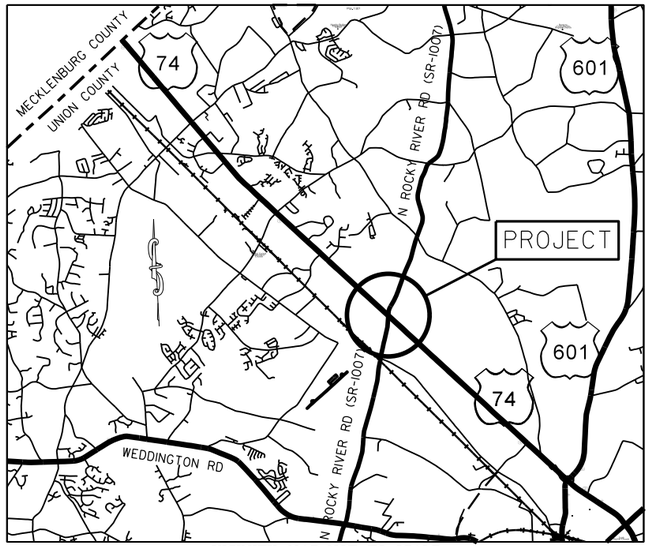
TIP: U-5703A

PROJECT: 50129.3.2



VICINITY MAP NOT TO SCALE

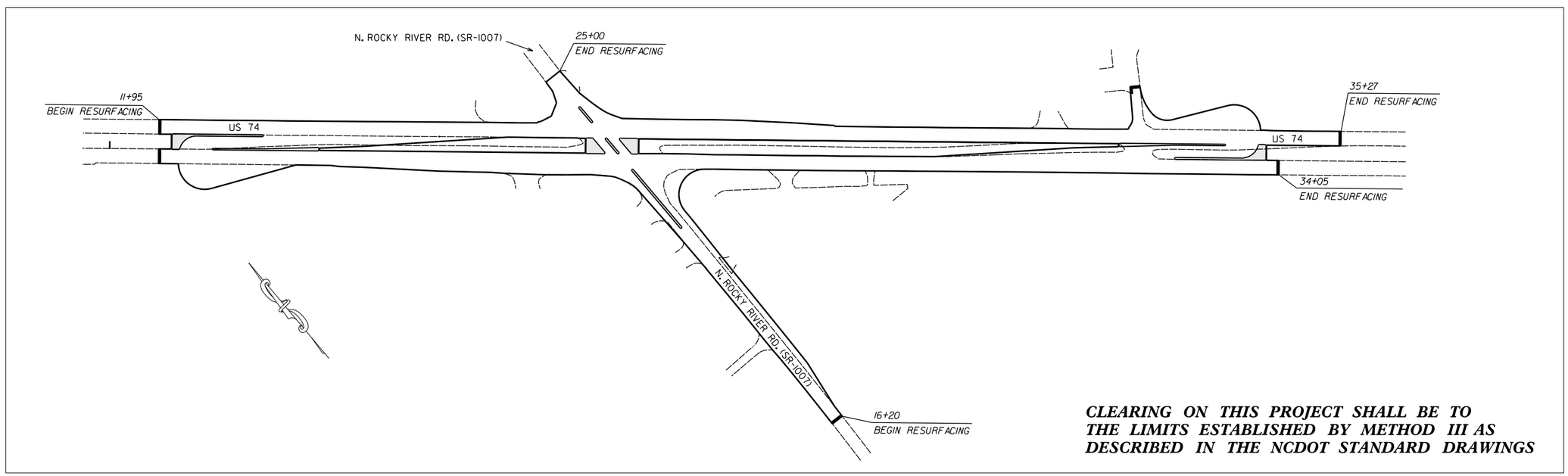
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
UNION COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	50129.3.2	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
50129.1.2	NHPP-0074(160)	P.E.
50129.2.2		R/W
50129.3.2		CONST.

LOCATION: *INTERSECTION OF US 74 & N. ROCKY RIVER RD. (SR-1007)*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, MONOLITHIC CONCRETE ISLAND, THERMOPLASTIC PAVEMENT MARKING, AND TRAFFIC SIGNALS*



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

GRAPHIC SCALES

0 50 100
PLANS

0 50 100
PROFILE (HORIZONTAL)

0 5 10
PROFILE (VERTICAL)

DESIGN DATA

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

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT	50129.3.2	=	0.61 MILES
TOTAL LENGTH OF STATE PROJECT	50129.3.2	=	0.61 MILES

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

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:

DONALD HARWARD
PROJECT ENGINEER

DONALD HARWARD
PROJECT DESIGN ENGINEER

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · DIVISION DESIGN CONSTRUCT UNIT

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPPERSON

DocuSigned by:
A92E75CC0FFB43B...
SIGNATURE:

10-DEC-2018 14:00
S:\DDC\RDY\union\US 74 Rocky River Rd\U-5
rbiowder AT DIV10-314132

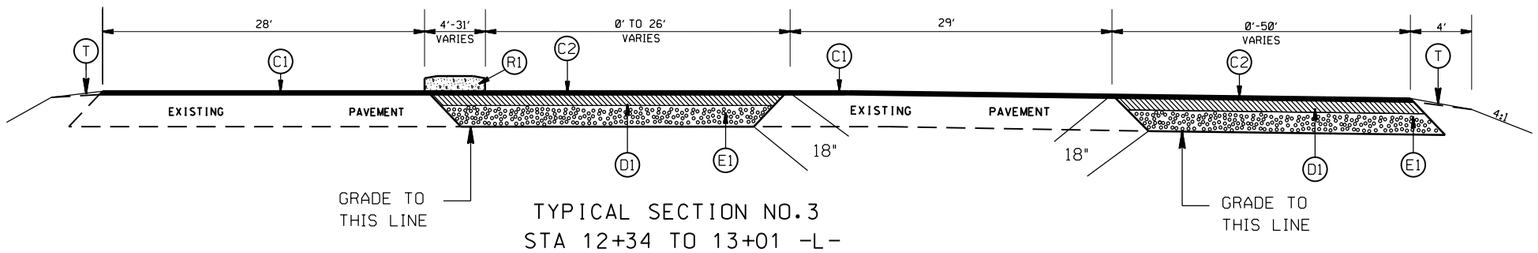
PROJECT NO.	SHEET NO.
50129.3.2	2
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

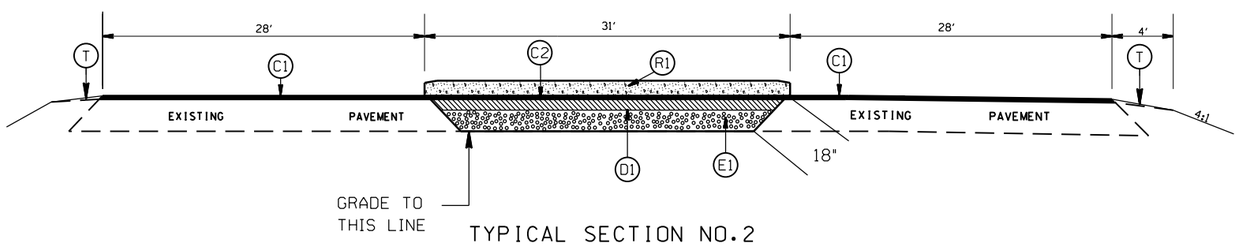
NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MCCARTHY DIVISION

DocuSigned by:

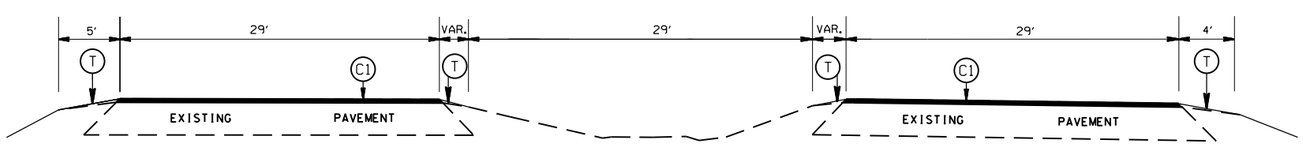
A92E75CC0FFB43B...



TYPICAL SECTION NO.3
STA 12+34 TO 13+01 -L-



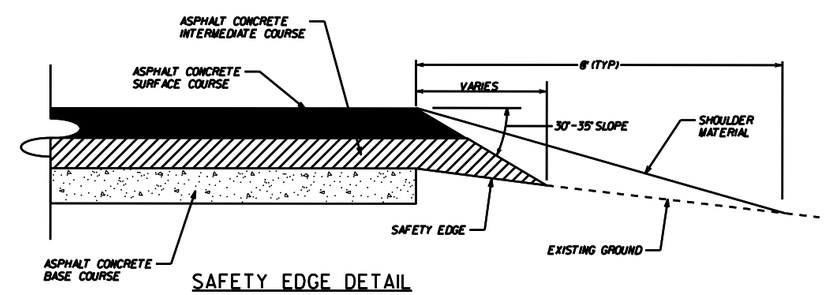
TYPICAL SECTION NO.2
STA 12+20 TO 12+34 -L-
STA 33+67.96 TO 33+80 -L-



TYPICAL SECTION NO.1
STA 11+95 TO 12+20 -L-
STA 33+80 TO 34+05 -L-

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
D1	PROP. APPROX. 4" ASPHALT CONC. INTERMEDATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 11" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
R1	PROP. 5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
T	EARTH MATERIAL



SAFETY EDGE DETAIL

MICHIGAN LEFT ON US 74 AT
NORTH ROCKY RIVER RD.(SR-1007)

		REVISIONS	
SCALE	N/A		
DATE	6-2018		
DWG. BY	CEB		
DESIGN BY	JDH		
APPROVED	JDH		

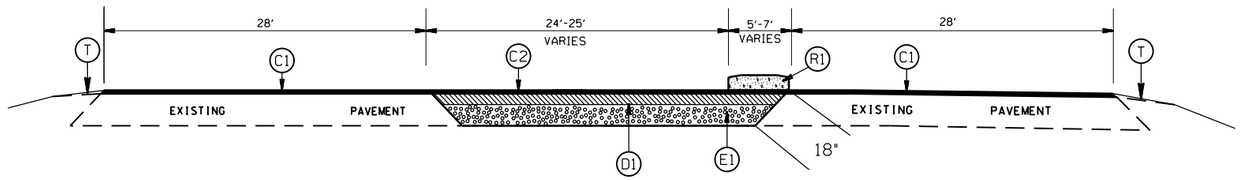
PROJECT NO.	SHEET NO.
50129.3.2	2A
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPERSON

DocuSigned by:

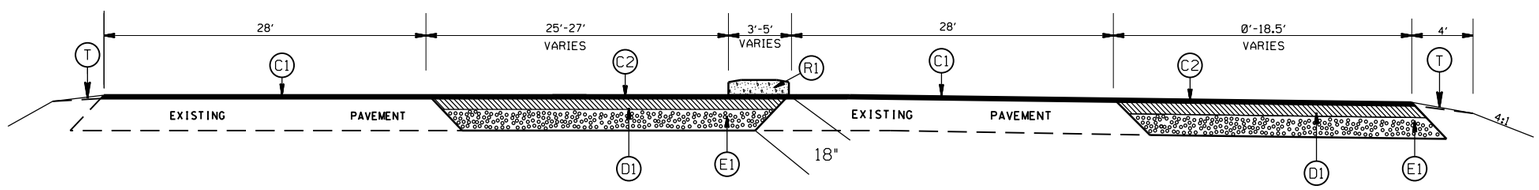
A92E75CC0FFB43B...



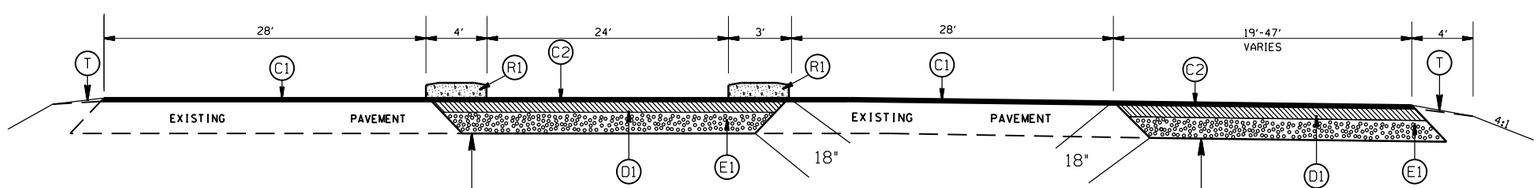
TYPICAL SECTION NO.6
STA 14+66 TO 15+12 -L-

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
D1	PROP. APPROX. 4" ASPHALT CONC. INTERMEDATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 11" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
R1	PROP. 5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
T	EARTH MATERIAL



TYPICAL SECTION NO.5
STA 14+01 TO 14+66 -L-



TYPICAL SECTION NO.4
STA 13+01 TO 14+01 -L-

MICHIGAN LEFT ON US 74 AT
NORTH ROCKY RIVER RD.(SR-1007)

		REVISIONS	
SCALE	N/A		
DATE	6-2018		
DWG. BY	CEB		
DESIGN BY	JDH		
APPROVED	JDH		

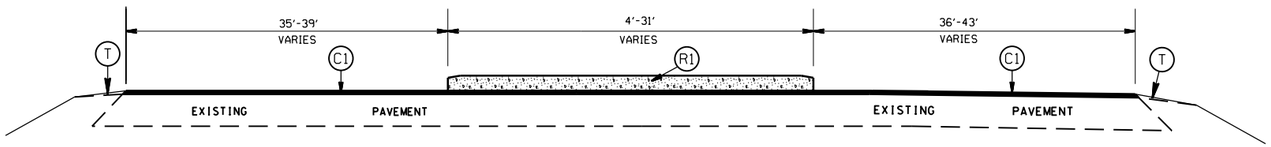
PROJECT NO.	SHEET NO.
50129.3.2	2B
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

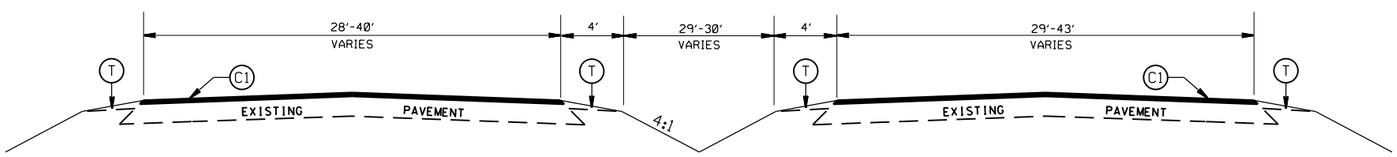
NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN W. GIBSON

DocuSigned by:

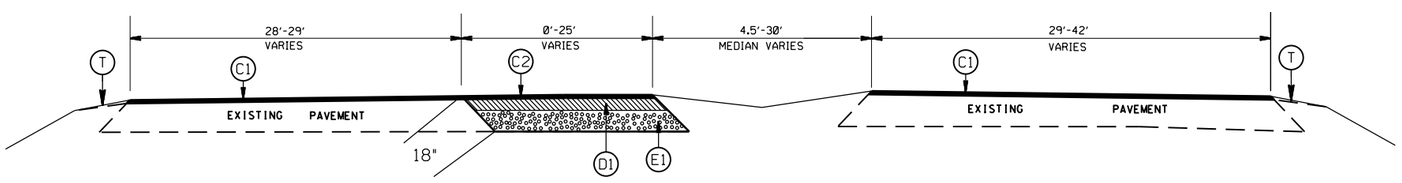
A92E75CC0FFB43B...



TYPICAL SECTION NO.9
STA 20+36.63 TO 20+75.21 -L-
STA 21+03.87 TO 21+41.97 -L-



TYPICAL SECTION NO.8
STA 18+82.88 TO 20+36.63 -L-
STA 21+41.97 TO 27+26.44 -L-



TYPICAL SECTION NO.7
STA 15+12 TO 18+82.88 -L-

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
D1	PROP. APPROX. 4" ASPHALT CONC. INTERMEDATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 11" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
R1	PROP. 5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
T	EARTH MATERIAL

MICHIGAN LEFT ON US 74 AT
NORTH ROCKY RIVER RD.(SR-1007)

			REVISIONS	
SCALE	N/A			
DATE	6-2018			
DWG. BY	CEB			
DESIGN BY	JDH			
APPROVED	JDH			

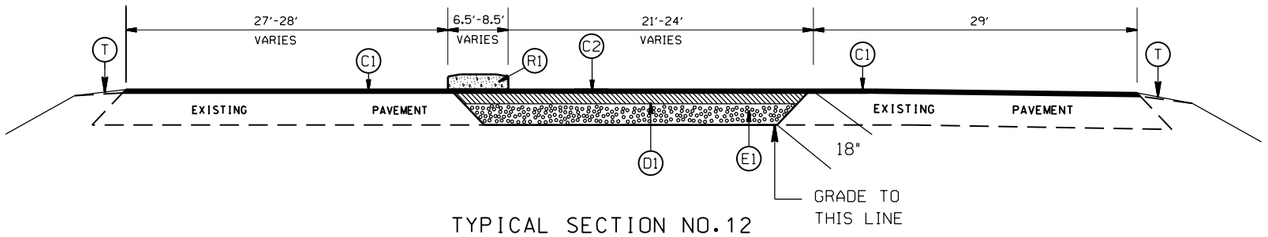
PROJECT NO.	SHEET NO.
50129.3.2	2C
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

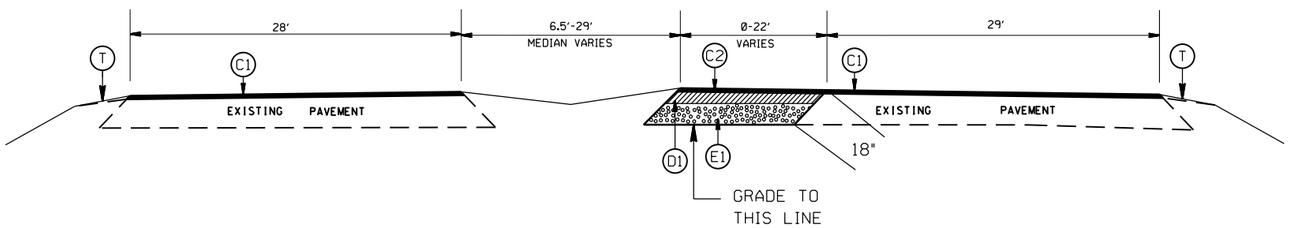
NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL BURDON

DocuSigned by:

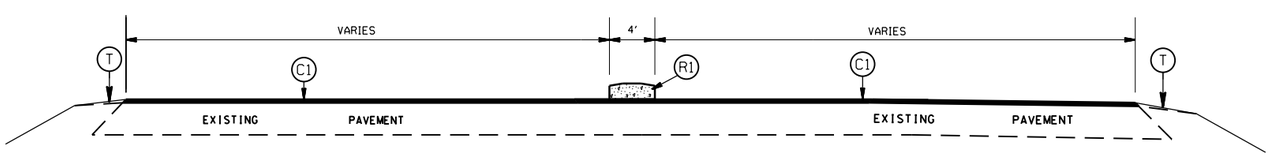
A92E75CC0FFB43B...



TYPICAL SECTION NO.12
STA 30+38 TO 31+07.79 -L-



TYPICAL SECTION NO.11
STA 27+26.44 TO 30+38 -L-



TYPICAL SECTION NO.10
STA 20+75.21 TO 21+03.87 -L-
STA 22+21.90 TO 22+59.16 -Y-
STA 23+80.62 TO 24+20.62 -Y-

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
D1	PROP. APPROX. 4" ASPHALT CONC. INTERMEDATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 11" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
R1	PROP. 5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
T	EARTH MATERIAL

MICHIGAN LEFT ON US 74 AT
NORTH ROCKY RIVER RD.(SR-1007)

		REVISIONS	
SCALE	N/A		
DATE	6-2018		
DWG. BY	CEB		
DESIGN BY	JDH		
APPROVED	JDH		

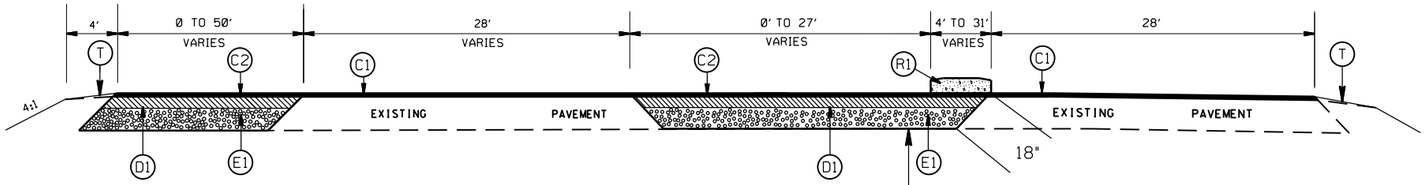
PROJECT NO.	SHEET NO.
50129.3.2	2D
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL PERSON

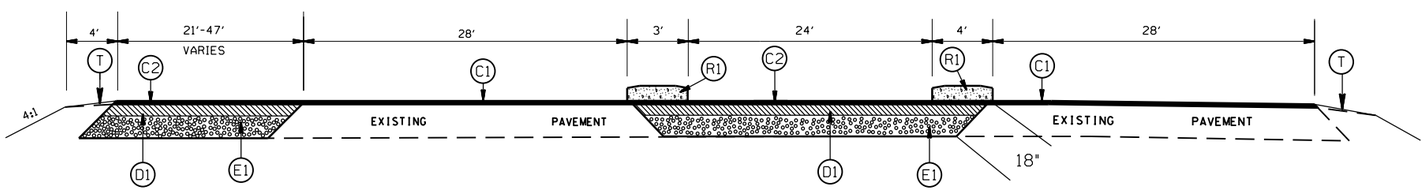
DocuSigned by:

A92E75CC0FFB43B...

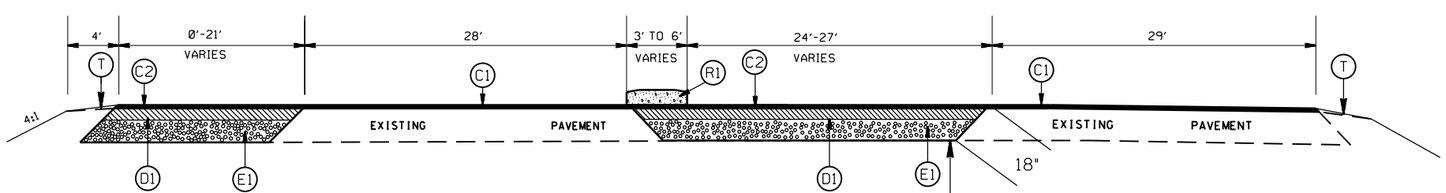


TYPICAL SECTION NO.15
STA 32+99 TO 33+67.96 -L-

GRADE TO THIS LINE



TYPICAL SECTION NO.14
STA 31+99 TO 32+99 -L-



TYPICAL SECTION NO.13
STA 31+07.79 TO 31+99 -L-

GRADE TO THIS LINE

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
D1	PROP. APPROX. 4" ASPHALT CONC. INTERMEDATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 11" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
R1	PROP. 5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
T	EARTH MATERIAL

MICHIGAN LEFT ON US 74 AT
NORTH ROCKY RIVER RD.(SR-1007)

		REVISIONS	
SCALE	N/A		
DATE	6-2018		
DWG. BY	CEB		
DESIGN BY	JDH		
APPROVED	JDH		

PROJECT NO.	SHEET NO.
50129.3.2	2E
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPERSON

DocuSigned by:

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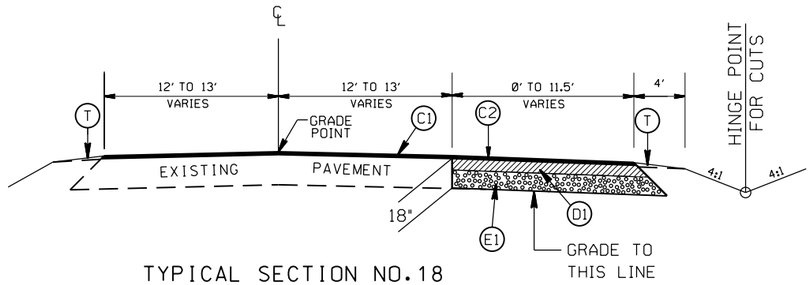
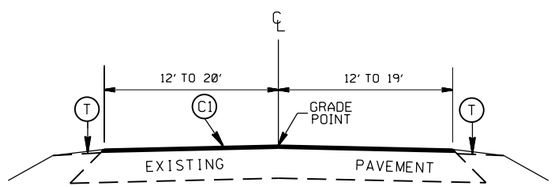


TYPICAL SECTION NO.18
STA 16+45 TO 18+00 -Y-



TYPICAL SECTION NO.17
STA 16+20 TO 16+45 -Y-
STA 24+20.62 TO 25+00.00 -Y-

TYPICAL SECTION NO.16
STA 34+05 TO 35+27 -L-

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
D1	PROP. APPROX. 4" ASPHALT CONC. INTERMEDATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 11" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
R1	PROP. 5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
T	EARTH MATERIAL

MICHIGAN LEFT ON US 74 AT
NORTH ROCKY RIVER RD.(SR-1007)

			REVISIONS	
SCALE	N/A	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
DATE	6-2018			
DWG. BY	CEB			
DESIGN BY	JDH			
APPROVED	JDH			

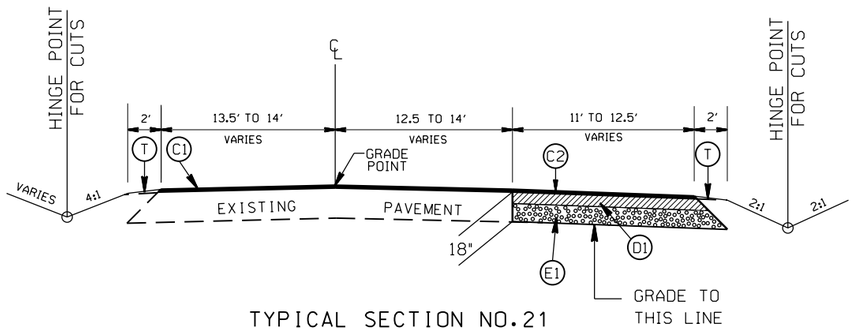
PROJECT NO.	SHEET NO.
50129.3.2	2F
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

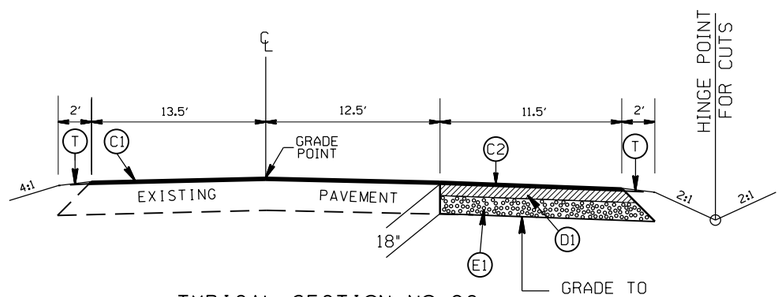
NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL PERSON

DocuSigned by:

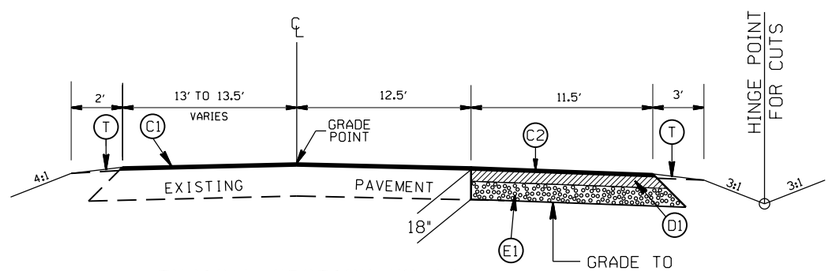
A92E75CC0FFB43B...



TYPICAL SECTION NO.21
STA 19+00 TO 20+84.63 -Y-



TYPICAL SECTION NO.20
STA 18+50 TO 19+00 -Y-



TYPICAL SECTION NO.19
STA 18+00 TO 18+50 -Y-

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
D1	PROP. APPROX. 4" ASPHALT CONC. INTERMEDATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 11" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
R1	PROP. 5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
T	EARTH MATERIAL

MICHIGAN LEFT ON US 74 AT
NORTH ROCKY RIVER RD.(SR-1007)

			REVISIONS	
SCALE	N/A			
DATE	6-2018			
DWG. BY	CEB			
DESIGN BY	JDH			
APPROVED	JDH			

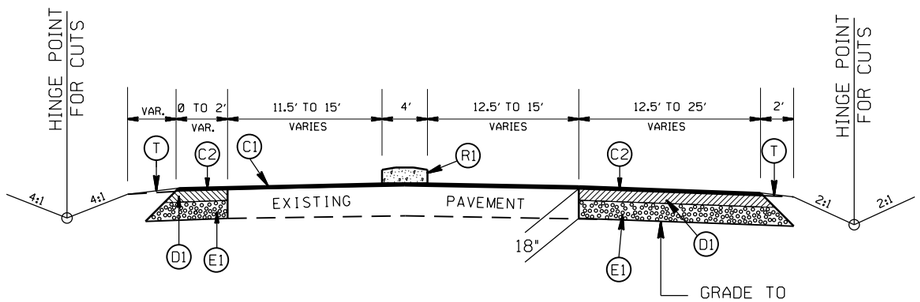
PROJECT NO.	SHEET NO.
50129.3.2	2G
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

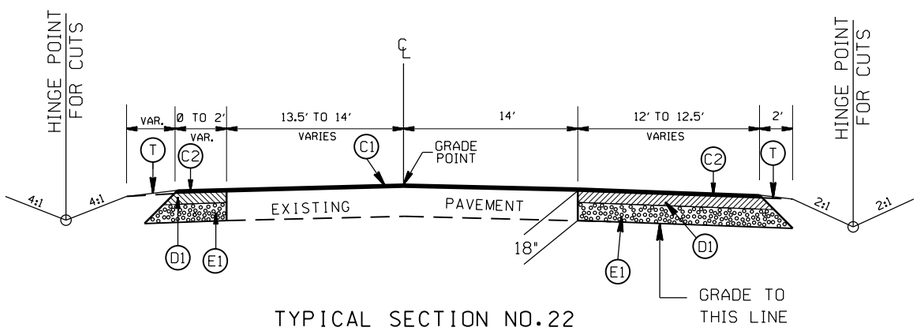
NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL PERSON

DocuSigned by:

A92E75CC0FFB43B...



