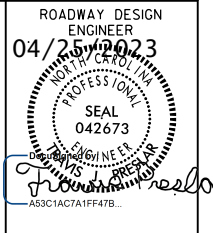
I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from survey control established under my supervision; that the depicted property data shown herein were surveyed under my supervision; and these monuments denote the right of way and easement boundaries at the time of staking which may be subject to change due to right of way revisions (see deeds for final determination).

Witness my signature, registration number and seal this 24th day of Oct 2022

Barry D. Davis,
Professional Land Surveyor
DocuSigned by:
Barry Davis
PLS# L-4384
0E2AAE4F48174DC...



LEFT TURN LANE WITH SIGNAL ON OLD CHARLOTTE RD. (SR-1009) AT WILLIAMS RD.			REVISIONS
SCALE	1"=50'		
DATE	12-2020		
DWG. BY	CEB		
DESIGN BY	TBL		
APPROVED	JDH		

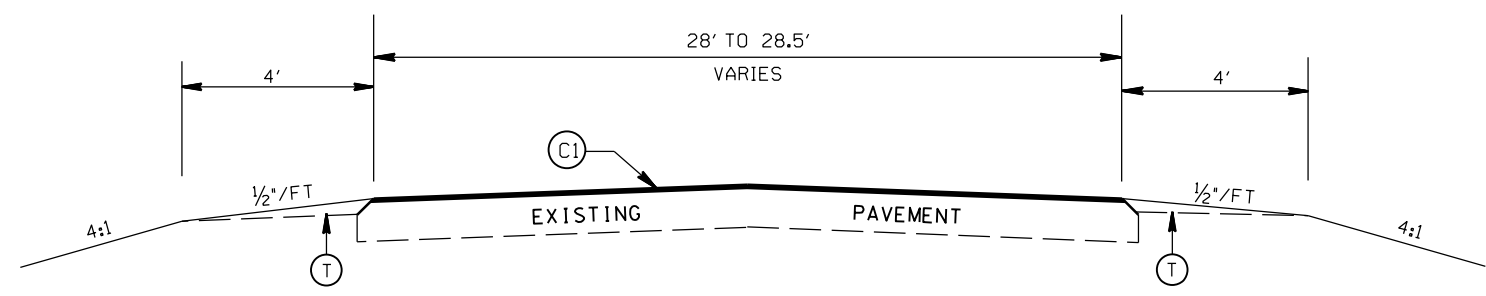
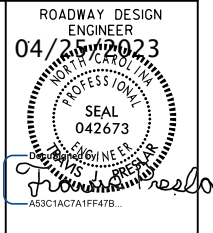


PAVEMENT SCHEDULE

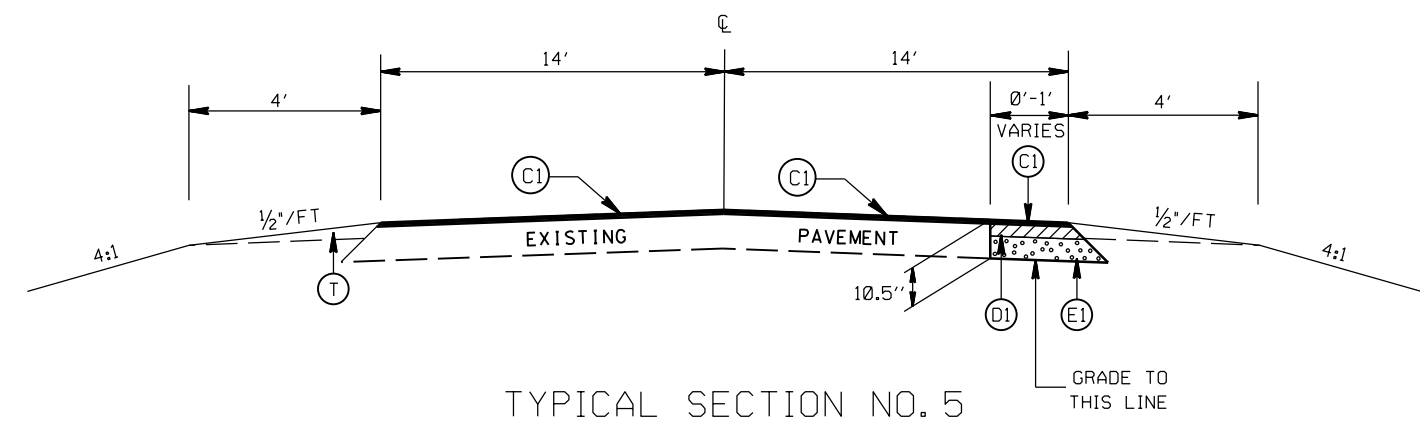
(C1)	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
(D1)	PROP. APPROX. 4.0" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
(E1)	PROP. APPROX. 5.0" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
(T)	EARTH MATERIAL

LEFT TURN LANE WITH SIGNAL
ON OLD CHARLOTTE RD. (SR-1009)
AT WILLIAMS RD.

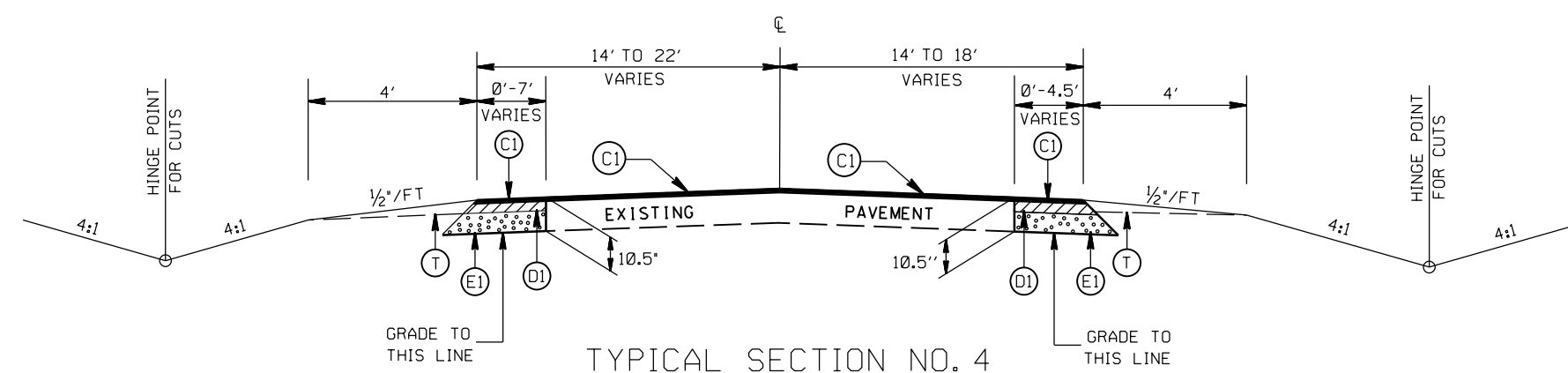
SCALE	N/A		REVISIONS
DATE	11-2020		
DWG. BY	DLS		
DESIGN BY	TBL		
APPROVED	JDH		



TYPICAL SECTION NO. 6
STA. 21+41.51 TO 22+40.00 -L-



TYPICAL SECTION NO. 5
STA. 21+29.88 TO 21+41.51 -L-



TYPICAL SECTION NO. 4
STA. 16+55.49 TO 21+29.88 -L-

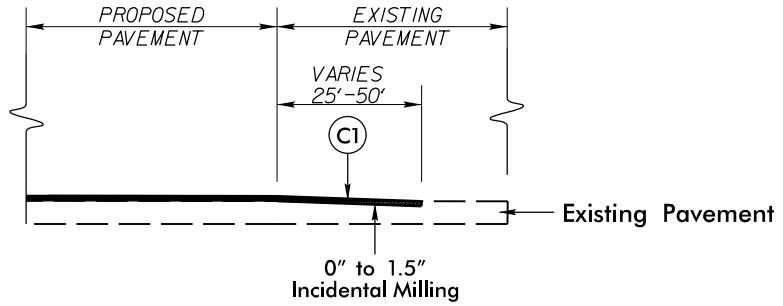
PAVEMENT SCHEDULE

(C1)	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
(D1)	PROP. APPROX. 4.0" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
(E1)	PROP. APPROX. 5.0" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
(T)	EARTH MATERIAL

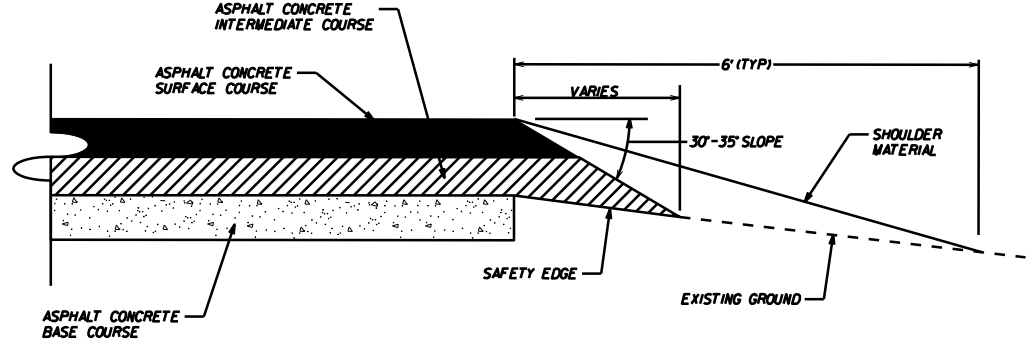
LEFT TURN LANE WITH SIGNAL
ON OLD CHARLOTTE RD. (SR-1009)
AT WILLIAMS RD.

SCALE	r=50'		REVISIONS
DATE	11-2020		
DWG. BY	DLS		
DESIGN BY	TBL		
APPROVED	JDH		

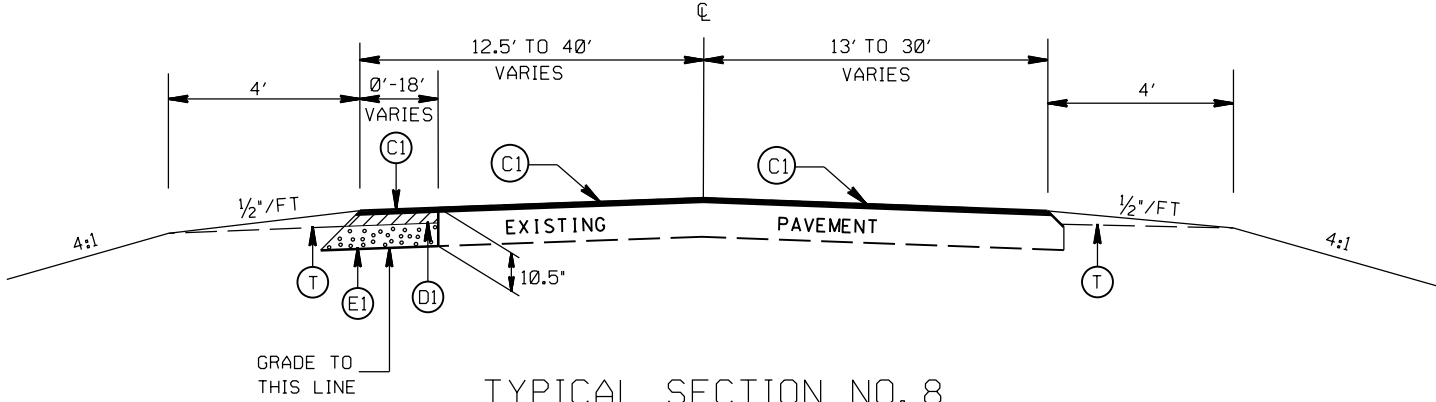
ROADWAY DESIGN ENGINEER
 04/25/2023
 PROFESSIONAL SEAL
 042673
 J. PRESLEY
 A53C1ACT1FF47B...



INCIDENTAL MILLING DETAIL
 EXISTING ROAD TIE-IN
 PROJECT TIE-INS



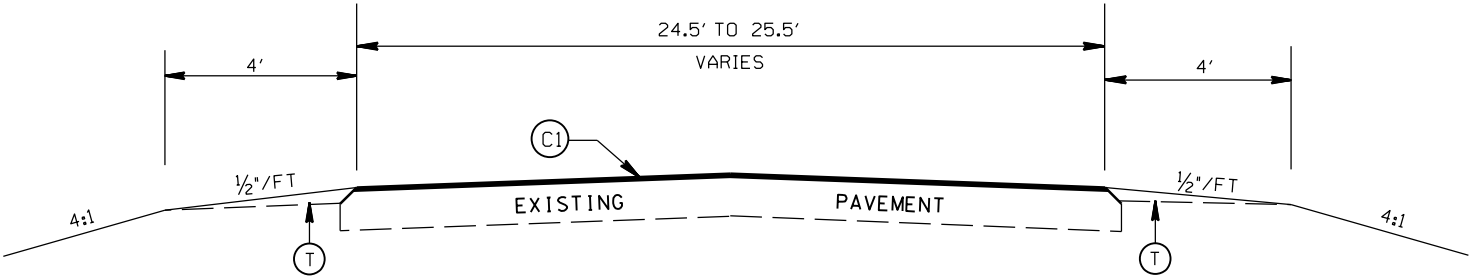
SAFETY EDGE DETAIL



TYPICAL SECTION NO. 8
 STA. 10+25.00 TO 11+73.59 -Y-

PAVEMENT SCHEDULE

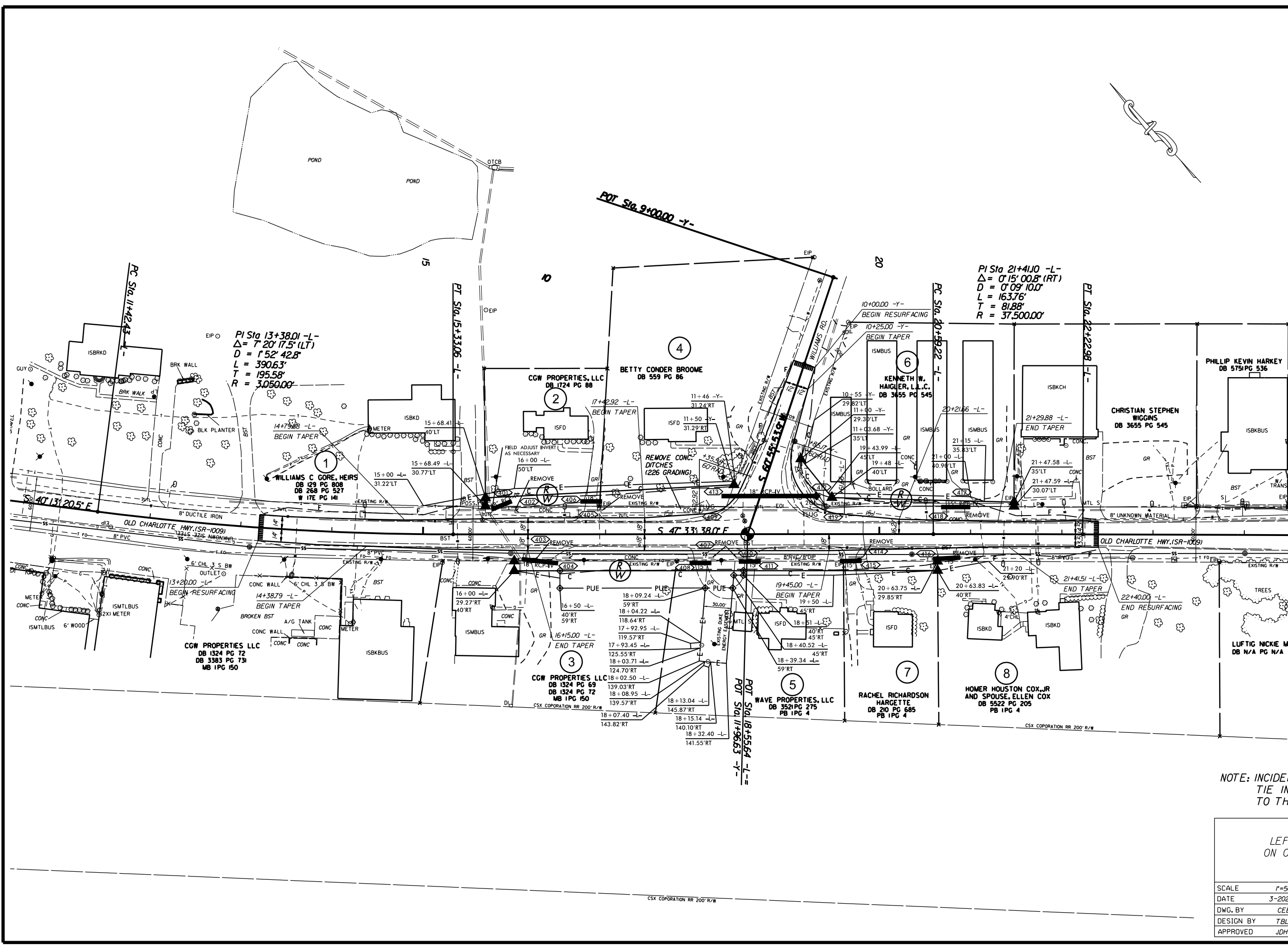
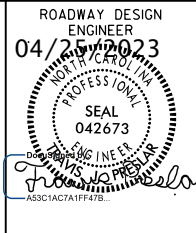
C1	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D1	PROP. APPROX. 4.0" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 5.0" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
T	EARTH MATERIAL



TYPICAL SECTION NO. 7
 STA. 10+00.00 TO 10+25.00 -Y-

LEFT TURN LANE WITH SIGNAL
 ON OLD CHARLOTTE RD. (SR-1009)
 AT WILLIAMS RD.

SCALE	1"=50'		REVISIONS
DATE	11-2020		
DWG. BY	DLS		
DESIGN BY	TBL		
APPROVED	JDH		




PI Sta 21+41.0 -L-
 $\Delta = 0'15'00.8''$ (RT)
 $D = 0'09'10.0''$
 $L = 163.76'$
 $T = 81.88'$
 $R = 37,500.00'$

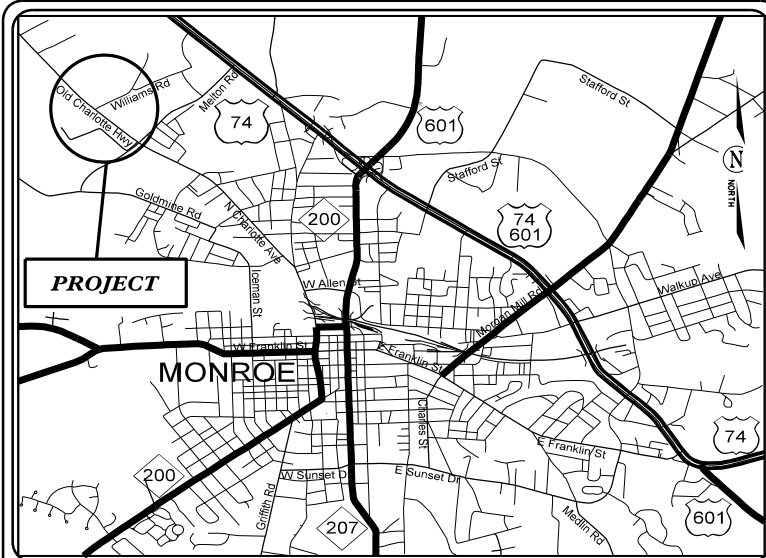
PI Sta 13+38.01 -L-
 $\Delta = 7'20'17.5''$ (LT)
 $D = 1'52'42.8''$
 $L = 390.63'$
 $T = 195.58'$
 $R = 3,050.00'$

NOTE: INCIDENTAL MILL APPROX. 25' AT EACH TIE IN TO PROVIDE A SMOOTH TRANSITION TO THE EXISTING ASPHALT PAVEMENT.

LEFT TURN LANE WITH SIGNAL ON OLD CHARLOTTE RD. (SR-1009) AT WILLIAMS RD.

