

PROJECT REFERENCE NO. U-4906	SHEET NO. 1A
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-5	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2C-1	DETAIL OF MODIFIED METHOD III CLEARING
2C-2	DETAIL OF CONVERTING EXISTING CATCH BASIN TO DROP INLET
2C-3	DETAIL OF ARCH PIPE ENDWALL
2C-4	DETAIL OF ARCH PIPE JUNCTION BOX
3B-1	ROADWAY SUMMARIES (EARTHWORK, PAVEMENT REMOVAL, PAVEMENT BREAKING)
3D-1 THRU 3D-8	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
3P-1	PARCEL INDEX SHEETS
4 THRU 26	PLAN SHEETS
27 THRU 39	PROFILE SHEETS
RW01	RIGHT OF WAY TITLE SHEET
RW02C-1 THRU RW02C-4	SURVEY CONTROL SHEETS
RW02D-1	PROPOSED ALIGNMENT CONTROL SHEETS
RW03E-1 THRU RW03E-3	RIGHT OF WAY CONTROL SHEETS
RW-04 THRU RW-26	RIGHT OF WAY CONTROL SHEETS
TMP-1 THRU TMP-11	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-12	PAVEMENT MARKING PLANS
EC-1 THRU EC-49	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-13	SIGNING PLANS
SIG.1.0 THRU SIG.7.0	SIGNAL PLANS
SIG.M1 THRU SIG.M8	STANDARD DRAWINGS FOR METAL POLES
SCP.1 THRU SCP.9	SIGNAL COMMUNICATION PLANS
UC-1 THRU UC-16	UTILITY CONSTRUCTION PLANS
UD-1 THRU UD-18	UTILITY BY OTHERS PLANS
X-1	CROSS SECTION INDEX SHEET
X-1A THRU X-1C	CROSS SECTION VOLUME SUMMARIES
X-2 THRU X-122	CROSS SECTIONS

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 MODIFIED METHOD III.

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

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

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.

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.

TEMPORARY SHORING:
SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE WATER & SEWER - ONWASA
POWER - JONES - ONSLOW EMC
TELECOMM & FIBER - CENTURYLINK, SPECTRUM
GAS - PIEDMONT NATURAL 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.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	METHOD OF CLEARING - METHOD III
225.02	GUIDE FOR GRADING SUBGRADE - SECONDARY AND LOCAL
225.04	METHOD OF OBTAINING SUPERELEVATION - TWO LANE PAVEMENT
DIVISION 3 - PIPE CULVERTS	
300.01	METHOD OF PIPE INSTALLATION
310.10	DRIVEWAY PIPE CONSTRUCTION
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	METHOD OF SHOULDER CONSTRUCTION - HIGH SIDE OF SUPERELEVATED CURVE - METHOD 1
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	PAVEMENT REPAIRS
DIVISION 8 - INCIDENTALS	
815.02	SUBSURFACE DRAIN
838.01	CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS - 15" THRU 48" PIPE 90 SKEW
838.11	BRICK ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS - 15" THRU 48" PIPE 90 SKEW
840.00	CONCRETE BASE PAD FOR DRAINAGE STRUCTURES
840.02	CONCRETE CATCH BASIN - 12" THRU 54" PIPE
840.14	CONCRETE DROP INLET - 12" THRU 30" PIPE
840.15	BRICK DROP INLET - 12" THRU 30" PIPE
840.16	DROP INLET FRAME AND GRATES - FOR USE WITH STD. DWG 840.14 AND 840.15
840.24	FRAMES AND NARROW SLOT S&G GRATES
840.25	ANCHORAGE FOR FRAMES - BRICK OR CONCRETE OR PRECAST
840.31	CONCRETE JUNCTION BOX - 12" THRU 66" PIPE
840.32	BRICK JUNCTION BOX - 12" THRU 66" PIPE
840.45	PRECAST DRAINAGE STRUCTURE
840.46	TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE
840.54	MANHOLE FRAME AND COVER
840.66	DRAINAGE STRUCTURE STEPS
840.72	PIPE COLLAR
846.01	CONCRETE CURB, GUTTER AND CURB & GUTTER
848.02	DRIVEWAY TURNOUT - RADIUS TYPE
848.03	DRIVEWAY TURNOUT - DROP CURB TYPE
848.04	STREET TURNOUT
876.01	RIP RAP IN CHANNELS
876.02	GUIDE FOR RIP RAP AT PIPE OUTLETS
876.04	DRAINAGE DITCHES WITH CLASS 'B' RIP RAP

EFF. 01-16-2018
REV.

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	□ EDM
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	○
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	□

HYDROLOGY:

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

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

Single Tree	○
Single Shrub	○

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

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	⊠
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	----- 7UTL
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊠
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

SURVEY CONTROL SHEET U4906

PROJECT REFERENCE NO.	SHEET NO.
40255.1.1	1C-1
Location and Surveys	

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

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

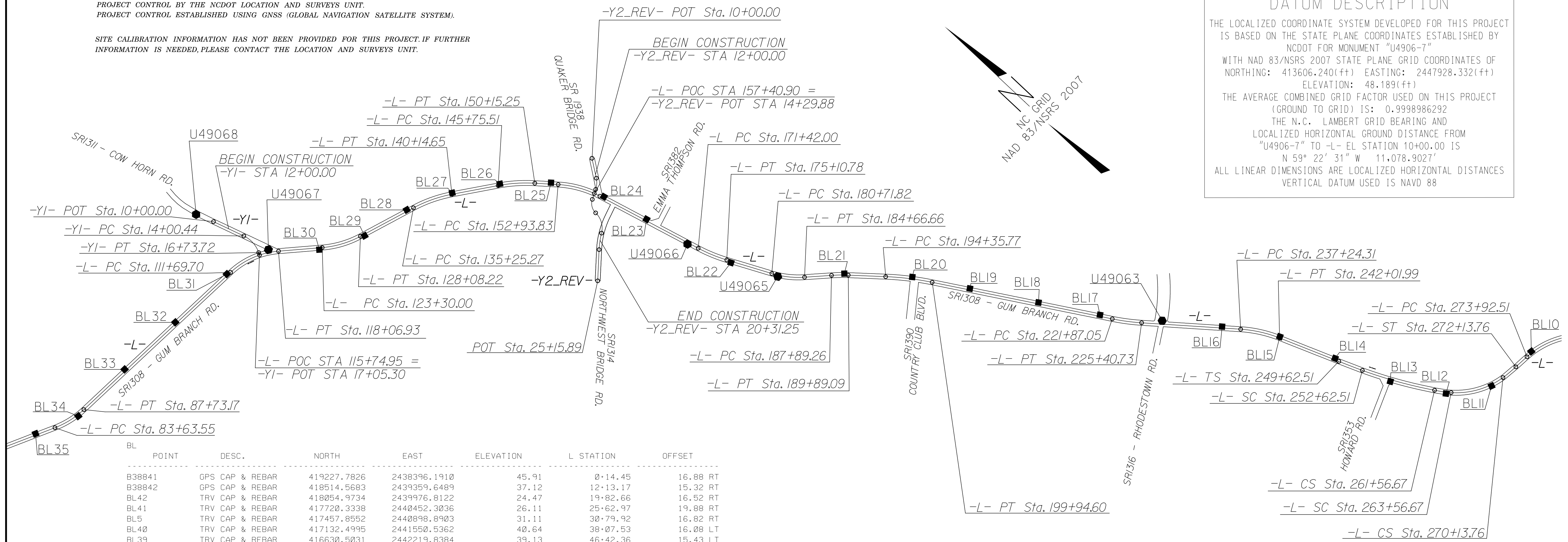
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U4906-7" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 413606.240(ft) EASTING: 2447928.332(ft) ELEVATION: 48.189(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998986292

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U4906-7" TO -L- EL STATION 10+00.00 IS
N 59° 22' 31" W 11,078.9027'

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



BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
B38841	GPS CAP & REBAR		419227.7826	2438396.1910	45.91	0+14.45	16.88 RT
B38842	GPS CAP & REBAR		418514.5683	2439359.6489	37.12	12+13.17	15.32 RT
BL42	TRV CAP & REBAR		418054.9734	2439976.8122	24.47	19+82.66	16.52 RT
BL41	TRV CAP & REBAR		417720.3338	2440452.3036	26.11	25+62.97	19.88 RT
BL5	TRV CAP & REBAR		417457.8552	2440898.8903	31.11	30+79.92	16.82 RT
BL40	TRV CAP & REBAR		417132.4995	2441550.5362	40.64	38+07.53	16.08 LT
BL39	TRV CAP & REBAR		416630.5031	2442219.8384	39.13	46+42.36	15.43 LT
U490610	GPS CAP & REBAR		416137.8418	2442557.2113	32.40	52+38.76	15.77 LT
BL38	TRV CAP & REBAR		415606.5308	2442822.4454	28.67	58+32.60	15.33 LT
U49069	GPS CAP & REBAR		415069.6854	2443055.6974	23.69	64+17.08	16.20 RT
BL37	TRV CAP & REBAR		414640.2366	2443362.1127	25.04	69+42.45	17.64 RT
BL36	TRV CAP & REBAR		414422.8701	2443819.1367	24.04	74+46.71	18.02 LT
BL35	TRV CAP & REBAR		414127.6189	2444426.2526	28.16	81+21.81	15.73 LT
BL34	TRV CAP & REBAR		413900.2617	2444928.0211	33.79	86+72.19	16.24 RT
BL33	TRV CAP & REBAR		413878.6152	2445712.6057	43.69	94+55.14	17.71 LT
BL32	TRV CAP & REBAR		413822.9024	2446536.2347	47.18	102+80.65	15.34 LT
BL31	TRV CAP & REBAR		413768.4537	2447376.7948	48.57	111+22.97	15.32 LT
U49067	GPS CAP & REBAR		413606.2240	2447928.3325	48.19	116+91.99	33.94 LT
BL30	TRV CAP & REBAR		413164.1751	2448344.5118	48.66	122+93.34	22.18 RT
BL29	TRV CAP & REBAR		412884.4303	2448834.7121	48.37	128+54.67	17.73 RT
BL28	TRV CAP & REBAR		412729.0972	2449404.3106	51.68	134+44.05	16.82 LT
BL27	TRV CAP & REBAR		412472.7141	2449923.3090	50.48	140+20.73	16.12 LT
BL26	TRV CAP & REBAR		412131.0487	2450390.7278	47.21	145+99.50	15.55 LT
BL25	TRV CAP & REBAR		411696.5363	2450818.8945	47.67	152+07.63	16.91 LT
BL24	TRV CAP & REBAR		411121.4331	2451128.7043	45.31	158+60.76	16.43 LT
BL23	TRV CAP & REBAR		410567.1985	2451280.5224	46.33	164+35.42	16.61 LT
U49066	GPS CAP & REBAR		410008.1620	2451399.4752	46.95	170+06.03	16.17 RT
BL22	TRV CAP & REBAR		409478.1065	2451592.6592	47.79	175+68.41	16.91 RT
U49065	GPS CAP & REBAR		408959.1429	2451853.7429	45.01	181+48.23	16.94 RT
BL21	TRV CAP & REBAR		408402.7974	2452422.8663	45.24	189+42.28	16.48 LT
BL20	TRV CAP & REBAR		407784.3884	2452948.2985	42.05	197+51.68	22.91 LT
BL19	TRV CAP & REBAR		407189.5165	2453317.5865	43.94	204+50.46	15.90 LT
BL18	TRV CAP & REBAR		406478.8588	2453756.9057	46.69	212+85.95	16.11 LT
BL17	TRV CAP & REBAR		405842.4942	2454150.8603	46.31	220+34.39	16.78 LT
U49063	GPS CAP & REBAR		405254.1273	2454608.0467	46.15	227+83.95	40.07 LT
BL16	TRV CAP & REBAR		404685.6167	2455046.0498	44.87	235+01.24	16.79 LT
BL15	TRV CAP & REBAR		404101.0849	2455429.8049	40.52	241+99.37	15.06 LT
BL14	TRV CAP & REBAR		403443.9506	2455691.5652	36.45	249+06.69	15.92 LT
BL13	TRV CAP & REBAR		402774.6708	2455942.5223	36.07	256+20.08	21.70 RT
BL12	TRV CAP & REBAR		402192.1929	2456292.0339	35.16	262+96.82	16.84 RT
BL11	TRV CAP & REBAR		401857.9054	2456729.8014	30.97	268+46.15	15.37 RT
BL10	TRV CAP & REBAR		401793.7408	2457354.2536	32.36	274+71.89	15.92 LT
U49062	GPS CAP & REBAR		401573.9450	2457855.0470	32.68	280+13.96	28.48 LT
BLA8	TRV CAP & REBAR		401000.7770	2458549.3900	32.99	289+14.30	24.92 LT
BLA7	TRV CAP & REBAR		400372.4100	2459236.2410	32.84	298+43.82	26.10 RT
BLA6	TRV CAP & REBAR		400022.9140	2459871.8260	19.14	305+66.93	33.91 LT

BL1	POINT	DESC.	NORTH	EAST	ELEVATION	L1 STATION	OFFSET
BLA5	TRV CAP & REBAR		399442.5760	2460736.5820	29.32	18+29.95	45.70 LT
BLA4	TRV CAP & REBAR		398686.6770	2460999.1360	31.83	26+19.92	30.70 RT
BLA3	TRV CAP & REBAR		397948.8120	2461387.8840	32.79	34+51.20	26.15 RT
BLA2	TRV CAP & REBAR		397098.7770	2461941.3390	33.43	44+63.09	22.05 LT
BLA1	TRV CAP & REBAR		396162.8380	2462052.5640	27.81	54+02.25	24.10 RT
GPS12	GPS CAP & REBAR		395260.1660	2462243.8590	29.03	63+23.35	30.56 LT
GPS11	GPS CAP & REBAR		393958.1340	2462380.6130	11.92	76+30.96	26.94 RT

BY3	POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
U49068	GPS CAP & REBAR		414523.9094	2447645.8568	49.79	OUTSIDE PROJECT LIMITS	

BY2	POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
A11	TRV CAP & REBAR		399658.0640	2461075.6250	34.96	15+64.47	15.81 LT

BY	POINT	DESC.	NORTH	EAST	ELEVATION	Y4 STATION	OFFSET
BYA12	TRV CAP & REBAR		395285.7953	2463286.1330	31.67	OUTSIDE PROJECT LIMITS	
BYA9	TRV CAP & REBAR		395260.4980	2462633.7380	30.64	14+50.34	17.17 RT

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET U4906

PROJECT REFERENCE NO.	SHEET NO.
40255.1.1	1C-2
Location and Surveys	

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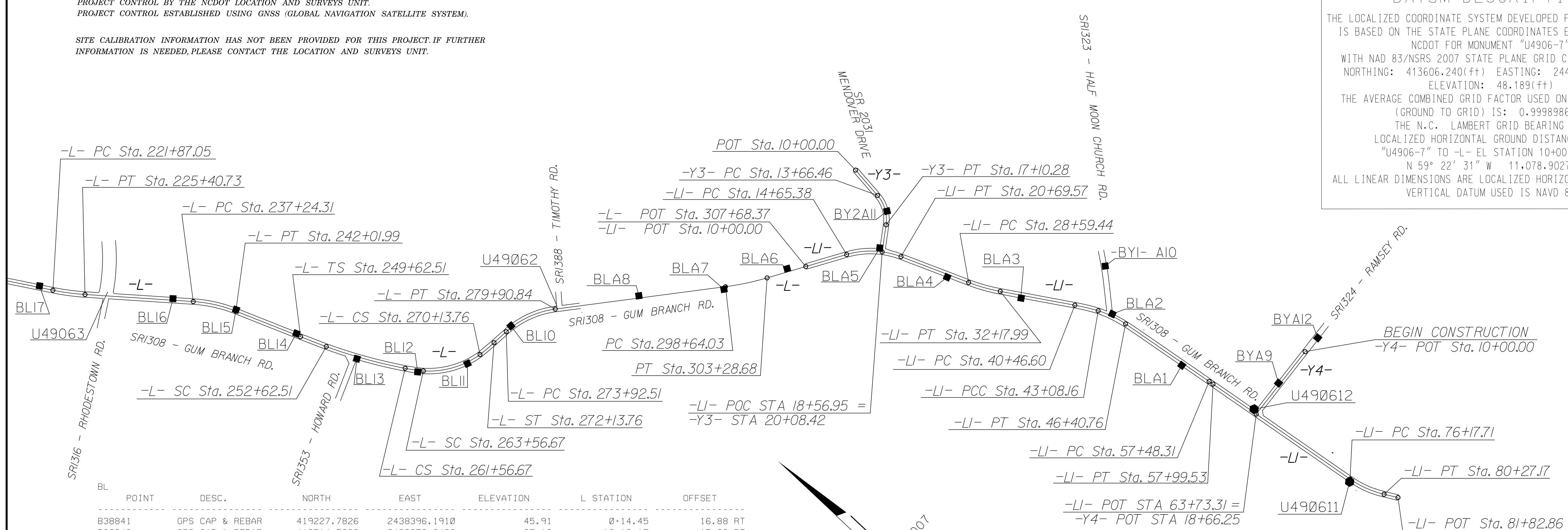
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BL42	TRV CAP & REBAR	418054.9734	2439976.8122	24.47	19+82.66	16.52 RT
BL41	TRV CAP & REBAR	417720.3338	2440452.3036	26.11	25+62.97	19.88 RT
BL5	TRV CAP & REBAR	417457.8552	2440898.8903	31.11	30+79.92	16.82 RT
BL40	TRV CAP & REBAR	417132.4995	2441550.5362	40.64	38+07.53	16.08 LT
BL39	TRV CAP & REBAR	416630.5031	2442219.8384	39.13	46+42.36	15.43 LT
U490610	GPS CAP & REBAR	416137.8418	2442557.2113	32.40	52+38.76	15.77 LT
BL38	TRV CAP & REBAR	415606.5308	2442822.4454	28.67	58+32.60	15.33 LT
U49069	GPS CAP & REBAR	415069.6854	2443055.6974	23.69	64+17.08	16.20 RT
BL37	TRV CAP & REBAR	414640.2366	2443362.1127	25.04	69+42.45	17.64 RT
BL36	TRV CAP & REBAR	414422.8701	2443819.1367	24.04	74+46.71	18.02 LT
BL35	TRV CAP & REBAR	414127.6189	2444426.2526	28.16	81+21.81	15.73 LT
BL34	TRV CAP & REBAR	413900.2617	2444928.0211	33.79	86+72.19	16.24 RT
BL33	TRV CAP & REBAR	413878.6152	2445712.6057	43.69	94+55.14	17.71 LT
BL32	TRV CAP & REBAR	413822.9024	2446536.2347	47.18	102+80.65	15.34 LT
BL31	TRV CAP & REBAR	413768.4537	2447376.7948	48.57	111+22.97	15.32 LT
U49067	GPS CAP & REBAR	413606.2240	2447928.3325	48.19	116+91.99	33.94 LT
BL30	TRV CAP & REBAR	413164.1751	2448344.5118	48.66	122+93.34	22.18 RT
BL29	TRV CAP & REBAR	412884.4303	2448834.7121	48.37	128+54.67	17.73 RT
BL28	TRV CAP & REBAR	412729.0972	2449404.3106	51.68	134+44.05	16.82 LT
BL27	TRV CAP & REBAR	412472.7141	2449923.3090	50.48	140+20.73	16.12 LT
BL26	TRV CAP & REBAR	412131.0487	2450390.7278	47.21	145+99.50	15.55 LT
BL25	TRV CAP & REBAR	411896.5363	2450818.8945	47.67	152+07.63	16.91 LT
BL24	TRV CAP & REBAR	411121.4331	2451128.7043	45.31	158+60.76	16.43 LT
BL23	TRV CAP & REBAR	410567.1985	2451280.5224	46.33	164+35.42	16.61 LT
U49066	GPS CAP & REBAR	410008.1620	2451399.4752	46.95	170+06.03	16.17 RT
BL22	TRV CAP & REBAR	409478.1065	2451592.6592	47.79	175+68.41	16.91 RT
U49065	GPS CAP & REBAR	408959.1429	2451853.7429	45.01	181+48.23	16.94 RT
BL21	TRV CAP & REBAR	408402.7974	2452422.8663	45.24	189+42.28	16.48 LT
BL20	TRV CAP & REBAR	407784.3884	2452948.2985	42.05	197+51.68	22.91 LT
BL19	TRV CAP & REBAR	407189.5165	2453317.5865	43.94	204+50.46	15.90 LT
BL18	TRV CAP & REBAR	406478.8588	2453756.9057	46.69	212+85.95	16.11 LT
BL17	TRV CAP & REBAR	405842.4942	2454150.8603	46.31	220+34.39	16.78 LT
U49063	GPS CAP & REBAR	405254.1273	2454608.0467	46.15	227+83.95	40.07 LT
BL16	TRV CAP & REBAR	404685.6167	2455046.0498	44.87	235+01.24	16.79 LT
BL15	TRV CAP & REBAR	404101.0849	2455429.8049	40.52	241+99.37	15.06 LT
BL14	TRV CAP & REBAR	403443.9506	2455691.5652	36.45	249+06.69	15.92 LT
BL13	TRV CAP & REBAR	402774.6708	2455942.5223	36.07	256+20.08	21.70 RT
BL12	TRV CAP & REBAR	402192.1929	2456292.0339	35.16	262+96.82	16.84 RT
BL11	TRV CAP & REBAR	401857.9054	2456729.8014	30.97	268+46.15	15.37 RT
BL10	TRV CAP & REBAR	401793.7408	2457354.2536	32.36	274+71.89	15.92 LT
U49062	GPS CAP & REBAR	401573.9450	2457855.0470	32.68	280+13.96	28.48 LT
BLA8	TRV CAP & REBAR	401000.7770	2458549.3900	32.99	289+14.30	24.92 LT
BLA7	TRV CAP & REBAR	400372.4100	2459236.2410	32.84	298+43.82	26.10 RT
BLA6	TRV CAP & REBAR	400022.9140	2459871.8260	19.14	305+66.93	33.91 LT

BL1 POINT	DESC.	NORTH	EAST	ELEVATION	L1 STATION	OFFSET
BLA5	TRV CAP & REBAR	399442.5760	2460736.5820	29.32	18+29.95	45.70 LT
BLA4	TRV CAP & REBAR	398686.6770	2460999.1360	31.83	26+19.92	30.70 RT
BLA3	TRV CAP & REBAR	397948.8120	2461387.8840	32.79	34+51.20	26.15 RT
BLA2	TRV CAP & REBAR	397098.7770	2461941.3390	33.43	44+63.09	22.05 LT
BLA1	TRV CAP & REBAR	396162.8380	2462052.5640	27.81	54+02.25	24.10 RT
GPS12	GPS CAP & REBAR	395260.1660	2462243.8590	29.03	63+23.35	30.56 LT
GPS11	GPS CAP & REBAR	393958.1340	2462380.6130	11.92	76+30.96	26.94 RT

BY3 POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
U49068	GPS CAP & REBAR	414523.9094	2447645.8568	49.79	OUTSIDE PROJECT LIMITS	

BY2 POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
A11	TRV CAP & REBAR	399658.0640	2461075.6250	34.96	15+64.47	15.81 LT

BY POINT	DESC.	NORTH	EAST	ELEVATION	Y4 STATION	OFFSET
BYA12	TRV CAP & REBAR	395285.7953	2463286.1330	31.67	OUTSIDE PROJECT LIMITS	
BYA9	TRV CAP & REBAR	395260.4980	2462633.7380	30.84	14+50.34	17.17 RT

NOTE: DRAWING NOT TO SCALE

6/2/2019

FINAL PAVEMENT DESIGN	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	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 4" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
J1	PROP. 6" AGGREGATE BASE COURSE
R1	2'-6" CONCRETE CURB AND GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	MILLING BITUMINOUS PAVEMENT. 1 1/2" DEPTH.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2A-1)

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

MILLING AT PAVEMENT TIE-INS

NOTES TO CONTRACTOR

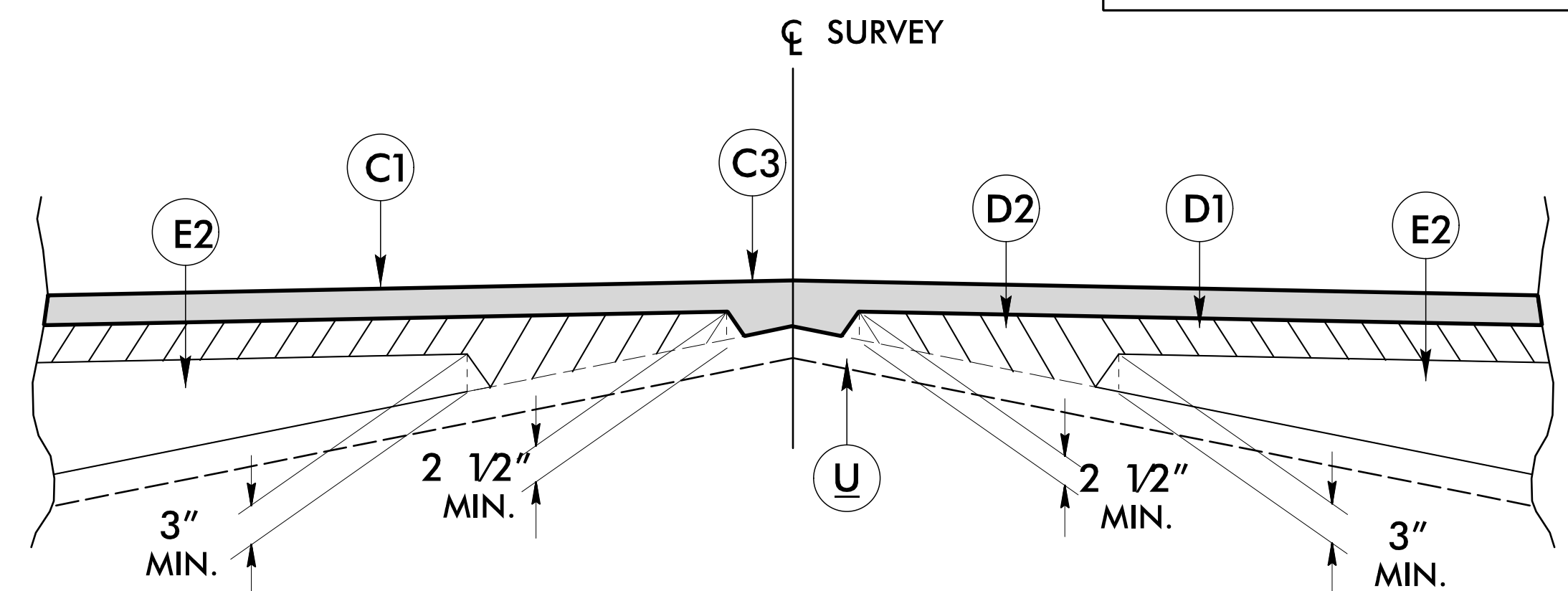
For surface mixes over 1" in thickness, mill the existing pavement in accordance with the following sketch as directed by the Engineer.

Locations shall include ties into existing concrete pavement, at bridge approaches where the bridge will not be resurfaced, and at the beginning and ending point of each resurfacing map.

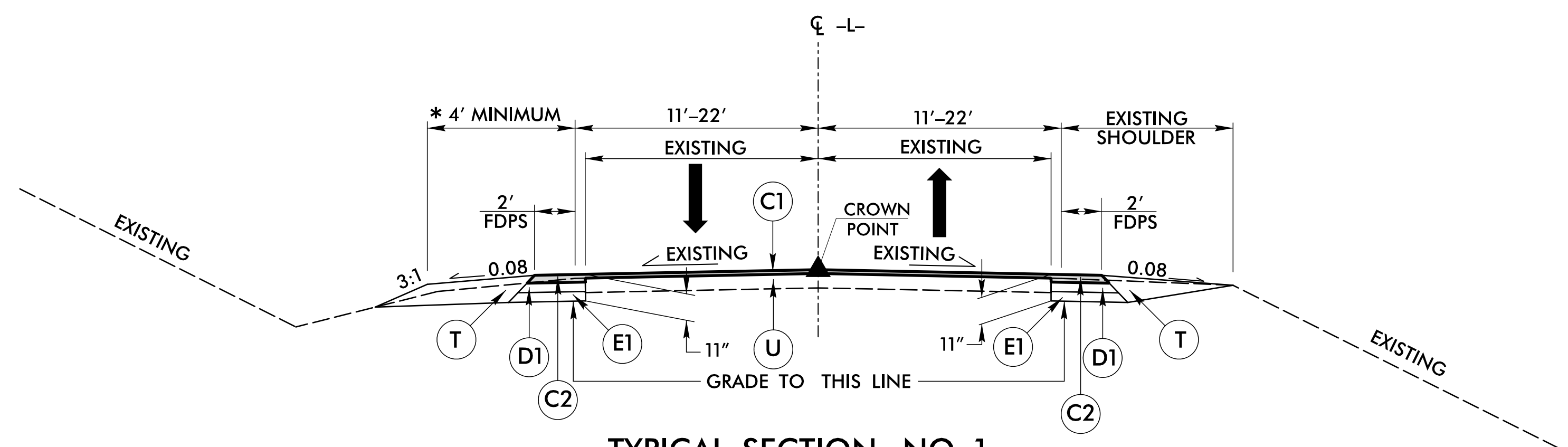
Perform the work in accordance with Section 607 of the January 2018 North Carolina Department of Transportation Standard Specifications for Roads and Structures. Resurfacing will be accomplished at the same time as the milling operation.

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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1524

PROJECT REFERENCE NO. U-4906	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



Detail Showing Method of Wedging



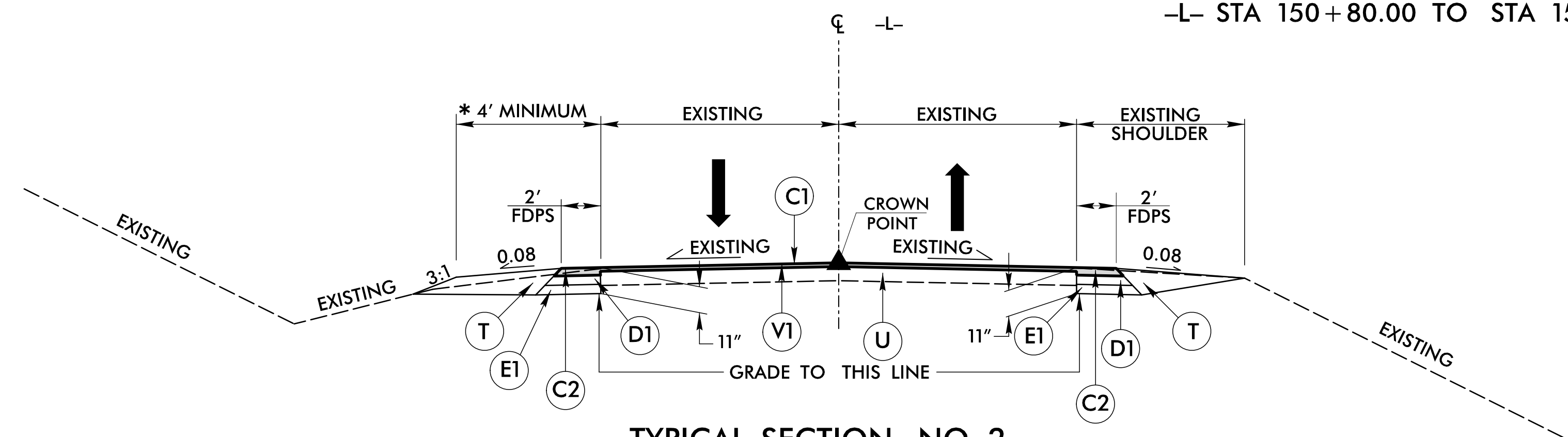
TYPICAL SECTION NO. 1

- L- STA 30+50.00 TO STA 62+50.00
- L- STA 78+50.00 TO STA 106+70.00
- L- STA 124+55.00 TO STA 150+80.00
- L- STA 165+00.00 TO STA 280+00.00

* NOTE: TIE PROPOSED SHOULDER TO EXISTING SHOULDER POINT OR PROVIDE A MINIMUM WIDTH OF 4'

TRANSITION FROM TYPICAL SECTION 1 TO TYPICAL SECTION 4

- L- STA 106+70.00 TO STA 110+30.00
- L- STA 150+80.00 TO STA 153+30.00



TYPICAL SECTION NO. 2

- L- STA 62+50.00 TO STA 65+80.00
- L- STA 71+55.00 TO STA 78+50.00

* NOTE: TIE PROPOSED SHOULDER TO EXISTING SHOULDER POINT OR PROVIDE A MINIMUM WIDTH OF 4'

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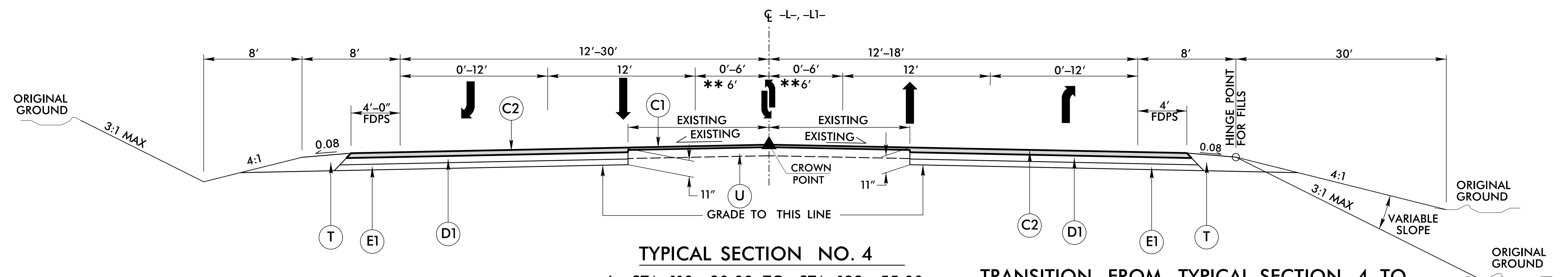
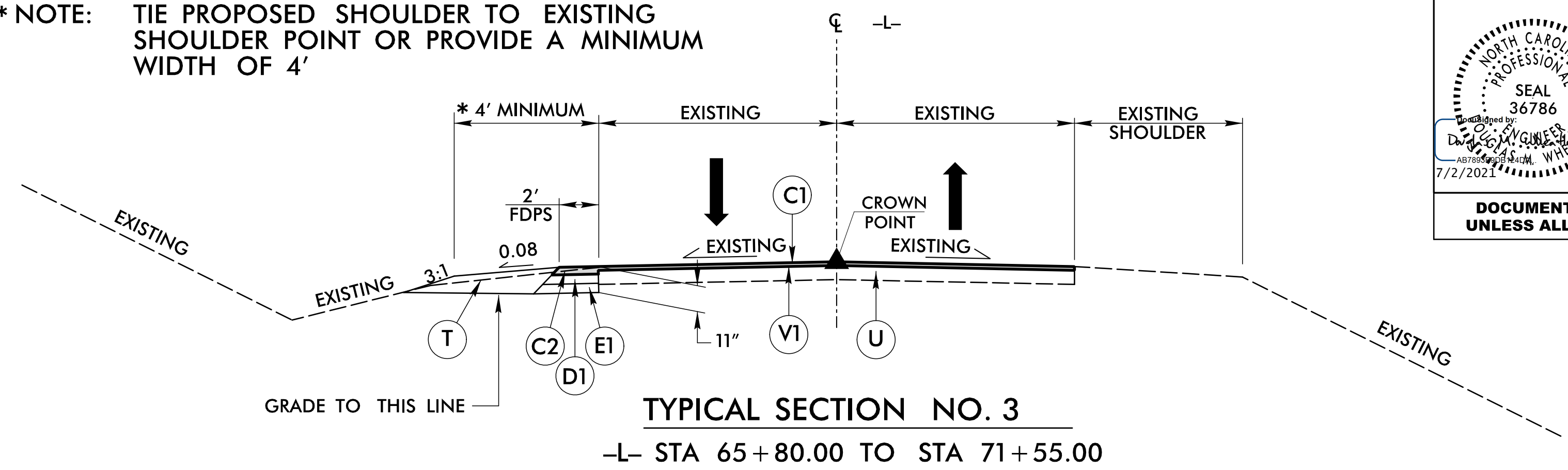
FINAL PAVEMENT DESIGN

C1	PROP. 1½" ACSC, TYPE S9.5B	J1	PROP. 6" ABC
C2	PROP. 3" ACSC, TYPE S9.5B	R1	2'-6" CONCRETE CURB AND GUTTER.
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B	T	EARTH MATERIAL.
D1	PROP. 4" ACIC, TYPE I19.0C	U	EXISTING PAVEMENT.
D2	PROP. VAR. DEPTH ACIC, TYPE I19.0C	V1	MILLING - 1 1/2" DEPTH.
E1	PROP. 4" ACBC, TYPE B25.0C	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2A-1)
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C	NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.	

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343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. C-1524

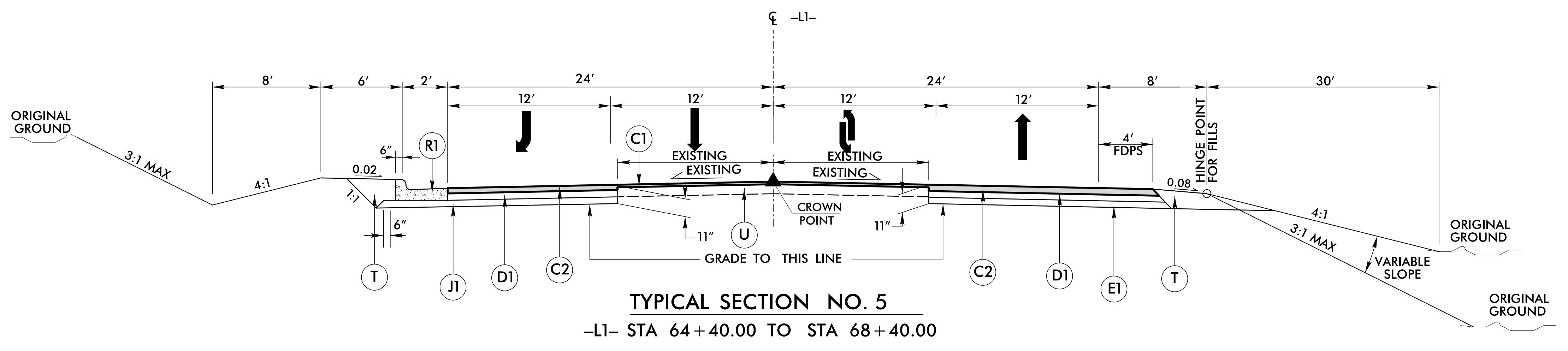
PROJECT REFERENCE NO. U-4906	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	PAVEMENT DESIGN ENGINEER <i>[Signature]</i>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

*** NOTE: TIE PROPOSED SHOULDER TO EXISTING SHOULDER POINT OR PROVIDE A MINIMUM WIDTH OF 4'**



TRANSITION FROM TYPICAL SECTION 4 TO TYPICAL SECTION 1
-L- STA 122+55.00 TO STA 124+55.00
-L- STA 162+00.00 TO STA 165+00.00

TRANSITION FROM TYPICAL SECTION 4 TO TYPICAL SECTION 5
-L1- STA 61+40.00 TO STA 64+40.00

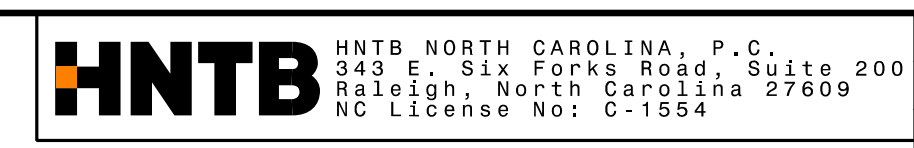


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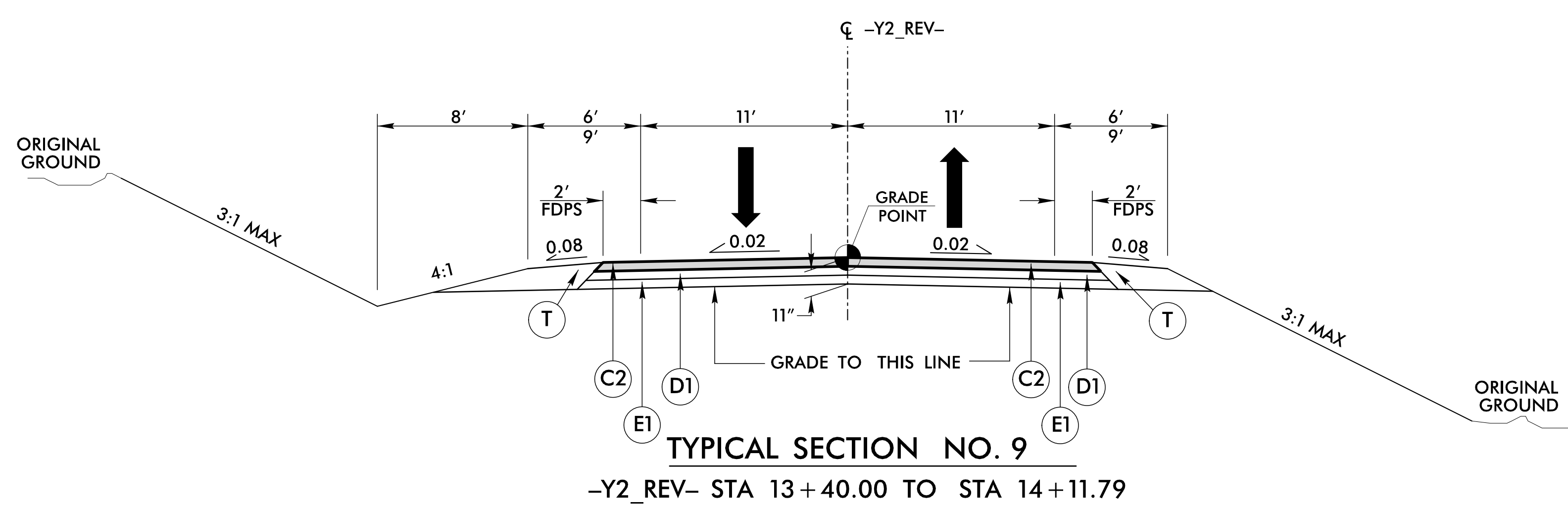
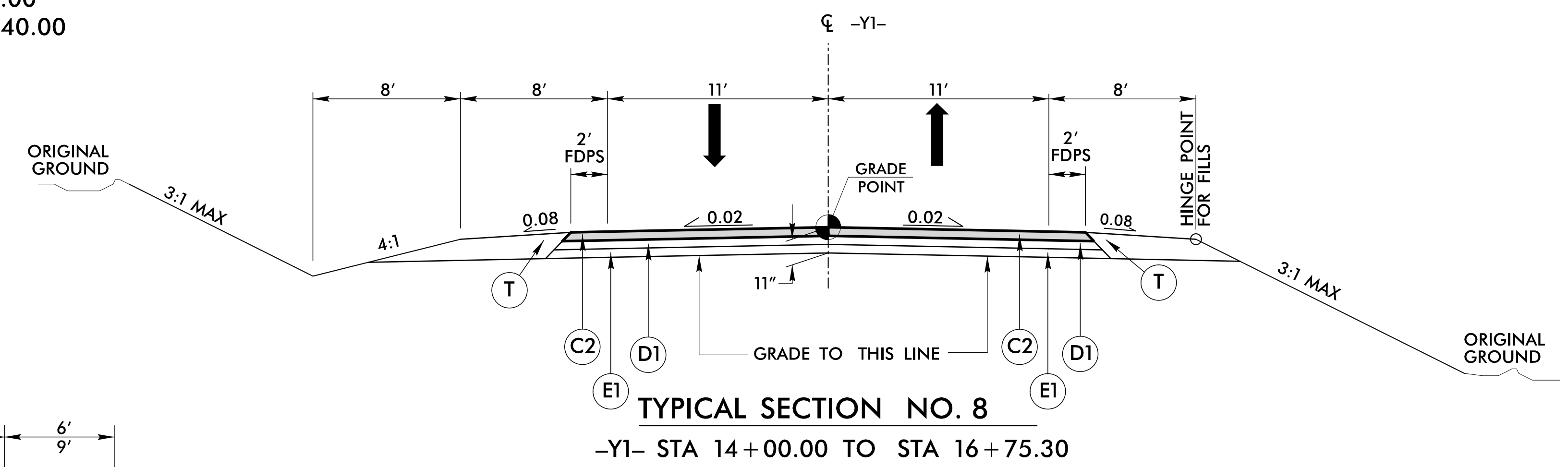
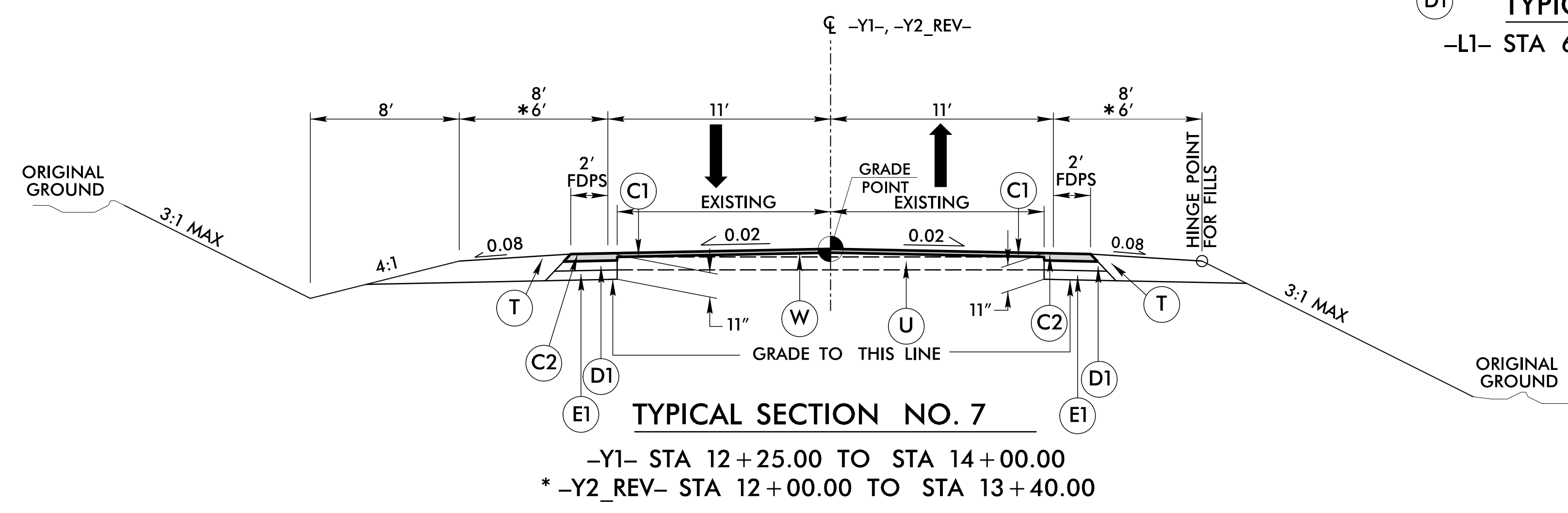
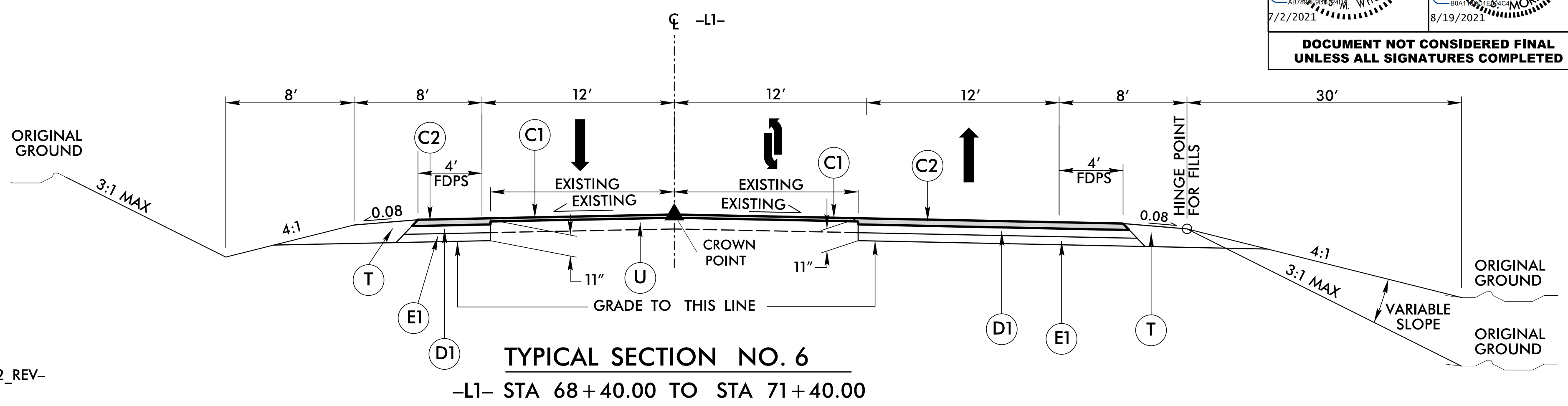
6/2/2021

FINAL PAVEMENT DESIGN

C1	PROP. 1 1/2" ACSC, TYPE S9.5B	J1	PROP. 6" ABC
C2	PROP. 3" ACSC, TYPE S9.5B	R1	2'-6" CONCRETE CURB AND GUTTER.
C3	PROP. VAR. DEPTH ACSC, TYPE S9.5B	T	EARTH MATERIAL.
D1	PROP. 4" ACIC, TYPE I19.0C	U	EXISTING PAVEMENT.
D2	PROP. VAR. DEPTH ACIC, TYPE I19.0C	V1	MILLING - 1 1/2" DEPTH.
E1	PROP. 4" ACBC, TYPE B25.0C	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2A-1)
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C	NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.	



