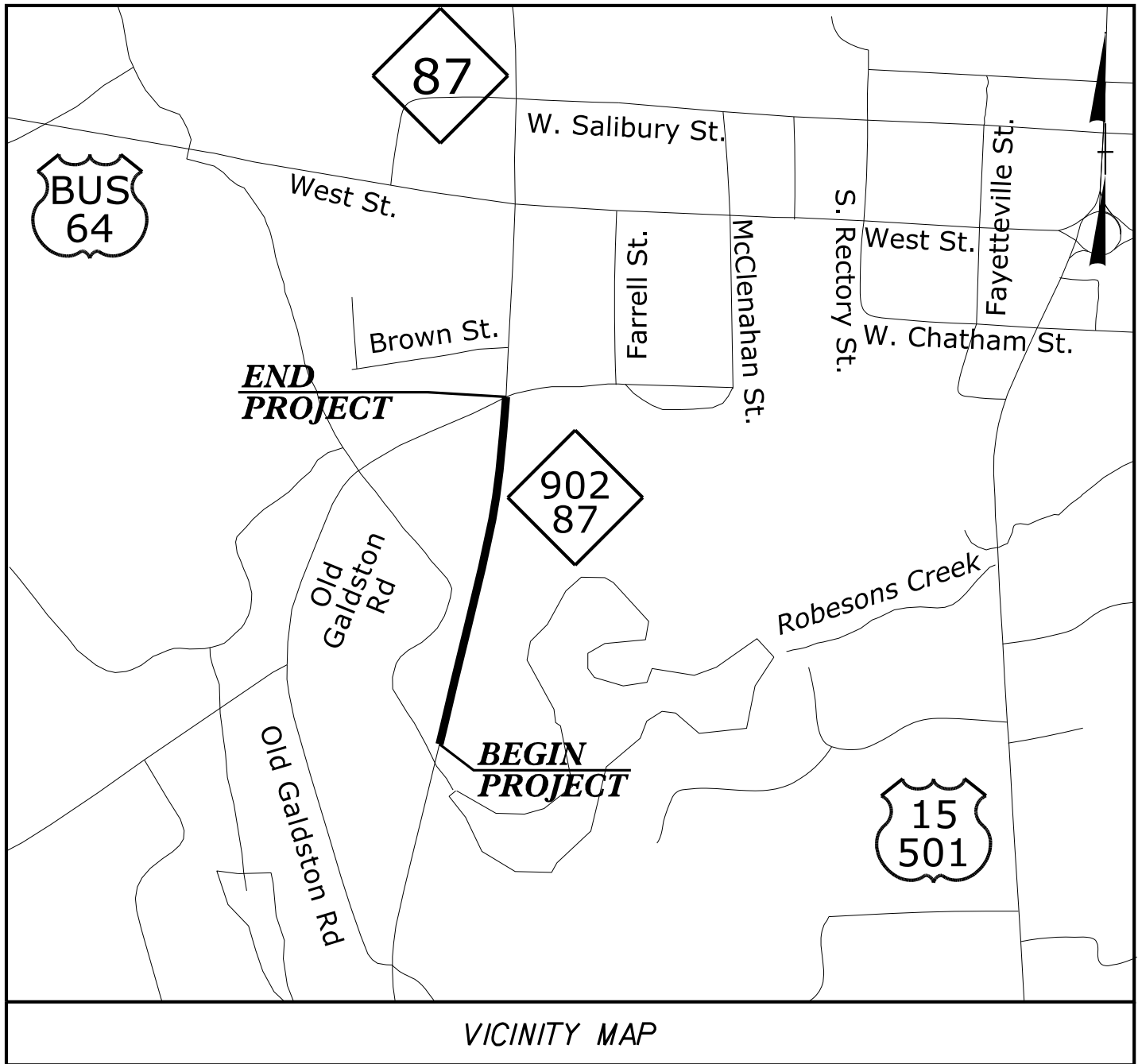


7/8/2026

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TIP PROJECT: BN-0012



VICINITY MAP
PROJECT LOCATION:
PITTSBORO, CHATHAM COUNTY, NC

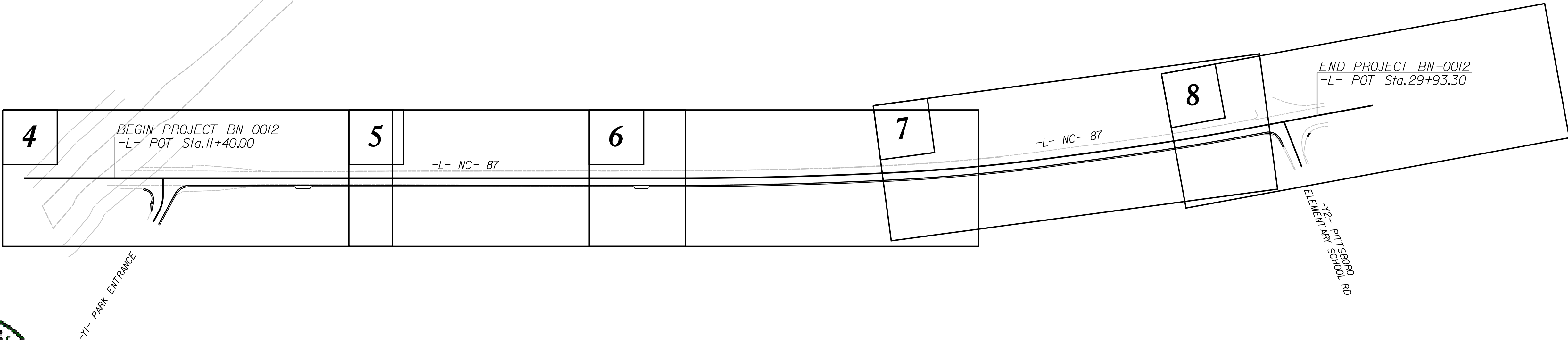
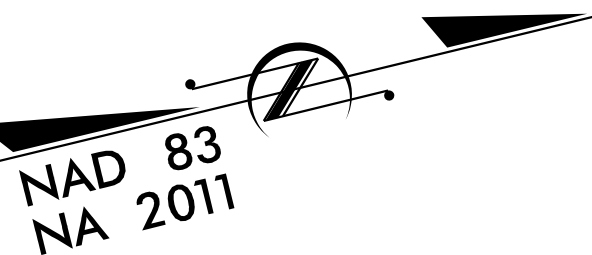
NTS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CHATHAM COUNTY

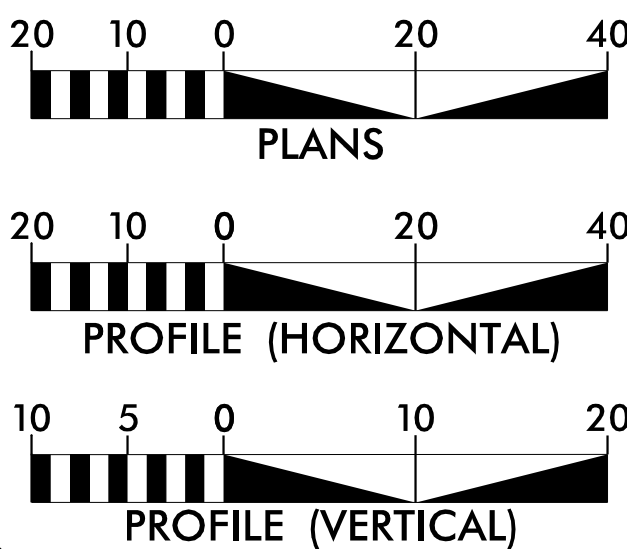
LOCATION: NC-87/NC-902 FROM TOWN LAKE PARK ENTRANCE TO
PITTSBORO ELEMENTARY SCHOOL ROAD (SR 1967)

TYPE OF WORK: GRADING, SIDEWALK, DRAINAGE



TOWN LAKE PARK ENTRANCE

GRAPHIC SCALES



DESIGN DATA

AADT 2023 = 7700
V = 35/40 MPH
FUNCTIONAL
CLASSIFICATION: RURAL
MAJOR COLLECTOR

PROJECT LENGTH

TOTAL LENGTH TIP PROJECT BN-0012 = 0.351 MILES

PLANS PREPARED FOR
THE TOWN OF PITTSBORO
BY:



2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:
07/08/2026

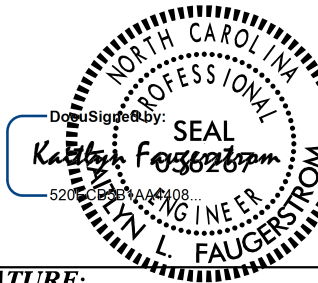
CALEB LOWMAN, P.E.
PROJECT ENGINEER

JESSE PARKER, E.I.
PROJECT DESIGN ENGINEER

JONATHAN FRANKLIN
PITTSBORO TOWN MANAGER

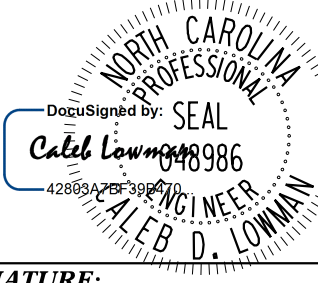
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

HYDRAULICS ENGINEER

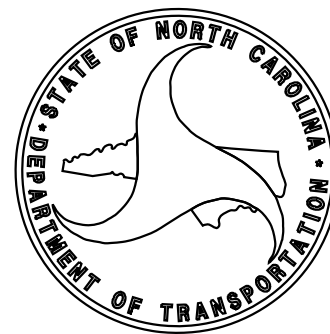


SIGNATURE:

ROADWAY DESIGN ENGINEER



SIGNATURE:



9/10/23

K:\RAL_Roadway\013859004 - BW-0012\Roadway\Proj\BW-0012_rdy_tshdgn

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	
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	

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	



-L- STA 11+40.00 TO STA 11+95.00



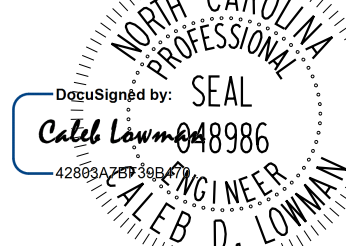
-1- STA 11+95.00 TO STA 29+93.30



-1- STA 20+65.00 TO STA 21+25.00



-YI- STA 10+24.50 TO STA 10+70.18

Kimley » Horn © 2025 421 FAYETTEVILLE STREET, SUITE 600 RALEIGH, NC 27601	PROJECT REFERENCE NO. <i>BN-0012</i>	SHEET NO. <i>2A-1</i>
	ROADWAY DESIGN ENGINEER	
	 7/8/2026	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

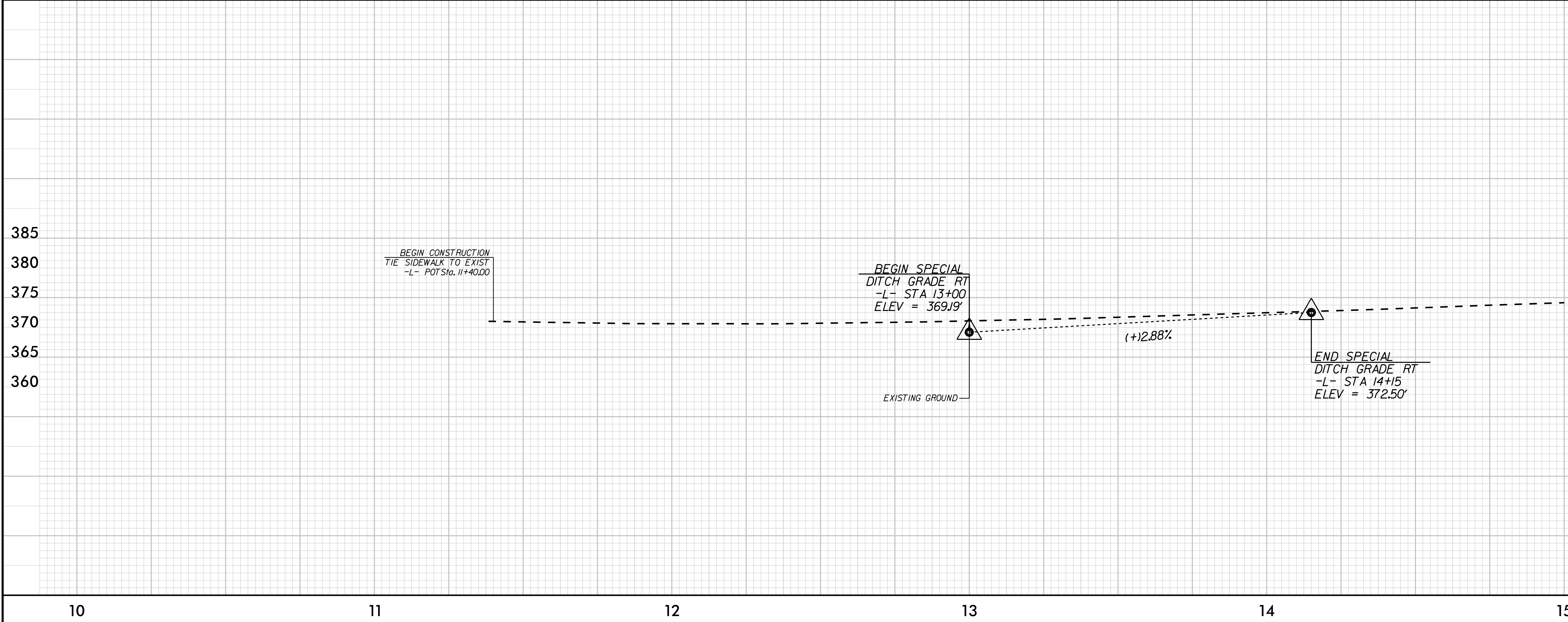
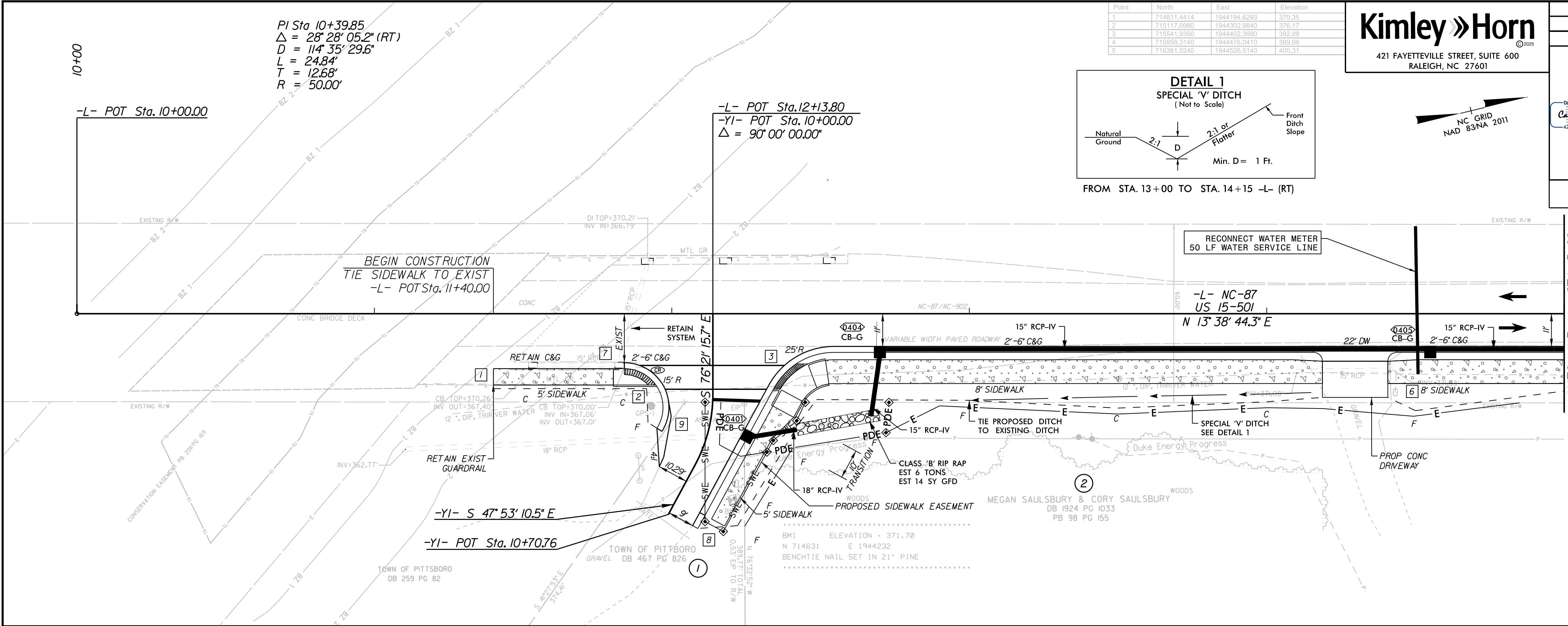
PAVEMENT SCHEDULE	
C1	PROPOSED APPROX 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROPOSED APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
D1	PROPOSED APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROPOSED APPROX. 5" ASPHALT CONCRETE BASE COURSE TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
R1	PROPOSED 2'-6" CONCRETE CURB & GUTTER
S	PROPOSED 4" CONCRETE SIDEWALK
T	EARTH MATERIAL
VI	MILLING ASPHALT PAVEMENT, 1.5" DEPTH
U	EXISTING PAVEMENT

NOTES:

- 1.REFER TO PLAN SHEETS FOR VARIABLE WIDTHS.
- 2.REFER TO PLAN SHEETS FOR GUARDRAIL LOCATIONS.
- 3.SAWCUT AND REMOVE EXIST ASPHALT PAVEMENT TO PROVIDE 2' MINIMUM WIDTH
- 4.MILL EXISTING ASPHALT PAVEMENT TO A DEPTH THAT ALLOWS THE MINIMUM SURFACE COURSE DEPTH.
- 5.PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE INDICATED.
- 6.PROVIDE MATTING FOR SOIL STABILIZATION WHEN SLOPES ARE 2:1.