SCALE	1"=50'		REVISIONS
DATE	3-2022		
DWG. BY	CEB		
DESIGN BY	TBL		
APPROVED	JDH		

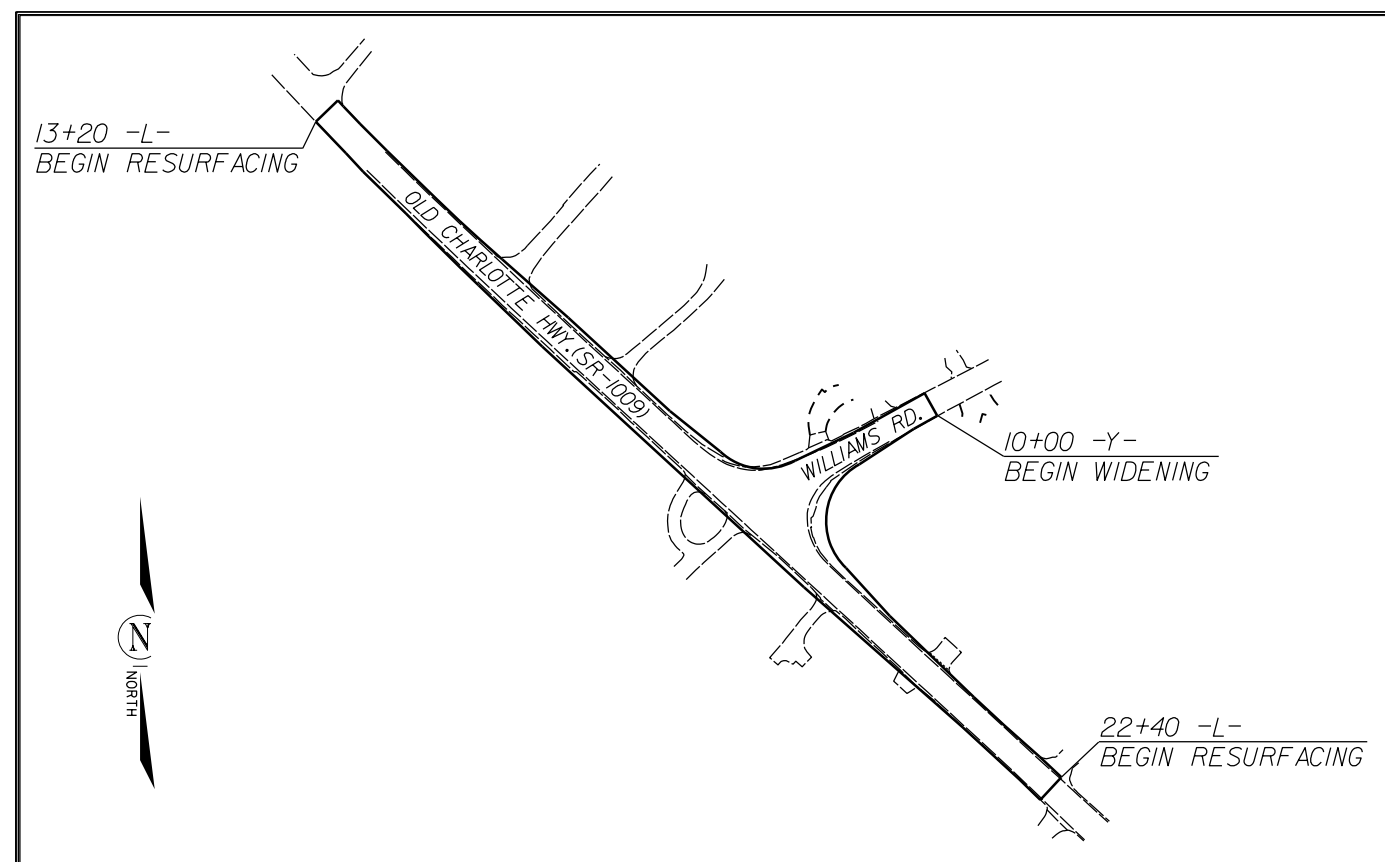
TIP PROJECT: W-5710AN



VICINITY MAP
NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
**PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL**
UNION COUNTY

LOCATION: OLD CHARLOTTE RD. (SR-1009) AT WILLIAMS RD.



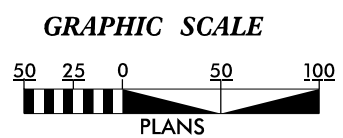
NOTE: INSTALL PERIMETER EROSION CONTROL MEASURES DURING INTIAL CLEARING PHASE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	44856.3.42	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
44856.1.42	HSIP-1009(024)	P.E.	
44856.2.42	HSIP-1009(024)	RW	
44856.3.42	HSIP-1009(024)	CONST.	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	III III III
1622.01	Temporary Berms and Slope Drains	T
1630.02	Silt Basin Type B	SB
1633.01	Temporary Rock Silt Check Type-A	RS
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	RS
1633.02	Temporary Rock Silt Check Type-B	RS
	Wattle/Coir Fiber Wattle	W
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	W
1634.01	Temporary Rock Sediment Dam Type-A	RD
1634.02	Temporary Rock Sediment Dam Type-B	RD
1635.01	Rock Pipe Inlet Sediment Trap Type-A	RPI
1635.02	Rock Pipe Inlet Sediment Trap Type-B	RPI
1630.04	Stilling Basin	SB
1630.06	Special Stilling Basin	SB
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	SK
	Tiered Skimmer Basin	SK
	Infiltration Basin	IB

THIS PROJECT CONTAINS
EROSION CONTROL PLANS
FOR CLEARING AND
GRUBBING PHASE OF
CONSTRUCTION.



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



Prepared In the Office of:
DDC UNIT DIVISION 10
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Designed by:
CHAD BURRIS 4159
NAME LEVEL III CERTIFICATION NO.

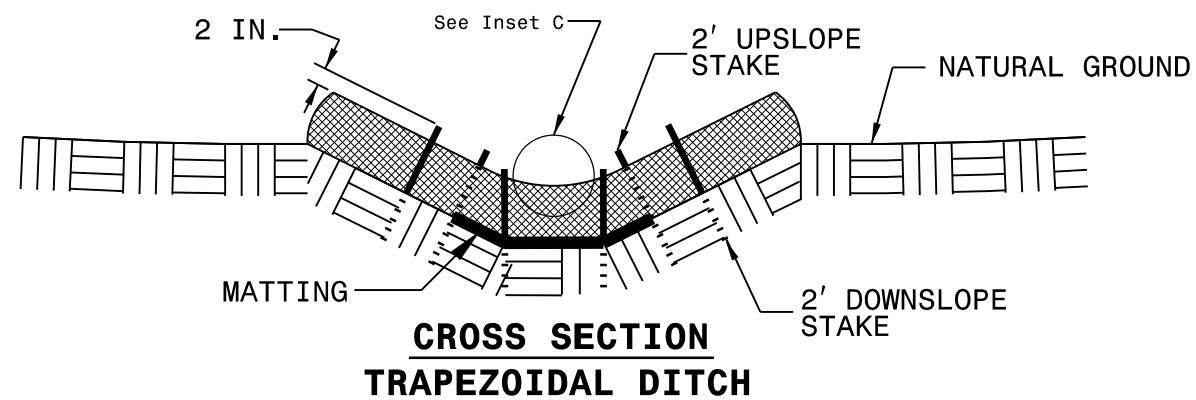
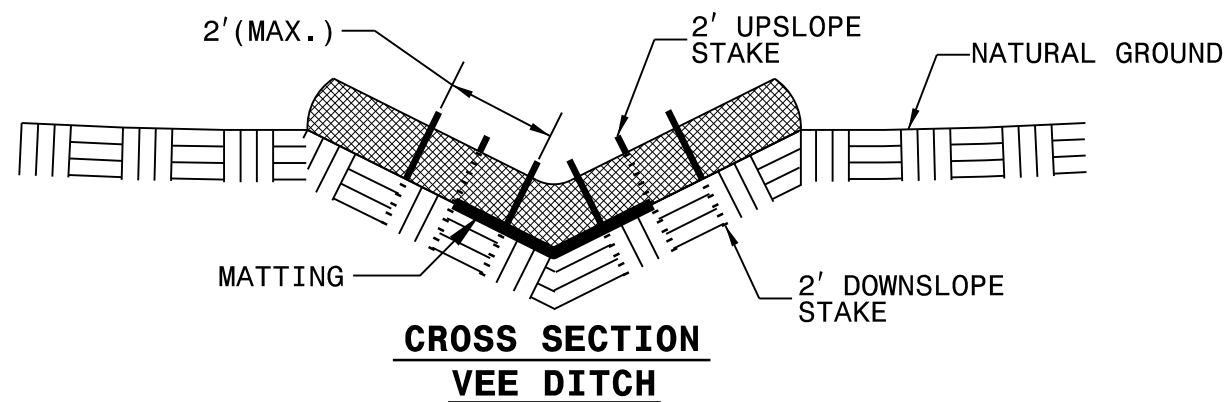
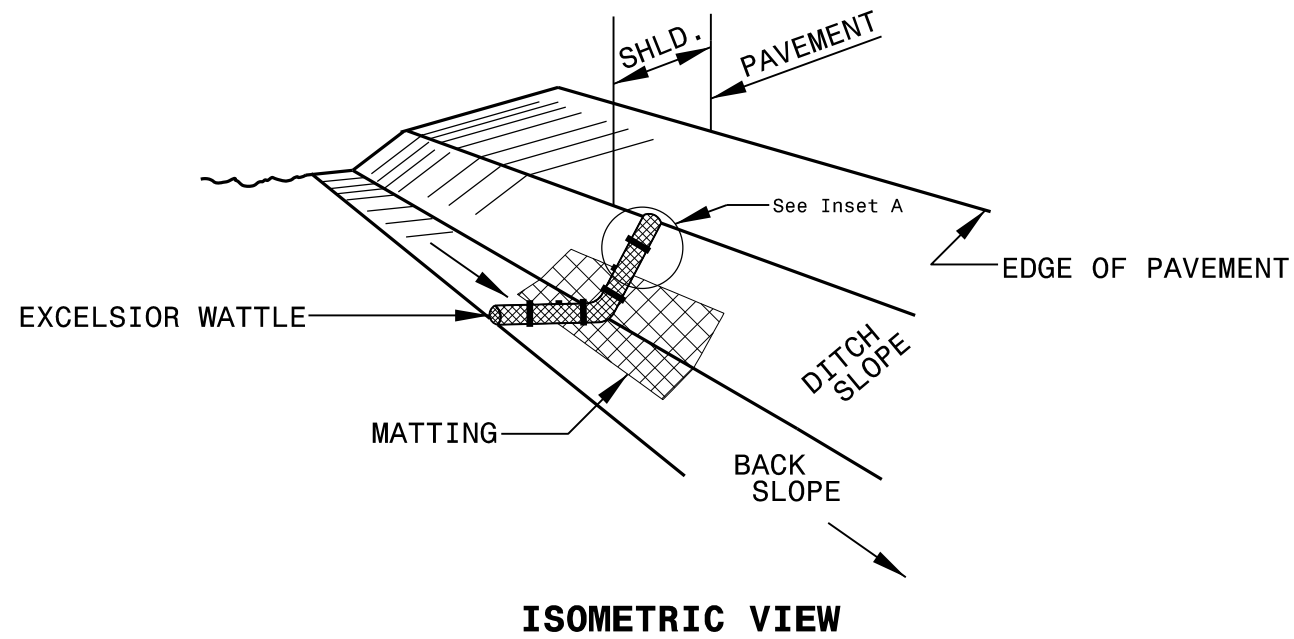
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"-- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 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 J
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 J
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type J	1634.02 Temporary Rock Sediment Dam Type J
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 J
1630.05 Temporary Diversion	1640.01 Coir Fiber Jaffle
1630.06 Special Stilling Basin	1640.01 Coir Fiber Jaffle
1631.01 Matting Installation	1645.01 Temporary Stream Crossing

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

PROJECT NO.	SHEET NO.
44856.3.42	EC-2
F.A. PROJECT NO. HSP-1009(024)	



NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR 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.

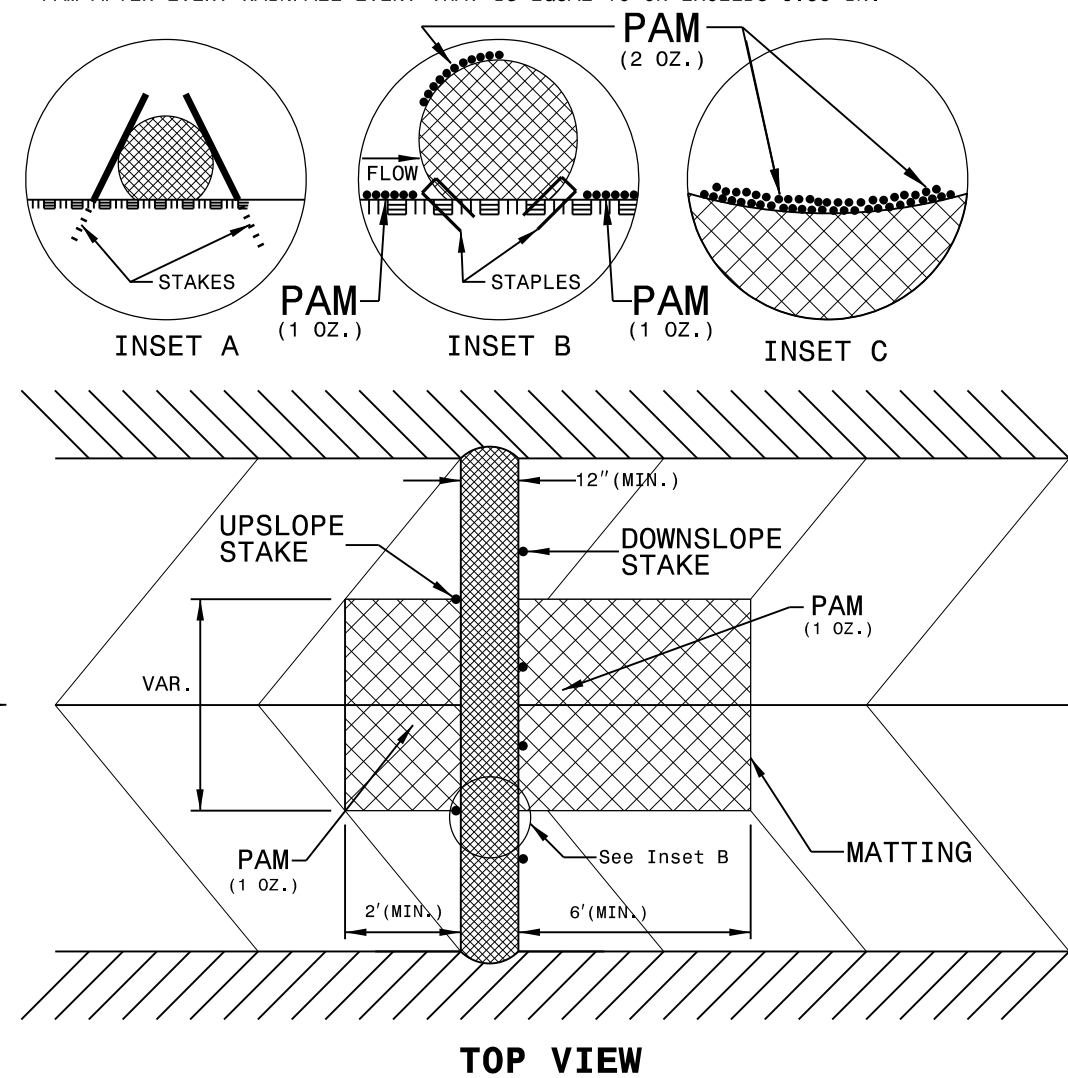
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

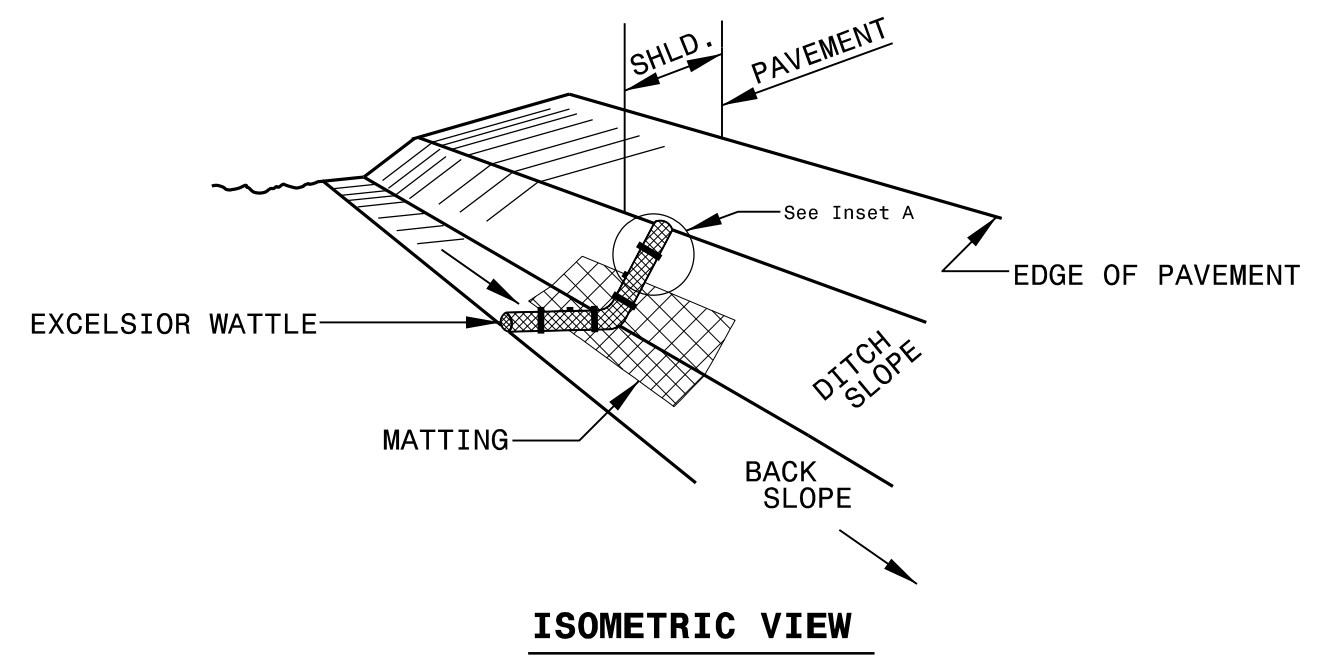
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

