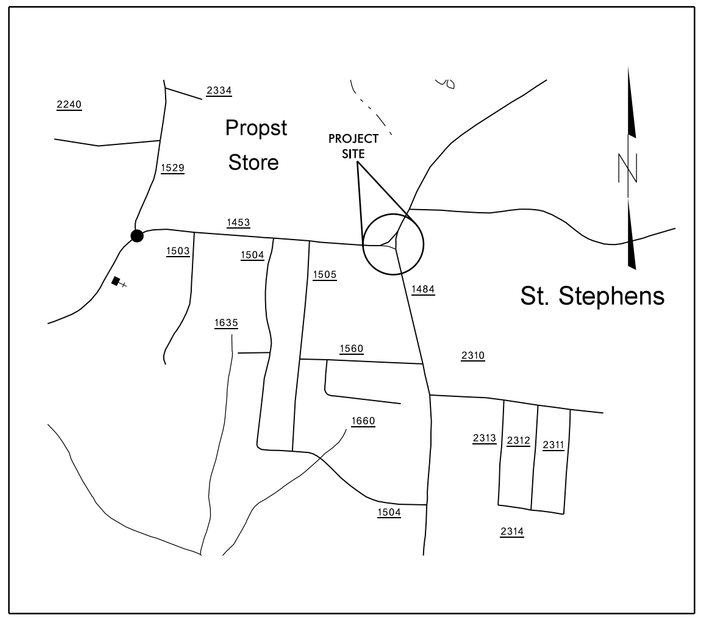
09/08/99

TIP PROJECT: SS–4912AJ

CONTRACT: DL00046

See Sheet 1-A For Index of Sheets



VICINITY MAP NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

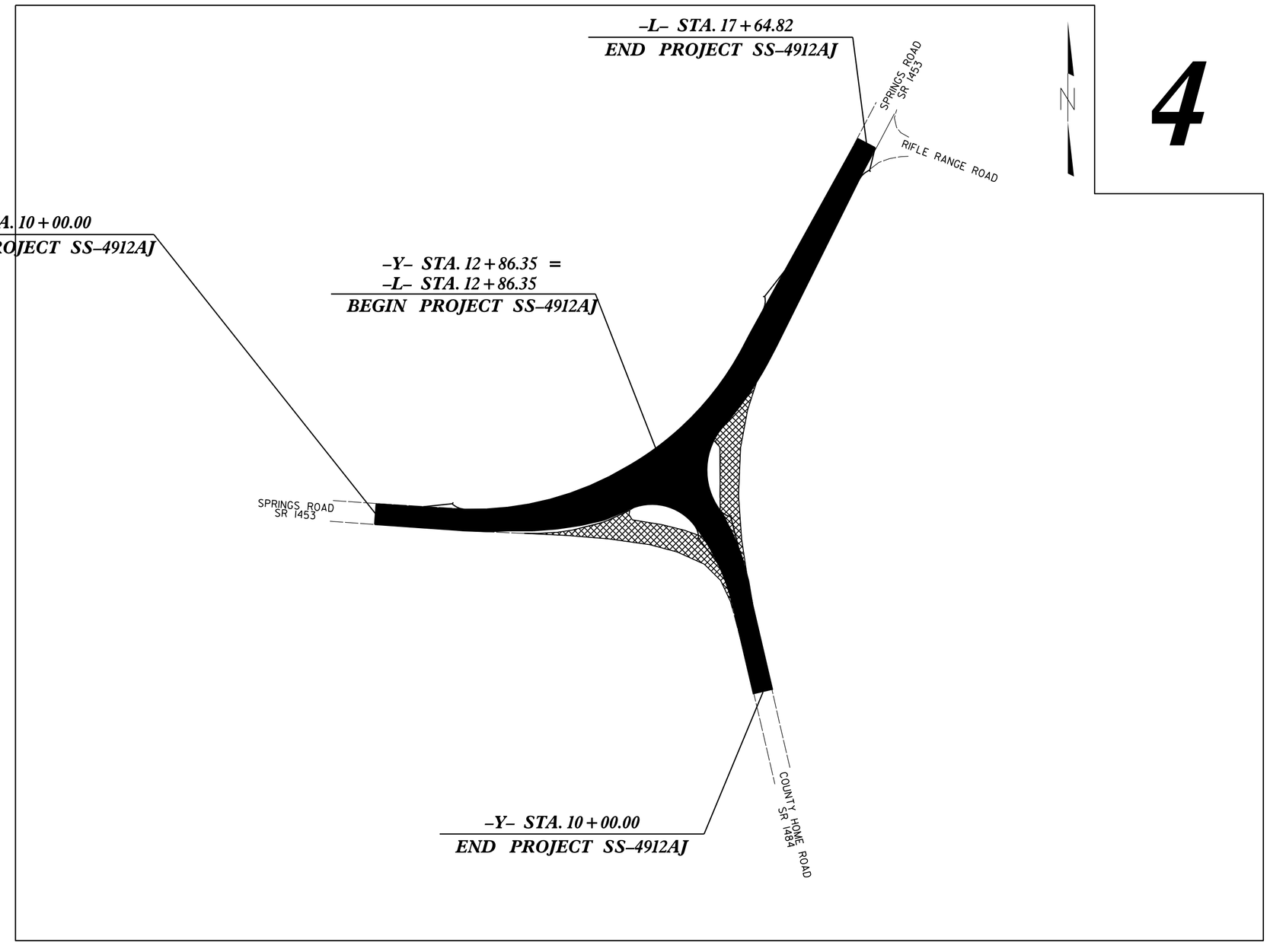
CATAWBA COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SS–4912AJ	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
43456.1.1		PE
43456.2.1		ROW
43456.3.1		CONST.

LOCATION: INTERSECTION OF SPRINGS RD. (SR 1453) AND COUNTY HOME RD. (SR 1484)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, CURB AND GUTTER, PAVEMENT MARKINGS, AND SIGNAL



GRAPHIC SCALES

50 25 0 50 100
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

4 2 0 4 8
PROFILE (VERTICAL)

DESIGN DATA

ADT 2010 = 14000
ADT _____= _____
DHV = ___ %
D = ___ %
T = ___ % *
V = 45 MPH
* TTST = __ DUAL __
FUNC CLASS =
MINOR ARTERIAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT SS–4912AJ = 0.199 MILES
TOTAL LENGTH OF PROJECT SS–4912AJ = 0.199 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
1710 East Marion St., Shelby NC, 28152

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
December 13, 2012

LETTING DATE:
September 24, 2013

M.E. STAFFORD, PE
PROJECT ENGINEER

R.E. HUMPHRIES, PLS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

_____ P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

_____ P.E.
SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

M.L. HOLDER P.E.
TWELFTH DIVISION ENGINEER

23-AUG-2013 14:35
S:\DDC\District 3\Catawba\Springs Rd - County Home\Plansheets\SH_Rdy_1sh_1.dgn
bksowell

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
SS-4912AJ	1-A

ROADWAY DESIGN ENGINEER

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3	SUMMARY OF QUANTITIES
3A THRU 3B	SUMMARY OF DRAINAGE QUANTITIES SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TCP-1 THRU TCP-7	TRAFFIC CONTROL PLANS
PM-1 THRU PM-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
SIG-1 THRU SIG-3	SIGNAL PLANS
X-1 THRU X-8	CROSS-SECTIONS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 08/31/11

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 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.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3' RADII OR RADII 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 RADII 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.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE CATAWBA COUNTY CITY OF HICKORY, TOWN OF CONOVER, CHARTER CABLE AND CENTURY LINK.

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	
200.03	Method of Clearing - Method III
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 I
DIVISION 8 - INCIDENTALS	
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
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

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
SS-4912AJ	1-B

Note: Not to Scale

S.U.E. = Subsurface Utility Engineering

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
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- 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
- 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 — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

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

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite Marker — RW
- 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 — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- 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 — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- 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 — W
- 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 — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- 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

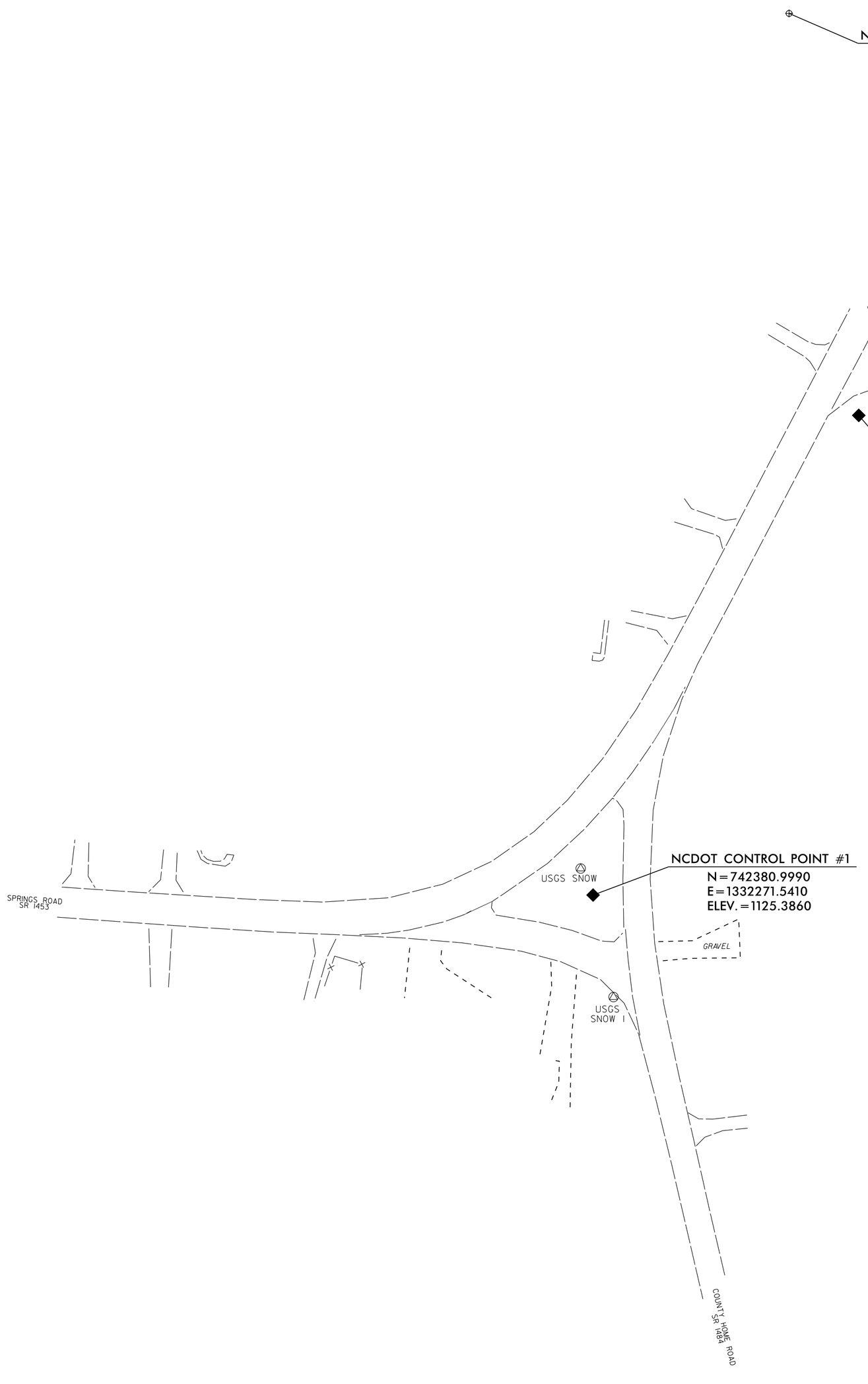
MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- 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.

8/17/99

SURVEY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
	1-C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



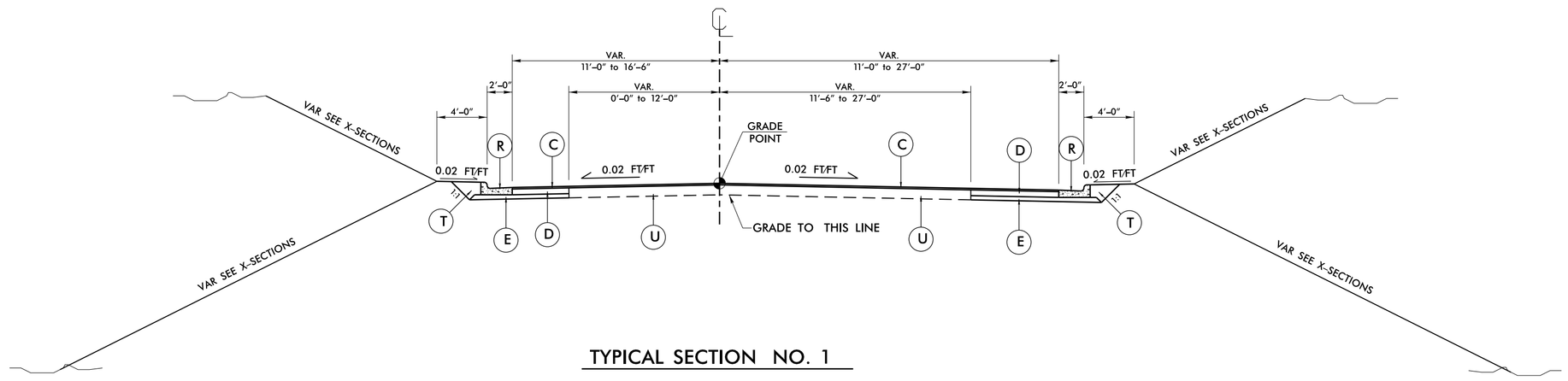
CONTROL DATA

POINT	NORTH	EAST	ELEVATION	STATION	OFFSET
1	742380.9990	1332271.5410	1125.39	-Y- 12+21.67	5.73'
2	742751.7080	1332476.9640	1120.14	-L- 17+40.49	32.76
3	743062.3610	1332423.1210	1110.74	OUTSIDE PROJECT LIMITS	

DRAWING NOT TO SCALE

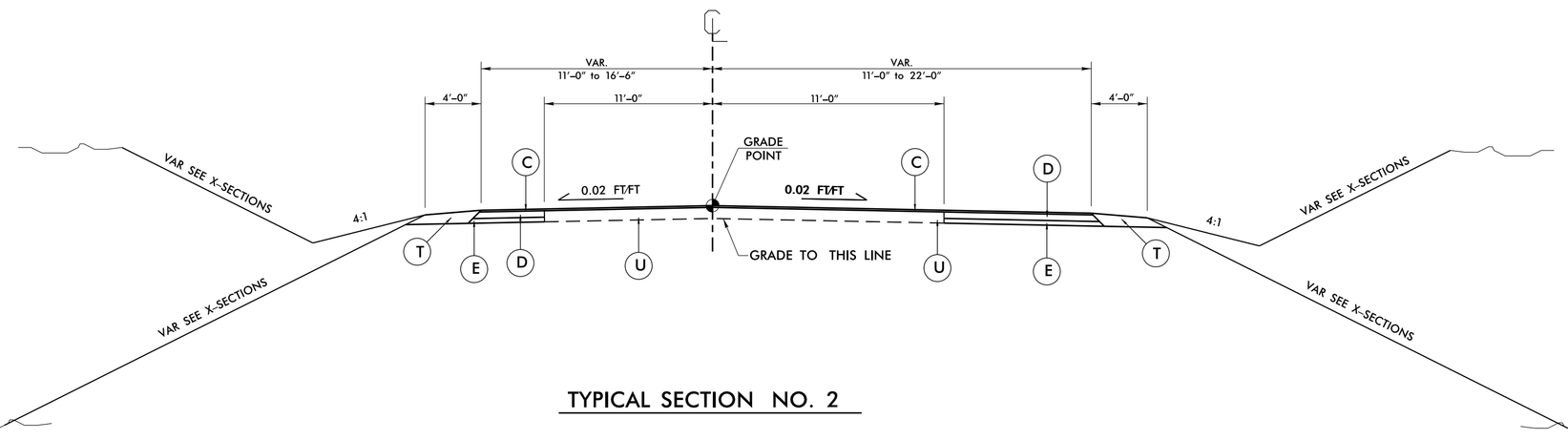
13-AUG-2013 09:14
C:\DOCUMENTS AND SETTINGS\Catawba\Springs Rd - County Home\Plansheets\SH_Rdy_psh_1c.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
SS-4912AJ	2



