

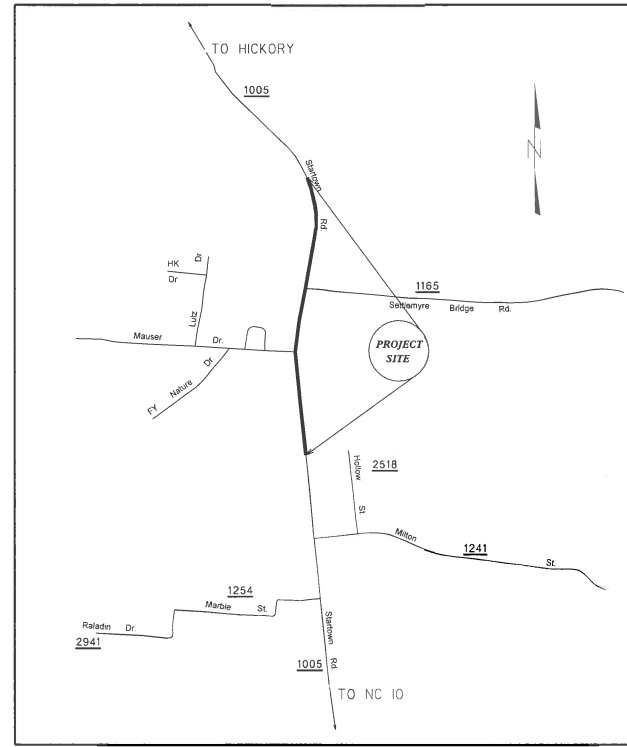
09/28/17

14-JUL-2017 08:59 S:\DDC\District_3\Catawba\W-5212M Startown.Settlemyre_DL00150\Plansheets\SR1005_1165_Rdy_tsh.l.dgn \$\$\$USERNAME\$\$\$

TIP PROJECT: W-5212M

CONTRACT: DL00150

See Sheet 1-A For Index of Sheets



VICINITY MAP NOT TO SCALE

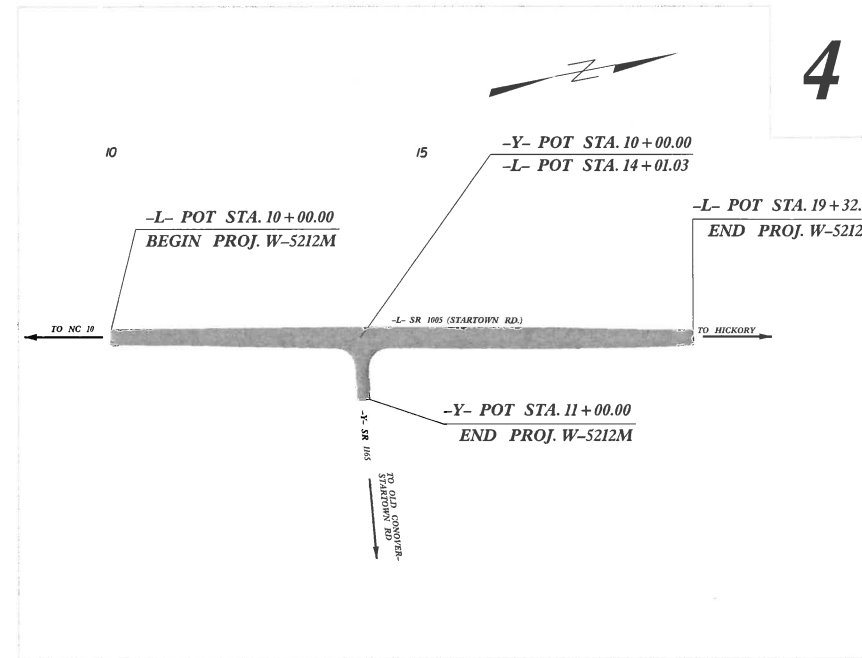
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CATAWBA COUNTY

LOCATION: INTERSECTION OF STARTOWN RD. (1005) AND
SETTLEMYPE BRIDGE RD. (1165)

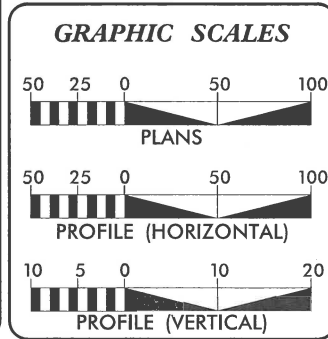
TYPE OF WORK: GRADING, PAVING, DRAINAGE, TRAFFIC SIGNAL,
PAVEMENT MARKINGS AND PAVEMENT MARKERS.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5212M	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45342.1.FD13		PE	
45342.2.13	HSIP-1005(35)	ROW	
46342.3.13	HSIP-1005(35)	CONST.	



4

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2013 = 8600
ADT =

DHV = %
D = %
T = % *
V = 50 MPH

* TTST = DUAL
FUNC CLASS =
MINOR ARTERIAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT 0.196 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
October 15, 2015

LETTING DATE:
August 8, 2017

J.B. McSWAIN
PROJECT MANAGER

B.K. SOWELL, PE
PROJECT DESIGN ENGINEER

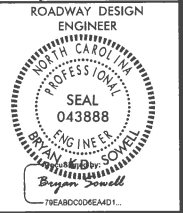
Seal of the Professional Engineer: BRYAN K.D. SOWELL, ENGINEER, No. 043888, State of North Carolina. Date: 7/14/2017.

ROADWAY DESIGN ENGINEER

DocuSigned by:
Bryan Sowell
7EAD3DC0E6A01... P.E.

SIGNATURE:





6/6/2017

SHEET NUMBER	INDEX OF SHEETS SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3A	SUMMARY OF DRAINAGE QUANTITIES SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-4	TRAFFIC CONTROL PLANS
PM-1	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
SIG-1 THRU SIG-3	SIGNAL PLANS
X-1 THRU X-6	CROSS-SECTIONS

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 07/30/12

GRADE LINE:
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

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

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.

TEMPORARY SHORING:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE ATT. CHARTER, CITY OF NEWTON, CENTURYLINK, DUKE ENERGY

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	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
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	
840.72	Pipe Collar
848.02	DRIVEWAY TURNOUT

12/05/11

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	○
Property Corner	✕
Property Monument	EDM
Parcel/Sequence Number	123
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	WLB
Proposed Wetland Boundary	WLB
Existing Endangered Animal Boundary	EAB
Existing Endangered Plant Boundary	EPB
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	○
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	○
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	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite RW Marker	-----
Proposed Control of Access Line with Concrete CA Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
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	▭
Single Tree	☼
Single Shrub	☼
Hedge	-----
Woods Line	-----

VEGETATION:

Orchard	☼
Vineyard	Vineyard

EXISTING STRUCTURES:

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

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	-----
Designated U/G Water Line (S.U.E.*)	-----
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.	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.

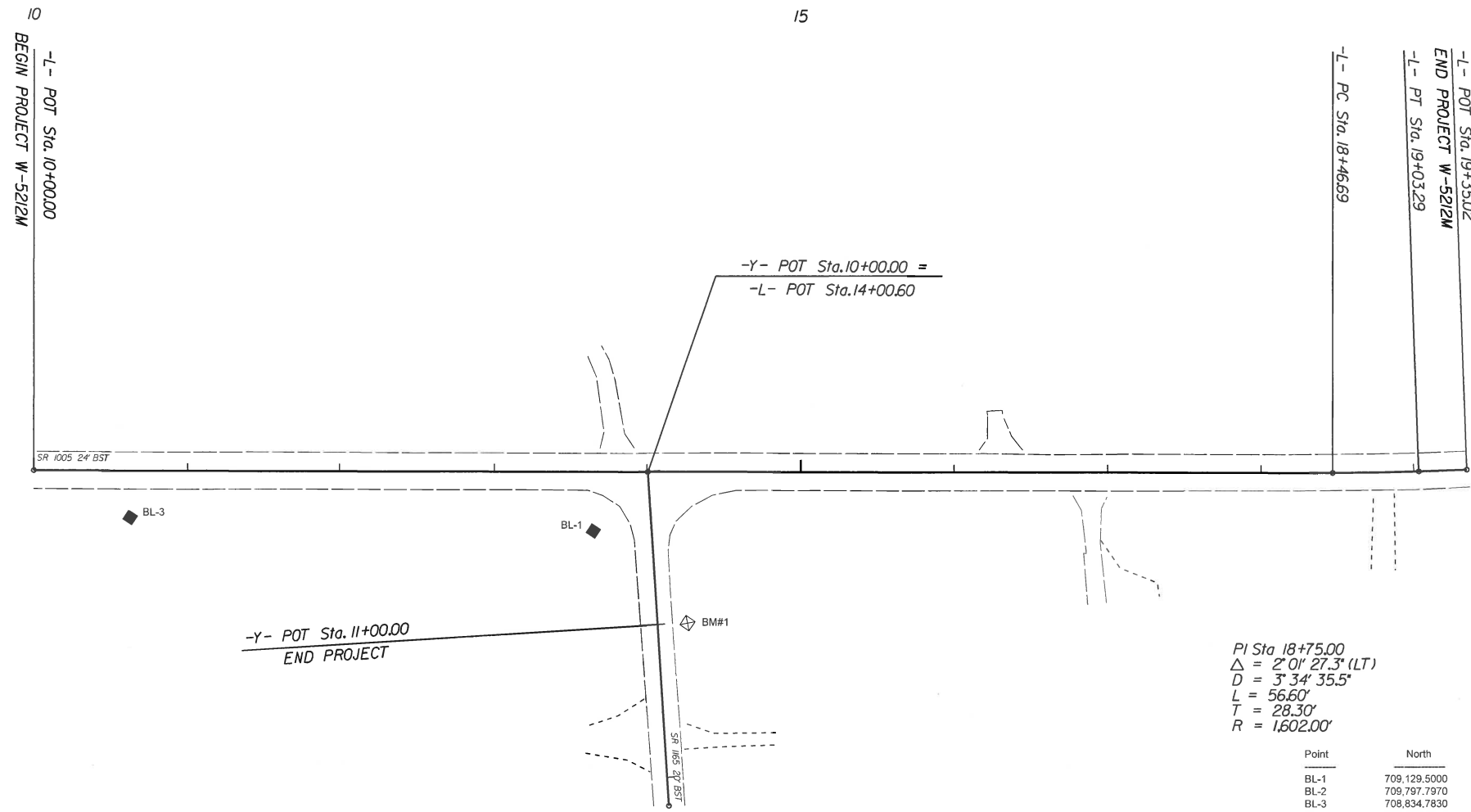
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PROJECT REFERENCE NO. <i>W-5212M</i>	SHEET NO. <i>1-C</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SURVEY CONTROL SHEET

DRAWING NOT TO SCALE



PI Sta 18+75.00
 $\Delta = 2^{\circ} 0' 27.3" (LT)$
 $D = 3^{\circ} 34' 35.5"$
 $L = 56.60'$
 $T = 28.30'$
 $R = 1602.00'$

Point	North	East	Elevation	-L- Station	Offset
BL-1	709,129.5000	1,324,942.7140	957.2800	13+64.66	38.74' RT.
BL-2	709,797.7970	1,324,994.4180	947.9900	OUTSIDE PROJECT LIMITS	
BL-3	708,834.7830	1,324,876.9270	958.5700	10+62.79	30.89' RT.
BL-4	709,162.9740	1,325,251.0610	979.9000	OUTSIDE PROJECT LIMITS	

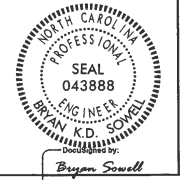
BENCHMARKS (NAVD88)
 BMM#1 ELEVATION = 961.86'
 N 709179 E 1325013
 -Y- STATION 11+00.14 19.85' LT.
 RR SPIKE IN BASE OF UTILITY POLE

