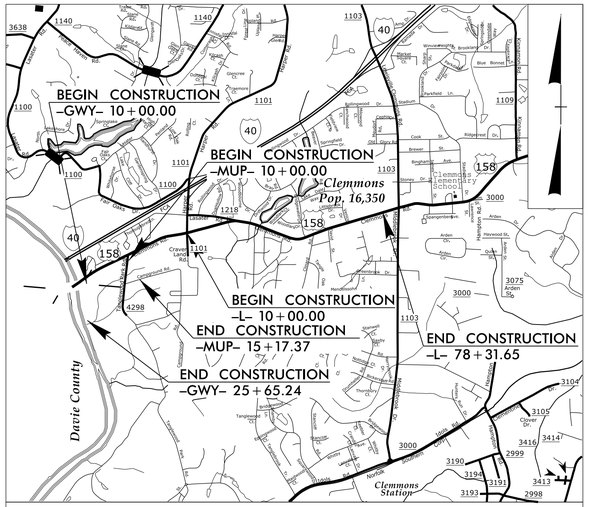
09/08/99

TIP PROJECT: U-4741PE

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheet 1C-1 For Survey Control Sheet



VICINITY MAP

NOTE: THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE VILLAGE OF CLEMMONS.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

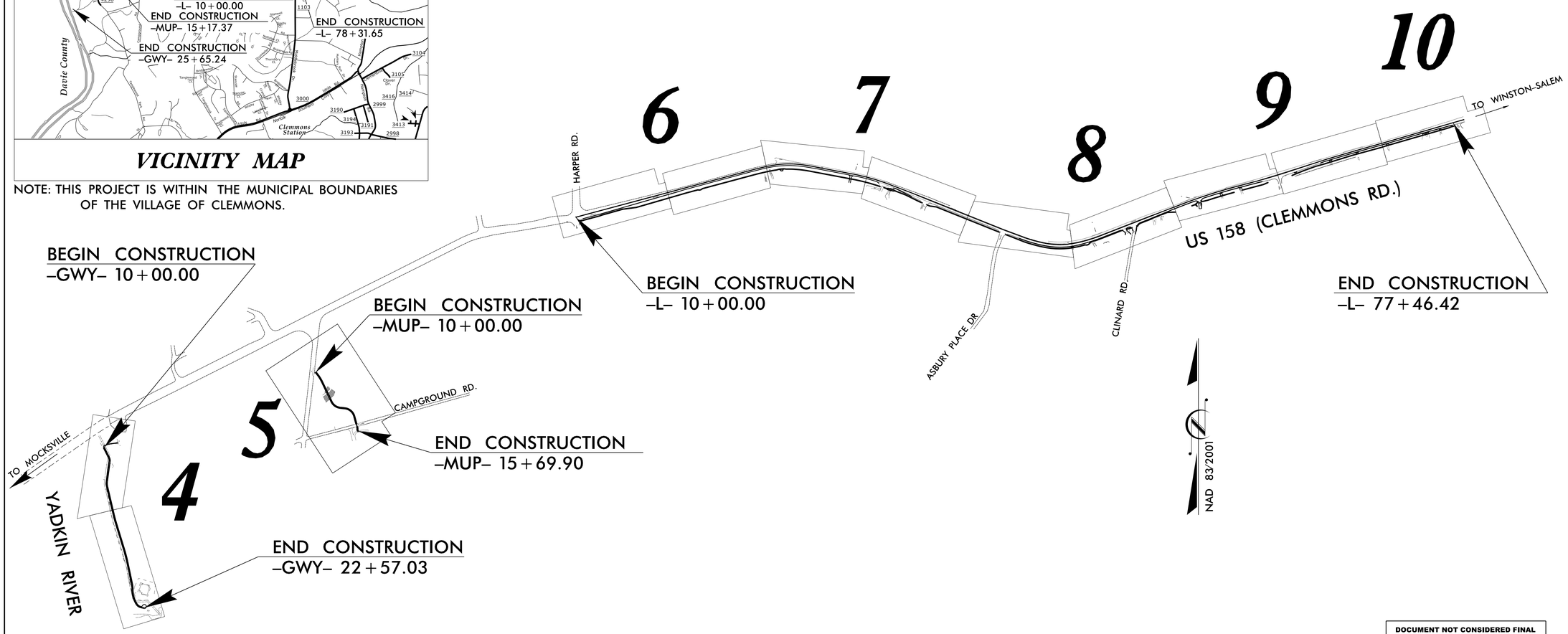
FORSYTH COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4741PE	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
39745.1.F30	STPDA-0926(8)	PE
39745.3.30	STPDA-0926(8)	CONST

LOCATION: ALONG US 158 (CLEMMONS RD.) AND ALONG YADKIN RIVER IN THE VILLAGE OF CLEMMONS.

TYPE OF WORK: GRADING, DRAINAGE, SIDEWALKS & GREENWAY.



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CONTRACT:

GRAPHIC SCALES

30 15 0 30 60
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

20 5 0 10 20
PROFILE (VERTICAL)

PROJECT LENGTH

LENGTH GREENWAY PROJECT = 0.238 MILES

LENGTH MULT-USE PATH PROJECT = 0.095 MILES

LENGTH SIDEWALK PROJECT = 1.278 MILES

MEGAN LEDBETTER
VILLAGE OF CLEMMONS CONTACT

BRETT ABERNATHY, PE, PLS
NCDOT CONTACT

Prepared in the Office of:
SUMMIT DESIGN AND ENGINEERING SERVICES
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504 Meadowland Drive
Hillsborough, NC 27278-8551
Voice: (919) 732-3883
Fax: (919) 732-6776
www.summitde.net

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:

TRACY N. PARROTT, PE
PROJECT ENGINEER

BRANDON W. JOHNSON, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 030405 ENGINEER D. C. DUFFIELD P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON P.E.
SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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CLEMMONS.Rdy tsh.dgn
jessica.puszynski

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
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Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C-1 THRU 1C-8	SURVEY CONTROL SHEETS
1D-1	CENTERLINE COORDINATE LIST
1E-1 THRU 1E-2	R/W AND EASEMENT COORDINATE LIST
2A-1 THRU 2A-3	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
3B-1	ROADWAY SUMMARIES
3D-1 THRU 3D-4	DRAINAGE SUMMARIES
3P-1	PARCEL INDEX SHEET
4 THRU 14	PLAN AND PROFILE SHEET
RW-1 THRU RW-10	MODIFIED R/W PLAN SHEETS
TMP-1 THRU TMP-1B	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-3	PAVEMENT MARKING PLANS
EC-1 THRU EC-17	EROSION CONTROL PLANS
X-1 THRU X-25	CROSS-SECTIONS

GENERAL NOTES:

2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.02

SIDE ROADS:

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

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FOOT RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

STREET TURNOUT:

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

SUBSURFACE PLANS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE CITY OF WINSTON SALEM.

DUKE ENERGY, PIEDMONT NATURAL GAS COMPANY.

AND TIME WARNER CABLE-CHARTER

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

CURB RAMPS

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.05 and/or 848.06.

EFF. 01-16-2018
REV.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - 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
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
240.01	Guide for Berm Ditch Construction
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
838.27	Reinforced Concrete Endwall - for Single 60" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.17	Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.51	Brick Manhole - 12" thru 36" Pipe
840.52	Precast Manhole - 4', 5' and 6' Diameter
840.53	Precast Manhole with Masonry Base - 12" thru 42" Pipe
840.54	Manhole Frame and Cover
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
866.01	Chain Link Fence - 4', 5' and 6' High Fence
866.02	Woven Wire Fence - with Wood Post
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

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04/06/15

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Proposed Detectable Warning Dome — DWD
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E*) — W
- U/G Water Line LOS C (S.U.E*) — W
- U/G Water Line LOS D (S.U.E*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

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

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:

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

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	IC-1

Location and Surveys

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
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504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-7615
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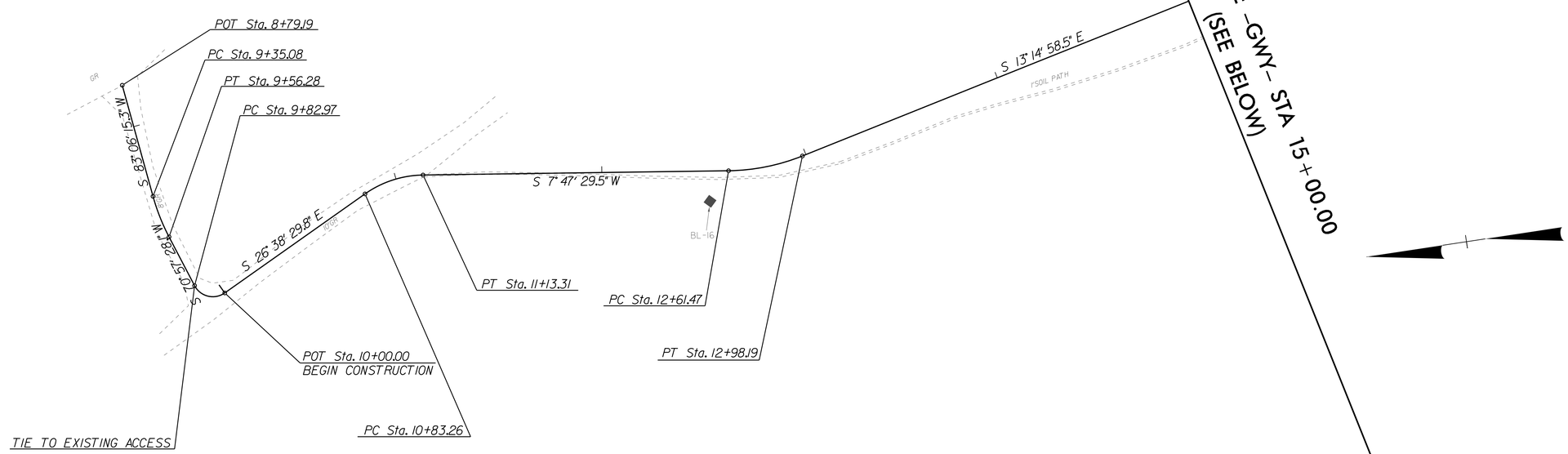
SURVEY CONTROL SHEET



DATUM DESCRIPTION

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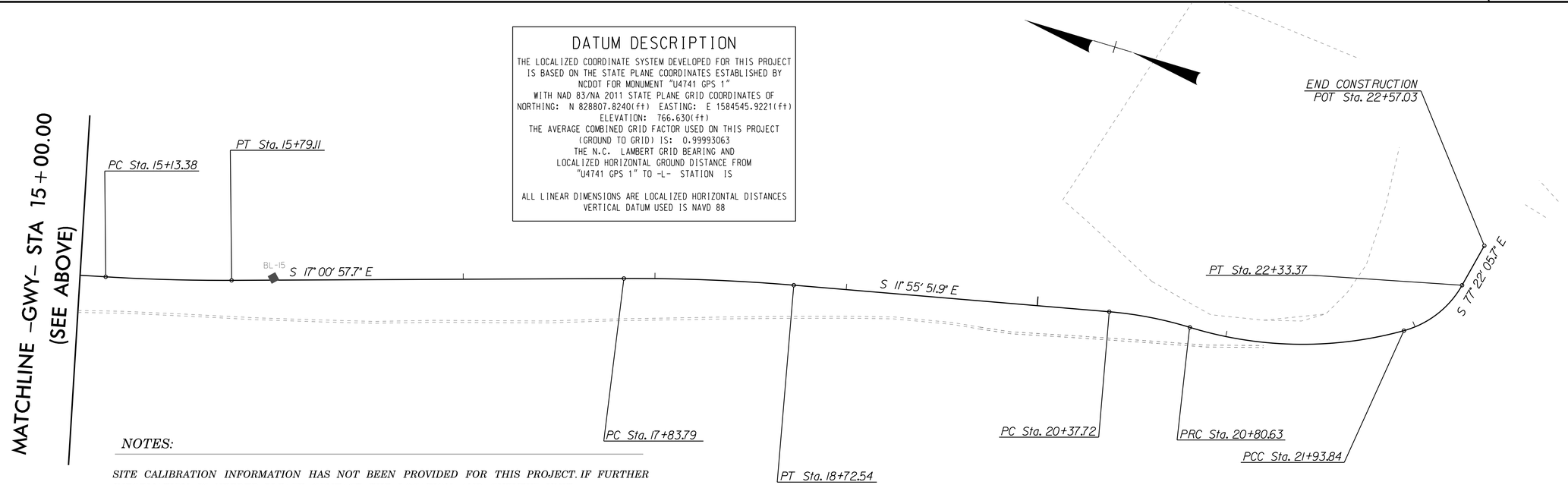
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: N 828807.8240(ft) EASTING: E 1584545.9221(ft)
ELEVATION: 766.630(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99993063
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U4741 GPS 1" TO -L- STATION IS

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



NOTES:

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PROJECT CONTROL ESTABLISHED USING GNSS (GLOBAL NAVIGATION SATELLITE SYSTEM).

NOTE: DRAWING NOT TO SCALE

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jessica.puszynski

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U-4741PE	IC-2

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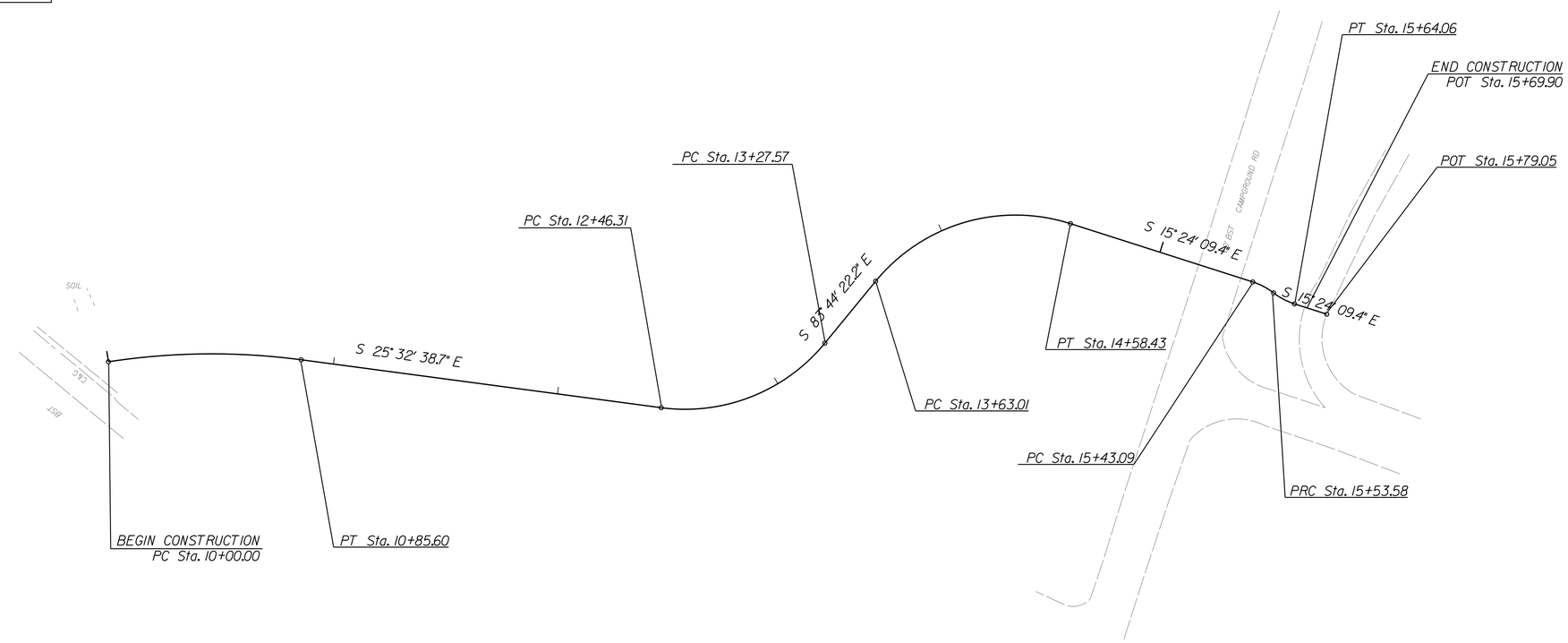

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NOTE: DRAWING NOT TO SCALE

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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	IC-3

Location and Surveys

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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	IC-4
Location and Surveys	

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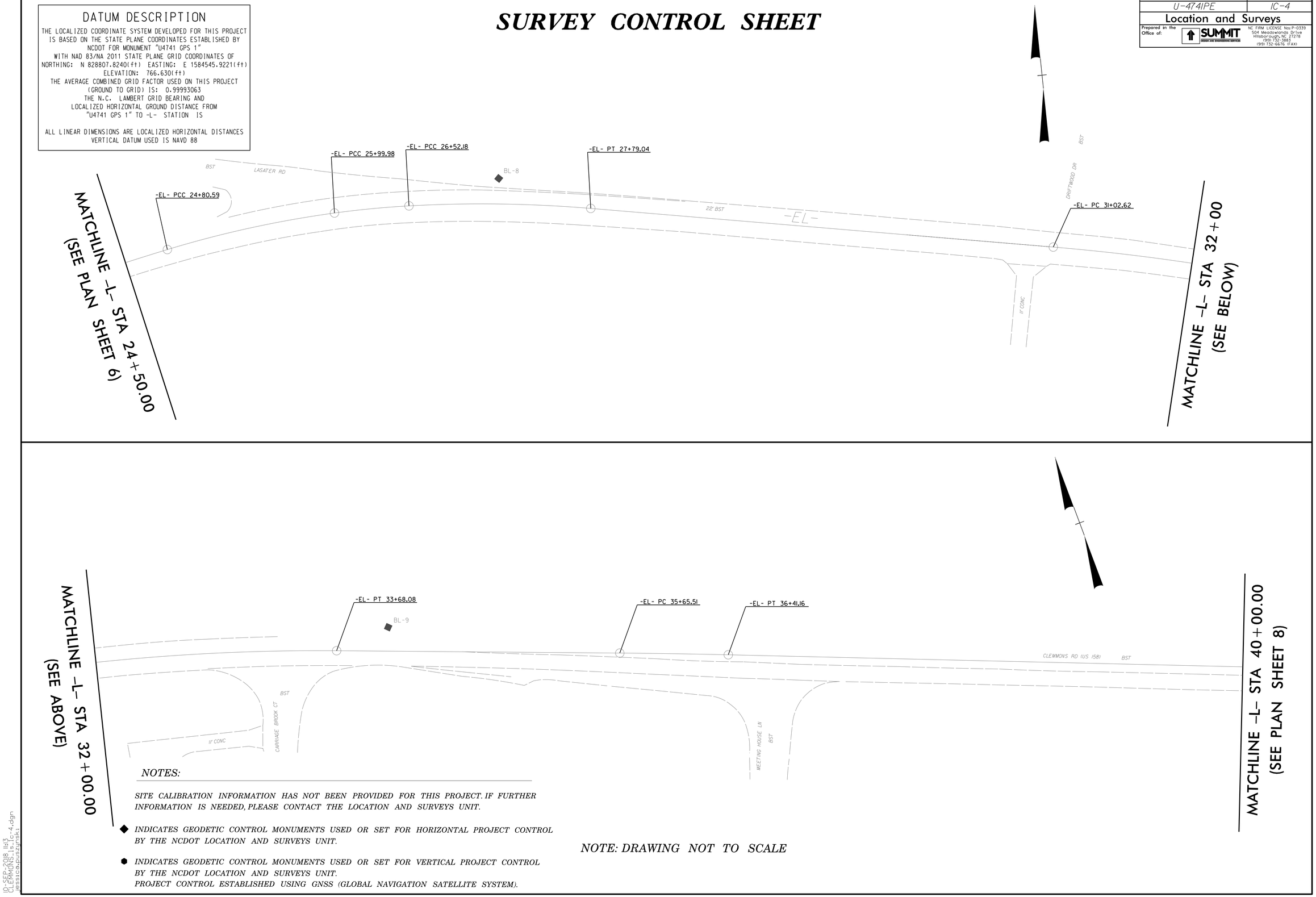

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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	IC-5
Location and Surveys	

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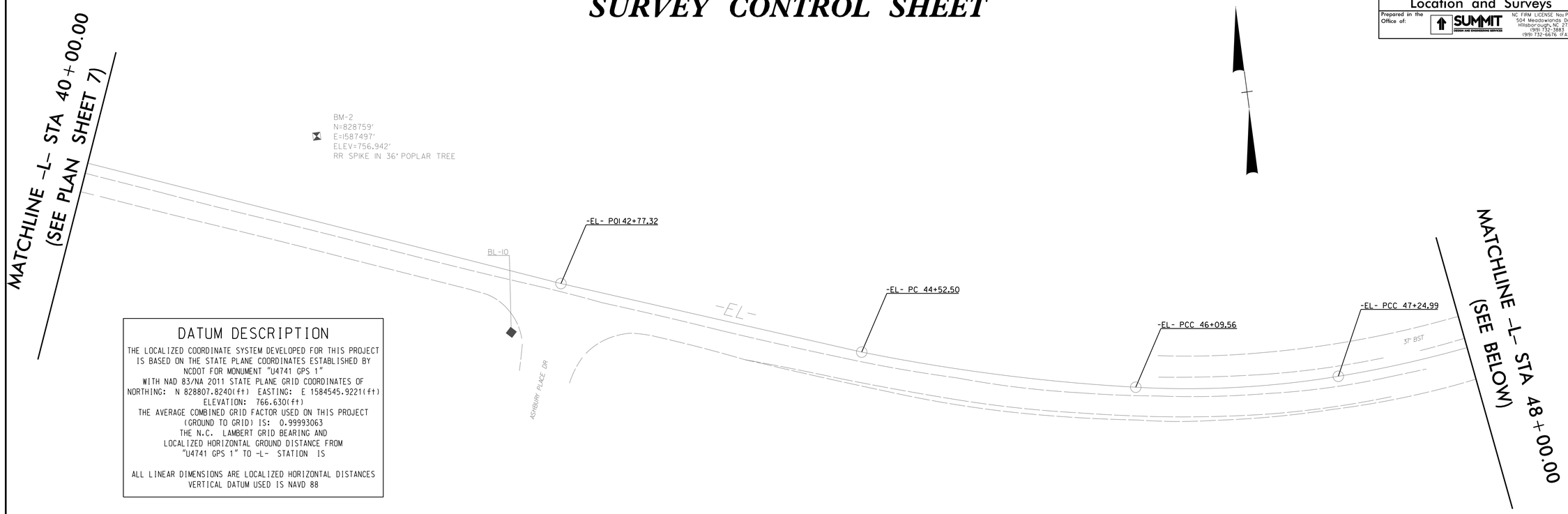

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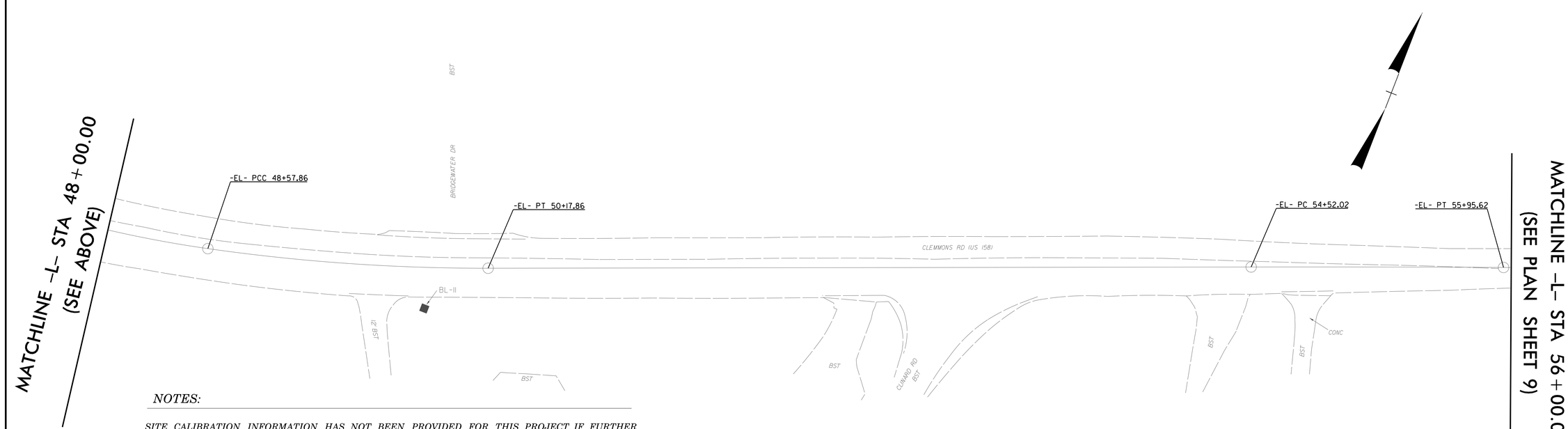
VERTICAL DATUM USED IS NAVD 88



NOTES:

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

◆ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*

● *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR VERTICAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*
PROJECT CONTROL ESTABLISHED USING GNSS (GLOBAL NAVIGATION SATELLITE SYSTEM).

NOTE: DRAWING NOT TO SCALE

10-SEP-2018 11:13
CLEMMONS1.sit-IC-5.dgn
jessica.puszynski

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	IC-6

Location and Surveys

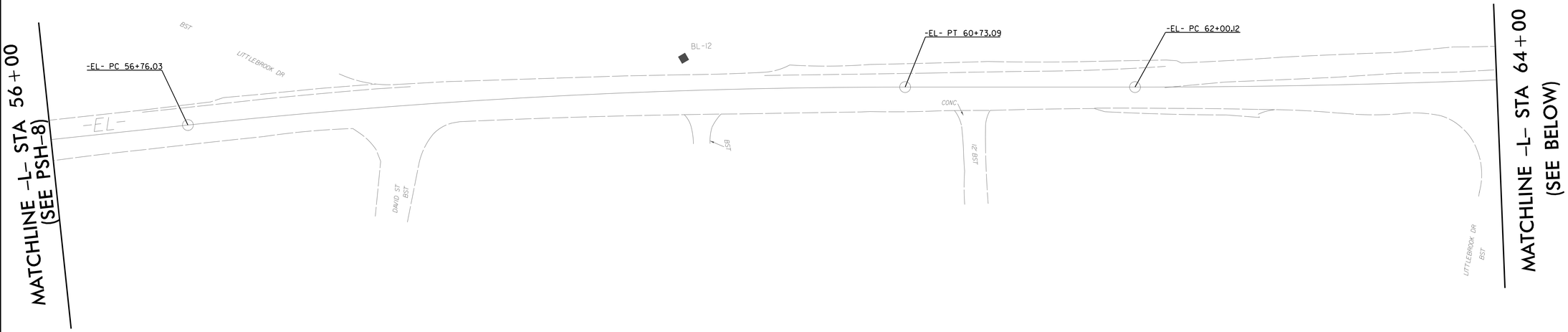
Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-7615
(919) 732-6676 (FAX)

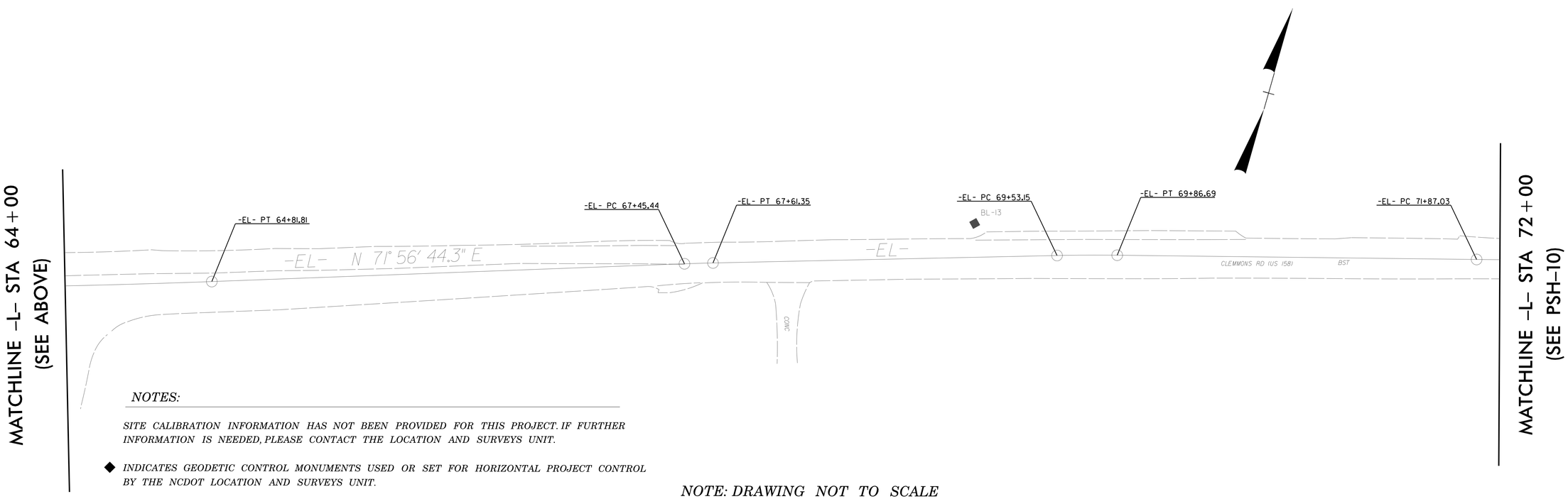
SURVEY CONTROL SHEET

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U4741 GPS 1"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: N 828807.8240(ft) EASTING: E 1584545.9221(ft)
ELEVATION: 766.630(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99993063
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U4741 GPS 1" TO -L- STATION IS

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





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PROJECT CONTROL ESTABLISHED USING GNSS (GLOBAL NAVIGATION SATELLITE SYSTEM).

NOTE: DRAWING NOT TO SCALE

10-SEP-2018 11:13
CLEMMONS1.sit-ic-6.dgn
jessica.puszynski

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	IC-7
Location and Surveys	

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

SURVEY CONTROL SHEET

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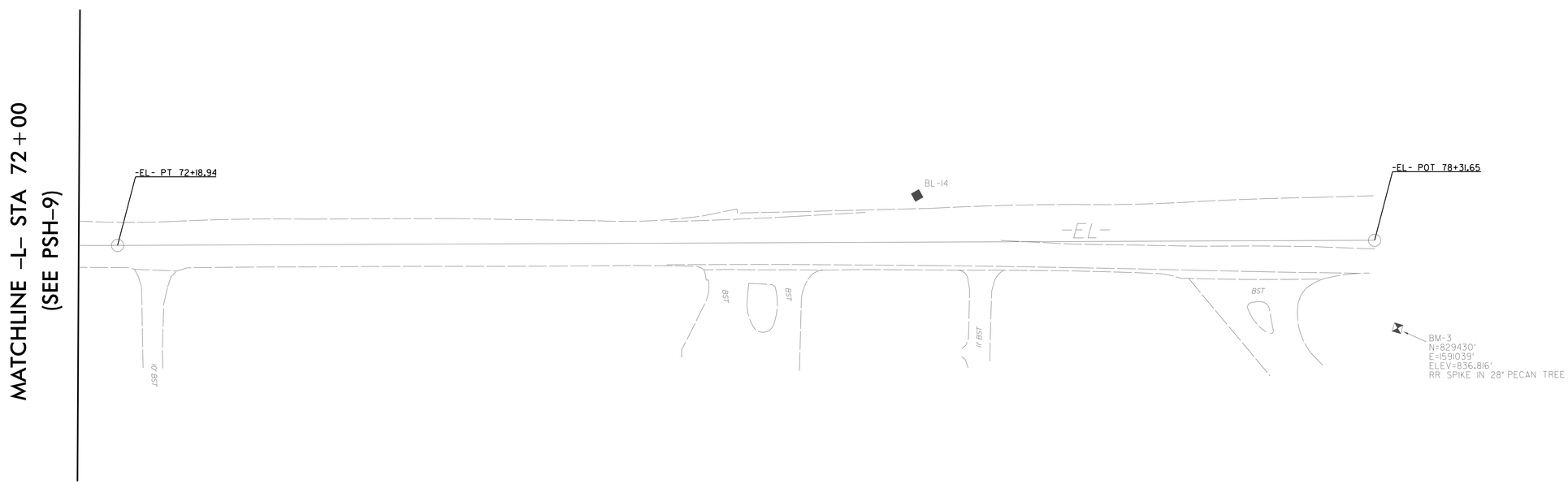

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PROJECT CONTROL ESTABLISHED USING GNSS (GLOBAL NAVIGATION SATELLITE SYSTEM).

NOTE: DRAWING NOT TO SCALE

10-SEP-2018 11:13
CLEMMONS, JESSICA
jessica.clemmons@ncdot.gov
U-4741PE_IC-7.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	IC-8
Location and Surveys	

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-7483
(919) 732-6676 (FAX)

SURVEY CONTROL SHEET

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
2	(GPS U4741-2)	829932.0933	1584441.6784	810.68 STA	12+72.09	1152.01 LT
1	(GPS U4741-1)	828807.8240	1584545.9221	766.63 STA	10+81.79	39.07 LT
7	(BL-7)	828987.2672	1585301.7997	752.71 STA	18+58.35	16.76 LT
8	(BL-8)	829152.9667	1586143.1941	733.15 STA	27+14.55	17.78 LT
9	(BL-9)	828995.8050	1586817.2273	727.48 STA	34+03.87	16.66 LT
10	(BL-10)	828634.4767	1587591.5405	753.52 STA	42+56.79	33.83 RT
11	(BL-11)	828577.9370	1588312.5283	777.33 STA	49+82.23	23.36 RT
12	(BL-12)	828956.0932	1589207.0843	806.83 STA	59+51.19	17.91 LT
13	(BL-13)	829231.9031	1590122.5222	824.31 STA	69+07.31	20.26 LT
14	(BL-14)	829428.0634	1590795.9271	831.53 STA	76+08.69	22.76 LT
3	(GPS U4741-3)	829593.1960	1591281.3065	839.73 STA	OUTSIDE PROJECT LIMITS	
4	(GPS U4741-4)	831120.5784	1591348.6642	800.11 STA	OUTSIDE PROJECT LIMITS	

BY

POINT	DESC.	NORTH	EAST	ELEVATION	GWY STATION	OFFSET
16	(BL-16)	826814.7328	1581011.5752	685.53 STA	12+52.29	14.70 RT
15	(BL-15)	826473.6931	1581100.5665	687.74 STA	16+00.97	1.10 LT
6	(GPS U4741-6)	825902.6324	1581645.1989	687.96 STA	OUTSIDE PROJECT LIMITS	
5	(GPS U4741-5)	826402.6810	1582373.7350	704.40 STA	OUTSIDE PROJECT LIMITS	

BY

POINT	DESC.	NORTH	EAST	ELEVATION	MUP STATION	OFFSET
17	(BL-17)	827105.0405	1582504.5386	717.16 STA	12+83.87	324.40 RT
18	(BL-18)	827970.7676	1582541.7822	735.73 STA	OUTSIDE PROJECT LIMITS	

EL

TYPE	STATION	NORTH	EAST
POT	10+00.00	828748.9172	1584477.0342
PC	23+48.13	829097.8511	1585779.2283
PCC	24+80.59	829127.5885	1585908.2742
PCC	25+99.98	829140.8674	1586026.7975
PCC	26+52.18	829140.4407	1586078.9830
PT	27+79.04	829125.5619	1586204.8620
PC	31+02.62	829065.4121	1586522.8068
PT	33+68.08	828993.0563	1586777.8501
PC	35+65.51	828922.4210	1586962.2029
PT	36+41.16	828894.8181	1587032.6448
POI	42+77.32	828658.2477	1587623.1732
PC	44+52.50	828597.1904	1587787.3744
PCC	46+09.56	828556.9124	1587939.0371
PCC	47+24.99	828547.9060	1588053.8877
PCC	48+57.86	828565.1170	1588185.4252
PT	50+17.86	828612.3706	1588338.1381
PC	54+52.02	828770.0324	1588742.6617
PT	55+95.62	828821.7006	1588876.6497
PC	56+76.03	828850.3596	1588951.7719
PT	60+73.09	828972.0413	1589329.5402
PC	62+00.12	829004.5452	1589452.3336
PT	64+81.81	829084.2591	1589722.4753
PC	67+45.44	829165.9614	1589973.1199
PT	67+61.35	829170.7713	1589988.2840
PC	69+53.15	829227.3069	1590171.5680
PT	69+86.69	829236.6548	1590203.7815
PC	71+87.03	829289.2507	1590397.0876
PT	72+18.94	829297.8734	1590427.8091
POT	78+31.65	829468.1464	1591016.3826

****
BM1 ELEVATION = 769.45'
N 828668' E 1584565'
L STATION 10+64.24 101.33 RT
BL STATION 16+29.00, 141' LEFT
RAILROAD SPIKE IN 60" OAK TREE
****

****
BM2 ELEVATION = 756.94'
N 828759' E 1587497'
L STATION 41+22.25 46.87 LT
BL STATION 46+71.00, 73' LEFT
RAILROAD SPIKE IN 36" POPLAR TREE
****

****
BM3 ELEVATION = 836.82'
N 829430' E 1591039'
BL STATION 83+93.00, 76' RIGHT
RAILROAD SPIKE IN 28" PECAN TREE
****

****
BM4 ELEVATION = 714.59
N 826383 E 1582489
BY STATION 25+27.00 117 RIGHT
BM4 RRS 24 POPLAR
****

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NOTE: DRAWING NOT TO SCALE

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PROJECT CONTROL ESTABLISHED USING GNSS (GLOBAL NAVIGATION SATELLITE SYSTEM).

10-SEP-2018 11:13
CLEMMONS, JESSICA
jessica.plusz(nsk)

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	ID-1
Location and Surveys	

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-7483
(919) 732-6676 (FAX)

PROPOSED ALIGNMENT CONTROL SHEET

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	828748.9172	1584477.0342
PC	23+48.13	829097.8511	1585779.2283
PCC	24+80.59	829127.5885	1585908.2742
PCC	25+99.98	829140.8674	1586026.7975
PCC	26+52.18	829140.4407	1586078.9830
PT	27+79.04	829125.5619	1586204.8620
PC	31+02.62	829065.4121	1586522.8068
PT	33+68.08	828993.0563	1586777.8501
PC	35+65.51	828922.4210	1586962.2029
PT	36+41.16	828894.8181	1587032.6448
POI	42+77.32	828658.2477	1587623.1732
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PT	55+95.62	828821.7006	1588876.6497
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PT	60+73.09	828972.0413	1589329.5402
PC	62+00.12	829004.5452	1589452.3336
PT	64+81.81	829084.2591	1589722.4753
PC	67+45.44	829165.9614	1589973.1199
PT	67+61.35	829170.7713	1589988.2840
PC	67+81.24	829176.6363	1590007.2977
PT	68+65.34	829200.7481	1590087.8657
PC	70+48.49	829251.7806	1590263.7600
PT	70+98.06	829265.3569	1590311.4353
PC	71+96.03	829291.7212	1590405.7908
PT	72+41.75	829304.2267	1590449.7702
POT	78+31.60	829468.1464	1591016.3826

GWY

TYPE	STATION	NORTH	EAST
POT	8+79.19	828748.9172	1584477.0342
PC	9+35.08	827081.4489	1581054.3300
PT	9+56.28	827076.7001	1581033.7099
PC	9+82.97	827067.9922	1581008.4806
PT	10+00.00	827054.0553	1581002.8050
PC	10+83.26	826979.6371	1581040.1385
PT	11+13.31	826950.4382	1581044.9854
PC	12+61.47	826803.6450	1581024.8994
PT	12+98.19	826803.6450	1581026.6381
PC	15+13.38	826557.7117	1581075.9571
PT	15+79.11	826494.2657	1581093.1151
PC	17+83.79	826298.5466	1581153.0123
PT	18+72.54	826212.6422	1581175.1864
PC	20+37.72	826051.0322	1581209.3345
PRC	20+80.63	826008.4215	1581213.6511
PCC	21+93.84	825900.9647	1581244.1684
PT	22+33.37	825878.7231	1581275.6039
POT	22+57.03	825873.5501	1581298.6868

MUP

TYPE	STATION	NORTH	EAST
PC	10+00.00	827607.0857	1582562.2176
PT	10+85.60	827536.1276	1582609.5733
PC	12+46.31	827391.1248	1582678.8731
PT	13+27.57	827346.0983	1582742.3295
PC	13+63.01	827342.2332	1582777.5617
PT	14+58.43	827283.9583	1582845.9644
PC	15+43.09	827202.3320	1582868.4520
PRC	15+53.58	827191.9475	1582869.4320
PT	15+64.06	827181.5630	1582870.4121
POT	15+79.05	827167.1092	1582874.3940

DATUM DESCRIPTION

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NOTE: DRAWING NOT TO SCALE

10-SEP-2018 11:13
CLEMMONS-1-id-1.dgn
jessicapuszynski

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	1E-1

Location and Surveys

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

RIGHT OF WAY CONTROL SHEET U-4741PE

ROW MARKER

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+80.00	44.96	828752.0774	1584662.5375
L	13+50.00	55.00	828786.3810	1584829.3430
L	14+50.00	70.00	828797.7749	1584929.8177
L	16+00.00	50.00	828855.9175	1585069.5297
L	23+48.13	50.00	829049.5549	1585792.1697
L	24+80.59	50.00	829078.4993	1585917.7744
L	25+20.00	50.00	829084.5365	1585954.0547
L	25+40.00	39.00	829097.8001	1585971.3456
L	25+80.00	39.00	829101.0297	1586009.1234
L	25+99.98	50.00	829090.8930	1586028.3961
L	26+52.18	50.00	829090.4991	1586076.5673
L	27+79.04	50.00	829076.4334	1586195.5677
L	31+02.91	50.00	829090.4991	1586076.5673
L	53+11.07	45.00	828676.9218	1588627.6804
L	54+52.02	45.00	828728.1044	1588759.0030
L	55+95.62	45.00	828779.6563	1588892.6896
L	56+76.03	45.00	828808.3153	1588967.8117
L	57+50.00	45.00	828833.6924	1589036.3497
L	57+55.01	84.00	828798.6393	1589054.1405
L	58+05.47	45.00	828851.8349	1589088.0675
L	60+73.09	45.00	828928.5395	1589341.0553
L	62+00.12	45.00	828961.0434	1589463.8487
L	63+16.78	45.00	828992.4890	1589577.2778
L	65+16.89	45.00	829052.3465	1589769.7738
L	67+45.44	45.00	829123.1771	1589987.0663
L	67+61.35	45.00	829127.7706	1590001.5480
L	67+81.24	45.00	829133.6355	1590020.5617
L	68+65.34	45.00	829157.5303	1590100.4045
L	70+48.49	45.00	829208.5628	1590276.2988
L	70+98.06	45.00	829222.0170	1590323.5451
L	71+96.01	45.00	829248.3414	1590417.8929
L	72+30.07	45.00	829257.7369	1590450.9494
L	72+30.11	40.00	829262.5541	1590449.6092
L	72+41.75	40.00	829262.5541	1590449.6092
L	77+23.54	40.00	829399.6913	1590923.6930

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

I, _____, 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 performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures as of 2017 date. 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 existing survey control provided by others; that the depicted property data shown herein were surveyed by others; 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 ___ day of ,20_

_____
Professional Land Surveyor PLS #

NOTE: DRAWING NOT TO SCALE

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REVISIONS

6/2/99

10-SEP-2018 11:13
CLEMMONS, JESSICA
jessicaclemmons

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	IE-2

Location and Surveys

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-7483
(919) 732-6676 (FAX)

PERMANENT EASEMENT CONTROL SHEET

PERMANENT EASEMENT MARKER–E

ALIGN	STATION	OFFSET	NORTH	EAST
L	24+62.00	50.00	829074.9735	1585900.0278
L	24+62.00	65.00	829060.2758	1585903.0238
L	24+83.00	50.00	829078.8233	1585919.9842
L	24+83.00	65.00	829064.1875	1585922.7869
L	46+83.26	50.97	828497.3018	1588009.7367
L	46+83.26	61.00	828487.3273	1588008.9369
L	47+24.99	61.00	828486.9366	1588055.8199
L	47+87.56	51.59	828501.5929	1588122.6477
L	47+87.56	61.00	828491.9981	1588121.7511

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "U4741 GPS 1"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: N 828807.8240(ft) EASTING: E 1584545.9221(ft)
ELEVATION: 766.630(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.99993063
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"U4741 GPS 1" TO -L- STATION IS

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

NOTES:

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

◆ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*

⬢ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR VERTICAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*
PROJECT CONTROL ESTABLISHED USING GNSS (GLOBAL NAVIGATION SATELLITE SYSTEM).

NOTE: DRAWING NOT TO SCALE

10-SEP-2018 11:13
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jessica.puszynski

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	2A-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

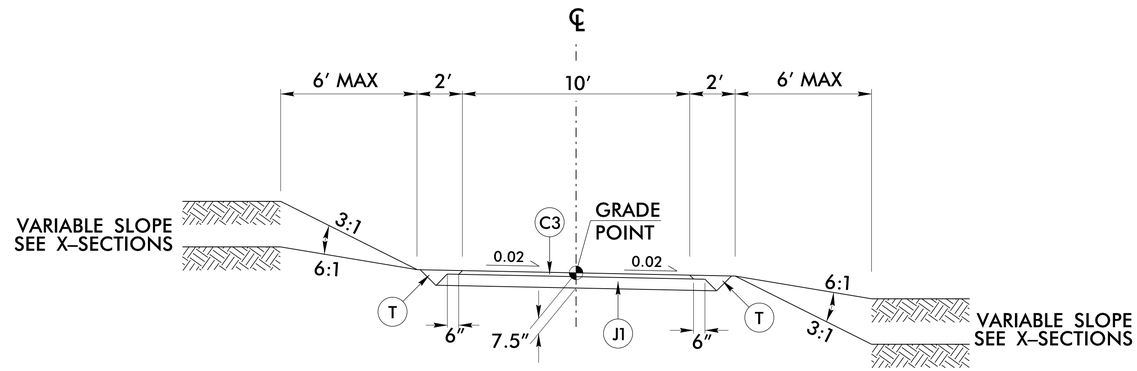
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

PAVEMENT SCHEDULE

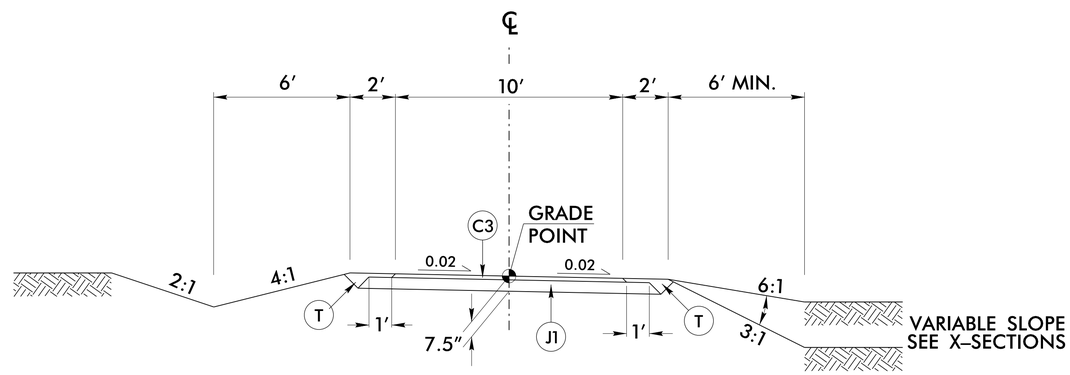
C1	PROP. APPROX. 1.5″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. APPROX. 1.5″ ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 5.5″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
J1	PROP. 6″ AGGREGATE BASE COURSE.
R1	2′-6″ CONCRETE CURB AND GUTTER.
R2	EXISTING 2′-6″ CONCRETE CURB AND GUTTER.
S	4″ CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U1	EXISTING PAVEMENT.
V1	MILLING BITUMINOUS PAVEMENT 1.5″ DEPTH.

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



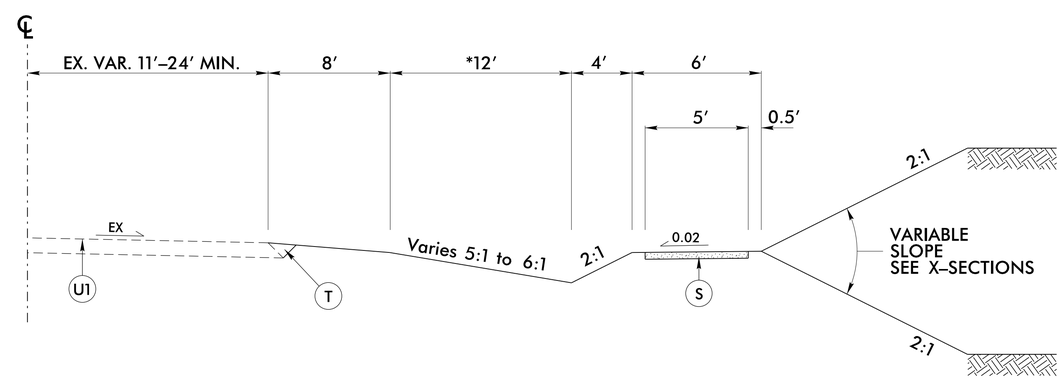
TYPICAL SECTION NO. 1

–GWY– STA 10+00.00 TO STA 22+57.03



TYPICAL SECTION NO. 2

–MUP– STA 10+00.00 TO STA 15+69.90



TYPICAL SECTION NO. 3

–L– STA 13+50.00 TO STA 33+30.00

* WIDTH REDUCED FROM STA 25+40.00 TO STA 25+80.00 TO AVOID ROCK WALL

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	2A-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

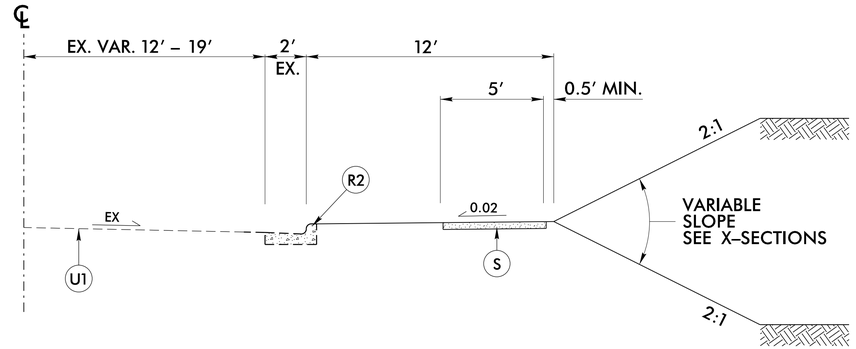
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

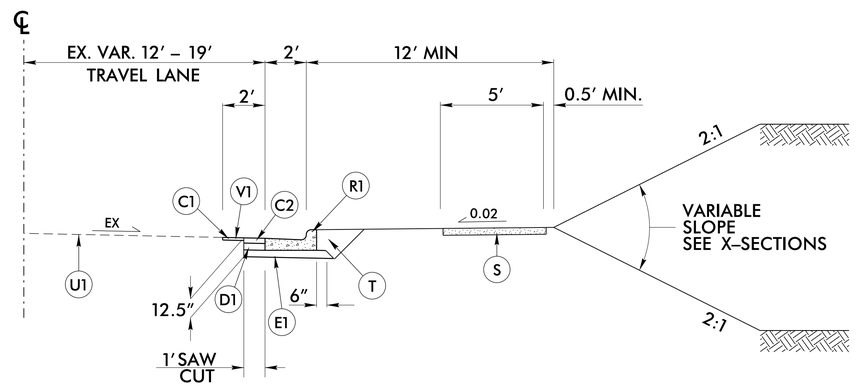
PAVEMENT SCHEDULE (PRELIMINARY PAVEMENT DESIGN)	
C1	1.5" S9.5B
C2	3" S9.5B
C3	1.5" SF9.5A
D1	4" I19.0C
E1	5.5" B25.0C
J1	6" ABC
R1	2'-6" C & G
R2	EX. 2'-6" C & G
S	4" SIDEWALK
T	EARTH MATERIAL
U1	EXIST. PAVEMENT
V1	MILLING 1.5"

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



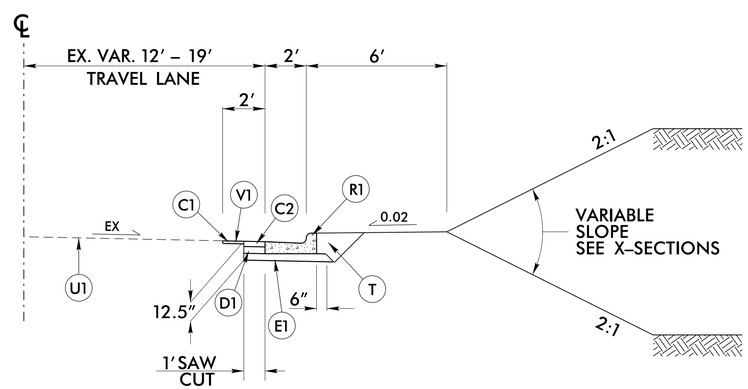
TYPICAL SECTION NO. 4

–L– STA 10+00.00 TO STA 11+77.00
–L– STA 33+30.00 TO STA 33+75.01
–L– STA 34+22.64 TO STA 44+09.00
–L– STA 63+16.00 TO STA 67+24.00
–L– STA 77+37.00 TO STA 77+46.42



TYPICAL SECTION NO. 5

–L– STA 11+77.00 TO STA 13+50.00
–L– STA 44+09.00 TO STA 48+77.00
–L– STA 55+41.00 TO STA 55+98.00
–L– STA 67+24.00 TO STA 77+37.00



TYPICAL SECTION NO. 6

–L– STA 55+98.00 TO STA 57+00.00
–L– STA 62+50.00 TO STA 63+16.00

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	2A-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

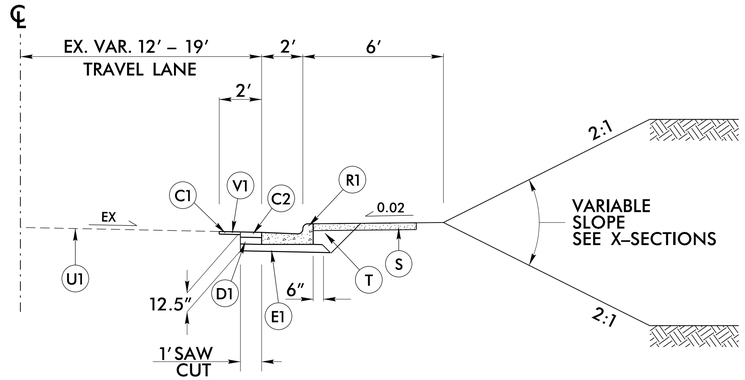
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSTON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

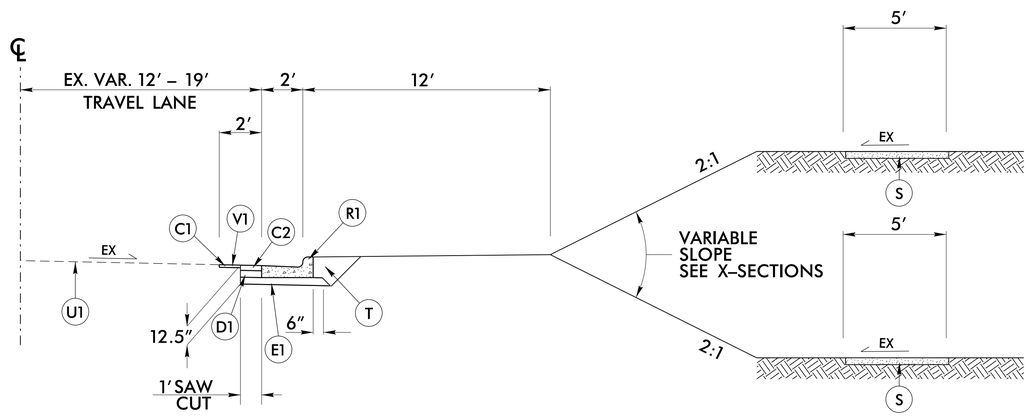
PAVEMENT SCHEDULE (PRELIMINARY PAVEMENT DESIGN)	
C1	1.5" S9.5B
C2	3" S9.5B
C3	1.5" SF9.5A
D1	4" I19.0C
E1	5.5" B25.0C
J1	6" ABC
R1	2'-6" C & G
R2	EX. 2'-6" C & G
S	4" SIDEWALK
T	EARTH MATERIAL
U1	EXIST. PAVEMENT
V1	MILLING 1.5"

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



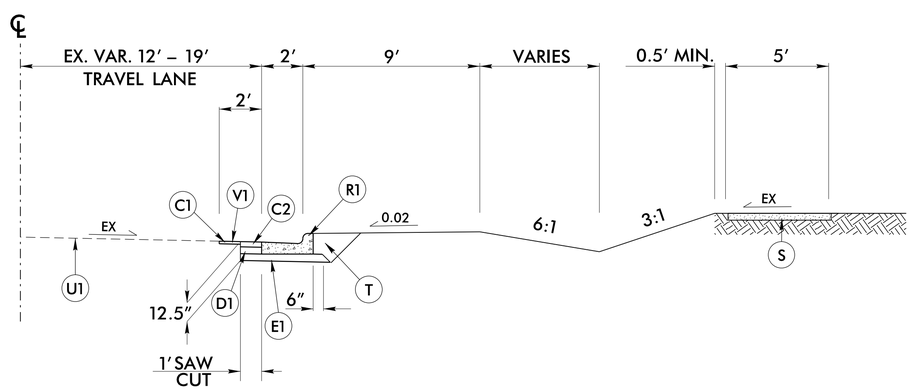
TYPICAL SECTION NO. 7

–L– STA 48+77.00 TO STA 55+41.00



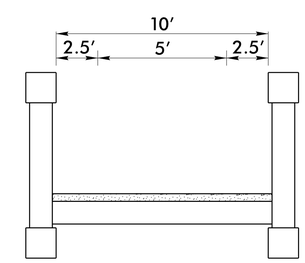
TYPICAL SECTION NO. 8

–L– STA 57+00.00 TO STA 58+30.00



TYPICAL SECTION NO. 9

–L– STA 58+30.00 TO STA 62+50.00



PEDESTRIAN BRIDGE TYPICAL

–L– STA 33+75.01 TO STA 34+22.64

REVISIONS

8/17/99

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jessicaburzynski

RAL-DESK082013A

COMPUTED BY:	James A. Crouse, PE	DATE:	4/20/17
CHECKED BY:	D.C. Duffield, PE	DATE:	6/25/18

