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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. U-2412A SHEET NO. 1A
ROADWAY DESIGN ENGINEER
SEAL 27391
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
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INDEX OF SHEETS

Table with 2 columns: SHEET NUMBER and DESCRIPTION. Lists sheets 1 through W-1 with their respective descriptions.

EFF. 01-16-2018 REV.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

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

Table with 2 columns: STD. NO. and TITLE. Lists various drawing standards such as DIVISION 2 - EARTHWORK, DIVISION 3 - PIPE CULVERTS, etc.

GENERAL NOTES:

2018 SPECIFICATIONS EFFECTIVE: 01-16-2018 REVISED:

GRADE LINE: GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED 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 [1].

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 & 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01 & 560.02

SIDE ROADS:

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

BERM DITCHES:

BERM DITCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 240.01 AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

DRIVEWAYS:

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

STREET TURNOUT:

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADIUS 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 WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

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 NORTH STATE (COMMUNICATIONS), TOWN OF JAMESTOWN (WATER AND SEWER), CITY OF HIGH POINT (ELECTRIC), CITY OF HIGH POINT (WATER AND SEWER), DUKE ENERGY (ELECTRIC DISTRIBUTION), DUKE ENERGY (TRANSMISSION), SPECTRUM (COMMUNICATIONS), AND PIEDMONT NATURAL GAS (DISTRIBUTION GAS). 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.

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

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	▬

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	□
Jurisdictional Stream	--- JS ---
Buffer Zone 1	--- BZ 1 ---
Buffer Zone 2	--- BZ 2 ---
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	▽
Proposed Lateral, Tail, Head Ditch	▬
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	①
Switch	□
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	--- C ---
Proposed Slope Stakes Fill	--- F ---
Proposed Curb Ramp	--- CR ---
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	▨

VEGETATION:

Single Tree	☼
Single Shrub	☼

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

Hedge	-----
Woods Line	-----
Orchard	☼
Vineyard	□

EXISTING STRUCTURES:

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

UTILITIES:

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

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.*)	-----
U/G Telephone Cable LOS C (S.U.E.*)	-----
U/G Telephone Cable LOS D (S.U.E.*)	-----
U/G Telephone Conduit LOS B (S.U.E.*)	-----
U/G Telephone Conduit LOS C (S.U.E.*)	-----
U/G Telephone Conduit LOS D (S.U.E.*)	-----
U/G Fiber Optics Cable LOS B (S.U.E.*)	-----
U/G Fiber Optics Cable LOS C (S.U.E.*)	-----
U/G Fiber Optics Cable LOS D (S.U.E.*)	-----

WATER:

Water Manhole	Ⓢ
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	-----
U/G Water Line LOS C (S.U.E.*)	-----
U/G Water Line LOS D (S.U.E.*)	-----
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.*)	-----
U/G TV Cable LOS C (S.U.E.*)	-----
U/G TV Cable LOS D (S.U.E.*)	-----
U/G Fiber Optic Cable LOS B (S.U.E.*)	-----
U/G Fiber Optic Cable LOS C (S.U.E.*)	-----
U/G Fiber Optic Cable LOS D (S.U.E.*)	-----

GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	-----
U/G Gas Line LOS C (S.U.E.*)	-----
U/G Gas Line LOS D (S.U.E.*)	-----
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.*)	-----
SS Forced Main Line LOS C (S.U.E.*)	-----
SS Forced Main Line LOS D (S.U.E.*)	-----

MISCELLANEOUS:

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

U-2412A SURVEY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
U-2412A	1C-1
Location and Surveys	

END STATE PROJECT U-2412A
-L- STA. 200 + 84.66

NOTES

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:

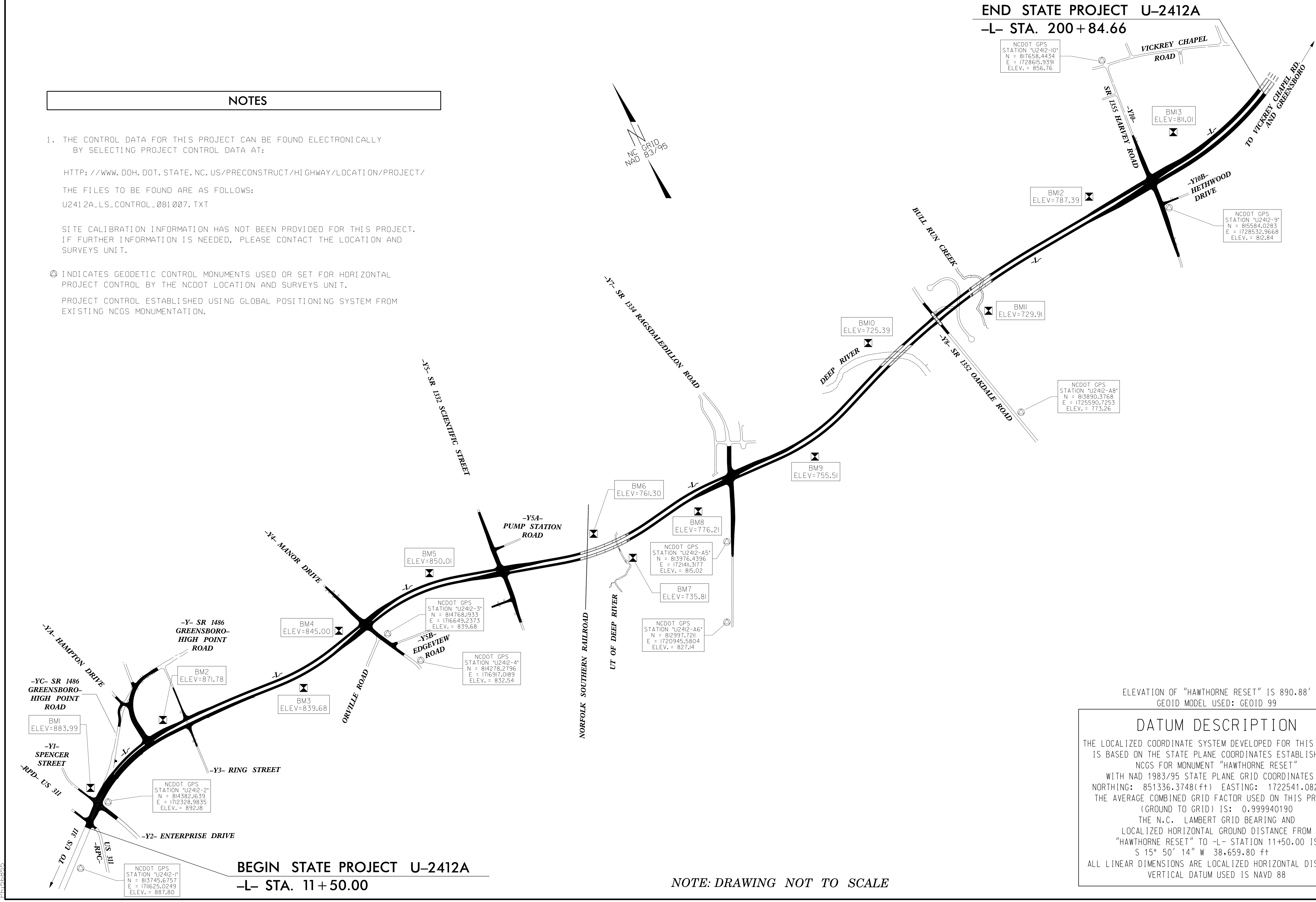
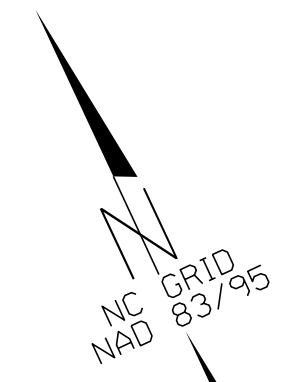
HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

THE FILES TO BE FOUND ARE AS FOLLOWS:
U2412A.LS.CONTROL_081007.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 FROM EXISTING NCGS MONUMENTATION.



ELEVATION OF "HAWTHORNE RESET" IS 890.88'
GEOID MODEL USED: GEOID 99

DATUM DESCRIPTION
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "HAWTHORNE RESET" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF
NORTHING: 851336.3748(±) EASTING: 1722541.0825(±)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999940190
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "HAWTHORNE RESET" TO -L- STATION 11+50.00 IS
S 15° 50' 14" W 38,659.80 ft
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

U-2412A SURVEY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
U-2412A	1C-2
Location and Surveys	

BASELINE DATA

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	U2412-1		813745.6757	1711625.0249	887.80	OUTSIDE PROJECT LIMITS	
2	U2412-2		814382.1639	1712328.9835	892.18	15-63.78	46.87 RT
101	BL-101		814725.8579	1712739.9246	887.34	20-95.79	37.09 LT
102	BL-102		814777.5038	1712942.8397	890.96	23-01.41	14.70 LT
103	BL-103		814850.9208	1713327.4101	890.55	26-91.32	7.36 LT
104	BL-104		814877.1590	1713536.7633	884.14	29-01.01	19.68 LT
105	BL-105		814864.9941	1713811.2938	869.06	31-74.98	3.62 LT
106	BL-106		814873.6906	1714068.3705	855.09	34-32.00	10.86 LT
107	BL-107		814859.1255	1714371.6537	842.29	37-35.33	0.97 LT
108	BL-108		814851.8861	1714603.5799	841.97	39-67.34	2.48 LT
109	BL-109		814834.1462	1714913.4139	830.00	42-77.65	2.51 LT
110	BL-110		814826.4621	1715145.9876	835.59	45-10.41	8.01 LT
111	BL-111		814827.3447	1715418.8109	851.76	47-84.08	8.50 LT
112	BL-112		814847.6104	1715642.5691	846.07	50-09.50	9.21 LT
113	BL-113		814888.2231	1715909.7060	817.55	52-00.32	3.33 LT
114	BL-114		814973.9533	1716254.7446	852.45	56-35.94	5.06 LT
115	BL-115		815034.5505	1716485.7327	845.75	58-74.73	8.32 LT
150	BL-150		815089.7962	1716746.4568	845.09	61-41.06	1.20 LT
151	BL-151		815119.3055	1716945.6898	849.75	63-42.58	3.99 RT
152	BL-152		815143.7938	1717267.8950	842.67	66-66.21	0.03 RT
153	BL-153		815095.6637	1717534.6453	846.05	69-37.33	32.05 RT
154	BL-154		815004.3587	1717978.0962	845.35	73-95.07	31.74 RT
155	BL-155		814899.8617	1718485.6050	828.75	79-12.42	2.79 RT
156	BL-156		814763.8696	1719018.5314	808.85	84-62.40	2.22 LT
157	BL-157		814662.8639	1719563.4006	785.25	90-18.45	25.46 LT
158	BL-158		814599.2735	1719995.5684	734.40	94-56.04	5.36 RT
159	BL-159		814601.9455	1720317.7609	767.00	97-76.80	19.04 RT
160	BL-160		814705.8958	1720865.0494	767.19	103-32.68	3.29 RT
161	BL-161		814735.1869	1721129.2522	751.93	105-99.00	11.90 RT
162	BL-162		814758.6242	1721364.3060	786.16	108-35.71	3.20 RT
163	BL-163		814785.2001	1721776.6220	785.45	112-48.20	1.15 RT
164	BL-164		814746.7971	1722003.6838	782.89	114-75.39	4.54 RT
165	BL-165		814740.1020	1722317.3685	761.81	117-89.15	4.31 RT
166	BL-166		814749.2533	1722785.3136	733.20	122-56.91	5.66 RT
167	BL-167		814803.0764	1723094.8554	767.69	125-70.84	1.17 RT
168	BL-168		814877.2559	1723344.7482	774.47	128-31.73	5.16 LT
169	BL-169		815019.4384	1723713.6413	739.79	132-27.57	6.23 LT
170	BL-170		815181.0128	1724133.0585	731.55	136-76.97	0.34 LT
171	BL-171		815325.6691	1724517.6995	716.77	140-87.76	6.23 LT
172	BL-172		815385.5711	1724726.6517	750.82	143-04.95	1.19 RT
173	BL-173		815473.5873	1724970.6214	783.23	145-63.73	13.63 LT
174	BL-174		815624.9275	1725152.2221	787.08	147-77.26	112.13 LT
175	BL-175		815546.8174	1725516.7113	752.80	151-12.17	49.39 RT
176	BL-176		815656.2695	1725842.6165	714.90	154-54.44	7.70 RT
177	BL-177		815719.3359	1726117.9103	759.66	157-36.46	7.72 LT
178	BL-178		815752.1027	1726402.4896	767.01	160-22.71	0.00 RT
179	BL-179		815785.5931	1726705.0950	792.04	163-27.16	8.50 RT
180	BL-180		815846.7956	1727262.2301	804.86	168-87.59	8.27 LT
181	BL-181		815901.1477	1727713.3911	779.60	173-41.86	20.37 LT
182	BL-182		815983.0768	1728115.4404	776.05	177-49.80	64.41 LT
183	BL-183		816126.9774	1728525.2403	789.53	181-71.24	169.44 LT
184	BL-184		816162.1189	1729065.9860	814.02	187-19.02	150.30 LT
185	BL-185		816270.8162	1729589.2499	821.68	192-74.82	151.11 LT
186	BL-186		816341.2506	1729952.3036	852.45	196-53.80	103.65 LT
187	BL-187		816404.6819	1730246.9637	864.55	199-55.31	45.75 LT
188	BL-188		816603.5786	1730665.6413	842.48	204-23.06	12.21 LT
189	BL-189		816963.0692	1731049.4044	849.13	209-47.72	27.57 RT
190	BL-190		817459.3334	1731244.3988	841.00	214-72.18	34.94 RT
191	BL-191		818181.0988	1731209.3487	844.39	OUTSIDE PROJECT LIMITS	
192	BL-192		819236.2736	1731087.8881	835.93	OUTSIDE PROJECT LIMITS	
193	BL-193		819670.6185	1731136.7877	850.70	OUTSIDE PROJECT LIMITS	
194	U2412-14		820168.3892	1731172.0298	844.51	OUTSIDE PROJECT LIMITS	
194	U2412C		820470.0493	1731442.2379	853.87	OUTSIDE PROJECT LIMITS	
1002	U2412C BL-2		821089.5101	1731956.9647	852.47	OUTSIDE PROJECT LIMITS	

BY	POINT	DESC.	NORTH	EAST	ELEVATION	YC STATION	OFFSET
A2	U2412-2		814382.1639	1712328.9835	892.18	OUTSIDE PROJECT LIMITS	
118	BY-118		815173.2428	1712963.7054	884.60	12-94.54	28.79 RT
134	BY-134		815411.7327	1713176.8539	885.58	OUTSIDE PROJECT LIMITS	
135	BY-135		815594.8772	1713457.6345	879.60	OUTSIDE PROJECT LIMITS	
136	BY-136		815713.4411	1713794.9347	884.61	OUTSIDE PROJECT LIMITS	
137	BY-137		815690.7764	1714151.4589	876.60	OUTSIDE PROJECT LIMITS	

BY1	POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
130	BY1-130		814948.7433	1712033.2970	873.00	OUTSIDE PROJECT LIMITS	
131	BY1-131		814642.2720	1712129.8165	882.58	13-10.36	16.45 LT
B2	U2412-2		814382.1639	1712328.9835	892.18	OUTSIDE PROJECT LIMITS	

BY2	POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
C2	U2412-2		814382.1639	1712328.9835	892.18	10-33.32	71.46 LT
132	BY2-132		814117.2384	1712417.2676	892.33	13-08.20	27.15 LT
133	BY2-133		813825.4428	1712544.2352	886.72	16-24.07	26.07 LT

BY3	POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
A136	BY-136		815713.4411	1713794.9347	884.61	OUTSIDE PROJECT LIMITS	
A105	BL-105		814864.9941	1713811.2938	869.06	15-45.49	15.57 LT
140	BY3-140		814563.1059	1713766.9924	875.19	18-49.20	13.42 RT

BENCHMARK DATA

BM1	ELEVATION	883.99	BM8	ELEVATION	776.21
N 814611	E	1712195	N 814526	E	1721178
L STATION 15-98 216 LEFT			L STATION 106-28 225 RIGHT		
BM *1 U-2524A&B - R/R SPIKE IN 26 INCH BLACK WALNUT			BM *8 U2412A&B - R/R SPIKE IN 12 INCH ELM		
BM2	ELEVATION	871.78	BM9	ELEVATION	755.51
N 815023	E	1713514	N 814534	E	1722900
L STATION 28-84 166 LEFT			L STATION 123-42 233 RIGHT		
BM *2 U2412A&B - R/R SPIKE IN 18 INCH POPLAR			BM *9 U2412A&B - R/R SPIKE IN 12 INCH POPLAR		
BM3	ELEVATION	839.68	BM10	ELEVATION	725.39
N 814642	E	1715355	N 815604	E	1724187
L STATION 47-16 174 RIGHT			L STATION 138-71 378 LEFT		
BM *3 U-2412A&B - R/R SPIKE IN 12 INCH POPLAR			BM *10 U2412A&B - R/R SPIKE IN 30 INCH RED OAK		
BM4	ELEVATION	845.00	BM11	ELEVATION	729.91
N 815113	E	1716150	N 815315	E	1725830
L STATION 55-68 165 LEFT			L STATION 153-77 341 RIGHT		
BM *4 U-2412A&B - R/R SPIKE IN 24 INCH WHITE OAK			BM *11 U2412A&B - R/R SPIKE IN 16 INCH RED OAK		
BM5	ELEVATION	850.01	BM12	ELEVATION	787.39
N 815297	E	1717572	N 816131	E	1727693
L STATION 69-50 172 LEFT			L STATION 173-43 251 LEFT		
BM *5 U2412A&B - R/R SPIKE IN 12 INCH SWEET GUM			BM *12 U2412A&B - R/R SPIKE IN 24 INCH RED OAK		
BM6	ELEVATION	761.30	BM13	ELEVATION	811.01
N 814844	E	1719781	N 816434	E	1729076
L STATION 92-23 230 LEFT			L STATION 187-71 418 LEFT		
BM *6 U2412A&B - R/R SPIKE IN 24 INCH RED OAK			BM *13 U2412A&B - R/R SPIKE IN 16 INCH POPLAR		

ELEVATION OF "HAWTHORNE RESET" IS 890.88'
 GEOD MODEL USED: GEOD 99

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "HAWTHORNE RESET" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 851336.3748(++) EASTING: 1722541.0825(++) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999940190 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "HAWTHORNE RESET" TO L- STATION 11+50.00 IS S 15° 50' 14" W 38,659.80 ft ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:

HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

THE FILES TO BE FOUND ARE AS FOLLOWS:

U2412A.LS.CONTROL_081007.TXT

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

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM FROM EXISTING NCGS MONUMENTATION.

U-2412A SURVEY CONTROL SHEET

L			
TYPE	STATION	NORTH	EAST
POT	10+00.00	814042.0909	1711880.5716
TS	12+15.63	814188.7027	1712038.6847
SC	16+15.63	814450.6344	1712340.7601
CS	26+93.42	814843.8342	1713330.3055
ST	30+93.42	814860.6634	1713729.7734
PC	32+93.42	814862.4182	1713929.7657
PT	41+27.61	814840.7493	1714763.5053
TS	43+55.38	814826.9226	1714990.8544
SC	45+80.38	814816.1699	1715215.5822
CS	52+35.95	814875.6691	1715867.0408
ST	54+60.95	814926.9541	1716086.1026
TS	59+49.14	815044.3734	1716559.9620
SC	61+99.14	815100.2750	1716803.6010
CS	71+53.60	815092.6620	1717751.7576
ST	74+03.60	815032.8554	1717994.4676
TS	85+87.39	814729.7184	1719138.7804
SC	87+87.39	814680.6572	1719332.6593
CS	98+84.71	814634.0339	1720422.8770
ST	100+84.71	814666.3638	1720620.2366
TS	102+84.71	814700.8863	1720817.2346
SC	104+84.71	814733.2162	1721014.5942
CS	108+71.36	814762.4398	1721399.8701
ST	110+71.36	814760.2483	1721599.8482
TS	118+15.53	814743.8266	1722343.8378
SC	120+40.53	814741.9862	1722568.8129
CS	129+14.54	814899.0212	1723424.7289
ST	131+39.54	814980.6058	1723634.3980
TS	133+94.50	815076.3500	1723870.6923
SC	135+94.50	815150.8256	1724056.3075
CS	162+51.25	815778.4052	1726629.5117
ST	164+51.25	815797.7485	1726828.5732
TS	184+45.08	815983.8345	1728813.6945
SC	186+70.08	816006.9324	1729037.4978
CS	201+35.84	816444.3729	1730427.8859
SC	203+35.84	816545.3324	1730600.4372
CS	217+25.22	817730.6545	1731201.2085
ST	219+25.22	817929.7067	1731182.2682

Y			
TYPE	STATION	NORTH	EAST
POT	10+00.00	814826.4892	1713207.1163
PC	12+94.08	815118.4097	1713171.5071
PT	20+63.04	815659.3776	1713601.2859
POT	26+94.89	815726.6700	1714229.5450

Y1			
TYPE	STATION	NORTH	EAST
POT	10+00.00	814925.5838	1712020.9959
PC	10+16.48	814909.1066	1712021.1263
PT	12+07.21	814725.8817	1712067.1955
POT	16+00.00	814378.3420	1712250.2280

Y2			
TYPE	STATION	NORTH	EAST
POT	10+00.00	814378.3420	1712250.2279
PC	12+24.95	814179.3030	1712355.0521
PT	16+88.24	813755.9679	1712542.3833
POT	18+21.13	813631.0700	1712587.7595

SERV			
TYPE	STATION	NORTH	EAST
POT	10+00.00	814609.3927	1712585.9662
POT	12+92.00	814348.1735	1712716.4595

YA			
TYPE	STATION	NORTH	EAST
POT	10+00.00	815617.8952	1713054.4916
PC	11+12.26	815511.6836	1713090.8312
PT	12+55.52	815396.3602	1713172.4998
POT	13+00.00	815368.8047	1713207.4186

YC			
TYPE	STATION	NORTH	EAST
POT	10+00.00	814946.6575	1712773.3282
PC	13+41.17	815227.9793	1712966.3482
PRC	14+57.71	815334.3220	1713012.2039
PT	15+74.30	815428.0475	1713076.5348
POT	16+24.30	815455.4752	1713118.3406

Y3			
TYPE	STATION	NORTH	EAST
POT	10+00.00	815410.6896	1713819.9694
PC	10+83.86	815326.8764	1713817.0434
PT	12+15.15	815195.7026	1713811.6016
POT	15+50.00	814861.2403	1713795.5265
POT	20+00.00	814411.8151	1713772.7637

Y4			
TYPE	STATION	NORTH	EAST
POT	10+00.00	815728.0976	1716230.4719
PC	18+61.51	814928.2254	1716550.4857
PT	20+17.06	814787.7682	1716617.0906
POT	24+49.47	814409.3370	1716826.3000

Y4A			
TYPE	STATION	NORTH	EAST
POT	10+00.00	814808.2037	1716606.0399
POT	13+77.56	814556.3408	1716324.7628

Y5			
TYPE	STATION	NORTH	EAST
POT	10+00.00	815780.0183	1718517.3390
PC	12+44.61	815536.0588	1718499.4784
PT	14+64.58	815316.5203	1718485.8314
PC	19+73.82	814807.9406	1718459.8284
PT	22+63.48	814519.2493	1718436.6692
PC	24+63.48	814320.4366	1718414.9091
PT	27+00.00	814085.1143	1718391.1920
POT	28+00.00	813985.5360	1718382.0172

Y5A			
TYPE	STATION	NORTH	EAST
POT	10+00.00	815216.2304	1718480.7037
PC	10+39.60	815212.2971	1718520.1068
PT	11+93.18	815202.9217	1718673.3618
POT	12+99.90	815200.4989	1718780.0603

Y5B			
TYPE	STATION	NORTH	EAST
POT	10+00.00	814534.7806	1718136.6493
POT	13+00.01	814508.9134	1718435.5379

Y7			
TYPE	STATION	NORTH	EAST
POT	10+00.00	815823.8820	1721937.3794
PC	11+33.08	815695.2480	1721971.4787
PT	16+23.13	815214.2634	1721943.0247
PC	24+64.60	814431.9823	1721633.0125
PT	27+03.05	814213.0530	1721538.6096
POT	33+50.04	813626.8460	1721264.8380

Y8			
TYPE	STATION	NORTH	EAST
POT	10+00.00	815995.1782	1725048.4597
PC	11+05.76	815890.4620	1725063.2522
PT	12+60.82	815738.4354	1725093.3918
POT	24+50.00	814586.5474	1725388.8607

Y10			
TYPE	STATION	NORTH	EAST
POT	10+00.00	817087.7659	1728599.5857
PC	13+61.20	816727.4904	1728573.7837
PT	16+31.68	816457.4754	1728558.1129
PC	22+87.21	815802.5896	1728528.9856
PT	25+34.65	815555.8919	1728510.3548
POT	32+10.00	814884.3533	1728438.6949

Y10B			
TYPE	STATION	NORTH	EAST
POT	10+00.00	815625.2083	1728517.1417
POT	14+03.18	815602.7479	1728919.6943

U-2412A SURVEY CONTROL SHEET

-L- FINAL NEW PERMANENT RIGHT OF WAY MONUMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
L	14+00.00	85.00	814249.5595	1712231.2198
L	14+10.00	-75.00	814375.9189	1712132.5636
L	16+05.56	114.12	814353.8740	1712402.0571
L	16+25.00	-112.00	814545.9069	1712281.0949
L	17+02.76	114.07	814407.7973	1712476.1639
L	17+81.54	114.45	814448.4533	1712538.3273
L	17+81.99	110.00	814452.4427	1712536.3030
L	18+82.51	110.01	814501.2099	1712617.8038
L	19+23.97	-129.61	814731.1596	1712538.0039
L	19+35.00	-85.00	814697.2926	1712569.8753
L	19+41.56	100.00	814536.7951	1712662.1190
L	19+60.00	90.00	814553.7787	1712673.0825
L	21+40.00	100.00	814616.2243	1712833.0063
L	21+51.65	-90.00	814796.8295	1712772.8616
L	22+00.00	-78.00	814803.7325	1712824.1848
L	23+50.00	-100.00	814873.5884	1712966.0968
L	23+95.00	110.00	814683.1062	1713065.2216
L	24+24.84	123.82	814676.6813	1713095.8657
L	24+55.00	-100.00	814901.3159	1713072.7906
L	32+35.03	115.51	814746.4037	1713872.3902
L	32+93.42	-100.00	814962.4164	1713928.8883
L	33+26.98	120.68	814741.9842	1713964.0370
L	33+60.00	122.41	814740.4074	1713996.7349
L	35+05.20	99.03	814763.3770	1714140.6570
L	35+95.92	100.67	814760.6030	1714230.5940
L	36+86.96	102.86	814756.5920	1714320.8050
L	37+67.53	103.88	814753.3770	1714400.6220
L	38+47.64	102.83	814751.7250	1714480.0260
L	41+27.61	-100.00	814940.5670	1714769.5757
L	41+36.86	101.22	814739.1530	1714766.5920
L	41+66.69	123.82	814714.7858	1714794.9894
L	45+00.00	-100.00	814918.8150	1715139.7184
L	45+00.38	115.00	814701.1976	1715213.0583
L	48+01.00	-121.17	814940.7492	1715430.3302
L	48+30.00	260.00	814561.9664	1715481.7285
L	48+30.00	120.00	814701.6786	1715472.7570
L	49+74.15	-95.61	814929.2296	1715597.7704
L	49+78.29	-115.00	814948.9501	1715599.5175
L	50+30.00	280.00	814563.5941	1715701.2118
L	51+00.00	-85.00	814935.1948	1715720.0087
L	51+50.00	280.00	814583.7485	1715831.2359
L	52+00.00	-90.00	814956.9522	1715814.6466
L	52+88.60	243.68	814648.9710	1715971.7176
L	53+90.00	-120.00	815026.5682	1715988.8028
L	54+50.00	-100.00	815021.3879	1716051.4333
L	55+22.90	235.99	814712.7960	1716202.9910
L	56+02.02	193.53	814773.0317	1716269.5830
L	56+81.46	151.83	814832.6230	1716336.6580
L	57+52.86	113.92	814886.5920	1716396.8450
L	58+15.00	-130.00	815138.2943	1716398.4941
L	58+67.16	148.33	814880.6779	1716516.0629
L	60+00.00	105.00	814954.5994	1716634.3743
L	60+00.00	106.11	814971.8909	1716711.1793
L	79+50.00	-110.00	814999.2692	1718550.8144
L	80+30.00	105.00	814770.9520	1718573.0909
L	81+00.00	-105.00	814956.0248	1718694.5326
L	82+00.00	-140.00	814964.2503	1718800.1609
L	82+20.00	-280.00	815094.4608	1718855.3445
L	82+90.00	-280.00	815076.5356	1718923.0105
L	84+00.00	105.00	814676.2044	1718930.7540
L	84+30.00	-150.00	814915.0197	1719025.0528
L	84+54.37	159.37	814609.7288	1718969.3859
L	84+95.53	-136.59	814885.2762	1719084.9627
L	86+69.10	-105.20	814810.7770	1719244.1764
L	87+87.39	-105.00	814782.9959	1719356.1495
L	89+08.29	170.00	814488.9008	1719419.6915
L	89+93.64	-115.00	814755.0458	1719553.0834
L	91+31.66	100.00	814523.6524	1719660.8232
L	92+08.43	-100.00	814715.1582	1719756.8059
L	95+25.00	100.00	814505.2553	1720066.5646
L	95+70.00	-100.00	814706.4210	1720105.9987
L	95+80.00	145.00	814461.9622	1720125.1082
L	96+00.00	-180.00	814787.5059	1720131.3567
L	97+50.00	100.00	814518.6704	1720298.6227
L	98+05.85	-115.00	814738.3007	1720331.5876
L	98+13.82	-156.33	814780.2340	1720334.4000
L	99+10.00	145.00	814494.2542	1720469.2951
L	99+90.00	-310.00	814955.9869	1720475.6844
L	100+75.00	100.00	814566.1881	1720627.9282
L	101+25.00	-300.00	814968.8157	1720608.1405

-L- FINAL NEW PERMANENT RIGHT OF WAY MONUMENTS CONT.

L	102+00.00	-185.00	814868.4899	1720701.8651
L	102+20.00	-120.00	814807.9157	1720732.7848
L	102+50.00	135.00	814561.9217	1720806.3506
L	103+50.00	-125.00	814835.2800	1720860.4212
L	104+85.00	-170.00	814901.5925	1720991.1530
L	106+50.00	115.00	814637.2041	1721188.5881
L	106+66.88	-116.17	814868.9747	1721186.4265
L	106+99.31	121.92	814633.9350	1721236.3466
L	108+60.00	-103.00	814865.2787	1721386.9632
L	110+40.00	-123.00	814883.9040	1721571.1114
L	111+65.00	-120.00	814878.1527	1721696.1157
L	112+16.78	-138.75	814895.7526	1721748.3006
L	114+00.00	125.00	814628.0266	1721925.6520
L	117+50.00	85.00	814660.2933	1722276.4495
L	119+00.00	150.00	814592.1476	1722425.8627
L	120+25.00	150.00	814591.7403	1722555.3932
L	122+20.00	-175.00	814925.8143	1722732.9575
L	123+47.98	113.24	814653.2505	1722890.2709
L	123+81.41	-121.46	814890.3046	1722890.6478
L	133+83.58	-110.15	815174.3394	1723819.2119
L	138+00.00	-120.00	815336.6087	1724206.7462
L	140+20.00	-240.00	815524.8854	1724377.4572
L	143+50.00	105.00	815299.6403	1724800.1282
L	144+70.00	-115.00	815544.8623	1724851.8860
L	144+70.00	-238.93	815663.7745	1724816.9918
L	144+80.00	160.00	815283.7537	1724938.7584
L	147+01.86	120.00	815381.2516	1725138.5556
L	147+09.48	-135.00	815629.5602	1725080.0243
L	147+92.98	120.00	815404.1390	1725225.5985
L	148+03.19	-120.00	815639.1058	1725175.6513
L	151+85.00	-115.00	815723.0580	1725552.8195
L	152+41.52	-115.00	815734.9553	1725608.7509
L	153+50.00	165.00	815482.2270	1725770.7197
L	153+69.89	-115.00	815760.7781	1725736.0370
L	156+50.00	-115.00	815811.3213	1726014.8774
L	158+50.00	210.00	815520.9156	1726261.6371
L	161+48.00	318.00	815451.2507	1726563.1094
L	162+20.00	170.00	815606.0910	1726616.5625
L	162+20.00	235.00	815541.4618	1726623.4952
L	163+00.00	-125.00	815907.7231	1726665.6148
L	168+40.00	170.00	815664.7727	1727231.4886
L	170+00.00	-160.00	816008.2653	1727359.9910
L	171+30.00	100.00	815761.5332	1727513.6896
L	173+80.00	270.00	815615.6080	1727778.4647
L	176+15.00	330.00	815577.8028	1728018.0388
L	176+75.00	270.00	815643.1407	1728072.1771
L	176+75.00	150.00	815762.6169	1728060.9773
L	177+50.00	-145.00	816063.3291	1728108.1173
L	179+80.00	-120.00	816059.9044	1728339.4466
L	180+20.00	160.00	815784.8599	1728405.4048
L	180+80.00	-120.00	816069.2376	1728439.0101
L	182+50.00	145.00	815821.2606	1728633.0009
L	182+90.00	-135.00	816103.7716	1728646.6935
L	183+80.05	137.11	815841.2569	1728761.7423
L	184+24.04	-130.35	816111.6569	1728780.5835
L	186+95.26	120.71	815890.3388	1729077.8809
L	187+48.07	-119.96	816135.9112	1729097.9459
L	188+75.00	120.00	815918.7740	1729260.8168
L	193+50.00	120.00	816031.2925	1729736.6571
L	198+22.13	-120.00	816418.3616	1730097.5285
L	198+27.44	-130.00	816429.5812	1730098.2526
L	199+31.60	135.00	816230.9389	1730302.2523

-Y- FINAL NEW PERMANENT RIGHT OF WAY MONUMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y	11+15.00	-85.00	814930.3509	1713108.8169
Y	12+00.00	-85.00	815014.7254	1713098.5247
Y	14+11.76	-75.00	815244.8627	1713097.0488
Y	15+75.30	60.00	815365.2204	1713271.8228
Y	16+50.00	-88.36	815506.7520	1713183.7962
Y	17+02.55	-70.00	815543.4360	1713235.9862
Y	17+50.00	60.00	815487.4811	1713362.5752
Y	17+73.37	-70.00	815600.2006	1713293.7154
Y	18+32.25	-115.92	815678.9334	1713322.3357
Y	18+50.00	45.00	815553.1725	1713424.4730
Y	18+64.82	-85.00	815673.0919	1713371.9979
Y	18+80.00	-65.00	815663.9363	1713396.9593
Y	19+94.45	54.02	815594.9159	1713547.0966
Y	19+97.56	45.00	815604.3448	1713547.6173
Y	20+90.00	-55.00	815716.9381	1713622.2347
Y	21+87.23	45.00	815627.8592	1713729.5578
Y	22+00.00	-31.47	815705.2499	1713734.1158

-YA- FINAL NEW PERMANENT RIGHT OF WAY MONUMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
YA	11+50.00	-55.00	815502.4592	1713154.4625
YA	10+12.00	25.85	815598.1720	1713033.9152
YA	10+12.00	-24.15	815614.3581	1713081.2228

-YC- FINAL NEW PERMANENT RIGHT OF WAY MONUMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
YC	13+00.00	30.50	815176.7752	1712968.2055
YC	13+18.57	-29.49	815226.0272	1712929.2393
YC	14+15.89	63.05	815272.4323	1713059.7246
YC	15+19.87	-45.00	815417.0796	1713000.9355
YC	15+74.30	-40.00	815461.4922	1713054.5927

-SERV- FINAL NEW PERMANENT RIGHT OF WAY MONUMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
SERV	12+00.00	-35.30	814446.2527	1712706.9280
SERV	12+00.00	20.16		

U-2412A SURVEY CONTROL SHEET

-Y5- FINAL NEW PERMANENT RIGHT OF WAY MONUMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y5	10+25.00	-30.31	815752.8717	1718545.7457
Y5	10+25.00	-35.00	815752.5315	1718550.4207
Y5	10+25.00	29.69	815757.2547	1718485.9064
Y5	10+25.00	40.00	815758.0077	1718475.6209
Y5	11+50.00	55.00	815634.4346	1718451.5334
Y5	11+50.00	-50.00	815626.7679	1718556.2532
Y5	15+00.00	-45.00	815278.8478	1718528.9640
Y5	16+10.00	70.00	815174.8635	1718408.4972
Y5	16+40.00	-55.00	815138.5199	1718531.8023
Y5	16+76.32	63.97	815108.3191	1718411.1318
Y5	17+40.00	-50.00	815038.9056	1718521.7026
Y5	20+27.95	55.78	814757.3468	1718401.1001
Y5	20+30.00	-65.00	814747.8062	1718521.5186
Y5	21+19.24	-61.57	814657.9127	1718511.6657
Y5	22+00.00	60.00	814588.1672	1718383.4534
Y5	22+18.04	-63.10	814558.1471	1718504.1898
Y5	23+50.00	60.00	814439.7733	1718367.6122
Y5	24+00.00	-85.00	814374.2941	1718506.3114
Y5	25+00.00	-45.00	814279.3529	1718455.7297
Y5	25+97.16	-30.41	814184.4727	1718431.2710
Y5	25+99.05	-45.00	814181.1466	1718445.6003
Y5	26+00.00	45.00	814189.1134	1718355.9489
Y5	26+00.00	30.00	814187.6290	1718370.8753

-Y5A- FINAL NEW PERMANENT RIGHT OF WAY MONUMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y5A	10+75.00	-45.00	815253.9422	1718559.0387
Y5A	10+75.00	40.00	815169.2264	1718552.0940
Y5A	11+50.00	-36.99	815241.3211	1718631.8465
Y5A	11+50.00	27.71	815176.6887	1718628.9819