DATUM DESCRIPTION

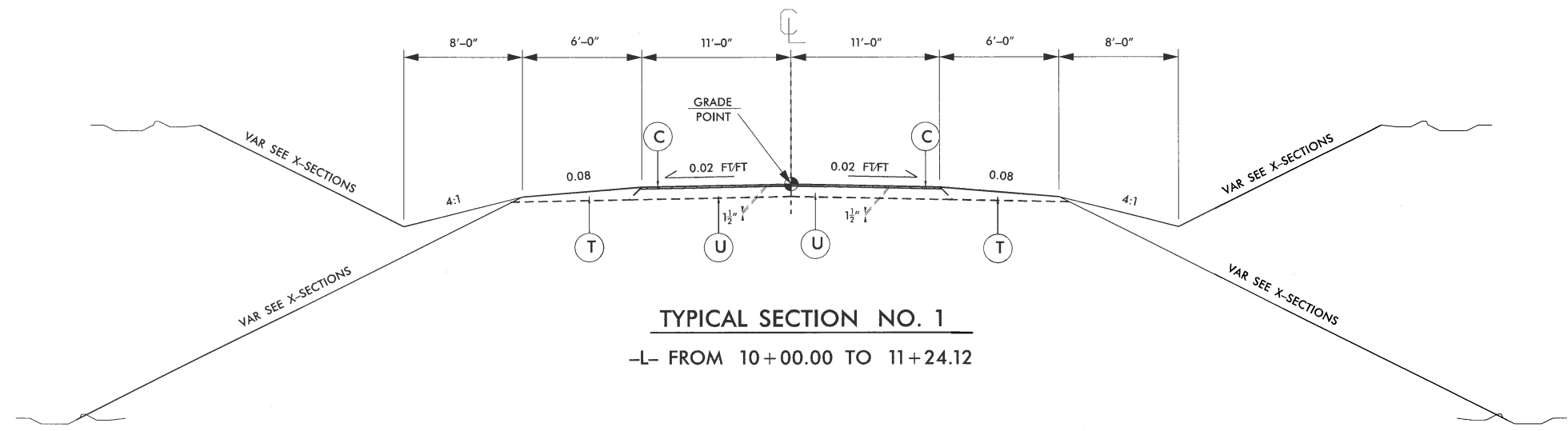
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "BL-1" WITH NAD 83/2011 STATE PLANE GRID COORDINATES OF NORTHING: 709129.500(ft) EASTING: 1324942.714(ft) ELEVATION: 957.28(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985941 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-1" TO -L- STATION 10+00.00 IS S 17° 07' 14" W 366.71' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

5/14/99

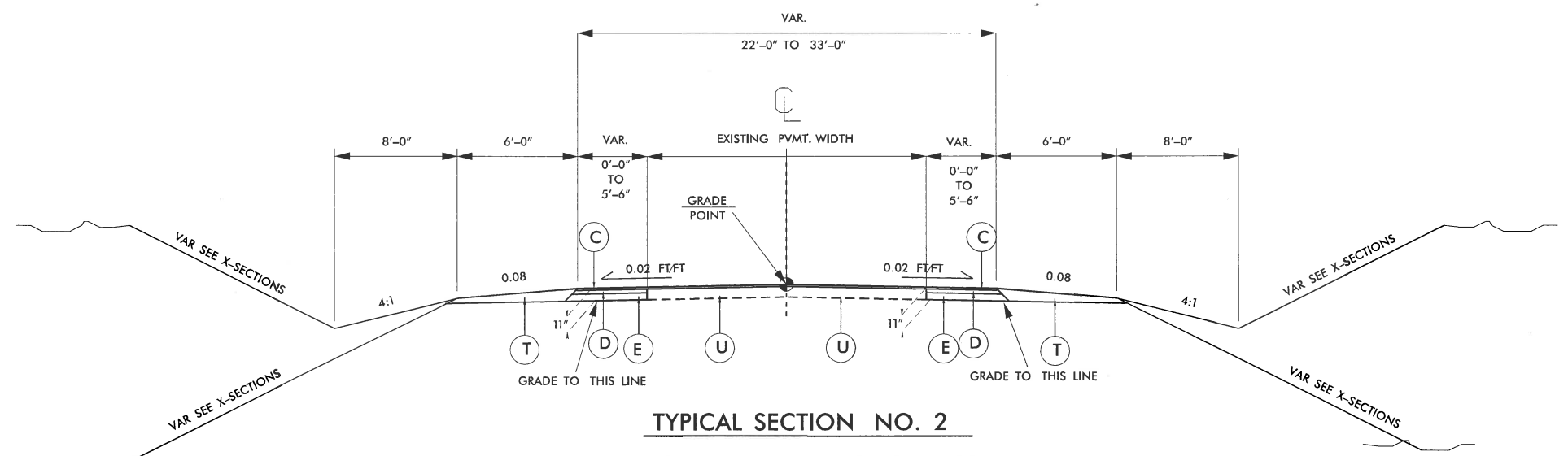
PROJECT REFERENCE NO. W-5212M	SHEET NO. 2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



6/6/2017



TYPICAL SECTION NO. 1
-L- FROM 10+00.00 TO 11+24.12



TYPICAL SECTION NO. 2
-L- FROM 11+24.12 TO 19+35.02

PAVEMENT SCHEDULE	
C	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E	PROP. APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
T	EARTH MATERIAL
U	EXISTING PAVEMENT

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

06-JUN-2017 14:02
 W-5212M-PLAN-SHEET-2.dgn
 W:\Projects\5212M\Drawings\Plan\5212M-PLAN-SHEET-2.dgn

COMPUTED BY: BAL DATE: 6/10/2014
 CHECKED BY: BKS DATE: 3/10/2015

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

PROJECT NO. W-5212M	SHEET NO. 3-A
------------------------	------------------

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.

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

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC)								C.S. PIPE								R.C. PIPE CLASS III								R.C. PIPE CLASS IV								ENDWALLS	QUANTITIES FOR DRAINAGE STRUCTURES	"TOTAL L.F. FOR PAY QUANTITY SHALL BE COL 'A' * (1.3 X COL 'B')	FRAME, GRATES, AND HOOD STANDARD 840.03	CONCRETE TRANSITIONAL SECTION	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.	ABBREVIATIONS					
		FROM	TO					12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"										30"	36"	42"	48"	C.B.	N.D.I.
		PER EACH (0' THRU 5.0')	5.0' THRU 10.0'					10.0' AND ABOVE	PER EACH (0' THRU 5.0')	5.0' THRU 10.0'	10.0' AND ABOVE	PER EACH (0' THRU 5.0')	5.0' THRU 10.0'	10.0' AND ABOVE	PER EACH (0' THRU 5.0')	5.0' THRU 10.0'	10.0' AND ABOVE	R.C.P.	C.S.P.	CATCH BASIN		D.I.	D.I.	G.D.I.	G.D.I.	G.D.I.	G.D.I.	G.D.I.	J.B.	M.H.	T.B.D.I.	T.B.J.B.																						
13+78 -L-	LT	0401																																		25'	15' CONC.																	
15+68 -L-	LT																																			20'	15' CONC.																	
16+27 -L-	LT																																			21'	15' CONC.																	
16+91 -L-	RT	0402																																		28'	15' METAL																	
17+73 -L-	CL	0403			950.16	946.16																																																
SHEET TOTALS																																				94'																		

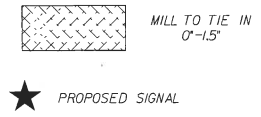
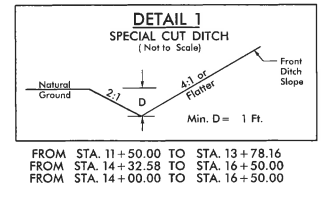
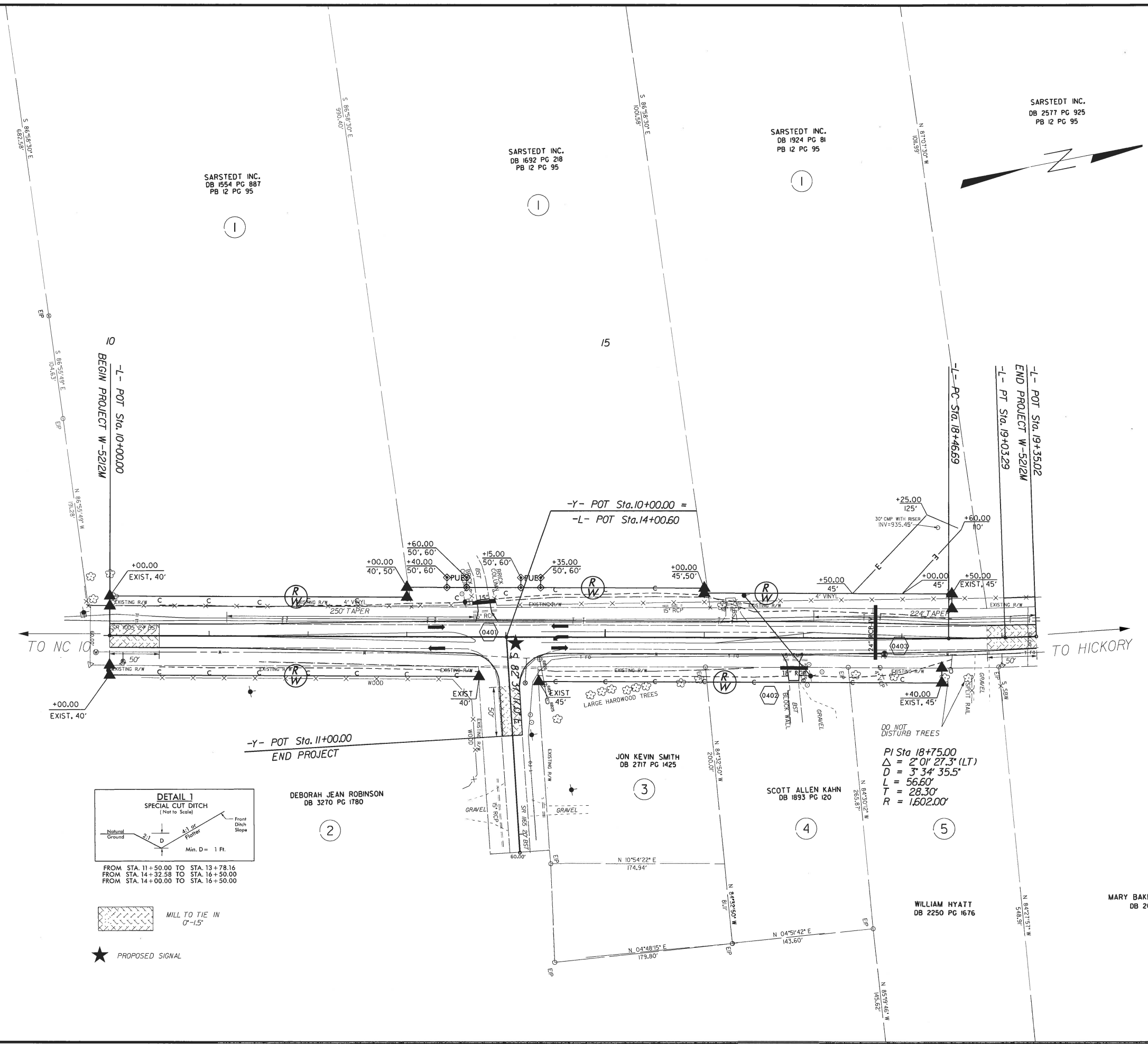
SUMMARY OF EARTHWORK

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
10+00	19+35.02	544	850	306	
SUBTOTALS:		544	850	306	
SUBTOTALS:		544	850	306	
LOSS TO C&G		-27		27	
PROJECT TOTALS:		517	850	333	
PROJECT TOTALS:		517	850	333	
GRAND TOTALS:		517	850	350	
SAY:				400	

