

**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

**This file or an individual page
shall not be considered a certified document.**

See Sheet 1-A For Index of Sheets
See Sheet 1-B for Conventional Symbols

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

VANCE COUNTY

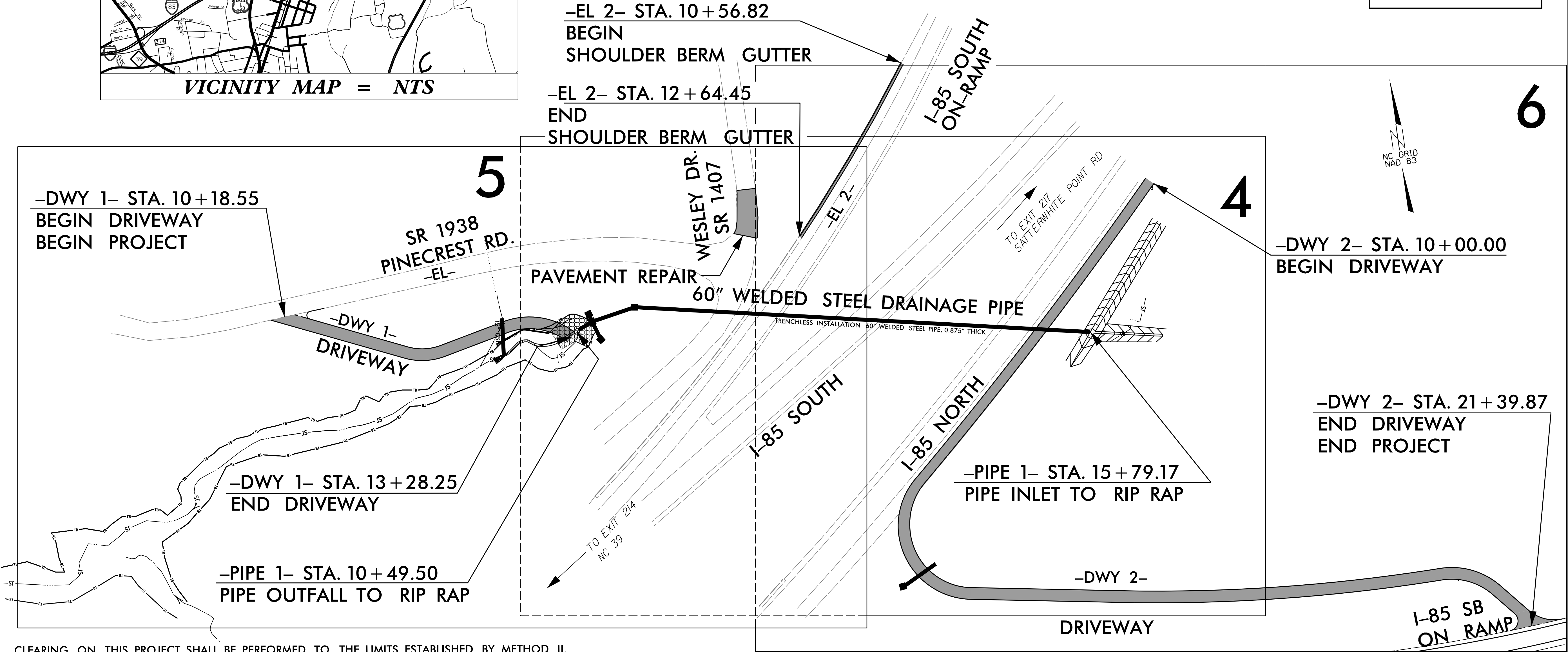
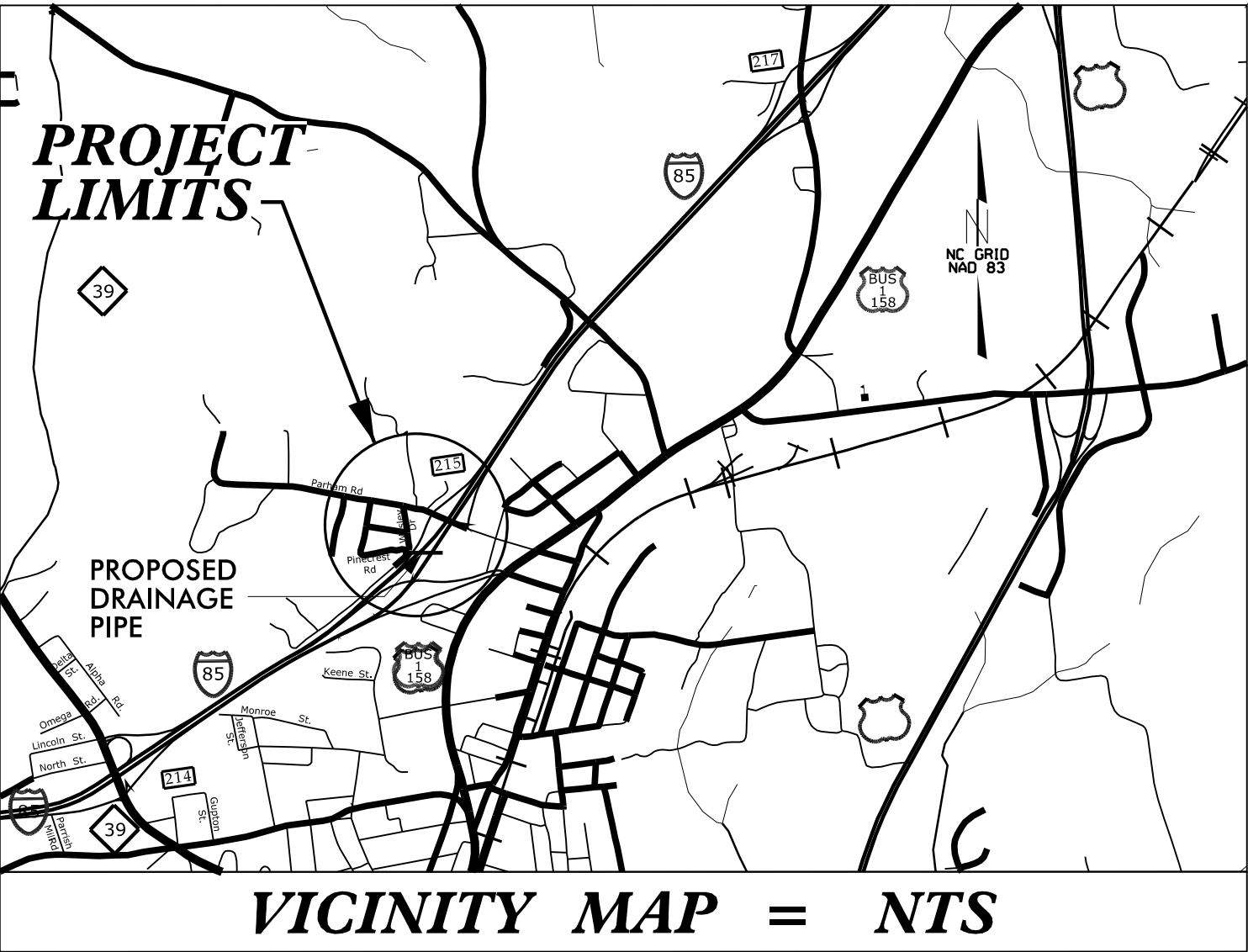
LOCATION: I-85 0.10 MILE SOUTH OF PARHAM ROAD (SR 1312) UNDER I-85 AND WESLEY DRIVE (SR 1407)

TYPE OF WORK: TRENCHLESS INSTALLATION OF
60-INCH WELDED STEEL PIPE

STATE	PROJECT REFERENCE	SHEET NO.	TOTAL SHEETS
N.C.	51214.01AK	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
51214.01AK		PE	
51214.01AK		CONST.	

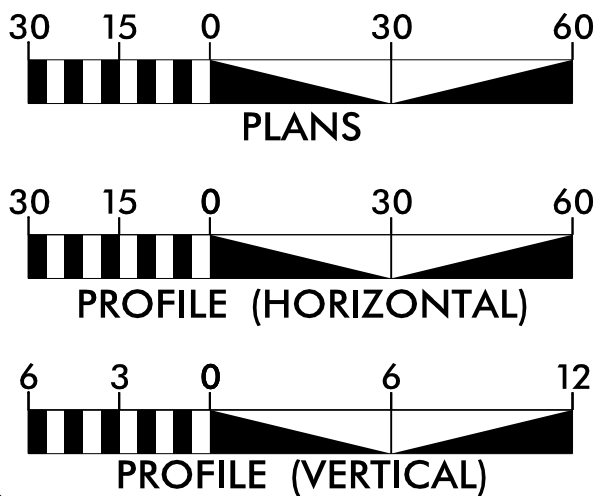
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

FINAL PLANS



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

GRAPHIC SCALES



DESIGN DATA

PROJECT LENGTH

TOTAL LENGTH PROJECT 51214.01AK = 0.099 MILES

Prepared in the Office of:
WETHERILL ENGINEERING
1223 Jones Franklin Rd. Raleigh, N.C. 27606
License No. F-0377
Bus: 919.851.8077 Fax: 919.851.8107

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

N/A

LETTING DATE:
SEPTEMBER 13, 2023

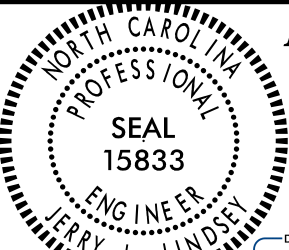
NCDOT CONTACT:

Prepared for:
**DIVISION OF HIGHWAYS
DIVISION 5**
2612 N. Duke Street
Durham, NC 27704

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

R.K. MURPHY, JR., PE
PROJECT DESIGN ENGINEER

JON ARNOLD, PE
ASSISTANT DIVISION MAINTENANCE ENGINEER



SIGNATURE:



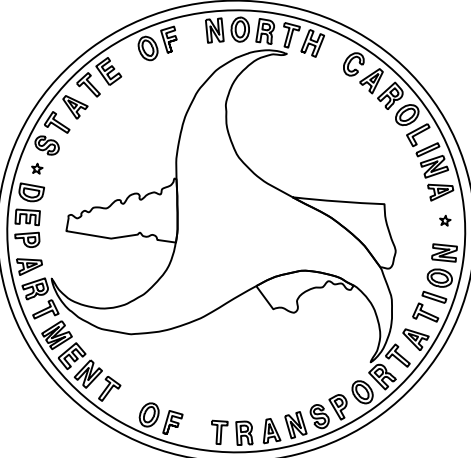
SIGNATURE:

HYDRAULICS ENGINEER
8/16/2023

Designated by:
Jonny L. Lindsey, P.E.
8/16/2023

**ROADWAY DESIGN
ENGINEER**

Designated by:
R.K. Murphy, Jr., P.E.
8/16/2023



8/17/99

8/16/2023 8:55 AM C:\ANCE_Rd\Index_1A.dgn
User: kenedi

GENERAL NOTES

GENERAL NOTES: 2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

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. 225.05 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. 560.02

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 FOOT RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

BRIGHTSPEED – PHONE, FIBER OPTIC

RIGHT-OF-WAY MARKERS:

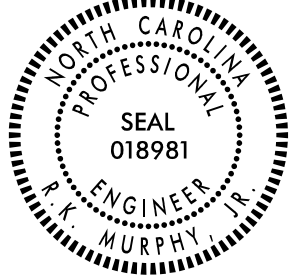
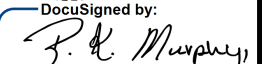
RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS AND BY CONTRACT IN ACCORDANCE WITH DESIGNATED SYMBOLS.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

PROJECT REFERENCE NO.
5/214.01AK

SHEET NO.
1A

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

ROADWAY DESIGN
ENGINEER
8/16/2023

Designed by: 

EFF. 01-16-2018
REV.

2018 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, 2018 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
225.04	Method of Obtaining Superelevation – Two Lane Pavement
DIVISION 3 – PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 8 – INCIDENTALS	
806.01	Concrete Right-of-Way Marker
816.04	Markers for Drainage Structure and Concrete Pad
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin – 12” thru 54” Pipe
840.02	Concrete Catch Basin – 12” thru 54” Pipe
840.03	Frame, Grates and Hood – for Use on Standard Catch Basin
840.16	Drop Inlet Frame and Grates – for use with Std. Dwg 840.14 and 840.15
840.20	Frames and Wide Slot Flat Grates
840.25	Anchorage for Frames – Brick or Concrete or Precast
840.31	Concrete Junction Box – 12” thru 66” Pipe
840.32	Brick Junction Box – 12” thru 66” Pipe
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	SYMBOLGY SHEET
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
3B-1	SUMMARY OF EARTHWORK QUANTITIES
3D-1 THRU 3D-3	SUMMARY OF DRAINAGE QUANTITIES
4 THRU 7	PLAN AND PROFILE SHEETS
TMP-01 THRU TMP-06	TRAFFIC MANAGEMENT PLANS
EC-1 THRU EC-9	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
X-1 THRU X-13	DRIVEWAY AND RAMP CROSS SECTIONS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Existing Iron Pin (EIP)	
Computed Property Corner	
Existing Concrete Monument (ECM)	
Parcel/Sequence Number	
Existing Fence Line	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	
Existing Historic Property Boundary	
Known Contamination Area: Soil	
Potential Contamination Area: Soil	
Known Contamination Area: Water	
Potential Contamination Area: Water	
Contaminated Site: Known or Potential	

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY & PROJECT CONTROL:

Primary Horiz Control Point	
Primary Horiz and Vert Control Point	
Secondary Horiz and Vert Control Point	
Vertical Benchmark	
Existing Right of Way Monument	
Proposed Right of Way Monument (Rebar and Cap)	
Proposed Right of Way Monument (Concrete)	
Existing Permanent Easement Monument	
Proposed Permanent Easement Monument (Rebar and Cap)	
Existing C/A Monument	
Proposed C/A Monument (Rebar and Cap)	
Proposed C/A Monument (Concrete)	
Existing Right of Way Line	
Proposed Right of Way Line	
Existing Control of Access Line	
Proposed Control of Access Line	
Proposed ROW and CA Line	
Existing Easement Line	
Proposed Temporary Construction Easement	
Proposed Temporary Drainage Easement	
Proposed Permanent Drainage Easement	
Proposed Permanent Drainage/Utility Easement	
Proposed Permanent Utility Easement	
Proposed Temporary Utility Easement	
Proposed Aerial Utility Easement	

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Curb Ramp	
Existing Metal Guardrail	
Proposed Guardrail	
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	
Pavement Removal	
VEGETATION:	
Single Tree	
Single Shrub	
Hedge	

Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

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

UTILITIES:

* SUE – Subsurface Utility Engineering
LOS – Level of Service – A,B,C or D (Accuracy)

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

TELEPHONE:

Existing Telephone Pole	
Proposed Telephone Pole	
Telephone Manhole	
Telephone Pedestal	
Telephone Cell Tower	
U/G Telephone Cable Hand Hole	
U/G Telephone Test Hole (SUE – LOS A)*	
U/G Telephone Cable (SUE – LOS B)*	
U/G Telephone Cable (SUE – LOS C)*	
U/G Telephone Cable (SUE – LOS D)*	
U/G Telephone Conduit (SUE – LOS B)*	
U/G Telephone Conduit (SUE – LOS C)*	
U/G Telephone Conduit (SUE – LOS D)*	
U/G Fiber Optics Cable (SUE – LOS B)*	
U/G Fiber Optics Cable (SUE – LOS C)*	
U/G Fiber Optics Cable (SUE – LOS D)*	

WATER:

Water Manhole	
Water Meter	
Water Valve	
Water Hydrant	
U/G Water Line Test Hole (SUE – LOS A)*	
U/G Water Line (SUE – LOS B)*	
U/G Water Line (SUE – LOS C)*	
U/G Water Line (SUE – LOS D)*	
Above Ground Water Line	

TV:

TV Pedestal	
TV Tower	
U/G TV Cable Hand Hole	
U/G TV Test Hole (SUE – LOS A)*	
U/G TV Cable (SUE – LOS B)*	
U/G TV Cable (SUE – LOS C)*	
U/G TV Cable (SUE – LOS D)*	
U/G Fiber Optic Cable (SUE – LOS B)*	
U/G Fiber Optic Cable (SUE – LOS C)*	
U/G Fiber Optic Cable (SUE – LOS D)*	

GAS:

Gas Valve	
Gas Meter	
U/G Gas Line Test Hole (SUE – LOS A)*	
U/G Gas Line (SUE – LOS B)*	
U/G Gas Line (SUE – LOS C)*	
U/G Gas Line (SUE – LOS D)*	
Above Ground Gas Line	

SANITARY SEWER:

Sanitary Sewer Manhole	
Sanitary Sewer Cleanout	
U/G Sanitary Sewer Line	
Above Ground Sanitary Sewer	
SS Force Main Line Test Hole (SUE – LOS A)*	
SS Force Main Line (SUE – LOS B)*	
SS Force Main Line (SUE – LOS C)*	
SS Force Main Line (SUE – LOS D)*	

MISCELLANEOUS:

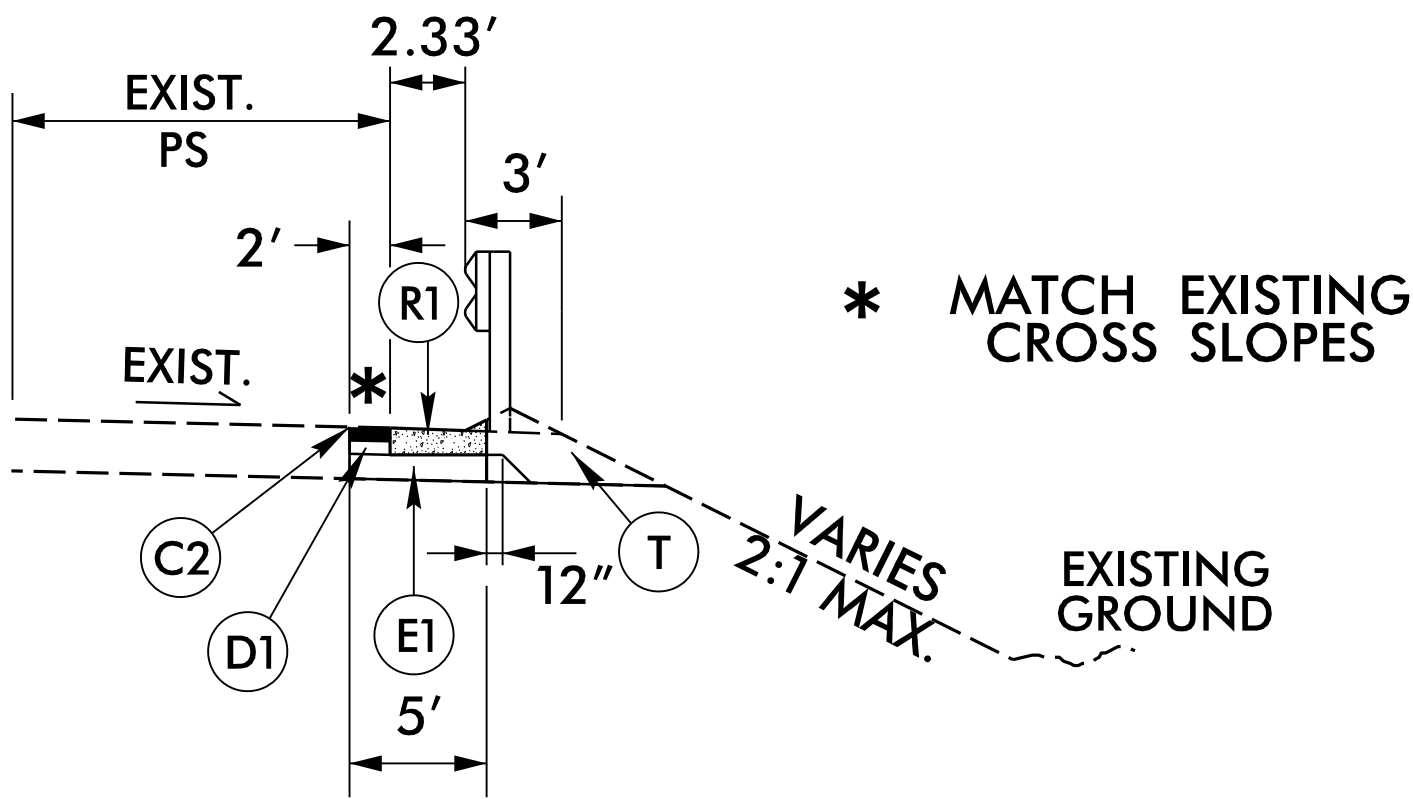
Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line (SUE – LOS B)*	
U/G Tank; Water, Gas, Oil	
Underground Storage Tank, Approx. Loc.	
A/G Tank; Water, Gas, Oil	
Geoenvironmental Boring	
Abandoned According to Utility Records	
End of Information	