TYPICAL SECTION NO.23
STA 21+07.76 TO 22+21.90 -Y-



TYPICAL SECTION NO.22
STA 20+84.63 TO 21+07.76 -Y-

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
D1	PROP. APPROX. 4" ASPHALT CONC. INTERMEDATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 11" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
R1	PROP. 5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
T	EARTH MATERIAL

MICHIGAN LEFT ON US 74 AT NORTH ROCKY RIVER RD.(SR-1007)

		REVISIONS	
SCALE	N/A		
DATE	6-2018		
DWG. BY	CEB		
DESIGN BY	JDH		
APPROVED	JDH		

PROJECT NO.	SHEET NO.
50129.3.2	2H
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MCCORKLE JOHNSON

DocuSigned by:

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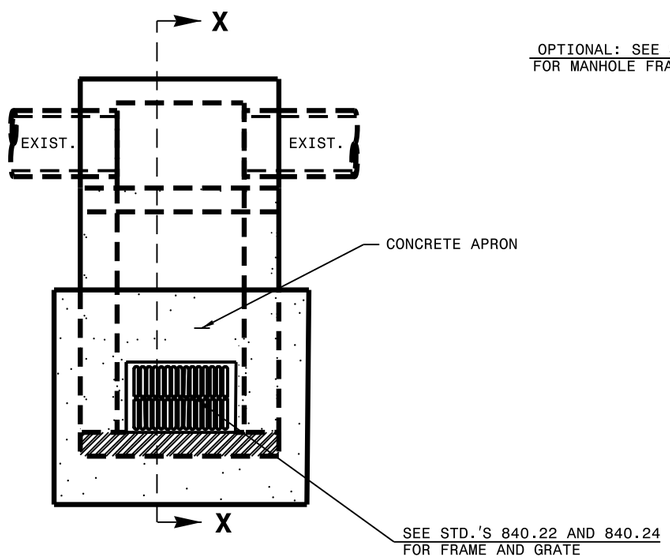
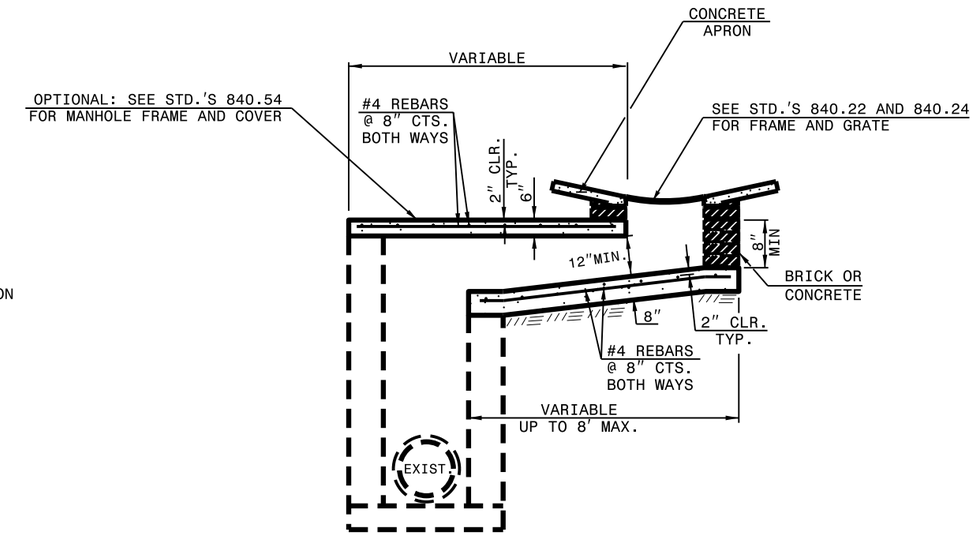
PROJECT REFERENCE NO.	SHEET NO.



PLAN



SECTION X-X

NOTES:

MORTAR JOINTS ½" TO ¼" THICK.

USE CLASS "B" CONCRETE THROUGHOUT.

USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

PROPOSED OFFSET 2GI

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt DATE: 4/13/15
CHECKED BY: _____ DATE: _____
FILE SPEC.: nbritt/english/hydro/840d06 offset boxes.dgn

06-DEC-2018 11:20
SSDOCKARY
J:\psc\docs\ATTDIV\WP 314.3\US 74 Rocky River Rd\U-5703A\tgp\US74_RockyRiver_un8_tgp.dgn

MICHIGAN LEFT ON US 74 AT NORTH ROCKY RIVER RD.(SR-1007)

			REVISIONS	
SCALE	N/A			
DATE	6-2018			
DWG. BY	TBL			
DESIGN BY	JDH			
APPROVED	JDH			

COMPUTED BY: 6-2018 DATE: TBL
CHECKED BY: 6-2018 DATE: JDH

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUB-REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

PROJECT NO.	SHEET NO.
50129.3.2	3
F.A. PROJECT NO.	

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

| STATION | LOCATION (LT,RT, OR CL) | STRUCTURE NO. FROM | STRUCTURE NO. TO | TOP ELEVATION | INVERT ELEVATION | INVERT ELEVATION | SLOPE CRITICAL | DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) SIZE 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | C.S. PIPE SIZE 12" | 15" | 18" | 24" | 36" | 42" | 48" | R.C. PIPE (CLASS III) SIZE 15" | 18" | 24" | 30" | 36" | 42" | 48" | R.C. PIPE (CLASS IV) SIZE 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | *** R. C. PIPE (CLASS V) | *** R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE | *** R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE | 15" SIDE DRAIN PIPE | 18" SIDE DRAIN PIPE | ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P. | C.S.P. | QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0') | * TOTAL LF FOR PAY QUANTITY SHALL BE COL 'A' + (1.3 X COL 'B') LIN. *FT. A 5.0' THRU 10.0' | B 10.0' AND ABOVE | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E | F | G | | CONCRETE TRANSITIONAL SECTION CATCH BASIN | DROP INLET | G.D.I. TYPE "D" STD. 840.19 OR 840.28 | G.D.I. FRAME WITH TWO GRATES STD. 840.22 | CONVERT EXISTING DI TO OFFSET 2GI | 15" PARALLEL PIPE END SECTION STD. 310.02 | T.B.J.B. STD. 840.34 | M.H. FRAME & COVER STD. 840.54 | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME & GRATE STD. 840.16 | | CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71 | PIPE REMOVAL LIN.FT. | REMARKS |
|---|---|---

PROJECT NO.	SHEET NO.
50129.3.2	4
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPPERSON

DocuSigned by:

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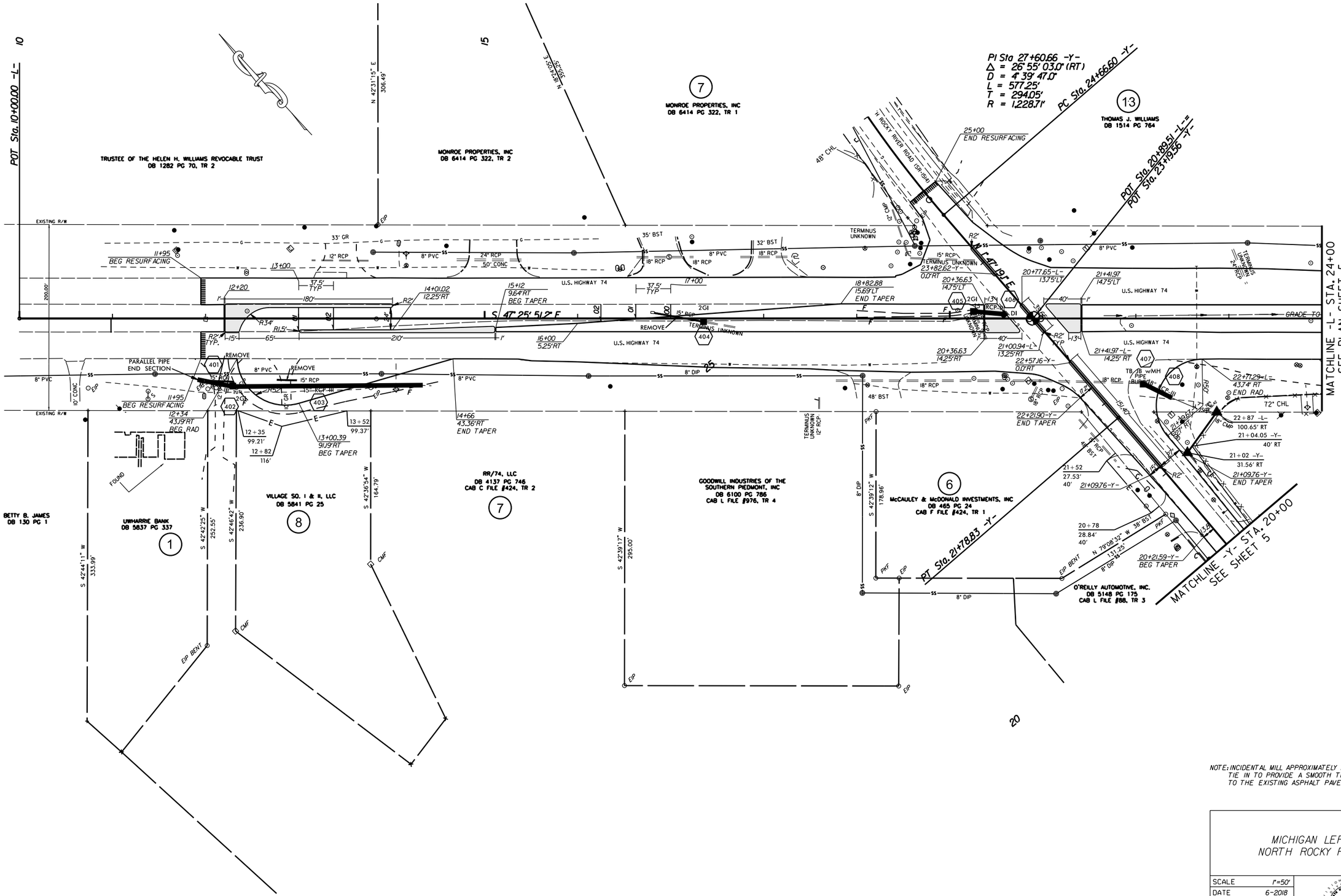

NOTE: INCIDENTAL MILL APPROXIMATELY 25' AT EACH TIE IN TO PROVIDE A SMOOTH TRANSITION TO THE EXISTING ASPHALT PAVEMENT.

MICHIGAN LEFT ON US 74 AT NORTH ROCKY RIVER RD.(SR-1007)

			REVISIONS	
SCALE	1"=50'			
DATE	6-2018			
DWG. BY	JDH			
DESIGN BY	JDH			
APPROVED	JDH			

PROJECT NO.	SHEET NO.
50129.3.2	5
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL SHEPHERSON

DocuSigned by:

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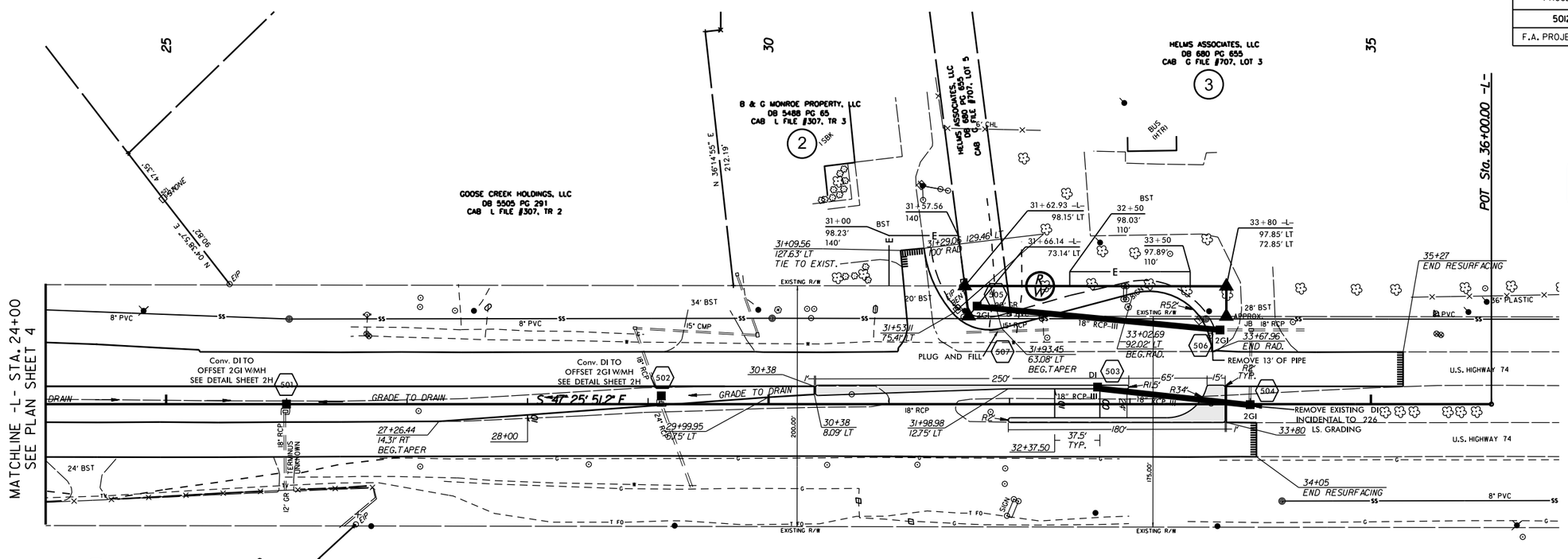

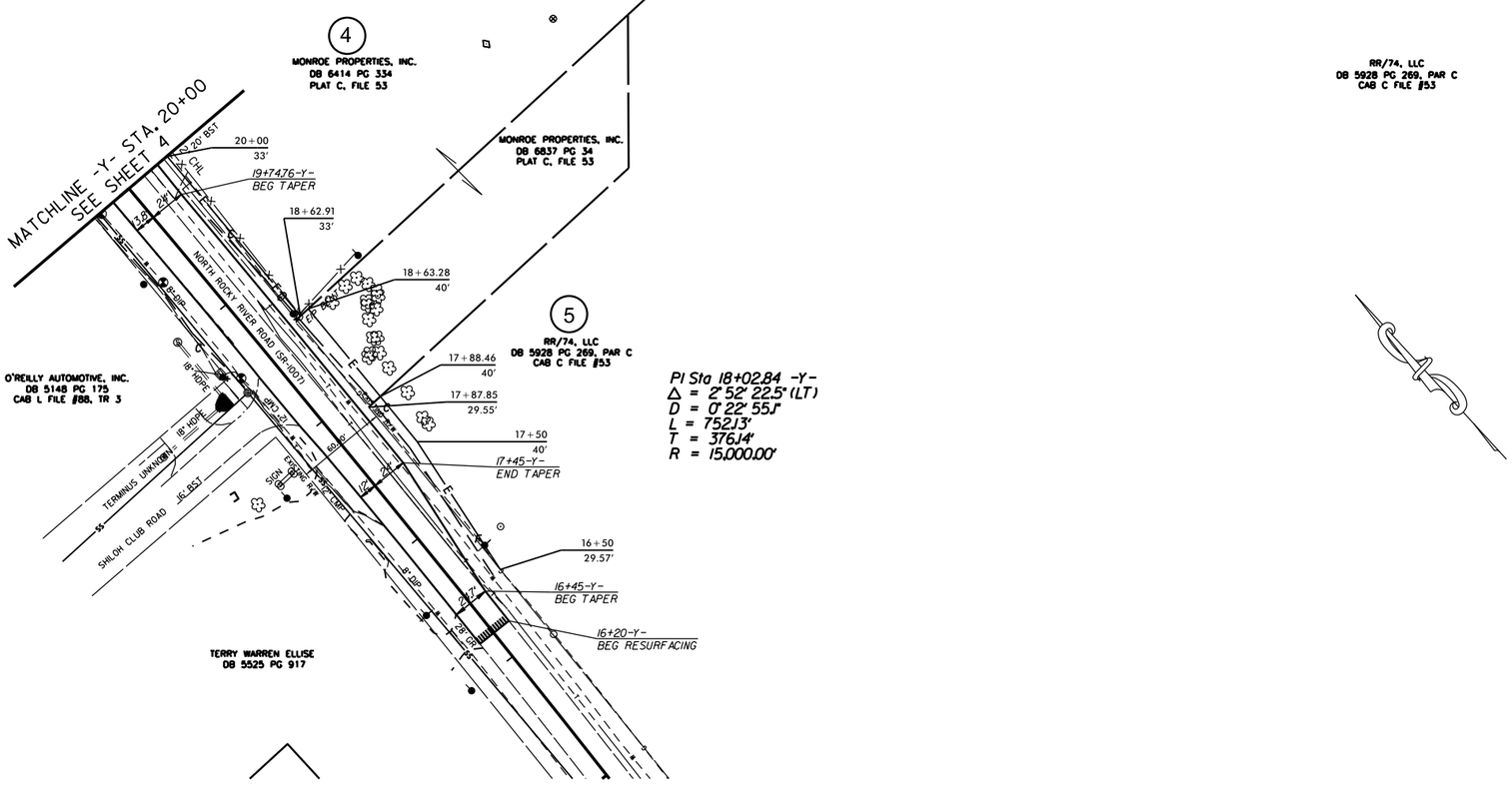

NOTE: INCIDENTAL MILL APPROXIMATELY 25' AT EACH TIE IN TO PROVIDE A SMOOTH TRANSITION TO THE EXISTING ASPHALT PAVEMENT.

MICHIGAN LEFT ON US 74 AT
NORTH ROCKY RIVER RD.(SR-1007)

		REVISIONS	
SCALE	1"=50'		
DATE	6-2018		
DWG. BY	JDH		
DESIGN BY	JDH		
APPROVED	JDH		

PROJECT NO.	SHEET NO.
50129.3.2	6
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SENIT MICHAEL EPPERSON

DocuSigned by:

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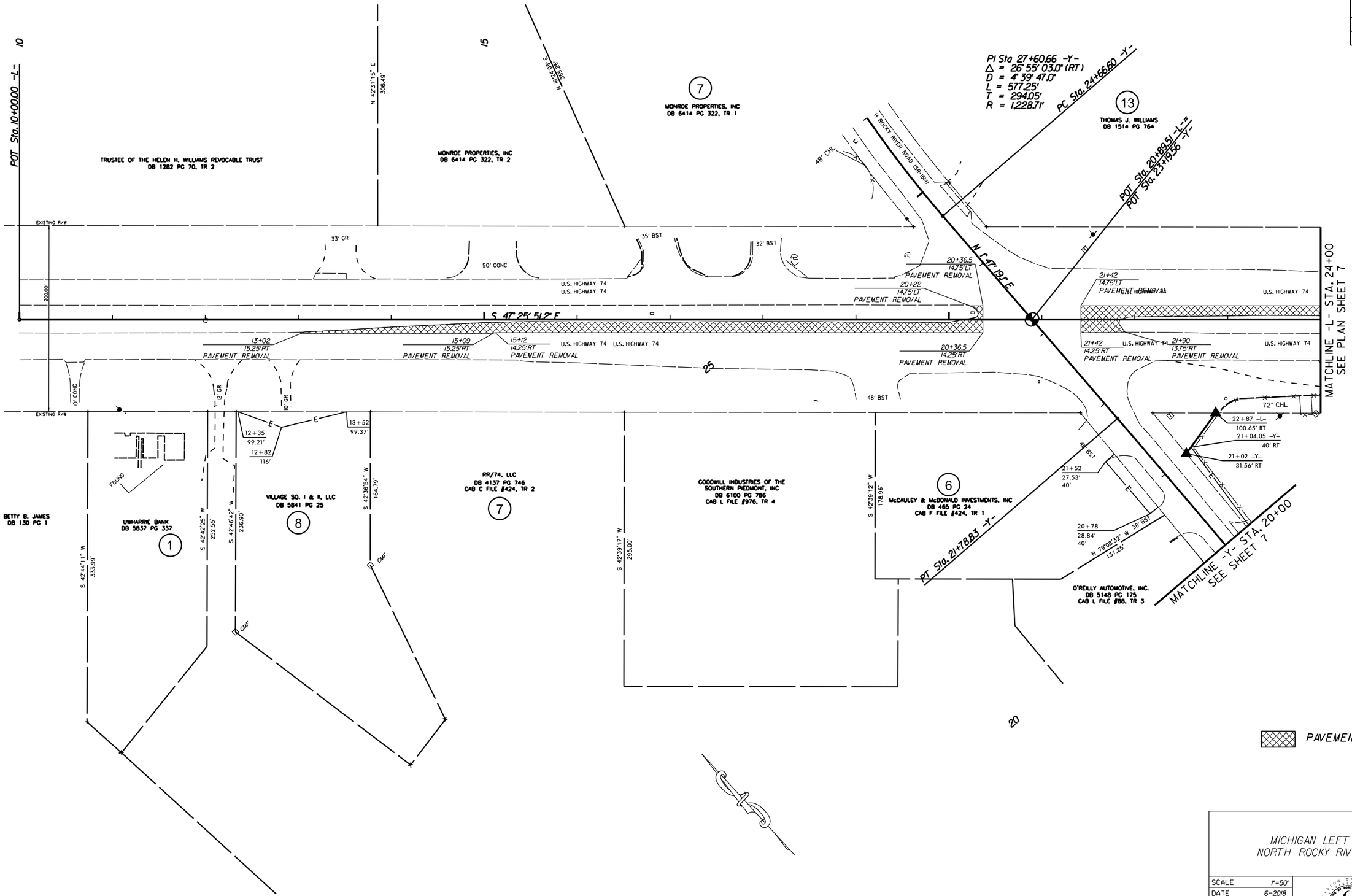

MICHIGAN LEFT ON US 74 AT
NORTH ROCKY RIVER RD.(SR-1007)

		REVISIONS	
SCALE	1"=50'		
DATE	6-2018		
DWG. BY	TBL		
DESIGN BY	JDH		
APPROVED	JDH		

PROJECT NO.	SHEET NO.
50129.3.2	7
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPPERSON

DocuSigned by:
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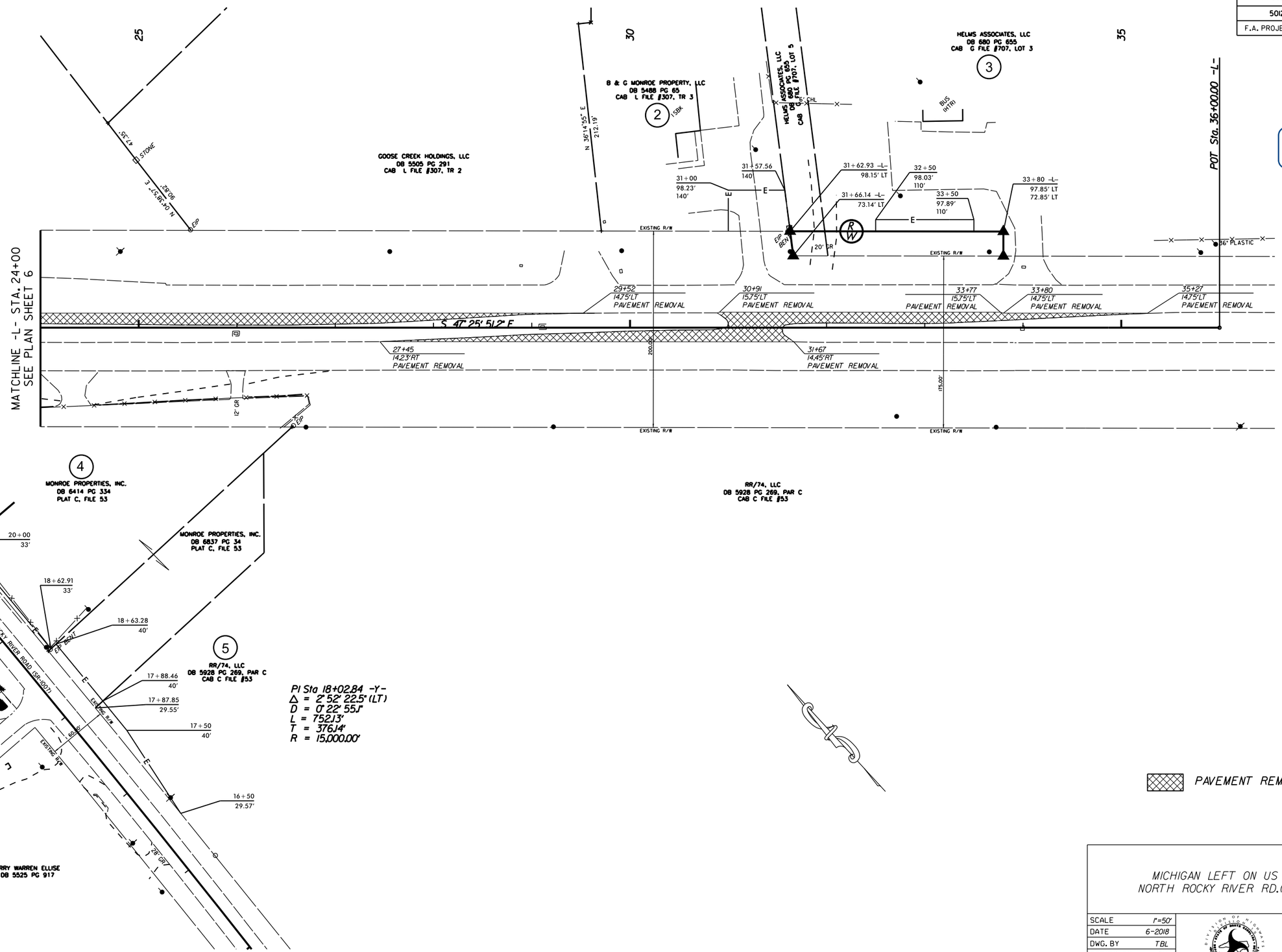


MICHIGAN LEFT ON US 74 AT
NORTH ROCKY RIVER RD.(SR-1007)

		REVISIONS	
SCALE	1"=50'		
DATE	6-2018		
DWG. BY	TBL		
DESIGN BY	JDH		
APPROVED	JDH		

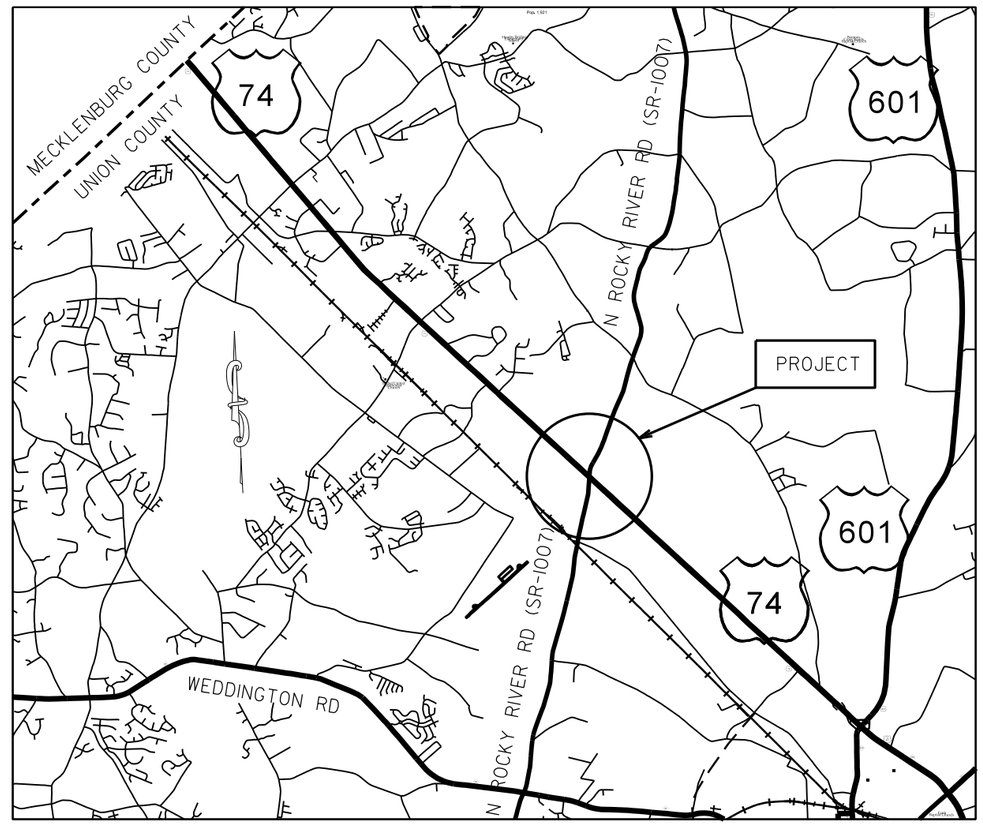
TIP PROJECT: U-5703A

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	50129.3.2	EC-1	___

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
50129.1.2	NHPP-0074(160)	P.E.
50129.2.2		R/W
50129.3.2		CONST.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL



