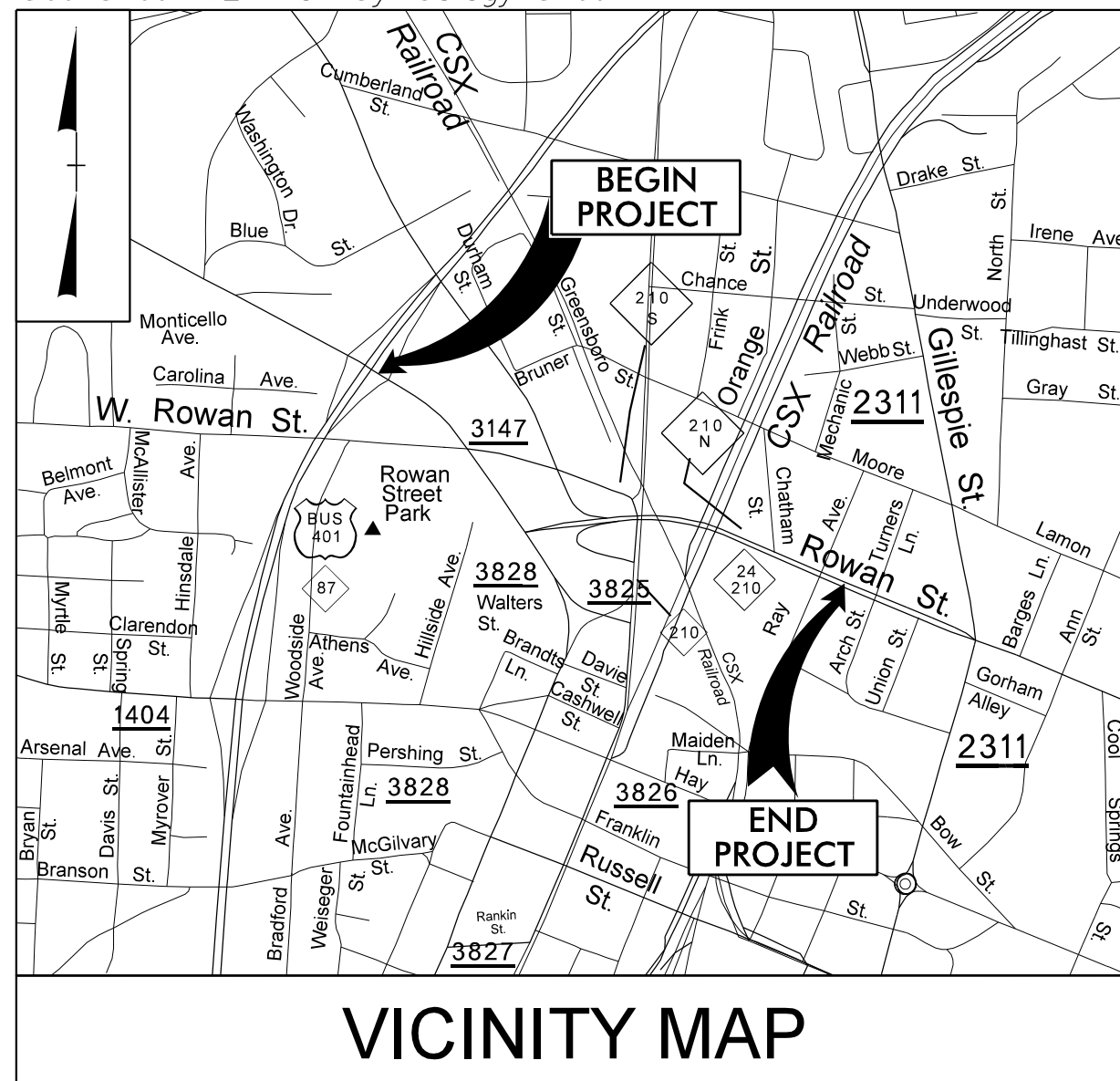


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with their signature on that page.**

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See Sheet 1A For Index of Sheets
See Sheet 1B For Symbology Sheet



VICINITY MAP

NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

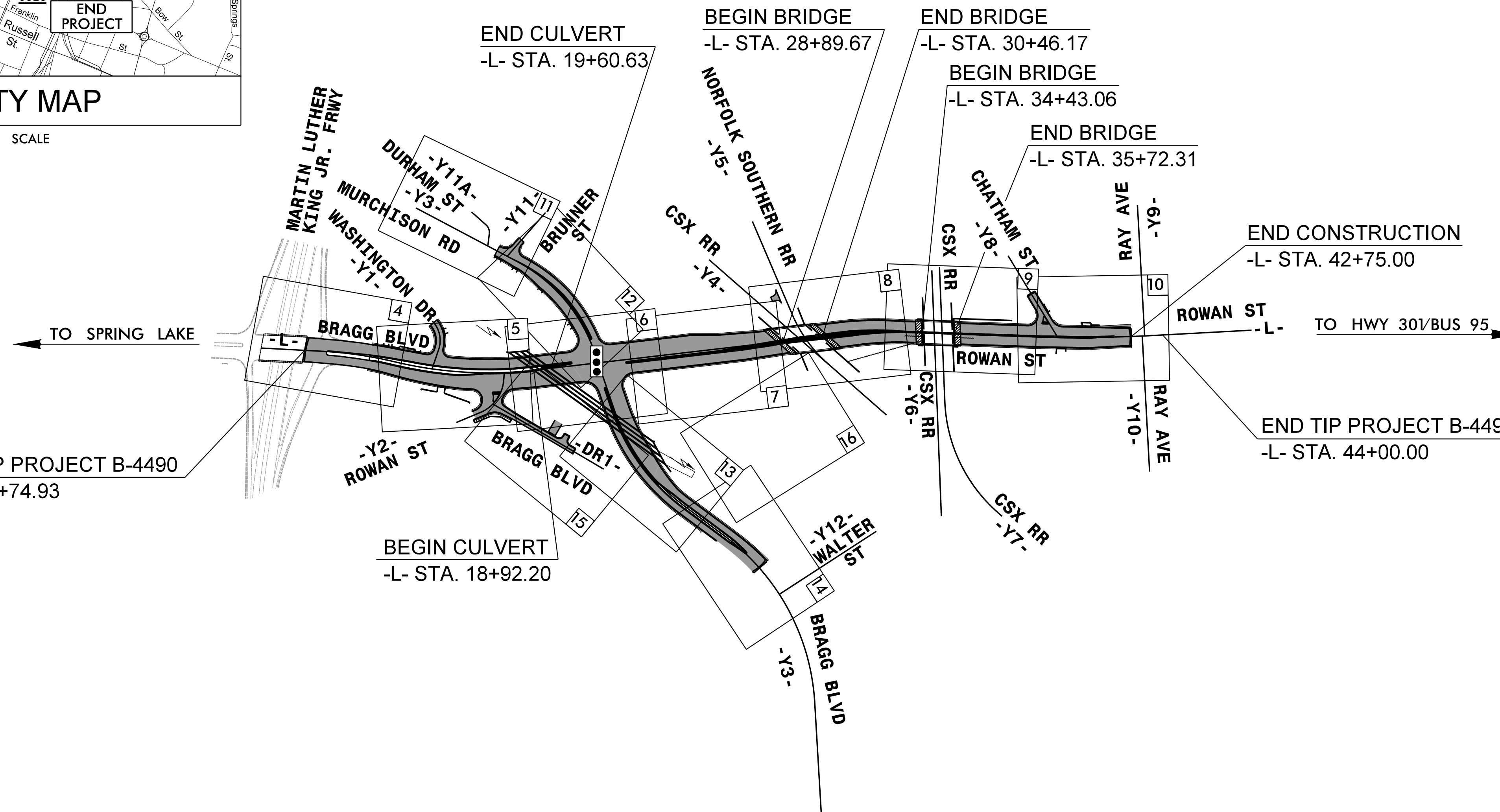
LOCATION: BRIDGE NO. 116 OVER CSX RAILROAD, NORFOLK SOUTHERN RAILROAD, AND HILLSBORO STREET ON NC/24-210 (ROWAN STREET)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNALS, RETAINING WALLS AND STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4490	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33727.1.1	BRNHS-0024(24)	P.E.	
33727.2.FS1	BRNHS-0024(24)	RW	
33727.2.FSU1	BRNHS-0024(24)	UTILITIES	
33727.3.FS1	BRNHS-0024(24)	CONST.	

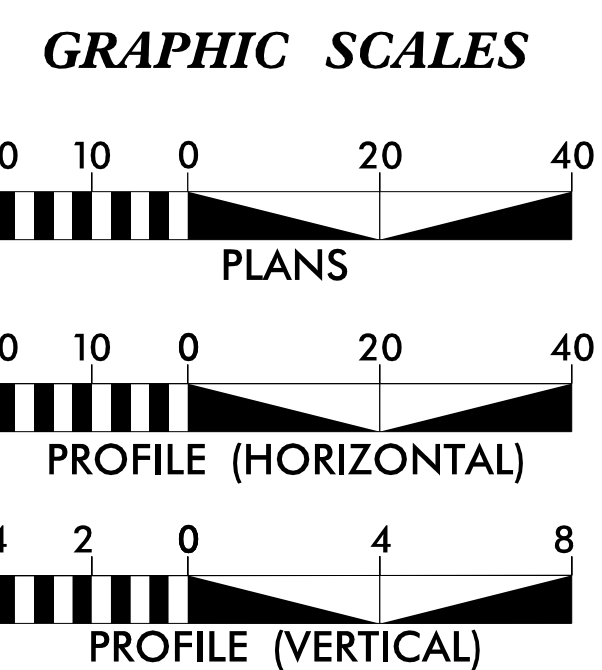
TIP PROJECT: B-4490

CONTRACT: C203917



DESIGN EXCEPTIONS REQUIRED FOR MAXIMUM GRADE, SAG VERTICAL CURVE K, VERTICAL STOPPING SIGHT DISTANCE, AND SUPERELEVATION.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2015 =	34,813
ADT 2035 =	47,596
DHV =	10 %
D =	55 %
T =	3 % *
V =	40 MPH
(* TTST 1% + DUAL 2%)	
FUNC CLASS =	URBAN
PRINCIPAL ARTERIAL	
STATEWIDE TIER	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4490 =	0.582 MILES
LENGTH STRUCTURE TIP PROJECT B-4490 =	0.067 MILES
TOTAL LENGTH TIP PROJECT B-4490 =	0.649 MILES

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE: NC-E-0165

PLANS PREPARED FOR:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr.
Raleigh NC, 27610

RIGHT OF WAY DATE:
DECEMBER 31, 2013

LETTING DATE:
SEPTEMBER 20, 2016

NCDOT CONTACT: BRENDA L. MOORE, PE, CPM.

TIM HAYES, PE
PROJECT ENGINEER

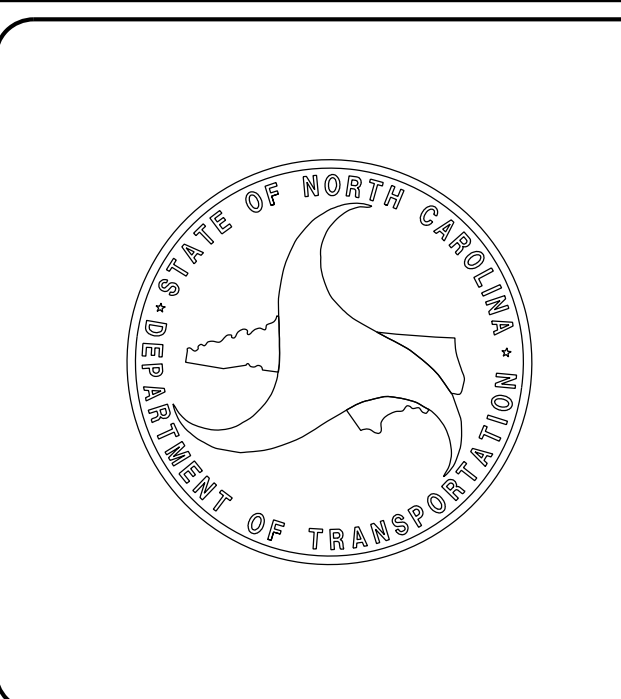
ERIC MISAK
PROJECT DESIGN ENGINEER

HYDRAULIC ENGINEER

RODNEY SCOTT HAYES
PROFESSIONAL ENGINEER
SEAL 039785
8/9/2016

ROADWAY DESIGN ENGINEER

JIM SCOTT HAYES
PROFESSIONAL ENGINEER
SEAL 19563
8/8/2016



8/17/99

INDEX OF SHEETS:

SHEET NUMBER	SHEET DESCRIPTION
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES AND LIST OF STANDARDS
1B	CONVENTIONAL SYMBOLS
1C-1 THRU 1C-2	SURVEY CONTROL SHEET B-4490
1D-1	CENTERLINE COORDINATE LIST
2A-1	PAVEMENT SCHEDULE, WEDGING DETAIL AND MILLING DETAILS
2A-2 THRU 2A-5	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B-1 THRU 2B-2	DETAIL SHOWING BRIDGE IN RELATION TO PAVEMENT
2B-3	DETAIL SHOWING PAVEMENT REMOVAL
2C-1	DETAIL TO CONVERT EXISTING DI, CB, DTCB OR GI TO JUNCTION BOX
2C-2	DETAIL TO CONVERT EXISTING CATCH BASIN OR JUNCTION BOX TO DI OR 2-GI
2C-3	DETAIL GUARDRAIL ANCHOR UNIT, TYPE III
2C-4	CURB RAMPS
2C-5	DETAIL OF SPECIAL CATCH BASIN
2C-6	DETAIL OF 2'-9" TO 2'-6" CURB & GUTTER TRANSITION SECTION
2C-7	DETAIL RETAINING WALL WROUGHT IRON FENCE
2C-8	COAL COMBUSTION PRODUCT PLACEMENT DETAIL
2G-1	EMBANKMENT STABILIZATION DETAILS AT BRIDGE APPROACHES
2G-2 THRU 2G-4	STANDARD TEMPORARY WALL
2H-1	STOCKPILE CONTAINMENT DETAIL
3B-1	ROADWAY SUMMARY (EARTHWORK, GUARDRAIL, PAVEMENT REMOVAL AND BREAKING EXISTING ASPHALT PAVEMENT)
3D-1 THRU 3D-6	DRAINAGE SUMMARIES
3P-1	PARCEL INDEX SHEET
4 THRU 16	PLAN SHEETS
17 THRU 25	PROFILE SHEETS
TMP-1 THRU TMP-32	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP- 4	PAVEMENT MARKING PLANS
EC-1 THRU EC- 35	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-6	SIGNING PLANS
SIG-1 THRU SCP-6	SIGNAL PLANS
UC-1 THRU UC-21	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-14	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION INDEX OF SHEETS
X-1B	CROSS-SECTIONS SUMMARY SHEET
X-1 THRU X-35	CROSS-SECTIONS
C-1 THRU C-18	CULVERT PLANS
S-1 THRU S- 84	STRUCTURE PLANS
W-1 THRU W-11	RETAINING WALL PLANS

EFF. 01-17-2012
REV. 10-30-2012

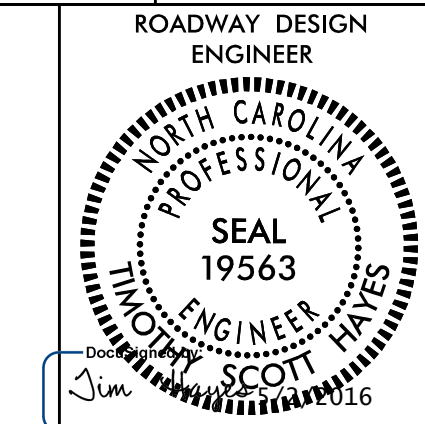
2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
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
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.03	Driveway Turnout - Drop Curb Type
848.04	Street Turnout
848.05	Curb Ramp - Proposed Curb & Gutter
852.01	Concrete Islands
852.10	Median Construction - with Curb and Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

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8/17/2016
B:\4490\RDW-1A.dgn

PROJECT REFERENCE NO. B-4490	SHEET NO. 1A
---------------------------------	-----------------



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. E-0165

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 10-31-2014

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 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.

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 STD. NO. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.03 AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

STREET TURNOUT:

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

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE Piedmont Natural Gas, Century Link,

Level 3, PWC- Distribution & transmission Power, Time Warner Cable, MCNC,

PWC Water & Sewer, PWC - Communications Fiber

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

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

CURB RAMPS

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

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

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

04/06/15

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	-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	☠
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	▬
False Sump	▽

RAILROADS:

Standard Gauge	-----
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 RW Marker	▲ RW
Proposed Control of Access Line with Concrete C/A Marker	○ C/A
Existing Control of Access	○ C/A
Proposed Control of Access	○ C/A
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	⊕
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	⊕
Telephone Pedestal	⊕
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.*)	-----TFD-----
U/G Fiber Optics Cable LOS C (S.U.E.*)	-----TFD-----
U/G Fiber Optics Cable LOS D (S.U.E.*)	-----TFD-----

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	○
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:

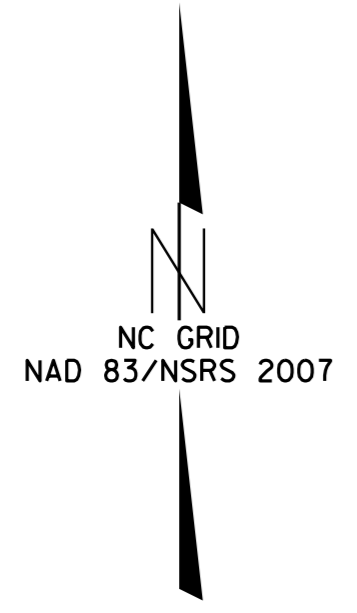
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	-----SS-----
Above Ground Sanitary Sewer	-----A/G Sanitary Sewer-----
SS Forced Main Line LOS B (S.U.E.*)	-----FSS-----
SS Forced Main Line LOS C (S.U.E.*)	-----FSS-----
SS Forced Main Line LOS D (S.U.E.*)	-----FSS-----

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line LOS B (S.U.E.*)	-----ZUTL-----
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
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.
B-4490	IC-1
Location and Surveys	

SURVEY CONTROL SHEET B-4490



BEGIN TIP PROJECT B-4490
-L- STA. 9+74.93

NCDOT BASELINE STATION (-BL-1)
LOCALIZED PROJECT COORDINATES
N=477616.1073
E=2032881.2814
ELEV=118.94'

NCDOT BASELINE STATION (-BY2-11)
LOCALIZED PROJECT COORDINATES
N=477936.1165
E=2033473.5447
ELEV=92.94'

NCDOT BASELINE STATION (-BL-2)
LOCALIZED PROJECT COORDINATES
N=477368.3866
E=2033222.8698
ELEV=103.67'

BM80

NCDOT BASELINE STATION (-BY2-13)
LOCALIZED PROJECT COORDINATES
N=477285.0705
E=2033912.1849
ELEV=92.61'

NCDOT BASELINE STATION (-BY4-18)
LOCALIZED PROJECT COORDINATES
N=477028.2544
E=2034588.0896
ELEV=102.30'

NCDOT BASELINE STATION (-BY1-10)
LOCALIZED PROJECT COORDINATES
N= 477055.5321
E=2033081.8405
ELEV=100.39'

NCDOT BASELINE STATION (-BY6-23)
LOCALIZED PROJECT COORDINATES
N=476649.4398
E=2035471.4957
ELEV=103.74'

NCDOT BASELINE STATION (-BY2- 15)
LOCALIZED PROJECT COORDINATES
N= 476534.5956
E=2033729.1288
ELEV=91.33'

NCDOT BASELINE STATION (-BL-6)
LOCALIZED PROJECT COORDINATES
N=476596.7086
E=2034898.9756
ELEV=98.90'

BM81

NCDOT BASELINE STATION (-BL-7)
LOCALIZED PROJECT COORDINATES
N=476512.2469
E=2035173.1197
ELEV=126.87'

NCDOT BASELINE STATION (-BL-9)
LOCALIZED PROJECT COORDINATES
N=476224.8000
E=2035889.9358
ELEV=103.42'

END TIP PROJECT B-4490
-L- STA. 44+00.00

NCDOT BASELINE STATION (-BY2- 16)
LOCALIZED PROJECT COORDINATES
N= 476167.2817
E=2033953.4731
ELEV=93.16'

NCDOT BASELINE STATION (-BY2- 17)
LOCALIZED PROJECT COORDINATES
N= 475805.6937
E=2034134.7524
ELEV=99.65'

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "VANDER RM3" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 464925.950(±) EASTING: 2069182.420(±) ELEVATION: 151.824(±) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999878975 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "VANDER RM3" TO -L- STATION 9+74.93 IS N 70° 47' 56.76" W 38,517.89' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING NCDOT PROJECT CONTROL DATA AT: [HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/](https://connect.ncdot.gov/resources/location/) THE FILES TO BE FOUND ARE AS FOLLOWS: B4490_LS_CONTROL.TXT
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- © INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT. PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM. NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

6/2/99

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SURVEY CONTROL SHEET B-4490

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	B4490 BL-1	477616.1073	2032881.2814	118.94	10+29.16	55.14 LT
2	B4490 BL-2	477368.3866	2033222.8698	103.67	14+45.52	44.78 LT
3	B4490 BL-3	477087.3452	2033476.3033	94.80	17+99.86	80.06 RT
4	B4490 BL-4	476889.8717	2034005.2624	94.20	23+59.50	91.47 RT
5	B4490 BL-5	476702.5842	2034612.2877	101.23	29+94.43	70.93 RT
6	B4490 BL-6	476596.7086	2034898.9756	98.90	33+09.21	60.94 RT
7	B4490 BL-7	476512.2469	2035173.1197	126.87	35+92.75	17.45 RT
8	B4490 BL-8	476361.6800	2035555.6653	105.78	40+01.93	25.94 LT
9	B4490 BL-9	476224.8000	2035889.9358	103.42	43+65.34	40.66 LT

POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
25	B4490 BL-3	477087.3452	2033476.3033	94.80	10+67.02	41.02 LT
10	B4490 BY1-10	477055.5321	2033081.8405	100.39	14+43.59	26.62 LT

POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
11	B4490 BY2-11	477936.1165	2033473.5447	92.94	OUTSIDE PROJECT LIMITS	
12	B4490 BY2-12	477650.6777	2033676.4645	92.75	13+45.31	26.12 LT
13	B4490 BY2-13	477285.0705	2033912.1849	92.61	17+56.05	76.17 LT
14	B4490 BL-4	476889.8717	2034005.2624	94.20	21+18.60	185.29 LT
15	B4490 BY2-15	476534.5956	2033729.1288	91.33	24+72.57	105.96 RT
16	B4490 BY2-16	476167.2817	2033953.4731	93.16	28+79.78	52.23 RT
17	B4490 BY2-17	475805.6937	2034134.7524	99.65	32+80.08	40.36 LT

POINT	DESC.	NORTH	EAST	ELEVATION	Y5 STATION	OFFSET
18	B4490 BY4-18	477028.2544	2034588.0896	102.30	12+59.51	33.10 RT
26	B4490 BL-5	476702.5842	2034612.2877	101.23	15+79.16	24.35 RT

POINT	DESC.	NORTH	EAST	ELEVATION	Y6 STATION	OFFSET
27	B4490 BL-6	476596.7086	2034898.9756	98.90	13+04.87	186.12 RT
20	P4901 BL-5	476544.3649	2035050.0389	100.54	12+92.86	26.69 RT
21	P4901 BL-6	476141.3844	2034889.7808	98.94	17+26.34	13.57 RT

POINT	DESC.	NORTH	EAST	ELEVATION	Y8 STATION	OFFSET
23	B4490 BY6-23	476649.4398	2035471.4957	103.74	10+72.19	24.55 RT
28	B4490 BL-8	476361.6800	2035555.6653	105.78	13+66.87	30.73 LT

.....
 BM80 ELEVATION = 93.57
 N 477462 E 2033833
 L STATION 20+10.00 394 LEFT
 RR SPIKE IN BASE OF 30' GUM

.....
 BM91 ELEVATION = 106.57
 N 476398 E 2035550
 L STATION 39+81.00 56 LEFT
 RR SPIKE IN BASE OF 18' HARDWOOD

ALIGN	STATION	OFFSET	NORTH	EAST
L	16+40.00	-83.32	477303.1347	2033401.8547
L	13+80.11	-64.85	477421.9754	2033183.8823
L	36+00.71	-69.50	476585.5812	2035220.5091
L	41+57.00	-45.36	476312.1609	2035702.7327
L	37+74.01	-69.50	476505.1825	2035374.0345
L	15+50.00	92.03	477195.9060	2033236.4266
L	14+40.00	65.60	477281.4680	2033154.6158
L	14+58.00	92.00	477249.0073	2033154.9212
L	16+55.00	-110.00	477320.1053	2033426.8032
L	19+00.00	-110.00	477229.9677	2033636.3908
L	25+44.38	-115.00	477024.9065	2034247.2896
L	25+94.45	-120.00	477013.3331	2034296.2589
L	31+65.00	-160.00	476864.6356	2034850.5973
L	33+14.00	-150.00	476791.4221	2034999.2672
L	27+65.53	-140.00	476976.5438	2034464.5338
L	27+38.41	-120.00	476966.4632	2034432.3789
L	34+52.72	-150.00	476725.5483	2035126.7564
L	40+02.00	-54.00	476386.7162	2035568.3295

ALIGN	STATION	OFFSET	NORTH	EAST
Y1	12+88.78	55.69	477387.3666	2033231.0505

ALIGN	STATION	OFFSET	NORTH	EAST
Y2	11+72.00	-33.00	477037.1052	2033358.0894
Y2	12+34.00	-30.00	477041.1975	2033290.9679
Y2	12+34.00	-25.20	477045.9944	2033291.2190

ALIGN	STATION	OFFSET	NORTH	EAST
Y3	18+27.06	109.17	477195.2380	2033737.2533
Y3	17+75.00	46.00	477247.0899	2033794.4771
Y3	12+15.00	46.00	477712.5569	2033540.9894
Y3	12+14.91	29.29	477722.5630	2033554.3746
Y3	27+90.00	-46.06	476291.6626	2033999.3187
Y3	26+60.18	-46.00	476406.3518	2033938.9912
Y3	21+63.30	125.33	476881.9136	2033691.5492
Y3	12+14.94	-29.94	477757.7611	2033602.0052
Y3	14+52.13	46.00	477521.9112	2033681.9994

ALIGN	STATION	OFFSET	NORTH	EAST
Y5	12+85.00	29.82	477002.6461	2034590.2544
Y5	13+75.67	-29.59	476909.4723	2034645.6548
Y5	12+95.00	45.00	476993.3206	2034574.6555
Y5	12+95.00	75.61	476994.6556	2034544.0698

ALIGN	STATION	OFFSET	NORTH	EAST
Y8	13+07.00	-24.70	476420.6556	2035543.7408

ALIGN	STATION	OFFSET	NORTH	EAST
Y11A	10+16.29	16.52	477781.8328	2033633.5435

ALIGN	STATION	OFFSET	NORTH	EAST
L	31+90.00	-163.00	476857.8103	2034877.7985
L	32+08.00	-161.00	476848.7128	2034895.8138
L	32+08.00	-155.29	476843.3980	2034893.7230
L	31+90.00	-157.08	476852.2727	2034875.7019
L	35+73.00	-126.00	476648.4884	2035222.1725
L	36+10.00	-137.00	476641.0683	2035260.0532
L	36+13.00	-117.00	476621.9590	2035253.4324
L	35+82.00	-107.65	476628.0568	2035221.6322

TYPE	STATION	NORTH	EAST
POT	10+00.00	477581.7353	2032829.2282
PC	10+43.71	477560.7523	2032867.5728
PRC	13+35.01	477398.4870	2033109.0112
PT	18+96.87	477126.9812	2033597.6144
PC	31+47.54	476719.8024	2034780.1475
PT	33+58.66	476636.3049	2034973.8389
PC	39+18.45	476376.6074	2035469.7447
PT	43+65.43	476187.2083	2035874.4493
POT	47+53.43	476038.6127	2036232.8671

TYPE	STATION	NORTH	EAST
POT	10+00.00	477077.0587	2033388.7138
POT	15+10.61	476654.2733	2033673.8392

TYPE	STATION	NORTH	EAST
POT	10+00.00	477614.1271	2033271.2087
PC	11+42.00	477478.9987	2033314.8587
PT	12+63.89	477366.1359	2033288.2303
POT	13+44.99	477308.2434	2033231.4339

TYPE	STATION	NORTH	EAST
POT	10+00.00	477171.0043	2033484.0101
PC	10+33.95	477141.8853	2033466.5609
PT	11+96.43	477069.1925	2033330.0517
POT	16+71.08	477094.0067	2032856.0575

TYPE	STATION	NORTH	EAST
POT	10+00.00	477912.7667	2033450.1210
PC	14+52.13	477549.2655	2033718.9824
PT	19+42.48	477086.5064	2033841.9106
PC	21+83.04	476847.6036	2033813.6976
PT	26+64.16	476381.6304	2033900.0070
PC	28+62.64	476205.9330	2033992.3376
PT	36+39.24	475454.5919	2034028.0959
POT	40+78.45	475048.1498	2033861.6276

TYPE	STATION	NORTH	EAST
POT	10+00.00	477223.1645	2034411.2859
POT	19+36.77	476361.8344	2034779.5866

TYPE	STATION	NORTH	EAST
POT	10+00.00	477286.0770	2034632.4800
PC	14+01.74	476884.7171	2034614.9567
PT	16+47.98	476644.4886	2034658.7250

TYPE	STATION	NORTH	EAST
POT	10+00.00	476802.4811	2035190.9425
POT	19+78.18	475904.8950	2034802.1199

TYPE	STATION	NORTH	EAST
POT	10+00.00	476801.5980	2035224.2460
PC	15+35.42	476310.1158	2035011.8325
PT	20+39.40	475819.8981	2035011.0925
POT	20+60.66	475800.3524	2035019.4700

TYPE	STATION	NORTH	EAST
POT	10+00.00	476723.7039	2035488.7772
POT	13+78.06	476347.5025	2035526.1914

TYPE	STATION	NORTH	EAST
POT	10+00.00	476683.0745	2036039.2390
POT	15+21.03	476201.5306	2035840.2622

TYPE	STATION	NORTH	EAST
POT	10+00.00	476205.3888	2035831.1725
POT	15+39.49	475707.0327	2035624.5603

TYPE	STATION	NORTH	EAST
POT	10+00.00	477673.4391	2033906.7180
POT	12+31.02	477582.6525	2033694.2879

TYPE	STATION	NORTH	EAST
POT	10+00.00	477803.2029	2033642.5866
PC	10+77.92	477731.2000	2033672.3636
PT	11+16.38	477694.3512	2033669.0905
POT	11+65.79	477652.7321	2033642.4539

TYPE	STATION	NORTH	EAST
POT	10+00.00	475962.8152	2034543.3030
POT	14+59.67	475903.8941	2034087.4263

NOTE: DRAWING NOT TO SCALE

6/2/09

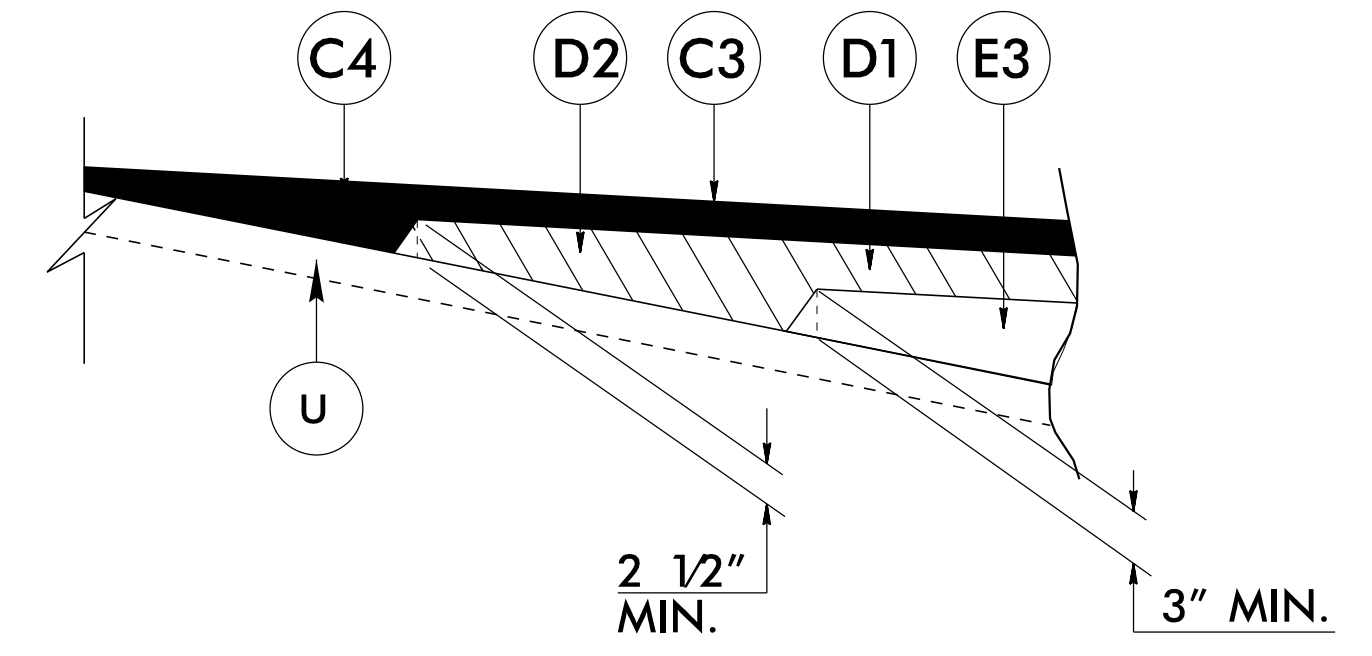
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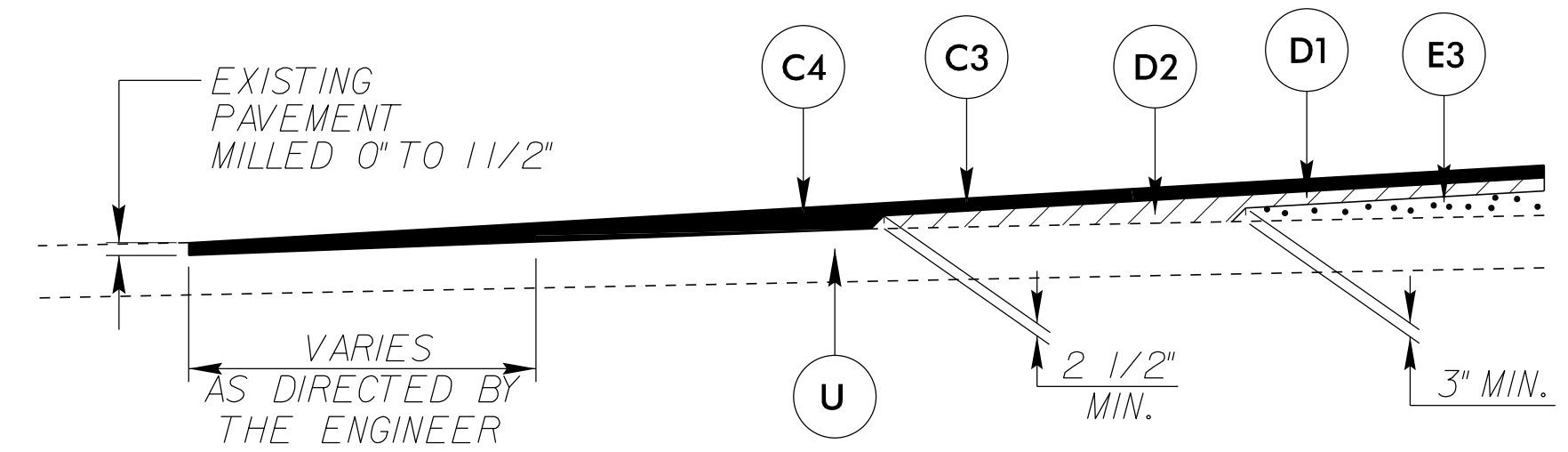
PROJECT REFERENCE NO. B-4490	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER TIMOTHY SCOTT SEAL 19563 2016	PAVEMENT DESIGN ENGINEER CLARK S. MORRISON SEAL 022896 2016
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	
<p>PLANS PREPARED BY: PARSONS BRINCKERHOFF 434 FAYETTEVILLE STREET SUITE 1500 RALEIGH, NC 27601 LICENSE NO. E-0165</p>	

FINAL PAVEMENT SCHEDULE					
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	E2	PROP. APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	S	4" CONCRETE SIDEWALK
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.	E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, 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 5 1/2" IN DEPTH	T	EARTH MATERIAL
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	R1	2'-6" CONCRETE CURB AND GUTTER	U	EXISTING PAVEMENT
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH	R2	1'-6" CONCRETE CURB AND GUTTER	V1	1.5" MILLING OF ASPHALT PAVEMENT
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R3	2'-9" CONCRETE CURB AND GUTTER	V2	3" MILLING OF ASPHALT PAVEMENT
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH	R4	5" MONOLITHIC STAMPED CONCRETE ISLAND	W	WEDGING DETAIL
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R5	4" STAMPED CONCRETE ISLAND COVER		

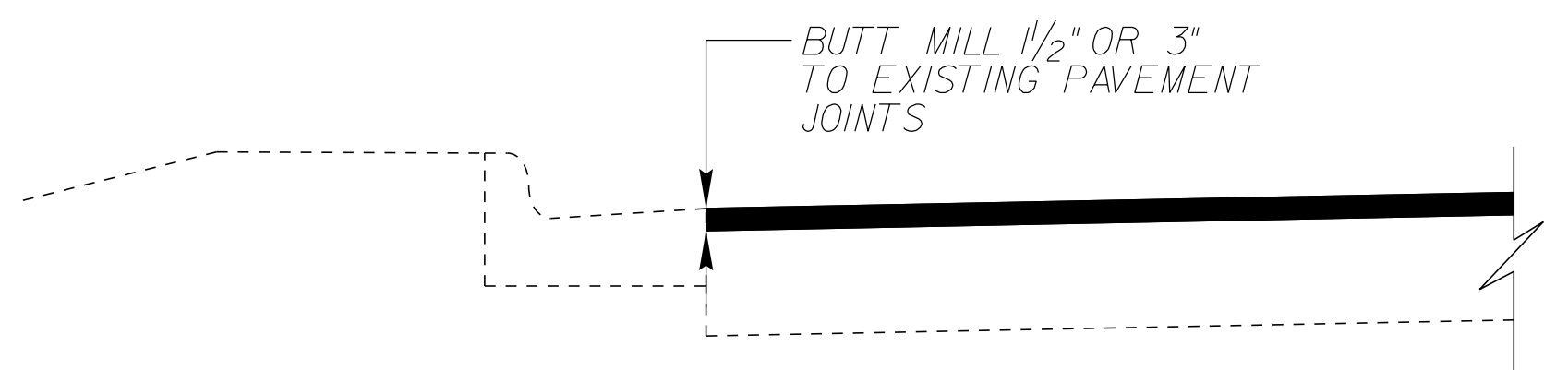
NOTE: ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE SHOWN



WEDGING DETAIL FOR RESURFACING



MILLING DETAIL FOR PROFILE CONNECTIONS
TYING PROPOSED PAVEMENTS TO EXISTING PAVEMENTS



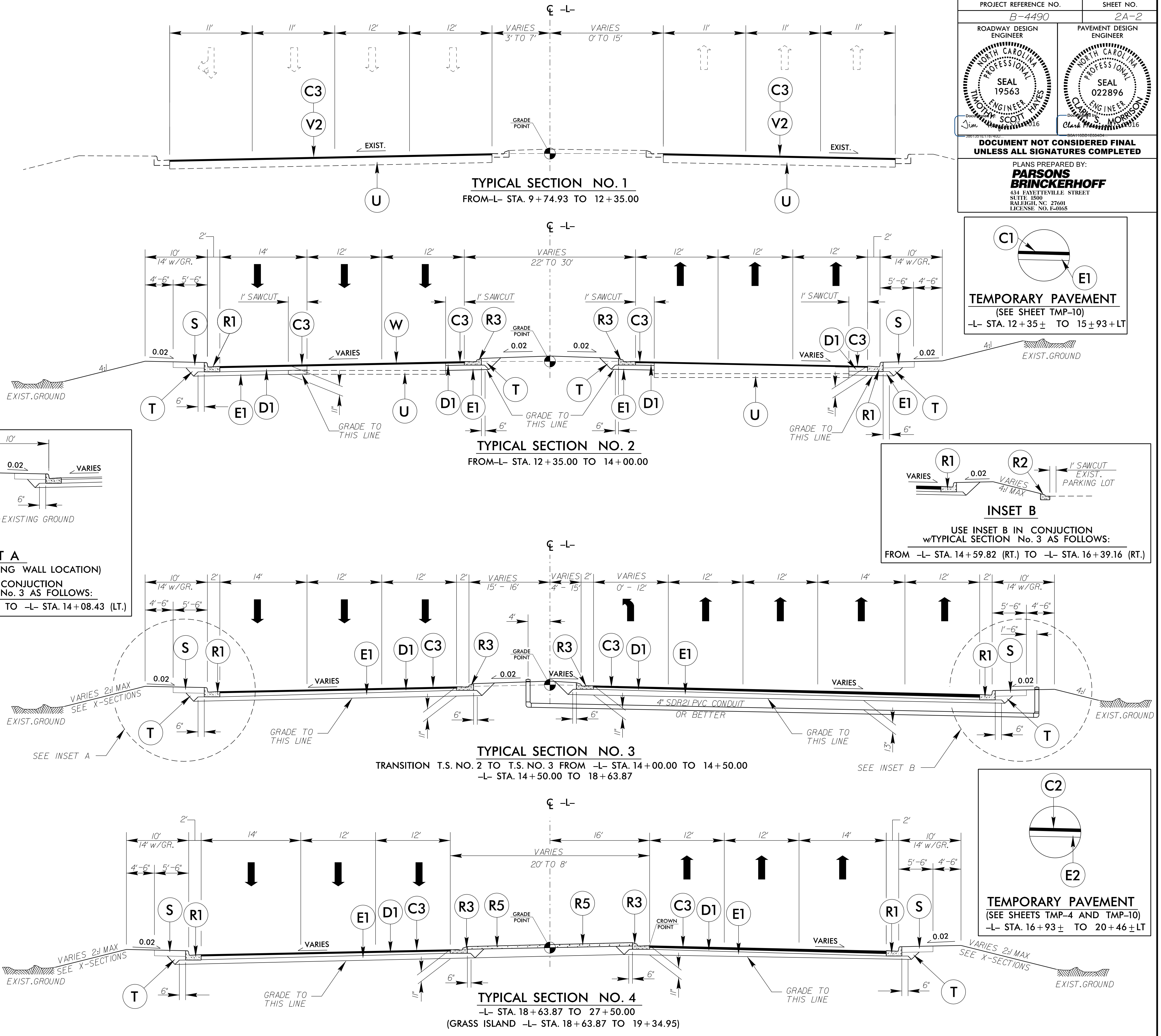
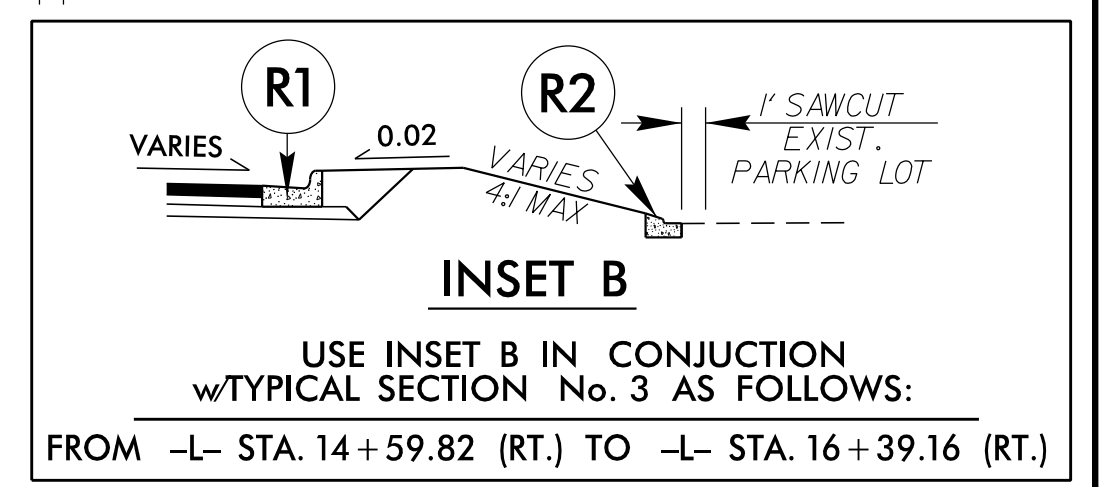
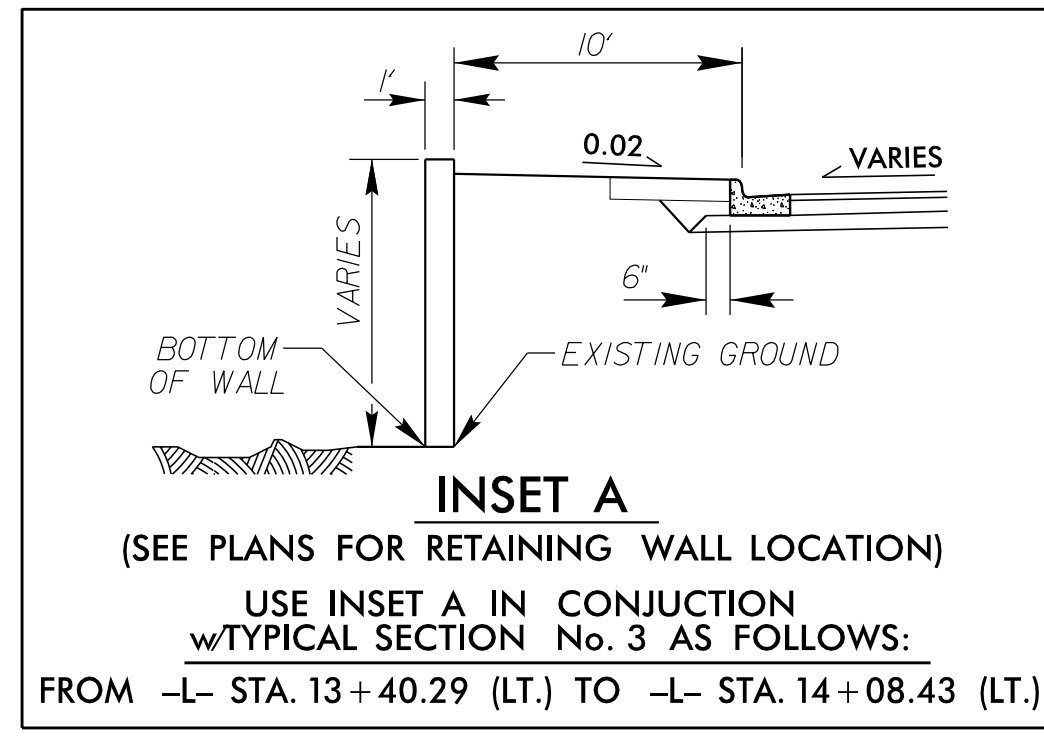
MILLING DETAIL FOR EXISTING CURB & GUTTER
(SEE TYPICAL SECTIONS NOS. 1, 14 & 17 FOR LOCATIONS)

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4/20/2016

6/2/99

PAVEMENT SCHEDULE	
C1	1.5" TYPE S9.5B
C2	2" TYPE S9.5B
C3	3" TYPE S9.5B
C4	VAR. DEPTH TYPE S9.5B
D1	4" I19.0B
D2	VAR. DEPTH I19.0B
E1	4" TYPE B25.0B
E2	5 1/2" TYPE B25.0B
E3	VAR. DEPTH TYPE B25.0B
R1	2'-6" CONCRETE C&G
R2	1'-6" CONCRETE C&G
R3	2'-9" CONCRETE C&G
R4	5" MONOLITHIC STAMPED CONCRETE ISLAND
R5	4" STAMPED CONC. ISLAND COVER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	1.5" MILLING ASPHALT PAVEMENT
V2	3" MILLING ASPHALT PAVEMENT
W	WEDGING DETAIL

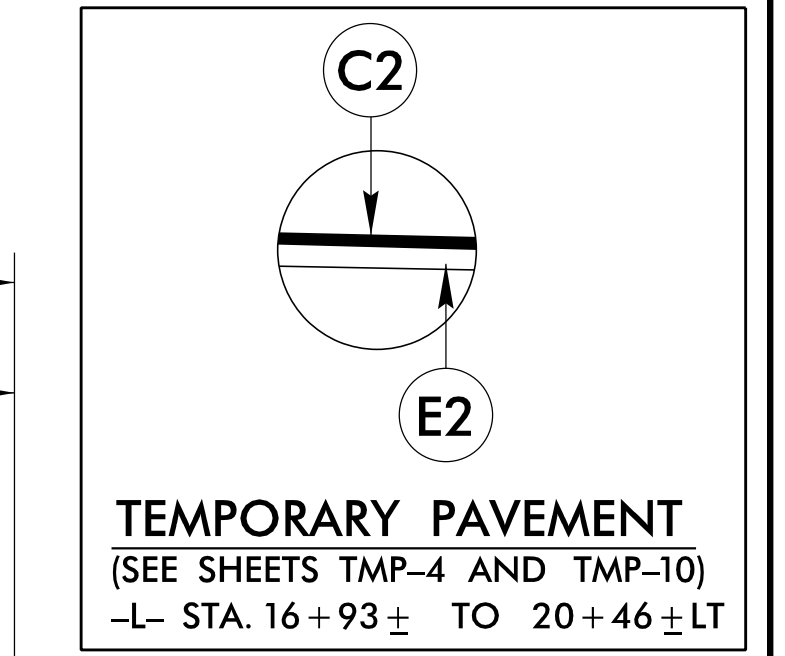
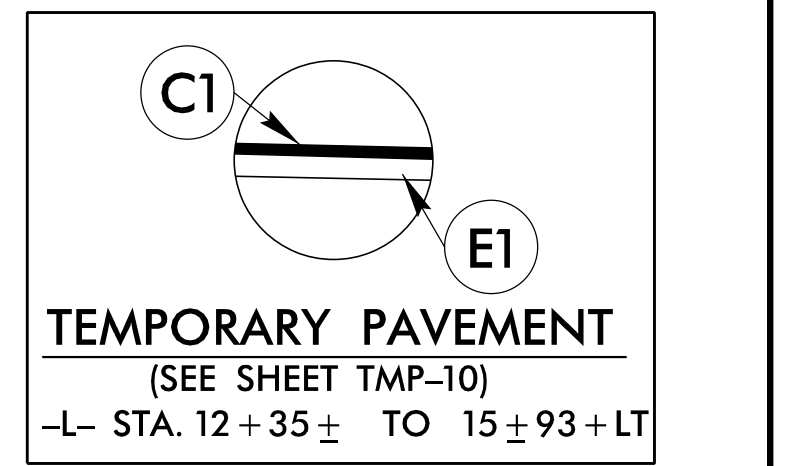
NOTE: LOCATION OF CONDUIT TO BE DETERMINED BY THE ENGINEER.