8/17/99

5/3/2023 - 85 Rd - rd - Typ.dgn
USER:SKNEDY

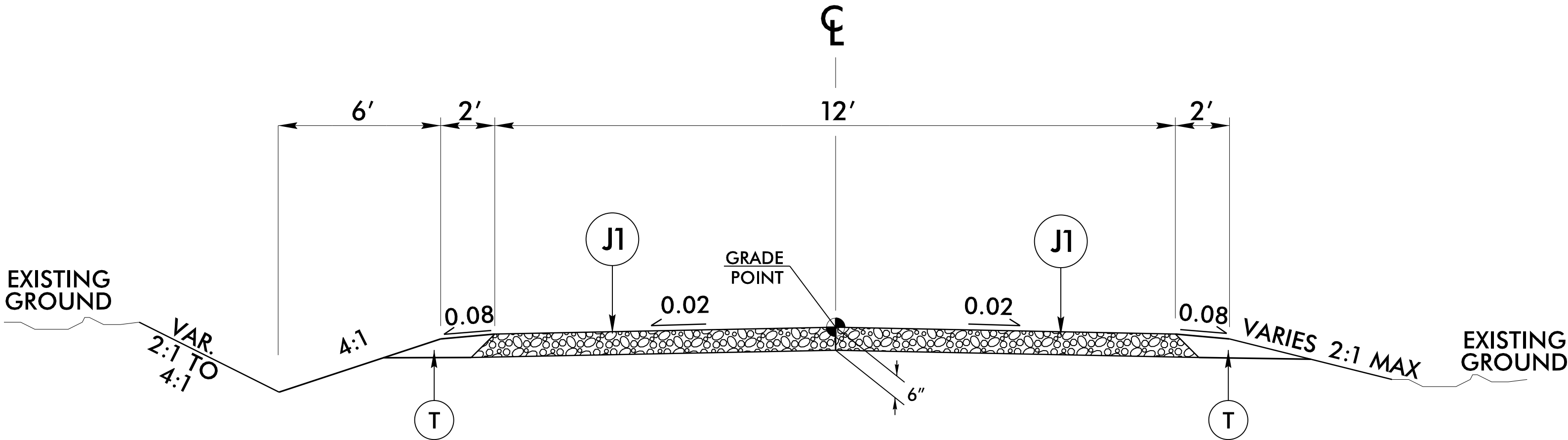
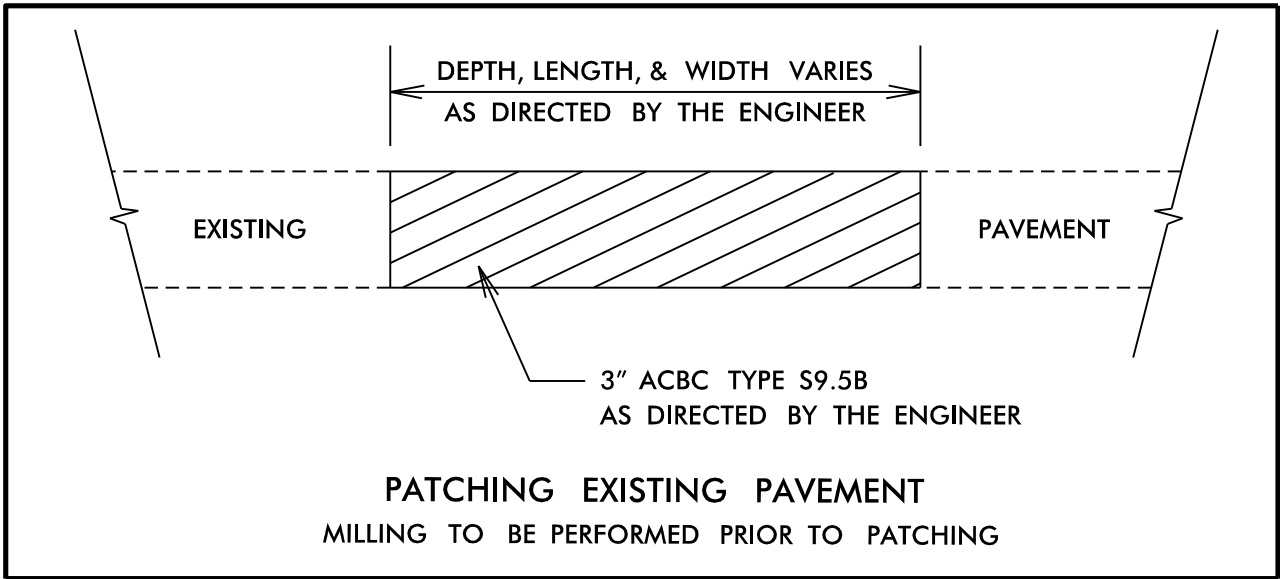
PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 3" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E2	PROP. APPROX. 6" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
J1	PROPOSED 6" AGGREGATE BASE COURSE
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL



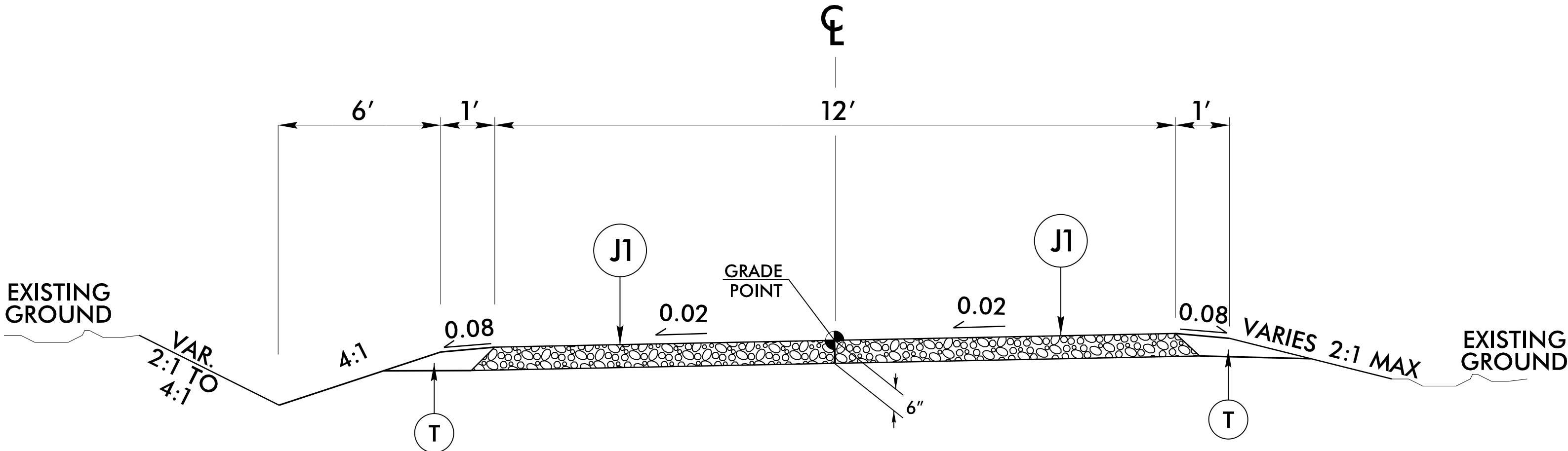
TYPICAL SECTION DETAIL
SHOULDER BERM GUTTER

I-85 SOUTH ON-RAMP
-EL2- STA. 10+56.82 TO STA. 12+64.45



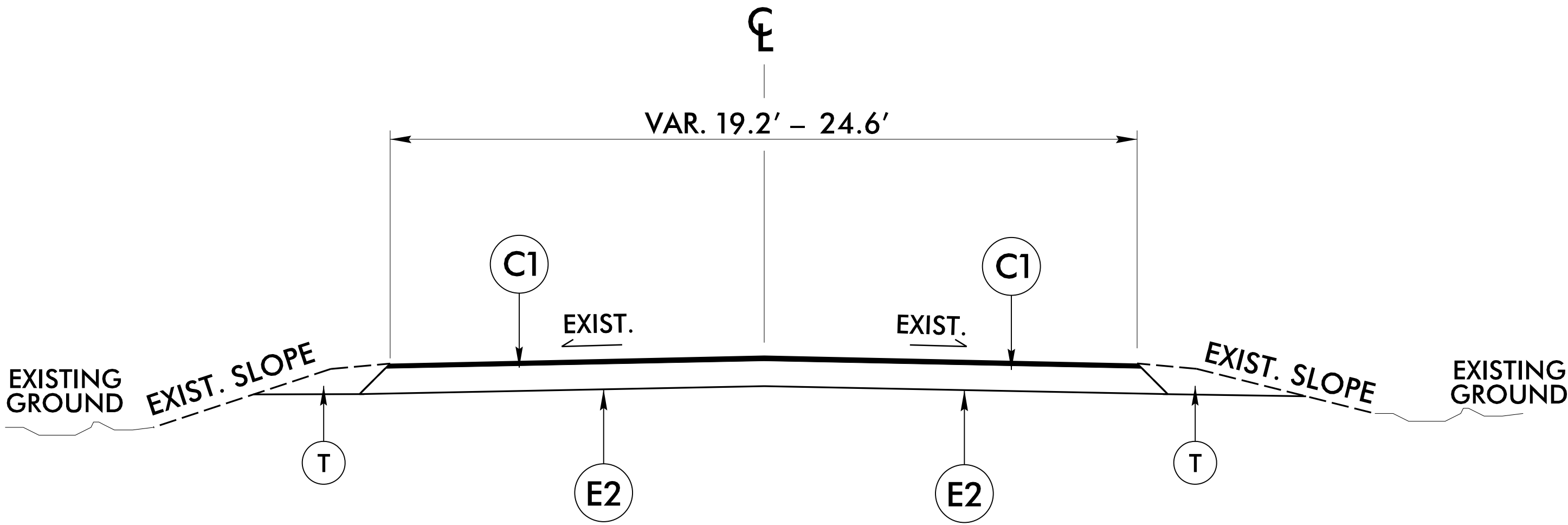
TYPICAL SECTION NO. 1

-DWY1- STA. 10+18.55 TO STA. 13+28.25



TYPICAL SECTION NO. 2

-DWY2- STA. 14+14.60 TO STA. 21+39.87



TYPICAL SECTION NO. 3

WESLEY DRIVE (SR 1407)

PROJECT REFERENCE NO.
51214.01AK

SHEET NO.
2A-1

5/11/2023

SEAL
018981

ENGINEER
MURPHY

5/11/2023

5/11/2023

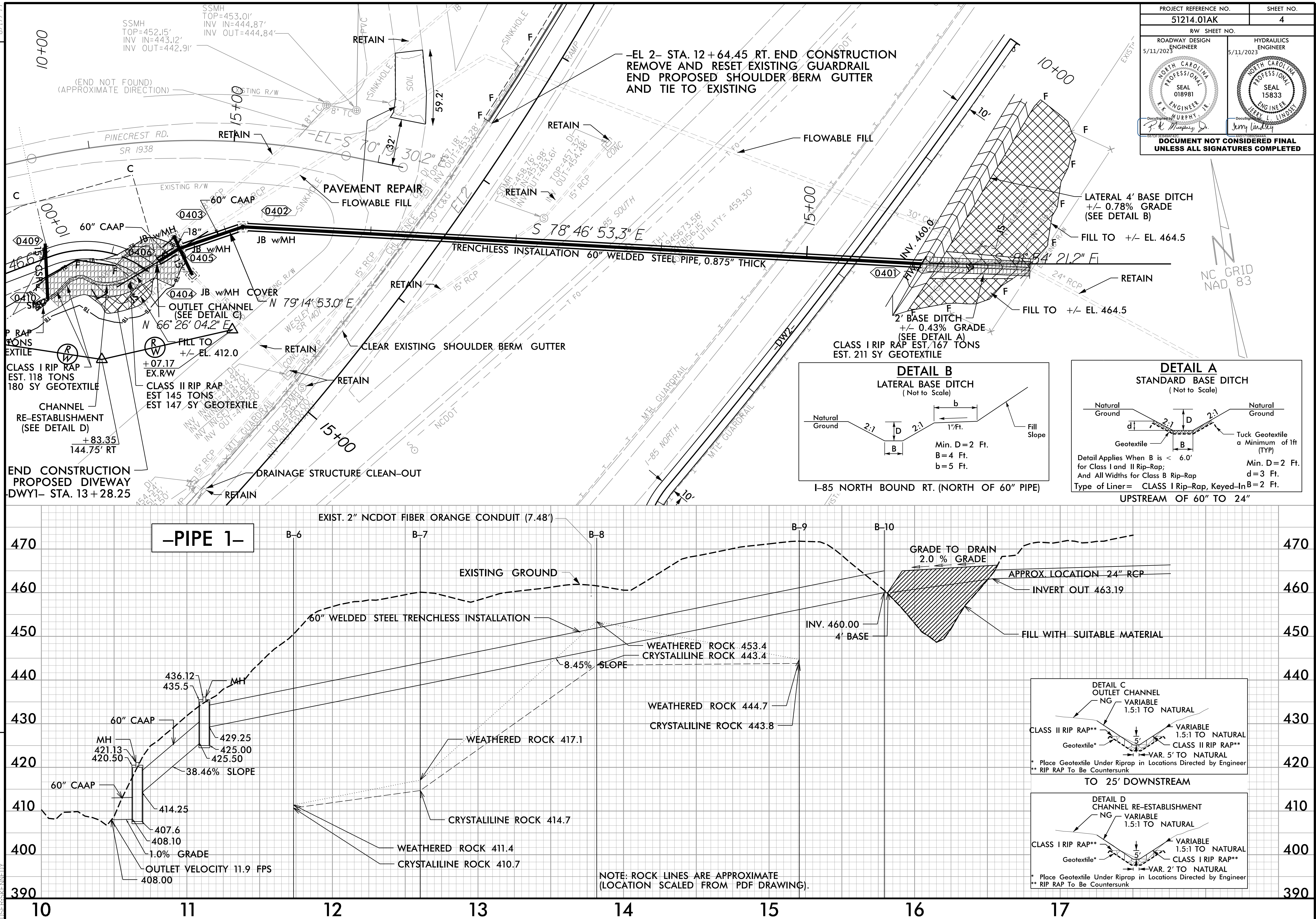
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

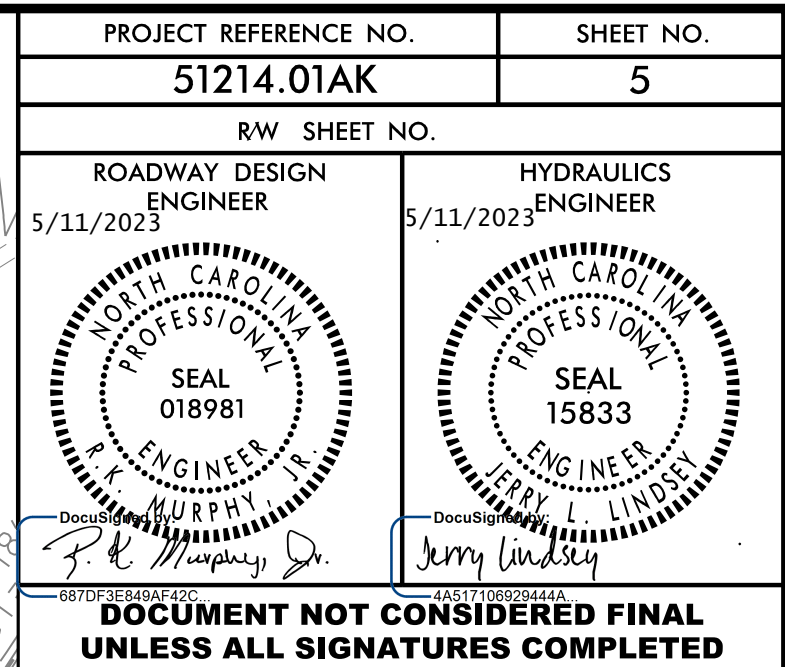
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
5/214.01AK	3B-1

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. + 20%	BORROW	WASTE
-EL2- L-85 SB ON-RAMP	11+00.00 TO 12+50.00	18	7		11
SUBTOTALS:		18	7		11
-DWY 1-	10+18.55 TO 13+28.00	1,143	335		808
SUBTOTALS:		1,143	335		808
-DWY 2-	14+50.00 TO 21+42.52	114	319	205	
SUBTOTALS:		114	319	205	
-DWY 2- CHANNEL & BASE DITCH LT.	10+29.55 TO 12+00.00	178	3,659	3,481	
SUBTOTALS:		178	3,659	3,481	
WASTE IN LIEU OF BORROW				-819	
PROJECT TOTALS:		1,453	4,320	2,867	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				143	
GRAND TOTALS:		1,453	4,320	3,010	
SAY:		1,460		3,020	





8/17/99

-EL2- PC Sta. 10+00.00

-EL 2- STA. 10+56.82 RT.
BEGIN CONSTRUCTION
REMOVE AND RESET EXISTING GUARDRAIL
INCLUDING END UNIT
BEGIN PROPOSED SHOULDER BERM GUTTER - 208 LF

-EL 2-
PI Sta 13+10.37
 $\Delta = 17^{\circ} 47' 59.8''$ (RT)
 $D = 2^{\circ} 53' 27.0''$
 $L = 615.74'$
 $T = 310.37'$
 $R = 1,981.99'$

-DWY2-

-DWY2-

PI Sta 11+93.70
 $\Delta = 5^{\circ} 04' 29.4''$ (RT)
 $D = 1^{\circ} 18' 38.9''$
 $L = 387.15'$
 $T = 193.70'$
 $R = 4,371.00'$

-DWY2- PC Sta. 10+00.00

-PIPE1- PI Sta. 15+79.10

-EL 2- STA. 12+64.45 RT. END CONSTRUCTION
REMOVE AND RESET EXISTING GUARDRAIL
END PROPOSED SHOULDER BERM GUTTER
AND TIE TO EXISTING

BEGIN CONSTRUCTION
PROPOSED DRIVEWAY
-DWY2- STA. 10+00.00
BEGIN
REMOVE AND RESET EXISTING GUARDRAIL

-DWY2-

-DWY2-

PI Sta 18+69.79
 $\Delta = 9^{\circ} 52' 22.0''$ (LT)
 $D = 3^{\circ} 07' 57.8''$
 $L = 315.15'$
 $T = 157.97'$
 $R = 1,828.95'$

PI Sta 20+59.77
 $\Delta = 50^{\circ} 12' 04.3''$ (RT)
 $D = 8^{\circ} 51' 04.0''$
 $L = 61.33'$
 $T = 32.79'$
 $R = 70.00'$

-PIPE31-
TRENCHLESS INSTALLATION 60" WELDED STEEL PIPE, 0.875" THICK
S 78° 46' 53.3" E

FLOWABLE FILL

LATERAL 4' BASE DITCH
+/- 0.78% GRADE
(SEE DETAIL B)

FILL TO +/- EL. 464.5

2' BASE DITCH
+/- 0.43% GRADE
(SEE DETAIL A)

CLASS I RIP RAP EST. 167 TONS
EST. 211 SY GEOTEXTILE

-PIPE1- POT Sta. 17+50.46

-DWY2- PRC Sta. 13+87.15

-DWY2- STA. 14+34.37
END
REMOVE AND RESET
EXISTING GUARDRAIL

50' TRANSITION

DO NOT DISTURB
RIGHT OF WAY MONUMENT
OR FENCE

-DWY2- PRC Sta. 20+26.97
-DWY2- POT Sta. 21+50.23
END CONSTRUCTION
PROPOSED DIVEWAY
-DWY2- STA. 21+39.87
-DWY2- PT Sta. 20+88.31

-DWY2- PT Sta. 15+44.52

-DWY2- PC Sta. 17+11.82

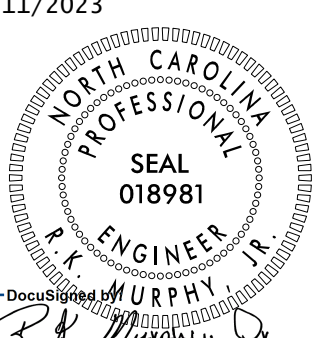
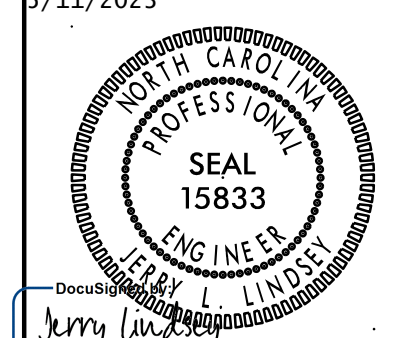
S 40° 51' 25.1" E

R=40'

R=10'

I-85 SB ON RAMP

NC GRID
NAD 83

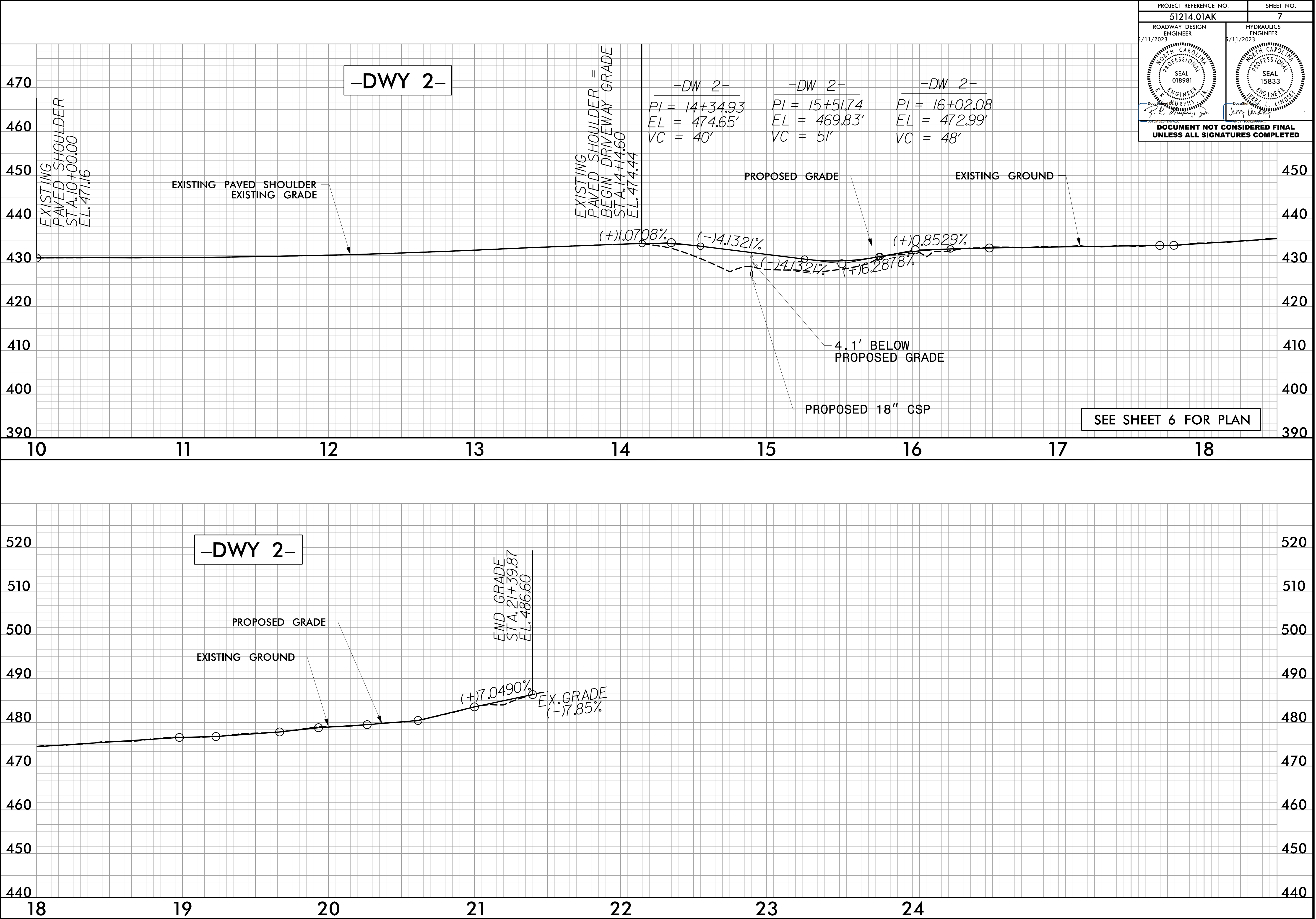
PROJECT REFERENCE NO.	SHEET NO.
51214.01AK	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 5/11/2023	HYDRAULICS ENGINEER 5/11/2023
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

