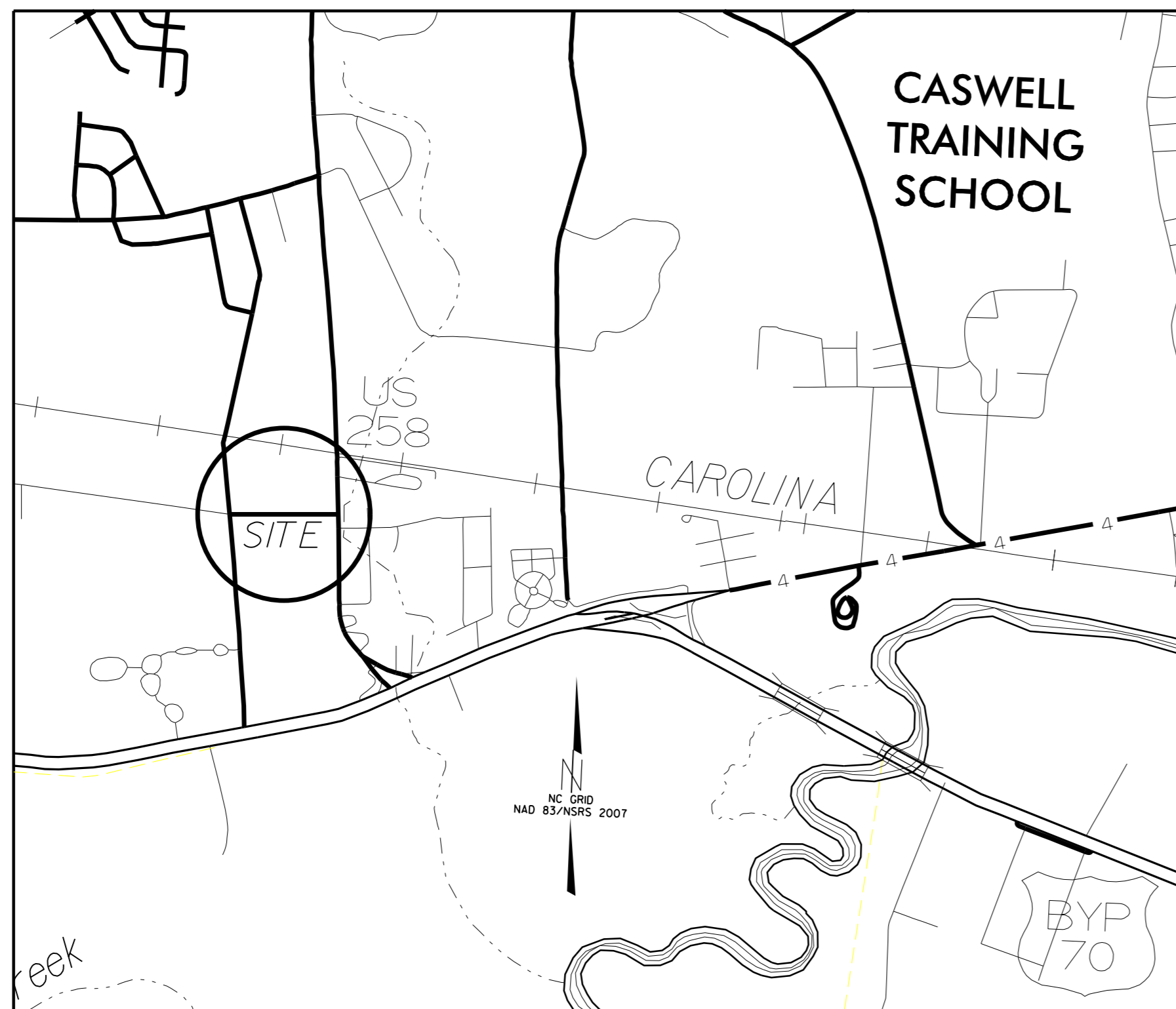


**TIP PROJECT: 49005**

**CONTRACT:**



Vicinity Map  
 See Sheet 1-A For Index of Sheets

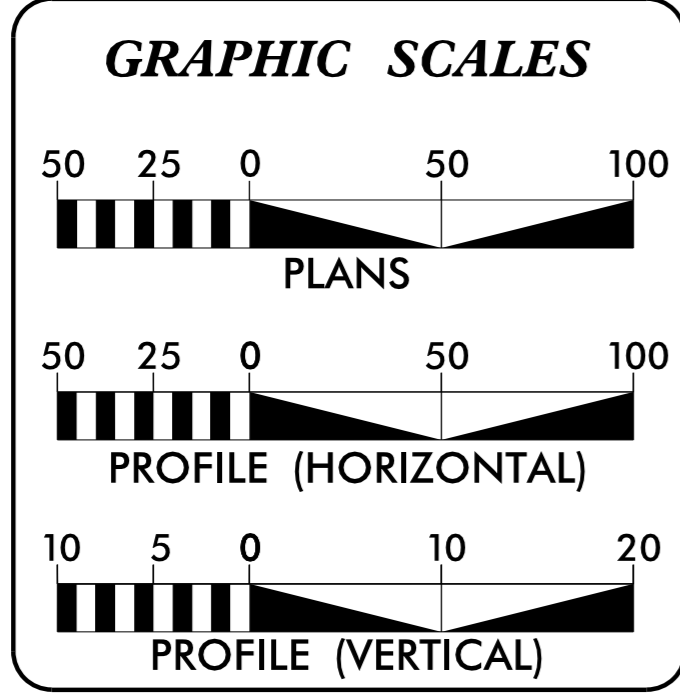
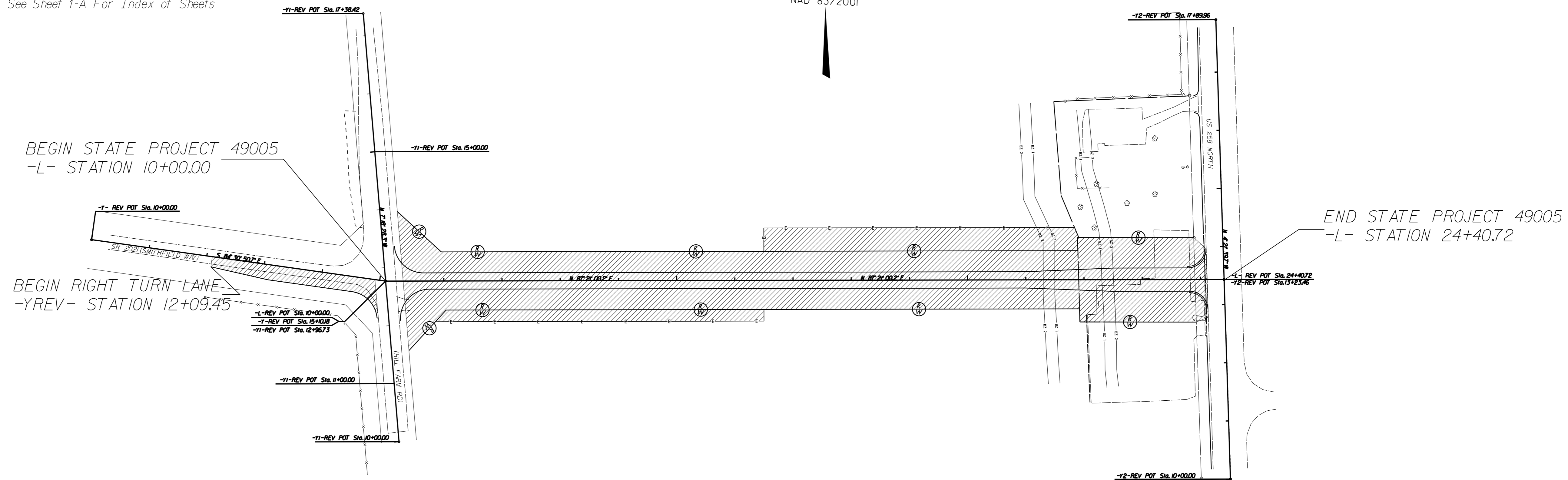
STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**LENOIR COUNTY**

**LOCATION: SR 2021 EXTENSION FROM HILL FARM ROAD  
 TO US 258.**

**TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE.**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	49005	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



**DESIGN DATA**

ADT =	
ADT =	
DHV =	%
D =	%
T =	% *
V =	MPH
* TTST =	DUAL
FUNC CLASS =	

**PROJECT LENGTH**

**TOTAL LENGTH STATE PROJECT 49005 = 0.273 MILES**

Prepared in the Office of:  
**DIVISION OF HIGHWAYS**  
 1704 N. GREENE ST. GREENVILLE, NC 27834

2012 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
 JANUARY 2014

**LETTING DATE:**  
 APRIL 2014

**DWAYNE ALLGOOD**  
 PROJECT ENGINEER

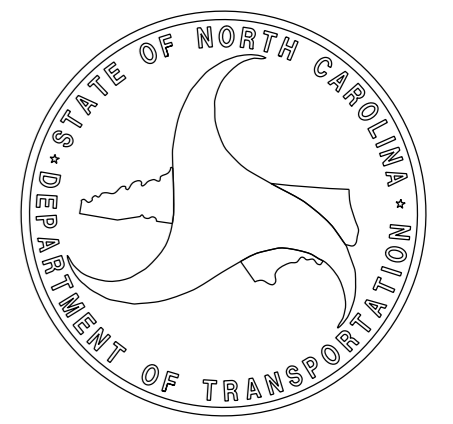
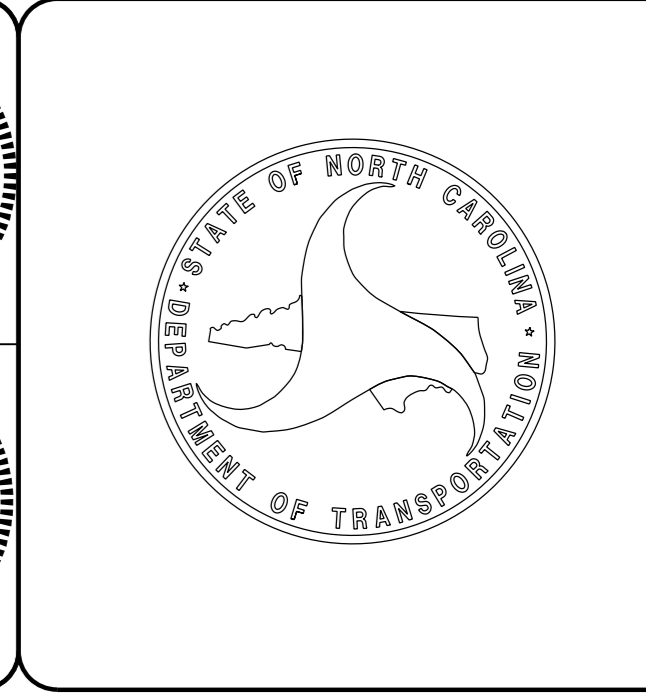
**LANG JONES**  
 PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

*Dwayne H. Allgood*  
 SIGNATURE: 04/02/2014

**ROADWAY DESIGN ENGINEER**

*Dwayne H. Allgood*  
 SIGNATURE: 04/02/2014



REVISIONS

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2	TYPICAL SECTIONS
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF EARTHWORK AND DRAINAGE QUANTITIES
4-5	PLAN AND PROFILE SHEET
EC1-EC4	EROSION CONTROL SHEETS
X1A	CROSS-SECTION SUMMARY
X1-X3	CROSS-SECTIONS
C1-C5	STRUCTURES

GENERAL NOTES:

2012 SPECIFICATIONS  
EFFECTIVE: 01-17-12  
REVISED: 11/01/11

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD 11.

UTILITIES:

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
209.02	Method of Clearing - Method 11
225.02	Guide for Grading Subgrade - Secondary and Local
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
846.01	Concrete Curb, Gutter and Curb & Gutter

12/05/11

Note: Not to Scale

\*S.U.E. = Subsurface Utility Engineering

# CONVENTIONAL PLAN SHEET SYMBOLS

## BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Property Corner	----->
Property Monument	□ ECM
Parcel/Sequence Number	⑫③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	----- MLB
Proposed Wetland Boundary	----- MLB
Existing Endangered Animal Boundary	----- EAB
Existing Endangered Plant Boundary	----- EPB
Known Soil Contamination: Area or Site	☠
Potential Soil Contamination: Area or Site	☠?

## 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	○ CSX TRANSPORTATION MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

## RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	----- RW
Proposed Right of Way Line with Iron Pin and Cap Marker	----- RW ▲
Proposed Right of Way Line with Concrete or Granite R/W Marker	----- RW ●
Proposed Control of Access Line with Concrete CA Marker	----- CA
Existing Control of Access	----- CA
Proposed Control of Access	----- CA
Existing Easement Line	----- E
Proposed Temporary Construction Easement	----- E
Proposed Temporary Drainage Easement	----- TDE
Proposed Permanent Drainage Easement	----- PDE
Proposed Permanent Drainage / Utility Easement	----- DUE
Proposed Permanent Utility Easement	----- PUE
Proposed Temporary Utility Easement	----- TUE
Proposed Aerial Utility Easement	----- AUE
Proposed Permanent Easement with Iron Pin and Cap Marker	----- ◆

## ROADS AND RELATED FEATURES:

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

## VEGETATION:

Single Tree	○
Single Shrub	○
Hedge	-----
Woods Line	-----

Orchard	-----
Vineyard	-----

## 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	●
Recorded U/G Power Line	----- P
Designated U/G Power Line (S.U.E.*)	----- P

## TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Booth	□
Telephone Pedestal	⊕
Telephone Cell Tower	●
U/G Telephone Cable Hand Hole	□
Recorded U/G Telephone Cable	----- T
Designated U/G Telephone Cable (S.U.E.*)	----- T
Recorded U/G Telephone Conduit	----- TC
Designated U/G Telephone Conduit (S.U.E.*)	----- TC
Recorded U/G Fiber Optics Cable	----- T FO
Designated U/G Fiber Optics Cable (S.U.E.*)	----- T FO

## WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded U/G Water Line	----- W
Designated U/G Water Line (S.U.E.*)	----- W
Above Ground Water Line	----- A/G Water

## TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	□
Recorded U/G TV Cable	----- TV
Designated U/G TV Cable (S.U.E.*)	----- TV
Recorded U/G Fiber Optic Cable	----- TV FO
Designated U/G Fiber Optic Cable (S.U.E.*)	----- TV FO

## GAS:

Gas Valve	◇
Gas Meter	⊕
Recorded U/G Gas Line	----- G
Designated U/G Gas Line (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
Recorded SS Forced Main Line	----- FSS
Designated SS Forced Main Line (S.U.E.*)	----- FSS

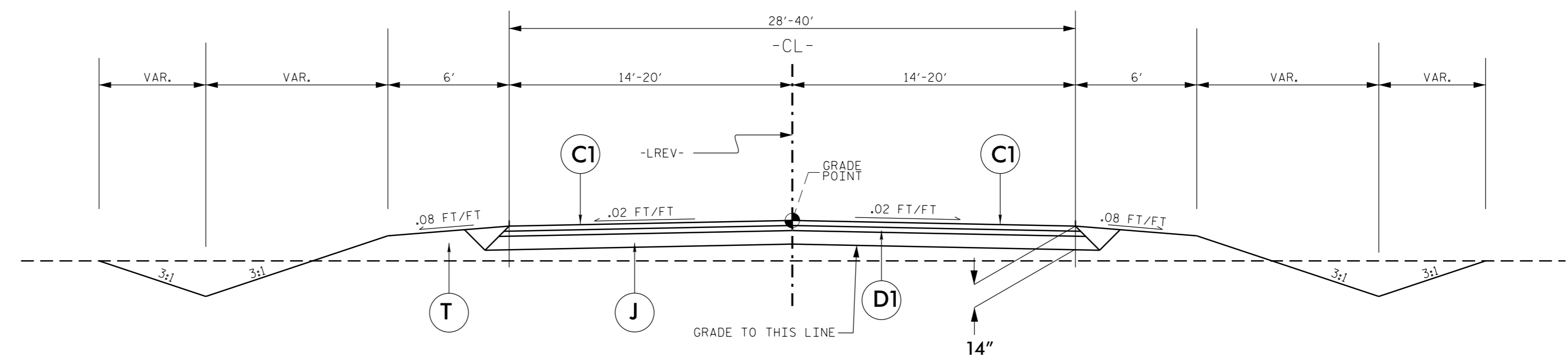
## MISCELLANEOUS:

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

6/2/99

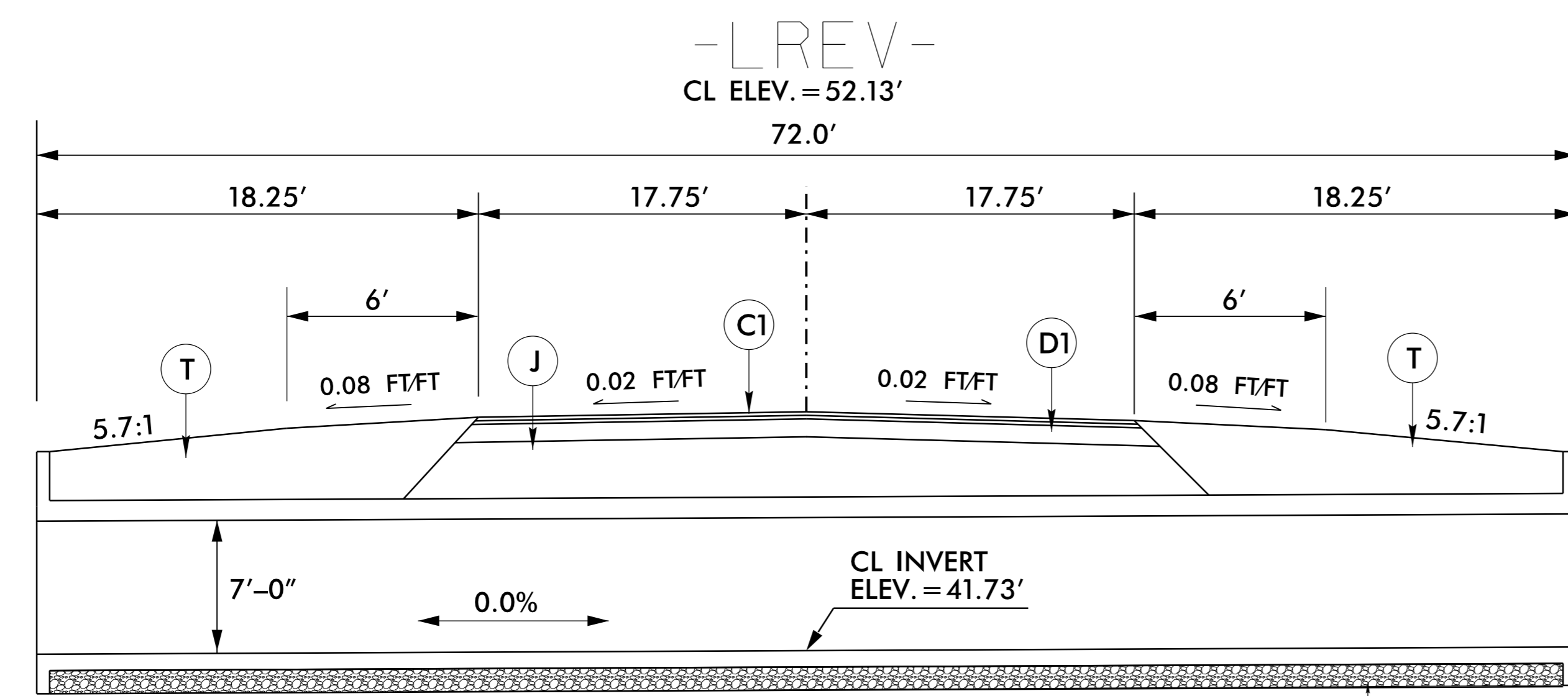
PROJECT REFERENCE NO. 49005	SHEET NO. 2
ROADWAY DESIGN ENGINEER <i>[Signature]</i> SEAL 16710 DWAYNE H. ALLIGOOD	PAVEMENT DESIGN ENGINEER <i>[Signature]</i> SEAL 16710 DWAYNE H. ALLIGOOD
04/02/2014	04/02/2014

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD.
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
F	FOUNDATION CONDITIONING MATERIAL (STRUCTURES)
J	PROP. APPROX. 8" AGGREGATE BASE COURSE
T	EARTH MATERIAL.