PROJECT NO.	SHEET NO.
U-4741	3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

Line & Station / Size / Thickness or Gauge	Offset		Structure Number From	Structure Number To	Top Elevation FT.	Invert Elevation FT.	Invert Elevation FT.	Minimum Required Slope %	Side Drain Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	15	18	24	30	36	42	48	R. C. Pipe Class III 12	15	18	24	30	36	42	48	R. C. Pipe Class IV 12	15	18	24	30	36	42	48
L 13+35	23	RT	0601		757.1																											
			0601	0602		751.3	751.0							56																		
L 14+51	39	RT	0603		753.3																											
			0603	0604		751.2	751.1			24																						
L 11+79	26	RT	0605		761.1																											
			0605	0601		755.3	752.3																					160				
L 22+98	34	RT	0606		733.3																											
			0606	0709		729.3	723.4			172																						
L 34+32	13	RT	0701		727.3																											
			0701	0702		724.3	723.9																			128						
L 35+58	25	RT	0702		729.0																											
L 30+66	31	RT	0703		732.0																											
			0703	0704		730.8	729.2			36																						
L 33+01			0705	0706		727.5	727.4			16																						
L 35+57	40	RT	0707		728.8																											
L 37+89	42	RT	0708		736.3																											
L 26+00	31	RT	0711		728.4																											
			0711	0712		724.4	723.5	0.3		76																						
L 25+21	33	RT	0712		729.3																											
			0712	0709		723.5	723.3			52																						
L 36+24	40	RT	0713		731.4																											
			0713	0707		725.1	722.7							64																		
L 36+99	42	RT	0714		734.6																											
L 50+64	30	RT	0802		780.4																											
			0802	0815		775.1	772.1						92																			
L 51+34	18	RT	0803		782.9																											
			0803	0804		778.9	778.9			16																						
L 51+34	30	RT	0804		783.0																											
			0804	0802		777.6	775.1						72																			
L 53+63	18	RT	0805		791.7																											
			0805	0814		787.7	787.6			16																						
L 53+21	31	RT	0806		790.0																											
			0806	0816		784.7	782.4																						68			
L 55+35	15	RT	0807		797.6																											
			0807	0813		793.6	793.5			12																						
L 42+62	38	RT	0808		753.5																											
			0808	0818		748.5	748.5						8																			
L 56+00	23	RT	0809		800.4																											
			0809	0813		795.7	793.6					68																				
L 44+00	46	RT	0810		758.7																											
			0810	0811		751.4	750.0						100																			
L 43+01	38	RT	0811		755.3																											
			0811	0808		750.0	748.5														40											
L 55+35	31	RT	0813		798.4																											
			0813	0814		792.8	787.3					172																				
L 53+63	32	RT	0814		792.1																											
			0814	0806		786.9	785.2					40																				
L 49+75	30	RT	0815		777.3																											
			0815	0817		772.1	768.4						104																			
L 52+46	23	RT	0816		787.6																											
SHEET TOTALS										420		280	376	120							40					128		160	68			

Quantities for Drainage Structures. NOTE: Total Lin. Ft. for pay quantity shall be A + (1.3 X B)

Line & Station	Structure From	Structure To	Endwalls Std. 838.01 or Std. 838.11 (unless noted otherwise) CY	Reinforced Endwalls CY	Drainage Structure Masonry CY	0' thru 5' EACH	A 5' thru 10' LIN. FT.	B 10' and above LIN. FT.	C.B. Std. 840.01 or Std. 840.02	Frame, Grates, and Hood Std. 840.03 Grate Type E	F	G		Concrete Transitional Section D.I. Std. 852.04 or Std. 852.06	Concrete Transitional Section C.B. Std. 852.05	Open Throat C.B. Std. 840.04 or Std. 840.05	Concrete Bridge Approach D.I. Std. 840.13	D.I. Std. 840.14 or Std. 840.15	D.I. Frame and Grates Std. 840.16	G.D.I. Type "A" Std. 840.17 or Std. 840.26	G.D.I. Type "B" Std. 840.18 or Std. 840.27	G.D.I. Type "D" Std. 840.19 or Std. 840.28	G.D.I. (W.S. Flat) Frame with Grate Std. 840.20	G.D.I. (W.S. Flat) Frame w/ 2 Grates Std. 840.20	G.D.I. (W.S. Sag) Frame w/ Grate Std. 840.22	G.D.I. (W.S. Sag) Frame w/ 2 Grates Std. 840.22	G.D.I. (N.S. Sag) Frame w/ Grate Std. 840.24	G.D.I. (N.S. Sag) Frame w/ 2 Grates Std. 840.24	G.D.I. (N.S. Flat) Frame w/ Grate Std. 840.29	G.D.I. (N.S. Flat) Frame w/ 2 Grates Std. 840.29
L 13+35	0601					1	0.8		1		1																			
	0601	0602																												
L 14+51	0603					1															1							1		
	0603	0604																												
L 11+79	0605					1	0.8		1		1																			
	0605	0601																												
L 22+98	0606					1															1							1		
	0606	0709																												
L 34+32	0701					1			1			1																		
	0701	0702																												
L 35+58	0702					1			1			1																		
L 30+66	0703																													
	0703	0704																												
L 33+01	0705	0706																												
L 35+57	0707					1	3.8																							
L 37+89	0708					1	0.3													1								1		
L 26+00	0711					1															1							1		
	0711	0712																												
L 25+21	0712					1																								
	0712	0709																												
L 36+24	0713					1	1.6																							
	0713	0707																												
L 36+99	0714					1	4.6																							
L 50+64	0802					1	2.8													1								1		
	0802	0815																												
L 51+34	0803					1			1			1																		
	0803	0804																												
L 51+34	0804					1	1.4													1								1		
	0804	0802																												
L 53+63	0805					1			1			1																		
	0805	0814																												
L 53+21	0806					1	1.8													1								1		
	0806	0816																												
L 55+35	0807					1			1			1																		
	0807	0813																												
L 42+62	0808					1			1			1																		
	0808	0818																												
L 56+00	0809					1	1.8													1								1		
	0809	0813																												
L 44+00	0810																													
	0810	0811																												
L 43+01	0811					1	0.5		1			1																		
	0811	0808																												
L 55+35	0813					1	1.8													1								1		
	0813	0814																												
L 53+63	0814					1	1.4																							
	0814	0806																												
L 49+75	0815					1	2.0													1								1		
	0815	0817																												
L 52+46	0816					1	0.8		1			1																		
SHEET TOTALS						25	26.2		10		2	8								7	3							10		

Line & Station	Structure From	Structure To	Driveway D.I. Std. 840.30	Frame w/ Grate for Driveway Std. 840.30	J.B. Std. 840.31 or Std. 840.32	Convert Ex J.B. to J.B. w/ M.H.	Convert Open Throat C.B. to C.B.	T.B.D.I. for Steel Grates Std. 840.36	Steel Frame with Two Grates Std. 840.37	Temp Steel Plate Cover Masonry Drainage	Spring Box Std. 840.41		M.H. Std. 840.51, Std. 840.52, or Std. 840.53	M.H. Frame and Cover Std. 840.54	Convert Existing C.B. to J.B.	Convert Existing C.B. to D.I.	Convert Existing D.I. to J.B.	Convert Existing J.B. to D.I.	Adjust C.B.	Adjust D.I.	15" C.S. Elbow	18" C.S. Elbow	24" C.S. Elbow	30" C.S. Elbow	36" C.S. Elbow	Berm Ditch Outlet Std. 850.10 (per each)	Berm Ditch Outlet Std. 850.11 (per each)	Modified Conc. Flume	Flowable Fill CY	Concrete Collars Cl. "B" Std. 840.72 CY	Concrete and Brick Pipe Plug Std. 840.71 CY	Pipe Removal LIN. FT.	Remarks
L 13+35	0601																																
	0601	0602																														13	
L 14+51	0603																																
	0603	0604																															
L 11+79	0605																																
	0605	0601																														32	
L 22+98	0606																																
	0606	0709																															
L 34+32	0701																																
	0701	0702																															
L 35+58	0702																																
L 30+66	0703																																
	0703	0704																															
L 33+01	0705	0706																															
L 35+57	0707					1								1																			
L 37+89	0708																																
L 26+00	0711																																
	0711	0712																															
L 25+21	0712				1								1	1																			
	0712	0709																															
L 36+24	0713					1								1																			
	0713	0707																															
L 36+99	0714					1								1																			
L 50+64	0802																																
	0802	0815																														90	
L 51+34	0803																																
	0803	0804																															
L 51+34	0804																																
	0804	0802																														70	
L 53+63	0805																																
	0805	0814																															
L 53+21	0806																																
	0806	0816																														78	
L 55+35	0807																																
	0807	0813																															
L 42+62	0808																																
	0808	0818																															
L 56+00	0809																																
	0809	0813																														65	
L 44+00	0810																																
	0810	0811																														101	
L 43+01	0811																																
	0811	0808																														37	
L 55+35	0813																																
	0813	0814																														172	
L 53+63	0814				1								1	1																			
	0814	0806																														42	
L 49+75	0815																																
	0815	0817																														102	
L 52+46	0816																																
SHEET TOTALS					2	3							2	5																		802	

ABBREVIATIONS

- **C.A.A.** CORRUGATED ALUMINIUM ALLOY
- **C.B.** CATCH BASIN
- **C.S.** CORRUGATED STEEL
- **D.I.** DROP INLET
- **G.D.I.** GRATED DROP INLET
- **H.D.P.E.** HIGH DENSITY POLYETHYLENE
- **J.B.** JUNCTION BOX
- **M.H.** MANHOLE
- **N.S.** NARROW SLOT
- **P.V.C.** POLYVINYL CHLORIDE
- **R.C.** REINFORCED CONCRETE
- **T.B.D.I.** TRAFFIC BEARING DROP INLET
- **T.B.J.B.** TRAFFIC BEARING JUNCTION BOX
- **W.S.** WIDE SLOT

RAL-DESK082013A

COMPUTED BY: James A. Crouse, PE DATE: 4/20/17

CHECKED BY: D.C. Duffield, PE DATE: 6/25/18

PROJECT NO.	SHEET NO.
U-4741	3D-2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Side Drain Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	15	18	24	30	36	42	48	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48
		0816	0804		782.4	777.8						120																			
L 48+76	36 RT	0817		773.6																											
		0817	0819		768.4	766.5						108																			
L 42+53	38 RT	0818		753.7																											
		0818	0821		748.4	737.5						244																			
L 40+10	36 RT	0820		742.3																											
		0820	0821		739.3	738.8			8																						
L 40+11	42 RT	0821		742.8																											
		0821	0708		737.5	732.1						224																			
L 58+30	14 RT	0901		804.7																											
		0901	0913		800.4	800.4				12																					
L 65+13	26 RT	0902		819.9					88																						
		0902	0928		815.0	814.6																									
L 59+78	14 RT	0903		807.4																											
		0903	0925		803.1	803.0			16																						
L 61+30	14 RT	0904		810.3																											
		0904	0921		806.1	805.1			12																						
L 68+20	12 RT	0906		825.1																											
		0906	0915		821.1	820.7											84														
L 69+81	13 RT	0907		825.5																											
L 70+26	13 RT	0908		825.0																											
		0908	0907		821.5	821.3																			48						
L 71+35	13 RT	0909		825.1																											
		0909	0919		822.4	822.3			20																						
L 58+06	41 RT	0910		803.8																											
		0910	0927		798.8	798.6													32												
L 58+29	25 RT	0913		804.8																											
		0913	0910		799.9	799.0					28																				
L 67+26	14 RT	0914		824.4																											
		0914	0923		820.4	819.5			24																						
L 68+72	13 RT	0915		825.4																											
		0915	0924		820.7	819.4			20																						
L 63+20	19 RT	0916		814.8																											
		0916	0922		808.8	808.3				44																					
L 58+00	54 RT	0917		805.0																											
		0917	0910		801.0	799.8			16																						
L 65+60	36 RT	0918		820.2																											
		0918	0902		816.2	815.0			52																						
L 71+35	32 RT	0919		824.6																											
		0919	0920		822.1	821.6			112																						
L 70+25	31 RT	0920		824.4																											
		0920	0908		821.6	821.5			20																						
L 61+30	26 RT	0921		809.1																											
		0921	0925		804.3	802.6					160																				
L 62+80	28 RT	0922		812.5																											
		0922	0921		808.3	804.8				152																					
L 67+24	33 RT	0923		823.5																											
		0923	0918		818.6	816.2			168																						
L 68+98	33 RT	0924		823.4																											
		0924	0923		819.4	818.6			172																						
						SHEET TOTALS			728	208	188	696					84		32						48						

LINE & STATION	FROM	TO	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G		CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	CONCRETE TRANSITIONAL SECTION C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	CONCRETE BRIDGE APPROACH D.I. STD. 840.13	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29
	0816	0804																												
L 48+76	0817					1														1								1		
	0817	0819																												
L 42+53	0818					1	2.4																							
	0818	0821																												
L 40+10	0820																													
	0820	0821																												
L 40+11	0821					1	2.8													1								1		
	0821	0708																												
L 58+30	0901					1			1			1																		
	0901	0913																												
L 65+13	0902					1																								
	0902	0928																												
L 59+78	0903					1			1			1																		
	0903	0925																												
L 61+30	0904					1			1			1																		
	0904	0921																												
L 68+20	0906					1			1	1																				
	0906	0915																												
L 69+81	0907					1			1			1																		
L 70+26	0908					1			1			1																		
	0908	0907																												
L 71+35	0909					1			1			1																		
	0909	0919																												
L 58+06	0910					1	1.8													1								1		
	0910	0927																												
L 58+29	0913					1	1.8													1								1		
	0913	0910																												
L 67+26	0914					1			1			1																		
	0914	0923																												
L 68+72	0915					1			1			1																		
	0915	0924																												
L 63+20	0916					1			1			1																		
	0916	0922																												
L 58+00	0917					1			1			1																		
	0917	0910																												
L 65+60	0918					1															1							1		
	0918	0902																												
L 71+35	0919					1	0.6																							
	0919	0920																												
L 70+25	0920					1	0.9																							
	0920	0908																												
L 61+30	0921					1															1							1		
	0921	0925																												
L 62+80	0922					1																								
	0922	0921																												
L 67+24	0923					1															1							1		
	0923	0918																												
L 68+98	0924					1															1							1		
	0924	0923																												
SHEET TOTALS						24	10.3		11	1		10								4	4							8		

LINE & STATION	FROM	TO	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	CONVERT EX J.B. TO J.B. W/ M.H.	CONVERT OPEN THROAT C.B. TO C.B.	T.B.D.I. FOR STEEL GRATES STD. 840.36	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	SPRING BOX STD. 840.41		M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO J.B.	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	ADJUST C.B.	ADJUST D.I.	15" C.S. ELBOW	18" C.S. ELBOW	24" C.S. ELBOW	30" C.S. ELBOW	36" C.S. ELBOW	BERM DITCH OUTLET STD. 850.10 (PER EACH)	BERM DITCH OUTLET STD. 850.11 (PER EACH)	MODIFIED CONC. FLUME	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
	0816	0804																														108	
L 48+76	0817																																
	0817	0819																														106	
L 42+53	0818					1								1																			
	0818	0821																														105	
L 40+10	0820																													0.3990			
	0820	0821																															
L 40+11	0821																																
	0821	0708																															
L 58+30	0901																																
	0901	0913																															
L 65+13	0902				1								1	1																			
	0902	0928																															
L 59+78	0903																																
	0903	0925																															
L 61+30	0904																																
	0904	0921																															
L 68+20	0906																																
	0906	0915																															
L 69+81	0907																																
L 70+26	0908																																
	0908	0907																														32	
L 71+35	0909																																
	0909	0919																															
L 58+06	0910																																
	0910	0927																														43	
L 58+29	0913																																
	0913	0910																															
L 67+26	0914																																
	0914	0923																															
L 68+72	0915																																
	0915	0924																															
L 63+20	0916																																
	0916	0922																														40	
L 58+00	0917																																
	0917	0910																															
L 65+60	0918																																
	0918	0902																															
L 71+35	0919				1								1	1																			
	0919	0920																															
L 70+25	0920				1								1	1																			
	0920	0908																															
L 61+30	0921																																
	0921	0925																														64	
L 62+80	0922				1								1	1																			
	0922	0921																															
L 67+24	0923																																
	0923	0918																															
L 68+98	0924																																
	0924	0923																															
SHEET TOTALS					4	1							4	5																0.3990		498	

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

COMPUTED BY:	James A. Crouse, PE	DATE:	4/20/17
CHECKED BY:	D.C. Duffield, PE	DATE:	6/25/18

RAL-DESK082013A

PROJECT NO.	SHEET NO.
U-4741	3D-3

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Side Drain Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	15	18	24	30	36	42	48	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G		CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	CONCRETE BRIDGE APPROACH D.I. STD. 840.13	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	CONVERT EX J.B. TO J.B. W/ M.H.	CONVERT OPEN THROAT C.B. TO C.B.	T.B.D.I. FOR STEEL GRATES STD. 840.36	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	SPRING BOX STD. 840.41		M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING C.B. TO J.B.	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	ADJUST C.B.	ADJUST D.I.	15" C.S. ELBOW	18" C.S. ELBOW	24" C.S. ELBOW	30" C.S. ELBOW	36" C.S. ELBOW	BERM DITCH OUTLET STD. 850.10 (PER EACH)	BERM DITCH OUTLET STD. 850.11 (PER EACH)	MODIFIED CONC. FLUME	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 59+71	26 RT	0925		807.4																															1															1							1																																
		0925	0913		802.3	800.1	0.7				144																																																																															18	
L 57+35	31 RT	0926		805.0																															1	3.3																										1								1	1																			
		0926	0809		798.3	795.7					128																																																																												168	
L 57+74	41 RT	0927		804.0																															1	2.2														1								1																																
		0927	0926		798.6	798.3					44																																																																													
L 64+25	27 RT	0928		816.8																															1			1			1																																																						
L 72+58	13 RT	1001		825.9																															1			1			1																																																				
		1001	1006		823.2	822.5			20																																																																																				
L 75+62	14 RT	1002		830.5																															1			1			1																																																				
		1002	1005		827.7	827.6			20																																																																																				
L 76+60	16 RT	1003		832.1																															1			1			1																																																				
		1003	1004		829.7	829.4			20																																																																																				
L 76+52	33 RT	1004		832.2																															1															1							1																																
		1004	1005		829.4	827.9			96																																																																																		98	
L 75+60	33 RT	1005		830.6																															1															1							1																																
		1005	1006		827.6	822.5			304																																																																																	59	
L 72+56	31 RT	1006		824.8																															1																												1								1	1																			
		1006	0919		822.5	822.1			124																																																																																	27	
L 46+31	38 RT																																																																																												98	
GWY 14+50		0401	0402						28																																																																																					
GWY 20+00		0403	0404						28																																																																																				
MUP 15+08		0503	0504						24																																																																																				
MUP 15+49		0505	0506					24																																																																																						
L 61+28	26 RT	0916		814.8																															1															1							1																																
SHEET TOTALS								24	664		316																								11	5.5		4			4								1	4							5					2								2	2																		468	
PROJECT TOTALS								24	1812	208	784	1072	120				84		32	40					176		160	68							60	42.0		25	1	2	22								12	11							23					8	4							8	12																0.3990		1768	

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

RAL-DESK082013A

COMPUTED BY: James A. Crouse, PE **DATE:** 4/20/17

CHECKED BY: D.C. Duffield, PE **DATE:** 6/25/18

PROJECT NO.	SHEET NO.
U-4741	3D-4

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54 INCHES & OVER)

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %
L 24+71	27 RT	0709		729.1			
		0709	0710		723.3	723.5	
MUP 11+68	18 LT	0501					
		0501	0502		706.2	705.7	

	Side Drain Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	15	18	24	30	36	42	48	54	60	66	72	78	84	C. S. PIPE 54	60	66	72	78	84	R. C. PIPE CLASS III 54	60	66	72	78	84	R. C. PIPE CLASS IV 54	60	66	72	78	84
L 24+71 0709																																
0709–0710												28																				
MUP 11+68 0501																																
0501–0502										44																						
SHEET TOTALS										44		28																				
PROJECT TOTALS										44		28																				

	ENDWALLS STD. 838.27 CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	5' THRU 10' (A) LIN. FT.	10' AND ABOVE (B) LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05
L 24+71 0709			7.000									
0709–0710												
MUP 11+68 0501	5.900											
0501–0502												
SHEET TOTALS	5.900		7.000									
PROJECT TOTALS	5.900		7.000									

	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	CONCRETE BRIDGE APPROACH D.I. STD. 840.13	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	CONVERT EX J.B. TO J.B. W/ M.H.	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	T.B.D.I. FOR STEEL GRATES STD. 840.36	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	SPRING BOX STD. 840.41	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	BERM DITCH OUTLET STD. 850.10 (PER EACH)	BERM DITCH OUTLET STD. 850.11 (PER EACH)	MODIFIED CONC. FLUME	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 24+71 0709																																			SEE SPECIAL DETAIL
0709–0710																																			
MUP 11+68 0501																																			
0501–0502																																			
SHEET TOTALS																																			
PROJECT TOTALS																																			

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883 - (919) 732-6676 (FAX)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

SHEET NO.	PARCEL NO.	OWNER	TYPE	AREA (SF)	AREA (AC)
6,7	1	FORSYTH COUNTY NORTH CAROLINA DB 1193 PG 1576	ROW	27850.76	0.639
6,7	1	FORSYTH COUNTY NORTH CAROLINA DB 1193 PG 1576	TCE	4262.59	0.098
7	1	FORSYTH COUNTY NORTH CAROLINA DB 1193 PG 1576	PDE	304.07	0.007
7	2	JASON M CRANDELL DB 2526 PG 2419	ROW	5820.33	0.134
7	2	JASON M CRANDELL DB 2526 PG 2419	TCE	4488.15	0.103
7	3	MARK W MILLER DB 2776 PG 223 PB 36 PG 44	TCE	1171.93	0.027
7	4	SCOTT A MIELKE ERICA L MIELKE DB 2834 PG 1254 PB 37 PG 186	TCE	256.44	0.006
8	5	LUC BARIL ELIZABETH BARIL DB 2687 PG 1024 PB 37 PG 186	PDE	421.88	0.010
8	6	TONY M TRANSOU DB 1864 PG 905 PB 37 PG 186	TCE	924.49	0.021
8	7	WINSTON WILLIAMS DB 2749 PG 1829 PB 37 PG 186	TCE	999.64	0.023
8	8	REBECCA J NORMAN CHARLES S MORRISON JR DB 3015 PG 397	PDE	1156.78	0.026
8	9	WC-CLEMMONS LLC DB 2743 PG 2725	TCE	1259.58	0.029
8	10	HUTCHINS LIVING TRUST DATED 11-14-2012 DB 3092 PG 833	ROW	2720.80	0.063
8,9	11	C & H INSULATION SERVICES INC DB 2803 PG 3762 DB 2553 PG 1292	ROW	6552.07	0.150
9	12	DONALD G TISE REVOCABLE TRUST DATED 12-18-1996 DB 1929 PG 2346	ROW	2971.43	0.068

SHEET NO.	PARCEL NO.	OWNER	TYPE	AREA (SF)	AREA (AC)
9	13	JEAN T LIVENGOOD EUGENE R LIVENGOOD DB 1865 PG 79	ROW	1921.62	0.044
9	14	GERRIL HICKS JAN B BLEVINS DB 3408 PG 1341	ROW	1292.05	0.030
9	15	ALI FARAHNAKIAN AZAME N FARHNAKIAN DB 1685 PG 1651	ROW	3982.05	0.091
9	16	J DODD LINKER JR REVOCABLE TRUST AGREEMENT DATED 12-30-2010 DB 3002 PG 1854	ROW	2844.94	0.065
9	16	J DODD LINKER JR REVOCABLE TRUST AGREEMENT DATED 12-30-2010 DB 3002 PG 1854	ROW	711.25	0.016
9	17	MARTHA W LINKER DB 2531 PG 325	ROW	3850.49	0.088
9	17	MARTHA W LINKER DB 2531 PG 325	TCE	959.36	0.022
9	18	MARTHA K LINKER DB 2531 PG 332	ROW	3066.34	0.070
9	18	MARTHA K LINKER DB 2531 PG 332	TCE	709.30	0.016
9	19	RODGER F SENTER GAIL W SENTER DB 1181 PG 1646	ROW	2416.51	0.056
9,10	20	STEPHEN P NEWSOM DB 3223 PG 3066	ROW	2428.42	0.056
10	21	DEBORAH S COOPER DB 1776 PG 449	ROW	224.96	0.005
10	22	DEBORAH COOPER REBECCA C HAMPTON DB 3220 PG 1623	ROW	2266.61	0.052
10	23	SOUTHERN FAMILY OF FORSYTH COUNTY LLC DB 2920 PG 4003	ROW	1613.55	0.037
10	24	DENNIS OLIVER SOUTHERN REVOCABLE TRUST AGREEMENT DATED 10-26-2009 DB 2920 PG 4006	ROW	826.67	0.019
10	25	THE VILLAGE OF CLEMMONS DB 3275 PG 3801	ROW	820.69	0.019
10	25	THE VILLAGE OF CLEMMONS DB 1784 PG 2440	TCE	270.86	0.006

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jessicapuszynski

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON	NORTH CAROLINA PROFESSIONAL SEAL 030405 ENGINEER D.C. DUFFIELD

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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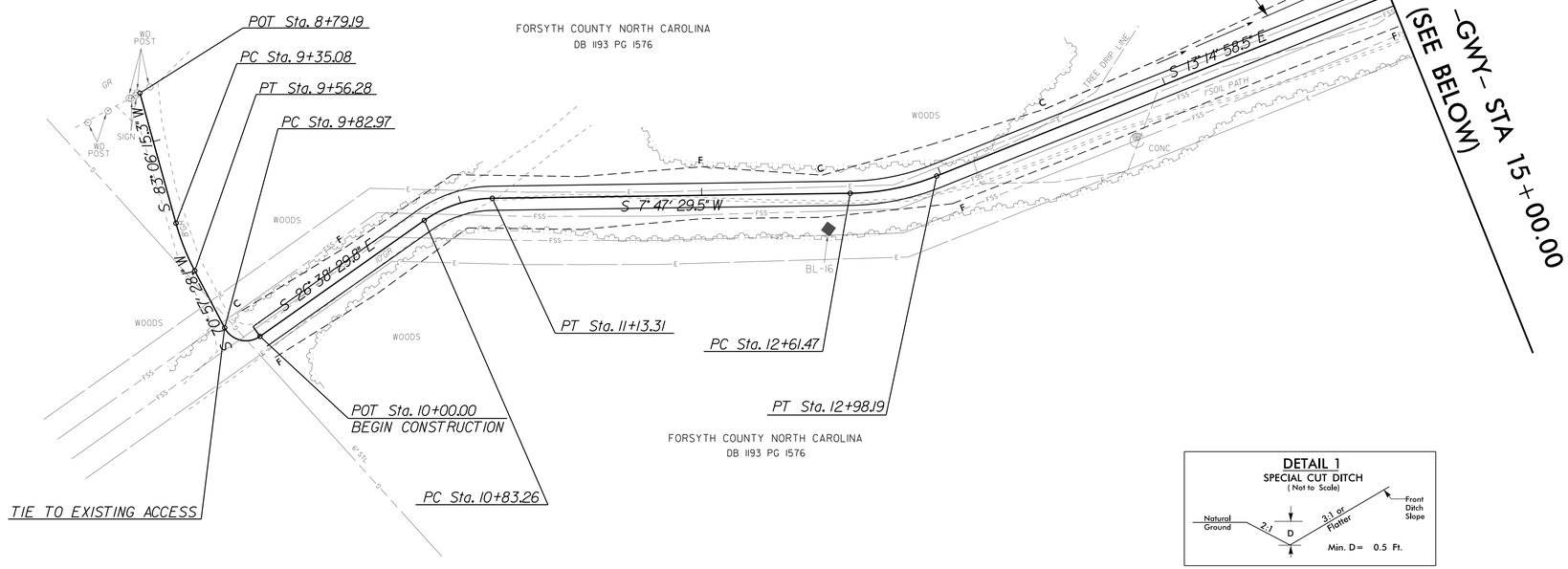
(919) 732-3883
(919) 732-6676 (FAX)

FOR -GWY- PROFILE SEE SHEET 11

-GWY-

PI Sta 9+45.72	PI Sta 9+94.39	PI Sta 10+98.75	PI Sta 12+80.04
△= 12° 08' 47.1" (LT)	△= 97° 35' 58.0" (LT)	△ = 34° 25' 59.3" (RT)	△ = 21° 02' 27.9" (LT)
D = 57° 17' 44.8"	D = 57.2° 57' 28.1"	D = 114° 35' 29.6"	D = 57° 17' 44.8"
L = 21.20'	L = 17.03'	L = 30.05'	L = 36.72'
T = 10.64'	T = 11.42'	T = 15.49'	T = 18.57'
R = 100.00'	R = 10.00'	R = 50.00'	R = 100.00'

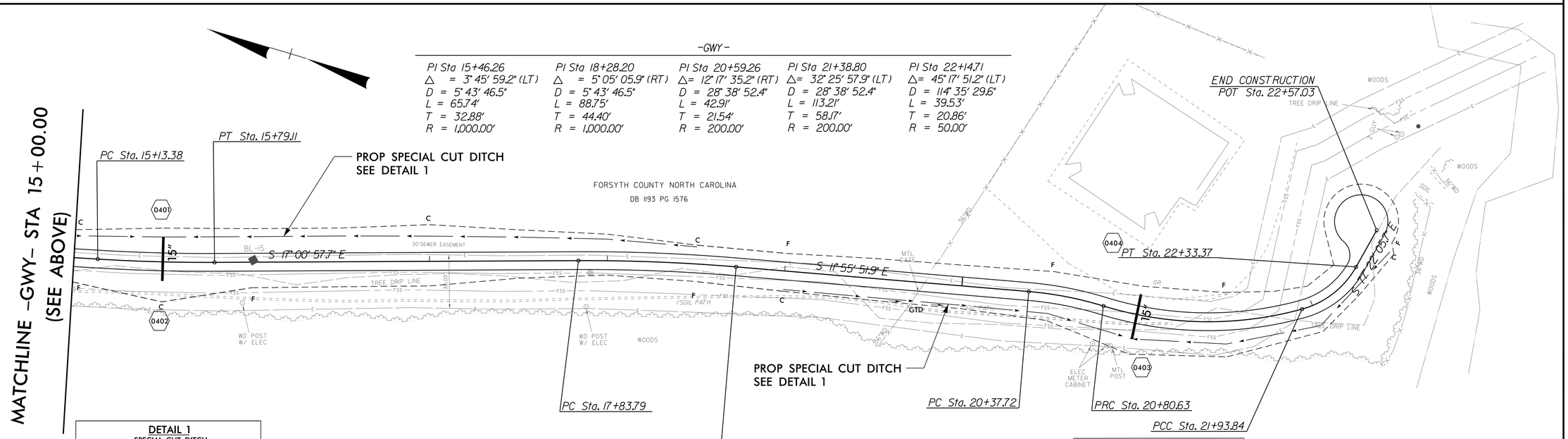


DETAIL 1
SPECIAL CUT DITCH
(Not to Scale)

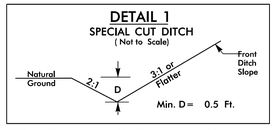
FROM STA. 14+00 TO STA. 18+50 -GWY- LT

-GWY-

PI Sta 15+46.26	PI Sta 18+28.20	PI Sta 20+59.26	PI Sta 21+38.80	PI Sta 22+14.71
△ = 3° 45' 59.2" (LT)	△ = 5° 05' 05.9" (RT)	△= 12° 17' 35.2" (RT)	△= 32° 25' 57.9" (LT)	△= 45° 17' 51.2" (LT)
D = 5° 43' 46.5"	D = 5° 43' 46.5"	D = 28° 38' 52.4"	D = 28° 38' 52.4"	D = 114° 35' 29.6"
L = 65.74'	L = 88.75'	L = 42.91'	L = 113.21'	L = 39.53'
T = 32.88'	T = 44.40'	T = 21.54'	T = 58.17'	T = 20.86'
R = 1,000.00'	R = 1,000.00'	R = 200.00'	R = 200.00'	R = 50.00'

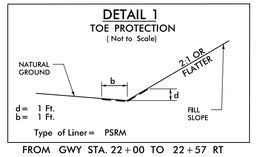


DETAIL 1
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 14+00 TO STA. 18+50 -GWY- LT
FROM STA. 19+00 TO STA. 22+50 -GWY- RT

DETAIL 1
TOE PROTECTION
(Not to Scale)



FROM GWY STA. 22+00 TO 22+57 RT

REVISIONS

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jessica.pusz.pr5k1

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON	NORTH CAROLINA PROFESSIONAL SEAL 030405 ENGINEER D.C. DUFFIELD

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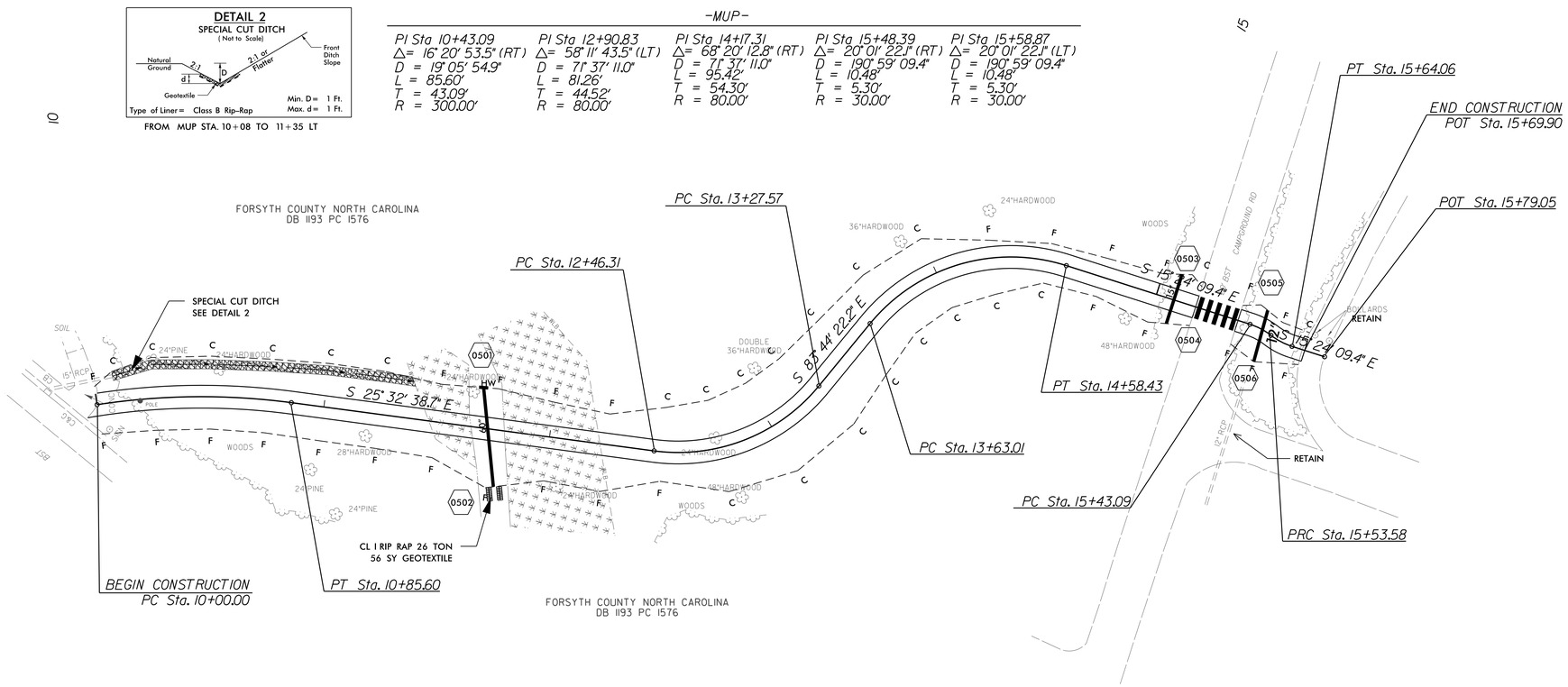
FOR -MUP- PROFILE SEE SHEET 11

DETAIL 2
SPECIAL CUT DITCH
(Not to Scale)

FROM MUP STA. 10+08 TO 11+35 LT

-MUP-

PI Sta 10+43.09	PI Sta 12+90.83	PI Sta 14+17.31	PI Sta 15+48.39	PI Sta 15+58.87
△= 16° 20' 53.5" (RT)	△= 58° 11' 43.5" (LT)	△= 68° 20' 12.8" (RT)	△= 20° 01' 22.1" (RT)	△= 20° 01' 22.1" (LT)
D = 19° 05' 54.9"	D = 71° 37' 11.0"	D = 71° 37' 11.0"	D = 190° 59' 09.4"	D = 190° 59' 09.4"
L = 85.60'	L = 81.26'	L = 95.42'	L = 10.48'	L = 10.48'
T = 43.09'	T = 44.52'	T = 54.30'	T = 5.30'	T = 5.30'
R = 300.00'	R = 80.00'	R = 80.00'	R = 30.00'	R = 30.00'



REVISIONS

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jessica.pulizzi@ncdot

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON	NORTH CAROLINA PROFESSIONAL SEAL 030405 ENGINEER D.C. DUFFIELD

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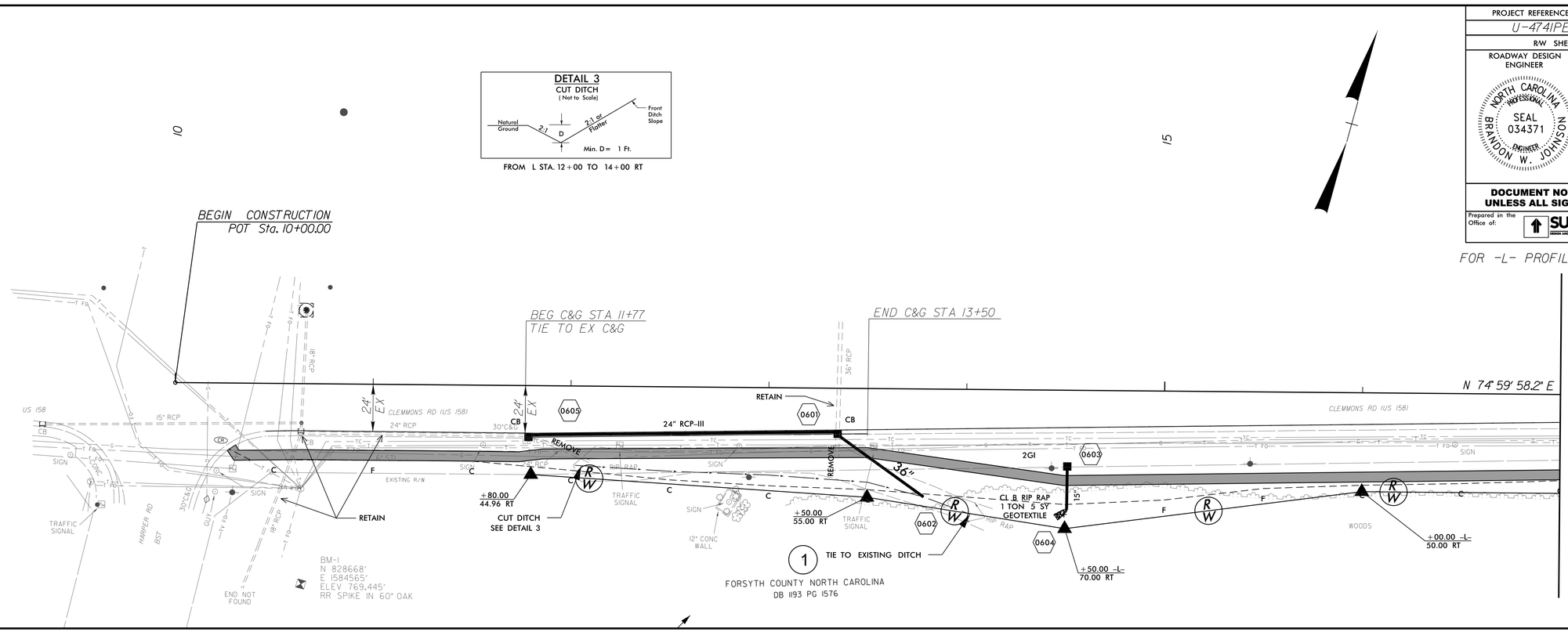
FOR -L- PROFILE SEE SHEET 12

REVISIONS



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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 030405 ENGINEER D.C. DUFFIELD

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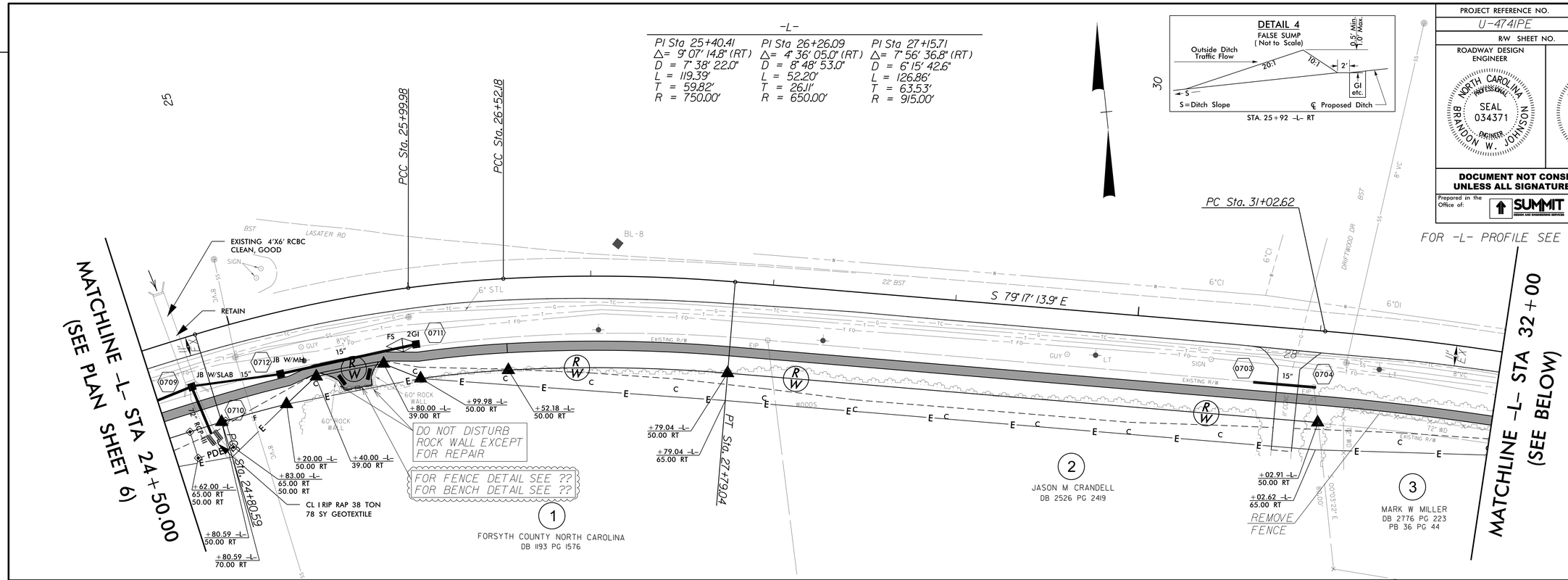
FOR -L- PROFILE SEE SHEET 12-13

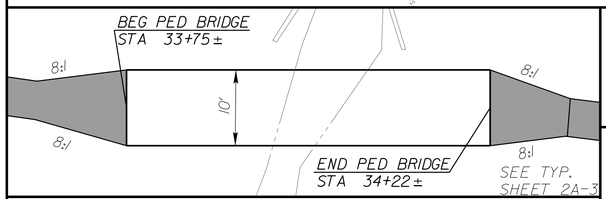
-L-

PI Sta 25+40.41	PI Sta 26+26.09	PI Sta 27+15.71
Δ= 9° 07' 14.8" (RT)	Δ= 4° 36' 05.0" (RT)	Δ= 7° 56' 36.8" (RT)
D = 7° 38' 22.0"	D = 8° 48' 53.0"	D = 6° 15' 42.6"
L = 119.39'	L = 52.20'	L = 126.86'
T = 59.82'	T = 26.11'	T = 63.53'
R = 750.00'	R = 650.00'	R = 915.00'

DETAIL 4
FALSE SUMP
(Not to Scale)

STA. 25+92 -L- RT





PEDESTRIAN BRIDGE TO SIDEWALK RELATIONSHIP

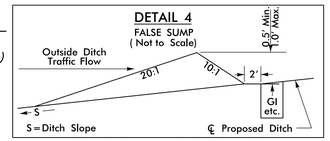
SEE CONTRACT PROPOSAL FOR GEOTECHNICAL INVESTIGATION AND INVENTORY FOR PEDESTRIAN BRIDGE.

CONTRACTOR SHALL PROVIDE STRUCTURE FOUNDATION DESIGN, SUBSTRUCTURE, PEDESTRIAN BRIDGE AND ALL ASSOCIATED LABOR, MATERIALS & EQUIPMENT.

-L-

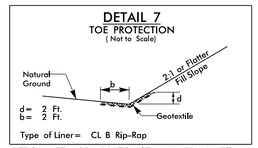
PI Sta 32+35.71	PI Sta 36+03.34
Δ= 10° 15' 06.0" (RT)	Δ= 0° 52' 01.1" (RT)
D = 3° 51' 42.5"	D = 1° 08' 45.3"
L = 265.46'	L = 75.66'
T = 133.09'	T = 37.83'
R = 1,483.65'	R = 5,000.00'

DETAIL 4
FALSE SUMP
(Not to Scale)



STA. 37+81 -L- RT, STA. 40+03 -L- RT

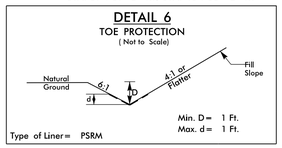
DETAIL 7
TOE PROTECTION
(Not to Scale)



Type of Liner= CL B Rip-Rap

FROM STA. 39+00 TO STA. 41+50 -L- RT

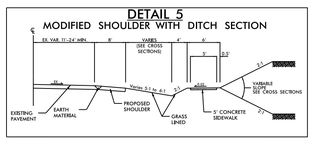
DETAIL 6
TOE PROTECTION
(Not to Scale)



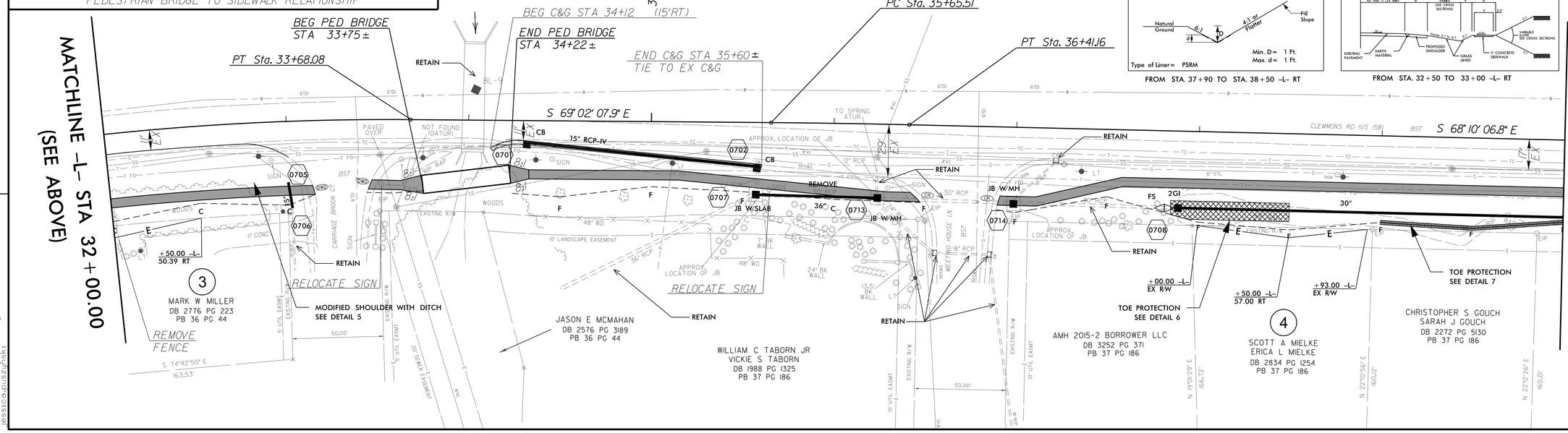
Type of Liner= PSRM

FROM STA. 37+90 TO STA. 38+50 -L- RT

DETAIL 5
MODIFIED SHOULDER WITH DITCH SECTION



FROM STA. 32+50 TO 33+00 -L- RT



REVISIONS

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jessicapuszynski

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON	NORTH CAROLINA PROFESSIONAL SEAL 030405 ENGINEER D.C. DUFFIELD

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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(919) 732-6676 (FAX)

FOR -L- PROFILE SEE SHEET 13

REVISIONS

DETAIL 7
TOE PROTECTION
(Not to Scale)

Natural Ground; 2:1 or Flatter Fill Slope; b; d; Geotextile

d= 1 Ft.
b= 1 Ft.

Type of Liner= CL B Rip-Rap

FROM STA. 39+00 TO STA. 41+50 -L- RT

DETAIL 8
SPECIAL CUT BASE DITCH
(Not to Scale)

Natural Ground; 1.75:1; D; d; B; 2:1 or Flatter; Front Slope Ditch; Geotextile

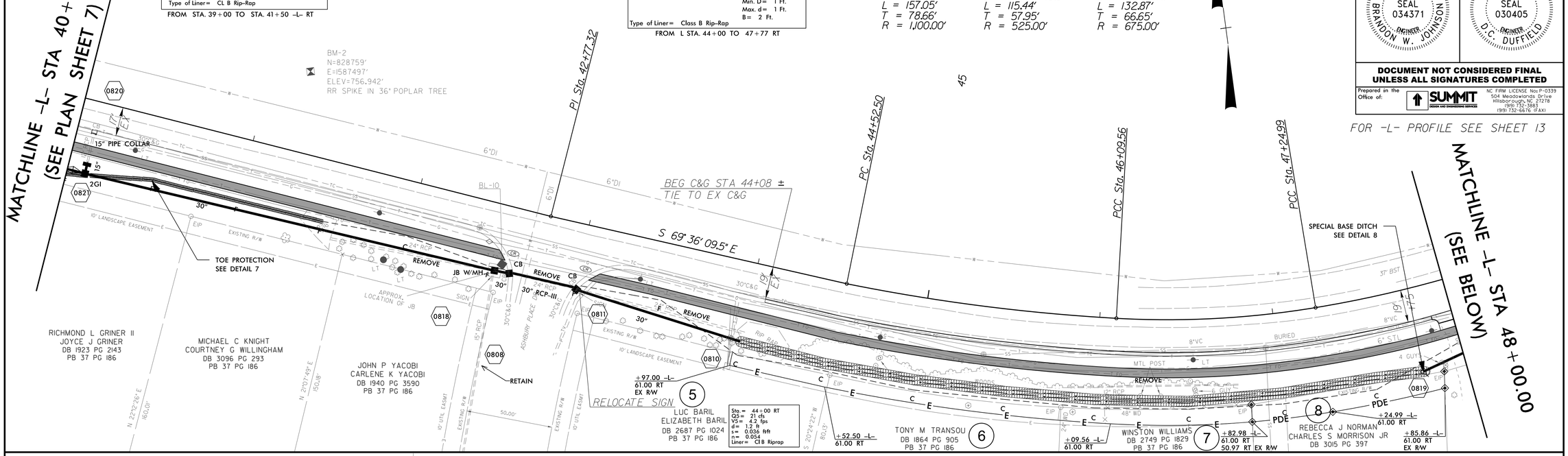
Min. D= 1 Ft.
Max. d= 1 Ft.
B= 2 Ft.

Type of Liner= Class B Rip-Rap

FROM L STA. 44+00 TO 47+77 RT

-L-

PI Sta 45+31.16	PI Sta 46+67.51	PI Sta 47+91.64
Δ= 8° 10' 49.6" (LT)	Δ= 12° 35' 52.9" (LT)	Δ= 11° 16' 43.0" (LT)
D = 5° 12' 31.3"	D = 10° 54' 48.5"	D = 8° 29' 17.7"
L = 157.05'	L = 115.44'	L = 132.87'
T = 78.66'	T = 57.95'	T = 66.65'
R = 1,100.00'	R = 525.00'	R = 675.00'



DETAIL 4
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow; 20:1; 10:1; 2'; 0.5' Min. 1.0' Max.; GI etc.; S; S=Ditch Slope; ℄ Proposed Ditch

STA. 48+68 -L- RT, STA. 55+27 -L- RT, STA. 55+98 -L- RT

DETAIL 9
TOE PROTECTION
(Not to Scale)

NATURAL GROUND; b; d; 2:1 OR FLATTER; FILL SLOPE

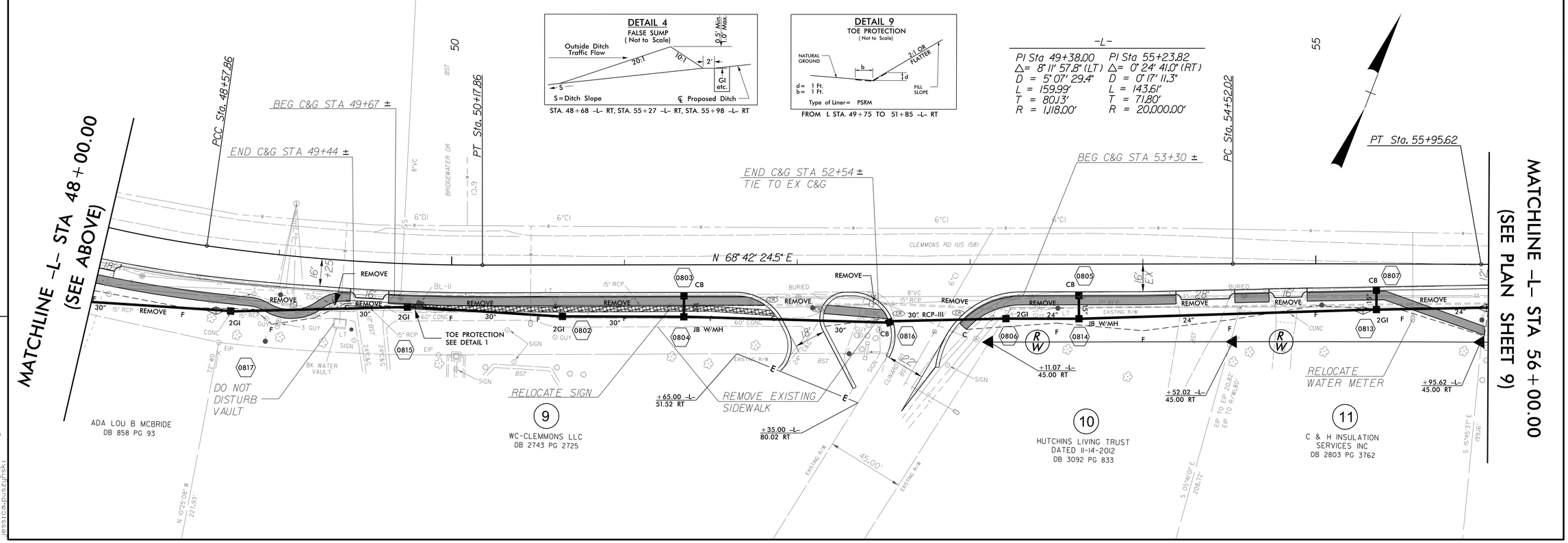
d= 1 Ft.
b= 1 Ft.