-Y5B- FINAL NEW PERMANENT RIGHT OF WAY MONUMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y5B	10+00.00	-29.16	814563.8305	1718139.1634
Y5B	10+00.00	-40.00	814574.6316	1718140.0982
Y5B	10+00.00	30.84	814504.0539	1718133.9901
Y5B	10+00.00	40.00	814494.9296	1718133.2004
Y5B	10+50.00	-50.00	814580.2833	1718190.7742
Y5B	10+50.00	50.00	814480.6557	1718182.1520
Y5B	12+20.00	50.00	814465.9979	1718351.5189
Y5B	12+25.00	-50.00	814565.1944	1718365.1225

-Y7- FINAL NEW PERMANENT RIGHT OF WAY MONUMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y7	16+68.29	63.46	815195.6614	1721867.3966
Y7	16+75.51	-59.72	815143.5700	1721979.2500
Y7	17+00.10	-59.83	815046.2950	1721940.8150
Y7	19+11.31	-60.02	814924.2390	1721892.6556
Y7	22+70.00	-75.00	814585.2639	1721774.4314
Y7	23+50.00	-70.10	814512.6954	1721740.4050
Y7	24+35.02	55.00	814479.7443	1721592.7788
Y7	24+64.60	-65.00	814408.0352	1721693.4404
Y7	24+64.60	55.00	814452.2453	1721581.8812
Y7	27+03.05	55.00	814236.3263	1721488.7763
Y7	27+40.00	-60.00	814154.1868	1721577.3386
Y7	29+20.00	50.00	814037.6446	1721401.5050
Y7	30+83.40	29.81	813881.0543	1721350.6548
Y7	30+84.45	40.00	813884.4066	1721340.9763
Y7	32+60.00	-29.57	813695.9150	1721329.7277

-Y8- FINAL NEW PERMANENT RIGHT OF WAY MONUMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y8	12+25.00	-29.98	815779.9487	1725114.1586
Y8	12+25.00	-55.00	815785.5429	1725138.5436
Y8	12+87.63	40.00	815702.5294	1725061.3071
Y8	17+50.00	-45.00	815275.7791	1725258.5241
Y8	17+50.00	-30.05	815272.0634	1725244.0385
Y8	17+61.26	45.00	815242.5079	1725174.1447
Y8	17+65.55	29.95	815242.0920	1725189.7837

-Y10- FINAL NEW PERMANENT RIGHT OF WAY MONUMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y10	15+14.42	50.00	816577.3912	1728514.0886
Y10	15+14.81	29.71	816575.8592	1728534.3204
Y10	15+36.01	-40.26	816550.8517	1728603.0187
Y10	15+36.14	-50.00	816550.1958	1728612.7408
Y10	15+90.00	-70.00	816495.7044	1728629.9688
Y10	16+65.00	60.00	816426.8502	1728496.6915
Y10	18+00.00	75.00	816292.6521	1728475.7075
Y10	19+50.00	80.00	816143.0203	1728464.0478
Y10	19+65.00	-70.00	816121.3702	1728613.2332
Y10	22+87.21	-80.00	815799.0349	1728608.9065
Y10	23+40.00	65.00	815753.6127	1728461.3999
Y10	23+90.00	-80.00	815694.3632	1728602.0262
Y10	25+34.65	65.00	815562.7889	1728445.7217
Y10	26+06.41	-70.00	815477.1098	1728572.3453
Y10	27+00.00	-70.00	815384.0466	1728562.4146
Y10	27+00.00	55.00	815397.3101	1728438.1203
Y10	30+00.00	-50.00	815087.8624	1728510.6952
Y10	31+00.00	-60.00	814987.3658	1728510.0280
Y10	31+82.91	-30.02	814908.1021	1728471.4215
Y10	31+82.97	-40.00	814906.9876	1728481.3369
Y10	32+00.00	29.99	814897.4785	1728409.9402
Y10	32+00.00	45.00	814899.0716	1728395.0100

-Y10B- FINAL NEW PERMANENT RIGHT OF WAY MONUMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y10B	11+15.00	-29.72	815648.4800	1728633.6185

-L- FINAL NEW PERMANENT UTILITY EASEMENT

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+40.72	-83.78	814335.4468	1712074.3301
L	14+37.33	-111.53	814421.8425	1712129.4950
L	14+38.17	-106.29	814418.4624	1712133.5933
L	15+95.09	-127.25	814538.8707	1712246.6557
L	16+24.25	-136.91	814565.3598	1712265.5197
L	16+25.31	-132.52	814562.5291	1712269.0572
L	16+33.30	-139.43	814573.1677	1712271.7676
L	16+39.31	-138.49	814576.2391	1712277.4862
L	16+48.21	-132.75	814577.2353	1712288.5508
L	18+35.62	-128.56	814683.8762	1712457.2954
L	19+15.91	-156.39	814750.6132	1712518.2648
L	19+16.33	-150.79	814745.9038	1712521.3420
L	19+25.15	-157.23	814756.0832	1712526.6362
L	19+25.59	-151.69	814751.4309	1712529.6760
L	19+31.28	-151.37	814754.0344	1712535.2288
L	19+49.23	-150.46	814762.2399	1712552.7295
L	21+24.15	-135.84	814828.3312	1712728.6748
L	21+29.14	-115.60	814811.6520	1712741.3050
L	21+33.48	-121.87	814819.2023	1712743.1745
L	52+35.07	-115.00	814988.1116	1715842.9028
L	52+51.64	-99.08	814975.8029	1715861.8062
L	53+90.00	-135.00	815041.1406	1715985.2513
L	148+03.20	-150.01	815668.1800	1725168.1935
L	151+84.81	-145.00	815752.3427	1725546.3047
L	152+94.07	-145.00	815775.1224	1725654.8197
L	152+99.69	-166.01	815796.8511	1725656.2089
L	153+55.12	-115.00	815757.8922	1725721.3759

-Y- FINAL NEW PERMANENT UTILITY EASEMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y	17+62.79	-77.41	815597.8111	1713279.6556
Y	17+63.32	-82.36	815601.9291	1713276.8357
Y	17+71.38	-76.41	815603.5930	1713287.8161
Y	17+71.82	-81.21	815607.5791	1713285.0866
Y	17+81.78	-75.63	815610.7228	1713297.5404
Y	18+76.93	-78.51	815674.2239	1713387.5256
Y	18+77.28	-84.09	815679.3410	1713385.2543
Y	20+88.42	-63.97	815725.6884	1713619.7114
Y	20+90.37	-69.37	815731.2670	1713621.0711
Y	20+95.40	-53.84	815716.3607	1713627.7308
Y	20+99.78	-65.98	815728.8988	1713630.7867
Y	21+97.42	48.44	815625.5227	1713740.0611
Y	22+02.65	39.92	815634.5526	1713744.3576

-YA- FINAL NEW PERMANENT UTILITY EASEMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
YA	11+39.56	-54.02	815509.3394	1713149.9579

-YC- FINAL NEW PERMANENT UTILITY EASEMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
YC	14+48.44	-41.11	815335.2167	1712970.2156
YC	14+49.57	-68.20	815342.6009	1712944.1313
YC	14+59.24	-39.78	815344.6116	1712973.7412
YC	14+60.25	-67.69	815352.2228	1712946.8552
YC	14+75.67	-38.09	815364.0388	1712981.0317
YC	14+79.34	-61.62	815376.5989	1712960.5485
YC	14+83.79	-38.10	815373.5748	1712984.6102
YC	14+86.36	-59.93	815385.1238	1712965.7758

-Y1- FINAL NEW PERMANENT UTILITY EASEMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y1	12+24.67	55.00	814684.7997	1712026.6693
Y1	14+00.00	55.00	814529.6707	1712108.3692
Y1	15+00.00	75.00	814431.8724	1712137.2706

-Y2- FINAL NEW PERMANENT UTILITY EASEMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y2	11+09.21	73.91	814247.2730	1712235.7264
Y2	13+24.87	67.46	814060.5611	1712339.7201
Y2	14+15.31	34.70	813994.0571	1712407.4316

-Y3- FINAL NEW PERMANENT UTILITY EASEMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y3	12+29.04	35.51	815183.5364	1713775.4633
Y3	12+31.91	16.41	815179.7496	1713794.4022
Y3	13+60.12	65.07	815054.0246	1713739.6516
Y3	13+60.37	55.27	815053.3067	1713749.4237
Y3	14+48.14	73.43	814966.5120	1713727.0747
Y3	16+87.75	67.52	814727.0794	1713721.1270
Y3	18+49.60	66.73	814565.4008	1713713.7288
Y3	18+50.05	72.06	814565.2231	1713708.3846
Y3	18+59.54	65.56	814555.4174	1713714.3941
Y3	18+60.01	71.22	814555.2286	1713708.7168
Y3	19+64.17	16.09	814448.4176	1713758.5091
Y3	19+65.19	36.20	814448.4176	1713738.3719

-Y4- FINAL NEW PERMANENT UTILITY EASEMENTS

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U-2412A SURVEY CONTROL SHEET

-Y5- FINAL NEW PERMANENT UTILITY EASEMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y5	10+10.16	44.07	815773.0984	1718472.6469
Y5	10+10.73	-30.31	815767.1063	1718546.7878
Y5	10+12.18	29.69	815770.0431	1718486.8423
Y5	10+14.58	-62.28	815760.9319	1718578.3835
Y5	10+24.51	-61.08	815751.1176	1718576.4656
Y5	12+22.63	81.73	815563.9486	1718419.5739
Y5	12+23.44	71.54	815562.3968	1718429.6726
Y5	12+32.60	82.52	815554.0646	1718418.0551
Y5	12+33.41	72.40	815552.5225	1718428.0909
Y5	15+87.44	95.12	815198.6798	1718384.5585
Y5	15+87.62	85.09	815197.9884	1718394.5721
Y5	15+97.44	95.00	815188.6827	1718384.1716
Y5	15+97.62	85.17	815188.0056	1718393.9794
Y5	17+31.38	84.23	815054.3686	1718388.0849
Y5	19+90.22	81.56	814795.9950	1718377.5210
Y5	19+92.88	91.71	814793.9401	1718367.2521
Y5	20+02.76	81.40	814783.6762	1718377.0038
Y5	20+03.06	91.41	814783.9437	1718366.9852
Y5	21+21.06	74.82	814667.0453	1718375.5729
Y5	22+25.04	78.20	814565.3860	1718362.9087
Y5	23+27.21	77.67	814464.3502	1718352.5291
Y5	27+10.31	-30.69	814072.0299	1718420.8096
Y5	27+11.28	-62.06	814068.1866	1718451.9567
Y5	27+15.21	29.26	814072.6546	1718360.6559
Y5	27+16.32	54.52	814073.8665	1718335.4056
Y5	27+20.32	-30.79	814062.0554	1718419.9884
Y5	27+21.28	-61.75	814058.2619	1718450.7320

-Y7- FINAL NEW PERMANENT UTILITY EASEMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y7	22+03.43	-121.93	814629.8601	1721842.5838
Y7	22+23.69	-118.85	814612.1571	1721832.2582
Y7	22+44.96	-87.82	814603.8209	1721795.5782
Y7	23+19.96	71.05	814592.6287	1721620.2492
Y7	24+31.47	70.68	814488.8255	1721579.5144
Y7	24+32.59	80.63	814491.4444	1721569.8456
Y7	24+41.52	70.62	814479.4549	1721575.8605
Y7	24+42.53	79.51	814481.7923	1721567.2312
Y7	28+59.96	67.11	814099.2777	1721411.4089
Y7	28+61.69	75.30	814101.1782	1721403.2555
Y7	28+69.85	66.02	814089.8601	1721408.2139
Y7	28+71.70	75.69	814092.2714	1721398.6692
Y7	30+82.25	47.94	813889.7629	1721334.7131
Y7	30+84.06	56.47	813891.7310	1721326.2250
Y7	30+91.97	44.03	813879.3017	1721334.1429
Y7	30+93.84	54.39	813881.9894	1721323.9663
Y7	31+34.17	29.91	813835.0919	1721329.0859

-Y8- FINAL NEW PERMANENT UTILITY EASEMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y8	12+02.70	36.93	815787.3352	1725044.0017
Y8	12+02.96	-29.94	815800.9943	1725109.4586
Y8	12+03.03	30.06	815788.4305	1725050.7887
Y8	12+05.53	-57.49	815804.3207	1725136.9247
Y8	12+13.23	-29.96	815791.1814	1725111.6066
Y8	12+15.91	-56.54	815794.3933	1725138.1269
Y8	13+56.23	69.83	815628.6686	1725049.4532
Y8	13+57.04	59.39	815630.4827	1725059.7742
Y8	13+66.17	70.64	815618.8382	1725051.1438
Y8	16+23.46	71.41	815369.4277	1725114.3257
Y8	16+33.09	60.17	815362.8904	1725127.6072
Y8	16+33.94	70.55	815359.4864	1725117.7634
Y8	17+16.38	45.00	815285.9774	1725162.9942
Y8	17+60.43	-66.06	815270.9083	1725281.5189
Y8	17+62.66	-40.05	815262.2799	1725256.8713
Y8	17+63.72	36.38	815242.2676	1725183.1048
Y8	17+70.39	-66.92	815261.4699	1725284.8230
Y8	17+72.70	-40.05	815252.5579	1725259.3650
Y8	17+73.08	29.95	815234.7929	1725191.6556
Y8	17+73.20	34.65	815233.5155	1725187.1316

-Y10- FINAL NEW PERMANENT UTILITY EASEMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y10	14+80.59	-40.29	816605.9571	1728606.1827
Y10	15+24.98	-65.40	816560.4334	1728628.7252
Y10	15+27.52	-54.60	816558.5107	1728617.8037
Y10	15+36.38	-67.94	816548.9883	1728630.6406
Y10	15+45.54	-58.87	816540.3871	1728621.0978
Y10	15+47.25	-64.89	816538.3673	1728627.0155
Y10	15+69.59	-62.46	816516.3312	1728623.4474
Y10	16+21.89	-70.07	816464.0737	1728628.5546
Y10	17+30.38	-95.95	816354.6039	1728649.5781
Y10	17+31.20	-85.67	816354.2430	1728639.2789
Y10	17+40.35	-96.74	816344.6100	1728649.9283
Y10	17+41.17	-86.45	816344.2487	1728639.6169
Y10	19+74.83	-90.89	816110.6254	1728633.6623
Y10	22+72.11	-94.97	815813.4510	1728624.5347
Y10	24+08.82	-95.00	815674.0955	1728616.4702
Y10	25+07.15	-101.33	815509.8427	1728607.3484
Y10	25+74.53	-111.39	815504.4191	1728616.8862
Y10	25+79.25	-97.19	815501.2298	1728602.2649
Y10	25+83.70	-107.40	815495.7263	1728611.9430
Y10	27+00.27	78.75	815399.5635	1728414.4764
Y10	27+09.56	82.46	815390.7223	1728409.8037
Y10	27+09.83	54.80	815387.5152	1728437.2727
Y10	27+12.97	73.91	815386.4229	1728417.9385
Y10	29+89.23	67.04	815110.9927	1728395.4559
Y10	29+89.72	76.16	815111.4711	1728386.3373
Y10	29+99.15	65.35	815100.9451	1728396.0822
Y10	29+99.64	75.64	815101.5525	1728385.7988
Y10	30+00.00	-66.73	815086.0868	1728527.3347
Y10	31+92.75	45.15	814906.3003	1728395.6355
Y10	31+92.78	45.60	814906.3191	1728395.1838

-Y10B- FINAL NEW PERMANENT UTILITY EASEMENT

ALIGN	STATION	OFFSET	NORTH	EAST
Y10B	11+03.49	30.28	815589.2066	1728618.7872

-L- FINAL NEW PERMANENT DRAINAGE EASEMENT

ALIGN	STATION	OFFSET	NORTH	EAST
L	19+40.00	-295.00	814885.4631	1712476.4896
L	19+49.23	-150.46	814762.2399	1712552.7295
L	19+50.00	-139.30	814752.7238	1712558.6173
L	19+65.00	-300.00	814903.1428	1712499.6669
L	19+75.00	-149.69	814774.2054	1712577.7217
L	42+25.00	135.00	814700.0864	1714852.5171
L	45+80.38	125.00	814691.2000	1715212.8388
L	83+38.46	-235.00	815020.6262	1718958.3328
L	83+55.00	-300.00	815079.2238	1718990.9647
L	83+75.00	-275.00	815049.9349	1719003.8957
L	87+60.00	213.77	814478.9624	1719256.4000
L	87+60.00	181.58	814510.2721	1719263.8675
L	88+15.00	206.65	814472.7700	1719315.2248
L	88+15.00	182.67	814496.1986	1719320.3760
L	135+60.00	-112.59	815242.7853	1723982.6755
L	135+85.00	-140.00	815277.5794	1723996.1003
L	136+15.00	-113.76	815264.2648	1724033.9733
L	190+35.00	-120.00	816184.9367	1729371.8593
L	190+35.00	-240.00	816302.2293	1729346.5129
L	193+00.00	-120.00	816247.5117	1729621.1281
L	193+00.00	-240.00	816362.8670	1729588.0728

-Y- FINAL NEW PERMANENT DRAINAGE EASEMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
Y	19+00.00	245.00	815393.9822	1713550.0907
Y	19+00.00	170.00	815461.7477	1713517.9507
Y	19+46.79	177.82	815466.0650	1713548.6477
Y	19+60.00	55.38	815585.0577	1713518.1394
Y	19+80.00	240.00	815412.7348	1713585.7213

-Y4- FINAL NEW PERMANENT DRAINAGE EASEMENT

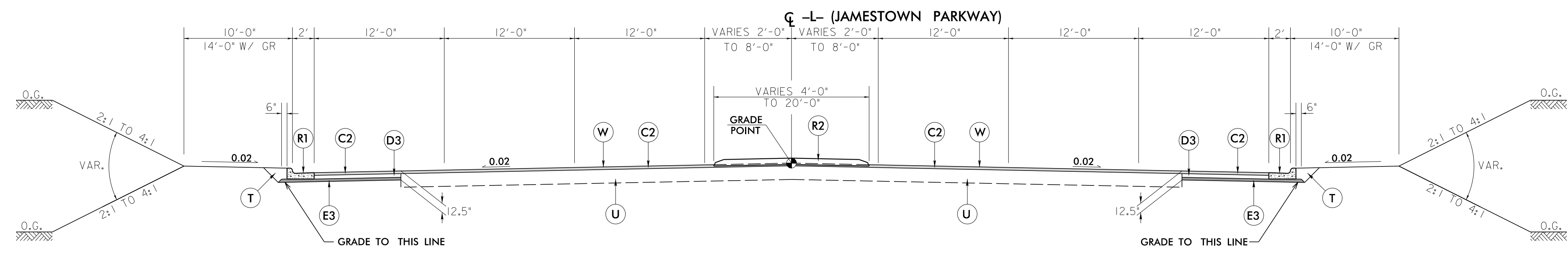
ALIGN	STATION	OFFSET	NORTH	EAST
Y4	10+00.00	-17.67	815734.6608	1716246.8765
Y4	10+00.00	-32.00	815739.9842	1716260.1824
Y4	10+10.00	-32.00	815730.6997	1716263.8969

-Y5- FINAL NEW PERMANENT DRAINAGE EASEMENT

ALIGN	STATION	OFFSET	NORTH	EAST
Y5	23+80.00	-82.58	814394.4390	1718506.0790
Y5	23+80.00	-100.00	814392.5434	1718523.3984
Y5	24+30.00	-100.00	814342.8402	1718517.9584
Y5	24+30.00	-73.00	814345.7788	1718491.1191

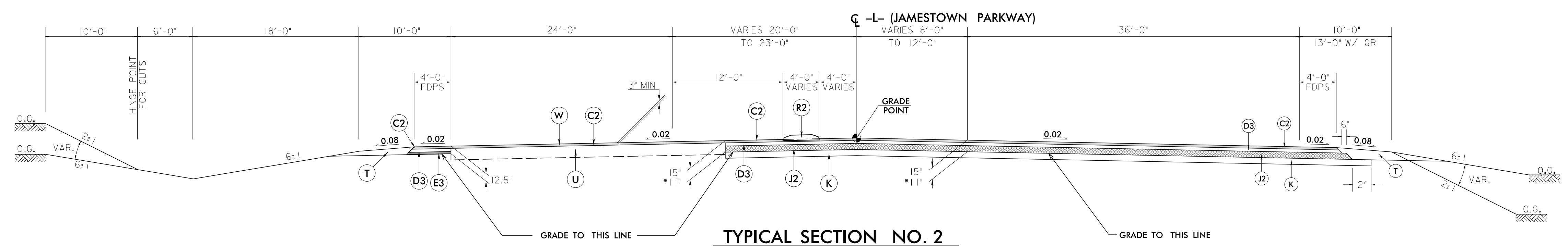
8/17/99

PROJECT REFERENCE NO. U-2412A	SHEET NO. 2A-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 27391 MICHAEL PERKINS	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 022896 CLAYTON MORRISON
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of: MOTT MACDONALD	PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/americas LICENSE NO. F-0669
SUNGATE DESIGN GROUP, P.A. 905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL: (919) 882-6244 ENG FIRM LICENSE NO. C-890	



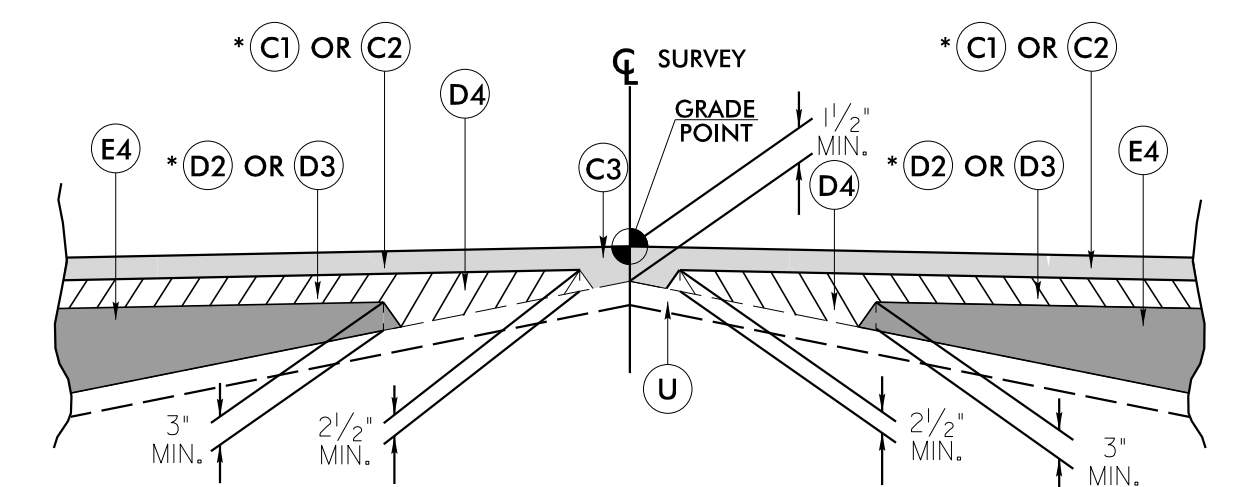
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1:
-L- STA 11+50.00 TO 15+00.00

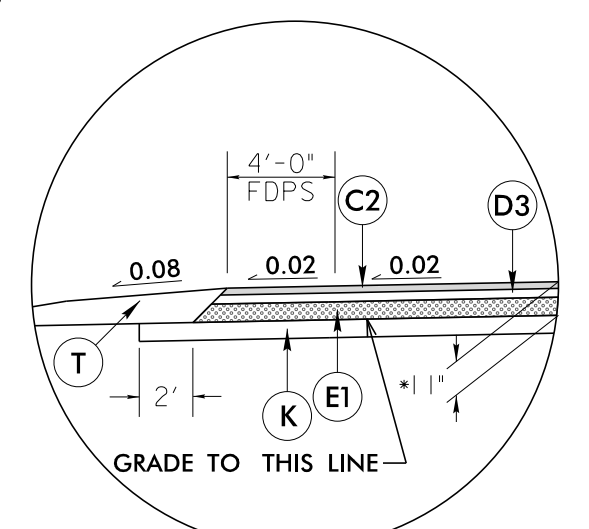


TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2:
-L- STA 15+00.00 TO 19+65.00



W: Detail Showing Method of Wedging
*SEE ALIGNMENT TYPICALS FOR PAVEMENT STRUCTURE



ALTERNATE PAVEMENT DESIGN
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 2, 3, 4, 5, & 22

PAVEMENT SCHEDULE			
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	J2	PROP. 8" AGGREGATE BASE COURSE
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	K	BASE TO BE TREATED WITH LIME TO A DEPTH OF 8", AT THE RATE OF 20 LBS. PER SQ. YD. AS DIRECTED BY THE ENGINEER. OR BASE TO BE TREATED WITH CEMENT TO A DEPTH OF 7", AT THE RATE OF 55 LBS. PER SQ. YD. AS DIRECTED BY THE ENGINEER.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH	N	GEOTEXTILE FOR PAVEMENT STABILIZATION
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE BINDER COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R1	2'-6" CONCRETE CURB AND GUTTER
D2	PROP. APPROX. 3" ASPHALT CONCRETE BINDER COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	R2	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
D3	PROP. APPROX. 4" ASPHALT CONCRETE BINDER COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R3	EXPRESSWAY GUTTER
D4	PROP. VAR. DEPTH ASPHALT CONCRETE BINDER COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.	R4	1'-6" CONCRETE CURB AND GUTTER
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R5	SHOULDER BERM GUTTER
E2	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.	S	4" CONCRETE SIDEWALK
E3	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	T	EARTH MATERIAL
E4	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.	U	EXISTING PAVEMENT
J1	PROP. 6" AGGREGATE BASE COURSE	W	WEDGING (SEE DETAIL SHOWING METHOD OF WEDGING ON THIS SHEET.)

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

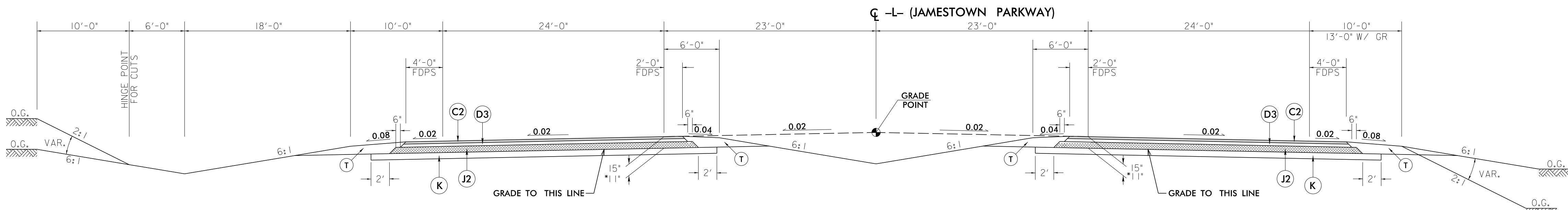
GEOTEXTILE FOR PAVEMENT STABILIZATION DETAIL							
USE GEOTEXTILE FOR PAVEMENT STABILIZATION DETAIL IN CONJUNCTION WITH APPROPRIATE TYPICAL SECTIONS AT LOCATION NOTED BELOW:							
LINE	STATION	STATION	LOCATION	LINE	STATION	STATION	LOCATION
-L-	35+50	40+50	LT	-L-	137+50	138+50	RT
-L-	40+50	45+50	CL	-L-	141+75	142+75	LT
-L-	51+00	55+00	CL	-L-	151+00	153+50	CL
-L-	81+00	89+50	CL	-L-	157+00	159+50	RT
-L-	96+50	101+50	CL	-L-	158+00	159+75	LT
-L-	101+50	103+50	LT	-L-	174+00	175+50	RT
-L-	104+00	107+50	CL	-L-	174+00	177+00	LT
-L-	109+00	112+00	LT	-L-	189+00	193+50	CL
-L-	115+50	118+00	LT	-L-	200+50	206+50	RT
-L-	118+00	124+50	CL	-Y-	11+25	13+25	CL
-L-	130+75	131+75	LT				
-L-	134+50	138+50	LT				

AREAS WILL BE INVESTIGATED DURING CONSTRUCTION

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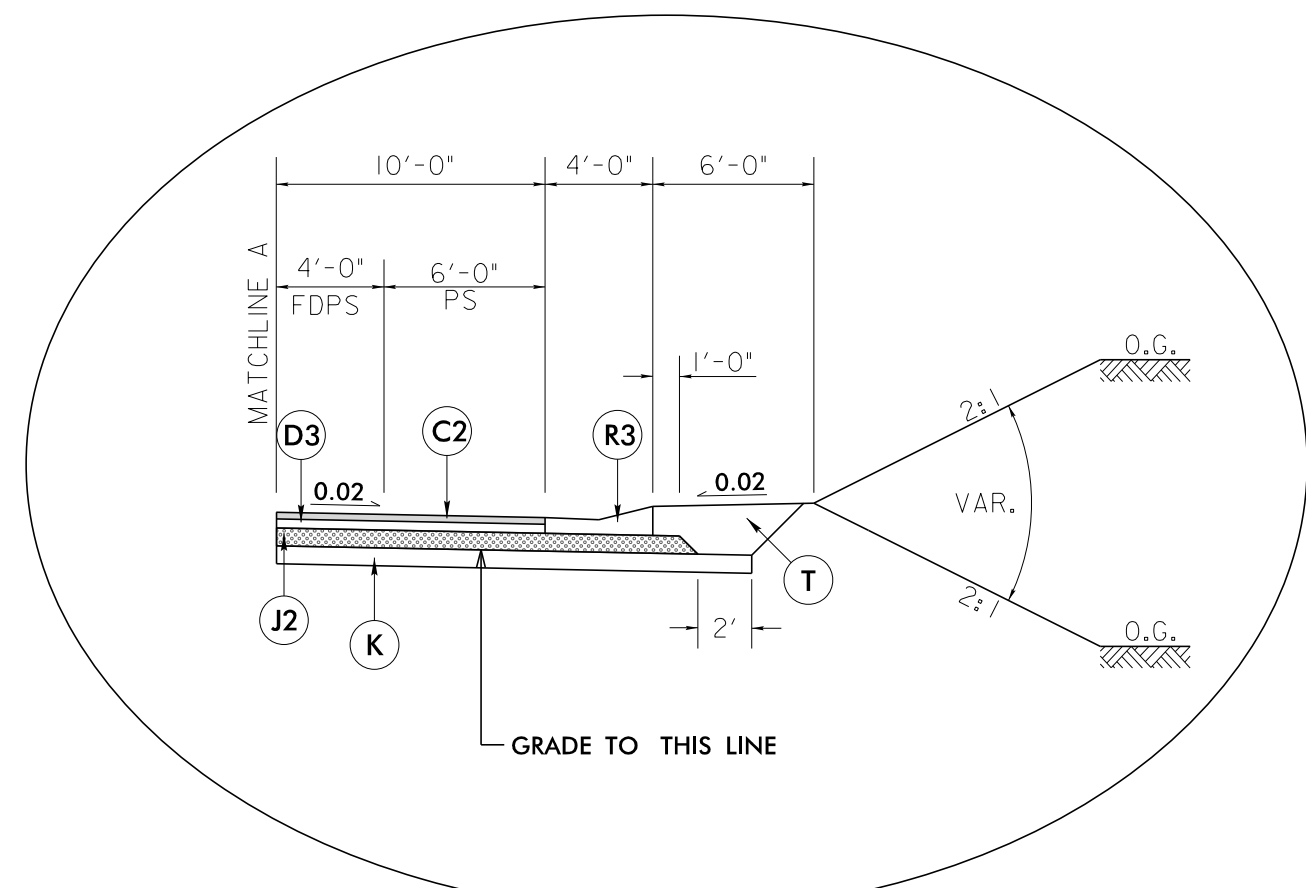
8/17/99

PROJECT REFERENCE NO. U-2412A	SHEET NO. 2A-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	MOTT MACDONALD
SUNGATE DESIGN GROUP, P.A.	
PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/merics LICENSE NO. F-0669 905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL: (919) 882-2424 ENG FIRM LICENSE NO. C-890	

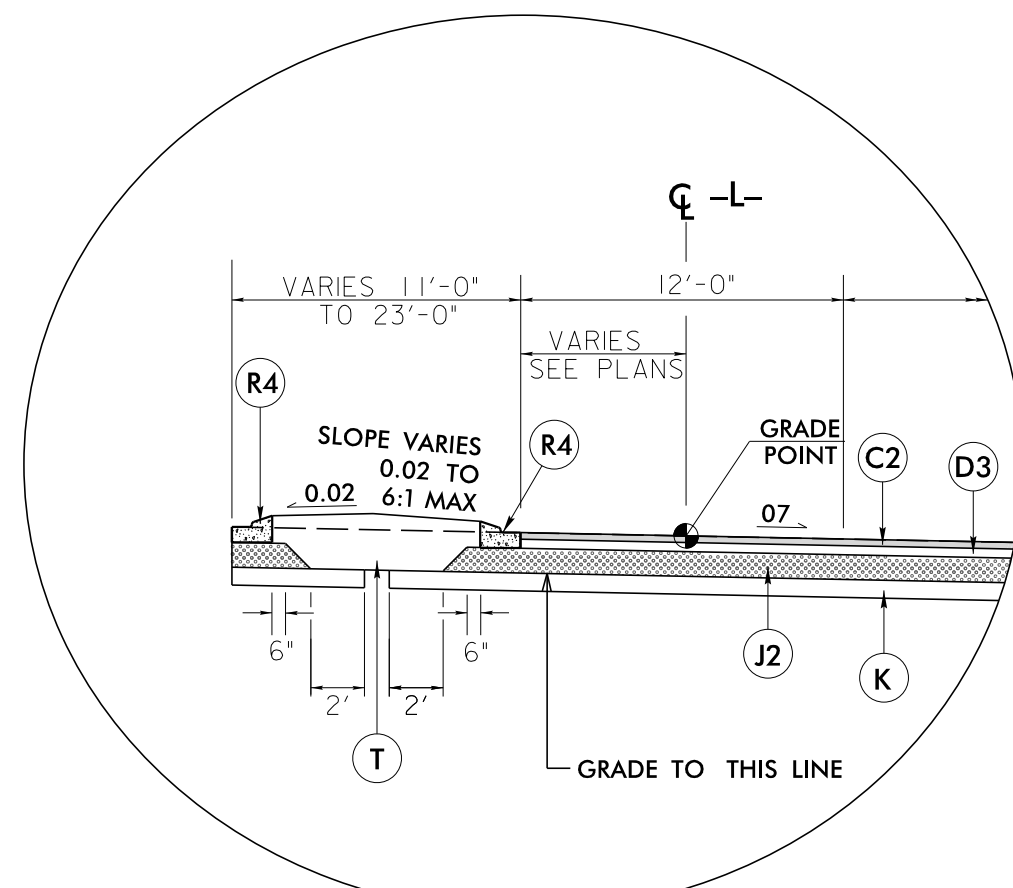


TYPICAL SECTION NO. 3

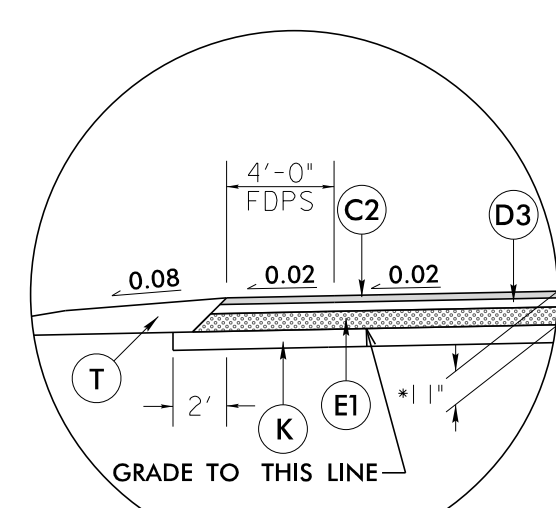
USE TYPICAL SECTION NO. 3:
-L- STA 19+65.00 TO 34+36.27



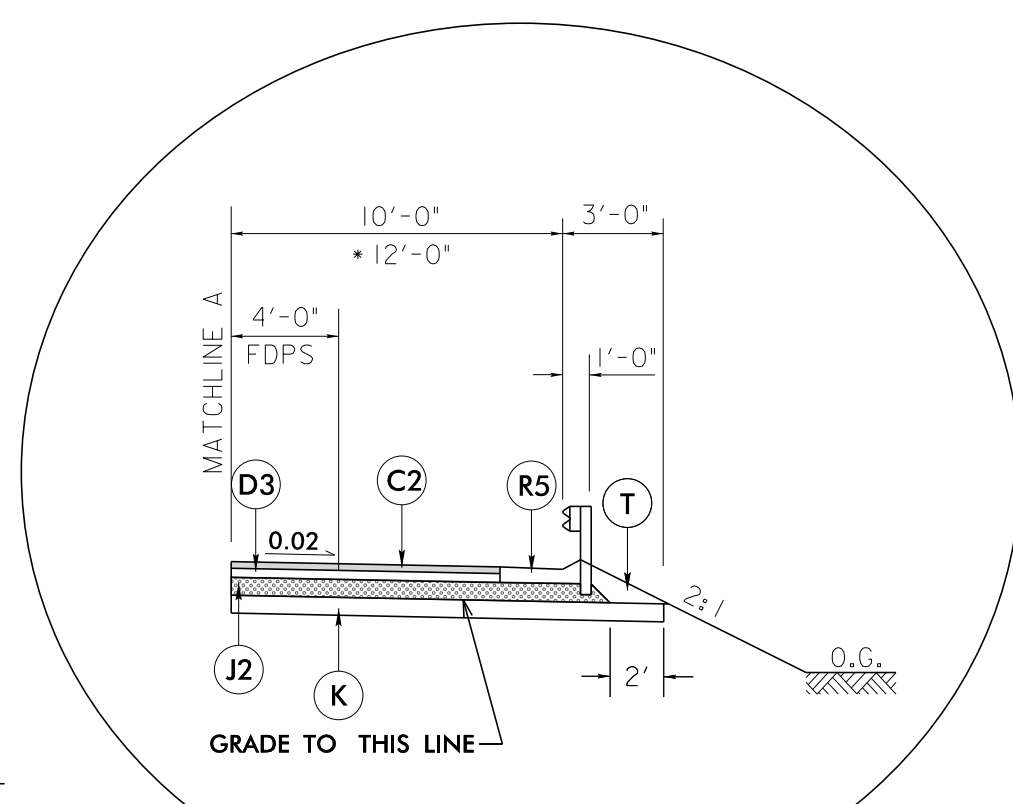
DETAIL C
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 2, 3 & 4
-L- STA 19+50.00 TO 24+00.00 RT
-L- STA 34+50.00 TO 41+00.00 RT