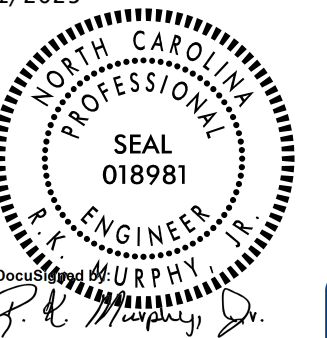
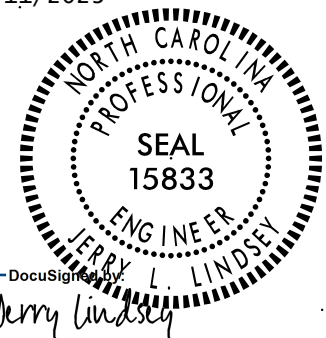
REVISIONS

5/2/2023 -85 VANCE.rdy.psh6.dgn
USER:SKENEDY

5/28/23

5/2/2023 8:55 VANCE.rdy-psd7.dgn
USER:SKENEDY



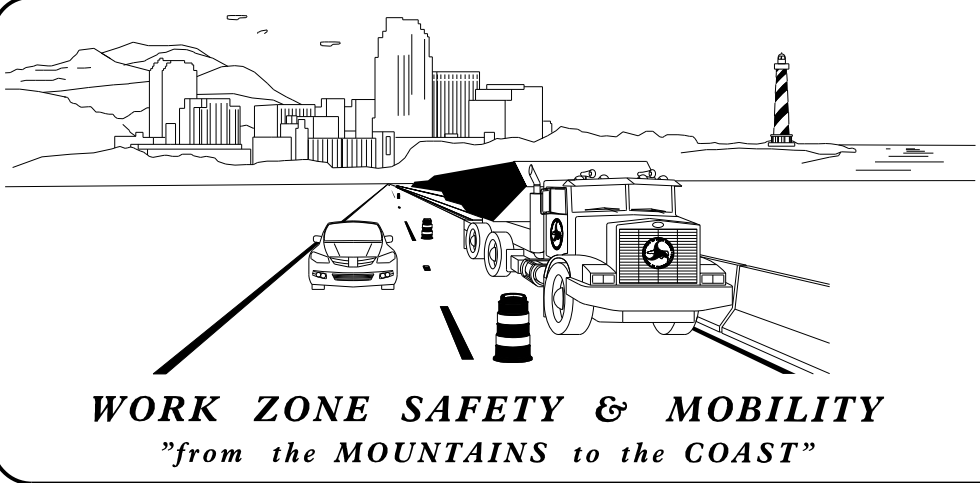
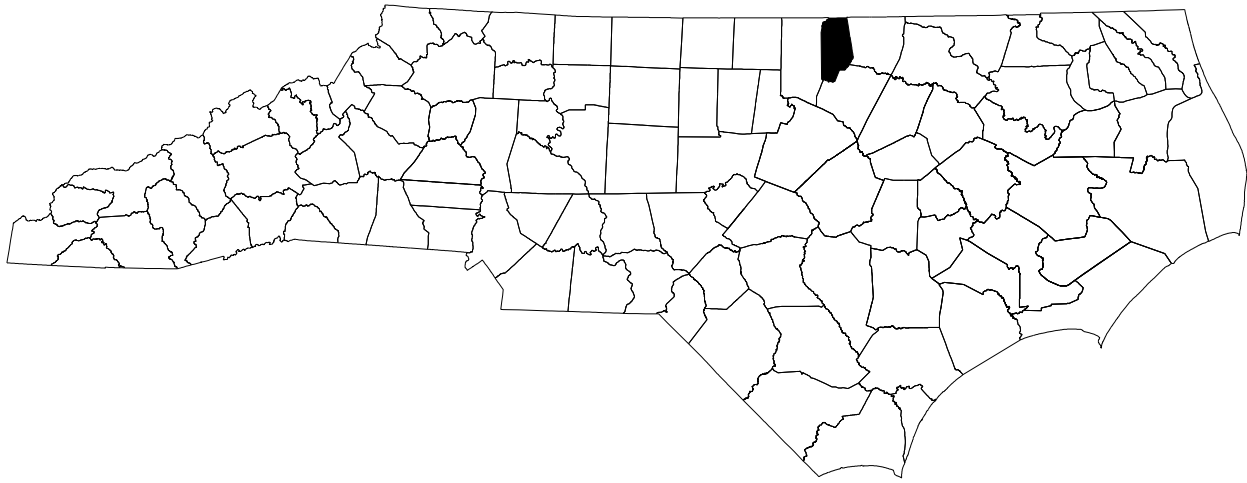
PROJECT REFERENCE NO.		SHEET NO.
51214.01AK		7
ROADWAY DESIGN ENGINEER 5/11/2023	HYDRAULICS ENGINEER 5/11/2023	
		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

5/3/2023
P:\2021\2129,09 I-85 Pipe Rplcmt Vance Co\Traffic\Traffic Design\Design\Pre-Let\Plan\WZ\TC\Sheets\51214.01.kk TMP_01 Title.dgn
User:AHayes

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

VANCE COUNTY



PLANS PREPARED BY:

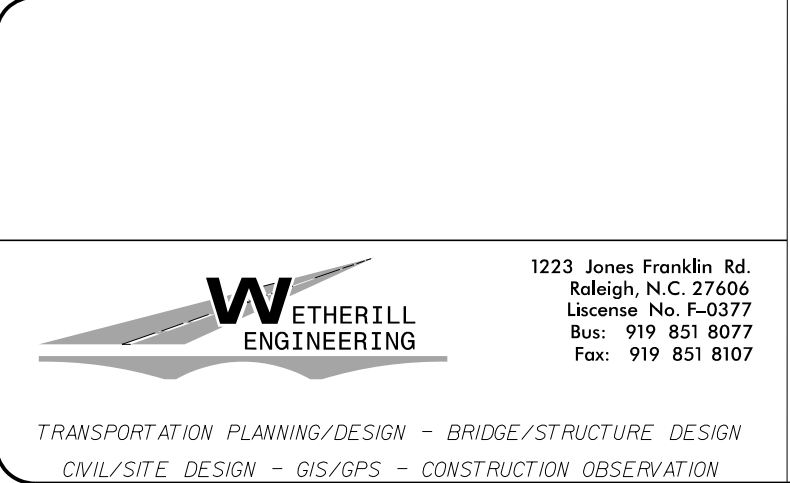
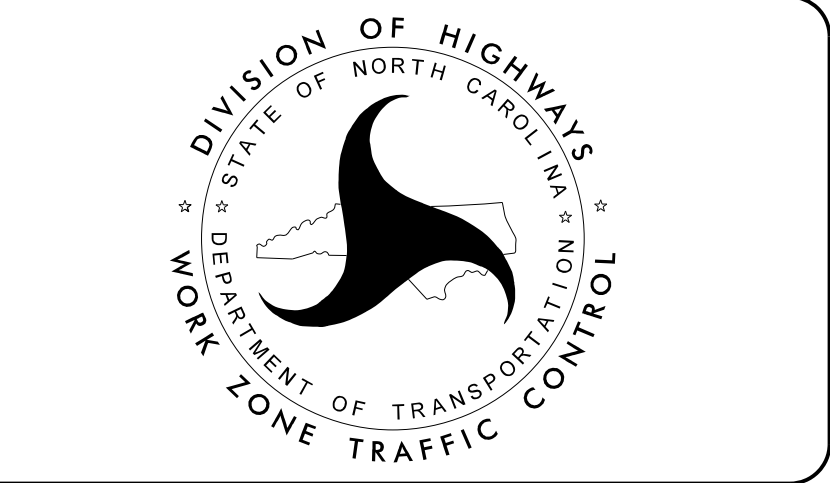
R. K. MURPHY, JR., P.E.

D. ALLEN HAYES, JR., E.I.

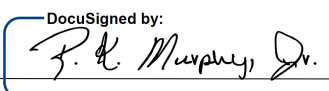
NCDOT CONTACTS:

PROJECT ENGINEER

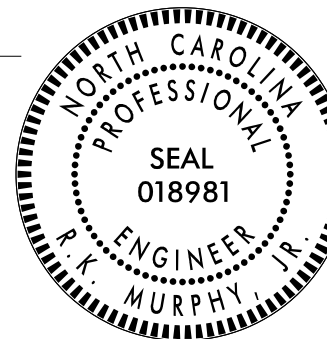
PROJECT DESIGN ENGINEER



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

APPROVED: 
DATE: 5/11/2023

SEAL



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-01	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-01A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-01B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES AND GENERAL NOTES)
TMP-02	SPECIAL SIGN DESIGNS
TMP-03	TEMPORARY TRAFFIC CONTROL PHASING
TMP-04 THRU 06	DETAIL SHEETS

SHEET NO.
TMP-01

51214.01

TIP PROJECT:

PROJ. REFERENCE NO.	SHEET NO.
51214.01AK	TMP-01A

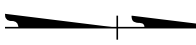
ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

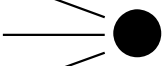
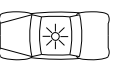
STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY - DRUMS

LEGEND

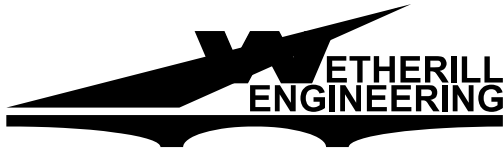
GENERAL

-  DIRECTION OF TRAFFIC FLOW
-  EXIST. PVMT.
-  NORTH ARROW
-  PROPOSED PVMT.
-  WORK AREA

TRAFFIC CONTROL DEVICES

-  DRUM
-  TEMPORARY CRASH CUSHION
-  FLASHING ARROW BOARD
-  LAW ENFORCEMENT

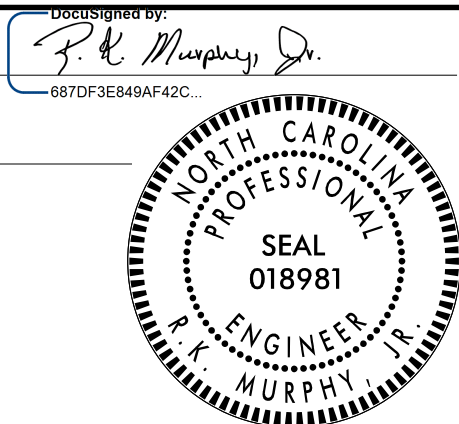
5/3/2023 5:21:29 PM User: AHayes
P:\2021\20210909 1-85 Pipe Rplcmt Vance Co\Traffic\Traffic Design\Design\Pre-Let\Plan\WZTC\Sheets\51214.01AK TMP_0A Legend.dgn



1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: _____
DATE: 5/11/2023



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



LIST OF APPLICABLE
ROADWAY STANDARD
DRAWINGS, AND LEGEND

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.

TIME RESTRICTIONS

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

ROAD NAME	DAY AND TIME RESTRICTIONS
1. I-85 INCLUDING ALL RAMPs AND LOOPS	6:00 A.M. - 9:00 P.M. SUNDAY THRU SATURDAY
2. ALL OTHER ROADS	7:00 A.M. - 9:00 A.M. 4:00 P.M. - 7:00 P.M.

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

ROAD NAME

1. I-85

HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR’S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31st TO 9:00 P.M. JANUARY 2ND. IF NEW YEAR’S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 P.M. THE FOLLOWING TUESDAY.

3. FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 9:00 P.M. MONDAY.

4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 9:00 P.M. TUESDAY.

5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.

6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 9:00 P.M. TUESDAY.

7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 9:00 P.M. MONDAY.

8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

D) 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.

E) 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.

F) 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.

G) 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.

H) 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.

I) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON SR 1938.

TRAFFIC PATTERN ALTERATIONS

J) NOTIFY THE ENGINEER THIRTY (30) 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 BARRIER

M) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS. TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

N) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS: (SEE ALSO 1101.05)

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT
55	25 FT
60 MPH or HIGHER	30 FT

TRAFFIC CONTROL DEVICES

O) 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.

P) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

MISCELLANEOUS

Q) LAW ENFORCEMENT SHALL BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

R) ALL STATIONS ARE CONSIDERED +/- UNLESS OTHERWISE SHOWN ON THE PLANS.

MANAGEMENT STRATEGIES

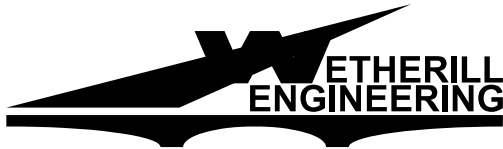
THE FOLLOWING LISTED WORK ZONE STRATEGIES ARE RECOMMENDED FOR INCLUSION WITHIN THIS TRANSPORTATION MANAGEMENT PLAN (TMP).

RECOMMENDED STRATEGIES:

TRAFFIC MANAGEMENT STRATEGIES:

- SHOULDER CLOSURES
- ONE-LANE, TWO WAY OPERATION (FLAGGING)
- NIGHT WORK
- WEEKEND WORK

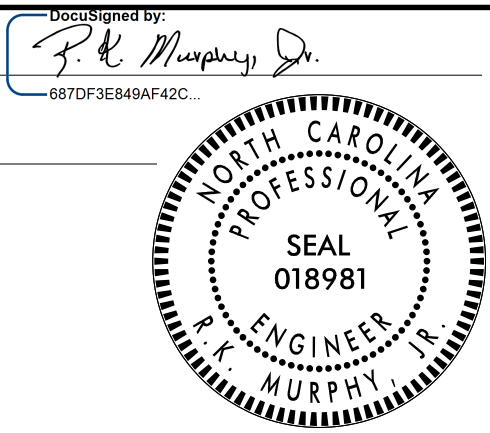
TRANSPORTATION OPERATIONS
PLAN: (MANAGEMENT
STRATEGIES AND
GENERAL NOTES)



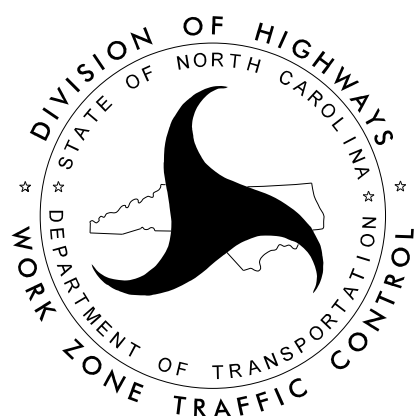
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED:
DATE: 5/11/2023



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



5/3/2023
P:\2021\2129.09 --85 Pipe Rplcm't vance Co\Traffic Design\Design\Pre-Let\Plan\WZTC\Sheets\51214.01AK TMP_02 SSD.dgn
User:AHayes

SPECIAL SIGN DESIGNS

PROJ. REFERENCE NO.	SHEET NO.
51214.01AK	TMP-03

PHASING

STEP 1) USING RSD (ROADWAY STANDARD DRAWING) 1101.01, INSTALL ADVANCE WARNING SIGNING ON -EL- (SR 1938), I-85 NB, AND THE I-85 SB ON-RAMPS. IF CONSTRUCTION OF -DWY1- AND -DW2- DOES NOT BEGIN WITHIN THREE DAYS OF SIGN INSTALLATION COVER THE SIGNS WITH AN APPROVED MATERIAL PER THE DISCRETION OF THE ENGINEER.

STEP 2) USING RSD 1101.02, INSTALL LANE CLOSURE ON -EL- AND CONSTRUCT -DWY1- UP TO AND INCLUDING THE FINAL ELEVATION. RETURN TRAFFIC TO THE EXISTING PATTERN AT THE END OF EACH WORK PERIOD.

USING RSD 1101.04 AND SHEET TMP-05, INSTALL SHOULDER CLOSURE
ON THE I-85 SB ON-RAMP AND CONSTRUCT -DW2- UP TO AND INCLUDING
THE FINAL ELEVATION.

USING RSD 1101.02; ON -EL2-, REMOVE EXISTING MEDIAN EDGE LINE
AND INSTALL TEMPORARY PAVEMENT MARKING AS SHOWN ON SHEET
TMP-06. THEN INSTALL WATER-FILLED BARRIER AND SHIFT RAMP
TRAFFIC AS SHOWN. BEGIN CONSTRUCTION ON -EL2-.

USING RSD 1101.02 AND SHEET TMP-04, INSTALL SHOULDER CLOSURE (PCB) ON I-85 NB, REMOVE EXISTING GUARDRAIL AS SHOWN, AND CONSTRUCT -DW2- UP TO AND INCLUDING THE FINAL ELEVATION.

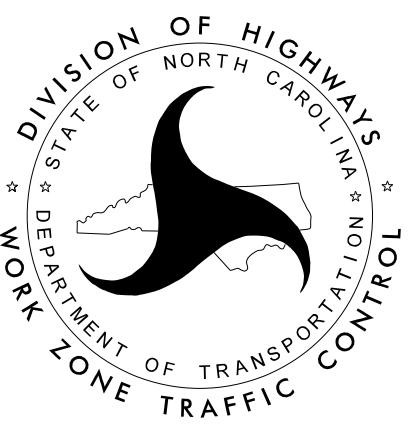
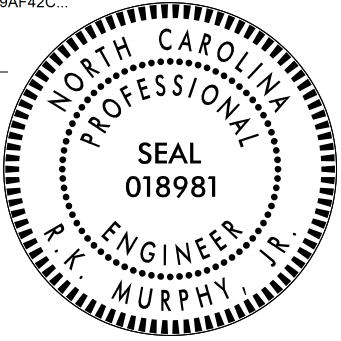
STEP 3) REMOVE SHOULDER CLOSURE ON THE I-85 SB ON-RAMP (AND SIGN W14-12). USING RSD 1101.02 ON SR 1407 (WESLEY DR) AND AWAY FROM TRAFFIC USING SHEET TMP-04, CONSTRUCT -PIPE 1- AND ALL DRAINAGE.

BEHIND BARRIER, COMPLETE CONSTRUCTION OF -EL2-. THEN USING
RSD 1101.02, REMOVE WATER-FILLED BARRIER, TEMPORARY PAVEMENT
MARKINGS, REPLACE EXISTING PAVEMENT MARKINGS IN-PLACE, AND
RETURN TRAFFIC TO THE EXISTING PATTERN.

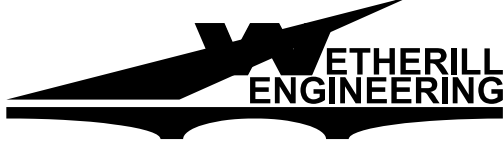
STEP 4) UPON COMPLETION OF ALL CONSTRUCTION, REMOVE -DW1- AND -DW2-, RE-INSTALL GUARDRAIL REMOVED IN STEP 3, REMOVE PORTABLE CONCRETE BARRIER, ALL TRANSPORTATION MANAGEMENT DEVICES, AND TEMPORARY SIGNING ON THE ENTIRE PROJECT, AND RETURN I-85 NB TRAFFIC TO THE EXISTING PATTERN.

APPROVED: J. E. Murphy, Jr.
687DF3E849AF42C...