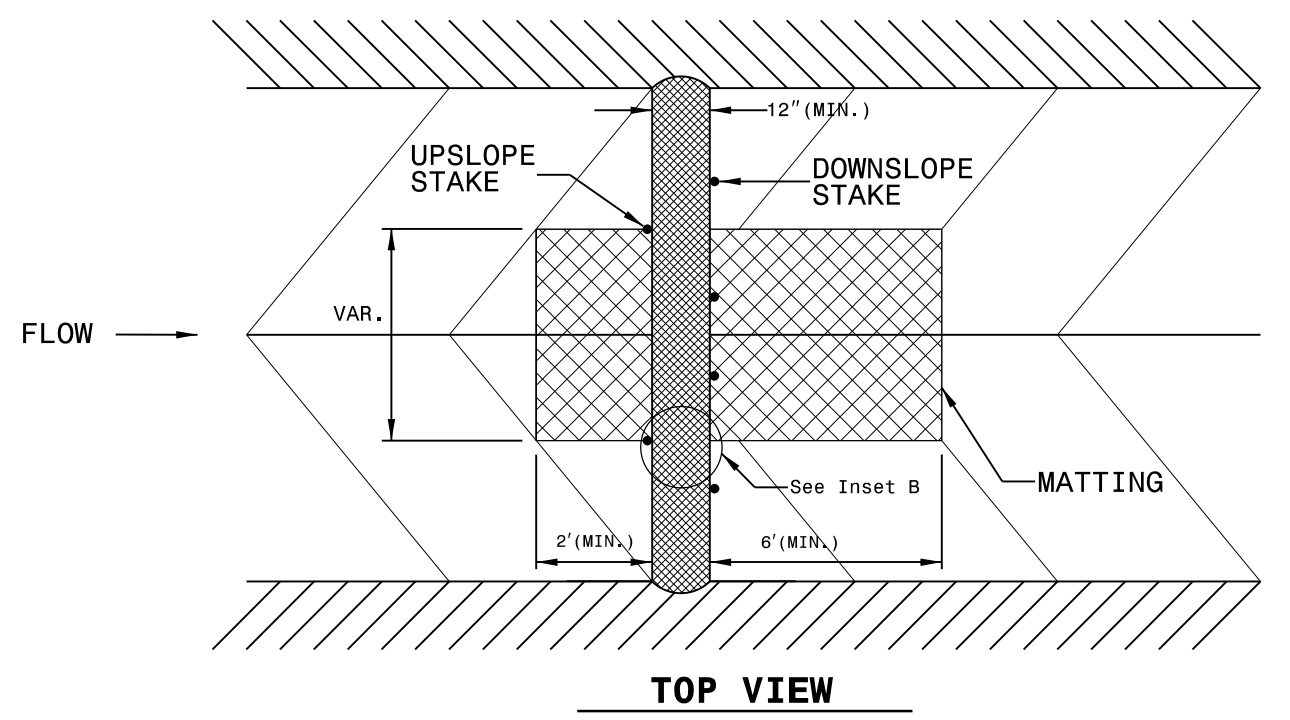
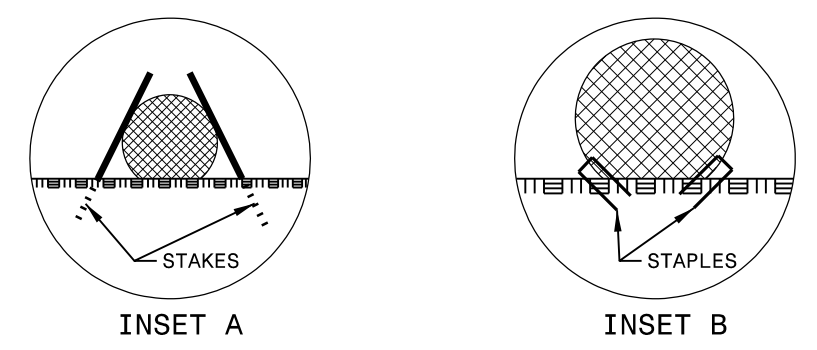
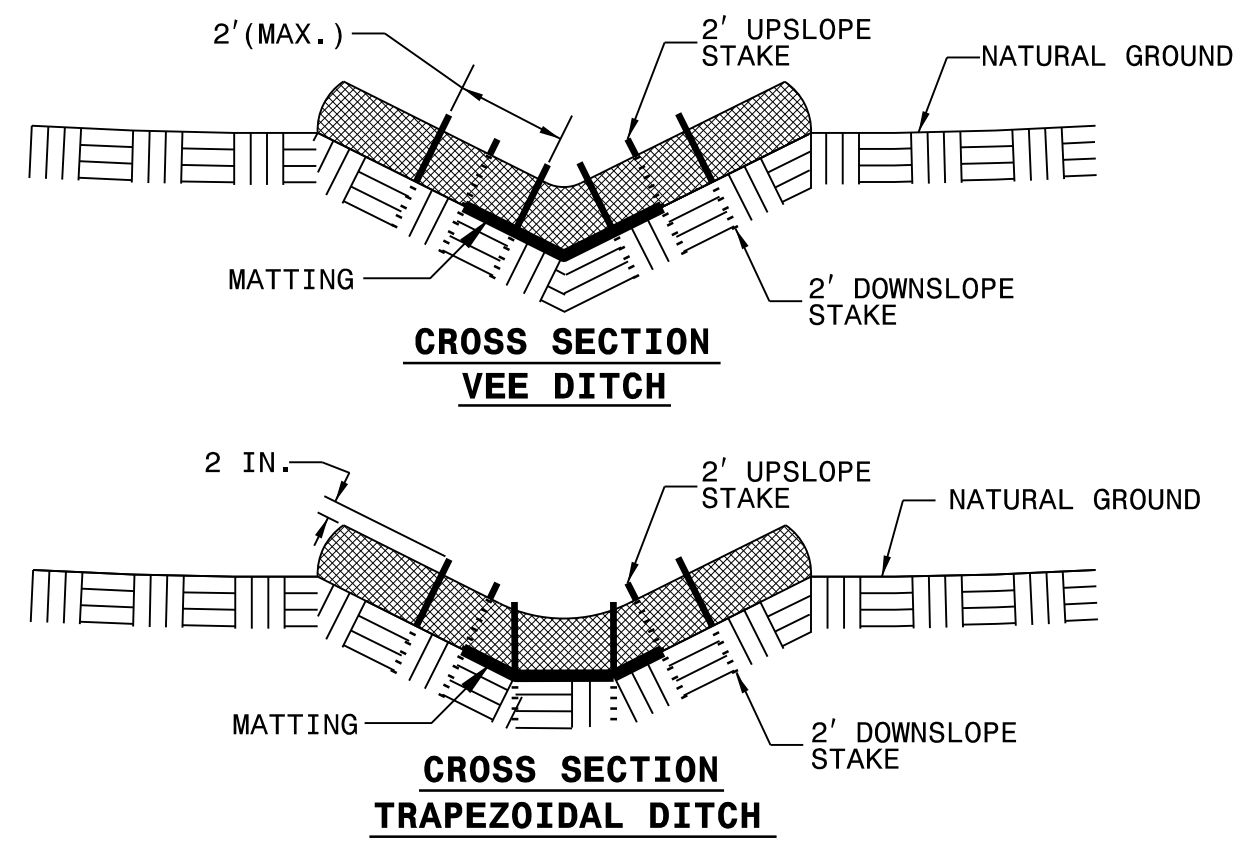


WATTLE DETAIL



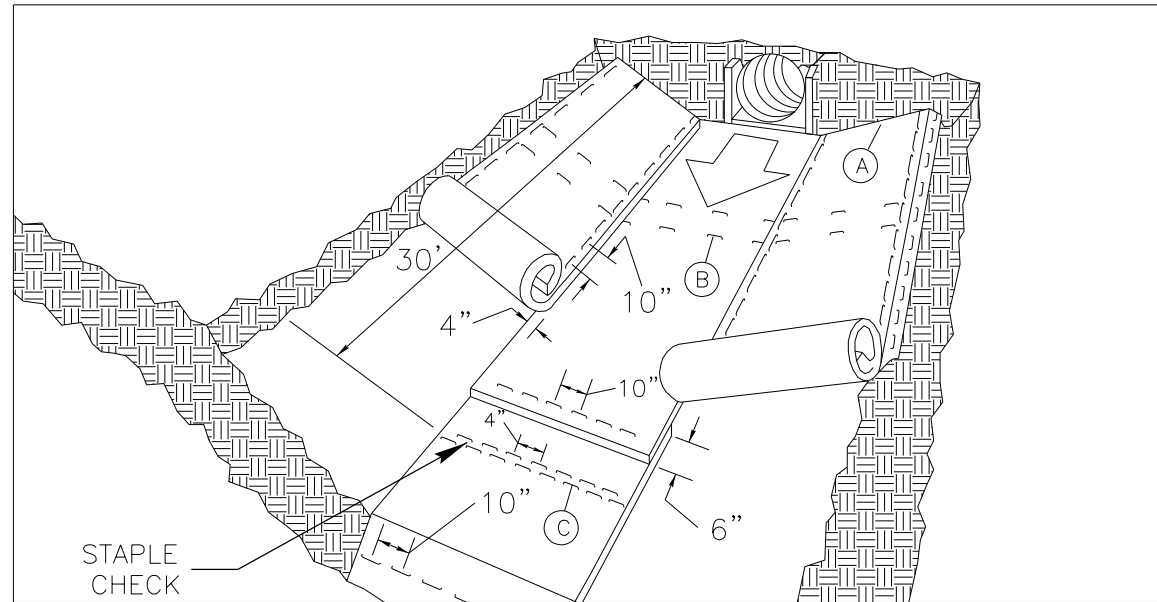
NOTES:

- USE MINIMUM 12 IN. DIAMETER EXCELSIOR 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.



MATTING INSTALLATION DETAIL

PROJECT NO.	SHEET NO.
44856.3.42	EC-2B
F.A. PROJECT NO. HSP-1009(024)	



MATTING IN DITCHES

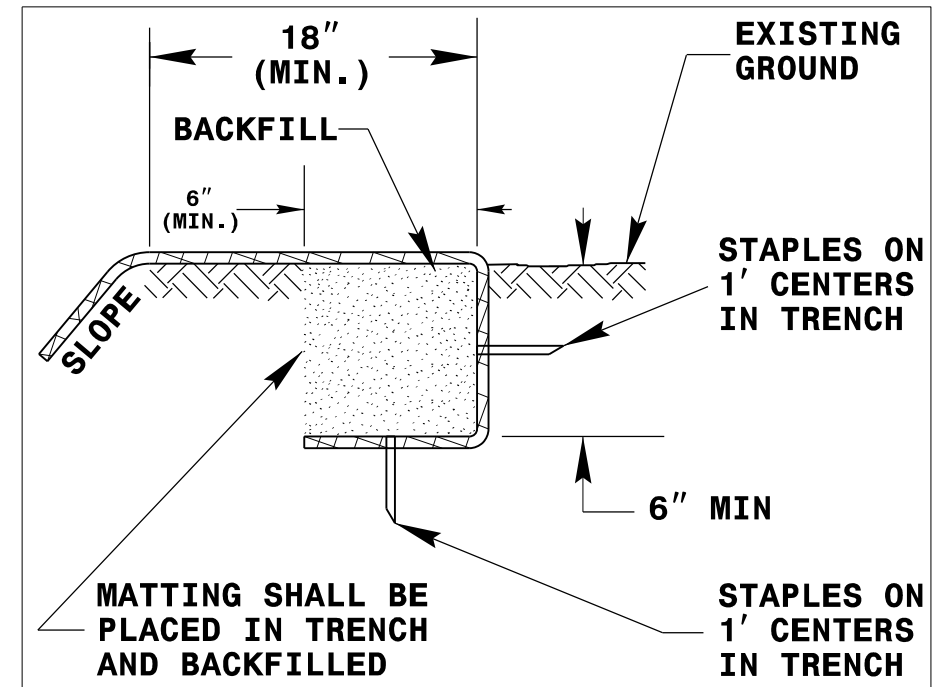
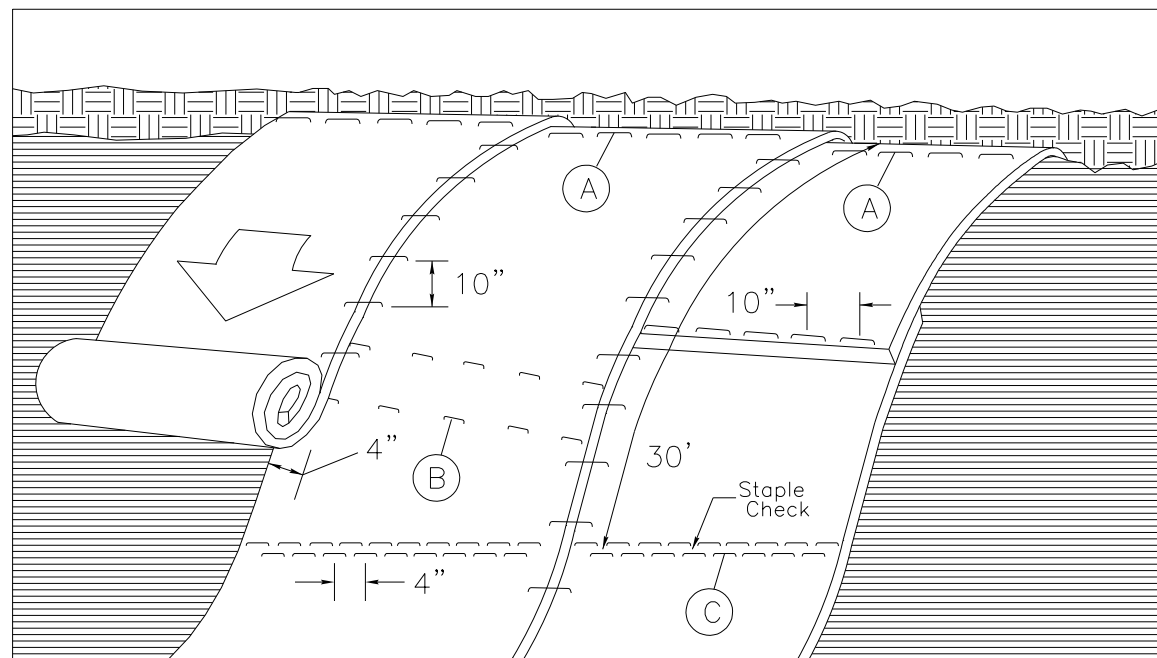


DIAGRAM (A)



MATTING ON SLOPES

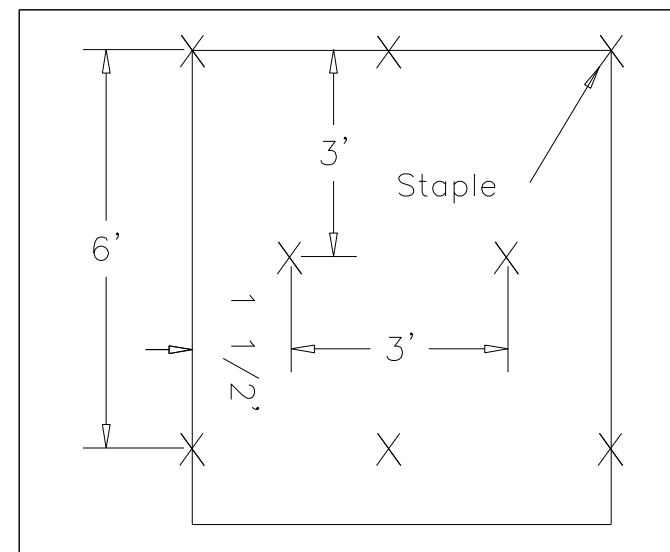


DIAGRAM (B)

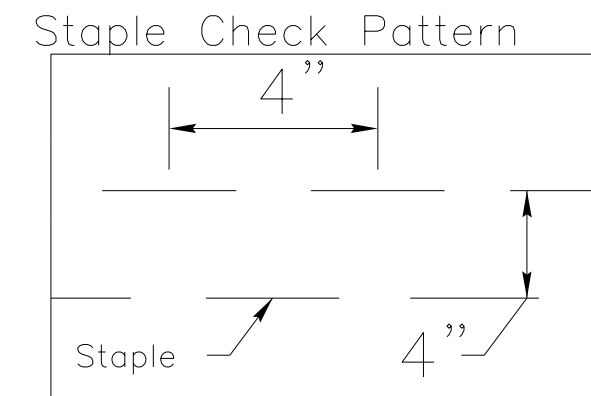


DIAGRAM (C)

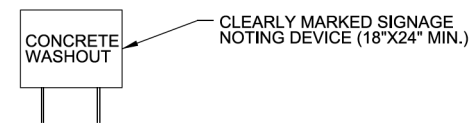
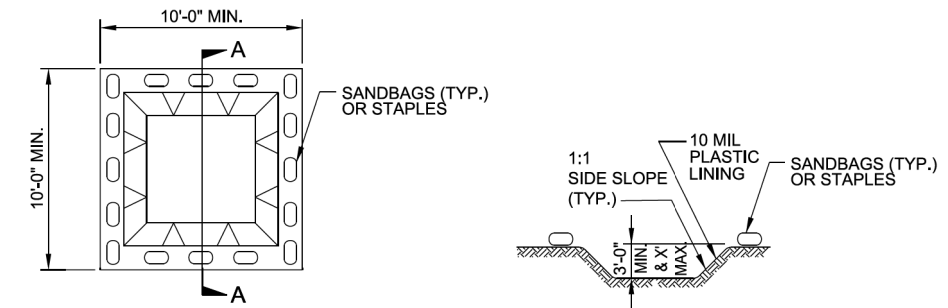
NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



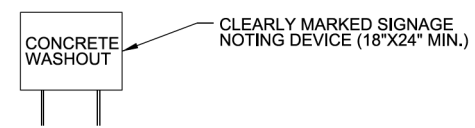
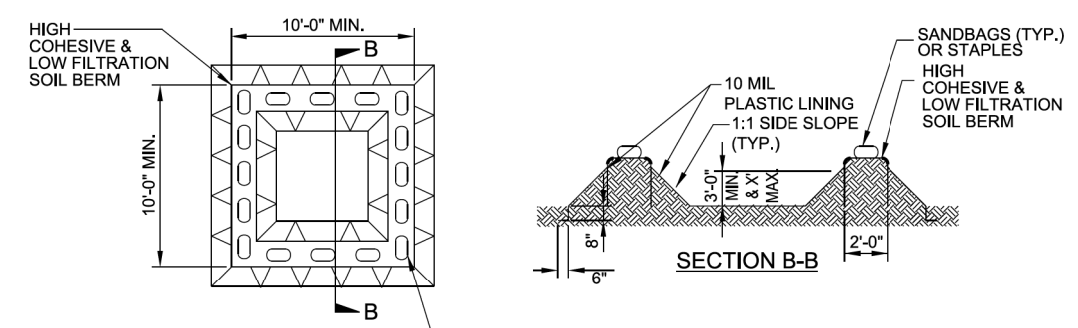
SECTION A-A

- NOTES:**
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

PLAN

BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE



SECTION B-B

- NOTES:**
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

PLAN

ABOVE GRADE WASHOUT STRUCTURE

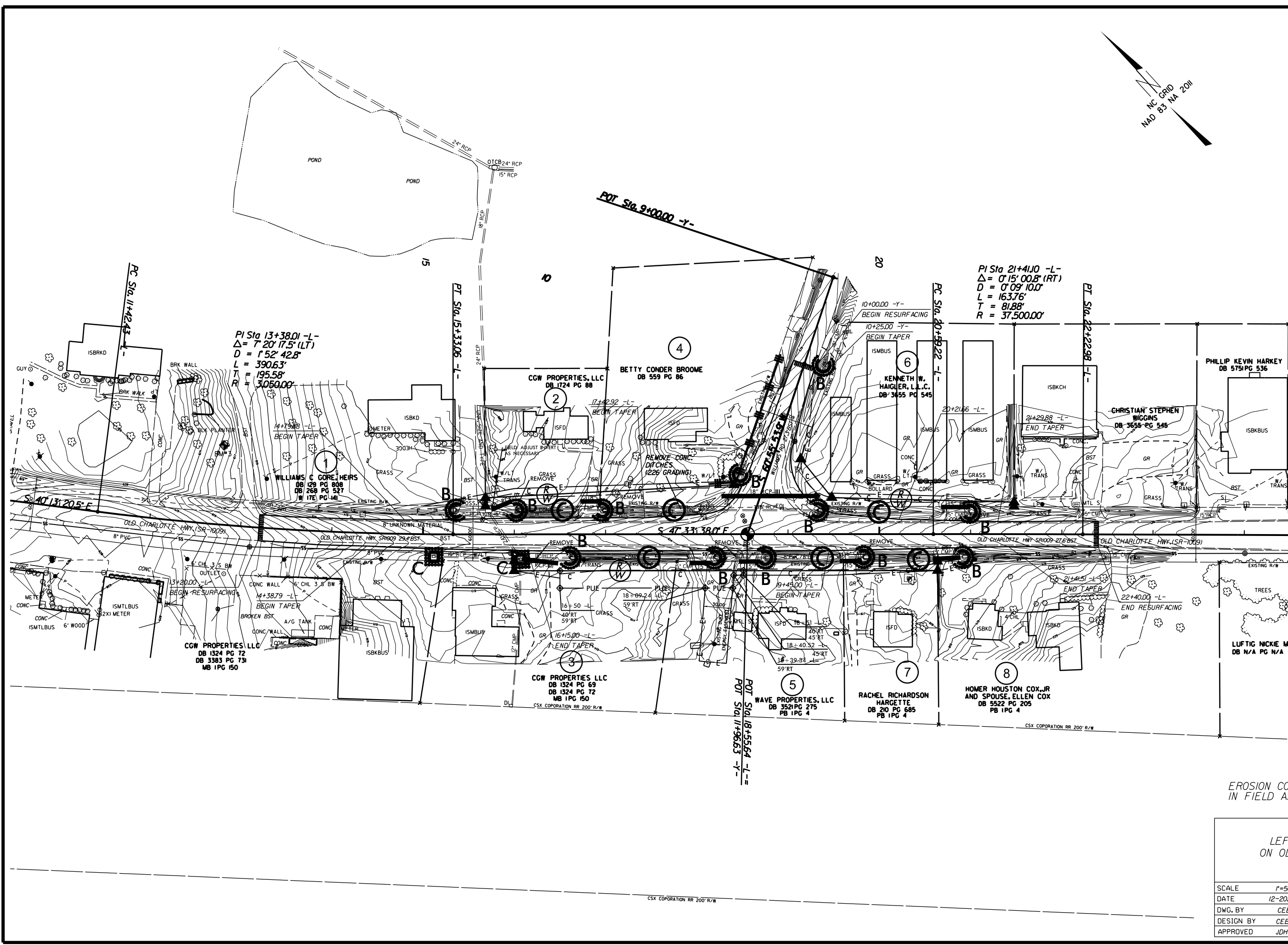
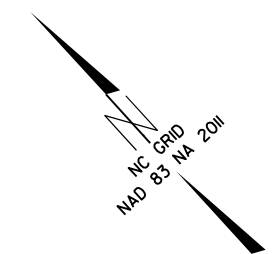
NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT NO.	SHEET NO.
44856.3.42	EC-3
F.A. PROJECT NO. HSIP-1009(024)	

SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
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.