7/8/2026

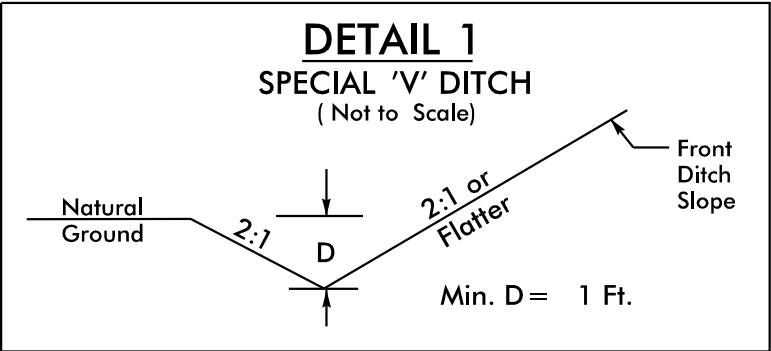
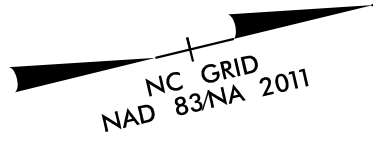
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Point	North	East	Elevation
1	714611.4414	1944194.6293	370.35
2	715117.0580	1944302.9840	375.17
3	715541.9360	1944402.3860	382.09
4	715958.3140	1944476.0410	389.06
5	716381.0240	1944526.5140	400.31

Kimley »Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601



FROM STA. 13+00 TO STA. 14+15 -L- (RT)

PROJECT REFERENCE NO. <i>BN-Q012</i>		SHEET NO. 4
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

- CONSTRUCTION NOTES
- 1 TIE PROPOSED SIDEWALK TO EXISTING SIDEWALK
 - 2 CONSTRUCT TYPE 1 CURB RAMP
 - 3 CONSTRUCT TYPE 1 MODIFIED CURB RAMP
 - 4 CONSTRUCT TYPE 1A CURB RAMP
 - 5 CONSTRUCT TYPE 3 MODIFIED CURB RAMP
 - 6 ADJUST UTILITY
 - 7 TIE PROPOSED CURB & GUTTER TO EXISTING CURB & GUTTER
 - 8 CURB & GUTTER END TREATMENT SEE SHEET 2
 - 9 CURB & GUTTER FLARE SEE SHEET 2

7/8/2026

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PROJECT REFERENCE NO.

BN-0012

SHEET NO.

5

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

7/8/2026

Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600

RALEIGH, NC 27601

NC GRID

NAD 83NA 2011

Seal 1

Seal 2

7/8/2026

7/8/2026

DOCUMENT NOT CONSIDERED FINAL

UNLESS ALL SIGNATURES COMPLETED

CONSTRUCTION NOTES

1

TIE PROPOSED SIDEWALK TO EXISTING SIDEWALK

2

CONSTRUCT TYPE 1 CURB RAMP

3

CONSTRUCT TYPE 1 MODIFIED CURB RAMP

4

CONSTRUCT TYPE 1A CURB RAMP

5

CONSTRUCT TYPE 3 MODIFIED CURB RAMP

6

ADJUST UTILITY

7

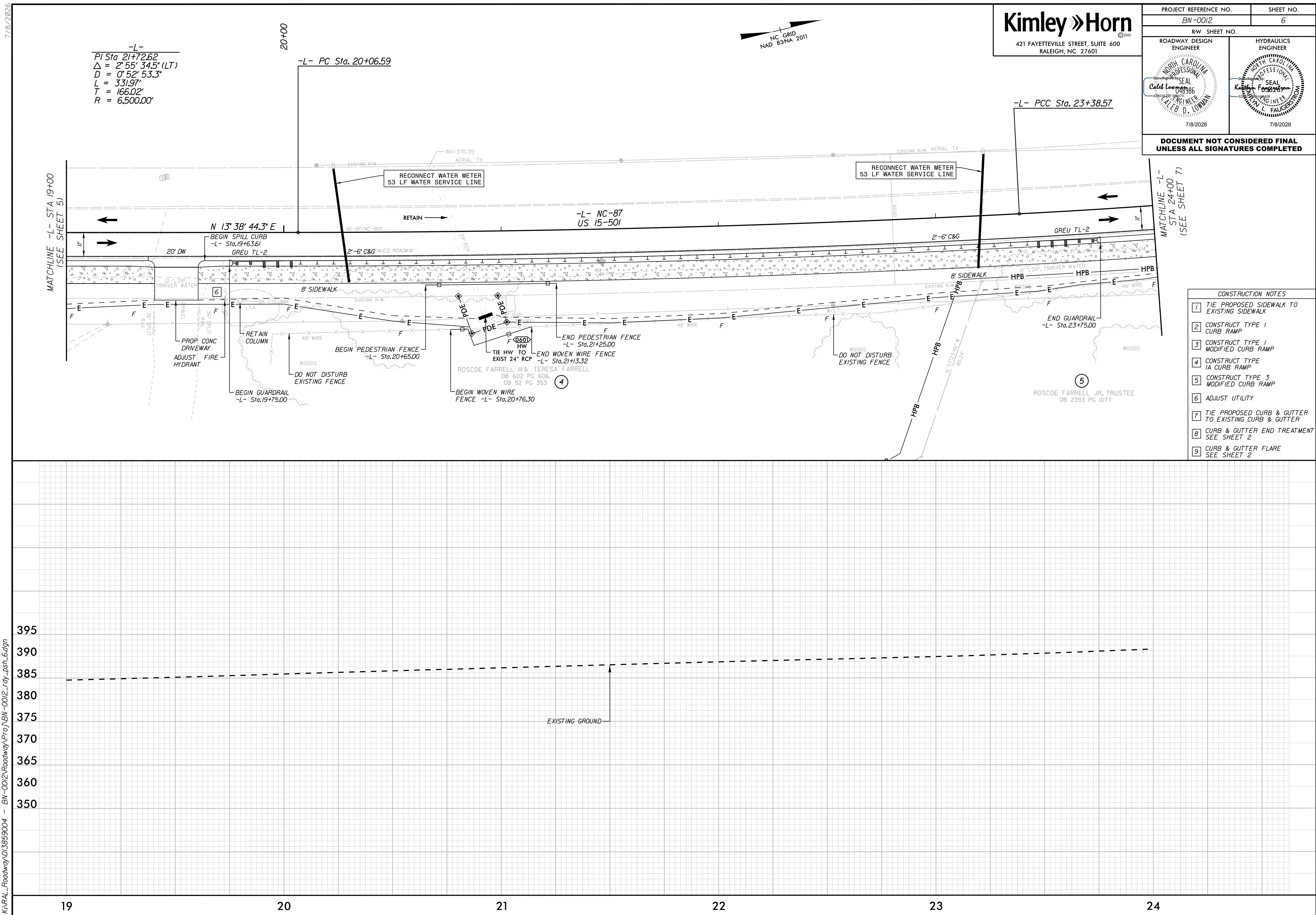
TIE PROPOSED CURB & GUTTER TO EXISTING CURB & GUTTER

8

CURB & GUTTER END TREATMENT SEE SHEET 2

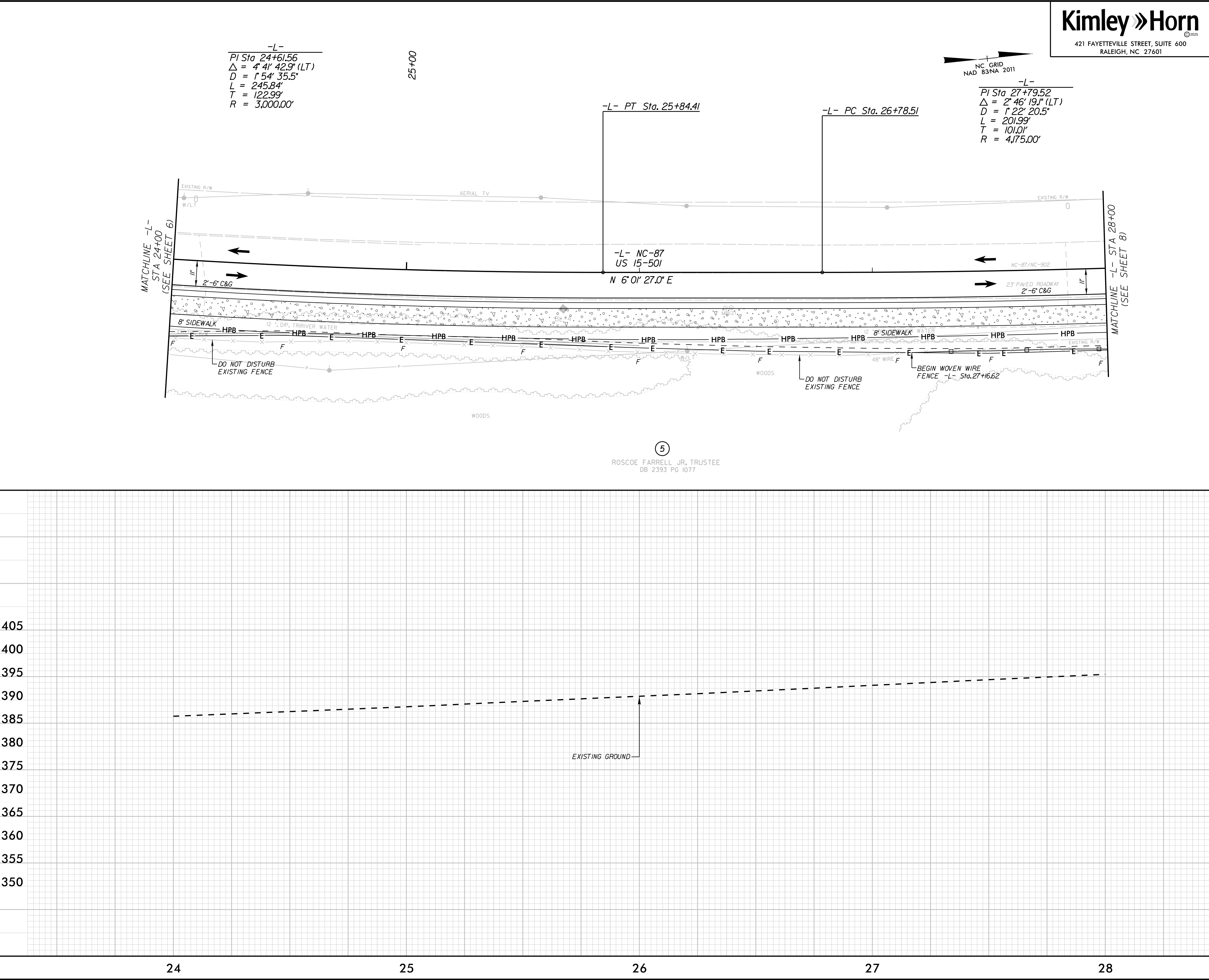
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CURB & GUTTER FLARE SEE SHEET 2



7/8/2026

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PROJECT REFERENCE NO.
BN-0012

SHEET NO.
7

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

7/8/2026

7/8/2026

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

Kimley » Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

Seal 1

Seal 2

Seal 1

Seal 2

1. TIE PROPOSED SIDEWALK TO EXISTING SIDEWALK

2. CONSTRUCT TYPE 1 CURB RAMP

3. CONSTRUCT TYPE 1 MODIFIED CURB RAMP

4. CONSTRUCT TYPE 1A CURB RAMP

5. CONSTRUCT TYPE 3 MODIFIED CURB RAMP

6. ADJUST UTILITY

7. TIE PROPOSED CURB & GUTTER TO EXISTING CURB & GUTTER

8. CURB & GUTTER END TREATMENT SEE SHEET 2

9. CURB & GUTTER FLARE SEE SHEET 2

7/8/2026

PROJECT REFERENCE NO.

BN-0012

SHEET NO.

8

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

Seal

Seal

Kimley » Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

NC GRID
NAD 83/NA 2011

7/8/2026

7/8/2026

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

30+00

-L- PT Sta. 28+80.49

-L- POT Sta. 29+45.72
-Y2- POT Sta. 10+00.00
 $\Delta = 79^{\circ}02'41.74"$

-L- POT Sta. 30+85.06

END CONSTRUCTION
TIE SIDEWALK TO EXIST
-L- POT Sta. 29+93.30

-L- NC-87
US 15-501
N 3°15'07.9" E

2'-6" C&G

23' PAVED ROADWAY

15' R

12.5' R

20' R

8' SIDEWALK

HPB

END WOVEN WIRE FENCE
-L- Sta. 28+13.33

DO NOT DISTURB
EXISTING FENCE

WOODS

48" WIRE

HPB

RETAIN POWER POLE

8" DIP, TRIRIVER WATER

12" DIP, TRIRIVER WATER
MTL FLUME COVER

CB TOP=399.86'
INV IN=397.20'
INV OUT=397.15'

CB TOP=398.86'
INV IN=396.30'
INV OUT=396.25'

12" DIP, TRIRIVER WATER

RETAIN SYSTEM

EXIST N 82°17'48.7" E

-Y2- SR 1967

END SPILL CURB
-L- Sta. 29+36.85

-Y2- POT Sta. 10+75.00

JANET FARRELL
DB 835 PG 92
PB 1PG 28

ROSCOE FARRELL JR, TRUSTEE
DB 2393 PG 1077

BM2 ELEVATION = 400.03
N 716329 E 1944570
BENCHTIE NAIL SET IN 12" CEDAR

MATCHLINE -L- STA 28+00
(SEE SHEET 7)

CONSTRUCTION NOTES

- 1 TIE PROPOSED SIDEWALK TO EXISTING SIDEWALK
- 2 CONSTRUCT TYPE 1 CURB RAMP
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- 4 CONSTRUCT TYPE 1A CURB RAMP
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- 9 CURB & GUTTER FLARE SEE SHEET 2

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415

410

405

400

395

390

385

EXISTING GROUND

END CONSTRUCTION
TIE SIDEWALK TO EXIST
-L- POT Sta. 29+93.30

28

29

30

TRAFFIC NOTES

ALL TRAFFIC CONTROL SHALL CONFORM TO THE LATEST MUTCD AND 2024 NCDOT STANDARDS

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: DAY AND TIME RESTRICTIONS

ROAD NAME		
	SCHOOL NOT IN SESSION	
-L- NC-87		MONDAY THRU FRIDAY
-Y1- PARK ENTRANCE		6:00AM TO 9:00AM
-Y2- PITTSBORO ELEMENTARY SCHOOL RD		AND
		4:00PM TO 7:00PM
	SCHOOL IN SESSION	
-L- NC-87		MONDAY THRU FRIDAY
-Y1- PARK ENTRANCE		6:00AM TO 9:00AM
-Y2- PITTSBORO ELEMENTARY SCHOOL RD		AND
		2:30PM TO 7:00PM

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

ROAD NAME
-L- NC-87
-Y1- PARK ENTRANCE
-Y2- PITTSBORO ELEMENTARY SCHOOL RD

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 7:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 7:00 P.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 7:00 P.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 7:00 P.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 7:00 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 7:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 7:00 P.M. TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 7:00 P.M. MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

LANE AND SHOULDER CLOSURE REQUIREMENTS:

C) 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.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING 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 OR A LANE CLOSURE IS INSTALLED.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 6-15 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.

PAVEMENT EDGE DROP OFF REQUIREMENTS:

F) 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.

TRAFFIC PATTERN ALTERATIONS:

G) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING:

H) 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.

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

J) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 100 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES:

K) 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 RADII, 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:

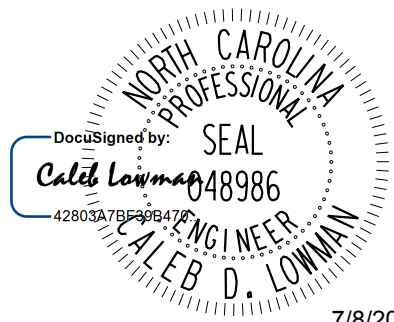
L) ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.

M) CONTRACTOR TO MAINTAIN ACCESS TO ONE PARKING LOT DRIVEWAY AT ALL TIMES DURING CONSTRUCTION.

Kimley»Horn

APPROVED:

DATE:





TEMPORARY TRAFFIC CONTROL PLAN

PROJ. REFERENCE NO.	SHEET NO.
BN-0012	TMP-2

-L- NC-87
-Y1- PARK ENTRANCE
-Y2- PITTSBORO ELEMENTARY SCHOOL RD

PHASING NOTES

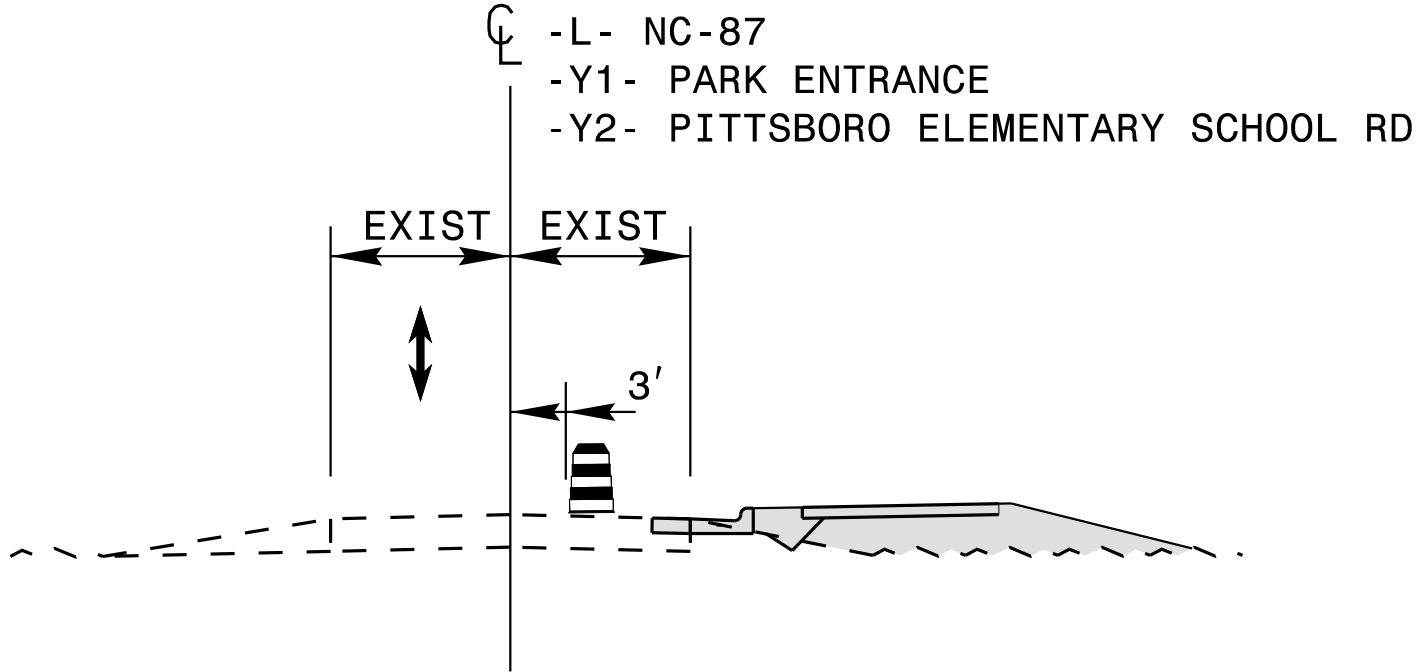
STEP 1

THE CONTRACTOR SHALL INSTALL ALL ADVANCE WARNING SIGNS PRIOR TO BEGINNING WORK ACCORDING TO NCDOT STANDARD DRAWING NO. 1101.01. SIGNS SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED.