PROJECT REFERENCE NO. U-4906	SHEET NO. 2A-3
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	PAVEMENT DESIGN ENGINEER <i>[Signature]</i>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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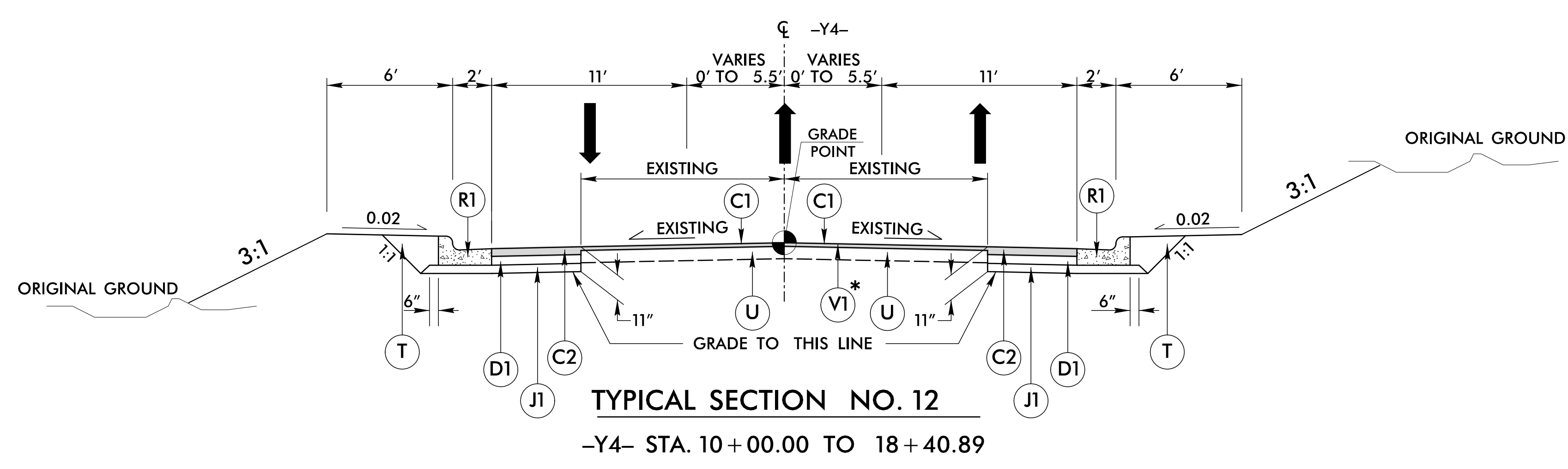
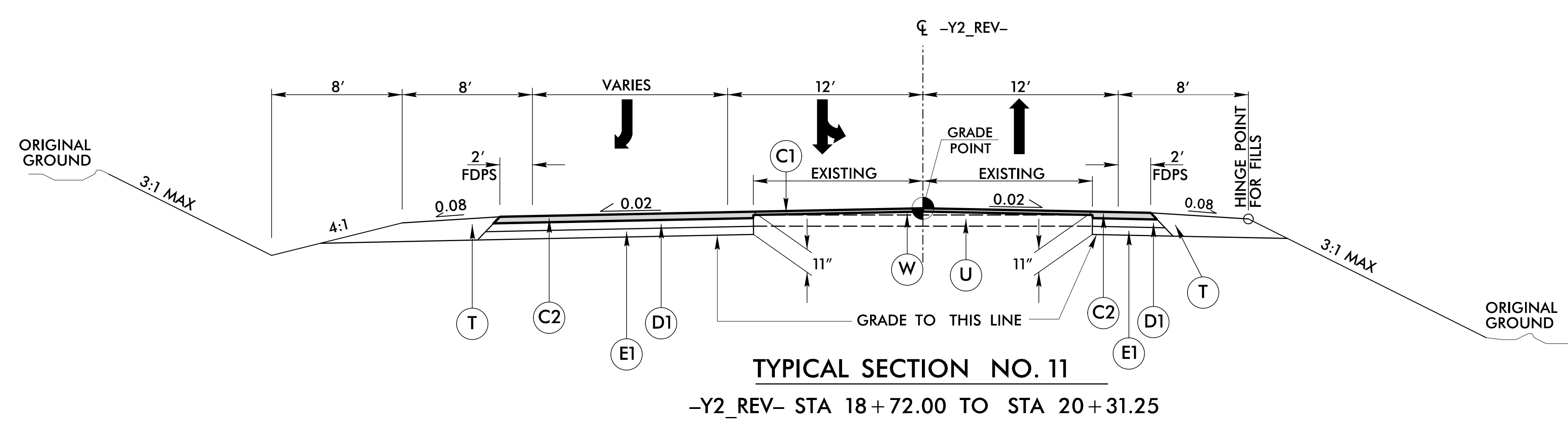
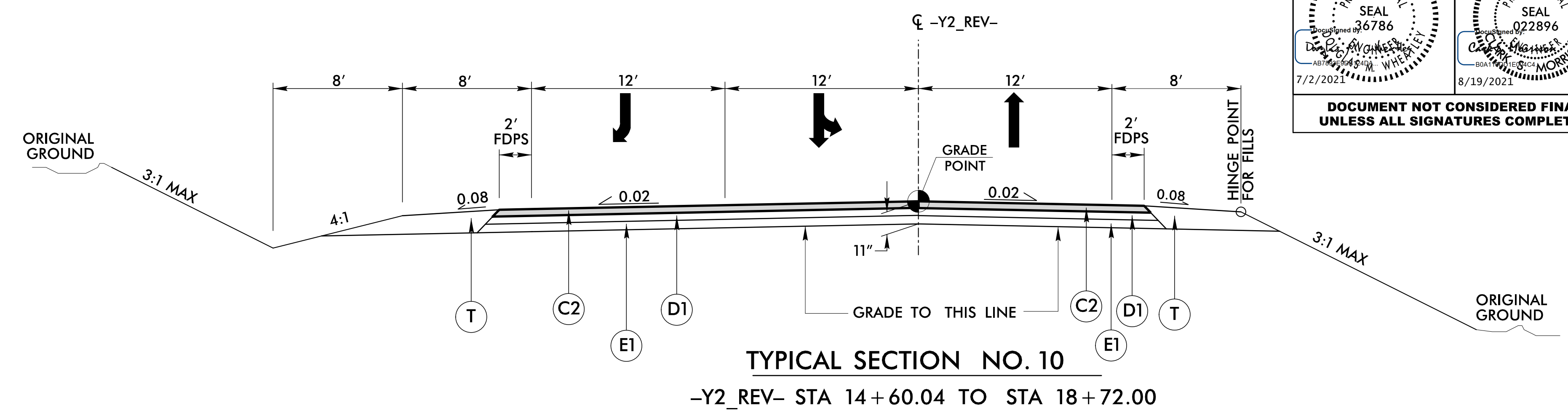
6/2/2021

FINAL PAVEMENT DESIGN

C1	PROP. 1 1/2" ACSC, TYPE S9.5B	J1	PROP. 6" ABC
C2	PROP. 3" ACSC, TYPE S9.5B	R1	2'-6" CONCRETE CURB AND GUTTER.
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D1	PROP. 4" ACIC, TYPE I19.0C	U	EXISTING PAVEMENT.
D2	PROP. VAR. DEPTH ACIC, TYPE I19.0C	V1	MILLING - 1 1/2" DEPTH.
E1	PROP. 4" ACBC, TYPE B25.0C	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2A-1)
E2	PROP. VAR. DEPTH ACBC, TYPE B25.0C	NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.	

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NC License No: C-1524

PROJECT REFERENCE NO. U-4906	SHEET NO. 2A-4
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	PAVEMENT DESIGN ENGINEER <i>[Signature]</i>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



* NOTE: MILLING NEEDED FROM STA. 13+23.79 TO STA. 16+25.00

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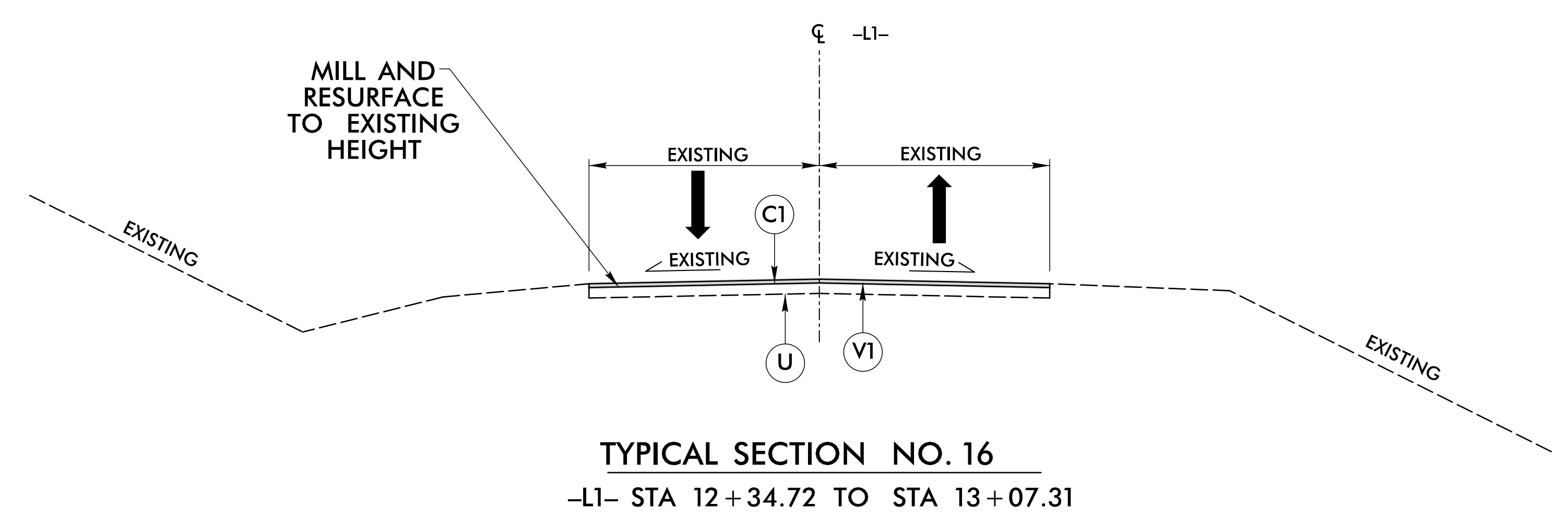
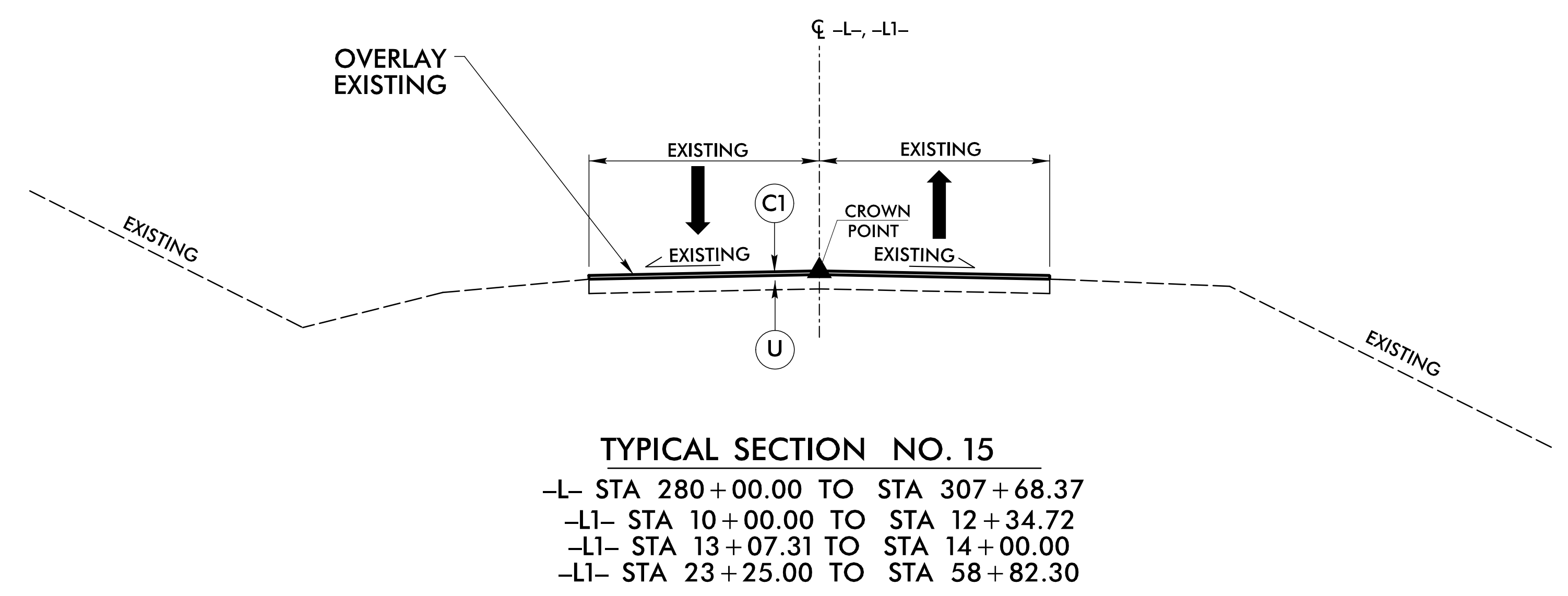
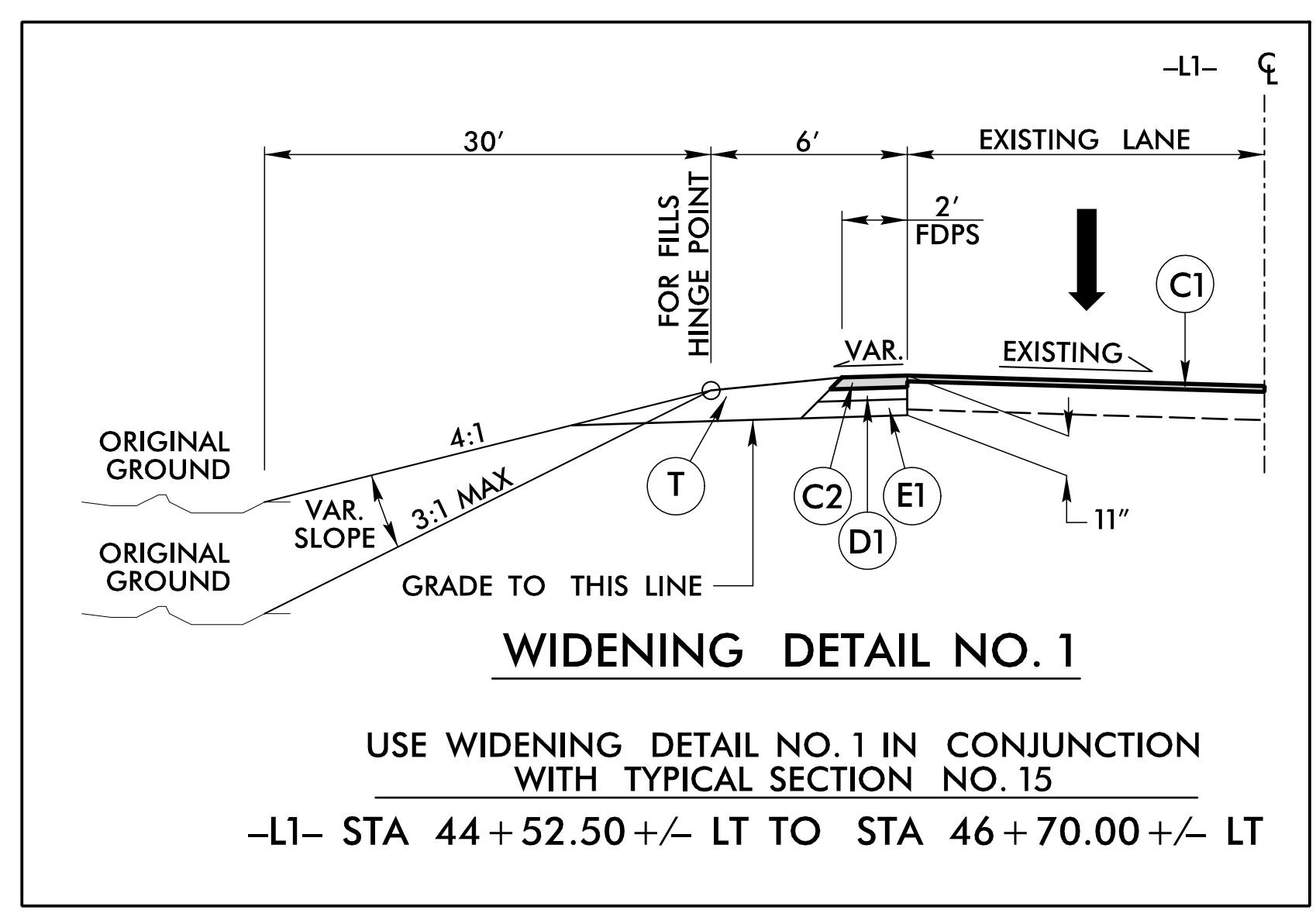
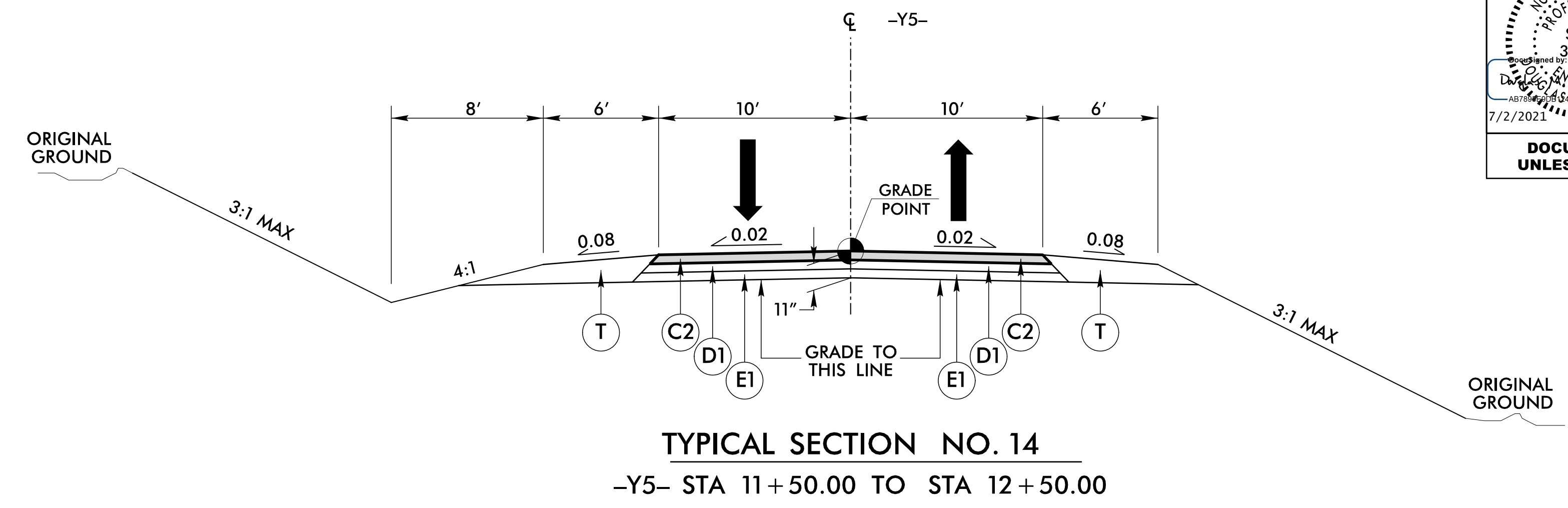
6/2/2021

FINAL PAVEMENT DESIGN

C1	PROP. 1½" ACSC, TYPE S9.5B	J1	PROP. 6" ABC
C2	PROP. 3" ACSC, TYPE S9.5B	R1	2'-6" CONCRETE CURB AND GUTTER.
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 Raleigh, North Carolina 27609
 NC License No: C-1524

PROJECT REFERENCE NO. U-4906	SHEET NO. 2A-5
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	PAVEMENT DESIGN ENGINEER <i>[Signature]</i>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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

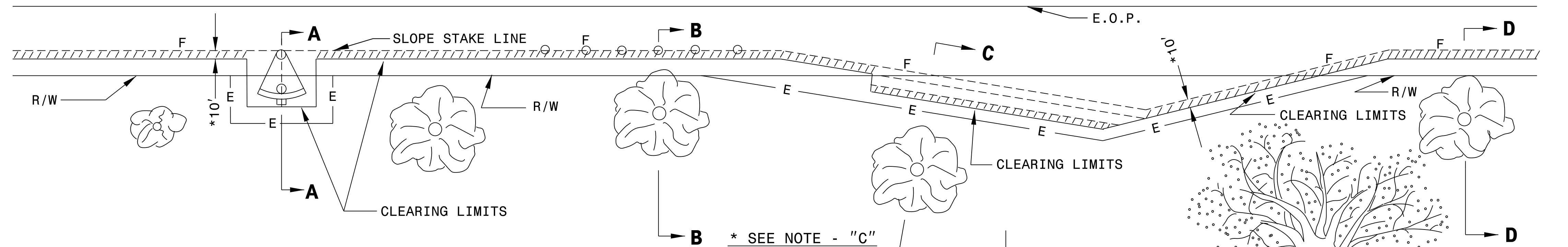
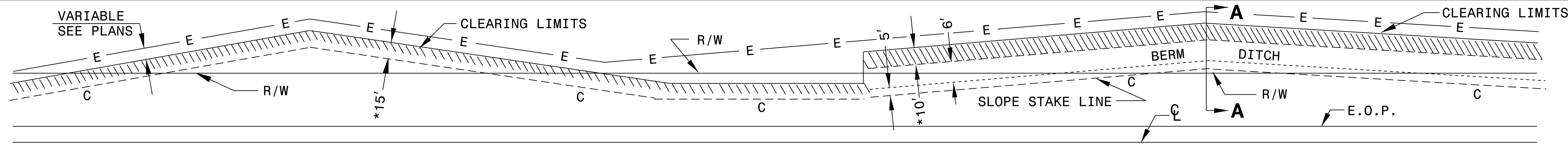
ENGLISH DETAIL DRAWING FOR METHOD OF CLEARING MODIFIED METHOD - III

SHEET 1 OF 1 200D03

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

ENGLISH DETAIL DRAWING FOR METHOD OF CLEARING MODIFIED METHOD - III

SHEET 1 OF 1 200D03



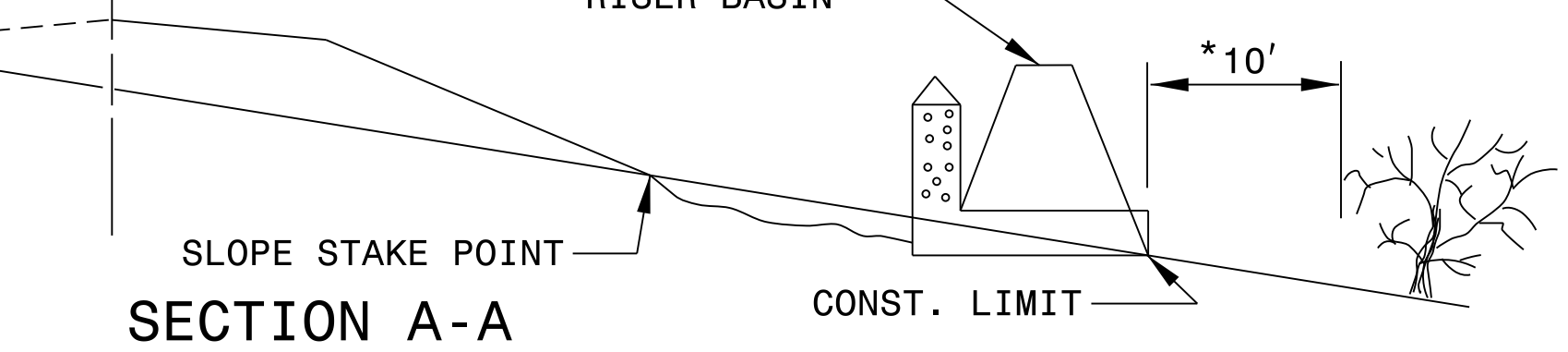
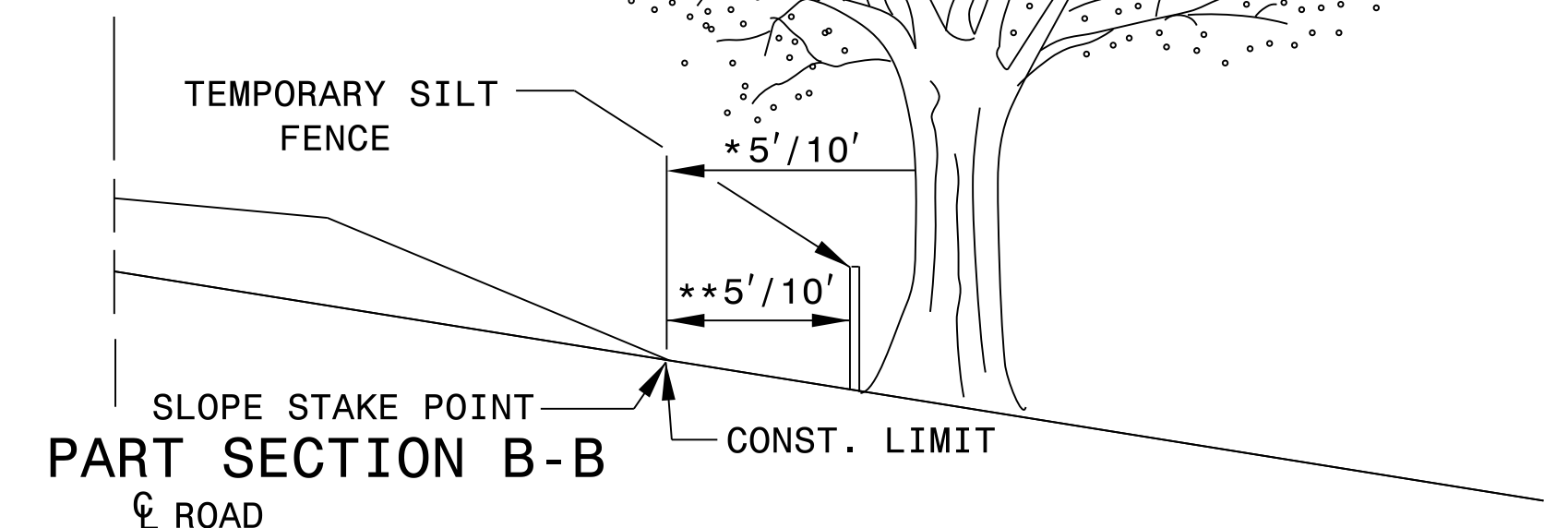
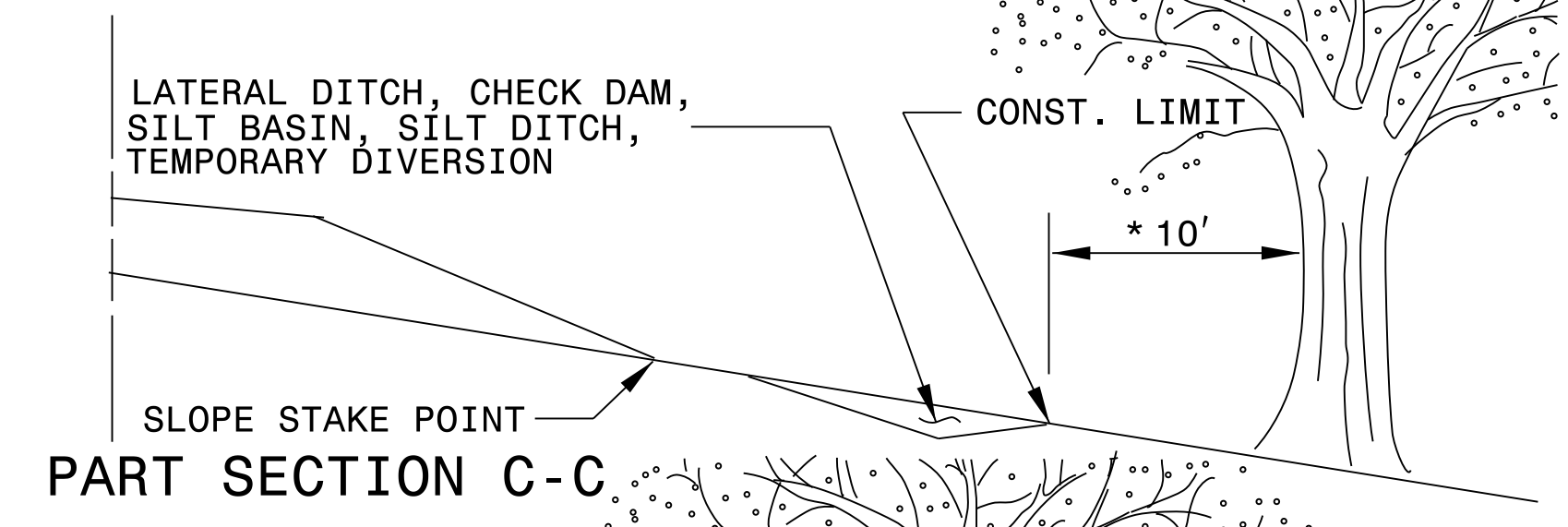
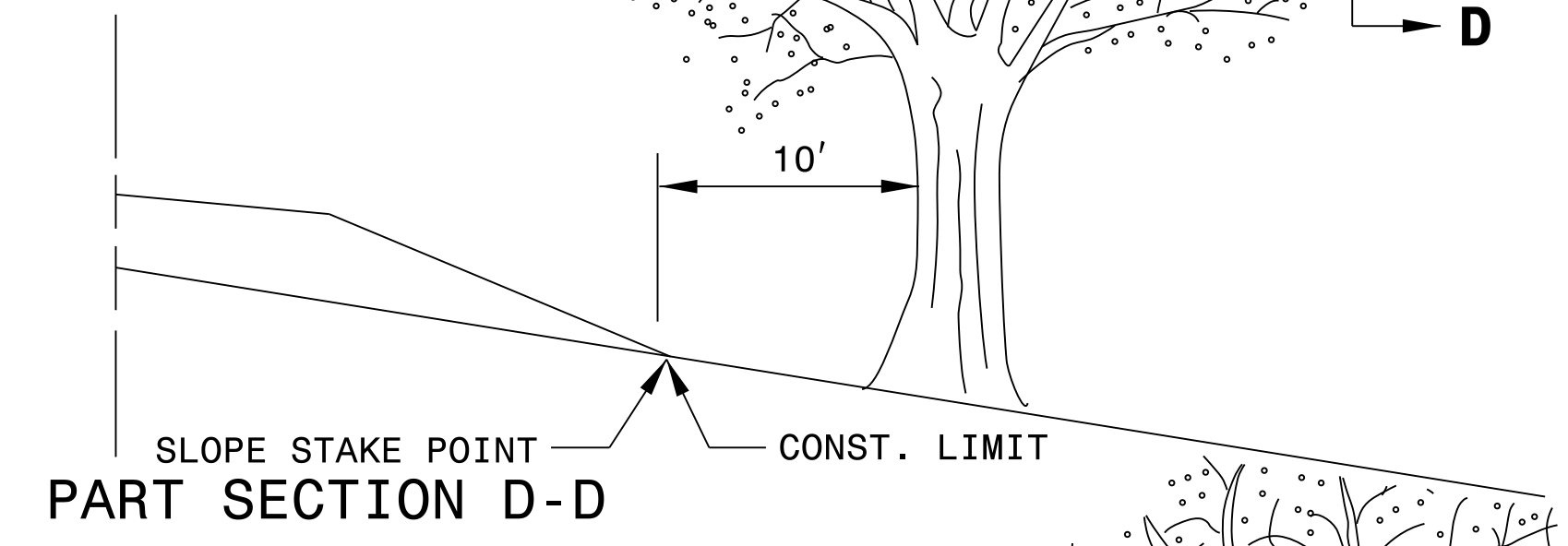
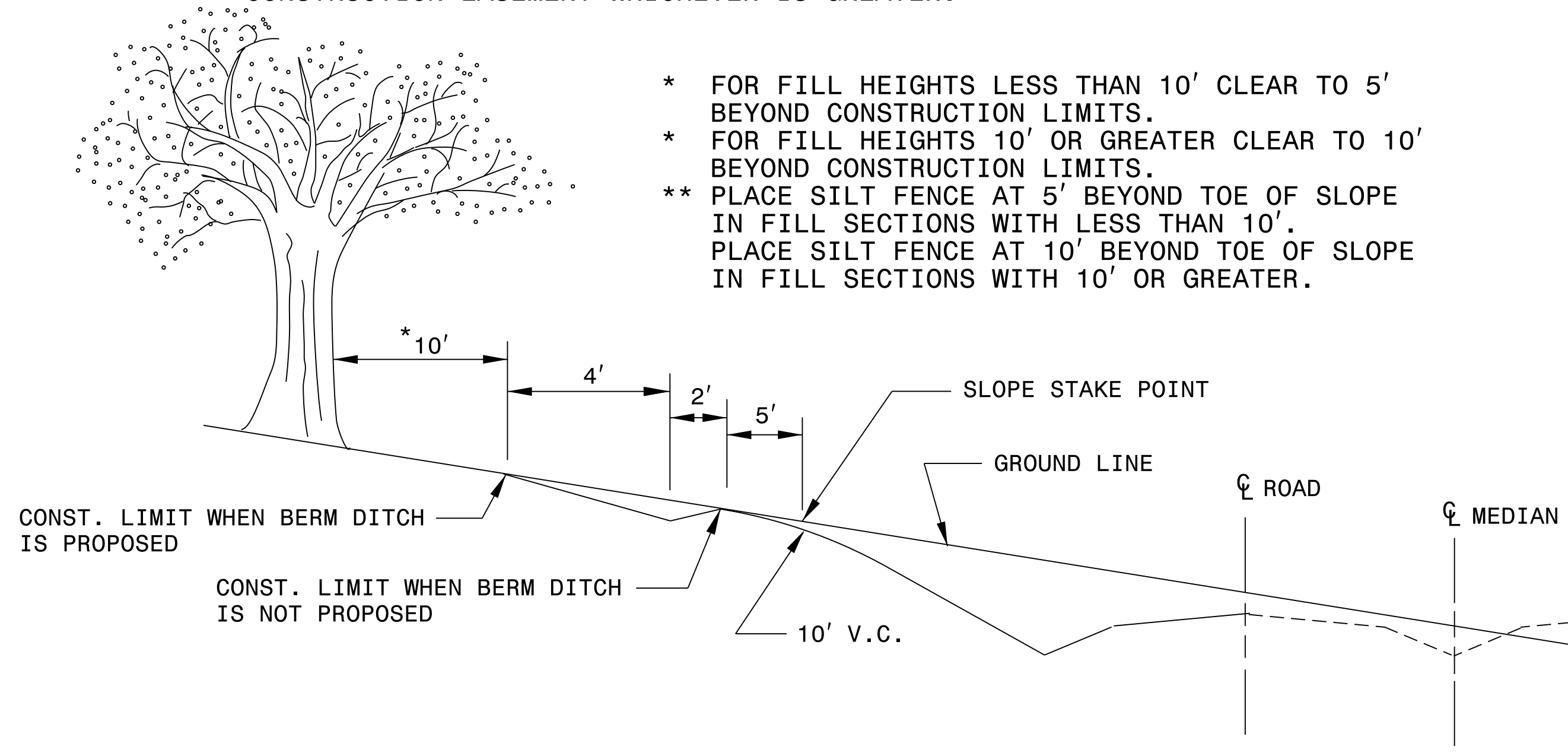
GENERAL NOTES:

1. REMOVE TREES OUTSIDE THE CLEARING LIMIT WHEN, IN THE OPINION OF THE ENGINEER, THE UTILITY OF A TREE WILL BE DESTROYED BY THE CONSTRUCTION OR THE CLEARING OPERATION.
2. CLEAR IN ACCORDANCE WITH THIS STANDARD EXCEPT WHERE ADDITIONAL CLEARING IS REQUIRED FOR SAFETY AS SHOWN ON THE PLANS.

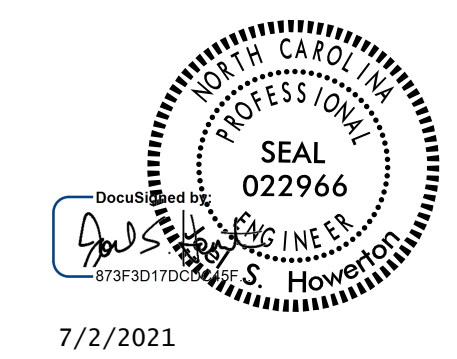
METHOD III CLEARING LIMITS

- (A) CUTS -- CLEAR TO CONSTRUCTION LIMITS.
- (B) FILLS - CLEAR TO 5'/10' * BEYOND CONSTRUCTION LIMITS, UNLESS SPECIFIED OTHERWISE BY WETLAND PERMIT.
- (C) CUTS AND FILLS - WHEN THE CLEARING LIMITS (A AND B) EXCEED THE PROPOSED R/W OR PROPOSED CONSTRUCTION EASEMENTS, THEN CLEAR ONLY TO THE R/W OR CONSTRUCTION EASEMENT WHICHEVER IS GREATER.

- * FOR FILL HEIGHTS LESS THAN 10' CLEAR TO 5' BEYOND CONSTRUCTION LIMITS.
- * FOR FILL HEIGHTS 10' OR GREATER CLEAR TO 10' BEYOND CONSTRUCTION LIMITS.
- ** PLACE SILT FENCE AT 5' BEYOND TOE OF SLOPE IN FILL SECTIONS WITH LESS THAN 10'. PLACE SILT FENCE AT 10' BEYOND TOE OF SLOPE IN FILL SECTIONS WITH 10' OR GREATER.