PI Sta 13+38.01 -L-
 $\Delta = 7' 20' 17.5''$ (LT)
 $D = 1' 52' 42.8''$
 $L = 390.63'$
 $T = 195.58'$
 $R = 3050.00'$

PI Sta 21+41.00 -L-
 $\Delta = 0' 15' 00.8''$ (RT)
 $D = 0' 09' 10.0''$
 $L = 163.76'$
 $T = 81.88'$
 $R = 37,500.00'$

CGW PROPERTIES, LLC
 DB 1324 PG 72
 DB 3383 PG 73
 MB 1PG 150

CGW PROPERTIES, LLC
 DB 1324 PG 69
 DB 1324 PG 72
 MB 1PG 150

WAVE PROPERTIES, LLC
 DB 3521 PG 275
 PB 1PG 4

RACHEL RICHARDSON
 HARGETTE
 DB 210 PG 685
 PB 1PG 4

HOMER HOUSTON COX, JR
 AND SPOUSE ELLEN COX
 DB 5522 PG 205
 PB 1PG 4

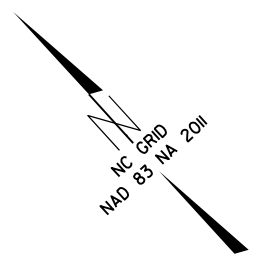
EROSION CONTROL MEASURES MAY BE CHANGED IN FIELD AS DIRECTED BY THE ENGINEER

LEFT TURN LANE WITH SIGNAL
 ON OLD CHARLOTTE HWY. (SR-1009)
 AT WILLIAMS RD.

SCALE	1"=50'
DATE	12-2020
DWG. BY	CEB
DESIGN BY	CEB
APPROVED	JDH

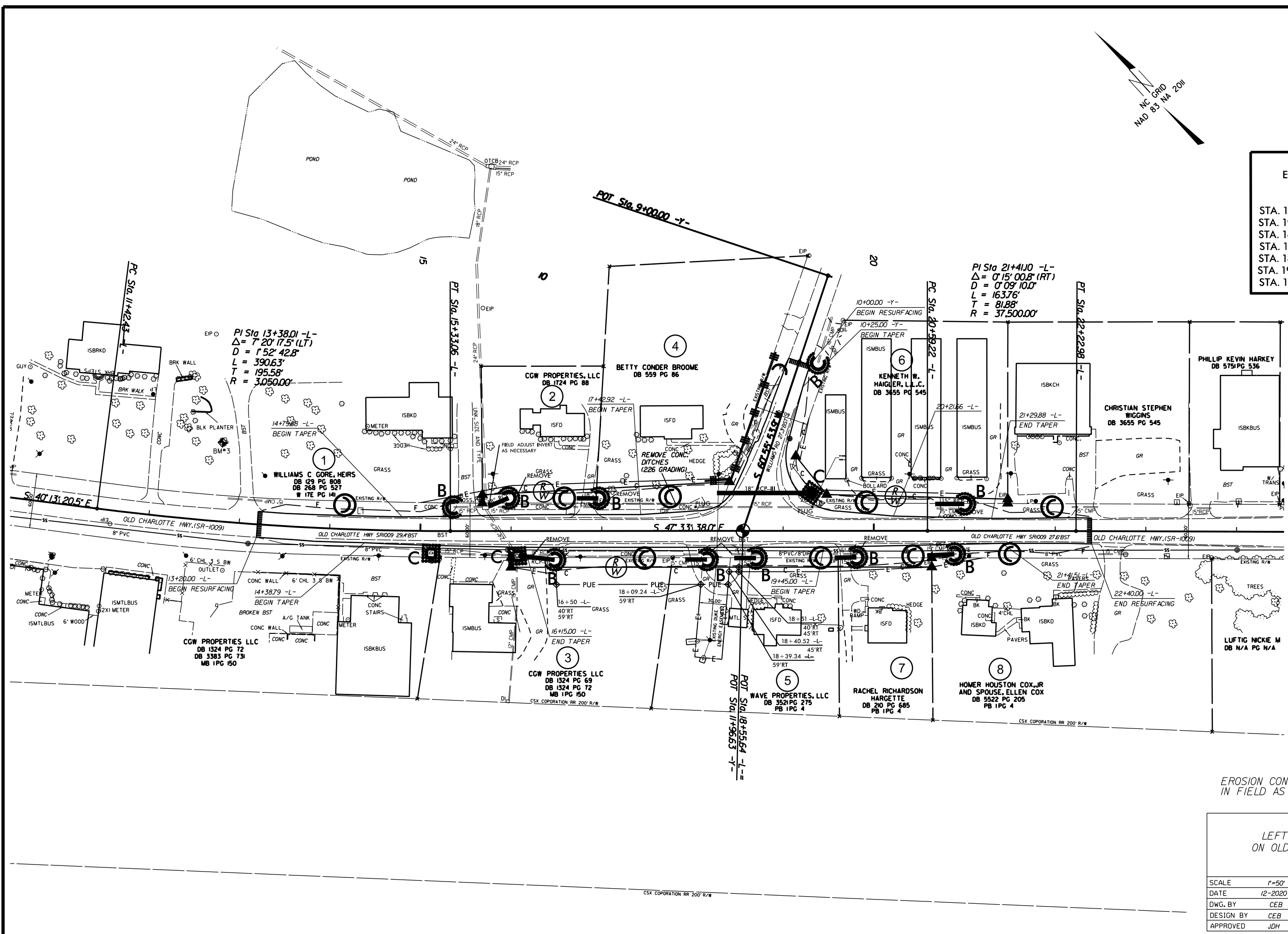


REVISIONS




INSTALL MATTING FOR
EROSION CONTROL IN THE
PROPOSED DITCH LINE.
SEE SHEET 2A

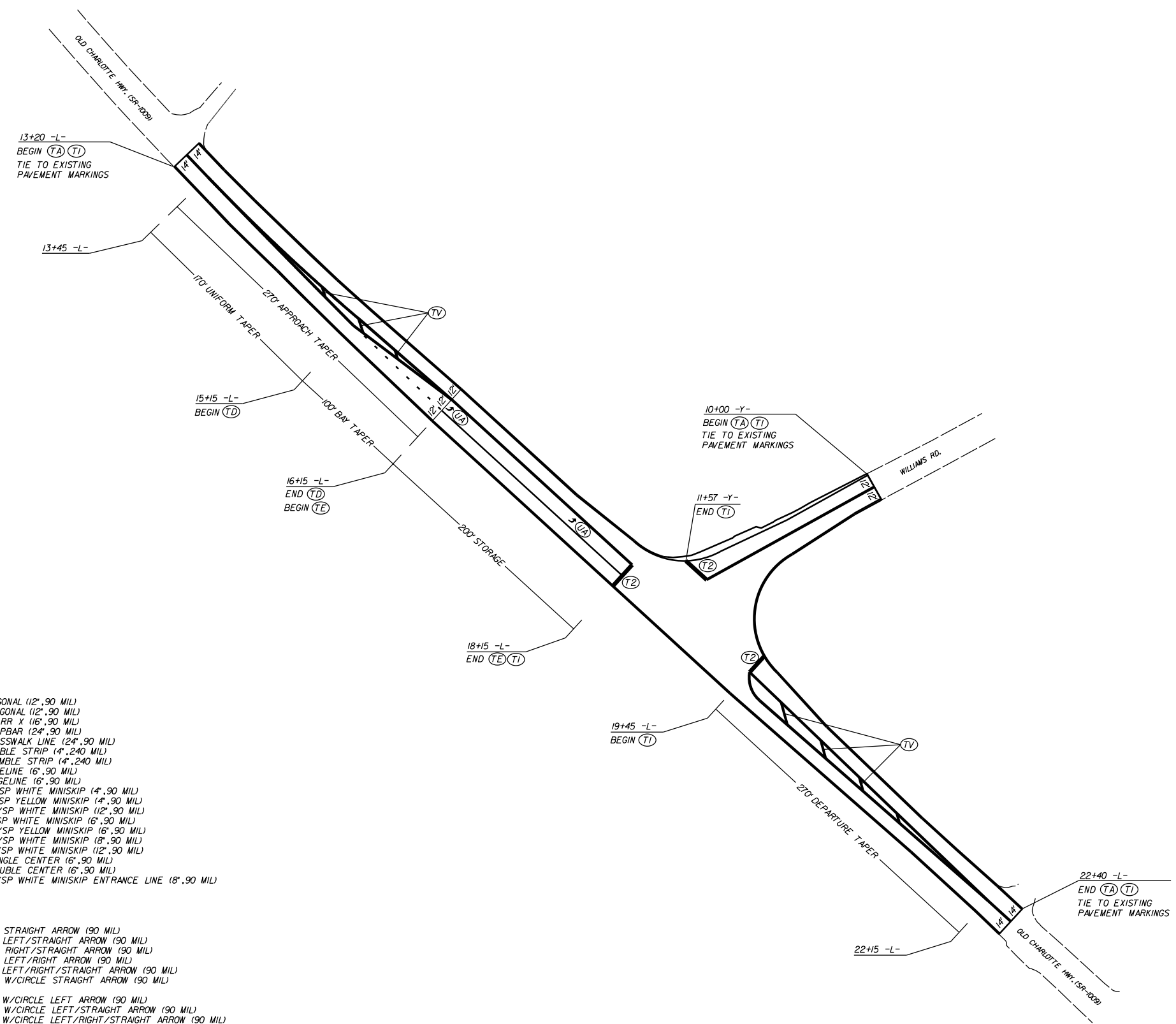
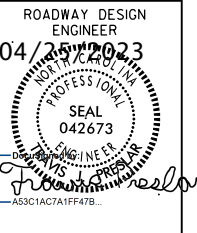
STA. 16+00 -L- LT TO 18+26 -L- LT
STA. 19+30 -L- LT TO 20+67 -L- LT
STA. 16+50 -L- RT TO 17+92 -L- RT
STA. 18+16 -L- RT TO 18+46 -L- RT
STA. 18+70 -L- RT TO 19+57 -L- RT
STA. 19+80 -L- RT TO 20+58 -L- RT
STA. 10+50 -Y- LT TO 11+25 -Y- LT



EROSION CONTROL MEASURES MAY BE CHANGED
IN FIELD AS DIRECTED BY THE ENGINEER

LEFT TURN LANE WITH SIGNAL
ON OLD CHARLOTTE HWY. (SR-1009)
AT WILLIAMS RD.

SCALE	1"=50'		REVISIONS
DATE	12-2020		
DWG. BY	CEB		
DESIGN BY	CEB		
APPROVED	JDH		



PAVEMENT MARKING SCHEDULE

THERMOPLASTIC MARKING LINES

- | | |
|--|---|
| TA - WHITE EDGELINE (4'.90 MIL) | TU - WHITE DIAGONAL (12'.90 MIL) |
| TB - YELLOW EDGELINE (4'.90 MIL) | TV - YELLOW DIAGONAL (12'.90 MIL) |
| TC - 10FT. WHITE SKIP (4'.90 MIL) | TI - WHITE LINE, RR X (16'.90 MIL) |
| TD - 3FT.-9FT./SP WHITE MINISKIP (4'.90 MIL) | T2 - WHITE STOPBAR (24'.90 MIL) |
| TE - WHITE SOLID LANE LINE (4'.90 MIL) | T3 - WHITE CROSSWALK LINE (24'.90 MIL) |
| TF - 10FT. YELLOW SKIP (4'.90 MIL) | T4 - WHITE RUMBLE STRIP (4".240 MIL) |
| TH - YELLOW SINGLE CENTER (4'.90 MIL) | T5 - YELLOW RUMBLE STRIP (4".240 MIL) |
| TI - YELLOW DOUBLE CENTER (4'.90 MIL) | T6 - WHITE EDGELINE (6'.90 MIL) |
| TJ - 10FT. WHITE SKIP (6'.90 MIL) | T7 - YELLOW EDGELINE (6'.90 MIL) |
| TK - 3FT.-9FT./SP WHITE MINISKIP (6'.90 MIL) | T8 - 2FT.-6FT./SP WHITE MINISKIP (4'.90 MIL) |
| TL - WHITE SOLID LANE LINE (6'.90 MIL) | T9 - 2FT.-6FT./SP YELLOW MINISKIP (4'.90 MIL) |
| TM - 10FT. YELLOW SKIP (6'.90 MIL) | T10 - 3FT.-3FT./SP WHITE MINISKIP (12'.90 MIL) |
| TN - WHITE GORELINE (8'.90 MIL) | T11 - 2FT.-6FT./SP WHITE MINISKIP (6'.90 MIL) |
| TO - WHITE DIAGONAL (8'.90 MIL) | T12 - 2FT.-6FT./SP YELLOW MINISKIP (6'.90 MIL) |
| TP - YELLOW DIAGONAL (8'.90 MIL) | T13 - 3FT.-9FT./SP WHITE MINISKIP (8'.90 MIL) |
| TQ - WHITE CROSSWALK LINE (8'.90 MIL) | T14 - 3FT.-9FT./SP WHITE MINISKIP (12'.90 MIL) |
| TR - WHITE SOLID LANE LINE (8'.90 MIL) | T15 - YELLOW SINGLE CENTER (6'.90 MIL) |
| TS - WHITE GORELINE (12'.90 MIL) | T16 - YELLOW DOUBLE CENTER (6'.90 MIL) |
| TT - WHITE SOLID LANE LINE (12'.90 MIL) | T17 - 3FT.-3FT./SP WHITE MINISKIP ENTRANCE LINE (8'.90 MIL) |

