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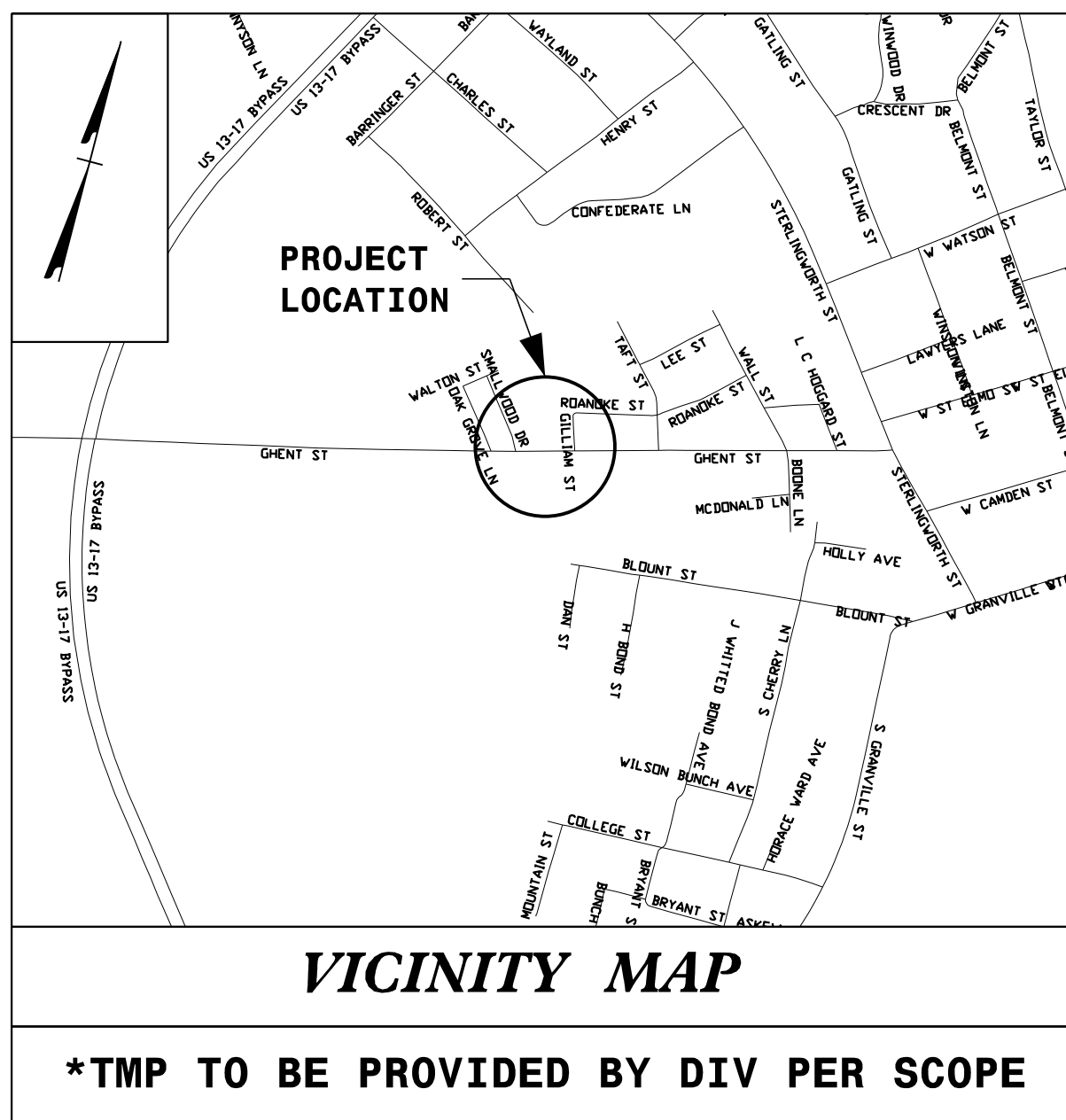
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WBS ELEMENT: 80080

CONTRACT: DA00411

See Sheet 1A For Index of Sheets

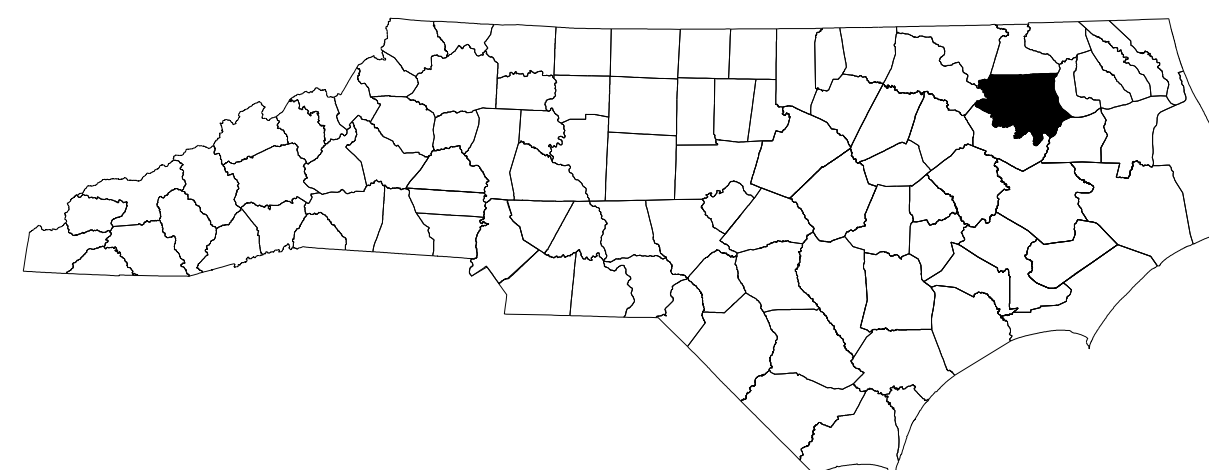


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

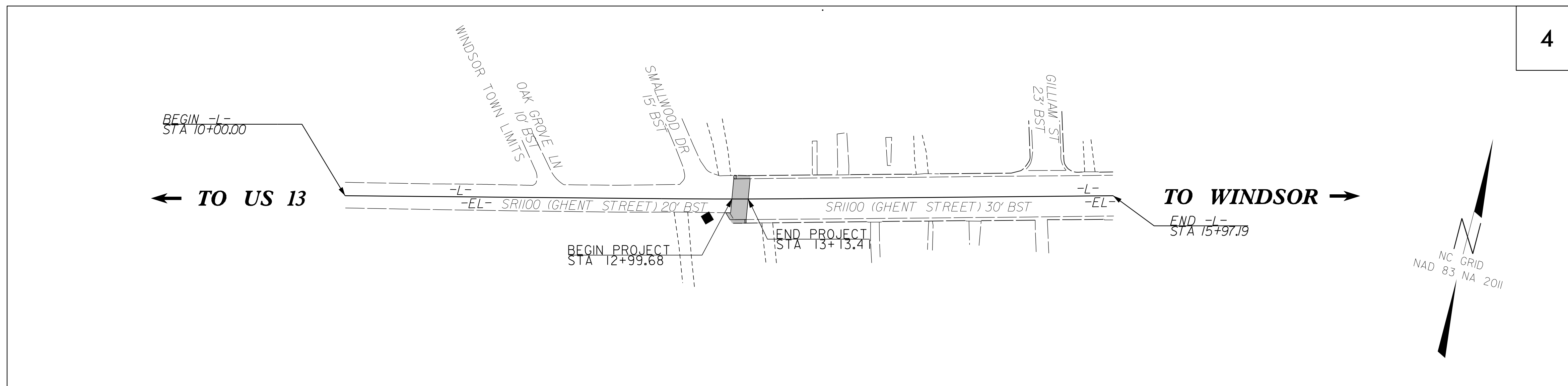
BERTIE COUNTY

**LOCATION: GHENT STREET
TOWN OF WINDSOR**

TYPE OF WORK: GRADING, DRAINAGE, AND PAVING



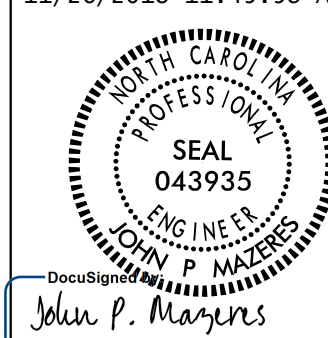
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	80080	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
80080		PE	
80080		RW	
80080		CONST	



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

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

<p>GRAPHIC SCALES</p> <p>25 22.5 0 25 50 PLANS</p> <p>25 22.5 0 25 50 PROFILE (HORIZONTAL)</p> <p>5 2.5 0 5 10 PROFILE (VERTICAL)</p>	<p>DESIGN DATA</p> <p>ADT 2017 = 1300 V = 40 MPH T = 2%</p> <p>*TTST = 1% DUAL 1%</p> <p>FUNC CLASS = MINOR COLLECTOR</p>	<p style="text-align: center;">PROJECT LENGTH</p> <p>LENGTH ROADWAY PROJECT 80080 = 0.0026 MILES LENGTH STRUCTURES PROJECT 80080 = 0.000 MILES TOTAL LENGTH PROJECT 80080 = 0.0026 MILES</p>	<p style="text-align: center;">Prepared In the Office of:</p> <p style="text-align: center;">KCA KISINGER CAMPO & ASSOCIATES</p> <p style="text-align: center;">NC FIRM LICENSE No: C-1506 4800 Six Forks Rd., Suite 120 Raleigh, NC 27609 (919)882-7839</p> <hr/> <p>RIGHT OF WAY DATE: 6/13/2018</p> <hr/> <p>LETTING DATE: 12/19/2018</p>	<p style="text-align: center;">HYDRAULICS ENGINEER</p> <p>10/17/2018 10:45:53 AM PDT</p> <p>DocuSigned by: <i>Ali Tayebzadeh</i> SEAL 043950 SIGNATURE: P.E.</p> <hr/> <p style="text-align: center;">ROADWAY DESIGN ENGINEER</p> <p>10/17/2018 10:42:23 AM PDT</p> <p>DocuSigned by: <i>John P. Mazeres</i> SEAL 043935 SIGNATURE: P.E.</p>	
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PROJECT REFERENCE NO. <i>80080</i>	SHEET NO. <i>1A</i>
ROADWAY DESIGN ENGINEER 11/26/2018 11:45:58 AM PST  SEAL 043935 JOHN P. MAYERS ENGINEER NORTH CAROLINA PROFESSIONAL	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SHEET NUMBER	INDEX OF SHEETS
	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C-1 THRU 1C-2	SURVEY CONTROL SHEET
1D-1	ALIGNMENT CONTROL SHEET
1E-1	RIGHT OF WAY CONTROL SHEET
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2D-1 THRU 2D-2	DRAINAGE DETAILS
3B-1	ROADWAY SUMMARY SHEET
4	PLAN AND PROFILE SHEET
TMP-1	TRANSPORTATION MANAGEMENT PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-6	CROSS-SECTIONS

GENERAL NOTES: 2018 SPECIFICATIONS
 EFFECTIVE: 01-16-2018

GRADING AND SURFACING:
 CLEARING:
 CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS
 ESTABLISHED BY METHOD II.

UTILITIES:
 UTILITY OWNERS ON THIS PROJECT ARE:
 TOWN OF WINDSOR (POWER, SEWER AND WATER)
 CENTURYLINK
 MEDIACOM

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY
 OTHERS.

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

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

01-16-2018
 2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard
 Drawings" Highway Design Branch - N. C. Department of
 Transportation - Raleigh, N. C., Dated January, 2018 are
 applicable to this project and by reference hereby are
 considered a part of these plans:

STD.NO. TITLE DIVISION 2 - EARTHWORK 200.02 Method of Clearing - Method II 225.02 Guide for Grading Subgrade - Secondary and Local DIVISION 3 - PIPE CULVERTS 300.01 Method of Pipe Installation DIVISION 8 - INCIDENTALS 806.01 Concrete Right-of-Way Marker 840.03 Frame, Grates and Hood - for Use on Standard Catch Basin 840.24 Frames and Narrow Slot Sag Grates 840.72 Pipe Collar 846.01 Concrete Curb, Gutter and Curb & Gutter 876.02 Guide for Rip Rap at Pipe Outlets	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
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12/2/2016

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
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	☠ S ☠
Potential Contamination Area: Soil	☠ S ☠
Known Contamination Area: Water	☠ W ☠
Potential Contamination Area: Water	☠ W ☠
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	-----
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	◆
Exist Permanent Easement Pin and Cap	◇
New Permanent Easement Pin and Cap	◆
Vertical Benchmark	▲
Existing Right of Way Marker	△
Existing Right of Way Line	---
New Right of Way Line	○ R W
New Right of Way Line with Pin and Cap	○ R W ▲
New Right of Way Line with Concrete or Granite R/W Marker	▲ R W
New Control of Access Line with Concrete C/A Marker	▲ C/A
Existing Control of Access	○ C/A
New Control of Access	○ C/A
Existing Easement Line	---
New Temporary Construction Easement	---
New Temporary Drainage Easement	---
New Permanent Drainage Easement	---
New Permanent Drainage / Utility Easement	---
New Permanent Utility Easement	---
New Temporary Utility Easement	---
New Aerial Utility Easement	---

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	---T---
Proposed Guardrail	---T---
Existing Cable Guiderail	---□---
Proposed Cable Guiderail	---□---
Equality Symbol	⊕
Pavement Removal	⊗

VEGETATION:

Single Tree	☼
Single Shrub	☼

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	---
Footbridge	---
Drainage Box: Catch Basin, DI or JB	CB
Paved Ditch Gutter	---
Storm Sewer Manhole	⊕
Storm Sewer	S

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	---
H-Frame Pole	●
U/G Power Line LOS B (S.U.E.*)	---P---
U/G Power Line LOS C (S.U.E.*)	---P---
U/G Power Line LOS D (S.U.E.*)	---P---
O/H Power Cable	P1

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	PH
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---
O/H Telephone Cable	T1
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	⊕
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	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	PH
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	⊕
Utility Unknown U/G Line LOS B (S.U.E.*)	---TU/L---
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	UST
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

PROJECT REFERENCE NO.	SHEET NO.
80080	1C-1
Location and Surveys	
PROJECT SURVEYOR	