05-DEC-2017 10:31 S:\Contracts\Special\Details\kkempf\english\0200D0301.modified.method III Cond.dgn Jhoverton AT CSO-292595



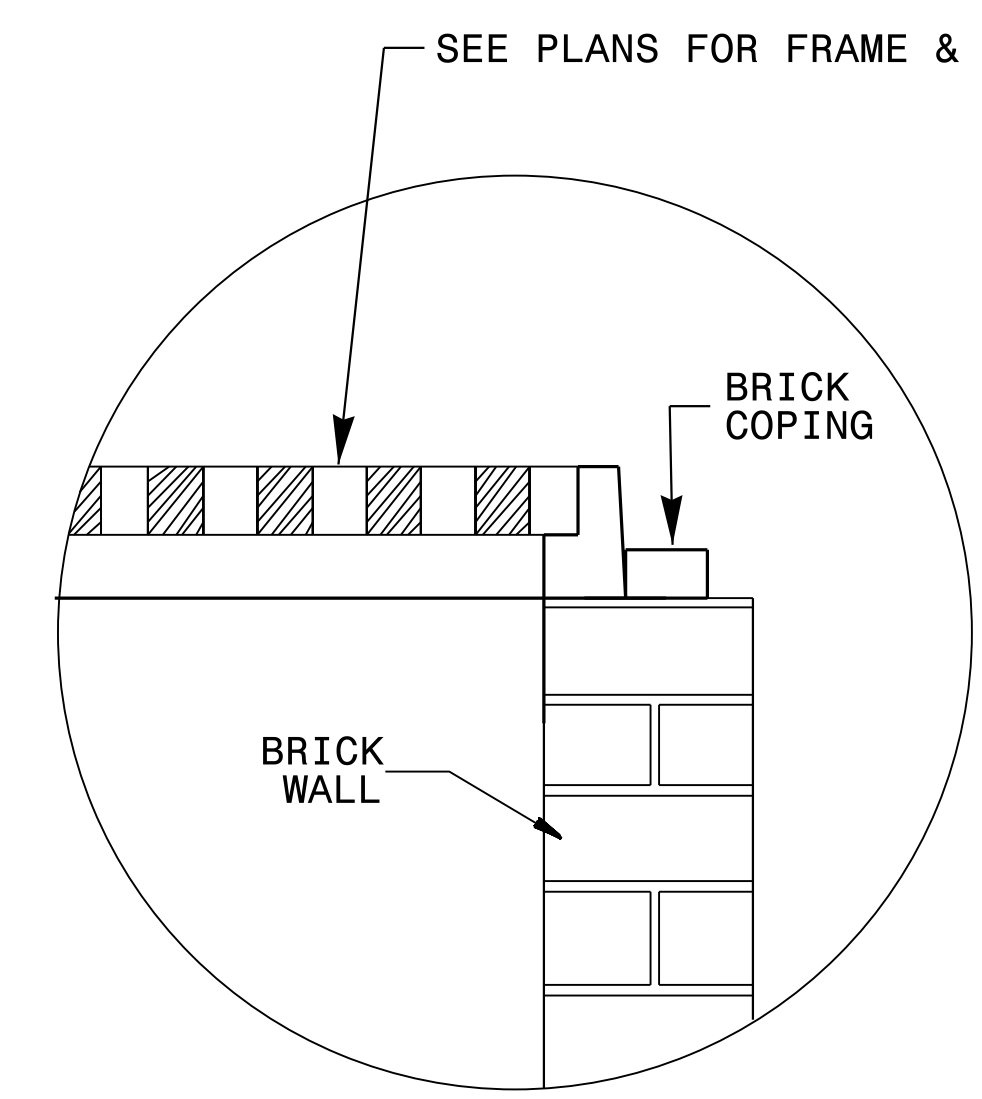
7/2/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

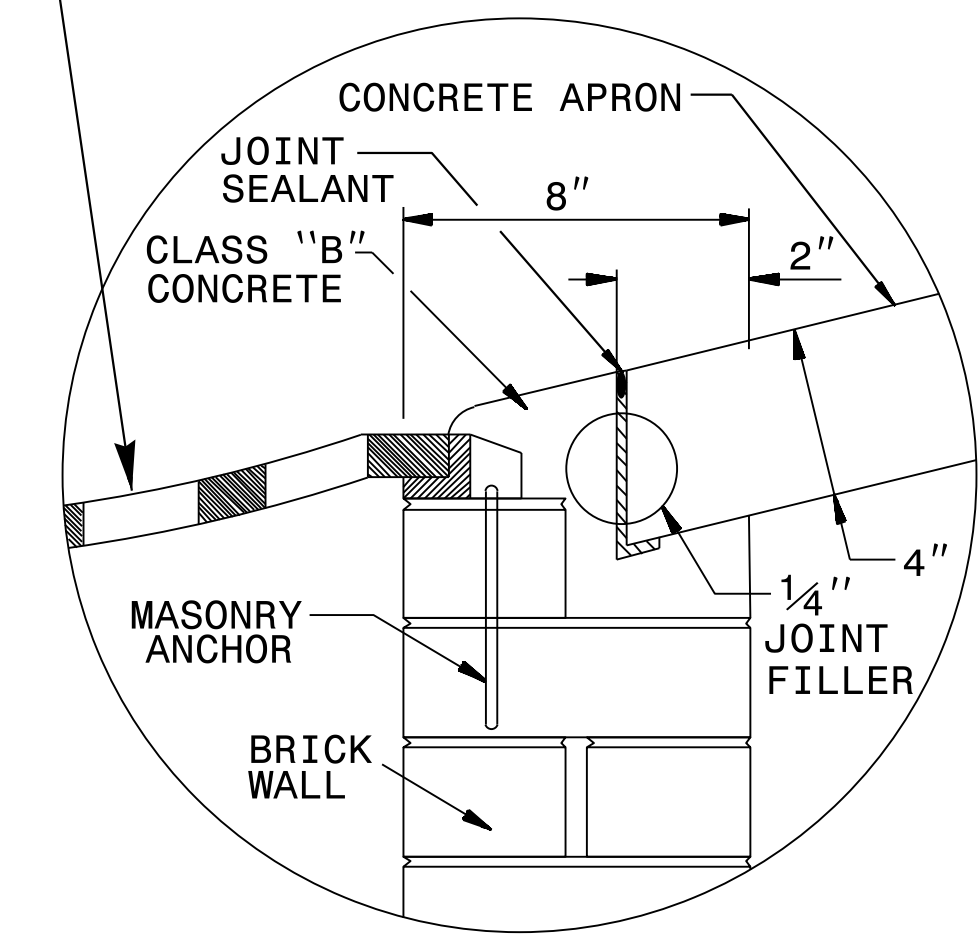
CONTRACT STANDARDS AND DEVELOPMENT UNIT Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: T.S.S. DATE: FEB. 2000
MODIFIED BY: K.A.K. DATE: AUG. 2016
CHECKED BY: DATE:
FILE SPEC.: kkempf/english/0200d301.dgn



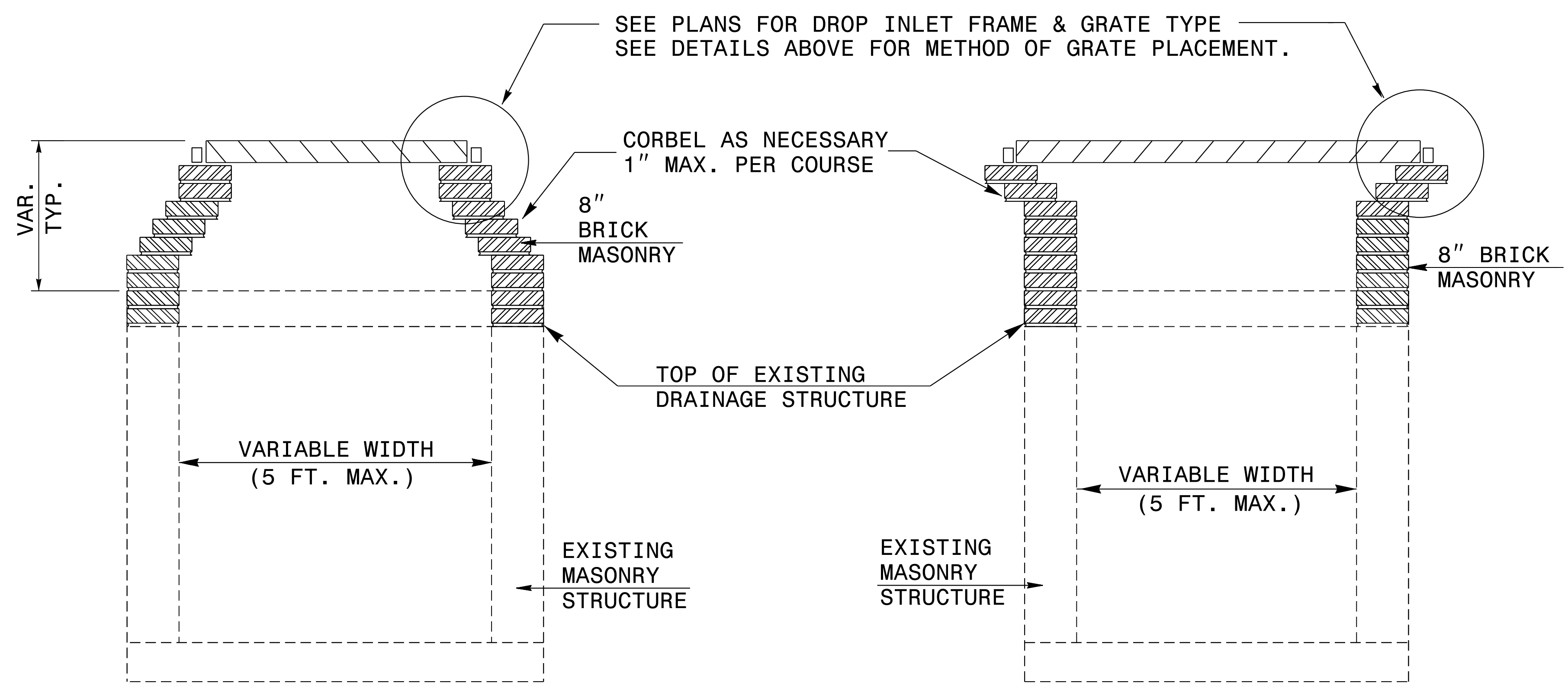
GRATE PLACEMENT DETAIL
FOR DROP INLETS



GRATE PLACEMENT DETAIL
FOR GRATED DROP INLETS

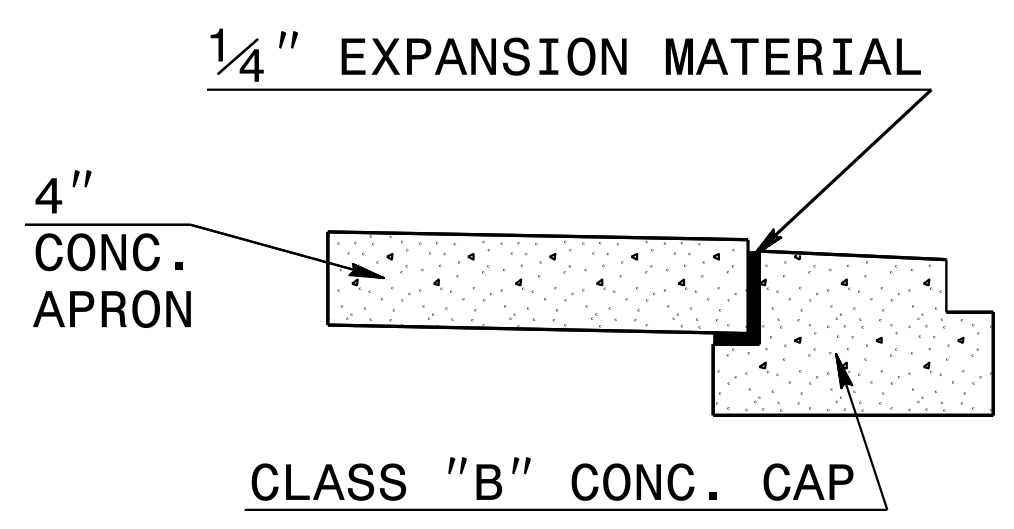
GENERAL NOTES:

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

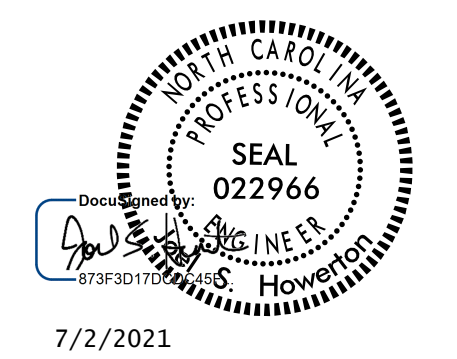


TYPICAL SECTION

TYPICAL SECTION



EXPANSION JOINT DETAIL



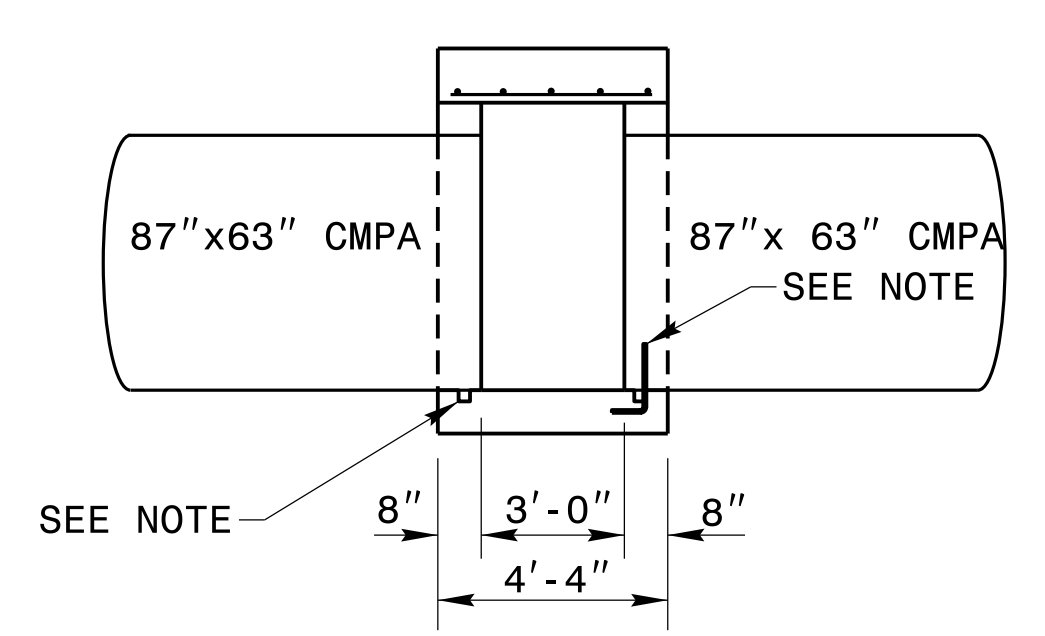
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

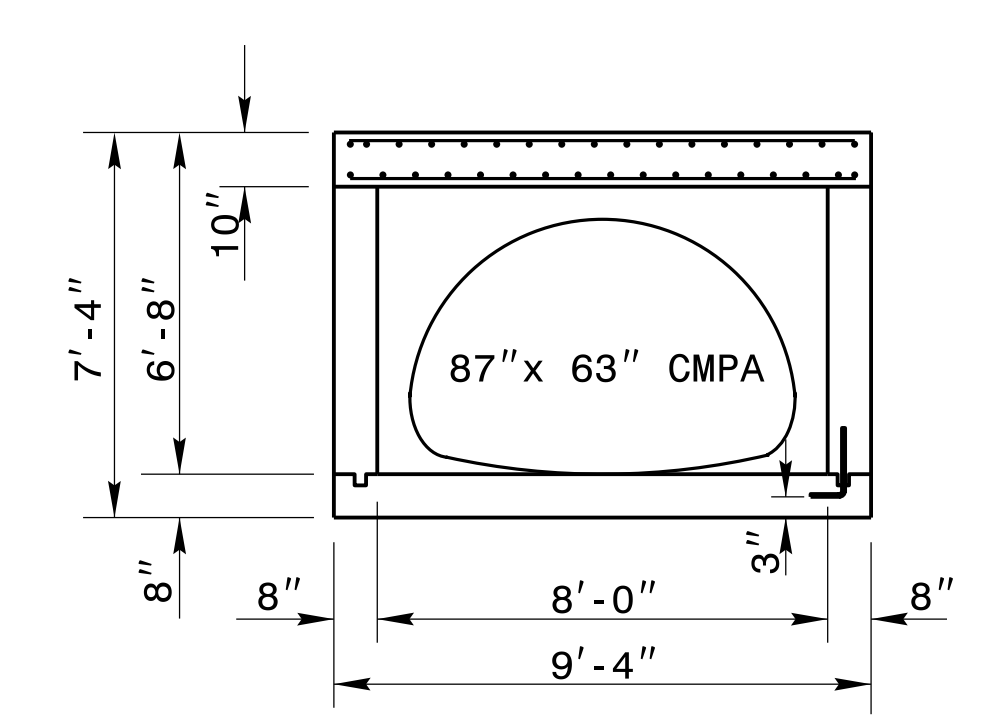
DETAIL TO CONVERT EXISTING CATCH BASIN OR JUNCTION BOX TO DI OR 2-GI

ORIGINAL BY: T.S.S. DATE: NOV. 1997
 MODIFIED BY: T.S.S. DATE: FEB. 2000
 CHECKED BY: DATE:
 FILE SPEC.: s:\usr\details\stand\cbtod102.dgn

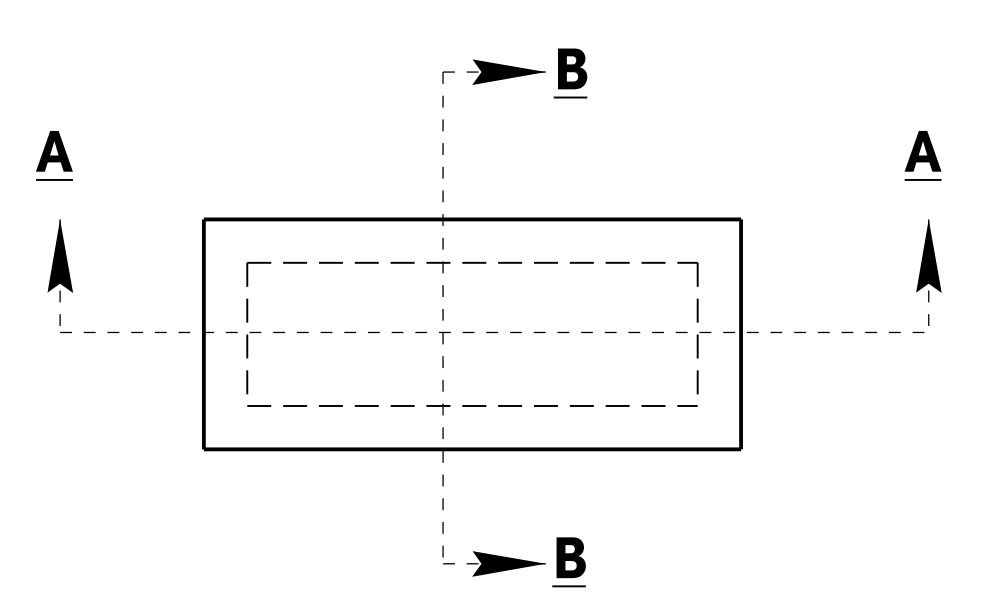
26-JUN-2017 10:39
 S:\Contracts\ContractDetails\Howerton\Convert CB or JB to DI.dgn
 Howerton AT USD-292595



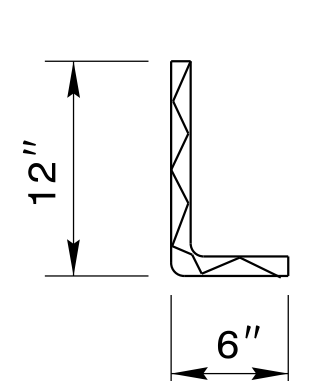
SECTION B-B



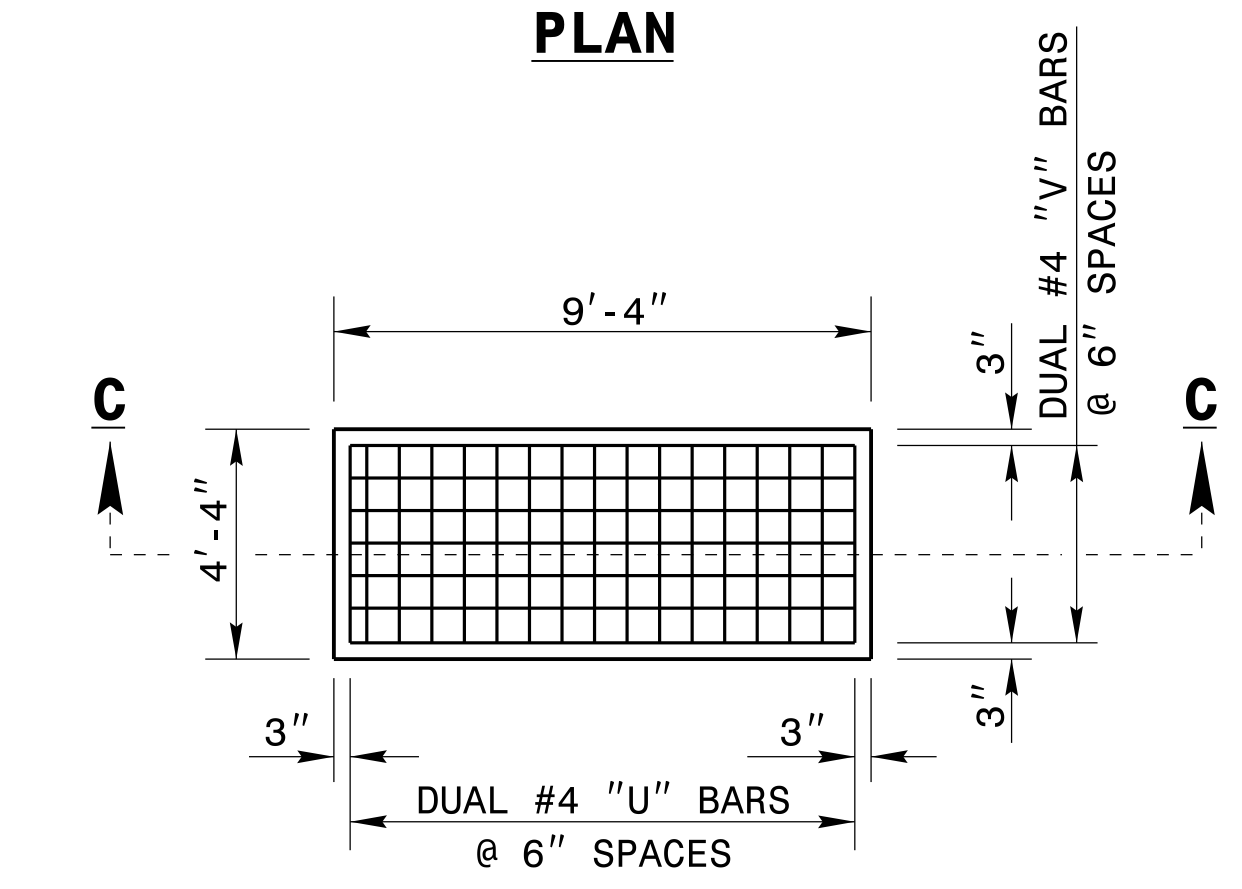
SECTION A-A



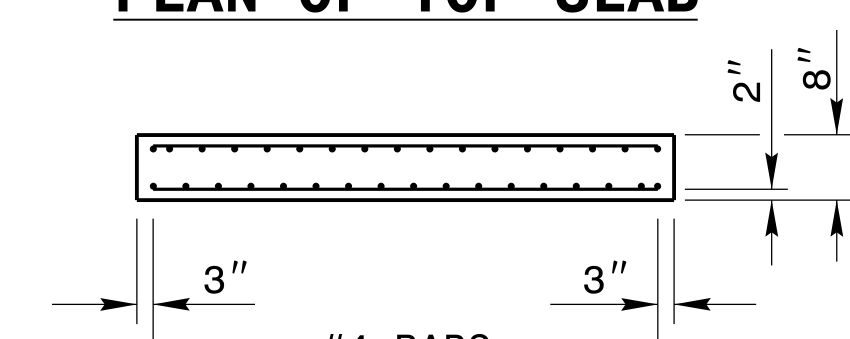
PLAN



DOWEL



PLAN OF TOP SLAB



SECTION C-C

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

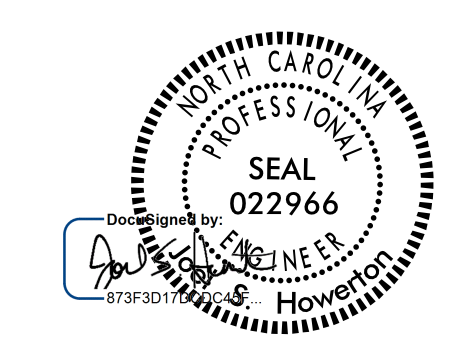
INSTALL STD 840.24 FRAME AND GRATE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

CONSTRUCT WITH PIPE CROWNS MATCHING.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

BILL OF MATERIAL FOR CATCH BASIN				
REINF. STEEL			1 PIPE	
BAR SIZE	LENGTH	NO.	WEIGHT	
U #4	3'-10"	40	103	
V #4	8'-10"	18	107	
REINF. STEEL LBS.			210	
TOTAL CLASS "B" CONCRETE			CU. YDS.	5.2



7/2/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

CONCRETE JUNCTION BOX FOR 87" X 63" CM PIPE ARCH

ORIGINAL BY: kakempf DATE: 06-05-13
 MODIFIED BY: DATE:
 CHECKED BY: DATE:
 FILE SPEC.: special_details/kkempf/english/pipe_arch_jb_71x47.dgn

23-JAN-2019 08:38
 S:\Contracts\Projects\Special Details\kkempf\english\pipe_arch_jb_71x47.dgn
 J:\overton AT USD-292595

SUMMARY OF EARTHWORK IN CUBIC YARDS

Station	Station	Uncl. Excav.	Undercut	Embank. +%	Borrow	Waste
-L- 30+50.00	-L- 60+00.00	619	0	586	0	33
-L- 60+00.00	-L- 90+00.00	646		500	0	146
-L- 90+00.00	-L- 120+00.00	1,730		3,846	2,116	0
-L- 120+00.00	-L- 150+00.00	1,629		691	0	938
-L- 150+00.00	-L- 180+00.00	3,962		1,070	0	2,892
-L- 180+00.00	-L- 210+00.00	666		548	0	119
-L- 210+00.00	-L- 240+00.00	748		593	0	156
-L- 240+00.00	-L- 270+00.00	567		956	389	0
-L- 270+00.00	-L- 280+00.00	375		311	0	64
SUBTOTAL		10,942	0	9,101	2,506	4,346
-L1- 14+00.00	-L1- 23+25.00	2,535		524	0	2,011
SUBTOTAL		2,535	0	524	0	2,011
-L1- 44+65.00	-L1- 46+70.00	11		39	28	
SUBTOTAL		11	0	39	28	0
-L1- 61+25.00	-L1- 71+40.00	782		290	0	492
SUBTOTAL		782	0	290	0	492
-Y1- 12+25.00	-Y1- 16+75.30	324		3,104	2,780	0
SUBTOTAL		324	0	3,104	2,780	0
-Y2_REV- 12+00.00	-Y2_REV- 20+31.25	1,128		3,354	2,226	0
SUBTOTAL		1,128	0	3,354	2,226	0
-Y4- 10+00.00	*-Y4-18+00.00	218		948	729	0
SUBTOTAL		218	0	948	729	0
-Y5- 11+50.00	-Y5-12+50.00	94		0	0	94
SUBTOTAL		94	0	0	0	94
TOTAL		16,034	0	17,358	8,268	6,944
EST. SHOULDER MATERIAL				6,875	6,875	
WASTE IN LIEU OF BORROW:					-5,909	-5,909
PROJECT TOTALS:		16,034	0	24,233	9,234	1,035
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					462	
GRAND TOTALS:		16,034	0	24,233	9,696	1,035
SAY:		16,440			9,940	

PAVEMENT REMOVAL & BREAKING EXISTING PAVEMENT SUMMARY IN SQUARE YARDS

SURVEY LINE	Station	Station	LOCATION LT/RT/C/L	ASPHALT REMOVAL	ASPHALT BREAKUP	CONCRETE REMOVAL	CONCRETE BREAKUP
L	159+60	160+61	RT				
	159+60	160+95	LT		292.25		
	159+66	160+47	RT		42.96		
	116+98	117+55	LT		72.95		
Y1	15+53	16+71	LT	402.36			
Y2_REV	12+85	13+57	LT		90.86		
	13+73	14+19	LT		162.55		
	17+02	17+59	LT	648.74			
	17+74	17+86	LT		9.85		
	17+79	18+21	LT	124.78			
	17+83	17+93	LT		11.11		
	17+92	18+32	LT				
	18+04	18+39	LT		64.08		
	18+47	18+86	LT		29.54		
TOTAL:				1,175.88	776.15		
SAY:				1,210	800		

UNDERCUT CONTINGENCY FOR EMBANKMENT STABILITY:	600 Yd ³	SELECT GRANULAR MATERIAL - BACKFILL CONTINGENT UNDERCUT	1600 Yd ³
UNDERCUT CONTINGENCY FOR SUBGRADE STABILITY:	1000 Yd ³		
* TOTAL UNDERCUT EXCAVATION:	1600 Yd³		
EST. SHALLOW UNDERCUT BY STATIONS:	500 Yd ³		
EST. SHALLOW UNDERCUT CONTINGENCY:	500 Yd ³		
TOTAL SHALLOW UNDERCUT:	1000 Yd³		

* PER GEOTECH RECOMMENDATION, ESTIMATED 1,600 CUBIC YARDS OF UNDERCUT TO BE USED IN THE DISCRETION OF THE RESIDENT ENGINEER.

DRAINAGE DITCH EXCAVATION = 830 CUBIC YARDS

-L- PAVEMENT STRUCTURE VOLUME = 9,532 CY

-L1- PAVEMENT STRUCTURE VOLUME = 1,818 CY

Note: These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, clearing and grubbing, breaking of existing pavement and removal of existing pavement will be paid for at the lump sum price for "Grading".

RALD156

COMPUTED BY: Allen Hodges, E.I. DATE: 5/17/2021
CHECKED BY: James Byrd, P.E. DATE: 5/17/2021

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. U-4906 SHEET NO. 3D-5

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

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

Table with columns for Line & Station, Offset, Structure Number, Invert Elevation, Minimum Required Slope, Drainage Pipe, C.S. Pipe, R.C. Pipe Class IV, MISC Pipe, Quantities for Drainage Structures, Frame, Grates, and Hood, Concrete Transitional Section, and Remarks. Includes a SHEET TOTALS row at the bottom.

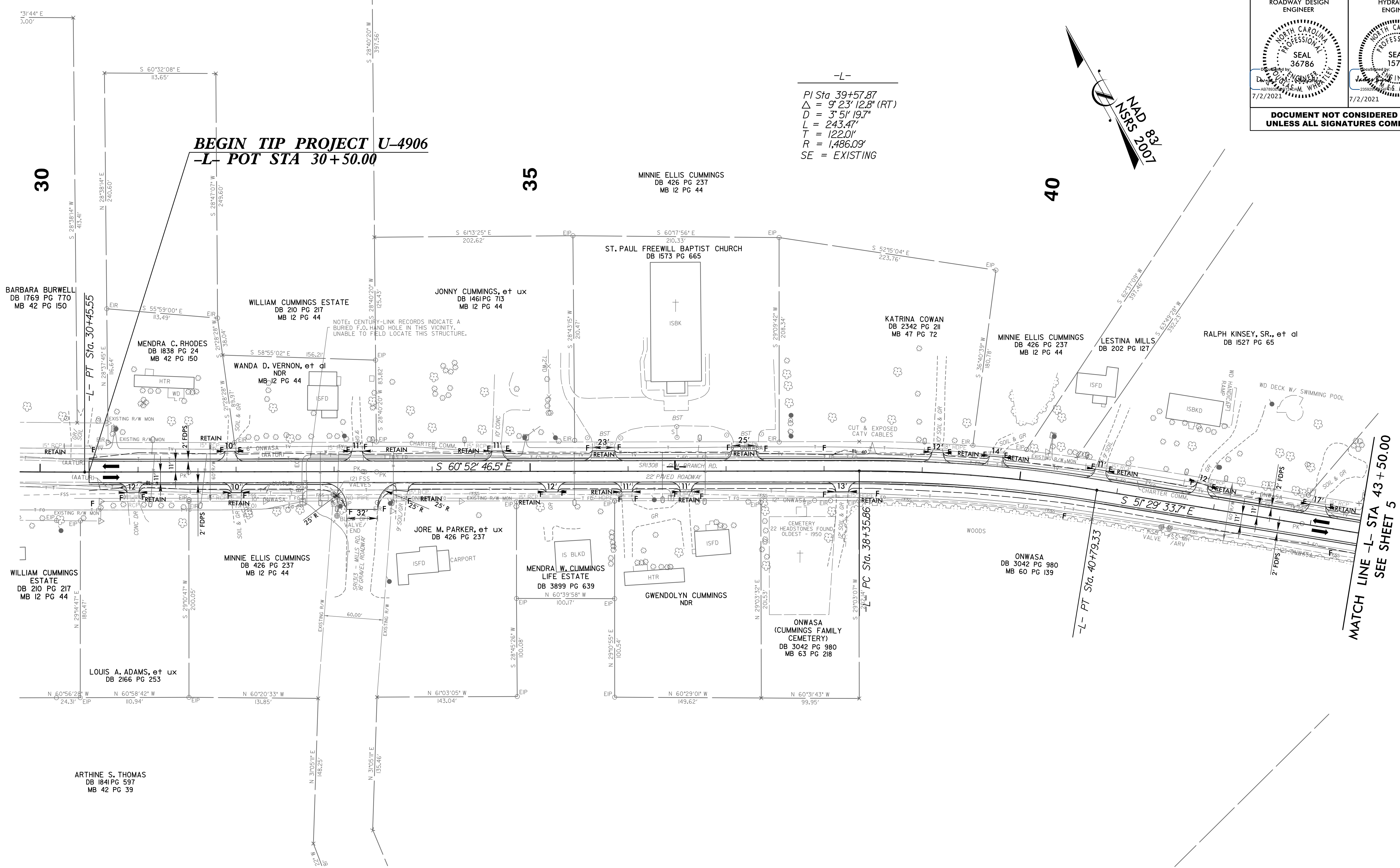
**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PARCEL INDEX SHEET**

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	5	ZACHARY YOUNTZ, et ux
1A	5	ONWASA
2	5	MICHAEL BYNUM
3	6	MICHAEL BYNUM
4	7	KEITH GURGANUS
5	8	GEORGE NEWBOLD
6	8	KEITH GURGANUS
7	9	GEORGIA WHITE
8	9	SUE BOGGS, et al
9	9	REBECCA BRYANT
10	9	ROBERT JUSTICE
11	9	ROBERT JUSTICE
12	9	REBECCA BRYANT
13	9,10	CITY OF JACKSONVILLE
14	9,10	BONNIE FREDRICK
15	10	RONALD NEWBOLD
16	10	FRANKLIN DILL
17	10	FREDERICK SPRUILL
18	10	THOMAS SMOLSKI, et ux
19	10	MERWIN MARSHBURN, et ux
20	10	RANDY FINDEISEN, et ux
21	10,11	HOWARD HERBERT, JR., et ux
22	10,11	JON HACKETT, et ux
23	11	ROBERT SMITH, et ux
24	12,13	BETTY CULLIPHER, et al
25	12,113	WILLIAM HANCOCK, et ux
26	13	MARGARET M. THOMPSON
27	13	GEORGE FRANKLIN & EDNA MARSHBURN
28	13	ASHLEY K. & KATHRYN M. FAIRCLOTH
29	13,14	EDNA P. & FRANKLIN MARSHBURN
30	13	RONALD J.&KATHERINE CZOSNYKA
31	13	GARY DALE JR & JACOB ERIN MARSHBURN
32	13,14	ZELMA RAHAL, et al
33	16	GABRIEL RODRIGUEZ
34	16	THERESA McALLISTER
35	16	JAMES McALLISTER, et ux
36	16, 18A	MORTON & MORTON PROPERTIES LLC
37	18, 18A	PREPS, INC
38	18, 18A	MARION HOWARD, et ux
39	18,19	WEYERHAEUSER REAL ESTATE DEVELOPMENT
40	19	JONES-ONSLow EMC
41	19	ANTHONY W. SYDES
42	N/A	PARCEL NO. NO LONGER USED
43	21	AARON STANDARD, et ux
44	21	AARON STANDARD, et ux
45	21	WILLA GREGG
46	21	MORTON INVESTMENTS, LLC
47	21	GREGORY MARSHBURN, et ux
48	21	EARL MARSHBURN, et ux
49	21	CARL MARSHBURN
50	21,22	CARL MARSHBURN, et ux
51	21,22	MORTON INVESTMENTS LLC
52	22	CARL MARSHBURN
53	23	BRANDON SISSON
54	23	LOUISE DUNN, et vir
55	23	ANNETTE METTS, et vir
56	23	JIMMY METTS, et ux
57	23	SERENA CAPLINS
58	23	JERMEY JORGE, et ux
59	23	RANDY THOMPSON, et al

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
60	23	AMBER WOLNIK
61	23	JUDE JOSEPH, ET VIR
62	23	CHARLES BUCKLER
63	23	RICHARD WRATCHFORD
64	24	BETHLEHEM BAPTIST CHURCH
65	24	GARY BAYSDEN, et ux
66	25	WARDEN BAYSDEN, et ux
67	25	TERRY BRITT, et ux
68	25	LLOYD HERBERT
69	25	JOSHUA I. CORDUAN
70	25	EPARK LLC
71	25	JEFFERSON M. DRUM, et ux
72	25	KENNETH STRAUB, et ux
73	25	LUTHER MITCHELL, JR.
74	25	ED JONES, et ux
75	25	EDDIE JONES, et ux
76	25	RANDY JARMAN, et ux
77	25,26	RANDY JARMAN, et ux
77A	26	RANDY JARMAN, et ux
78Z	25	EDDIE JONES, et ux
79Z	25	EDDIE JONES, et ux
80Z	25	EDDIE JONES, et ux
81Z	26	LINDA LACORTE
82Z	26	EDDIE JONES, et ux
83	26	EDDIE JONES, et ux
84	26	LARRY D. COTTLE, et ux
85	26	PHILIP F. GAREY, et ux
86	N/A	PARCEL NO. NO LONGER USED
87	N/A	PARCEL NO. NO LONGER USED
88	25	CAROLINA PRIDE HOMEBUILDERS, INC
89	25	CAROLINA TELEPHONE & TELEGRAPH
90	25	MYRON D. LANIER, et ux
91	25	VELMA L. WALKER
92	25	FRANCIS L. MUMPOWER, et ux
93	13	DAVID M. & PATSY ANN SYDES
94	23	EVELYN SIMS
95	25	JACKIE F. WATERS, et ux
96	16	CLINTON & SYLVIA RUNYON
97	16	JOHNNIE CARSON
98	16	MITCHBURG INVESTMENT, LLC
99	14	KAVI MORTON, et al
100	14	LIVING HOPE COMMUNITY CHURCH OF JACKSONVILLE

5/14/2021

PROJECT REFERENCE NO. U-4906		SHEET NO. 4
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



-L-
 PI Sta 39+57.87
 $\Delta = 9' 23' 12.8''$ (RT)
 $D = 3' 5' 19.7''$
 $L = 243.47'$
 $T = 122.01'$
 $R = 1,486.09'$
 SE = EXISTING

BEGIN TIP PROJECT U-4906
-L- POT STA 30+50.00

MATCH LINE -L- STA 43+50.00
 SEE SHEET 5

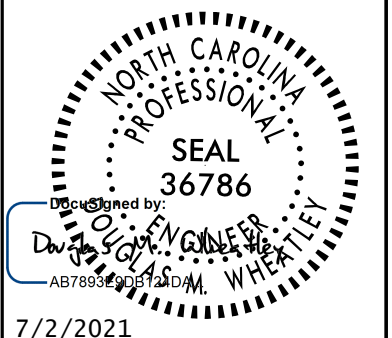
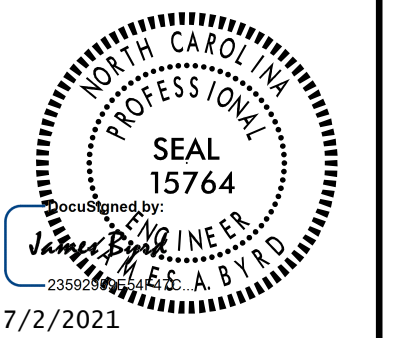
DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)

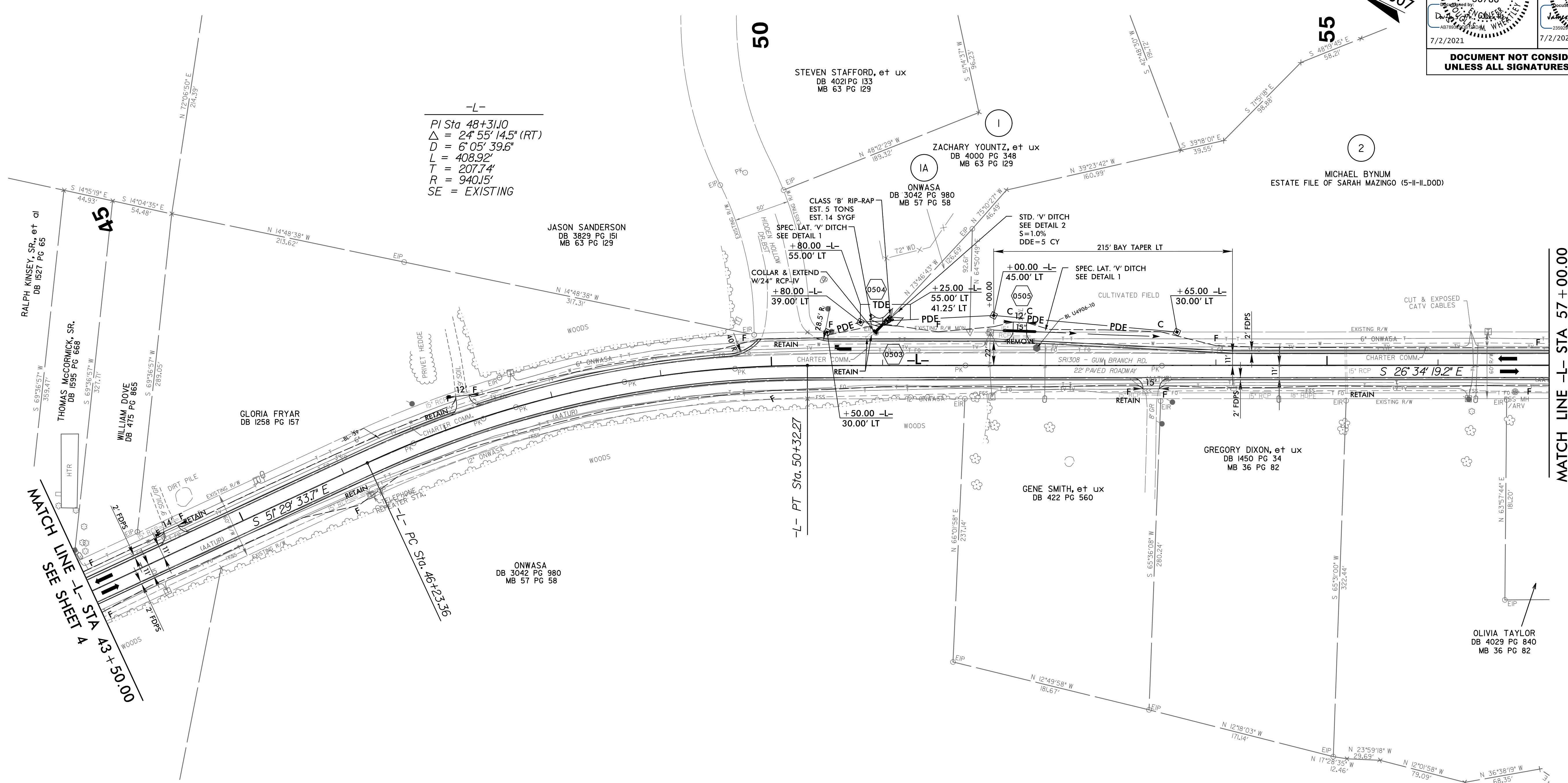
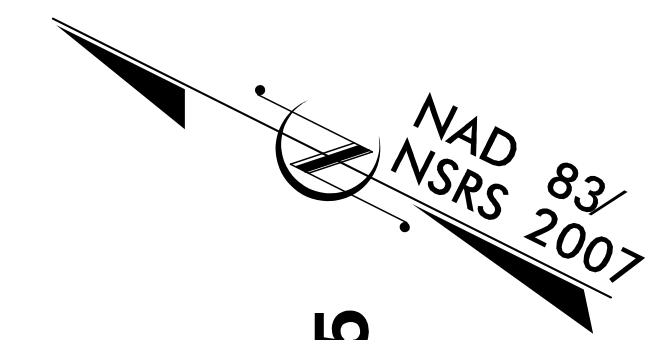
NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED.