THERMOPLASTIC MARKING SYMBOLS

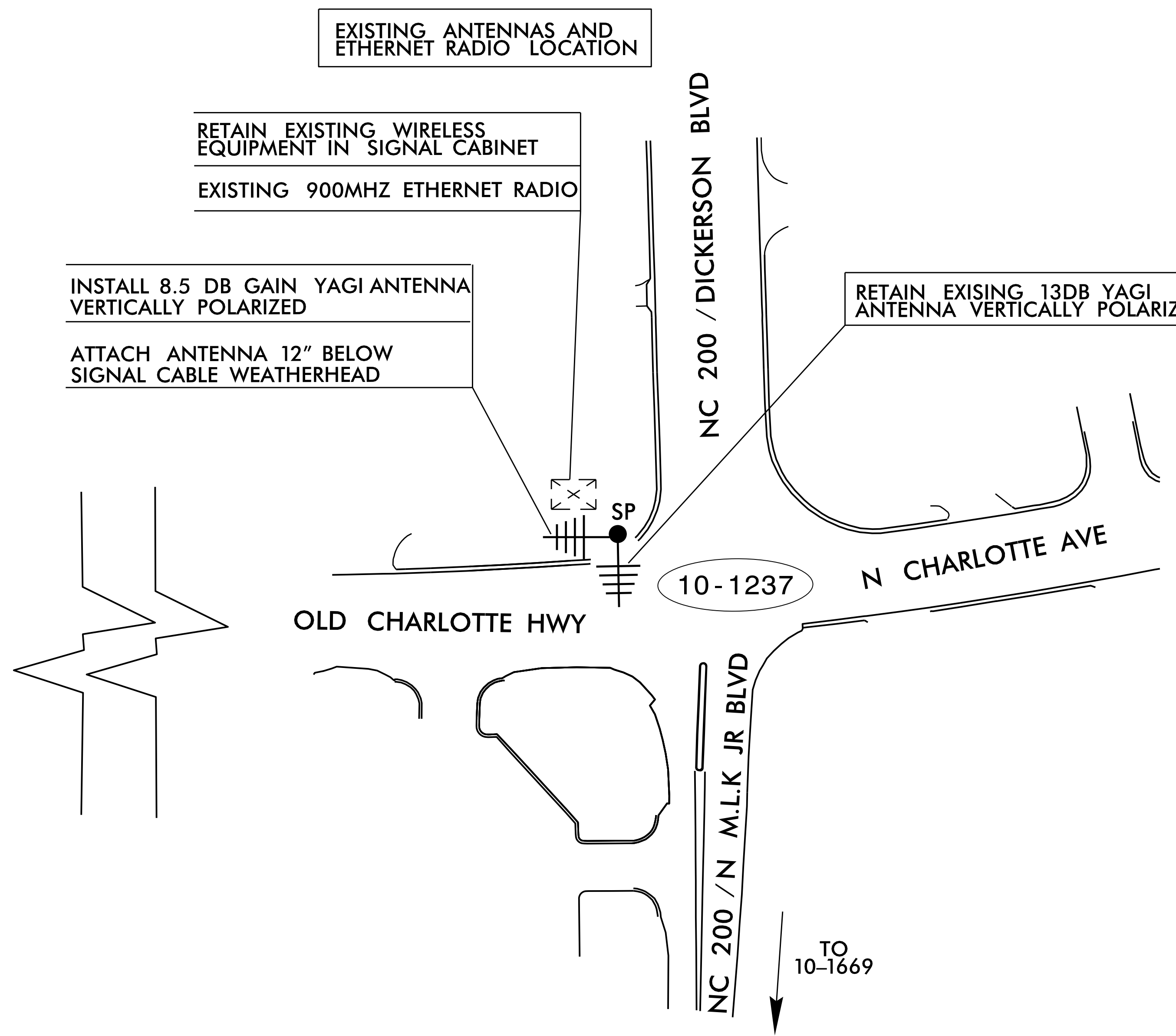
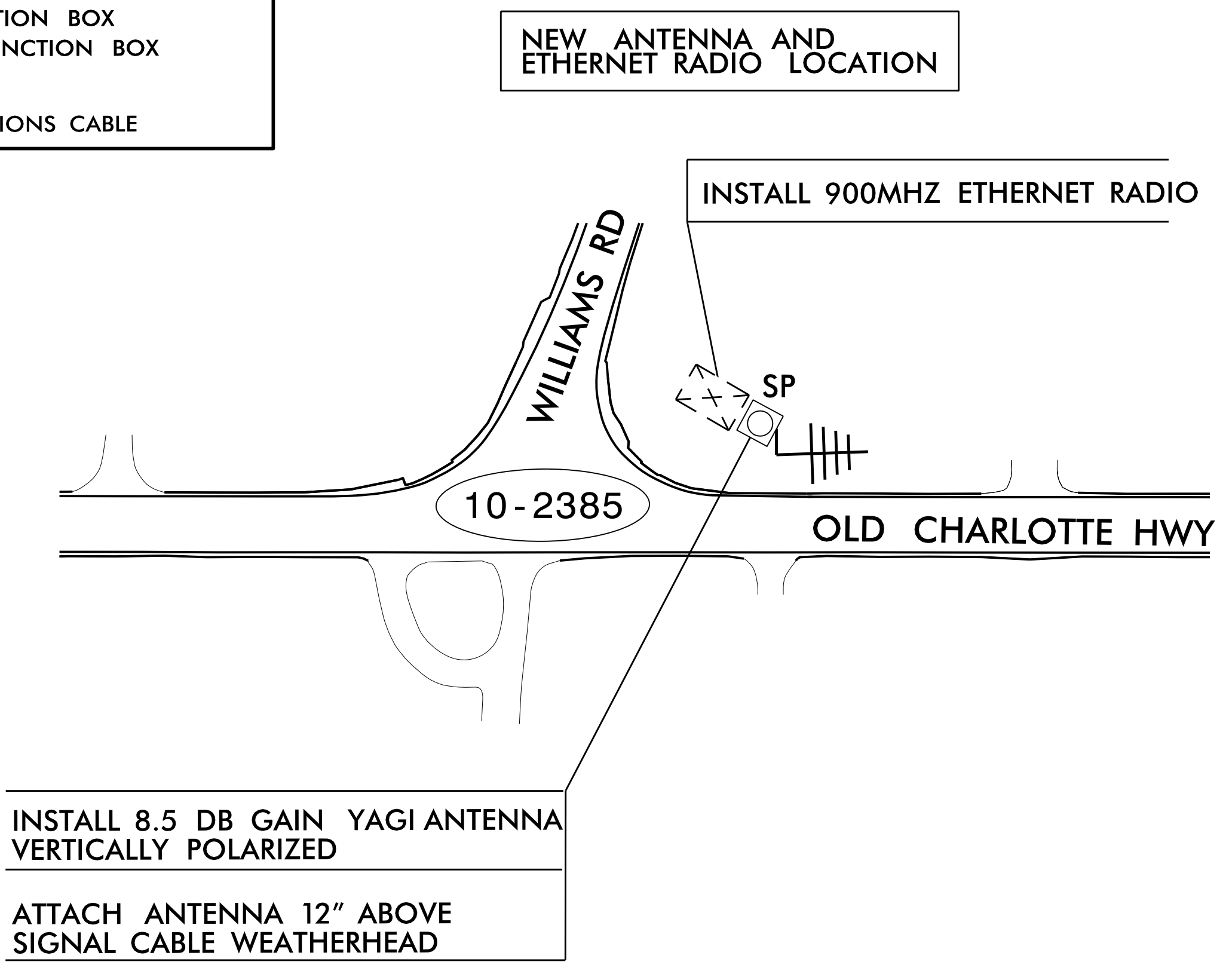
- | | |
|--|--|
| UA - LEFT TURN ARROW (90 MIL) | UU - FISH-HOOK STRAIGHT ARROW (90 MIL) |
| UB - RIGHT TURN ARROW (90 MIL) | UV - FISH-HOOK LEFT/STRAIGHT ARROW (90 MIL) |
| UC - STRAIGHT ARROW (90 MIL) | UW - FISH-HOOK RIGHT/STRAIGHT ARROW (90 MIL) |
| UD - COMBO. LEFT/STRAIGHT ARROW (90 MIL) | UX - FISH-HOOK LEFT/RIGHT ARROW (90 MIL) |
| UE - COMBO. RIGHT/STRAIGHT ARROW (90 MIL) | UY - FISH-HOOK LEFT/RIGHT/STRAIGHT ARROW (90 MIL) |
| UF - COMBO. LEFT/RIGHT ARROW (90 MIL) | UZ - FISH-HOOK W/CIRCLE STRAIGHT ARROW (90 MIL) |
| UG - COMBO. LEFT/RIGHT/STRAIGHT ARROW (90 MIL) | YA - FISH-HOOK W/CIRCLE LEFT ARROW (90 MIL) |
| UH - HANDICAP PARKING (90 MIL) | YB - FISH-HOOK W/CIRCLE LEFT/STRAIGHT ARROW (90 MIL) |
| UI - ALPHANUMERIC CHAR. (90 MIL) | YC - FISH-HOOK W/CIRCLE LEFT/RIGHT/STRAIGHT ARROW (90 MIL) |
| UJ - BICYCLE SYMBOL (90 MIL) | YD - COMBO. LEFT/U-TURN ARROW (90 MIL) |
| UK - BICYCLE STRAIGHT ARROW (90 MIL) | MA - PERMANENT RAISED MARKER (YELLOW & YELLOW) |
| UL - BICYCLE CHAR. (90 MIL) | MB - PERMANENT RAISED MARKER (CRYSTAL & RED) |
| UM - 12" YIELD LINE TRIANGLE (90 MIL) | MC - PERMANENT RAISED MARKER (YELLOW & RED) |
| UN - 24" YIELD LINE TRIANGLE (90 MIL) | MD - PERMANENT RAISED MARKER (YELLOW) |
| UO - BICYCLE LEFT ARROW (90 MIL) | ME - SNOWPLOWABLE MARKER (YELLOW & YELLOW) |
| UP - MERGE ARROW (90 MIL) | MF - SNOWPLOWABLE MARKER (CRYSTAL & RED) |
| UQ - RAMP ARROW SYMBOL (90 MIL) | MG - SNOWPLOWABLE MARKER (YELLOW & RED) |
| UR - SHARROW (90 MIL) | ML - PERMANENT RAISED MARKER (CRYSTAL & CRYSTAL) |
| US - BICYCLE LOOP DETECTOR (90 MIL) | MO - SNOWPLOWABLE MARKER (CRYSTAL & CRYSTAL) |
| UT - U-TURN ARROW (90 MIL) | |

LEFT TURN LANE WITH SIGNAL
ON OLD CHARLOTTE RD.(SR-1009)
AT WILLIAMS RD.

SCALE	1"=50'		REVISIONS
DATE	1-2021		
DWG. BY	TBL		
DESIGN BY	TBL		
APPROVED	JDH		

LEGEND

- YAGI ANTENNA (DOUBLE) FOR REPEATER OPERATION
- YAGI ANTENNA (SINGLE)
- OMNI ANTENNA
- EXISTING CONTROLLER AND CABINET
- MASTER RADIO LOCATION
- SIGNAL INVENTORY NUMBER
- NEW METAL POLE W/MAST ARM
- EXISTING METAL POLE W/MAST ARM
- EXISTING WOOD POLE
- NEW METAL POLE
- SIGNAL POLE
- EXISTING METAL POLE
- NEW OVERSIZED JUNCTION BOX
- EXISTING OVERSIZED JUNCTION BOX
- EXISTING CONDUIT
- NEW CONDUIT
- EXISTING COMMUNICATIONS CABLE



NOTES FOR WIRELESS COMMUNICATIONS:

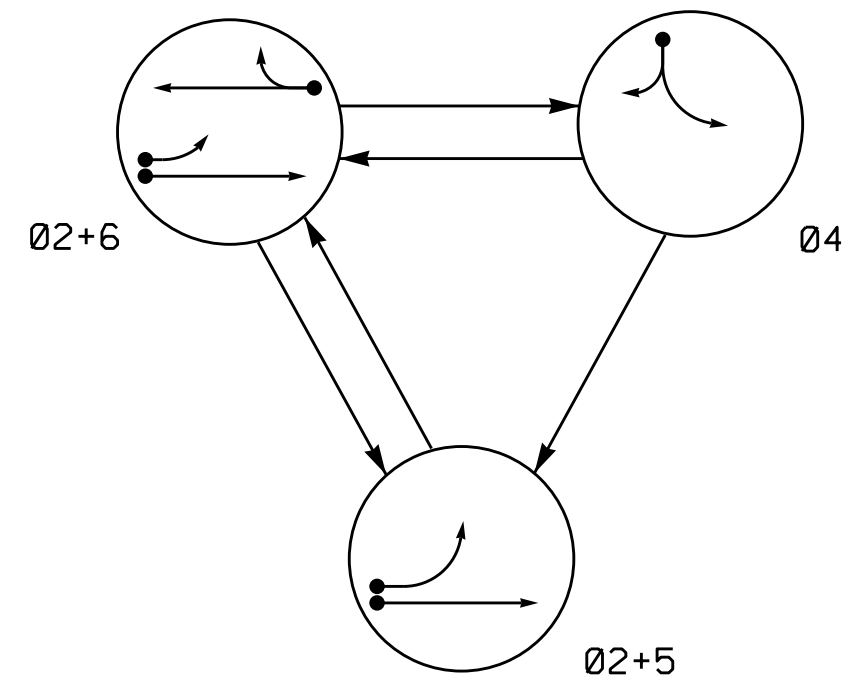
1. INSTALL COAXIAL CABLE:
 - A. ON WOOD POLES, REQUIRING A NEW RIGID GALVANIZED STEEL RISER, INSTALL A 2" RISER WITH WEATHERHEAD AND ROUTE THE COAXIAL CABLE TO THE ANTENNA.
 - B. ON METAL POLES WITH MAST ARMS, RUN COAXIAL CABLE UP THROUGH THE POLE AND OUT THE MAST ARM; FIELD DRILL A 1/2" HOLE UP THROUGH THE BOTTOM OF MAST ARM FOR INSTALLATION OF THE COAXIAL CABLE TO THE ANTENNA.
 - C. ON METAL STRAIN POLES, RUN COAXIAL CABLE UP THROUGH THE POLE AND OUT THE WEATHERHEAD AND ROUTE THE COAXIAL CABLE TO THE ANTENNA.
 - D. BETWEEN THE POINT OF EXITING THE RISER, METAL POLE OR MAST ARM AND THE ANTENNA, SECURE THE COAXIAL CABLE TO THE STRUCTURE USING 3/4" STAINLESS STEEL STRAPS EVERY 12".
2. IF AN EXISTING 2" SPARE RIGID GALVANIZED STEEL RISER IS AVAILABLE, INSTALL THE COAXIAL CABLE IN THE SPARE RISER WITH 2" WEATHERHEAD.
3. INSTALL WIRELESS ANTENNA ON POLE WITH RF WARNING SIGN.
(NOTE: RF WARNING SIGN NOT REQUIRED WHEN ANTENNA IS INSTALLED ON AN NCDOT-OWNED POLE.)
4. MAINTAIN PROPER CLEARANCE FROM ALL UTILITIES PER THE NATIONAL ELECTRICAL SAFETY CODE.
5. INSTALL WIRELESS RADIO MODEM WITH EXTERIOR DISCONNECT SWITCH LOCATED ON CABINET.
(NOTE: RF ANTENNA DISCONNECT SWITCH AND DECAL ARE NOT REQUIRED WHEN THE ANTENNA IS INSTALLED ON AN NCDOT-OWNED POLE.)
6. REFERENCE "WIRELESS RADIO ANTENNA TYPICAL DETAILS."

THIS PLAN SUPERSEDES PLAN SEALED BY MEREDITH M. MCDIARMID ON JUNE 28, 2021.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

<p>750 N. Greenfield Pkwy., Garner, NC 27529</p>	<p>WIRELESS COMMUNICATION PLAN</p> <p>SR 1009 (OLD CHARLOTTE HWY) AT WILLIAMS RD</p>		<p>SEAL</p>								
	<p>Prepared in the Offices of:</p> <p>UNION CO. ENGINEERS & ARCHITECTS</p> <p>9098BEEF705A4FA</p>	<p>PLAN DATE: DECEMBER 2021</p> <p>REVIEWED BY: <i>Gryg Gruen</i></p> <p>PREPARED BY: H.T. BERGGREN, EI</p>	<p>DocuSigned by: MONROE</p> <p>01/04/2022 DATE</p>								
<p>SCALE 50</p> <p>1"=50'</p>	<p>REVISIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO.</th> <th>DESCRIPTION</th> <th>INIT.</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		NO.	DESCRIPTION	INIT.	DATE					<p>SEAL</p> <p>042578</p> <p>ENGINEER</p> <p>Matthew T. Carlisle</p>
NO.	DESCRIPTION	INIT.	DATE								

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

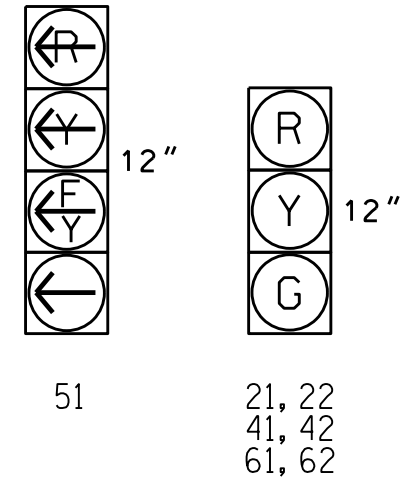
- ←●→ DETECTED MOVEMENT
- ←○→ UNDETECTED MOVEMENT (OVERLAP)
- ←---→ UNSIGNALIZED MOVEMENT
- ←- - -> PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE			
	02+6	02+5	04	FLASH
21, 22	G	G	R	Y
41, 42	R	R	G	R
51	←	→	←	→
61, 62	R	G	R	Y

SIGNAL FACE I.D.

All Heads L.E.D.

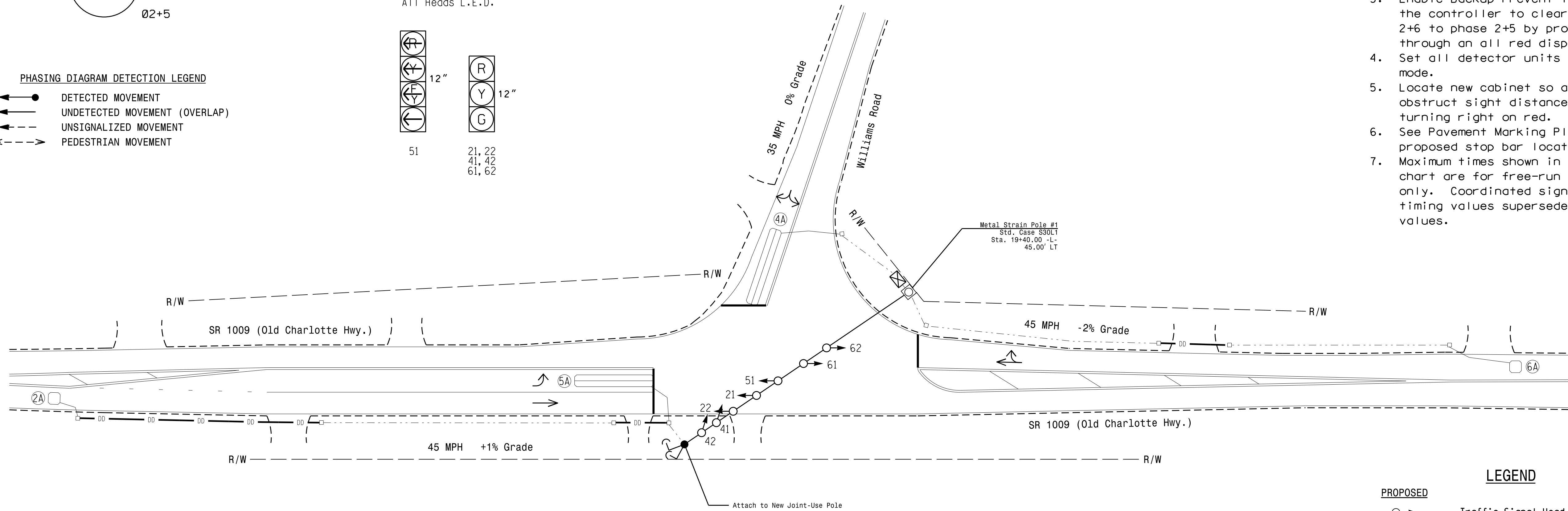


ASC/3 DETECTOR INSTALLATION CHART											
DETECTOR					PROGRAMMING						
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	NEW CARD
2A	6X6	300	4	X	2	Yes	-	-	X	N	- X
4A	6X40	0	2-4-2	X	4	Yes	-	5.0	-	N	- X
5A	6X40	0	2-4-2	X	5	Yes	-	15.0	-	N	- X
6A	6X6	300	5	X	6	Yes	-	3.0	-	G	- X

3 Phase Fully Actuated D10-23 Monroe CLS

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Enable Backup Prevent to allow the controller to clear from phase 2+6 to phase 2+5 by progressing through an all red display.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- See Pavement Marking Plans for proposed stop bar locations.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



FEATURE	PHASE			
	2	4	5	6
Min Green *	12	7	7	12
Walk *	-	-	-	-
Ped Clear	-	-	-	-
Veh. Extension *	6.0	2.0	2.0	6.0
Max I *	90	25	15	90
Yellow	4.7	3.8	3.0	4.7
Red Clear	1.6	1.6	1.9	1.6
Red Revert	5.0	2.0	2.0	2.0
Actuations B4 Add *	-	-	-	-
Seconds / Actuation *	2.5	-	-	2.5
Max Initial *	34	-	-	34
Time Before Reduction *	15	-	-	15
Time To Reduce *	30	-	-	30
Minimum Gap	3.0	-	-	3.0
Locking Detector	X	-	-	X
Recall Position	VEH. RECALL	-	-	VEH. RECALL
Dual Entry	-	-	-	-
Simultaneous Gap	X	X	X	X

* 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.

LEGEND

- | | | | |
|--|---|--|--|
| | PROPOSED Traffic Signal Head | | EXISTING Traffic Signal Head |
| | PROPOSED Modified Signal Head | | EXISTING N/A |
| | PROPOSED Pedestrian Signal Head | | EXISTING N/A |
| | PROPOSED Signal Pole with Guy | | EXISTING Signal Pole with Guy |
| | PROPOSED Signal Pole with Sidewalk Guy | | EXISTING Signal Pole with Sidewalk Guy |
| | PROPOSED Inductive Loop Detector | | EXISTING Inductive Loop Detector |
| | PROPOSED Controller & Cabinet | | EXISTING Controller & Cabinet |
| | PROPOSED Junction Box | | EXISTING Junction Box |
| | PROPOSED 2-in Underground Conduit | | EXISTING 2-in Underground Conduit |
| | PROPOSED Right of Way | | EXISTING Right of Way |
| | PROPOSED Directional Arrow | | EXISTING Directional Arrow |
| | PROPOSED Directional Drill (1.2-inch conduit) | | EXISTING N/A |
| | PROPOSED Type II Signal Pedestal | | EXISTING Type II Signal Pedestal |
| | PROPOSED Metal Strain Pole | | EXISTING Metal Strain Pole |

This plan supersedes the one signed and sealed on 7/23/2021.

