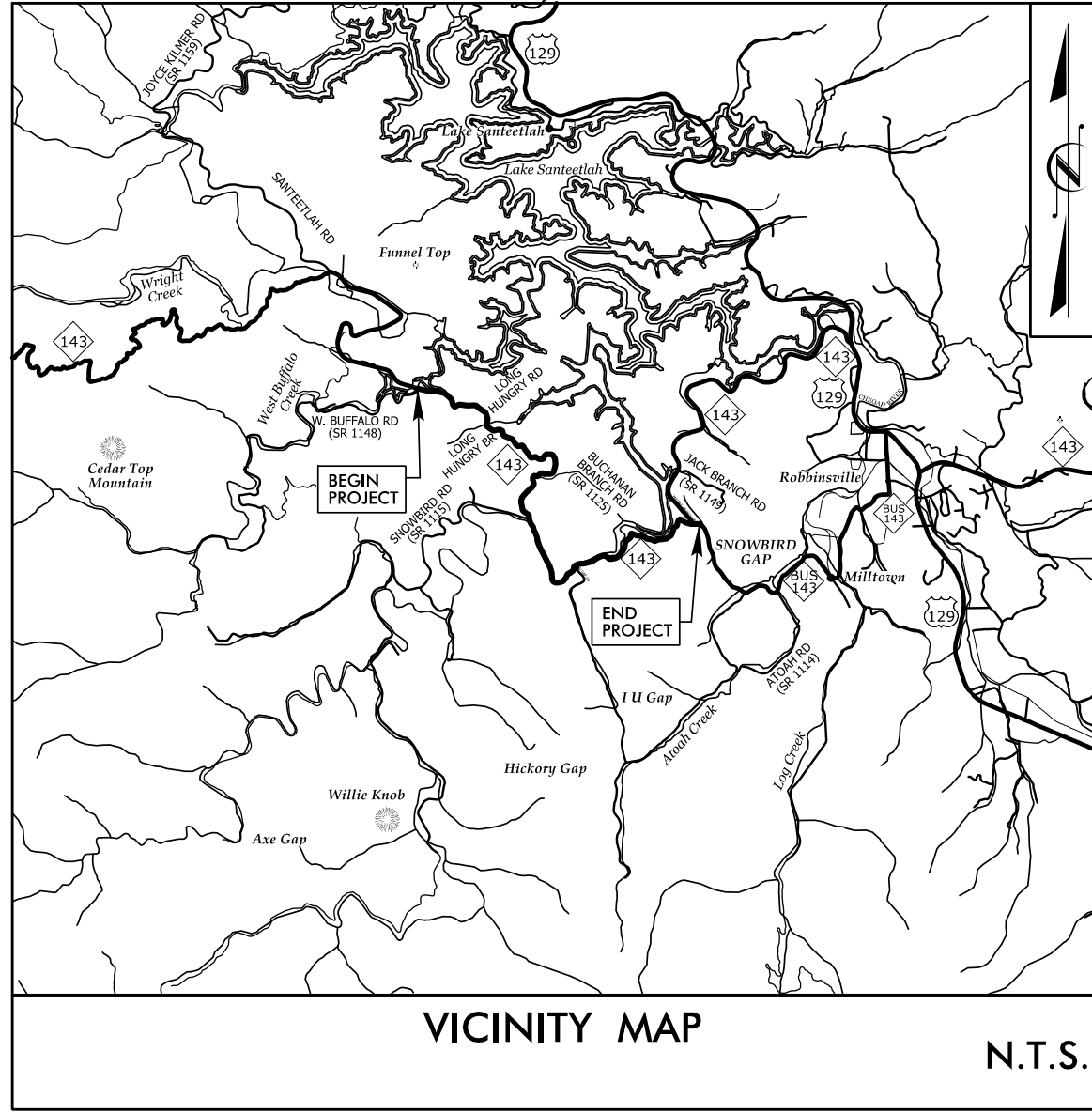


09/08/2022

SYTIME

TIP PROJECT: R-2822B

CONTRACT:



REDLINE DRAINAGE PLANS

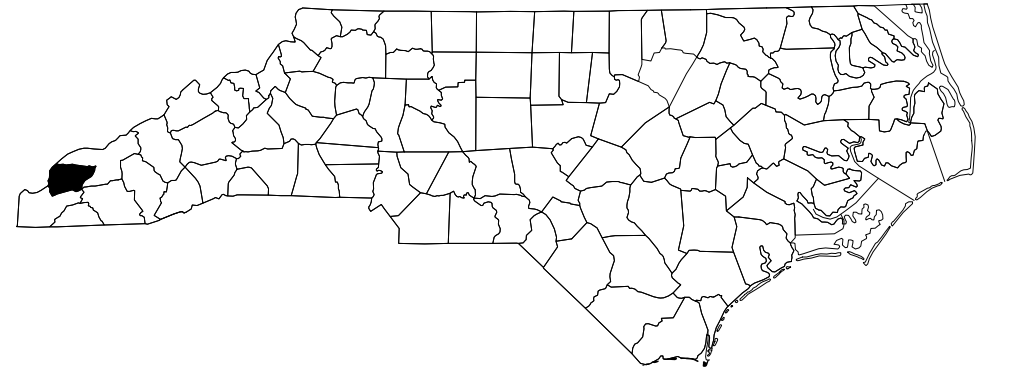
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GRAHAM COUNTY

LOCATION: NC 143 (CHEROHALA SKYWAY) FROM WEST BUFFALO CREEK
TO NC-143 BUSINESS WEST OF ROBBINSVILLE

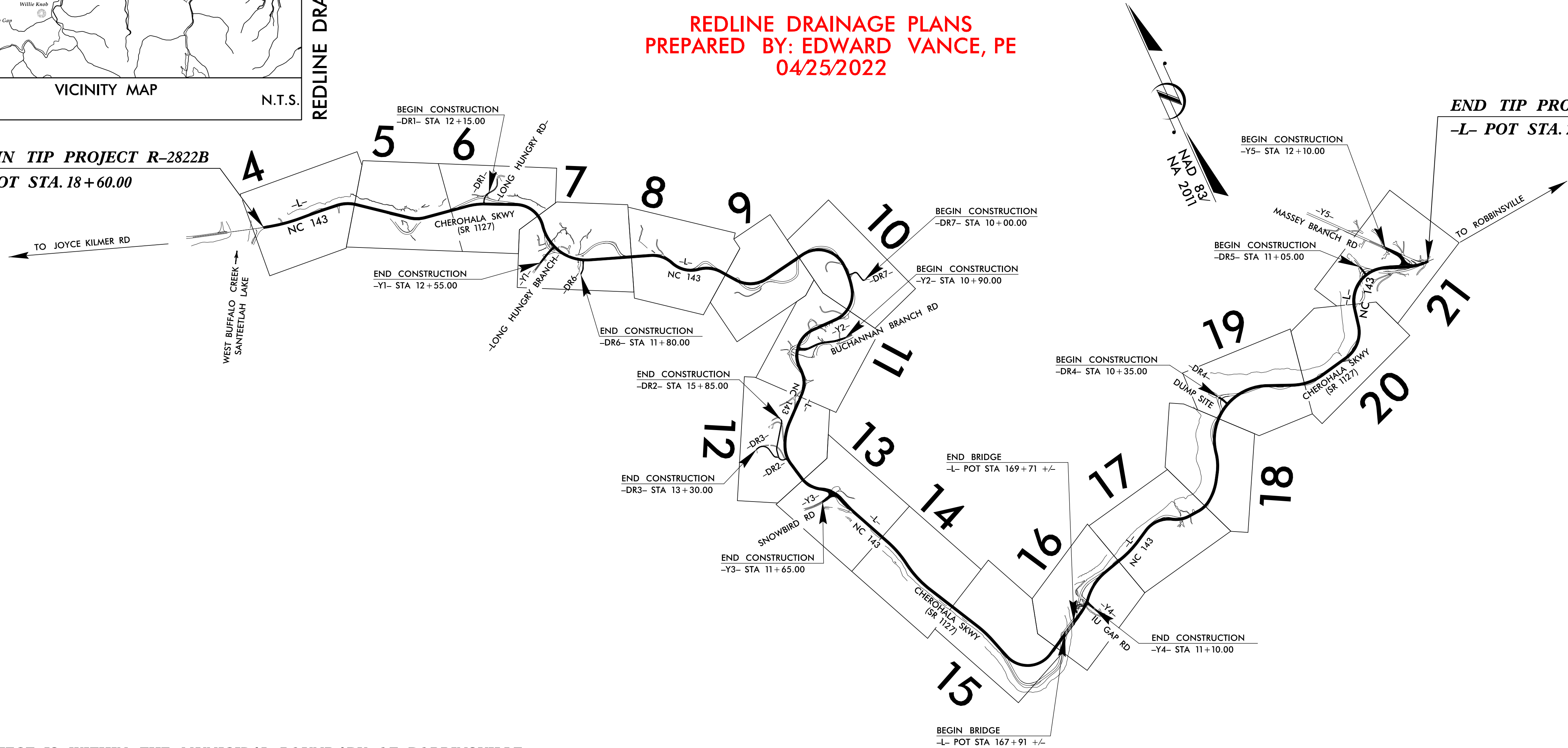
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE,
CULVERTS, AND RETAINING WALLS

REDLINE DRAINAGE PLANS
PREPARED BY: EDWARD VANCE, PE
04/25/2022



END TIP PROJECT R-2822B
-L- POT STA. 239 + 70.00

BEGIN TIP PROJECT R-2822B
-L- POT STA. 18 + 60.00

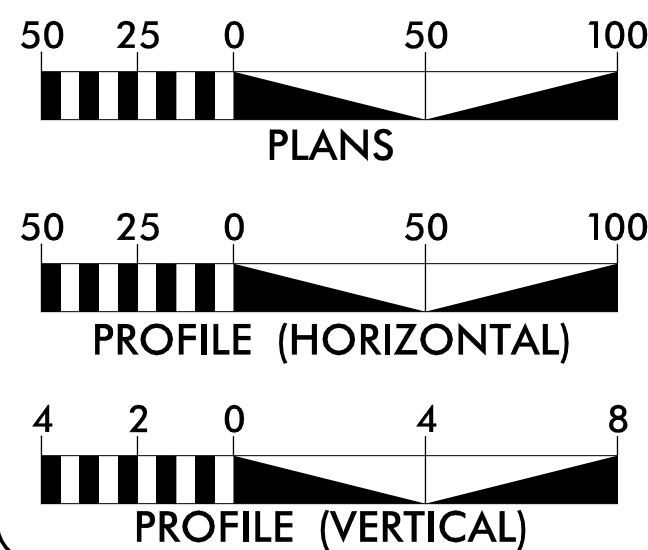


THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARY OF ROBBINSVILLE.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2024 = 2,830
ADT 2044 = 4,050
K = 11%-13%
D = 1%
T = 6%*
V = 35 MPH
* (TTST = 1% + DUAL 5%)
FUNC CLASS =
MAJOR COLLECTOR
SUB REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2822B = 4.188 MILES
LENGTH STRUCTURE TIP PROJECT R-2822B = 0.034 MILES
TOTAL LENGTH OF TIP PROJECT R-2822B = 4.154 MILES

PLANS PREPARED FOR NCDOT BY:



STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 13, 2022

LETTING DATE:
FEBRUARY 16, 2024

NIKKI HONEYCUTT, PE
PROJECT ENGINEER

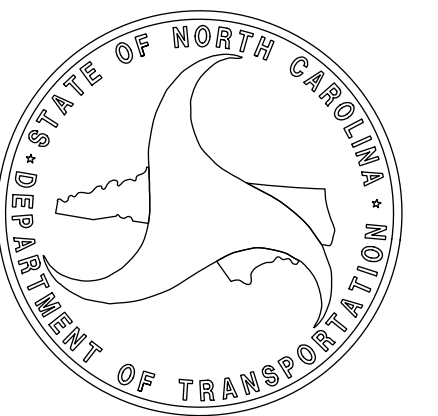
ASHLEY N. BOUCHARD, PE
PROJECT DESIGNER

HYDRAULICS
ENGINEER

SIGNATURE: P.E.

ROADWAY
DESIGN
ENGINEER

SIGNATURE: P.E.



INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-2	TYPICAL SECTIONS, PAVEMENT SCHEDULE AND WEDGING DETAIL
2D-1	DRAINAGE DETAILS
4 THRU 21	PLAN SHEETS
22 THRU 43	PROFILE SHEETS
X-1A	CROSS SECTION INDEX OF SHEETS
X-1 THRU X-317	CROSS SECTIONS



STV Engineers, Inc.

900 West Trade St., Suite 715

Charlotte, NC 28202

NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
R-2822B	1A
ROADWAY DESIGN ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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	
Computed Property Corner	
Property Monument	
Parcel/Sequence Number	
Existing Fence Line	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	
Existing Historic Property Boundary	
Known Contamination Area: Soil	
Potential Contamination Area: Soil	
Known Contamination Area: Water	
Potential Contamination Area: Water	
Contaminated Site: Known or Potential	

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	
Sign	
Well	
Small Mine	
Foundation	
Area Outline	
Cemetery	
Building	
School	
Church	
Dam	

HYDROLOGY:

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

RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Curb Ramp	
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	

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

Existing Telephone Pole	
Proposed Telephone Pole	
Telephone Manhole	
Telephone Pedestal	
Telephone Cell Tower	
U/G Telephone Cable Hand Hole	
U/G Telephone Cable LOS B (S.U.E.*)	
U/G Telephone Cable LOS C (S.U.E.*)	
U/G Telephone Cable LOS D (S.U.E.*)	
U/G Telephone Conduit LOS B (S.U.E.*)	
U/G Telephone Conduit LOS C (S.U.E.*)	
U/G Telephone Conduit LOS D (S.U.E.*)	
U/G Fiber Optics Cable LOS B (S.U.E.*)	
U/G Fiber Optics Cable LOS C (S.U.E.*)	
U/G Fiber Optics Cable LOS D (S.U.E.*)	

WATER:

Water Manhole	
Water Meter	
Water Valve	
Water Hydrant	
U/G Water Line LOS B (S.U.E.*)	
U/G Water Line LOS C (S.U.E.*)	
U/G Water Line LOS D (S.U.E.*)	
Above Ground Water Line	

TV:

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

GAS:

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

SANITARY SEWER:

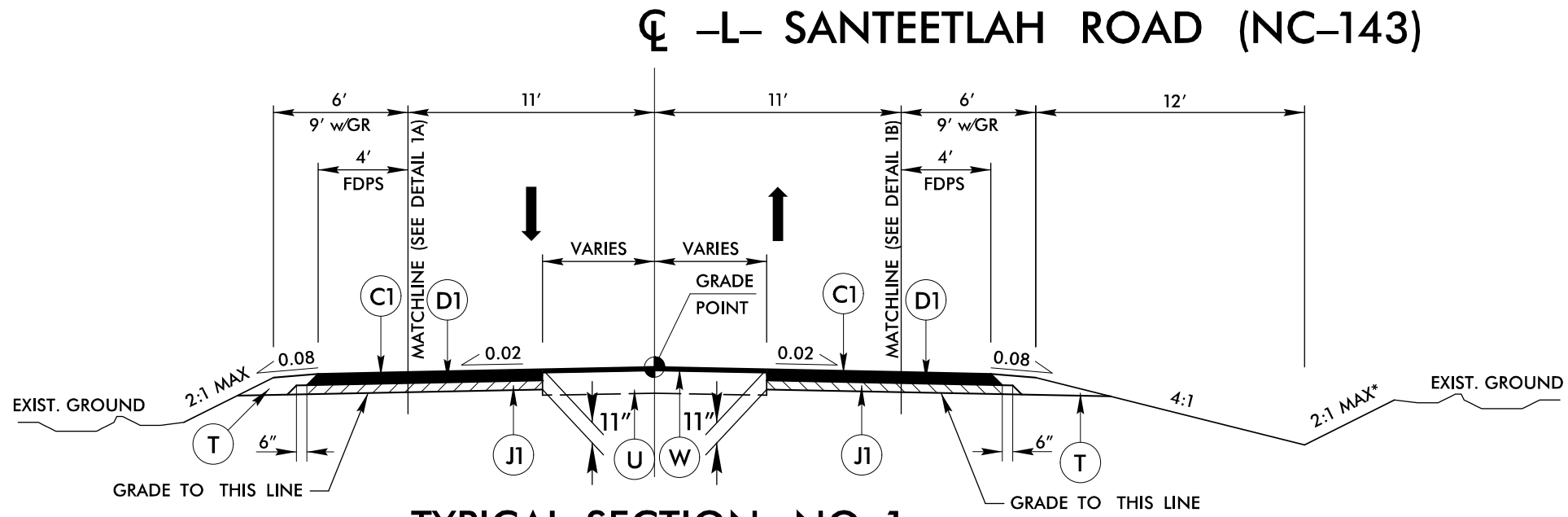
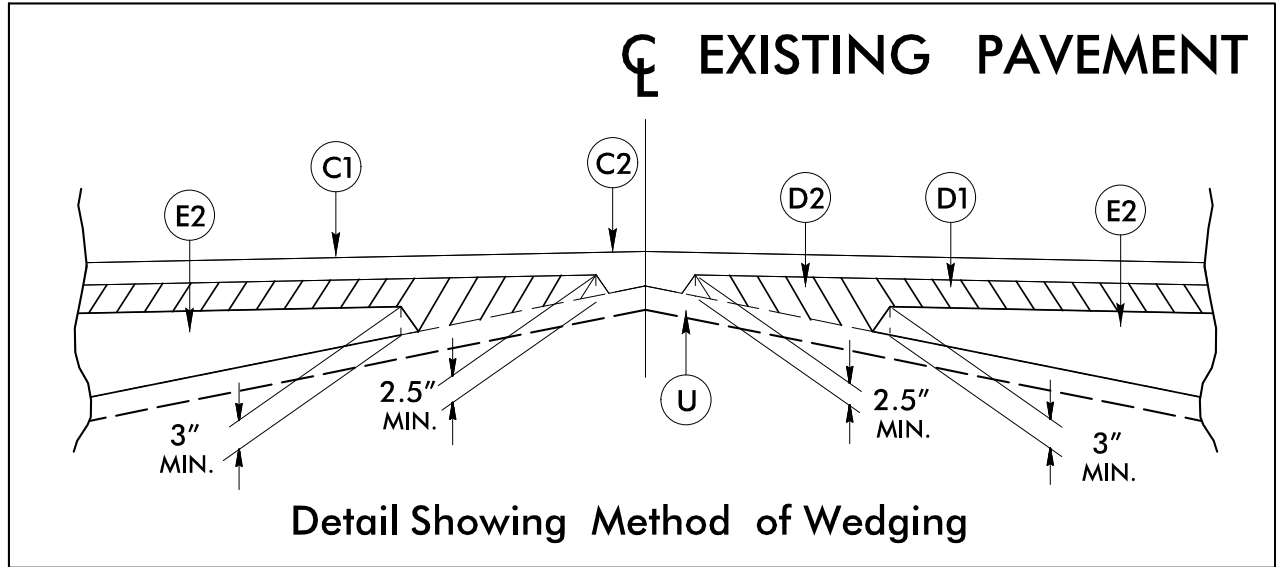
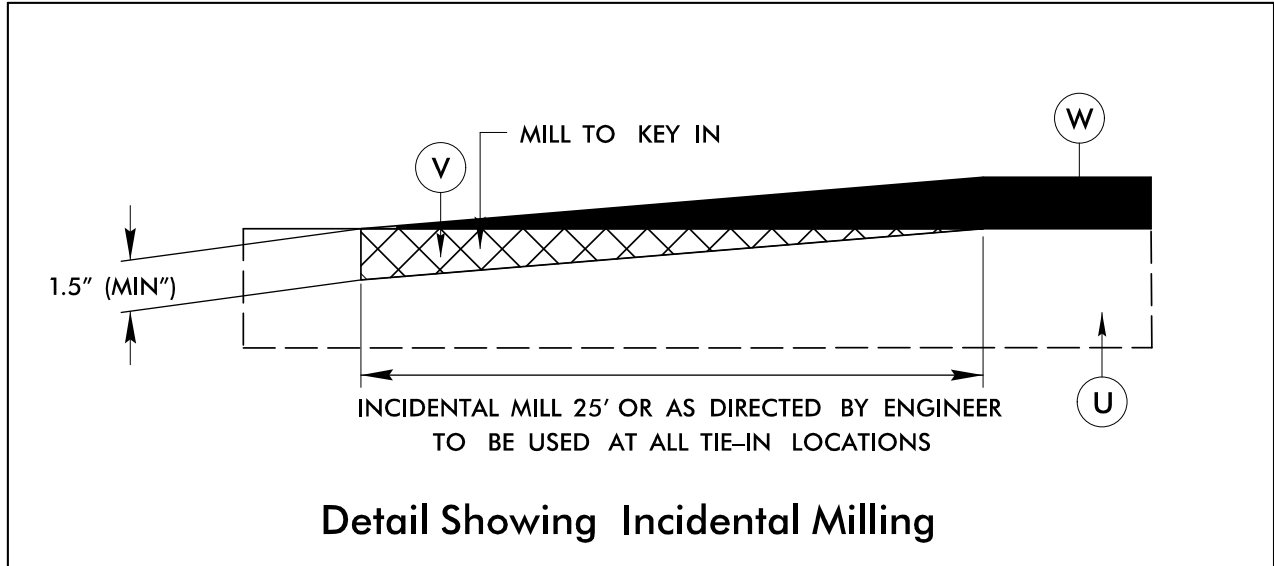
Sanitary Sewer Manhole	
Sanitary Sewer Cleanout	
U/G Sanitary Sewer Line	
Above Ground Sanitary Sewer	
SS Forced Main Line LOS B (S.U.E.*)	
SS Forced Main Line LOS C (S.U.E.*)	
SS Forced Main Line LOS D (S.U.E.*)	