PROJECT REFERENCE NO. B-4490	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER TIMOTHY SCOTT SEAL 19563	PAVEMENT DESIGN ENGINEER CLAYTON MORRISON SEAL 022896

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

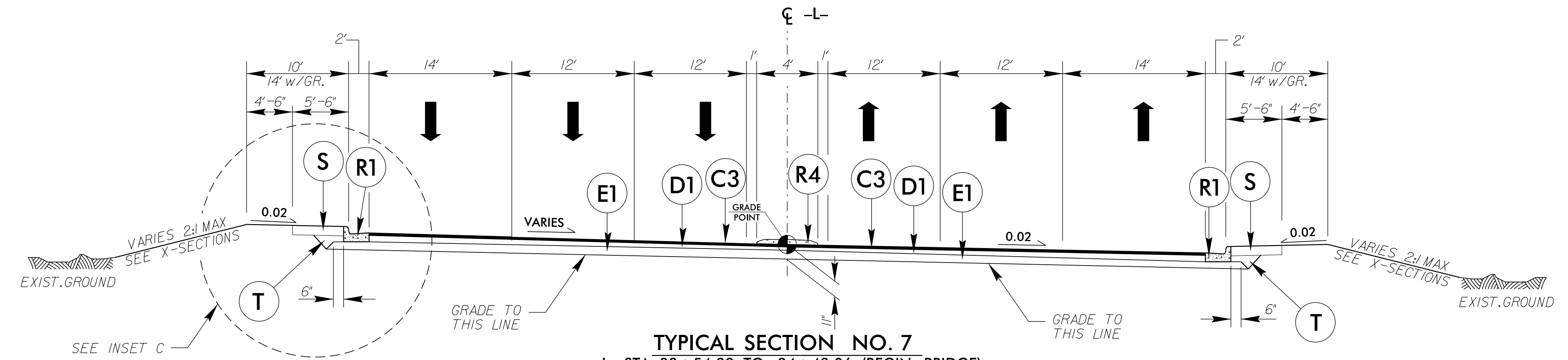
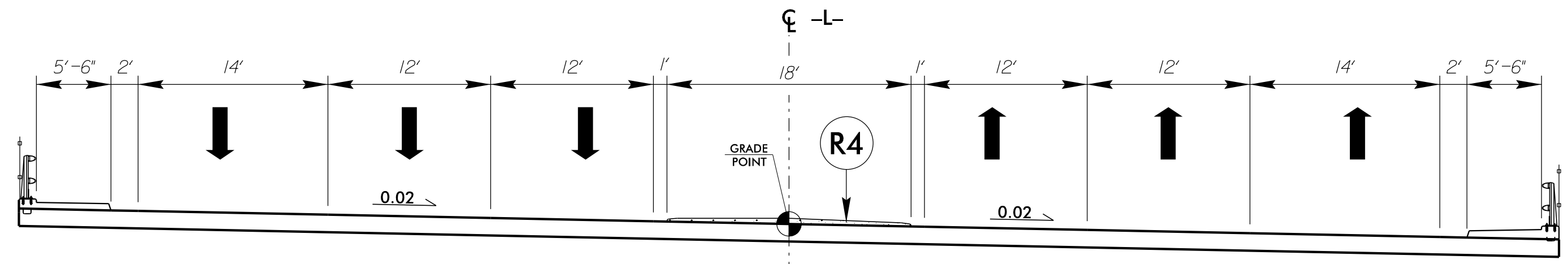
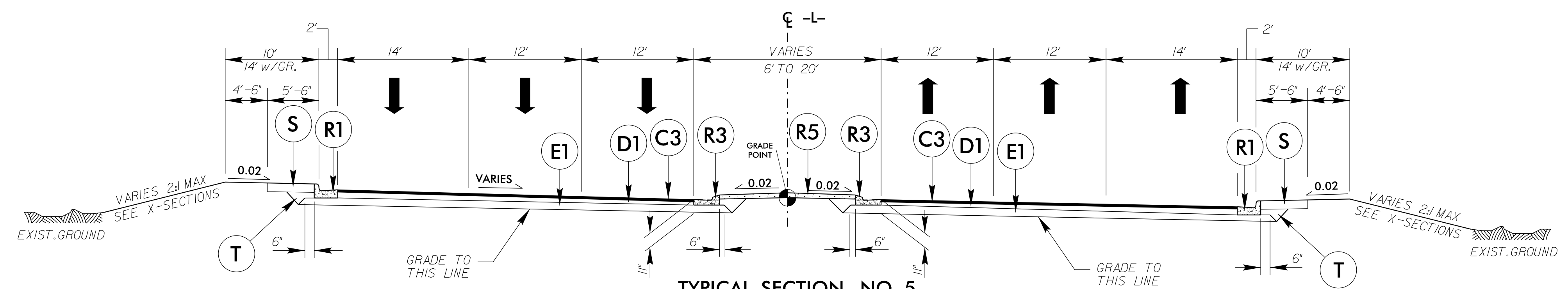
PLANS PREPARED BY:
PARSONS BRINCKERHOFF
 434 FAYETTEVILLE STREET
 SUITE 1500
 RALEIGH, NC 27601
 LICENSE NO. E-0165



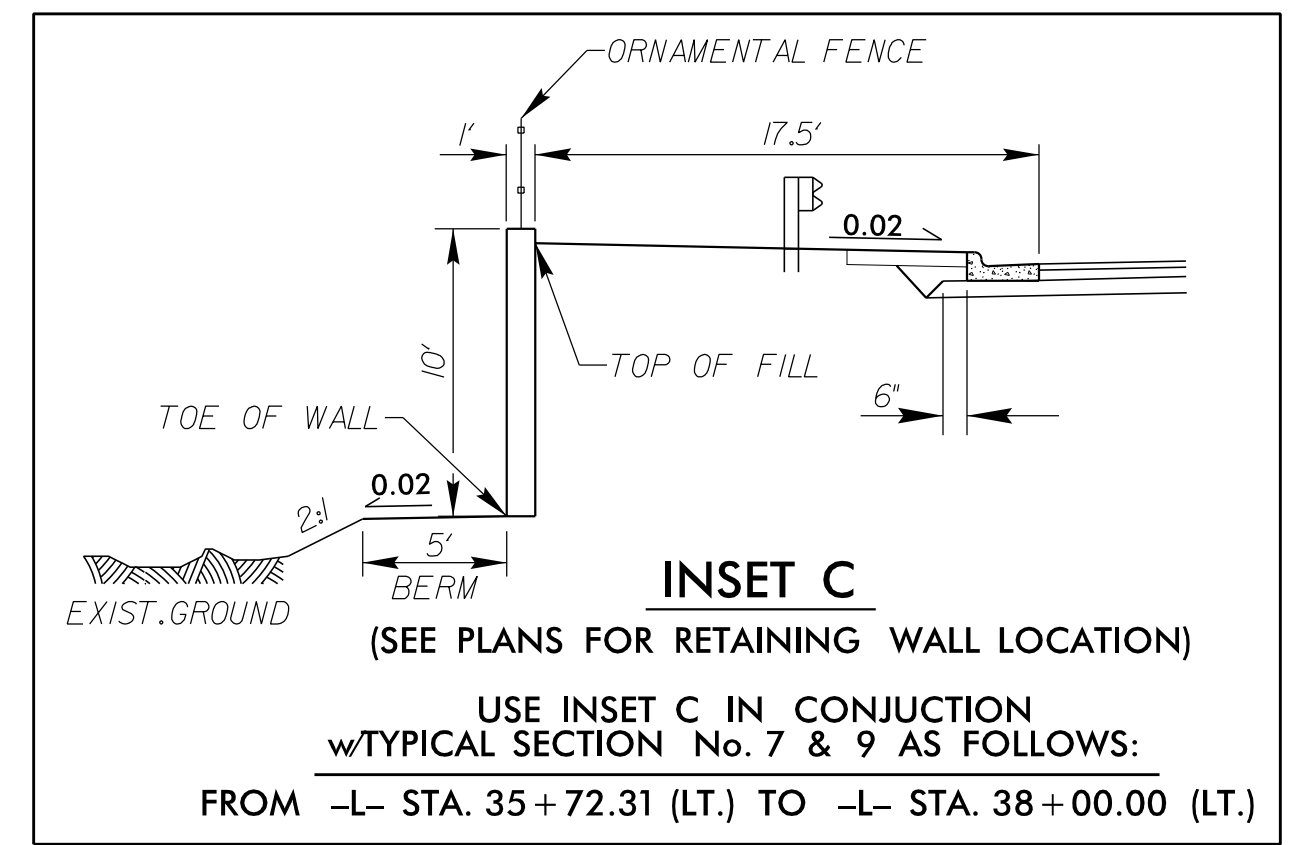
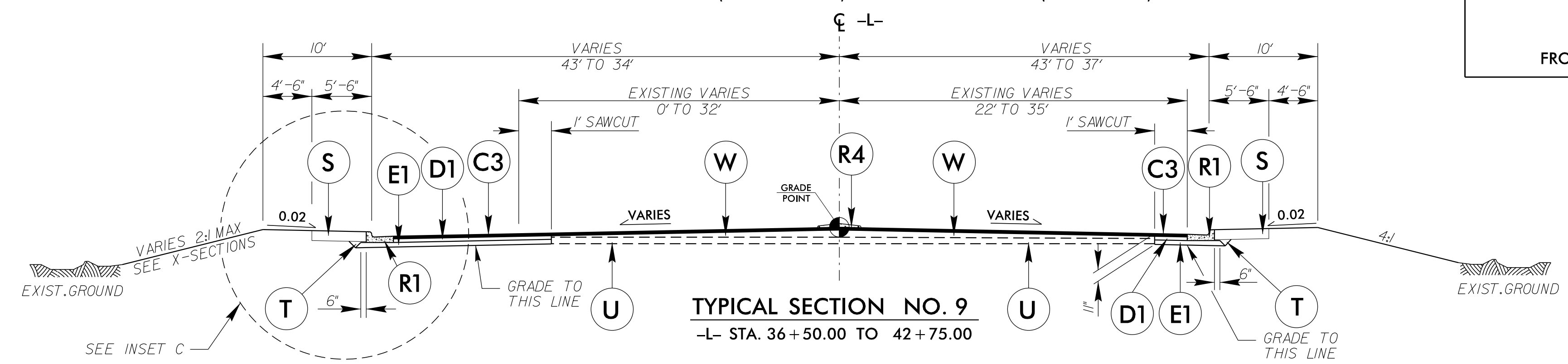
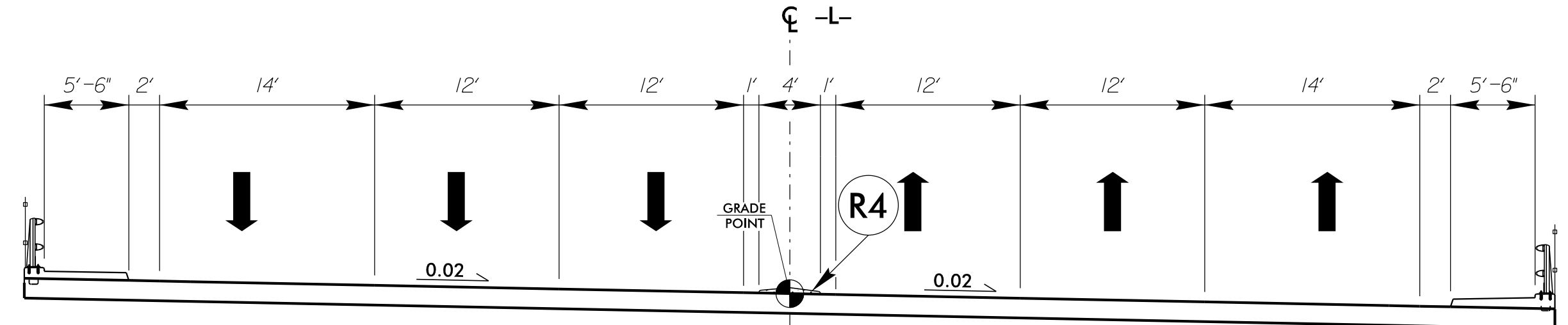
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 6/3/2016

6/2/2016

PAVEMENT SCHEDULE	
C1	1.5" TYPE S9.5B
C2	2" TYPE S9.5B
C3	3" TYPE S9.5B
C4	VAR. DEPTH TYPE S9.5B
D1	4" I19.0B
D2	VAR. DEPTH I19.0B
E1	4" TYPE B25.0B
E2	5 1/2" TYPE B25.0B
E3	VAR. DEPTH TYPE B25.0B
R1	2'-6" CONCRETE C&G
R2	1'-6" CONCRETE C&G
R3	2'-9" CONCRETE C&G
R4	5" MONOLITHIC STAMPED CONCRETE ISLAND
R5	4" STAMPED CONC. ISLAND COVER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	1.5" MILLING ASPHALT PAVEMENT
V2	3" MILLING ASPHALT PAVEMENT
W	WEDGING DETAIL



* TRANSITION FROM TYPICAL SECTION 7 TO TYPICAL SECTION 9 FROM -L- STA. 36+00.00 TO 36+50.00

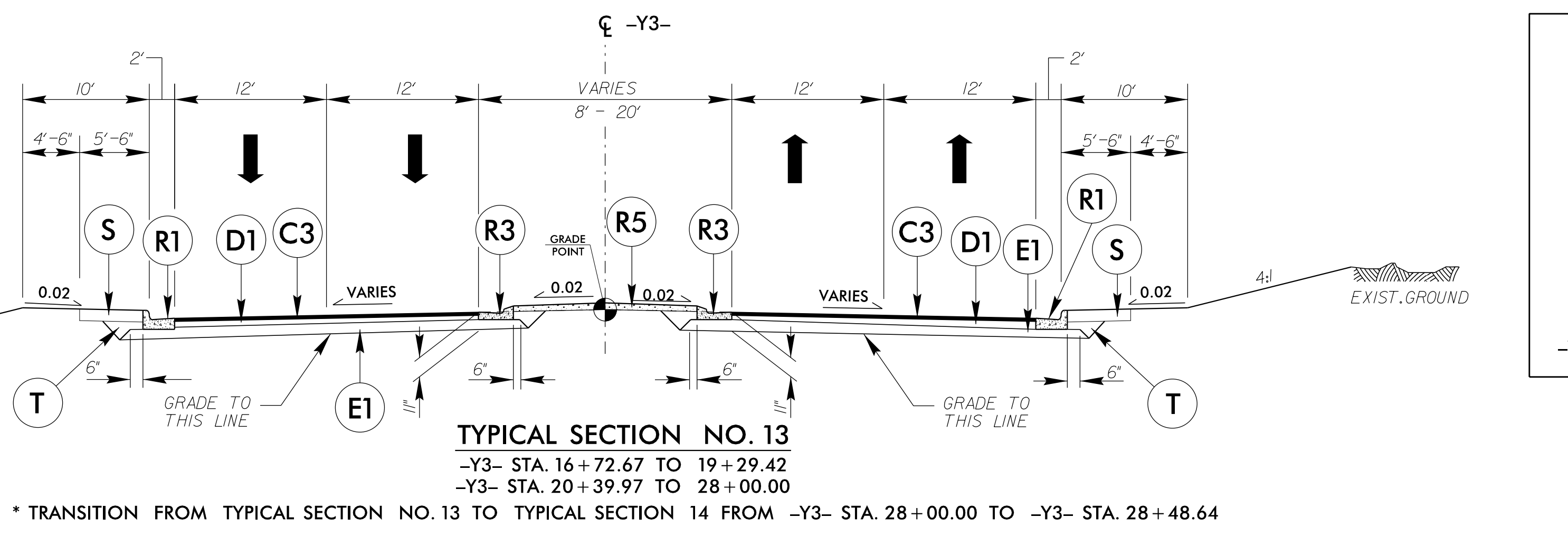
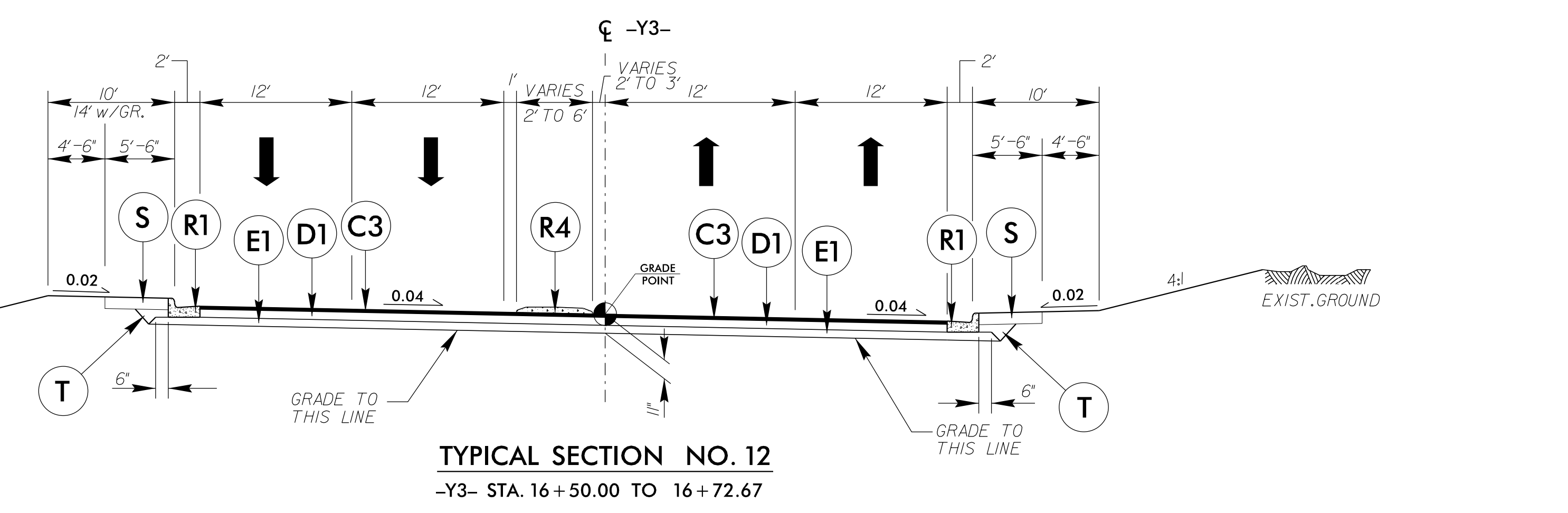
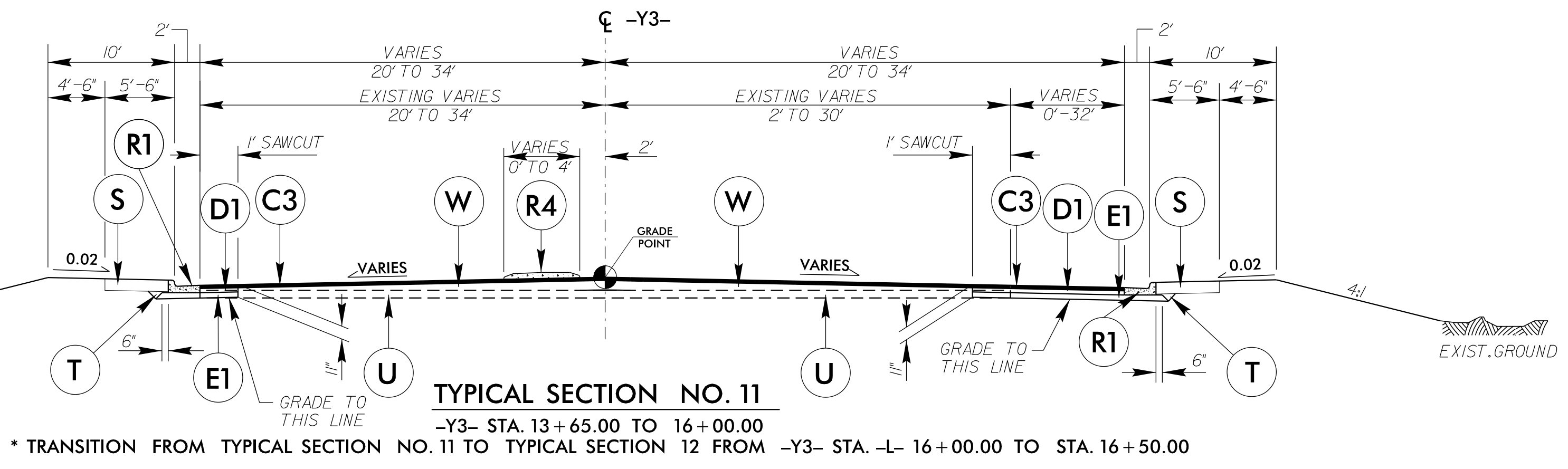
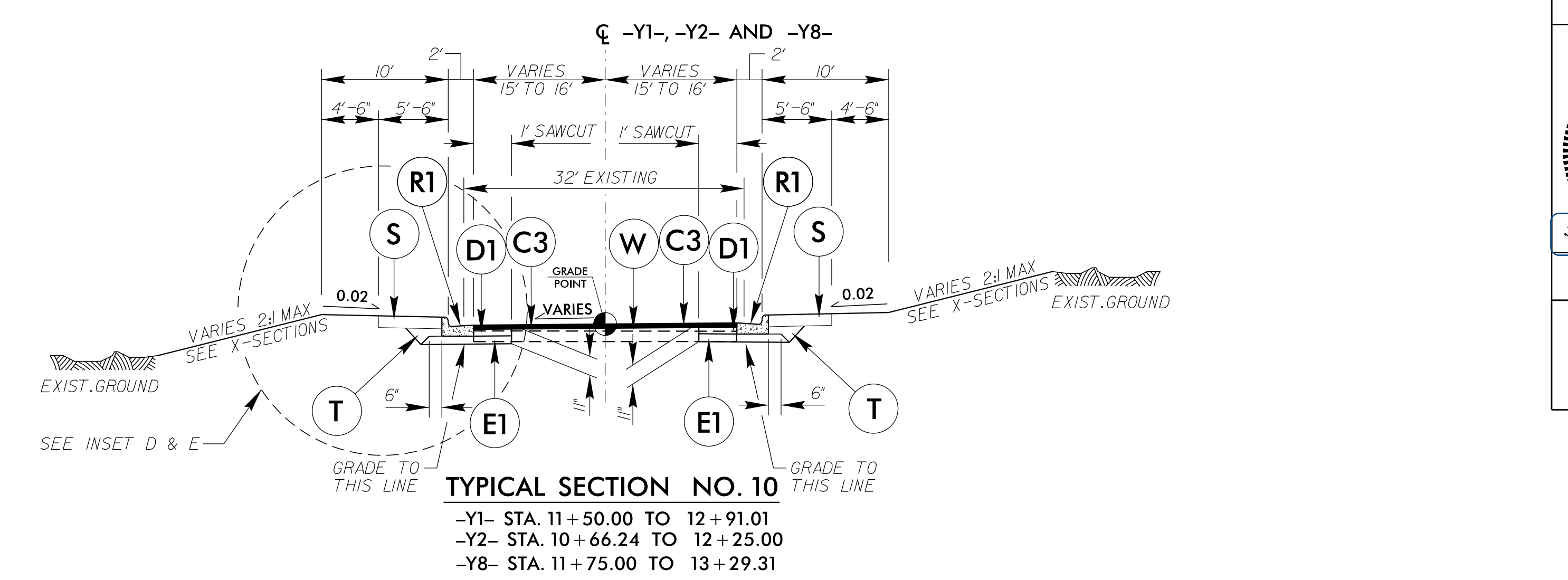
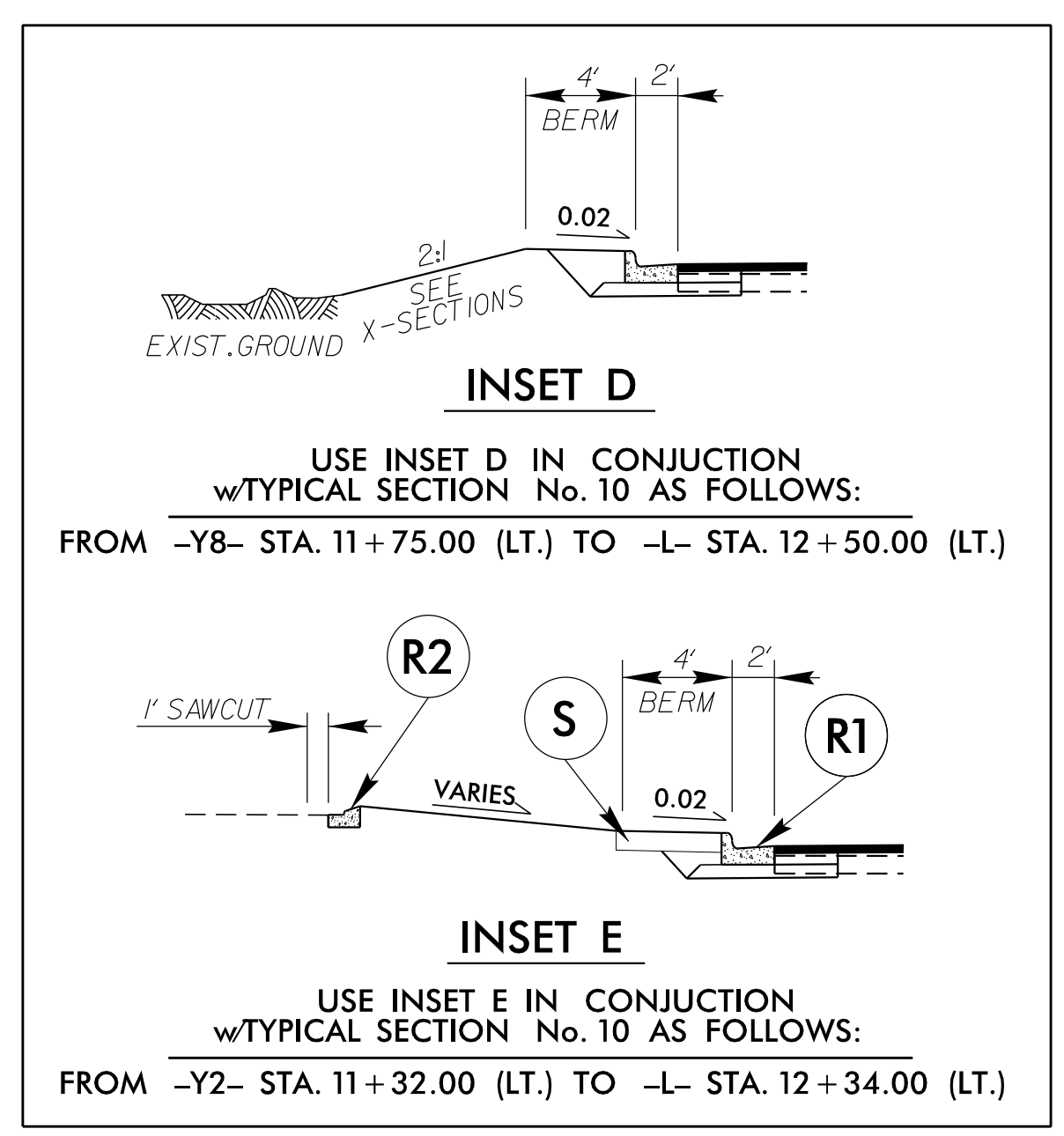


PROJECT REFERENCE NO. B-4490	SHEET NO. 2A-3
ROADWAY DESIGN ENGINEER TIMOTHY SCOTT SEAL 19563 NORTH CAROLINA PROFESSIONAL ENGINEER	PAVEMENT DESIGN ENGINEER CLARK S. MORRISON SEAL 022896 NORTH CAROLINA PROFESSIONAL ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PLANS PREPARED BY: PARSONS BRINCKERHOFF 434 FAYETTEVILLE STREET SUITE 1500 RALEIGH, NC 27601 LICENSE NO. E-0165	

4:33:11 PM
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3/10/2016

6/2/2016

PAVEMENT SCHEDULE	
C1	1.5" TYPE S9.5B
C2	2" TYPE S9.5B
C3	3" TYPE S9.5B
C4	VAR. DEPTH TYPE S9.5B
D1	4" I19.0B
D2	VAR. DEPTH I19.0B
E1	4" TYPE B25.0B
E2	5 1/2" TYPE B25.0B
E3	VAR. DEPTH TYPE B25.0B
R1	2'-6" CONCRETE C&G
R2	1'-6" CONCRETE C&G
R3	2'-9" CONCRETE C&G
R4	5" MONOLITHIC STAMPED CONCRETE ISLAND
R5	4" STAMPED CONC. ISLAND COVER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	1.5" MILLING ASPHALT PAVEMENT
V2	3" MILLING ASPHALT PAVEMENT
W	WEDGING DETAIL

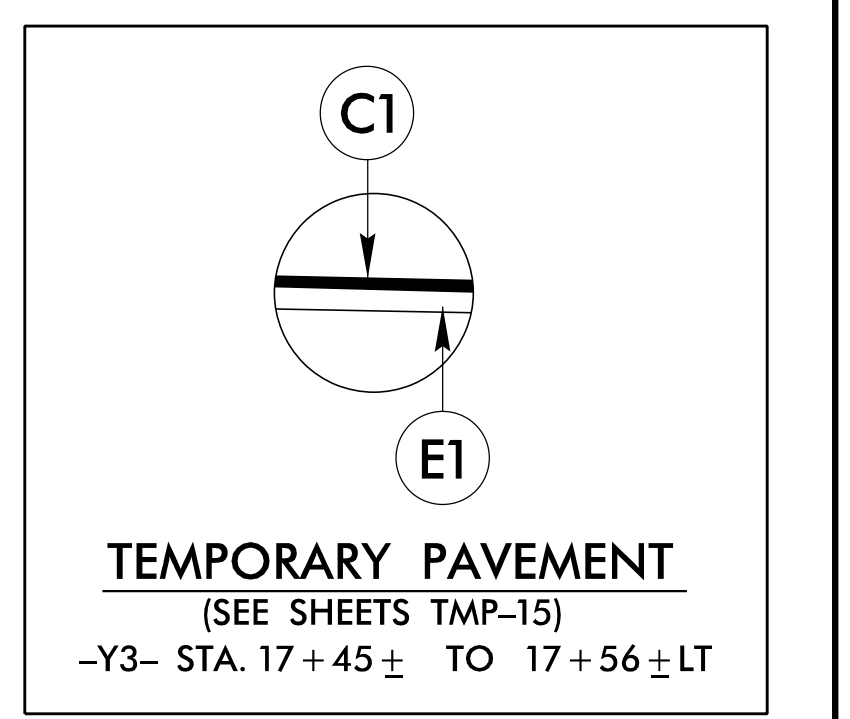


PROJECT REFERENCE NO. B-4490 SHEET NO. 2A-4

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19563
PAVEMENT DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022896

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

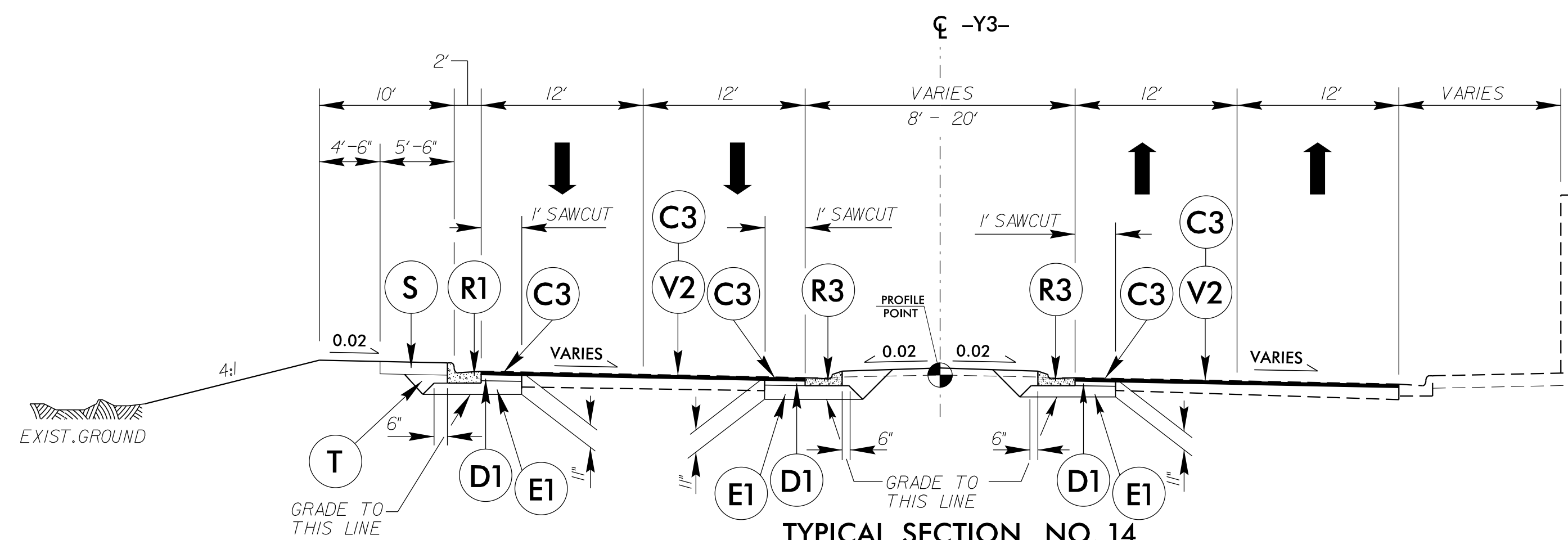
PLANS PREPARED BY: **PARSONS BRINCKERHOFF**
434 FAYETTEVILLE STREET, SUITE 1500, RALEIGH, NC 27601, LICENSE NO. E-0165



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6/2/2016

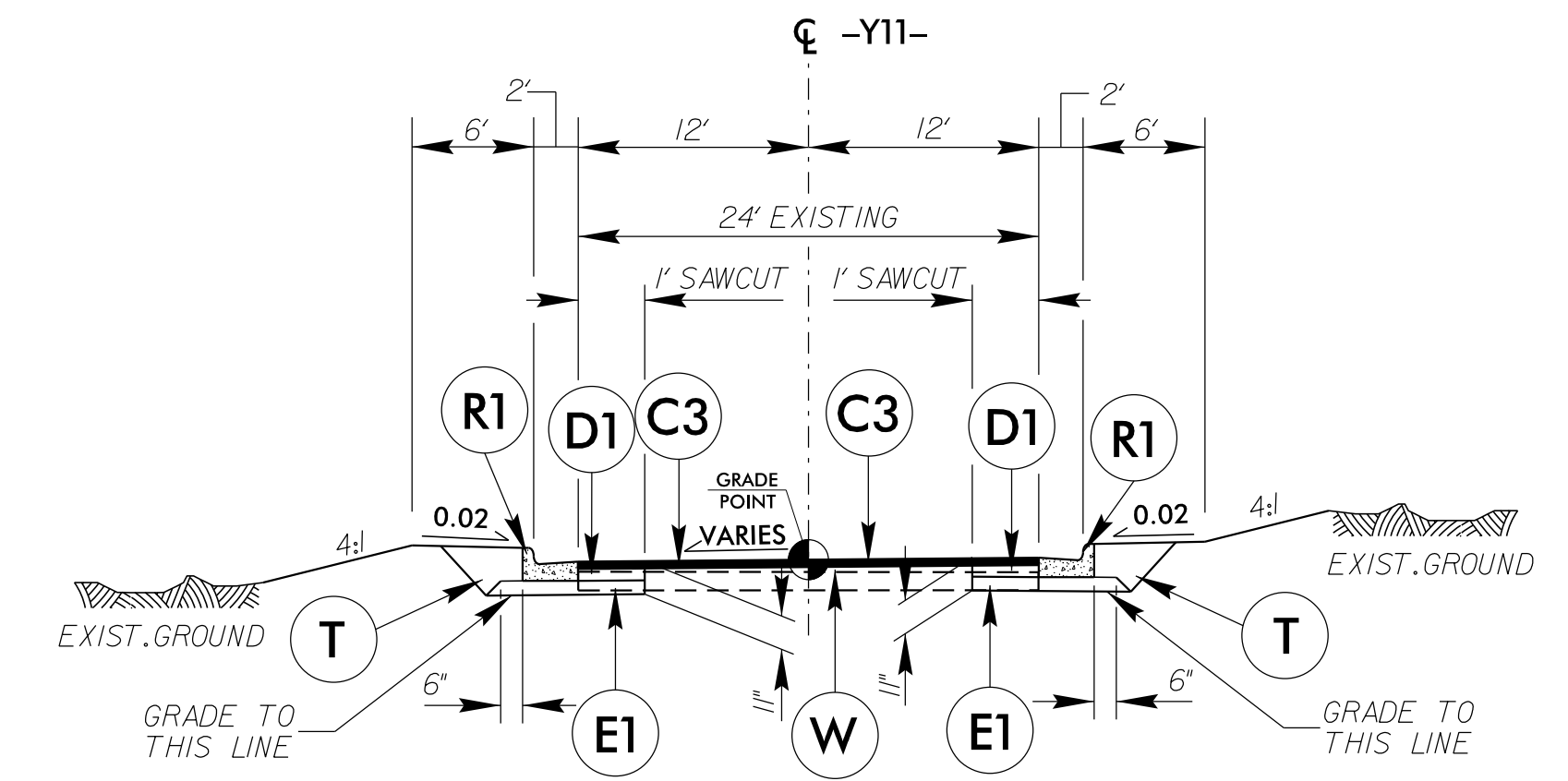
PAVEMENT SCHEDULE	
C1	1.5" TYPE S9.5B
C2	2" TYPE S9.5B
C3	3" TYPE S9.5B
C4	VAR. DEPTH TYPE S9.5B
D1	4" I19.0B
D2	VAR. DEPTH I19.0B
E1	4" TYPE B25.0B
E2	5 1/2" TYPE B25.0B
E3	VAR. DEPTH TYPE B25.0B
R1	2'-6" CONCRETE C&G
R2	1'-6" CONCRETE C&G
R3	2'-9" CONCRETE C&G
R4	5" MONOLITHIC STAMPED CONCRETE ISLAND
R5	4" STAMPED CONC. ISLAND COVER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	1.5" MILLING ASPHALT PAVEMENT
V2	3" MILLING ASPHALT PAVEMENT
W	WEDGING DETAIL



TYPICAL SECTION NO. 14

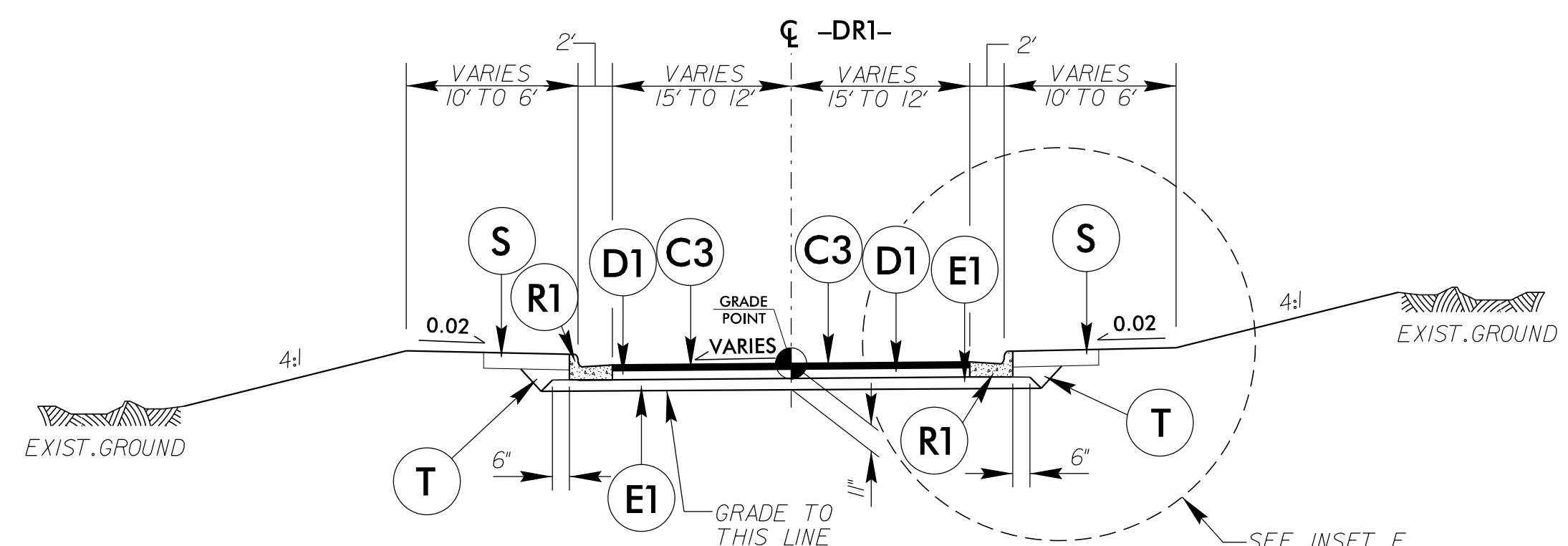
-Y3- STA. 28+48.64 TO 30+50.00

* TRANSITION FROM TYPICAL SECTION NO. 13 TO TYPICAL SECTION 14 FROM -Y3- STA. 28+00.00 TO -Y3- STA. 28+48.64



TYPICAL SECTION NO. 15

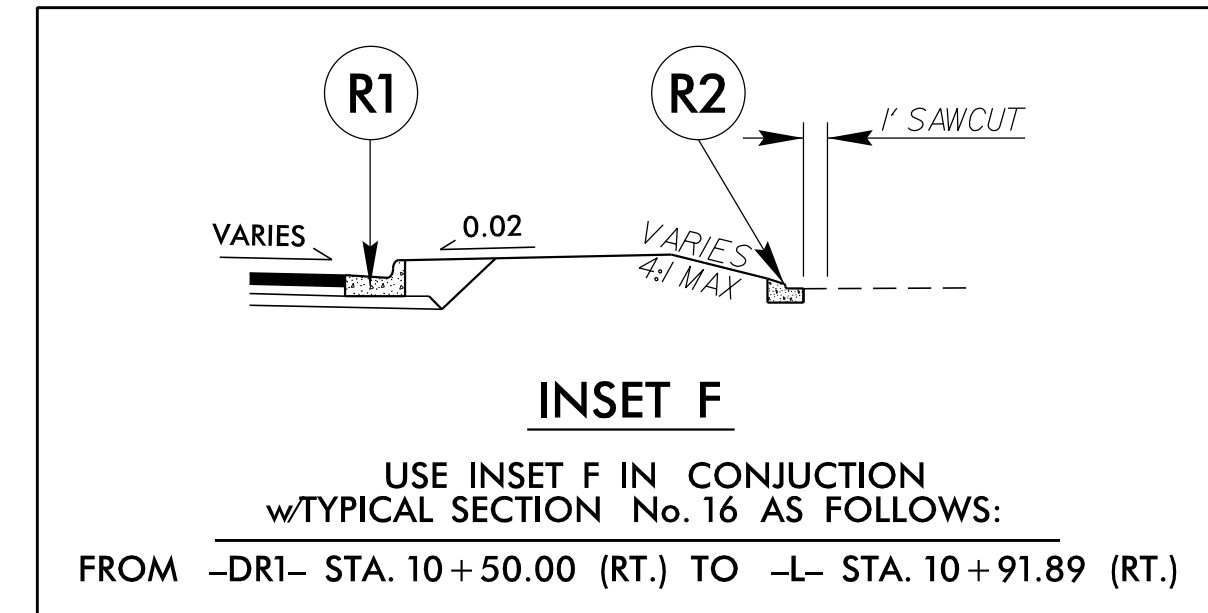
-Y11- STA. 11+45.00 TO 12+06.97



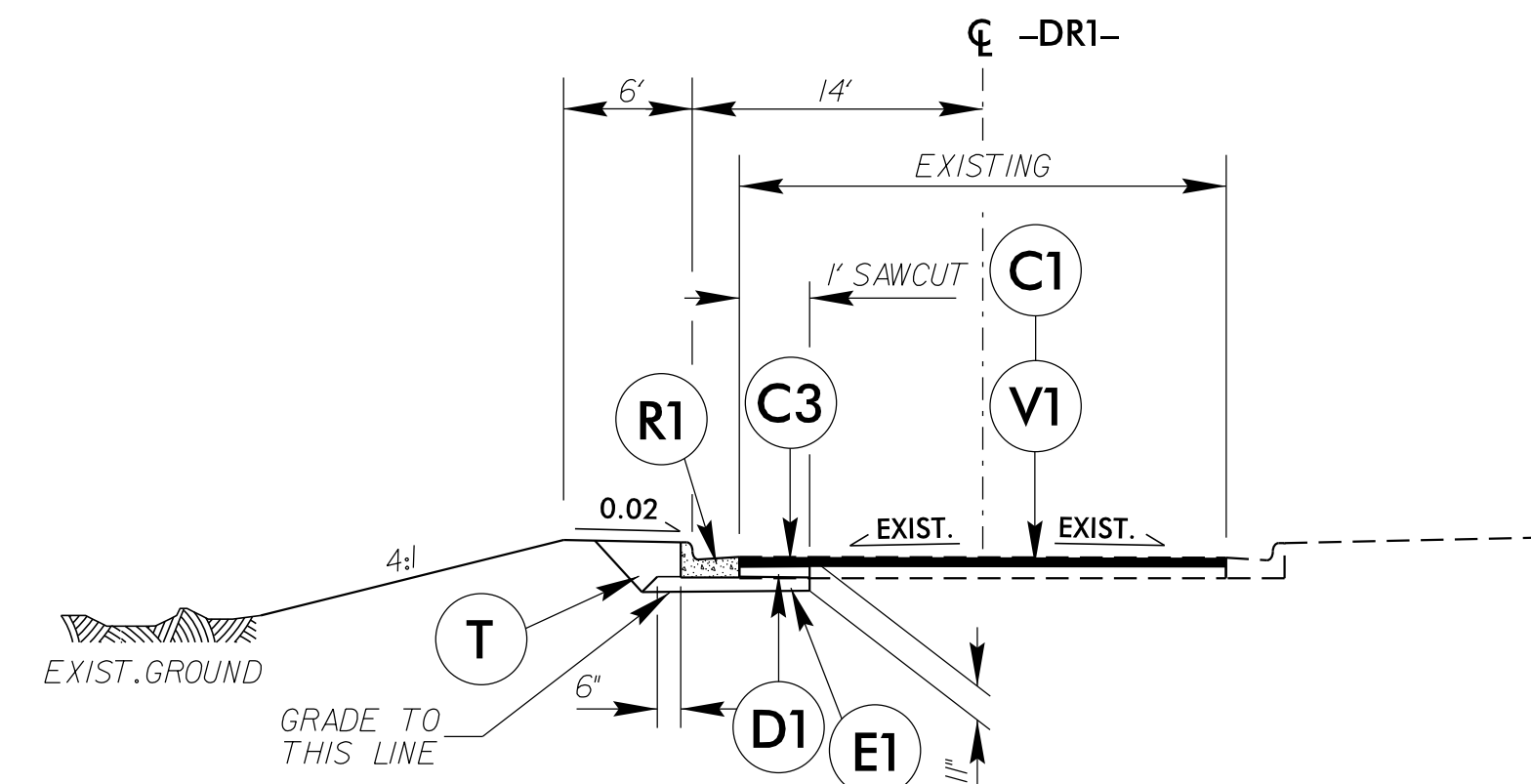
TYPICAL SECTION NO. 16

-DR1- STA. 10+16.45 TO 11+80.00

NOTE:
DO NOT DISTURB
EXIST. RETAINING WALL,
SIDEWALK AND CURB & GUTTER



INSET F
USE INSET F IN CONJUNCTION
w/TYPICAL SECTION No. 16 AS FOLLOWS:
FROM -DR1- STA. 10+50.00 (RT.) TO -L- STA. 10+91.89 (RT.)