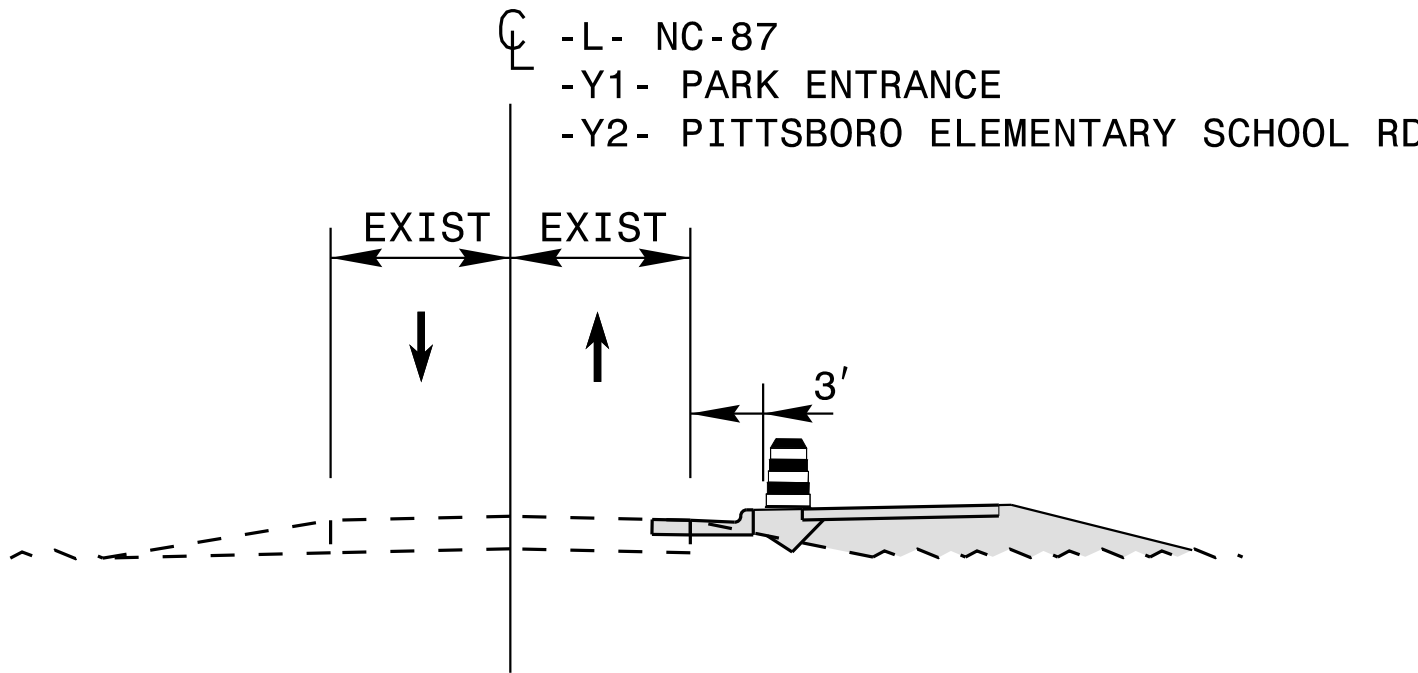
STEP 2

WHILE MAINTAINING EXISTING TRAFFIC AND USING NCDOT STANDARD DRAWING 1101.02 FOR TEMPORARY LANE CLOSURES AS NEEDED, THE CONTRACTOR SHALL CONSTRUCT PROPOSED IMPROVEMENTS ON -L- NC-87, -Y1- PARK ENTRANCE, AND -Y2- PITTSBORO SCHOOL RD INCLUDING BUT NOT LIMITED TO GRADING, DRAINAGE INSTALLATION, SIDEWALK INSTALLATION, PAVEMENT MARKING, AND SIGNING.

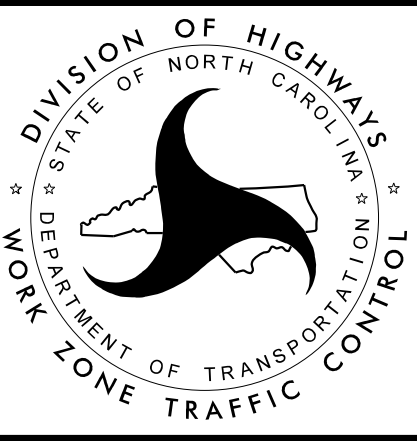
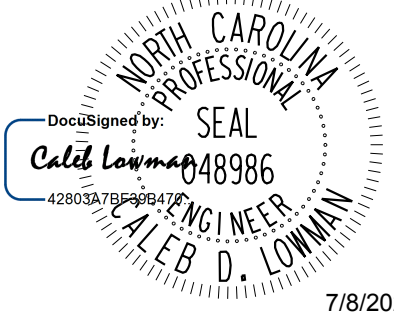
TEMPORARY LANE CLOSURE TRAFFIC PATTERN
(NCDOT STD. 1101.02)



"END OF DAY" TRAFFIC PATTERN

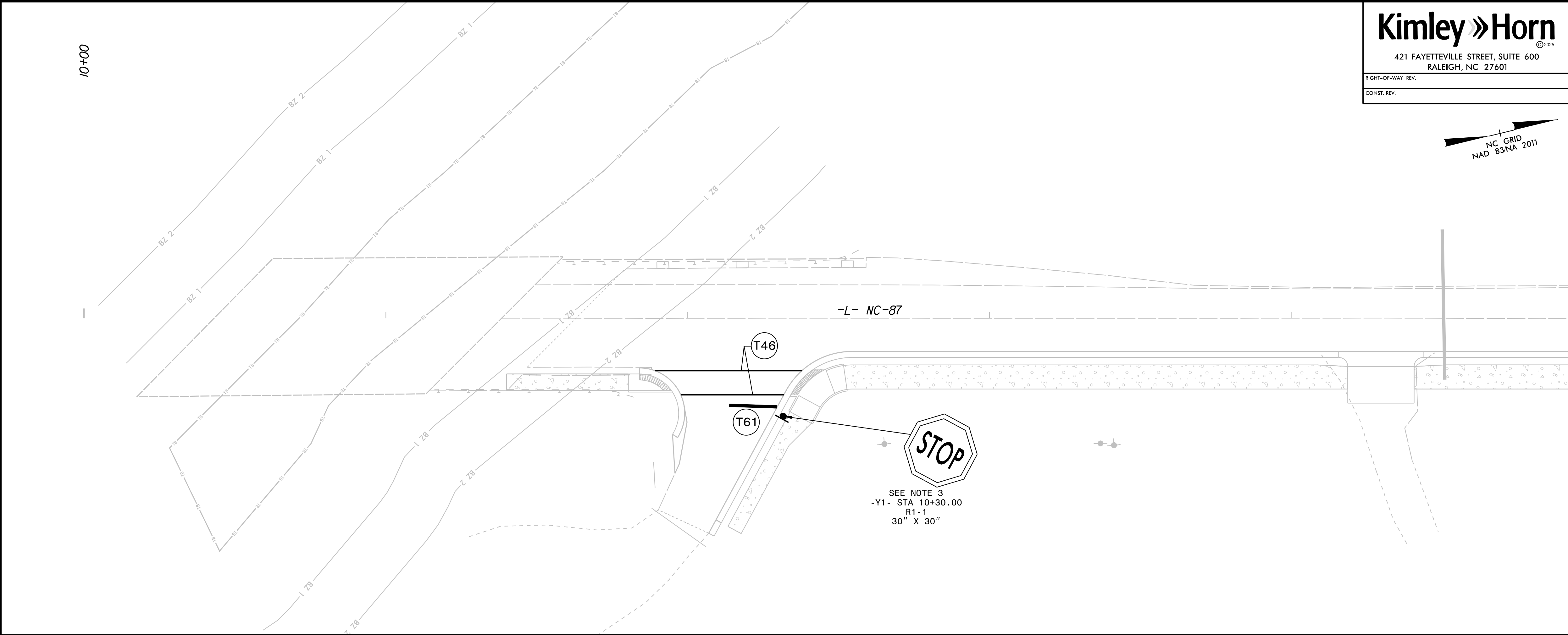


Kimley»Horn

APPROVED:	DATE:		TEMPORARY TRAFFIC CONTROL PLAN
 7/8/2026			

7/8/2026

K:\RAL_Roadway\013859004 - BN-0012\Signing and Delineation\Plans\BN-0012_rdy_dsp_ldgn



Kimley » Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.

BN-0012

SHEET NO.

PSP-1

R/W SHEET NO.

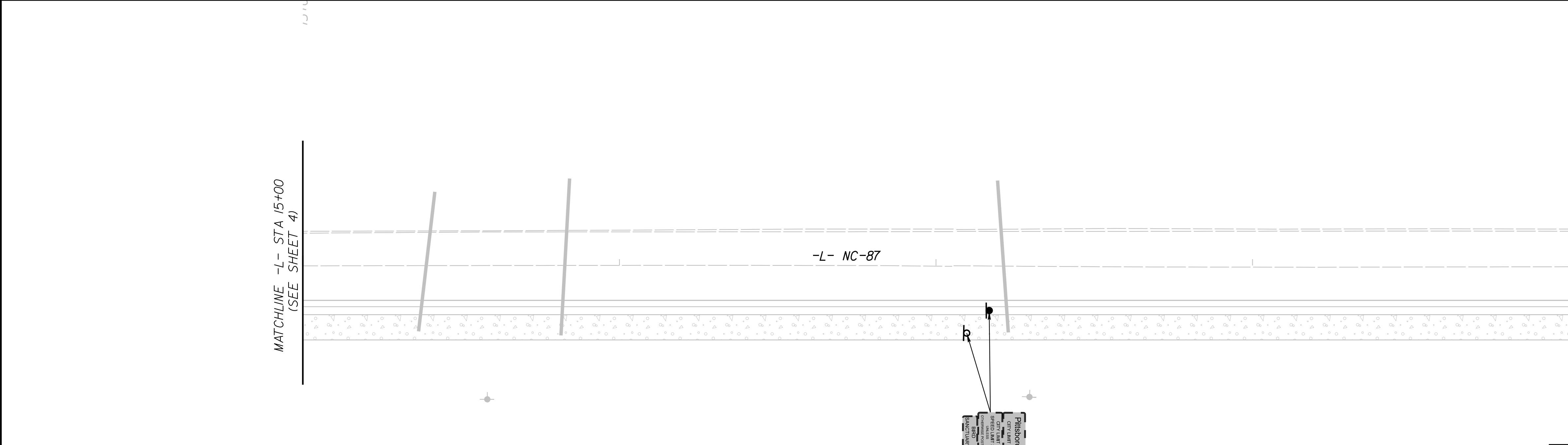
ROADWAY DESIGN
ENGINEER



7/8/2026

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

MATCHLINE -L- STA 15+00
(SEE SHEET 5)



MATCHLINE -L- STA 19+00
(SEE SHEET 6)

SIGNING LEGEND



DENOTES EXISTING SIGN



DENOTES PROPOSED SIGN



DENOTES NEW U-CHANNEL POST/PROPOSED SIGN LOCATION



DENOTES EXISTING U-CHANNEL POST/EXISTING SIGN LOCATION

SIGNING NOTES

- DISPOSAL OF SUPPORT U-CHANNEL
- SIGN ERECTION RELOCATE TYPE E ON NEW U-CHANNEL SUPPORT
- SIGN ERECTION, TYPE E

PAVEMENT MARKING LEGEND

(T46)

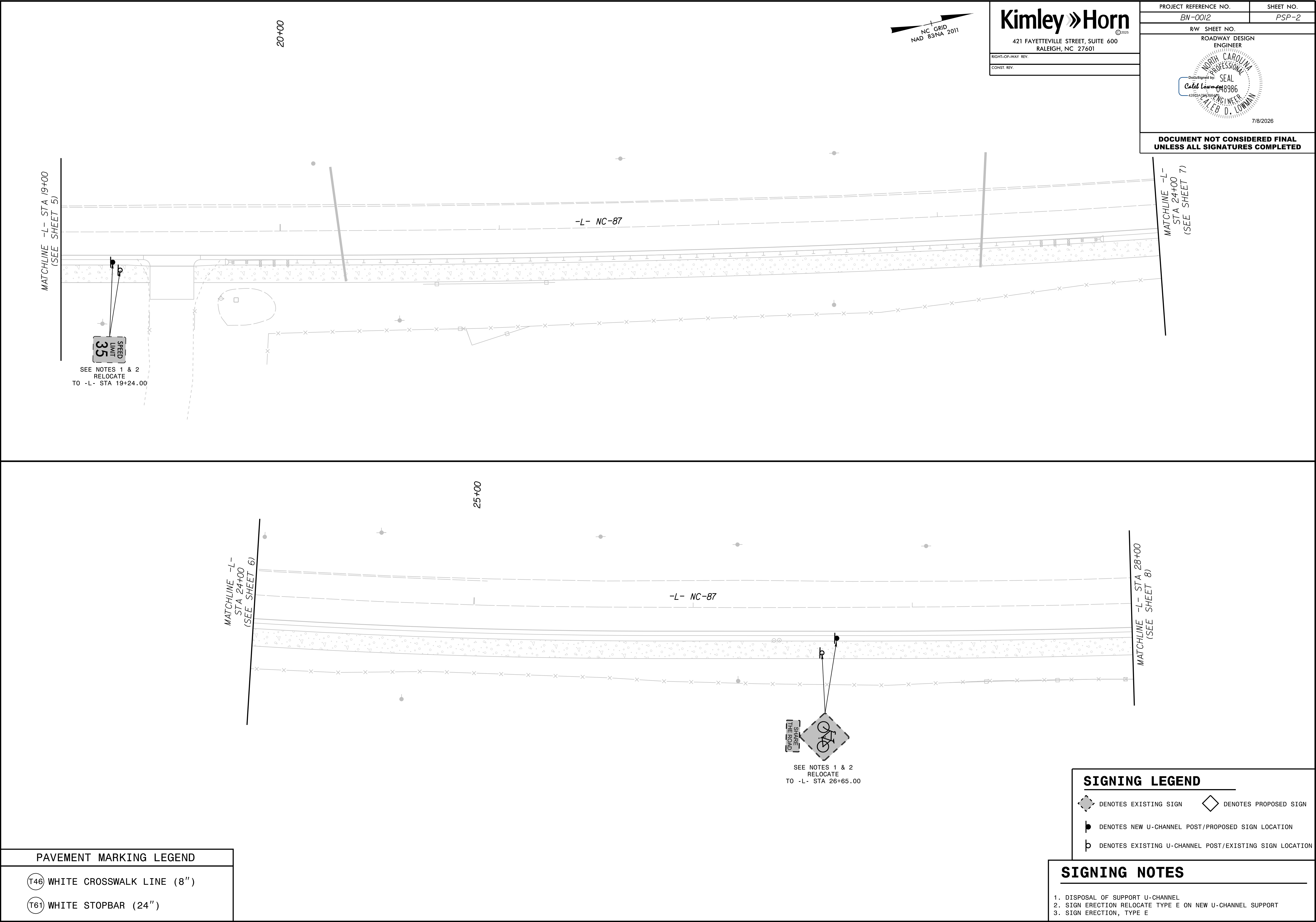
WHITE CROSSWALK LINE (8")

(T61)

WHITE STOPBAR (24")

7/8/2026

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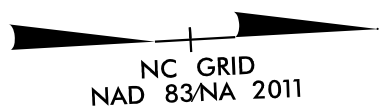


Kimley » Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.



PROJECT REFERENCE NO.

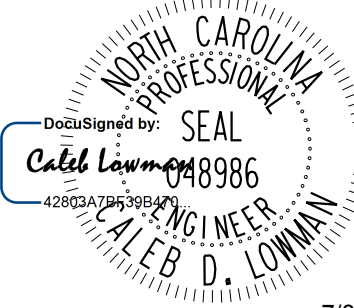
BN-0012

SHEET NO.