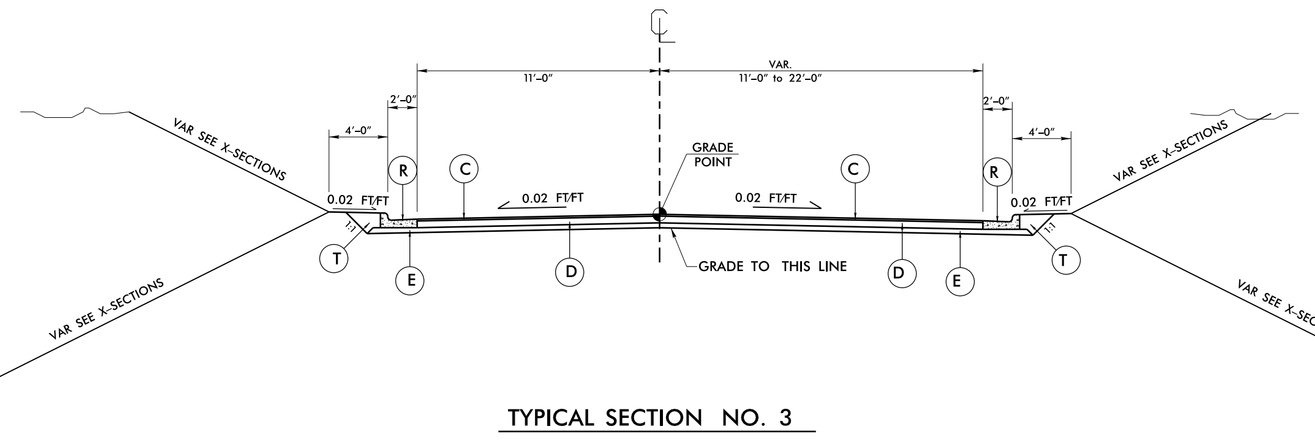
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
–L– STA. 10+00.00 to 17+64.82



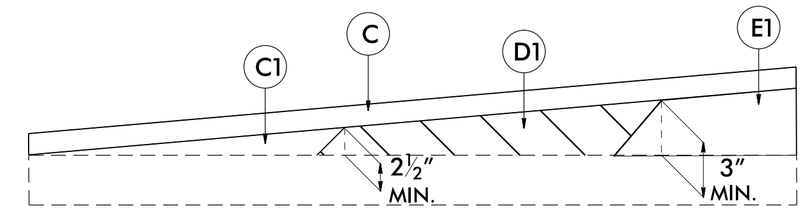
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
–Y– STA. 10+00.00 to 11+92.22



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
–Y– STA. 11+92.22 to 12+63.15



Wedging Detail For Resurfacing

PAVEMENT SCHEDULE

C	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C1	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
D	PROP. APPROX. 5½"ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 313.5 LBS. PER SQ. YD FOR EACH 2 LIFTS
D1	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0 B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
U	EXISTING PAVEMENT.
R1	2'-6" CURB AND GUTTER
T	EARTH MATERIAL

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	SECTION	QUANTITY
0000100000-N	MOBILIZATION	LS	800	1
0000400000-N	CONSTRUCTION SURVEYING	LS	801	1
0043000000-N	GRADING	LS	226	1
0050000000-E	SUPPLEMENTARY CLEARING & GRUBBING	ACR	226	1
0318000000-E	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	TON	300	40
0320000000-E	FOUNDATION CONDITIONING FABRIC	SY	300	120
0366000000-E	15" RC PIPE CULVERTS, CLASS III	LF	310	348
1220000000-E	INCIDENTAL STONE BASE	TON	545	150
1489000000-E	ASPHALT CONC BASE COURSE, TYPE B25.0B	TON	610	340
1498000000-E	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B	TON	610	540
1519000000-E	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	TON	610	300
1575000000-E	ASPHALT BINDER FOR PLANT MIX	TON	620	60
2253000000-E	PIPE COLLARS	CY	840	0.8
2286000000-N	MASONRY DRAINAGE STRUCTURES	EA	840	5
2308000000-E	MASONRY DRAINAGE STRUCTURES	LF	840	2.1
2374000000-N	FRAME WITH GRATE & HOOD, STD 840.03, TYPE **	EA	840	4
2396000000-N	FRAME WITH COVER, STD 840.54	EA	840	1
2549000000-E	2'-6" CONCRETE CURB & GUTTER	LF	846	1230
2612000000-E	6" CONCRETE DRIVEWAY	SY	848	50
3656000000-E	GEOTEXTILE FOR DRAINAGE	SY	876	15
4400000000-E	WORK ZONE SIGNS (STATIONARY)	SF	1110	72
4405000000-E	WORK ZONE SIGNS (PORTABLE)	SF	1110	96
4410000000-E	WORK ZONE SIGNS (BARRICADE MOUNTED)	SF	1110	50
4430000000-N	DRUMS	EA	1130	150
4445000000-E	BARRICADES (TYPE III)	LF	1145	72
4455000000-N	FLAGGER	MD	1150	30
4685000000-E	THERMOPLASTIC PAVEMENT MARKINGLINES (4", 90 MILS)	LF	1205	395
4686000000-E	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)	LF	1205	3289
4695000000-E	THERMOPLASTIC PAVEMENT MARKINGLINES (8", 90 MILS)	LF	1205	100
4710000000-E	THERMOPLASTIC PAVEMENT MARKINGLINES (24", 120 MILS)	LF	1205	67
4725000000-E	THERMOPLASTIC PAVEMENT MARKINGSYMBOL (90 MILS)	EA	1205	5
4905000000-N	SNOWPLOWABLE PAVEMENT MARKERS	EA	1253	25
6000000000-E	TEMPORARY SILT FENCE	LF	1605	800
6006000000-E	STONE FOR EROSION CONTROL, CLASS A	TON	1610	65
6009000000-E	STONE FOR EROSION CONTROL, CLASS B	TON	1610	45
6012000000-E	SEDIMENT CONTROL STONE	TON	1610	65
6015000000-E	TEMPORARY MULCHING	ACR	1615	2.5
6018000000-E	SEED FOR TEMPORARY SEEDING	LB	1620	100
6021000000-E	FERTILIZER FOR TEMPORARY SEED-ING	TON	1620	0.5
6030000000-E	SILT EXCAVATION	CY	1630	100
6036000000-E	MATTING FOR EROSION CONTROL	SY	1631	2000
6042000000-E	1/4" HARDWARE CLOTH	LF	1632	155
6071020000-E	POLYACRYLAMIDE (PAM)	LB	SP	10
6071030000-E	COIR FIBER BAFFLES	LF	1640	15
6084000000-E	SEEDING & MULCHING	ACR	1660	2
6090000000-E	SEED FOR REPAIR SEEDING	LB	1661	50
6093000000-E	FERTILIZER FOR REPAIR SEEDING	TON	1661	0.25
6096000000-E	SEED FOR SUPPLEMENTAL SEEDING	LB	1662	75
6108000000-E	FERTILIZER TOPDRESSING	TON	1665	1.75
6117000000-N	RESPONSE FOR EROSION CONTROL	EA	SP	13
7060000000-E	SIGNAL CABLE	LF	1705	1000
7120000000-E	VEHICLE SIGNAL HEAD (12", 3 SECTION)	EA	1705	6
7132000000-E	VEHICLE SIGNAL HEAD (12", 4 SECTION)	EA	1705	1
7144000000-E	VEHICLE SIGNAL HEAD (12", 5 SECTION)	EA	1705	2
7264000000-E	MESSENGER CABLE (3/8")	LF	1710	1100
7279000000-E	TRACER WIRE	LF	1715	50
7300000000-E	UNPAVED TRENCHING (2")	LF	1715	50
7324000000-N	JUNCTION BOX (STANDARD SIZE)	EA	1716	7
7360000000-N	WOOD POLE	EA	1720	4
7372000000-N	GUY ASSEMBLY	EA	1721	8
7420000000-E	2" RISER WITH WEATHERHEAD	EA	1722	5
7444000000-E	INDUCTIVE LOOP SAWCUT	LF	1725	500
7456000000-E	LEAD-IN CABLE (14-2)	LF	1726	1200
7684000000-N	SIGNAL CABINET FOUNDATION	EA	1750	1
7756000000-N	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)	EA	1751	1
7780000000-N	DETECTOR CARD (TYPE 2070L)	EA	1751	4
7901000000-N	CABINET BASE EXTENDER	EA	1753	1

COMPUTED BY: _____ DATE: _____ 10/25/2011
CHECKED BY: _____ DATE: _____

PROJECT NO.	SHEET NO.
SS-4912AJ	3-A

D12CAD247784

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L- 10+00	18+00	739	407		332
-Y- 10+00	12+50	98	82		16
SUBTOTALS:		837	489		348
SUBTOTALS:					
PROJECT TOTALS:		837	489		348
LOSS DUE TO CLEARING & GRUBBING		-40			-40
PROJECT TOTALS:		797	489		308
GRAND TOTALS:		797	489		308
SAY:		**1000**			

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL

LINE	Station	Station	LOC LT/RT/CL	YD^2
-Y-	11+00	12+86	LT/RT/CL	1115
			TOTAL:	1115.00
			SAY:	1150

D12CAD247784

COMPUTED BY: BKS	DATE: 10/24/2011
CHECKED BY: REH	DATE:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
SS-4912AJ	3-B

**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)

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
10+93 -L-	RT	1			1130.70	1129.48			108								X	X	X
12+00 -L-	LT	2		1127.77		1124.77													
14+50 -L-	LT	3		1124.80															
13+25 -L-	LT	2	3		1124.77	1121.19			240								X	X	X
12+23 -Y-	LT	4		1127.69	1122.46	1122.53													
12+23 -Y-	RT	5		1127.59	1121.75	1121.86													
12+23 -Y-	RT	6		1127.69	1121.47	1121.35													
SHEET TOTALS									348										

STATION	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	** " R.C. PIPE (CLASS V)	**** RC PIPE CULVERTS, CONTRACTOR DESIGN	**** RC PIPE CULVERTS, CONTRACTOR DESIGN	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE
10+93 -L-																													
12+00 -L-																													
14+50 -L-																													
13+25 -L-																													
12+23 -Y-																													
12+23 -Y-																													
12+23 -Y-																													
SHEET TOTALS																													

STATION	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') PER EACH (0' THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34	M.H. FRAME AND COVER STD. 840.54			DRAINAGE PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
10+93 -L-																												0.8		TIE TO EXIST. 15" CONC. DW PIPES
12+00 -L-			1			1			1																					
14+50 -L-			1			1			1																					
13+25 -L-																														
12+23 -Y-			1			1		1																						
12+23 -Y-			1	0.8																		1	1							REMOVE EXIST DI AND REPLACE WITH TBJB
12+23 -Y-			1	1.3		1			1																					
SHEET TOTALS			5	2.1		4		1	3													1	1					0.8		

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I.(N.S.)	(NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

12-AUG-2013 13:50
S:\DOC_District 3\Catawba\Springs Rd - County Home\Plansheets\SH_Rdy_psh_4.dgn

-Y- PI 11+50.61
Δ = 22° 28' 53.3" (LT)
D = 22° 55' 05.9"
L = 98.09'
T = 49.69'
R = 250.00'

-L- PI 13+21.50
Δ = 66° 31' 39.8" (LT)
D = 16° 22' 12.8"
L = 406.39'
T = 229.59'
R = 350.00'

-L- POT 17+64.82
END CONSTRUCTION

-Y- POT 10+00.00
END CONSTRUCTION

-Y- PC 11+00.92

-Y- PT 11+99.02

-L- PC 13+34.91 =
-Y- POT 12+86.35

-L- PT 14+98.31

-L- PC 10+19.91

-L- POT 10+00.00
BEGIN CONSTRUCTION

BOBBY RAY KILLIAN
DB 2930 PG 1647

BOBBY RAY KILLIAN
DB 1908 PG 1649

GRADY DEAL
DB 2218 PG 1955

GRADY DEAL
DB 0330 PG 0005

TAMMY ELDER & JANET HICKS
DB 2932 PG 1688

EMIL & OLIMPIA BELOS
DB 2657 PG 0546

EMIL & OLIMPIA BELOS
DB 2657 PG 0544

BOBBY & TODD KILLIAN
DB 3090 PG 351

BOBBY & TODD KILLIAN
DB 3090 PG 351

JENNIFER BRASWELL
DB 2708 PG 0077

PATSY SIGMON
DB 2254 PG 1047

CYRIL & KIMBERLY YANCEY
DB 2927 PG 0956

COUNTY HOME ROAD

SPRINGS ROAD SR 1453

RIFLE RANGE ROAD

N 13° 06' 47.4" W

N 27° 39' 26.3" E

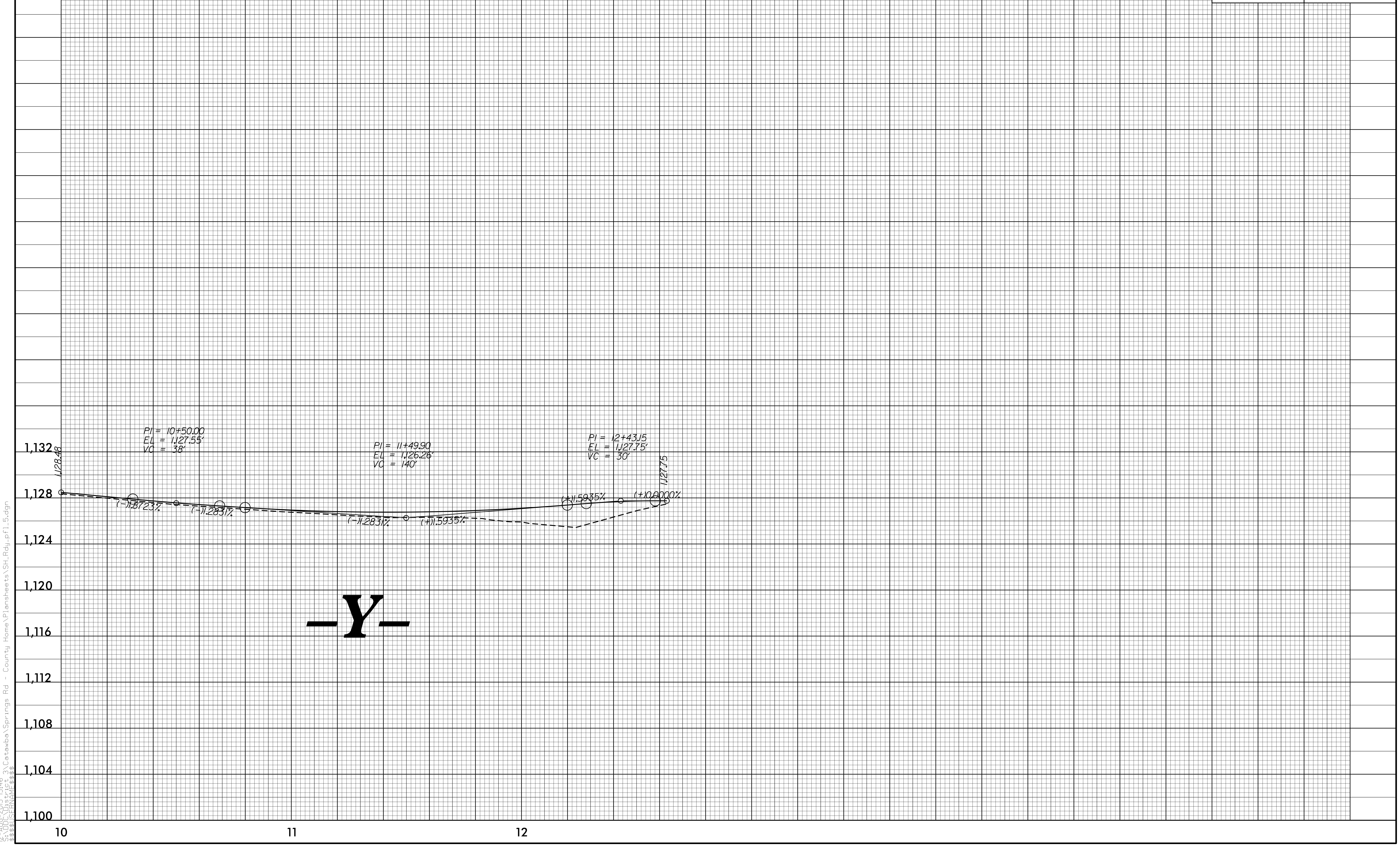
S 85° 48' 53.9" E

N 35° 35' 40.7" W

PROJECT REFERENCE NO.	SHEET NO.
SS-4912AI	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/9

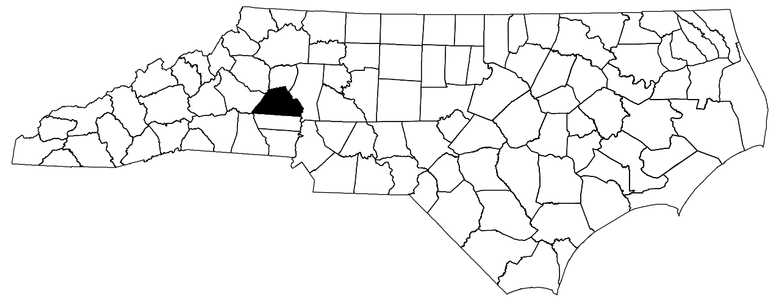
PROJECT REFERENCE NO.	SHEET NO.
SS-4912AJ	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