SURVEY CONTROL SHEET SR-1100

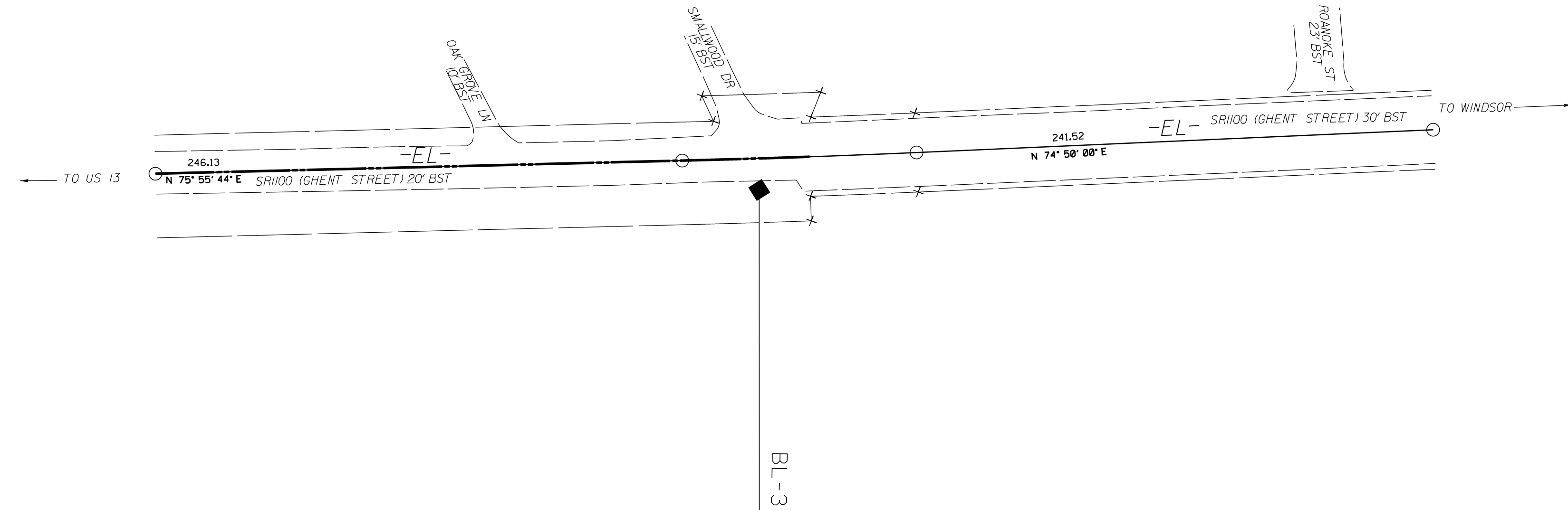
W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION



REVISIONS

SR 1100-1 (GPS MON)

SR 1100-2 (GPS MON)



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "US17-2"

WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
 NORTHING: 820947.72(±) EASTING: 2605306.88(±)
 ELEVATION: 32.66(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999959214

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "US17-2" TO -EL- 10+00 STATION IS
 N 29° 57' 01.32 W 3,414.36 (±)

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

NOTES:

- IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

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 USER: amc

PROJECT REFERENCE NO. 80080	SHEET NO. 1C-2
Location and Surveys	
PROJECT SURVEYOR	

SURVEY CONTROL SHEET SR-1100

W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

CONTROL DATA

BL	POINT	DESC.	NORTH	EAST	ELEVATION
SR11001	GPS MON	SR1100-	823603.3200	2602223.4200	29.66
SR11002	GPS MON	SR1100-	823807.7930	2603134.0950	31.84
BL3		BL-3	823960.4244	2603879.0995	29.52

BENCHMARK DATA

.....
 BM10 ELEVATION = 33.61
 N 823911 E 2603538
 R/R SPIKE 30" PINE

EXISTING ALIGNMENT

EL	POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT		823906.124	2603602.260							
LINE				N 75°55'43.6" E	246.13					
PC		823965.965	2603841.005							
CURVE				N 75°22'52.0" E	109.53	01°05'43.3"(LT)	01°00'00.0"	109.54	54.77	5729.58
PT		823993.610	2603946.994							
LINE				N 74°50'00.3" E	241.52					
POT		824056.798	2604180.100							

NOTES:

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2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

REVISIONS

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6/27/19

PROJECT REFERENCE NO.	SHEET NO.
80080	1D-1
Location and Surveys	
PROJECT SURVEYOR	

PROPOSED ALIGNMENT CONTROL SHEET SR-1100

REVISIONS
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 USER: amesw10

L			
TYPE	STATION	NORTH	EAST
POT	10+00.00	823906.1239	2603602.2600
PC	12+46.13	823965.9651	2603841.0053
PT	13+55.69	823993.6166	2603947.0170
POT	15+97.19	824056.7991	2604180.1008

NOTES:

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RIGHT OF WAY CONTROL SHEET

ROW MARKER PERMANENT EASEMENT -E

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+80.30	33.72	823941.7112	2603882.5178
L	12+82.82	30.00	823945.9462	2603884.0448
L	13+03.19	-30.00	824009.1391	2603888.7014
L	13+03.49	51.33	823930.5311	2603909.5540
L	13+04.34	144.28	823840.8152	2603933.8934
L	13+05.26	45.77	823936.3529	2603909.8713
L	13+13.98	18.50	823964.9598	2603911.4301
L	13+18.81	255.47	823737.0884	2603976.6368
L	13+20.06	-18.50	824002.2876	2603907.8736
L	13+23.40	280.00	823714.6020	2603987.5620
L	13+27.24	253.74	823741.0121	2603984.7125
L	13+45.13	250.13	823749.3253	2604001.8228
L	13+55.69	-158.58	824146.6769	2603905.5264
L	13+56.47	247.88	823754.5703	2604012.6182
L	13+61.12	272.45	823732.0824	2604023.5403
L	13+62.14	-155.56	824145.4446	2603912.5385
L	13+65.89	-181.42	824171.3803	2603909.3941
L	13+80.41	-146.99	824141.9513	2603932.4171
L	13+86.95	-143.92	824140.6998	2603939.5389
L	13+97.57	-166.55	824165.3225	2603943.8659


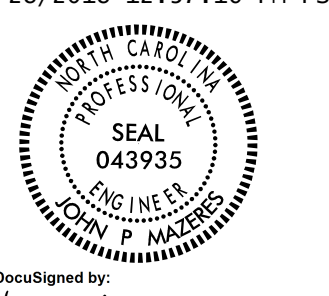

REVISIONS

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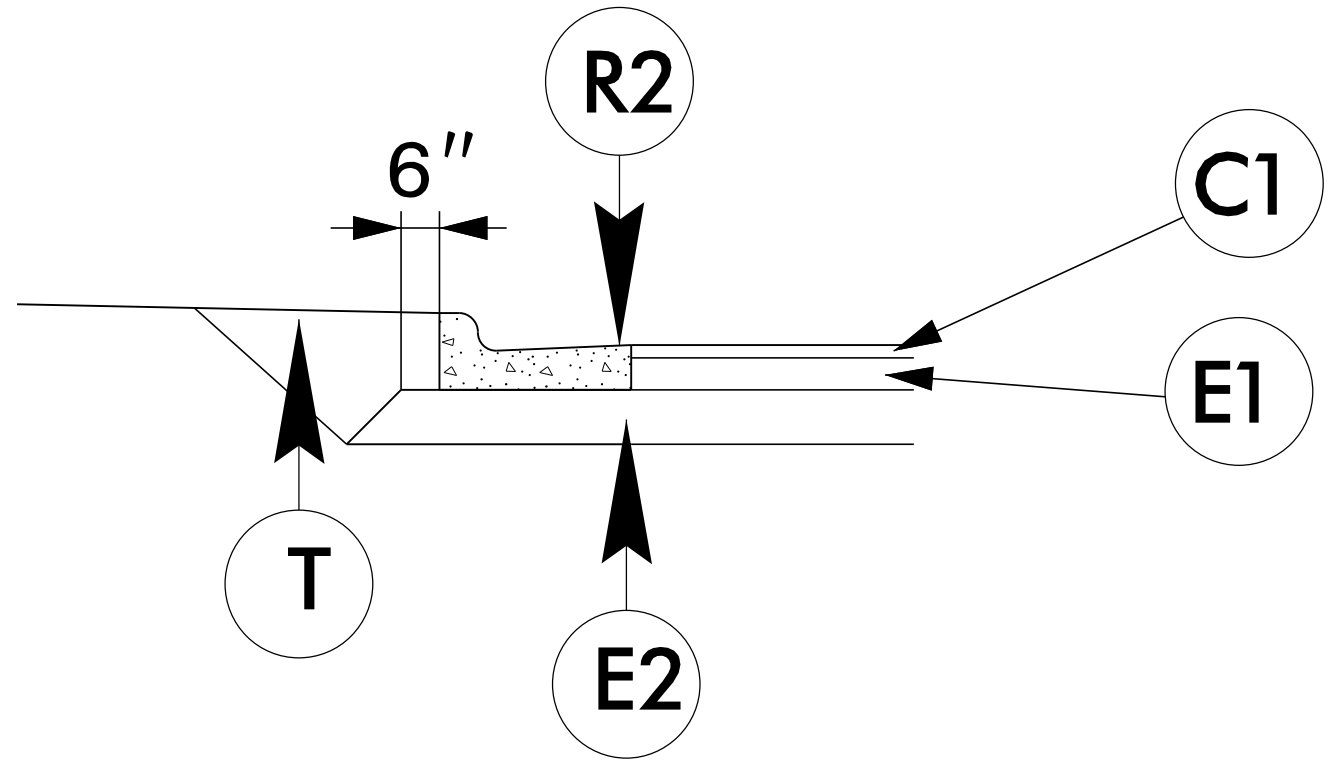
NOTES:

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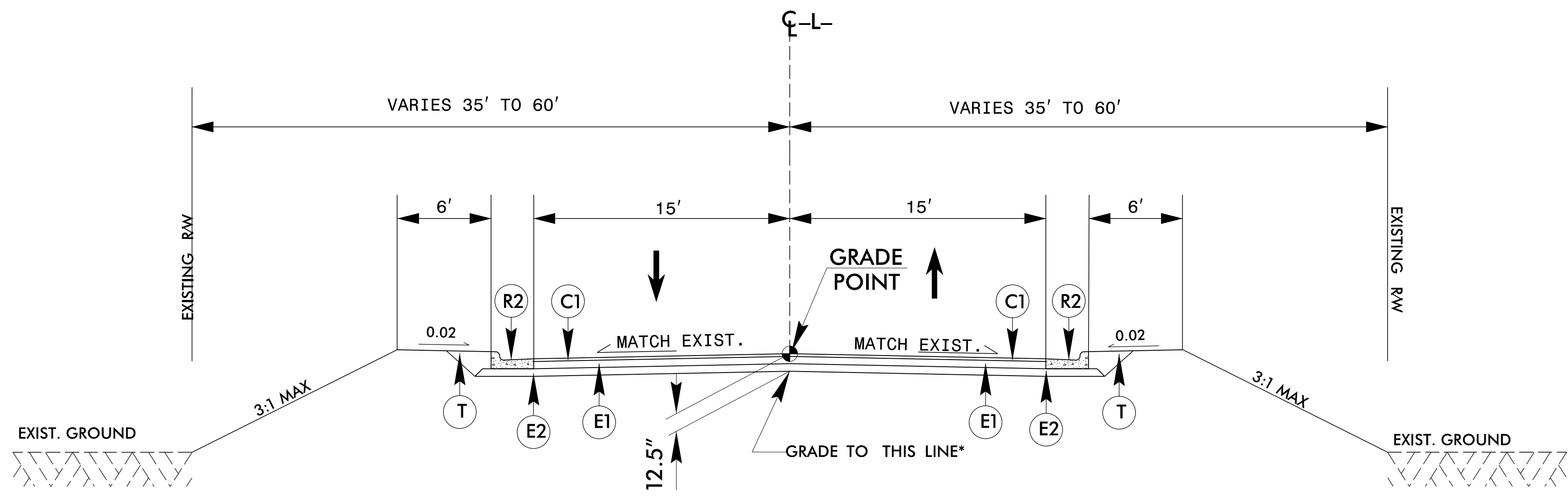
6/2/2018

PROJECT REFERENCE NO. 80080	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER 11/28/2018 12:37:16 PM PST	PAVEMENT DESIGN ENGINEER 11/28/2018 12:37:16 PM PST
	
DocuSigned by: John P. Mazers	DocuSigned by: John P. Mazers
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PREPARED IN THE OFFICE OF:	 <small>NC FIRM LICENSE No: C-1506 4800 Six Forks Rd., Suite 120 Raleigh, NC 27609 (919)882-7839</small>

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S 9.5B (PG 64-22), AT AN AVERAGE RATE OF 220 LBS. PER SQ. YD.
E1	PROP. APPROX. 5.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 PER SQ. YD.
E2	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS PER SQ. YD.
R2	2'-6" CONCRETE CURB AND GUTTER.
T	EARTH MATERIAL.



CURB AND GUTTER PAVING DETAIL TO BE USED WITH TYPICAL NO. 1



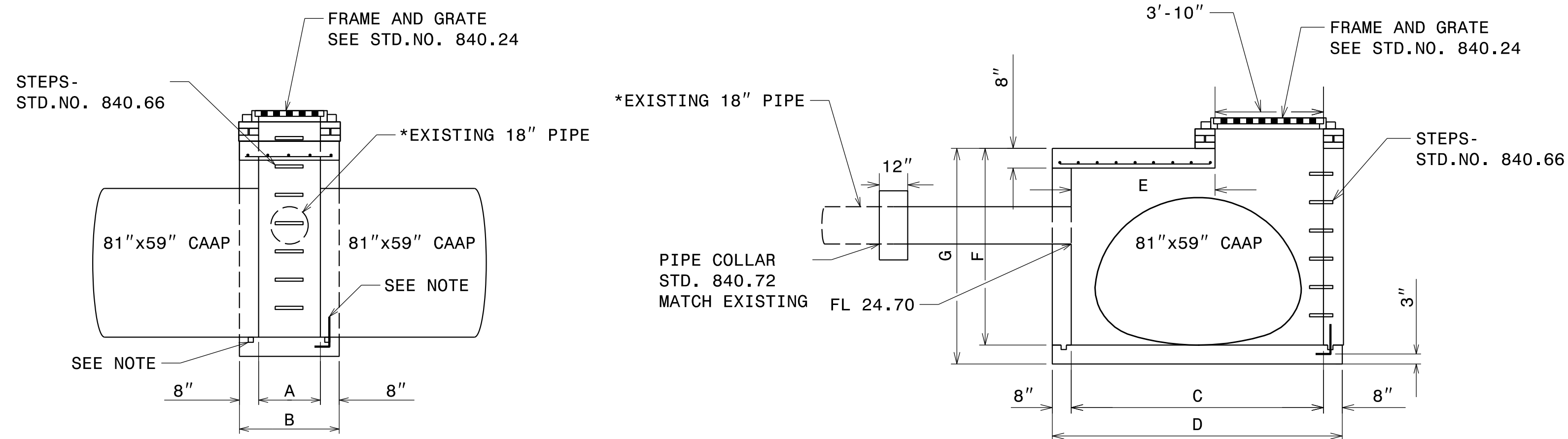
TYPICAL NO. 1
 -L- (SR 1100)
 DESIGN SPEED: 40 MPH
 USE TYPICAL SECTION NO. 1
 -L- STA. 12+95.99 TO STA. 13+13.41

*NOTE: USE AGGREGATE BASE COURSE OVER #57 STONE PIPE BACKFILL TO REQUIRED SUBGRADE ELEVATION. (SEE SHEET 2D-2)