PSP-3

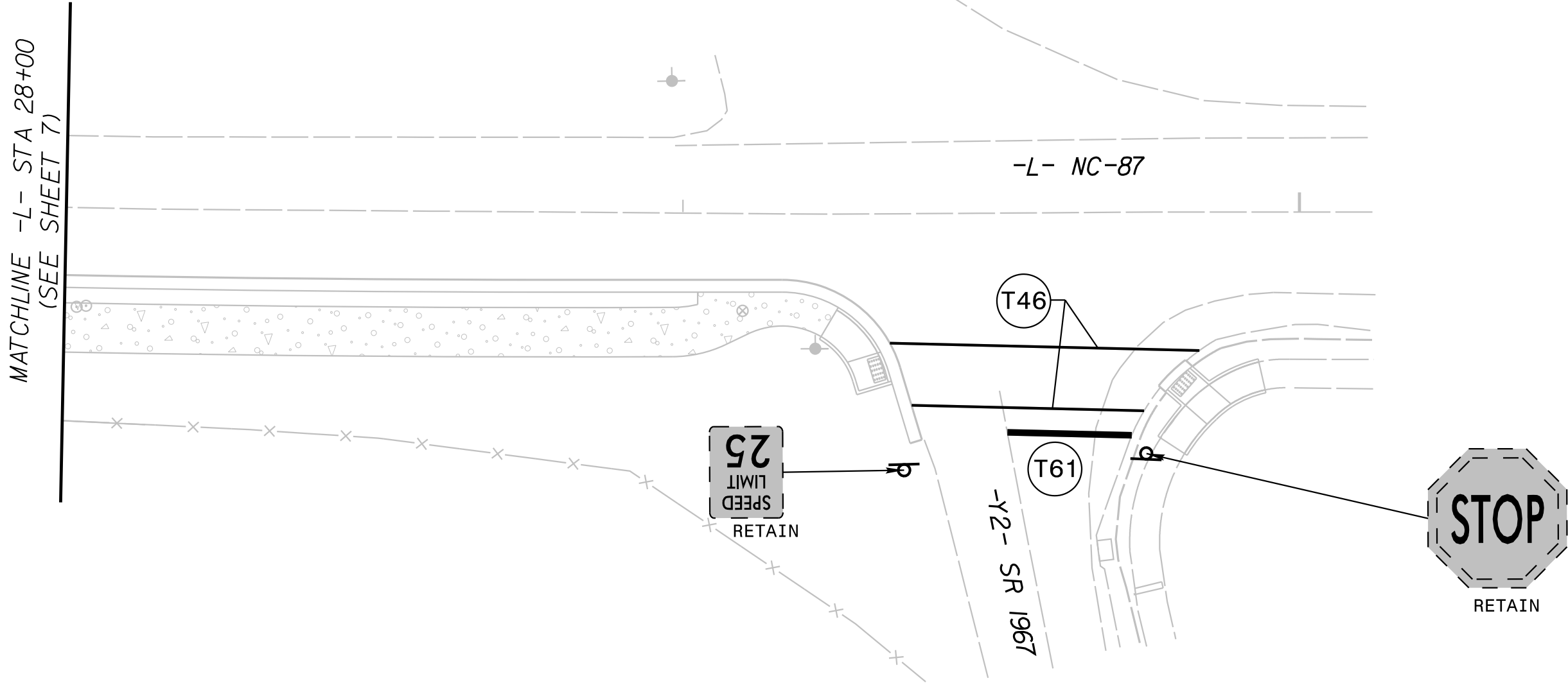
R/W SHEET NO.

ROADWAY DESIGN
ENGINEER



7/8/2026

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



PAVEMENT MARKING LEGEND

(T46) WHITE CROSSWALK LINE (8")

(T61) WHITE STOPBAR (24")

SIGNING LEGEND



DENOTES EXISTING SIGN



DENOTES PROPOSED SIGN



DENOTES NEW U-CHANNEL POST/PROPOSED SIGN LOCATION

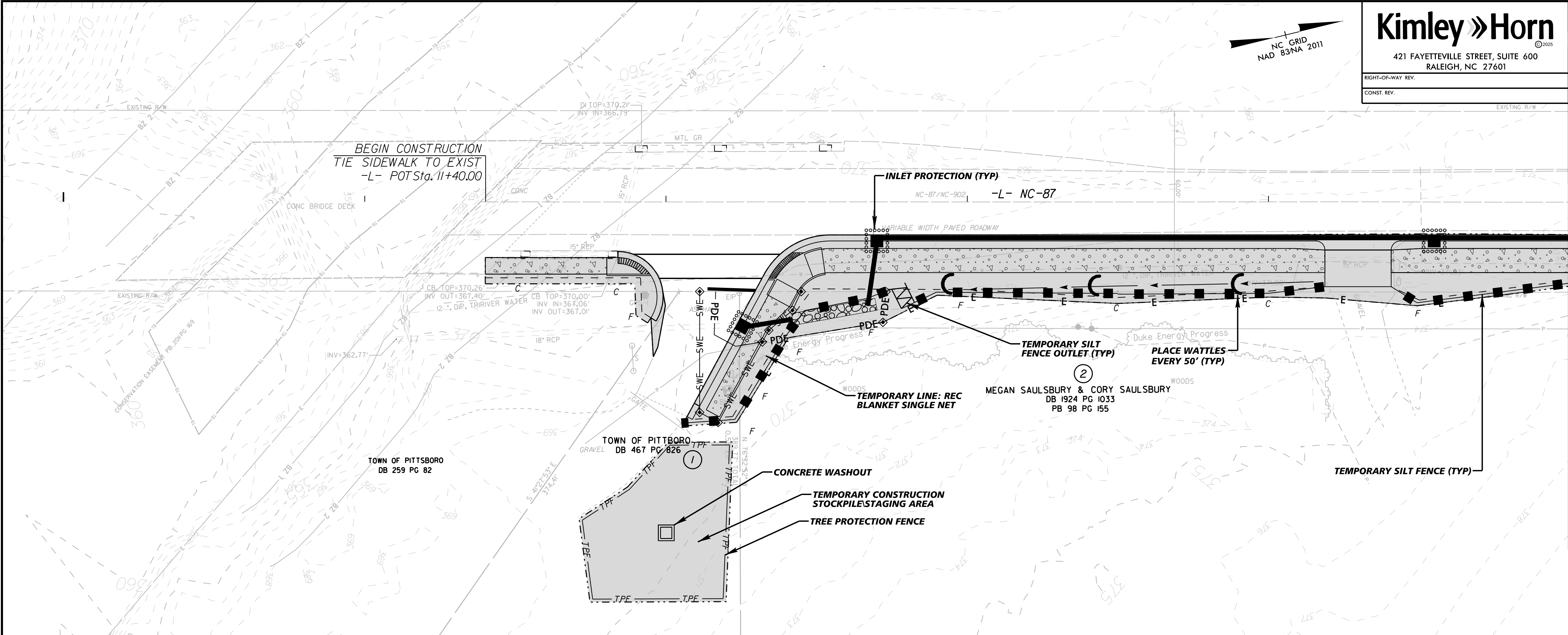


DENOTES EXISTING U-CHANNEL POST/EXISTING SIGN LOCATION

SIGNING NOTES

- DISPOSAL OF SUPPORT U-CHANNEL
- SIGN ERECTION RELOCATE TYPE E ON NEW U-CHANNEL SUPPORT
- SIGN ERECTION, TYPE E

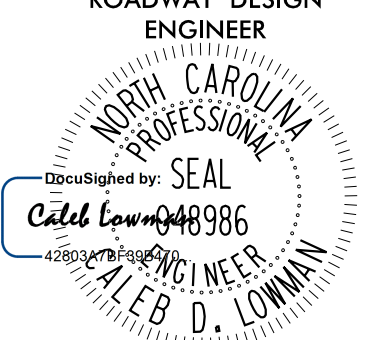
7/8/2026
K:\PAL_Roadway\013659004 - BN-0012\Erosion Control\PS\NBN-0012_rdy-EC.dgn



Kimley »Horn

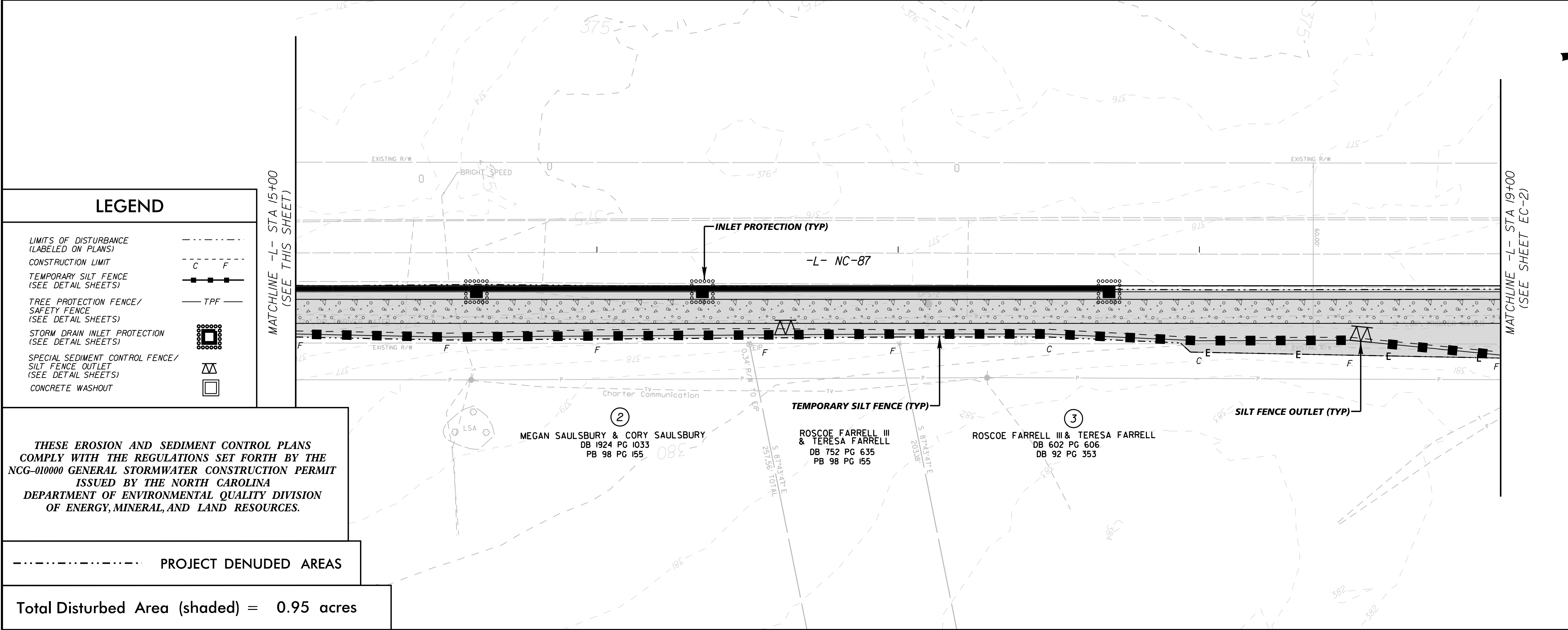
421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
BN-0012	EC-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
	
7/8/2026	

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

MATCHLINE -L- STA 15+00
(SEE THIS SHEET)



LEGEND

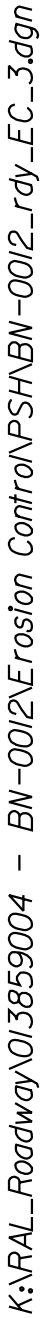
- LIMITS OF DISTURBANCE (LABELED ON PLANS) --- --
- CONSTRUCTION LIMIT --- --
- TEMPORARY SILT FENCE (SEE DETAIL SHEETS) --- --
- TREE PROTECTION FENCE/ SAFETY FENCE (SEE DETAIL SHEETS) --- --
- STORM DRAIN INLET PROTECTION (SEE DETAIL SHEETS) --- --
- SPECIAL SEDIMENT CONTROL FENCE/ SILT FENCE OUTLET (SEE DETAIL SHEETS) --- --
- CONCRETE WASHOUT --- --

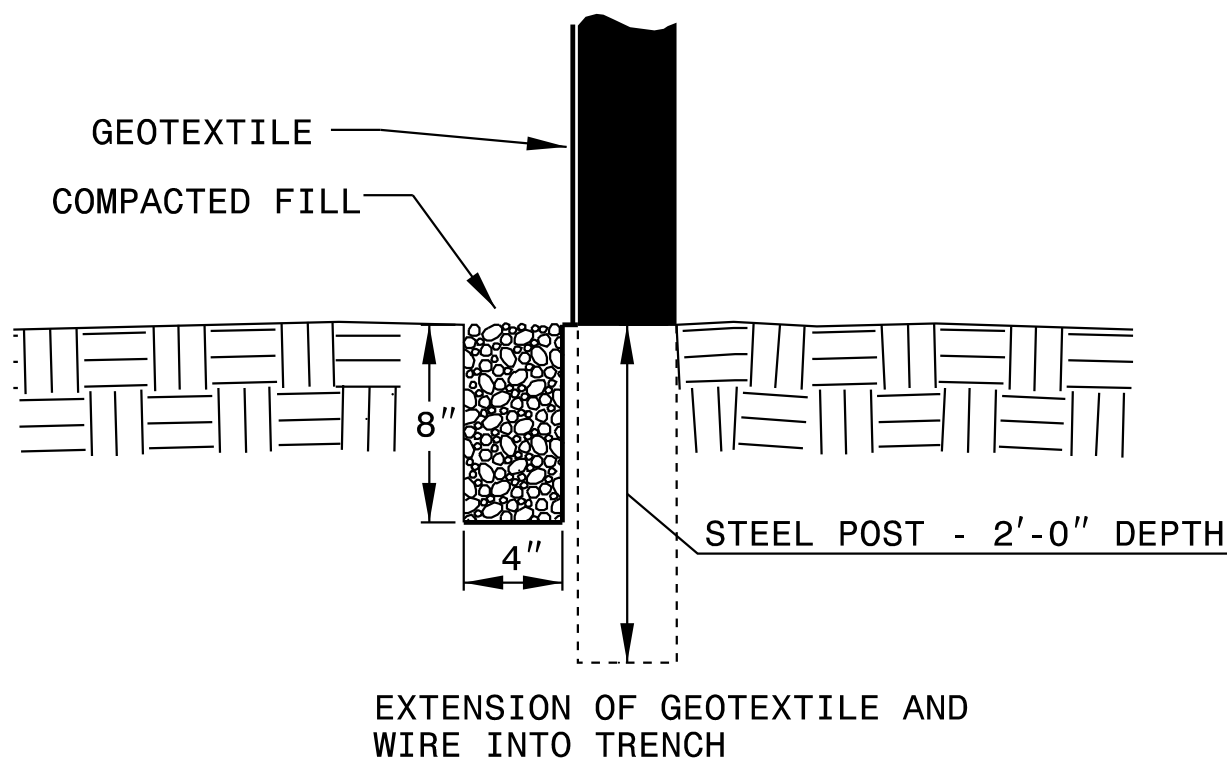
THESE EROSION AND SEDIMENT CONTROL PLANS
COMPLY WITH THE REGULATIONS SET FORTH BY THE
NCG-010000 GENERAL STORMWATER CONSTRUCTION PERMIT
ISSUED BY THE NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION
OF ENERGY, MINERAL, AND LAND RESOURCES.

PROJECT DENUDEED AREAS

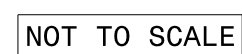
Total Disturbed Area (shaded) = 0.95 acres







SHEET 1 OF 1
1605.01



SHEET 1 OF 1
1631.01



SHEET 1 OF 1
1636.0

VARIOUS LINING CONSTRUCTION SPECIFICATIONS

In channels, roll out strips of netting parallel to the direction of flow and over the protective mulch.

CONSTRUCTION SPECIFICATIONS

SYNTHETIC ROVING

Use North American Green PS 300 permanent erosion control matting or equivalent product approved by engineer.

Synthetic roving is wound into a cylindrical package so that it can be continuously withdrawn from the center using a compressed air ejector. Roving expands into a mat of glass fibers as it contacts the soil surface. It is often used over a straw mulch, but must still be tacked with asphalt.

Spread roving uniformly over the area at a rate of 0.25 to 0.35 lb/sq yd. Anchor with asphalt immediately after application, at a rate of 450 gallons per acre.

As a channel lining, and at other sites of concentrated flow, the roving mat must be further anchored to prevent undermining. It may be secured with stakes placed at intervals no greater than 10 ft along the drainage way, and randomly throughout its width, but not more than 10 ft apart. As an option to staking, the roving can be buried to a depth of 5 inches at the upgrade end and at intervals of 50 ft along the length of the channel.

NETS AND MATS

Nets alone generally provide little moisture conservation benefits and only limited erosion protection. Therefore, they are usually used in conjunction with an organic mulch such as straw.

Except when wood fiber slurry is used, netting should always be installed over the mulch. Wood fiber may be sprayed on top of an installed net.

Mats, including "excelsior" (wood fiber) blankets, are considered protective mulches and may be used alone on erodible soils, and during all times of the year. Place the matting in firm contact with the soil and staple securely.

INSTALLATION OF NETTING AND MATTING

Products designed to control erosion should be installed in accordance with manufacturer's instructions. Any mat or blanket-type product used as a protective mulch should provide cover of at least 30% of the surface where it is applied. Installation is illustrated below.

1. Apply lime, fertilizer and seed before laying the net or mat. If open-weave netting is used, lime may be incorporated before installing the net and fertilizer and seed sprayed on afterward.
2. Start laying the net from the top of the channel or slope and unroll it down the grade. Allow netting to lay loosely on the soil but without wrinkles—do not stretch.
3. To secure the net, bury the upslope end in a slot or trench no less than 6 inches deep, cover with soil, and tamp firmly. Staple the net every 12 inches across the top end and every 3 ft around the edges and bottom. Where 2 strips of net are laid side by side, the adjacent edges should be overlapped 3 inches and stapled together. Each strip of netting should also be stapled down the center, every 3 ft. Do not stretch the net when applying staples.
4. To join two strips, cut a trench to anchor the end of the new net. Overlap the end of the previous roll 18 inches, as shown below, and staple every 12 inches just below the anchor slot.

MAINTENANCE

Inspect all mulches periodically, and after rainstorms to check for rill erosion, dislocation, or failure. Where erosion is observed, apply additional mulch. If washout occurs, repair the slope grade, reseed, and reinstall mulch. Continue inspections until vegetation is firmly established.

