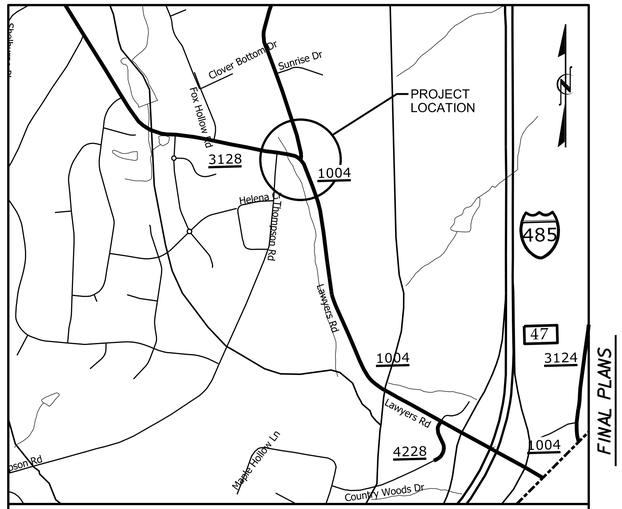
09/08/99

TIP: W-5210K

PROJECT: 45340.3.11

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

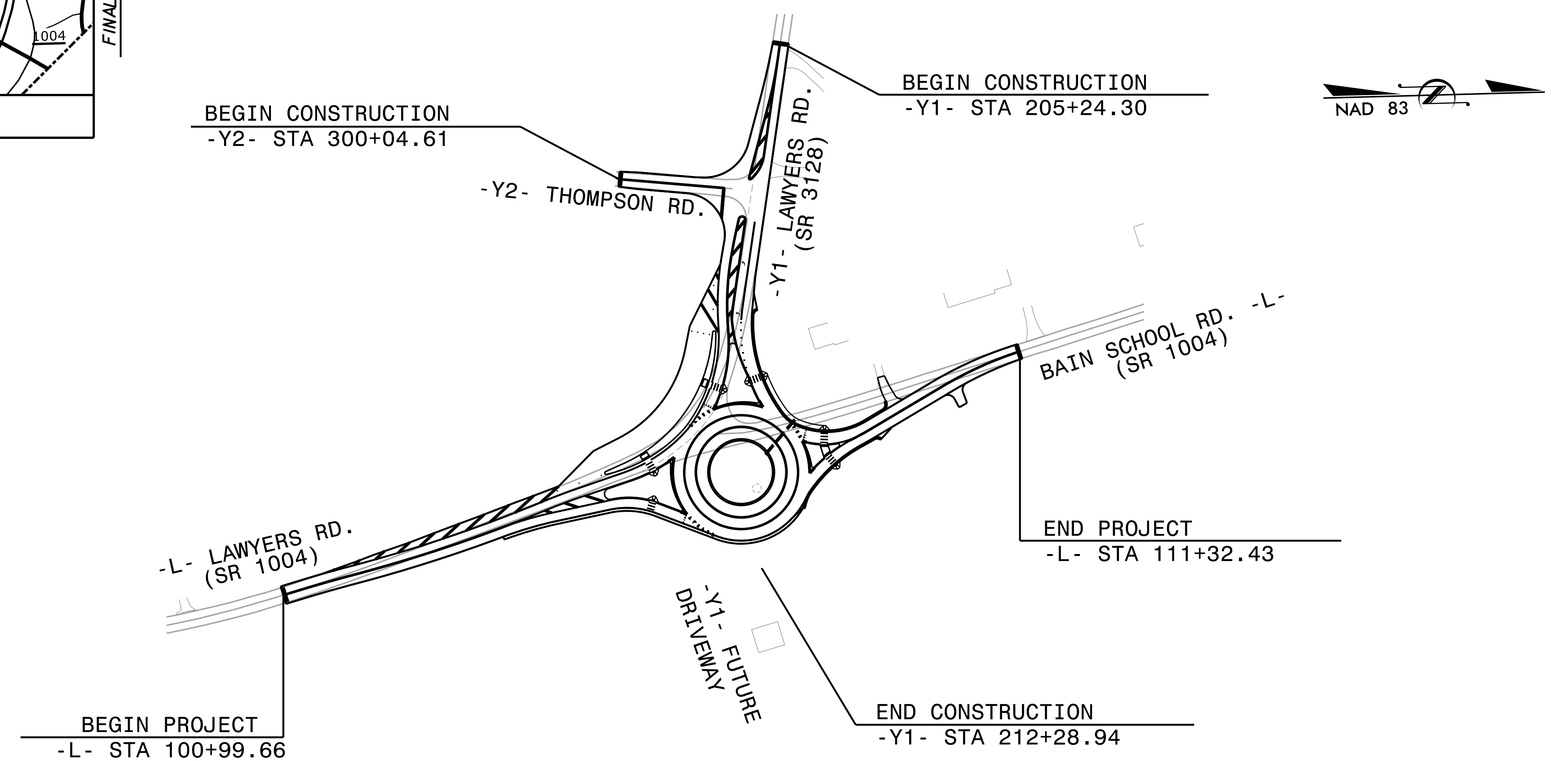
MECKLENBURG COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	45340.3.11	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
45340.1.FD11	HSIP-3128(1)	P.E.
43765	HSIP-3128(1)	R /W
45340.3.11	HSIP-3128(1)	CONST.

LOCATION: INTERSECTION IMPROVEMENTS LAWYERS ROAD (SR 1004 /3128) AND BAIN SCHOOL ROAD (SR 1004)

TYPE OF WORK: GRADING, DRAINAGE & PAVING



GRAPHIC SCALES

20 10 0 20 40
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

2 1 0 2 4
PROFILE (VERTICAL)

DESIGN DATA

ADT = N/A
ADT = N/A
K = N/A %
D = N/A %
T = N/A %
V = 40 MPH

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT W-5210K = 0.196 MILES

TOTAL LENGTH TIP PROJECT W-5210K = 0.196 MILES

PLANS PREPARED FOR THE NCDOT BY:

Kimley»Horn
© 2018
200 South Tryon Street, Suite 200
Charlotte, North Carolina 28202
NC LICENSE# F-0102

2018 STANDARD SPECIFICATIONS

LETTING DATE:

TIMOTHY BRUMFIELD, PE
PROJECT ENGINEER

PROJECT DESIGN ENGINEER

ROADWAY DESIGN AND HYDRAULICS ENGINEER ENGINEER

DocuSigned by:
Timothy R. Brumfield
E4724E8191DF4FB...
SIGNATURE:

P.E.

NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER TIMOTHY R. BRUMFIELD 4/24/2018

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

4/16/2018
25001-RD01-COVR.dgn
tim.brumfield

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER
Timothy P. Plummer
E47245E9109F4FB

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NC LICENSE #F-0102
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GENERAL NOTES

2018 SPECIFICATIONS

STATEMENT OF WORK:

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF A ROUNDABOUT AT THE INTERSECTION OF LAWYERS ROAD AND BAIN SCHOOL ROAD. CURB AND GUTTER WITH SIDEWALK WILL BE PLACED ALONG THE OUTSIDE OF THE ROUNDABOUT.

GRADE LINE:

THE GRADE LINE SHOWN DENOTES THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AS DIRECTED BY THE ENGINEER AND APPROVED BY NCDOT IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

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

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.

UNDERDRAINS:

UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH NCDOT STD. NO. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH NCDOT STD. NO. 848.02 AND WITH DETAILS IN PLANS USING 3' 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 NCDOT STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE:

POWER: DUKE POWER
TELEPHONE: AT&T
GAS: PIEDMONT NATURAL GAS
CABLE:
WATER: CHARLOTTE WATER
COMMUNICATIONS: WINDSTREAM, NCDOT

THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. AT LEAST 48 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY THE CONTRACTOR SHALL NOTIFY THE NORTH CAROLINA ONE-CALL UTILITIES LOCATION SERVICE AT 1-800-632-4949 FOR PROPER IDENTIFICATION OF EXISTING UTILITIES WITHIN THE PROJECT SITE.

THE CONTRACTOR IS RESPONSIBLE FOR THE REPAIR AND REPLACEMENT OF ANY UTILITIES DAMAGED DURING CONSTRUCTION. DAMAGED ITEMS SHALL BE REPAIRED TO AT LEAST THE QUALITY OF WORKMANSHIP FOUND IN THE ORIGINAL ITEM.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS. CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY COORDINATION.

GENERAL NOTES (continued)

SUBSURFACE PLANS:

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

EROSION CONTROL:

EROSION CONTROL SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL REGULATIONS, U.S. DEPARTMENT OF AGRICULTURE, AND U.S. SOIL CONSERVATION SERVICE REGULATIONS AND THE EROSION CONTROL PLANS INCLUDED HEREIN.

TRAFFIC CONTROL:

TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH NCDOT STANDARDS AND THE TRAFFIC CONTROL PLANS INCLUDED HEREIN.

SURVEY:

SURVEY WAS PROVIDED BY LDSI, INC. THE CONTRACTOR IS TO COORDINATE WITH THE SURVEYOR PRIOR TO GEOMETRIC LAYOUT.

CURB RAMPS:

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. THE CONSTRUCTION OF ALL CURB RAMPS SHALL BE IN ACCORDANCE WITH NCDOT STD. NO. 848.05 AND/OR 848.06.

RIGHT-OF-WAY MARKERS:

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

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 CONSTRUCTUION:

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

INDEX OF SHEETS:

SHEET NO.	DESCRIPTION
1	COVER SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
2 TO 2-D	PAVEMENT SCHEDULE, TYPICAL SECTIONS, WEDGING DETAILS, DITCH DETAILS
2-E TO 2-H	INTERSECTION DETAIL SHEETS
3	DRAINAGE SUMMARY
4 TO 8	PLAN SHEETS
9 TO 13	ROADWAY PROFILE SHEETS
15 TO 18	DRAINAGE PROFILES
19	DRIVEWAY PROFILES
TMP-1 TO TMP-12	TRAFFIC CONTROL PLAN
PM-1 TO PM-4	PAVEMENT MARKING PLAN
EC-1 TO EC-8	EROSION CONTROL PLAN
SG-1 TO SG-4	SIGNING PLAN
UBO-1 TO UBO-6	UTILITY BY OTHERS PLAN
X	INDEX OF CROSS SECTIONS
XA	CROSS SECTION SUMMARY
X-1 TO X-8	CROSS SECTION SHEETS

LIST OF ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" HIGHWAY DESIGN BRANCH-N.C. DEPARTMENT OF TRANSPORTATION-RALEIGH, N.C., DATED JULY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS.

NCDOT STD. NO.	STANDARD DRAWING TITLE
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.05	Method of Obtaining Superelevation - Divided Highways
300.01	Method of Pipe Installation
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
654.01	Pavement Repairs
840.01	Brick 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
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.54	Manhole Frame and Cover
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.03	Driveway Turnout - Drop Curb Type
848.05	Curb Ramp - Proposed Curb & Gutter
848.06	Curb Ramp - Existing Curb & Gutter
852.01	Concrete Islands
904.10	Orientation of Ground Mounted Signs
904.50	Mounting of Type 'D','E' AND 'F' Signs on 'U' Channel Posts
1101.01	Work Zone Advance Warning Signs
1101.02	Temporary Lane Closures
1101.04	Temporary Shoulder Closures
1101.11	Traffic Control Design Tables
1110.01	Stationary Work Zone Signs
1110.02	Portable Work Zone Signs
1130.01	Drum
1150.01	Flagging Devices
1180.01	Skinny-Drum
1205.01	Pavement Markings
1205.02	Pavement Markings - Two-Lane and Multi-Lane Roadways
1205.04	Pavement Markings - Intersections
1205.05	Pavement Markings - Turn Lanes
1205.07	Pavement Markings - Pedestrian Crosswalks
1205.08	Pavement Markings - Symbols and Word Messages
1205.09	Pavement Markings - Painted Islands
1250.01	Raised Pavement Markers - Installation Spacing
1251.01	Raised Pavement Markers - Permanent and Temporary
1264.02	Object Markers - Installation
1605.01	Temporary Silt Fence
1607.01	Gravel Construction Etrance
1631.01	Matting Installation
1632.03	Rock Inlet Sediment Trap Type C
1633.02	Temporary Rock Silt Check Type B
1635.02	Rock Pipe Inlet Sediment Trap Type B

REVISIONS

8/17/99

4/16/2018
25017-RD02-NOTE.dgn
timothy.plummer

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	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
- 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
- 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.

REVISIONS

8/17/99

4/16/2018
25001?-R002-NOTE.dgn
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PROJECT REFERENCE NO.	SHEET NO.
W-5210K	2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER 4/24/2018
TIMOTHY W. BURNETTE
E4724SE9109F4FB...
DOCUSIGNED

Kimley»Horn
NC LICENSE #F-0102
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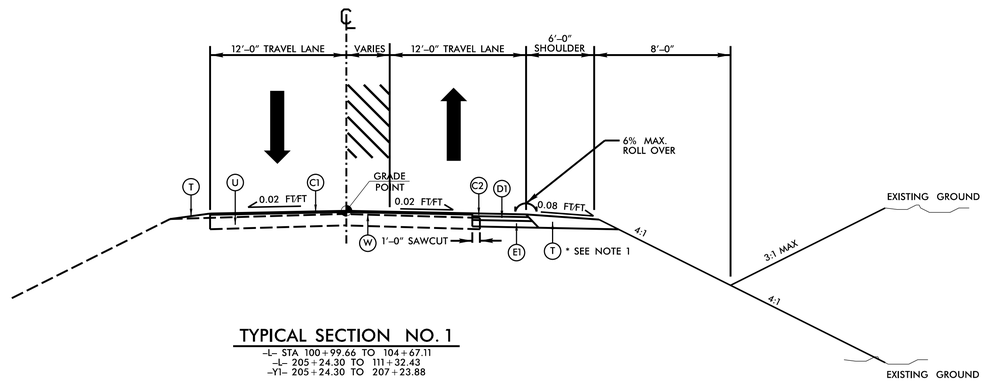
8/17/99

REVISIONS

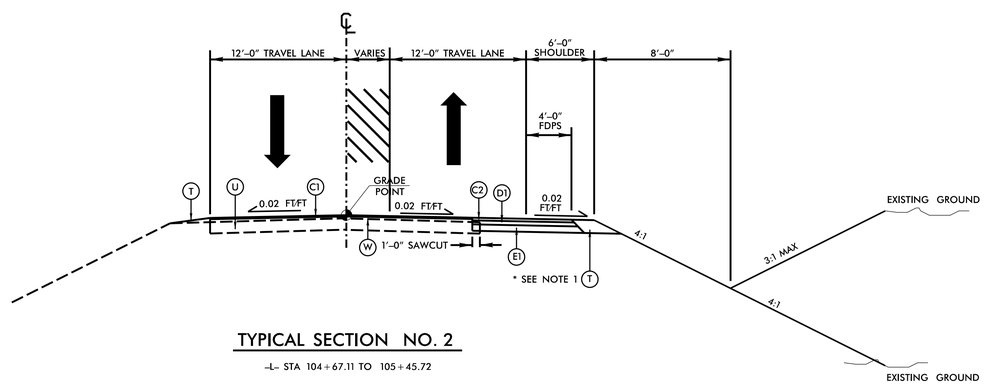
NOTES:

1. FOR GRADING AT SHOULDER, SEE INSET B ON SHEET 2-D
2. FOR GRADING AT CURB AND GUTTER, SEE INSET A ON SHEET 2-D
3. FOR GRADING AT TRUCK APRON CURB, SEE INSET C ON SHEET 2-D



TYPICAL SECTION NO. 1

-L- STA 100+99.66 TO 104+67.11
-L- 205+24.30 TO 111+32.43
-Y1- 205+24.30 TO 207+23.88



TYPICAL SECTION NO. 2

-L- STA 104+67.11 TO 105+45.72

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER, CLASS B
R2	1'-6" CONCRETE CURB AND GUTTER, CLASS AA
R3	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
R4	PROPOSED 2'-6" CONCRETE CURB AND GUTTER - SPILL CURB (SEE DETAIL SHEET 2-D)
R5	PROPOSED APPROX. 10" CONCRETE PAVEMENT, CLASS AA TRUCK MOUNTED APRON
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH WEDGING (SEE STANDARD WEDGING DETAIL SHEET 2-D)

4/16/2018
250017-RD04-TSEC.dgn

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	2-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER
INTERIM REVIEW
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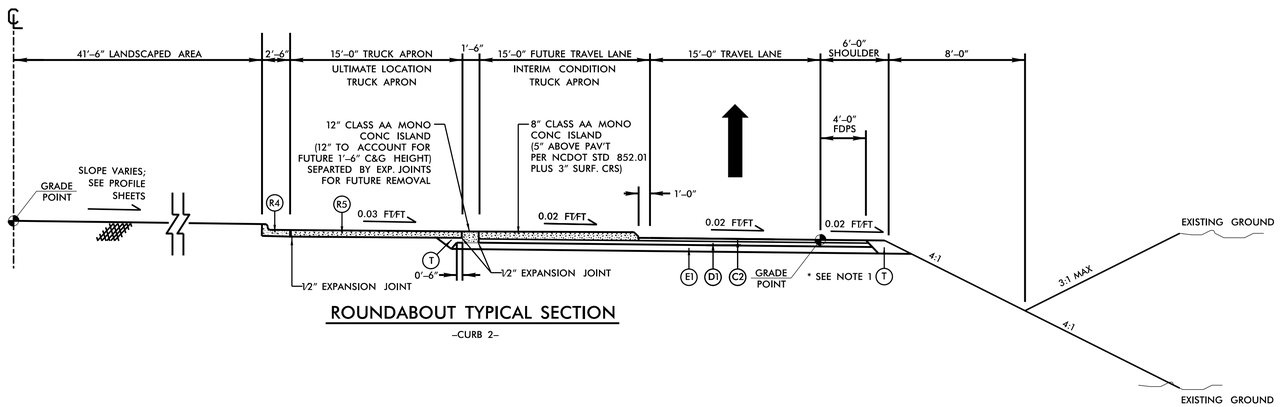
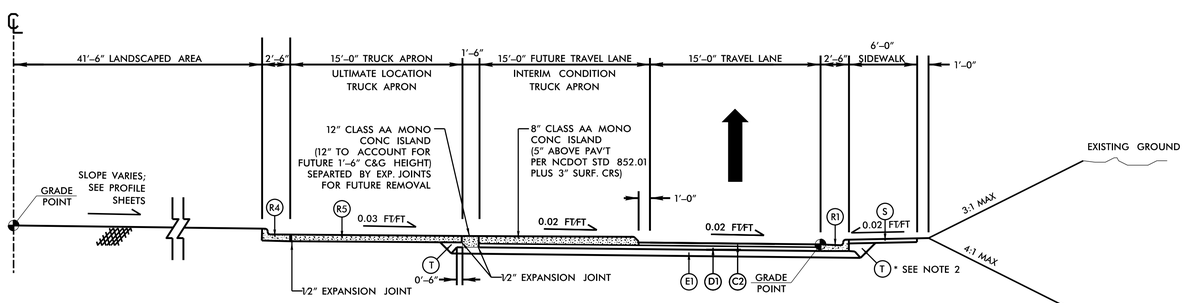
NOTES:

1. FOR GRADING AT SHOULDER, SEE INSET B ON SHEET 2–D
2. FOR GRADING AT CURB AND GUTTER, SEE INSET A ON SHEET 2–D
3. FOR GRADING AT TRUCK APRON CURB, SEE INSET C ON SHEET 2–D



ROUNDABOUT TYPICAL SECTION

–CURB 2–



ROUNDABOUT TYPICAL SECTION

–CURB 3–
–CURB 4–

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER, CLASS B
R2	1'-6" CONCRETE CURB AND GUTTER, CLASS AA
R3	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
R4	PROPOSED 2'-6" CONCRETE CURB AND GUTTER - SPILL CURB (SEE DETAIL SHEET 2-D)
R5	PROPOSED APPROX. 7" CONCRETE PAVEMENT, CLASS AA TRUCK MOUNTED APRON
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH WEDGING (SEE STANDARD WEDGING DETAIL SHEET 2-D)

8/17/99

REVISIONS

4/16/2018
250017-RD04-TSEC.dgn

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	2-B

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

Kimley»Horn

NC LICENSE #F-0102
2000 SOUTH BOULEVARD
SUITE 440
CHARLOTTE,
NORTH CAROLINA
28203
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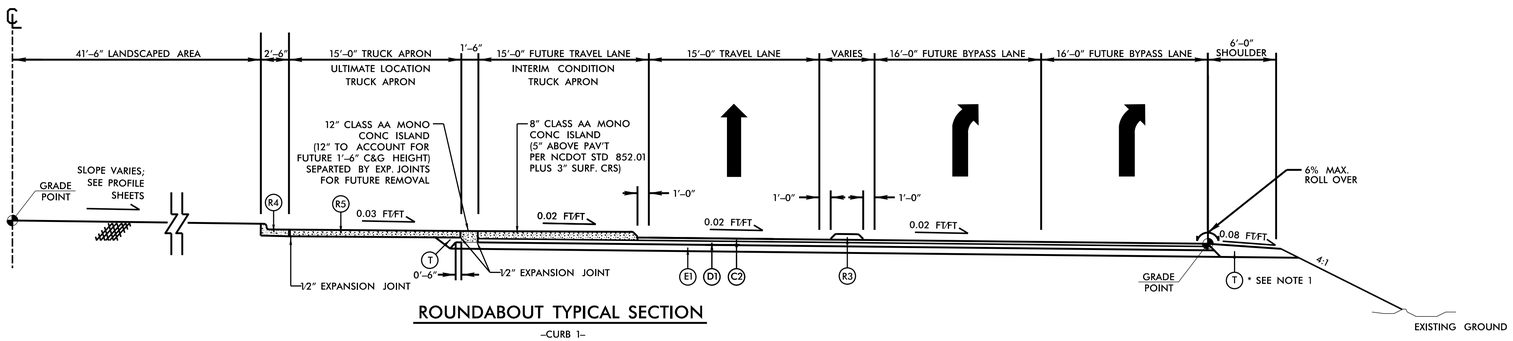
8/17/99

REVISIONS

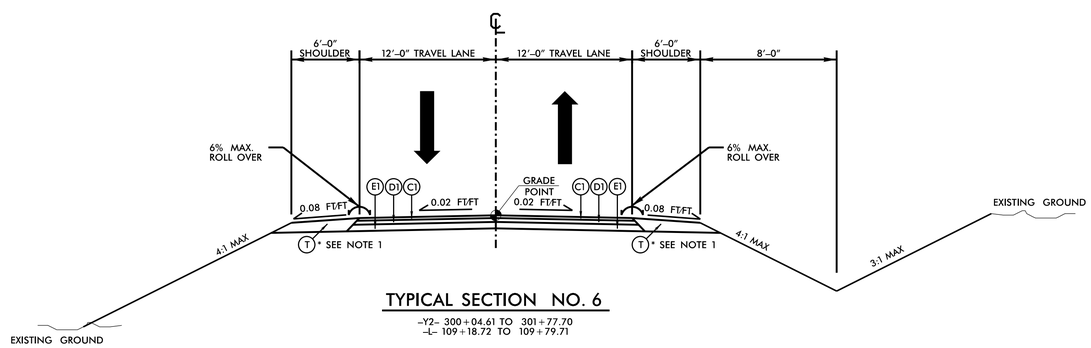
NOTES:

1. FOR GRADING AT SHOULDER, SEE INSET B ON SHEET 2-D
2. FOR GRADING AT CURB AND GUTTER, SEE INSET A ON SHEET 2-D
3. FOR GRADING AT TRUCK APRON CURB, SEE INSET C ON SHEET 2-D



ROUNDABOUT TYPICAL SECTION

-CURB 1-



TYPICAL SECTION NO. 6

-Y2- 300+04.61 TO 301+77.70
-L- 109+18.72 TO 109+79.71

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER, CLASS B
R2	1'-6" CONCRETE CURB AND GUTTER, CLASS AA
R3	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
R4	PROPOSED 2'-6" CONCRETE CURB AND GUTTER - SPILL CURB (SEE DETAIL SHEET 2-D)
R5	PROPOSED APPROX. 7" CONCRETE PAVEMENT, CLASS AA TRUCK MOUNTED APRON
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH WEDGING (SEE STANDARD WEDGING DETAIL SHEET 2-D)

4/16/2018
250017-RD04-TSEC.dgn

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	2-C

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER 4/24/2018

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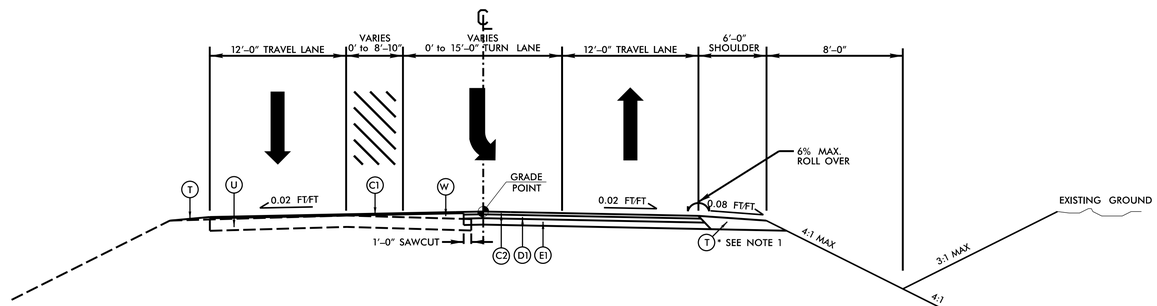
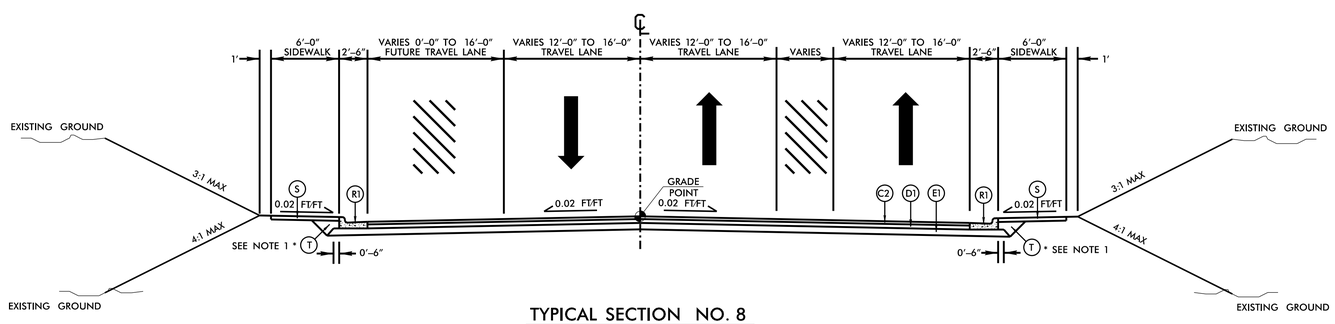
NOTES:

1. FOR GRADING AT SHOULDER, SEE INSET B ON SHEET 2-D
2. FOR GRADING AT CURB AND GUTTER, SEE INSET A ON SHEET 2-D
3. FOR GRADING AT TRUCK APRON CURB, SEE INSET C ON SHEET 2-D



TYPICAL SECTION NO. 7

-Y1- 207+23.88 TO 208+59.12



TYPICAL SECTION NO. 8

-L- STA 108+63.50 TO 109+18.72

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER, CLASS B
R2	1'-6" CONCRETE CURB AND GUTTER, CLASS AA
R3	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
R4	PROPOSED 2'-6" CONCRETE CURB AND GUTTER - SPILL CURB (SEE DETAIL SHEET 2-D)
R5	PROPOSED APPROX. 7" CONCRETE PAVEMENT, CLASS AA TRUCK MOUNTED APRON
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH WEDGING (SEE STANDARD WEDGING DETAIL SHEET 2-D)

8/17/99

REVISIONS

4/16/2018
250017-RD04-TSEC.dgn
jim.z.smith

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	2-D

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

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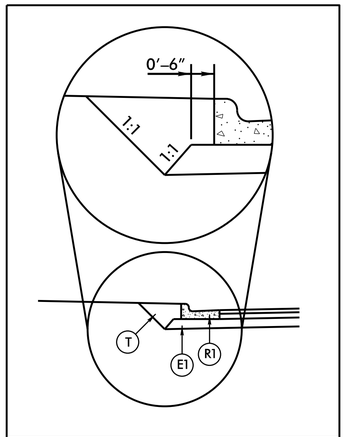
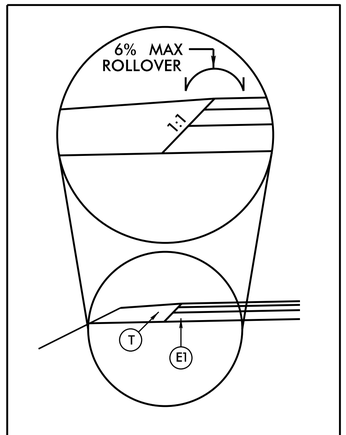
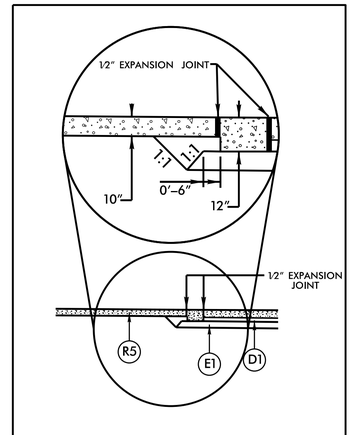


INSET A

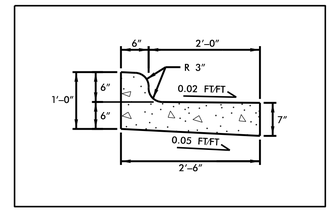


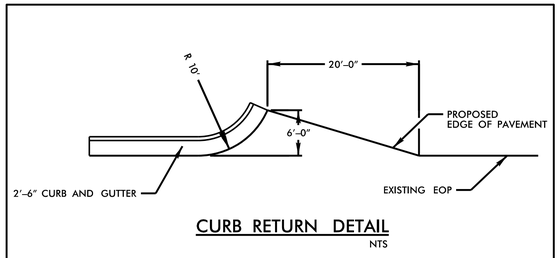
INSET B



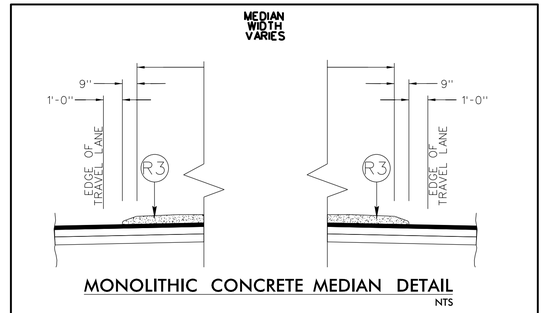
INSET C

R4 2'-6" CURB & GUTTER – SPILL DETAIL

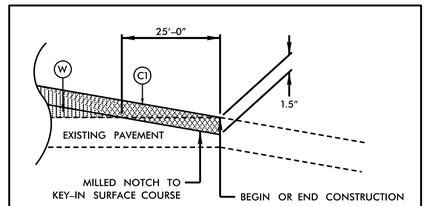




CURB RETURN DETAIL
NTS

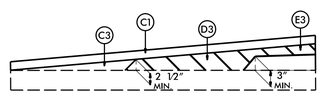


MONOLITHIC CONCRETE MEDIAN DETAIL
NTS

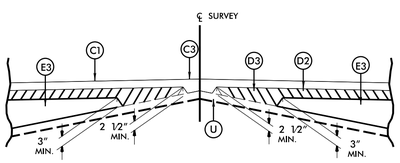


TIE-INS AT PROJECT TERMINI
NTS

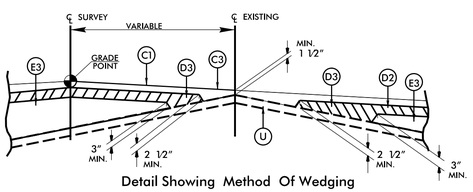
WEDGING DETAILS



Wedging Detail For Resurfacing

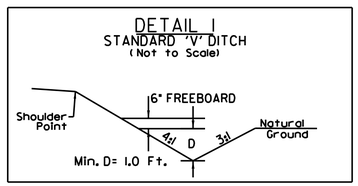


Detail Showing Method of Wedging

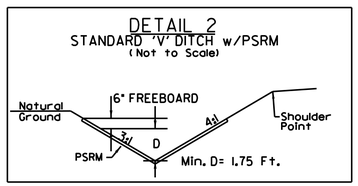


Detail Showing Method Of Wedging

DITCH DETAILS



FROM STA. 109+06.52 RT (–L–) TO STA. 111+32.43 RT (–L–)



FROM STA. 100+99.66 RT (–L–) TO STA. 107+66.82 RT (–L–)
FROM STA. 109+06.52 RT (–L–) TO STA. 111+32.43 RT (–L–)
FROM STA. 205+24.30 RT (–Y1–) TO STA. 206+86.62 RT (–Y1–)
FROM STA. 207+70.34 RT (–Y1–) TO STA. 207+98.19 RT (–Y1–)
FROM STA. 300+04.61 RT (–Y2–) TO STA. 301+24.74 RT (–Y2–)
FROM STA. 300+04.61 LT (–Y2–) TO STA. 301+40.37 LT (–Y2–)

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
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E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER, CLASS B
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R3	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
R4	PROPOSED 2'-6" CONCRETE CURB AND GUTTER - SPILL CURB (SEE DETAIL SHEET 2-D)
R5	PROPOSED APPROX. 7" CONCRETE PAVEMENT, CLASS AA TRUCK MOUNTED APRON
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH WEDGING (SEE STANDARD WEDGING DETAIL SHEET 2-D)

REVISIONS

8/17/99

4/16/2018
2500017-RD04-TSEC.dgn
Integrated

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	2E

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

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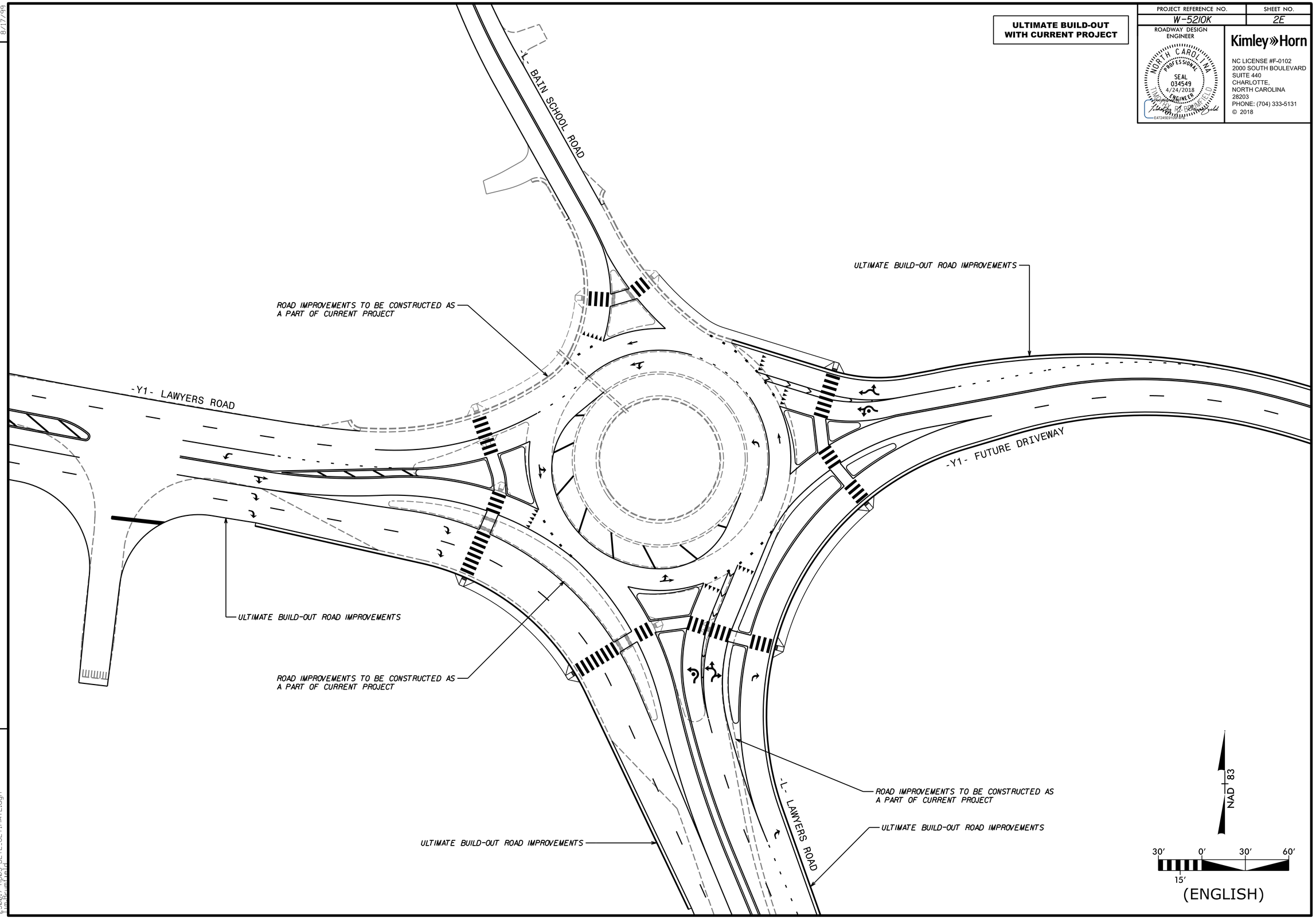
ULTIMATE BUILD-OUT WITH CURRENT PROJECT



REVISIONS

8/17/99

4/16/2018
250017-Rd03-DETL_ULTIMATE.dgn

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	2F

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

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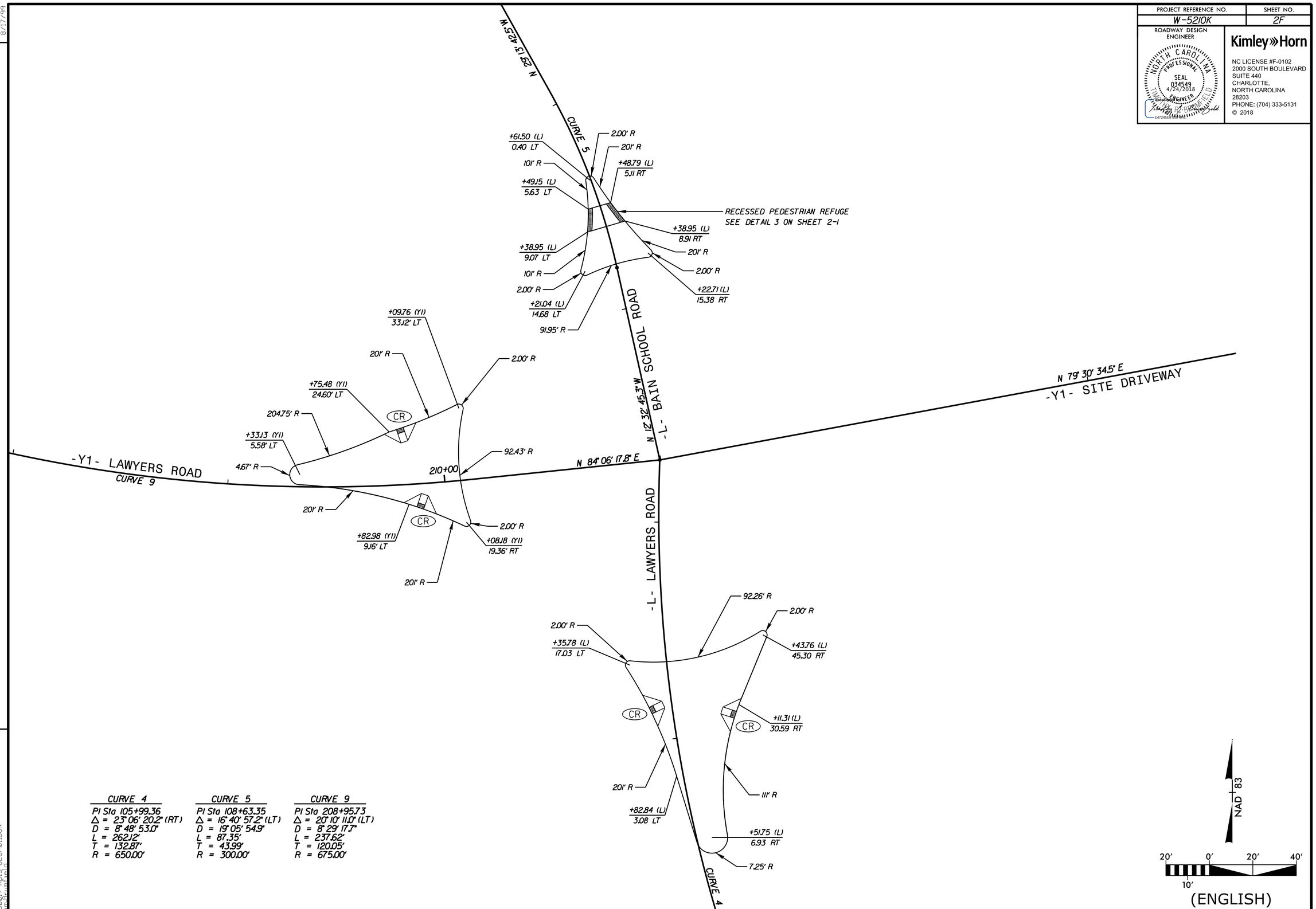

CURVE 4	CURVE 5	CURVE 9
PI Sta 105+99.36	PI Sta 108+63.35	PI Sta 208+95.73
Δ = 23° 06' 20.2" (RT)	Δ = 16° 40' 57.2" (LT)	Δ = 20° 10' 11.0" (LT)
D = 8° 48' 53.0"	D = 19° 05' 54.9"	D = 8° 29' 17.7"
L = 262.12'	L = 87.35'	L = 237.62'
T = 132.87'	T = 43.99'	T = 120.05'
R = 650.00'	R = 300.00'	R = 675.00'

REVISIONS

8/17/99

4/16/2018
2500017-RD15-GEOM01.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	2G

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

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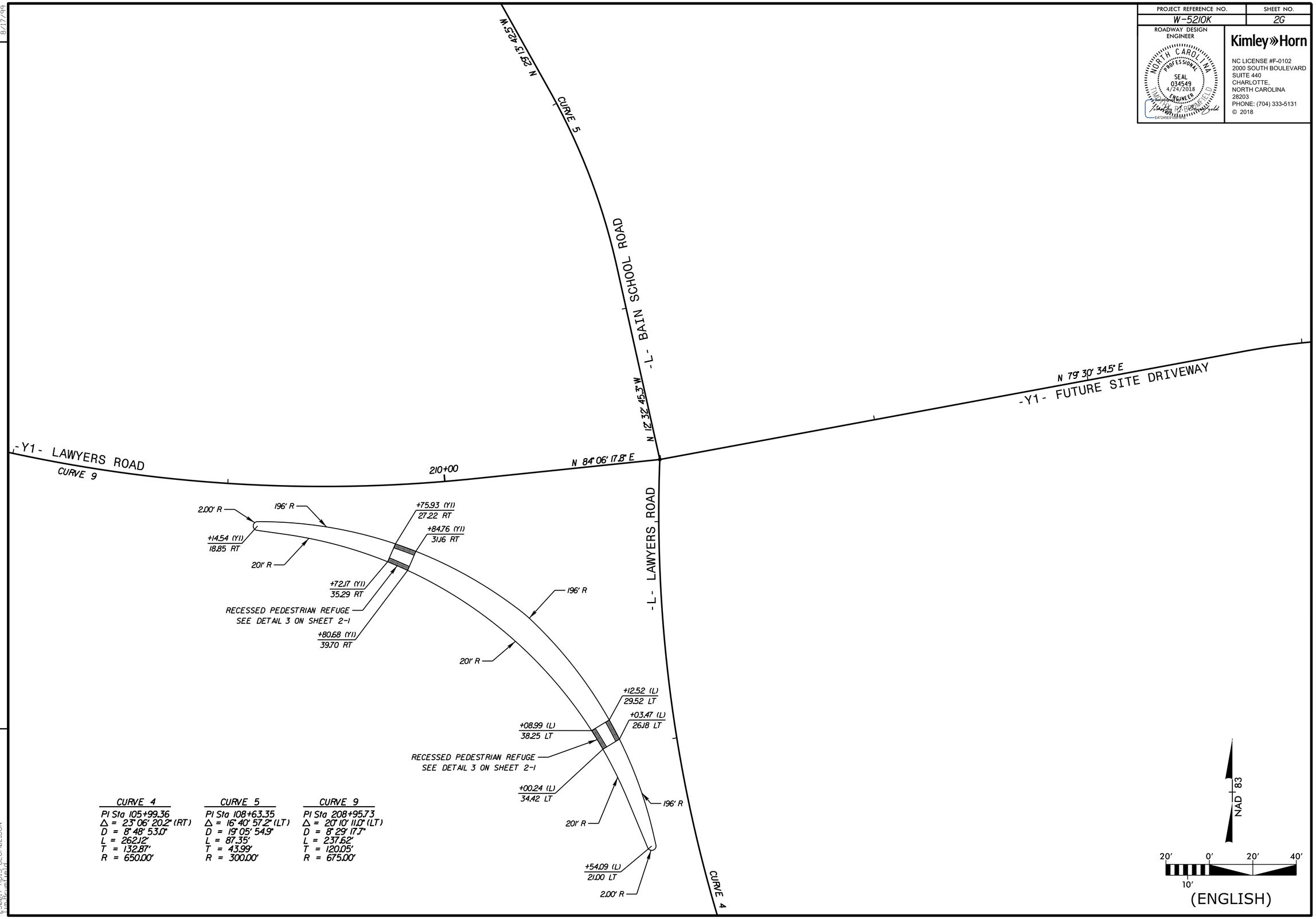
REVISIONS