DETAIL D
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 3
-L- STA 19+65.00 TO 25+17.30



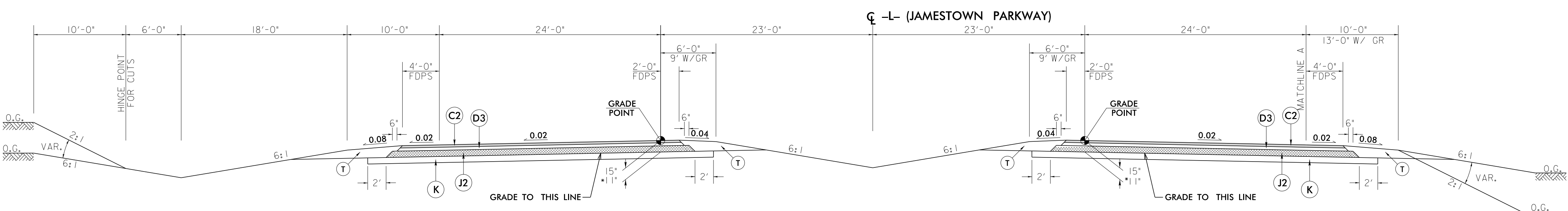
ALTERNATE PAVEMENT DESIGN
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 2, 3, 4, 5, & 22



DETAIL E

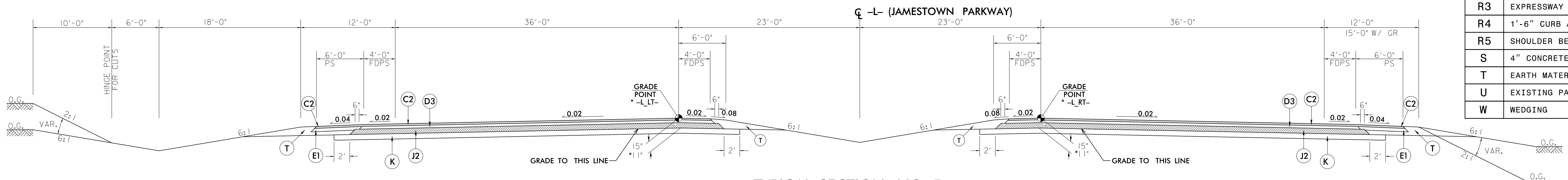
USE DETAIL E IN CONJUNCTION WITH TYPICAL SECTION NOS. 4 & 5
 -L- STA 35+00.00 TO 45+05.00 LT
 -L- STA 41+65.00 TO 45+05.00 RT
 -L- STA 50+44.00 TO 54+60.00 LT
 -L- STA 82+85.00 TO 90+06.10 LT
 -L- STA 96+68.20 TO 96+89.00 RT
 -L- STA 97+10.45 TO 103+06.00 LT
 -L- STA 103+66.00 TO 106+25.00 RT
 -L- STA 115+50.00 TO 126+42.00 LT
 -L- STA 136+46.00 TO 138+56.40 RT
 -L- STA 136+97.00 TO 137+81.75 LT
 -L- STA 150+14.00 TO 152+99.03 RT
 -L- STA 153+21.00 TO 153+33.14 LT
 -L- STA 156+54.44 TO 162+51.00 RT
 * -L- STA 171+13.00 TO 176+00.00 RT
 * -L- STA 173+95.00 TO 176+10.00 LT
 * -L- STA 188+95.00 TO 194+25.00 LT

PAVEMENT SCHEDULE	
C1	1.5" S9.5C
C2	3" S9.5C
C3	VAR. DEPTH S9.5C
D1	2.5" I19.0C
D2	3" I19.0C
D3	4" I19.0C
D4	VAR. DEPTH I19.0C
E1	4" B25.0C
E2	5" B25.0C
E3	5.5" B25.0C
E4	VAR. DEPTH B25.0C
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
K	8" SOIL LIME SUBBASE OR 7" SOIL CEMENT SUBBASE
N	GEOTEXTILE FOR STABILIZATION
R1	2'-6" CURB AND GUTTER
R2	MONOLITHIC CONCRETE ISLAND (KEYED IN)
R3	EXPRESSWAY GUTTER
R4	1'-6" CURB AND GUTTER
R5	SHOULDER BERM GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4:
 -L- STA 34+36.27 TO 90+12.25 (BEGIN BRIDGE)
 -L- STA 96+54.28 (END BRIDGE) TO 138+21.44 (BEGIN BRIDGE)
 -L- STA 142+21.57 (END BRIDGE) TO 153+49.98 (BEGIN BRIDGE)
 -L- STA 156+55.00 (END BRIDGE) TO 172+35.00



TYPICAL SECTION NO. 5

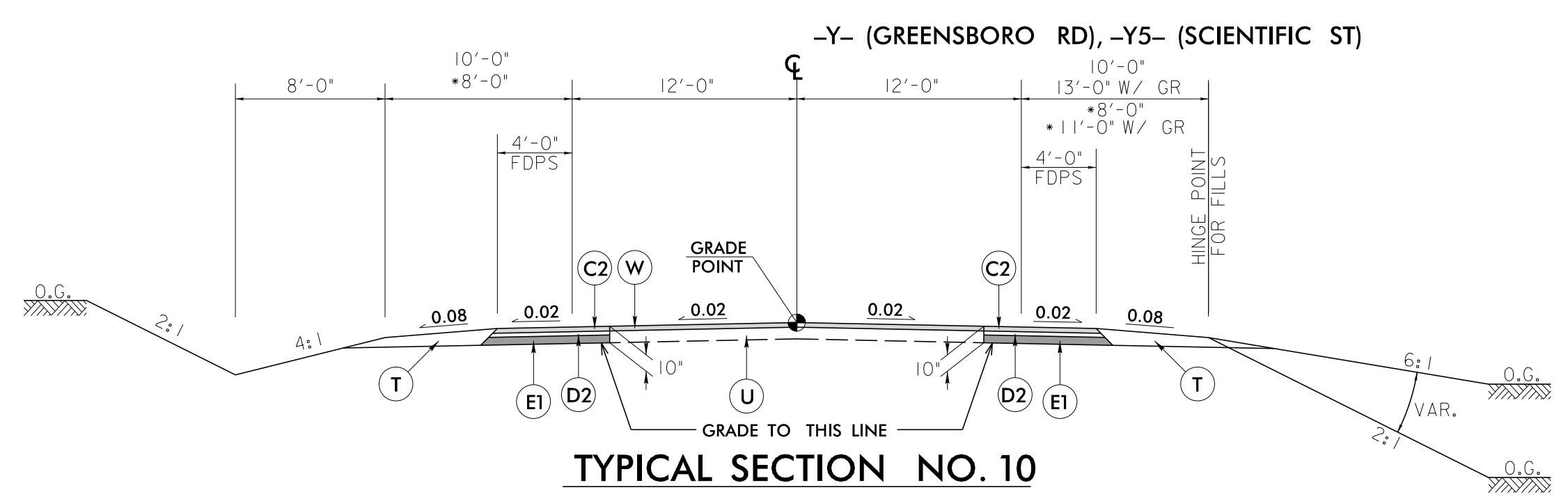
-L RT- STA. 205+50.00 TO -L RT- 208+55.02
 -L LT- STA. 205+50.00 TO -L LT- 208+32.42

USE TYPICAL SECTION NO. 5:
-L- STA 172+35.00 TO 208+98.89

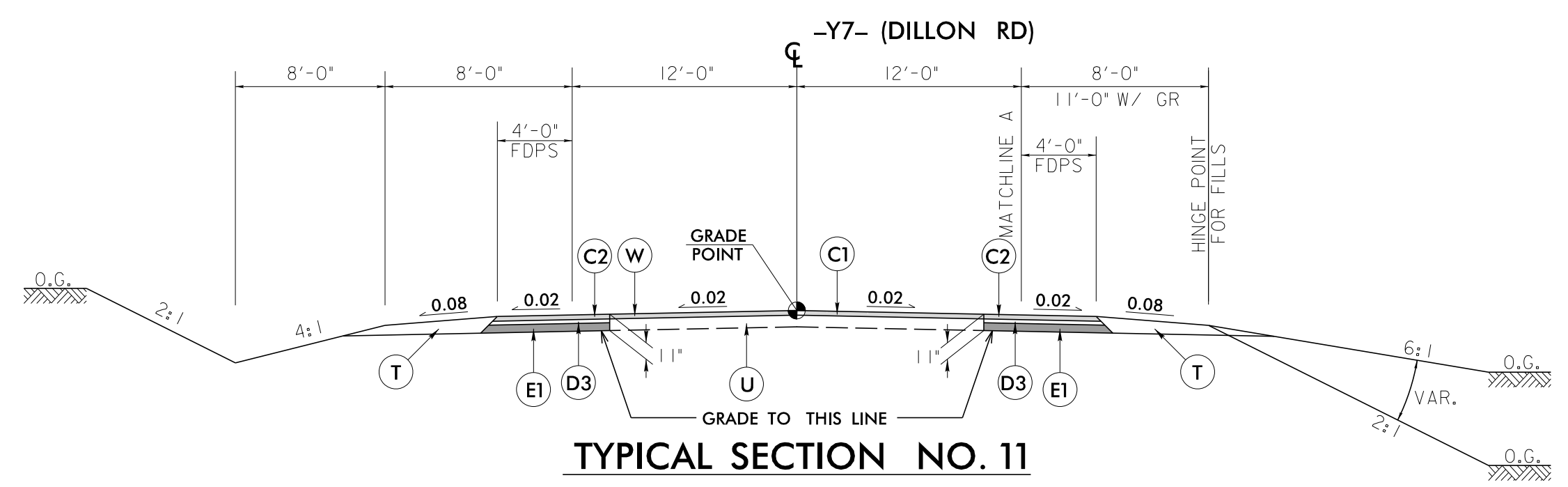
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8/17/99

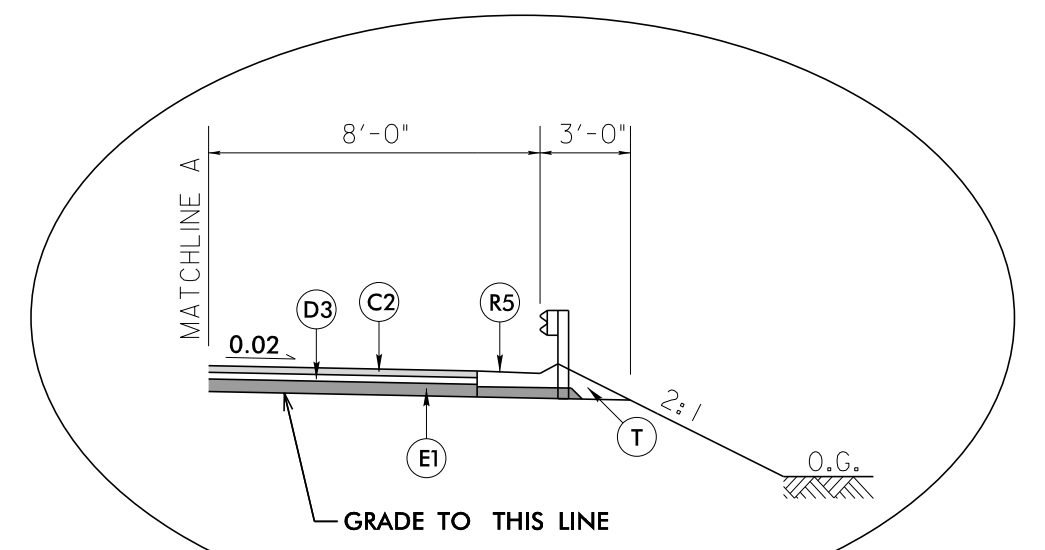
PROJECT REFERENCE NO. U-2412A	SHEET NO. 2A-4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	



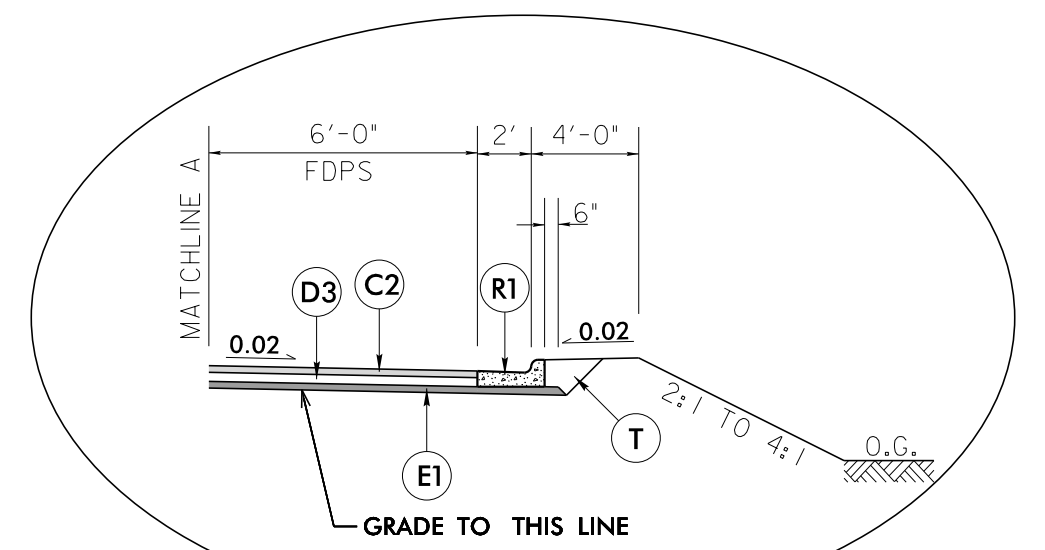
USE TYPICAL SECTION NO. 10:
 -Y- STA 17+00.00 TO 22+00.00
 *-Y5- STA 10+25.00 TO 18+17.62
 *-Y5- STA 19+29.13 TO 26+00.00



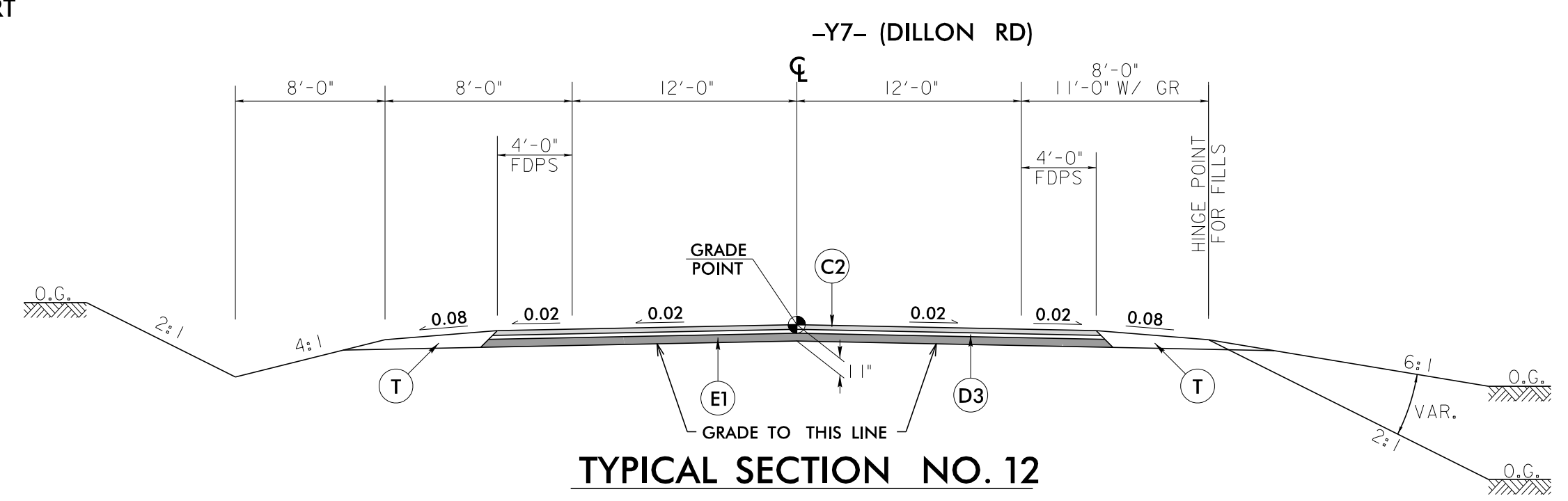
USE TYPICAL SECTION NO. 11:
 Y7- STA 17+00.00 TO 20+58.78



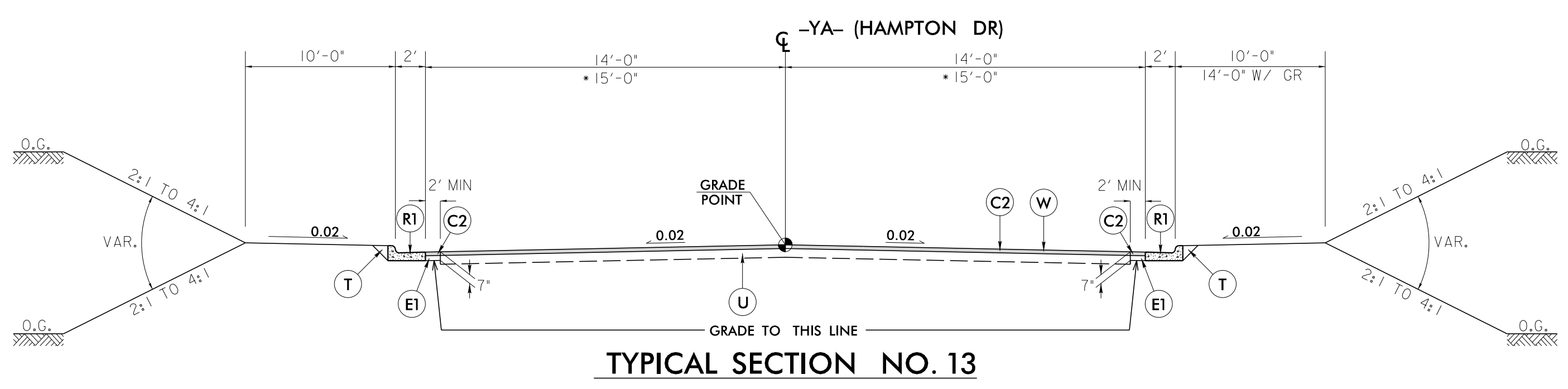
DETAIL H
 USE IN CONJUNCTION WITH TYPICAL SECTION NO. 11
 -Y7- STA 18+25.00 TO 20+00.00 RT



DETAIL G
 USE IN CONJUNCTION WITH TYPICAL SECTION NO. 11
 -Y7- STA 16+65.00 TO 18+25.00 RT



USE TYPICAL SECTION NO. 12:
 -Y7- STA 21+71.88 TO 31+75.00

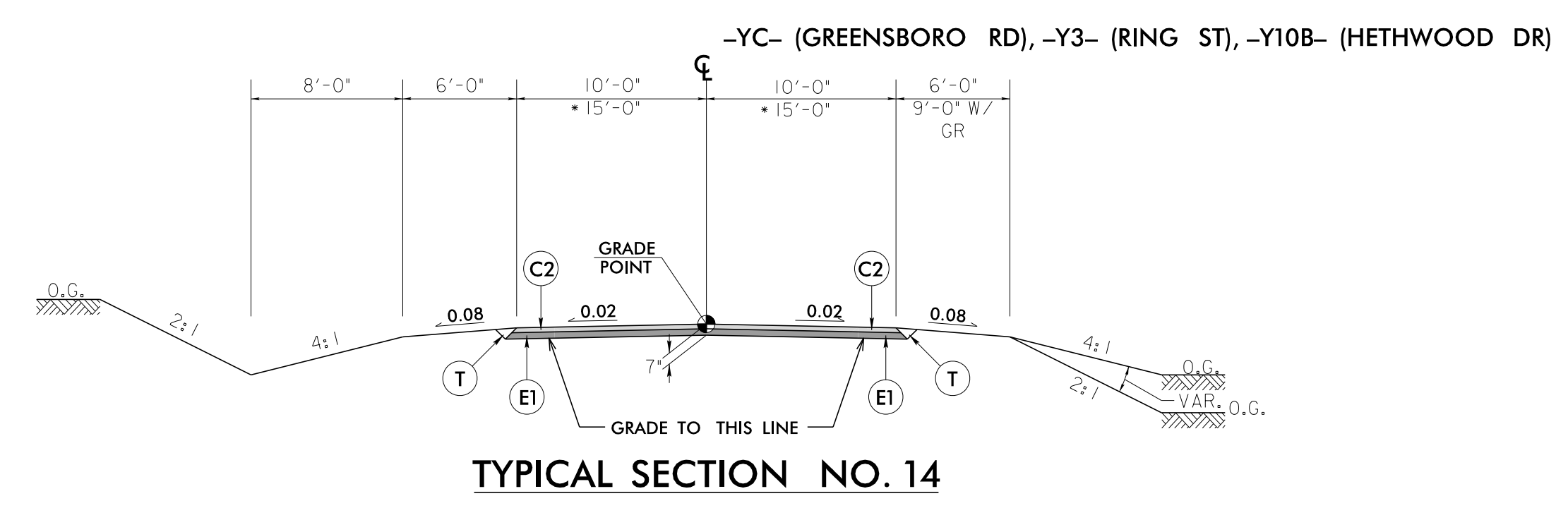


USE TYPICAL SECTION NO. 13:
 -YA- STA 10+50.00 TO 11+82.00
 TRANSITION PAVEMENT WIDTH -YA- STA 11+82.00 TO 11+90.00
 *-YA- STA 11+90.00 TO 12+63.86

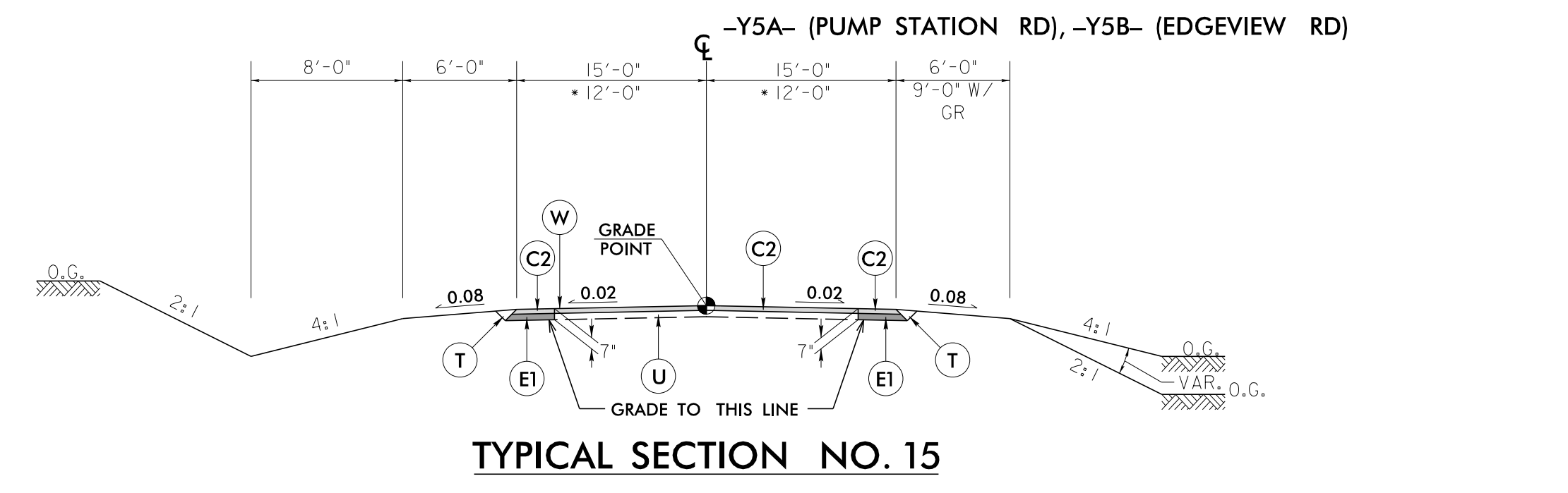
PAVEMENT SCHEDULE	
C1	1.5" S9.5C
C2	3" S9.5C
C3	VAR. DEPTH S9.5C
D1	2.5" I19.0C
D2	3" I19.0C
D3	4" I19.0C
D4	VAR. DEPTH I19.0C
E1	4" B25.0C
E2	5" B25.0C
E3	5.5" B25.0C
E4	VAR. DEPTH B25.0C
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
K	8" SOIL LIME SUBBASE OR 7" SOIL CEMENT SUBBASE
N	GEOTEXTILE FOR STABILIZATION
R1	2'-6" CURB AND GUTTER
R2	MONOLITHIC CONCRETE ISLAND (KEYED IN)
R3	EXPRESSWAY GUTTER
R4	1'-6" CURB AND GUTTER
R5	SHOULDER BERM GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

10/10/59 AM
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 PLOT: 8/17/99

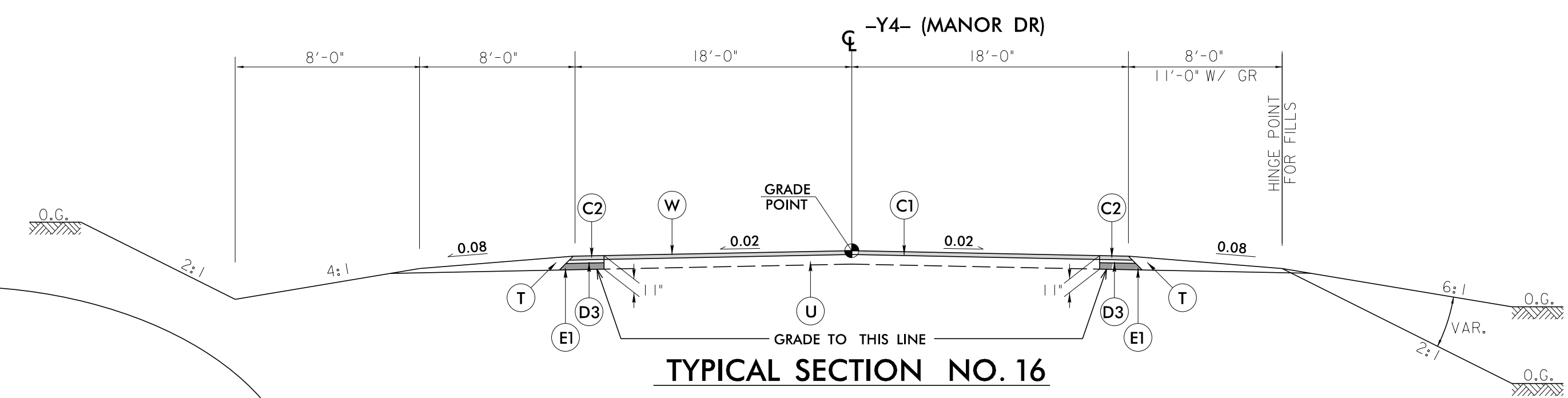
8/17/99



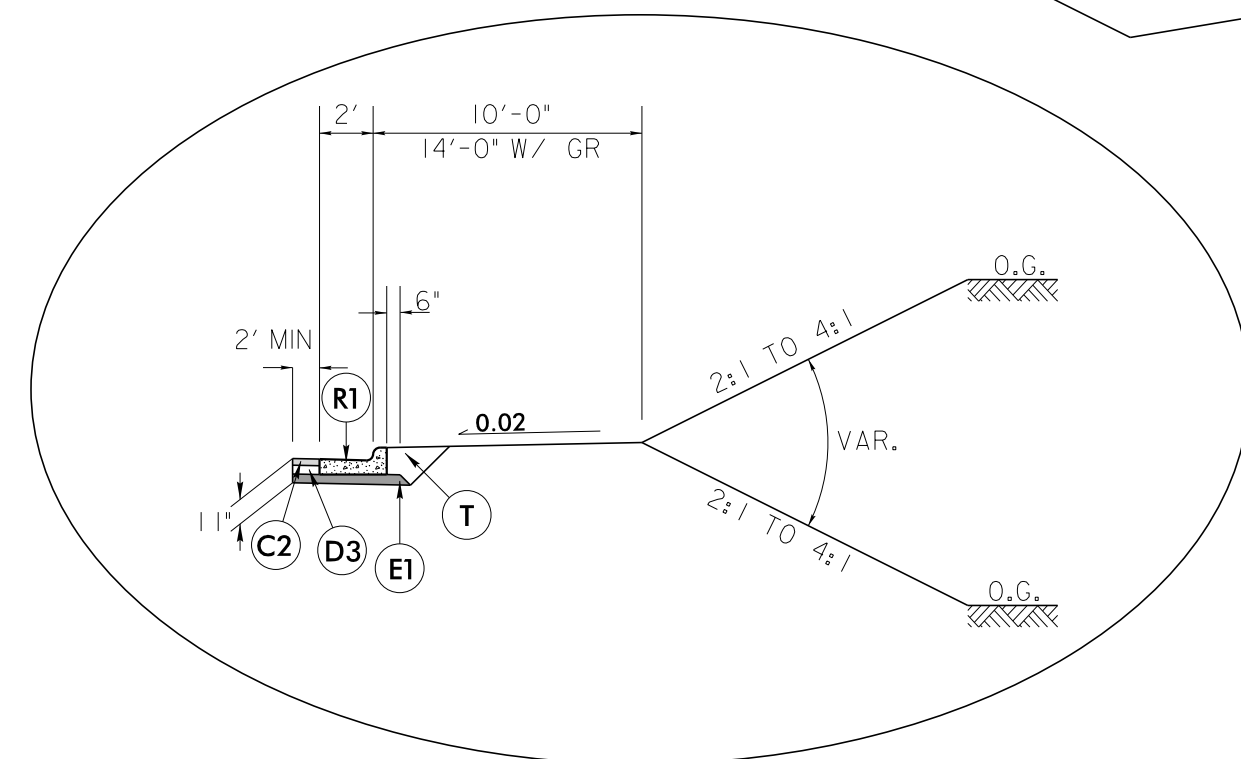
USE TYPICAL SECTION NO. 14:
 *-YC- STA 13+00.00 TO 16+10.30
 -Y3- STA 16+09.10 TO 19+00.00
 -Y10B- STA 10+31.77 TO 12+50.00



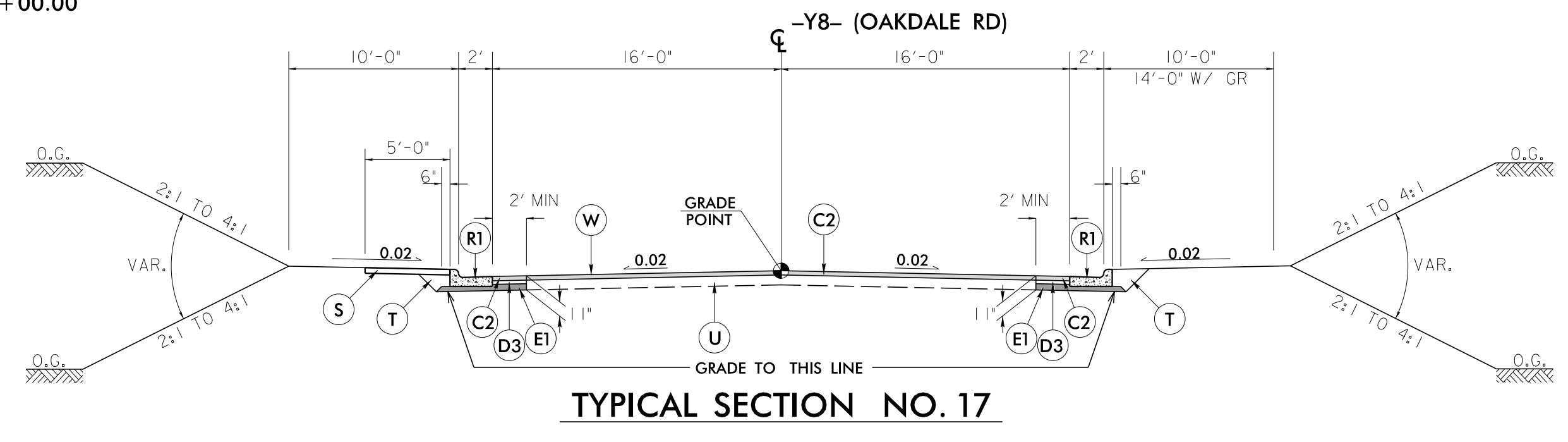
USE TYPICAL SECTION NO. 15:
 -Y5A- STA 10+18.02 TO 11+50.00
 *-Y5B- STA 10+00.00 TO 12+82.00



USE TYPICAL SECTION NO. 16:
 -Y4- STA 10+10.00 TO 24+00.00



USE IN CONJUNCTION WITH TYPICAL SECTION NO. 16
 -Y4- STA 12+07.88 RT TO 16+94.95 RT
 -Y4- STA 13+10.00 LT TO 16+94.95 LT
 -Y4- STA 18+05.07 TO 24+00.00



USE TYPICAL SECTION NO. 17:
 -Y8- STA 12+25.00 TO 13+87.65 (BEG BRIDGE)
 -Y8- STA 16+00.15 (END BRIDGE) TO 17+50.00

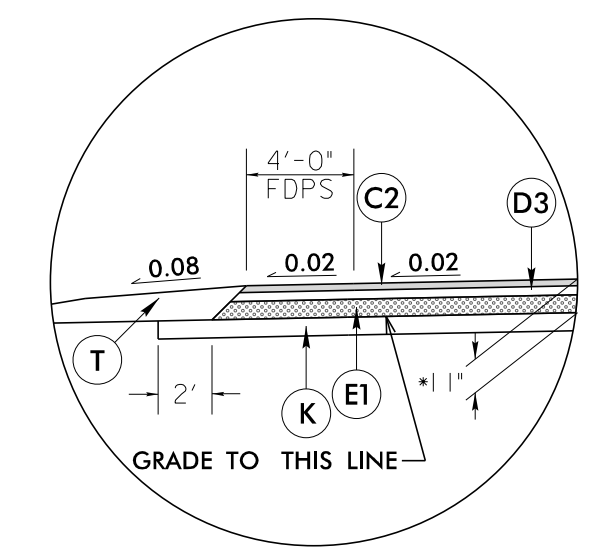
PROJECT REFERENCE NO. U-2412A	SHEET NO. 2A-5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER MOTT MACDONALD	PAVEMENT DESIGN ENGINEER MOTT MACDONALD
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of: MOTT MACDONALD PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/americas LICENSE NO. F-0669	
SUNGATE DESIGN GROUP, P.A. 905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL: (919) 896-2441 ENG FIRM LICENSE NO. C-890	

PAVEMENT SCHEDULE	
C1	1.5" S9.5C
C2	3" S9.5C
C3	VAR. DEPTH S9.5C
D1	2.5" I19.0C
D2	3" I19.0C
D3	4" I19.0C
D4	VAR. DEPTH I19.0C
E1	4" B25.0C
E2	5" B25.0C
E3	5.5" B25.0C
E4	VAR. DEPTH B25.0C
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
K	8" SOIL LIME SUBBASE OR 7" SOIL CEMENT SUBBASE
N	GEOTEXTILE FOR STABILIZATION
R1	2'-6" CURB AND GUTTER
R2	MONOLITHIC CONCRETE ISLAND (KEYED IN)
R3	EXPRESSWAY GUTTER
R4	1'-6" CURB AND GUTTER
R5	SHOULDER BERM GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

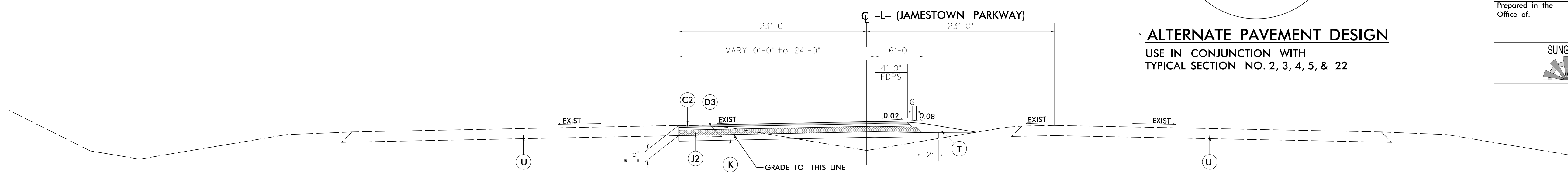
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8/17/99

PROJECT REFERENCE NO. U-2412A	SHEET NO. 2A-7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	MOTT MACDONALD
	PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/americas LICENSE NO. F-0669
SUNGATE DESIGN GROUP, P.A. 905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL: (919) 886-2441 ENG FIRM LICENSE NO. C-890	