OUTLET STABILIZATION STRUCTURE DETAIL (6.41)

DETAIL A

Plan

Section A-A

Pipe Outlet To Flat Area With No Defined Channel

DETAIL B

Plan

Section A-A

Pipe Outlet to Well-Defined Channel

CONSTRUCTION SPECIFICATIONS

1. Ensure that the subgrade for the filter and riprap follows the required lines and grades shown in the plan. Compact any fill required in the subgrade to the density of the surrounding undisturbed material. Low areas in the subgrade on undisturbed soil may also be filled by increasing the riprap thickness.
2. The riprap and gravel filter must conform to the specified grading limits shown on the plans.
3. Filter cloth, when used, must meet design requirements and be properly protected from punching or tearing during installation. Repair any damage by removing the riprap and placing another piece of filter cloth over the damaged area. All connecting joints should overlap a minimum of 1 foot. If damage is extensive, replace the entire filter cloth.
4. Riprap may be placed by equipment, but take care to avoid damaging the filter.
5. The minimum thickness of the riprap should be 15 times the maximum stone diameter.
6. Riprap may be field stone or rough quarry stone. It should be hard, angular, highly weather-resistant and well graded.
7. Construct the apron on zero grade with no overfall at the end. Make the top of the riprap at the downstream end level with the receiving area or slightly below it.
8. Ensure that the apron is properly aligned with the receiving stream and preferably straight throughout its length. If a curve is needed to fit site conditions, place it in the upper section of the apron.
9. Immediately after construction, stabilize all disturbed areas with vegetation.

MAINTENANCE

Inspect riprap outlet structures after heavy rains to see if any erosion around or below the riprap has taken place or if stones have been dislodged. Immediately make all needed repairs to prevent further damage.

NOTE: USE INLET TUBES AS NEEDED TO PREVENT SILT AND DEBRIS FROM ENTERING INLETS DURING CONSTRUCTION.

ISOMETRIC VIEW

PROFILE VIEW OF INSTALLED FILTER SACK

Inlet Tubes

Materials

Use inlet tubes that exhibit the following properties:
Produced by a Manufacturer experienced in sediment tube manufacturing.
Composed of compacted geotextiles, curled excelsior wood, natural coconut fibers or hardwood mulch or a mix of these materials enclosed by a flexible netting material. Do not use straw, straw fiber, straw bales, pine needles or leaf mulch under this specification. Utilize an outer netting that consists of seamless, high-density polyethylene photodegradable materials treated with ultraviolet stabilizers or a seamless, high-density polyethylene non-degradable materials.

Installation:

Install inlet tubes lying flat on the ground, with no gaps between the underlying surface and the inlet tube.

Inspection and Maintenance:

Inlet tubes may be temporarily moved during construction as needed. Replace inlet tubes damaged during installation as directed by the Inspector or Manufacturer's Representative at the contractor's expense.

1. EMPTY FILTER SACK WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
2. GEOTEXTILE WILL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS REQUIREMENTS IN THE SPECIFICATIONS TABLE.
3. AN OIL ADSORBENT PAD OR PILLOW CAN BE PURCHASED WHEN OIL SPILLS ARE A CONCERN.
4. INSPECT PER REGULATORY REQUIREMENTS.
5. THE WIDTH, "W", OF THE FILTER SACK WILL MATCH THE INSIDE WIDTH OF THE GRATED INLET BOX.
6. THE DEPTH, "D", OF THE FILTER SACK WILL BE BETWEEN 18 INCHES AND 36 INCHES.
7. THE LENGTH, "L", OF THE FILTER SACK WILL MATCH THE INSIDE LENGTH OF THE GRATED INLET BOX.

LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1

MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
EC-1	-L-	12+50	13+00	RT	32
EC-1	-YI-	10+25	10+70	LT	28
EC-2	-L-	20+00	24+50	RT	755
EC-2	-L-	26+50	28+00	RT	186
EC-3	-L-	28+00	29+00	RT	162
			SUBTOTAL		1163
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					
THIS INCLUDES BUT IS NOT LIMITED TO MATTING ALL SLOPES AND					
AREAS AROUND PIPE INLET/OUTLETS THAT ARE NOT COVERED BY					
RIP RAP AND WHEN MEASURES ARE REMOVED					
				TOTAL	1163
				SAY	1170

MAINTENANCE:
INSPECT ROLLED EROSION CONTROL PRODUCTS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT RAIN FALL EVENT, REPAIR IMMEDIATELY IF NEEDED.
GOOD CONTACT WITH GROUND MUST BE MAINTAINED AND EROSION MUST NOT OCCUR BENEATH THE MATTING.
ANY AREAS OF MATTING THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH THE GROUND SHALL BE REPAIRED AND STAPLED.
IF EROSION OCCURES DUE TO POORLY CONTROLLED DRAINAGE, THE PROBLEM SHALL BE FIXED AND THE ERODED AREA PROTECTED.
MONITOR AND REPAIR THE MATTING AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.

Kimley »Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.
BN-0012

SHEET NO.
EC-7

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

Seal

Seal

Seal

Seal

Seal

Seal

7/8/2026

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NPDES GENERAL STORMWATER PERMIT
SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	
HIGH QUALITY WATER (HOW) ZONES	7 DAYS	
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 WITH SLOPES STEEPER THAN 4:1. 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HOW ZONES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HOW ZONES.

GENERAL NOTES (TYPICAL ALL SHEETS):

1.) ALL EROSION CONTROL MEASURES TO BE WITHIN LIMITS OF DISTURBANCE.

2.) CONTRACTOR TO ENSURE THAT ALL ROADWAYS, PARKING LOTS, AND CURB LINES ADJACENT TO THIS PROJECT ARE FREE OF DEBRIS, DIRT, AND EQUIPMENT DURING THE PROJECT DURATION UNLESS DIRECTED BY ENGINEER. ANY DAMAGE TO EXISTING CURB AND GUTTER, ROADS, OR PARKING LOTS AT CONSTRUCTION ENTRANCES MUST BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

3.) PIPES SHALL BE INSTALLED/REPLACED IN THE DRY (WITH A MIN. 3 DAYS OF DRY WEATHER DURING INSTALLATION) OR CONTRACTOR SHALL PLAN TO ISOLATE AND DEWATER EXCAVATED AREAS AS NEEDED USING SILT BAGS AND/OR COFFER DAM AND PUMP AROUND. IF SILT BAGS ARE UTILIZED, CONTRACTOR TO INSPECT BAG FOR DAMAGE AND BLOACKAGE. REPLACE BAG WHEN ¾ FULL OF SEDIMENT, AND PROVIDE A SUFFICIENT QUANTITY OF BAGS TO CONTAIN SILT FROM PUMPED EFFLUENT DURING COSNTRUCTION. IF COFFER DAMS ARE UTILIZED, A COFFER DAM DETAIL MUST BE SUBMITTED FOR APPROVAL PRIOR TO CONSTRUCTION.

4.) WHERE SILT FENCES ARE LOCATED BELOW STORM DRAIN OUTLETS, THEIR LOCATIONS MUST BE MODIFIED AS THE STORM DRAINS ARE INSTALLED SO THAT THE FENCES WILL PASS OVER THE PIPE OUTLETS.

5.) SILT FENCE OUTLET MUST BE ADDED IN THE FIELD WHENEVER LOW POINTS ARE ENCOUNTERED ALONG SILT FENCE RUNS.

6.) ALL EROSION CONTROL MEASURES MUST BE SELF-INSPECTED ONCE A WEEK OR WITHIN 24 HOURS OF ANY RAINFALL EVENT OF ONE INCH AND GREATER. SUBMIT SELF-INSPECTION REPORT WITHIN 15 DAYS OF THE INSPECTION. SELF-INSPECTIONS AND SELF-MONITORING SHALL BE CONDUCTED IN ACCORDANCE WITH THE CONDITIONS OF THE NPDES PERMIT NO. NCG010000 AND NORTH CAROLINA GENERAL STATUE 113A-54.(e) AND 15A NCAC 04B.0131.

7.) INSTALL ANY ADDITIONAL EROSION CONTROL MEASURES AS NECESSARY TO PREVENT SEDIMENT RUNOFF.

8.) NO BURNING WILL BE ALLOWED ON THE PROJECT.

9.) SEE SHEET SHEET EC-4 FOR GENERAL CONSTRUCTION SCHEDULE/SEQUENCE

10.) INLET PROTECTION TO BE INSTALLED AND MAINTAINED WHEN UNSTABLE AND SEDIMENT LADEN SOIL IS DRAINING TO STRUCTURES. MANY VERSIONS OF INLET PROTECTION HAVE BEEN PROPOSED ON THIS PROJECT DUE TO THE URBAN NATURE OF THE SITE.

11.) WATTLE DAMS TO BE INSTALLED AND MAINTAINED WHEN UNSTABLE AND SEDIMENT LADEN SOIL IS DRAINING IN DITCHES.

12.) USE ROLLED EROSION CONTROL PRODUCTS ON ALL CUT/FILL SLOPES WITHOUT RIP RAP INCLUDING BASINS AS NECESSARY FOR STABILIZATION

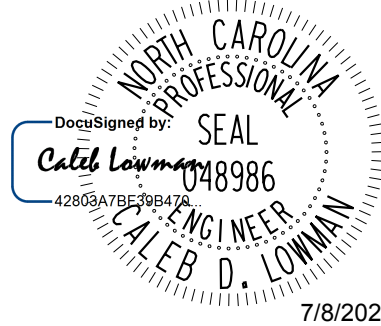
13.) DO NOT ALLOW CONCRETE DUST/WASTE/ WASTEWATER INTO STORM DRAIN OR OFF-SITE. ALL SEDIMENT MUST BE CLEANED OFF THE ROADWAY BY DRY SWEEPING METHODS ONLY. WATER MUST NOT BE USED TO WASH SEDIMENT OFF OF ROADS, DRIVEWAYS, OR PARKING LOTS.

14.) IF ADDITIONAL ACREAGE IS ADDED TO AN EXISTING PERMIT REVISED FORMS, PLANS, AND ANY ADDITIONAL FEES MUST BE SUBMITTED.

15.) IF OWNERSHIP OF A PROPERTY HAS CHANGED A REVISED FRO MUST BE SUBMITTED.

16.) THE OWNER, GENERAL CONTRACTOR, GRADING COMPANY, AND EROSION CONTROL INSTALLER MUST BE PRESENT AT THE PRECONSTRUCTION MEETING.

17.) THE E&SC PERMIT WILL BE DISTRIBUTED AT THIS MEETING.



GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes		
Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
- Temporary grass seed covered with straw or other mulches and tackifiers - Hydroseeding - Rolled erosion control products with or without temporary grass seed - Appropriately applied straw or other mulch - Plastic sheeting	- Permanent grass seed covered with straw or other mulches and tackifiers - Geotextile fabrics such as permanent soil reinforcement matting - Hydroseeding - Shrubs or other permanent plantings covered with mulch - Uniform and evenly distributed ground cover sufficient to restrain erosion - Structural methods such as concrete, asphalt or retaining walls - Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

- Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
- Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
- Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
- Provide ponding area for containment of treated Stormwater before discharging offsite.
- Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

- Maintain vehicles and equipment to prevent discharge of fluids.
- Provide drip pans under any stored equipment.
- Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
- Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
- Remove leaking vehicles and construction equipment from service until the problem has been corrected.
- Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

- Never bury or burn waste. Place litter and debris in approved waste containers.
- Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
- Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds.
- Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
- Dispose waste off-site at an approved disposal facility.
- On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

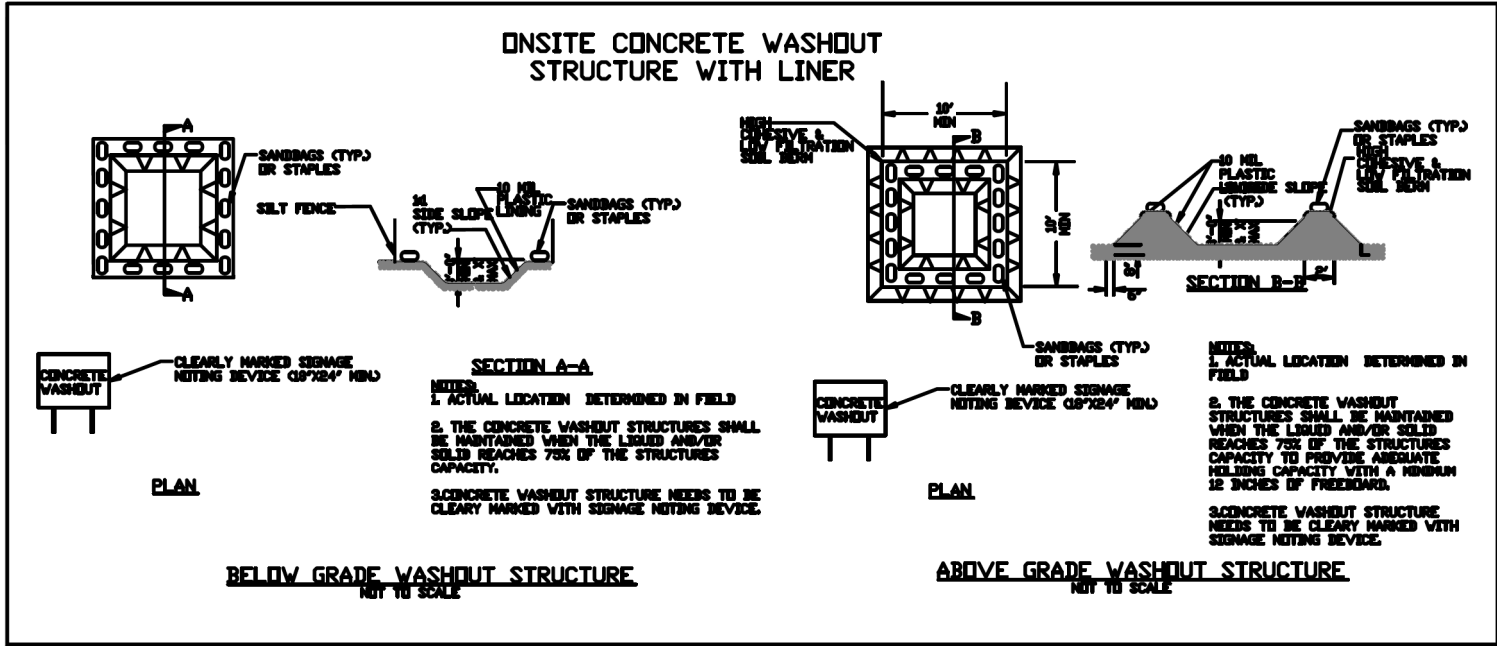
- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled, sized and placed appropriately for the needs of site.
- Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

- Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
- Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
- Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

- Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
- Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
- Provide stable stone access point when feasible.
- Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



CONCRETE WASHOUTS

- Do not discharge concrete or cement slurry from the site.
- Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
- Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
- Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
- Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
- Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
- Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
- Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
- Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
- At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
- Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
- Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
- Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

- Create designated hazardous waste collection areas on-site.
- Place hazardous waste containers under cover or in secondary containment.
- Do not store hazardous chemicals, drums or bagged materials directly on the ground.

Kimley »Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601

RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.

BN-0012

SHEET NO.

EC-9

R/W SHEET NO.

ROADWAY DESIGN
ENGINEER



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDCs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

- The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
- The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
- Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
- Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
- Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
- Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

- This General Permit as well as the Certificate of Coverage, after it is received.
- Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

- Visible sediment deposition in a stream or wetland.
- Oil spills if:
 - They are 25 gallons or more,
 - They are less than 25 gallons but cannot be cleaned up within 24 hours,
 - They cause sheen on surface waters (regardless of volume), or
 - They are within 100 feet of surface waters (regardless of volume).
- Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
- Anticipated bypasses and unanticipated bypasses.
- Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	Within 24 hours, an oral or electronic notification. Within 7 calendar days, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. - If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	Within 24 hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	A report at least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	Within 24 hours, an oral or electronic notification. Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	Within 24 hours, an oral or electronic notification. Within 7 calendar days, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). - Division staff may waive the requirement for a written report on a case-by-case basis.