8/17/99



CURVE 4	CURVE 5	CURVE 9
PI Sta 105+99.36	PI Sta 108+63.35	PI Sta 208+95.73
Δ = 23° 06' 20.2" (RT)	Δ = 16° 40' 57.2" (LT)	Δ = 20° 10' 11.0" (LT)
D = 8° 48' 53.0"	D = 19° 05' 54.9"	D = 8° 29' 17.7"
L = 262.12'	L = 87.35'	L = 237.62'
T = 132.87'	T = 43.99'	T = 120.05'
R = 650.00'	R = 300.00'	R = 675.00'

4/16/2018
2500017-RD15-GEOM02.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	2H

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

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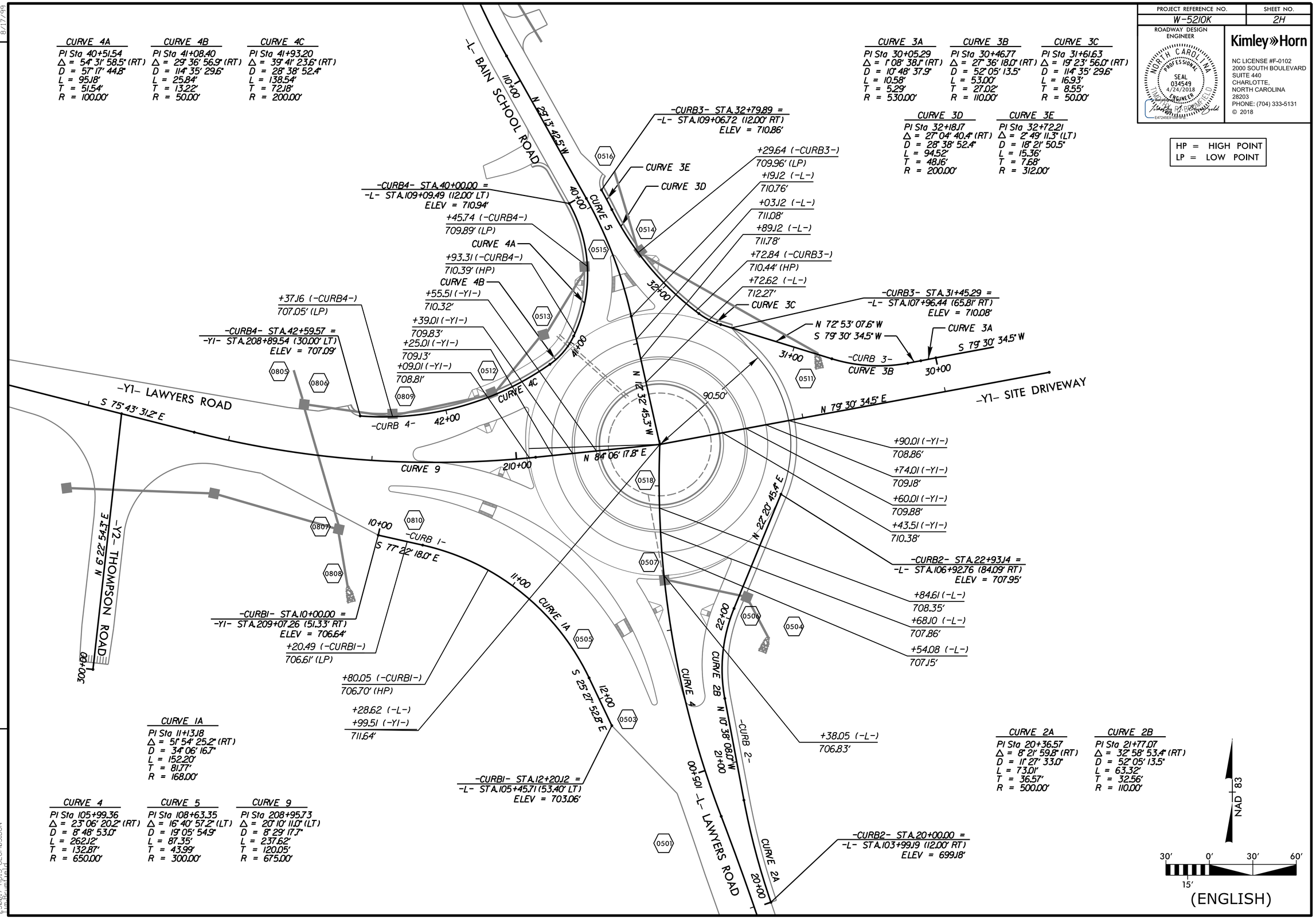
HP = HIGH POINT
LP = LOW POINT



CURVE 4A
PI Sta 40+51.54
Δ = 54° 31' 58.5" (RT)
D = 57° 17' 44.8"
L = 95.18'
T = 51.54'
R = 100.00'

CURVE 4B
PI Sta 41+08.40
Δ = 29° 36' 56.9" (RT)
D = 114° 35' 29.6"
L = 25.84'
T = 13.22'
R = 50.00'

CURVE 4C
PI Sta 41+93.20
Δ = 39° 41' 23.6" (RT)
D = 28° 38' 52.4"
L = 138.54'
T = 72.18'
R = 200.00'

CURVE 3A
PI Sta 30+05.29
Δ = 1° 08' 38.1" (RT)
D = 10° 48' 37.9"
L = 10.58'
T = 5.29'
R = 530.00'

CURVE 3B
PI Sta 30+46.77
Δ = 27° 36' 18.0" (RT)
D = 52° 05' 13.5"
L = 53.00'
T = 27.02'
R = 110.00'

CURVE 3C
PI Sta 31+61.63
Δ = 19° 23' 56.0" (RT)
D = 114° 35' 29.6"
L = 16.93'
T = 8.55'
R = 50.00'

CURVE 3D
PI Sta 32+18.17
Δ = 27° 04' 40.4" (RT)
D = 28° 38' 52.4"
L = 94.52'
T = 48.16'
R = 200.00'

CURVE 3E
PI Sta 32+72.21
Δ = 2° 49' 11.3" (LT)
D = 18° 21' 50.5"
L = 15.36'
T = 7.68'
R = 312.00'

CURVE 1A
PI Sta 11+13.18
Δ = 51° 54' 25.2" (RT)
D = 34° 06' 16.7"
L = 152.20'
T = 81.77'
R = 168.00'

CURVE 4
PI Sta 105+99.36
Δ = 23° 06' 20.2" (RT)
D = 8° 48' 53.0"
L = 262.12'
T = 132.87'
R = 650.00'

CURVE 5
PI Sta 108+63.35
Δ = 16° 40' 57.2" (LT)
D = 19° 05' 54.9"
L = 87.35'
T = 43.99'
R = 300.00'

CURVE 9
PI Sta 208+95.73
Δ = 20° 10' 11.0" (LT)
D = 8° 29' 17.7"
L = 237.62'
T = 120.05'
R = 675.00'

CURVE 2A
PI Sta 20+36.57
Δ = 8° 21' 59.8" (RT)
D = 11° 27' 33.0"
L = 73.01'
T = 36.57'
R = 500.00'

CURVE 2B
PI Sta 21+77.07
Δ = 32° 58' 53.4" (RT)
D = 52° 05' 13.5"
L = 63.32'
T = 32.56'
R = 110.00'

REVISIONS

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mwilfong14

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	2-1

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NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER 4/24/2018

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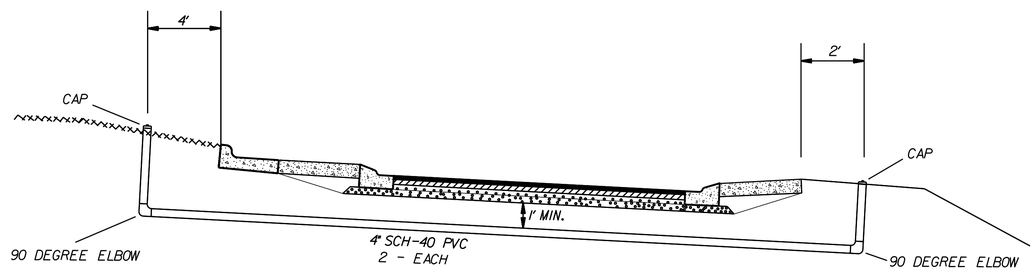
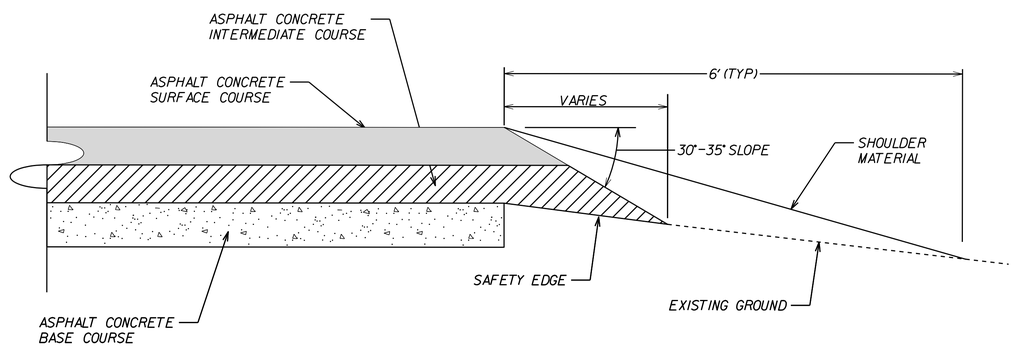
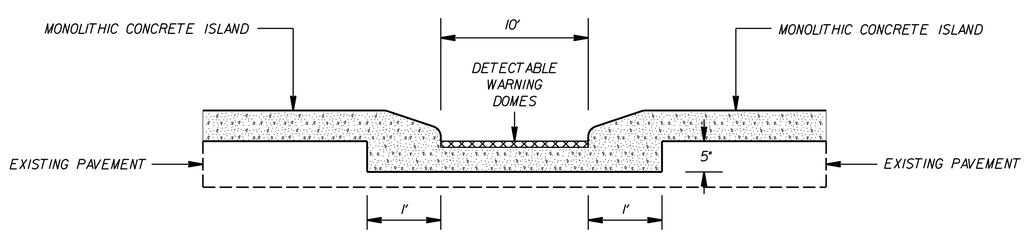
DETAIL 1 – CONDUIT DETAIL



DETAIL 2 – SHOULDER WEDGE DETAIL



DETAIL 3 – MONOLITHIC CONCRETE ISLAND WITH RECESSED PEDESTRIAN REFUGE



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W-5210K	3

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COMPUTED BY: ANDREW MCWILLIAMS DATE: 10/31/2016

CHECKED BY: TIM BRUMFIELD DATE: 10/31/2016

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)

| STATION / SIZE / THICKNESS OR GAUGE | LOCATION (LT, RT, OR CL)' | STRUCTURE NO. FROM | STRUCTURE NO. TO | TOP ELEVATION | INVERT ELEVATION | INVERT ELEVATION | SLOPE CRITICAL | SIDE DRAIN PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | C.S. PIPE 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | R.C. PIPE CLASS III 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | HDPE PIPE 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | * " R.C. PIPE (CLASS V) | ** " RC PIPE CULVERTS, CONTRACTOR DESIGN | *** " RC PIPE CULVERTS, CONTRACTOR DESIGN | 15" SIDE DRAIN PIPE | 18" SIDE DRAIN PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) | CU. YARDS R.C.P. | CU. YARDS C.S.P. | QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0') | LIN. FT. 5.0' THRU 10.0' A | LIN. FT. 10.0' AND ABOVE B | *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E | F | G | CONCRETE TRANSITIONAL SECTION DROP INLET | CATCH BASIN | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME AND GRATE STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR 840.26 | G.D.I. TYPE "B" STD. 840.18 OR 840.27 | G.D.I. TYPE "D" STD. 840.19 OR 840.28 | G.D.I. FRAME WITH GRATE STD. 840.20 | G.D.I. FRAME WITH TWO GRATES STD. 840.22 | G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24 | G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24 | J.B. STD. 840.31 OR 840.32 | M.H. FRAME AND COVER STD. 840.54 | SIDE DRAIN PIPE ELBOWS NO. & SIZE | CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71 | CONC. COLLARS CL. "B" C.Y. STD. 840.72 | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	4

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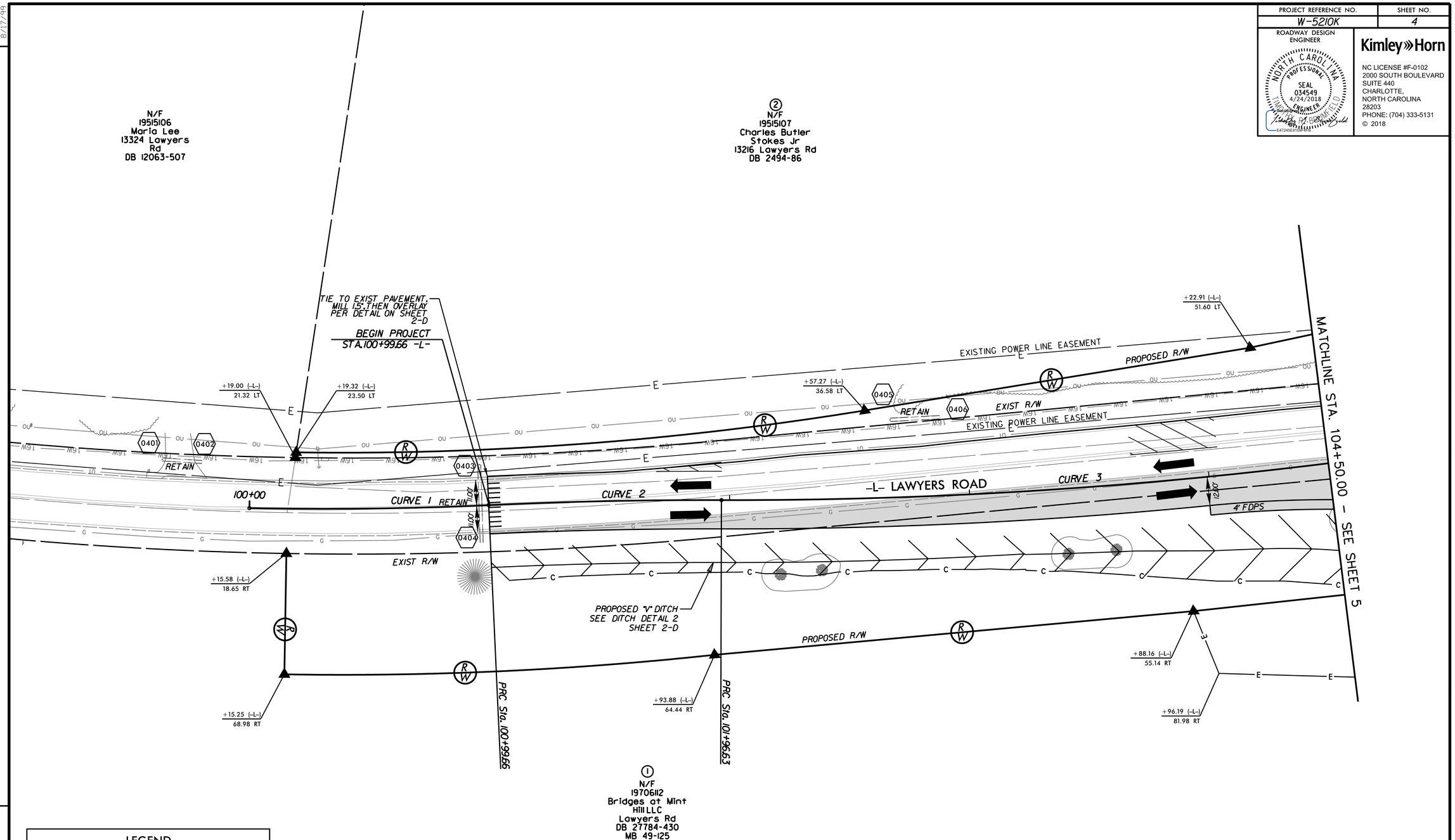

LEGEND
CONCRETE PAVING
ROADWAY WIDENING
CONCRETE TRUCK APRON
MILL AND OVERLAY
PAVEMENT REMOVAL
DETECTABLE WARNING DOMES

CURVE 1
PI Sta 100+49.85
Δ = 3° 46' 28.8" (LT)
D = 3° 47' 14.8"
L = 99.66'
T = 49.85'
R = 1,512.78'

CURVE 2
PI Sta 101+48.15
Δ = 2° 46' 40.0" (RT)
D = 2° 51' 53.2"
L = 96.96'
T = 48.49'
R = 2,000.00'

CURVE 3
PI Sta 103+31.77
Δ = 7° 43' 52.5" (LT)
D = 2° 51' 53.2"
L = 269.87'
T = 135.14'
R = 2,000.00'

811 Know what's below. Call before you dig.

NAD 83

20' 0' 20' 40'
10'
(ENGLISH)

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PROJECT REFERENCE NO.	SHEET NO.
W-5210K	5

ROADWAY DESIGN ENGINEER

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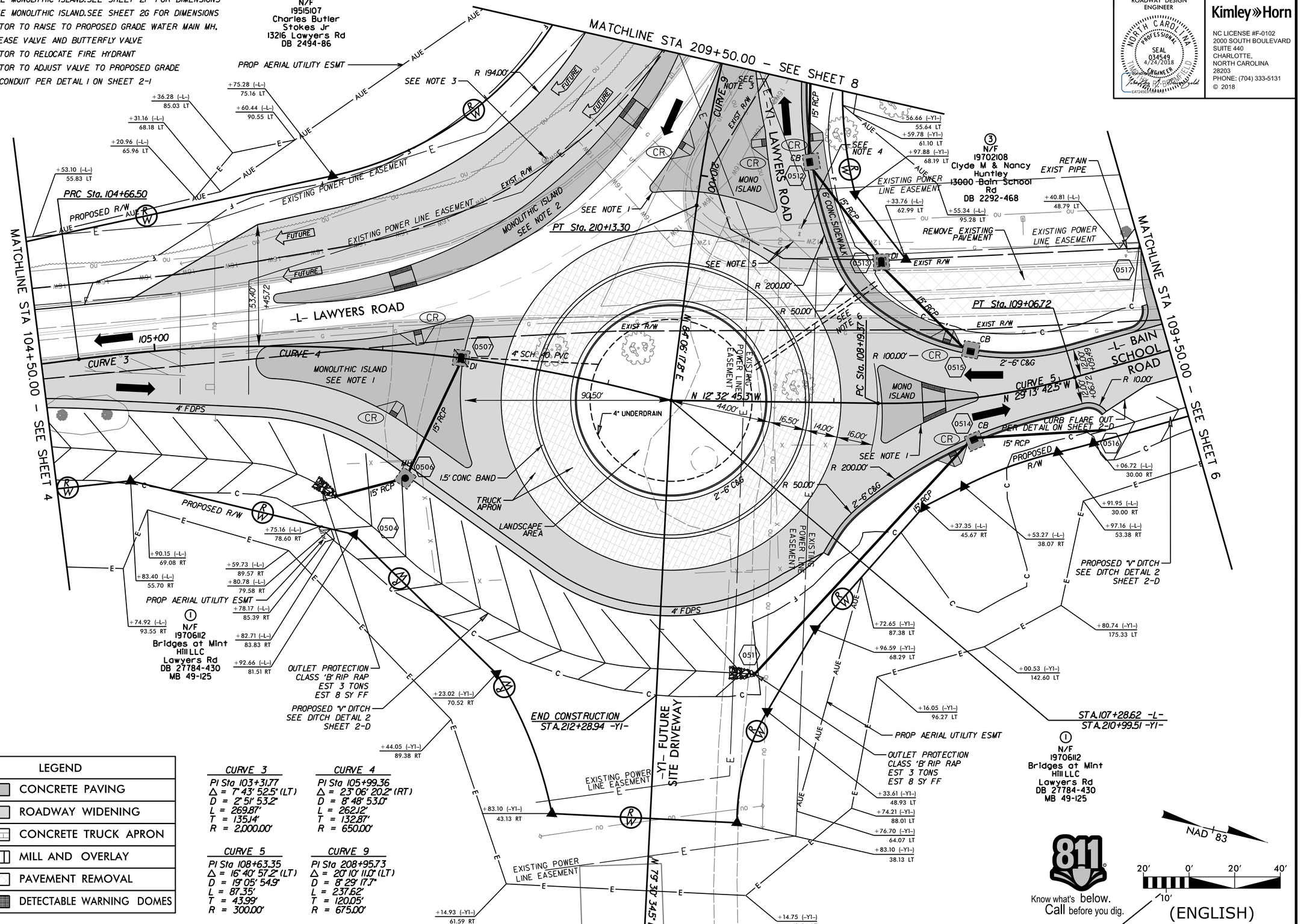
NOTES:

1. CONCRETE MONOLITHIC ISLAND.SEE SHEET 2F FOR DIMENSIONS
2. CONCRETE MONOLITHIC ISLAND.SEE SHEET 2G FOR DIMENSIONS
3. CONTRACTOR TO RAISE TO PROPOSED GRADE WATER MAIN MH. AIR RELEASE VALVE AND BUTTERFLY VALVE
4. CONTRACTOR TO RELOCATE FIRE HYDRANT
5. CONTRACTOR TO ADJUST VALVE TO PROPOSED GRADE
6. INSTALL CONDUIT PER DETAIL I ON SHEET 2-I



LEGEND
CONCRETE PAVING
ROADWAY WIDENING
CONCRETE TRUCK APRON
MILL AND OVERLAY
PAVEMENT REMOVAL
DETECTABLE WARNING DOMES

CURVE 3
PI Sta 103+31.77
Δ = 7° 43' 52.5" (LT)
D = 2° 51' 53.2"
L = 269.87'
T = 135.14'
R = 2,000.00'

CURVE 4
PI Sta 105+99.36
Δ = 23° 06' 20.2" (RT)
D = 8° 48' 53.0"
L = 262.12'
T = 132.87'
R = 650.00'

CURVE 5
PI Sta 108+63.35
Δ = 16° 40' 57.2" (LT)
D = 19° 05' 54.9"
L = 87.35'
T = 43.99'
R = 300.00'

CURVE 9
PI Sta 208+95.73
Δ = 20° 10' 11.0" (LT)
D = 8° 29' 17.7"
L = 237.62'
T = 120.05'
R = 675.00'

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im_Brandt-Tate2

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W-5210K	6

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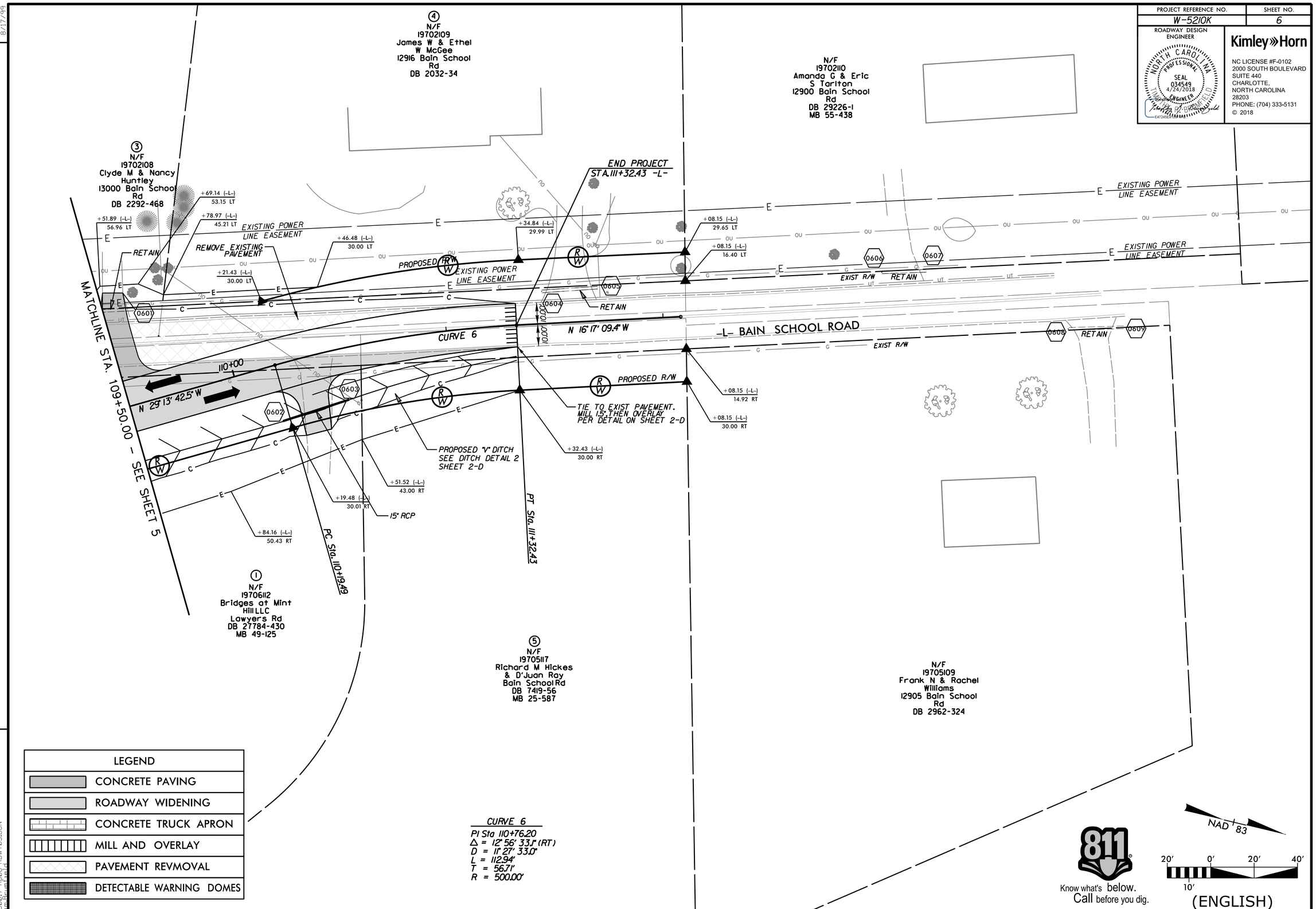

LEGEND
CONCRETE PAVING
ROADWAY WIDENING
CONCRETE TRUCK APRON
MILL AND OVERLAY
PAVEMENT REVMOVAL
DETECTABLE WARNING DOMES

CURVE 6
PI Sta 110+76.20
Δ = 12° 56' 33.1" (RT)
D = 11° 27' 33.0"
L = 112.94'
T = 56.71'
R = 500.00'

811 Know what's below. Call before you dig.

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PROJECT REFERENCE NO.	SHEET NO.
W-5210K	7

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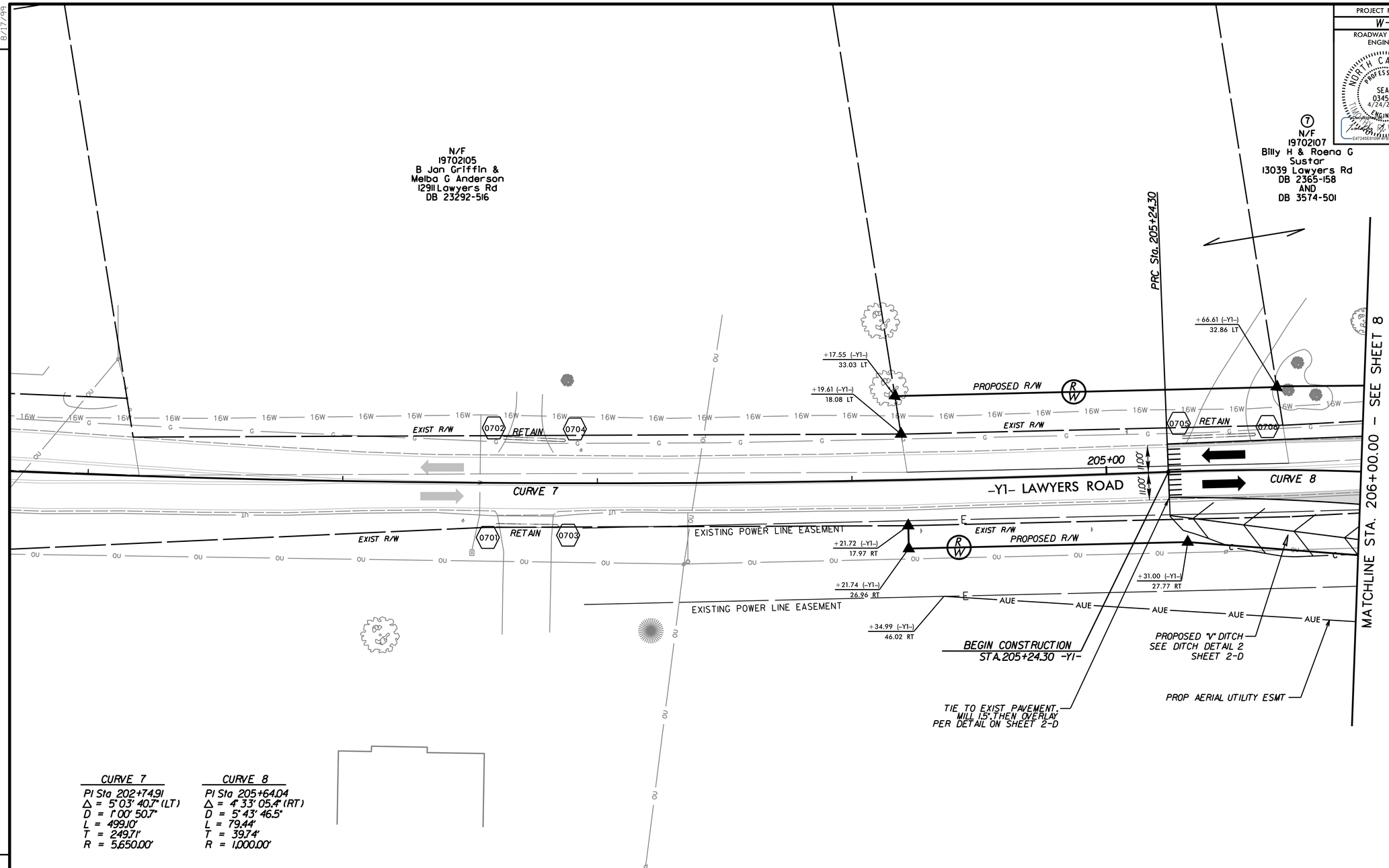

CURVE 7	CURVE 8
PI Sta 202+74.91	PI Sta 205+64.04
Δ = 5° 03' 40.7" (LT)	Δ = 4° 33' 05.4" (RT)
D = 1° 00' 50.7"	D = 5° 43' 46.5"
L = 499.10'	L = 79.44'
T = 249.71'	T = 39.74'
R = 5,650.00'	R = 1,000.00'

LEGEND
CONCRETE PAVING
ROADWAY WIDENING
CONCRETE TRUCK APRON
MILL AND OVERLAY
PAVEMENT REMOVAL
DETECTABLE WARNING DOMES

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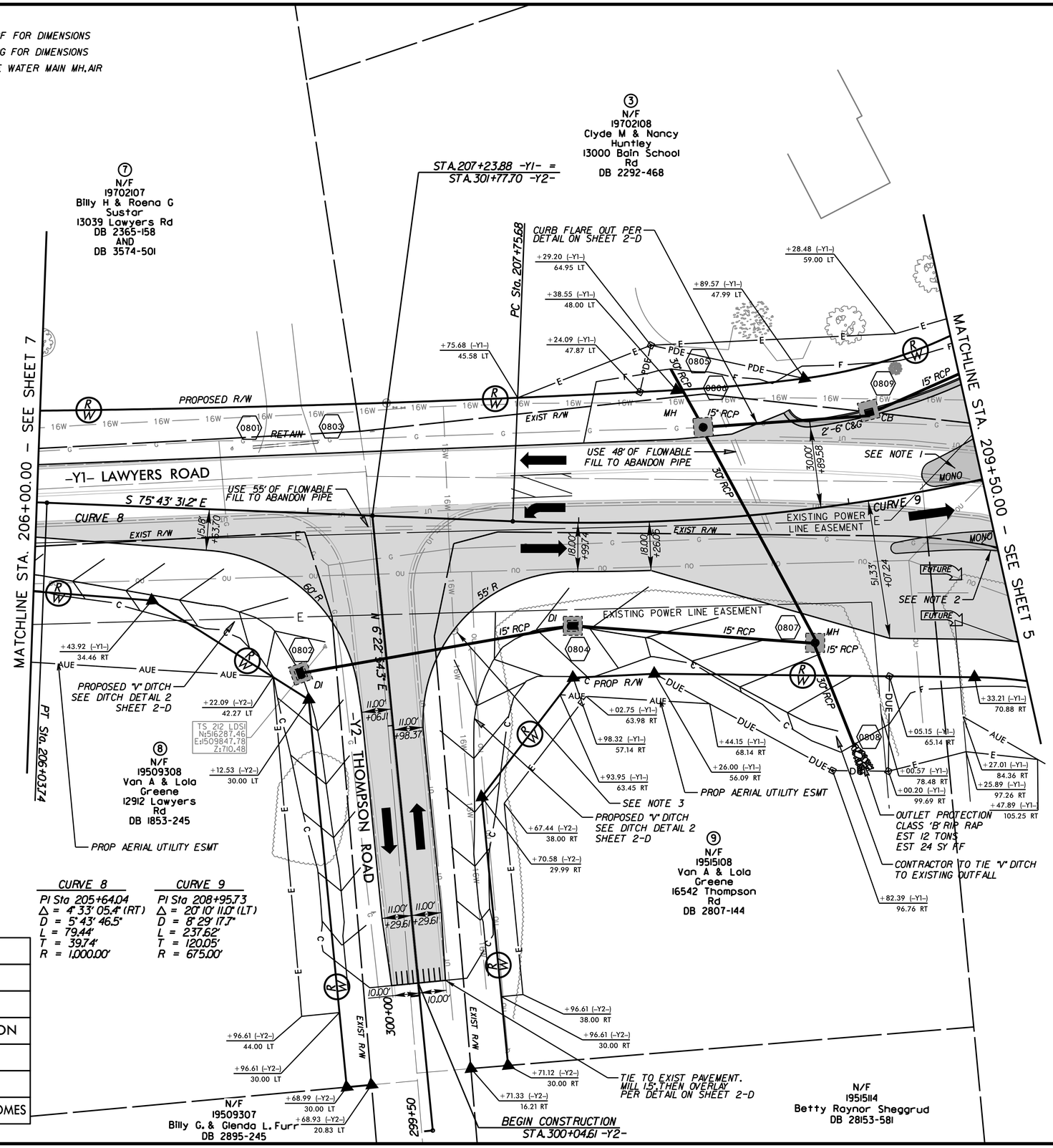
2. CONCRETE MONOLITHIC ISLAND.SEE SHEET 2G FOR DIMENSIONS
3. CONTRACTOR TO RAISE TO PROPOSED GRADE WATER MAIN MH,AIR RELEASE VALVE AND BUTTERFLY VALVE



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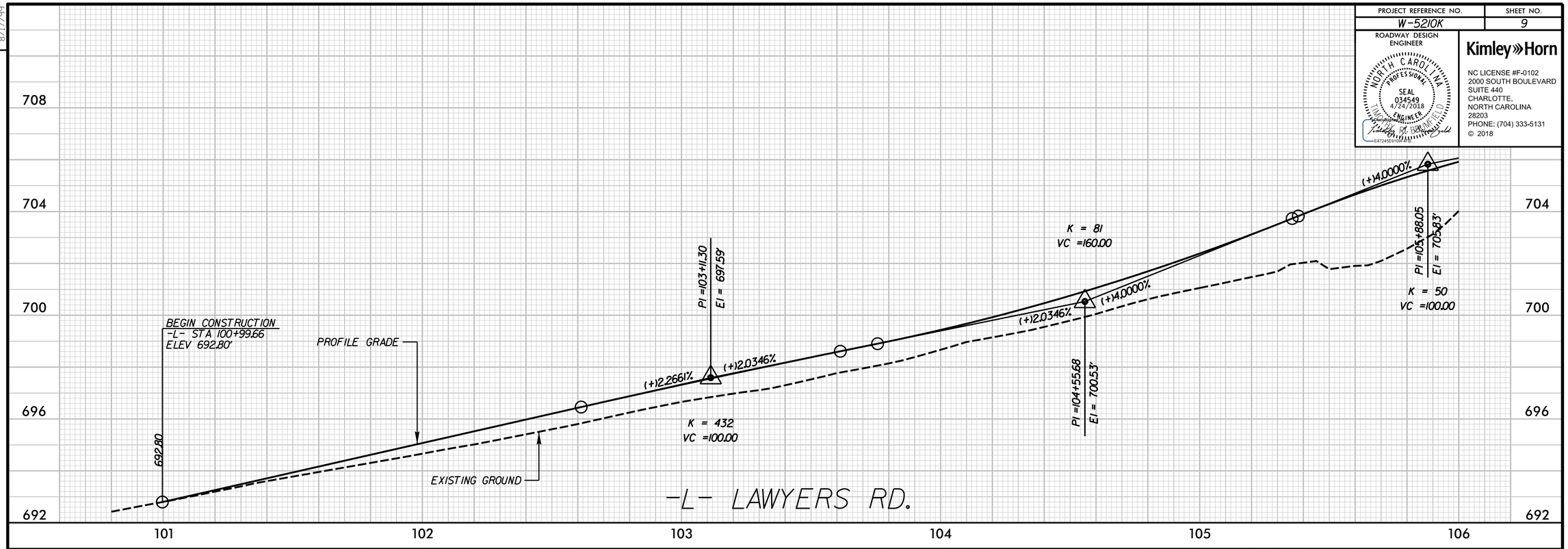

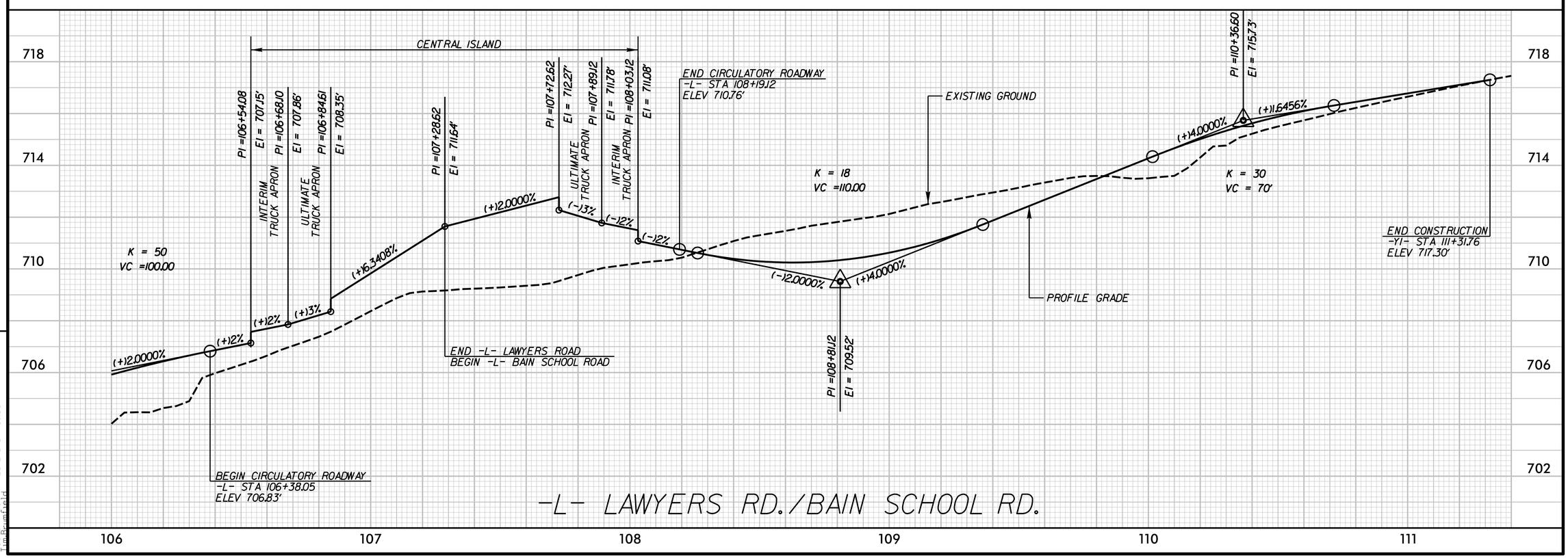

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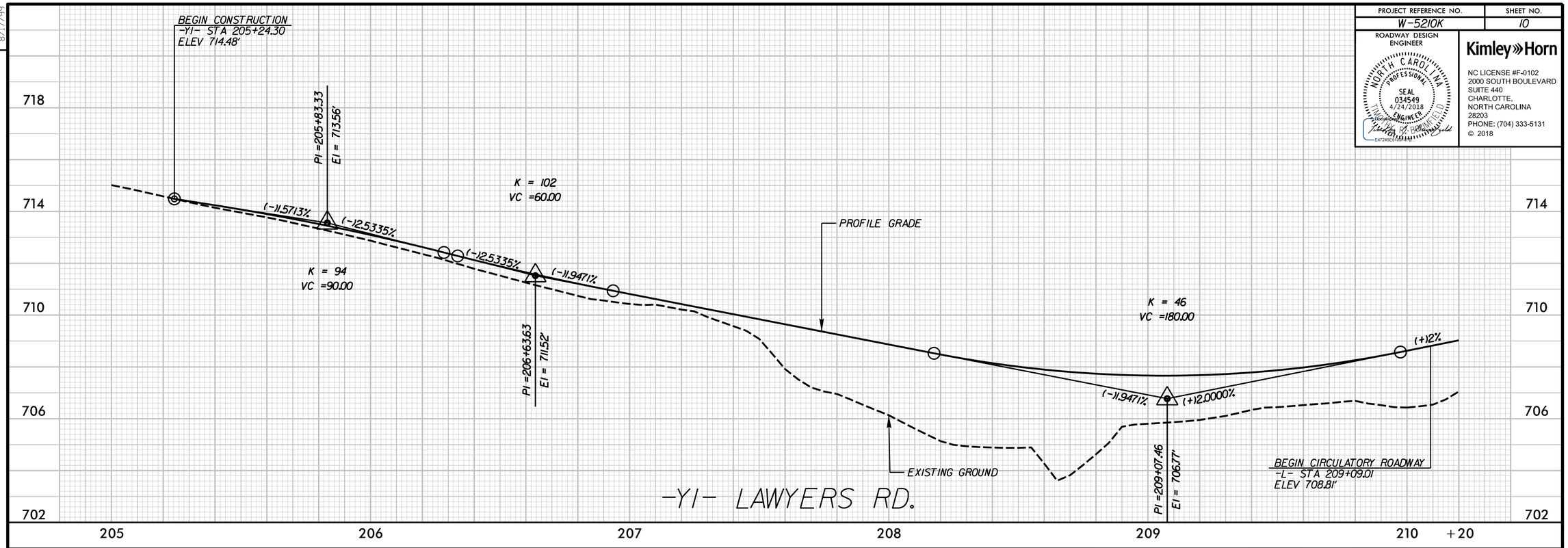