FOR -L- PROFILE, SEE SHEET 27

15-JUN-2021 13:22
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 HNTB

5/14/2022

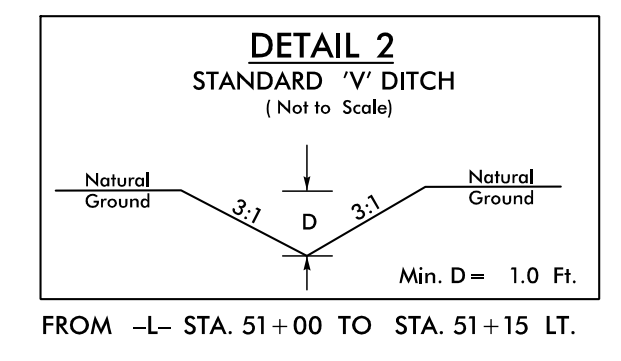
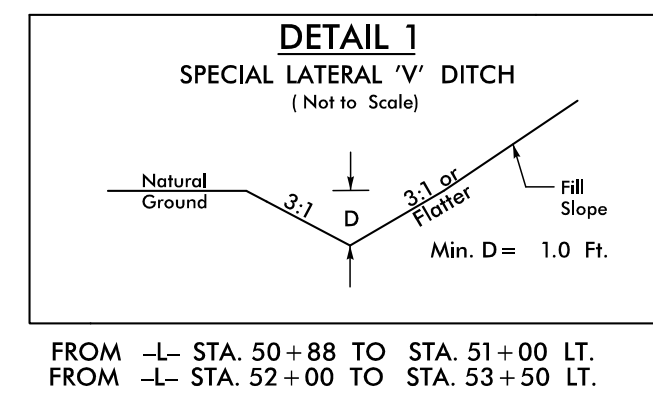
PROJECT REFERENCE NO. U-4906		SHEET NO. 5
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
		
7/2/2021	7/2/2021	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



-L-
 PI Sta 48+31.10
 $\Delta = 24^{\circ}55'14.5''$ (RT)
 $D = 6^{\circ}05'39.6''$
 $L = 408.92'$
 $T = 207.74'$
 $R = 940.15'$
 SE = EXISTING

MATCH LINE -L- STA 43+50.00
 SEE SHEET 4

MATCH LINE -L- STA 57+00.00
 SEE SHEET 6



DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)

NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

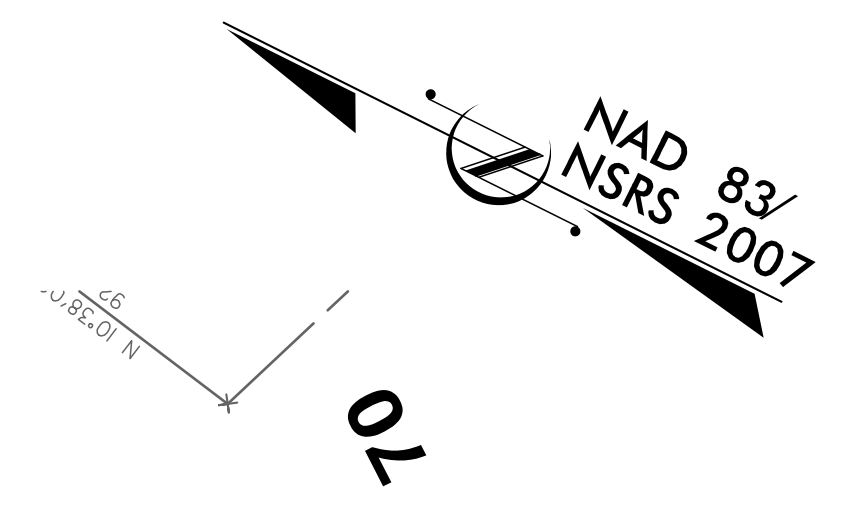
FOR -L- PROFILE, SEE SHEET 27

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 HNTB

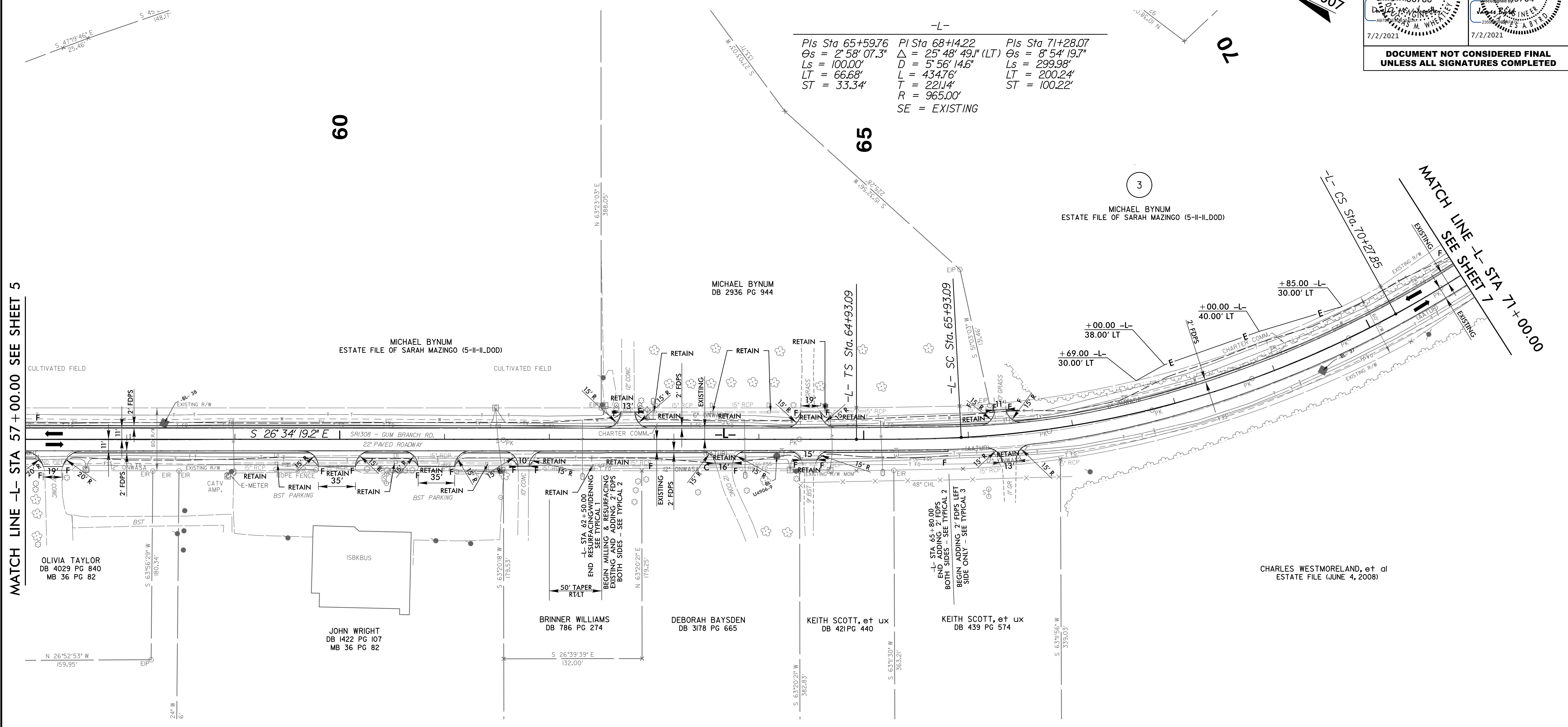
5/14/2022

HNTB HNTB NORTH CAROLINA, P.C.
 343 E. Six Forks Road, Suite 200
 Raleigh, North Carolina 27609
 NC License No: C-1524

PROJECT REFERENCE NO. U-4906	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	



-L-
 Pls Sta 65+59.76 PI Sta 68+14.22 Pls Sta 71+28.07
 $\Theta_s = 2^\circ 58' 07.3''$ $\Delta = 25^\circ 48' 49.1''$ (LT) $\Theta_s = 8^\circ 54' 19.7''$
 $L_s = 100.00'$ $D = 5^\circ 56' 14.6''$ $L_s = 299.98'$
 $LT = 66.68'$ $L = 434.76'$ $LT = 200.24'$
 $ST = 33.34'$ $T = 221.14'$ $ST = 100.22'$
 $R = 965.00'$
 SE = EXISTING



MATCH LINE -L- STA 57+00.00 SEE SHEET 5

MATCH LINE -L- STA 71+00.00 SEE SHEET 7

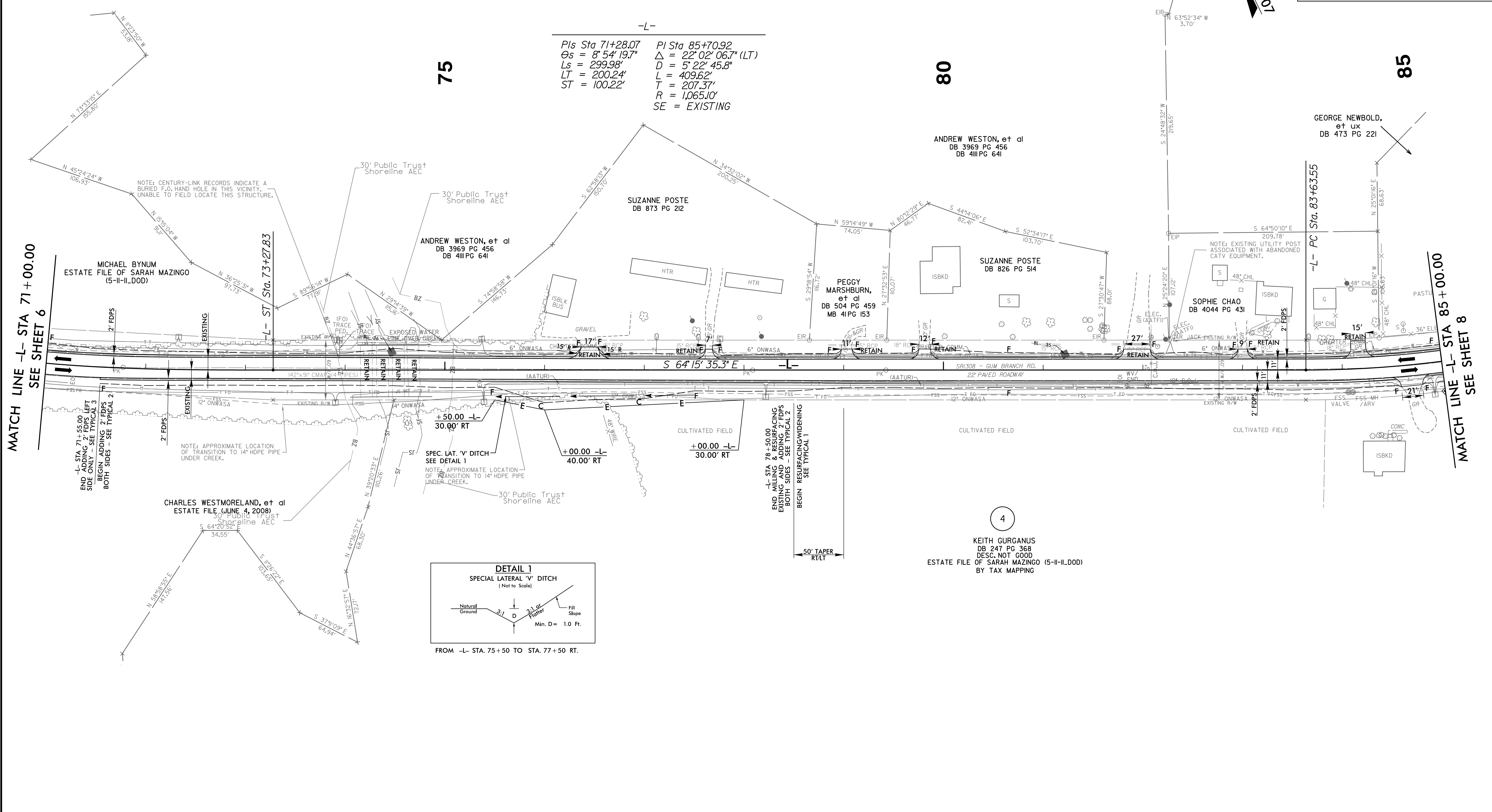
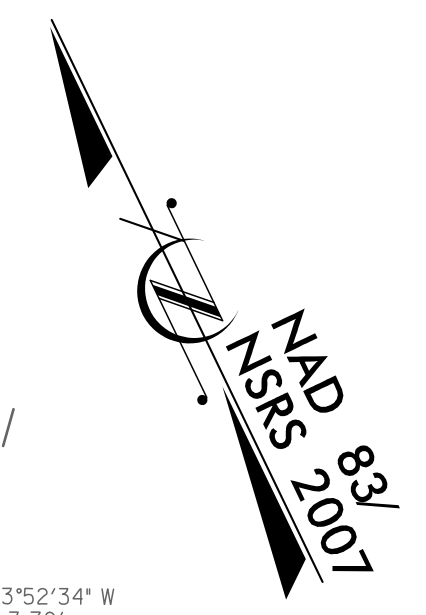
DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)

NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEET 27 AND 28

15-JUN-2022 13:22
 \Roadway\Proj\4906_rdy_psh6.dgn
 HNTB

PROJECT REFERENCE NO. U-4906		SHEET NO. 7	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



-L-

<i>PIs Sta 71+28.07</i>	<i>PI Sta 85+70.92</i>
<i>Os = 8° 54' 19.7"</i>	<i>Δ = 22° 02' 06.7" (LT)</i>
<i>Ls = 299.98'</i>	<i>D = 5° 22' 45.8"</i>
<i>LT = 200.24'</i>	<i>L = 409.62'</i>
<i>ST = 100.22'</i>	<i>T = 207.37'</i>
	<i>R = 1,065.00'</i>
	<i>SE = EXISTING</i>

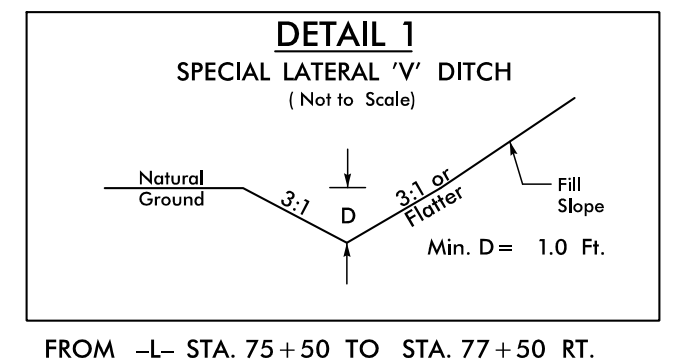
75

80

85

MATCH LINE -L- STA 71+00.00
SEE SHEET 6

MATCH LINE -L- STA 85+00.00
SEE SHEET 8

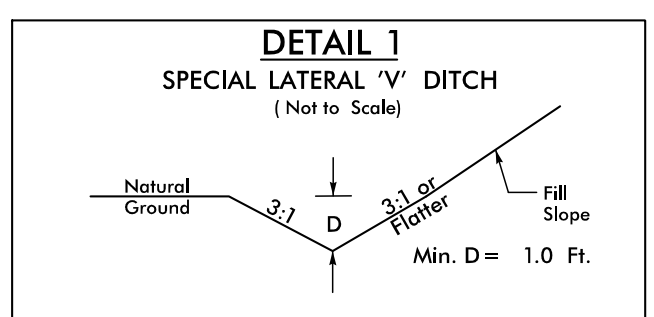
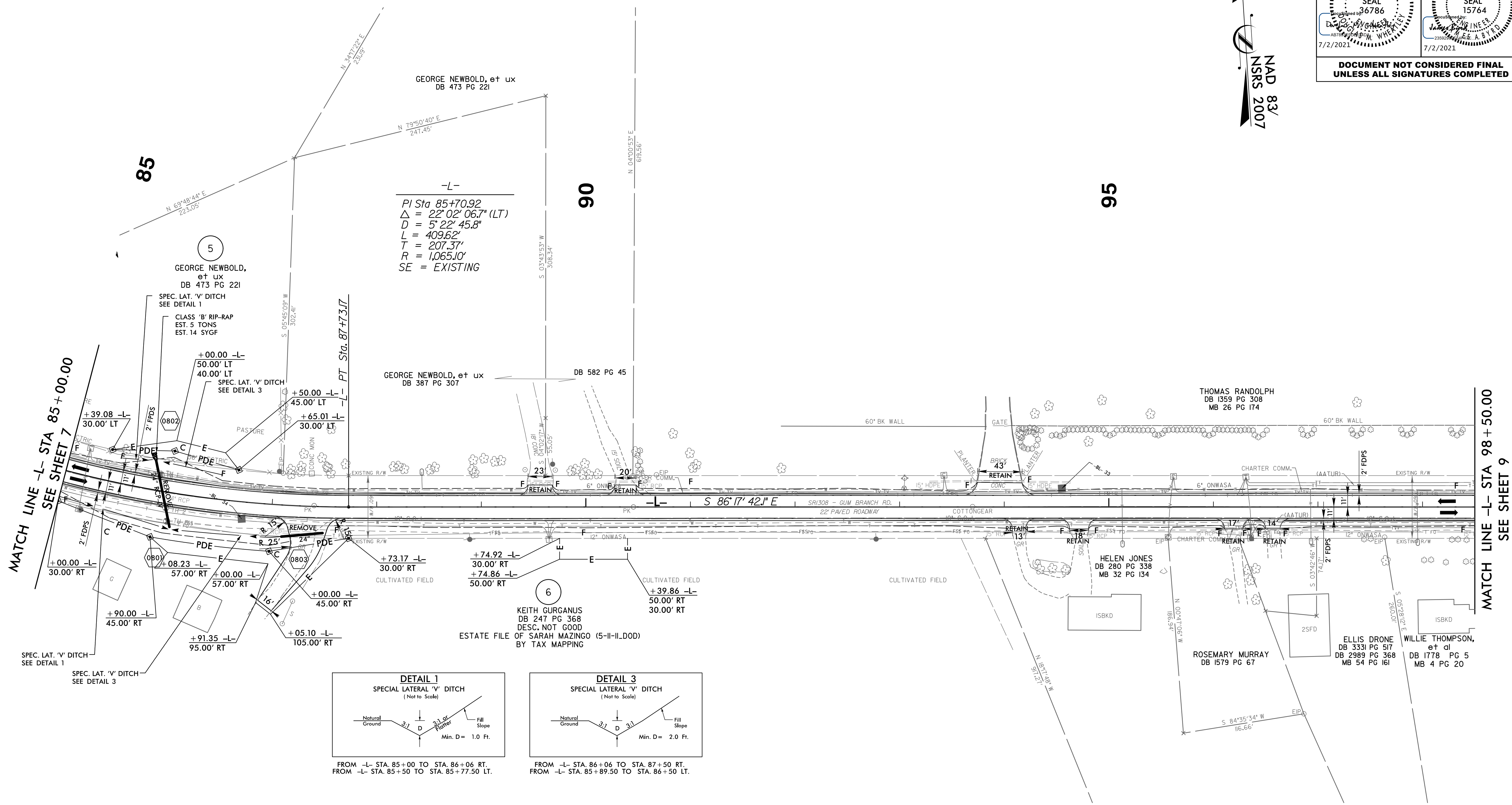


DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)
NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

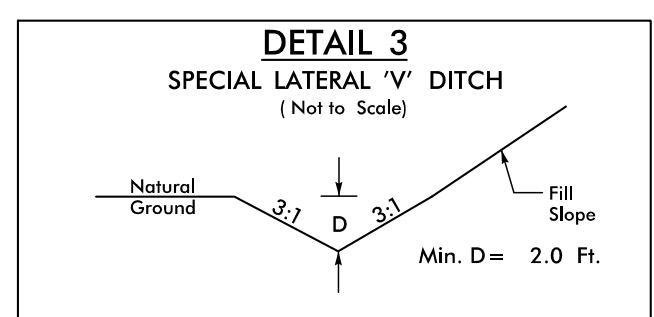
FOR -L- PROFILE, SEE SHEET 28

5/14/2021

PROJECT REFERENCE NO. U-4906		SHEET NO. 8
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



FROM -L- STA. 85+00 TO STA. 86+06 RT.
 FROM -L- STA. 85+50 TO STA. 85+77.50 LT.



FROM -L- STA. 86+06 TO STA. 87+50 RT.
 FROM -L- STA. 85+89.50 TO STA. 86+50 LT.

-L-
 PI Sta 85+70.92
 $\Delta = 22^\circ 02' 06.7\" (LT)$
 $D = 5^\circ 22' 45.8\"$
 $L = 409.62'$
 $T = 207.37'$
 $R = 1,065.10'$
 SE = EXISTING

GEORGE NEWBOLD, et ux
 DB 387 PG 307

6
 KEITH GURGANUS
 DB 247 PG 368
 DESC. NOT GOOD
 OF SARAH MAZINGO (5-II-IL.DOD)
 BY TAX MAPPING

THOMAS RANDOLPH
 DB 1359 PG 308
 MB 26 PG 174

HELEN JONES
 DB 280 PG 338
 MB 32 PG 134

ROSEMARY MURRAY
 DB 1579 PG 67

ELLIS DRONE
 DB 3331 PG 517
 DB 2989 PG 368
 MB 54 PG 161

WILLIE THOMPSON,
 et al
 DB 1778 PG 5
 MB 4 PG 20

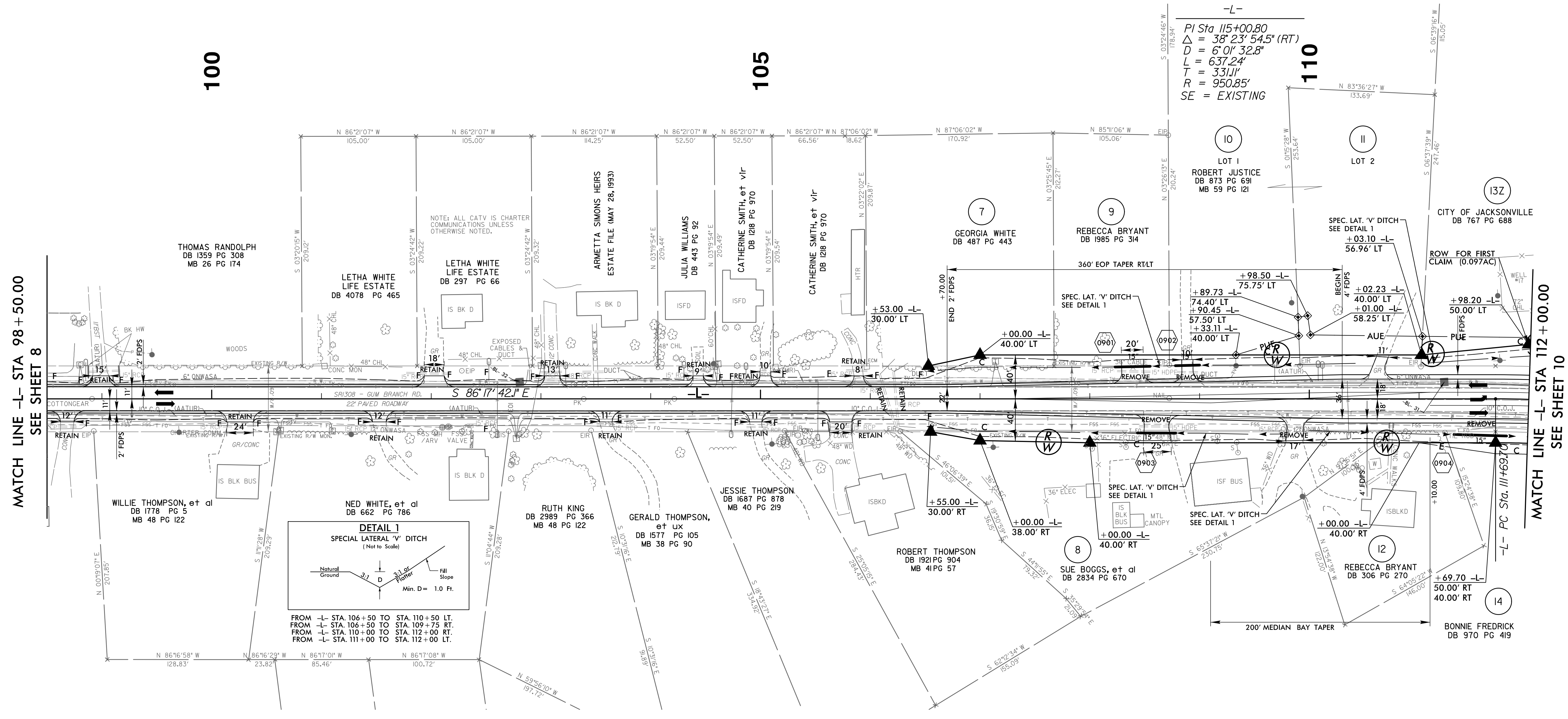
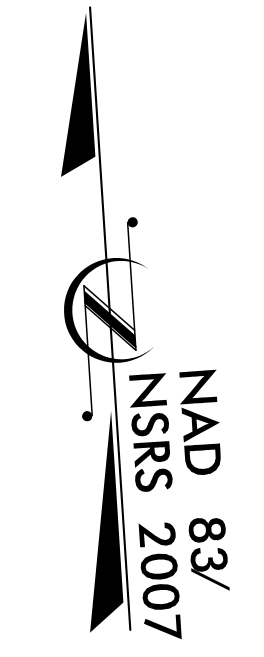
DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)
 NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEET 28 AND 29

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 HNTB

5/14/2021

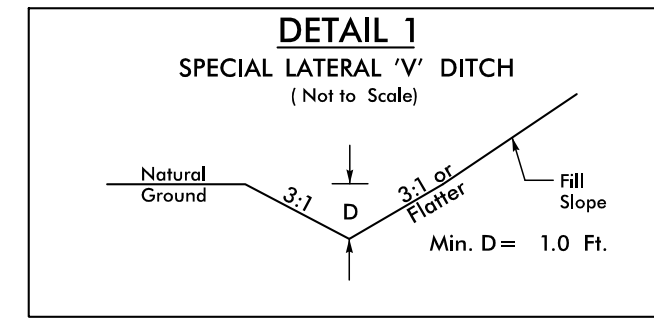
PROJECT REFERENCE NO. U-4906		SHEET NO. 9
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



-L-
 PI Sta 115+00.80
 $\Delta = 38' 23' 54.5''$ (RT)
 $D = 6' 01' 32.8''$
 $L = 637.24'$
 $T = 331.11'$
 $R = 950.85'$
 SE = EXISTING

MATCH LINE -L- STA 98 + 50.00
SEE SHEET 8

MATCH LINE -L- STA 112 + 00.00
SEE SHEET 10



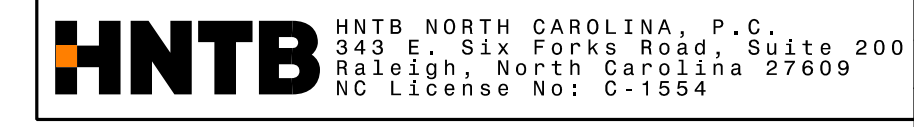
FROM -L- STA. 106 + 50 TO STA. 110 + 50 LT.
 FROM -L- STA. 106 + 50 TO STA. 109 + 75 RT.
 FROM -L- STA. 110 + 00 TO STA. 112 + 00 RT.
 FROM -L- STA. 111 + 00 TO STA. 112 + 00 LT.

DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)
 NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

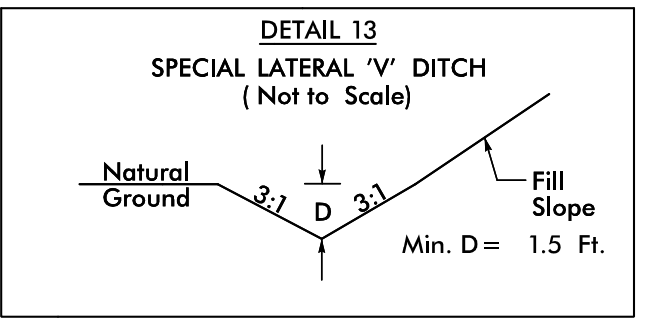
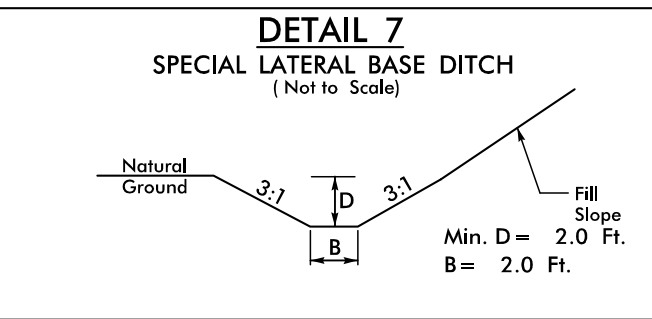
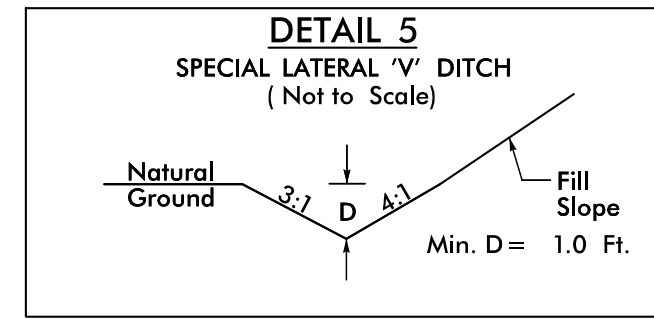
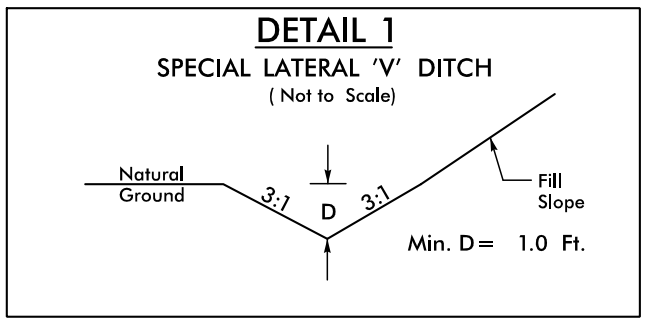
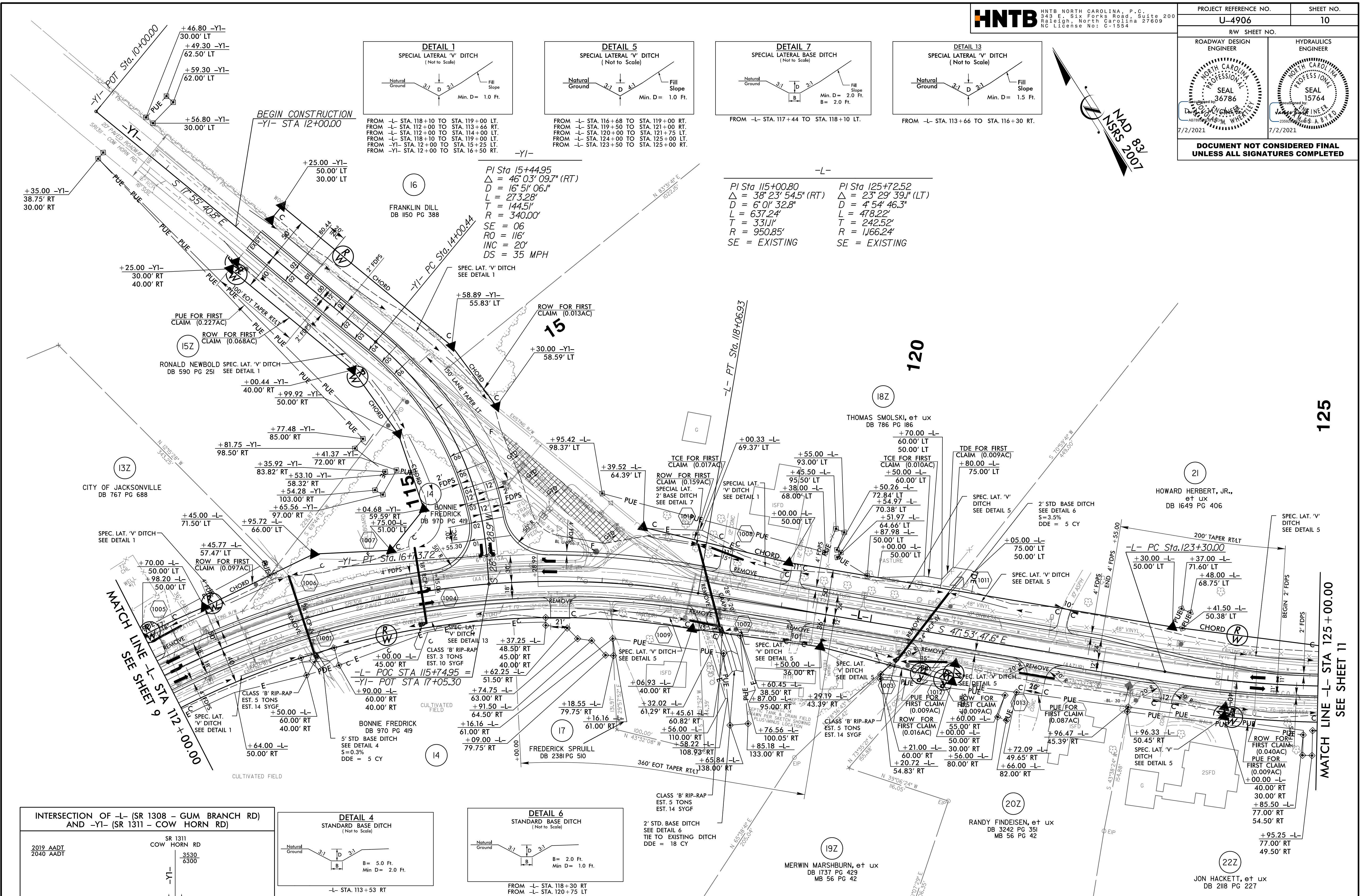
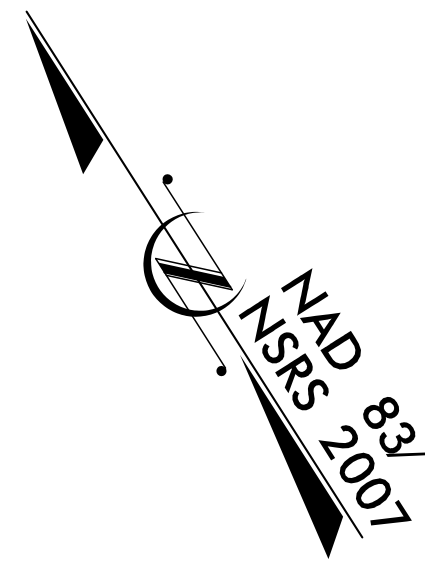
FOR -L- PROFILE, SEE SHEET 29

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 DJP

5/14/2021



PROJECT REFERENCE NO. U-4906	SHEET NO. 10
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 36786
	SEAL 15764
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



FROM -L- STA. 118+10 TO STA. 119+00 LT.
FROM -L- STA. 112+00 TO STA. 113+66 RT.
FROM -L- STA. 118+10 TO STA. 119+00 LT.
FROM -L- STA. 118+10 TO STA. 119+00 LT.
FROM -YI- STA. 12+00 TO STA. 15+25 LT.
FROM -YI- STA. 12+00 TO STA. 16+50 RT.

FROM -L- STA. 116+68 TO STA. 119+00 RT.
FROM -L- STA. 119+50 TO STA. 121+00 RT.
FROM -L- STA. 120+00 TO STA. 121+75 LT.
FROM -L- STA. 124+00 TO STA. 125+00 LT.
FROM -L- STA. 123+50 TO STA. 125+00 RT.

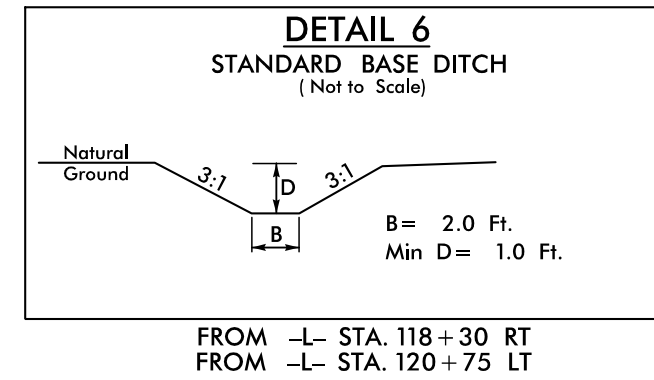
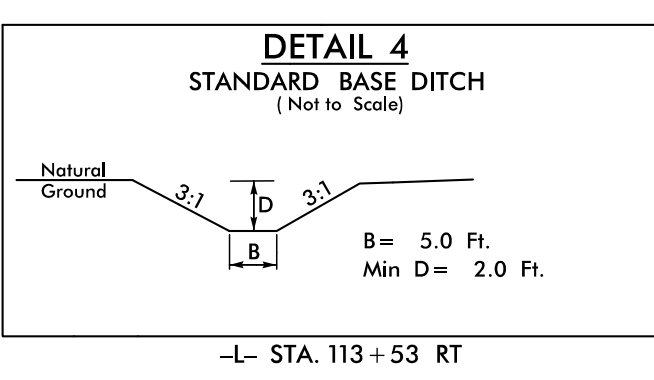
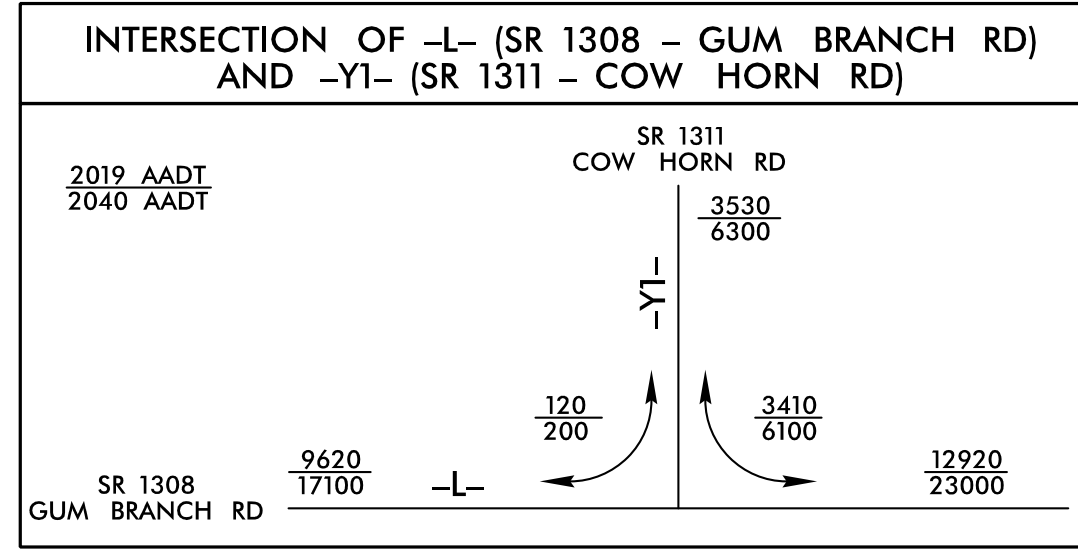
FROM -L- STA. 117+44 TO STA. 118+10 LT.

FROM -L- STA. 113+66 TO STA. 116+30 RT.

PI Sta 15+44.95
Δ = 46°03'09.7" (RT)
D = 16'51'06.1"
L = 273.28'
T = 144.51'
R = 340.00'
SE = 06
RO = 116°
INC = 20°
DS = 35 MPH

-L-
PI Sta 115+00.80 Δ = 38°23'54.5" (RT)
D = 6'01'32.8" L = 637.24'
T = 331.11' R = 950.85'
SE = EXISTING

PI Sta 125+72.52 Δ = 23°29'39.1" (LT)
D = 4'54'46.3" L = 478.22'
T = 242.52' R = 1,666.24'
SE = EXISTING



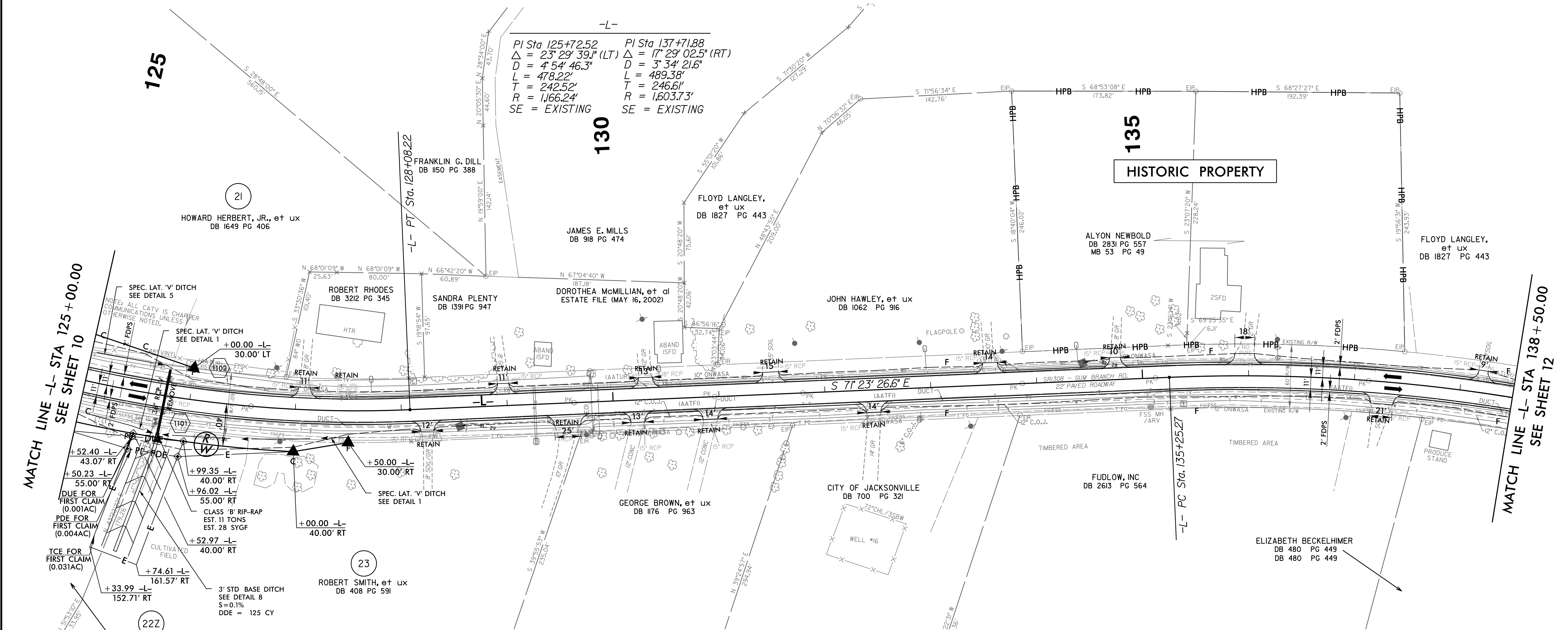
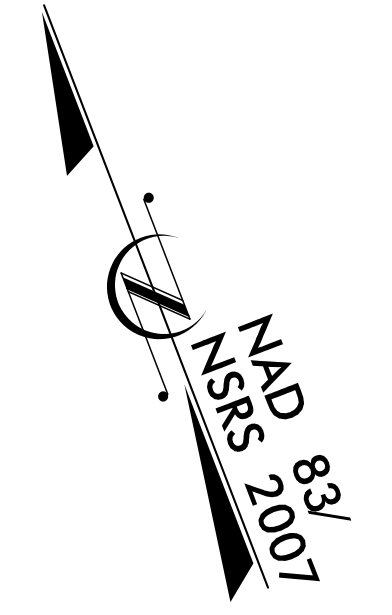
DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)
NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEETS 29 AND 30
FOR -YI- PROFILE, SEE SHEET 38

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8/17/99

PROJECT REFERENCE NO. U-4906	SHEET NO. 11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



MATCH LINE -L- STA 125+00.00
SEE SHEET 10

MATCH LINE -L- STA 138+50.00
SEE SHEET 12

PI Sta 125+72.52 $\Delta = 23^\circ 29' 39.1''$ (LT)
 $D = 4^\circ 54' 46.3''$
 $L = 478.22'$
 $T = 242.52'$
 $R = 1,166.24'$
 SE = EXISTING

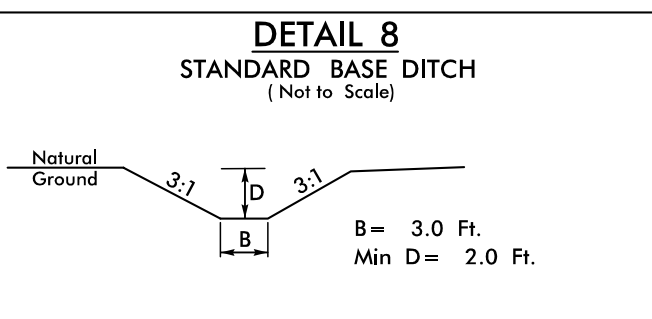
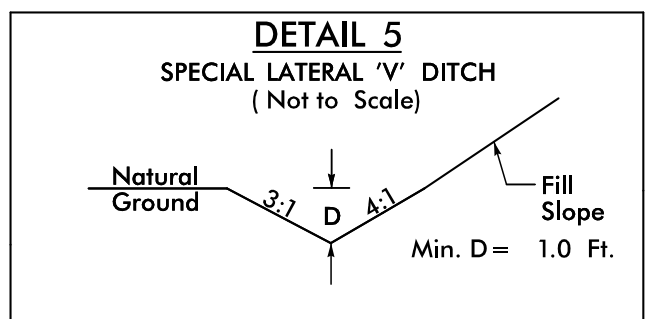
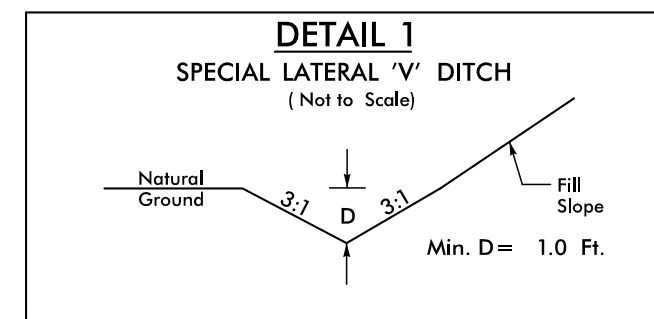
PI Sta 137+71.88 $\Delta = 17^\circ 29' 02.5''$ (RT)
 $D = 3^\circ 34' 21.6''$
 $L = 489.38'$
 $T = 246.61'$
 $R = 1,603.73'$
 SE = EXISTING