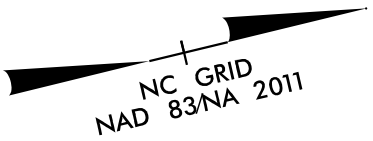


NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

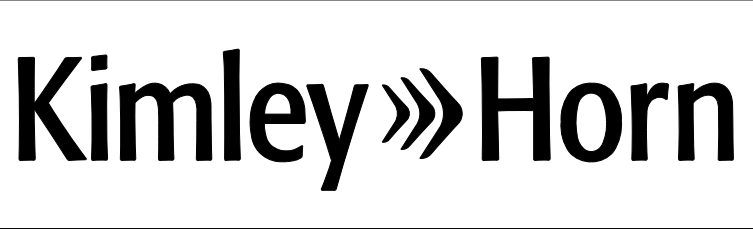
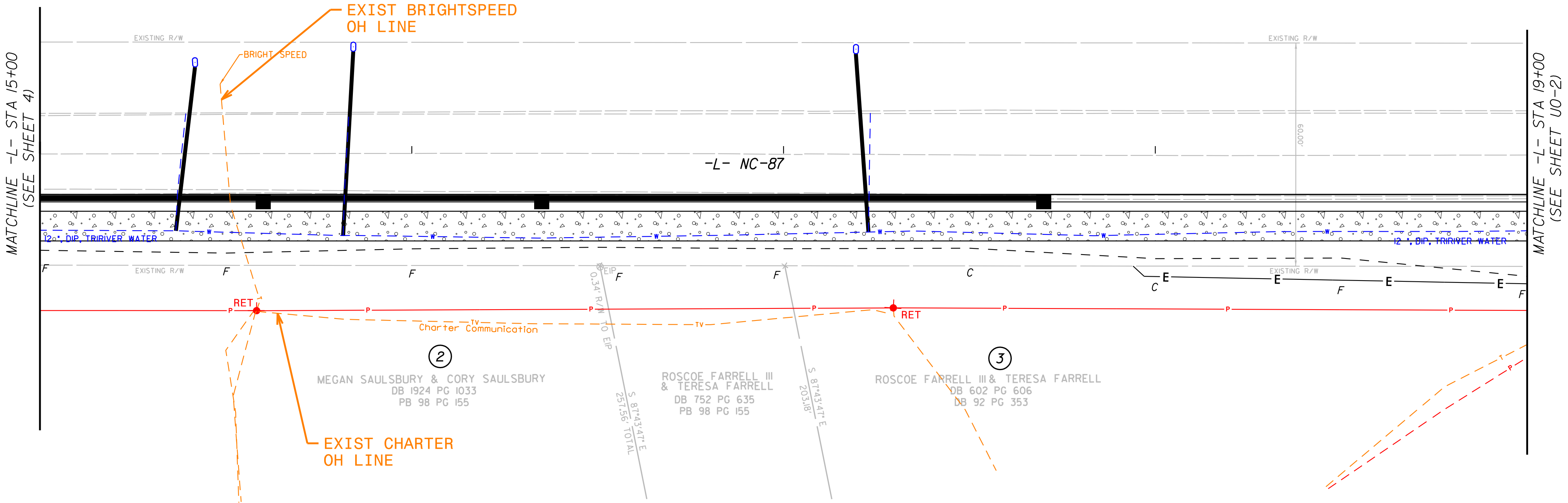
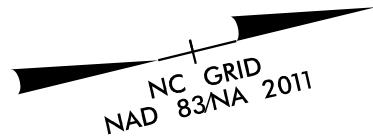
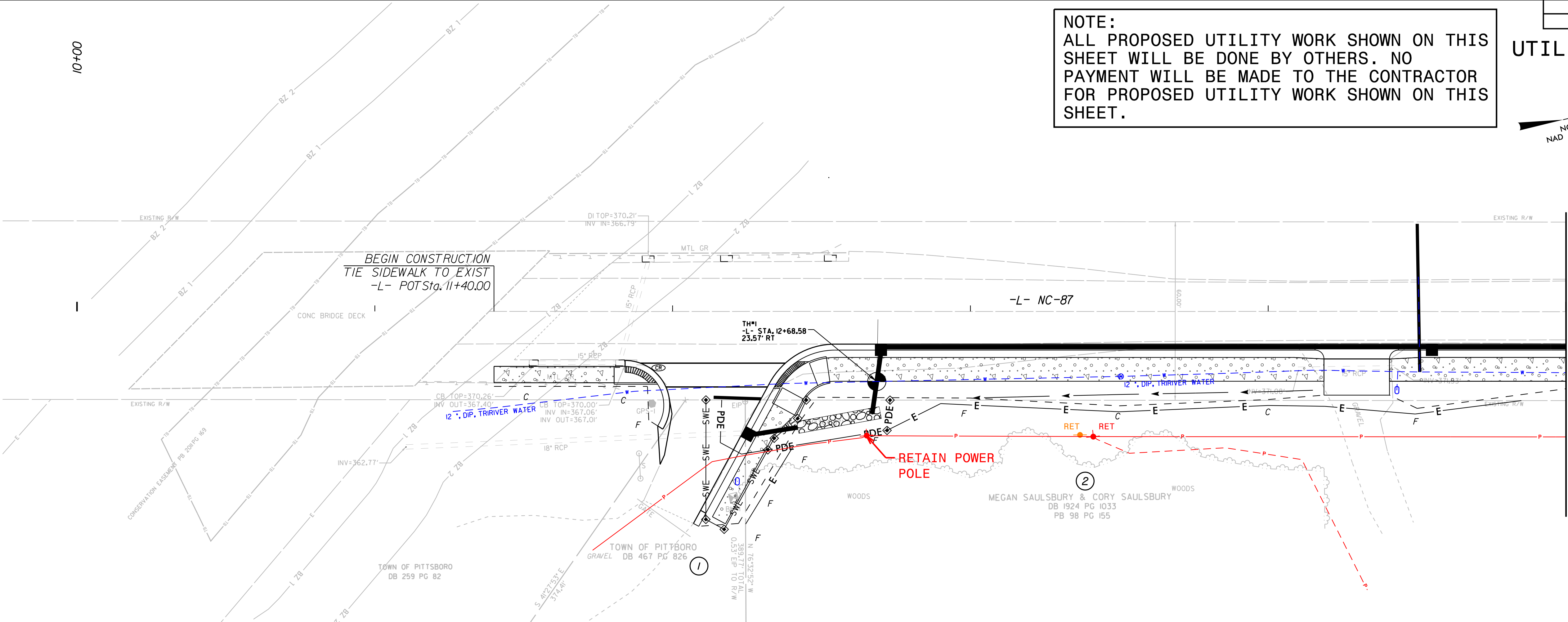
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PROJECT REFERENCE NO.	SHEET NO.
BN-0012	U0-1

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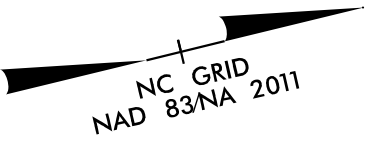


NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

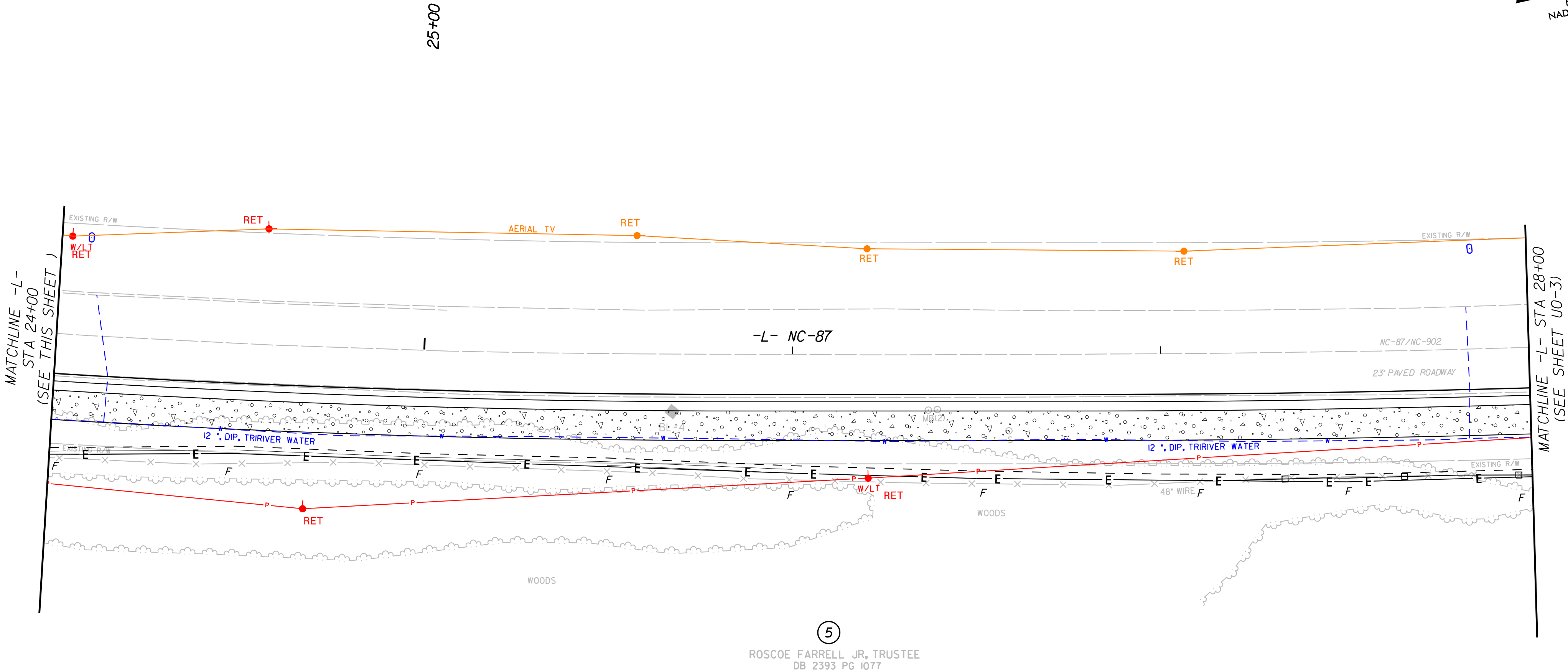
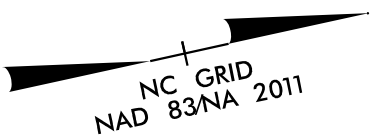
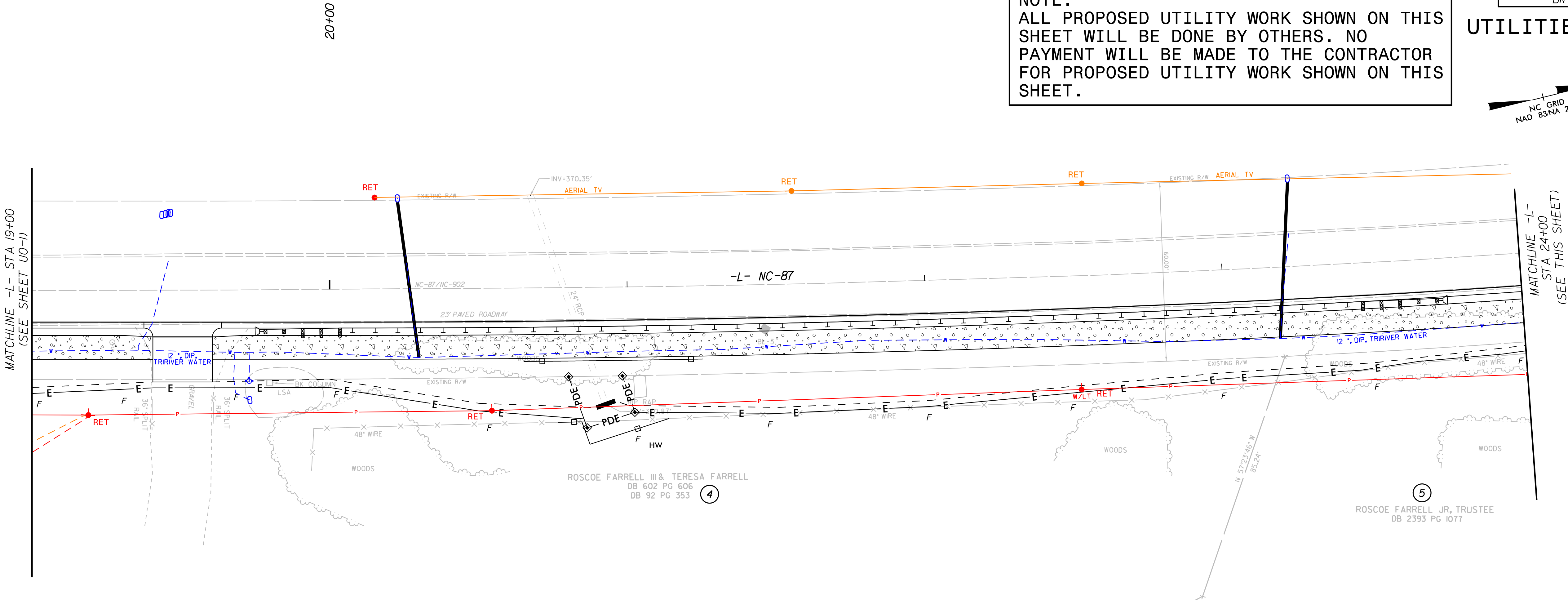


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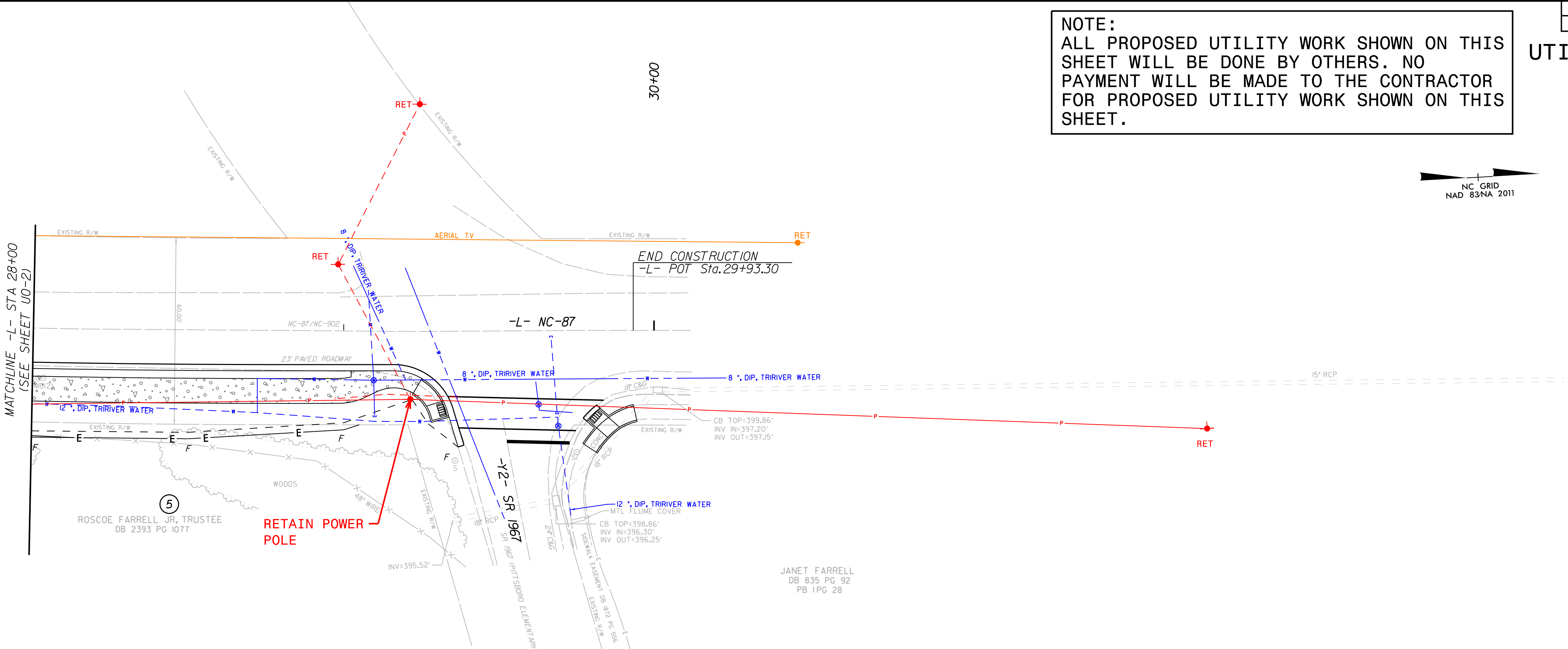
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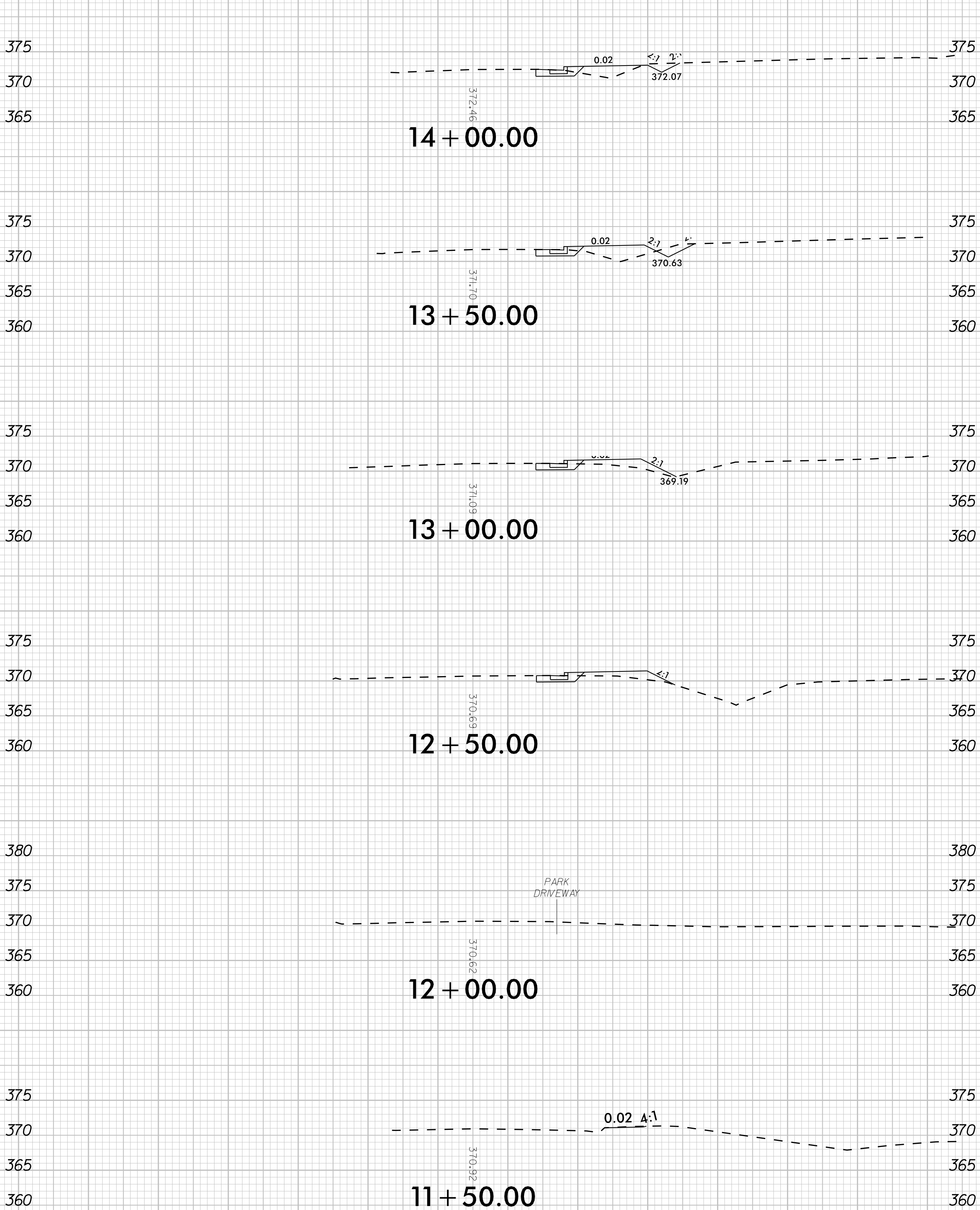
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BN-0012 CROSS SECTION INDEX