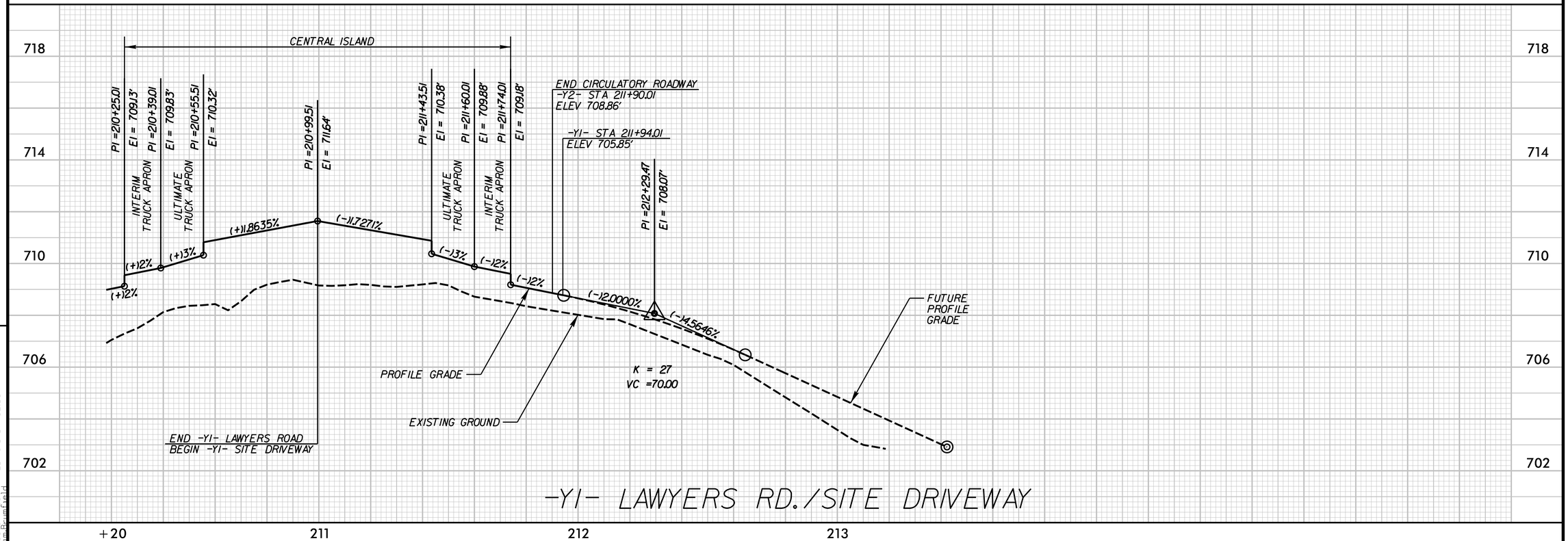

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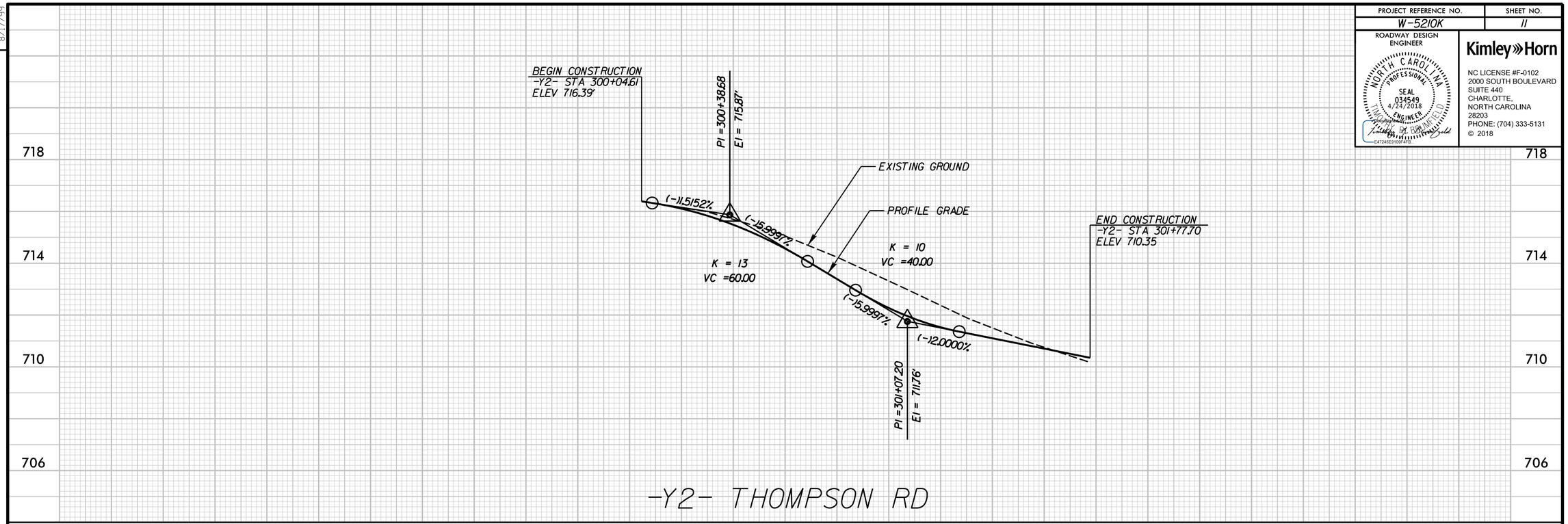

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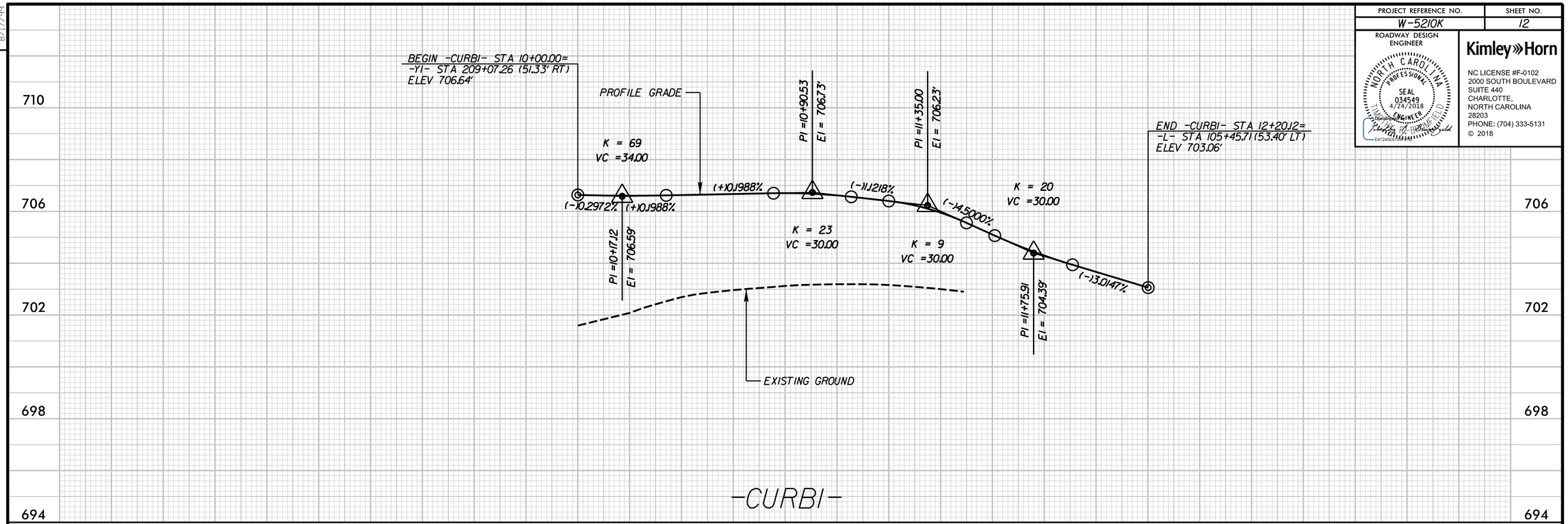

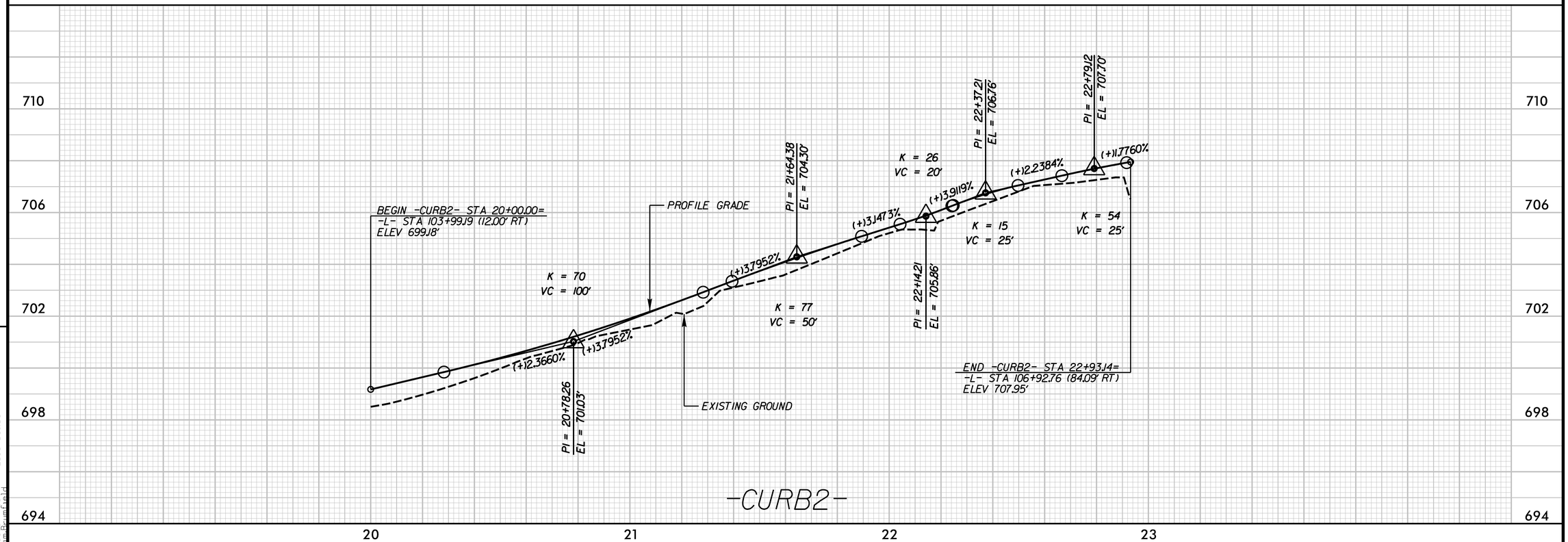

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W-5210K	13

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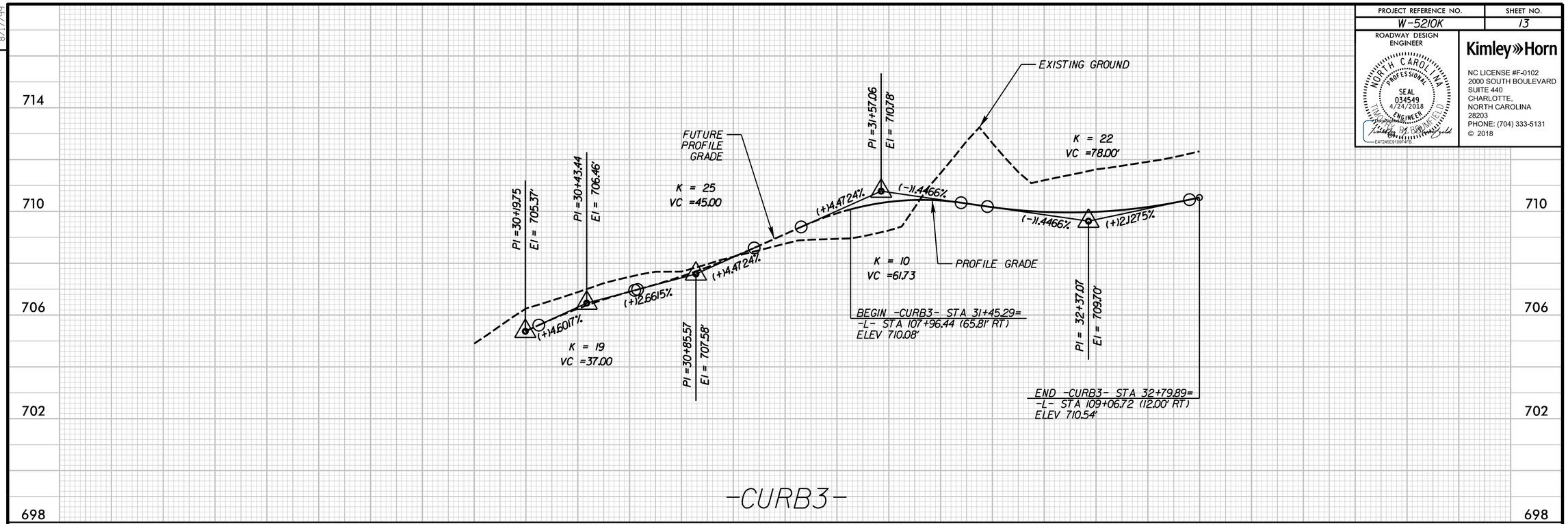

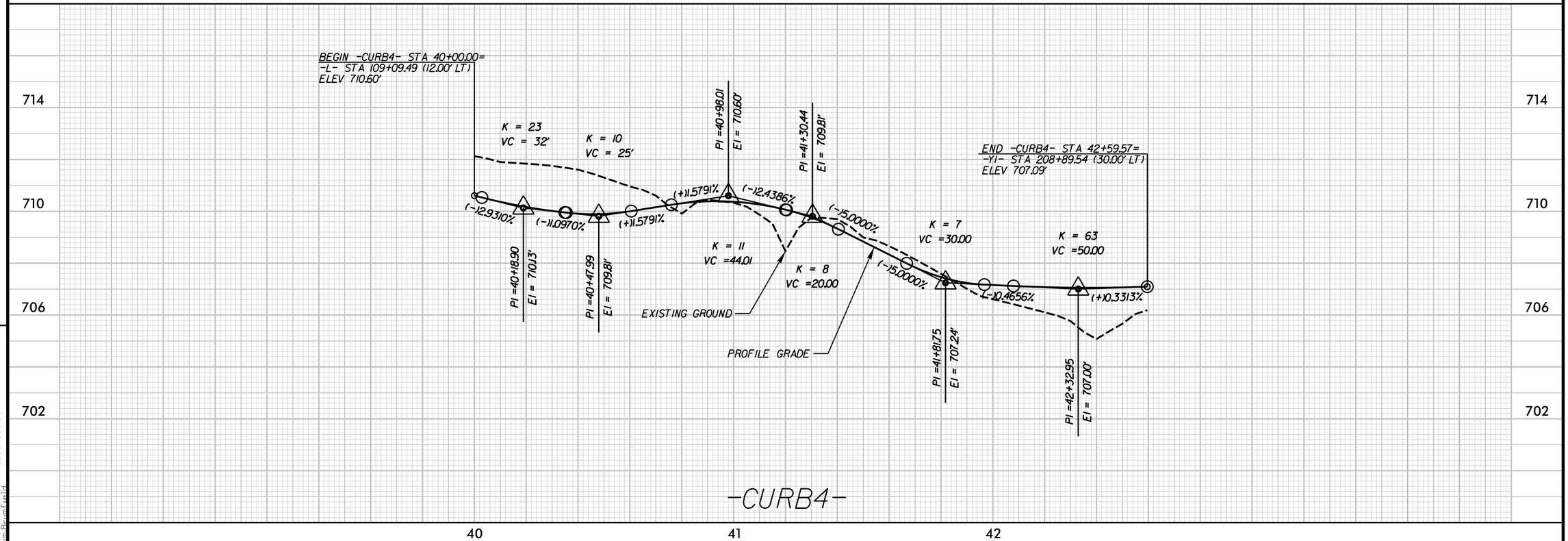

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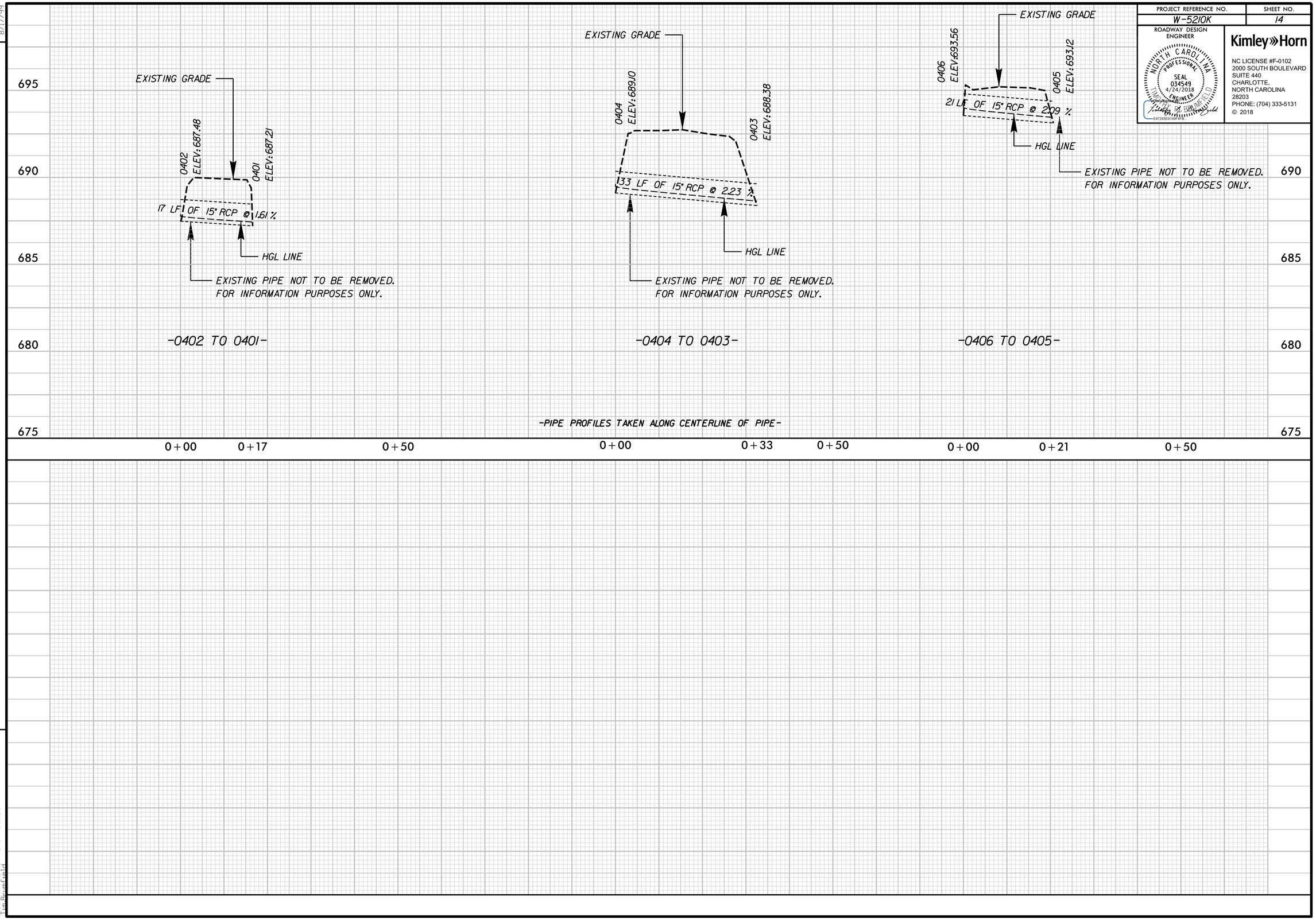

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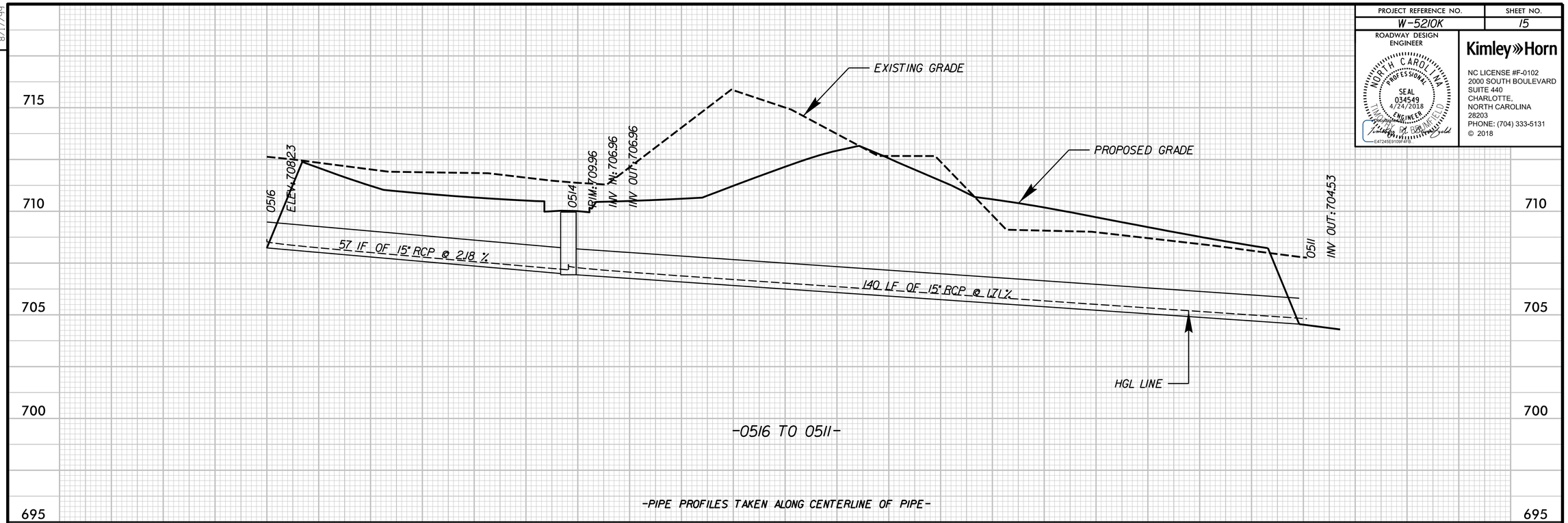
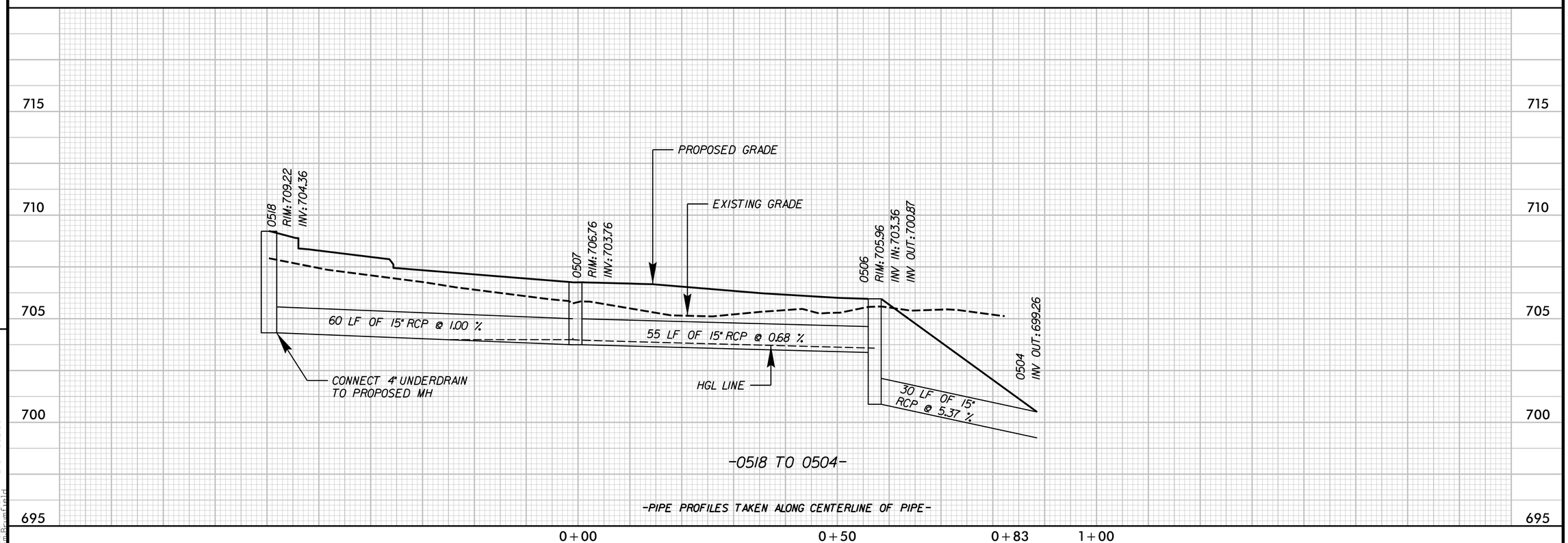


-0516 TO 0511-

-PIPE PROFILES TAKEN ALONG CENTERLINE OF PIPE-



-0518 TO 0504-

-PIPE PROFILES TAKEN ALONG CENTERLINE OF PIPE-

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PROJECT REFERENCE NO.	SHEET NO.
W-5210K	16

ROADWAY DESIGN ENGINEER

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Timothy R. Sellers

E47245E9109F4FB

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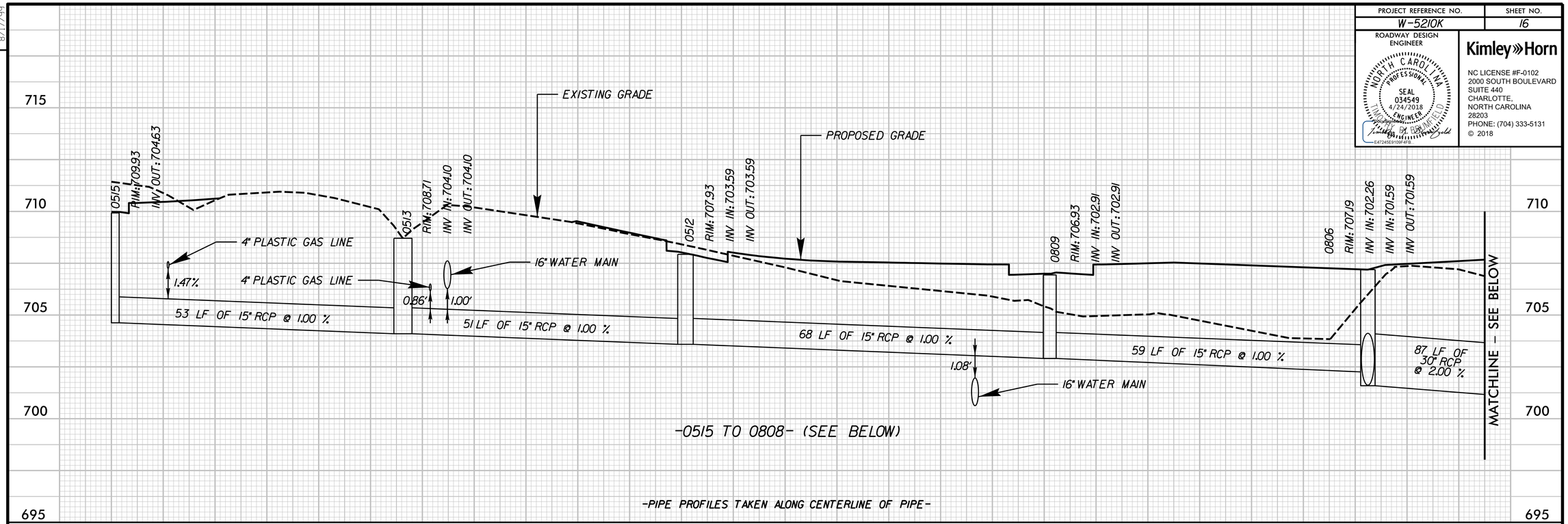

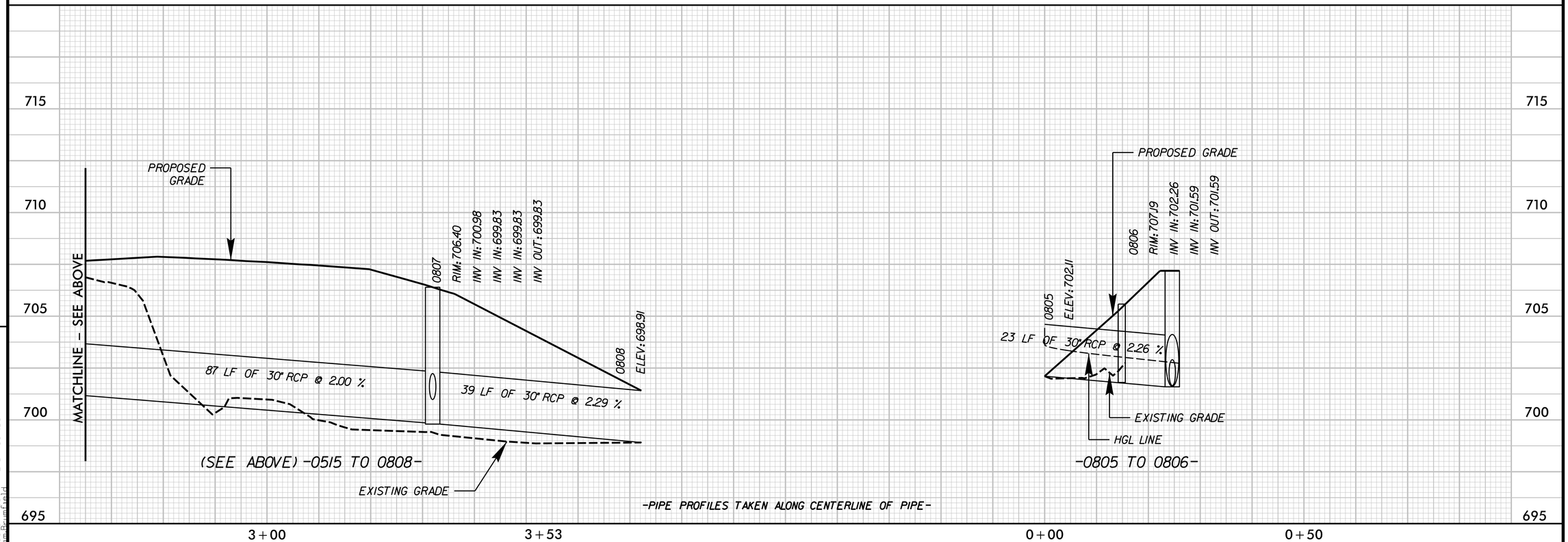

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PROJECT REFERENCE NO.	SHEET NO.
W-5210K	17

ROADWAY DESIGN ENGINEER

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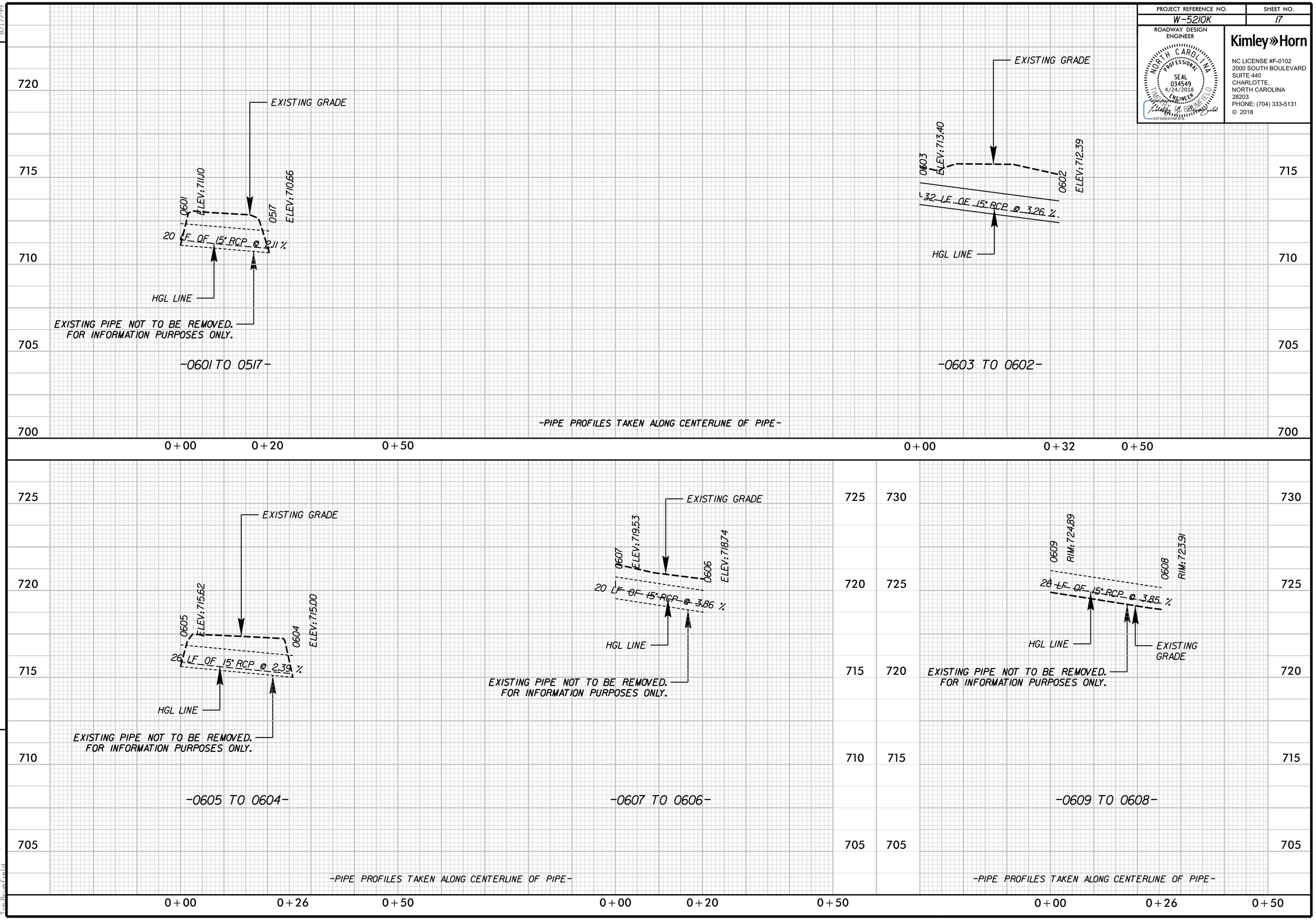

REVISIONS

8/17/99

4/6/2018
250017-RD09-PRFL-DRNG05.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	18

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

TIMOTHY R. BRUMFIELD

E4724569109F4FB

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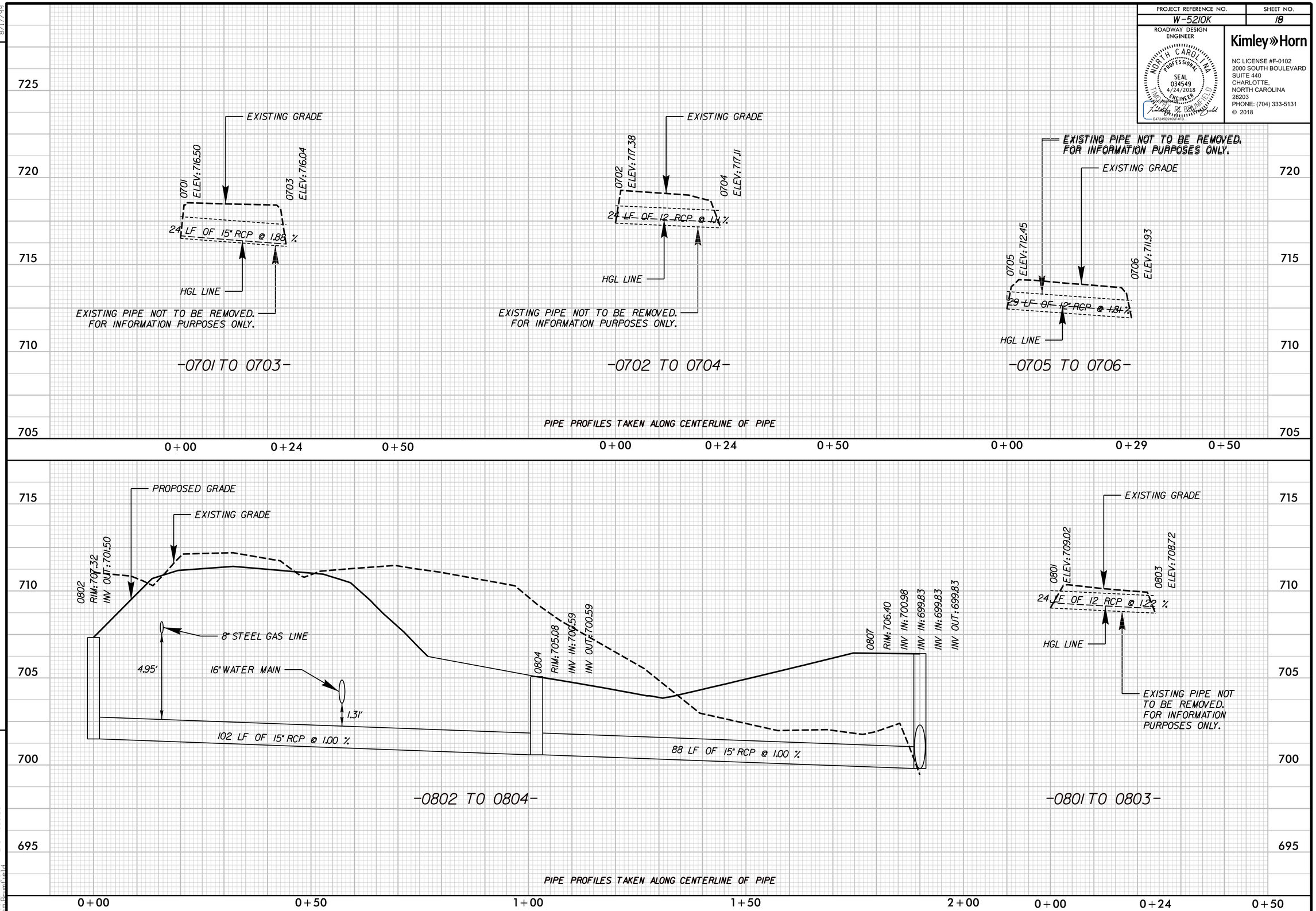
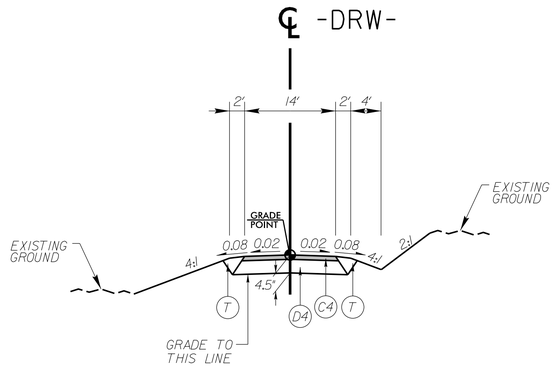


REVISIONS

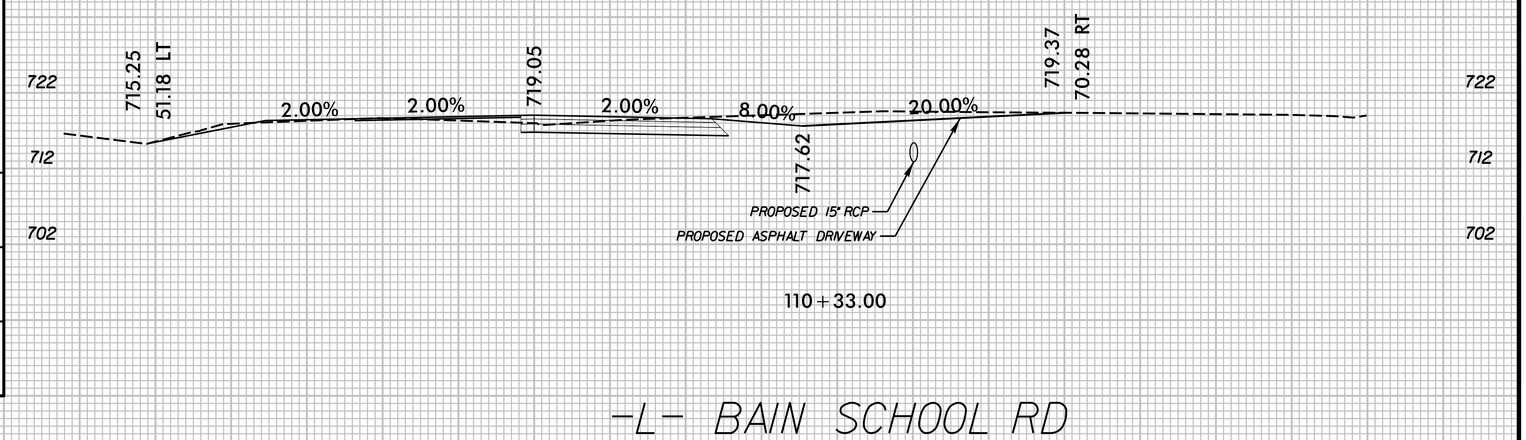
8/17/99

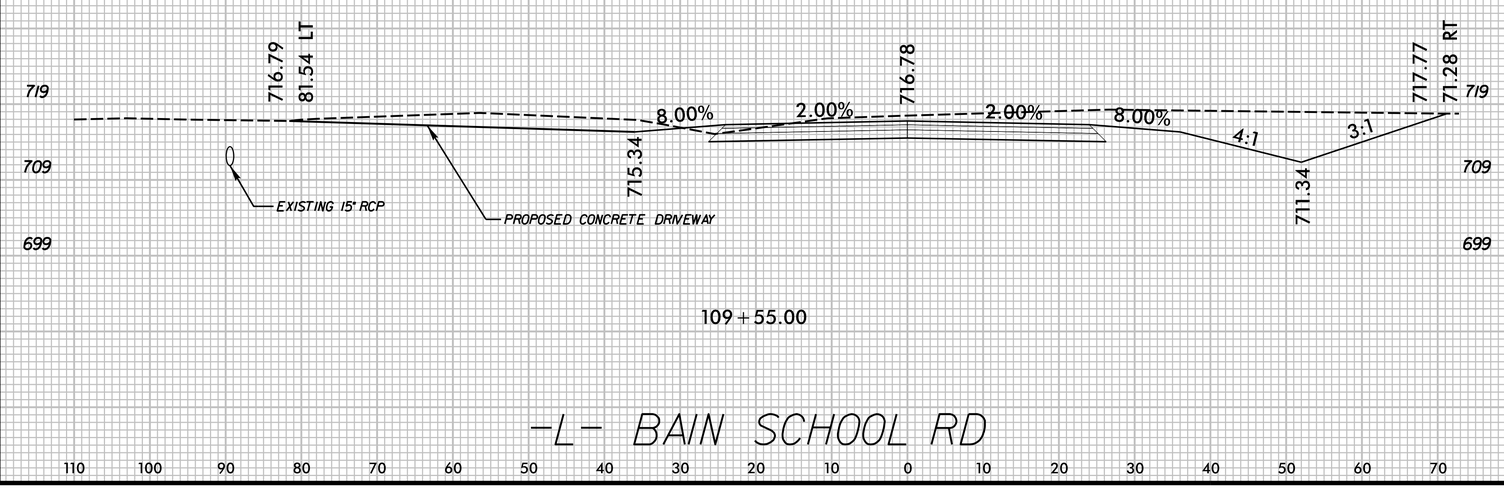
4/16/2018
250017-RD09-PRFL-DRNC06.DGN

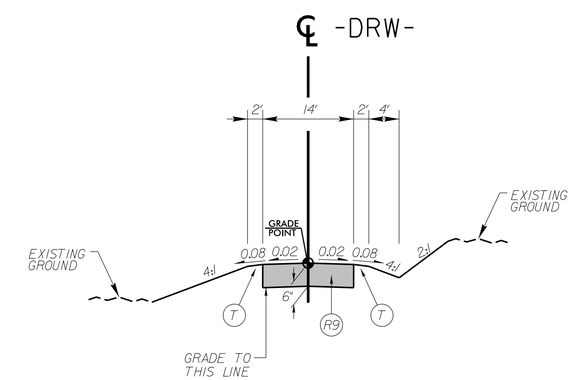
PROJECT REFERENCE NO.	SHEET NO.
W-5210K	19



C4	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
D4	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
T	EARTH MATERIAL







R9	6" CONCRETE DRIVEWAY
T	EARTH MATERIAL

REVISIONS

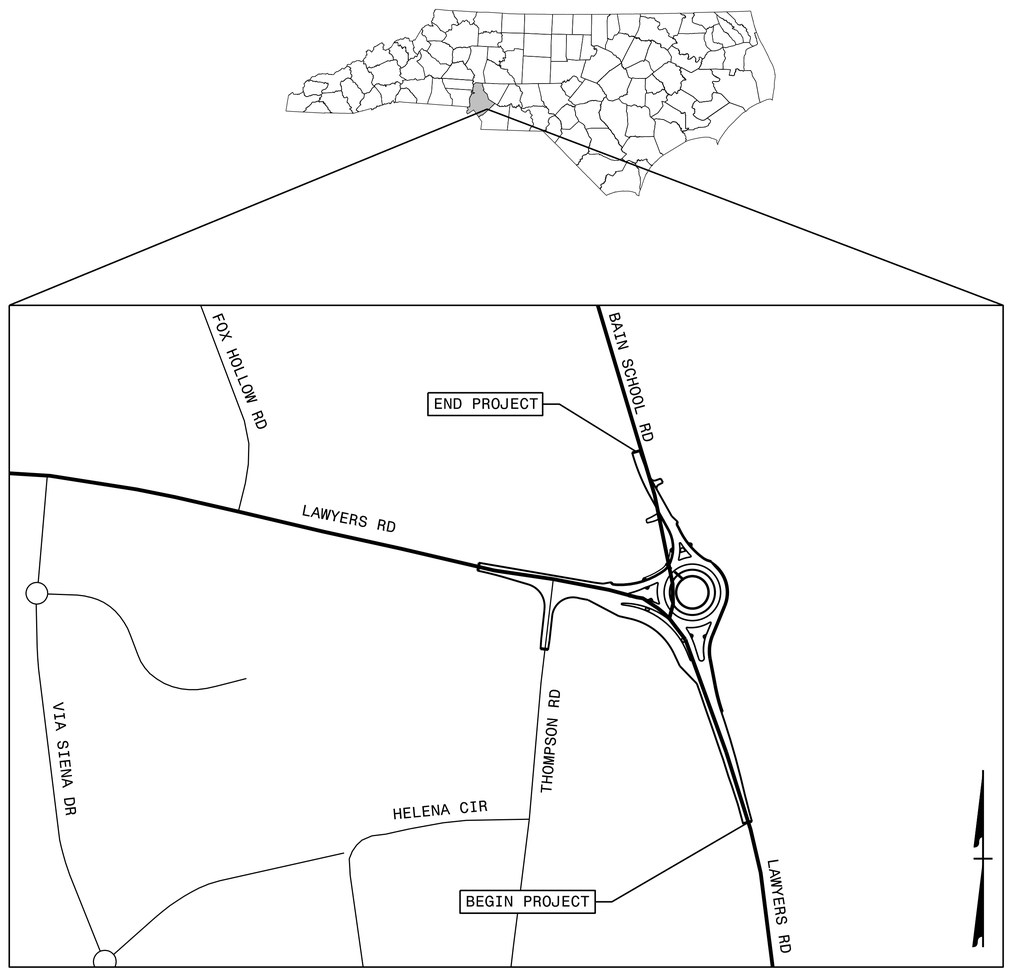
8/17/99

4/16/2018
250017-RD08-PRFL_-L-_DRWY02.DGN

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

MECKLENBURG COUNTY



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: GENERAL NOTES AND PROJECT NOTES
TMP-2	THOMPSON ROAD OFF-SITE DETOUR
TMP-3	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4 TO TMP-6	TEMPORARY TRAFFIC CONTROL PHASE I DETAIL
TMP-7 TO TMP-9	TEMPORARY TRAFFIC CONTROL PHASE II DETAIL
TMP-10 TO TMP-12	TEMPORARY TRAFFIC CONTROL PHASE III DETAIL

SHEET NO.
TMP-1

W-5210K

TIP PROJECT:

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

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER

_____ TRAFFIC CONTROL PROJECT ENGINEER

_____ TRAFFIC CONTROL PROJECT DESIGN ENGINEER

_____ TRAFFIC CONTROL DESIGN ENGINEER

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

PLANS PREPARED FOR THE NCDOT BY:

Kimley»Horn
© 2016
200 South Tryon Street, Suite 200
Charlotte, North Carolina 28202
NC LICENSE# F-0102

APPROVED: DocuSigned by: Timothy R. Brumfield E47245E9109F4FB...