VICINITY MAP NOT TO SCALE

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
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	SW / CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

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

GRAPHIC SCALE

0
PLANS

0
PROFILE (HORIZONTAL)

0
PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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.

Prepared In the Office of:

DDC UNIT DIVISION 10
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

2018 STANDARD SPECIFICATIONS

Designed by:

TRAVIS LOWDER — *3742*
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 revison 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		

05-DEC-2018 10:45
Rockwell, Travis D. (TRAVIS.D.ROCKWELL@TAT.DIVIS.3419)
>>>

PROJECT NO.	SHEET NO.
50129.3.2	EC-2
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPPERSON

DocuSigned by:

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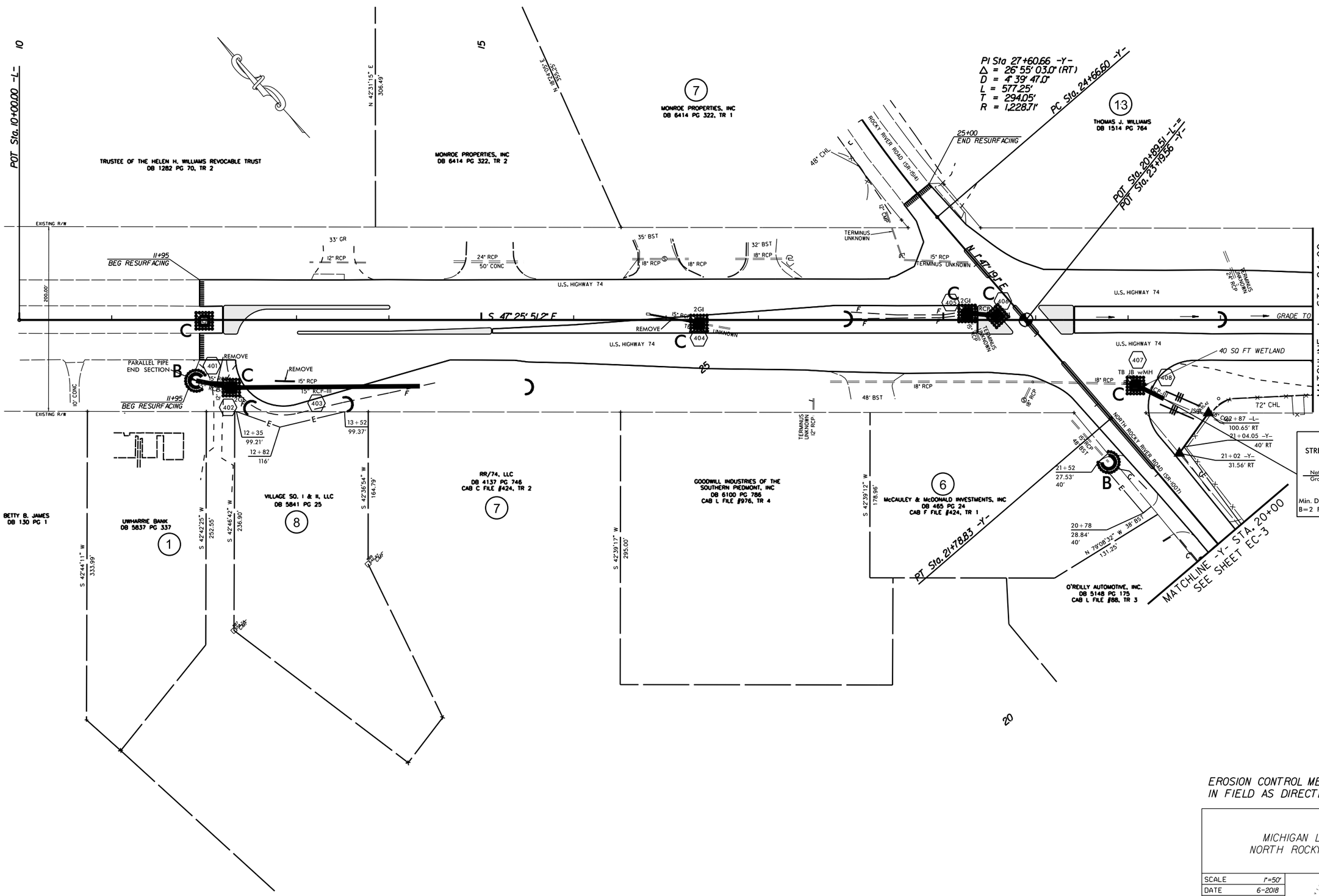
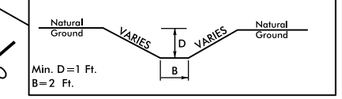


STREAM IMPACT

STREAM CUBIC YARDS OF FILL = 2.5 CY



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

MICHIGAN LEFT ON US 74 AT NORTH ROCKY RIVER RD.(SR-1007)

			REVISIONS	
SCALE	1"=50'	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
DATE	6-2018			
DWG. BY	TBL			
DESIGN BY	JDH			
APPROVED	JDH			

PROJECT NO.	SHEET NO.
50129.3.2	EC-3
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPPERSON

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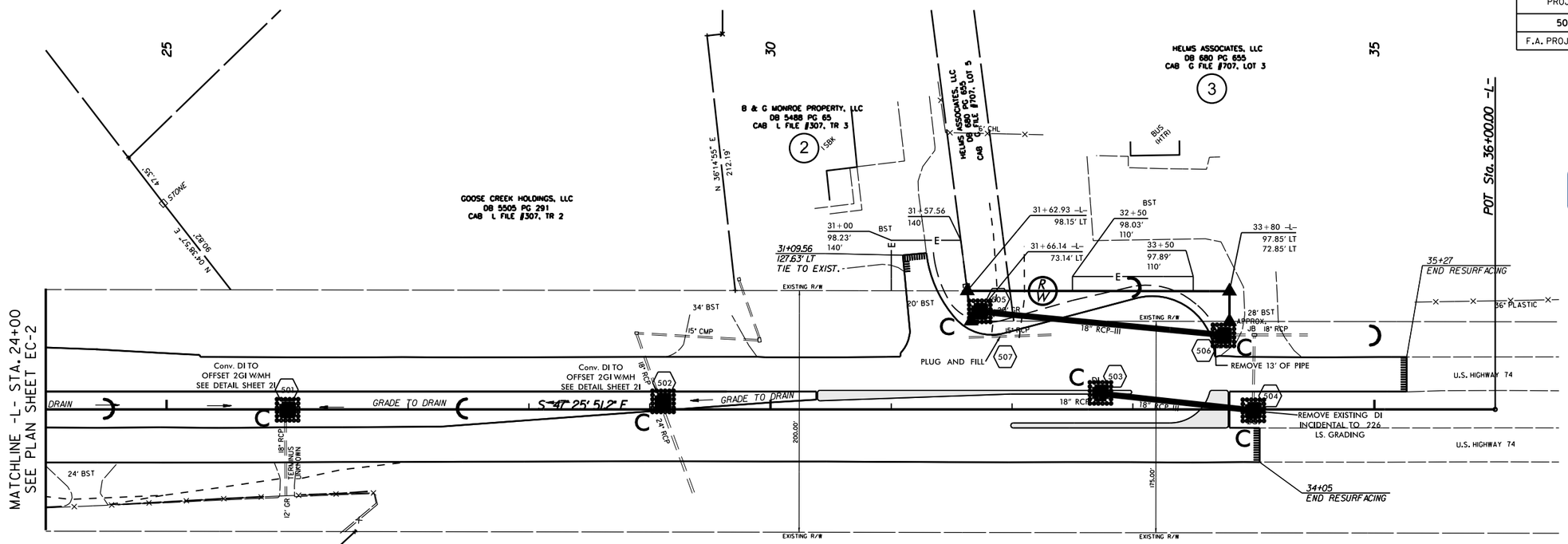

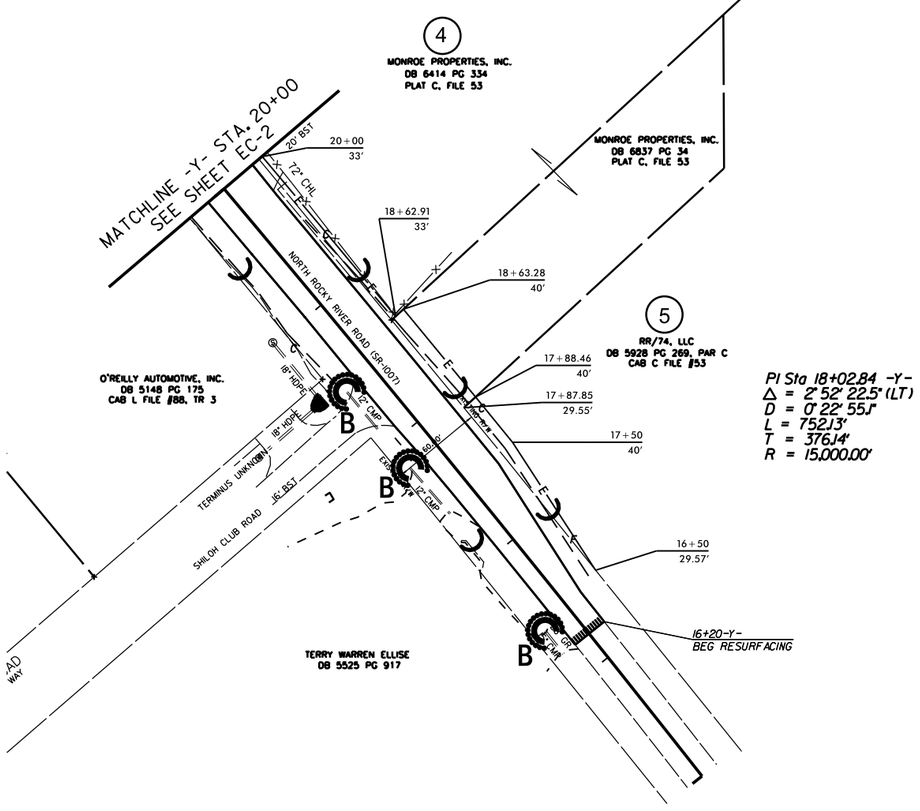

EROSION CONTROL MEASURES MAY BE CHANGED IN FIELD AS DIRECTED BY THE ENGINEER.

MICHIGAN LEFT ON US 74 AT NORTH ROCKY RIVER RD.(SR-1007)

		REVISIONS	
SCALE	1"=50'		
DATE	6-2018		
DWG. BY	TBL		
DESIGN BY	JDH		
APPROVED	JDH		

PROJECT NO.	SHEET NO.
50129.3.2	PMP-1
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPPERSON

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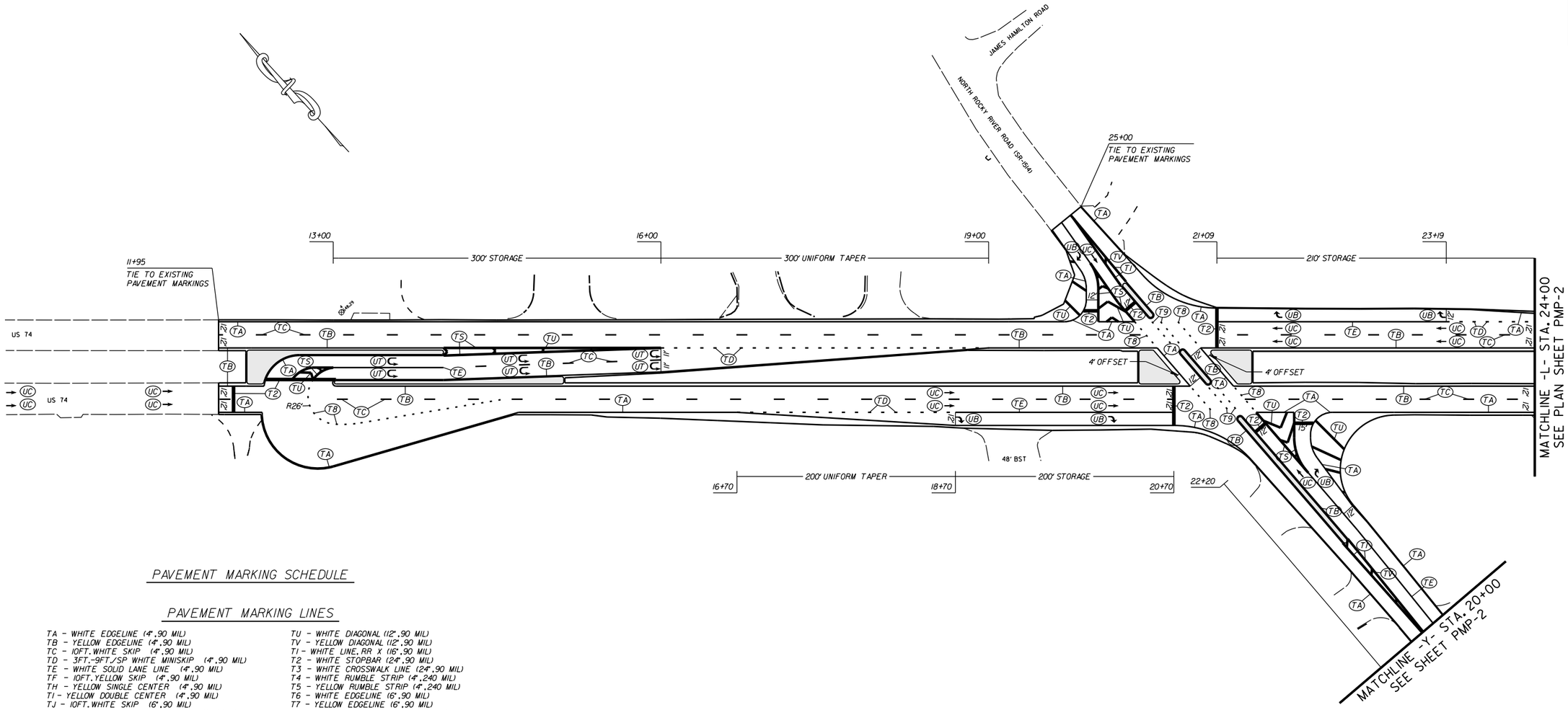

PAVEMENT MARKING SCHEDULE

PAVEMENT MARKING LINES

TA - WHITE EDGELINE (4",90 MIL)
TB - YELLOW EDGELINE (4",90 MIL)
TC - 10FT.WHITE SKIP (4",90 MIL)
TD - 3FT.-9FT./SP WHITE MINISKIP (4",90 MIL)
TE - WHITE SOLID LANE LINE (4",90 MIL)
TF - 10FT.YELLOW SKIP (4",90 MIL)
TH - YELLOW SINGLE CENTER (4",90 MIL)
TI - YELLOW DOUBLE CENTER (4",90 MIL)
TJ - 10FT.WHITE SKIP (6",90 MIL)
TK - 3FT.-9FT./SP WHITE MINISKIP (6",90 MIL)
TL - WHITE SOLID LANE LINE (6",90 MIL)
TM - 10FT.YELLOW SKIP (6",90 MIL)
TN - WHITE GORELINE (8",90 MIL)
TO - WHITE DIAGONAL (8",90 MIL)
TP - YELLOW DIAGONAL (8",90 MIL)
TQ - WHITE CROSSWALK LINE (8",90 MIL)
TR - WHITE SOLID LANE LINE (8",90 MIL)
TS - WHITE GORELINE (12",90 MIL)
TT - WHITE SOLID LANE LINE (12",90 MIL)
TU - WHITE DIAGONAL (12",90 MIL)
TV - YELLOW DIAGONAL (12",90 MIL)
T1 - WHITE LINE,RR X (16",90 MIL)
T2 - WHITE STOPBAR (24",90 MIL)
T3 - WHITE CROSSWALK LINE (24",90 MIL)
T4 - WHITE RUMBLE STRIP (4",240 MIL)
T5 - YELLOW RUMBLE STRIP (4",240 MIL)
T6 - WHITE EDGELINE (6",90 MIL)
T7 - YELLOW EDGELINE (6",90 MIL)
T8 - 2FT.-6FT./SP WHITE MINISKIP (4",90 MIL)
T9 - 2FT.-6FT./SP YELLOW MINISKIP (4",90 MIL)
T10 - 3FT.-3FT./SP WHITE MINISKIP (12",90 MIL)
T11 - 2FT.-6FT./SP WHITE MINISKIP (6",90 MIL)
T12 - 2FT.-6FT./SP YELLOW MINISKIP (6",90 MIL)
T13 - 3FT.-9FT./SP WHITE MINISKIP (8",90 MIL)
T14 - 3FT.-9FT./SP WHITE MINISKIP (12",90 MIL)
T15 - YELLOW SINGLE CENTER (6",90 MIL)
T16 - YELLOW DOUBLE CENTER (6",90 MIL)
T17 - 3FT.-3FT./SP WHITE MINISKIP ENTRANCE LINE (8",90 MIL)

PAVEMENT MARKING SYMBOLS

UA -LEFT TURN ARROW (90 MIL)
UB - RIGHT TURN ARROW (90 MIL)
UC - STRAIGHT ARROW (90 MIL)
UD - COMBO.LEFT/STRAIGHT ARROW (90 MIL)
UE - COMBO.RIGHT/STRAIGHT ARROW (90 MIL)
UF - COMBO.LEFT/RIGHT ARROW (90 MIL)
UG - COMBO.LEFT/RIGHT/STRAIGHT ARROW (90 MIL)
UH - HANDICAP PARKING (90 MIL)
UI - ALPHANUMERIC CHAR. (90 MIL)
UJ - BICYCLE SYMBOL (90 MIL)
UK - BICYCLE STRAIGHT ARROW (90 MIL)
UL - BICYCLE CHAR. (90 MIL)
UM - 12"YIELD LINE TRIANGLE (90 MIL)
UN - 24"YIELD LINE TRIANGLE (90 MIL)
UO - BICYCLE LEFT ARROW (90 MIL)
UP - MERGE ARROW (90 MIL)
UQ - RAMP ARROW SYMBOL (90 MIL)
UR - SHARROW (90 MIL)
US - BICYCLE LOOP DETECTOR (90 MIL)
UT - U-TURN ARROW (90 MIL)
UU - FISH-HOOK STRAIGHT ARROW (90 MIL)
UV - FISH-HOOK LEFT/STRAIGHT ARROW (90 MIL)
UW - FISH-HOOK RIGHT/STRAIGHT ARROW (90 MIL)
UX - FISH-HOOK LEFT/RIGHT ARROW (90 MIL)
UY - FISH-HOOK LEFT/RIGHT/STRAIGHT ARROW (90 MIL)
UZ - FISH-HOOK W/CIRCLE STRAIGHT ARROW (90 MIL)

WA - FISH-HOOK W/CIRCLE LEFT ARROW (90 MIL)
WB - FISH-HOOK W/CIRCLE LEFT/STRAIGHT ARROW (90 MIL)
WC - FISH-HOOK W/CIRCLE LEFT/RIGHT/STRAIGHT ARROW (90 MIL)

MA - PERMANENT RAISED MARKER (YELLOW & YELLOW)
MB - PERMANENT RAISED MARKER (CRYSTAL & RED)
MC - PERMANENT RAISED MARKER (YELLOW & RED)
MD - PERMANENT RAISED MARKER (YELLOW)
ME - SNOWPLOWABLE MARKER (YELLOW & YELLOW)
MF - SNOWPLOWABLE MARKER (CRYSTAL & RED)
MG - SNOWPLOWABLE MARKER (YELLOW & RED)
ML - PERMANENT RAISED MARKER (CRYSTAL & CRYSTAL)
MO - SNOWPLOWABLE MARKER (CRYSTAL & CRYSTAL)

MICHIGAN LEFT ON US 74 AT
NORTH ROCKY RIVER RD.(SR-1007)

			REVISIONS	
SCALE	1"=50'	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
DATE	1-2019			
DWG. BY	JDH			
DESIGN BY	JDH			
APPROVED	JDH			

PROJECT NO.	SHEET NO.
50129.3.2	PMP-2
F.A. PROJECT NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034357 ENGINEER SEAN MICHAEL EPPERSON

DocuSigned by:

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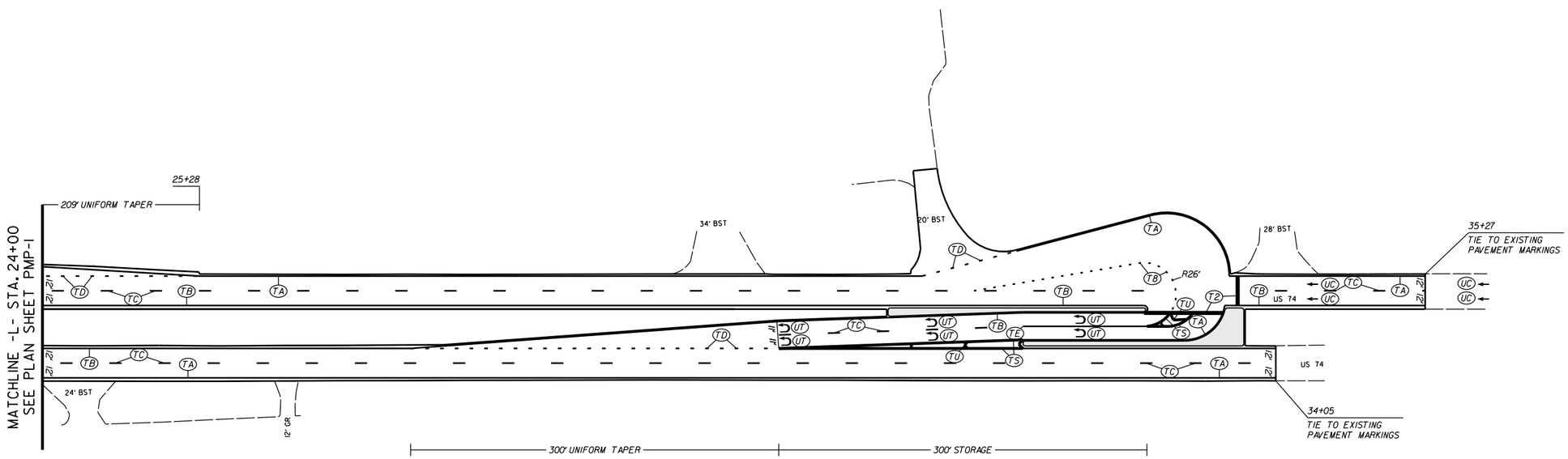

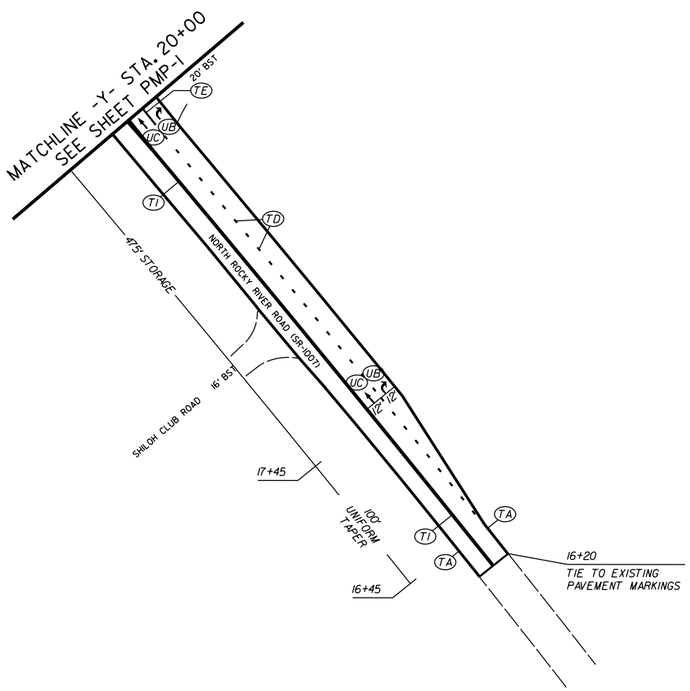

PAVEMENT MARKING SCHEDULE

PAVEMENT MARKING LINES

TA - WHITE EDGELINE (4",90 MIL)
TB - YELLOW EDGELINE (4",90 MIL)
TC - 10FT.WHITE SKIP (4",90 MIL)
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TO - WHITE DIAGONAL (8",90 MIL)
TP - YELLOW DIAGONAL (8",90 MIL)
TQ - WHITE CROSSWALK LINE (8",90 MIL)
TR - WHITE SOLID LANE LINE (8",90 MIL)
TS - WHITE GORELINE (12",90 MIL)
TT - WHITE SOLID LANE LINE (12",90 MIL)
TU - WHITE DIAGONAL (12",90 MIL)
TV - YELLOW DIAGONAL (12",90 MIL)
T1 - WHITE LINE.RR X (16",90 MIL)
T2 - WHITE STOPBAR (24",90 MIL)
T3 - WHITE CROSSWALK LINE (24",90 MIL)
T4 - WHITE RUMBLE STRIP (4",240 MIL)
T5 - YELLOW RUMBLE STRIP (4",240 MIL)
T6 - WHITE EDGELINE (6",90 MIL)
T7 - YELLOW EDGELINE (6",90 MIL)
T8 - 2FT.-6FT./SP WHITE MINISKIP (4",90 MIL)
T9 - 2FT.-6FT./SP YELLOW MINISKIP (4",90 MIL)
T10 - 3FT.-3FT./SP WHITE MINISKIP (12",90 MIL)
T11 - 2FT.-6FT./SP WHITE MINISKIP (6",90 MIL)
T12 - 2FT.-6FT./SP YELLOW MINISKIP (6",90 MIL)
T13 - 3FT.-9FT./SP WHITE MINISKIP (8",90 MIL)
T14 - 3FT.-9FT./SP WHITE MINISKIP (12",90 MIL)
T15 - YELLOW SINGLE CENTER (6",90 MIL)
T16 - YELLOW DOUBLE CENTER (6",90 MIL)
T17 - 3FT.-3FT./SP WHITE MINISKIP ENTRANCE LINE (8",90 MIL)

PAVEMENT MARKING SYMBOLS

UA -LEFT TURN ARROW (90 MIL)
UB - RIGHT TURN ARROW (90 MIL)
UC - STRAIGHT ARROW (90 MIL)
UD - COMBO.LEFT/STRAIGHT ARROW (90 MIL)
UE - COMBO.RIGHT/STRAIGHT ARROW (90 MIL)
UF - COMBO.LEFT/RIGHT ARROW (90 MIL)
UG - COMBO.LEFT/RIGHT/STRAIGHT ARROW (90 MIL)
UH - HANDICAP PARKING (90 MIL)
UI - ALPHANUMERIC CHAR.(90 MIL)
UJ - BICYCLE SYMBOL (90 MIL)
UK - BICYCLE STRAIGHT ARROW (90 MIL)
UL - BICYCLE CHAR.(90 MIL)
UM - 12"YIELD LINE TRIANGLE (90 MIL)
UN - 24"YIELD LINE TRIANGLE (90 MIL)
UO - BICYCLE LEFT ARROW (90 MIL)
UP - MERGE ARROW (90 MIL)
UQ - RAMP ARROW SYMBOL (90 MIL)
UR - SHARROW (90 MIL)
US - BICYCLE LOOP DETECTOR (90 MIL)
UT - U-TURN ARROW (90 MIL)
UU - FISH-HOOK STRAIGHT ARROW (90 MIL)
UV - FISH-HOOK LEFT/STRAIGHT ARROW (90 MIL)
UW - FISH-HOOK RIGHT/STRAIGHT ARROW (90 MIL)
UX - FISH-HOOK LEFT/RIGHT ARROW (90 MIL)
UY - FISH-HOOK LEFT/RIGHT/STRAIGHT ARROW (90 MIL)
UZ - FISH-HOOK W/CIRCLE STRAIGHT ARROW (90 MIL)

WA - FISH-HOOK W/CIRCLE LEFT ARROW (90 MIL)
WB - FISH-HOOK W/CIRCLE LEFT/STRAIGHT ARROW (90 MIL)
WC - FISH-HOOK W/CIRCLE LEFT/RIGHT/STRAIGHT ARROW (90 MIL)

MA - PERMANENT RAISED MARKER (YELLOW & YELLOW)
MB - PERMANENT RAISED MARKER (CRYSTAL & RED)
MC - PERMANENT RAISED MARKER (YELLOW & RED)
MD - PERMANENT RAISED MARKER (YELLOW)
ME - SNOWPLOWABLE MARKER (YELLOW & YELLOW)
MF - SNOWPLOWABLE MARKER (CRYSTAL & RED)
MG - SNOWPLOWABLE MARKER (YELLOW & RED)
ML - PERMANENT RAISED MARKER (CRYSTAL & CRYSTAL)
MO - SNOWPLOWABLE MARKER (CRYSTAL & CRYSTAL)

MICHIGAN LEFT ON US 74 AT
NORTH ROCKY RIVER RD.(SR-1007)

			REVISIONS	
SCALE	1"=50'	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH, NORTH CAROLINA		
DATE	1-2019			
DWG. BY	JDH			
DESIGN BY	JDH			
APPROVED	JDH			

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TIP PROJECT: U-5703A

8/17/99

TIP NO.	SHEET NO.
U-5703A	SP-1

APPROVED: DocuSigned by: Shane I. Sharpe 34FF0EB03EE041B...