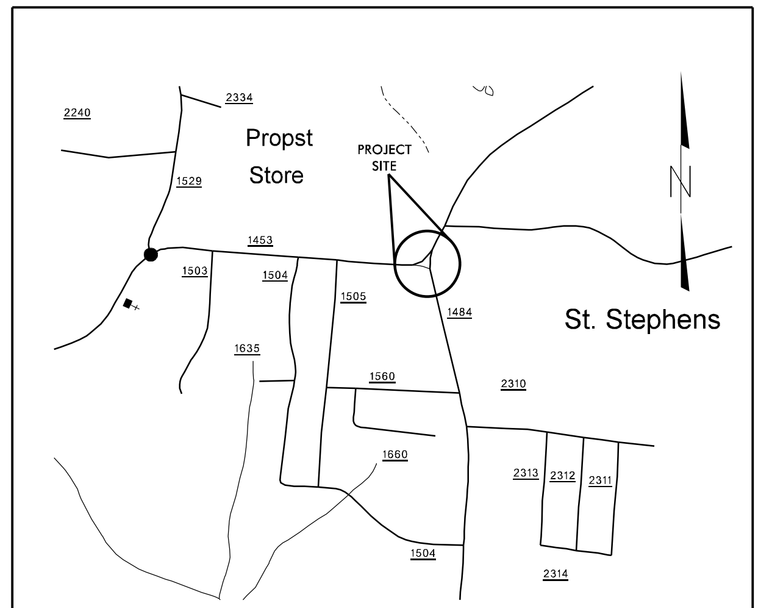


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

CATAWBA COUNTY





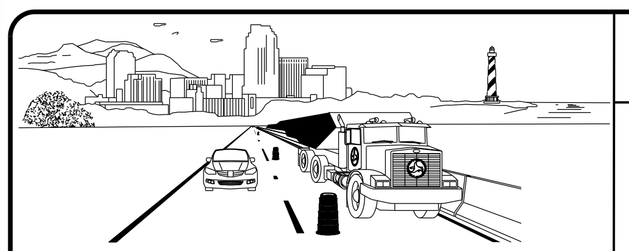
VICINITY MAP

INDEX OF SHEETS

SHEET NO.
TCP-1

SS-4912AJ

TIP PROJECT:



WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. *STATE TRAFFIC MANAGEMENT ENGINEER*

_____ *TRAFFIC CONTROL PROJECT ENGINEER*

_____ *TRAFFIC CONTROL PROJECT DESIGN ENGINEER*

_____ *TRAFFIC CONTROL DESIGN ENGINEER*

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

*APPROVED:*_____
*DATE:*_____

SEAL

$$$$$$SYSTIME$$$$
$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$USERNAME$$$

PROJ. REFERENCE NO.	SHEET NO.
SS-4912AJ	TCP-1A

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANAUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMPS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS
1205.11	PAVEMENT MARKINGS - RAILROAD CROSSINGS
1205.12	PAVEMENT MARKINGS - BRIDGES
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

LEGEND

GENERAL

- ⬅ DIRECTION OF TRAFFIC FLOW
- ◄🚶► DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- ------- EXIST. PVMT.
- ⟶ NORTH ARROW
- ——— PROPOSED PVMT.
- ☐ WORK AREA
- ▨ REMOVAL
- ☐ USER DEFINED (IF NEEDED)
- ☐ USER DEFINED (IF NEEDED)

TRAFFIC CONTROL DEVICES

- ▨ BARRICADE (TYPE III)
- ▲ CONE
- ● DRUM ◉ SKINNY DRUM ◎ TUBULAR MARKER
- 〰 TEMPORARY CRASH CUSHION
- ● FLASHING ARROW PANEL (TYPE C)
- ■ FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- ⊲ PORTABLE SIGN
- ⊢ STATIONARY SIGN
- ▷ STATIONARY OR PORTABLE SIGN

SIGNALS

- ● EXISTING
- ◎ PROPOSED
- ◎ TEMP TEMPORARY

PAVEMENT MARKINGS

- —— EXISTING LINES
- —— TEMPORARY LINES

PAVEMENT MARKERS

- □ CRYSTAL/CRYSTAL
- ◧ CRYSTAL/RED
- ◆ YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

- ↑↰↰ PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

APPROVED: ______ DATE: ______

SEAL

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD
DRAWINGS & LEGEND

MANAGEMENT STRATEGIES

-COUNTY HOME ROAD (SR 1484) WILL BE CLOSED DURING CONSTRUCTION FROM THE INTERSECTION SRINGS ROAD (SR 1454) TO +/- 200 FEET SOUTH OF THE SPRINGS ROAD INTERSECTION. THERE ARE THREE PRIVATE PROPERTY ENTRANCES LOCATED WITHIN THIS CLOSED AREA THAT SHALL BE MAINTAINED DURING CONSTRUCTION TO ALLOW ACCESS TO THESE PROPERTIES.

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

PAVEMENT EDGE DROP OFF REQUIREMENTS

D) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

E) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

F) STATE FORCES WILL BE RESPONSIBLE FOR PROVIDING PERMANENT SIGNING.

G) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

H) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

I) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

J) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.

K) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

L) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS SHOWN IN THE PAVEMENT MARKING PLAN.

M) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

N) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

APPROVED:______________ DATE:________

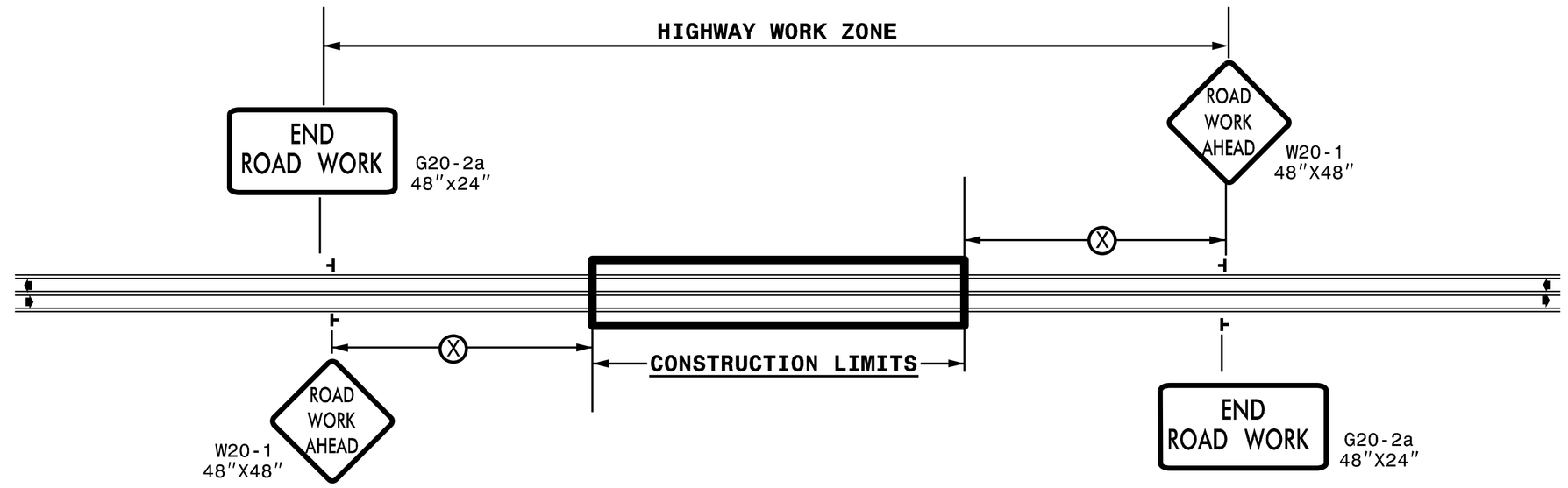
SEAL

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

GENERAL NOTES

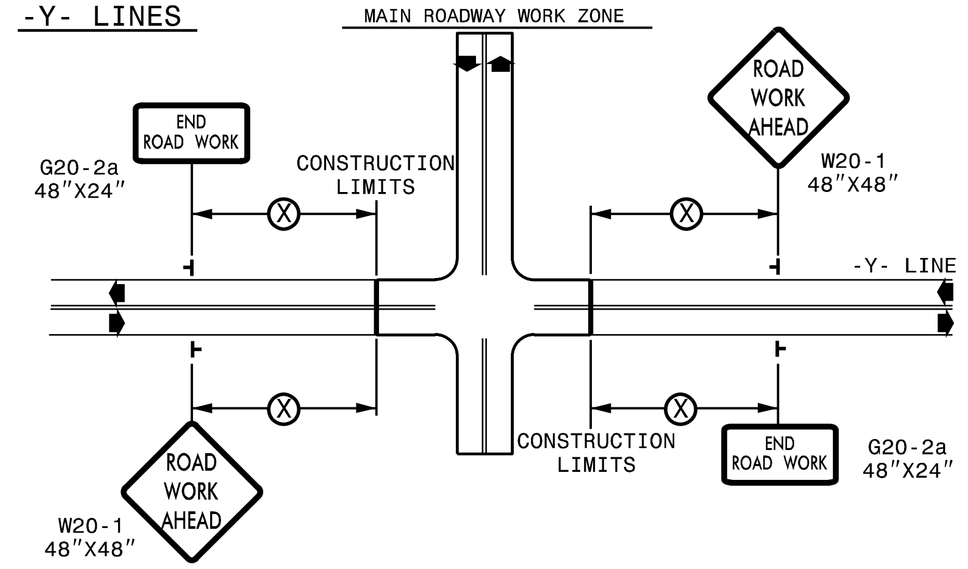
PROJ. REFERENCE NO.	SHEET NO.
SS-4912AJ	TCP-3

TWO-WAY UNDIVIDED ** (L-LINES)



POSTED SPEED LIMIT (M.P.H.)	RECOMMENDED MINIMUM SIGN SPACING (X)
≤ 50	500′
≥ 55	1000′

ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)



GENERAL NOTES

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4″ X 4″ WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.
- ** TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

LEGEND

- ⊢ STATIONARY SIGN
- ⬅ DIRECTION OF TRAFFIC FLOW

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

DETAIL DRAWING FOR TWO-WAY UNDIVIDED WORK ZONE WARNING SIGNS

SHEET 1 OF 1

APPROVED:_____ DATE:_____

SEAL

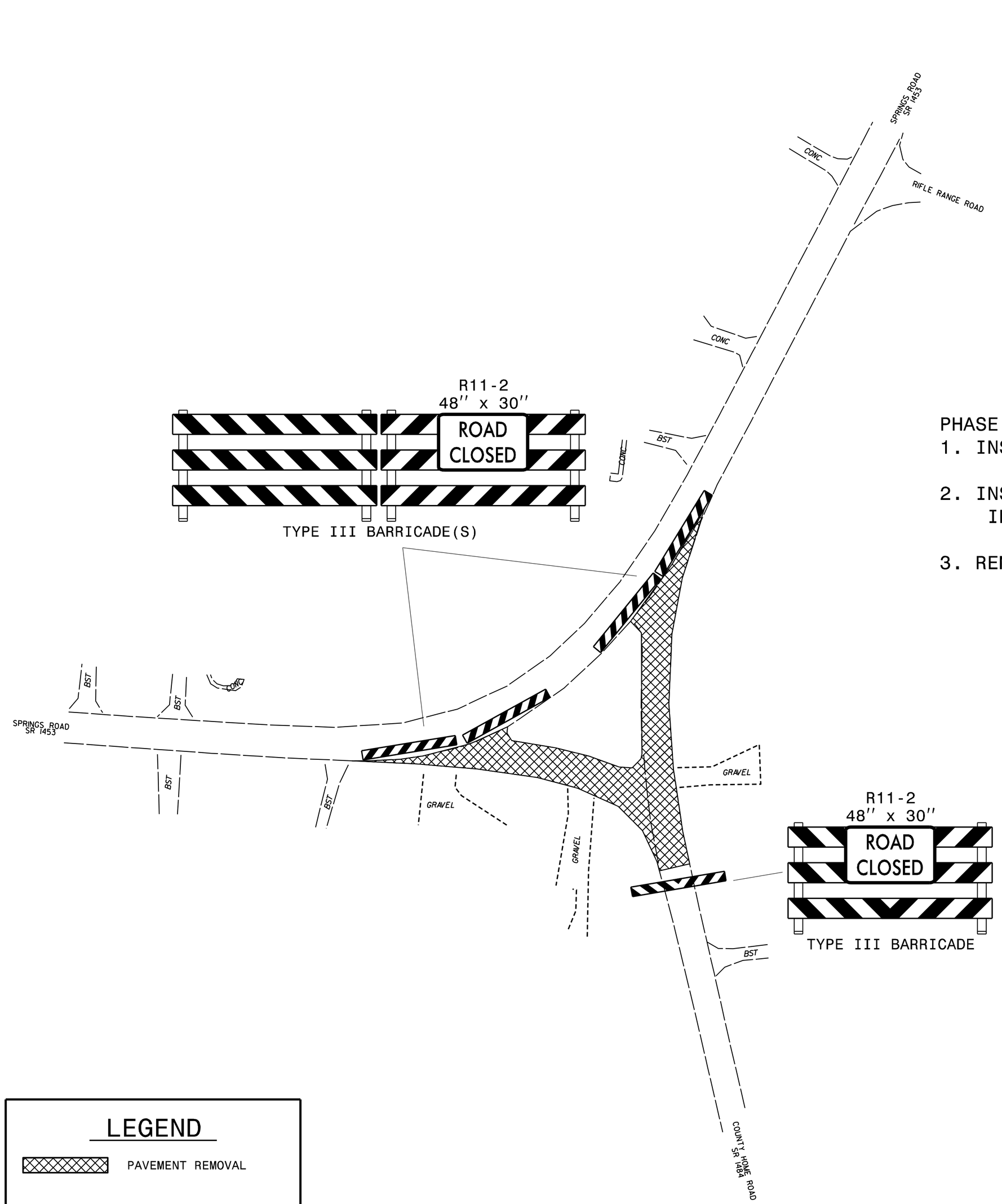
DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS

WORK ZONE WARNING SIGNS

$$$$$$SYSTIME$$$$$$
$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
SS-4912AJ	TCP-4



TYPE III BARRICADE(S)

TYPE III BARRICADE

PHASE I

1. INSTALL ADVANCED WARNING WORKZONE SIGNS PER PLANSHEET TCP-3.

2. INSTALL TYPE III BARRICADES TO CLOSE SECTION OF COUNTY HOME ROAD IN ORDER TO REMOVE EXISTING ASPHALT PAVEMENT.

3. REMOVE EXISTING ASPHALT PAVEMENT IN AREAS DESIGNATED ON ROADWAY PLANSHEET 4.

LEGEND

PAVEMENT REMOVAL

TYPE III BARRICADE

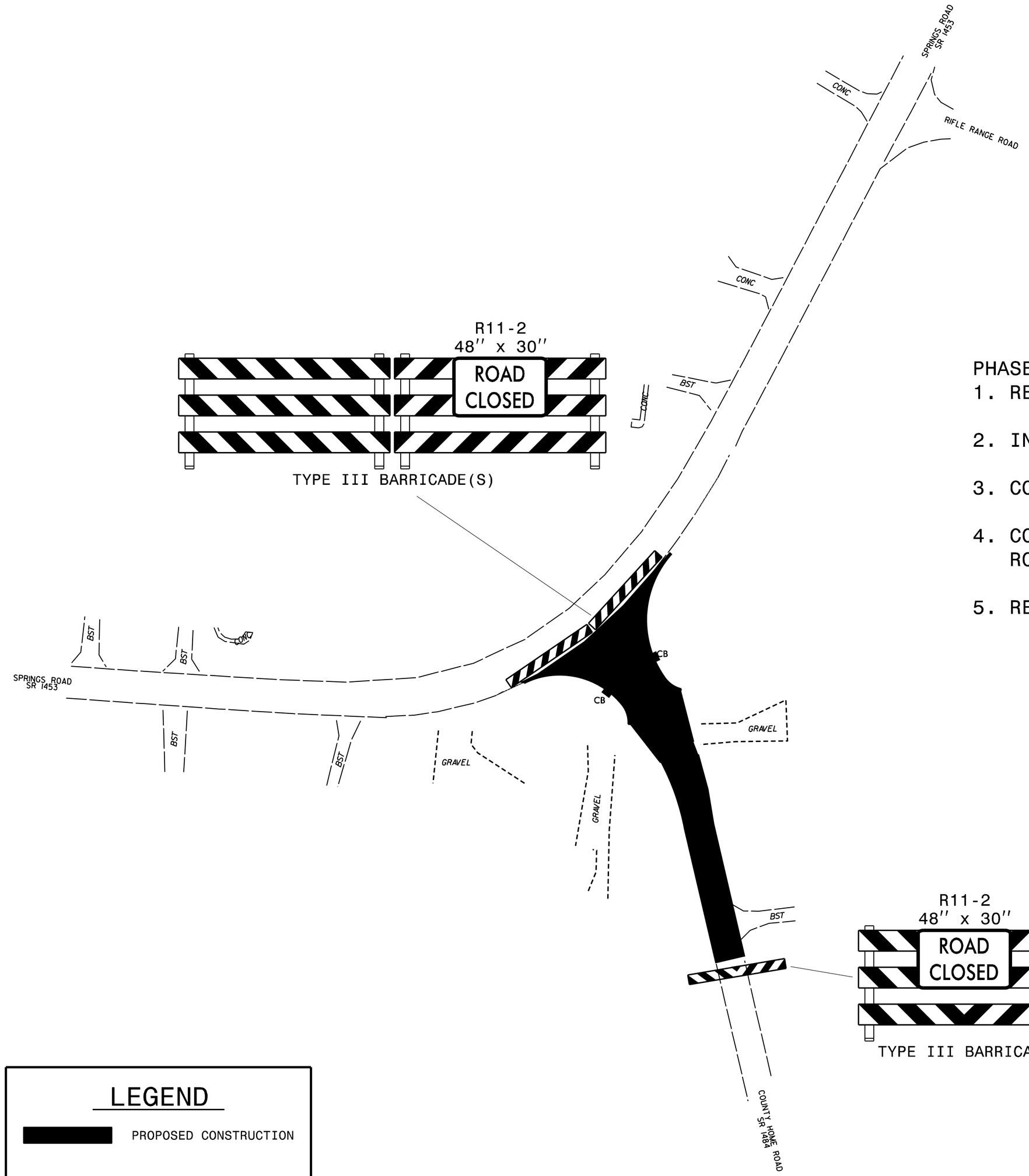
$$$$$$$CSYTIME$$$$$
$$$$$$$$$$$$$$$$$$$DGN\$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