DATE: 4/24/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER TIMOTHY R. BRUMFIELD

4/16/2018
25001/7-R012-TCP-COVER.DGN
Tim.Brumfield

PROJ. REFERENCE NO.	SHEET NO.
W-5210K	TMP-1A

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

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
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	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	POSITIVE PROTECTION
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE 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
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL
- USER DEFINED (IF NEEDED)
- USER DEFINED (IF NEEDED)

SIGNALS

EXISTING PROPOSED TEMPORARY (T E M P)

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

PA	-	*PAINT (4" WHITE)*	*EDGE LINE*
PI	-	*PAINT (4" YELLOW)*	*DOUBLE CENTER LINE*
P4	-	*PAINT (24" WHITE)*	*WHITE STOPBAR*

APPROVED: DocuSigned by: E4724SE910BF4FB...

DATE: 4/24/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER TIMOTHY R. BRUMFIELD

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

ROADWAY STANDARD DRAWINGS & LEGEND

4/16/2018
25001F-RD12-TCP-COVER.DGN
Tim.Brumfield

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	TMP-1B

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

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GENERAL NOTES

A) THE CONTRACTOR SHALL BE REQUIRED TO FURNISH, INSTALL, RELOCATE, AND MAINTAIN ALL TRAFFIC CONTROL DEVICES, SIGNS, BARRICADES, WARNING AND/OR CHANNELIZING DEVICES FOR WORK SITES AND DETOUR ROUTES AS SHOWN IN TRAFFIC CONTROL PLANS UNLESS OTHERWISE SPECIFIED WITHIN THE TRAFFIC CONTROL PLANS. THE LOCATION AND POSITIONING OF THESE BARRICADES, SIGNS, ETC. SHALL BE APPROVED BY THE ENGINEER.

B) THE CONTRACTOR SHALL CONTACT THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION TWO WEEKS PRIOR TO BEGINNING ANY WORK THAT WILL REQUIRE THE PLACEMENT OF SIGNS OR OTHER TRAFFIC CONTROL DEVICES BY NCDOT. CONTACT MUST BE IN WRITING TO THE TRAFFIC ENGINEER, TRANSPORTATION ENGINEERING DIVISION, WITH CURRENT TELEPHONE CONTACT. PRIOR TO REVISING TRAFFIC LANES WHICH REQUIRE SIGNAL REVISIONS, THE CONTRACTOR SHALL NOTIFY THE NCDOT IMPLEMENTATION SECTION MANAGER A MINIMUM OF 30 CALENDAR DAYS IN ADVANCE. THE TRAFFIC LANES SHALL NOT BE SHIFTED UNTIL THE REQUIRED SIGNAL REVISION / SHIFT IS COMPLETE AND READY FOR ACTIVATION.

C) THE CONTRACTOR SHALL MARK ALL HAZARDS WITHIN THE LIMITS OF THE PROJECT WITH WELL-MAINTAINED SIGNS, BARRICADES, WARNING AND/OR CHANNELIZING DEVICES. ON CONNECTING ROADS, ALL BARRICADES, SIGNS, WARNING, AND/OR CHANNELIZING DEVICES SHALL BE MOVED, SUPPLEMENTED, CHANGED, OR REMOVED AS REQUIRED DURING THE PROGRESS OF CONSTRUCTION AS APPROVED BY THE ENGINEER.

D) THE CONTRACTOR SHALL MAINTAIN TWO WAY TRAFFIC ON ALL PORTIONS OF THIS PROJECT, UNLESS OTHERWISE SPECIFIED HEREIN, AND WILL BE REQUIRED TO PROVIDE PROPERTY OWNERS AND TENANTS ACCESS TO THEIR PROPERTY THROUGHOUT THE PROJECT, INCLUDING INGRESS AND EGRESS FOR BUSINESSES.

E) TRAFFIC CONTROL PLANS (TCP) FOR THIS PROJECT CONSIST OF SEVERAL TYPICAL DRAWINGS AND STANDARDS SHOWING TRAFFIC CONTROL DEVICES TO BE USED WHERE VARIOUS TYPES OF CONSTRUCTION ACTIVITIES ARE OCCURRING ON THE PROJECT. THESE DRAWINGS ARE FOR TYPICAL SITUATIONS AND SHOULD BE ADAPTED TO THE ACTUAL FIELD CONDITIONS. UNFORESEEN FIELD SITUATIONS, MAY PREVENT THE ADAPTION OF THE PRESCRIBED TYPICAL DRAWING OR STANDARD EXACTLY AS SHOWN. THE CONTRACTOR, AT THE DIRECTION OF THE ENGINEER, SHALL MOVE, SUPPLEMENT, CHANGE, AND/OR REMOVE THE TRAFFIC CONTROL DEVICES ASSOCIATED WITH THESE TYPICAL DRAWINGS AND/OR STANDARD DRAWINGS TO ENSURE THAT THE MOTORIST CAN PASS THROUGH THE CONSTRUCTION AREA IN A SAFE AND EFFICIENT MANNER.

F) CONSTRUCTION PHASING MAY DICTATE THAT TWO OR MORE TYPICAL DRAWINGS OR STANDARDS BE USED IN ONE AREA OF CONSTRUCTION. CHANNELIZING DEVICES ASSOCIATED WITH THESE TYPICALS SHALL BE MOVED, SUPPLEMENTED, CHANGED, OR REMOVED AS REQUIRED BY THE CONSTRUCTION PHASING OF THE PLANS. THE LOCATION AND POSITIONING OF THESE DEVICES SHALL BE APPROVED BY THE ENGINEER TO ENSURE THAT THE MOTORIST DOES NOT RECEIVE FALSE INFORMATION WHEN TWO OR MORE TYPICALS AND/OR ROADWAY STANDARD DRAWINGS OVERLAP.

G) TEMPORARY OPERATIONAL SIGNS ARE GENERALLY MOUNTED ON PORTABLE SUPPORTS. THESE ARE NORMALLY USED FOR SHORT-TERM OPERATIONS TO WARN AND GUIDE TRAFFIC THROUGH OR AROUND CONSTRUCTION AREAS WITHIN A CONSTRUCTION ZONE. OPERATIONAL SIGNS SHALL BE INSTALLED PRIOR TO THE START OF OPERATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SIGNS SHALL BE MAINTAINED IN PROPER POSITION AND KEPT CLEAN AND LEGIBLE AT ALL TIMES. INSTALL SAND BAG BALLAST, OR OTHER APPROVED DEVICES TO PREVENT MOVEMENT OF SIGNS BY WIND OR PASSING VEHICLES AS NEEDED, SIGNS SHALL BE REMOVED WHEN NOT APPLICABLE. THE BOTTOM OF THE SIGN SHALL BE A MINIMUM OF 1 FOOT ABOVE THE PAVEMENT SURFACE.

H) WORK ON THE PROJECT OR ANY SEPARATE ACTIVITY THEREIN SHALL NOT START UNTIL ALL OF THE REQUIRED SIGNS, BARRICADES, WARNING, AND/OR CHANNELIZING DEVICES ARE INSTALLED AND APPROVED BY THE ENGINEER.

I) ANY EXISTING PAVEMENT MARKINGS DETERMINED BY THE ENGINEER TO BE MISLEADING OR IN CONFLICT WITH THE TRAFFIC CONTROL PLAN SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR PRIOR TO PROCEEDING WITH ANY CONSTRUCTION ACTIVITY.

J) ALL TEMPORARY PAVEMENT MARKINGS APPLIED BY THE CONTRACTOR SHALL BE IN PAINT UNLESS OTHERWISE SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS.

K) THE CONTRACTOR MUST HAVE A MINIMUM OF TWO FLAGGERS PRESENT DURING ALL PERIODS OF CONSTRUCTION ACTIVITY TO ASSIST IN THE MOVEMENT OF TRAFFIC THROUGH THE WORK AREA. ADDITIONAL FLAGGERS MAY BE REQUIRED AS DIRECTED BY THE ENGINEER OR NCDOT. ALL FLAGGERS UTILIZED ON PROJECT MUST BE CERTIFIED.

L) FLAGGERS' ATTIRE SHALL INCLUDE A FLUORESCENT ORANGE VEST, SHIRT, OR JACKET WORN AS THE OUTER LAYER OF CLOTHING. THE FLAGGER SHALL BE EQUIPPED WITH A STOP/SLOW PADDLE (SEE MUTCD, PART IV, SECTION 6F-2, PAGE 6F-1).

M) RED FLAGS WILL BE ACCEPTABLE IN LIEU OF THE PADDLE IN EMERGENCY SITUATIONS ONLY. FLAGGERS, PROPERLY EQUIPPED AND INSTRUCTED, WILL BE PROVIDED BY THE CONTRACTORS AND STATIONED AT THE LOCATIONS SPECIFIED OR AS DIRECTED BY THE ENGINEER. A FLUORESCENT ORANGE CAP MAY BE REQUIRED.

N) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

PROJECT NOTES

1) PROJECT NOTES ARE NOT INTENDED TO BE USED AS GENERAL NOTES FOR THE PROJECT. THEY ARE TO BE USED AT SPECIFIC LOCATIONS AS REQUIRED BY THE DETAILS OF THE TRAFFIC CONTROL PLANS.

2) TRAFFIC CONTROL DEVICES SHALL BE LOCATED NO CLOSER THAN 5 FT. TO A TRENCH AT EXISTING GRADE, MEASURED FROM THE SIDE FACING TRAFFIC.

3) MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES SHALL BE 50 FT. IN TANGENT AREAS, 25 FT. IN TAPERS AND IN RADII ON BAIN SCHOOL ROAD AND 40 FT. IN TANGENT AREAS, 20 FT. IN TAPERS AND IN RADII ON LAWYERS ROAD UNLESS OTHERWISE INDICATED ON THE PLANS.

4) WHEN USING TYPE III BARRICADES WITH SIGN R11-2 ATTACHED, BARRICADES SHALL BE OF SUFFICIENT LENGTH TO CLOSE ROADWAY.

5) CONTRACTOR SHOULD BE AWARE THAT WHEN THE CONSTRUCTION AREA IS IN OR NEAR A VERTICAL CREST OR HORIZONTAL CURVE, THE WORK AREA SHALL BE EXTENDED SO THAT LANE CLOSURE BEGINS IN ADVANCE OF THE CURVE AND MINIMUM STOPPING SIGHT DISTANCE IS MET.

6) POLICE OFFICERS MAY BE REQUIRED TO CONTROL TRAFFIC DURING CONSTRUCTION HOURS AS DIRECTED BY THE ENGINEER.

7) WHEN TRAFFIC PROCEEDS THROUGH OR ADJACENT TO CONSTRUCTION ACTIVITY OR A WORK ZONE, FLAGGER(S) AND FLAGGER SYMBOL SIGN(S (W20-7) SHALL BE USED AS DIRECTED BY THE ENGINEER TO SLOW AND/OR STOP TRAFFIC AND DIRECT IT THROUGH THE WORK AREA. SIGN W20-7A SHALL NOT BE DISPLAYED EXCEPT WHEN FLAGGER IS PRESENT.

8) THE CONTRACTOR SHALL MAINTAIN A SMOOTH TRANSITION FROM EXISTING PAVEMENT TO PROPOSED PAVING OPERATION.

9) CONTRACTOR SHALL SUPPLY AND INSTALL ALL TEMPORARY PAVEMENT MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

10) THE CONTRACTOR SHALL FOLLOW THE PHASING AS DESCRIBED HEREIN. THE CONTRACTOR SHALL COMPLETE THE REQUIREMENTS OF EACH CONSTRUCTION PHASE IN SEQUENCE. WHEN A CONSTRUCTION PHASE IS DIVIDED INTO STEPS, THE CONTRACTOR SHALL COMPLETE THE REQUIREMENTS OF EACH STEP IN SEQUENCE. (EXAMPLE: THE REQUIREMENTS OF PHASE I SHALL BE COMPLETED BEFORE PROCEEDING TO PHASE II; THE REQUIREMENTS OF STEP 1 OF PHASE I SHALL BE COMPLETED BEFORE PROCEEDING TO STEP 2 OF PHASE I). ALL WORK DESCRIBED IN THE PROJECT PHASING SHALL BE PERFORMED BY THE CONTRACTOR, EXCEPT WHERE IT IS SPECIFIED FOR CERTAIN WORK TO BE PERFORMED BY OTHERS.

11) THE CONTRACTOR SHALL NOT BE ALLOWED TO STOP TRAFFIC FOR MORE THAN 5 MINUTES AT A TIME IN ANY ONE DIRECTION.

12) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

FOR FURTHER DETAIL, SEE DETAIL A FOUND ON SHEET TCP-3

13) 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.

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.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

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.

DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

14) FLAGGER(S) AND FLAGGER AHEAD SYMBOL SIGN(S) (W20-7) MAY BE REQUIRED TO DIRECT TRAFFIC THROUGH CONSTRUCTION ZONE DURING PAVEMENT DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.

15) THE CONTRACTOR SHALL REMOVE ANY CONFLICTING PAVEMENT MARKINGS.

16) THE CONTRACTOR SHALL REPLACE ANY EXISTING PAVEMENT MARKINGS WHICH HAVE BEEN OBLITERATED BY CONSTRUCTION ACTIVITIES AT THE END OF EACH DAY'S OPERATIONS.

17) CONTRACTOR SHALL NOT WORK ON BOTH SIDES OF THE ROADWAY SIMULTANEOUSLY WITHIN THE SAME AREA.

18) INGRESS AND EGRESS SHALL BE MAINTAINED TO ALL BUSINESSES AND DWELLINGS AFFECTED BY THE PROJECT. SPECIAL ATTENTION SHALL BE PAID TO FIRE HYDRANTS.

19) ALL TRAVEL LANES SHALL REMAIN OPEN DURING PERIODS OF CONSTRUCTION INACTIVITY, UNLESS OTHERWISE INSTRUCTED BY ENGINEER.

20) DURING THE HOURS OF 6:00 AM-9:00 AM AND 4:00 PM-6:00 PM MONDAY THRU FRIDAY, CONSTRUCTION OR MAINTENANCE WORK WHICH INVOLVES CLOSURE OF A TRAVEL LANE WILL NOT BE ALLOWED ON THOROUGHFARE STREETS EXCEPT FOR EMERGENCY SITUATIONS OR WITH APPROVAL FROM NCDOT.

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	TMP-2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER 4/24/2018

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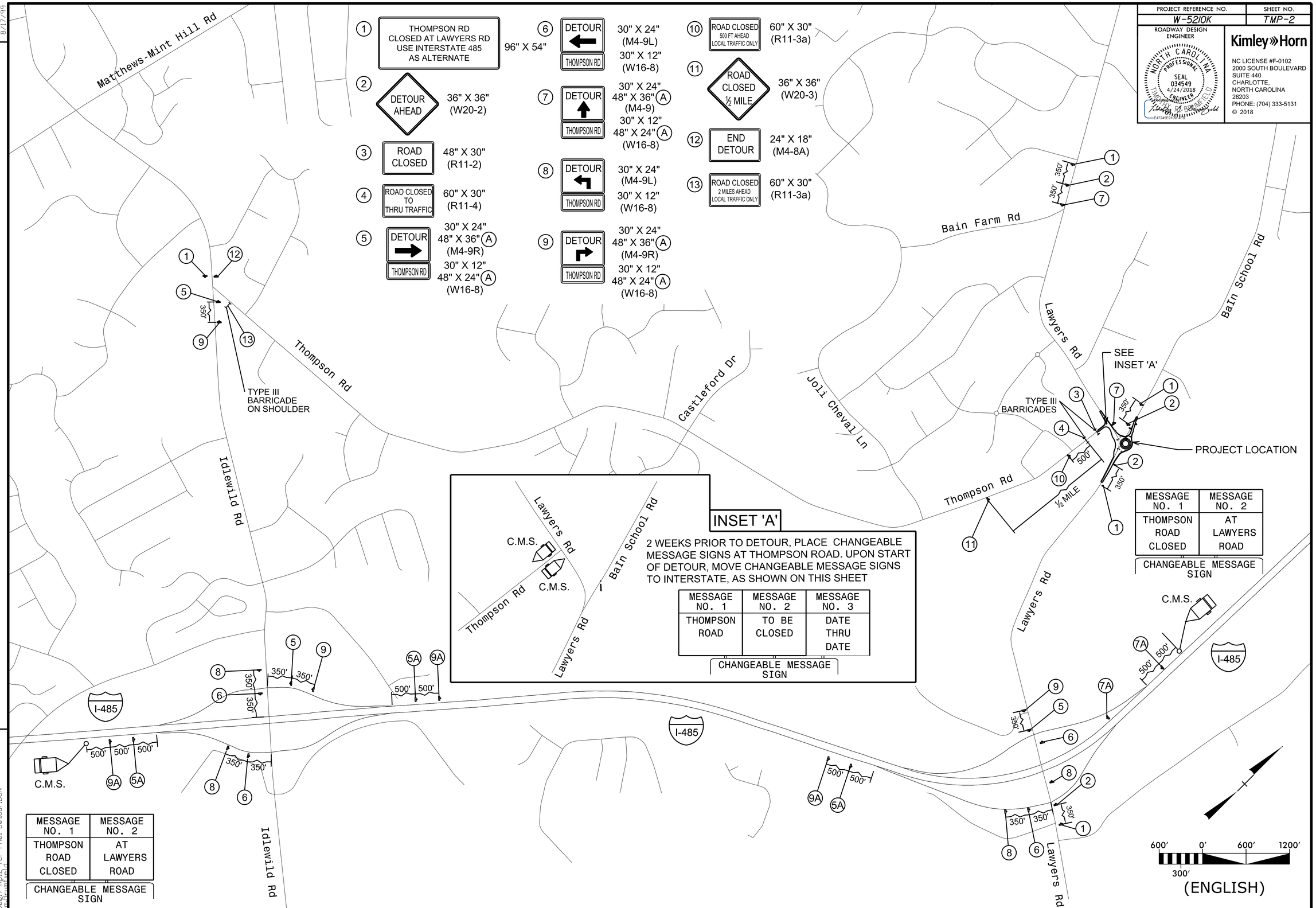
REVISIONS

8/17/99

1. THOMPSON RD CLOSED AT LAWYERS RD USE INTERSTATE 485 AS ALTERNATE — 96" X 54"
2. DETOUR AHEAD — 36" X 36" (W20-2)
3. ROAD CLOSED — 48" X 30" (R11-2)
4. ROAD CLOSED TO THRU TRAFFIC — 60" X 30" (R11-4)
5. DETOUR THOMPSON RD — 30" X 24"; 48" X 36" (A) (M4-9R); 30" X 12"; 48" X 24" (A) (W16-8)
6. DETOUR THOMPSON RD — 30" X 24" (M4-9L); 30" X 12" (W16-8)
7. DETOUR THOMPSON RD — 30" X 24"; 48" X 36" (A) (M4-9); 30" X 12"; 48" X 24" (A) (W16-8)
8. DETOUR THOMPSON RD — 30" X 24" (M4-9L); 30" X 12" (W16-8)
9. DETOUR THOMPSON RD — 30" X 24"; 48" X 36" (A) (M4-9R); 30" X 12"; 48" X 24" (A) (W16-8)
10. ROAD CLOSED 500 FT AHEAD LOCAL TRAFFIC ONLY — 60" X 30" (R11-3a)
11. ROAD CLOSED ½ MILE — 36" X 36" (W20-3)
12. END DETOUR — 24" X 18" (M4-8A)
13. ROAD CLOSED 2 MILES AHEAD LOCAL TRAFFIC ONLY — 60" X 30" (R11-3a)



INSET 'A'

2 WEEKS PRIOR TO DETOUR, PLACE CHANGEABLE MESSAGE SIGNS AT THOMPSON ROAD. UPON START OF DETOUR, MOVE CHANGEABLE MESSAGE SIGNS TO INTERSTATE, AS SHOWN ON THIS SHEET

MESSAGE NO. 1	MESSAGE NO. 2	MESSAGE NO. 3
THOMPSON ROAD	TO BE CLOSED	DATE THRU DATE

CHANGEABLE MESSAGE SIGN

MESSAGE NO. 1	MESSAGE NO. 2
THOMPSON ROAD CLOSED	AT LAWYERS ROAD

CHANGEABLE MESSAGE SIGN

MESSAGE NO. 1	MESSAGE NO. 2
THOMPSON ROAD CLOSED	AT LAWYERS ROAD

CHANGEABLE MESSAGE SIGN

600' 0' 600' 1200'
300'
(ENGLISH)

4/16/2018
25017-RD12_TCP-PH01-Detour.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	TMP-2A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

Transportation Mobility & Safety Division

E4724SE9109F4FB

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2000 SOUTH BOULEVARD
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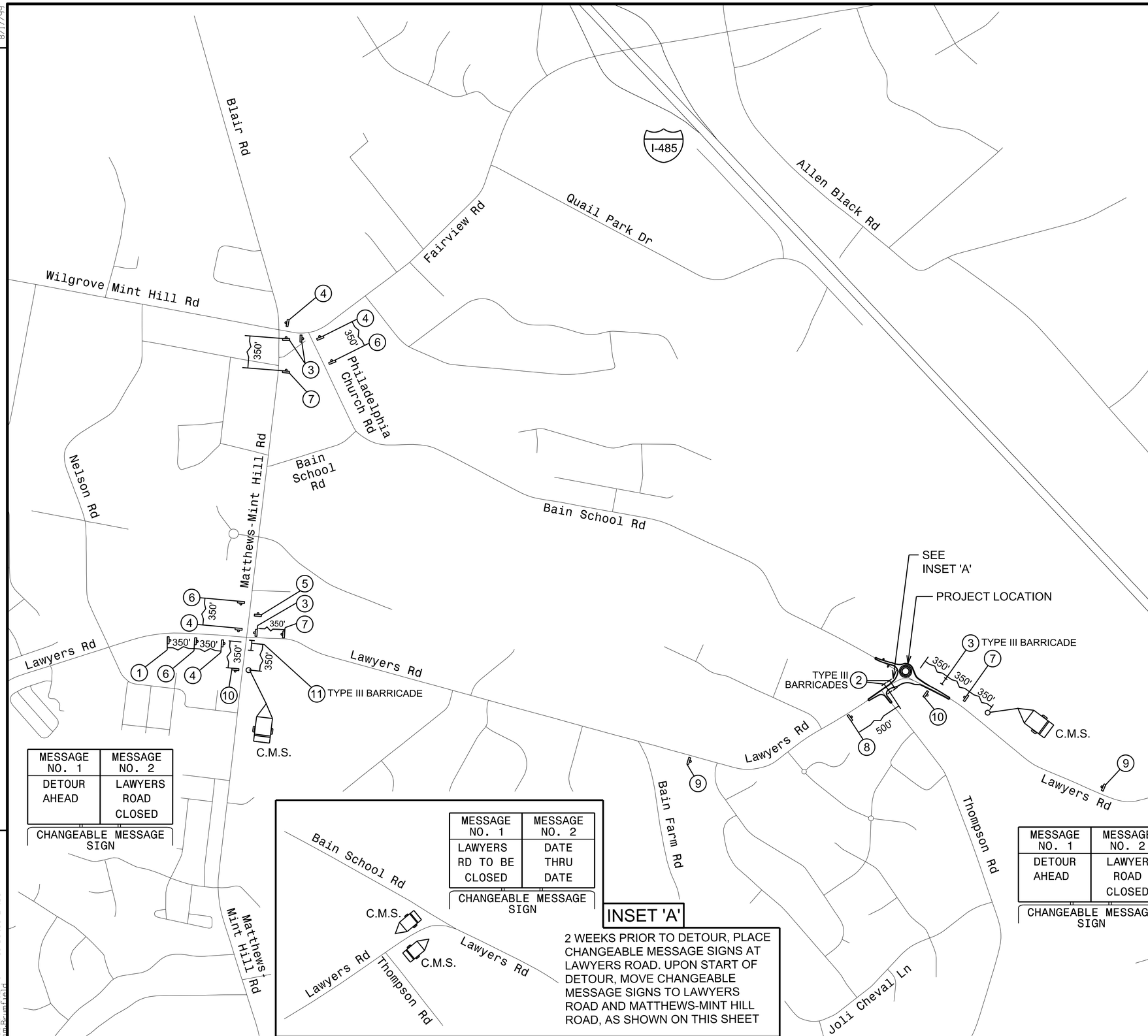

MESSAGE NO. 1	MESSAGE NO. 2
DETOUR AHEAD	LAWYERS ROAD CLOSED

CHANGEABLE MESSAGE SIGN

MESSAGE NO. 1	MESSAGE NO. 2
LAWYERS RD TO BE CLOSED	DATE THRU DATE

CHANGEABLE MESSAGE SIGN

MESSAGE NO. 1	MESSAGE NO. 2
DETOUR AHEAD	LAWYERS ROAD CLOSED

CHANGEABLE MESSAGE SIGN

INSET 'A'

2 WEEKS PRIOR TO DETOUR, PLACE CHANGEABLE MESSAGE SIGNS AT LAWYERS ROAD. UPON START OF DETOUR, MOVE CHANGEABLE MESSAGE SIGNS TO LAWYERS ROAD AND MATTHEWS-MINT HILL ROAD, AS SHOWN ON THIS SHEET

1	DETOUR AHEAD	36" X 36" (W20-2)
2	ROAD CLOSED	48" X 30" (R11-2)
3	DETOUR / LAWYERS RD	30" X 24" (M4-9R) 30" X 12" (W16-8)
4	DETOUR / LAWYERS RD	30" X 24" (M4-9L) 30" X 12" (W16-8)
5	DETOUR / LAWYERS RD	30" X 24" (M4-9) 30" X 12" (W16-8)
6	DETOUR / LAWYERS RD	30" X 24" (M4-9L) 30" X 12" (W16-8)
7	DETOUR / LAWYERS RD	30" X 24" (M4-9R) 30" X 12" (W16-8)
8	ROAD CLOSED 500 FT AHEAD LOCAL TRAFFIC ONLY	60" X 30" (R11-3a)
9	ROAD CLOSED ½ MILE	36" X 36" (W20-3) WITH FLAGS
10	END DETOUR	24" X 18" (M4-8A)
11	ROAD CLOSED 1.5 MILES AHEAD LOCAL TRAFFIC ONLY	60" X 30" (R11-3a)

REVISIONS

8/17/99

4/24/2018
25001 7-RD12_TCP-PH01-Detour2A.DGN
jmaher mmitchell

TRAFFIC CONTROL PHASING NOTES

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	TMP-3

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

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PHASE 1: CONSTRUCT LANE WIDENING, CURB AND GUTTER, AND SIDEWALK OF RIGHT THRU BYPASS LANES ON SOUTHBOUND LAWYERS ROAD. CONSTRUCT LANE WIDENING ON THOMPSON ROAD.

STEP 1 INSTALL ALL ADVANCED WARNING SIGNAGE THROUGHOUT PROJECT PRIOR TO BEGINNING CONSTRUCTION.

STEP 2 INSTALL EROSION CONTROL MEASURES THROUGHOUT THE PROJECT IN ACCORDANCE WITH THE EROSION CONTROL PLANS.

STEP 3 CLOSE THE SOUTHBOUND LANE ON LAWYERS ROAD AS SHOWN ON TMP-4 TO TMP-6, PHASE 1 ROADWAY TRAFFIC CONTROL PLAN. CONSTRUCT LANE WIDENING,CURB AND GUTTER, AND SIDEWALK OF RIGHT THRU LANE USING NCDOT ROADWAY STANDARD DRAWING STD. 1101.02, SHEET 1 OF 15. CONSTRUCT UP TO, BUT NOT INCLUDING, SURFACE COURSE.

SOUTHBOUND LANE CLOSURE AND CONSTRUCTION ON LAWYERS ROAD SHALL BE LIMITED TO OFF PEAK HOURS (9A-4P).

CLOSE LAWYERS ROAD TO INSTALL STORM DRAINAGE AS SHOWN ON TMP-5. USE DETOUR PLAN AS SHOWN ON SHEET TMP-2A. ROAD CLOSURE TO OCCUR OVER WEEKEND, STARTING 7 PM ON FRIDAY AND REOPENING PRIOR TO 6 AM MONDAY.

STEP 4 CLOSE THOMPSON ROAD AS SHOWN ON TMP-6. USE DETOUR PLAN AS SHOWN ON TMP-2 CONSTRUCT LANE WIDENING USING NCDOT ROADWAY STANDARD DRAWING STD. 1101.03, SHEET 8 OF 9. CONSTRUCT UP TO, BUT NOT INCLUDING, SURFACE COURSE.

SOUTHBOUND LANE CLOSURE AND CONSTRUCTION ON LAWYERS ROAD SHALL BE LIMITED TO OFF PEAK HOURS (9A-4P).

STEP 5 CONSTRUCT CONNECTION TO BAIN SCHOOL ROAD. WEDGE EXISTING LAWYERS ROAD UP TO, BUT NOT INCLUDING, SURFACE COURSE USING FLAGGER CONTROL PER NCDOT STD. 1101.02, SHEET 1 OF 15.

LANE CLOSURES AND CONSTRUCTION ON LAWYERS ROAD AND BAIN SCHOOL ROAD SHALL BE LIMITED TO OFF PEAK HOURS (9A-4P).

PHASE 2: CONSTRUCT ROUNDABOUT, BAIN SCHOOL ROAD TIE IN, LAWYERS ROAD SOUTH TIE IN AND SITE TIE IN.

STEP 1 INSTALL ALL ADVANCED WARNING SIGNAGE THROUGHOUT PROJECT PRIOR TO BEGINNING CONSTRUCTION.

STEP 2 INSTALL EROSION CONTROL MEASURES THROUGHOUT THE PROJECT IN ACCORDANCE WITH THE EROSION CONTROL PLANS.

STEP 3 USE NEWLY CONSTRUCTED RIGHT BYPASS LANES AND MONOLITHIC ISLANDS AS SHOWN ON PLANS FOR TWO WAY TRAFFIC FLOW ON LAWYERS ROAD AS SHOWN ON SHEETS TMP-7 TO TMP-9, PHASE 2 ROADWAY TRAFFIC CONTROL PLAN. BARREL OFF WORK ZONE IN ACCORDANCE WITH NCDOT STANDARD DRAWING STD. 1101.04, SHEET 1 OF 1. CONSTRUCT UP TO, BUT NOT INCLUDING, SURFACE COURSE.

CONSTRUCTION ON LAWYERS AND BAIN SCHOOL ROADS SHALL BE LIMITED TO OFF PEAK HOURS (9A-4P).

PHASE 3: CONSTRUCT WEST SIDE OF ROUNDABOUT AND LAWYERS ROAD WEST TIE IN.

STEP 1 INSTALL ALL ADVANCED WARNING SIGNAGE THROUGHOUT PROJECT PRIOR TO BEGINNING CONSTRUCTION.

STEP 2 INSTALL EROSION CONTROL MEASURES THROUGHOUT THE PROJECT IN ACCORDANCE WITH THE EROSION CONTROL PLANS.

STEP 3 USE NEWLY CONSTRUCTED RIGHT BYPASS LANES, MONOLITHIC ISLANDS AS SHOWN ON PLANS, AND THE EAST SIDE OF THE ROUNDABOUT FOR TWO WAY TRAFFIC FLOW ON LAWYERS AND BAIN SCHOOL ROAD AS SHOWN ON SHEETS TMP-10 TO TMP-12, PHASE 3 ROADWAY TRAFFIC CONTROL PLAN. BARREL OFF WORK ZONE IN ACCORDANCE WITH NCDOT STANDARD DRAWING STD. 1101.04, SHEET 1 OF 1. CONSTRUCT UP TO, BUT NOT INCLUDING, SURFACE COURSE.

CONSTRUCTION ON LAWYERS AND BAIN SCHOOL ROADS SHALL BE LIMITED TO OFF PEAK HOURS (9A-4P).

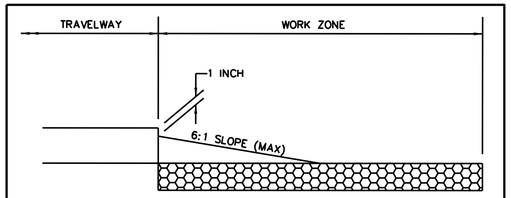
PHASE 4: SURFACE PAVEMENT COURSE, FINAL MONOLITHIC ISLANDS AND FINAL PAVEMENT MARKINGS.

STEP 1 REMOVE LANE CLOSURES ON LAWYERS AND BAIN SCHOOL ROAD.

STEP 2 REMOVE ALL TRAFFIC CONTROL DEVICES AND TEMPORARY PAVEMENT MARKINGS. CONSTRUCT FINAL LAYER OF SURFACE COURSE AND INSTALL FINAL PAVEMENT MARKINGS.

THIS WORK SHALL BE LIMITED TO OFF PEAK HOURS (9A-4P).

CONTRACTOR TO CONTACT NCDOT 14 DAYS PRIOR TO BEGINNING WORK



DETAIL A

N.T.S.

REVISIONS

8/17/99

4/21/2018
25017-RD12-TCP-GEN NOTES-01.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	TMP-4

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

DocuSigned by: E47245E9109F4FB...

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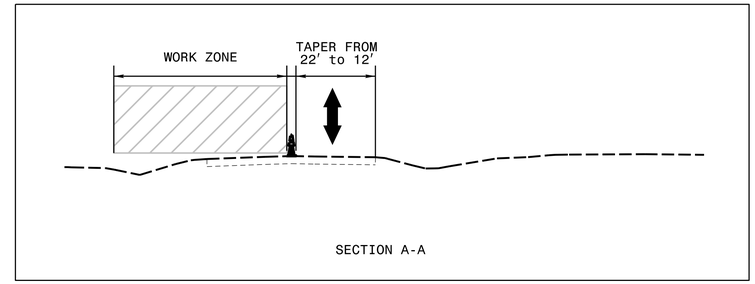

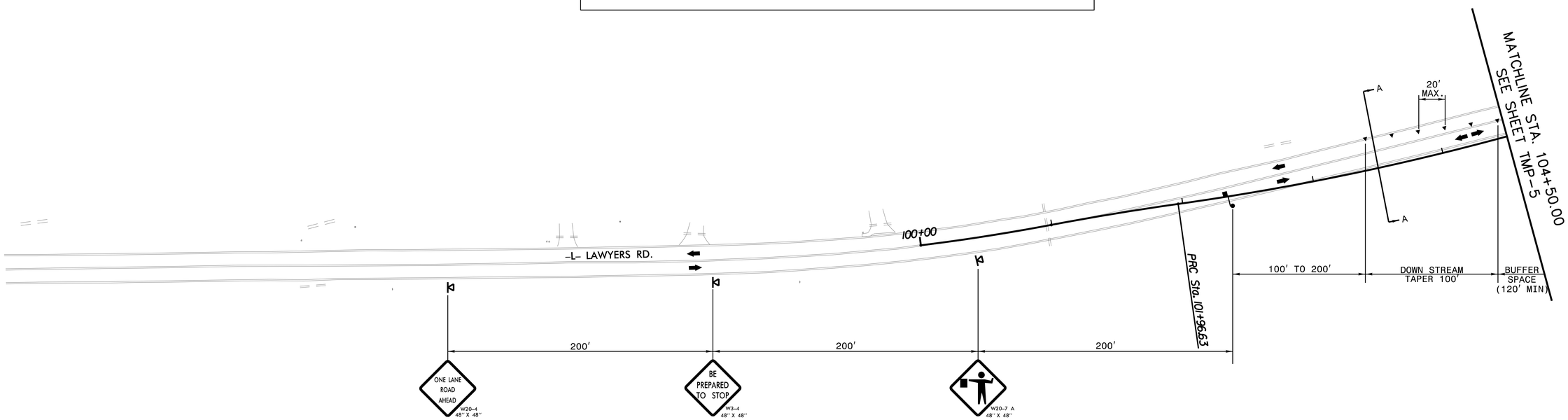

LEGEND

- WORK ZONE
- DRUM
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW
- FLAGGER
- TYPE III BARRICADE

NOTE: WHEN WORK IS WITHIN 6′ OF ROADWAY, CONTRACTOR MUST CLOSE ONE LANE AND USE FLAGGER OPERATIONS AS SHOWN ON NCDOT STD 1101.02, SHEET 1 OF 15.

811 Know what's below. Call before you dig.

NAD 83

40′ 0′ 40′ 80′
20′

(ENGLISH)

REVISIONS

8/17/99

4/16/2018
250017-RD12_TCP-PH01-02.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	TMP-5

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

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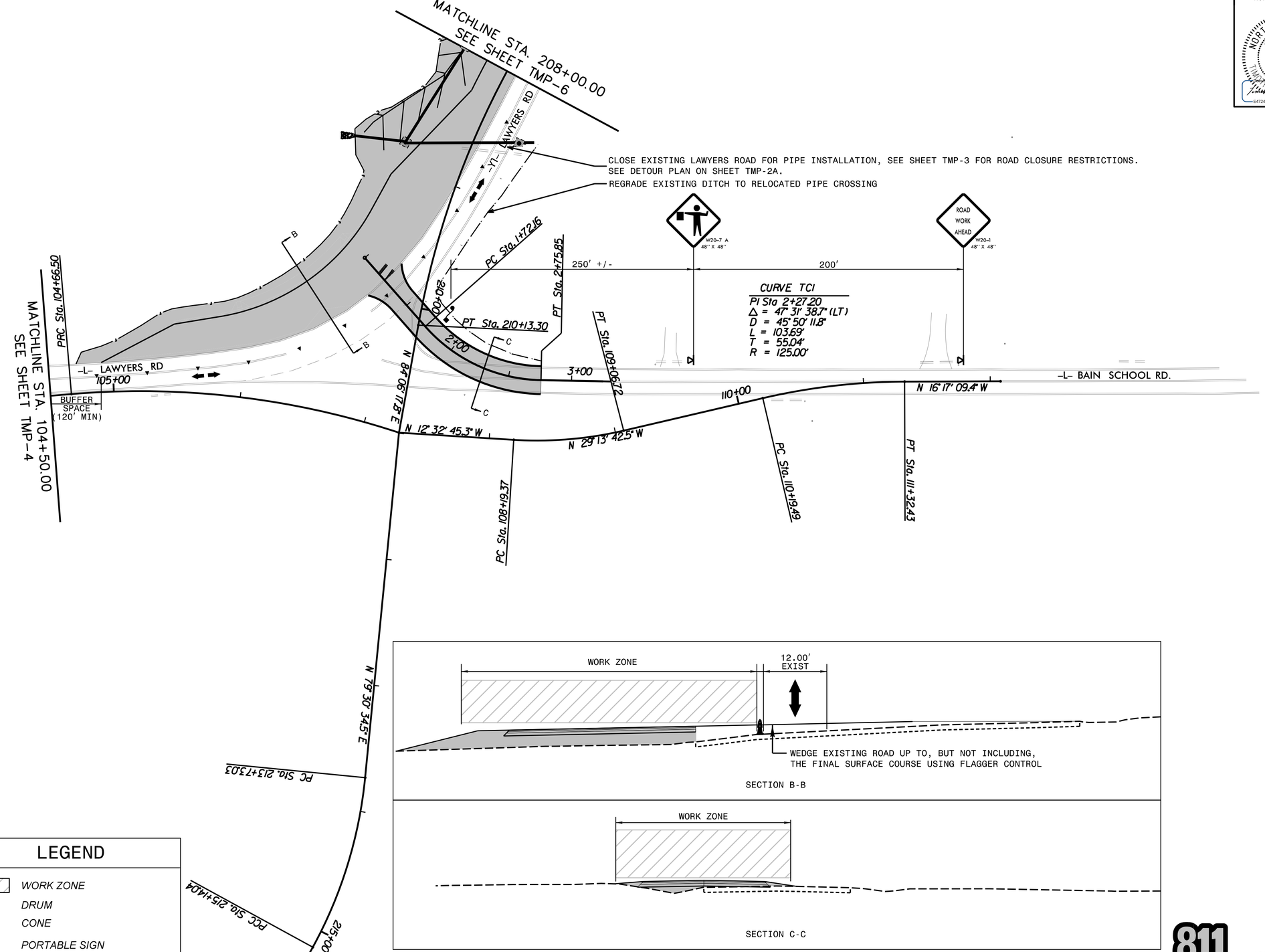

LEGEND

- WORK ZONE
- DRUM
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW
- FLAGGER
- TYPE III BARRICADE

NOTE: WHEN WORK IS WITHIN 6' OF ROADWAY, CONTRACTOR MUST CLOSE ONE LANE AND USE FLAGGER OPERATIONS AS SHOWN ON NCDOT STD 1101.02, SHEET 1 OF 15.