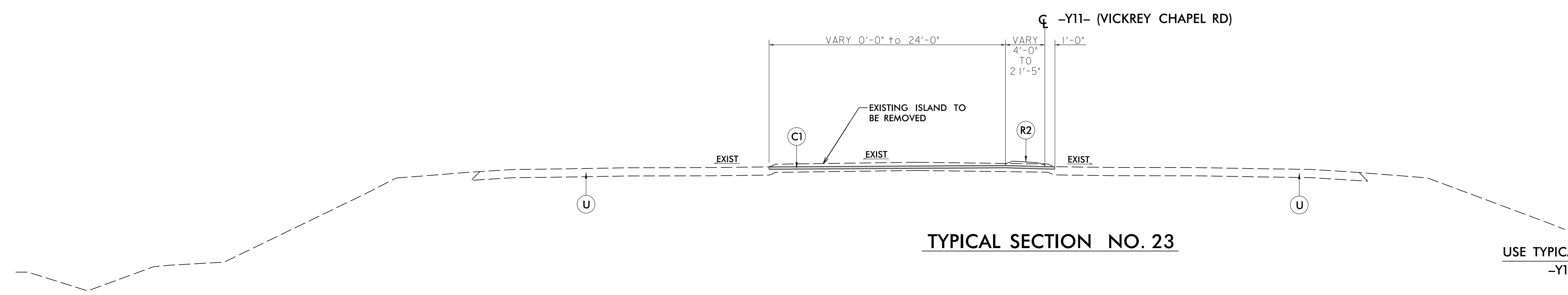


ALTERNATE PAVEMENT DESIGN
USE IN CONJUNCTION WITH
TYPICAL SECTION NO. 2, 3, 4, 5, & 22



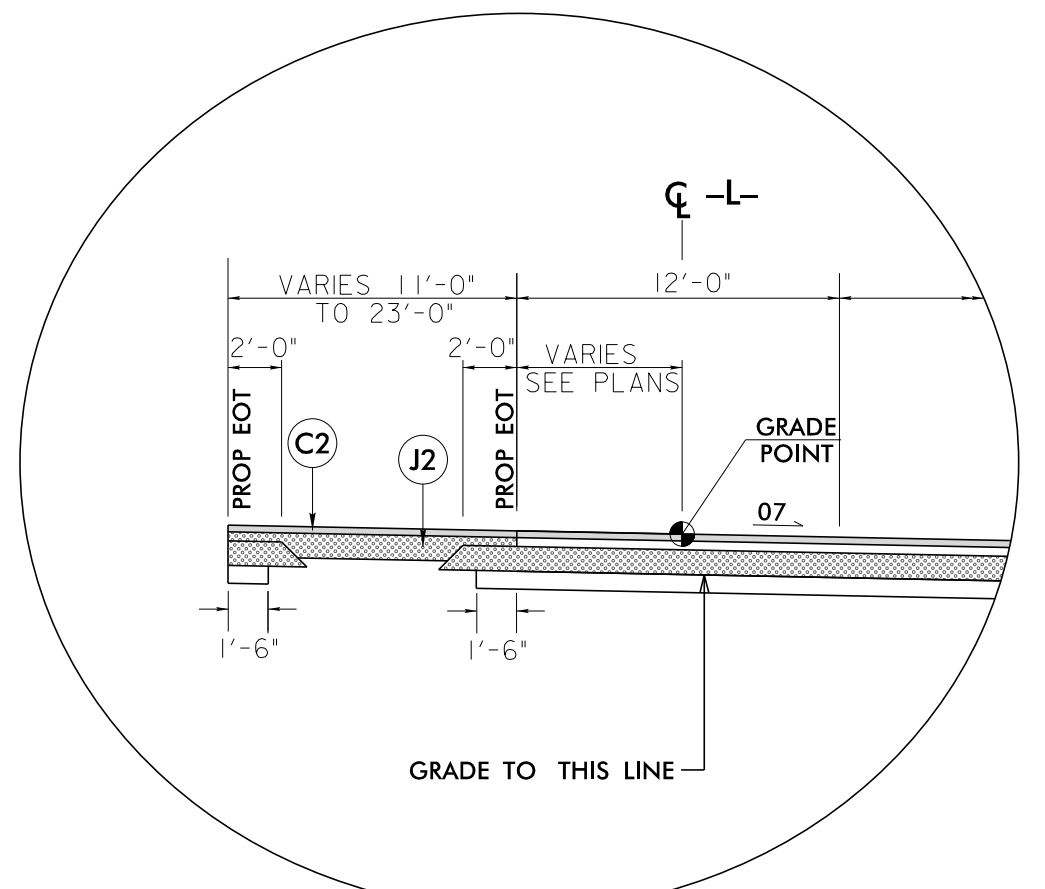
TYPICAL SECTION NO. 22

USE TYPICAL SECTION NO. 22:
-L- STA. 209+80.00 TO -L- 214+47.00



TYPICAL SECTION NO. 23

USE TYPICAL SECTION NO. 23:
-Y11- STA. 19+30.00 TO -L- 23+20.00



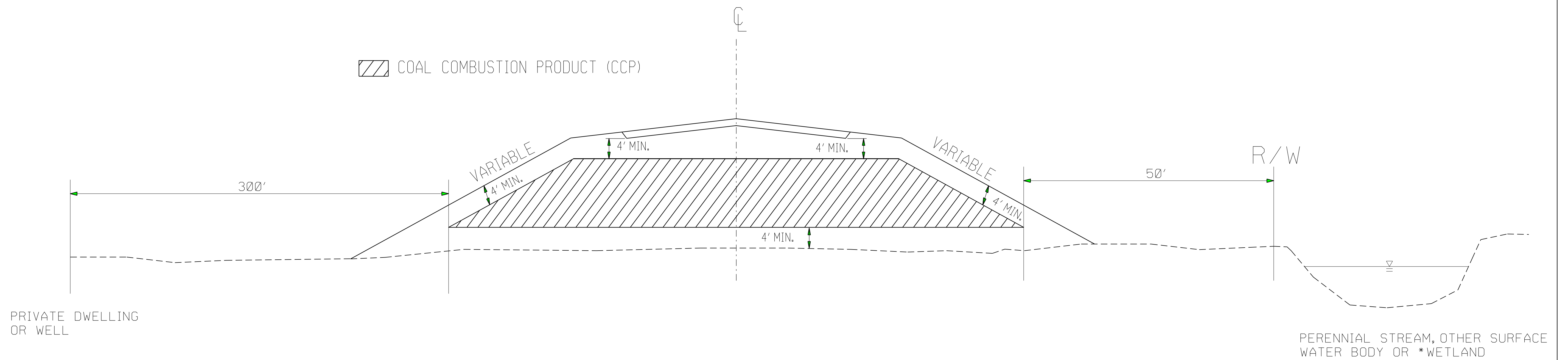
DETAIL J

TEMPORARY PAVEMENT: USE IN CONJUNCTION WITH TYPICAL SECTION NO. 3
-L- STA 19+40.00 TO 19+80.00 (441 SF)
-L- STA 24+36.00 TO 25+19.00 (1654 SF)

PAVEMENT SCHEDULE	
C1	1.5" S9.5C
C2	3" S9.5C
C3	VAR. DEPTH S9.5C
D1	2.5" I19.0C
D2	3" I19.0C
D3	4" I19.0C
D4	VAR. DEPTH I19.0C
E1	4" B25.0C
E2	5" B25.0C
E3	5.5" B25.0C
E4	VAR. DEPTH B25.0C
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
K	8" SOIL LIME SUBBASE OR 7" SOIL CEMENT SUBBASE
N	GEOTEXTILE FOR STABILIZATION
R1	2'-6" CURB AND GUTTER
R2	MONOLITHIC CONCRETE ISLAND (KEYED IN)
R3	EXPRESSWAY GUTTER
R4	1'-6" CURB AND GUTTER
R5	SHOULDER BERM GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

8/17/99 AM
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PL156835

COAL COMBUSTION PRODUCT PLACEMENT



PRIVATE DWELLING OR WELL

PERENNIAL STREAM, OTHER SURFACE WATER BODY OR *WETLAND

*(OBTAIN PERMISSION FROM ARMY CORPS OF ENGINEERS)

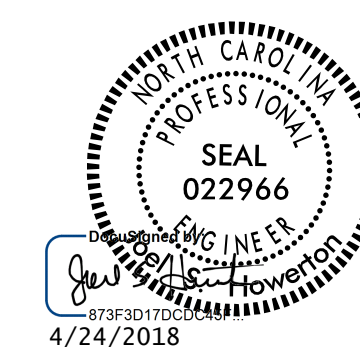
PLACE CCP IN HATCHED AREA IN ACCORDANCE WITH THE PROJECT SPECIAL PROVISIONS

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

PLACE AT LOCATIONS AS APPROVED BY THE ENGINEER

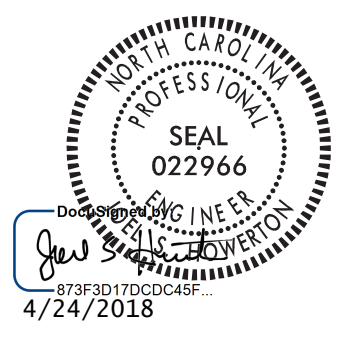
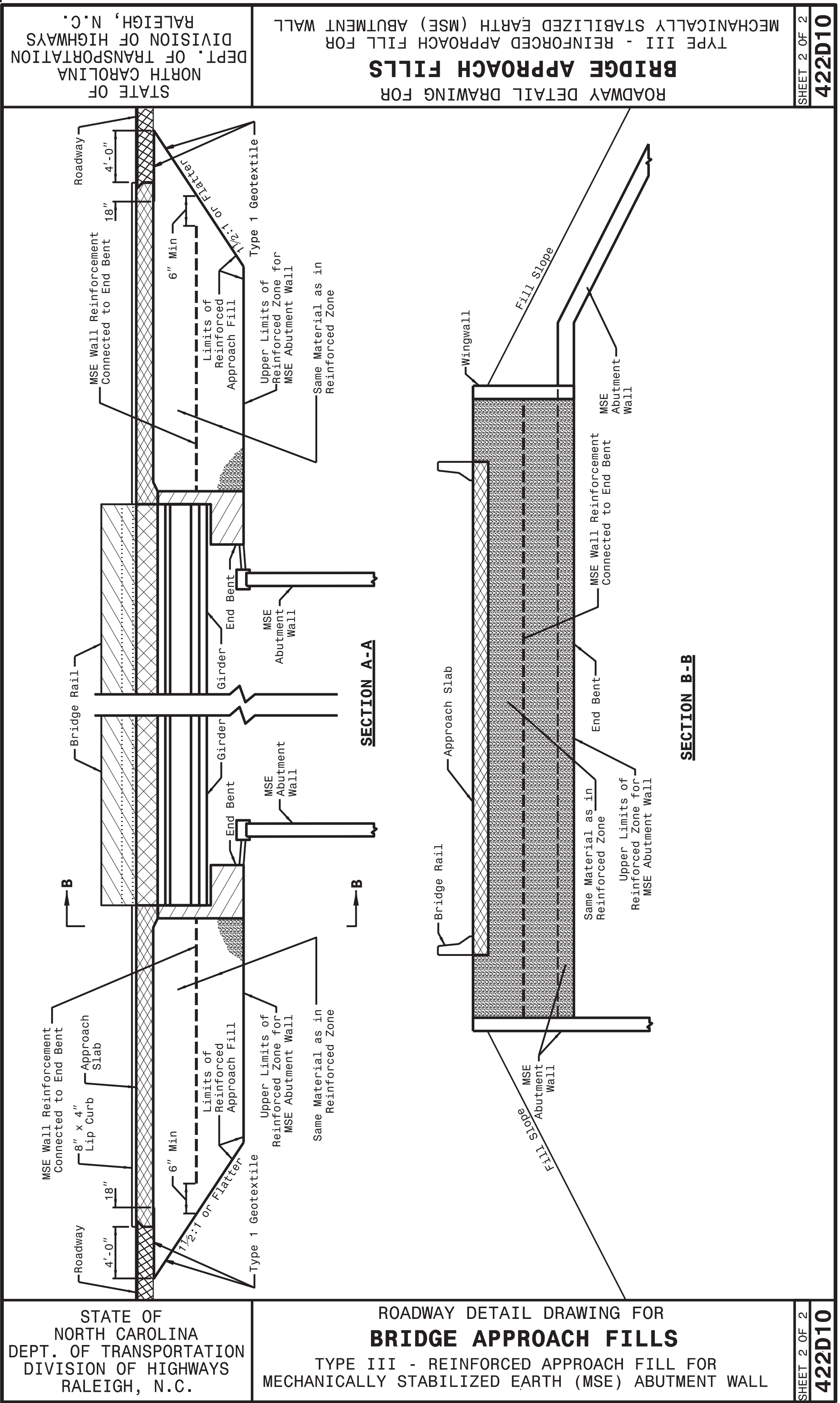
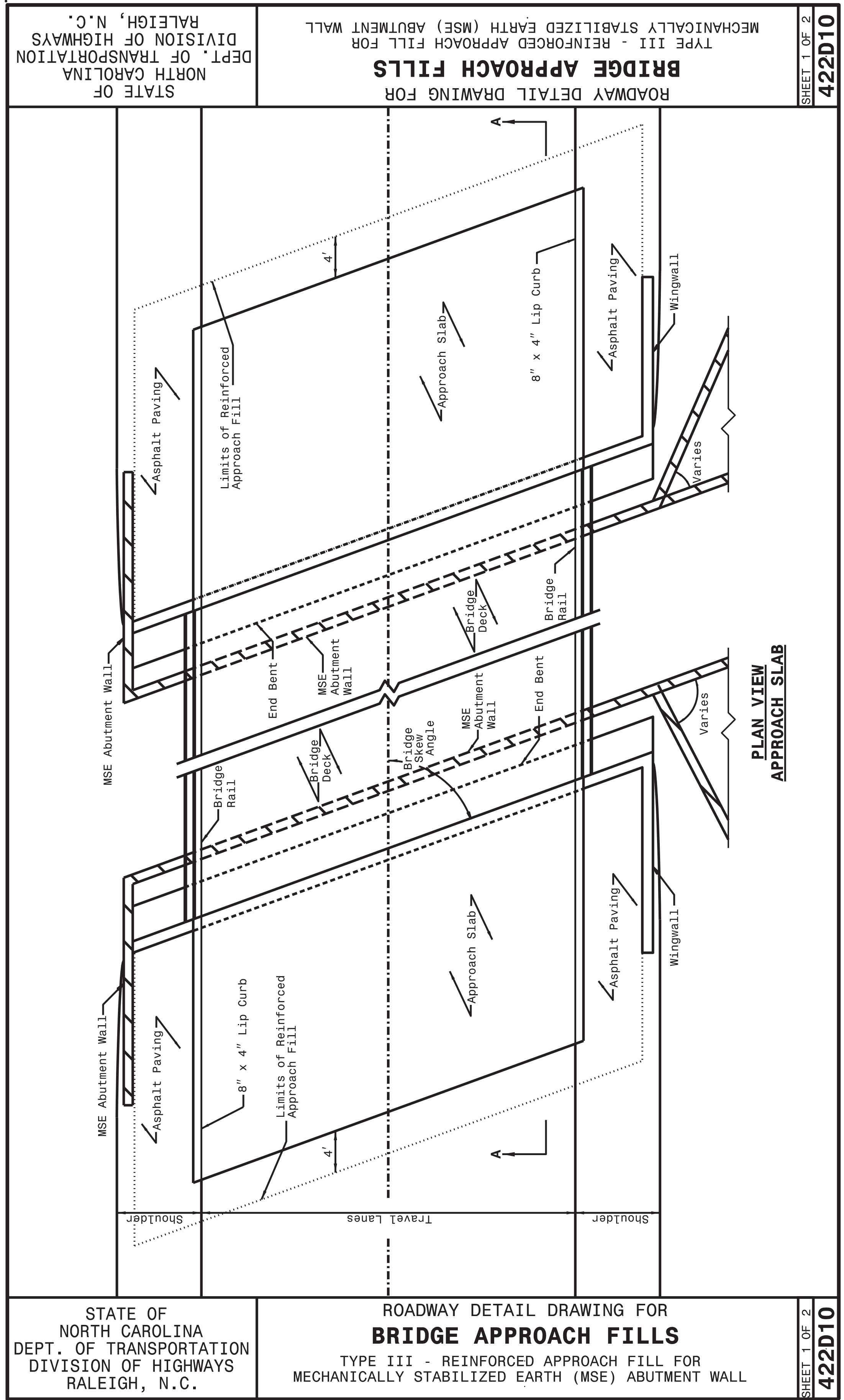
PLACE SOIL BORROW MATERIAL ON THE OUTSIDE OF CCP AS EACH LIFT OF CCP IS PLACED

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	

07-SEP-2017 08:21 S:\Contracts\Special Details\Hoverton\Coal Combustion Product Detail.dgn Jhoverton AT USD-232595



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

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

**TYPE III
REINFORCED
APPROACH FILLS**

ORIGINAL BY: K. A. KEMPF DATE: JULY 2017
 MODIFIED BY: DATE: _____
 CHECKED BY: DATE: _____
 FILE SPEC.: 2018 standard drawings\division 422d10.dgn

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

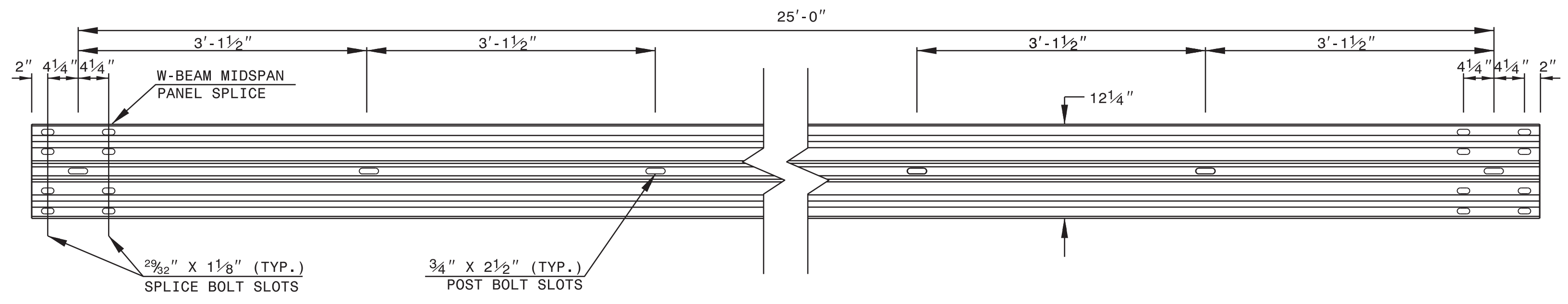
ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

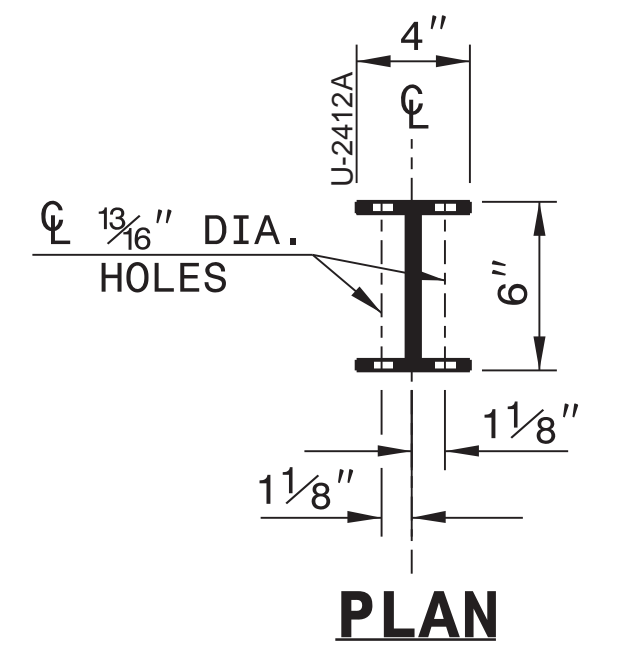
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

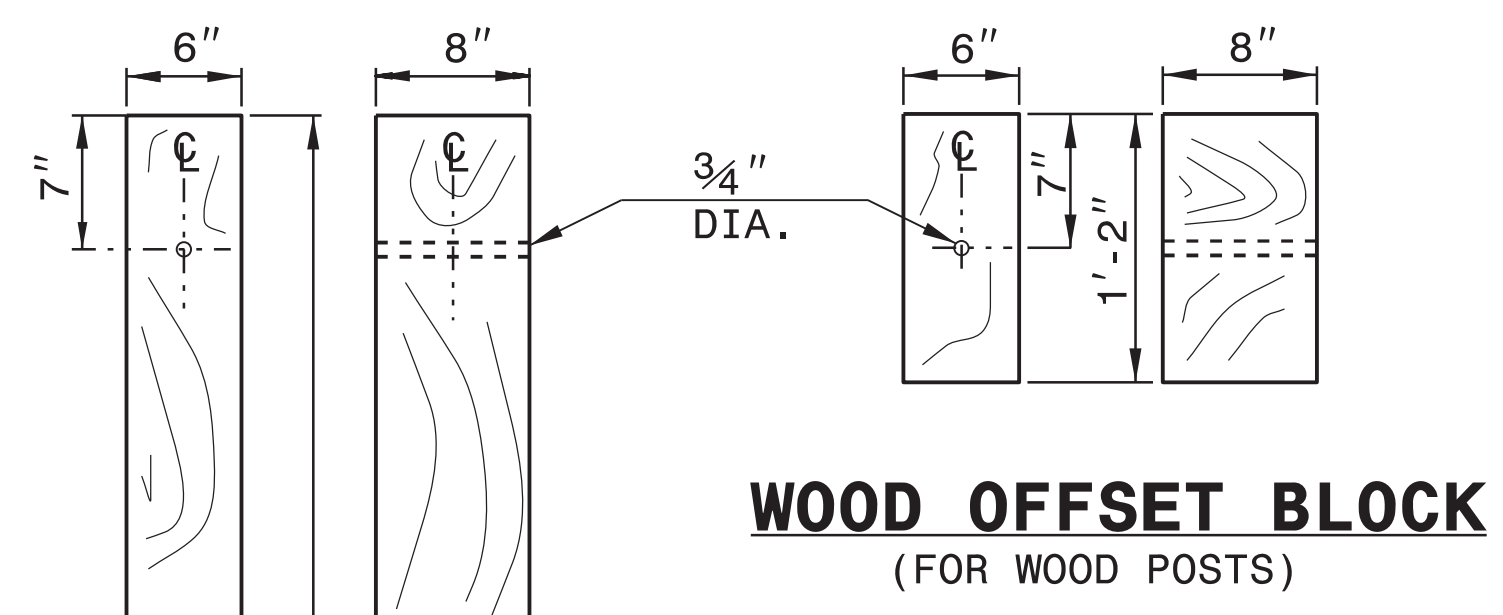
SHEET 6 OF 8
862D02



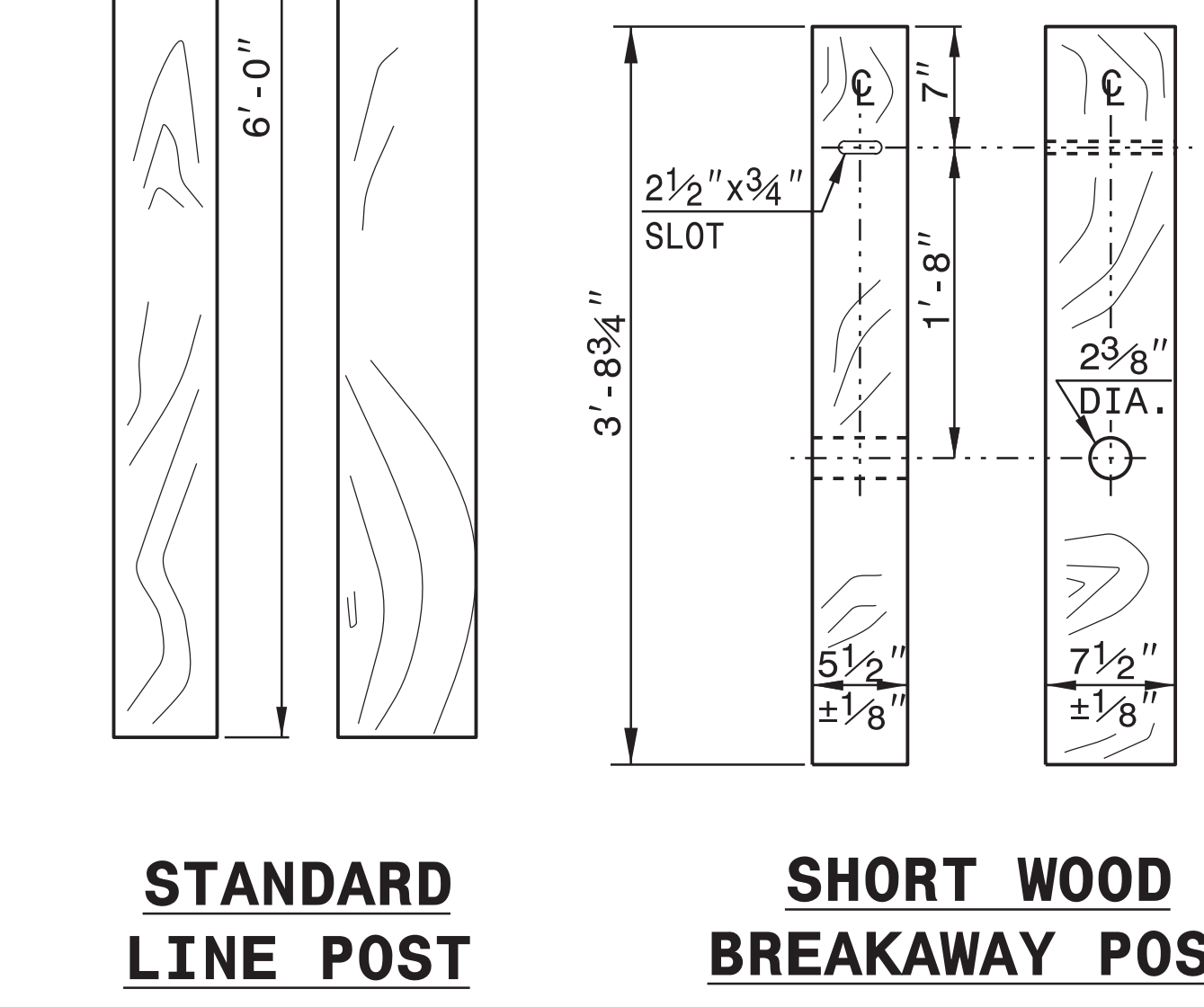
STANDARD W-BEAM GUARDRAIL



PLAN

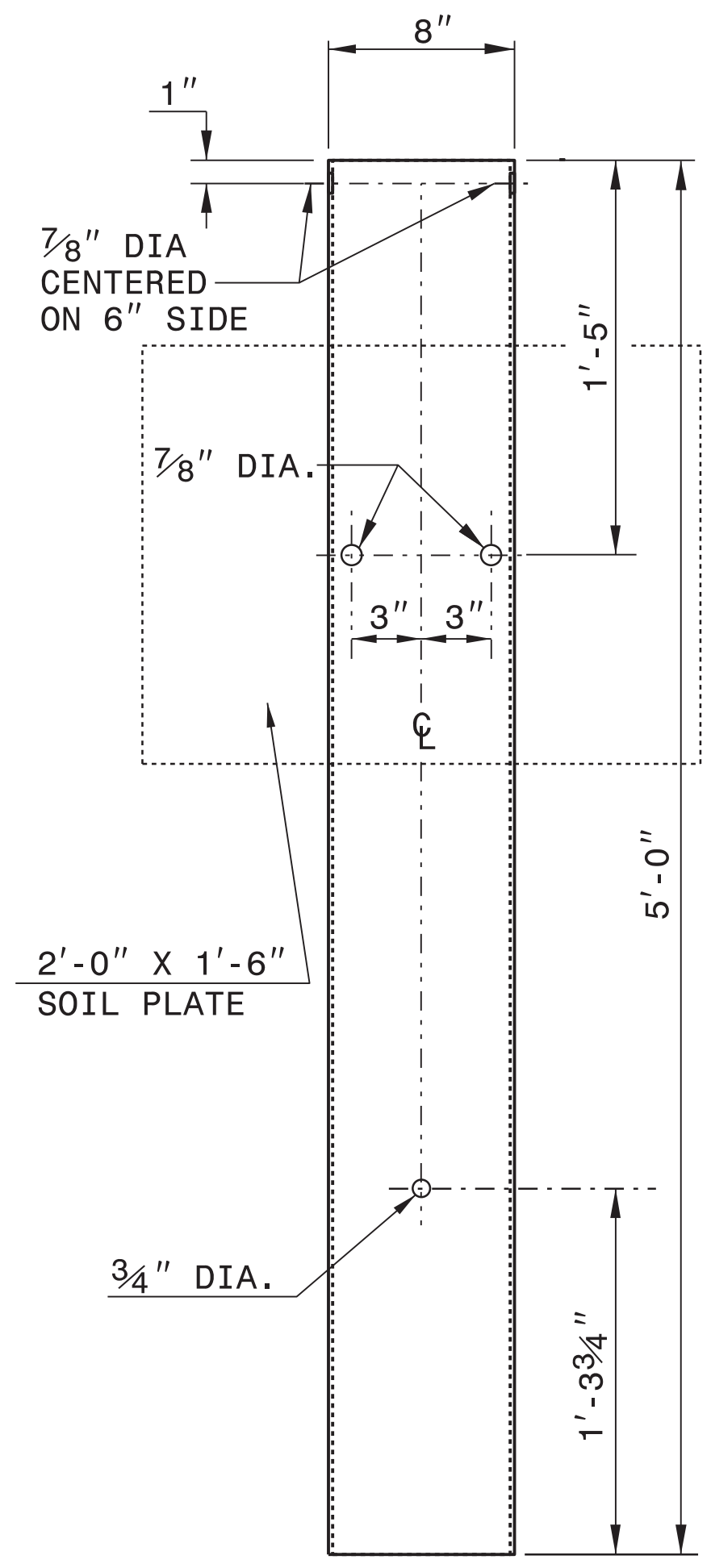


**WOOD OFFSET BLOCK
(FOR WOOD POSTS)**

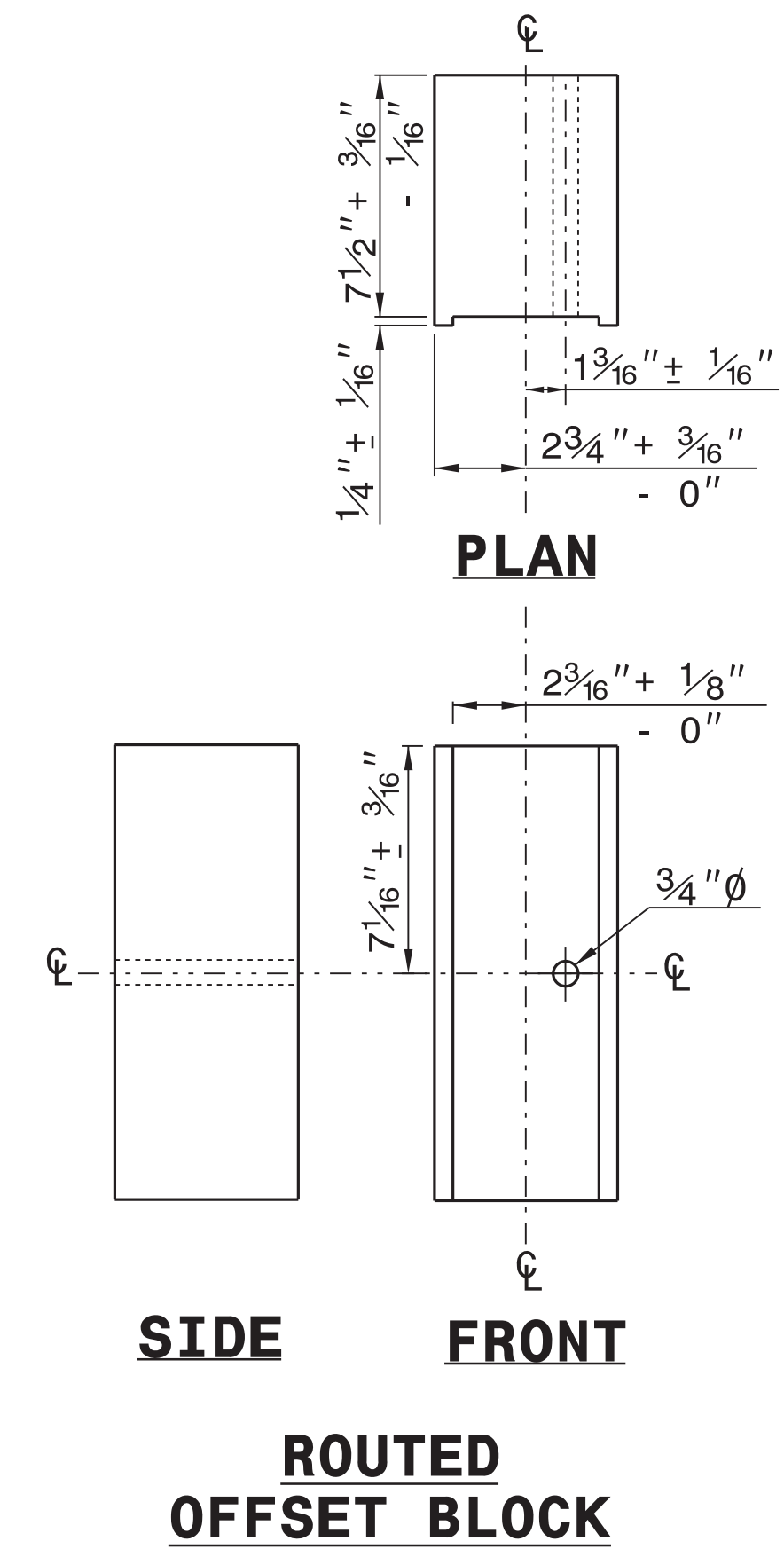


**STANDARD
LINE POST**

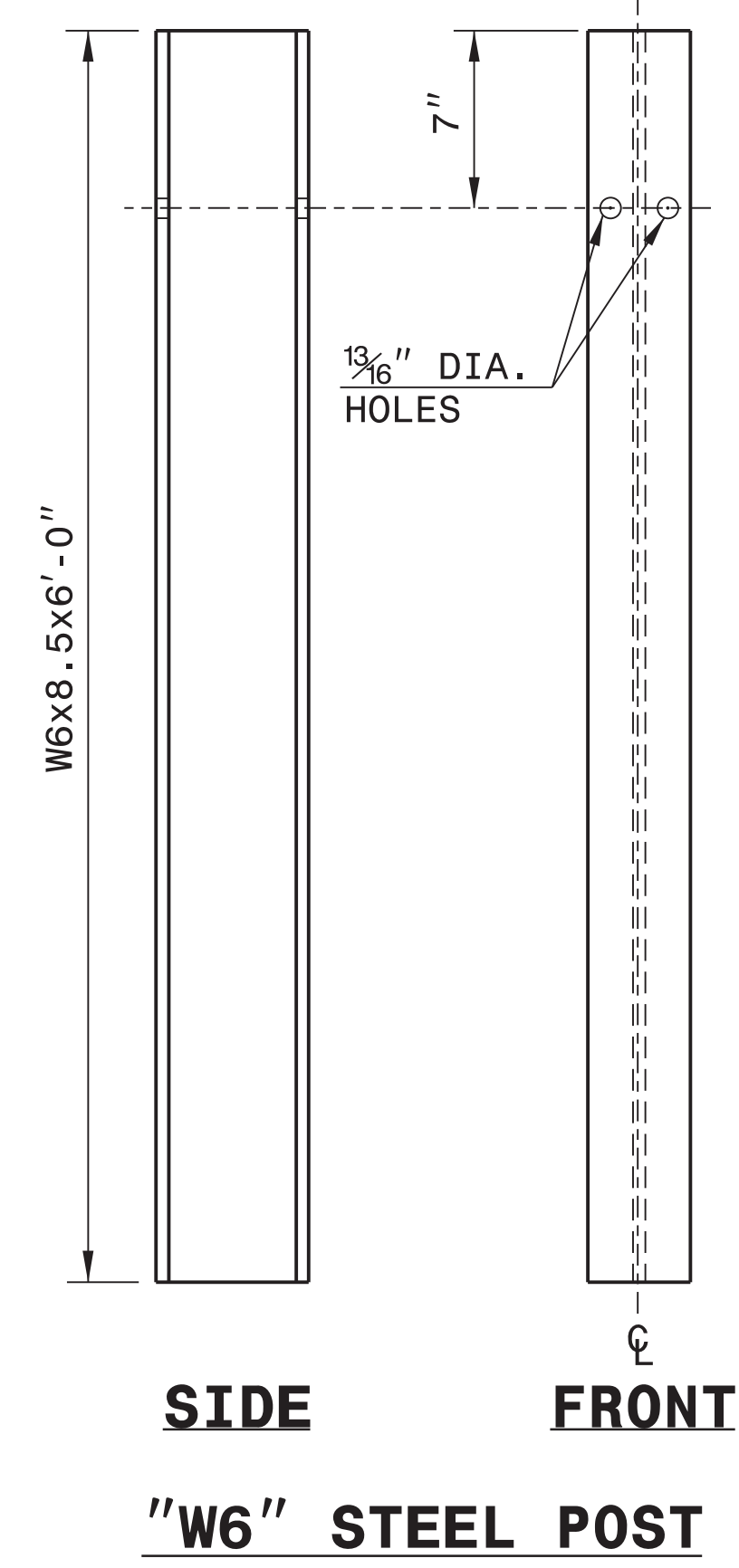
**SHORT WOOD
BREAKAWAY POST**



**STEEL TUBE
TS 6"x8"x0.1875"**

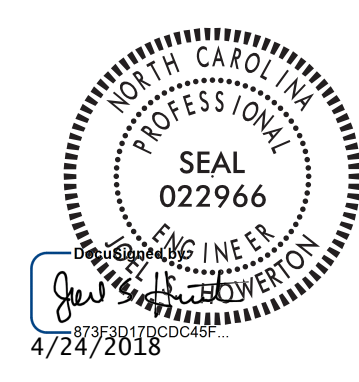


**ROUTED
OFFSET BLOCK**



"W6" STEEL POST

SYSTEM PARTS

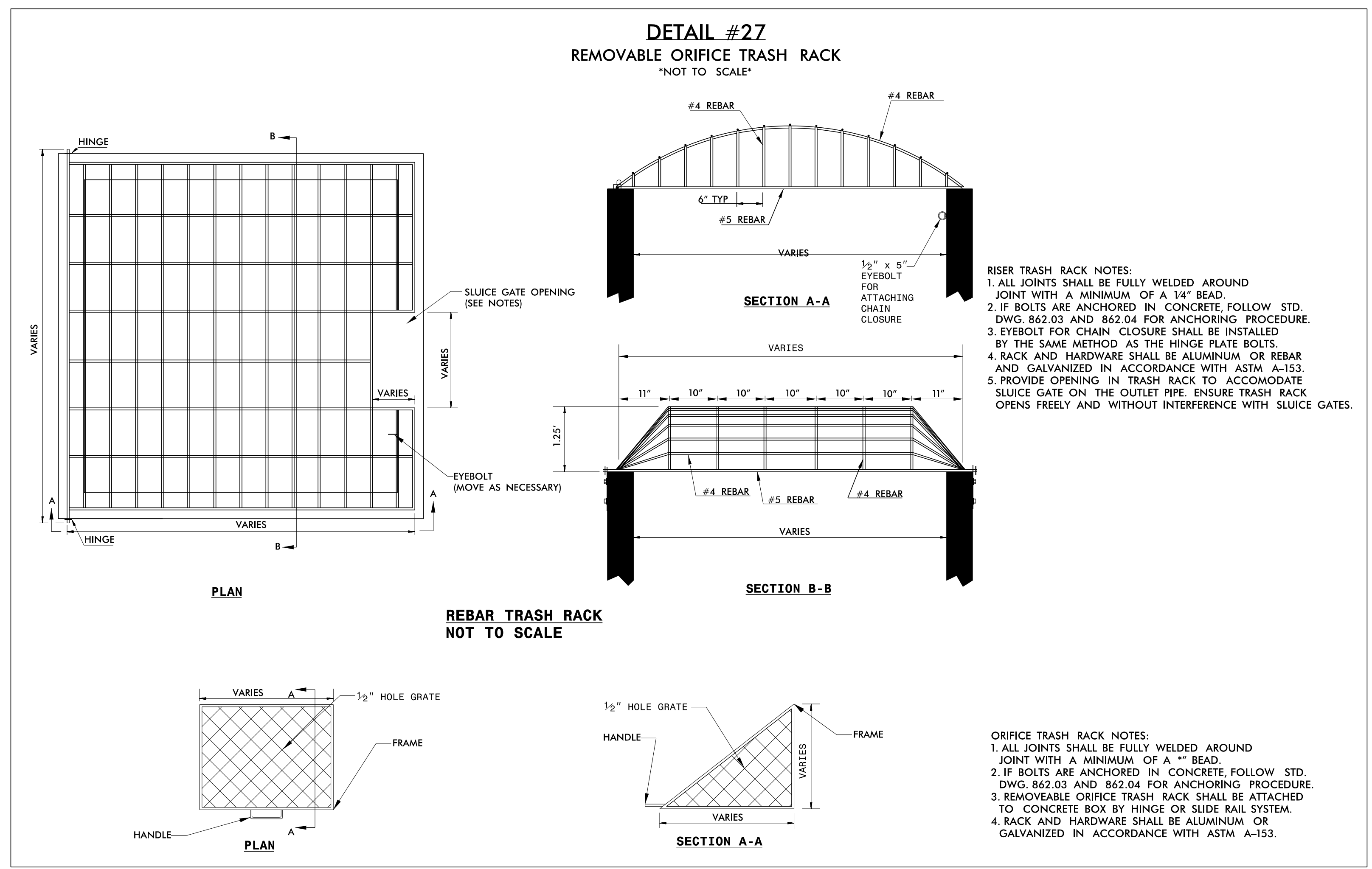



**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

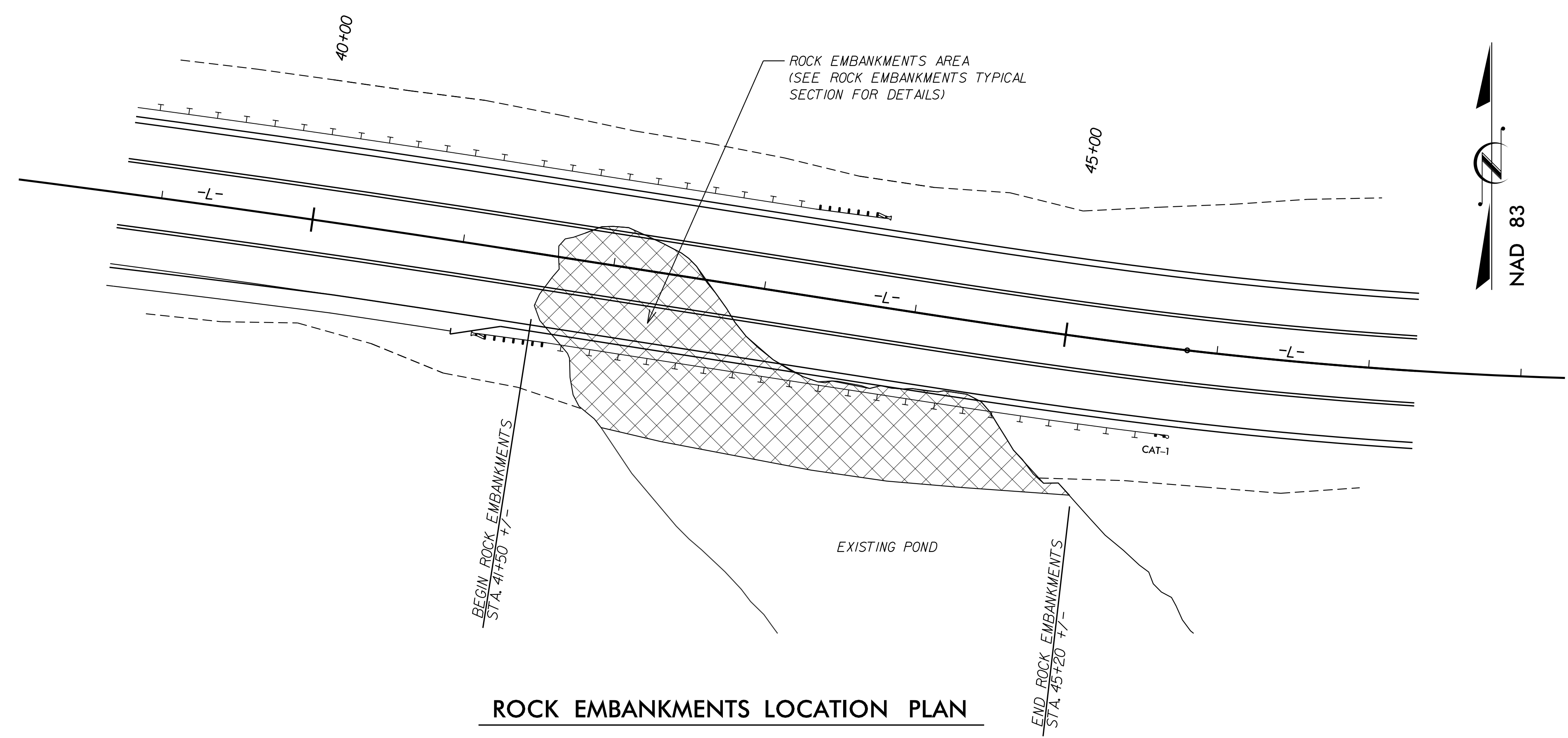
SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON DATE: 3-7-2018
 MODIFIED BY: DATE: _____
 CHECKED BY: DATE: _____
 FILE SPEC.: _____