DATE: 8/8/2018

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NORTH CAROLINA PROFESSIONAL SEAL 040734 ENGINEER SHANE I. SHARPE

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

SIGNING PLAN
UNION COUNTY

LOCATION: US-74 AT SR 1007 (ROCKY RIVER ROAD)

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

STD. NO.	TITLE
903.10	GROUND MOUNTED SIGN SUPPORTS
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E', AND 'F' SIGNS ON 'U' CHANNEL POSTS
910.30	SIGNING SIGNALIZED SUPERSTREET (DUAL U-TURN)

INDEX

SHEET NO.	DESCRIPTION
SP-1	SIGNING TITLE SHEET
SP-1A	TYPE "D", "E" & "F" NOTES
SP-2 THRU SP-4	SIGN DETAIL SHEETS

SUMMARY OF QUANTITIES

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT
4072000000	903	SUPPORTS, 3 LBS STEEL U-CHANNEL.....	160	L.F.
4078000000	903	SUPPORTS, 2 LBS STEEL U-CHANNEL.....	40	EA.
4096000000	904	SIGN ERECTION, TYPE D.....	2	EA.
4102000000	904	SIGN ERECTION, TYPE E.....	18	EA.
4108000000	904	SIGN ERECTION, TYPE F.....	8	EA.
4116100000	904	SIGN ERECTION, RELOCATE SIGN TYPE E.....	7	EA.
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL.....	9	EA.

GENERAL NOTES

- SIGNS FURNISHED BY STATE
- 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.
- SIGNING PLANS DO NOT INCLUDE TEMPORARY CONSTRUCTION SIGNING OR PAVEMENT MARKINGS. SEE TRANSPORTATION MANAGEMENT AND PAVEMENT MARKING PLANS.
- 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.
- WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.
- THE BACKGROUND FOR TYPE 'E' AND 'F' SIGNS SHALL BE TYPE 'C' REFLECTIVE SHEETING.
- SEE ROADWAY PLANS FOR GUARD / GUIDE RAIL DETAILS.

PLAN PREPARED BY:
STV Engineers, Inc.

SHANE I. SHARPE, PE — TRAFFIC ENGINEER

BHUPESH R. JOSHI, EI — TRANSPORTATION DESIGNER

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TIP NO.	SHEET NO.
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TYPE "E" & "F" SIGNS

TYPE "E" SIGNS

401 QUANTITY REQ'D 4
ONE "U" POST PER SIGN

R3–18
36'' X 36''

402 QUANTITY REQ'D 2
TWO "U" POST PER SIGN

R6–1 L
54'' X 18''

403 QUANTITY REQ'D 2
ONE "U" POST PER SIGN

R3–2
36'' X 36''

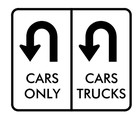
407 QUANTITY REQ'D 2
ONE "U" POST PER SIGN

W12–1
36'' X 36''

409 QUANTITY REQ'D 2
ONE "U" POST PER SIGN

R3–8
36'' X 24''

410 QUANTITY REQ'D 2
TWO "U" POST PER SIGN



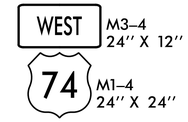
R3–8
48'' X 36''

411 QUANTITY REQ'D 4
ONE "U" POST PER SIGN

R5–1
36'' X 36''

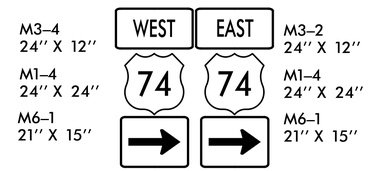
TYPE "F" SIGNS

501 QUANTITY REQ'D 1
ONE "U" POST PER SIGN



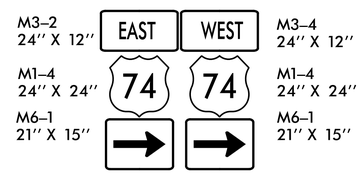
M3–4
24'' X 12''
M1–4
24'' X 24''

503 QUANTITY REQ'D 1
TWO "U" POST PER SIGN



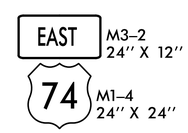
M3–4
24'' X 12''
M1–4
24'' X 24''
M6–1
21'' X 15''
M3–2
24'' X 12''
M1–4
24'' X 24''
M6–1
21'' X 15''

504 QUANTITY REQ'D 1
TWO "U" POST PER SIGN



M3–2
24'' X 12''
M1–4
24'' X 24''
M6–1
21'' X 15''
M3–4
24'' X 12''
M1–4
24'' X 24''
M6–1
21'' X 15''

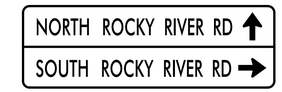
505 QUANTITY REQ'D 1
ONE "U" POST PER SIGN



M3–2
24'' X 12''
M1–4
24'' X 24''

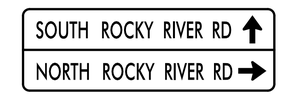
TYPE "D" SIGNS

601 QUANTITY REQ'D 1
TWO "U" POST PER SIGN



D1–2
VAR X 30''

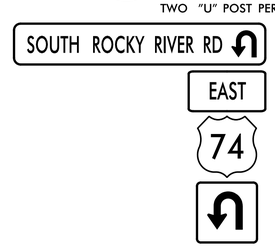
602 QUANTITY REQ'D 1
TWO "U" POST PER SIGN



D1–2
VAR X 30''

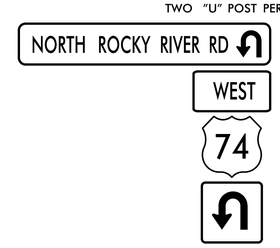
COMBO TYPE "D" & "F" SIGNS

502 QUANTITY REQ'D 2
TWO "U" POST PER SIGN



D1–1
VAR X 18''
M3–2
24'' X 12''
M1–4
24'' X 24''

506 QUANTITY REQ'D 2
TWO "U" POST PER SIGN



D1–1
VAR X 18''
M3–4
24'' X 12''
M1–4
24'' X 24''

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Joshua

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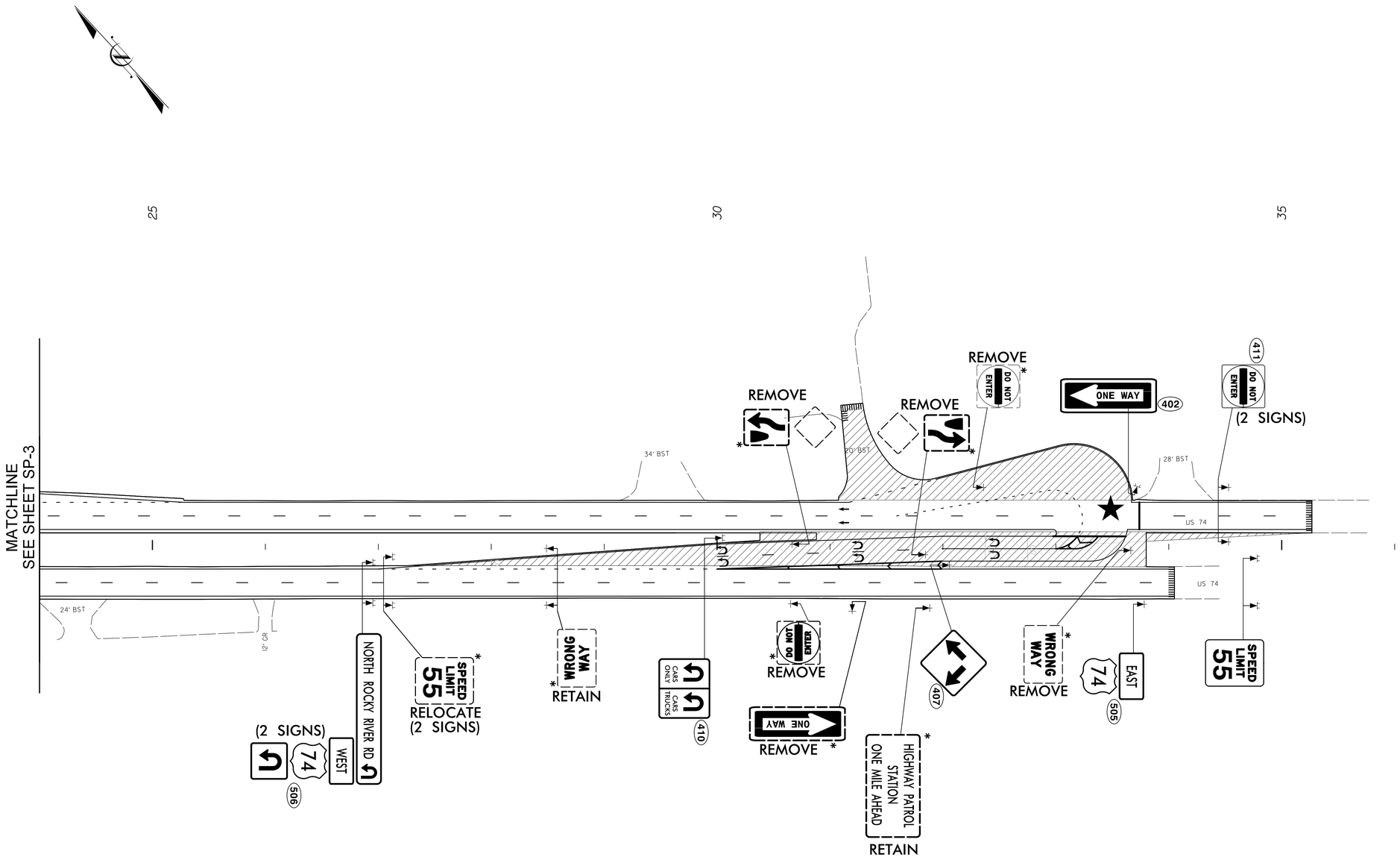

PHASE I

PHASE I OF CONSTRUCTION
★ PROPOSED TRAFFIC SIGNAL
✱ EXISTING SIGNS
STATIONARY SIGN ON ONE SUPPORT
STATIONARY SIGN ON TWO SUPPORTS

SIGNING DETAIL SHEET

8/8/2018
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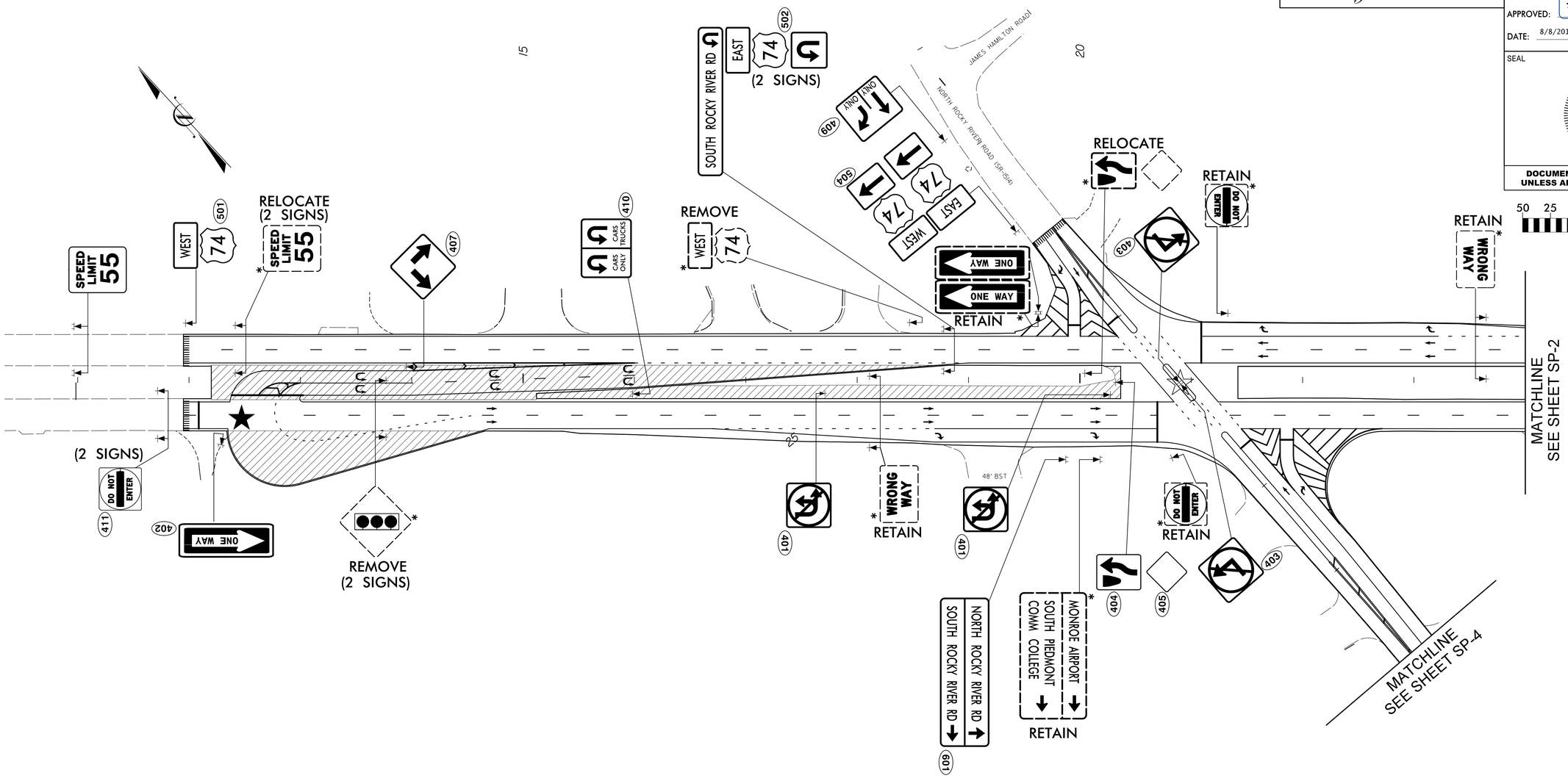

PHASE II

PHASE II OF CONSTRUCTION
☆ EXISTING TRAFFIC SIGNAL
★ PROPOSED TRAFFIC SIGNAL
✱ EXISTING SIGNS
STATIONARY SIGN ON ONE SUPPORT
STATIONARY SIGN ON TWO SUPPORTS

SIGNING DETAIL SHEET

8/8/2018
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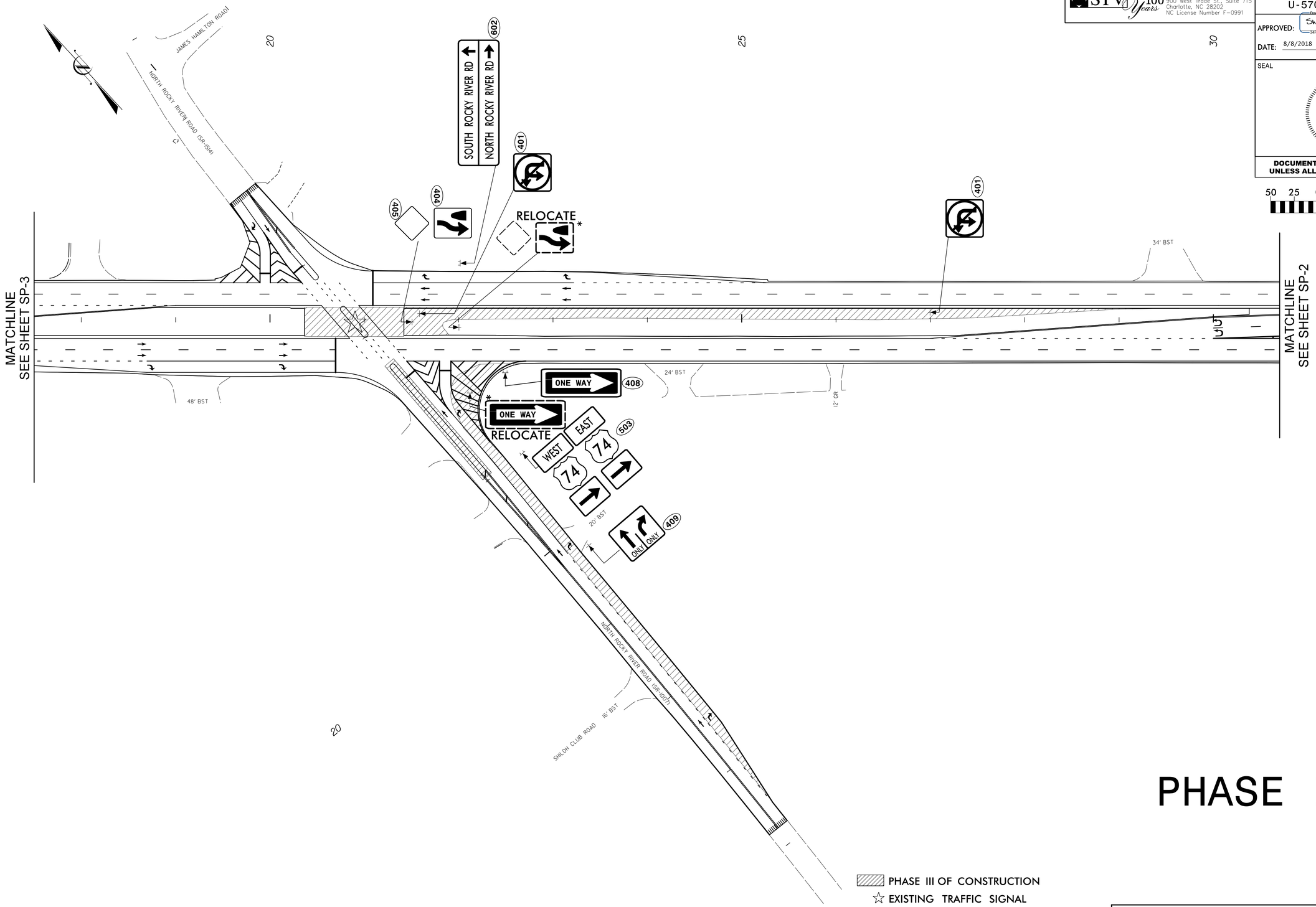

PHASE III OF CONSTRUCTION
☆ EXISTING TRAFFIC SIGNAL
✱ EXISTING SIGNS
STATIONARY SIGN ON ONE SUPPORT
STATIONARY SIGN ON TWO SUPPORTS

PHASE III

SIGNING DETAIL SHEET

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6/23/16

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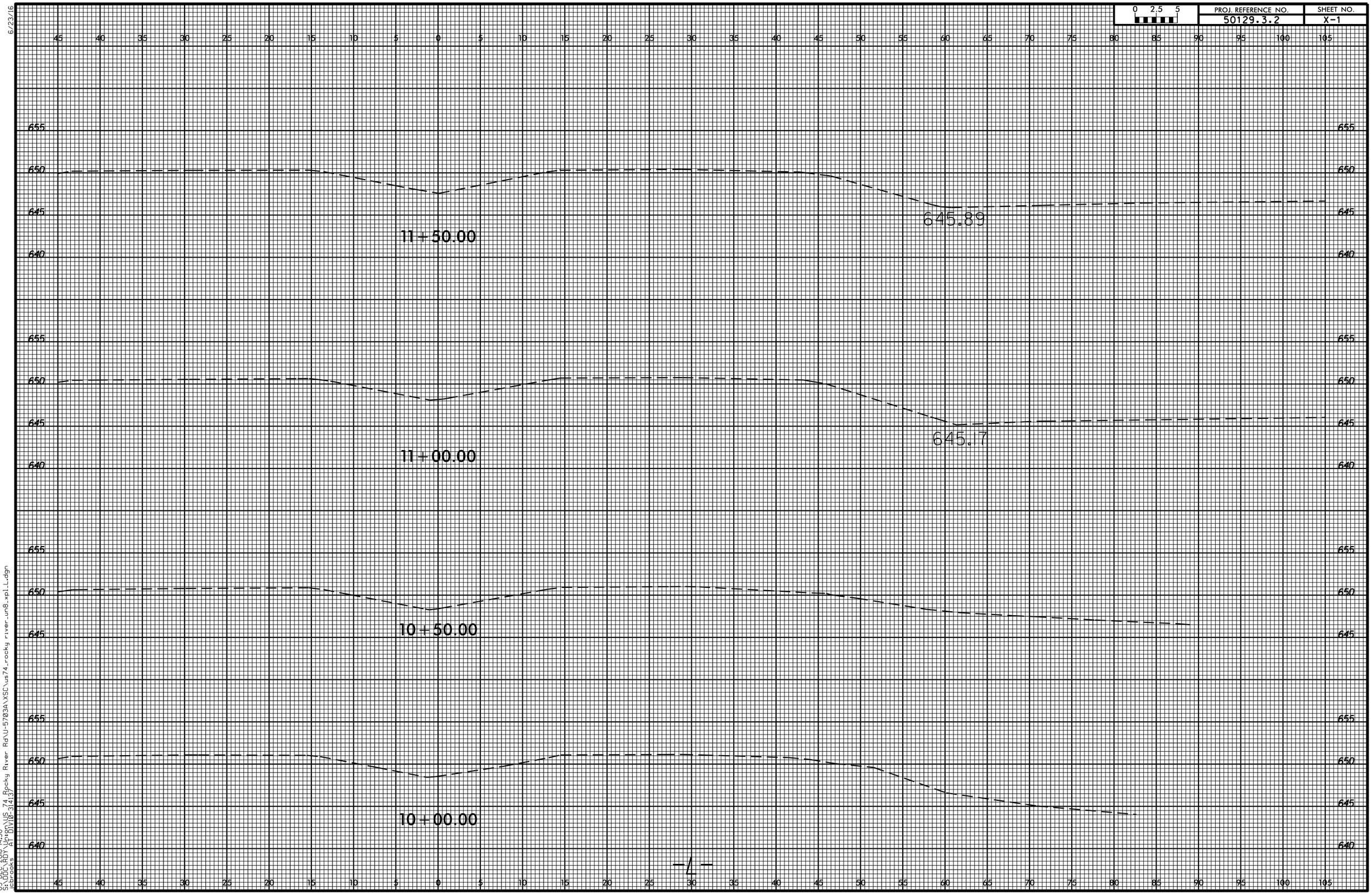

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cebrooks AT DIV18-31437

6/23/16

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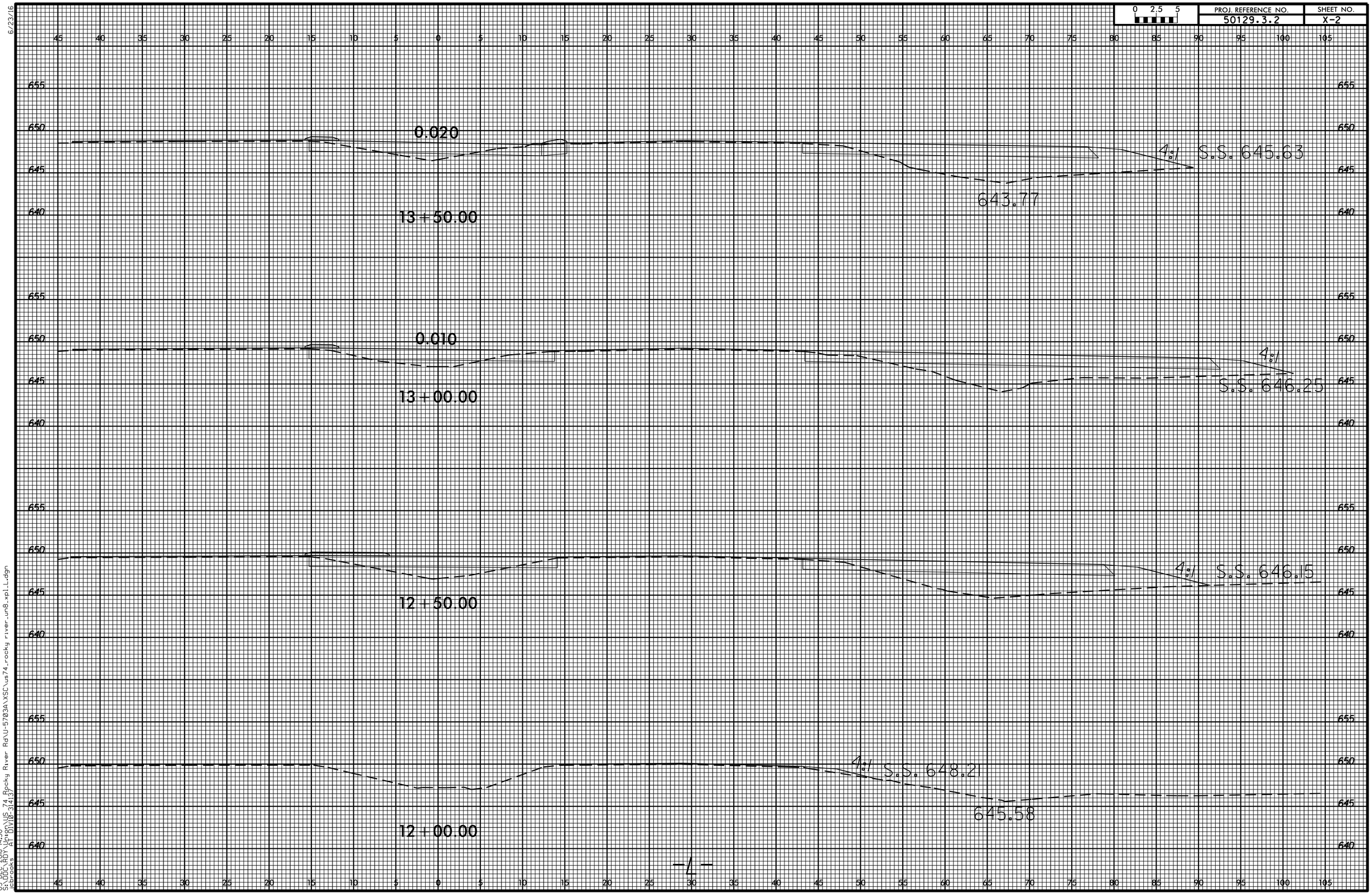

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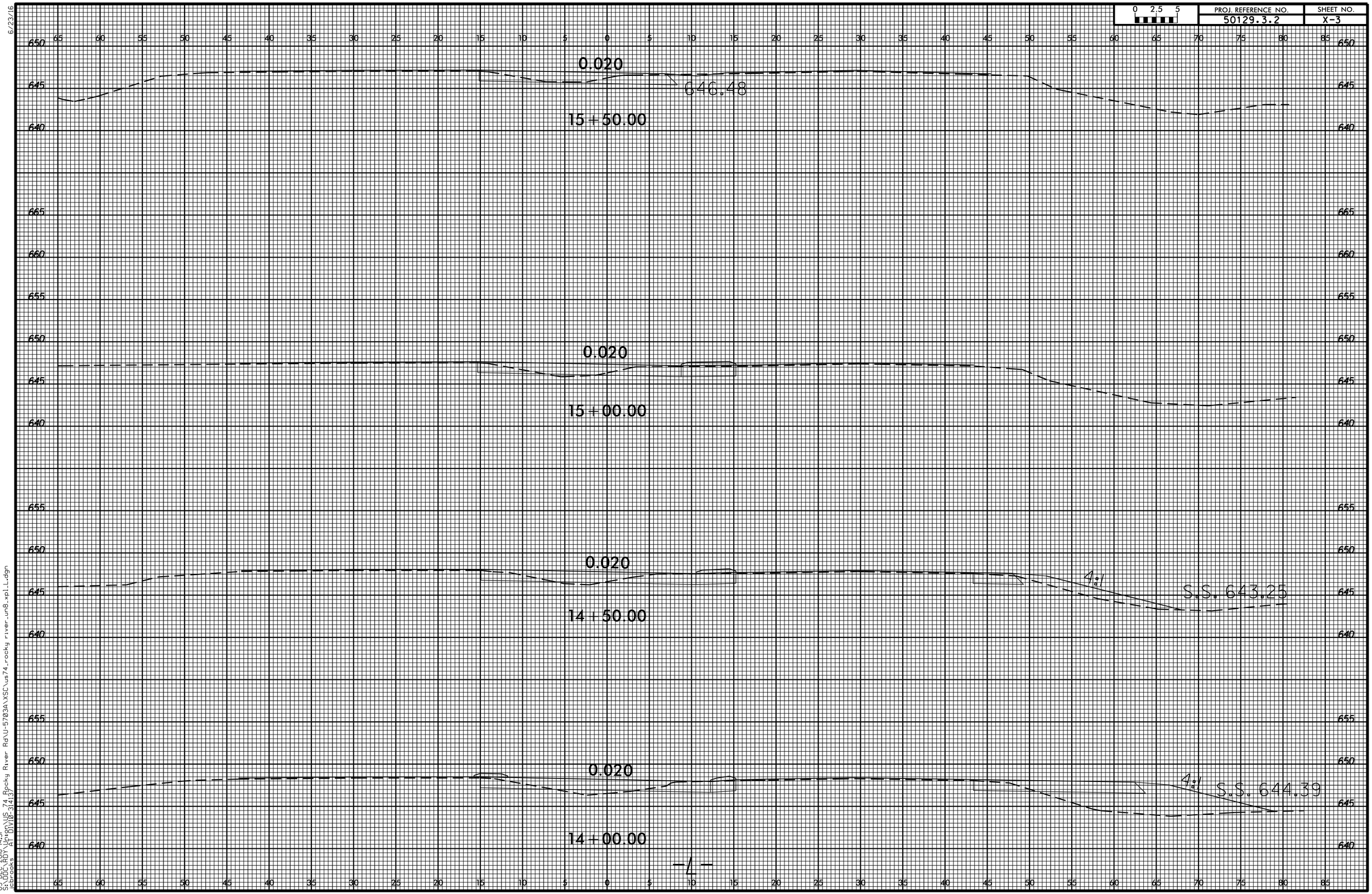