Type of Liner= PSRM

FROM L STA. 49+75 TO 51+85 -L- RT

-L-

PI Sta 49+38.00	PI Sta 55+23.82
Δ= 8° 11' 57.8" (LT)	Δ= 0° 24' 41.0" (RT)
D = 5° 07' 29.4"	D = 0° 17' 11.3"
L = 159.99'	L = 143.61'
T = 80.13'	T = 71.80'
R = 1,118.00'	R = 20,000.00'



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jessica.puzzo@rs.k1

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON	NORTH CAROLINA PROFESSIONAL SEAL 030405 ENGINEER D.C. DUFFIELD

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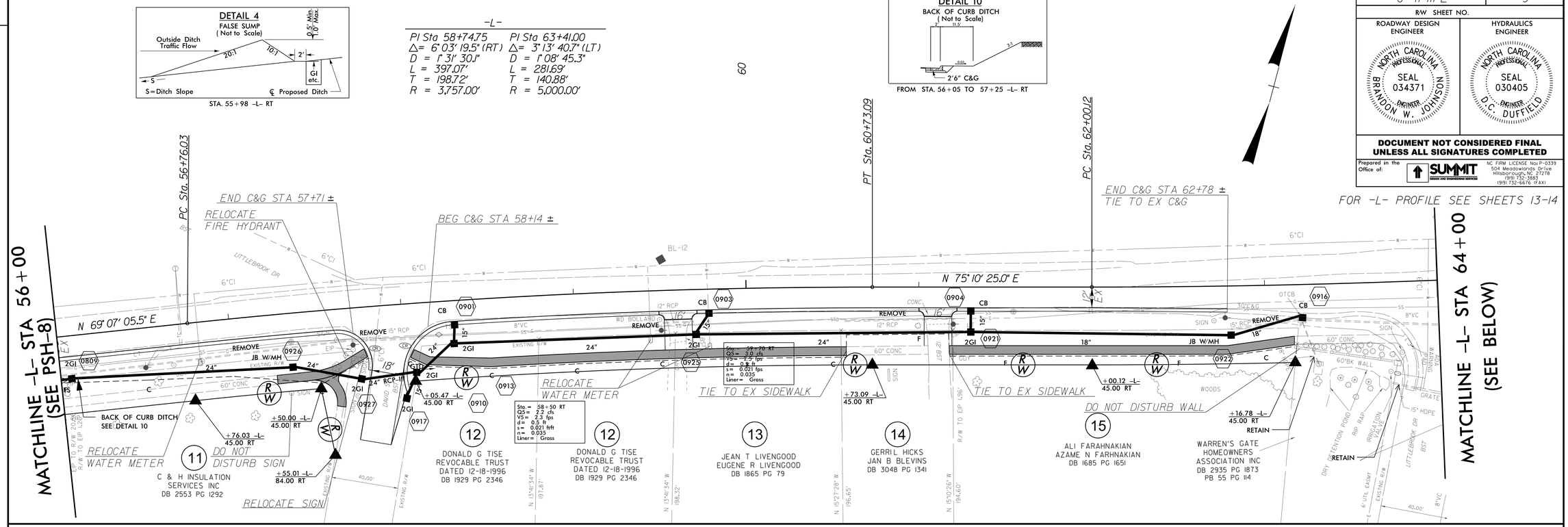
FOR -L- PROFILE SEE SHEETS 13-14

REVISIONS



10-SEP-2018 11:15
CLEMMONS_Rdy_psh_9.dgn
dgs310.pw:224:ds1

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON	NORTH CAROLINA PROFESSIONAL SEAL 030405 ENGINEER D.C. DUFFIELD

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

FOR -L- PROFILE SEE SHEET 14

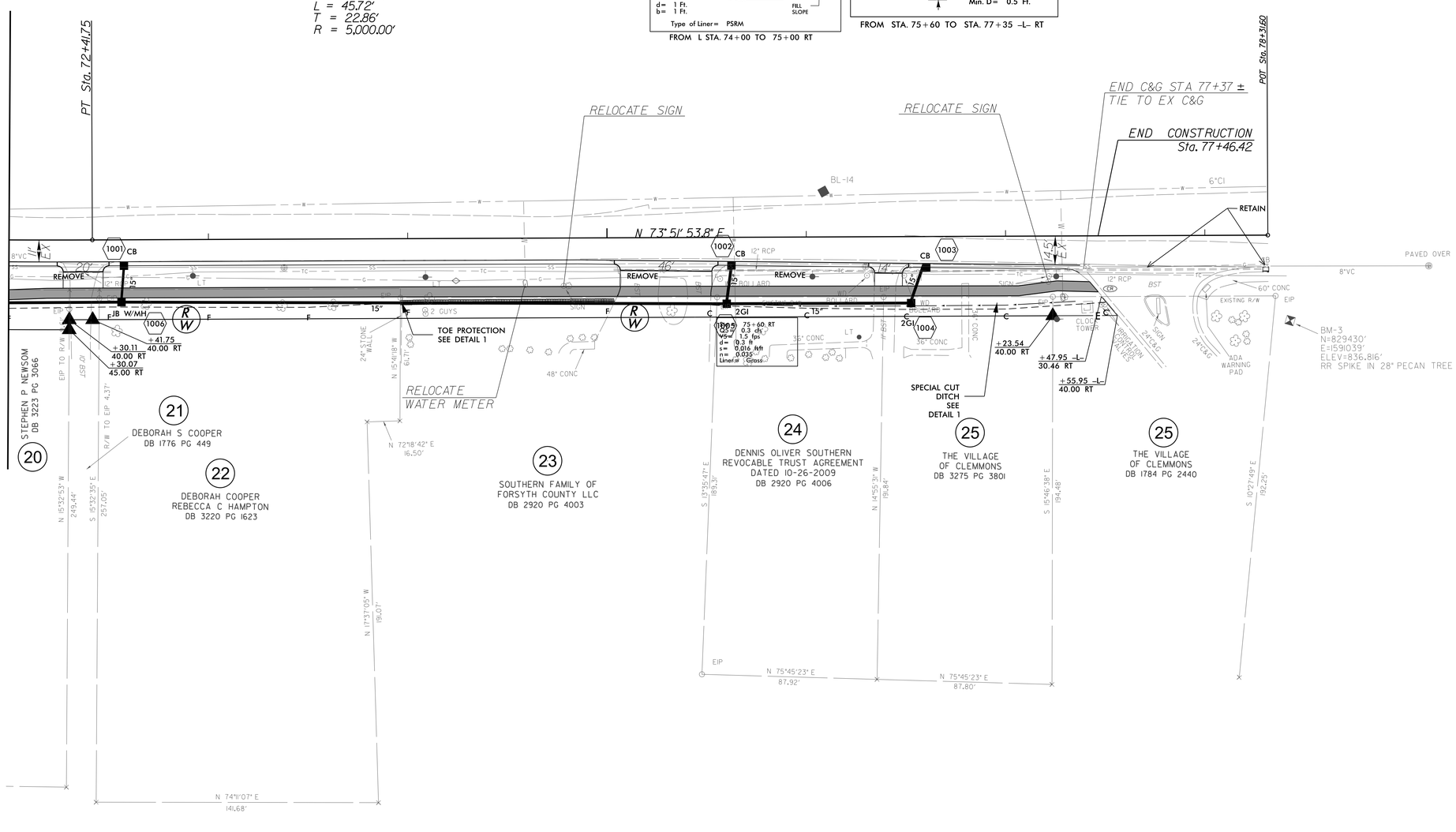
REVISIONS

MATCHLINE -L- STA 72+00 (SEE PSH-9)

-L-
PI Sta 72+18.89
Δ = 0° 31' 26.2" (LT)
D = 1° 08' 45.3"
L = 45.72'
T = 22.86'
R = 5,000.00'

DETAIL 9
TOE PROTECTION
(Not to Scale)
NATURAL GROUND; b; d; 2:1 OR FLATTER; FILL SLOPE
d= 1 Ft.
b= 1 Ft.
Type of Liner= PSRM
FROM L STA. 74+00 TO 75+00 RT

DETAIL 1
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground; 2:1; D; 3:1 or Flatter; Front Ditch Slope
Min. D= 0.5 Ft.
FROM STA. 75+60 TO STA. 77+35 -L- RT



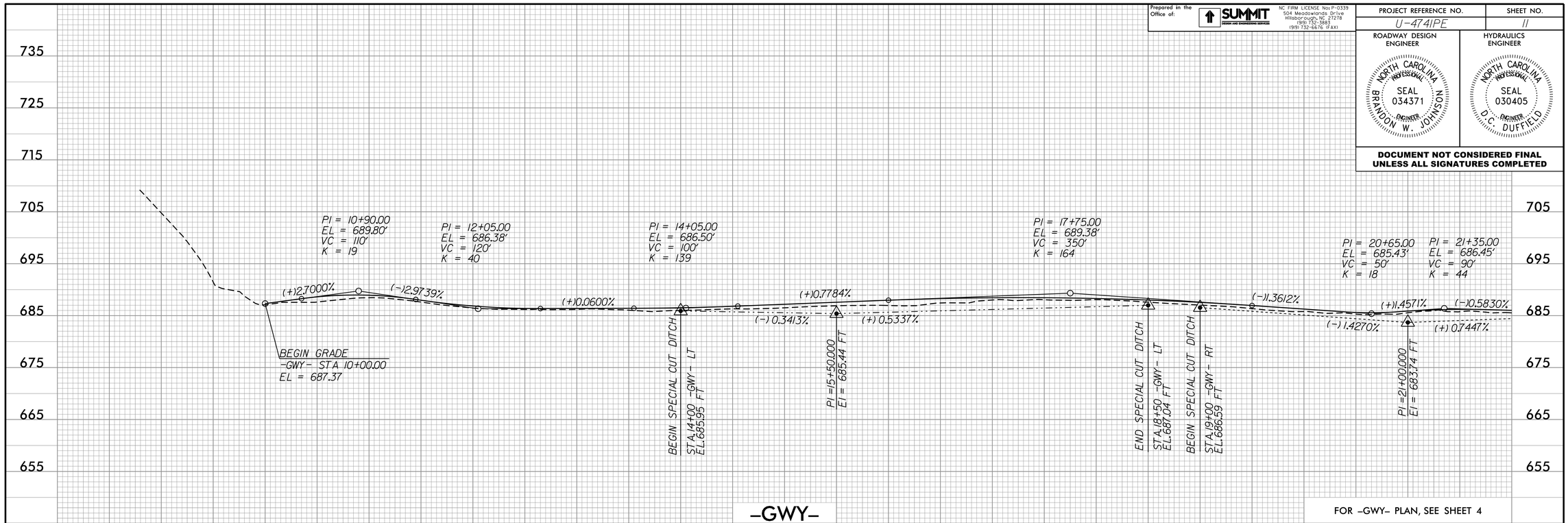
10-SEP-2018 JH5
CLEMMONS_Rdy_psh_10.dgn
pssise0ps2ssf1ps1

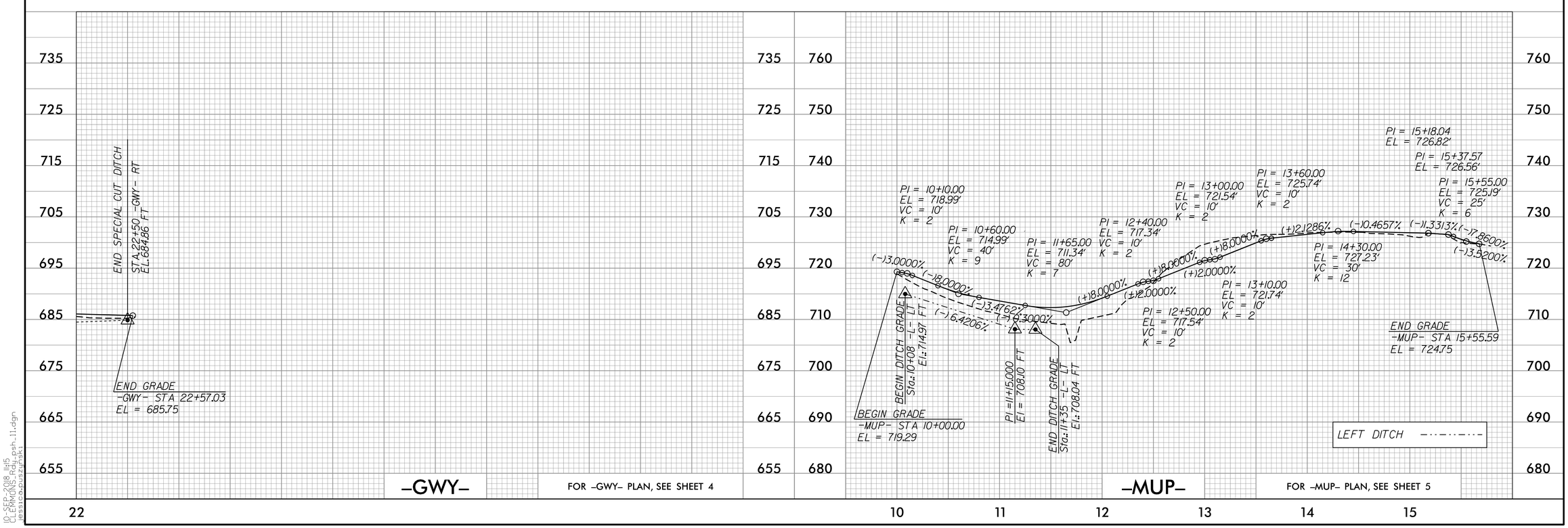
Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	11

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON	NORTH CAROLINA PROFESSIONAL SEAL 030405 ENGINEER D.C. DUFFIELD

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





10-SEP-2018 11:15
CLEMMONS:Rdy_psh_11.dgn
jessica.puszynski

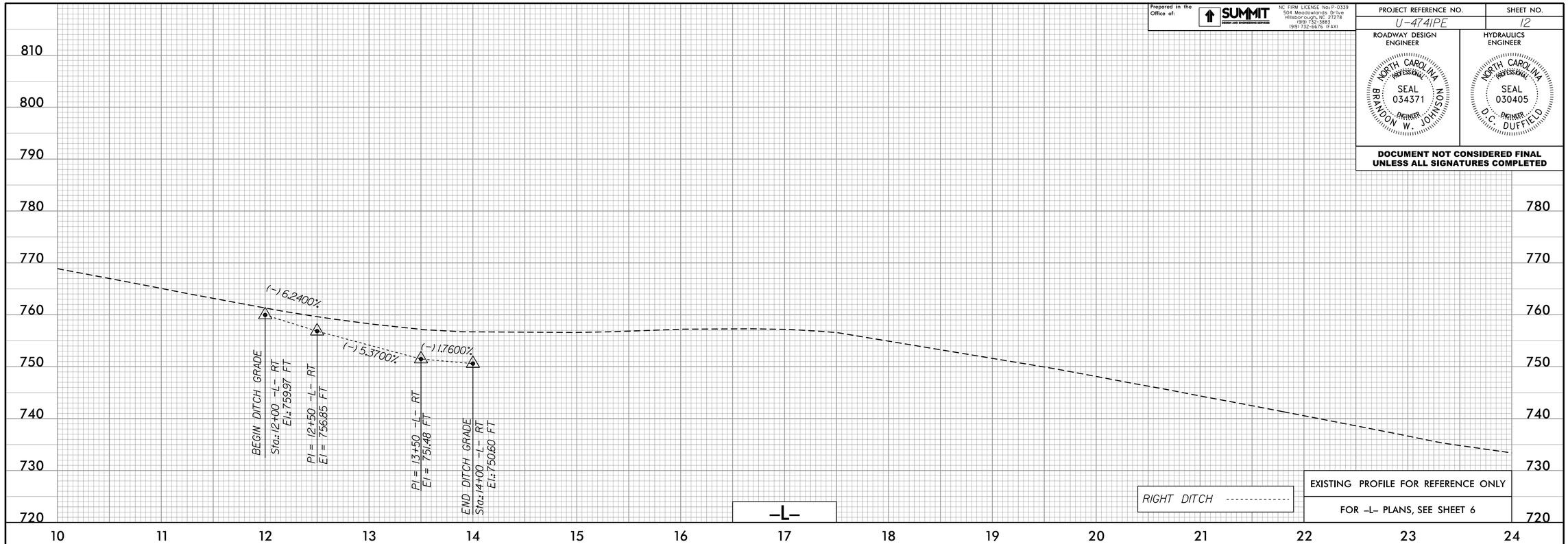
Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

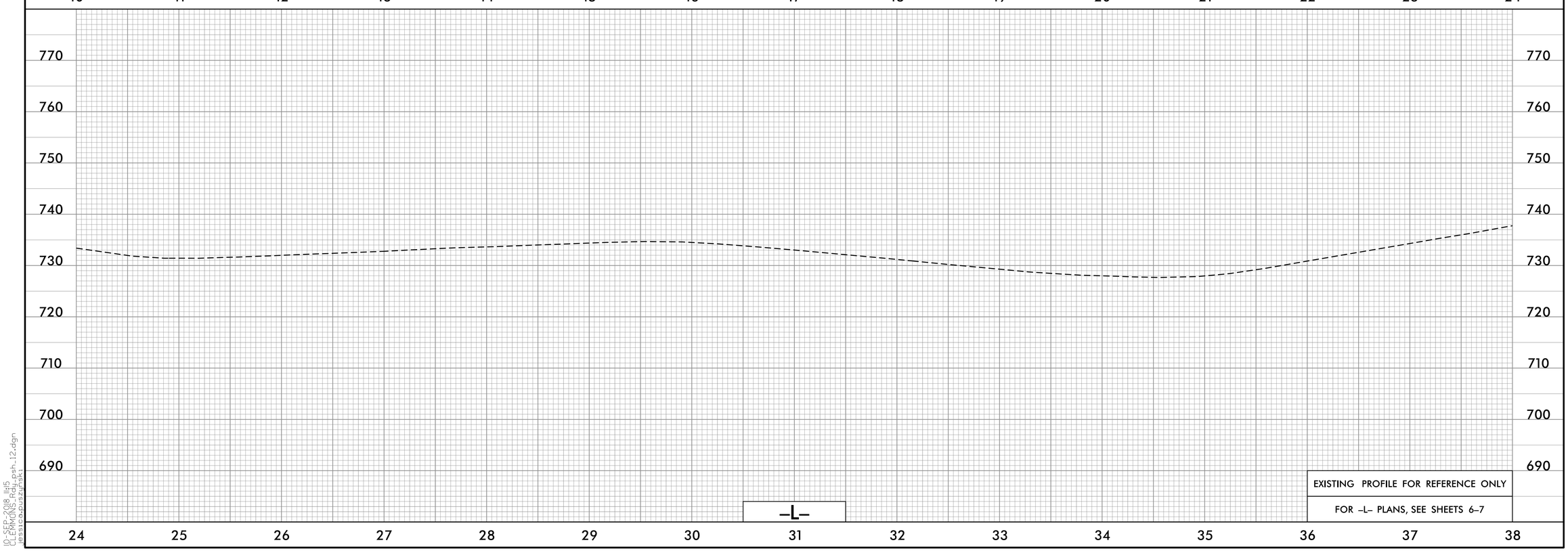
PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	12

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 030405 ENGINEER D.C. DUFFIELD

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





10-SEP-2018 11:15
CLEMMONS Rdy_psh_12.dgn
jessica.puszynski

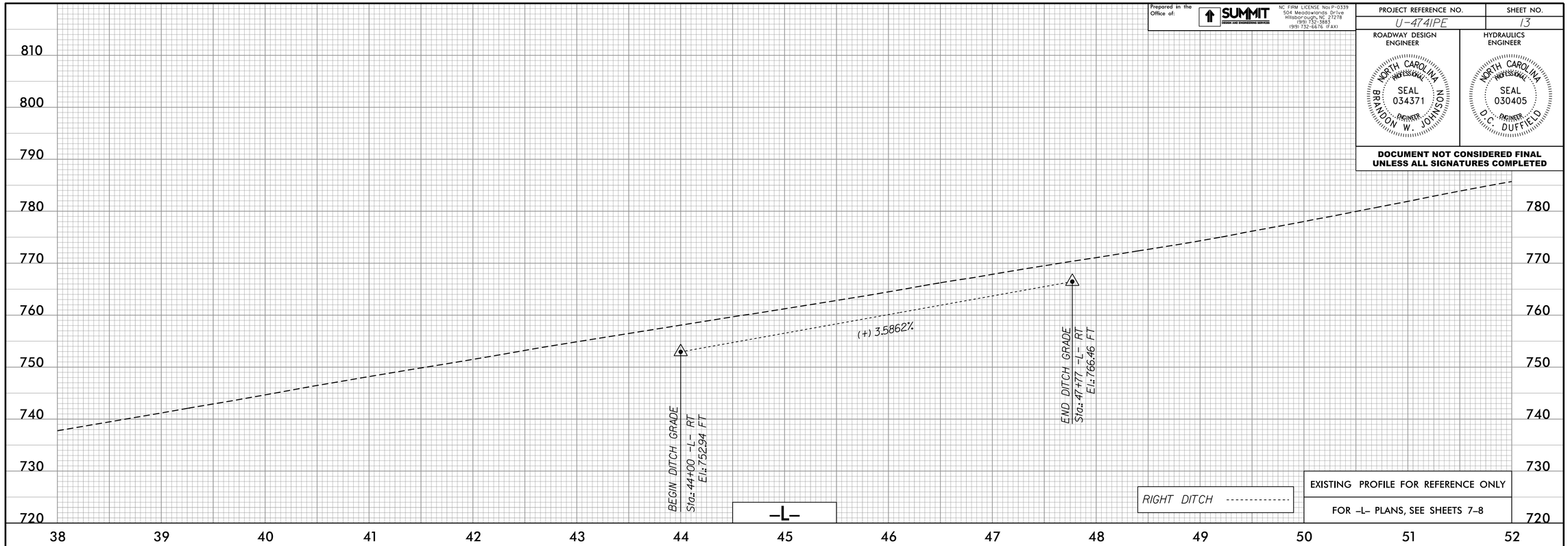
Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

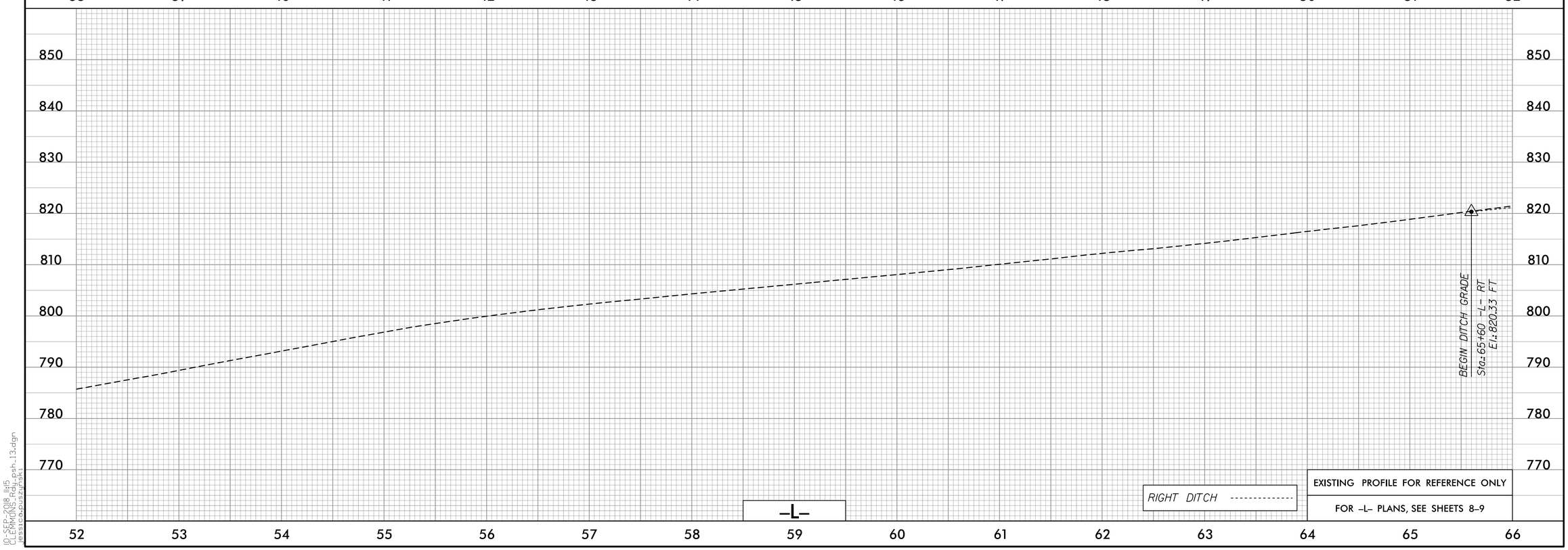
PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	13

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 030405 ENGINEER D. C. DUFFIELD

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





10-SEP-2018 11:15
CLEMMONS Rdy.psh_13.dgn
(jessica.puszynski)

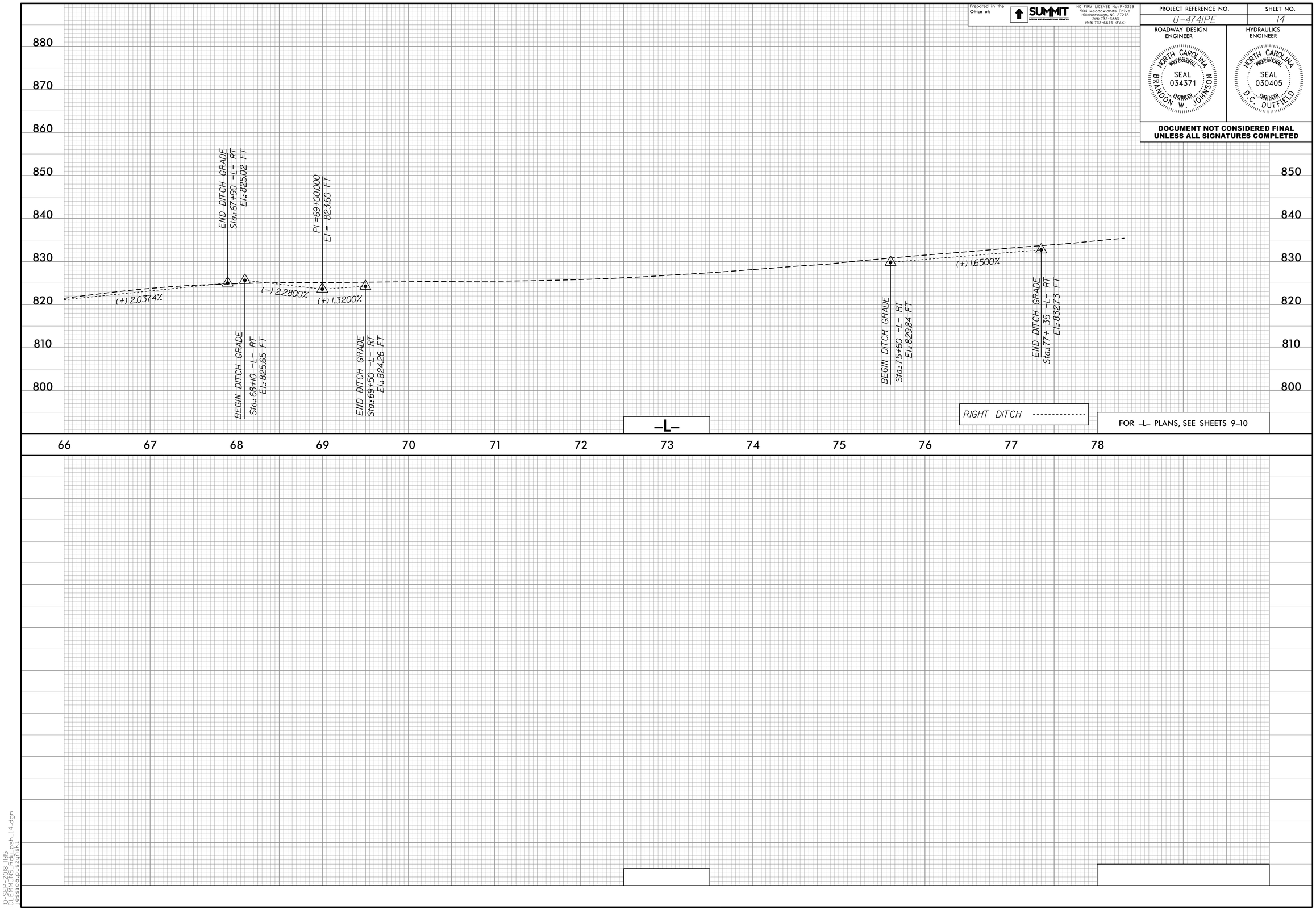
Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	14

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 030405 ENGINEER D.C. DUFFIELD

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



FOR -L- PLANS, SEE SHEETS 9-10

10-SEP-2018 14:15
CLEMMONS Rdy_psh_14.dgn
jessica.puszynski

09/08/99

TIP PROJECT: U-4741PE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4741PE	RW-1	

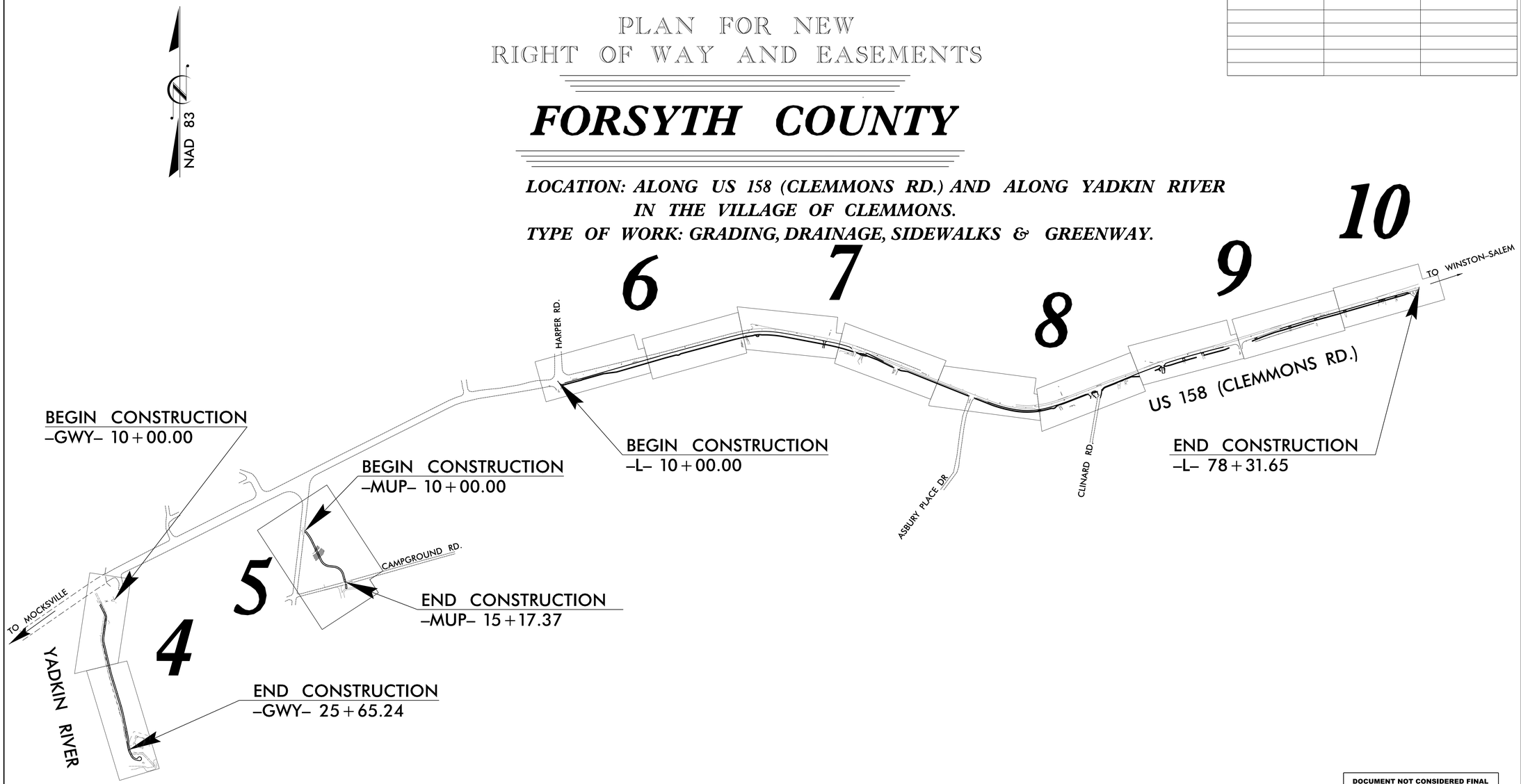
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
39745.1.F30	STPDA-0926(8)	PE
39745.3.30	STPDA-0926(8)	CONST

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR NEW
RIGHT OF WAY AND EASEMENTS

FORSYTH COUNTY

LOCATION: ALONG US 158 (CLEMMONS RD.) AND ALONG YADKIN RIVER IN THE VILLAGE OF CLEMMONS.
TYPE OF WORK: GRADING, DRAINAGE, SIDEWALKS & GREENWAY.



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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT:

GRAPHIC SCALES

30 15 0 30 60
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

20 5 0 10 20
PROFILE (VERTICAL)

PROJECT LENGTH

LENGTH GREENWAY PROJECT = 0.296 MILES

LENGTH MULT-USE PATH PROJECT = 0.098 MILES

LENGTH SIDEWALK PROJECT = 1.294 MILES

MEGAN LEDBETTER
VILLAGE OF CLEMMONS CONTACT

BRETT ABERNATHY, PE, PLS
NCDOT CONTACT

Prepared in the Office of:
SUMMIT
DESIGN AND ENGINEERING SERVICES
FIRM NO. P-0339
504 Meadowland Drive
Hillsborough, NC 27278-8551
Voice: (919) 732-3883
Fax: (919) 732-6776
www.summitde.net

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:

PPROFESSIONAL LAND SURVEYOR

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

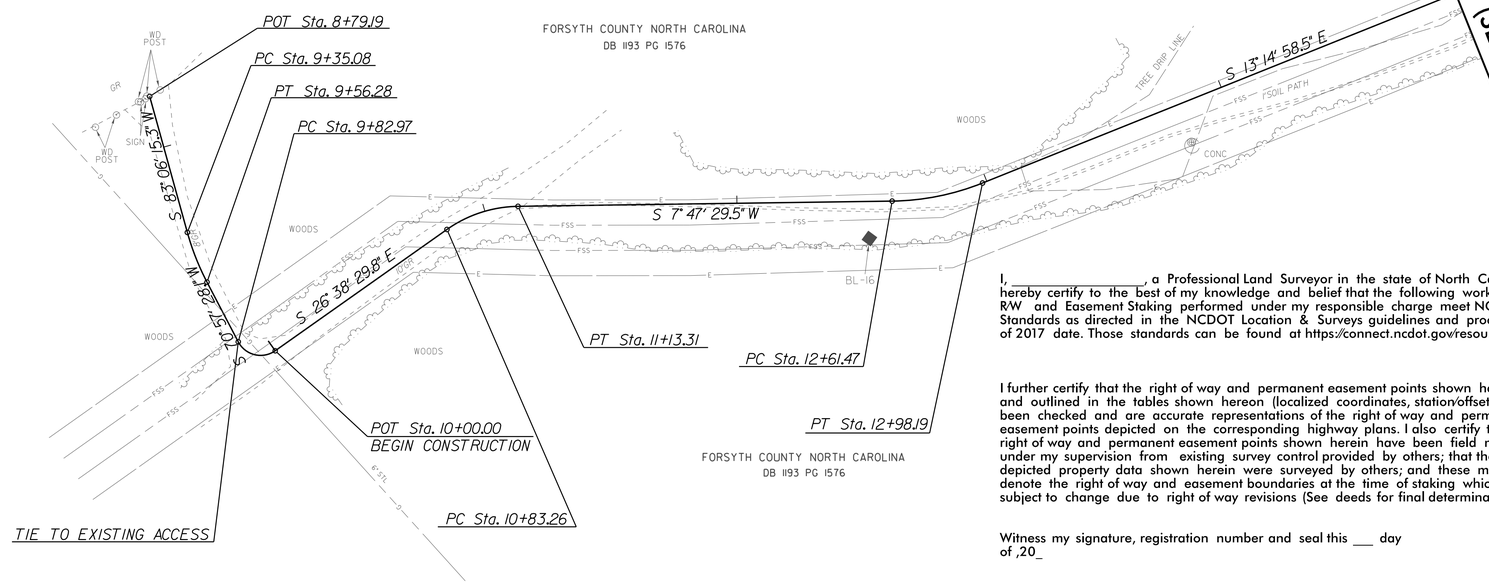
10-SEP-2018 11:15
CLEMMONS_Rdy_tsn_RW1.dgn
jessica.puszynski

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	RW-4

PROJECT SURVEYOR

-GWY-

PI Sta 9+45.72	PI Sta 9+94.39	PI Sta 10+98.75	PI Sta 12+80.04
△= 12° 08' 47.1" (LT)	△= 97° 35' 58.0" (LT)	△ = 34° 25' 59.3" (RT)	△ = 21° 02' 27.9" (LT)
D = 57° 17' 44.8"	D = 57° 27' 28.1"	D = 114° 35' 29.6"	D = 57° 17' 44.8"
L = 21.20'	L = 17.03'	L = 30.05'	L = 36.72'
T = 10.64'	T = 11.42'	T = 15.49'	T = 18.57'
R = 100.00'	R = 10.00'	R = 50.00'	R = 100.00'



MATCHLINE -GWY- STA 15+00.00 (SEE BELOW)

I, _____, 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 performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures as of 2017 date. 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 existing survey control provided by others; that the depicted property data shown herein were surveyed by others; 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).

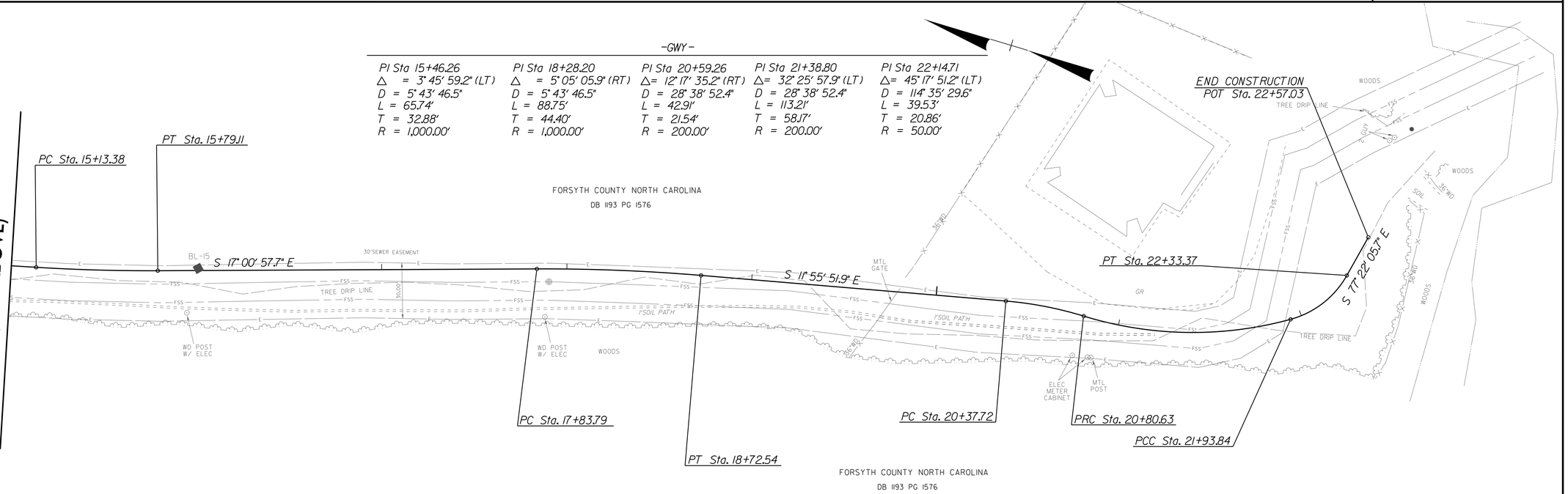
Witness my signature, registration number and seal this ___ day of ,20_

_____ Professional Land Surveyor

_____ PLS #

-GWY-

PI Sta 15+46.26	PI Sta 18+28.20	PI Sta 20+59.26	PI Sta 21+38.80	PI Sta 22+14.71
△ = 3° 45' 59.2" (LT)	△ = 5° 05' 05.9" (RT)	△= 12° 17' 35.2" (RT)	△= 32° 25' 57.9" (LT)	△= 45° 17' 51.2" (LT)
D = 5° 43' 46.5"	D = 5° 43' 46.5"	D = 28° 38' 52.4"	D = 28° 38' 52.4"	D = 114° 35' 29.6"
L = 65.74'	L = 88.75'	L = 42.91'	L = 113.21'	L = 39.53'
T = 32.88'	T = 44.40'	T = 21.54'	T = 58.17'	T = 20.86'
R = 1,000.00'	R = 1,000.00'	R = 200.00'	R = 200.00'	R = 50.00'



MATCHLINE -GWY- STA 15+00.00 (SEE ABOVE)

Notes
1) These right of way maps may be a compilation of work from several different sources and/or surveyors. Those individual components can be found electronically by selecting Project Data at: http://www.ndot.org/doh/preconstruction/highway/location/project
2) New Right of Way and Easements Subject to Change. Please refer to deeds for final determination

REVISIONS

10-SEP-2018 11:15
CLEMMONS Rdy_psh_RW4.dgn
jessica.puszynski

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	RW-5

PROJECT SURVEYOR

I, _____, 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 performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures as of 2017 date. Those standards can be found at https://connect.ncdot.gov/resources/Location/Pages/.

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Witness my signature, registration number and seal this ___ day of ,20_

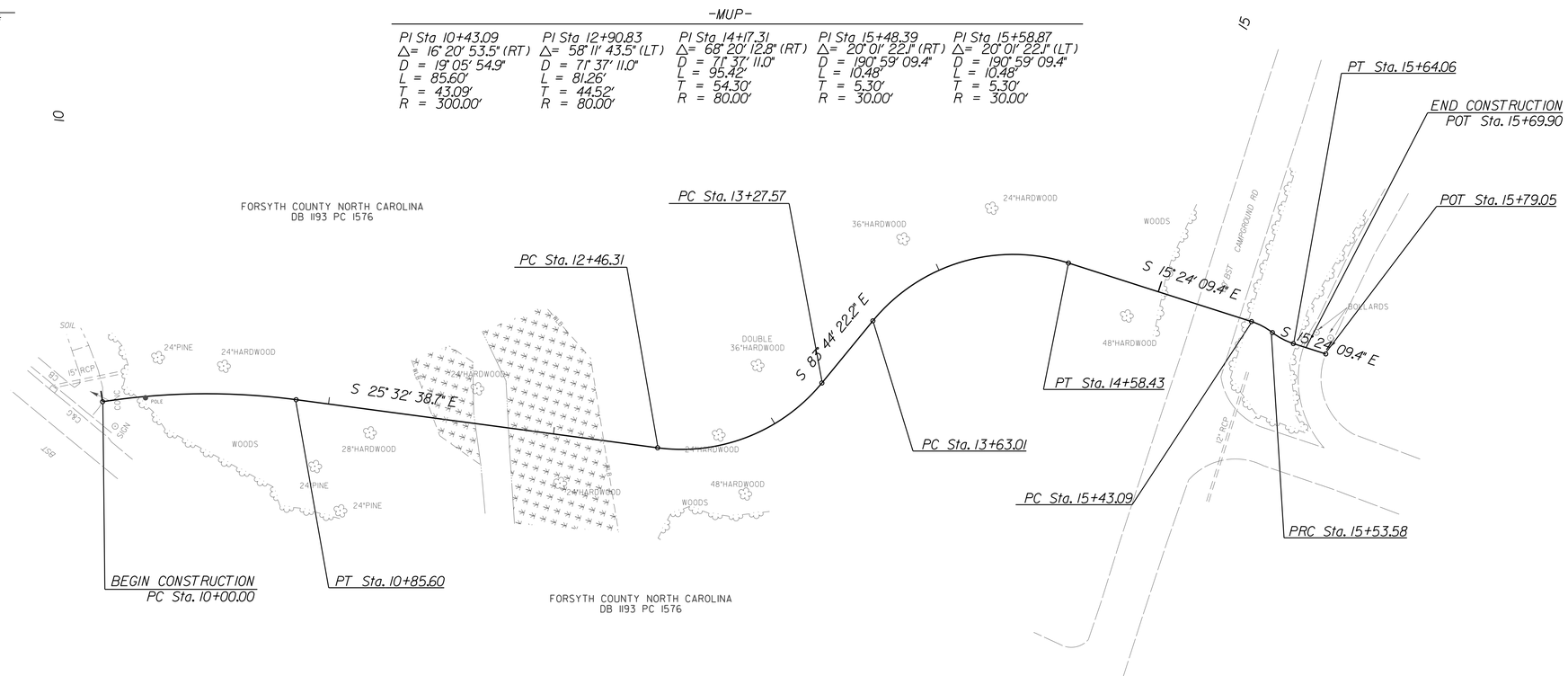
_____ Professional Land Surveyor

_____ PLS #

REVISIONS

-MUP-

PI Sta 10+43.09	PI Sta 12+90.83	PI Sta 14+17.31	PI Sta 15+48.39	PI Sta 15+58.87
△= 16° 20' 53.5" (RT)	△= 58° 11' 43.5" (LT)	△= 68° 20' 12.8" (RT)	△= 20° 01' 22.1" (RT)	△= 20° 01' 22.1" (LT)
D = 19° 05' 54.9"	D = 71° 37' 11.0"	D = 71° 37' 11.0"	D = 190° 59' 09.4"	D = 190° 59' 09.4"
L = 85.60'	L = 81.26'	L = 95.42'	L = 10.48'	L = 10.48'
T = 43.09'	T = 44.52'	T = 54.30'	T = 5.30'	T = 5.30'
R = 300.00'	R = 80.00'	R = 80.00'	R = 30.00'	R = 30.00'



Notes
1) These right of way maps may be a compilation of work from several different sources and/or surveyors. Those individual components can be found electronically by selecting Project Data at: http://www.ndot.org/doh/preconstruction/highway/location/project
2) New Right of Way and Easements Subject to Change. Please refer to deeds for final determination

10-SEP-2018 11:16
C:\LEMMONS\Rdu.psh_RW5.dgn
jessica.pulsz(psk1)

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	RW-6

PROJECT SURVEYOR

1

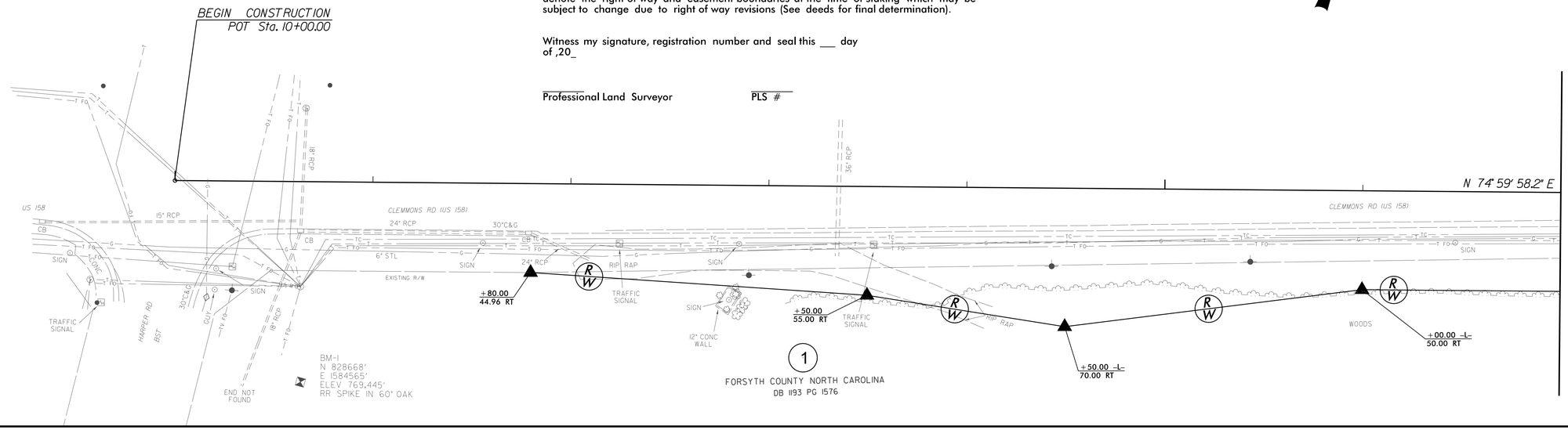
FORSYTH COUNTY NORTH CAROLINA
DB 1193 PG 1576

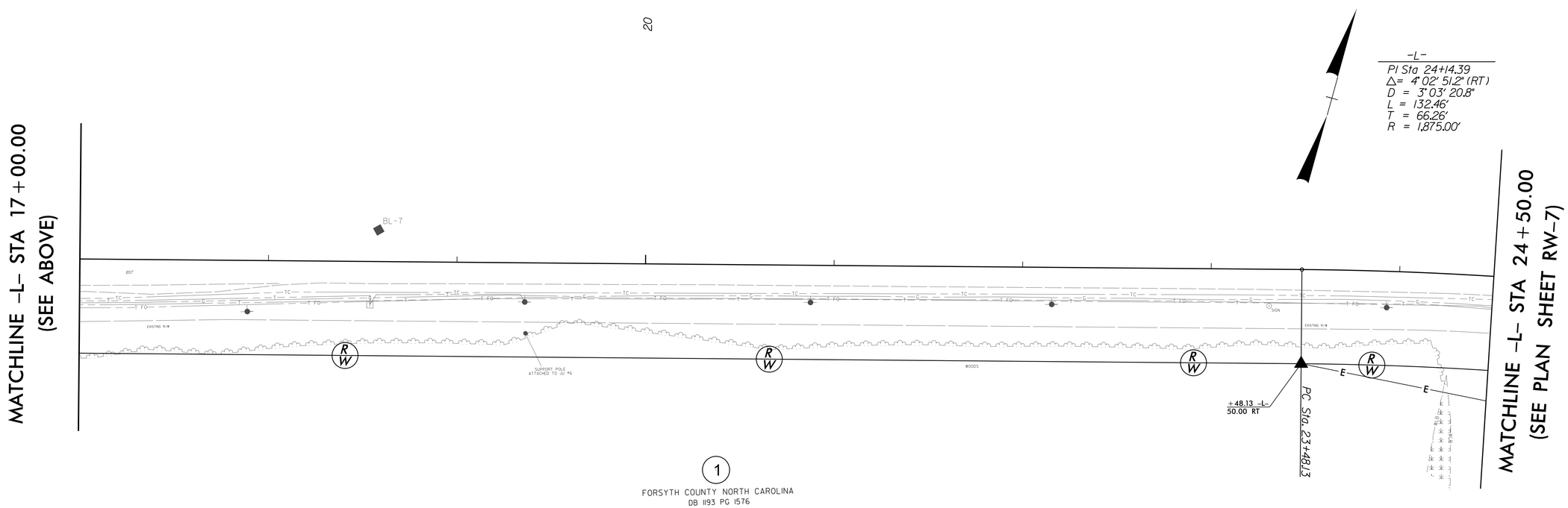
I, _____, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item R/W and Easement Staking performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures as of 2017 date. 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 existing survey control provided by others; that the depicted property data shown herein were surveyed by others; 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 ___ day of ,20_

_____ Professional Land Surveyor PLS #





Notes
1) These right of way maps may be a compilation of work from several different sources and/or surveyors. Those individual components can be found electronically by selecting Project Data at: http://www.ncdot.org/doh/preconstruction/highway/location/project
2) New Right of Way and Easements Subject to Change. Please refer to deeds for final determination

REVISIONS

10-SEP-2018 11:16
CLEMMONS Rdy.psh_RW6.dgn
jessica.puszynski

Notes
1) These right of way maps may be a compilation of work from several different sources and/or surveyors. Those individual components can be found electronically by selecting Project Data at: http://www.ncdot.org/doh/preconstruction/highway/location/project
2) New Right of Way and Easements Subject to Change. Please refer to deeds for final determination

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	RW-7

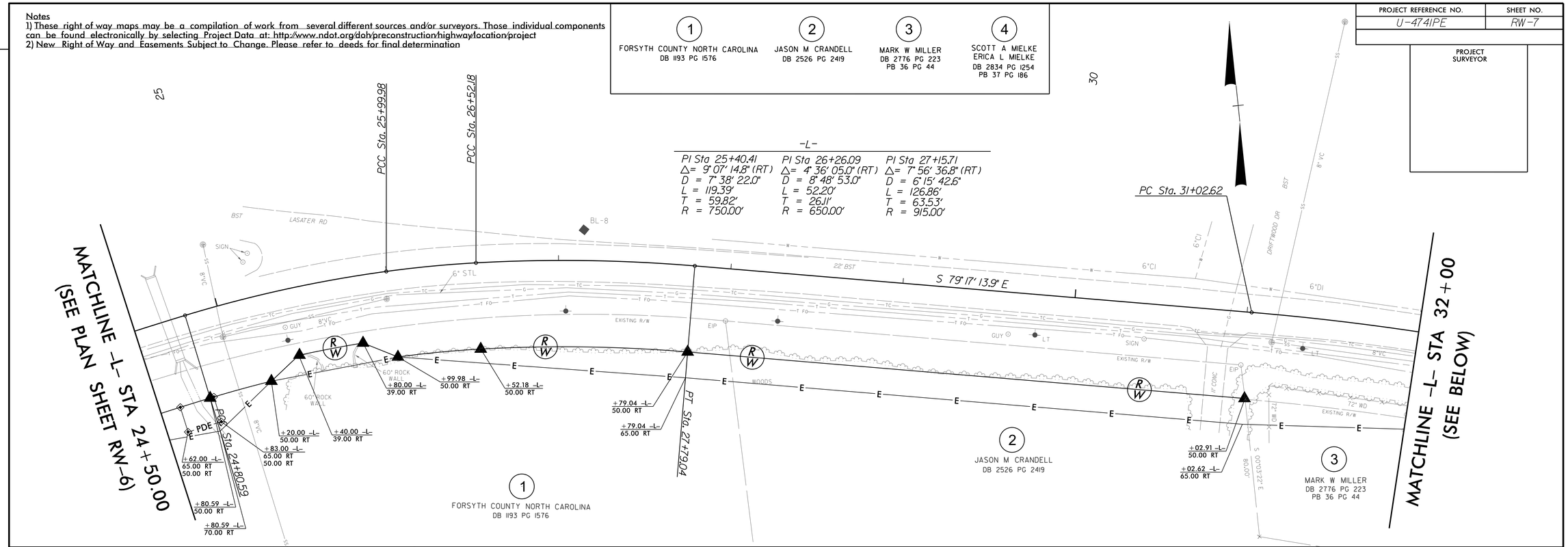
PROJECT SURVEYOR

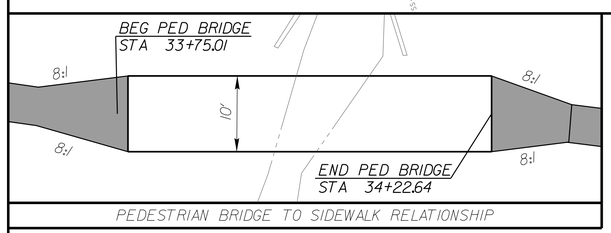
1 FORSYTH COUNTY NORTH CAROLINA DB 1193 PG 1576

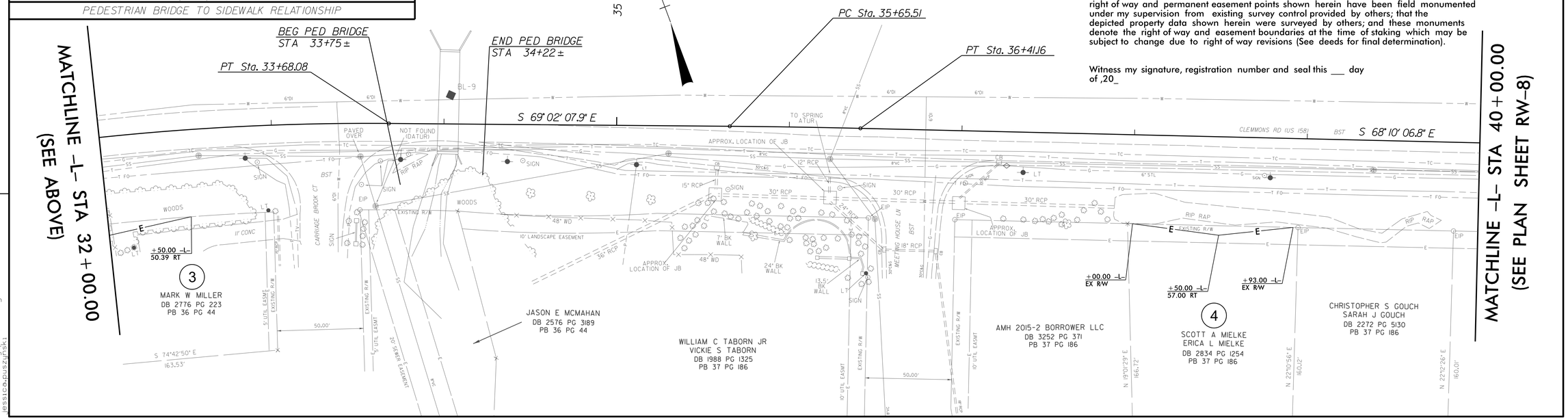
2 JASON M CRANDELL DB 2526 PG 2419

3 MARK W MILLER DB 2776 PG 223 PB 36 PG 44

4 SCOTT A MIELKE ERICA L MIELKE DB 2834 PG 1254 PB 37 PG 186







I, _____, 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 performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures as of 2017 date. Those standards can be found at https://connect.ncdot.gov/resources/Location/Pages/.

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Witness my signature, registration number and seal this ___ day of ,20_

REVISIONS

10-SEP-2018 11:16
CLEMMONS_Rdy_psh_RW7.dgn
(essica@pusz/PSK)

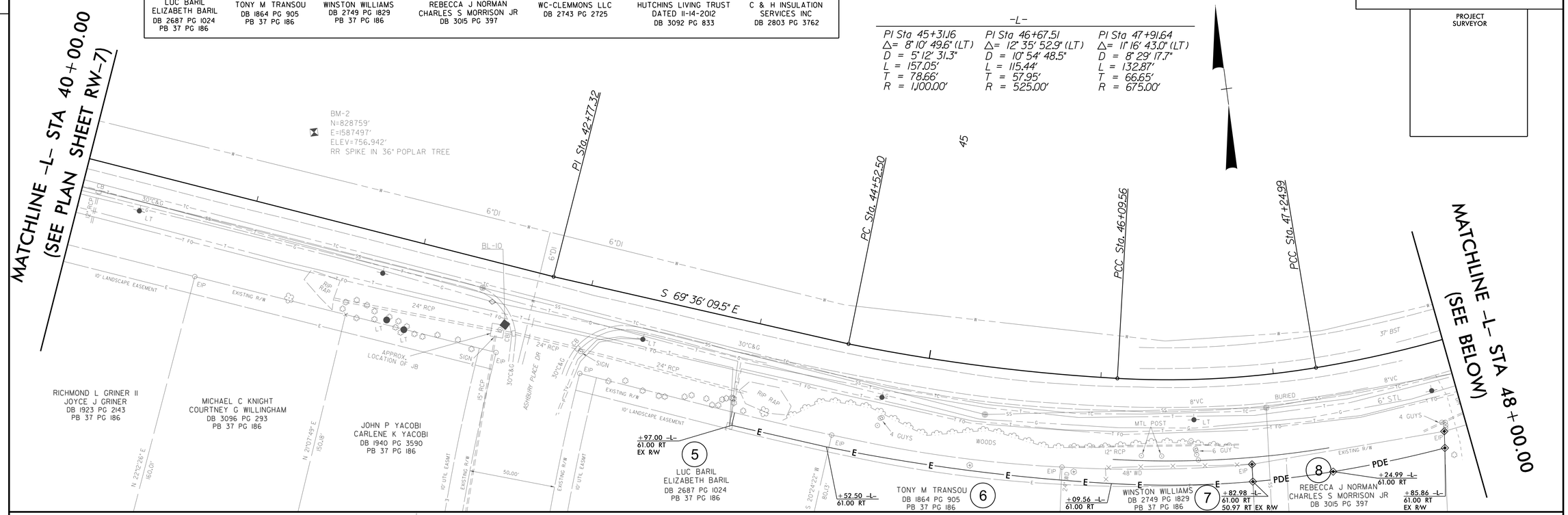
PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	RW-8

PROJECT SURVEYOR

5	6	7	8	9	10	11
LUC BARIL ELIZABETH BARIL DB 2687 PG 1024 PB 37 PG 186	TONY M TRANSOU DB 1864 PG 905 PB 37 PG 186	WINSTON WILLIAMS DB 2749 PG 1829 PB 37 PG 186	REBECCA J NORMAN CHARLES S MORRISON JR DB 3015 PG 397	WC-CLEMMONS LLC DB 2743 PG 2725	HUTCHINS LIVING TRUST DATED 11-14-2012 DB 3092 PG 833	C & H INSULATION SERVICES INC DB 2803 PG 3762

-L-

PI Sta 45+31.16	PI Sta 46+67.51	PI Sta 47+91.64
Δ= 8° 10' 49.6" (LT)	Δ= 12° 35' 52.9" (LT)	Δ= 11° 16' 43.0" (LT)
D = 5° 12' 31.3"	D = 10° 54' 48.5"	D = 8° 29' 17.7"
L = 157.05'	L = 115.44'	L = 132.87'
T = 78.66'	T = 57.95'	T = 66.65'
R = 1,100.00'	R = 525.00'	R = 675.00'



I, _____, 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 performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures as of 2017 date. Those standards can be found at https://connect.ncdot.gov/resources/Location/Pages/.