DATE: 5/11/2023



PHASING



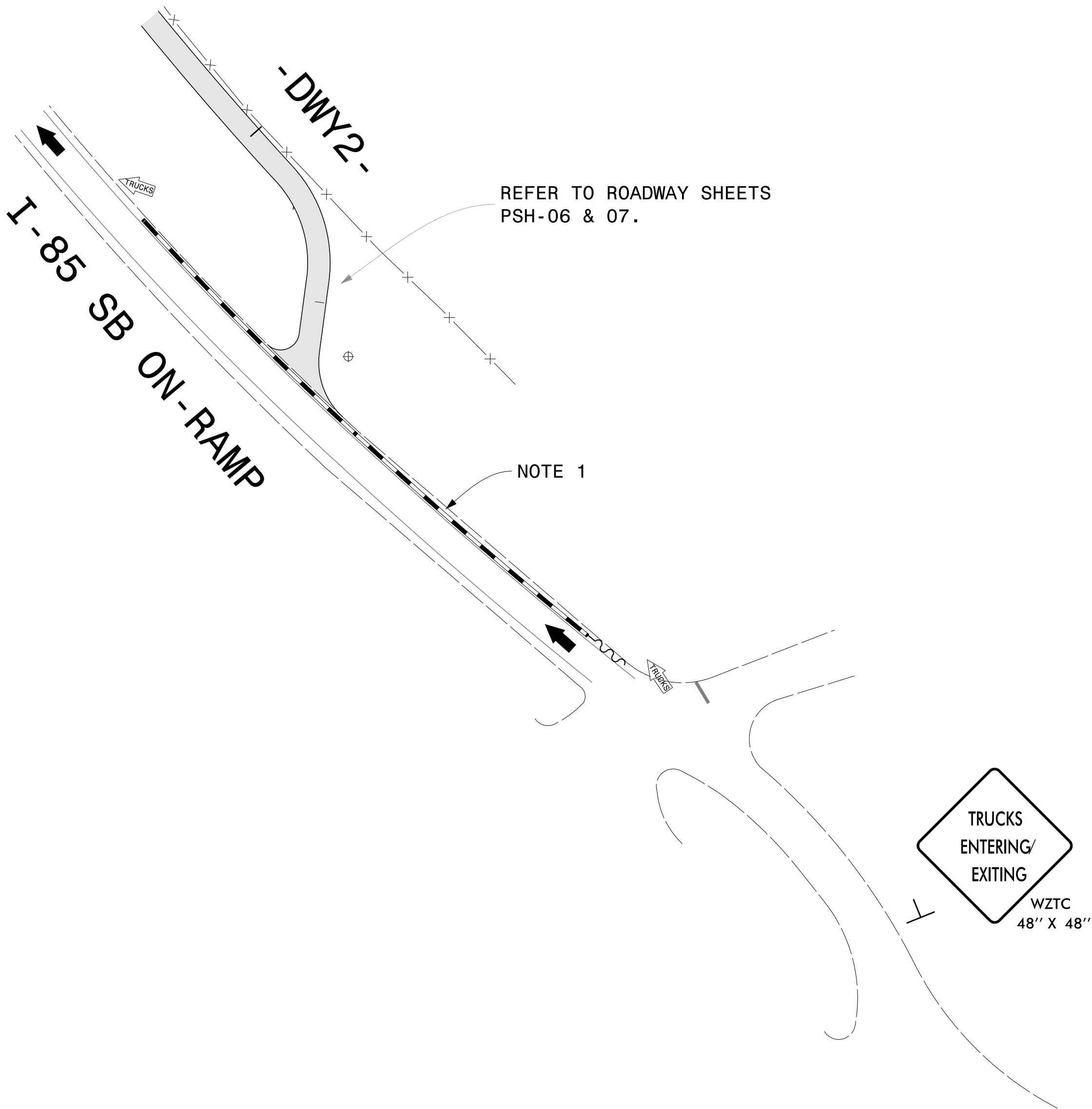
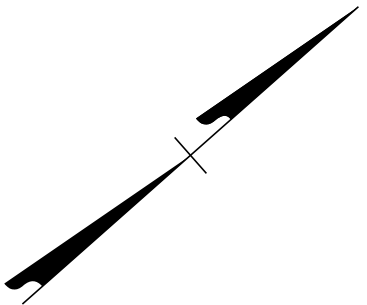
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

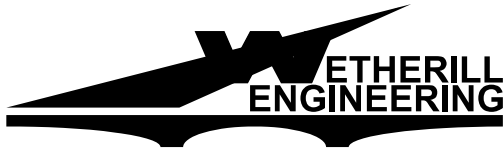
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



PROJ. REFERENCE NO.	SHEET NO.
51214.01AK	TMP-05

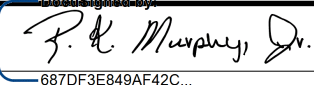


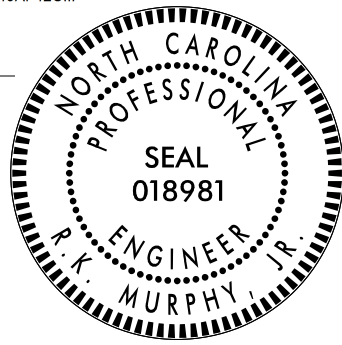
- NOTES:
- 1) THE CONTRACTOR SHALL DETERMINE THE LIMITS OF THE PCB PER THE DISCRETION OF THE ENGINEER. THE PCB SHALL BE OFFSET 1' FROM THE EDGE OF TRAVEL.
 - 2) SEE SHEET TMP-02 FOR SPECIAL SIGN DESIGNS.



1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: 
DATE: 5/11/2023

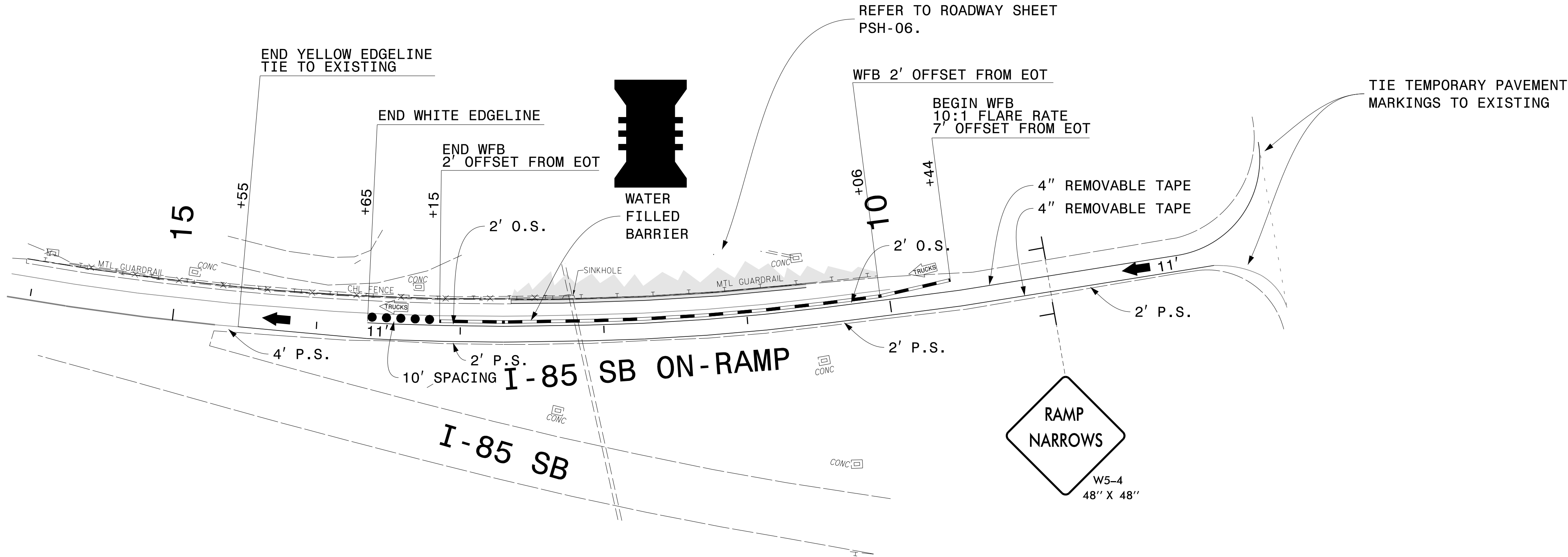


**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

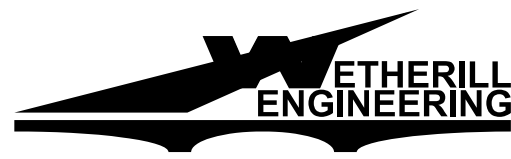


LANE CLOSURE DETAIL

PROJ. REFERENCE NO.	SHEET NO.
51214.01AK	TMP-06



5/3/2023
P:\2021\2029.09 I-85 Pipe Rplcmt Vance Co\Traffic\Traffic Design\Design\Pre-Let\Plan\WZ\TC\Sheets\51214.01AK TMP-06.dgn
User:AHayes



1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

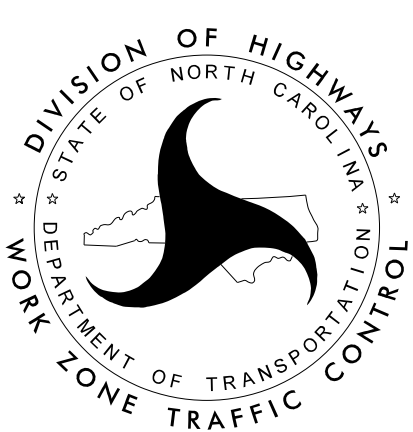
APPROVED:

Signed By: *P. K. Murphy Jr.*
087DF3E84BAF42C...

DATE: 5/11/2023



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



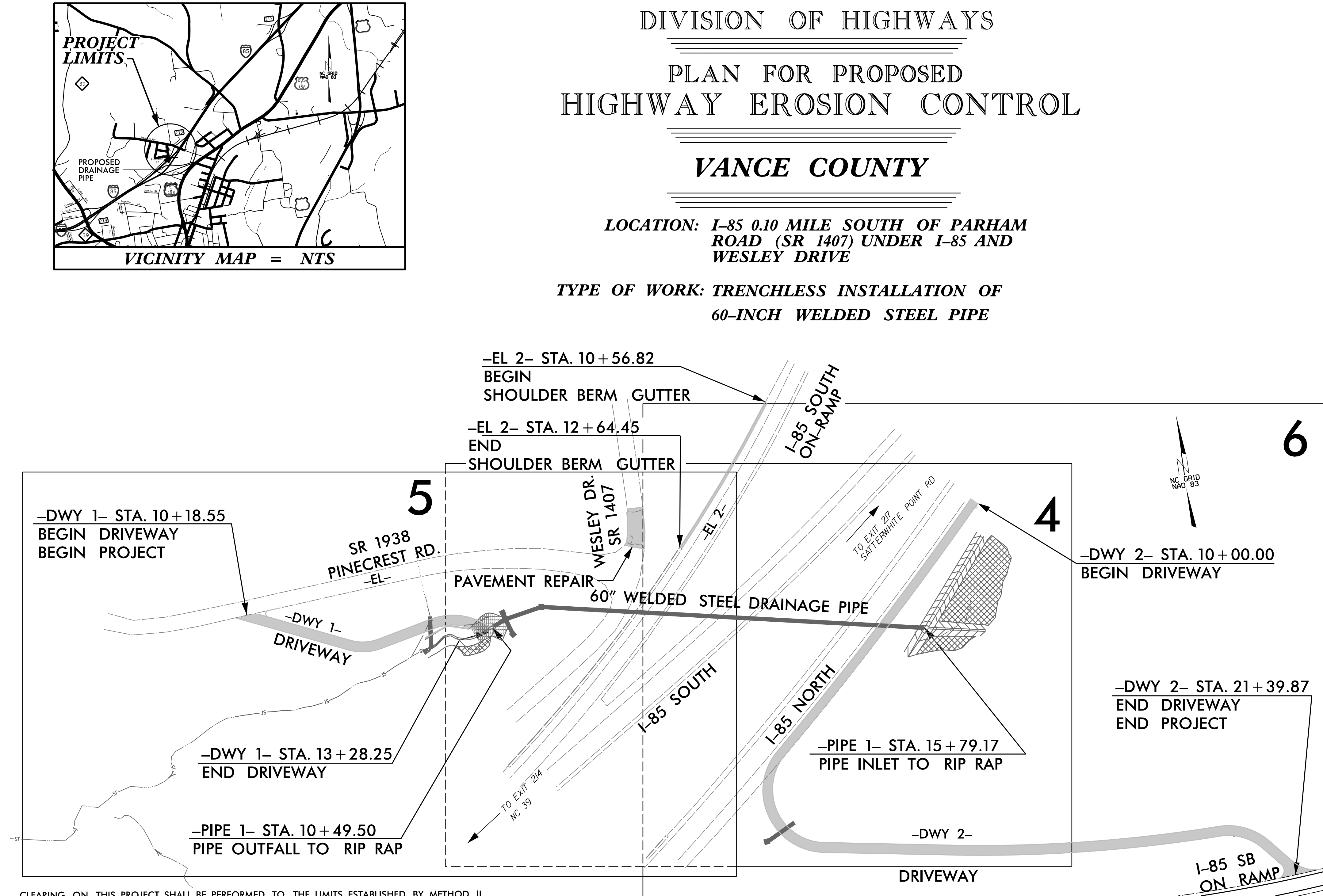
LANE CLOSURE DETAIL

TIP PROJECT: 51214.01AK

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

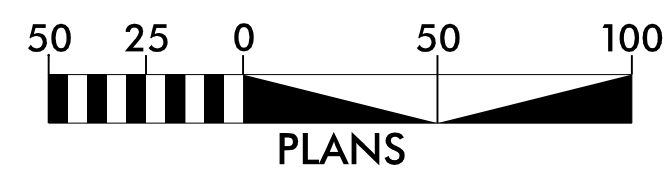
LOCATION: I-85 0.10 MILE SOUTH OF PARHAM
ROAD (SR 1407) UNDER I-85 AND
WESLEY DRIVE

TYPE OF WORK: TRENCHLESS INSTALLATION OF
60-INCH WELDED STEEL PIPE



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

GRAPHIC SCALE



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH
THE APPLICABLE REGULATIONS SET FORTH BY THE NCG-010000
GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019
AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.



1223 Jones Franklin Rd. Raleigh, N.C. 27606
License No. F-0377
Bus: 919.851.8077 Fax: 919.851.8107

Prepared in the Office of:
WETHERILL ENGINEERING
1223 JONES FRANKLIN ROAD
RALEIGH, NC 27606

2018 STANDARD SPECIFICATIONS

Designed by:

KATIE ESTEP

NAME

4485

LEVEL III CERTIFICATION NO.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	51214.01AK	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	III III III
1622.01	Temporary Berms and Slope Drains	III III III
1630.02	Silt Basin Type B	III III III
1633.01	Temporary Rock Silt Check Type-A	III III III
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	III III III
1633.02	Temporary Rock Silt Check Type-B	III III III
	Wattle/Coir Fiber Wattle	III III III
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	III III III
1634.01	Temporary Rock Sediment Dam Type-A	III III III
1634.02	Temporary Rock Sediment Dam Type-B	III III III
1635.01	Rock Pipe Inlet Sediment Trap Type-A	III III III
1635.02	Rock Pipe Inlet Sediment Trap Type-B	III III III
1630.04	Stilling Basin	III III III
1630.06	Special Stilling Basin	III III III
	Rock Inlet Sediment Trap:	III III III
1632.01	Type A	III III III
1632.02	Type B	III III III
1632.03	Type C	III III III
	Skimmer Basin	III III III
	Tiered Skimmer Basin	III III III
	Infiltration Basin	III III III

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

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 2018 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		

PROJECT REFERENCE NO.	SHEET NO.
51214.01AK	EC-2A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
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.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
5/214.0/AK	EC-2B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

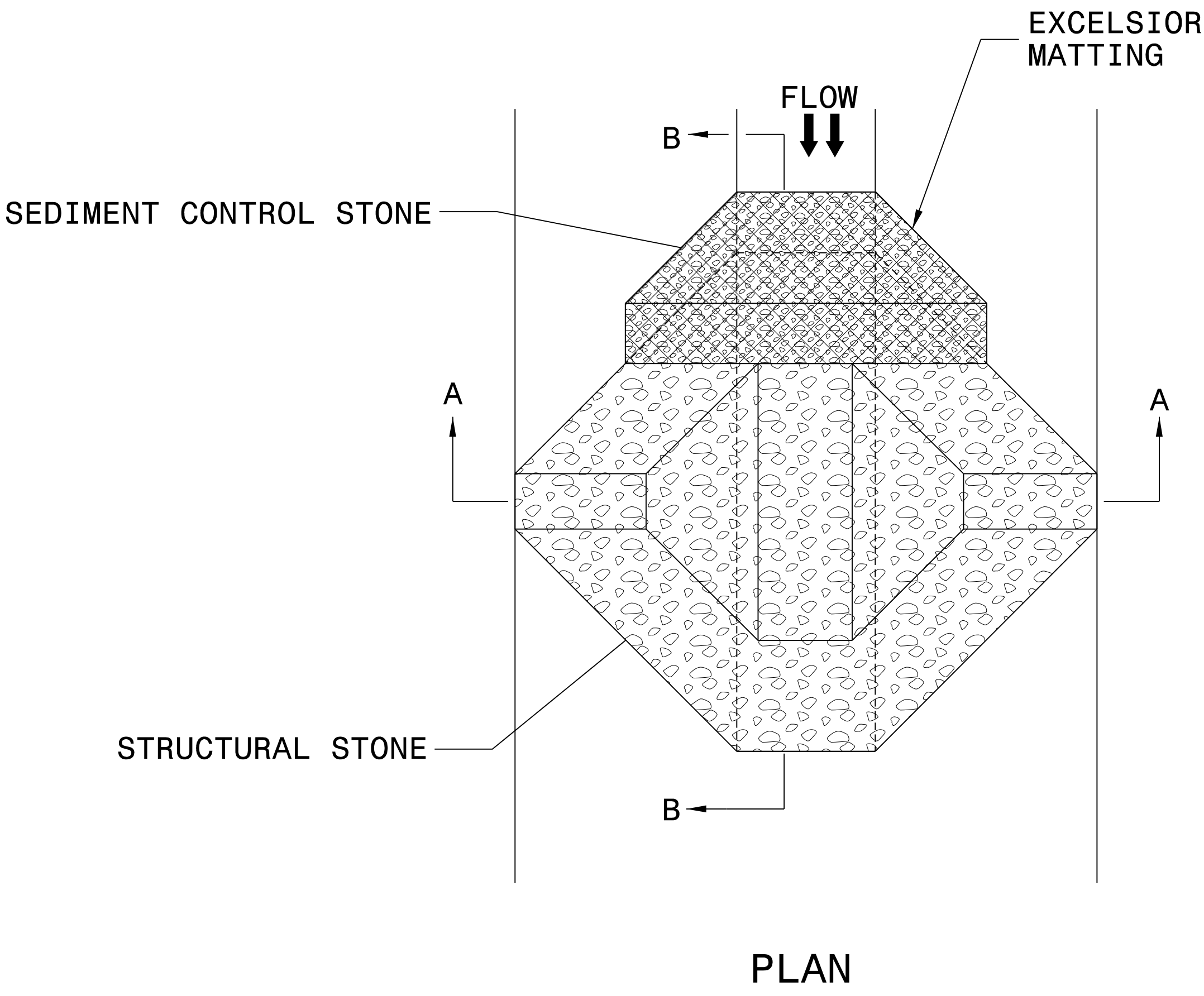
[illegible]

PERMANENT SOIL REINFORCEMENT MAT

[illegible]

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

PROJECT REFERENCE NO.	SHEET NO.
51214.01AK	EC-3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



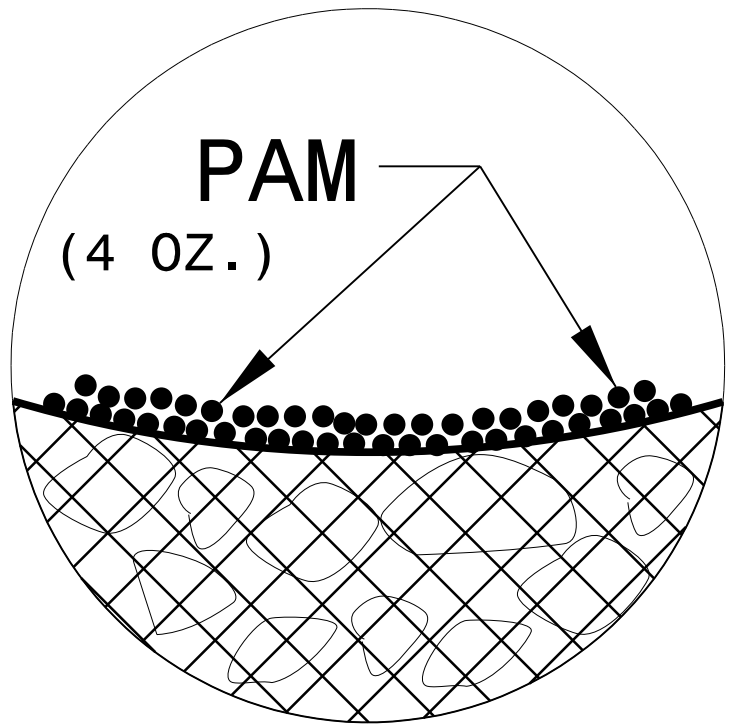
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

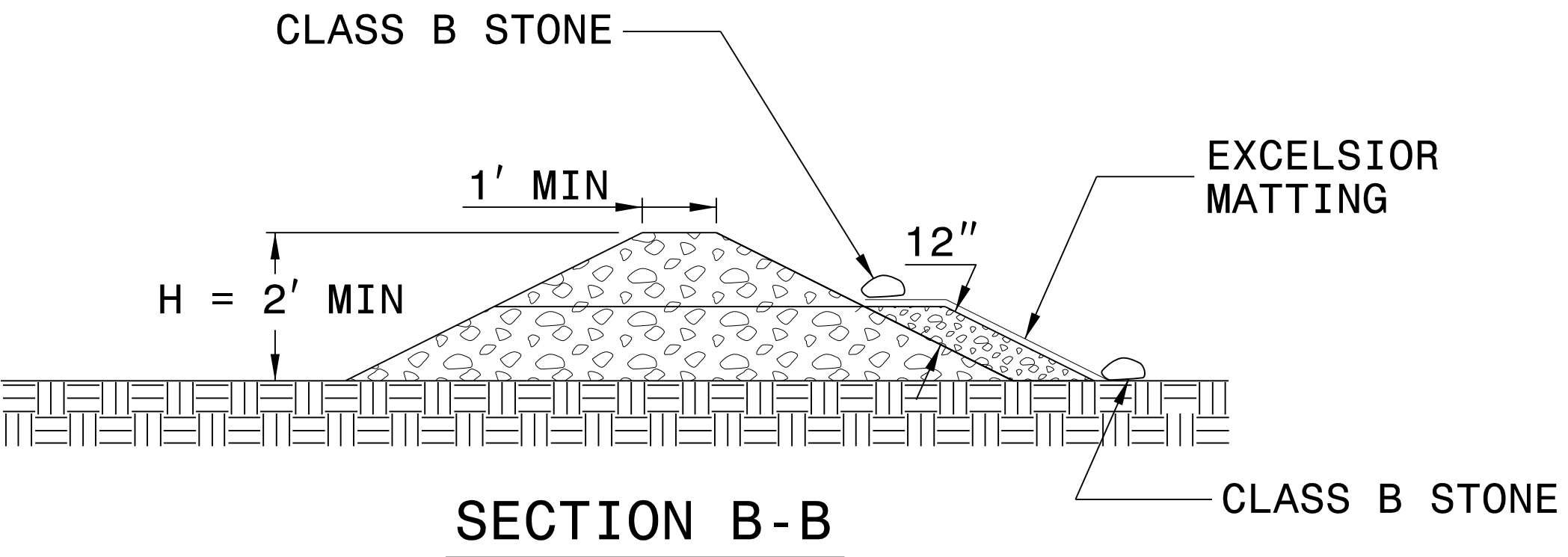
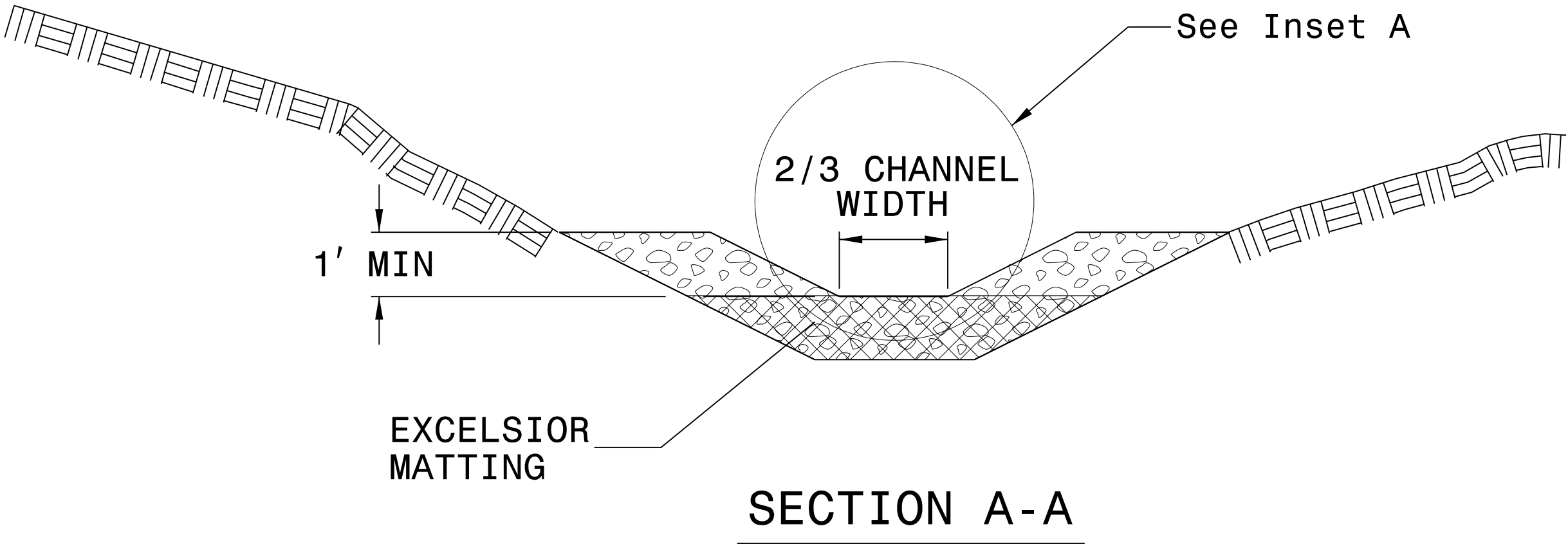
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