MISCELLANEOUS:

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

PAVEMENT SCHEDULE (ASSUMED)	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF THE TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD., PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2" 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 2.5" 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 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
J1	PROP. 4" AGGREGATE BASE COURSE
T	EARTH MATERIAL
W	WEDGING
U	EXISTING PAVEMENT
V	INCIDENTAL MILLING

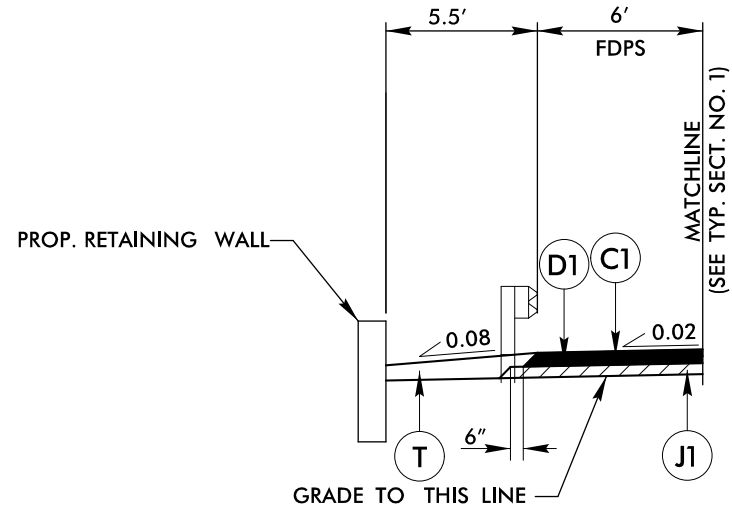
ALL PAVEMENT EDGES ARE 1:1, UNLESS OTHERWISE NOTED.



TYPICAL SECTION NO. 1

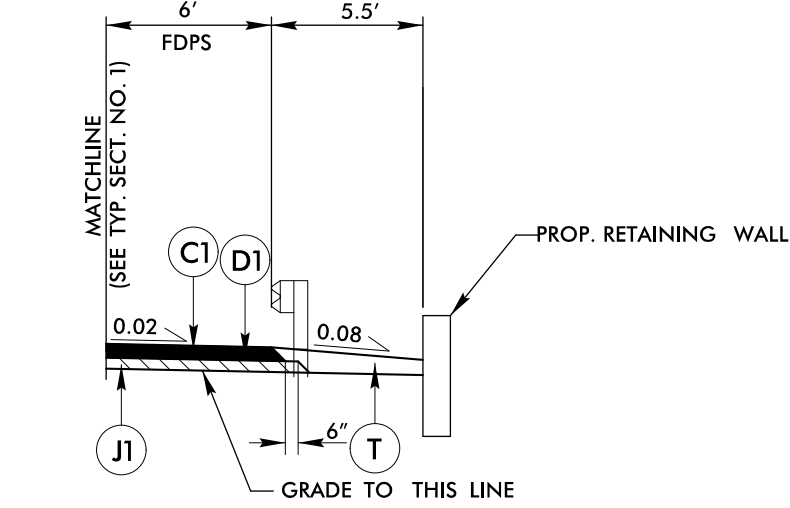
-L- Sta. 18 + 60.00 TO 33 + 50.00
-L- Sta. 39 + 00.00 TO 42 + 00.00
-L- Sta. 51 + 00.00 TO 55 + 00.00
-L- Sta. 58 + 25.00 TO 58 + 75.00
-L- Sta. 68 + 75.00 TO 75 + 00.00
-L- Sta. 78 + 00.00 TO 80 + 75.00
-L- Sta. 89 + 25.00 TO 90 + 00.00
-L- Sta. 95 + 25.00 TO 99 + 00.00
-L- Sta. 103 + 00.00 TO 105 + 00.00
-L- Sta. 113 + 50.00 TO 136 + 00.00
-L- Sta. 138 + 25.00 TO 146 + 00.00
-L- Sta. 156 + 00.00 TO 157 + 50.00
-L- Sta. 177 + 25.00 TO 185 + 50.00
-L- Sta. 190 + 50.00 TO 199 + 00.00
-L- Sta. 210 + 00.00 TO 211 + 25.00
-L- Sta. 216 + 50.00 TO 219 + 50.00
-L- Sta. 224 + 00.00 TO 227 + 00.00

*NOTE: SLOPES STEEPER THAN 2:1 WILL BE USED WHERE APPROVED BY GEOTECH



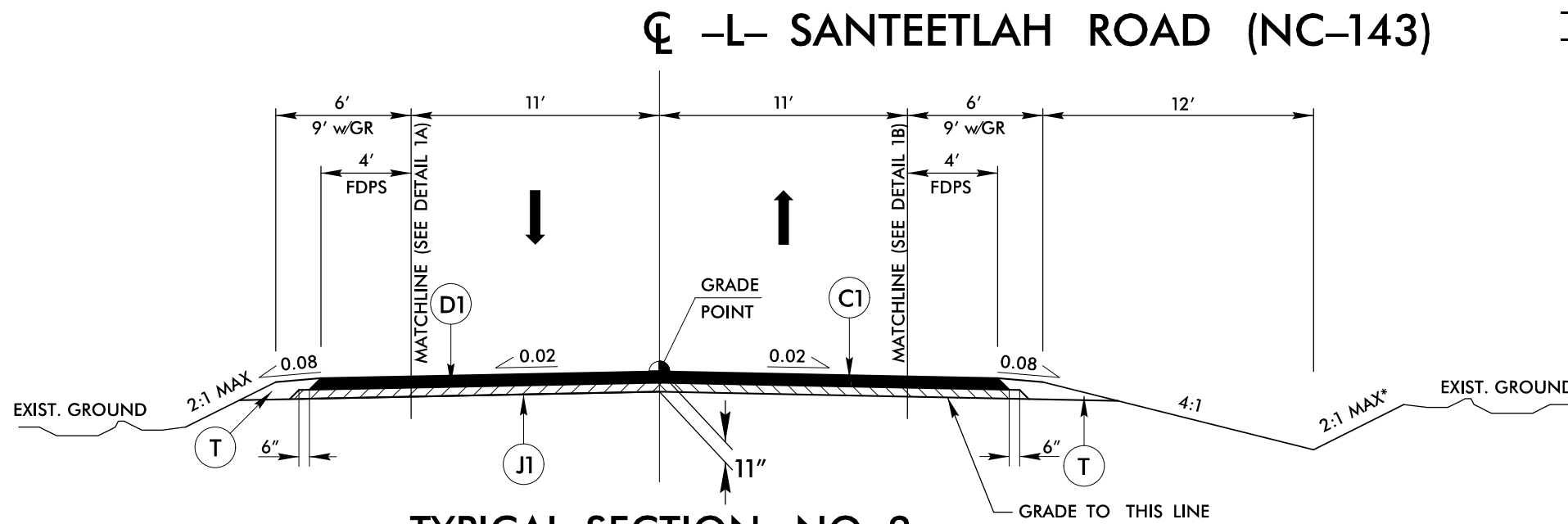
DETAIL 1A

-L- Sta. 183 + 00.00 TO 185 + 50.00
-L- Sta. 207 + 00.00 TO 213 + 50.00
-L- Sta. 226 + 50.00 TO 230 + 00.00



DETAIL 1B

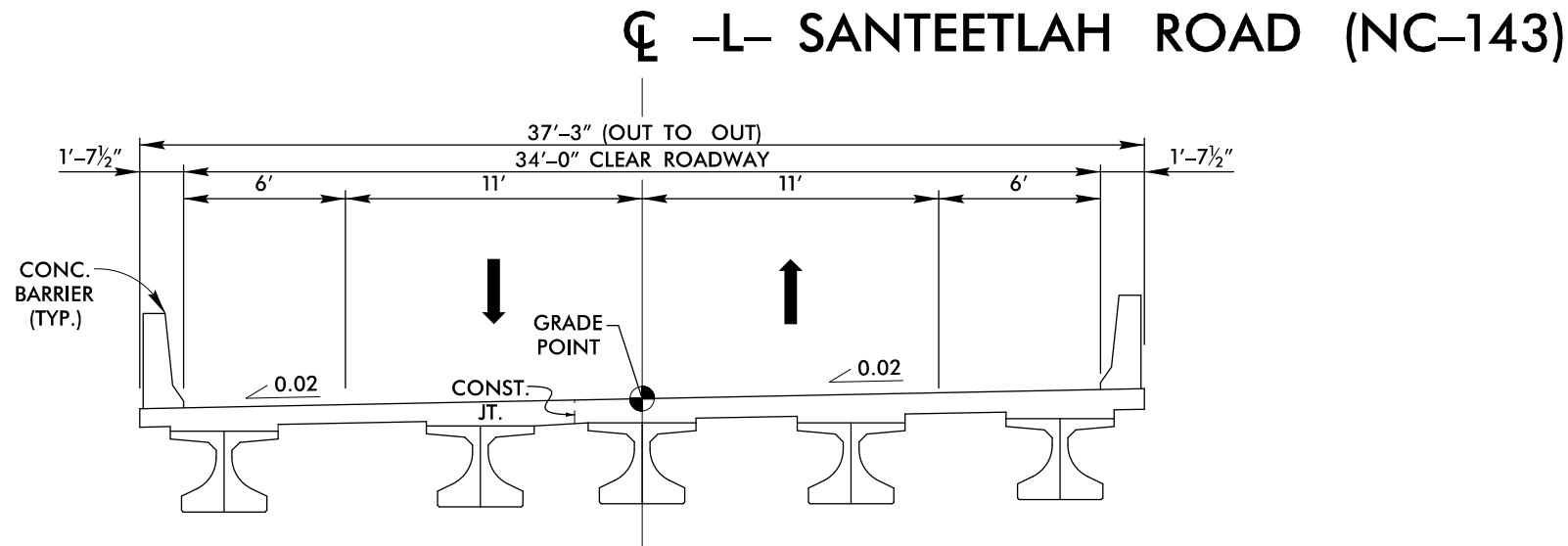
-L- Sta. 98 + 0.00 TO 102 + 06.72



TYPICAL SECTION NO. 2

-L- Sta. 33 + 50.00 TO 39 + 00.00
-L- Sta. 42 + 00.00 TO 51 + 00.00
-L- Sta. 55 + 00.00 TO 58 + 25.00
-L- Sta. 58 + 75.00 TO 68 + 75.00
-L- Sta. 75 + 00.00 TO 78 + 00.00
-L- Sta. 80 + 75.00 TO 89 + 25.00
-L- Sta. 90 + 00.00 TO 95 + 25.00
-L- Sta. 99 + 00.00 TO 103 + 00.00
-L- Sta. 105 + 00.00 TO 113 + 50.00
-L- Sta. 136 + 00.00 TO 138 + 25.00
-L- Sta. 146 + 00.00 TO 156 + 00.00
-L- Sta. 157 + 50.00 TO 167 + 91 +/- (BR)
-L- Sta. 169 + 71 +/- (BR) TO 177 + 25.00
-L- Sta. 185 + 50.00 TO 190 + 50.00
-L- Sta. 199 + 00.00 TO 210 + 00.00
-L- Sta. 211 + 25.00 TO 216 + 50.00
-L- Sta. 219 + 50.00 TO 224 + 00.00
-L- Sta. 227 + 00.00 TO 239 + 70.00

