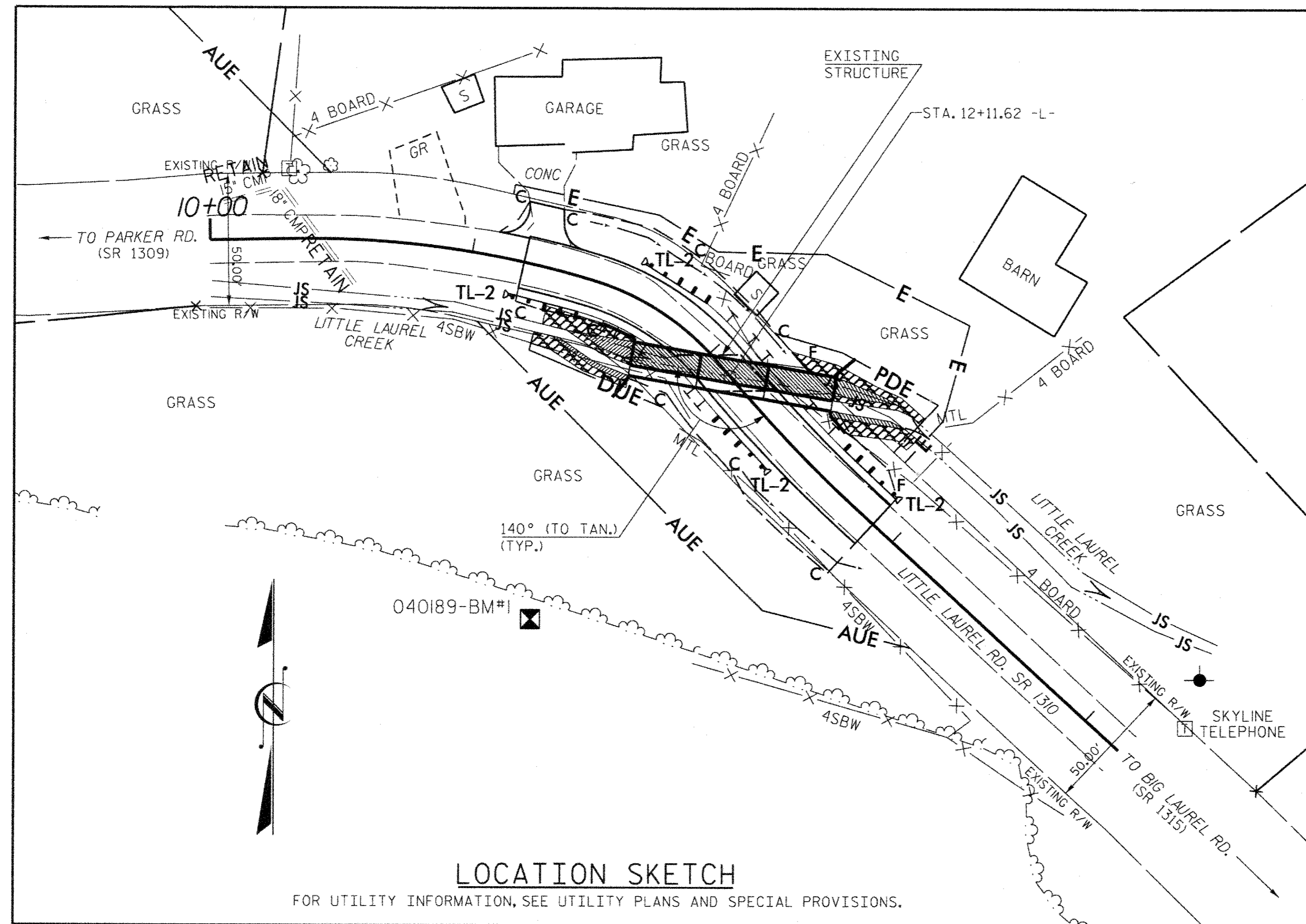


BM #1 ON -L- STA. 12+29.96, 117.80' RT., 8" SPIKE IN 24" WHITE PINE, ELEV. 3092.64

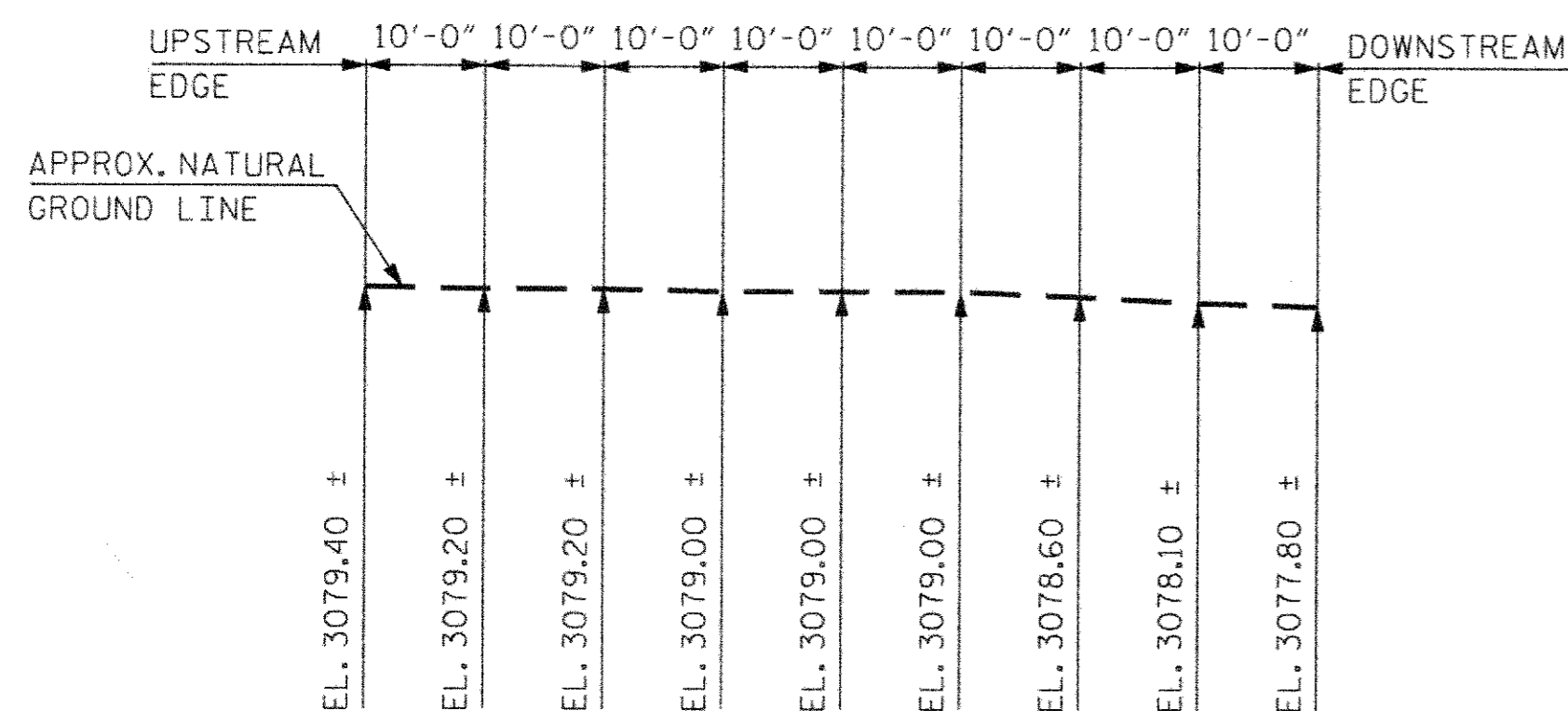


**NOTES:**

- ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
- CULVERT IS TO BE DESIGNED FOR A MINIMUM FILL DEPTH OF 1'-4" AND A MAXIMUM FILL DEPTH OF 3'-0".
- THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.
- FOR ALUMINUM BOX CULVERT, FOUNDATION MATERIAL, AND CULVERT BACKFILL SEE SPECIAL PROVISIONS.
- ALL MATERIALS SHALL MEET THE REQUIREMENTS OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES DATED JANUARY 2012.
- THE DETAILS SHOWN ARE FOR GENERAL LAYOUT ONLY. THE SUPPLIER SHALL PROVIDE DESIGNS AND DETAILS FOR REVIEW AND APPROVAL THAT MEET REQUIREMENTS OF AASHTO LFRD BRIDGE DESIGN SPECIFICATIONS, SECTION 12, AND ARE SEALED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER.
- UNLESS OTHERWISE INDICATED, THE SUPPLIER SHALL DESIGN, DETAIL, AND FURNISH ALL STRUCTURAL ELEMENTS AND HARDWARE.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
- THE EXISTING STRUCTURE CONSISTING OF ONE SPAN AS 18'-11", WITH ASPHALT WEARING SURFACE ON TIMBER DECK AND STEEL I-BEAMS WITH A CLEAR ROADWAY WIDTH OF 18'-4" ON TIMBER CAPS, POSTS AND SILLS LOCATED AT THE PROPOSED CULVERT SITE SHALL BE REMOVED. THE BRIDGE IS NOT PRESENTLY POSTED. SEE SPECIAL PROVISIONS.
- REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
- THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
- INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 12+11.62 -L-."
- GUARD RAIL POST LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. ADJUST GUARDRAIL LOCATION AS REQUIRED TO AVOID PROPOSED WING WALLS AND ANCHOR UNITS.

**FOUNDATION NOTES:**

- SEE SECTION 414 OF THE STANDARD SPECIFICATIONS FOR CULVERT EXCAVATION AND BACKFILLING.
- EXCAVATE ONE FOOT MINIMUM BELOW CULVERT AND REPLACE THE EXCAVATED MATERIAL WITH FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH SECTION 414 OF THE STANDARD SPECIFICATIONS.
- WING WALL BACKFILL SHALL MEET CLASS II OR BETTER AS SPECIFIED IN SECTION 1016 OF THE STANDARD SPECIFICATIONS.



PROFILE ALONG CULVERT

**GRADE DATA**

GRADE POINT ELEV. @ STA. 12+11.62 -L- = 3082.84  
 BED ELEV. @ STA. 12+11.62 -L- = 3077.52  
 ROADWAY SLOPES-----2:1

**HYDRAULIC DATA**

DESIGN DISCHARGE-----160 C.F.S.  
 FREQUENCY OF DESIGN FLOOD-----2 YR.  
 DESIGN HIGH WATER ELEVATION-----3083.2  
 DRAINAGE AREA-----1.6 SQ. MI.  
 BASE DISCHARGE (Q100)-----800 C.F.S.  
 BASE HIGH WATER ELEVATION-----3084.28

**OVERTOPPING FLOOD DATA**

OVERTOPPING DISCHARGE-----92 C.F.S.  
 FREQUENCY OF OVERTOPPING FLOOD-----2 YR. -  
 OVERTOPPING FLOOD ELEVATION-----3082.8

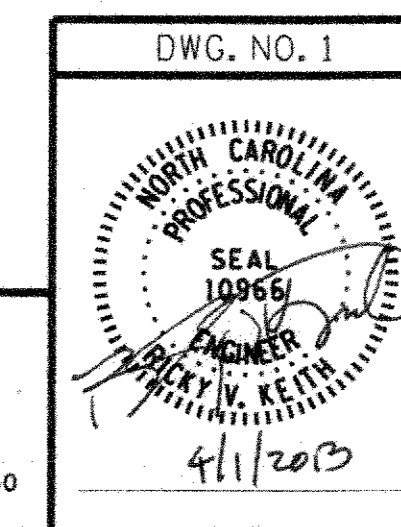
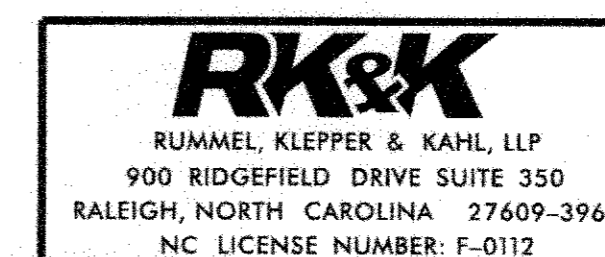
TOTAL STRUCTURE QUANTITIES	
ALUMINUM BOX CULVERT	LUMP SUM
CULVERT EXCAVATION	LUMP SUM
REMOVAL OF EXISTING STRUCTURE	LUMP SUM
FOUNDATION MATERIAL	75 TONS
CULVERT BACKFILL	230 TONS

PROJECT NO. 17BP.11.R.7  
 ASHE COUNTY  
 STATION: 12+11.62 -L-

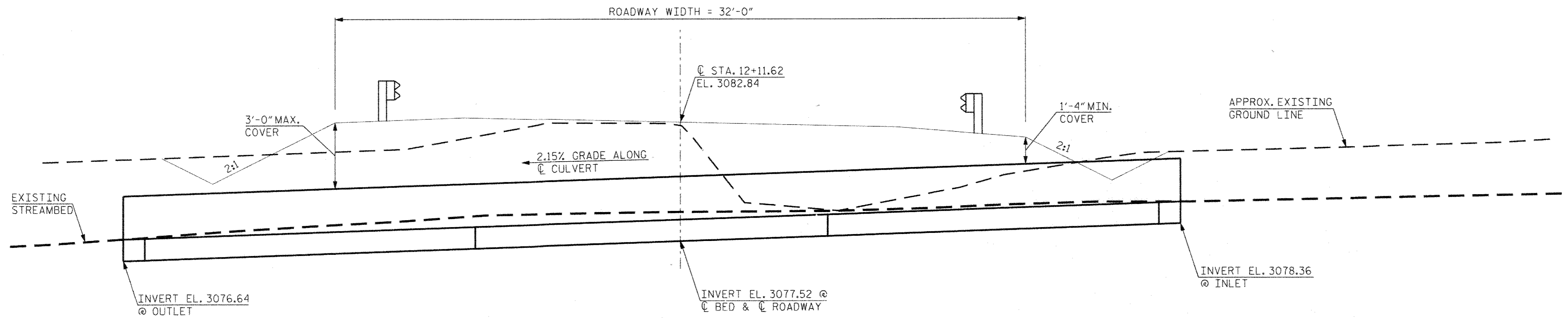
SHEET 1 OF 3 REPLACES BRIDGE #189

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

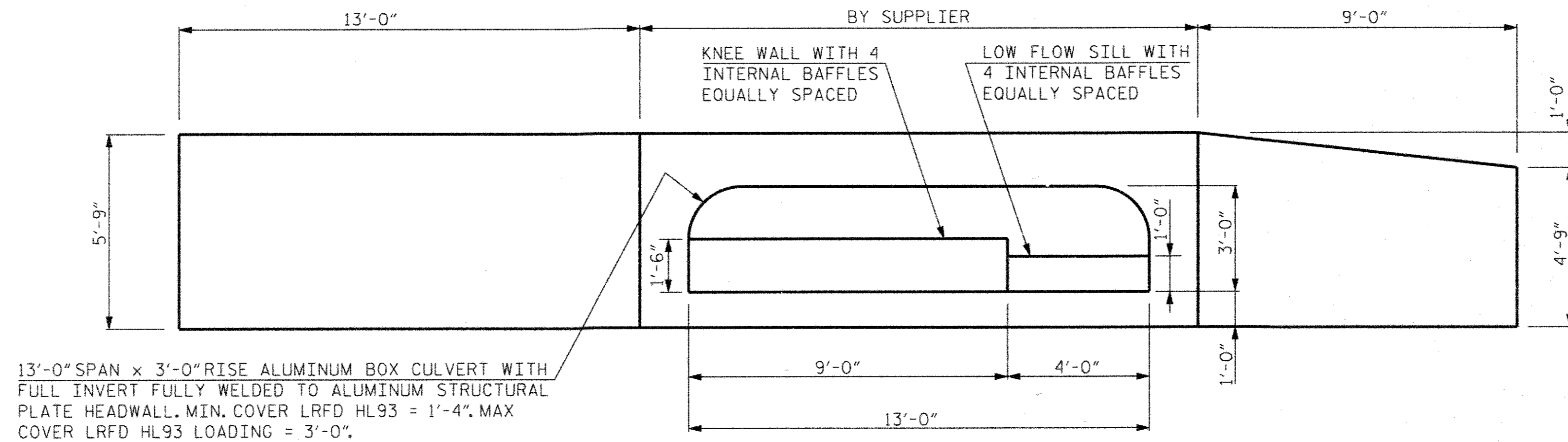
SINGLE 13' x 3'  
 ALUMINUM BOX CULVERT  
 TYPE E6