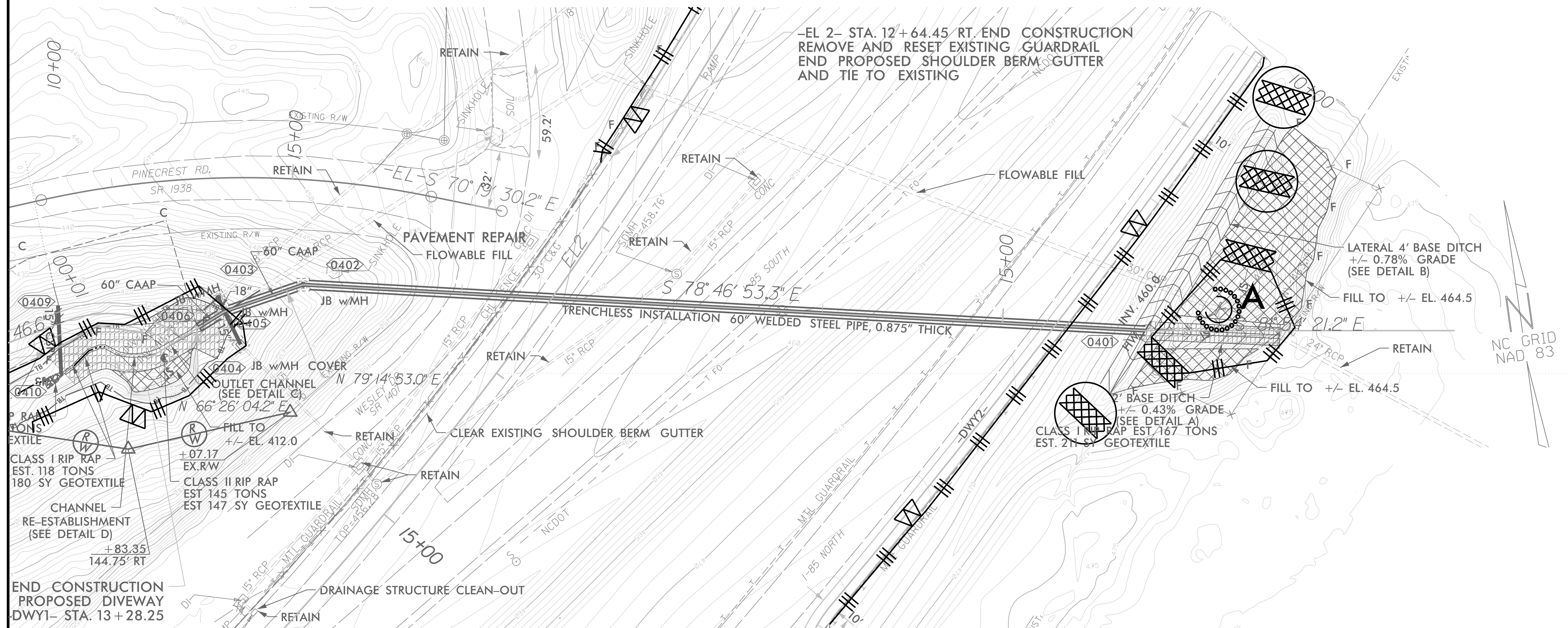


INSET A



NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
51214.01AK	EC-4/CONSTR. 4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

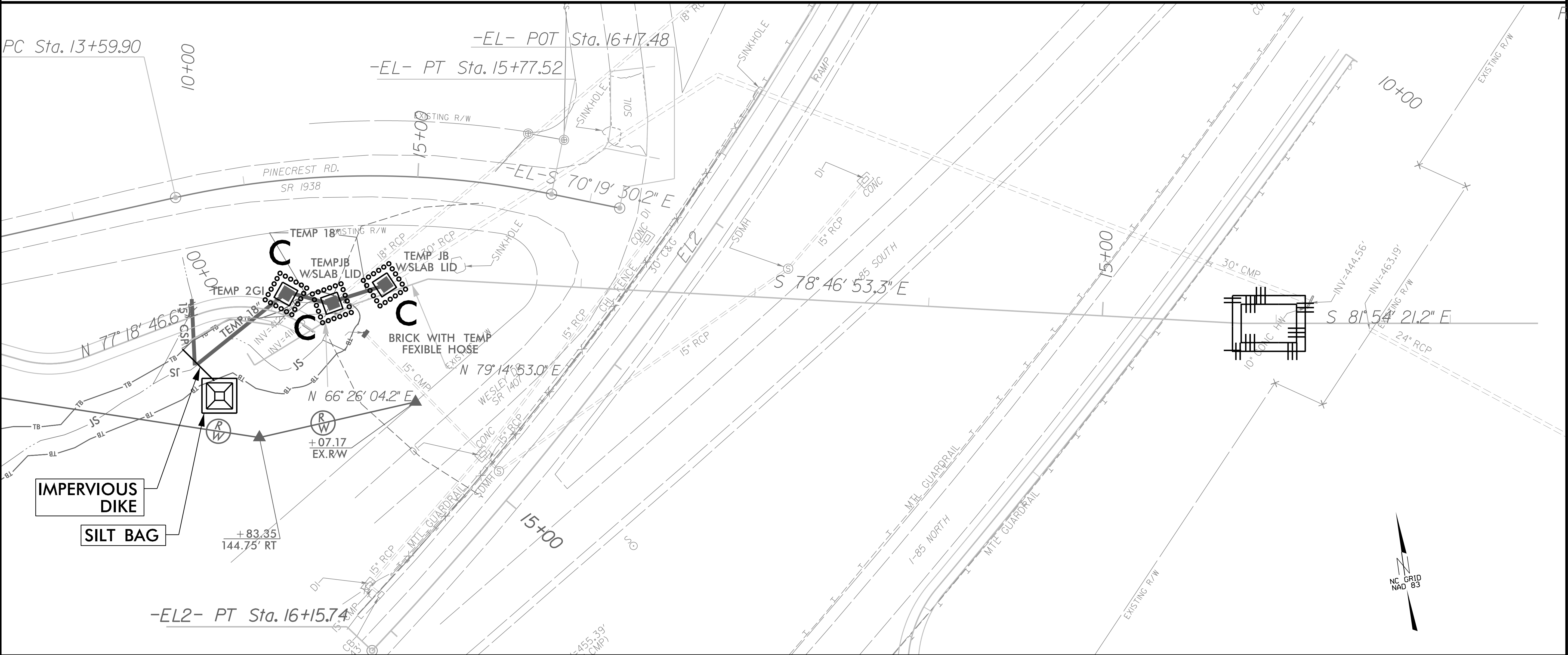


CLEARING AND GRUBBING EROSION CONTROL FOR
PLAN SHEET 4

PIPE REPLACEMENT CONSTRUCTION SEQUENCE

PROJECT REFERENCE NO.	SHEET NO.
51214.01AK	EC-4A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PHASE I

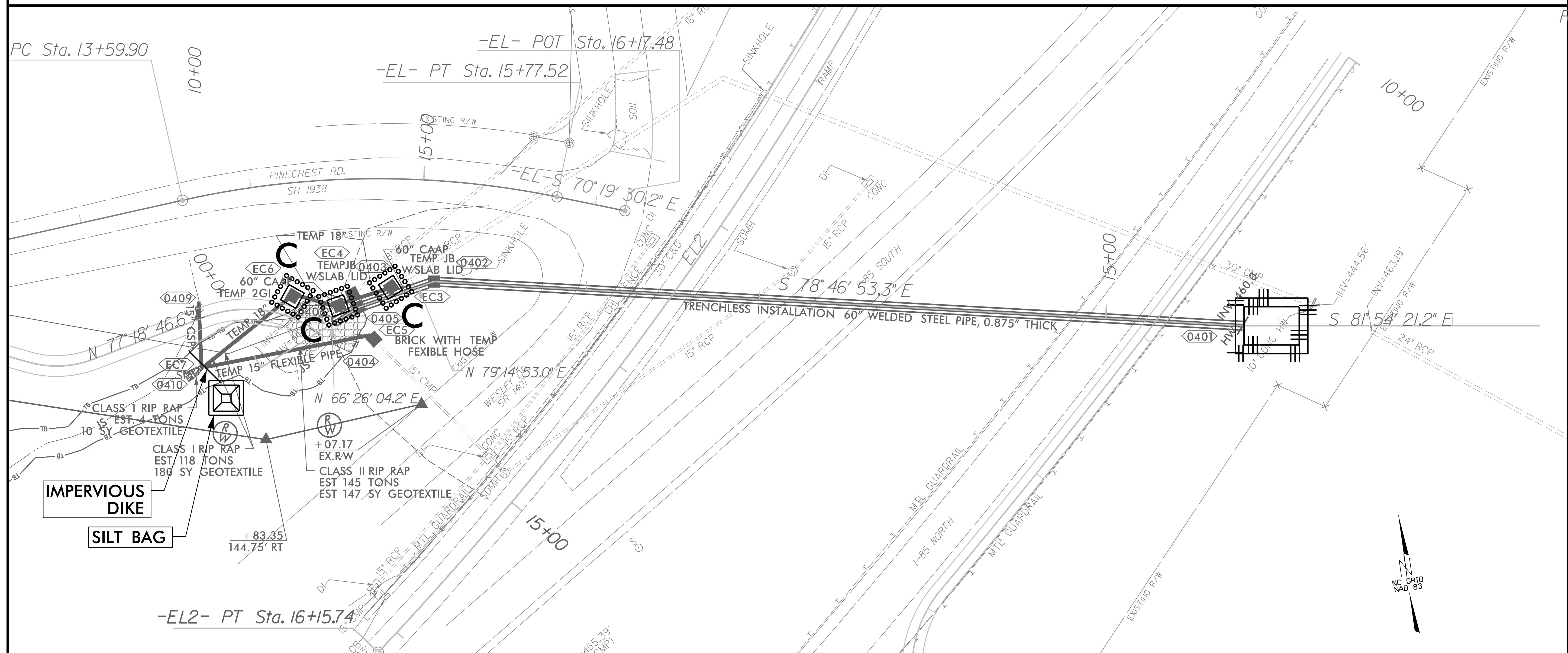


- INSTALL EROSION CONTROL MEASURES FOR THIS SITE PRIOR TO COMMENCING CULVERT WORK. REMOVE EXISTING PIPES AS NEEDED.
1. INSTALL SPECIAL STILLING BASINS/SILT BAG AS NEEDED FOR DEWATERING OF THE PROJECT SITE THROUGHOUT CONSTRUCTION SEQUENCING.
 2. INSTALL IMPERVIOUS DIKE DOWNSTREAM AND INSTALL/UTILIZE TEMPORARY PIPES TO MAINTAIN THE FLOW OF WATER.
 3. INSTALL BORE PIT UPSTREAM.
 4. INSTALL 15" CSP OFF -DWY1- TO BE LEFT AS PERMANENT DRAINAGE.

PROJECT REFERENCE NO.		SHEET NO.	
51214.01AK		EC-4B	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

PIPE REPLACEMENT CONSTRUCTION SEQUENCE

PHASE 2

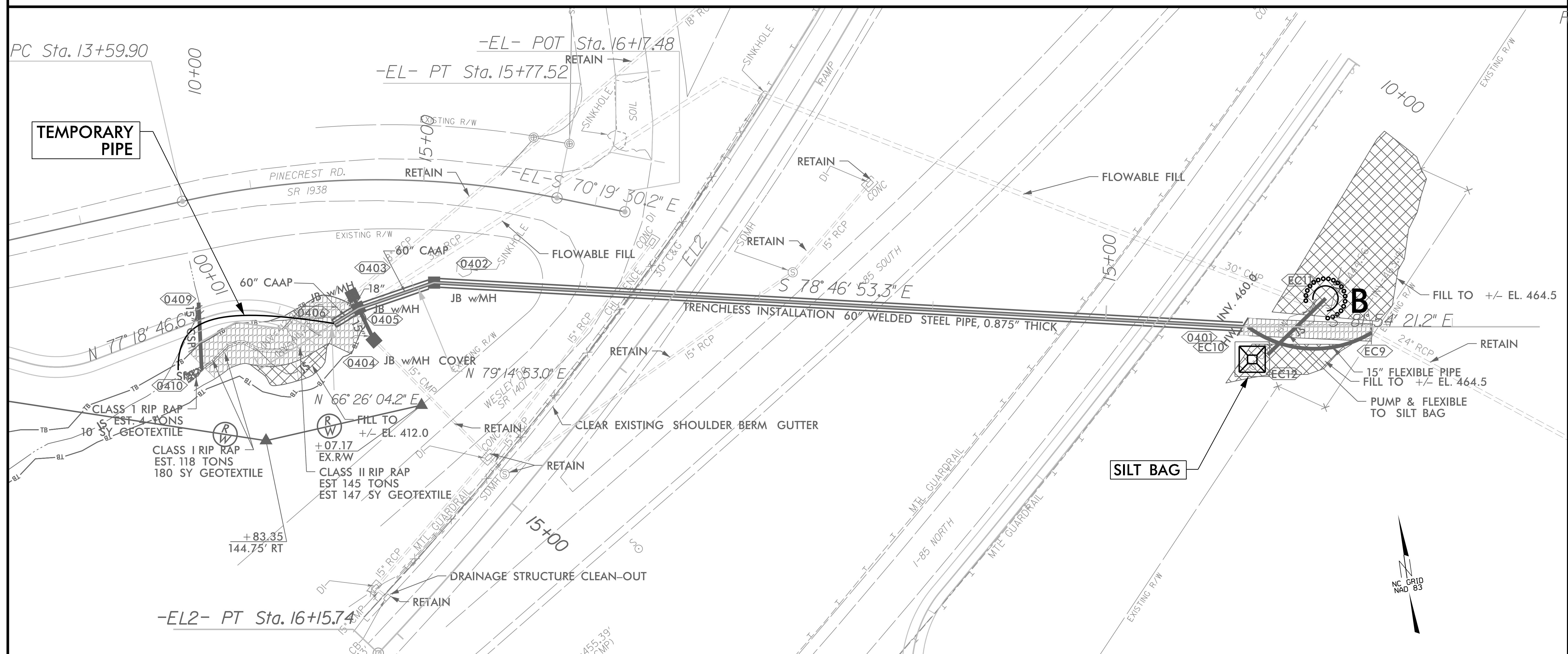


1. DEWATER DOWNSTREAM WORK SITE USING SPECIAL STILLING BASIN\ SILT BAG.
2. INSTALL 60" PIPE VIA TRENCHLESS INSTALL. INSTALL PERMANENT DRAINAGE DOWNSTREAM.
3. INSTALL RIPRAP AT OUTLET OF 60". COMPLETE AS MUCH CHANNEL REESTABLISHMENT AS POSSIBLE.

PROJECT REFERENCE NO.		SHEET NO.	
51214.01AK		EC-4C	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

PIPE REPLACEMENT CONSTRUCTION SEQUENCE

PHASE 3

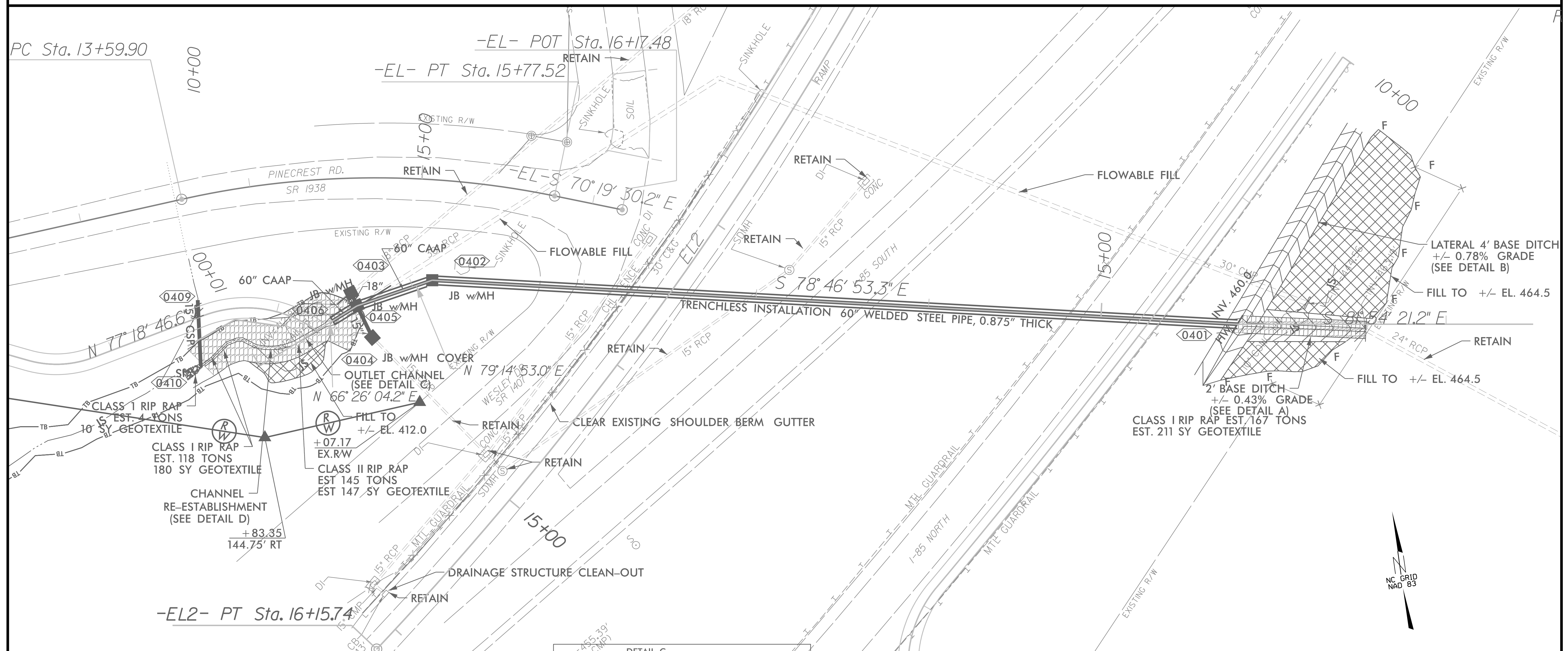


1. CONSTRUCT A SHORT SECTION OF INLET DITCH AT 60". INSTALL SILT BAG AND TEMPORARY PUMP AROUND AT INLET OF 60", AND PROVIDE TEMPORARY PUMP AROUND AT OUTLET OF 60".
2. REMOVE TEMPORARY 18" PIPE.
3. INSTALL FLEXIBLE HOSE FROM 24" RCP TO INLET OF 60".
4. COMPLETE CHANNEL RE-ESTABLISHMENT. REMOVE IMPERVIOUS DIKE DOWNSTREAM, REMOVE PUMP AROUND AND RE-ESTABLISH NORMAL STREAM FLOW FROM 60" PIPE OUTLET.