-L- NC-87 X-2 THRU X-5
-YI- PARK ENTRANCE X-6

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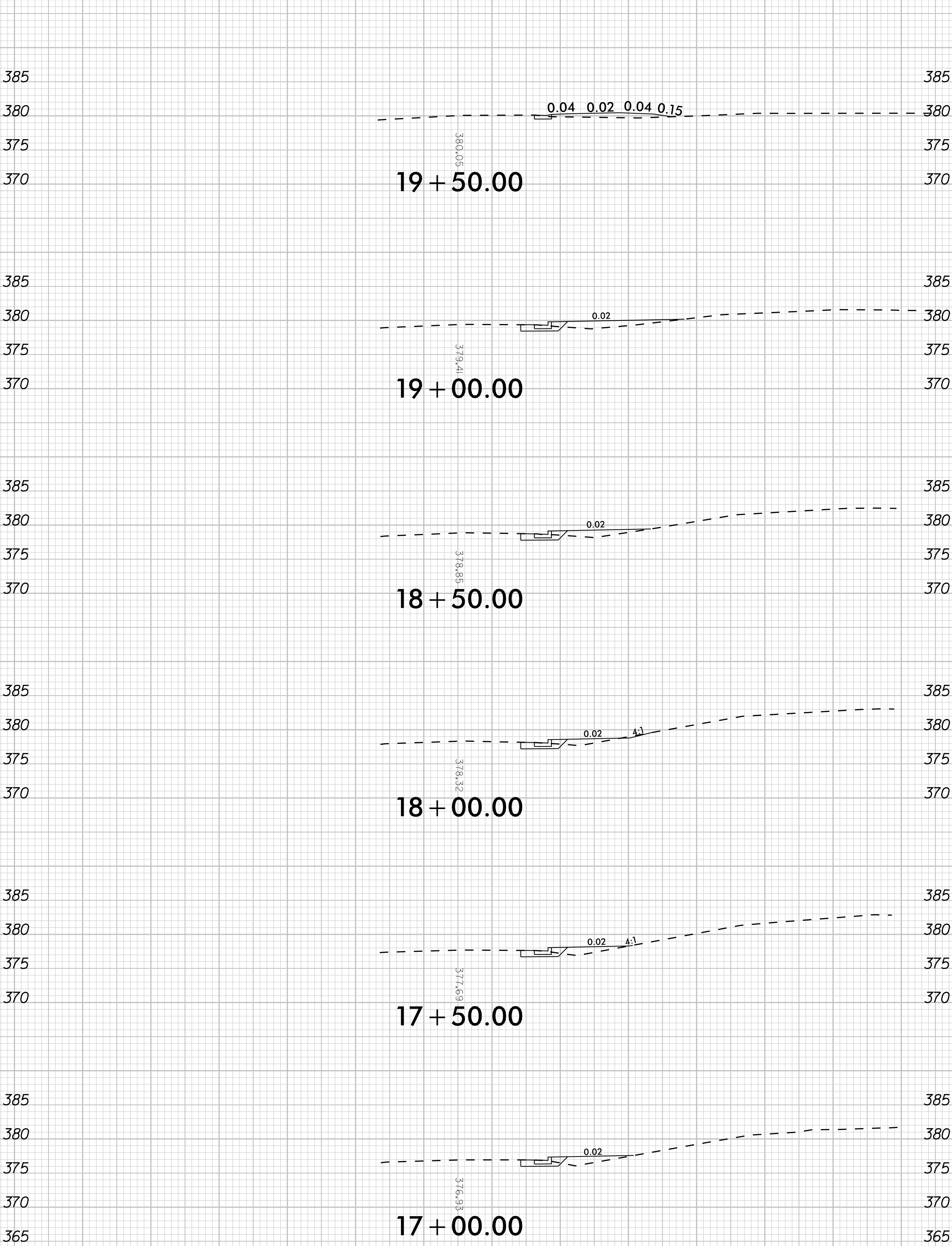
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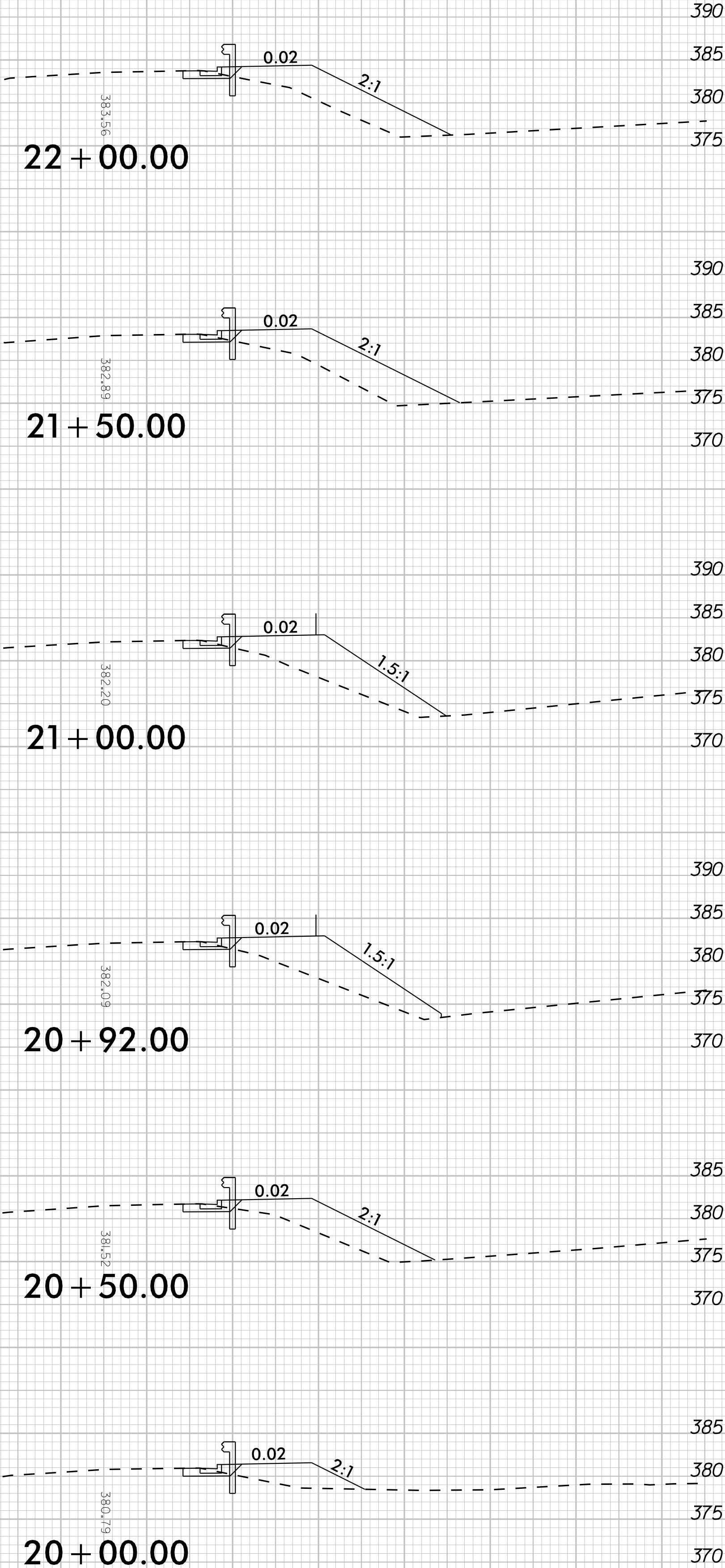
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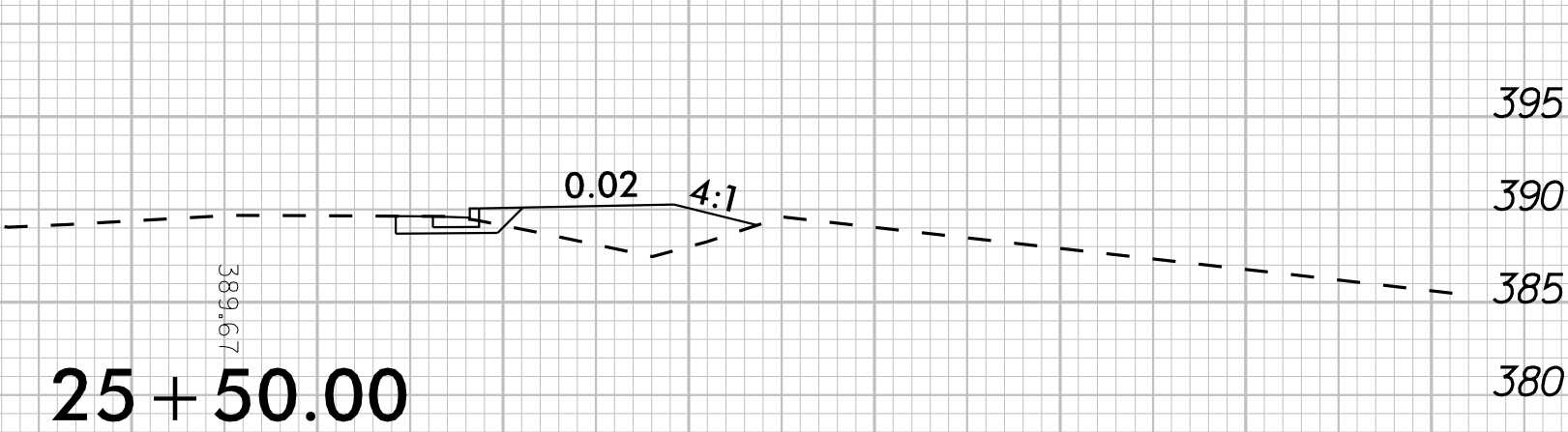
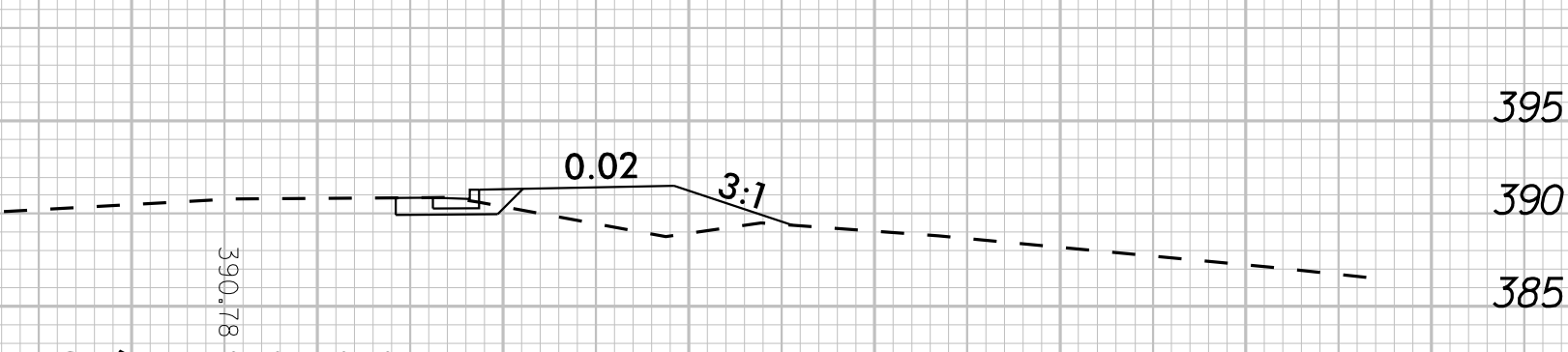
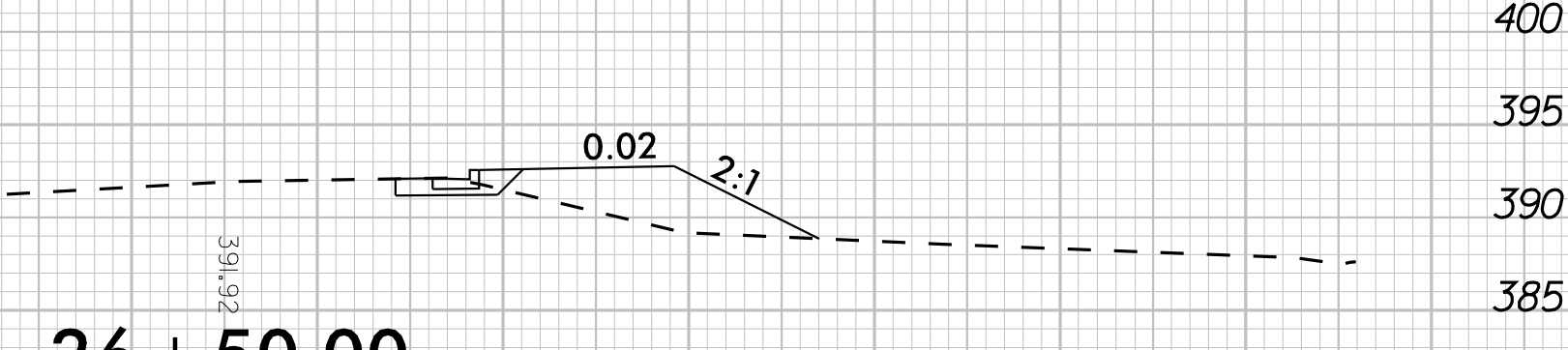
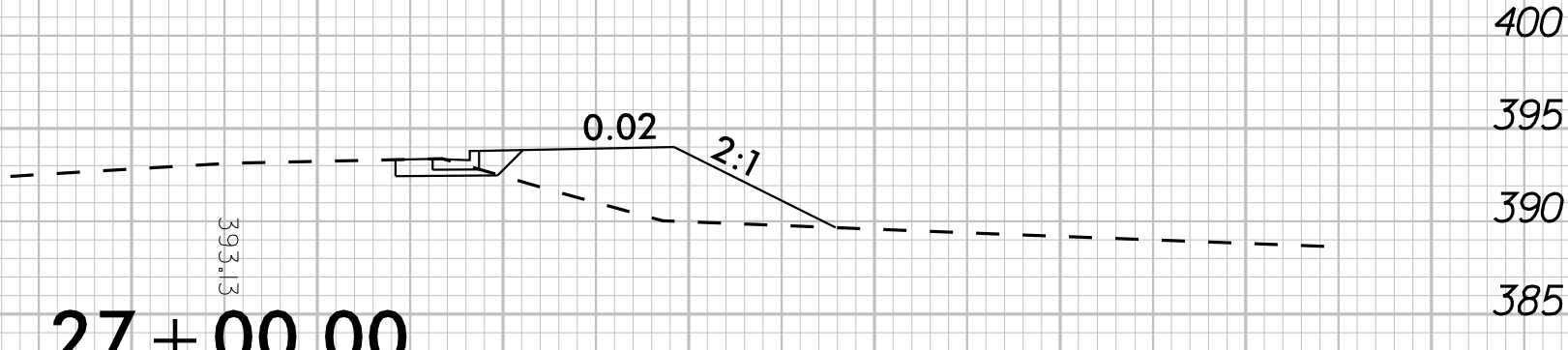
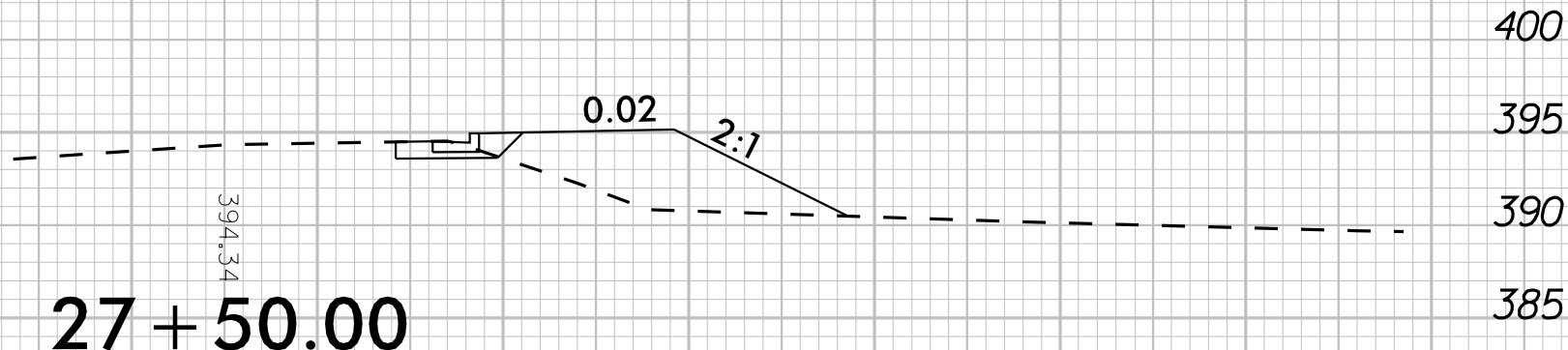
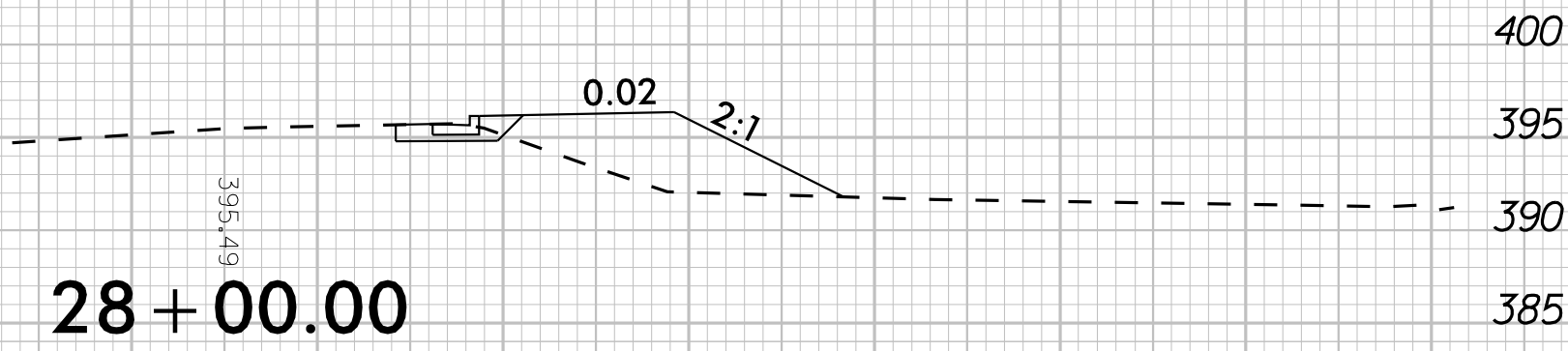
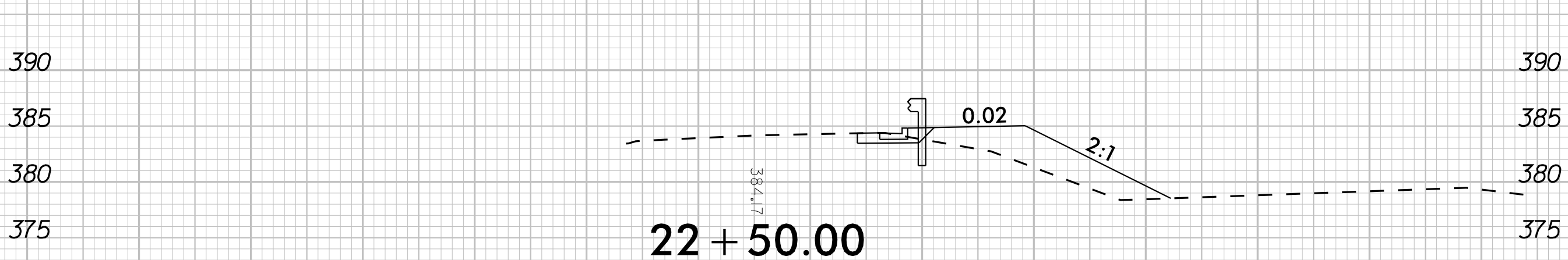
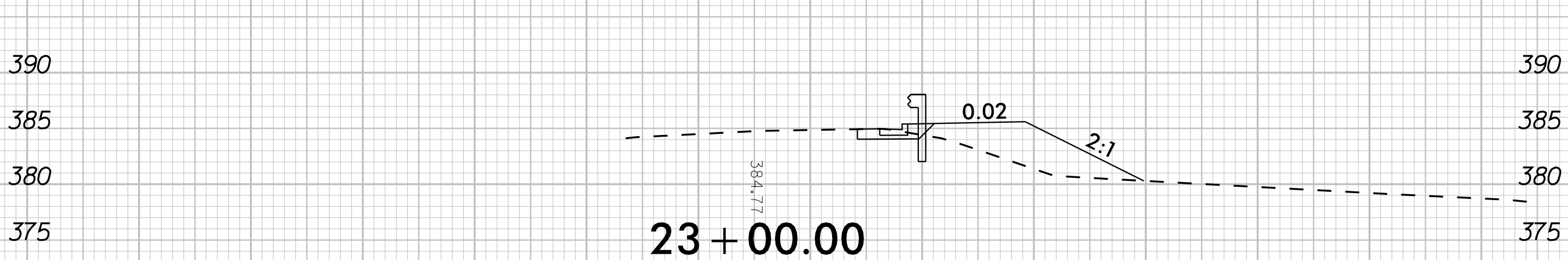