APPROVED:_____ DATE:_____

SEAL

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

PHASE I



PROJ. REFERENCE NO.	SHEET NO.
SS-4912AJ	TCP-5

PHASE I CONTINUED

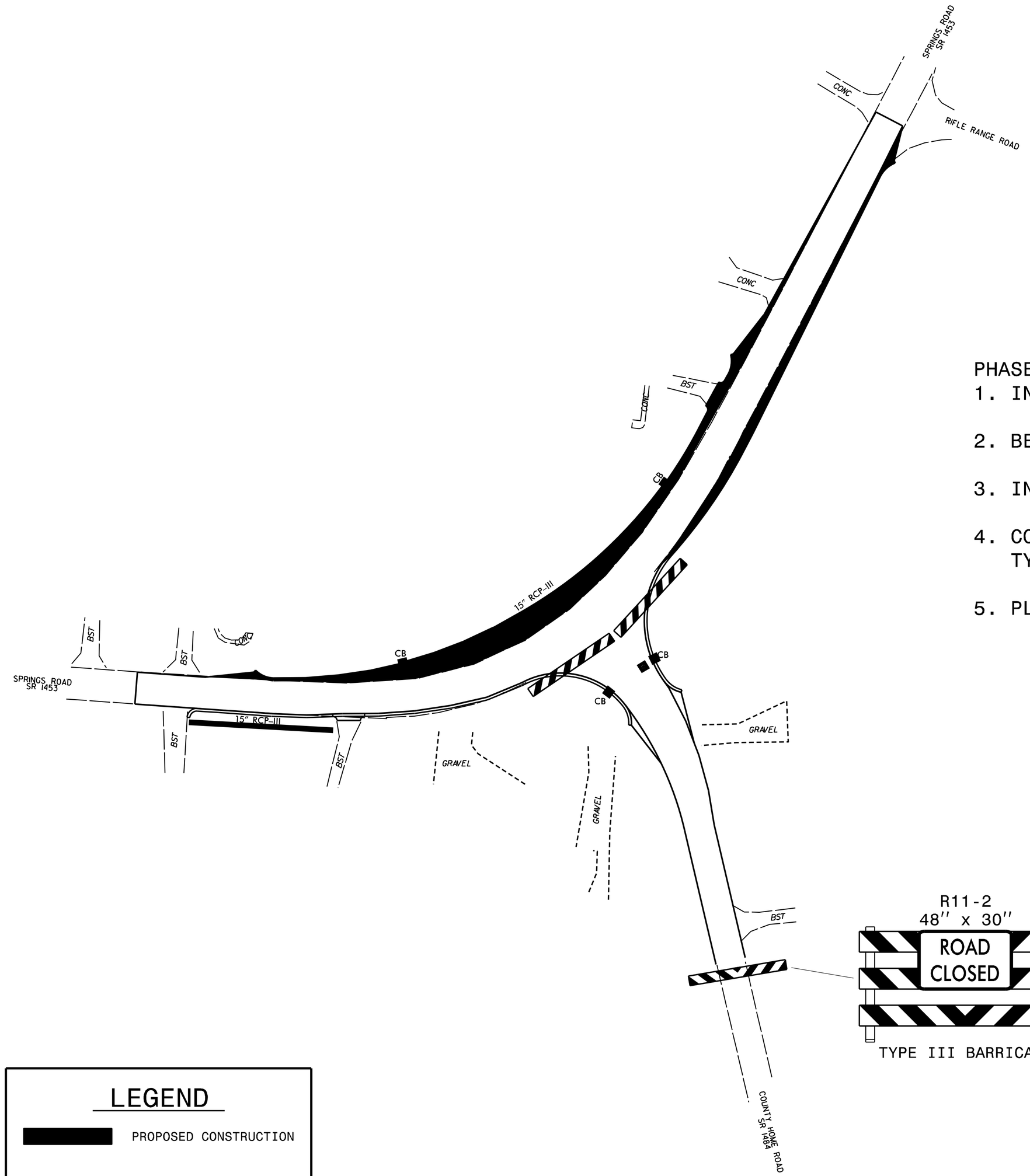
1. REPOSITION BARRICADES AS REQUIRED TO PROTECT WORK AREA.
2. INSTALL EROSION CONTROL DEVICES PER EROSION CONTROL PLANS.
3. CONSTRUCT DRAINAGE STRUCTURES FOR -Y- LINE DRAINAGE.
4. CONSTRUCT SUBGRADE AND PAVEMENT FOR -Y- LINE USING TYPICAL SECTION ON ROADWAY PLANSHEET 2, ROADWAY PLANSHEET 4, AND PROFILE SHEET 5.
5. RECONNECT EXISTING DRIVEWAYS TO NEW ALIGNMENT.

APPROVED:__________ DATE:__________

SEAL

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

PHASE I CONTINUED



PROJ. REFERENCE NO.	SHEET NO.
SS-4912AJ	TCP-6

PHASE II
1. INSTALL EROSION CONTROL MEASURE PER EROSION CONTROL PLANS.

2. BEGIN GRADING FOR WIDENING OPERATIONS.

3. INSTALL DRAINAGE DEVICES AS CONSTRUCTION ALLOWS.

4. CONSTRUCT SUBGRADE AND PAVEMENT FOR -L- LINE WIDENING USING TYPICAL SECTION ON ROADWAY PLANSHEET 2 AND ROADWAY PLANSHEET 4.

5. PLACE PROPOSED CURB AND GUTTER AS SHOWN ON PLANSEET 4.

LEGEND

■	PROPOSED CONSTRUCTION
▨	TYPE III BARRICADE

APPROVED:__________ DATE:__________

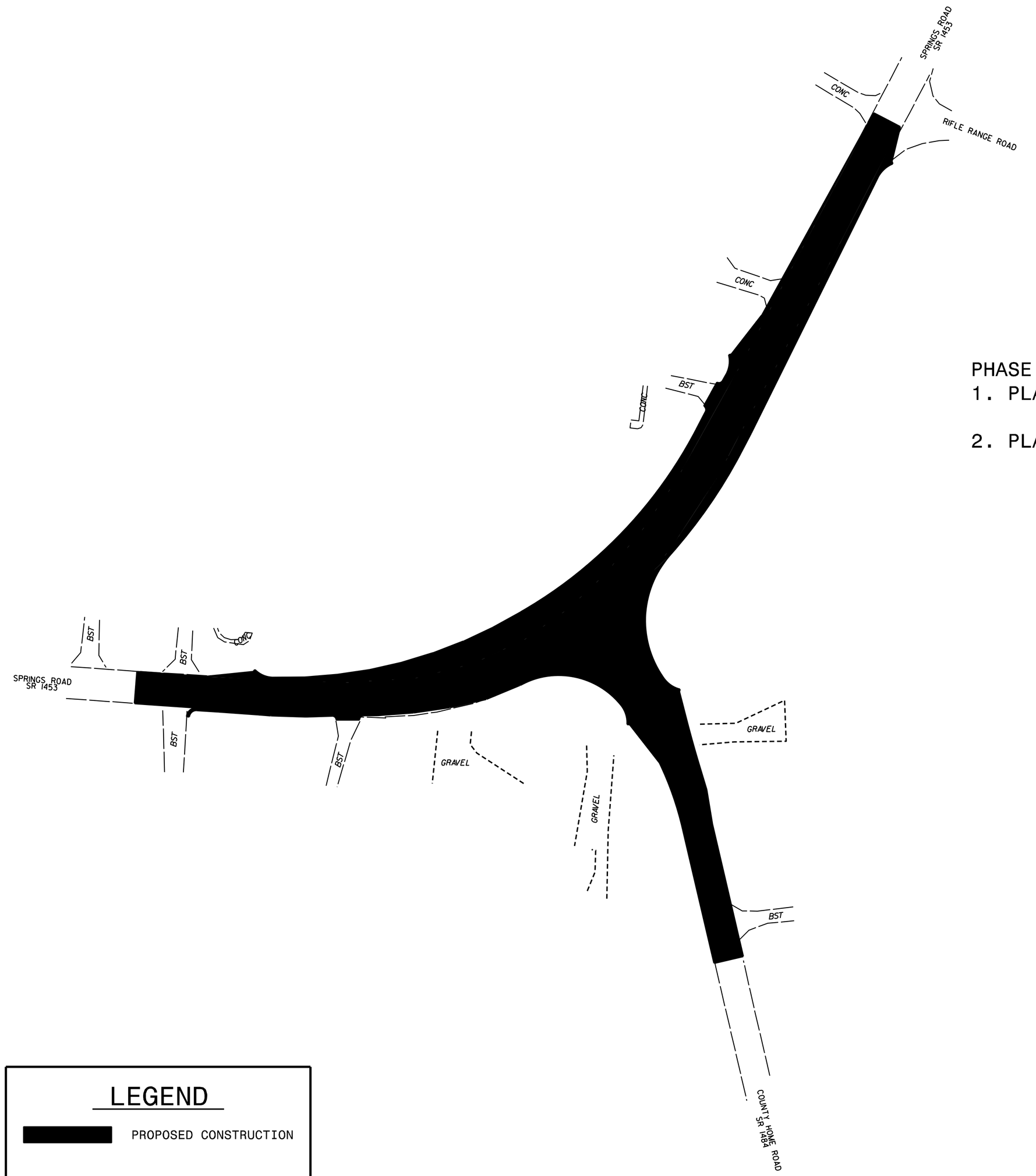
SEAL

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASE II

$$$$$$SYSTIME$$$$
$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
SS-4912AJ	TCP-7



PHASE III

1. PLACE FINAL SURFACE LAYER ON -L- AND -Y- LINES.

2. PLACE FINAL PAVEMENT MARKING LINES ACCORDING TO PAVEMENT MARKING PLANS.

LEGEND

PROPOSED CONSTRUCTION

TYPE III BARRICADE

APPROVED: _____ DATE: _____

SEAL

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

PHASE III

$$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$
$$$USERNAME$$$$

FINAL PAV'T MARKING SCHEDULE

Pavement Marking Schedule

TIP Project # SH

SYMBOL	DESCRIPTI		PAY ITEM QUANTITY			TOTAL	
		FINAL PAVEMENT MARKINGS					
T2	WHITE STOPBAR	THERMOPLASTIC(24", 120 MILS)	67	LF			
					TOTAL	67	LF
		THERMOPLASTIC(4", 120 MILS)					
TD	2 FT. WHITE MINISKIP		39	LF			
TE	WHITE SOLID LANE LINE		230	LF			
TI	YELLOW DOUBLE CENTER		3020	LF			
					TOTAL	3289	LF
		THERMOPLASTIC(4", 90 MILS)					
TA	WHITE EDGELINE		450	LF			
					TOTAL	450	LF
		THERMOPLASTIC(8", 90 MILS)					
TT	YELLOW DIAGONAL		100	LF			
					TOTAL	100	LF
		THERMOPLASTICPAVEMENT MARKING SYMBOLS (90 MILS)					
UA	LEFT TURN ARROW		3	EA			
UB	RIGHT TURN ARROW		2	EA			
					TOTAL	5	EA

SEE ROADWAY STANDARD DRAWING NUMBERS 1205.01, 1205.02, 1205.04, 1205.05, 1205.06, 1205.08, 1205.09, 1250.01 AND 1253.01

$$$$$$SYSTIME$$$$
$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

APPROVED: __________ DATE: __________

SEAL

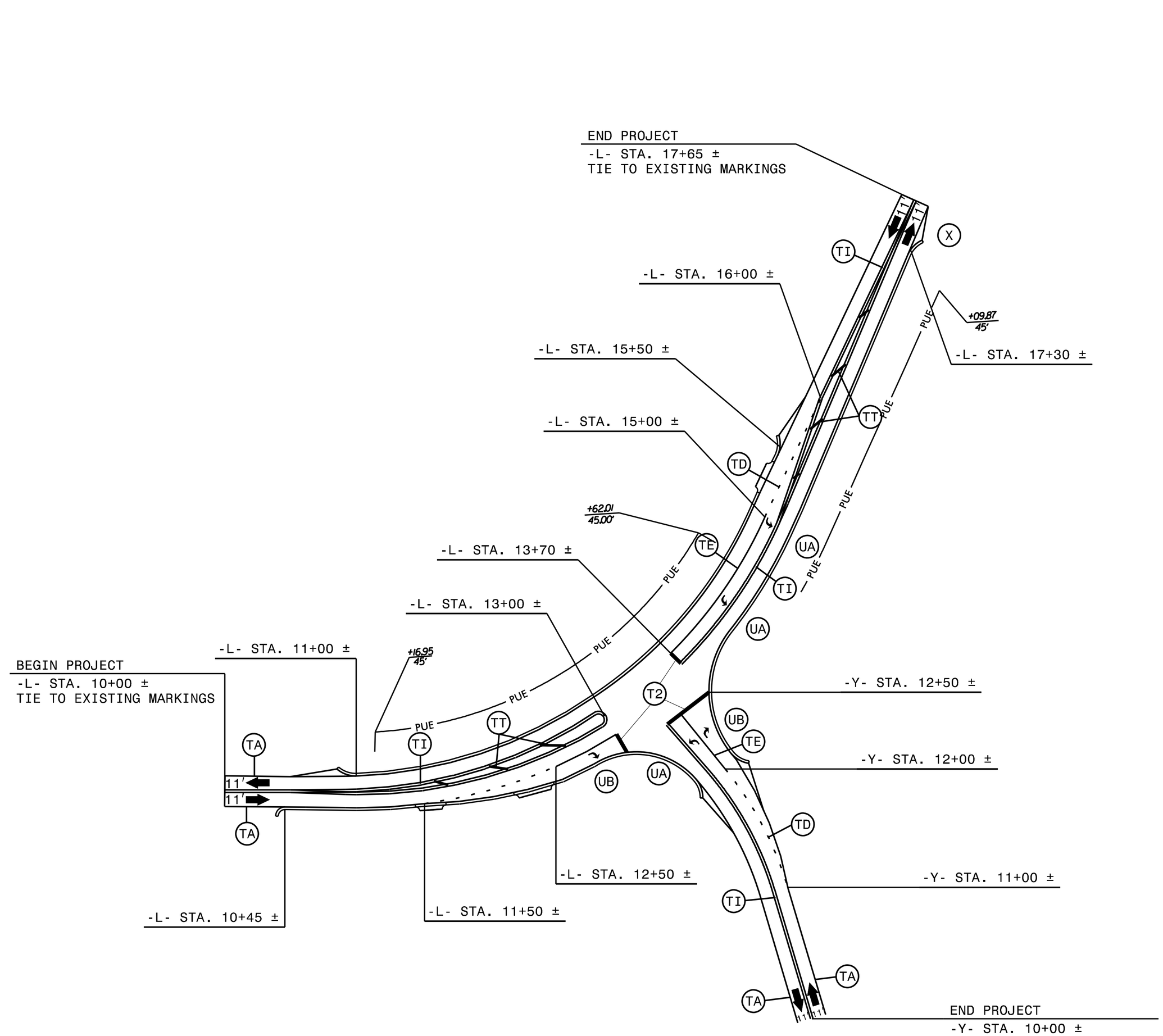
FINAL PAVEMENT MARKING PLAN

SCALE: NONE
DATE: 06-11
DWG. BY: BKS
DESIGN BY:
REVIEWED BY:

REVISIONS

CADD FILE

PROJ. REFERENCE NO.	SHEET NO.
SS-4812AJ	PMP-2



NOTES:

-SEE SHEET PM-1, FOR FINAL PAVEMENT MARKING SCHEDULE.

-PAVEMENT MARKINGS, SYMBOLS, AND CHARACTERS ARE TO BE MARKED ACCORDING TO ROADWAY STANDARD DRAWINGS UNLESS OTHERWISE NOTED IN THE PLANS.

-PAVEMENT MARKERS ARE TO BE SPACED ACCORDING TO THE ROADWAY STANDARD DRAWINGS.