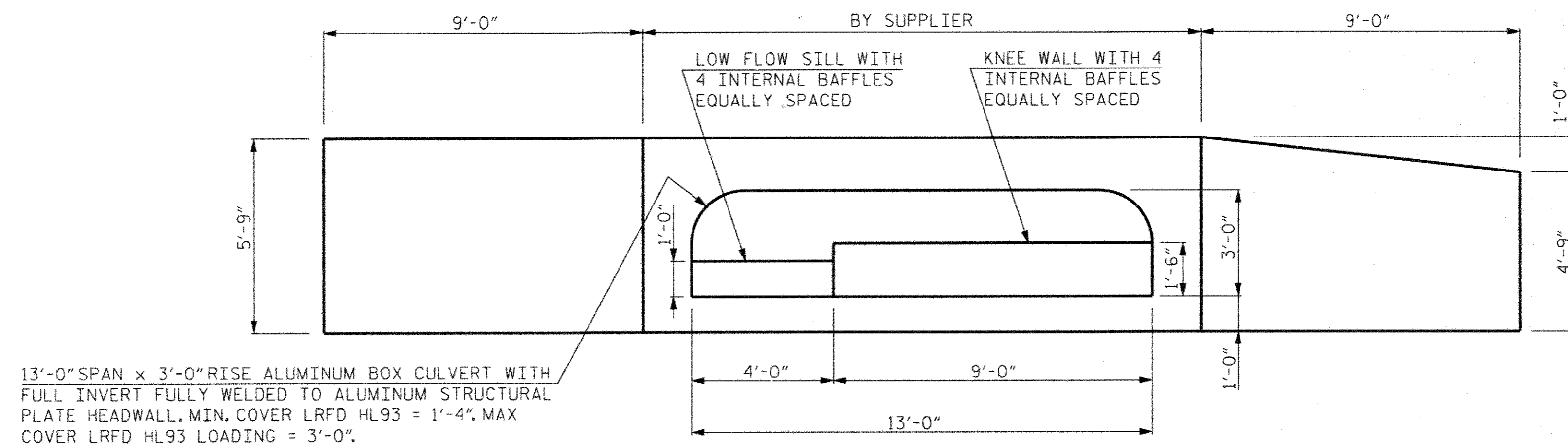
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1			3			TOTAL SHEETS
2			4			



**CULVERT SECTION NORMAL TO ROADWAY**  
(LOOKING AHEAD STATION)



**END ELEVATION - INLET END**



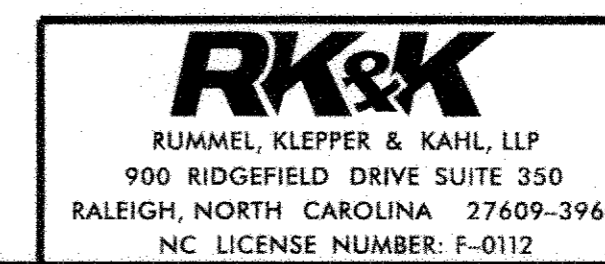
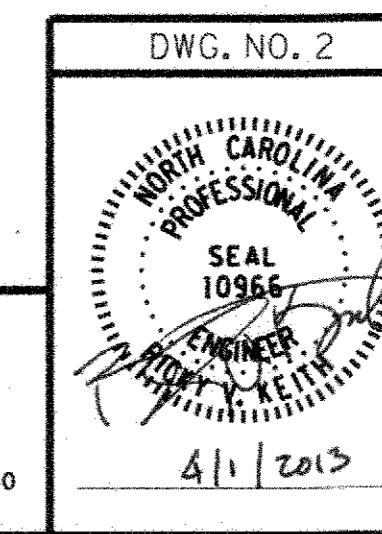
**END ELEVATION - OUTLET END**

PROJECT NO. 17BP.11.R.7  
ASHE COUNTY  
 STATION: 12+11.62 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SINGLE 13' x 3'  
 ALUMINUM BOX CULVERT  
 TYPE E6



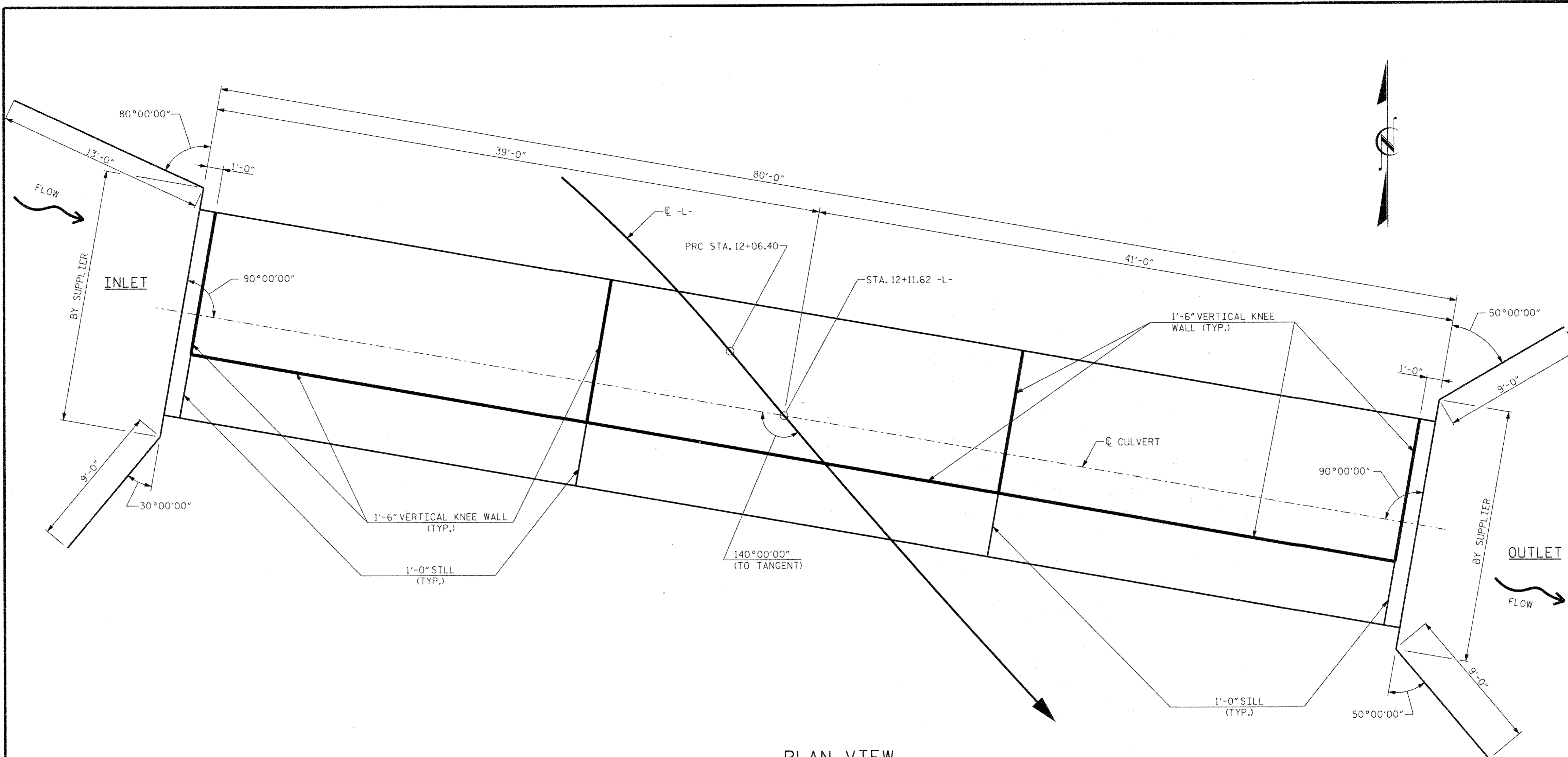
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SHEET NO.  
 C-2  
 TOTAL SHEETS

4/1/2013 R:\Structures\DCNV\040189\_rdy\_psh.dgn  
 parrish

DRAWN BY: W.R. PARRISH DATE: MAR. 2013  
 CHECKED BY: R.V. KEITH DATE: MAR. 2013





**PLAN VIEW**

(BAFFLES FOR LOW FLOW SILL AND KNEE WALL TO BE EQUALLY SPACED)

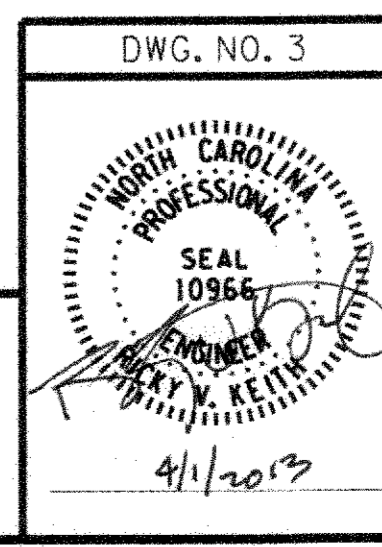
**HORIZONTAL CURVE DATA -L-**

PI Sta 10+90.50	PI Sta 11+77.84	PI Sta 12+44.59
$\Delta = 17^\circ 48' 15.9''$ (RT)	$\Delta = 33^\circ 43' 51.8''$ (RT)	$\Delta = 7^\circ 56' 39.5''$ (LT)
D = 15' 29' 07.2"	D = 57' 17' 44.8"	D = 10' 25' 02.7"
L = 114.98'	L = 58.87'	L = 76.26'
T = 57.96'	T = 30.32'	T = 38.19'
R = 370.00'	R = 100.00'	R = 550.00'
SE = 0.03	SE = 0.03	SE = 0.02
V = 23mph	V < 15mph	V < 15mph

PROJECT NO. 17BP.11.R.7  
ASHE COUNTY  
 STATION: 12+11.62 -L-

SHEET 3 OF 3  
 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SINGLE 13' x 3'  
 ALUMINUM BOX CULVERT  
 TYPE E6**



**RK&K**  
 RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NUMBER: F-0112

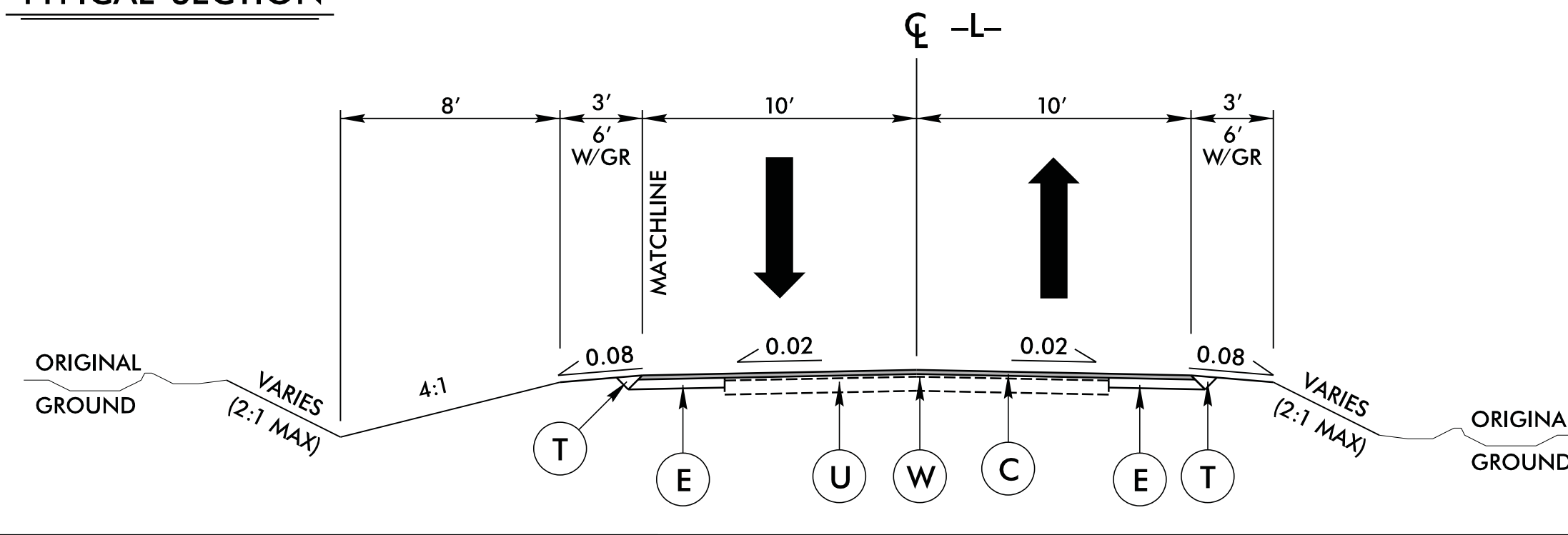
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NO.	BY:	DATE:	NO.	BY:	DATE:	C-3
1			3			TOTAL SHEETS
2			4			

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 Parrish

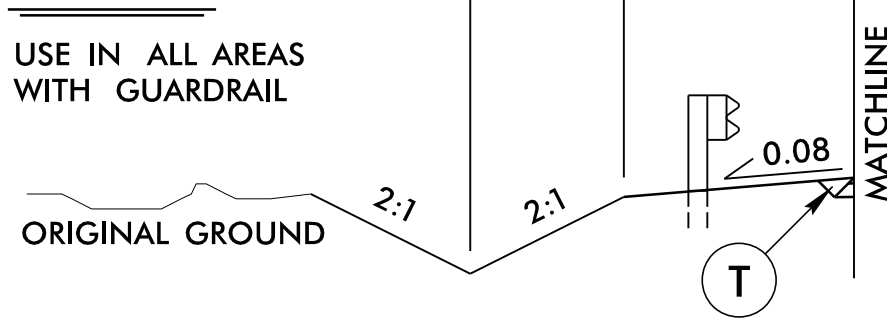
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 CHECKED BY: R.V. KEITH DATE: MAR. 2013



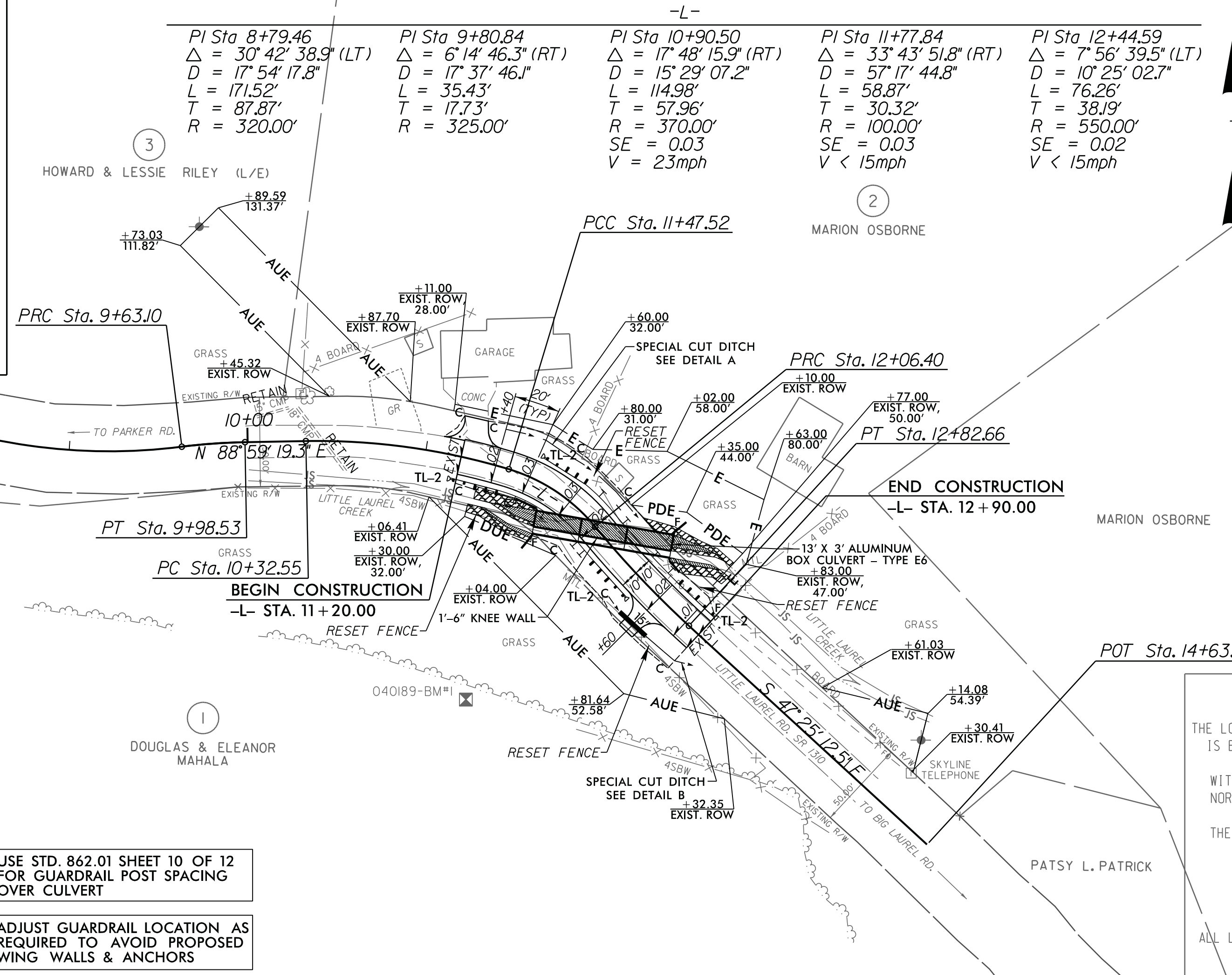
**TYPICAL SECTION**



**INSET**



PAVEMENT SCHEDULE	
C	1½" SURFACE COURSE, TYPE SF9.5A
E	5½" BASE COURSE, TYPE B25.0B
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W	WEDGING