811 Know what's below. Call before you dig.

NAD 83

40' 0' 40' 80'
20'

(ENGLISH)

REVISIONS

8/17/99

4/21/2018
25017-RD12_TCP-PH01-03.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	TMP-6

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER 4/24/2018

DocuSigned by: Brian Mulfield
E4724SE9109F4FB...

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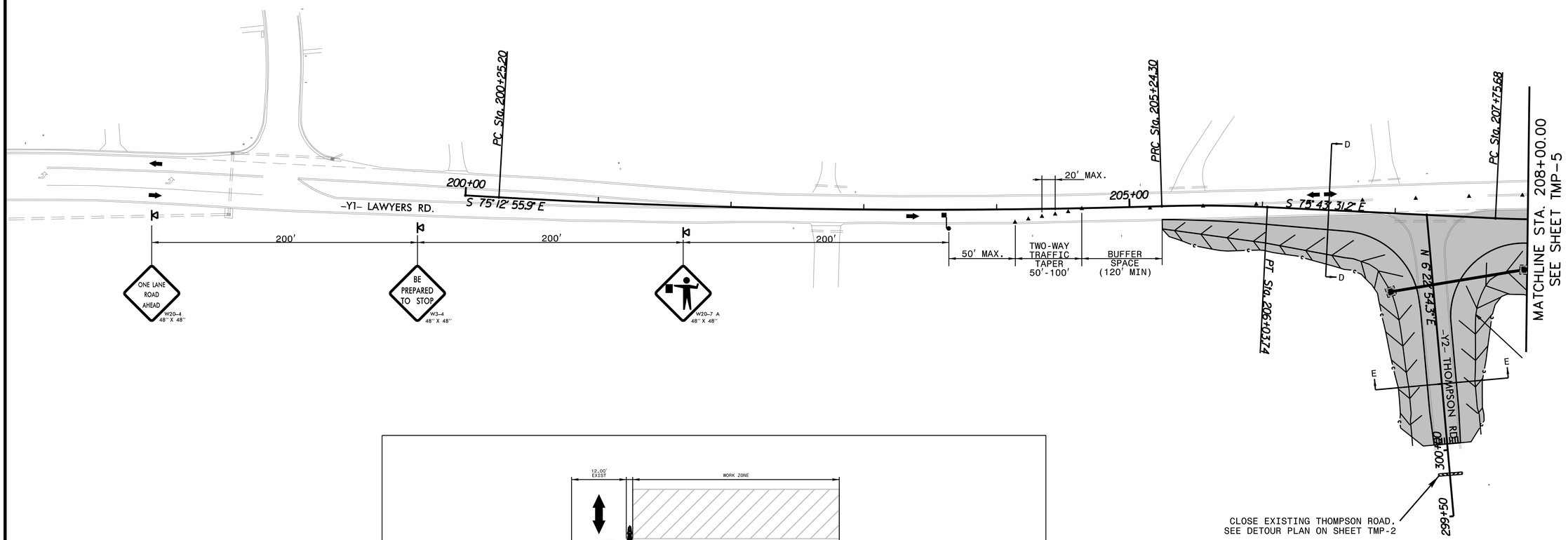

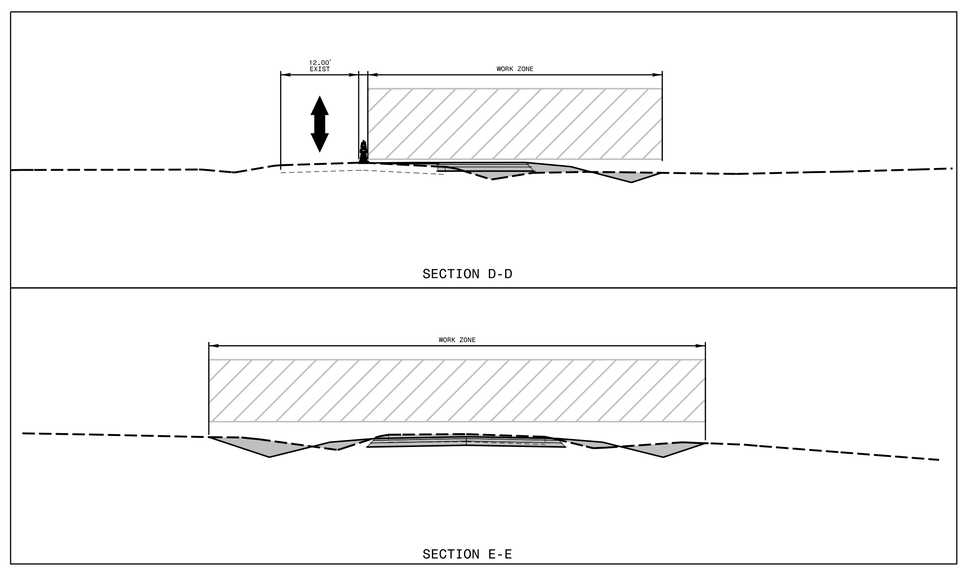

LEGEND

- WORK ZONE
- DRUM
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW
- FLAGGER
- TYPE III BARRICADE

NOTE: WHEN WORK IS WITHIN 6' OF ROADWAY, CONTRACTOR MUST CLOSE ONE LANE AND USE FLAGGER OPERATIONS AS SHOWN ON NCDOT STD 1101.02, SHEET 1 OF 15.

811 Know what's below. Call before you dig.

NAD 83

40' 0' 40' 80'
20'
(ENGLISH)

REVISIONS

8/17/99

4/16/2018
250017-RD12-TCP-PH01-04.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	TMP-7

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER 4/24/2018

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E47245E910F4FB...

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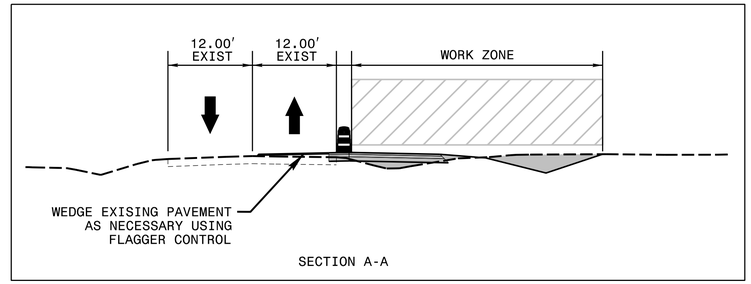
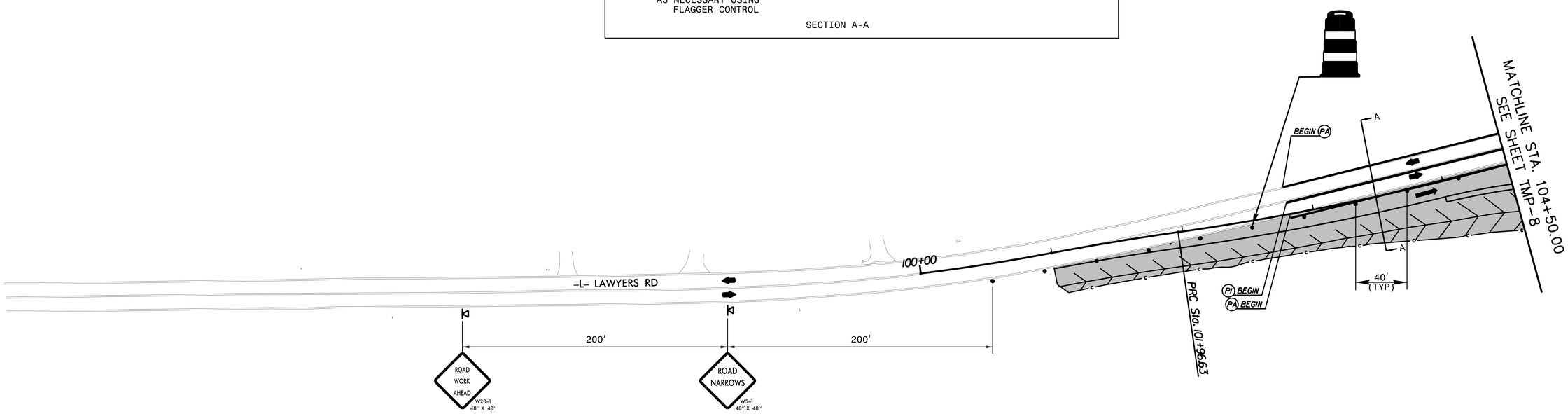


SECTION A-A



LEGEND

- WORK ZONE
- DRUM
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW
- FLAGGER
- TYPE III BARRICADE

NOTE: WHEN WORK IS WITHIN 6′ OF ROADWAY, CONTRACTOR MUST CLOSE ONE LANE AND USE FLAGGER OPERATIONS AS SHOWN ON NCDOT STD 1101.02, SHEET 1 OF 15.

811 Know what's below. Call before you dig.

NAD 83

40′ 0′ 40′ 80′
20′

(ENGLISH)

REVISIONS

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4/16/2018
250017-RD12_TCP-PH02-05.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	TMP-8

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

Timothy R. Gaskill

E47245E9105F4FB...

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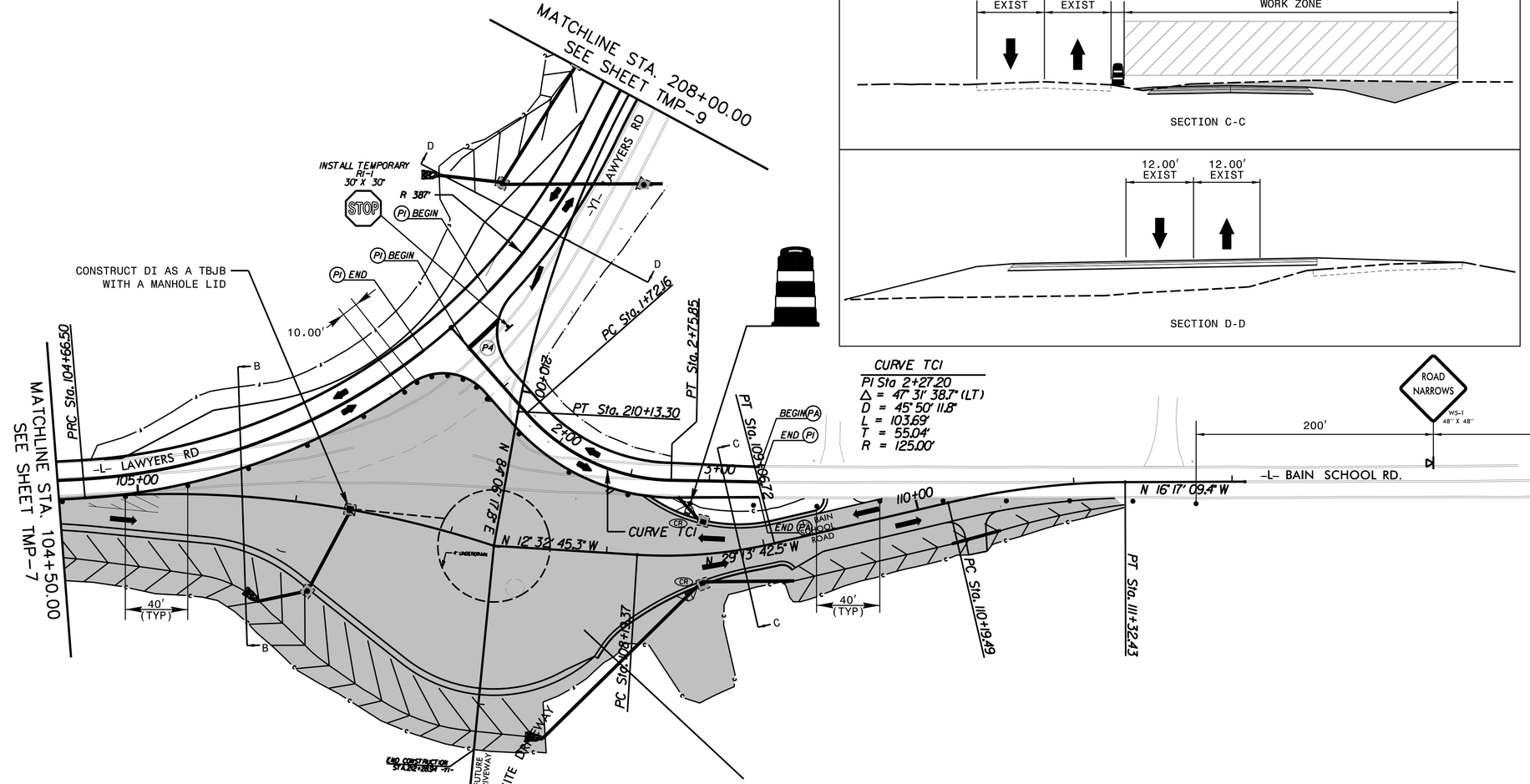

LEGEND

- WORK ZONE
- DRUM
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW
- FLAGGER
- TYPE III BARRICADE

NOTE: WHEN WORK IS WITHIN 6' OF ROADWAY, CONTRACTOR MUST CLOSE ONE LANE AND USE FLAGGER OPERATIONS AS SHOWN ON NCDOT STD 1101.02, SHEET 1 OF 15.

811 Know what's below. Call before you dig.

REVISIONS

8/17/99

4/6/2018
250017-RD12_TCP-PH02-06.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	TMP-9

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER 4/24/2018

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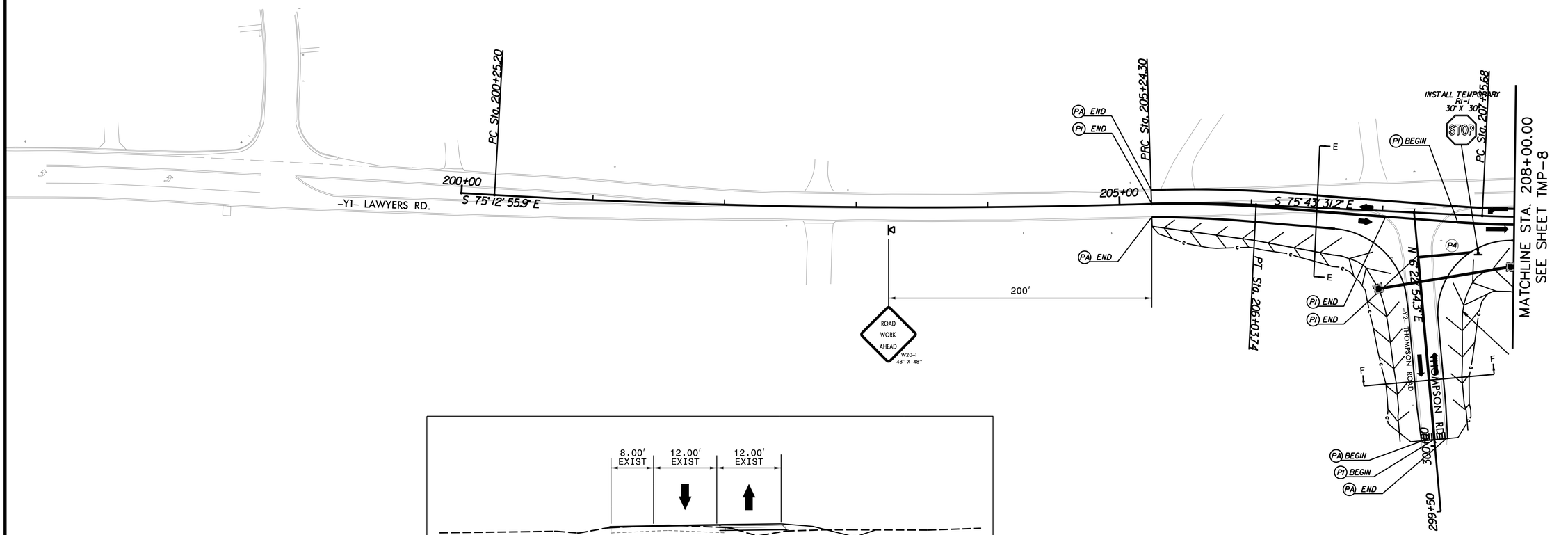
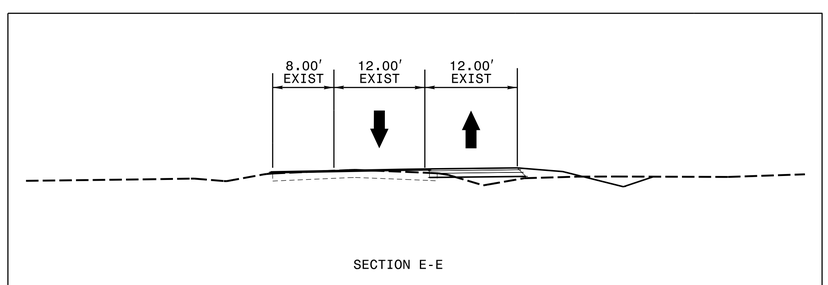
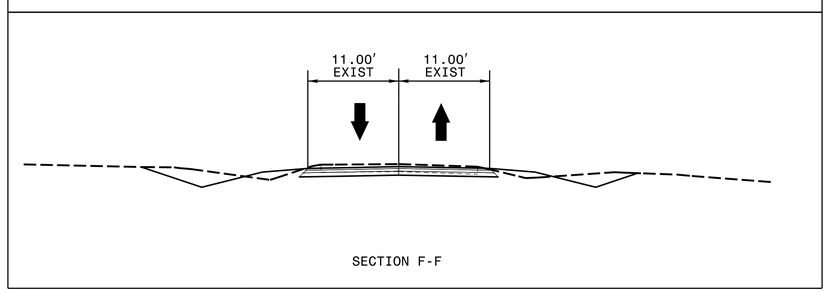




SECTION E-E



SECTION F-F

LEGEND

- WORK ZONE
- DRUM
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW
- FLAGGER
- TYPE III BARRICADE

NOTE: WHEN WORK IS WITHIN 6' OF ROADWAY, CONTRACTOR MUST CLOSE ONE LANE AND USE FLAGGER OPERATIONS AS SHOWN ON NCDOT STD 1101.02, SHEET 1 OF 15.

Know what's below. Call before you dig.

40' 0' 40' 80'
20'
(ENGLISH)

NAD 83

REVISIONS

8/17/99

4/16/2018
25001 7-RD12_TCP-PH02-07.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	TMP-10

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NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER 4/24/2018

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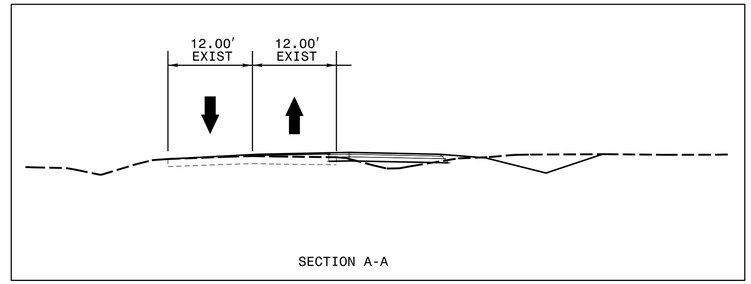

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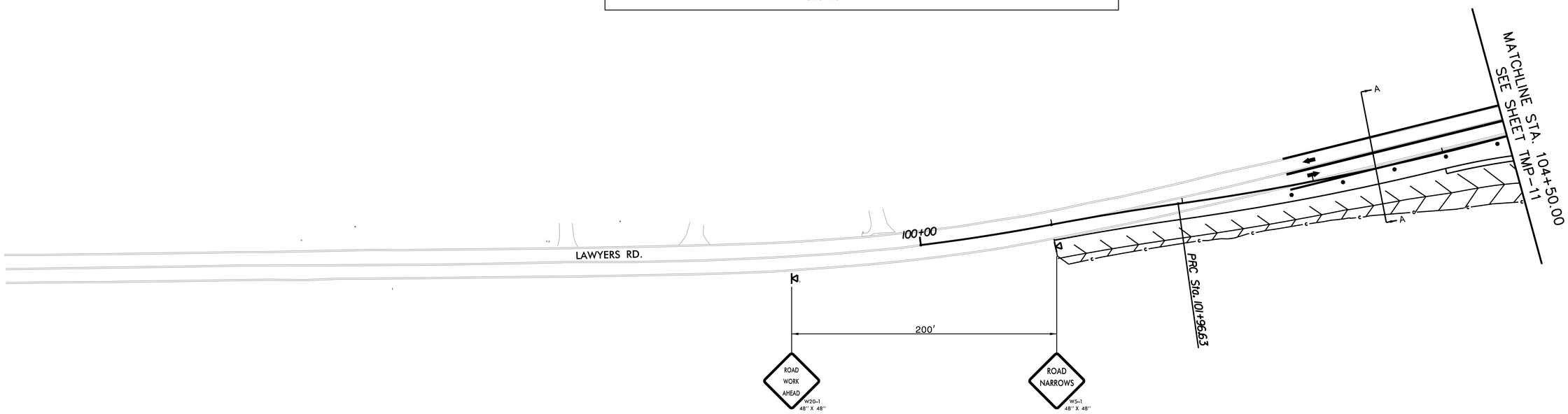

LEGEND

- WORK ZONE
- DRUM
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW
- FLAGGER
- TYPE III BARRICADE

Know what's below. Call before you dig.

NAD 83

40' 0' 40' 80'

20'

(ENGLISH)

REVISIONS

8/17/99

4/16/2018
250017-RD12_TCP-PH03-08.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	TMP-11

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

Tommy Bell Gold

E47245E9109F4F8...

TWO-PHASE PLAN SUBMITTED

Kimley»Horn

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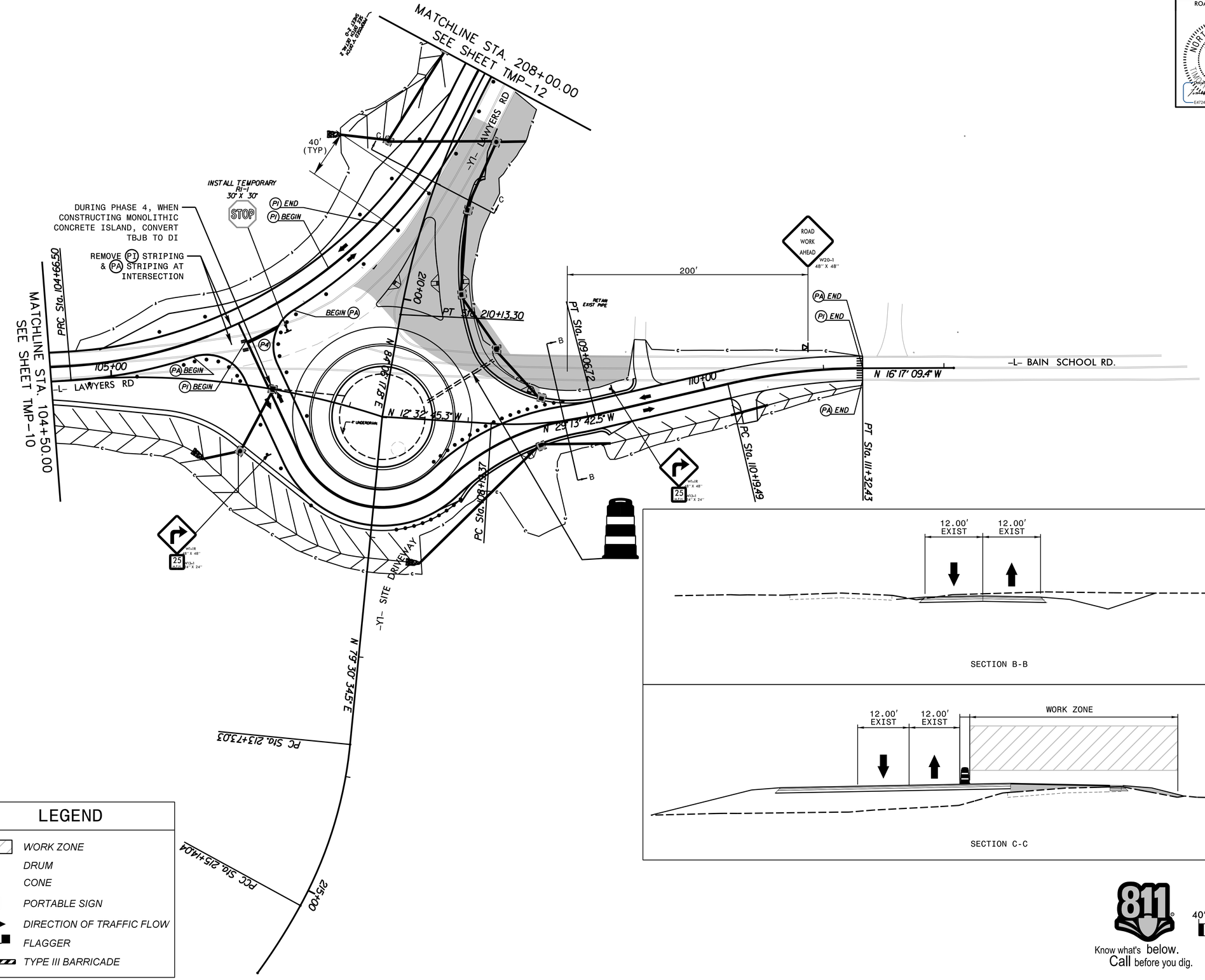

Know what's below. Call before you dig.

REVISIONS

8/17/99

4/16/2018
250017-RD12-TCP-PH03-04.DGN
mm:mitchell

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	TMP-12

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER 4/24/2018

DOCUSIGNED BY: Kimley-Horn and Associates, Inc.
E472456910974E8...

Kimley»Horn

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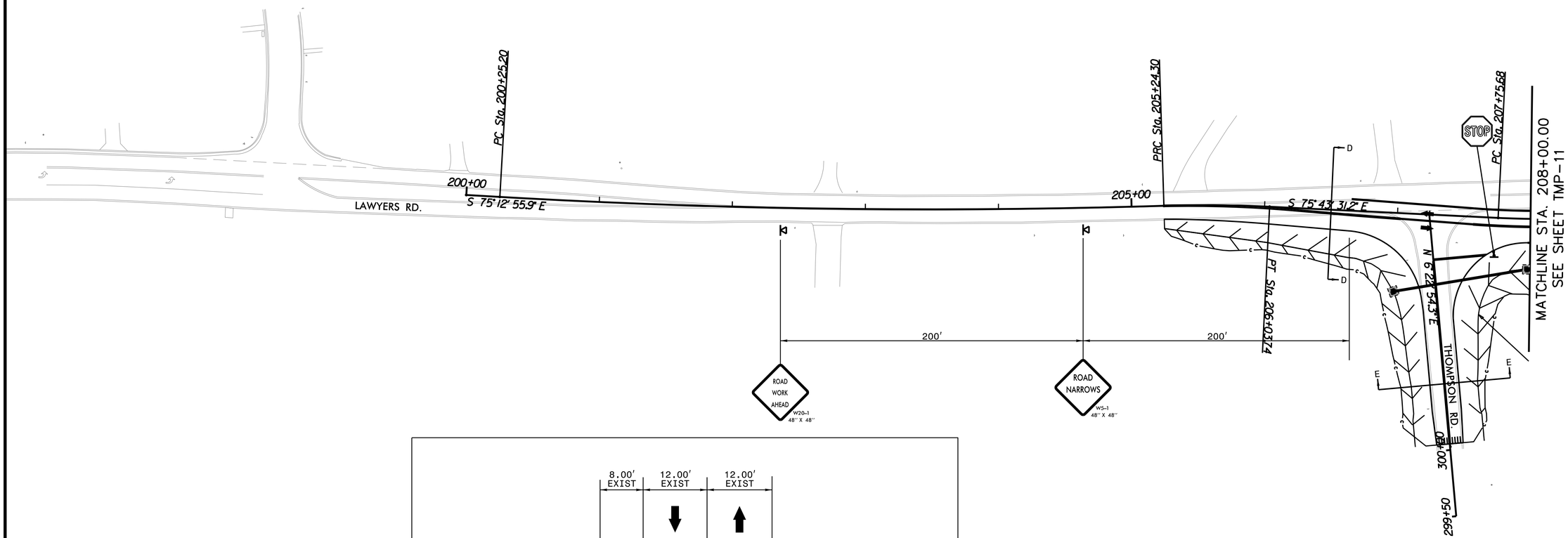

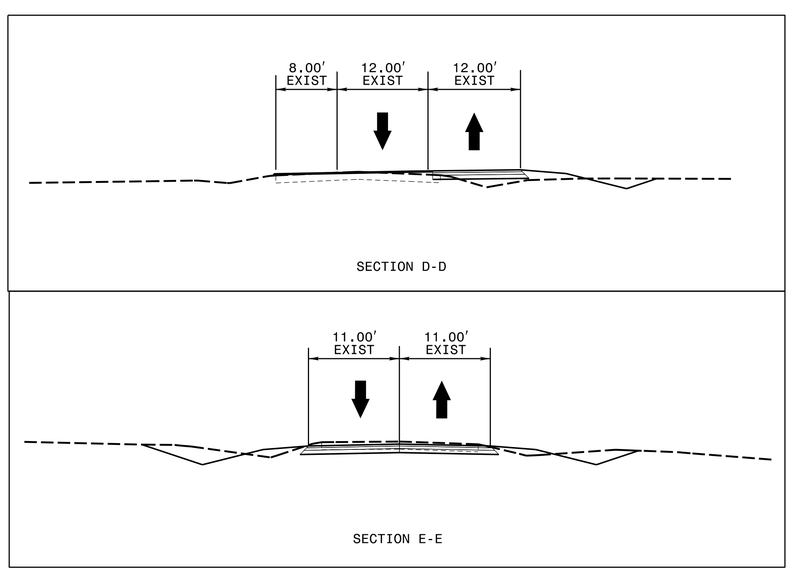

LEGEND

- WORK ZONE
- DRUM
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW
- FLAGGER
- TYPE III BARRICADE

NAD 83

811 Know what's below. Call before you dig.

40' 0' 40' 80'
20'
(ENGLISH)

4/16/2018
250017-RD12_TCP-PH03-10.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	PM-1

APPROVED: DocuSigned by: Timothy R. Brumfield E4724SE9109F4FB...

DATE: 4/24/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER TIMOTHY R. BRUMFIELD

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
MECKLENBURG COUNTY

LOCATION: INTERSECTION IMPROVEMENTS LAWYERS ROAD AND BAIN SCHOOL ROAD

TIP PROJECT: W-5210K

CONTRACT:

INDEX

SHEET NO.	DESCRIPTION
PM-1	TITLE SHEET
PM-2 THUR PM-4	PAVEMENT MARKING PLAN

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

PLAN PREPARED BY: KIMLEY-HORN & ASSOC.

T. R. BRUMFIELD, P.E. ENGINEER

A. L. McWILLIAMS, P.E. DESIGN

Kimley»Horn

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

_____ SIGNING & DELINEATION STANDARDS ENGINEER

_____ SIGNING & DELINEATION PROJECT DESIGN ENGINEER

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

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

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

ROAD NAME	MARKING	MARKER
ALL	THERMOPLASTIC	RAISED PAVEMENT MARKINGS

B) CONTRACTOR TO TIE PROPOSED MARKINGS TO EXISTING MARKINGS AT PROJECT LIMITS.

C) CONTRACTOR SHALL MILL ANY EXISTING MARKINGS OR SYMBOLS IN CONFLICT WITH PROPOSED MARKINGS.

D) RAISED REFELCTIVE PAVEMENT MARKERS ARE TO BE PLACED ACCORDING TO NCDOT ROADWAY STANDARD DRAWINGS.

E) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTINS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.

F) UNLESS OTHERWISE SPECIFIED, HEATED -IN-PLACE THERMOPLASTIC MAY BE USED IN LIEU OF EXTRUDED THERMOPLASTIC FOR STOP BARS, SYMBOLS, CHARACTERS AND DIAGNOLS. IF HEATED-IN-PLACE IS USED, IT SHALL BE PAID FOR USING THE EXTRUDED THERMOPLASTIC PAY ITEM

PLAN SYMBOLOGY

PAVEMENT MARKING LINES

TA - THERMOPLASTIC (4" WHITE, 90 MILS) EDGE LINE
TB - THERMOPLASTIC (4" YELLOW, 90 MILS) EDGE LINE
TH - THERMOPLASTIC (4" YELLOW, 120 MILS) YELLOW SINGLE CENTER LINE
TI - THERMOPLASTIC (4" YELLOW, 120 MILS) DOUBLE CENTER LINE
TN - THERMOPLASTIC (8" WHITE, 90MILS) GORE LINE
TO - THERMOPLASTIC (8" WHITE, 90 MILS) WHITE DIAGONAL
TP - THERMOPLASTIC (8" YELLOW, 90 MILS) YELLOW DIAGONAL
TR - THERMOPLASTIC (8" WHITE, 120 MILS) SOLID LANE LINE
TV - THERMOPLASTIC (8" WHITE, 90 MILS) CROSSWALK LINE
T1 - THERMOPLASTIC (16" WHITE, 120 MILS) WHITE LINE
T2 - THERMOPLASTIC (24" WHITE, 120 MILS) WHITE STOPBAR
T3 - THERMOPLASTIC (24" WHITE, 120MILS) HI VISIBILITY CROSSWALK
T6 - THERMOPLASTIC (16" WHITE, 120MILS) EDGE LINE
T8 - THERMOPLASTIC (4" WHITE, 120 MILS) 4" X 2' MINISKIP
T17 - THERMOPLASTIC (8" WHITE, 120 MILS) 3' MINISKIP (ROUNDABOUTS ONLY)

PAVEMENT MARKING SYMBOLS

UA - THERMOPLASTIC (90 MILS) LEFT TURN ARROW
UN - INVERTED TRIANGLES (90 MILS) 24" YIELD LINE TRIANGLE
UI - THERMOPLASTIC (90 MILS) ALPHANUMERIC CHARACTER

PAVEMENT MARKER LEGEND

● - FLEXIBLE REFLECTIVE DELINEATORS

← - DIRECTION OF TRAFFIC FLOW

4/16/2018
25007-R013-STRP-COVER.DGN
Tim.Brumfield

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	PM-2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

Kimley»Horn

NC LICENSE #F-0102
2000 SOUTH BOULEVARD
SUITE 440
CHARLOTTE,
NORTH CAROLINA
28203
PHONE: (704) 333-5131
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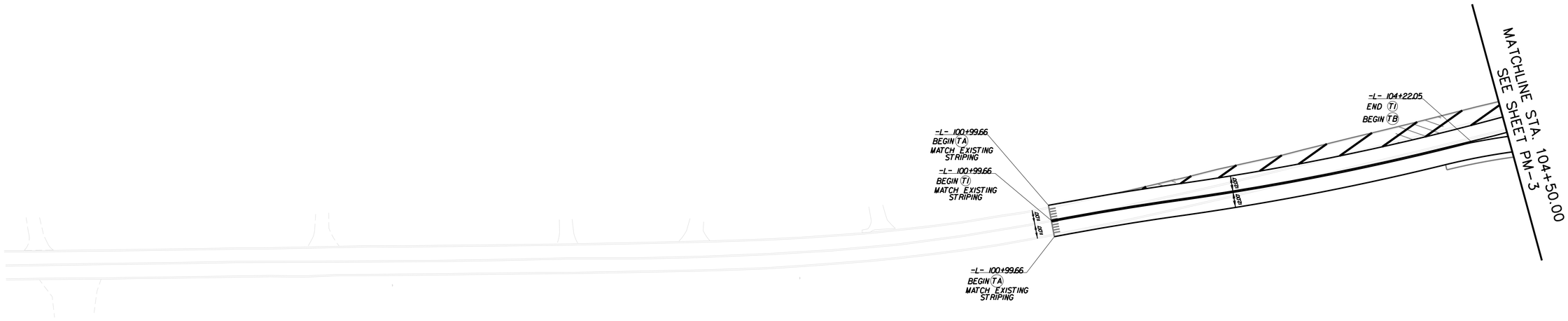
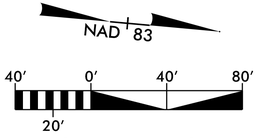
8/17/99

REVISIONS





(ENGLISH)

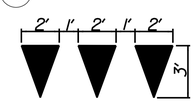
PAVEMENT MARKING LEGEND

- DIRECTION OF TRAFFIC FLOW
- FLEXIBLE REFLECTIVE DELINEATORS

PAY ITEM NOTES (SIGNING):
1. REMOVE AND DISPOSE OF EXISTING "U" CHANNEL POST.
2. ERECT EXISTING SIGN ON NEW "U" CHANNEL POST.
3. FYG = FLOURESCENT YELLOW-GREEN

PAVEMENT MARKING NOTES:
1. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
2. CONTRACTOR SHALL TIE PROPOSED MARKINGS TO EXISTING MARKINGS AT PROJECT LIMITS.
3. CONTRACTOR SHALL MILL ANY EXISTING MARKINGS IN CONFLICT WITH PROPOSED.
4. RAISED REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED ACCORDING TO NCDOT ROADWAY STANDARD DRAWINGS.

US YIELD LINE DETAIL



THERMOPLASTIC THICK SYMBOL (90 mils) [PER MUTCD 3B.16]

PAVEMENT MARKING LINES

TA	-	THERMOPLASTIC (4" WHITE, 90 MILS) EDGE LINE
TB	-	THERMOPLASTIC (4" YELLOW, 90 MILS) EDGE LINE
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UN	-	INVERTED TRIANGLES (90 MILS) 24" YIELD LINE TRIANGLE
UI	-	THERMOPLASTIC (90 MILS) ALPHANUMERIC CHARACTER

4/6/2018
250017-RD13-STRP01.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	PM-3

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

E47246E6F1BA4A4...

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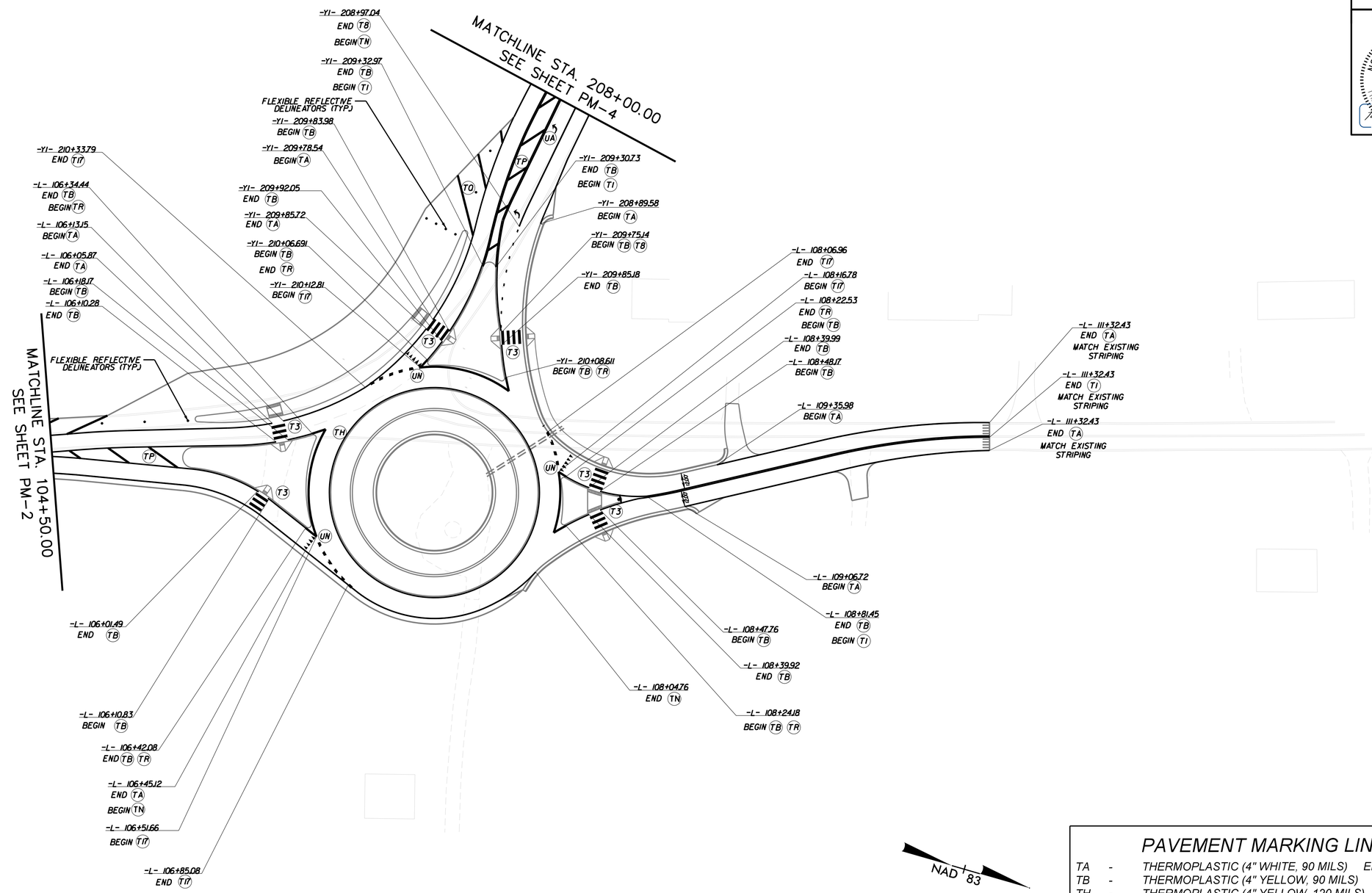

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- FLEXIBLE REFLECTIVE DELINEATORS

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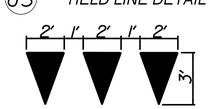

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REVISIONS

8/17/99

4/16/2018
250017-RD13-STRP02.DGN
mwarren1d1d

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	PM-4

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER 4/24/2018

DOCUSIGNED BY: E4724SE9109F4FB...