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

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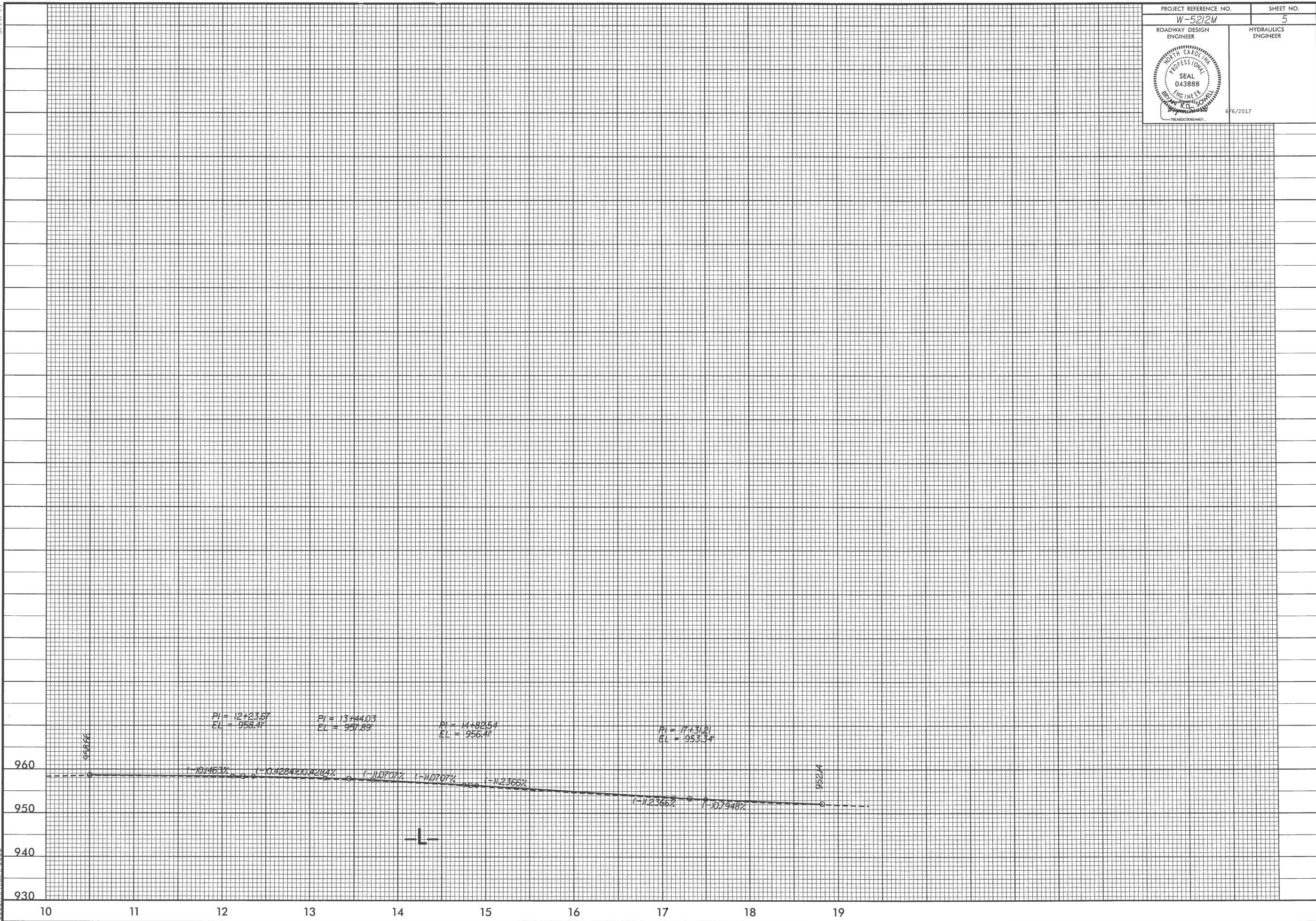
PROJECT REFERENCE NO. W-5212M	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



5/14/99

PROJECT REFERENCE NO. W-5212M	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

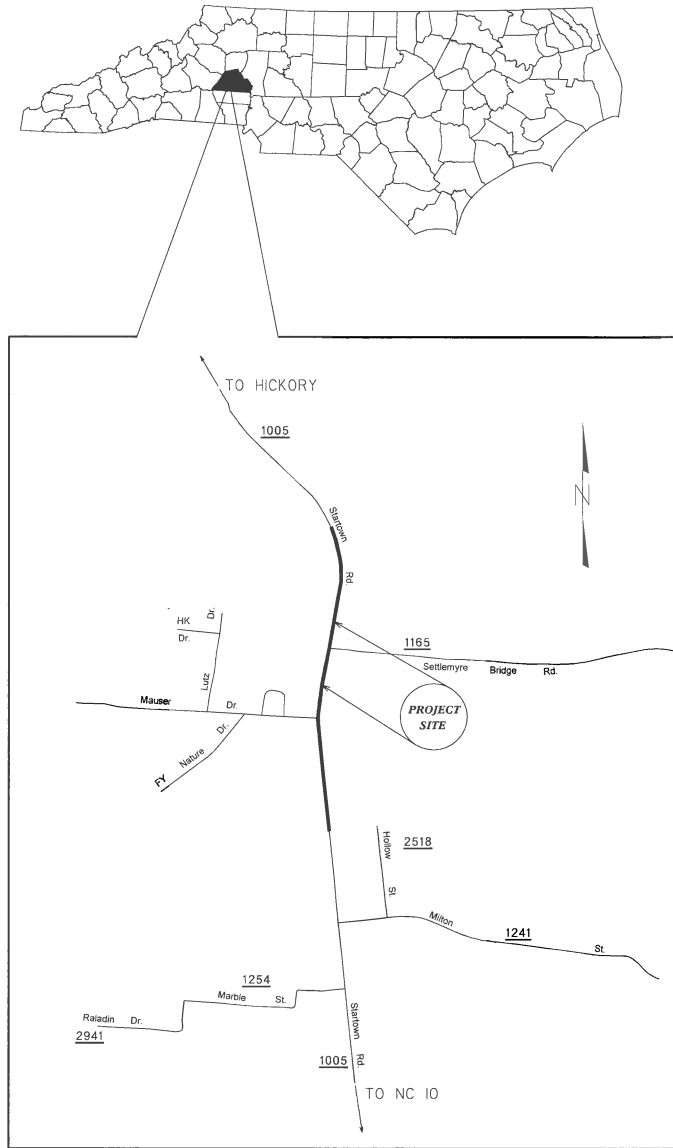
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

CATAWBA COUNTY



VICINITY MAP NOT TO SCALE

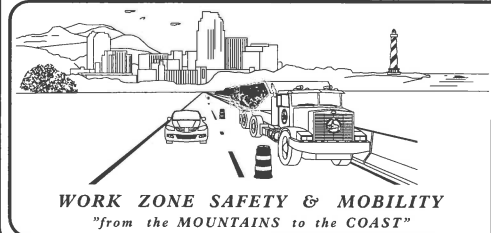
INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES AND LOCAL NOTES)
TMP-2	TEMPORARY TRAFFIC CONTROL PHASE I DETAIL
TMP-3	TEMPORARY TRAFFIC CONTROL PHASE II DETAIL
TMP-4	TEMPORARY TRAFFIC CONTROL PHASES III & IV DETAIL
PMP-1	PAVEMENT MARKING PLAN

SHEET NO.
TMP-1

TIP PROJECT: W-5212M

06-JUN-2017 08:12
C:\Users\jw\Documents\Projects\W-5212M\StarTown\Settlemyre_DL00145\Traffic Control\W-5212M_TC.BTMP_TMP-I.dgn
\$\$\$\$SERNAME\$\$\$\$



N.C.D.O.T. DIVISION 12 DDC UNIT
1710 EAST MARION STREET, SHELBY, NC 28152



Documented by:
Bryan K.D. Sovell
APPROVED: _____
DATE: 6/6/2017

SEAL



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 JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

<u>STD. NO.</u>	<u>TITLE</u>
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
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	DRUM
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	POSITIVE PROTECTION
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.

- WORK AREA
- REMOVAL

SIGNALS

- PROPOSED

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

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APPROVED: DATE: 6/6/2017		
ROADWAY STANDARD DRAWINGS & LEGEND		

GENERAL NOTES / LOCAL 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 UNDESIRABLE 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.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
SR 1005	MONDAY-FRIDAY: 7:00 A.M. UNTIL 8:00 A.M.

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME
ANY ROAD

HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 4:00 P.M. DECEMBER 31ST TO 9:00 A.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 A.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 4:00 P.M. THURSDAY AND 9:00 A.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY TO 9:00 A.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 4:00 P.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 A.M. THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 4:00 P.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 A.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- FOR LABOR DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY AND 9:00 A.M. TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 4:00 P.M. TUESDAY TO 9:00 A.M. MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 4:00 P.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS DAY.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- 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.
- 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.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- 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.
- DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

H) 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.

I) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING 'UNEVEN LANES' SIGNS (W8-11) 100 IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

J) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

K) 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.

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

TRAFFIC CONTROL DEVICES

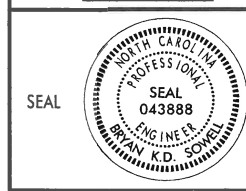
M) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADIUS, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

MISCELLANEOUS

N) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE 'LOOSE GRAVEL' SIGNS (W8-7) AND BLACK ON ORANGE 'PAVEMENT ENDS' SIGNS (W8-3) AND RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

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APPROVED: _____ DATE: 6/6/2017



**TRANSPORTATION
OPERATIONS
PLAN**

NOTE: THIS PROJECT IS DIVIDED INTO FOUR (4) PHASES.

IN PHASE I THE CONTRACTOR WILL GRADE AND PAVE FOR WIDENING ON THE LEFT SIDE OF -L- UP TO BUT NOT INCLUDING THE FINAL SURFACE AND INSTALL DRAINAGE.

IN PHASE II THE CONTRACTOR WILL GRADE AND PAVE FOR WIDENING ON THE RIGHT SIDE OF -L- UP TO BUT NOT INCLUDING THE FINAL SURFACE AND INSTALL DRAINAGE.

IN PHASE III PLACE THE FINAL SURFACE LAYER, PAVEMENT MARKINGS AND PAVEMENT MARKERS AS SHOWN ON THE PLANS.

IN PHASE IV INSTALL SIGNAL AND LOOPS AS SHOWN ON THE PLANS.

DURING ALL PHASES OF CONSTRUCTION MAINTAIN INGRESS AND EGRESS TO ALL RESIDENTIAL DRIVES LOCATED WITHIN THE PROJECT LIMITS.

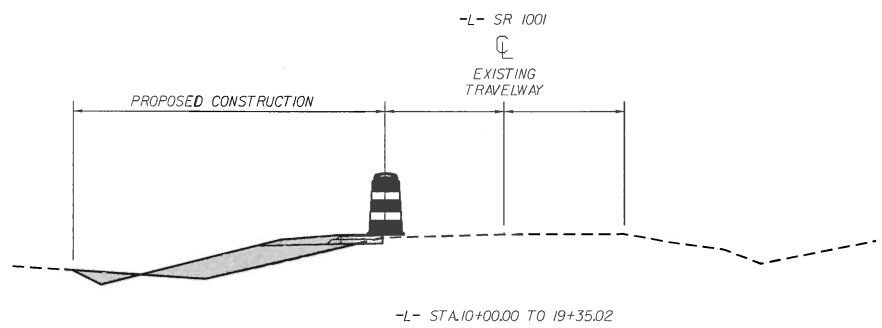
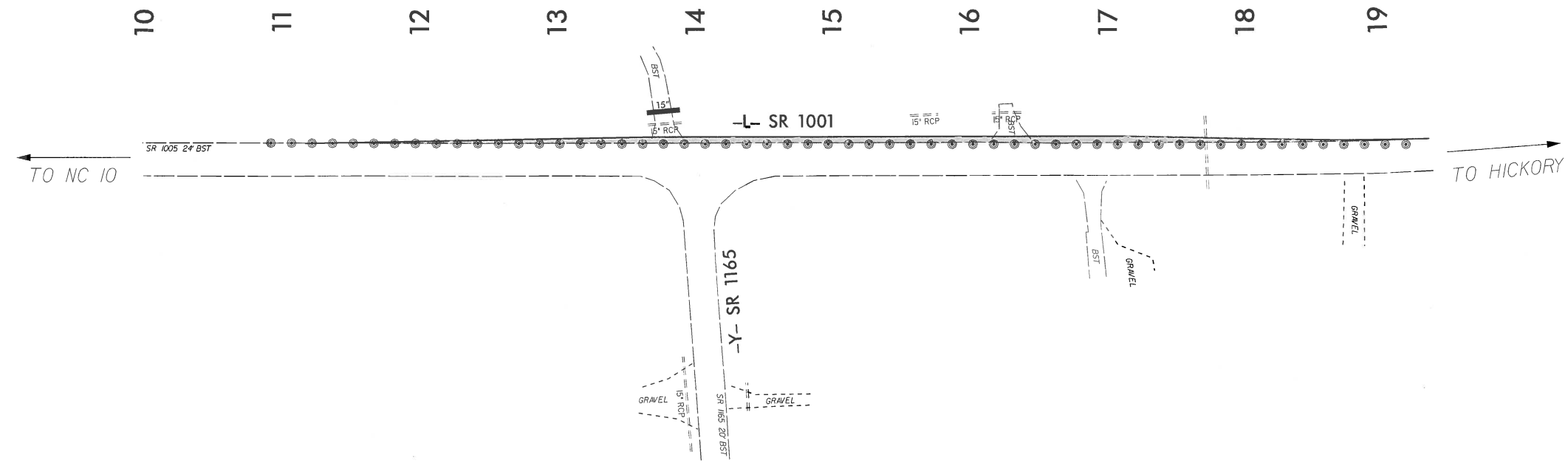
PHASE I

PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, INSTALL WORK ZONE ADVANCED WARNING SIGNS AS SHOWN IN NCDOT STANDARD DRAWING 1101.01 SHEET 3 OF 3.