APPROVED:_____ DATE:_____

SEAL

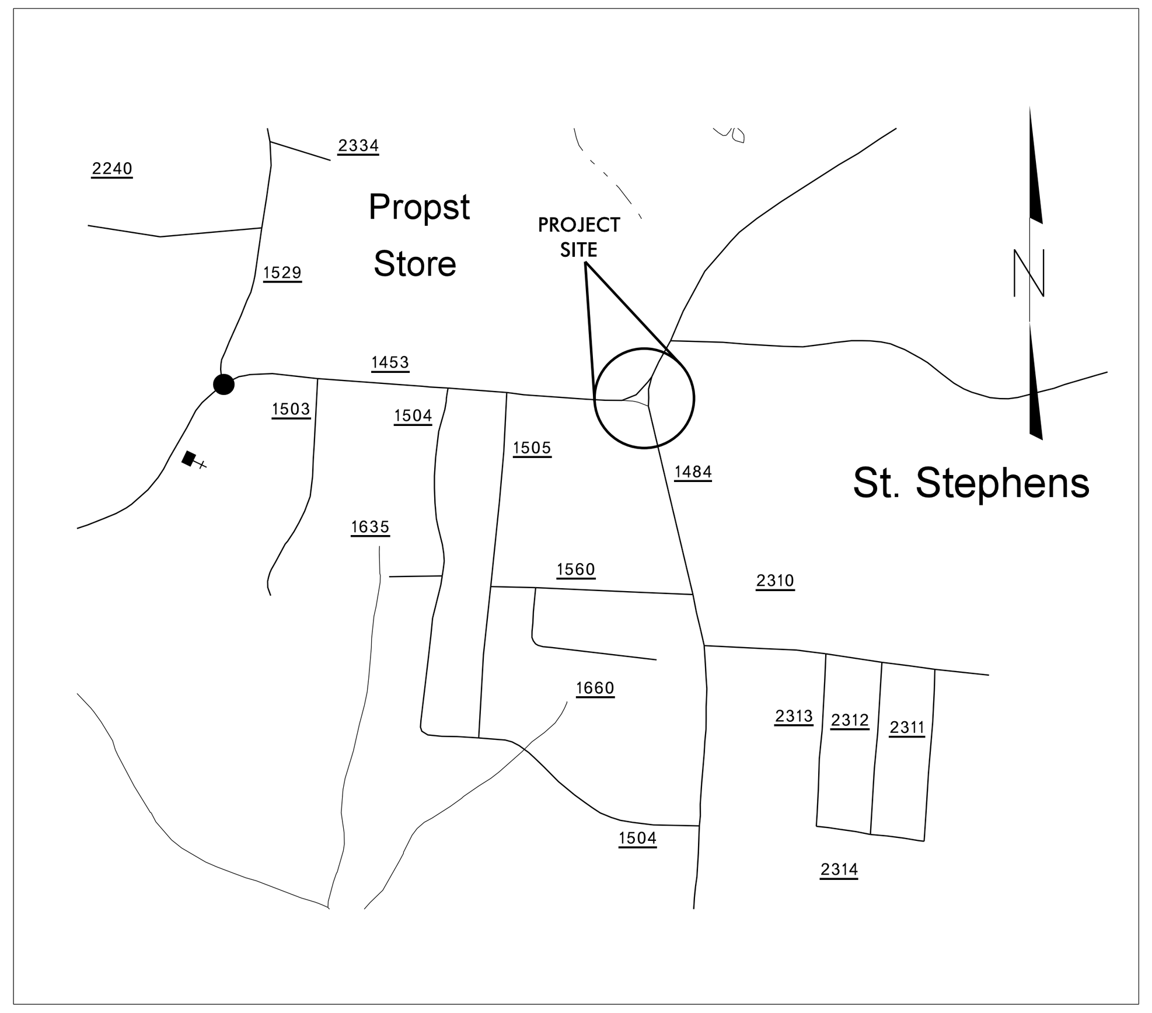
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

FINAL PAVEMENT MARKING PLAN

$$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

TIP PROJECT: SS-4912AJ

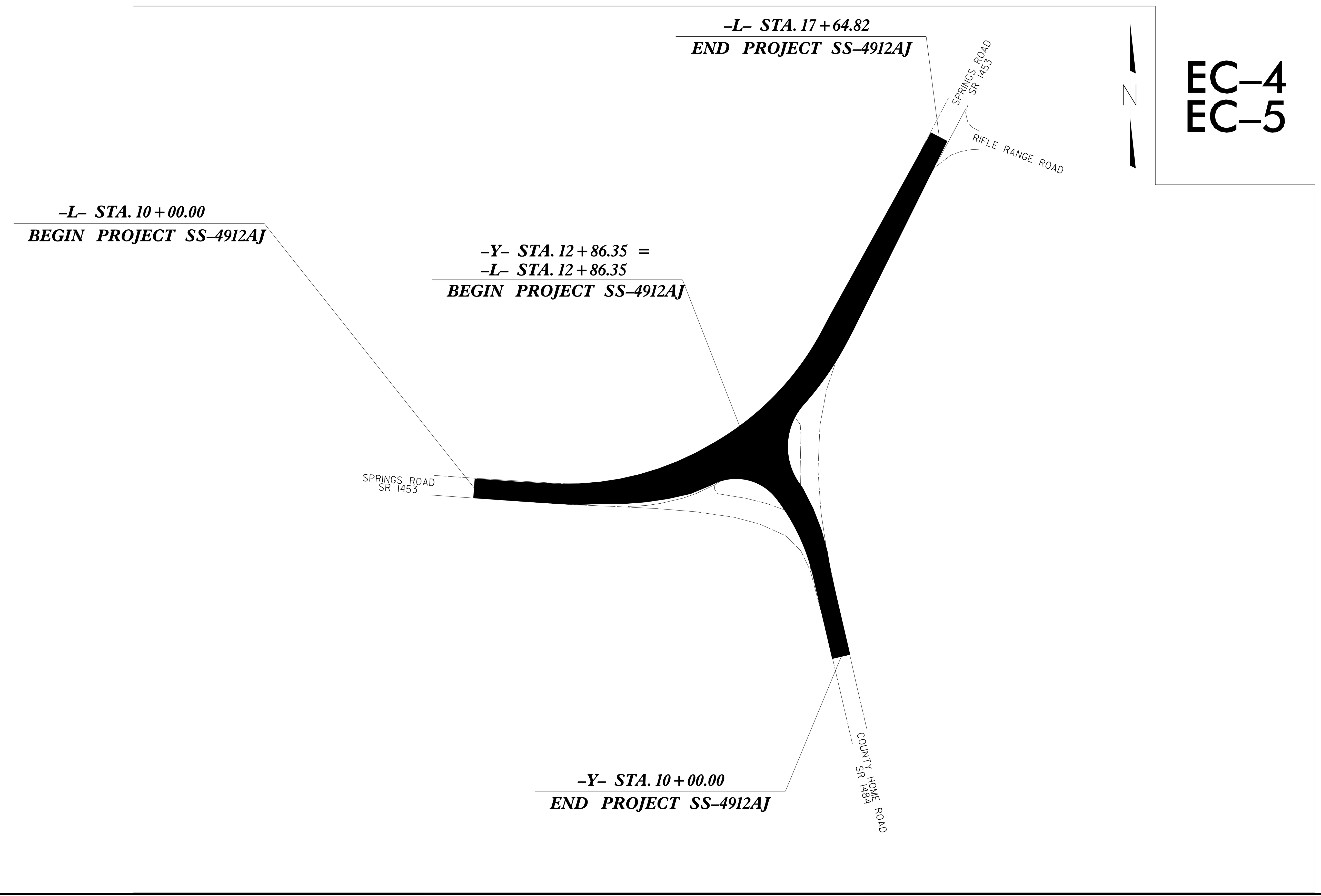
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SS-4912AJ	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



VICINITY MAP NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description
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
1633.01	Temporary Rock Silt Check Type-A
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)
1633.02	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
	Rock Inlet Sediment Trap:
1632.01	Type A
1632.02	Type B
1632.03	Type C
	Skimmer Basin
	Tiered Skimmer Basin
	Infiltration Basin

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

GRAPHIC SCALE

0 PLANS

0 PROFILE (HORIZONTAL)

0 PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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 12 DDC UNIT

1710 East Marion St.
Shelby, NC 28152

2012 STANDARD SPECIFICATIONS

EC Design: B.K. Sowell Level III #332

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 revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

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

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
SS-4912AJ	EC-1A

EROSION CONTROL & PIPE INSTALLATION SCHEDULE
GENERAL E&SC NOTES
GROUND STABILIZATION CHART

Erosion Control Schedule and Notes

1. Generally, the order of installation of the erosion control measures will be as follows:

   A. Temporary silt basins shall be installed before clearing and grubbing begins.

   B. Silt fences and temporary silt ditches shall be installed after clearing and before grading.

   C. Temporary stone ditch checks with PAM or wattles with PAM shall be installed in all disturbed areas as soon as the disturbance begins.

   D. Final stone ditch checks or wattles shall be installed as soon as ditch line is established.

   E. Pipe outlet and inlet protection will be done as soon as the pipe is installed.

   F. Other permanent erosion control measures are to be implemented as soon as practical.

2. Temporary rock silt checks, type B will be spaced by percent grade as shown in the erosion control plan.

3. No. 5 stone, or equivalent, will be used in conjunction with the temporary rock silt checks in locations where water is leaving the project or entering a pipe.

4. All devices are to be cleaned out when half full.

5. Establish permanent vegetation per ground stabilization chart.

Notes:

For silt basin size see the attached erosion control plans.

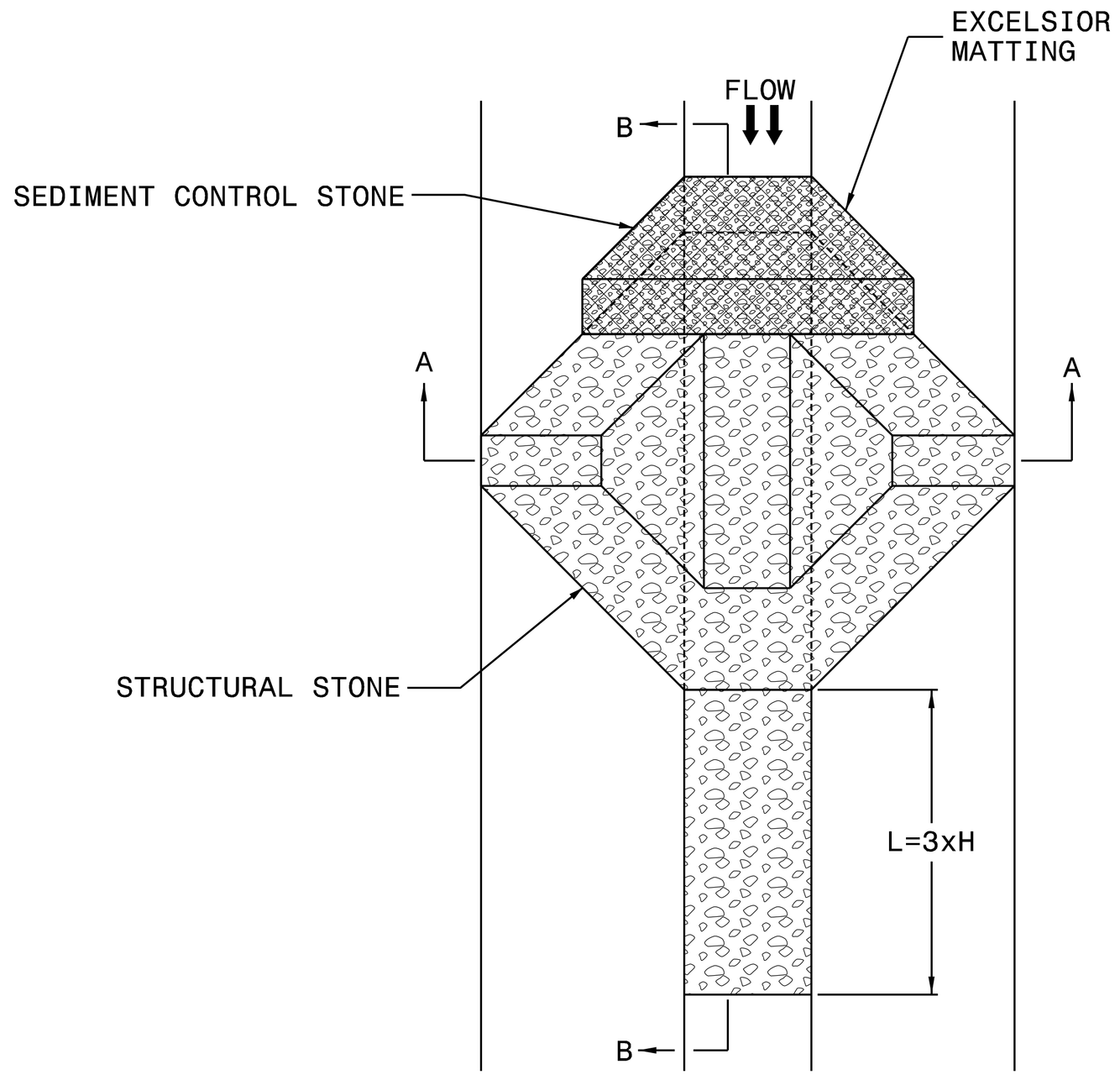
PAM is to be placed on all Type A checks and wattles in the erosion control chain except for the final device in HWQ and Trout projects.

GROUND STABILIZATION CHART

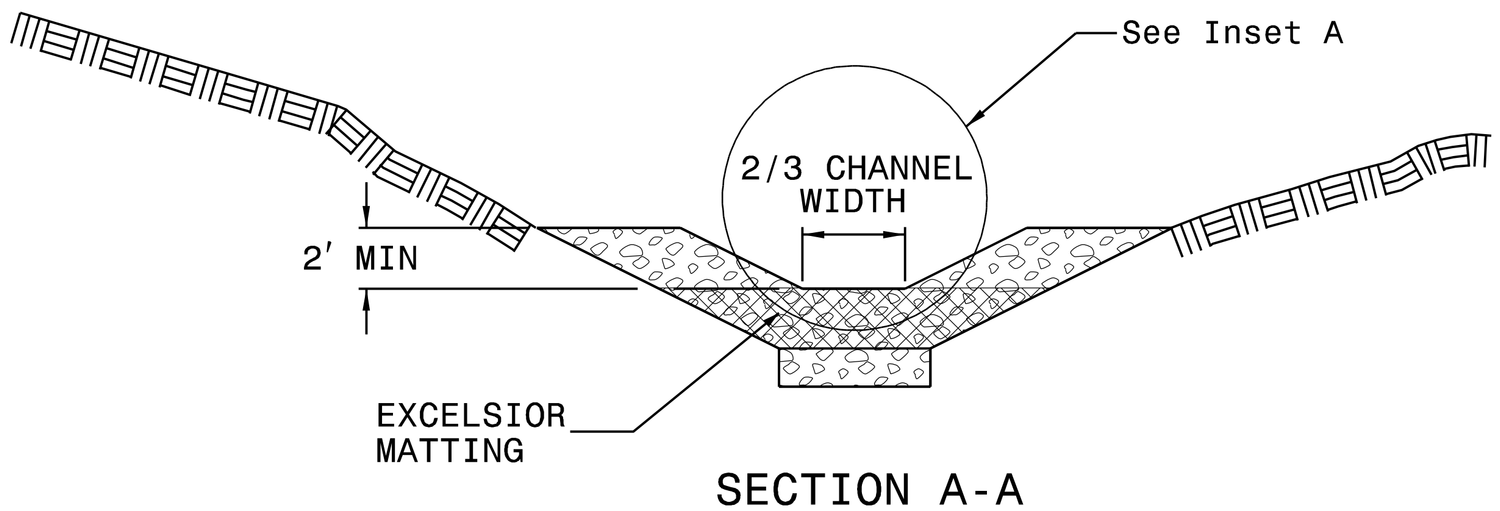
Site Area Description	Stabilization Time Frame	Stabilization Time Frame Exceptions
Perimeter dikes, swales, ditches and slopes	7 days	None
High Quality Water Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10 ft. or less in length and are not steeper than 2:1, 14 days are allowed
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in lenght
All other areas flatter than 4:1	14 days	None (except for perimeters and HQW zones)

PROJECT REFERENCE NO.	SHEET NO.
SS-4912AJ	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN