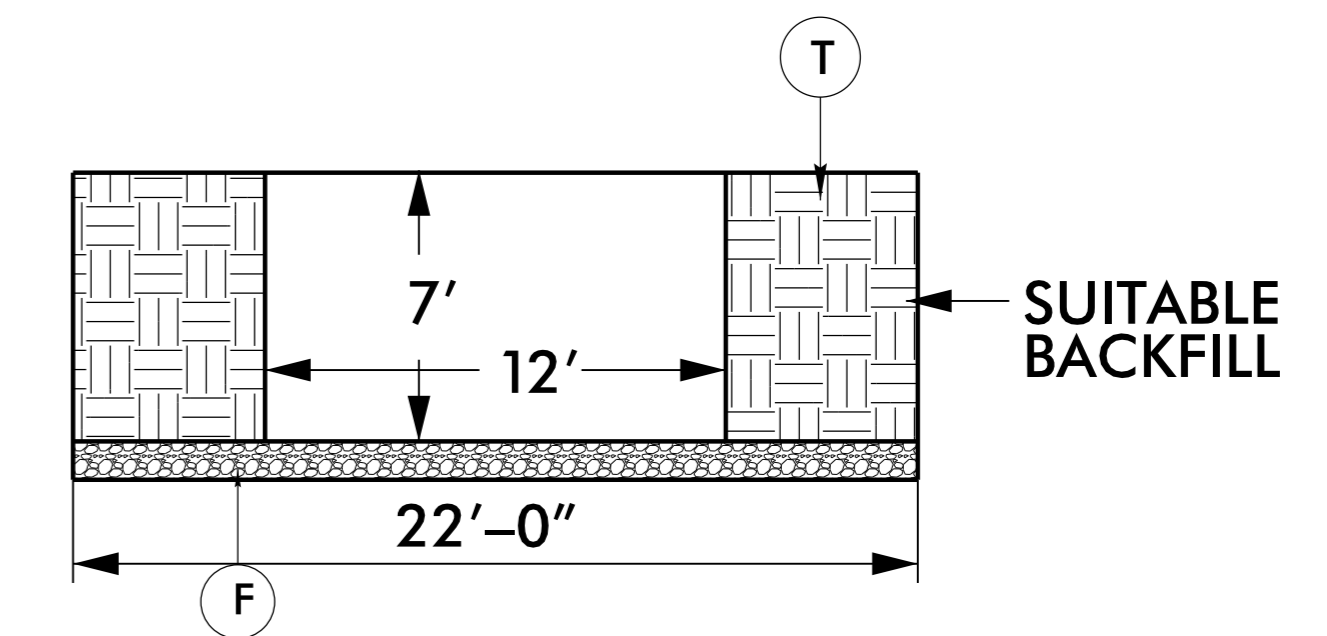


TYPICAL SECTION #1 (NTS)  
-LREV- STATION 10+44.52 - 23+80.84

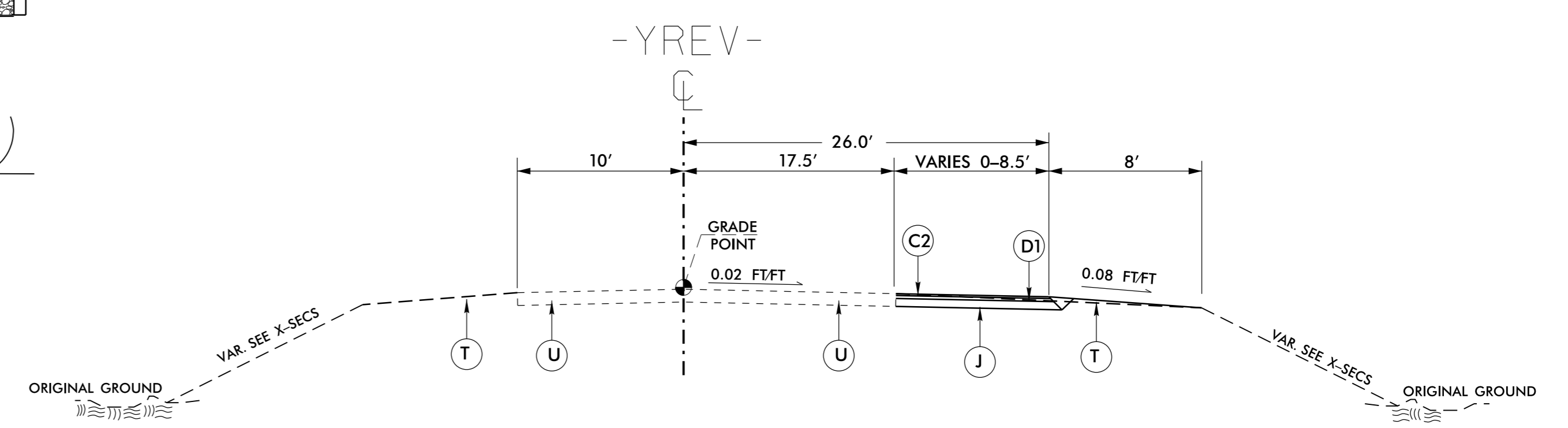
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL BOX CULVERT SECTION #2 (NTS)  
-LREV- STATION 12+89.80



END VIEW BOX CULVERT (NTS)



TYPICAL SECTION #3 (NTS)  
-YREV- STATION 12+09.45 - 15+00.00

03\_APR\_2014 4:08 C:\Users\US70\_Hill Farm Rd\revised\SR2021\text\_psh2\_rev.dgn



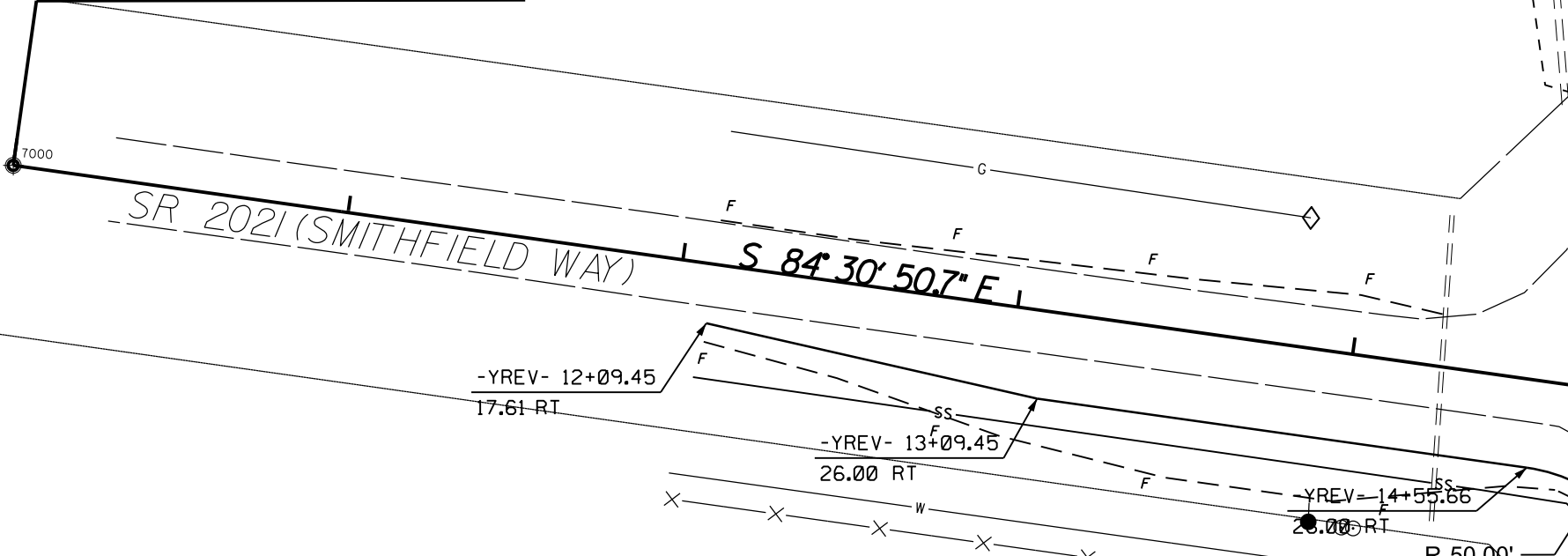


**RIGHT OF WAY AREA SUMMARY**

PARCEL NO.	PROPERTY OWNER NAME	LOCATION	TOTAL PARCEL AREA (ACRES)	AREA TO BE PURCHASED (RIGHT OF WAY) (ACRES)	AREA TO BE PURCHASED (TEMP. CONST. EASEMENT) (ACRES)	PARCEL AREA REMAINING (ACRES)
1	NC STATE PROPERTY OF CASWELL	LT RT -L-	236.280	2.779	0.749	232.752
2	RANDY AND CARRIE JONES	LT -L-	1.220	0	0	1.220
3	WALTER AND SYLVIA POOLE	LT RT -L-	0.665	0.665	0	0
4	WALTER AND SYLVIA POOLE	RT -L-	0.770	0	0	0.770

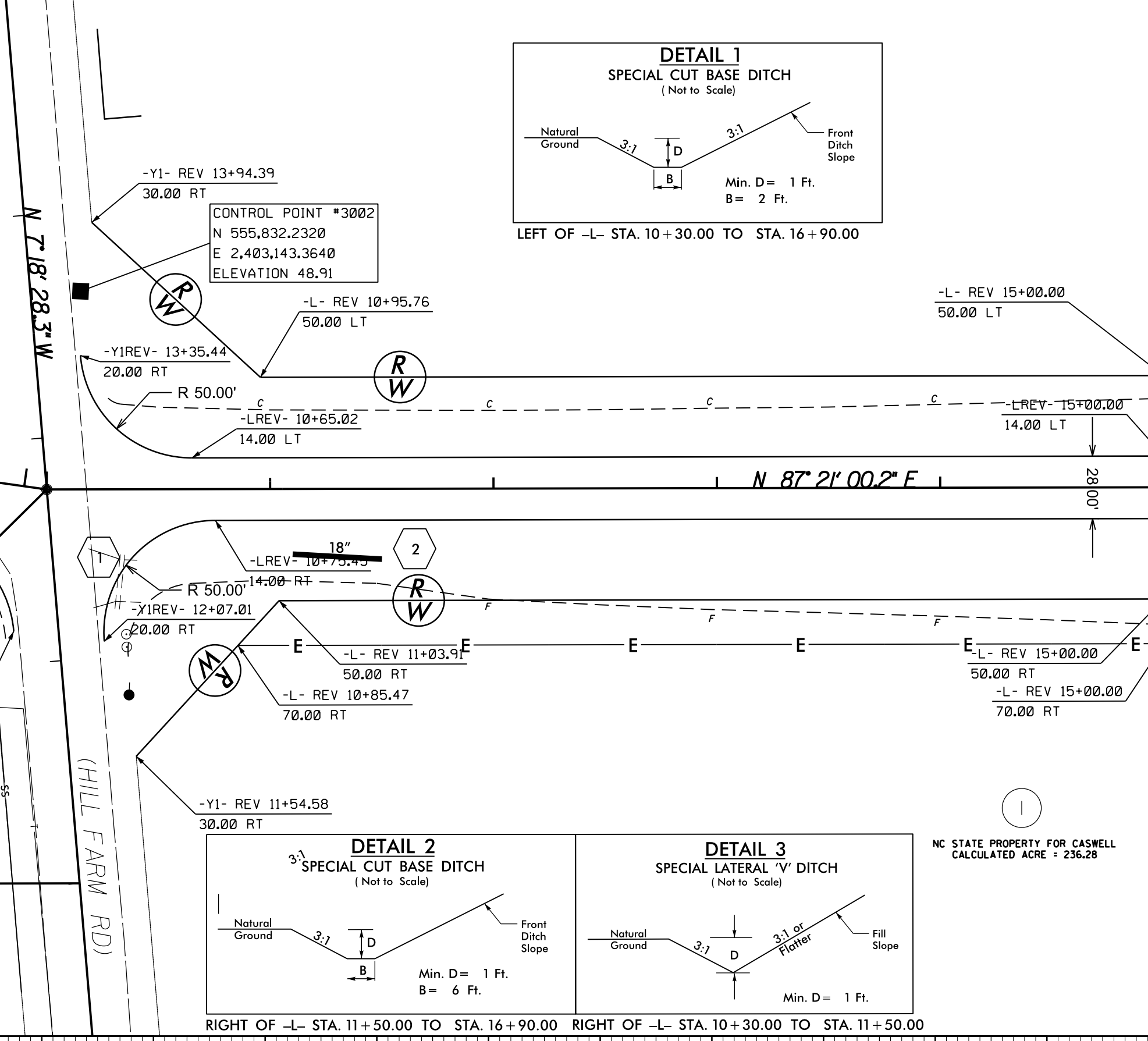


-Y- REV POT Sta. 10+00.00



**DATUM DESCRIPTION**  
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "3002"  
 WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF NORTHING: 555832.2320(ft) EASTING: 2403143.3640(ft) ELEVATION: 48.9050(ft)  
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998759352  
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "3002" TO -L-REV STATION 10+00.00 IS S 07° 08' 21" W 89.99'  
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

-Y1-REV POT Sta. 15+00.00

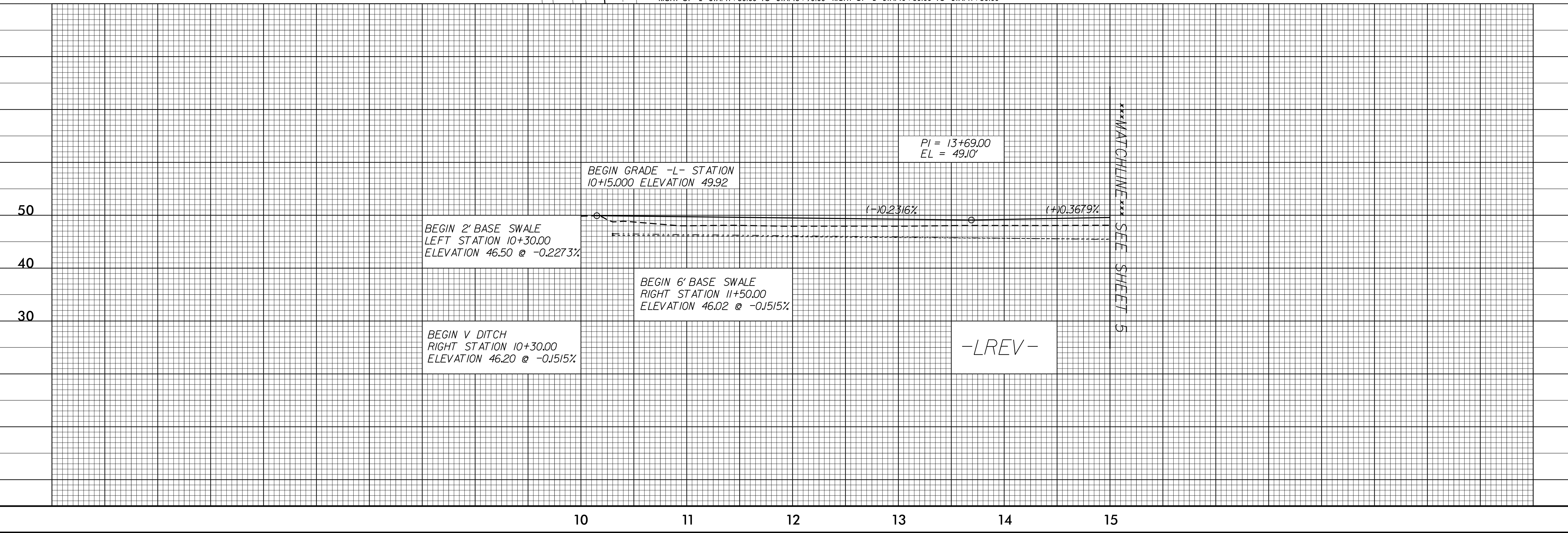


\*\*\*MATCHLINE\*\*\* SEE SHEET 5

**PROJECT CONTROL POINTS**

POINT#	NORTH	EAST	ELEVATION	DESCRIPTION
3000	556,223.8210	2,404,496.1700	50.4270	REBAR WITH ALUM. DISK
3001	555,910.5290	2,404,520.9440	49.3310	REBAR WITH ALUM. DISK
3002	555,832.2320	2,403,143.3640	48.9050	REBAR WITH ALUM. DISK
3003	556,189.5060	2,403,104.8450	47.3830	REBAR WITH ALUM. DISK

REVISIONS



\*\*\*MATCHLINE\*\*\* SEE SHEET 5

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 8/17/99

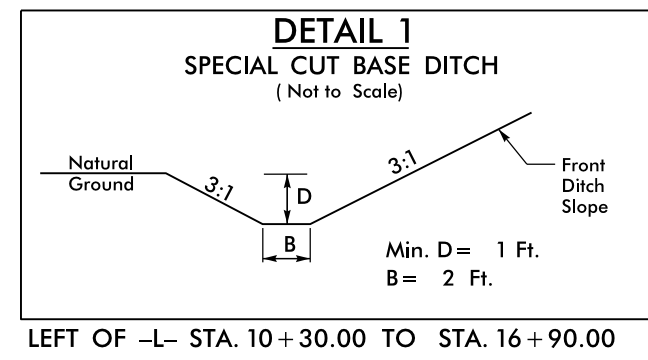
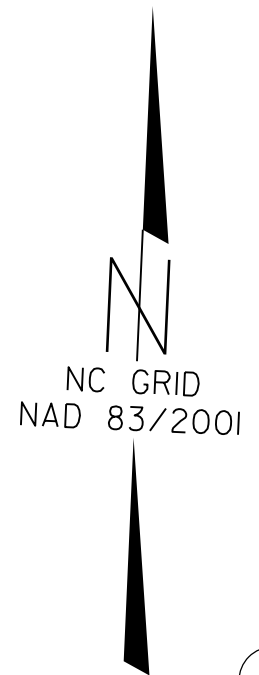
**RIGHT OF WAY AREA SUMMARY**

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1	NC STATE PROPERTY OF CASWELL	LT -L-	236.280	2.779	0.749	232.752
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3	WALTER AND SYLVIA POOLE	LT -L-	0.665	0.665	0	0
4	WALTER AND SYLVIA POOLE	RT -L-	0.770	0	0	0.770