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6/23/16

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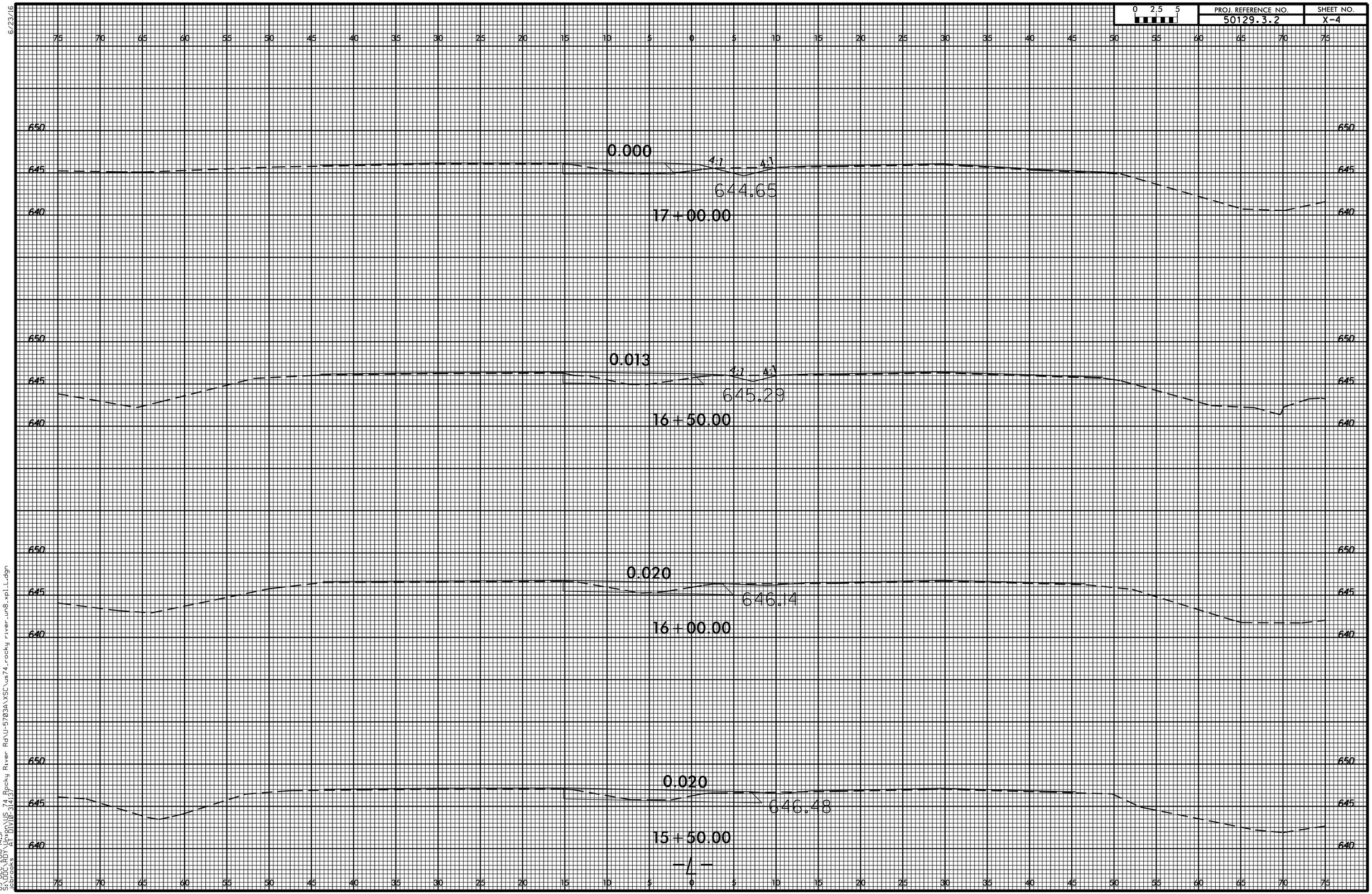

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6/23/16

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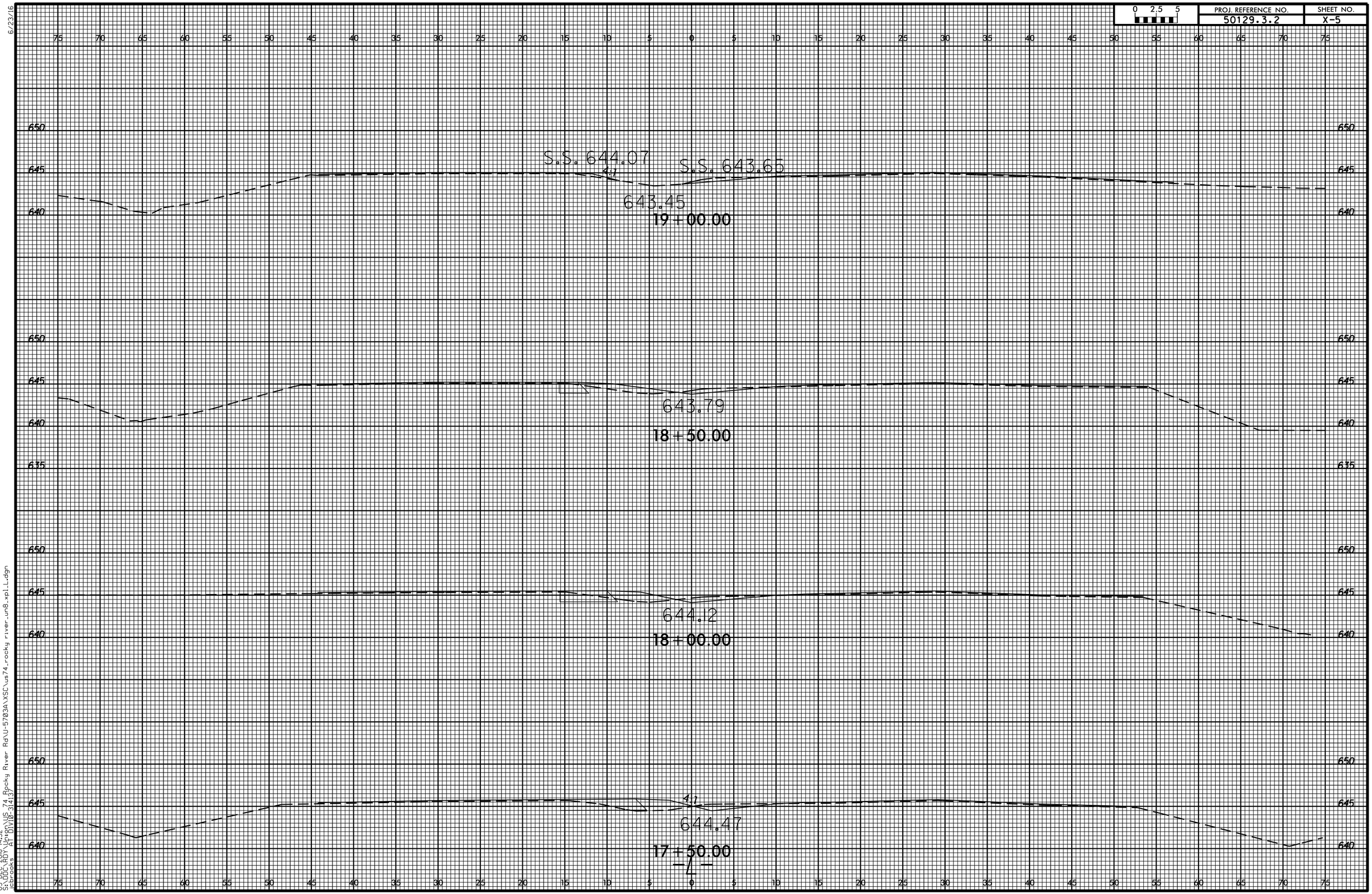

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6/23/16

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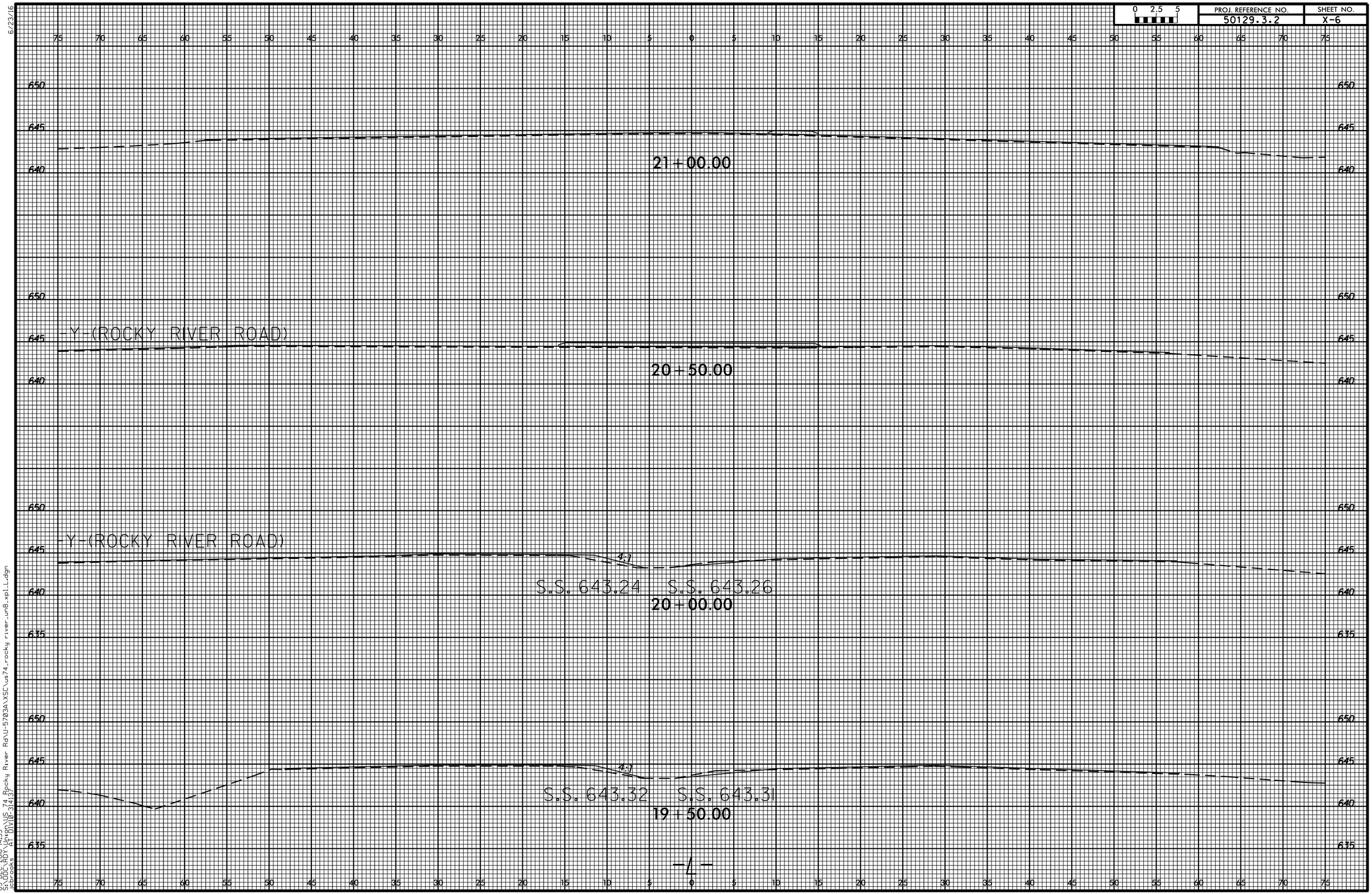

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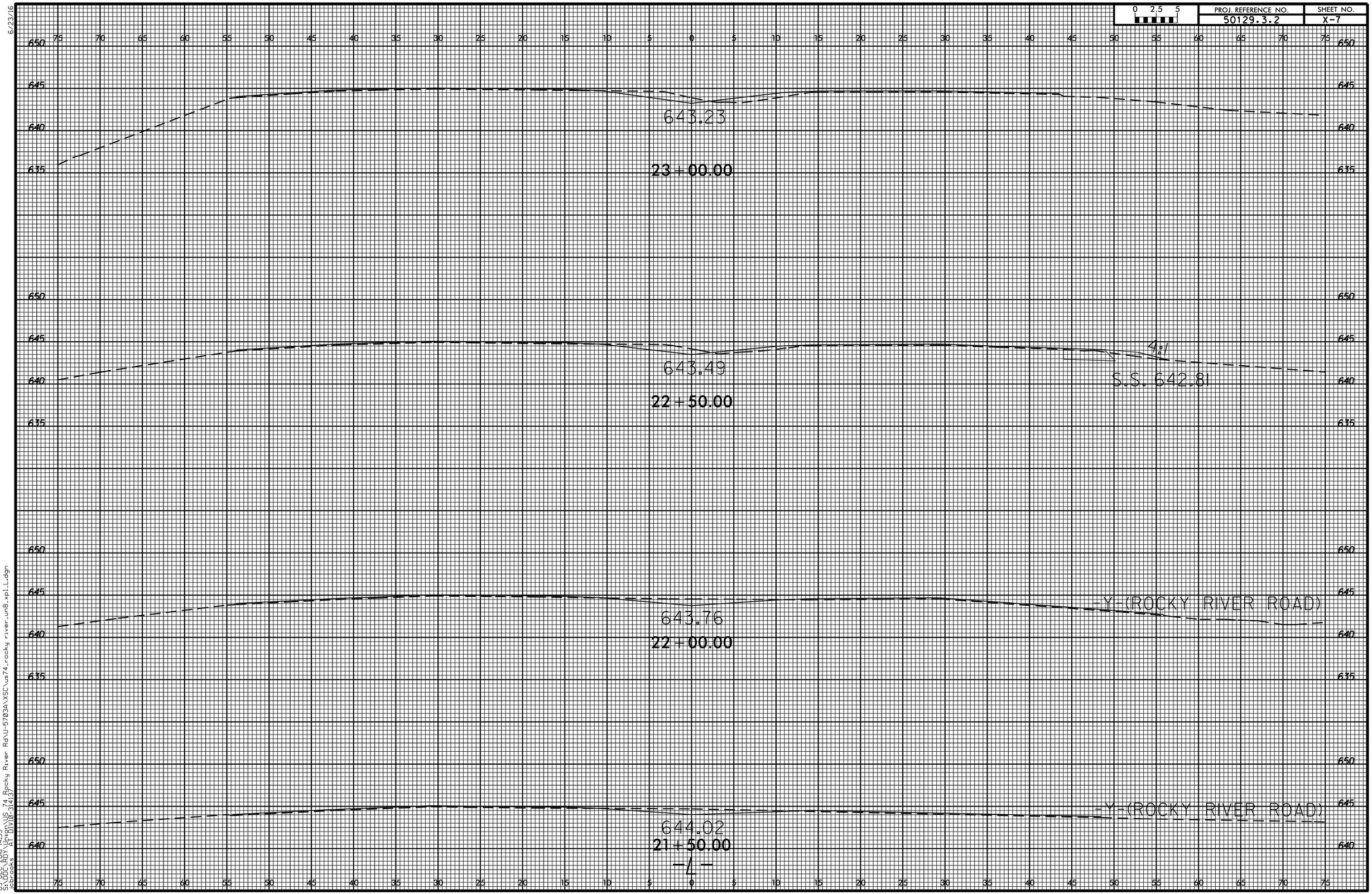

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jebrooks AT DIV10-31437

6/23/16

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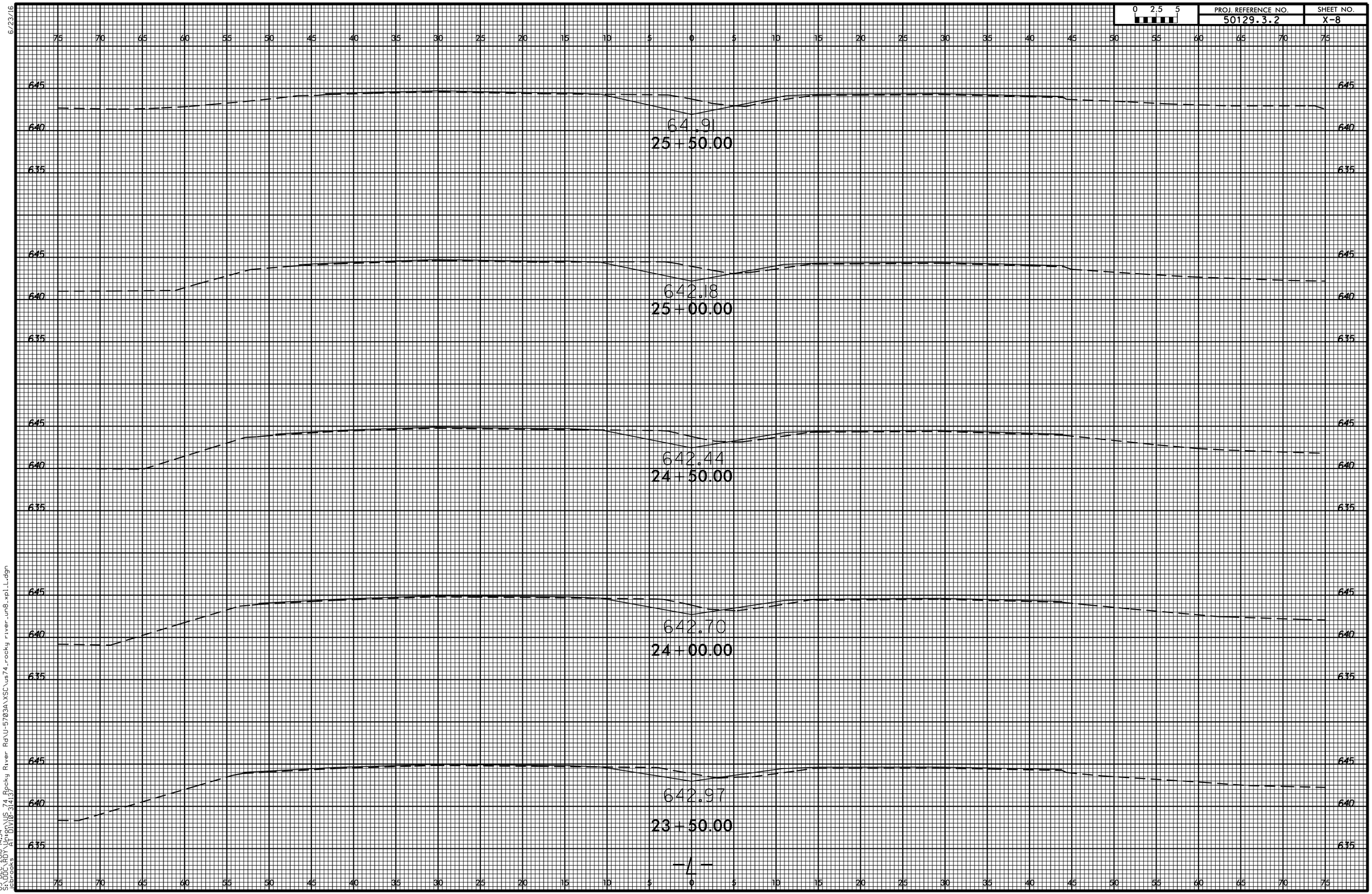

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cebrooks AT DIV10-3141.37

6/23/16

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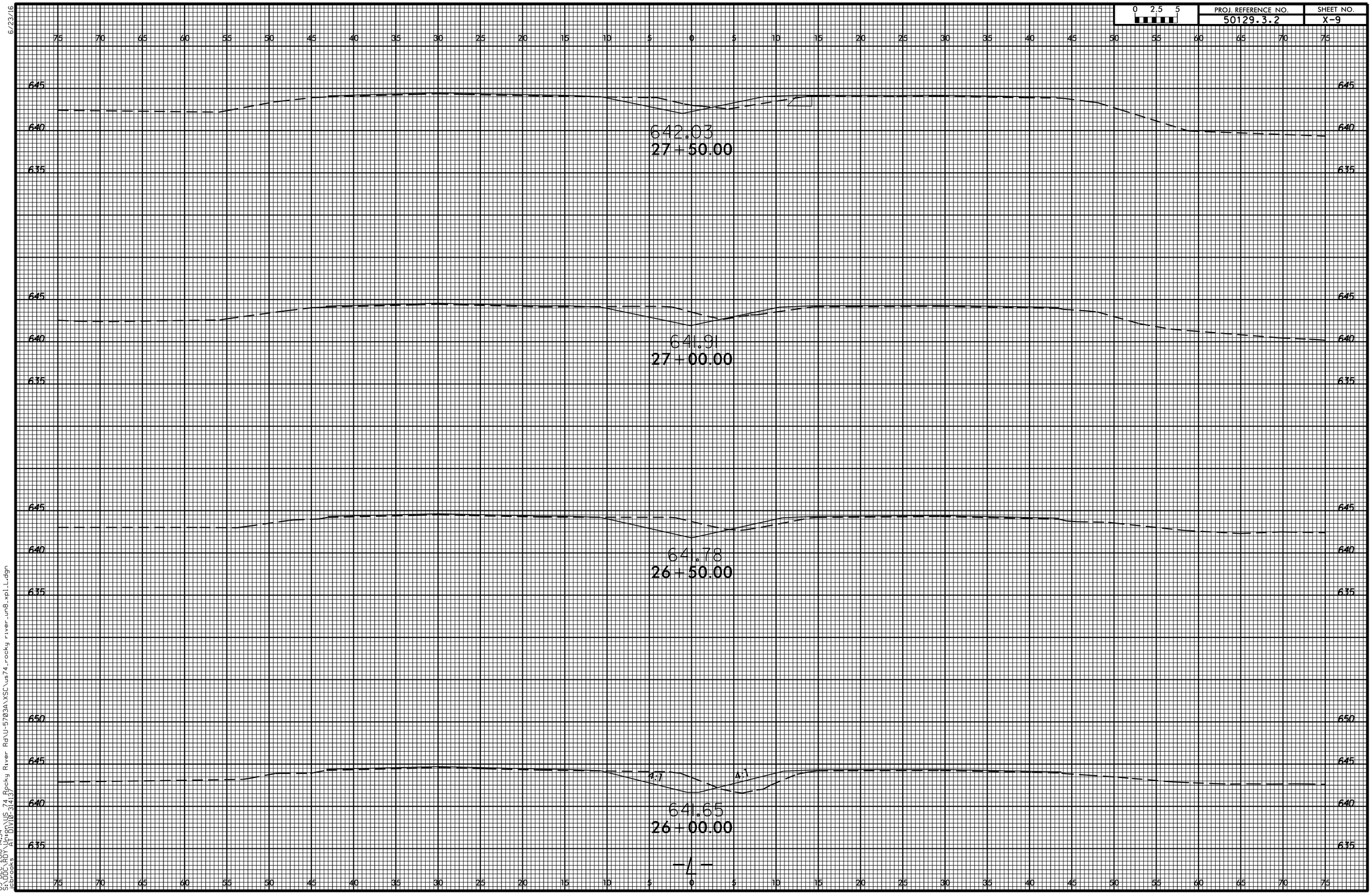

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cebrooks AT DIV10-31437

6/23/16

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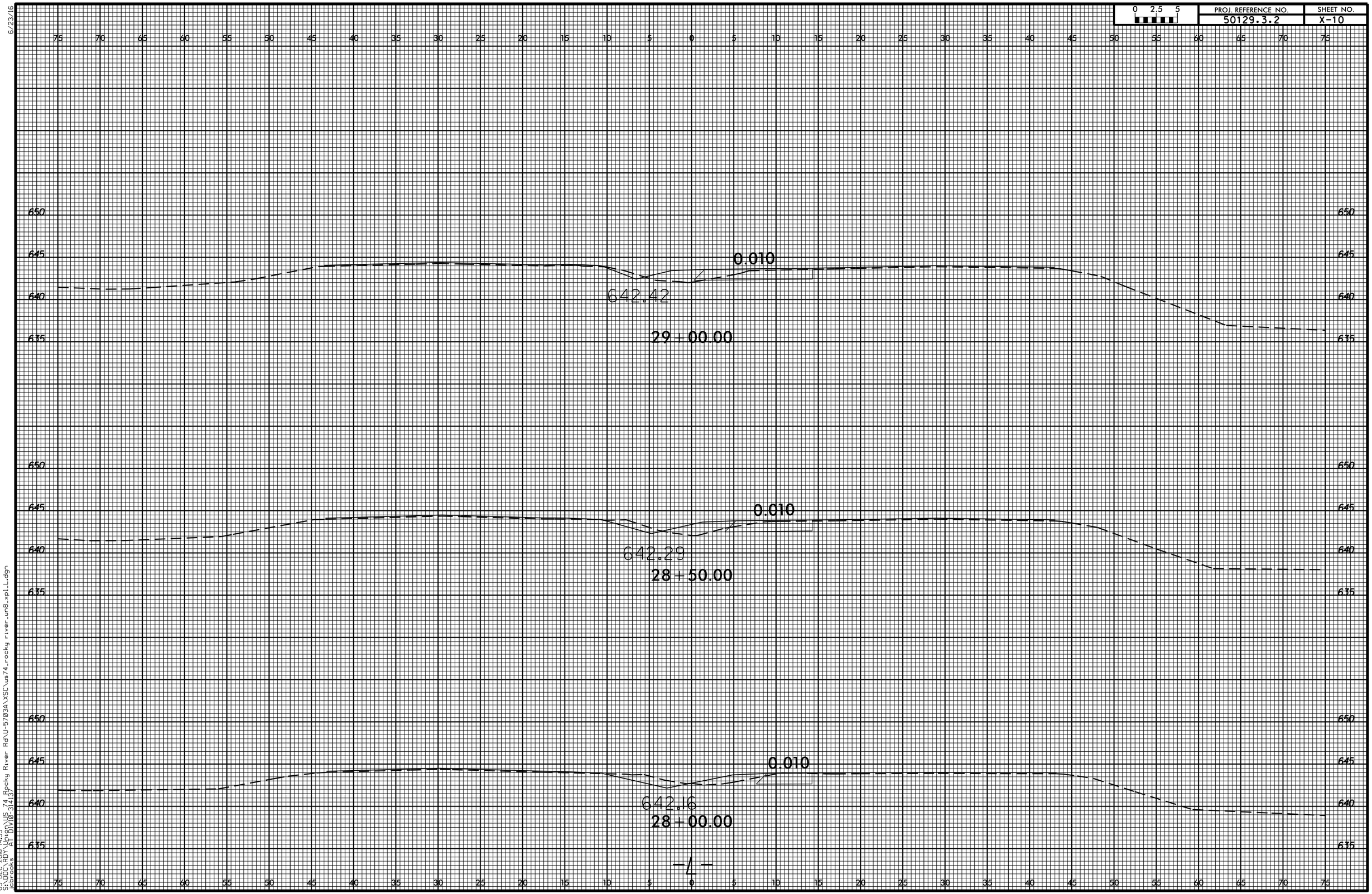