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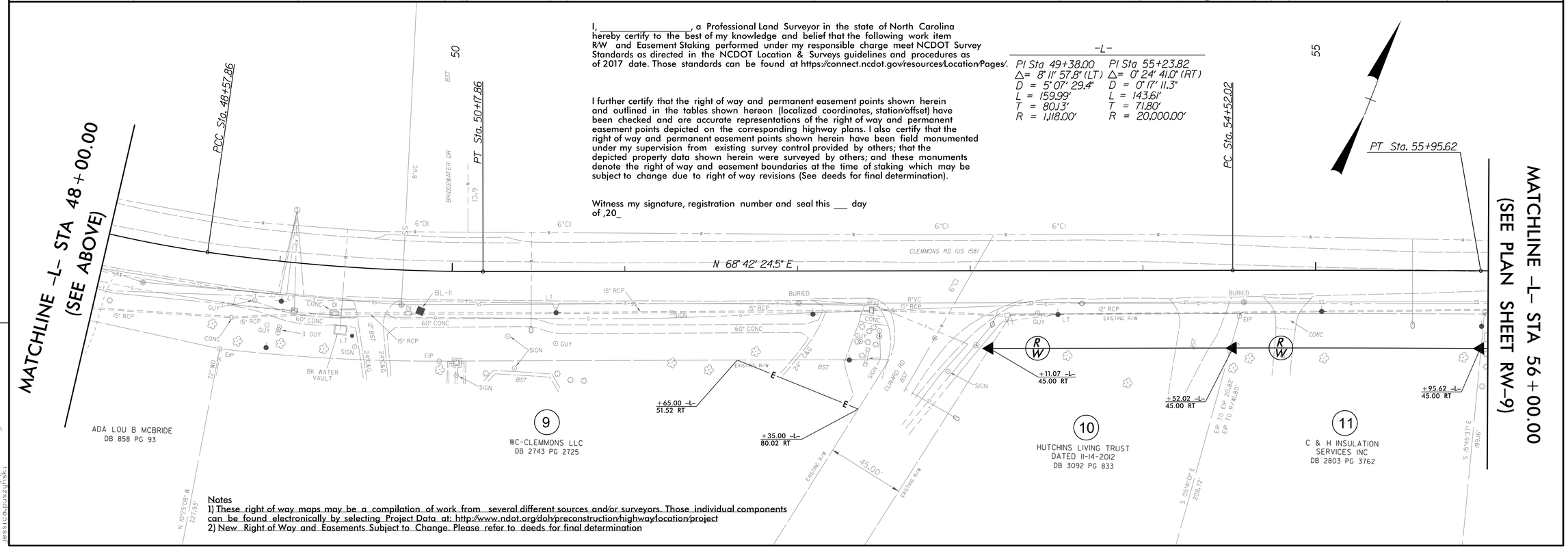
Witness my signature, registration number and seal this ___ day of ,20_

-L-

PI Sta 49+38.00	PI Sta 55+23.82
Δ= 8° 11' 57.8" (LT)	Δ= 0° 24' 41.0" (RT)
D = 5° 07' 29.4"	D = 0° 17' 11.3"
L = 159.99'	L = 143.61'
T = 80.13'	T = 71.80'
R = 1,118.00'	R = 20,000.00'



Notes
1) These right of way maps may be a compilation of work from several different sources and/or surveyors. Those individual components can be found electronically by selecting Project Data at: http://www.ndot.org/doh/preconstruction/highway/location/project
2) New Right of Way and Easements Subject to Change. Please refer to deeds for final determination

REVISIONS

10-SEP-2018 11:16
CLEMMONS Rdy.psh_RW8.dgn
jessica.puszynski

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	RW-9

PROJECT SURVEYOR

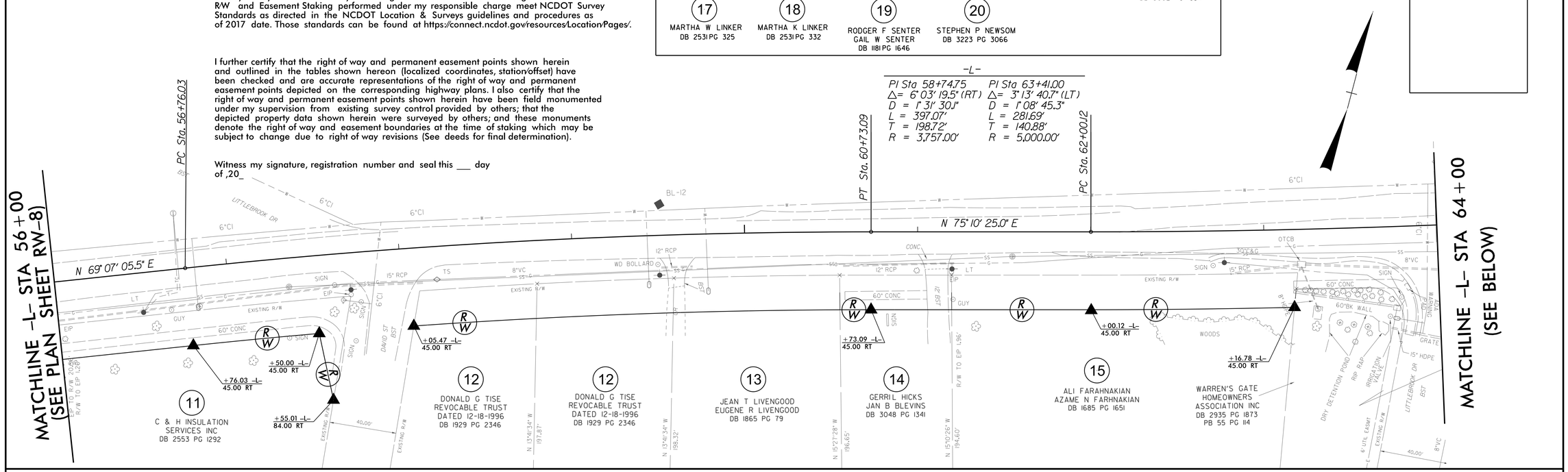
Notes
1) These right of way maps may be a compilation of work from several different sources and/or surveyors. Those individual components can be found electronically by selecting Project Data at: http://www.ncdot.org/doh/preconstruction/highway/location/project
2) New Right of Way and Easements Subject to Change. Please refer to deeds for final determination

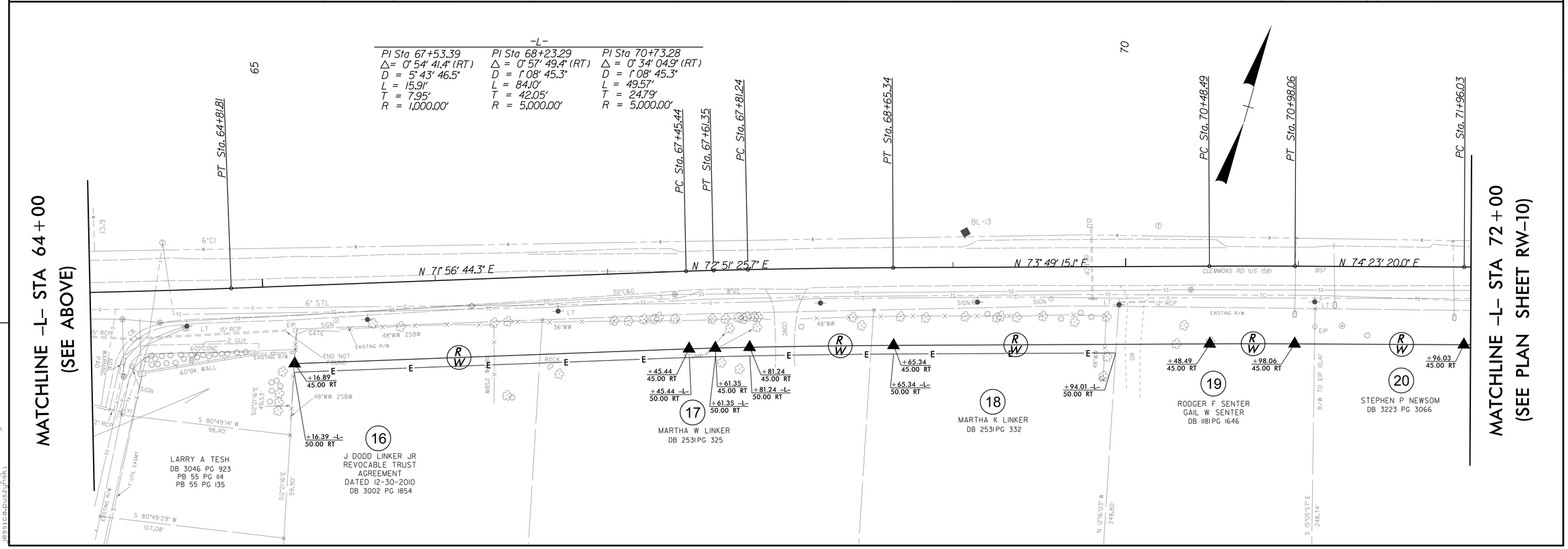
I, _____, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item R/W and Easement Staking performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures as of 2017 date. 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 existing survey control provided by others; that the depicted property data shown herein were surveyed by others; 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 ___ day of ,20_

11 C & H INSULATION SERVICES INC DB 2553 PG 1292	12 DONALD G TISE REVOCABLE TRUST DATED 12-18-1996 DB 1929 PG 2346	13 JEAN T LIVENGOOD EUGENE R LIVENGOOD DB 1865 PG 79	14 GERRIL HICKS JAN B BLEVINS DB 3048 PG 1341	15 ALI FARAHNAKIAN AZAME N FARHNAKIAN DB 1685 PG 1651	16 J DODD LINKER JR REVOCABLE TRUST AGREEMENT DATED 12-30-2010 DB 3002 PG 1854
17 MARTHA W LINKER DB 2531PG 325	18 MARTHA K LINKER DB 2531PG 332	19 RODGER F SENTER GAIL W SENTER DB 1181PG 1646	20 STEPHEN P NEWSOM DB 3223 PG 3066		





REVISIONS

10-SEP-2018 11:16
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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	RW-10

PROJECT SURVEYOR

Notes
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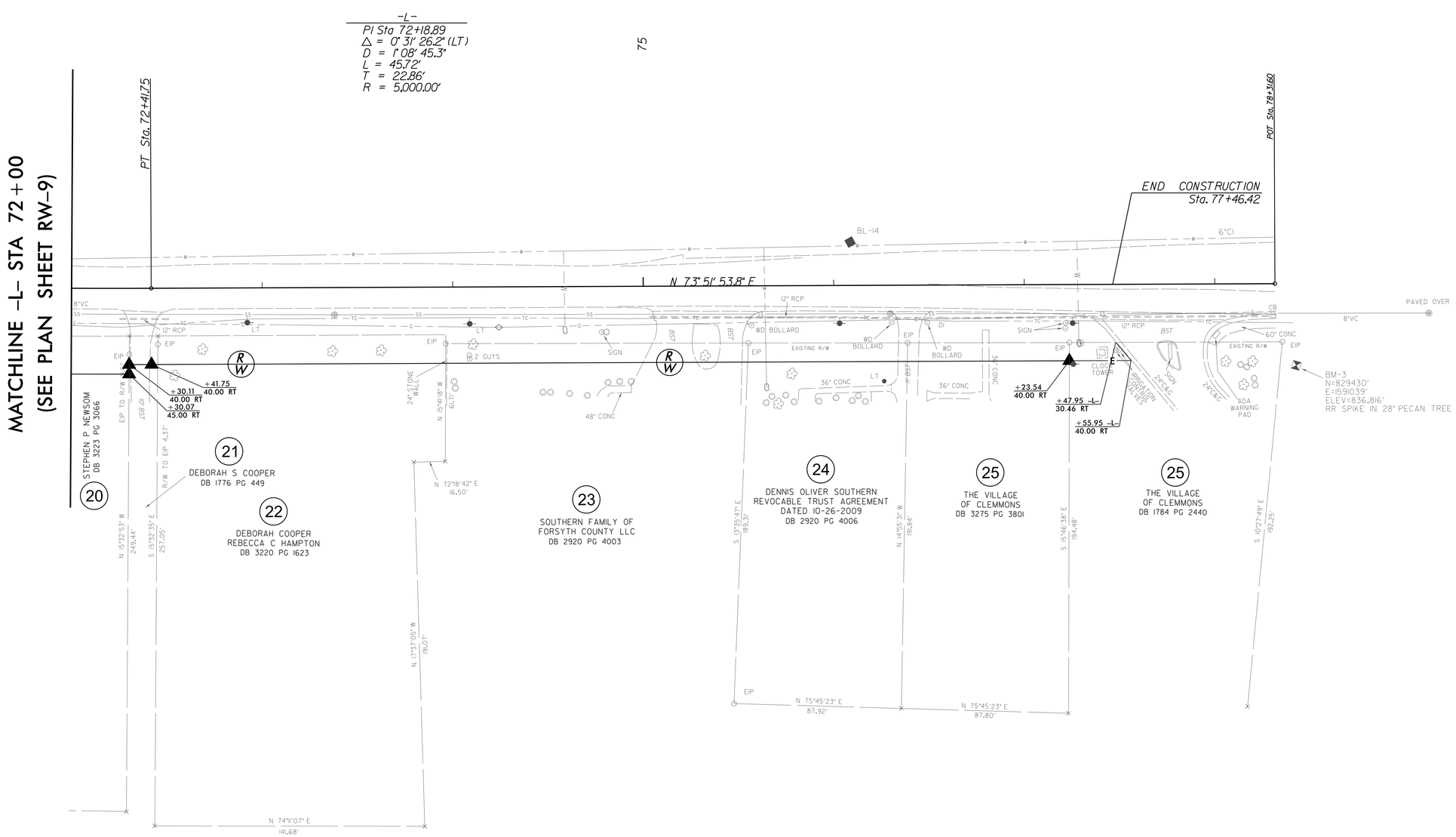
Witness my signature, registration number and seal this ___ day of ,20_

20 STEPHEN P NEWSOM DB 3223 PG 3066	21 DEBORAH S COOPER DB 1776 PG 449	22 DEBORAH COOPER REBECCA C HAMPTON DB 3220 PG 1623
23 SOUTHERN FAMILY OF FORSYTH COUNTY LLC DB 2920 PG 4003	24 DENNIS OLIVER SOUTHERN REVOCABLE TRUST AGREEMENT DATED 10-26-2009 DB 2920 PG 4006	25 THE VILLAGE OF CLEMMONS DB 3275 PG 3801



REVISIONS

10-SEP-2018 11:16
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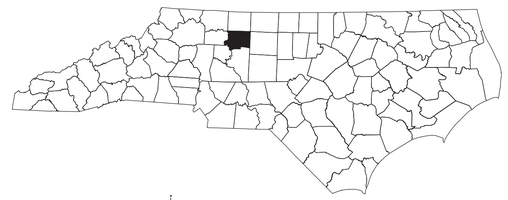
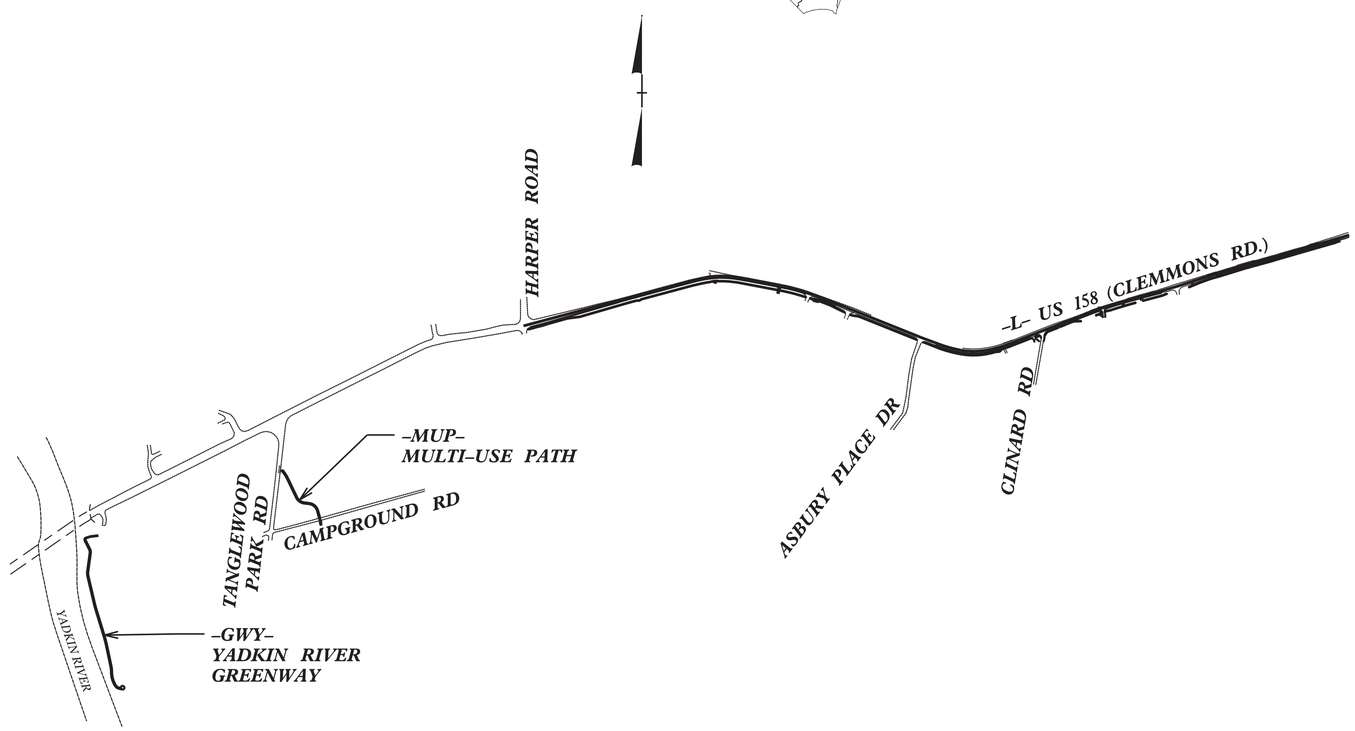
STATE OF NORTH CAROLINA
VILLAGE OF CLEMMONS

TRANSPORTATION MANAGEMENT PLAN

FORSYTH COUNTY





INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	TRANSPORTATION OPERATIONS PLAN:MANAGEMENT STRATEGIES AND GENERAL NOTES
TMP-1B	TRANSPORTATION OPERATIONS PLAN: PHASING

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANAUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMPS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS
1205.11	PAVEMENT MARKINGS - RAILROAD CROSSINGS
1205.12	PAVEMENT MARKINGS - BRIDGES
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

SHEET NO.
TMP–1

TIP PROJECT: U–4741PE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

B.W. JOHNSON, P.E. — TRAFFIC CONTROL PROJECT ENGINEER

J.S. BOURNE, P.E. — TRAFFIC CONTROL PROJECT DESIGN ENGINEER

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

Prepared in the Office of:
SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P–0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732–3883
(919) 732–6676 (FAX)

APPROVED:_____

DATE:_____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19680 ENGINEER J. STUART BOURNE

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PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	TMP-1A

TRAFFIC CONTROL DETAILS & NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSION IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES MONDAY THROUGH FRIDAY FROM 7 A.M. TO 9 A.M., AND 4 P.M. TO 6 P.M.
B) DO NOT CLOSE TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS.

HOLIDAY
1. FOR ANY UNEXPECTED OCCURANCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S BETWEEN THE HOURS OF 4:00 P.M. DECEMBER 31ST TO 9:00 A.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 A.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 4:00 P.M. THURSDAY AND 9:00 A.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY TO 9:00 A.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 4:00 P.M. THE DAY BEFORE INDEPENDENCE DAY, AND 9:00 A.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY AND 9:00 A.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 4:00 P.M. TUESDAY TO 9:00 A.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 4:00 P.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

LANE CLOSURE AND SHOULDER REQUIREMENTS

C) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED, OR AS DIRECTED BY THE ENGINEER.
D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

PAVEMENT EDGE DROP OFF REQUIREMENTS

F) BACKFILL, AT A SLOPE OF 6:1, UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP–OFF AS FOLLOWS:
   1. BACKFILL DROP–OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.
   2. BACKFILL DROP–OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.
   3. BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.
G) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8–11) 1000 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

SIGNING

H) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
I) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERNS.

PAVEMENT MARKINGS

J) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL ROADWAY SURFACES.
K) INSTALL TEMPORARY PAVEMENT MARKINGS ON INTERIM LAYERS OF PAVEMENT.
L) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
M) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS BY THE END OF EACH DAY'S OPERATION.

TRAFFIC PATTERN ALTERATIONS

N) NOTIFY THE ENGINEER TWENTY ONE CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATIONS.

NOTIFICATION AND COORDINATION OF OPERATIONS

O) PROVIDE THE TOWN A MINIMUM OF 48 HOUR NOTICE PRIOR TO BEGINNING WORK ON THE PROJECT INITIALLY AND PRIOR TO BEGINNING EACH PHASE OF CONSTRUCTION.
P) THE TOWN OR ITS REPRESENTATIVE WILL PROVIDE PRIMARY COORDINATION WITH ADJACENT BUSINESSES AND PROPERTY OWNERS.
Q) COMPLETE AN ACTIVE PHASE PRIOR TO BEGINNING A SUBSEQUENT PHASE.
R) CONDUCT ALL OPERATIONS IN A MANNER TO MINIMIZE IMPACTS TO BUSINESSES AND PROPERTIES.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

APPROVED:_____ DATE:_____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19680 ENGINEER J. STUART BOURNE

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

TRAFFIC CONTROL DETAILS AND NOTES

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PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	TMP-1B

PHASING

PHASE I

STEP 1:

ERECT WORK ZONE ADVANCED WARNING SIGNS IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 1101.01 SHEET 3 ON THE FOLLOWING ROADWAYS:
–L– US 158 (CLEMMONS ROAD)
CAMPGROUND ROAD

STEP 2:

BEGIN CONSTRUCTION OF GREENWAY ALONG YADKIN RIVER FROM STA –GWY– 10+00 TO STA –GWY– 22+57+/–

THE CONTRACTOR SHALL MAINTAIN ACCESS TO THE TANGLEWOOD AMPHITHEATER'S PARKING AREA AND CANOE LAUNCH /RAMP AT ALL TIMES DURING CONSTRUCTION.

BEGIN CONSTRUCTION OF MULTI–USE PATH FROM TANGLE PATH ROAD TO CAMPGROUND ROAD FROM STA –MUP– 10+00 TO STA –MUP– 15+69+/–

STEP 3:

USING ROADWAY STANDARD DRAWING 1101.02 SHEETS 1 AND 2, CLOSE THE WESTBOUND LANE AS NEEDED TO INSTALL PROPOSED DRAINAGE AND CONSTRUCT CURB AND GUTTER, CURB CUTS AND SIDEWALK ALONG US 158 (CLEMONS ROAD) WHILE MAINTAINING ACCESS TO RESIDENCES AND BUSINESSES AT ALL TIMES DURING CONSTRUCTION FROM STA –L– 10+00 TO STA –L– 77+46+/–

SEE LANE CLOSURE TIME RESTRICTIONS LISTED ON TMP SHEET 1A.

DO NOT DISTURB 60" ROCK WALL RIGHT OF –L– LINE AT APPROXIMATE STA 25+40+/– ACROSS FROM THE LASTER ROAD INTERSECTION.

AT THE END OF EACH WORK DAY, USE DRUMS /SKINNY DRUMS TO DELINEATE THE WORK AREA AND RETURN TRAFFIC TO A TWO–LANE TWO–WAY TRAFFIC PATTERN.

SEE "PAVEMENT DROP OFF EDGE REQUIREMENTS" ON TMP SHEET 1A.

PHASE II

STEP 1:

USING ROADWAY STANDARD DRAWING 1101.02 SHEET 1, REMOVE ALL CONFLICTING PAVEMENT MARKINGS AND COMPLETE FINAL MILLING AND PAVING. PLACE PROPOSED FINAL PAVEMENT MARKINGS IN ACCORDANCE WITH PLANS.

STEP 2:

COMPLETE CONSTRUCTION OF GREENWAY ALONG YADKIN RIVER FROM STA –GWY– 10+00 TO STA –GWY– 22+57+/– BEGAN IN PHASE I.

THE CONTRACTOR SHALL MAINTAIN ACCESS TO THE TANGLEWOOD AMPHITHEATER*S PARKING AREA AND CANOE LAUNCH /RAMP AT ALL TIMES DURING CONSTRUCTION.

COMPLETE CONSTRUCTION OF MULTI–USE PATH FROM TANGLE PATH ROAD TO CAMPGROUND ROAD FROM STA –MUP– 10+00 TO STA –MUP– 15+69+/– BEGAN IN PHASE I.

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APPROVED:_____ DATE:_____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19680 ENGINEER J. STUART BOURNE

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

TRAFFIC CONTROL
PHASING

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TIP PROJECT: U-4741PE

CONTRACT:

STATE OF NORTH CAROLINA
VILLAGE OF CLEMMONS

FORSYTH COUNTY

TIP NO.	SHEET NO.
U-4741PE	PMP-1

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

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LOCATION: ALONG US 158 (CLEMMONS RD.) AND ALONG YADKIN RIVER IN THE VILLAGE OF CLEMMONS.

TYPE OF WORK: GRADING, DRAINAGE, SIDEWALKS & GREENWAY.

GENERAL PAVEMENT MARKING NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

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

ROAD NAME	MARKING
CAMPGROUND RD.	PAINT
HARPER RD.	PAINT

TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

SEE ROADWAY PLANS FOR ALTERNATE CURB RAMP DESIGNS FOR TYPE I CURB RAMP.

SUMMARY OF PAVEMENT QUANTITIES

SYMBOL	DESCRIPTION	QUANTITY
P2	WHITE STOPBAR (24")	65 LF
P3	WHITE CROSSWALK LINE (24")	100 LF
PQ	WHITE CROSSWALK LINE (8")	410 LF
	REMOVAL OF PAVEMENT MARKING LINES (4")	30 LF
	REMOVAL OF PAVEMENT MARKING LINES (24")	45 LF

GENERAL SIGNING NOTES

WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER.

WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.

THE BACKGROUND FOR TYPE E SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.

SUMMARY OF SIGNING QUANTITIES

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT
4025000000	901	CONTRACTOR FURNISHED, TYPE E SIGN	18	SF
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL (X-BRACING)	24	LF
4102000000	904	SIGN ERECTION, TYPE E	2	EA

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 2012 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
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALK

CURB RAMP LOCATIONS

STATIONS	CURB RAMP TYPE
-L- STA. 10+28+/-	STANDARD
-L- STA. 36+45+/-	TYPE 1
-L- STA. 36+90+/-	TYPE 1
-L- STA. 42+56+/-	TYPE 1
-L- STA. 43+09+/-	TYPE 1
-L- STA. 51+77+/-	TYPE 1
-L- STA. 52+16+/-	TYPE 1
-L- STA. 52+50+/-	TYPE 1
-L- STA. 52+98+/-	STANDARD
-L- STA. 57+77+/-	STANDARD
-L- STA. 58+05+/-	STANDARD
-L- STA. 77+44+/-	TYPE 1

Prepared in the Office of:

SUMMIT DESIGN AND ENGINEERING SERVICES

NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

TRACY N. PARROTT, PE — *PROJECT ENGINEER*

BRANDON W. JOHNSON, PE — *PROJECT DESIGN ENGINEER*

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

INDEX

PMP-1	PAVEMENT MARKING PLAN TITLE AND SCHEDULE SHEET
PMP-2	CROSSWALK PAVEMENT MARKING GUIDANCE DETAIL
PMP-3-4	PAVEMENT MARKING DETAIL SHEETS

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TIP NO.	SHEET NO.
U-4741PE	PMP-2

APPROVED:

DATE:

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES NC FIRM LICENSE No: P-0339 504 Meadowlands Drive Hillsborough, NC 27278 (919) 732-3883 ~ (919) 732-6676 (FAX)

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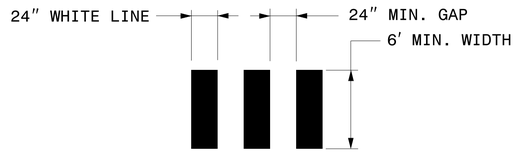
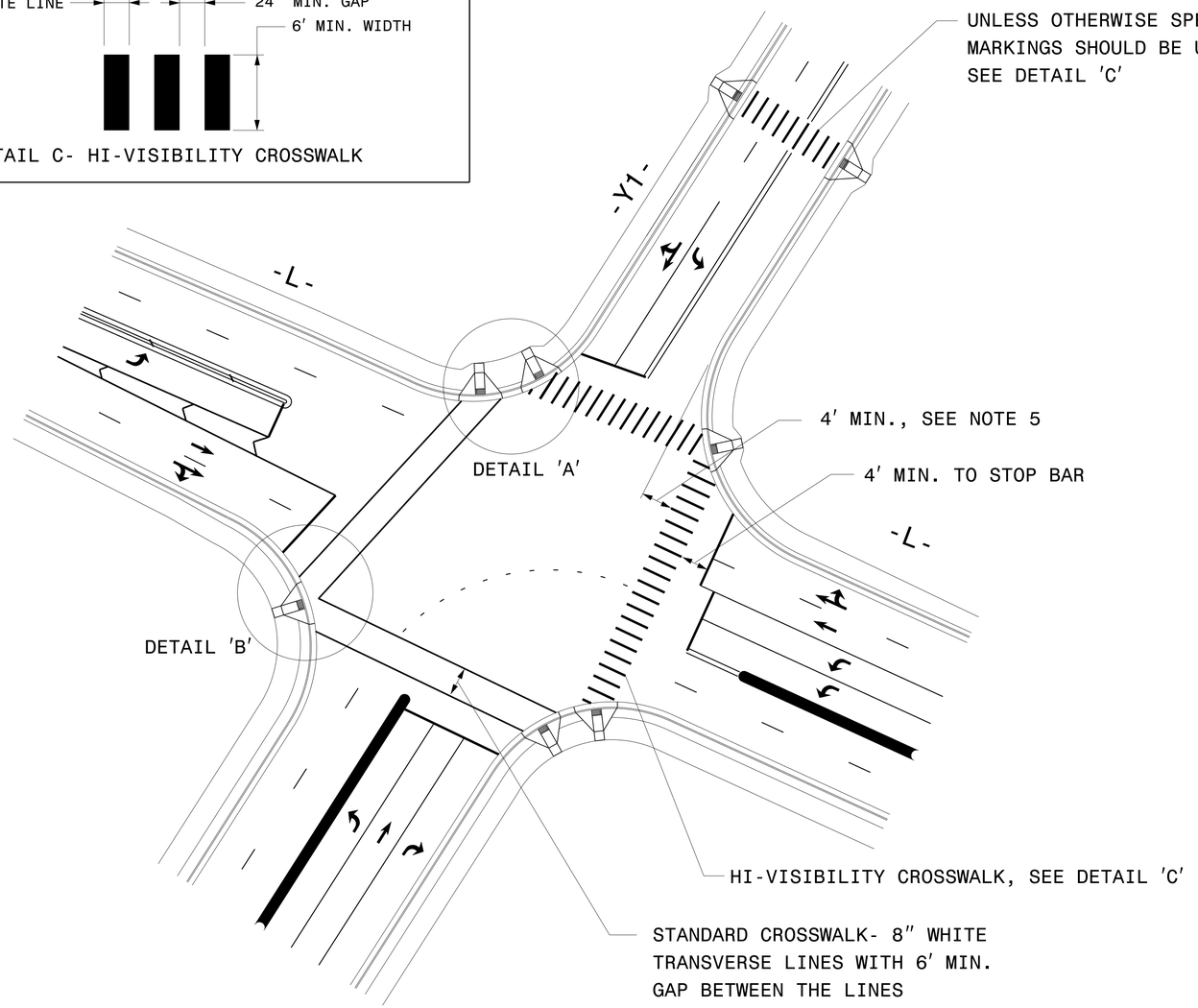
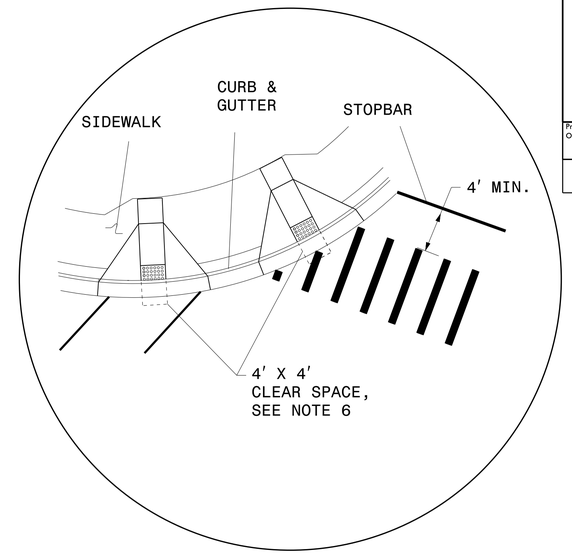
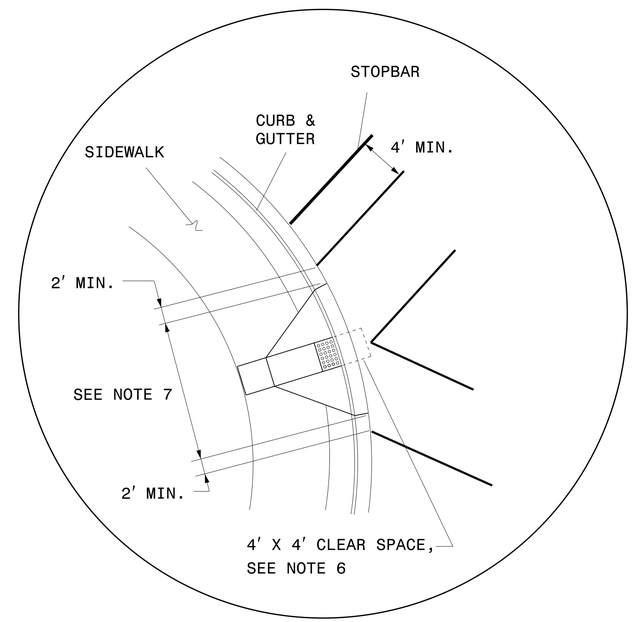


DETAIL C- HI-VISIBILITY CROSSWALK





DETAIL 'A'- DUAL CURB RAMPS



DETAIL 'B'- SINGLE DIAGONAL CURB RAMP

NOTES:

1. USE THE DETAILS ABOVE AND THE FOLLOWING NOTES FOR GUIDANCE IN PLACING CROSSWALK MARKINGS. REFER TO NCDOT ROADWAY STANDARD DRAWINGS, MUTCD AND ADA STANDARDS FOR ADDITIONAL GUIDANCE.
2. THE LOCATION AND TYPE OF CROSSWALK MARKINGS SHOWN ON THE ABOVE DETAILS ARE FOR REFERENCE ONLY. LOCATE CROSSWALK MARKINGS AS SHOWN ON THE PROJECT DETAIL SHEETS OR AS DIRECTED BY THE ENGINEER. THE CROSSWALK MARKING TYPE, STANDARD OR HI-VISIBILITY, SHALL BE INSTALLED AS SPECIFIED ON THE PROJECT DETAIL SHEETS OR AS DIRECTED BY THE ENGINEER.
3. THE STANDARD CROSSWALK IS TWO WHITE 8" TRANSVERSE LINES WITH A 6' MINIMUM GAP BETWEEN THE LINES. THE HI-VISIBILITY CROSSWALK IS WHITE 24" WIDE LONGITUDAL LINES WITH 24" MINIMUM GAPS BETWEEN LINES, SEE DETAIL 'C'. HI-VISIBILITY CROSSWALKS SHOULD BE A MINIMUM OF 6' WIDE.
4. STOP BARS SHOULD BE PLACED A MINIMUM OF 4' IN ADVANCE OF NEAREST CROSSWALK LINE.
5. SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL IS 4' MIN.
6. BEYOND THE BOTTOM GRADE BREAK, A CLEAR SPACE OF 4' X 4' MINIMUM SHALL BE PROVIDED WITHIN THE MARKINGS.
7. SINGLE DIAGONAL CURB RAMPS WITH FLARED SIDES SHALL HAVE A SEGMENT OF CURB 2 FEET LONG MINIMUM LOCATED ON EACH SIDE OF THE CURB RAMP AND WITHIN THE MARKED CROSSING, SEE DETAIL 'B'.
8. CURB RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE TO THE LATEST NCDOT ROADWAY STANDARD DRAWINGS.

CROSSWALK PAVEMENT MARKING GUIDANCE DETAIL

12-SEP-2018 13:57
Clemmons_RDY_pmp_02_Crosswalk Guidance Detail.dgn
spencer.merritt

8/8/16

TIP NO.	SHEET NO.
U-4741PE	PMP-3

APPROVED: _____

DATE: _____

SEAL

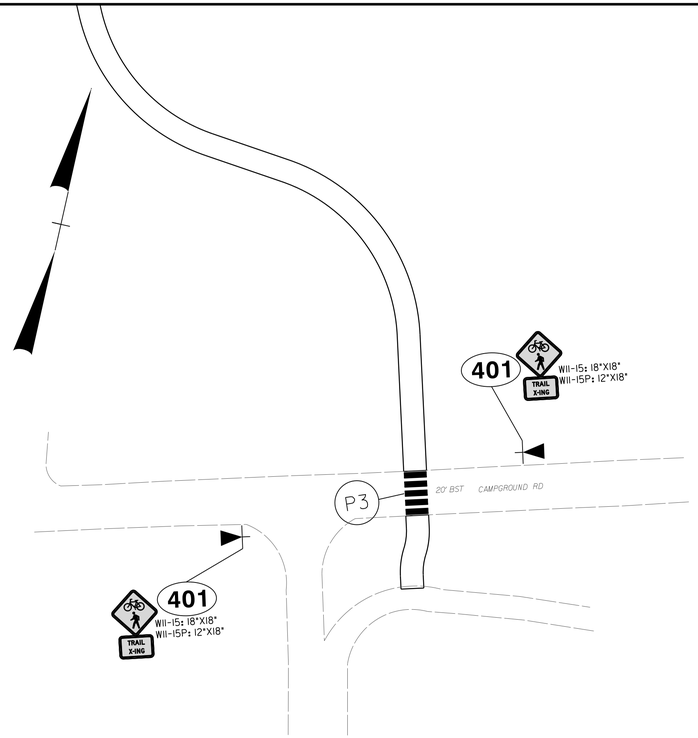
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

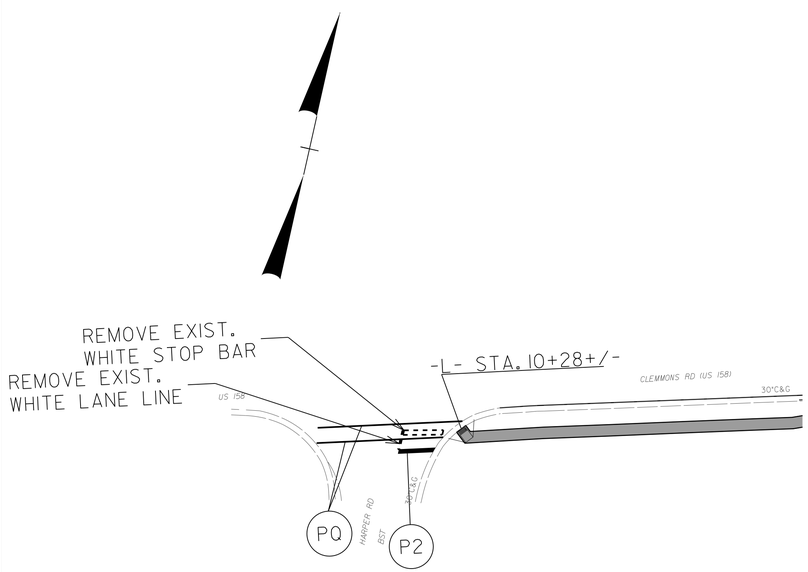
Prepared in the Office of:

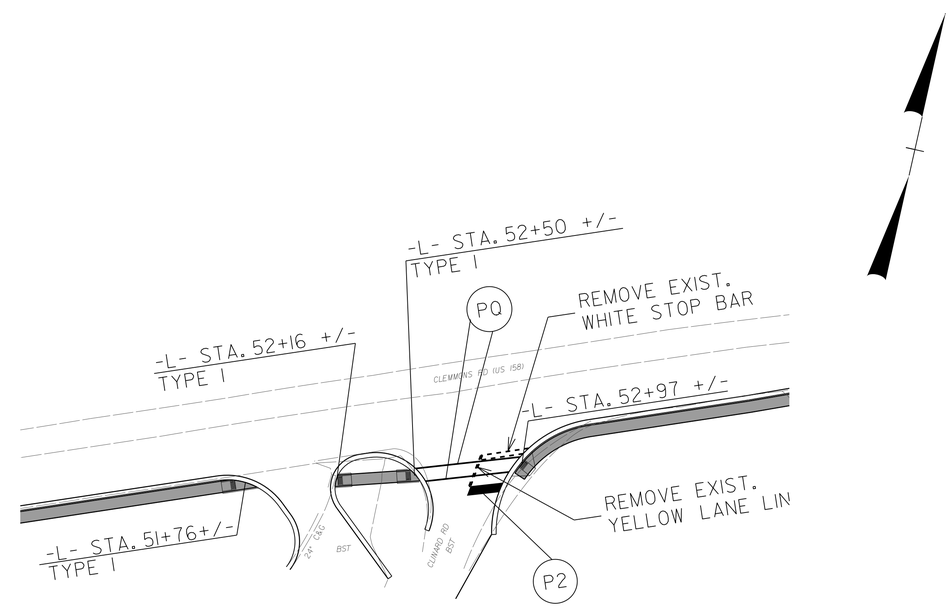
SUMMIT DESIGN AND ENGINEERING SERVICES

NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED







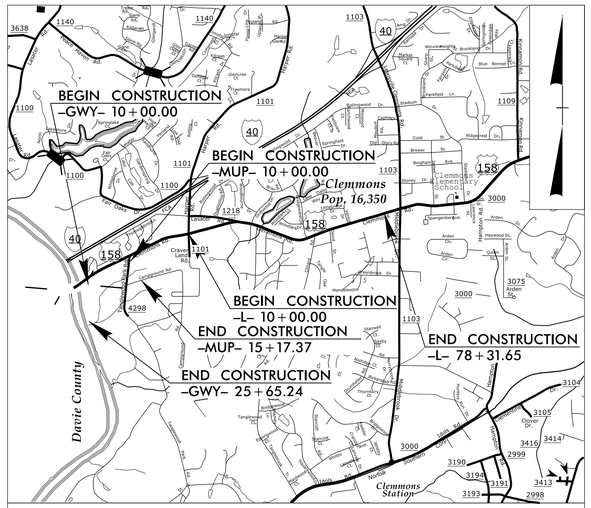
12-SEP-2018 13:58
Clemmons_Rdy_pmp_03.dgn
spencer.merritt

STATE	PROJECT REFERENCE NO.
N.C.	U-4741PE

TIP PROJECT: U-4741PE

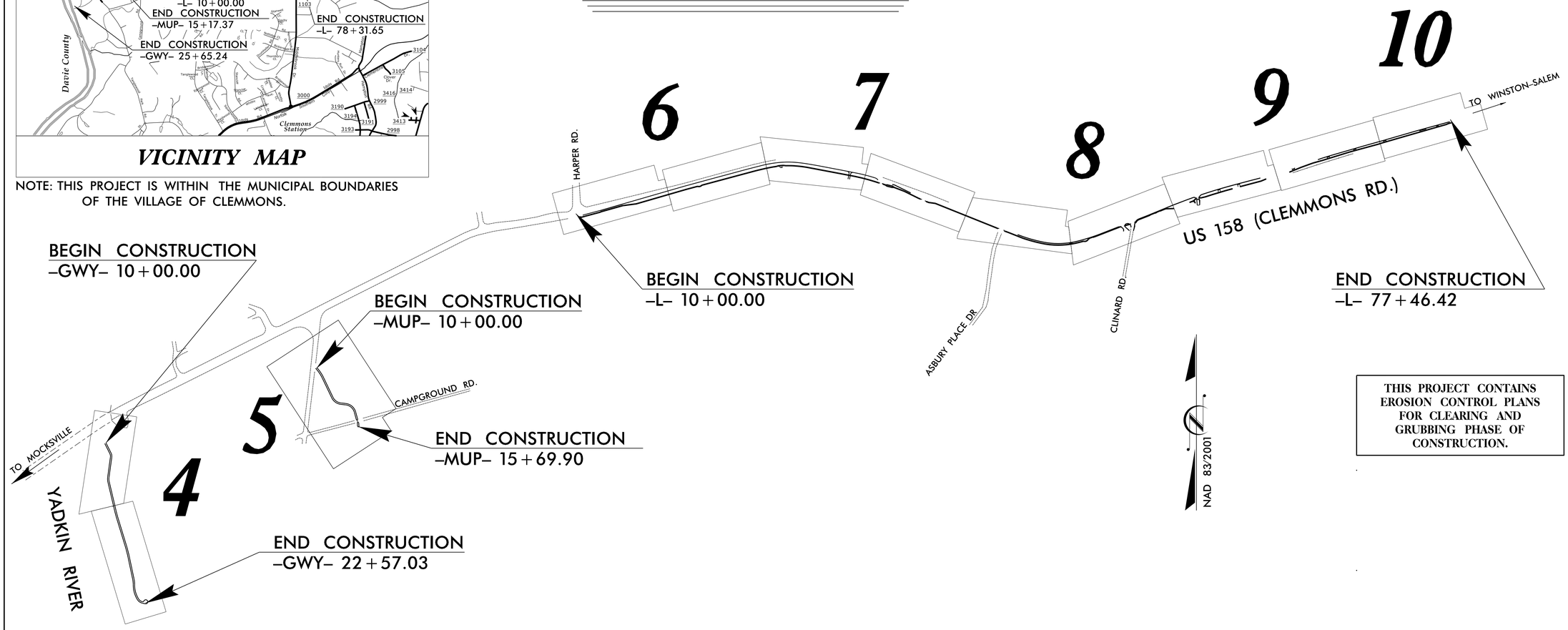
STATE OF NORTH CAROLINA
VILLAGE OF CLEMMONS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL



VICINITY MAP

NOTE: THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE VILLAGE OF CLEMMONS.



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

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 1, 2016 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

GRAPHIC SCALES

30 15 0 30 60
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

20 5 0 10 20
PROFILE (VERTICAL)

PROJECT LENGTH

LENGTH GREENWAY PROJECT = 0.296 MILES

LENGTH MULT-USE PATH PROJECT = 0.098 MILES

LENGTH SIDEWALK PROJECT = 1.294 MILES

MEGAN LEDBETTER
VILLAGE OF CLEMMONS CONTACT

BRETT ABERNATHY, PE, PLS
NCDOT CONTACT

Reviewed in the Office of:

NCDEQ
450 Hanes Mill Rd., Ste. 300
Winston-Salem, NC 27105

Reviewed by:

Prepared in the Office of:

SUMMIT
DESIGN AND ENGINEERING SERVICES
FIRM NO. P-0339

504 Meadowland Drive
Hillsborough, NC 27278-8551
Voice: (919) 732-3883
Fax: (919) 732-6776
www.summitde.net

Designed by:

Jessica Puszynski, EI — *4073*
NAME — *LEVEL III CERTIFICATION NO.*

12-SEP-2018 15:53
CLEMMONS_EEC_tsh.dgn
spencer.morris

PROJECT NO.	SHEET NO.
U-4741PE	EC-01

SCALE: 1" = 30'

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES — NC FIRM LICENSE No: P-0339, 504 Meadowlands Drive, Hillsborough, NC 27278, (919) 732-3883, (919) 732-6676 (FAX)

SOIL STABILIZATION TIMEFRAMES

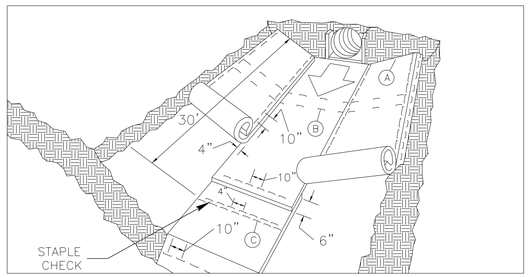
SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS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

LEGEND

Description	Symbol
Limits of Disturbance	LOD
Temporary Silt Ditch	TSD
Standard Temporary Silt Fence	
Special Sediment Control Fence	
Rock Check Dam Type B	
Coir Fiber Wattle	
Pipe Inlet Sediment Trap	
Rock Inlet Sediment Trap	
Compost Inlet Sock	

PROPOSED DISTURBED AREA	=	4.6 AC
PROPOSED IMPERVIOUS AREA	=	– 1.1 AC
PROPOSED GRASSED AREA	=	3.5 AC

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

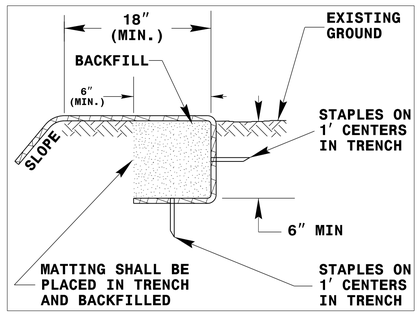
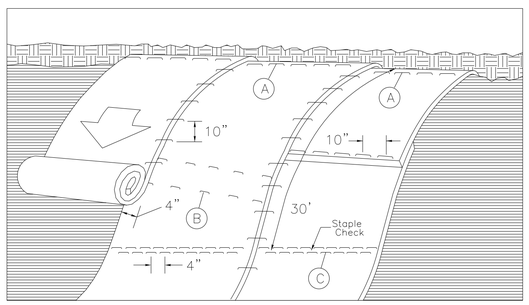


DIAGRAM (A)



MATTING ON SLOPES

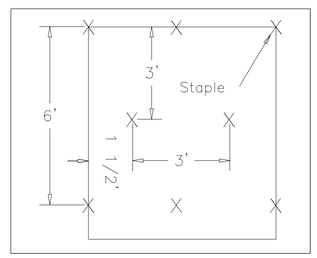


DIAGRAM (B)

Staple Check Pattern

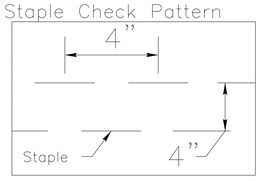


DIAGRAM (C)

NOTES:

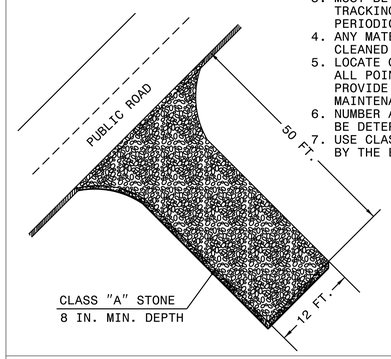
THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

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

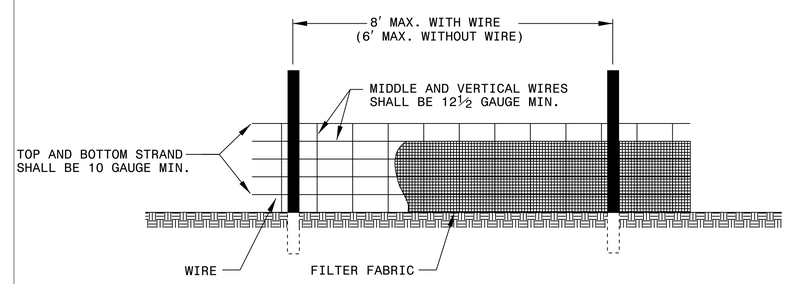
GRAVEL CONSTRUCTION ENTRANCE

NOTES:
1. PROVIDE TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS.
2. LOCATE ENTRANCE(S) TO PROVIDE FOR UTILIZATION BY ALL CONSTRUCTION VEHICLES.
3. MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOPDRESSING WITH STONE WILL BE NECESSARY.
4. ANY MATERIAL TRACKED ONTO THE ROADWAY MUST BE CLEANED UP IMMEDIATELY.
5. LOCATE GRAVEL CONSTRUCTION ENTRANCE AT ALL POINTS OF INGRESS AND EGRESS UNTIL SITE IS STABILIZED. PROVIDE FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE.
6. NUMBER AND LOCATION OF CONSTRUCTION ENTRANCES TO BE DETERMINED BY THE ENGINEER.
7. USE CLASS 'A' STONE OR OTHER COARSE AGGREGATE APPROVED BY THE ENGINEER.

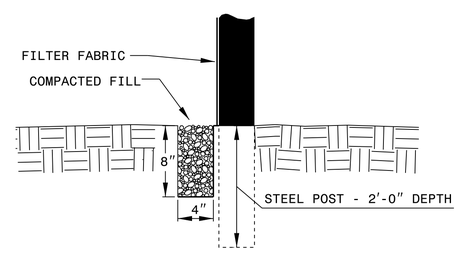


NOTE: PLACE FILTER FABRIC BENEATH STONE

TEMPORARY SILT FENCE

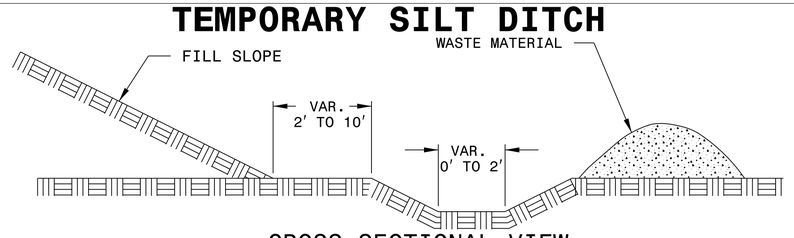


NOTES
USE WIRE A MINIMUM OF 32" IN WIDTH AND WITH A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.
USE FILTER FABRIC A MINIMUM OF 36" IN WIDTH AND FASTEN ADEQUATELY TO THE WIRE AS DIRECTED BY THE ENGINEER.
PROVIDE 5'-0" STEEL POST OF THE SELF-FASTENER ANGLE STEEL TYPE.



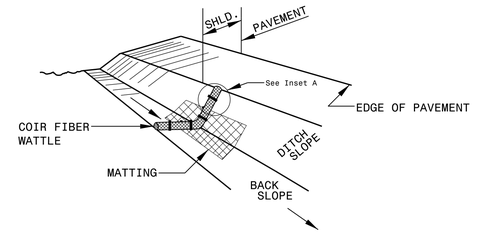
EXTENSION OF FABRIC AND WIRE INTO TRENCH

TEMPORARY SILT DITCH

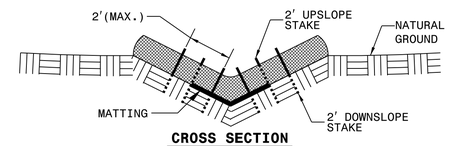


CROSS SECTIONAL VIEW

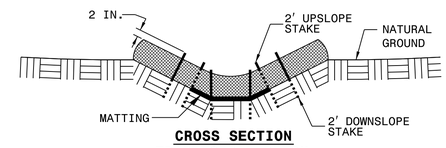
COIR FIBER WATTLE DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

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

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

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

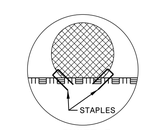
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

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

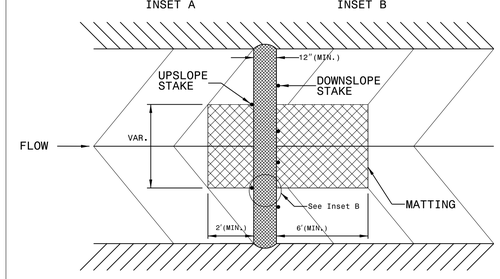
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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

INSET A



INSET B



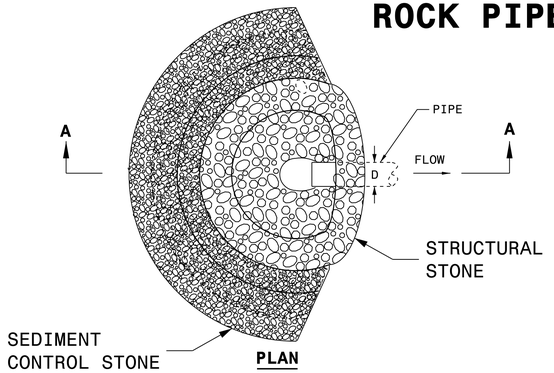
TOP VIEW

PROJECT NO.	SHEET NO.
U-4741PE	EC-02

SCALE: 1" = 30'

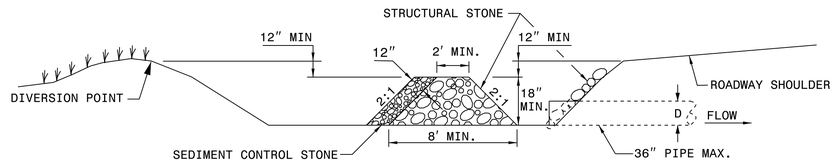
Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

ROCK PIPE INLET SEDIMENT TRAP TYPE 'A'



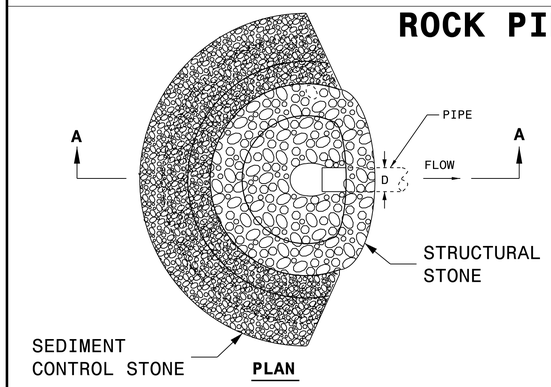
PLAN

NOTE:
USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.
CONSTRUCT TOP OF BERM A MINIMUM OF ONE FOOT BELOW THE SHOULDER OR DIVERSION POINT.
PROVIDE A TOTAL SEDIMENT TRAP VOLUME OF 1800± CUBIC FEET PER ACRE OF DISTURBED AREA. SOME OF THE REQUIRED VOLUME MAY BE PROVIDED BY UP OR DOWNSTREAM CONTROLS.