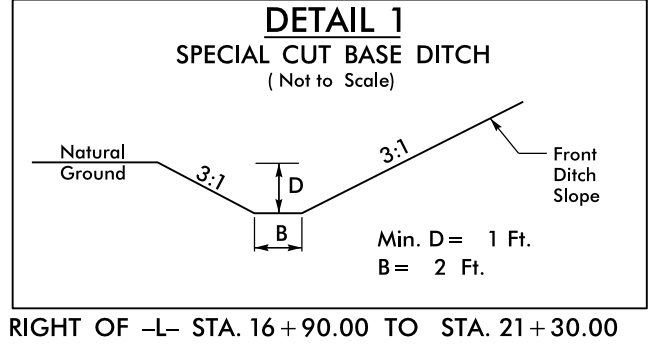
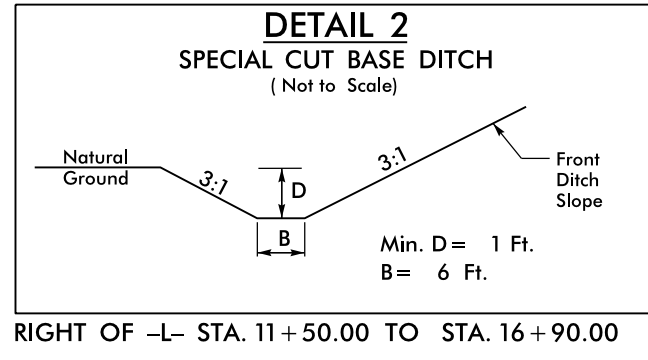
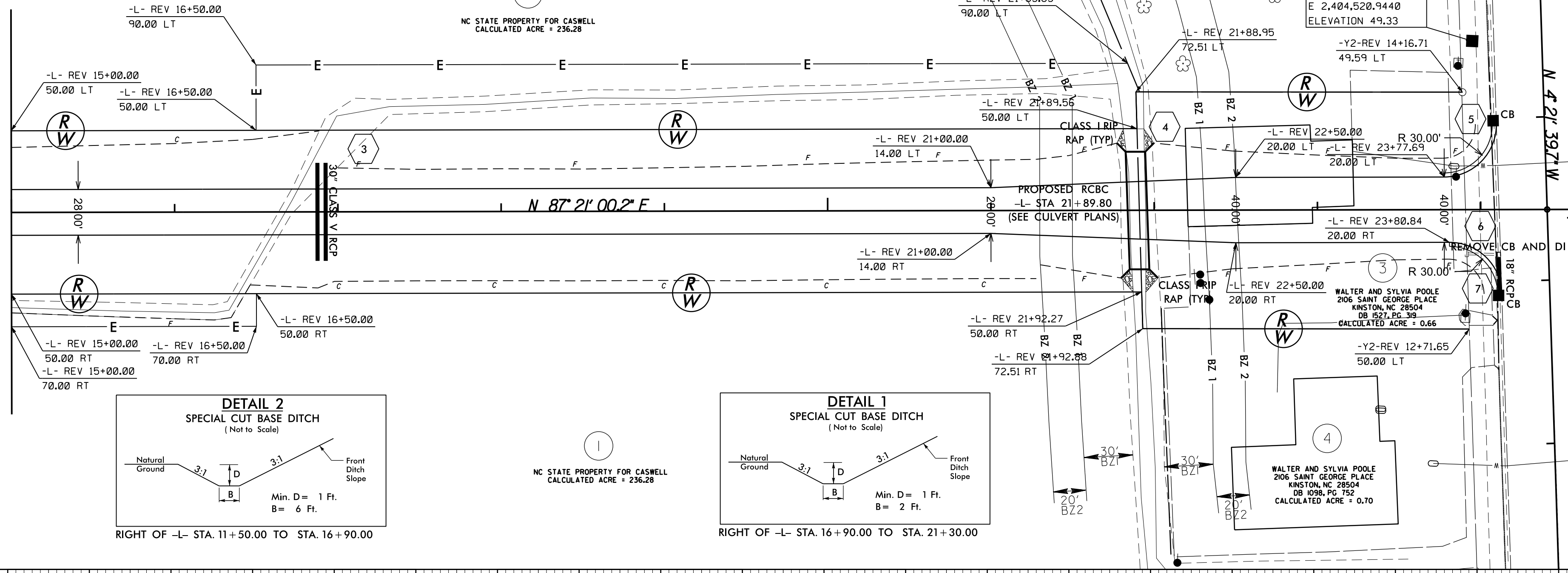
PROJECT REFERENCE NO. 49005	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PROJECT CONTROL POINTS**

POINT#	NORTH	EAST	ELEVATION	DESCRIPTION
3000	556,223.8210	2,404,496.1700	50.4270	REBAR WITH ALUM. DISK
3001	555,910.5290	2,404,520.9440	49.3310	REBAR WITH ALUM. DISK
3002	555,832.2320	2,403,143.3640	48.9050	REBAR WITH ALUM. DISK
3003	556,189.5060	2,403,104.8450	47.3830	REBAR WITH ALUM. DISK

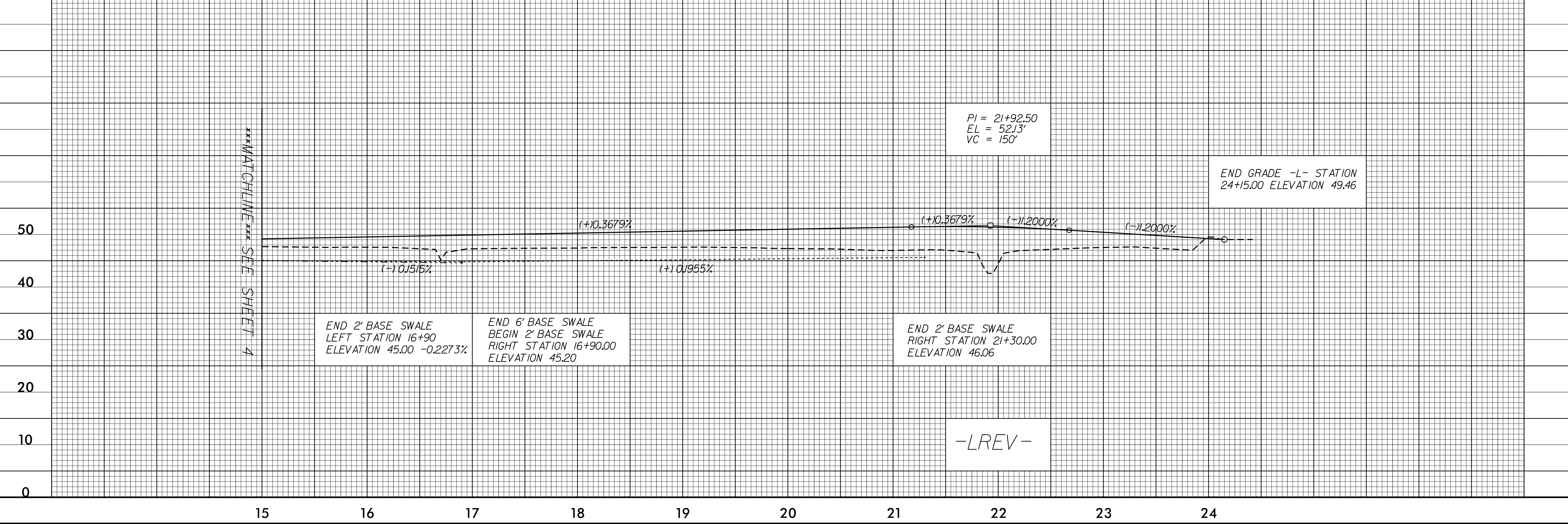


\*\*\*MATCHLINE\*\*\* SEE SHEET 4



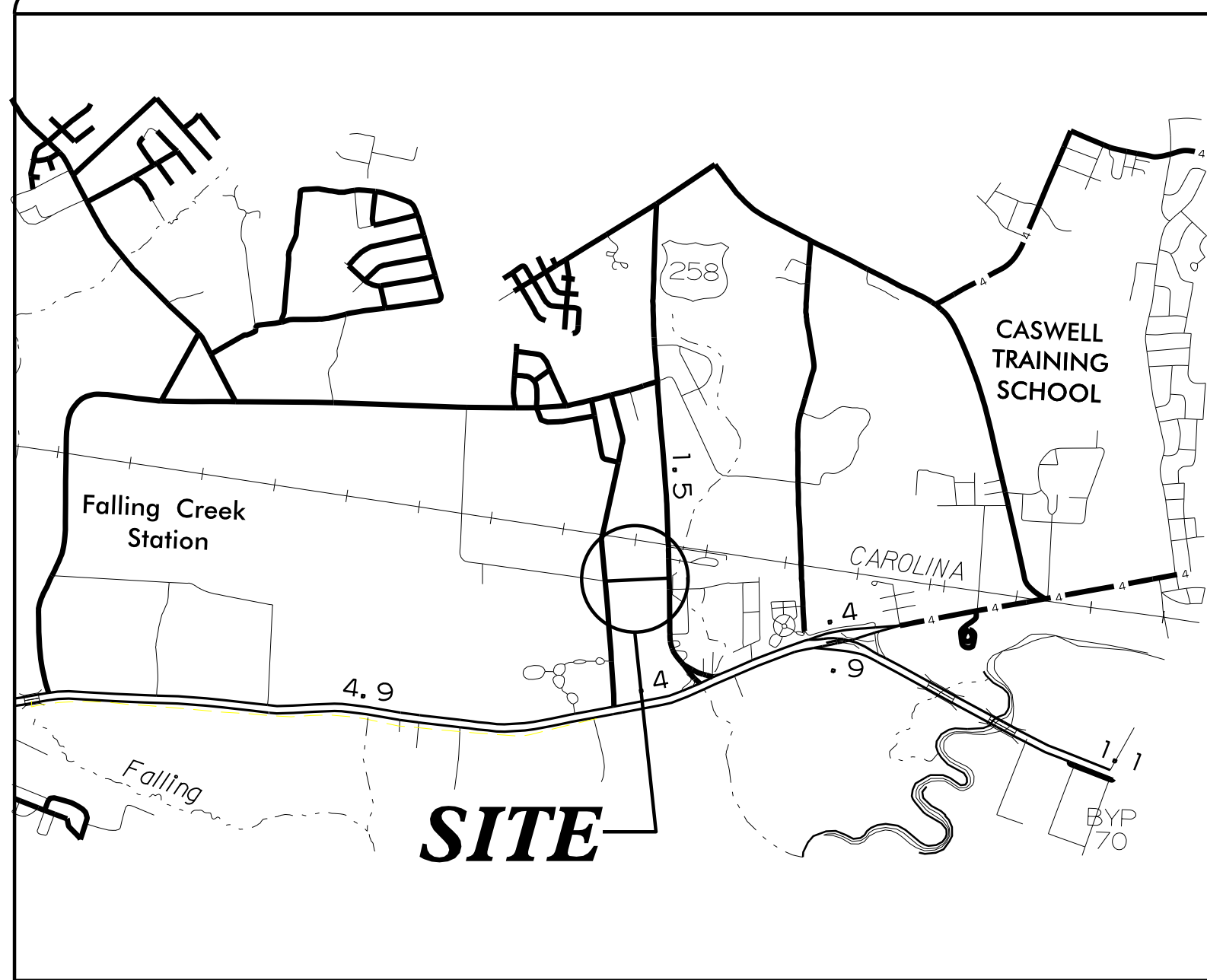
REVISIONS

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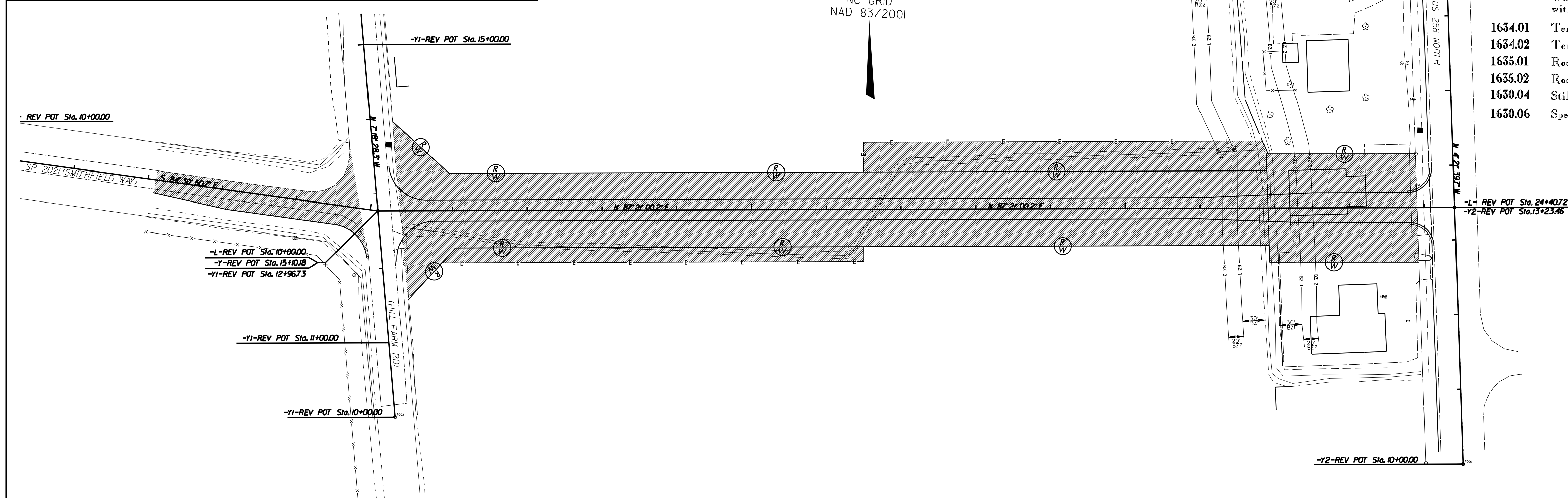




**STATE PROJECT: 49005**



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



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	49005	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
		PE	
		RW	
		CONST	

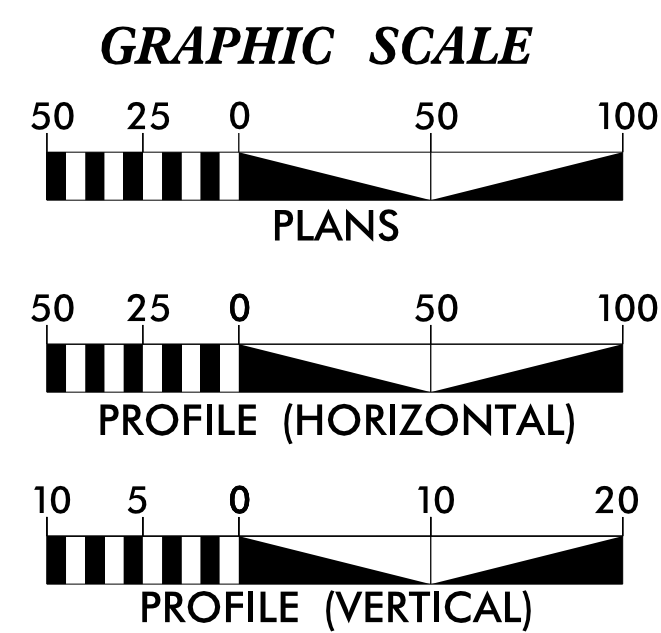
**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
1607.01	Gravel Construction Entrance	
1630.03	Temporary Silt Ditch	
1630.05	Temporary Diversion	
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1635.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1635.02	Temporary Rock Silt Check Type-B	
	Wattle/Coir Fiber Wattle	
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	

**THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.**

**ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT**  
*Refer To E. C. Special Provisions for Special Considerations.*

**EC TITLE SHEET (NTS)**



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared in the Office of:  
**DIVISION 2 DDC**  
1704 North Greene Street  
Greenville, NC 27835  
**2012 STANDARD SPECIFICATIONS**

VAN TRAN, ASST. DDC ENGINEER  
LEVEL III CERTIFICATION #3601

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

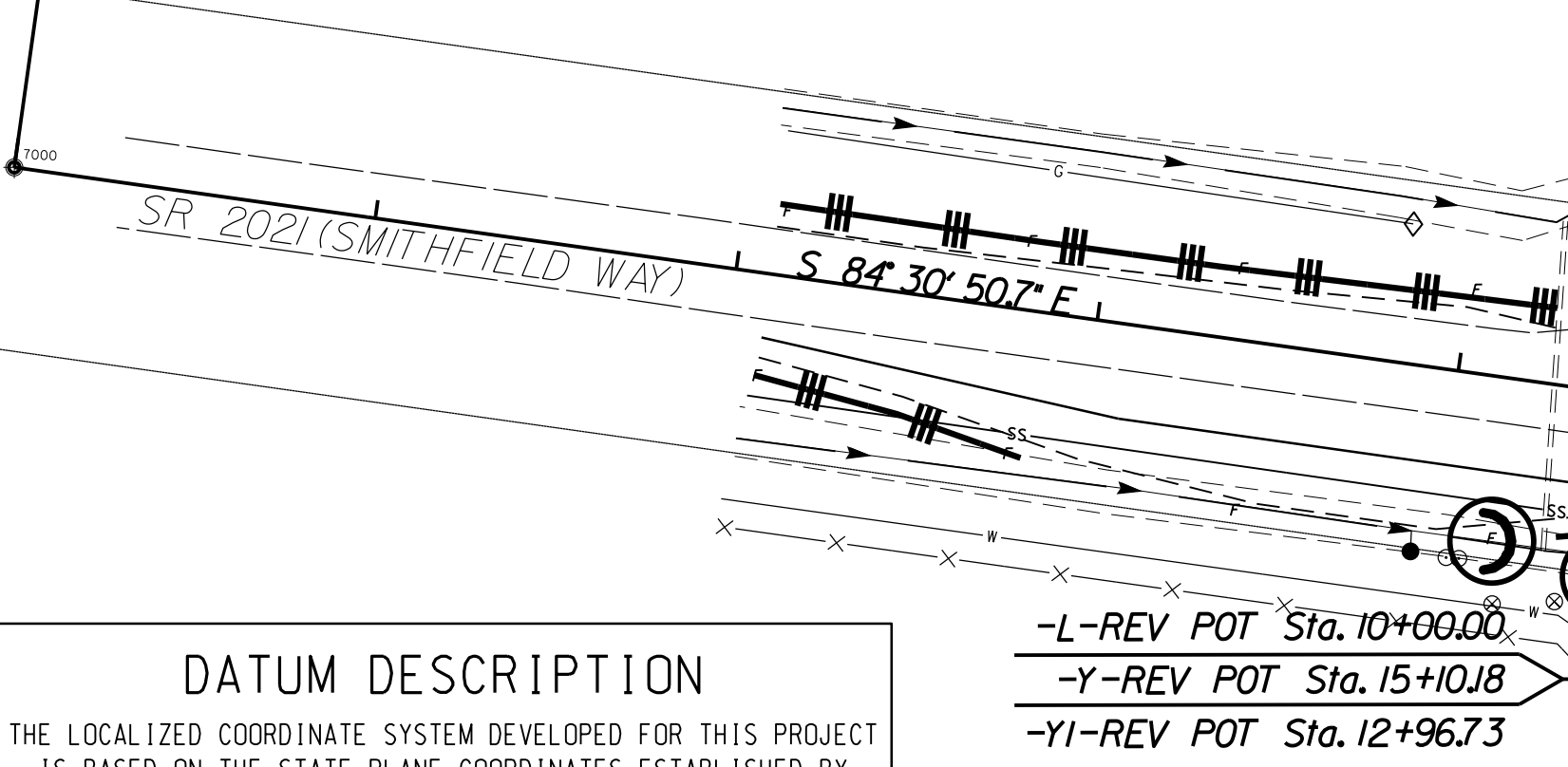
1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type A
1622.01 Temporary Berms and Slope Drains	1633.02 Temporary Rock Silt Check Type B
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type B	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Coir Fiber Baffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	



**RIGHT OF WAY AREA SUMMARY**

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-Y- REV POT Sta. 10+00.00



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 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998759352  
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "3002" TO -L-REV STATION 10+00.00 IS S 07°08'21"W 89.99'  
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