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cebrooks AT DIV10-31437

6/23/16

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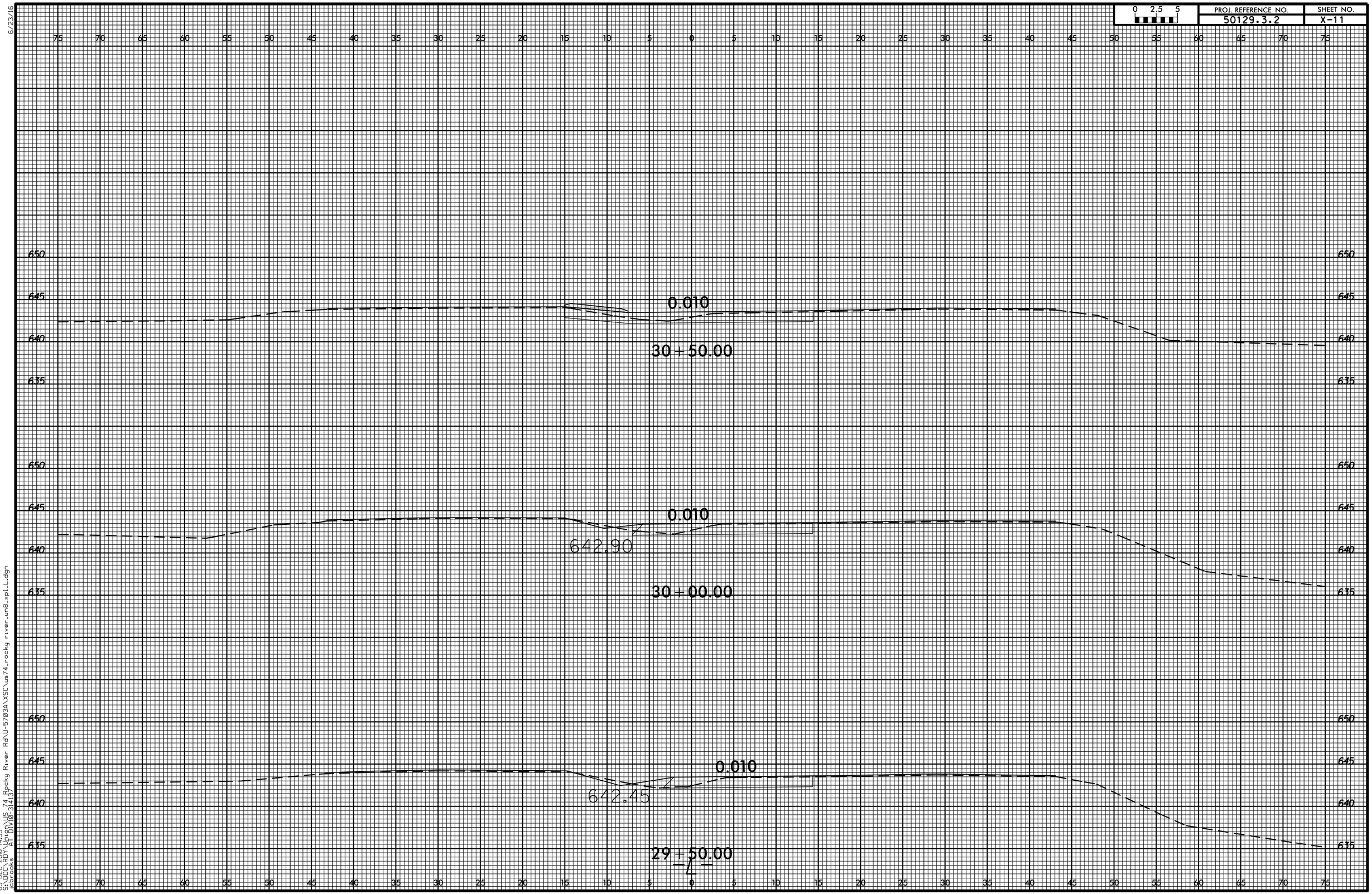

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cebrooks AT DIV18-3141S7

6/23/16

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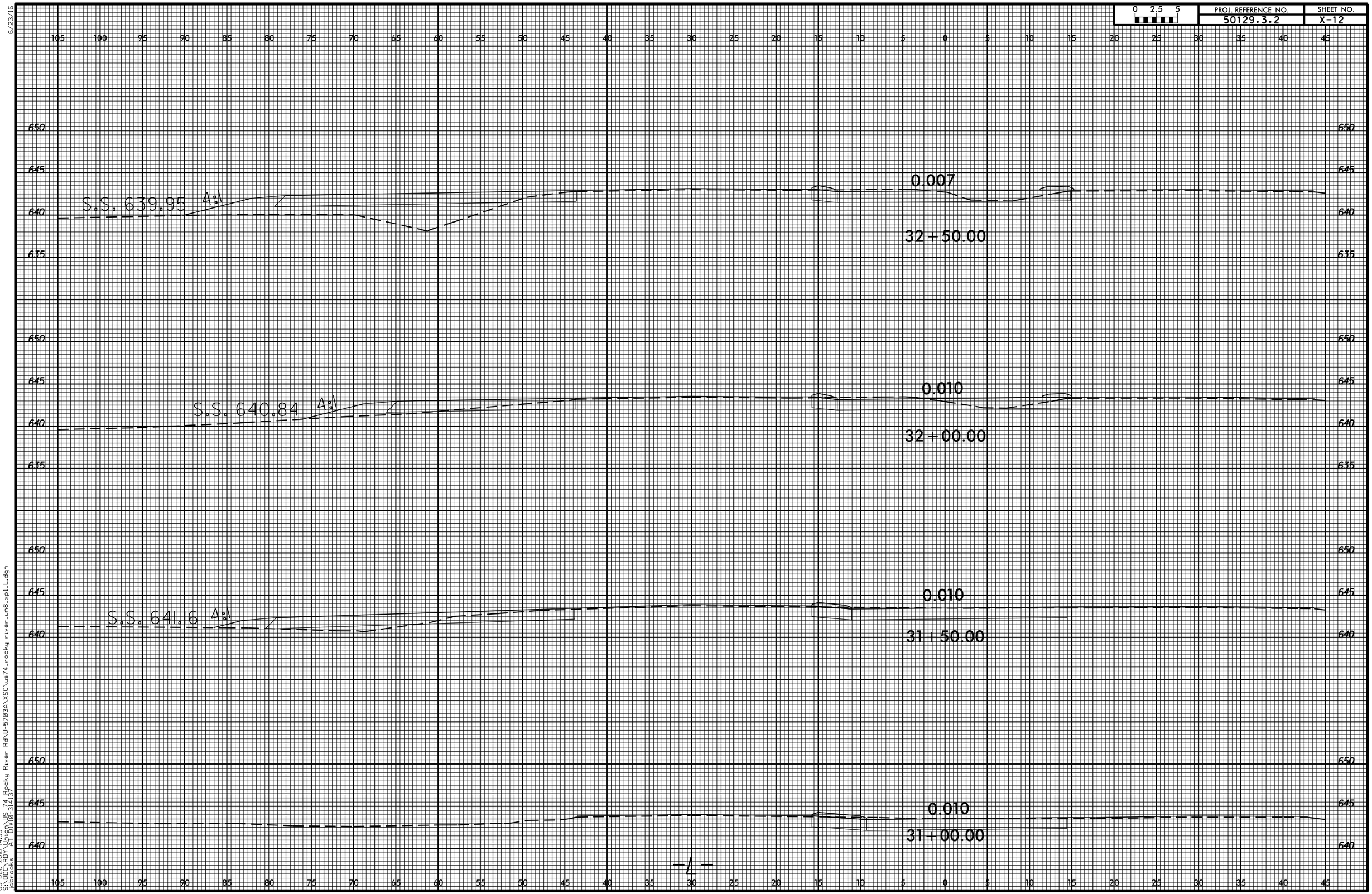

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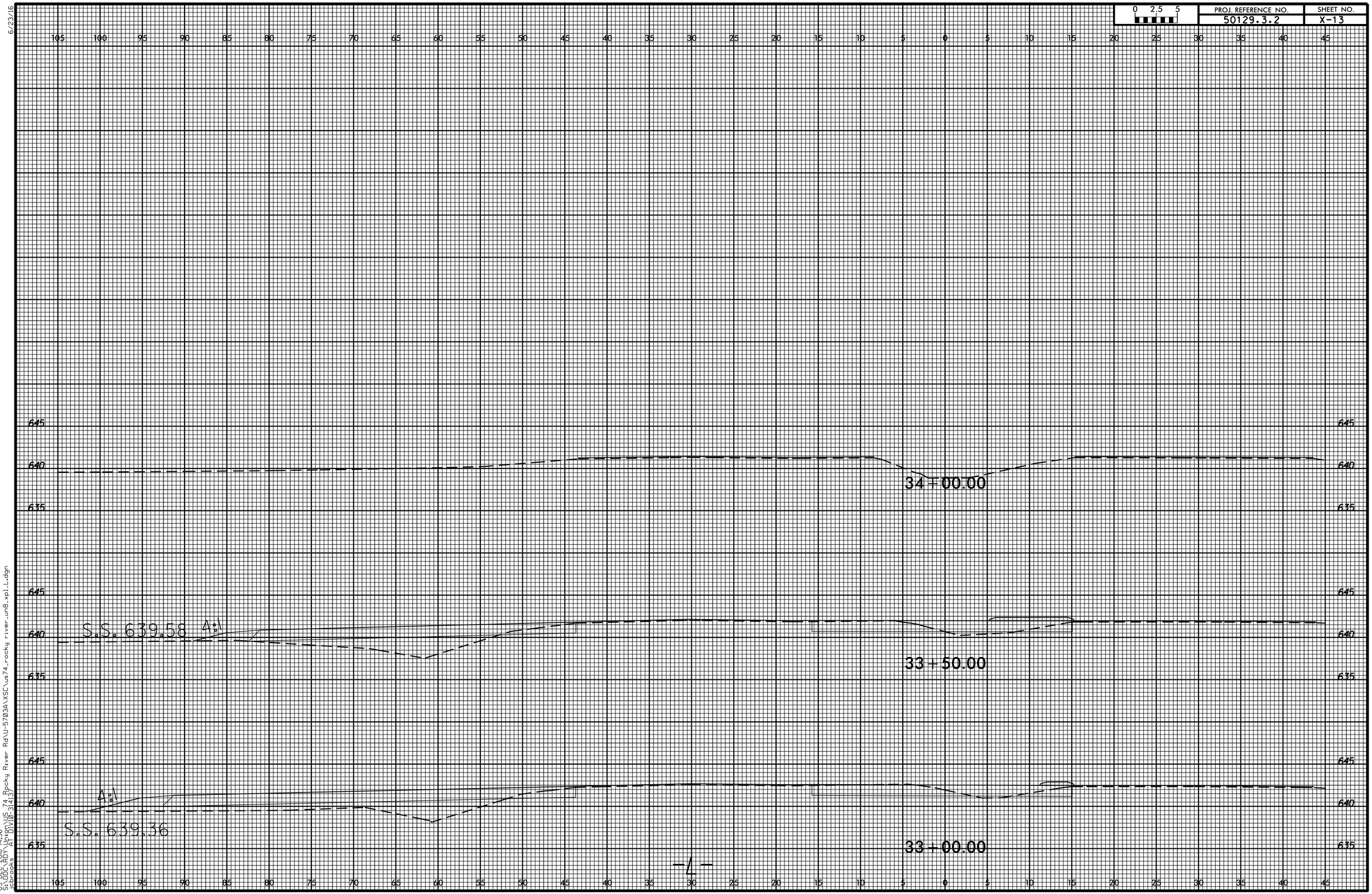
cebrooks AT DIV10-31437



6/23/16

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cebrooks AT DIV18-3141.37

6/23/16

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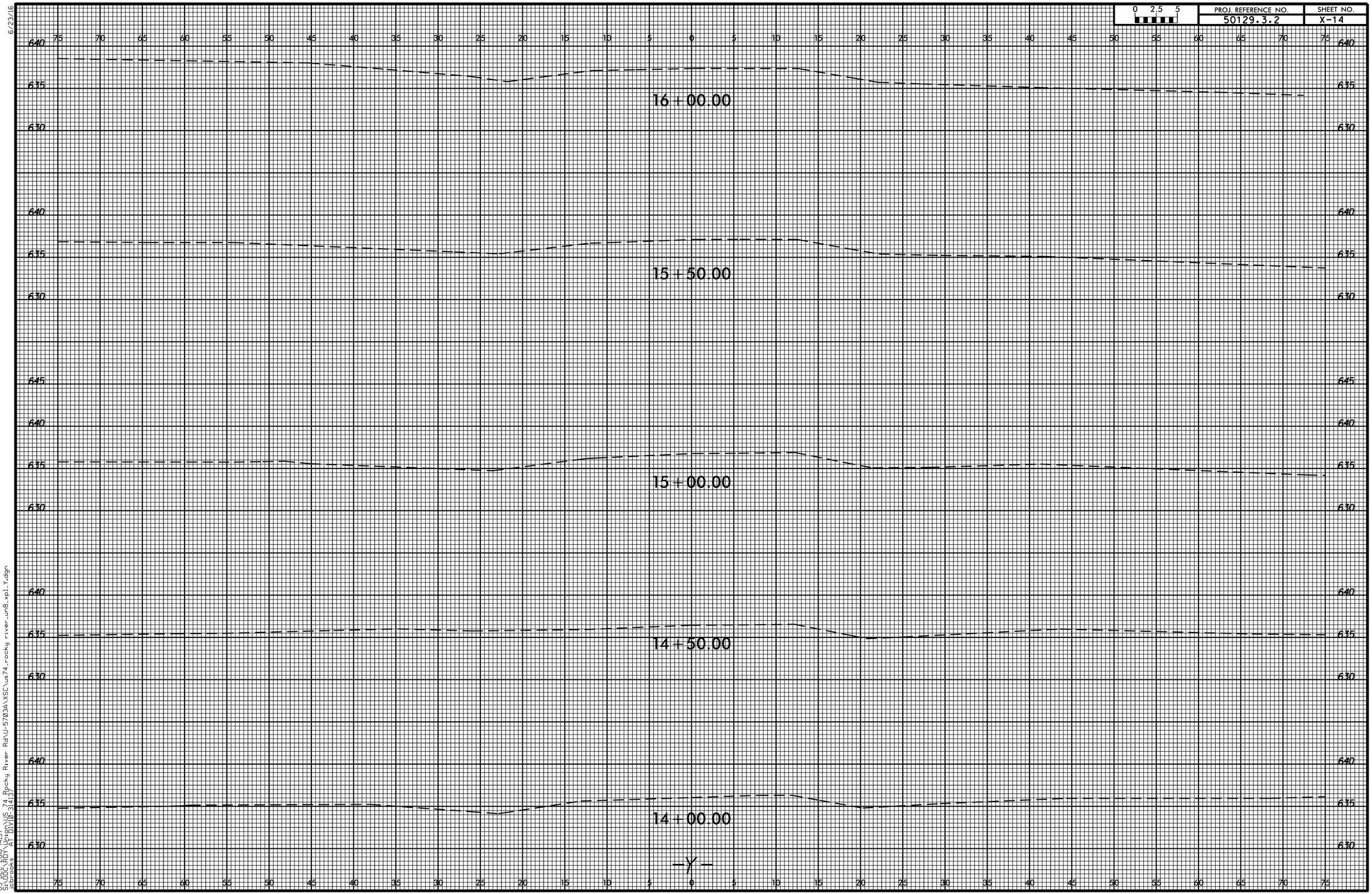

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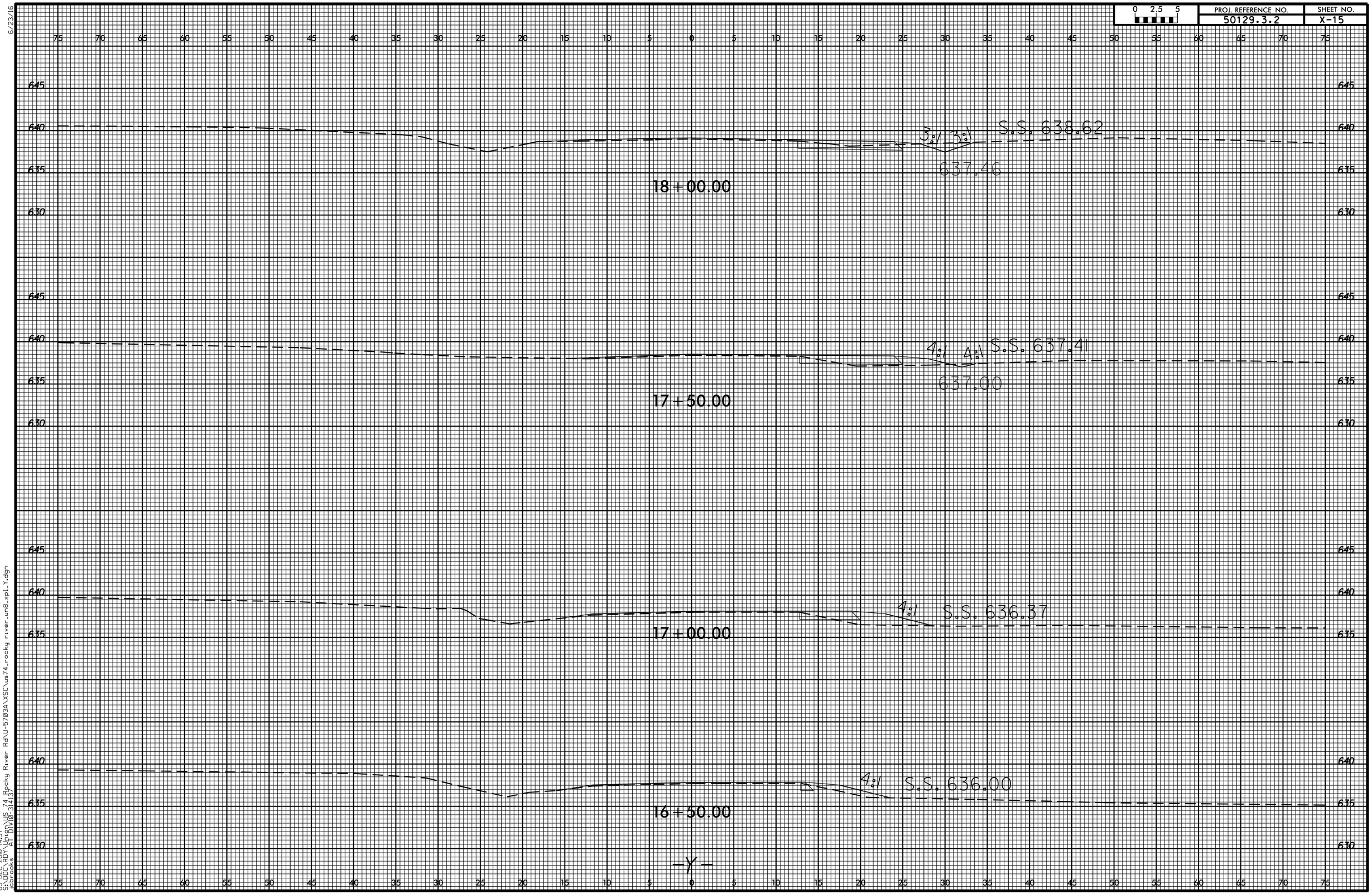
cebrooks AT DIV10-3141,37



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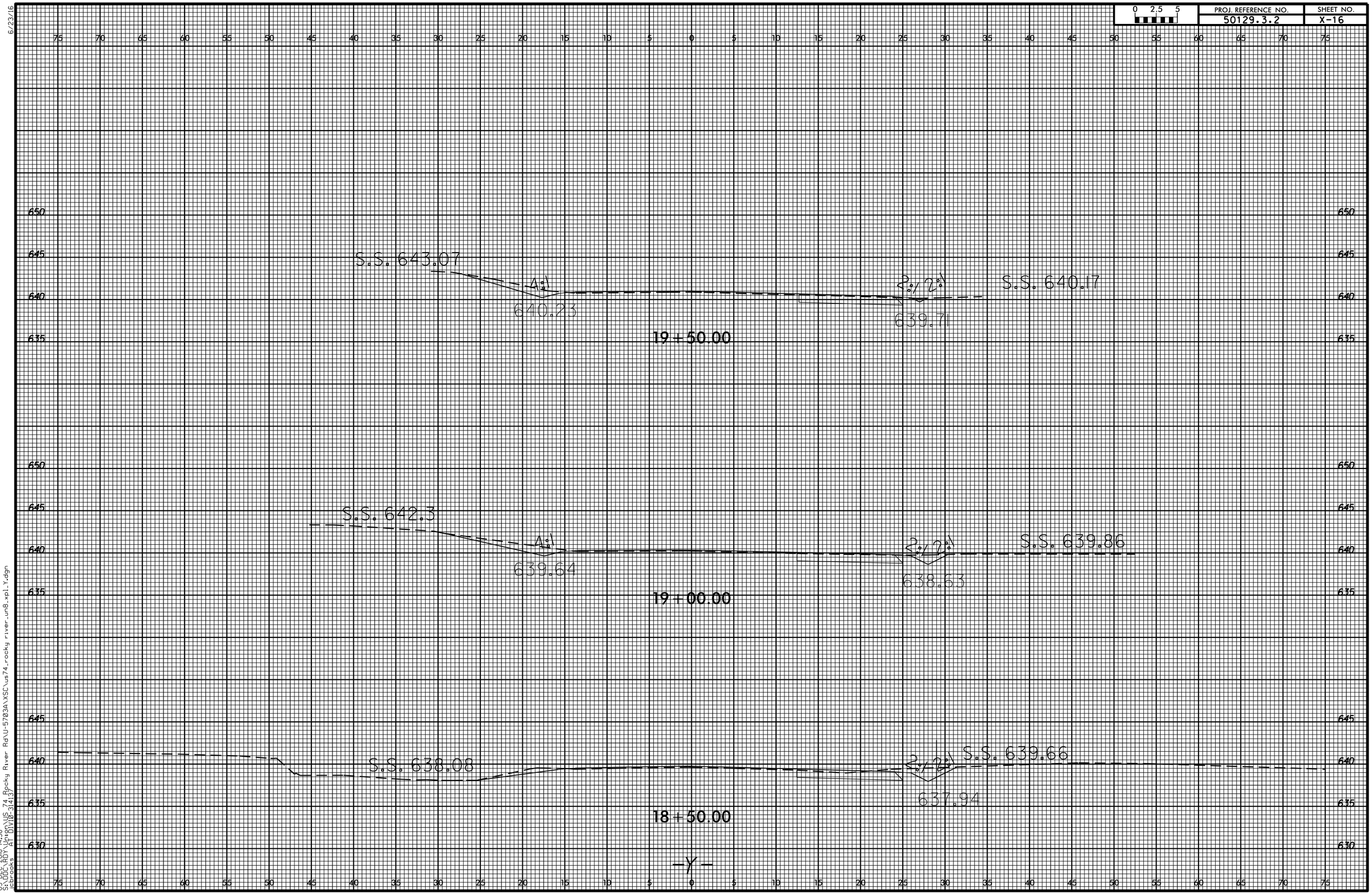
tebrooks AT DIV10-3141.37



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cebrooks AT DIV10-3141.37

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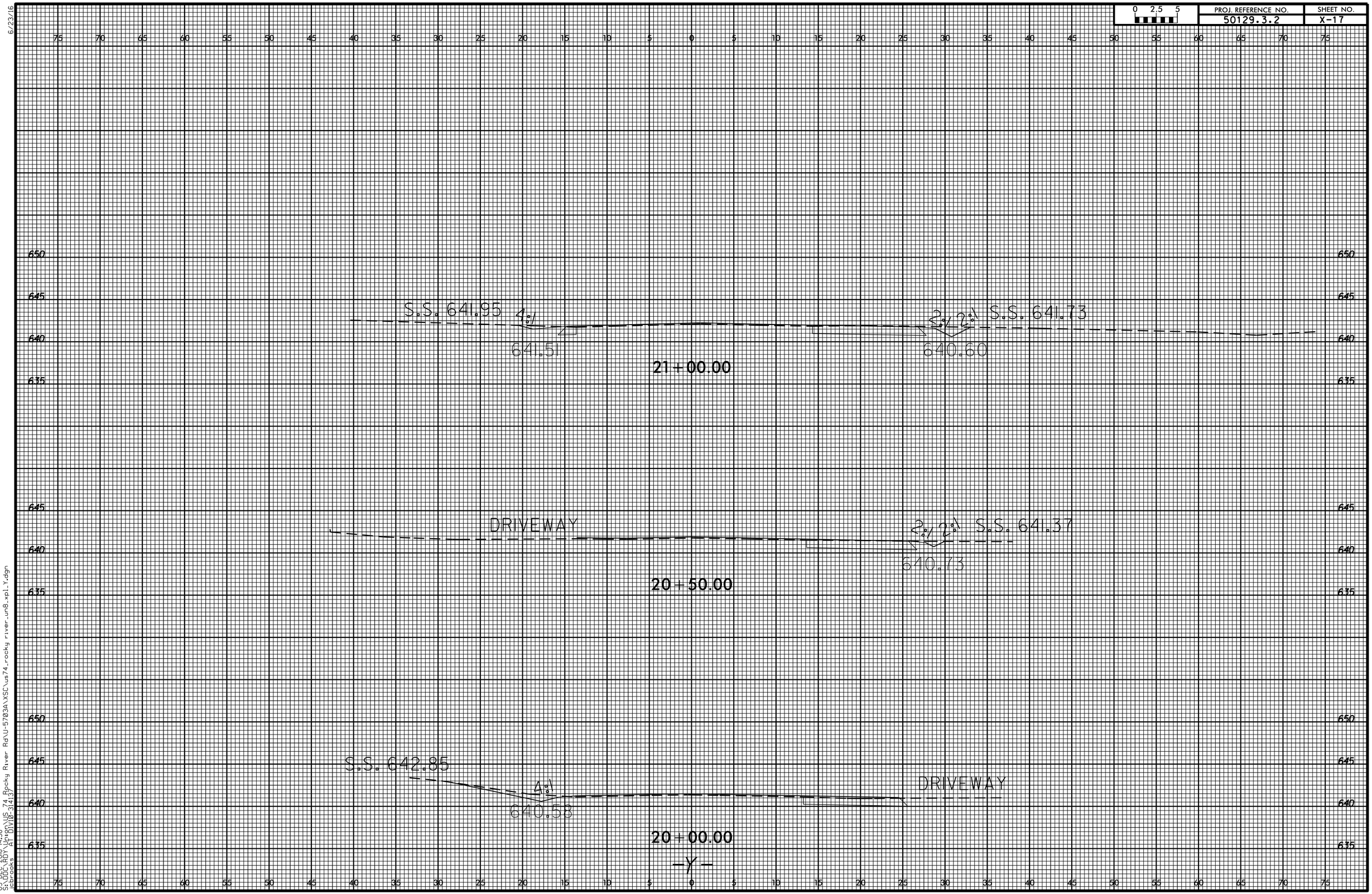

6/23/16

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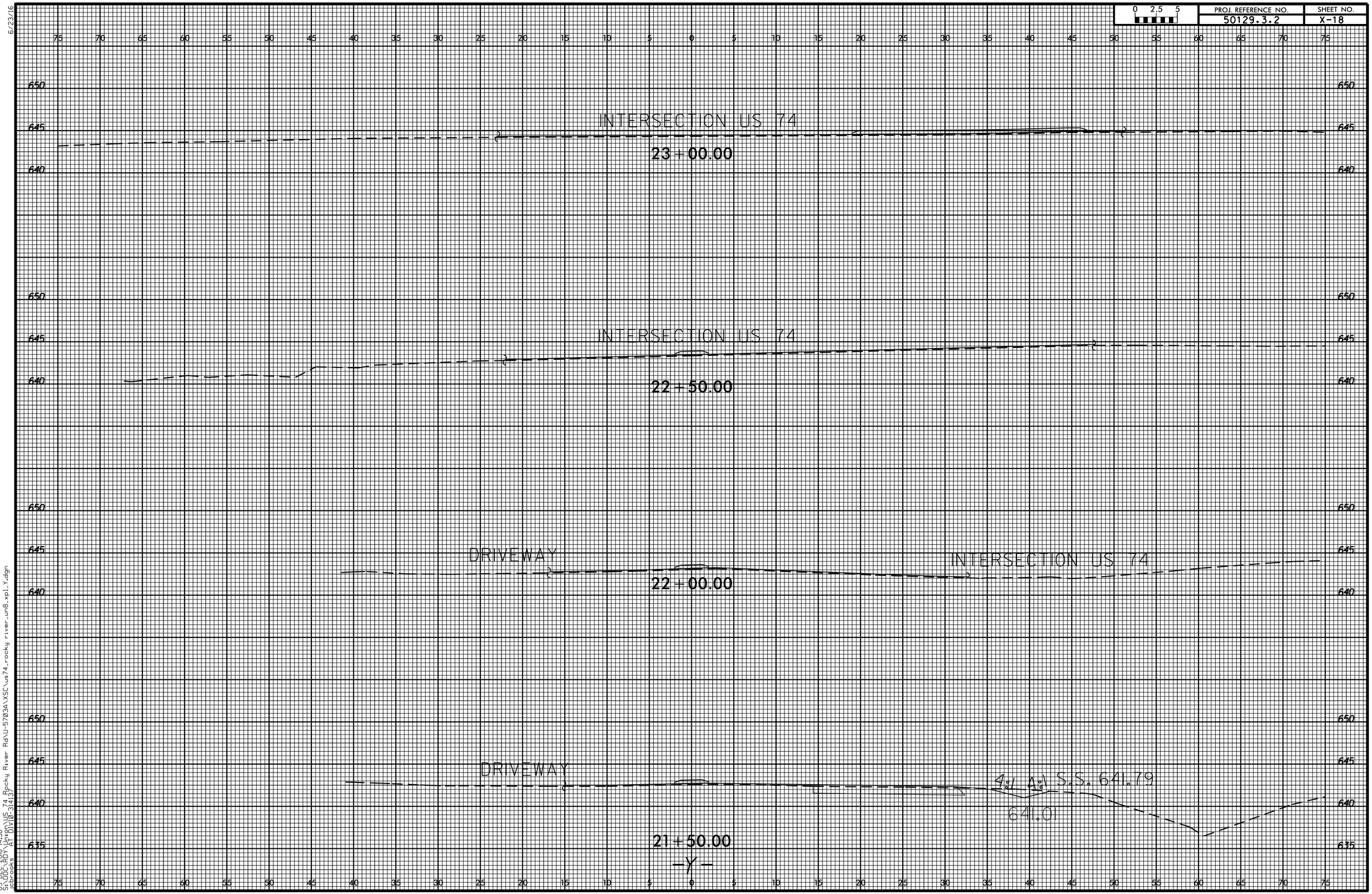