*NOTE: SLOPES STEEPER THAN 2:1 WILL BE USED WHERE APPROVED BY GEOTECH

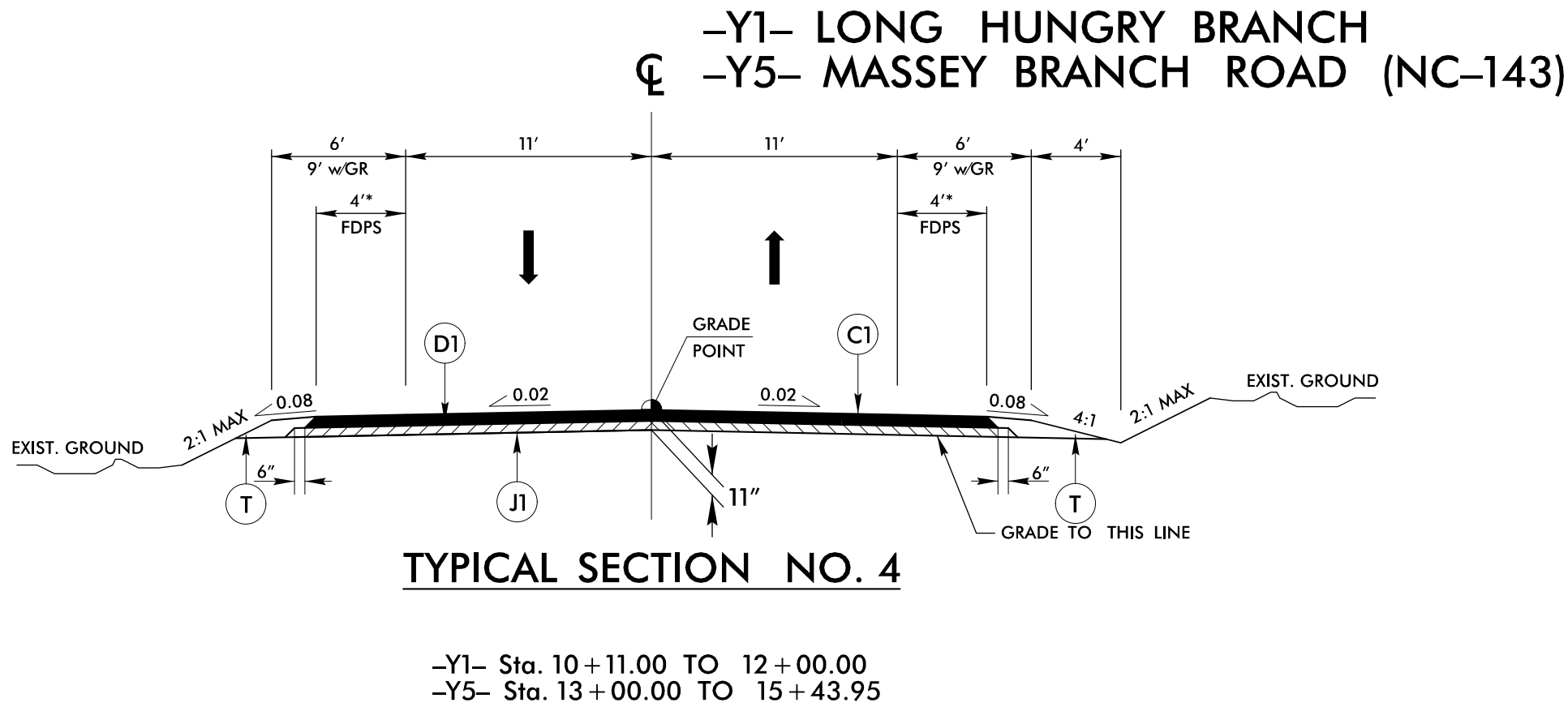


TYPICAL SECTION NO. 3

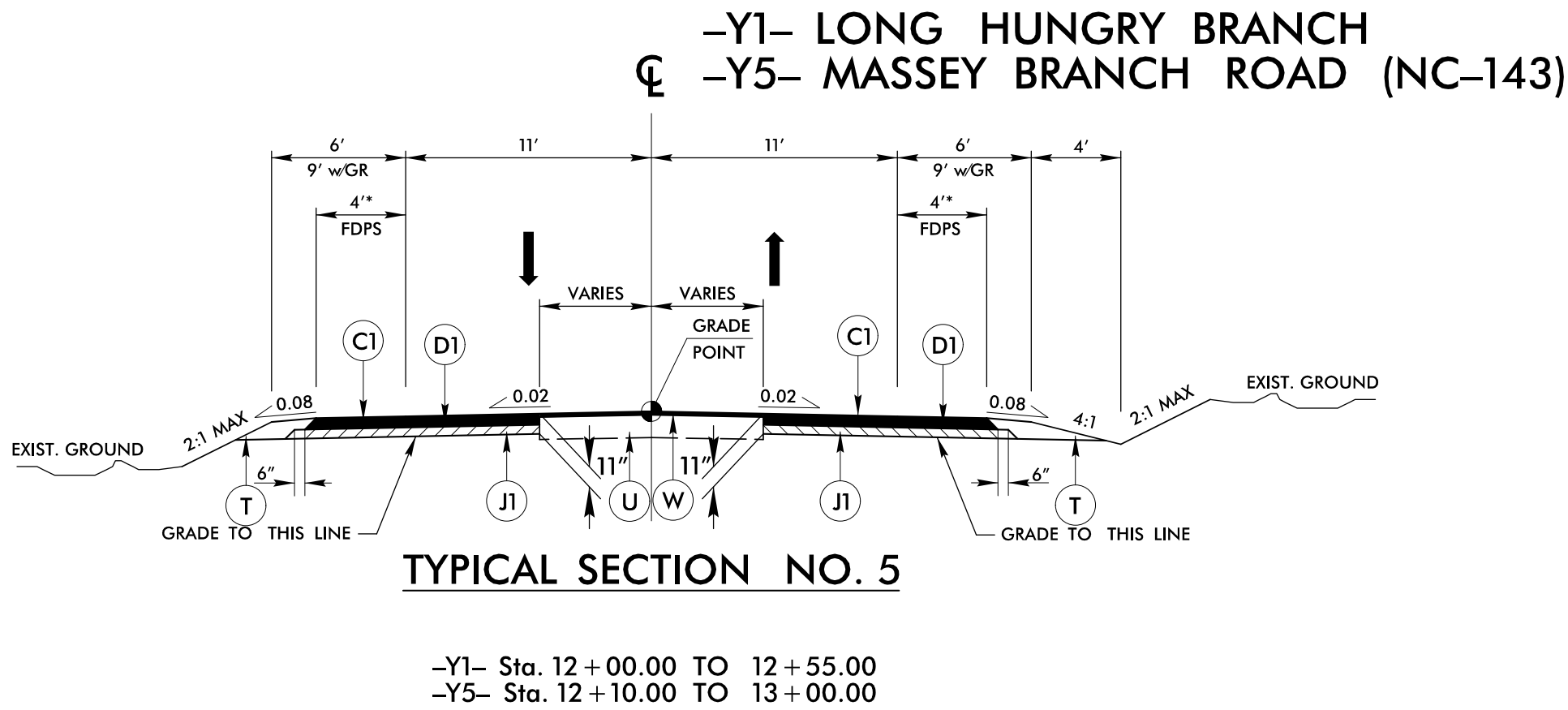
BRIDGE #13 OVER SNOWBIRD CREEK
-L- Sta. 167 + 91 +/- TO 169 + 71 +/-

PAVEMENT SCHEDULE (ASSUMED)	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF THE TWO LAYERS.
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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 2.5" 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 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
J1	PROP. 4" AGGREGATE BASE COURSE
T	EARTH MATERIAL
W	WEDGING (SEE DETAIL SHEET 2A-1)
U	EXISTING PAVEMENT
V	INCIDENTAL MILLING

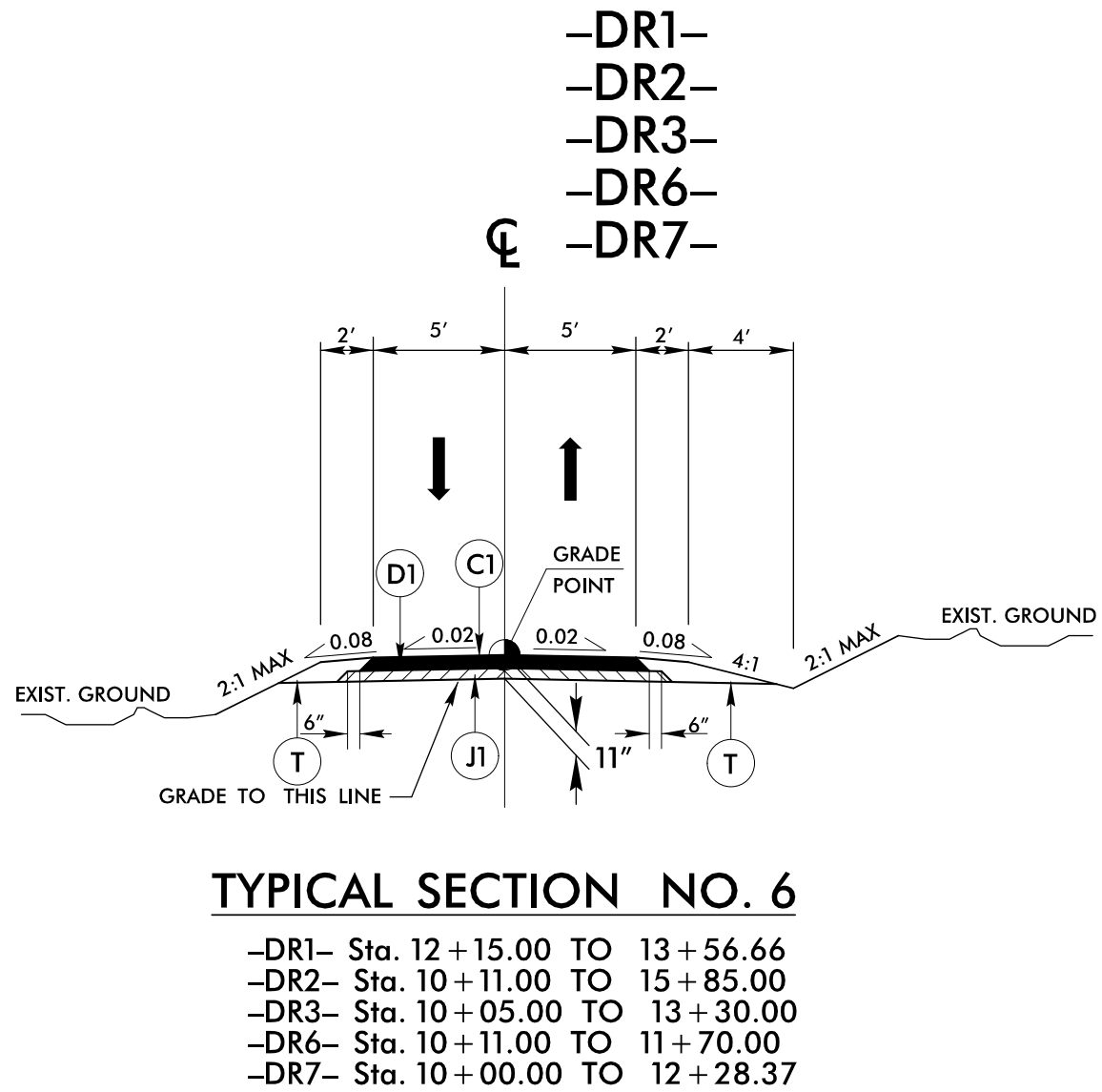
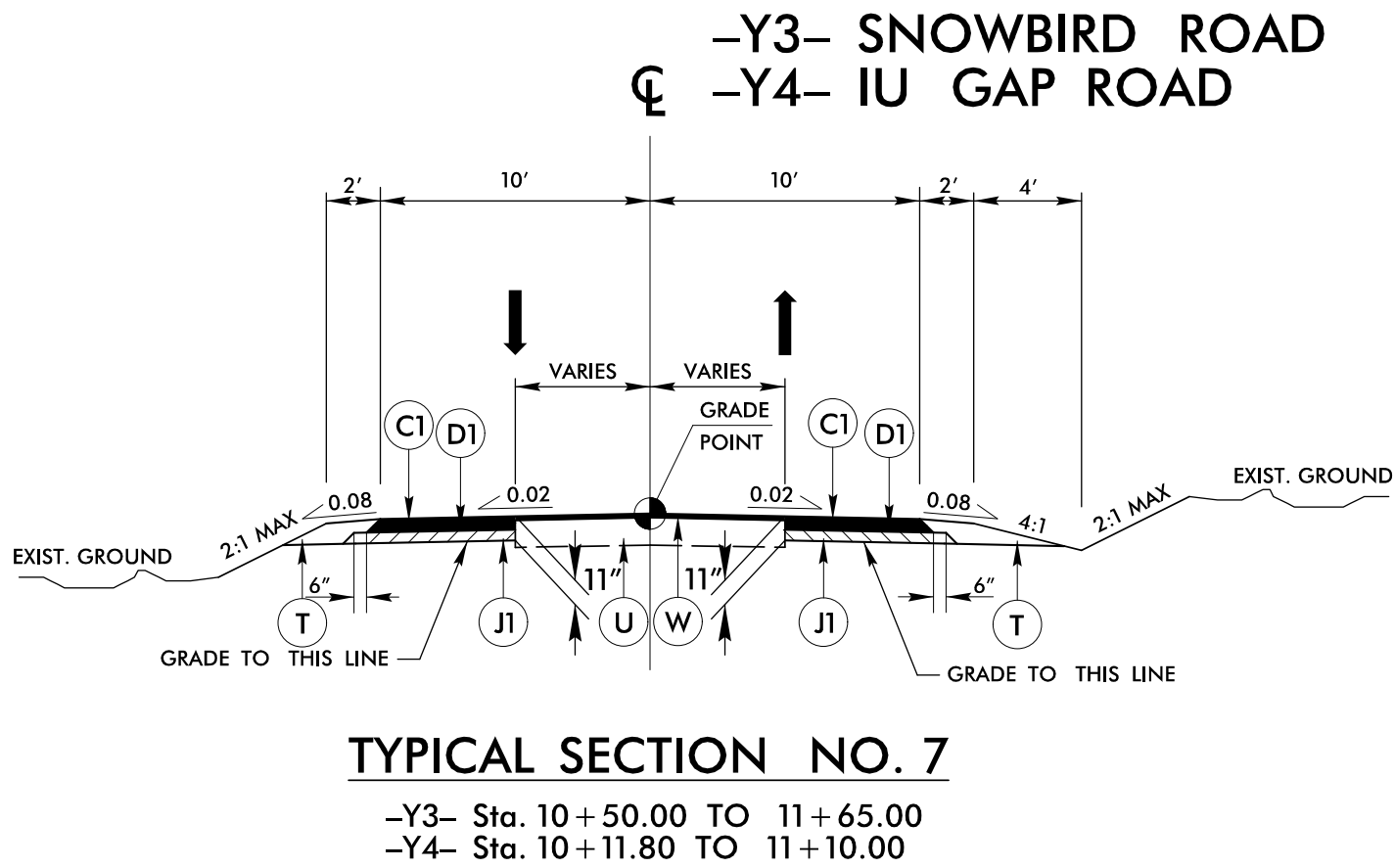
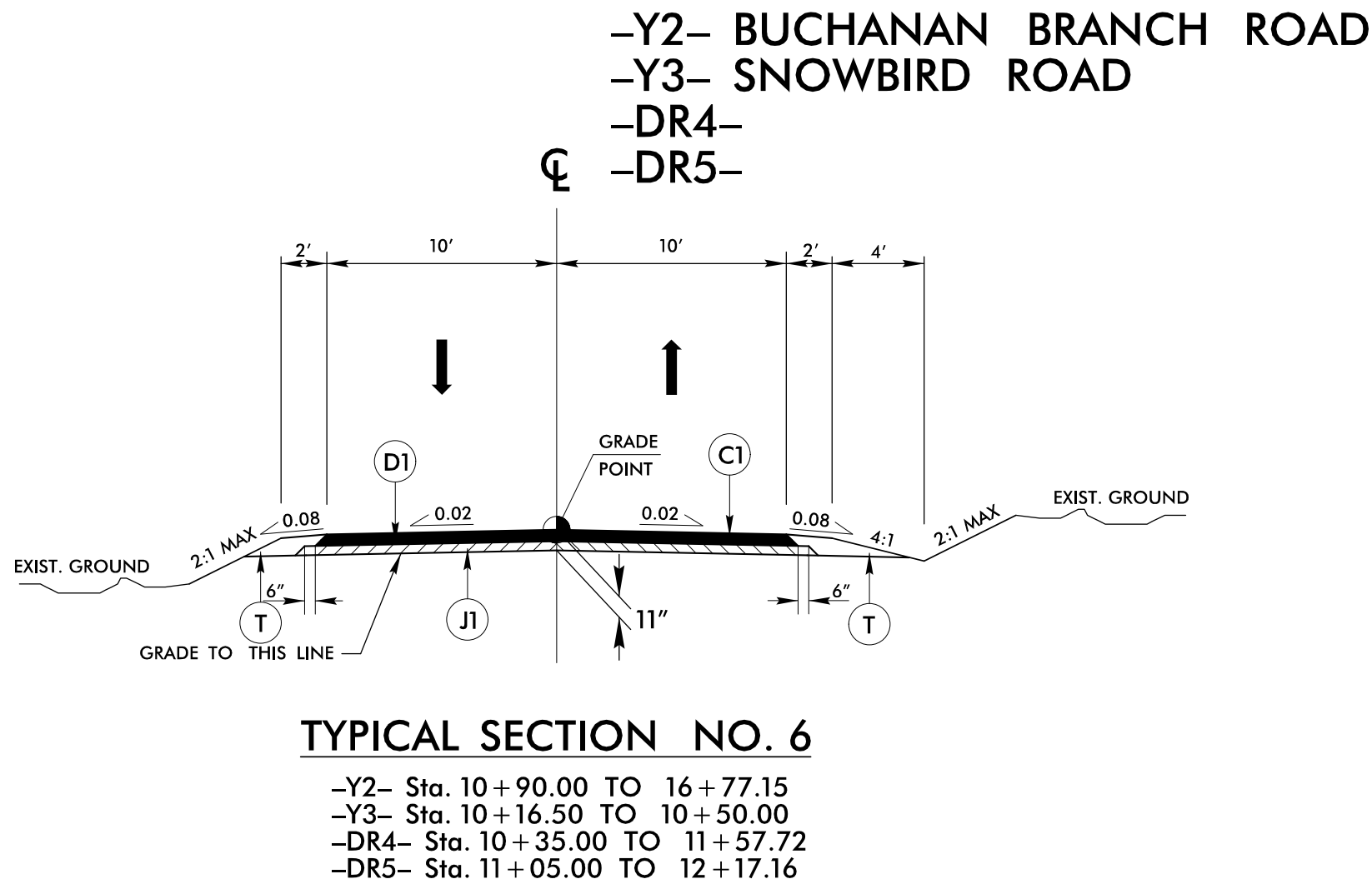
ALL PAVEMENT EDGES ARE 1:1, UNLESS OTHERWISE NOTED.