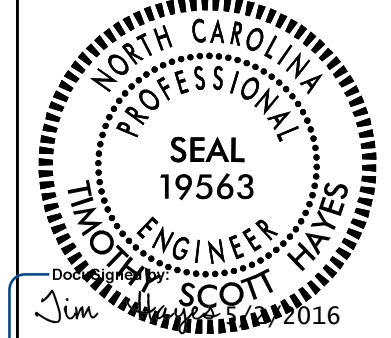


TYPICAL SECTION NO. 17

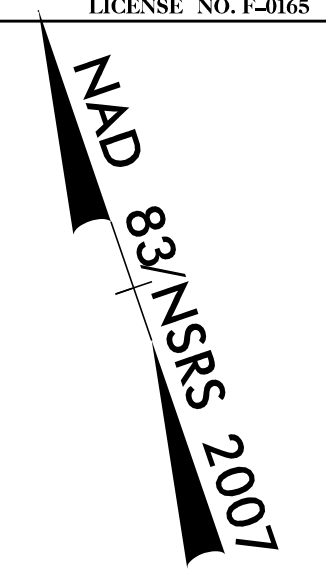
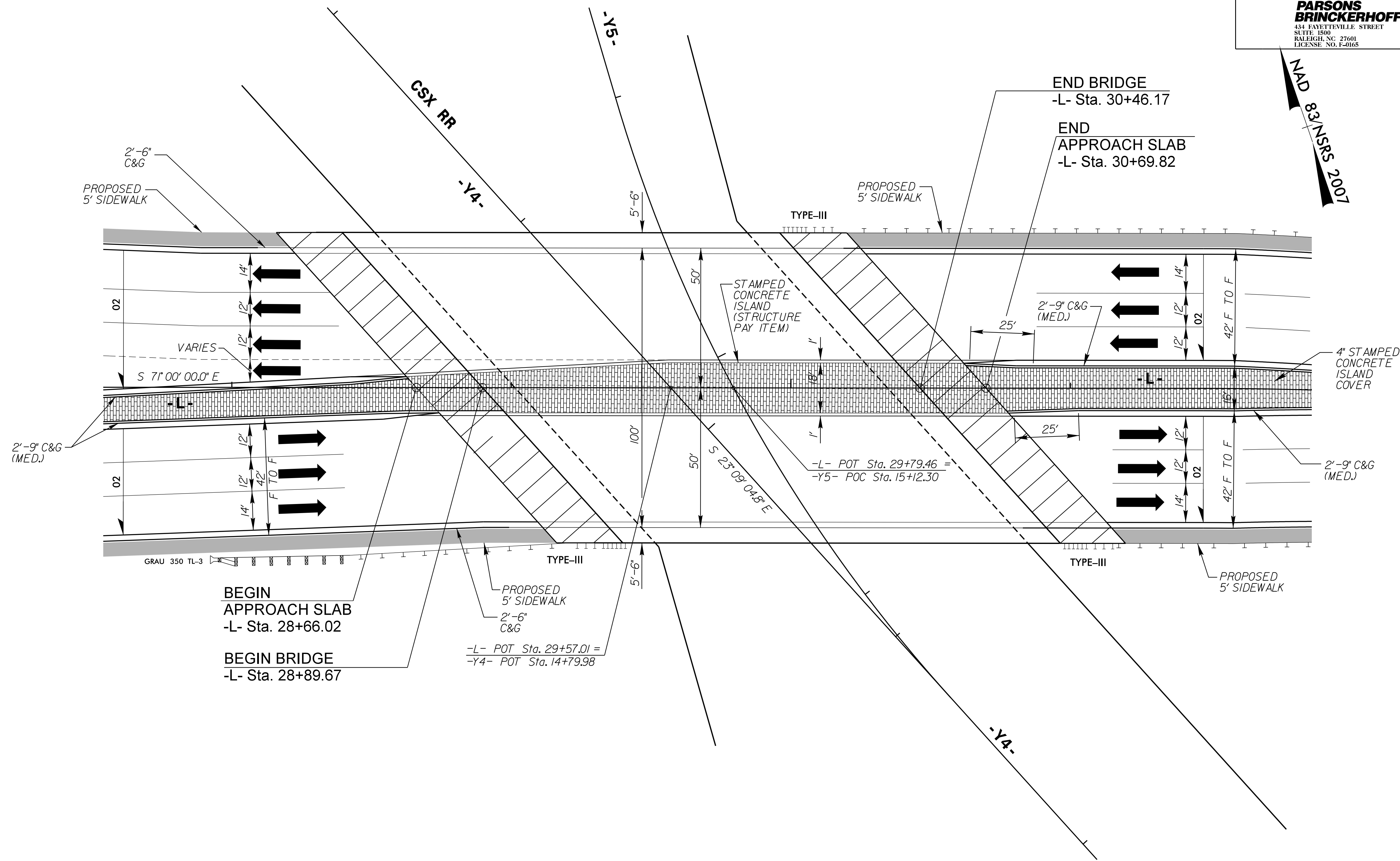
-DR1- STA. 11+80.00 TO 13+71.63

PROJECT REFERENCE NO. B-4490	SHEET NO. 2A-5
ROADWAY DESIGN ENGINEER TIMOTHY SCOTT SEAL 19563 ENGINEER 2016	PAVEMENT DESIGN ENGINEER CLAYTON MORRISON SEAL 022896 ENGINEER 2016
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PLANS PREPARED BY: PARSONS BRINCKERHOFF 434 FAYETTEVILLE STREET SUITE 1500 RALEIGH, NC 27601 LICENSE NO. E-0165	

4:33:53 PM
B:\4490\RD-tyr-tyr.dgn
3/10/2016

PROJECT REFERENCE NO. B-4490	SHEET NO. 2B-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PLANS PREPARED BY: PARSONS BRINCKERHOFF 434 FAYETTEVILLE STREET SUITE 1500 RALEIGH, NC 27601 LICENSE NO. F-0165	

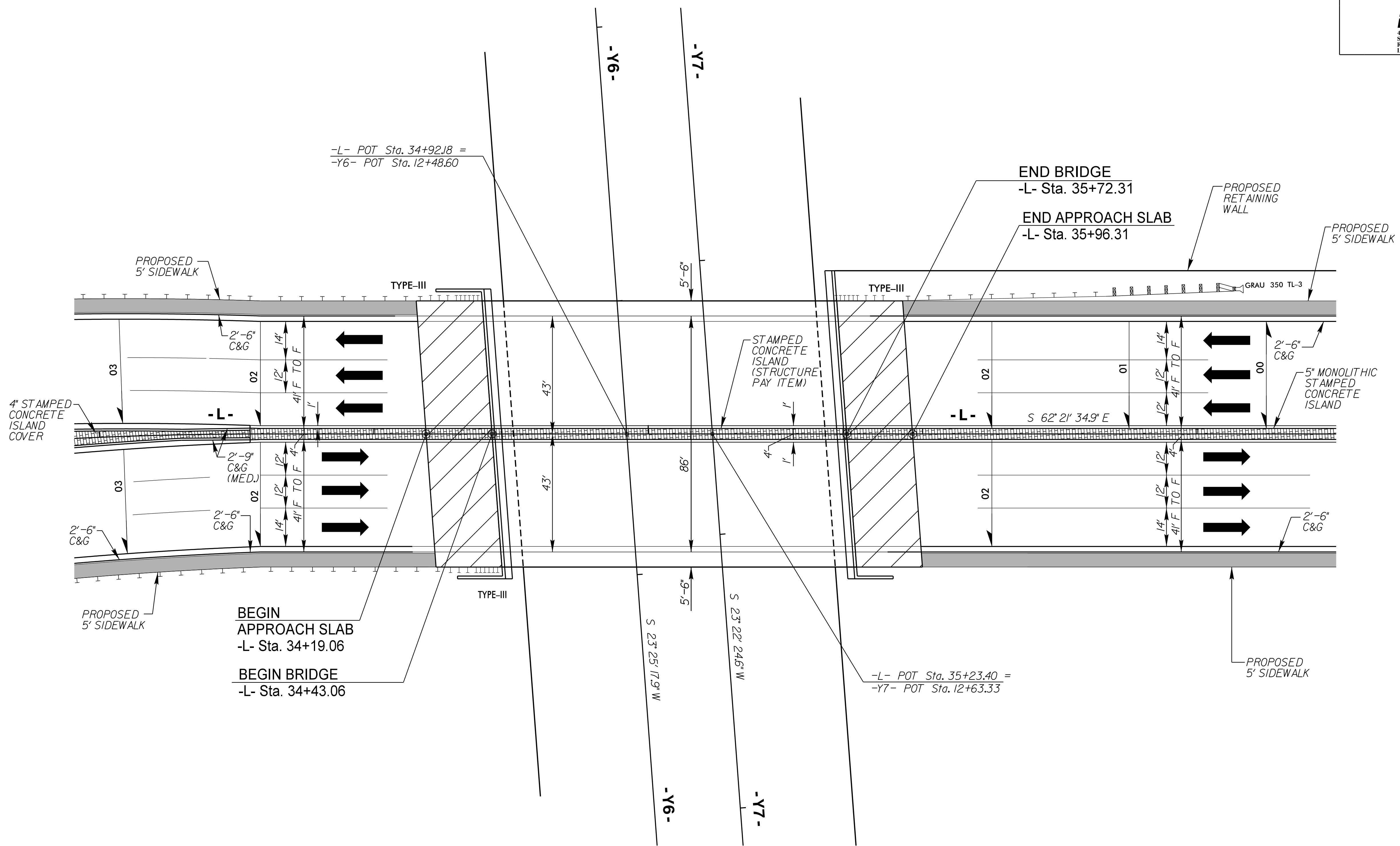
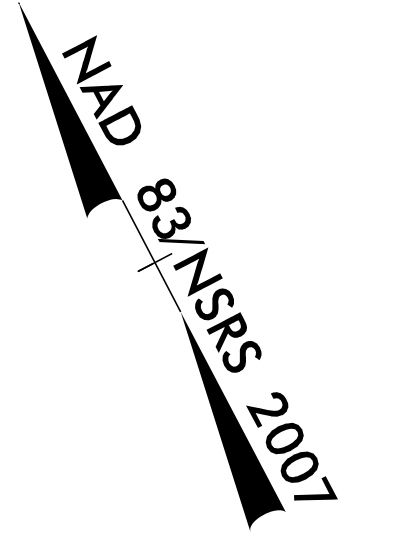
DETAIL SHOWING BRIDGE IN RELATION TO PAVEMENT



8.17.09

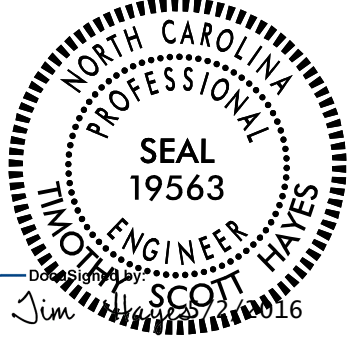
DETAIL SHOWING BRIDGE IN RELATION TO PAVEMENT

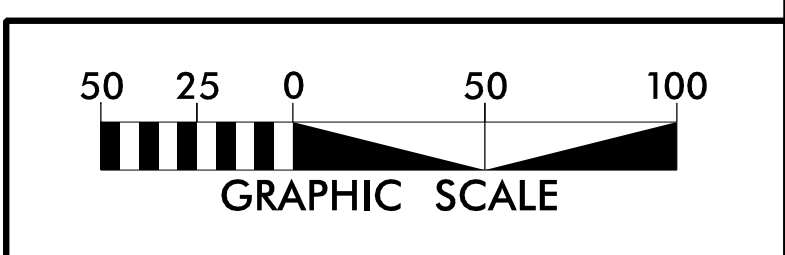
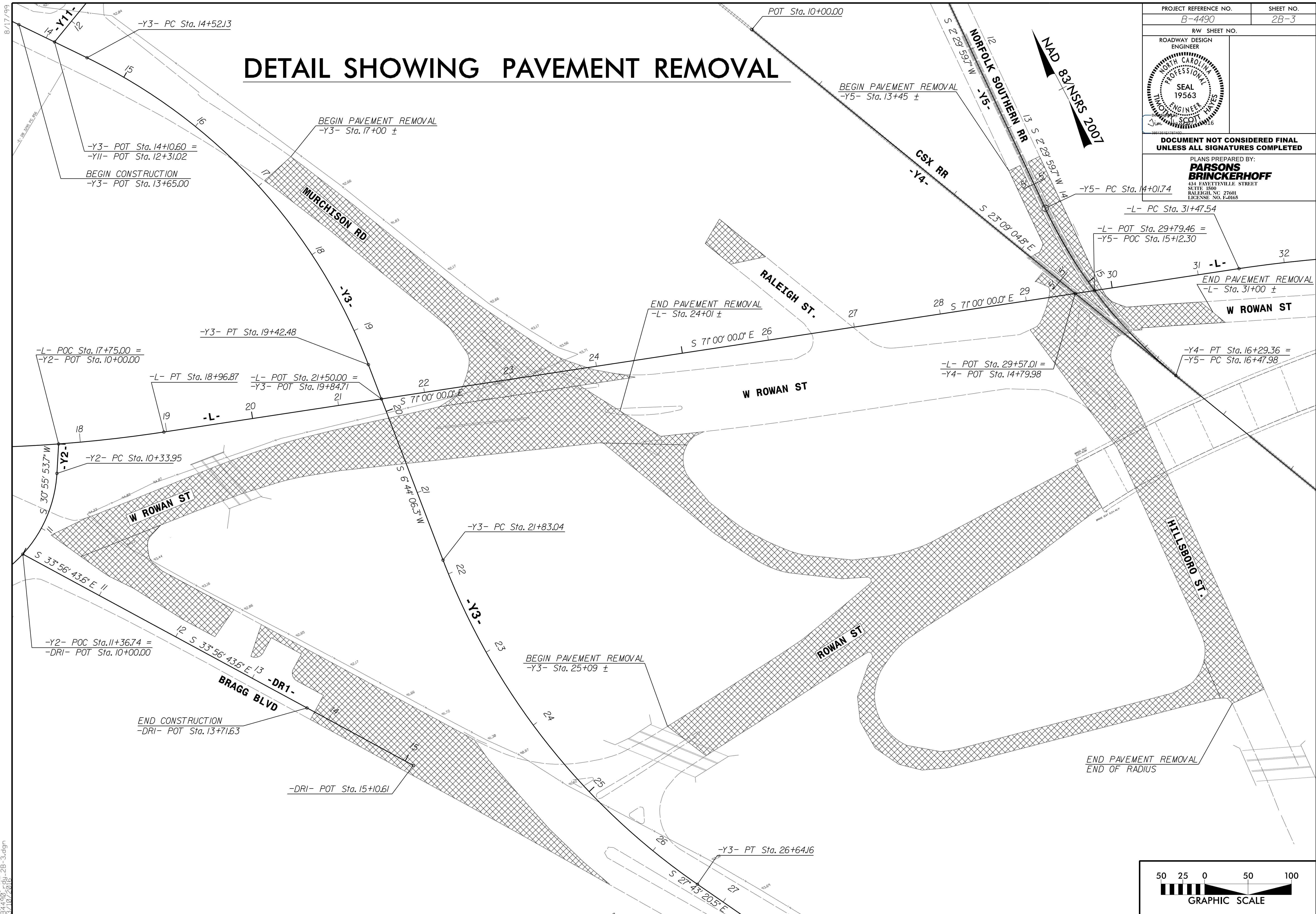
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	
PLANS PREPARED BY: PARSONS BRINCKERHOFF 434 FAYETTEVILLE STREET SUITE 1500 RALEIGH, NC 27601 LICENSE NO. E-0165	



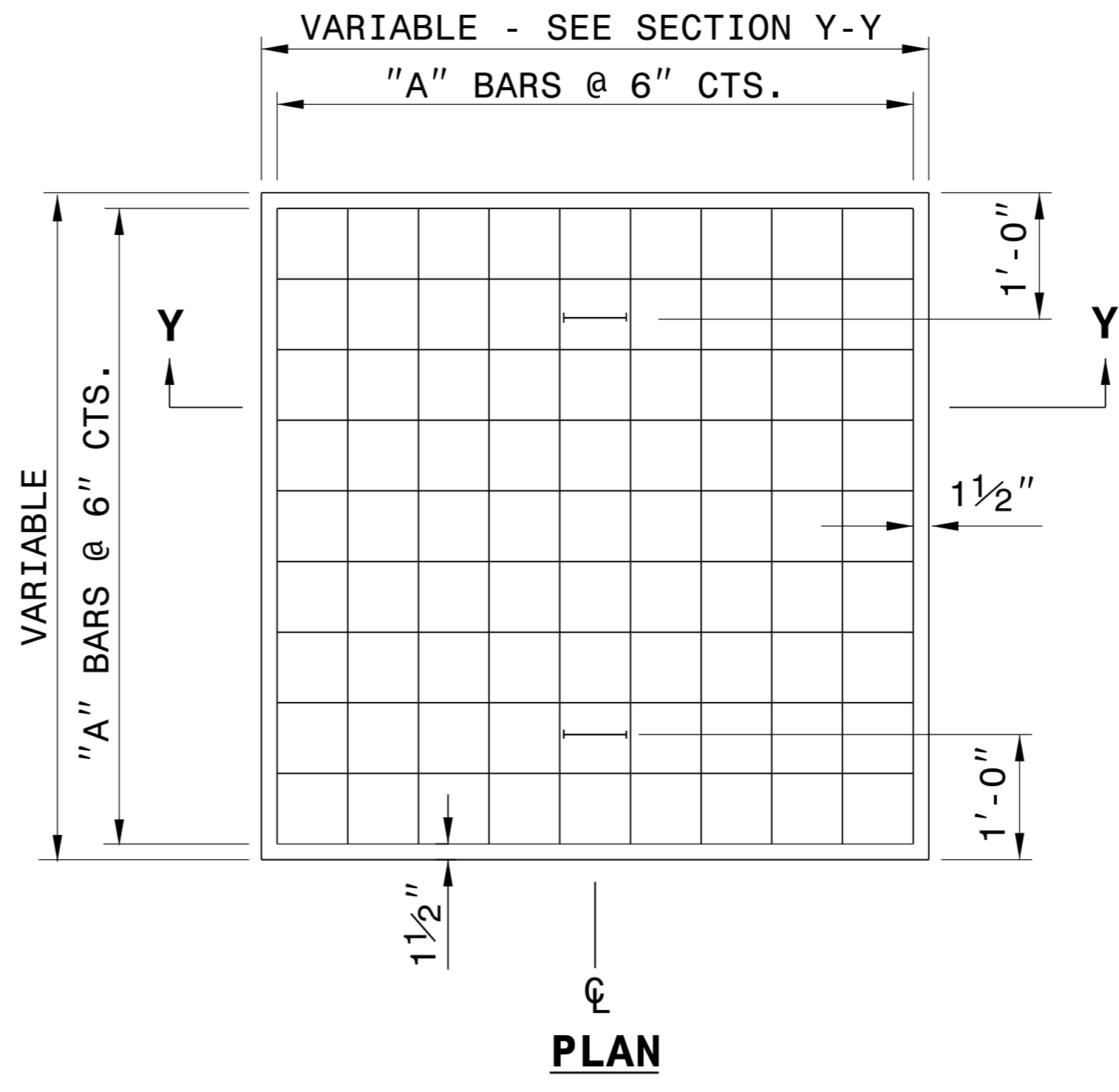
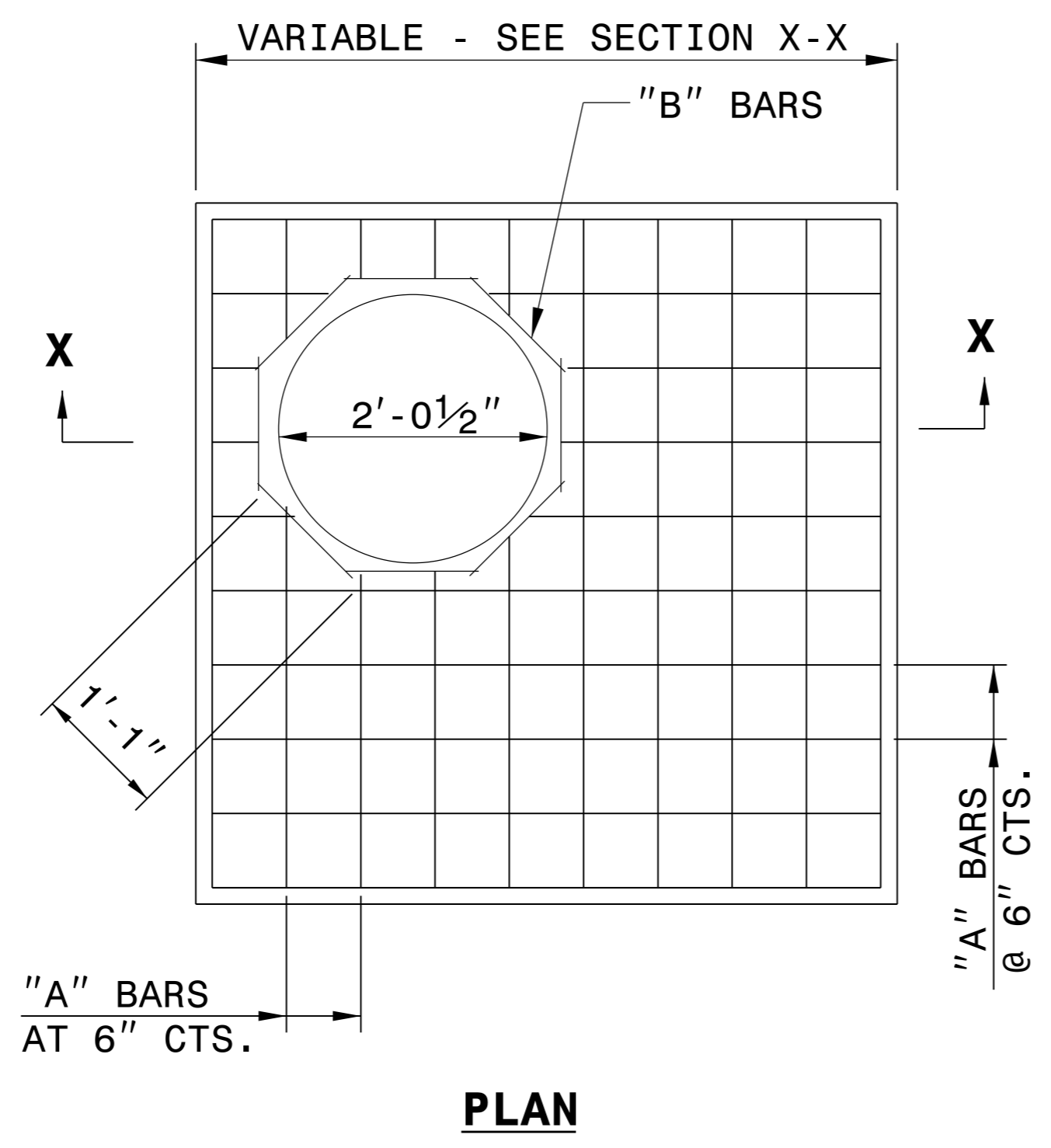
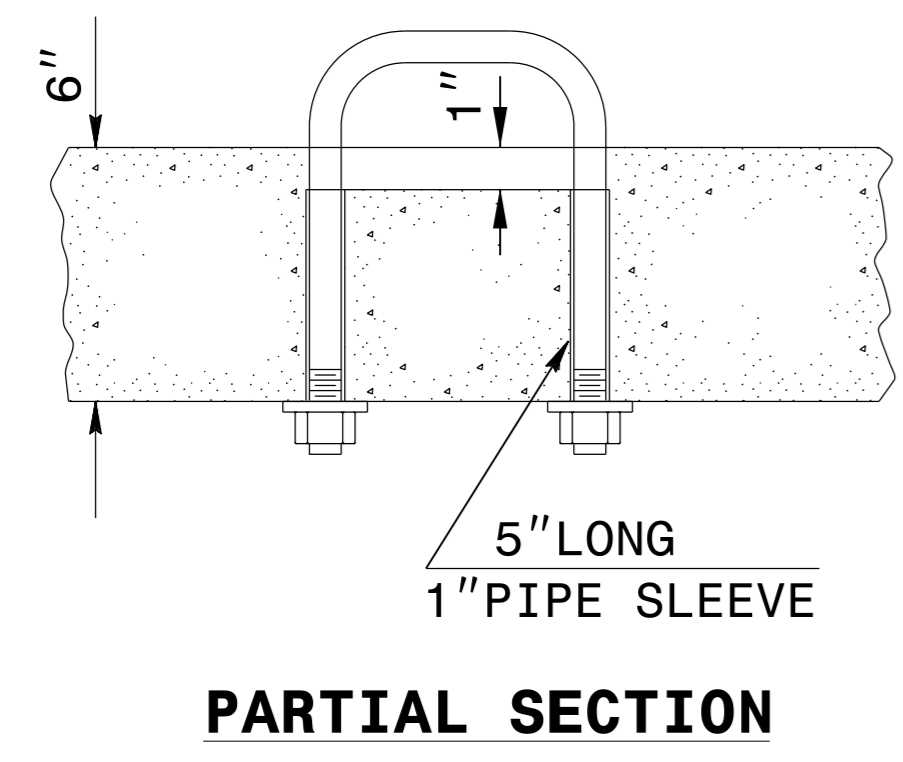
8.17.09
8.17.09
8.17.09

DETAIL SHOWING PAVEMENT REMOVAL

PROJECT REFERENCE NO. B-4490	SHEET NO. 2B-3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PLANS PREPARED BY: PARSONS BRINCKERHOFF 434 FAYETTEVILLE STREET SUITE 1500 RALEIGH, NC 27601 LICENSE NO. E-0165	



4/4/00 PM 11:28:33.dgn
3/10/2016

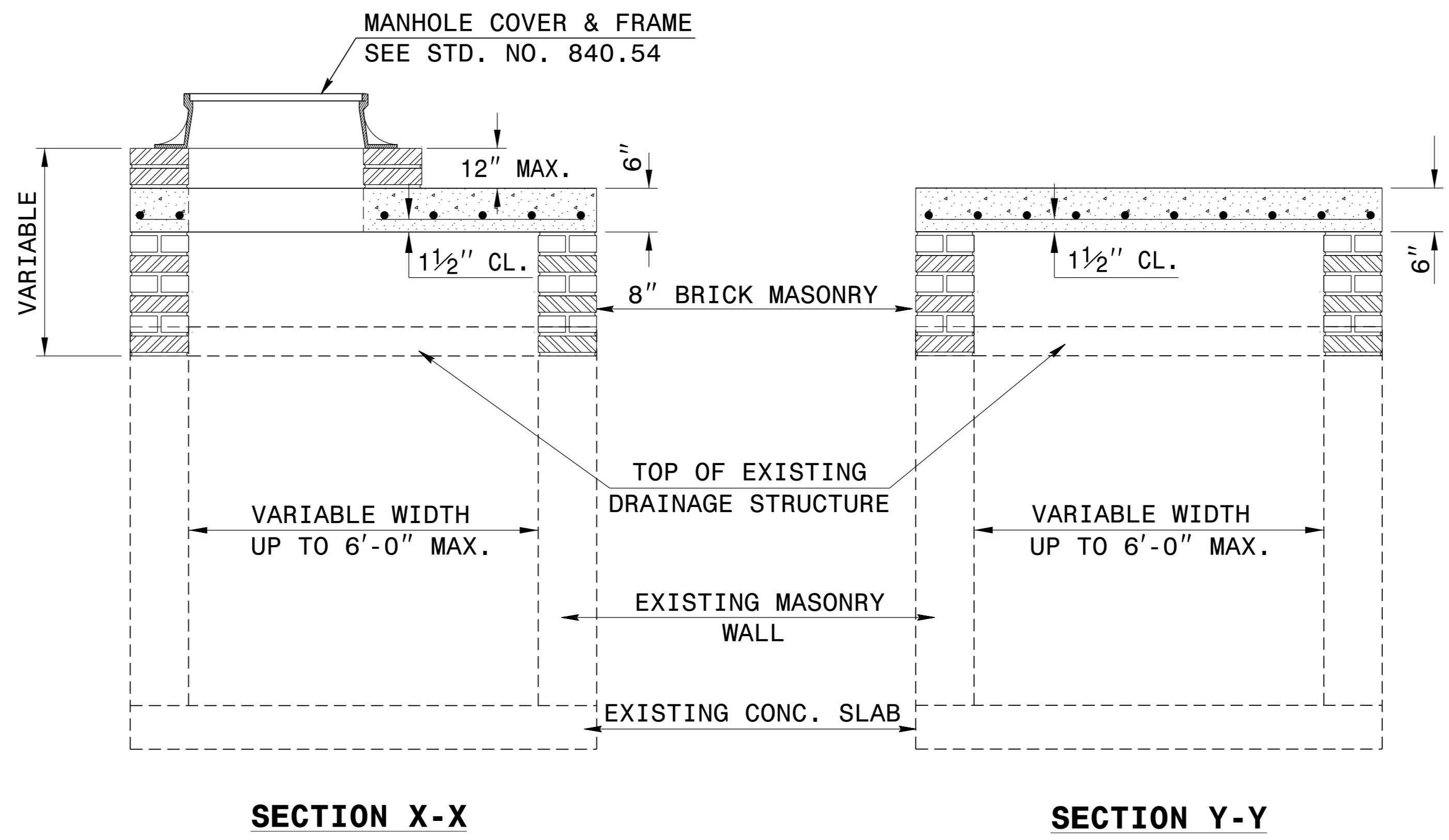
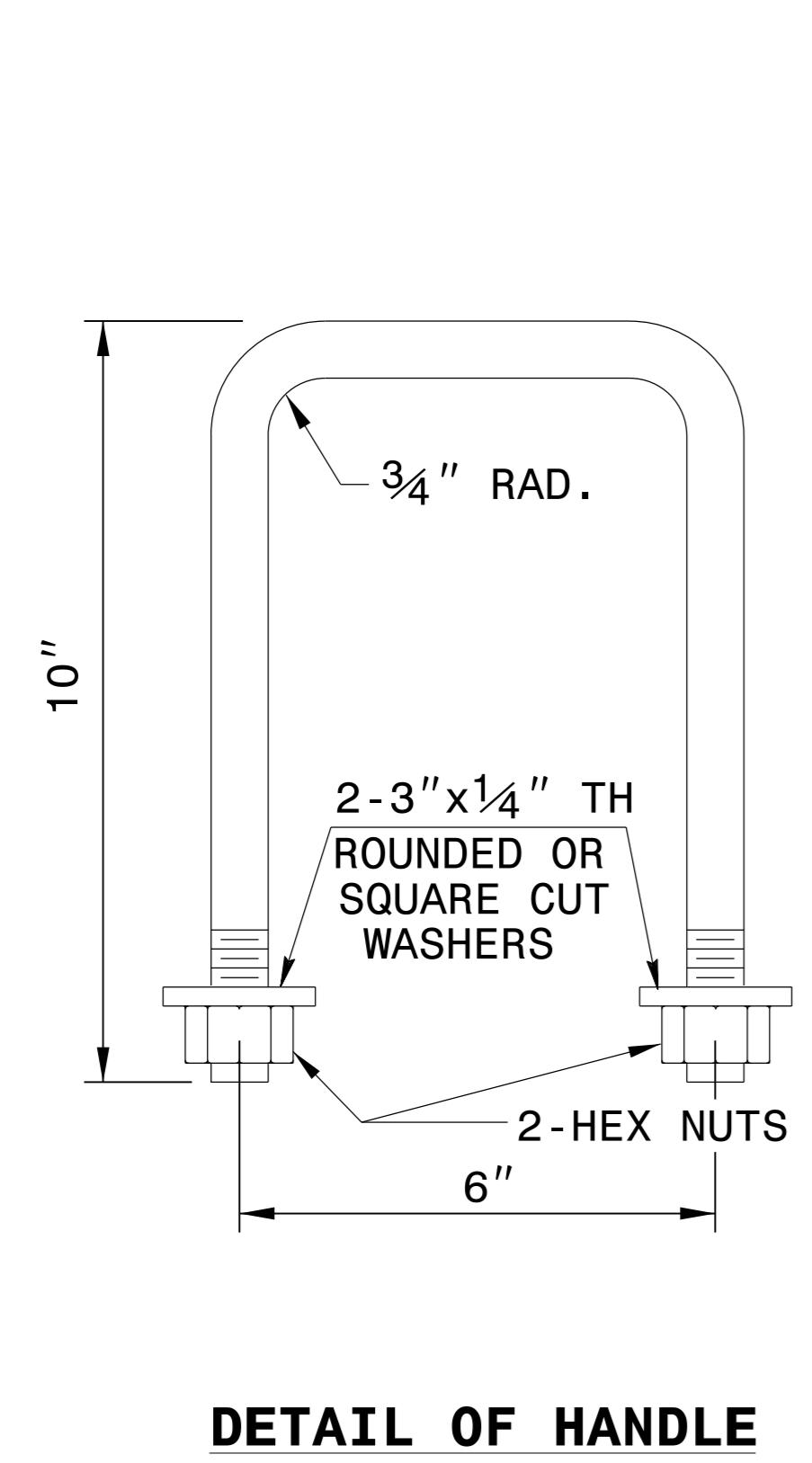


GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

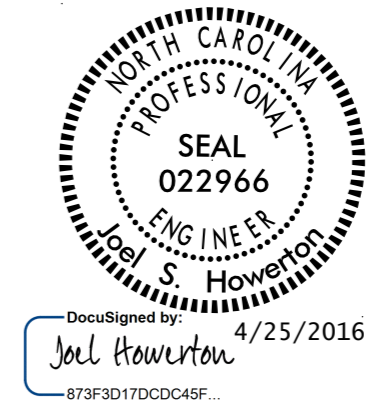
DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.



BILL OF MATERIALS				
REINFORCING STEEL				
CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.
A	#4	20	4'-6"	60.12
B	#4	8	1'-1"	5.79
TOTAL				65.91 *
MASONRY				CU YDS
TOP SLAB CONCRETE CLASS "B"				.4326 *
BRICK MASONRY PER FT HT (MIN)				.4111

*** NOTE:**
 QUANTITIES BASED ON 3'-6" X 3'-6" DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

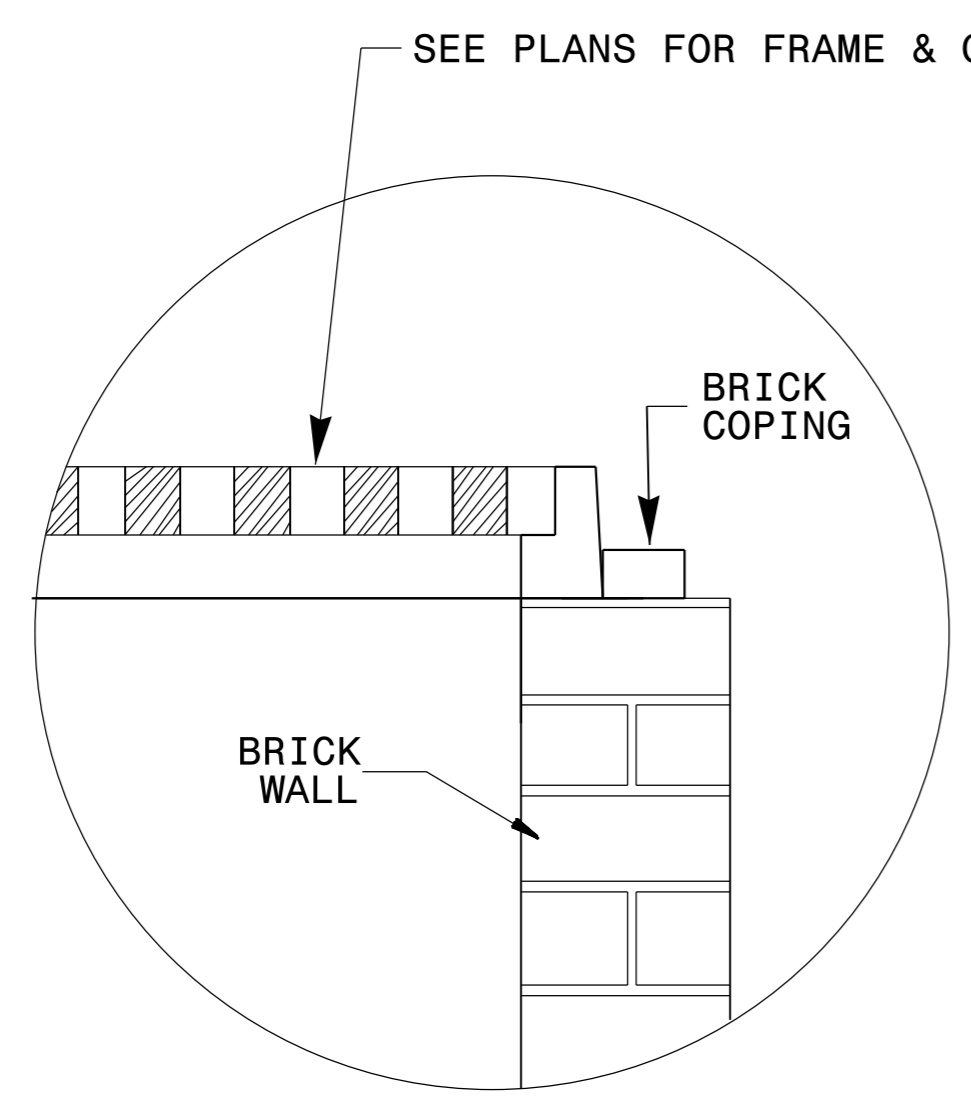


CONTRACT STANDARDS AND DEVELOPMENT UNIT
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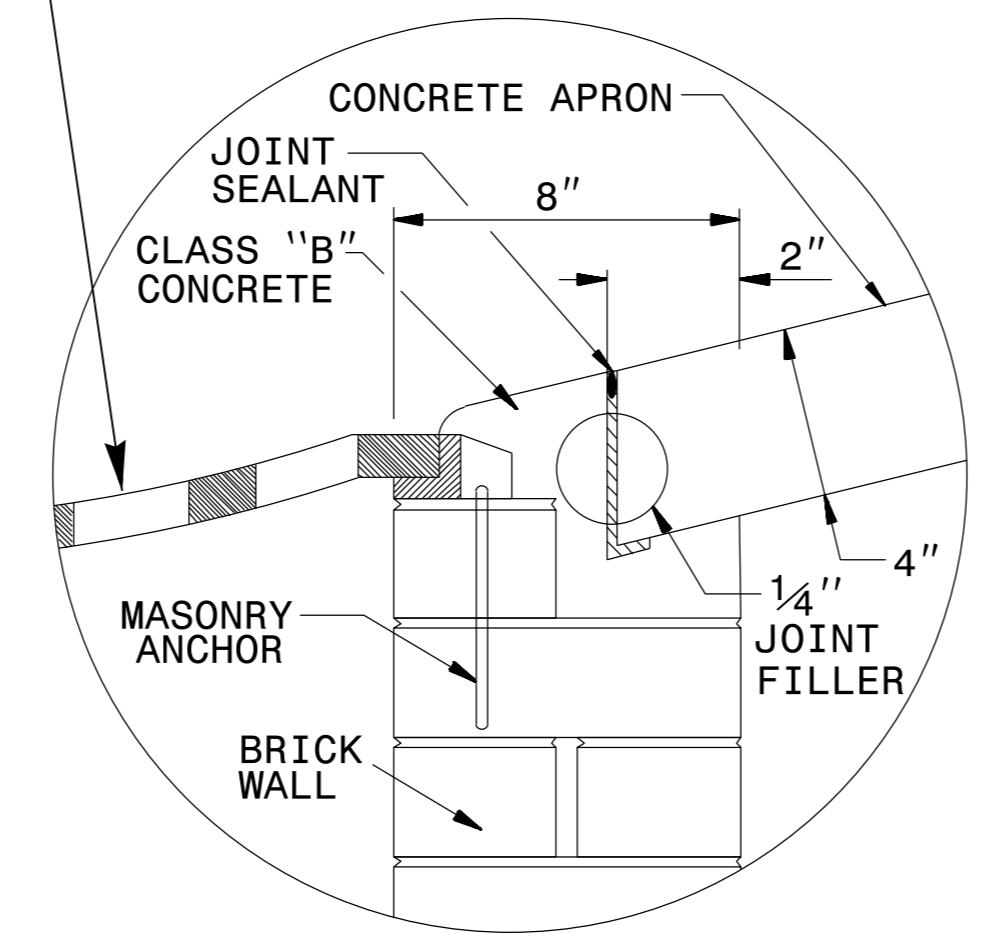
DETAIL TO CONVERT EXISTING DI, CB, OTCB or GI TO JUNCTION BOX (MANHOLE OPTIONAL)

ORIGINAL BY: T.S.S. DATE: NOV. 1997
 MODIFIED BY: T.S.S. DATE: FEB. 2000
 CHECKED BY: DATE:
 FILE SPEC.: ds174:/usr/details/stand/boxtojbe.dgn

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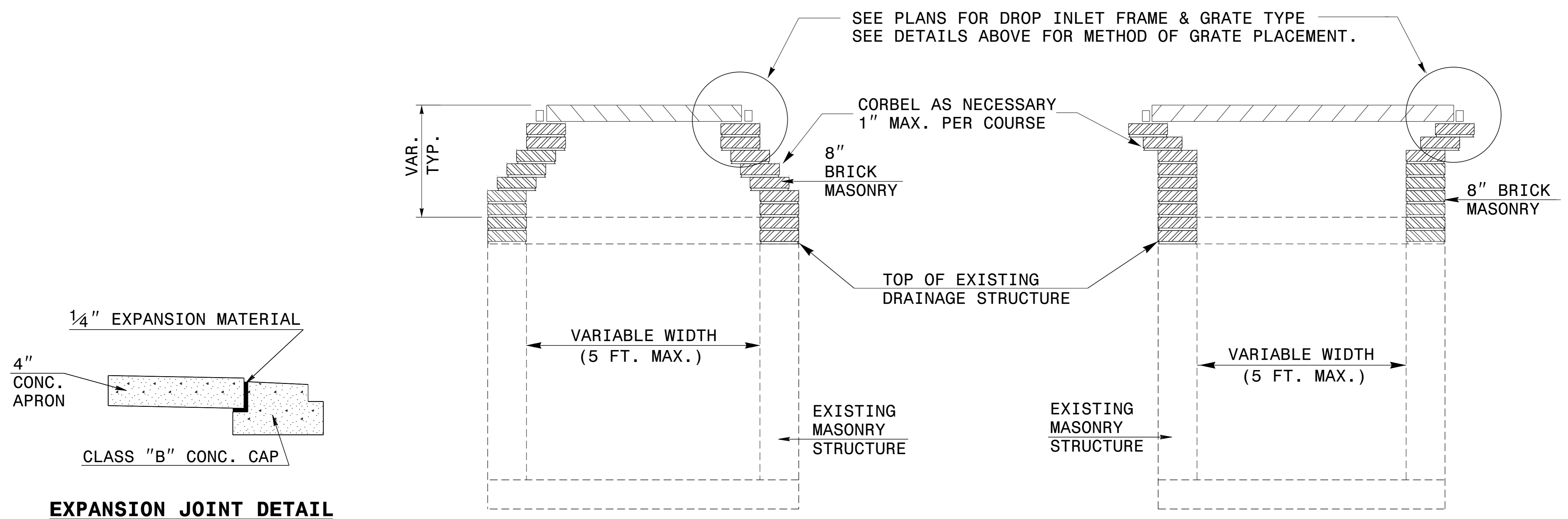
GRATE PLACEMENT DETAIL
FOR DROP INLETS



GRATE PLACEMENT DETAIL
FOR GRATED DROP INLETS

GENERAL NOTES:

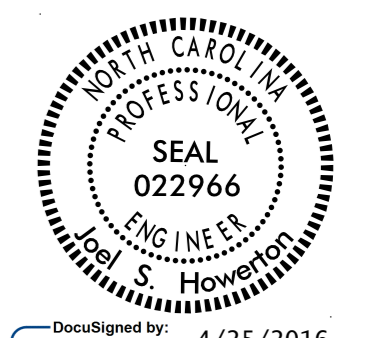
- CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.
- USE CLASS B CONCRETE.
- THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.
- JUMBO CONCRETE BRICK WILL BE PERMITTED. 4" CONCRETE BRICK OR 8" SOLID CONCRETE BLOCK ARE REQUIRED FOR DRAINAGE STRUCTURE.
- INCLUDE 18" CONCRETE APRON IN UNIT PRICE BID PER EACH, CONVERT EXISTING CATCH BASIN TO DROP INLET.
- SPECIAL DESIGN IS REQUIRED FOR USE UNDER PAVEMENT.
- CONFIRM DIMENSIONS ON EACH INDIVIDUAL FRAME & GRATE PROPOSAL.
- SEE STD. DRAWING 840.25 FOR MASONRY ANCHORAGE.