PROJECT REFERENCE NO.		SHEET NO.	
51214.01AK		EC-4D	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

PIPE REPLACEMENT CONSTRUCTION SEQUENCE

PHASE 4

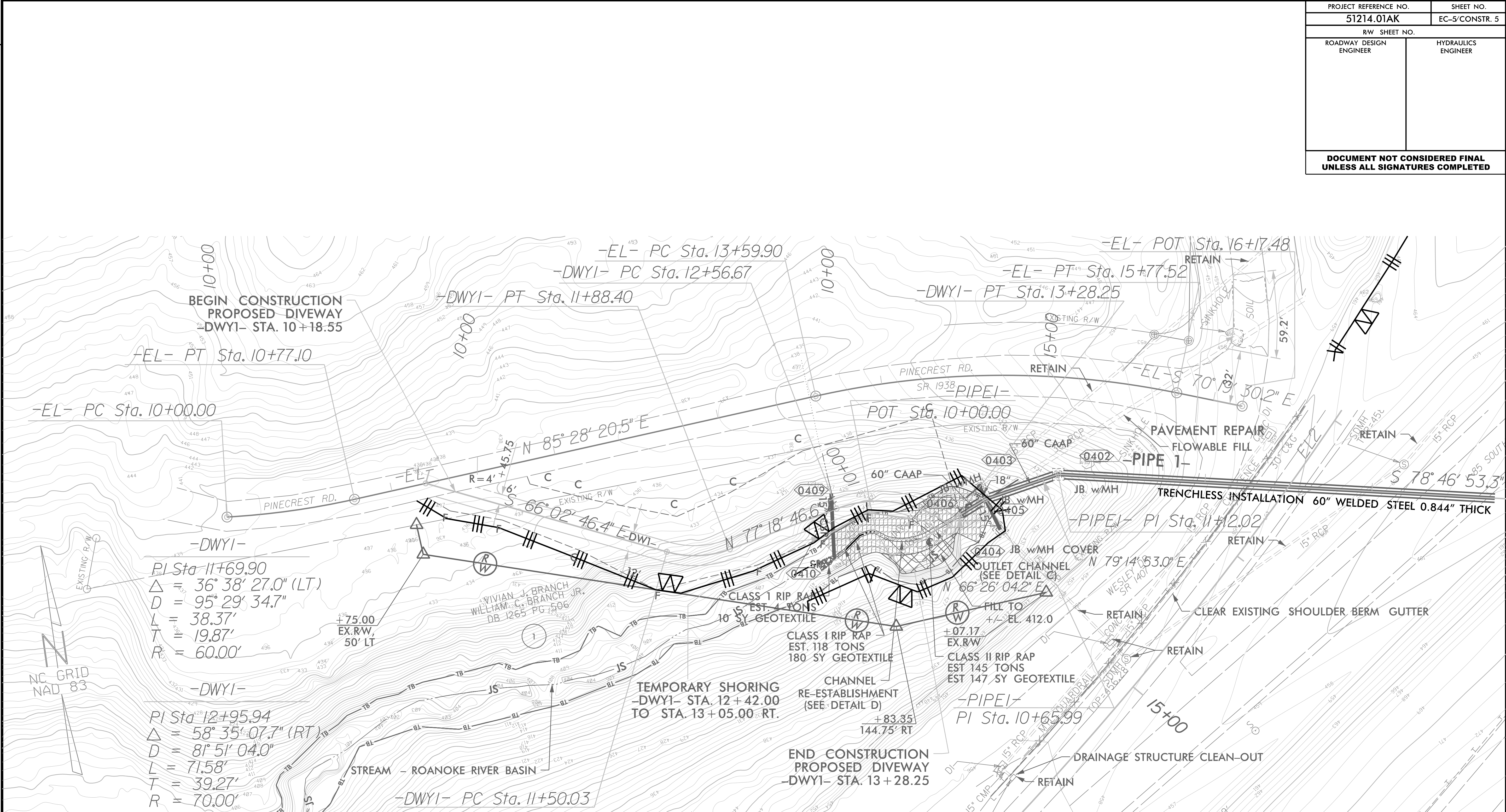


1. INSTALL PROPOSED UPSTREAM BASE DITCH.
2. REMOVE PUMP AND HOSES, SILT BAG, ANY OTHER TEMPORARY DRAINAGE AND EROSION CONTROL MEASURES.
3. REMOVE IMPERVIOUS DIKES.

8/17/99

REVISIONS

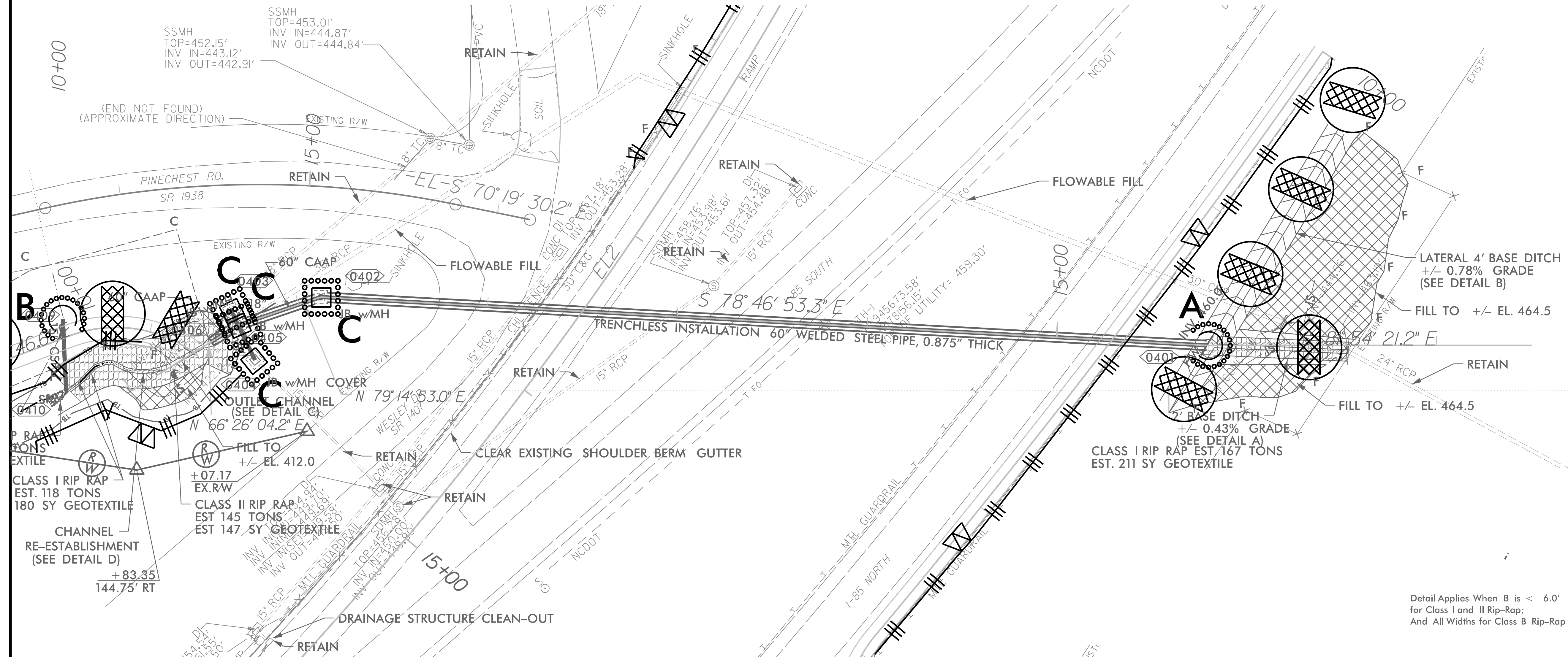
PROJECT REFERENCE NO.	SHEET NO.
51214.01AK	EC-5/CONSTR. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



CLEARING AND GRUBBING EROSION CONTROL FOR
PLAN SHEET 5

5/2/2023 85_VANCE.ec_cg.psh5.dgn
11:58:10

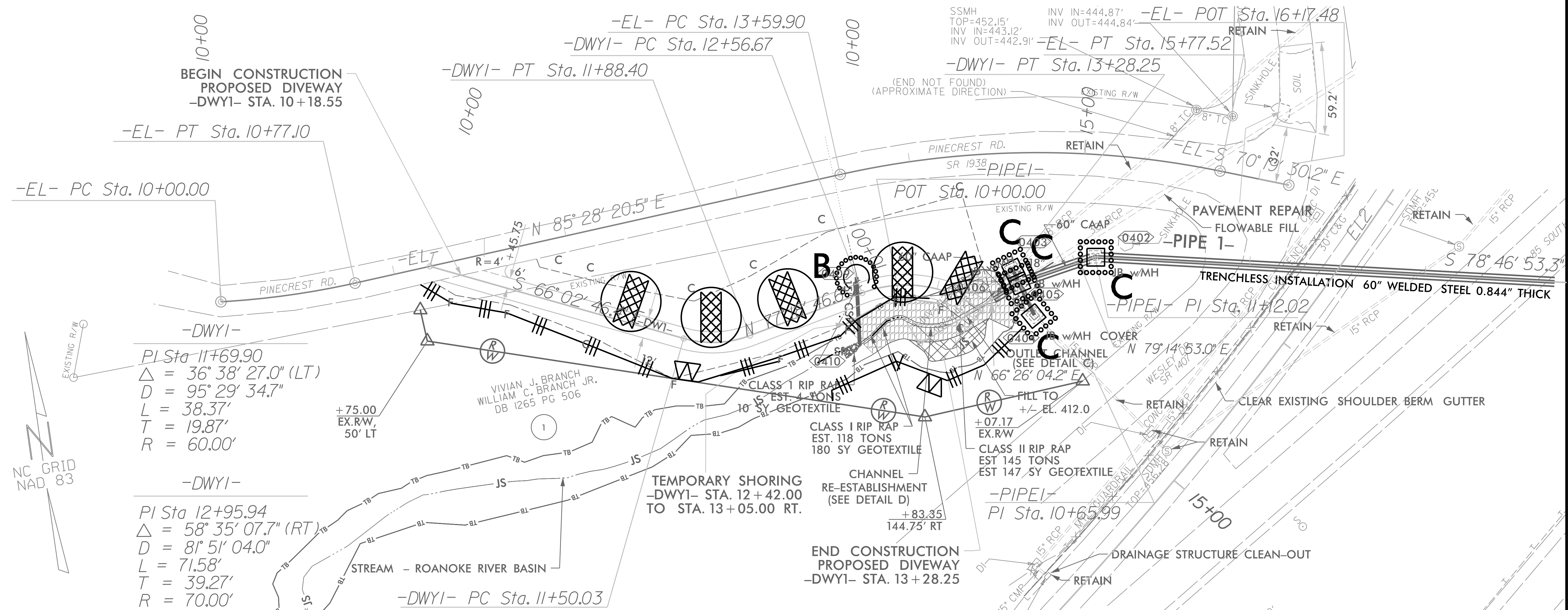
PROJECT REFERENCE NO.	SHEET NO.
51214.01AK	EC-7/CONSTR. 4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



For Slopes Excavated Greater Than 10 feet
Install Matting for Erosion Control on
Entire Slope as Work Allows.

Detail Applies When B is $< 6.0'$
for Class I and II Rip-Rap;
And All Widths for Class B Rip-Rap

PROJECT REFERENCE NO.	SHEET NO.
51214.01AK	EC-8/CONSTR. 5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



For Slopes Excavated Greater Than 10 feet
Install Matting for Erosion Control on
Entire Slope as Work Allows.

8/17/99

REVISIONS

5/2/2023
....\Y-85-VANCE-ec-final-psh8.dgn
USER:Kestep

8/17/99

-EL2- PC Sta. 10+00.00

-EL 2-

PI Sta 13+10.37
 $\Delta = 17^\circ 47' 59.8''$
 $D = 2^\circ 53' 27.0''$
 $L = 615.74'$
 $T = 310.37'$
 $R = 1,981.99'$

For Slopes Excavated Greater Than 10 feet
Install Matting for Erosion Control on
Entire Slope as Work Allows.

-DWY2-

-DWY2-

PI Sta 15+33.28
 $\Delta = 128^\circ 48' 29.9''$ (LT)
 $D = 81^\circ 51' 04.0''$
 $L = 157.37'$
 $T = 146.13'$
 $R = 70.00'$

PI Sta 11+93.70
 $\Delta = 5^\circ 04' 29.4''$ (RT)
 $D = 1^\circ 18' 38.9''$
 $L = 387.15'$
 $T = 193.70'$
 $R = 4,371.00'$

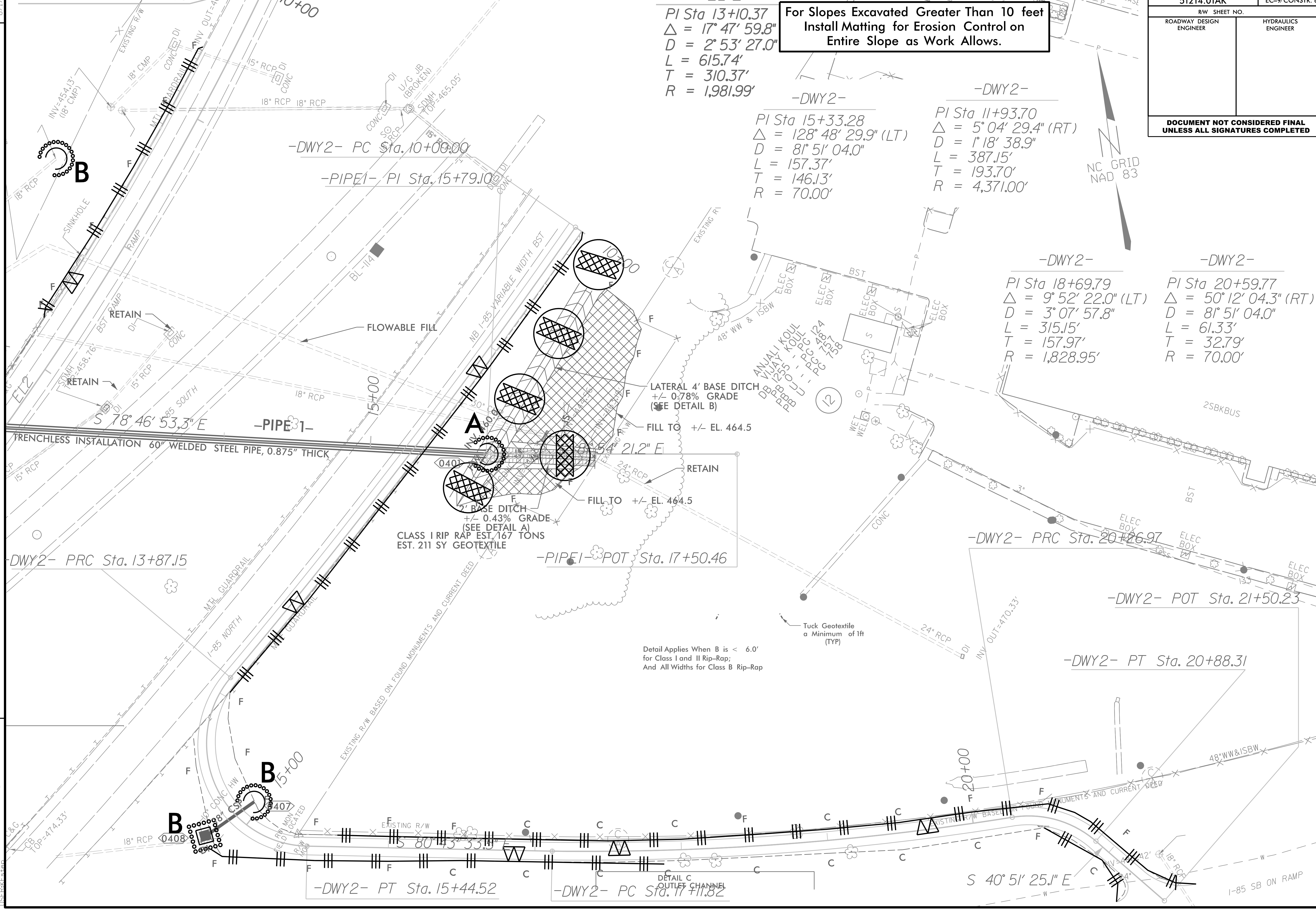
-DWY2-

-DWY2-

PI Sta 18+69.79
 $\Delta = 9^\circ 52' 22.0''$ (LT)
 $D = 3^\circ 07' 57.8''$
 $L = 315.15'$
 $T = 157.97'$
 $R = 1,828.95'$

PI Sta 20+59.77
 $\Delta = 50^\circ 12' 04.3''$ (RT)
 $D = 81^\circ 51' 04.0''$
 $L = 61.33'$
 $T = 32.79'$
 $R = 70.00'$

NC GRID
NAD 83



Detail Applies When B is < 6.0'
for Class I and II Rip-Rap;
And All Widths for Class B Rip-Rap

Tuck Geotextile
a Minimum of 1ft
(TYP)

DETAIL C
OUTLET CHANNEL

REVISIONS

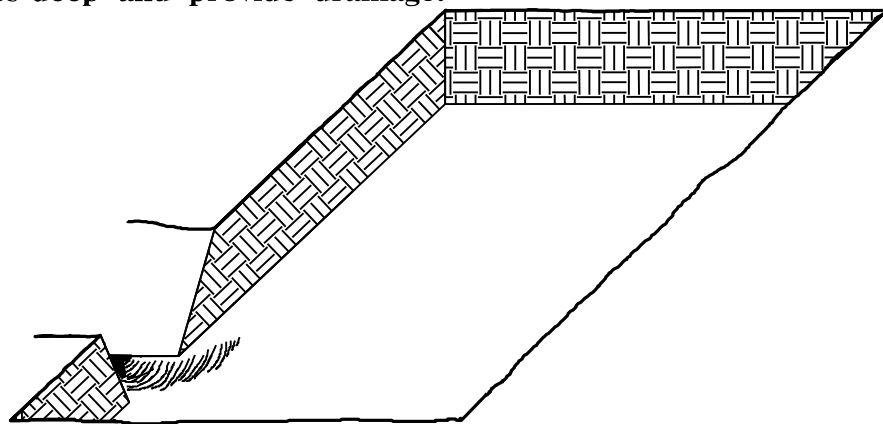
PROJECT REFERENCE NO.		SHEET NO.	
51214.01AK		EC-9/CONSTR. 6	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

5/2/2023
VANCE.ec.f.inol.psh9.dgn
11:56:04

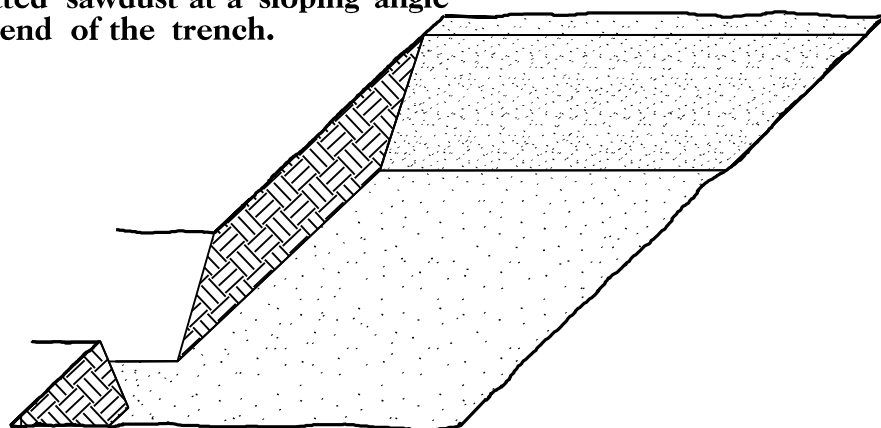
PLANTING DETAILS
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

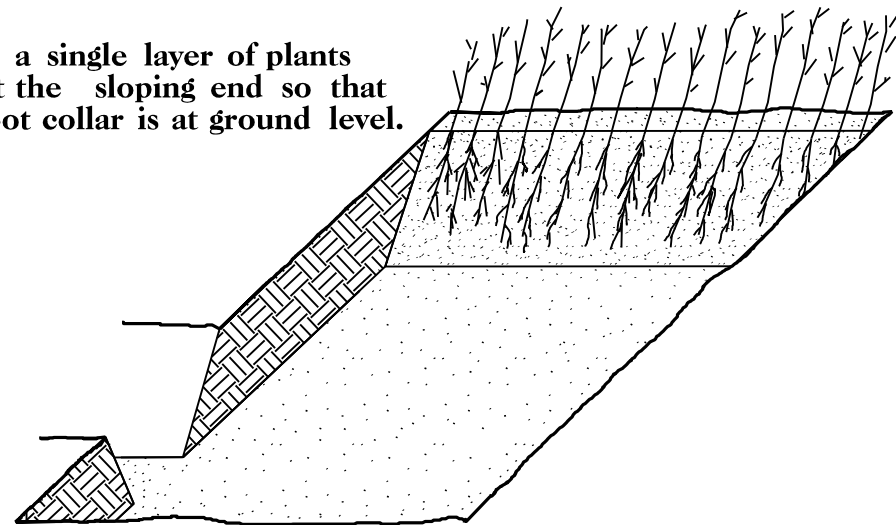
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



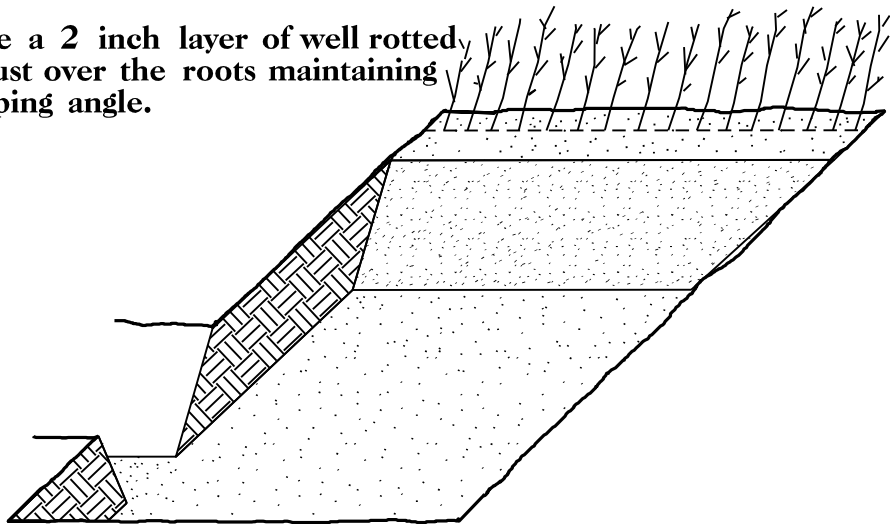
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

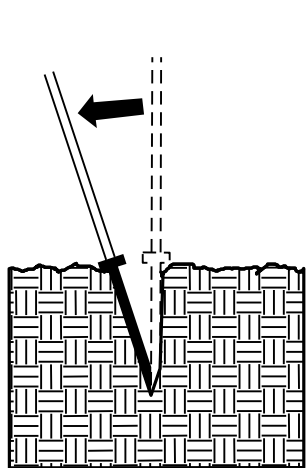


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

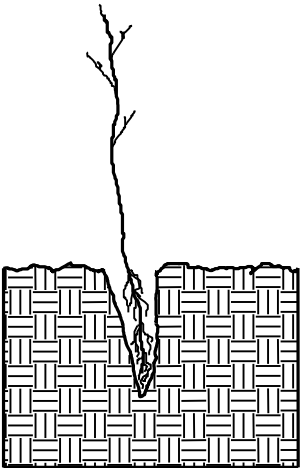


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

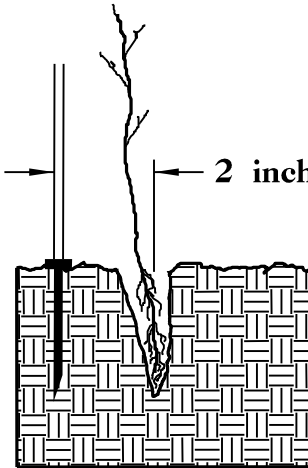
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



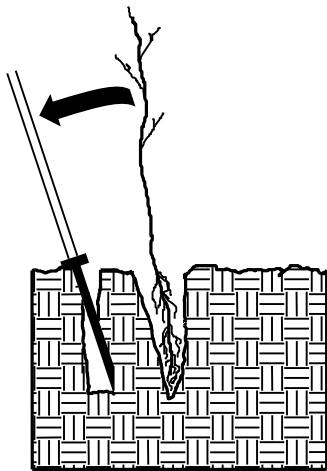
1. Insert planting bar as shown and pull handle toward planter.