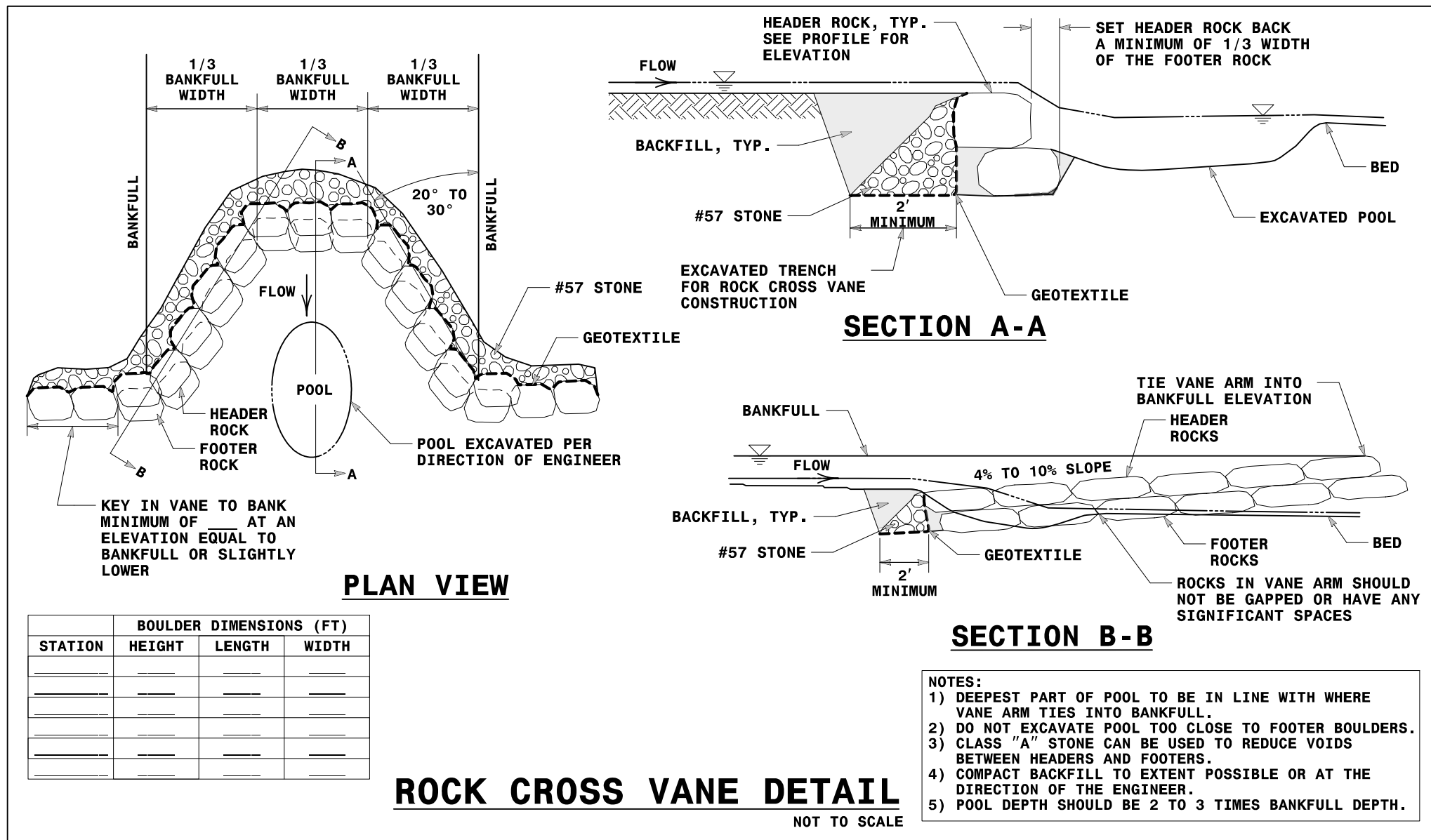


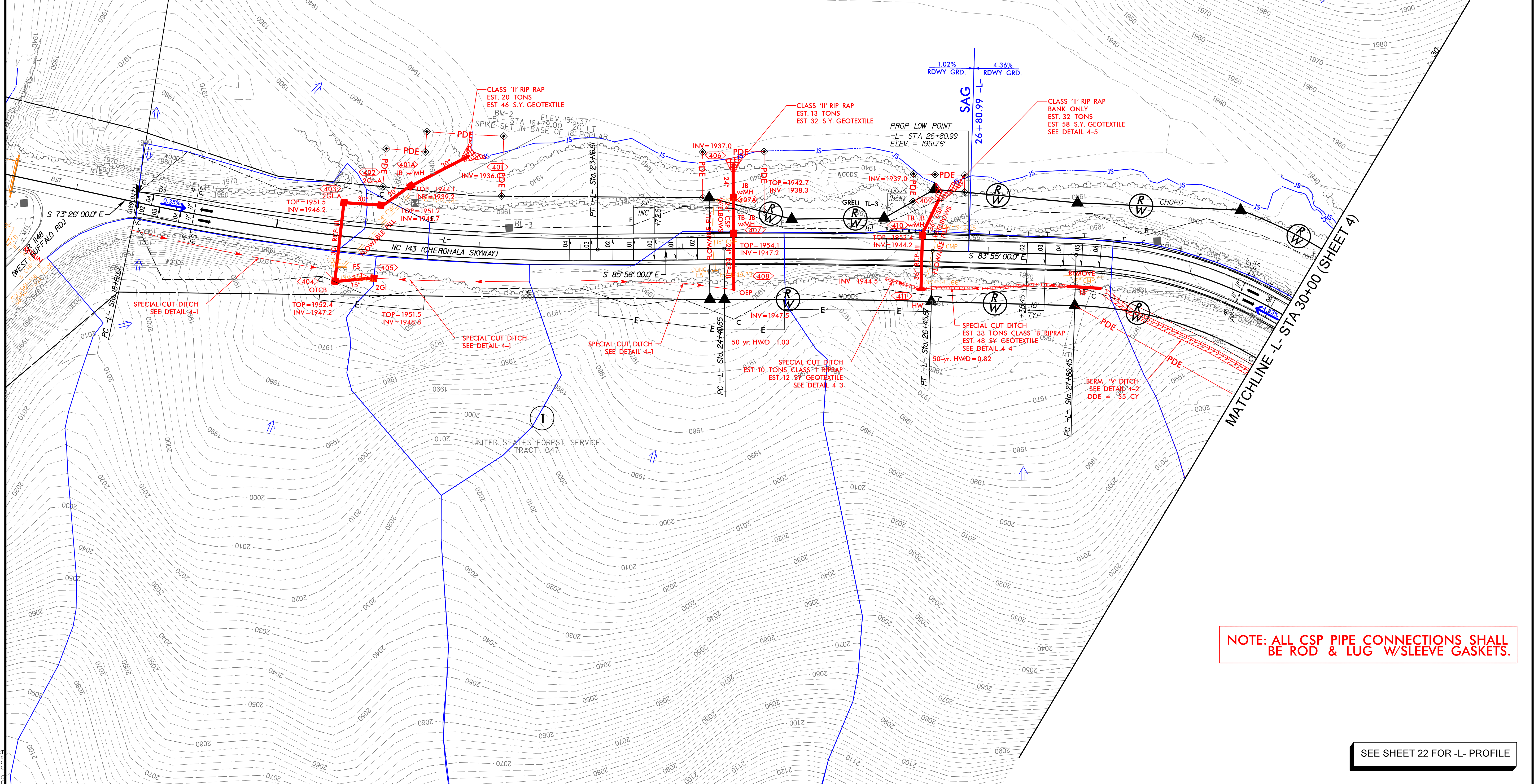
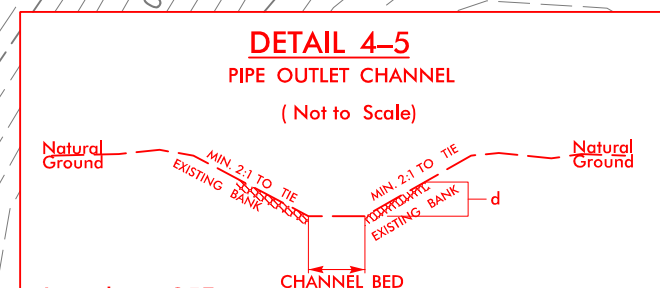
*NOTE: 0' FDPS ON –Y1–



*NOTE: 0' FDPS ON –Y1–







NOTE: ALL CSP PIPE CONNECTIONS SHALL BE ROD & LUG W/SLEEVE GASKETS.

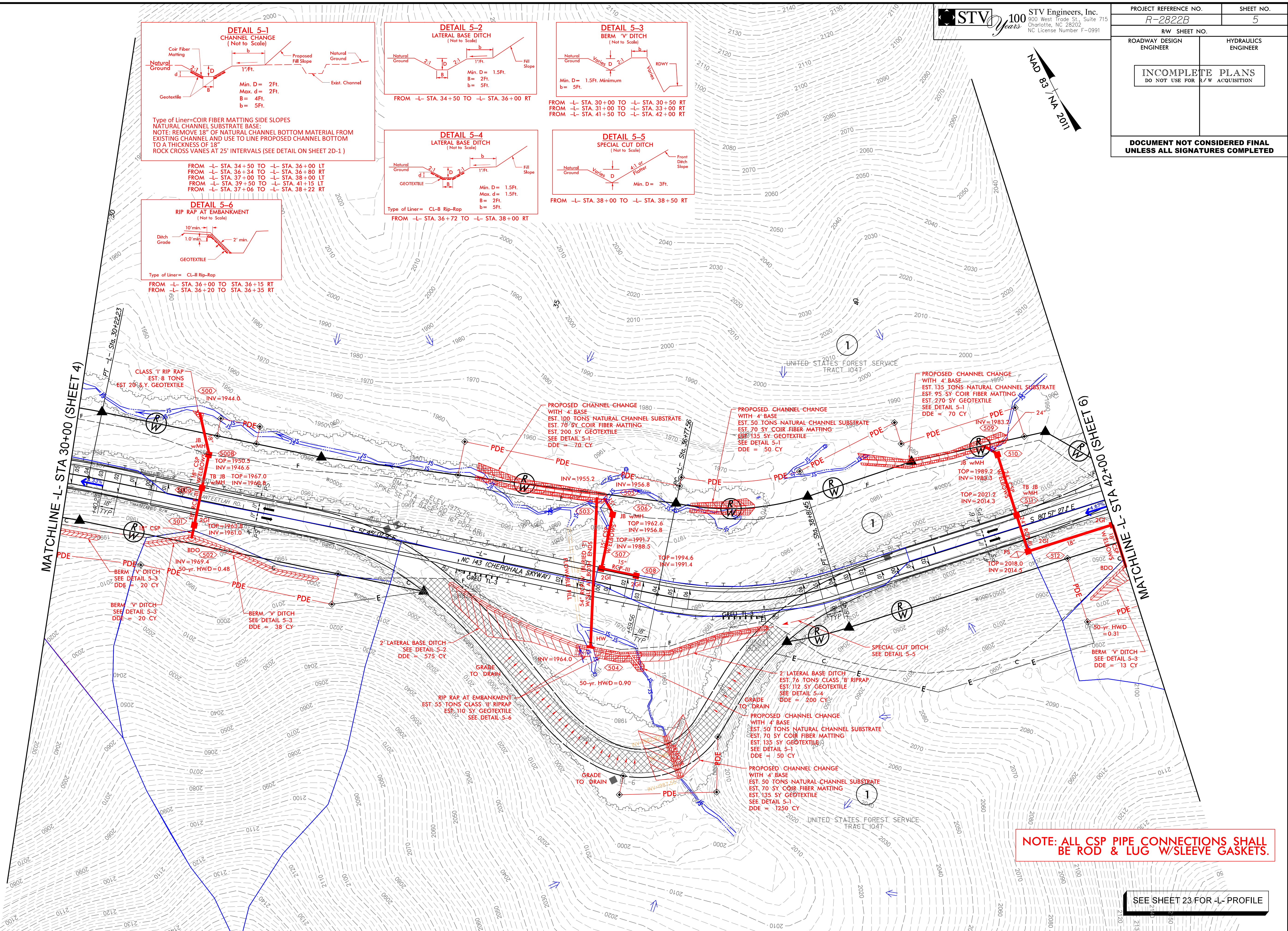
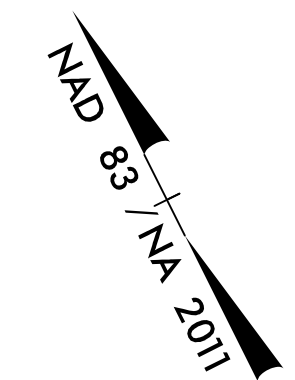
SEE SHEET 22 FOR -L- PROFILE

8/17/99

4/25/2022
R:\Hydro\cadd\PSH\R-2822B_hyd.psd05.dgn
Bouchard

STV 100 Years
STV Engineers, Inc.
500 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO. <i>R-2822B</i>		SHEET NO. <i>5</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



NOTE: ALL CSP PIPE CONNECTIONS SHALL BE ROD & LUG W/SLEEVE GASKETS.

SEE SHEET 23 FOR L- PROFILE

8/17/99

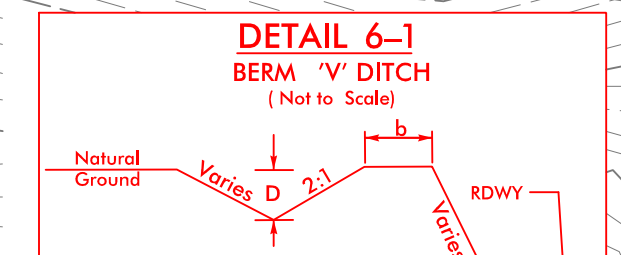
4/25/2022
R:\Hydro\Drawings\CADD\PSH\R-2822B.hyd.psh06.dgn
Bauchop



STV Engineers, Inc.
800 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO. <i>R-2822B</i>		SHEET NO. <i>6</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

DETAIL 6-1
BERM 'V' DITCH
(Not to Scale)



FROM -L- STA. 41+50 TO -L- STA. 42+50 RT
FROM -L- STA. 43+50 TO -L- STA. 44+50 RT
FROM -L- STA. 46+50 TO -L- STA. 47+50 RT
FROM -L- STA. 49+50 TO -L- STA. 53+00 RT

MATCHLINE L- STA 42+00 (SHEET 5)

MATCHLINE L- STA 53+00 (SHEET 7)

MATCHLINE (SHEET 7)

NOTE: ALL CSP PIPE CONNECTIONS SHALL BE ROD & LUG W/SLEEVE GASKETS.

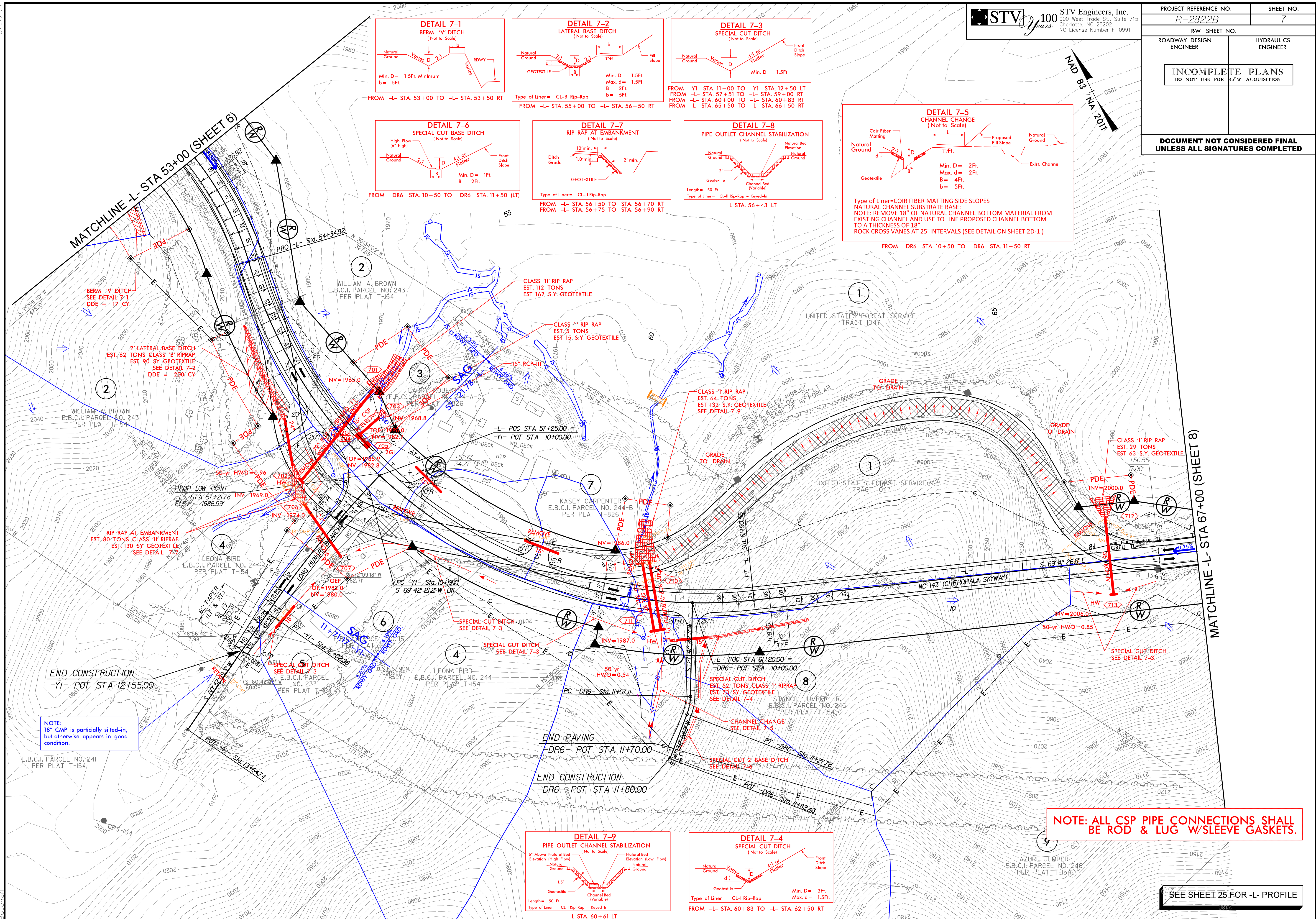
SEE SHEET 24 FOR -L- PROFILE

8/17/99

4/25/2022
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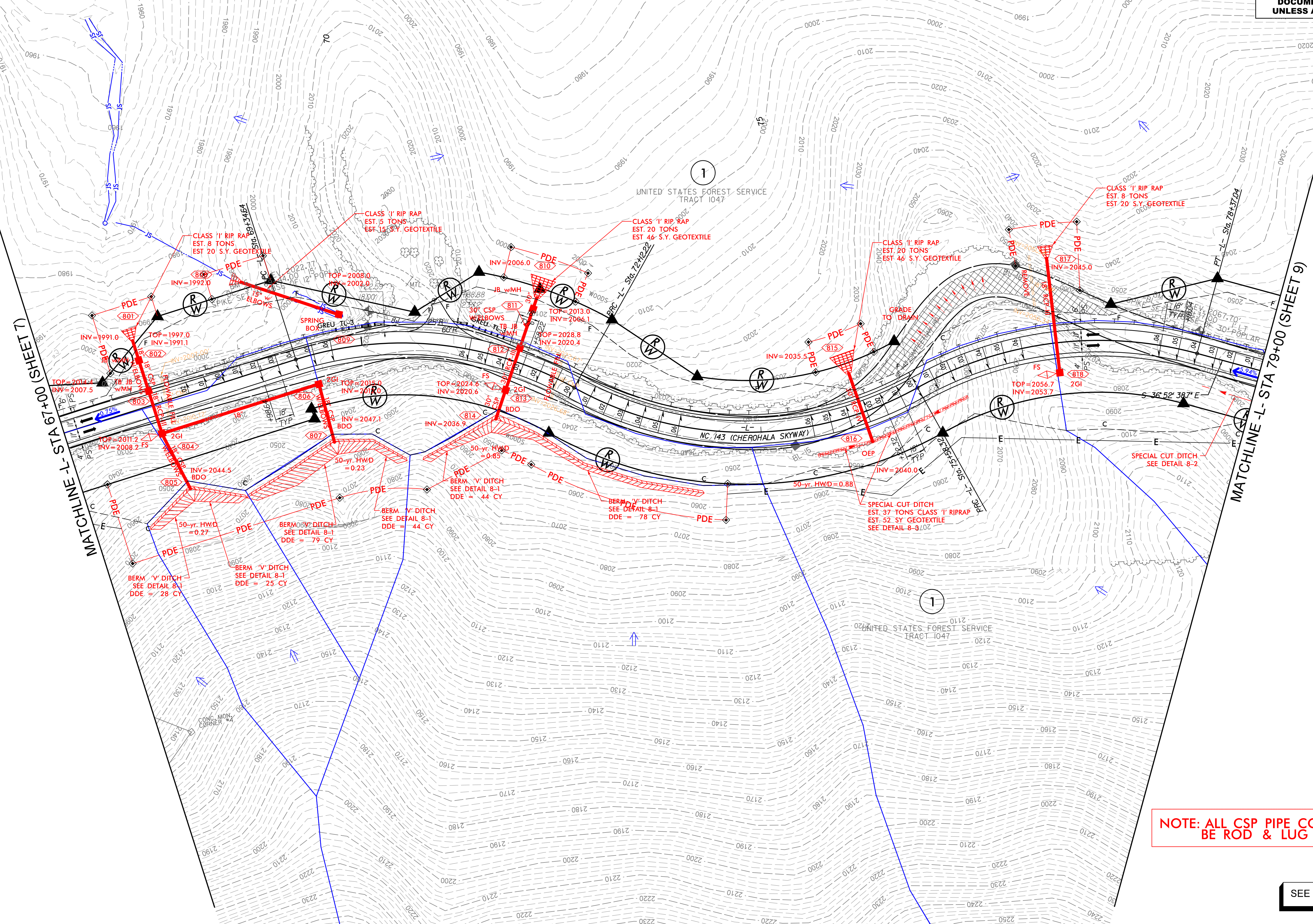
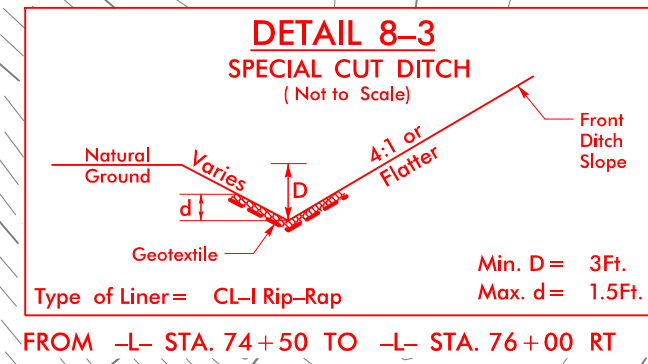
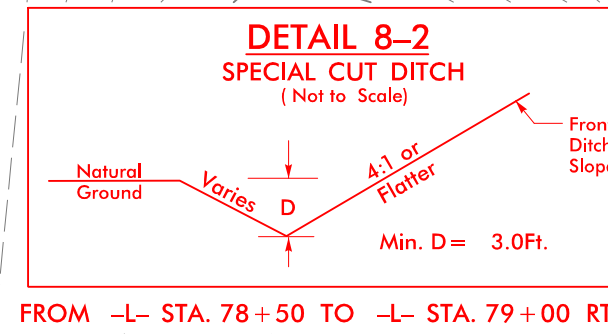
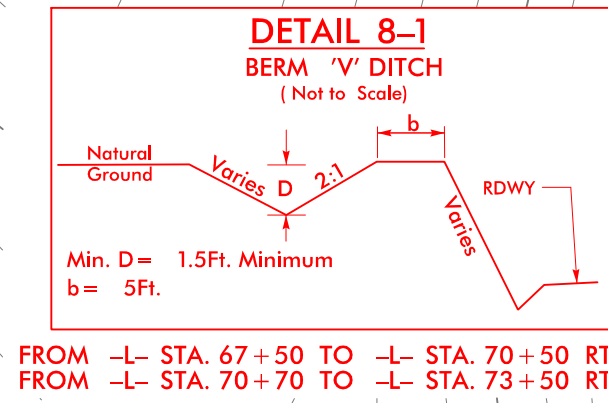
STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO. <i>R-2822B</i>		SHEET NO. <i>7</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



NOTE: ALL CSP PIPE CONNECTIONS SHALL BE ROD & LUG W/SLEEVE GASKETS.