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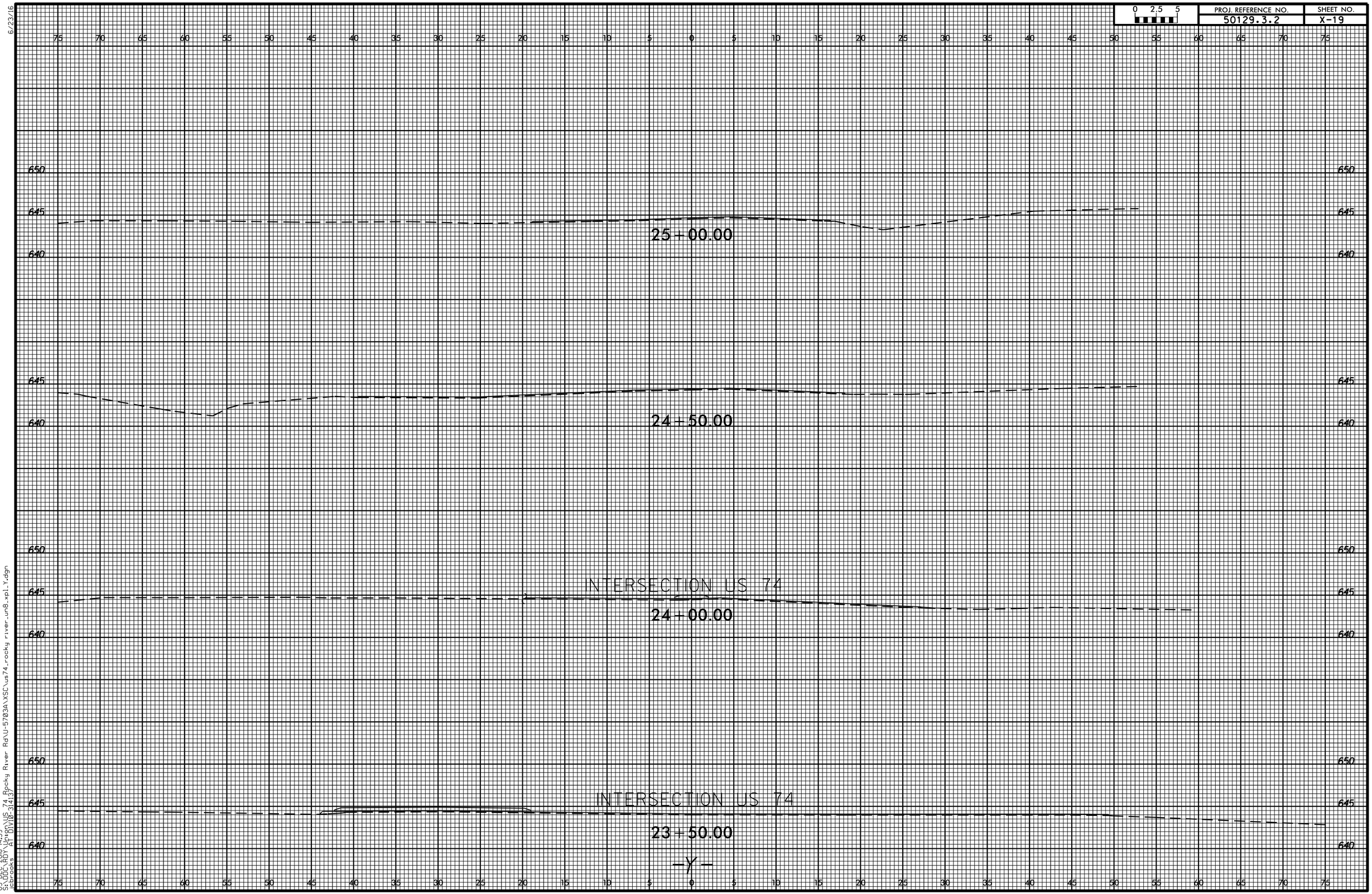
cebrooks AT DIV10-31437



6/23/16

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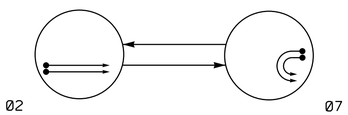
cebrooks AT DIV10-31437

PROJECT REFERENCE NO.	SHEET NO.
U-5703	Sig. 1.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

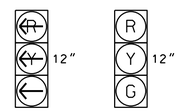
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE 02	PHASE 07	FLASH
21, 22	G	R	Y
71, 72, 73	~~R~~	—	~~R~~

SIGNAL FACE I.D.

All Heads L.E.D.



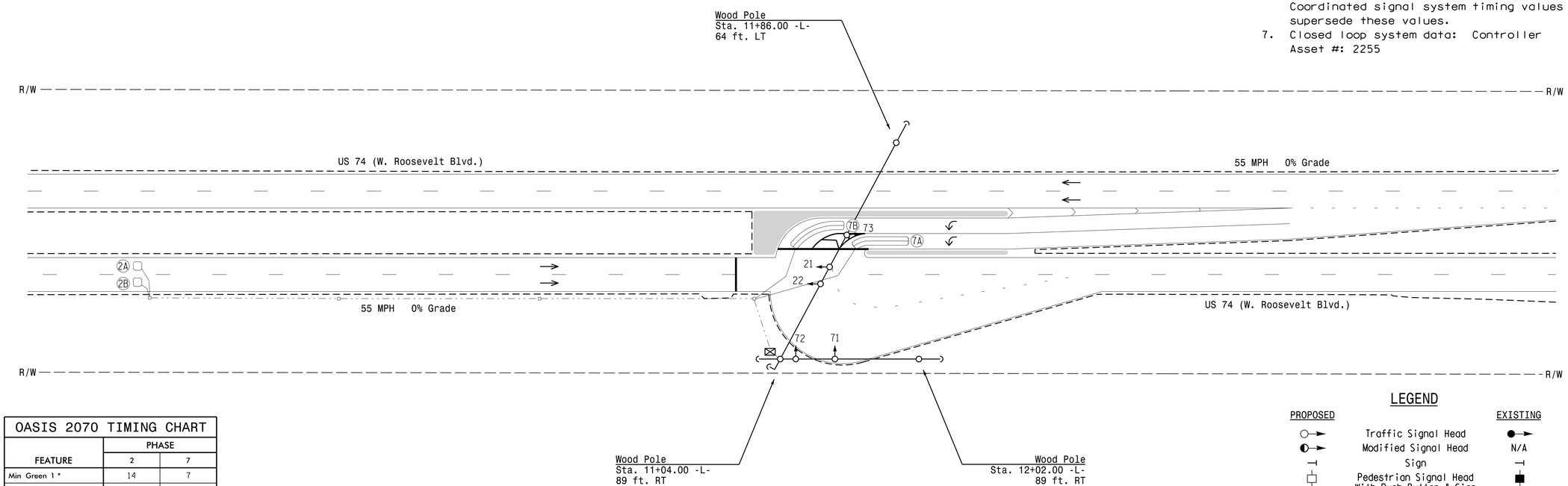
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2A	6X6	420	5	Y	2	Y	Y	-	-	-	-	Y
2B	6X6	420	5	Y	2	Y	Y	-	-	-	-	Y
7A	6X40	0	2-4-2	Y	7	Y	Y	-	-	-	-	Y
7B	6X40	0	2-4-2	Y	7	Y	Y	-	-	-	-	Y

2 Phase
Fully Actuated
US 74 (Indian Trail) CLS

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Set all detector units to presence mode.
4. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
5. See Pavement Marking Plans for stop bar locations.
6. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
7. Closed loop system data: Controller Asset #: 2255



OASIS 2070 TIMING CHART

FEATURE	PHASE 2	PHASE 7
Min Green 1 *	14	7
Extension 1 *	6.0	2.0
Max Green 1 *	90	30
Yellow Clearance	5.2	3.0
Red Clearance	2.0	3.3
Red Revert	2.0	2.0
Walk 1 *	-	-
Don't Walk 1	-	-
Seconds Per Actuation *	1.5	-
Max Variable Initial *	46	-
Time Before Reduction *	15	-
Time To Reduce *	45	-
Minimum Gap	3.4	-
Recall Mode	MIN RECALL	-
Vehicle Call Memory	YELLOW	-
Dual Entry	-	-
Simultaneous Gap	ON	ON

* 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		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	

New Installation

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared In the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 74 Eastbound at N. Rocky River Road Westbound U-Turn

Division 10 Union County Monroe

PLAN DATE:	April 2017	REVIEWED BY:	T.J. Williams
PREPARED BY:	R.N. Zinser	REVIEWED BY:	

SCALE 0 40 1"=40'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 043914 ENGINEER RICHARD N. ZINSER

DocuSigned by: R. N. Zinser 5/23/2017
F13B9D7347224AF DATE

SIG. INVENTORY NO. 10-2255

09-MAR-2018 09:40
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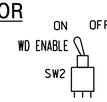
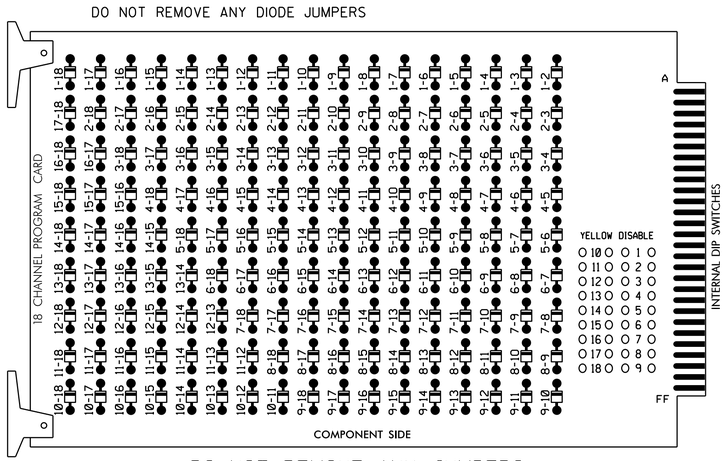
rnzinser

PROJECT REFERENCE NO.	SHEET NO.
U-5703	Sig. 1.1

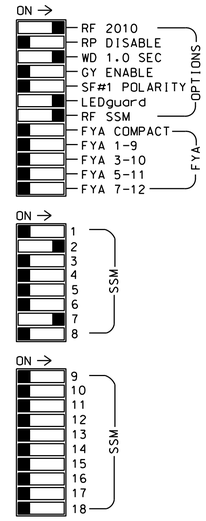
EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(set switches as shown)





DO NOT REMOVE ANY JUMPERS



NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

NOTES

1. 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.
2. Enable Simultaneous Gap-Out for all Phases.
3. Program phase 2 for Variable Initial and Gap Reduction.
4. Program phase 2 for Startup In Green.
5. Program phase 2 for Yellow Flash.
6. The cabinet and controller are part of the US 74 (Indian Trail) Closed Loop System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...12
LOAD SWITCHES USED.....S2,S10
PHASES USED.....2,7
OVERLAPS.....NONE

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	NU	21,22	NU	NU	NU	NU	NU	NU	NU	71,72 73	NU	NU
RED		128										
YELLOW		129										
GREEN		130										
RED ARROW										122		
YELLOW ARROW										123		
GREEN ARROW										124		

NU = Not Used

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	SLOT	Ø 2 2A	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	FS DC ISOLATOR
	L	EMPTY	Ø 2 2B	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	ST DC ISOLATOR
FILE "J"	U	SLOT	SLOT	SLOT	SLOT	Ø 7 7A	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT
	L	EMPTY	EMPTY	EMPTY	EMPTY	Ø 7 7B	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY

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

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
2A	TB2-5,6	I2U	39	1	2	2	Y	Y			
2B	TB2-7,8	I2L	43	5	12	2	Y	Y			
7A	TB5-5,6	J5U	57	19	7	7	Y	Y			
7B	TB5-7,8	J5L	57	19	7	7	Y	Y			

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 10-2255
DESIGNED: April 2017
SEALED: 5/23/2017
REVISED: N/A

Electrical Detail

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 74 Eastbound
at
N. Rocky River Road
Westbound U-Turn

Division 10 Union County Monroe

PLAN DATE: May 2017	REVIEWED BY:
PREPARED BY: S. Armstrong	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036880 ENGINEER KEITH M. MINS

DocuSigned by: Keith M. Mins 3/12/2018
2F807B0EBCD4AA6... DATE

SIG. INVENTORY NO. 10-2255

12-MAR-2018 08:21
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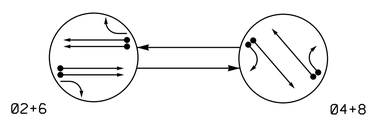
sarmstrong

PROJECT REFERENCE NO.	SHEET NO.
U-5703	Sig. 2.0

PHASING DIAGRAM



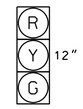
PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION			
SIGNAL FACE	PHASE 02+6	PHASE 04+8	FLASH
21, 22	G	R	Y
41, 42, 43	R	G	R
61, 62	G	R	Y
81, 82, 83	R	G	R

SIGNAL FACE I.D.

All Heads L.E.D.



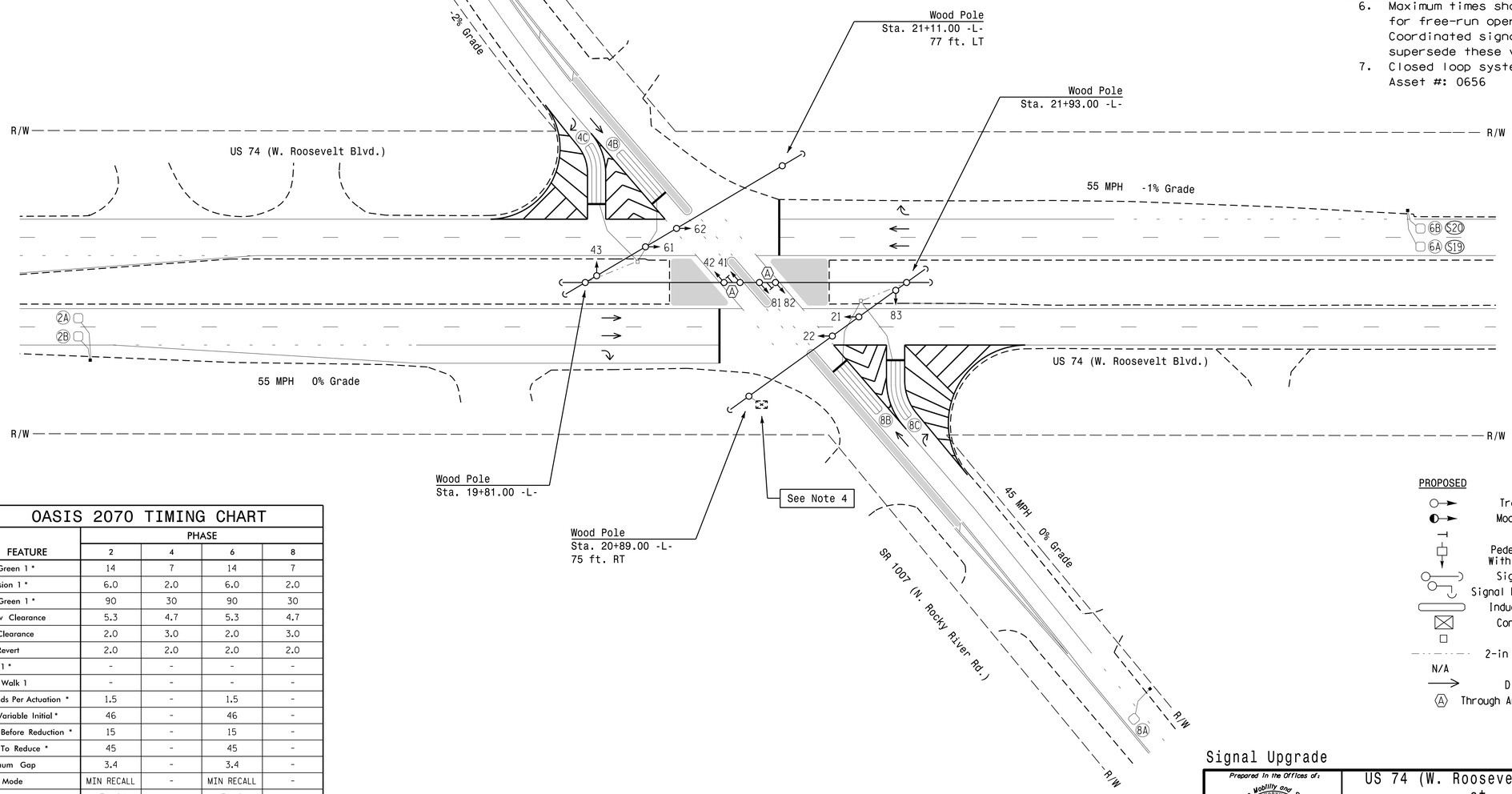
21, 22
41, 42, 43
61, 62
81, 82, 83

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART											
INDUCTIVE LOOPS					DETECTOR PROGRAMMING						
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2A	6X6	420	6	Y	2	Y	Y	-	-	-	-	Y
2B	6X6	420	6	Y	2	Y	Y	-	-	-	-	Y
4A	6X40	300	6	Y	4	-	Y	-	2.4	-	-	Y
4B	6X40	0	2-4-2	Y	4	Y	Y	-	-	-	-	Y
4C	6X40	0	2-4-2	Y	4	Y	Y	-	-	15	-	Y
6A/S19	6X6	420	6	Y	6	Y	Y	-	-	-	Y	Y
6B/S20	6X6	420	6	Y	6	Y	Y	-	-	-	Y	Y
8A	6X40	300	6	Y	8	-	Y	-	2.4	-	-	Y
8B	6X40	0	2-4-2	Y	8	Y	Y	-	-	-	-	Y
8C	6X40	0	2-4-2	Y	8	Y	Y	-	-	15	-	Y

2 Phase
Fully Actuated
US 74 (Indian Trail) CLS

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Set all detector units to presence mode.
4. Install a new 2070E Controller into the existing Cabinet.
5. See Pavement Marking Plans for stop bar locations.
6. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
7. Closed loop system data: Controller Asset #: 0656



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
Ⓐ	Through Arrow "ONLY" Sign (R3-5A)	Ⓐ

OASIS 2070 TIMING CHART

FEATURE	PHASE 2	PHASE 4	PHASE 6	PHASE 8
Min Green 1 *	14	7	14	7
Extension 1 *	6.0	2.0	6.0	2.0
Max Green 1 *	90	30	90	30
Yellow Clearance	5.3	4.7	5.3	4.7
Red Clearance	2.0	3.0	2.0	3.0
Red Revert	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	1.5	-	1.5	-
Max Variable Initial *	46	-	46	-
Time Before Reduction *	15	-	15	-
Time To Reduce *	45	-	45	-
Minimum Gap	3.4	-	3.4	-
Recall Mode	MIN RECALL	-	MIN RECALL	-
Vehicle Call Memory	YELLOW	-	YELLOW	-
Dual Entry	-	ON	-	ON
Simultaneous Gap	ON	ON	ON	ON

* 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.

Signal Upgrade

Prepared In the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE 0 40
1"=40'

US 74 (W. Roosevelt Blvd.)
at
SR 1007 (N. Rocky River Rd.)/
SR 1514 (N. Rocky River Rd.)

Division 10 Union County Monroe

PLAN DATE: April 2017 REVIEWED BY: T.J. Williams
PREPARED BY: R.N. Zinser REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 043914 ENGINEER RICHARD N. ZINSER

DocuSigned by:
R. N. Zinser
E13B8B734727A8E
5/23/2017
DATE

SIG. INVENTORY NO. 10-0656

09-MAR-2018 09:33
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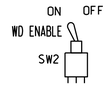
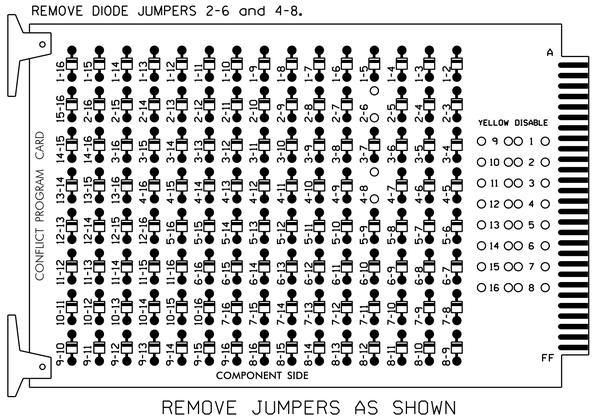
rnzinser

PROJECT REFERENCE NO.	SHEET NO.
U-5703	Sig. 2.1

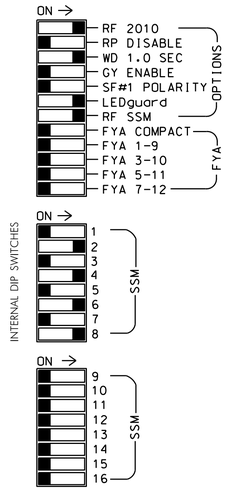
EDI MODEL 2010ECLip-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)





REMOVE JUMPERS AS SHOWN



■ = DENOTES POSITION OF SWITCH

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Make sure jumpers SEL2-SEL5 are present on the monitor board.
3. Integrate monitor with Ethernet network in cabinet.

NOTES

1. 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.
2. Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels, tie unused red monitor inputs 1,3, 5,7,9,10,11,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
3. Program phases 4 and 8 for Dual Entry.
4. Enable Simultaneous Gap-Out for all Phases.
5. Program phases 2 and 6 for Variable Initial and Gap Reduction.
6. Program phases 2 and 6 for Startup In Green.
7. Program phases 2 and 6 for Yellow Flash.
8. The cabinet and controller are part of the US 74 (Indian Trail) Closed Loop System.

EQUIPMENT INFORMATION

CONTROLLER.....2070E
CABINET.....332 W/ AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S2,S4,S6,S8
PHASES USED.....2,4,6,8
OVERLAPS.....NONE

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S89	S9	S10	S11	S12	S13	S14
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 43	NU	NU	61,62	NU	NU	81,82 83	NU	NU	NU	NU	NU	NU	NU
RED		128			101			134			107							
YELLOW		129			102			135			108							
GREEN		130			103			136			109							
RED ARROW																		
YELLOW ARROW																		
GREEN ARROW																		

NU = Not Used

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	SLOT EMPTY	Ø 2 2A	SLOT EMPTY	SLOT EMPTY	Ø 8 8A	Ø 8 8B	Ø 4 4A	Ø 4 4C	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	FS DC ISOLATOR
	L		Ø 2 2B			NOT USED	Ø 8 8C	Ø 4 4B	NOT USED						ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	Ø6/SYS 6A/S19	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L		Ø6/SYS 6B/S20												

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

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
2A	TB2-5,6	12U	39	1	2	2	Y	Y			
2B	TB2-7,8	12L	43	5	12	2	Y	Y			
4A	TB6-1,2	17U	65	27	34	4		Y		2.4	
4B	TB6-3,4	17L	78	40	44	4	Y	Y			
4C	TB6-5,6	18U	49	11	24	4	Y	Y			15
6A/S19	TB3-5,6	J2U	40	2	6	6/SYS	Y	Y			
6B/S20	TB3-7,8	J2L	44	6	16	6/SYS	Y	Y			
8A	TB4-5,6	15U	58	20	3	8		Y		2.4	
8B	TB4-9,10	16U	41	3	4	8	Y	Y			
8C	TB4-11,12	16L	45	7	14	8	Y	Y			15

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 10-0656
DESIGNED: April 2017
SEALED: 5/23/2017
REVISED: N/A

Electrical Detail

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 74 (W. Roosevelt Blvd.)
at
SR 1007 (N. Rocky River Rd.)/
SR 1514 (N. Rocky River Rd.)

Division 10 Union County Monroe

PLAN DATE: May 2017 REVIEWED BY:
PREPARED BY: S. Armstrong REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036880 ENGINEER KEITH M. MINS

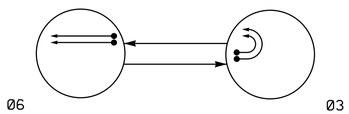
DocuSigned by: Keith M. Mins 6/5/2017
2F80786E8CD34A5... DATE

SIG. INVENTORY NO. 10-0656

05-JUN-2017 09:04
S:*ITS&SU*ITS Signals*Workgroups*Sig Mgmt*Armstrong*100656_smele_xxx.dgn
sarmstrong

PROJECT REFERENCE NO.	SHEET NO.
U-5703	Sig. 3.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

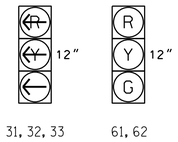
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE Ø6	PHASE Ø3	FLASH
31, 32, 33	~~R~~	←	~~R~~
61, 62	G	R	Y

SIGNAL FACE I.D.

All Heads L.E.D.



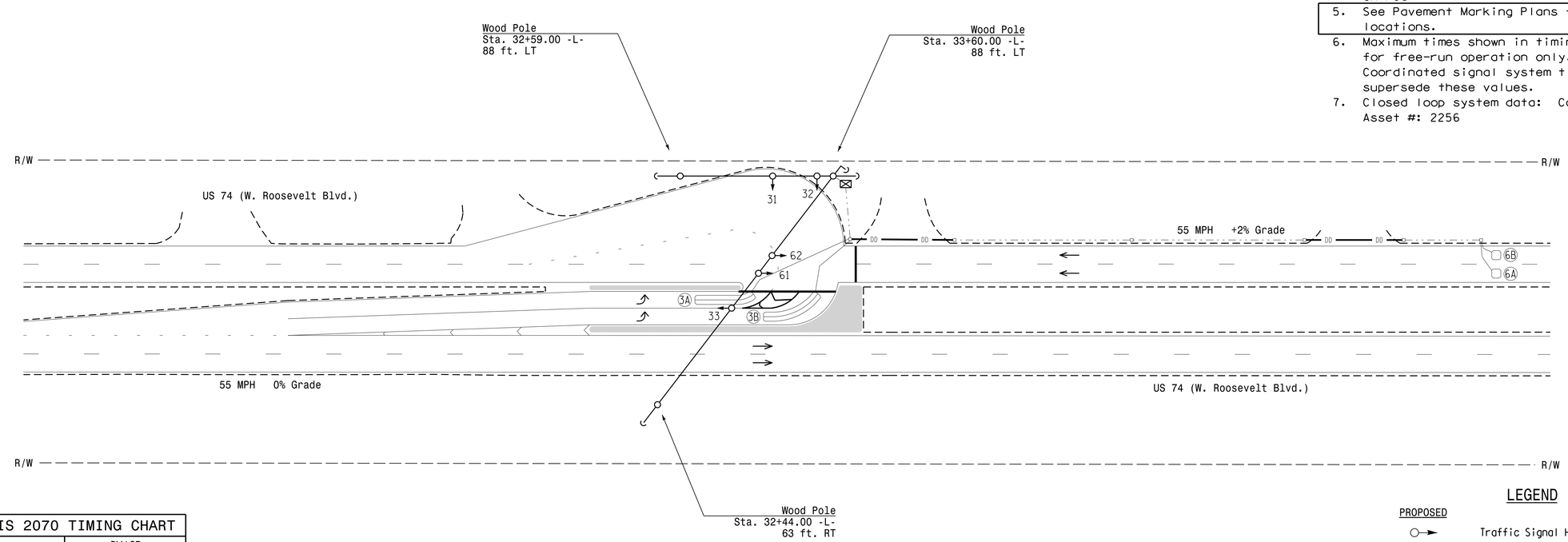
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
3A	6X40	0	2-4-2	Y	3	Y	Y	-	-	-	-	Y
3B	6X40	0	2-4-2	Y	3	Y	Y	-	-	-	-	Y
6A	6X6	420	5	Y	6	Y	Y	-	-	-	-	Y
6B	6X6	420	5	Y	6	Y	Y	-	-	-	-	Y

2 Phase
Fully Actuated
US 74 (Indian Trail) CLS

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Set all detector units to presence mode.
4. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
5. See Pavement Marking Plans for stop bar locations.
6. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
7. Closed loop system data: Controller Asset #: 2256



OASIS 2070 TIMING CHART

FEATURE	PHASE 3	PHASE 6
Min Green 1 *	7	14
Extension 1 *	2.0	6.0
Max Green 1 *	30	90
Yellow Clearance	3.0	5.0
Red Clearance	3.1	2.0
Red Revert	2.0	2.0
Walk 1 *	-	-
Don't Walk 1	-	-
Seconds Per Actuation *	-	1.5
Max Variable Initial *	-	46
Time Before Reduction *	-	15
Time To Reduce *	-	45
Minimum Gap	-	3.4
Recall Mode	-	MIN RECALL
Vehicle Call Memory	-	YELLOW
Dual Entry	-	-
Simultaneous Gap	ON	ON

* These values may be field adjusted. Do not adjust Min reen 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		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
	Directional Drill	N/A

New Installation

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE 0 40
1"=40'

US 74 Westbound
at
N. Rocky River Road
Eastbound U-Turn

Division 10 Union County Monroe

PLAN DATE: May 2017 REVIEWED BY: T.J. Williams
PREPARED BY: R.N. Zinser REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 043914 ENGINEER RICHARD N. ZINSER