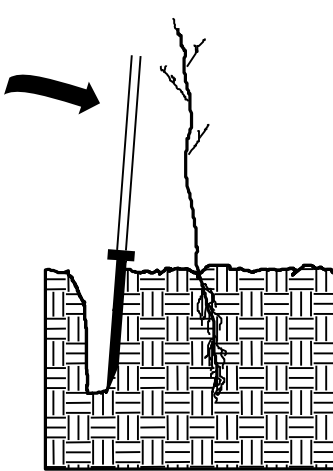
2. Remove planting bar and place seedling at correct depth.



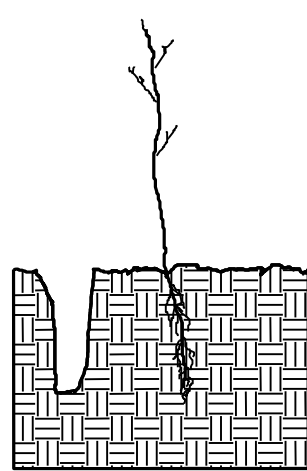
3. Insert planting bar 2 inches toward planter from seedling.



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



5. Push handle forward firming soil at top.



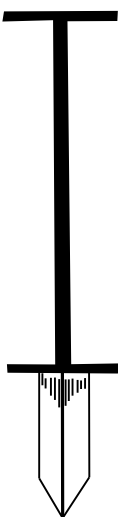
6. Leave compaction hole open. Water thoroughly.

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:

34%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
33%	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in - 18 in BR
33%	BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

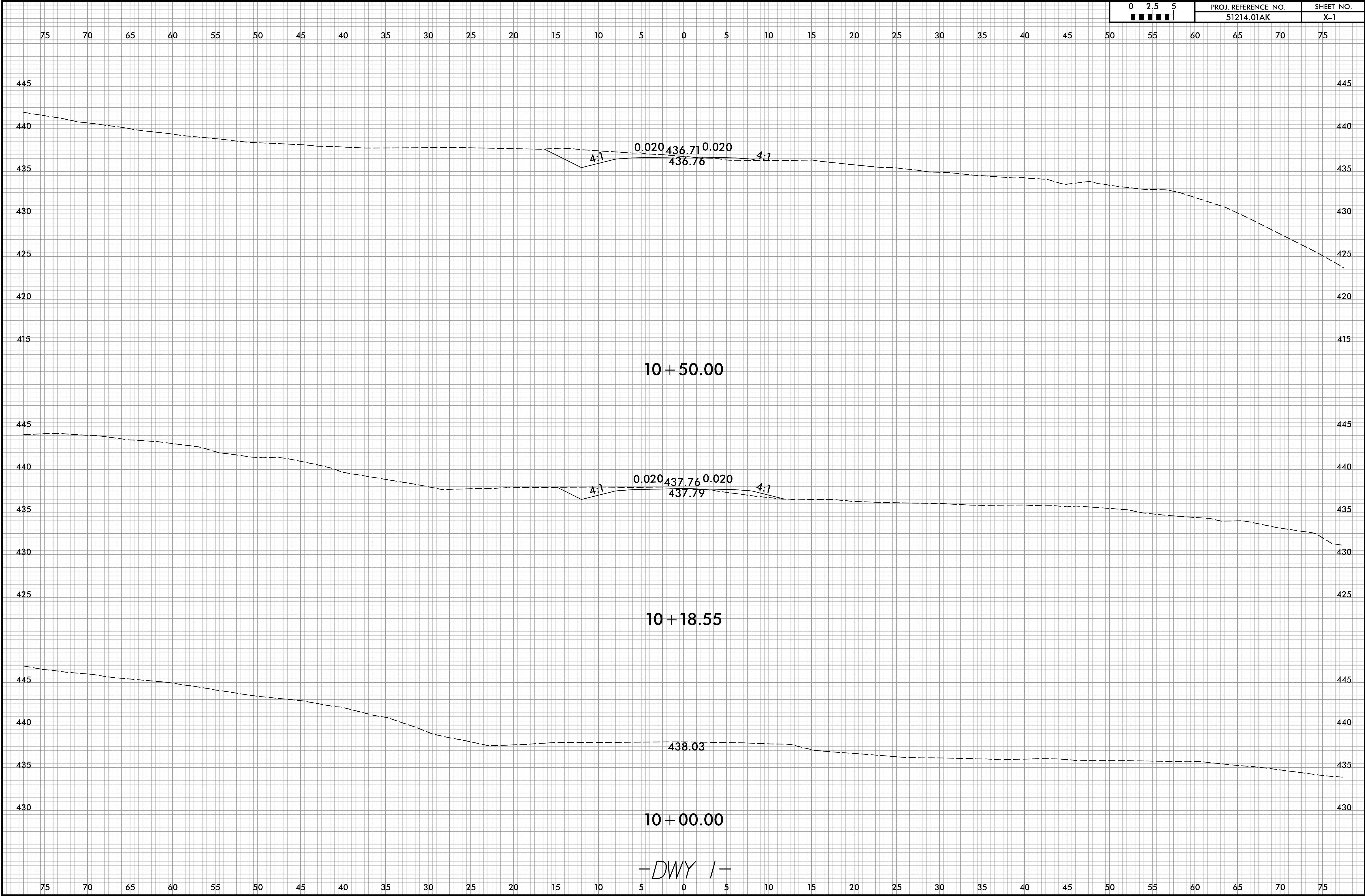
REFORESTATION DETAIL SHEET

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

8/23/99



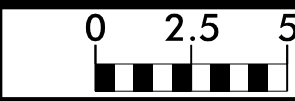
PROJ. REFERENCE NO.	SHEET NO.
51214.01AK	X-1



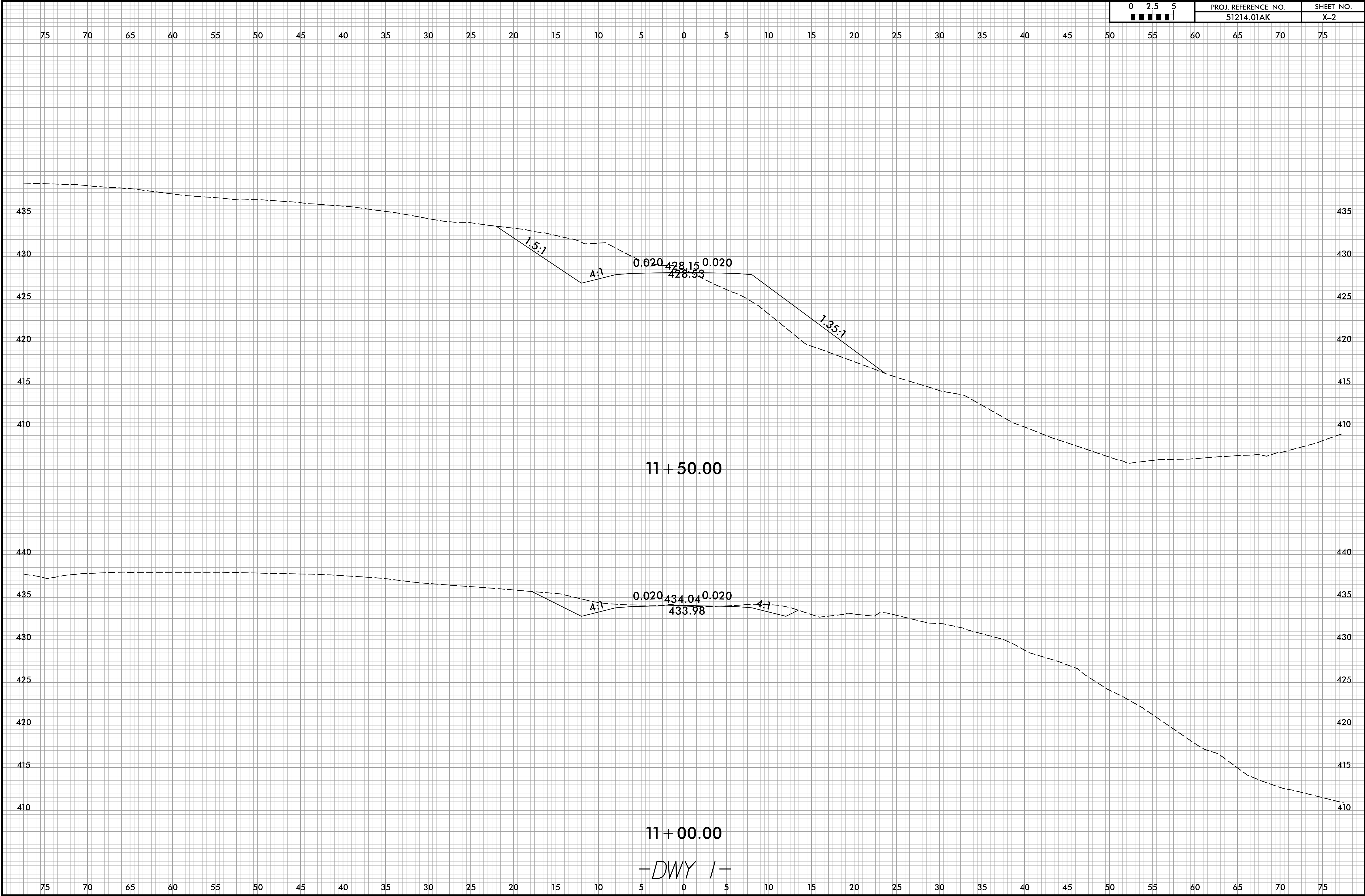
5/2/2023
13:00:00
DWY / -
13:00:00
DWY / -

8/23/99

5/2/2023
115-DWY-100X-XPL.dgn
115-DWY-100X-XPL.dgn

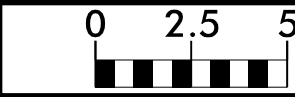


PROJ. REFERENCE NO.	SHEET NO.
51214.01AK	X-2

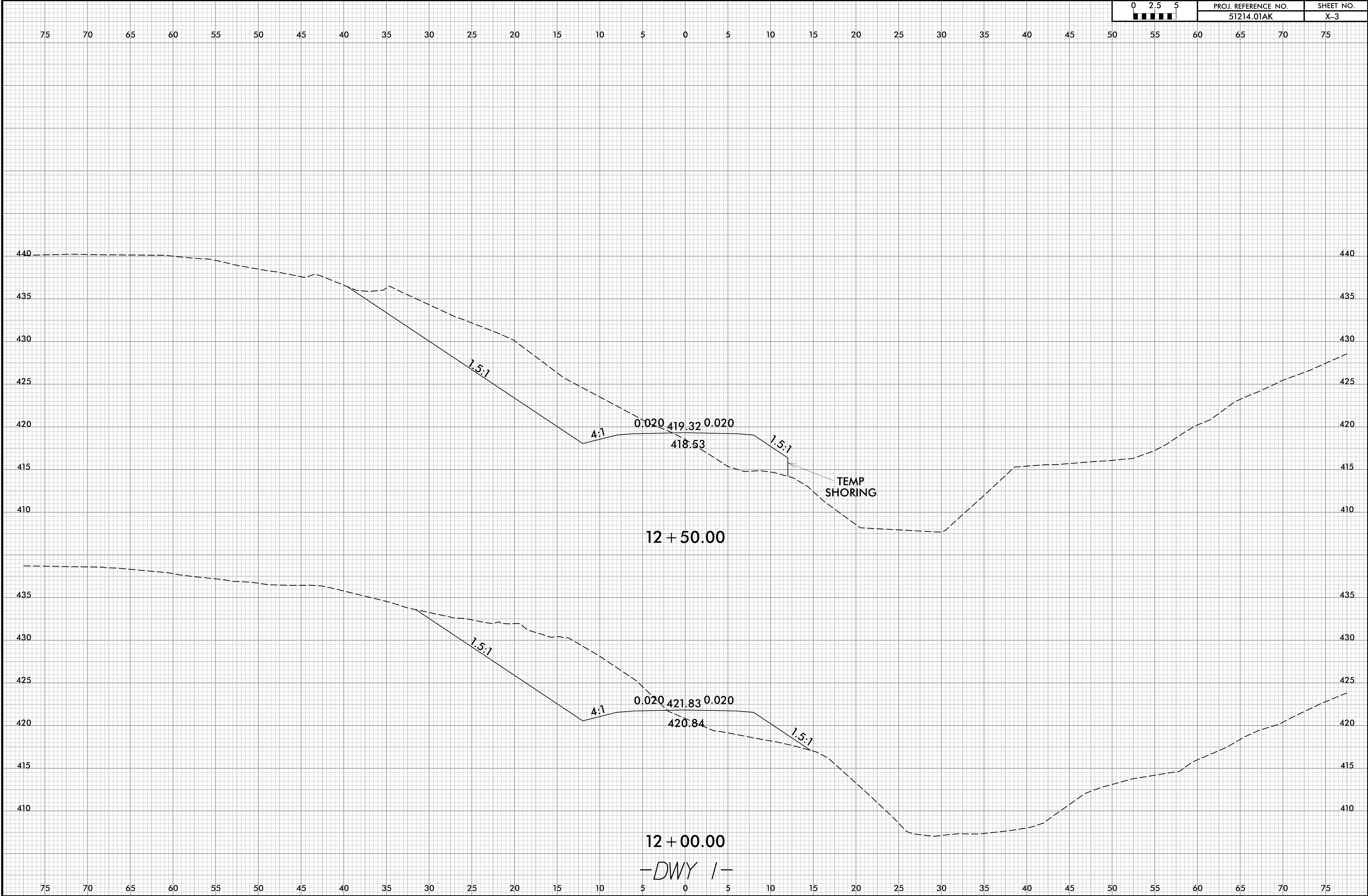


8/23/99

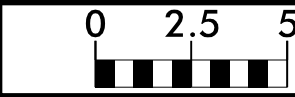
5/2/2023
11:51 AM
J:\DWG\XPL.dgn



PROJ. REFERENCE NO.	SHEET NO.
51214.01AK	X-3

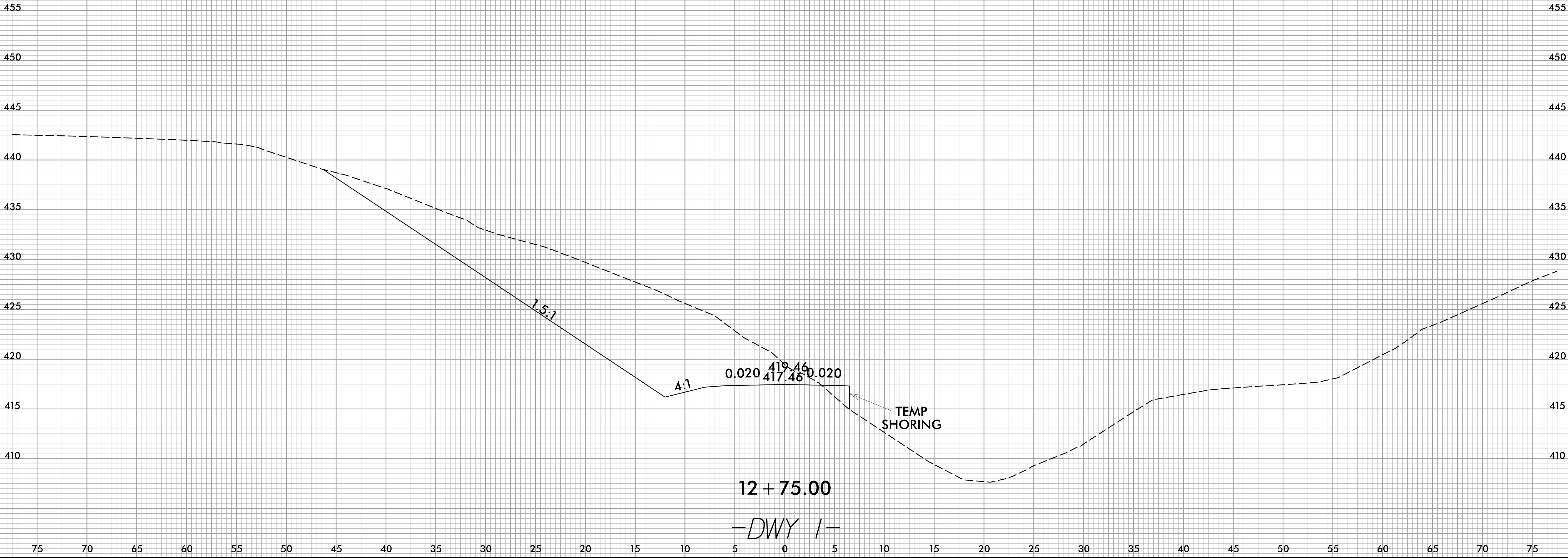


8/23/99



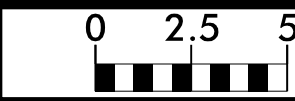
PROJ. REFERENCE NO.	SHEET NO.
51214.01AK	X-4