-L-REV POT Sta. 10+00.00  
 -Y-REV POT Sta. 15+10.18  
 -YI-REV POT Sta. 12+96.73

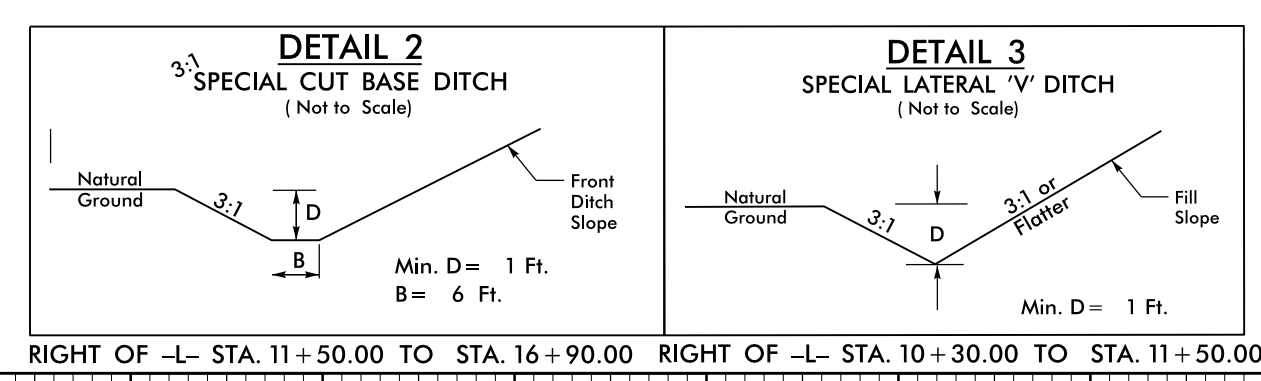
-YI-REV POT Sta. 11+00.00

N 7° 18' 28.3" W (HILL FARM RD)

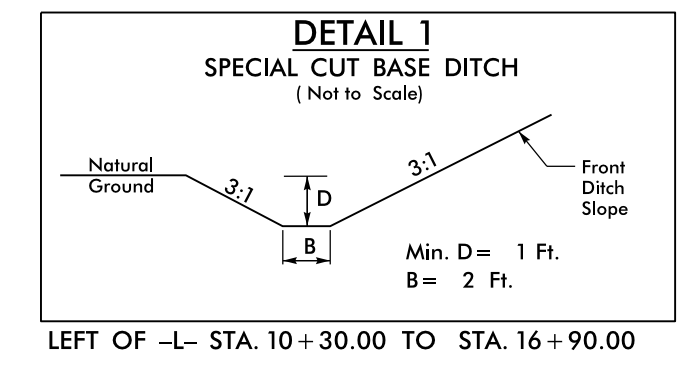
-YI-REV POT Sta. 15+00.00

GRAVEL CONSTRUCTION ENTRANCE (TO BE LOCATED BY THE ENGINEER)

N 87° 21' 00.2" E



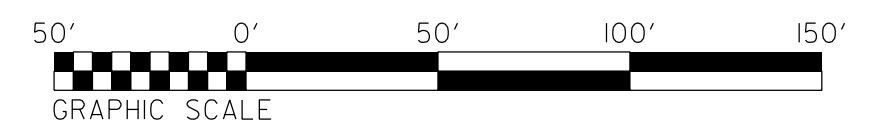
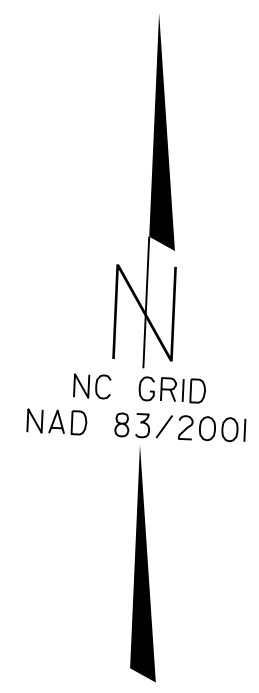
RIGHT OF -L- STA. 11+50.00 TO STA. 16+90.00 RIGHT OF -L- STA. 10+30.00 TO STA. 11+50.00



LEFT OF -L- STA. 10+30.00 TO STA. 16+90.00

NC STATE PROPERTY FOR CASWELL CALCULATED ACRE = 236.28

NC STATE PROPERTY FOR CASWELL CALCULATED ACRE = 236.28



**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
	Wattle/Coir Fiber Wattle	~ ~ ~ ~ ~
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	~ ~ ~ ~ ~
1607.01	Gravel Construction Entrance	⊙

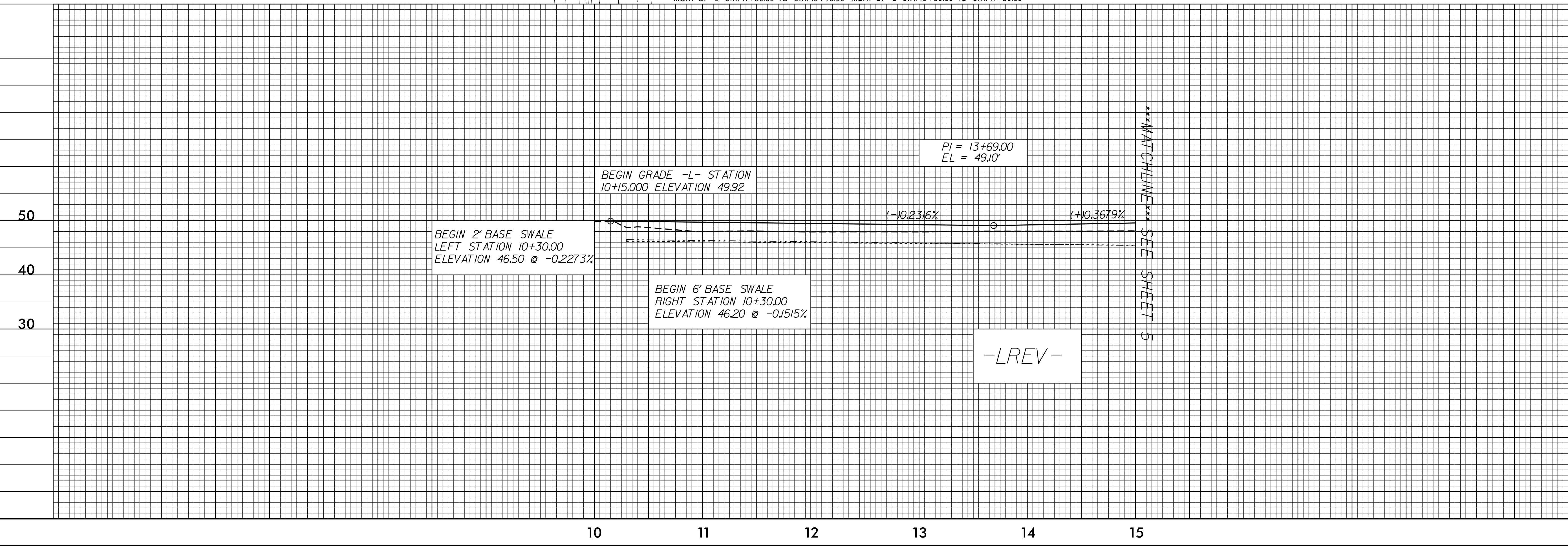
**PROJECT CONTROL POINTS**

POINT#	NORTH	EAST	ELEVATION	DESCRIPTION
3000	556,223.8210	2,404,496.1700	50.4270	REBAR WITH ALUM. DISK
3001	555,910.5290	2,404,520.9440	49.3310	REBAR WITH ALUM. DISK
3002	555,832.2320	2,403,143.3640	48.9050	REBAR WITH ALUM. DISK
3003	556,189.5060	2,403,104.8450	47.3830	REBAR WITH ALUM. DISK

REVISIONS

\*\*\*MATCHLINE\*\*\* SEE SHEET 5

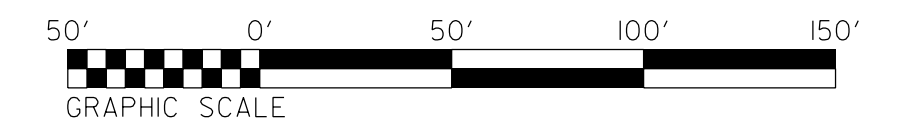
\*\*\*MATCHLINE\*\*\* SEE SHEET 5



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**RIGHT OF WAY AREA SUMMARY**

PARCEL NO.	PROPERTY OWNER NAME	LOCATION	TOTAL PARCEL AREA [ACRES]	AREA TO BE PURCHASED (RIGHT OF WAY) [ACRES]	AREA TO BE PURCHASED (TEMP. CONST. EASEMENT) [ACRES]	PARCEL AREA REMAINING [ACRES]
1	NC STATE PROPERTY OF CASWELL	LT RT -L-	236.280	2.779	0.749	232.752
2	RANDY AND CARRIE JONES	LT -L-	1.220	0	0	1.220
3	WALTER AND SYLVIA POOLE	LT RT -L-	0.665	0.665	0	0
4	WALTER AND SYLVIA POOLE	RT -L-	0.770	0	0	0.770



**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
	Wattle/Coir Fiber Wattle	
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	
1607.01	Gravel Construction Entrance	

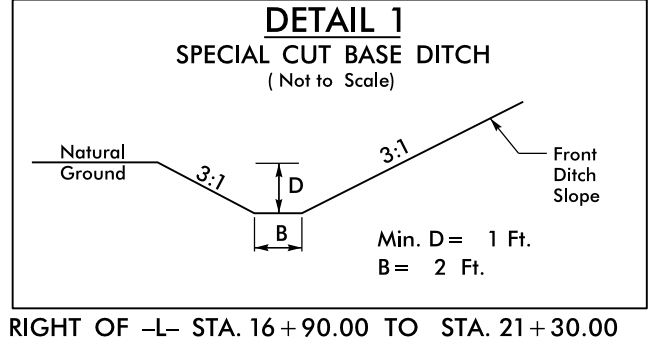
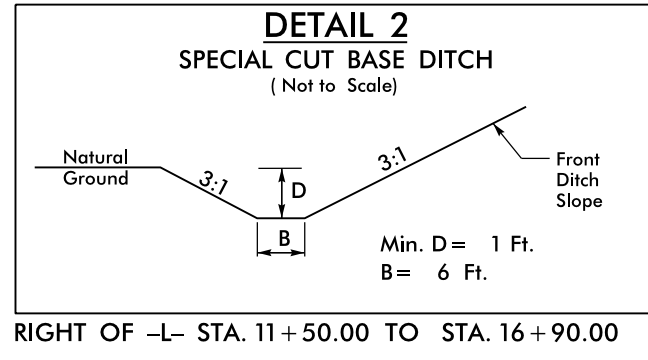
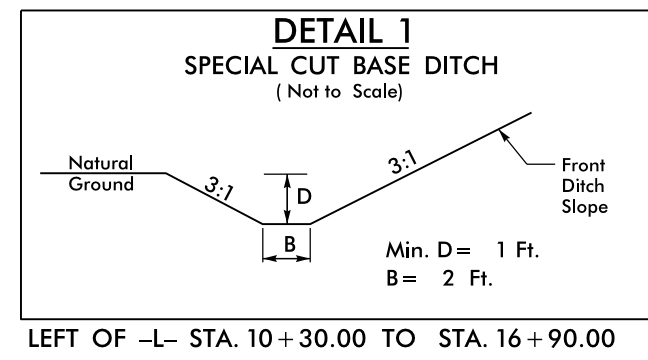
-L- REV POT Sta. 24+40.72  
-Y2- REV POT Sta. 13+23.46

**PROJECT CONTROL POINTS**

POINT#	NORTH	EAST	ELEVATION	DESCRIPTION
3000	556,223.8210	2,404,496.1700	50.4270	REBAR WITH ALUM. DISK
3001	555,910.5290	2,404,520.9440	49.3310	REBAR WITH ALUM. DISK
3002	555,832.2320	2,403,143.3640	48.9050	REBAR WITH ALUM. DISK
3003	556,189.5060	2,403,104.8450	47.3830	REBAR WITH ALUM. DISK

\*\*\*MATCHLINE\*\*\* SEE SHEET 4

\*\*\*MATCHLINE\*\*\* SEE SHEET 4



PI = 21+92.50  
EL = 52.13'  
VC = 150'