AS REQUIRED USE NCDOT STANDARD DRAWING STD. 1101.02 SHEET 1 OF 15 FOR TRAFFIC CONTROL DURING THE FOLLOWING OPERATIONS AND ADHERE TO THE DAY AND TIME RESTRICTIONS IN THE CONTRACT AND THE TRAFFIC CONTROL PLAN GENERAL NOTES.

CONSTRUCT -L- UP TO BUT NOT INCLUDING THE FINAL SURFACE LAYER AT THE FOLLOWING LOCATIONS:

-L- LT FROM STA. 10+00.00 TO STA. 19+35.02

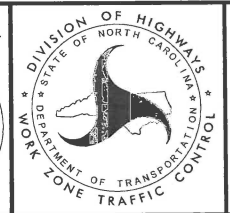


LEGEND	
	PROPOSED CONSTRUCTION

APPROVED: *Bryan Small*
77648DC06E4401

DATE: 6/6/2017

SEAL



PHASE 1

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PHASE II

USING NCDOT STANDARD DRAWING 1101.02 SHEET 1 OF 15 AND ADHERING TO THE DAY AND TIME RESTRICTIONS IN THE CONTRACT AND THE TRAFFIC CONTROL PLAN GENERAL NOTES, CONSTRUCT -L- AND -Y- UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE AT THE FOLLOWING LOCATIONS:

- L- RT. FROM STA. 10+00.00 TO STA. 19+35.02
- Y- FROM STA. 10+00.00 TO STA. 11+00.00

-L- STA. 17+73.50 INSTALL CROSS PIPE ONE LANE OF TRAFFIC MUST BE MAINTAINED AT ALL TIMES.



LEGEND

PROPOSED CONSTRUCTION

APPROVED: *Byron Sewell*
178480000214201

DATE: 6/6/2017

SEAL

PHASE II

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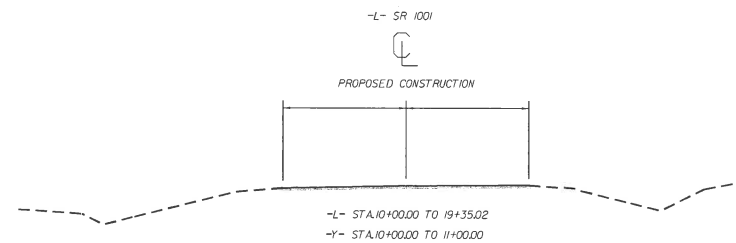
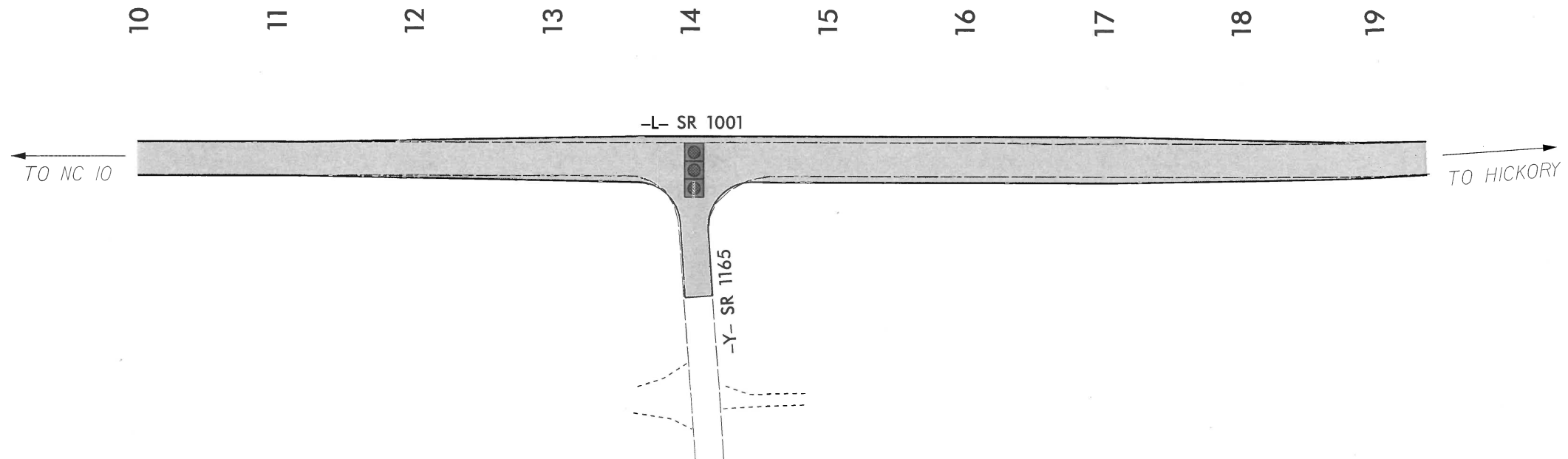
PHASE III

USING NCDOT STANDARD DRAWING 1101.02 SHEET 1 OF 15 AND ADHERING TO THE DAY AND TIME RESTRICTIONS IN THE CONTRACT AND THE TRAFFIC CONTROL PLAN GENERAL NOTES, PLACE THE FINAL SURFACE COURSE, PAVEMENT MARKINGS, AND PAVEMENT MARKERS ON -L- AND -Y- AT THE FOLLOWING LOCATIONS:

- L- FROM STA. 10+00.00 TO STA. 19+35.02
- Y- FROM STA. 10+00.00 TO STA. 11+00.00

PHASE IV

USING NCDOT STANDARD DRAWING 1101.02 SHEET 1 OF 15 AND ADHERING TO THE DAY AND TIME RESTRICTIONS IN THE CONTRACT AND THE TRAFFIC CONTROL PLAN GENERAL NOTES, INSTALL SIGNAL AND DETECTION LOOPS ACCORDING TO SIGNAL PLANS.



LEGEND	
	PROPOSED CONSTRUCTION

APPROVED: *Byron Sowell*
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DATE: 6/6/2017

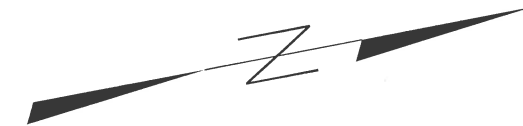
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PHASES III & IV

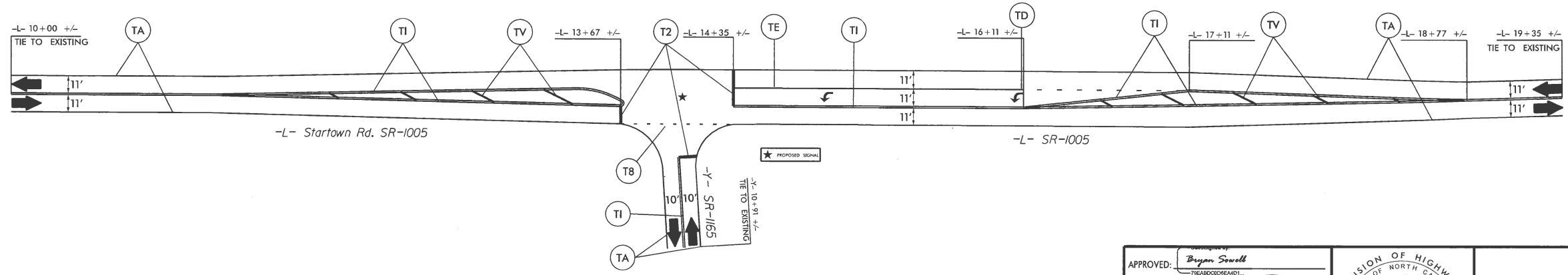
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PAVEMENT MARKING SCHEDULE
TIP PROJECT • W-5212M

SYMBOL	DESCRIPTION	TEMPORARY PAVEMENT MARKINGS
TV	YELLOW DIAGONAL	THERMOPLASTIC(12", 90 MILS)
T2	WHITE STOPBAR	THERMOPLASTIC(24", 120 MILS)
T8	2 FT. - 6 FT./SP WHITE MINISKIP	THERMOPLASTIC(4", 120 MILS)
TD	3 FT. - 9 FT./SP WHITE MINISKIP	
TE	WHITE SOLID LANE LINE	
TI	YELLOW DOUBLE CENTER	
TA	WHITE EDGELINE	THERMOPLASTIC(4", 90 MILS)
UA	LEFT TURN ARROW	THERMOPLASTICPAVEMENT MARKING SYMBOLS (90 MILS)



****SEE SIGNAL PLANS
FOR STOP BAR PLACEMENT**



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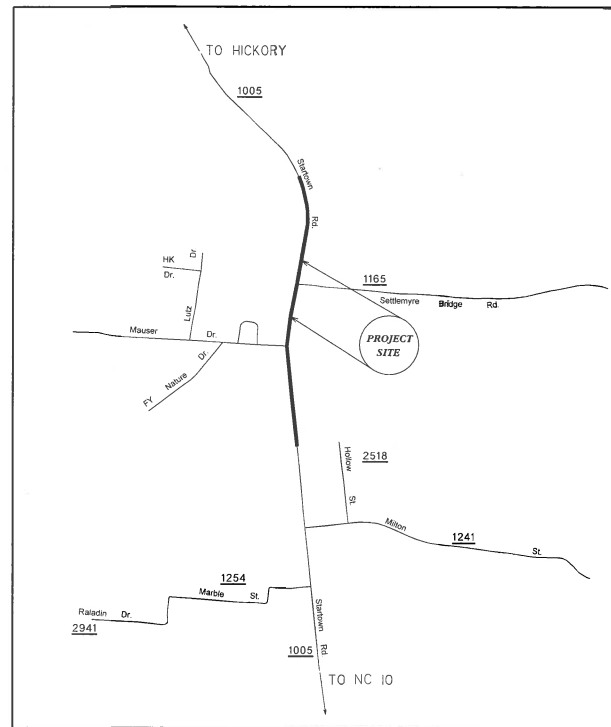
APPROVED: <i>Bryan Somell</i> DATE: 6/6/2017 SEAL			PAVEMENT MARKING PLAN
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09/08/99

See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL



VICINITY MAP NOT TO SCALE

10

-L- POT STA. 10+00.00
BEGIN PROJ. W-5212M

-Y- POT STA. 10+00.00 =
-L- POT STA. 14+01.03

-L- POT STA. 19+32.02
END PROJ. W-5212M

SR 1005 24' BST

SR 1185 20' BST



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5212M	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
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.

TIP PROJECT: W-5212M

GRAPHIC SCALES



ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

Erosion Control Plan
B.K. Sowell
Level III #3907

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

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		

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5/28/99

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.