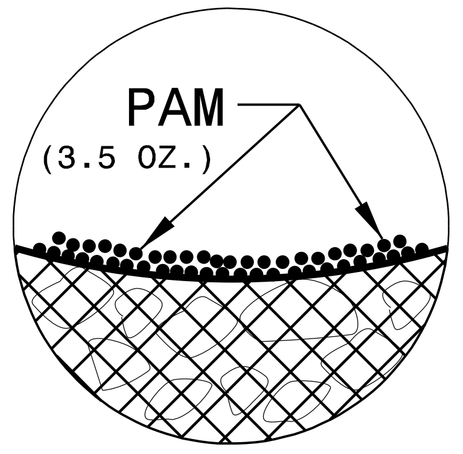
SECTION A-A

NOTES

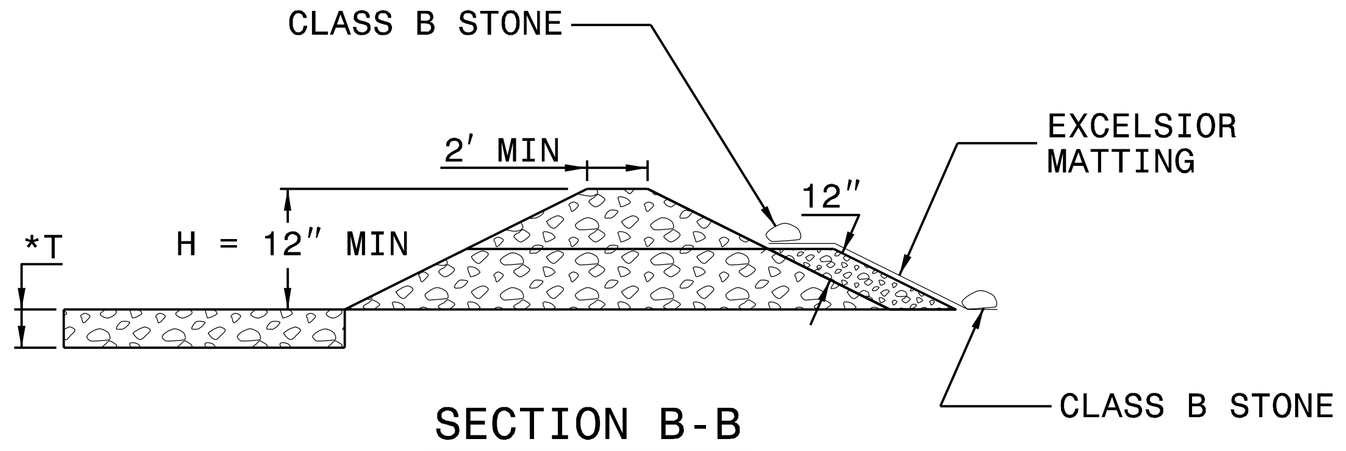
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 3.5 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



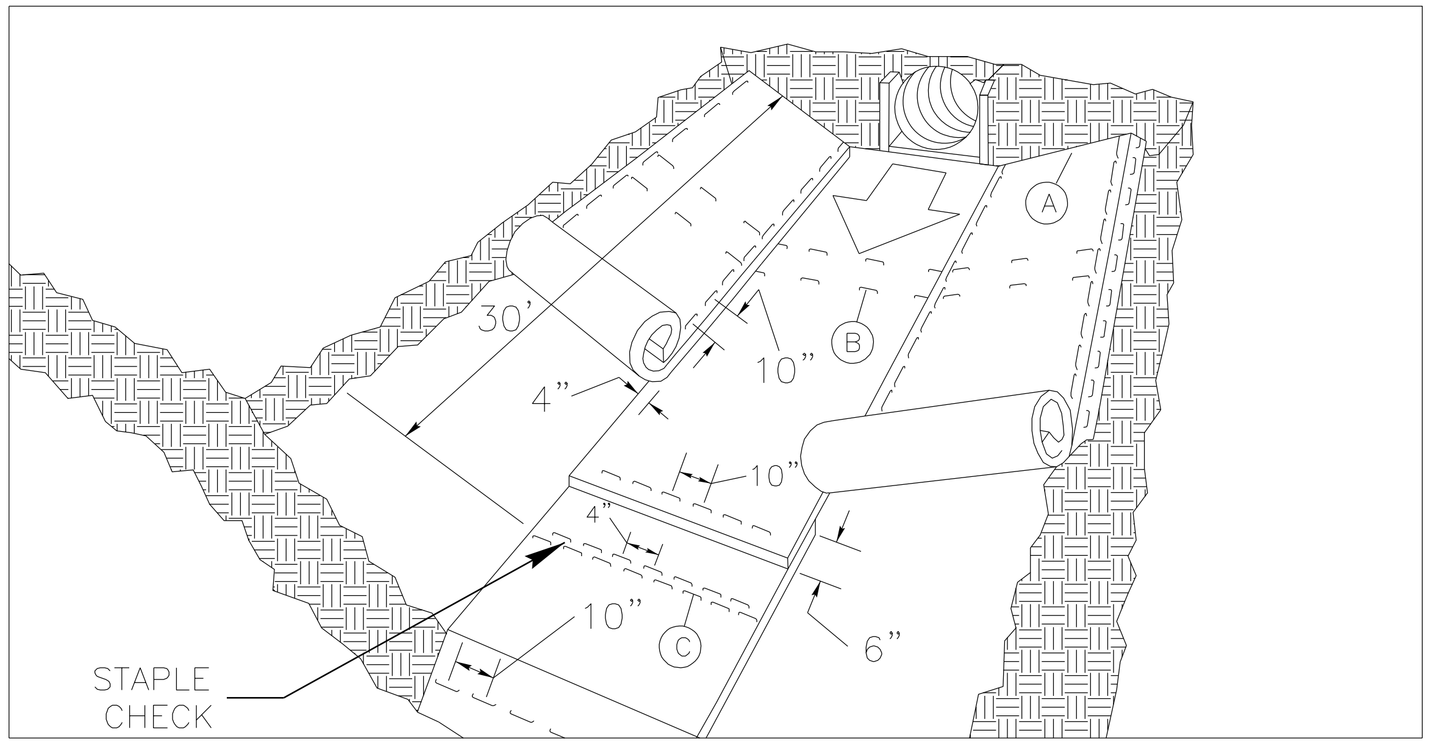
SECTION B-B

*T = 12" MIN., 18" MAX.

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
SS-4912AJ	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

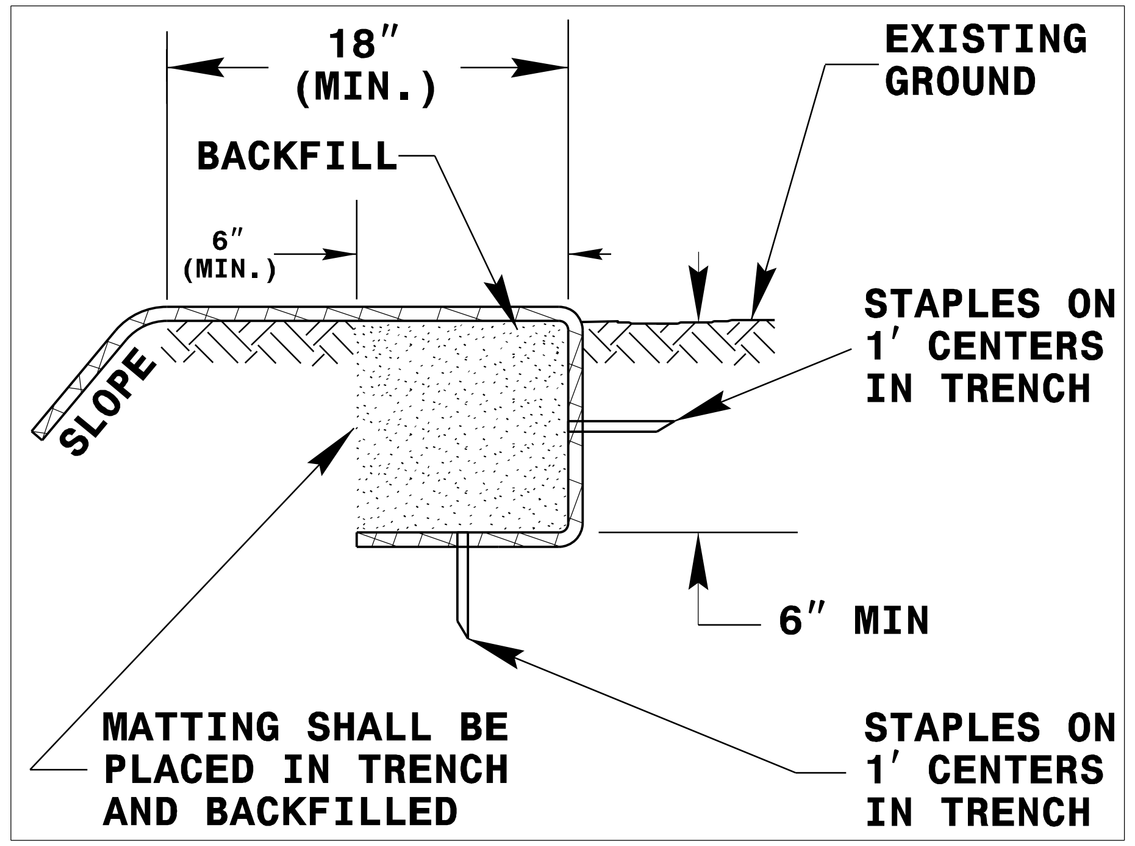
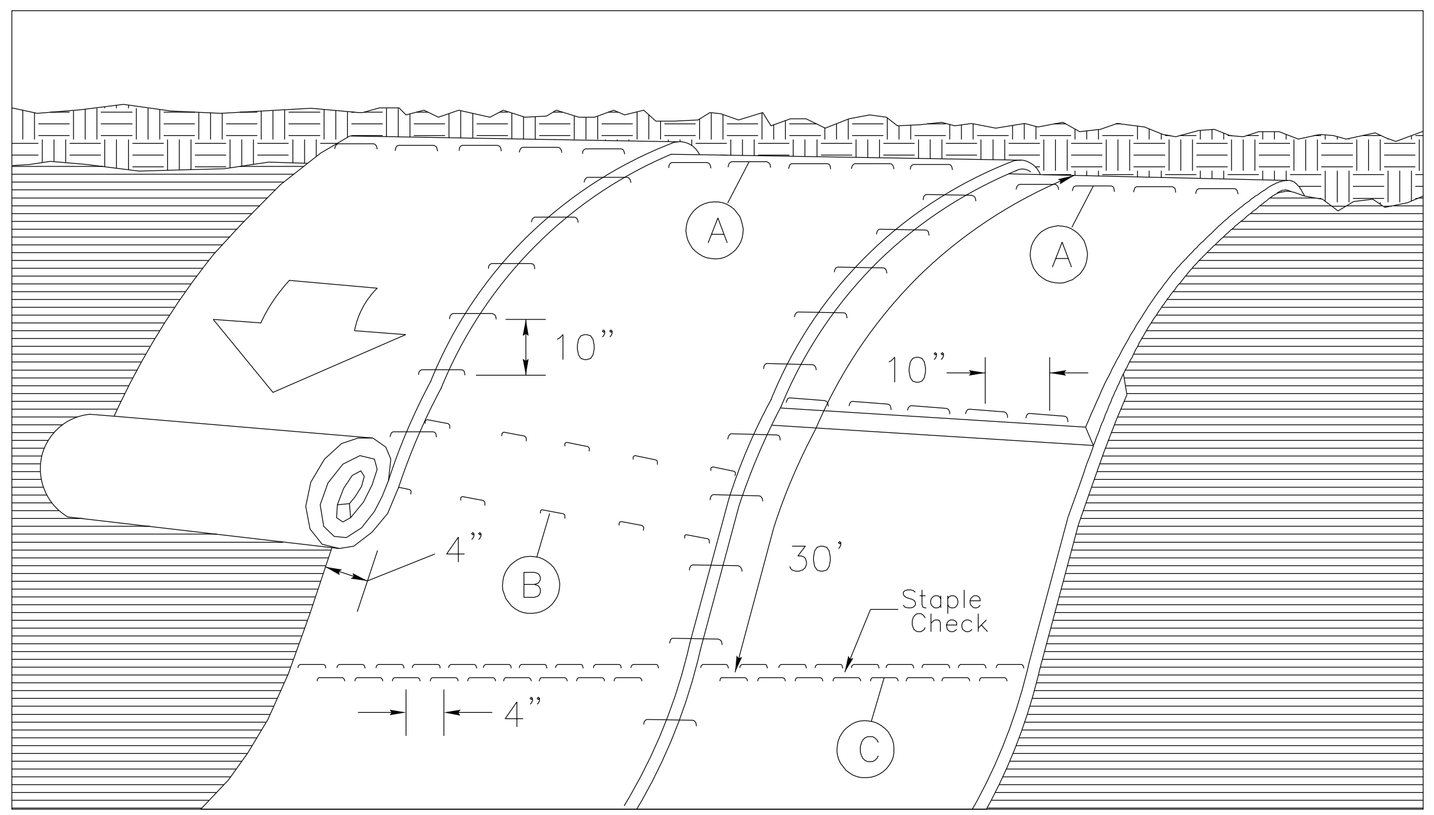


DIAGRAM (A)



MATTING ON SLOPES

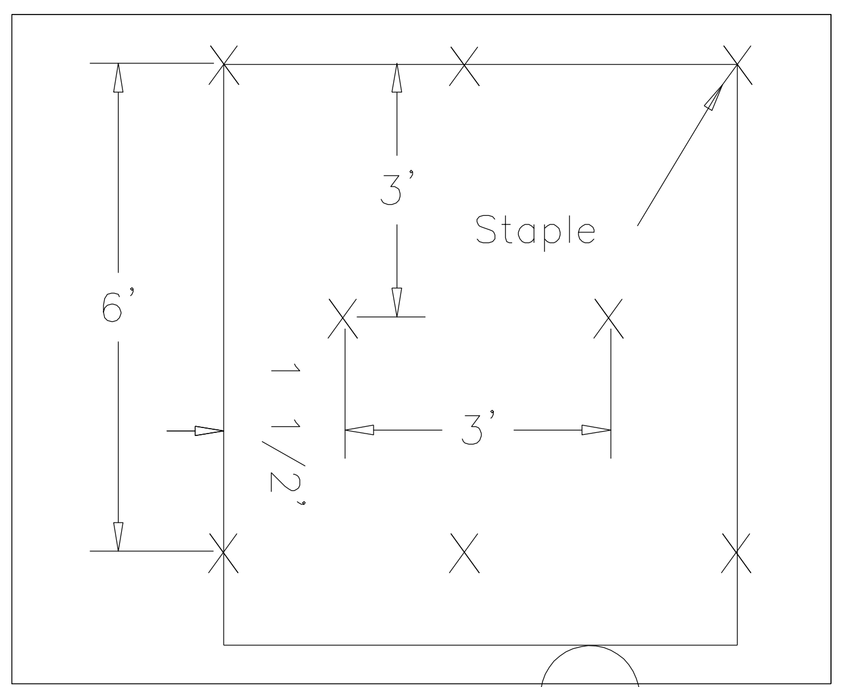


DIAGRAM (B)

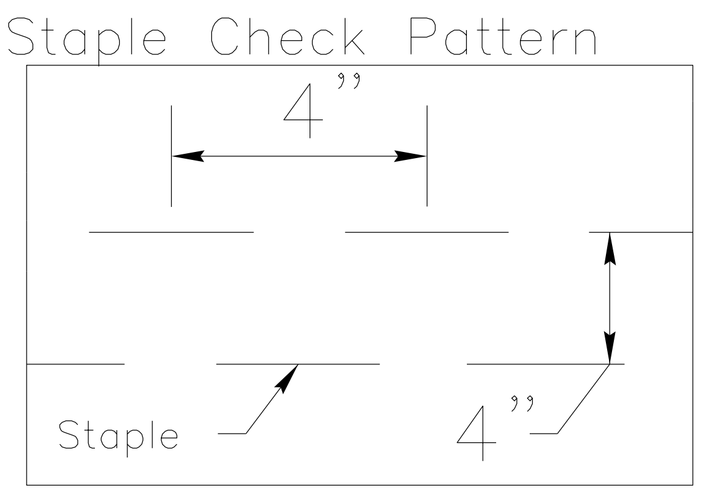


DIAGRAM (C)

NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
SS-4912AJ	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	15+50	16+00	LT	55
4	-L-	16+20	17+61	LT	150
			SUBTOTAL		150
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					100
				TOTAL	250
				SAY	300

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)