PROJECT REFERENCE NO. <i>U-2412A</i>	SHEET NO. <i>2D-3</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	
	PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/americas LICENSE NO. F-0669
905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL: (919) 896-2441 ENG FIRM LICENSE NO. C-890	

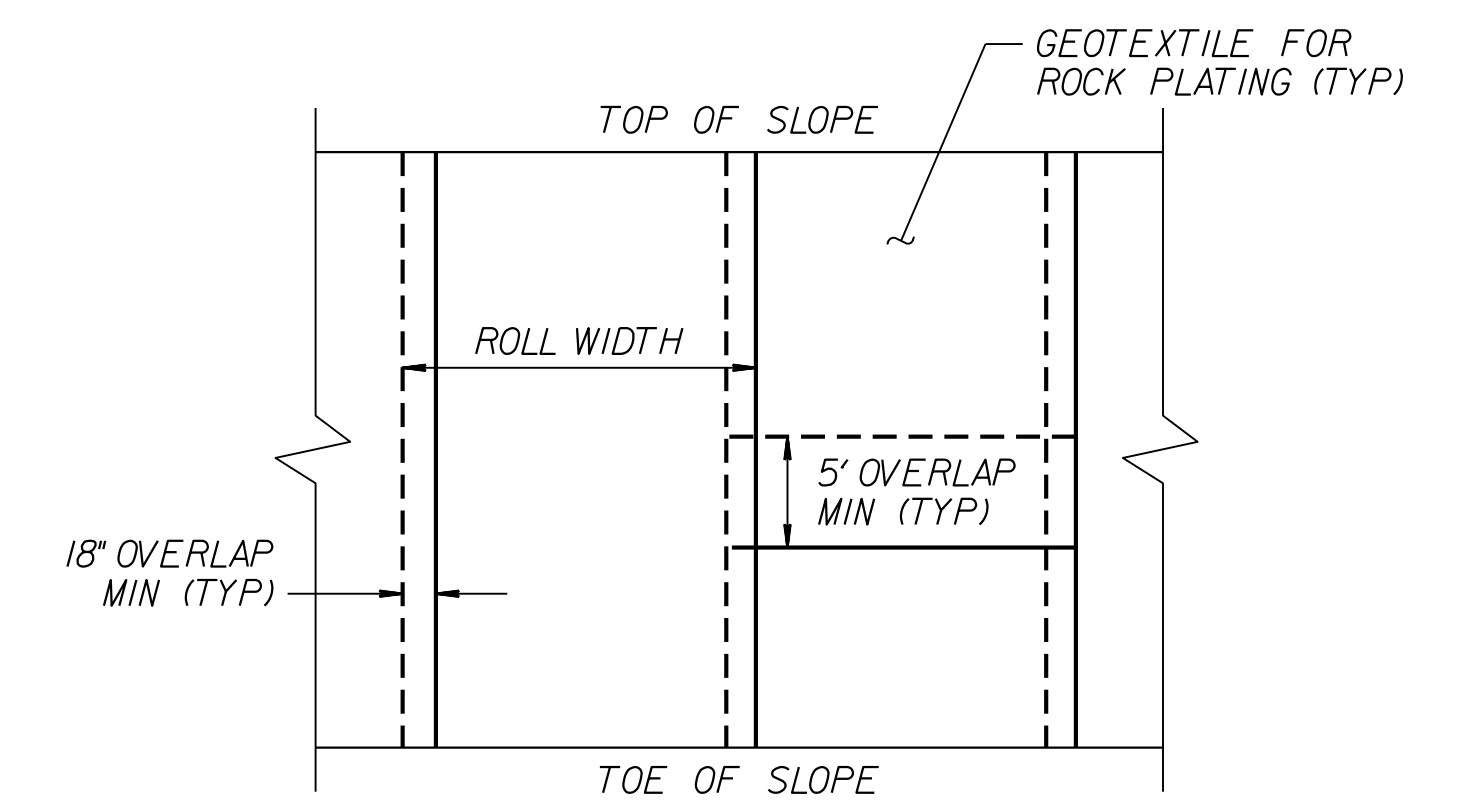


PROJECT REFERENCE NO. U-2412A	SHEET NO. 2G-1
GEOTECHNICAL ENGINEER  DocuSigned by: Thein Tun Zan 10/31/2017 SIGNATURE DATE	ENGINEER SIGNATURE DATE
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



ROCK EMBANKMENTS LOCATION PLAN

NOT TO SCALE



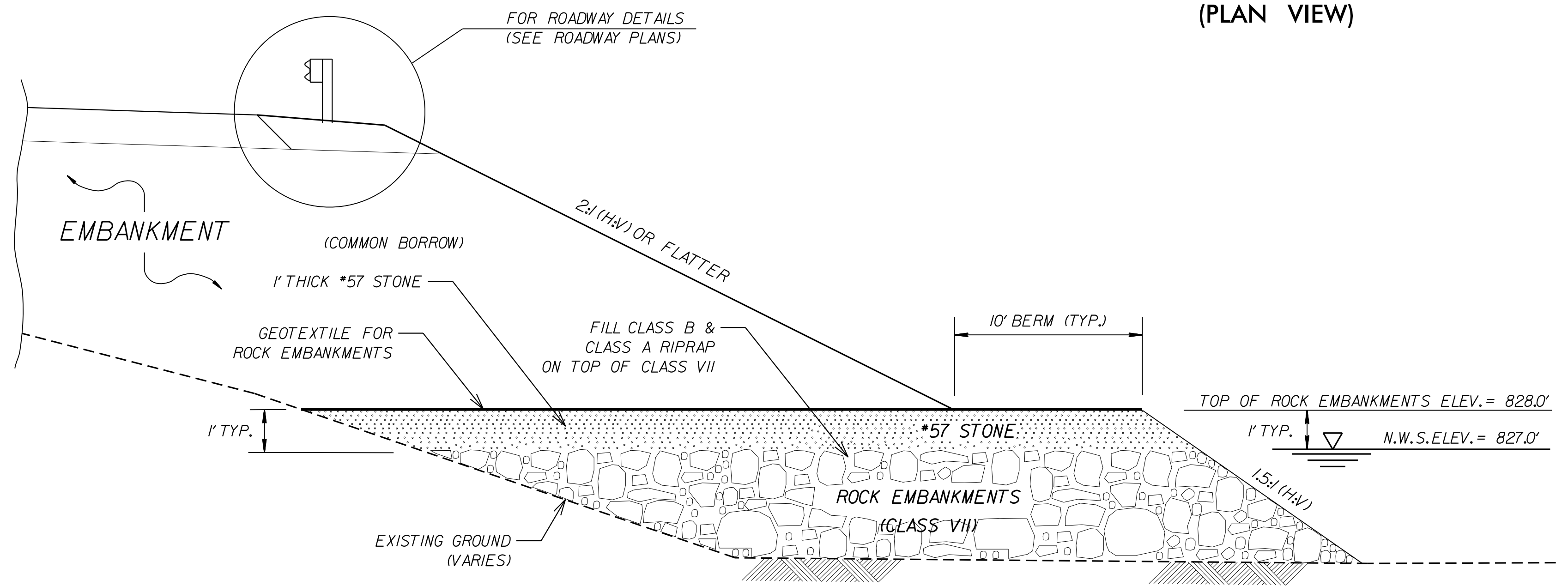
**GEOTEXTILE OVERLAP DETAIL
(PLAN VIEW)**

ROCK EMBANKMENTS

FOR ROCK EMBANKMENTS, SEE ROCK EMBANKMENTS SPECIAL PROVISION.
 USE ROCK EMBANKMENTS AT FOLLOWING LOCATIONS:

-LINE-	APPROX. BEGINNING STATION	APPROX. ENDING STATION	LOCATION LT/RT
-L-	41+50 +/- -L-	45+20 +/- -L-	RIGHT

CONSTRUCT ROCK EMBANKMENTS TO THE ELEVATION SHOWN IN THE ROCK EMBANKMENTS TYPICAL SECTION AND ACCORDING TO THE ROCK EMBANKMENTS SPECIAL PROVISION.
 FILL VOIDS IN THE TOP OF ROCK EMBANKMENTS WITH CLASS B AND CLASS A RIP RAP.
 PLACE #57 STONE AS SHOWN IN THE ROCK EMBANKMENTS TYPICAL SECTION.
 INSTALL GEOTEXTILE ON TOP OF #57 STONE IN ACCORDANCE WITH THE ARTICLE 270-3 OF THE STANDARD SPECIFICATIONS.

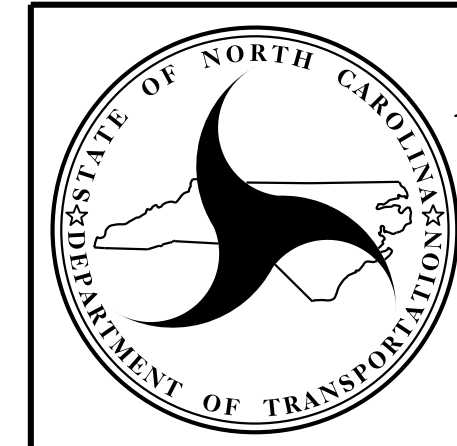


ROCK EMBANKMENTS TYPICAL SECTION

NOT TO SCALE

ESTIMATED MATERIAL QUANTITIES FOR ROCK EMBANKMENTS	
ROCK EMBANKMENTS (SELECT MATERIAL, CLASS VII)	= 5,420 TONS
RIP RAP CLASS A	= 680 TONS
RIP RAP CLASS B	= 680 TONS
#57 STONE (SELECT MATERIAL, CLASS VII)	= 1,560 TONS
GEOTEXTILE FOR ROCK EMBANKMENTS	= 2,860 SY

PREPARED BY: THEIN T. ZAN	DATE: 10-2017
REVIEWED BY: JAMES R. BATTS	DATE: 10-2017



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

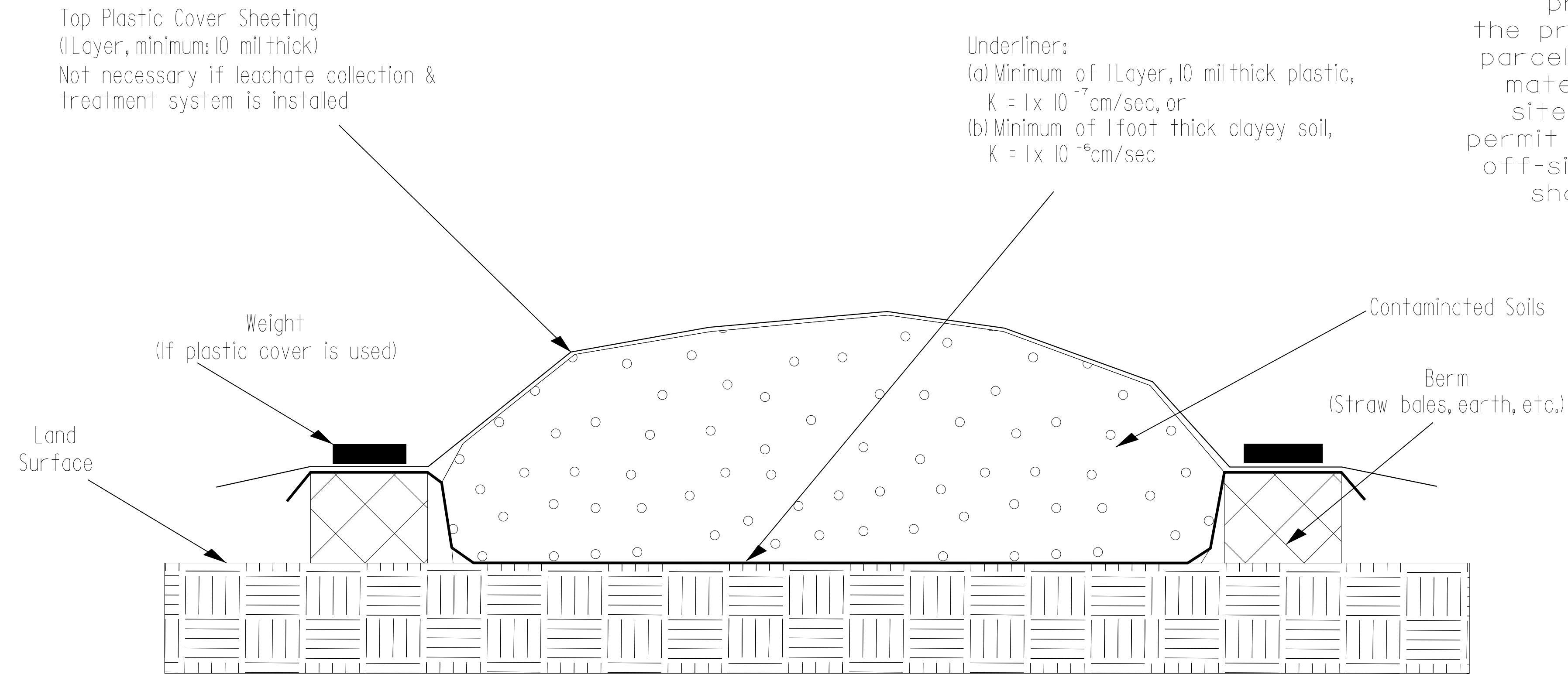
**GEOTECHNICAL
ENGINEERING UNIT**

ROCK EMBANKMENTS DETAILS

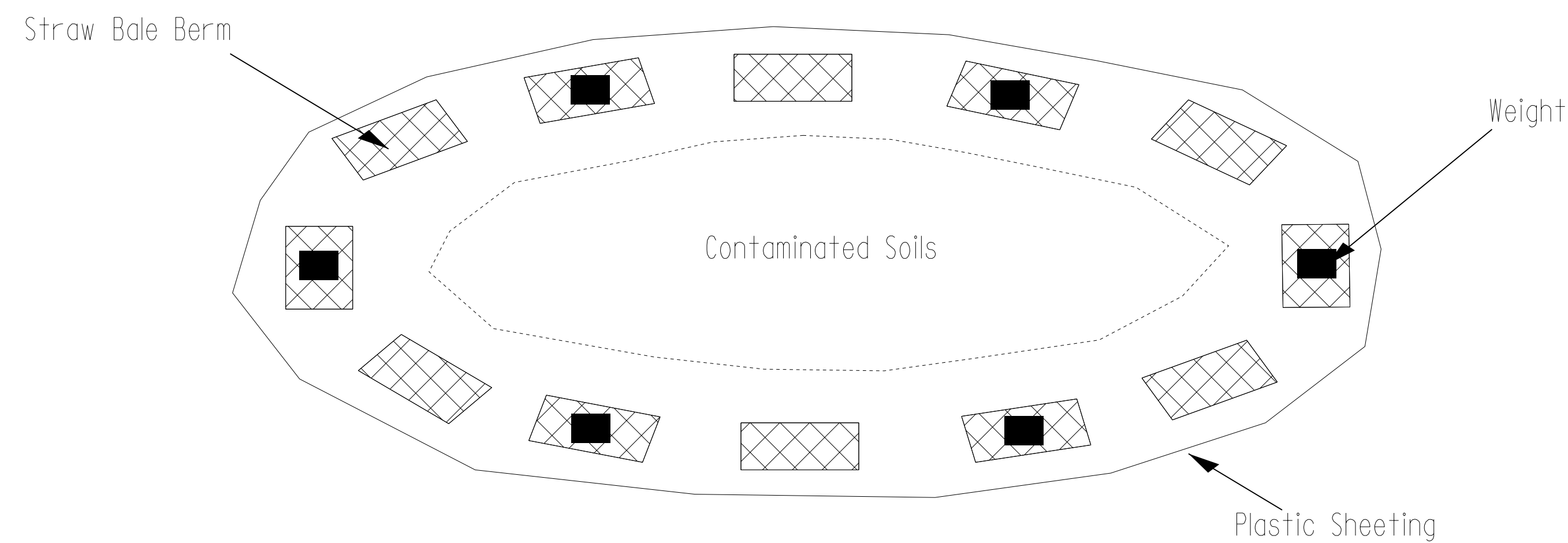
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

Detail for Temporary Containment of Contaminated Soil

Cross-Section View



Map 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 NCDEQ UST Section for off-site temporary storage. Stockpile shall be removed within 45 days.

PREPARED BY:	DATE:
REVIEWED BY:	DATE:

GEOTECHNICAL ENGINEERING UNIT

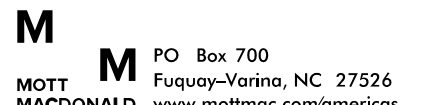
EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
 CONTRACT OFFICE

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH**

STOCKPILE CONTAINMENT DETAIL

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

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
U-2412A	3B-1
RW SHEET NO.	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	 MOTT MACDONALD PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/americas

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- 11+50.00 TO 41+50.00	74,637		44,105		30,532
-RPD- 10+25.00 TO 12+34.38	159		89		70
-Y1- 12+75.00 TO 15+42.74	141		820	679	
-Y2- 10+57.32 TO 13+25.00	1,277		8		1,269
-Y- 10+51.62 TO 22+00.00	3,300		22,766	19,466	
-YA- 10+50.00 TO 12+63.86	138		190	52	
-YC- 13+00.00 TO 16+10.30	523		344		179
-Y3- 16+09.10 TO 19+00.00	1,155	871	1,045	1,045	2,026
-SERV- 10+57.47 TO 12+30.00	1,551				1,551
SUBTOTAL #1	82,881	871	69,367	21,242	35,627
-L- 41+50.00 TO 71+50.00	51,715	1,896	100,186	50,879	4,304
-Y4- 10+10.00 TO 16+94.95	490		1,087	597	
-Y4- 18+05.07 TO 24+00.00	142		1,577	1,435	
SUBTOTAL #2	52,347	1,896	102,850	52,911	4,304
-L- 71+50.00 TO 89+51.81	12,833	6,230	170,851	170,558	18,770
-Y5- 10+25.00 TO 18+17.62	607		1,666	1,059	
-Y5- 19+29.13 TO 26+00.00	1,095		3,353	2,258	
-Y5A- 10+18.02 TO 11+50.00	112		108		4
-Y5B- 10+00.00 TO 12+82.00	445		365		80
SUBTOTAL #3	15,092	6,230	176,343	173,875	18,854
-L- 94+16.81 TO 126+00.00	26,579	615	333,613	310,589	4,170
-Y7- 17+00.00 TO 20+58.78	217		1,708	1,491	
-Y7- 21+71.88 TO 31+75.00	5,203		408		4,795
SUBTOTAL #4	31,999	615	335,729	312,080	8,965
-L- 126+00.00 TO 138+21.44	65,541		25,406		40,135
SUBTOTAL #5	65,541		25,406		40,135

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- 142+21.51 TO 153+50.00	90,876		46,895		43,981
-Y8- 12+25.00 TO 13+95.67	20		239	219	
-Y8- 15+99.68 TO 17+50.00	29		160	131	
SUBTOTAL #6	90,925		47,294	350	43,981
-L- 156+55.00 TO 186+50.00	255,011	7,639	68,675		193,975
-Y10- 14+65.00 TO 20+65.24	256		7,261	7,005	
-Y10- 21+98.61 TO 32+00.00	9,463		293		9,170
-Y10B- 10+31.77 TO 12+50.00	864		8		856
SUBTOTAL #7	265,594	7,639	76,237	7,005	204,001
-L- 186+50.00 TO 208+38.61	30,477	7,302	122,155	114,816	30,440
SUBTOTAL #8	30,477	7,302	122,155	114,816	30,440
SUBTOTAL #1 THRU #8	634,856	24,553	955,381	682,279	386,306
MATERIAL FOR BASIN CONSTRUCTION	87,500		6,240		81,260
MATERIAL FOR SHOULDER CONSTRUCTION			54,480	54,480	
LOST DUE TO CLEARING AND GRUBBING	-20,000			20,000	
ADDITIONAL UNDERCUT		4,600	5,520	5,520	4,600
HARD ROCK TO REPLACE BORROW				-10,939	-10,939
ADJUSTED FOR ROCK SWELL			-2,735	-2,735	
ELIMINATE EARTH SHRINKAGE FACTOR SINCE NOW ROCK			-2,735	-2,735	
WASTE IN LIEU OF BORROW				-349,266	-349,266
TOTAL	702,356	29,153	1,016,152	396,605	111,961
Select Granular Material ESTIMATED 5% TO REPLACE TOPSOIL ON BORROW PITS			-34,984	-34,984	
GRANDTOTAL	702,356	29,153	981,168	381,451	111,961
SAY	705,000	29,200		385,000	

NOTE:
 1. UNDERCUT MAY BE USED IN EMBANKMENTS, BUT NOT IN THE TOP 3 FT OF THE EMBANKMENT, AT THE DISCRETION OF THE ENGINEER. (29,153 CY) PER GEOTECH
 2. UNSUITABLE UNCLASSIFIED EXCAVATION IS RECOMMENDED TO BE WASTED; HOWEVER, THE MATERIAL MAY BE USED IN EMBANKMENTS, BUT NOT IN THE TOP 3 FT OF THE EMBANKMENT, AT THE DISCRETION OF THE ENGINEER.

EST. DDE: SAY 4,712 CY
 SELECT GRANULAR MATERIAL: SAY 31,000 CY
 EST. CLASS IV SUBGRADE CONTINGENCY: SAY 1,000 TONS
 EST. PAVEMENT STRUCTURE VOLUME: 59,200 CY

NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

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**SUMMARY OF
 WOVEN WIRE FENCE, 47" FABRIC**

STATION TO STATION	LT or RT	A FABRIC (LF)	B END BRACE	C CORNER BRACE	D LINE BRACE	E 4" POSTS (EA)	F 5" POSTS (EA)
-Y2- 12+00.98 to -Serv- 12+00	RT	470.25	2	5		23	19
-Serv- 12+00 to -L- 25+39	RT	674.94	2	4	1	38	19
-L- 26+25 to -Y3- 17+65	RT	534.54	2	2	1	31	13
-Y3- 17+65 to -Y4- 21+30	RT	3,265.19	2	12	7	200	61
-Y4- 21+65 to -Y5- 22+00	RT	2,302.67	2	4	7	144	37
-Y5- 21+90 to -L- 89+08.29	RT	1,136.47	2	4	2	69	22
-L- 96+00.00 to 104+88.12	RT	923.62	2	4	1	56	19
-L- 104+95.06 to 111+10.49	RT	603.47	2	3	1	34	16
-Y7- 23+50 to 119+84.85	RT	855.72	2	4	1	51	19
-L- 119+89.95 to -L- 138+80.00	RT	2,124.17	2	4	6	133	34
-L- 143+50.00 to 147+23.78	RT	389.81	2	2		22	10
-L- 147+01.86 to -Y8- 17+61.26	RT	143.24	1			9	2
-L- 147+71.28 to 153+20.00	RT	548.76	2	1	1	34	10
-L- 156+35.00 to 172+18.13	RT	1,698.43	2	4	4	106	28
-L- 172+41.27 to -Y10- 27+00	RT	1,450.73	2	7	2	87	31
-Y10- 27+00 to 24+92.08	LT	210.11	2			13	4
-Y10- 24+32.41 to -L- 209+52.10	RT	3,159.12	2	4	10	201	46
-L- 147+92.98 to -Y8- 17+50	RT	132.52	1			8	2
-Y1- 12+05.83 to -Y- 14+11.75	LT	1,575.05	2	8	2	94	34
-Y- 14+20 to -L- 51+24.59	LT	2,776.63	2	4	7	178	37
-L- 51+30.52 to 53+50.91	LT	229.68	2	1		13	7
-L- 53+57.02 to -Y4- 13+35	LT	746.30	2	4	1	43	19
-Y4- 14+00 to -L- 65+67.24	LT	893.06	2	3	2	53	19
-L- 65+72.45 to -Y5- 16+10	LT	1,393.87	2	3	5	84	28
-Y5- 16+08.30 to -L- 89+93.64	LT	1,401.95	2	7	2	83	31
-L- 96+50.00 to -Y7- 16+68.29	LT	2,153.77	2	12	4	125	52
-Y7- 16+75.51 to -L- 137+60.00	LT	2,814.74	2	9	7	173	52
-L- 141+20.00 to -Y8- 12+28.95	LT	963.90	2	3	2	58	19
-Y8- 13+77.47 to 13+87.65	LT	33.10	1				2
-Y8- 12+60.82 to -L- 153+50.00	LT	669.99	2	1	1	42	10
-L- 156+75.00 to -Y10- 16+65	LT	2,779.49	2	1	12	175	43
-Y10- 15+90 to -L- 206+71.95	LT	2,750.65	2	5	11	168	52
-L- 147+09.48 to 147+25.56	LT	29.70	1			1	2
SUBTOTAL:		41,835.64				2,551	799
U-2412A SAY:		44,000				2,680	840

NOTE: LT or RT INDICATES LEFT OR RIGHT OF THE MAIN LINE.

**SUMMARY OF
 CHAIN LINK FENCE, 48" FABRIC**

STATION TO STATION	LT or RT	A FABRIC (LF)	B END BRACE	C CORNER BRACE	D LINE BRACE	E LINE POSTS (EA)	F TERMINAL POSTS (EA)
-L- 12+87.10 to -Y2- 11+80	RT	197.49	2	2		16.46	4
-L- 13+35 to -Y- 12+20	LT	434.61	2		3	23.97	13
BARBED WIRE (CONTINGENCY)		300				25	
SUBTOTAL:		932.10				65.43	17
U-2412A SAY:		980				70	19

NOTE: LT or RT INDICATES LEFT OR RIGHT OF THE MAIN LINE.

SUMMARY OF EXPRESSWAY GUTTER

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	LENGTH
-L-	19+65.00	24+00.00	RT	435.00'
-L-	34+50.00	41+00.00	RT	650.00'
U-2412A TOTAL:				1,085'
U-2412A SAY:				1,140'

SUMMARY OF SHOULDER BERM GUTTER

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	LENGTH
-L-	35+00.00	45+05.00	LT	1005.00'
-L-	41+65.00	45+05.00	RT	340.00'
-L-	50+44.00	54+60.00	LT	416.00'
-L-	82+85.00	90+06.10	LT	721.10
-L-	96+68.20	96+89.00	RT	20.80'
-L-	97+10.45	103+06.00	LT	595.55'
-L-	103+66.00	106+25.00	RT	259.00'
-L-	115+50.00	126+42.00	LT	1092.00'
-L-	136+46.00	138+56.40	RT	210.40'
-L-	136+97.00	137+81.75	LT	84.75'
-L-	150+14.00	152+99.03	RT	285.03'
-L-	153+21.00	153+33.14	LT	12.14'
-L-	156+54.44	162+51.00	RT	596.56'
-L-	171+13.00	176+00.00	RT	487.00'
-L-	173+95.00	176+10.00	LT	215.00'
-L-	188+95.00	194+25.00	LT	530.00'
-Y7-	18+25.00	20+00.00	RT	175.00'
U-2412A TOTAL:				7,045.33'
U-2412A SAY:				7,400'

SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD ²
-L-	19+00.00	20+41.00	LT	183.03
-L-	110+70.00		LT	83.78
-L-	151+25.00		RT	1,802.55
-L-	151+25.00		LT	2,053.13
-Y-	16+40.00		LT	168.68
-Y3-	14+30.00	14+63.00	CL	70.35
-Y4-	20+00.00		RT	34.44
-YC-	13+50.00	16+00.00	CL	1,173.14
-Y7-	27+00.00	31+75.00	CL	2,283.28
TEMPORARY PAVEMENT				
-L-	19+40.00	19+80.00	CL	441
-L-	24+36.00	25+19.00	CL	1,654
U-2412A TOTAL:				9,947.38
U-2412A SAY:				10,450

SUMMARY OF BREAKING EXISTING ASPHALT PAVEMENT

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD ²
-L-	19+00.00	20+13.00	CL	1,011.80
-L-	150+00.00	152+22.00	CL	1,054.29
-Y7-	17+00.00	20+00.00	CL	698.15
U-2412A TOTAL:				2,764.24
U-2412A SAY:				2,900

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 PK66854

COMPUTED BY: T T Zan DATE: 10-24-2017
 CHECKED BY: J R Batts DATE: 10-24-2017

(1-16-18)

PROJECT NO.
U-2412A

SHEET NO.
3G-1

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
L	160+00	173+50		SD	2700
CONTINGENCY					1000
TOTAL LF:					3700

*UD = Underdrain
 *BD = Blind Drain
 *SD = Subsurface Drain

SUMMARY OF GEOTEXTILE FOR PAVEMENT STABILIZATION

LINE	Station	Station	Geotextile for Pavement Stabilization SY	Class IV Subgrade Stabilization TONS
-L-	35+50	40+50	2222	
-L-	40+50	45+50	4444	
-L-	51+00	55+00	3556	
-L-	81+00	89+50	7556	
-L-	96+50	101+50	3889	
-L-	101+50	103+50	778	
-L-	104+00	107+50	2722	
-L-	109+00	112+00	1167	
-L-	115+50	118+00	1500	
-L-	118+00	124+50	5778	
-L-	130+75	131+75	389	
-L-	134+50	138+50	1556	
-L-	137+50	138+50	389	
-L-	141+75	142+75	389	
-L-	151+00	153+50	1944	
-L-	157+00	159+50	972	
-L-	158+00	159+75	681	
-L-	174+00	175+50	1000	
-L-	174+00	177+00	1667	
-L-	189+00	193+50	6000	
-L-	200+50	206+50	8000	
-Y-	11+25	13+25	1556	653
TOTAL SY/TONS:			58153	653

*Total tons of "Class IV Subgrade Stabilization" is only the estimated quantity for pavement stabilization and may only represent a portion of the subgrade stabilization quantity shown in the Item Sheets of the Proposal.