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

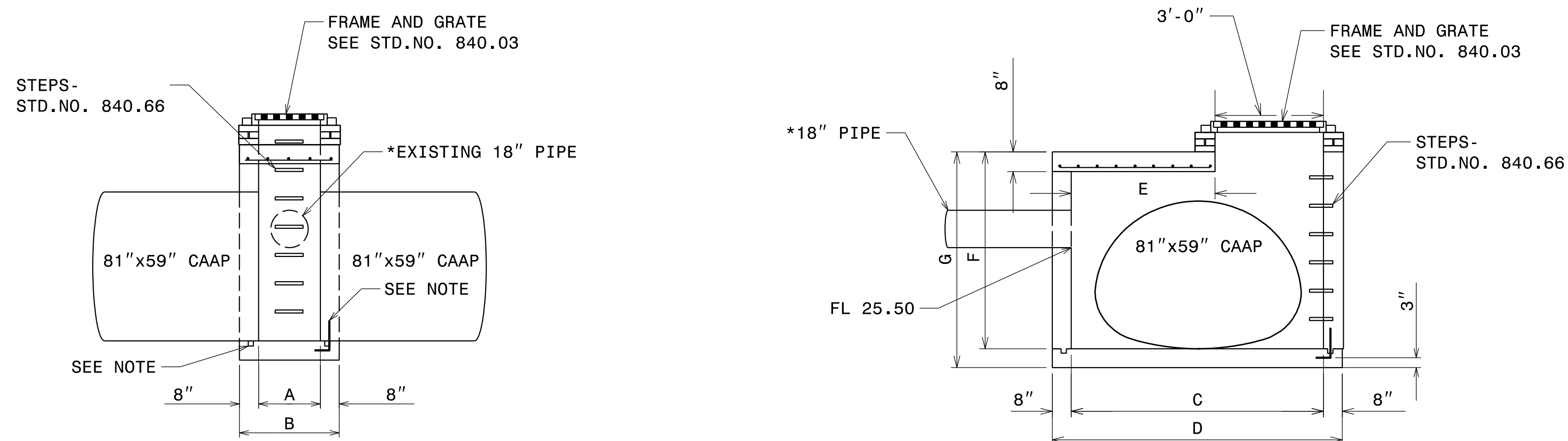
PROJECT REFERENCE NO.	SHEET NO.
80080	2D-1



STR. No.	A	B	C	D	E	F	G
0501	2'-2"	3'-6"	8'-6"	9'-10"	4'-8"	6'-7"	7'-3"
0504	2'-2"	3'-6"	10'-6"	11'-10"	6'-8"	6'-7"	7'-3"

*ONLY APPLIES TO STRUCTURE 0501

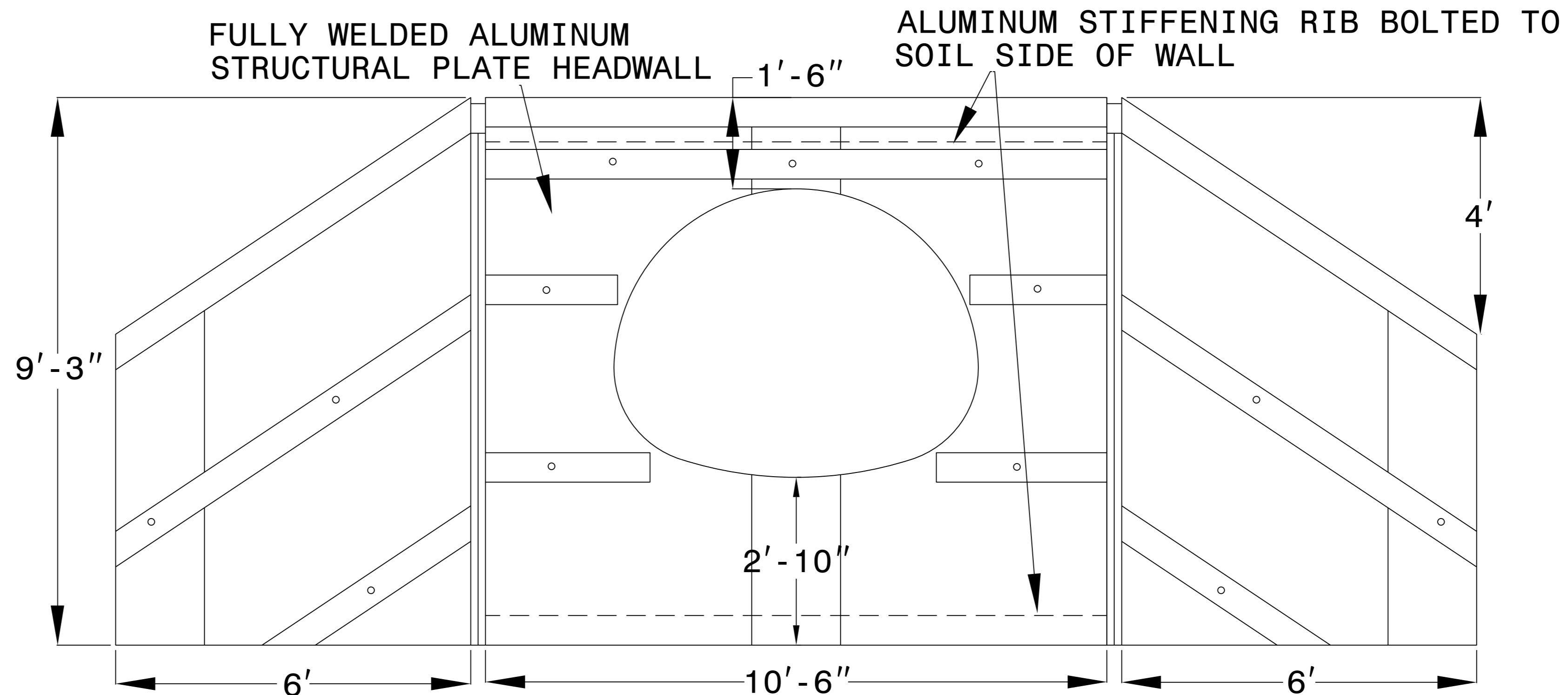
GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
INSTALL STD. 840.24 FRAME AND GRATE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.



STR. No.	A	B	C	D	E	F	G	TYPE
0502	2'-6"	3'-10"	9'-6"	10'-10"	6'-7"	6'-7"	7'-3"	F
0503	2'-6"	3'-10"	10'-6"	11'-10"	7'-6"	6'-7"	7'-3"	G

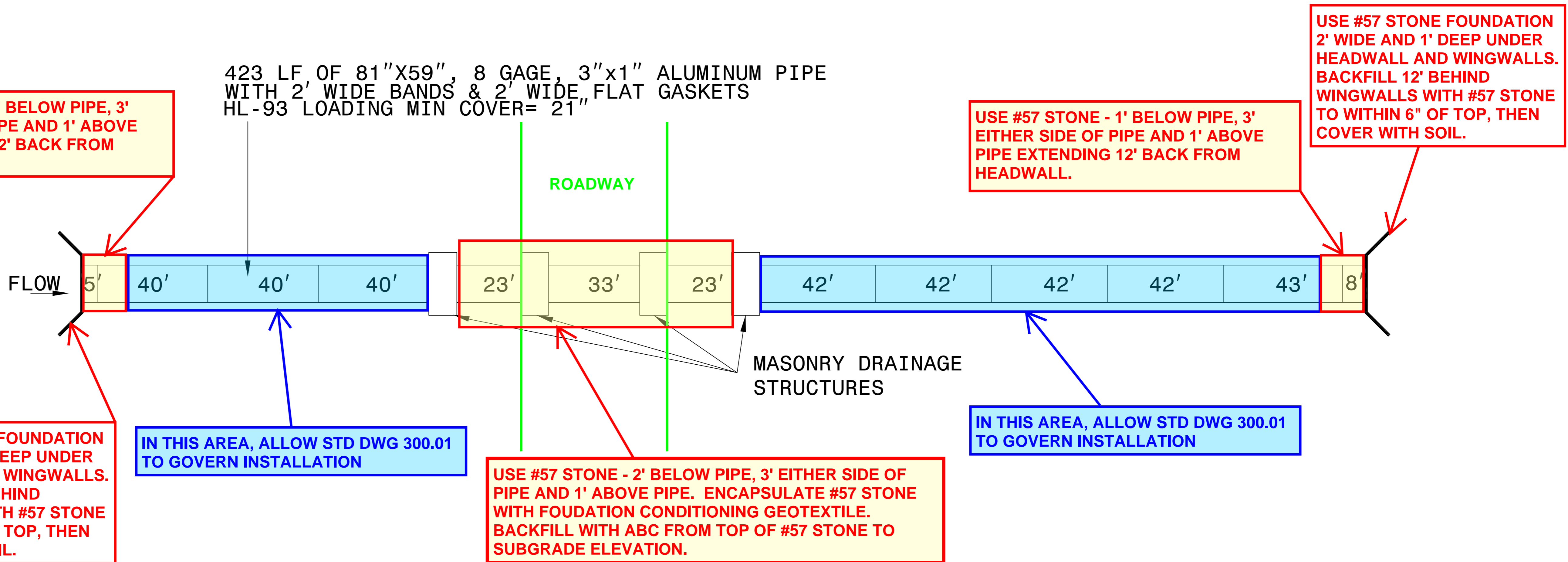
*ONLY APPLIES TO STRUCTURE 0503

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
INSTALL STD. 840.03 FRAME AND GRATE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.



END VIEW- INLET & OUTLET HEADWALL

423 LF OF 81"X59", 8 GAGE, 3"x1" ALUMINUM PIPE WITH 2' WIDE BANDS & 2' WIDE FLAT GASKETS
HL-93 LOADING MIN COVER= 21"



28-NOV-2018 12:05 C:\Users\jvopoff\OneDrive\Documents\Projects\Planning & Programming\2) Non-STIP (Division Managed)\80080 (Windsor - Ghent Street Drainage)\100% Plans\80080_Microstation_Files_11-8-2018\Hydraulics\80080_rdy_Drainage_Structure\2d\2d.dwg

12/06/07

COMPUTED BY: AJM DATE: 3/7/18
CHECKED BY: JPM DATE: 8/08/18

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. 80080 SHEET NO. 3B-1
KCA KISINGER CAMPO & ASSOCIATES
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SUMMARY OF EARTHWORK

Table with columns: Station, Station, Uncl. Excav., Embank. +25%, Borrow, Waste. Includes project totals and grand totals for earthwork quantities.

COMPUTED BY: EA DATE: 3/7/18
CHECKED BY: AT DATE: 8/08/18

CURB AND GUTTER SUMMARY

Table with columns: Line, Station, Station, Length. Includes total length of 10.0 and a note 'SAY: 10'.

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

Large table listing pipe details for diameters 54 inches and over. Columns include station, structure no., invert elevations, pipe class (R.C. PIPE, C.A.A PIPE, STRUCTURAL PLATE PIPE), endwalls, frames/grates, and remarks.

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

Large table listing pipe details for diameters 48 inches and under. Columns include station, structure no., invert elevations, pipe class (SIDE DRAIN PIPE, C.S. PIPE, R.C. PIPE CLASS III/IV), endwalls, frames/grates, and remarks.

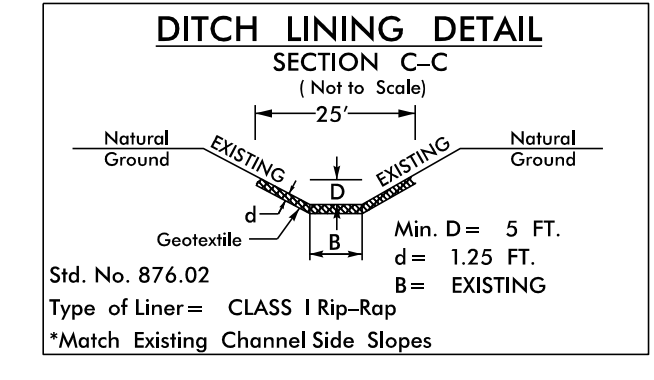
Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

10/12/2018 10:56:00 AM C:\p\production\1201710-SESC-Div1\Task8-Ghent Street Drainage\Roadway\80080.rdy_Sum.dgn

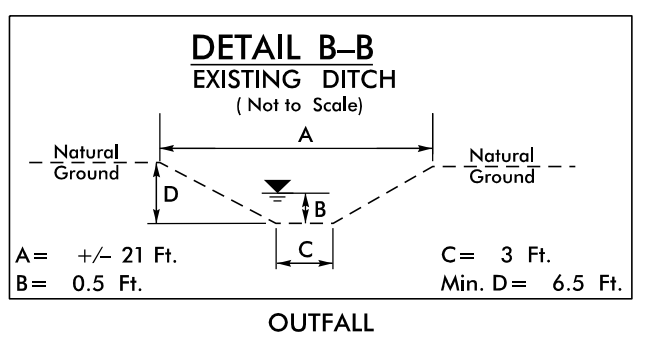
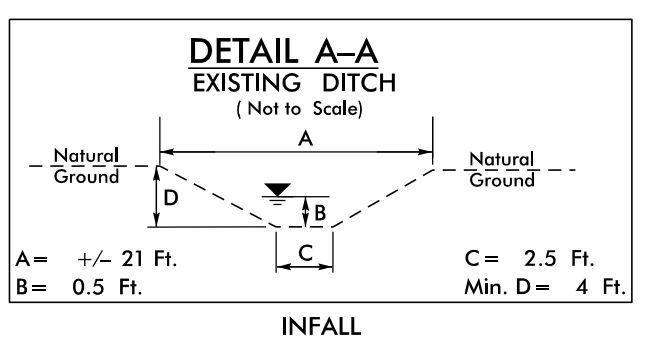
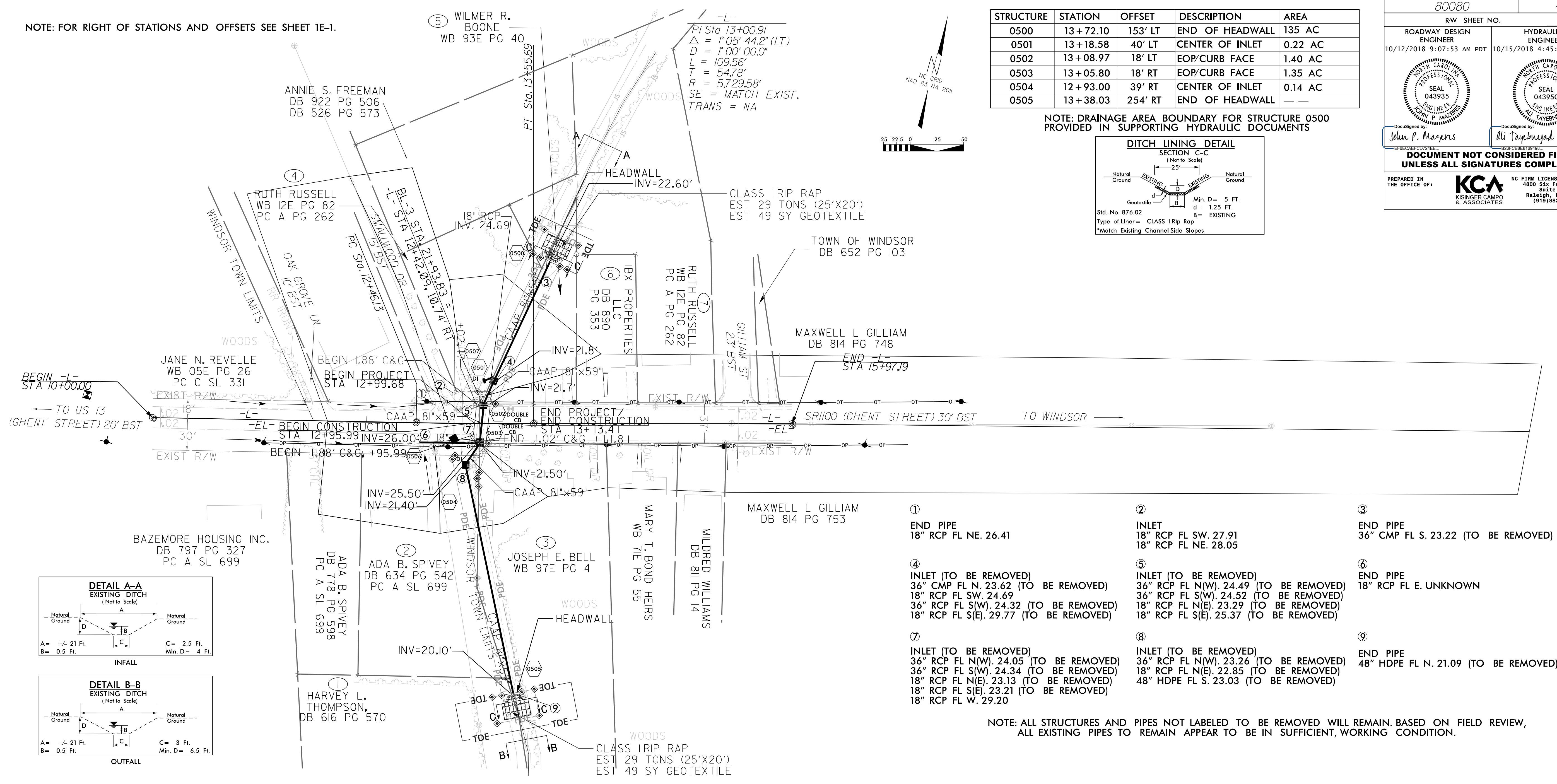
PROJECT REFERENCE NO. 80080	SHEET NO. 4
ROADWAY DESIGN ENGINEER 10/12/2018 9:07:53 AM PDT	HYDRAULICS ENGINEER 10/15/2018 4:45:43 AM PDT
DocuSigned by: John P. Margers	DocuSigned by: Ali Tayebzadeh
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PREPARED IN THE OFFICE OF: KISINGER CAMPO & ASSOCIATES NC FIRM LICENSE No: C-1506 4800 Six Forks Rd., Suite 120 Raleigh, NC 27609 (919) 852-7839	