+52.40 -L- 43.07' RT
 +50.23 -L- 55.00' RT
 DUE FOR FIRST CLAIM (0.001AC)
 PDE FOR FIRST CLAIM (0.004AC)
 TCE FOR FIRST CLAIM (0.031AC)

+99.35 -L- 40.00' RT
 +96.02 -L- 55.00' RT
 CLASS 'B' RIP-RAP EST. 11 TONS EST. 28 SYGF

+52.97 -L- 40.00' RT
 +74.61 -L- 161.57' RT
 +33.99 -L- 152.71' RT

3' STD BASE DITCH SEE DETAIL 8
 $S = 0.1\%$
 $DDE = 125$ CY



DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)
 NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

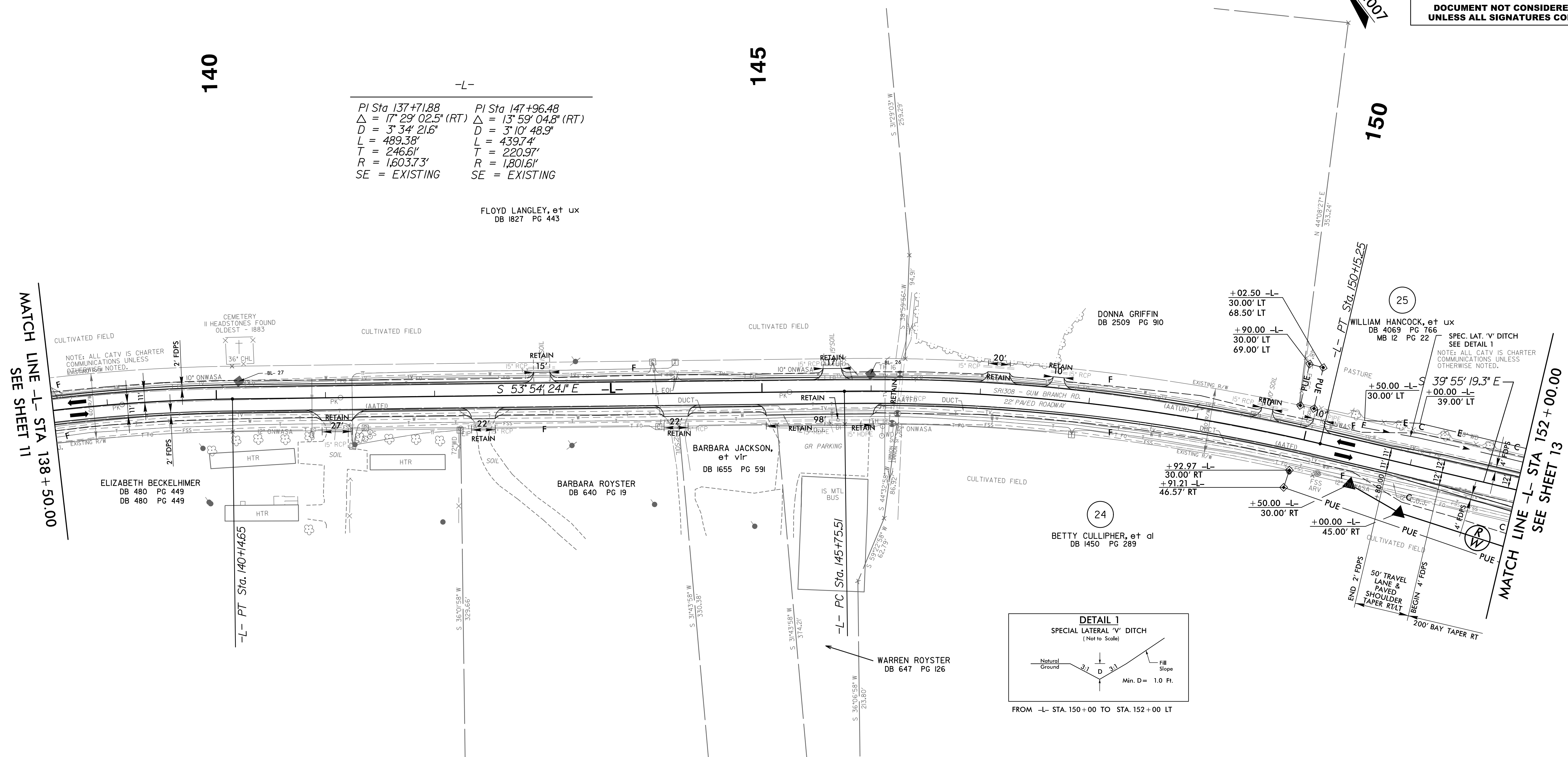
FOR -L- PROFILE, SEE SHEET 30

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5/14/2021

HNTB HNTB NORTH CAROLINA, P.C.
 343 E. Six Forks Road, Suite 200
 Raleigh, North Carolina 27609
 NC License No: C-1554

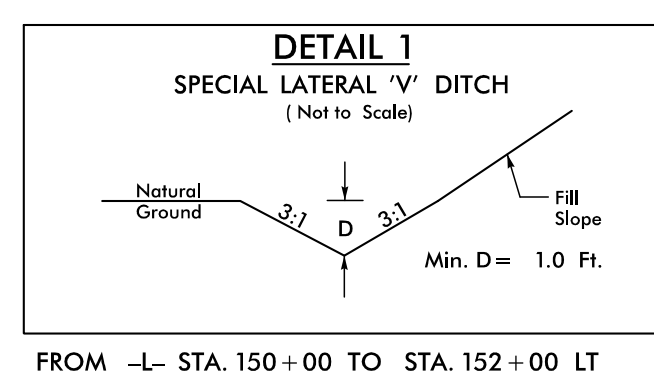
PROJECT REFERENCE NO. U-4906		SHEET NO. 12
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



$PI\ Sta\ 137+71.88$
 $\Delta = 17^{\circ} 29' 02.5'' (RT)$
 $D = 3^{\circ} 34' 21.6''$
 $L = 489.38'$
 $T = 246.61'$
 $R = 1,603.73'$
 SE = EXISTING

$PI\ Sta\ 147+96.48$
 $\Delta = 13^{\circ} 59' 04.8'' (RT)$
 $D = 3^{\circ} 10' 48.9''$
 $L = 439.74'$
 $T = 220.97'$
 $R = 1,801.61'$
 SE = EXISTING

FLOYD LANGLEY, et ux
 DB 1827 PG 443



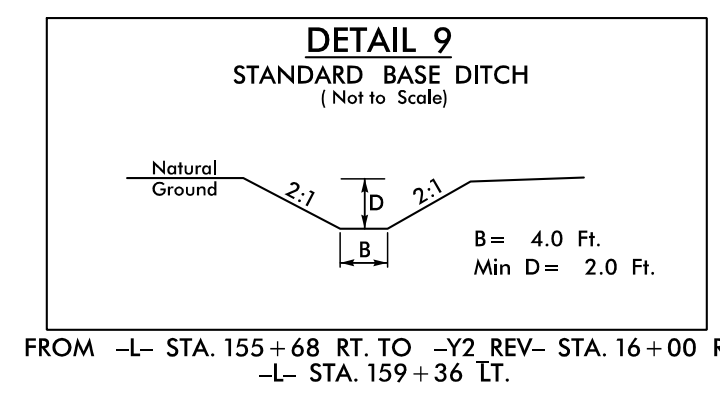
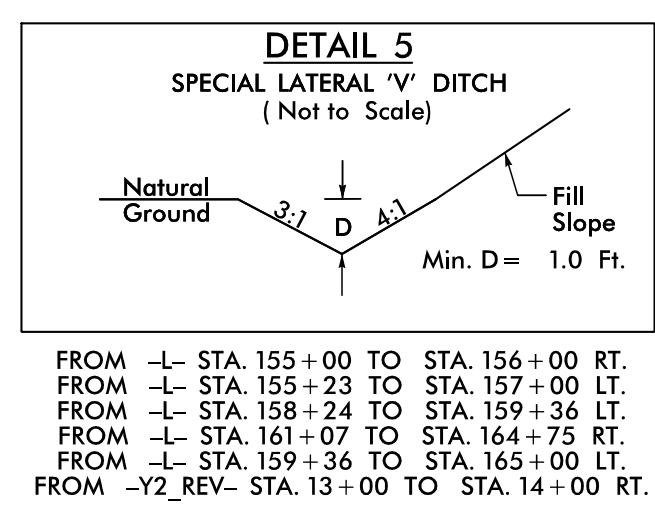
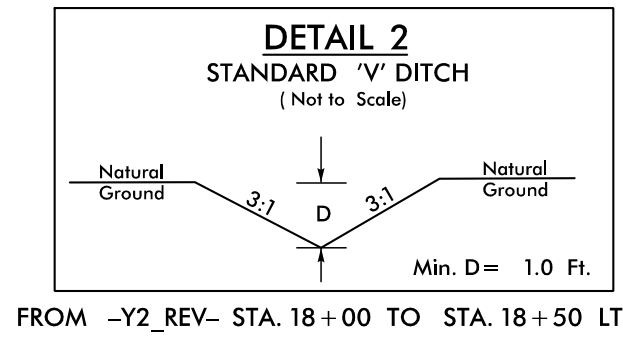
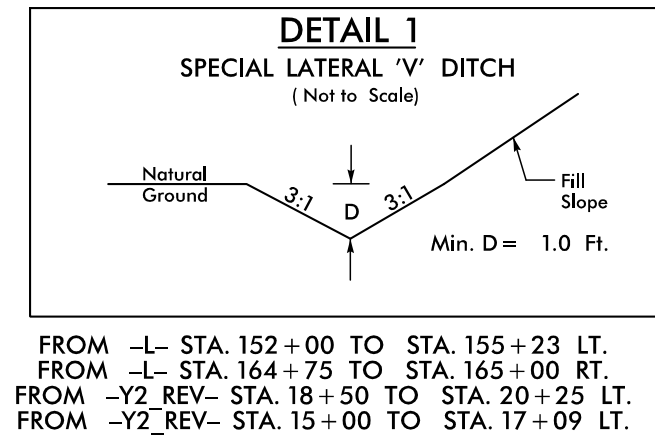
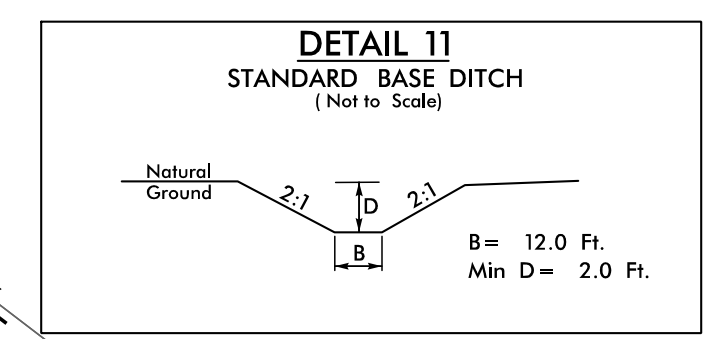
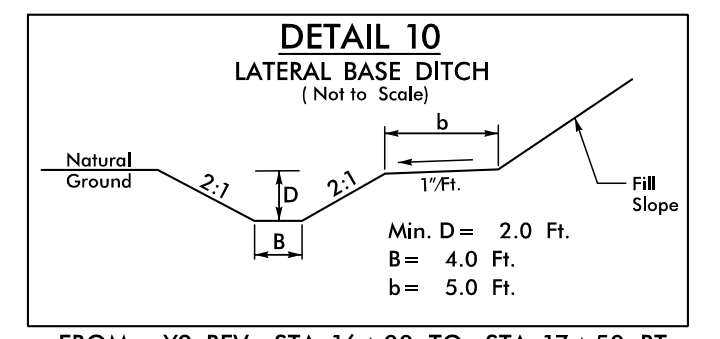
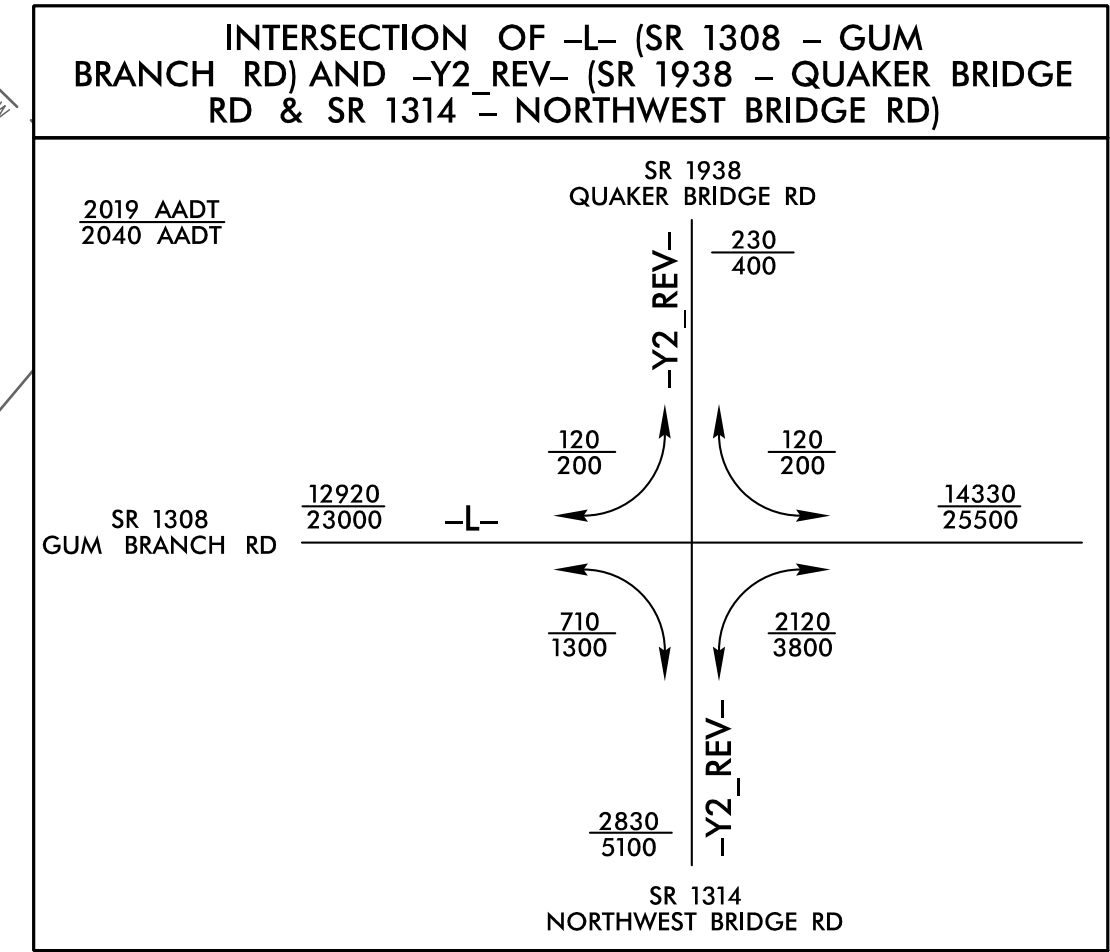
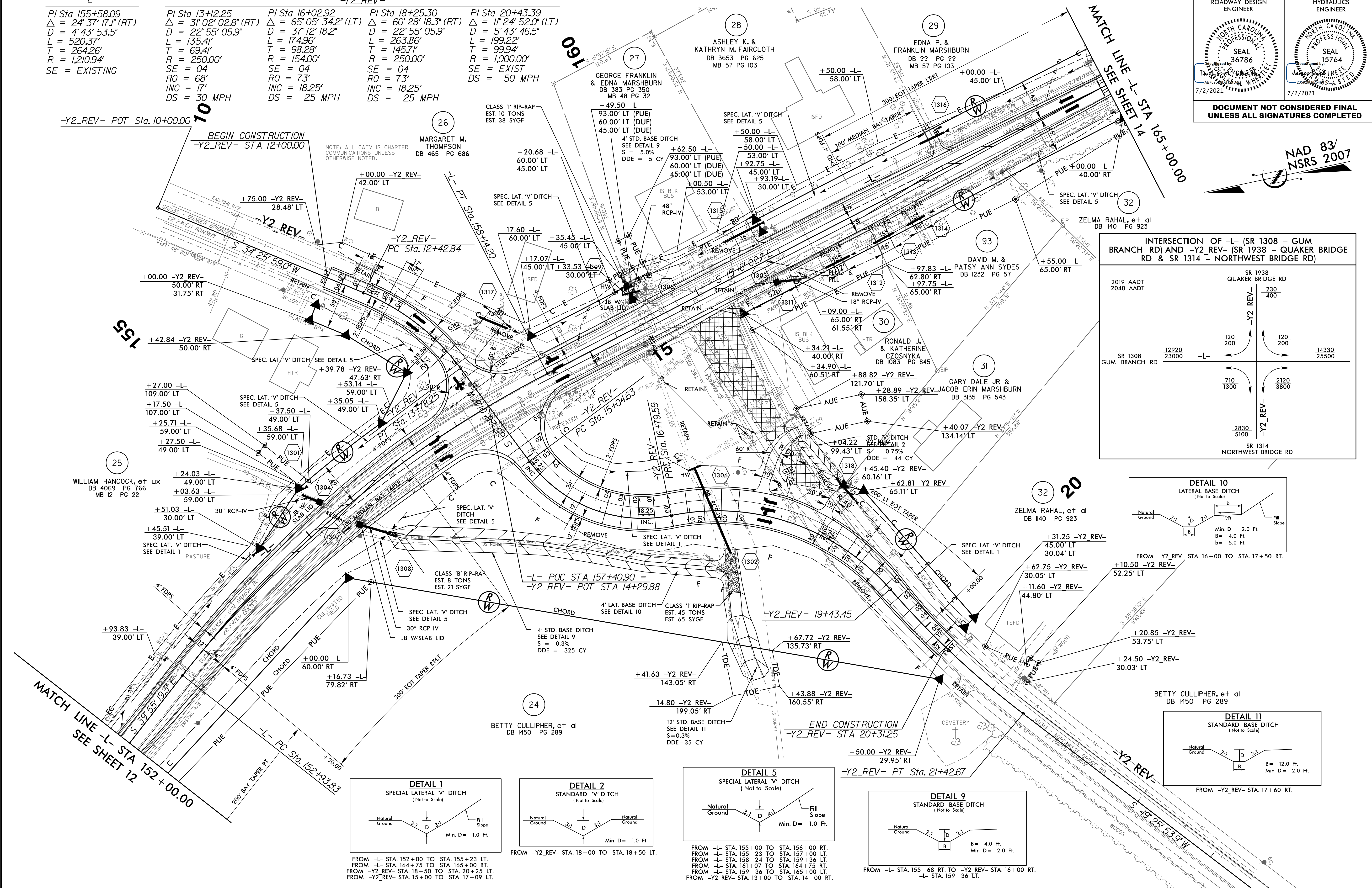
DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)
 NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED
 FOR -L- PROFILE, SEE SHEETS 30 AND 31

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5/14/20

PROJECT REFERENCE NO. U-4906	SHEET NO. 13
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 36786 7/2/2021
	SEAL 15764 7/2/2021
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L-	-Y2_REV-			
PI Sta 155+58.09	PI Sta 13+12.25	PI Sta 16+02.92	PI Sta 18+25.30	PI Sta 20+43.39
$\Delta = 24' 37" 17.1" (RT)$	$\Delta = 31' 02" 02.8" (RT)$	$\Delta = 65' 05" 34.2" (LT)$	$\Delta = 60' 28" 18.3" (RT)$	$\Delta = 11' 24" 52.0" (LT)$
$D = 4' 43" 53.5"$	$D = 22' 55" 05.9"$	$D = 37' 12" 18.2"$	$D = 22' 55" 05.9"$	$D = 5' 43" 46.5"$
$L = 520.37'$	$L = 135.41'$	$L = 174.96'$	$L = 263.86'$	$L = 199.22'$
$T = 264.26'$	$T = 69.41'$	$T = 98.28'$	$T = 145.71'$	$T = 99.94'$
$R = 1,210.94'$	$R = 250.00'$	$R = 154.00'$	$R = 250.00'$	$R = 1,000.00'$
SE = EXISTING	SE = 04	SE = 04	SE = 04	SE = EXIST
	RO = 68'	RO = 73'	RO = 73'	DS = 50 MPH
	INC = 17'	INC = 18.25'	INC = 18.25'	
	DS = 30 MPH	DS = 25 MPH	DS = 25 MPH	



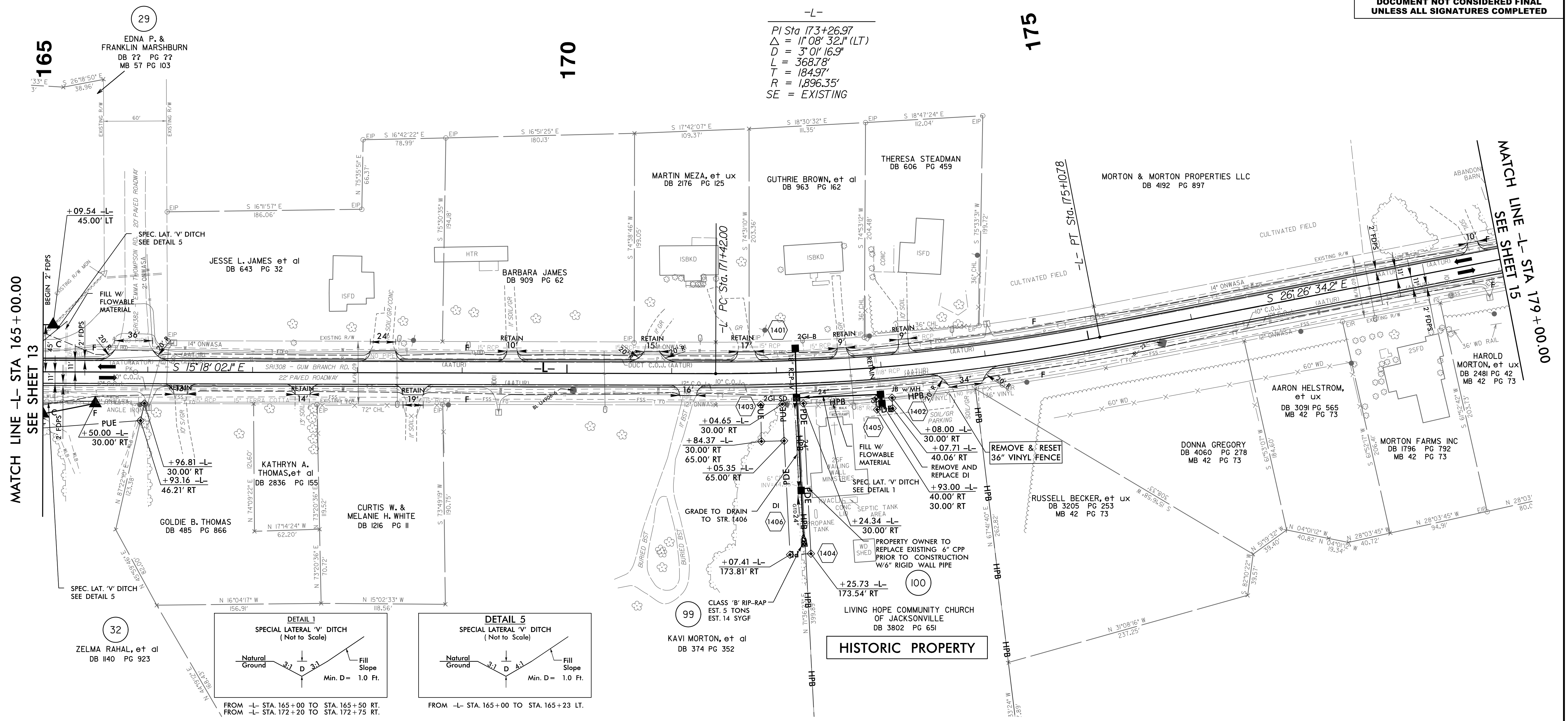
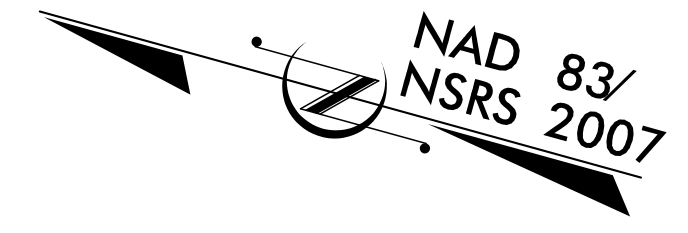
DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)
NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEET 31
FOR -Y2_REV- PROFILE, SEE SHEET 38

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8/17/19

PROJECT REFERENCE NO. U-4906	SHEET NO. 14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

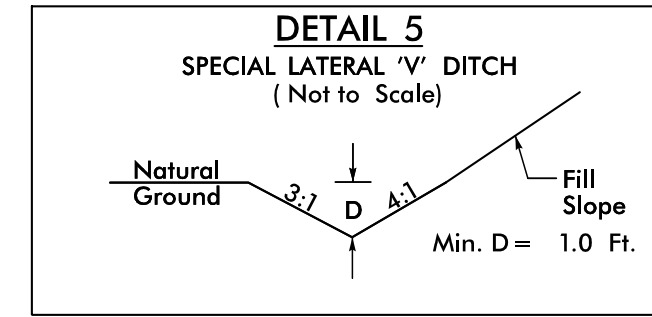
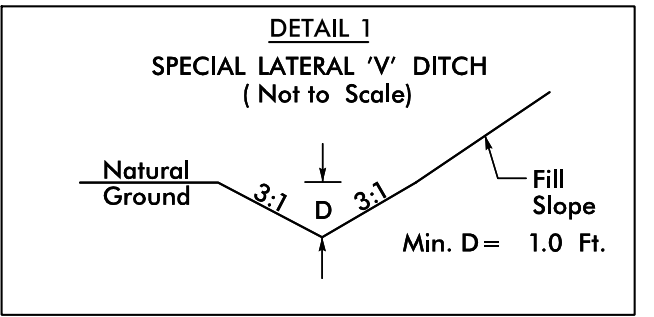


-L-
 PI Sta 173+26.97
 $\Delta = 11^{\circ}08'32.1''$ (LT)
 $D = 3^{\circ}01'16.9''$
 $L = 368.78'$
 $T = 184.97'$
 $R = 1,896.35'$
 SE = EXISTING

MATCH LINE -L- STA 165+00.00
 SEE SHEET 13

MATCH LINE -L- STA 179+00.00
 SEE SHEET 15

32
 ZELMA RAHAL, et al
 DB 1140 PG 923



FROM -L- STA. 165+00 TO STA. 165+50 RT.
 FROM -L- STA. 172+20 TO STA. 172+75 RT.

FROM -L- STA. 165+00 TO STA. 165+23 LT.

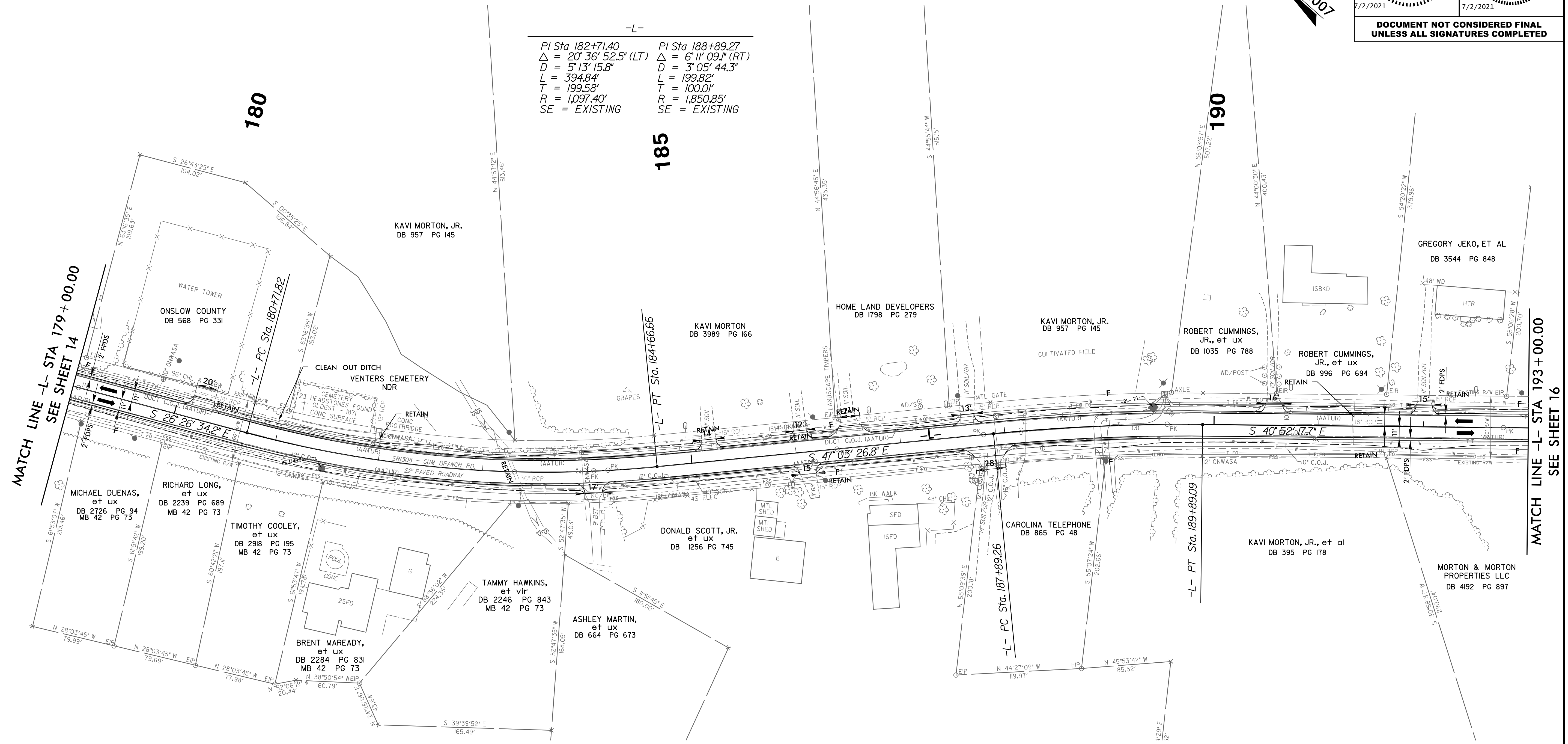
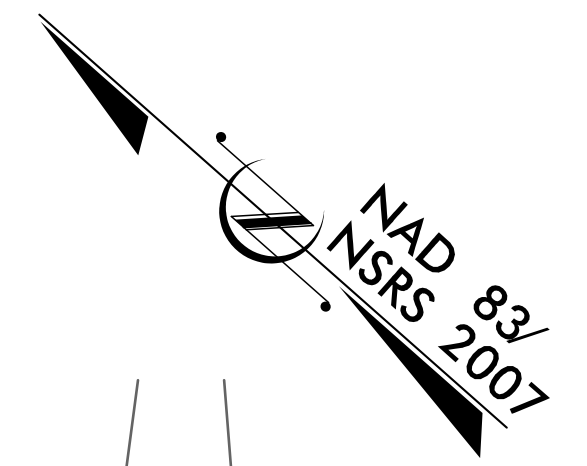
HISTORIC PROPERTY

DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)
 NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEETS 31 AND 32

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PROJECT REFERENCE NO. U-4906		SHEET NO. 15
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



-L-

<i>PI Sta 182+71.40</i>	<i>PI Sta 188+89.27</i>
$\Delta = 20^\circ 36' 52.5''$ (LT)	$\Delta = 6^\circ 11' 09.1''$ (RT)
$D = 5^\circ 13' 15.8''$	$D = 3^\circ 05' 44.3''$
$L = 394.84'$	$L = 199.82'$
$T = 199.58'$	$T = 100.01'$
$R = 1,097.40'$	$R = 1,850.85'$
$SE = EXISTING$	$SE = EXISTING$

MATCH LINE -L- STA 179+00.00
SEE SHEET 14

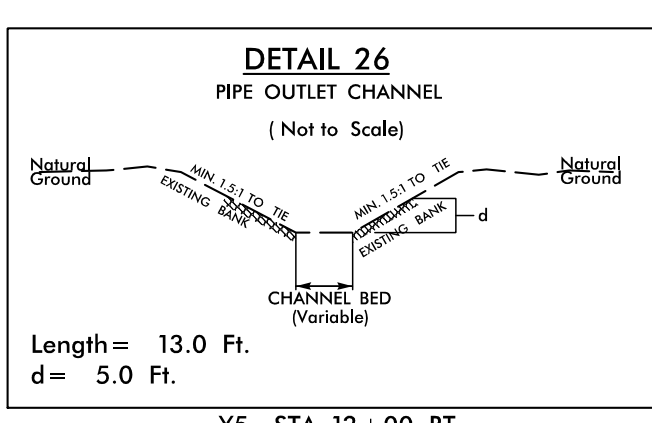
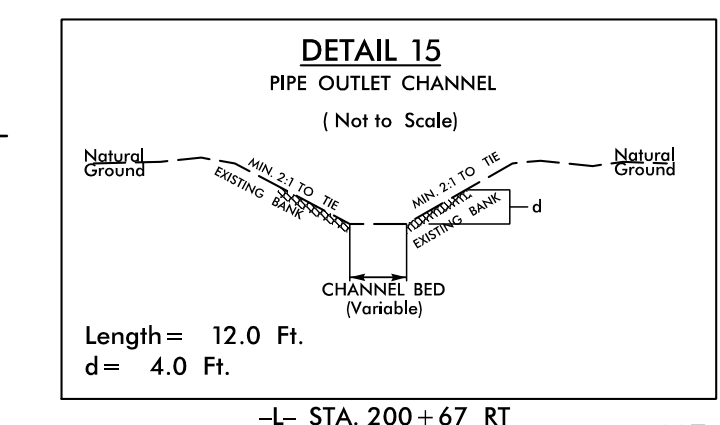
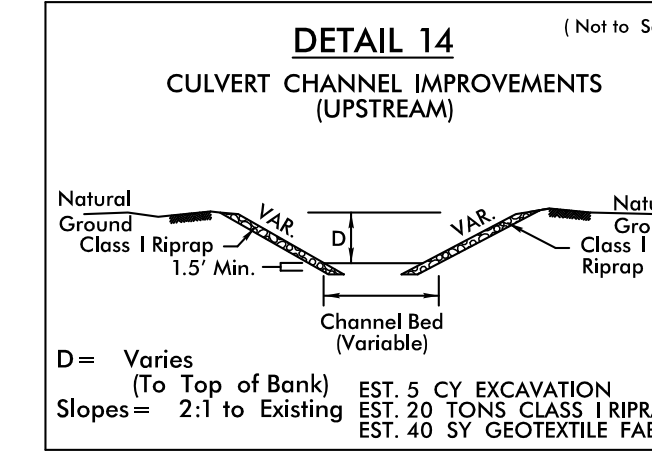
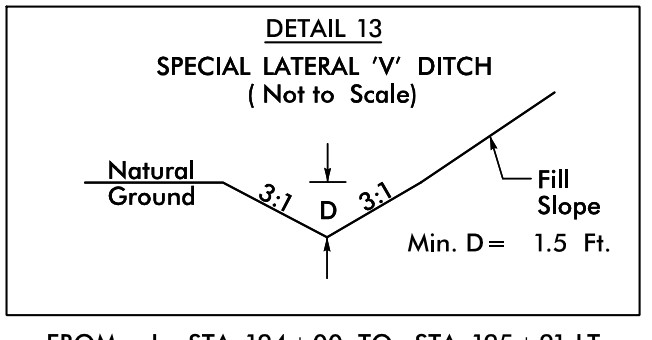
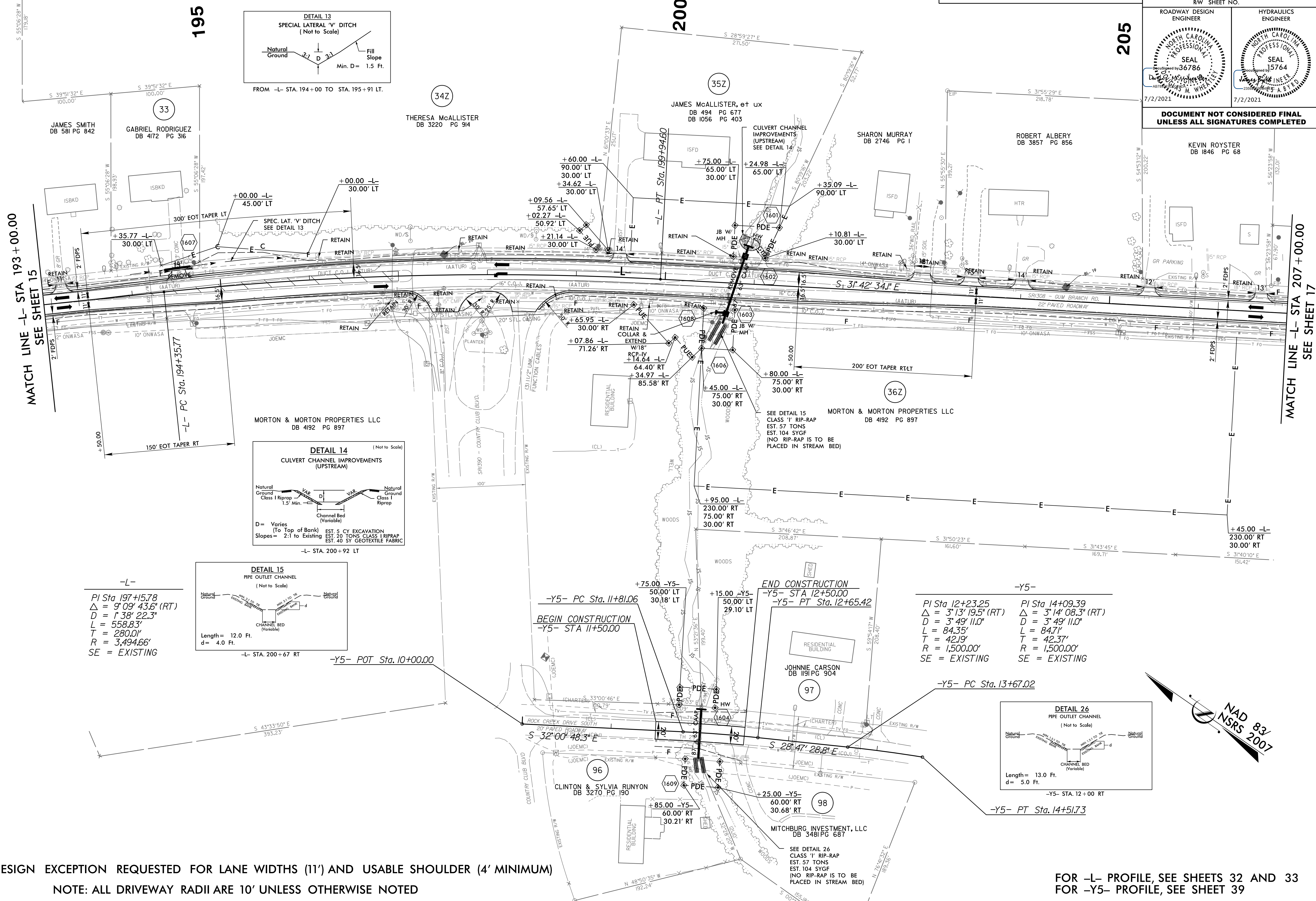
MATCH LINE -L- STA 193+00.00
SEE SHEET 16

DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)
 NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEET 32

5/14/2023
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HNTB

PROJECT REFERENCE NO. U-4906	SHEET NO. 16
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 36786 7/2/2021
	SEAL 15764 7/2/2021
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
KEVIN ROYSTER DB 1846 PG 68	



-L-
PI Sta 197+15.78
 $\Delta = 9^{\circ}09'43.6''$ (RT)
D = 1'38"22.3"
L = 558.83'
T = 280.01'
R = 3,494.66'
SE = EXISTING

-Y5-
PI Sta 12+23.25
 $\Delta = 3^{\circ}13'19.5''$ (RT)
D = 3'49"11.0"
L = 84.35'
T = 42.19'
R = 1,500.00'
SE = EXISTING

PI Sta 14+09.39
 $\Delta = 3^{\circ}14'08.3''$ (RT)
D = 3'49"11.0"
L = 84.71'
T = 42.37'
R = 1,500.00'
SE = EXISTING

DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)
NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

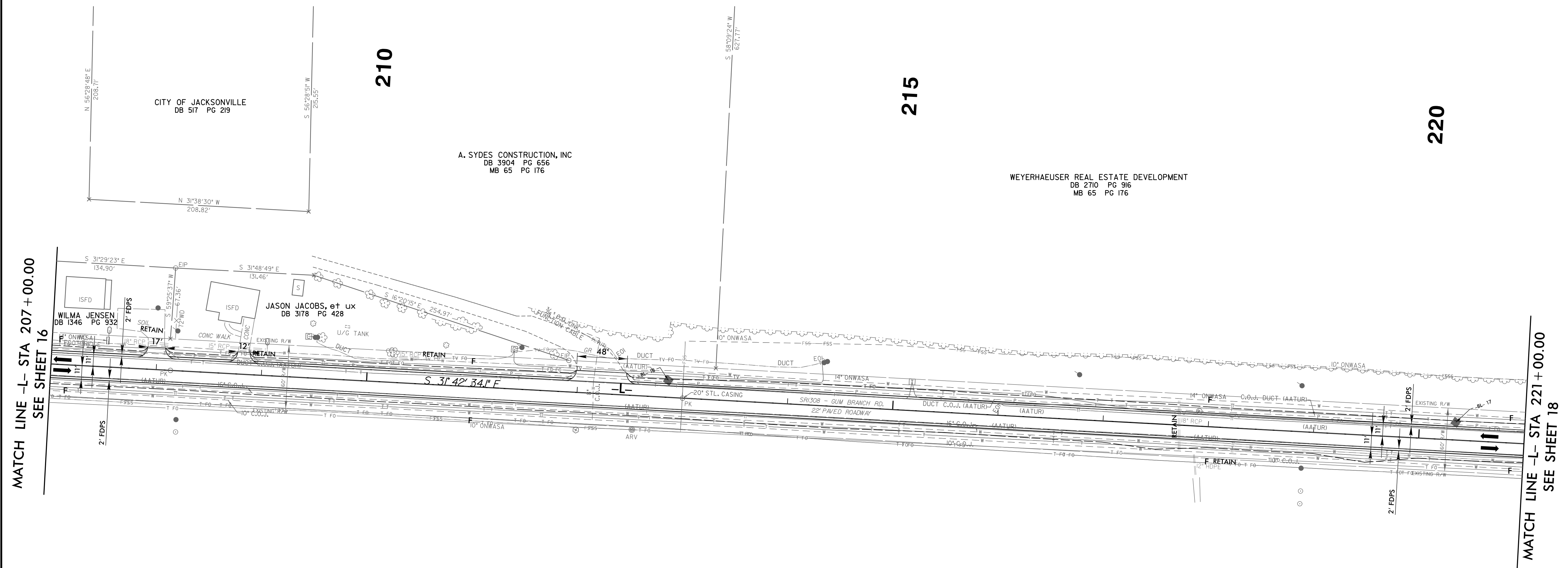
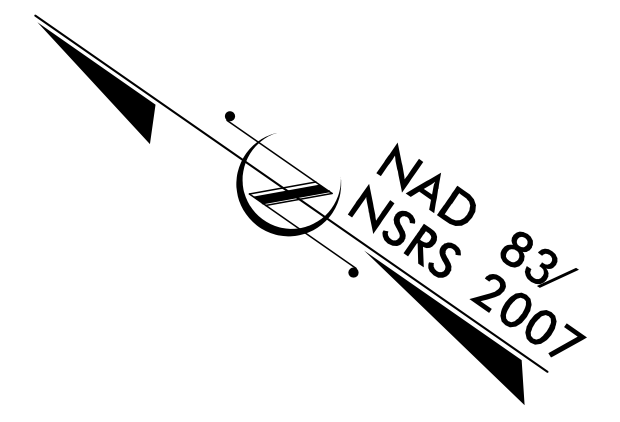
FOR -L- PROFILE, SEE SHEETS 32 AND 33
FOR -Y5- PROFILE, SEE SHEET 39



5/14/20

HNTB HNTB NORTH CAROLINA, P.C.
 343 E. Six Forks Road, Suite 200
 Raleigh, North Carolina 27609
 NC License No: C-1554

PROJECT REFERENCE NO. U-4906		SHEET NO. 17
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



MATCH LINE -L- STA 207 + 00.00
SEE SHEET 16

MATCH LINE -L- STA 221 + 00.00
SEE SHEET 18

DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)
 NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