Kimley»Horn

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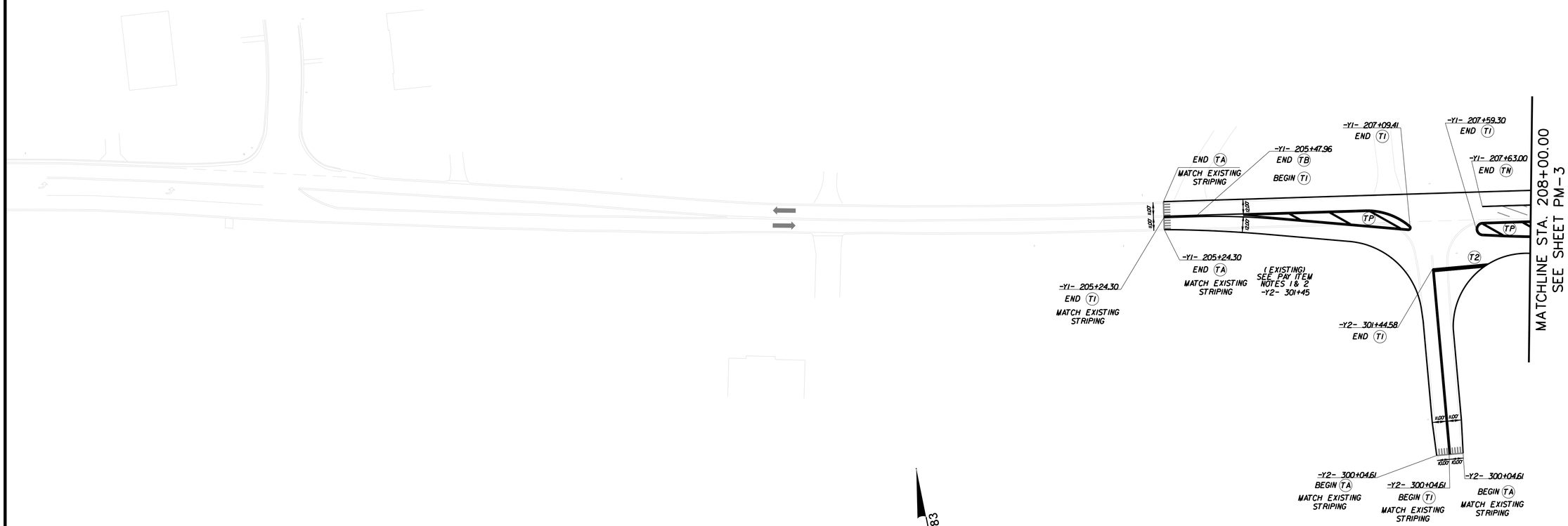
REVISIONS

8/17/99



NAD 83

40' 0' 40' 80'

20'

(ENGLISH)

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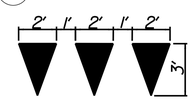

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PAVEMENT MARKING LEGEND

DIRECTION OF TRAFFIC FLOW

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4/16/2018
250017-RD13-STRP03.DGN
kim17mt1v1

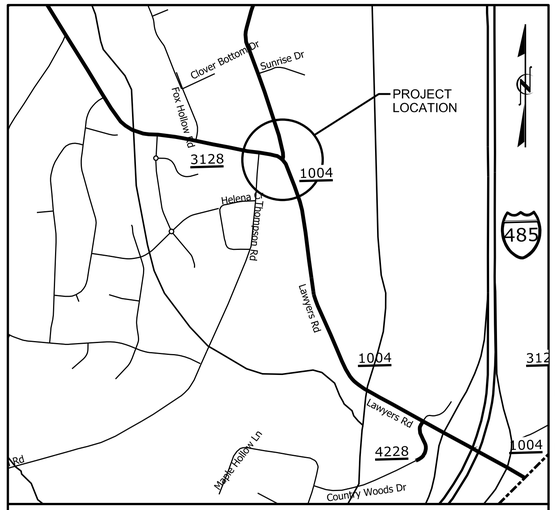
TIP PROJECT: W-5210K

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5210K	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

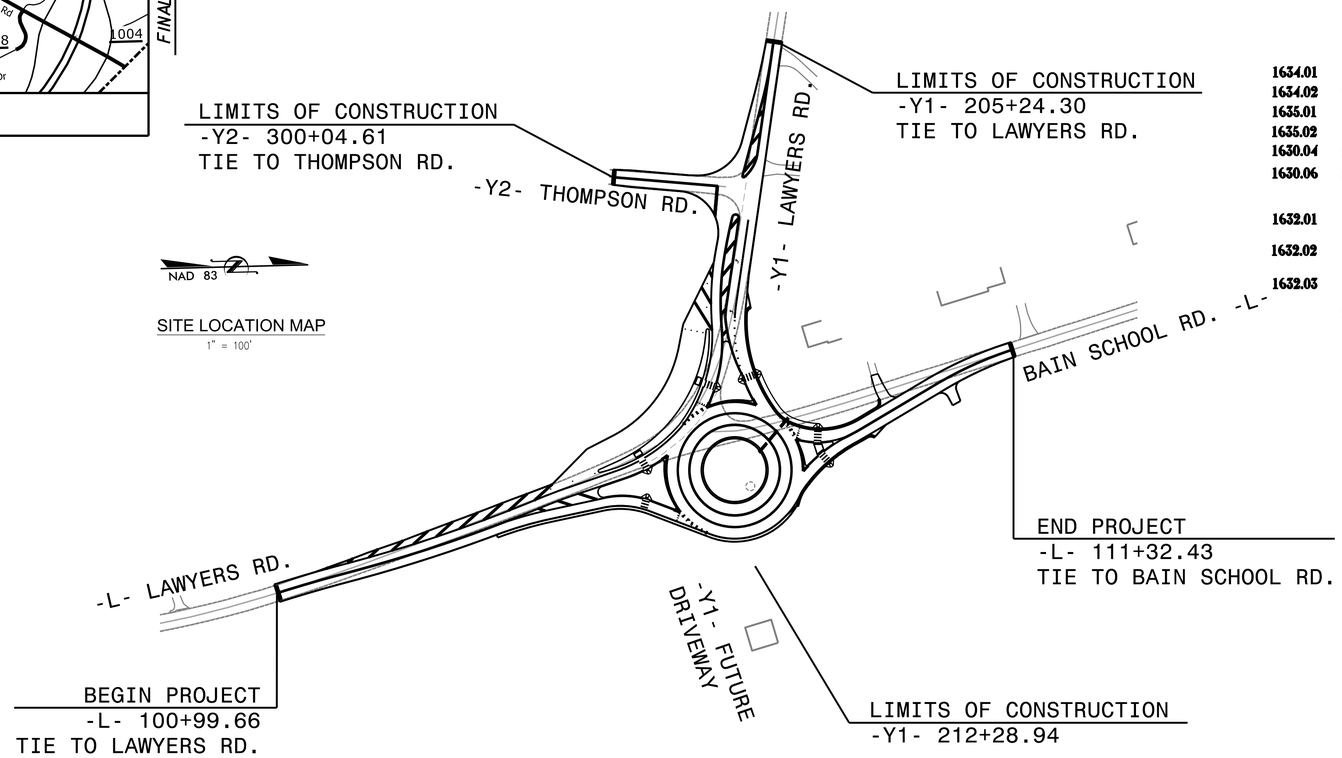
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL



VICINITY MAP

FINAL PLANS



NAD 83

SITE LOCATION MAP
1" = 100'

EROSION AND SEDIMENT CONTROL MEASURES

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

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

GRAPHIC SCALE

20 0 40
PLANS

10 0 20
PROFILE (HORIZONTAL)

1 0 2
PROFILE (VERTICAL)

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

PLANS PREPARED FOR THE NCDOT BY:

Kimley»Horn
© 2016
200 South Tryon Street, Suite 200
Charlotte, North Carolina 28202
NC LICENSE# F-0102

2018 STANDARD SPECIFICATIONS

DocuSigned by:
Timothy R. Brumfield
E47245E9109F4FB...
SIGNATURE: ***P.E.***

NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER TIMOTHY R. BRUMFIELD 4/24/2018

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2018 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

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

8/17/99

REVISIONS

EROSION CONTROL:

THE CONTRACTOR SHALL INSTALL AND MAINTAIN THROUGHOUT THE PROJECT CONSTRUCTION ALL EROSION CONTROL MEASURES SHOWN WITHIN THESE PLANS IN ACCORDANCE WITH APPLICABLE NCDOT EROSION AND SEDIMENT CONTROL REGULATIONS.

ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL REGULATIONS, U.S. DEPARTMENT OF AGRICULTURE, AND U.S. SOIL CONSERVATION SERVICE REGULATIONS.

ALL CONSTRUCTION WORK SHALL BE IN COMPLIANCE WITH REGULATIONS OF NCDOT'S NCG01 STORMWATER DISCHARGE PERMIT FOR CONSTRUCTION ACTIVITIES THE CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES TO MINIMIZE EROSION. THE CONTRACTOR SHALL MAINTAIN CLOSE CONTACT WITH THE NCDOT CONSTRUCTION RESIDENT ENGINEER, INSPECTORS, AND ROADSIDE ENVIRONMENTAL UNIT FIELD OPERATIONS ENGINEER SO THAT PERIODIC INSPECTIONS CAN BE PERFORMED AT APPROPRIATE STAGES OF CONSTRUCTION.

APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, STOCKPILING, STAGING AREAS, ETC. ARE SUBJECT TO NCDOT'S RECLAMATION PROCEDURES FOR WASTE/BORROW SITES. PERMISSION MUST BE OBTAINED FROM THE AFFECTED PROPERTY OWNERS. CONTACT PROJECT ENGINEER AND PROJECT EROSION CONTROL INSPECTOR TO ENSURE THE NCDOT RECLAMATION PLAN PROCEDURES ARE FOLLOWED.

EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED CONTINUOUSLY, RELOCATED WHEN AND AS NECESSARY, AND SHALL BE CHECKED AFTER EVERY RAINFALL. SEEDED AREAS SHALL BE CHECKED REGULARLY AND SHALL BE WATERED, FERTILIZED, RESEEDED AND MULCHED AS NECESSARY TO OBTAIN A DENSE STAND OF GRASS.

STABILIZATION IS THE BEST FORM OF EROSION CONTROL. ALL DISTURBED AREAS WHICH ARE NOT OTHERWISE STABILIZED SHALL BE TOP SOILED AND SEEDED, TEMPORARILY OR PERMANENTLY, IN ACCORDANCE WITH THE NORTH CAROLINA SEDIMENT CONTROL REGULATIONS. PERMANENT SEEDING AND GRASS ESTABLISHMENT ARE REQUIRED PRIOR TO PROJECT COMPLETION AND ACCEPTANCE.

CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 7 CALENDAR DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING. PERMANENT GROUND COVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED WITHIN 7 CALENDAR DAYS FOLLOWING COMPLETION OF CONSTRUCTION.

ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 15 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.

WHEN A CRUSHED STONE CONSTRUCTION ENTRANCE HAS BEEN COVERED WITH SOIL OR HAS BEEN PUSHED INTO THE SOIL BY CONSTRUCTION TRAFFIC, IT SHALL BE REPLACED WITH A DEPTH OF STONE EQUAL TO THAT OF THE ORIGINAL APPLICATION.

ALL DRAINAGE INLETS SHALL BE PROTECTED FROM SILTATION. INEFFECTIVE PROTECTION DEVICES SHALL BE IMMEDIATELY REPLACED AND THE INLET CLEANED. FLUSHING IS NOT AN ACCEPTABLE METHOD OF CLEANING.

DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

GRADING:

THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. AT LEAST 48 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY THE CONTRACTOR SHALL NOTIFY THE NORTH CAROLINA ONE-CALL UTILITIES LOCATION SERVICE AT 1-800-632-4949 FOR PROPER IDENTIFICATION OF EXISTING UTILITIES WITHIN THE PROJECT SITE.

CONTRACTOR IS RESPONSIBLE FOR THE REPAIR AND REPLACEMENT OF ANY UTILITES, CURB & GUTTER, PAVEMENT, LANDSCAPING, ETC. THAT MAY BE DAMAGED DURING CONSTRUCTION. DAMAGED ITEMS SHALL BE REPAIRED TO AT LEAST THE QUALITY OF WORKMANSHIP FOUND IN THE ORIGINAL ITEM.

ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE.

CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION CONTROL DEVICES SHOWN ON THE APPROVED PLANS FOR THE DURATION OF CONSTRUCTION OR UNTIL FINAL INSPECTION AND APPROVAL.

IN ORDER TO ENSURE PROPER DRAINAGE, MAINTAIN A MINIMUM 0.50% SLOPE ON THE CURB.

ALL MATERIALS USED FOR FILL OR BACK-FILL SHALL BE FREE OF WOOD, ROOTS, ROCKS, BOULDERS OR ANY OTHER NON-COMPACTABLE SOIL TYPE MATERIAL. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN-MADE FILLS, REFUSE DEBRIS DERIVED FROM ANY SOURCE.

ALL CONTOURS ARE IN REFERENCE TO THE BENCHMARK AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO GROUND BREAKING.

ALL CONTOURS AND SPOT ELEVATIONS REFLECT FINISHED GRADES.

REFER TO THE PAVEMENT CROSS-SECTION DETAILS TO ESTABLISH THE CORRECT SUBBASE OR AGGREGATE BASE COURSE ELEVATIONS.

CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY TO TRANSITION BACK TO EXISTING GRADE.

THE LIMITS OF CLEARING SHOWN ON THE GRADING AND EROSION CONTROL PLAN IS BASED ON THE APPROXIMATE CUT AND FILL SLOPE LIMITS, OR OTHER GRADING REQUIREMENTS.

SLOPES SHALL BE GRADED NO STEEPER THAN 2:1.

COORDINATE ALL CURB AND STREET GRADES AT INTERSECTIONS WITH THE NCDOT INSPECTORS.

ALL DEBRIS FROM CLEARING OPERATIONS SHALL BE DISPOSED OF IN A LEGAL MANNER UTILIZING PROPERLY PERMITTED DISPOSAL SITES OR THROUGH NCDOT'S RELCAMATION PROCEDURES FOR WASTE/BORROW SITES.

CONSTRUCTION SEQUENCE:

PHASE 1 SEQUENCE

1. CONTRACTOR TO OBTAIN GRADING/EROSION CONTROL APPROVAL.
2. THE CONTRACTOR SHALL SET UP A PRE-CONSTRUCTION CONFERENCE ON-SITE WITH THE EROSION CONTROL INSPECTOR TO DISCUSS THE PROJECT. THE CONTRACTOR SHALL SCHEDULE A MEETING A MINIMUM OF 48 HOURS PRIOR TO ANY LAND DISTURBING ACTIVITY.
3. MAINTAIN ALL EXISTING EROSION CONTROL FEATURES AND INSTALL SILT FENCE, INLET PROTECTION, TREE PROTECTION, AND OTHER MEASURES AS SHOWN ON THE PLANS, CLEARING ONLY AS NECESSARY TO INSTALL THESE ITEMS.
4. SCHEDULE AN ON-SITE INSPECTION BY AN NCDOT CONSTRUCTION INSPECTOR, AND AFTER APPROVAL, CLEARING AND GRUBBING MAY BEGIN.
5. CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND MEASURES.
6. THE CONTRACTOR SHALL NOT BEGIN WORK THAT CANNOT BE STABILIZED BY THE END OF THE WORK DAY.
7. ALL EARTH MOVING EQUIPMENT SHALL BE SERVICED PRIOR TO WORK COMMENCING EACH DAY. EQUIPMENT SHALL BE MAINTAINED TO PREVENT FUEL, OIL, AND LUBRICANT SPILLS IN THE VICINITY OF A STREAM.
8. FOR PHASED EROSION CONTROL PLANS, CONTRACTOR SHALL MEET WITH EROSION CONTROL INSPECTOR PRIOR TO COMMENCING WITH EACH PHASE OF EROSION CONTROL MEASURES.

PHASE 2 SEQUENCE

1. INSTALL ALL EROSION CONTROL DEVICES SPECIFIED AND AS INDICATED ON THE DRAWINGS. DURING EACH PHASE OF SITE CONSTRUCTION THE CONTRACTOR SHALL ADJUST, RELOCATE, AND/OR REINSTALL AS APPLICABLE ALL EROSION CONTROL DEVICES AND SEDIMENT DISCHARGE FROM THE SITE.
2. SILT FENCE AND TREE PROTECTION FENCE SHALL BE MAINTAINED AROUND THE PERIMETER OF ALL EARTHWORK AREAS TO PREVENT SEDIMENT TRANSPORT ONTO ADJACENT PROPERTIES, AS APPLICABLE.
3. SILT FENCE FILTER BARRIERS SHALL BE INSTALLED AND MAINTAINED UNTIL CONSTRUCTION IS COMPLETE AND LANDSCAPING IS INSTALLED.
4. THE CONTRACTOR SHALL IMMEDIATELY CLEAN UP AND REPAIR ALL EROSION DAMAGE AFTER DISCOVERY AND REINSTALL ADEQUATE CONTROL MEASURES AS NECESSARY TO PREVENT REOCCURRENCE OF DAMAGE.
5. ALL SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND AFTER ANY STORM EVENT OF GREATER THAN 0.5 INCHES OF PRECIPITATION DURING ANY 24 HOUR PERIOD. UTILIZE NCDOT'S NPDES STORM WATER RECORD AND REPORTING FORM TO BE FILLED OUT IN CONJUCTION WITH THE NCDOT CONSTRUCTION INSPECTOR.
6. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS BEEN TEMPORARILY OR PERMANENTLY CEASED, UNLESS ACTIVITY IN THAT PORTION OF THE SITE WILL RESUME WITHIN 14 DAYS. CONTRACTOR SHALL INSTALL TEMPORARY GRAVEL DRIVEWAY AT EACH.
7. MAINTAIN ALL CONSTRUCTION ACCESS ENTRANCES TO LIMIT DEPOSITS OF SOIL ONTO THE EXISTING ROADWAYS. ROUTINELY CLEAN THE ROADWAYS AS THIS OCCURS.

MAINTENANCE PLAN:

1. INSPECT ALL EROSION CONTROL DEVICES WEEKLY AND AFTER RAINFALL EVENTS AS NOTED ABOVE. NEEDED REPAIRS SHALL BE MADE IMMEDIATELY.
2. MAINTAIN EROSION CONTROL DEVICES AS FOLLOWS:

-TEMPORARY SILT FENCE- REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. AVOID UNDERMINING THE FENCE.

-TEMPORARY CHECK DAM- REMOVE SEDIMENT ACCUMULATION BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION. ADD STONE TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

-STORM DRAIN INLET PROTECTION- REMOVE SEDIMENT AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAINFALL.

-TEMPORARY DIVERSION DITCH- INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND.

-GRAVEL AND RIPRAP BASIN- REMOVE SEDIMENT AND RESTORE BASIN TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN DEPTH OF THE TRAP. CHECK THE STRUCTURE FOR DAMAGE FROM EROSION TO ENSURE IT IS A MINIMUM 1.5 FEET BELOW THE LOW POINT OF THE EMBANKMENT.

-TEMPORARY SLOPE DRAIN- INSPECT THE SLOPE DRAIN AND SUPPORTING DIVERSION AFTER EVERY RAINFALL AND PROMPTLY MAKE NECESSARY REPAIRS. WHEN THE PROTECTED AREA HAS BEEN PERMANENTLY STABILIZED, TEMPORARY MEASURES MAY BE REMOVED. MATERIALS DISPOSED OF PROPERLY, AND ALL DISTURBED AREAS STABILIZED APPROPRIATELY.

-TEMPORARY ROCK DAM- CHECK ROCK DAM AFTER EACH RAINFALL. REMOVE SEDIMENT AND RESTORE ORIGINAL VOLUME WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE DESIGN VOLUME.

3. ALL GRADED AREAS WILL BE SEEDED, FERTILIZED AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE, VEGETATIVE COVER WITHIN (7) WORKING DAYS OR FOURTEEN (14) CALENDAR DAYS (WHICHEVER PERIOD IS SHORTER) OF COMPLETION OF ANY PHASE OF GRADING. IF WORK ON THE PROJECT CEASES FOR MORE THAN THE AFOREMENTIONED LENGTH OF TIME, ALL DISTURBED AREAS SHALL HAVE TEMPORARY VEGETATIVE GROUND COVER ESTABLISHED AND EROSION CONTROL DEVICES MAINTAINED.

GROUND STABILIZATION:

CONTRACTOR SHALL STABILIZE (TEMPORARY OR PERMANENT) ALL DISTURBED AREAS WITHIN 7 OR 14 DAYS OF TERMINATION OF GRADING OPERATIONS PER THE FOLLOWING GUIDLINES.

PERIMETER DIKES, SWALES, DITCHES AND SLOPES- 7 DAYS.
IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1 -14 DAYS
HIGH QUALITY WATER ZONES- 7 DAYS
SLOPES 3:1 OR STEEPER- 7 DAYS
SLOPES BETWEEN 3:1 AND 4:1 LESS THAN 50' IN LENGTH-14 DAYS
SLOPES BETWEEN 3:1 AND 4:1 GREATER THAN 50' IN LENGTH- 7 DAYS
SLOPERS FLATTER THAN 4:1- 14 DAYS

SEEDBED PREPARATION:

GRADED SLOPES AND FILL - THE ANGLE FOR GRADED SLOPES AND FILLS SHALL BE NO GREATER THAN THE ANGLE WHICH CAN BE RETAINED BY VEGETATIVE COVER OR OTHER ADEQUATE EROSION CONTROL DEVICES OR STRUCTURES. IN ANY EVENT, SLOPES THAT ARE LEFT EXPOSED SHALL BE PLANTED OR OTHERWISE PROVIDED WITH GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION WITHIN TIME FRAME AS DESCRIBED IN GROUND STABILIZATION SECTION OF EROSION GENERAL NOTES (THIS SHEET).

GROUND COVER - WHENEVER LAND DISTURBING ACTIVITY IS UNDERTAKEN ON A TRACT COMPRISING MORE THAN ONE ACRE, IF MORE THAN ONE CONTIGUOUS ACRE IS UNCOVERED, A GROUND COVER SUFFICIENT TO RESTRAIN EROSION MUST BE PLANTED OR OTHERWISE PROVIDED WITHIN A MAXIMUM OF 14 WORKING DAYS ON THAT PORTION OF THE TRACT UPON WHICH FURTHER ACTIVE CONSTRUCTION IS NOT BEING UNDERTAKEN.

SURFACE WATER CONTROL MEASURES TO BE INSTALLED ACCORDING TO THE PLANS.

AREAS TO BE SEEDED SHALL BE RIPPED AND SPREAD WITH AVAILABLE TOPSOIL 3" DEEP. TOTAL SEEDBED PREPARED DEPTH SHALL BE 4" TO 8" DEEP.

LOOSE ROCKS, ROOTS, AND OTHER OBSTRUCTIONS SHALL BE REMOVED FROM THE SURFACE SO THAT THEY WILL NOT INTERFERE WITH ESTABLISHMENT AND MAINTENANCE OF VEGETATION. SURFACE FOR FINAL SEEDBED PREPARATION, AT FINISH GRADES SHOWN, SHALL BE REASONABLY SMOOTH AND UNIFORM.

IF SOIL TEST IS TAKEN, PROVIDE LIME AND FERTILIZER ACCORDING TO THE SOIL TEST REPORT.

IF NO SOIL TEST IS TAKEN, FERTILIZER AND LIME SHALL BE ACCORDING TO SEEDING SPECIFICATIONS.

LIME AND FERTILIZER SHALL BE APPLIED UNIFORMLY AND MIXED WITH THE SOIL DURING SEEDBED PREPARATION.

STORM DRAINAGE NOTES:

ALL STORM DRAINAGE PIPE WITHIN PUBLIC ROAD RIGHT-OF-WAYS TO BE CLASS III REINFORCED CONCRETE PIPE PER NCDOT STANDARDS, UNLESS OTHERWISE NOTED.

FLARED END SECTION INVERTS ARE SET AT OR SLIGHTLY BELOW EXISTING GRADE. VERIFY ELEVATIONS IN FIELD PRIOR TO CONSTRUCTING PIPE SYSTEMS.

A MINIMUM GRADE OF 0.50% SHALL BE MAINTAINED ON ALL PIPES.

PIPE LENGTHS INDICATED ON PLANS ARE APPROXIMATE ONLY.

ALL INLETS MUST BE PROTECTED AT THE CLOSE OF BUSINESS EACH DAY.

NO PIPES ARE TO BE INSTALLED AND LEFT OPEN OVER NIGHT. ALL PIPE WORK MUST BE CLOSED AND PROTECTED AT THE CLOSE OF BUSINESS.

SUBSURFACE DRAINAGE FACILITIES MAY BE REQUIRED IN THE STREET RIGHT-OF-WAY IF DEEMED NECESSARY BY THE INSPECTOR.

UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.

EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.

EFFLUENT FROM DENATURING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.

MATERIAL USED FOR BACK-FILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.

RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL REGULATIONS.

APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.

CONTRACTOR SHALL BE RESPONSIBLE FOR FOLLOWING NCDOT'S RECLAMATION PROCEDURES FOR WASTE/BORROW SITES. APPROVAL FOR USE OF ANY OFFSITE LOCATION MUST BE OBTAINED THROUGH NCDOT'S ROADSIDE ENVIRONMENTAL UNIT AND THE RESPONSIBLE NCDOT CONSTRUCTION ENGINEER THROUGH THE COMPLETION OF THE RECLAMATION PLAN PROCEDURES. NCDENR APPROVED MINING SITES OR APPROPRIATE WASTE SITES MAY BE USED WITH NCDOT APPROVAL.

ANY EXCESS MATERIAL GENERATED BY THIS PROJECT MUST BE DISPOSED OF BY THE CONTRACTOR AT AN APPROVED OFF-SITE LOCATION.

GENERAL EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES AT LEAST ONCE A WEEK OR AFTER EACH RAINFALL EVENT, AND REPAIR IF NECESSARY, TO ENSURE THAT ALL EROSION CONTROL MEASURES ARE FUNCTIONING PROPERLY.
2. STABILIZATION OF DISTURBED AREAS SHALL PROGRESS WITH PIPE INSTALLATION. AT NO TIME SHALL PIPE INSTALLATION PROGRESS MORE THAN 500 FEET AHEAD OF FINE GRADING, SEEDING, AND MULCHING OPERATIONS.
3. THE CONTRACTOR SHALL MAINTAIN STORM DRAINAGE DURING PIPE INSTALLATION. DISTURBED AREAS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE GRADED DAILY TO PREVENT PONDING OF STORM WATER RUNOFF AND UNNECESSARY SOIL EROSION. THE ROADWAY CUT SHALL BE BACKFILLED AND STABILIZED AT THE END OF EACH WORK DAY WITH STONE MATERIAL, AND GRADED TO MATCH NORMAL GUTTERLINE ELEVATIONS AND SLOPES SO THAT NORMAL DRAINAGE WILL BE PROVIDED.
4. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR LOCATION AND PROTECTION OF EXISTING ABOVE AND BELOW GROUND UTILITIES AND STRUCTURES. ANY AND ALL MAINS OR INDIVIDUAL SERVICES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
5. SECURE EXISTING SANITARY SEWER DURING TRENCHING AND BACKFILLING OPERATION.
6. SEEDING AND MULCHING IS REQUIRED FOR ALL DISTURBED AREAS.

GENERAL EROSION CONTROL NOTES (CONT'D):

7. THE CONTRACTOR SHALL NOTIFY CHARLOTTE-MECKLENBURG UTILITY DEPARTMENT AND PIEDMONT NATURAL GAS COMPANY, INC. PRIOR TO EXCAVATING AT OR NEAR SEWER MAINS, WATER MAINS, AND GAS MAINS.
8. WHEN EXISTING FENCES ARE MOVED DURING CONSTRUCTION. THE CONTRACTOR SHALL SECURE PETS WITH TEMPORARY FENCING UNTIL PERMANENT FENCING IS RESET.
9. THE CONTRACTOR IS TO MAINTAIN CONTINUOUS SANITARY SEWER FLOW AT ALL EXISTING SANITARY SEWERS.
10. THE CONTRACTOR IS TO MAINTAIN CONTINUOUS WATER SERVICE TO ALL RESIDENCES.
11. ANY STOCKPILING OF SOIL ON PAVED SURFACE SHALL HAVE SAND AND OR ROCK SCREENING UNDERNEATH AREA.
12. CONTRACTOR IS RESPONSIBLE FOR AMENDMENTS TO PLAN FOR ADDITIONAL AREAS FOR STAGING PURPOSES. SUCH AREAS WILL BE STABILIZED.
13. CONTRACTOR IS TO USE NO.57 STONE WHERE STONE IS REFERENCE FOR ALL SEDIMENTATION AND EROSION CONTROL DETAILS.
14. THE CONTRACTOR SHALL NOT BEGIN WORK THAT CANNOT BE STABILIZED BY THE END OF THE WORK DAY AND SHALL NOT LEAVE ANY STORM DRAINAGE PIPES OPEN OVERNIGHT. PIPES MUST BE CLOSED AND PROTECTED BY END OF THE WORK DAY.
15. INLET PROTECTION IS REQUIRED FOR ALL PHASES OF THE PROJECT AND UNTIL THE DISTURBED AREA IF FULLY STABILIZED.
16. ADDITIONAL EROSION CONTROL MEASURES AND CONSTRUCTION ENTRANCES/EXITS MAY BE REQUIRED BASED ON FIELD CONDITIONS.
17. PERMANENT VEGETATION SHALL BE INSTALLED IN CONJUNCTION WITH TEMPORARY SEEDING IF CONSTRUCTION OCCURS DURING THE SPECIFIED SEASON IN THE VEGETATION PLANS AND SPECIFICATIONS. IF NOT, THEN PERMANENT VEGETATION SHALL BE PLANTED IN THE SEASON.
18. ALL EARTH MOVING EQUIPMENT SHALL BE SERVICED PRIOR TO THE WORK COMMENCING EACH DAY. EQUIPMENT SHALL BE MAINTAINED TO PREVENT FUEL, OIL, AND LUBRICANT SPILLS IN THE VICINITY OF A STREAM.

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	EC-2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER
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Kimley»Horn
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4/6/2018
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PROJECT REFERENCE NO.	SHEET NO.
W-5210K	EC-3

NOTE: REFER TO THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL, CHAPTER 6, SECTION 6.10.1 FOR FURTHER DETAILS REGARDING TEMPORARY SEEDING.

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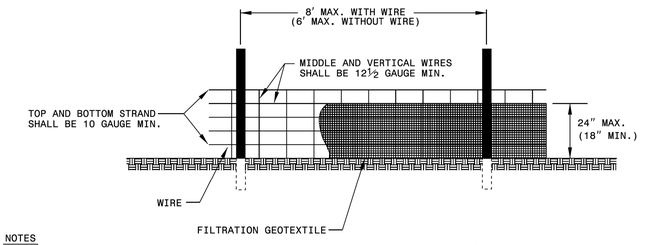
ENGLISH STANDARD DRAWING FOR
TEMPORARY SILT FENCE



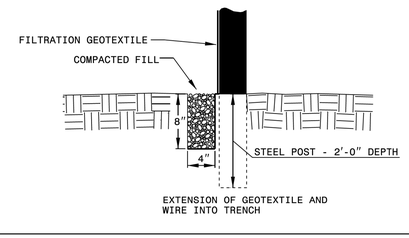
NOTES

USE WIRE A MINIMUM OF 32" IN WIDTH AND WITH A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.

USE FILTRATION GEOTEXTILE A MINIMUM OF 36" IN WIDTH AND FASTEN ADEQUATELY TO THE WIRE AS DIRECTED.

PROVIDE 5'-0" STEEL POST OF THE SELF-FASTENER ANGLE STEEL TYPE.

FOR MECHANICAL SLICING METHOD INSTALLATION, GEOTEXTILE SHALL BE A MAXIMUM OF 18" ABOVE GROUND SURFACE.



SHEET 1 OF 1
1605.01

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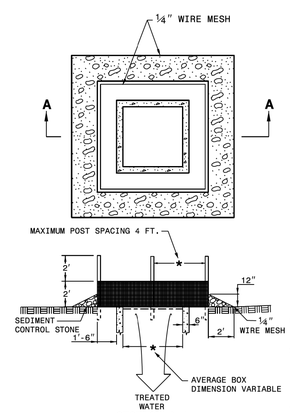
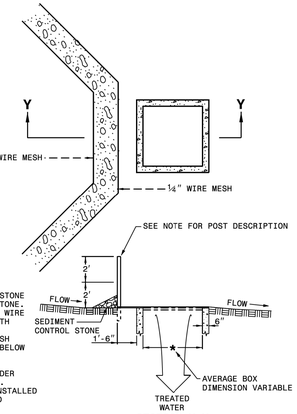
ENGLISH STANDARD DRAWING FOR
ROCK INLET SEDIMENT TRAP TYPE C



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 ¼ 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

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ENGLISH STANDARD DRAWING FOR
ROCK INLET SEDIMENT TRAP TYPE C

SHEET 1 OF 1
1632.03

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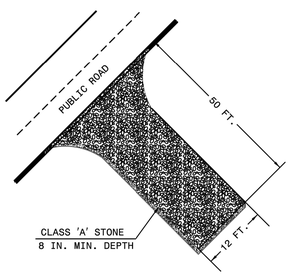
ENGLISH STANDARD DRAWING FOR
GRAVEL CONSTRUCTION ENTRANCE



NOTES

1. PROVIDE TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS.
2. LOCATE ENTRANCES 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.
8. INSTALL CONSTRUCTION ENTRANCES IN A WAY TO PREVENT VEHICLES FROM BYPASSING CONSTRUCTION ENTRANCE LEAVING PROJECT SITE.

NOTE: PLACE FILTRATION GEOTEXTILE BENEATH STONE

SHEET 1 OF 1
1607.01

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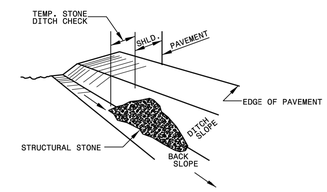
ENGLISH STANDARD DRAWING FOR
TEMPORARY ROCK SILT CHECK TYPE B



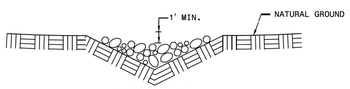
ISOMETRIC VIEW

NOTES:

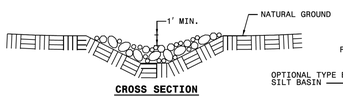
USE CLASS B EROSION CONTROL STONE FOR STRUCTURAL STONE.

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%.

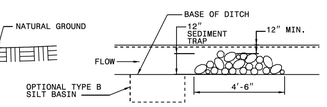
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL. PLACE SEDIMENT CONTROL STONE AS DIRECTED.



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH



ELEVATION VIEW

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ENGLISH STANDARD DRAWING FOR
TEMPORARY ROCK SILT CHECK TYPE B

SHEET 1 OF 1
1633.02

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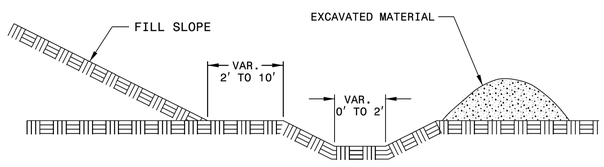
ENGLISH STANDARD DRAWING FOR
TEMPORARY SILT DITCH

NOTES

EXCAVATE TEMPORARY SILT DITCH WITH NON-VERTICAL SIDE SLOPES AND NOT GREATER THAN 1.5:1 SLOPE.
SEED BERM CREATED BY EXCAVATED MATERIAL AS DIRECTED.



CROSS SECTIONAL VIEW

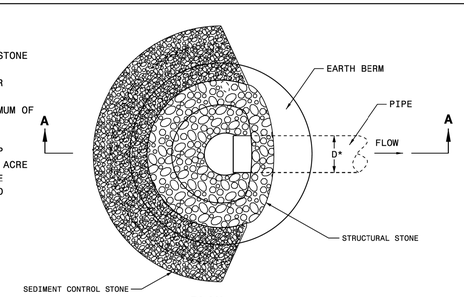
SHEET 1 OF 1
1630.03

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12

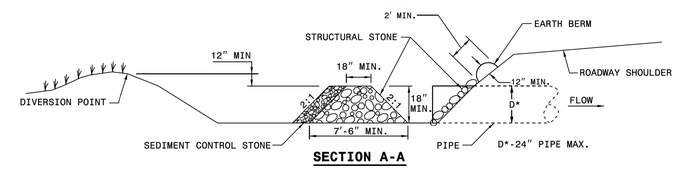
ENGLISH STANDARD DRAWING FOR
ROCK PIPE INLET SEDIMENT TRAP TYPE B

NOTES

USE CLASS A 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 3600± CUBIC FEET PER ACRE OF DISTURBED AREA. SOME OF THE REQUIRED VOLUME MAY BE PROVIDED BY UP OR DOWNSTREAM CONTROLS.



PLAN



SECTION A-A

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12

ENGLISH STANDARD DRAWING FOR
ROCK PIPE INLET SEDIMENT TRAP TYPE B

SHEET 1 OF 1
1635.02

Table 6.10a Temporary Seeding Recommendations for Late Winter and Early Spring

Seeding mixture

Species	Rate (lb/acre)
Rye (grain)	120
Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains)	50

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

Seeding dates
Mountains—Above 2500 feet: Feb. 15 - May 15
Below 2500 feet: Feb. 1- May 1
Piedmont—Jan. 1 - May 1
Coastal Plain—Dec. 1 - Apr. 15

Soil amendments
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

Table 6.10b Temporary Seeding Recommendations for Summer

Seeding mixture

Species	Rate (lb/acre)
German millet	40

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb/acre.

Seeding dates
Mountains—May 15 - Aug. 15
Piedmont—May 1 - Aug. 15
Coastal Plain—Apr. 15 - Aug. 15

Soil amendments
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

Table 6.10c Temporary Seeding Recommendations for Fall

Seeding mixture

Species	Rate (lb/acre)
Rye (grain)	120

Seeding dates
Mountains—Aug. 15 - Dec. 15
Coastal Plain and Piedmont—Aug. 15 - Dec. 30

Soil amendments
Follow soil tests or apply 2,000 lb/acre ground agricultural limestone and 1,000 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extent temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

Know what's below. Call before you dig.

REVISIONS

8/17/99

4/16/2018
25001?-RD14-EROS-DETAILS-02.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	EC-4

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

Timothy R. Dreifuss

E47245E9109F4FB...

Kimley»Horn

NC LICENSE #F-0102
2000 SOUTH BOULEVARD
SUITE 440
CHARLOTTE,
NORTH CAROLINA
28203
PHONE: (704) 333-5131

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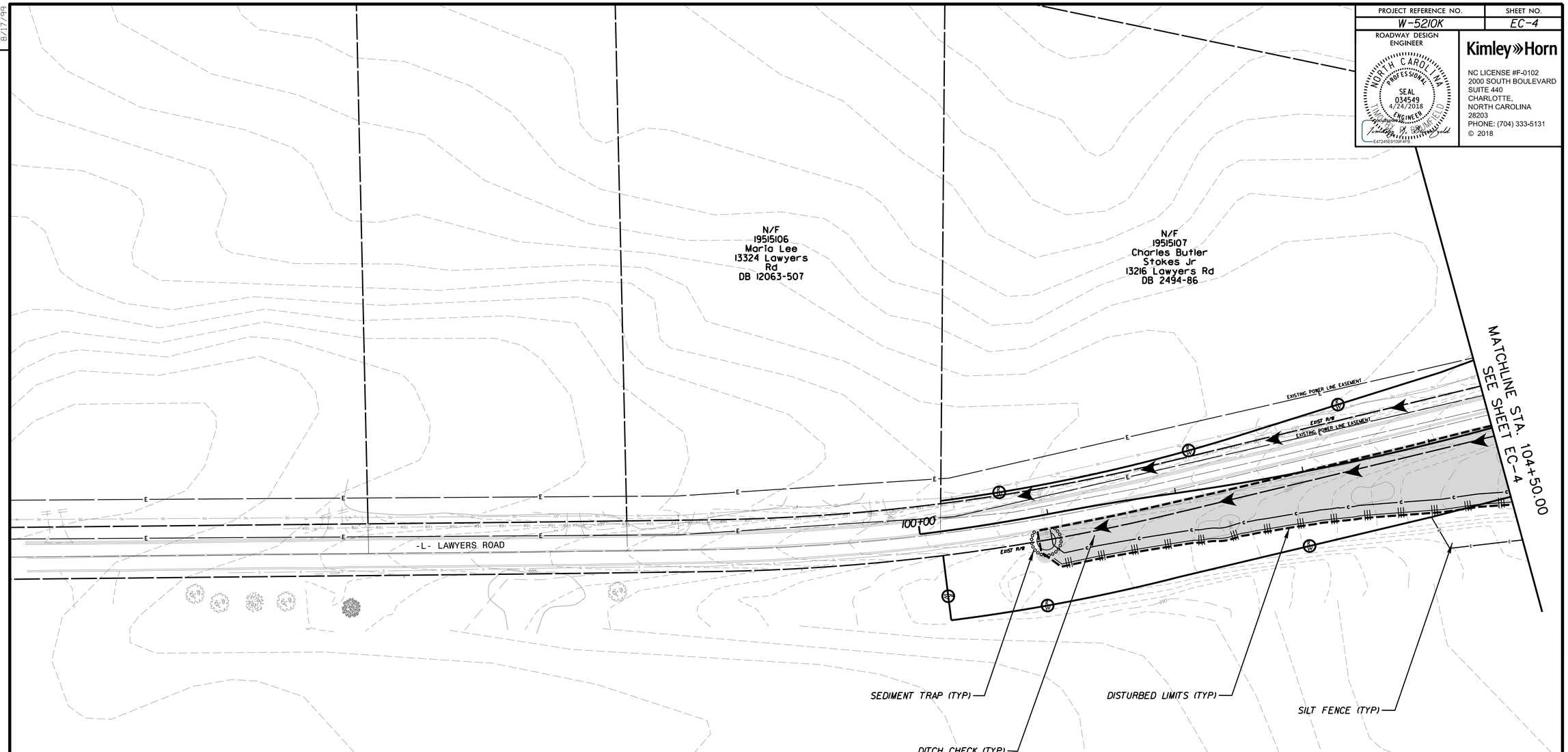

PROJECT DISTURBED AREA = ± 3.7 ACRES

STABILIZE ALL SLOPES 3:1 AND GREATER WITH MULCH AND SEED AS NOTED IN EROSION CONTROL DETAILS

STABILIZE ALL FILL SLOPES WITH AN ELEVATION CHANGE GREATER THAN 10' WITH A TEMPORARY SILT DITCH AS SHOWN IN EROSION CONTROL DETAILS.