EXPANSION JOINT DETAIL

TYPICAL SECTION

TYPICAL SECTION



DocuSigned by: 4/25/2016
Joel Howerton
873F3D17DDC45F

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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Office 919-707-6950 FAX 919-250-4119

DETAIL TO CONVERT EXISTING CATCH BASIN OR JUNCTION BOX TO DI OR 2-GI

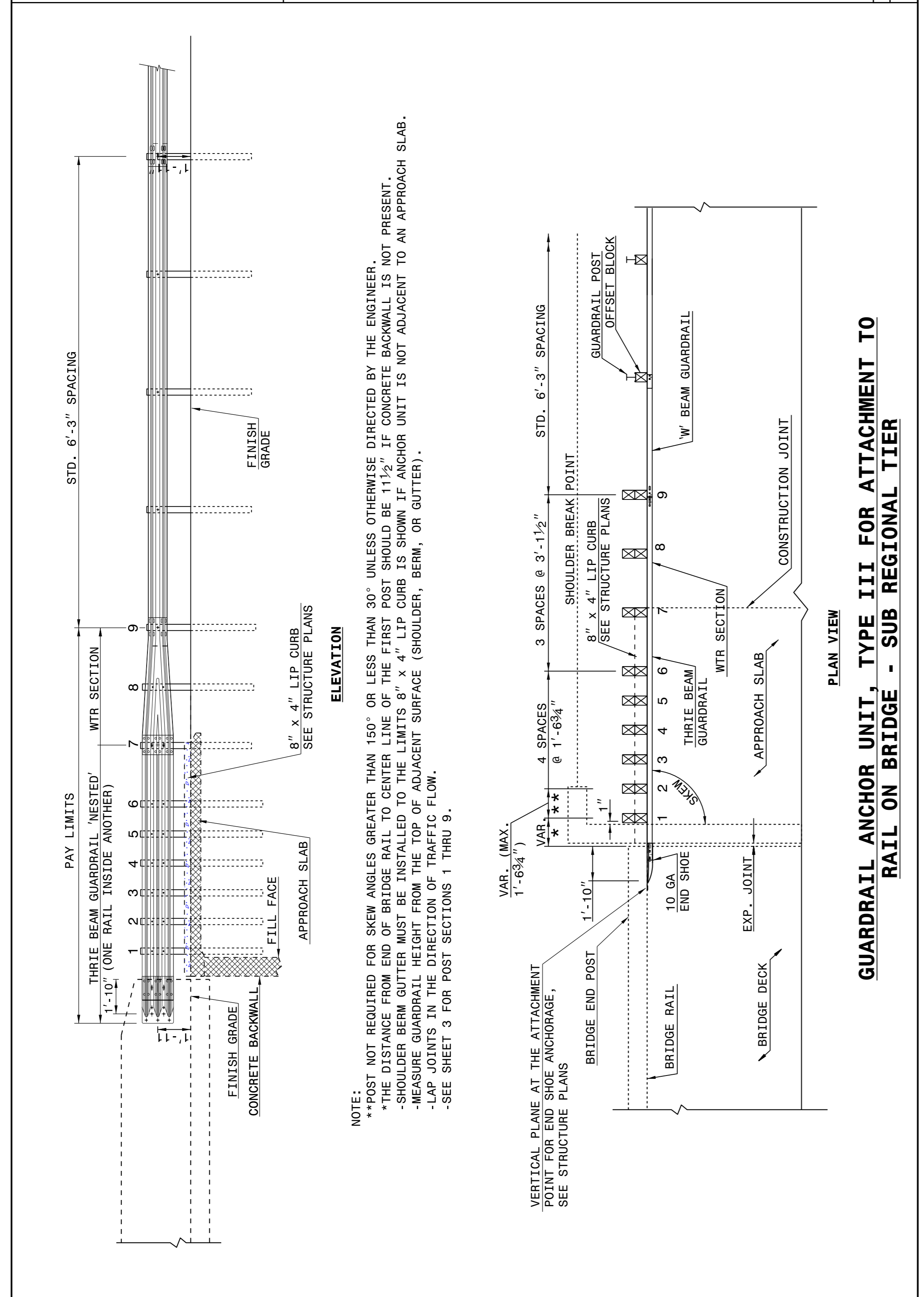
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MODIFIED BY: T.S.S.	DATE: FEB. 2000
CHECKED BY:	DATE:
FILE SPEC.: s:usr/details/stand/cbtodi02.dgn	

DATE PLOTTED: 4/25/2016 10:00:00 AM
USER: JHOWERTON
C:\PROJECTS\B-4490\2C-2\2C-2.dwg

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

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862d03



NOTE:
 **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2". IF CONCRETE BACKWALL IS NOT PRESENT.
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" X 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

**GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER**

SHEET 2 OF 7
862d03

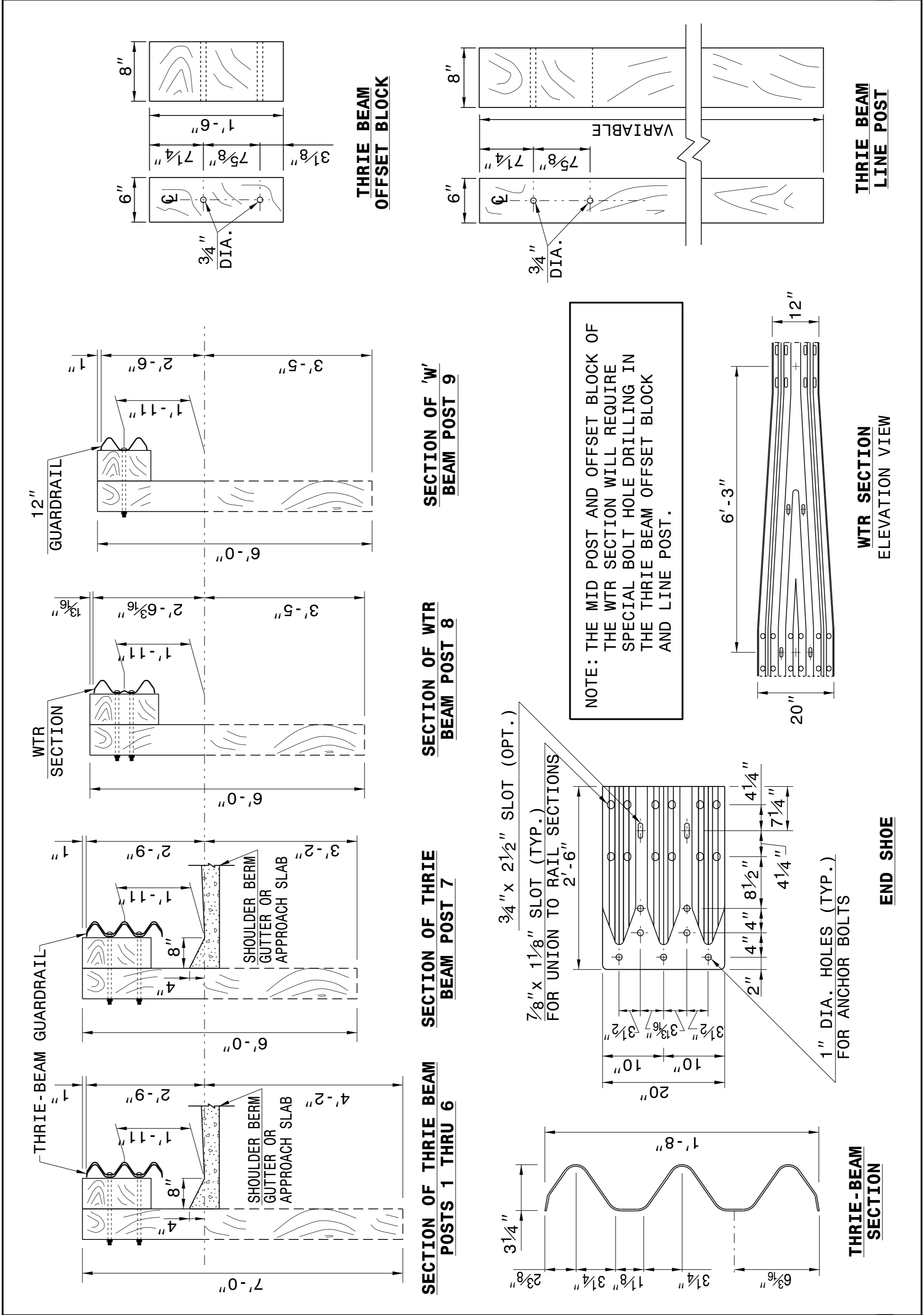
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER

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

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7
862d03



NOTE: THE MID POST AND OFFSET BLOCK OF THE WTR SECTION WILL REQUIRE SPECIAL BOLT HOLE DRILLING IN THE THRIE BEAM OFFSET BLOCK AND LINE POST.

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III

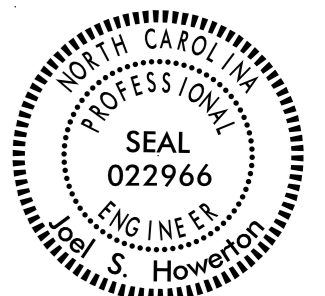
SHEET 3 OF 7
862d03

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

**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
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SEE TITLE BLOCK

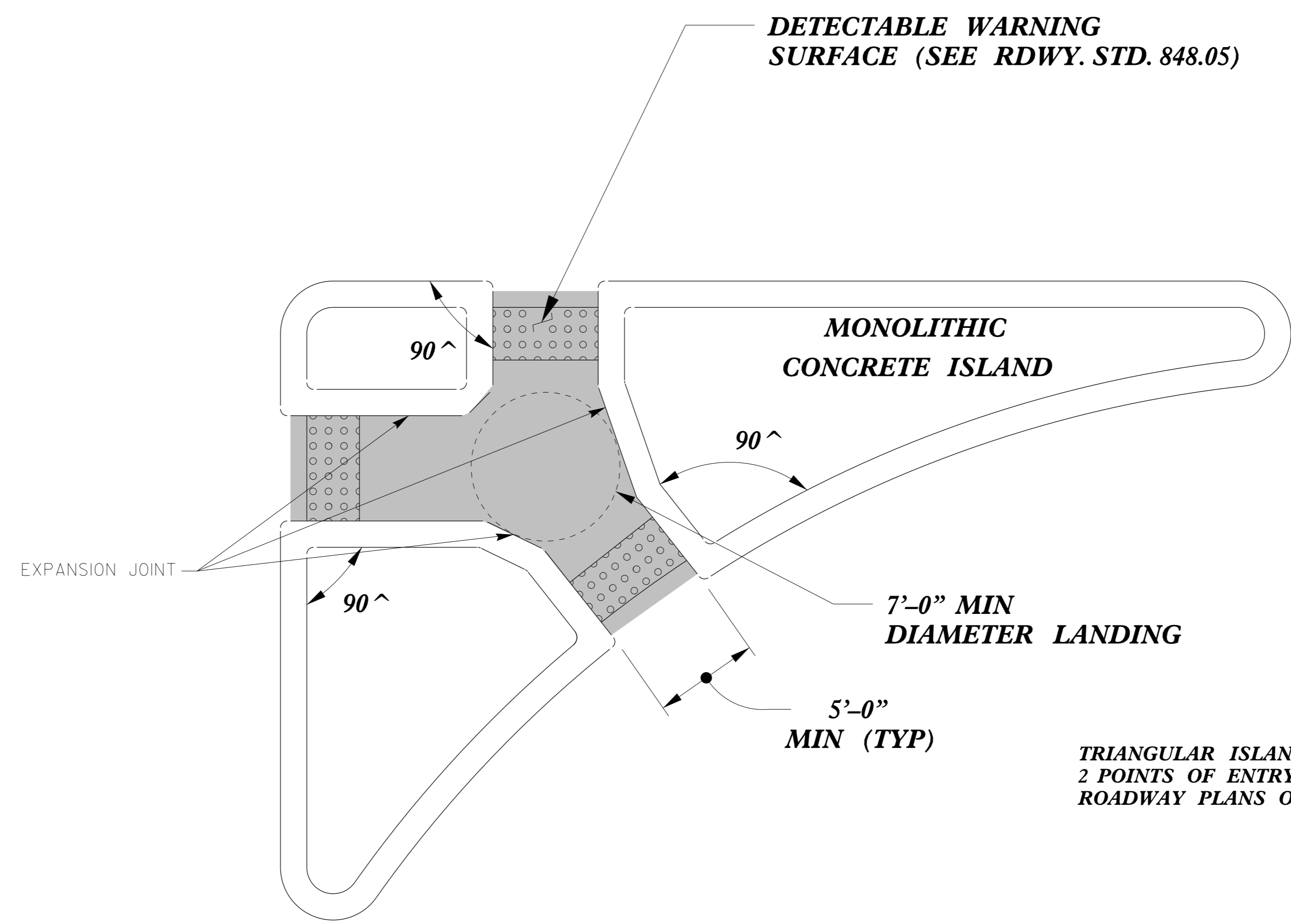
ORIGINAL BY: J. HOWERTON DATE: 06-22-12
 MODIFIED BY: DATE:
 CHECKED BY: DATE:
 FILE SPEC.: DATE:



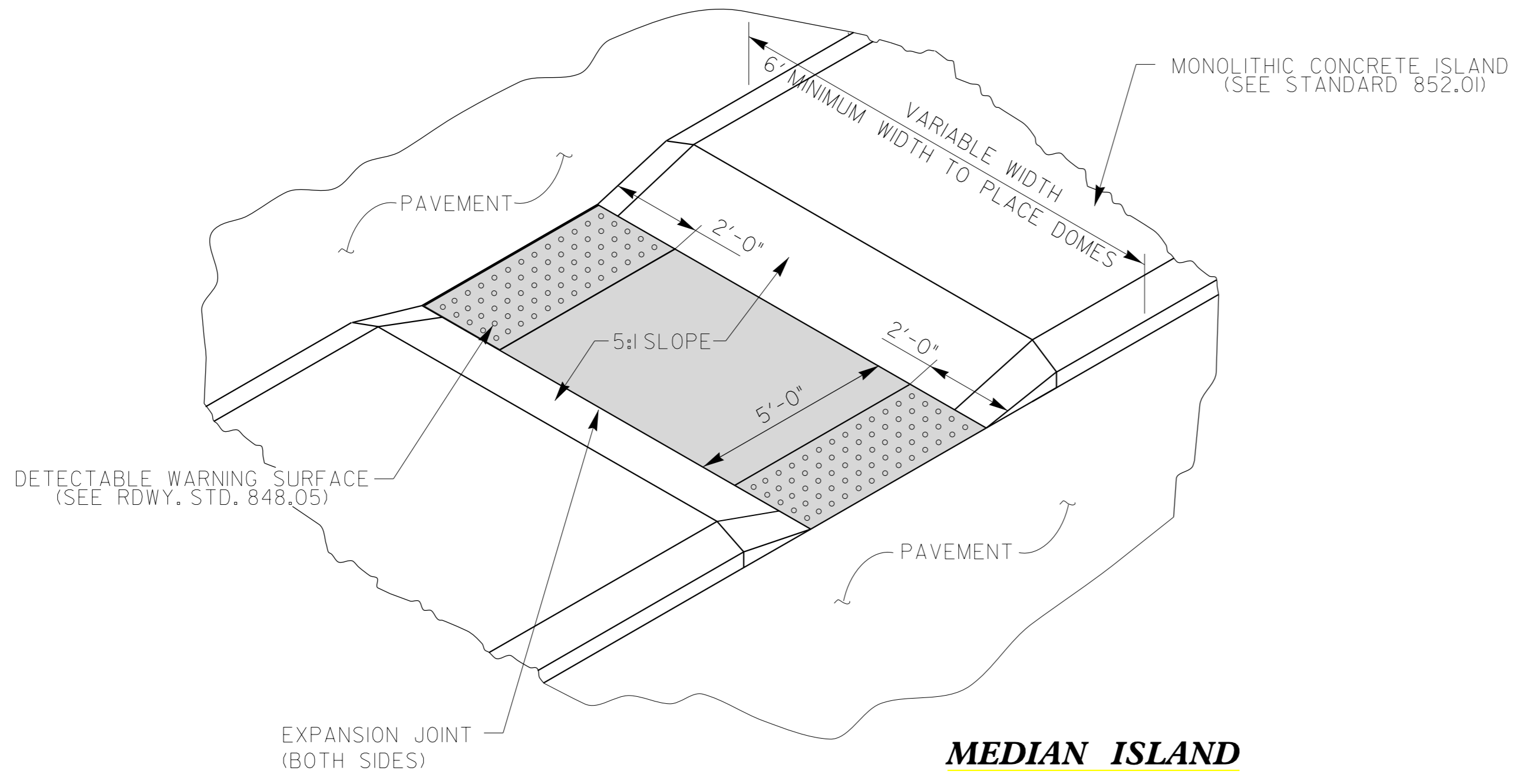
DocuSigned by:
Joel Howerton 4/25/2016
873F3D17DCC048F

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

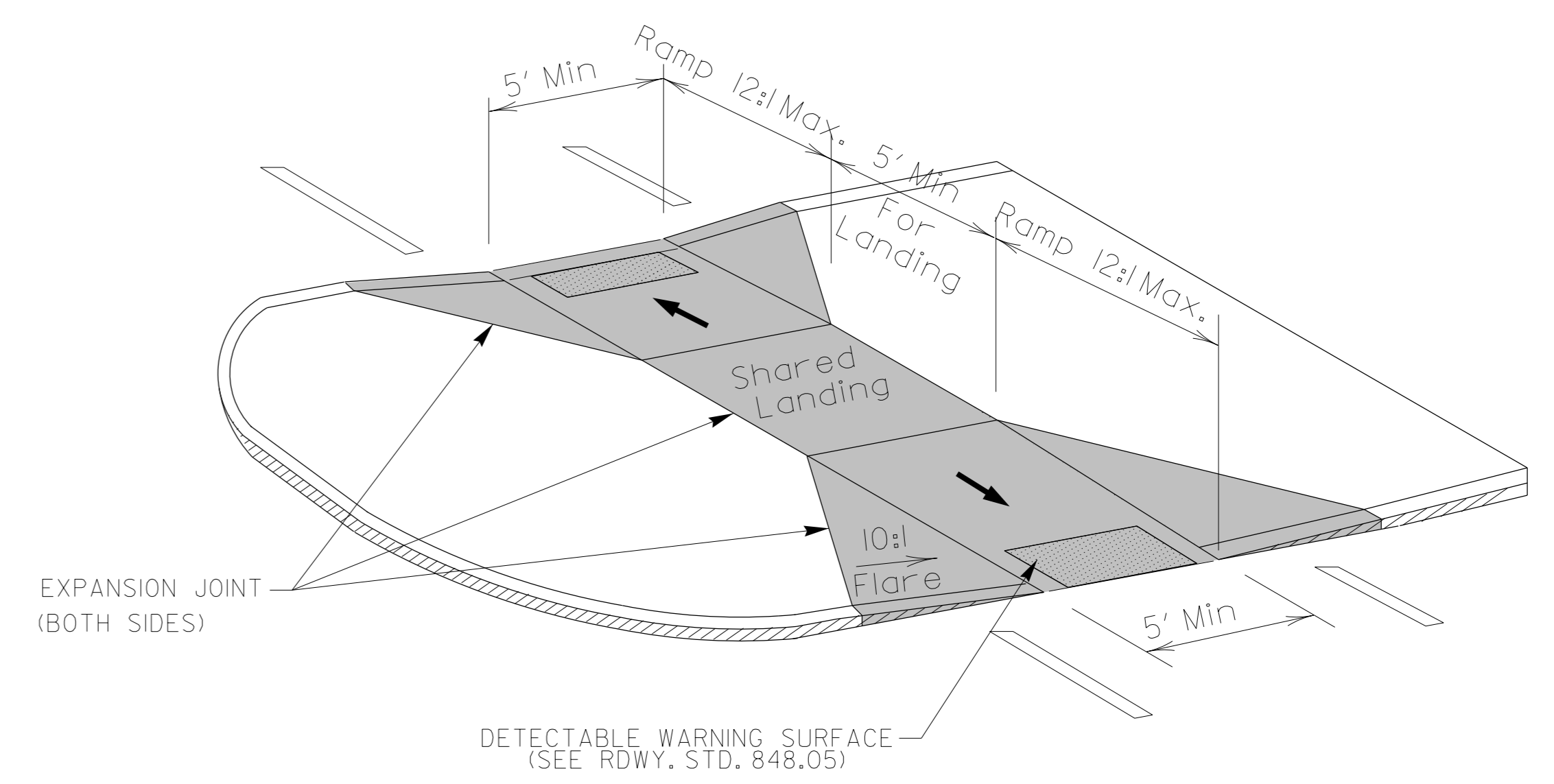
PAY LIMITS FOR 2 OR 3 CURB RAMPS
(CALCULATE BASED ON NUMBER OF
SETS OF TRUNCATED DOMES)



**TRIANGULAR ISLAND
WITH CUT THROUGH**



**MEDIAN ISLAND
WITH CUT THROUGH**



**MEDIAN ISLAND
CURB RAMPS**

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
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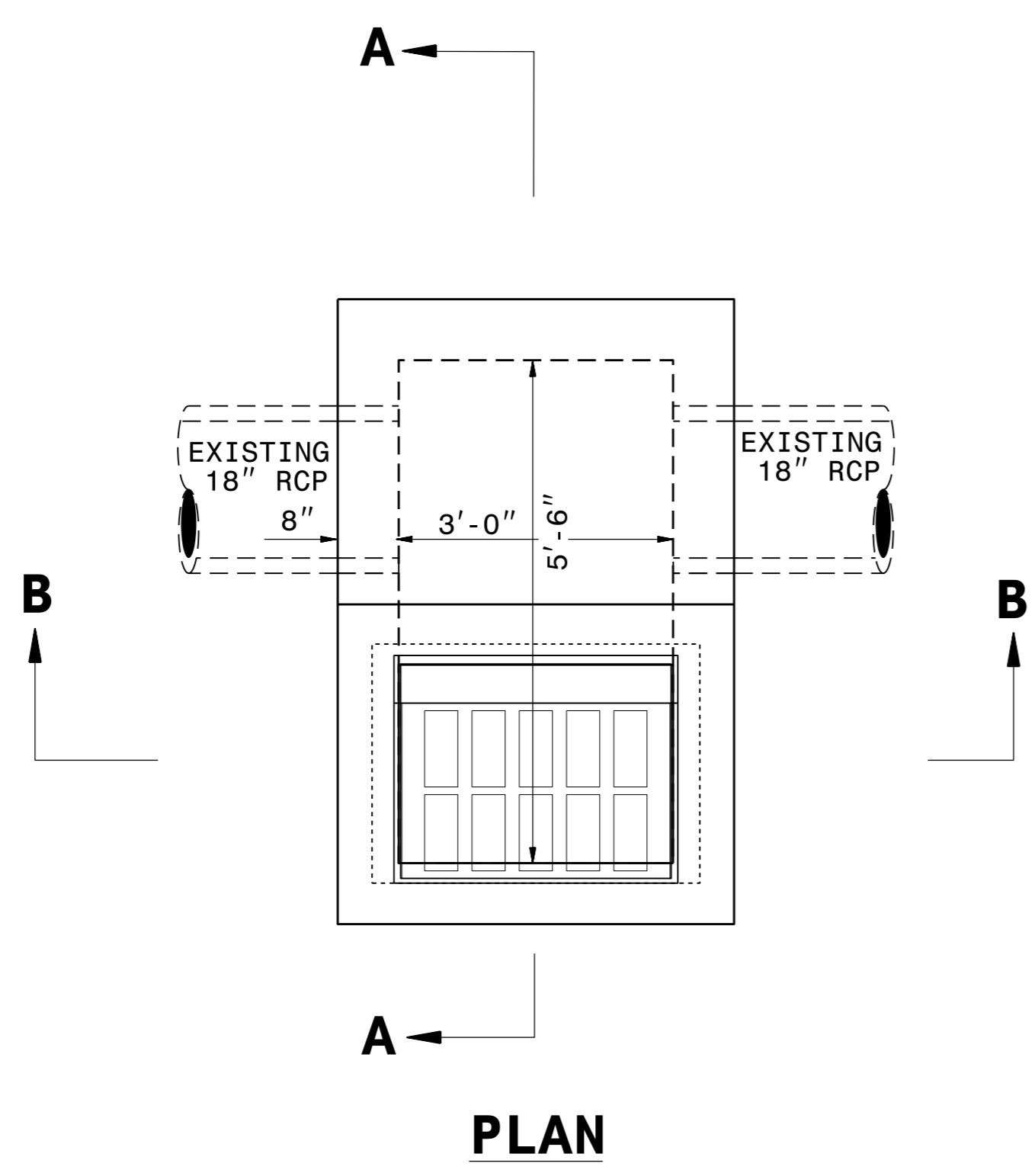
CURB RAMPS
Median or Turn Lane Islands

ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: stds/2012CurbRamp/CurbRampDetails.dgn



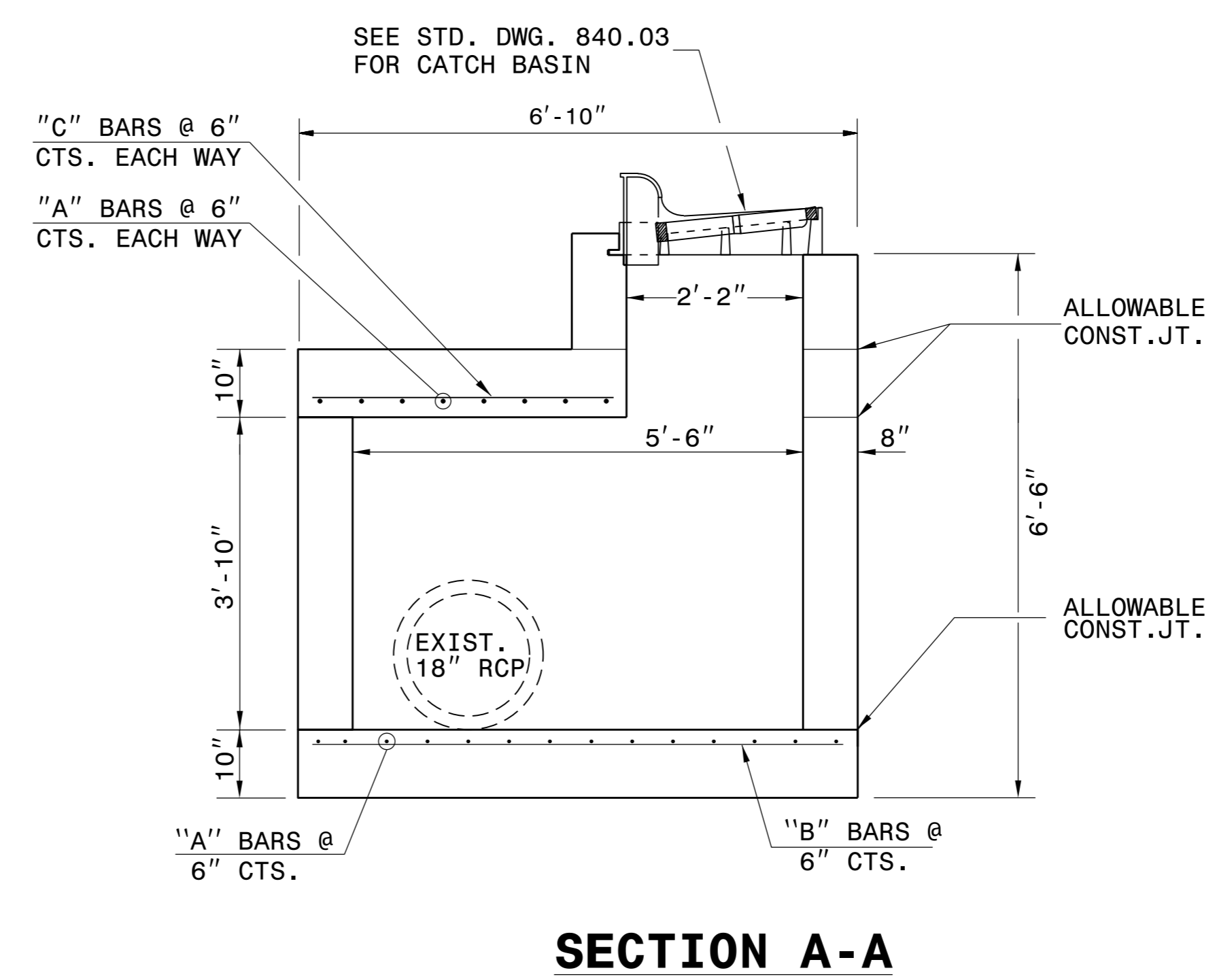
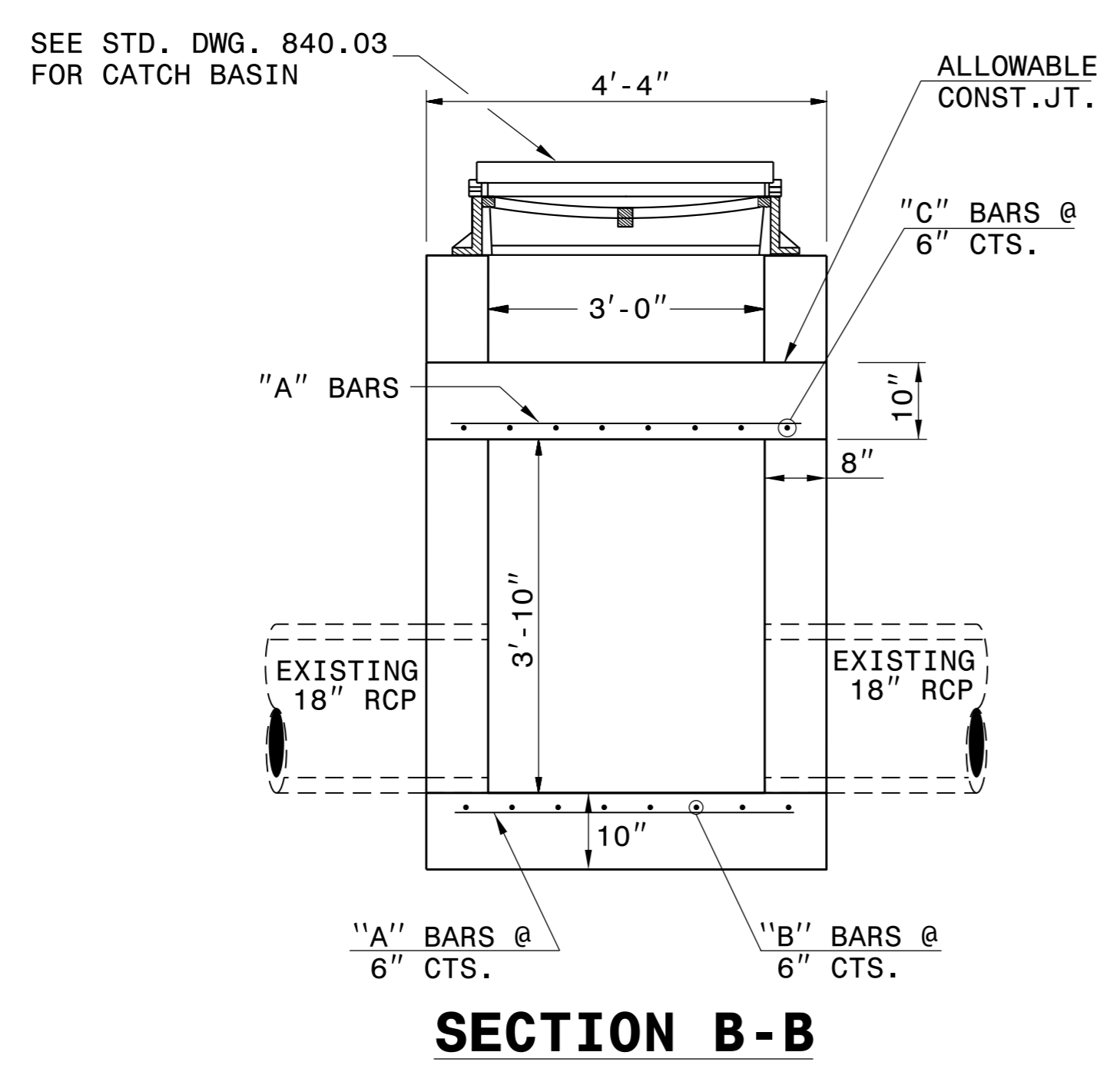
DocuSigned by:
Joel Howerton
6/16/2016

5/14/99
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GENERAL NOTES:

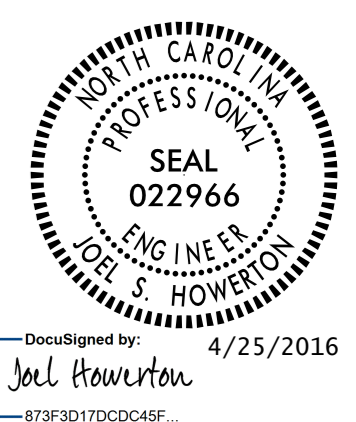
1. USE CLASS "B" CONCRETE THROUGHOUT.
2. CONSTRUCT CONCRETE BOX IN ACCORDANCE WITH SECTION 825 OF THE STANDARD SPECIFICATIONS.
3. USE FORMS FOR CONSTRUCT THE BOTTOM SLAB.
4. ADJUST LENGTH OF STEEL BARS AS NEEDED TO COMPENSATE FOR PIPES AND FRAME AND GRATE OPENINGS.
5. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60.
6. CUT OR BEND STEEL BARS AS NEEDED TO PROVIDE 2" CLEARANCE.
7. LOCATE FRAME AND GRATE AS FIELD CONDITIONS DICTATE AND AS DIRECTED BY THE ENGINEER.
8. DIMENSIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.



BILL OF MATERIALS

BAR	QTY	SIZE	LENGTH	WEIGHT
A	22	#5	4'-0"	92
B	8	#5	5'-2"	43
C	8	#5	3'-8"	31
TOTAL REINF. STEEL (lbs.)				166
TOTAL CONC. CU. YDS.			4.1	

NO DEDUCTIONS HAVE BEEN MADE TO ACCOMMODATE PIPES OR CATCH BASIN OPENING.



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

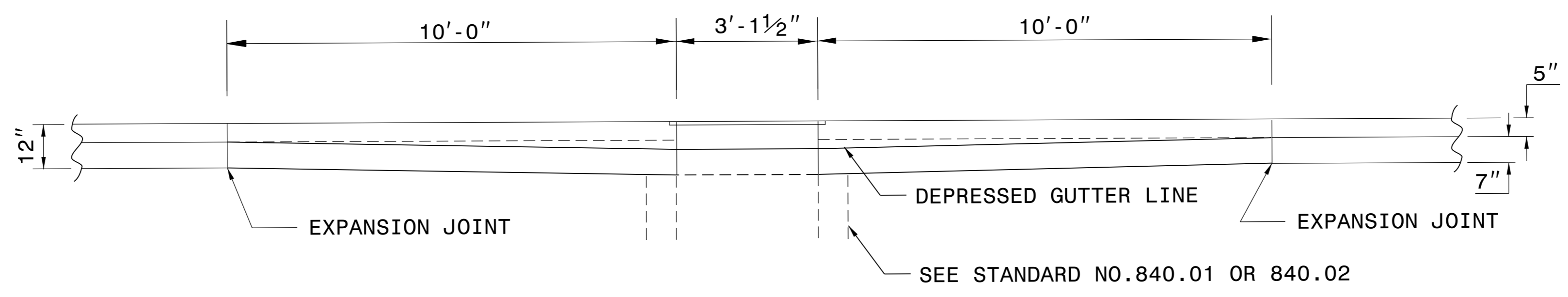
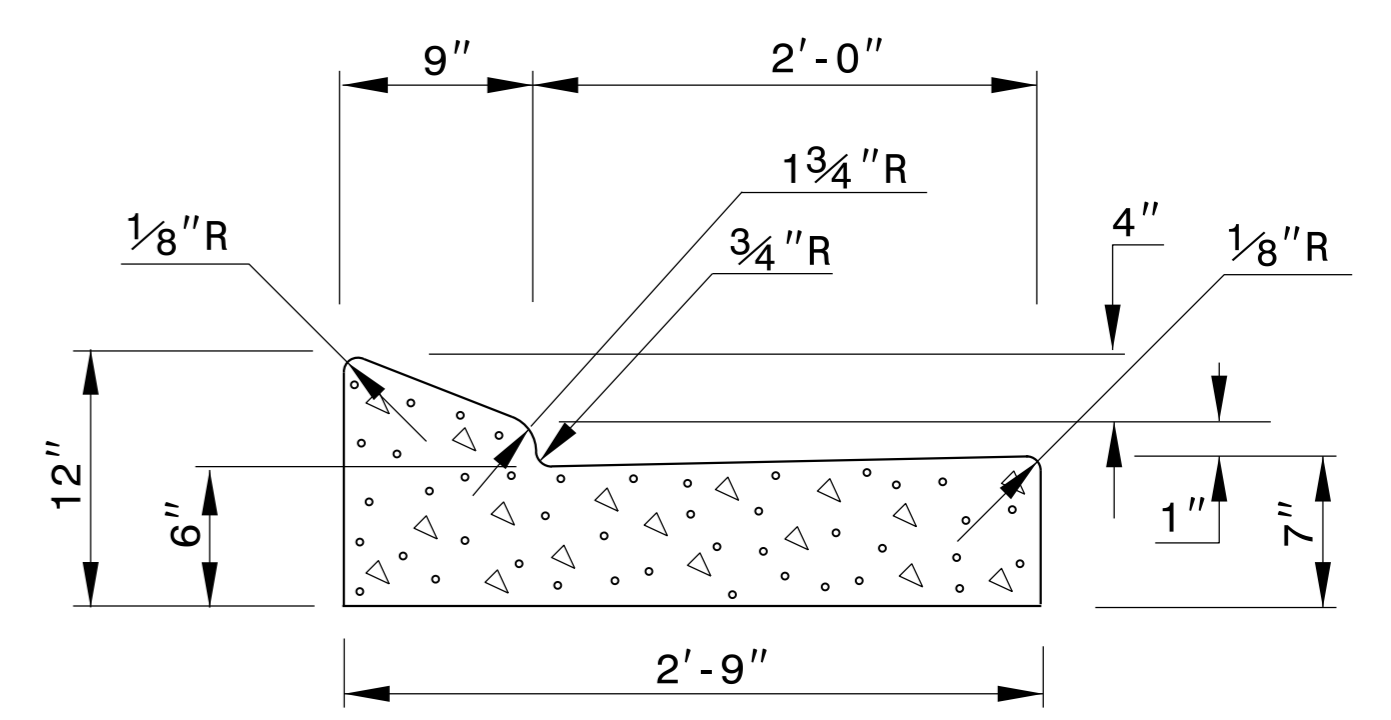
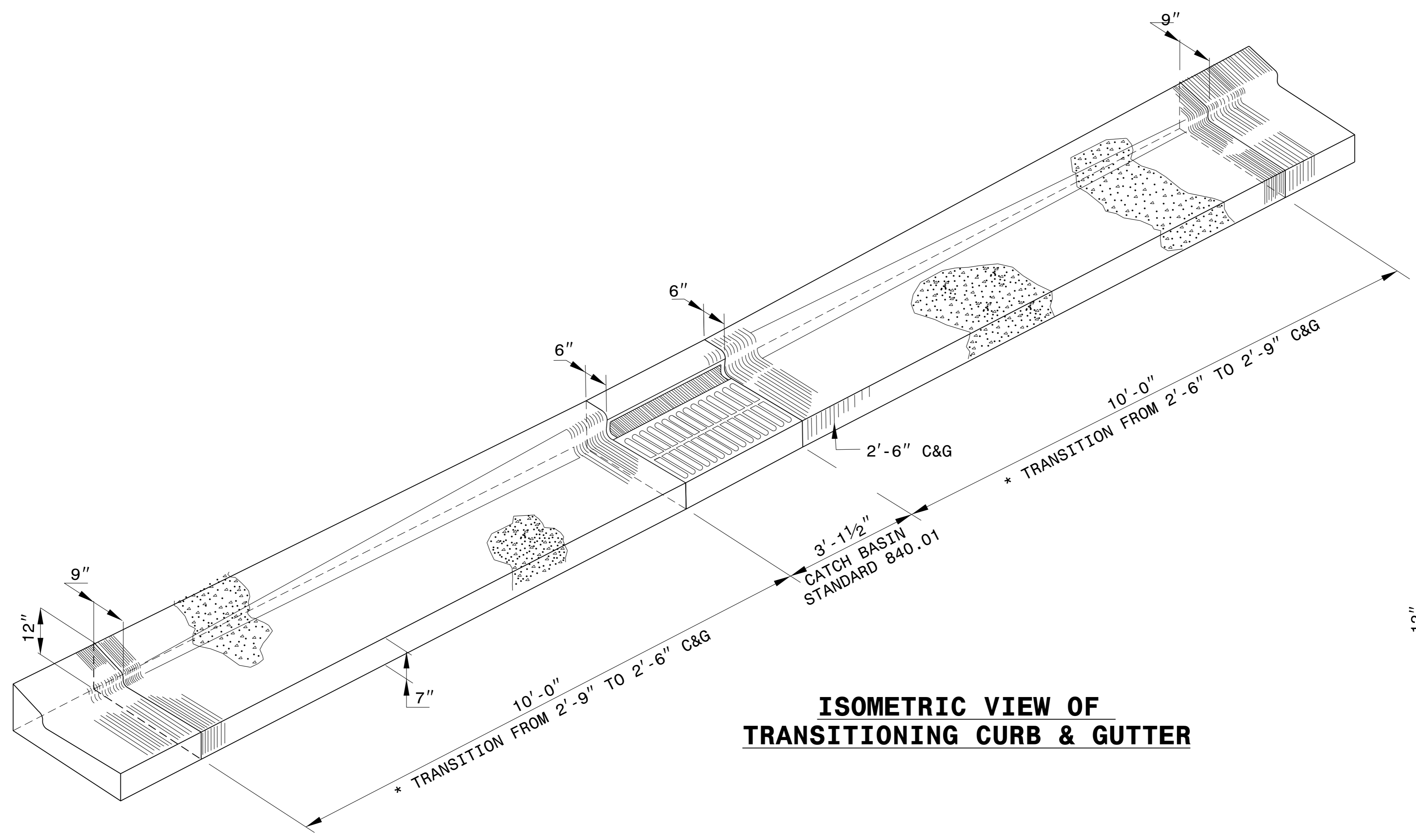
CONTRACT SERVICES AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

DETAIL OF SPECIAL CATCH BASIN

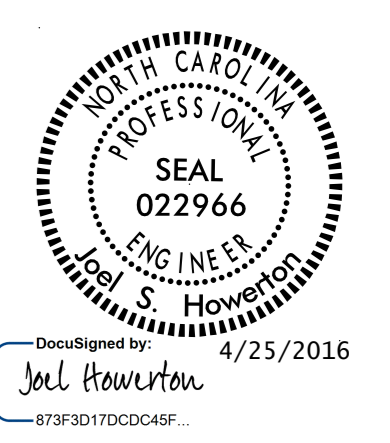
ORIGINAL BY: K.A. KEMPF DATE: OCTOBER 6, 2015
 MODIFIED BY: DATE: _____
 CHECKED BY: DATE: _____
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\$\$\$\$\$
 USER: JPK
 DATE: 4/25/2016 10:00:00 AM
 TIME: 10:00:00 AM
 C:\Users\jpk\Documents\B4490.cb_offset.dgn

NOTE: SEE STD.DWG. 846.01 FOR
2'-6" CURB AND GUTTER
INFORMATION.