PROJECT REFERENCE NO. ASHE #189	SHEET NO. RDY-1
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**GRAPHIC SCALES**

50 0 50 100  
PLANS

50 0 50 100  
PROFILE (HORIZONTAL)

10 0 10 20  
PROFILE (VERTICAL)

DESIGN SPEED = 25 mph  
ADT = 250 (2009)

**DATUM DESCRIPTION**

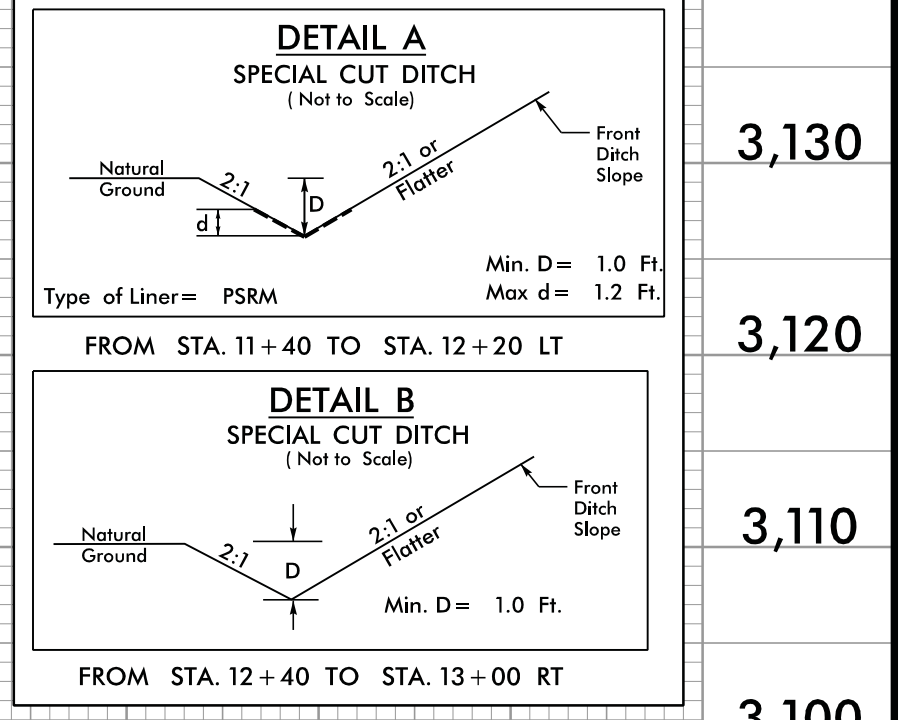
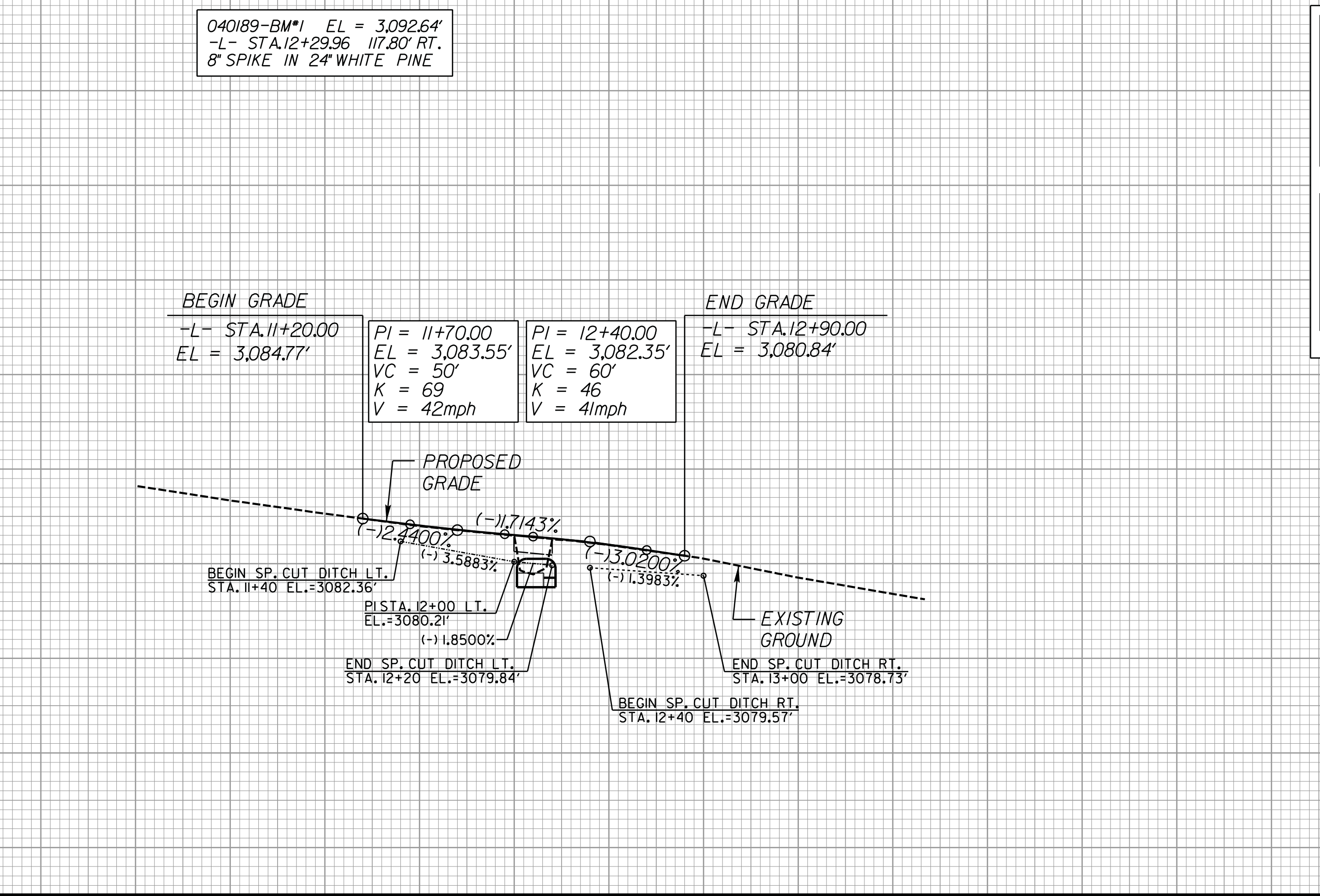
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "040285-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 997822.1343(FF) EASTING: 121998.7865(FF) ELEVATION: 3068.2012(FF) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999545102 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "040285-2" TO L- STATION 10+00.00 IS S 54°13'47.62" E 735.45(FF) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

RIGHT-OF-WAY AREAS									
PARCEL #	PROPERTY OWNER'S NAME	TOTAL AREA	AREA TAKEN	AREA REMAINING RIGHT	AREA REMAINING LEFT	CONSTRUCTION EASEMENT	PERMANENT DRAINAGE EASEMENT	DRAINAGE UTILITY EASEMENT	AERIAL UTILITY EASEMENT
1	DOUGLAS & ELEANOR MAHALA	N/A	0 Ac.	N/A	N/A	0 Ac.	0 Ac.	0.009 Ac.	0.090 Ac.
2	MARION OSBORNE	N/A	0 Ac.	N/A	N/A	0.074 Ac.	0.025 Ac.	0 Ac.	0.065 Ac.
3	HOWARD & LESSIE RILEY (L/E)	N/A	0 Ac.	N/A	N/A	0 Ac.	0 Ac.	0 Ac.	0.051 Ac.

USE STD. 862.01 SHEET 10 OF 12 FOR GUARDRAIL POST SPACING OVER CULVERT

ADJUST GUARDRAIL LOCATION AS REQUIRED TO AVOID PROPOSED WING WALLS & ANCHORS

Ashe 189 Control Points								
Point Description	Proposed Station	Proposed Offset	Northing	Easting	Elevation	Distance from Sta. 10+00	Direction from Sta. 10+00	
BL-1	10+40.51	13.70' LT	998266.3608	1218442.5965	3,086.78'	43.01'	N 70° 32' 43.1" E	
BL-2	12+57.81	11.83' LT	998174.9686	1218639.1927	3,081.57'	249.36'	S 71° 59' 50.8" E	
BEGIN ALN	7+91.58	0.00'	998273.3297	1218197.4695				
PRC	9+63.10	0.00'	998249.4565	1218365.2552				
PT	9+98.53	0.00'	998252.0096	1218400.5759				
PC	10+32.55	0.00'	998252.6100	1218434.5840				
BEGIN PROJECT	11+20.00	0.00'	998243.8538	1218521.3923				
PCC	11+47.52	0.00'	998236.8887	1218548.0137				
PRC	12+06.40	0.00'	998204.7285	1218596.3113				
PT	12+82.66	0.00'	998204.7285	1218596.3113				
END PROJECT	12+90.00	0.00'	998144.4388	1218654.1209				
END ALN	14+63.38	0.00'	998027.1276	1218781.7860				



PLANS PREPARED BY :

**RK&K**

RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560

8/17/99 8/19/2013 P:\Roadway\Pro\040189\_rdy\_psh.dgn



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
ASHE #189	TCP-1

**PLAN FOR PROPOSED  
TRAFFIC CONTROL, MARKING & DELINEATION**

**ASHE COUNTY**

**PROJECT NOTES**

**ROADWAY STANDARD DRAWINGS**

THE FOLLOWING ROADWAY STANDARDS AS APPEAR 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:

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

**PROJECT PHASING**

PHASE I

STEP 1: USING ROADWAY STANDARD DRAWING NUMBER 1101.04, SHEET 1 OF 1, STATE FORCES TO INSTALL ALL ADVANCE WARNING SIGNS FOR DETOUR, KEEPING SIGNS COVERED.

WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING WORK IN PHASE I, STEP 2.

STEP 2: CLOSE SR 1310, (LITTLE LAUREL RD.) TO TRAFFIC, USING ROADWAY STANDARD DRAWING 1101.03 SHEET 1. UNCOVER ALL ADVANCE WARNING SIGNS FOR ROAD CLOSURE AND SHIFT TRAFFIC TO TEMPORARY DETOUR.

STEP 3: DEMOLISH AND REMOVE EXISTING BRIDGE NO. 189 OVER LITTLE LAUREL CREEK.

STEP 4: COMPLETE CONSTRUCTION OF PROPOSED STRUCTURE, APPROACH ROADWAY WIDENING AND PAVING, (SEE ROADWAY PLANS & STRUCTURAL PLANS).

STEP 5: STATE FORCES TO PLACE FINAL PAVEMENT MARKINGS, (PAINT) ON SR 1310, (LITTLE LAUREL RD.).

WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING WORK IN PHASE I, STEP 6.

STEP 6: USING ROADWAY STANDARD DRAWING NO. 1101.04, SHEET 1 OF 1, THE CONTRACTOR SHALL REMOVE SIGNS AND TRAFFIC CONTROL DEVICES ERECTED IN STEP 2 AND OPEN SR 1310, (LITTLE LAUREL RD.) TO TRAFFIC. STATE FORCES WILL REMOVE OFF-SITE DETOUR SIGNING.

**FINAL PAVEMENT MARKING SCHEDULE**

SYMBOL	DESCRIPTION	QUANTITY BREAKDOWN	PAY ITEM	TOTAL QUANTITY
PAVEMENT MARKING LINES				
PA	WHITE EDGELINE 2X	680 LF	PAINT (4")	TOTAL 1360 LF
PI	YELLOW DOUBLE CENTER 2X	680 LF		
2X = TWO APPLICATIONS				

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 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.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

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

STATE FORCES WILL PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS, UNLESS OTHERWISE NOTED.

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

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

TRAFFIC CONTROL DEVICES

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

F) STATE FORCES TO INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING
1. SR 1310 (LITTLE LAUREL RD.)	PAINT

G) STATE FORCES TO PLACE AT LEAST TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE ON NEW ASPHALT PAVEMENT. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.

H) CONTRACTOR TO MAINTAIN ACCESS TO ALL DRIVEWAYS, WITHIN THE PROJECT LIMITS AT ALL TIMES.

ASHE #189

TIP PROJECT:

2/26/2013 10:09:05 AM C:\Users\ncdoot\Div\_0nCall\N01L\_Ashe189\_B2P\040189\Design\TrafficControl\TCP\ASHE\_189\_TCP\_tmp01.dgn

PLANS PREPARED BY :  
**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560  
FOR  
DIVISION OF HIGHWAYS

SEAL



Feb 26, 2013

K. W. BISBY, PE **TRAFFIC CONTROL ENGINEER**  
M. A. COLE **TRAFFIC CONTROL PROJECT DESIGNER**  
A. TUTT **TRAFFIC CONTROL PROJECT DESIGNER**







# EROSION CONTROL PLAN

PROJECT REFERENCE NO. SHEET NO.  
 ASHE #189 EC-1/RDY-1

NAD 83 / NSRS 2007

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	
1650.05	Temporary Diversion	
1630.06	Special Stilling Basin	
1632.03	Rock Inlet Sediment Trap Type C	
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	
	Wattle with Polyacrylamide (PAM)	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

## 2012 STANDARD DRAWINGS

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	

ELENI RIGGS, PE  
 LEVEL IIIA NAME

3056

LEVEL IIIA CERTIFICATION NO.

**ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT**

Refer To E. C. Special Provisions for Special Considerations.