Wet Pipe Installation Schedule and Notes

1. Prior to installing any E&SC measures identify permit conditions and impact area limits.
2. Install erosion control devices.
3. Manage the water course. The pipe must be placed in the dry. Install dewatering measures.
4. Remove material and existing pipe while limiting material and sediment from entering stream and escaping the project.
5. Excavation of stream channel shall not exceed 10' on either side of new pipe or culvert unless indicated on permit.
6. Per permit conditions for Corps of Engineers and the Wildlife Resources Commission, all pipes in streams 48" or greater must be buried 12" below streambed elevation. Pipes less than 48" must be buried with 20% of the diameter below streambed elevation.
7. Place the new pipe and compact backfill.
8. Install slope protection on the outlet and inlet ends of the pipe. Also complete installation of erosion control measures and perform maintenance as needed on existing measures.
9. Establish permanent vegetation per ground stabilization chart.
10. More information on wet pipe installation can be found in the BMP manual section 4.2 "Pipe & Culvert installation"

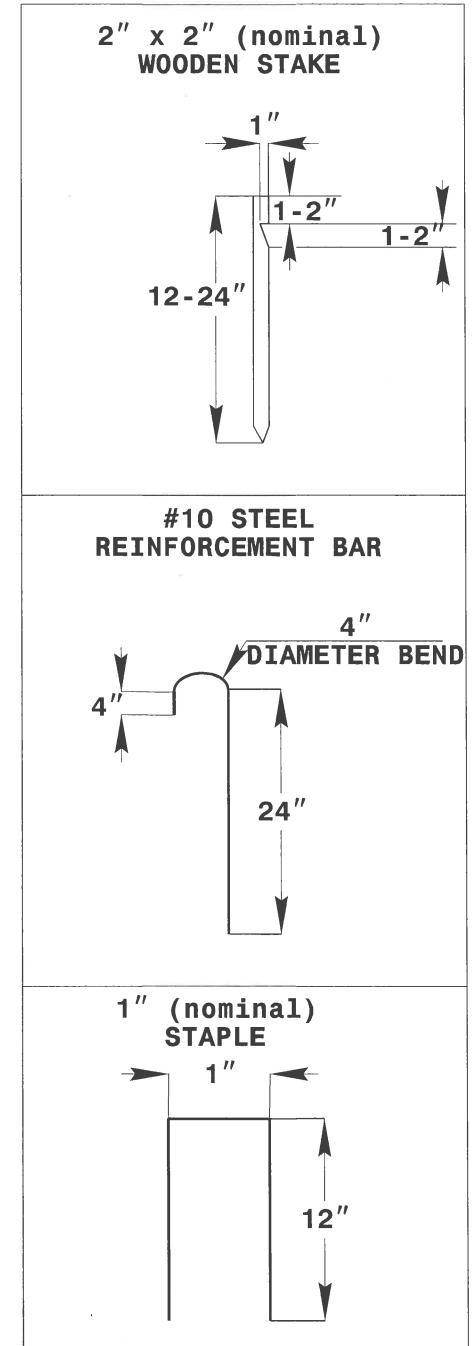
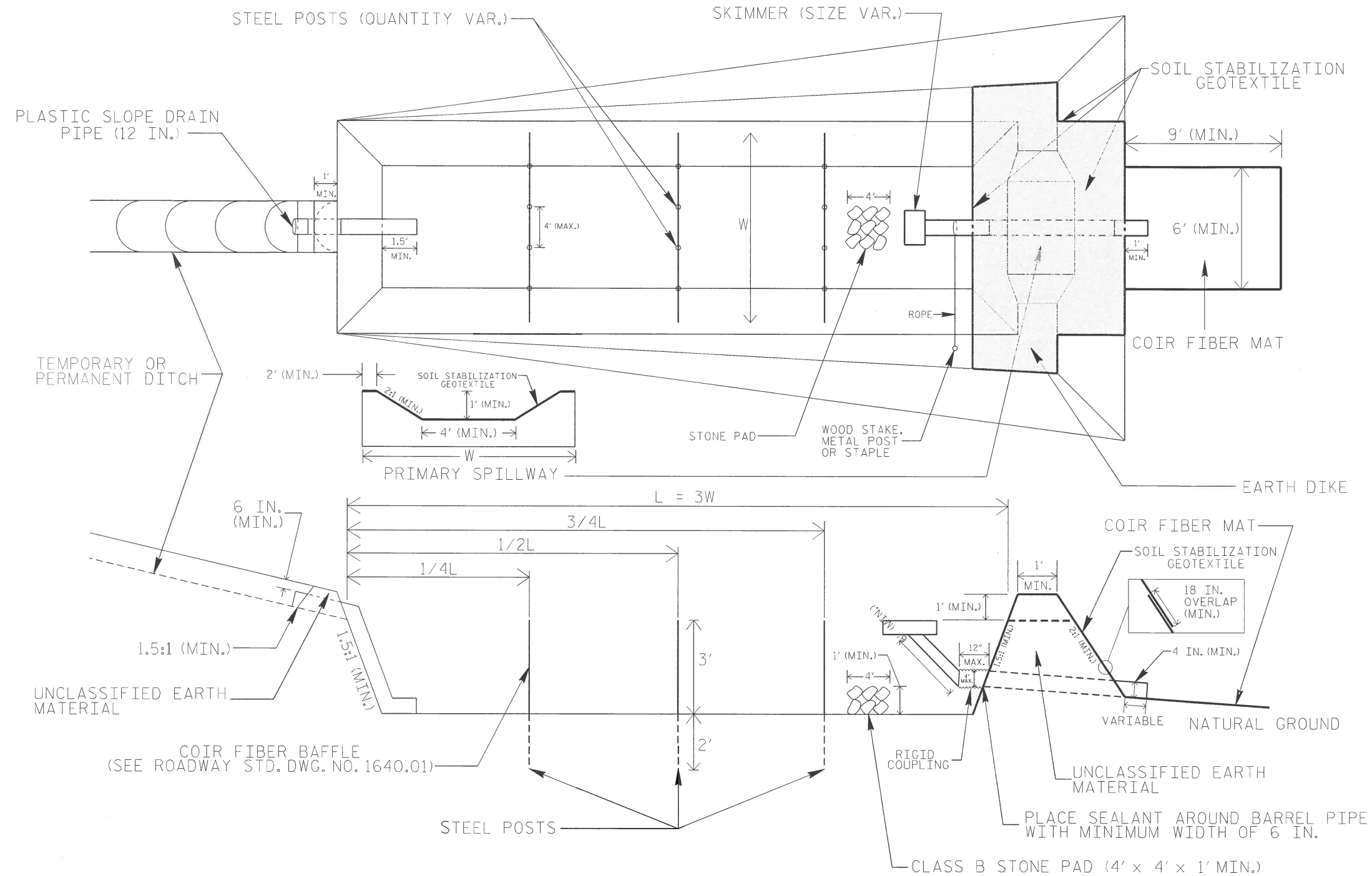
GROUND STABILIZATION CHART

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 length
All other areas flatter than 4:1	14 days	None (except for perimeters and HQW zones)

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PROJECT REFERENCE NO. W-5212M	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SKIMMER BASIN WITH BAFFLES DETAIL



COIR FIBER MAT ANCHOR OPTIONS

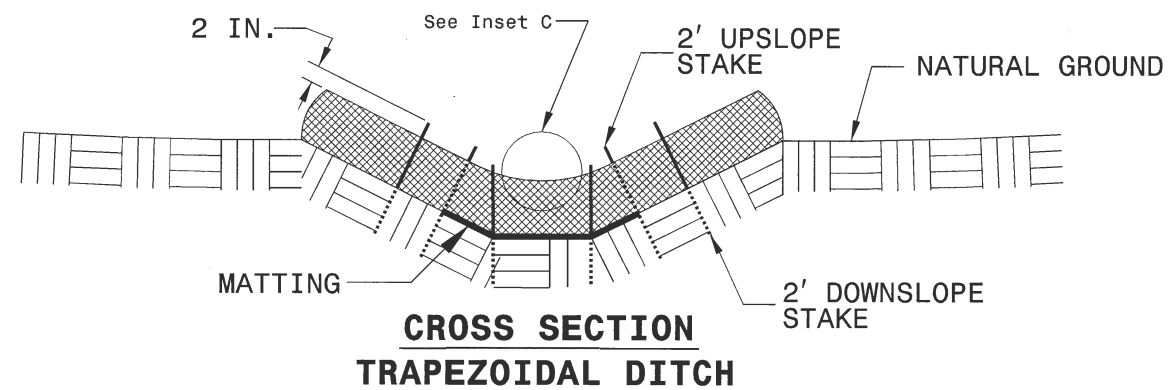
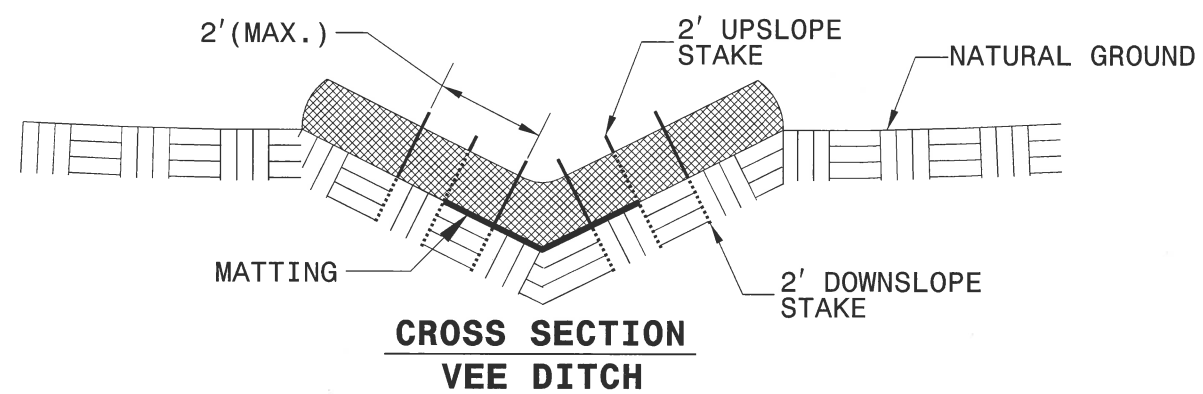
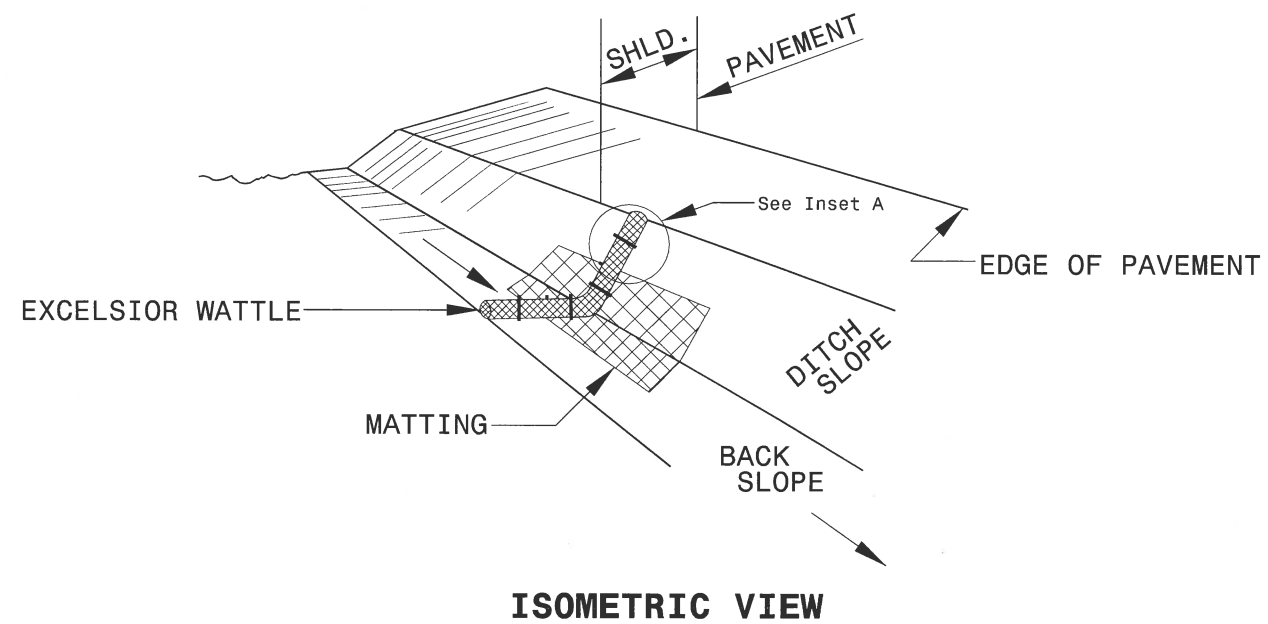
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. FOR BASIN DEPTH OF 3 FT., THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE PRIMARY SPILLWAY WEIR LENGTH (FT.) USING $Q/0.8$, WHERE Q IS FLOW RATE (CFS) INTO BASIN.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTRATION GEOTEXTILE OR TARP AS DIRECTED.
6. SOIL STABILIZATION GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

PROJECT REFERENCE NO. W-5212M	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