* MAINTAIN THE EDGE OF PAVEMENT. TRANSITION THE CURB ALONG THE
BACK OF THE CURB.



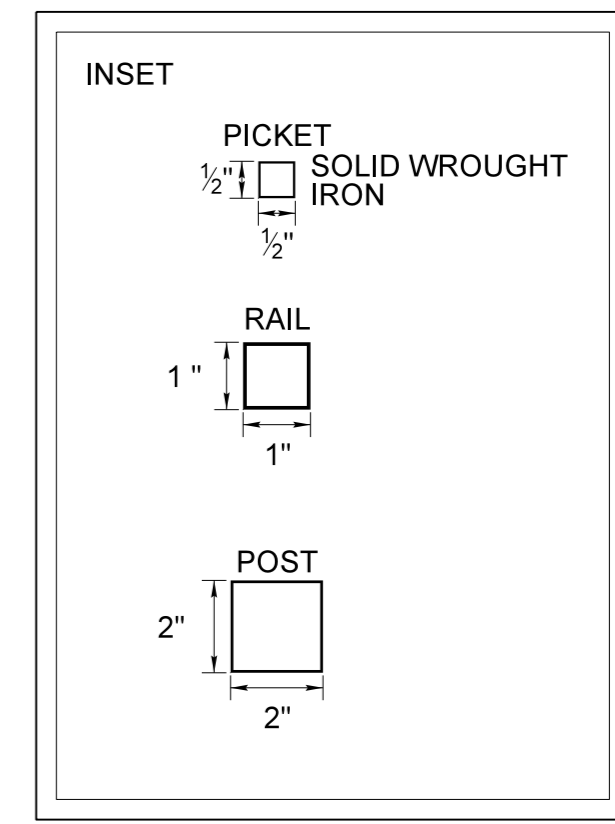
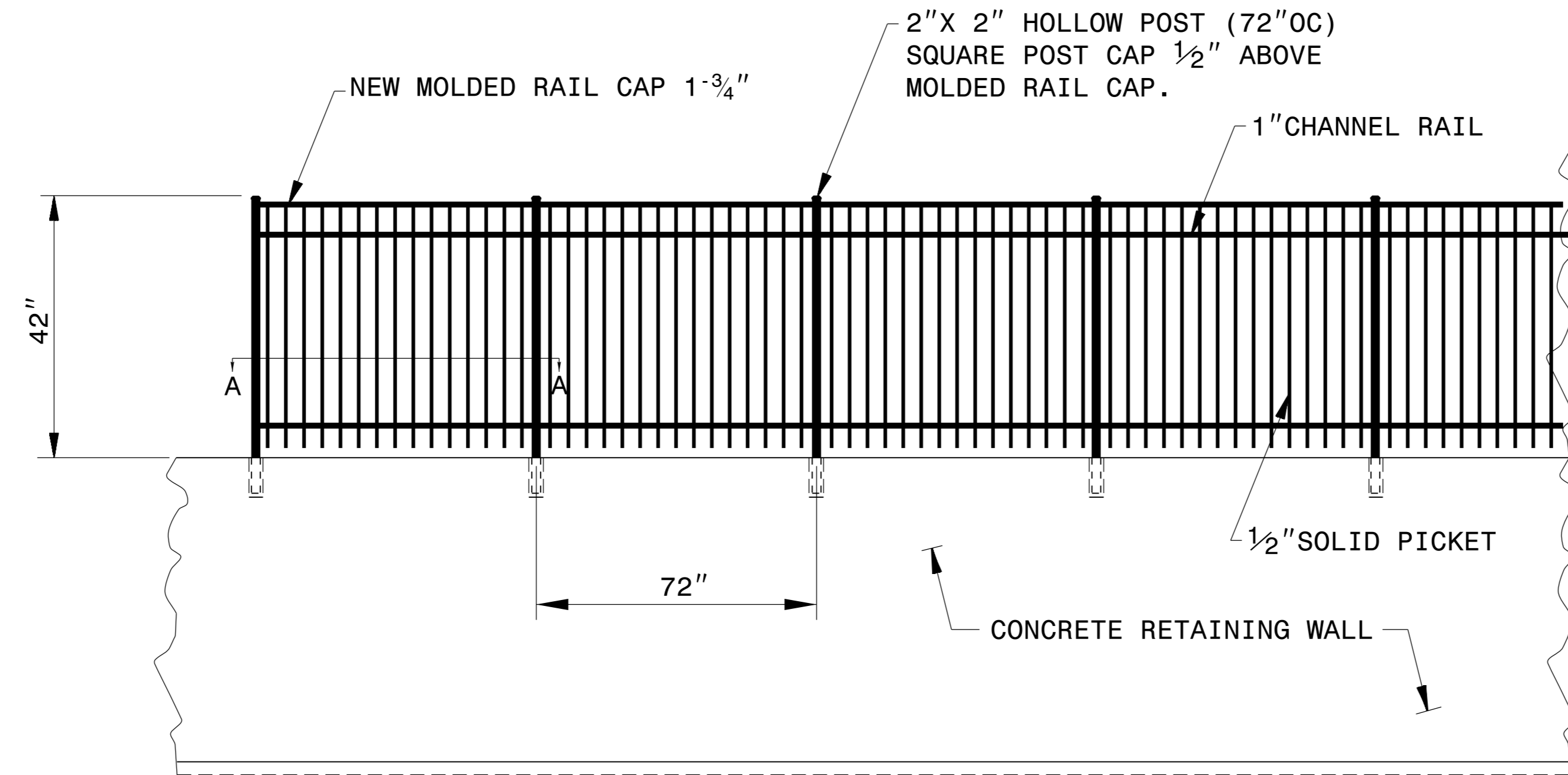
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

**DETAIL OF 2'-9"
TO 2'-6" CURB & GUTTER
TRANSITION SECTION**

ORIGINAL BY: _____	DATE: _____
MODIFIED BY: tspell	DATE: July 14, 2009
CHECKED BY: _____	DATE: _____
FILE SPEC.: s:eric/usr/details/stand/cgtranst.dgn	

C:\P\PROJECTS\2016\CONTRACT STANDARDS AND DEVELOPMENT UNIT\20160425\20160425.DWG
 USER: jhowerton
 DATE: 4/25/2016 10:58:48 AM
 PLOT: 4/25/2016 10:58:48 AM
 PLOT DEVICE: HP DesignJet T1300

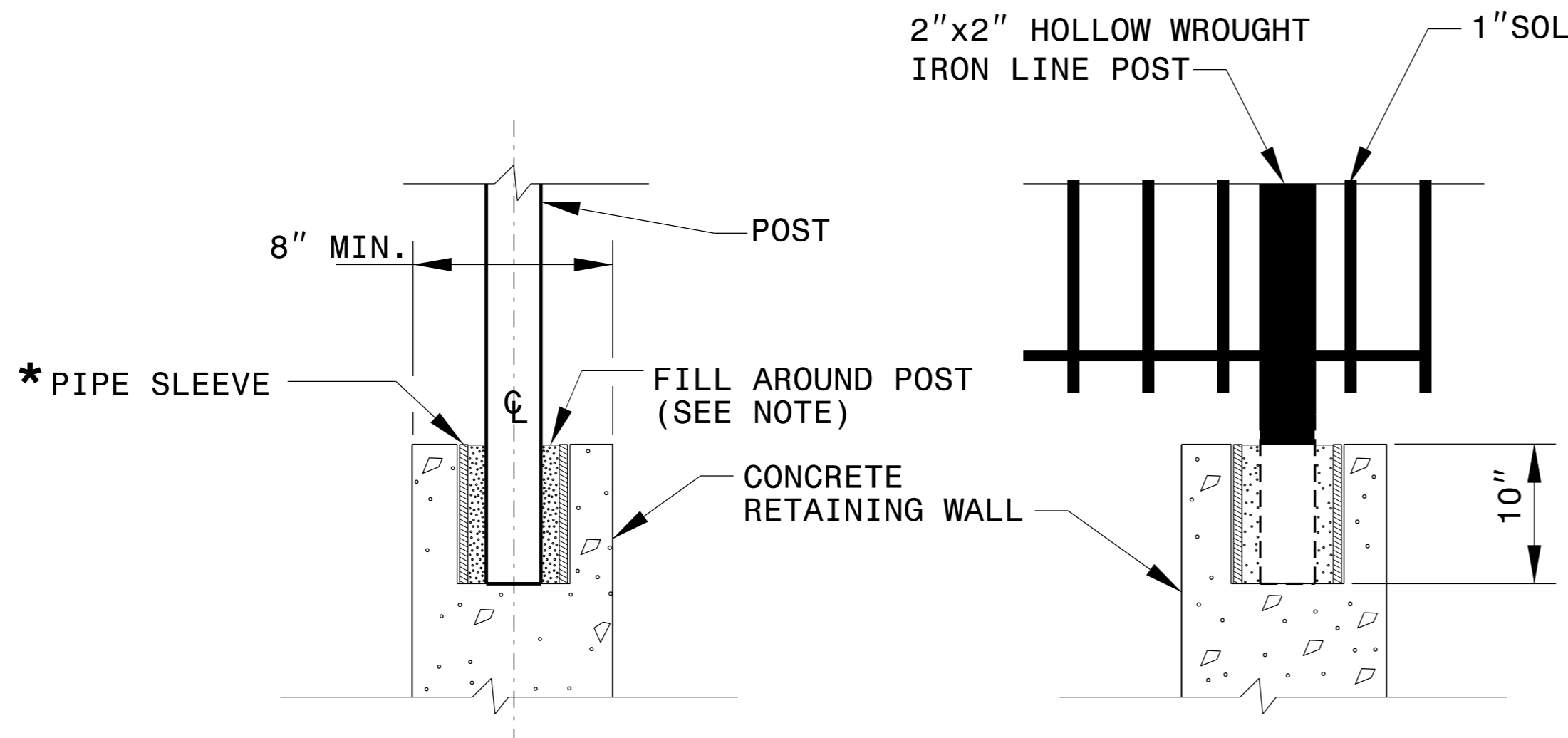


RETAINING WALL MOUNTED DECORATIVE WROUGHT IRON RAILING

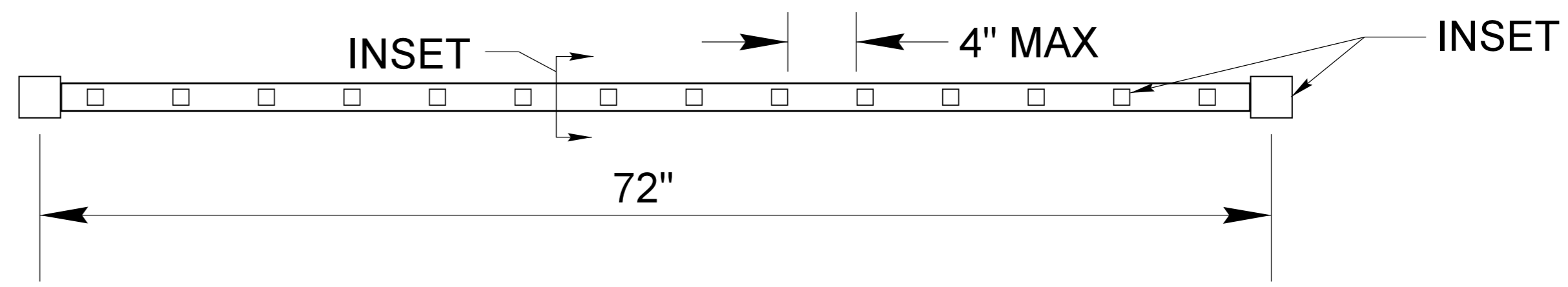
NOTE:

PLACEMENT OF PIPE SLEEVES SHALL CORRESPOND TO POSTS AS SHOWN.
 FILL SPACE BETWEEN POST AND PIPE MATERIAL ACCORDING TO FENCE
 INSTALLATION SPECIFICATIONS OR MATERIAL APPROVED BY ENGINEER.

* PIPE SLEEVES SHALL BE INSTALLED IN THE CONCRETE RETAINING
 WALL WITH WROUGHT IRON POST AS INDICATED ...



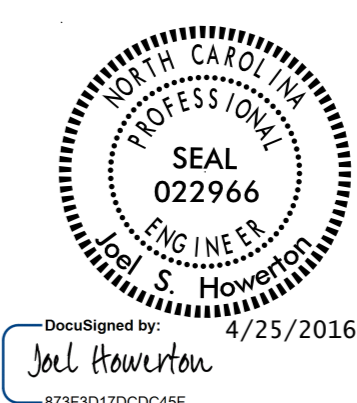
POST EMBEDMENT IN RETAINING WALL



SECTION A-A

NOTES:

- 1) SUBMIT ALTERNATE FENCE MATERIAL TO ENGINEER FOR APPROVAL.
- 2) SUBMIT ANY VARIATIONS IN FENCE DIMENSIONS TO ENGINEER FOR APPROVAL.
- 3) FENCE POSTS MAY BE CAST INTO THE CONCRETE RETAINING WALL WITHOUT THE PIPE SLEEVE AS DIRECTED BY THE ENGINEER.



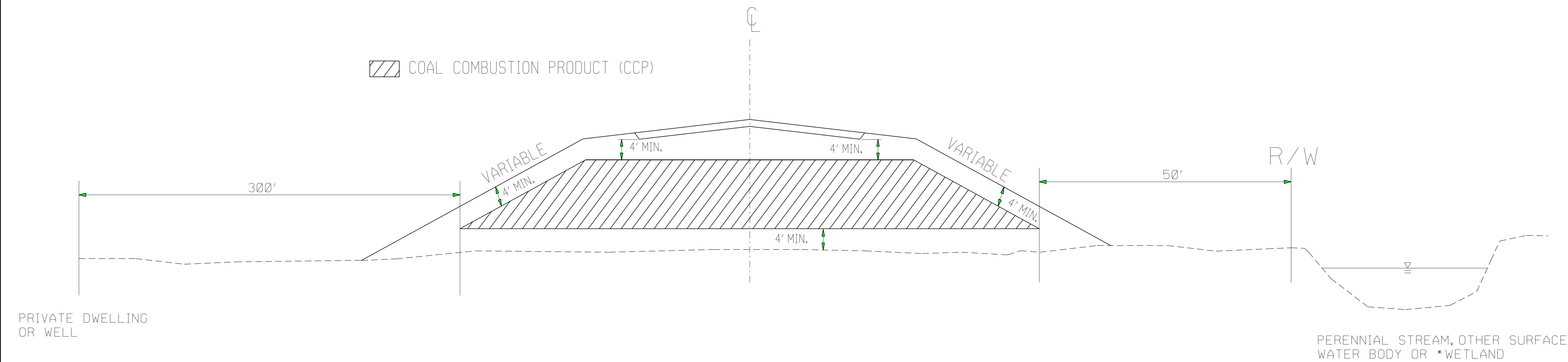
CONTRACT STANDARDS & DEVELOPMENT UNIT
 STANDARDS AND SPECIAL DESIGN
 Office 919-707-6950 FAX 919-250-4119

RETAINING WALL WROUGHT IRON FENCE

ORIGINAL BY: _____ DATE: _____
 MODIFIED BY: rnbritt DATE: 12-01-15
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: details/english/misc/wrought_iron_fence_retwall.dgn

TIME \$\$\$\$\$\$
 DATE \$\$\$\$\$\$
 USER \$\$\$\$\$\$
 FILE \$\$\$\$\$\$

COAL COMBUSTION PRODUCT PLACEMENT



PLACE CCP IN HATCHED AREA IN ACCORDANCE WITH THE PROJECT SPECIAL PROVISIONS

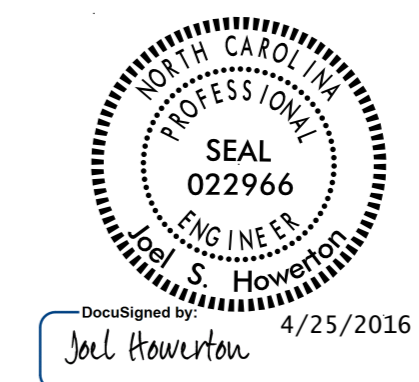
PLACE CCP A MINIMUM OF 5' ABOVE SEASONAL HIGH GROUND WATER

PLACE AT LOCATIONS AS APPROVED BY THE ENGINEER

PLACE SOIL BORROW MATERIAL ON THE OUTSIDE OF CCP AS EACH LIFT OF CCP IS PLACED

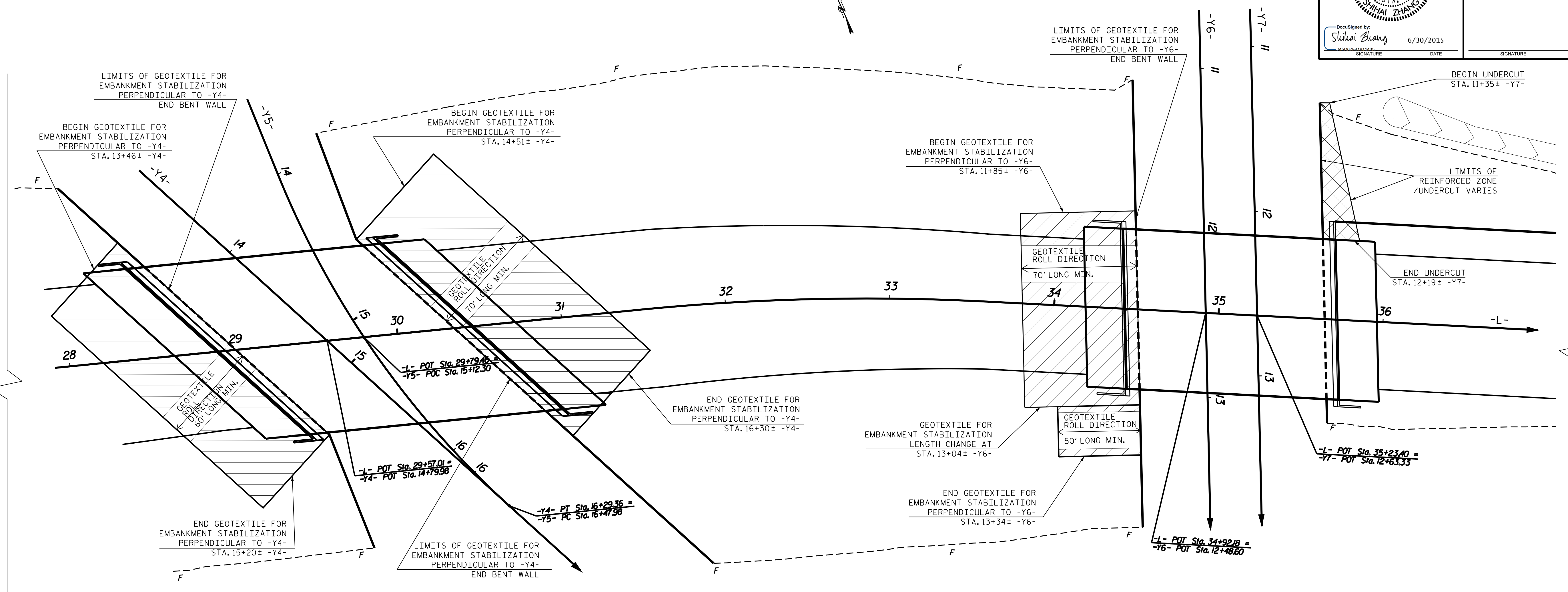
*(OBTAIN PERMISSION FROM ARMY CORPS OF ENGINEERS)

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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950 FAX 919-250-4119	
COAL COMBUSTION PRODUCT PLACEMENT DETAIL	
ORIGINAL BY: J.S.H.	DATE: 3/16/15
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.: joel/coal combustion material detail.dgn	



NOTES

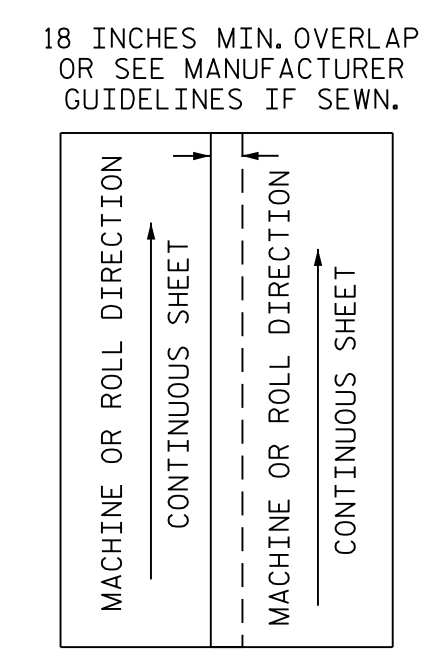
1. GEOTEXTILE FOR EMBANKMENT STABILIZATION SHALL BE PLACED ON THE EXISTING GROUND OR BOTTOM OF THE WALL EXCAVATION AS SHOWN IN THIS PLAN AT BOTH END BENTS OF STRUCTURE NO.1 AND END BENT 1 OF STRUCTURE NO. 2.
2. GEOTEXTILE FOR EMBANKMENT STABILIZATION SHEETS MUST HAVE A CONTINUOUS LENGTH AS INDICATED ON THE PLAN. NO SEAMS OR JOINTS ARE ALLOWED IN THE MACHINE DIRECTION OF GEOTEXTILE.
3. THE TERMS ROLL AND MACHINE DIRECTION ARE USED INTERCHANGEABLY.
4. FOR GEOTEXTILE FOR EMBANKMENT STABILIZATION, SEE GEOTEXTILE FOR EMBANKMENT STABILIZATION SPECIAL PROVISION.
5. UNDERCUT SOFT ALLUVIAL SOIL UNDER THE REINFORCED ZONE OF THE MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALL AT END BENT 2 OF STRUCTURE NO.2 AS SHOWN IN THIS PLAN AND AS DIRECTED BY THE ENGINEER, DEPTH OF UNDERCUT VARIES FROM LOCATION TO LOCATION (5'±).
6. FOR UNDERCUT, SEE SECTION 225 OF THE STANDARD SPECIFICATIONS.
7. FOR GEOTEXTILE FOR SOIL STABILIZATION, SEE SECTION 270 OF THE STANDARD SPECIFICATIONS.
8. FOR SELECT GRANULAR MATERIAL, SEE SECTION 265 OF THE STANDARD SPECIFICATIONS.



PLAN VIEW FOR EMBANKMENT STABILIZATION
N.T.S.

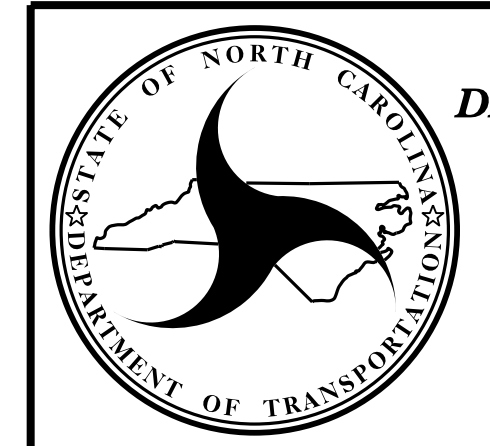
QUANTITIES	
GEOTEXTILE FOR EMBANKMENT STABILIZATION	3,650 SY#
UNDERCUT	300 CY
GEOTEXTILE FOR SOIL STABILIZATION	300 SY
SELECT GRANULAR MATERIAL	300 CY

* GEOTEXTILE FOR EMBANKMENT STABILIZATION ESTIMATED QUANTITY DOES NOT INCLUDE OVERLAPS OR WASTE.



GEOTEXTILE OVERLAP DETAIL
N.T.S.

PREPARED BY: S. ZHANG	DATE: 6/2015
REVIEWED BY: J. BATTS	DATE: 6/2015

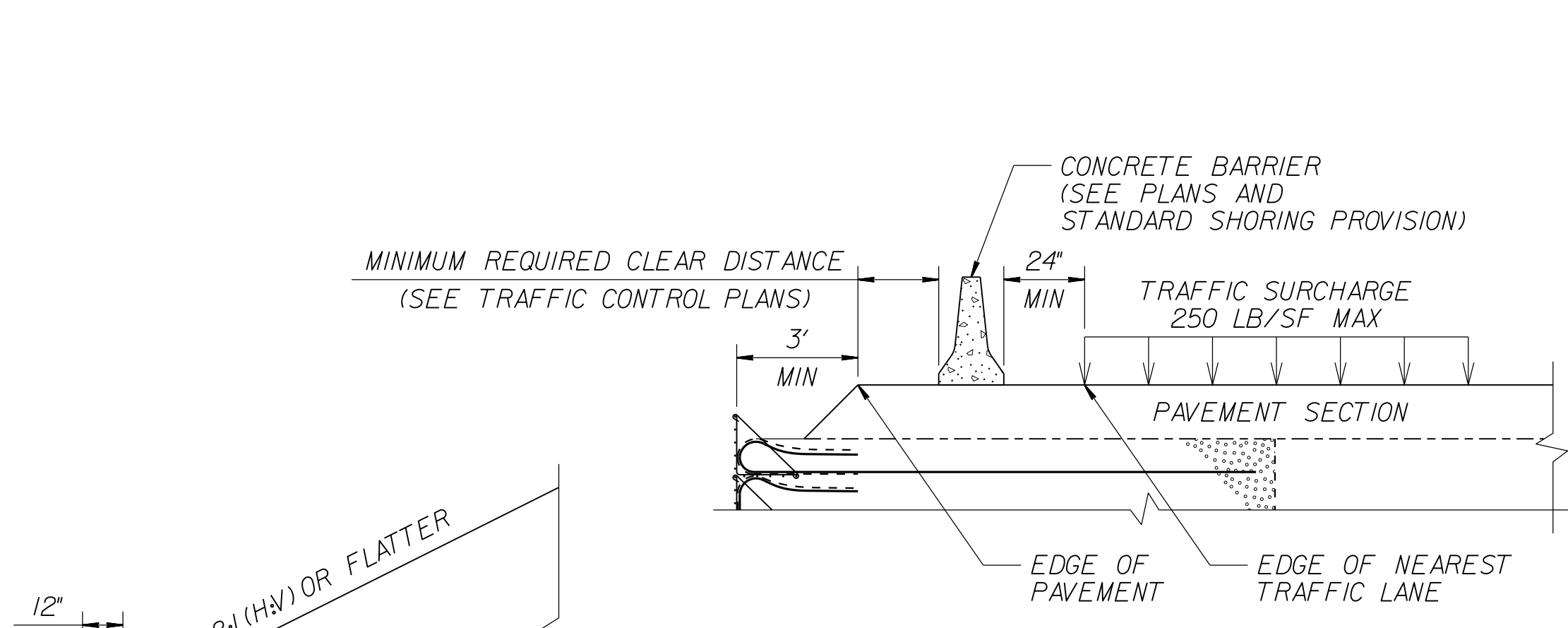


**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

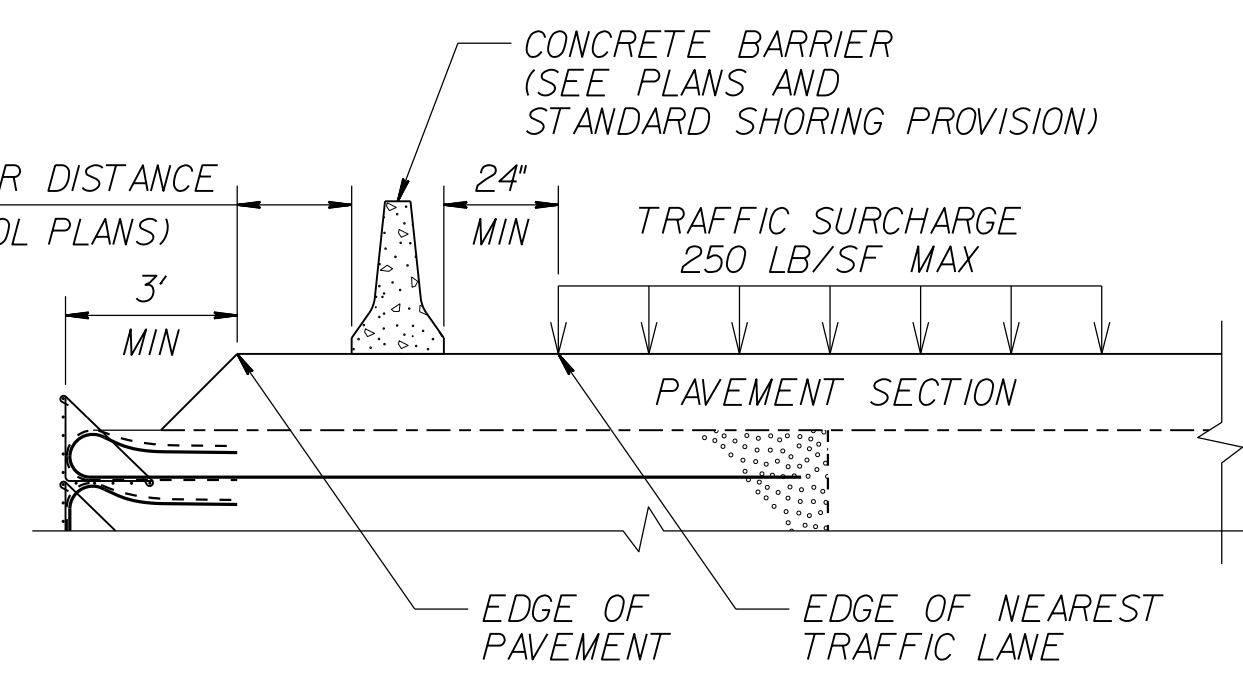
**GEOTECHNICAL
ENGINEERING UNIT**

**EMBANKMENT STABILIZATION
DETAILS AT BRIDGE APPROACHES**

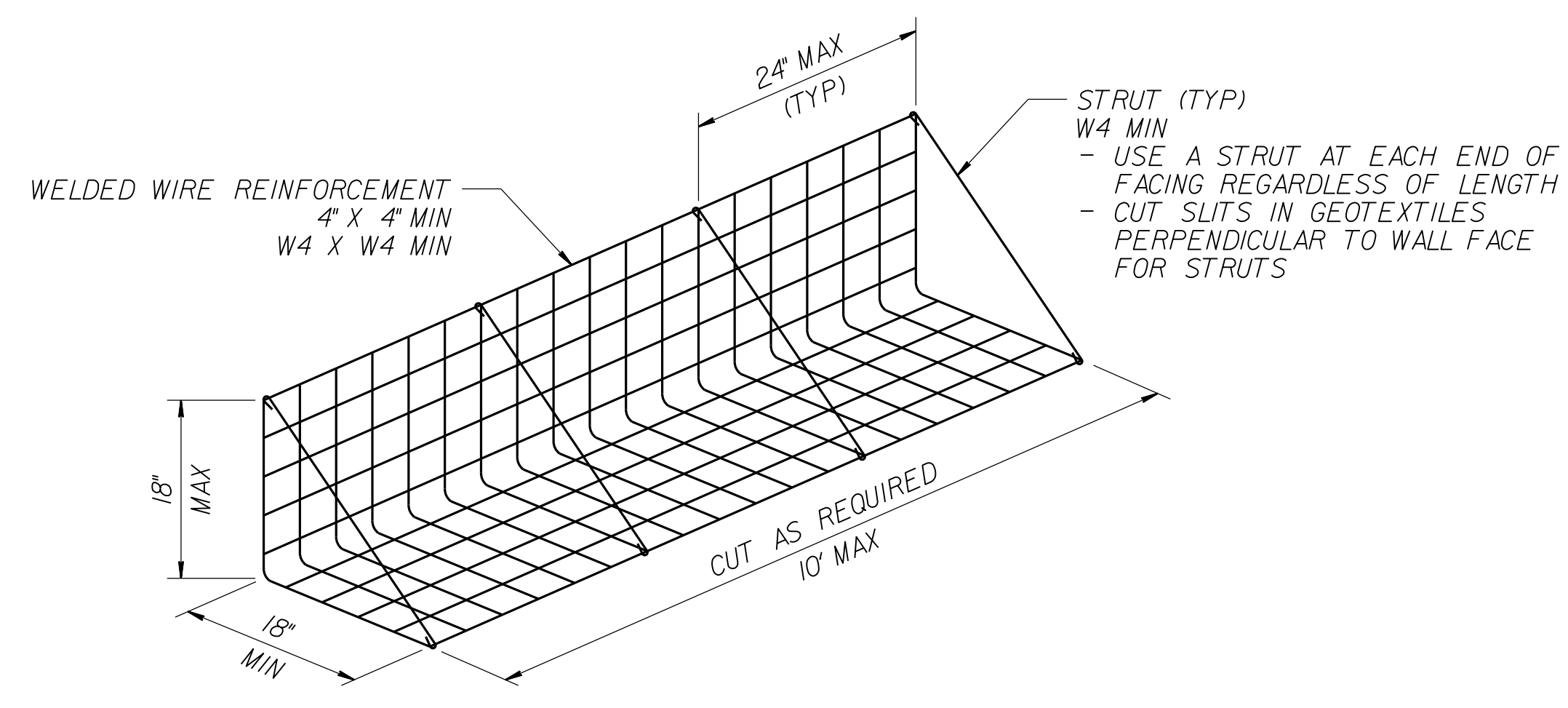
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		



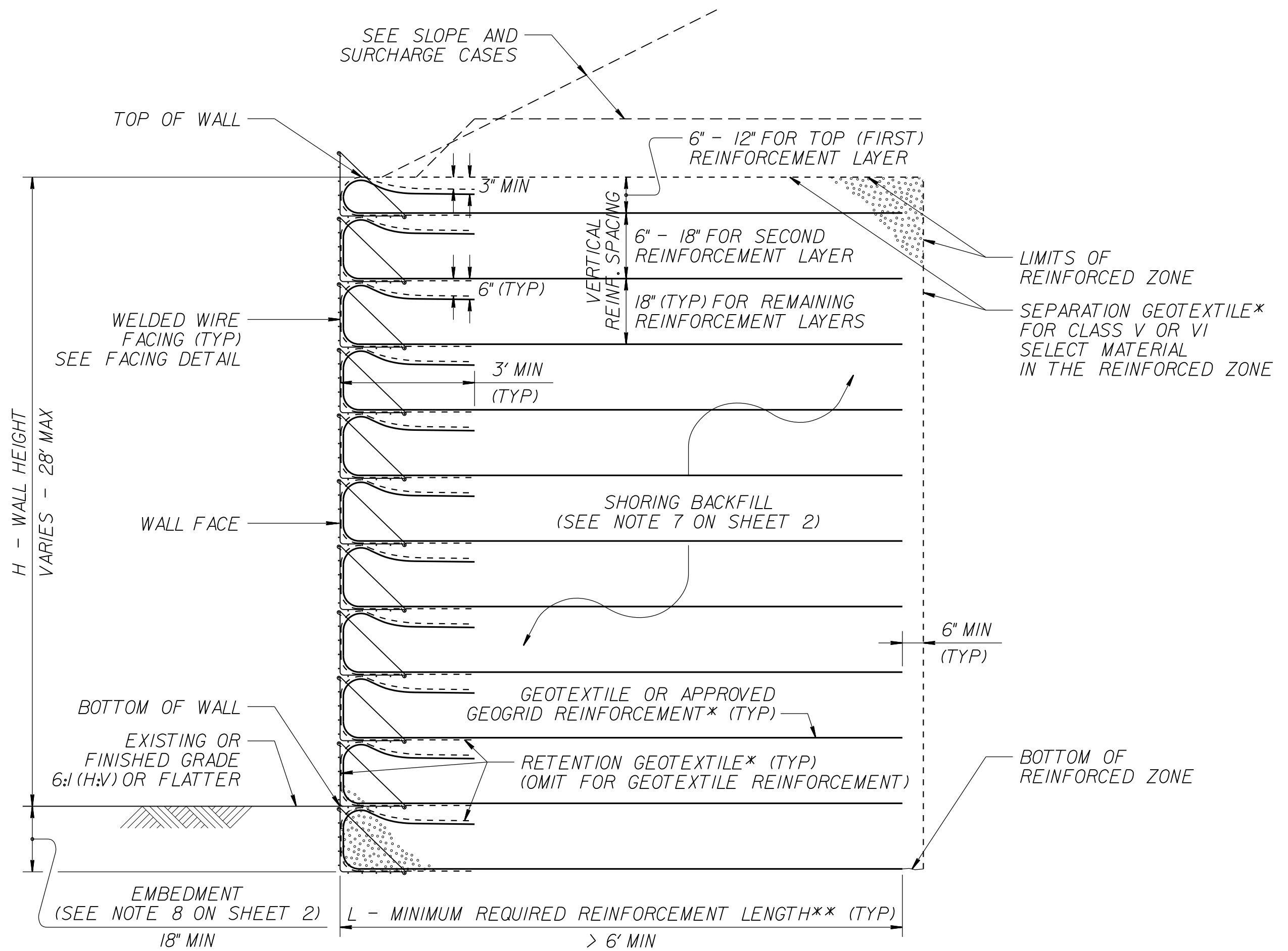
SLOPE CASE



SURCHARGE CASE

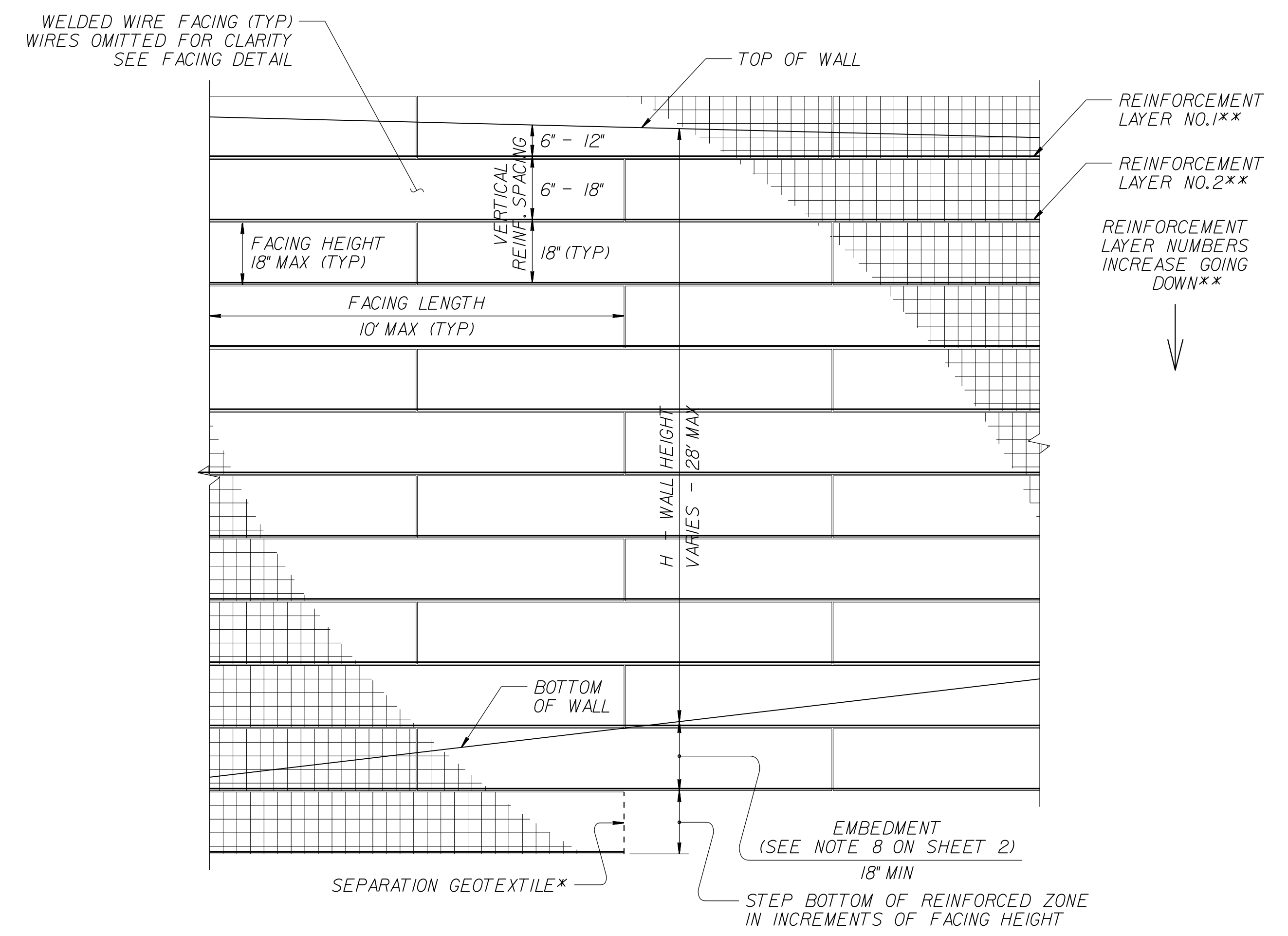


FACING DETAIL



STANDARD TEMPORARY WALL

(FOR STANDARD TEMPORARY WALLS ON STRUCTURES, SEE TEMPORARY WALL ON STRUCTURE DETAIL ON SHEET 2.)
 *SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.
 **SEE REINFORCEMENT TABLES ON SHEET 3.



STANDARD TEMPORARY WALL - PARTIAL ELEVATION

*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.
 **SEE REINFORCEMENT TABLES ON SHEET 3.