SEE SHEET 25 FOR -L- PROFILE



NOTE: ALL CSP PIPE CONNECTIONS SHALL
BE ROD & LUG W/SLEEVE GASKETS.

SEE SHEET 26 FOR -L- PROFILE

4/25/2022
R:\Hydro\Projects\CADD\PSH\R-2822B_hyd.psh08.dgn
Bouche



NOTE: ALL CSP PIPE CONNECTIONS SHALL BE ROD & LUG W/SLEEVE GASKETS.

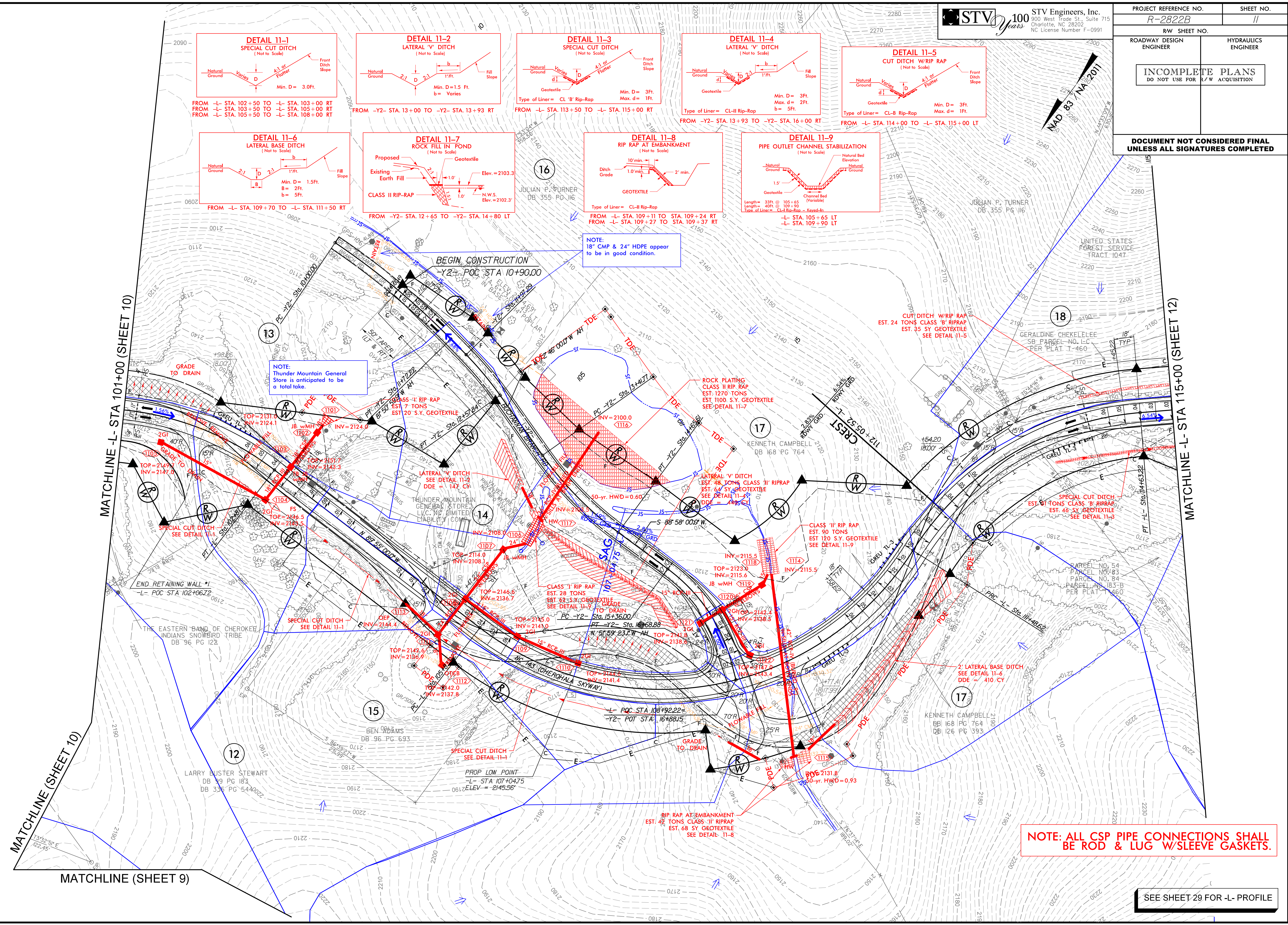
SEE SHEET 27 FOR -L- PROFILE

4/25/2022
R:\Hydraulics\CADD\PSHAR-2822B_hyd_psh09.dgn
Boucheb



4/25/2022
R:\Hydro\Projects\CA00\PSH\R-2822B_hyd_psh11.dgn
B:\Hydro\Projects\CA00\PSH\R-2822B_hyd_psh11.dgn
8/17/99

PROJECT REFERENCE NO. <i>R-2822B</i>		SHEET NO. <i>11</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

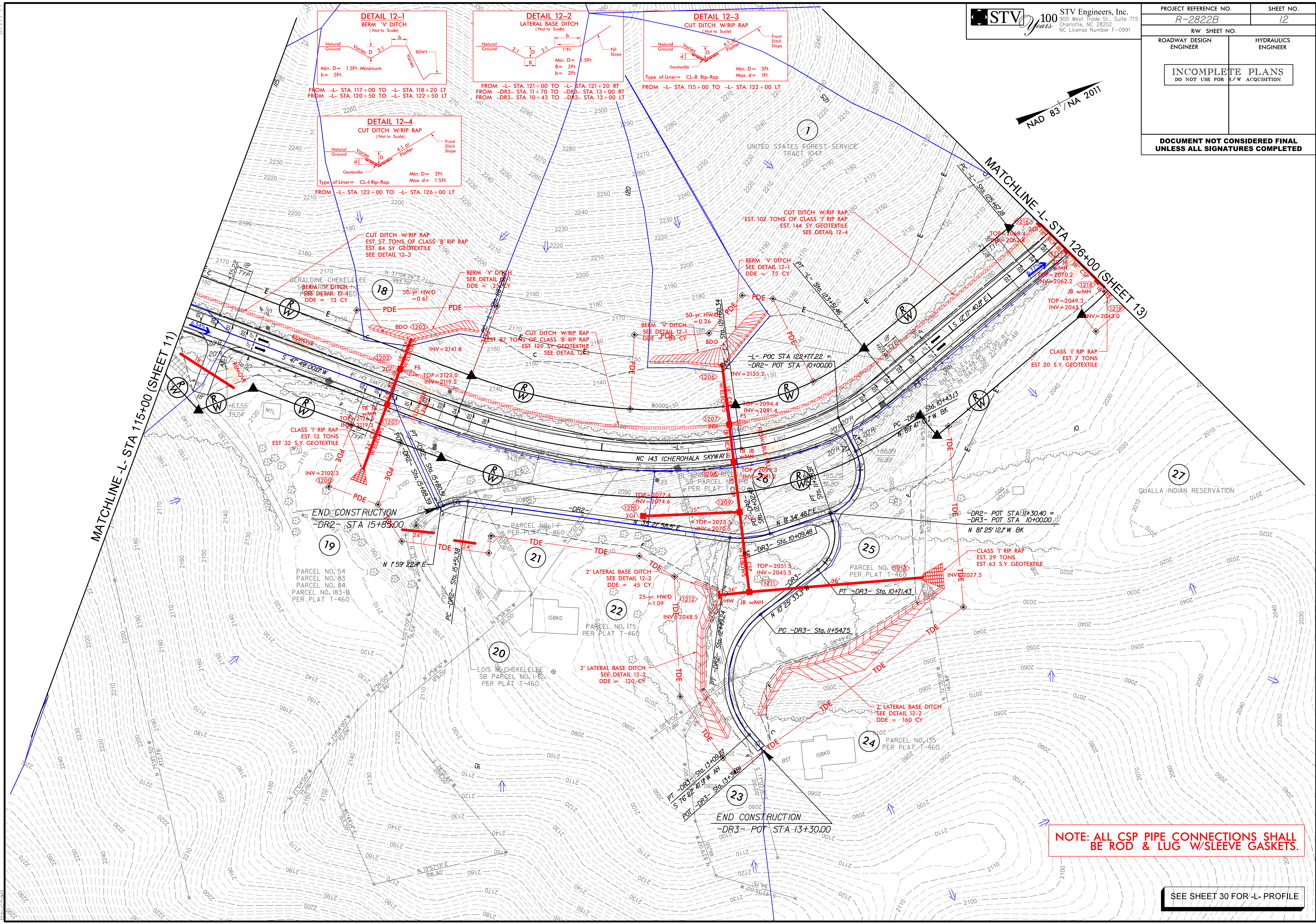


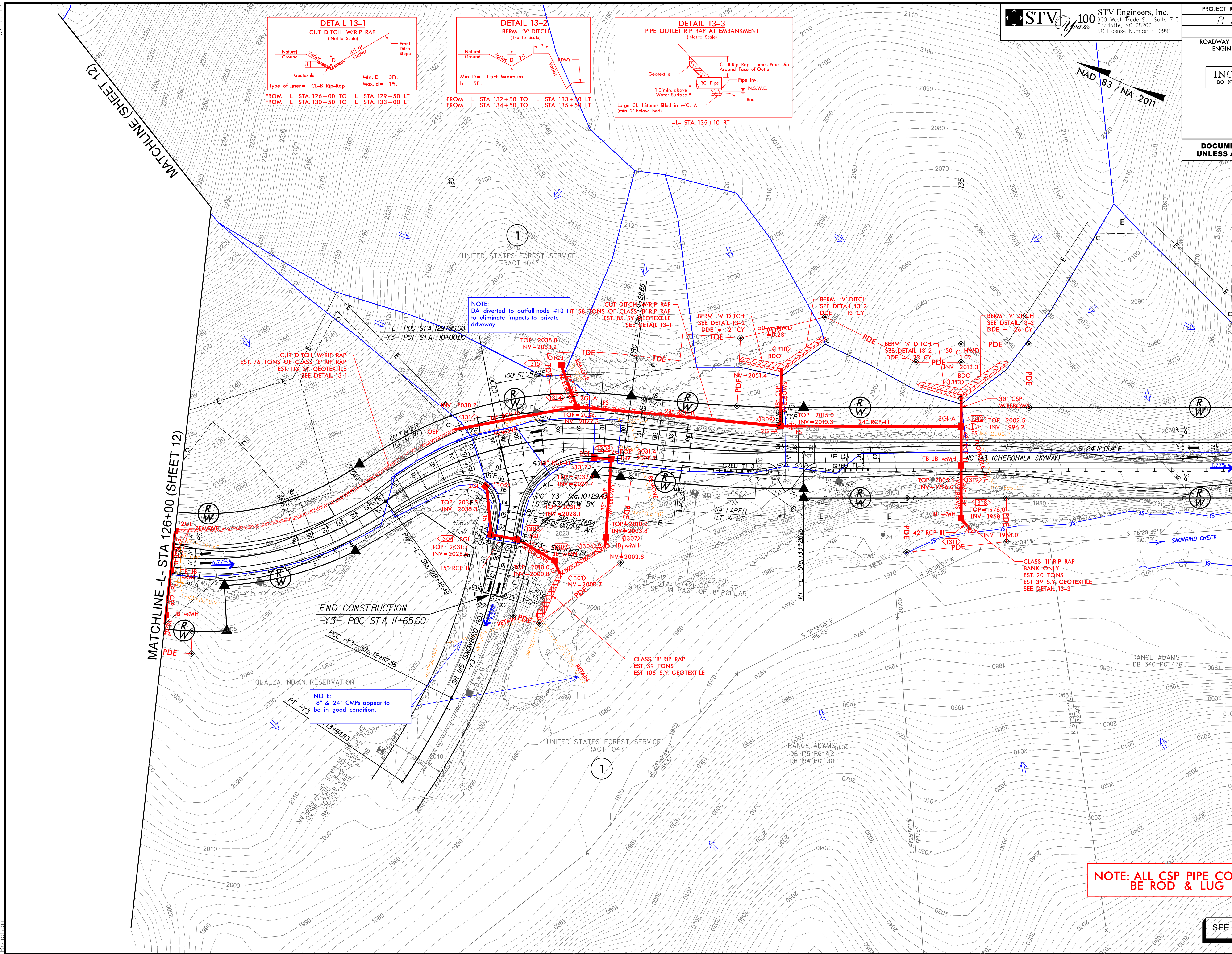
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4/25/2022
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PROJECT REFERENCE NO. <i>R-2822B</i>		SHEET NO. <i>12</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

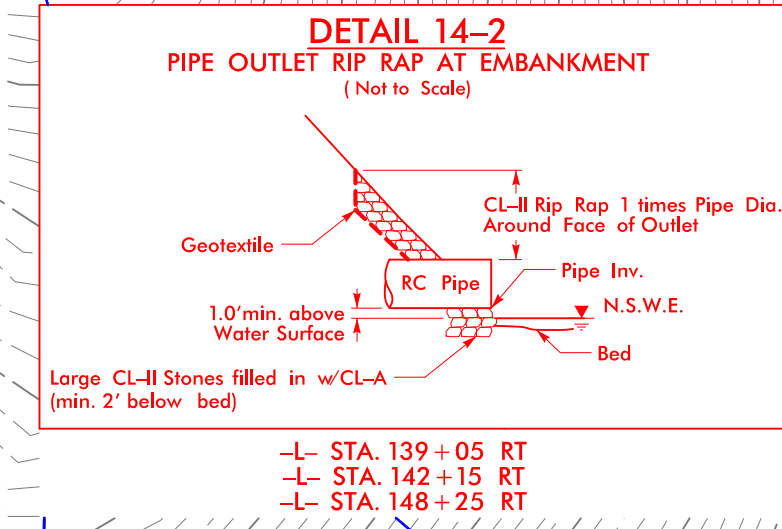
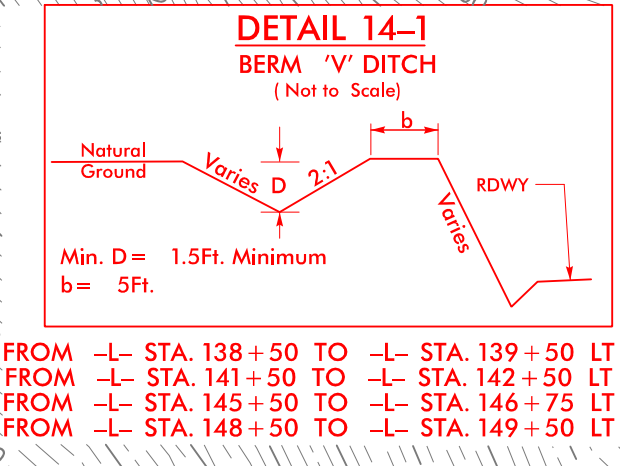
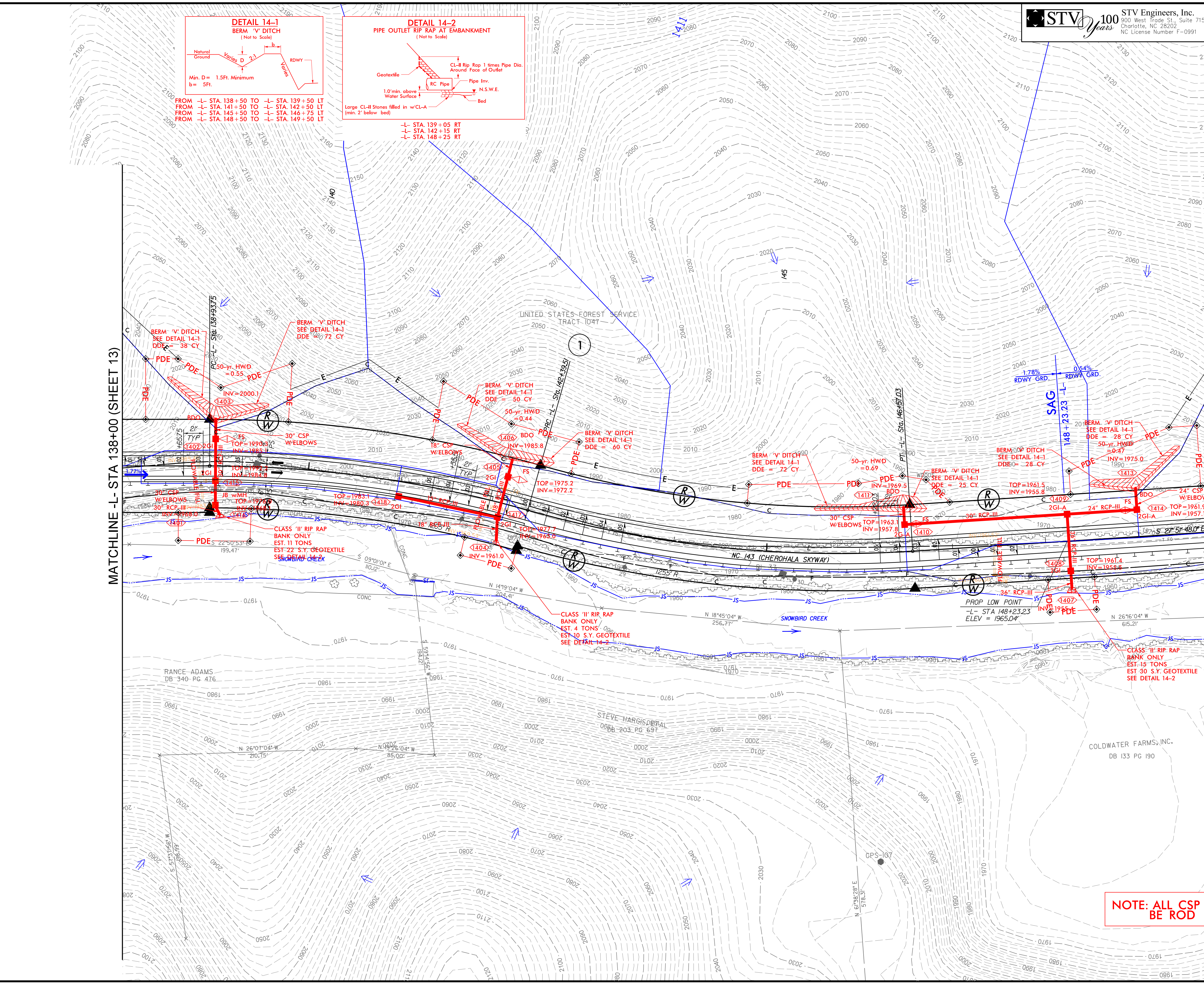




NOTE: ALL CSP PIPE CONNECTIONS SHALL BE ROD & LUG W/SLEEVE GASKETS.