STRUCTURE	STATION	OFFSET	DESCRIPTION	AREA
0500	13+72.10	153' LT	END OF HEADWALL	135 AC
0501	13+18.58	40' LT	CENTER OF INLET	0.22 AC
0502	13+08.97	18' LT	EOP/CURB FACE	1.40 AC
0503	13+05.80	18' RT	EOP/CURB FACE	1.35 AC
0504	12+93.00	39' RT	CENTER OF INLET	0.14 AC
0505	13+38.03	254' RT	END OF HEADWALL	—

NOTE: DRAINAGE AREA BOUNDARY FOR STRUCTURE 0500 PROVIDED IN SUPPORTING HYDRAULIC DOCUMENTS

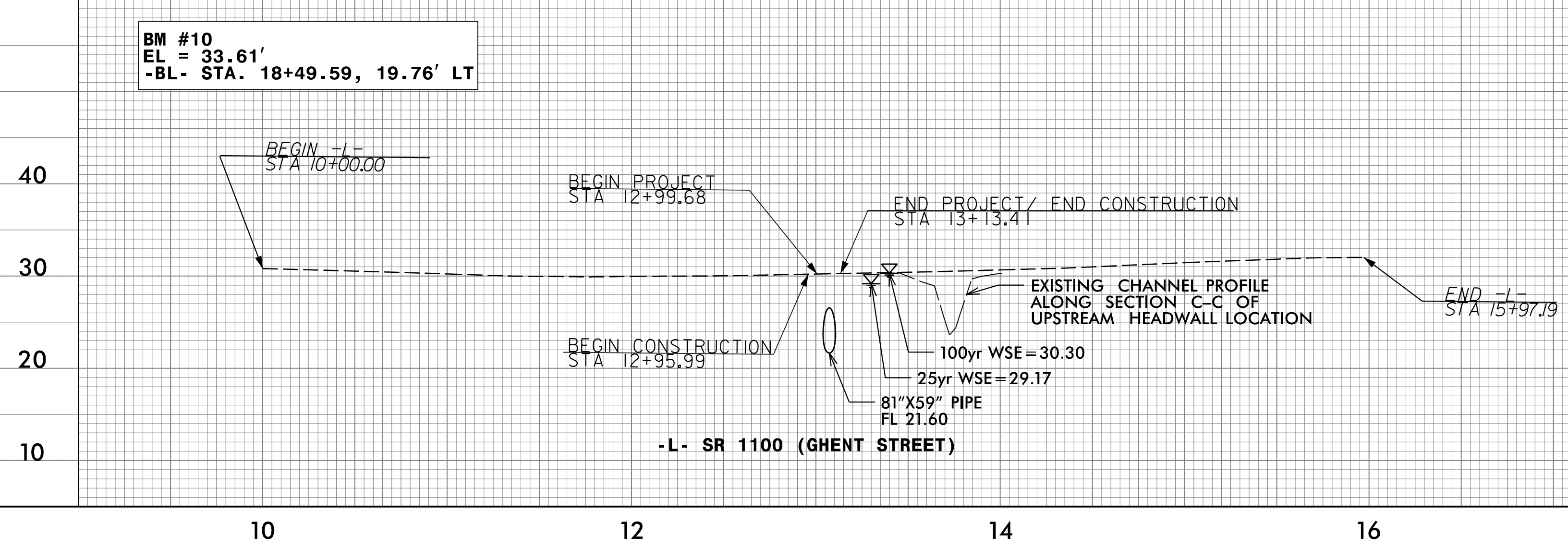


NOTE: FOR RIGHT OF STATIONS AND OFFSETS SEE SHEET 1E-1.



- ① END PIPE
18" RCP FL NE. 26.41
- ② INLET
18" RCP FL SW. 27.91
18" RCP FL NE. 28.05
- ③ END PIPE
36" CMP FL S. 23.22 (TO BE REMOVED)
- ④ INLET (TO BE REMOVED)
36" CMP FL N. 23.62 (TO BE REMOVED)
18" RCP FL SW. 24.69
36" RCP FL S(W). 24.32 (TO BE REMOVED)
18" RCP FL S(E). 29.77 (TO BE REMOVED)
- ⑤ INLET (TO BE REMOVED)
36" RCP FL N(W). 24.49 (TO BE REMOVED)
36" RCP FL S(W). 24.52 (TO BE REMOVED)
18" RCP FL N(E). 23.29 (TO BE REMOVED)
18" RCP FL S(E). 25.37 (TO BE REMOVED)
- ⑥ END PIPE
18" RCP FL E. UNKNOWN
- ⑦ INLET (TO BE REMOVED)
36" RCP FL N(W). 24.05 (TO BE REMOVED)
36" RCP FL S(W). 24.34 (TO BE REMOVED)
18" RCP FL N(E). 23.13 (TO BE REMOVED)
18" RCP FL S(E). 23.21 (TO BE REMOVED)
18" RCP FL W. 29.20
- ⑧ INLET (TO BE REMOVED)
36" RCP FL N(W). 23.26 (TO BE REMOVED)
18" RCP FL N(E). 22.85 (TO BE REMOVED)
48" HDPE FL S. 23.03 (TO BE REMOVED)
- ⑨ END PIPE
48" HDPE FL N. 21.09 (TO BE REMOVED)

NOTE: ALL STRUCTURES AND PIPES NOT LABELED TO BE REMOVED WILL REMAIN. BASED ON FIELD REVIEW, ALL EXISTING PIPES TO REMAIN APPEAR TO BE IN SUFFICIENT, WORKING CONDITION.

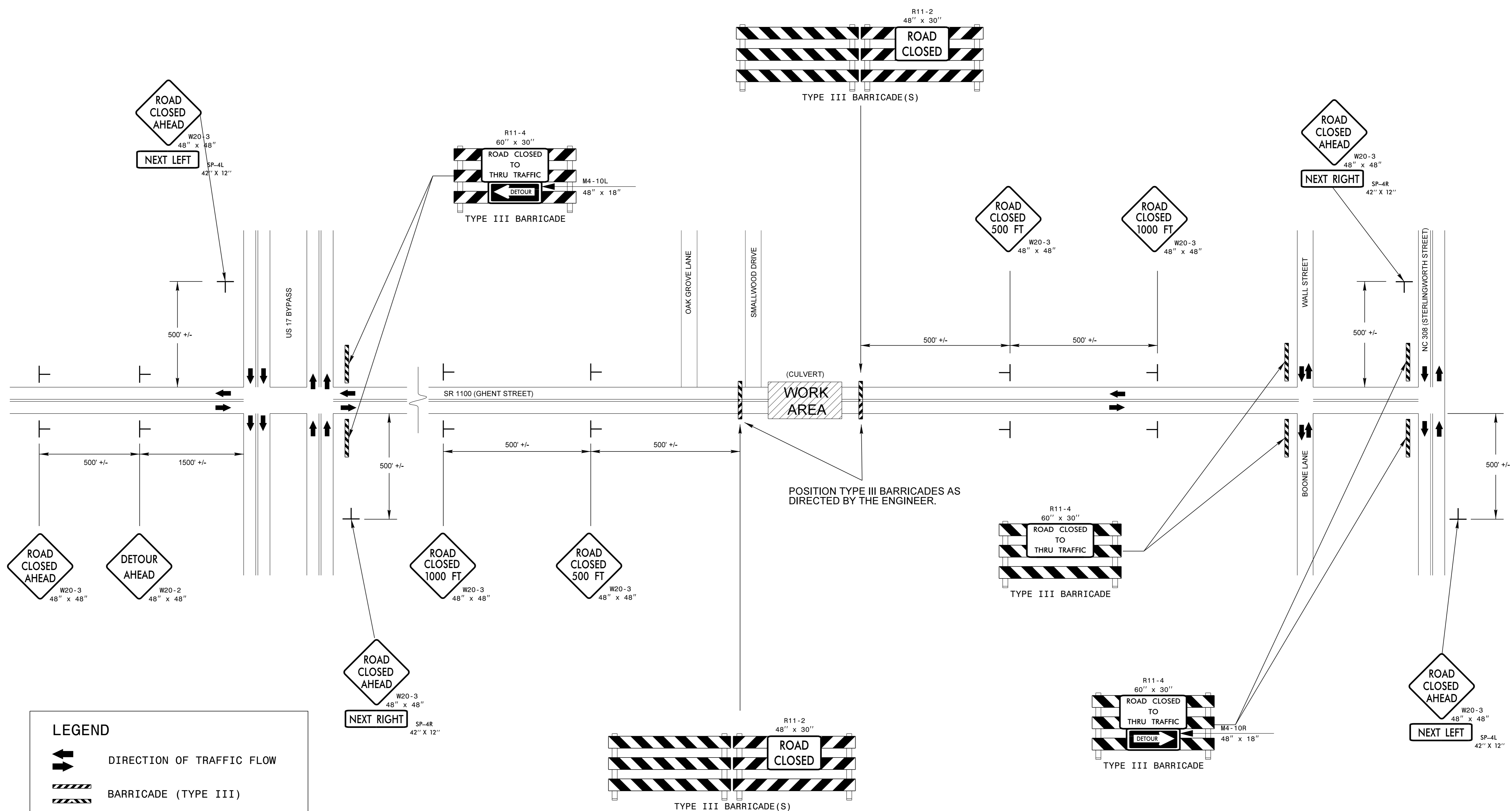


HYDRAULIC DATA	
DRAINAGE AREA	= 134.4 AC
DESIGN DISCHARGE	= 120 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 29.77 FT
100 YEAR DISCHARGE	= 165 CFS
100 YEAR HW ELEVATION	= 30.30 FT
OVERTOPPING DISCHARGE	= 124.5 CFS
OVERTOPPING FREQUENCY	= +25 YR
OVERTOPPING ELEVATION	= 30.00 FT

REVISIONS

10/12/2018 4:15:10 PM \\F:\Projects\1201710-DESC-Div1\Task8\Ghent_Street_Drainage\Roadway_80080_Rdly_psb_Plan_Sheet_50.dgn

21-NOV-2018 12:17 C:\Users\brobbis\Desktop\Projects (Planning & Programming)\2) Non-STIP (Division Managed)\80080 (Windsor - Ghent Street Drainage)\00% Plans\80080_GhentSt_Tc_TMP.dgn
 brobbis AT DICAD23212L



LEGEND

- DIRECTION OF TRAFFIC FLOW
- BARRICADE (TYPE III)
- STATIONARY SIGN

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - 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 WARNING SIGNS
1101.03	TEMPORARY ROAD CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

- GENERAL NOTES:**
- INSTALLATION OF TEMPORARY ROUTE MARKERS, DESTINATION SIGNS, AND ANY NECESSARY MODIFICATIONS TO EXISTING OR PROPOSED REGULATORY OR WARNING SIGNS WILL BE MADE BY OTHERS (STATE OR TOWN FORCES) UNLESS OTHERWISE DESIGNATED IN PLANS. PROVIDE A MINIMUM 21 CALENDAR DAY NOTICE TO STATE FORCES BEFORE A ROADWAY IS CLOSED TO TRAFFIC SUCH THAT THE NECESSARY PROVISIONS CAN BE MADE TO INFORM LOCAL EMERGENCY AND LAW ENFORCEMENT PERSONNEL, SCHOOLS OR ANY OTHER PARTIES AFFECTED BY THE ROAD CLOSURE.
 - INSTALL SIGNS BEFORE THE BARRICADES WHEN CLOSING THE ROADWAY TO TRAFFIC. REMOVE BARRICADES BEFORE SIGNS WHEN OPENING THE ROADWAY TO TRAFFIC. INSTALL/REMOVE SIGNS AND BARRICADES WITHIN THE SAME CALENDAR DAY.
 - POSITION WING BARRICADES ON THE SHOULDERS AND SLOPE THE STRIPES DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN ON DETOURING.
 - USE ADDITIONAL TYPE III BARRICADES IN STAGGERED LOCATIONS SUPPLEMENTED WITH SIGN R11-4 "ROAD CLOSED TO THRU TRAFFIC" IN THE EVENT THAT TRAFFIC MUST BE MAINTAINED BEYOND THE DETOUR POINT.
 - SEE ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9, FOR TEMPORARY ROAD CLOSURE.