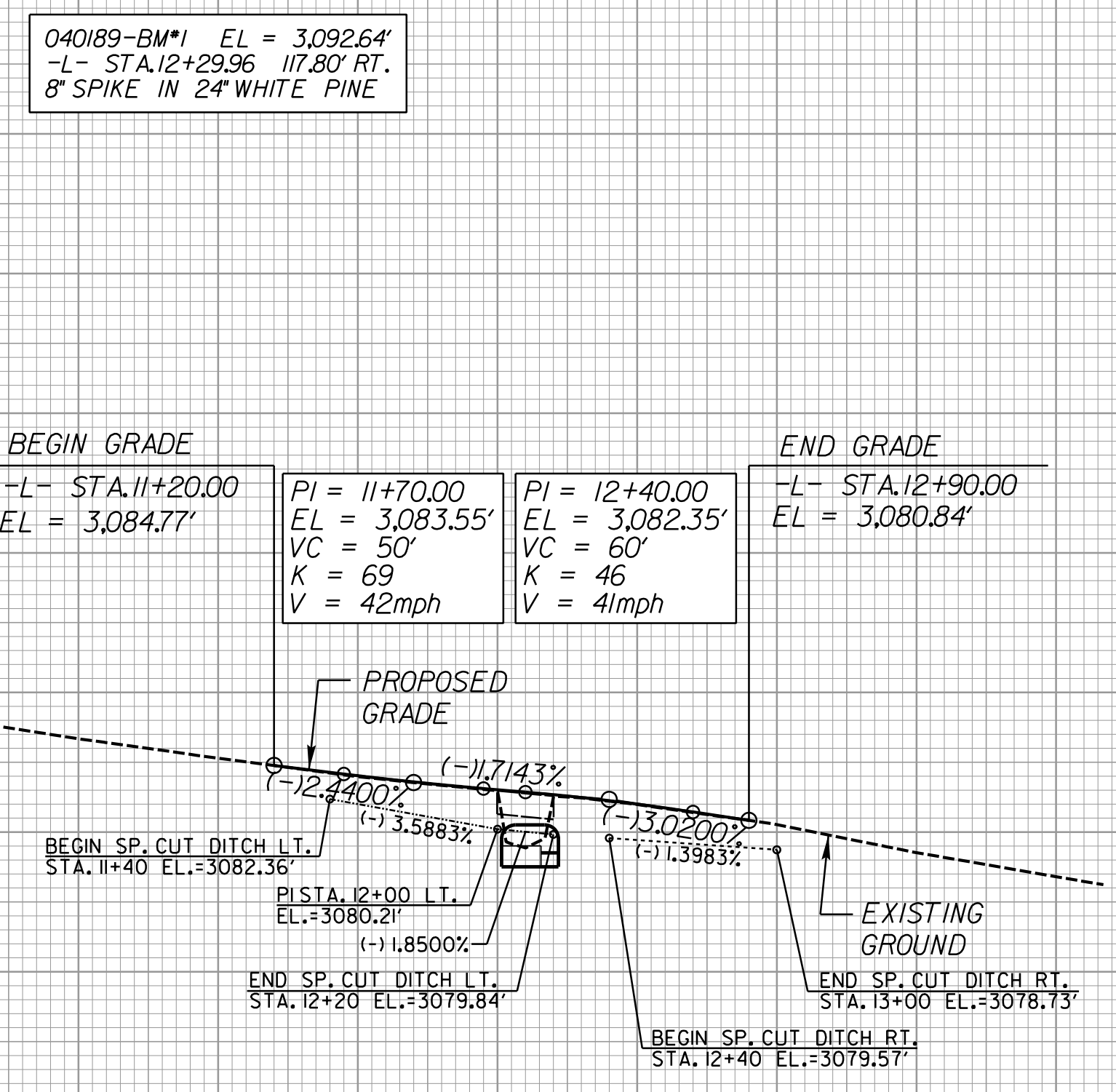
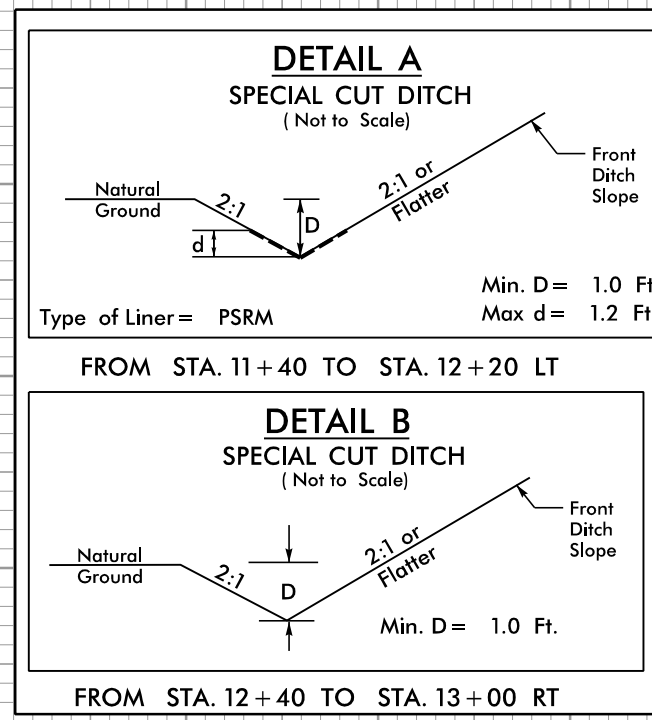
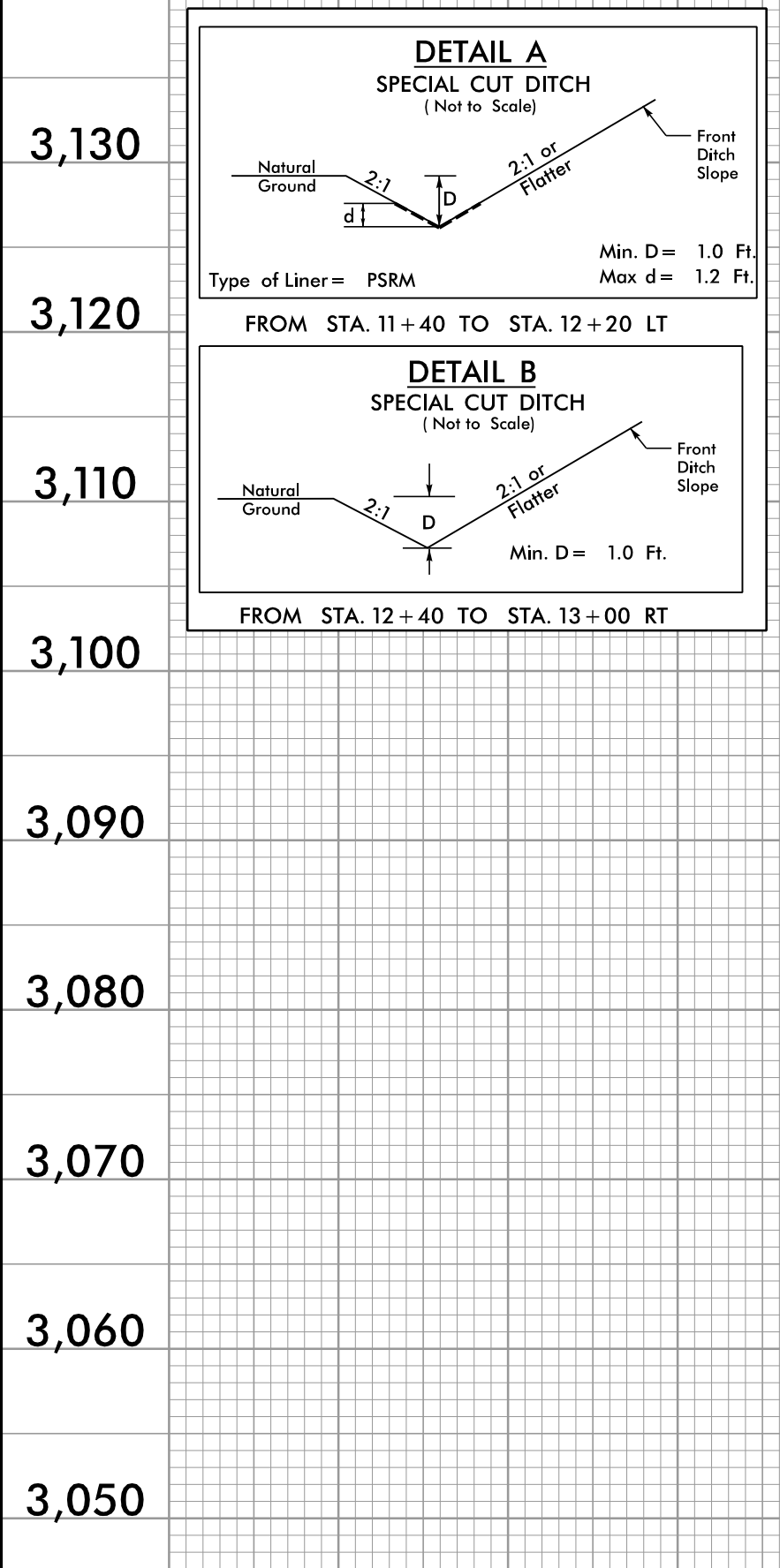
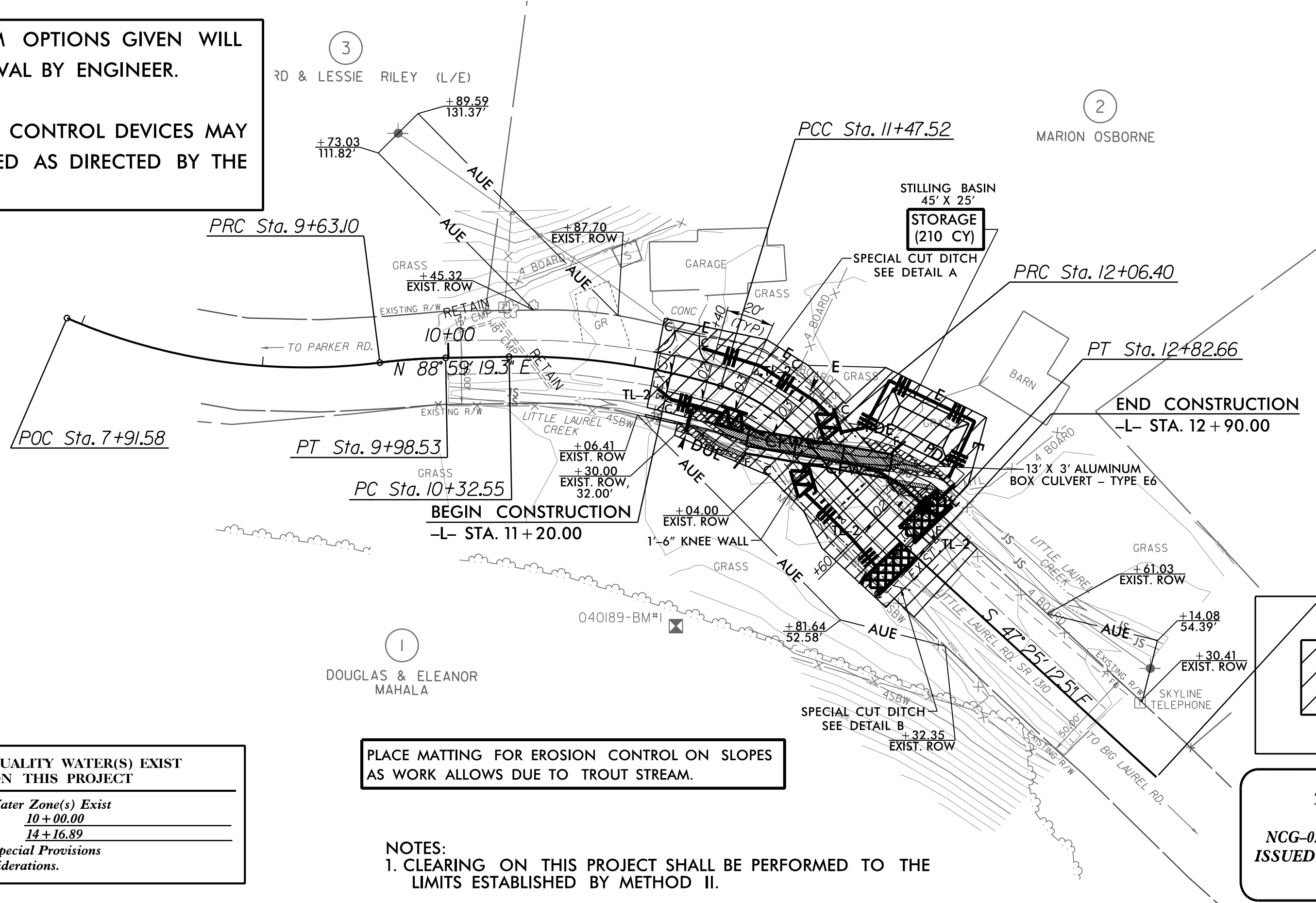
**HIGH QUALITY WATER(S) EXIST ON THIS PROJECT**

High Quality Water Zone(s) Exist  
 From Sta. 10+00.00  
 to Sta. 14+16.89  
 Refer To E. C. Special Provisions for Special Considerations.

PLACE MATTING FOR EROSION CONTROL ON SLOPES AS WORK ALLOWS DUE TO TROUT STREAM.

NOTES:  
 1. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

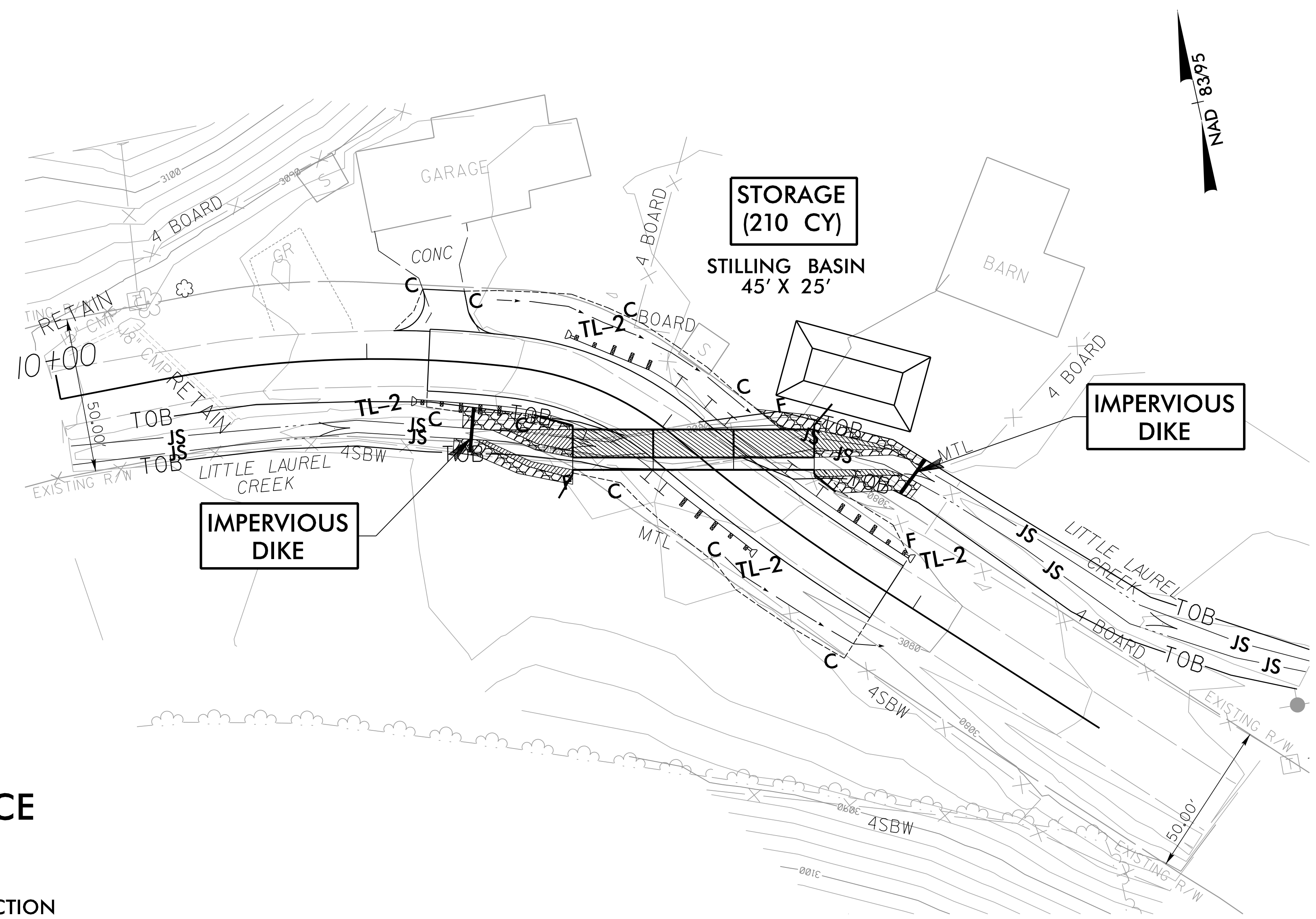
THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.



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PLANS PREPARED BY:  
**RK&K**  
 RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560





## CULVERT CONSTRUCTION SEQUENCE STA. 12 + 11.62 -L-

1. INSTALL IMPERVIOUS DIKES AS SHOWN ON THE CONSTRUCTION PHASING PLAN.
2. USE PUMP-AROUND OPERATIONS IN THE DRY SEASON TO DIVERT STREAM BASE FLOW AROUND THE WORK AREA.
3. UTILIZE A SPECIAL STILLING BASIN WITH A MINIMUM STORAGE CAPACITY OF 210 CUBIC YARDS OR CONSTRUCT A 45' X 25' STILLING BASIN AT THE DOWNSTREAM END OF THE PROPOSED CULVERT.
4. INSTALL PROPOSED CULVERT AS SHOWN ON THE PHASING PLAN.
5. CONSTRUCT CHANNEL IMPROVEMENTS AT BOTH ENDS OF THE CULVERT. STABILIZE NEW CHANNEL IMPROVEMENTS.
6. REMOVE IMPERVIOUS DIKES AND DIVERT STREAM THROUGH ALUMINUM BOX CULVERT.
7. CONSTRUCT -L- ROADWAY WIDENING AND EMBANKMENTS.

INSTALL PIPE(S) IN JURISDICTIONAL AREAS ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

PLANS PREPARED BY :



RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
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4/2/2013  
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# EROSION CONTROL PLAN

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	
1650.05	Temporary Diversion	
1630.06	Special Stilling Basin	
1632.03	Rock Inlet Sediment Trap Type C	
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	
	Wattle with Polyacrylamide (PAM)	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

## 2012 STANDARD DRAWINGS

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		

ELENI RIGGS, PE  
LEVEL IIIA NAME  
  
3056  
LEVEL IIIA CERTIFICATION NO.

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT  
*High Quality Water Zone(s) Exist*  
From Sta. 10+00.00 to Sta. 14+16.89  
Refer To E. C. Special Provisions for Special Considerations.