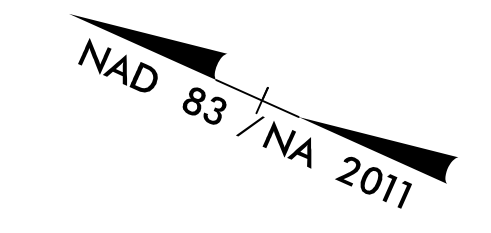
SEE SHEET 31 FOR -L- PROFILE

8/17/99
4/25/2022
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Baudach



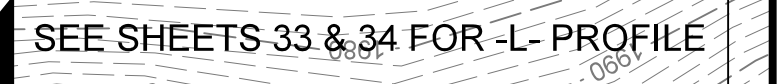
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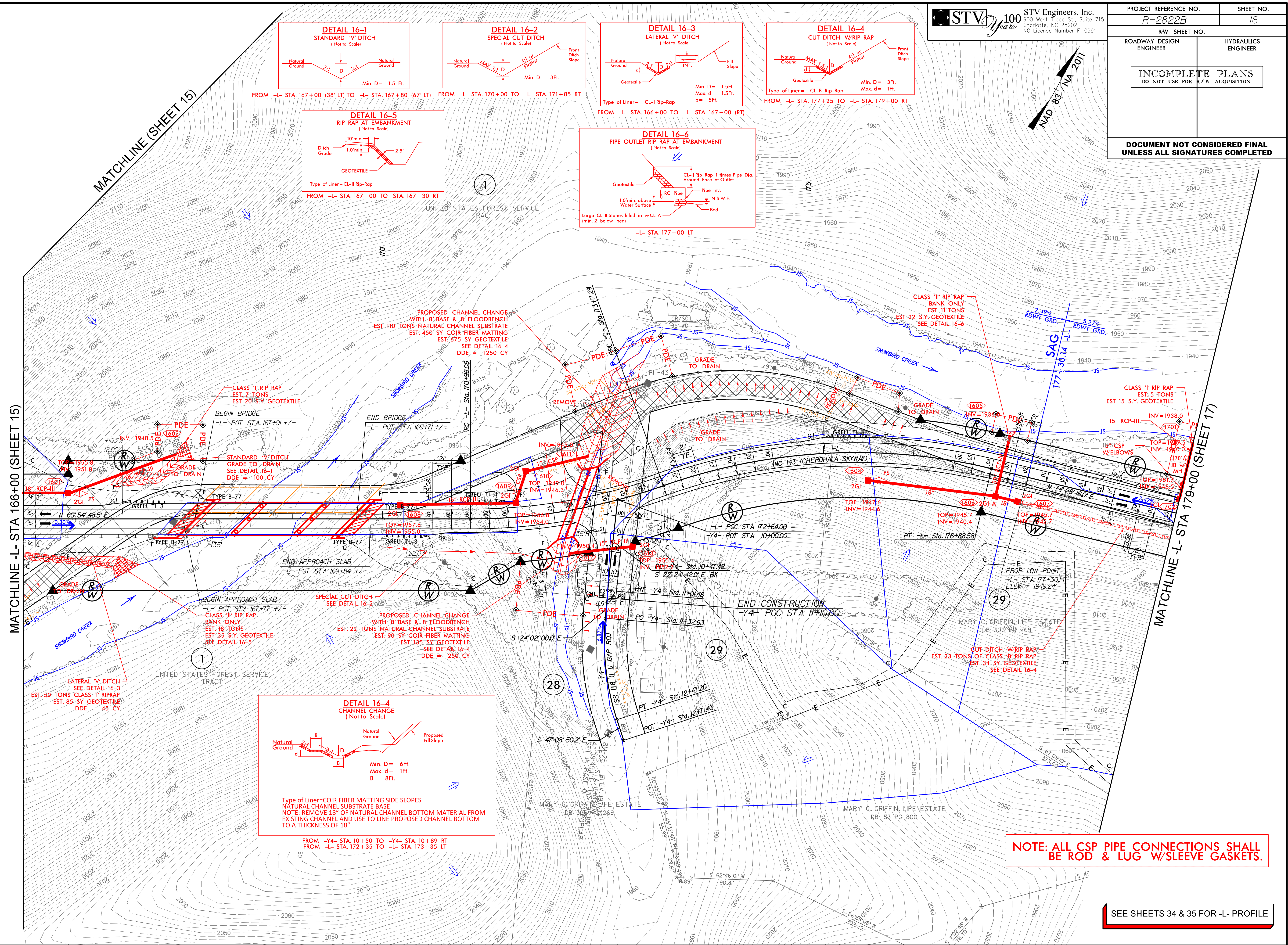
PROJECT REFERENCE NO. R-2822B		SHEET NO. 14	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



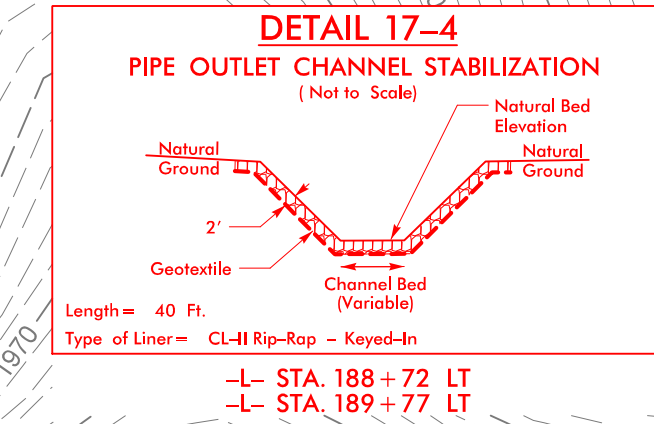
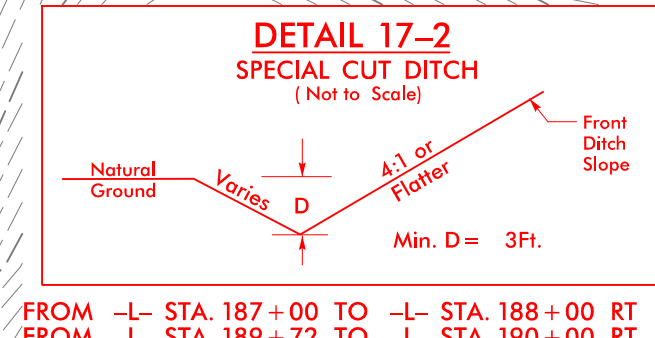
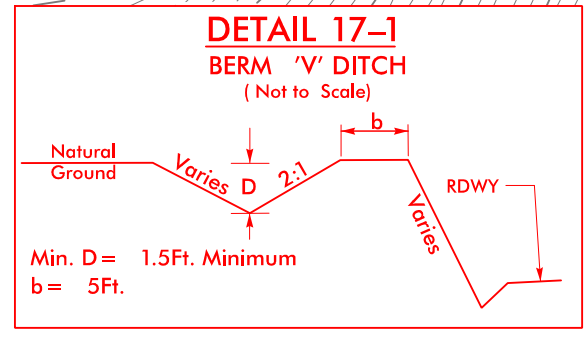
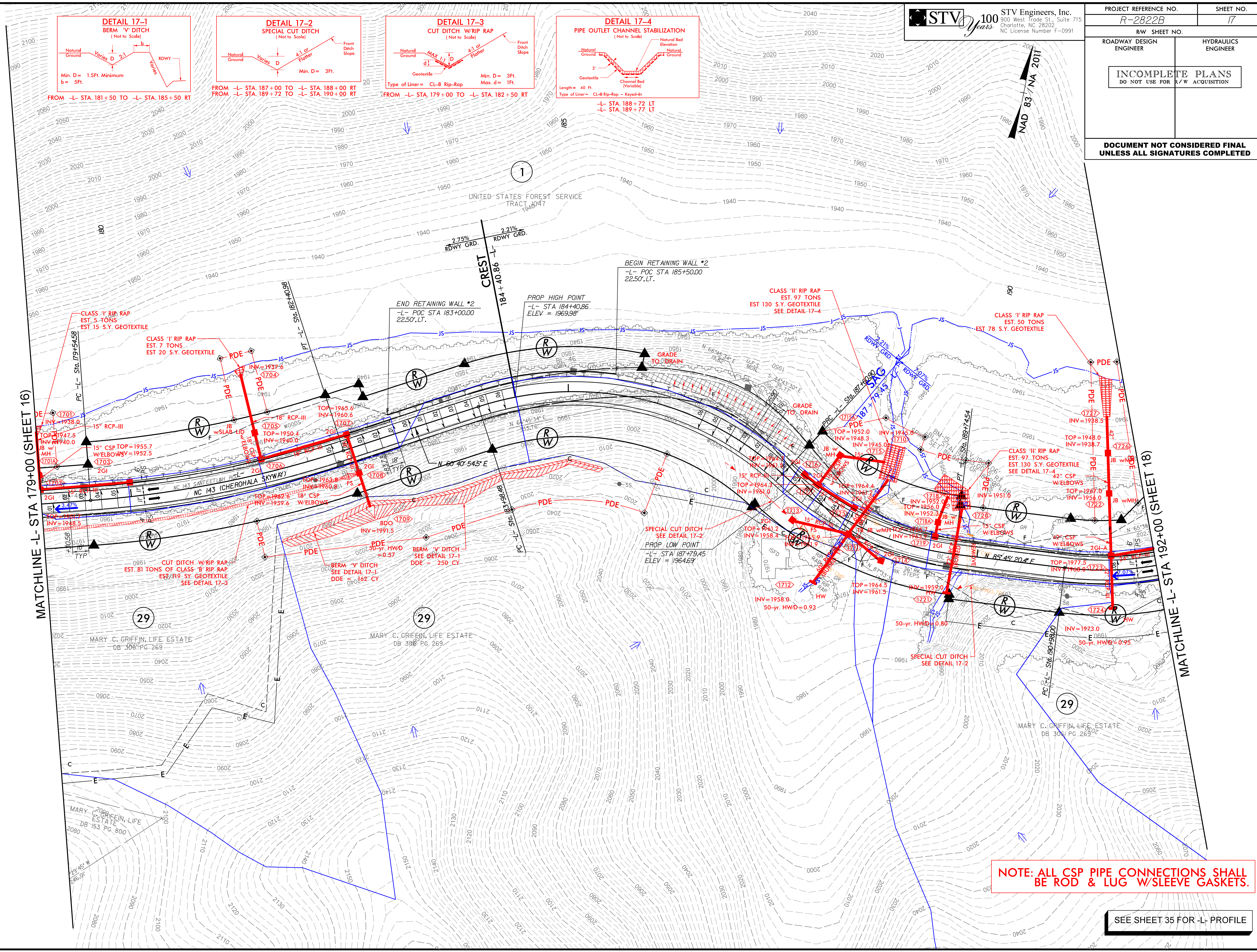
NOTE: ALL CSP PIPE CONNECTIONS SHALL BE ROD & LUG W/SLEEVE GASKETS.

SEE SHEET 32 FOR -L- PROFILE





8/17/99
4/25/2022
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B:\Hydro\plans\CADD\PSH\R-2822B_hyd_psh17.dgn



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PROJECT REFERENCE NO. <i>R-2822B</i>		SHEET NO. <i>17</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

NOTE: ALL CSP PIPE CONNECTIONS SHALL BE ROD & LUG W/SLEEVE GASKETS.

SEE SHEET 35 FOR -L- PROFILE

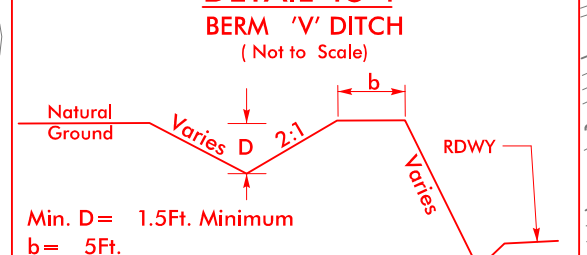
6/17/99
4/25/2022
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Boughton



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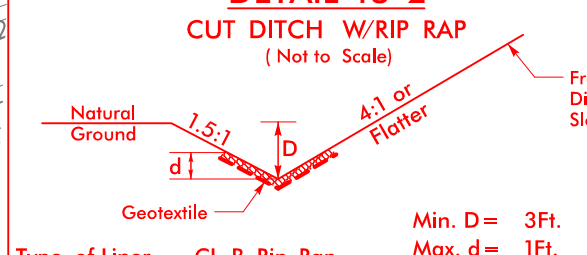
PROJECT REFERENCE NO. R-2822B		SHEET NO. 18
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

DETAIL 18-1
BERM 'V' DITCH
(Not to Scale)



Min. D = 1.5 Ft. Minimum
b = 5 Ft.

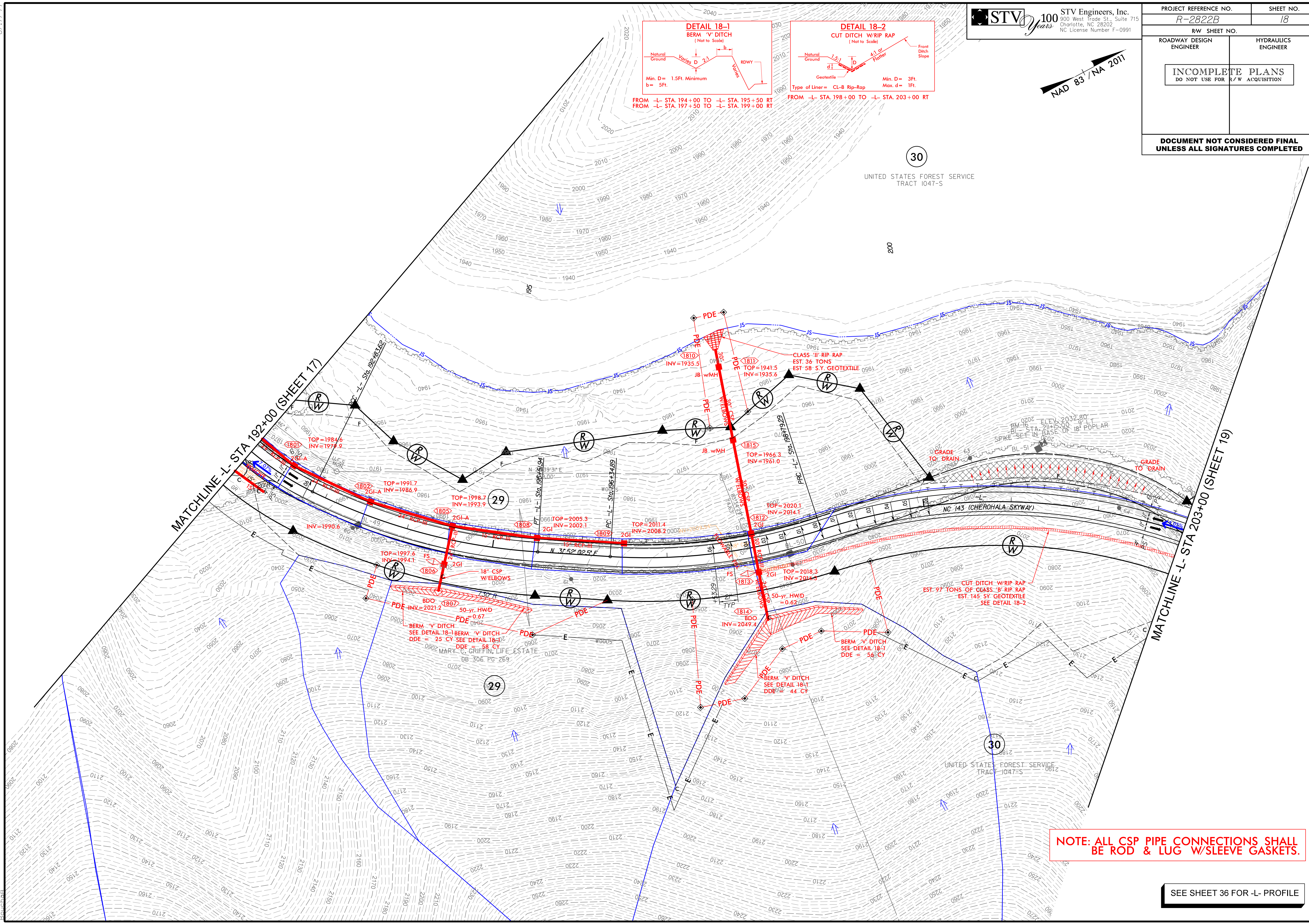
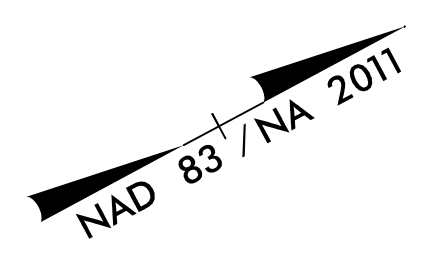
DETAIL 18-2
CUT DITCH W/ RIP RAP
(Not to Scale)



Min. D = 3 Ft.
Max. d = 1 Ft.