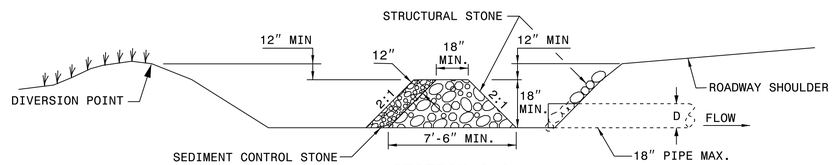
SECTION A-A

ROCK PIPE INLET SEDIMENT TRAP TYPE 'B'



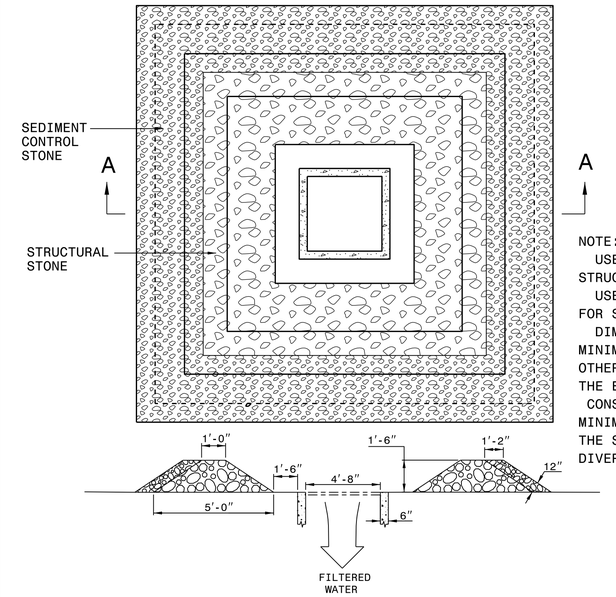
PLAN

NOTE:
USE CLASS 'A' EROSION CONTROL STONE FOR STRUCTURAL STONE.
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL.
CONSTRUCT TOP OF BERM A MINIMUM OF ONE FOOT BELOW THE SHOULDER OR DIVERSION POINT.
PROVIDE A TOTAL SEDIMENT TRAP VOLUME OF 1800± CUBIC FEET PER ACRE OF DISTURBED AREA. SOME OF THE REQUIRED VOLUME MAY BE PROVIDED BY OTHER UP OR DOWNSTREAM CONTROLS.



SECTION A-A

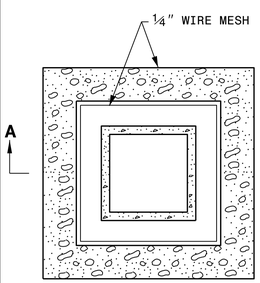
ROCK INLET SEDIMENT TRAP TYPE 'B'

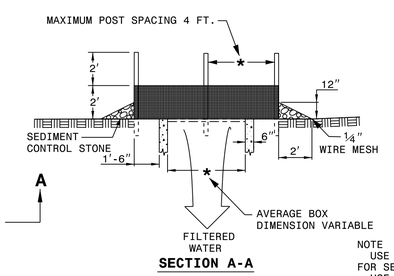


SECTION A-A

NOTE:
USE CLASS 'A' STONE FOR STRUCTURAL STONE.
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL.
DIMENSIONS SHOWN ARE MINIMUM ACCEPTABLE UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
CONSTRUCT TOP OF BERM A MINIMUM OF ONE FOOT BELOW THE SHOULDER OR ANY DIVERSION POINT.

ROCK INLET SEDIMENT TRAP TYPE 'C'

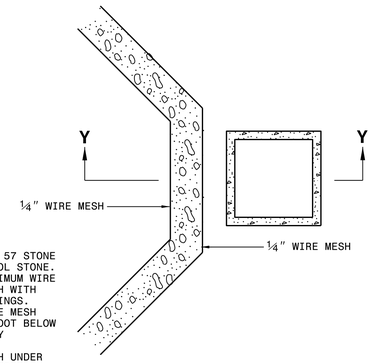


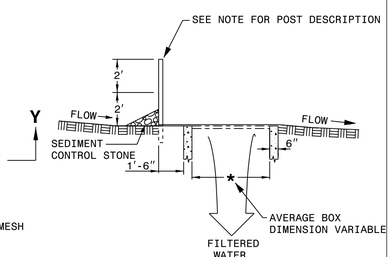


SECTION A-A

MULTI-DIRECTIONAL FLOW

NOTE
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.
USE 24 GAUGE MINIMUM WIRE MESH HARDWARE CLOTH WITH 1/4 INCH MESH OPENINGS.
PLACE TOP OF WIRE MESH A MINIMUM OF ONE FOOT BELOW THE SHOULDER OR ANY DIVERSION POINT.
INSTALL WIRE MESH UNDER SEDIMENT CONTROL STONE.
USE 5' STEEL POST, INSTALLED 1.5' DEEP MINIMUM, AND OF THE SELF-FASTENER ANGLE STEEL TYPE.
SPACE POST A MAXIMUM OF 4'.

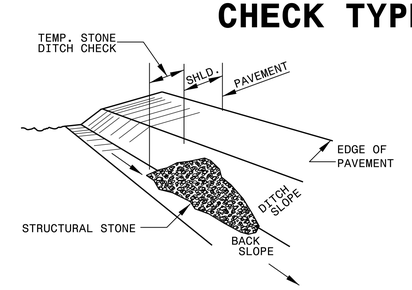




SECTION Y-Y

SINGLE-DIRECTIONAL FLOW

TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL

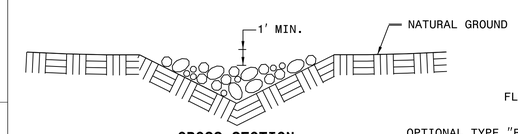


ISOMETRIC VIEW

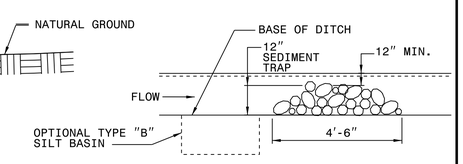
NOTES:

USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.

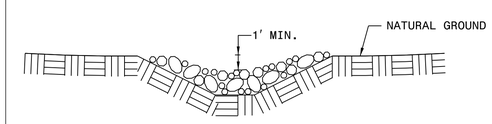
THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



CROSS SECTION
VEE DITCH

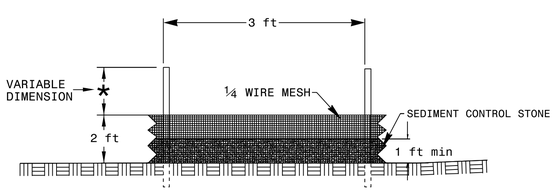


ELEVATION VIEW



CROSS SECTION
TRAPEZOIDAL DITCH

SPECIAL SEDIMENT CONTROL FENCE



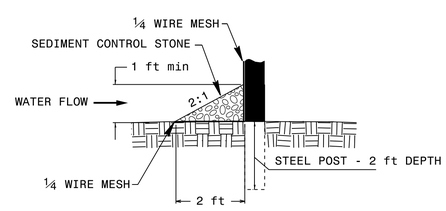
GENERAL NOTES:

USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.

USE HARDWARE CLOTH 24 GAUGE WIRE MESH WITH 1/4 INCH MESH OPENINGS.

INSTALL 5 FT. SELF FASTENER ANGLE STEEL POST 2 FT. DEEP MINIMUM.

SPACE POST A MAXIMUM OF 3 FT.



PROJECT NO.	SHEET NO.
U-4741PE	EC-03
SCALE: 1" = 30'	

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE: Nos P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

STABILIZATION REQUIREMENTS:
(3-11-2016)

Stabilization for this project shall comply with the time frame guidelines as specified 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. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land-disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity:

- Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
- Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
- Slopes 4:1 or flatter

The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. High Quality Water Zones (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

SEEDING AND MULCHING: (West)

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

Shoulder and Median Areas

August 1 - June 1		May 1 - September 1	
20#	Kentucky Bluegrass	20#	Kentucky Bluegrass
75#	Hard Fescue	75#	Hard Fescue
25#	Rye Grain	10#	German or Browntop Millet
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Areas Beyond the Mowing Pattern, Waste and Borrow Areas:

August 1 - June 1		May 1 - September 1	
100#	Tall Fescue	100#	Tall Fescue
15#	Kentucky Bluegrass	15#	Kentucky Bluegrass
30#	Hard Fescue	30#	Hard Fescue
25#	Rye Grain	10#	German or Browntop Millet
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Approved Tall Fescue Cultivars

06 Dust	Escalade	Justice	Serengeti
2nd Millennium	Essential	Kalahari	Shelby
3rd Millennium	Evergreen 2	Kitty Hawk 2000	Sheridan
Apache III	Falcon IV	Legitimate	Signia
Avenger	Falcon NG	Lexington	Silver Hawk
Barlexas	Falcon V	LSD	Sliverstar
Barlexas II	Faith	Magellan	Shenandoah Elite
Bar Fa	Fat Cat	Matador	Sidewinder
Barrera	Festnova	Millennium SRP	Skyline
Barrington	Fidelity	Monet	Solara
Barrobusto	Finelawn Elite	Mustang 4	Southern Choice II
Barvado	Finelawn Xpress	Ninja 2	Speedway
Biltmore	Finesse II	Ol' Glory	Spyder LS
Bingo	Firebird	Olympic Gold	Sunset Gold
Bizem	Firecracker LS	Padre	Taccoa
Blackwatch	Firenza	Patagonia	Tanzania
Blade Runner II	Five Point	Pedigree	Trio
Bonsai	Focus	Picasso	Tahoe II
Braveheart	Forte	Piedmont	Talladega
Bravo	Garrison	Plantation	Tarheel
Bullseye	Gazelle II	Proseeds 5301	Terrano
Cannavaro	Gold Medallion	Prospect	Titan ltd
Catalyst	Grande 3	Pure Gold	Titanium LS
Cayenne	Greenbrooks	Quest	Tracer
Cessane Rz	Greenkeeper	Raptor II	Traverse SRP
Chipper	Gremlin	Rebel Exeda	Tulsa Time
Cochise IV	Greystone	Rebel Sentry	Turbo
Constitution	Guardian 21	Rebel IV	Turbo RZ
Corgi	Guardian 41	Regiment II	Tuxedo RZ
Corona	Hemi	Regenerate	Ultimate
Coyote	Honky Tonk	Rendition	Venture
Darlington	Hot Rod	Rhambler 2 SRP	Umbrella
Davinci	Hunter	Rembrandt	Van Gogh
Desire	Inferno	Reunion	Watchdog
Dominion	Innovator	Riverside	Wolfpack II
Dynamic	Integrity	RNP	Xtremegreen
Dynasty	Jaguar 3	Rocket	
Endeavor	Jamboree	Scorpion	

Approved Kentucky Bluegrass Cultivars:

4-Season	Blue Velvet	Gladstone	Quantum Leap
Alexa II	Blueberry	Granite	Rambo
America	Boomerang	Hampton	Rhapsody
Apollo	Brilliant	Harmonie	Rhythm
Arcadia	Cabernet	Impact	Rita
Aries	Champagne	Jefferson	Royce
Armada	Champlain	Juliet	Rubicon
Arrow	Chicago II	Jump Start	Rugby II
Arrowhead	Corsair	Keeneland	Shiraz
Aura	Courtyard	Langara	Showcase
Avid	Delight	Liberator	Skye
Award	Diva	Madison	Solar Eclipse
Awesome	Dynamo	Mercury	Sonoma
Bandera	Eagleton	Midnight	Sorbonne
Barduke	Emblem	Midnight II	Starburst
Barnique	Empire	Moon Shadow	Sudden Impact
Baroness	Envicta	Moonlight SLT	Total Eclipse
Barrister	Everest	Mystere	Touche
Barvette HGT	Everglade	Nu Destiny	Tsunami
Bedazzled	Excursion	NuChicago	Unique
Belissimo	Freedom II	NuGlade	Valor
Bewitched	Freedom III	Odyssey	Voyager II
Beyond	Front Page	Perfection	Washington
Blacksburg II	Futurity	Pinot	Zinfandel
Blackstone	Gaelic	Princeton 105	
Blue Note	Ginney II	Prosperity	

Approved Hard Fescue Cultivars:

Aurora II	Eureka II	Oxford	Scaldis II
Aurora Gold	Firefly	Reliant II	Spartan II
Berkshire	Granite	Reliant IV	Stonehenge
Bighorn GT	Heron	Rescue 911	
Chariot	Nordic	Rhino	

On cut and fill slopes 2:1 or steeper add 20# Sericea Lespedeza January 1 - December 31.

Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.

TEMPORARY SEEDING:

Fertilizer shall be the same analysis as specified for *Seeding and Mulching* and applied at the rate of 400 pounds and seeded at the rate of 50 pounds per acre. German Millet, or Browntop Millet shall be used in summer months and rye grain during the remainder of the year. The Engineer will determine the exact dates for using each kind of seed.

FERTILIZER TOPDRESSING:

Fertilizer used for topdressing shall be 16-8-8 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 2-1-1 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 16-8-8 analysis and as directed.

SUPPLEMENTAL SEEDING:

The kinds of seed and proportions shall be the same as specified for *Seeding and Mulching*, and the rate of application may vary from 25# to 75# per acre. The actual rate per acre will be determined prior to the time of topdressing and the Contractor will be notified in writing of the rate per acre, total quantity needed, and areas on which to apply the supplemental seed. Minimum tillage equipment, consisting of a sod seeder shall be used for incorporating seed into the soil as to prevent disturbance of existing vegetation. A clodbuster (ball and chain) may be used where degree of slope prevents the use of a sod seeder.

MOWING:

The minimum mowing height on this project shall be six inches.

LAWN TYPE APPEARANCE:

All areas adjacent to lawns must be hand finished as directed to give a lawn type appearance. Remove all trash, debris, and stones ¾" and larger in diameter or other obstructions that could interfere with providing a smooth lawn type appearance. These areas shall be reseeded to match their original vegetative conditions, unless directed otherwise by the Field Operations Engineer.

GENERAL EROSION CONTROL AND CONTRUCTION SEQUENCE

- Obtain Erosion and Sediment Control (EC) Plan Approval prior to any land disturbing activity

Phase 1 Clearing and Grubbing Phase

1. Install phase EC devices and adjust as necessary to ensure proper usage of EC devices prior to Phase 1 clearing and grubbing
2. Prepare project area via clearing and grubbing of project area for phase 1.
3. Adhere to the Soil Stabilization Timeframes as required
4. Monitor EC devices for functionality
5. Regularly clean out EC devices as necessary
6. Continue to Monitor EC devices, repair and adjust as needed to ensure proper usage of EC devices for phase 1.
7. Maintain stock piled areas as necessary
8. Continue to regularly clean out EC devices as needed.

Phase 2 Final Design

1. Install proposed EC devices for Phase 2 as necessary
2. Install proposed drainage (pipes and boxes) and Phase 2 EC for the proposed drainage as needed.
3. Preform rough grading as needed.
4. Install curb and gutter and grade shoulder behind curb and gutter.
5. Adhere to the Soil Stabilization Timeframes as required
6. Install sidewalks.
7. Install Ped Bridge Abutments and Ped Bridge as time allows.
8. Finish grading and stabilized all of disturbed areas.
9. Adhere to the Soil Stabilization Timeframes as required.
10. Continue to Maintain stock piled areas as necessary.
11. Continue to Monitor EC devices, repair and adjust as needed to ensure proper usage of EC devices for the Final Design phase. Continue to regularly clean out EC devices as needed.

Removal EC devices only after all land disturbing activities have been completed and disturbed areas have been stabilized.

Potential Contractor Staging and Laydown Area

The EC plans have accounted for 0.5 ac of additional areas of disturbance. A 0.25 ac area along the Yadkin River or Greenway portion (sheet 4) of the project and a 0.25 ac area along the Multi Use Path (MUP) portion of the project (sheet 5). The portion of the project along US 158 should have sufficient enough permitted areas for staging and stockpiling. The Contractor is responsible to locate and obtain permission to access and use locations on sheets 4 and 5 to serve as temporary storage and stockpile areas. The Contractor is responsible to provide all the necessary measures to protect these staging, laydown and stockpile areas and adhere to the ground cover, soil stabilization timeframes as required and maintain and stabilizing of these areas throughout the life of the project and restore and stabilize these areas when the project is complete.

NOTE: This Project is Located in the Yadkin River watershed

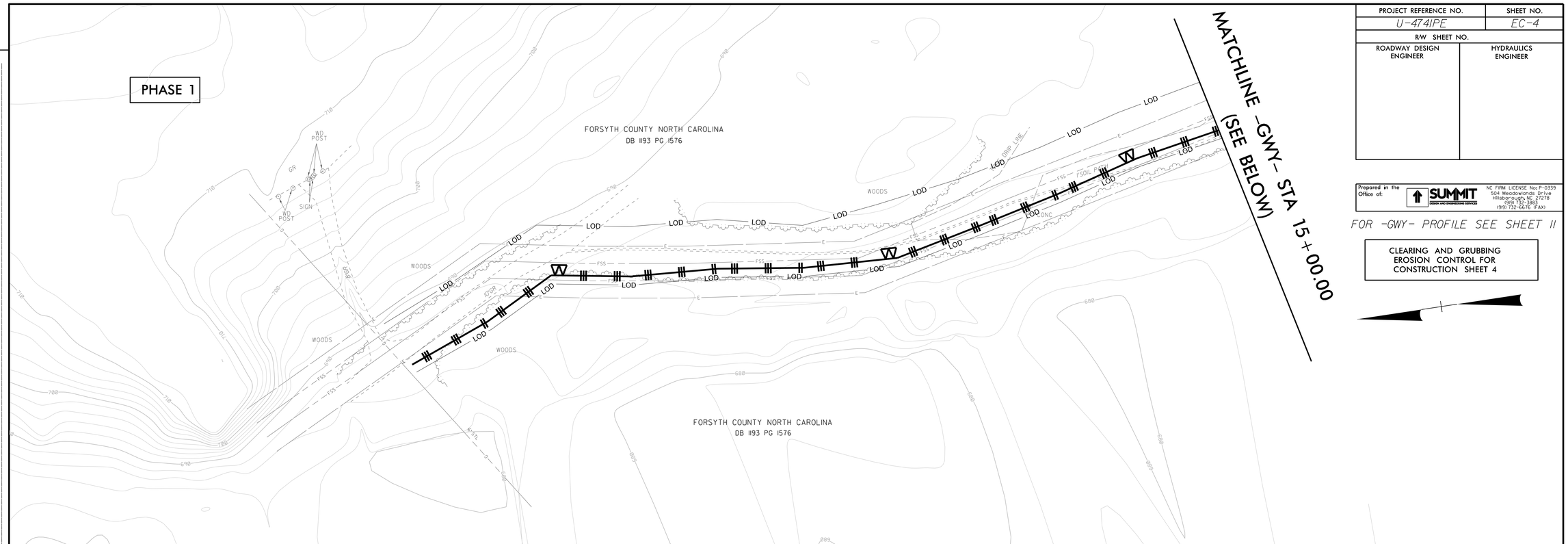
THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE. PRACTICES SHALL BE CHECKED WEEKLY, AT A MINIMUM, AND AFTER ANY RAINFALL EVENT GREATER THAN ½- INCH.THE CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING SEQUENCE OF CONSTRUCTION IN ACCORDANCE WITH THE CONSTRUCTION PLANS OR AS DIRECTED BY THE DESIGNER. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED WITHIN 14 CALENDAR DAYS. ON SLOPES AT 2:1 OR STEEPER, THE SEEDING SHALL TAKE PLACE WITHIN 48 HOURS OF DISTURBANCE. SITE STABILIZATION IS REQUIRED PRIOR TO FINAL APPROVAL OF GRADING PERMIT AND ISSUANCE OF CERTIFICATE OF OCCUPANCY. GRASS UTILIZED AS PERMANENT GROUND COVER MUST BE AT A MOWABLE HEIGHT THAT GENERALLY PROVIDES AT LEAST 80% COVERAGE THROUGHOUT THE SITE, WITH NO LARGE BARE PATCHES OR EVIDENCE OF EROSION.

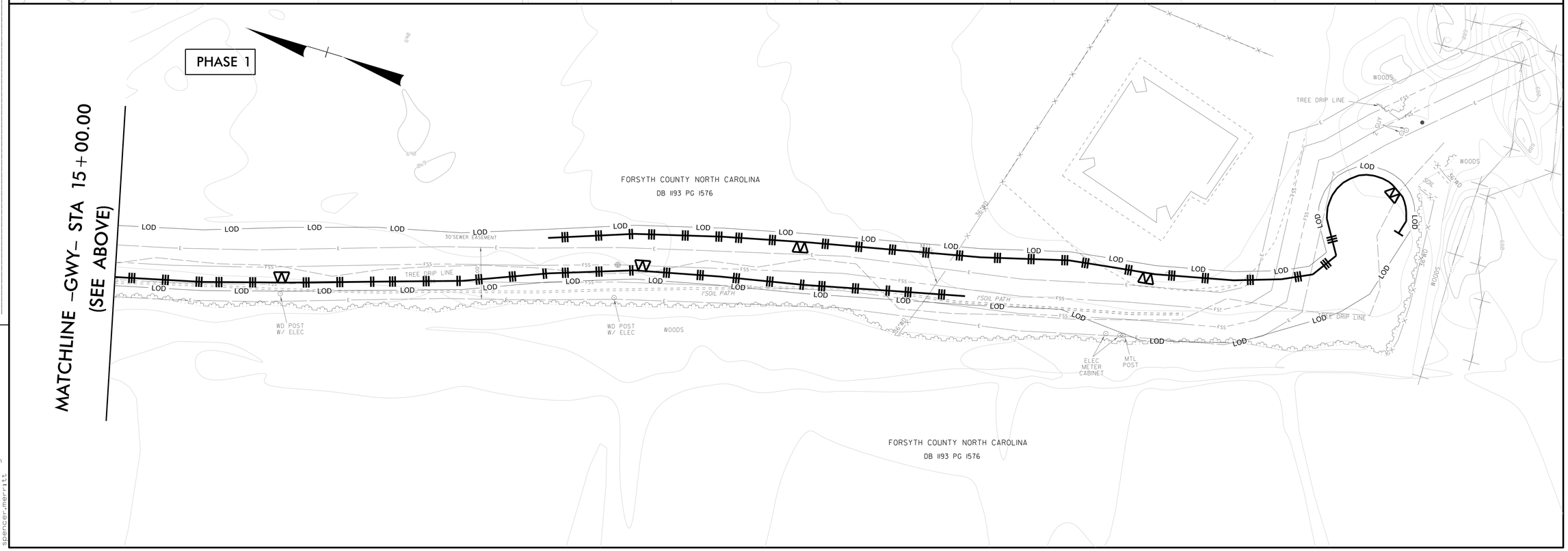
PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	EC-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Prepared in the Office of:
SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

FOR -GWY- PROFILE SEE SHEET 11

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4





REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	EC-5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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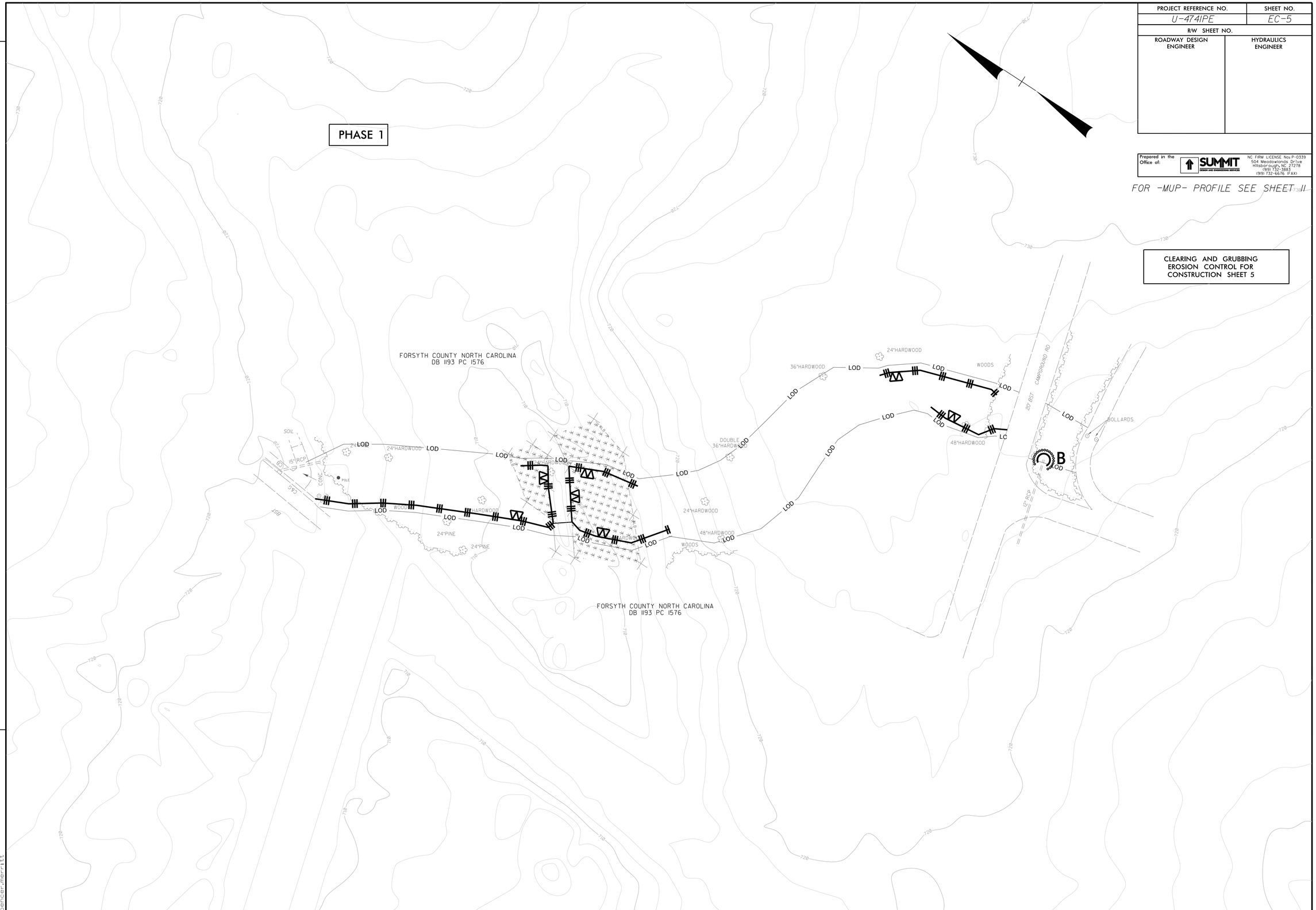

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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	EC-6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 6

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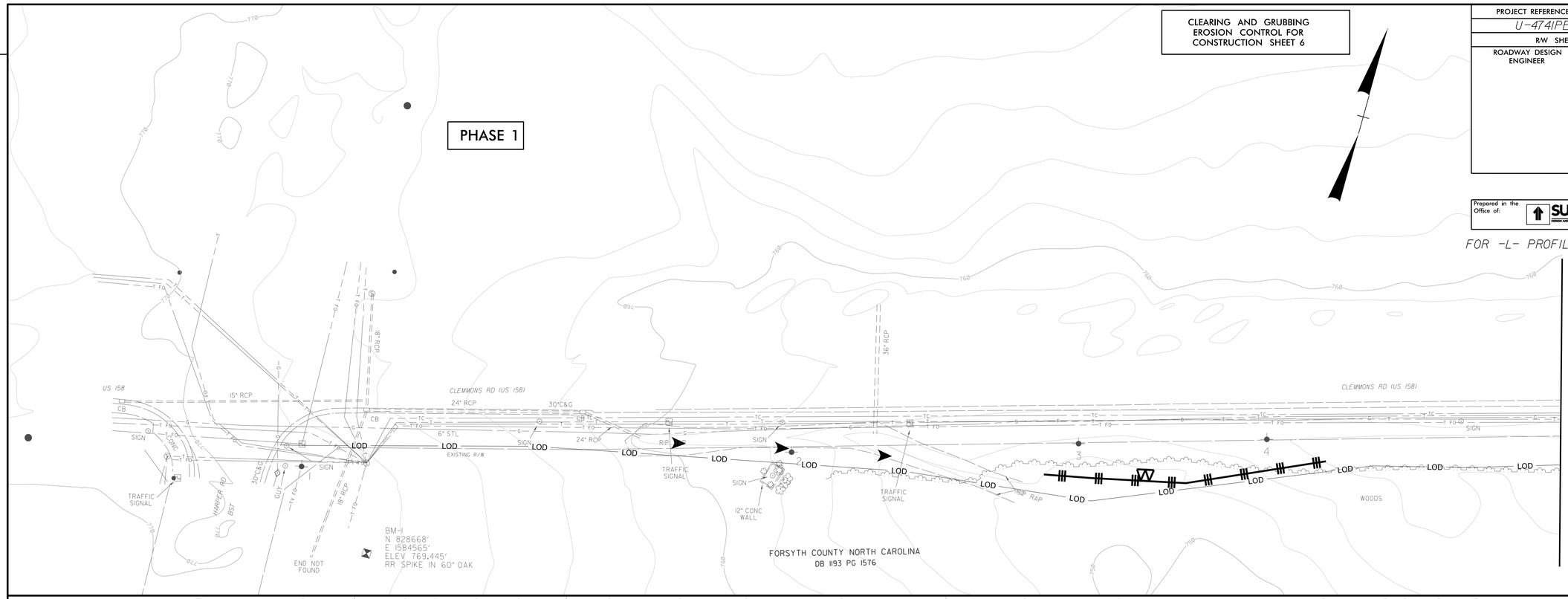
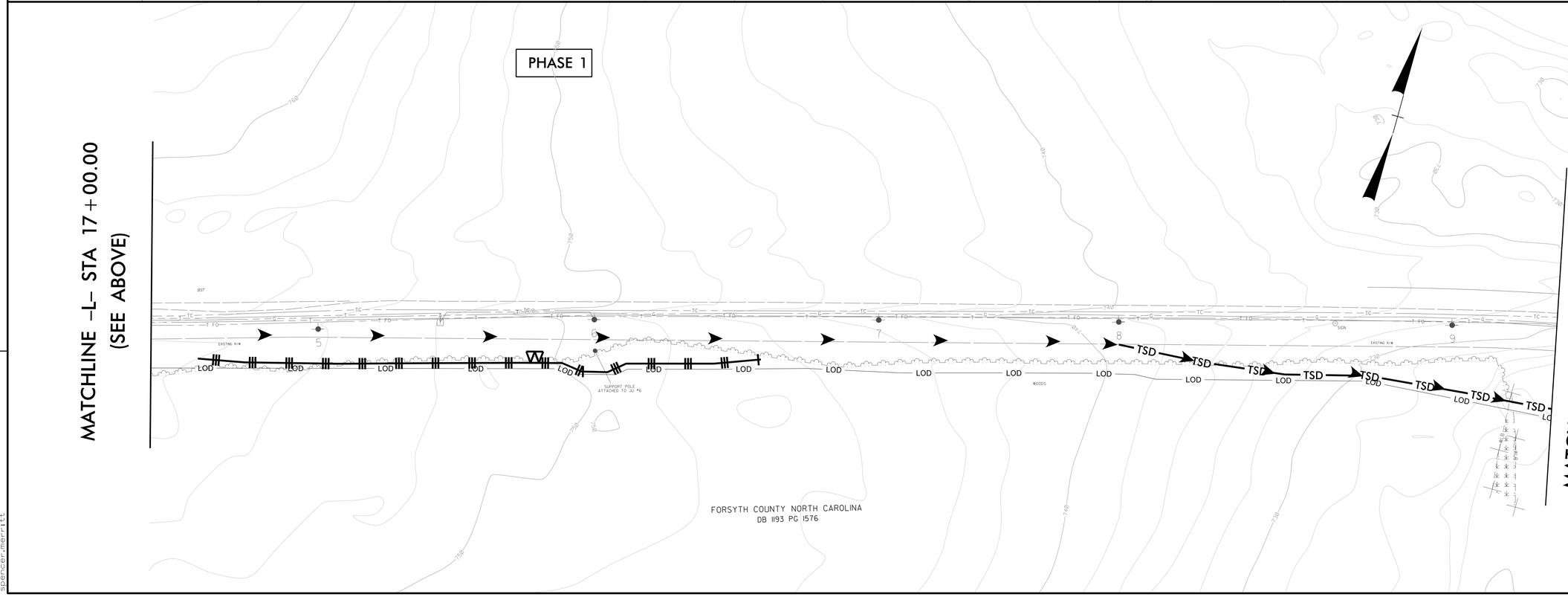
FOR -L- PROFILE SEE SHEET 12





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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	EC-7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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(919) 732-3883
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PHASE 1

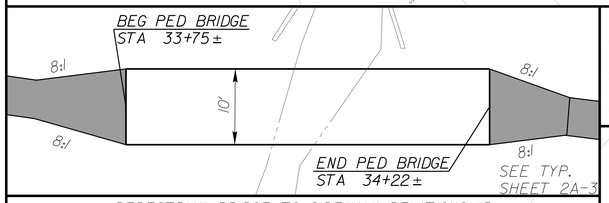
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 7

FOR -L- PROFILE SEE SHEET 12-13

MATCHLINE -L- STA 24+50.00 (SEE PLAN SHEET 6)

MATCHLINE -L- STA 32+00 (SEE BELOW)

LASATER RD
DRIFTWOOD DR
JASON M CRANDELL
DB 2526 PG 2419
MARK W MILLER
DB 2776 PG 223
PB 36 PG 44
FORSYTH COUNTY NORTH CAROLINA
DB 1193 PG 1576
60' ROCK WALL
EXISTING R/W
LOD
TSD



PEDESTRIAN BRIDGE TO SIDEWALK RELATIONSHIP

SEE CONTRACT PROPOSAL FOR GEOTECHNICAL INVESTIGATION AND INVENTORY FOR PEDESTRIAN BRIDGE.

CONTRACTOR SHALL PROVIDE STRUCTURE FOUNDATION DESIGN, SUBSTRUCTURE, PEDESTRIAN BRIDGE AND ALL ASSOCIATED LABOR, MATERIALS & EQUIPMENT.

PHASE 1

MATCHLINE -L- STA 32+00 (SEE ABOVE)

MATCHLINE -L- STA 40+00 (SEE PLAN SHEET 8)

CLEMMONS RD (US 158)
CARRIAGE BROOK CT
MARK W MILLER
DB 2776 PG 223
PB 36 PG 44
JASON E MCMAHAN
DB 2576 PG 3189
PB 36 PG 44
WILLIAM C TABORN JR
VICKIE S TABORN
DB 1988 PG 1325
PB 37 PG 186
AMH 2015-2 BORROWER LLC
DB 3252 PG 371
PB 37 PG 186
SCOTT A MIELKE
ERICA L MIELKE
DB 2834 PG 1254
PB 37 PG 186
CHRISTOPHER S GOUCH
SARAH J GOUCH
DB 2272 PG 5130
PB 37 PG 186
APPROX. LOCATION OF JB
EXISTING R/W
LOD
TSD

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	EC-8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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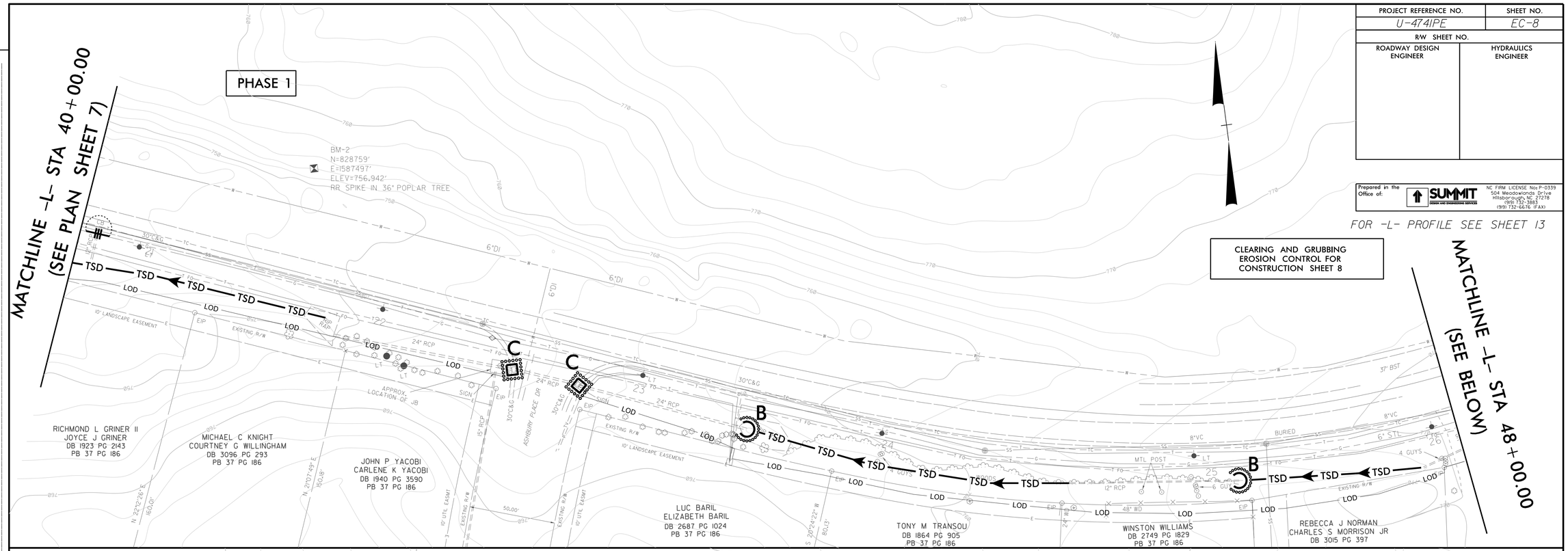
FOR -L- PROFILE SEE SHEET 13



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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	EC-9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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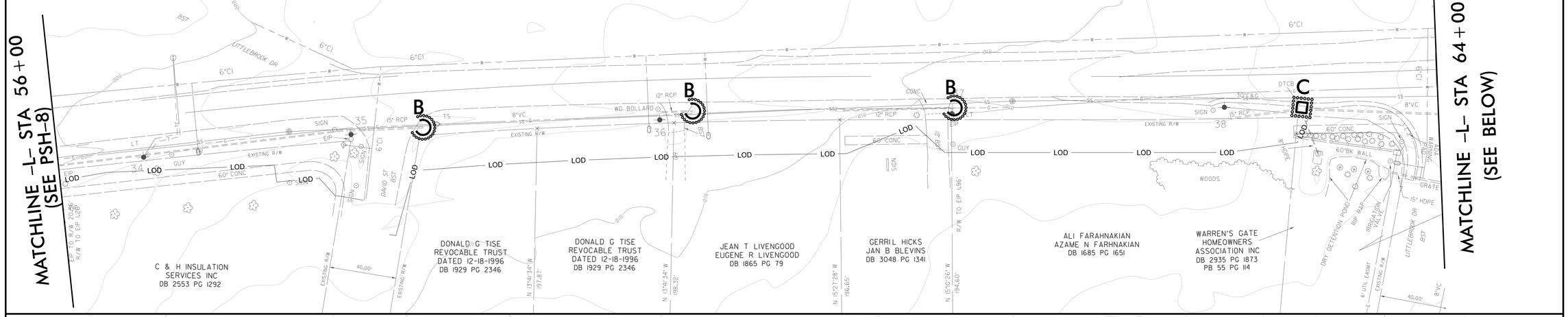
(919) 732-6676 (FAX)

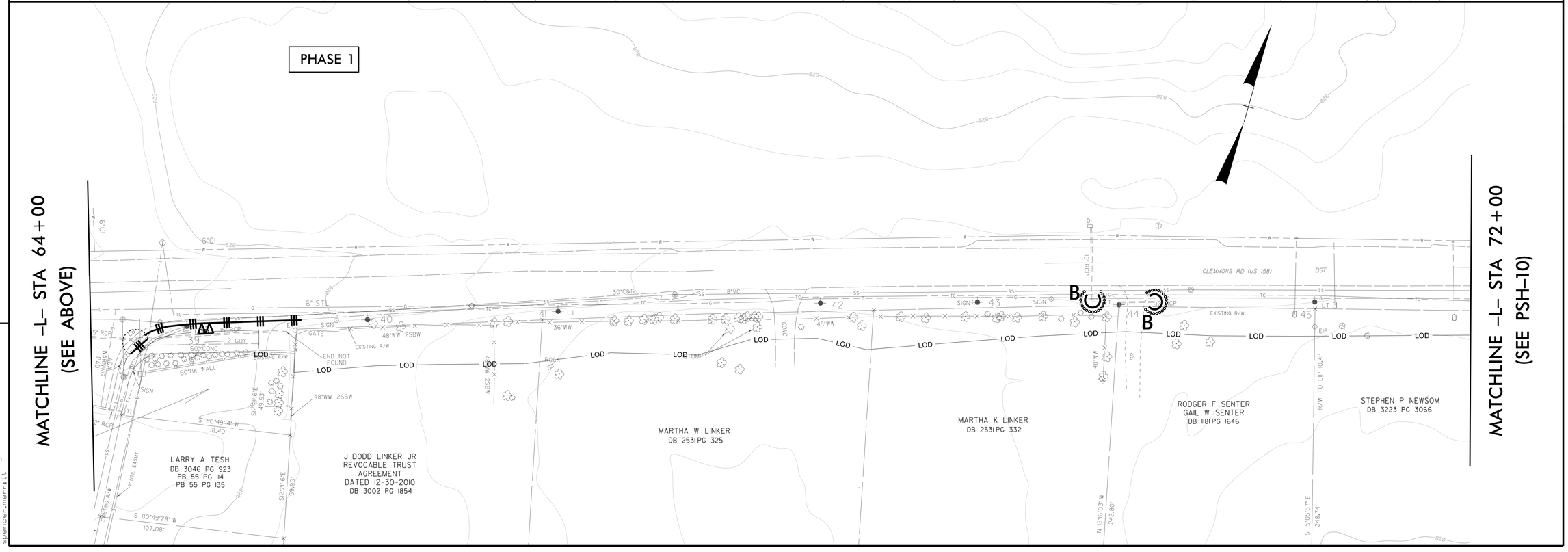
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 9

FOR -L- PROFILE SEE SHEETS 13-14

PHASE 1



PHASE 1



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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	EC-10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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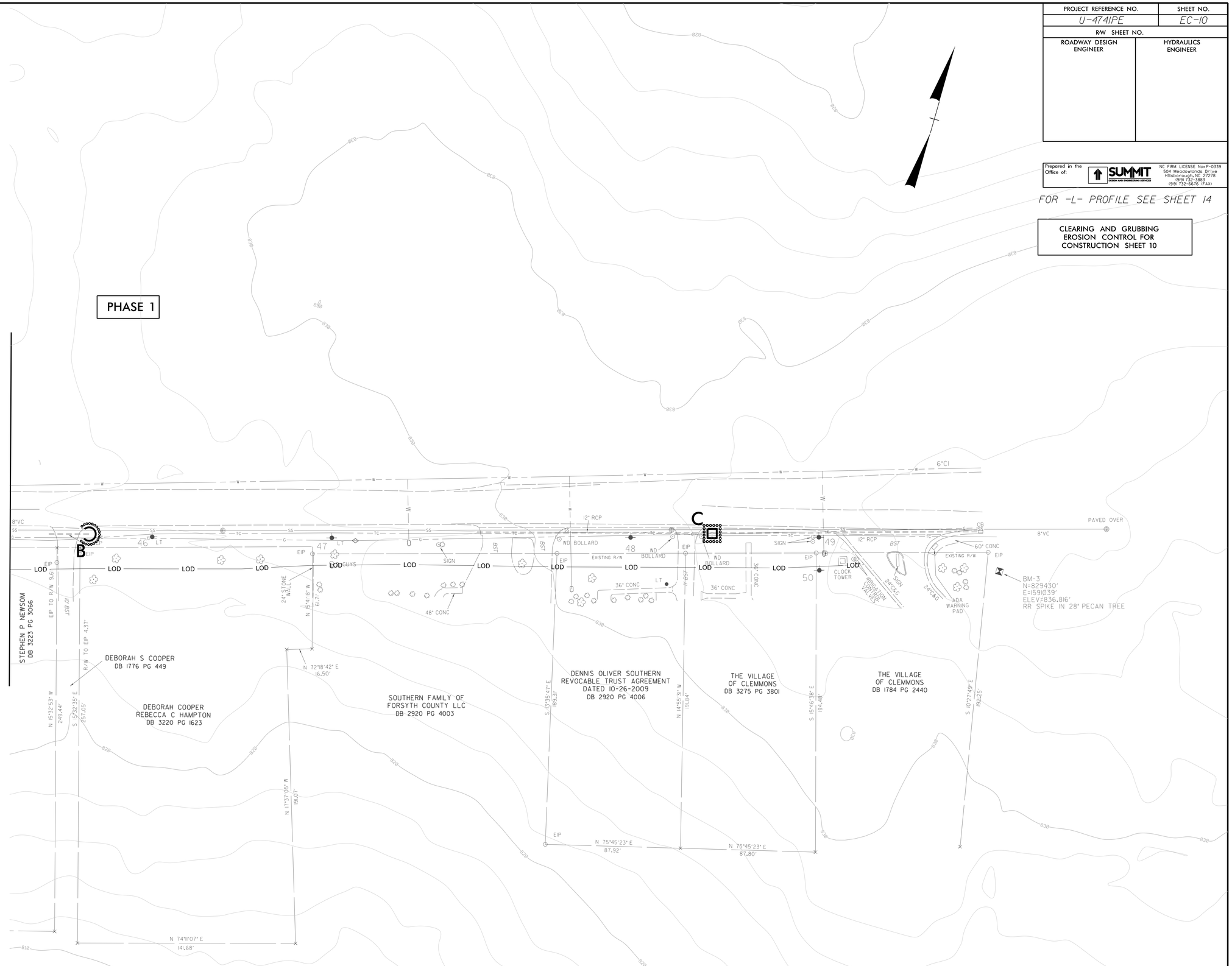
FOR -L- PROFILE SEE SHEET 14

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 10



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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	EC-11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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Hillsborough, NC 27278
(919) 732-3883
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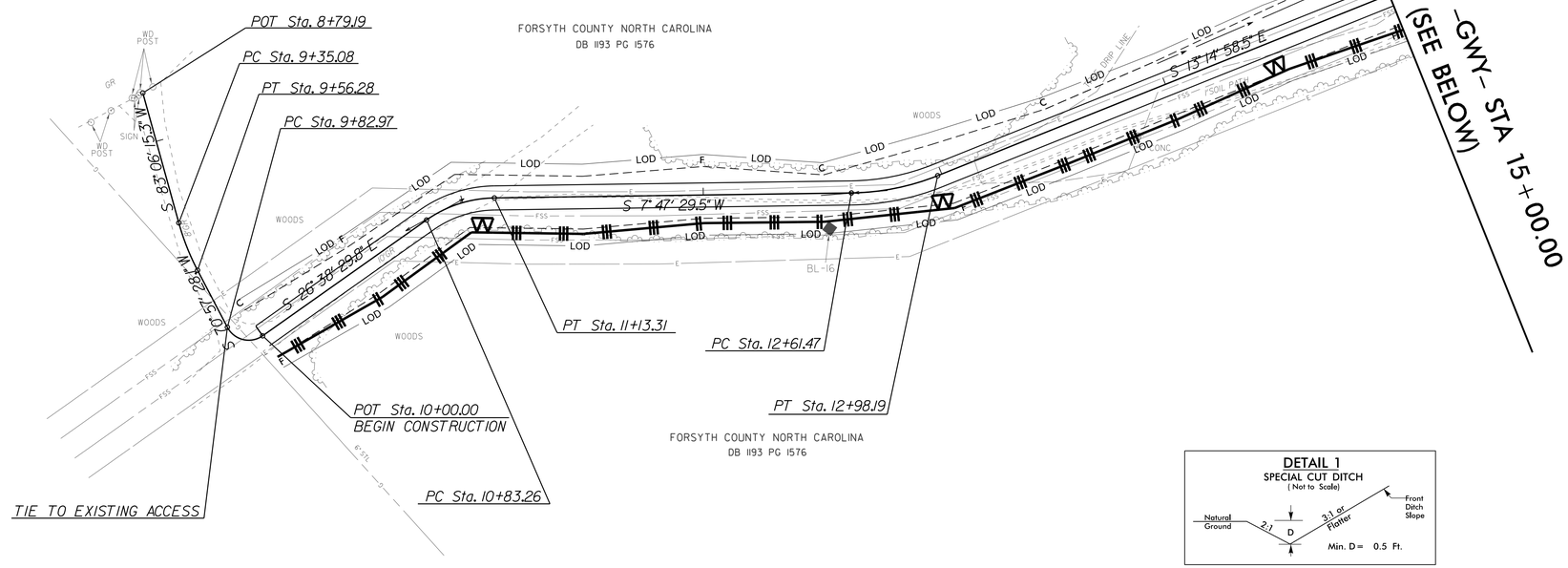
FOR -GWY- PROFILE SEE SHEET 11

PHASE 2

-GWY-

PI Sta 9+45.72	PI Sta 9+94.39	PI Sta 10+98.75	PI Sta 12+80.04
△= 12° 08' 47.1" (LT)	△= 97° 35' 58.0" (LT)	△ = 34° 25' 59.3" (RT)	△ = 21° 02' 27.9" (LT)
D = 57° 17' 44.8"	D = 57° 27' 28.1"	D = 114° 35' 29.6"	D = 57° 17' 44.8"
L = 21.20'	L = 17.03'	L = 30.05'	L = 36.72'
T = 10.64'	T = 11.42'	T = 15.49'	T = 18.57'
R = 100.00'	R = 10.00'	R = 50.00'	R = 100.00'



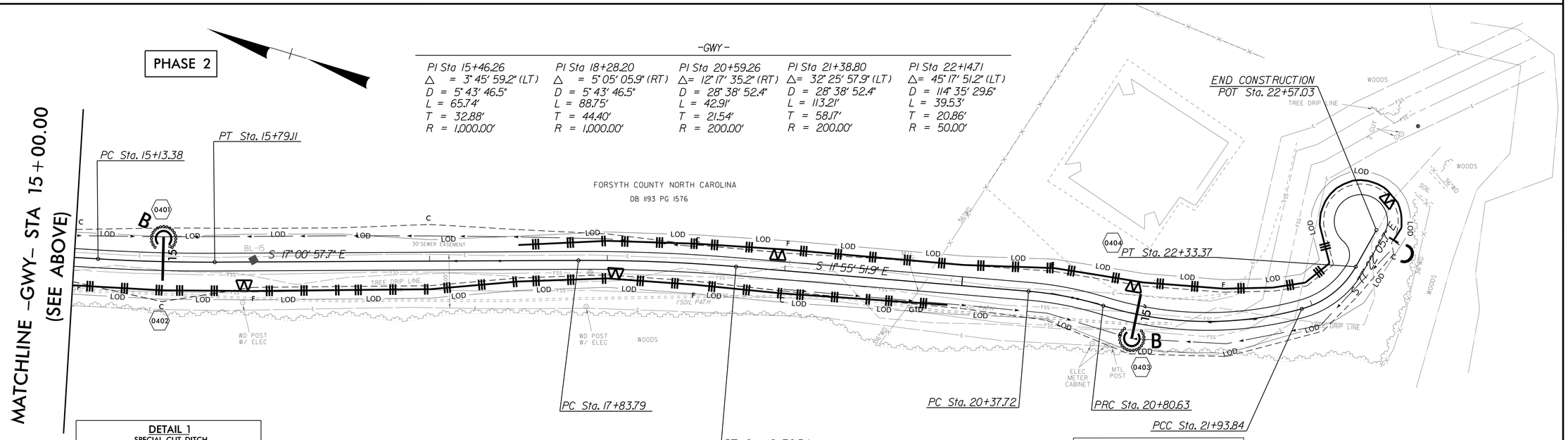
DETAIL 1
SPECIAL CUT DITCH
(Not to Scale)

FROM STA. 14+00 TO STA. 18+50 -GWY- LT

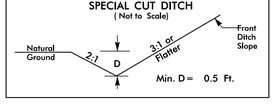
PHASE 2

-GWY-

PI Sta 15+46.26	PI Sta 18+28.20	PI Sta 20+59.26	PI Sta 21+38.80	PI Sta 22+14.71
△ = 3° 45' 59.2" (LT)	△ = 5° 05' 05.9" (RT)	△= 12° 17' 35.2" (RT)	△= 32° 25' 57.9" (LT)	△= 45° 17' 51.2" (LT)
D = 5° 43' 46.5"	D = 5° 43' 46.5"	D = 28° 38' 52.4"	D = 28° 38' 52.4"	D = 114° 35' 29.6"
L = 65.74'	L = 88.75'	L = 42.91'	L = 113.21'	L = 39.53'
T = 32.88'	T = 44.40'	T = 21.54'	T = 58.17'	T = 20.86'
R = 1,000.00'	R = 1,000.00'	R = 200.00'	R = 200.00'	R = 50.00'

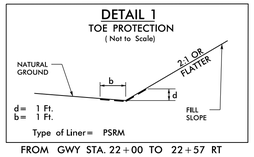


DETAIL 1
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 14+00 TO STA. 18+50 -GWY- LT
FROM STA. 19+00 TO STA. 22+50 -GWY- RT

DETAIL 1
TOE PROTECTION
(Not to Scale)



d = 1 Ft.
b = 1 Ft.
Type of Liner = PSRM

FROM GWY STA. 22+00 TO 22+57 RT

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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	EC-12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

FOR -MUP- PROFILE SEE SHEET 11

PHASE 2

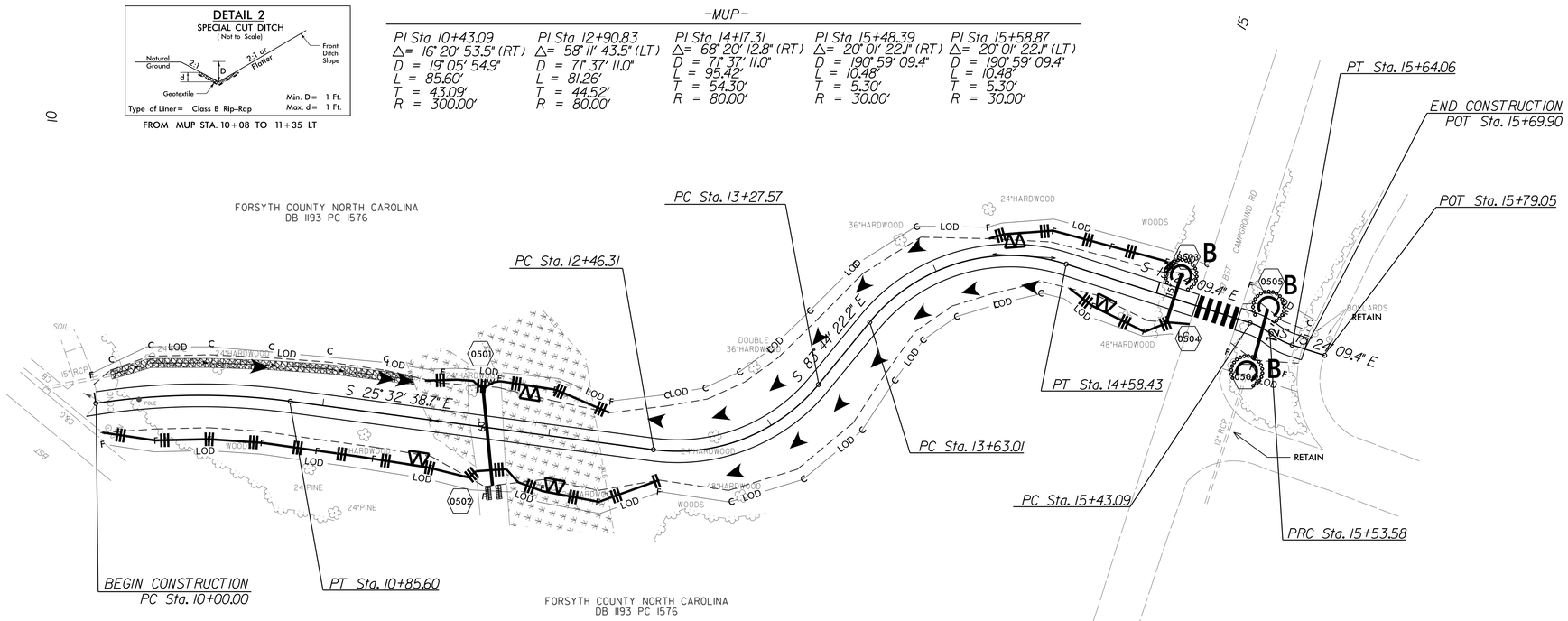
For Slopes Greater Than 10 feet
Install Matting for Erosion Control on
Entire Slope as Work Allows.