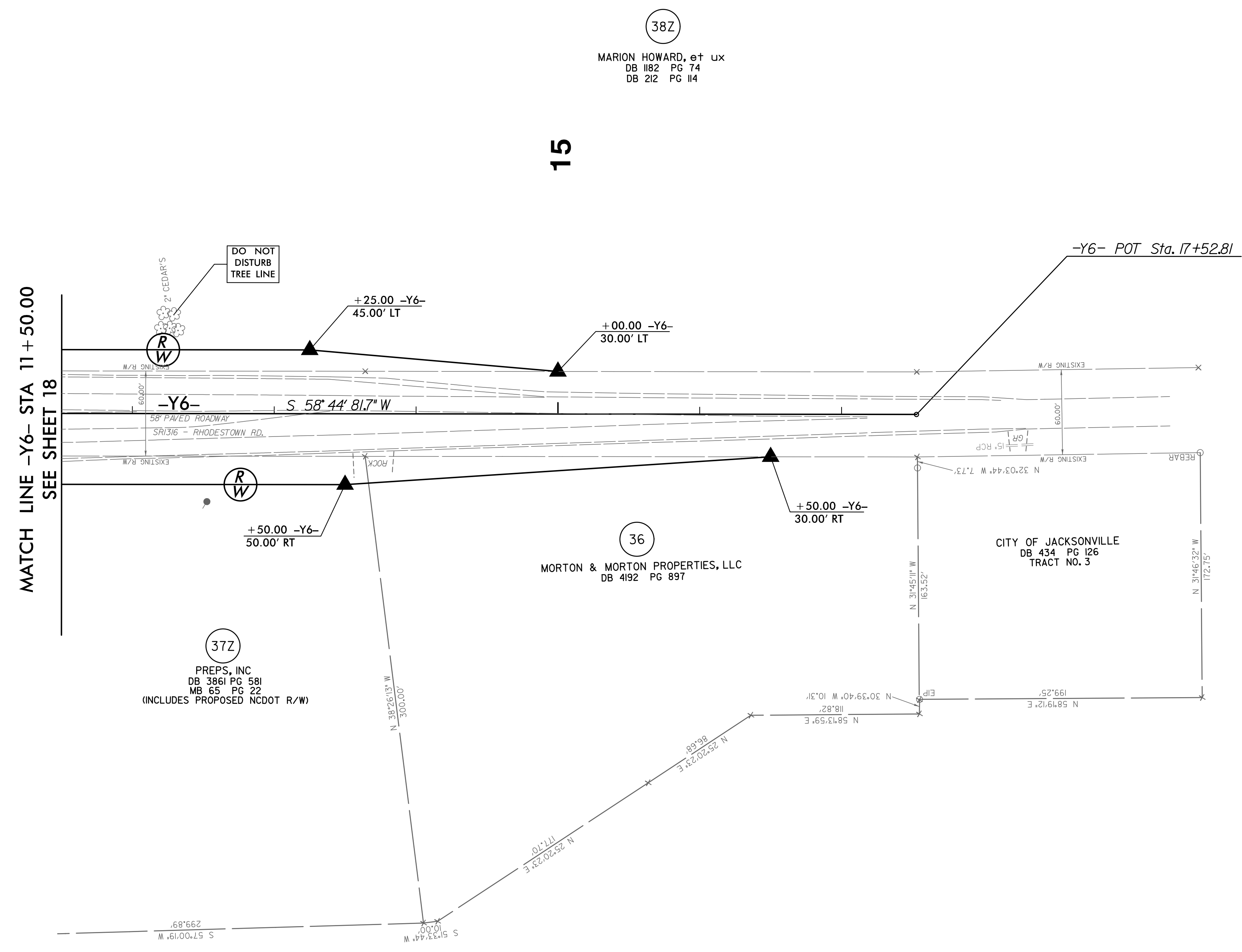
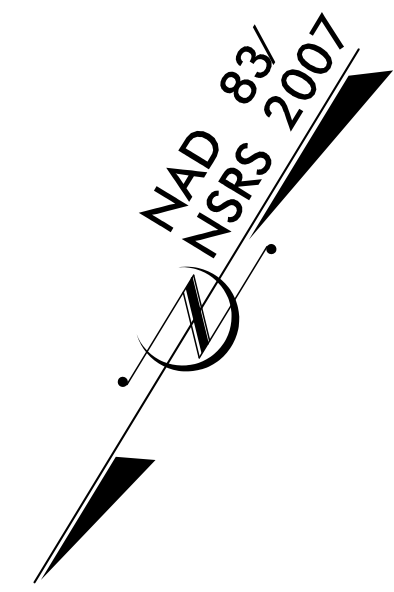
FOR -L- PROFILE, SEE SHEETS 33

15-JUN-2021 13:23
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 HNTB

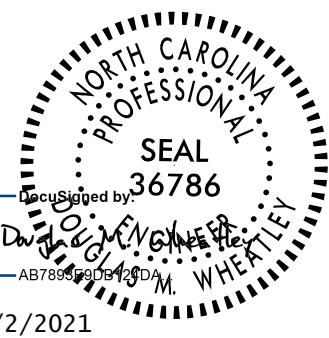
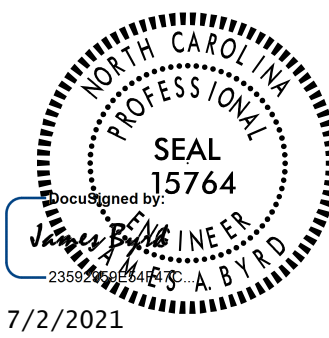
5/14/2021

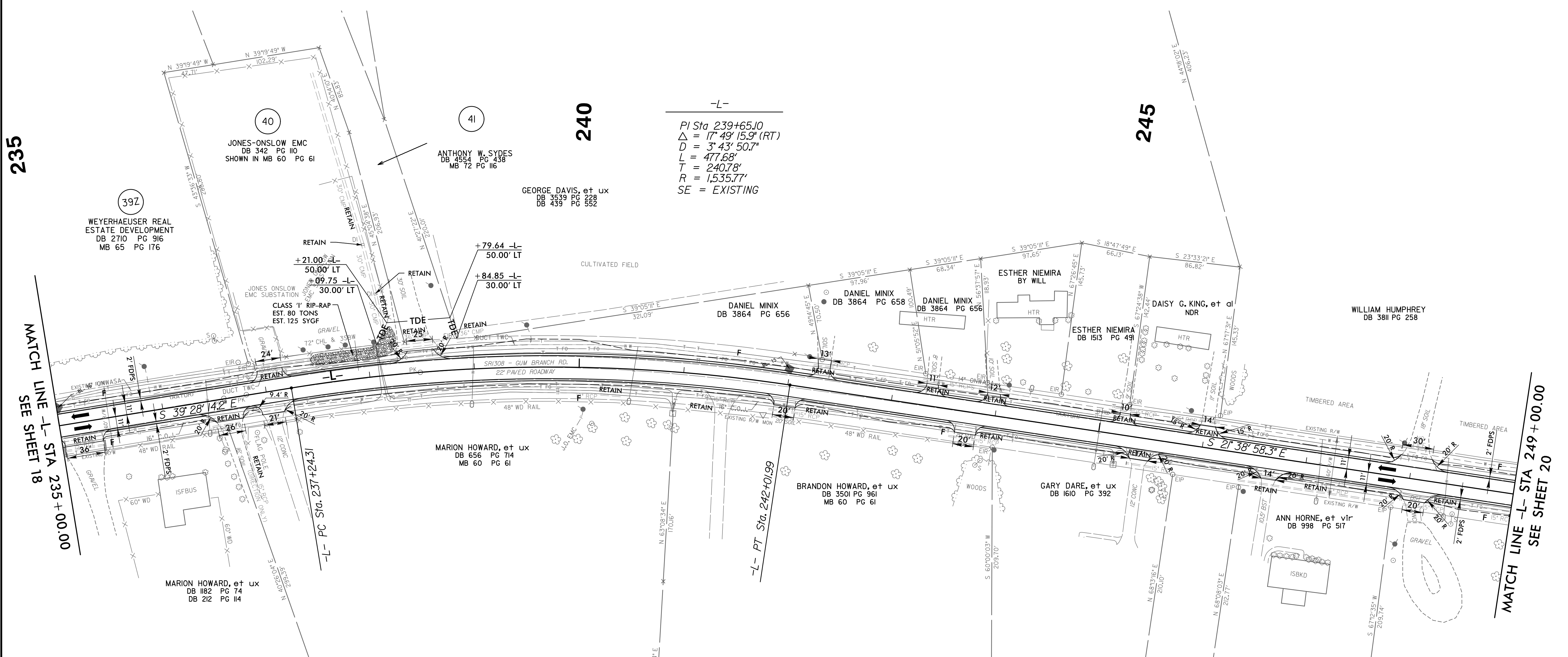
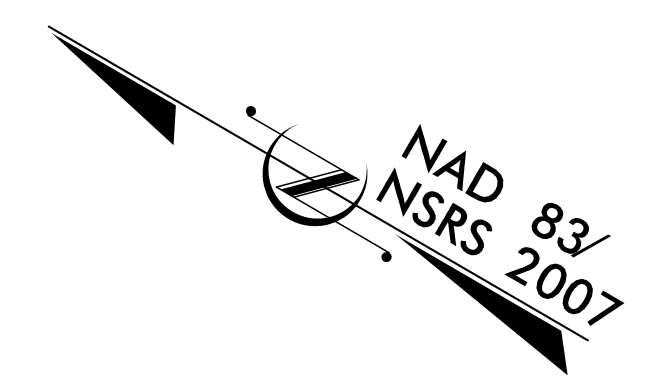
HNTB HNTB NORTH CAROLINA, P.C.
 343 E. Six Forks Road, Suite 200
 Raleigh, North Carolina 27609
 NC License No: C-1524

PROJECT REFERENCE NO. U-4906		SHEET NO. 18A
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



MATCH LINE -Y6- STA 11+50.00
SEE SHEET 18

PROJECT REFERENCE NO. U-4906	SHEET NO. 19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 7/2/2021	 7/2/2021
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



235

240

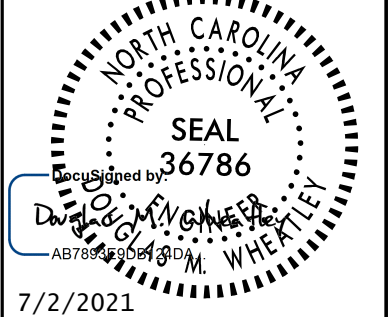
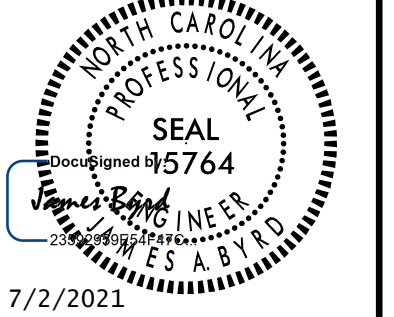
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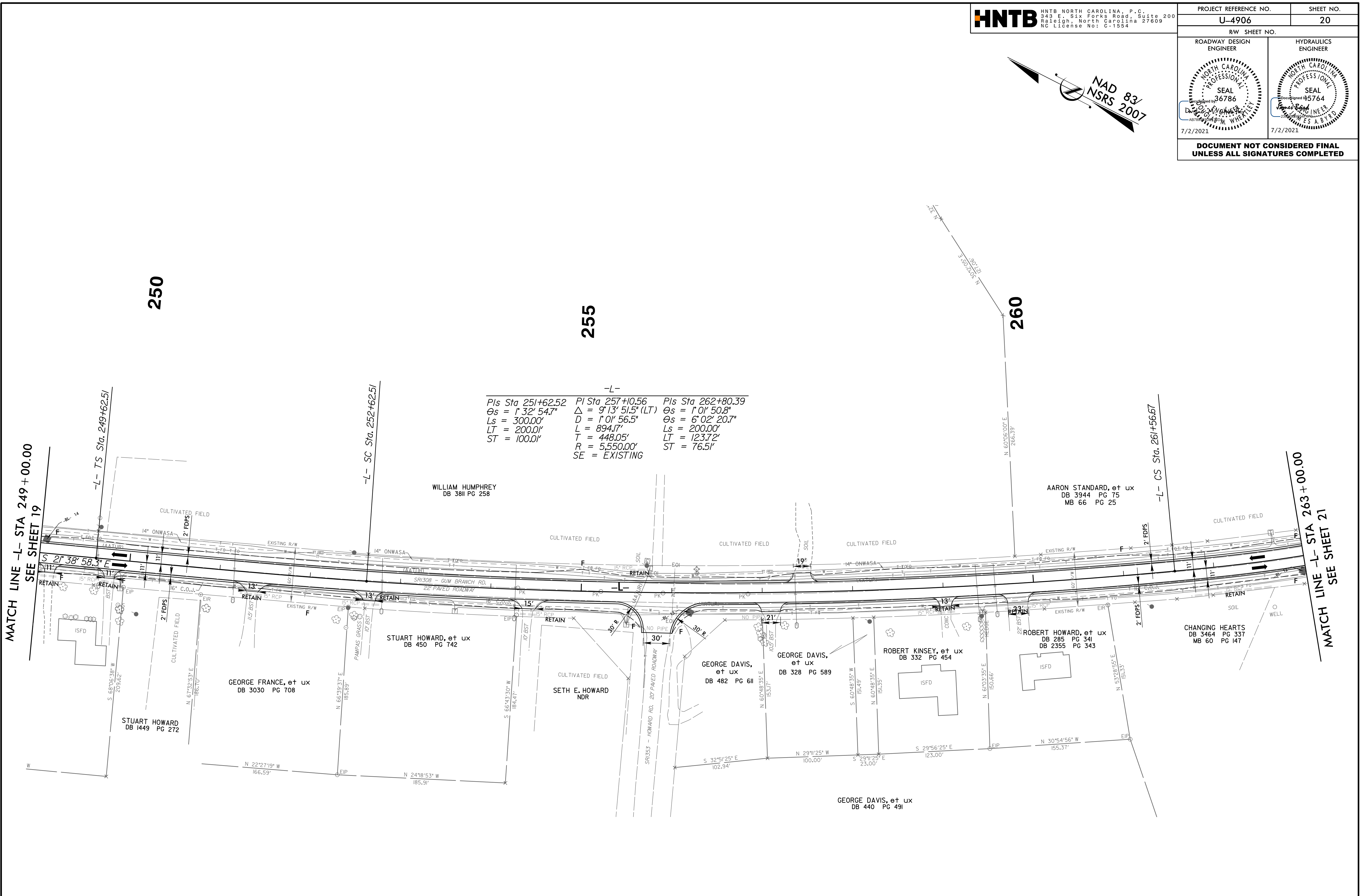
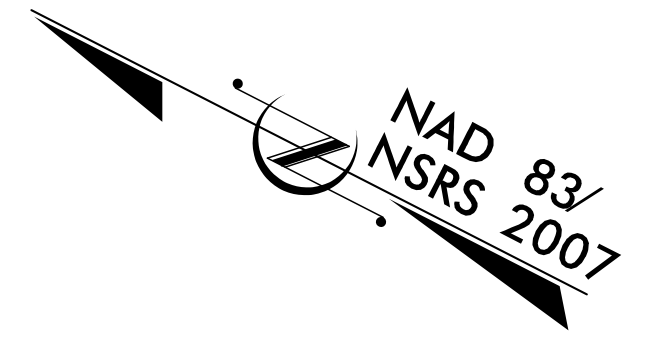
MATCH LINE -L- STA 235 + 00.00
 SEE SHEET 18

MATCH LINE -L- STA 249 + 00.00
 SEE SHEET 20

DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)
 NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED ON PLANS

FOR -L- PROFILE, SEE SHEET 34

PROJECT REFERENCE NO. U-4906		SHEET NO. 20
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
		
7/2/2021	7/2/2021	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

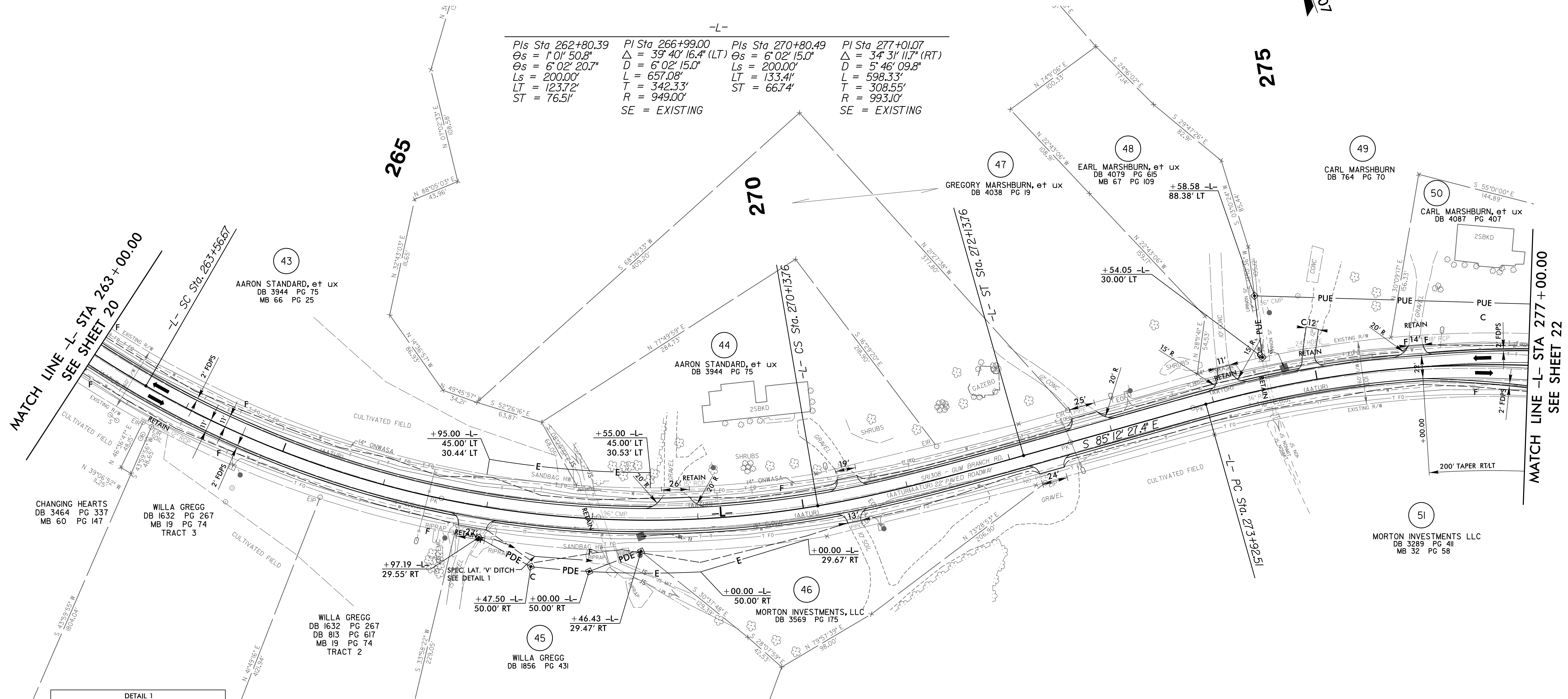
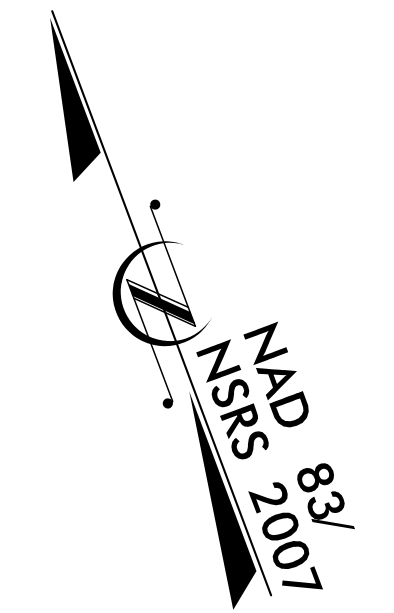


-L-

Pls Sta 251+62.52	Pl Sta 257+10.56	Pls Sta 262+80.39
$\Theta_s = 1^\circ 32' 54.7''$	$\Delta = 9^\circ 13' 51.5''$ (LT)	$\Theta_s = 1^\circ 01' 50.8''$
$L_s = 300.00'$	$D = 1^\circ 01' 56.5''$	$\Theta_s = 6^\circ 02' 20.7''$
$LT = 200.01'$	$L = 894.17'$	$L_s = 200.00'$
$ST = 100.01'$	$T = 448.05'$	$LT = 123.72'$
	$R = 5,550.00'$	$ST = 76.51'$
	$SE = EXISTING$	

DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)
 NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED ON PLANS

PROJECT REFERENCE NO. U-4906		SHEET NO. 21
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

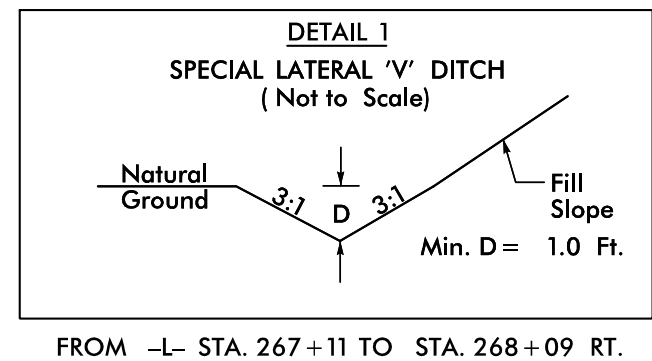


-L-

Pls Sta 262+80.39 θs = 1°01'50.8" θs = 6°02'20.7" Ls = 200.00' LT = 123.72' ST = 76.51'	PI Sta 266+99.00 Δ = 39°40'16.4" (LT) D = 6°02'15.0" L = 657.08' T = 342.33' R = 949.00' SE = EXISTING	Pls Sta 270+80.49 θs = 6°02'15.0" Ls = 200.00' LT = 133.41' ST = 66.74'	PI Sta 277+01.07 Δ = 34°31'11.7" (RT) D = 5°46'09.8" L = 598.33' T = 308.55' R = 993.10' SE = EXISTING
--	--	---	--

MATCH LINE -L- STA 263+00.00
SEE SHEET 20

MATCH LINE -L- STA 277+00.00
SEE SHEET 22



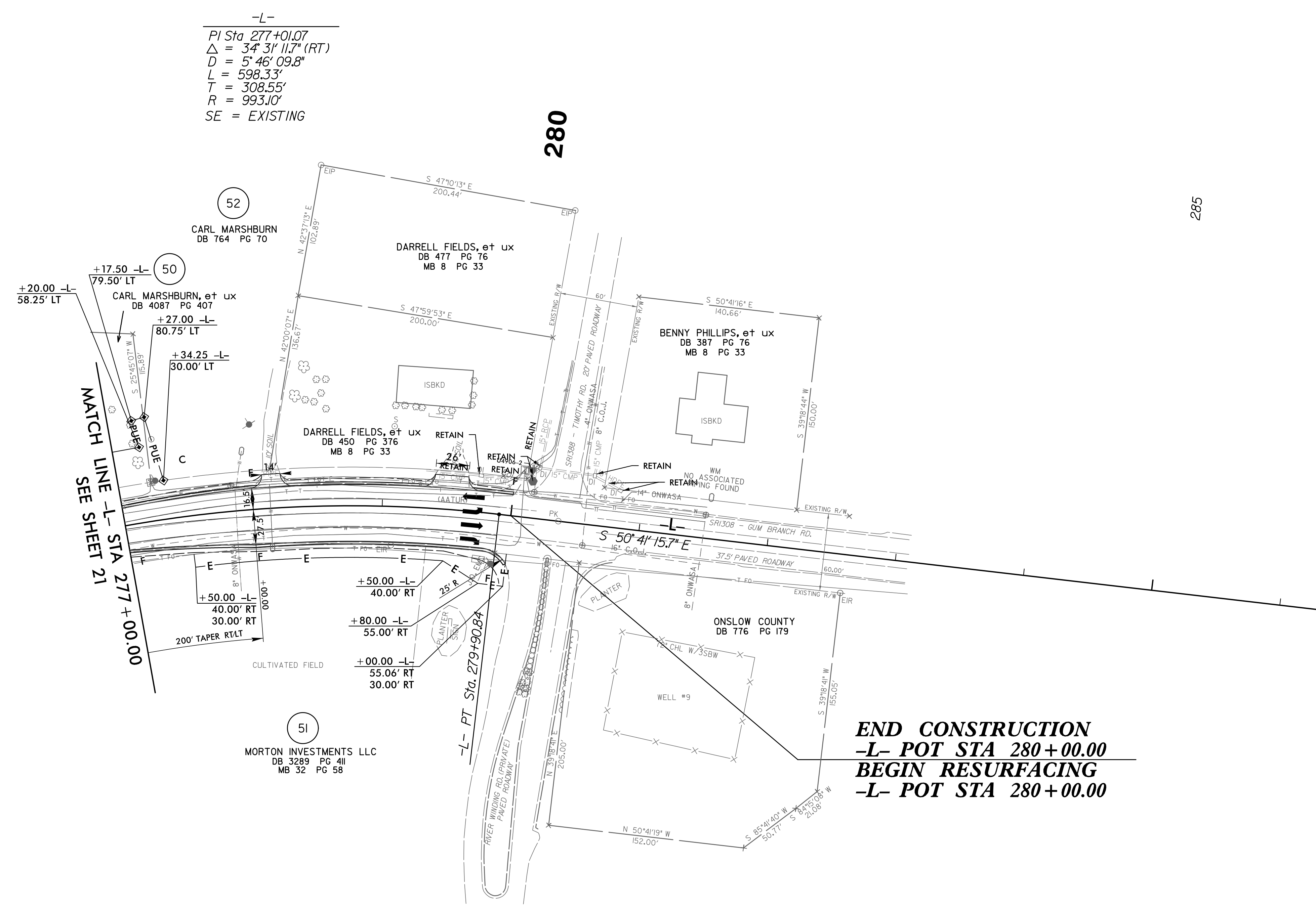
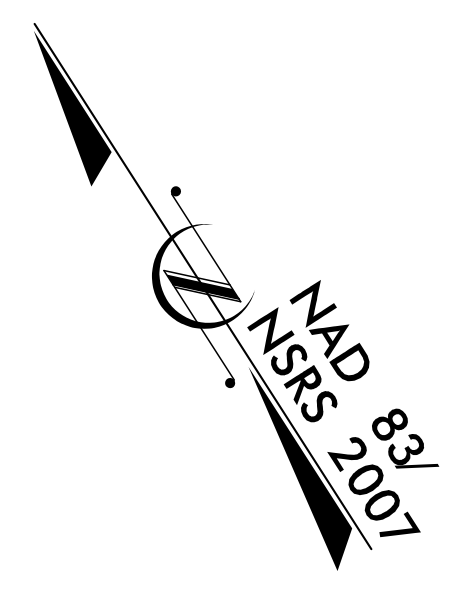
DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)

NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED ON PLANS

FOR -L- PROFILE, SEE SHEET 35

8/17/99

PROJECT REFERENCE NO. U-4906	SHEET NO. 22
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



-L-
 PI Sta 277+01.07
 $\Delta = 34' 31'' 11.7''$ (RT)
 $D = 5' 46'' 09.8''$
 $L = 598.33'$
 $T = 308.55'$
 $R = 993.10'$
 SE = EXISTING

DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)

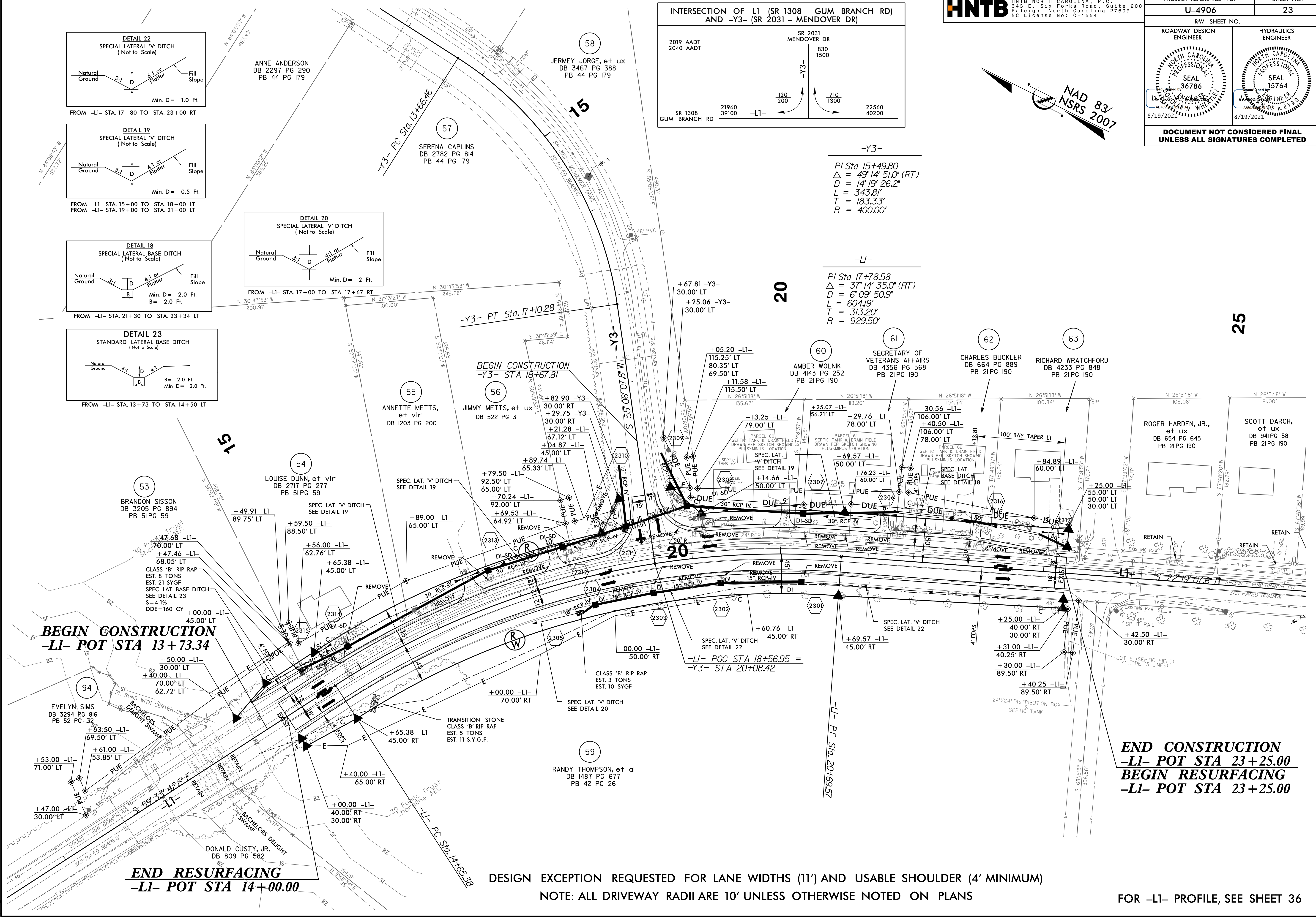
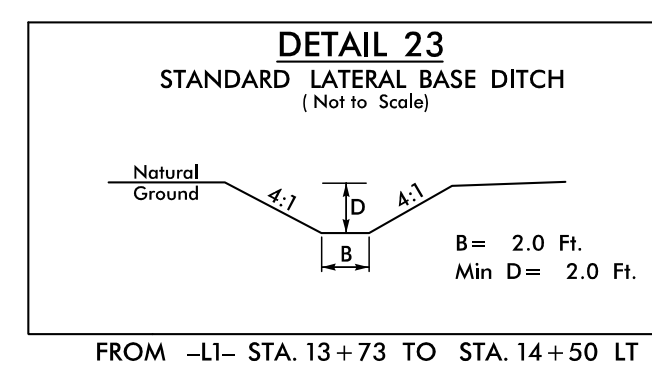
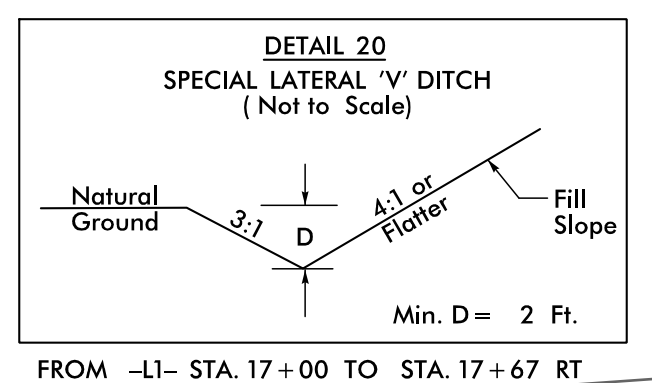
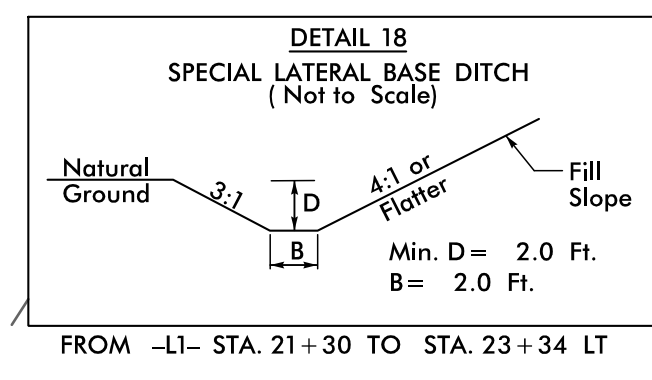
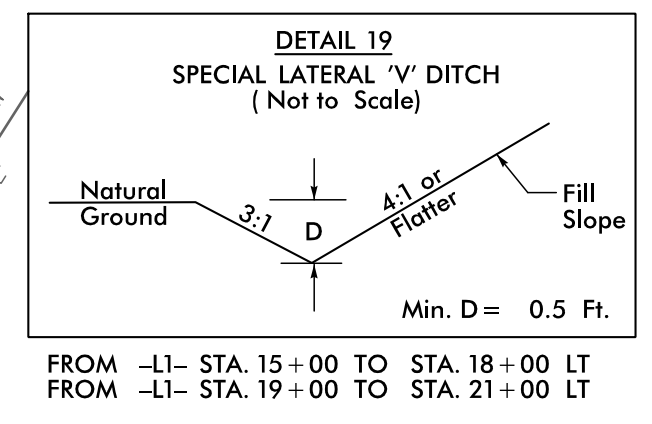
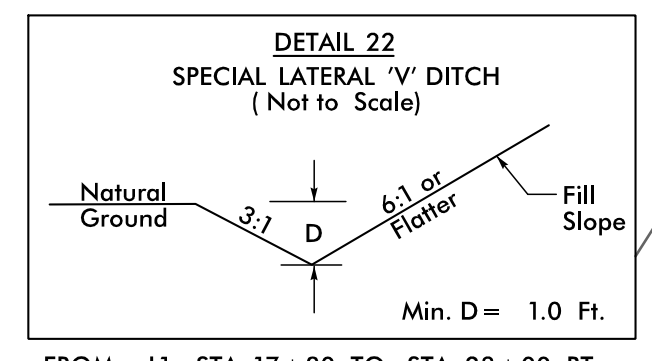
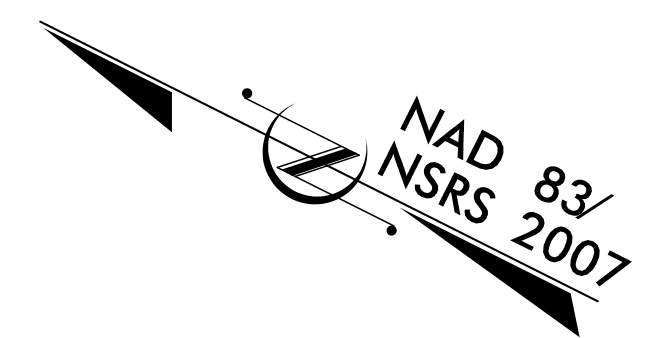
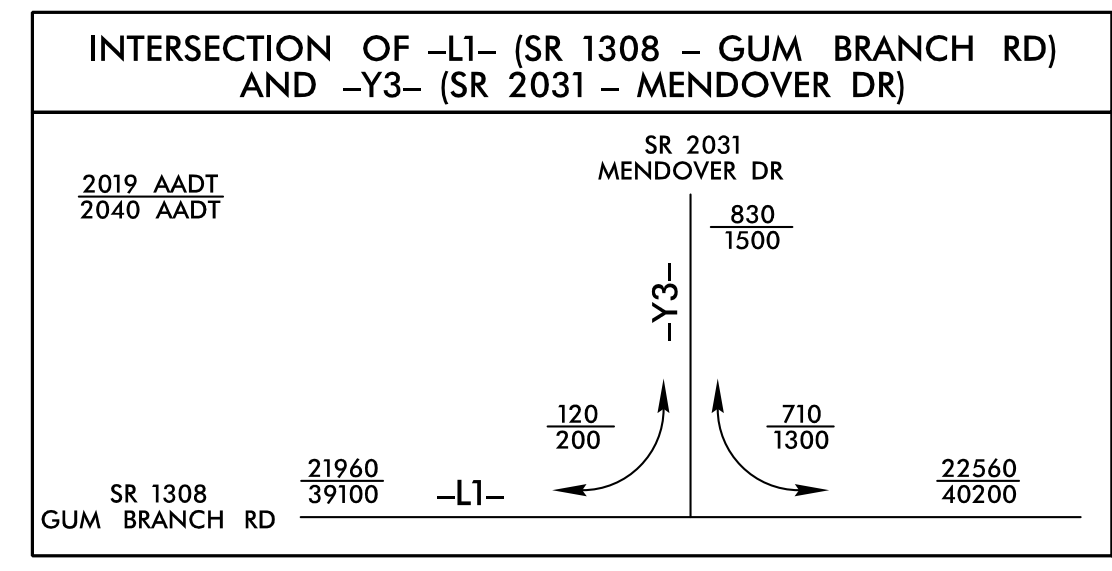
NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED ON PLANS

FOR -L- PROFILE, SEE SHEET 35

15-JUN-2021 13:23
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 DJP

5/14/2018
18-AUG-2021 13:35
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PROJECT REFERENCE NO. U-4906	SHEET NO. 23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

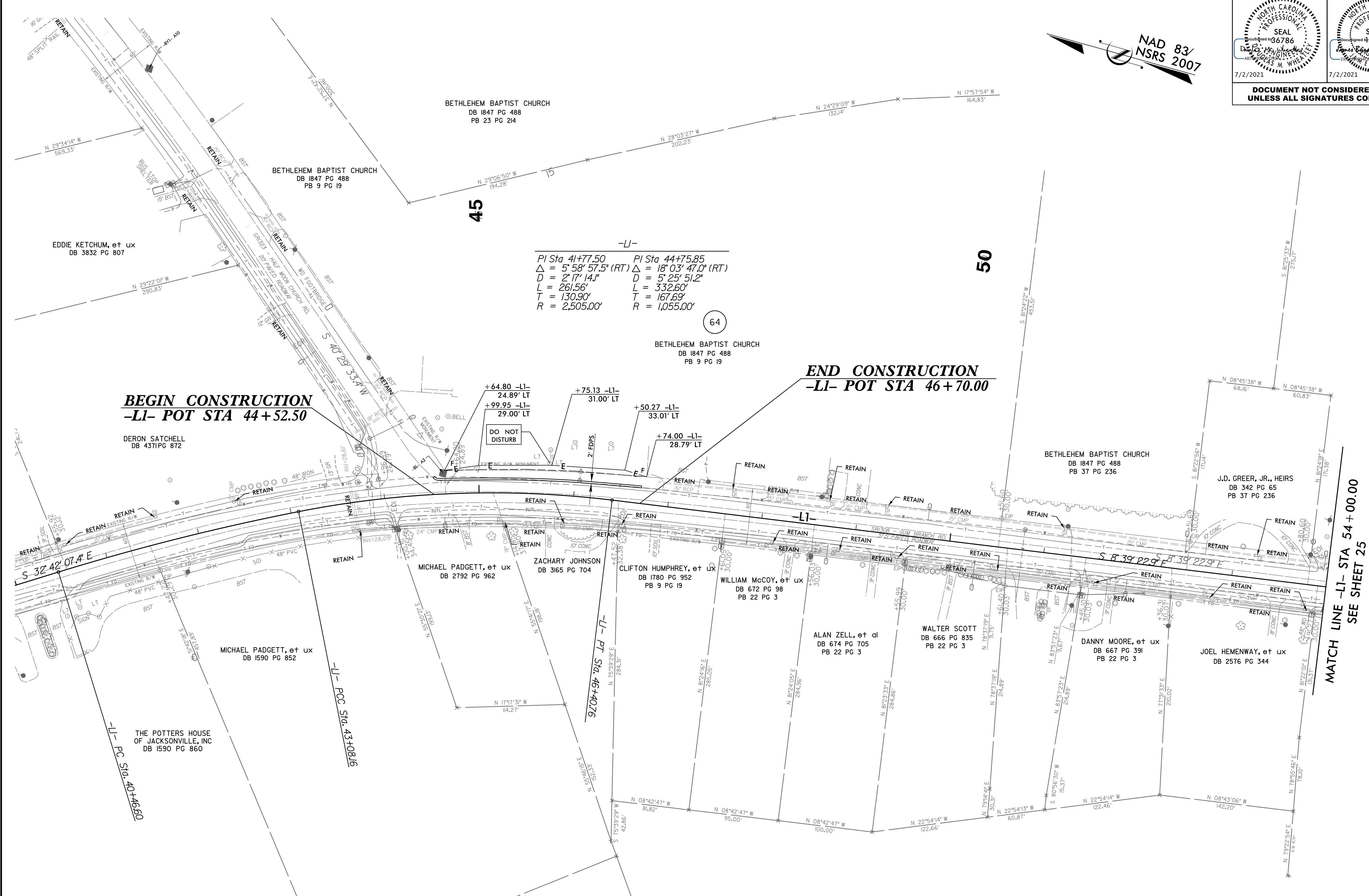
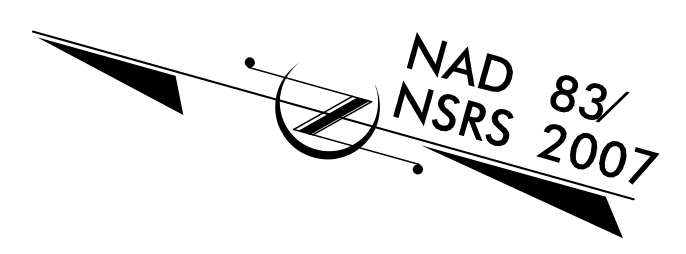


DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)
NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED ON PLANS

FOR -L1- PROFILE, SEE SHEET 36

8.17/99

PROJECT REFERENCE NO. U-4906		SHEET NO. 24
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



-L1-

PI Sta 41+77.50	PI Sta 44+75.85
$\Delta = 5' 58' 57.5''$ (RT)	$\Delta = 18' 03' 47.0''$ (RT)
$D = 2' 17' 14.1''$	$D = 5' 25' 51.2''$
$L = 261.56'$	$L = 332.60'$
$T = 130.90'$	$T = 167.69'$
$R = 2,505.00'$	$R = 1,055.00'$

BEGIN CONSTRUCTION
-L1- POT STA 44+52.50

END CONSTRUCTION
-L1- POT STA 46+70.00

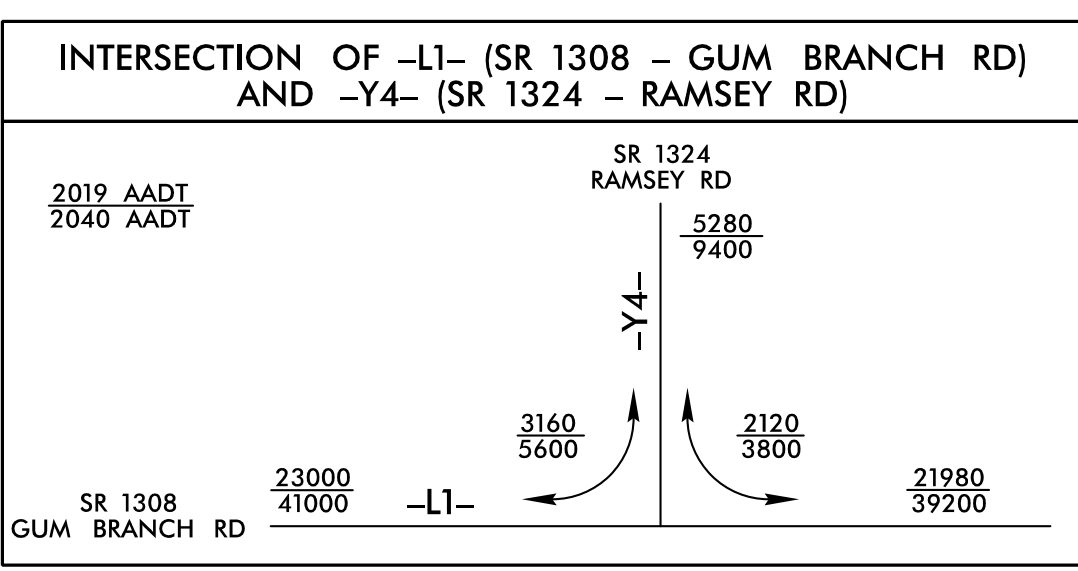
MATCH LINE -L1- STA 54+00.00
SEE SHEET 25

DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)

FOR -L1- PROFILE, SEE SHEET 36

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HNTB

8/17/2021



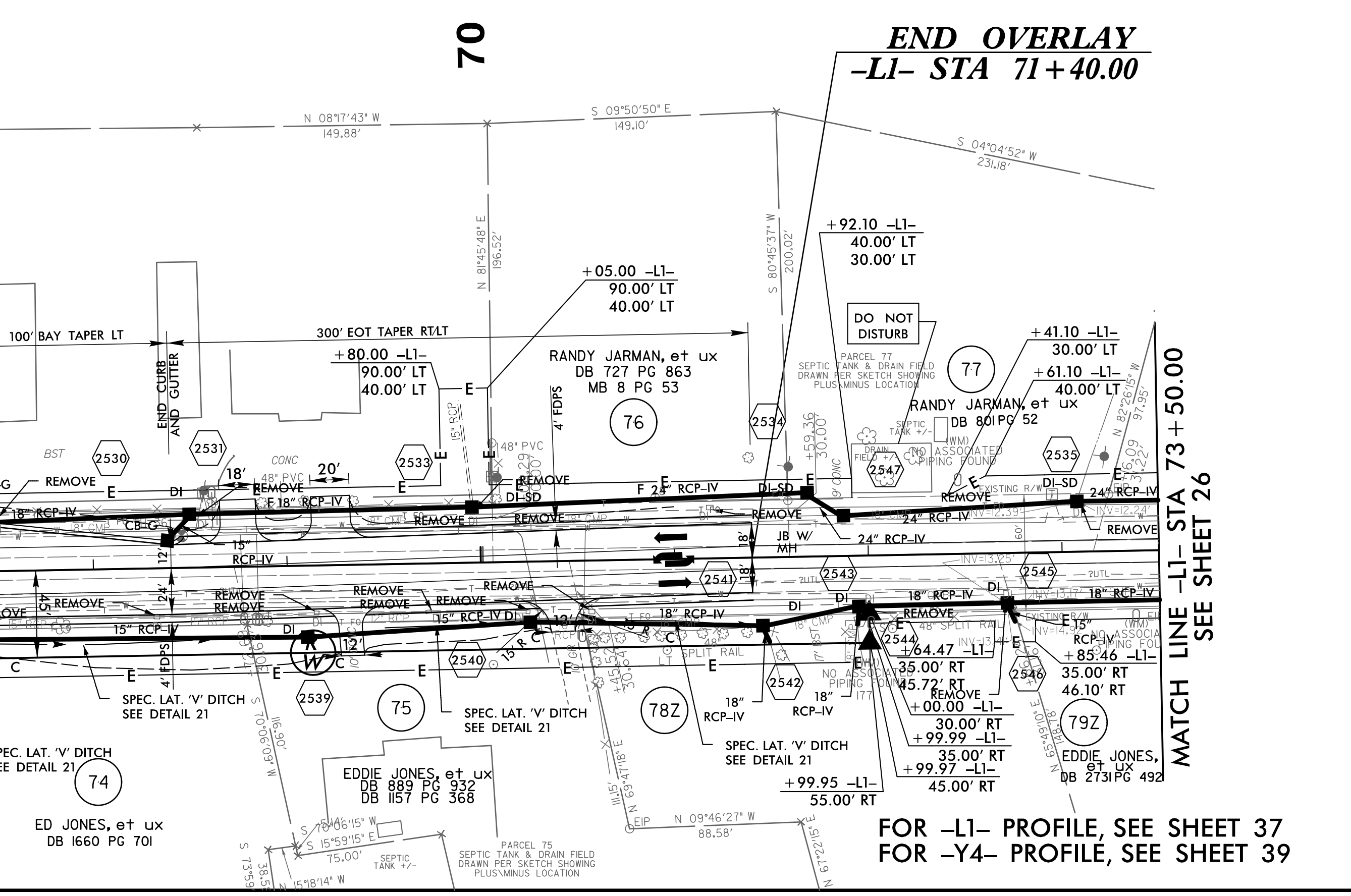
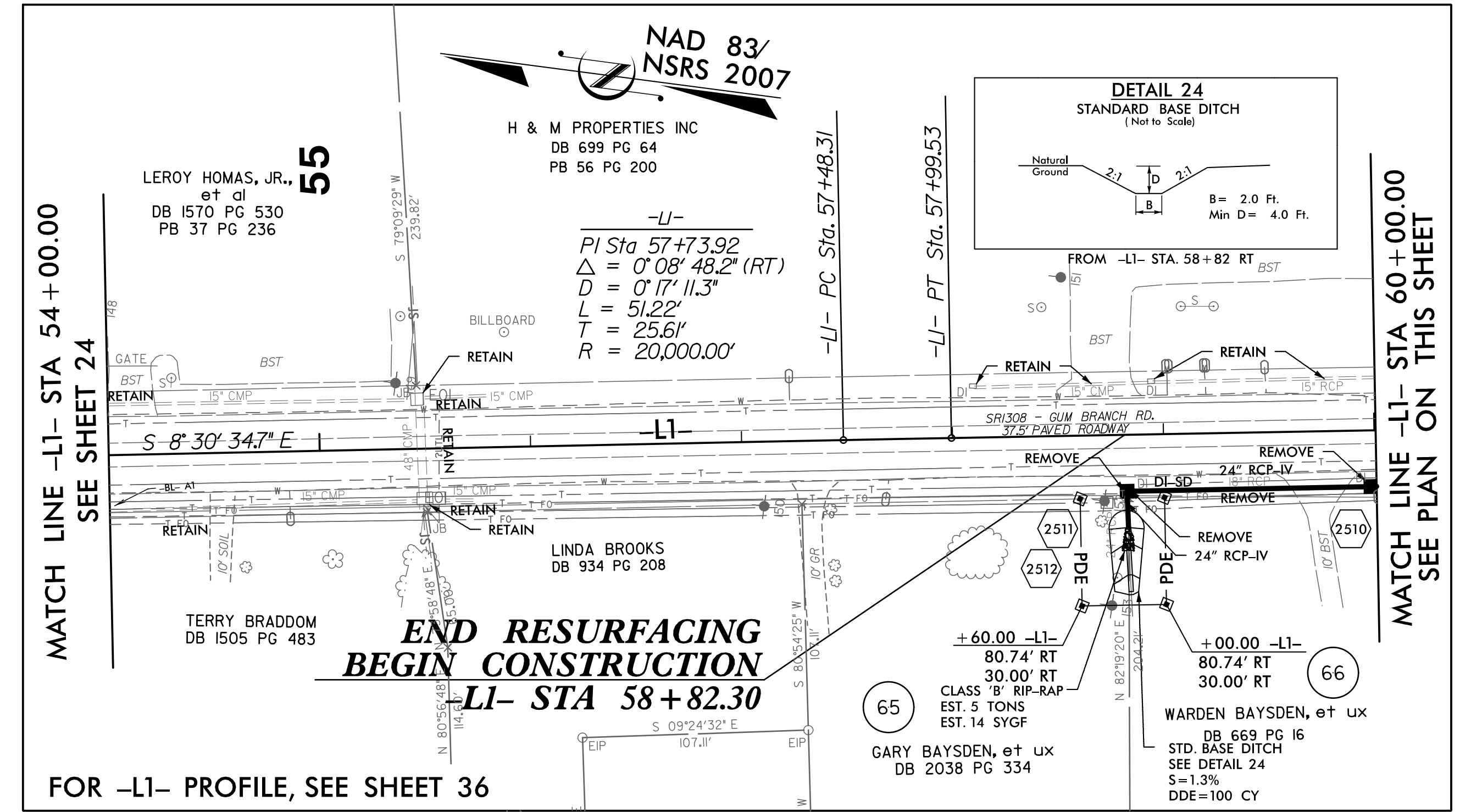
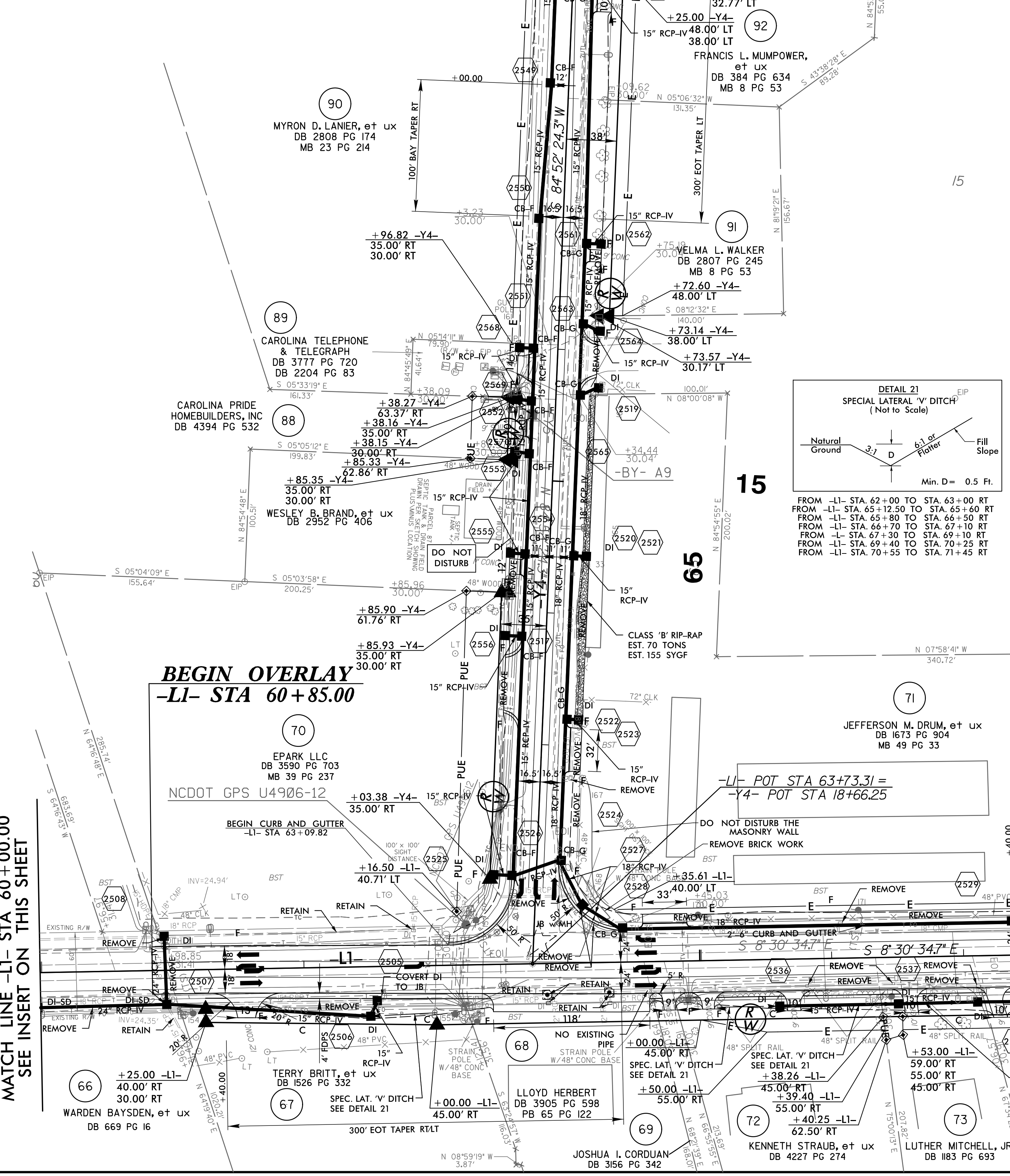
EXISTING TRAFFIC SIGNAL

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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No. C-1554

PROJECT REFERENCE NO.	SHEET NO.
U-4906	25
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 36786
	SEAL 15764
7/2/2021	7/2/2021
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

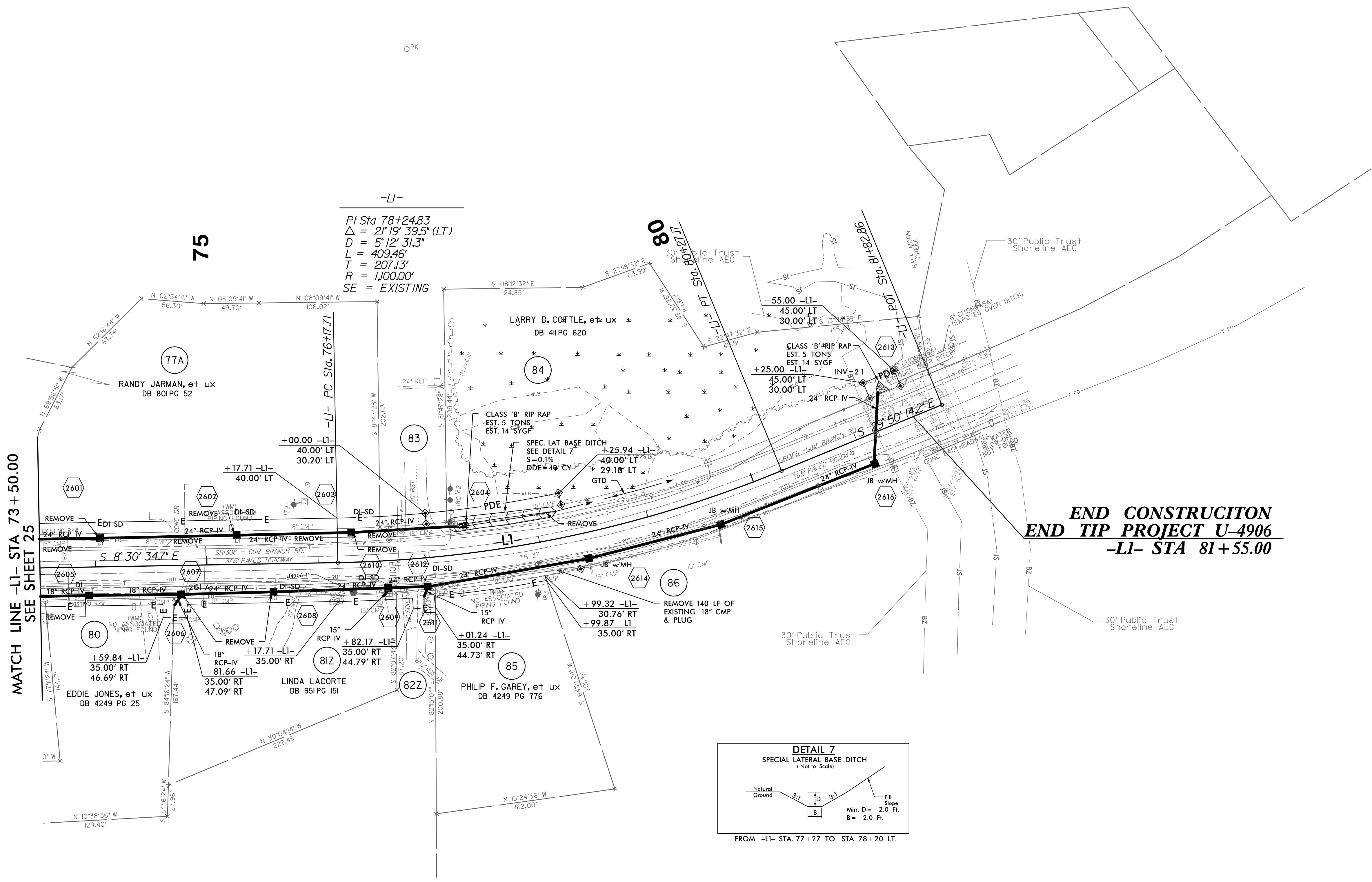
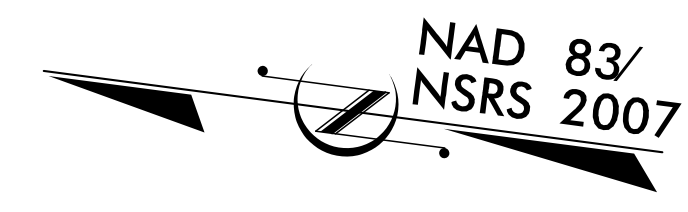
DESIGN EXCEPTION REQUESTED FOR LANE WIDTHS (11') AND USABLE SHOULDER (4' MINIMUM)

NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED ON PLANS

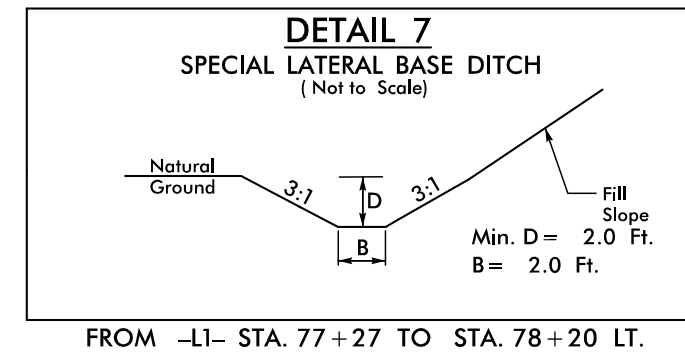


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PROJECT REFERENCE NO. U-4906		SHEET NO. 26
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



**END CONSTRUCTION
 END TIP PROJECT U-4906
 -LI- STA 81+55.00**



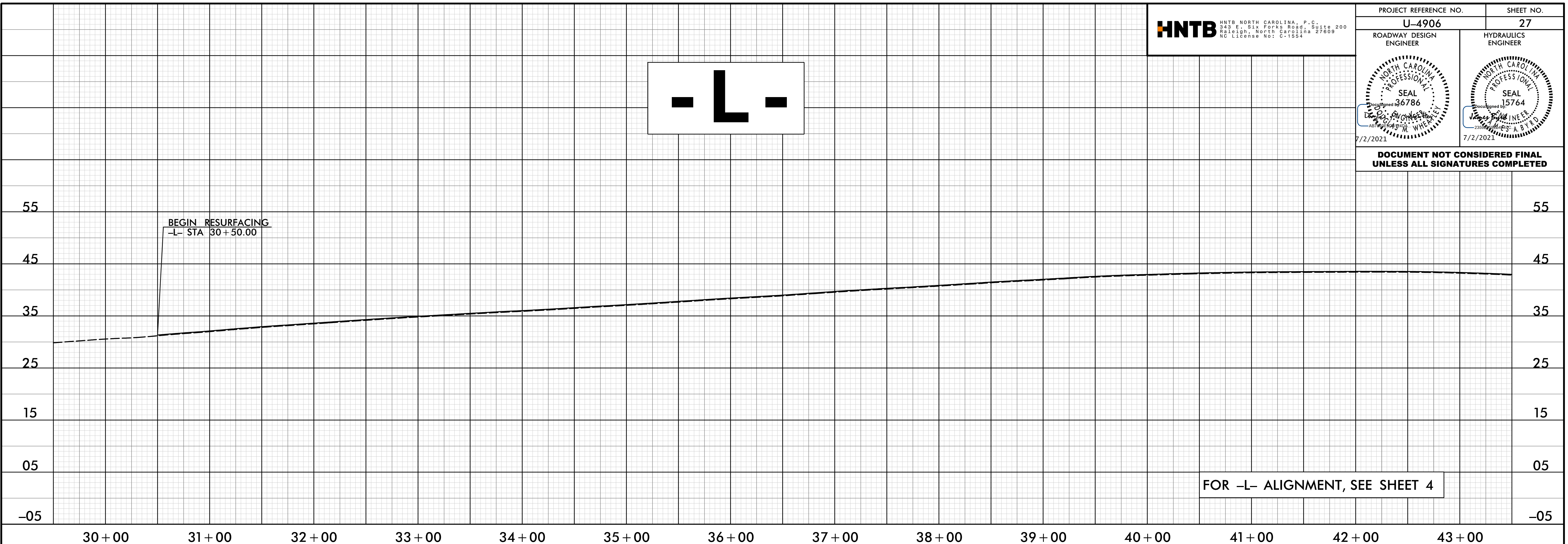
NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED ON PLANS

5/28/2021

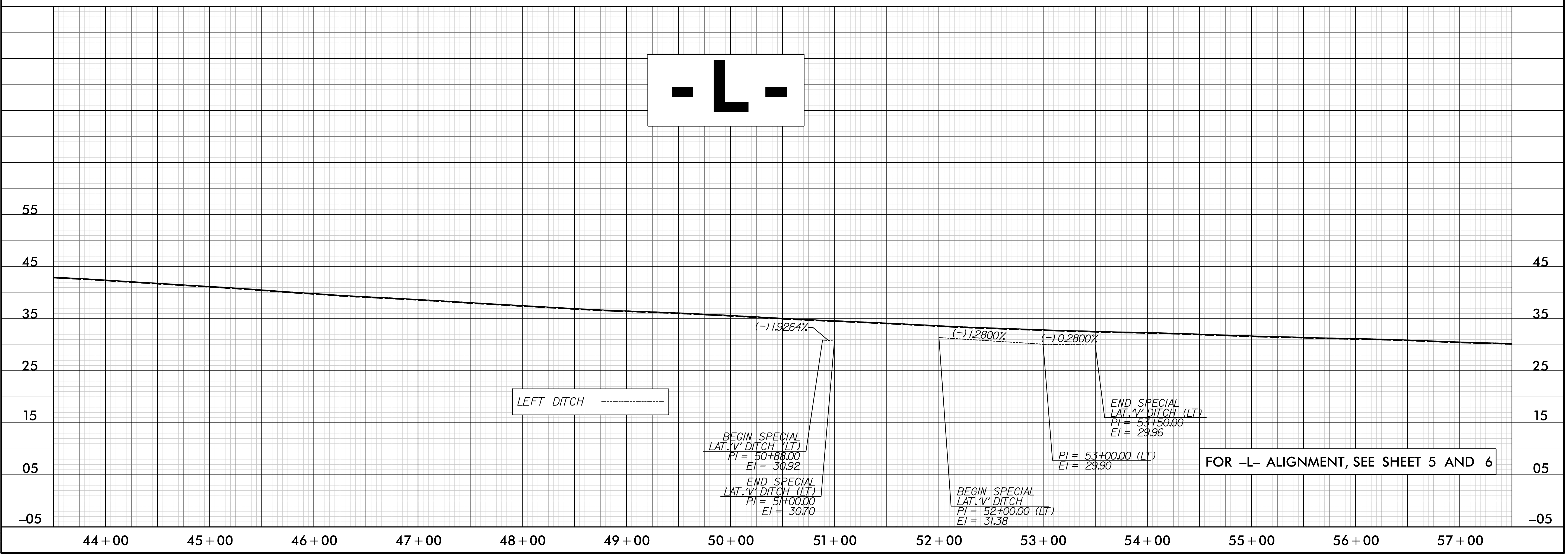
HNTB HNTB NORTH CAROLINA, P.C.
 343 E. SIX FORKS ROAD, SUITE 200
 RALEIGH, NORTH CAROLINA 27609
 NC LICENSE NO: C-1554

PROJECT REFERENCE NO. U-4906	SHEET NO. 27
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	HYDRAULICS ENGINEER <i>[Signature]</i>
SEAL 36786 7/2/2021	SEAL 15764 7/2/2021

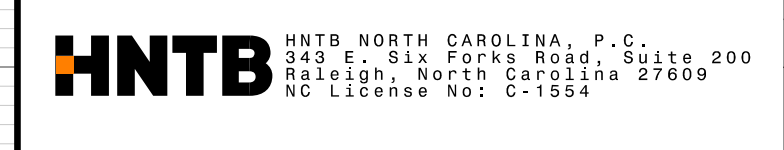
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



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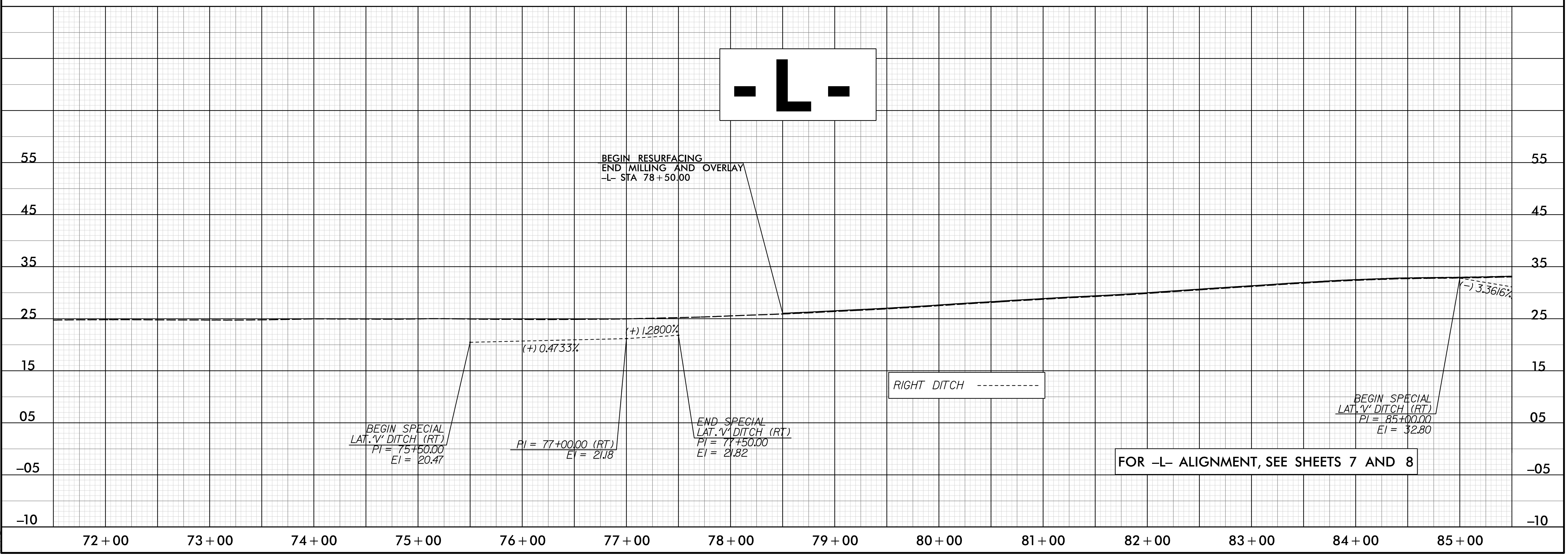
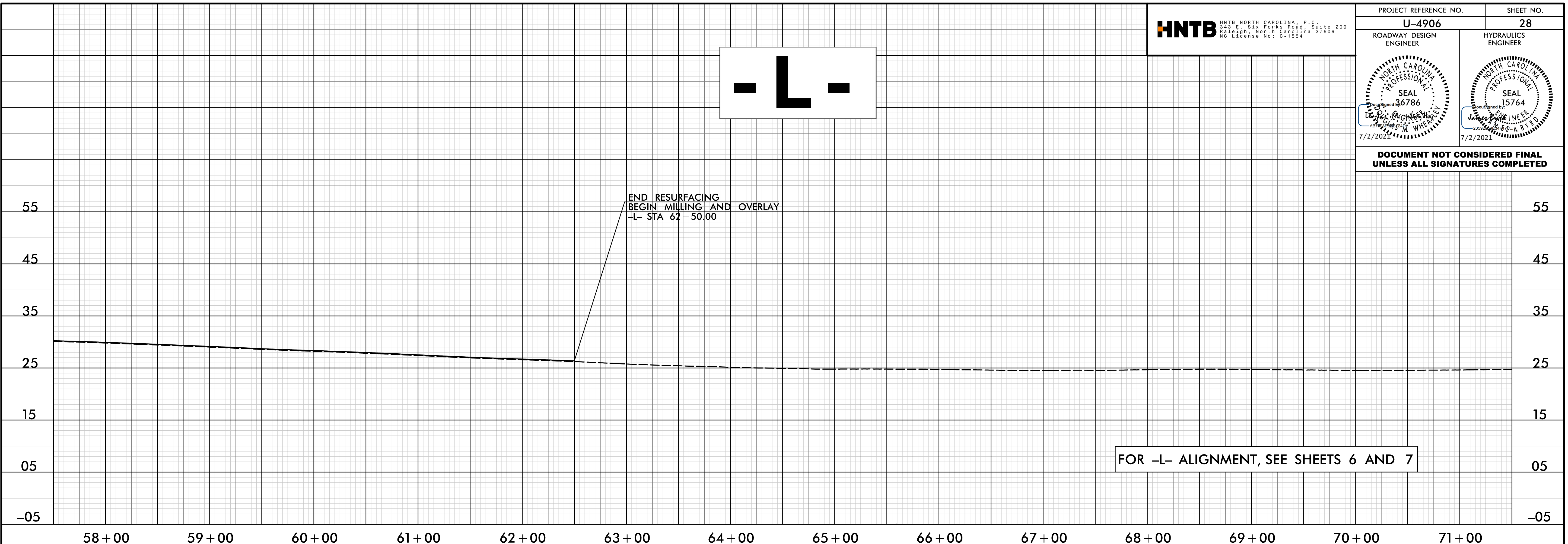


5/28/99



PROJECT REFERENCE NO. U-4906	SHEET NO. 28
ROADWAY DESIGN ENGINEER SEAL 36786 7/2/2021	HYDRAULICS ENGINEER SEAL 15764 7/2/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

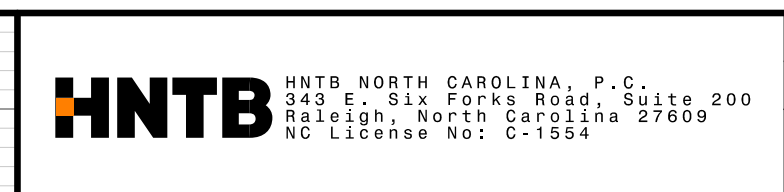


15-JUN-2021 13:23
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HNTB

5/28/99

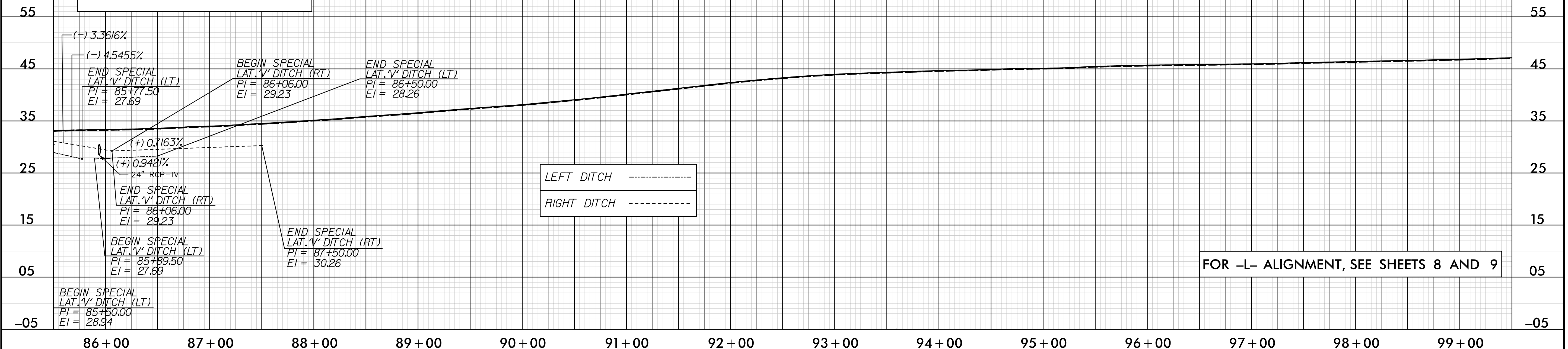
PIPE HYDRAULIC DATA
-L- Sta.85+94 (STR *0801)

DRAINAGE AREA	= 9.4	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 17	CFS
DESIGN HW ELEVATION	= 31.5	FT
100 YEAR DISCHARGE	= 20	CFS
100 YEAR HW ELEVATION	= 31.9	FT
OVERTOPPING FREQUENCY	= >500(+)	YRS
OVERTOPPING DISCHARGE	= -	CFS
OVERTOPPING ELEVATION	= 33.7	FT



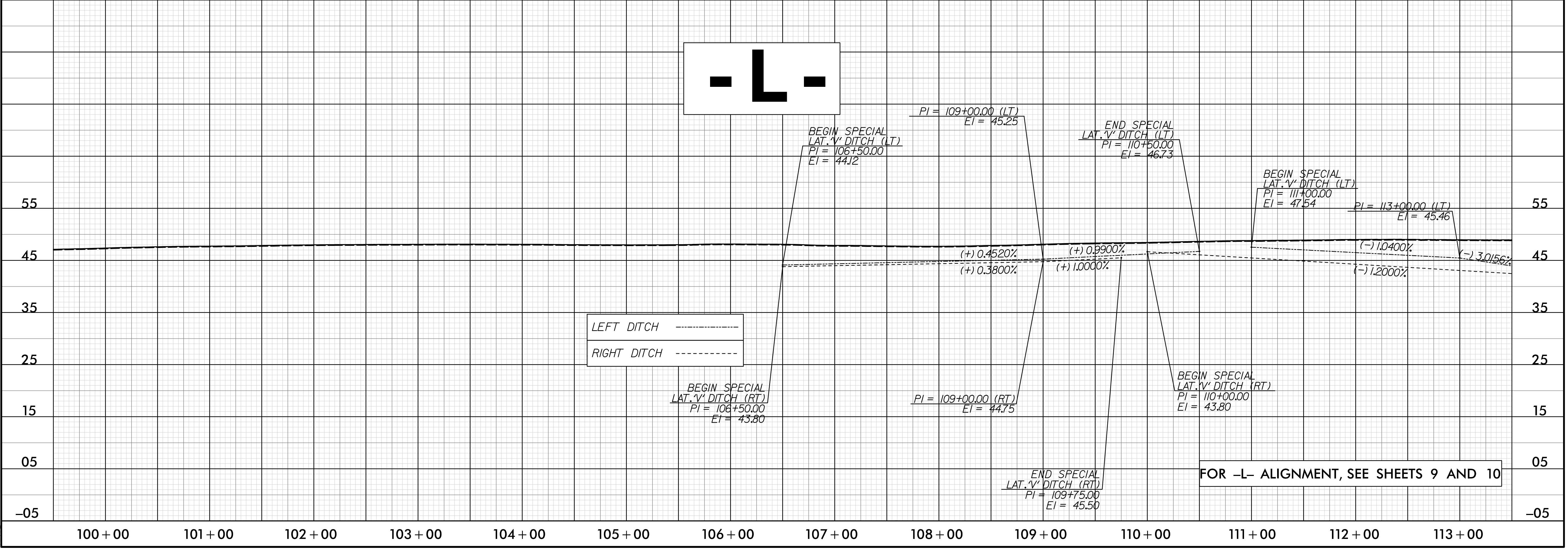
PROJECT REFERENCE NO.	U-4906	SHEET NO.	29
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



FOR -L- ALIGNMENT, SEE SHEETS 8 AND 9

15-JUN-2021 13:23 (Roadway\Pro)\u4906_rdy_pf1_pst29.dgn



FOR -L- ALIGNMENT, SEE SHEETS 9 AND 10

5/28/2021

PIPE HYDRAULIC DATA
-L- Sta.113+65 (STR #1001)

DRAINAGE AREA	= 4.2	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 10	CFS
DESIGN HW ELEVATION	= 45.4	FT
100 YEAR DISCHARGE	= 12	CFS
100 YEAR HW ELEVATION	= 45.6	FT
OVERTOPPING FREQUENCY	= >500(+)	YRS
OVERTOPPING DISCHARGE	= -	CFS
OVERTOPPING ELEVATION	= 48.7	FT

PIPE HYDRAULIC DATA
-L- Sta.115+00 (STR #1004)

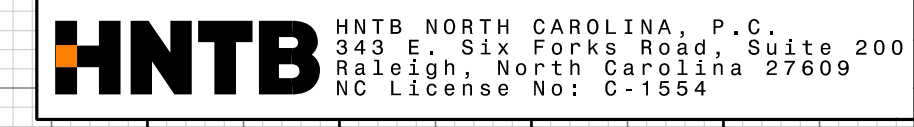
DRAINAGE AREA	= 1.3	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 4.3	CFS
DESIGN HW ELEVATION	= 44.9	FT
100 YEAR DISCHARGE	= 5	CFS
100 YEAR HW ELEVATION	= 45.0	FT
OVERTOPPING FREQUENCY	= >500-YR	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= 49.3	FT

PIPE HYDRAULIC DATA
-L- Sta.118+22 (STR #1002)

DRAINAGE AREA	= 20.4	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 9	CFS
DESIGN HW ELEVATION	= 45.9	FT
100 YEAR DISCHARGE	= 15	CFS
100 YEAR HW ELEVATION	= 47.3	FT
OVERTOPPING FREQUENCY	= 200	YRS
OVERTOPPING DISCHARGE	= 18	CFS
OVERTOPPING ELEVATION	= 48.3	FT

PIPE HYDRAULIC DATA
-L- Sta.120+55 (STR #1003)

DRAINAGE AREA	= 22.4	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 10	CFS
DESIGN HW ELEVATION	= 45.4	FT
100 YEAR DISCHARGE	= 16	CFS
100 YEAR HW ELEVATION	= 46.0	FT
OVERTOPPING FREQUENCY	= >500(+)	YRS
OVERTOPPING DISCHARGE	= -	CFS
OVERTOPPING ELEVATION	= 48J	FT

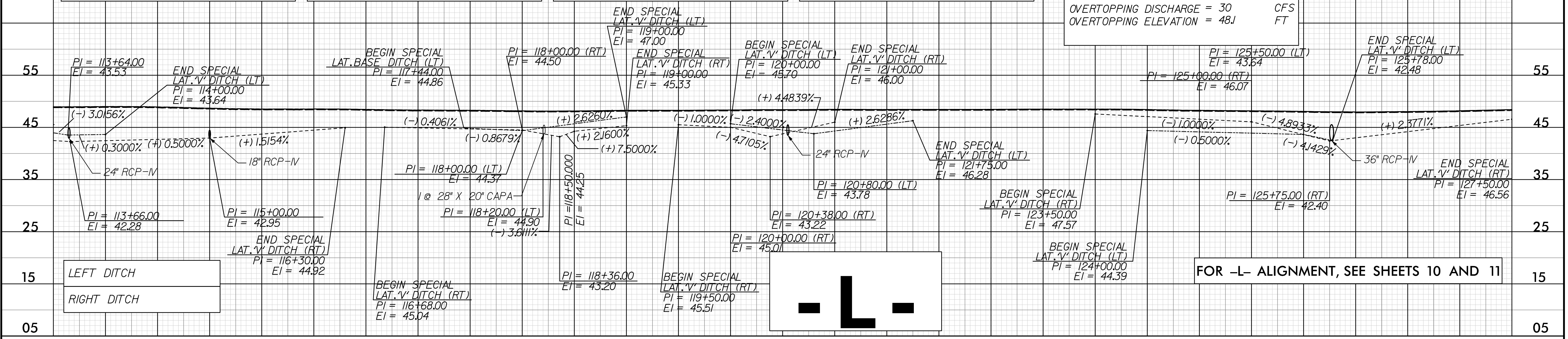


PIPE HYDRAULIC DATA
-L- Sta.125+77 (STR #101)

DRAINAGE AREA	= 36J	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 15	CFS
DESIGN HW ELEVATION	= 44.8	FT
100 YEAR DISCHARGE	= 20	CFS
100 YEAR HW ELEVATION	= 46.2	FT
OVERTOPPING FREQUENCY	= 200	YRS
OVERTOPPING DISCHARGE	= 30	CFS
OVERTOPPING ELEVATION	= 48J	FT

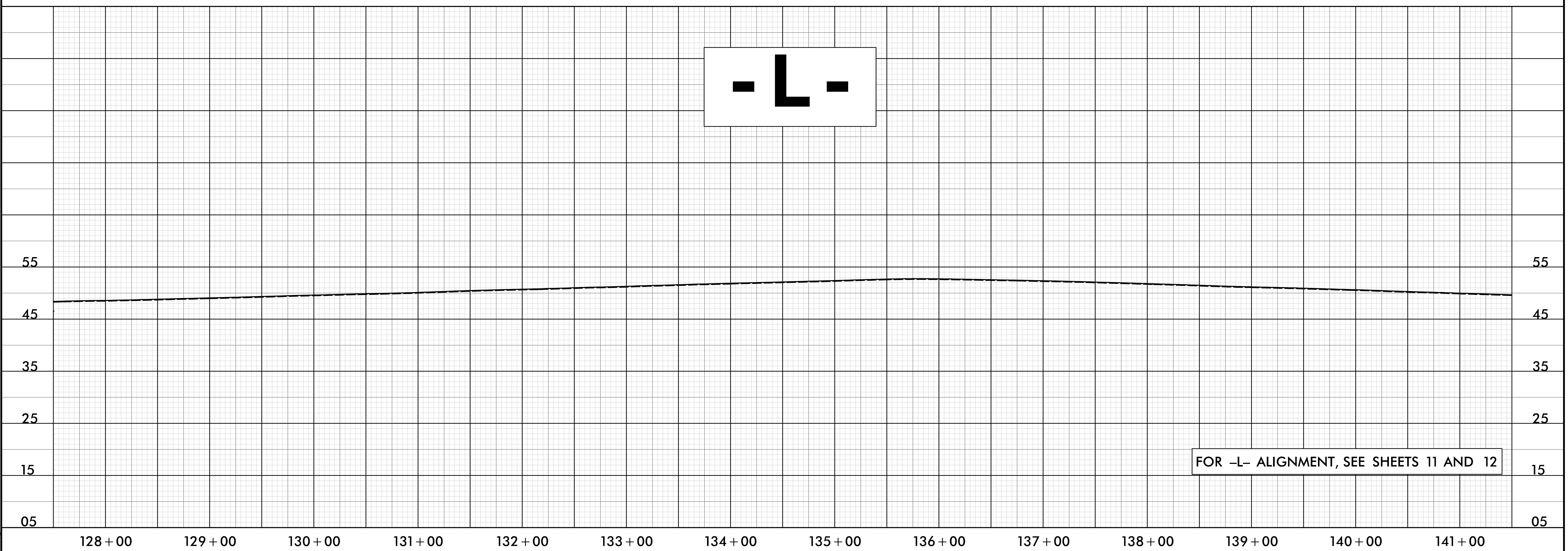
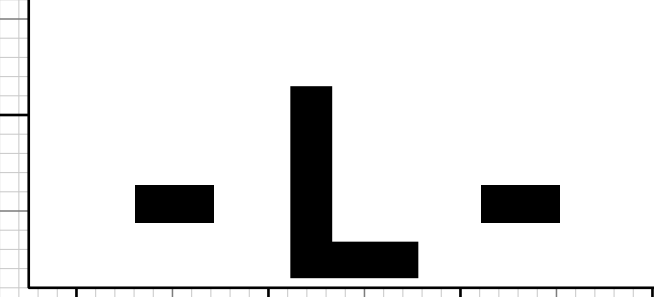
PROJECT REFERENCE NO.	U-4906	SHEET NO.	30
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