FROM -L- STA. 194+00 TO -L- STA. 195+50 RT
FROM -L- STA. 197+50 TO -L- STA. 199+00 RT

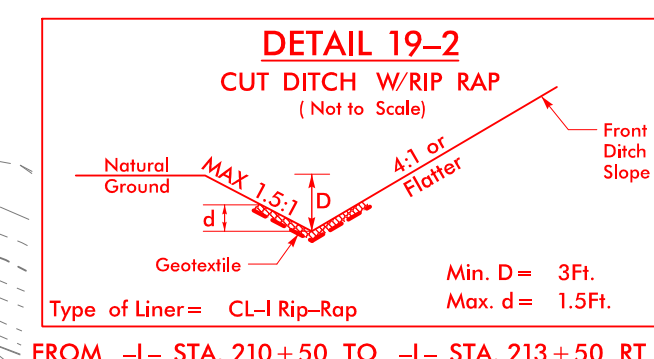
FROM -L- STA. 198+00 TO -L- STA. 203+00 RT



SEE SHEET 36 FOR -L- PROFILE

8/17/19

4/25/2022
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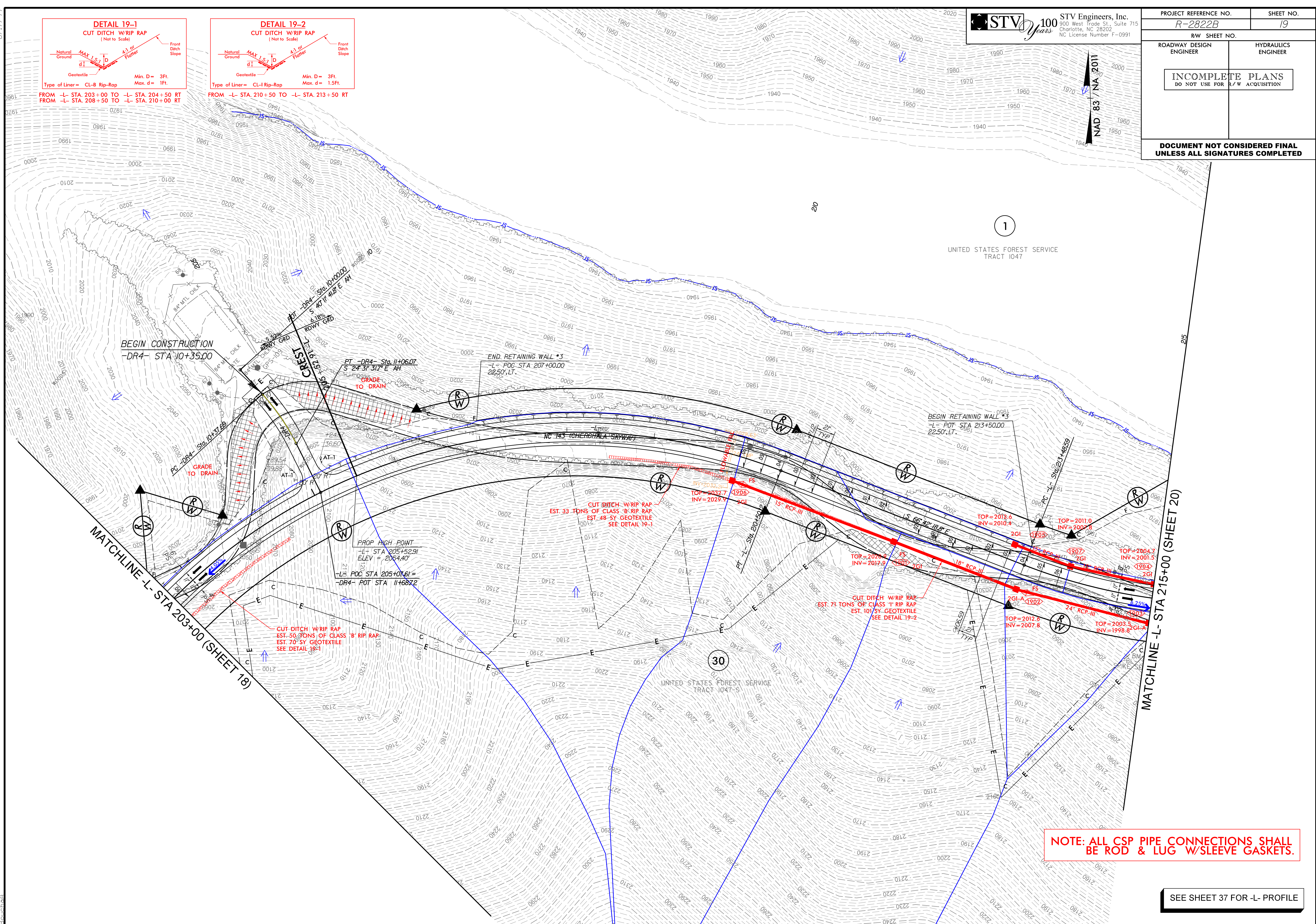


FROM -L- STA. 203+00 TO -L- STA. 204+50 RT
FROM -L- STA. 208+50 TO -L- STA. 210+00 RT

FROM -L- STA. 210+50 TO -L- STA. 213+50 RT

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PROJECT REFERENCE NO. <i>R-2822B</i>		SHEET NO. <i>19</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



NOTE: ALL CSP PIPE CONNECTIONS SHALL BE ROD & LUG W/SLEEVE GASKETS.

SEE SHEET 37 FOR -L- PROFILE

8/17/99

4/25/2022
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Bouhadd

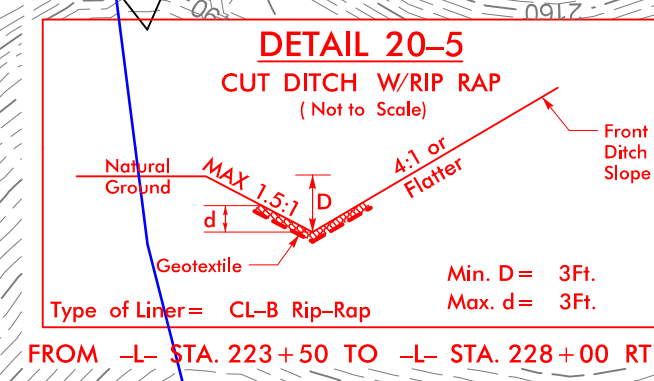
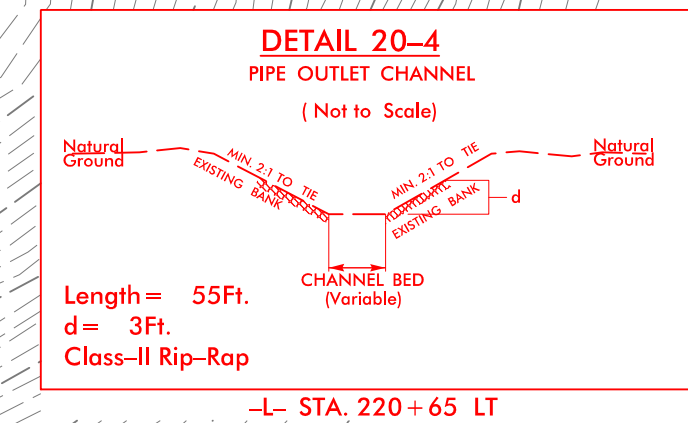
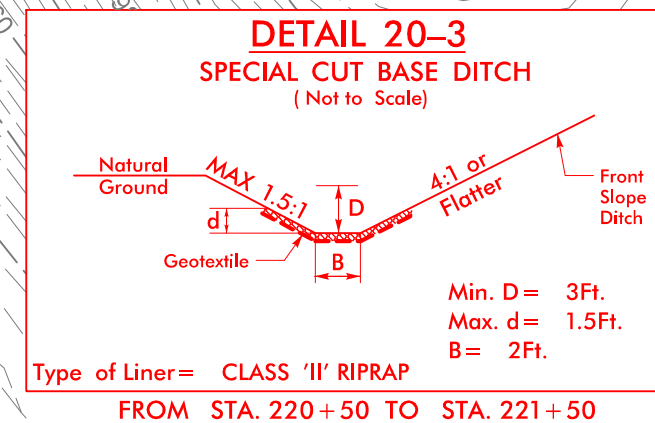
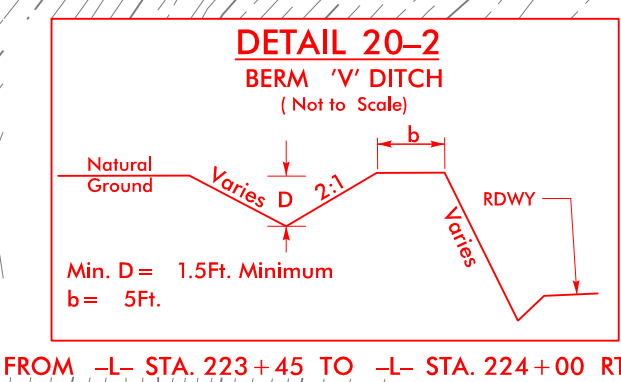
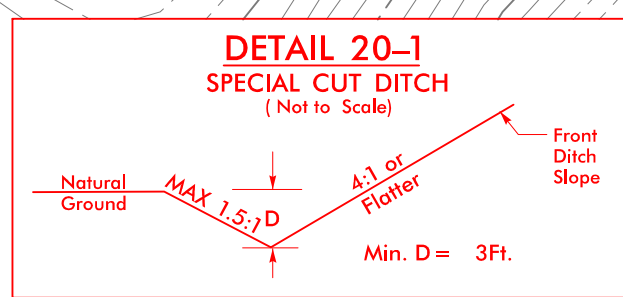
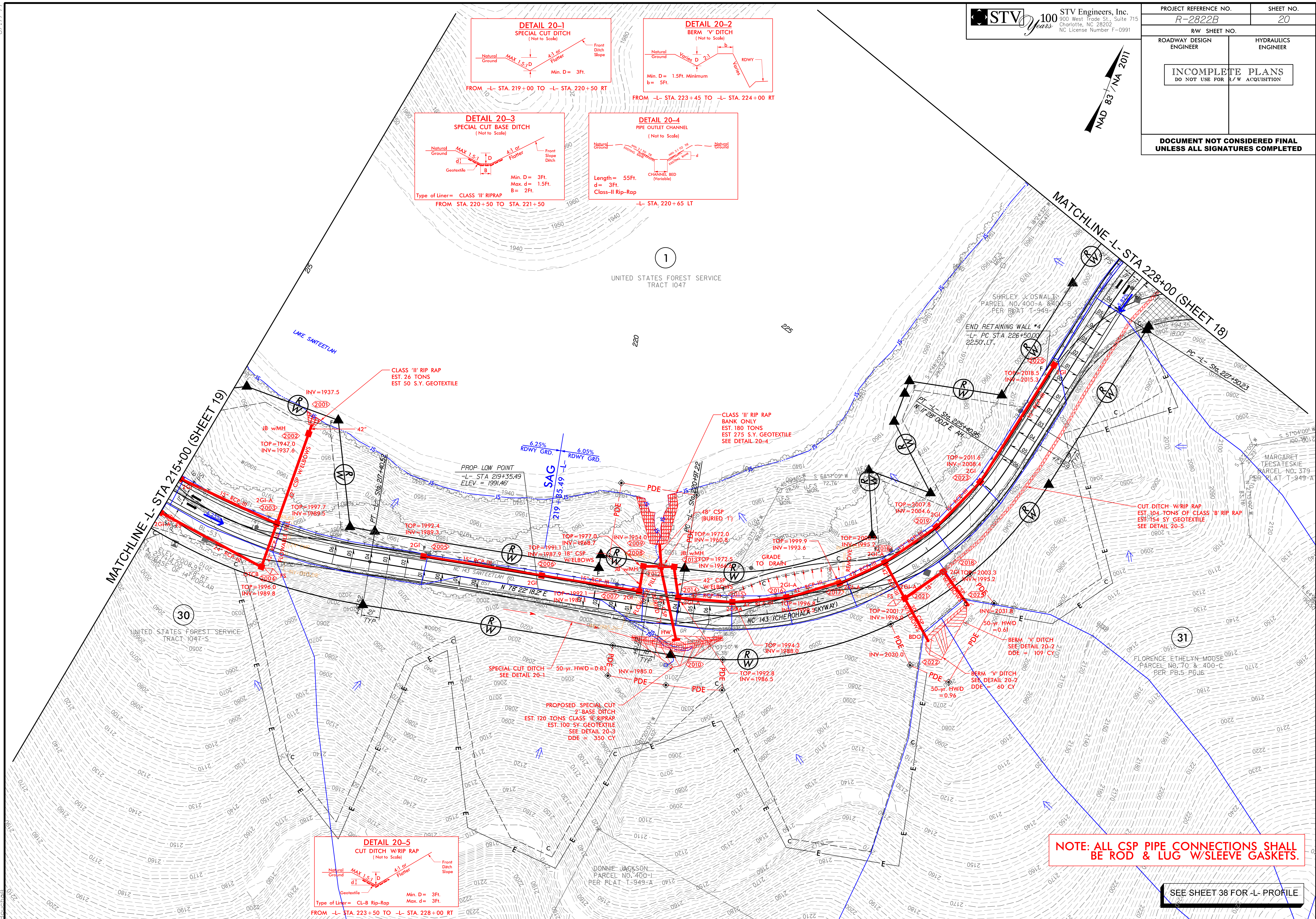


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PROJECT REFERENCE NO. <i>R-2822B</i>		SHEET NO. <i>20</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

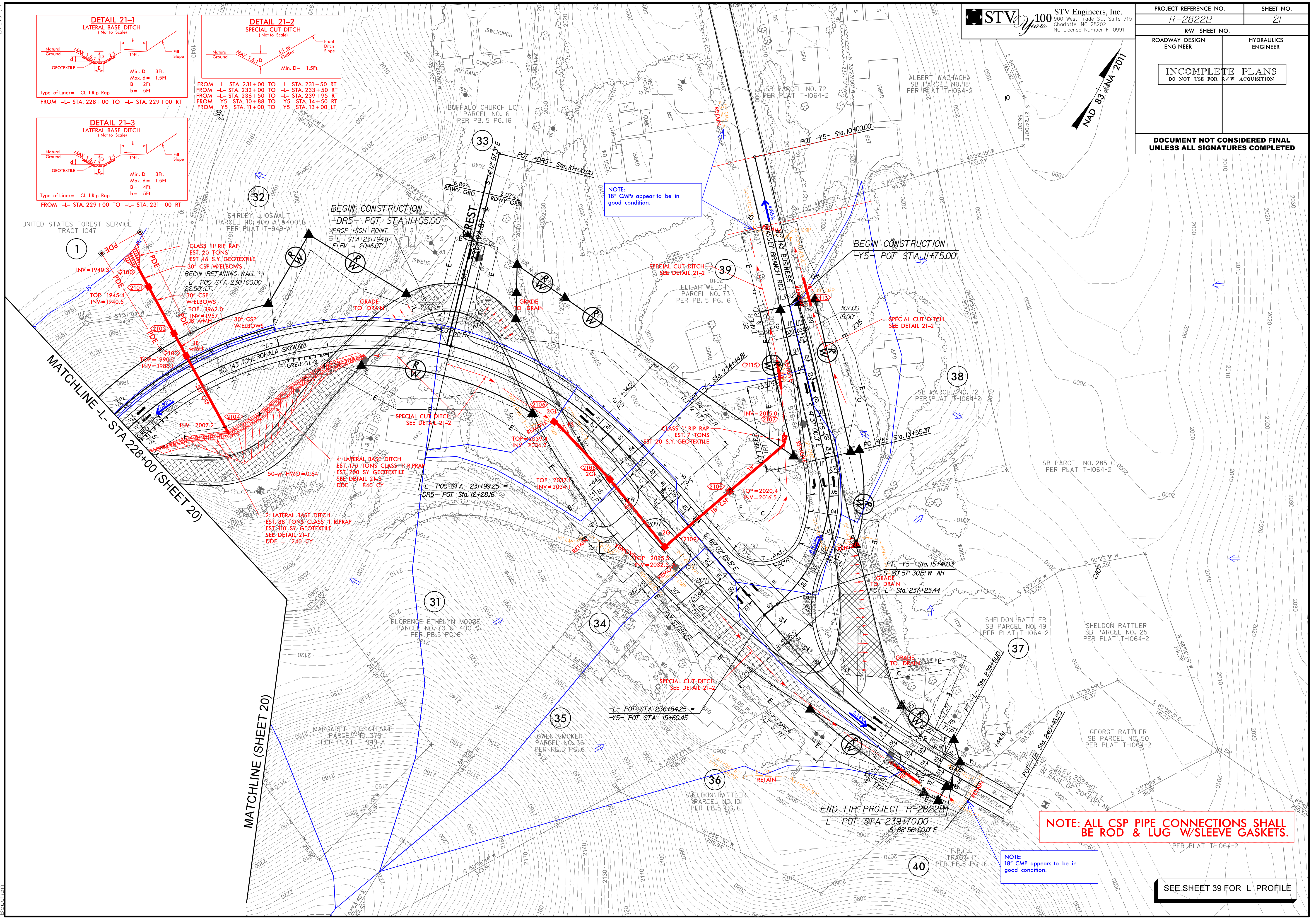
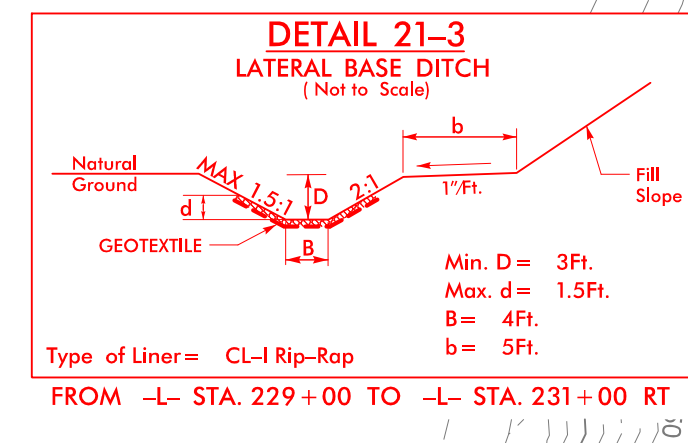
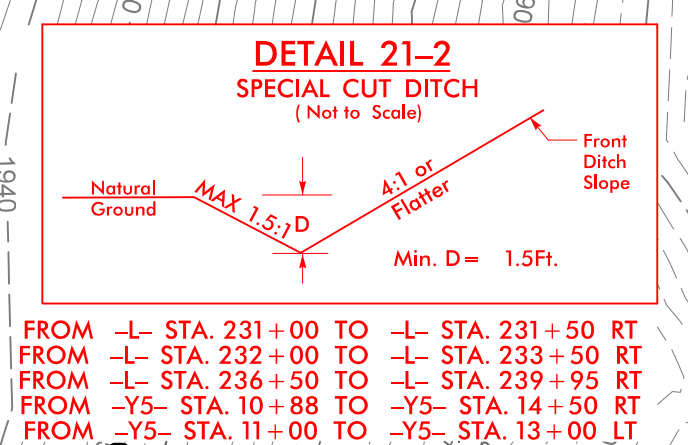
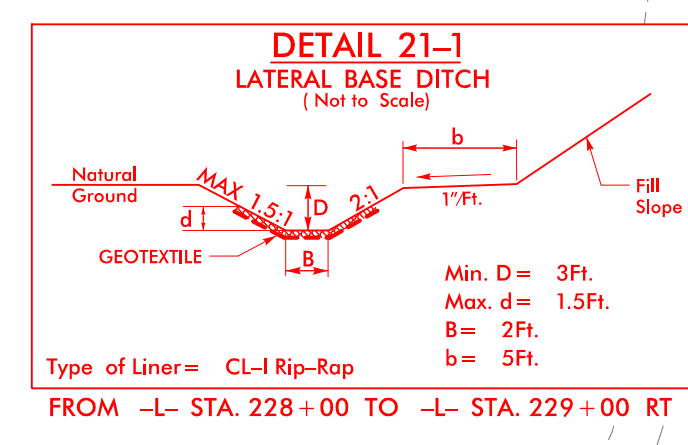
NAD 83 / NA 2011



NOTE: ALL CSP PIPE CONNECTIONS SHALL BE ROD & LUG W/SLEEVE GASKETS.