STABILIZE AS SHOWN (UNLESS OTHERWISE NOTED) ON THIS PLAN WITHIN 14 DAYS OF COMPLETION PER EROSION CONTROL NOTES

N/F
19706112
Bridges at Mint
Hill LLC
Lawyers Rd
DB 27784-430
MB 49-125

LEGEND (APPLIES TO ALL SHEETS)

- RIP RAP
- DISTURBED AREA
- CONSTRUCTION LIMIT
- TEMPORARY SILT FENCE [EC-2]
- ROCK INLET SEDIMENT TRAP [EC-2]
- TEMPORARY GRAVEL CONSTRUCTION ENTRANCE [EC-2]
- TEMPORARY ROCK SILT CHECK TYPE-B [EC-2]

811 Know what's below. Call before you dig.

NAD 83

40' 0' 40' 80'
20'
(ENGLISH)

REVISIONS

8/17/99

4/16/2018
2500017-RD14-EROS-PH01-03.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	EC-5

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER
E47245E9109F4FB

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SUITE 440
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NORTH CAROLINA
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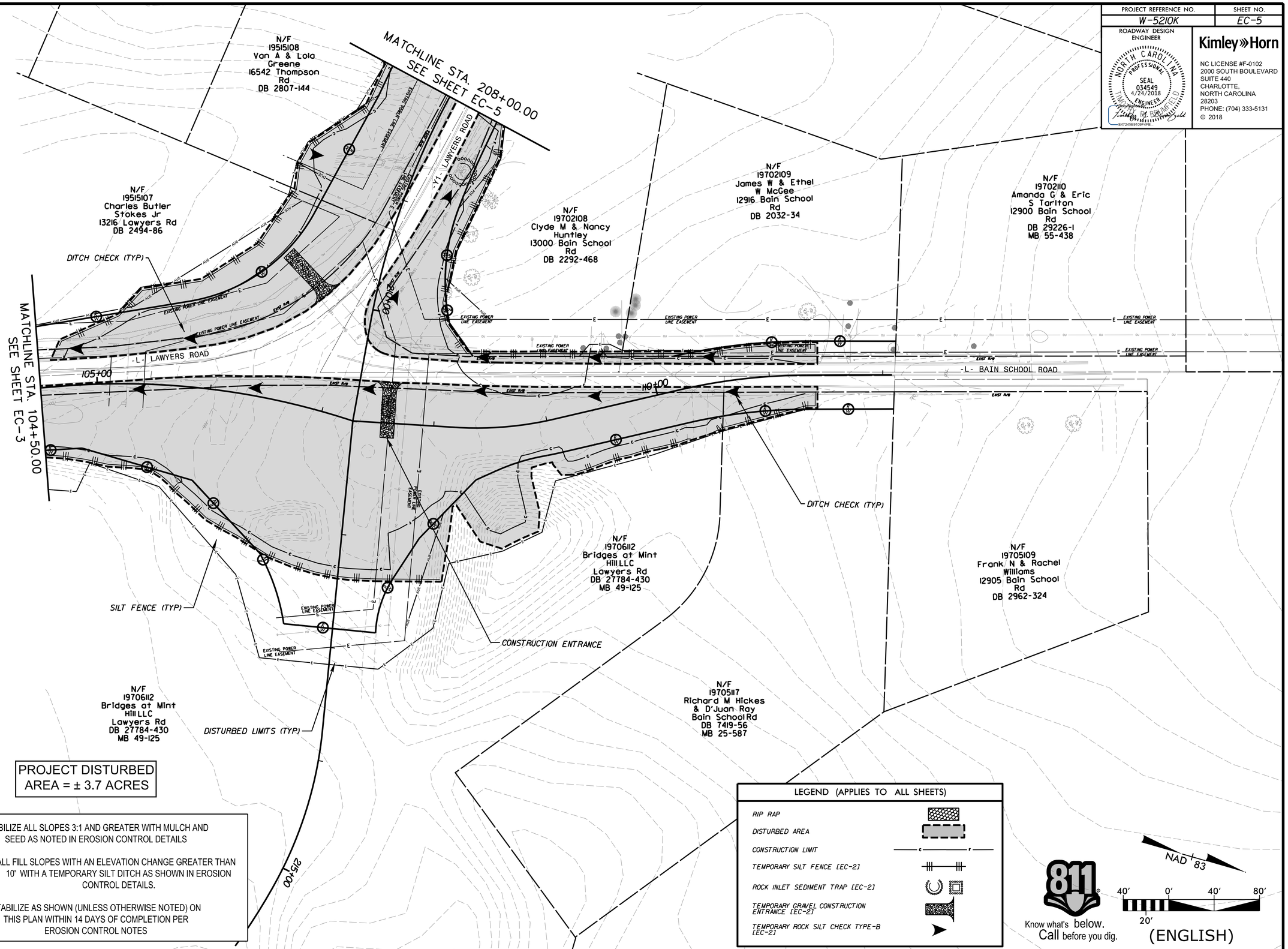

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LEGEND (APPLIES TO ALL SHEETS)

- RIP RAP
- DISTURBED AREA
- CONSTRUCTION LIMIT
- TEMPORARY SILT FENCE [EC-2]
- ROCK INLET SEDIMENT TRAP [EC-2]
- TEMPORARY GRAVEL CONSTRUCTION ENTRANCE [EC-2]
- TEMPORARY ROCK SILT CHECK TYPE-B [EC-2]

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2500017-RD14-EROS-PH01-04.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	EC-6

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER 4/24/2018
Timothy B. Gold
E4724569109F4FB

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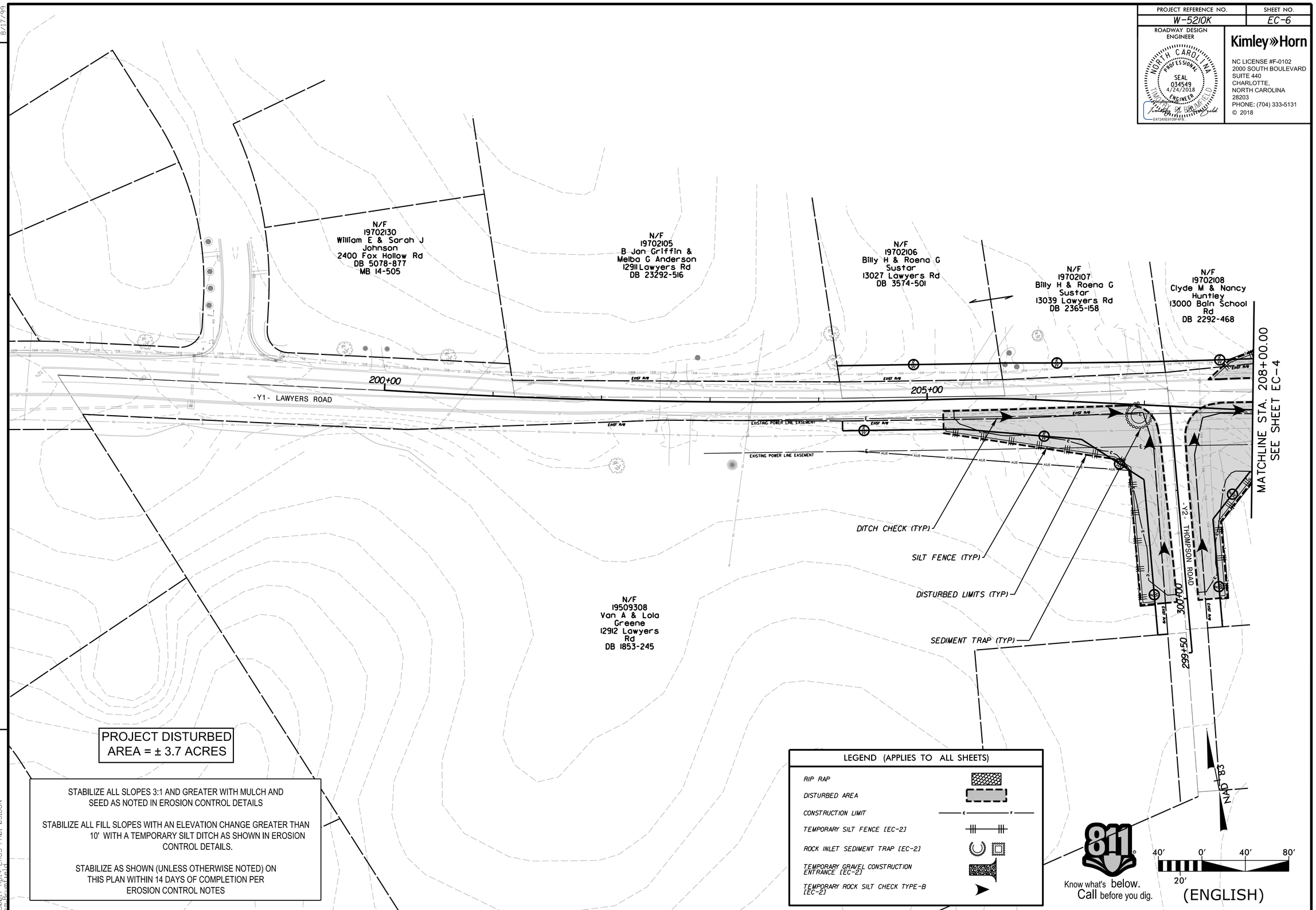

PROJECT DISTURBED AREA = ± 3.7 ACRES

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LEGEND (APPLIES TO ALL SHEETS)

- RIP RAP
- DISTURBED AREA
- CONSTRUCTION LIMIT
- TEMPORARY SILT FENCE [EC-2]
- ROCK INLET SEDIMENT TRAP [EC-2]
- TEMPORARY GRAVEL CONSTRUCTION ENTRANCE [EC-2]
- TEMPORARY ROCK SILT CHECK TYPE-B [EC-2]

REVISIONS

8/17/99

4/16/2018
25001 7-RD14-EROS-PH01-05.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	EC-7

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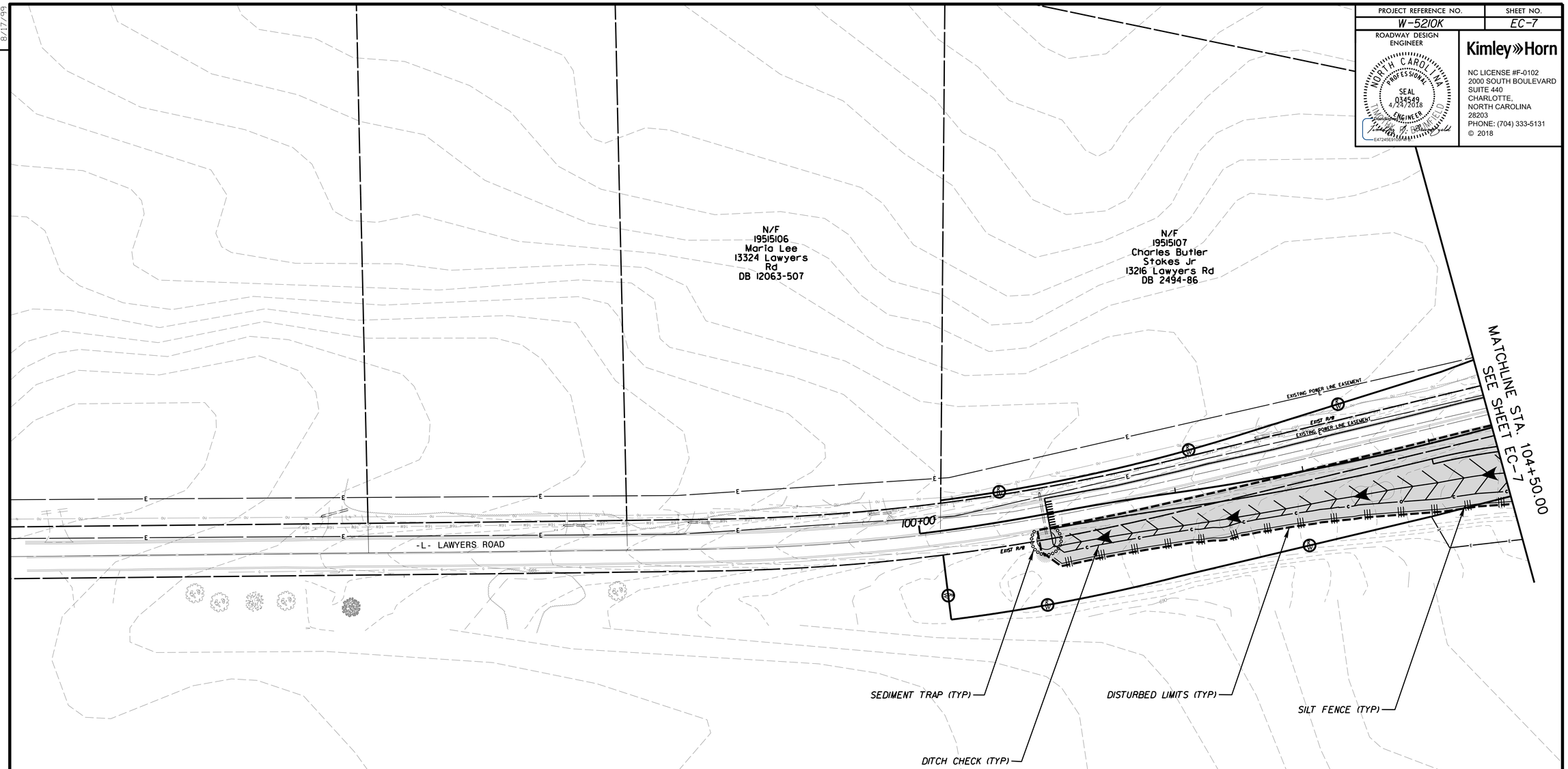

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N/F
19706112
Bridges at Mint
Hill LLC
Lawyers Rd
DB 27784-430
MB 49-125

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NAD 83

40' 0' 40' 80'
20'
(ENGLISH)

4/16/2018
2500017-RD14-EROS-PH02-06.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	EC-8

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

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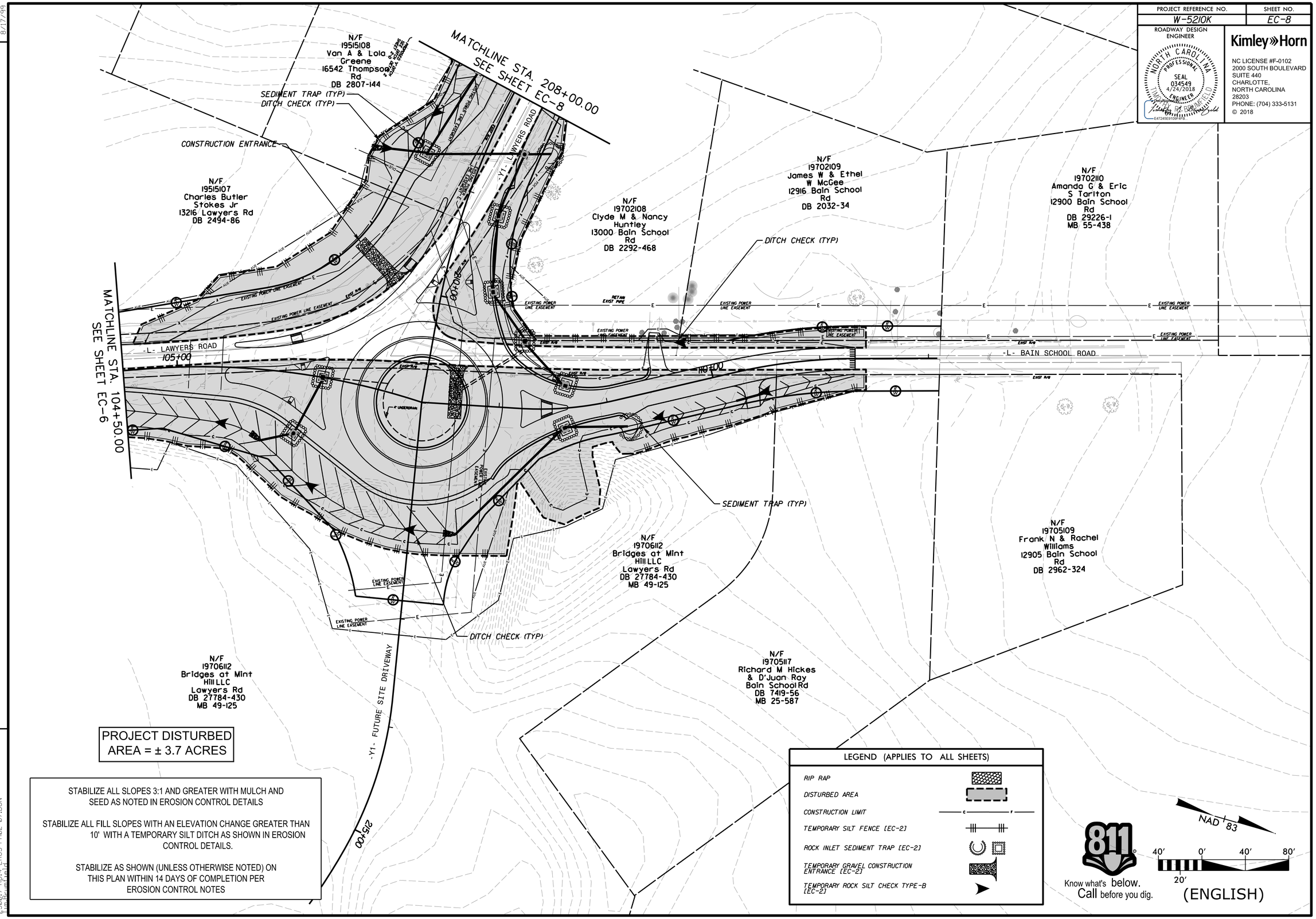

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250017-RD14-EROS-PH02-07.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	EC-9

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER
E47245E9109F4FB

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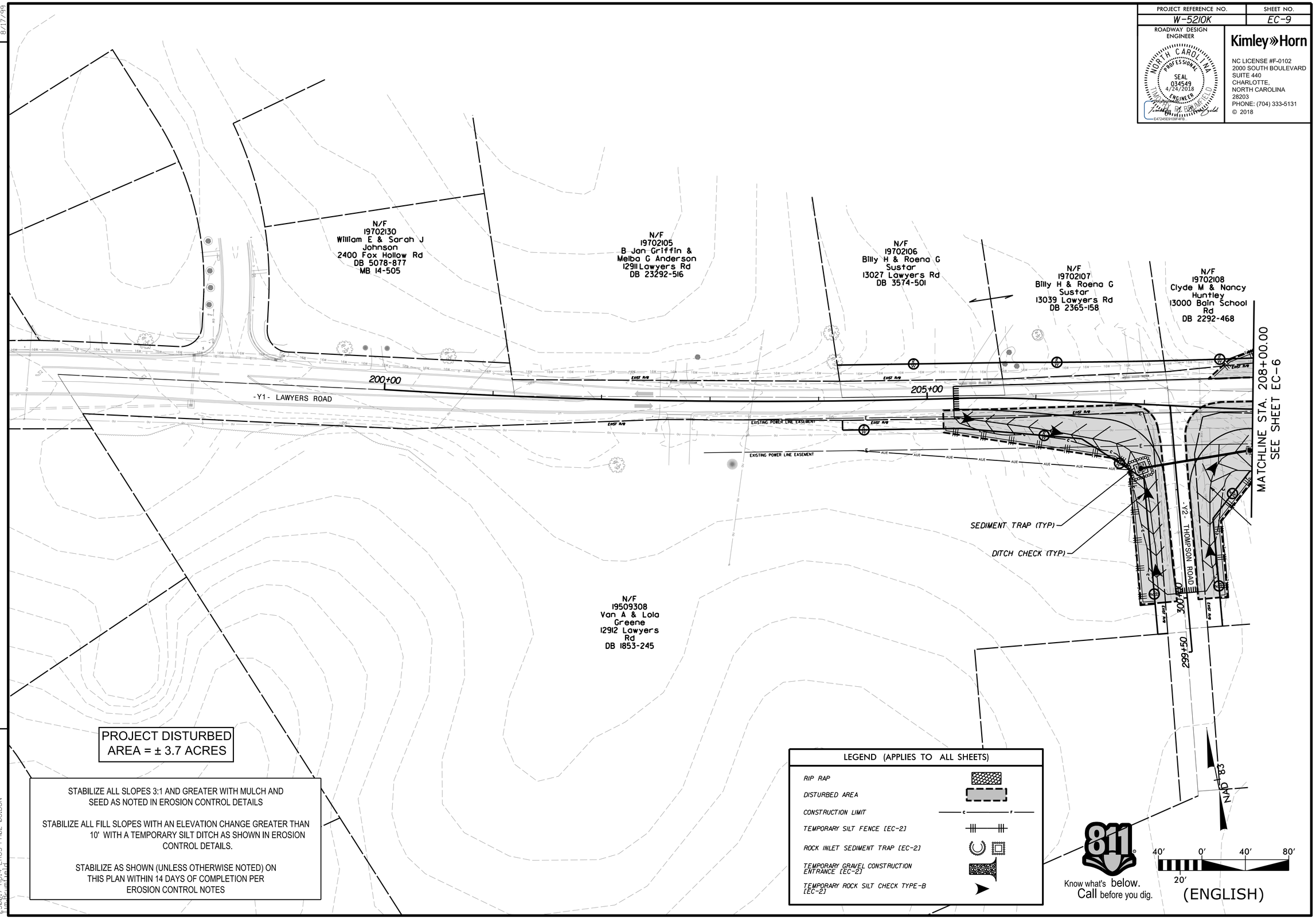

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REVISIONS

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4/16/2018
250017-RD14-EROS-PH02-08.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	SG-1

APPROVED: DocuSigned by: Timothy R. Brumfield E4724E6910F4FB...

DATE: 4/24/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER TIMOTHY R. BRUMFIELD

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

SIGNING PLAN
MECKLENBURG COUNTY

LOCATION: INTERSECTION IMPROVEMENTS LAWYERS ROAD AND BAIN SCHOOL ROAD

CONTRACT: TIP PROJECT: W-5210K

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
901.80	SIGN MOUNTING DETAILS - FOR TYPE A AND TYPE B SIGNS
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.20	SECONDARY SIGN MOUNTING
904.30	SUPPLEMENTAL SIGN MOUNTING
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS
1264.01	OBJECT MARKERS - TYPES

INDEX

SHEET NO.	DESCRIPTION
SG-1	TITLE SHEET
SG-2 TO SG-4	SIGNING PLAN SHEETS

GENERAL NOTES

- SIGNS FURNISHED BY CONTRACTOR
- ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.
- IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER.
- WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER
- ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
- WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.
- THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.

4/16/2018
25007-RD14A-SIGN-COVER.DGN
Tim.Brumfield

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	SG-2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

Timothy Pat Gribble

DocuSigned by: Timothy Pat Gribble

E472456E9109F4FB...

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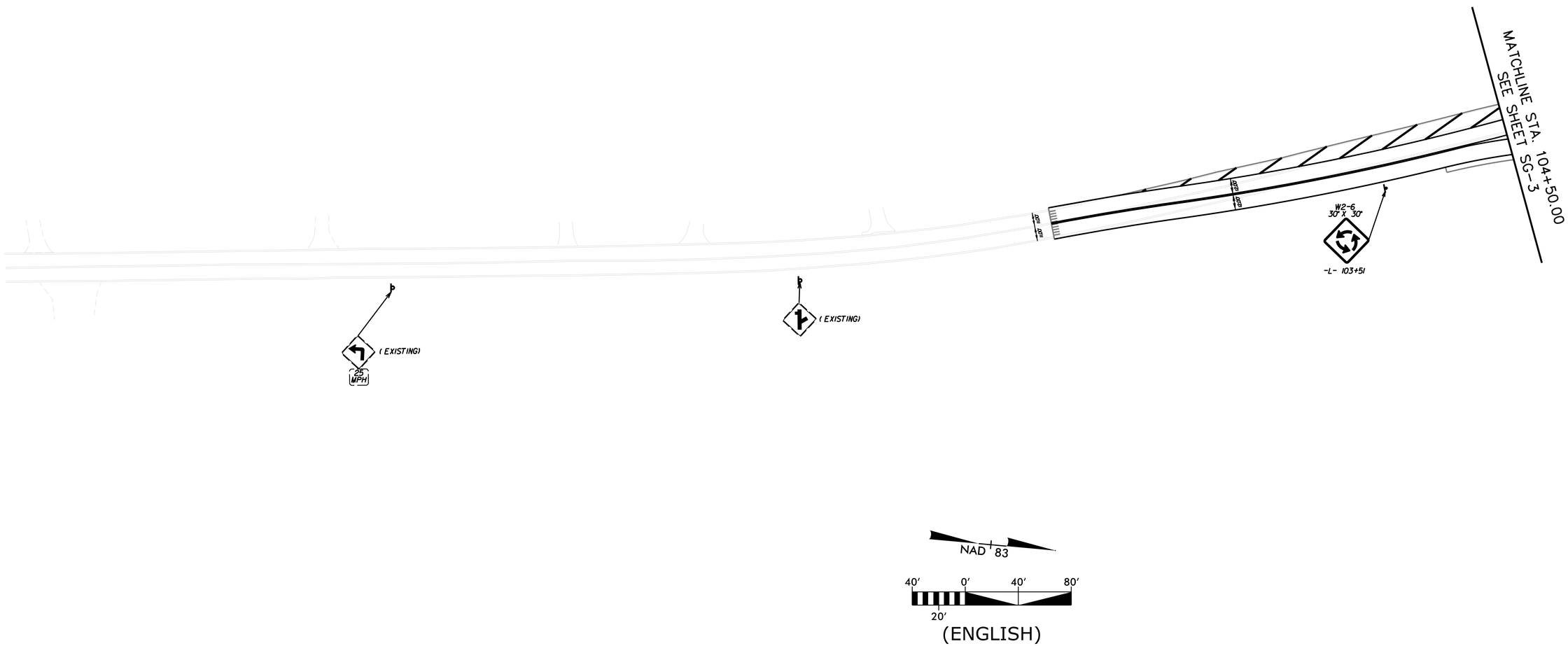

PAY ITEM NOTES (SIGNING):
1. REMOVE AND DISPOSE OF EXISTING "U" CHANNEL POST.
2. ERECT EXISTING SIGN ON NEW "U" CHANNEL POST.
3. FYG = FLOURESCENT YELLOW-GREEN

REVISIONS

8/17/99

4/16/2018
250017-RD14A-SIGN01.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	SG-3

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 ENGINEER 4/24/2018

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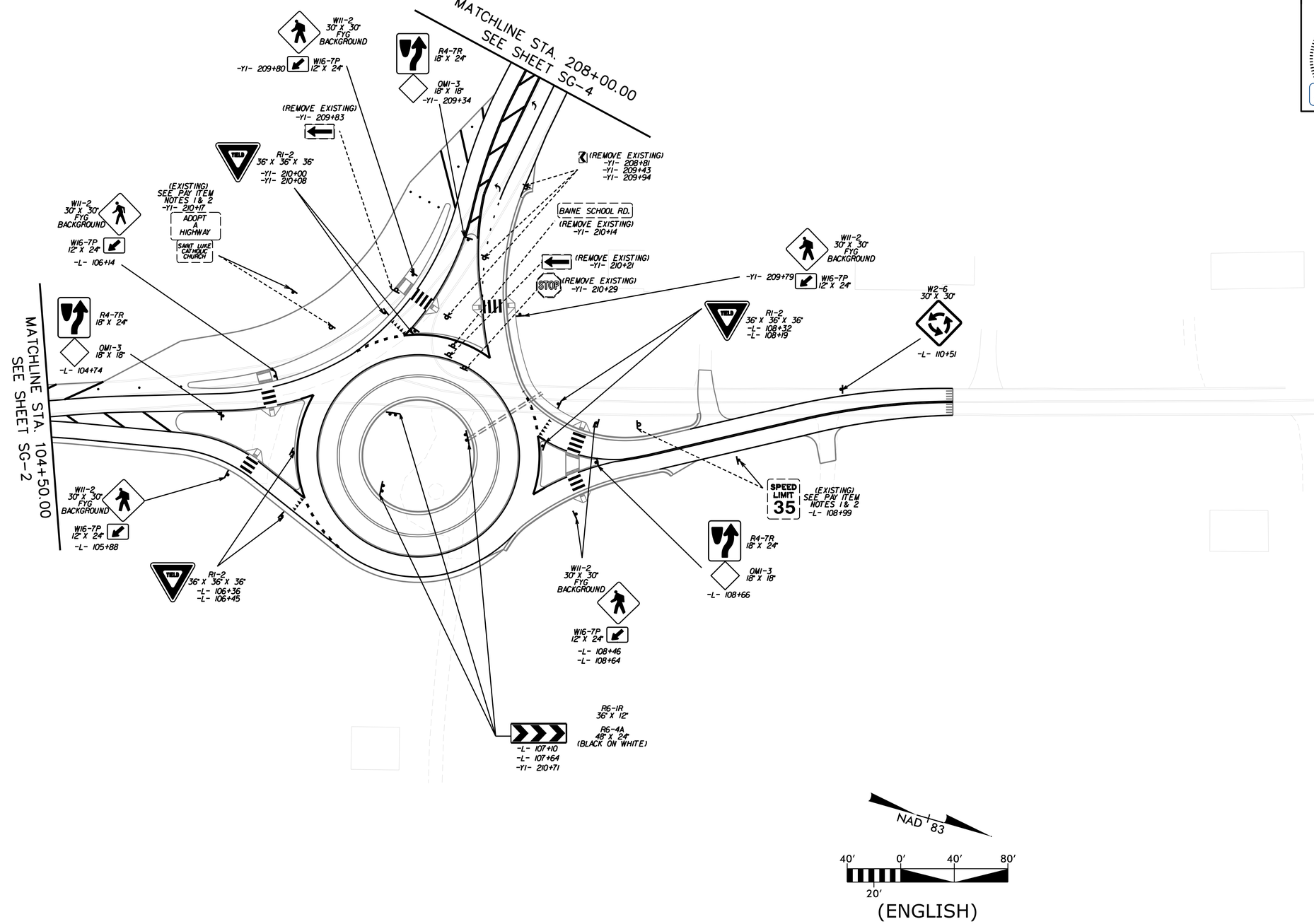

PAY ITEM NOTES (SIGNING):
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2. ERECT EXISTING SIGN ON NEW "U" CHANNEL POST.
3. FYG = FLOURESCENT YELLOW-GREEN

REVISIONS

8/17/99

4/16/2018
250017-RD14A-SIGN02.DGN
mwhite

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	SG-4

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034549 4/24/2018 ENGINEER

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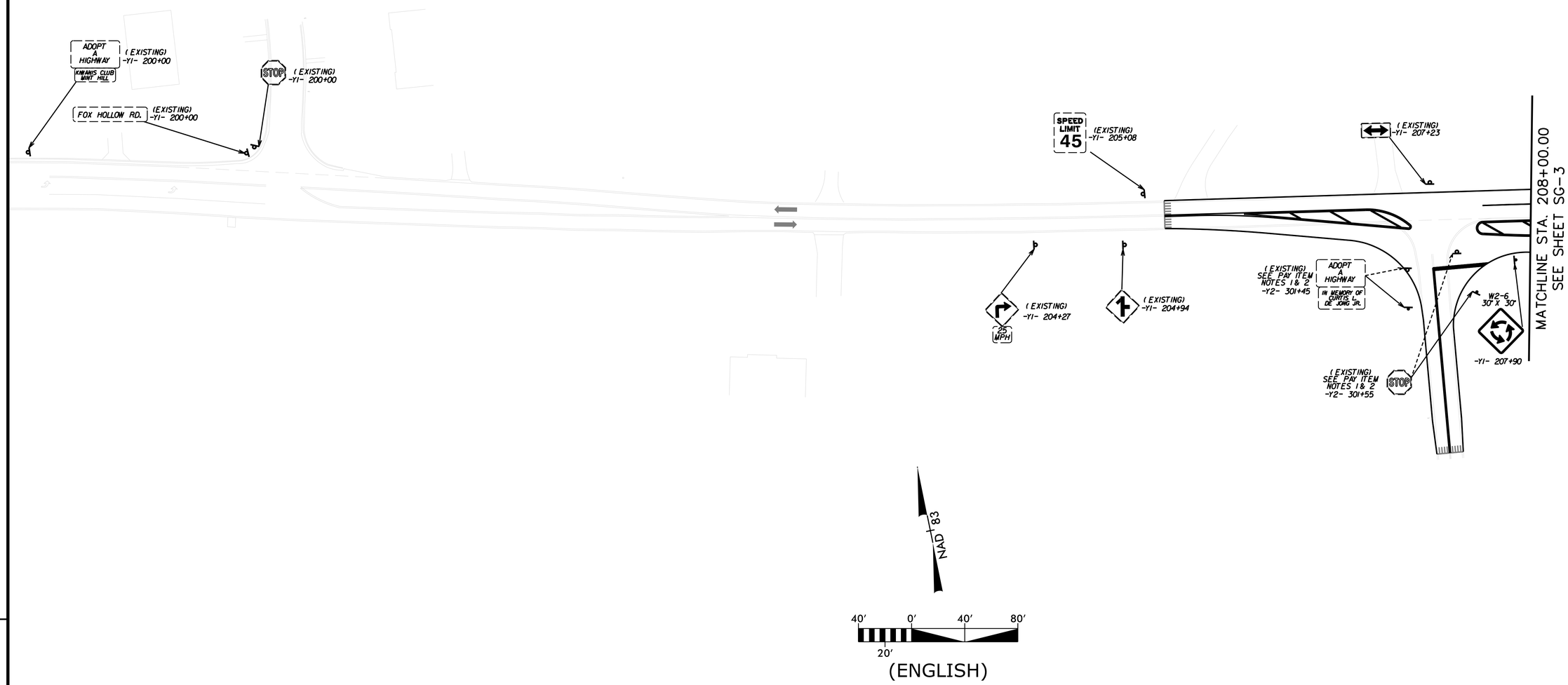

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REVISIONS

8/17/99

4/16/2018
250017-RD14A-SIGN03.DGN

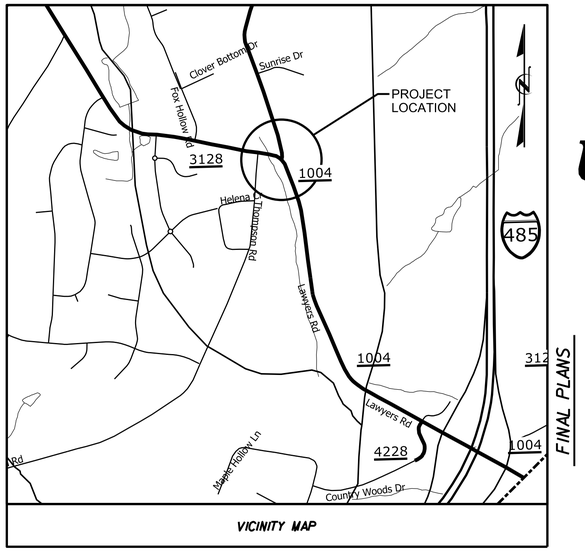
T.I.P. NO.	SHEET NO.
W-5210K	UBO-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

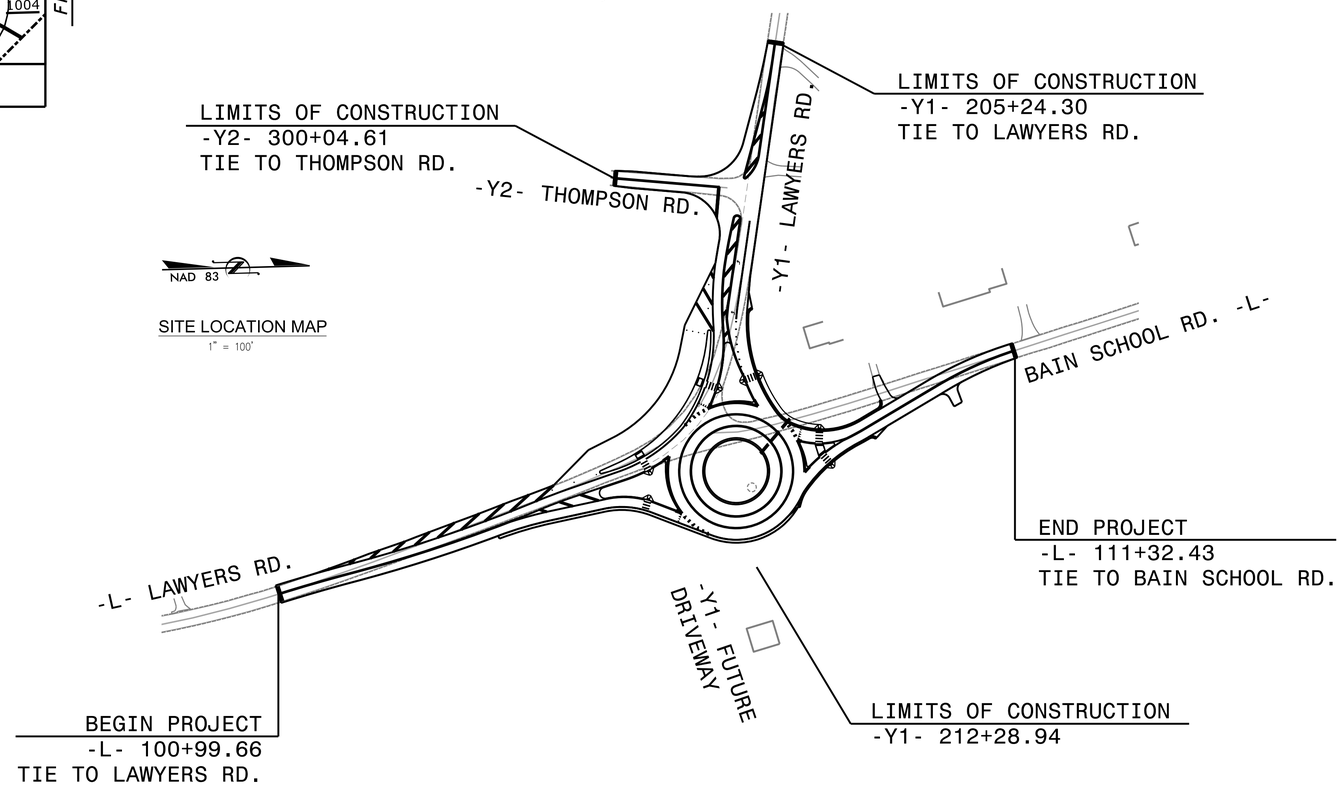
UTILITIES BY OTHERS PLANS
MECKLENBURG COUNTY

LOCATION: INTERSECTION IMPROVEMENTS LAWYERS ROAD AND BAIN SCHOOL ROAD

TYPE OF WORK: GRADING, DRAINAGE & PAVING



FINAL PLANS



GRAPHIC SCALES

20 10 0 20 40
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

2 1 0 2 4
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	*DESCRIPTION*
UBO-1	*TITLE SHEET*
UBO-2 THRU UBO-6	*UTILITY BY OTHERS PLAN SHEETS*

UTILITY OWNERS ON PROJECT

(A) DUKE ENERGY - ELECTRIC
(B) AT&T - TELECOM
(C) CHARTER COMMUNICATIONS - TELECOM
(D) PIEDMONT NATURAL GAS - GAS
(E) CHARLOTTE WATER - WATER, SEWER

PLANS PREPARED FOR THE NCDOT BY:

Kimley»Horn
© 2016
200 South Tryon Street, Suite 200
Charlotte, North Carolina 28202
NC LICENSE# F-0102

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING

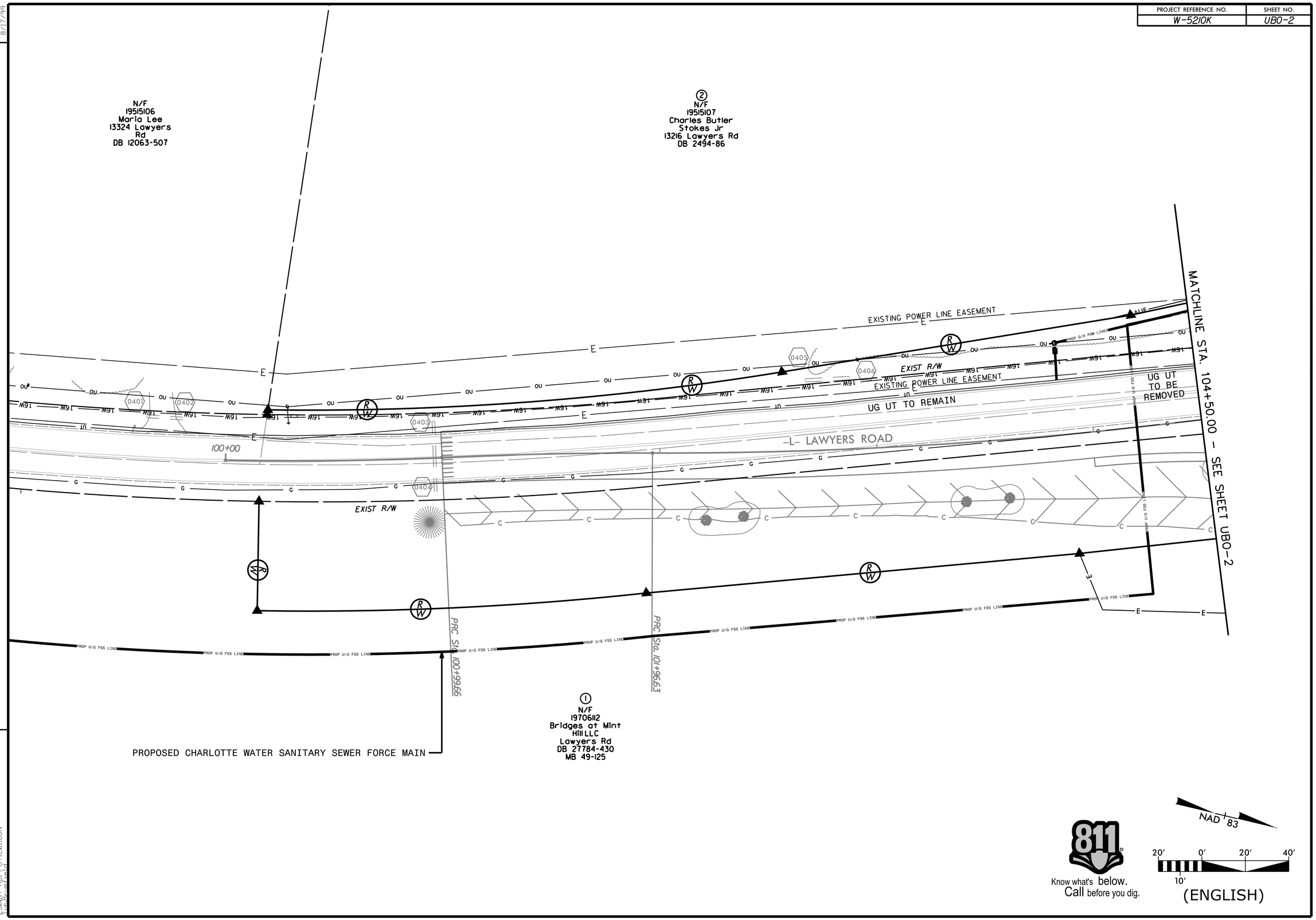
1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

TIP PROJECT: W-5210K

CONTRACT:

09/08/99
4/16/2018
25001-Rdig-UTIL-COVER.DGN
Tim.Brumfield

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	UBO-2

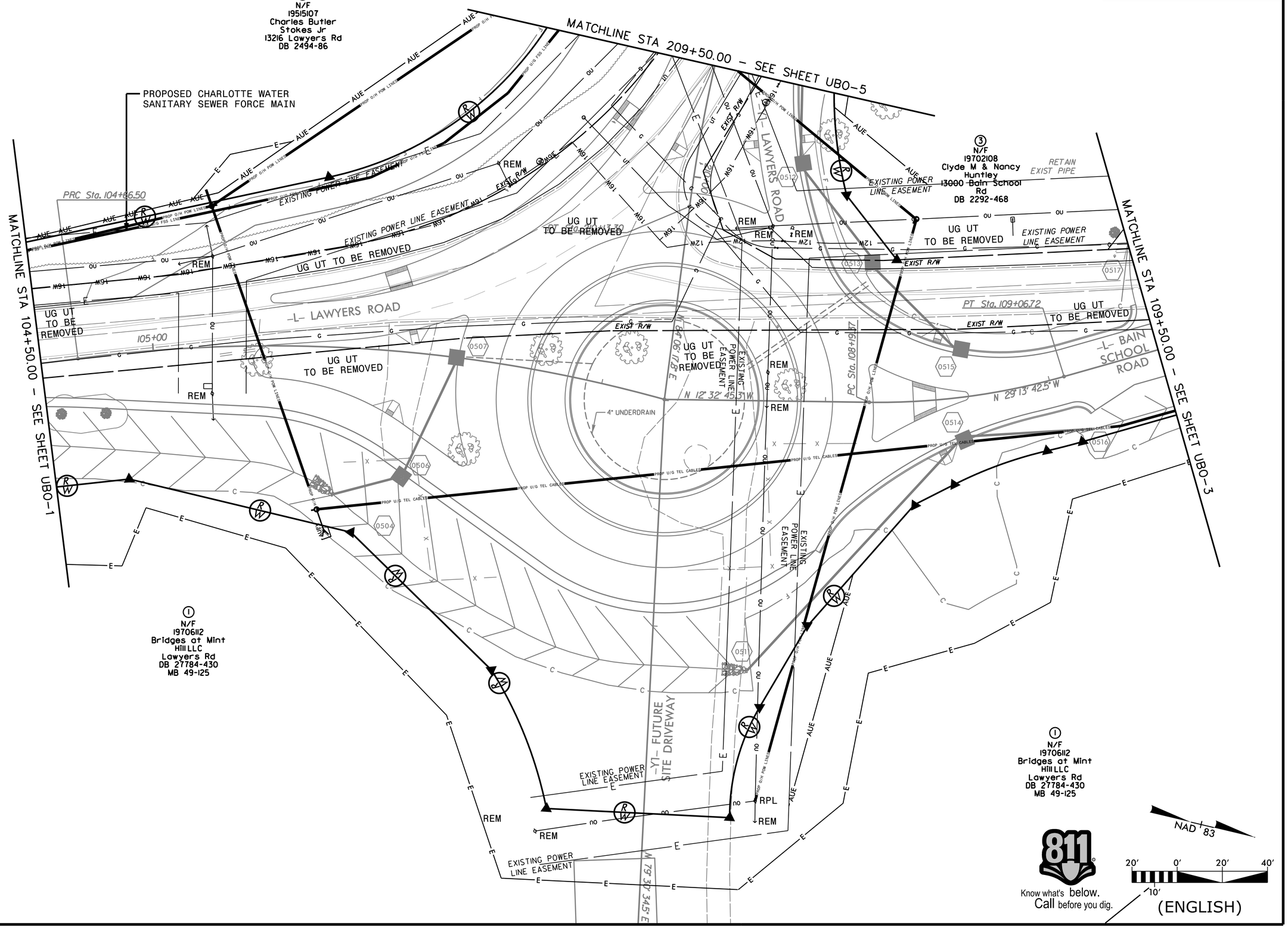


REVISIONS

8/17/99

4/16/2018
250017-RD19-UTIL01.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	UBO-3