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



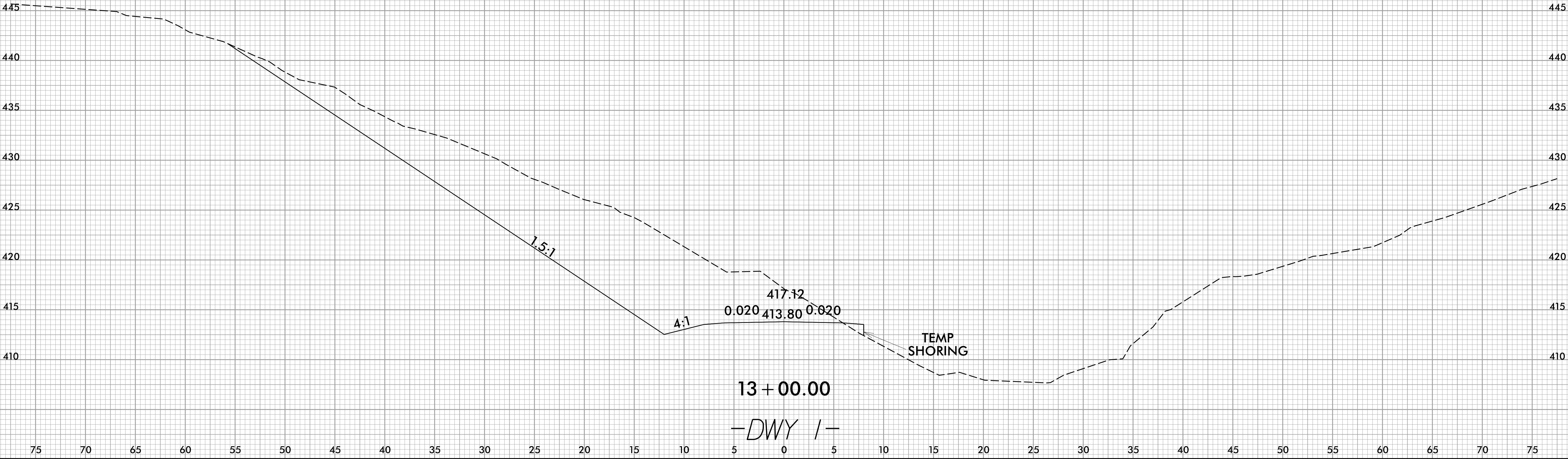
5/2/2023
11:51 AM
J:\DWY\DWY_XPL.dgn

8/23/99

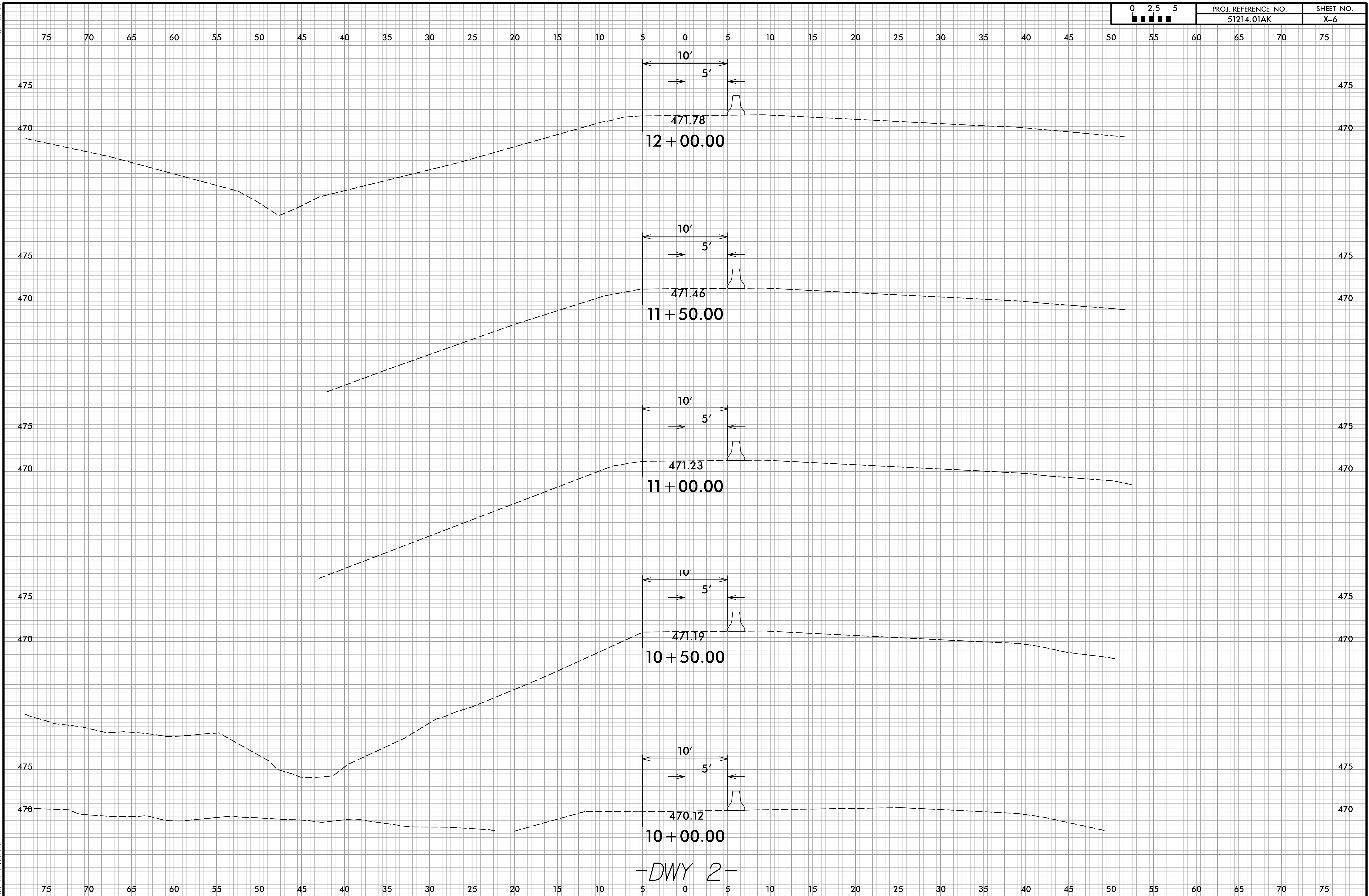


PROJ. REFERENCE NO.	SHEET NO.
51214.01AK	X-5

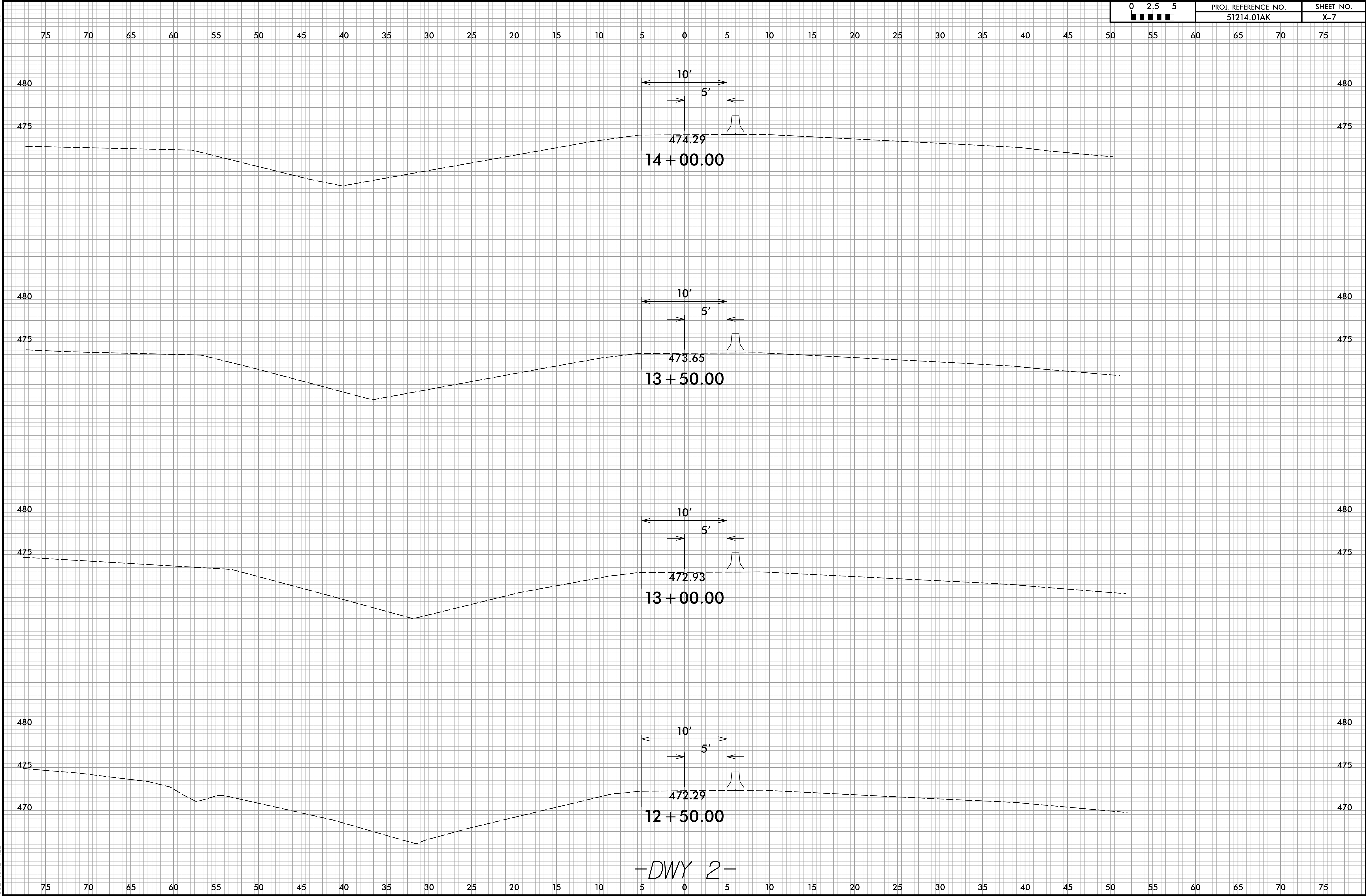
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

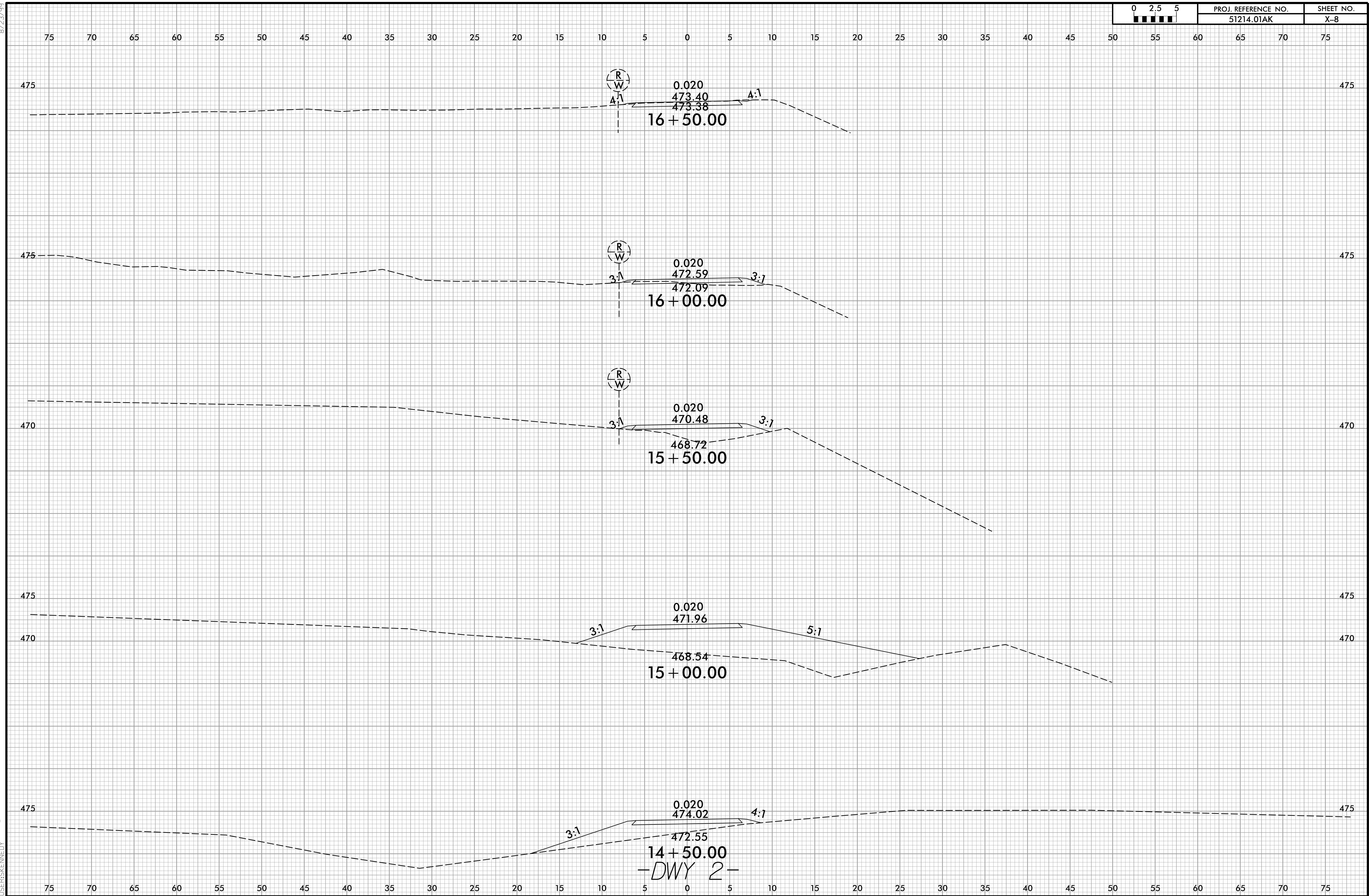


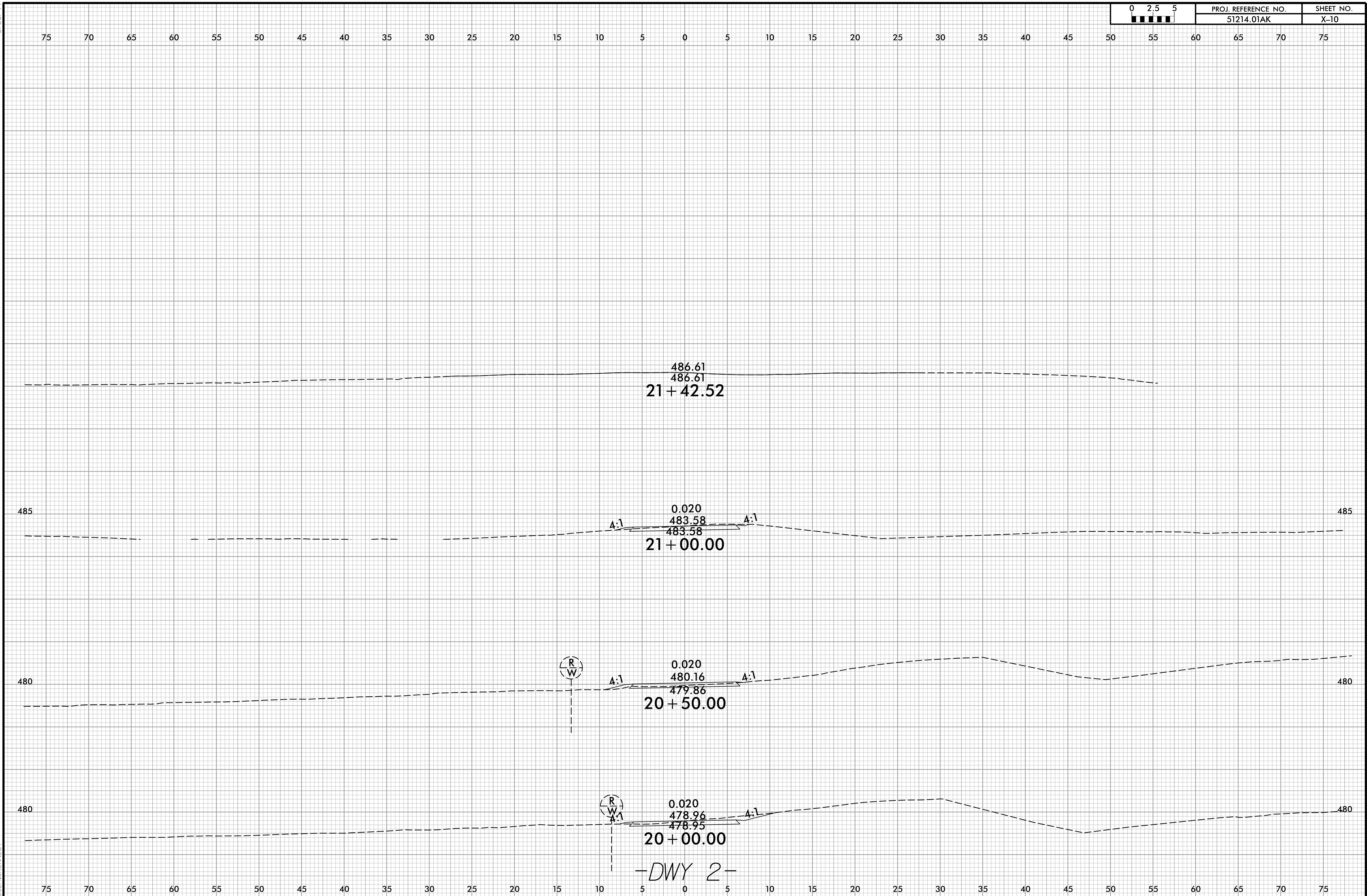
5/2/2023
13:00:00
DWY
13:00:00
DWY
13:00:00
DWY



8/23/99

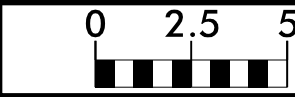




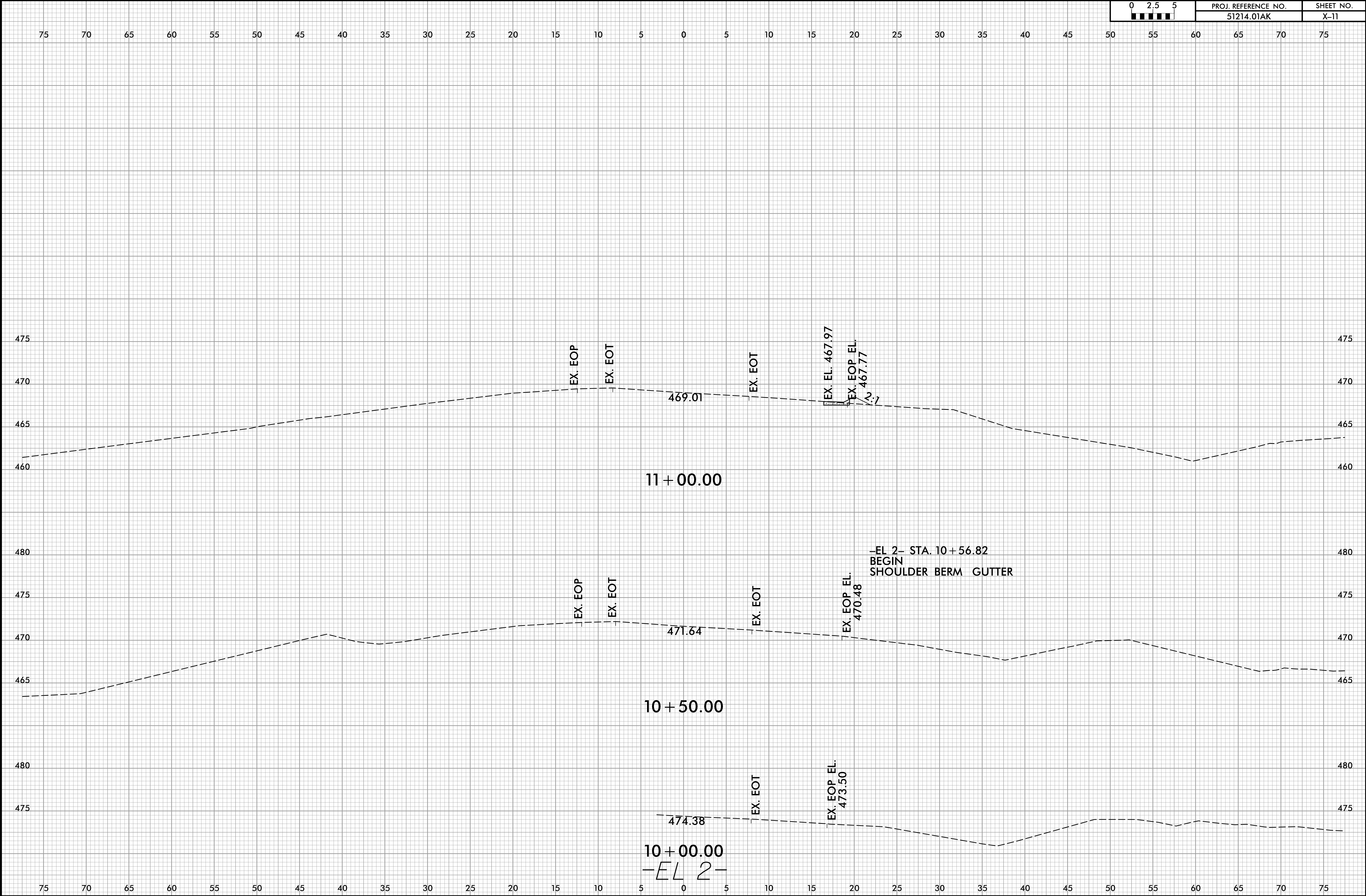


8/23/99

4/24/2023
13:55:29
R:\Projects\2023\13-55-29\13-55-29.dgn

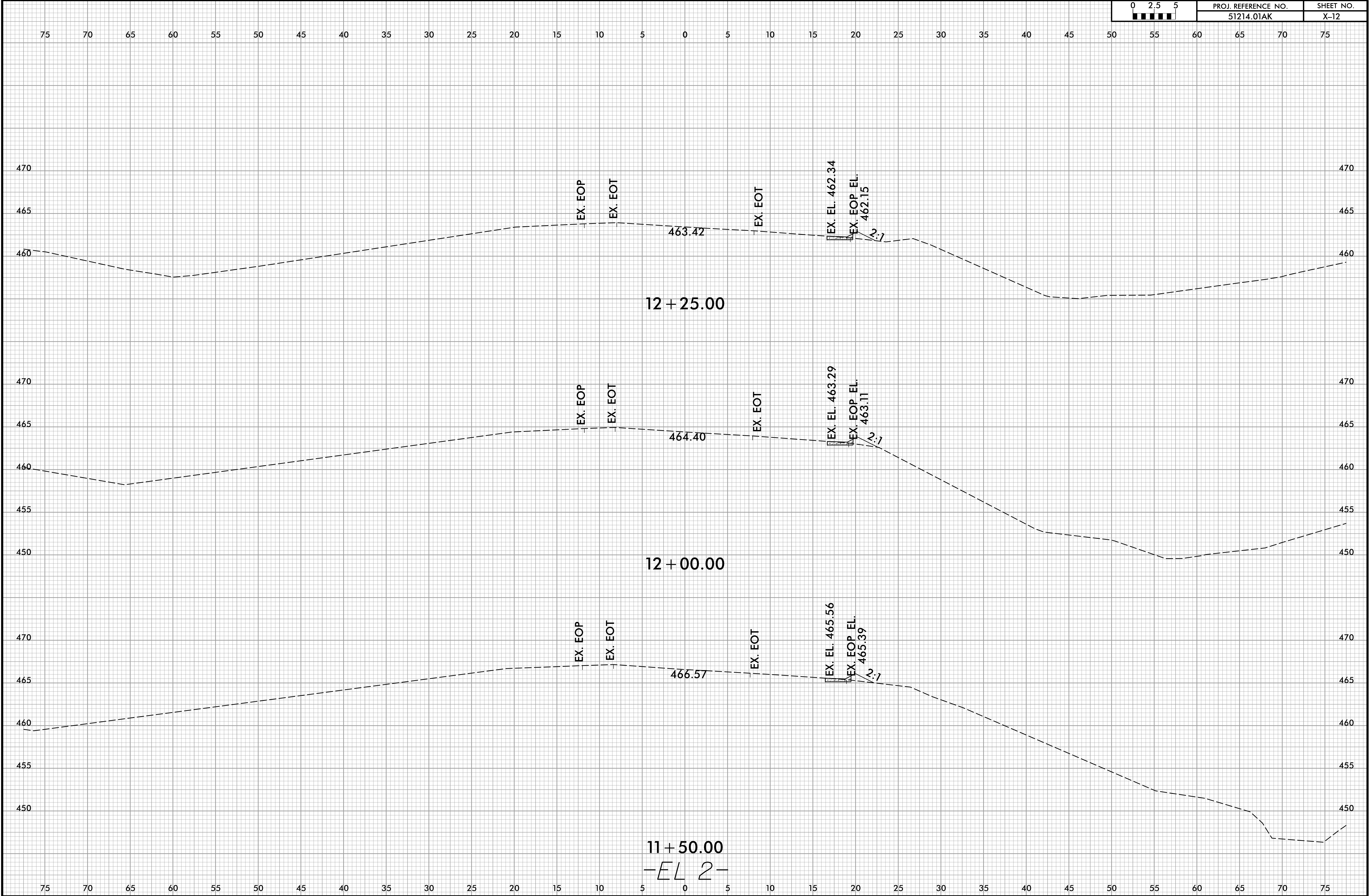


PROJ. REFERENCE NO.	SHEET NO.
51214.01AK	X-11



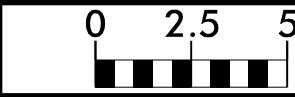
8/23/99

4/24/2023
13:58:29
R:\Projects\115\115-0000\115-0000.dgn



8/23/99

4/24/2023
R:\PROJECTS\13-00-00\13-00-00.dgn
JES:KENDY



PROJ. REFERENCE NO.	SHEET NO.
51214.01AK	X-13