SEE SHEET 38 FOR -L- PROFILE

8/17/99
4/25/2022
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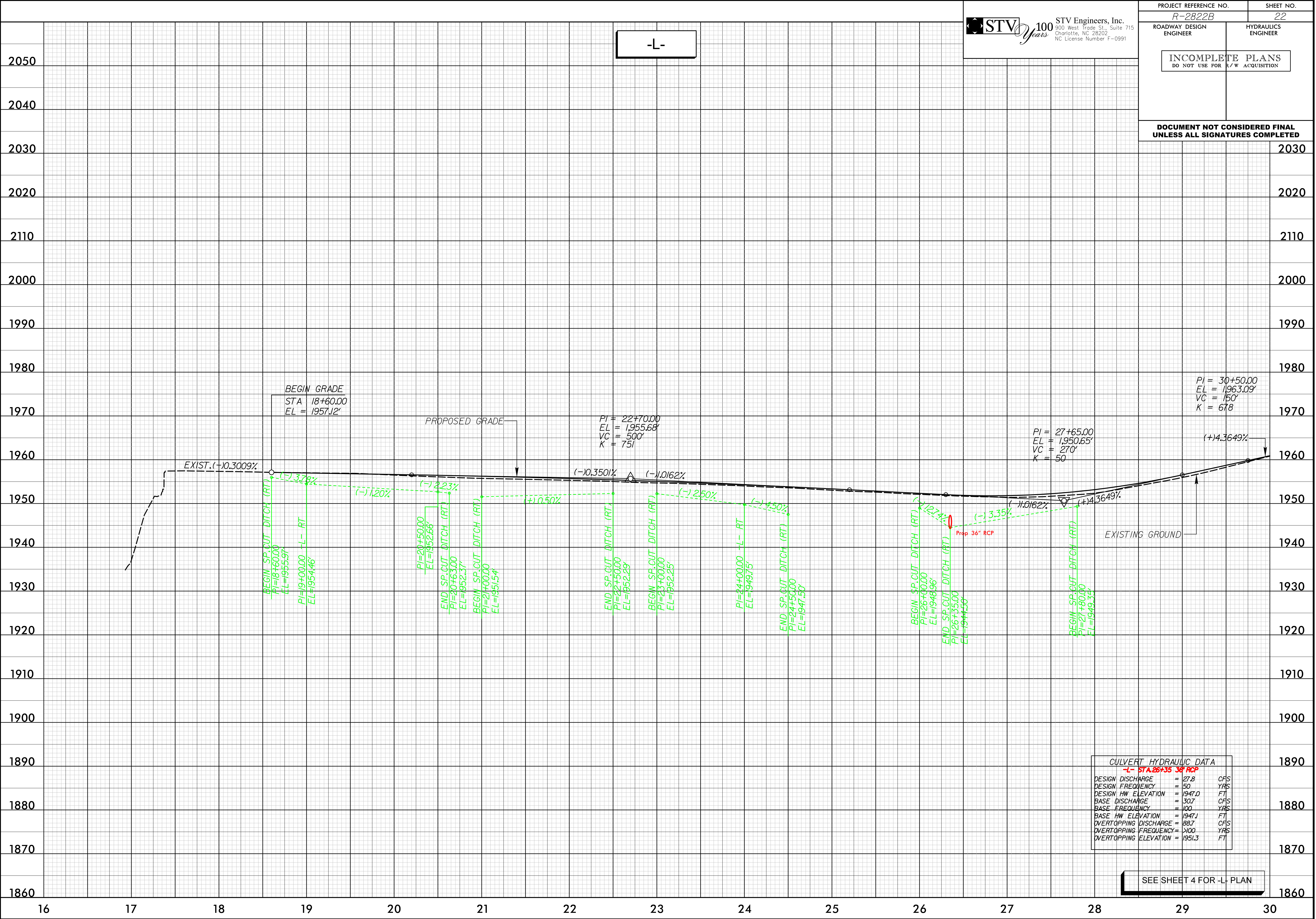
PROJECT REFERENCE NO. <i>R-2822B</i>		SHEET NO. <i>21</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

NOTE: ALL CSP PIPE CONNECTIONS SHALL BE ROD & LUG W/SLEEVE GASKETS.

NOTE:
18" CMP appears to be in good condition.

SEE SHEET 39 FOR -L- PROFILE

4/25/2022
R:\Projects\2022\4/25/2022\PSH\PSH-R-2822B.hyd psh22 pfl.dgn
5/28/99



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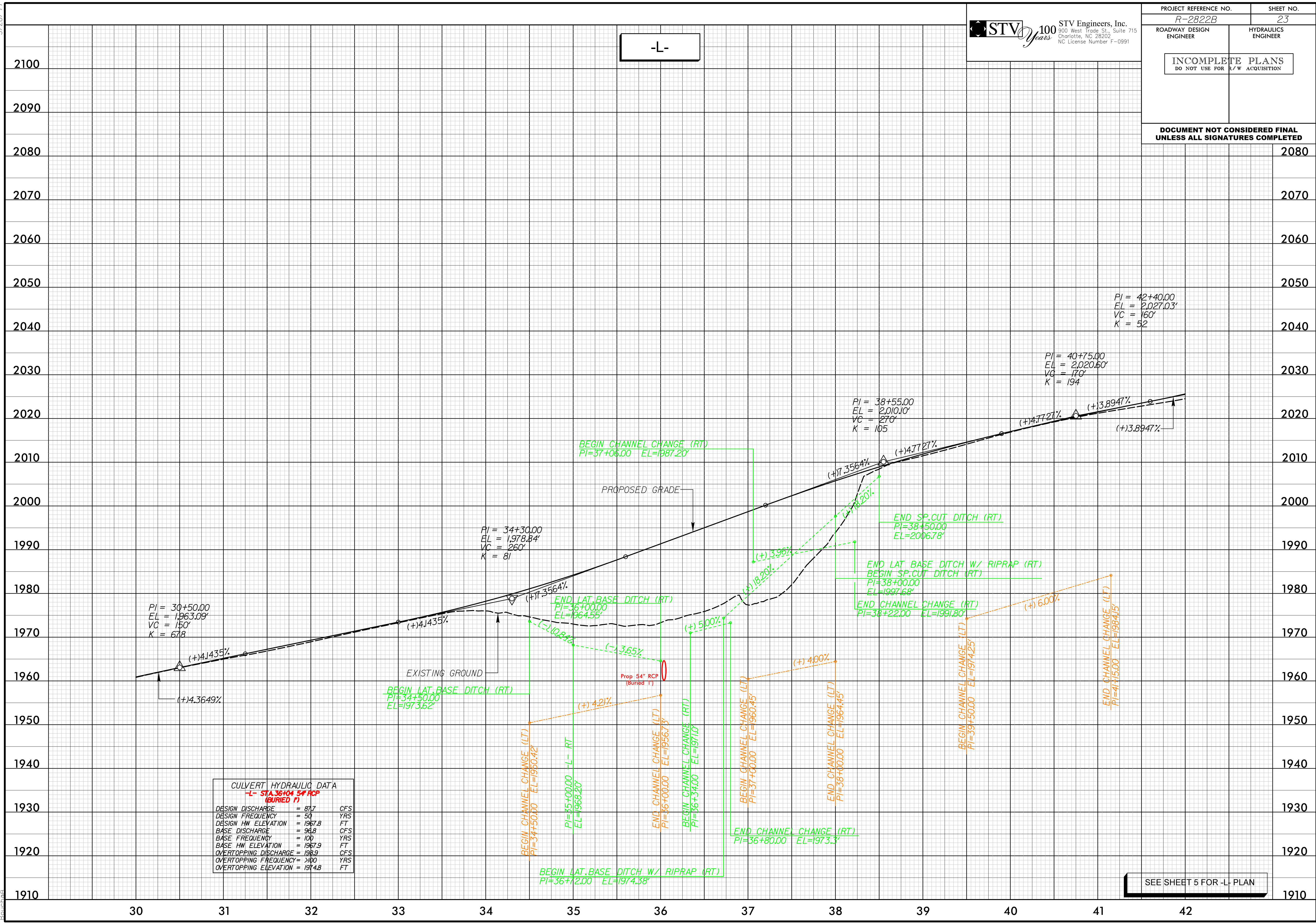
PROJECT REFERENCE NO.		SHEET NO.	
R-2822B		22	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			

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

			2030
			2020
			2110
			2000
			1990
			1980
			1970
			1960
			1950
			1940
			1930
			1920
			1910
			1900
			1890
			1880
			1870
			1860

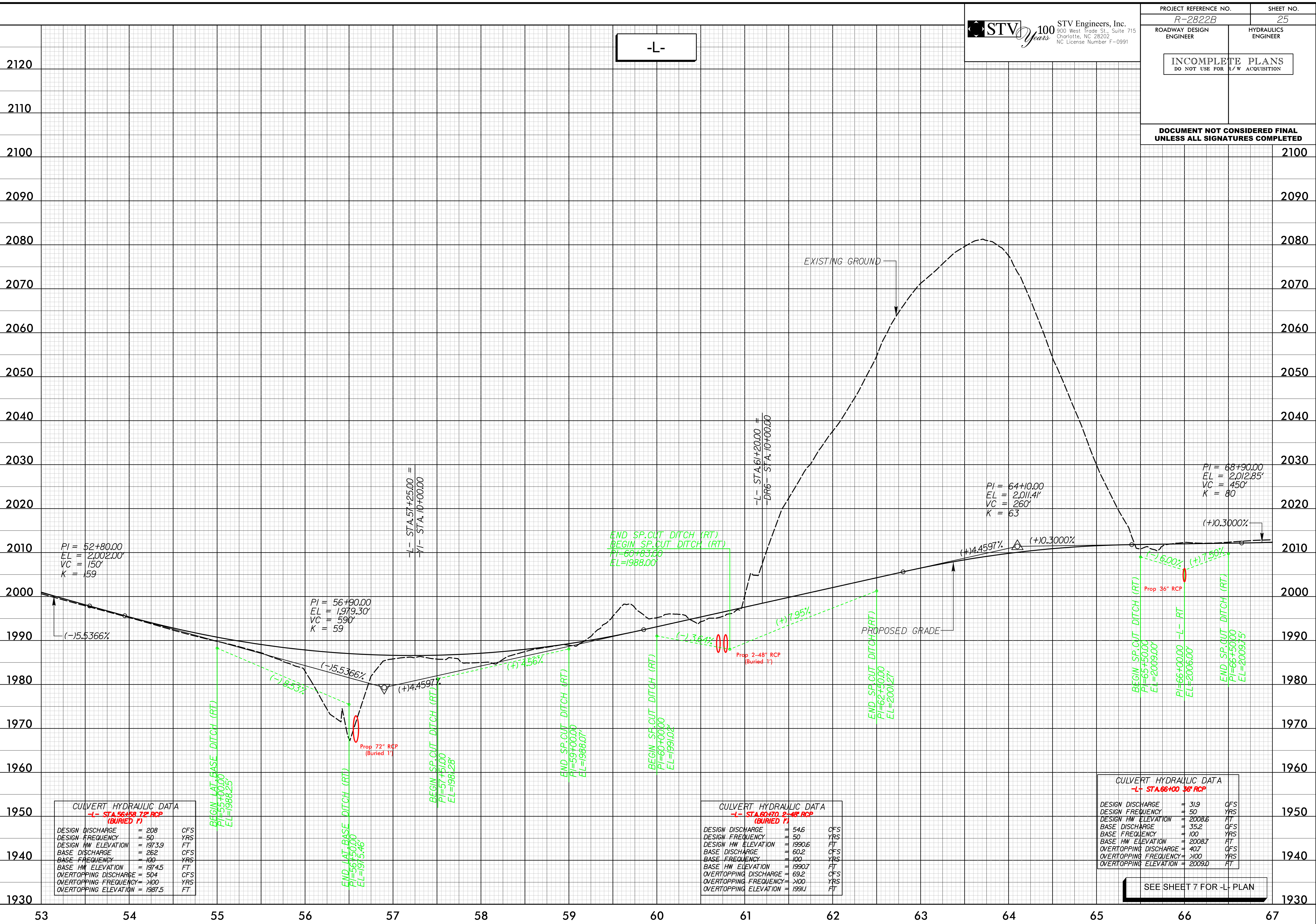
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4/25/2022
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Baudach

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



SEE SHEET 5 FOR -L- PLAN

4/25/2022
R:\Highways\CAAD\PSH\AR-2822B_hyd_psh25_pfl.dgn
B:\Highways\CAAD\PSH\AR-2822B_hyd_psh25_pfl.dgn
5/28/99



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PROJECT REFERENCE NO.
R-2822B

SHEET NO.
25

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

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DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
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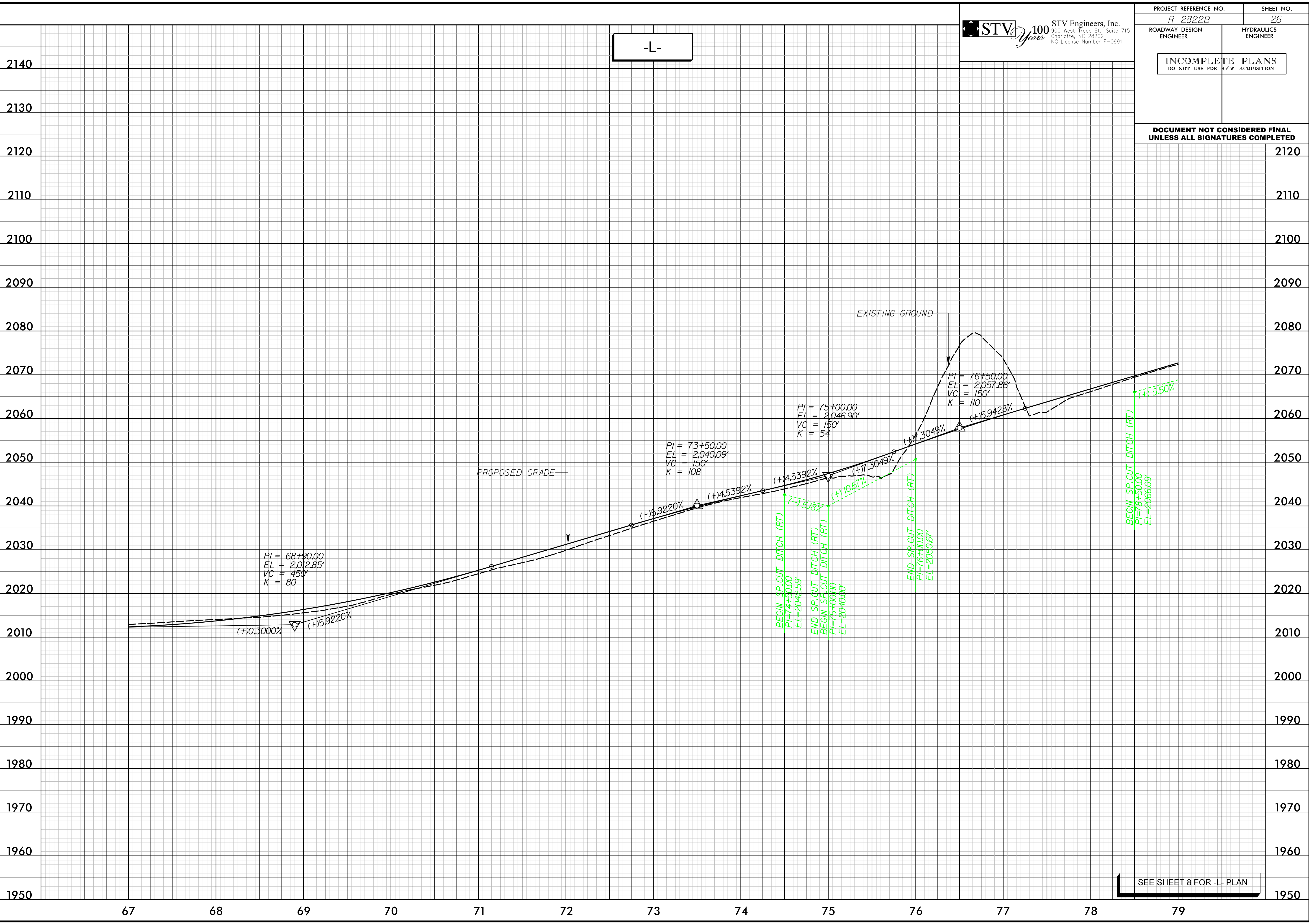
CULVERT HYDRAULIC DATA		
-L- STA 56+58.72 RCP (BURIED 1')		
DESIGN DISCHARGE	= 208	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 1973.9	FT
BASE DISCHARGE	= 262	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1974.5	FT
OVERTOPPING DISCHARGE	= 504	CFS
OVERTOPPING FREQUENCY	= >100	YRS
OVERTOPPING ELEVATION	= 1987.5	FT

CULVERT HYDRAULIC DATA		
-L- STA 60+70.2 RCP (BURIED 1')		
DESIGN DISCHARGE	= 54.6	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 1990.6	FT
BASE DISCHARGE	= 60.2	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1990.7	FT
OVERTOPPING DISCHARGE	= 69.2	CFS
OVERTOPPING FREQUENCY	= >100	YRS
OVERTOPPING ELEVATION	= 1991.1	FT

CULVERT HYDRAULIC DATA		
-L- STA 66+100.36 RCP		
DESIGN DISCHARGE	= 31.9	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 2008.6	FT
BASE DISCHARGE	= 35.2	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2008.7	FT
OVERTOPPING DISCHARGE	= 40.7	CFS
OVERTOPPING FREQUENCY	= >100	YRS
OVERTOPPING ELEVATION	= 2009.0	FT

SEE SHEET 7 FOR -L- PLAN

4/25/2022
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PROJECT REFERENCE NO.
R-2822B

SHEET NO.
26

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

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4/25/2022
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