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU/AST	Aggregate Thickness INCHES	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
			AST	4				500	
-L-			ASU	12	550	1000	1550		
CONTINGENCY									
TOTAL CY/TONS/SY:					550	1000**	1550**	500	0

*ASU = Aggregate Subgrade
 *AST = Aggregate Stabilization
 **Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

SUMMARY OF ROCK PLATING

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
L	1.7:1 (H:V)	104+00 ±	1.7:1 (H:V)	105+00 ±	LT	2	*	1000
TOTAL SY:								1000

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

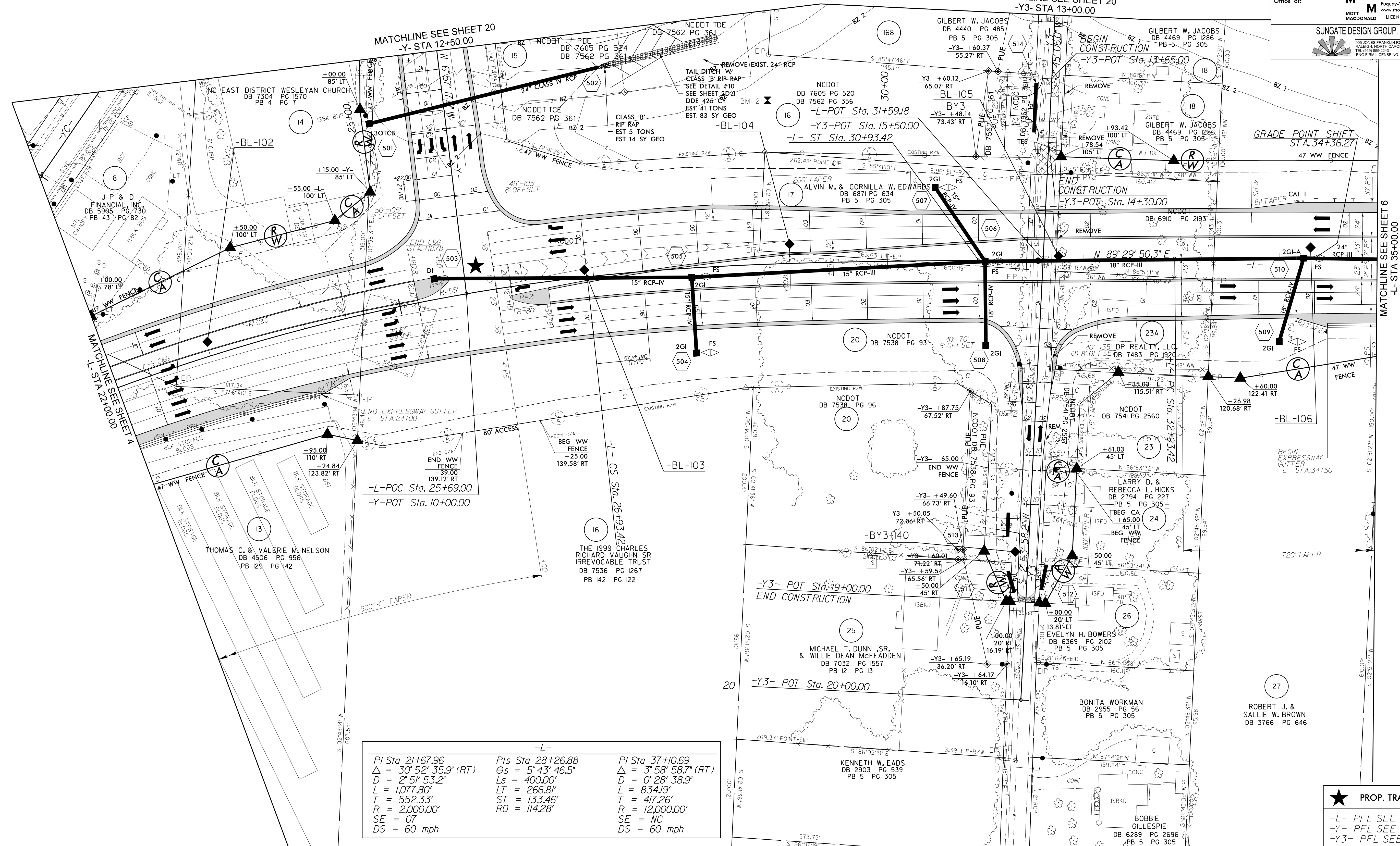
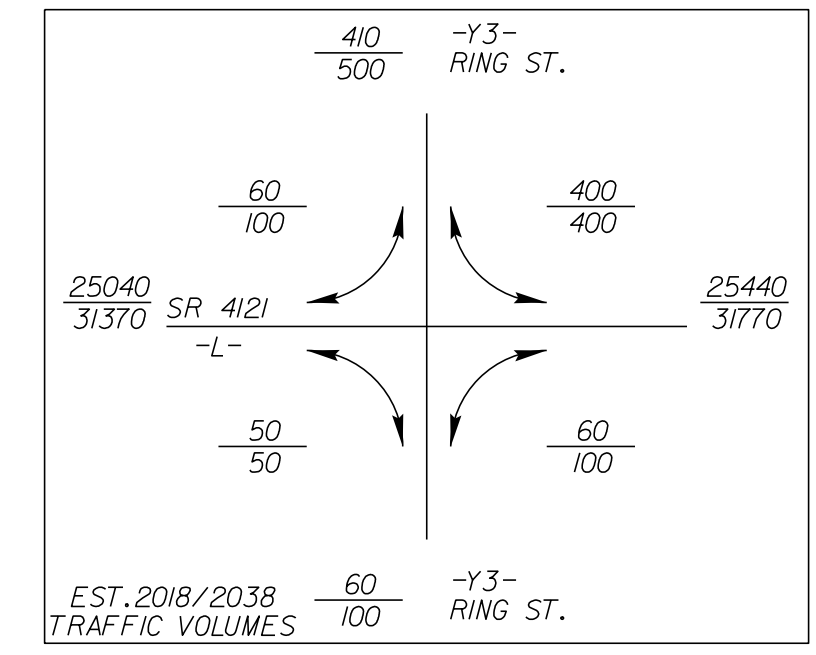
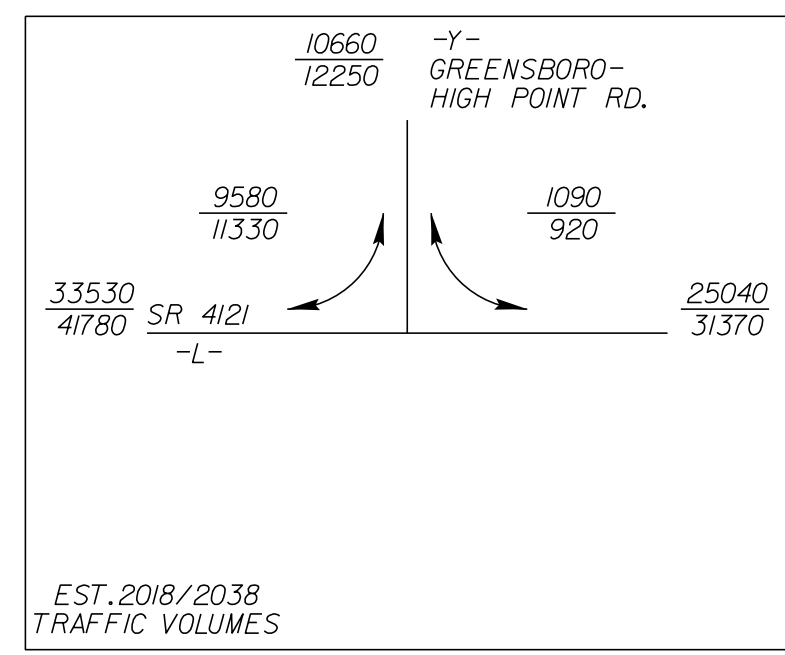
PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	NCDOT
2	4	WILLIAM T. & BRENDA L. MITCHELL
3	4	JUDY D. SCARLETT
4	4	JEANNE S. & FRANK B. LEE, JR
5	4	AL B. & VERA P. HARRIS
8	4,5	J P & D FINANCIAL, INC.
9	4	GRACE CHUCH OF HIGH POINT, INC.
11	4	WEST MOFFITT PROPERTIES, LLC
11A	4	TIMOTHY E. & CYNTHIA B. BLACKMON
13	4,5	THOMAS C. & VALERIE M. NELSON
14	5,20	NC EAST DISTRICT WESLEYAN CHURCH
15	5,20	NCDOT
16	5,20	NCDOT
		THE 1999 CHARLES RICHARD VAUGHN SR IRREVOCABLE TRUST
16	5	
17	5	ALVIN M. & CORNILLA W. EDWARDS
18	5	GILBERT W. JACOBS
20	5	NCDOT
23	5	NCDOT
23A	5	DP REALTY, LLC.
24	5	LARRY D. & REBECCA L. HICKS
25	5	MICHAEL T. DUNN ,SR. & WILLIE DEAN McFFADDEN
26	5	EVELYN H. BOWERS
27	5,6,20	ROBERT J. & SALLIE W. BROWN
28	6	AR STORAGEARMADILLO GREENSBORO INC
30	6	ROBERT J. & SALLIE W. BROWN
31	6	KHAN & SHERRY KHAN
32	6,7	GROOME, HOFFMAN & BENCINI, INC.
33	7	ROBERT E. & AMY M. WINSLOW
33A	6,7	JUSTIN W. & JESSICA O. STRICKLAND
34	7	JEFFREY SCOTT & SARAH H. OAKLEY
34A	7	JEFFREY SCOTT & SARAH H. OAKLEY
34B	7	JEFFREY SCOTT & SARAH H. OAKLEY
37	7	KEVIN J. RITTER
38	7	ROBERT P. & HELEN E. GUARINO
39	7	KHAN & SHERRY KHAN
39A	7	JERRY C. & ANITA L. KEY
39B	7	ILLARD J. & MAJORIE NAN P. YARBOROUGH
39C	7	H. MACK LITTLE
41	7,21	DAVID MICHAEL CORUM
42	7	MANOR DRIVE LLC.
43	7	O.E. & HELEN G. KESTER
43A	7	HERITAGE HOLDINGS GROUP , LLC.
43B	7	CONSUELO L. DE LANDAVERDE
43C	7	R. ANDREWS BUILDERS INC.
47	7	NCDOT
47	7	NCDOT
49	7	NCDOT
52	7	TERESA M. HONN
53	7	CARL A. & JAN H. GALLONI
54	7	MELVIN M. & BETTY R. CARTER
55	7	KERRY L. GRINDSTAFF
57	7	SLOBODAN & NADA KRAJISNIK
58	7,8	THURMAN G. & ILA L. SPRADLEY
59	7,8,9,22	JEMSITE DEVELOPMENT LLC
59	8,9,22	MCALPINE-WRENN FARM, LLC
59A	8,9	NCDOT
59A	7,8	NCDOT
60	9,22	CRAMER WOOD PRODUCTS, INC.
61	9	JAMES H. & LOLA J. GLOVER
62	9	RICHARD R. & MARY M. GLOVER
62A	9	RICHARD R. & MARY M. GLOVER

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
62B	9	RICHARD R. & MARY M. GLOVER
63	9	NCDOT
64	9, 10	NCDOT
65	9	DARRELL K. JACKSON
66	9,10	LABRENDA P. BENNETT
67	9,22	JOSE S. RODRIGUEZ
68	9,22	EDWARD E. SMITH JOYCE M SMITH
69	9,22	WILLIAM F. STODDARD ANDREA L. STODDARD
70	9	JAMES H. & LOLA J. GLOVER
71	9,22	NCDOT
71Z	9,10,22	HAROLD L. GLOVER, JR. KATHY G. NESSLER
74	10	CITY OF HIGH POINT
74	11	CITY OF HIGH POINT
75	10,23	NANCY T. GUITON
75	11	NANCY T. GUITON
76	11	NCDOT
77	11	RIVER WALK WEST TOWNHOMES OWNERS ASSOC.
77	11,23	10' UTILITY EASEMENT
78	23	MATTHEW C. & JENNIFER T. GEE
78	11,12	RIVER WALK OF GUILFORD CO. HOMEOWNERS ASSOC INC.
80	11	ALAN G. BRUTON DEBORAH K. BRUTON
81	11	KENNETH M. WILLARD KATHY L. SMITH
82	11,23	DB 7228 PG 150
83	11,12	OAK HOLLOW BUILDERS, INC.
84	11,12,23	CAROLYN S. DILLON
85	12	GERALDINE ROBERTSON
86	12,13	NCDOT
87	13	NORTHPOINT FAMILY LIMITED PARTNERSHIP
87A	13,14	NORTHPOINT FAMILY LIMITED PARTNERSHIP
89	14	JACKIE LEE & BARBARA M. CAMPBELL
90	14	ROBERT E. & LOIS W. SMITH
91	14	MARY OAK PLAZA, LLC.
100	14	GUS & FOTINI ANDY
104	14	NCDOT
109	14	RICK LYLES DALLAS A. COLLINS
112	14	NCDOT
116	14	BULL RUN VILLAGE LLC.
125	14,15	15 NCDOT
126	14	CREEK RUN LLC
127	15,16	SHELBA A. & MITCHELL P. WATSON
127	24	SHERRILL L. & KITSIE G. AUMAN
127A	15,16,24	THE BOBBY CARROL AUMAN FAMILY FARM DEVELOPMENT, LLC
127B	15	SHELBA A. & MITCHELL P. WATSON
128	15,16	B. STEVEN AUMAN
129	17,24	KIMBERLY S. FALSON- FLEMMING ERIC H. FLEMMING
130	17	MICHAEL ALAN BRYANT JOHNNIE S. BRYANT
132	17	NCDOT
133	17	NCDOT
134	17	FRANCES A. BOYLES LIVING TRUST
135	17,24	NCDOT
136	17,18	GUILFORD COUNTY BOARD OF EDUCATION
138	18	ROBERT J. BEDINGFIELD JEANNE H. BEDINGFIELD
139	20	TRIAD EVENT PLANNERS INC.
140	20	HARVEY A. & LYDIA P. GOHO
141	20	CRESTWOOD PRESBYTERIAN CHURCH
143	20	ALEXANDER PRESS INC.
144	20	W.B. JR. & PATRICIA S. DELK TRUSTEES OF THE WILLAM B. DELK , JR & PATRICIA S. DELK REVOCABLE LIVING TRUST
145	20	H. WINDLEY DUNBAR
146	20	CAROLINA CHILD CARE PROPERTIES, L.L.C.
147	20	OTIS W. & CORRINA N. WALLACE

8.17.17.99

PROJECT REFERENCE NO. U-2412A		SHEET NO. 5	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
Prepared in the Office of:			



NAD 83/95

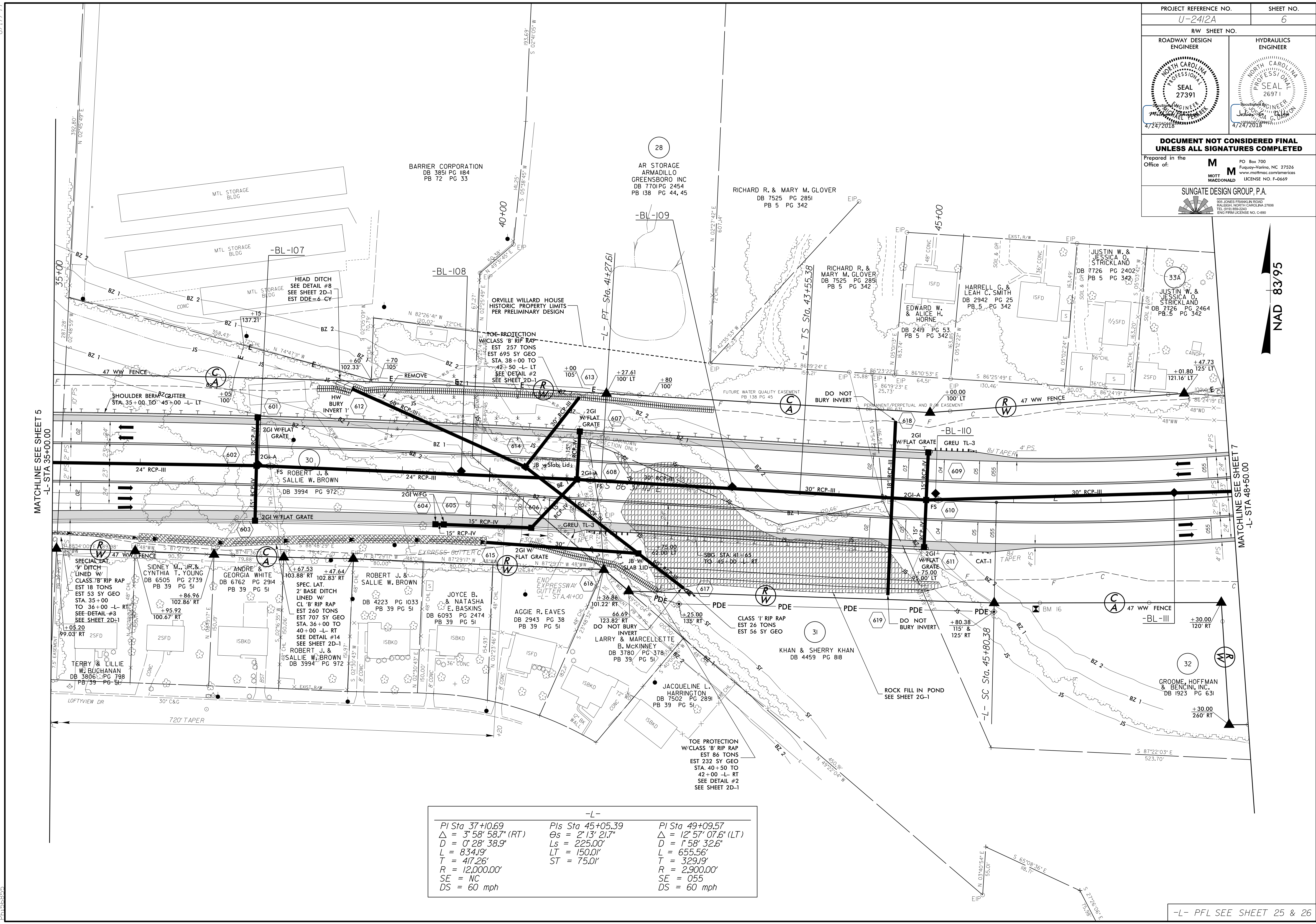
PI Sta 21+67.96 $\Delta = 30^{\circ} 52' 35.9''$ (RT) $D = 2^{\circ} 51' 53.2''$ $L = 1,077.80'$ $T = 552.33'$ $R = 2,000.00'$ $SE = 07$ $DS = 60$ mph	-L- PI Sta 28+26.88 $\Delta = 5^{\circ} 43' 46.5''$ $Ls = 400.00'$ $LT = 266.81'$ $ST = 133.46'$ $RO = 114.28'$	PI Sta 37+10.69 $\Delta = 3^{\circ} 58' 58.7''$ (RT) $D = 0^{\circ} 28' 38.9''$ $L = 834.19'$ $T = 417.26'$ $R = 12,000.00'$ $SE = NC$ $DS = 60$ mph
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★ PROP. TRAFFIC SIGNAL

-L- PFL SEE SHEET 25
 -Y- PFL SEE SHEET 34
 -Y3- PFL SEE SHEET 35

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PROJECT REFERENCE NO. U-2412A		SHEET NO. 6	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
Prepared in the Office of:		M PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/americas MOTT MACDONALD LICENSE NO. F-0669	
SUNGATE DESIGN GROUP, P.A. <small>905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL: (919) 866-2444 ENG FIRM LICENSE NO. C-6800</small>			



NAD 83/95

MATCHLINE SEE SHEET 5
-L- STA 35+00.00

MATCHLINE SEE SHEET 7
-L- STA 48+50.00

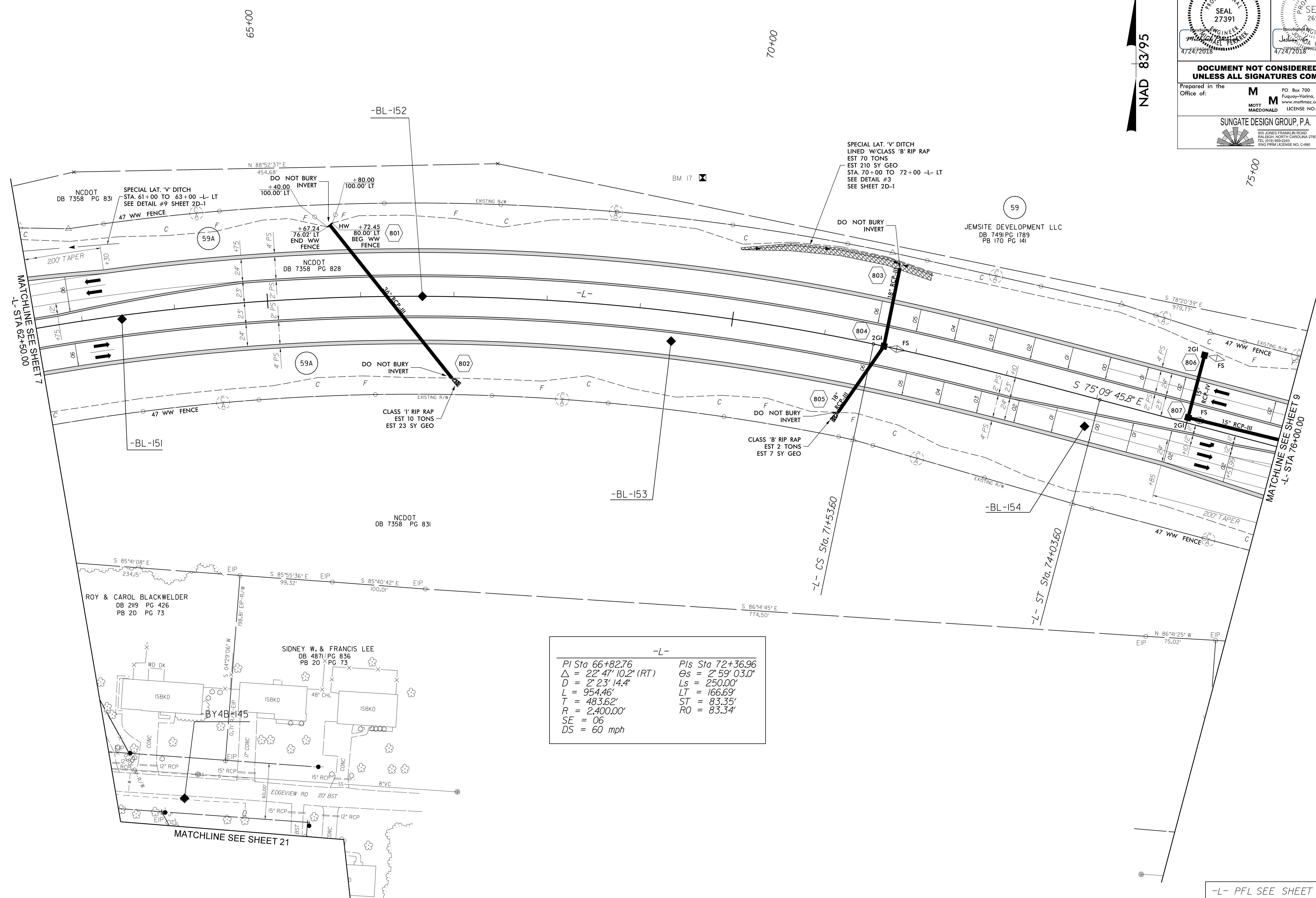
-L-		
PI Sta 37+0.69	PIs Sta 45+05.39	PI Sta 49+09.57
$\Delta = 3' 58' 58.7''$ (RT)	$\Delta = 2' 13' 21.7''$	$\Delta = 12' 57' 07.6''$ (LT)
$D = 0' 28' 38.9''$	$Ls = 225.00'$	$D = 1' 58' 32.6''$
$L = 834.19'$	$LT = 150.01'$	$L = 655.56'$
$T = 417.26'$	$ST = 75.01'$	$T = 329.19'$
$R = 12,000.00'$		$R = 2,900.00'$
$SE = NC$		$SE = 055$
$DS = 60$ mph		$DS = 60$ mph

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8/17/99

PROJECT REFERENCE NO. U-2412A		SHEET NO. 8	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
Prepared in the Office of:		M PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/americas M MOTT MACDONALD LICENSE NO. F-0669	
SUNGATE DESIGN GROUP, P.A. <small>905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL: (919) 886-2441 ENG FIRM LICENSE NO. C-890</small>			

NAD 83/95

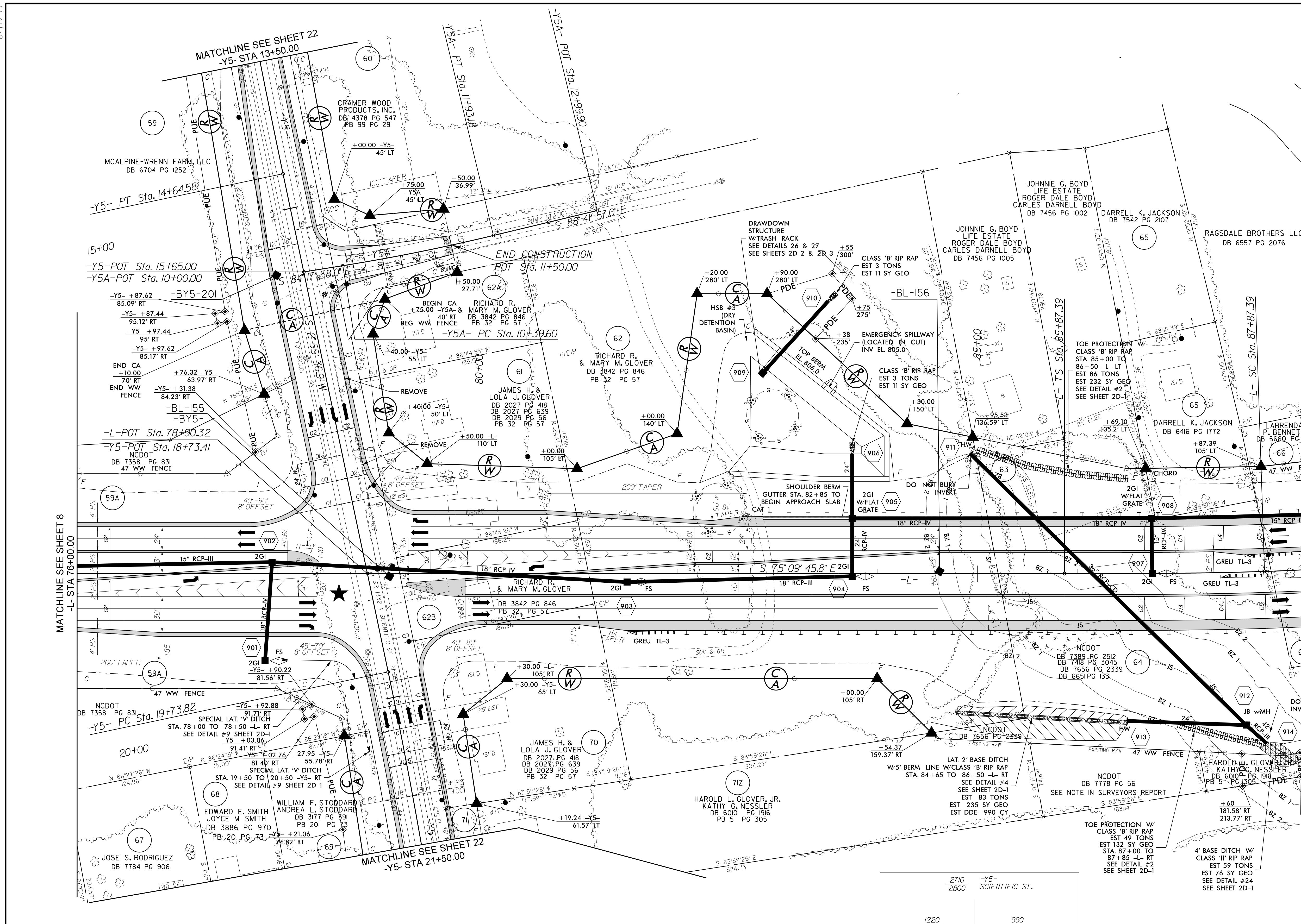


-L-	
PI Sta 66+82.76	PIs Sta 72+36.96
$\Delta = 22^\circ 47' 10.2''$ (RT)	$\Theta_s = 2^\circ 59' 03.0''$
$D = 2^\circ 23' 14.4''$	$L_s = 250.00'$
$L = 954.46'$	$LT = 166.69'$
$T = 483.62'$	$ST = 83.35'$
$R = 2,400.00'$	$RO = 83.34'$
$SE = 06$	
$DS = 60$ mph	

-L- PFL SEE SHEET 26 & 27

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PL:06835

PROJECT REFERENCE NO. U-2412A		SHEET NO. 9	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
Prepared in the Office of:			
MOTT MACDONALD		PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/americas LICENSE NO. F-0669	
SUNGATE DESIGN GROUP, P.A. 905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL: (919) 886-2444 ENG FIRM LICENSE NO. C-690			



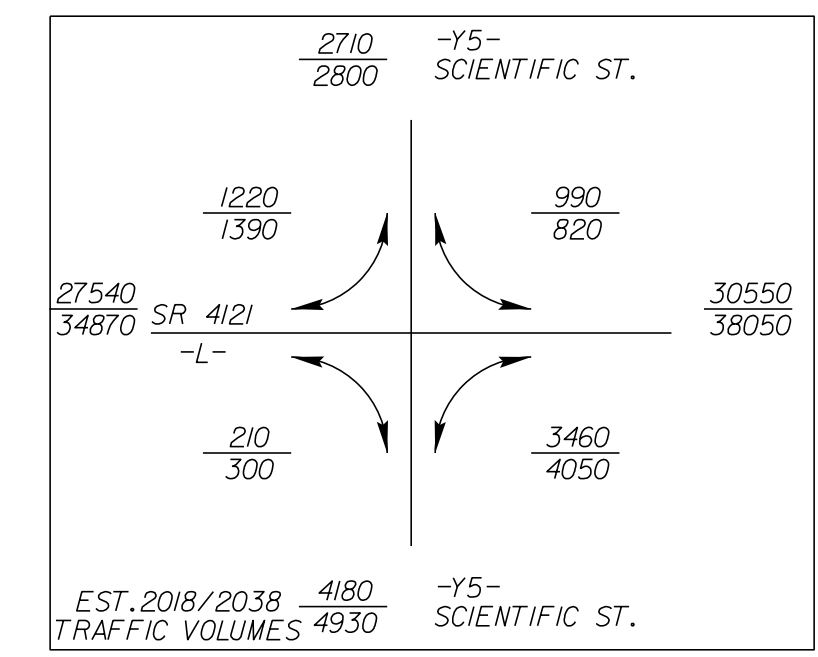
MATCHLINE SEE SHEET 8
-L- STA 76+00.00

MATCHLINE SEE SHEET 10
-L- STA 88+50.00

-Y5-	-Y5A-
PI Sta 13+54.60 $\Delta = 1' 15' 37.1''$ (LT) $D = 0' 34' 22.6''$ $L = 219.97'$ $T = 109.99'$ $R = 10,000.00'$ $SE = NC$ $DS = 50$ mph	PI Sta 21+18.69 $\Delta = 3' 19' 09.3''$ (RT) $D = 1' 08' 45.3''$ $L = 289.66'$ $T = 144.87'$ $R = 5,000.00'$ $SE = SEE PLAN VIEW$ $DS = 50$ mph

-Y5A-	-L-
PI Sta 11+16.43 $\Delta = 4' 23' 59.0''$ (LT) $D = 2' 51' 53.2''$ $L = 153.58'$ $T = 76.83'$ $R = 2,000.00'$ $SE = SEE PLAN VIEW$ $DS = 30$ mph	PI Sta 87+20.73 $\Theta_s = 1' 54' 35.5''$ $D = 200.00'$ $Ls = 133.34'$ $ST = 66.67'$

-L-	-Y5-
PI Sta 93+42.25 $\Delta = 20' 57' 26.2''$ (LT) $D = 1' 54' 35.5''$ $L = 1,097.32'$ $T = 554.86'$ $R = 3,000.00'$ $SE = 05$ $DS = 60$ mph	EST. 2018/2038 TRAFFIC VOLUMES 4180 4930



★ PROP. TRAFFIC SIGNAL

-L- PFL SEE SHEET 27
 -Y5- PFL SEE SHEET 36
 -Y5A- PFL SEE SHEET 37

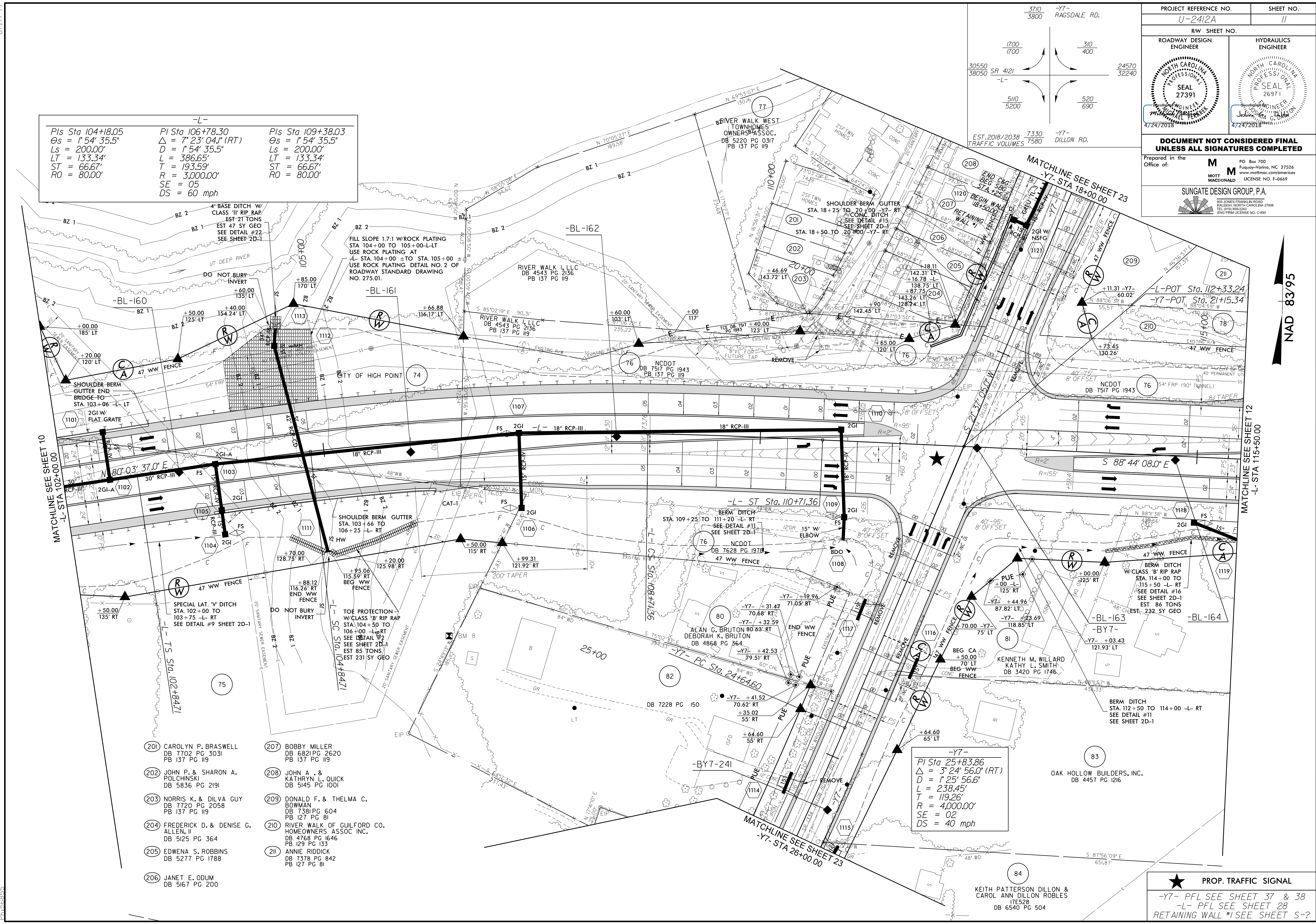
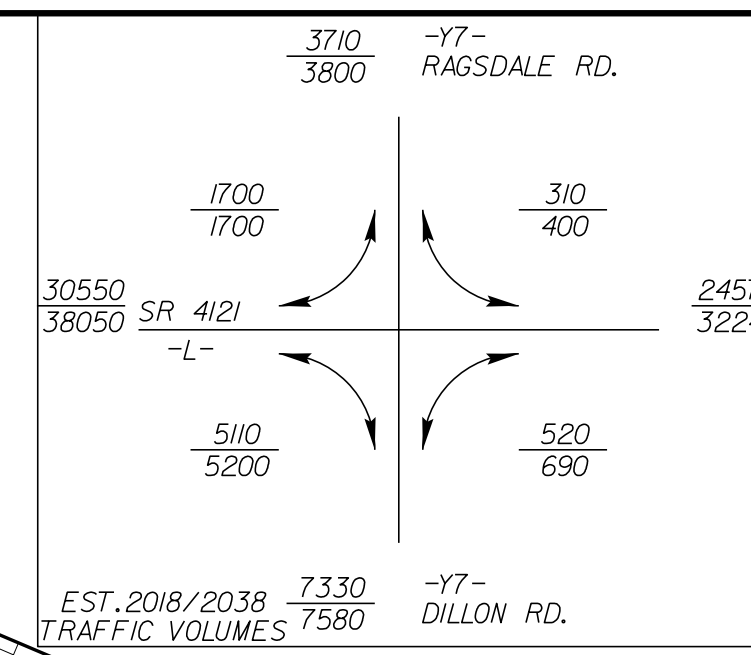
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P:\102412A\102412A.rvt

8.17.799

PROJECT REFERENCE NO. U-2412A		SHEET NO. 11	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		SEAL 27391	
NORTH CAROLINA PROFESSIONAL SEAL		NORTH CAROLINA PROFESSIONAL SEAL 26971	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		Prepared in the Office of: MOTT MACDONALD	
PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/mclicens		LICENSE NO. F-0669	
SUNGATE DESIGN GROUP, P.A.			

-L-

<i>Pls Sta 104+18.05</i>	<i>Pl Sta 106+78.30</i>	<i>Pls Sta 109+38.03</i>
$\Delta s = 1' 54' 35.5"$	$\Delta = 7' 23' 04.1" (RT)$	$\Delta s = 1' 54' 35.5"$
$Ls = 200.00'$	$D = 1' 54' 35.5"$	$Ls = 200.00'$
$LT = 133.34'$	$L = 386.65'$	$LT = 133.34'$
$ST = 66.67'$	$T = 193.59'$	$ST = 66.67'$
$RO = 80.00'$	$R = 3,000.00'$	$RO = 80.00'$
	$SE = 05$	
	$DS = 60 \text{ mph}$	



- (201) CAROLYN P. BRASWELL
DB 7702 PG 3031
PB 137 PG 119
- (202) JOHN P. & SHARON A. POLCHINSKI
DB 5836 PG 2191
- (203) NORRIS K. & DILVA GUY
DB 7720 PG 2058
PB 137 PG 119
- (204) FREDERICK D. & DENISE G. ALLEN, II
DB 5125 PG 364
- (205) EDWENA S. ROBBINS
DB 5277 PG 1788
- (206) JANET E. ODUM
DB 5167 PG 200
- (207) BOBBY MILLER
DB 6821 PG 2620
PB 137 PG 119
- (208) JOHN A. & KATHRYN L. OUICK
DB 5145 PG 1001
- (209) DONALD F. & THELMA C. BOWMAN
DB 7381 PG 604
PB 127 PG 81
- (210) RIVER WALK OF GUILFORD CO. HOMEOWNERS ASSOC INC.
DB 4768 PG 1646
PB 129 PG 133
- (211) ANNIE RIDDICK
DB 7378 PG 842
PB 127 PG 81

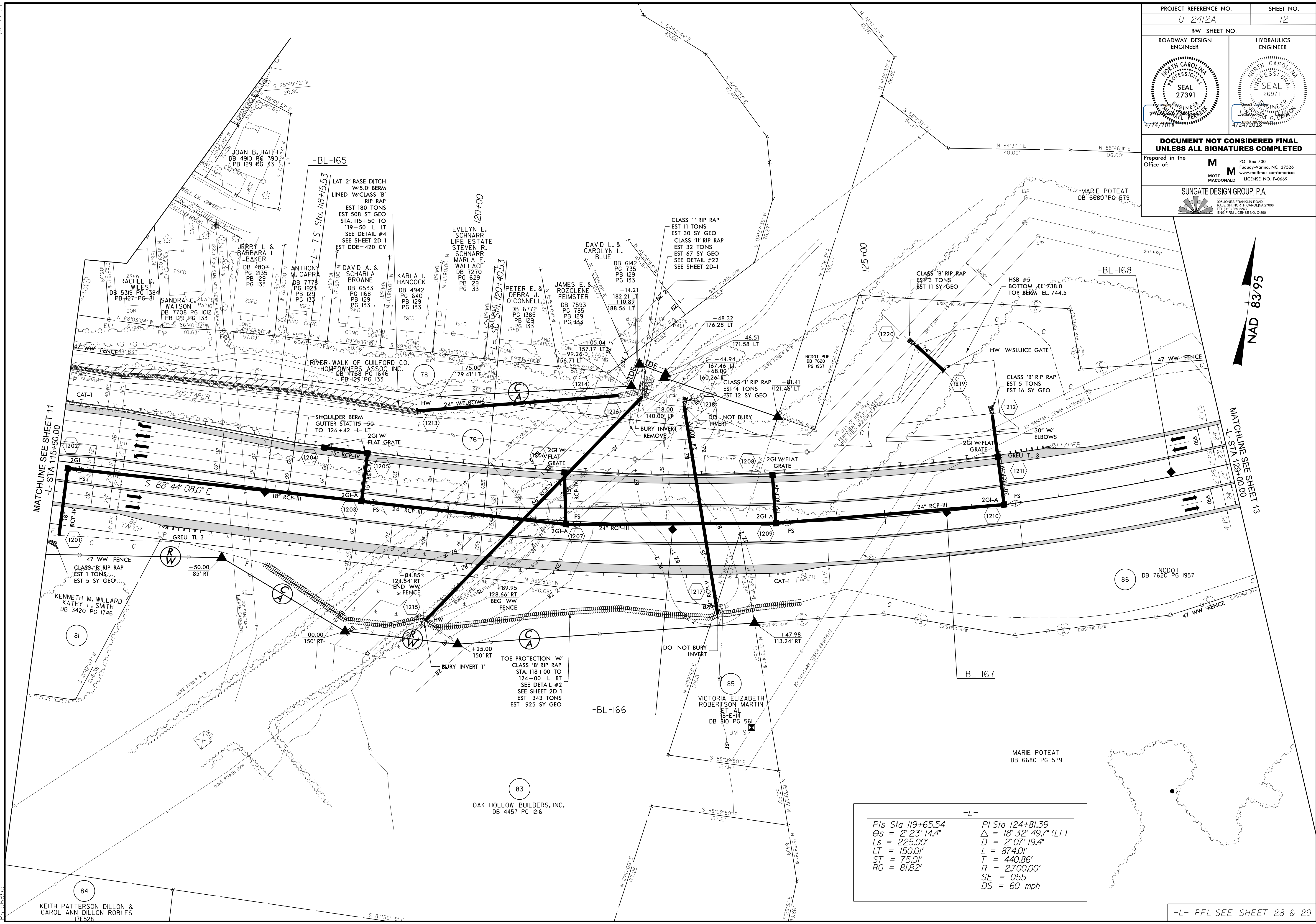
-Y7-

Pl Sta 25+83.86
 $\Delta = 3' 24' 56.0" (RT)$
 $D = 1' 25' 56.6"$
 $L = 238.45'$
 $T = 119.26'$
 $R = 4,000.00'$
 $SE = 02$
 $DS = 40 \text{ mph}$

★ PROP. TRAFFIC SIGNAL
-Y7- PFL SEE SHEET 37 & 38
-L- PFL SEE SHEET 28
RETAINING WALL #1 SEE SHEET S-?