APPROVED:

DATE: 11/21/2018

SEAL

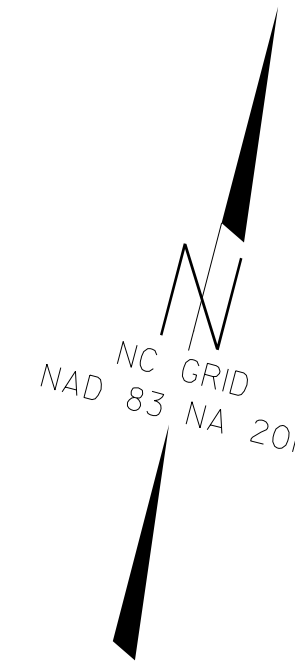
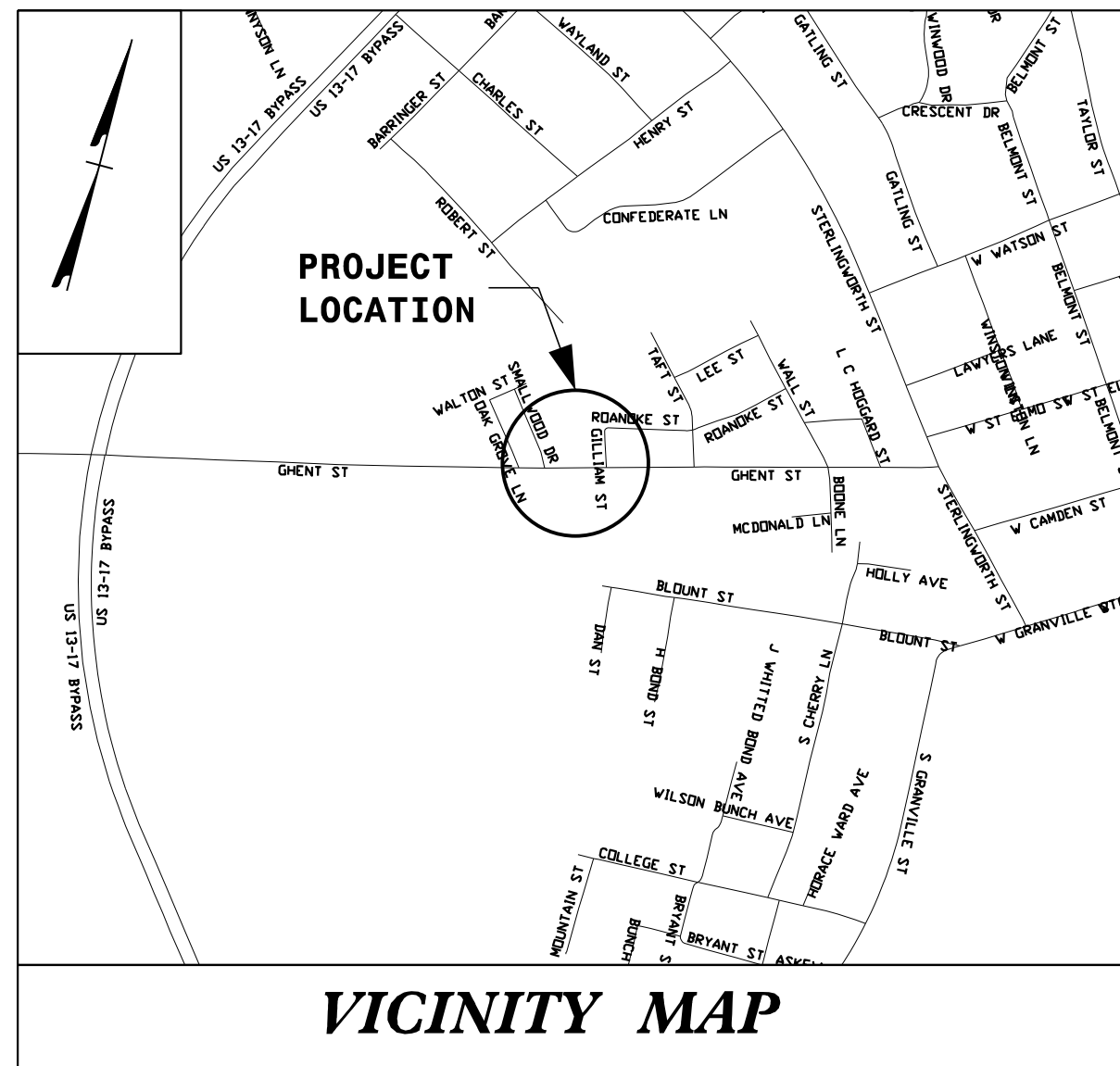
ROAD CLOSURE
SR 1100 (GHENT STREET)

WBS ELEMENT: 80080

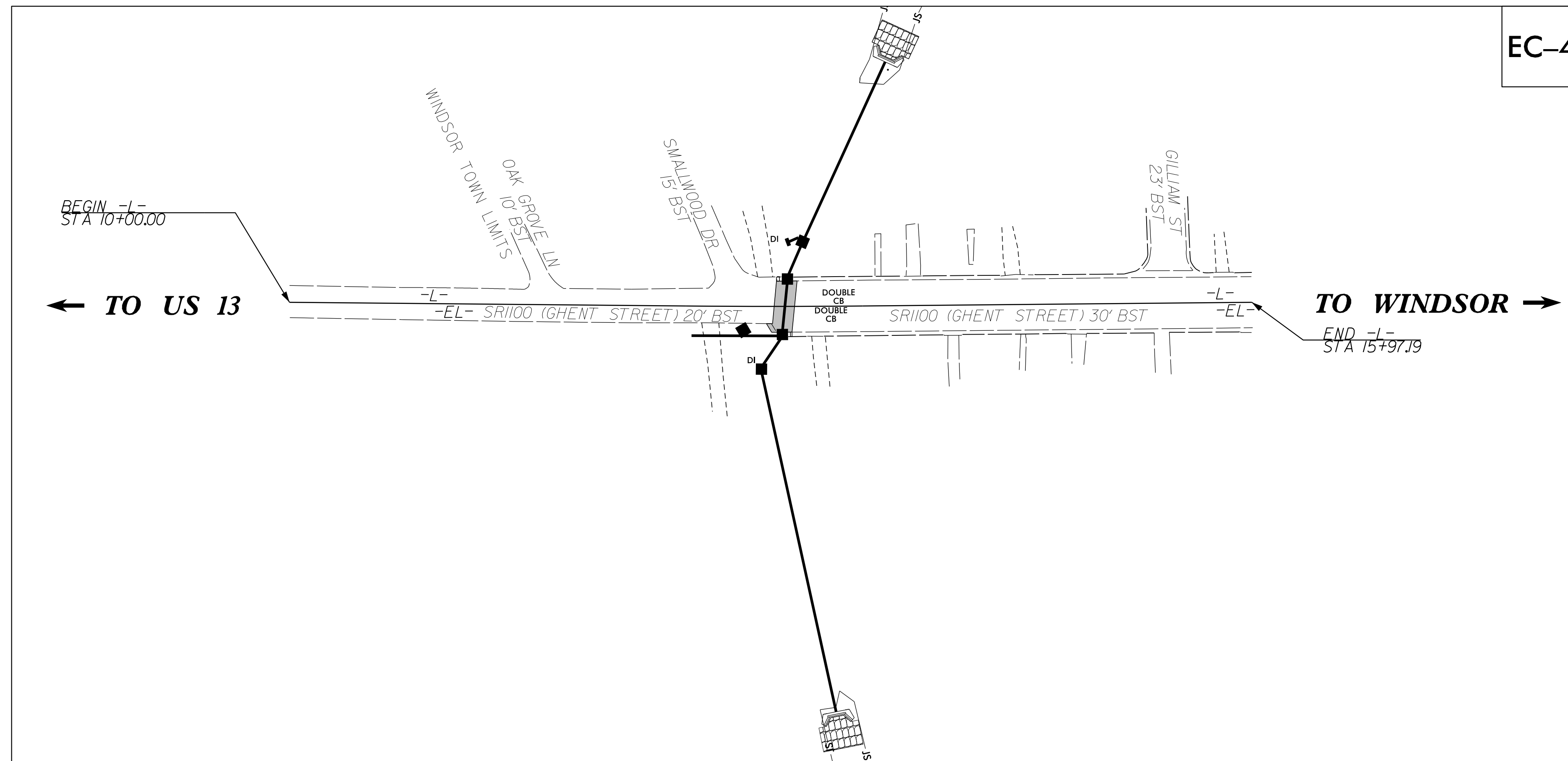
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL
BERTIE COUNTY

09/12/2018

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	80080	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
80080		PE	
80080		RW	
80080		CONST	



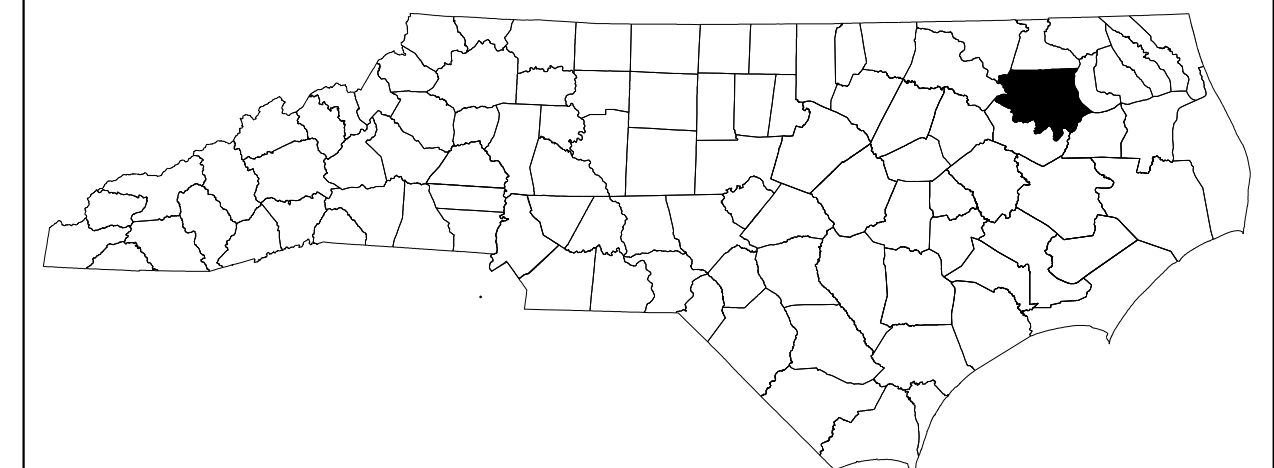
**LOCATION: GHENT STREET
CITY OF WINDSOR
TYPE OF WORK: GRADING, DRAINAGE, AND PAVING**



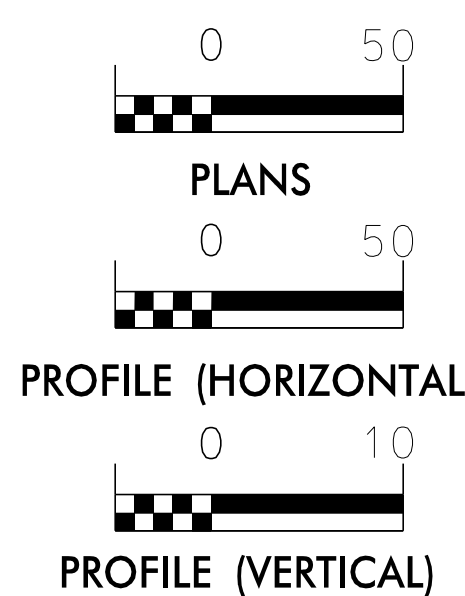
EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	TSF
1606.01	Special Sediment Control Fence	SCF
1622.01	Temporary Berms and Slope Drains	TBSD
1630.02	Silt Basin Type B	SB
1633.01	Temporary Rock Silt Check Type-A	TRSCA
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	TRSCA-PAM
1633.02	Temporary Rock Silt Check Type-B	TRSCB
	Wattle / Coir Fiber Wattle	WCFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	WCFW-PAM
1634.01	Temporary Rock Sediment Dam Type-A	TRSDA
1634.02	Temporary Rock Sediment Dam Type-B	TRSDB
1635.01	Rock Pipe Inlet Sediment Trap Type-A	RPISTRA
1635.02	Rock Pipe Inlet Sediment Trap Type-B	RPISTRB
1630.04	Stilling Basin	SB
1630.06	Special Stilling Basin	SSB
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	SKB
	Tiered Skimmer Basin	TSKB
	Infiltration Basin	IB

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



GRAPHIC SCALE



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

Prepared in the Office of:

KCA
KISINGER CAMPO & ASSOCIATES
NC FIRM LICENSE NO: C-1506
4800 Six Forks Rd., Suite 120
Raleigh, NC 27609
(919)882-7839

Designed by:

SAM CULLUM 4109
NAME LEVEL III CERTIFICATION NO.

Reviewed in the Office of:

ROADSIDE ENVIRONMENTAL UNIT
170 Courthouse Rd
Currituck, NC 27929

2018 STANDARD SPECIFICATIONS

Reviewed by:

ANDY BLANKENSHIP, PE

Roadway Standard Drawings

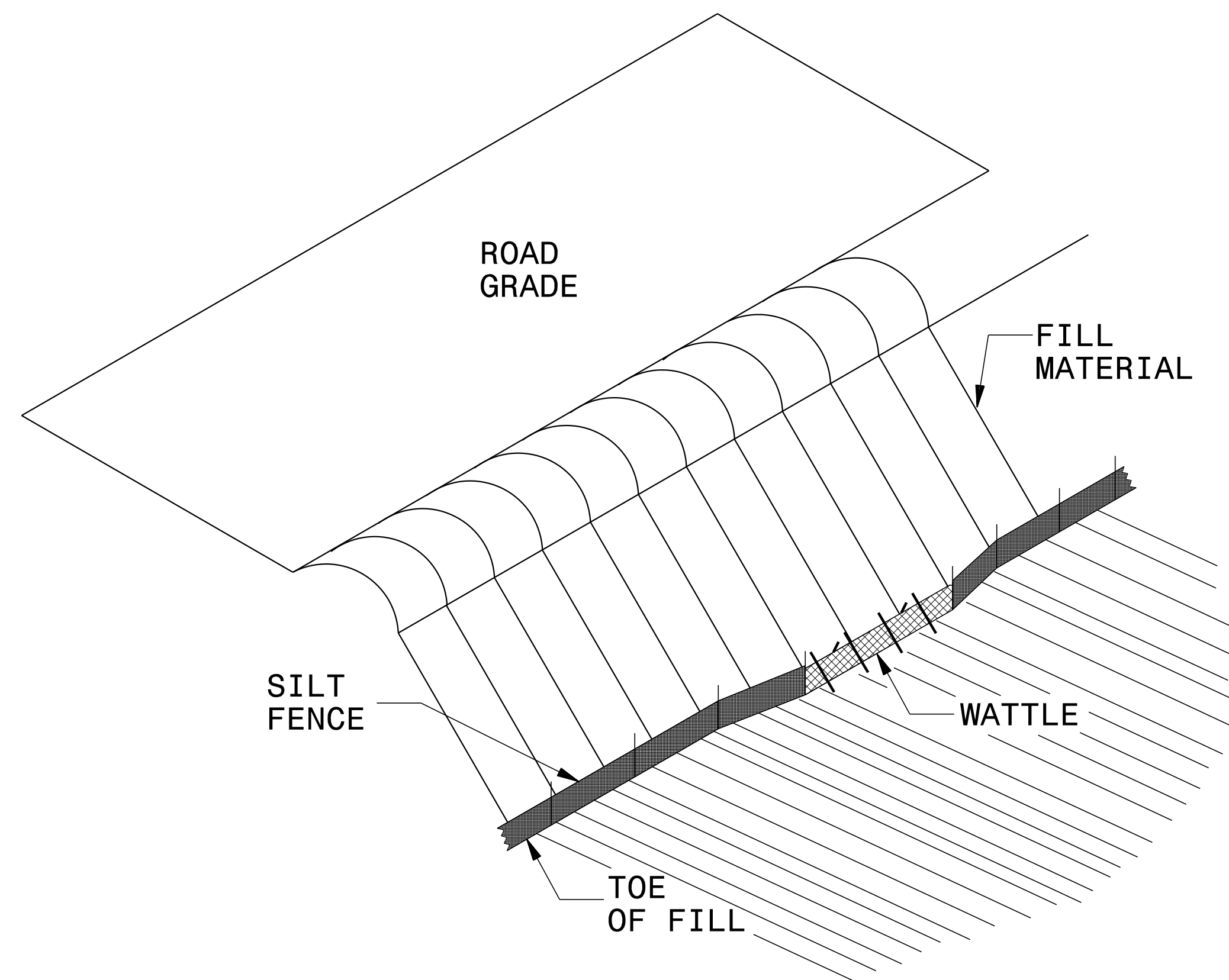
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type 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	