END GRADE -L- STATION 24+15.00 ELEVATION 49.46

END 2' BASE SWALE  
LEFT STATION 16+90  
ELEVATION 45.00 -0.2273%

END 6' BASE SWALE  
BEGIN 2' BASE SWALE  
RIGHT STATION 16+90.00  
ELEVATION 45.20

END 2' BASE SWALE  
RIGHT STATION 21+30.00  
ELEVATION 46.06

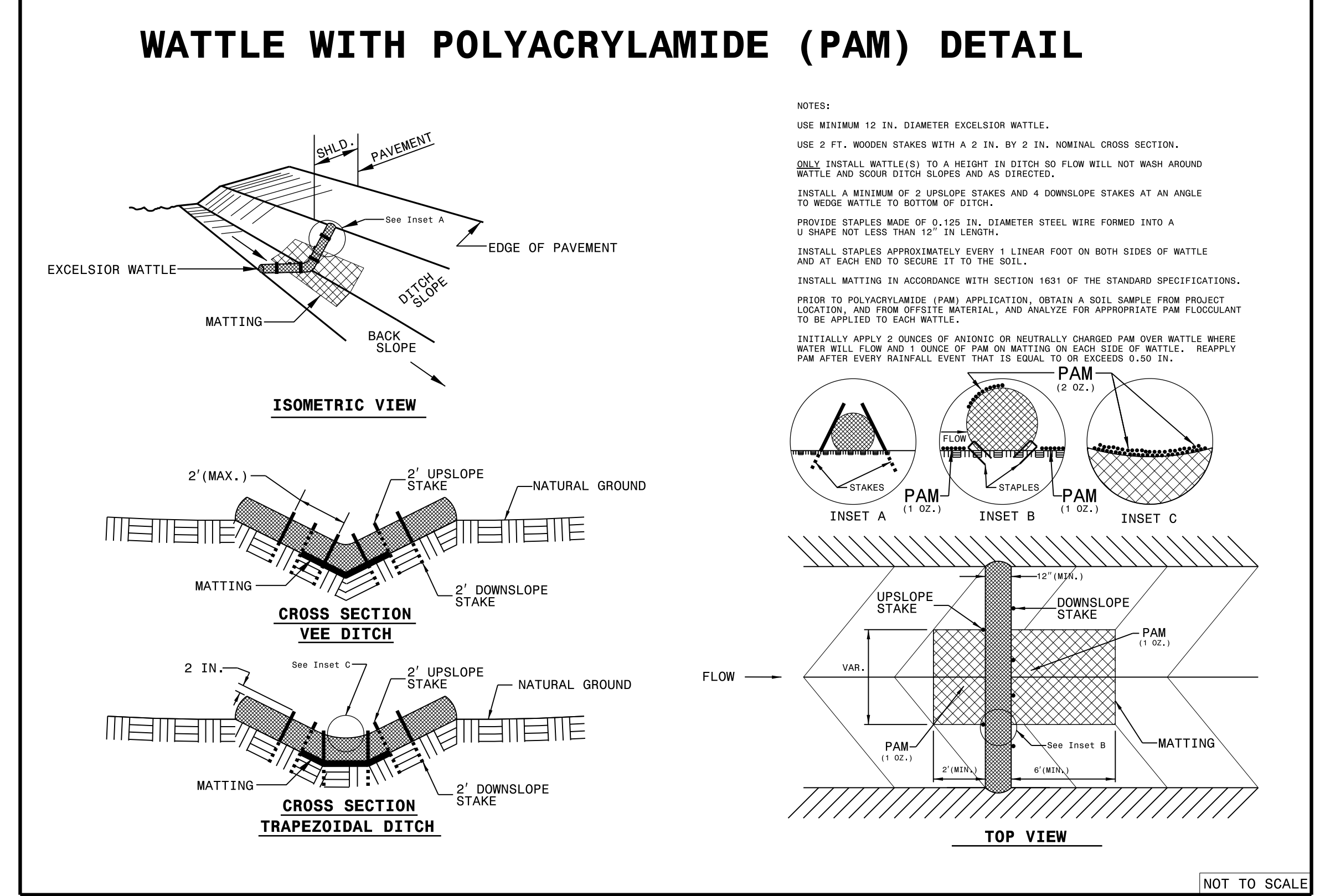
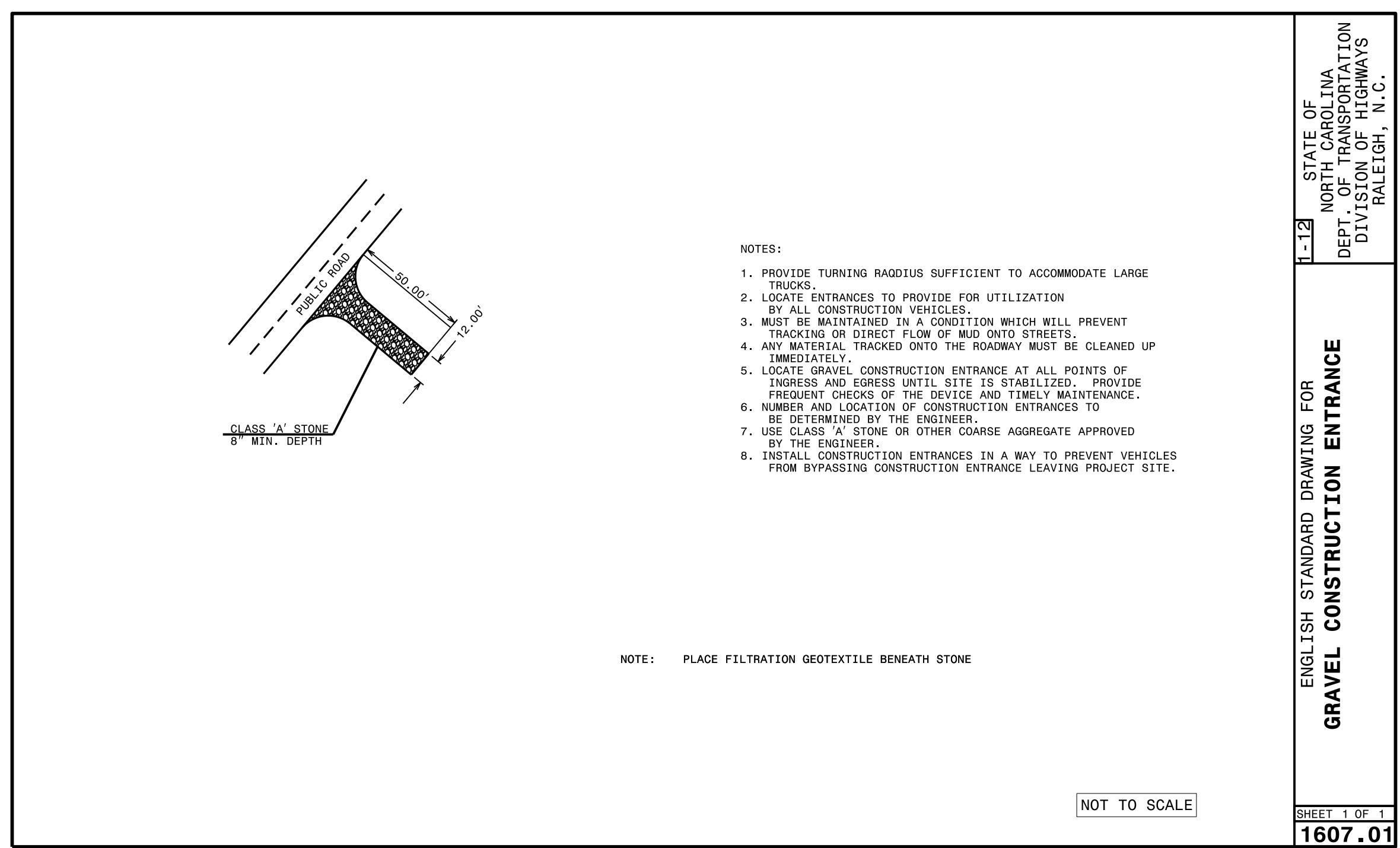
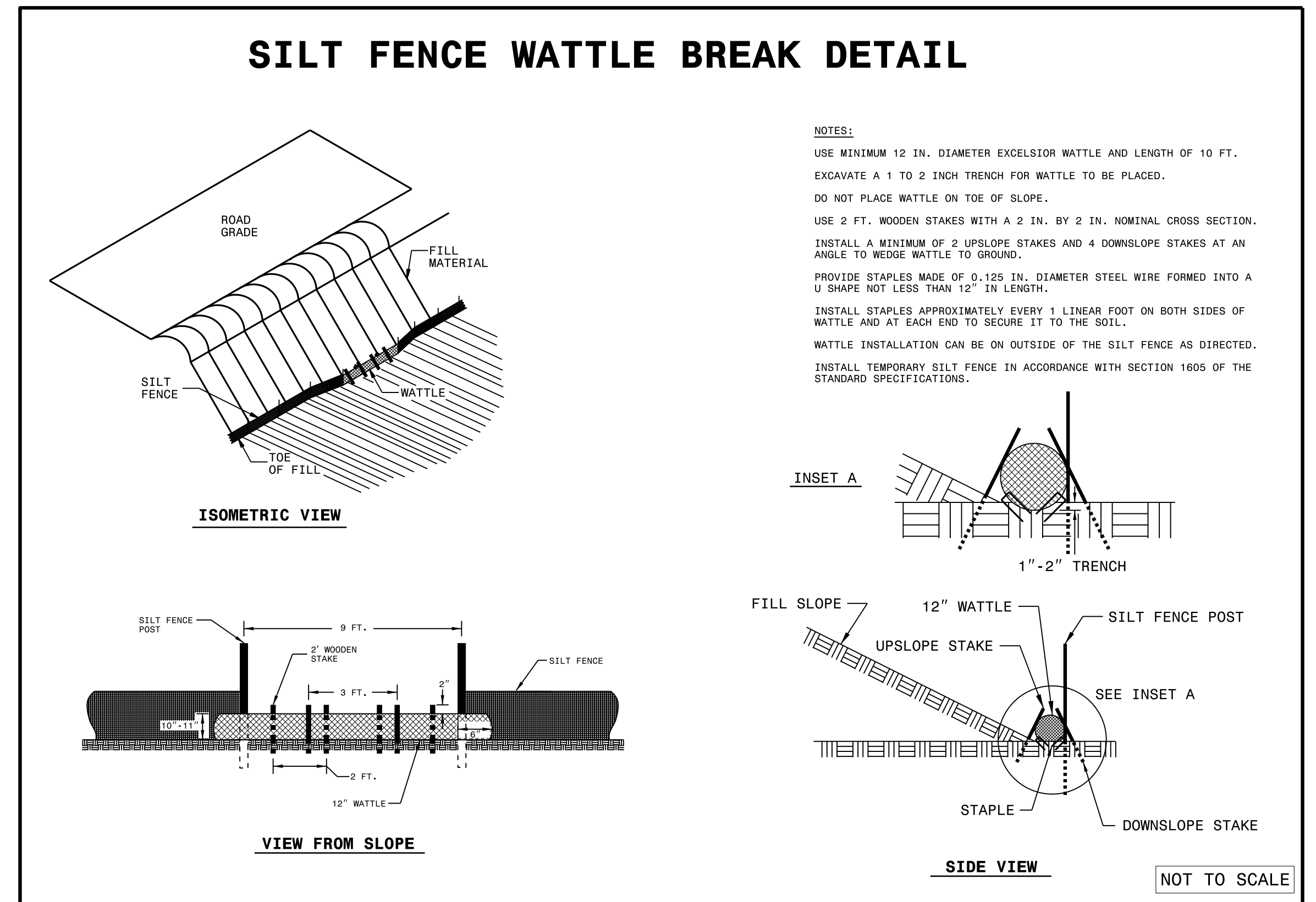
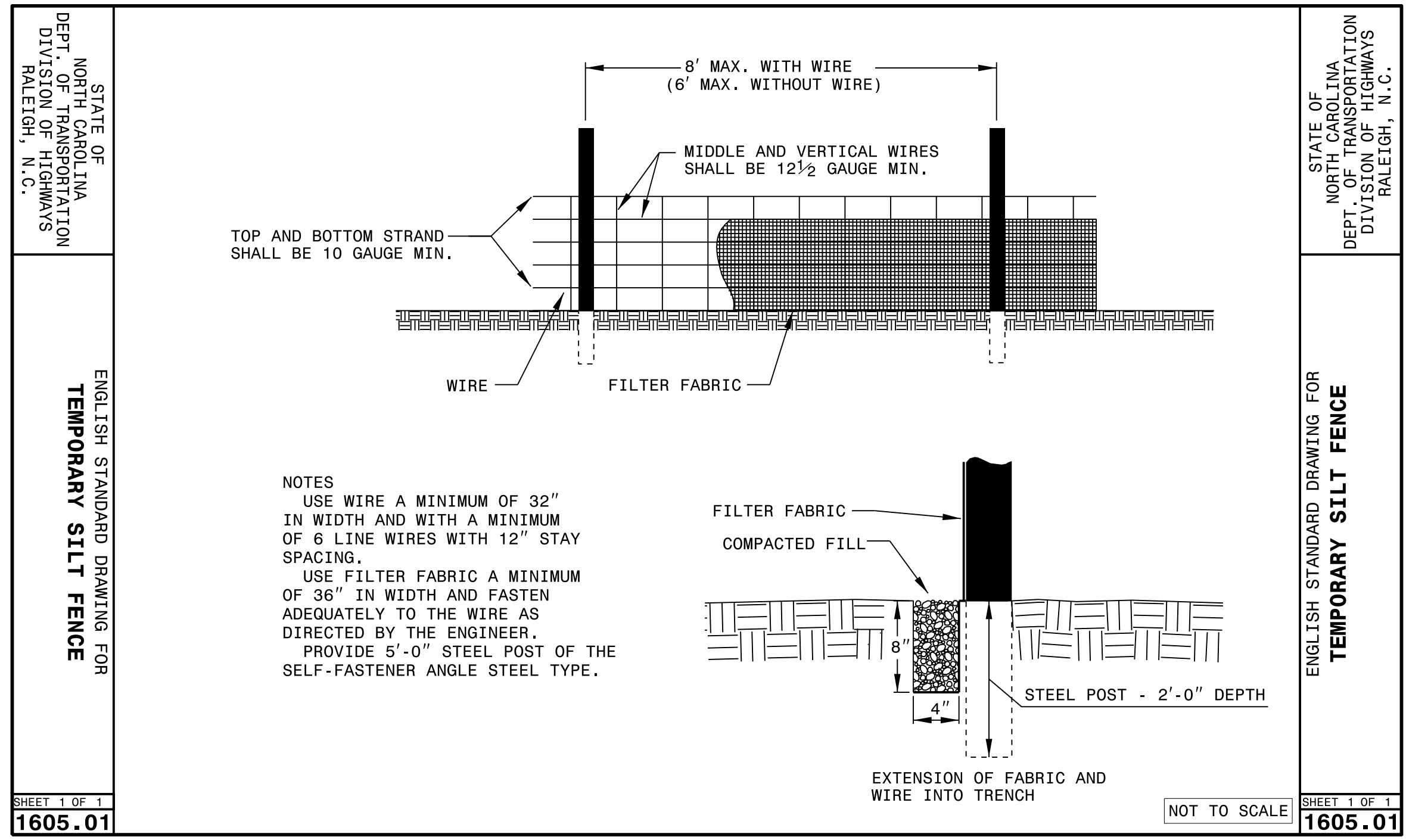
-LREV-

REVISIONS

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8/17/99

REVISIONS



03-APR-2014 14:05:00 R:\revised\SR2021\text.psh\_ec4.dgn



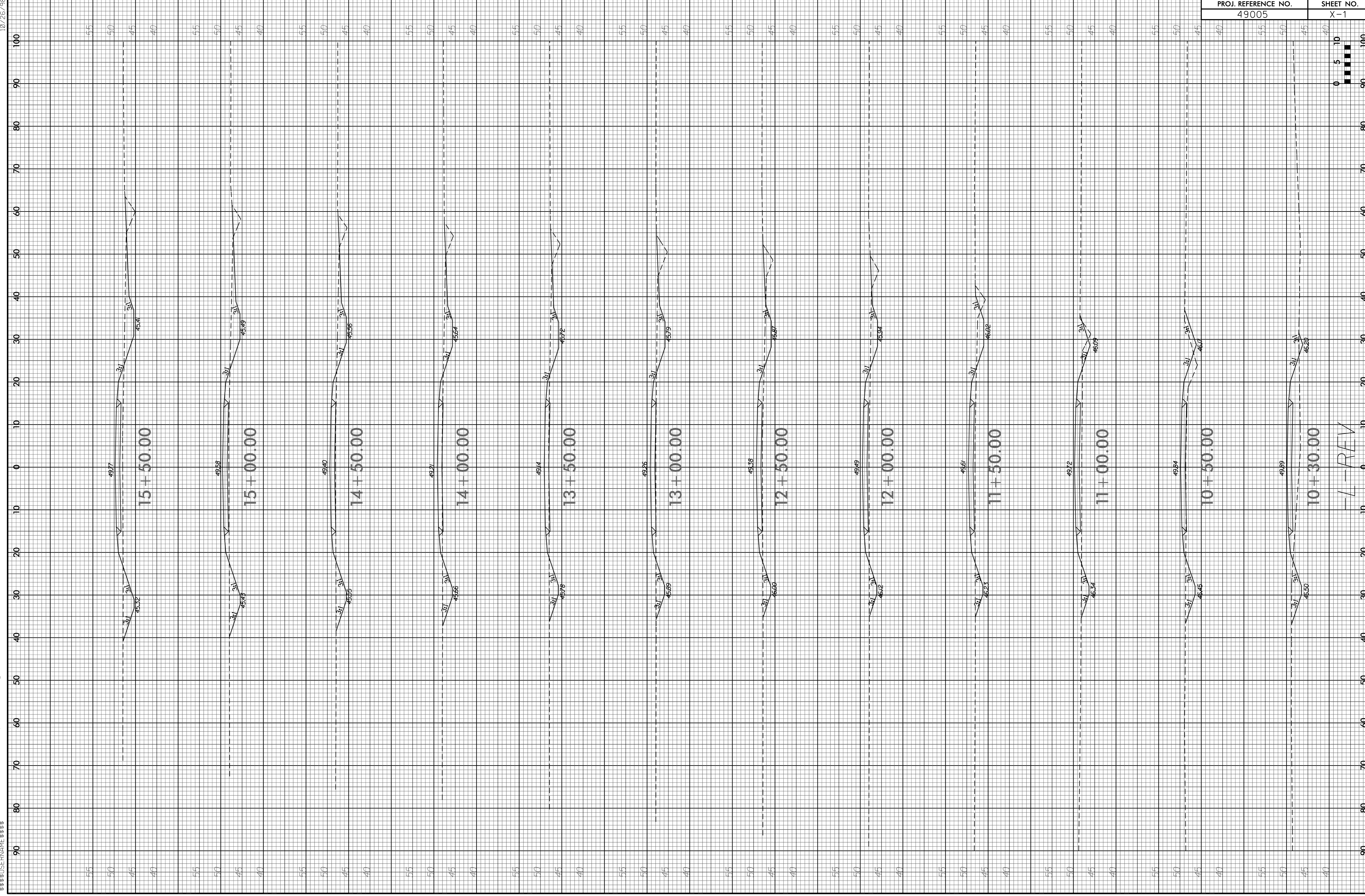
DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

## CROSS-SECTION SUMMARY

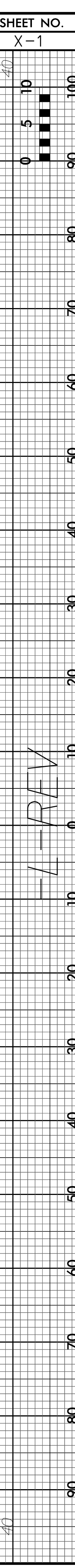
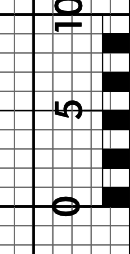
IN CUBIC YARDS

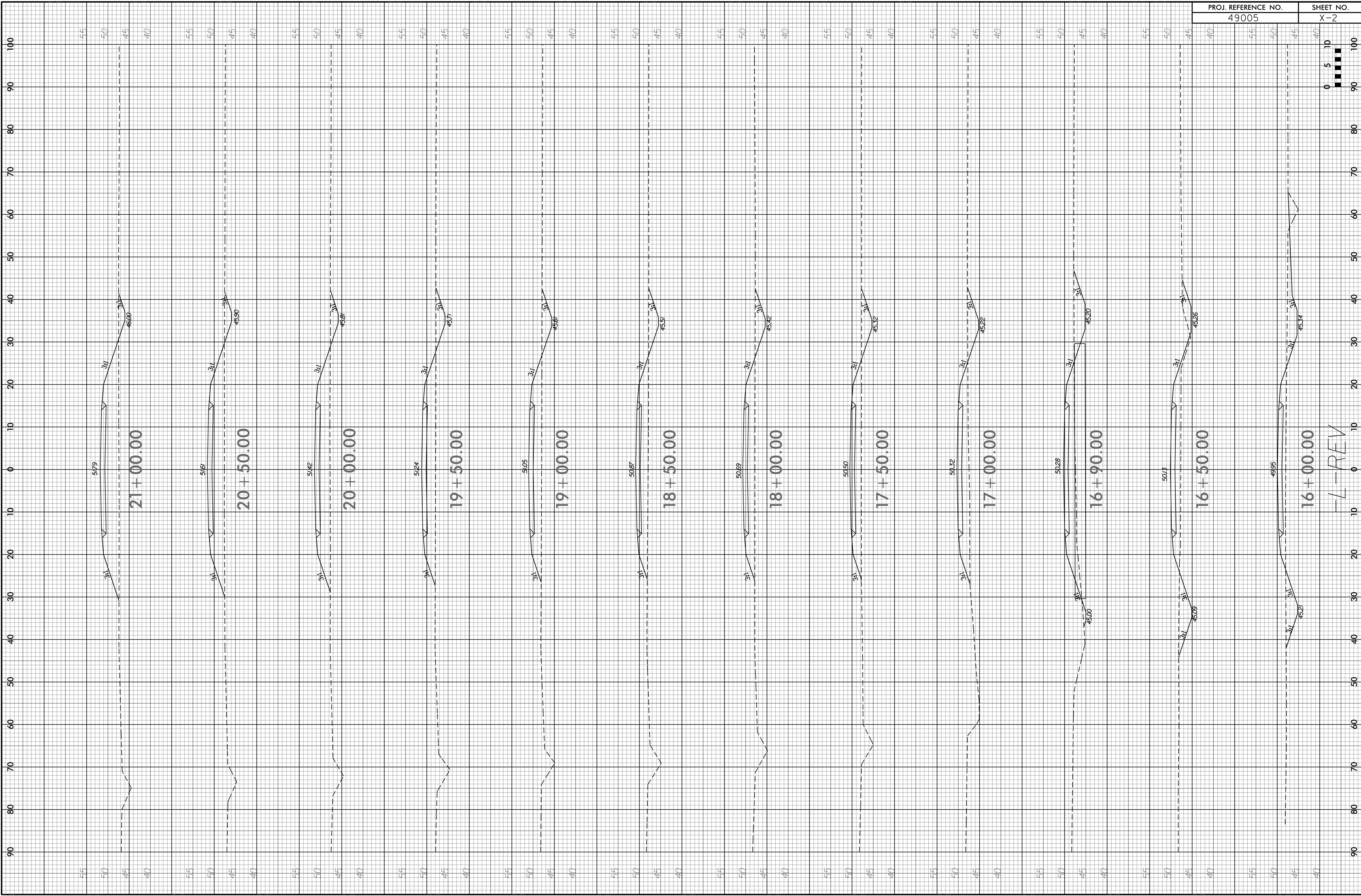
NOTE: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract Lump Sum price for "Grading".

LOCATION (-L-)	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT
10+30.00	0	0	0
10+50.00	26	0	42
11+00.00	69	0	57
11+50.00	54	0	69
12+00.00	54	0	72
12+50.00	55	0	73
13+00.00	64	0	64
13+50.00	81	0	46
14+00.00	90	0	36
14+50.00	94	0	43
15+00.00	102	0	57
15+50.00	107	0	84
16+00.00	116	0	112
16+50.00	107	0	137
16+90.00	64	0	148
17+00.00	12	0	41
17+50.00	44	0	191
18+00.00	40	0	193
18+50.00	39	0	205
19+00.00	38	0	217
19+50.00	35	0	244
20+00.00	30	0	288
20+50.00	24	0	336
21+00.00	20	0	385
21+30.00	11	0	249
21+50.00	3	0	177
21+92.00	0	0	711
22+00.00	0	0	167
22+50.00	0	0	653
23+00.00	0	0	364
23+50.00	0	0	237
LOCATION (-YREV-)	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT
12+09.45	0	0	0
12+50.00	7	0	2
13+00.00	12	0	5
13+50.00	12	0	11
14+00.00	15	0	7
14+50.00	18	0	1
14+65.00	5	0	0



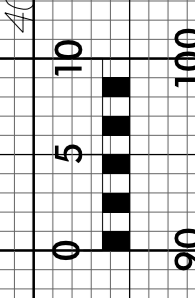
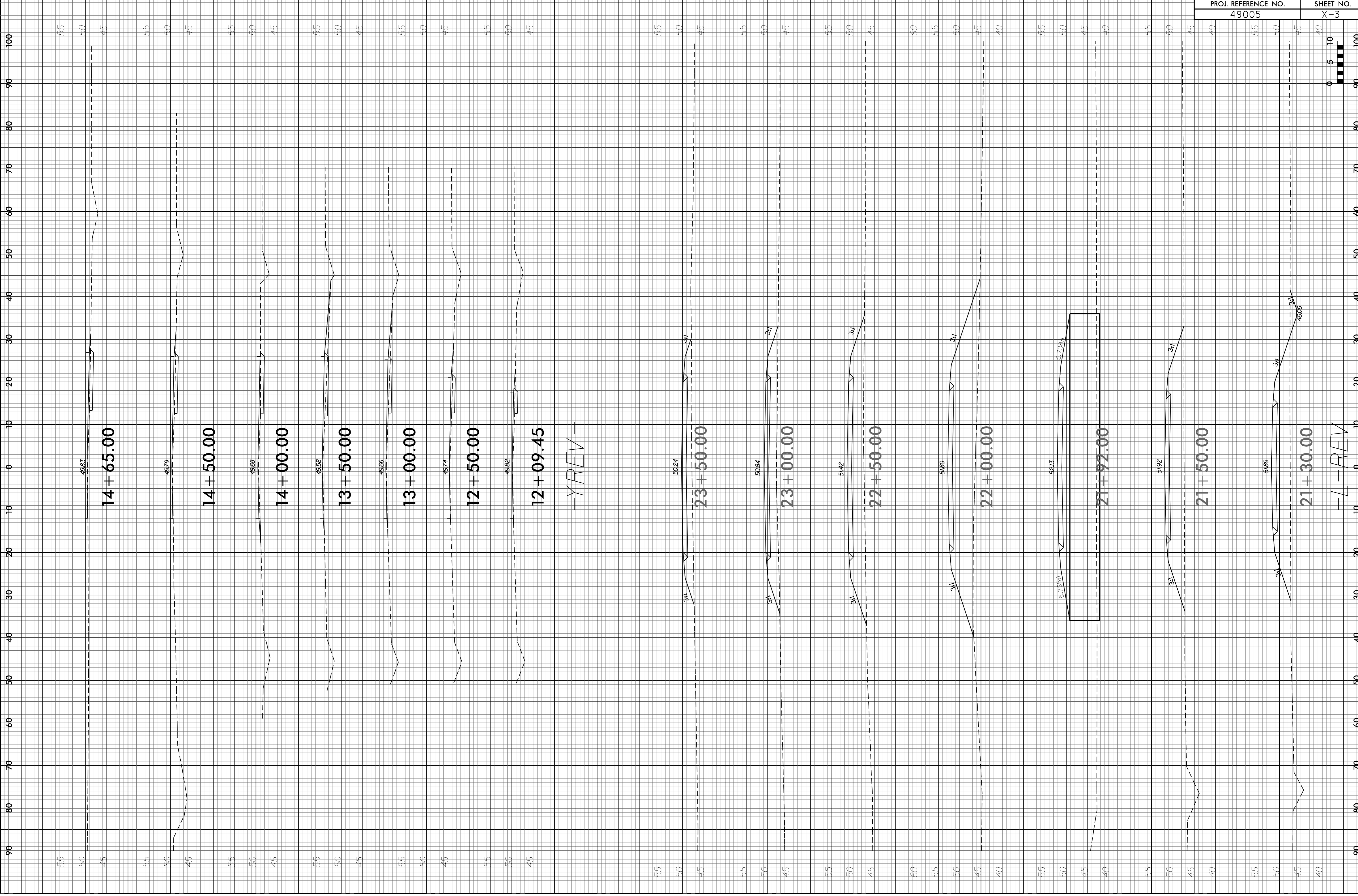
--L--REV