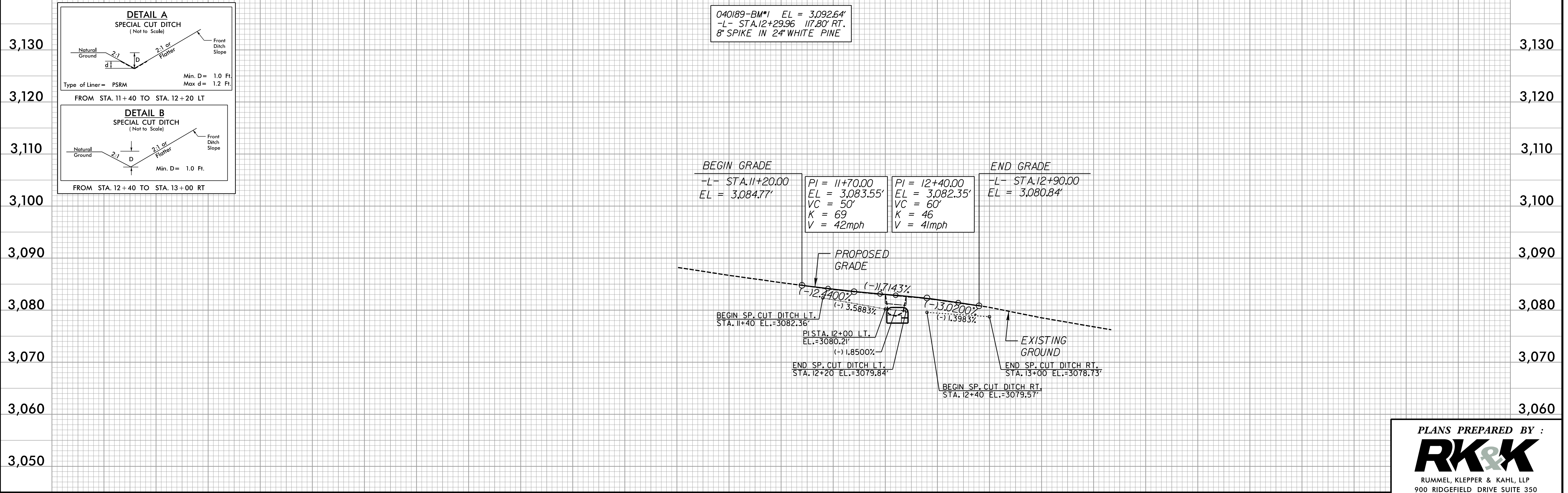
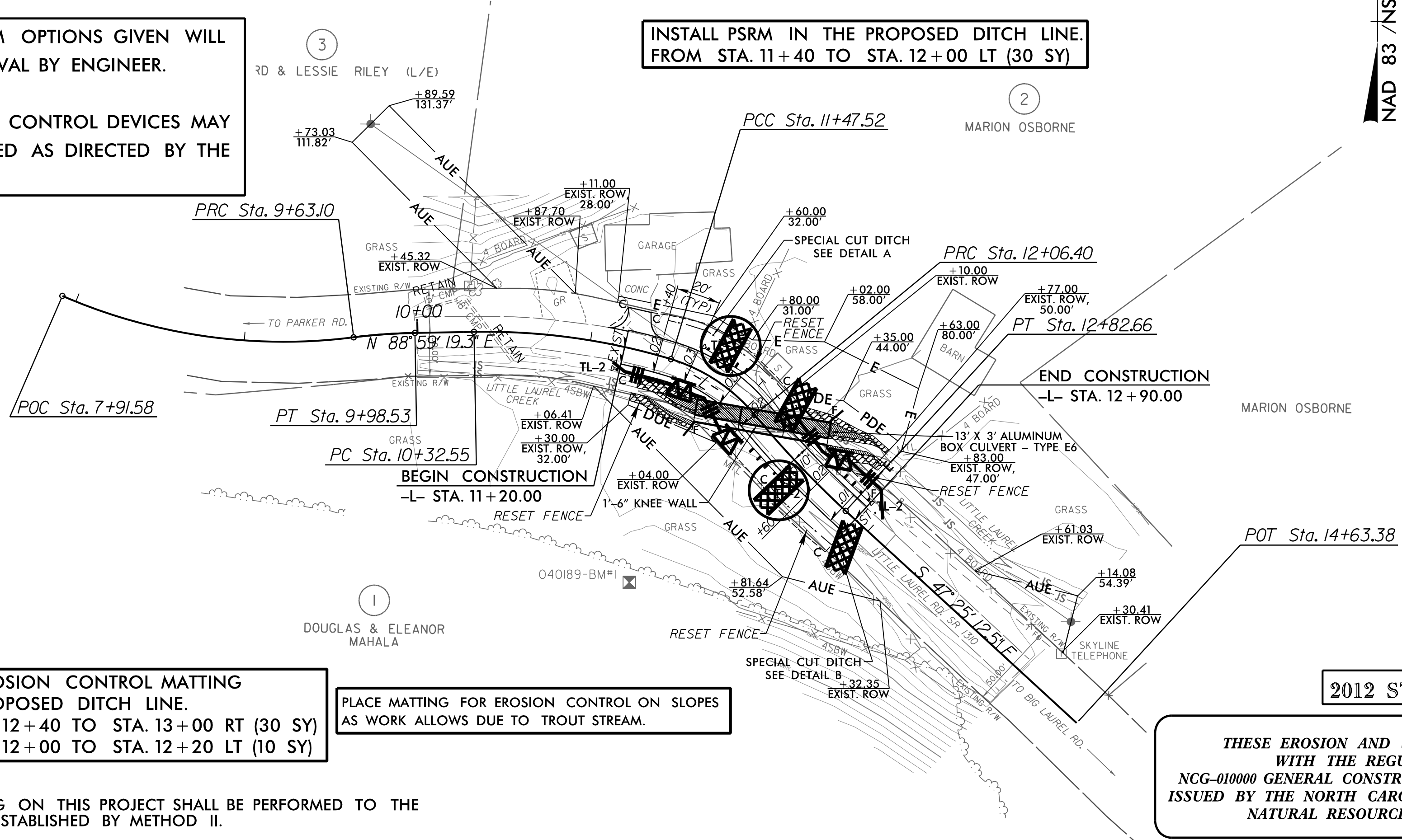
INSTALL EROSION CONTROL MATTING IN THE PROPOSED DITCH LINE.  
FROM STA. 12+40 TO STA. 13+00 RT (30 SY)  
FROM STA. 12+00 TO STA. 12+20 LT (10 SY)

PLACE MATTING FOR EROSION CONTROL ON SLOPES AS WORK ALLOWS DUE TO TROUT STREAM.

NOTES:  
1. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

## 2012 STANDARD SPECIFICATIONS

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.

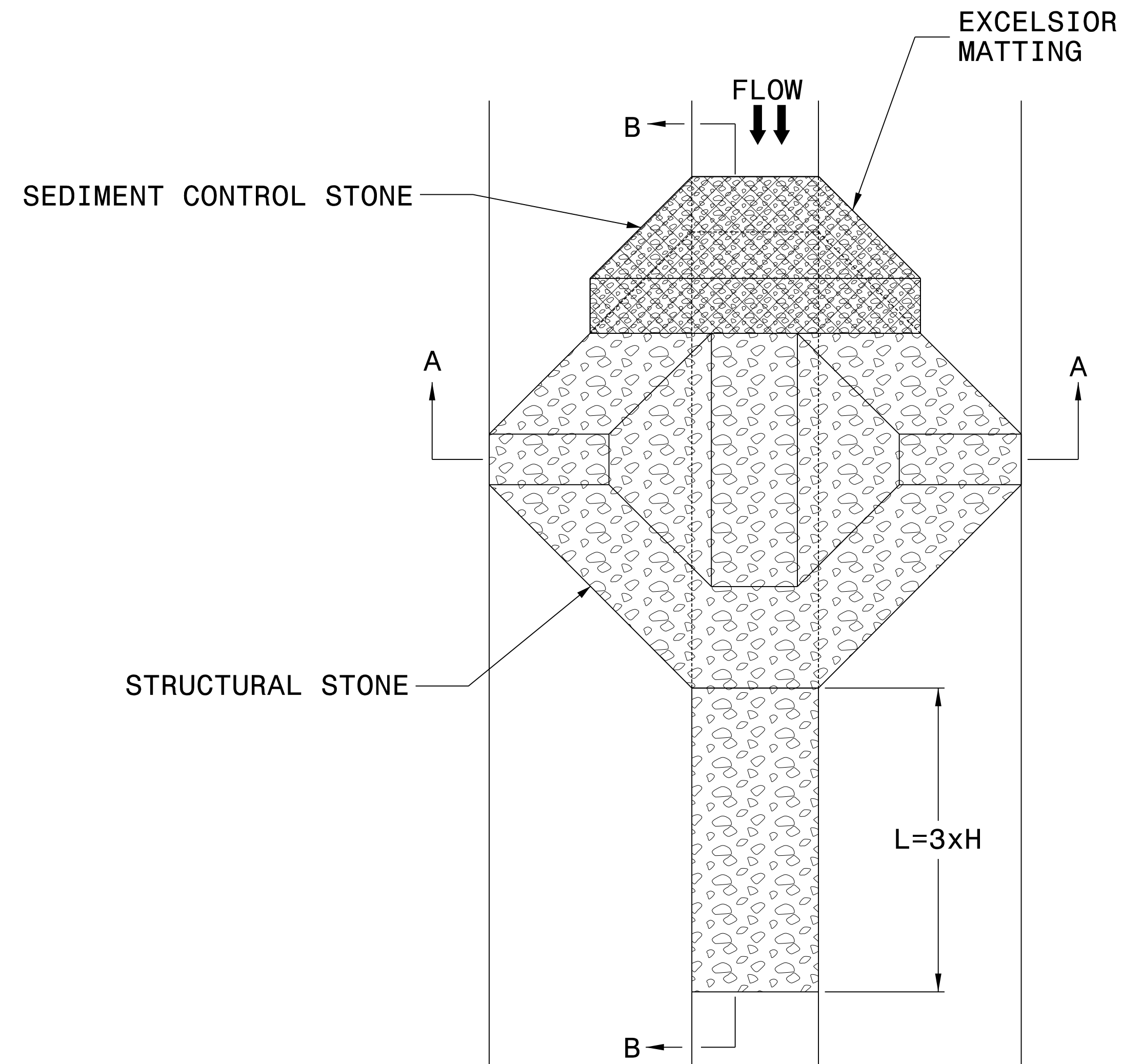


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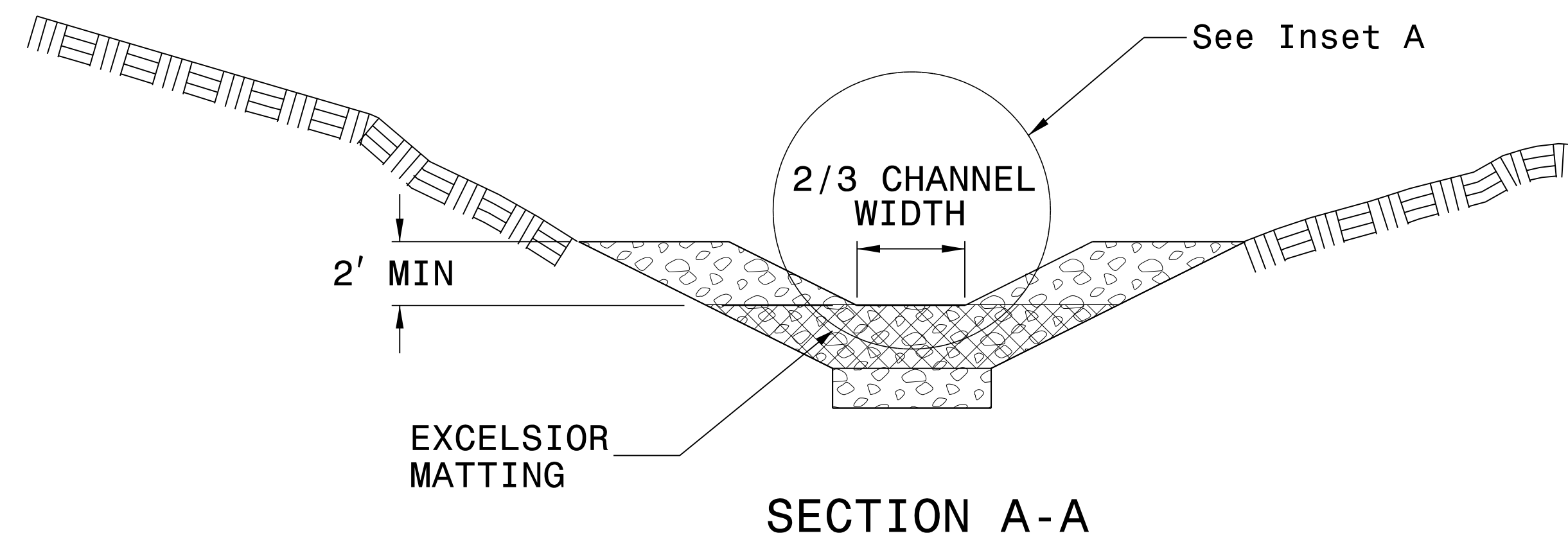
PLANS PREPARED BY:  
**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
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# TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN



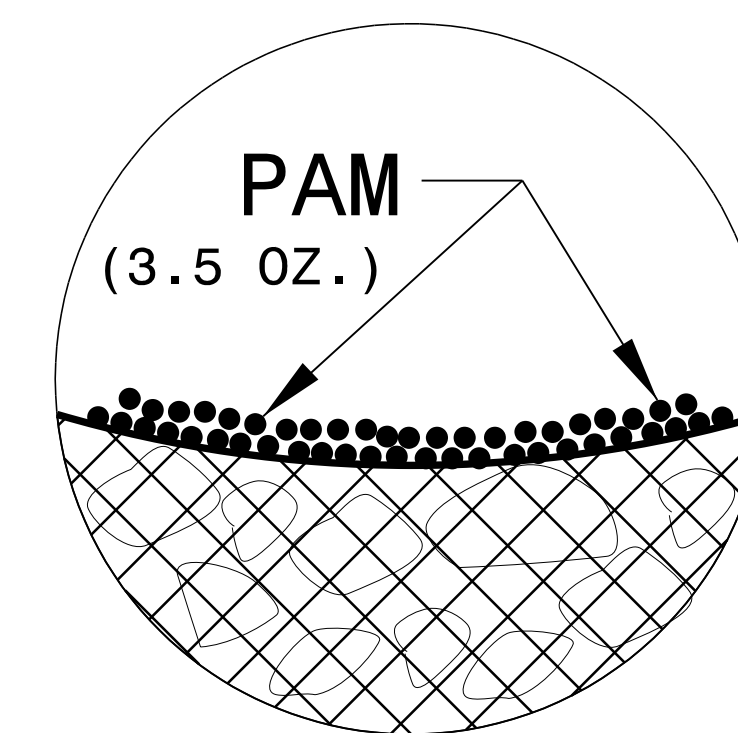
SECTION A-A

## NOTES

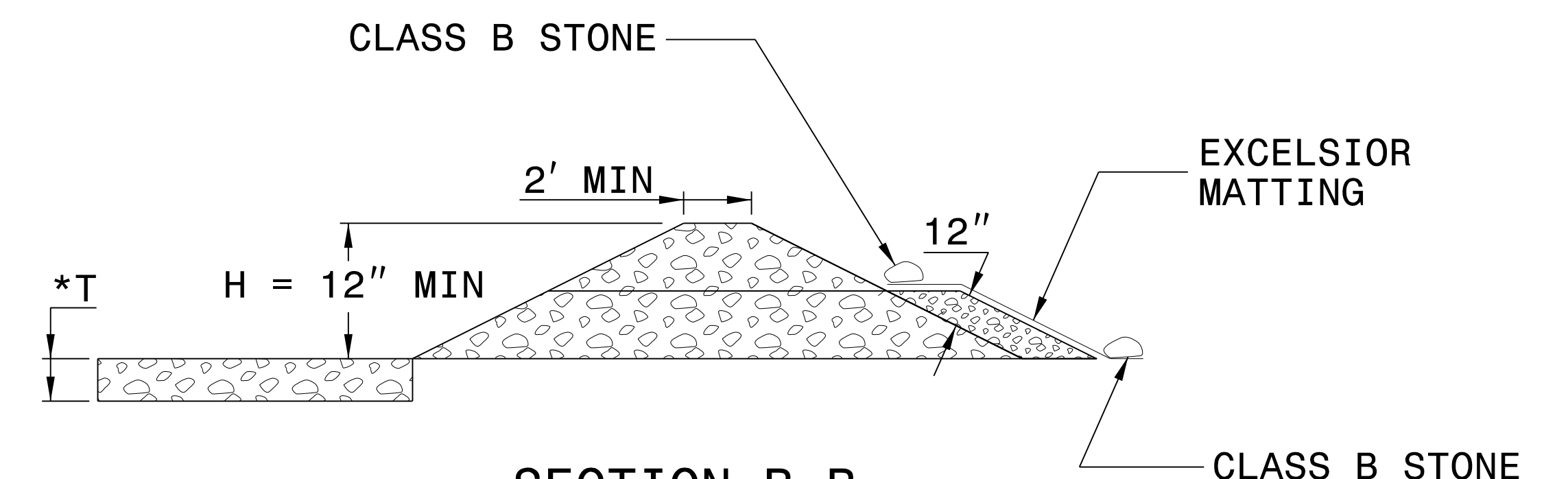
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