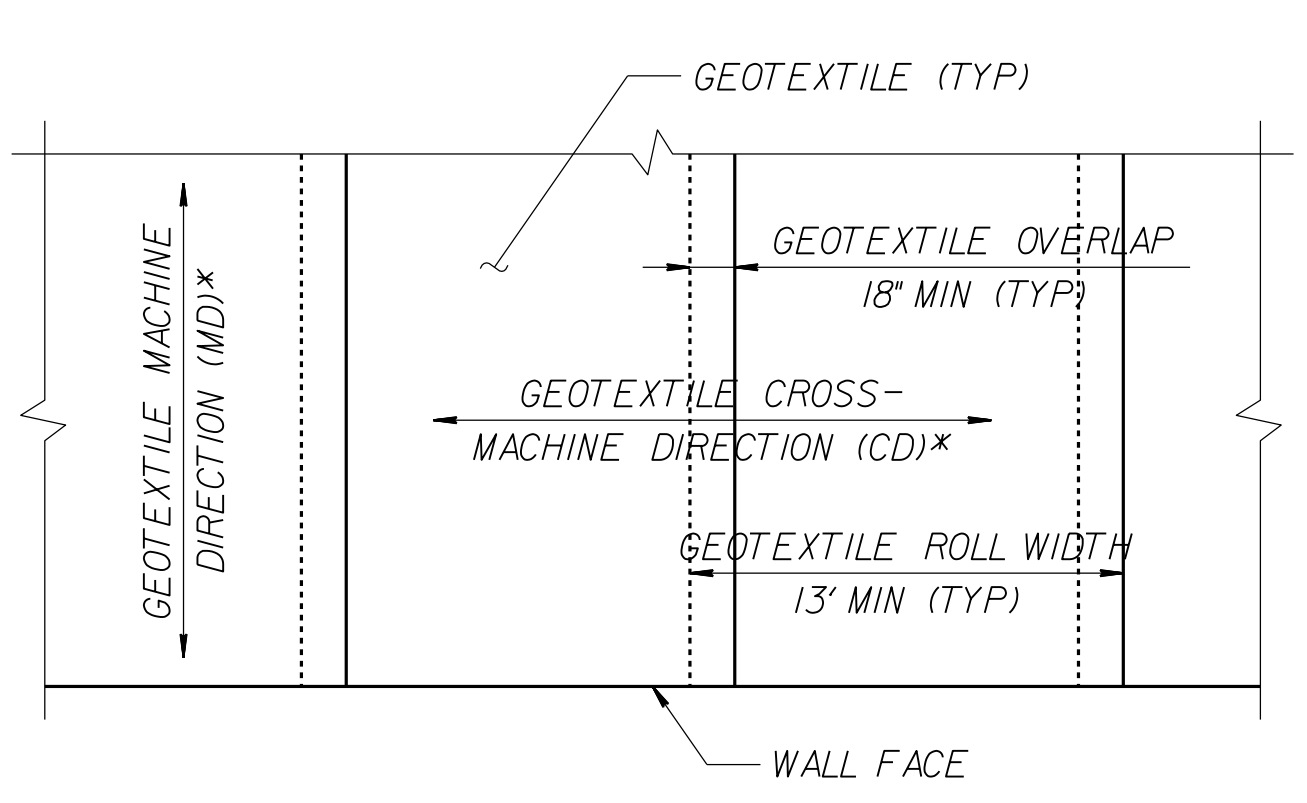


**NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS**

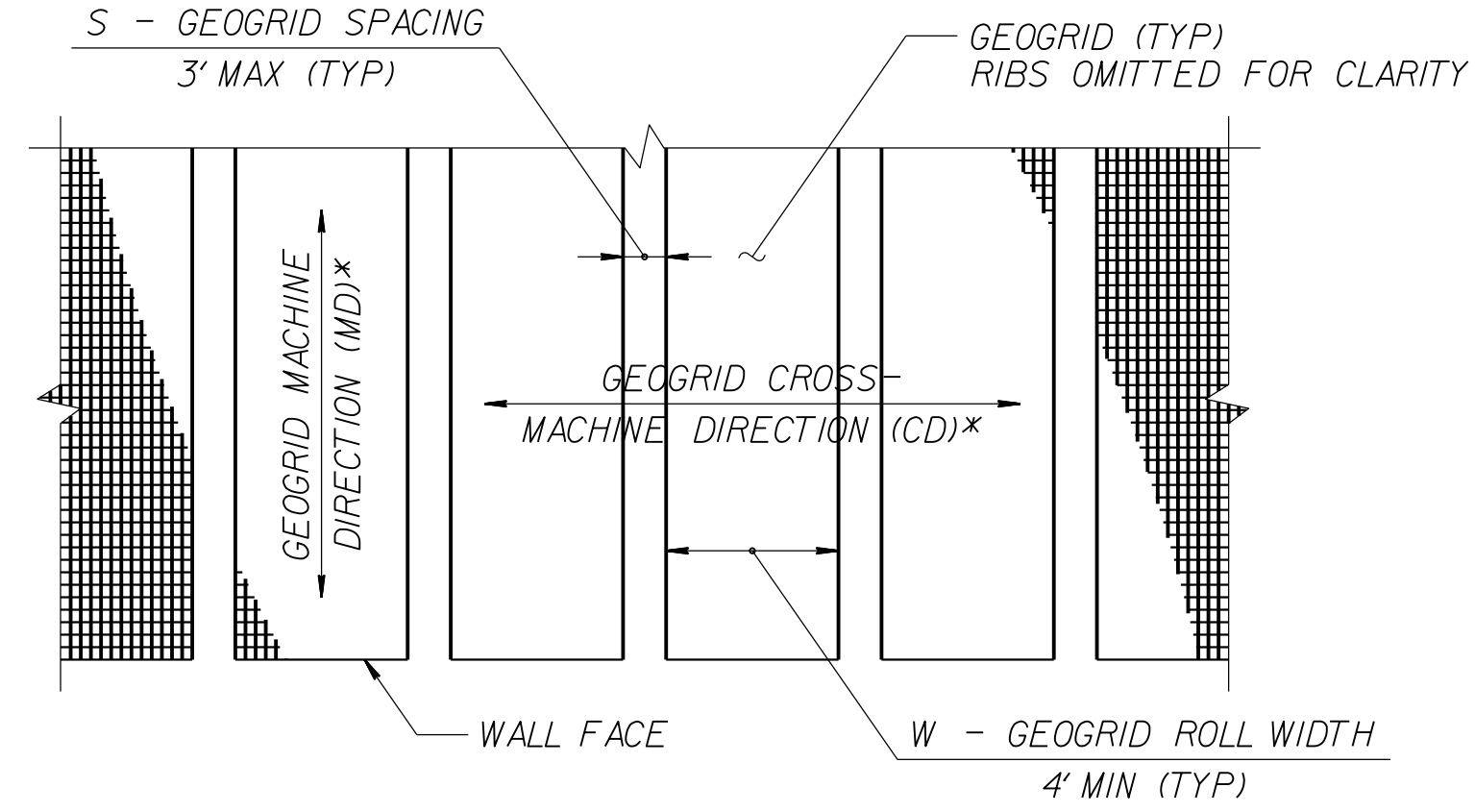
**GEOTECHNICAL
 ENGINEERING UNIT**

STANDARD DETAIL NO. 1801.02

**STANDARD
 TEMPORARY WALL
 SHEET 1 OF 3**

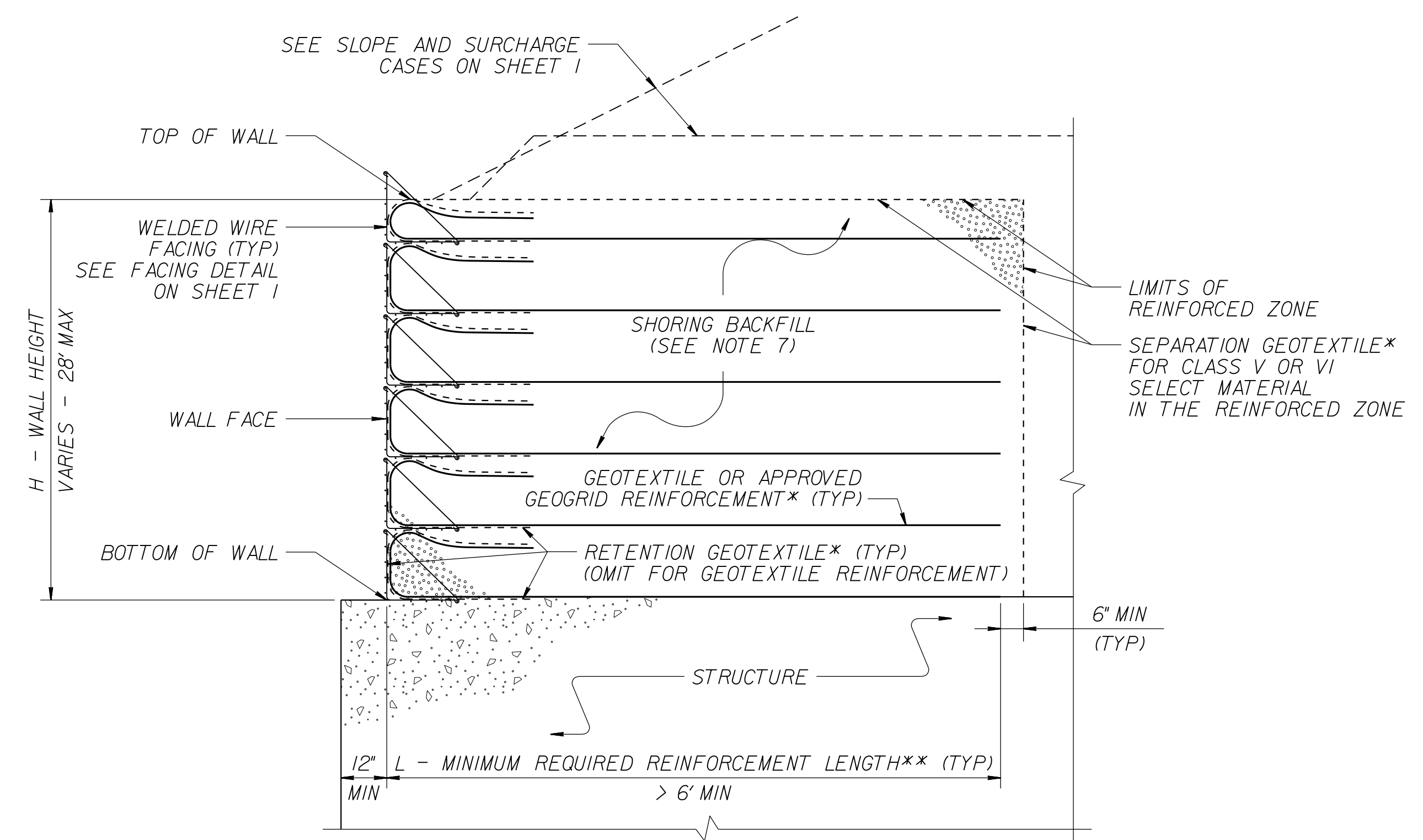


GEOTEXTILE PLACEMENT
(100% COVERAGE MIN FOR GEOTEXTILE REINFORCEMENT)



GEOGRID PLACEMENT
(80% COVERAGE MIN FOR GEOGRID REINFORCEMENT – $\frac{W}{W+S} \times 100 \geq 80\%$, SEE NOTE 11)

GEOSYNTHETIC PLACEMENT DETAILS
(PLAN VIEW)
*SEE NOTE 12.




TEMPORARY WALL ON STRUCTURE DETAIL
*SEE GEOSYNTHETIC PLACEMENT DETAILS.
**SEE REINFORCEMENT TABLES ON SHEET 3.

NOTES:

- AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY WALLS AS NOTED IN THE PLANS.
- FOR STANDARD TEMPORARY WALLS, SEE STANDARD SHORING PROVISION.
- STANDARD TEMPORARY WALLS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ LB/CF
FRICTION ANGLE, $\phi = 30$ DEGREES
COHESION, $c = 0$ LB/SF
- DO NOT USE STANDARD TEMPORARY WALLS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
- DO NOT USE STANDARD TEMPORARY WALLS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW TEMPORARY WALLS.
- USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, ASSUME GROUNDWATER DEPTH IS LESS THAN 7' BELOW BOTTOM OF REINFORCED ZONE. DO NOT USE STANDARD TEMPORARY WALLS IF GROUNDWATER IS ABOVE BOTTOM OF REINFORCED ZONE.
- DO NOT USE A-2-4 SOIL FOR STANDARD TEMPORARY WALLS AROUND CULVERTS OR IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS FOR SLOPE CASES. DO NOT USE CLASS VI SELECT MATERIAL IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS WITH GEOTEXTILE REINFORCEMENT.
- EMBEDMENT IS NOT REQUIRED FOR STANDARD TEMPORARY WALLS ON STRUCTURES OR ROCK AS DETERMINED BY THE ENGINEER.
- DO NOT USE MORE THAN 4 DIFFERENT REINFORCEMENT STRENGTHS FOR EACH STANDARD TEMPORARY WALL.
- GEOGRIDS ARE TYPICALLY APPROVED FOR ULTIMATE TENSILE STRENGTHS IN THE MACHINE DIRECTION (MD) AND CROSS-MACHINE DIRECTION (CD) OR SHORT-TERM DESIGN STRENGTHS FOR A 3-YEAR DESIGN LIFE IN THE MD BASED ON MATERIAL TYPE. THE LIST OF APPROVED GEOGRIDS WITH DESIGN STRENGTHS IS AVAILABLE FROM: connect.ncdot.gov/resources/Materials/Pages/SoilsLaboratory.aspx DEFINE MATERIAL TYPE FROM THE WEBSITE ABOVE FOR SHORING BACKFILL AS FOLLOWS:

MATERIAL TYPE	SHORING BACKFILL
BORROW	A-2-4 SOIL
FINE AGGREGATE	CLASS II, TYPE I OR CLASS III SELECT MATERIAL
COARSE AGGREGATE	CLASS V OR VI SELECT MATERIAL

- IF THE WEBSITE DOES NOT LIST A SHORT-TERM DESIGN STRENGTH FOR AN APPROVED GEOGRID, USE A SHORT-TERM DESIGN STRENGTH EQUAL TO THE ULTIMATE TENSILE STRENGTH DIVIDED BY 3.5 FOR THE GEOGRID REINFORCEMENT.
- FOR GEOGRID REINFORCEMENT WITH LESS THAN 100% COVERAGE, STAGGER REINFORCEMENT SO GEOGRIDS ARE CENTERED OVER GAPS IN THE REINFORCEMENT LAYER BELOW.
 - AT THE CONTRACTOR'S OPTION, REINFORCEMENT MAY BE INSTALLED WITH THE MD PARALLEL TO THE WALL FACE IF BOTH OF THE FOLLOWING CONDITIONS OCCUR:
- W (REINFORCEMENT ROLL WIDTH) \geq (MINIMUM REQUIRED REINFORCEMENT LENGTH) + 4.5' AND
- REINFORCEMENT STRENGTH IN CD \geq MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD.
 - SUBMIT A "STANDARD TEMPORARY WALL SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY WALL CONSTRUCTION. STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM: connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx
 - DO NOT PLACE SHORING BACKFILL OR REINFORCEMENT UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.
 - FOR STANDARD TEMPORARY WALLS WITH PILE FOUNDATIONS IN THE REINFORCED ZONE, DRIVE PILES THROUGH REINFORCEMENT AFTER CONSTRUCTING TEMPORARY WALLS.
 - DO NOT SPLICE OR OVERLAP REINFORCEMENT SO SEAMS ARE PARALLEL TO THE WALL FACE.
 - CONTACT THE ENGINEER WHEN EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT.
 - FOR STANDARD TEMPORARY WALLS WITH INTERIOR ANGLES LESS THAN 90 DEGREES, WRAP GEOSYNTHETICS AT ACUTE CORNERS AS DIRECTED BY THE ENGINEER.
 - FOR STANDARD TEMPORARY WALLS WITH TOP OF WALL WITHIN 5' OF FINISHED GRADE, REMOVE TOP FACING AND INCORPORATE TOP REINFORCEMENT LAYER INTO FILL WHEN PLACING FILL IN FRONT OF WALL.

PROJECT REFERENCE NO. B-4490	SHEET NO. 2G-4
GEOTECHNICAL ENGINEER  SEAL 022246 SCOTT A. HIDDEN ENGINEER	ENGINEER
DocuSigned by: Scott A. Hidden 9/11/2015 SIGNATURE DATE	SIGNATURE DATE

SLOPE OR SURCHARGE CASE	GROUNDWATER DEPTH BELOW BOTTOM OF REINFORCED ZONE (SEE NOTE 6 ON SHEET 2) (FT)	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)	H - WALL HEIGHT (FT)																									
			< 4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
SLOPE CASE	> 0	CLASS II, TYPE I, CLASS III, CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	8	9	11	12	13	13	14	15	16	17	18	19	20	21	22	23	24	24	25	26	27	27	
SURCHARGE CASE	> 0 TO 7 FOR H < 20' > 0 TO 10 FOR H ≥ 20'	ALL SHORING BACKFILL TYPES	6	7	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	17	17	18	19	19	20	21	22	
		A-2-4 SOIL	6	6	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21	
		CLASS II, TYPE I OR CLASS III SELECT MATERIAL	6	6	7	7	8	8	9	10	10	11	11	12	12	13	14	15	15	16	16	17	17	18	18	19	20	
	> 7 FOR H < 20' > 10 FOR H ≥ 20'	CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	7	8	8	9	9	10	10	11	12	13	13	14	14	15	15	16	17	17	18	19	19		

L - MINIMUM REQUIRED REINFORCEMENT LENGTH (FT)
(FOR ALL REINFORCEMENT TYPES)

WALL HEIGHT (H) + EMBEDMENT (FT)	NUMBER OF REINFORCEMENT LAYERS*
2.5 - 4	3
4 - 5.5	4
5.5 - 7	5
7 - 8.5	6
8.5 - 10	7
10 - 11.5	8
11.5 - 13	9
13 - 14.5	10
14.5 - 16	11
16 - 17.5	12
17.5 - 19	13
19 - 20.5	14
20.5 - 22	15
22 - 23.5	16
23.5 - 25	17
25 - 26.5	18
26.5 - 28	19
28 - 29.5	20

*BASED ON VERTICAL REINFORCEMENT SPACING SHOWN ON SHEET 1.

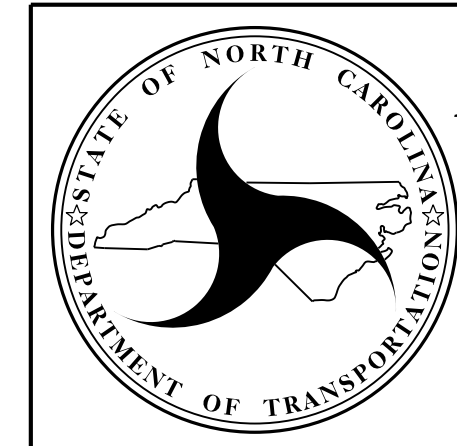
REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II, TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL	A-2-4 SOIL	CLASS II, TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL
1	2400	2400	2400	2400	2400
2	2400	2400	2400	2400	2400
3	2400	2400	2400	2400	2400
4	2400	2400	2500	2400	2400
5	2500	2400	3000	2400	2400
6	3000	2400	3500	2800	2400
7	3500	2700	4000	3200	2600
8	4000	3100	4500	3600	2900
9	4500	3500	5000	4000	3200
10	5000	3900	5500	4400	3500
11	5500	4300	6000	4800	3800
12	6000	4700	6500	5200	4100
13	6500	5100	7000	5600	4400
14	7000	5400	7500	6000	4700
15	7500	5800	8000	6400	5000
16	8000	6200	8500	6800	5300
17	8500	6600	9000	7200	5600
18	9000	7000	9500	7600	5900
19	9500	7400	10000	8000	6200
20	10000	7800	10500	8400	6500

GEOTEXTILE REINFORCEMENT
ULTIMATE TENSILE STRENGTH (LB/FT)

REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II, TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL	A-2-4 SOIL	CLASS II, TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL
1	240	200	340	290	240
2	380	310	520	430	350
3	530	420	700	570	460
4	690	550	870	720	570
5	860	690	1050	860	680
6	1030	830	1220	1000	790
7	1200	970	1400	1150	900
8	1370	1110	1580	1290	1010
9	1550	1240	1750	1430	1120
10	1720	1380	1930	1580	1230
11	1890	1520	2100	1720	1340
12	2060	1660	2280	1860	1450
13	2240	1800	2450	2010	1560
14	2410	1940	2630	2150	1670
15	2580	2080	2800	2290	1780
16	2750	2220	2980	2440	1890
17	2930	2360	3160	2580	2000
18	3100	2500	3330	2720	2110
19	3270	2640	3510	2860	2220
20	3440	2780	3690	3000	2330

GEOGRID REINFORCEMENT
SHORT-TERM DESIGN STRENGTH (LB/FT)
(SEE NOTE 10 ON SHEET 2.)

MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD
(SEE NOTE 9 ON SHEET 2.)
*SEE PARTIAL ELEVATION ON SHEET 1 FOR REINFORCEMENT LAYER NUMBERING.



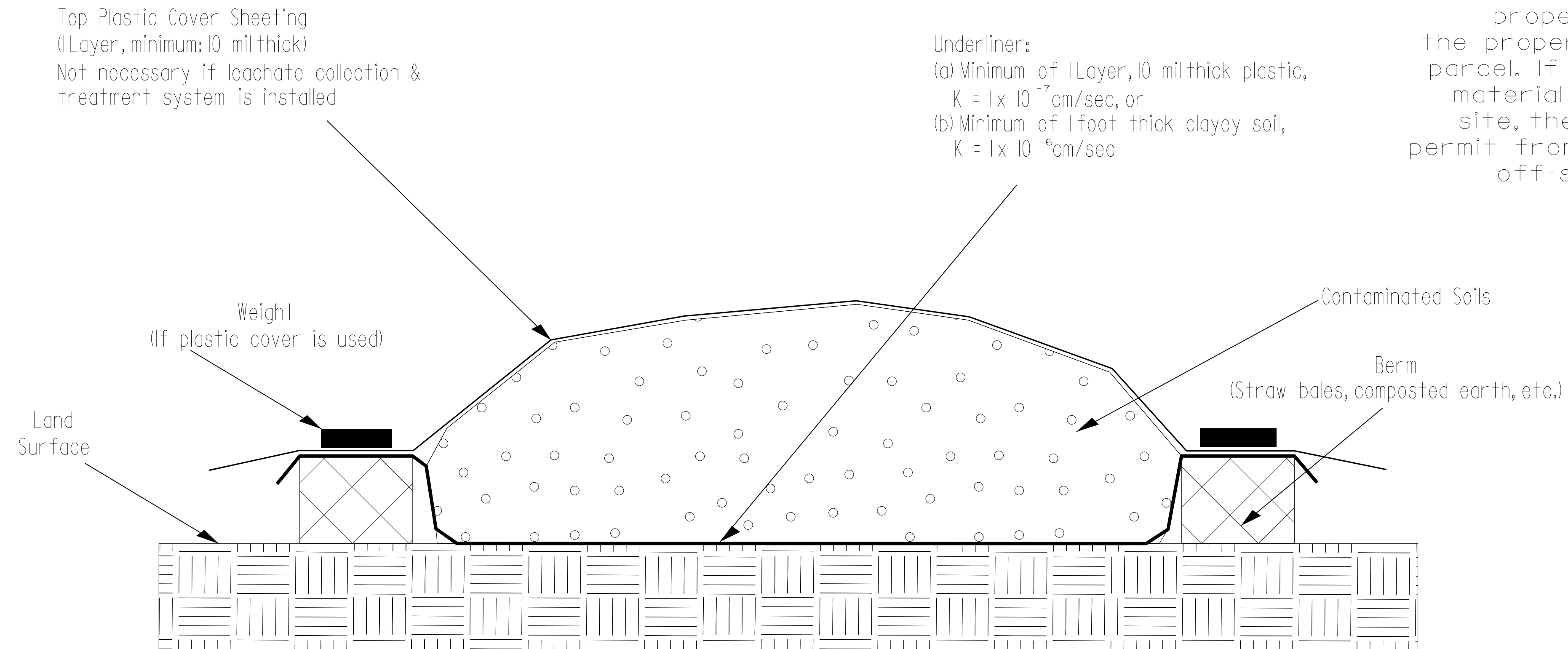
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**GEOTECHNICAL
ENGINEERING UNIT**

STANDARD DETAIL NO. 1801.02
STANDARD TEMPORARY WALL SHEET 3 OF 3
DATE: 11-19-13

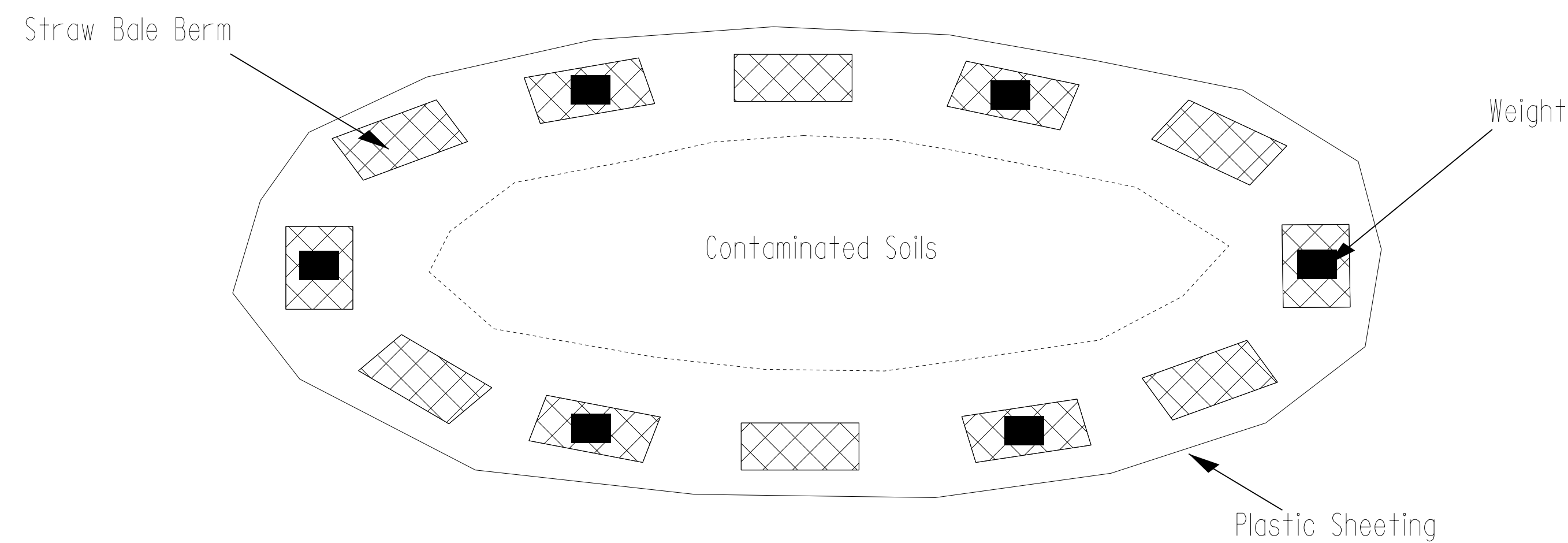
Detail for Temporary Containment of Contaminated Soil

Cross-Section View



NOTE:
The Contractor shall stockpile all contaminated soil excavated from a property in a location within the property boundaries of the source parcel. If the volume of contaminated material exceeds available space on site, the Contractor shall obtain a permit from the NCDENR UST Section for off-site temporary storage.

Map View



GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
 CONTRACT OFFICE

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STOCKPILE CONTAINMENT DETAIL					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

PREPARED BY:	DATE:
REVIEWED BY:	DATE:

RD266181

COMPUTED BY: CAF DATE: 09/16/15
CHECKED BY: VBB DATE: 09/17/15

PROJECT NO. B-4490 SHEET NO. 3D-4

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

Main data table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, SIDE DRAIN PIPE (RCP, CSP, CAAP or HDPE), C. S. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, R. C. PIPE CLASS V, ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, and REMARKS. Includes a SHEET TOTALS row at the bottom.

RD266181

COMPUTED BY: CAF DATE: 09/16/15
CHECKED BY: VBB DATE: 09/17/15

PROJECT NO. B-4490 SHEET NO. 3D-6

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".

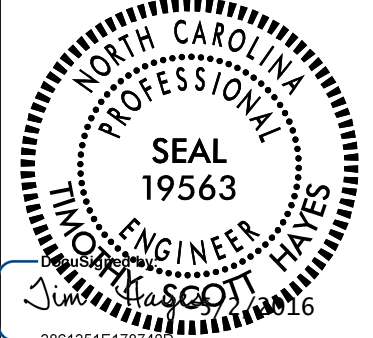

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns for LINE & STATION, SIZE, THICKNESS OR GAUGE, OFFSET, STRUCTURE NUMBER, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, SIDE DRAIN PIPE (RCP, CSP, CAAP or HDPE), C. S. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, R. C. PIPE CLASS V, ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, and REMARKS. Includes sub-totals for SHEET TOTALS and PROJECT TOTALS.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4 & 5	VAIL FAMILY LIMITED PARTNERSHIP
2	4 & 5	VALUE PLACE FAYETTEVILLE BRAGG LLC
3	5	JAMES E. GARDNER
4	5	WDO LLC
5	5,6,11 & 12	DORIS B. UTLEY
6	5	CHARLES WILLIAMS JR.
7	5 & 6	EDMUND GEORGE
8	5 & 15	S.C. RANKIN EST
9	6 & 12	ROSALIND W. WAITMAN
10	6	UTLEY RENTALS, LLC
11	6	UTLEY RENTALS, LLC
12	6	WYANE QUICK
13	6	ROSSIE BAREFOOT
14	6	NC DOT
15	6 & 12	CITY OF FAYETTEVILLE
16	6 & 7	ALEXANDER EVANS
18	7	P&S ENTERPRISES INC
19	7	P&S ENTERPRISES
21	7 & 8	GEORGE SKENTERIS
23	8	GEORGE BROWN
24	8	WILLIAM JOSEPH BAGGETT
25	8	TALLY INVESTMENTS LLC
26	8	WILLIAM JOSEPH BAGGETT
27	8	TALLY INVESTMENTS LLC
28	8	TALLY INVESTMENTS LLC
29	8 & 9	LALON L. BARNES JR.
30	9	ALFRED N. DAVIS
31	9	LAWRENCE GLINDEMAN
32	9 & 10	Q. J. SCARBOROUGH JR.
33	9 & 10	CITY OF FAYETTEVILLE
34	10	MARION C. GEORGE JR.
35	10	LAFAYETTE BANK & TRUST CO.
36	11	CITY OF FAYETTEVILLE
37	11	CITY OF FAYETTEVILLE
38	11	COUNCIL & WILLIFORD PROPERTIRS, LLC
40	11 & 12	CITY OF FAYETTEVILLE
42	13 & 14	CITY OF FAYETTEVILLE
43	14	CITY OF FAYETTEVILLE
44	6, 13 & 15	EDWARD B. SEIFERT
45	6 & 15	S.C. RANKIN EST
46	5	CITY OF FAYETTEVILLE

PROJECT REFERENCE NO. B-4490		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
PLANS PREPARED BY: PARSONS BRINCKERHOFF 434 FAYETTEVILLE STREET SUITE 1500 RALEIGH, NC 27601 LICENSE NO. E-0165			
VAIL FAMILY LIMITED PARTNERSHIP DB 4594 PG 225			

-L- CURVE DATA

PI Sta 11+89.76	PI Sta 16+18.86
$\Delta = 10^\circ 25' 53.3''$ (RT)	$\Delta = 20^\circ 07' 11.6''$ (LT)
D = 3' 34' 51.6"	D = 3' 34' 51.6"
L = 291.30'	L = 561.85'
T = 146.05'	T = 283.85'
DS = 40 MPH	DS = 27 MPH
SE = exist.	SE = 2.0% *
RO = exist.	RO = 100'

*** DESIGN EXCEPTION REQUIRED FOR SUPERELEVATION**

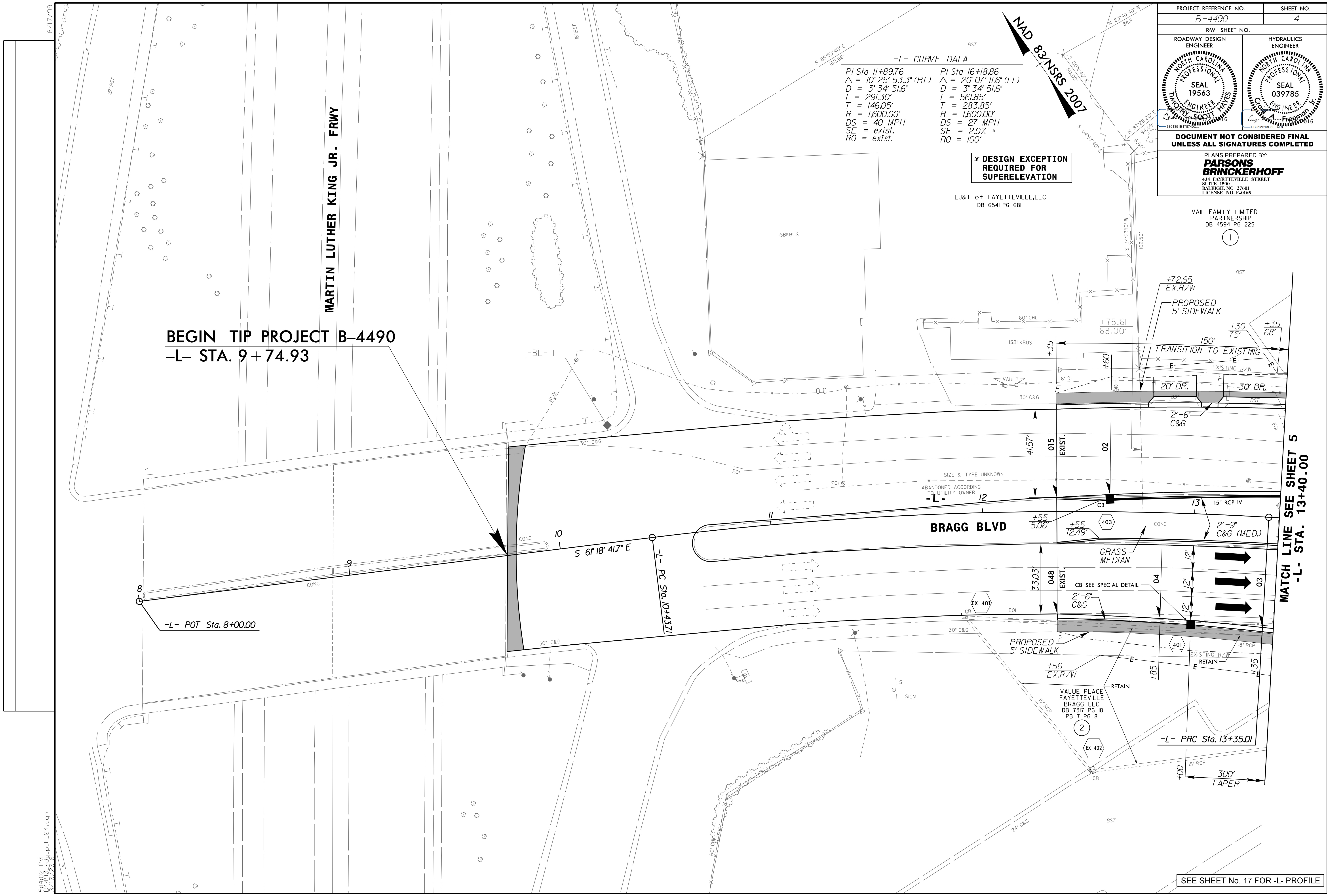
LJ&T of FAYETTEVILLE, LLC
DB 6541 PG 681

BEGIN TIP PROJECT B-4490
-L- STA. 9+74.93

MATCH LINE SEE SHEET 5
-L- STA. 13+40.00

-L- PRC Sta. 13+35.01

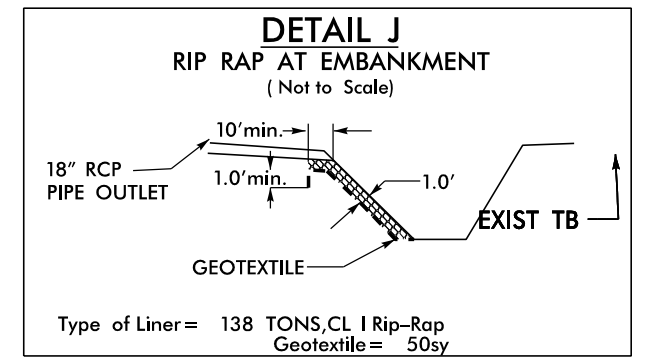
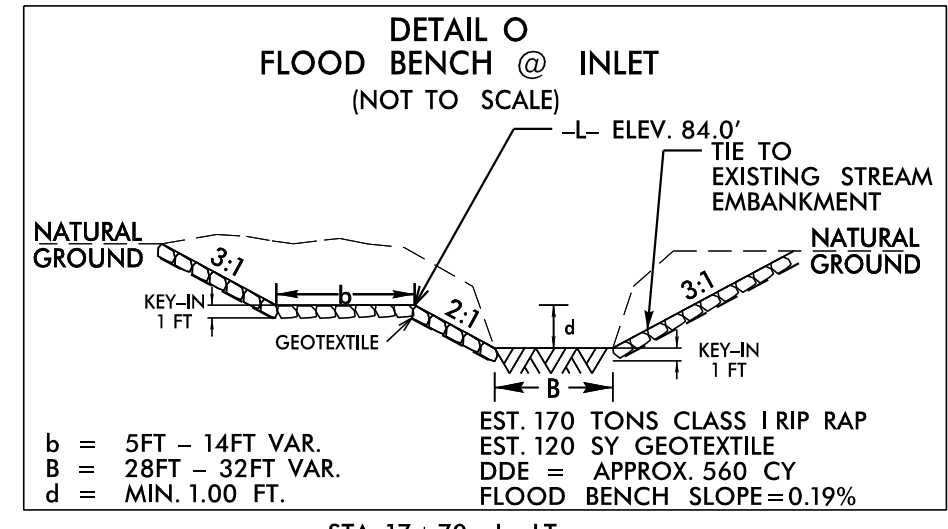
SEE SHEET No. 17 FOR -L- PROFILE



5:41:02 PM
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 3/10/2016

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. E-0165

PROJECT REFERENCE NO. B-4490	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

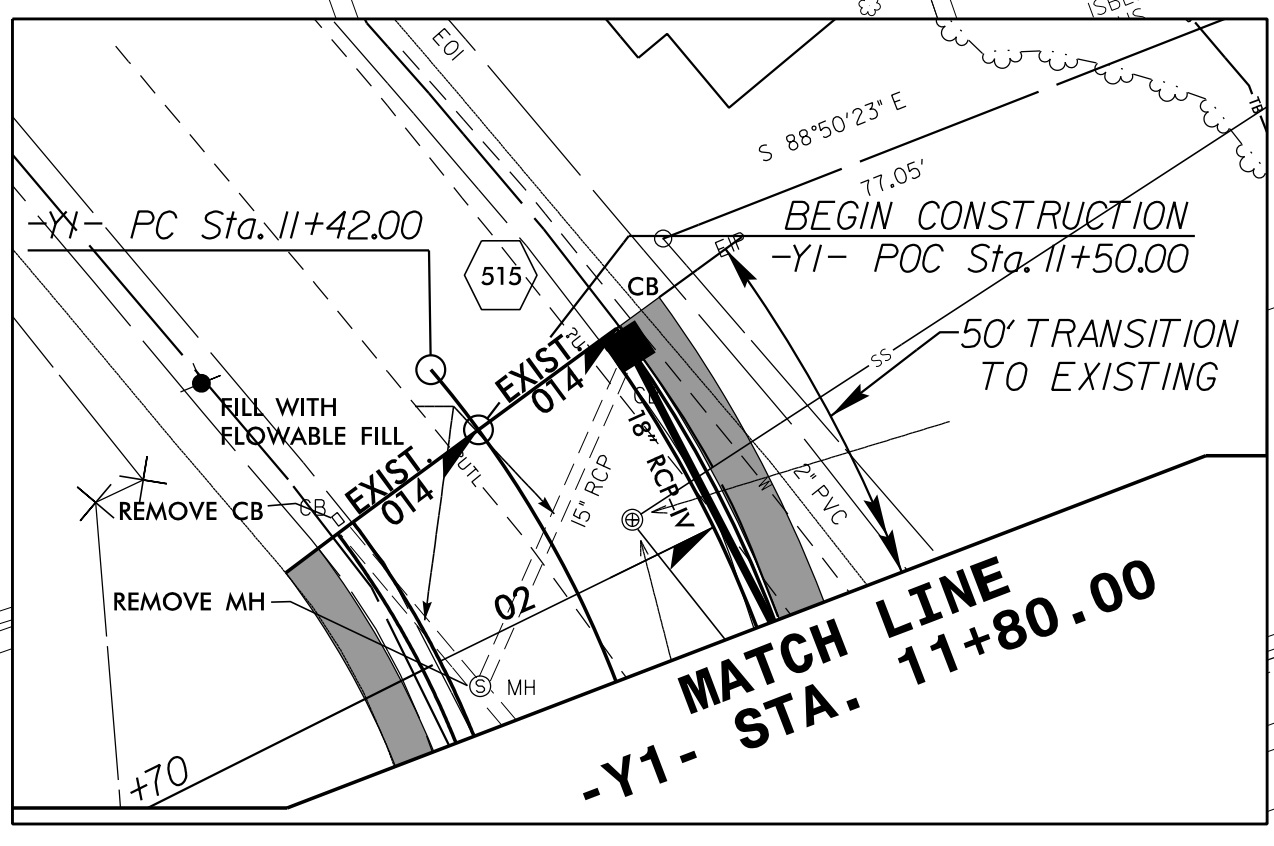
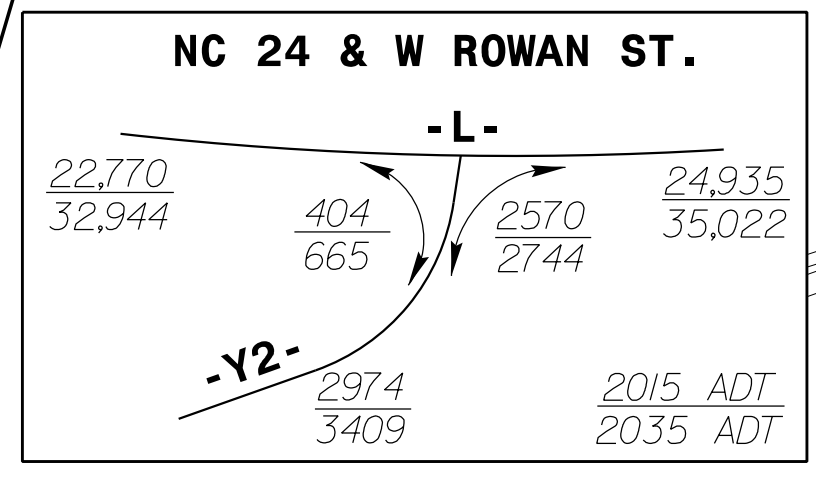


FROM STA. 17+50 TO STA. 17+82 -L- LT
-L- CURVE DATA
PI Sta 16+18.86
 $\Delta = 20' 07'' 11.6''$ (LT)
 $D = 3' 34'' 51.6''$
 $L = 561.85'$
 $T = 283.85'$
 $R = 1,600.00'$
 $SE = 2.0\% \times$
 $RO = 100'$
 $DS = 27$ MPH

*** DESIGN EXCEPTION REQUIRED FOR SUPERELEVATION**

-Y1- CURVE DATA
PI Sta 12+09.77
 $\Delta = 62' 21'' 15.4''$ (RT)
 $D = 51' 09'' 25.0''$
 $L = 121.89'$
 $T = 67.77'$
 $R = 112.00'$
 $SE = n/a$
 $RO = n/a$

-Y2- CURVE DATA
PI Sta 11+24.19
 $\Delta = 62' 03'' 54.7''$ (RT)
 $D = 38' 11'' 49.9''$
 $L = 162.49'$
 $T = 90.25'$
 $R = 150.00'$
 $SE = n/a$
 $RO = n/a$



MATCH LINE SEE INSET IN THIS SHEET
-Y1- STA. 11+80.00

MATCH LINE SEE SHEET 12
INSET A

MATCH LINE SEE SHEET 6
-L- STA. 18+50.00

MATCH LINE SEE SHEET 15
-DR1- STA. 10+80.00

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
SEE SHEET No. 2B-3 FOR PAVEMENT REMOVAL DETAIL
SEE SHEETS No. C-1 THRU C-18 FOR CULVERT PLANS
SEE SHEET No. 17 FOR -L- PROFILE
SEE SHEET No. 22 FOR -Y1- & -Y2- PROFILE
SEE SHEET No. 25 FOR -DR1- PROFILE

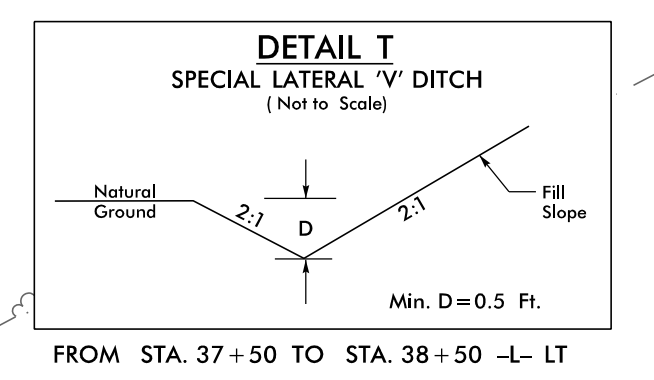
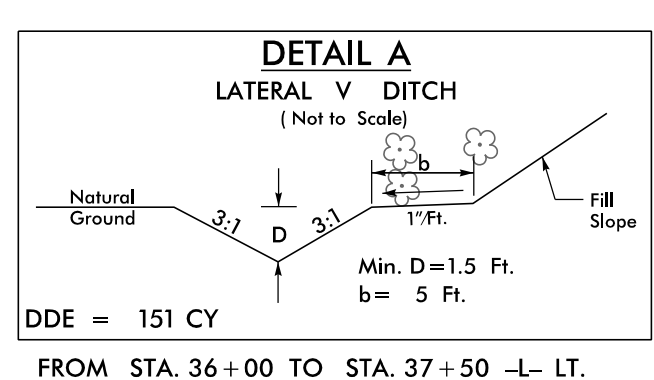
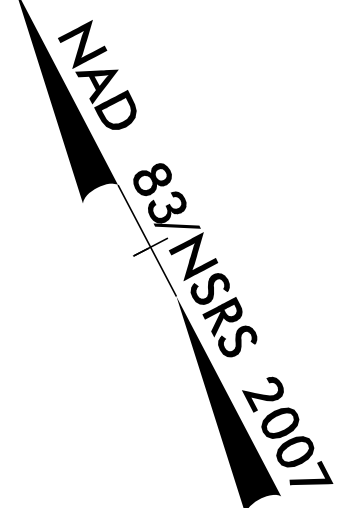
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2/22/2016

REVISIONS

8.17.17.99

PROJECT REFERENCE NO. B-4490	SHEET NO. 9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PLANS PREPARED BY:
BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. E-0165



-L-
PI Sta. 32+53.30
Δ = 8' 38" 25" (RT)
D = 4' 05" 33.2"
L = 211.2'
T = 105.76'
R = 1,400.00'
DS = 40 MPH
SE = 3.0%
RO = 100'

END RETAINING WALL #4
-Y6- STA. 11+05.98
41.27' RT.

BEGIN RETAINING WALL #5
-Y7- STA. 11+43.50
41.03' LT.

A PERMANENT SOIL REINFORCEMENT MAT (PSRM) SHALL BE PLACED ON SLOPES STEEPER THAN 3:1 (H:V) FROM STA. 25+50± -L- (LEFT) TO STA. 39+00± -L- (LEFT) AND STA. 28+00± -L- (RIGHT) TO STA. 34+60± -L- (RIGHT). SEE PERMANENT SOIL REINFORCEMENT MAT SPECIAL PROVISION.

BEGIN ORNAMENTAL FENCE
-L- STA. 35+67.87 +/-

END RETAINING WALL #6
END ORNAMENTAL FENCE
-L- STA. 38+00.00
OFF. 59.5'

END BRIDGE
-L- Sta. 35+72.31

BEGIN APPROACH SLAB
-L- Sta. 34+19.06

BEGIN BRIDGE
-L- Sta. 34+43.06

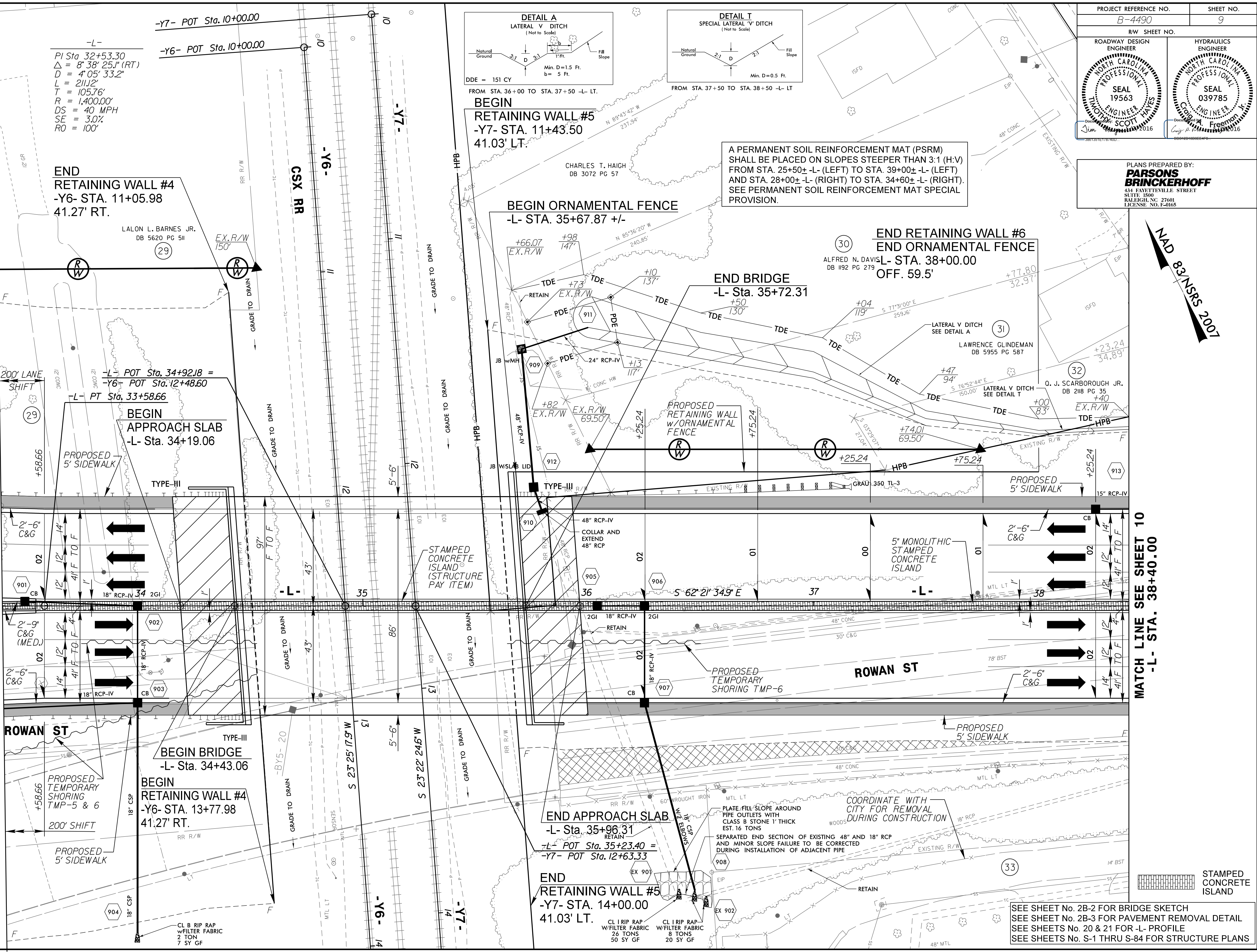
BEGIN RETAINING WALL #4
-Y6- STA. 13+77.98
41.27' RT.