DETAIL 2
SPECIAL CUT DITCH
(Not to Scale)

FROM MUP STA. 10+08 TO 11+35 LT

-MUP-

PI Sta 10+43.09	PI Sta 12+90.83	PI Sta 14+17.31	PI Sta 15+48.39	PI Sta 15+58.87
△= 16° 20' 53.5" (RT)	△= 58° 11' 43.5" (LT)	△= 68° 20' 12.8" (RT)	△= 20° 01' 22.1" (RT)	△= 20° 01' 22.1" (LT)
D = 19° 05' 54.9"	D = 71° 37' 11.0"	D = 71° 37' 11.0"	D = 190° 59' 09.4"	D = 190° 59' 09.4"
L = 85.60'	L = 81.26'	L = 95.42'	L = 10.48'	L = 10.48'
T = 43.09'	T = 44.52'	T = 54.30'	T = 5.30'	T = 5.30'
R = 300.00'	R = 80.00'	R = 80.00'	R = 30.00'	R = 30.00'



REVISIONS

12-SEP-2018 15:57
CLEMMONS_EC_12.dgn
spencer.merritt

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	EC-13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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Hillsborough, NC 27278
(919) 732-3883
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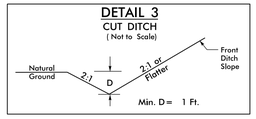
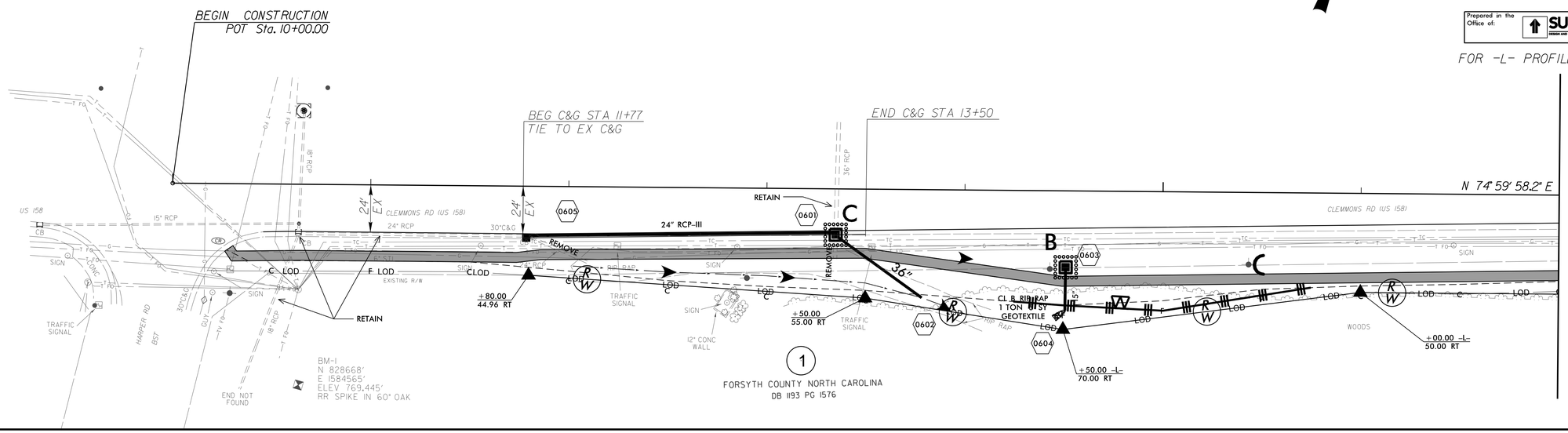
FOR -L- PROFILE SEE SHEET 12

PHASE 2

DETAIL 3
CUT DITCH
(Not to Scale)



FROM L STA. 12+00 TO 14+00 RT

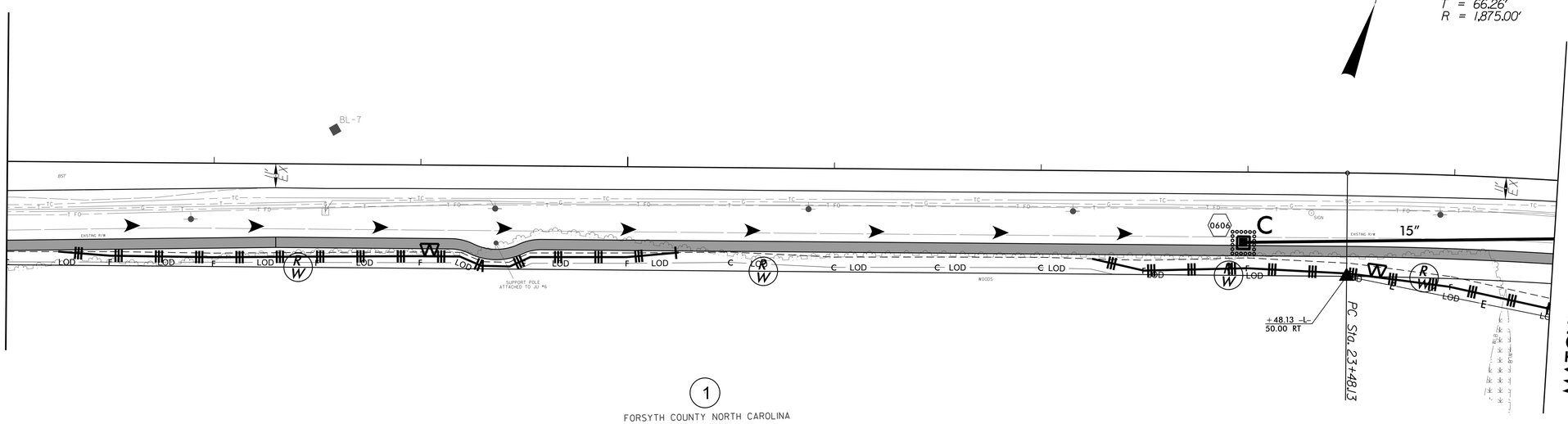


MATCHLINE -L- STA 17+00.00
(SEE BELOW)

For Slopes Greater Than 10 feet
Install Matting for Erosion Control on
Entire Slope as Work Allows.

PHASE 2

-L-
PI Sta 24+14.39
Δ= 4° 02' 51.2" (RT)
D = 3° 03' 20.8"
L = 132.46'
T = 66.26'
R = 1,875.00'



MATCHLINE -L- STA 17+00.00
(SEE ABOVE)

MATCHLINE -L- STA 24+50.00
(SEE PLAN SHEET 7)

REVISIONS

12-SEP-2018 15:57
CLEMMONS-EC-13.dgn
spencer.merritt

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	EC-14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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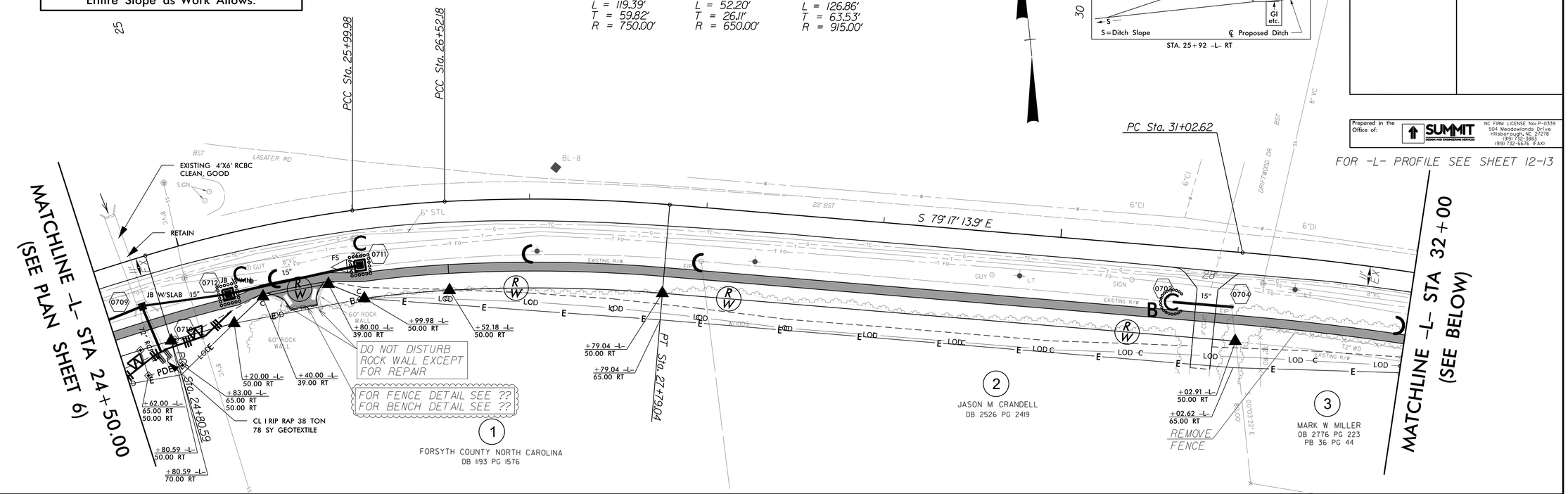
FOR -L- PROFILE SEE SHEET 12-13

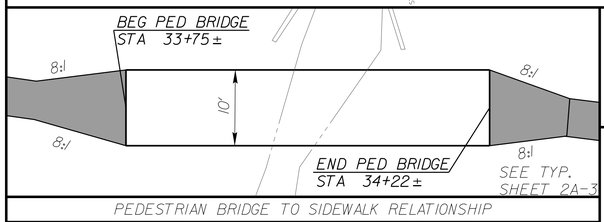
For Slopes Greater Than 10 feet Install Matting for Erosion Control on Entire Slope as Work Allows.

PHASE 2

-L-

PI Sta 25+40.41	PI Sta 26+26.09	PI Sta 27+15.71
Δ= 9° 07' 14.8" (RT)	Δ= 4° 36' 05.0" (RT)	Δ= 7° 56' 36.8" (RT)
D = 7° 38' 22.0"	D = 8° 48' 53.0"	D = 6° 15' 42.6"
L = 119.39'	L = 52.20'	L = 126.86'
T = 59.82'	T = 26.11'	T = 63.53'
R = 750.00'	R = 650.00'	R = 915.00'





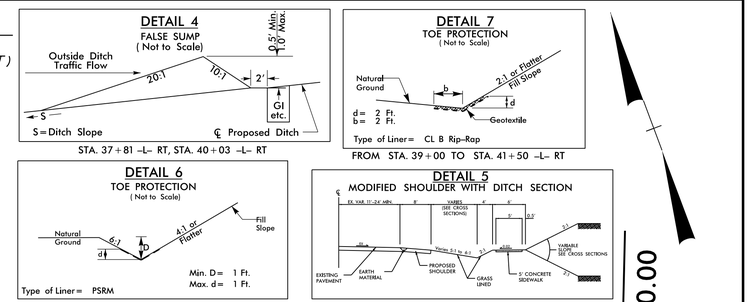
SEE CONTRACT PROPOSAL FOR GEOTECHNICAL INVESTIGATION AND INVENTORY FOR PEDESTRIAN BRIDGE.

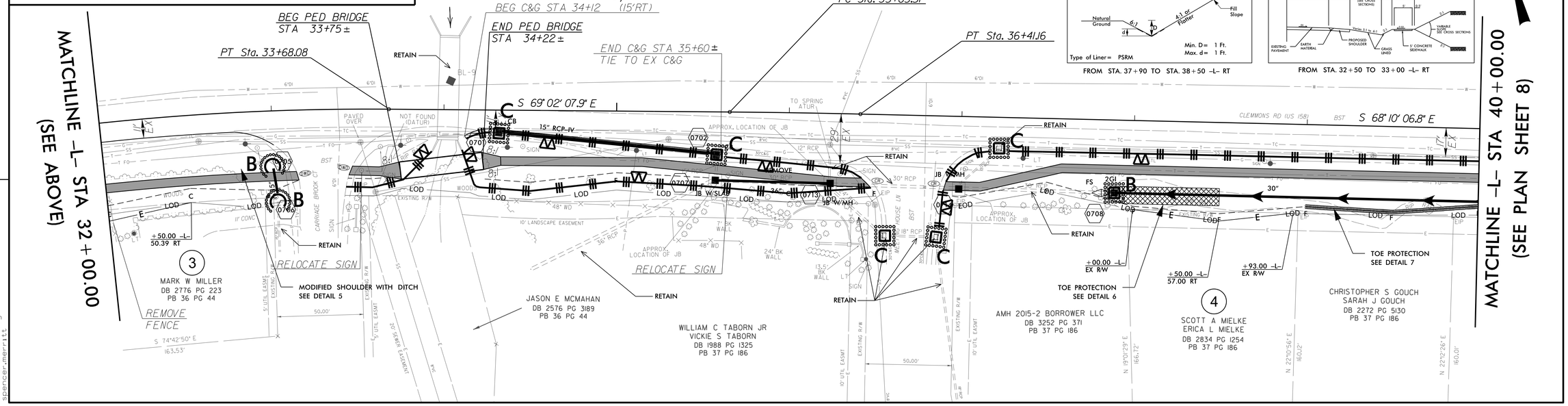
CONTRACTOR SHALL PROVIDE STRUCTURE FOUNDATION DESIGN, SUBSTRUCTURE, PEDESTRIAN BRIDGE AND ALL ASSOCIATED LABOR, MATERIALS & EQUIPMENT.

PHASE 2

-L-

PI Sta 32+35.71	PI Sta 36+03.34
Δ= 10° 15' 06.0" (RT)	Δ= 0° 52' 01.1" (RT)
D = 3° 51' 42.5"	D = 1° 08' 45.3"
L = 265.46'	L = 75.66'
T = 133.09'	T = 37.83'
R = 1,483.65'	R = 5,000.00'





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spencer.merritt

PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	EC-15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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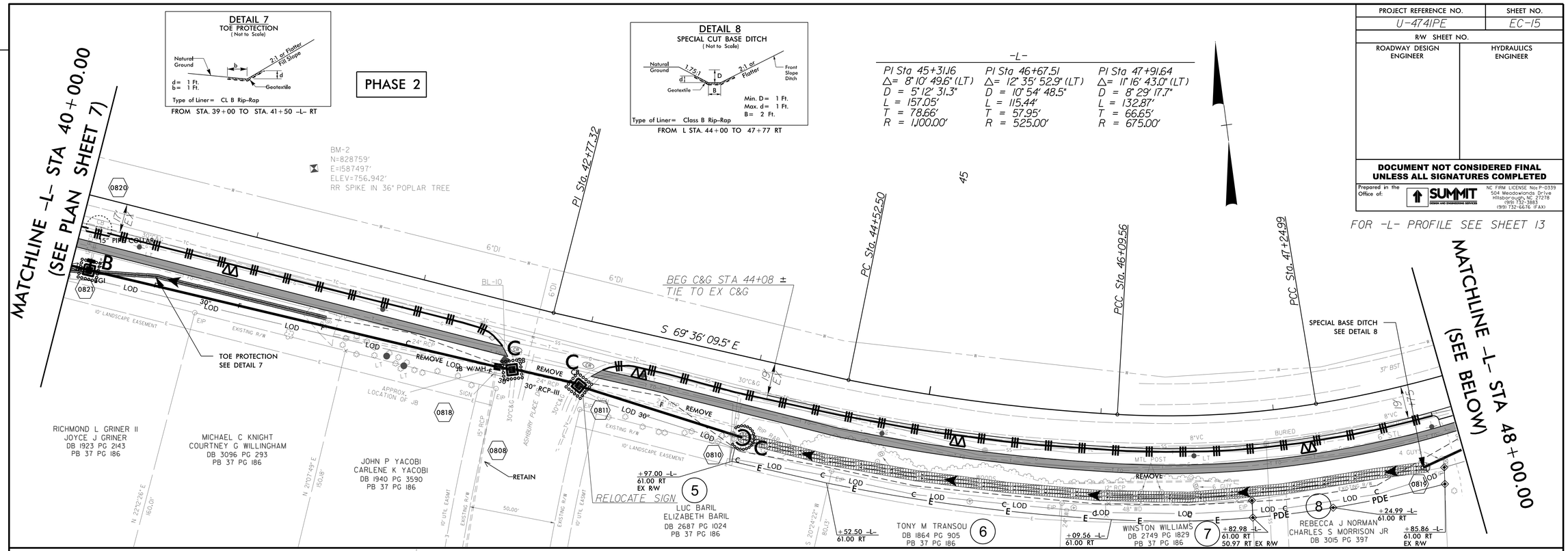
FOR -L- PROFILE SEE SHEET 13



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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	EC-16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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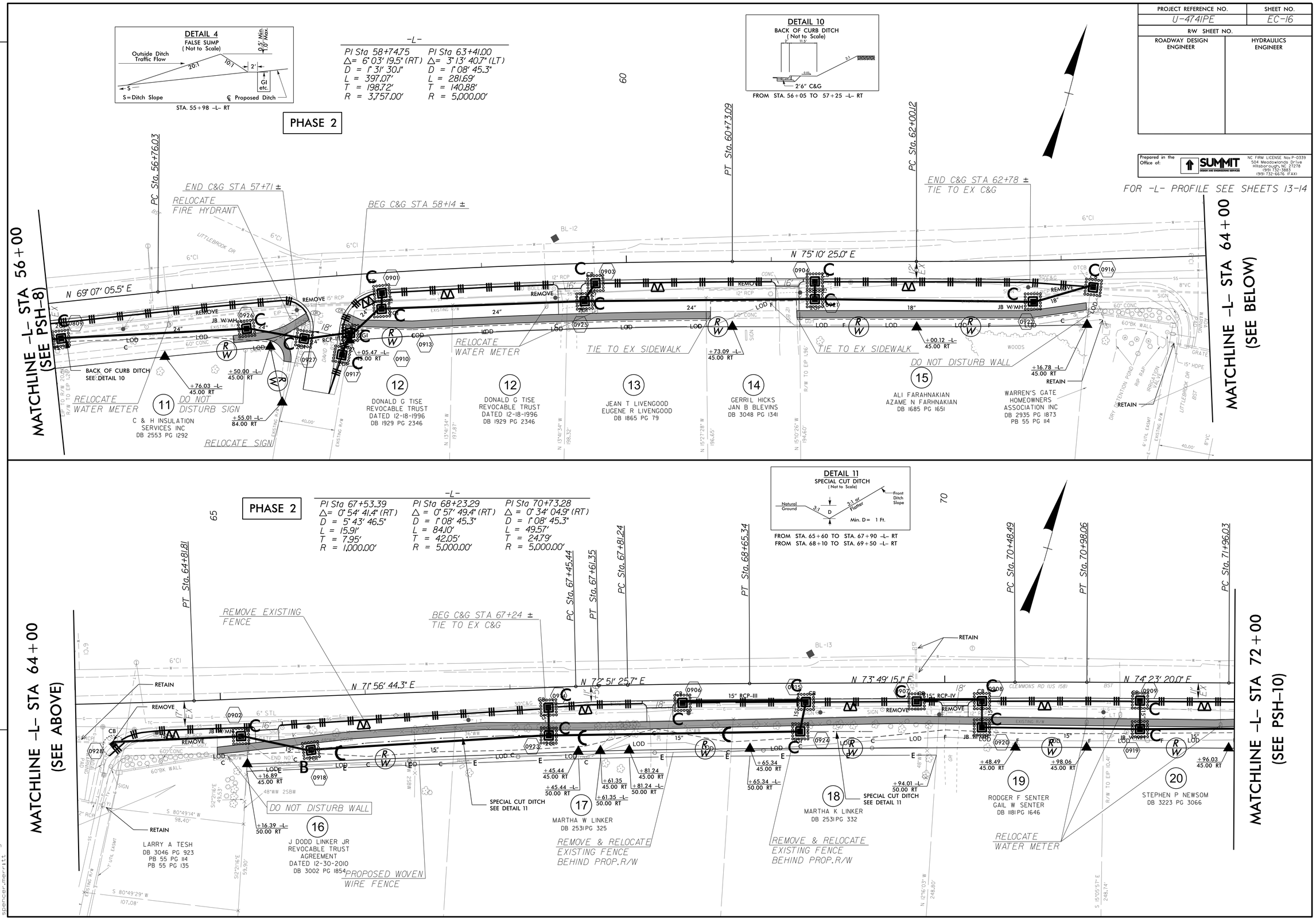

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
U-4741PE	EC-17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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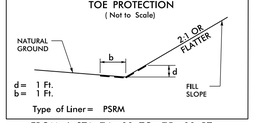
FOR -L- PROFILE SEE SHEET 14

REVISIONS

PHASE 2

-L-
PI Sta 72+18.89
Δ = 0° 31' 26.2" (LT)
D = 1° 08' 45.3"
L = 45.72'
T = 22.86'
R = 5,000.00'

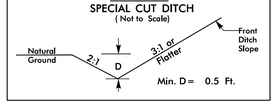
DETAIL 9
TOE PROTECTION
(Not to Scale)



d = 1 Ft.
b = 1 Ft.
Type of Liner = PSRM

FROM L STA. 74+00 TO 75+00 RT

DETAIL 1
SPECIAL CUT DITCH
(Not to Scale)



Min. D = 0.5 Ft.

FROM STA. 75+60 TO STA. 77+35 -L- RT

MATCHLINE -L- STA 72+00
(SEE PSH-9)

PT Sta. 72+41.75

RELOCATE SIGN

RELOCATE SIGN

END C&G STA 77+37 ±
TIE TO EX C&G

END CONSTRUCTION
Sta. 77+46.42

POT Sta. 78+31.60

BL-14

6"CI

RETAIN

N 73°51'53.8" E

8"VC

PAVED OVER

12" RCP

BST

60" CONC

EXISTING R/W

EIP

REMOVE

REMOVE

LOD

+41.75
40.00 RT

+30.11
40.00 RT

+30.07
45.00 RT

TOE PROTECTION
SEE DETAIL 1

24" STONE WALL

48" CONC

RELOCATE
WATER METER

36" CONC

+23.54
40.00 RT

+47.95 -L-
30.46 RT

+55.95 -L-
40.00 RT

SPECIAL CUT
DITCH
SEE
DETAIL 1

CLOSE TOWER

IRRIGATION VALVES

SIGN

24"AC

24"CMP

ADA WARNING PAD

BM-3
N=829430'
E=1591039'
ELEV=836.816'
RR SPIKE IN 28" PECAN TREE

20
STEPHEN P. NEWSOM
DB 3223 PG 3066

21
DEBORAH S COOPER
DB 1776 PG 449

22
DEBORAH COOPER
REBECCA C HAMPTON
DB 3220 PG 1623

23
SOUTHERN FAMILY OF
FORSYTH COUNTY LLC
DB 2920 PG 4003

24
DENNIS OLIVER SOUTHERN
REVOCABLE TRUST AGREEMENT
DATED 10-26-2009
DB 2920 PG 4006

25
THE VILLAGE
OF CLEMMONS
DB 3275 PG 3801

25
THE VILLAGE
OF CLEMMONS
DB 1784 PG 2440

N 15°32'53" W
249.44'

S 15°32'35" E
257.05'

R/W TO EIP 4.37'

N 72°18'42" E
16.50'

N 15°41'18" W
61.77'

N 17°37'05" W
191.07'

N 74°11'07" E
141.68'

S 13°35'47" E
189.31'

N 14°55'31" W
191.84'

S 15°46'38" E
194.48'

S 10°27'49" E
192.25'

N 75°45'23" E
87.92'

N 75°45'23" E
87.80'

12-SEP-2018 15:58
CLEMMONS EC17.dgn
spencer-mer-111

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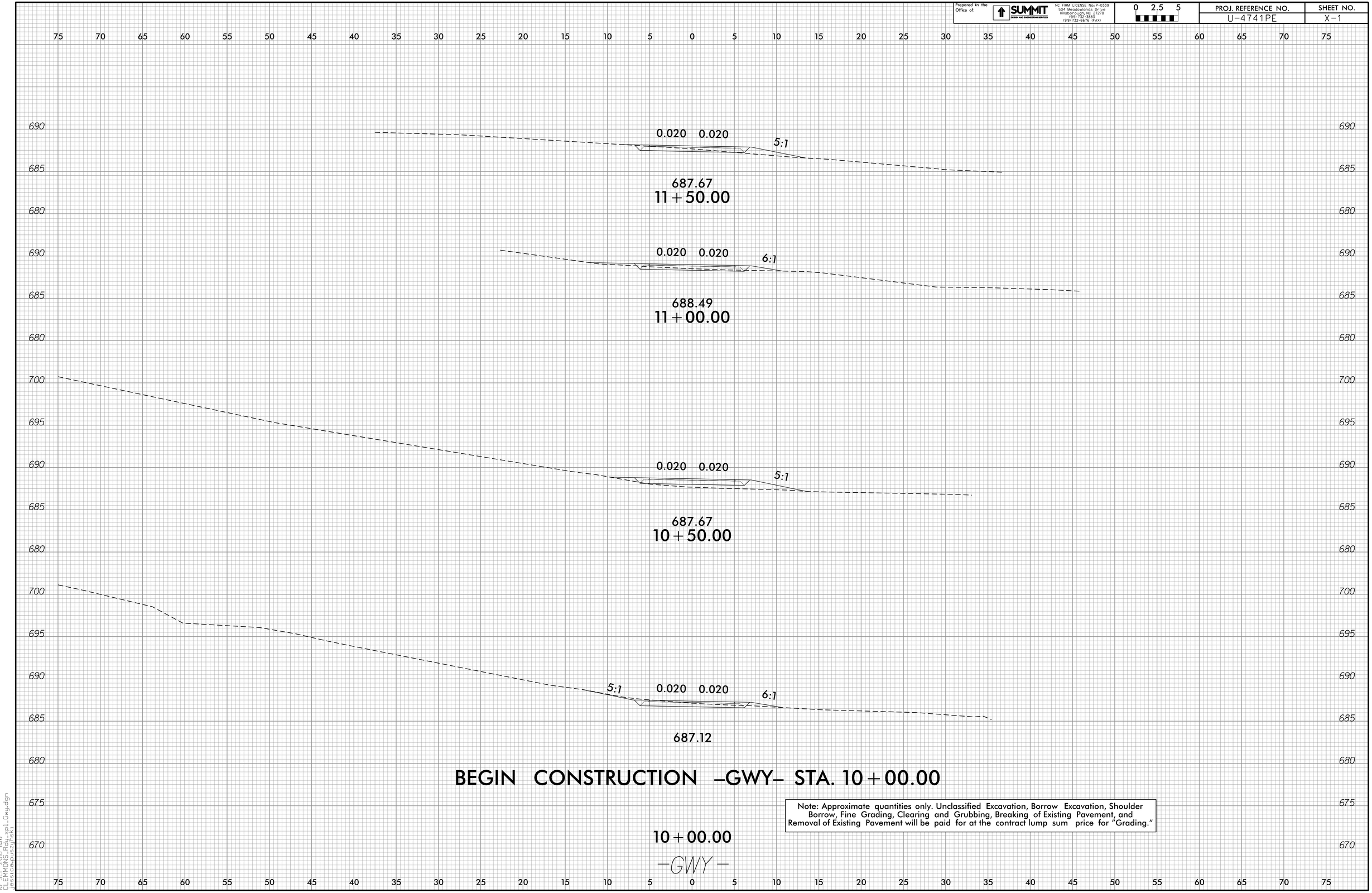
0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-1



Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

10-SEP-2018 11:16
C:\EMMGR\Projects\u4741pe\u4741_gwy.dgn

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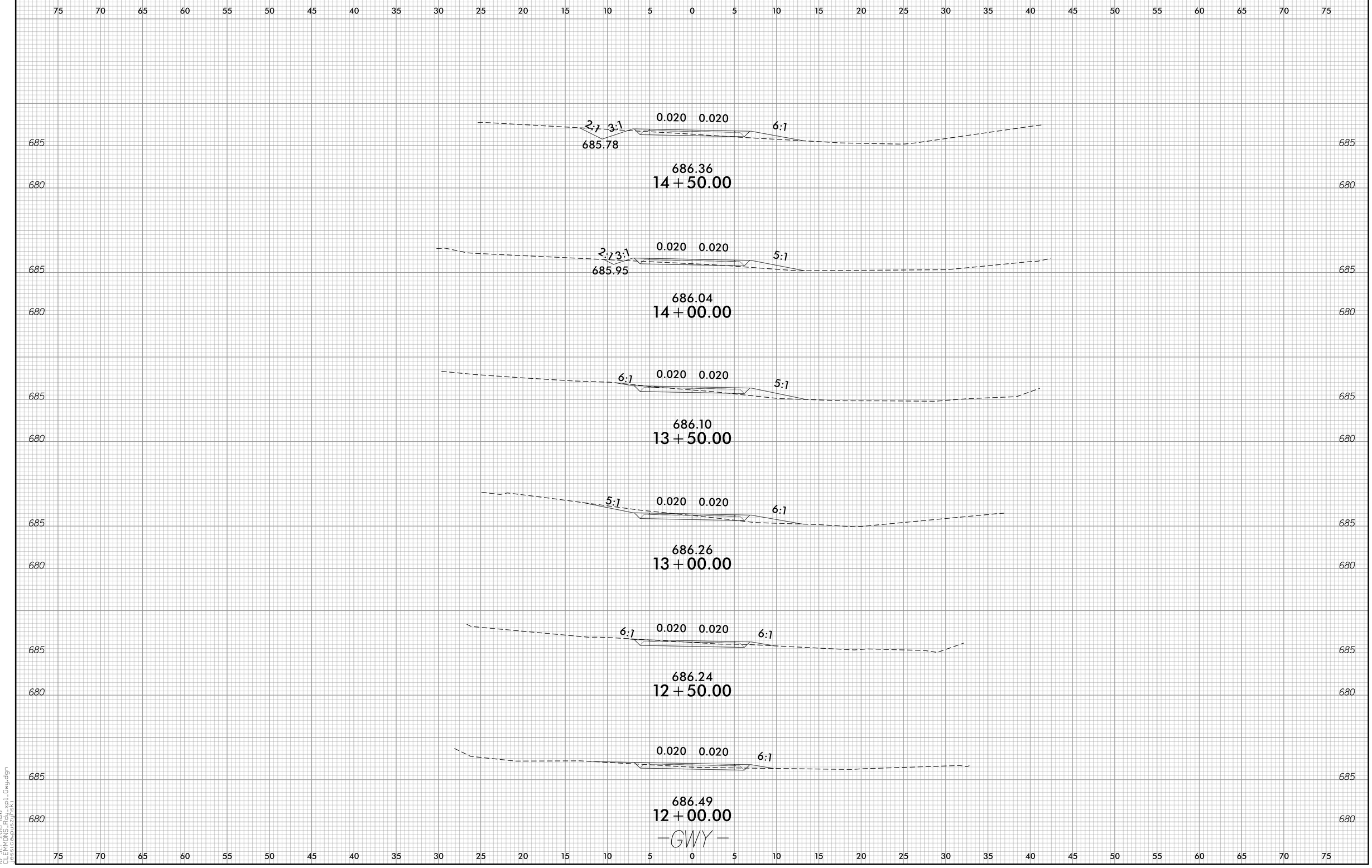
0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-2



10-SEP-2018 11:16
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jessica.puszynski

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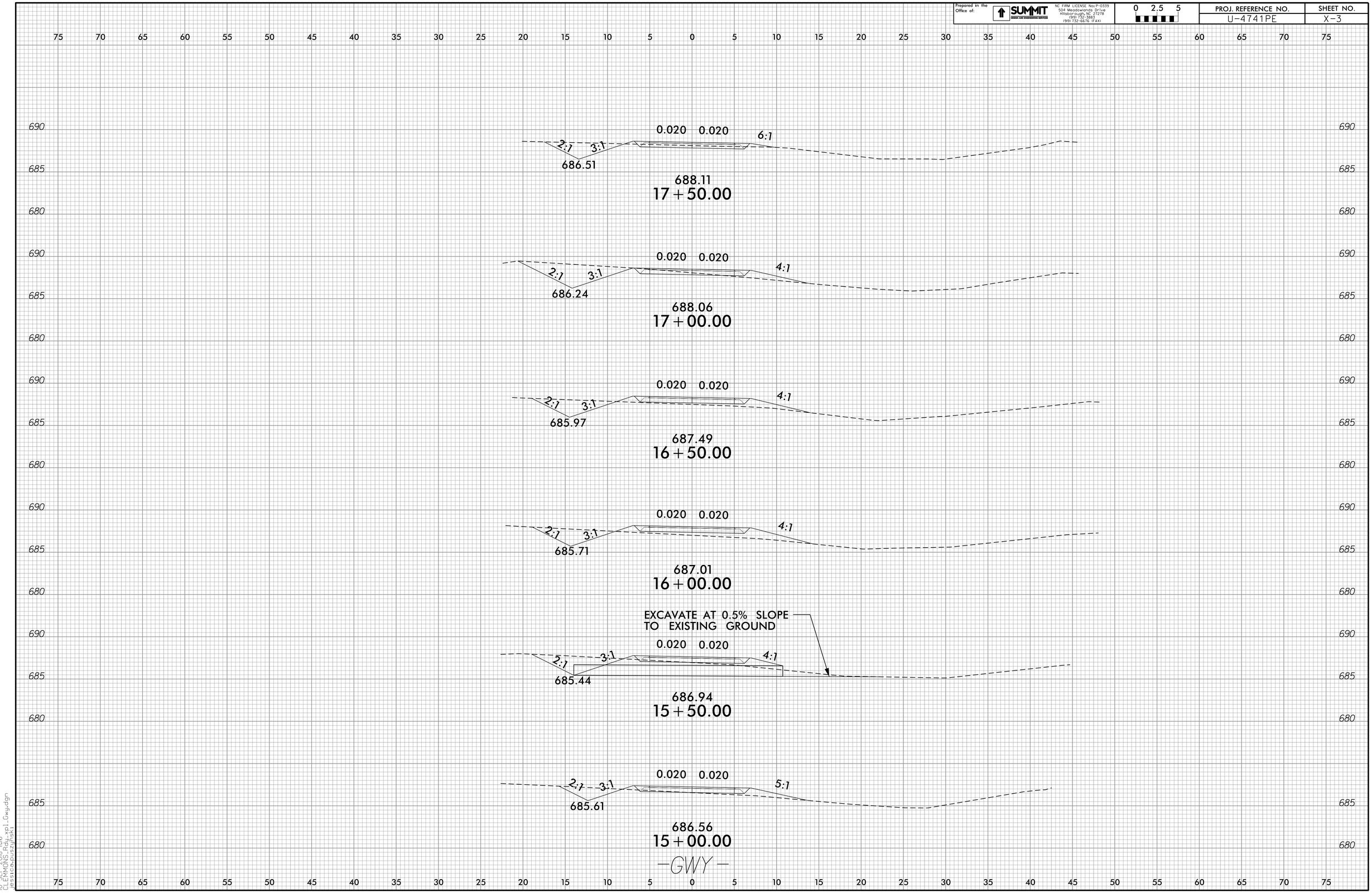
0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-3



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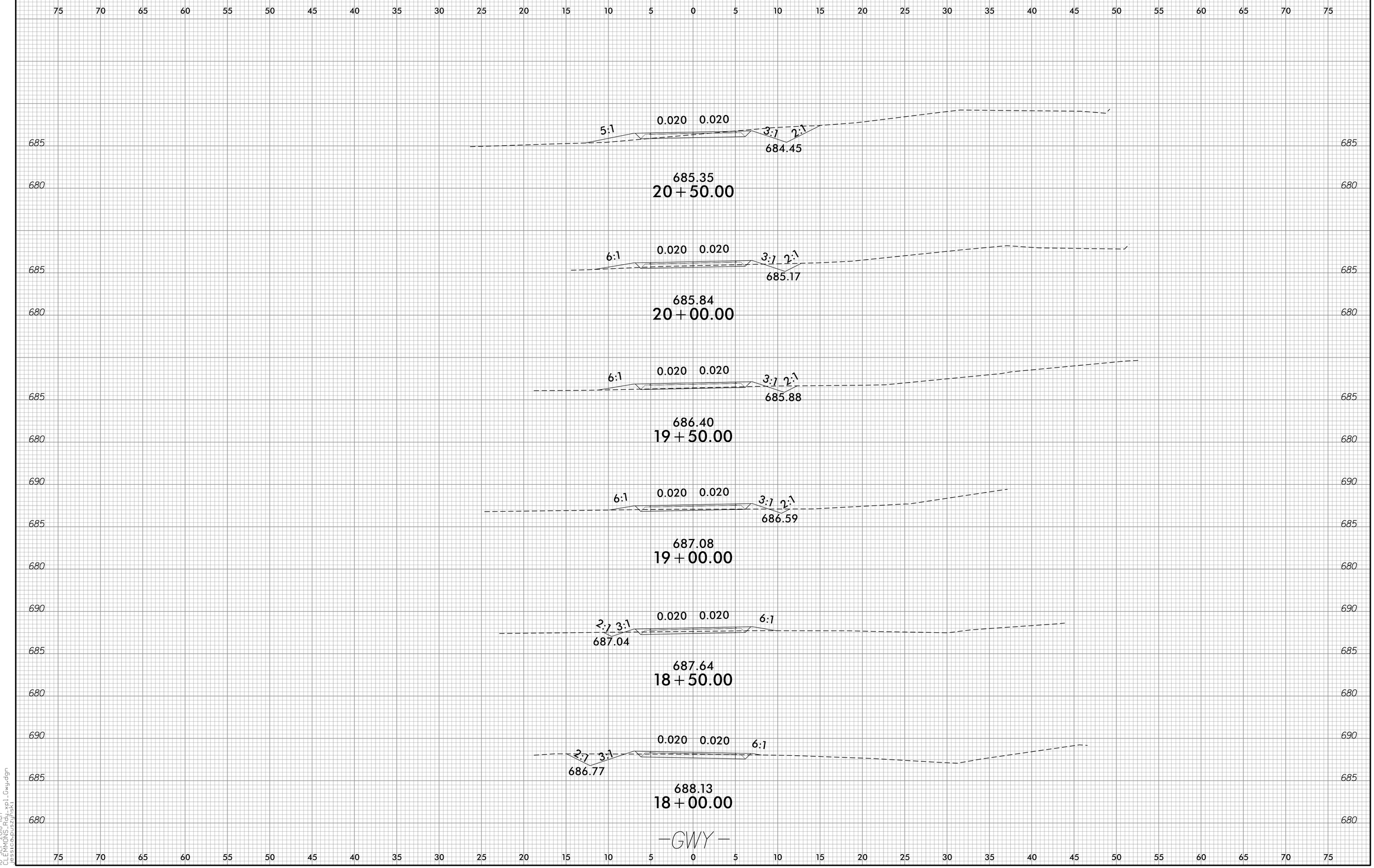
0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-4



10-SEP-2018 11:17
CLEMMONS RD
jessica.pusczynski
U4741PE_X-01.dwg,dgn

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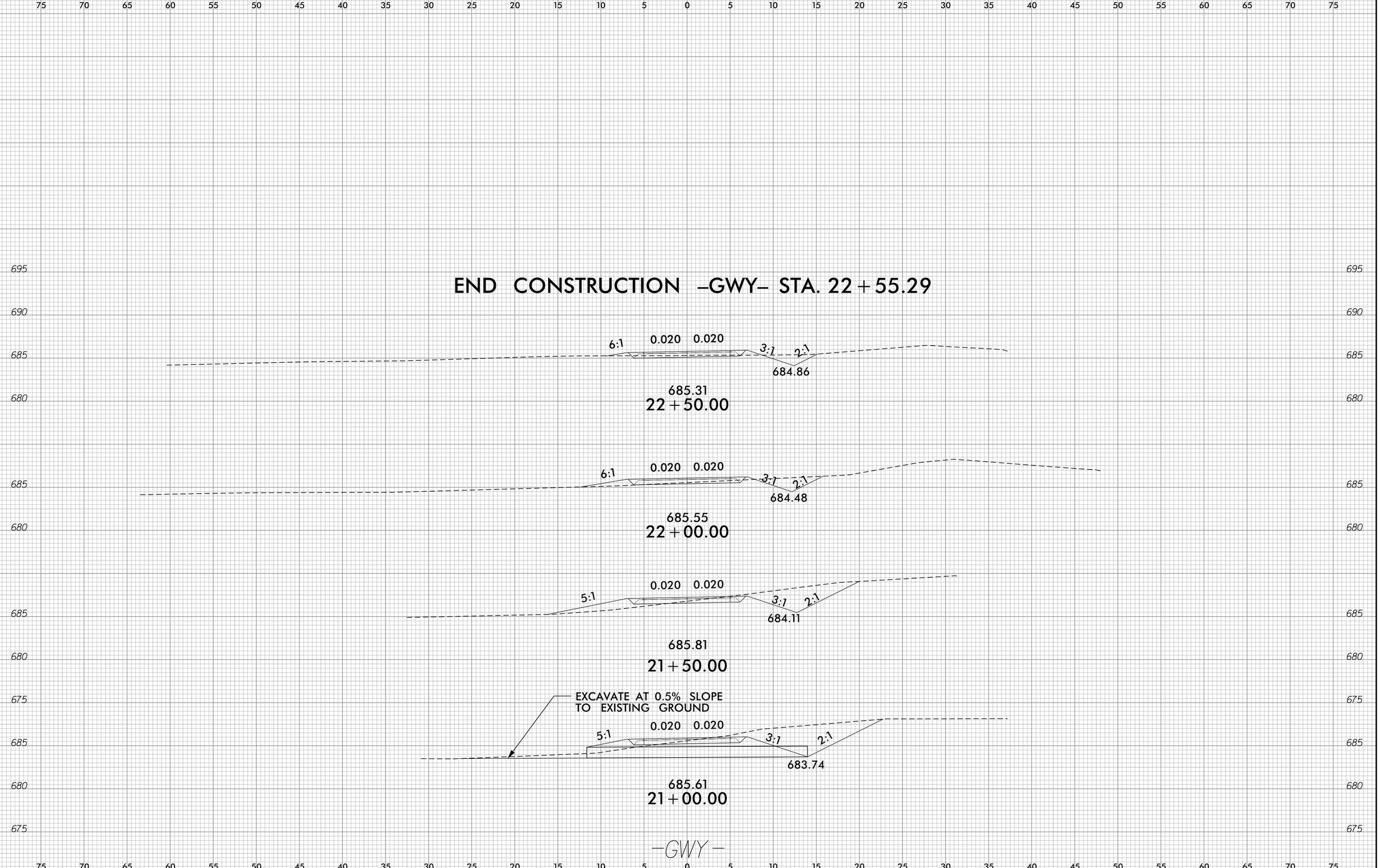
0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-5

END CONSTRUCTION –GWY– STA. 22 + 55.29



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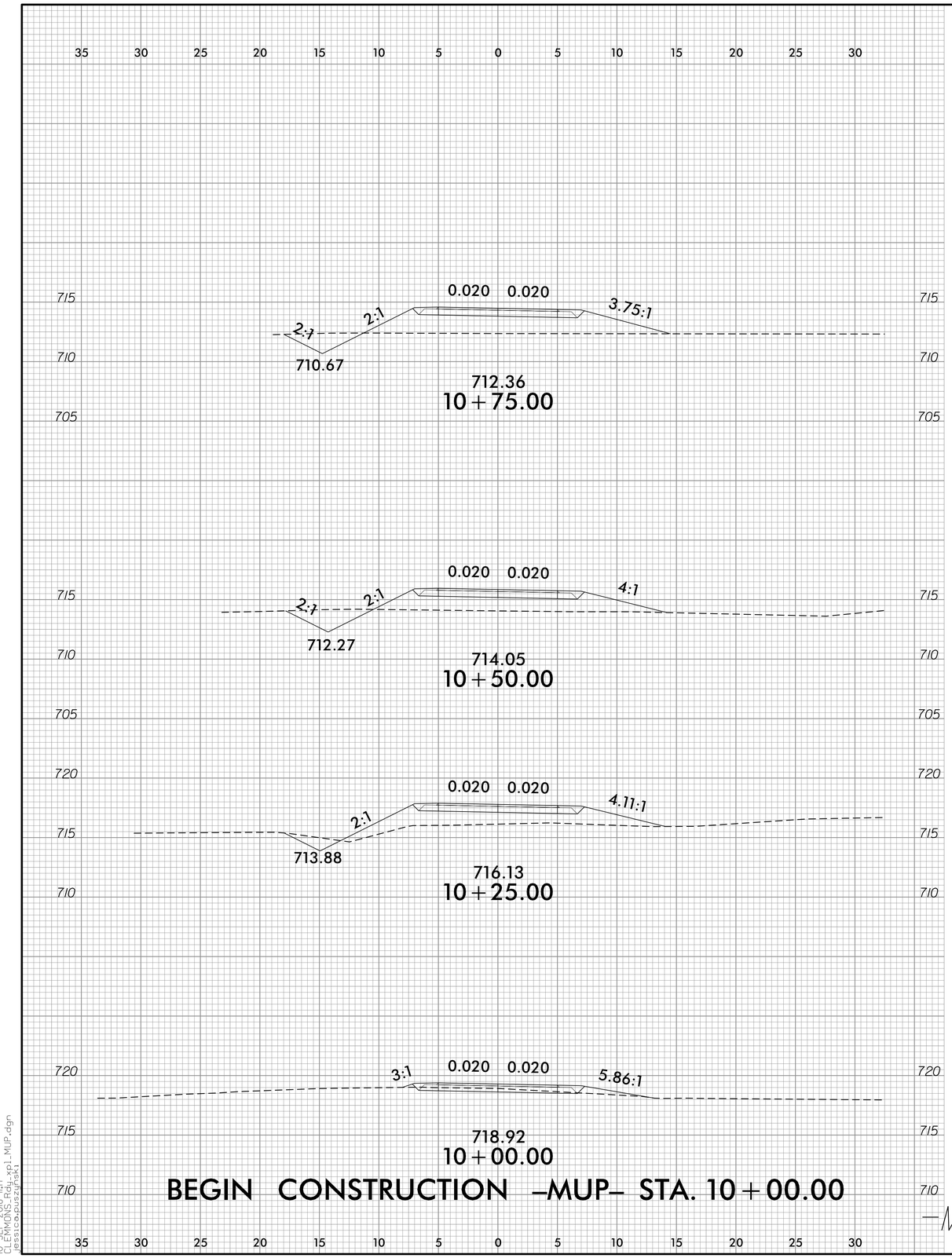
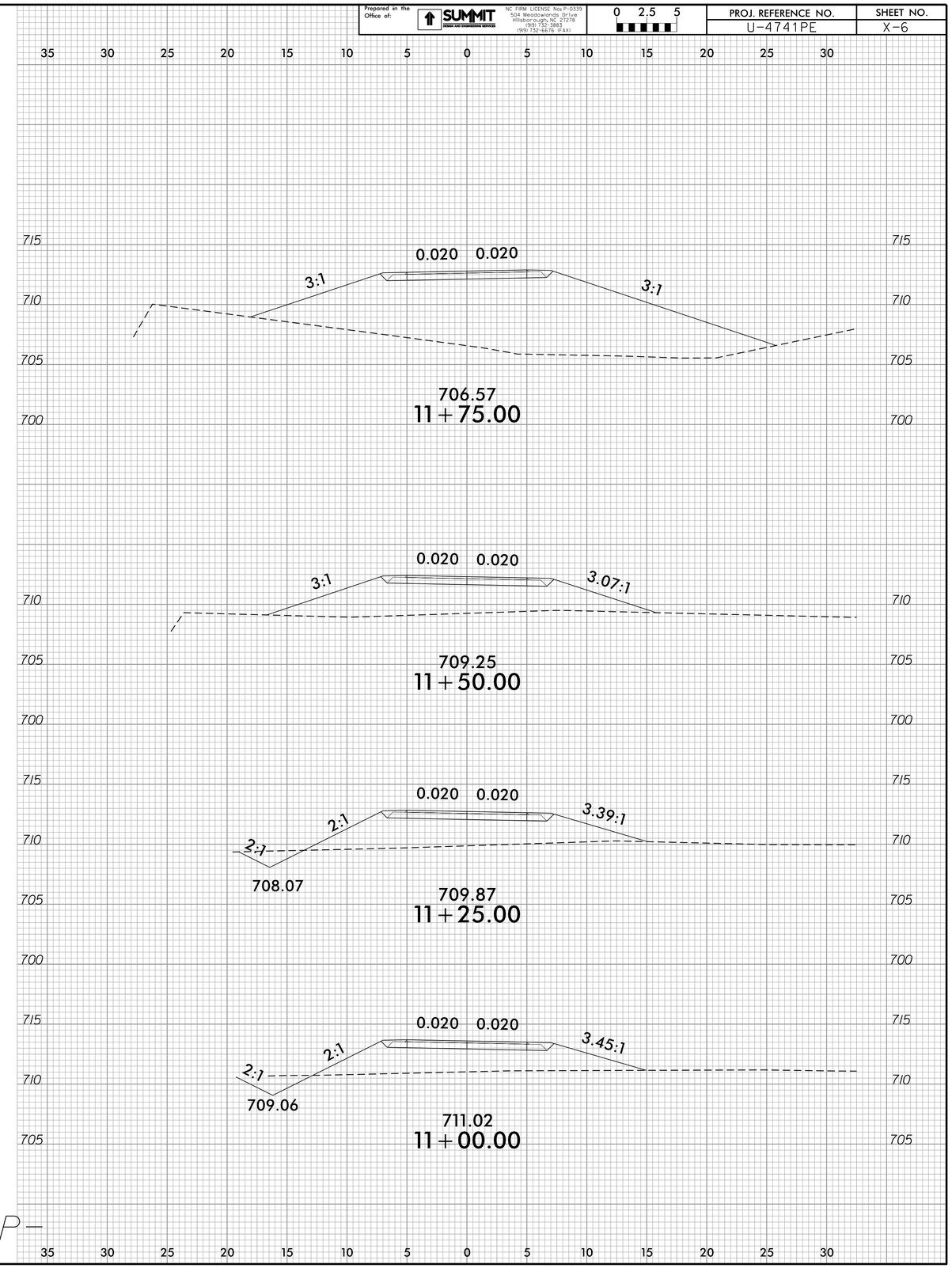
0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-6





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CLEMONS Rdwy
jessicaausziński

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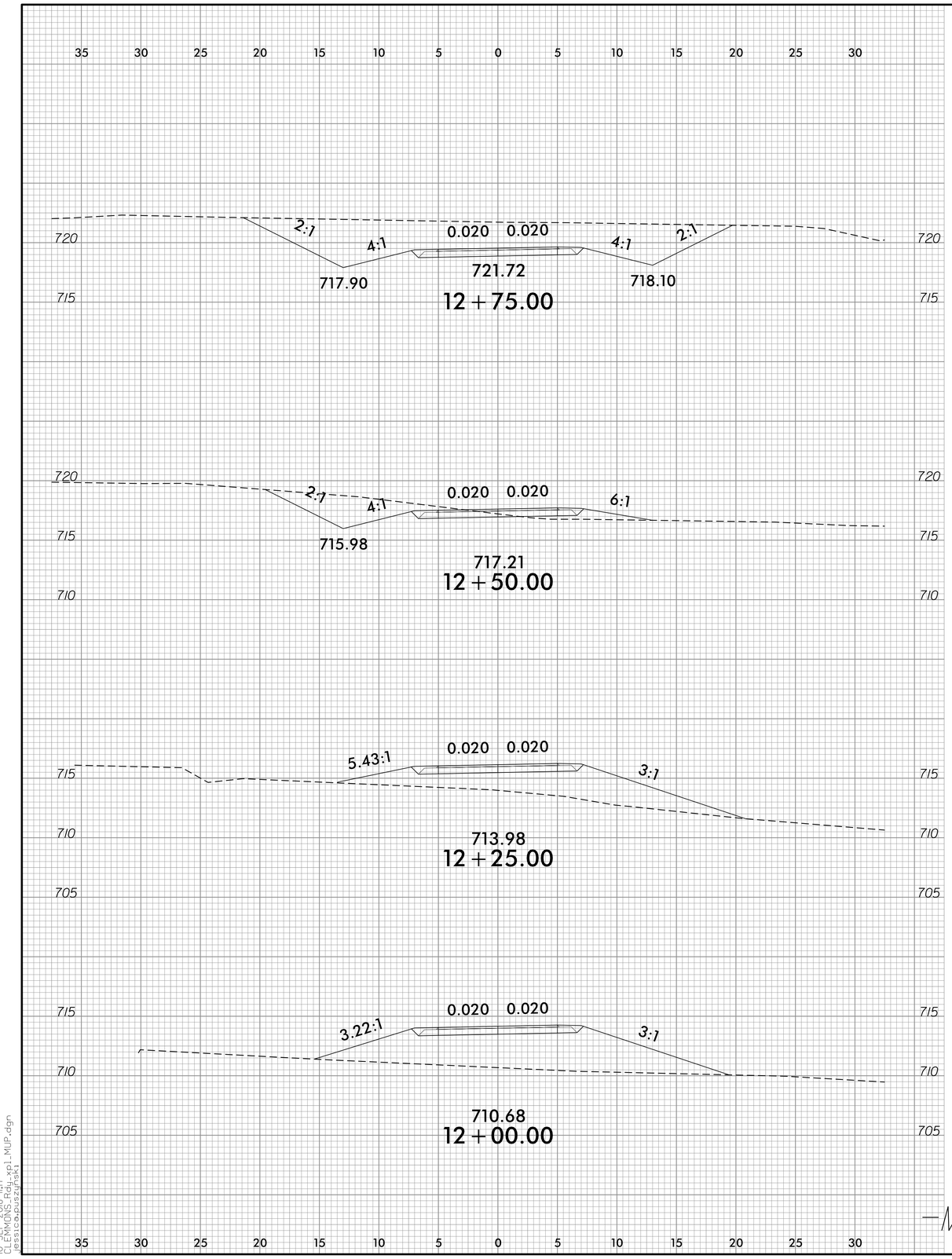
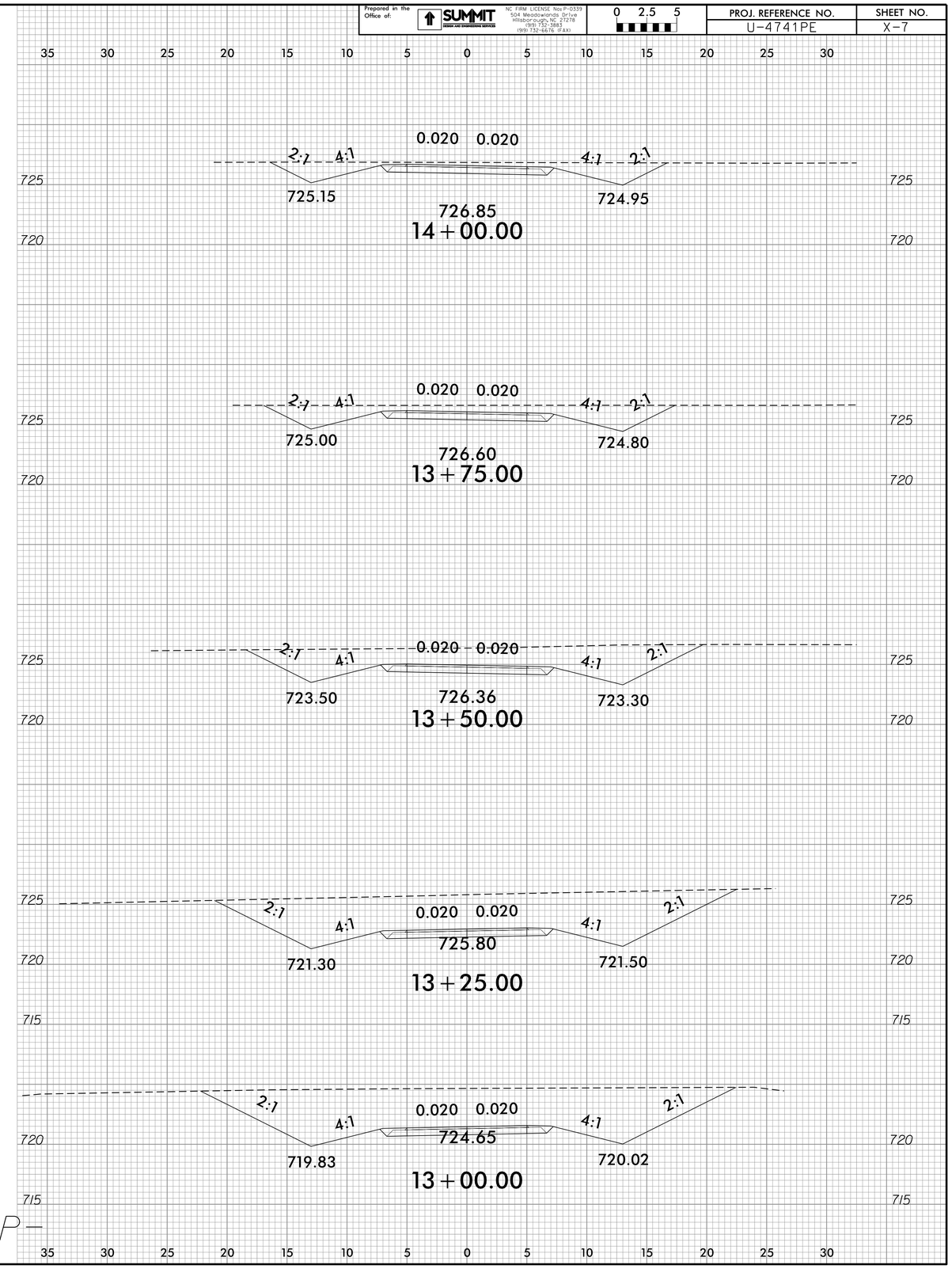
PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-7