New Installation

	SR 1009 (Old Charlotte Hwy.) at Williams Road		
	Division 10 Union County Monroe	PLANNED BY: R. N. Zinser	
750 N. Greenfield Pkwy, Garner, NC 27529	PREPARED BY: R. N. Zinser	REVIEWED BY: T. J. Williams	DATE: Nov 29, 2021
SCALE: 1"=30'	REVISIONS:	INITIALS:	DATE:

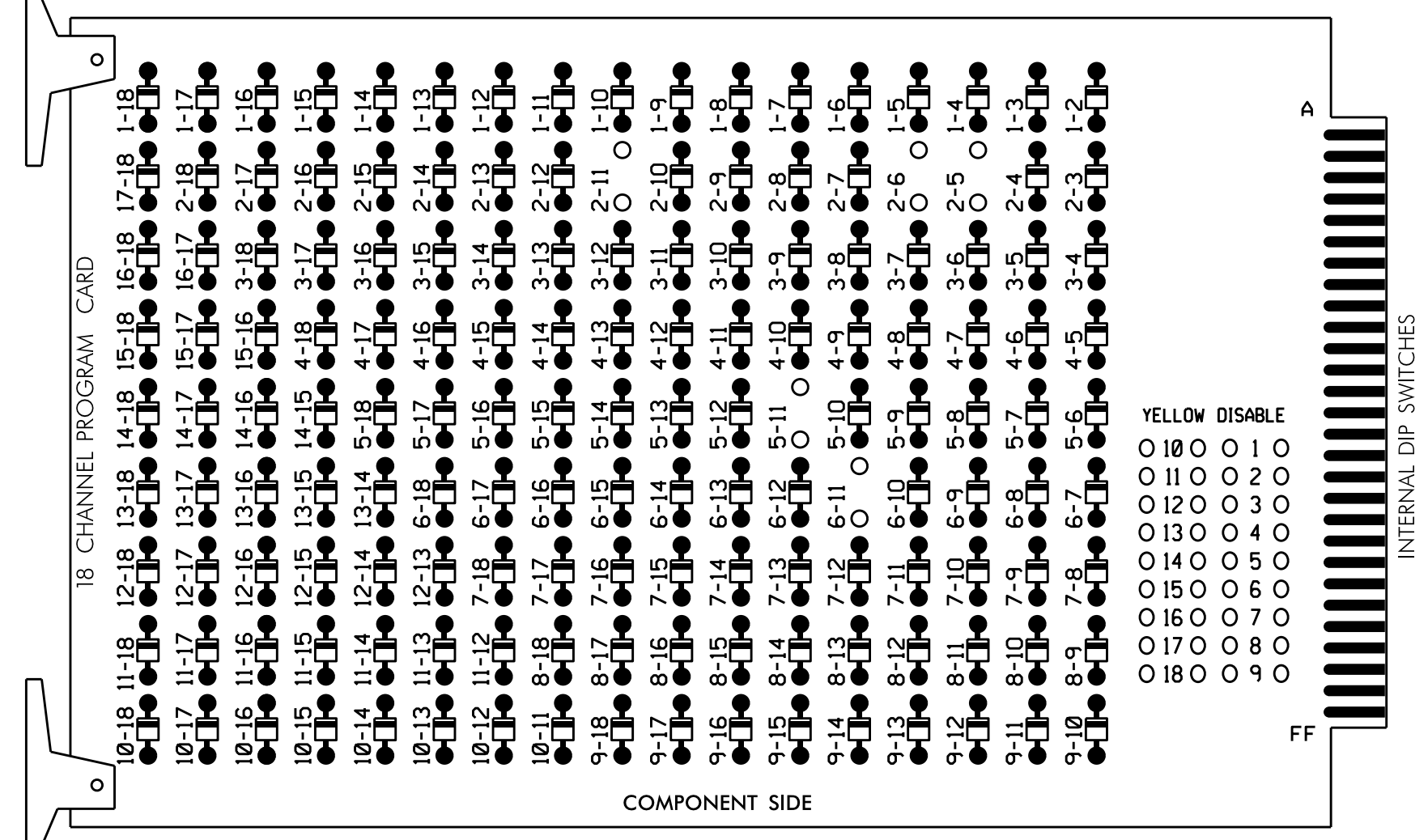
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

20-Nov-2021 15:52 S:\IT\565\K15\Sig\01\le5\Sig\10\10-2385\2021-04\102385-1.sig.dsn,2021mdd.dgn rnz:insr

EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

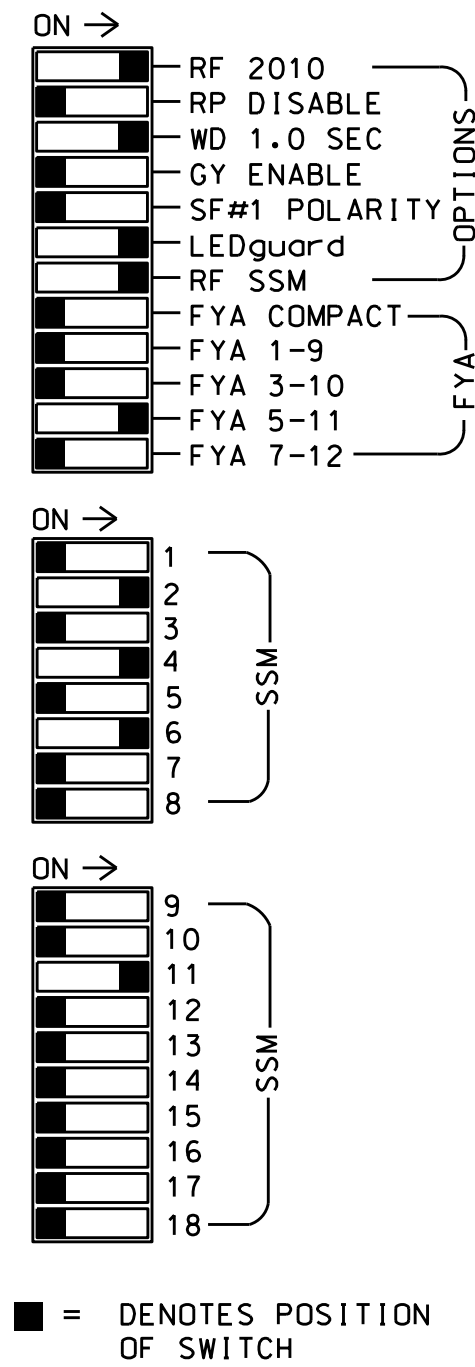
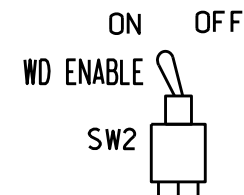
REMOVE DIODE JUMPERS 2-5, 2-6, 2-11, 5-11 and 6-11.



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.
- Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.



NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Program controller to start up in phase 2 Green and 6 Green.
- The cabinet and controller are part of the D10-23 Monroe Closed Loop System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
 CABINET.....332 W/AUX
 SOFTWARE.....ECONOLITE ASC/3-2070
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S2,S5,S7,S8,AUX S4
 PHASES USED.....2,4,5,6
 OVERLAP "A".....NOT USED
 OVERLAP "B".....NOT USED
 OVERLAP "C".....*
 OVERLAP "D".....NOT USED
 * See overlap programming detail on sheet 2

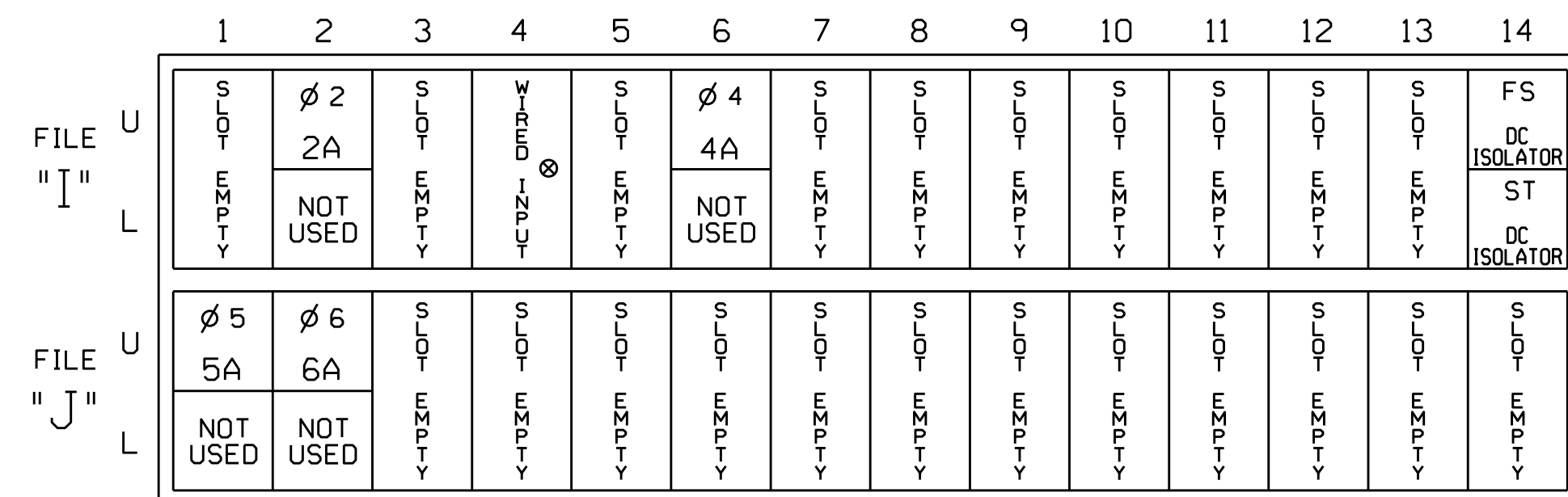
SIGNAL HEAD HOOK-UP CHART

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.	NU	21,22	NU	NU	41,42	NU	51	61,62	NU	NU	NU	NU	NU	NU	NU	51	NU	NU	
RED		128			101			134											
YELLOW		129			102		*	135											
GREEN		130			103			136											
RED ARROW																		A114	
YELLOW ARROW																			A115
FLASHING YELLOW ARROW																			A116
GREEN ARROW								133											

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

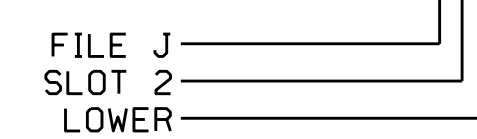
⊗ Wired Input - Do not populate slot with detector card

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
2A	TB2-5,6	I2U	39	2	2	YES			X	N
4A	TB4-9,10	I6U	41	4	4	YES		5		N
5A	TB3-1,2	J1U	55	5	5	YES		15		N
		14U	47	22	2	YES		3		G
6A	TB3-5,6	J2U	40	6	6	YES			X	N

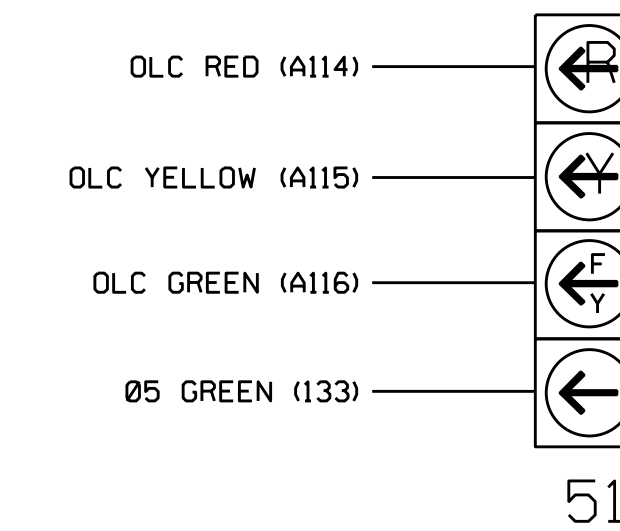
¹Add jumper from J1-W to 14-W, on rear of input file.

INPUT FILE POSITION LEGEND: J2L



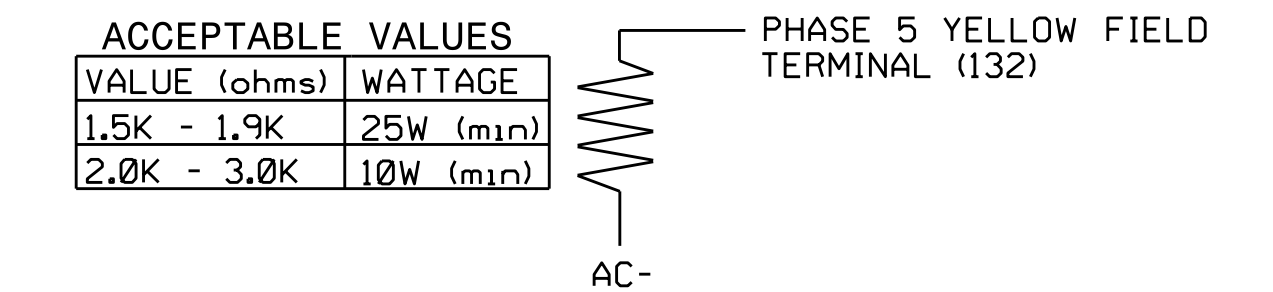
FYA SIGNAL WIRING DETAIL

(wire signal head as shown)



LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown)



10-NOV-2021 10:15 S:\IT\ASST\IS:Signal\work\hous\sig_mon\proj\sig_mon\102385_sig_elec_xxx.dgn

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 10-2385
 DESIGNED: November 2021
 SEALED: 11/29/2021
 REVISED:

THIS ELECTRICAL DETAIL SUPERSEDES THE DETAIL SEALED ON 07/30/21

Electrical Detail - Sheet 1 of 2

Electrical and Programming Details For: SR 1009 (Old Charlotte Hwy.) at Williams Road

Prepared In the Offices of: [Logo] 750 N. Greenfield Pkwy, Garner, NC 27529

Division 10 Union County Monroe

PLAN DATE: November 2021 REVIEWED BY: T. Joyce

PREPARED BY: C. Strickland REVIEWED BY:

REVISIONS: [Table]

INIT. DATE

DocuSigned by: D. Todd Joyce Nov 30, 2021

SIG. INVENTORY NO. 10-2385

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL: [Professional Engineer Seal]

ECONOLITE ASC/3-2070 LOGIC PROCESSOR PROGRAMMING DETAIL TO PREVENT POSSIBLE BACKUP PREVENT/RED REVERT ISSUE

(program controller as shown)

Under very specific circumstances when backing up from 2+6 to 2+5, the controller will not reserve phase 2 after going through Red Clear and Red Revert. This logic ensures backup protect and Red Revert work properly.

1. From Main Menu select 1. CONFIGURATION
2. From CONFIGURATION Submenu select 8. LOGIC PROCESSOR
3. From 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:N (T/F)
IF   VEH YELLOW ON PH  6 IS ON
AND  CTR ON PHASE CHECK  4 IS OFF

THEN LP SET LOGIC FLAG  1      ON
```

IF PHASE 6 IS CLEARING AND THERE ARE NO SIDE STREET CALLS, SET A LOGIC FLAG.

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

```
LP#:  2 COPY FROM:  2 ACTIVE:N (T/F)
IF   LP FLAG           1 IS ON

THEN CTR CALL PHASE   5      ON

ELSE
```

IF THE LOGIC FLAG IS SET, THE CONTROLLER IS BACKING UP TO PHASE 5. SO PLACE A CONTROLLER CALL TO PHASE 5.

ENTER A "3" IN THE LP# FIELD. PRESS 'ENTER', AND PROGRAM AS SHOWN.

```
LP#:  3 COPY FROM:  3 ACTIVE:N (T/F)
IF   VEH GREEN ON PH  5 IS ON

THEN LP SET LOGIC FLAG  1      OFF

ELSE
```

PHASE 5 IS BEING SERVED SO CLEAR THE LOGIC FLAG AND RELEASE THE PHASE 5 CONTROLLER CALL.

4. From LOGIC PROCESSOR Submenu select 1. LOGIC STATEMENT CONTROL

ENABLE LOGIC PROCESSOR STATEMENTS 1, 2, & 3 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
LP 1-15  E  E  E  .  .  .  .  .  .  .  .  .  .  .  .
LP 16-30 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 31-45 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 46-60 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 61-75 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 76-90 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
```

END PROGRAMMING

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select 2. CONTROLLER
2. From CONTROLLER Submenu select 2. VEHICLE OVERLAPS

Toggle Twice

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..... 0
```

END PROGRAMMING

ECONOLITE ASC/3-2070 BACKUP PROTECTION ENABLE PROGRAMMING

(program controller as shown)

1. From Main Menu select 1. CONFIGURATION
2. From CONFIGURATION Submenu select 1. CONTROLLER SEQ
3. From CONTROLLER SEQUENCE Submenu select 3. BACKUP PREVENT PHASES

Follow programming as shown below. On the 'ENABLE BACKUP PREVENT' screen move cursor to the appropriate field and press 'YES/NO' on the controller keypad to toggle field value between 'X', 'B', 'C' and 'OFF'.