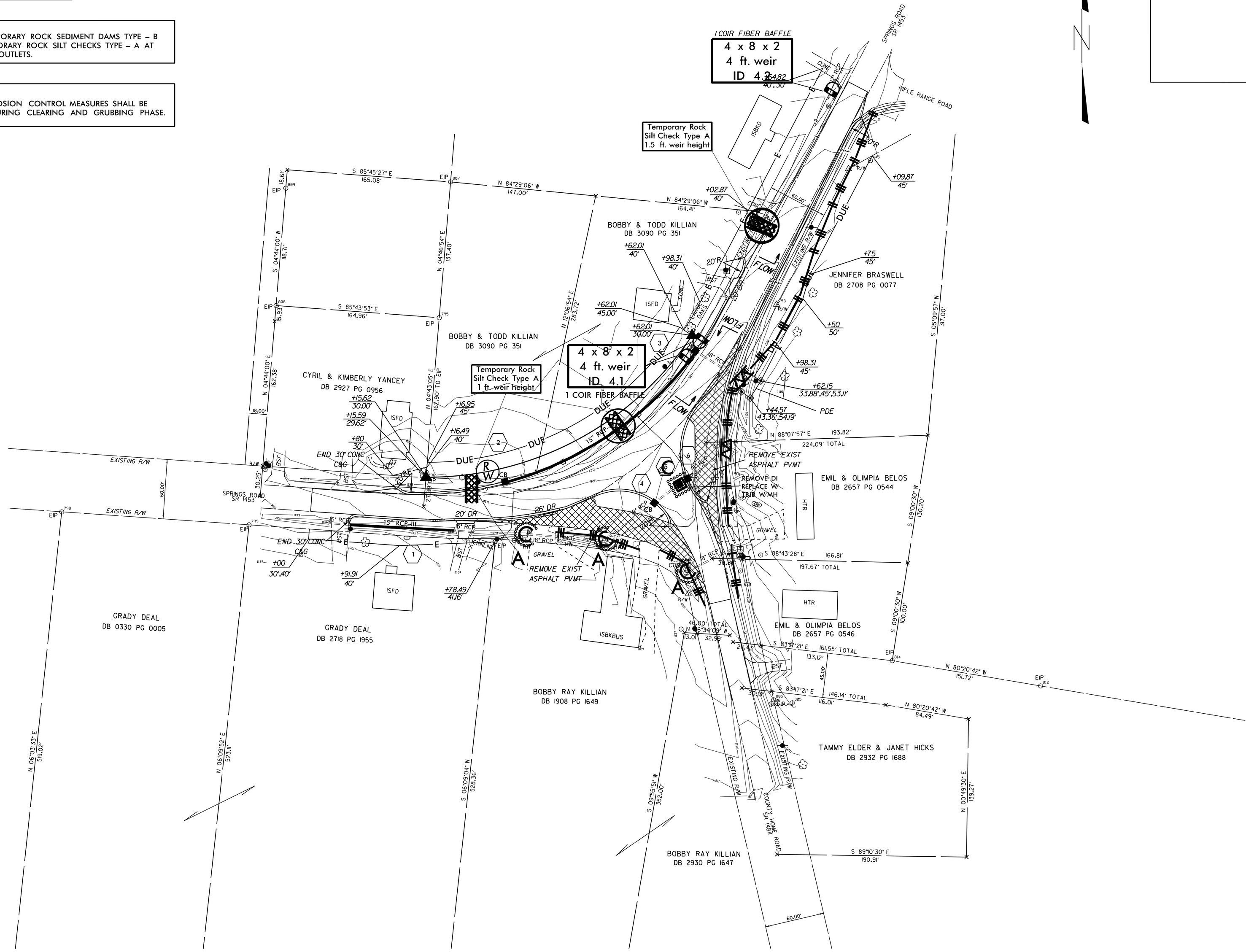
8/17/99

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

PROJECT REFERENCE NO.	SHEET NO.
SS-4912AJ	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PROJECT REFERENCE NO.	SHEET NO.
SS-4912AJ	EC-5/CONST.5
RW SHEET NO.	____
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

12-AUG-2013 11:28
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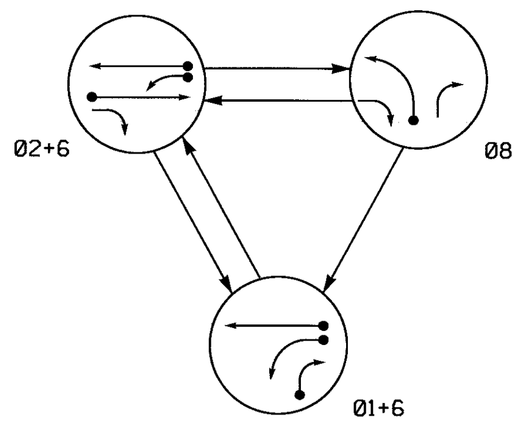
bksowell

PROJECT REFERENCE NO.	SHEET NO.
SS-4912AJ	Sig. 1

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION				
SIGNAL FACE	PHASE Ø1+6	PHASE Ø2+6	PHASE Ø8	FLASH
11	←	F Y	R	Y
21, 23	R	G	R	Y
22	R	G	R/→	Y
61, 62, 63	G	G	R	Y
81	R	R	G	R
82	R/→	R	G	R

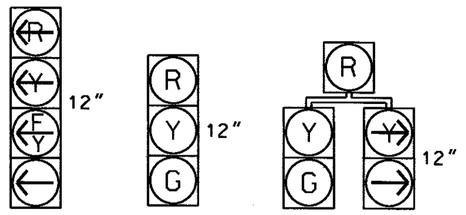
F Y = Flashing Yellow Arrow

STANDARD SIGNAL FACE CLEARANCES FOR FLASHING LEFT TURN SIGNAL						
		TO ←	TO F Y		TO R	
		1	2	1	2	1	2
FROM ←		←	←	R	R	R	R
FROM F Y		F Y	F Y	F Y	F Y	R	R
FROM R		R	R	R	R	R	R

F Y = Flashing Yellow Arrow

SIGNAL FACE I.D.

All Heads L.E.D.

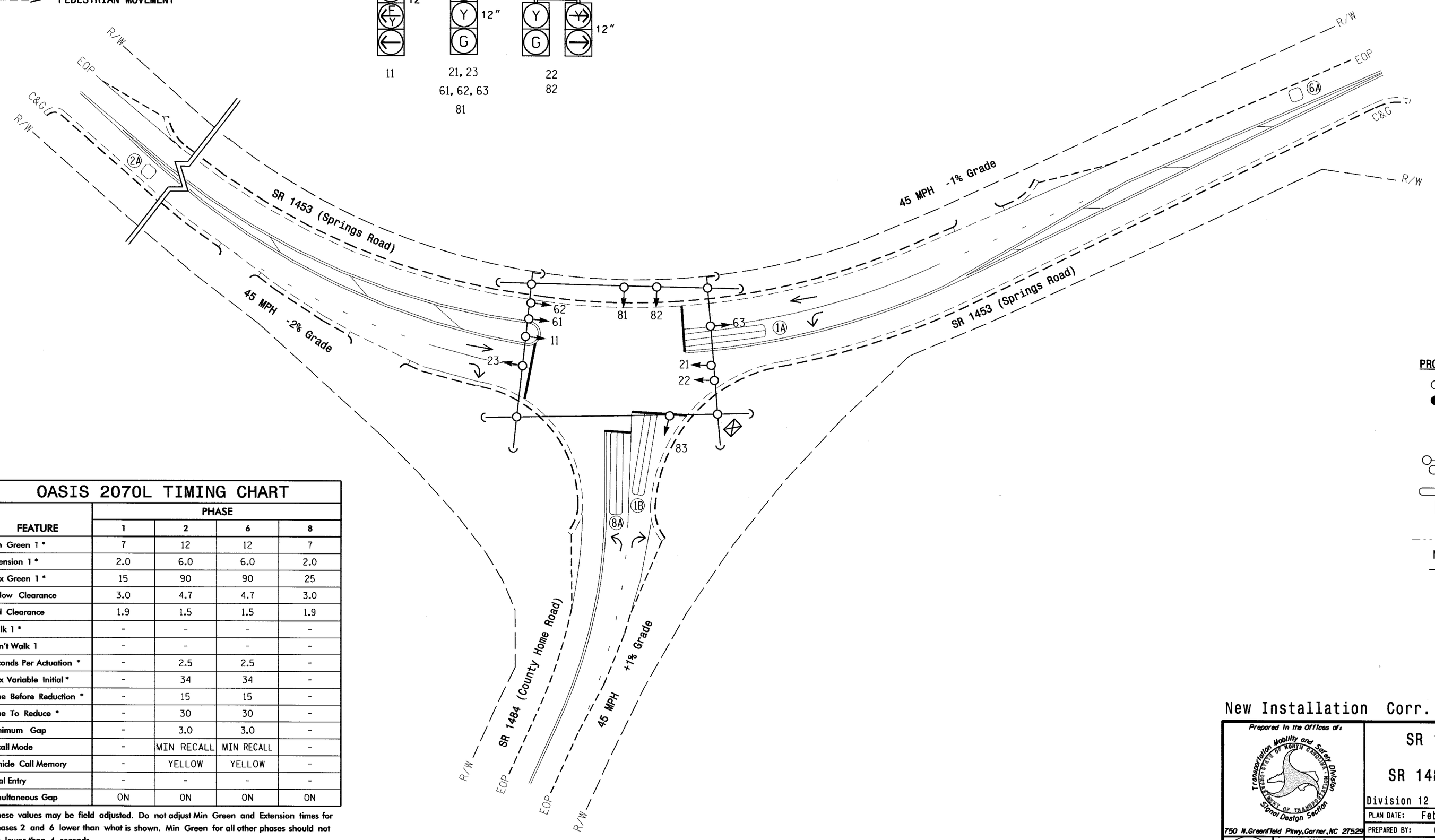


OASIS 2070L LOOP & DETECTOR INSTALLATION CHART														
INDUCTIVE LOOPS						DETECTOR PROGRAMMING								
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP		PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	Y		1	Y	Y	-	-	15	-	Y
						6	Y	Y	Y	-	3	-	Y
1B	6X40	0	2-4-2	Y		1	Y	Y	-	-	15	-	Y
2A	6X6	300	5	Y		2	Y	Y	-	-	-	-	Y
6A	6X6	300	5	Y		6	Y	Y	-	-	-	-	Y
8A	6X40	0	2-4-2	Y		8	Y	Y	-	-	3	-	Y

3 Phase
Fully Actuated
Isolated

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 may be lagged.
4. Set all detector units to presence mode.
5. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
6. Locate and field adjust poles as necessary.



OASIS 2070L TIMING CHART				
	PHASE			
FEATURE	1	2	6	8
Min Green 1 *	7	12	12	7
Extension 1 *	2.0	6.0	6.0	2.0
Max Green 1 *	15	90	90	25
Yellow Clearance	3.0	4.7	4.7	3.0
Red Clearance	1.9	1.5	1.5	1.9
Walk 1 *	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	-	2.5	2.5	-
Max Variable Initial *	-	34	34	-
Time Before Reduction *	-	15	15	-
Time To Reduce *	-	30	30	-
Minimum Gap	-	3.0	3.0	-
Recall Mode	-	MIN RECALL	MIN RECALL	-
Vehicle Call Memory	-	YELLOW	YELLOW	-
Dual Entry	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

LEGEND

PROPOSED		EXISTING
○→	Traffic Signal Head	●→
◐→	Modified Signal Head	N/A
⊣	Sign	⊣
▭↓	Pedestrian Signal Head With Push Button & Sign	■↓
○	Signal Pole with Guy	●
○	Signal Pole with Sidewalk Guy	●↓
▭	Inductive Loop Detector	▭
⊠	Controller & Cabinet	⊡
□	Junction Box	■
----------	2-in Underground Conduit	----------
N/A	Right of Way	----------
→	Directional Arrow	→

New Installation Corr. File No. 12-11-212

Prepared in the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SR 1453 (Springs Road) at SR 1484 (County Home Road)

Division 12 Catawba County near Hickory

PLAN DATE: February 2012 REVIEWED BY: W. Mahbooba

PREPARED BY: C. Pierce REVIEWED BY:

SCALE 0 30 1"=30'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 24393 ENGINEER TIMOTHY WILLIAMS

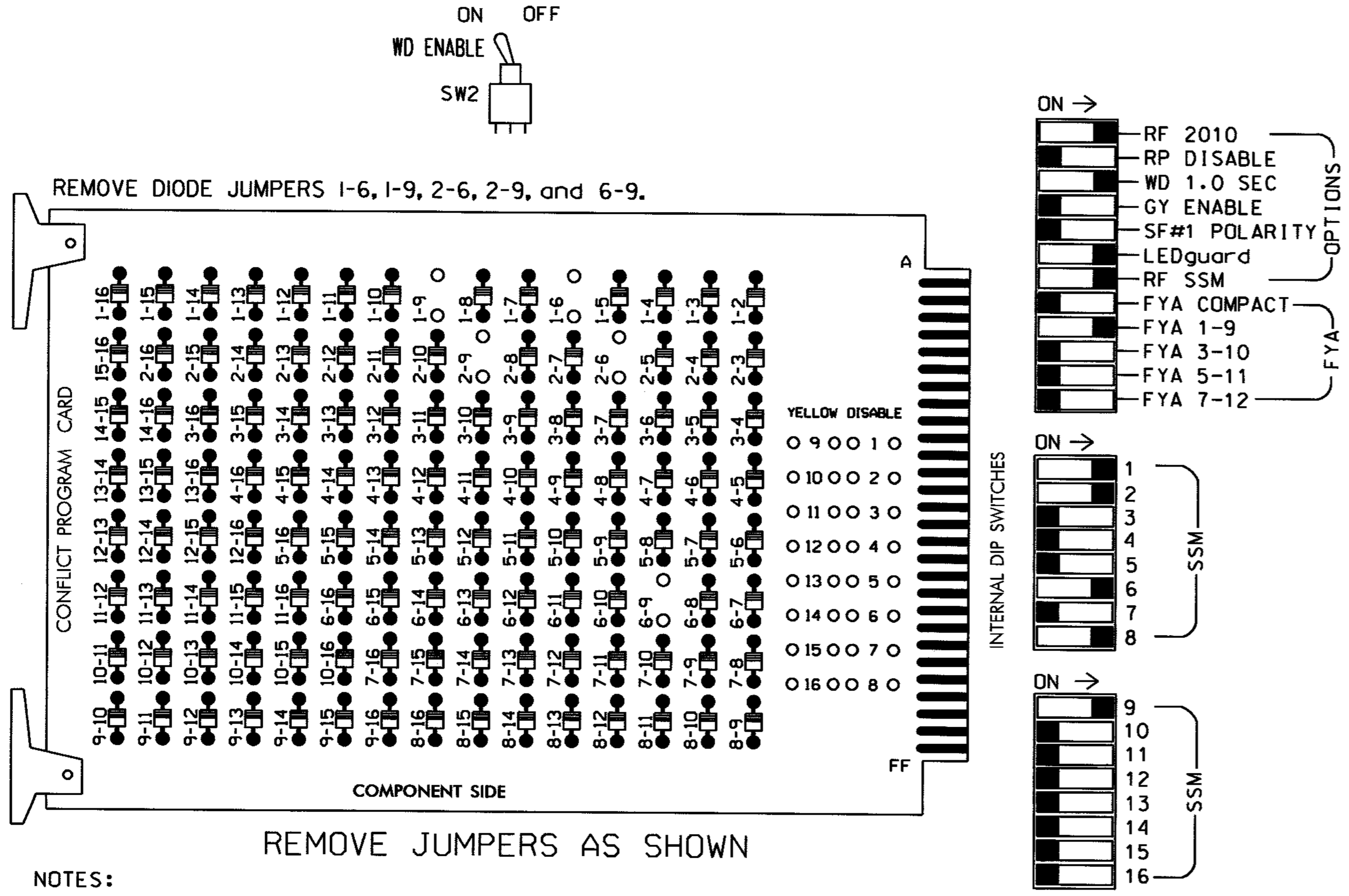
SIGNATURE T.D.W. DATE 2/28/12

SIG. INVENTORY NO. 12-1791

27-FEB-2012 17:44
S:\TSS&M\ITS Signals\Signal Design Section\Western Region\Div-12\12-1791\12179l_sig_den_2011xxxx.dgn
dgnsrce

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE JUMPERS AS SHOWN

■ = DENOTES POSITION OF SWITCH

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Make sure jumpers SEL2-SEL5 are present on the monitor board.

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels, tie unused red monitor inputs 3,4, 5,7,10,11,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
3. Enable Simultaneous Gap-Out for all phases.
4. Program phases 2 and 6 for Variable Initial and Gap Reduction.
5. Program phases 2 and 6 for Start Up In Green.
6. Program phases 2 and 6 for Yellow Flash, and overlap 1 as Wag Overlaps.

PROJECT REFERENCE NO.	SHEET NO.
SS-4912AJ	Sig.

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1		S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8		S8P	S9	S10	S11	S12	S13	S14
PHASE	1		2	2 PED	3	4	4 PED	5	6	6 PED	7	8		8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11★	82	21,22 23	NU	NU	NU	NU	NU	61,62 63	NU	NU	22	81,82	NU	11★	NU	NU	NU	NU	NU
RED		✳	128						134				107							
YELLOW			129						135				108							
GREEN			130						136				109							
RED ARROW															A121					
YELLOW ARROW		126										108			A122					
FLASHING YELLOW ARROW															A123					
GREEN ARROW	127	127										109								

NU = Not Used

✳ Denotes install load resistor. See load resistor installation detail this sheet.

★ See pictorial of head wiring in detail below.

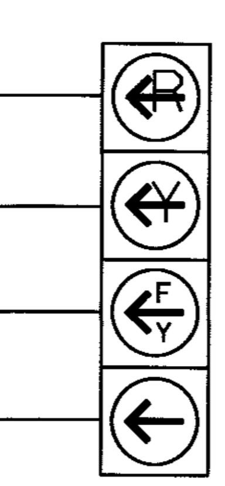
EQUIPMENT INFORMATION

CONTROLLER..............2070L
CABINET.................332 W/ AUX
SOFTWARE................ECONOLITE OASIS
CABINET MOUNT...........BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED......S1,S2,S6,S8,S9
PHASES USED.............1,2,6,8
OVERLAP "A".............1+2
OVERLAP "B".............NOT USED
OVERLAP "C".............NOT USED
OVERLAP "D".............NOT USED

4 SECTION FYA PPLT SIGNAL WIRING DETAIL

(wire signal head as shown)

OLA RED (A121)
OLA YELLOW (A122)
OLA GREEN (A123)
Ø1 GREEN (127)



11

NOTE

The sequence display for signal head 11 requires special logic programming. See sheet 2 for programming instructions.