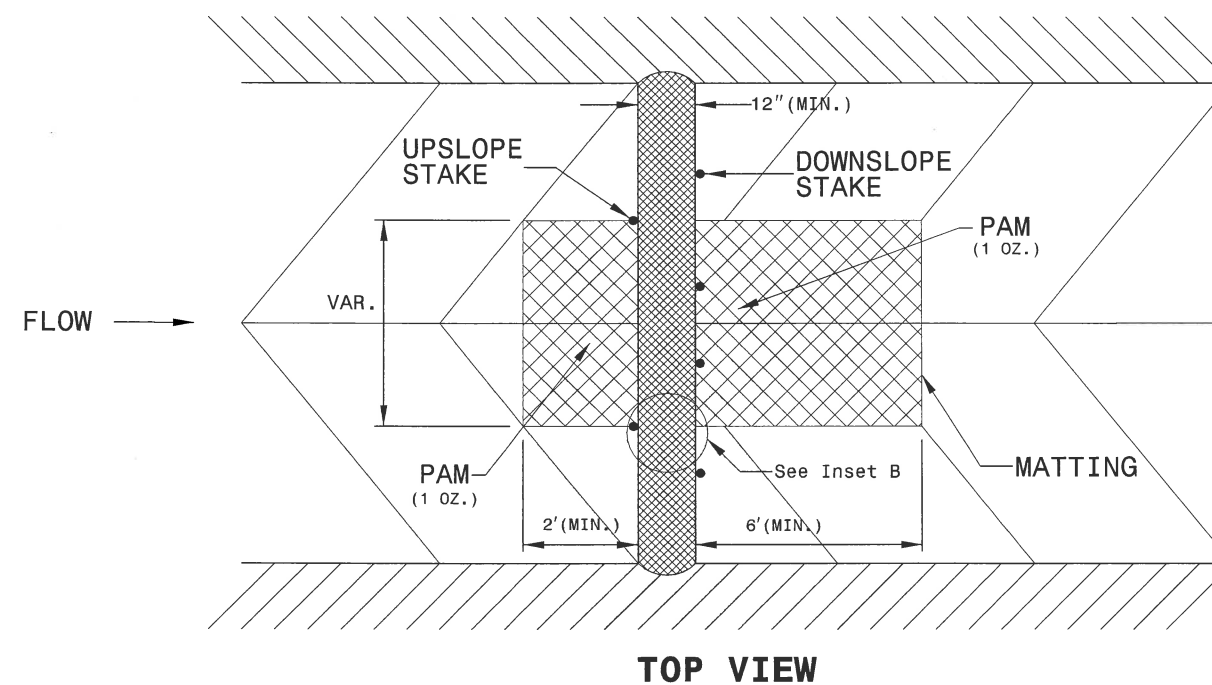
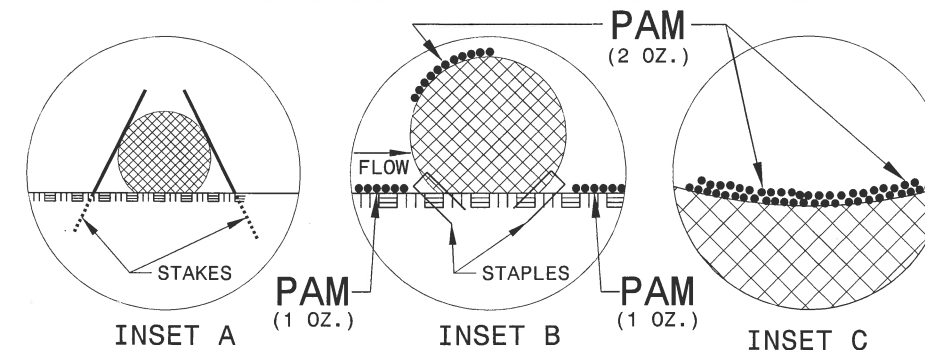
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

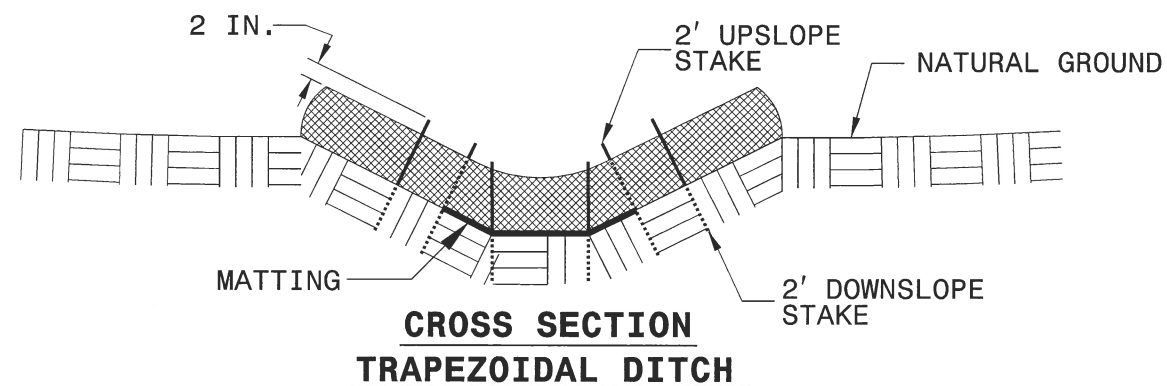
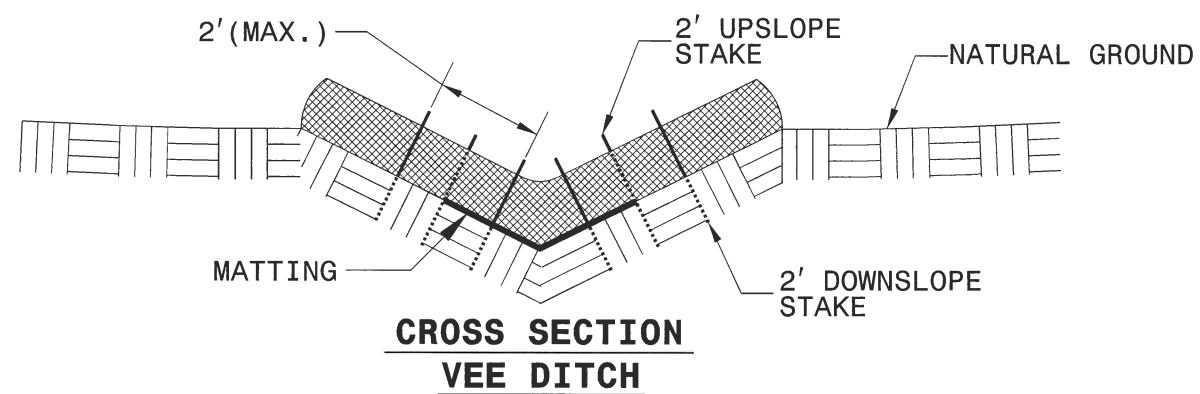
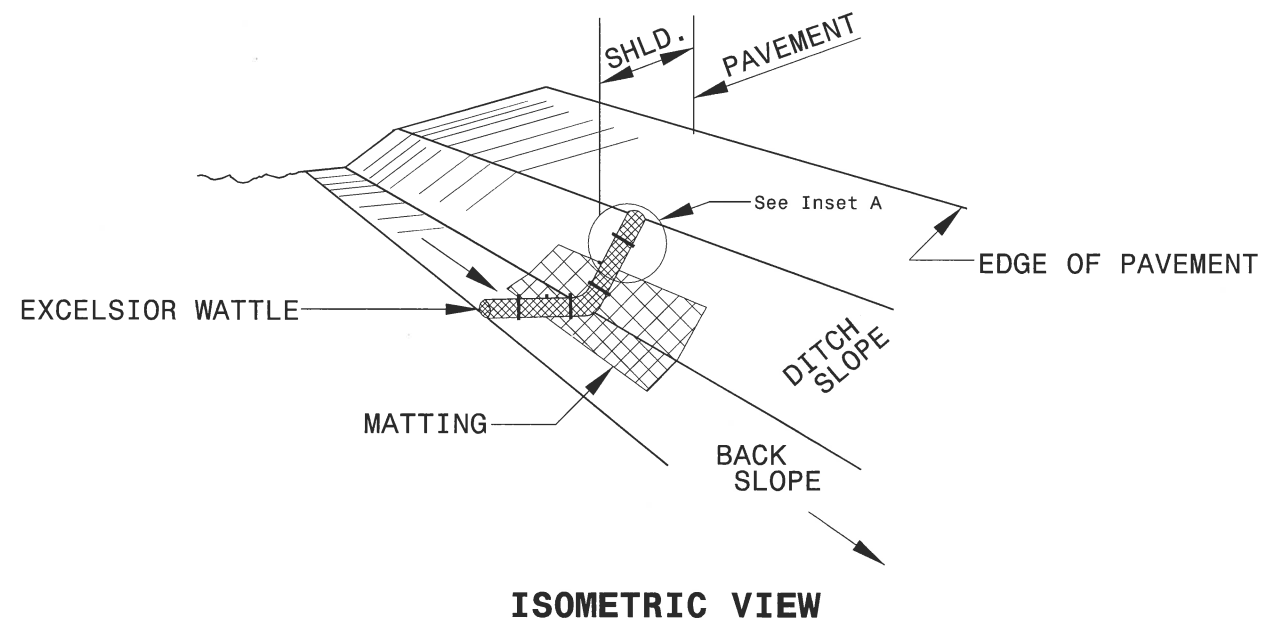
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



PROJECT REFERENCE NO. W-5212M	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE DETAIL



NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

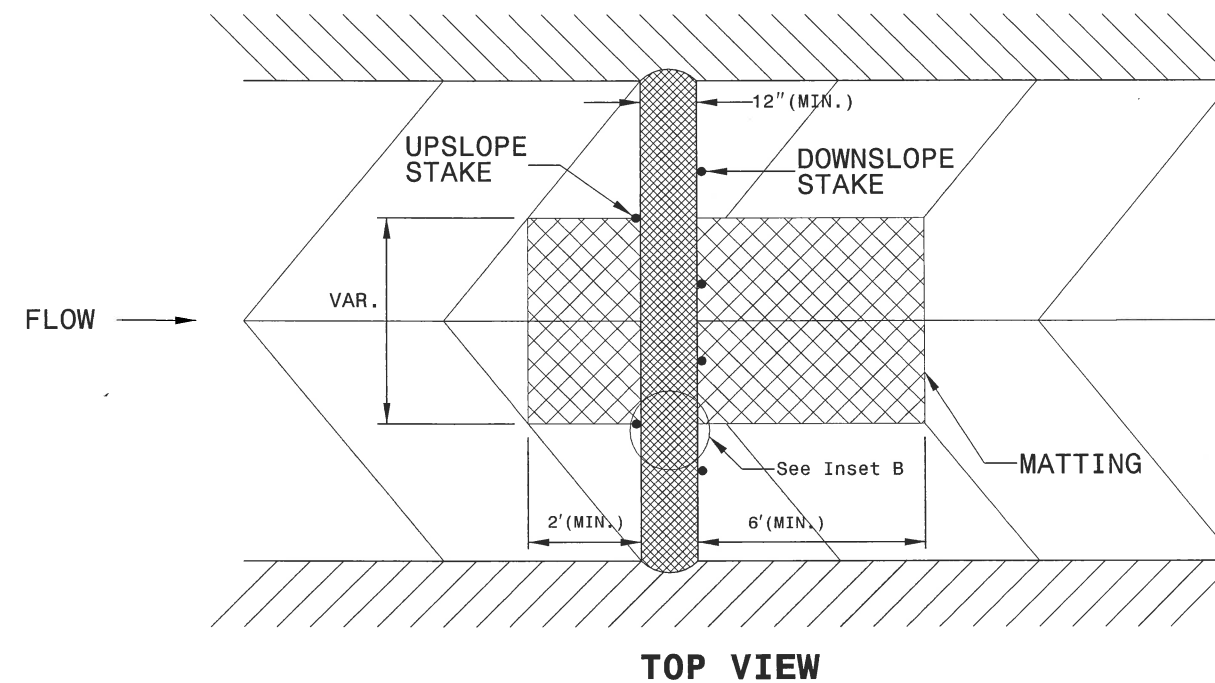
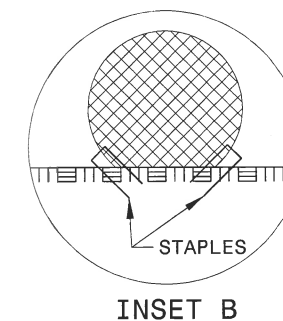
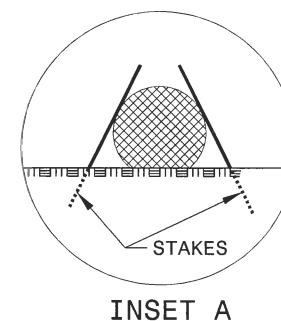
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



PROJECT REFERENCE NO. W-5212M	SHEET NO. EC.4/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SARSTEDT INC.
DB 2577 PG 925
PB 12 PG 95