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PL166365

PROJECT REFERENCE NO. U-2412A	SHEET NO. 12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	MOTT MACDONALD
 SUNGATE DESIGN GROUP, P.A. <small>905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL: (919) 886-2441 ENG FIRM LICENSE NO. C-690</small>	



-L-

<i>Pls Sta 119+65.54</i>	<i>PI Sta 124+81.39</i>
<i>Os = 2' 23" 14.4"</i>	<i>Δ = 18' 32" 49.7" (LT)</i>
<i>Ls = 225.00'</i>	<i>D = 2' 07" 19.4"</i>
<i>LT = 150.00'</i>	<i>L = 874.00'</i>
<i>ST = 75.00'</i>	<i>T = 440.86'</i>
<i>RO = 81.82'</i>	<i>R = 2,700.00'</i>
	<i>SE = 055</i>
	<i>DS = 60 mph</i>

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 11/16/2012

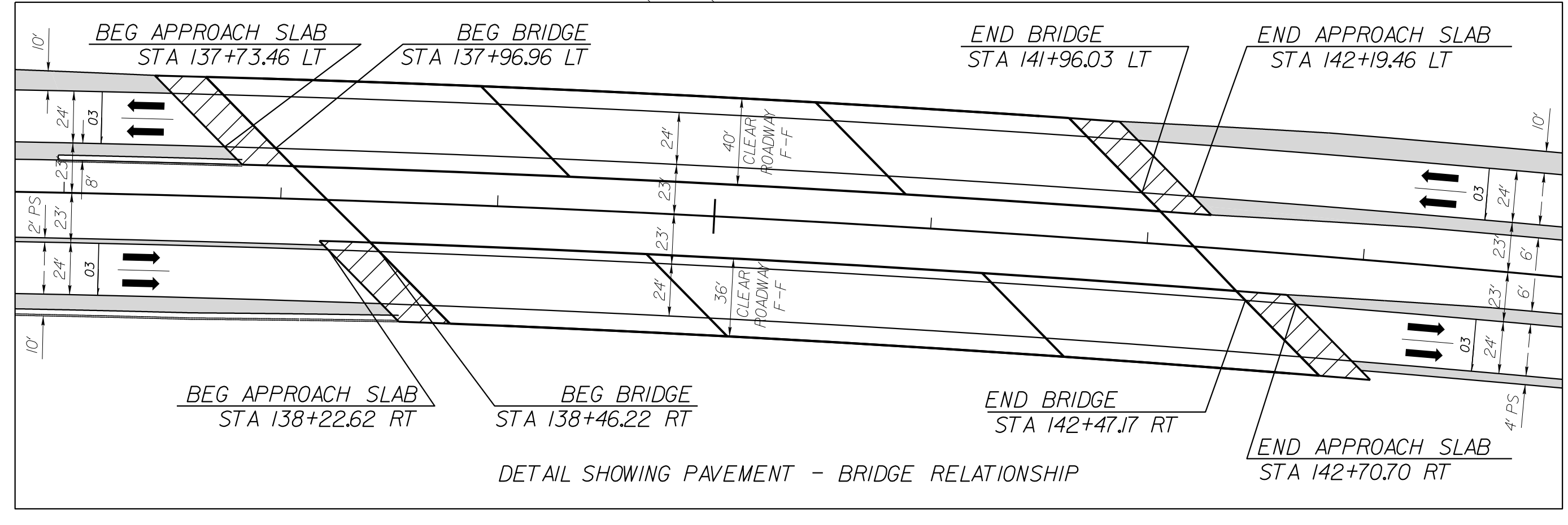
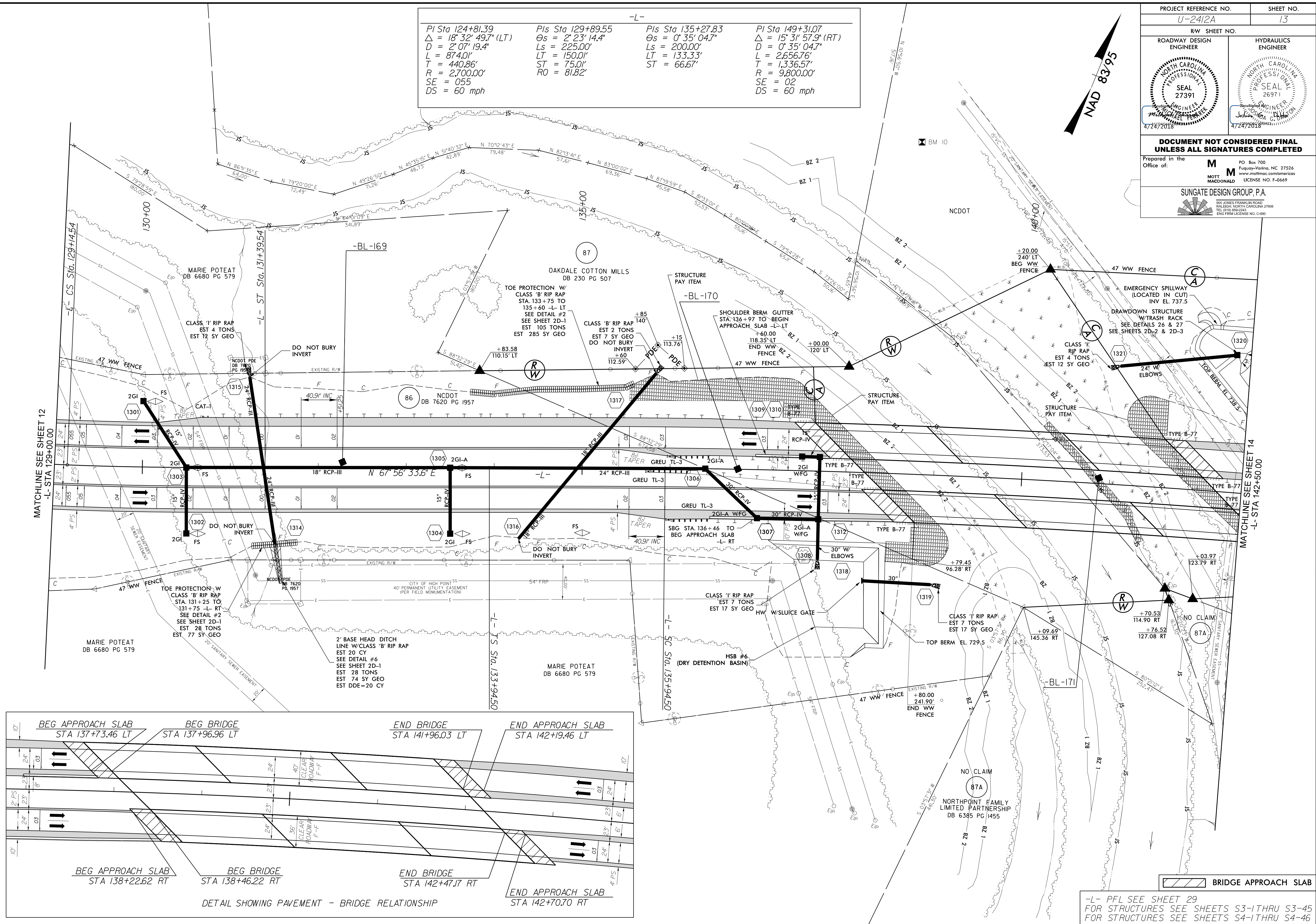
KEITH PATTERSON DILLON & CAROL ANN DILLON ROBLES
17528

-L- PFL SEE SHEET 28 & 29

8.17.799

-L-			
PI Sta 124+81.39	PIs Sta 129+89.55	PIs Sta 135+27.83	PI Sta 149+31.07
$\Delta = 18^\circ 32' 49.7''$ (LT)	$\Theta_s = 2^\circ 23' 14.4''$	$\Theta_s = 0^\circ 35' 04.7''$	$\Delta = 15^\circ 31' 57.9''$ (RT)
$D = 2^\circ 07' 19.4''$	$L_s = 225.00'$	$L_s = 200.00'$	$D = 0^\circ 35' 04.7''$
$L = 874.01'$	$LT = 150.01'$	$LT = 133.33'$	$L = 2,656.76'$
$T = 440.86'$	$ST = 75.01'$	$ST = 66.67'$	$T = 1,336.57'$
$R = 2,700.00'$	$RO = 81.82'$		$R = 9,800.00'$
$SE = 055$			$SE = 02$
$DS = 60$ mph			$DS = 60$ mph

PROJECT REFERENCE NO. U-2412A	SHEET NO. 13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	MOTT MACDONALD
	PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/ncamericas LICENSE NO. F-0669
SUNGATE DESIGN GROUP, P.A.	
905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL: (919) 882-2424 ENG FIRM LICENSE NO. C-890	

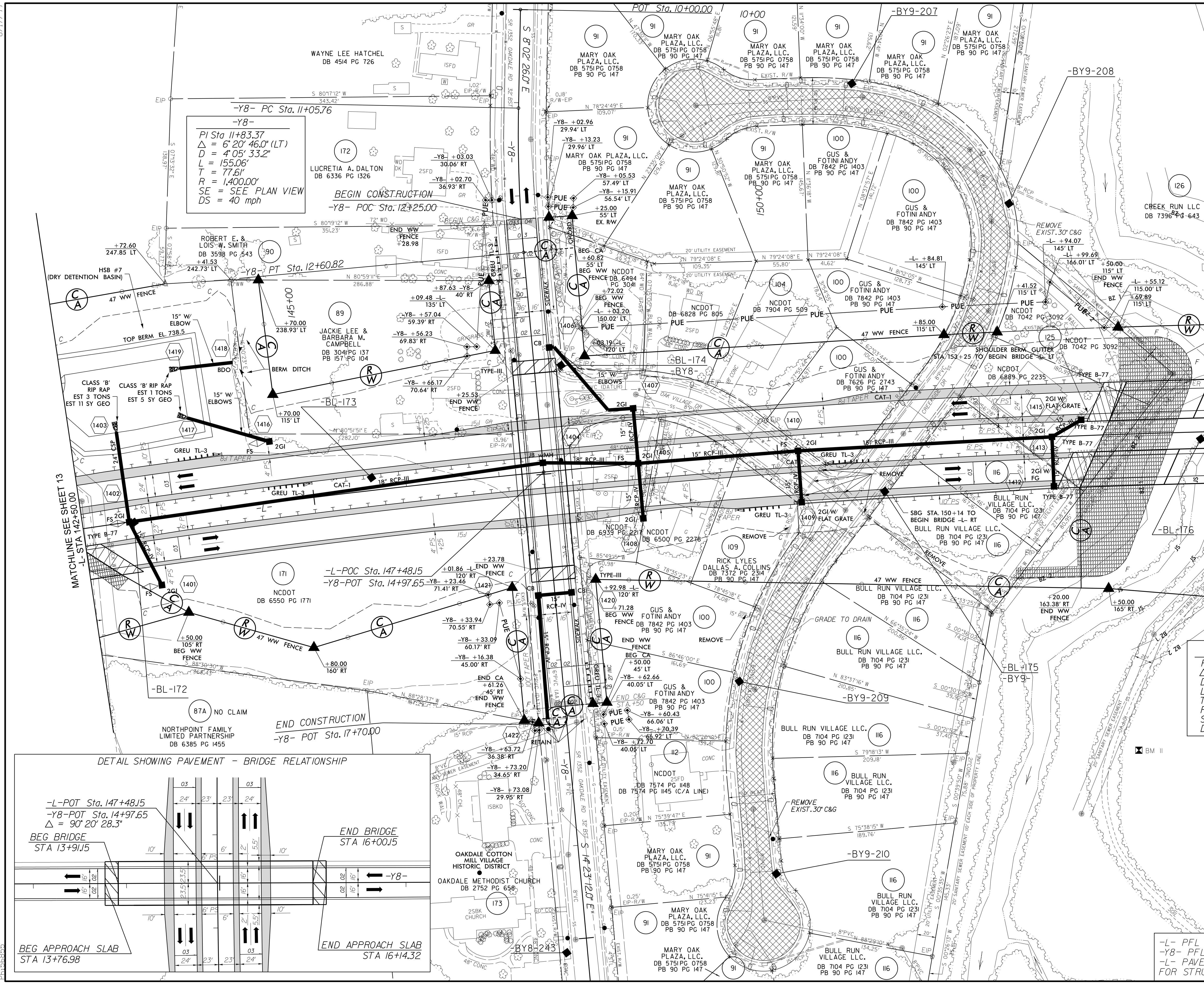


BRIDGE APPROACH SLAB

-L- PFL SEE SHEET 29
FOR STRUCTURES SEE SHEETS S3-1 THRU S3-45
FOR STRUCTURES SEE SHEETS S4-1 THRU S4-46

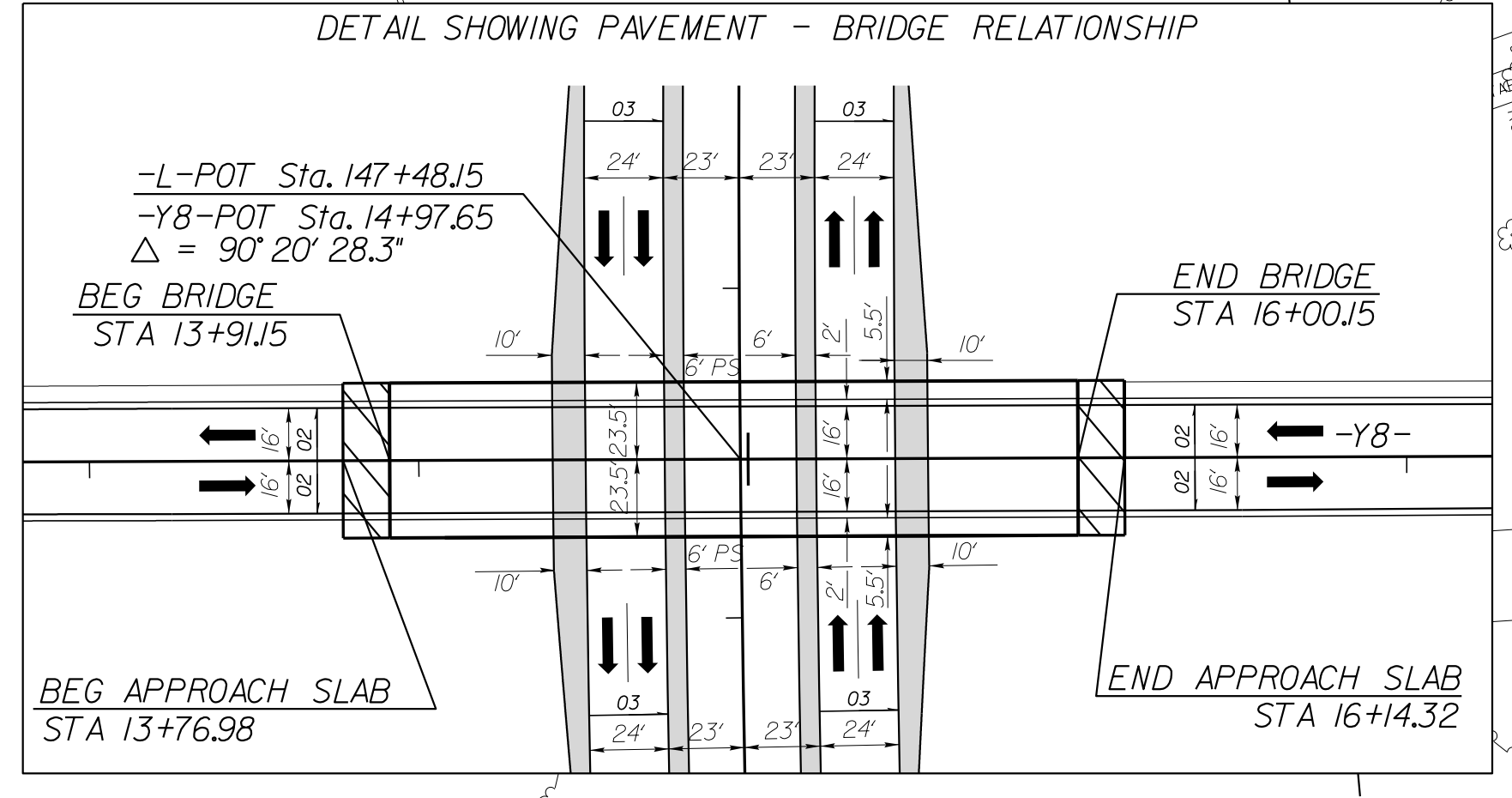
148:51 BY
148:51 CHECKED
148:51 DESIGNED
148:51 DATE
148:51 USER

PROJECT REFERENCE NO. U-2412A		SHEET NO. 14	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
Prepared in the Office of:		M PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/mottmac TEL (919) 666-2444 FAX (919) 666-2444 LIC. NO. F-0669	
SUNGATE DESIGN GROUP, P.A. 			



-Y8-
 PI Sta 11+83.37
 $\Delta = 6' 20'' 46.0''$ (LT)
 $D = 4' 05'' 33.2''$
 $L = 155.06'$
 $T = 77.61'$
 $R = 1,400.00'$
 SE = SEE PLAN VIEW
 DS = 40 mph

-L-
 PI Sta 149+31.07
 $\Delta = 15' 31'' 57.9''$ (RT)
 $D = 0' 35'' 04.7''$
 $L = 2,656.76'$
 $T = 1,336.57'$
 $R = 9,800.00'$
 SE = 02
 DS = 60 mph

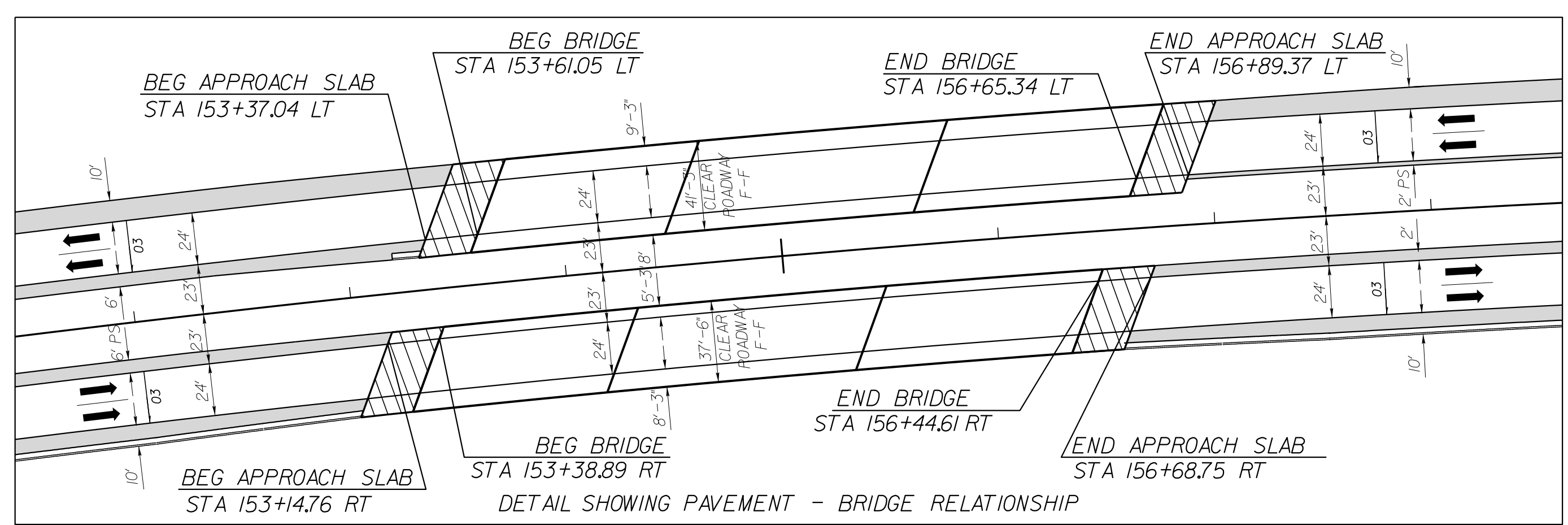


BRIDGE APPROACH SLAB

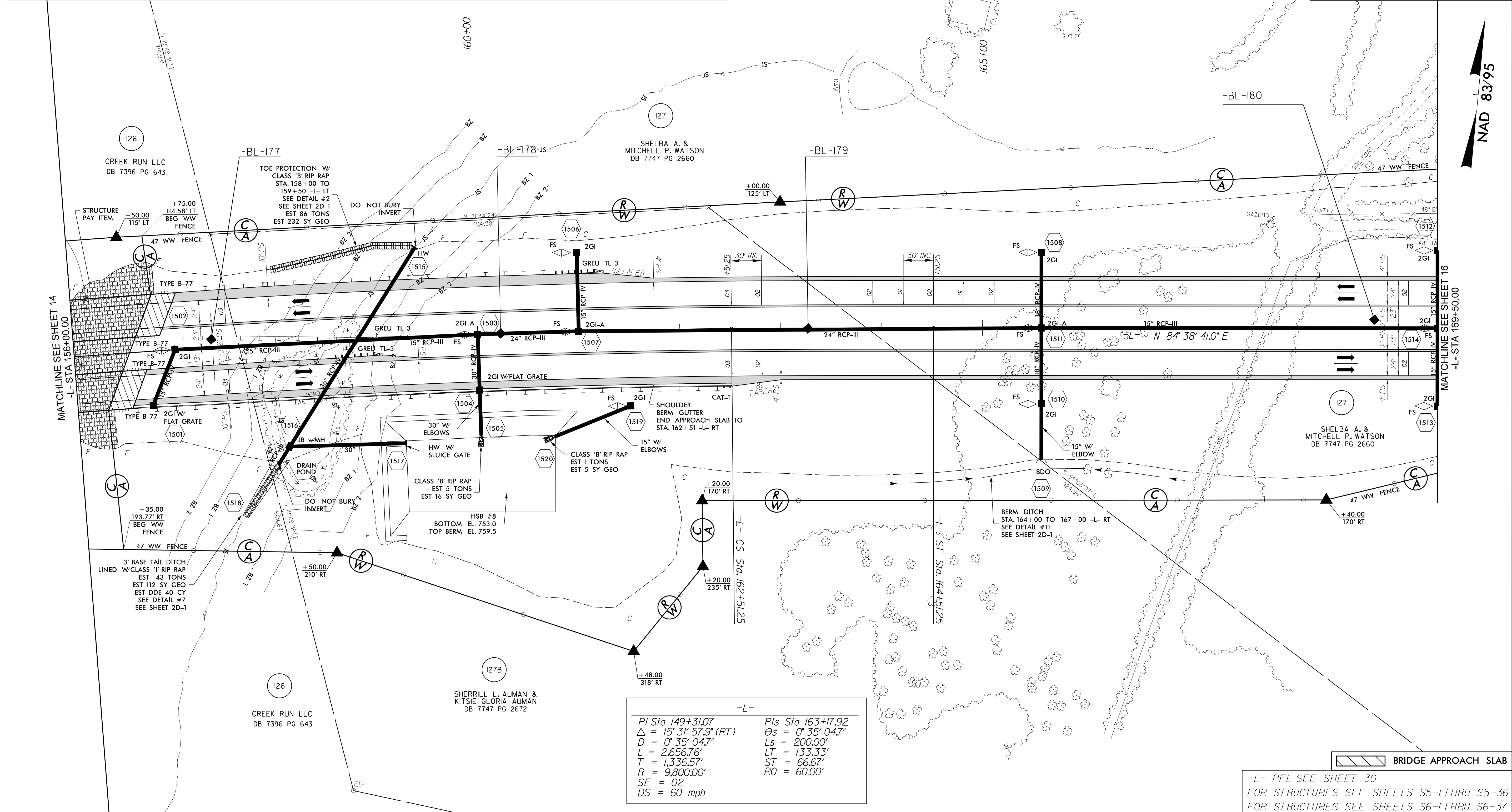
-L- PFL SEE SHEET 29 & 30
 -Y8- PFL SEE SHEET 38
 -L- PAVEMENT/BRIDGE SKETCH SEE SHEET 15
 FOR STRUCTURES SEE SHEETS S7-1 THRU S7-37

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 PL166836

8/17/99



PROJECT REFERENCE NO. U-2412A		SHEET NO. 15	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		SEAL 26971	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
Prepared in the Office of:		M PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/americas MOTT MACDONALD LICENSE NO. F-0669	
SUNGATE DESIGN GROUP, P.A. 905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL: (919) 886-2441 ENG FIRM LICENSE NO. C-890			



-L-


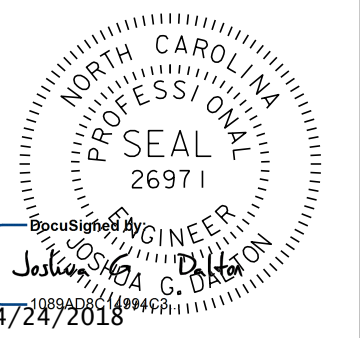

PI Sta 149+31.07 $\Delta = 15' 31' 57.9''$ (RT) $D = 0' 35' 04.7''$ $L = 2,656.76'$ $T = 1,336.57'$ $R = 9,800.00'$ $SE = 02$ $DS = 60$ mph	PIs Sta 163+17.92 $\Theta_s = 0' 35' 04.7''$ $L_s = 200.00'$ $LT = 133.33'$ $ST = 66.67'$ $RO = 60.00'$
--	--

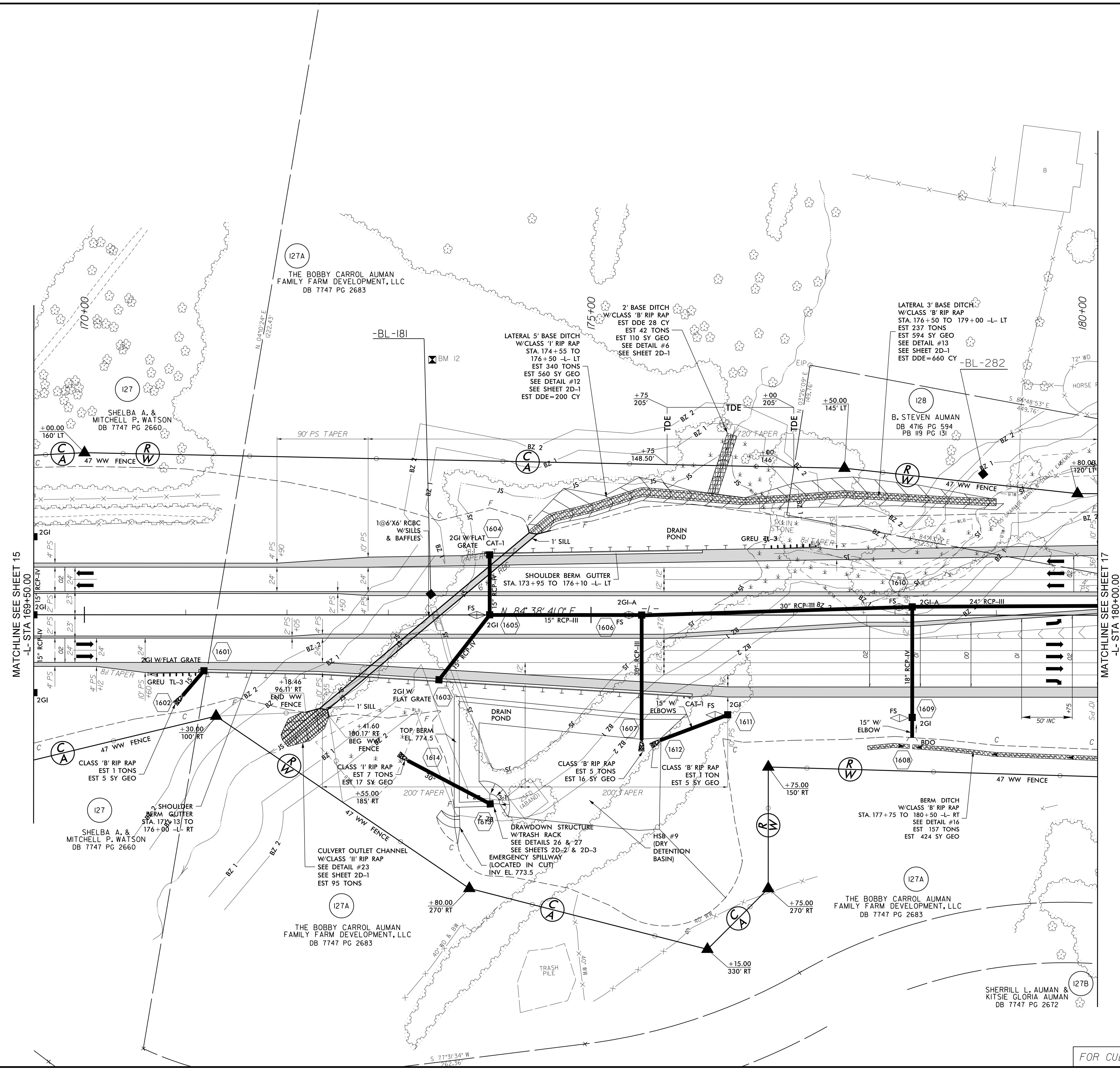
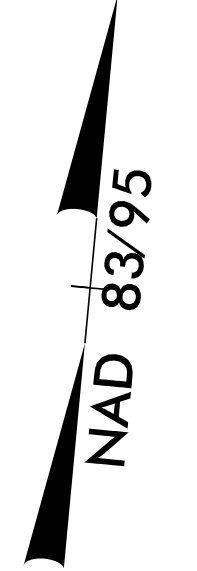
-L- PFL SEE SHEET 30
 FOR STRUCTURES SEE SHEETS S5-1 THRU S5-36
 FOR STRUCTURES SEE SHEETS S6-1 THRU S6-37

BRIDGE APPROACH SLAB

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 PL156835

8/17/99

PROJECT REFERENCE NO. U-2412A		SHEET NO. 16	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
			
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SUNGATE DESIGN GROUP, P.A.  905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL: (919) 886-2441 ENG FIRM LICENSE NO. C-890			



MATCHLINE SEE SHEET 15
-L- STA 169+50.00

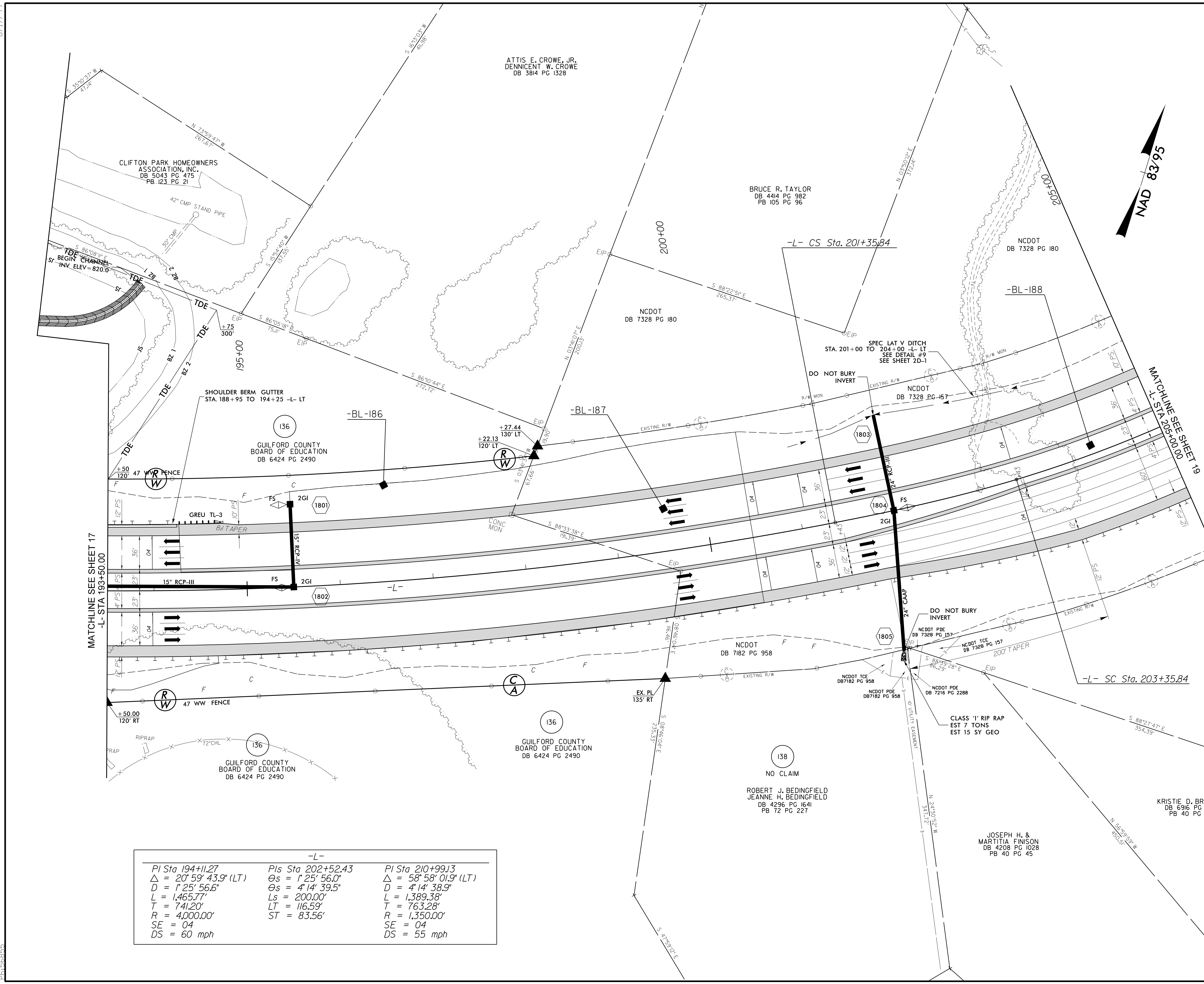
MATCHLINE SEE SHEET 17
-L- STA 180+00.00

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\\p1\share\jerry_o_j\U2412A_r.dwg_psh16.dgn
PL166855

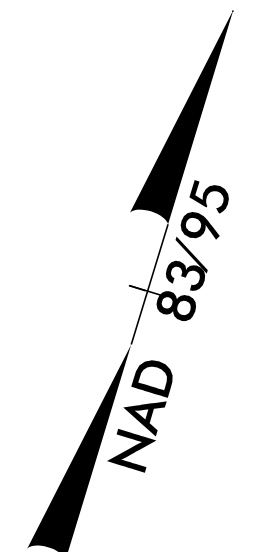
-L- PFL SEE SHEET 30 & 31

FOR CULVERT PLANS SEE SHEETS C-1 THRU C-5

PROJECT REFERENCE NO. U-2412A		SHEET NO. 18	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
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-L-		
PI Sta 194+11.27	PIs Sta 202+52.43	PI Sta 210+99.13
$\Delta = 20^{\circ} 59' 43.9''$ (LT)	$\Theta_s = 1^{\circ} 25' 56.0''$	$\Delta = 58^{\circ} 58' 01.9''$ (LT)
$D = 1^{\circ} 25' 56.6''$	$\Theta_s = 4^{\circ} 14' 39.5''$	$D = 4^{\circ} 14' 38.9''$
$L = 1,465.77'$	$L_s = 200.00'$	$L = 1,389.38'$
$T = 741.20'$	$LT = 116.59'$	$T = 763.28'$
$R = 4,000.00'$	$ST = 83.56'$	$R = 1,350.00'$
$SE = 04$		$SE = 04$
$DS = 60$ mph		$DS = 55$ mph