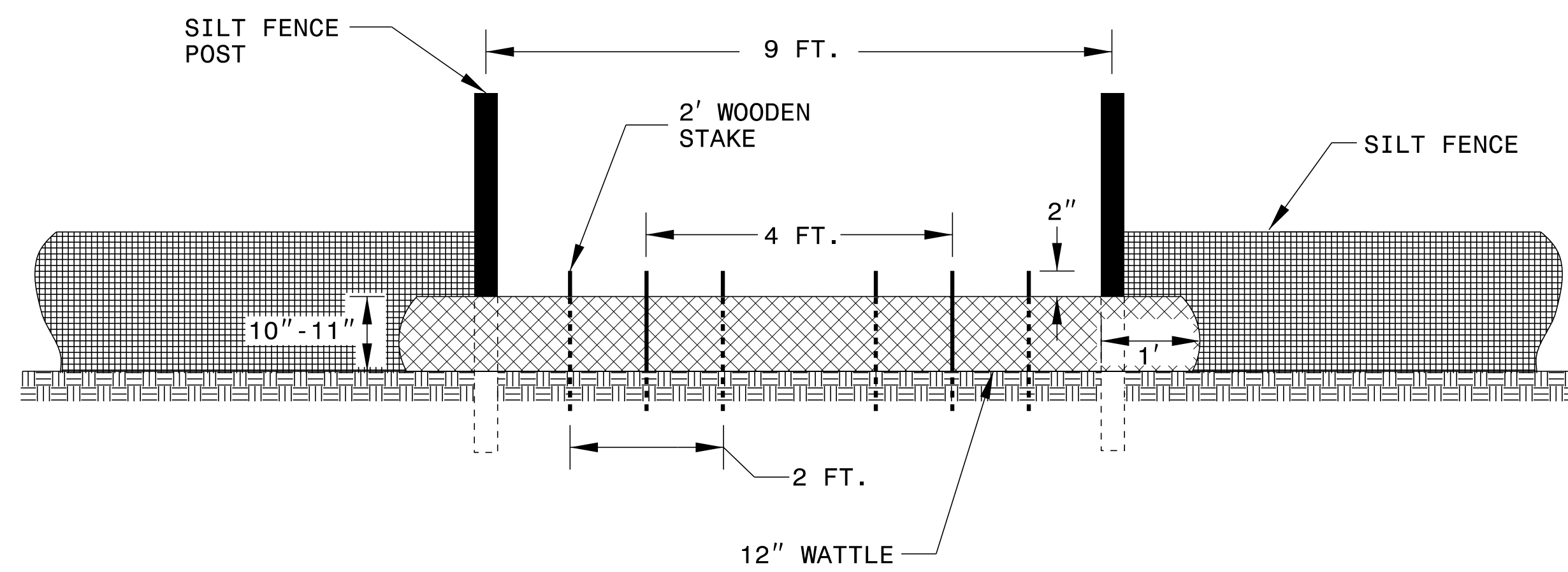
7/2/99

PROJECT REFERENCE NO. 80080	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT FENCE COIR FIBER WATTLE BREAK DETAIL



ISOMETRIC VIEW



VIEW FROM SLOPE

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

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

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

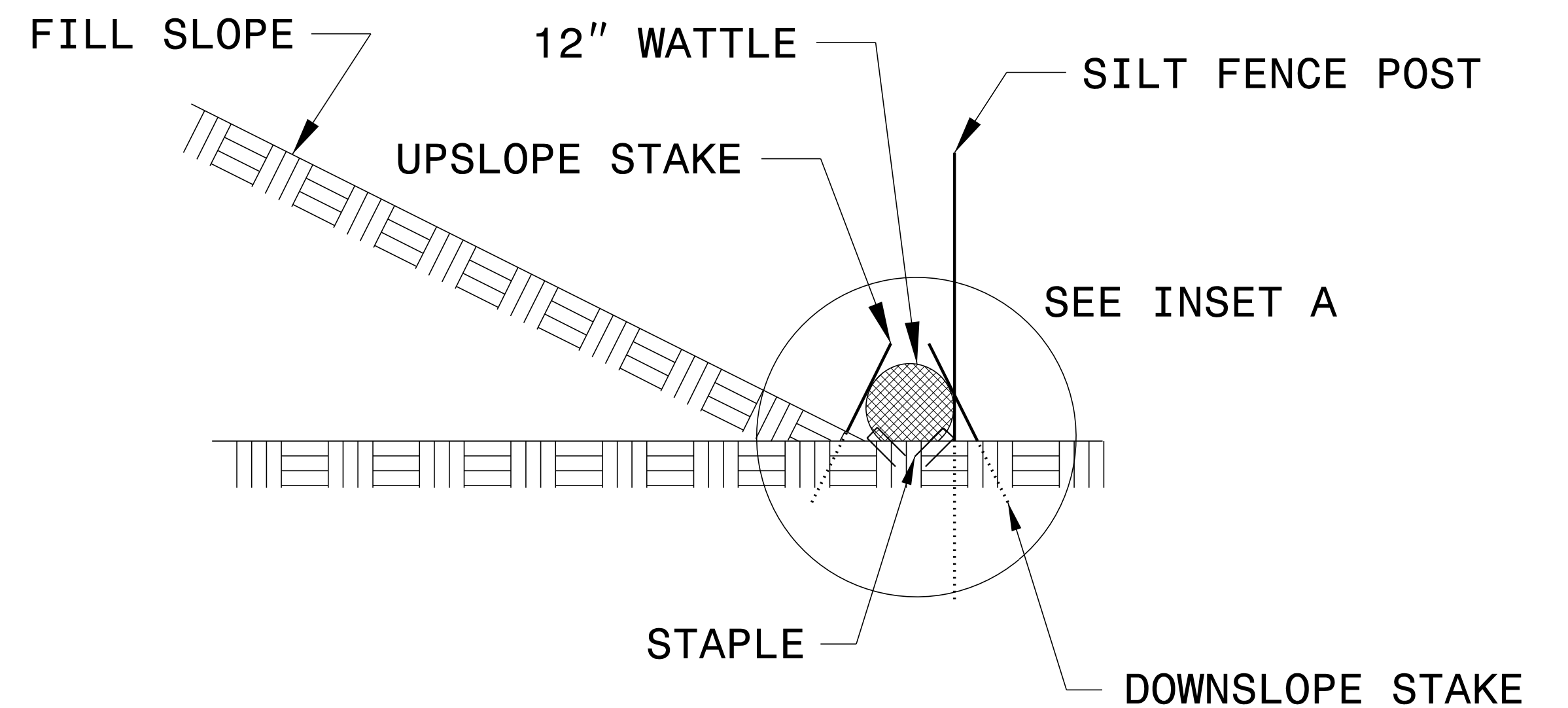
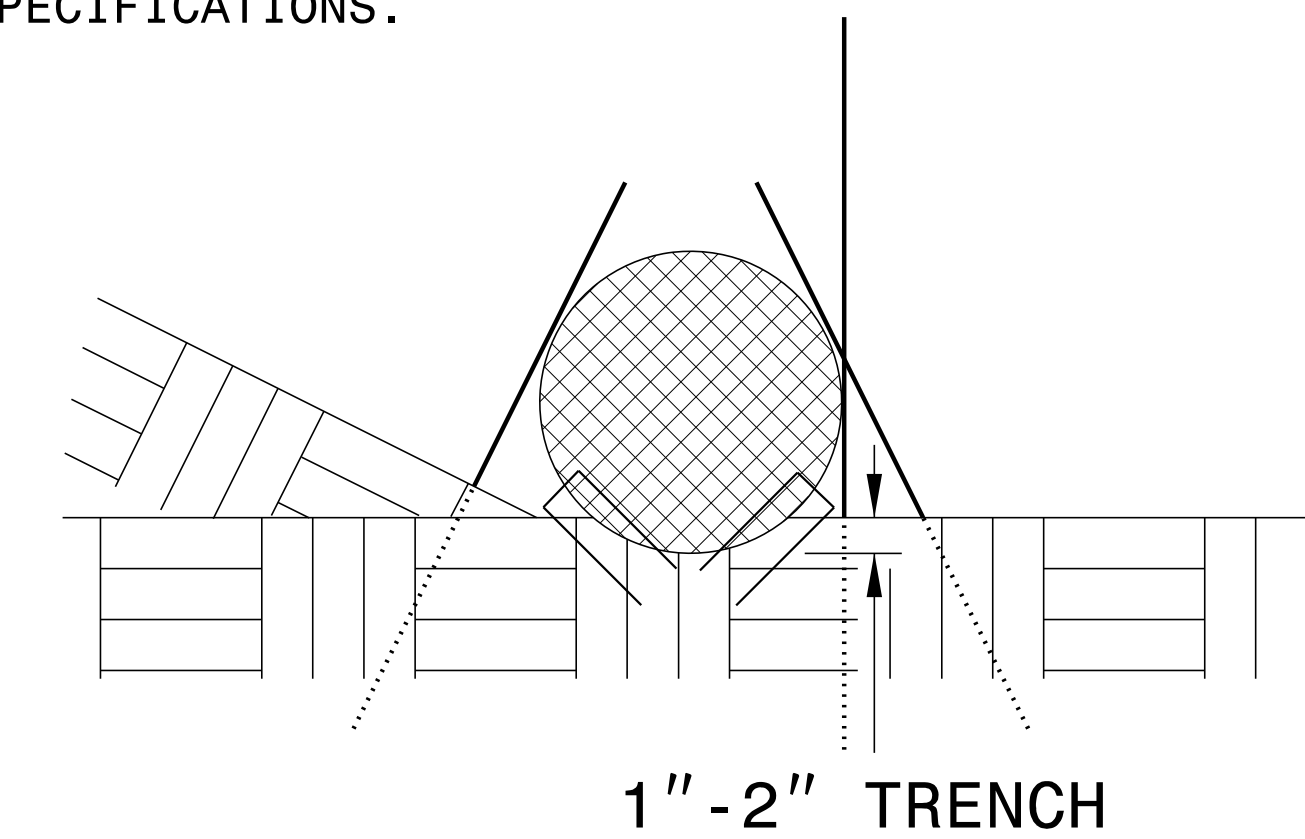
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A



SIDE VIEW

7/2/99

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>80080</i>	SHEET NO. <i>EC-3A</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

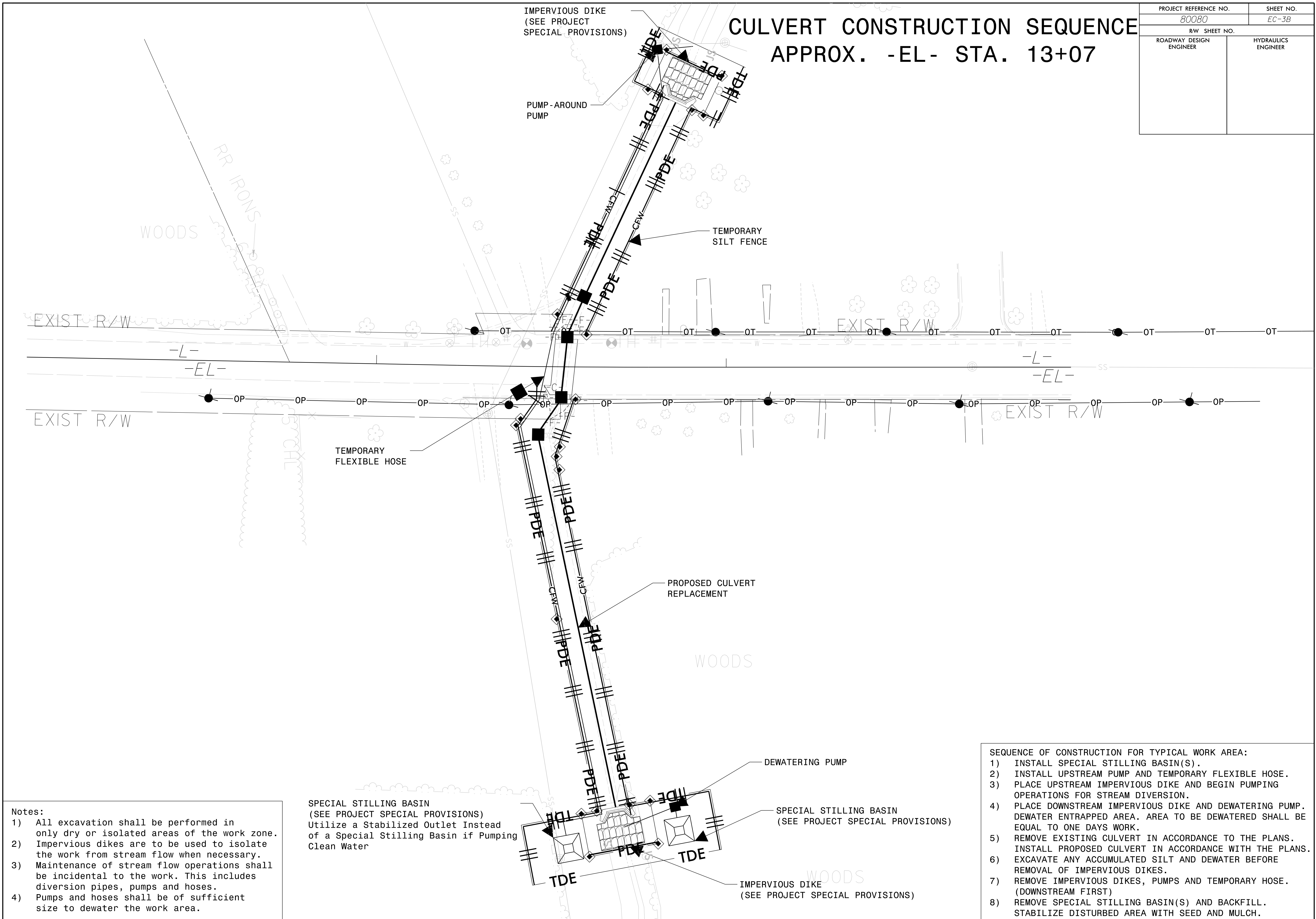
SOIL STABILIZATION TIMEFRAMES

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

CULVERT CONSTRUCTION SEQUENCE

APPROX. -EL- STA. 13+07

PROJECT REFERENCE NO. 80080	SHEET NO. EC-3B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



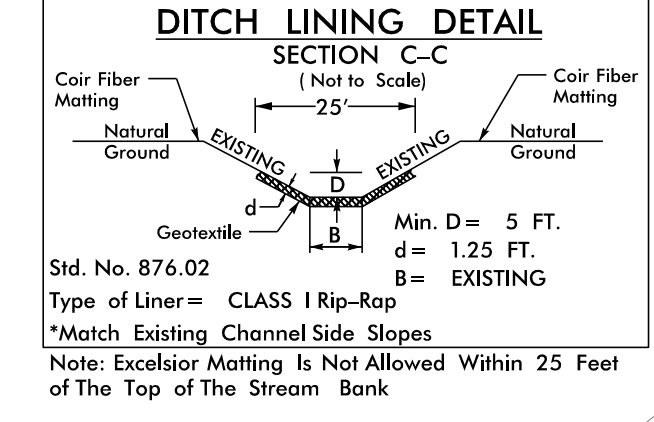
Notes:

- 1) All excavation shall be performed in only dry or isolated areas of the work zone.
- 2) Impervious dikes are to be used to isolate the work from stream flow when necessary.
- 3) Maintenance of stream flow operations shall be incidental to the work. This includes diversion pipes, pumps and hoses.
- 4) Pumps and hoses shall be of sufficient size to dewater the work area.