```
ENABLE BACKUP PREVENT
TMG/BKUP 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
1 . . . . .
2 . . . . .
3 . . . . .
4 . . . . .
5 . . . . .
6 . . . . B . . . . .
7 . . . . .
8 . . . . .
9 . . . . .
10 . . . . .
11 . . . . .
12 . . . . .
13 . . . . .
14 . . . . .
15 . . . . .
16 . . . . .
```

END PROGRAMMING

NOTE

1. 'B' without a 'C' programmed for the 'TIMING' (row) phase inhibits the controller from servicing the 'BACKUP' (column) phase when the 'TIMING' (row) phase is active, or next, until the controller goes through Red Revert and Red Clear. Make sure the proper Red Revert and Red Clear times shown on the Signal Design plan are programmed in the controller phase timing.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 10-2385
DESIGNED: November 2021
SEALED: 11/29/2021
REVISED:

THIS ELECTRICAL DETAIL
SUPERSEDES THE DETAIL
SEALED ON 07/30/21

Electrical Detail - Sheet 2 of 2

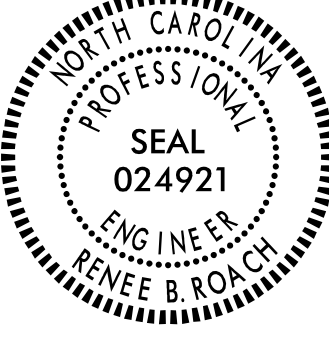
<p style="font-size: small;">ELECTRICAL AND PROGRAMMING DETAILS FOR:</p> <p style="font-size: x-small;">Prepared In the Offices of: STATE OF NORTH CAROLINA Department of Transportation Signal Management Section 750 N. Greenfield Pkwy, Garner, NC 27529</p>	<p style="font-weight: bold; font-size: large;">SR 1009 (Old Charlotte Hwy.) at Williams Road</p> <p style="font-size: x-small;">Division 10 Union County Monroe</p> <table style="width: 100%; font-size: x-small;"> <tr> <td>PLAN DATE: November 2021</td> <td>REVIEWED BY: T. Joyce</td> </tr> <tr> <td>PREPARED BY: C. Strickland</td> <td>REVIEWED BY:</td> </tr> <tr> <td>REVISIONS</td> <td>INIT. DATE</td> </tr> </table>	PLAN DATE: November 2021	REVIEWED BY: T. Joyce	PREPARED BY: C. Strickland	REVIEWED BY:	REVISIONS	INIT. DATE	<p style="font-size: x-small; text-align: center;">DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p> <p style="text-align: center;">SEAL SEAL 031001 ENGINEER TODD JOYCE DocuSigned by: Nov 30, 2021 DATE</p> <p style="font-size: x-small;">SIC. INVENTORY NO. 10-2385</p>
PLAN DATE: November 2021	REVIEWED BY: T. Joyce							
PREPARED BY: C. Strickland	REVIEWED BY:							
REVISIONS	INIT. DATE							

3D-10/16-2021 12:16
W:\2385\em.enr\10-2385.dgn
ceastf\ckj\and

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

**SIGNING PLAN
UNION COUNTY**

**LOCATION: INTERSECTION OF OLD CHARLOTTE HWY.(SR-1009)
AND WILLIAMS RD**

PROJECT REFERENCE NO. W-5710AN	SHEET NO. SIGN-1
DocuSigned by: APPROVED: Renee B. Roach 3EB4360B0316431	
DATE: 12/02/2022	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

T.I.P.: W-5710AN

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 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS

GENERAL NOTES

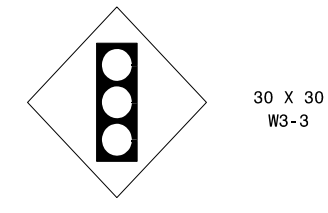
- SIGNS FURNISHED BY STATE
- CONFIRM IN WRITING AT LEAST 4 MONTHS IN ADVANCE, THE ACTUAL DATE THE DEPARTMENT FURNISHED SIGNS WILL BE REQUIRED.
- IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.
- 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	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL	52	L.F.
4102000000	904	SIGN ERECTION, TYPE E	3	EA.
4116100000	904	RELOCATE SIGN TYPE E (GROUND MOUNTED)	1	EA.
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	1	EA.
4238000000	907	DISPOSAL OF SIGN D,E,OR F	1	EA.

TYPE E SIGNS

(401) QUANTITY REQ'D 3



30 X 30
W3-3

ONE "U" POST PER SIGN

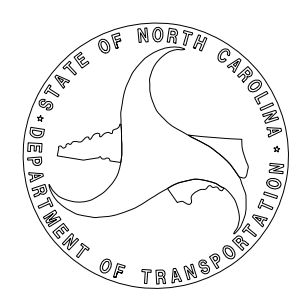
INDEX

SHEET NO.	DESCRIPTION
SIGN-1	TITLE SHEET
SIGN-2	EXISTING/PROPOSED SIGN SHEET

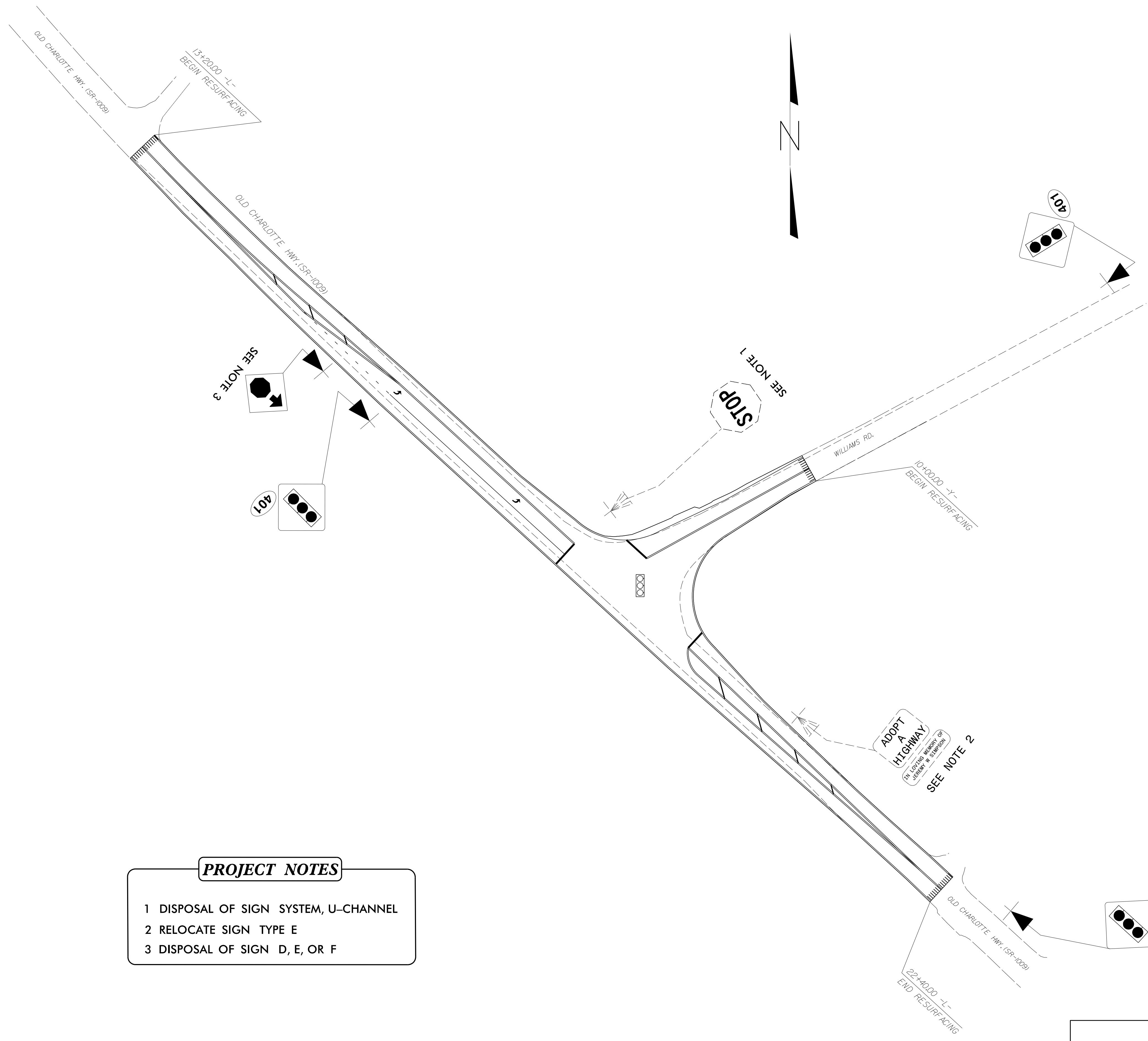
PLAN PREPARED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

Kelvin Jordan SIGNING & DELINEATION REGIONAL ENGINEER

J.Navarrete SIGNING & DELINEATION PROJECT DESIGN ENGINEER



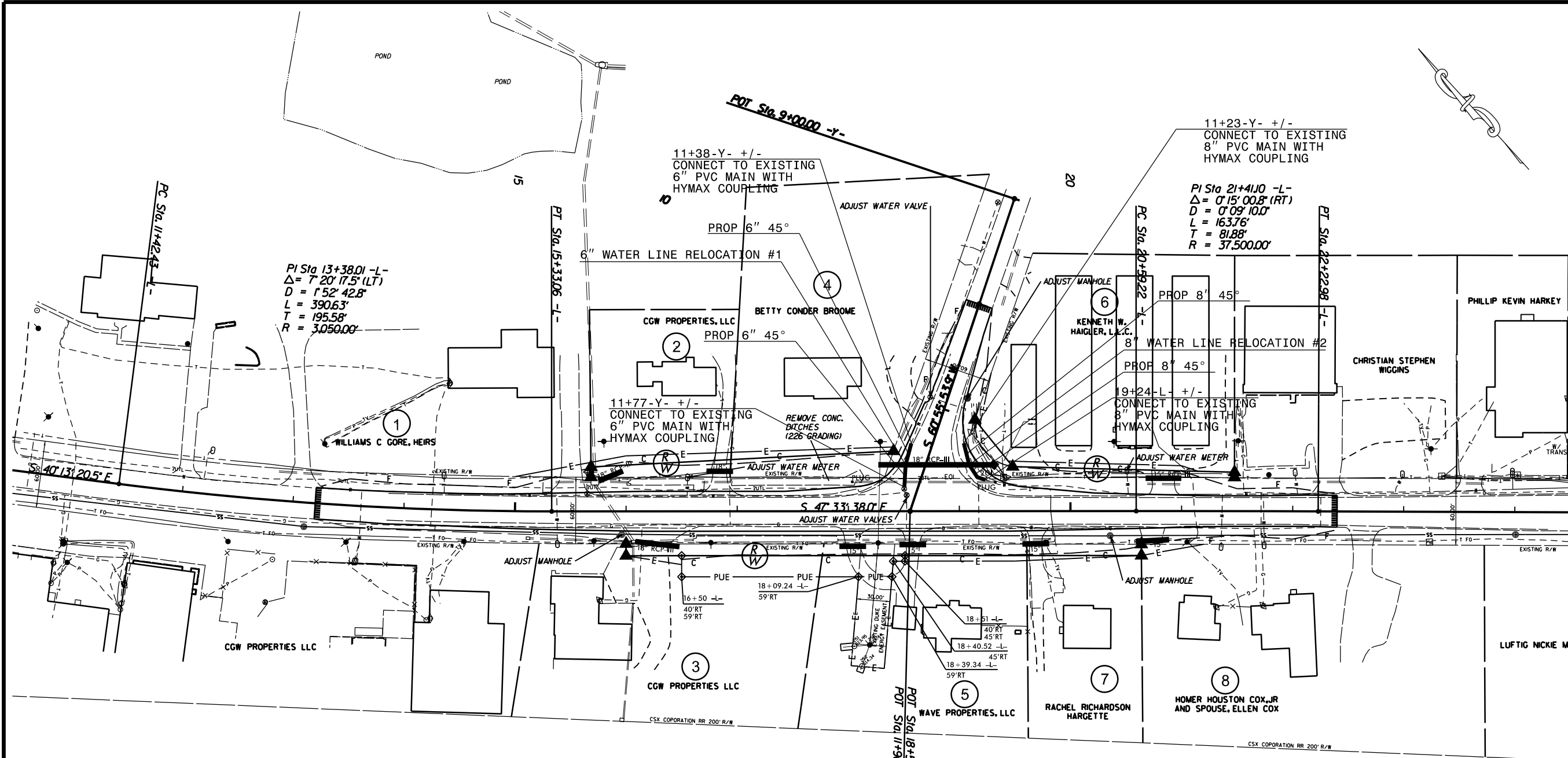
CONTRACT:



- PROJECT NOTES**
- 1 DISPOSAL OF SIGN SYSTEM, U-CHANNEL
 - 2 RELOCATE SIGN TYPE E
 - 3 DISPOSAL OF SIGN D, E, OR F

 SIGNAL

EXISTING/ PROPOSED



GENERAL NOTES:

CONTACT RICHARD RISER OF CITY OF MONROE 72 HOURS PRIOR TO BEGINNING WORK ON THIS PROPOSED WATER MAIN AT (704) 282-4646.

WATER VALVES ARE TO BE OPERATED BY CITY OF MONROE STAFF.

ENTIRE LENGTH OF RELOCATED WATER MAIN MUST BE RESTRAINED JOINT.

CONTRACTOR IS TO USE TEMP. PLUGS AND BLOW OFFS FOR TESTING & DISINFECTION.