END APPROACH SLAB
-L- Sta. 35+96.31

END RETAINING WALL #5
-Y7- STA. 14+00.00
41.03' LT.

MATCH LINE SEE SHEET 8
-L- STA. 33+40.00

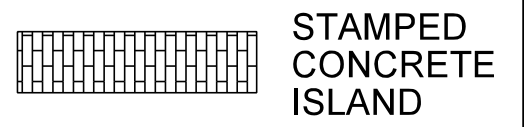
MATCH LINE SEE SHEET 10
-L- STA. 38+40.00



REVISIONS

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4/11/2016

SEE SHEET No. 2B-2 FOR BRIDGE SKETCH
SEE SHEET No. 2B-3 FOR PAVEMENT REMOVAL DETAIL
SEE SHEETS No. 20 & 21 FOR -L- PROFILE
SEE SHEETS No. S-1 THRU S-84 FOR STRUCTURE PLANS



PROJECT REFERENCE NO. B-4490	SHEET NO. 10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. E-0165

FREDERICK L. GRAHAM
DB 4652 PG 271

25BKBUS

25BKBUS

20' BST DRIVE

EXISTING R/W

EXISTING R/W

EXISTING R/W

EXISTING R/W

EXISTING R/W

EXISTING R/W

EXISTING R/W

EXISTING R/W

EXISTING R/W

EXISTING R/W

EXISTING R/W

EXISTING R/W

SEE SHEET No. 21 FOR -L- PROFILE
SEE SHEET No. 24 FOR -Y8- PROFILE

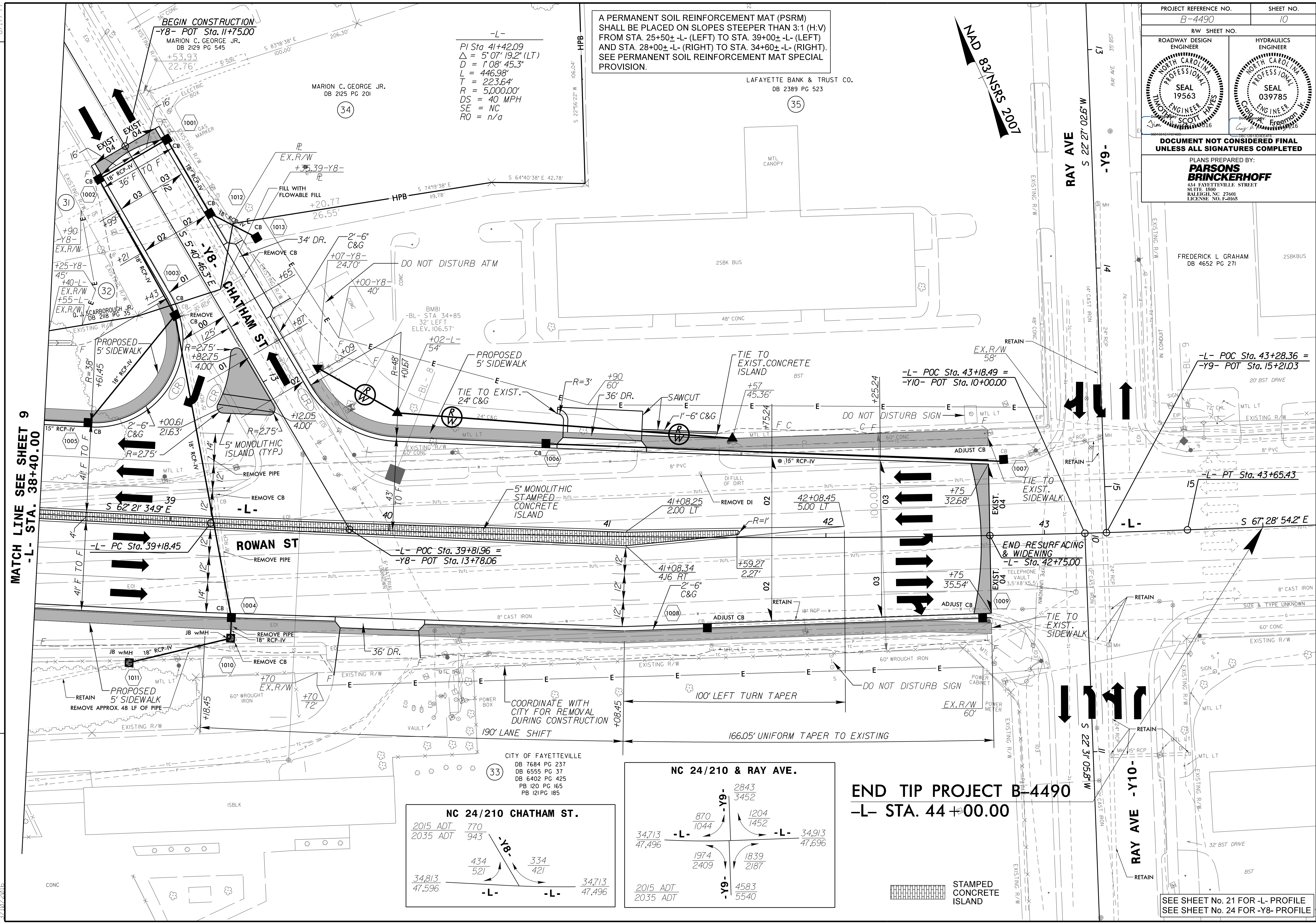
NAD 83 NSRS 2007

A PERMANENT SOIL REINFORCEMENT MAT (PSRM) SHALL BE PLACED ON SLOPES STEEPER THAN 3:1 (H:V) FROM STA. 25+50± -L- (LEFT) TO STA. 39+00± -L- (LEFT) AND STA. 28+00± -L- (RIGHT) TO STA. 34+60± -L- (RIGHT). SEE PERMANENT SOIL REINFORCEMENT MAT SPECIAL PROVISION.

-L-
PI Sta 41+42.09
Δ = 5' 07" 19.2" (LT)
D = 1' 08" 45.3"
L = 446.98'
T = 223.64'
R = 5,000.00'
DS = 40 MPH
SE = NC
RO = n/a

LAFAYETTE BANK & TRUST CO.
DB 2389 PG 523

MARION C. GEORGE JR.
DB 2125 PG 201



MATCH LINE SEE SHEET 9
-L- STA. 38+40.00

NC 24/210 CHATHAM ST.

2015 ADT	770	34,813	47,596
2035 ADT	943	34,713	47,496

NC 24/210 & RAY AVE.

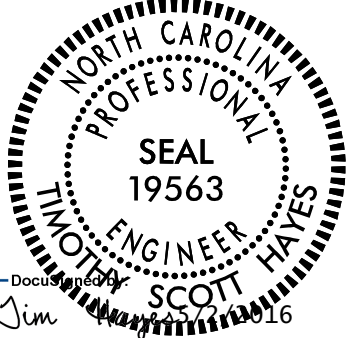

2015 ADT	870	34,713	47,496
2035 ADT	1044	34,913	47,696

END TIP PROJECT B-4490
-L- STA. 44+00.00

STAMPED CONCRETE ISLAND

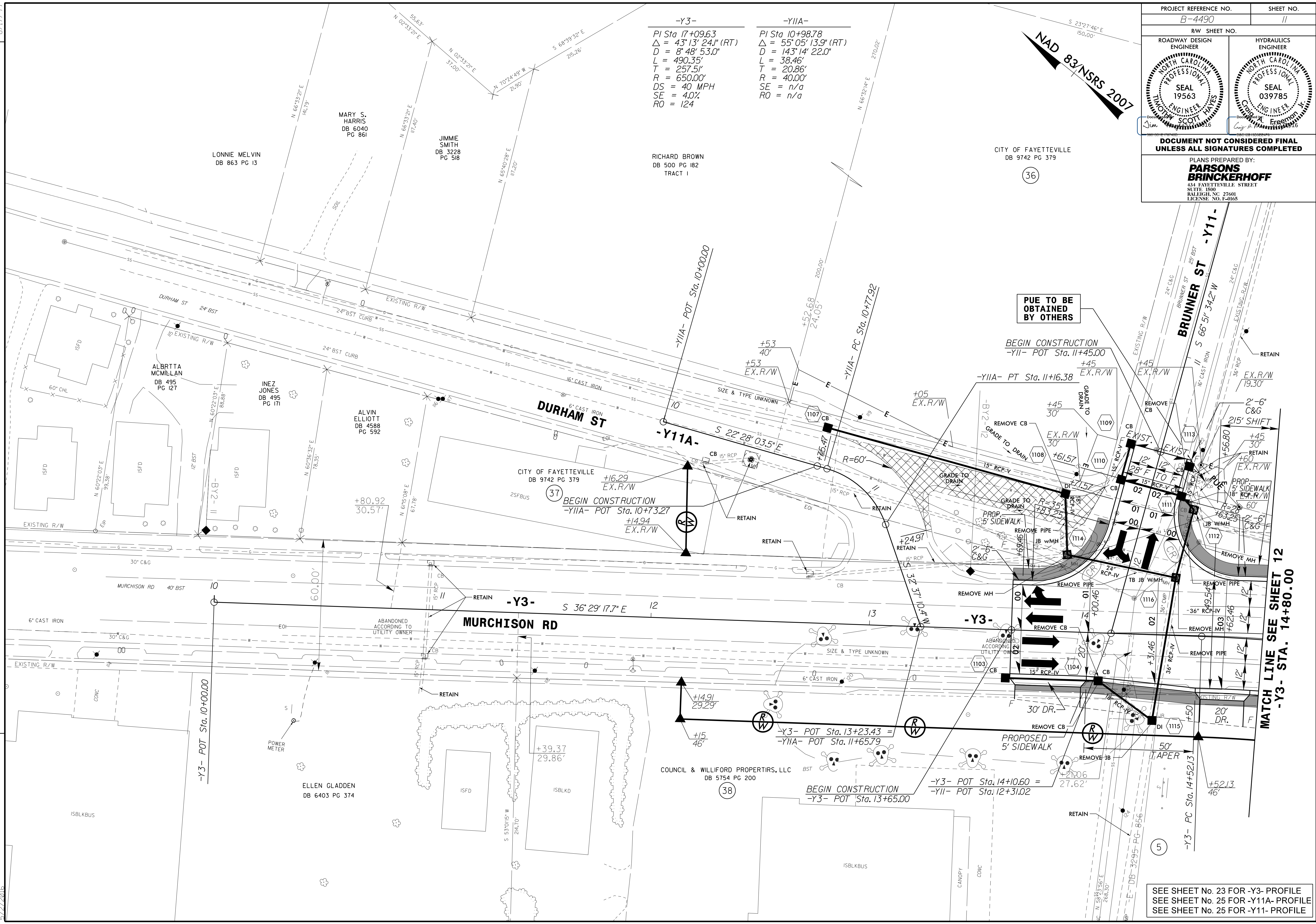
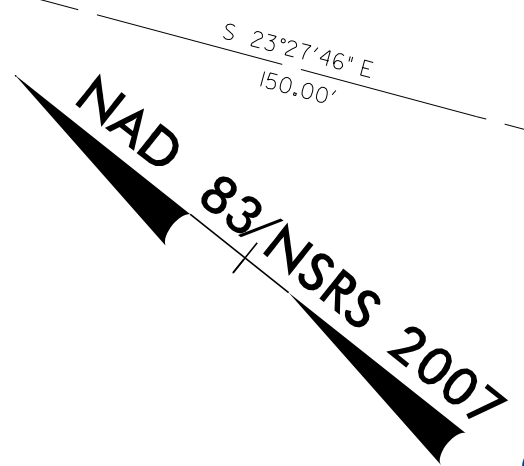
REVISIONS

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3/10/2016
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PROJECT REFERENCE NO. B-4490		SHEET NO. 11	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
			
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>			
<p>PLANS PREPARED BY: PARSONS BRINCKERHOFF 434 FAYETTEVILLE STREET SUITE 1500 RALEIGH, NC 27601 LICENSE NO. E-0165</p>			

-Y3-
 PI Sta 17+09.63
 $\Delta = 43^{\circ}13'24.1''$ (RT)
 $D = 8^{\circ}48'53.0''$
 $L = 490.35'$
 $T = 257.51'$
 $R = 650.00'$
 $DS = 40$ MPH
 $SE = 4.0\%$
 $RO = 124$

-Y11A-
 PI Sta 10+98.78
 $\Delta = 55^{\circ}05'13.9''$ (RT)
 $D = 143^{\circ}14'22.0''$
 $L = 38.46'$
 $T = 20.86'$
 $R = 40.00'$
 $SE = n/a$
 $RO = n/a$



REVISIONS

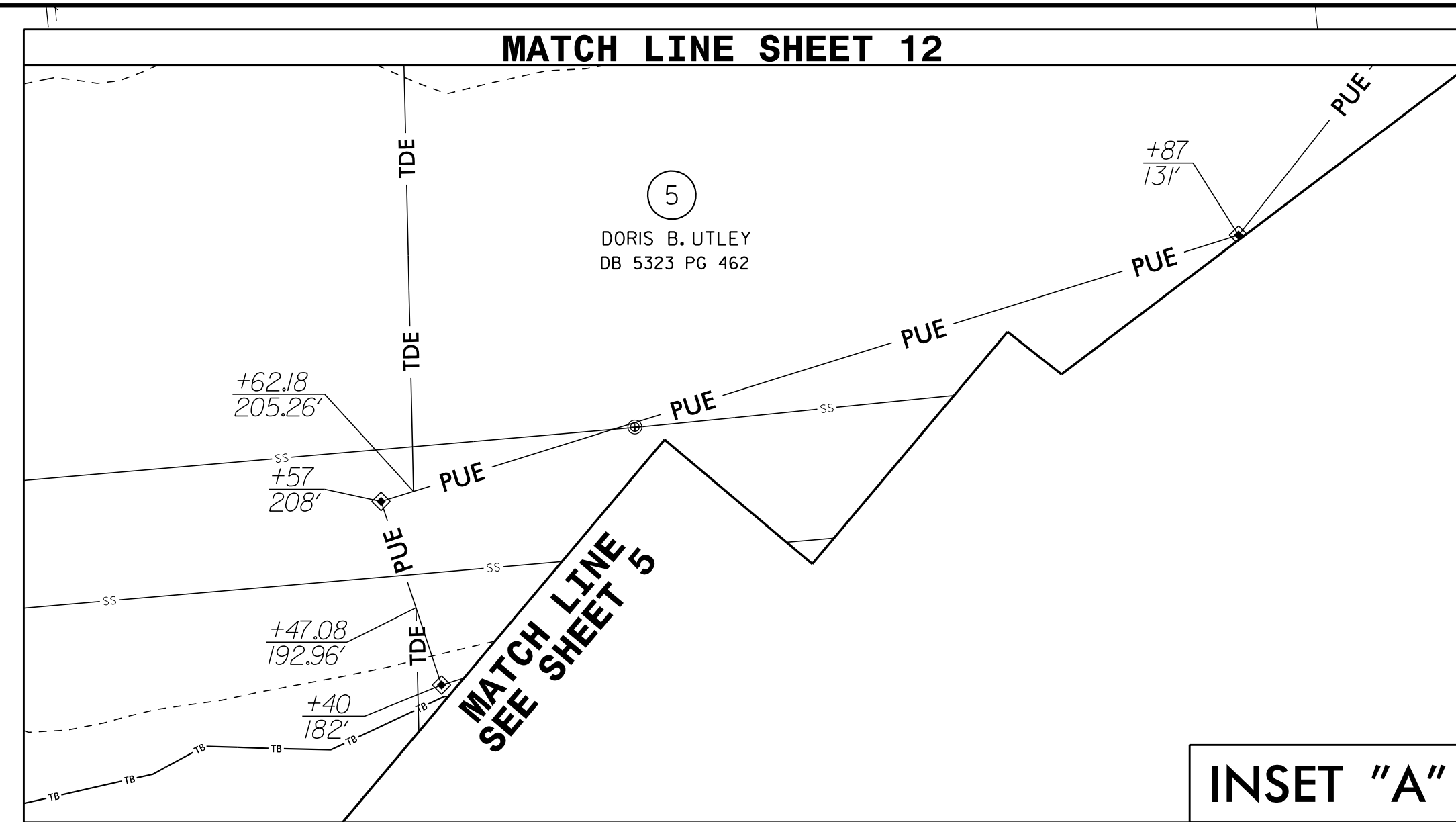
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 5:22/2016
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SEE SHEET No. 23 FOR -Y3- PROFILE
 SEE SHEET No. 25 FOR -Y11A- PROFILE
 SEE SHEET No. 25 FOR -Y11- PROFILE

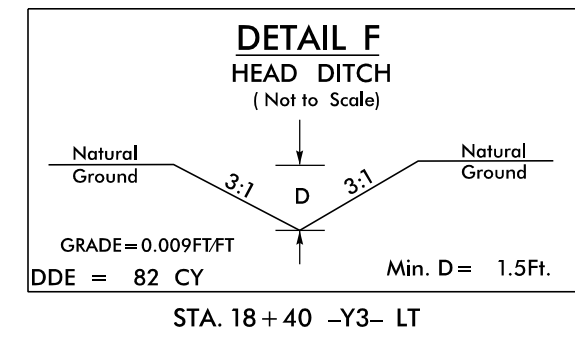
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PROJECT REFERENCE NO. B-4490		SHEET NO. 12	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 		HYDRAULICS ENGINEER 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
PLANS PREPARED BY: PARSONS BRINCKERHOFF 434 FAYETTEVILLE STREET SUITE 1500 RALEIGH, NC 27601 LICENSE NO. F-0165			

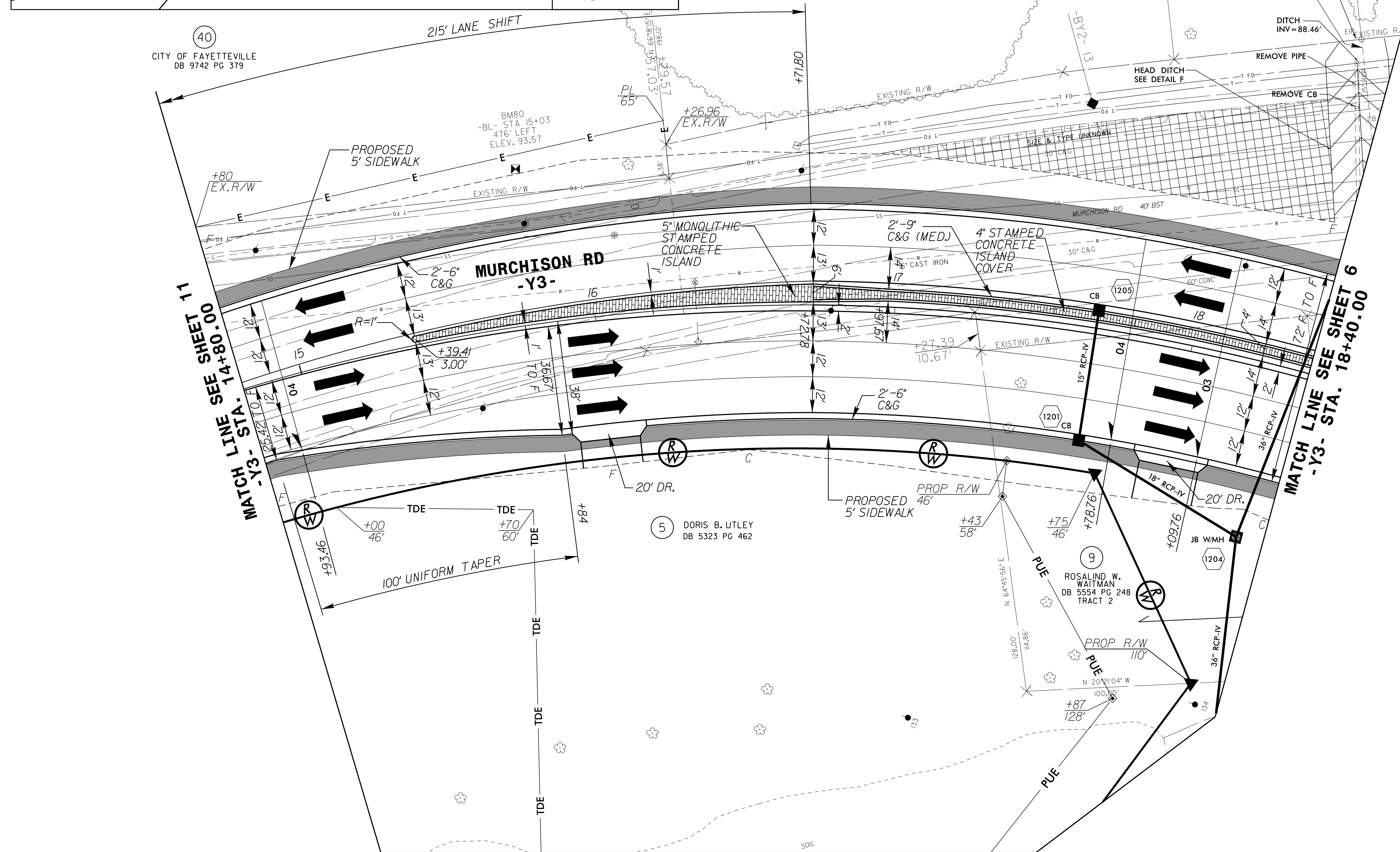


-Y3-

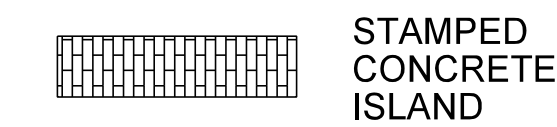
PI Sta 17+09.63
 $\Delta = 43^\circ 13' 24.1''$ (RT)
 $D = 8' 48.53.0''$
 $L = 490.35'$
 $T = 257.51'$
 $R = 650.00'$
 $DS = 40$ MPH
 $SE = 4.0\%$
 $RO = 12.4'$




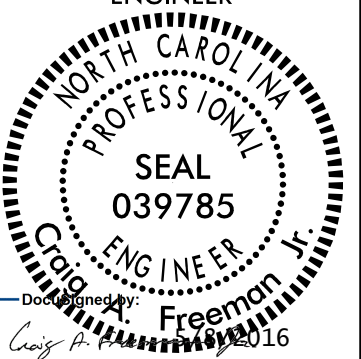
REVISIONS



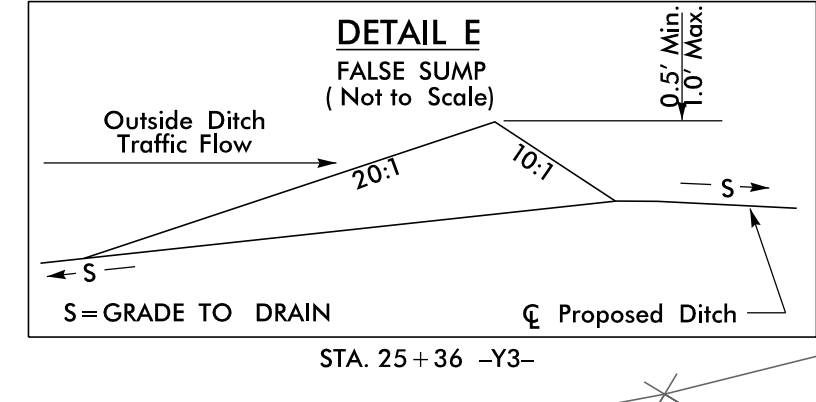
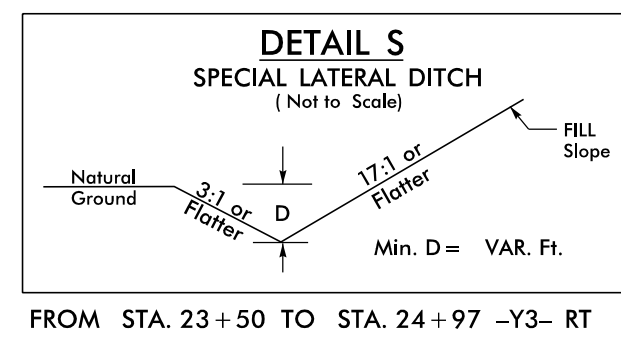
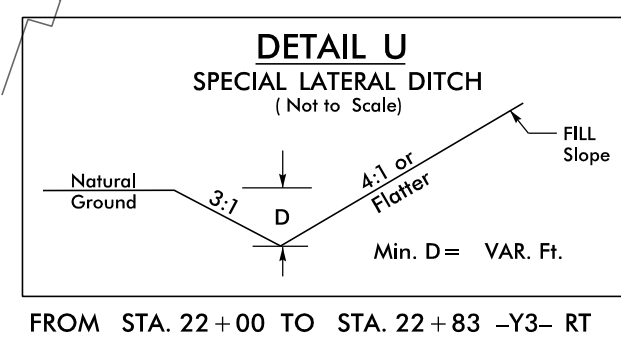
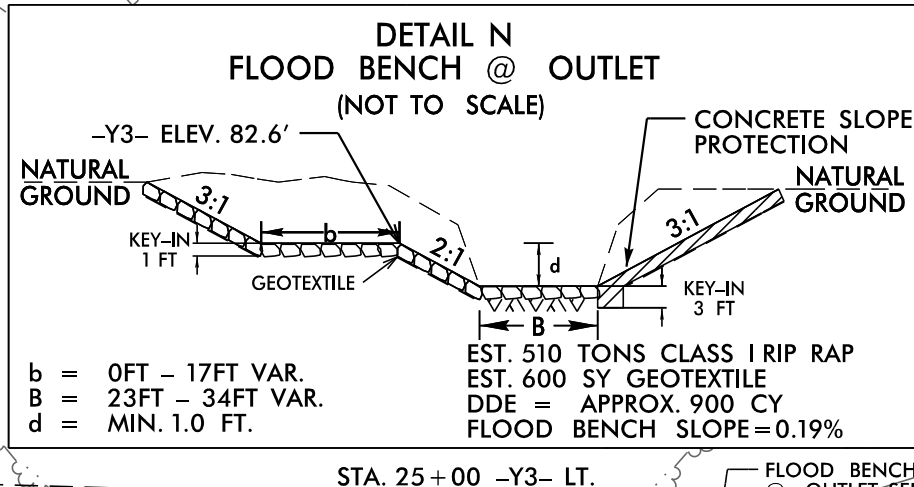
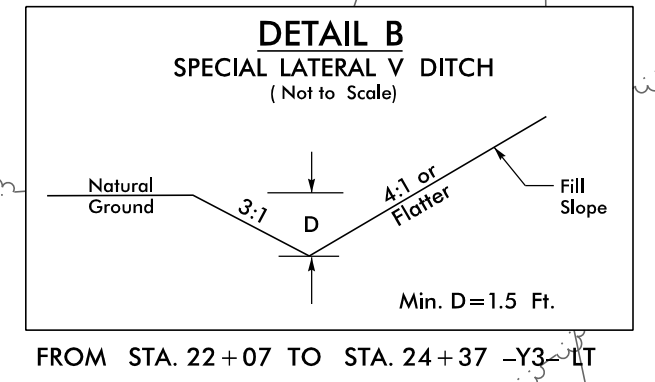
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5/22/2016



SEE SHEET No. 2B-3 FOR PAVEMENT REMOVAL DETAIL
 SEE SHEET No. 23 FOR -Y3- PROFILE

PROJECT REFERENCE NO. B-4490		SHEET NO. 13	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
PLANS PREPARED BY: PARSONS BRINCKERHOFF 434 FAYETTEVILLE STREET SUITE 1500 RALEIGH, NC 27601 LICENSE NO. F-0165			

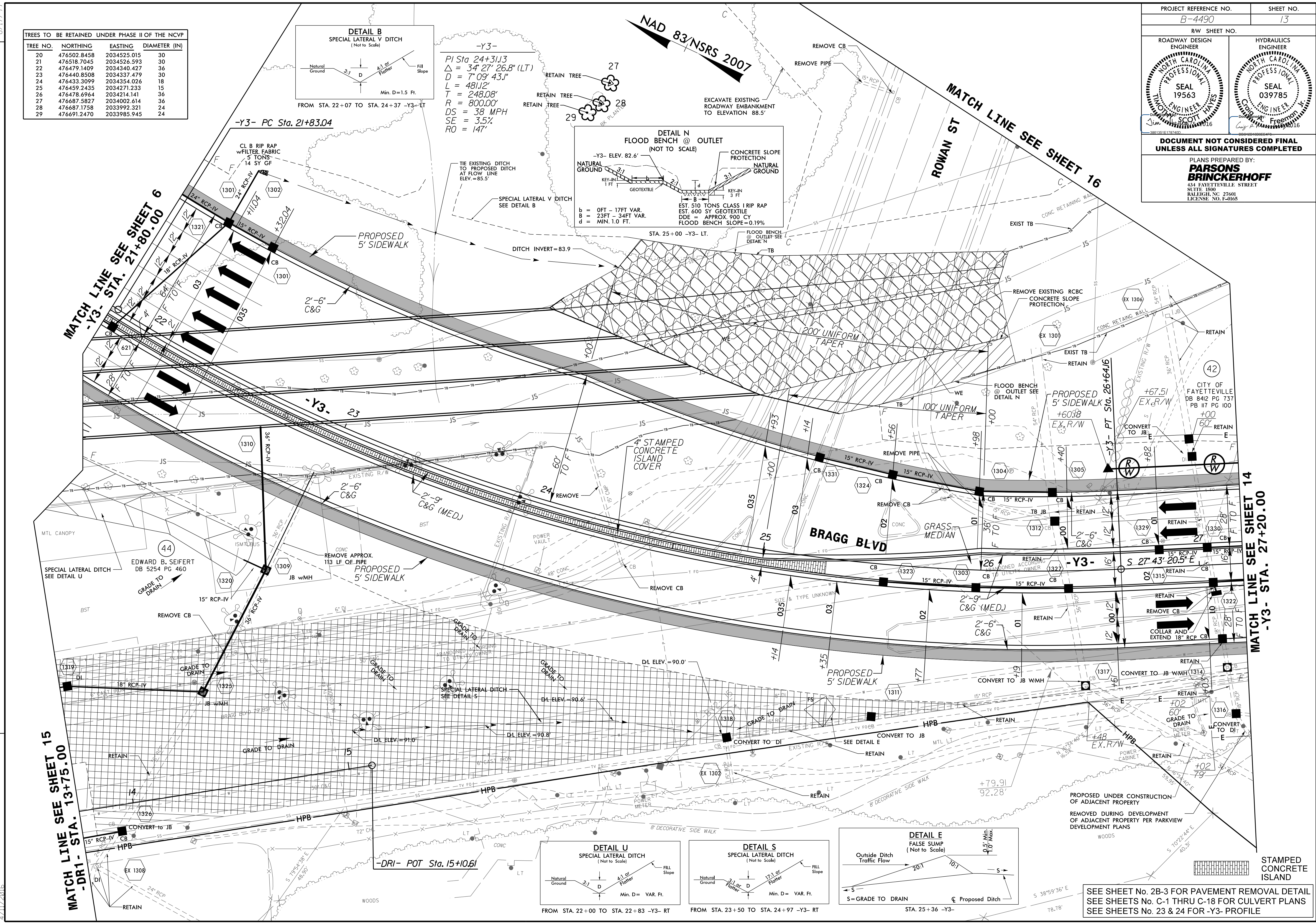
TREE NO.	NORTHING	EASTING	DIAMETER (IN)
20	476502.8458	2034525.015	30
21	476518.7045	2034526.593	30
22	476479.1409	2034340.427	36
23	476440.8508	2034337.479	30
24	476433.3099	2034354.026	18
25	476459.2435	2034271.233	15
26	476478.6964	2034214.141	36
27	476687.5827	2034002.614	36
28	476687.1758	2033992.321	24
29	476691.2470	2033985.945	24



8/17/99

REVISIONS

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4/11/2016



SEE SHEET No. 2b-3 FOR PAVEMENT REMOVAL DETAIL
 SEE SHEETS No. C-1 THRU C-18 FOR CULVERT PLANS
 SEE SHEETS No. 23 & 24 FOR -Y3- PROFILE

STAMPED CONCRETE ISLAND

8/17/99

PROJECT REFERENCE NO. B-4490		SHEET NO. 14	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		SEAL 19563	
NORTH CAROLINA PROFESSIONAL ENGINEER		SEAL 039785	
JAMES W. SCOTT, P.E.		C. FREEMAN, P.E.	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
PLANS PREPARED BY: PARSONS BRINCKERHOFF 434 FAYETTEVILLE STREET SUITE 1500 RALEIGH, NC 27601 LICENSE NO. E-0165			

NAD 83/NSRS 2007

-Y3-

PI Sta 24+31.13	PI Sta 32+77.61
$\Delta = 34' 27" 26.8" (LT)$	$\Delta = 49' 59" 42.4" (RT)$
$D = 7' 09" 43.1"$	$D = 6' 26" 15.8"$
$L = 481.12'$	$L = 776.60'$
$T = 248.08'$	$T = 414.97'$
$R = 800.00'$	$R = 890.00'$
$DS = 38 MPH$	$SE = exist.$
$SE = 3.5\%$	$RO = exist.$
$RO = 147'$	

CITY OF FAYETTEVILLE
DB 7369 PG 841
PB 117 PG 100

(42)
CITY OF FAYETTEVILLE
DB 7329 PG 300
PB 117 PG 100

CITY OF FAYETTEVILLE
DB 5029 PG 454

160' LANE SHIFT

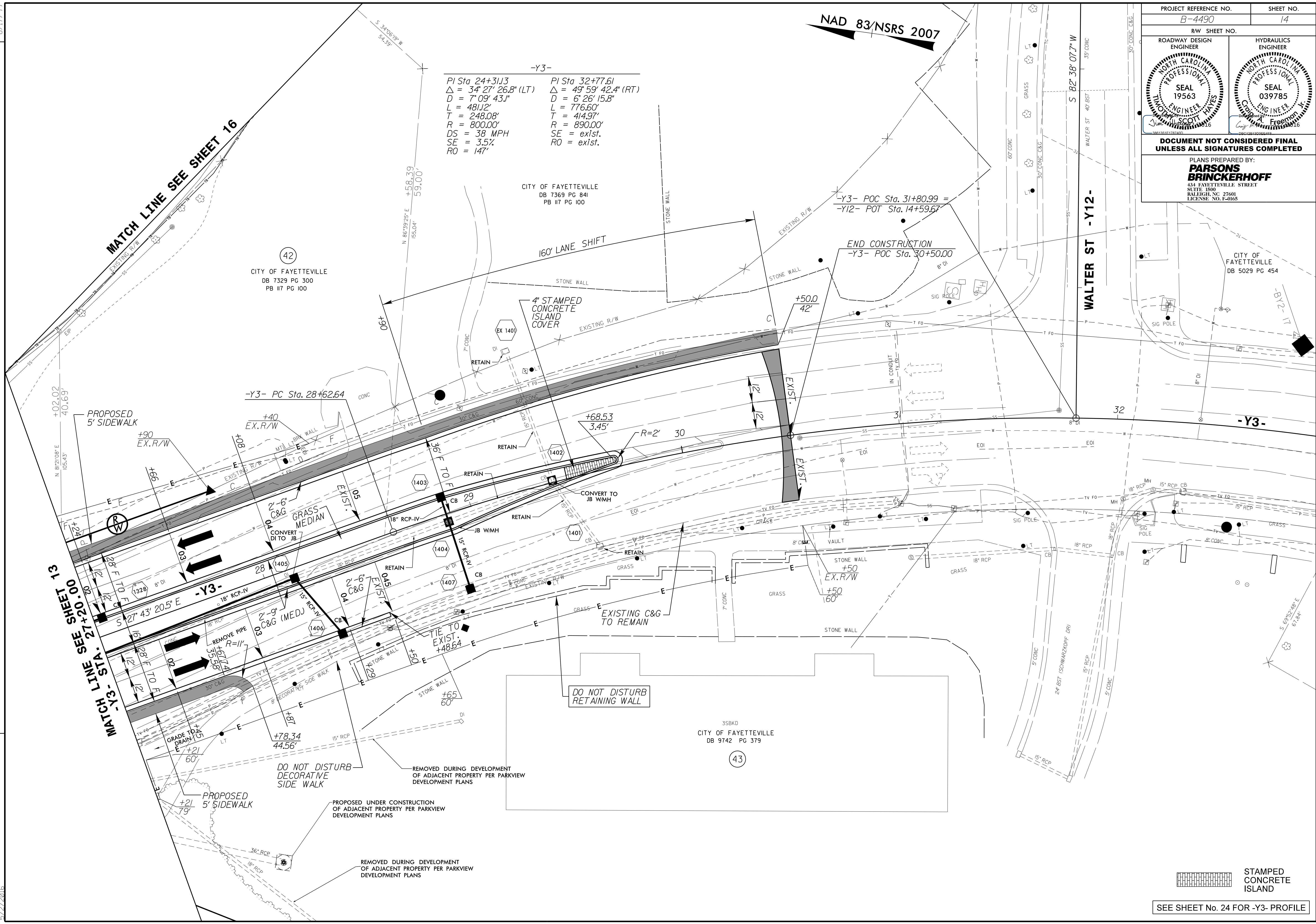
END CONSTRUCTION
-Y3- POC Sta. 30+50.00

WALTER ST -Y12-

MATCH LINE SEE SHEET 16

MATCH LINE SEE SHEET 13

REVISIONS



DO NOT DISTURB
RETAINING WALL

DO NOT DISTURB
DECORATIVE
SIDE WALK

REMOVED DURING DEVELOPMENT
OF ADJACENT PROPERTY PER PARKVIEW
DEVELOPMENT PLANS

PROPOSED UNDER CONSTRUCTION
OF ADJACENT PROPERTY PER PARKVIEW
DEVELOPMENT PLANS

REMOVED DURING DEVELOPMENT
OF ADJACENT PROPERTY PER PARKVIEW
DEVELOPMENT PLANS

STAMPED
CONCRETE
ISLAND

SEE SHEET No. 24 FOR -Y3- PROFILE

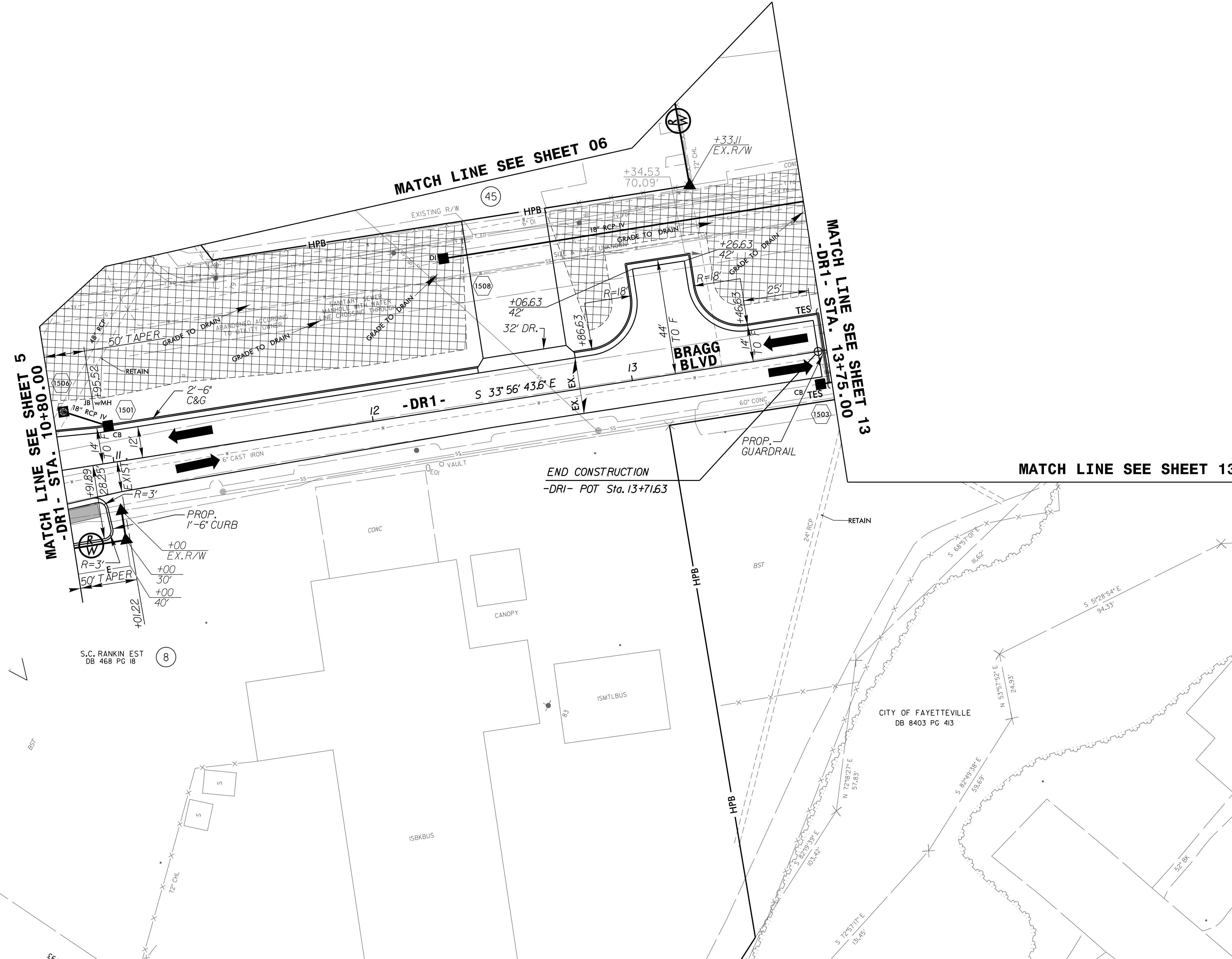
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8/22/03
du-cash_14.dgn

8.17.99

NAD 83/NSRS 2007

PROJECT REFERENCE NO. B-4490	SHEET NO. 15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PLANS PREPARED BY: PARSONS BRINCKERHOFF 434 FAYETTEVILLE STREET SUITE 1500 RALEIGH, NC 27601 LICENSE NO. E-0165	

REVISIONS

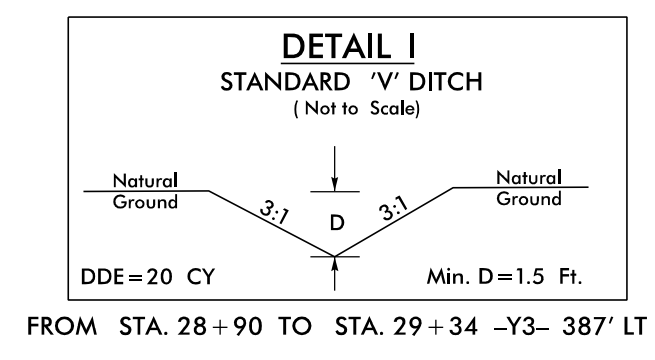
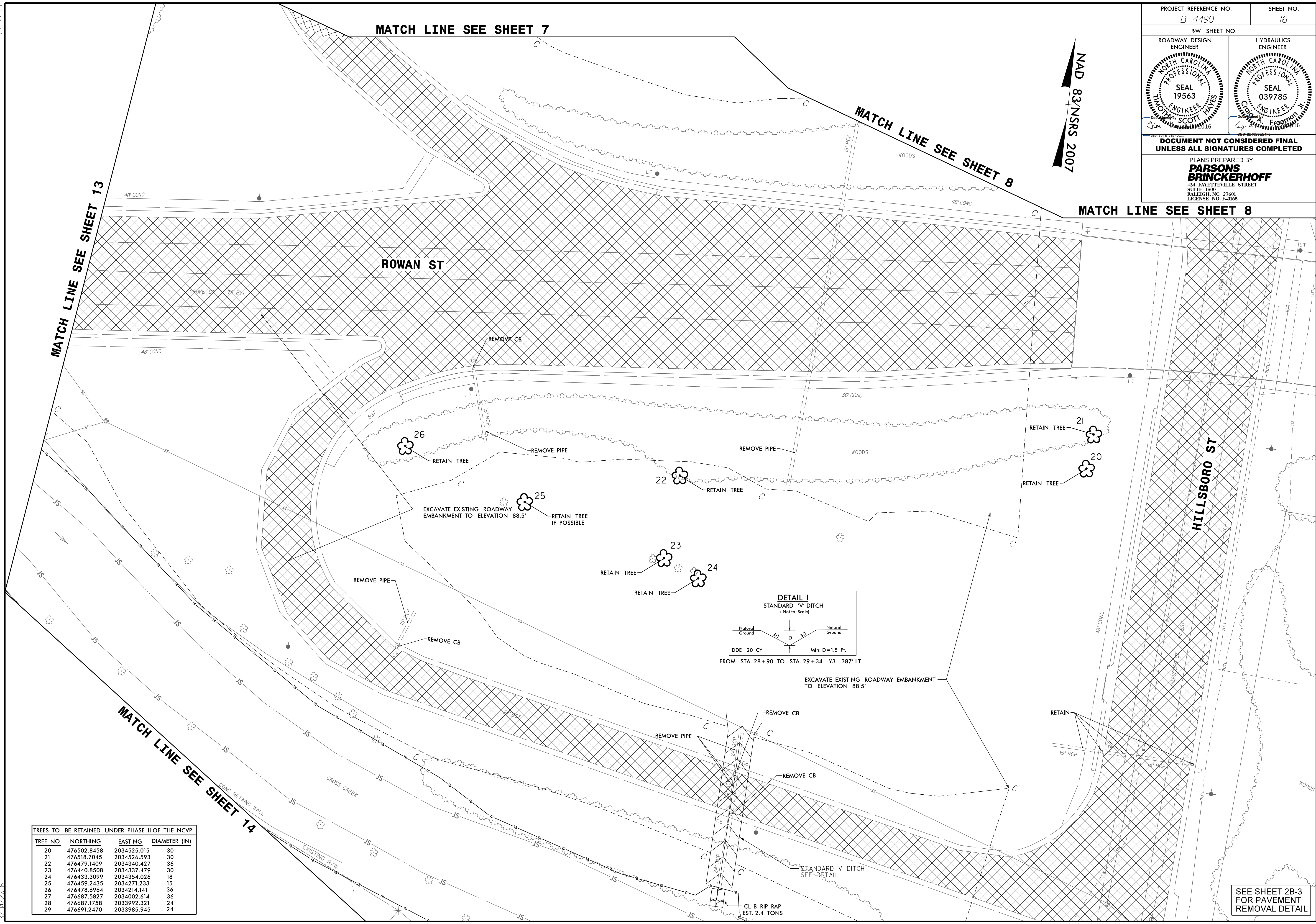