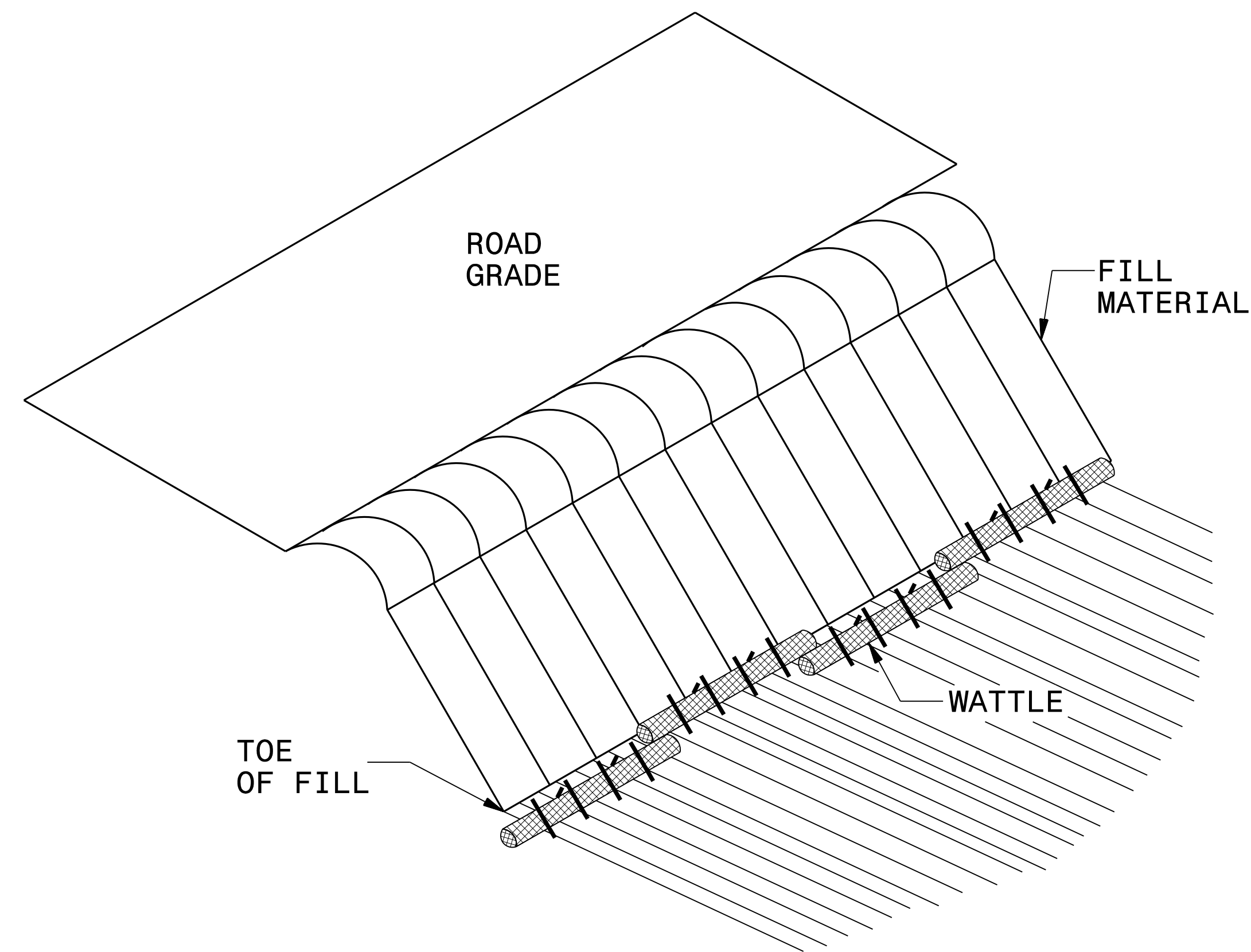
\*T = 12" MIN., 18" MAX.

NOT TO SCALE

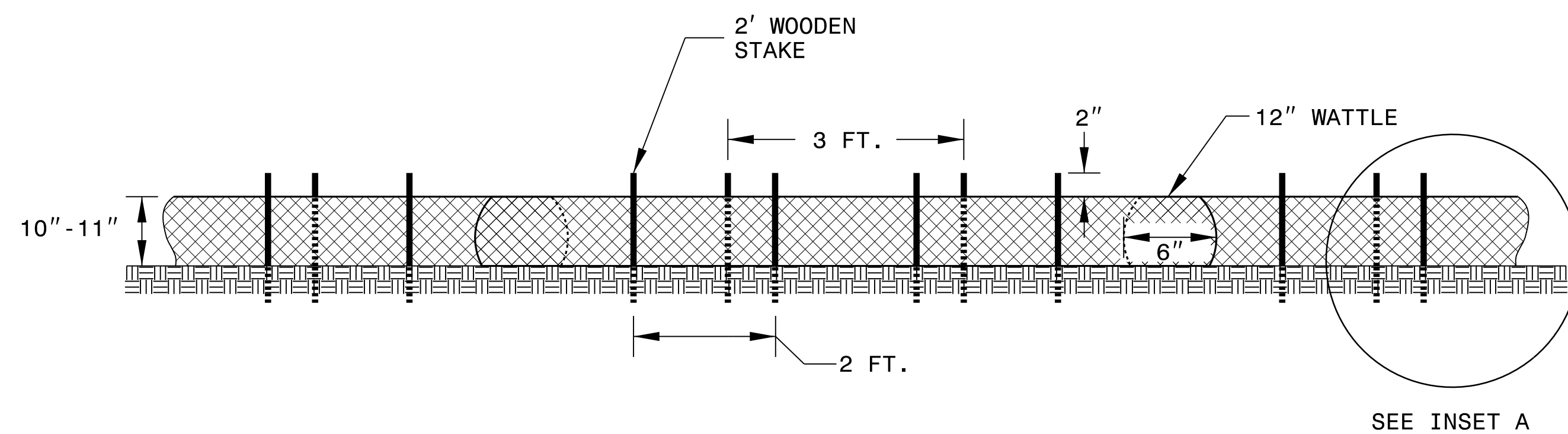


PROJECT REFERENCE NO. ASHE #189	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# COIR FIBER WATTLE BARRIER DETAIL



**ISOMETRIC VIEW**



**FRONT VIEW**

**NOTES:**

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLES ON TOE OF SLOPE.

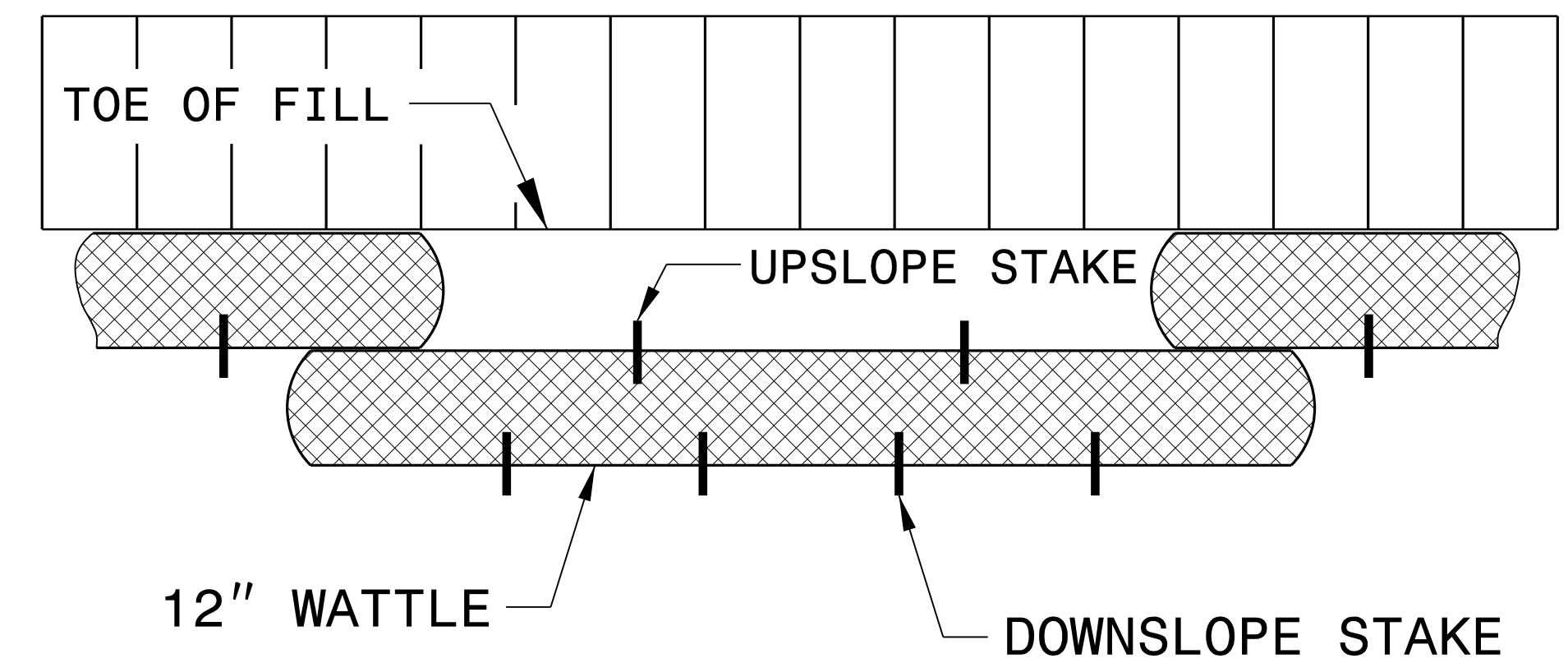
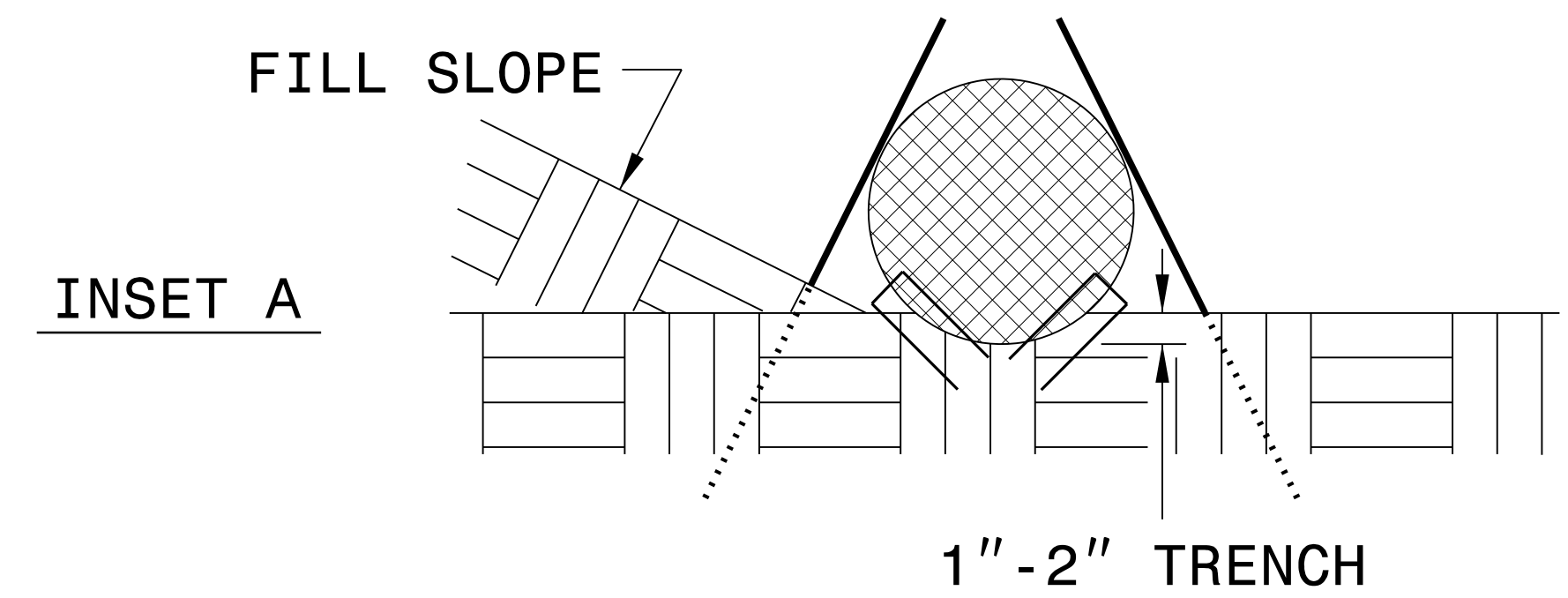
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

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

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.

FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 20 FT.



**TOP VIEW**



DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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## ***SOIL STABILIZATION TIMEFRAMES***

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' 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 WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

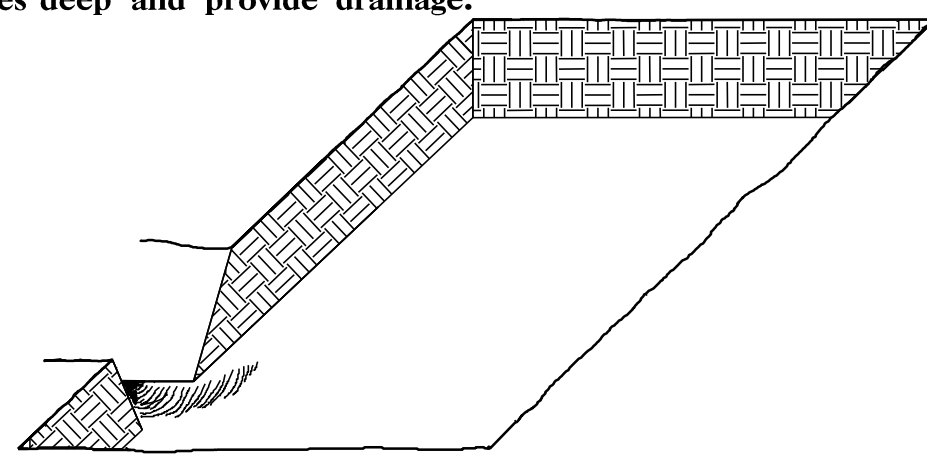
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	ASHE *189	RF-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

# PLANTING DETAILS

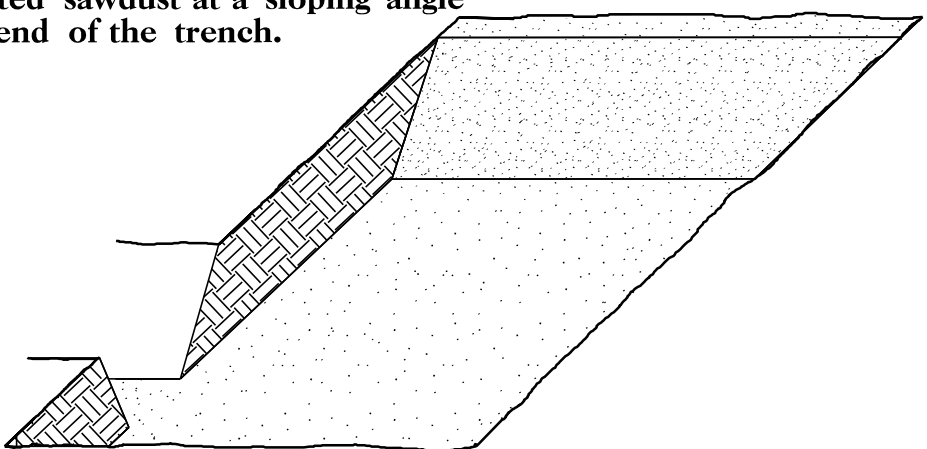
## SEEDLING / LINER BAREROOT PLANTING DETAIL

### HEALING IN

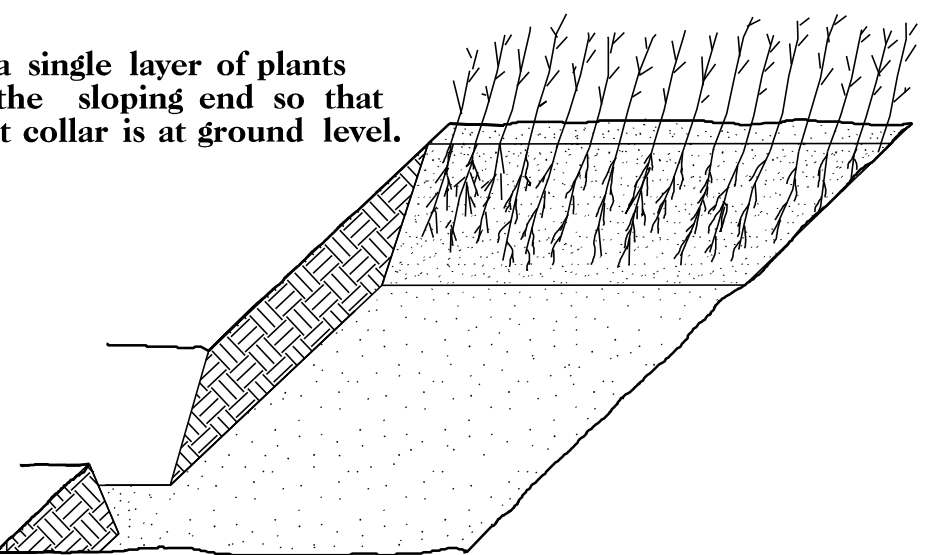
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