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	Ø1 1A	Ø1 1B	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	FS DC ISOLATOR
	L	NOT USED	Ø2 2A												ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	Ø6 6A	SLOT EMPTY	WIRED INPUT ⊗	SLOT EMPTY	Ø8 8A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L		NOT USED				NOT USED								

EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A[1]	TB2-1,2	I1U	56	18	1	1	Y	Y			15
	-	J4U	48	10	26	6	Y	Y	Y		3
1B	TB2-5,6	I2U	39	1	2	1	Y	Y			15
2A	TB2-7,8	I2L	43	5	12	2	Y	Y			
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			3

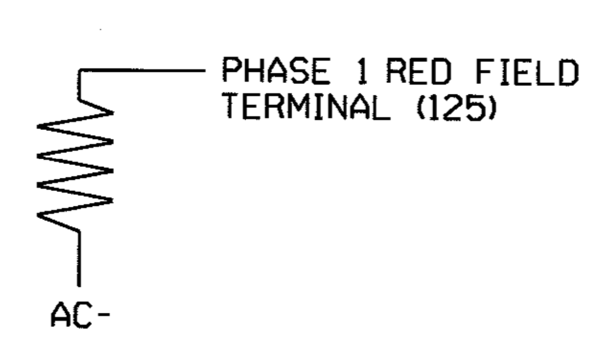
[1] Add jumper from I1-W to J4-W, on rear of input file.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown below)

ACCEPTABLE VALUES	
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 12-1791
DESIGNED: February 2012
SEALED: 2/28/12
REVISED: N/A

New Installation - Sheet 1 of 2

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of: Transportation Mobility and Safety Division, Signals Management Section, North Carolina Department of Transportation

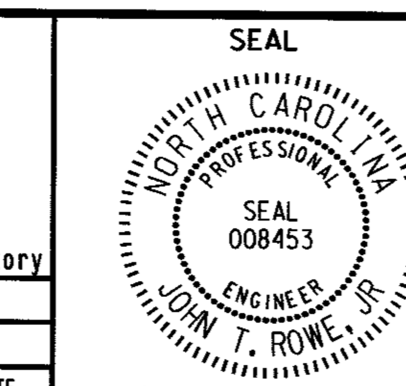
750 N.Greenfield Pkwy,Garner,NC 27529

SR 1453 (Springs Road)
at
SR 1484 (County Home Road)

Division 12 | Catawba County | near Hickory
PLAN DATE: February 2012 | REVIEWED BY: JTR
PREPARED BY: S. Armstrong | REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL



SIGNATURE 2-29-12 DATE

SIG. INVENTORY NO. 12-1791

28-FEB-2012 09:42
S:\ITS&SU\ITS Signals\Workgroups\Sig Man\armstrong\12191_sm_ele.xxx.dgn
sarmstrong

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL
TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

1. FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, AND 3.

2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).

```
LOGICAL I/O COMMAND #1   (+/-COMMAND#)
IF  ACTIVE PHASE        #1   IS ON
AND RED CLEAR ON PHASE  #1   IS ON

            SCROLL DOWN
THEN:
SET OUTPUT  ASSIGNMENT #50 ON
SET OUTPUT  ASSIGNMENT #51 OFF
```

NOTE: LOGIC FOR PHASE 1 RED CLEAR WHEN TRANSITIONING FROM PHASE 1 TO PHASE 2 (HEAD 11).

PRESS '+'

```
LOGICAL I/O COMMAND #2   (+/-COMMAND#)
IF  ACTIVE PHASE        #1   IS ON

            SCROLL DOWN
THEN:
SET OUTPUT  ASSIGNMENT #52 OFF
```

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 1 (HEAD 11).

PRESS '+'

```
LOGICAL I/O COMMAND #3   (+/-COMMAND#)
IF  YELLOW ON PHASE     #1   IS ON

            SCROLL DOWN
THEN:
SET OUTPUT  ASSIGNMENT #51 ON
```

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 1 (HEAD 11).

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

OUTPUT 50 = Overlap A Red
OUTPUT 51 = Overlap A Yellow
OUTPUT 52 = Overlap A Green

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

```
 PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
 PHASE:          |12345678910111213141516
VEH OVL PARENTS: |XX
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: |
STARTUP COLOR: _ RED   _ YELLOW  _ GREEN
FLASH COLORS:  _ RED   _ YELLOW  X GREEN
SELECT VEHICLE OVERLAP OPTIONS:    (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

← NOTICE GREEN FLASH

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 12-1791
DESIGNED: February 2012
SEALED: 2/28/12
REVISED: N/A

New Installation - Sheet 2 of 2

ELECTRICAL AND PROGRAMMING DETAILS FOR:

SR 1453 (Springs Road)
at
SR 1484 (County Home Road)

Prepared in the Offices of: Transportation Mobility and Safety Division, Signals Management Section, N.C. Dept. of Transportation

750 N.Greenfield Pkwy,Garner,NC 27529

Division 12 | Catawba County | near Hickory

PLAN DATE:	February 2012	REVIEWED BY:	JTR
PREPARED BY:	S. Armstrong	REVIEWED BY:	
REVISIONS		INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 008453 ENGINEER JOHN T. ROWE, JR.

SIGNATURE: John T. Rowe Jr. DATE: 2-29-12

SIG. INVENTORY NO. 12-1791

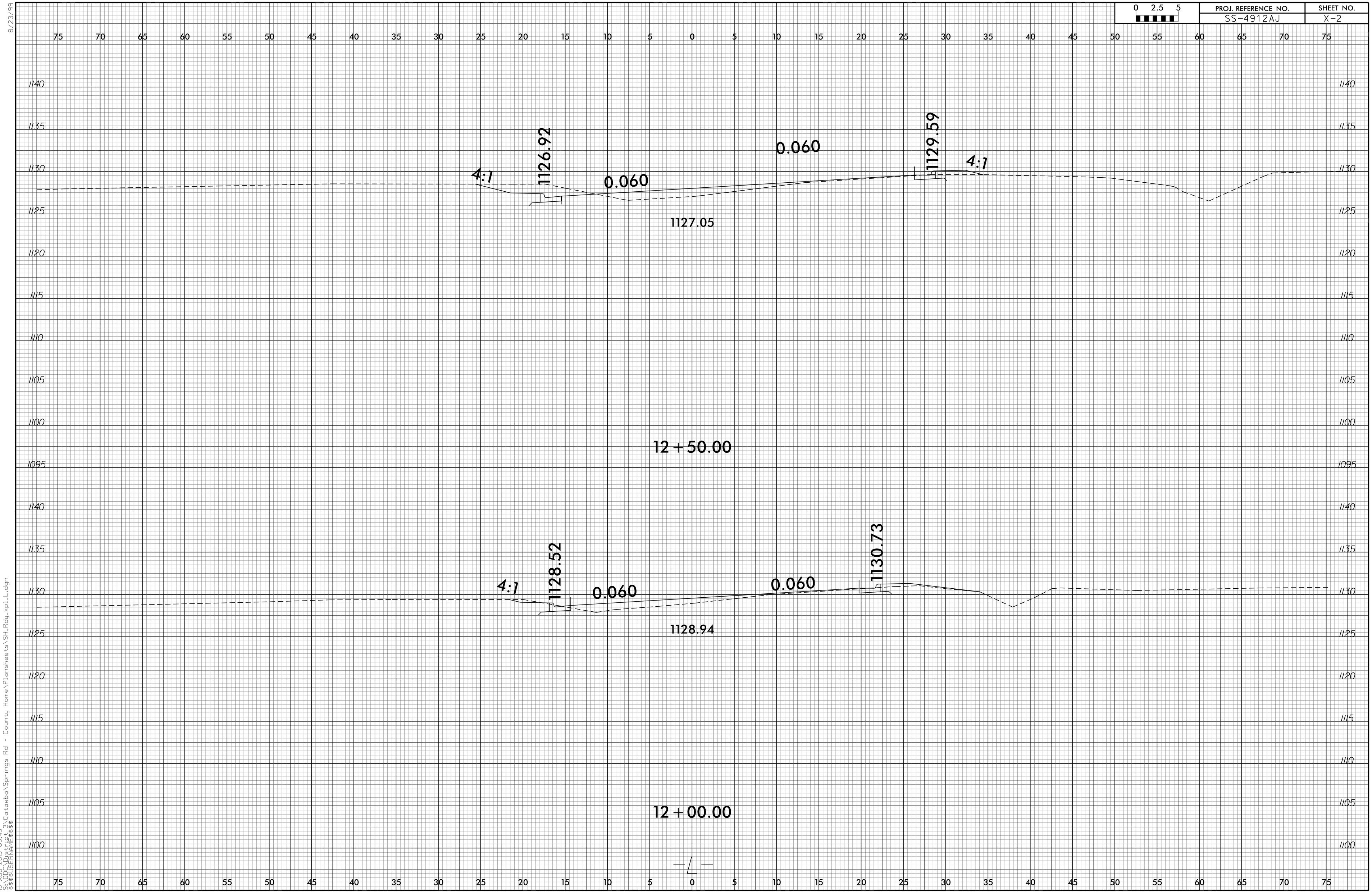
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	SS-4912AJ	X-1

Note: "Quantities are approximate only. The Resident Engineer will re-cross-section the work accurately when the project is staked out. These cross-section notes will be used in computing the final quantities for which the contractor will be paid."

8/23/99

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	SS-4912AJ	X-2



13-AUG-2013 09:49
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$$$$USERNAME$$$$

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	SS-4912AJ	X-3

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

1135
1130
1125
1120
1115
1110

4:1

1125.28

0.060

0.060

1126.07

1127.83 PROP EP

13+34.91

1140
1135
1130
1125
1120
1115
1110
1105
1100
1095

-Y- LINE
TIE IN

4:1

1125.68

0.060

1126.49

13+00.00

-℄-

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	SS-4912AJ	X-4

8/23/99

13-AUG-2013 09:49
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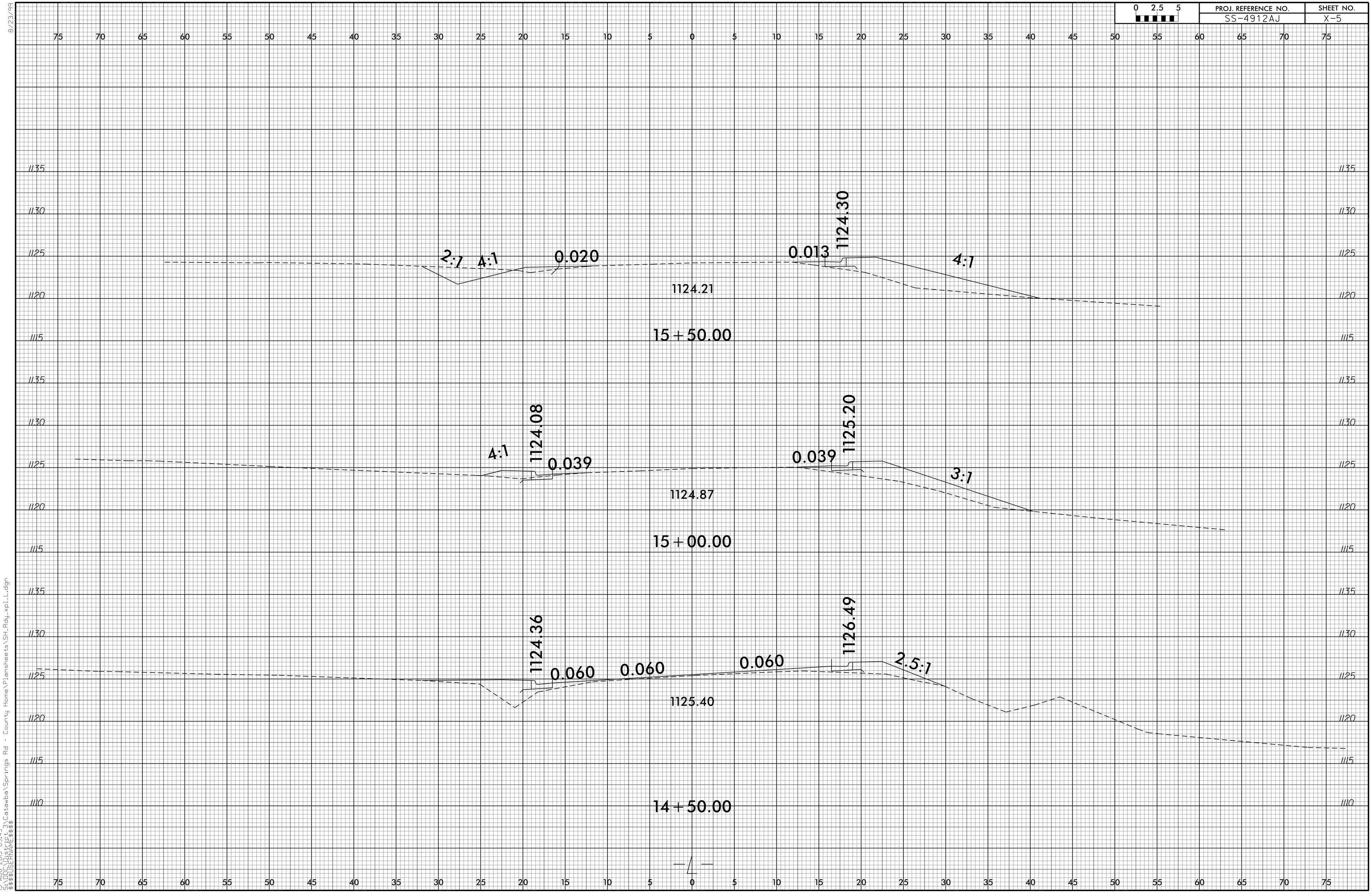
8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	SS-4912AJ	X-5



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$$$$USERNAME$$$$

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	SS-4912AJ	X-6

1120.89

17 + 64.57

1121.14

2:1 4:1 4:1

1121.11

17 + 50.00

1121.80

2:1 4:1 0.020 0.020 4:1

1121.91

17 + 00.00

1122.12 1122.62

2:1 4:1 0.020 0.020 4:1

1122.67

16 + 50.00

1123.42

2:1 4:1 0.020 0.012 4:1

1123.41

16 + 00.00

13-AUG-2013 09:50
$$$$USERNAME$$$$
C:\Users\$$$$USERNAME$$$$\Catawba\Springs Rd - County Home\Plansheets\SH_Rdy_xpl_L.dgn

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	SS-4912AJ	X-7

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

1135
1130
1125
1120
1115

0.000 0.000

12+00.00

0.020 0.020 3%

11+50.00

11+00.00

10+50.00

10+00.00

—Y—

13-AUG-2013 09:50
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8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
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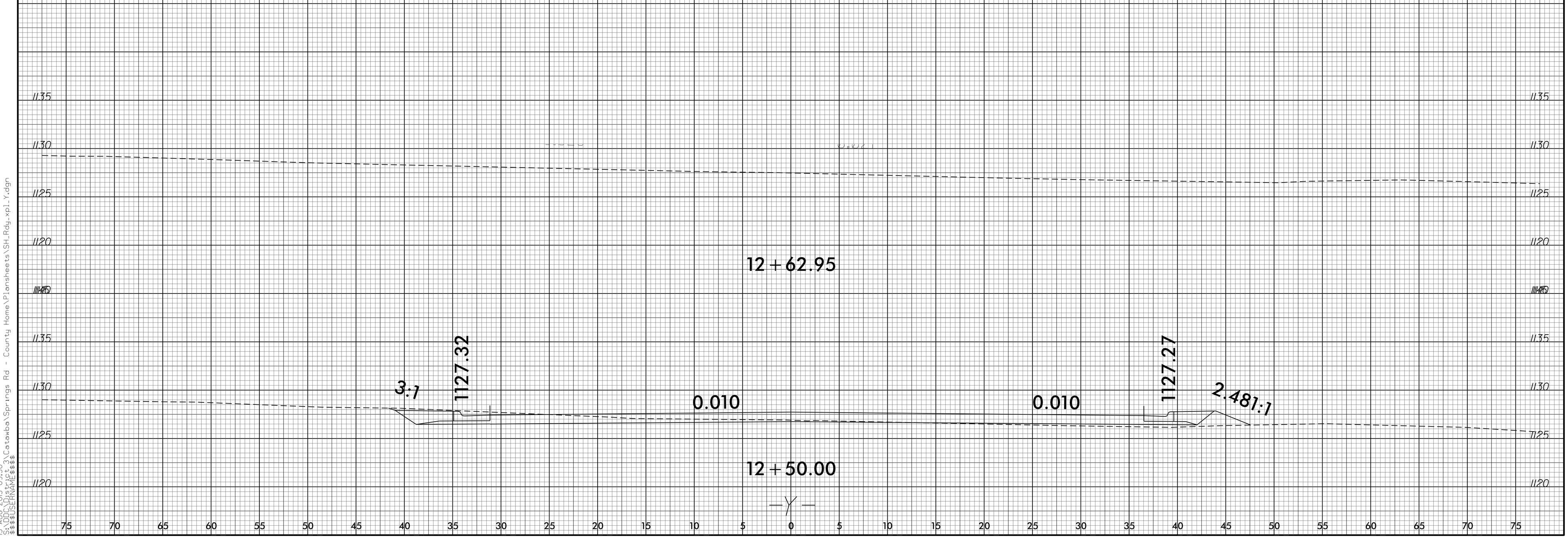

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