10-SEP-2018 14:17
CLEMONS RH1
jessicaprzybylski
U4741_xp1_MUP.dgn

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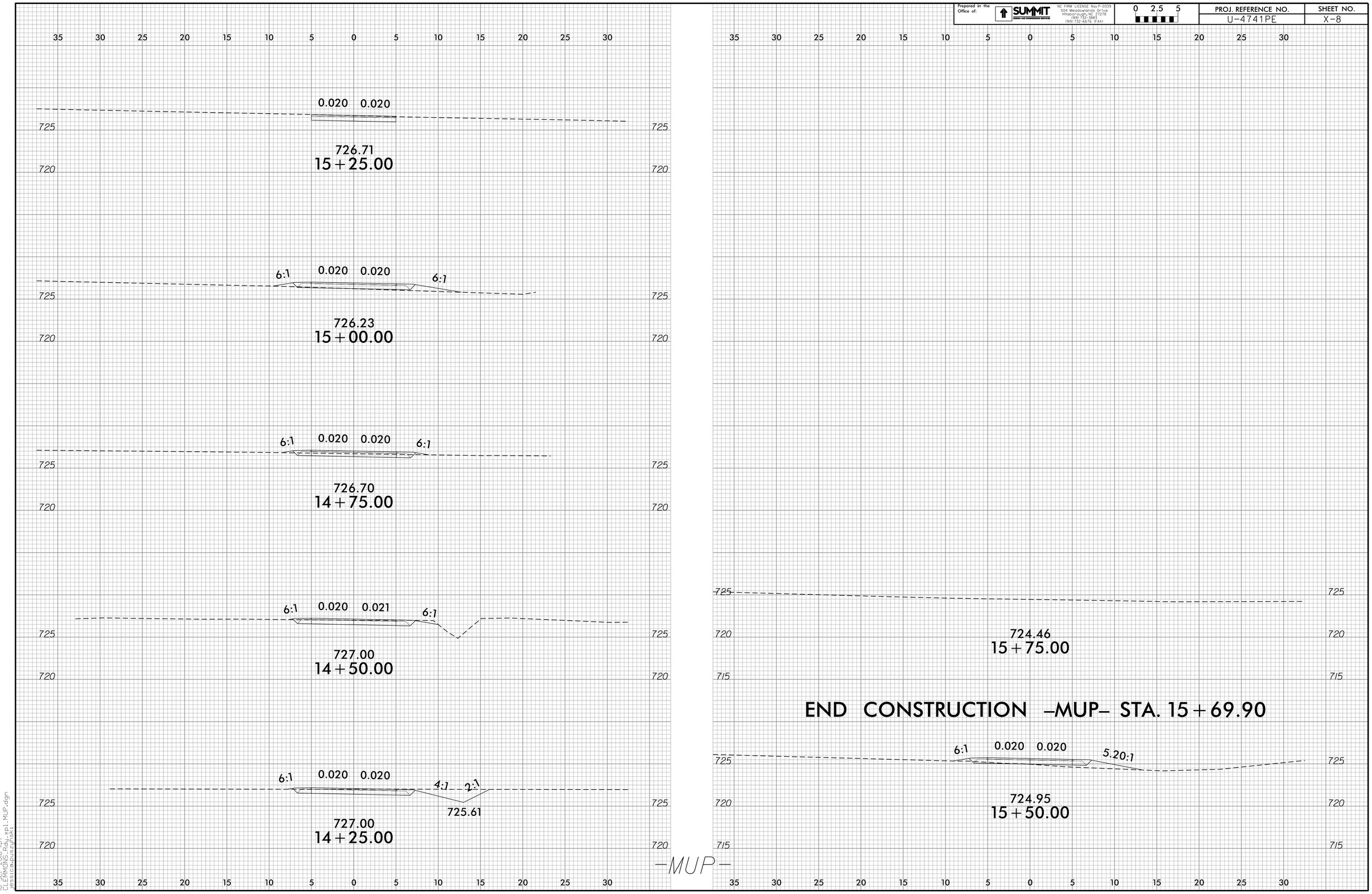
0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-8



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CLEMONS Rdt
jessicaausrzyski
jessicaausrzyski_xp1_MUP.dgn

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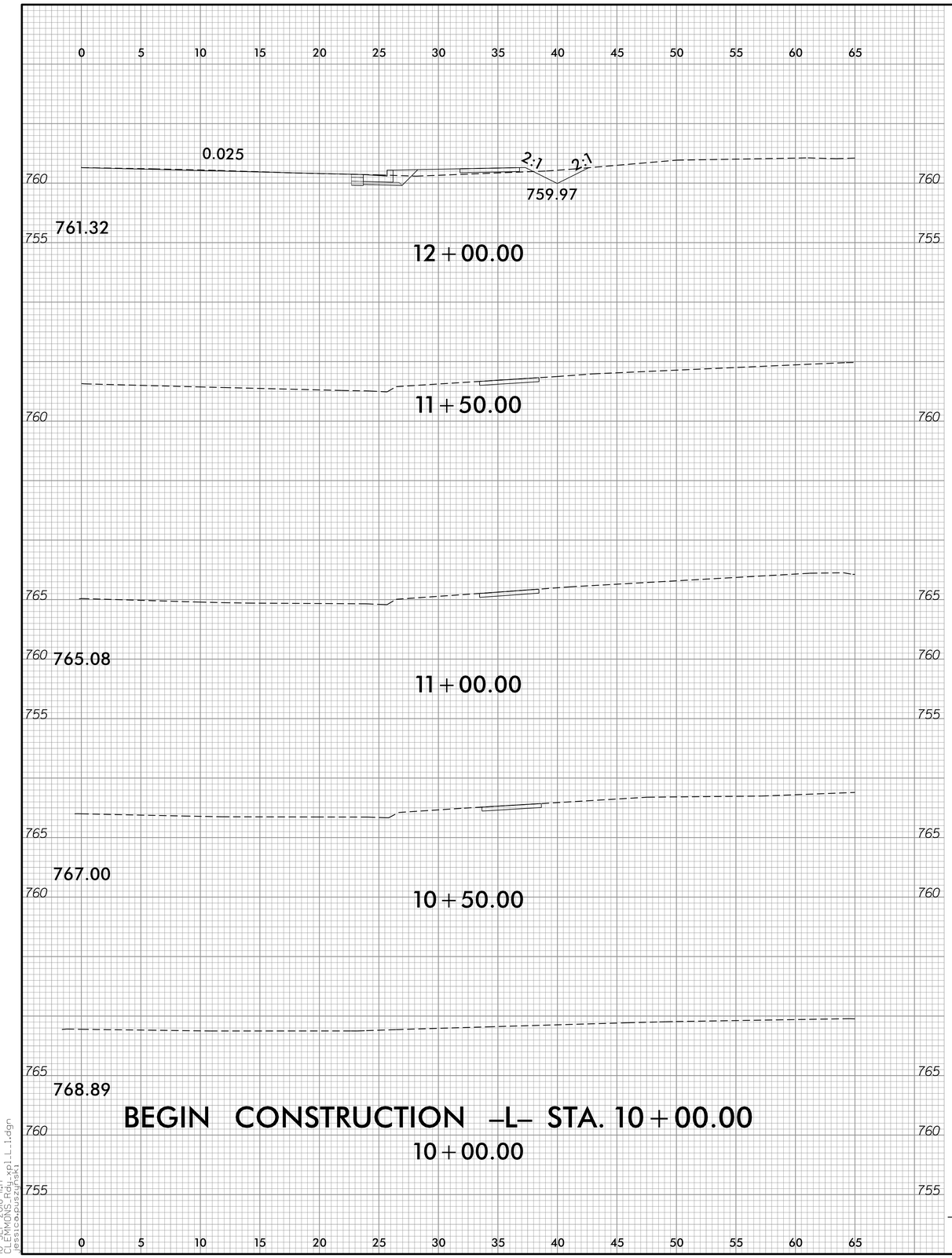
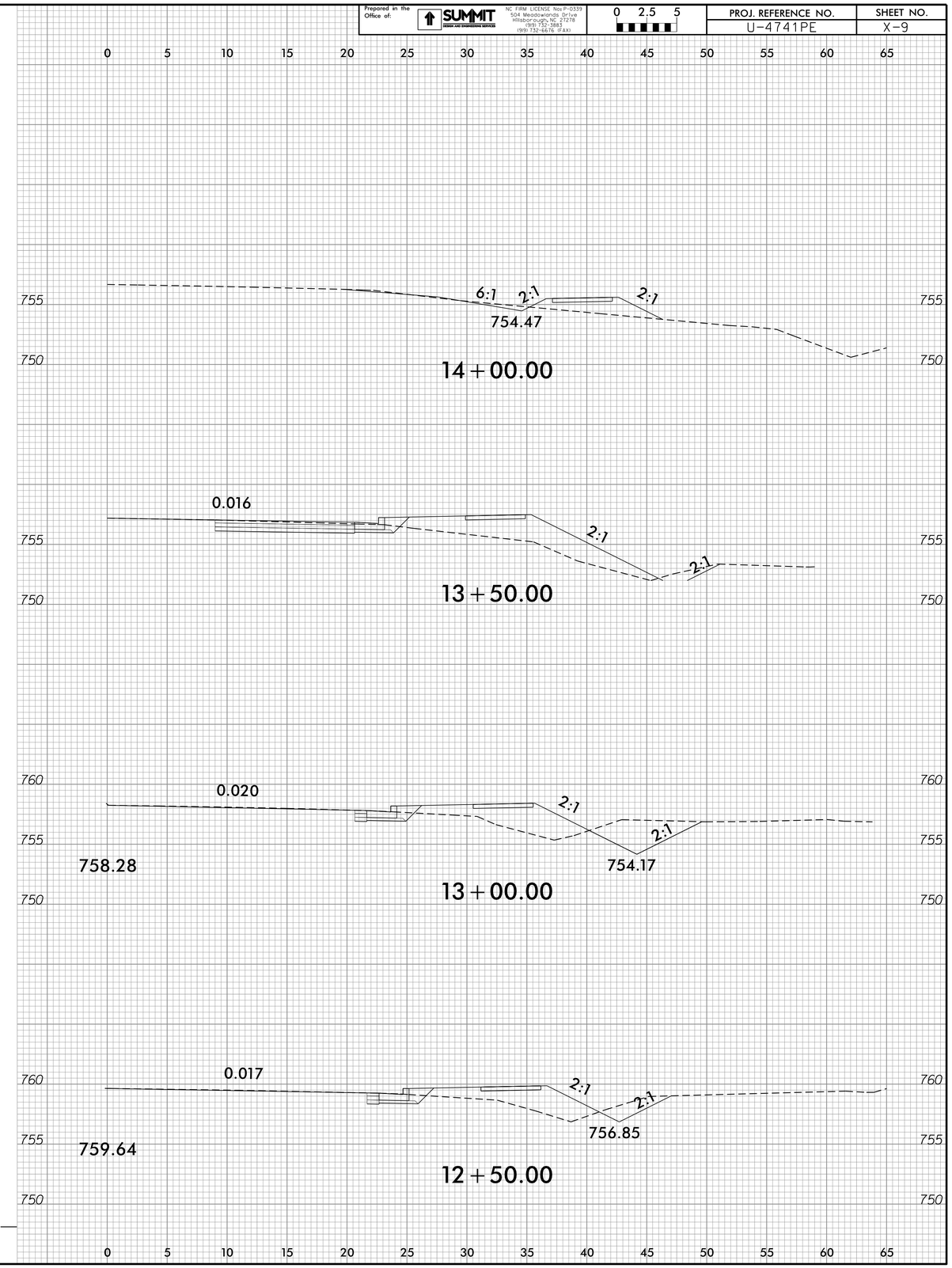
PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-9





-L-

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CLEMMONS Rdwy
jessicaburzynski

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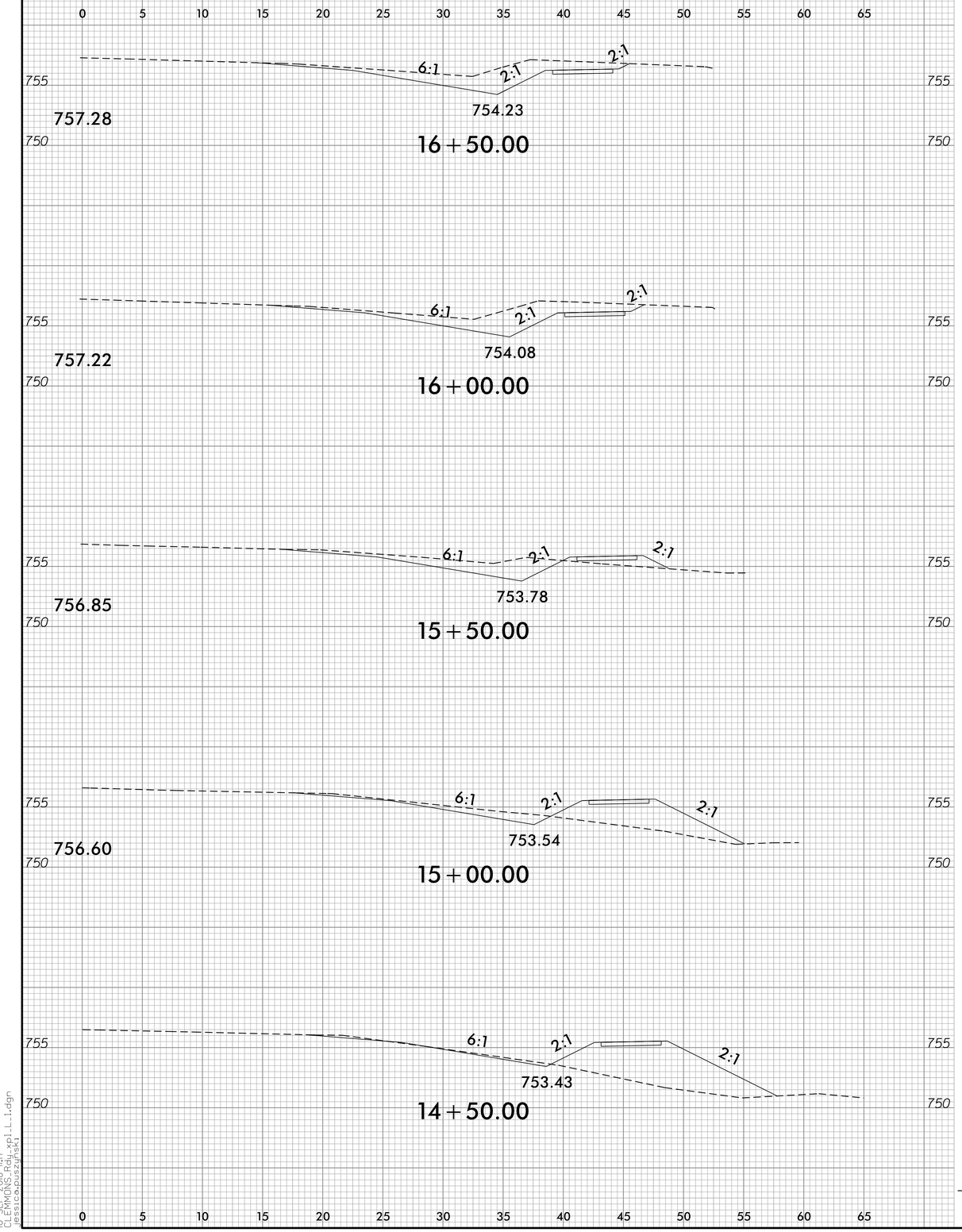
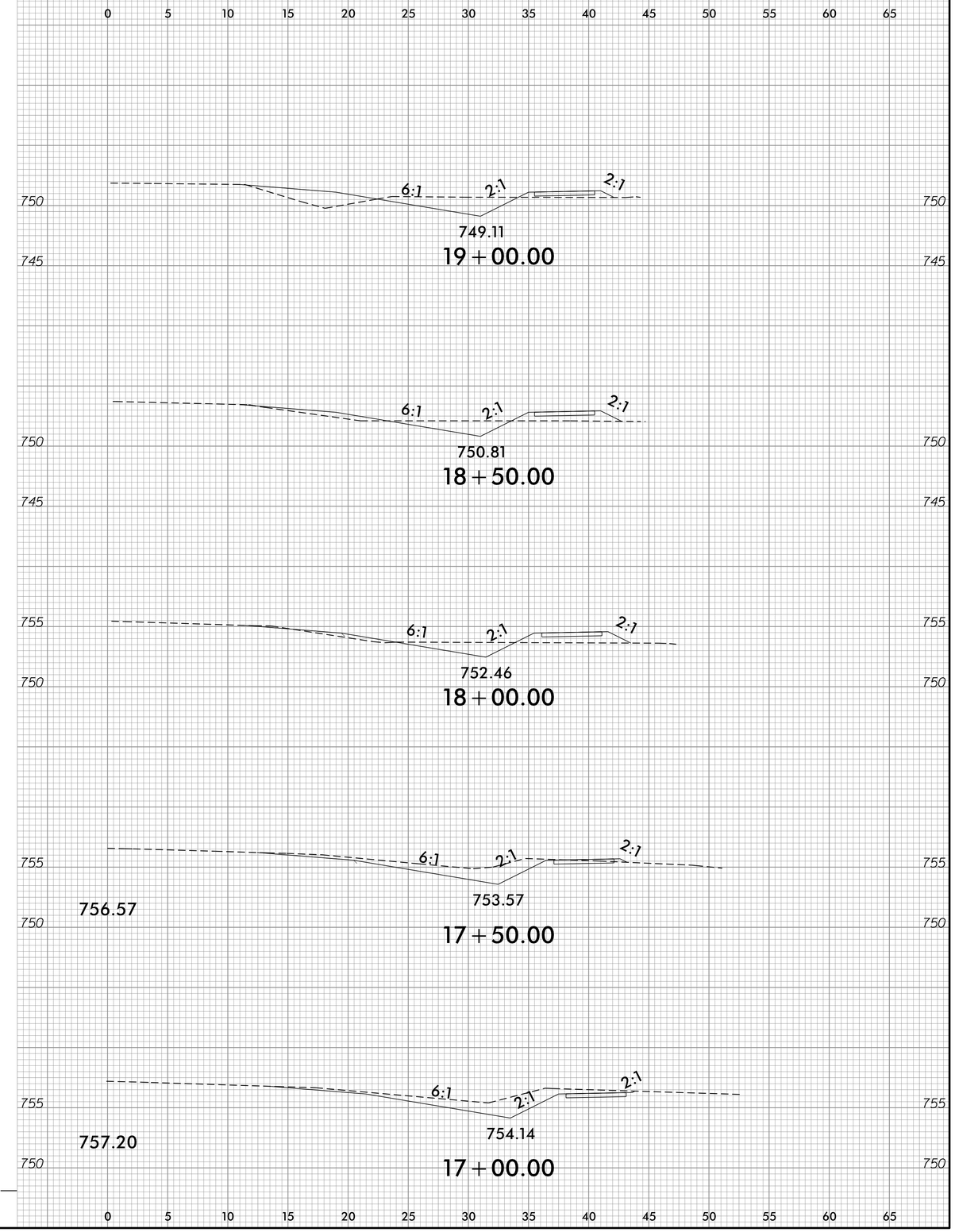
0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-10





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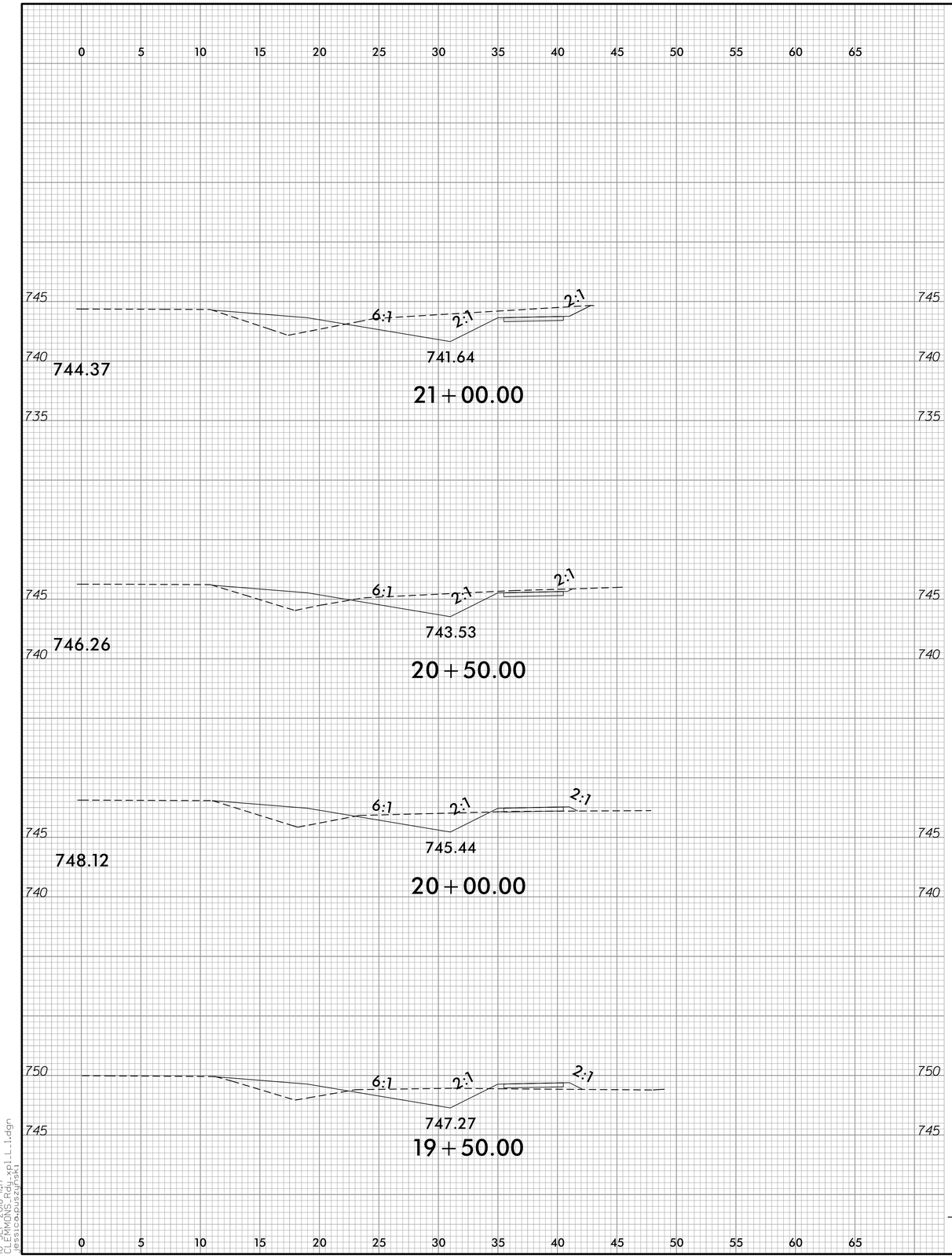
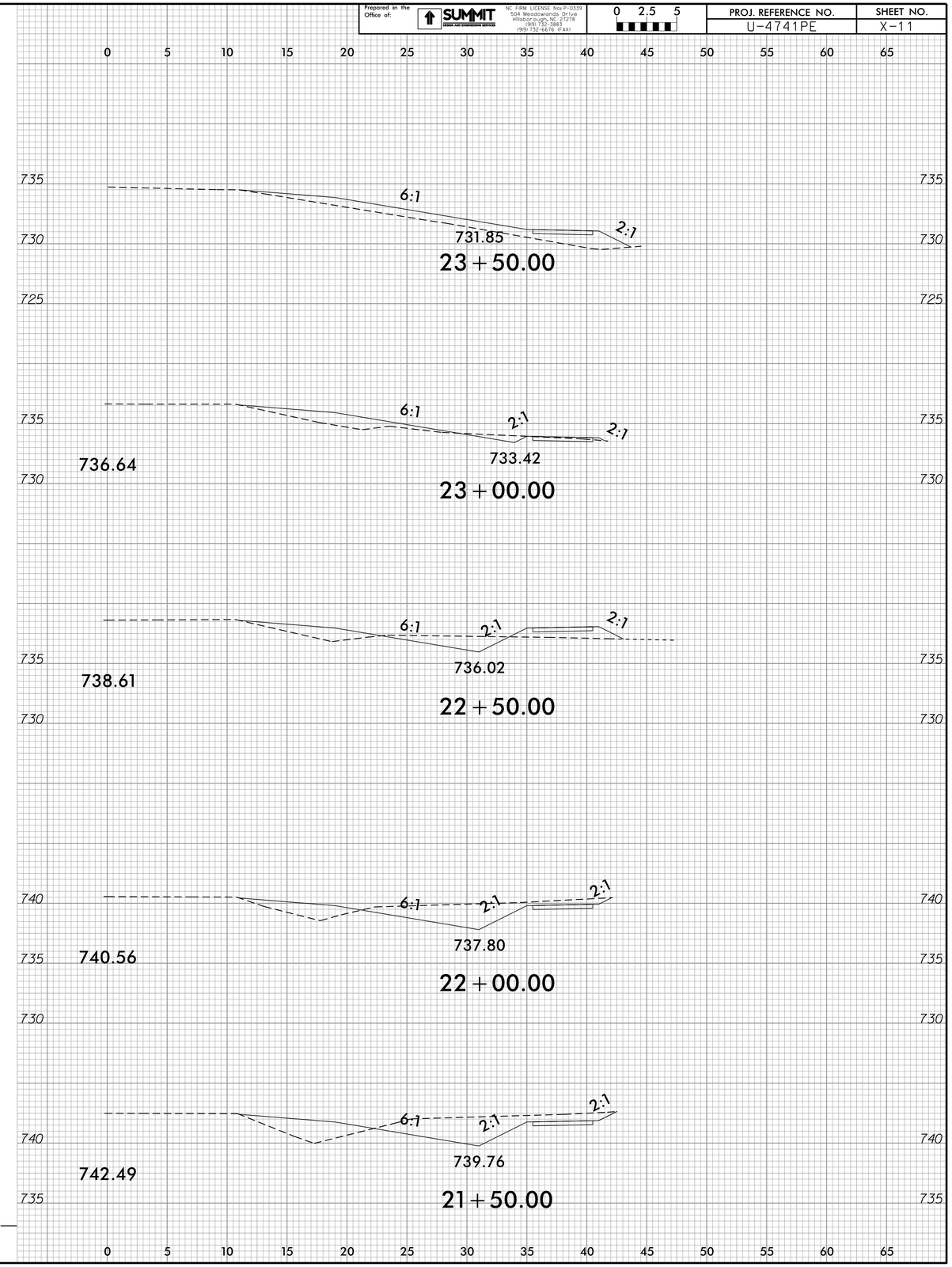
0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-11





10-SEP-2018 14:7
CLEMMONS.dgn
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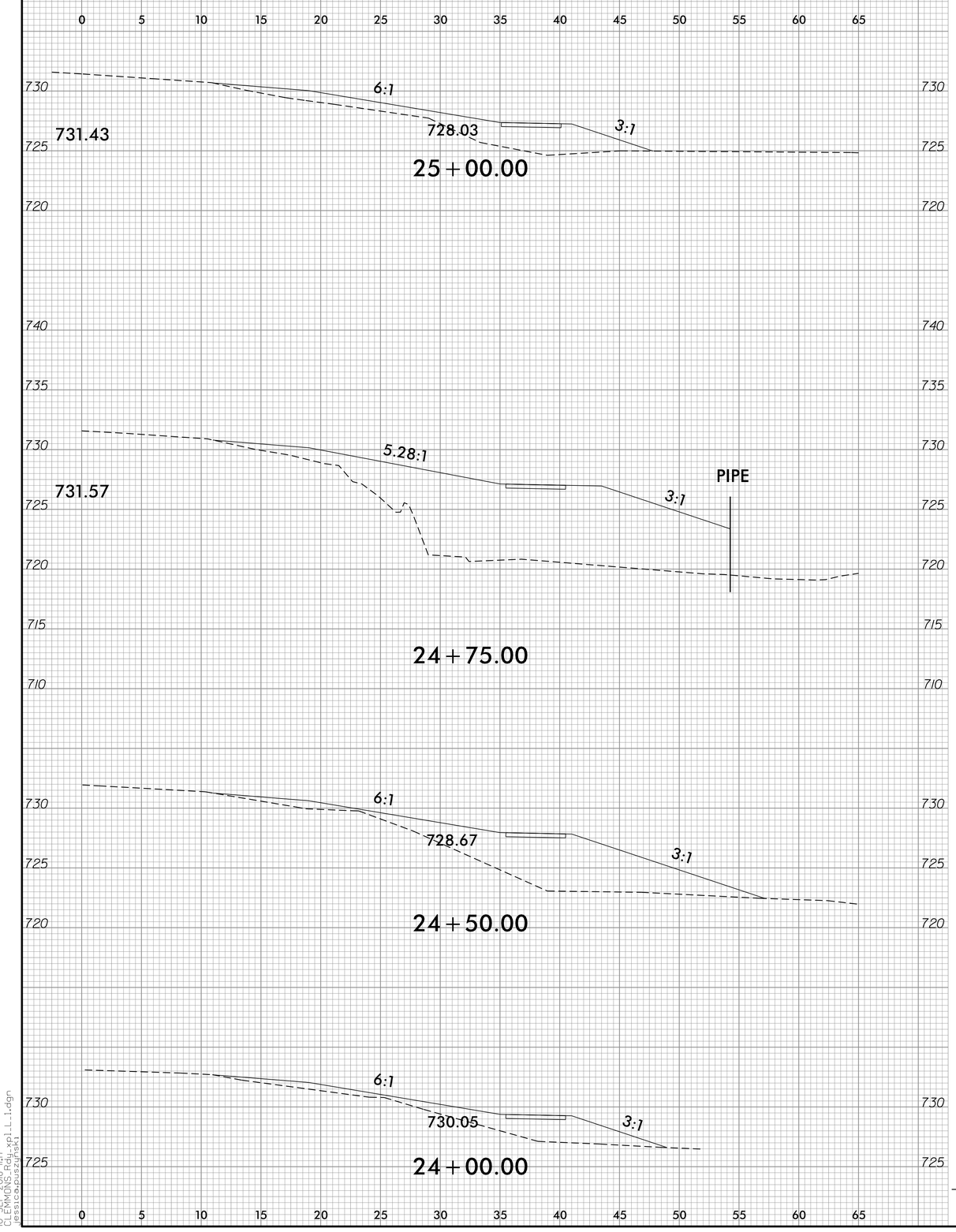
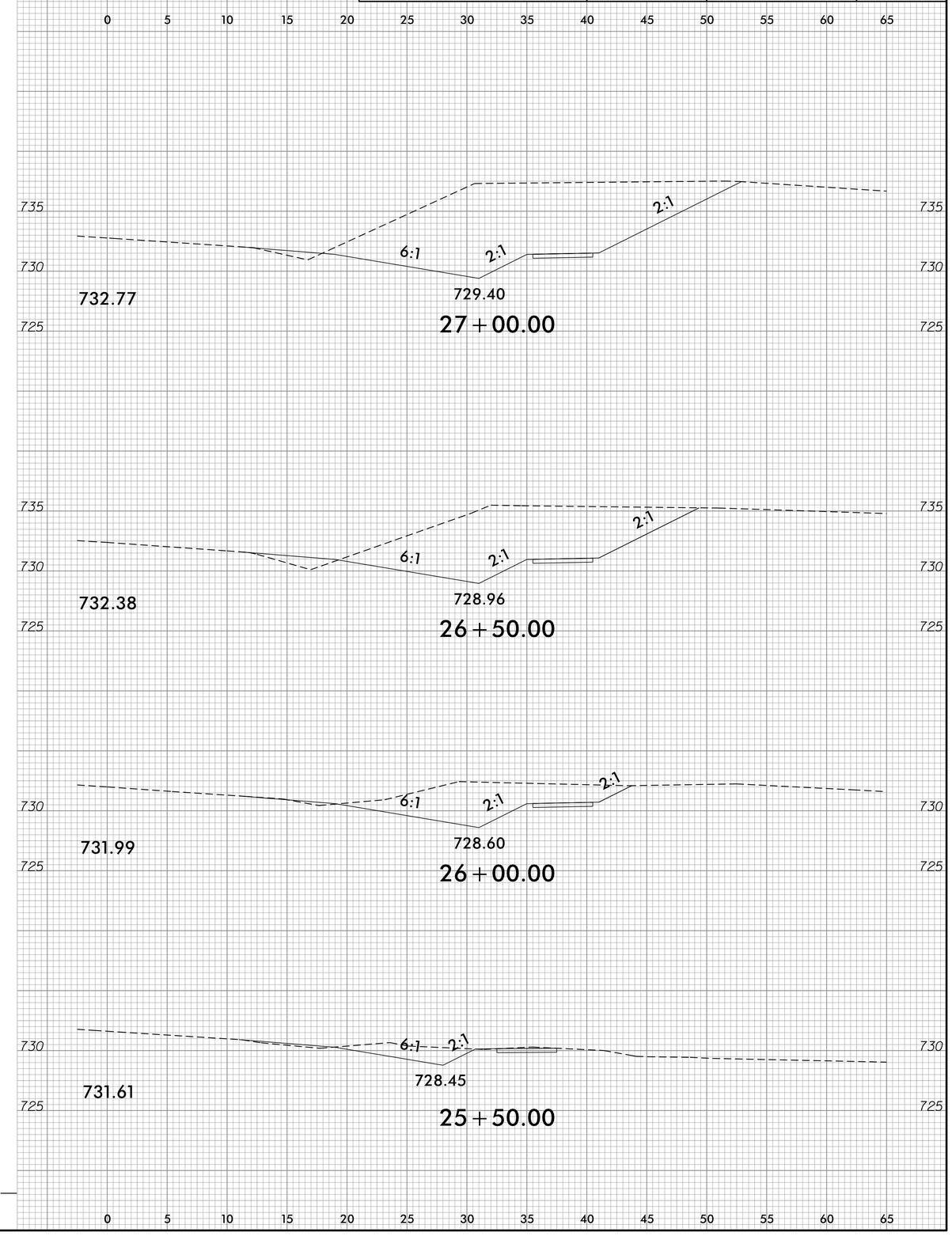
0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-12





10-SEP-2018 14:17
CLEMMONS Plot
jessicaprice
jkeyzurs
U4741X_X01_L_1.dgn

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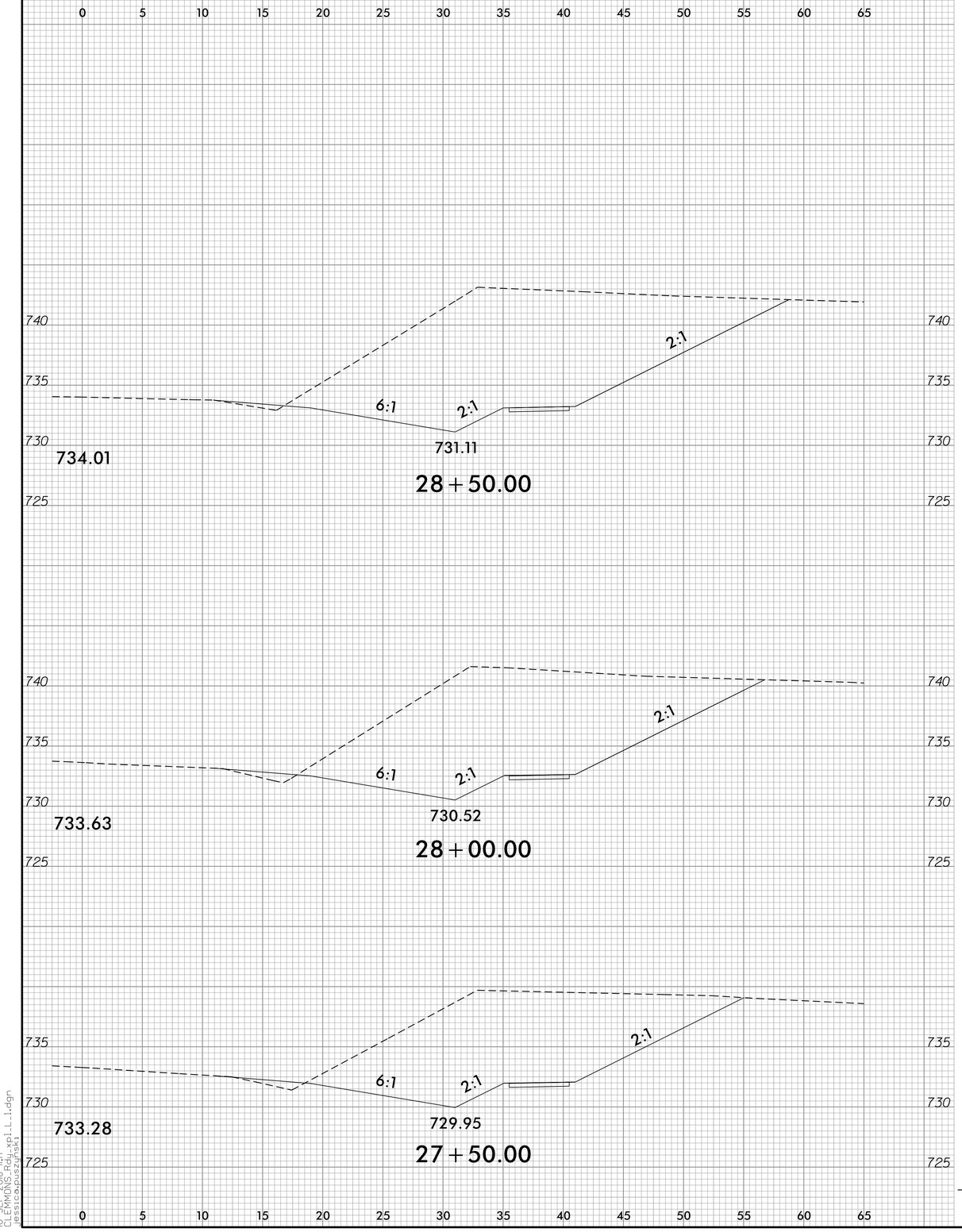
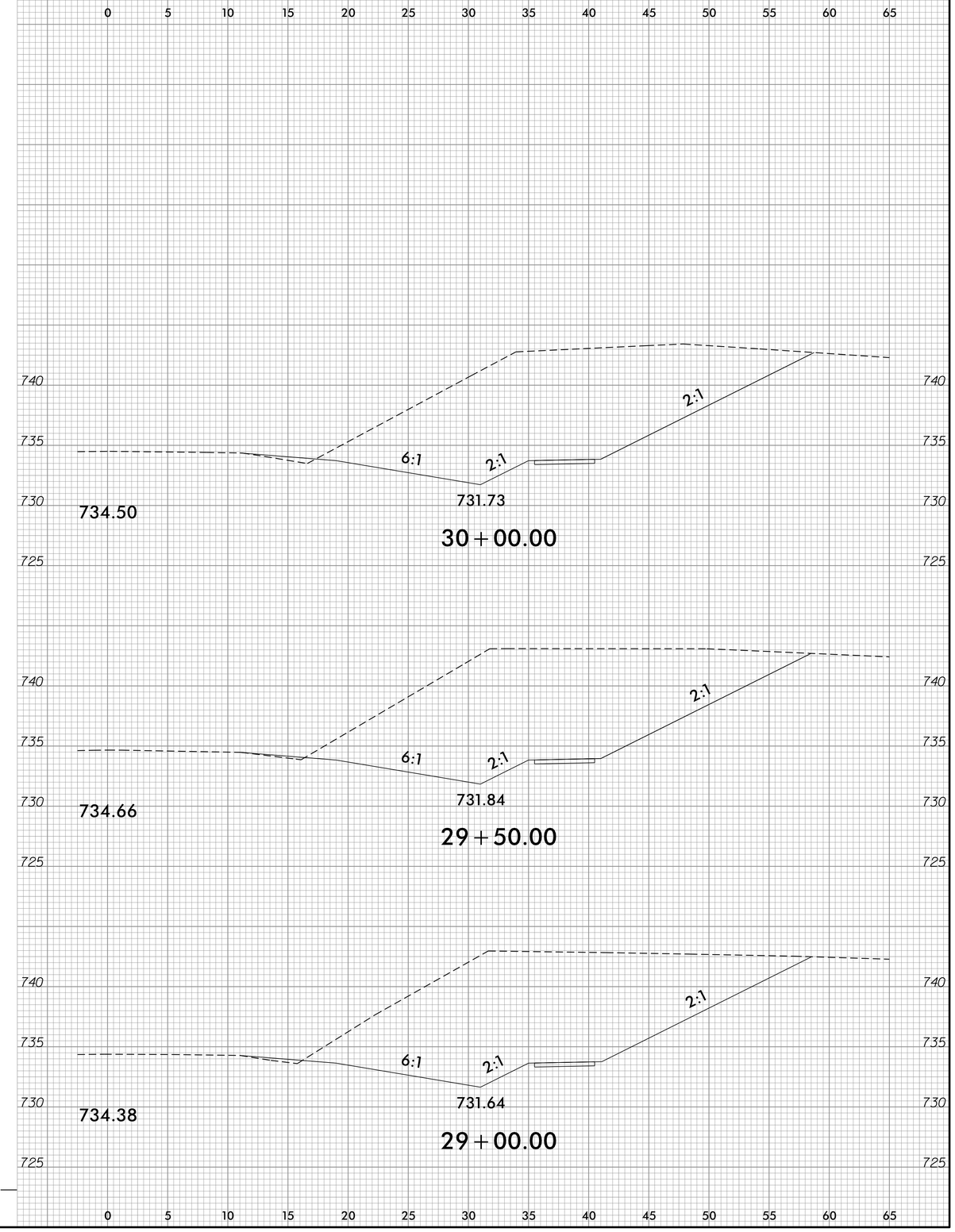
PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-13





10-SEP-2018 14:7
CLEMONS Rd
jessicaprusznski

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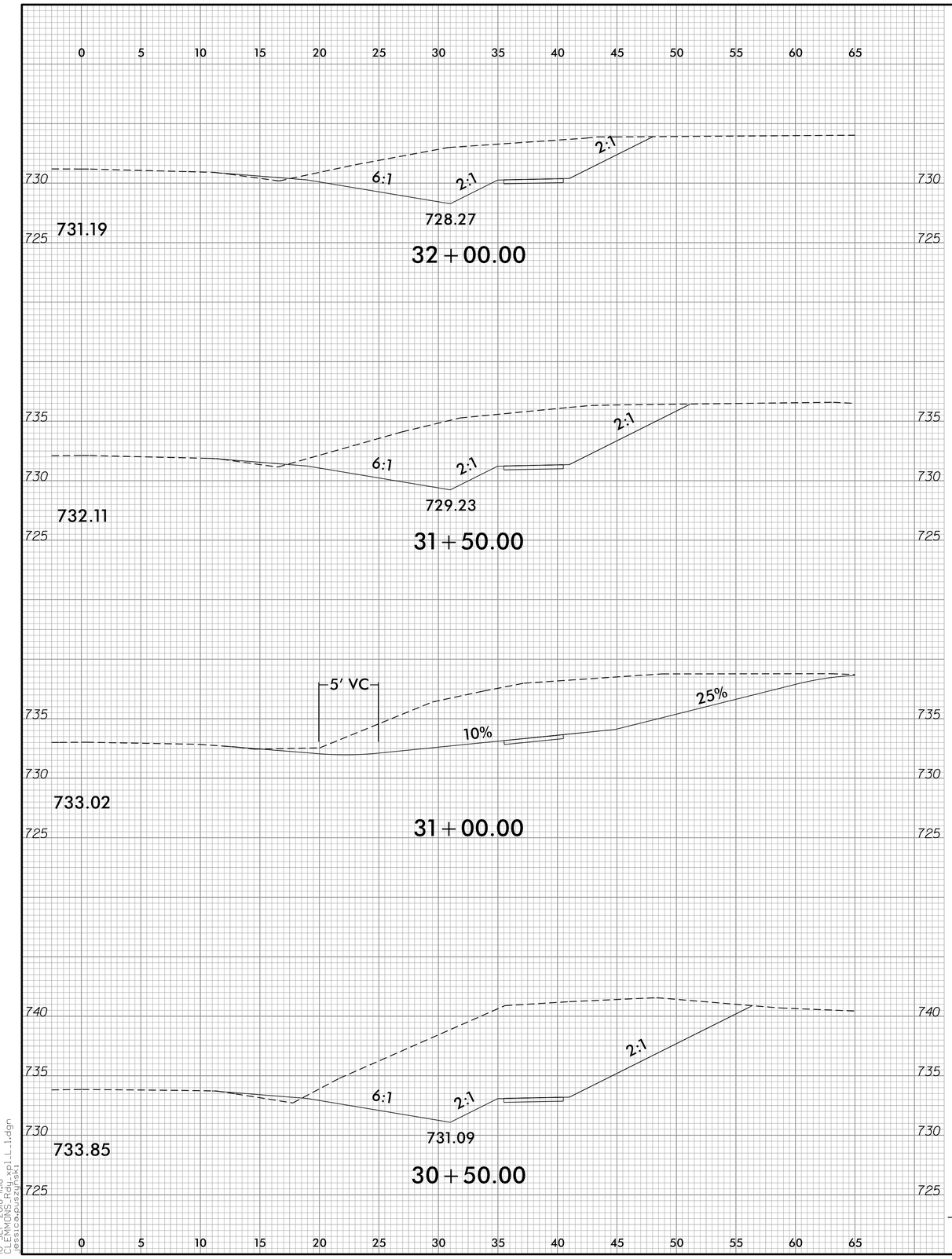

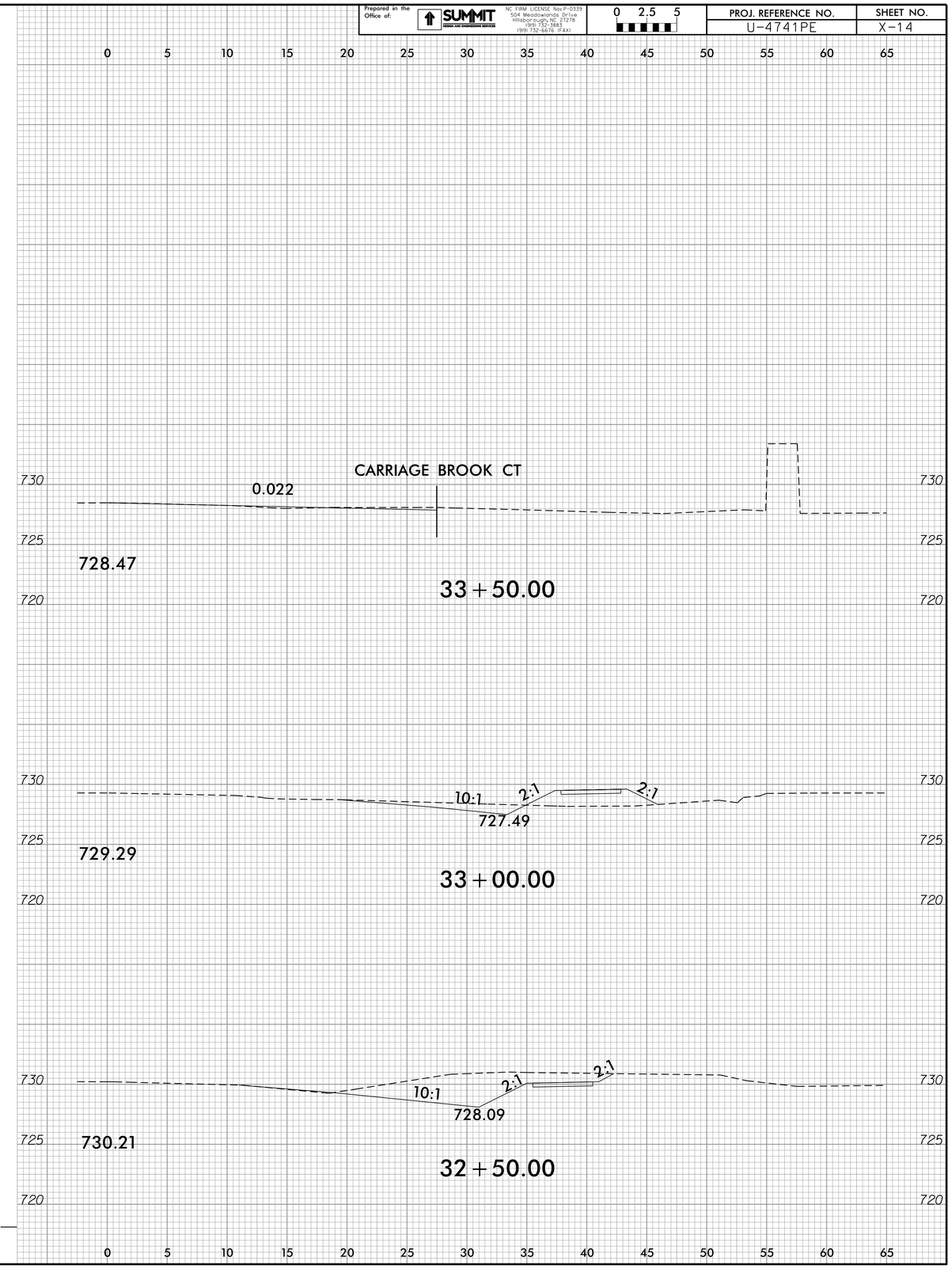

10-SEP-2018 14:18
CLEMONS Rdy
jessicaausrzynski
jessicaausrzynski_xp11_11.dgn

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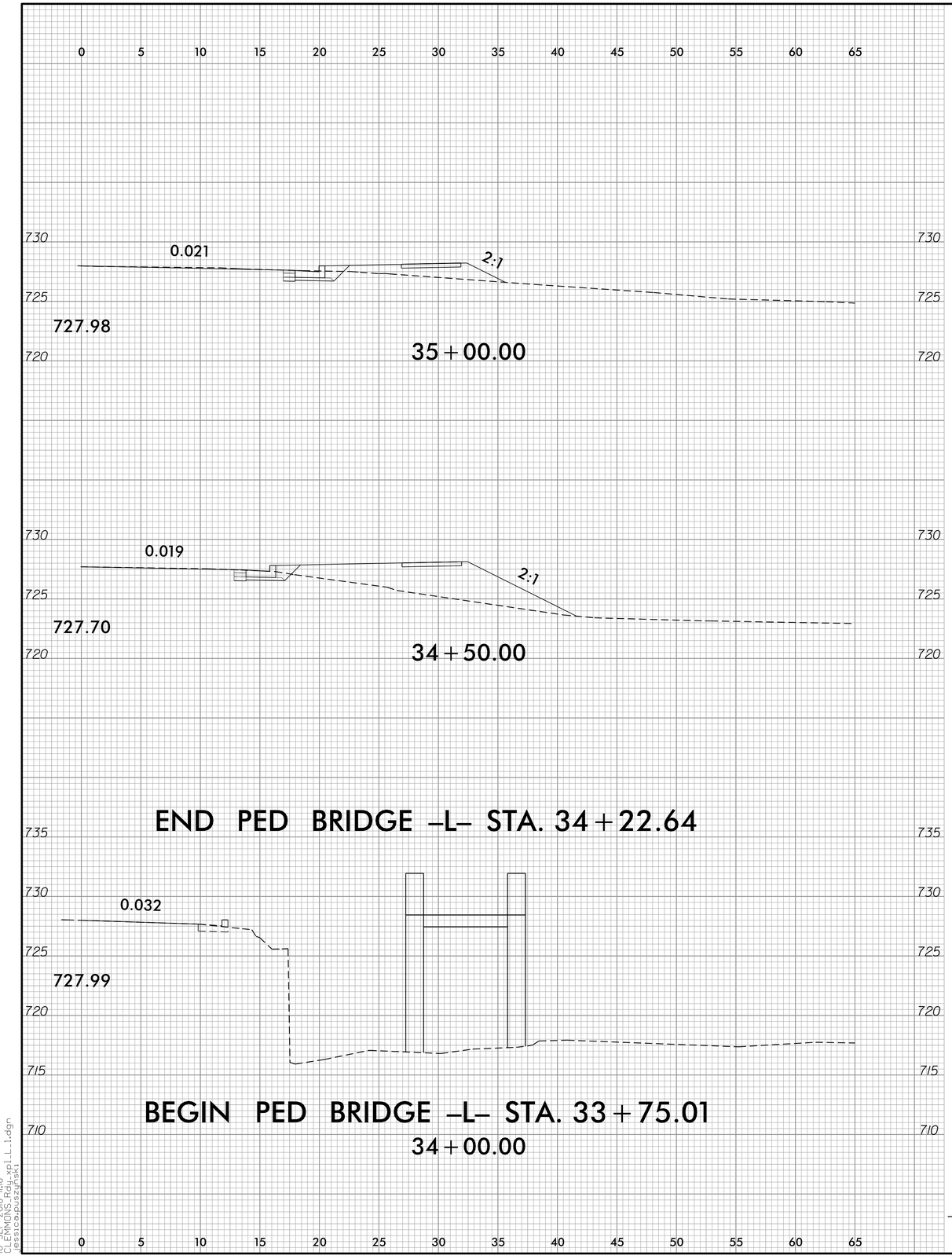
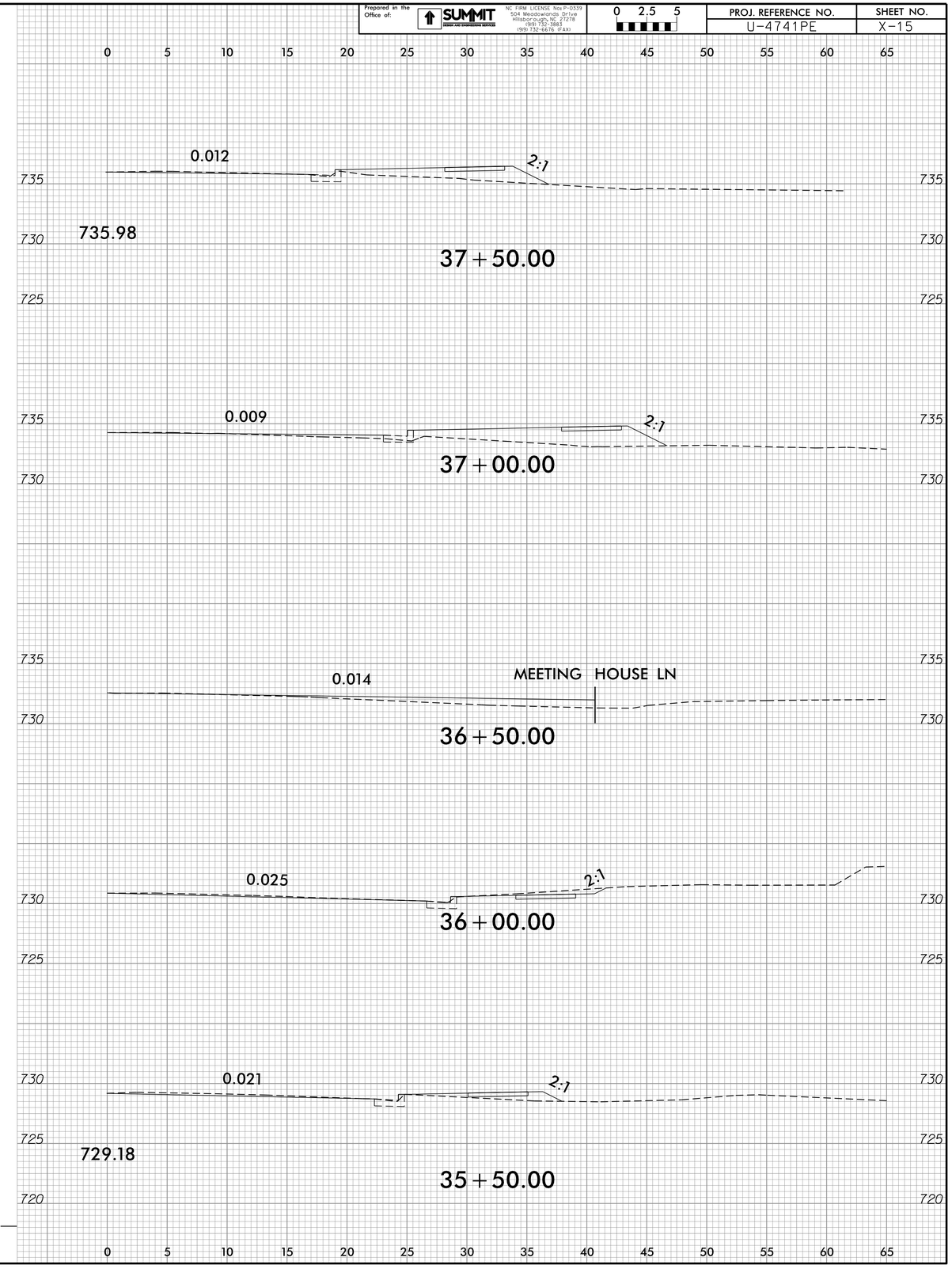
PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-15