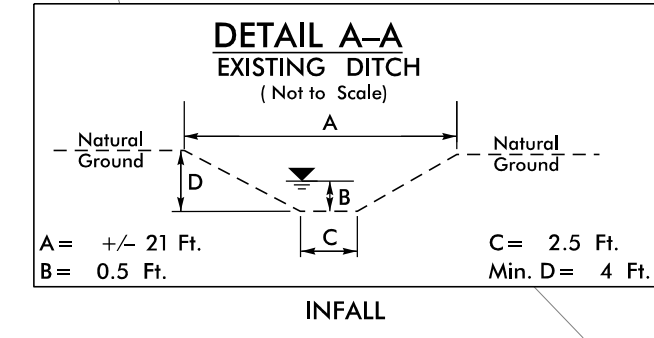
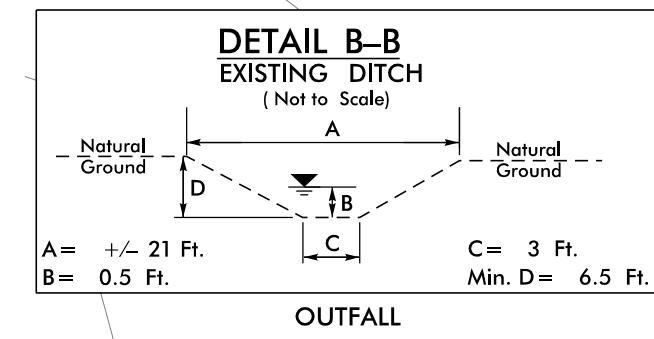
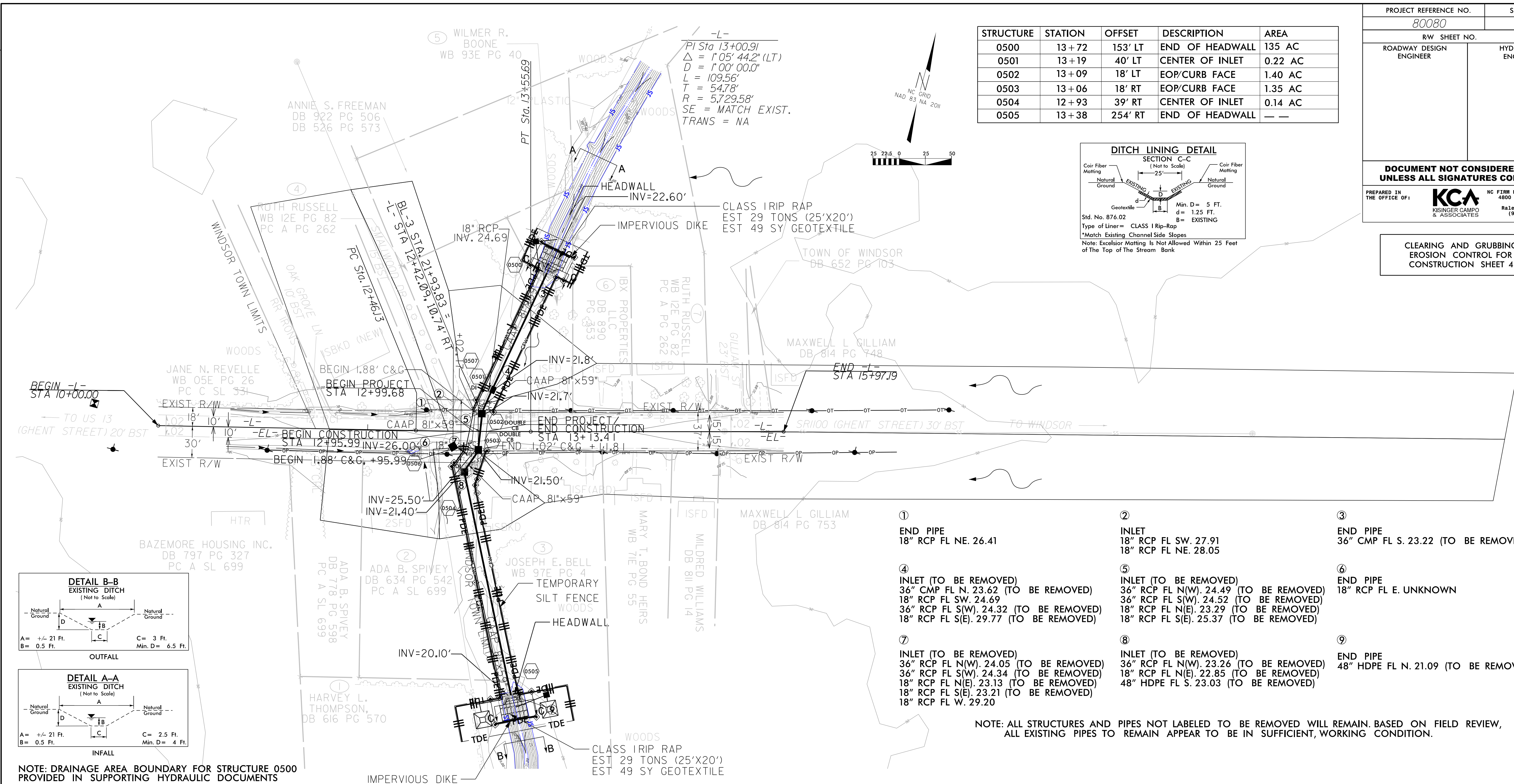
SPECIAL STILLING BASIN
(SEE PROJECT SPECIAL PROVISIONS)
Utilize a Stabilized Outlet Instead of a Special Stilling Basin if Pumping Clean Water

- SEQUENCE OF CONSTRUCTION FOR TYPICAL WORK AREA:
- 1) INSTALL SPECIAL STILLING BASIN(S).
 - 2) INSTALL UPSTREAM PUMP AND TEMPORARY FLEXIBLE HOSE.
 - 3) PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
 - 4) PLACE DOWNSTREAM IMPERVIOUS DIKE AND DEWATERING PUMP. DEWATER ENTRAPPED AREA. AREA TO BE DEWATERED SHALL BE EQUAL TO ONE DAYS WORK.
 - 5) REMOVE EXISTING CULVERT IN ACCORDANCE TO THE PLANS. INSTALL PROPOSED CULVERT IN ACCORDANCE WITH THE PLANS.
 - 6) EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES.
 - 7) REMOVE IMPERVIOUS DIKES, PUMPS AND TEMPORARY HOSE. (DOWNSTREAM FIRST)
 - 8) REMOVE SPECIAL STILLING BASIN(S) AND BACKFILL. STABILIZE DISTURBED AREA WITH SEED AND MULCH.

STRUCTURE	STATION	OFFSET	DESCRIPTION	AREA
0500	13+72	153' LT	END OF HEADWALL	135 AC
0501	13+19	40' LT	CENTER OF INLET	0.22 AC
0502	13+09	18' LT	EOP/CURB FACE	1.40 AC
0503	13+06	18' RT	EOP/CURB FACE	1.35 AC
0504	12+93	39' RT	CENTER OF INLET	0.14 AC
0505	13+38	254' RT	END OF HEADWALL	—



CLEARING AND GRUBBING
 EROSION CONTROL FOR
 CONSTRUCTION SHEET 4

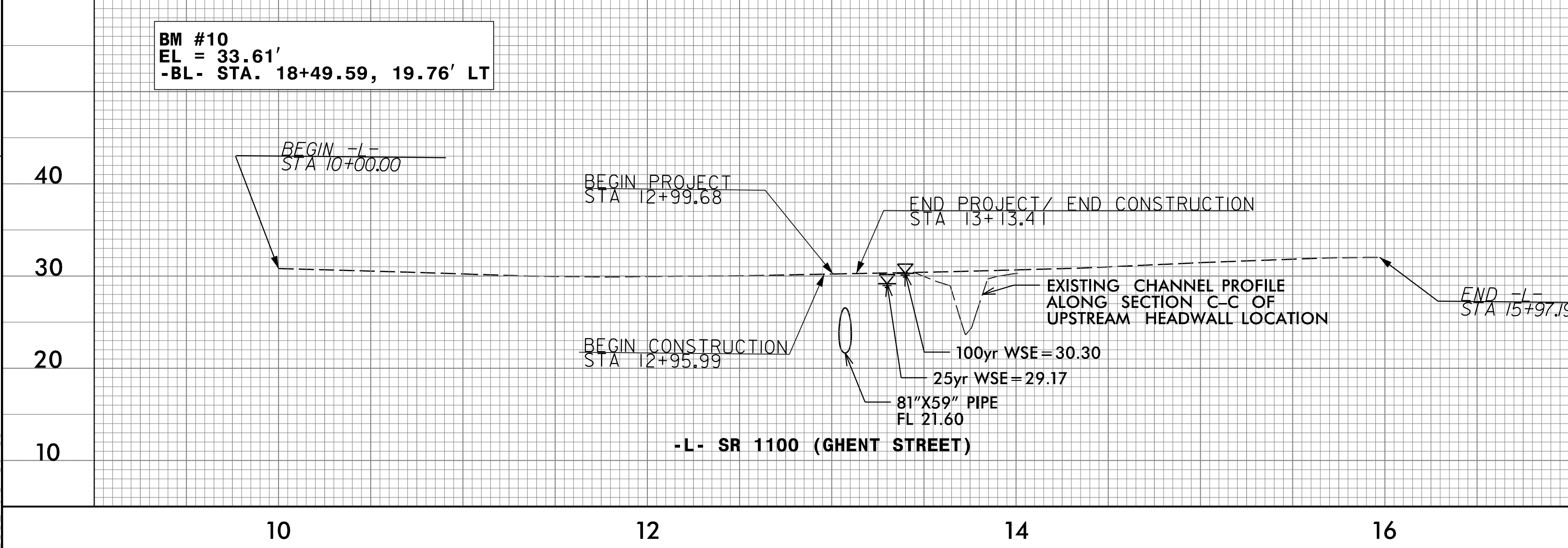


NOTE: DRAINAGE AREA BOUNDARY FOR STRUCTURE 0500 PROVIDED IN SUPPORTING HYDRAULIC DOCUMENTS

- ① END PIPE
18" RCP FL NE. 26.41
- ② INLET
18" RCP FL SW. 27.91
18" RCP FL NE. 28.05
- ③ END PIPE
36" CMP FL S. 23.22 (TO BE REMOVED)
- ④ INLET (TO BE REMOVED)
36" CMP FL N. 23.62 (TO BE REMOVED)
18" RCP FL SW. 24.69
36" RCP FL S(W). 24.32 (TO BE REMOVED)
18" RCP FL S(E). 29.77 (TO BE REMOVED)
- ⑤ INLET (TO BE REMOVED)
36" RCP FL N(W). 24.49 (TO BE REMOVED)
36" RCP FL S(W). 24.52 (TO BE REMOVED)
18" RCP FL N(E). 23.29 (TO BE REMOVED)
18" RCP FL S(E). 25.37 (TO BE REMOVED)
- ⑥ END PIPE
18" RCP FL E. UNKNOWN
- ⑦ INLET (TO BE REMOVED)
36" RCP FL N(W). 24.05 (TO BE REMOVED)
36" RCP FL S(W). 24.34 (TO BE REMOVED)
18" RCP FL N(E). 23.13 (TO BE REMOVED)
18" RCP FL S(E). 23.21 (TO BE REMOVED)
18" RCP FL W. 29.20
- ⑧ INLET (TO BE REMOVED)
36" RCP FL N(W). 23.26 (TO BE REMOVED)
18" RCP FL N(E). 22.85 (TO BE REMOVED)
48" HDPE FL S. 23.03 (TO BE REMOVED)
- ⑨ END PIPE
48" HDPE FL N. 21.09 (TO BE REMOVED)

NOTE: ALL STRUCTURES AND PIPES NOT LABELED TO BE REMOVED WILL REMAIN. BASED ON FIELD REVIEW, ALL EXISTING PIPES TO REMAIN APPEAR TO BE IN SUFFICIENT, WORKING CONDITION.