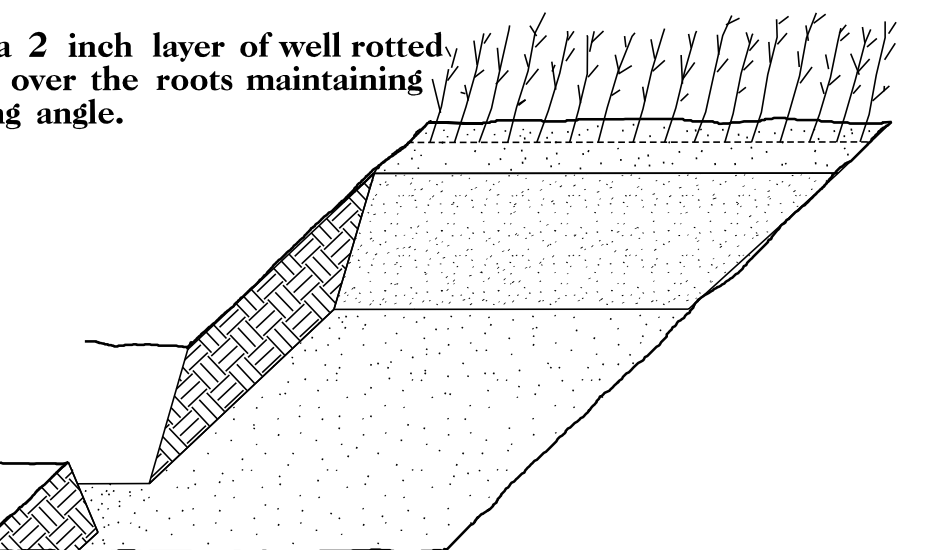
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

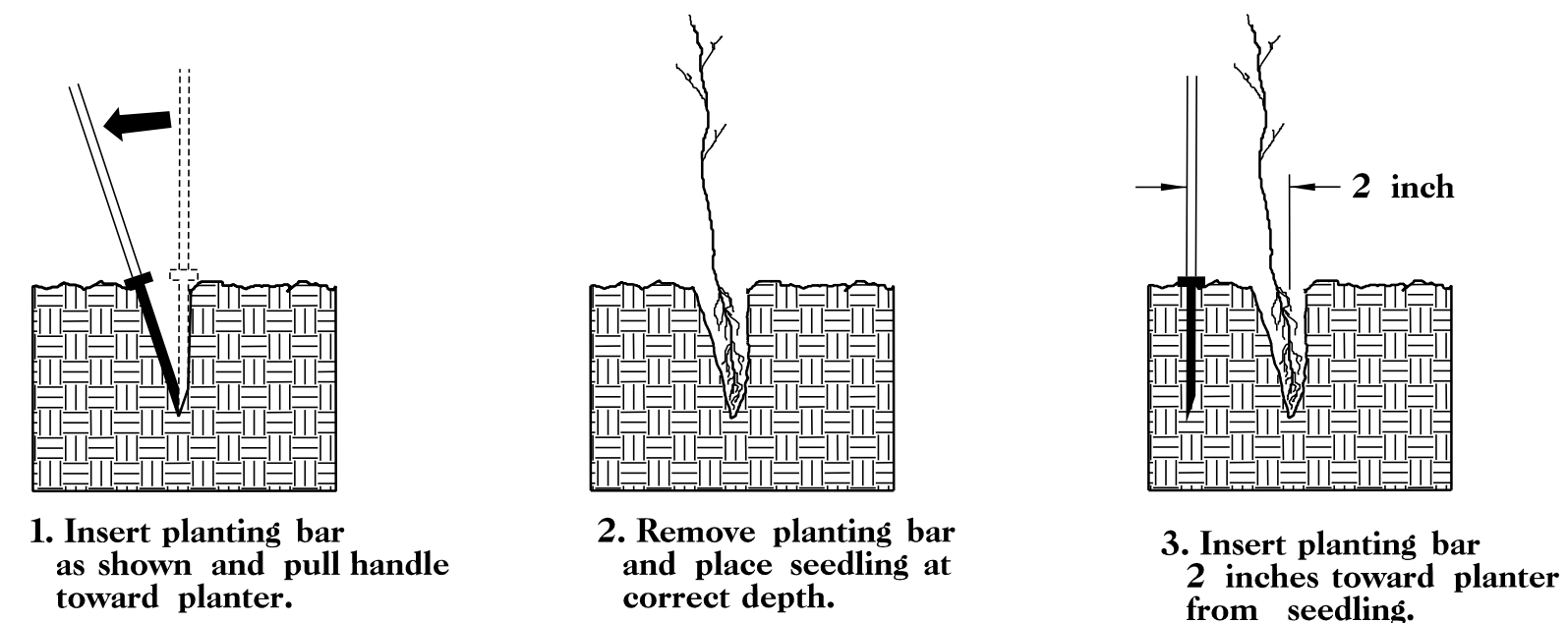


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.



6. Repeat layers of plants and sawdust as necessary and water thoroughly.

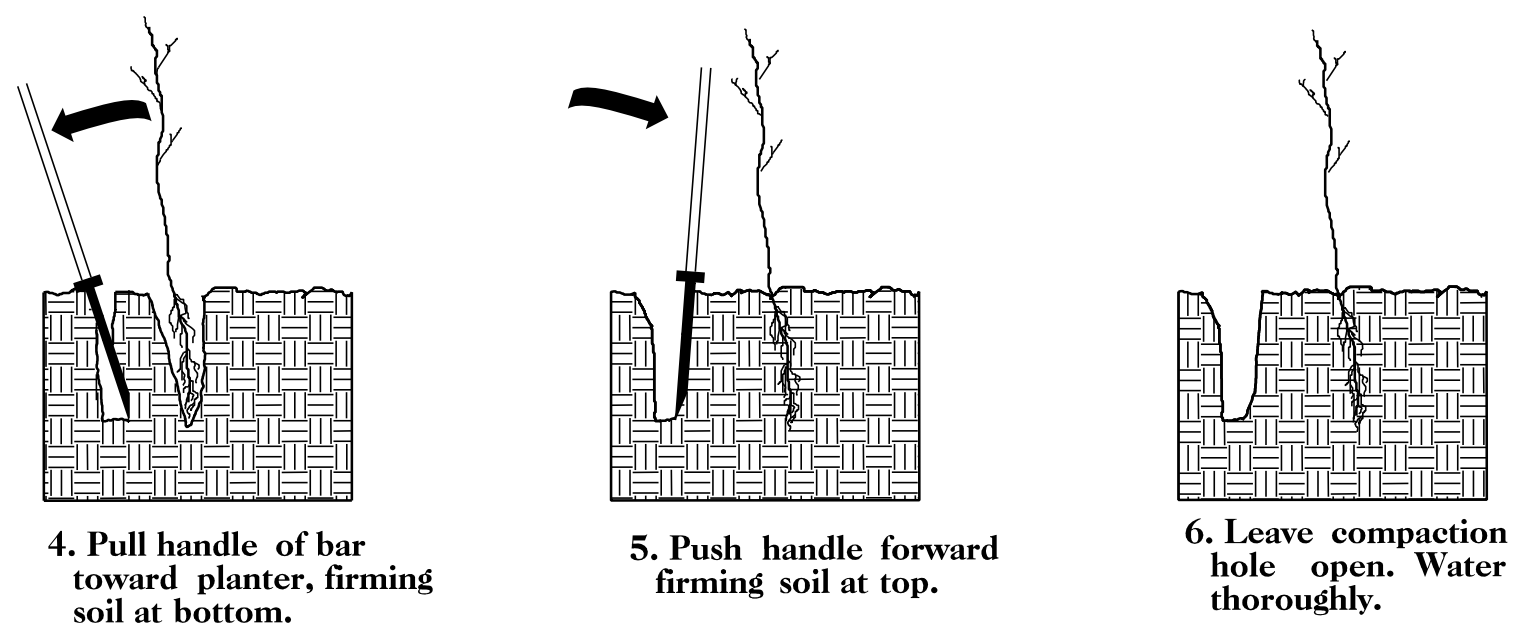
### DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



1. Insert planting bar as shown and pull handle toward planter.

2. Remove planting bar and place seedling at correct depth.

3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.

5. Push handle forward firming soil at top.

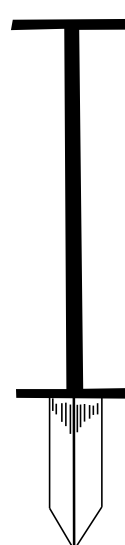
6. Leave compaction hole open. Water thoroughly.

### PLANTING NOTES:

**PLANTING BAG**  
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



**KBC PLANTING BAR**  
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



**ROOT PRUNING**  
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

## REFORESTATION

- TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

### REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
25%	PLATANUS OCCIDENTALIS	SYCAMORE	12 in - 18 in BR
25%	FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in BR
25%	BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

## REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT



## UTILITY ASSESSMENT AND PRELIMINARY ROUTING

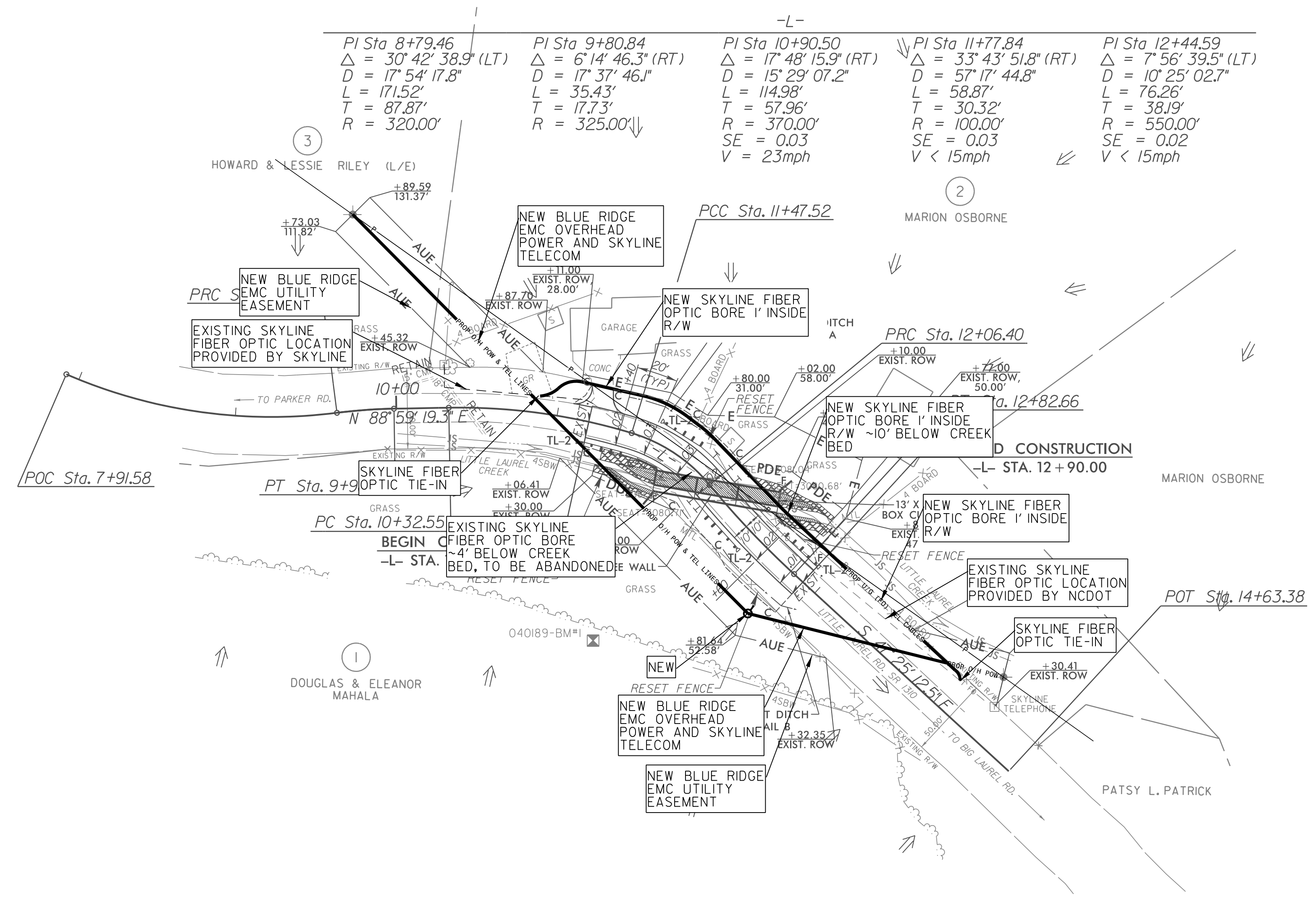
**NOTE:**  
ALL PROPOSED UTILITY RELOCATION  
AND ROUTING IS FOR PRELIMINARY  
ANALYSIS ONLY, NOT FOR CONSTRUCTION

### GRAPHIC SCALES



DESIGN SPEED = 25 mph  
ADT = 250 (2009)

NAD 83 / NSRS 2007



Station	Delta (Δ)	Distance (D)	Length (L)	Time (T)	Radius (R)	SE	V
PI Sta 8+79.46	30° 42' 38.9" (LT)	17' 54' 17.8"	171.52'	87.87'	320.00'		
PI Sta 9+80.84	6° 14' 46.3" (RT)	17' 37' 46.1"	35.43'	17.73'	325.00'		
PI Sta 10+90.50	17° 48' 15.9" (RT)	15' 29' 07.2"	114.98'	57.96'	370.00'	0.03	23mph
PI Sta 11+77.84	33° 43' 51.8" (RT)	57' 17' 44.8"	58.87'	30.32'	100.00'	0.03	< 15mph
PI Sta 12+44.59	7° 56' 39.5" (LT)	10' 25' 02.7"	76.26'	38.19'	550.00'	0.02	< 15mph

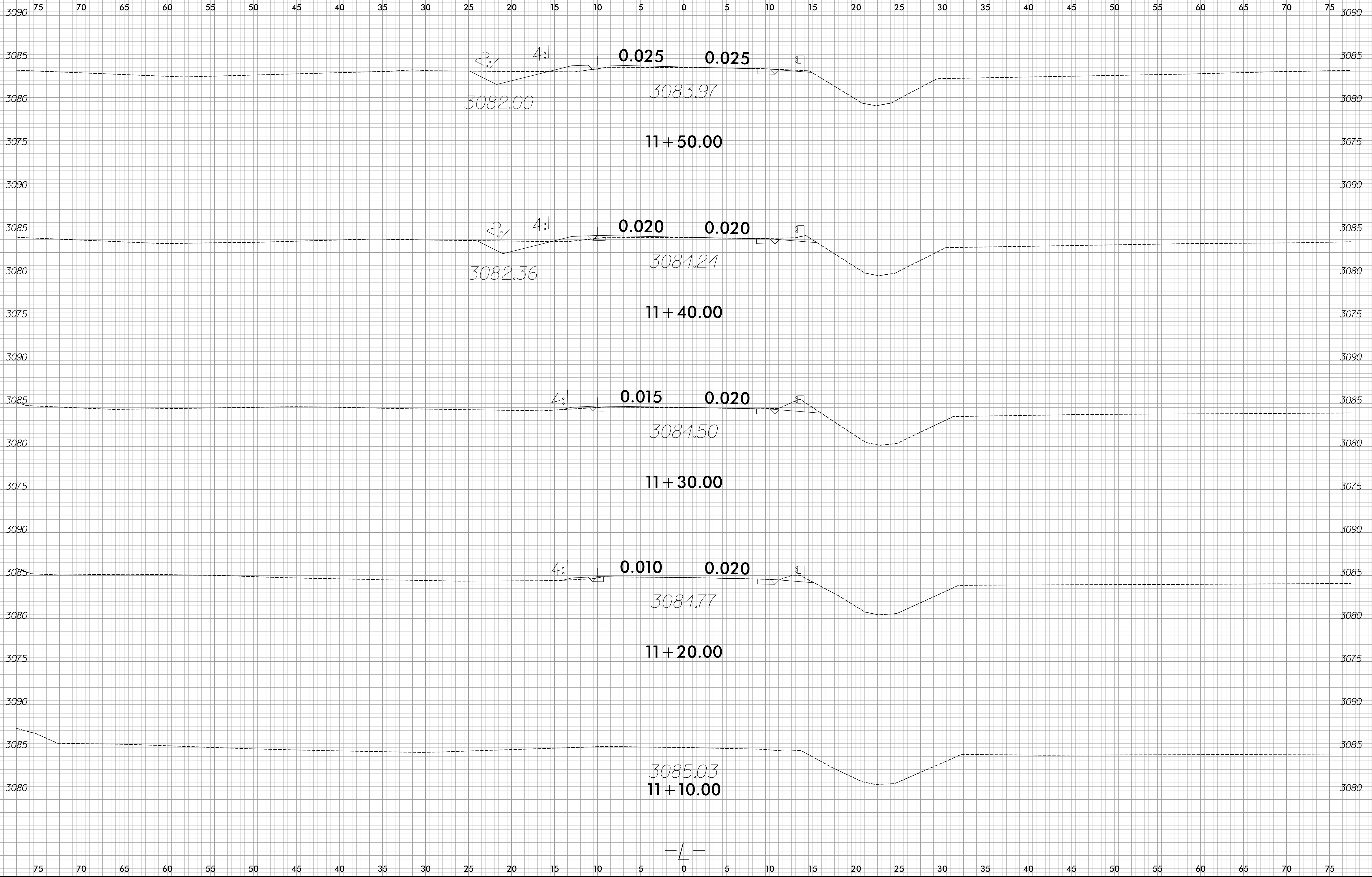
**NOTE;**  
1) SKYLINE TO ABANDON IN PLACE EXISTING BORE 4' UNDER CREEK BED.  
SKYLINE REQUIRES A 72 HOUR NOTICE TO PERFORM ON-SITE WORK.