DocuSigned by: R. N. Zinser 5/23/2017
E1A0A0D7A4D3A8B... DATE

SIG. INVENTORY NO. 10-2256

09-MAR-2018 03:44
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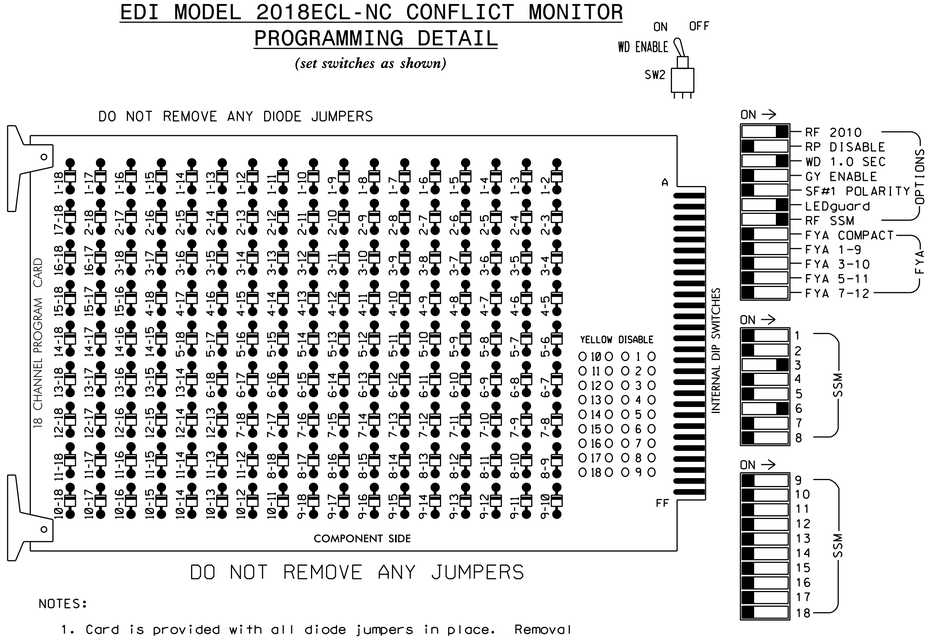
rnzinser

PROJECT REFERENCE NO.	SHEET NO.
U-5703	Sig. 3.1

EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(set switches as shown)



DO NOT REMOVE ANY JUMPERS

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

NOTES

1. 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.
2. Enable Simultaneous Gap-Out for all Phases.
3. Program phase 6 for Variable Initial and Gap Reduction.
4. Program phase 6 for Startup In Green.
5. Program phase 6 for Yellow Flash.
6. The cabinet and controller are part of the US 74 (Indian Trail) Closed Loop System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...12
LOAD SWITCHES USED.....S4,S8
PHASES USED.....3,6
OVERLAPS.....NONE

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	NU	NU	NU	31,32 33	NU	NU	NU	61,62	NU	NU	NU	NU
RED								134				
YELLOW								135				
GREEN								136				
RED ARROW				116								
YELLOW ARROW				117								
GREEN ARROW				118								

NU = Not Used

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	SLOT	SLOT	SLOT	SLOT	Ø 3 3A	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	FS DC ISOLATOR
	L	EMPTY	EMPTY	EMPTY	EMPTY	Ø 3 3B	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	ST DC ISOLATOR
FILE "J"	U	SLOT	Ø 6 6A	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT
	L	EMPTY	Ø 6 6B	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY

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

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
3A	TB4-5,6	I5U	58	20	3	3	Y	Y			
3B	TB4-7,8	I5L	58	20	3	3	Y	Y			
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
6B	TB3-7,8	J2L	44	6	16	6	Y	Y			

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 10-2256
DESIGNED: May 2017
SEALED: 5/23/2017
REVISED: N/A

Electrical Detail

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:

Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signals Management Section

750 N.Greenfield Pkwy,Garner,NC 27529

US 74 Westbound at N. Rocky River Road Eastbound U-Turn

Division 10 Union County Monroe

PLAN DATE: May 2017	REVIEWED BY:
PREPARED BY: S. Armstrong	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036880 ENGINEER KEITH M. MIMS

DocuSigned by:
Keith M. Mims 6/5/2017
2F80786E8CD34A5
DATE

SIG. INVENTORY NO. 10-2256

24-MAY-2017 13:01
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sarmstrong

PROJECT REFERENCE NO.	SHEET NO.
U-5703	SCP.1

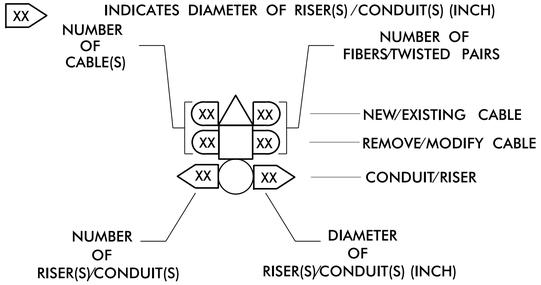
1. INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
2. INSTALL COAX CABLE
3. INSTALL ETHERNET CABLE
4. INSTALL SMFO CABLE
5. INSTALL MMFO CABLE
6. INSTALL FIBER OPTIC DROP CABLE
7. INSTALL TRACER WIRE
8. TRENCH
9. INSTALL PVC CONDUIT
10. INSTALL RIGID, GALVANIZED STEEL CONDUIT
11. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
12. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL
13. INSTALL OUTER–DUCT POLYETHYLENE CONDUIT
14. INSTALL POLYETHYLENE CONDUIT
15. DIRECTIONAL DRILL CONDUIT
16. BORE AND JACK CONDUIT
17. INSTALL CABLE(S) IN EXISTING CONDUIT
18. INSTALL CABLE(S) IN NEW CONDUIT
19. INSTALL CABLE(S) IN EXISTING RISER
20. INSTALL CABLE(S) IN NEW RISER
21. INSTALL CABLE(S) IN EXISTING CONDUIT STUB–OUTS
22. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB–OUTS WHEN AVAILABLE)
23. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB–OUTS WHEN AVAILABLE)
24. INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET
25. INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET
26. MODIFY EXISTING INTERCONNECT CENTER /SPLICE ENCLOSURE
27. INSTALL NEW FIBER OPTIC TRANSCEIVER
28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS AND FUSION SPLICE CABLE IN CABINET
29. INSTALL UNDERGROUND SPLICE ENCLOSURE
30. INSTALL AERIAL SPLICE ENCLOSURE
31. INSTALL POLE MOUNTED SPLICE CABINET
32. INSTALL BASE MOUNTED SPLICE CABINET
33. REMOVE EXISTING SPLICE CABINET
34. INSTALL CABINET FOUNDATION
35. INSTALL CCTV CAMERA POLE MOUNTED CABINET
36. INSTALL CCTV CAMERA ASSEMBLY
37. INSTALL CCTV CAMERA WOOD POLE
38. INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
39. INSTALL JUNCTION BOX
40A. INSTALL OVERSIZED JUNCTION BOX
40B. INSTALL SPECIAL OVERSIZED JUNCTION BOX (36" x 36" x 24")
41. REMOVE EXISTING JUNCTION BOX
42. INSTALL WOOD POLE
43. REMOVE EXISTING WOOD POLE
44. INSTALL AERIAL GUY ASSEMBLY
45. INSTALL STANDARD GUY ASSEMBLY
46. INSTALL SIDEWALK GUY ASSEMBLY
47. INSTALL MESSENGER CABLE
48A. REMOVE EXISTING COMMUNICATIONS AND MESSENGER CABLE
48B. REMOVE EXISTING COMMUNICATIONS CABLE
49. BACK PULL EXISTING COMMUNICATIONS CABLE
50. INSTALL TELEPHONE SERVICE
51. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
52A. INSTALL DELINEATOR MARKER
52B. INSTALL JUNCTION BOX MARKER
53. STORE 20 FEET OF COMMUNICATIONS CABLE
54. LASH CABLE(S) TO EXISTING COMMUNICATIONS CABLE
55. LASH CABLE(S) TO EXISTING MESSENGER CABLE
56. LASH CABLE(S) TO NEW MESSENGER CABLE
57. MODIFY EXISTING ELECTRICAL SERVICE
58. INSTALL NEW ELECTRICAL SERVICE
59. INSTALL NEW ETHERNET EDGE SWITCH
60. BOND TRACER WIRE TO EQUIPMENT GROUND BUS
61. DO NOT BOND TRACER WIRE TO EQUIPMENT GROUND BUS
62. BOND RISER AND MESSENGER CABLE TO POLE GROUND
63. BOND RISER TO POLE GROUND
64. BOND MESSENGER CABLE TO POLE GROUND
65. INSTALL HEAT SHRINK TUBING RETROFIT KIT
66. INSTALL MOLDABLE DUCT SEAL
67. SLACK SPAN

LEGEND

- FO — NEW FIBER OPTIC COMMUNICATIONS CABLE
- TWIST PR — NEW TWISTED PAIR COMMUNICATIONS CABLE
- EXI — EXISTING COMMUNICATIONS CABLE
- REM — EXISTING COMMUNICATIONS CABLE TO BE REMOVED
- NEW AERIAL GUY ASSEMBLY
- NEW CONDUIT
- EXISTING CONDUIT
- DD — NEW DIRECTIONAL DRILLED CONDUIT
- B&J — NEW BORED AND JACKED CONDUIT
- NEW JUNCTION BOX
- EXISTING JUNCTION BOX
- NEW WOOD POLE
- EXISTING WOOD POLE
- S — AERIAL SPLICE ENCLOSURE
- S — UNDERGROUND SPLICE ENCLOSURE
- NEW METAL POLE
- EXISTING METAL POLE
- NEW CCTV ASSEMBLY
- NEW STANDARD GUY ASSEMBLY
- NEW SIDEWALK GUY ASSEMBLY
- XX–XXXX — SIGNAL INVENTORY NUMBER
- NEW CABLE STORAGE RACKS (SNOW SHOES)
- EXISTING CABLE STORAGE RACK (SNOW SHOE)
- EXISTING CONTROLLER AND CABINET
- NEW CCTV CABINET
- S — EXISTING SPLICE CABINET
- S — NEW SPLICE CABINET
- SP — SIGNAL POLE
- FLAT PANEL ANTENNA (SINGLE)
- YAGI ANTENNA (DOUBLE) FOR REPEATER OPERATION
- YAGI ANTENNA (SINGLE)
- OMNI ANTENNA

CONSTRUCTION NOTE SYMBOLOGY KEY

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



ATTACHMENT POINT:

- XX"/SS / YYY — DISTANCE ABOVE (IN)/ATTACHMENT POINT REFERENCE POINT
- YYY / XX"/SS — REFERENCE POINT DISTANCE BELOW (IN)/ATTACHMENT POINT

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:

North Carolina Department of Transportation
Mission: To connect people and goods to destinations in a manner that protects the environment and enhances the economy.
Vision: To be a leader in transportation by providing a safe, sustainable, multimodal transportation system that enhances the quality of life in North Carolina.
DIVISION OF HIGHWAYS

750 N. Greenfield Pkwy., Garner, NC 27529

CONSTRUCTION NOTES

DIVISION 10 UNION COUNTY INDIAN TRAIL

PLAN DATE: FEBRUARY 2018
PREPARED BY: A. J. SKUCE
REVIEWED BY: Neil Avery
DocuSigned by: 09F5DB6CBED3443...

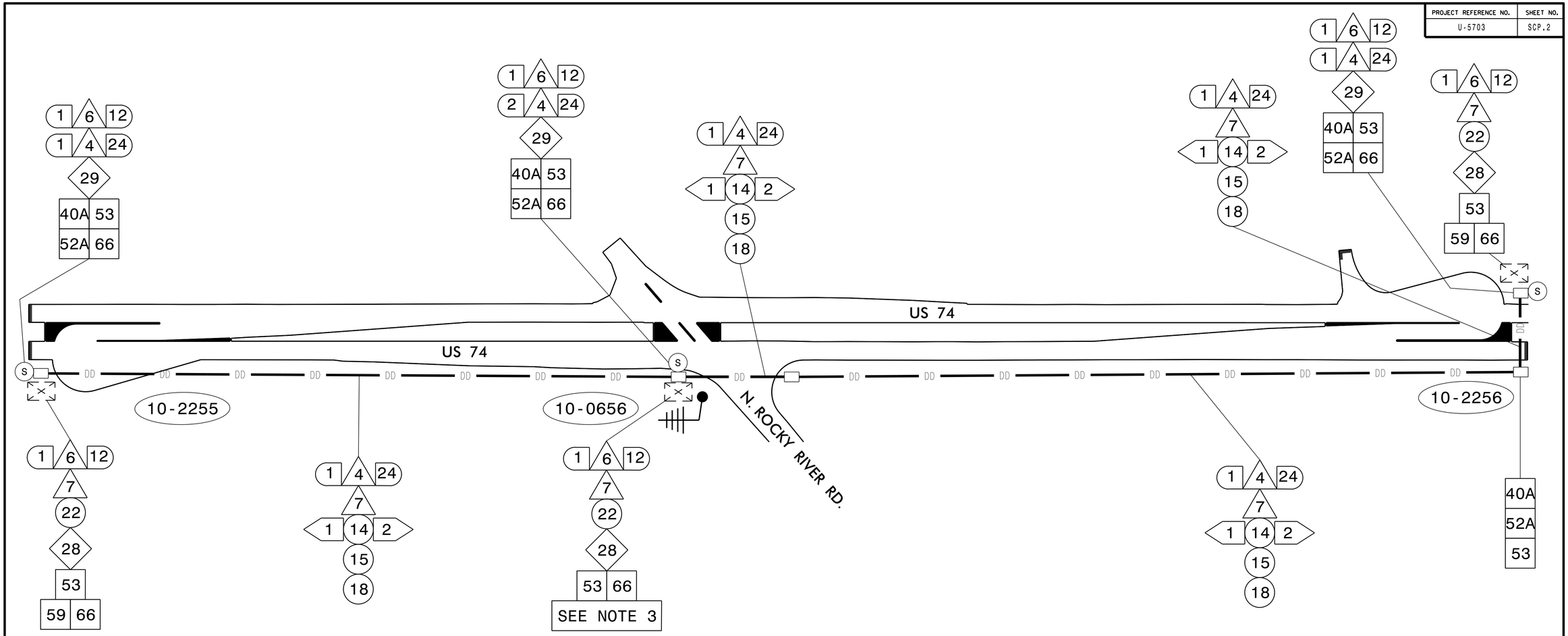
REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032108 ENGINEER MOHD A. ASLAMI

DocuSigned by: Mohd Aslami 5D9B0BA6DBB6495...
3/5/2018
DATE

PROJECT REFERENCE NO.	SHEET NO.
U-5703	SCP.2



1) FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE DIVISION 10 TRAFFIC ENGINEER, TONY TAGLIAFERRI, AT 704-9824400 TO ARRANGE FOR THE DIVISION TO PROGRAM THE NEW FIELD ETHERNET SWITCHES WITH THE NECESSARY NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO: THE PROJECT IP ADDRESS, DEFAULT GATEWAY, SUBNET MASK AND VLAN ID INFORMATION. NOTIFY THE DIVISION TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL

2) CONTRACTOR TO RECORD EXISTING SPLICE ARRANGEMENT FOR COMPARISON TO THE SUPPLIED SPLICE DETAILS. IF DISCREPANCIES EXIST, CONTACT THE ENGINEER TO DETERMINE HOW TO PROCEED WITH RESPLICING. PROVIDE AS-BUILT PLANS TO THE ENGINEER IF FINAL SPLICE ARRANGEMENT DIFFERS FROM THE SUPPLIED SPLICE DETAILS.

3) LEAVE EXISTING RADIO SYSTEM INTACT AND OPERATIONAL. RE-USE EXISTING ETHERNET EDGE SWITCH. CONNECT RADIO AND NEW FIBER SYSTEM AS SHOWN ON THESE PLANS AND THE SPLICE PLANS.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:

Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems Section

750 N. Greenfield Pkwy., Garner, NC 27529

SCALE 0 80′ 1″ = 80′

SIGNAL COMMUNICATIONS CABLE AND CONDUIT ROUTING PLANS

DIVISION 10 UNION COUNTY INDIAN TRAIL

PLAN DATE: FEBRUARY 2018 REVIEWED BY: DocuSigned by: Neil Avery 09F5DB4CBED3443...

PREPARED BY: A. J. SKUCE

REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032108 ENGINEER MOHAMED A. ASLAMI

DocuSigned by: Mohamed Aslami 5D9B0BA6DBB6495... 3/5/2018

DATE

PROJECT REFERENCE NO.	SHEET NO.
U-5703	SCP.3

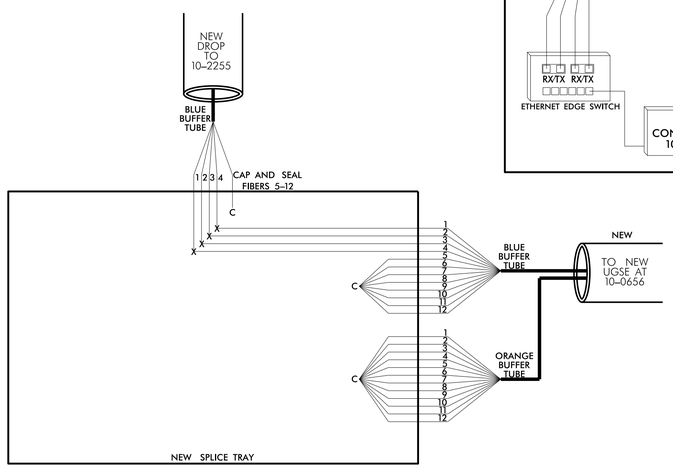
NEW UNDERGROUND SPLICE ENCLOSURE
US 74 U– TURN BULB OUT AT
SIG. INV. # 10–2255

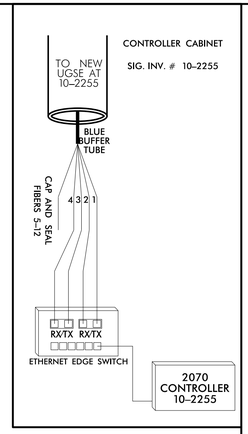
Notes:
Unused fibers left coiled and stored in splice tray.
Unused Buffer Tubes left coiled and stored in splice tray.

COLOR CODE
TIA/EIA 598–A

(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA

LEGEND
X = FUSION SPLICE
C = CAP IN TRAY





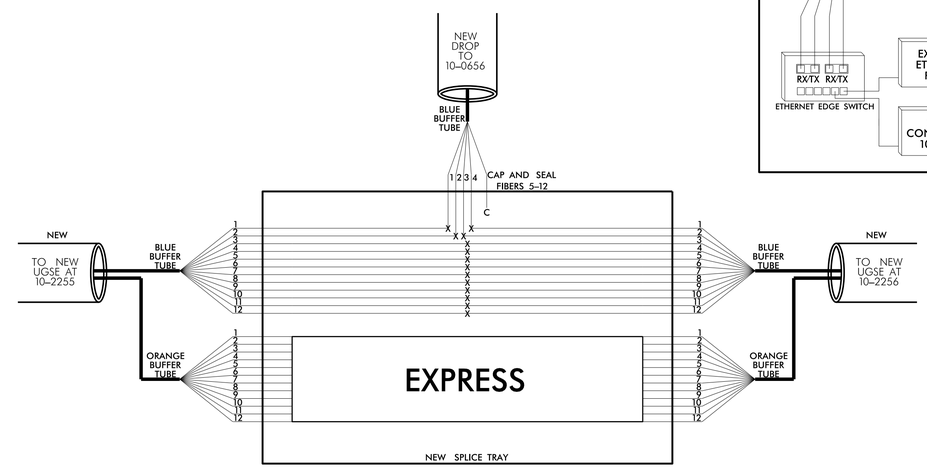
NEW UNDERGROUND SPLICE ENCLOSURE
US 74 AT N. ROCKY RIVER RD.
SIG. INV. # 10–0656

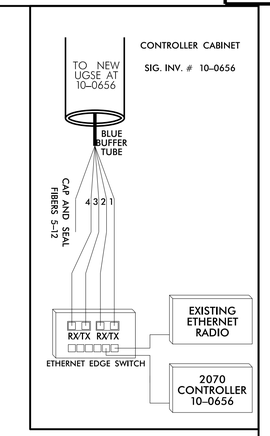
Notes:
Unused fibers left coiled and stored in splice tray.
Unused Buffer Tubes left coiled and stored in splice tray.

COLOR CODE
TIA/EIA 598–A

(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA

LEGEND
X = FUSION SPLICE
C = CAP IN TRAY





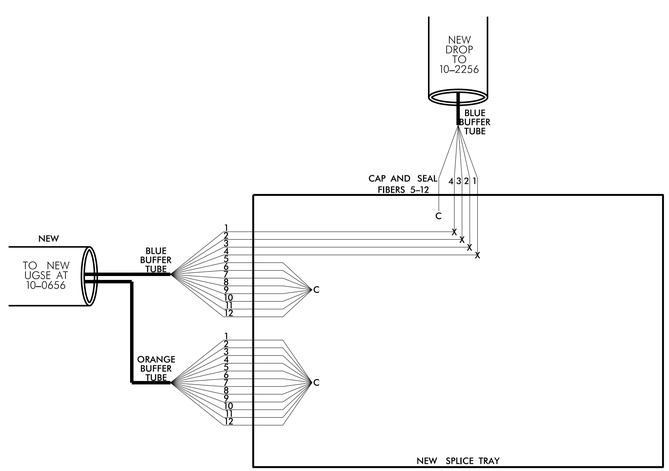
NEW UNDERGROUND SPLICE ENCLOSURE
US 74 U–TURN BULB OUT AT
SIG. INV. # 10–2256

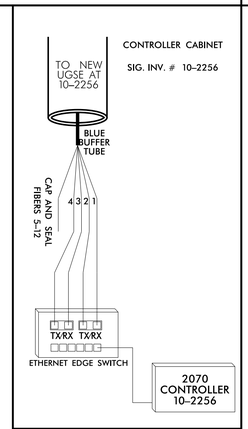
Notes:
Unused fibers left coiled and stored in splice tray.
Unused Buffer Tubes left coiled and stored in splice tray.

COLOR CODE
TIA/EIA 598–A

(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA

LEGEND
X = FUSION SPLICE
C = CAP IN TRAY





1) FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE DIVISION 10 TRAFFIC ENGINEER, TONY TAGLIAFERRI, AT 704–9824400 TO ARRANGE FOR THE DIVISION TO PROGRAM THE NEW FIELD ETHERNET SWITCHES WITH THE NECESSARY NETWORK CONFIGURATION DATA, INCLUDING BUT NOT LIMITED TO: THE PROJECT IP ADDRESS, DEFAULT GATEWAY, SUBNET MASK AND VLAN ID INFORMATION. NOTIFY THE DIVISION TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL

2) ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING \ ENSURING PROPER TERMINATIONS.

3) INCLUDE ON THE COVER OF EACH SPLICE TRAY THE FOLLOWING:
REFERENCE SECTION 1731 "FIBER OPTIC SPLICE ENCLOSURE"

1) SPLICE LOCATION
2) DATE
3) COMPANY NAME
4) NAME OF INDIVIDUAL PERFORMING THE SPLICING

PRIOR TO INSTALLING THE COVER ON THE SPLICE TRAY TAKE A DIGITAL PHOTOGRAPH SHOWING THE SPLICE TRAY AND INFORMATION SHOWN ABOVE (1–4) AND SUBMIT PHOTOGRAPH ALONG WITH OTDR TEST RESULTS.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:

Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems Section

750 N. Greenfield Pkwy., Garner, NC 27529

SPLICE DETAIL

DIVISION 10 UNION COUNTY INDIAN TRAIL

PLAN DATE: FEBRUARY 2018 REVIEWED BY: DocuSigned by: Neil Avery 09F5DB4CBED3443...

PREPARED BY: A. J. SKUCE

REVISIONS	INIT.	DATE

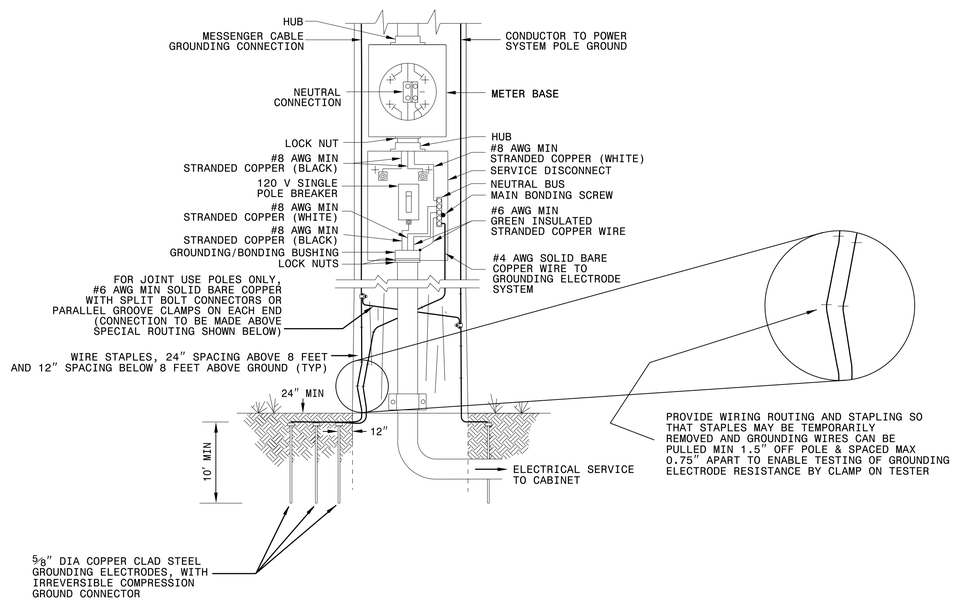
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032108 ENGINEER MOHAMMAD A. ASLAMI

DocuSigned by: Mohammad Aslami 5D9B0BA6DBB6495... 3/5/2018

DATE

PROJECT NO.	SHEET NO.
	Sig.



1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR

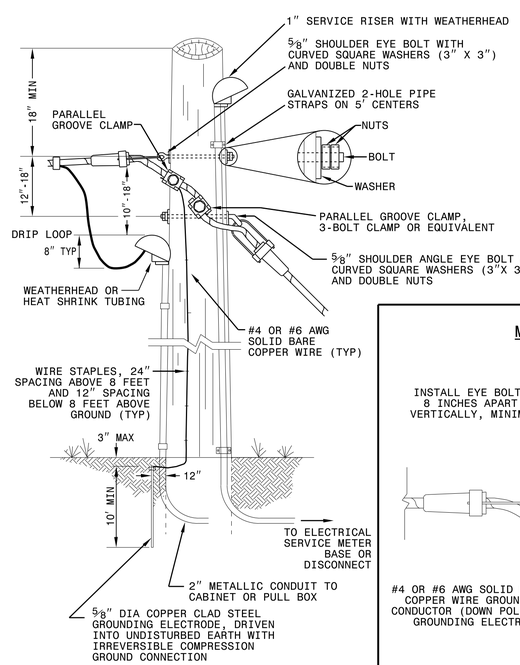
ELECTRICAL SERVICE GROUNDING

GROUNDING AND BONDING

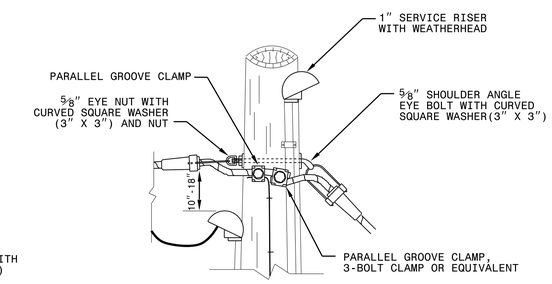
SHEET 1 OF 1

1700D01

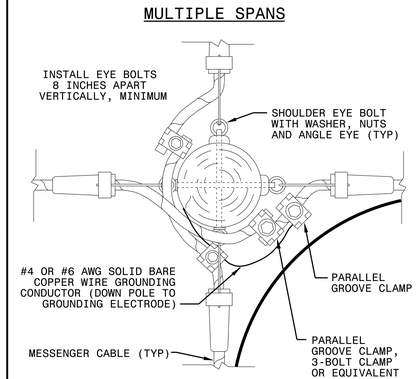
TWO-BOLT METHOD (PREFERRED)



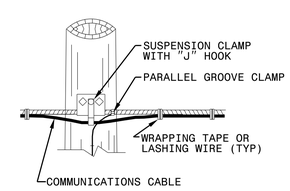
ONE-BOLT METHOD



MULTIPLE SPANS



COMMUNICATIONS CABLE AT INTERMEDIATE POLE



NOTE

FOR CONNECTING MESSENGER TO MESSENGER, USE PARALLEL GROOVE CLAMP, 3-BOLT CLAMP OR EQUIVALENT. FOR CONNECTING COPPER WIRE TO MESSENGER, USE PARALLEL GROOVE CLAMP.

1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR

WOOD POLES

METHODS OF ATTACHMENT AND GROUNDING

SHEET 1 OF 1

1720D01

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

See Plate for Title

Prepared in the Offices of:

Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
ITS & Signals Unit

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032108 ENGINEER MOHD A. ASLAMI

DocuSigned by: Mohd Aslami
5D9B0BA6DBB6495...
10/11/2017
DATE

11-2017-2017 08:56
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rwhough