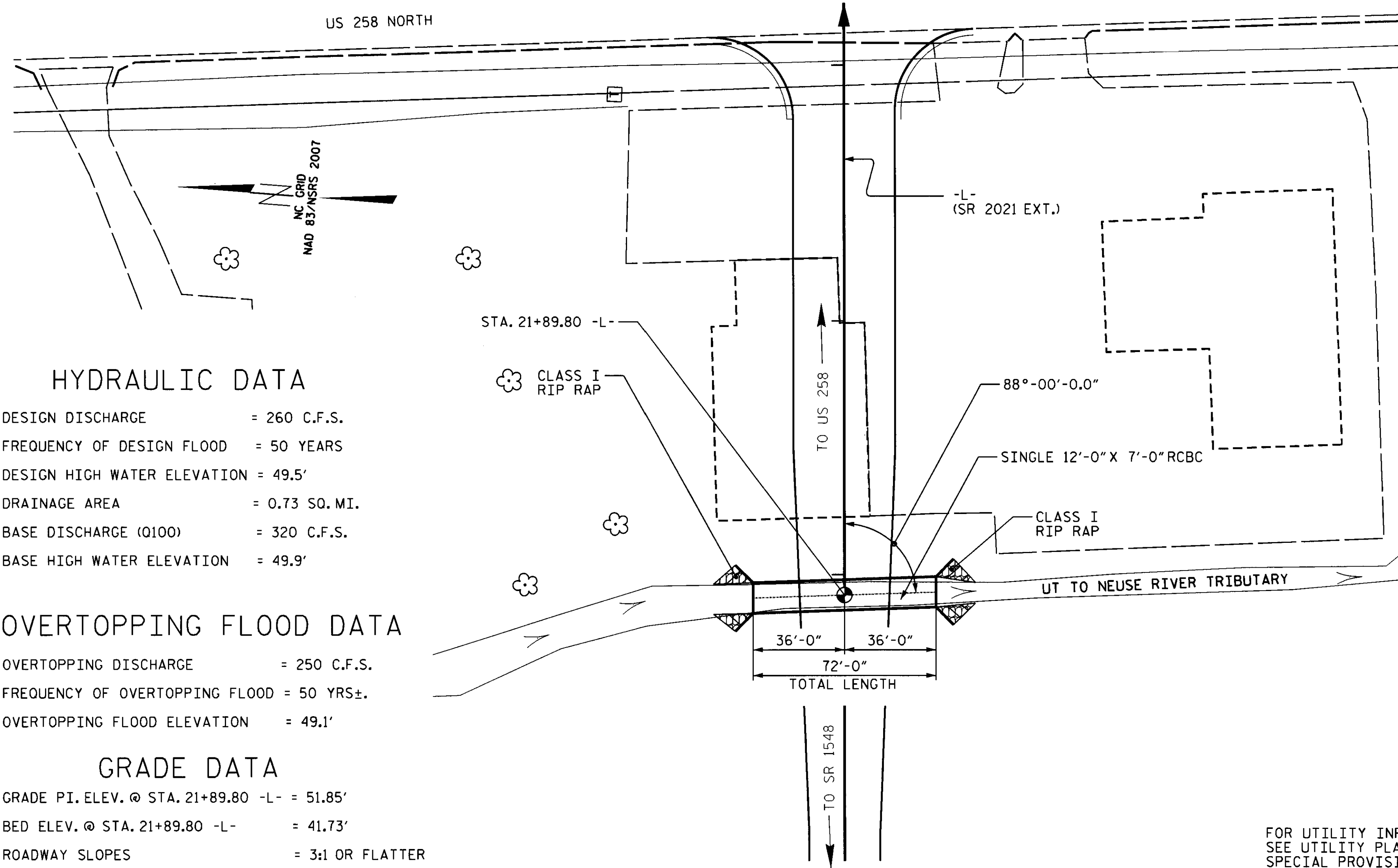


--L--REV





BENCH MARK : TRAVERSE POINT 20; LOCATED AT STA. 21+78.90 125.1' RT. -L-, EL. 46.59'



**HYDRAULIC DATA**

DESIGN DISCHARGE = 260 C.F.S.  
 FREQUENCY OF DESIGN FLOOD = 50 YEARS  
 DESIGN HIGH WATER ELEVATION = 49.5'  
 DRAINAGE AREA = 0.73 SQ. MI.  
 BASE DISCHARGE (Q100) = 320 C.F.S.  
 BASE HIGH WATER ELEVATION = 49.9'

**OVERTOPPING FLOOD DATA**

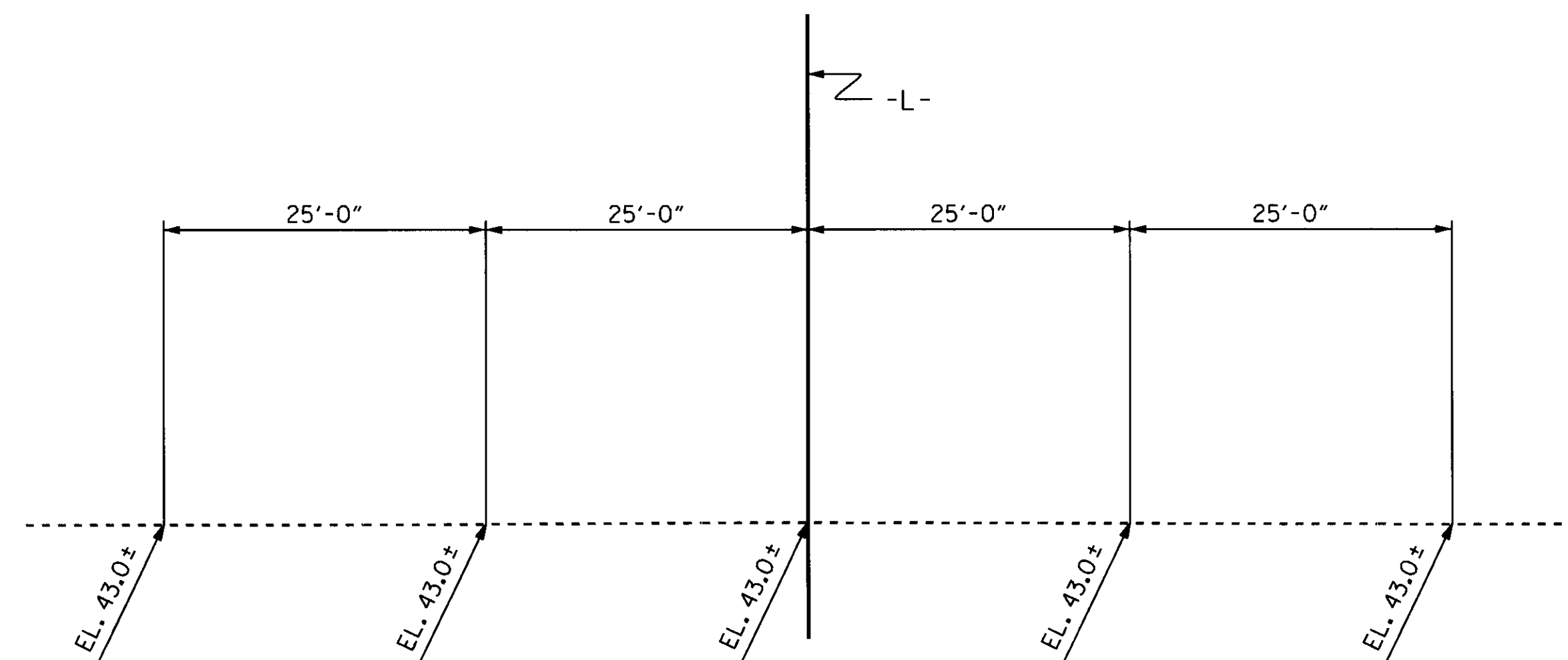
OVERTOPPING DISCHARGE = 250 C.F.S.  
 FREQUENCY OF OVERTOPPING FLOOD = 50 YRS±.  
 OVERTOPPING FLOOD ELEVATION = 49.1'

**GRADE DATA**

GRADE PI. ELEV. @ STA. 21+89.80 -L- = 51.85'  
 BED ELEV. @ STA. 21+89.80 -L- = 41.73'  
 ROADWAY SLOPES = 3:1 OR FLATTER

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

**LOCATION SKETCH**



**PROFILE ALONG CULVERT**

**NOTES**

- ASSUMED LIVE LOAD -----HL93 OR ALTERNATE LOADING.
- DESIGN FILL-----3.13'
- FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTE SHEET.
- 3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:
  1. WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
  2. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALLS.
- THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.
- DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON WING SHEET.
- AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.
- TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FEET. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
- A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

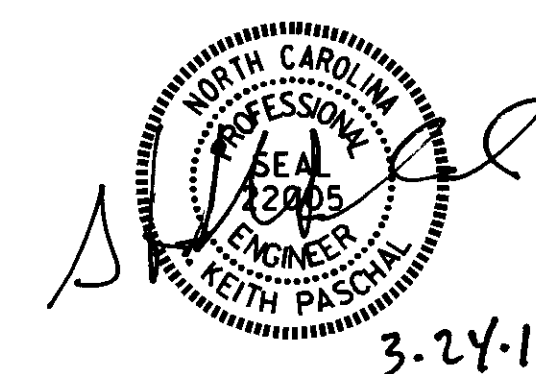
**TOTAL STRUCTURE QUANTITIES**

CLASS A CONCRETE	
BARREL @ 1.132 CY/FT	81.5 C.Y.
WINGS ETC.	29.7 C.Y.
TOTAL	111.2 C.Y.
REINFORCING STEEL	
BARREL	14,186 LBS.
WINGS ETC.	1,736 LBS.
TOTAL	15,922 LBS.
FOUNDATION CONDITIONING MATERIAL	88.0 TONS
CULVERT EXCAVATION	LUMP SUM

PROJECT NO. 49005  
LENOIR COUNTY  
 STATION: 21+89.80 -L-

SHEET 1 OF 5

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SINGLE 12 FT. X 7 FT.  
 CONCRETE BOX CULVERT



DRAWN BY : M. M. AHMED DATE : 8/19/13  
 CHECKED BY : P. N. HOLDER DATE : 2/26/14  
 DESIGN ENGINEER OF RECORD : A. K. PASCHAL DATE : 2/24/14

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1			3			TOTAL SHEETS
2			4			5

**LOAD AND RESISTANCE FACTOR RATING (LRFR)  
SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS**

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE								COMMENT NUMBER		
						LIVE-LOAD FACTORS (LL)	MOMENT				SHEAR					
							RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft)	RATING FACTOR	BOX NO.	ELEMENT TYPE		DISTANCE FROM LEFT END OF ELEMENT (ft)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.07	--	1.75	1.07	1	Top Corner Wall	0.58	1.08	1	Top Slab	0.90		
	HL-93 (OPERATING)	N/A		1.39	--	1.35	1.39	1	Top Corner Wall	0.58	1.39	1	Top Slab	0.90		
	HS-20 (INVENTORY)	36.00	②	1.31	47.05	1.75	1.31	1	Top Slab	6.33	1.33	1	Top Slab	0.90		
	HS-20 (OPERATING)	36.00		1.69	60.99	1.35	1.69	1	Top Slab	6.33	1.73	1	Top Slab	0.90		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH		2.37	32.03	1.40	2.37	1	Top Slab	6.33	2.42	1	Top Slab	0.90		
		SNGARBS2	20.00		2.22	44.42	1.40	2.22	1	Top Slab	6.33	2.26	1	Top Slab	0.90	
		SNAGRIS2	22.00		2.37	52.20	1.40	2.37	1	Top Slab	6.33	2.42	1	Top Slab	0.90	
		SNCOTTS3	27.25	③	1.30	35.54	1.40	1.30	1	Top Corner Wall	0.58	1.34	1	Top Slab	0.90	
		SNAGGRS4	34.93		1.34	46.74	1.40	1.43	1	Bottom Corner	7.40	1.34	1	Bottom Slab	11.76	
		SNS5A	35.55		1.38	49.20	1.40	1.46	1	Top Corner Wall	0.58	1.38	1	Bottom Slab	0.90	
		SNS6A	39.95		1.38	55.29	1.40	1.46	1	Top Corner Wall	0.58	1.38	1	Bottom Slab	0.90	
	SNS7B	42.00		1.38	58.13	1.40	1.46	1	Top Corner Wall	0.58	1.38	1	Bottom Slab	0.90		
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.00		1.60	52.82	1.40	1.60	1	Bottom Corner	7.40	1.66	1	Bottom Slab	0.90	
		TNT4A	33.07		1.52	50.39	1.40	1.52	1	Top Corner Wall	0.58	1.60	1	Top Slab	0.90	
		TNT6A	41.60		1.37	57.09	1.40	1.48	1	Top Corner Wall	0.58	1.37	1	Bottom Slab	11.76	
		TNT7A	42.00		1.51	63.34	1.40	1.51	1	Top Corner Wall	0.58	1.56	1	Bottom Slab	11.76	
		TNT7B	42.00		1.42	59.83	1.40	1.49	1	Top Corner Wall	0.58	1.42	1	Bottom Slab	11.76	
		TNAGRIT4	43.00		1.46	62.74	1.40	1.46	1	Top Corner Wall	0.58	1.53	1	Top Slab	0.90	
TNAGT5A		45.00		1.49	67.09	1.40	1.49	1	Top Corner Wall	0.58	1.55	1	Top Slab	11.76		
TNAGT5B	45.00		1.52	68.45	1.40	1.52	1	Top Corner Wall	0.58	1.60	1	Top Slab	0.90			

**LOAD FACTORS:**

DESIGN LOAD RATING FACTORS

LOAD TYPE	MAX FACTOR	MIN FACTOR
DC	1.25	0.90
DW	1.50	0.65
EV	1.30	0.90
EH	1.35	0.90
ES	1.35	0.90
LS	1.75	--
WA	1.00	--

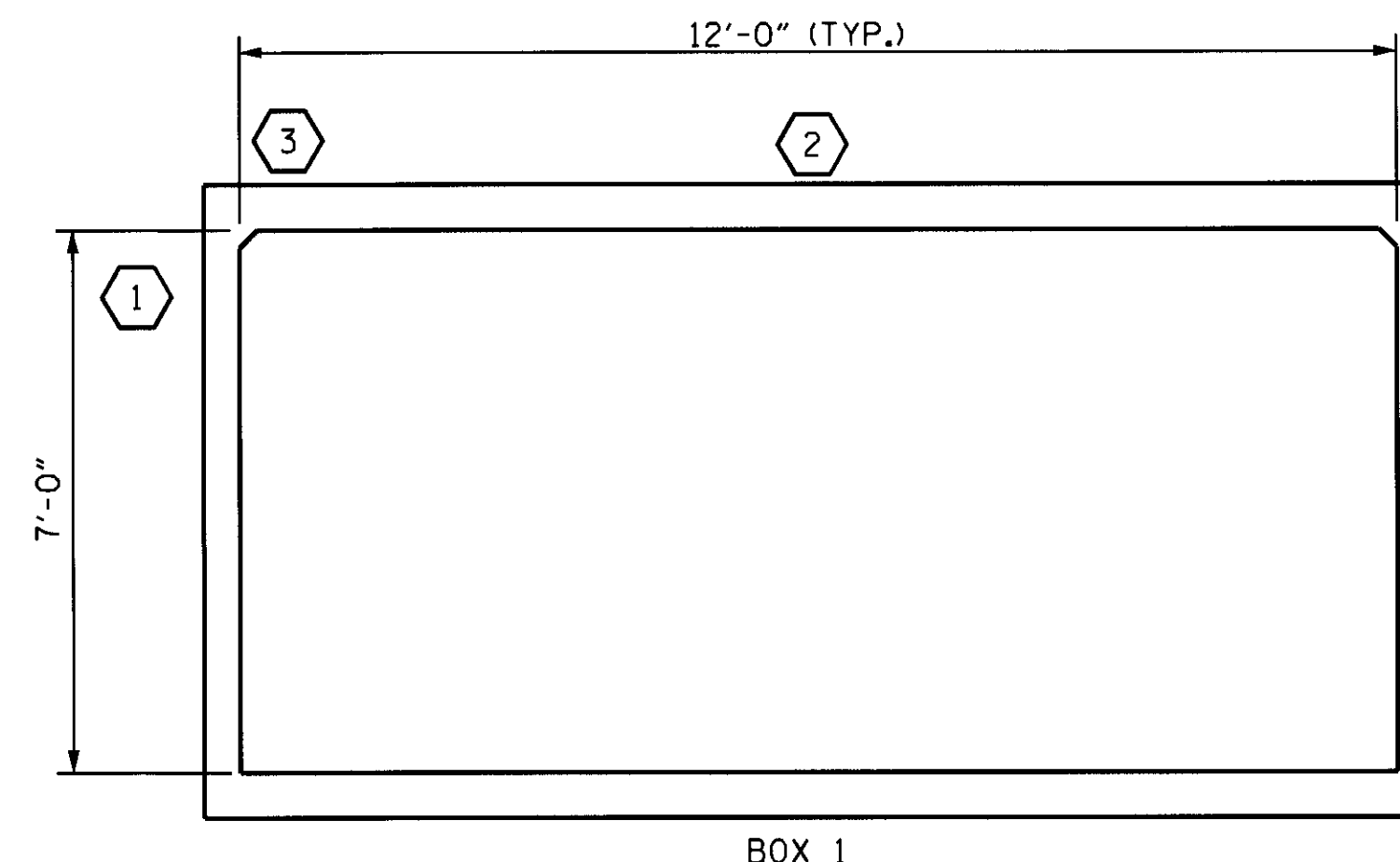
**NOTE:**

RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATE.

**COMMENTS:**

- 1.
- 2.
- 3.
- 4.