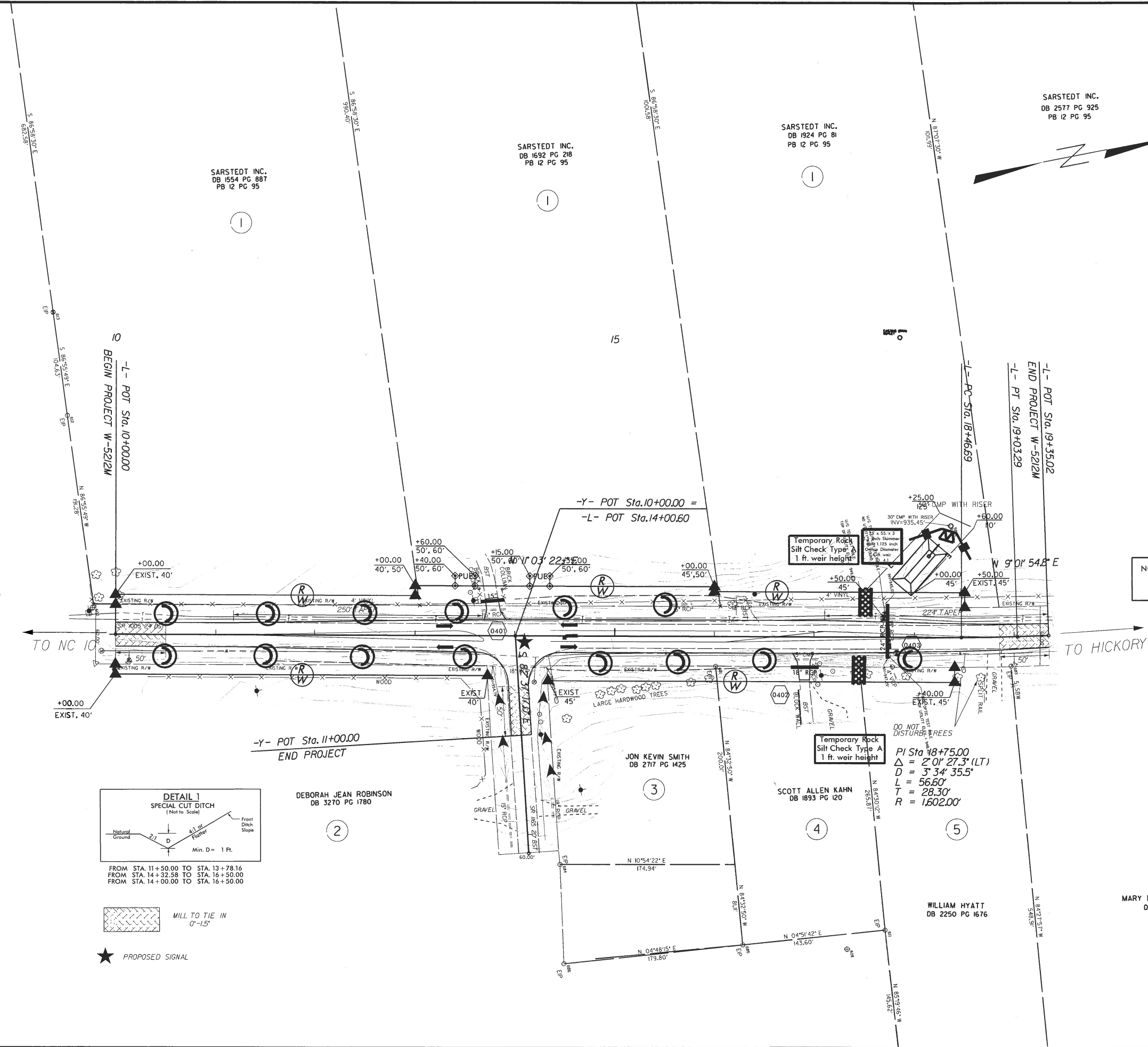


SARSTEDT INC.
DB 1924 PG 81
PB 12 PG 95

SARSTEDT INC.
DB 1692 PG 218
PB 12 PG 95

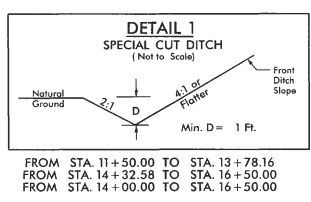
SARSTEDT INC.
DB 1554 PG 887
PB 12 PG 95

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

APPLY PAM AT A RATE
OF 6oz PER WATTLE

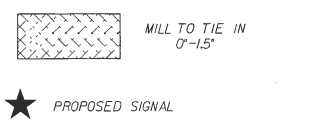
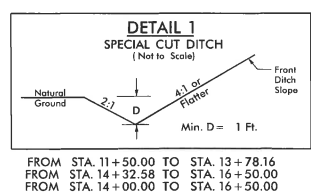
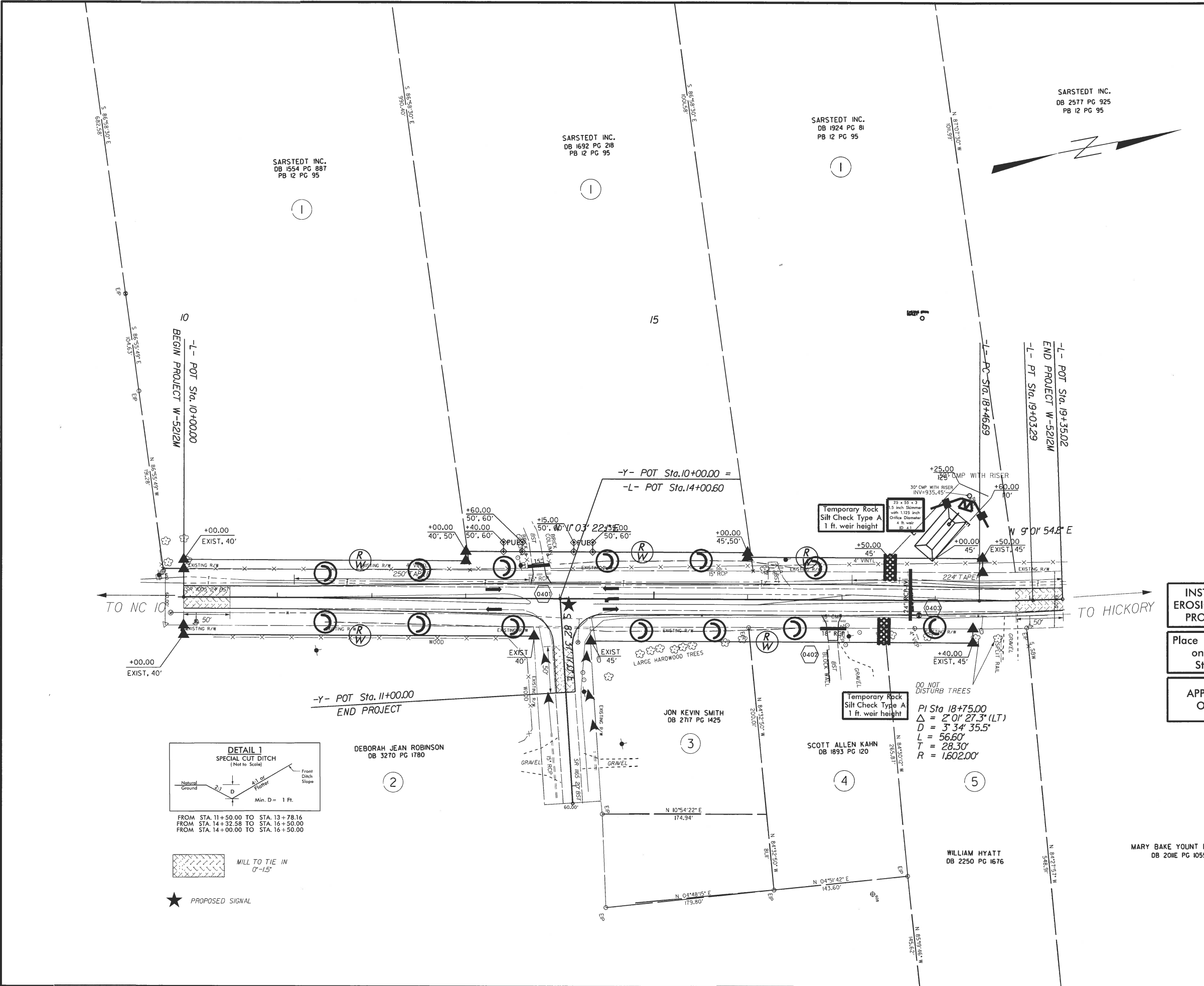


MILL TO TIE IN
0'-1.5'

★ PROPOSED SIGNAL

PROJECT REFERENCE NO.	SHEET NO.
W-5212M	EC.5/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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 8/17/99



- INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.
- Place Matting for Erosion Control on Slope as Work Allows. Sta. 10+50 to Sta. 18+72
- APPLY PAM AT A RATE OF 6oz PER WATTLE

6/23/16



PROJ. REFERENCE NO.
W-5212M

SHEET NO.
X-1

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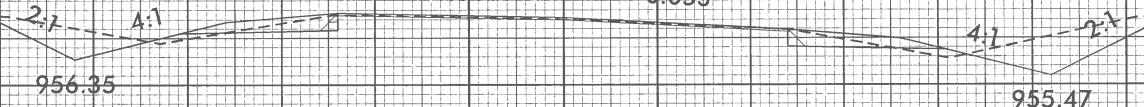
970 970

960 960

11 + 50.00

950 950

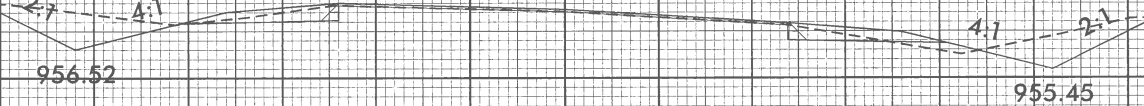
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11 + 00.00

950 950

960 960



10 + 50.00

950 950

960 960

10 + 00.00

950 950



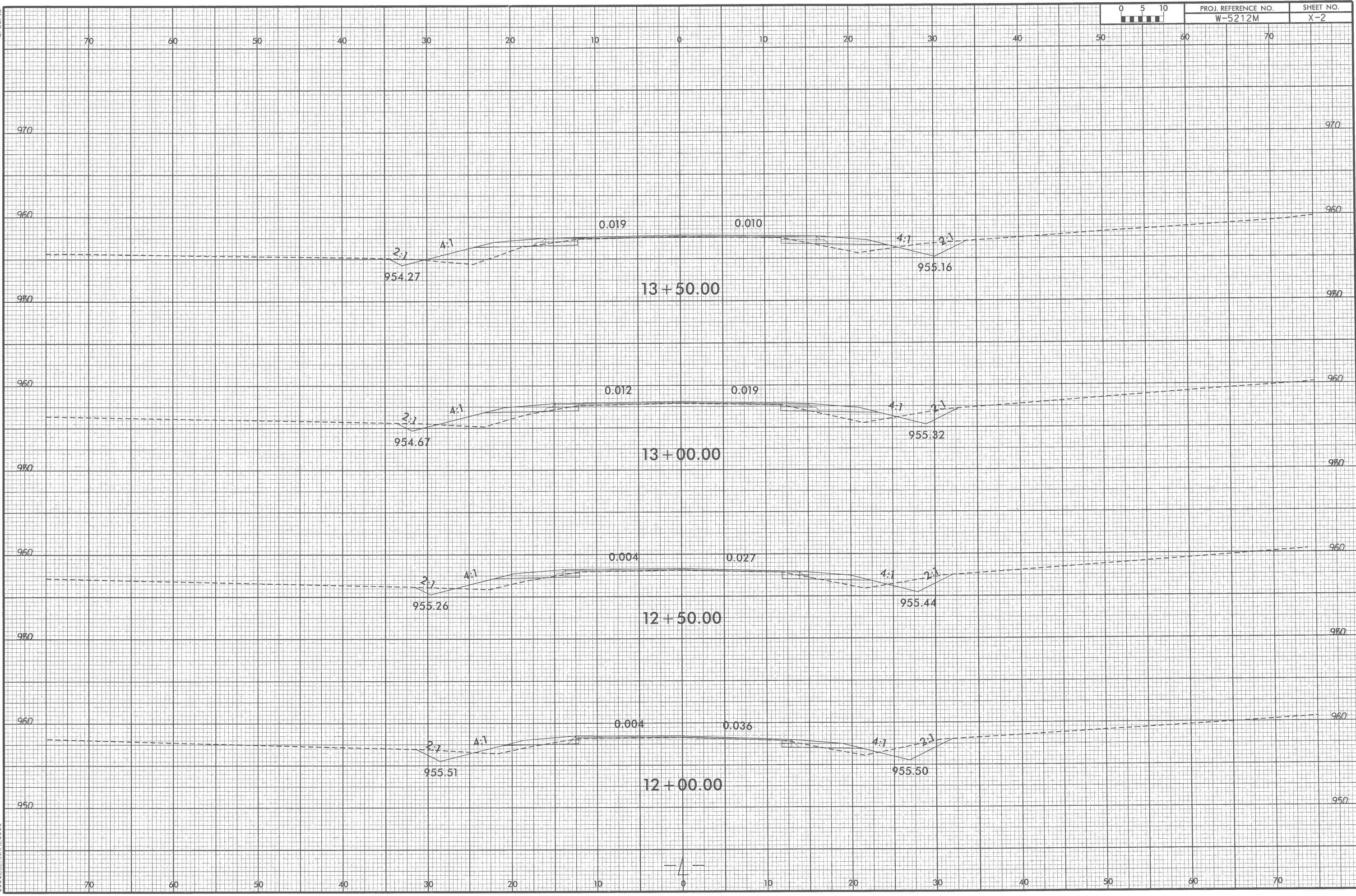
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PROJ. REFERENCE NO.
W-5212M