BM #10
 EL = 33.61'
 -BL- STA. 18+49.59, 19.76' LT

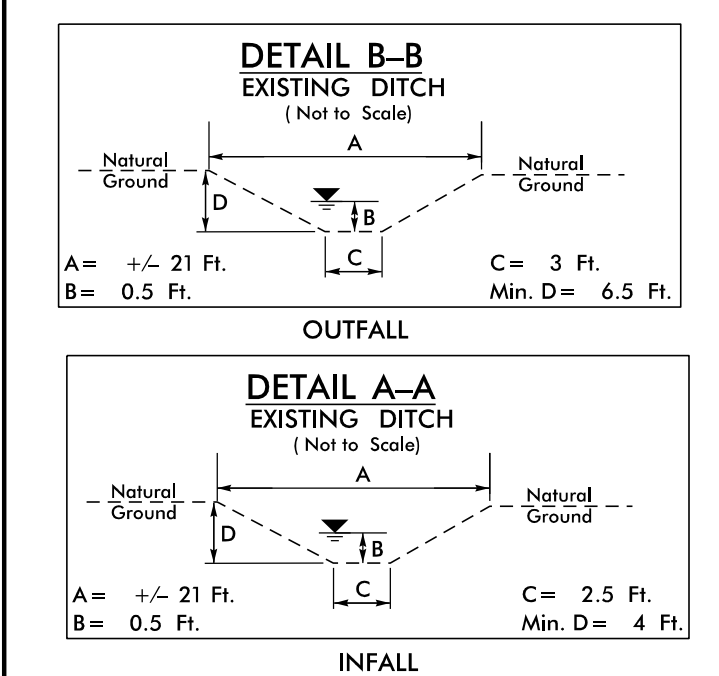
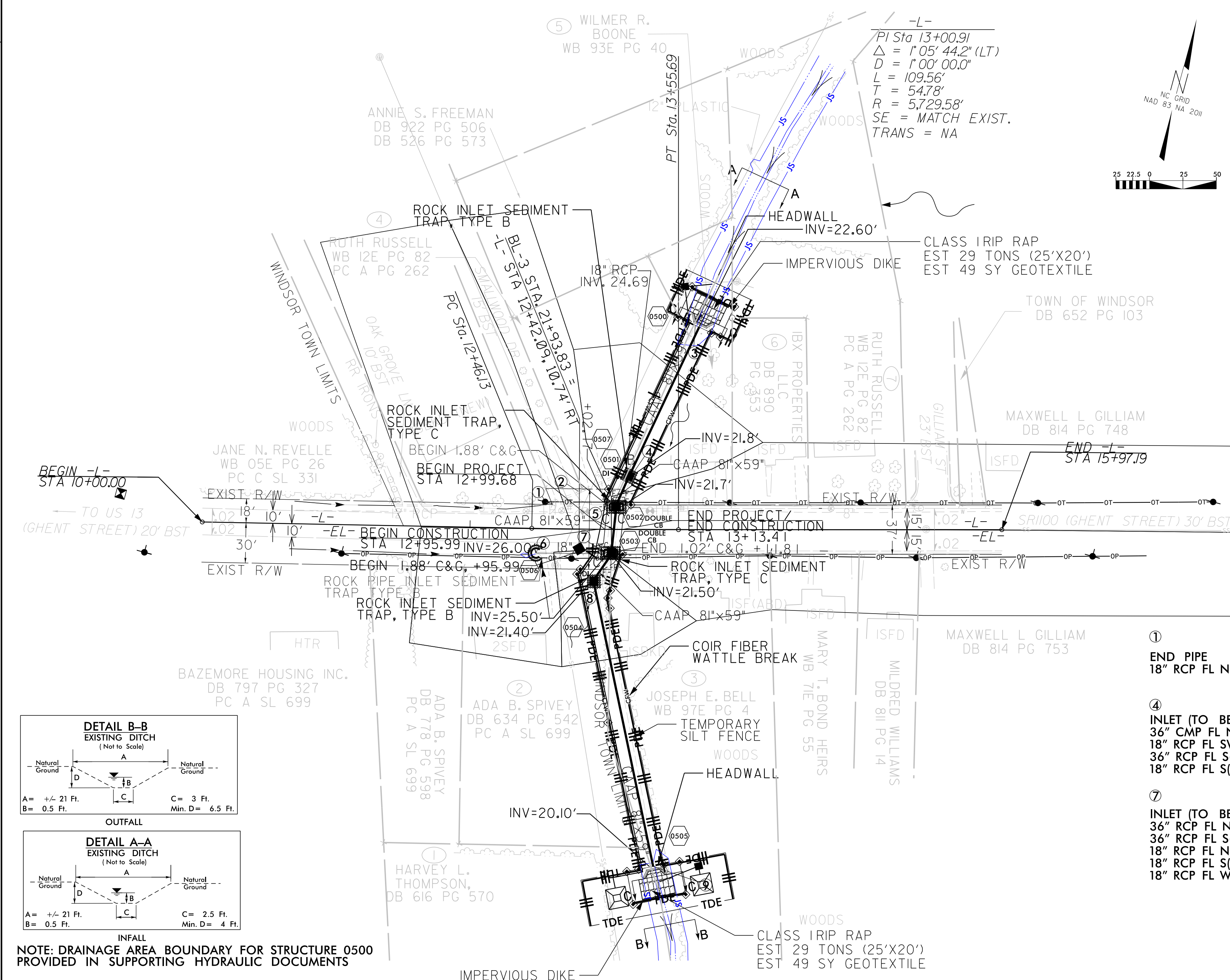
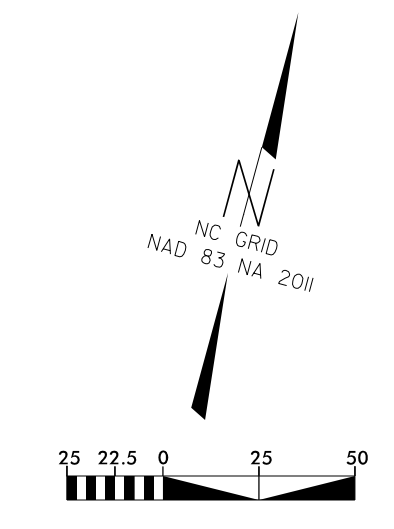
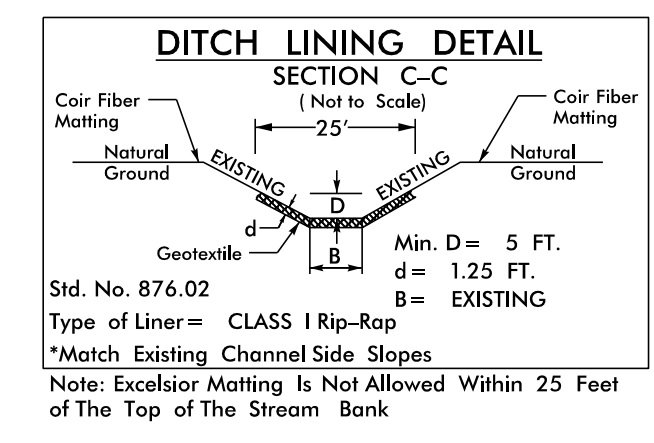


HYDRAULIC DATA

DRAINAGE AREA	= 134.4	AC
DESIGN DISCHARGE	= 120	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 29.17	FT
100 YEAR DISCHARGE	= 165	CFS
100 YEAR HW ELEVATION	= 30.30	FT
OVERTOPPING DISCHARGE	= 124.5	CFS
OVERTOPPING FREQUENCY	= +25	YR
OVERTOPPING ELEVATION	= 30.00	FT

REVISIONS
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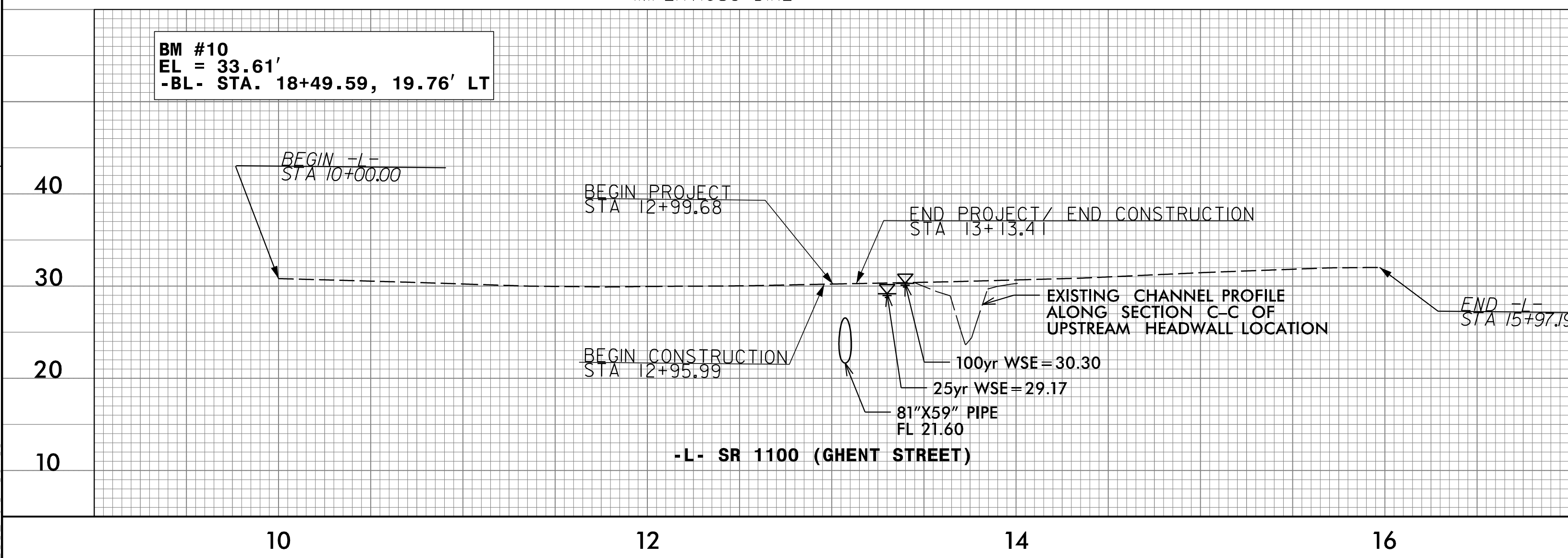
STRUCTURE	STATION	OFFSET	DESCRIPTION	AREA
0500	13+72	153' LT	END OF HEADWALL	135 AC
0501	13+19	40' LT	CENTER OF INLET	0.22 AC
0502	13+09	18' LT	EOP/CURB FACE	1.40 AC
0503	13+06	18' RT	EOP/CURB FACE	1.35 AC
0504	12+93	39' RT	CENTER OF INLET	0.14 AC
0505	13+38	254' RT	END OF HEADWALL	—



NOTE: DRAINAGE AREA BOUNDARY FOR STRUCTURE 0500 PROVIDED IN SUPPORTING HYDRAULIC DOCUMENTS

- ① END PIPE
18" RCP FL NE. 26.41
- ② INLET
18" RCP FL SW. 27.91
18" RCP FL NE. 28.05
- ③ END PIPE
36" CMP FL S. 23.22 (TO BE REMOVED)
- ④ INLET (TO BE REMOVED)
36" CMP FL N. 23.62 (TO BE REMOVED)
18" RCP FL SW. 24.69
36" RCP FL S(W). 24.32 (TO BE REMOVED)
18" RCP FL S(E). 29.77 (TO BE REMOVED)
- ⑤ INLET (TO BE REMOVED)
36" RCP FL N(W). 24.49 (TO BE REMOVED)
36" RCP FL S(W). 24.52 (TO BE REMOVED)
18" RCP FL N(E). 23.29 (TO BE REMOVED)
18" RCP FL S(E). 25.37 (TO BE REMOVED)
- ⑥ END PIPE
18" RCP FL E. UNKNOWN
- ⑦ INLET (TO BE REMOVED)
36" RCP FL N(W). 24.05 (TO BE REMOVED)
36" RCP FL S(W). 24.34 (TO BE REMOVED)
18" RCP FL N(E). 23.13 (TO BE REMOVED)
18" RCP FL S(E). 23.21 (TO BE REMOVED)
18" RCP FL W. 29.20
- ⑧ INLET (TO BE REMOVED)
36" RCP FL N(W). 23.26 (TO BE REMOVED)
18" RCP FL N(E). 22.85 (TO BE REMOVED)
48" HDPE FL S. 23.03 (TO BE REMOVED)
- ⑨ END PIPE
48" HDPE FL N. 21.09 (TO BE REMOVED)

NOTE: ALL STRUCTURES AND PIPES NOT LABELED TO BE REMOVED WILL REMAIN. BASED ON FIELD REVIEW, ALL EXISTING PIPES TO REMAIN APPEAR TO BE IN SUFFICIENT, WORKING CONDITION.



HYDRAULIC DATA	
DRAINAGE AREA	= 134.4 AC
DESIGN DISCHARGE	= 120 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 29.17 FT
100 YEAR DISCHARGE	= 165 CFS
100 YEAR HW ELEVATION	= 30.30 FT
OVERTOPPING DISCHARGE	= 124.5 CFS
OVERTOPPING FREQUENCY	= +25 YR
OVERTOPPING ELEVATION	= 30.00 FT

REVISIONS
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 User: ameswin

12/06/07

COMPUTED BY: AJM DATE: 3/7/18
 CHECKED BY: JPM DATE: 8/08/18

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. <i>80080</i>	SHEET NO. <i>X-1A</i>
PREPARED IN THE OFFICE OF: KCA KISINGER CAMPO & ASSOCIATES	NC FIRM LICENSE No: C-1506 4800 Six Forks Rd., Suite 120 Raleigh, NC 27609 (919)882-7839
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

CROSS-SECTION SUMMARY

Station	Uncl. Exc.	Undercut	Embt	Station	Uncl. Exc.	Undercut	Embt	Station	Uncl. Exc.	Undercut	Embt	Station	Uncl. Exc.	Undercut	Embt
-L-	(cu. yd.)	(cu. yd.)	(cu. yd.)	-L-	(cu. yd.)	(cu. yd.)	(cu. yd.)	-L-	(cu. yd.)	(cu. yd.)	(cu. yd.)	-L-	(cu. yd.)	(cu. yd.)	(cu. yd.)
12+95.99	0	0	0												
13+00.00	0	0	1												
13+13.41	0	0	3												

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

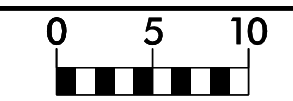
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 USER: ameswain

6/23/16

PREPARED IN THE OFFICE OF:



NC FIRM LICENSE NO. C-1005
8000 S.W. PARKWAY
DALLAS, TX 75249
TEL: (972) 982-7830
FAX: (972) 982-7830



PROJ. REFERENCE NO.
80080

SHEET NO.
X-1

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

40

40

30

30

30.54
10 + 50.00

40

40

30

30

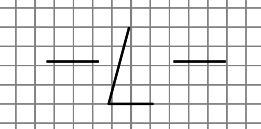
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20

20

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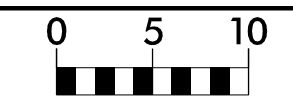


6/23/16

PREPARED IN THE OFFICE OF:



NC FIRM LICENSE NO. C-1005
KCA
KANSAS CITY
& ASSOCIATES



PROJ. REFERENCE NO.
80080

SHEET NO.
X-2

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40

30

20

40

30

20

EXIST. ROW

EXIST. ROW

29.96
11 + 50.00

40

30

20

40

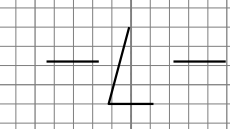
30

20

EXIST. ROW

EXIST. ROW

30.23
11 + 00.00



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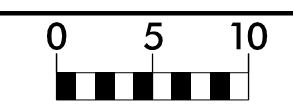
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6/23/16

PREPARED IN THE OFFICE OF:



NC FIRM LICENSE NO. 6-1000
6000 S.W. PARKWAY
SUITE 120
RALEIGH, NC 27609
(919)887-7839



PROJ. REFERENCE NO.
80080

SHEET NO.
X-3

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40
30
20

40
30
20

EXIST. ROW

EXIST. ROW

30.03
12 + 50.00

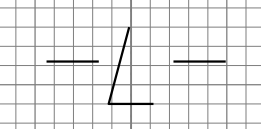
EXIST. ROW

EXIST. ROW

29.95
12 + 00.00

40
30
20

40
30
20



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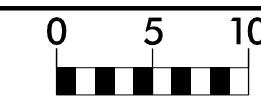
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User: amcswain

6/23/16

PREPARED IN THE OFFICE OF:



NC FIRM LICENSE NO. C-1005
KCA
KIMBERLY CAMP
& ASSOCIATES
100 S. PARKWAY
SUITE 100
RALEIGH, NC 27609
(919)887-7830



PROJ. REFERENCE NO.
80080

SHEET NO.
X-4

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

40
30
20

40
30
20

EXIST. ROW

EXIST. ROW

30.41
13 + 50.00

END PROJECT -L- STA. 13+13.41

40
30
20

40
30
20

EXIST. ROW

EXIST. ROW

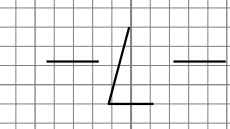
30.22
13 + 00.00

0.02 0.02 3%

BEGIN PROJECT -L- STA. 12+99.68

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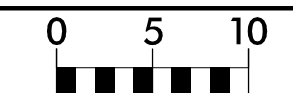


6/23/16

PREPARED IN THE OFFICE OF:



NC FIRM LICENSE NO. C-1009
KCA ENGINEERING & ASSOCIATES
100 S. PARKWAY
Raleigh, NC 27609
(919)887-7839



PROJ. REFERENCE NO.

80080

SHEET NO.

X-5

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

40
30
20

40
30
20

EXIST. ROW

EXIST. ROW

31.00
14 + 50.00

40
30
20

40
30
20

EXIST. ROW

EXIST. ROW

30.67
14 + 00.00

1/4" = 1'

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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