LEFT DITCH
RIGHT DITCH

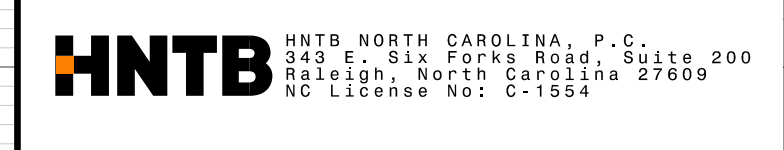
FOR -L- ALIGNMENT, SEE SHEETS 10 AND 11



FOR -L- ALIGNMENT, SEE SHEETS 11 AND 12

15-JUN-2021 13:23 (Roadway\Pro)\u4906_rdy_pf1_psh30.dgn

5/28/99



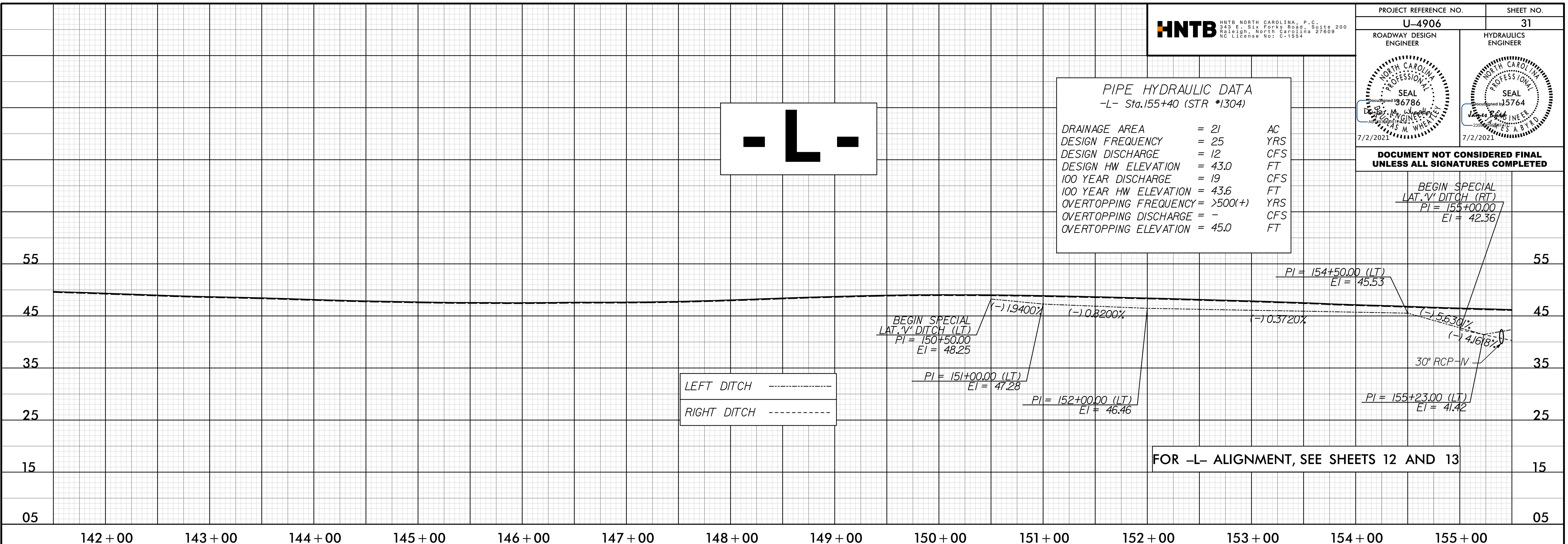
PROJECT REFERENCE NO. U-4906	SHEET NO. 31
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER

PIPE HYDRAULIC DATA
-L- Sta.155+40 (STR #1304)

DRAINAGE AREA	= 21	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 12	CFS
DESIGN HW ELEVATION	= 43.0	FT
100 YEAR DISCHARGE	= 19	CFS
100 YEAR HW ELEVATION	= 43.6	FT
OVERTOPPING FREQUENCY	= >500(+)	YRS
OVERTOPPING DISCHARGE	= -	CFS
OVERTOPPING ELEVATION	= 45.0	FT

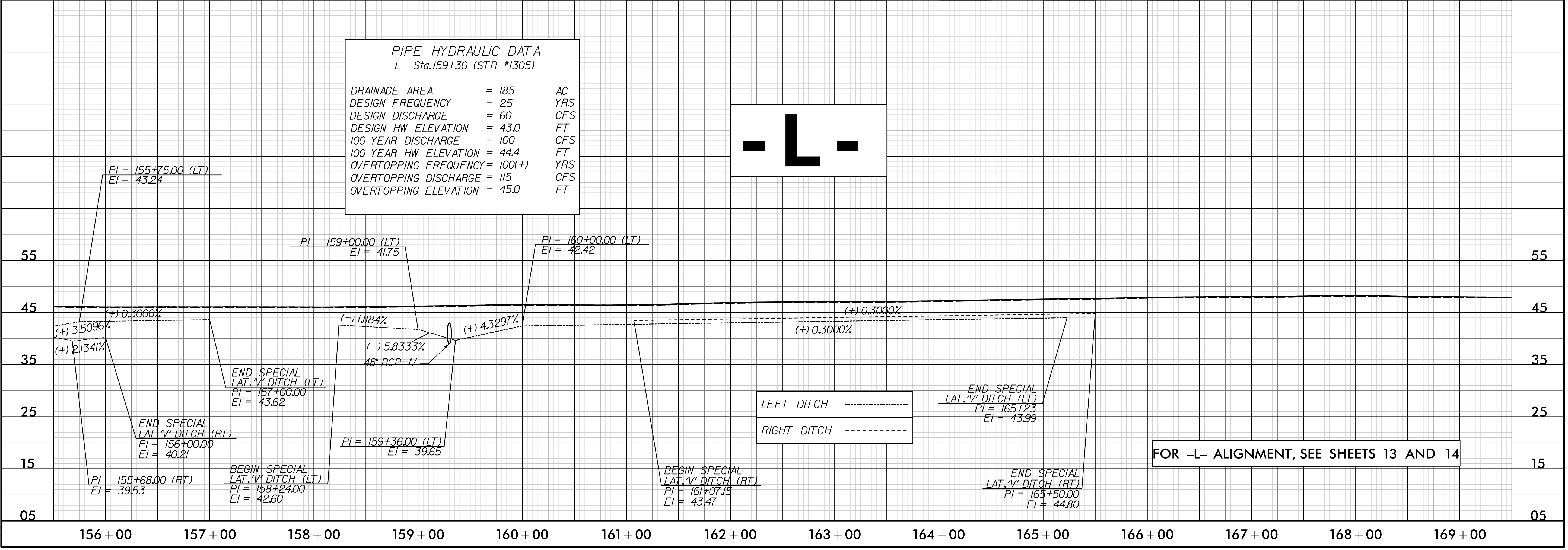
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BEGIN SPECIAL LAT. V. DITCH (RT)
PI = 155+00.00
EI = 42.36



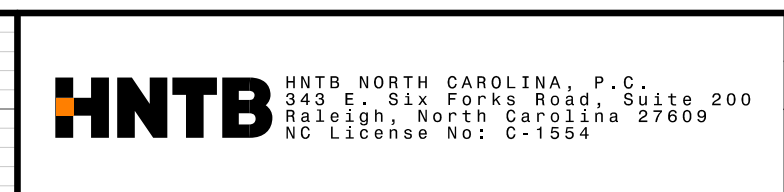
PIPE HYDRAULIC DATA
-L- Sta.159+30 (STR #1305)

DRAINAGE AREA	= 185	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 60	CFS
DESIGN HW ELEVATION	= 43.0	FT
100 YEAR DISCHARGE	= 100	CFS
100 YEAR HW ELEVATION	= 44.4	FT
OVERTOPPING FREQUENCY	= 100(+)	YRS
OVERTOPPING DISCHARGE	= 115	CFS
OVERTOPPING ELEVATION	= 45.0	FT

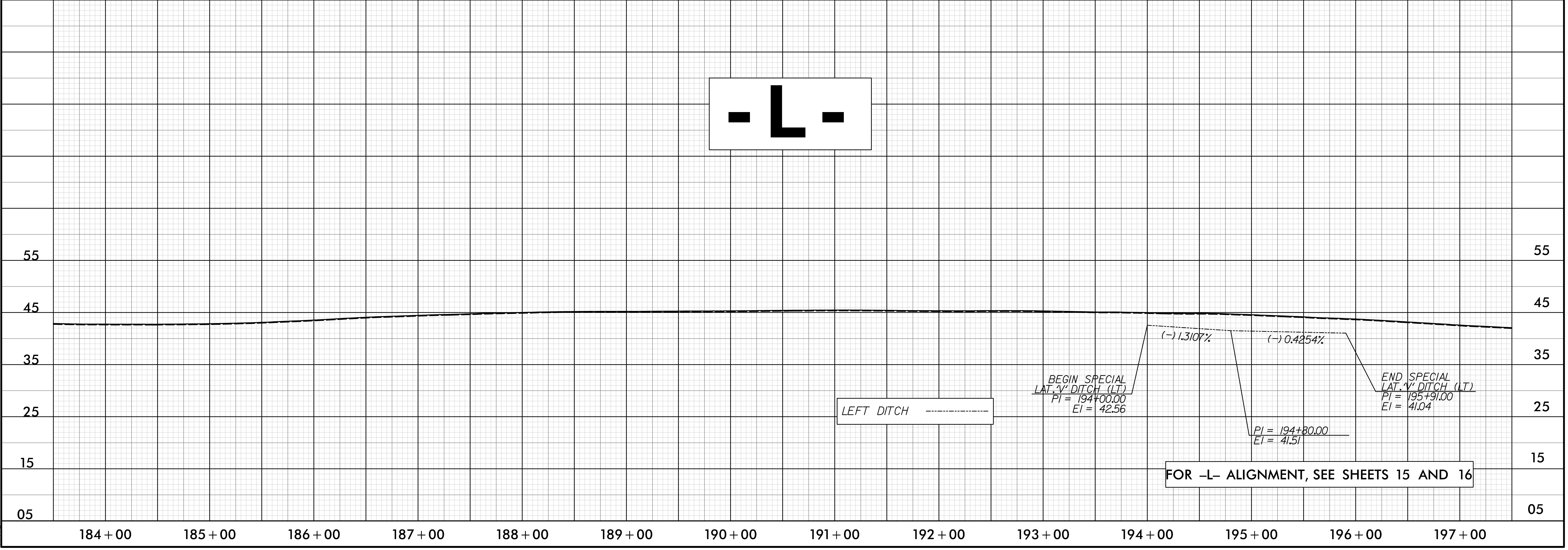
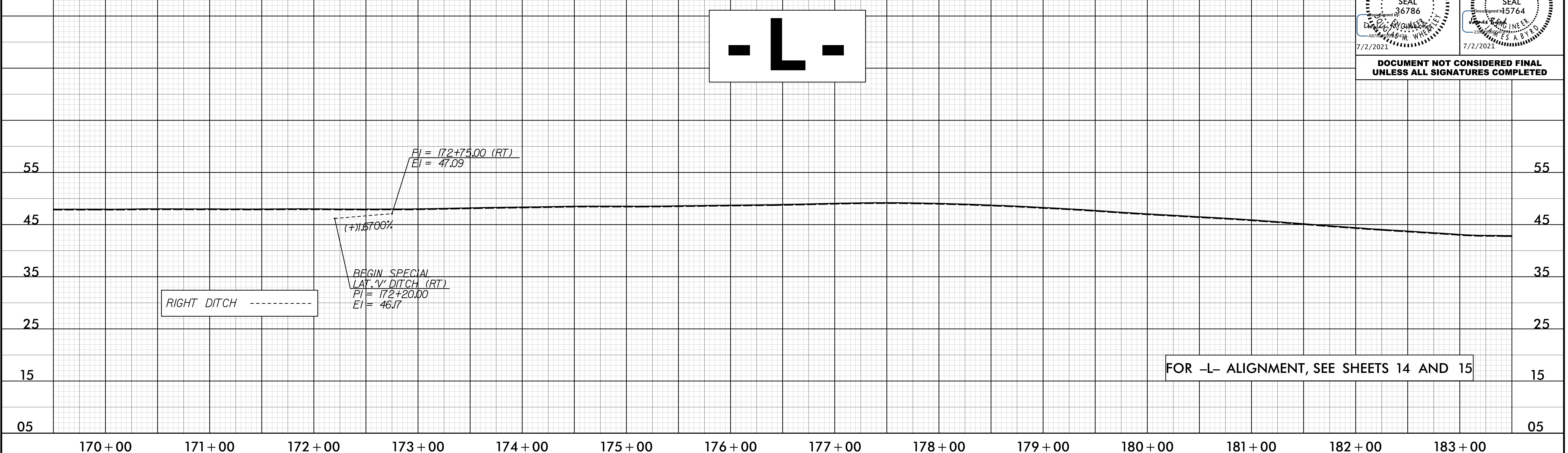


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5/28/99

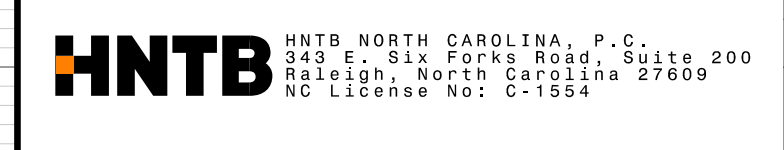


PROJECT REFERENCE NO. U-4906	SHEET NO. 32
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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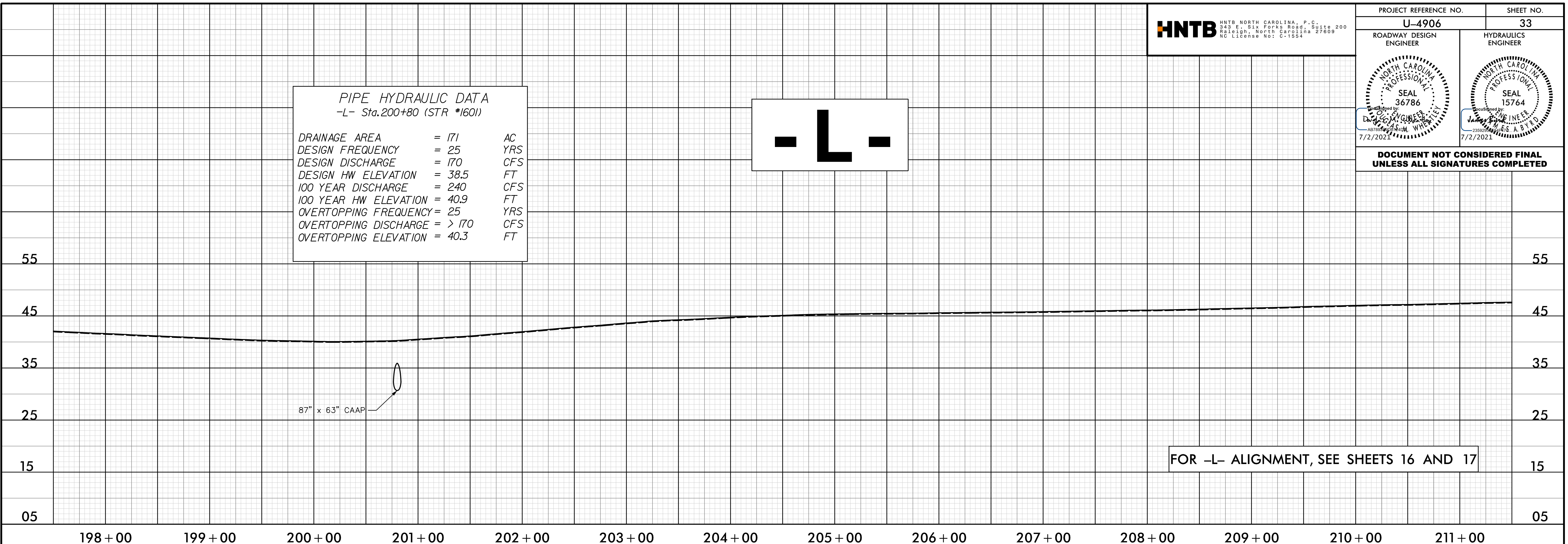
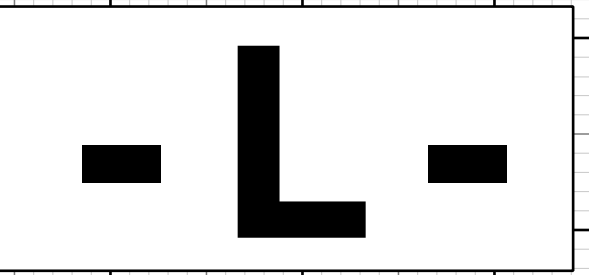
5/28/21



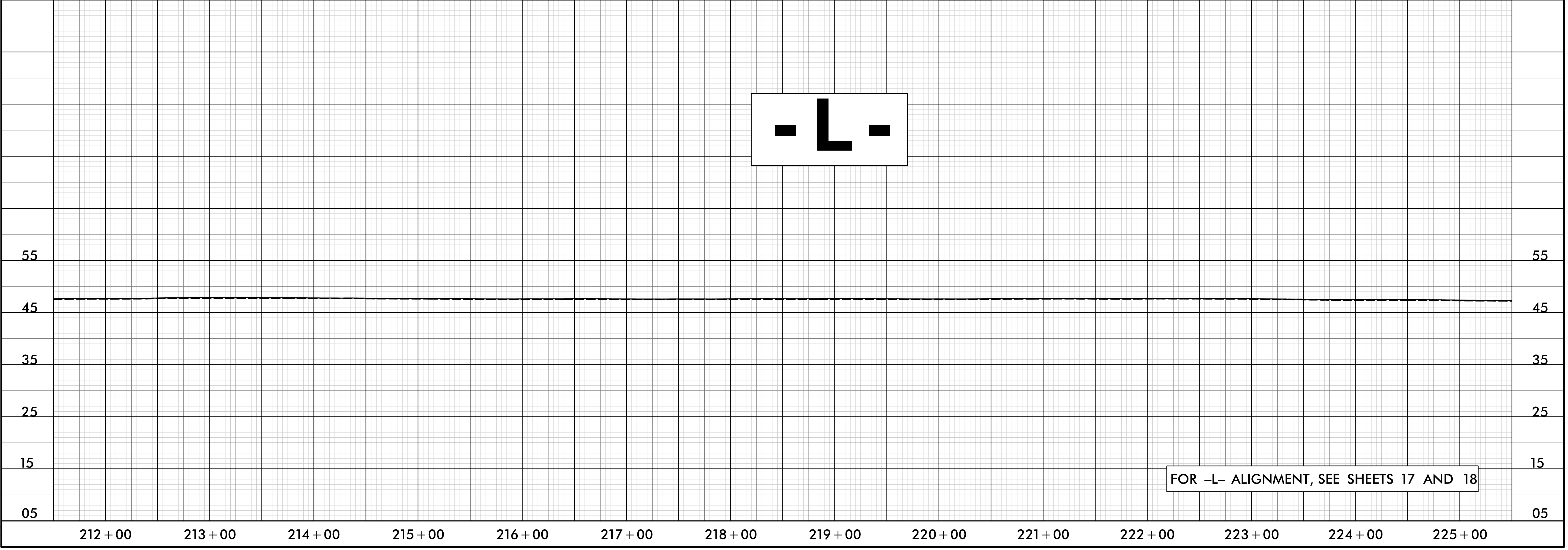
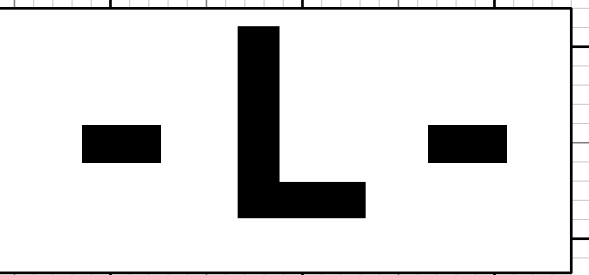
PROJECT REFERENCE NO. U-4906	SHEET NO. 33
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PIPE HYDRAULIC DATA
 -L- Sta.200+80 (STR *1601)

DRAINAGE AREA	= 171	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 170	CFS
DESIGN HW ELEVATION	= 38.5	FT
100 YEAR DISCHARGE	= 240	CFS
100 YEAR HW ELEVATION	= 40.9	FT
OVERTOPPING FREQUENCY	= 25	YRS
OVERTOPPING DISCHARGE	= > 170	CFS
OVERTOPPING ELEVATION	= 40.3	FT



FOR -L- ALIGNMENT, SEE SHEETS 16 AND 17



FOR -L- ALIGNMENT, SEE SHEETS 17 AND 18

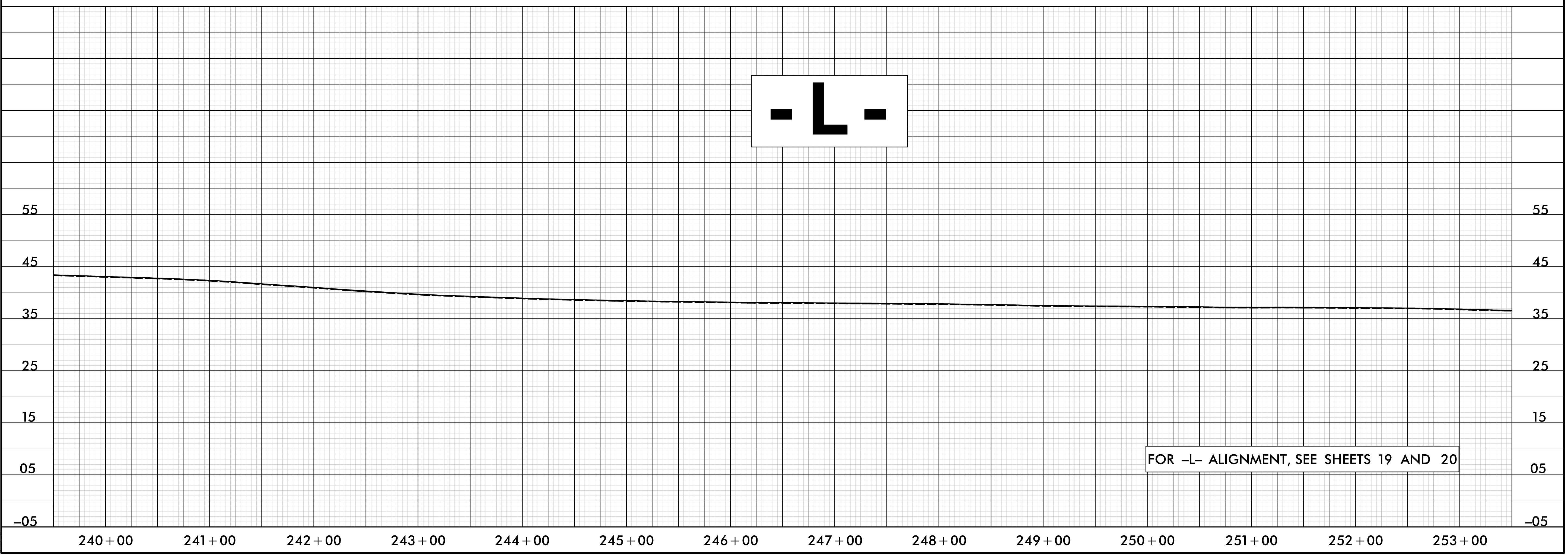
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HNTB

5/28/19

HNTB HNTB NORTH CAROLINA, P.C.
 343 E. SIX FORKS ROAD, SUITE 200
 RALEIGH, NORTH CAROLINA 27609
 NC LICENSE NO: C-1554

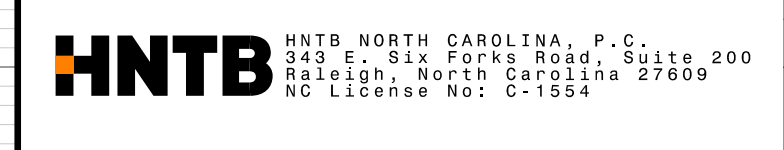
PROJECT REFERENCE NO. U-4906	SHEET NO. 34
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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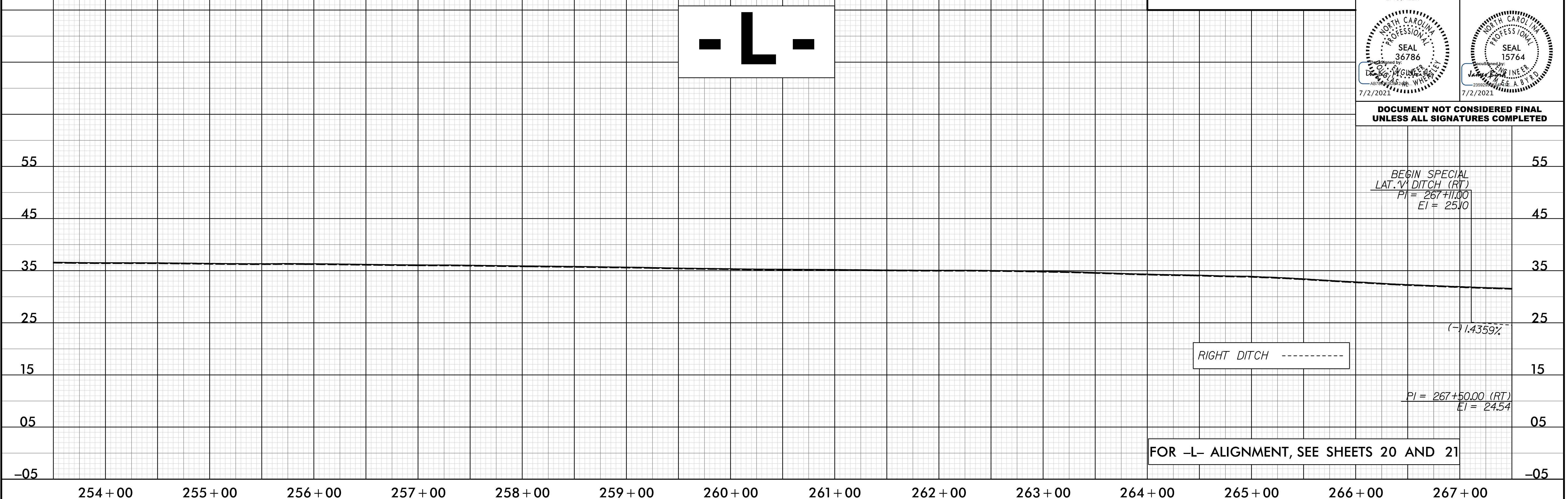
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5/28/21

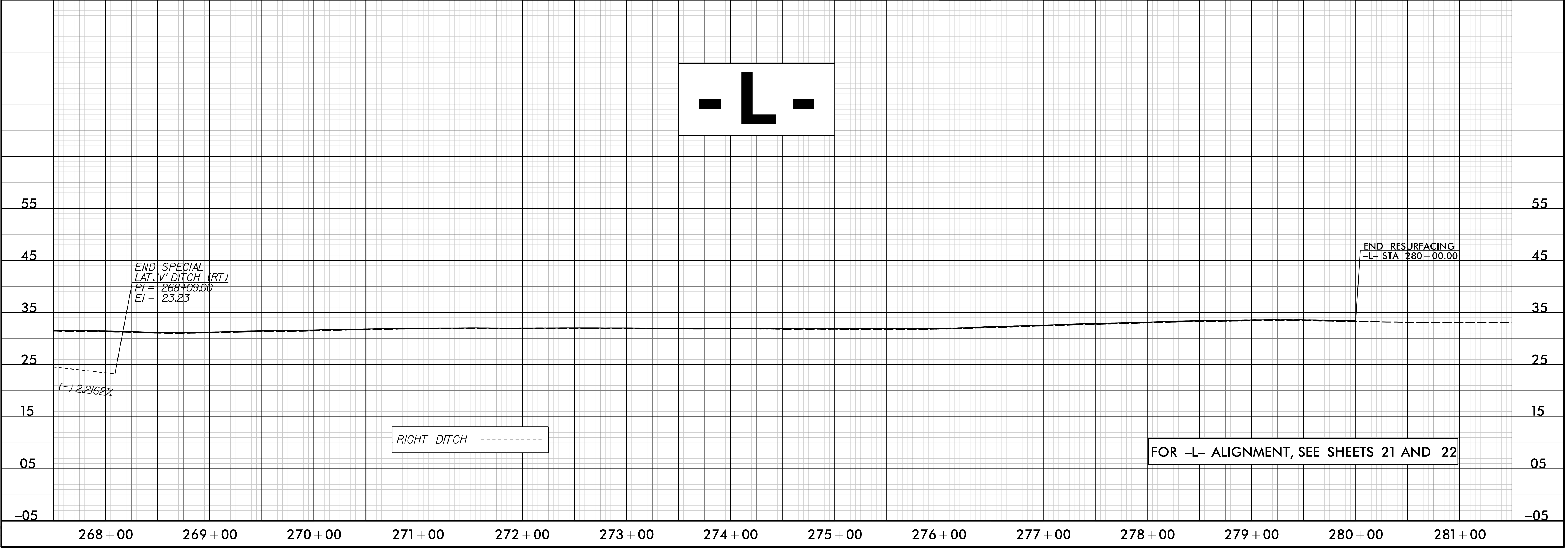


PROJECT REFERENCE NO. U-4906	SHEET NO. 35
ROADWAY DESIGN ENGINEER SEAL 36786 7/2/2021	HYDRAULICS ENGINEER SEAL 15764 7/2/2021

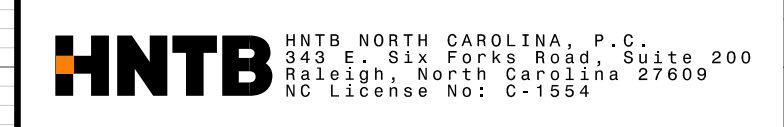
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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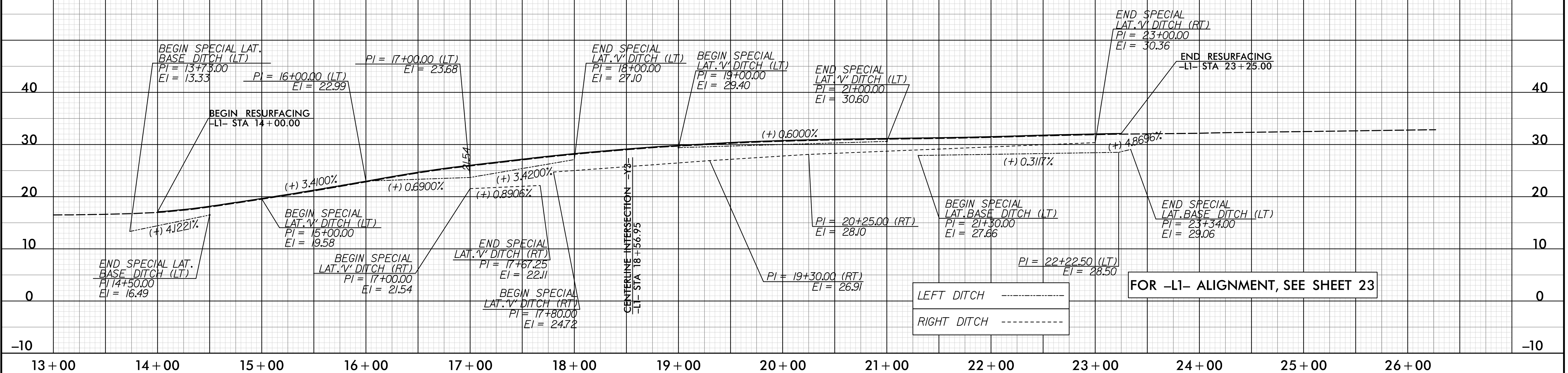
5/28/19



PROJECT REFERENCE NO. U-4906	SHEET NO. 36
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

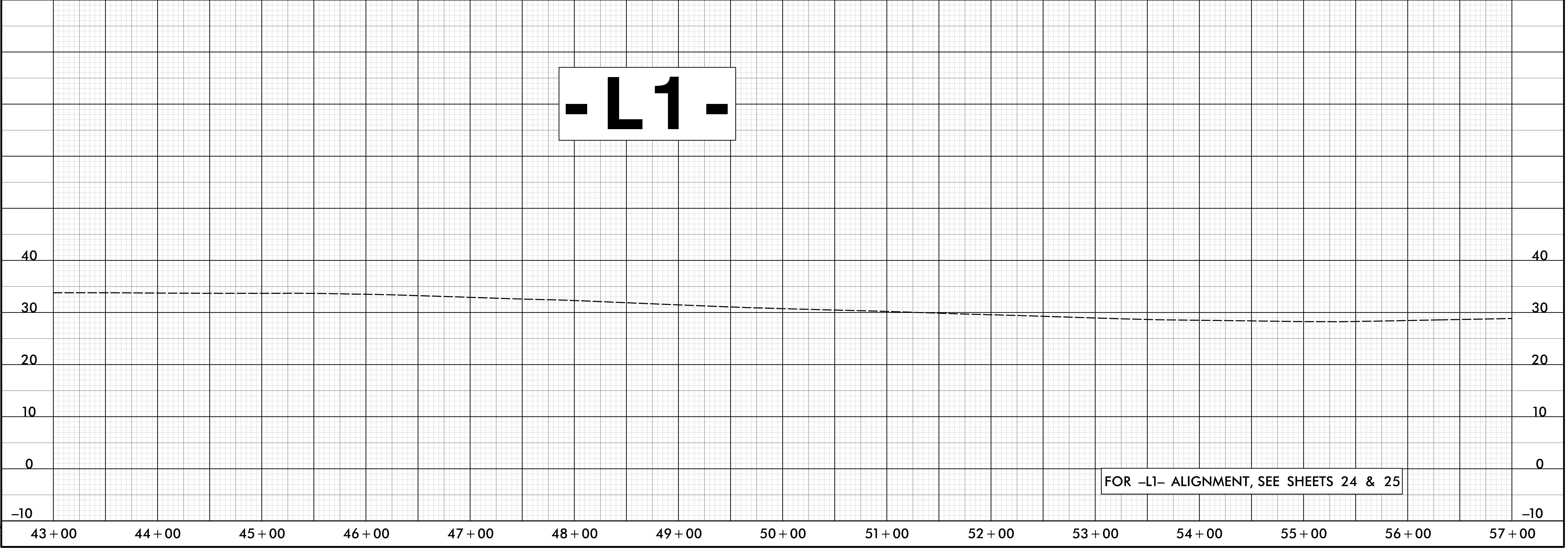
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L1-



FOR -L1- ALIGNMENT, SEE SHEET 23

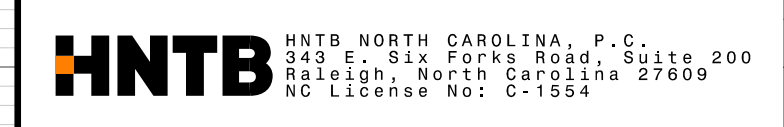
-L1-



FOR -L1- ALIGNMENT, SEE SHEETS 24 & 25

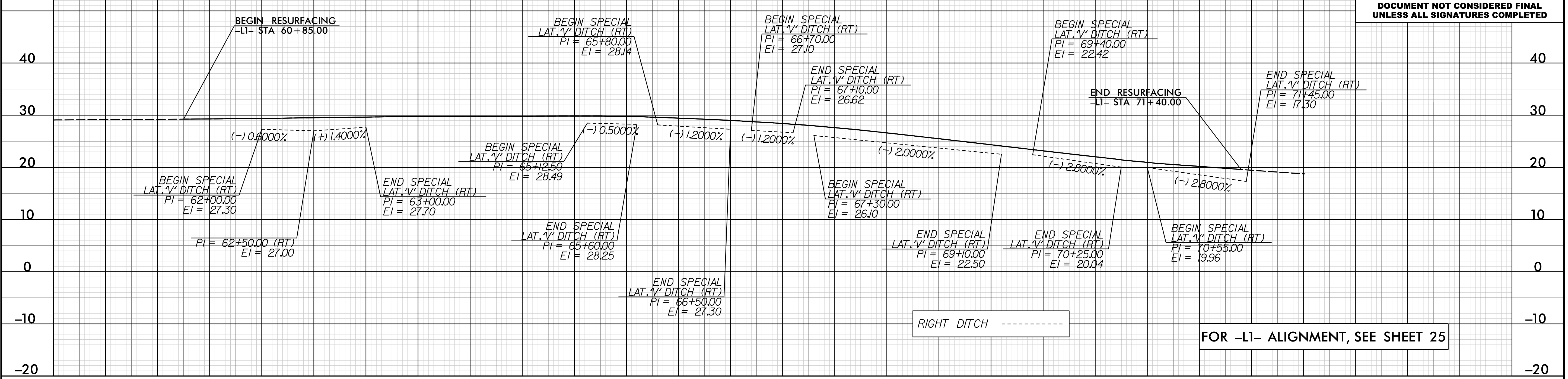
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5/28/2024



PROJECT REFERENCE NO. U-4906	SHEET NO. 37
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

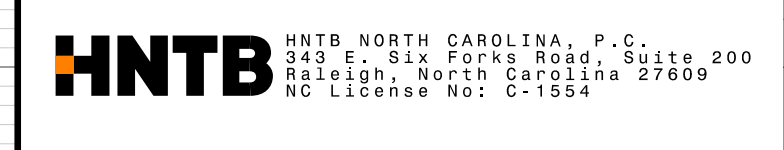
-L1-



FOR -L1- ALIGNMENT, SEE SHEET 25

15-JUN-2024 13:24
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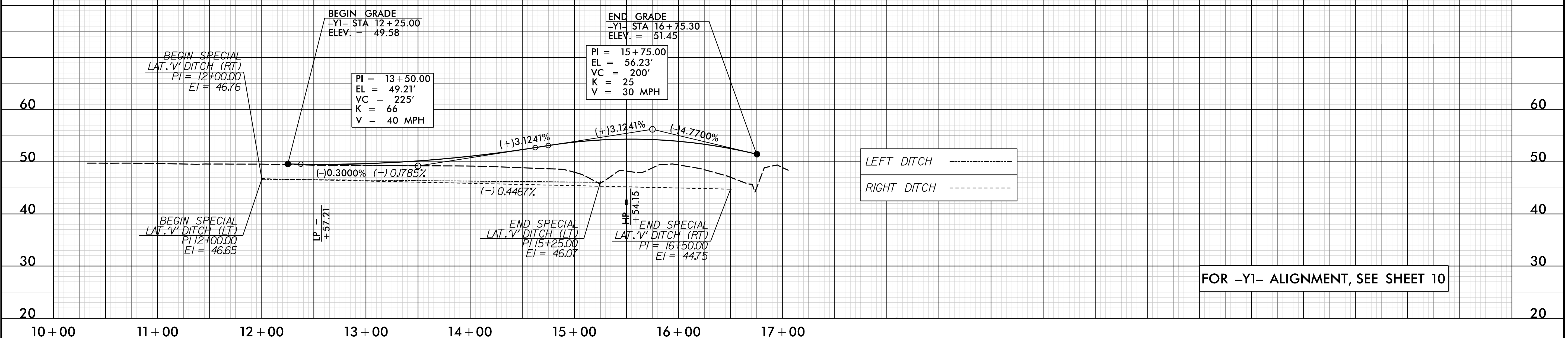
5/28/2021



PROJECT REFERENCE NO. U-4906	SHEET NO. 38
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y1-

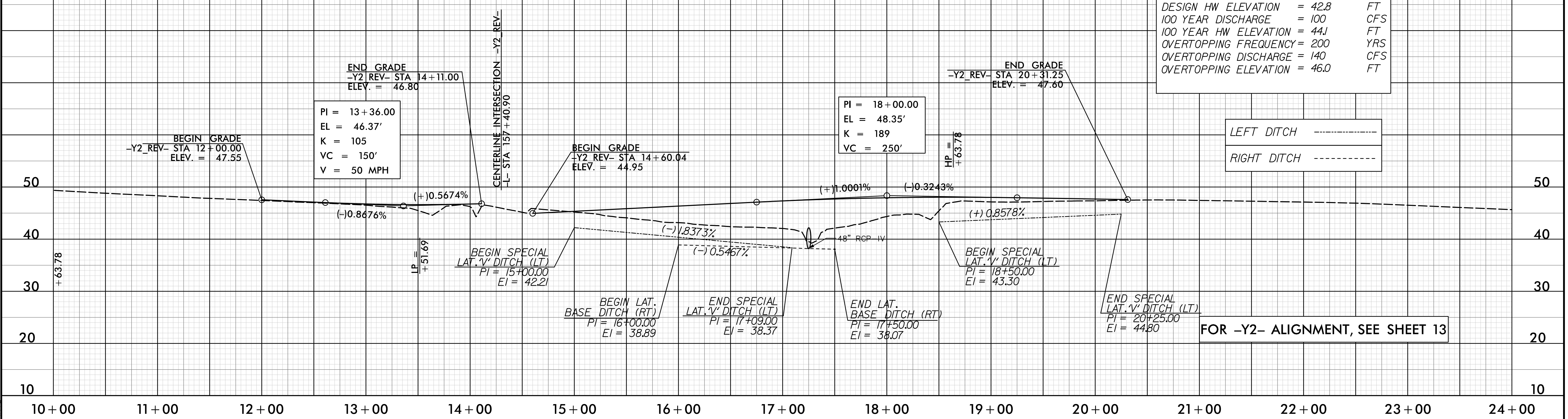


FOR -Y1- ALIGNMENT, SEE SHEET 10

-Y2_REV-

PIPE HYDRAULIC DATA
-Y2_REV- Sta. 17+25 (STR #1306)

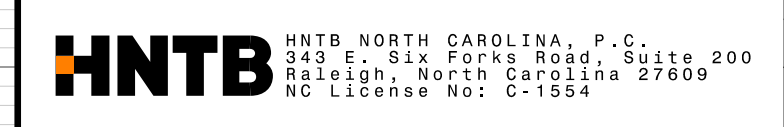
DRAINAGE AREA	= 191	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 65	CFS
DESIGN HW ELEVATION	= 42.8	FT
100 YEAR DISCHARGE	= 100	CFS
100 YEAR HW ELEVATION	= 44.1	FT
OVERTOPPING FREQUENCY	= 200	YRS
OVERTOPPING DISCHARGE	= 140	CFS
OVERTOPPING ELEVATION	= 46.0	FT



FOR -Y2- ALIGNMENT, SEE SHEET 13

15-JUN-2021 13:24
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DATE

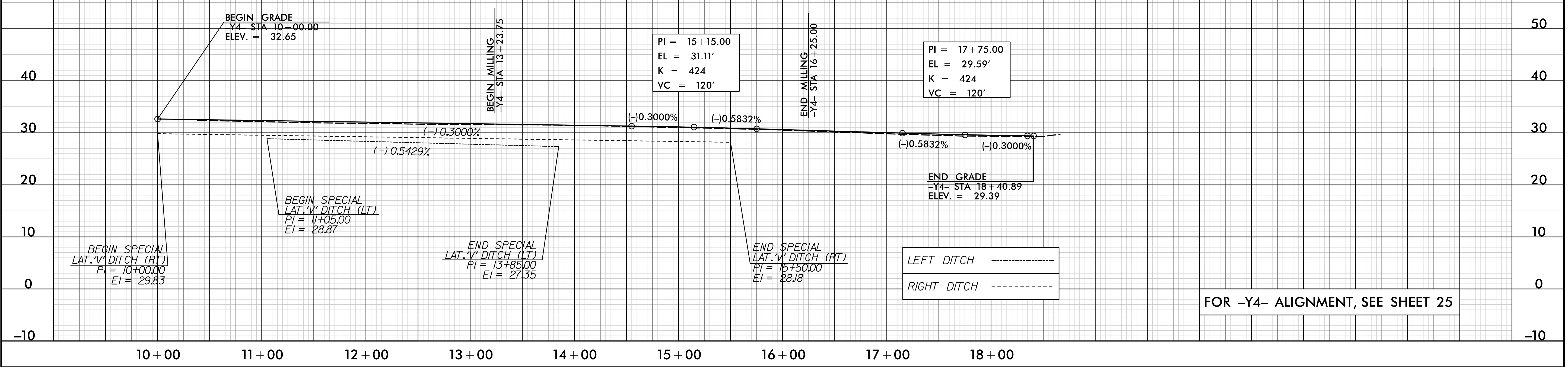
5/28/2021



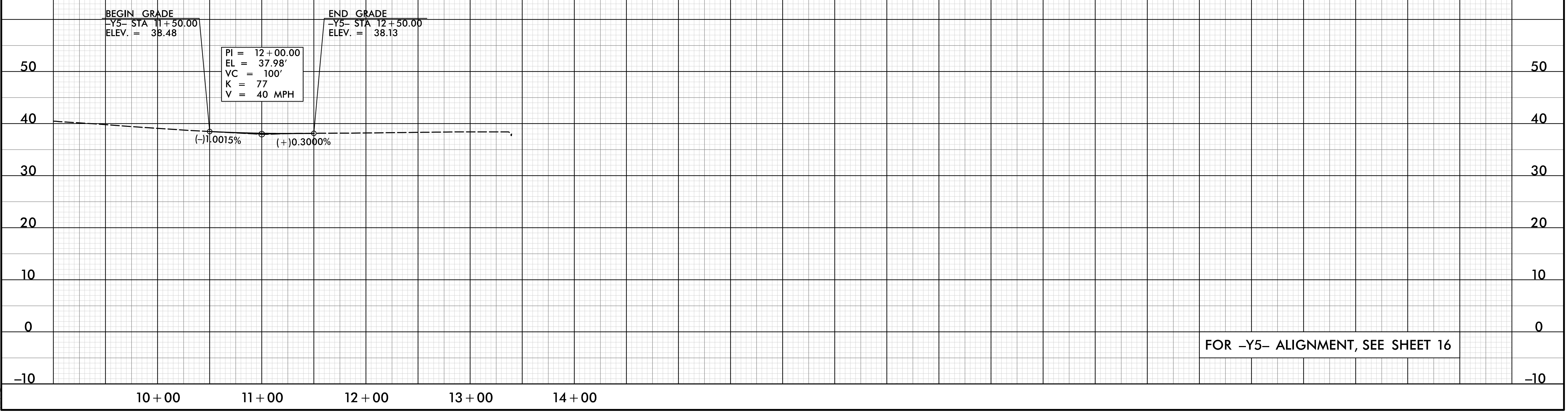
PROJECT REFERENCE NO. U-4906	SHEET NO. 39
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
7/2/2021	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y4-



-Y5-



15-JUN-2021 13:24
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