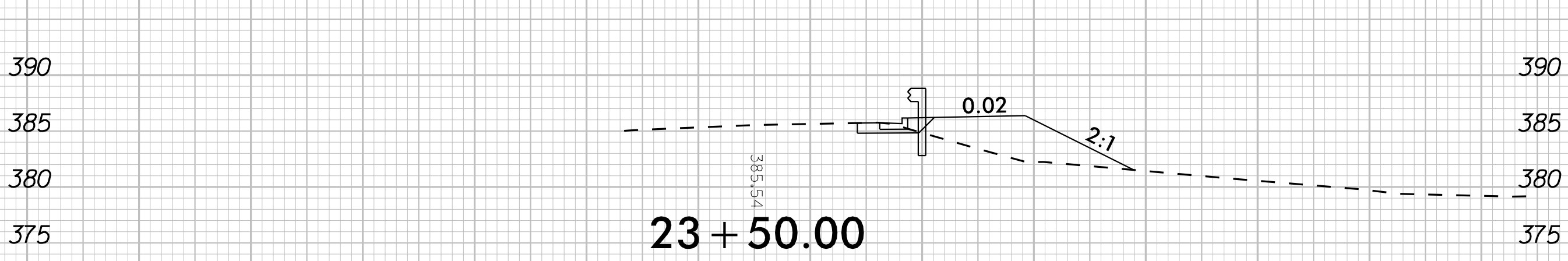
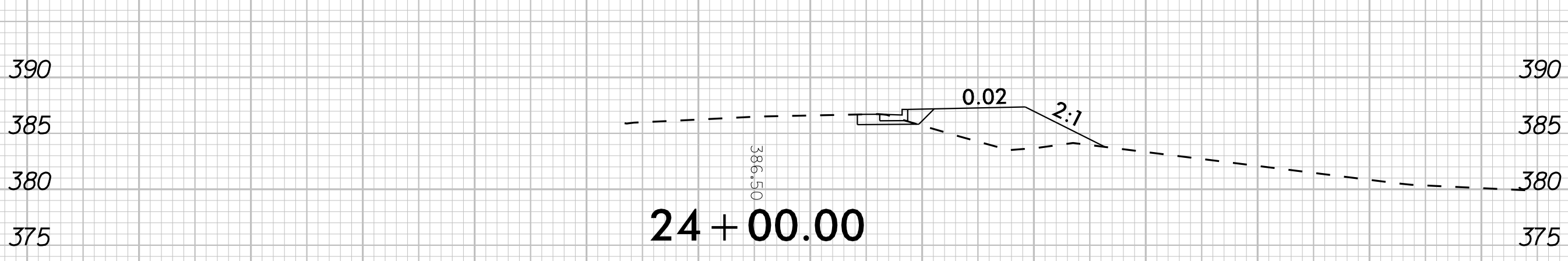
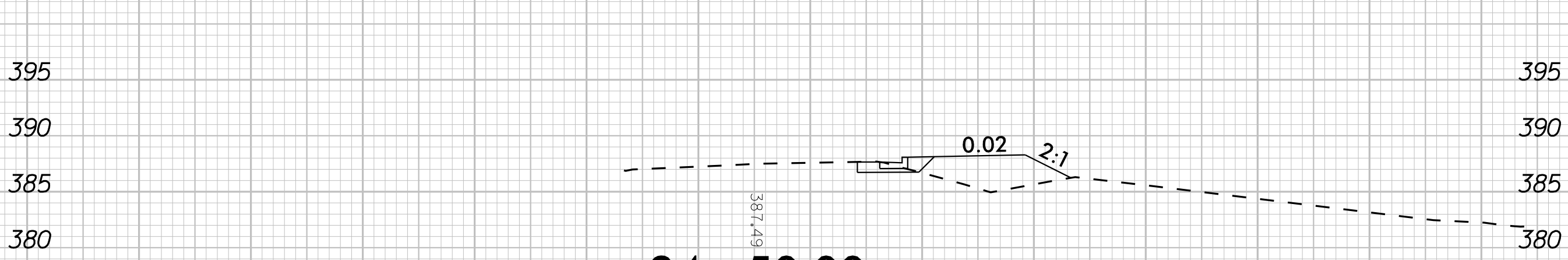
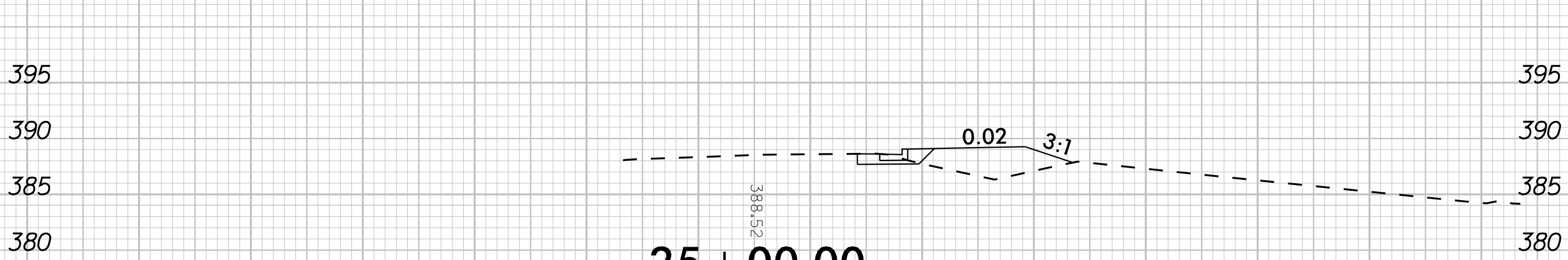
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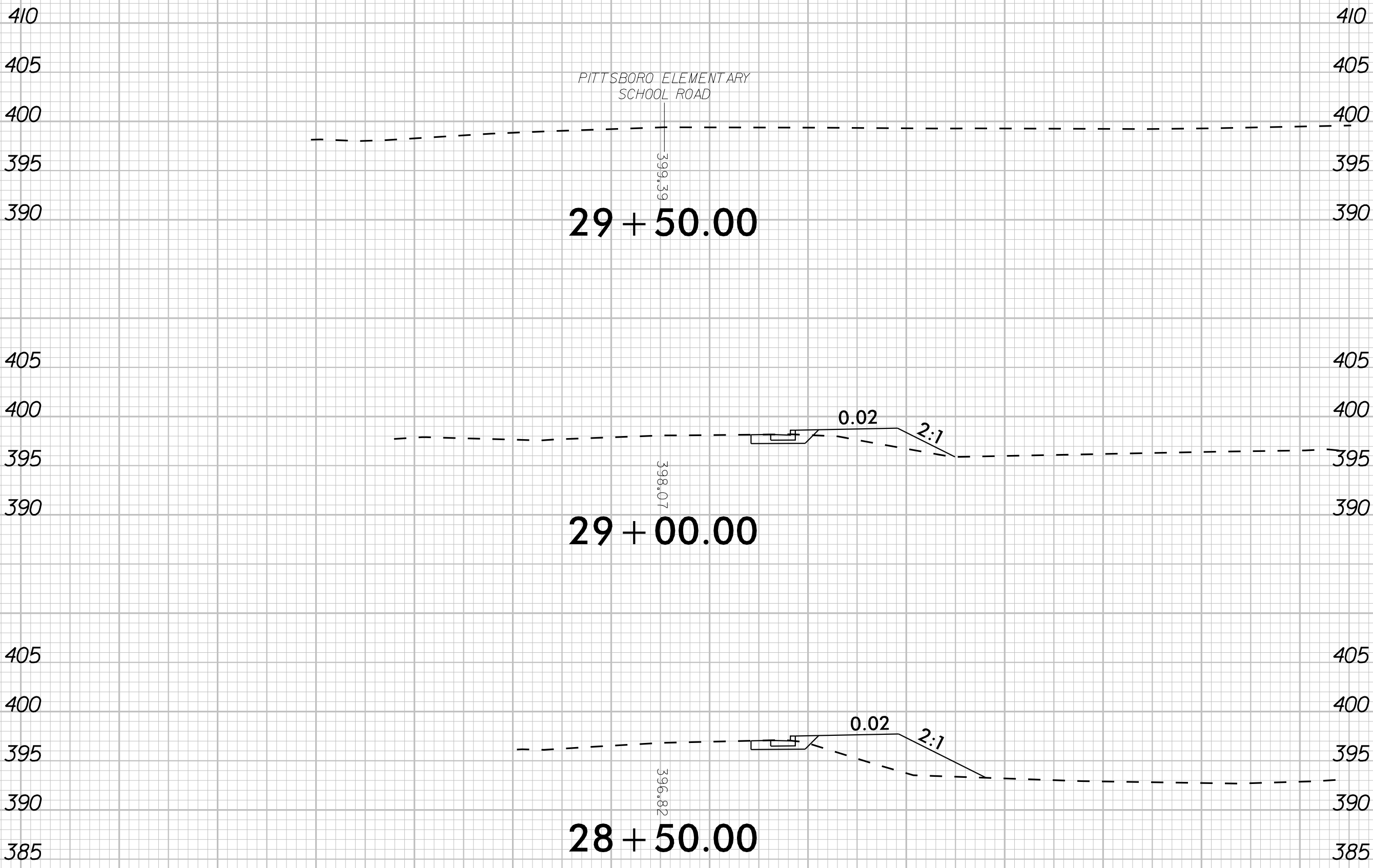
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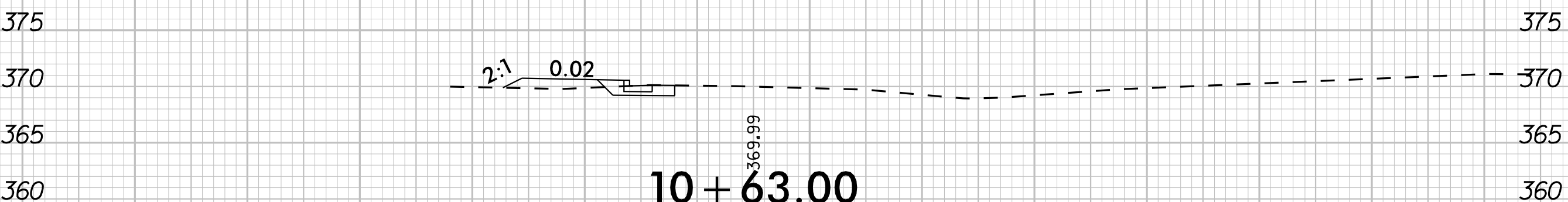
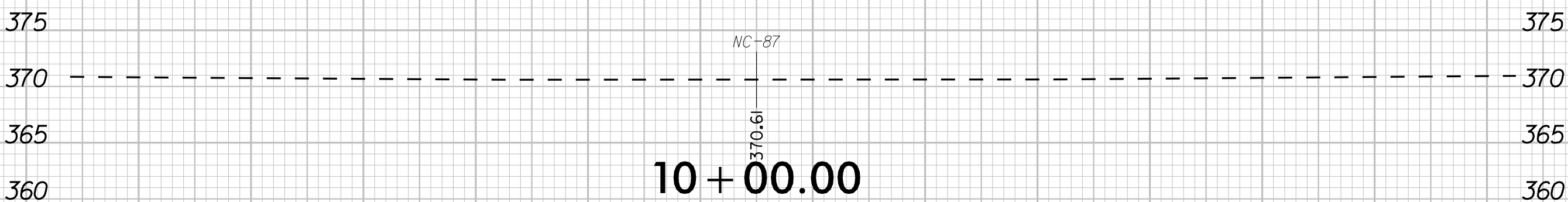
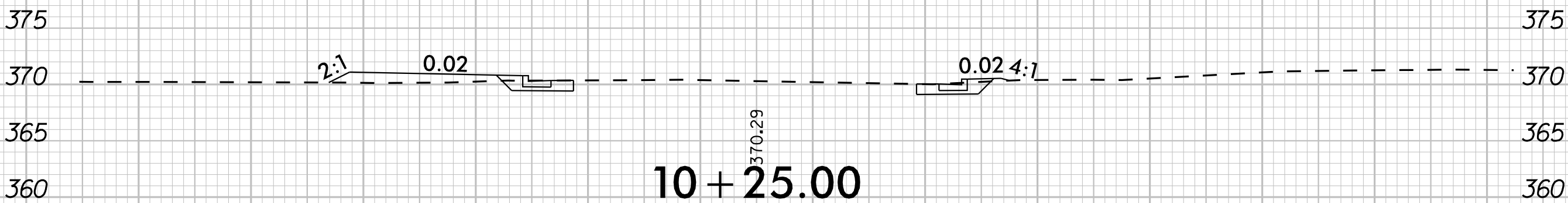
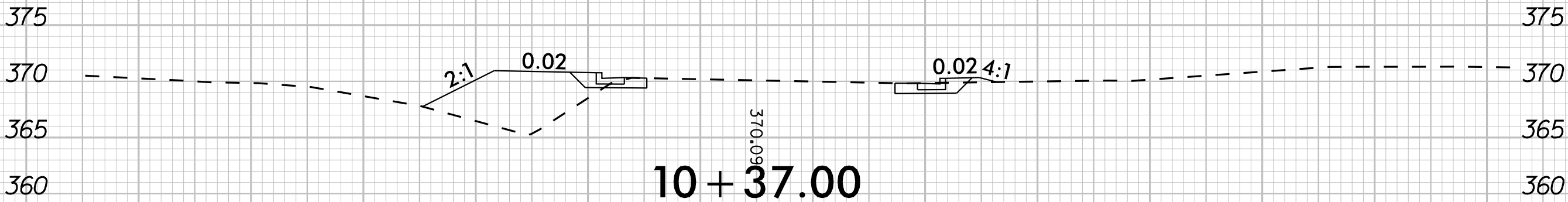
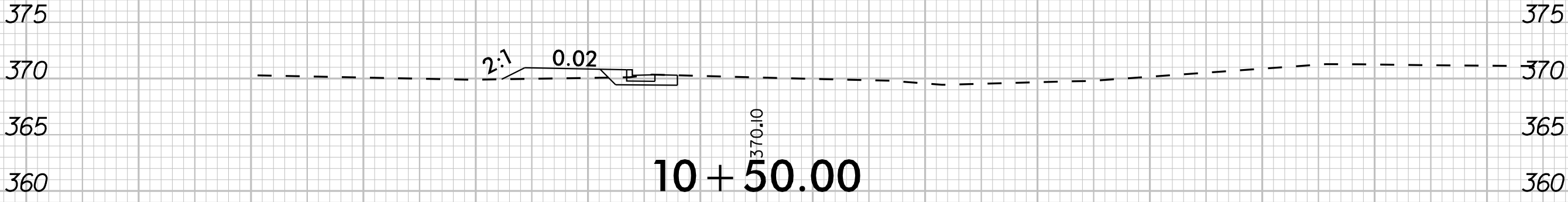
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-YI- PARK ENTRANCE