CONTRACTOR IS TO PROVIDE TWO TIE-IN CREWS WORKING CONCURRENTLY, ONE AT EACH END, TO MINIMIZE SHUT DOWN TIME.

SHUT DOWN WILL BE LIMITED TO A MAXIMUM OF FOUR HOURS. PROVIDE 96 HOURS ADVANCE NOTICE TO CITY OF MONROE PRIOR TO SHUT-DOWN OF WATER MAIN.

CONTRACTOR SHALL PROVIDE A PLAN FOR BLOCKING AT ALL TIE-IN LOCATIONS. PLAN MUST BE APPROVED BY CITY OF MONROE REPRESENTATIVE PRIOR TO PERFORMING WORK.

ALL SLEEVES MUST BE OF THE RESTRAINED JOINT TYPE.

THE NEW WATER MAIN MUST BE AT LEAST 3 FEET BELOW THE PROPOSED EDGE OF PAVEMENT AND PROVIDE A MINIMUM 3 FEET OF COVER AT ALL TIMES.

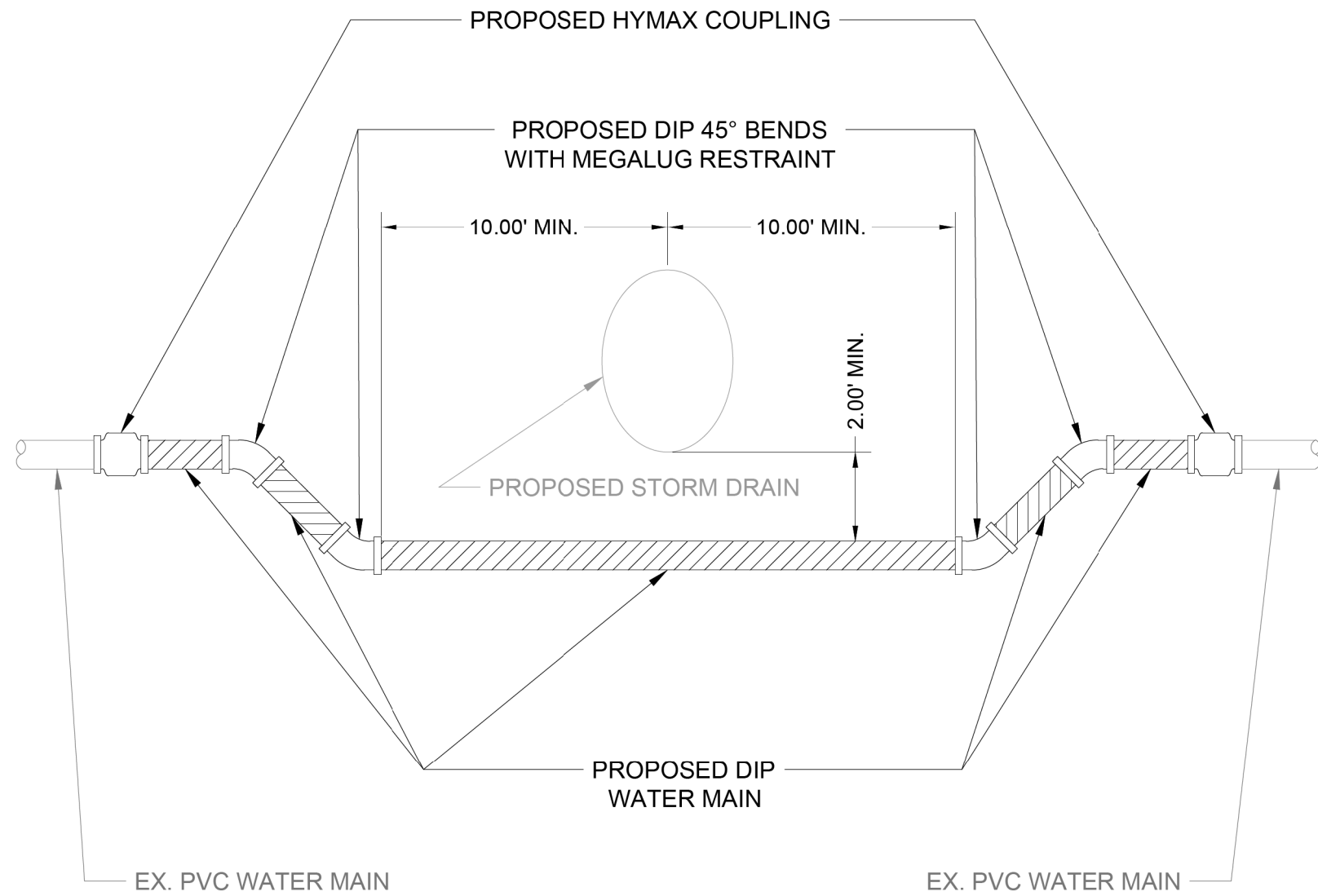
DUE TO OPERATING HOURS OF LOCAL BUSINESSES, TIE-INS TO THE EXISTING WATER MAIN MAY REQUIRE NIGHT WORK

SEE SHEET UC-2 FOR DETAIL.

LEFT TURN LANE WITH SIGNAL ON OLD CHARLOTTE RD.(SR-1009) AT WILLIAMS RD.

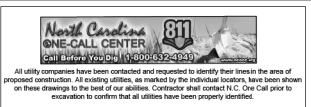
SCALE	1"=50'		REVISIONS
DATE	08-2021		
DWG. BY	CEB		
DESIGN BY	TBL		
APPROVED	JDH		

PROJECT NO.	SHEET NO.
44856.3.42	UC-2
F.A. PROJECT NO. HSIP-1009(024)	



0	PLANS	4/23/21

DESIGNED -
DRAWN RY
CHECKED RER
PROJ. MGR. RER



CITY OF MONROE
WATER RESOURCES DEPARTMENT
ENGINEERING DIVISION

WATER MAIN IMPROVEMENTS

SCALE	SHEET NO.
NTS	1
	OF 1

LEFT TURN LANE WITH SIGNAL
ON OLD CHARLOTTE RD.(SR-1009)
AT WILLIAMS RD.

SCALE	r=50'		REVISIONS
DATE	08-2021		
DWG. BY	CEB		
DESIGN BY	TBL		
APPROVED	JDH		

T.I.P. NO.	SHEET NO.
W-5710AN	UO-1

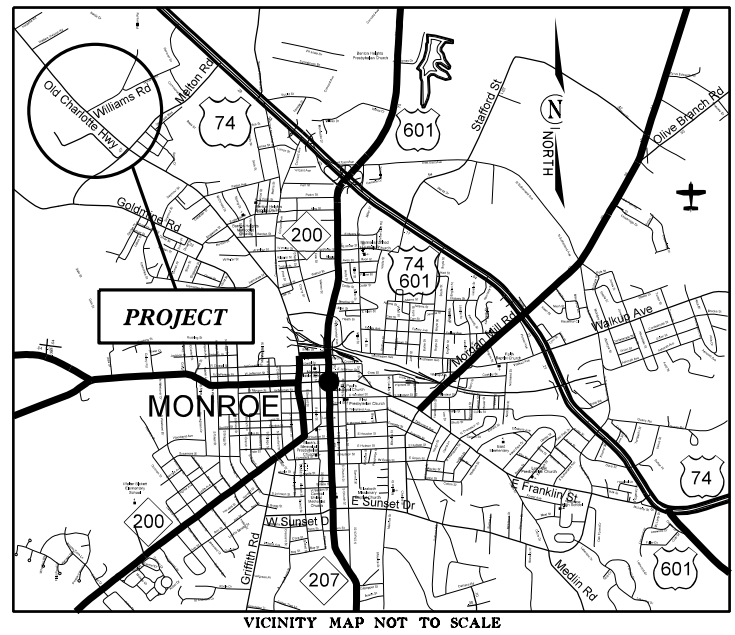
NOTE:
 ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS.
 NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

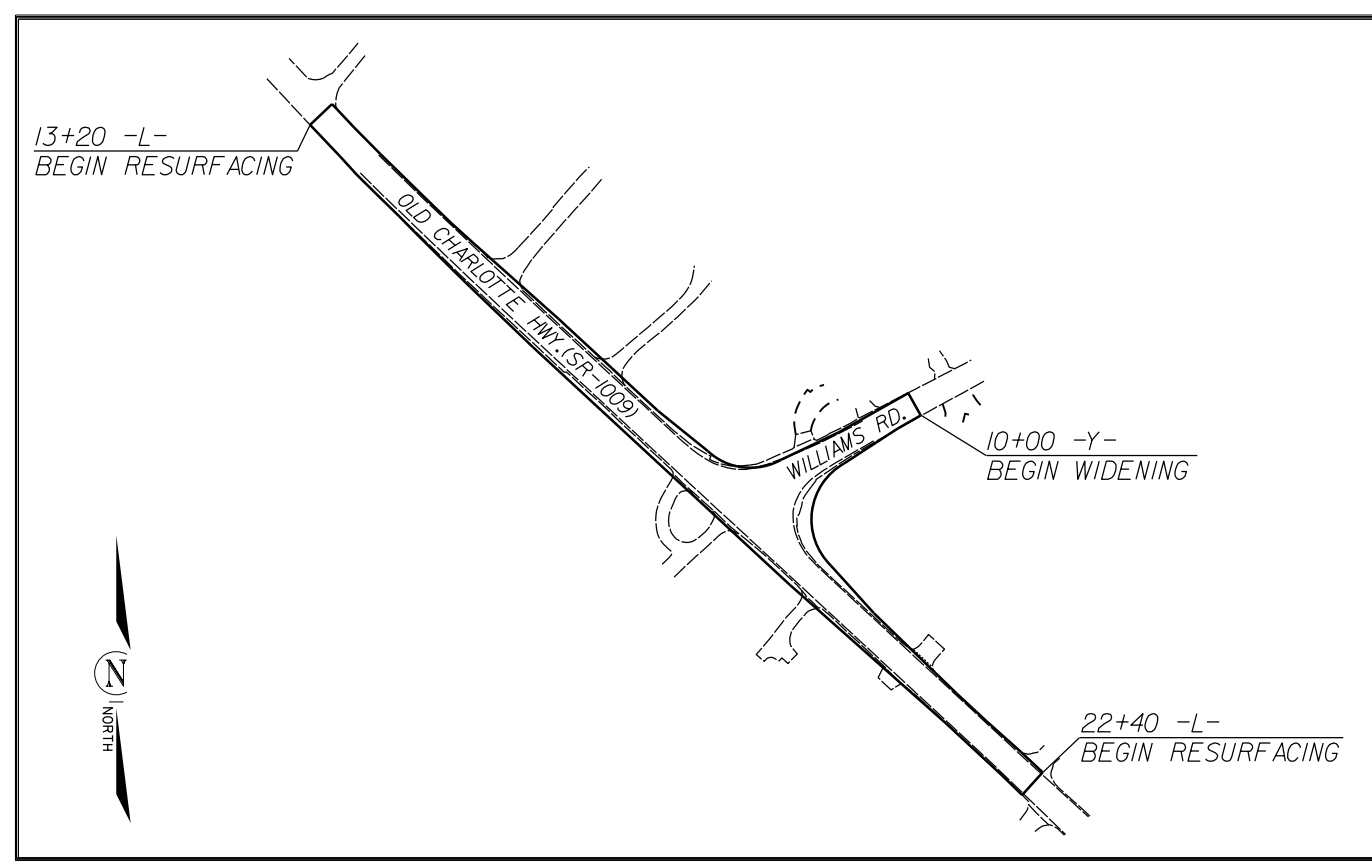
**UTILITIES BY OTHERS PLANS
 UNION COUNTY**

**LOCATION: INTERSECTION OF OLD CHARLOTTE HWY. (SR-1009)
 AND WILLIAMS RD.**

TYPE OF WORK: UTILITIES BY OTHERS



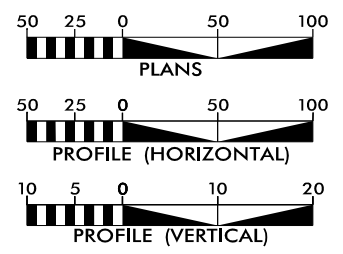
VICINITY MAP NOT TO SCALE



PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

TIP PROJECT: W-5710AN

GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UO-1	TITLE SHEET
UO-2	UBO PLAN SHEETS

UTILITY OWNERS WITH CONFLICTS

- (A) POWER - DUKE ENERGY
- (B) GAS - CITY OF MONROE
- (C) COMMUNICATIONS - FRONTIER COMMUNICATIONS
- (D) COMMUNICATIONS - CHARTER COMMUNICATIONS
- (E) COMMUNICATIONS - AT&T

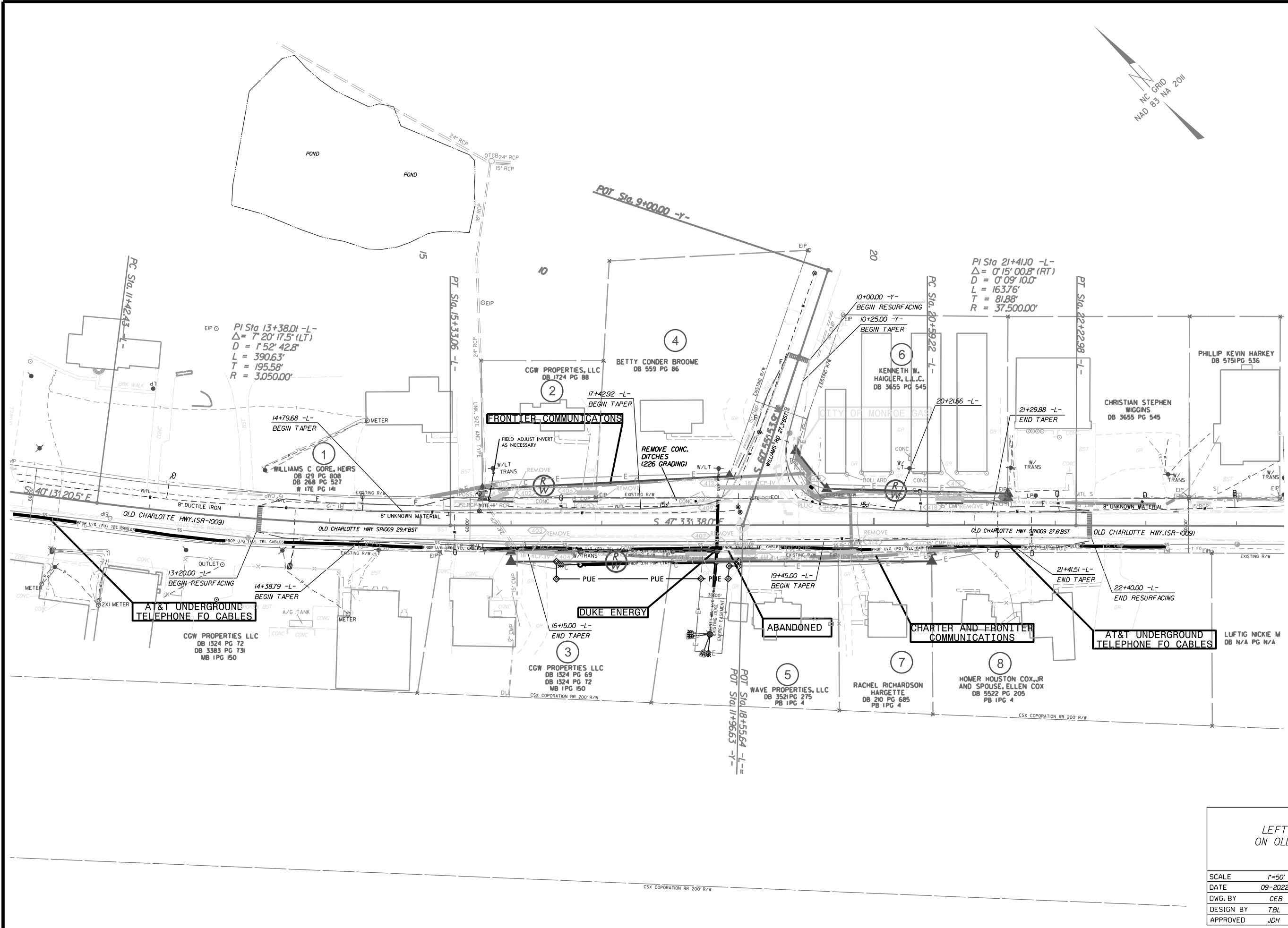
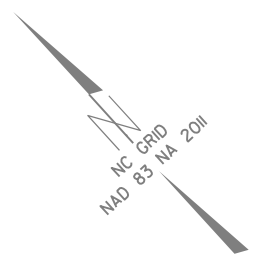
PREPARED IN THE OFFICE OF:

DDC UNIT DIVISION 10
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS




**DIVISION 10
 UTILITIES UNIT**
 716 W. MAIN ST.
 ALBEMARLE, NC 28001
 PHONE (704) 983-4400

T LYNN BASINGER UTILITIES ENGINEER
ADAM PRESLAR UTILITIES COORDINATOR

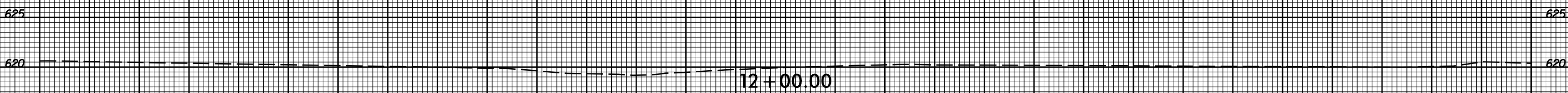
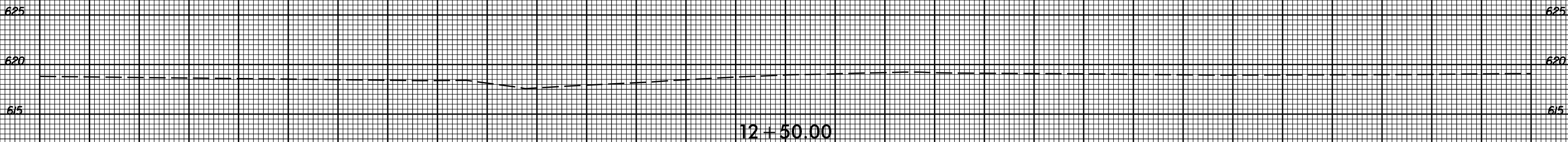
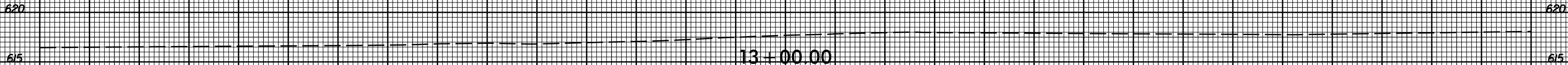
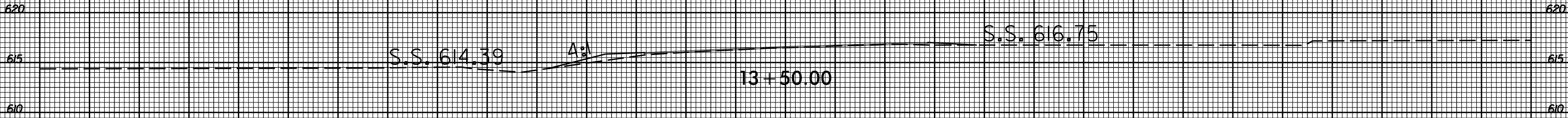


LEFT TURN LANE WITH SIGNAL
ON OLD CHARLOTTE RD. (SR-1009)
AT WILLIAMS RD.

SCALE	1"=50'		REVISIONS
DATE	09-2022		
DWG. BY	CEB		
DESIGN BY	TBL		
APPROVED	JDH		



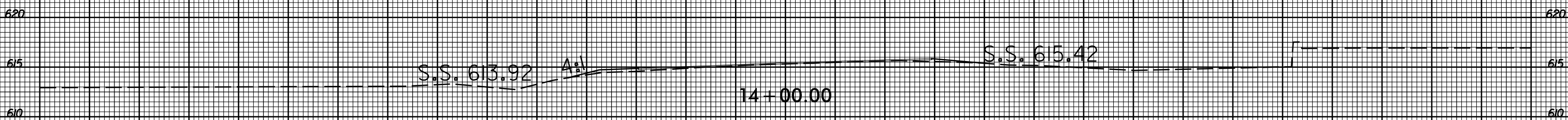
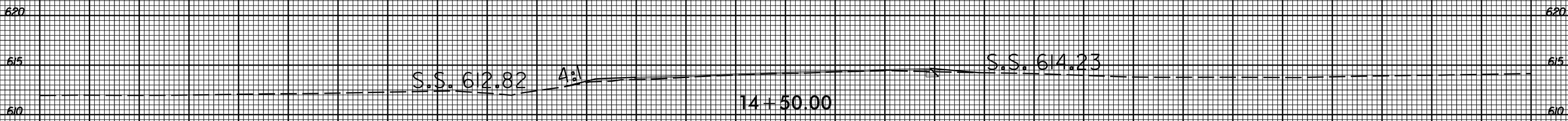
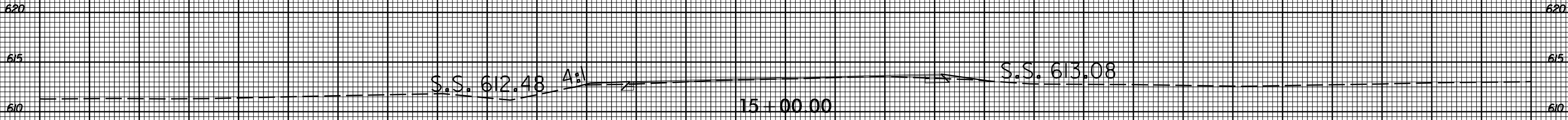
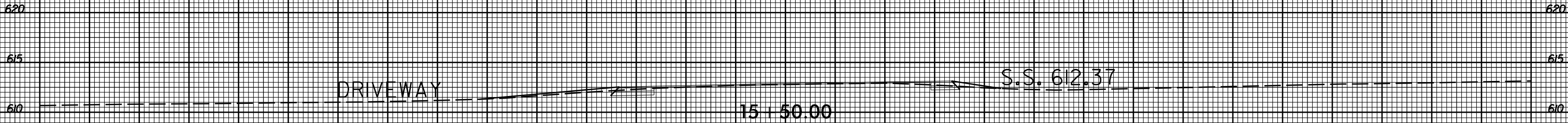
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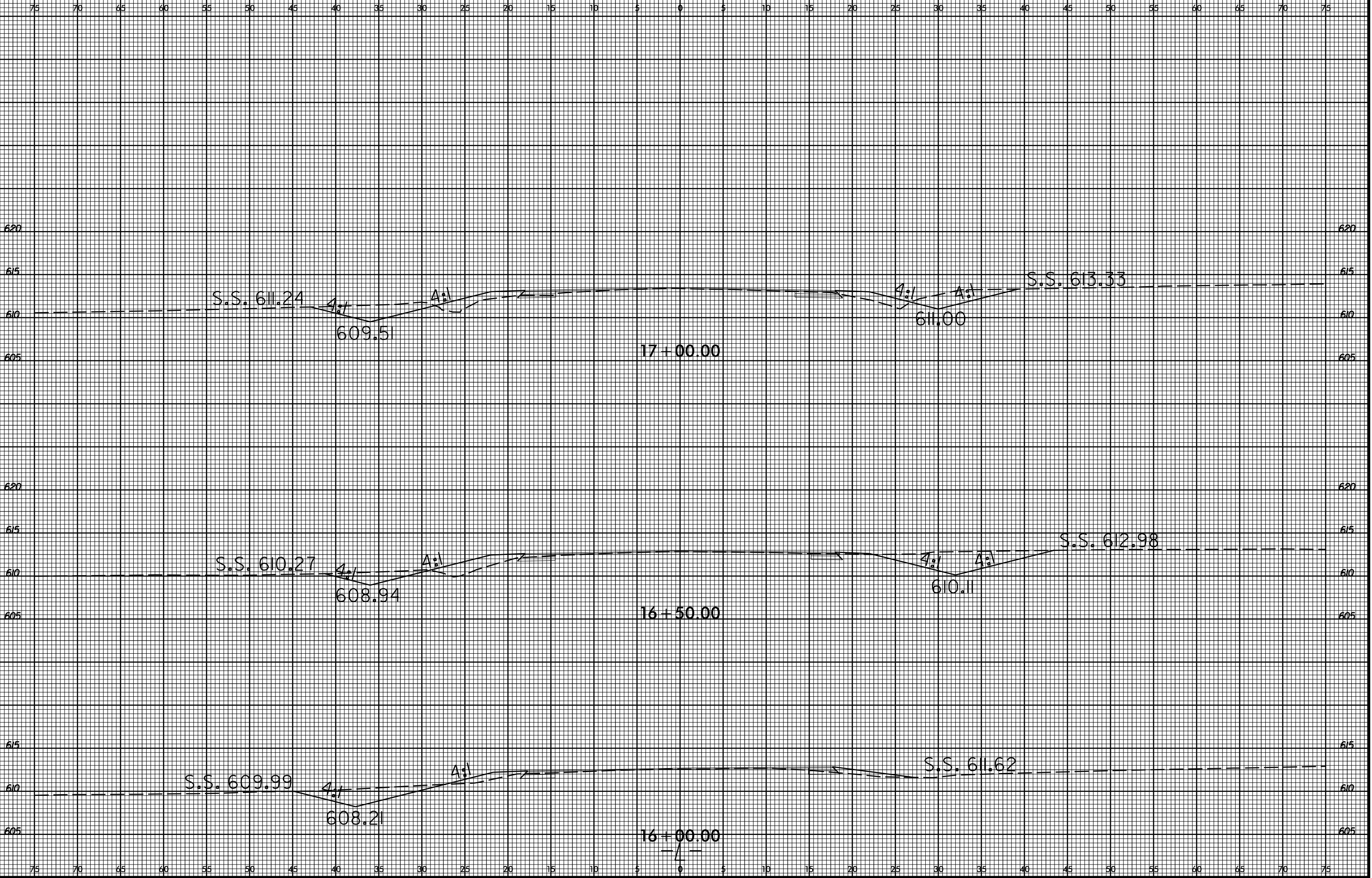
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75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75





620 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 75 620

WILLIAMS ROAD

S.S. 615.64

4:1
613.59
A:1

19+00.00

620 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 75 620

WILLIAMS ROAD

DRIVEWAY

18+50.00

620 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 75 620

S.S. 613.15

DRIVEWAY

4:1
610.48
A:1

18+00.00

620 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 75 620

S.S. 612.62

S.S. 613.89

4:1
610.14
A:1

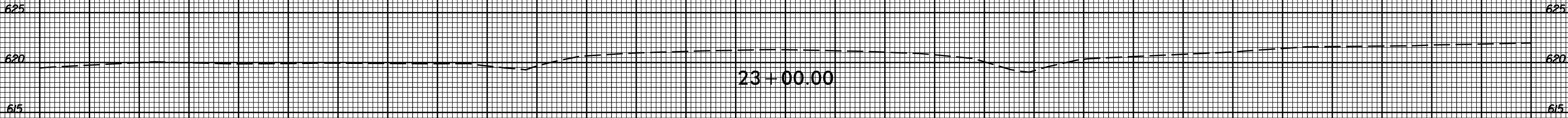
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17+50.00

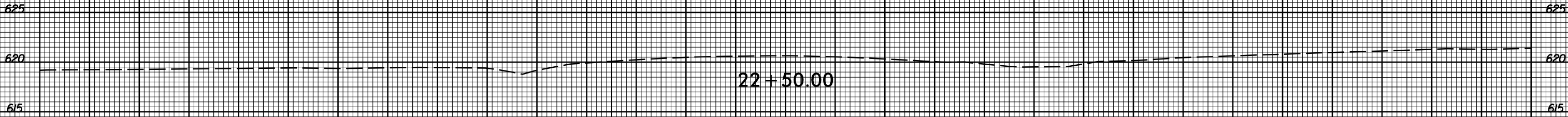
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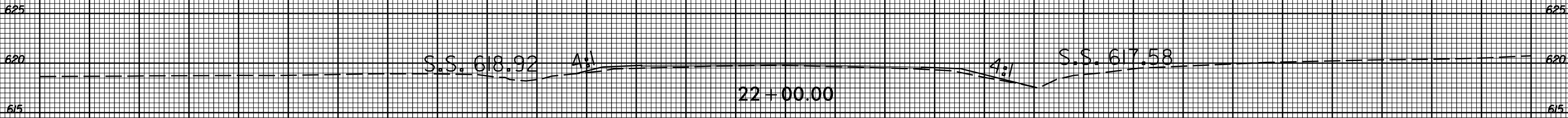
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23+00.00



22+50.00



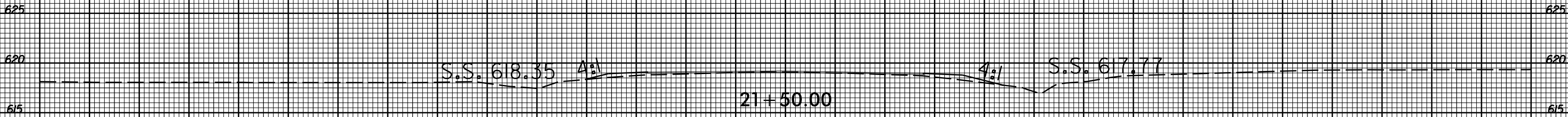
22+00.00

S.S. 618.92

4:1

4:1

S.S. 617.58



21+50.00

S.S. 618.35

4:1

4:1

S.S. 617.77