SEE SHEET No. 2B-3 FOR PAVEMENT REMOVAL DETAIL
SEE SHEET No. 25 FOR -DR1- PROFILE

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PROJECT REFERENCE NO. B-4490	SHEET NO. 16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PLANS PREPARED BY: PARSONS BRINCKERHOFF 434 FAYETTEVILLE STREET SUITE 1500 RALEIGH, NC 27601 LICENSE NO. E-0165	

NAD 83/NSRS 2007



TREES TO BE RETAINED UNDER PHASE II OF THE NCVF

TREE NO.	NORTHING	EASTING	DIAMETER (IN)
20	476502.8458	2034525.015	30
21	476518.7045	2034526.593	30
22	476479.1409	2034340.427	36
23	476440.8508	2034337.479	30
24	476433.3099	2034354.026	18
25	476459.2435	2034271.233	15
26	476478.6964	2034214.141	36
27	476687.5827	2034002.614	36
28	476687.1758	2033992.321	24
29	476691.2470	2033985.945	24

SEE SHEET 2B-3 FOR PAVEMENT REMOVAL DETAIL

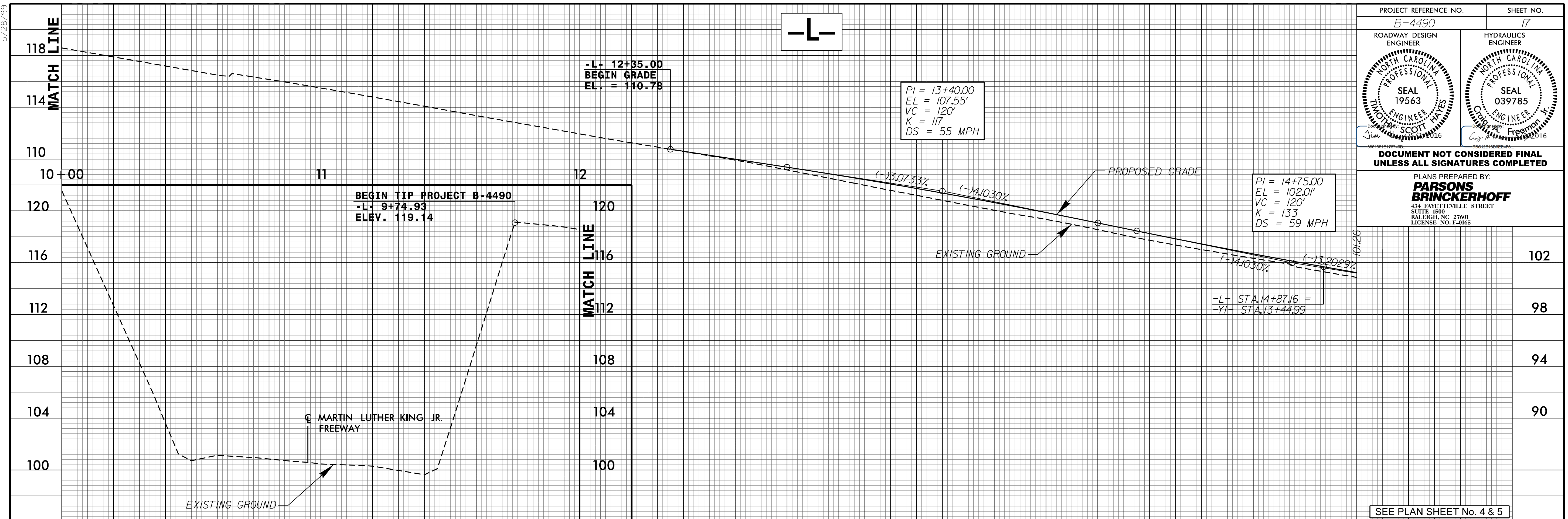
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3/10/2016

5/28/99

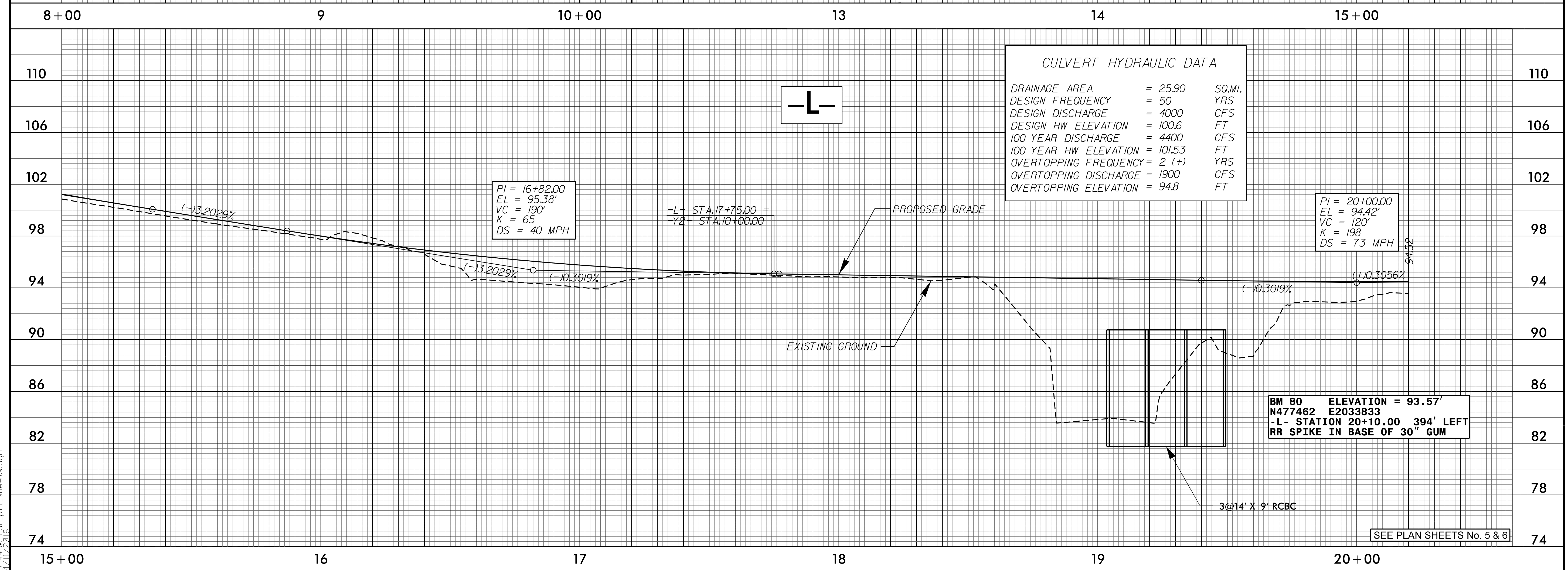
PROJECT REFERENCE NO. B-4490	SHEET NO. 17
ROADWAY DESIGN ENGINEER TIMOTHY SCOTT SEAL 19563 NORTH CAROLINA PROFESSIONAL ENGINEER	HYDRAULICS ENGINEER JAMES FREEMAN JR. SEAL 039785 NORTH CAROLINA PROFESSIONAL ENGINEER

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. E-0165



SEE PLAN SHEET No. 4 & 5



SEE PLAN SHEETS No. 5 & 6

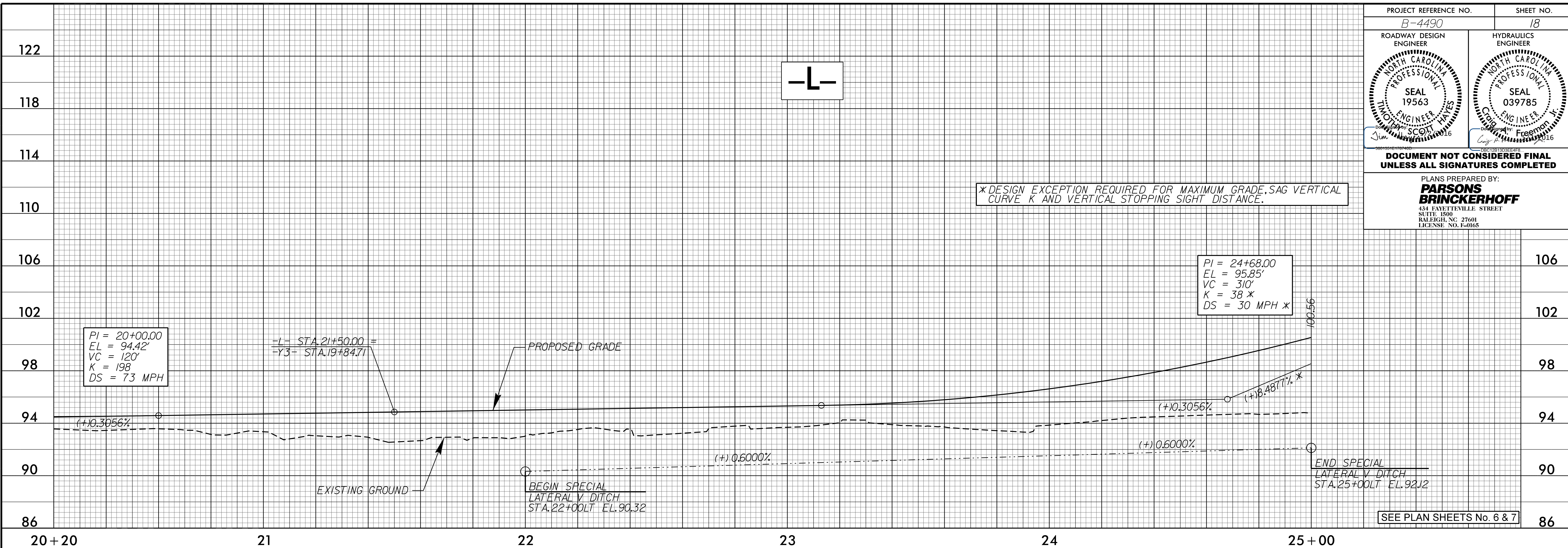
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4/11/2016

5/28/99

PROJECT REFERENCE NO. B-4490	SHEET NO. 18
ROADWAY DESIGN ENGINEER SEAL 19563 TIMOTHY SCOTT 1/16	HYDRAULICS ENGINEER SEAL 039785 C. FREEMAN 1/16

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. E-0165



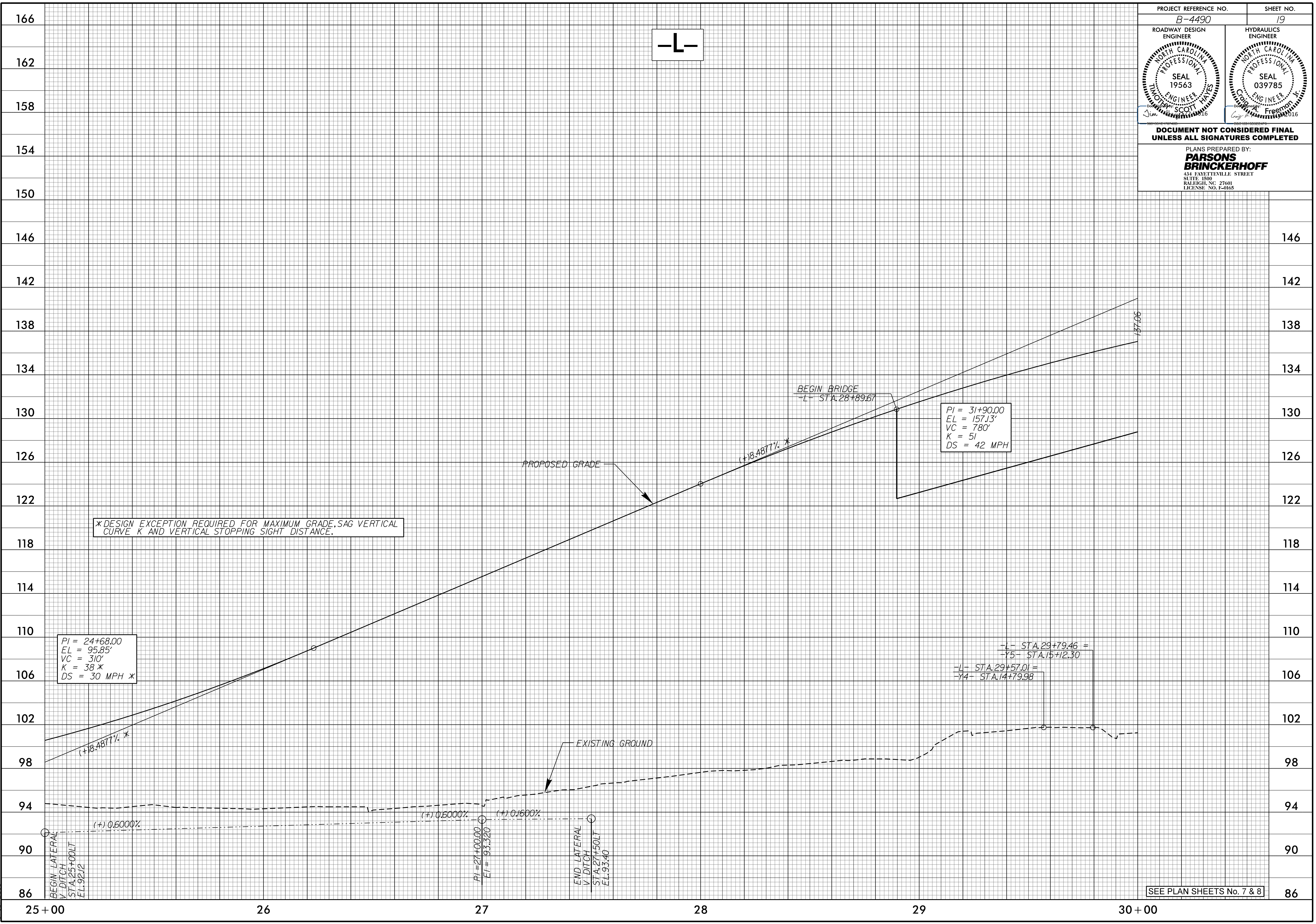
SEE PLAN SHEETS No. 6 & 7

5/24/PM
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3/10/2016

5/14/99

PROJECT REFERENCE NO. B-4490	SHEET NO. 19
ROADWAY DESIGN ENGINEER SEAL 19563 TIMOTHY SCOTT	HYDRAULICS ENGINEER SEAL 039785 C. Freeman
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PLANS PREPARED BY: PARSONS BRINCKERHOFF 434 FAYETTEVILLE STREET SUITE 1500 RALEIGH, NC 27601 LICENSE NO. E-0165	

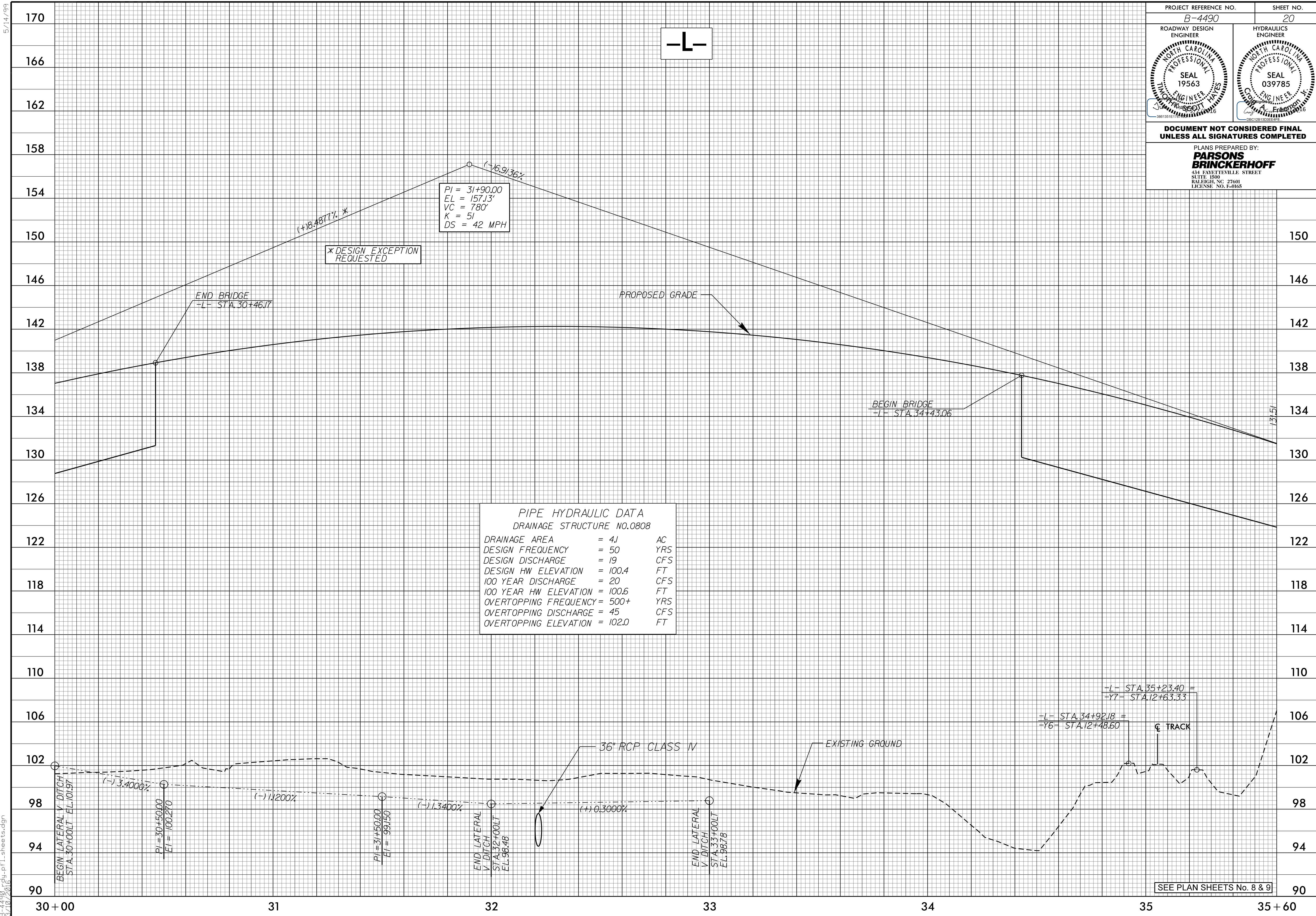
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3/10/2016



SEE PLAN SHEETS No. 7 & 8

5/14/99

PROJECT REFERENCE NO. B-4490	SHEET NO. 20
ROADWAY DESIGN ENGINEER SEAL 19563 NORTH CAROLINA PROFESSIONAL ENGINEER TIMOTHY S. BENTLEY	HYDRAULICS ENGINEER SEAL 039785 NORTH CAROLINA PROFESSIONAL ENGINEER C. A. FREEMAN
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PLANS PREPARED BY: PARSONS BRINCKERHOFF 434 FAYETTEVILLE STREET SUITE 1500 RALEIGH, NC 27601 LICENSE NO. E-0165	

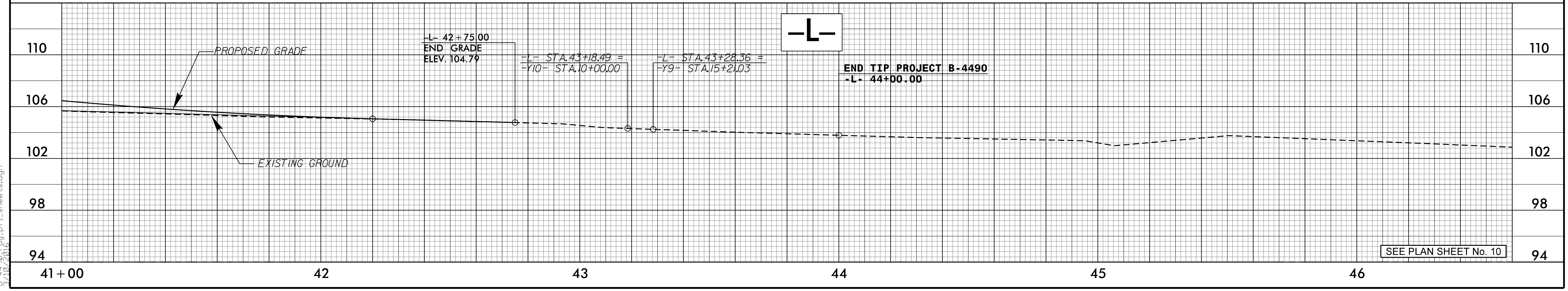
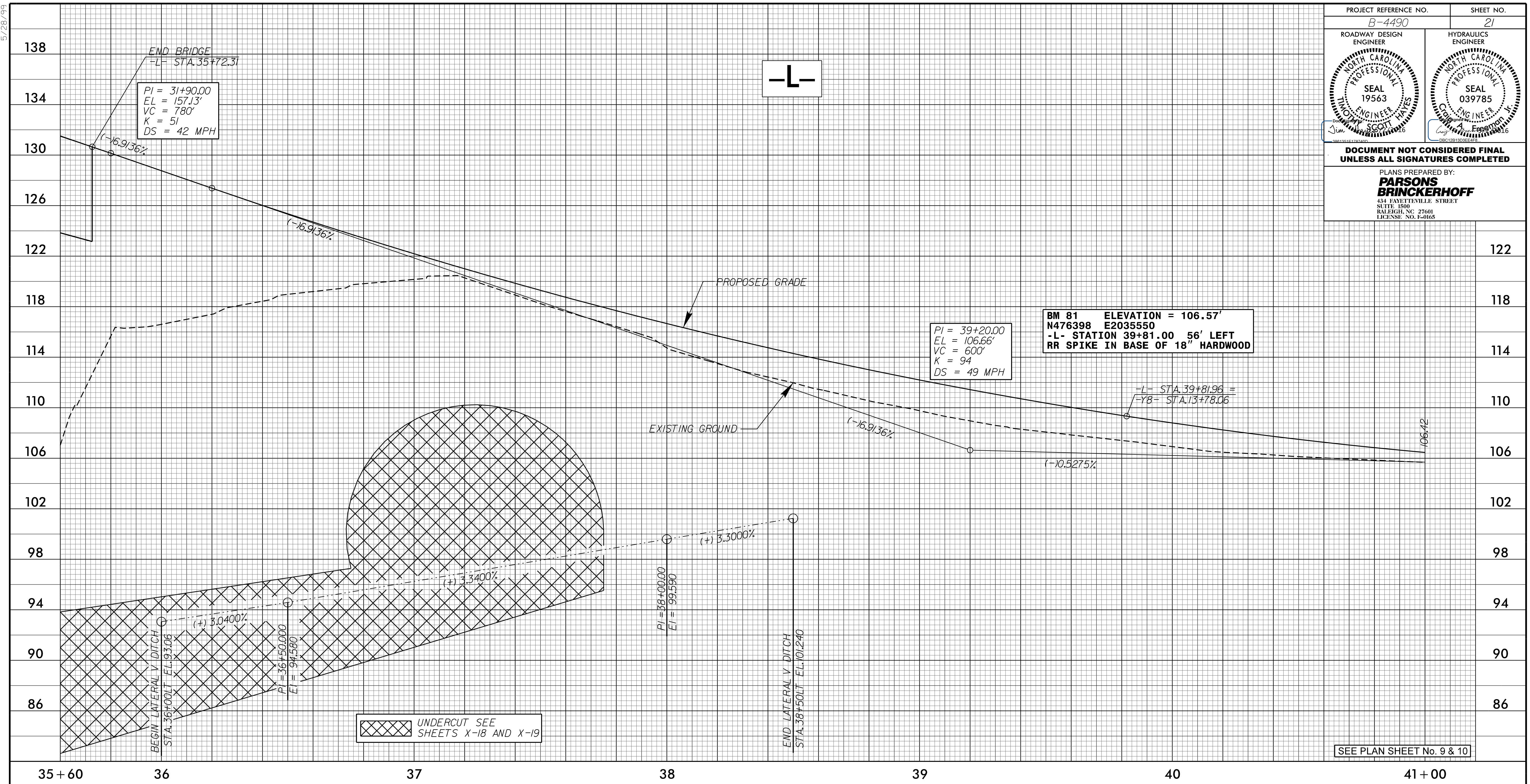


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3/10/2016

SEE PLAN SHEETS No. 8 & 9

5/28/99

PROJECT REFERENCE NO. B-4490	SHEET NO. 21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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3/10/2016

5/28/99

PROJECT REFERENCE NO. B-4490	SHEET NO. 22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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104

100

96

92

88

84

80

10

11

12

13

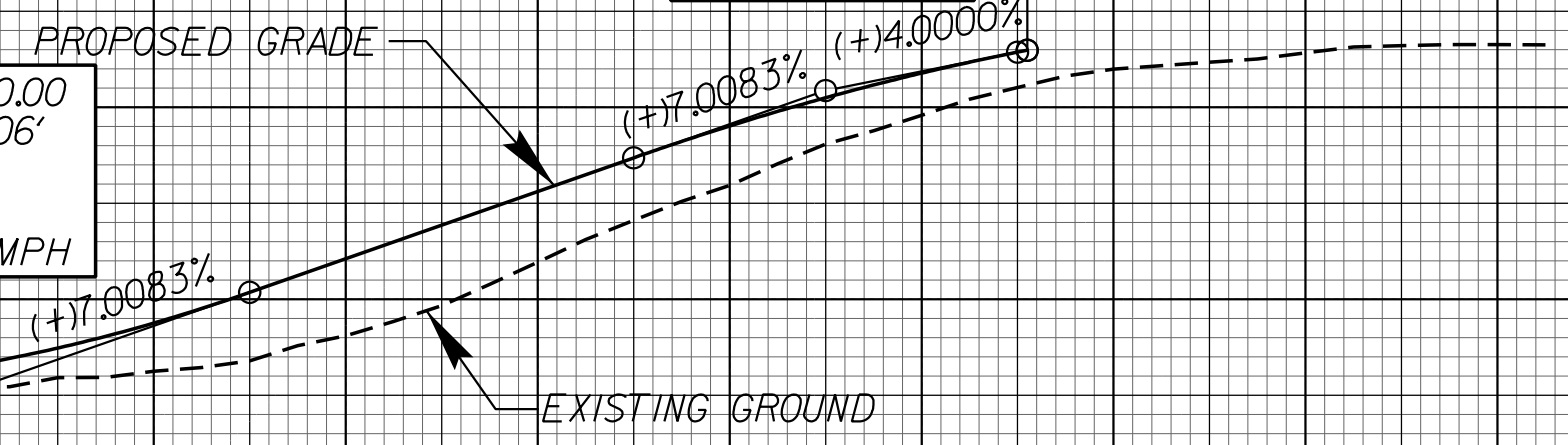
-Y1-

-Y1- 12 + 91.01 =
-L- 14 + 97.60 (53' LT)
END GRADE
ELEV. 101.21

-Y1- 11 + 50.00
BEGIN GRADE
ELEV. 94.12

PI = 12 + 70.00
EL = 100.37'
VC = 40'
K = 8
DS = <15 MPH

PI = 11 + 80.00
EL = 94.06'
VC = 60'
K = 13
DS = 17 MPH



100

96

92

88

84

80

SEE PLAN SHEET No. 5

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3/10/2016

10

11

12

13

14

15

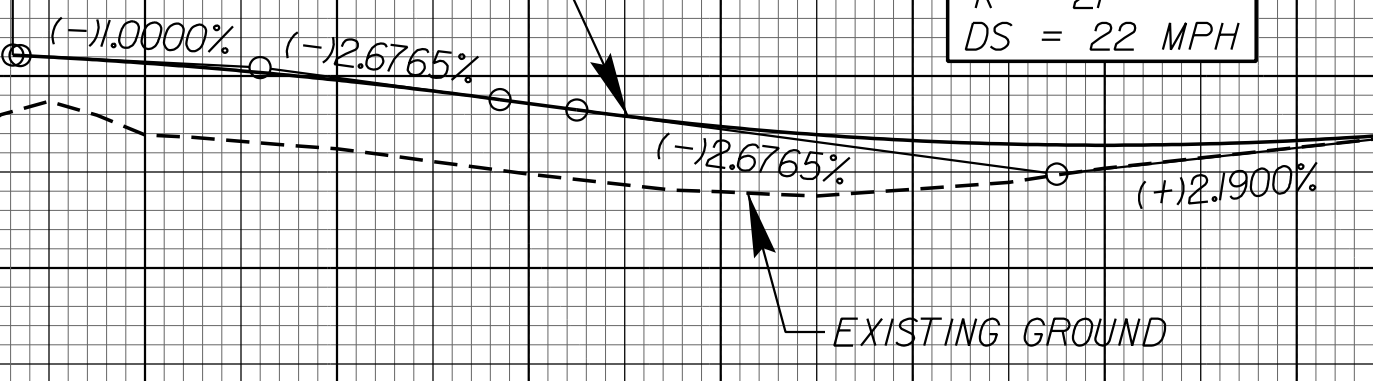
-Y2-

-Y2- 10 + 66.24 =
-L- 17 + 63.35 (65' RT)
BEGIN GRADE
ELEV. 96.45

-Y2- 12 + 25.00
END GRADE
ELEV. 95.07

PI = 10 + 92.00
EL = 96.20'
VC = 50'
K = 30
DS = 35 MPH

PI = 11 + 75.00
EL = 93.97'
VC = 100'
K = 21
DS = 22 MPH



116

112

108

104

100

96

92

88

116

112

108

104

100

96

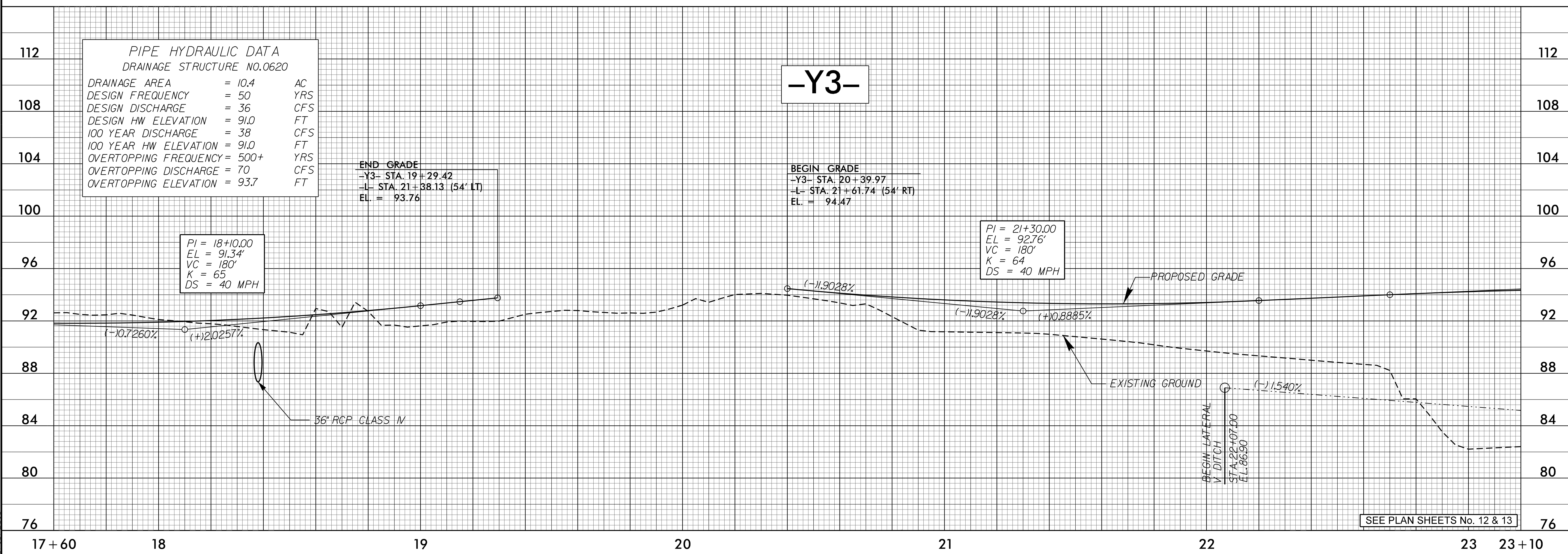
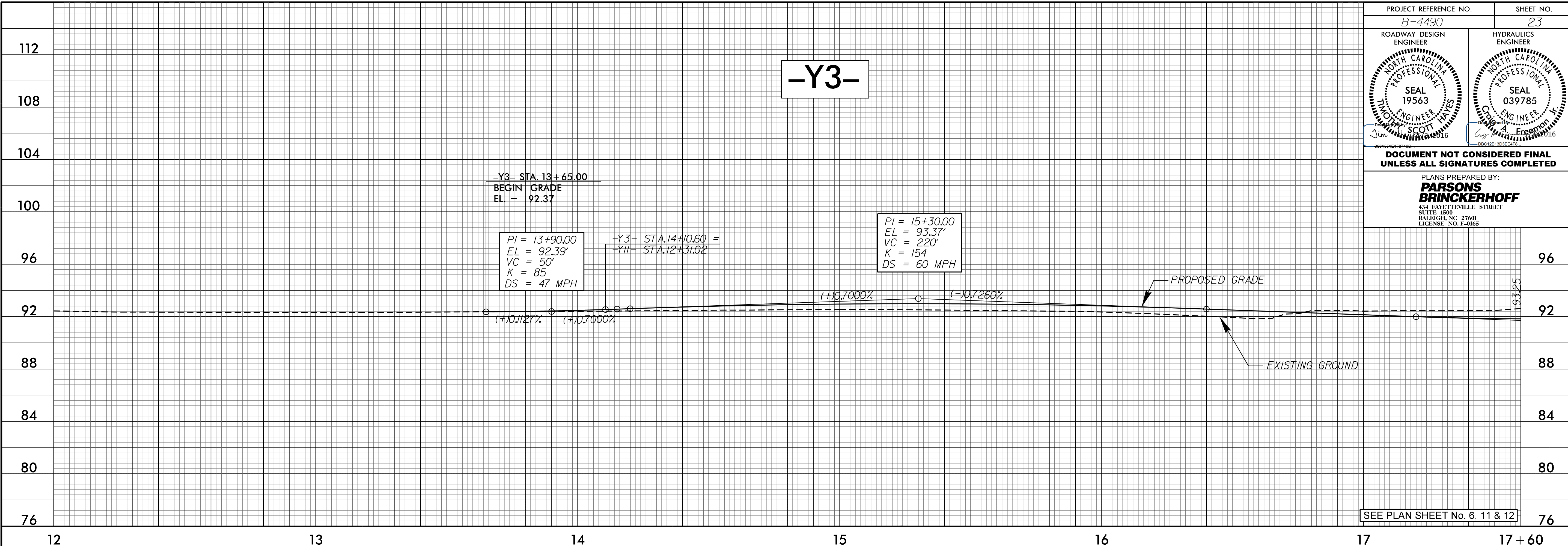
92

88

SEE PLAN SHEET No. 5

5/28/99

PROJECT REFERENCE NO. B-4490	SHEET NO. 23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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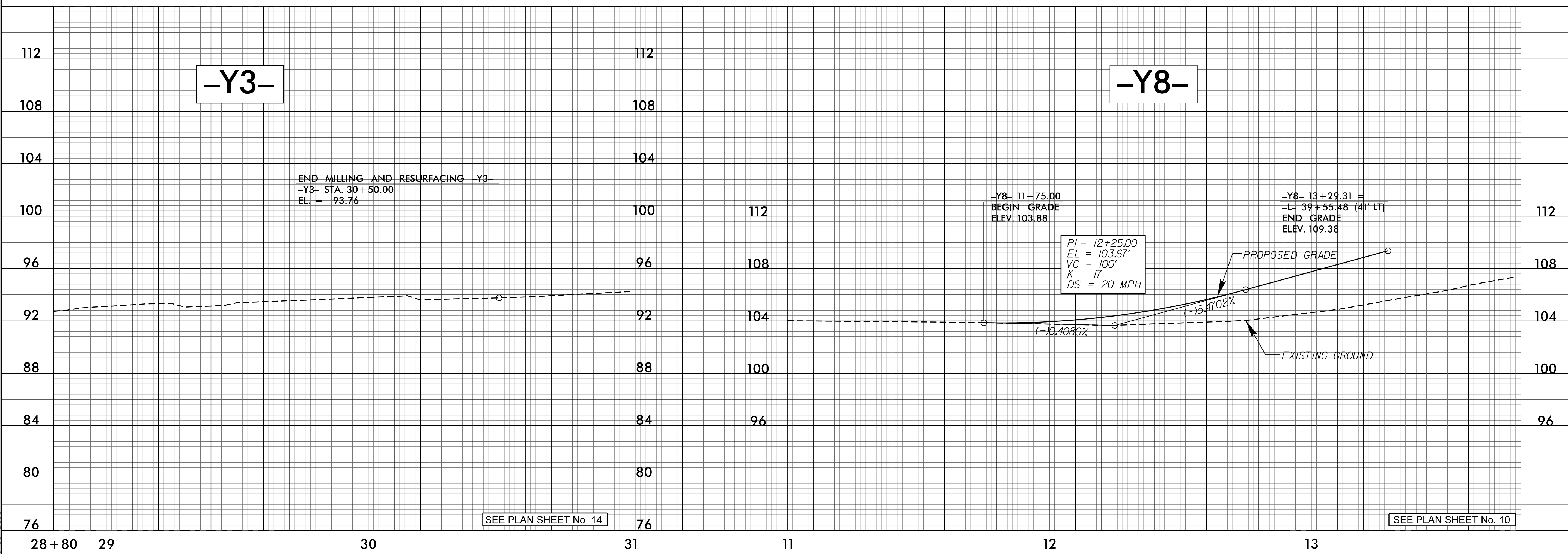
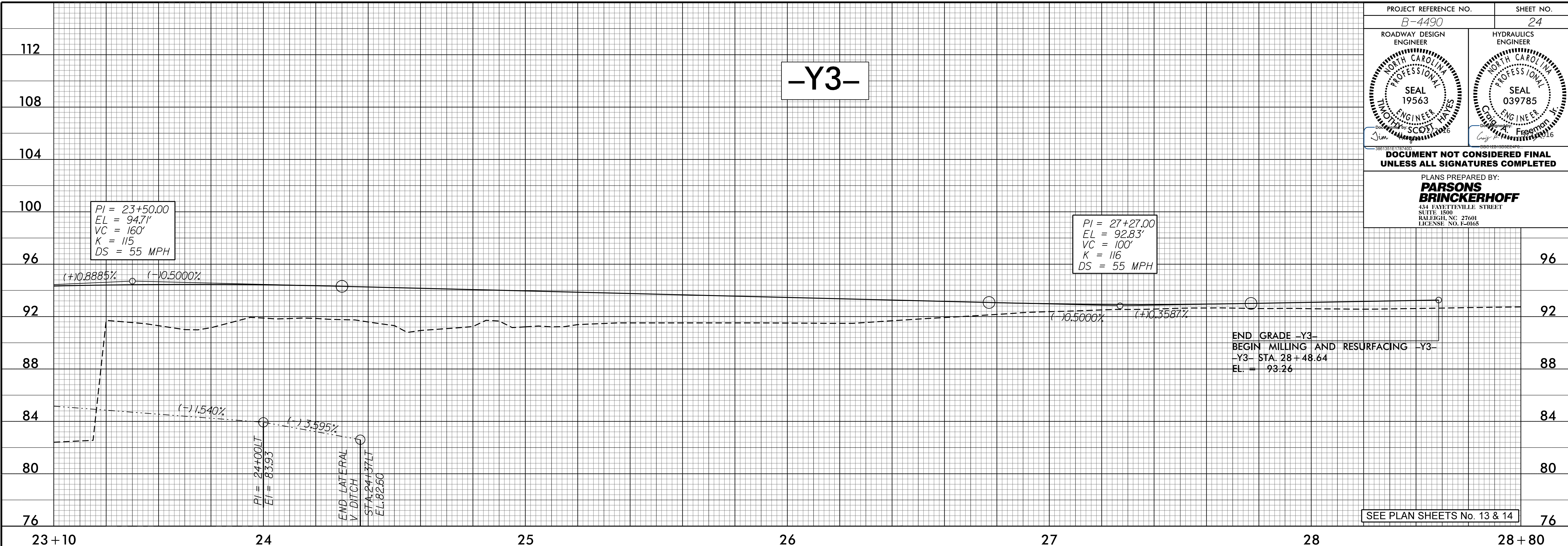
PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.0620

DRAINAGE AREA	= 10.4	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 36	CFS
DESIGN HW ELEVATION	= 91.0	FT
100 YEAR DISCHARGE	= 38	CFS
100 YEAR HW ELEVATION	= 91.0	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 70	CFS
OVERTOPPING ELEVATION	= 93.7	FT

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5/28/99

PROJECT REFERENCE NO. B-4490	SHEET NO. 24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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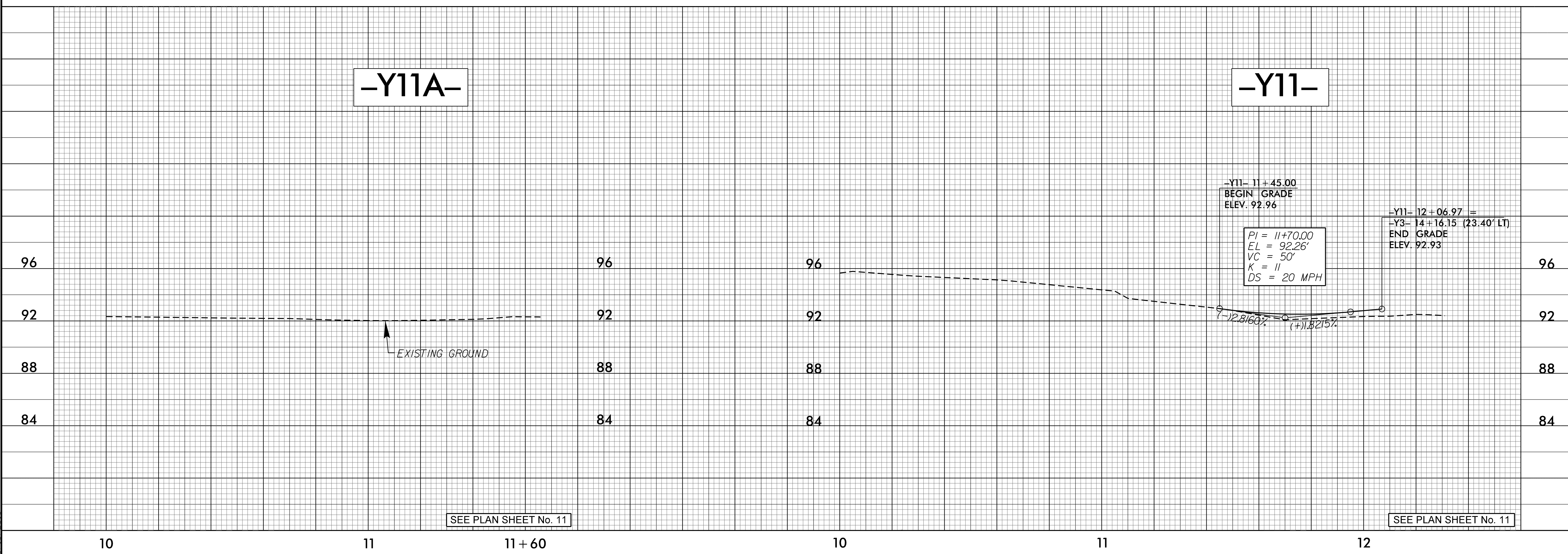
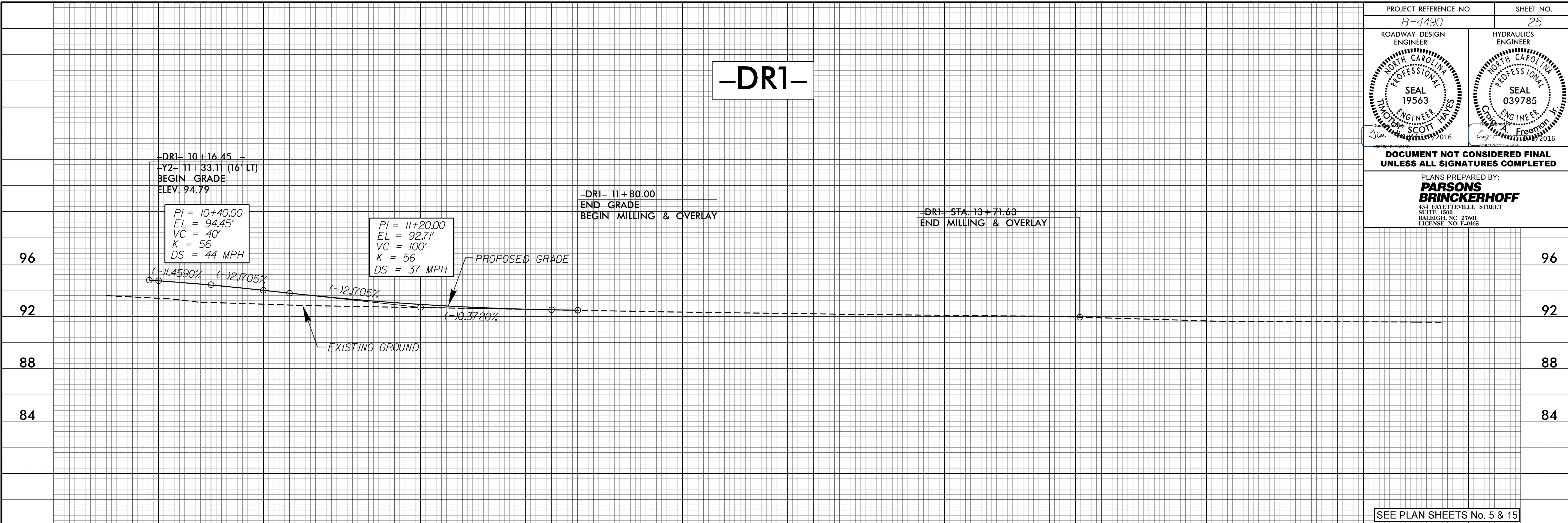
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3/10/2016

5/28/16

PROJECT REFERENCE NO. B-4490	SHEET NO. 25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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