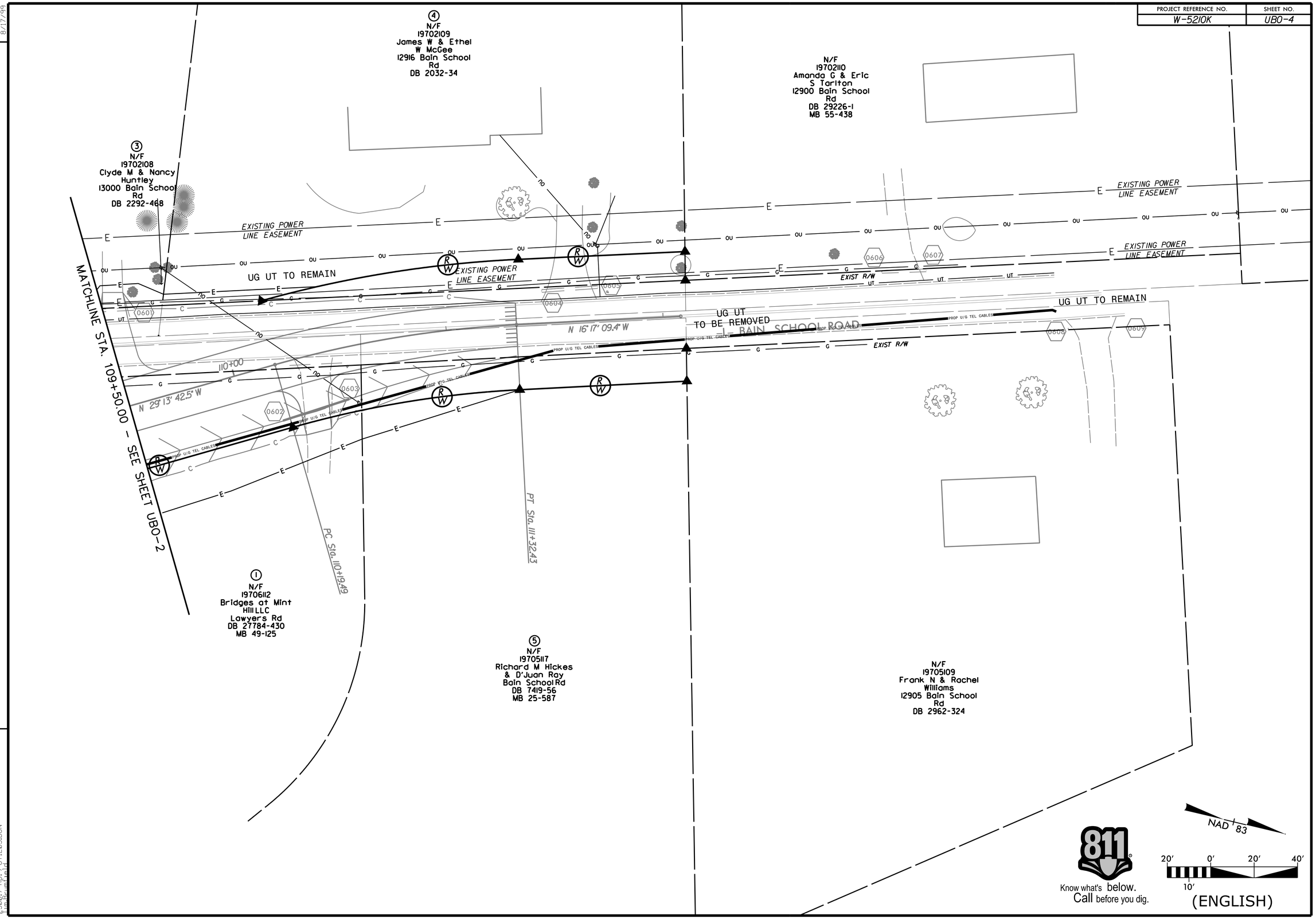


REVISIONS

8/17/99

4/16/2018
250017-RD13-UTL02.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	UBO-4

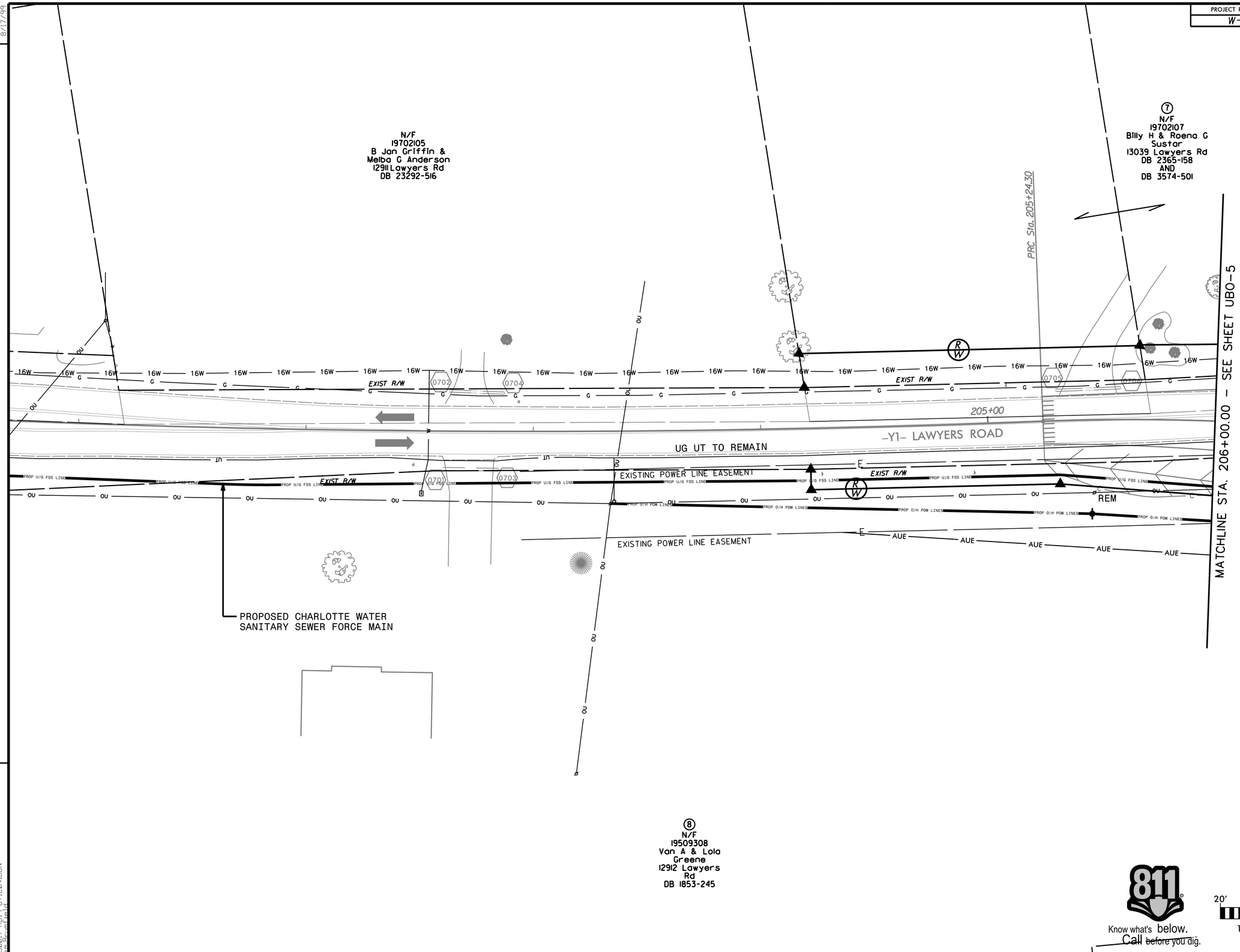


REVISIONS

8/17/99

4/16/2018
250017-RD19-UTIL03.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	UBO-5



REVISIONS

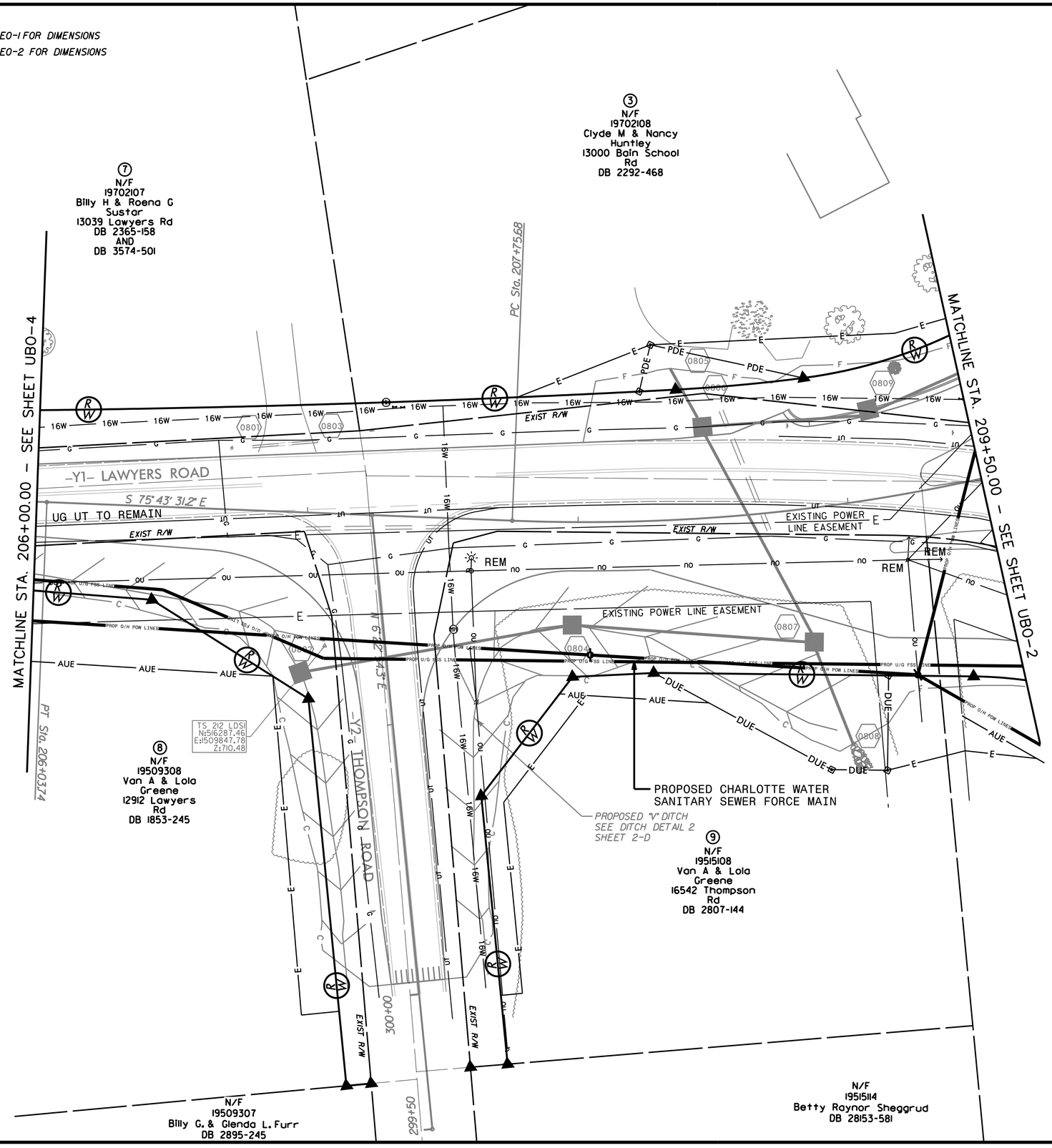
8/17/99

4/6/2018
25047-RD13-UTIL04.DGN

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	UBO-6

NOTES:

1. CONCRETE MONOLITHIC ISLAND. SEE SHEET GEO-1 FOR DIMENSIONS
2. CONCRETE MONOLITHIC ISLAND. SEE SHEET GEO-2 FOR DIMENSIONS



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4/16/2018
2500017-RD19-UTIL05.DGN
Image matched

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5210K	X	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CROSS – SECTIONS

SECTIONS	SHEET NO's.
CROSS–SECTION TITLE SHEET	X
CROSS–SECTION SUMMARY	XA
STA. 100+50 –L– TO STA. 102+00 –L–	X1
STA. 102+50 –L– TO STA. 104+00 –L–	X2
STA. 104+50 –L– TO STA. 109+50 –L–	X3
STA. 110+00 –L– TO STA. 111+50 –L–	X4
STA. 205+00 –Y1– TO STA. 206+50 –Y1–	X5
STA. 207+00 –Y1– TO STA. 208+50 –Y1–	X6
STA. 209+00 –Y1– TO STA. 213+00 –Y1–	X7
STA. 300+50 –Y2– TO STA. 301+50 –Y2–	X8

TIP PROJECT: W-5210K

CONTRACT:

4/16/2018
25001-RDIB-XSEC-COVER.dgn
Tim.Brumfield

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

CROSS-SECTION SUMMARY

Station -L-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station -L-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station -Y1-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station -Y1-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station -Y2-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station Roundabout	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
100+50	--	--	109+50	--	--	205+00	--	--	212+50	--	--	300+00	--	--		1947	1108
101+00	13	10	110+00	167	0	205+50	9	5	213+00	0	0	300+50	57	8			
101+50	23	16	110+50	86	1	206+00	20	13				301+00	158	9			
102+00	17	15	111+00	27	3	206+50	32	20				301+50	147	3			
102+50	15	19	111+50	7	1	207+00	50	26									
103+00	19	22				207+50	83	19									
103+50	37	17				208+00	111	45									
104+00	82	10				208+50	60	297									
104+50	130	8				209+00	7	510									
105+00	149	38															

REVISIONS

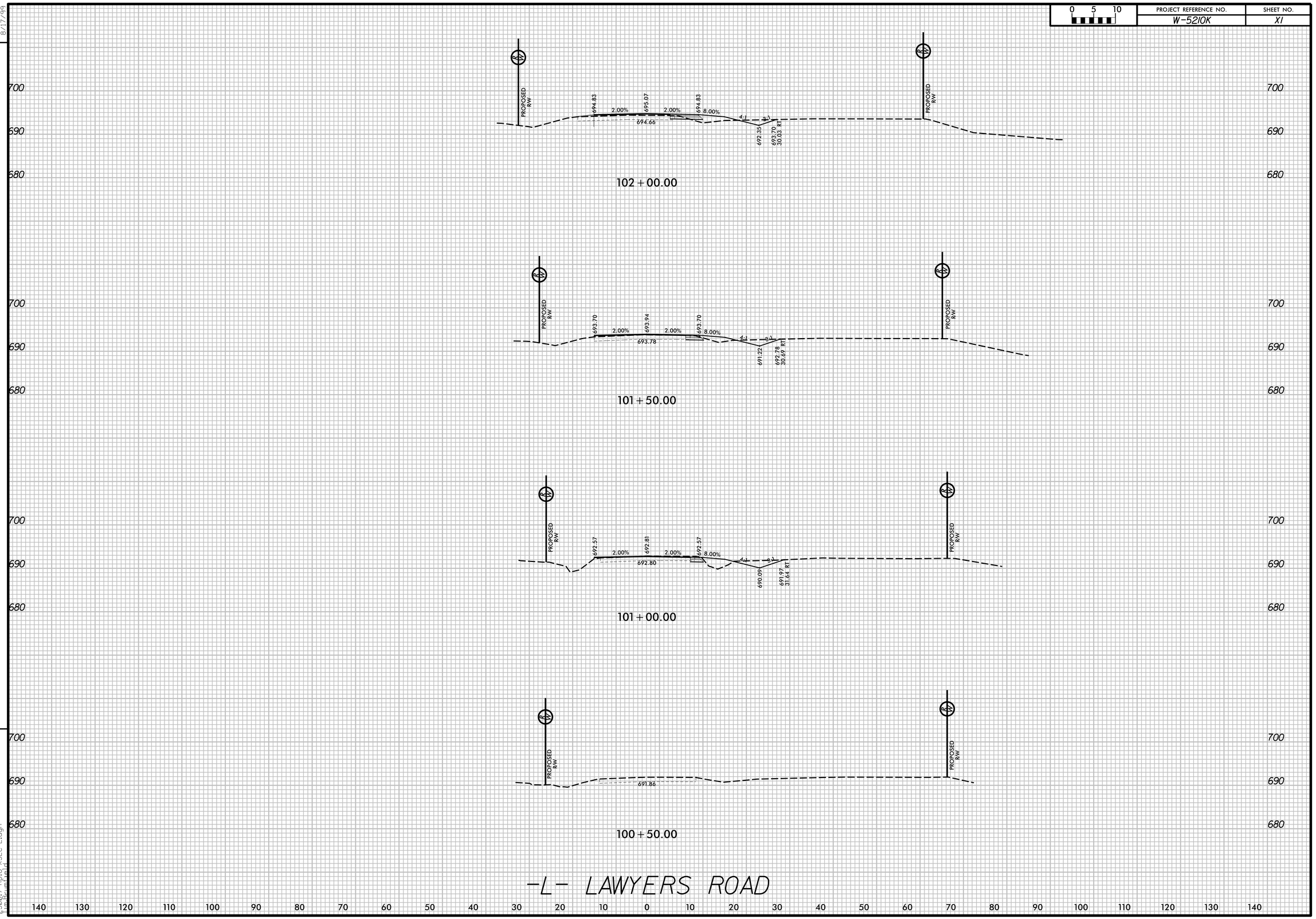
8/17/99

4/16/2018
250017-RD18-XSEC-COVER.dgn

0 5 10	PROJECT REFERENCE NO.	SHEET NO.
	W-5210K	X1

8/17/99

REVISIONS

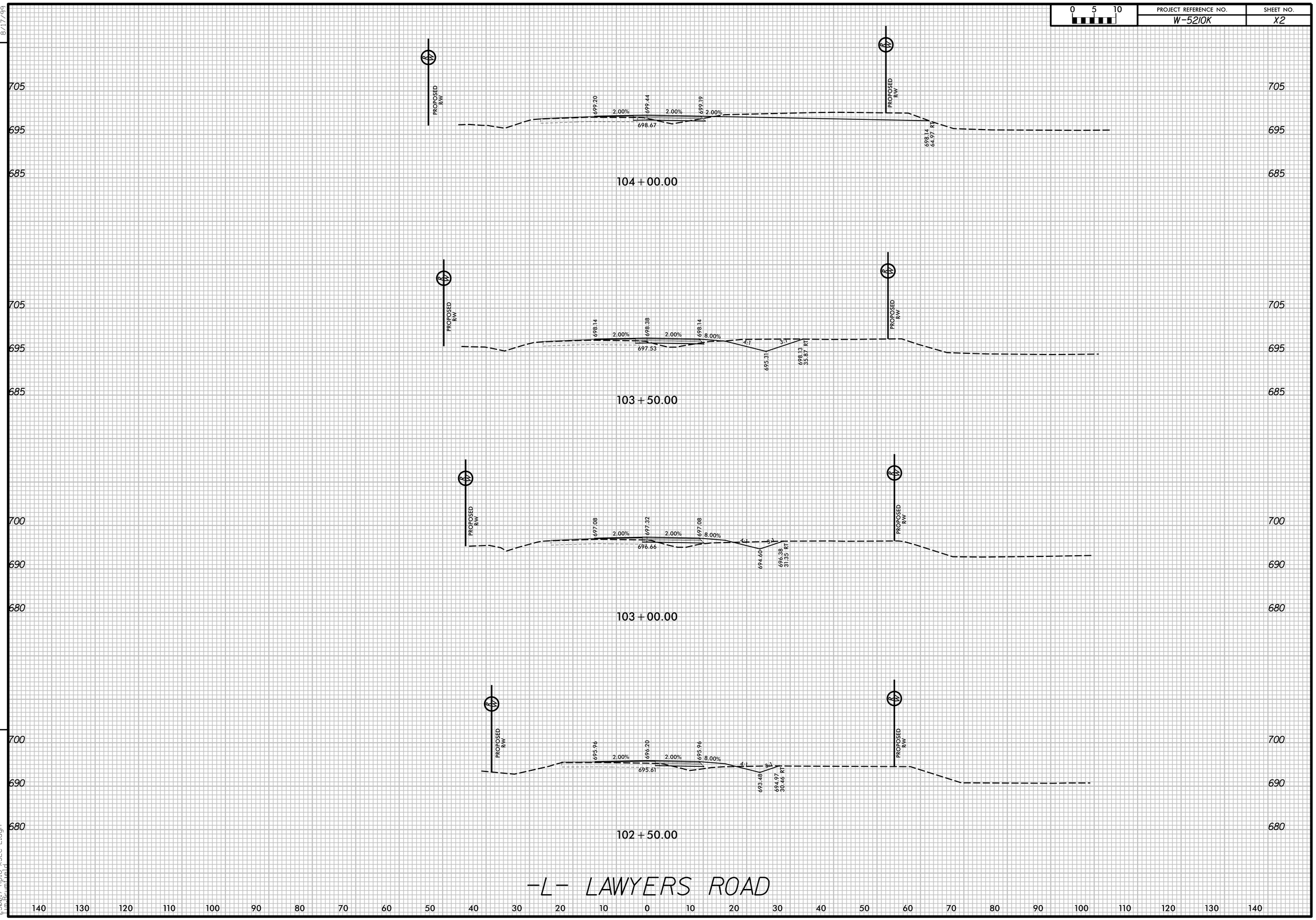


4/16/2018
25001/7-RD18-XSEC-L.dgn
jmcgrimfield

0 5 10	PROJECT REFERENCE NO.	SHEET NO.
	W-5210K	X2

8/17/99

REVISIONS



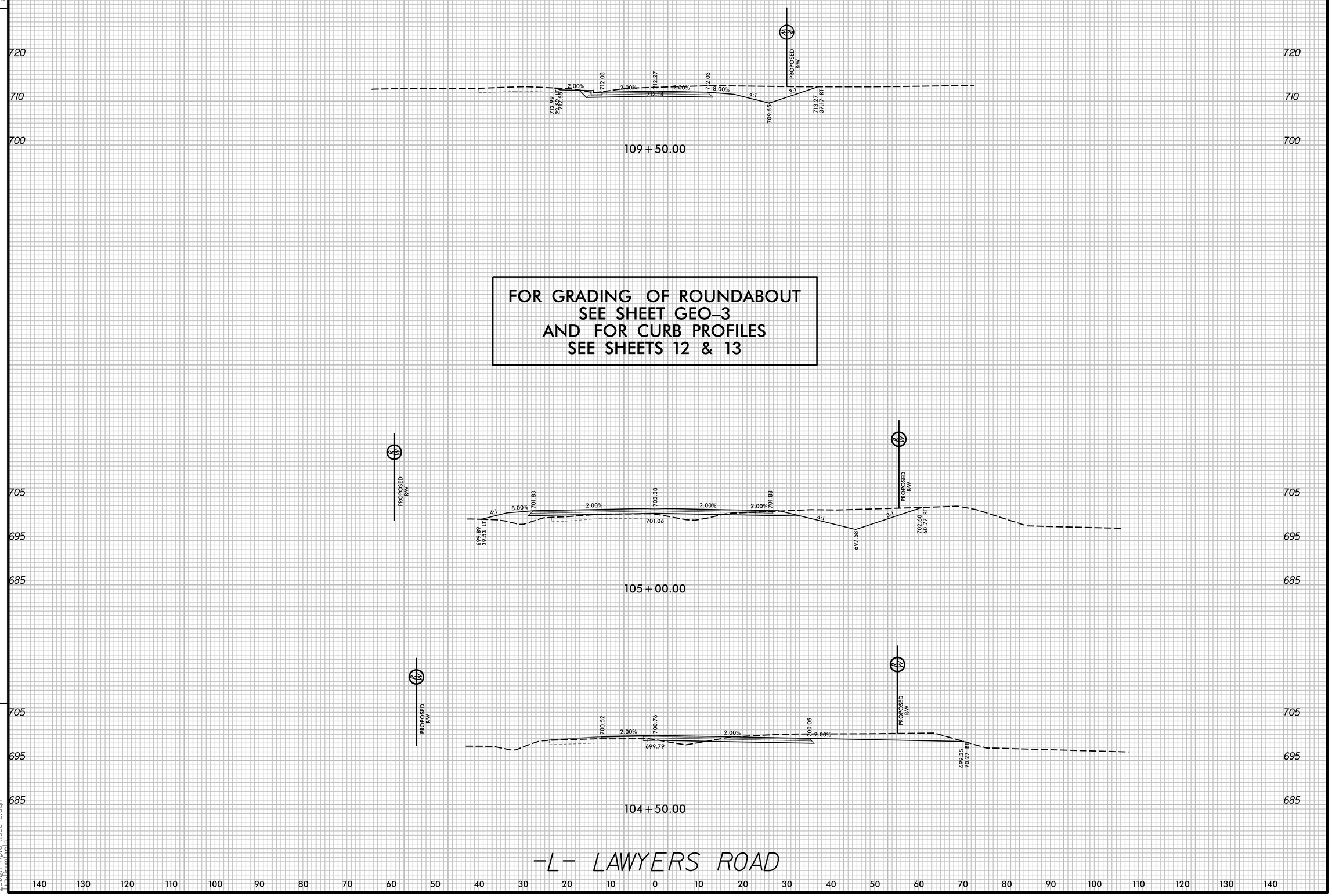
-L- LAWYERS ROAD

4/16/2018
25001/7-RD18-XSEC-L.dgn
imcarmichael

0 5 10	PROJECT REFERENCE NO.	SHEET NO.
	W-5210K	X3

8/17/99

REVISIONS



FOR GRADING OF ROUNDABOUT
SEE SHEET GEO-3
AND FOR CURB PROFILES
SEE SHEETS 12 & 13

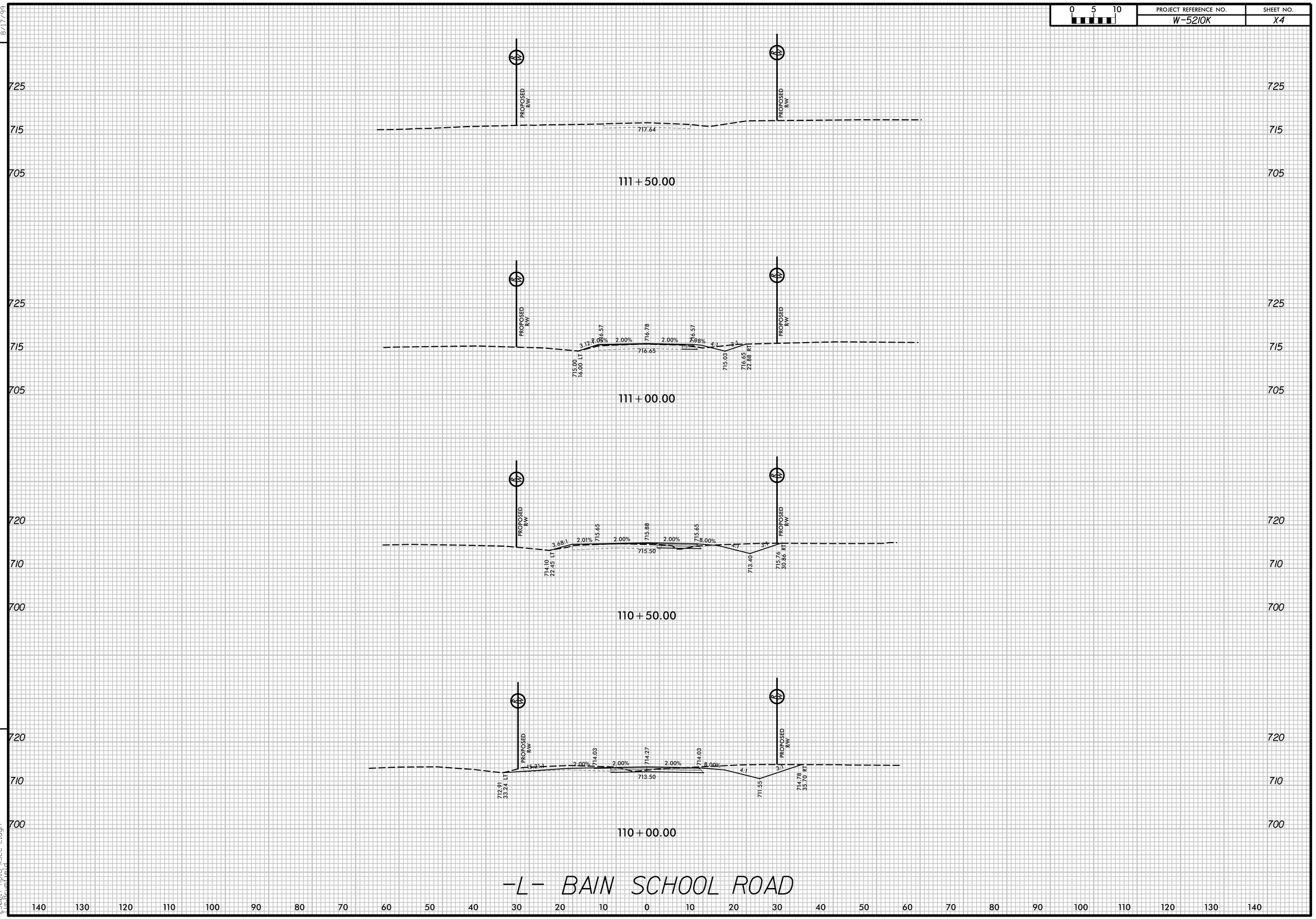
-L- LAWYERS ROAD

4/16/2018
25001/7-Rd18-XSEC-L.dgn
jmcgrumfield

0 5 10	PROJECT REFERENCE NO.	SHEET NO.
	W-5210K	X4

8/17/99

REVISIONS



4/16/2018
25001/7-R018-XSEC-L.dgn
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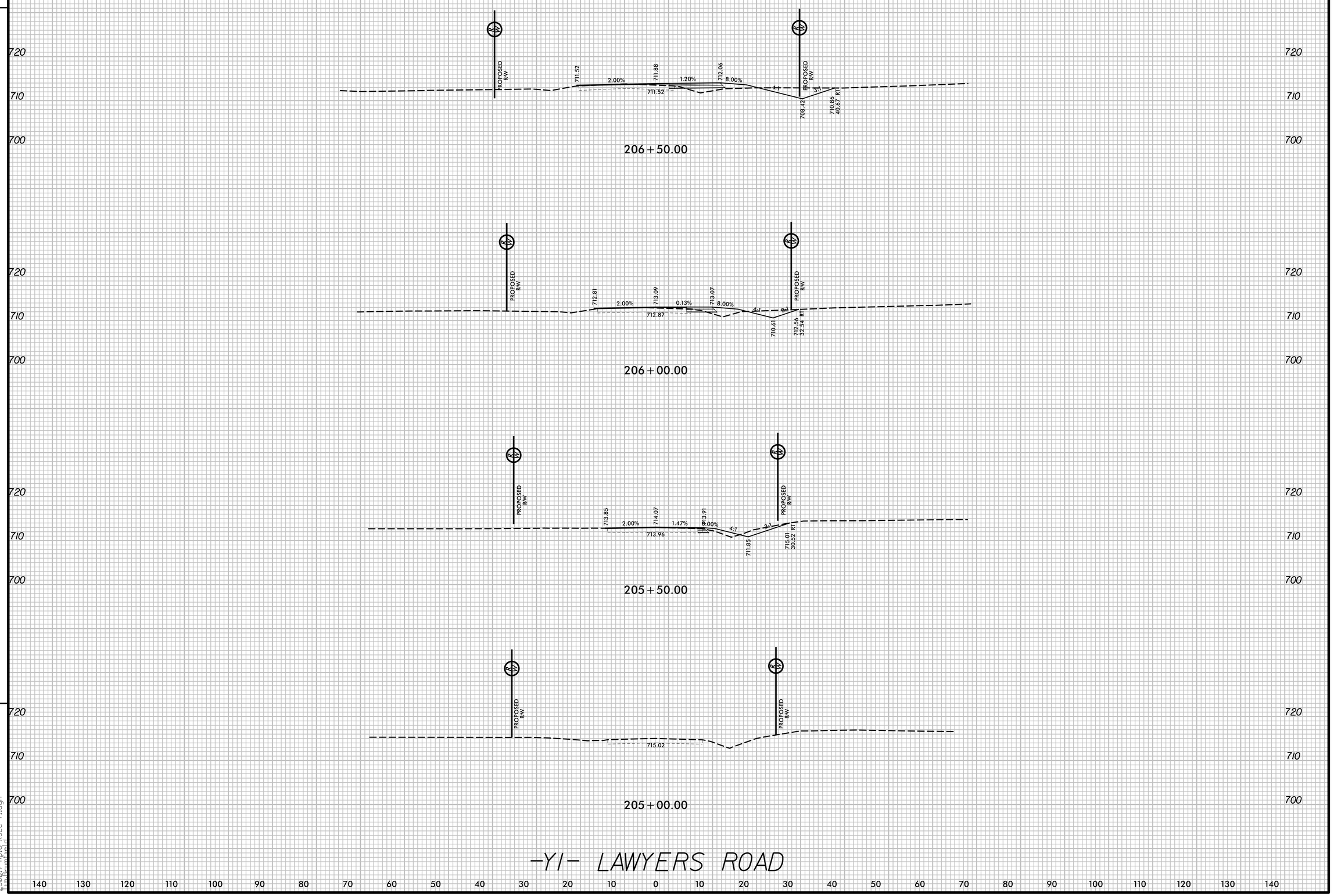
0 5 10	PROJECT REFERENCE NO.	SHEET NO.
	W-5210K	X5

8/17/99

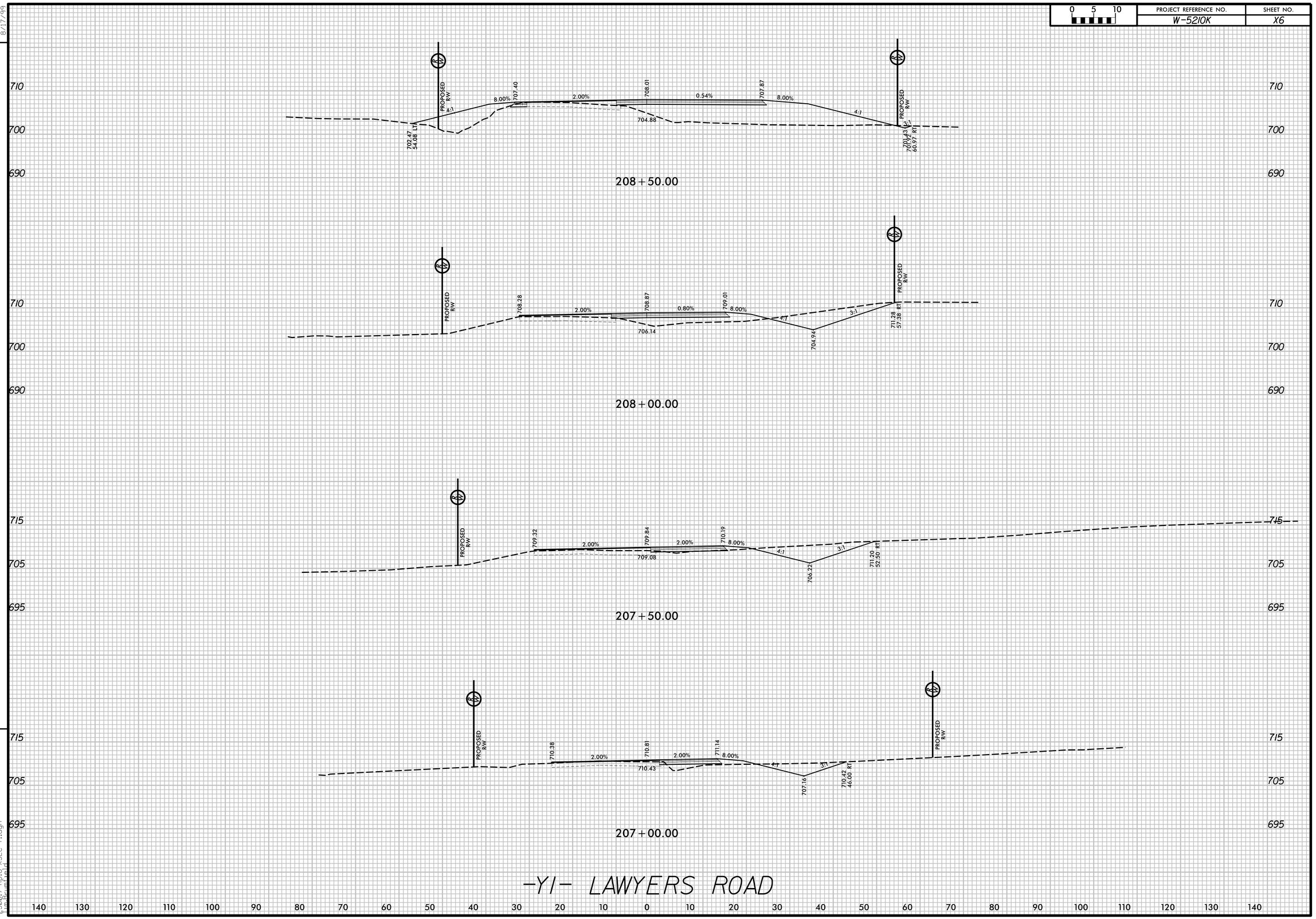
REVISIONS



4/16/2018
25001/7-RD18-XSEC-Y1.dgn

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	X6

0 5 10



REVISIONS

8/17/99

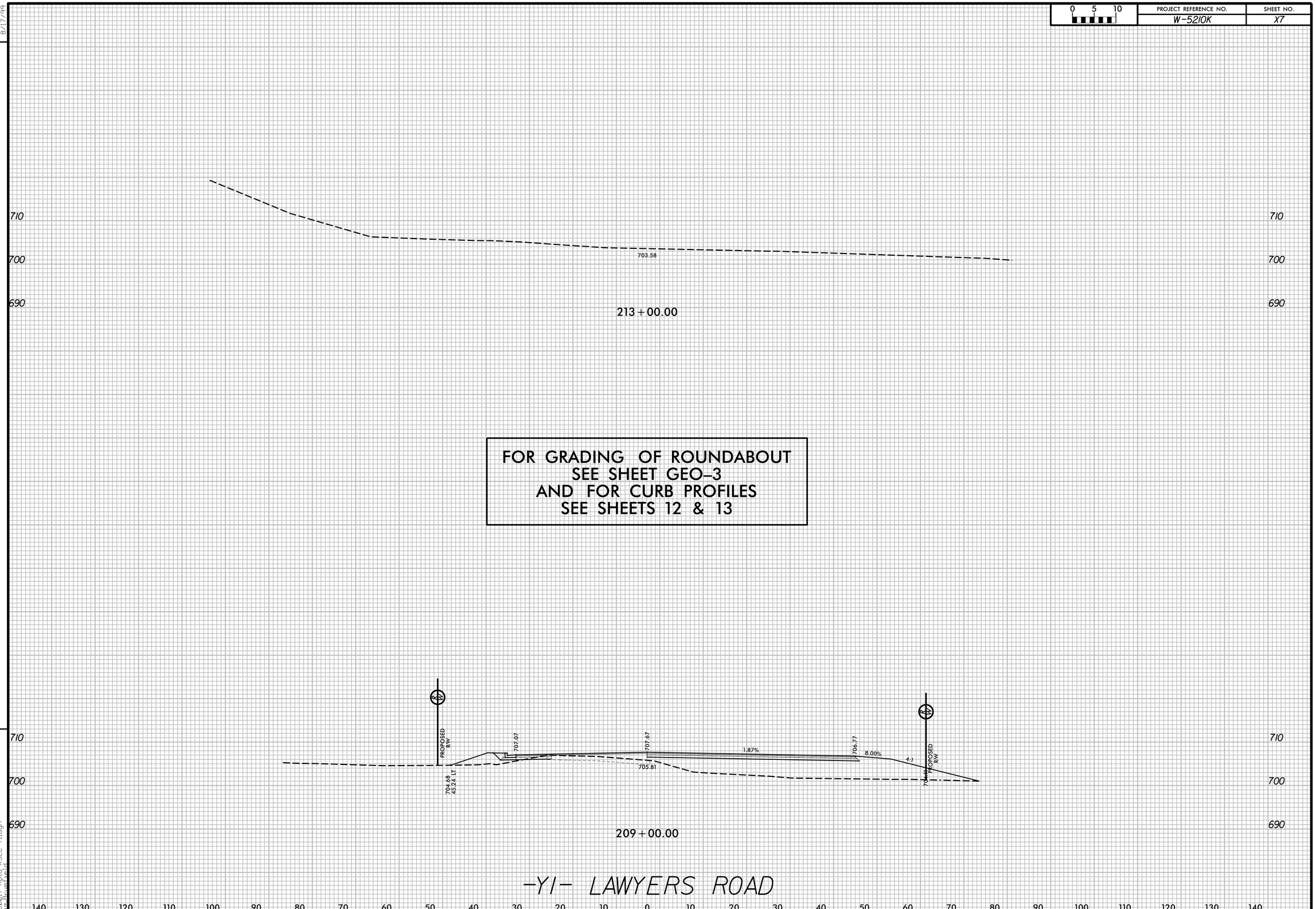
-Y1- LAWYERS ROAD

4/16/2018
25007-Rd18-XSEC-Y1.dgn
mwarren

0 5 10	PROJECT REFERENCE NO.	SHEET NO.
	W-5210K	X7

8/17/99

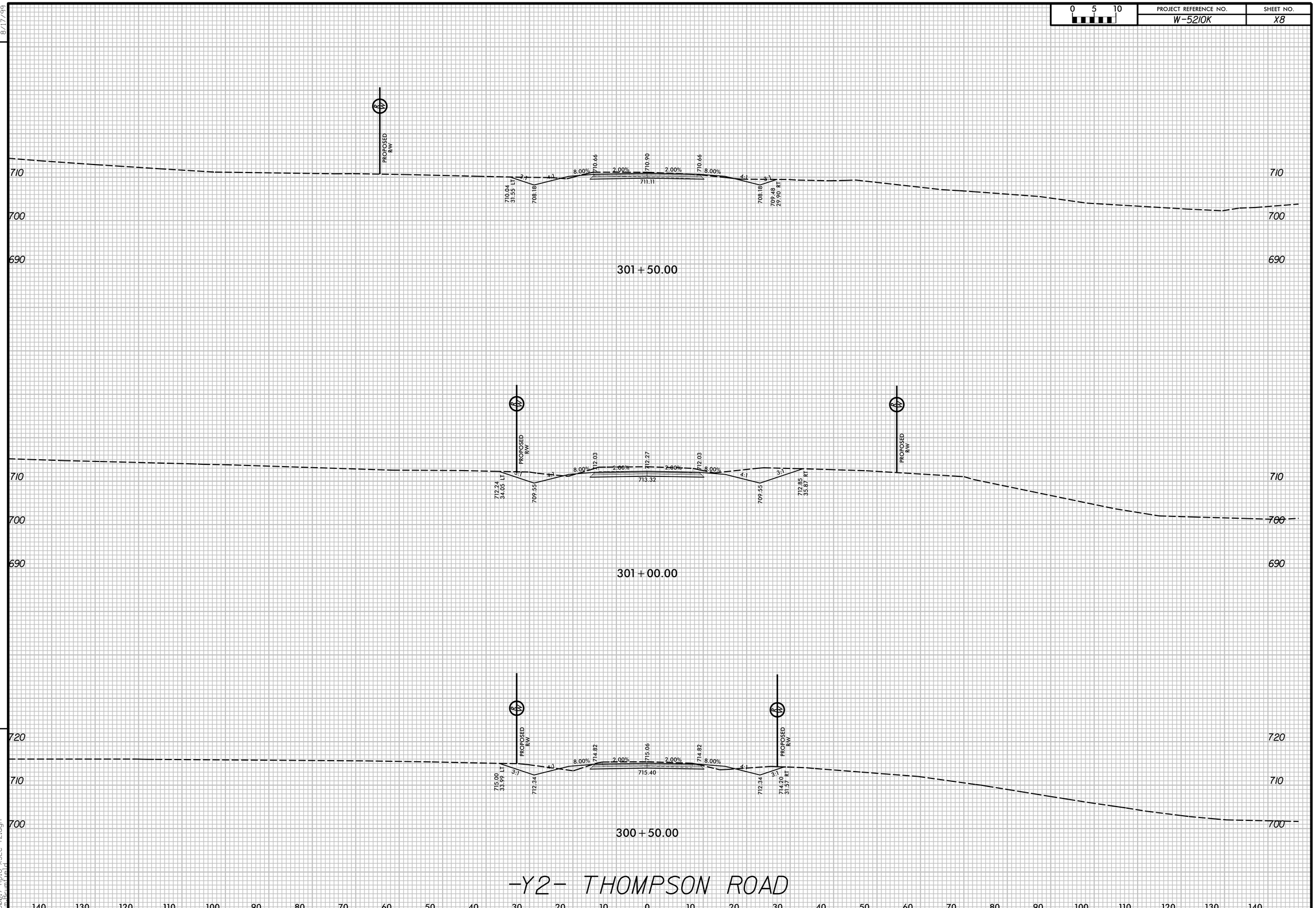
REVISIONS



4/16/2018
2:50:17 PM
R018-XSEC-Y1.dgn

PROJECT REFERENCE NO.	SHEET NO.
W-5210K	X8

0 5 10



REVISIONS

8/17/99

4/16/2018
25007-RD18-XSEC-Y2.dgn