<p><b>UTILITY OWNERS ON THIS SHEET</b></p> <p>BLUE RIDGE EMC – POWER SKYLINE – TELEPHONE AND FIBER OPTIC</p>	<p><b>PLANS PREPARED BY :</b></p> <p><b>RK&amp;K</b></p> <p>RUMMEL, KLEPPER &amp; KAHL, LLP 900 RIDGEFIELD DRIVE SUITE 350 RALEIGH, NORTH CAROLINA 27609-3960 NC LICENSE NO. F-0112 • (919) 878-9560</p>
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8/23/99



PROJ. REFERENCE NO.	SHEET NO.
Ashe #189	X-1



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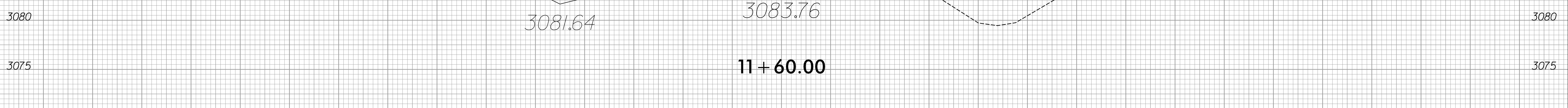
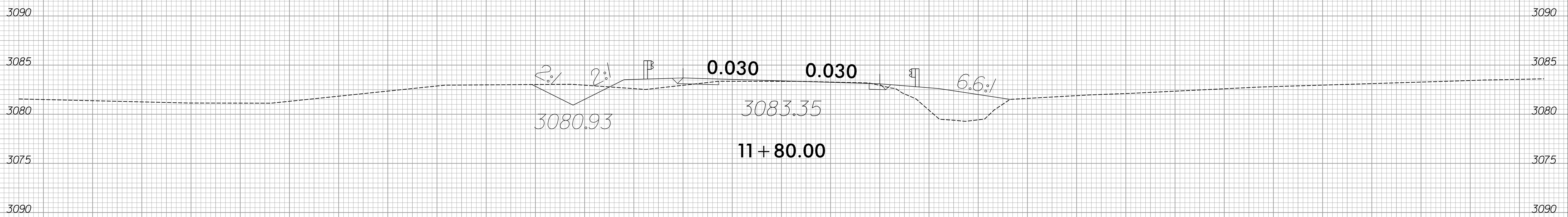
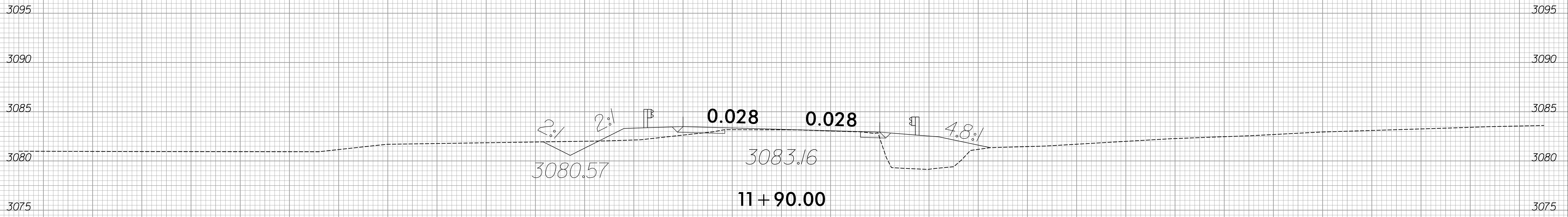
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PROJ. REFERENCE NO.  
Ashe #189

SHEET NO.  
X-2

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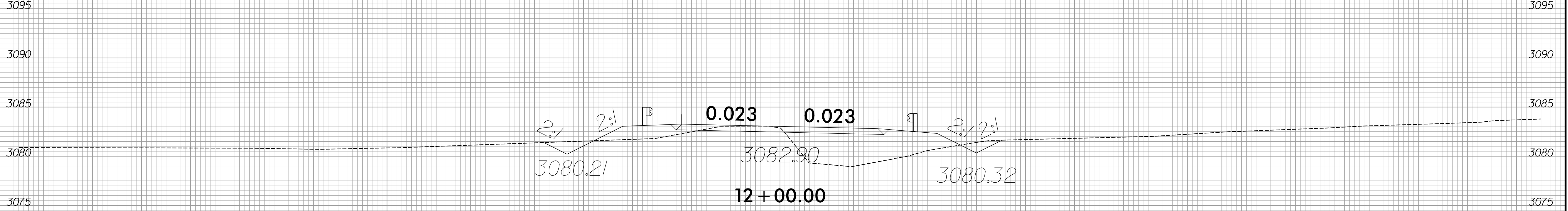
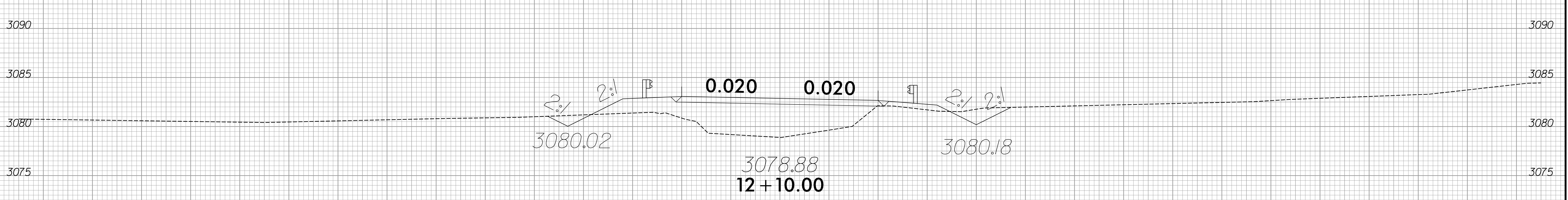
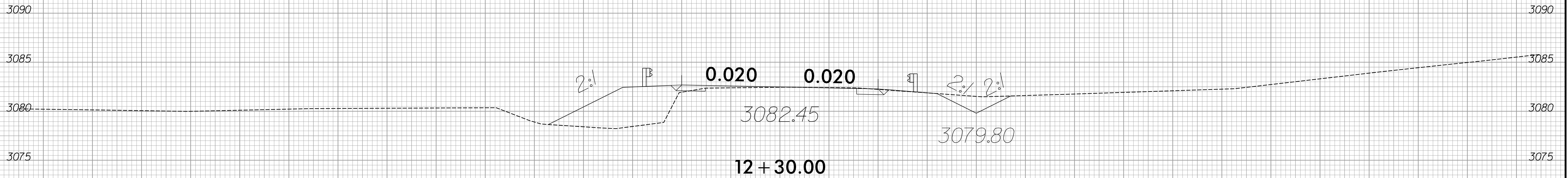


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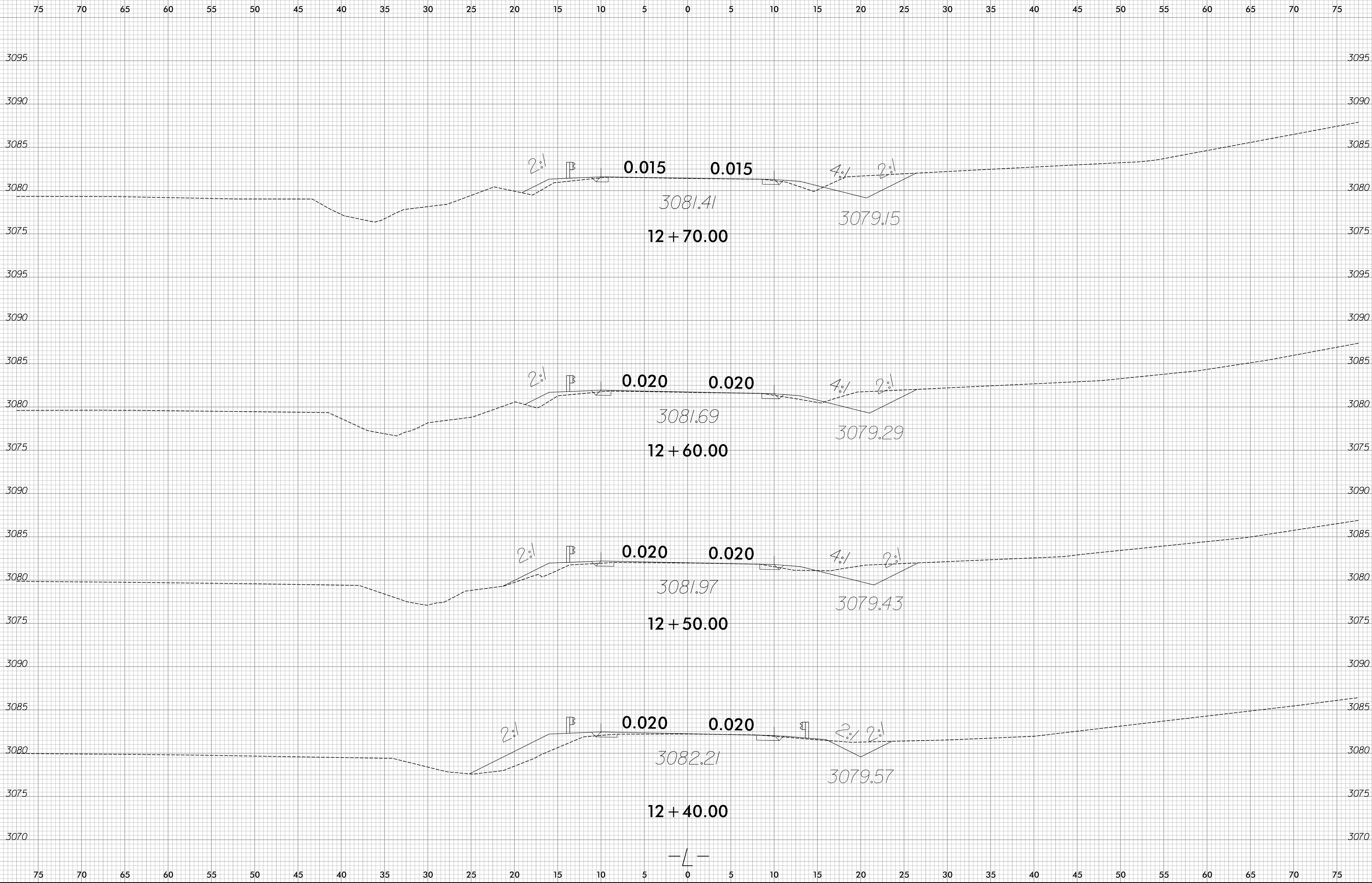


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Ashe #189

SHEET NO.  
X-4



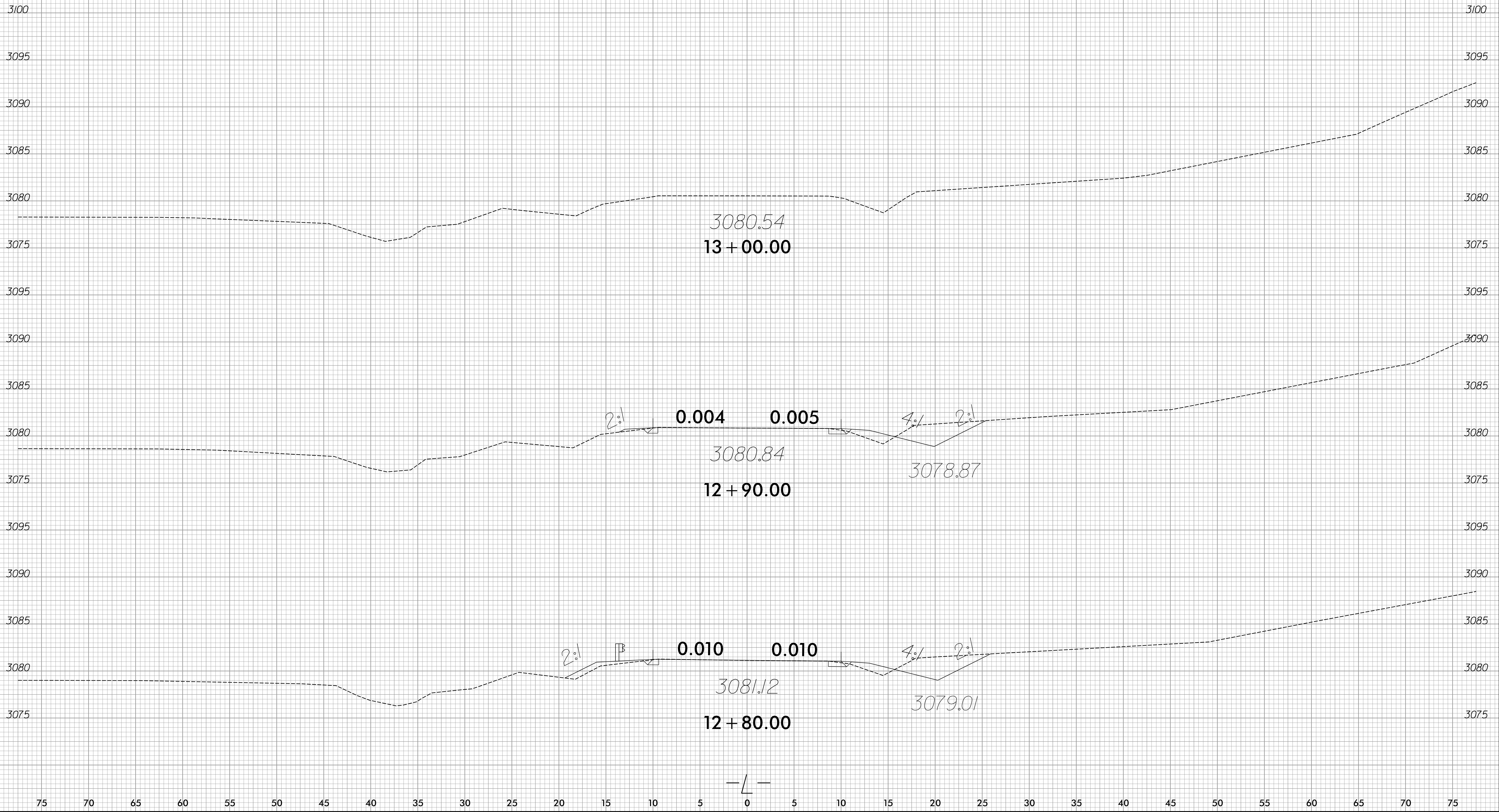
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PROJ. REFERENCE NO.	SHEET NO.
Ashe #189	X-5

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