MATCHLINE SEE SHEET 17
-L- STA 193+50.00

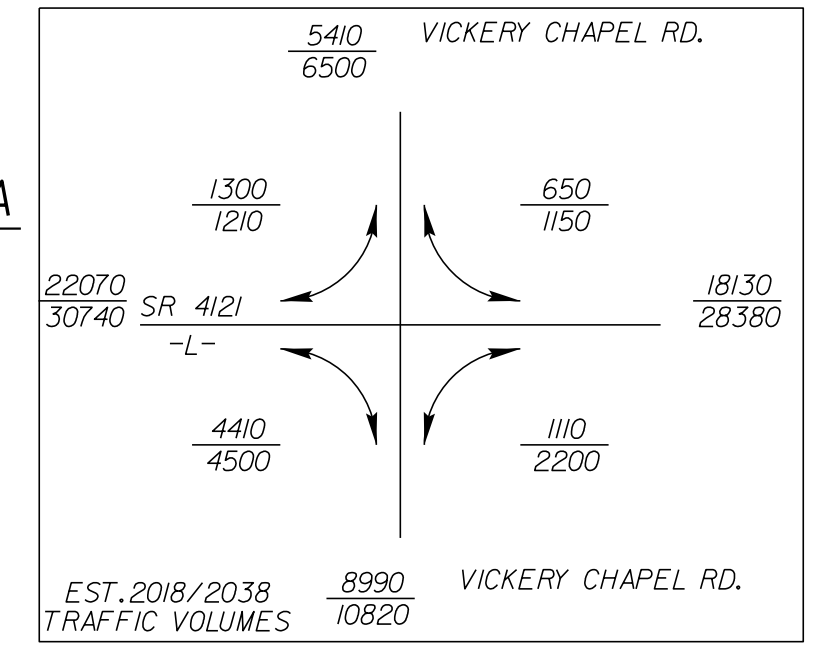
MATCHLINE SEE SHEET 19
-L- STA 205+00.00

-L- PFL SEE SHEET 31

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PROJECT REFERENCE NO. U-2412A		SHEET NO. 19	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p> <p>Prepared in the Office of: M MOTT MACDONALD</p> <p>PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/ncamericas LICENSE NO. F-0669</p> <p>SUNGATE DESIGN GROUP, P.A. 905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL: (919) 866-2424 ENG FIRM LICENSE NO. C-800</p>			

KOURY VENTURES LIMITED PARTNERSHIP
DB 6568 PG 2468



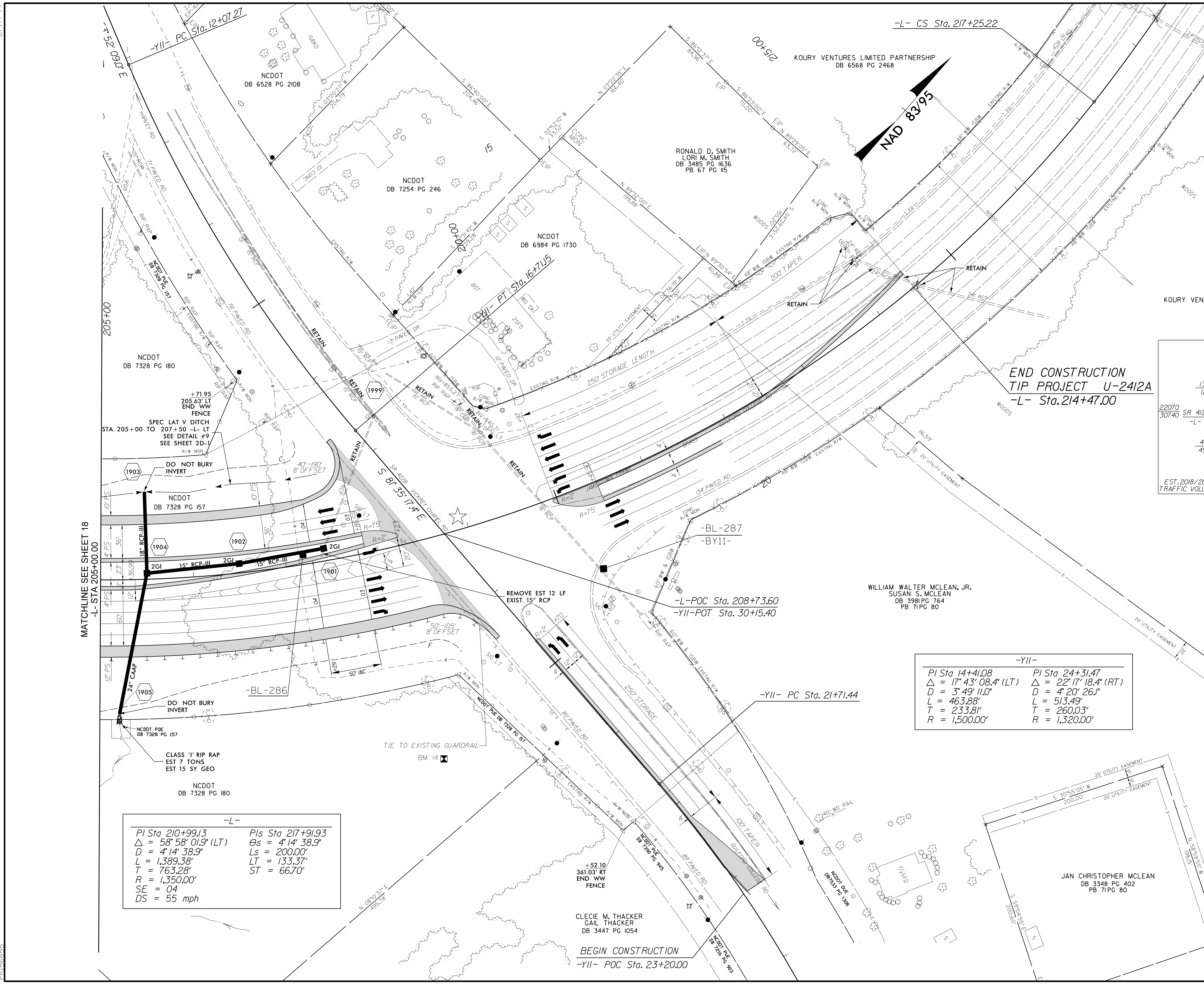
END CONSTRUCTION
TIP PROJECT U-2412A
-L- Sta. 214+47.00

-YII-	
PI Sta 14+41.08	PI Sta 24+31.47
$\Delta = 17^{\circ} 43' 08.4''$ (LT)	$\Delta = 22^{\circ} 17' 18.4''$ (RT)
D = 3' 49' 11.0"	D = 4' 20' 26.1"
L = 463.88'	L = 513.49'
T = 233.81'	T = 260.03'
R = 1,500.00'	R = 1,320.00'

-L-	
PI Sta 210+99.13	PIs Sta 217+91.93
$\Delta = 58^{\circ} 58' 01.9''$ (LT)	$\Delta_s = 4^{\circ} 14' 38.9''$
D = 4' 14' 38.9"	Ls = 200.00'
L = 1,389.38'	LT = 133.37'
T = 763.28'	ST = 66.70'
R = 1,350.00'	
SE = 04	
DS = 55 mph	

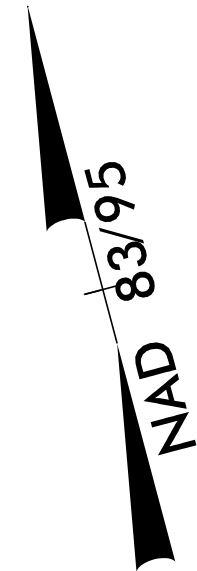
MATCHLINE SEE SHEET 18
-L- STA 205+00.00

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14:49:13 PM
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15:56:55

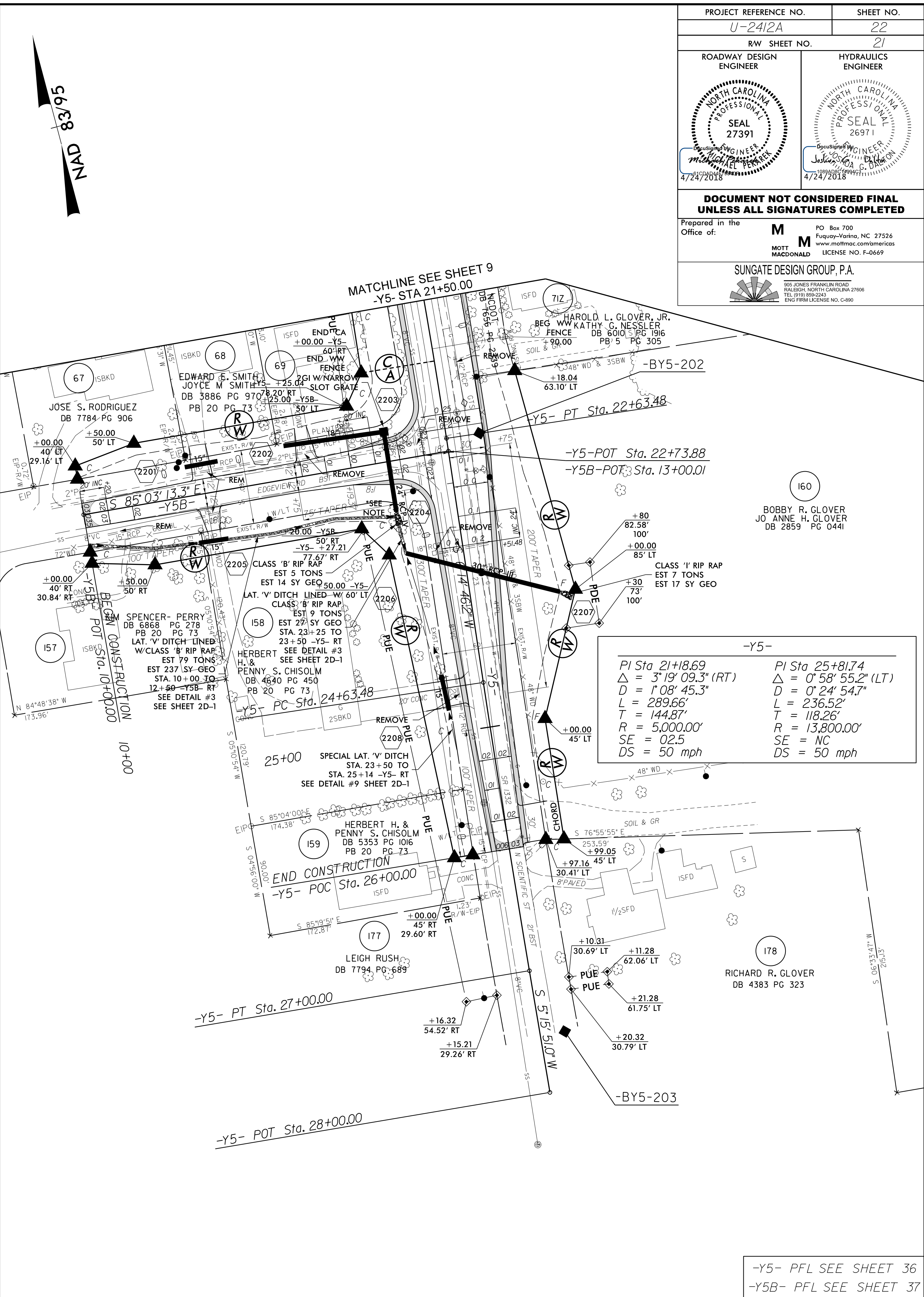
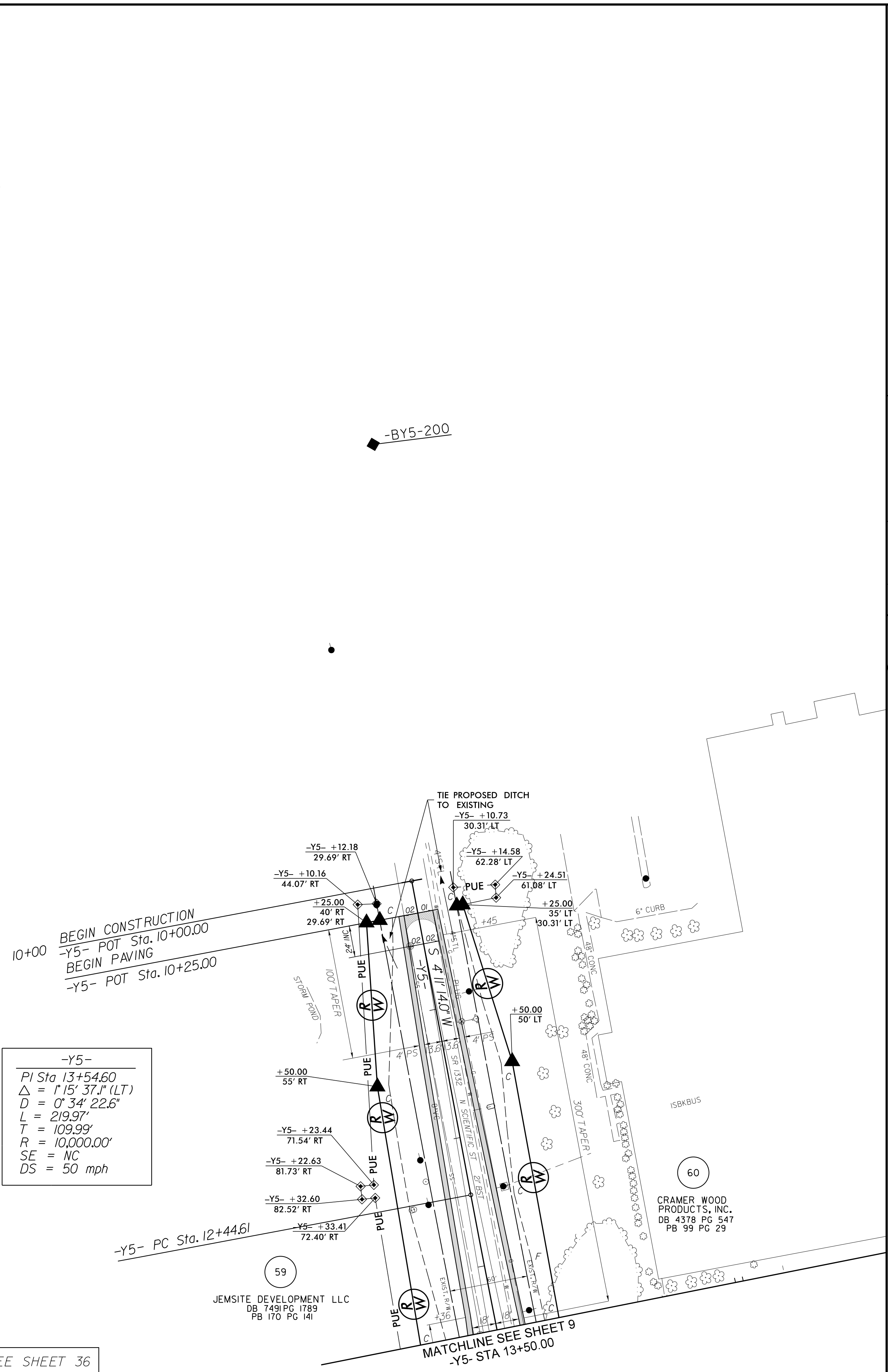
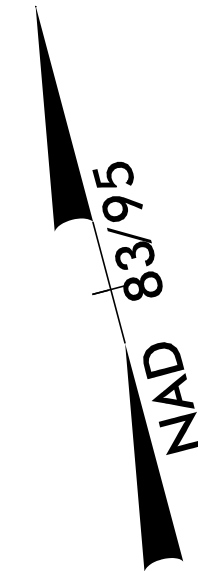


★ EXIST. TRAFFIC SIGNAL
-L- PFL SEE SHEET 31 & 32

8.17.17.99



PROJECT REFERENCE NO. U-2412A		SHEET NO. 22	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
RW SHEET NO. 21		21	
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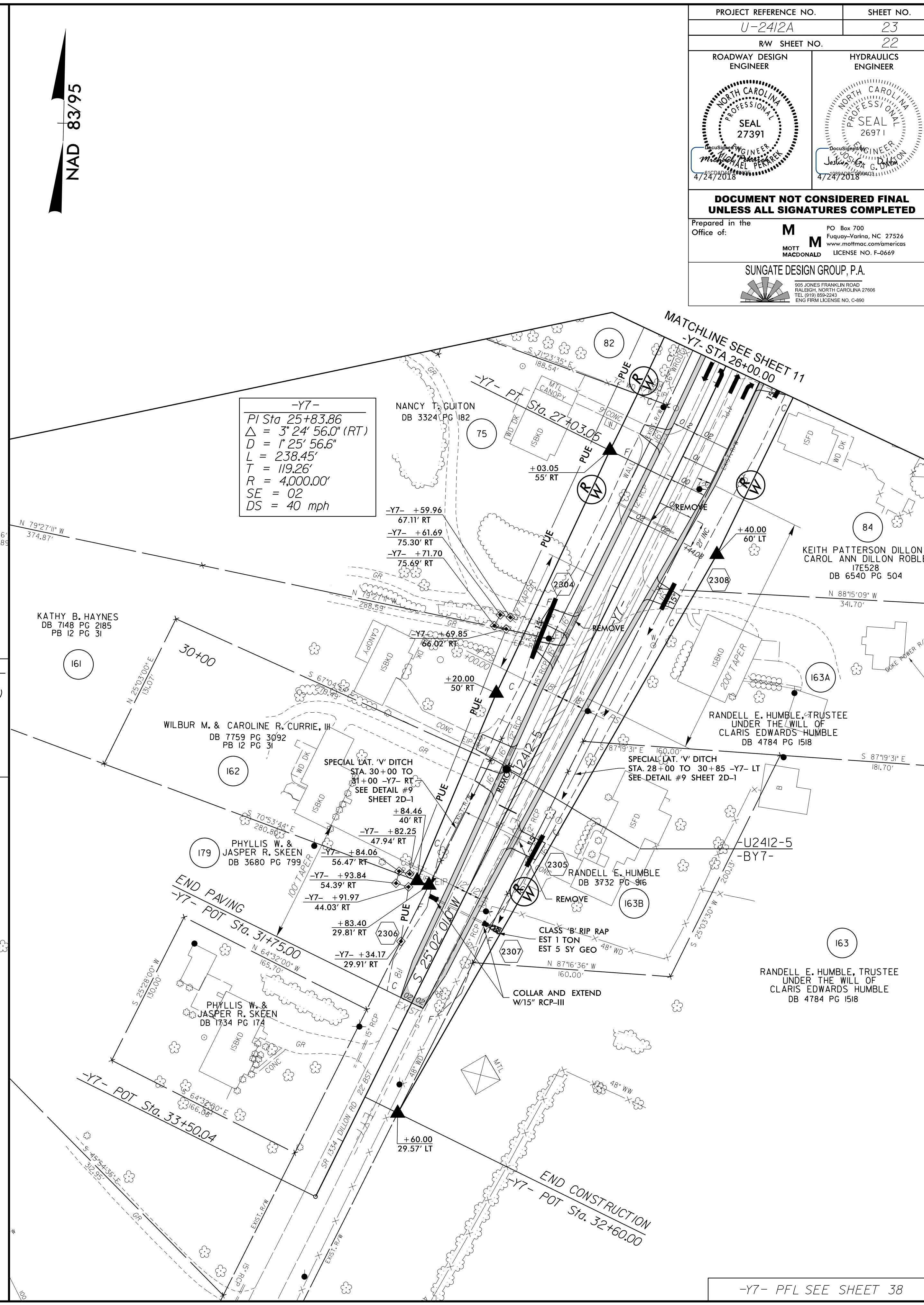
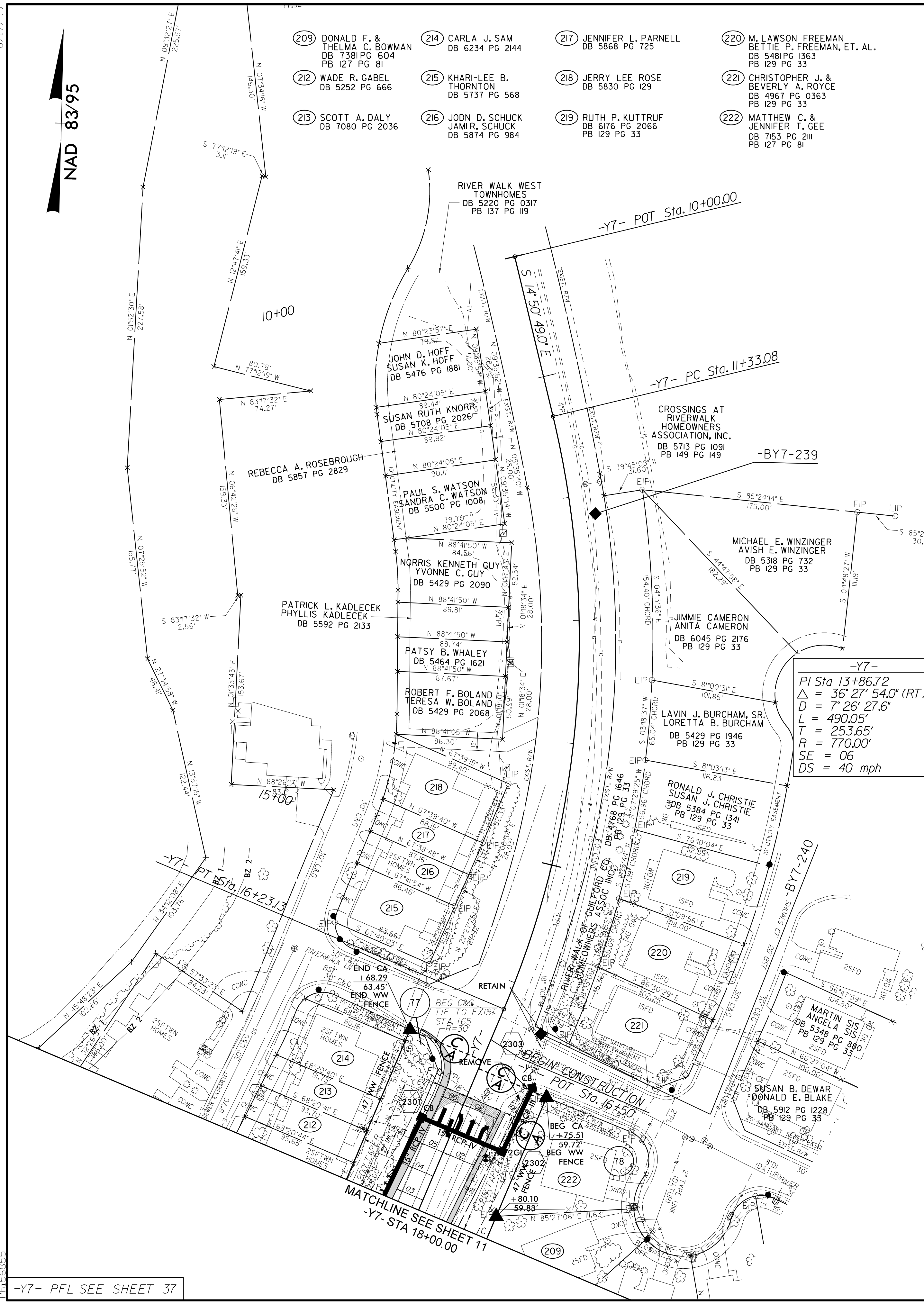
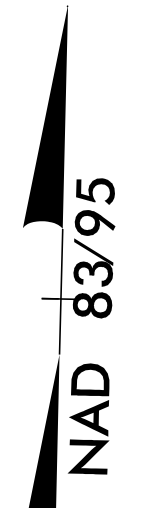
-Y5-
 PI Sta. 13+54.60
 $\Delta = 1^{\circ}15'37.1"$ (LT)
 $D = 0^{\circ}34'22.6"$
 $L = 219.97'$
 $T = 109.99'$
 $R = 10,000.00'$
 $SE = NC$
 $DS = 50$ mph

-Y5- PFL SEE SHEET 36

-Y5- PFL SEE SHEET 36
-Y5B- PFL SEE SHEET 37

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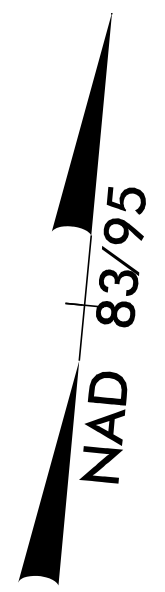


PROJECT REFERENCE NO. U-2412A	SHEET NO. 23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
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SUNGATE DESIGN GROUP, P.A.	

-Y7- PFL SEE SHEET 37

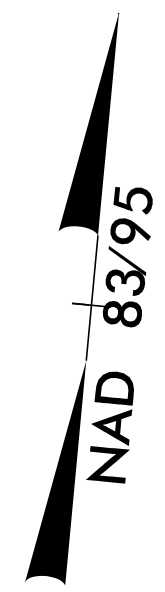
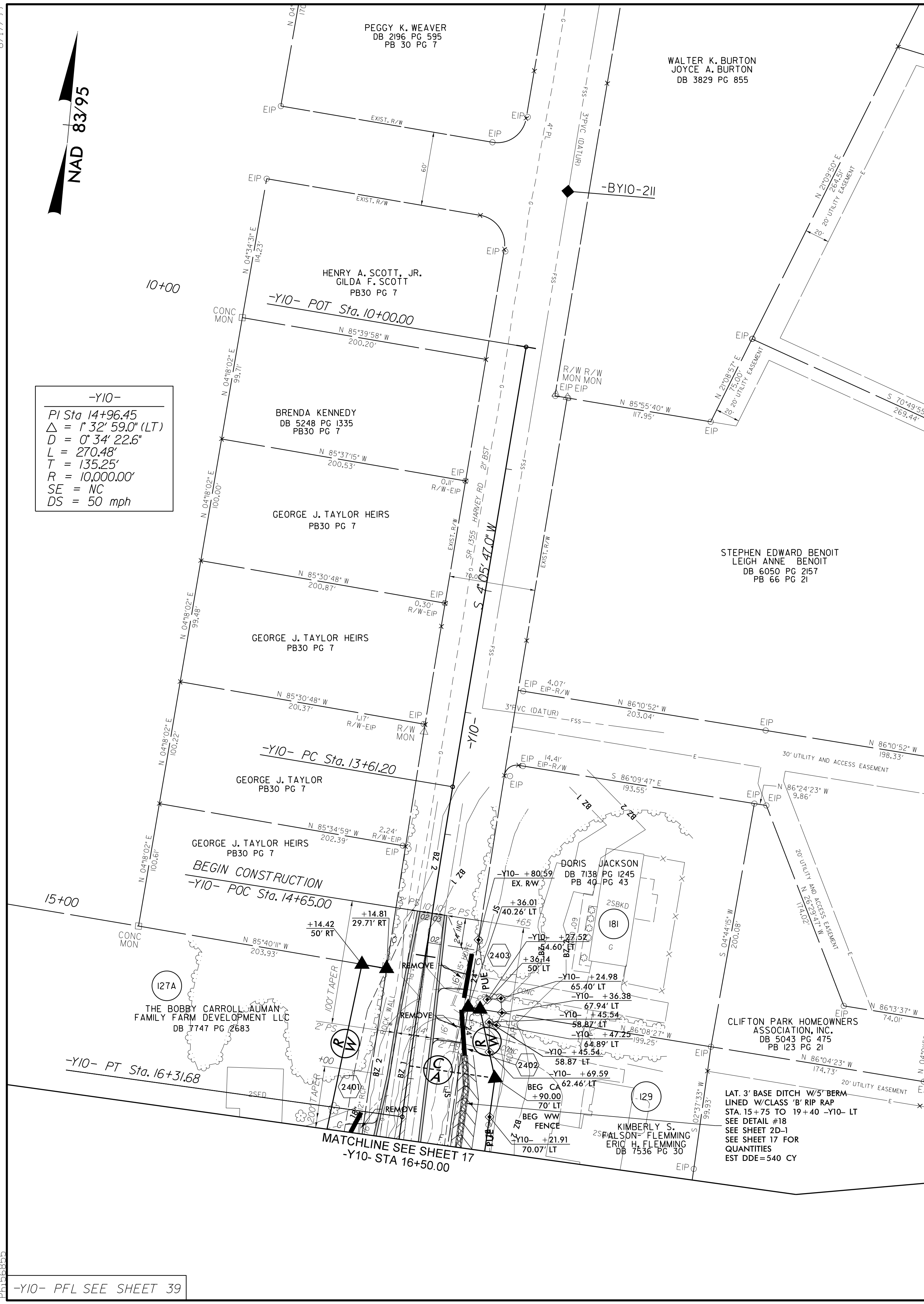
-Y7- PFL SEE SHEET 38

8.17.7.99

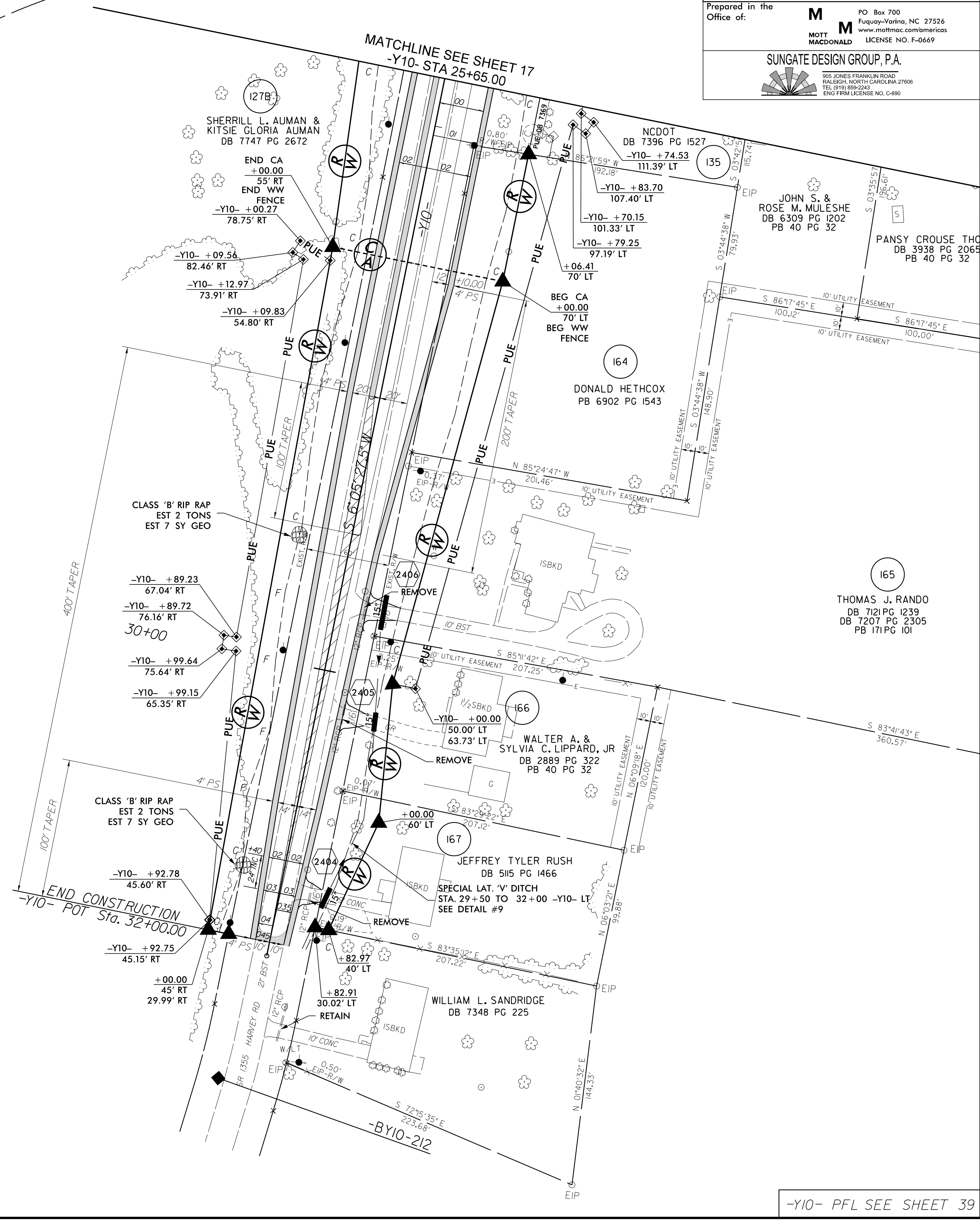


-Y10-

PI Sta 14+96.45
 $\Delta = 1^{\circ}32'59.0''$ (LT)
 $D = 0^{\circ}34'22.6''$
 $L = 270.48'$
 $T = 135.25'$
 $R = 10,000.00'$
 $SE = NC$
 $DS = 50$ mph



PROJECT REFERENCE NO. U-2412A	SHEET NO. 24
RW SHEET NO. 23	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
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SUNGATE DESIGN GROUP, P.A.	

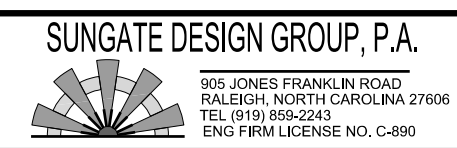


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-Y10- PFL SEE SHEET 39

-Y10- PFL SEE SHEET 39

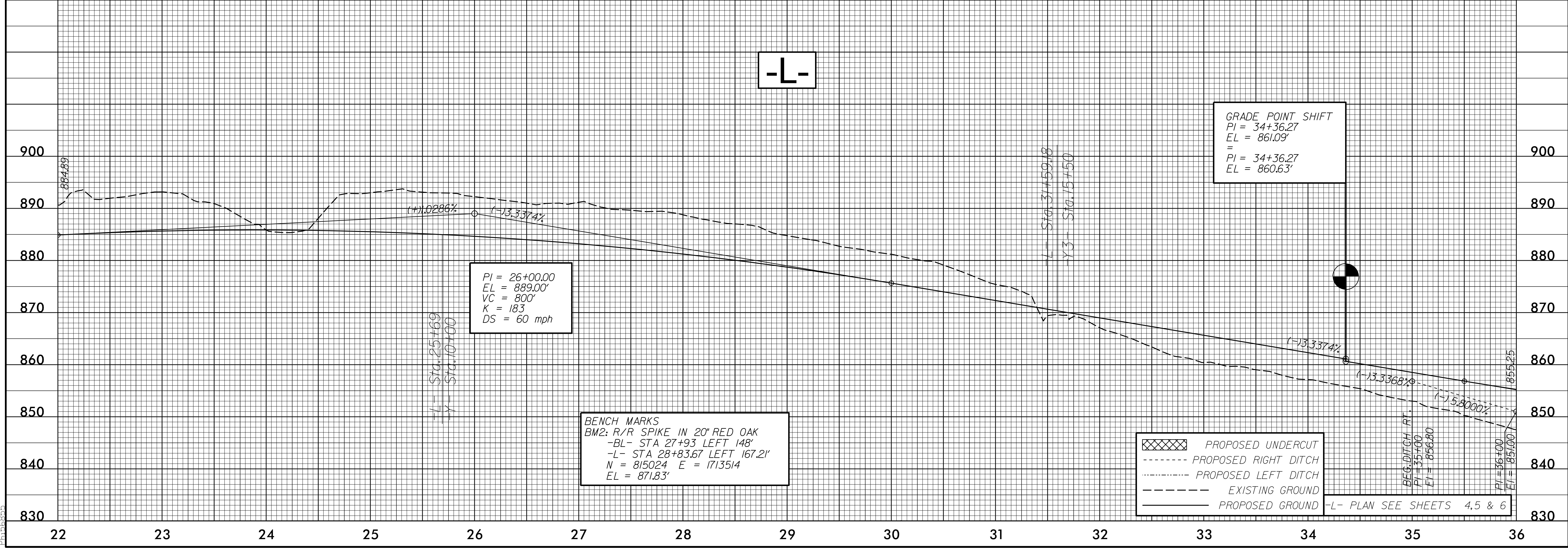
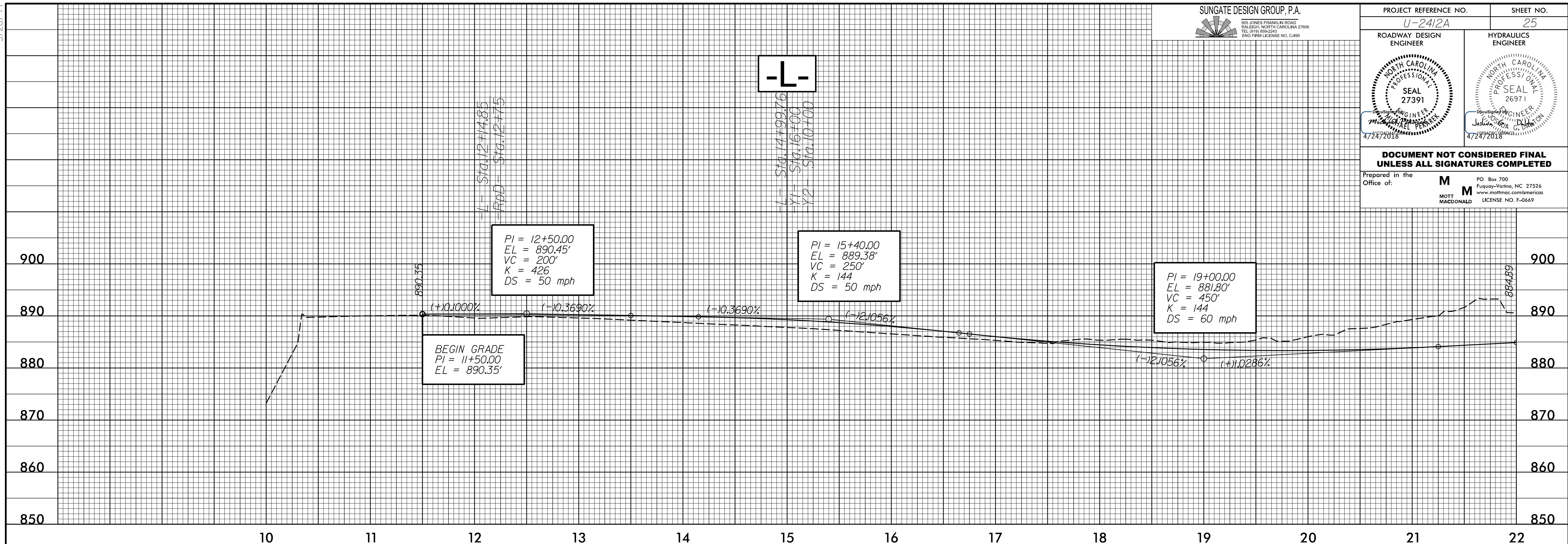
5/28/19



PROJECT REFERENCE NO. U-2412A	SHEET NO. 25
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER

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