10-SEP-2018 14:18
CLEMMONS Rdwy
jeffrey.brooks.xsl1_1.dgn

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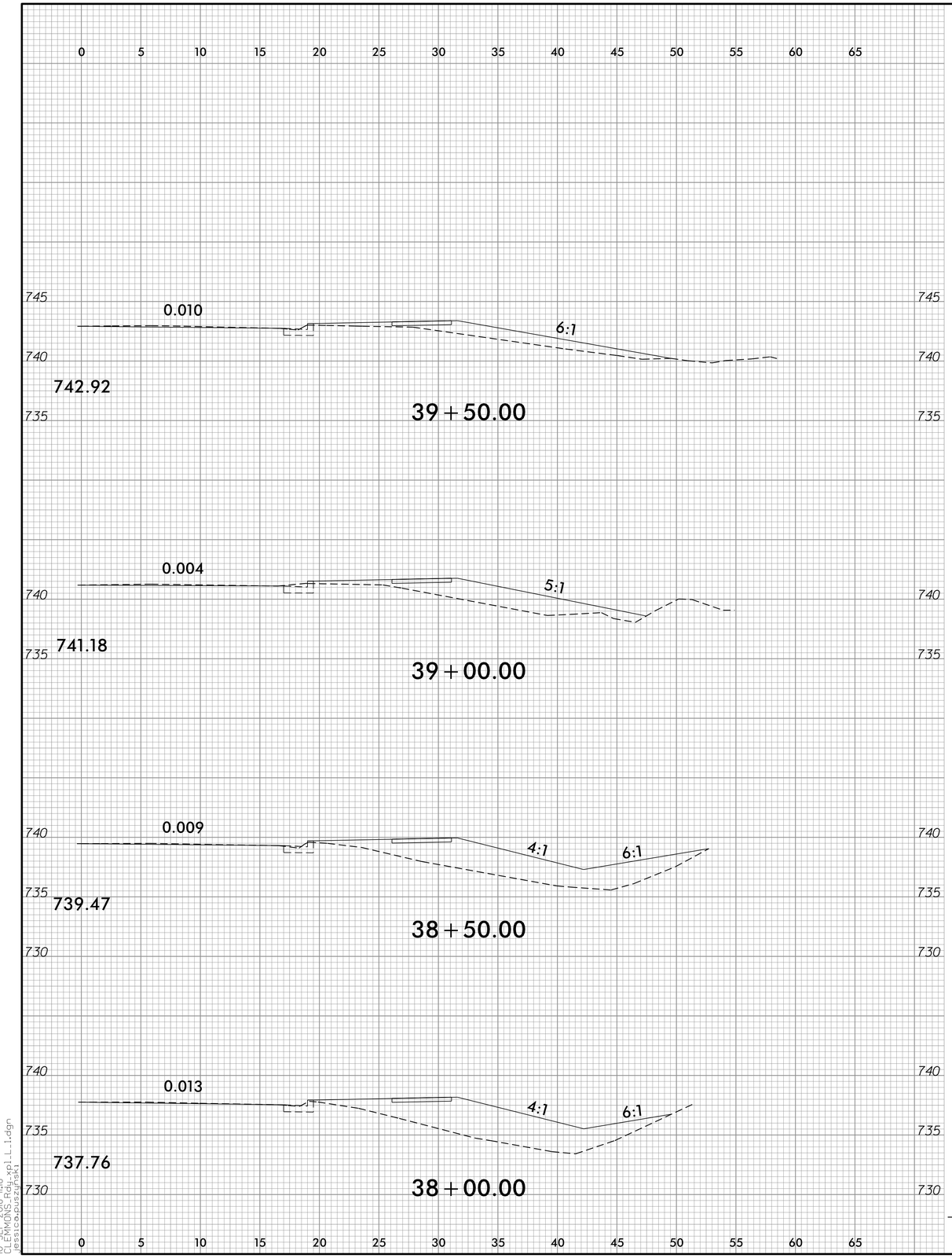
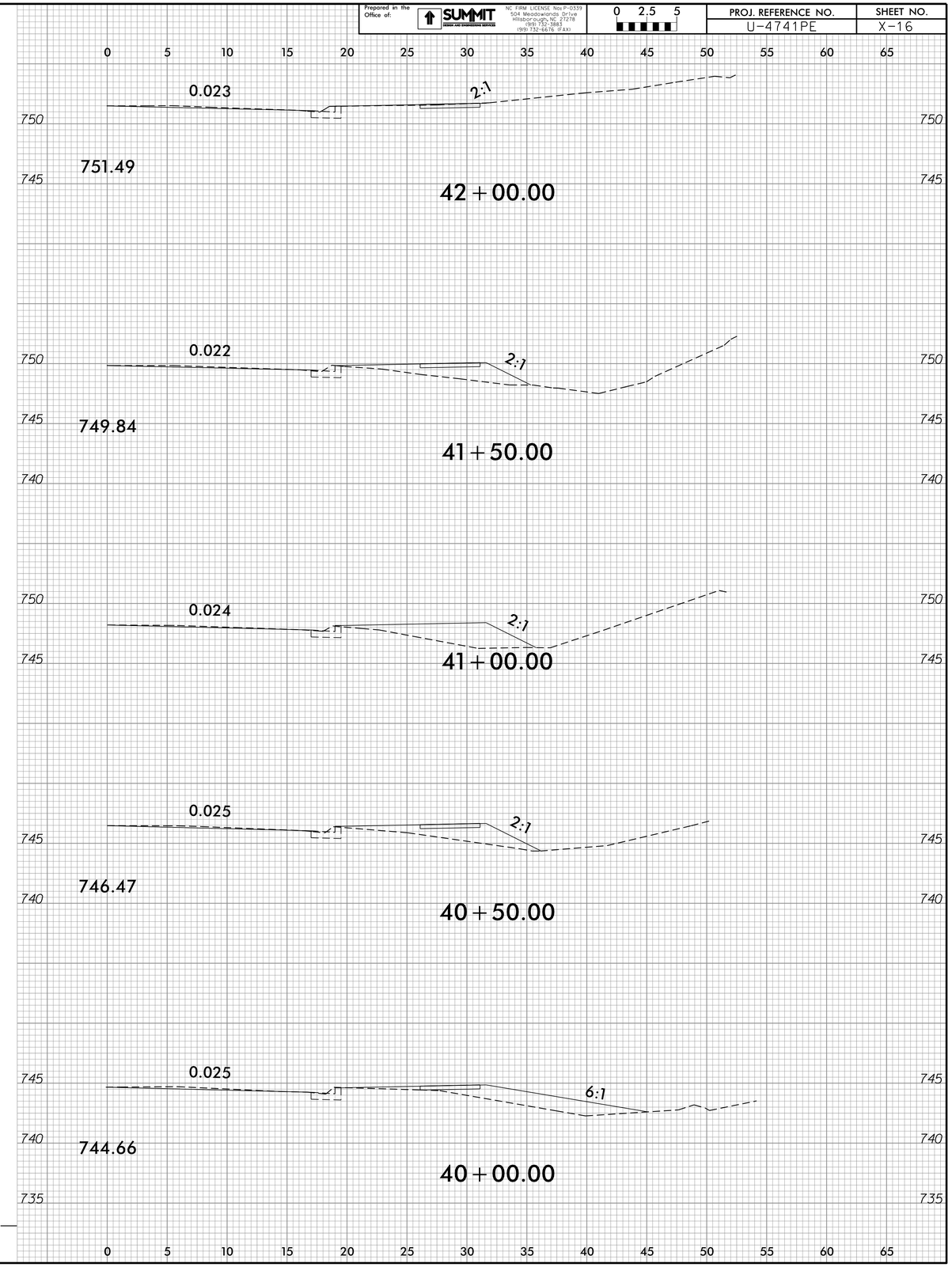
PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-16





10-SEP-2018 14:8
C:\EMDOTS\Bid
jessica.puszynski

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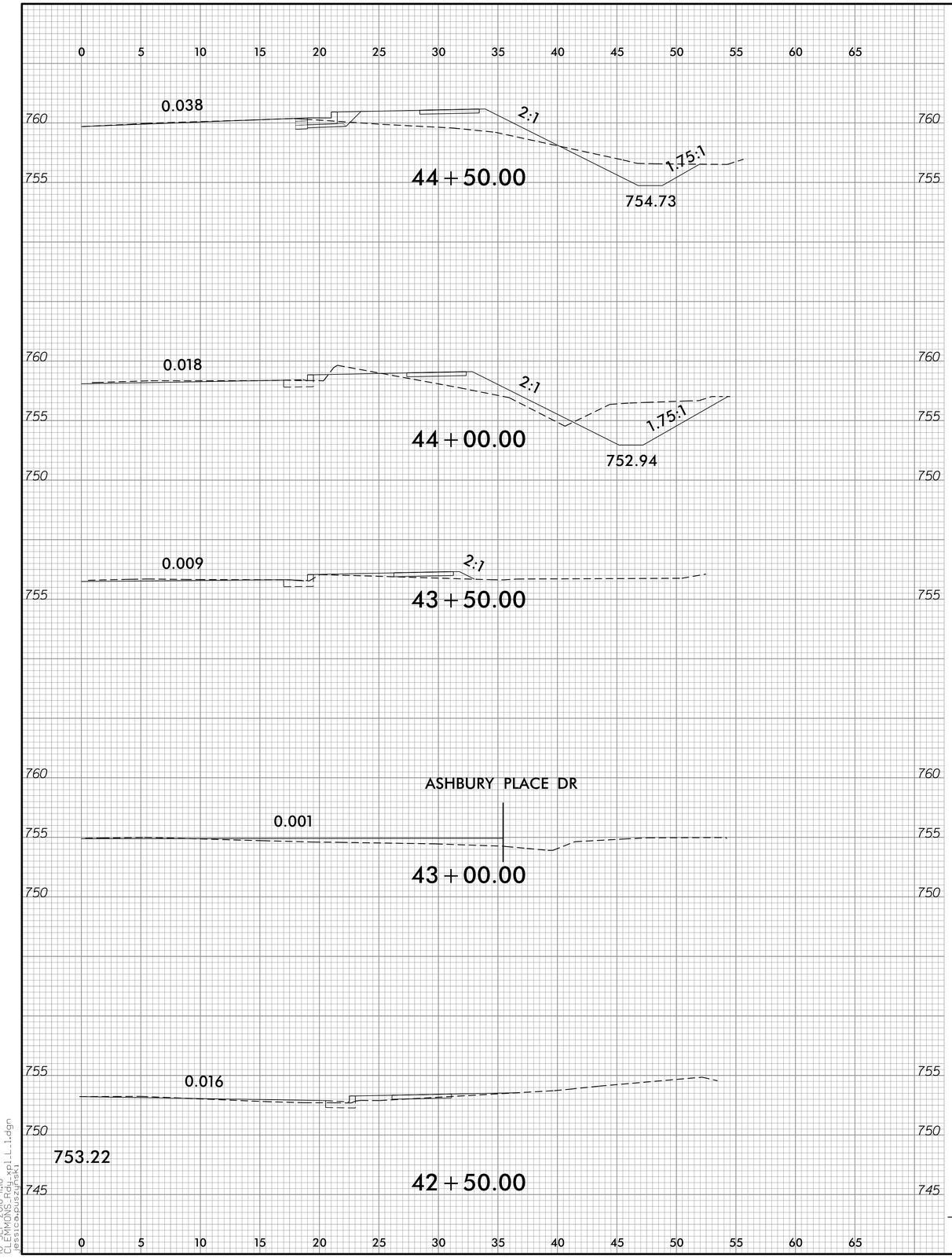
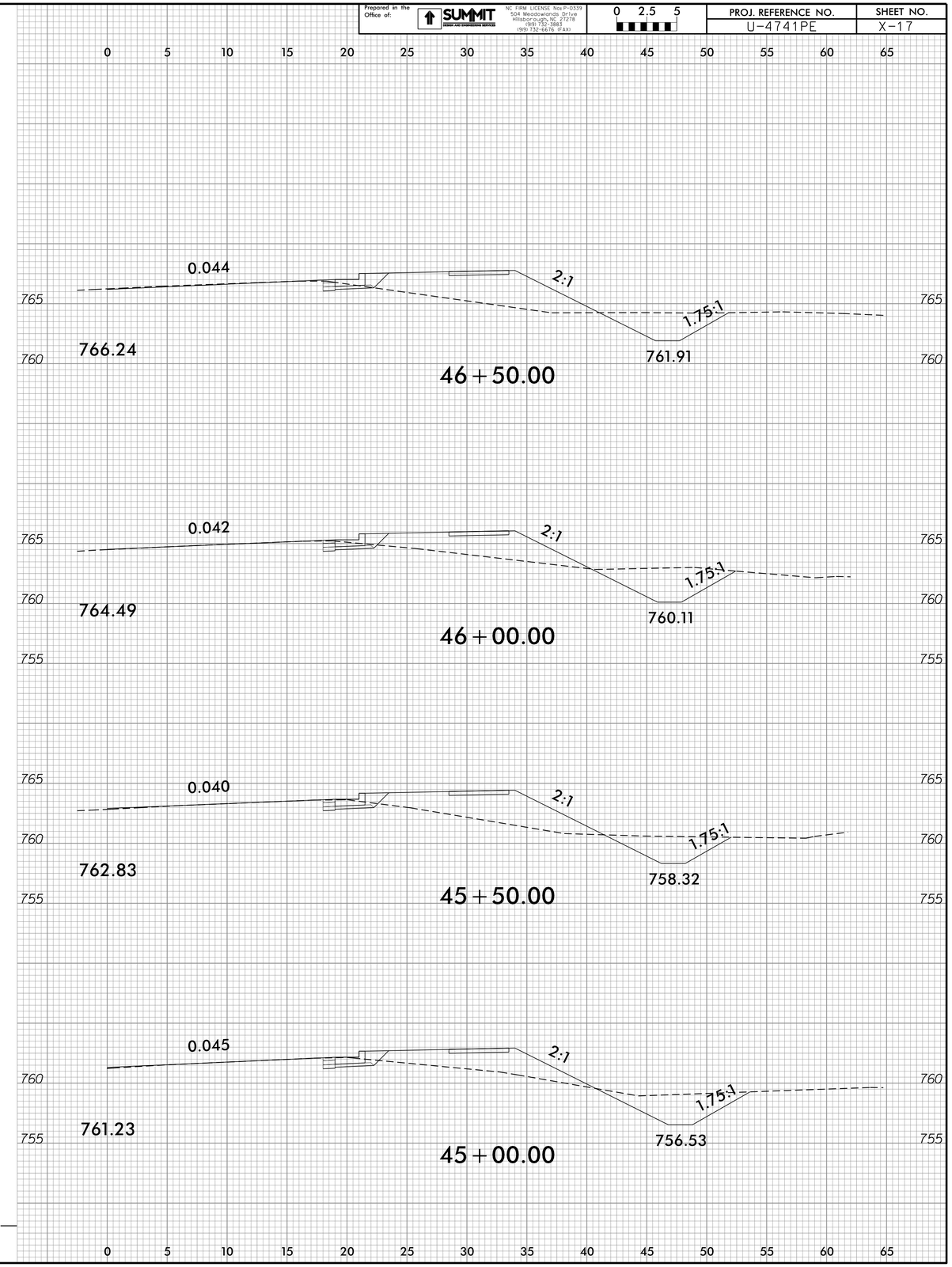
PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-17





10-SEP-2018 14:18
CLEMMONS Rdwy
jessicaprusinski
jessicaprusinski
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PROJ. REFERENCE NO.	SHEET NO.
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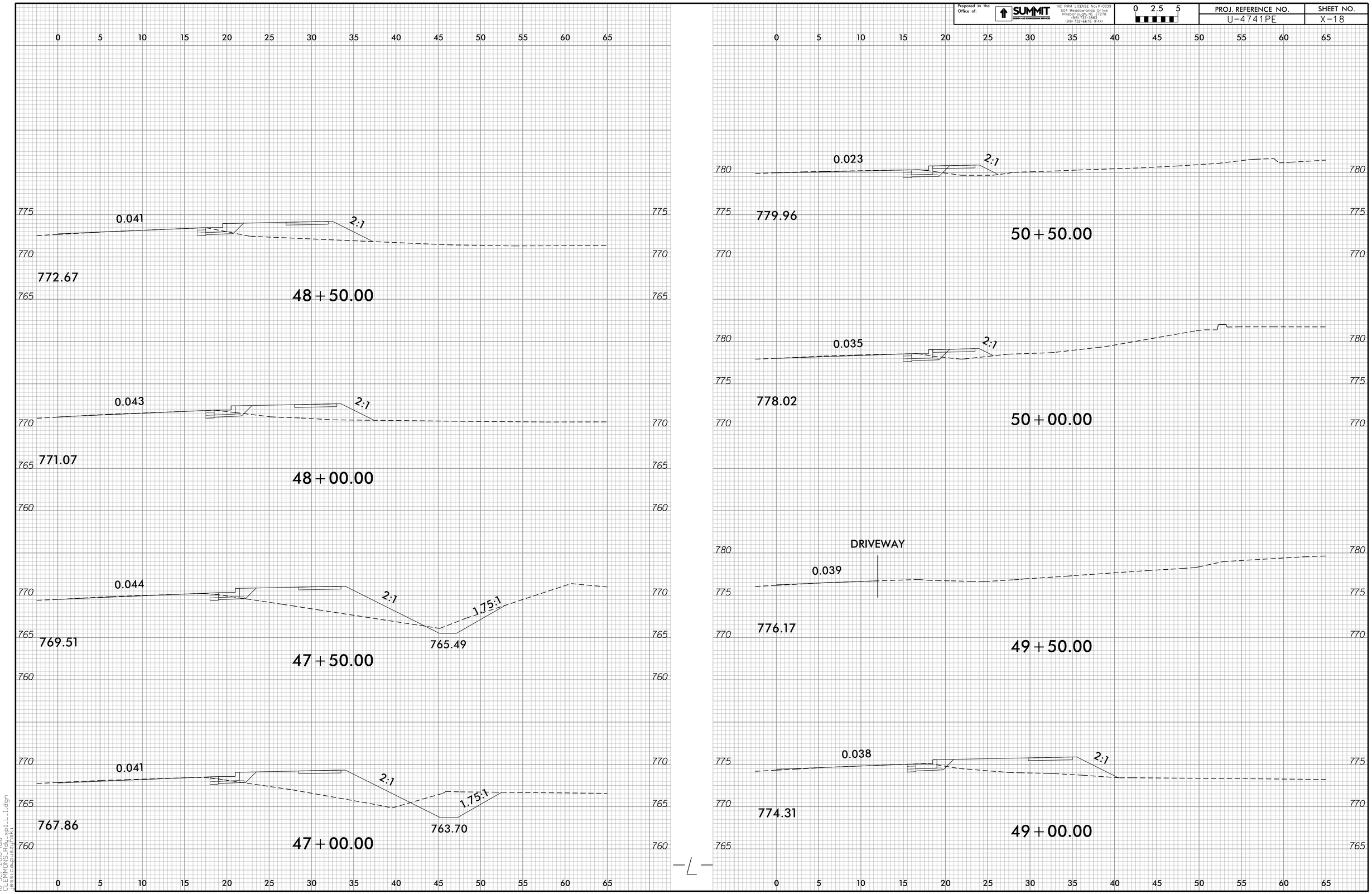

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CLEMMONS Rdy.xpl1_1_1.dgn
jessicaprusinski

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PROJ. REFERENCE NO.	SHEET NO.
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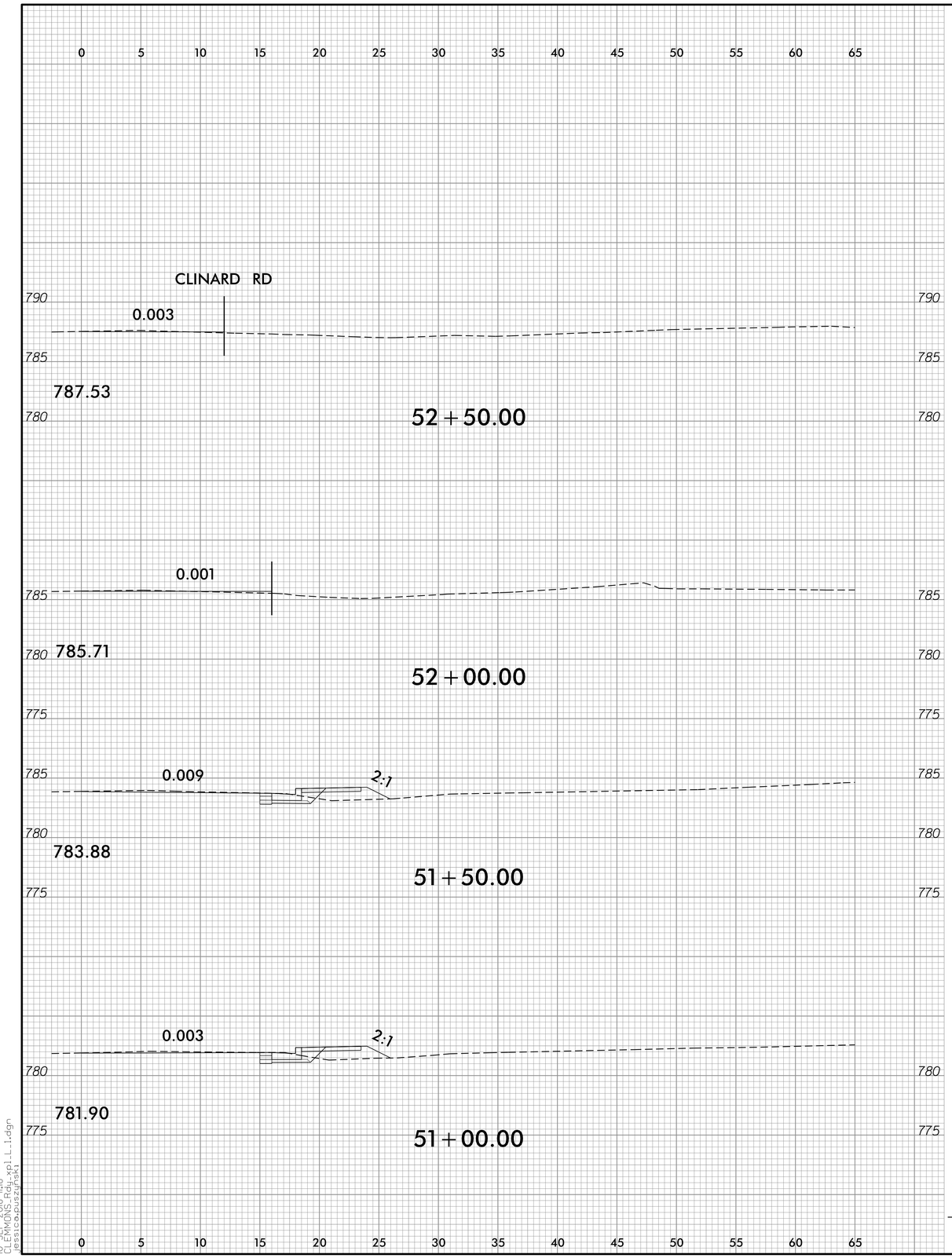

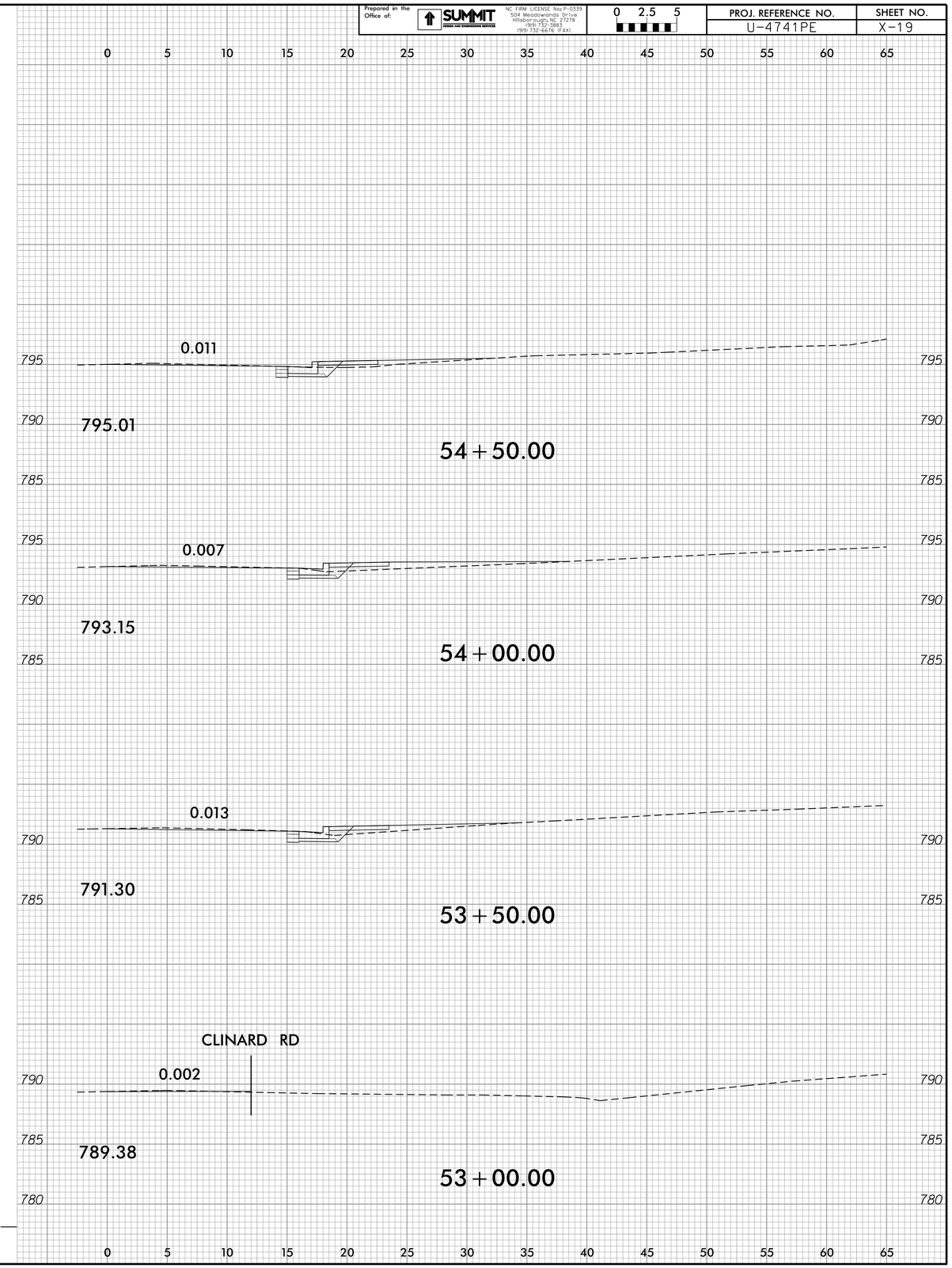

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CLEMMONS.dgn
jessicaburgess
kbrazzo01L_1.dgn

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PROJ. REFERENCE NO.	SHEET NO.
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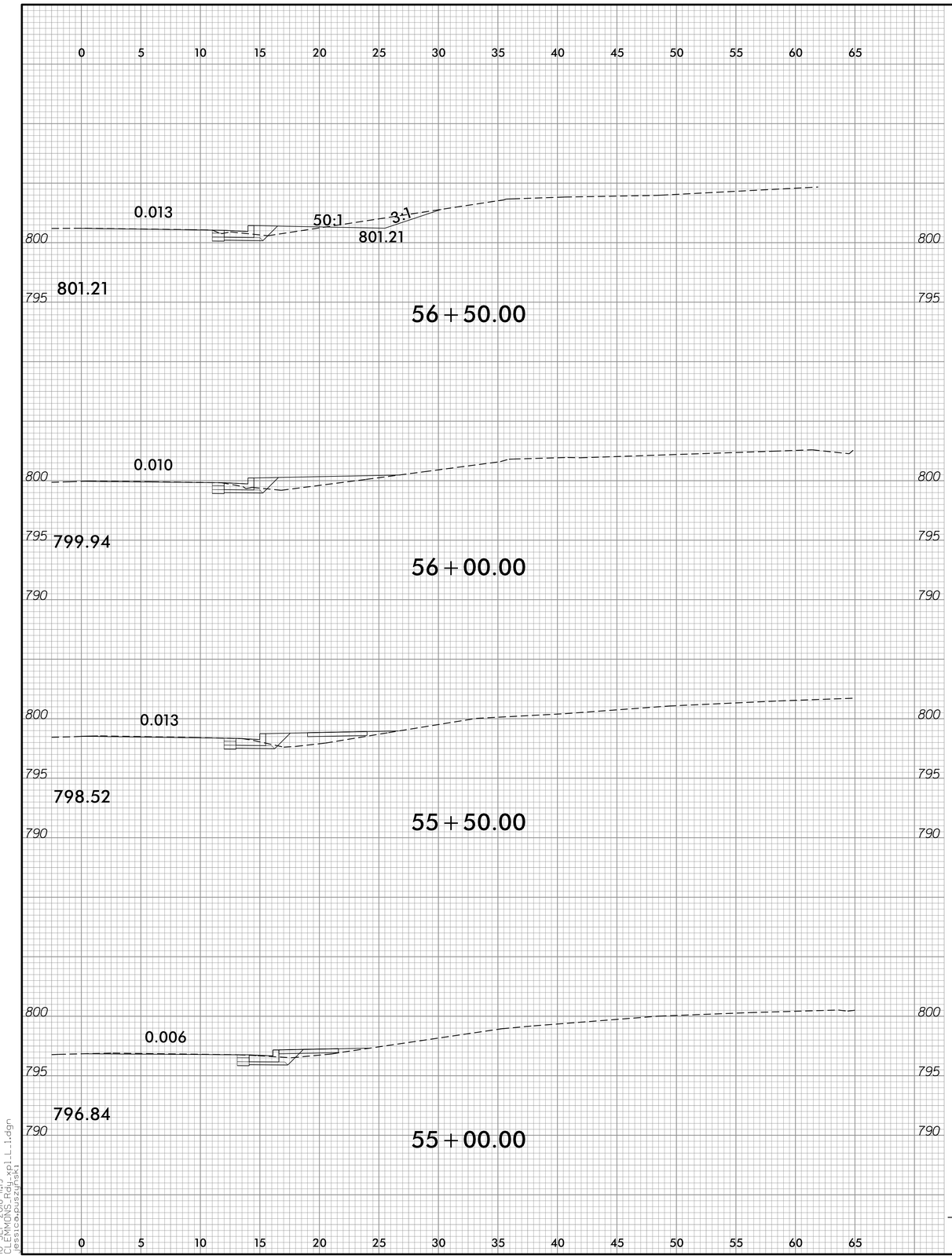

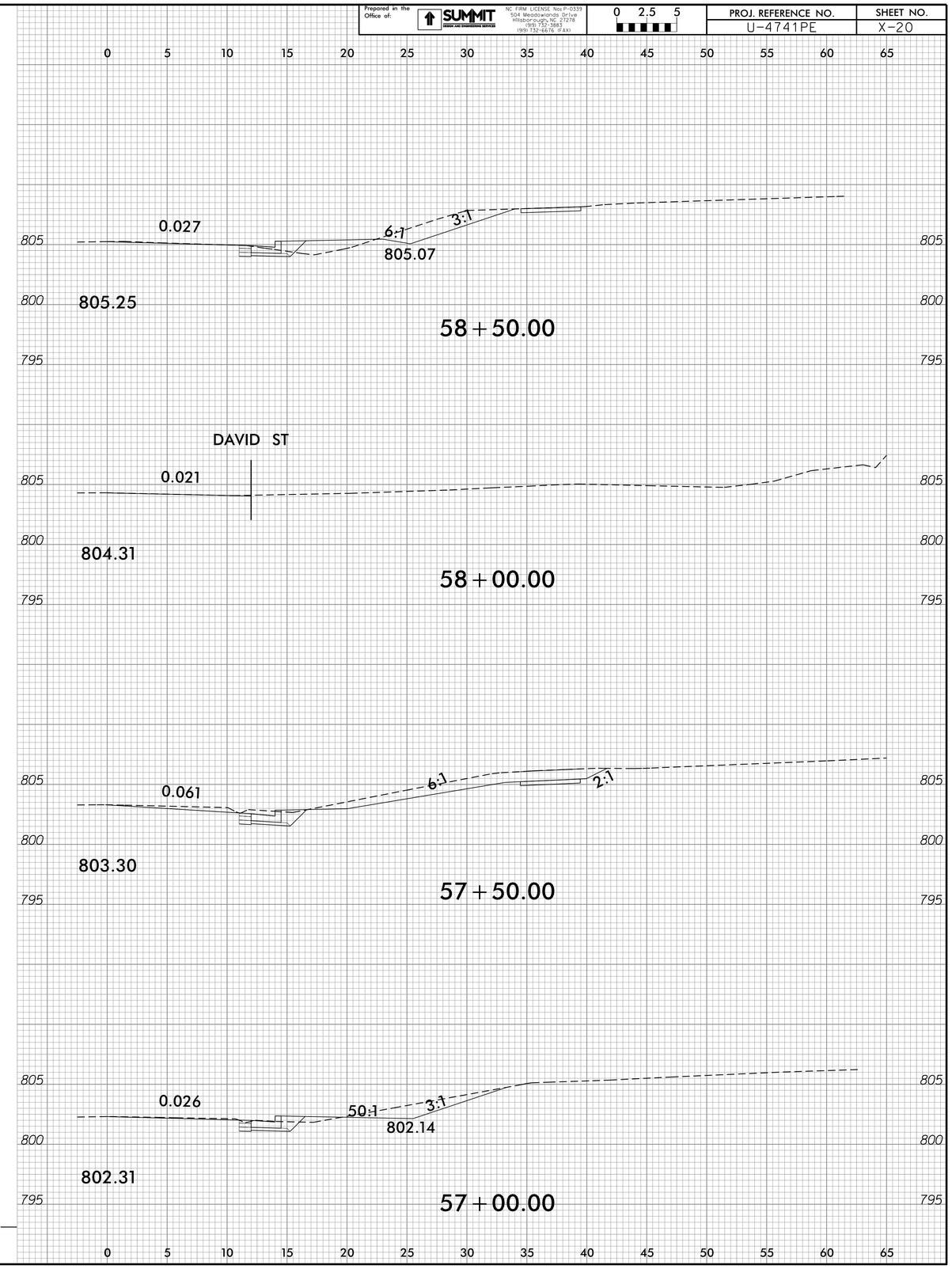

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jessicaburgess
kshafer01L_1.dgn

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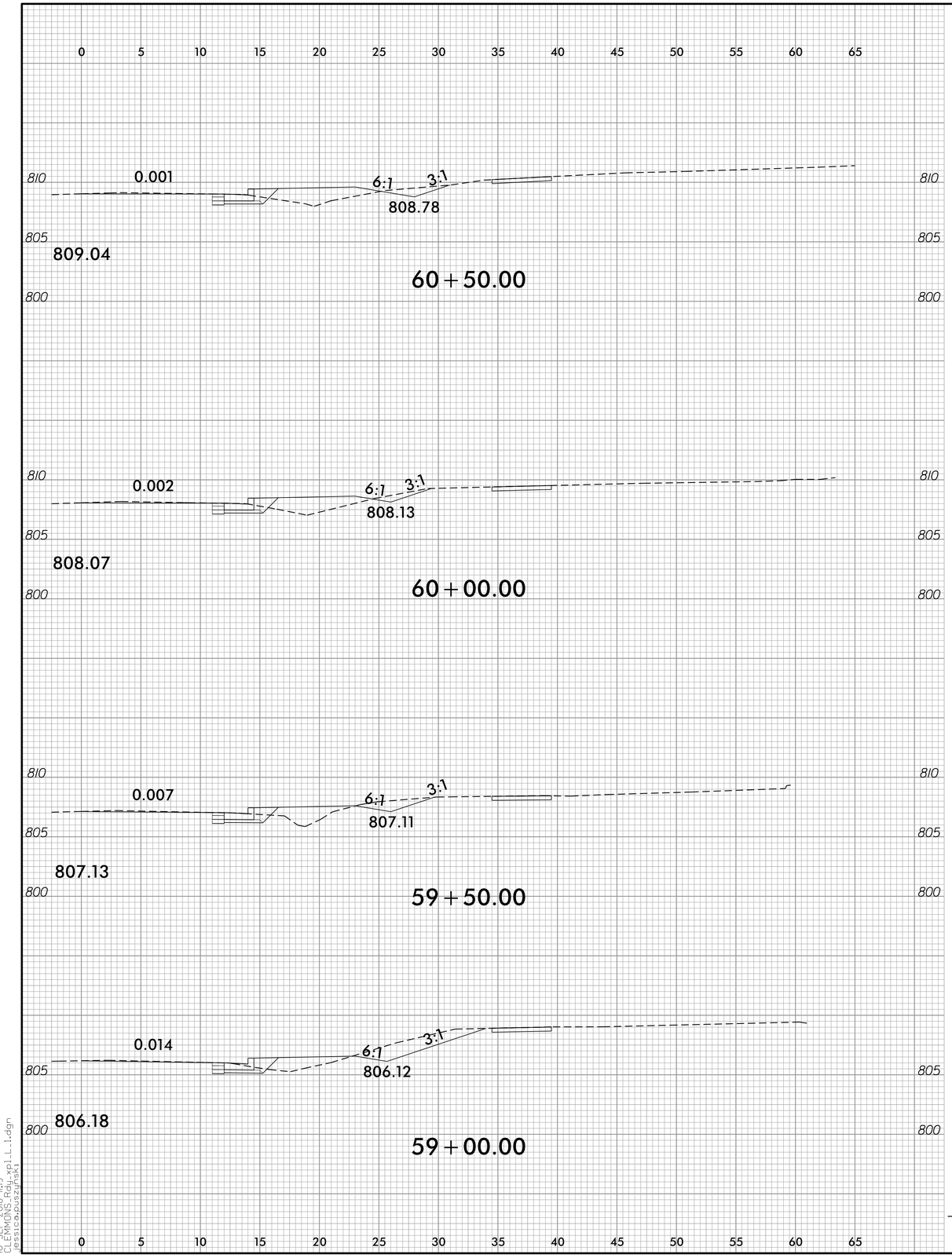

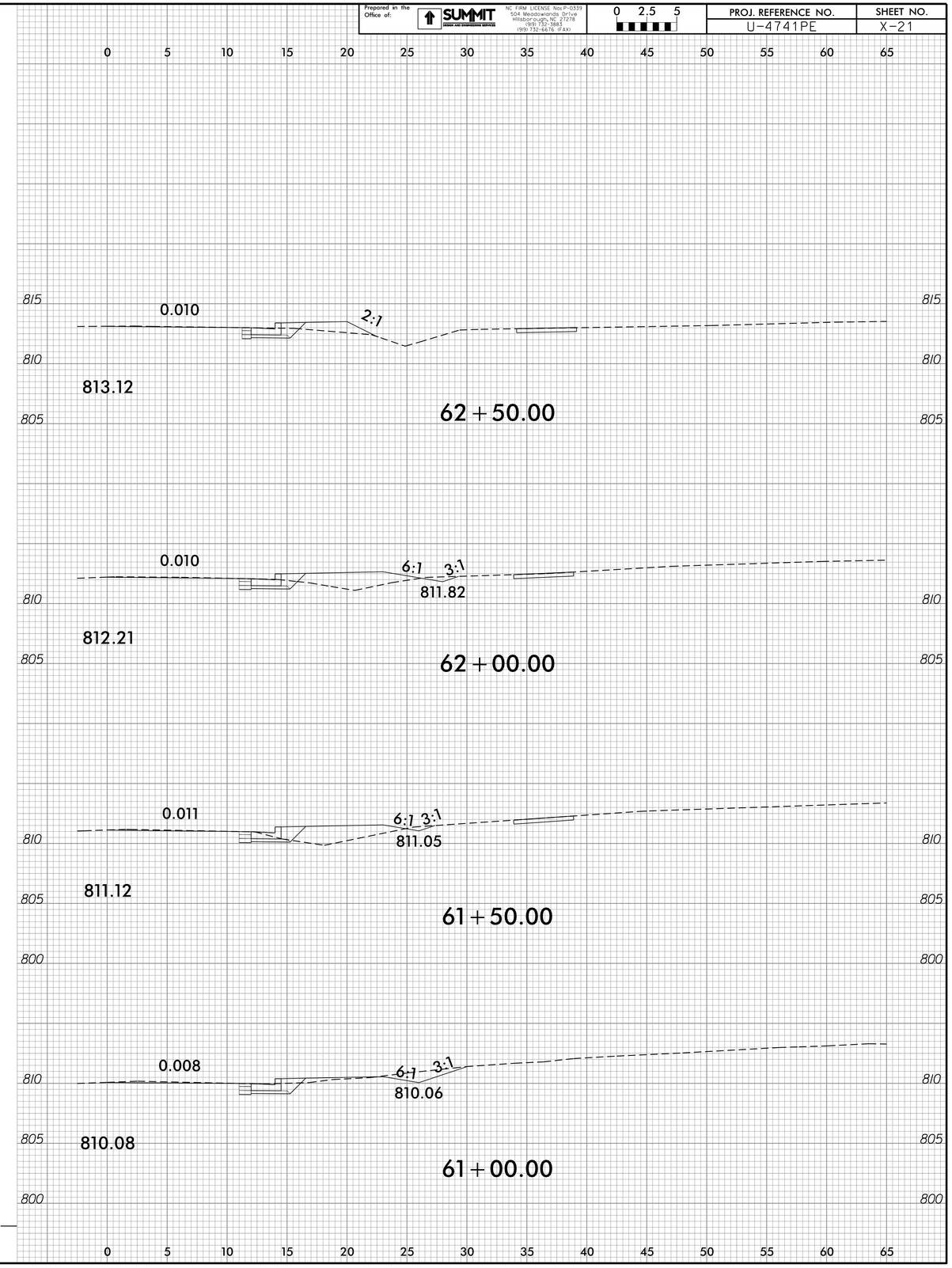

10-SEP-2018 14:19
CLEMMONS Rdy
kfsyzysnsscdrdsssscdrdsssscdr
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PROJ. REFERENCE NO.	SHEET NO.
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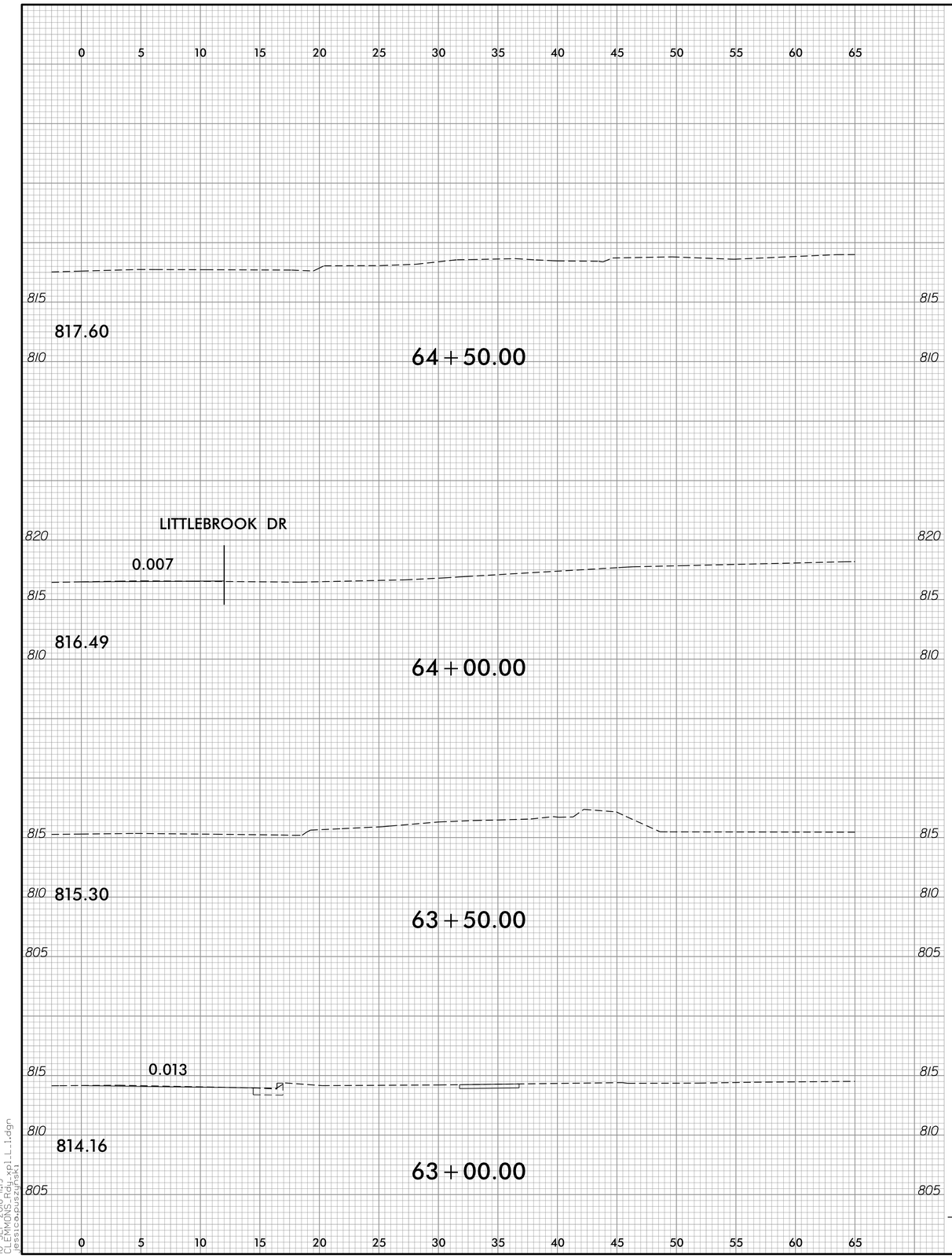

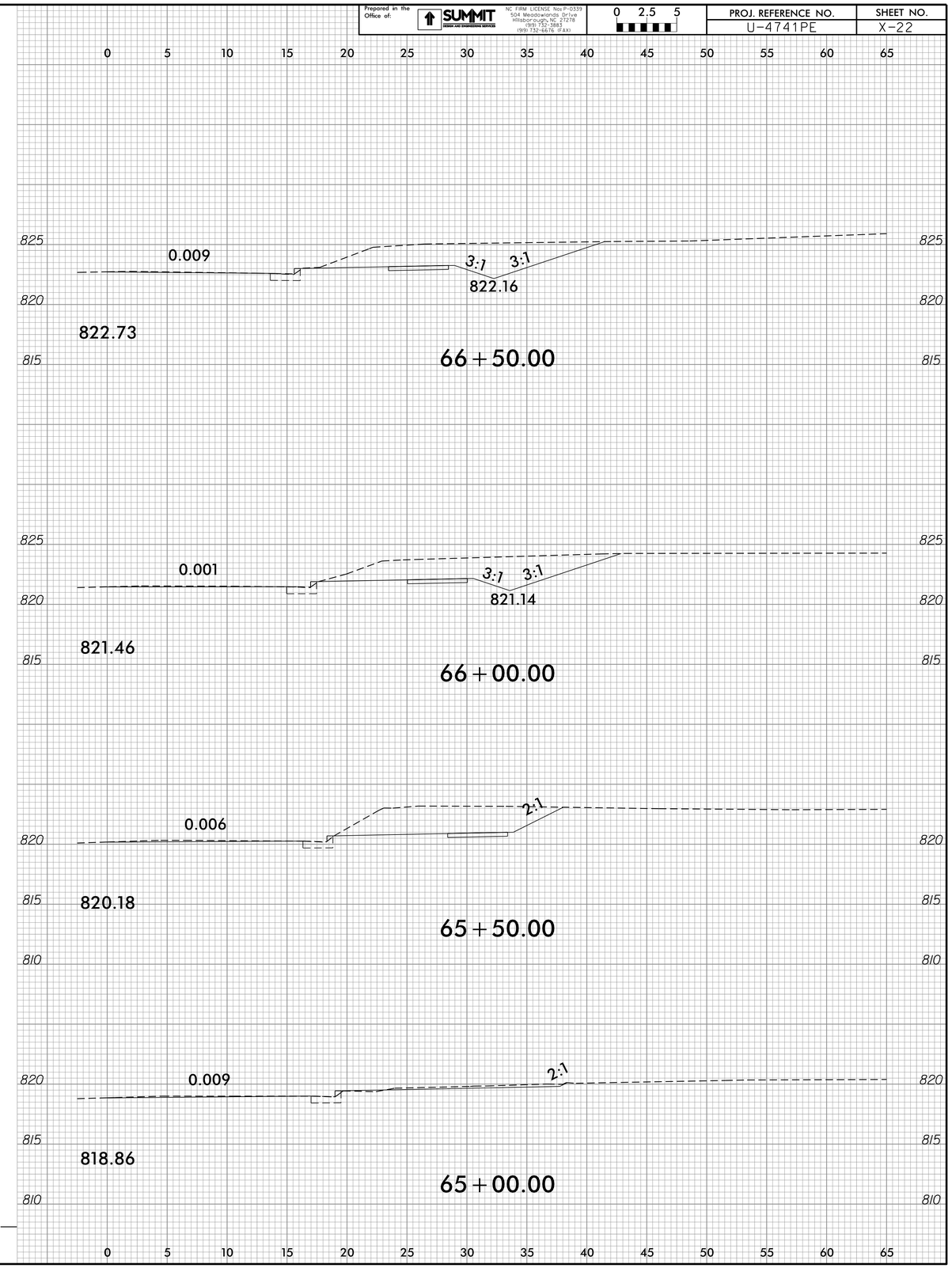

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jessicapuszynski

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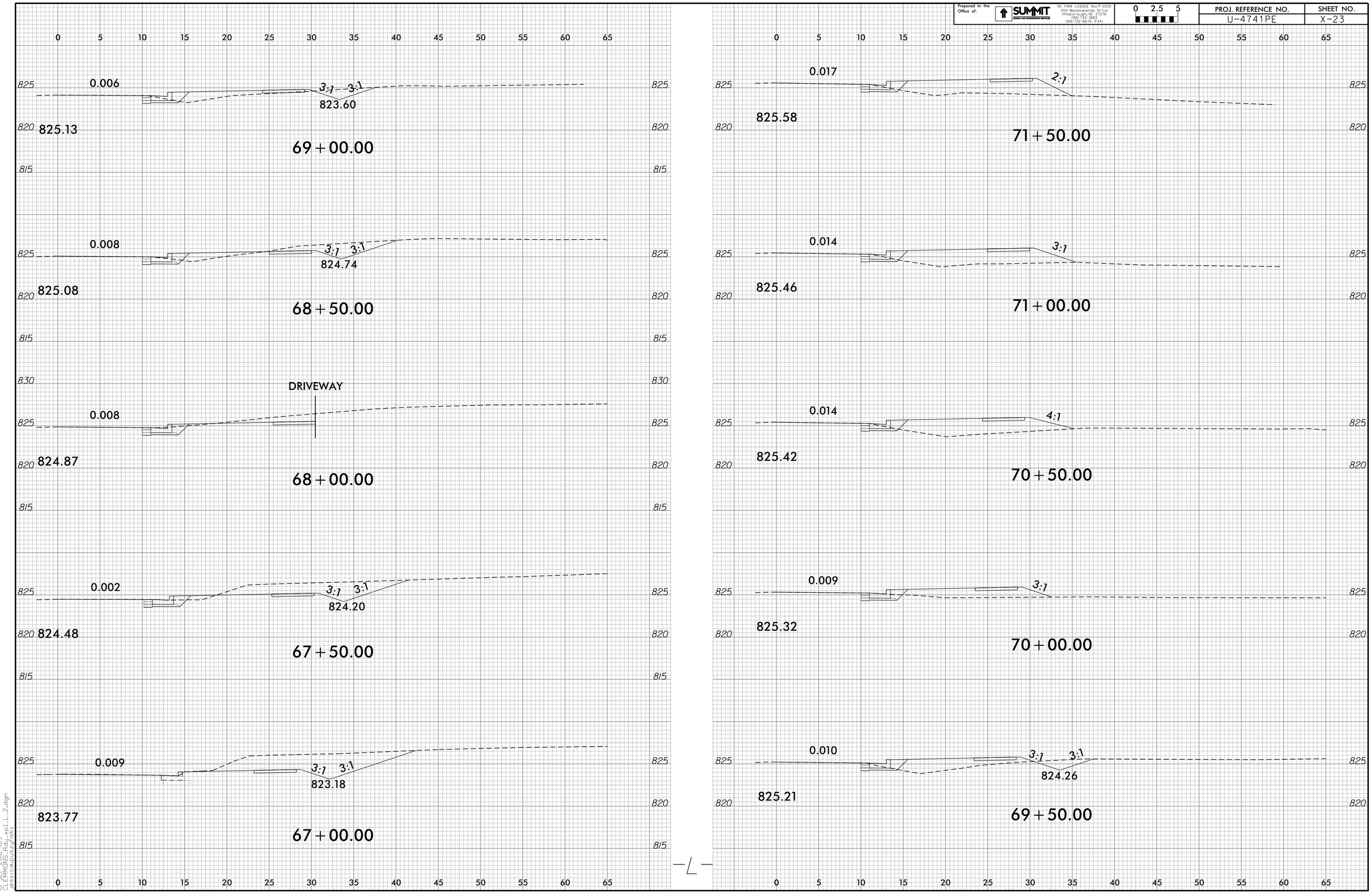
PROJ. REFERENCE NO.	SHEET NO.
U-4741PE	X-23



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CLEMONS Rdy
jessica.cousyzinski

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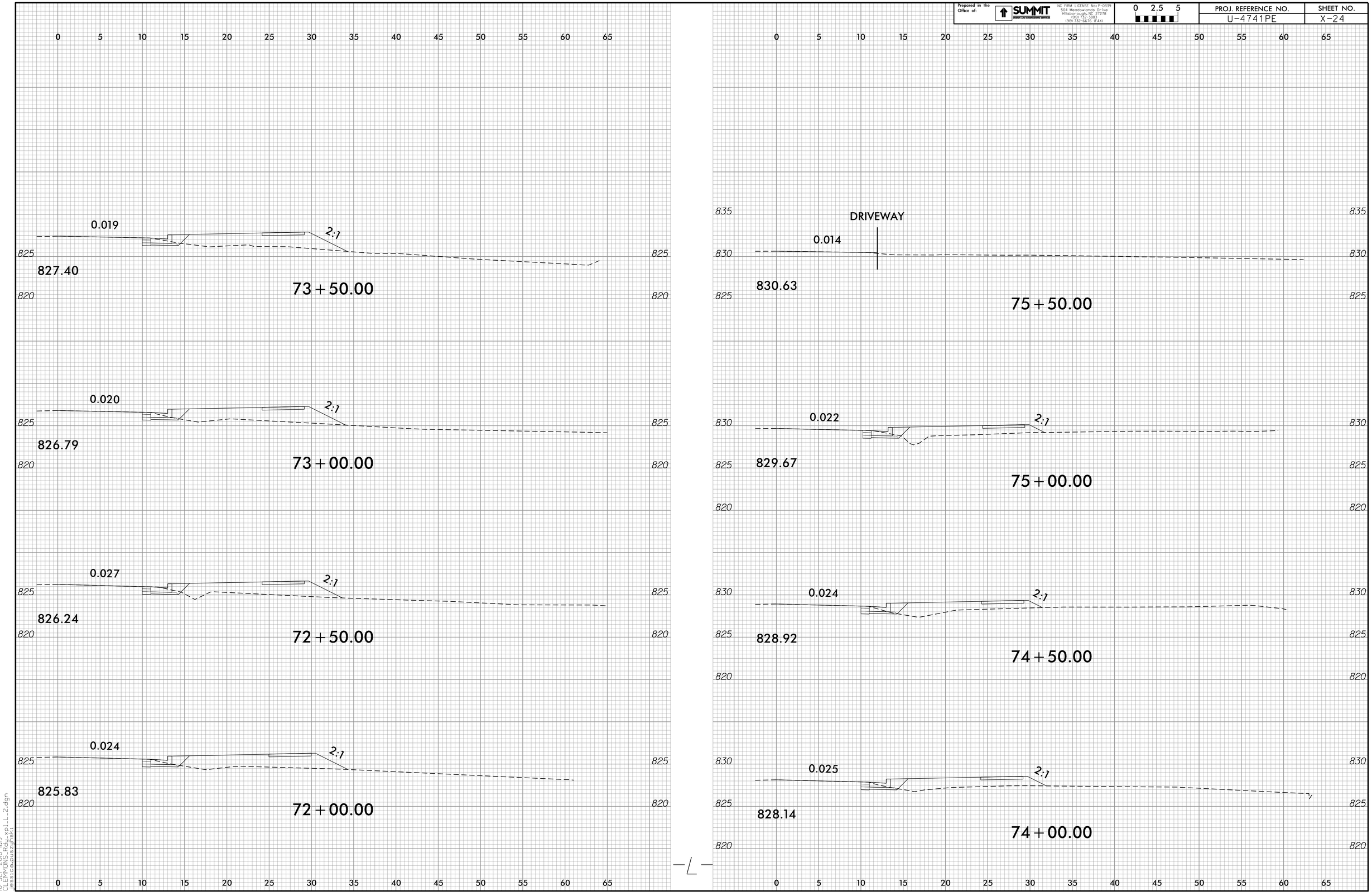

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CLEMMONS Rdy
jessica.cadreau(jsk)

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PROJ. REFERENCE NO.	SHEET NO.
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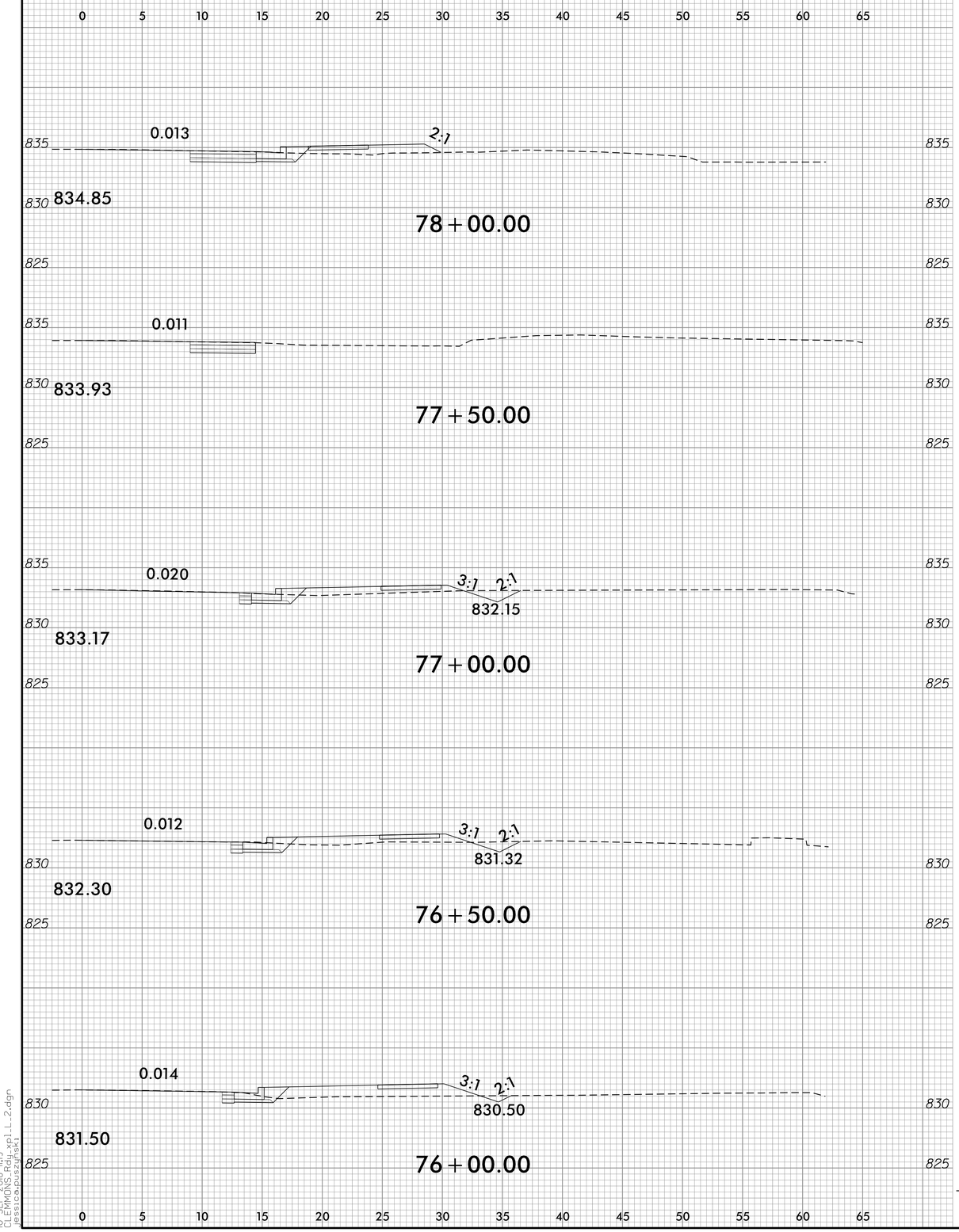

10-SEP-2018 14:19
CLEMMONS Rdwy_xpl_L_2.dgn
jessica.puszynski