#	CONTROLLING LOAD RATING
①	DESIGN LOAD RATING (HL-93)
②	DESIGN LOAD RATING (HS-20)
③	LEGAL LOAD RATING **
** SEE CHART FOR VEHICLE TYPE	

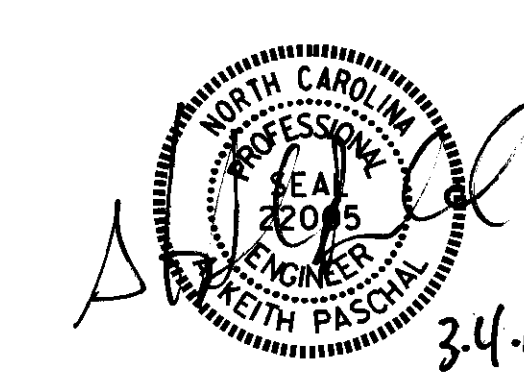


**LRFR SUMMARY**  
(LOOKING DOWNSTREAM)

PROJECT NO. 49005  
LENOIR COUNTY  
 STATION: 21+89.80 -L-  
 SHEET 2 OF 5

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

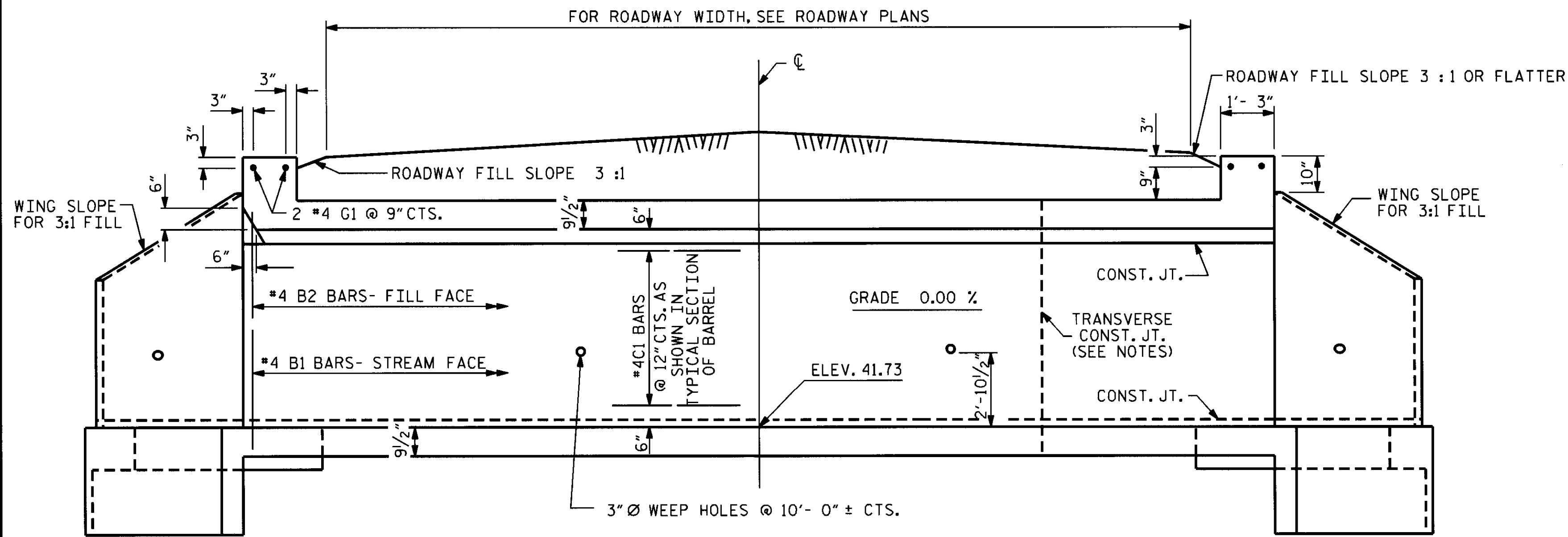
**LRFR SUMMARY FOR  
 REINFORCED CONCRETE  
 BOX CULVERTS  
 (NON-INTERSTATE TRAFFIC)**



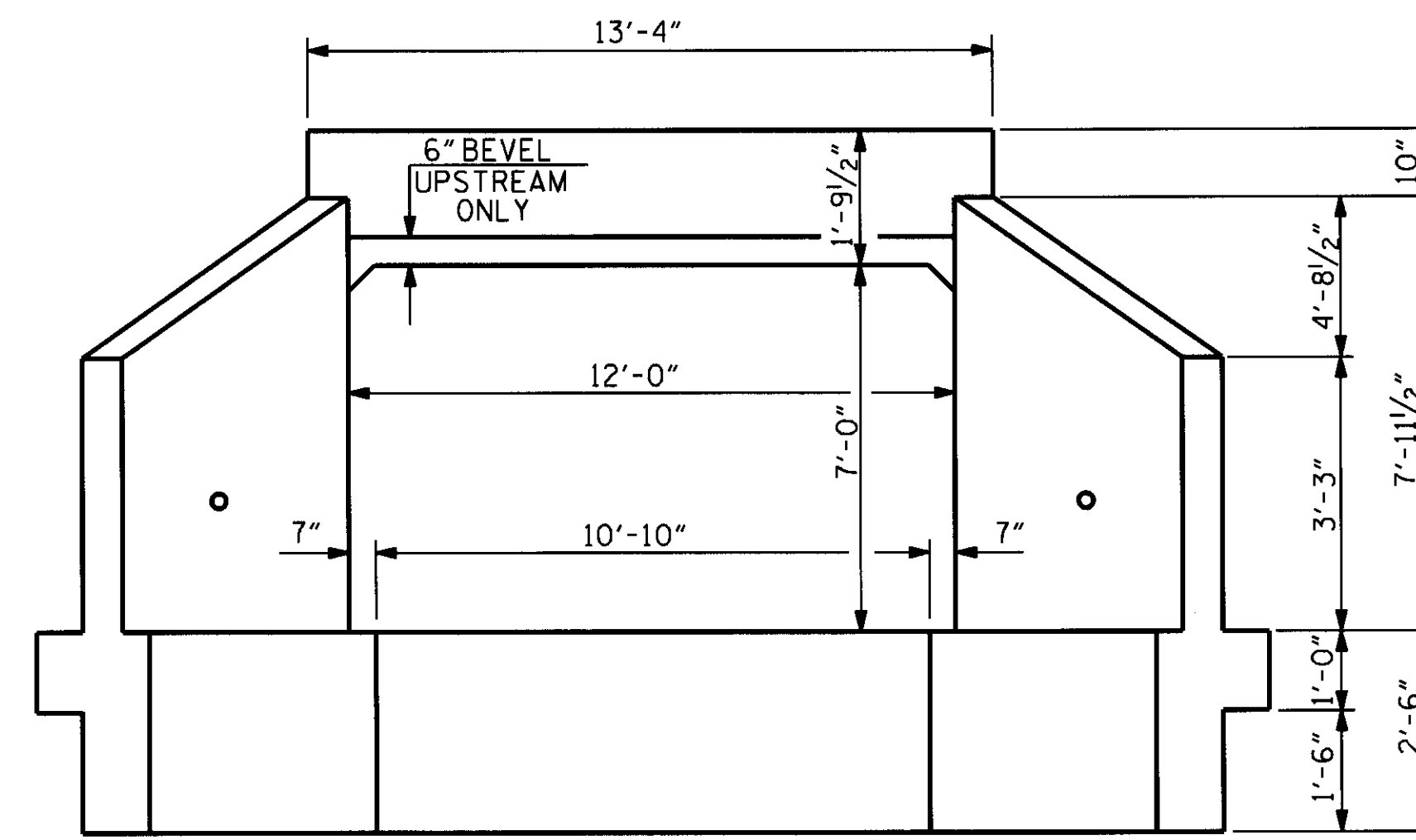
ASSEMBLED BY: M. M. AHMED DATE: 8/19/13  
 CHECKED BY: P. N. HOLDER DATE: 2/26/14  
 DESIGN ENGINEER OF RECORD: A. K. PASCHAL DATE: 2/24/14  
 DRAWN BY: WMC 7/11 REV. 10/1/11 MAA/GM  
 CHECKED BY: GM 7/11

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-2
1			3			TOTAL SHEETS
2			4			5

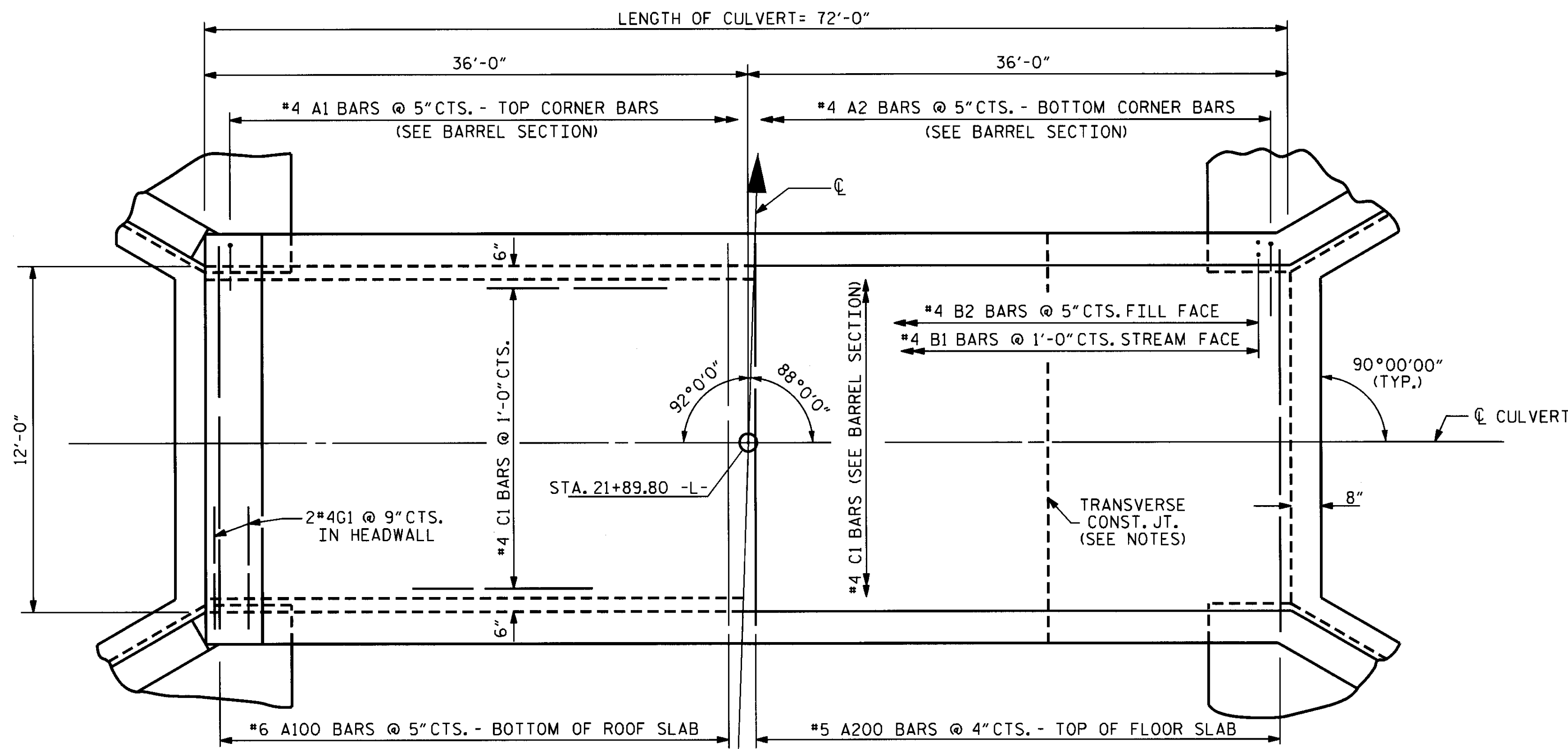




CULVERT SECTION NORMAL TO ROADWAY



END ELEVATION



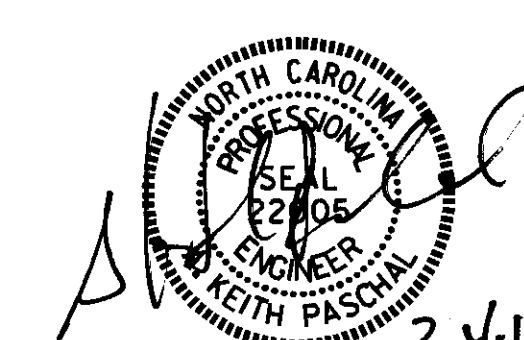
PART PLAN ROOF SLAB

PART PLAN FLOOR SLAB

PROJECT NO. 49005  
LENOIR COUNTY  
 STATION: 21+89.80 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**BARREL STANDARD**  
 SINGLE 12 FT. X 7 FT.  
 CONCRETE BOX CULVERT

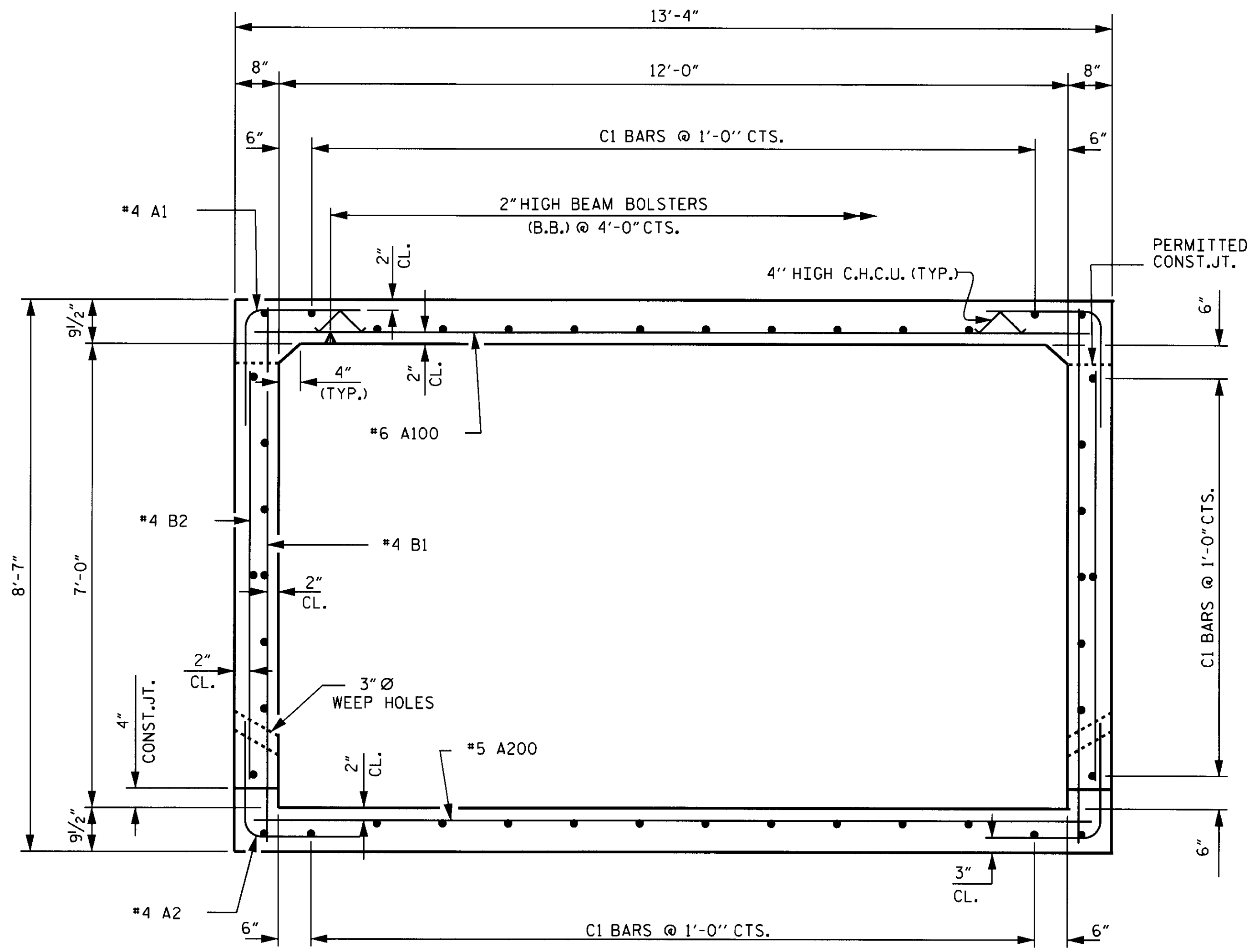


REVISED 8-28-92 BY E.L.R. CHECKED BY G.R.P.  
 REVISED 8-22-89 BY A.R.B. CHECKED BY C.R.K.  
 REDRAWN 8-22-1989  
 REVISED 11-19-99 BY M.M. CHECKED BY R.W.W.

ASSEMBLED BY: M. M. AHMED DATE: 8/22/13  
 CHECKED BY: P. N. HOLDER DATE: 2/26/14  
 DRAWN BY: R. WRIGHT DATE: AUG. 1989  
 CHECKED BY: A.R. BISSETTE DATE: AUG. 1989

**SPECIAL**  
**STANDARD**

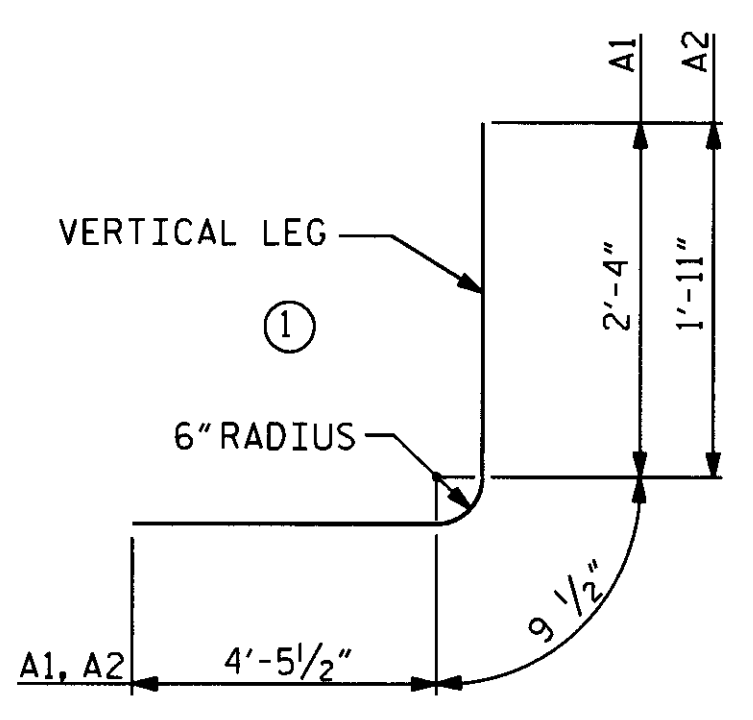
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	DATE:	C-3
1			3		TOTAL SHEETS
2			4		5



BAR TYPE		BILL OF MATERIAL				
BAR	No.	SIZE	TYPE	LENGTH	WEIGHT	
A100	173	#6	STR	12'-11"	3356	
A200	216	#5	STR	12'-11"	2910	
A1	346	#4	1	7'-7"	1753	
A2	346	#4	1	7'-2"	1656	
B1	144	#4	STR	8'-1"	778	
B2	346	#4	STR	6'-4"	1464	
C1	132	#4	STR	25'-4"	2234	
G1	4	#4	STR	13'-0"	35	
TOTAL REINFORCING STEEL					14,186 LBS	