SHEET NO.
X-2



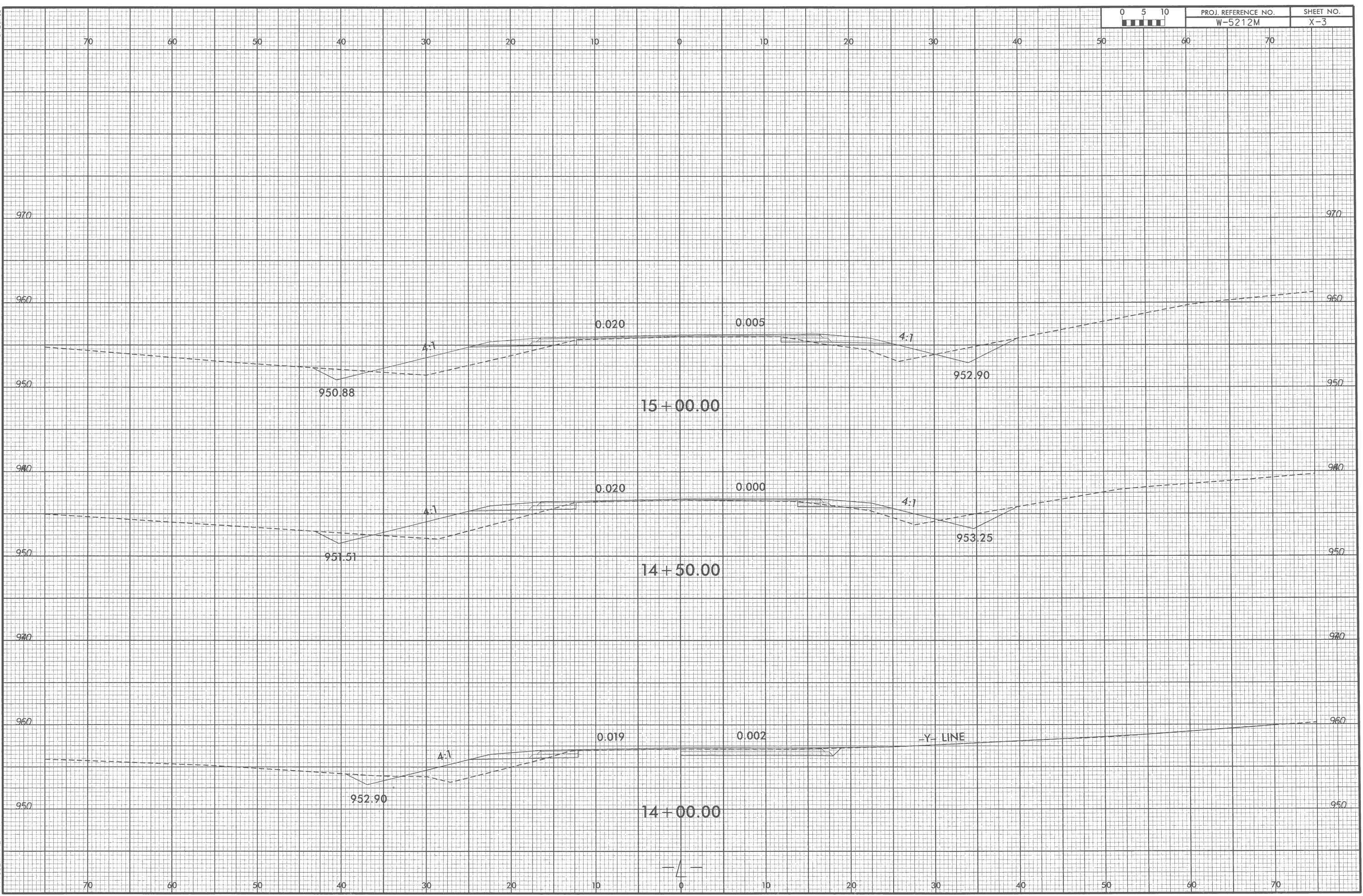
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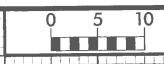


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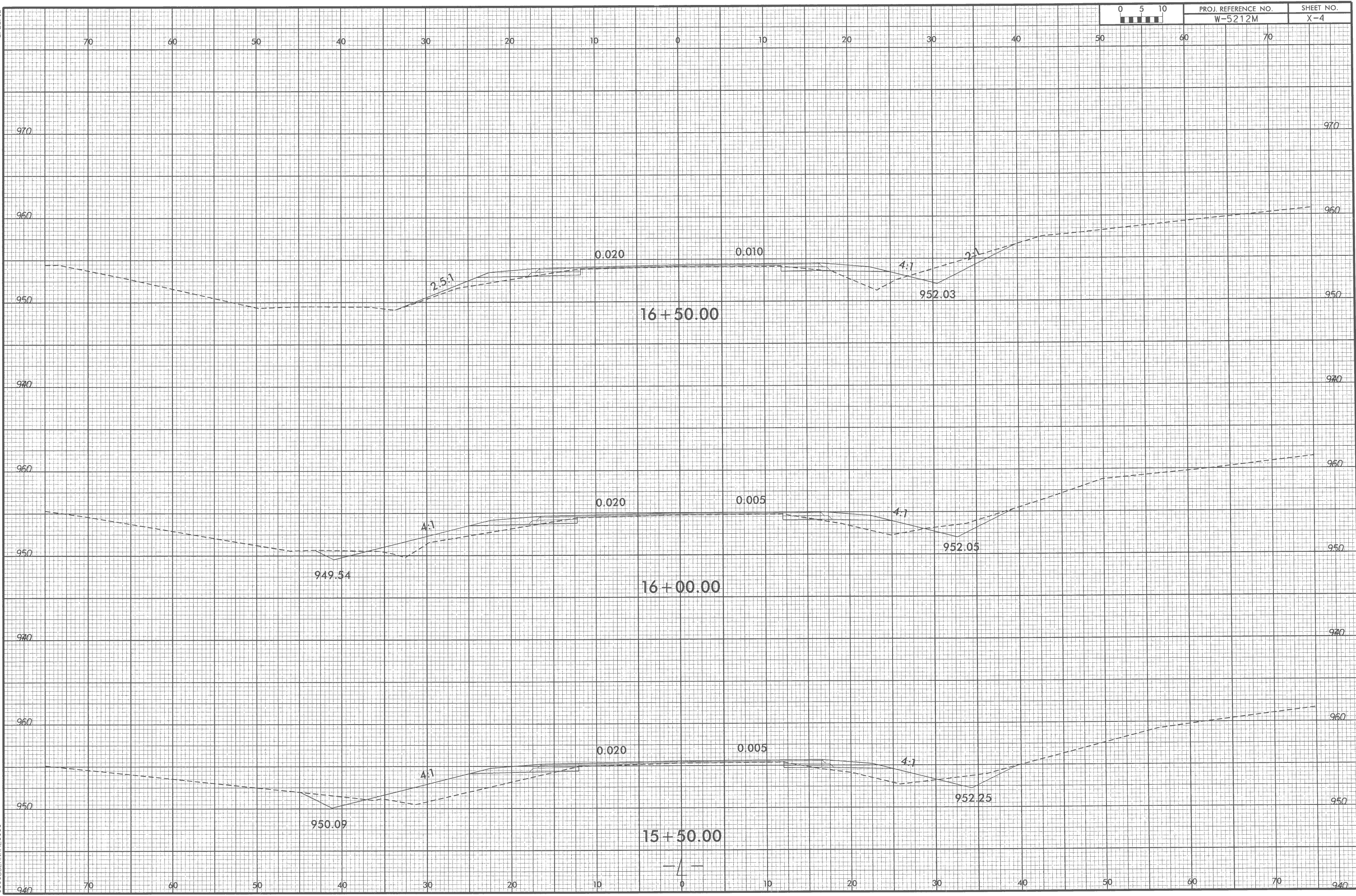


6/23/16



PROJ. REFERENCE NO.	SHEET NO.
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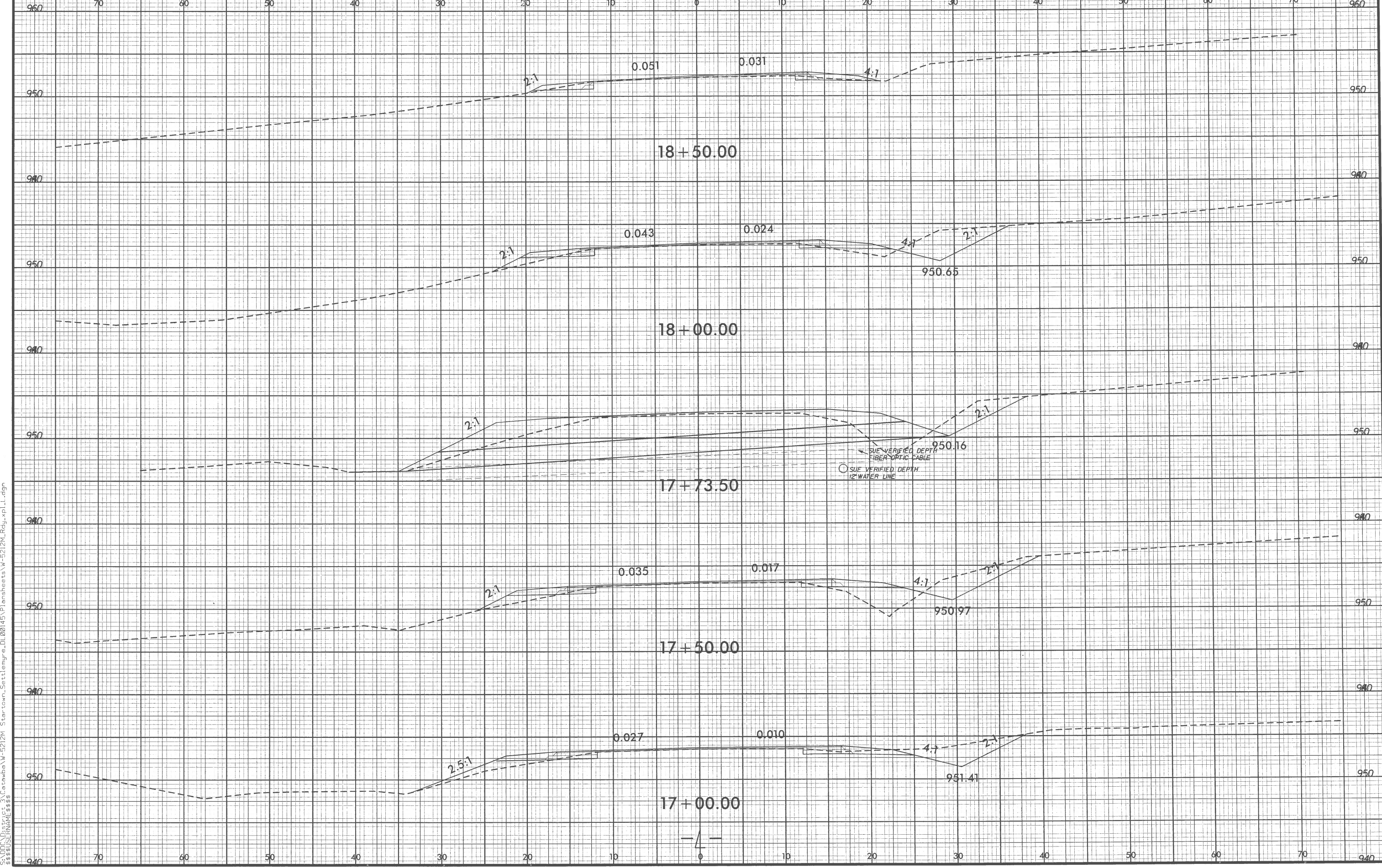
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6/23/16



PROJ. REFERENCE NO.	SHEET NO.
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PROJ. REFERENCE NO.	SHEET NO.
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