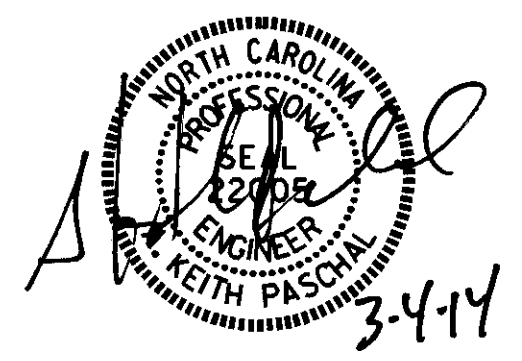
  

SPLICE LENGTH CHART		
BAR	SIZE	SPLICE LENGTH
B1	#4	1'-5"
C1	#4	1'-11"



PROJECT NO. 49005  
 LENOIR COUNTY  
 STATION: 21+89.80 -L-  
 SHEET 4 OF 5

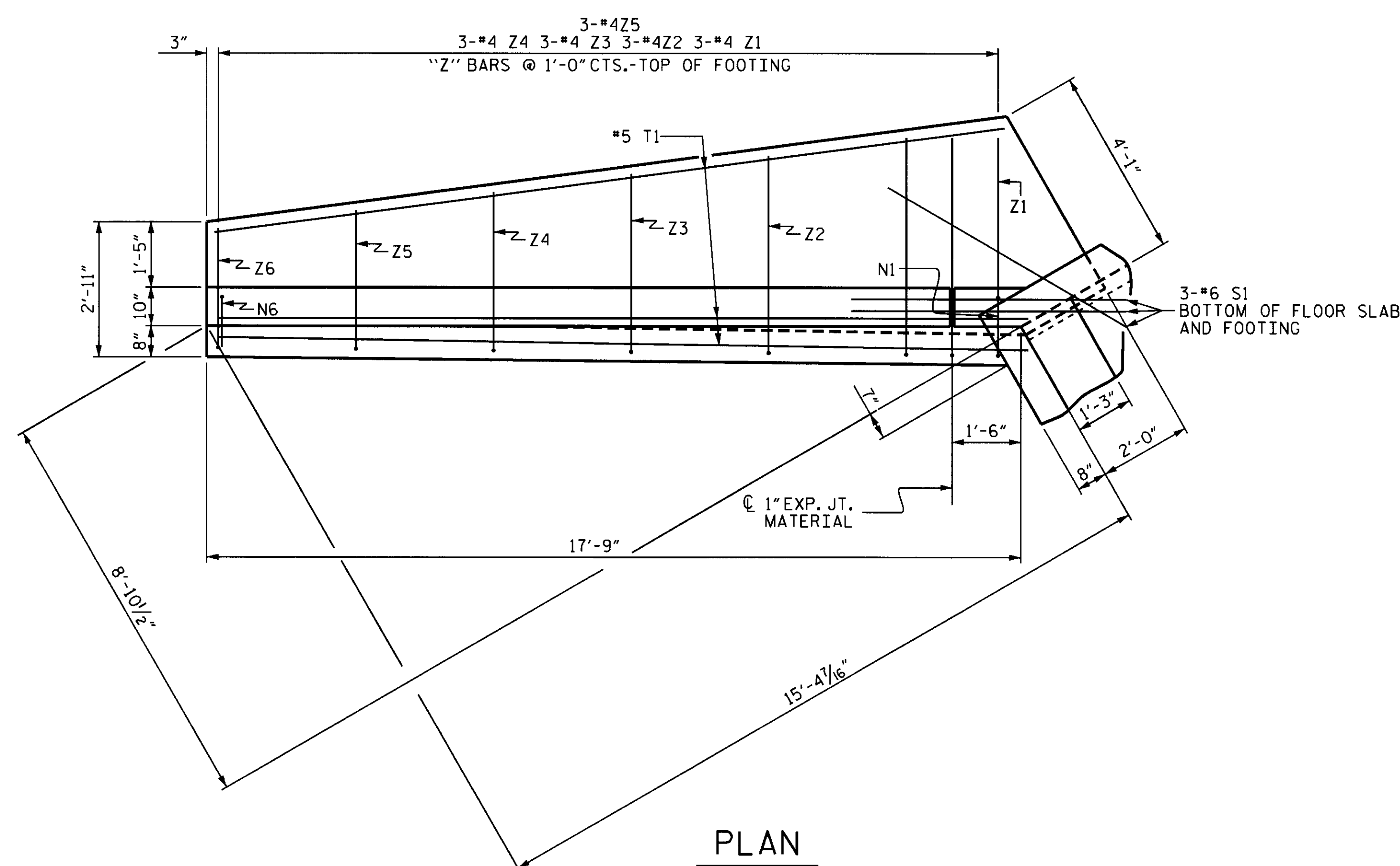
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 BARREL STANDARD  
 SINGLE 12 FT. X 7 FT.  
 CONCRETE BOX CULVERT



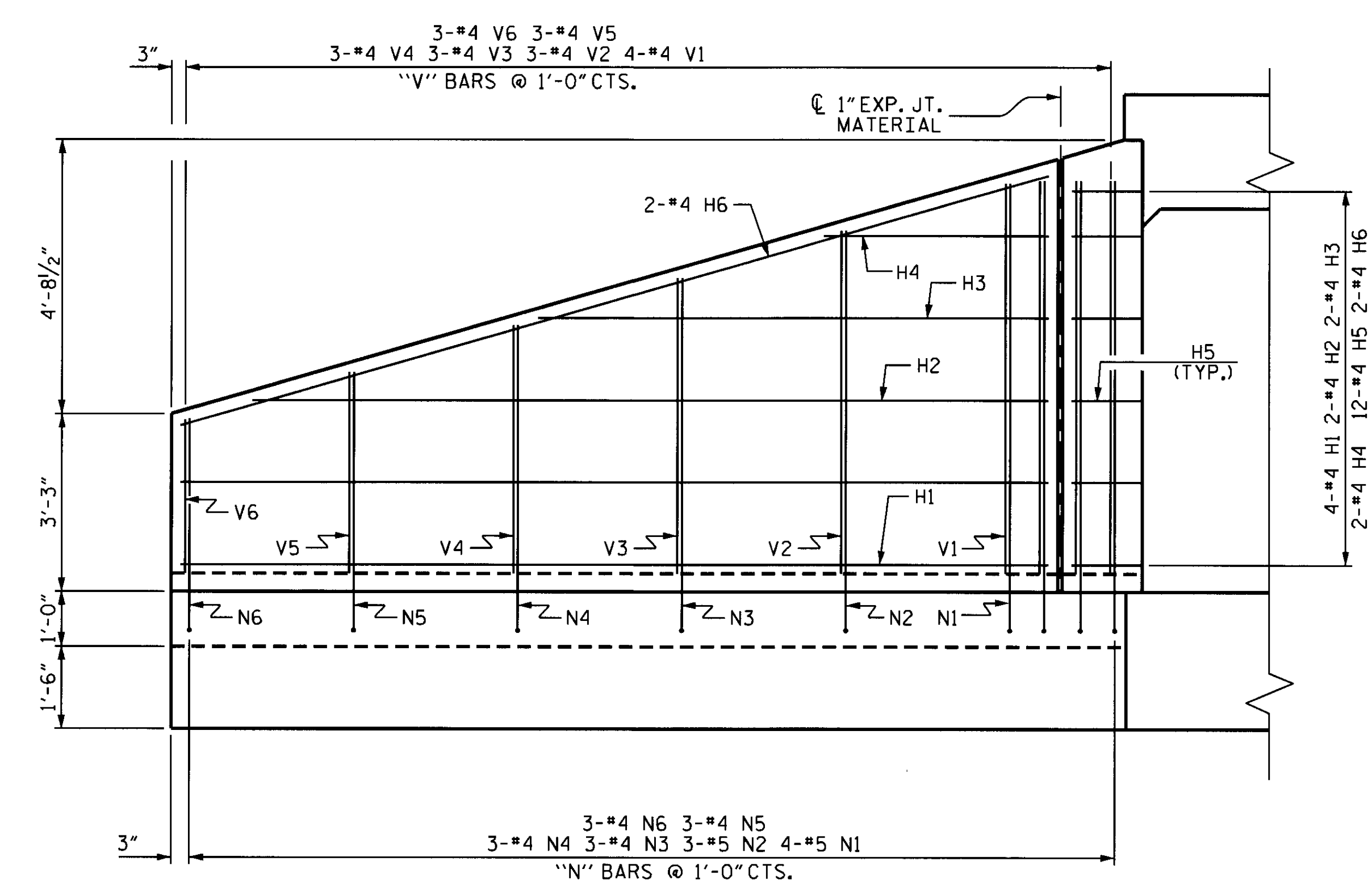
DRAWN BY: M. M. AHMED DATE: 8/22/13  
 CHECKED BY: P. N. HOLDER DATE: 2/26/14  
 DESIGN ENGINEER OF RECORD: A. K. PASCHAL DATE: 2/24/14

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-4
1			3			TOTAL SHEETS
2			4			5

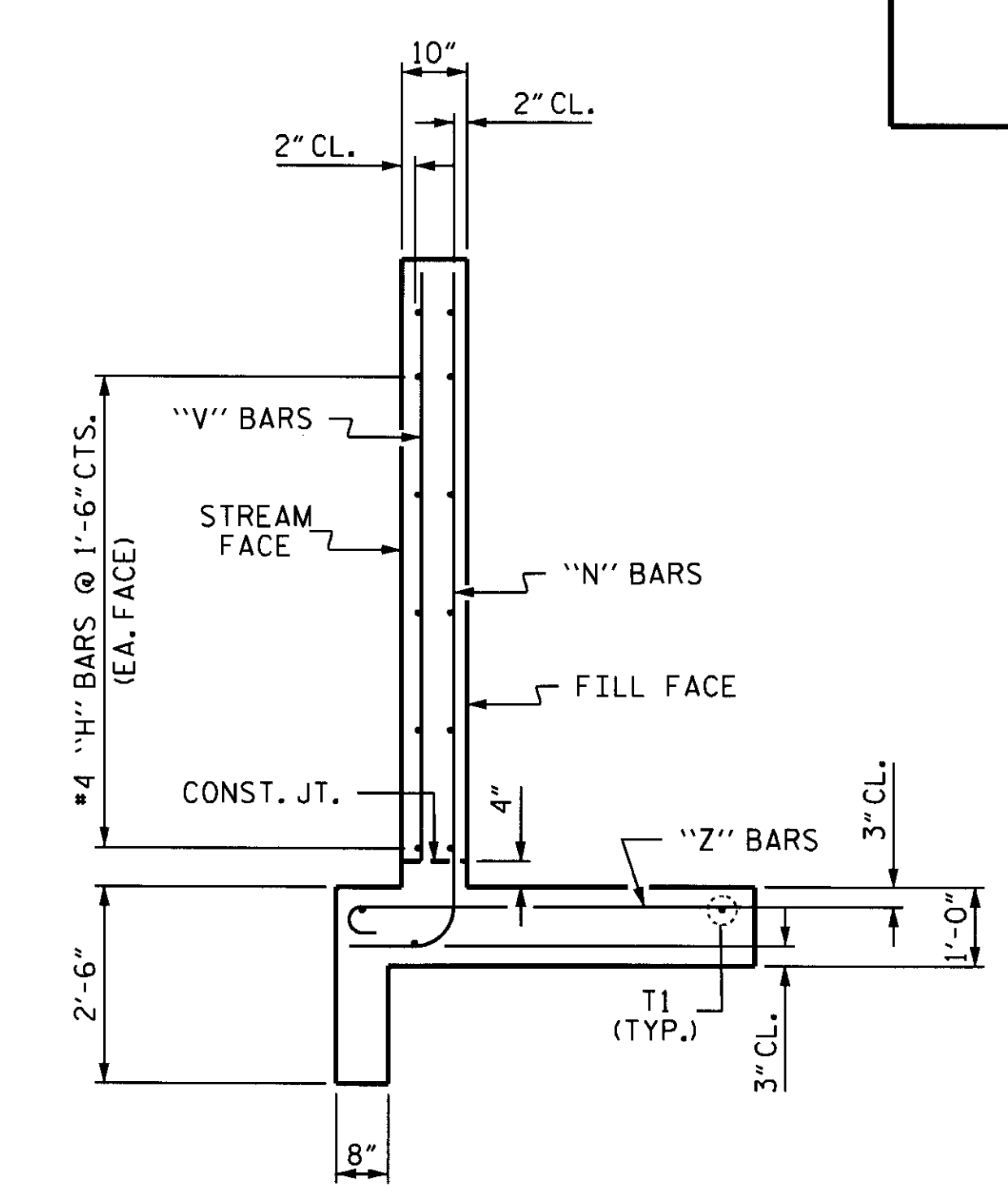
28-FEB-2014 12:22  
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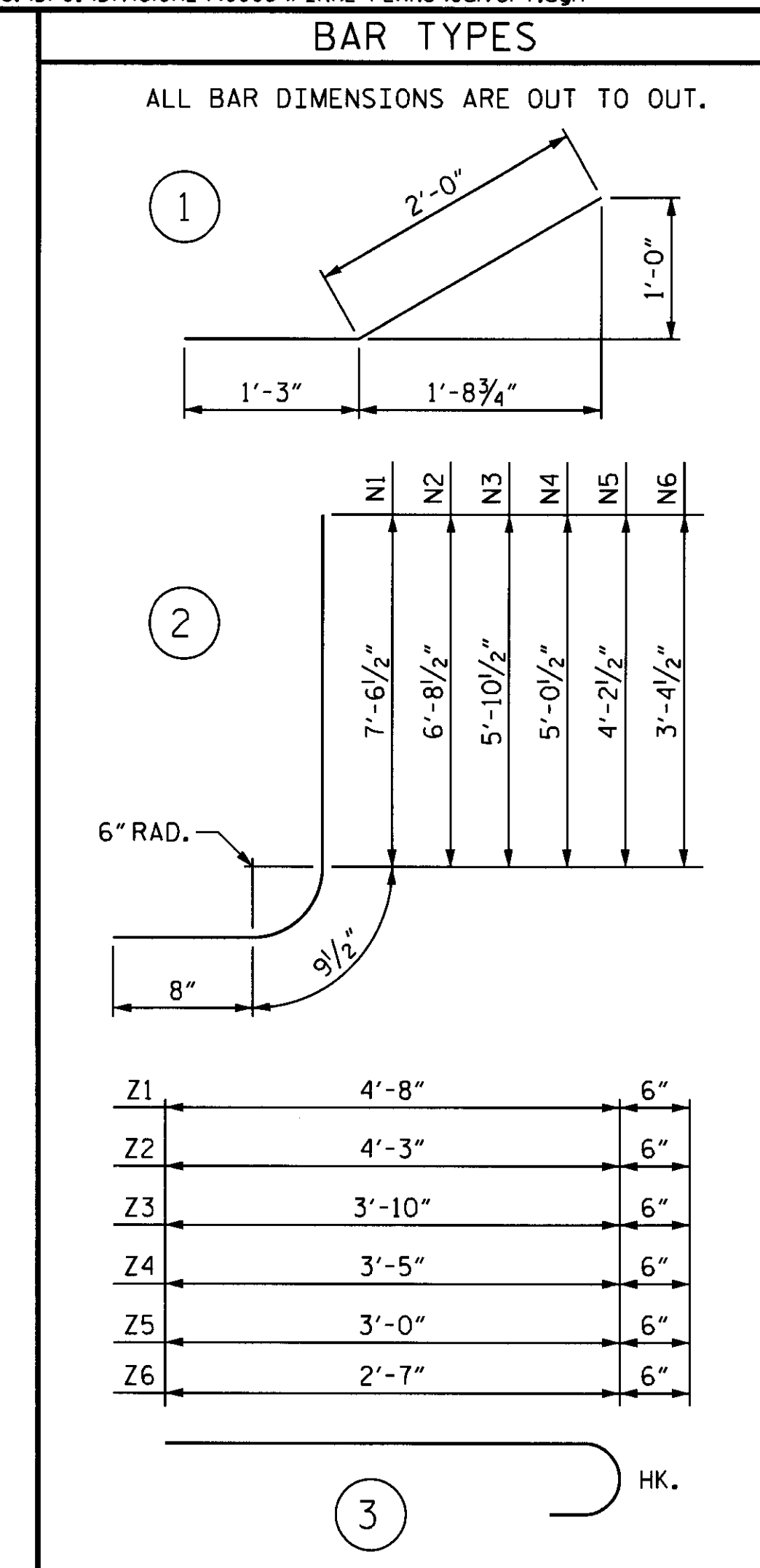
PLAN



ELEVATION



TYPICAL WING SECTION



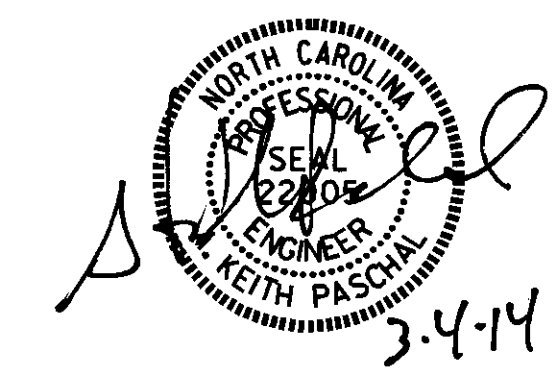
BILL OF MATERIAL FOR ONE WING					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	4	#4	STR	15'-10"	42
H2	2	#4	STR	14'-9"	20
H3	2	#4	STR	9'-4"	12
H4	2	#4	STR	3'-11"	5
H5	12	#4	1	3'-3"	26
H6	2	#4	STR	16'-5"	22
N1	4	#5	2	9'-0"	38
N2	3	#5	2	8'-2"	26
N3	3	#4	2	7'-4"	15
N4	3	#4	2	6'-6"	13
N5	3	#4	2	5'-8"	11
N6	3	#4	2	4'-10"	10
S1	3	#6	STR	6'-0"	27
T1	3	#5	STR	17'-4"	54
V1	4	#4	STR	6'-11"	18
V2	3	#4	STR	6'-1"	12
V3	3	#4	STR	5'-3"	11
V4	3	#4	STR	4'-5"	9
V5	3	#4	STR	3'-7"	7
V6	3	#4	STR	2'-9"	6
Z1	3	#4	3	5'-2"	10
Z2	3	#4	3	4'-9"	10
Z3	3	#4	3	4'-4"	9
Z4	3	#4	3	3'-11"	8
Z5	3	#4	3	3'-6"	7
Z6	3	#4	3	3'-1"	6

TOTAL REINFORCING STEEL FOR 1 WING 434 LBS

BILL OF MATERIAL		
TOTAL REINFORCING STEEL FOR 4 WINGS 1736 LBS		
CLASS A CONCRETE		
4 WINGS		27.2 CY
2 HEADWALLS		1.2 CY
2 END CURTAIN WALLS		1.3 CY
TOTAL		29.7 CY

PROJECT NO. 49005  
LENOIR COUNTY  
STATION: 21+89.80 -L-  
SHEET 5 OF 5

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
WINGS FOR CONCRETE BOX CULVERT  
H = 7'-0" SLOPE = 3:1  
90° SKEW



ASSEMBLED BY: M. L. RORIE DATE: 7/26/13  
CHECKED BY: P. N. HOLDER DATE: 2/26/14  
DESIGN ENGINEER OF RECORD: A. K. PASCHAL DATE: 2/24/14  
DRAWN BY: CCJ 10/99  
CHECKED BY: RWW 03/00

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-5
1			3			TOTAL SHEETS
2			4			5



## STANDARD NOTES

### DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION		
GRADE 60	--	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	-----	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR		
UNTREATED - EXTREME FIBER STRESS	-----	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	-----	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	-----	30 LBS. PER CU. FT.  (MINIMUM)

### MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

### CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

### CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

### DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

### ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.  
ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.  
IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.  
DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

### REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.  
WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

### STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".  
EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.  
WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

### HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.  
METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

### SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

**ENGLISH**

JANUARY, 1990