

PROJECT: 095.01.D3EFE

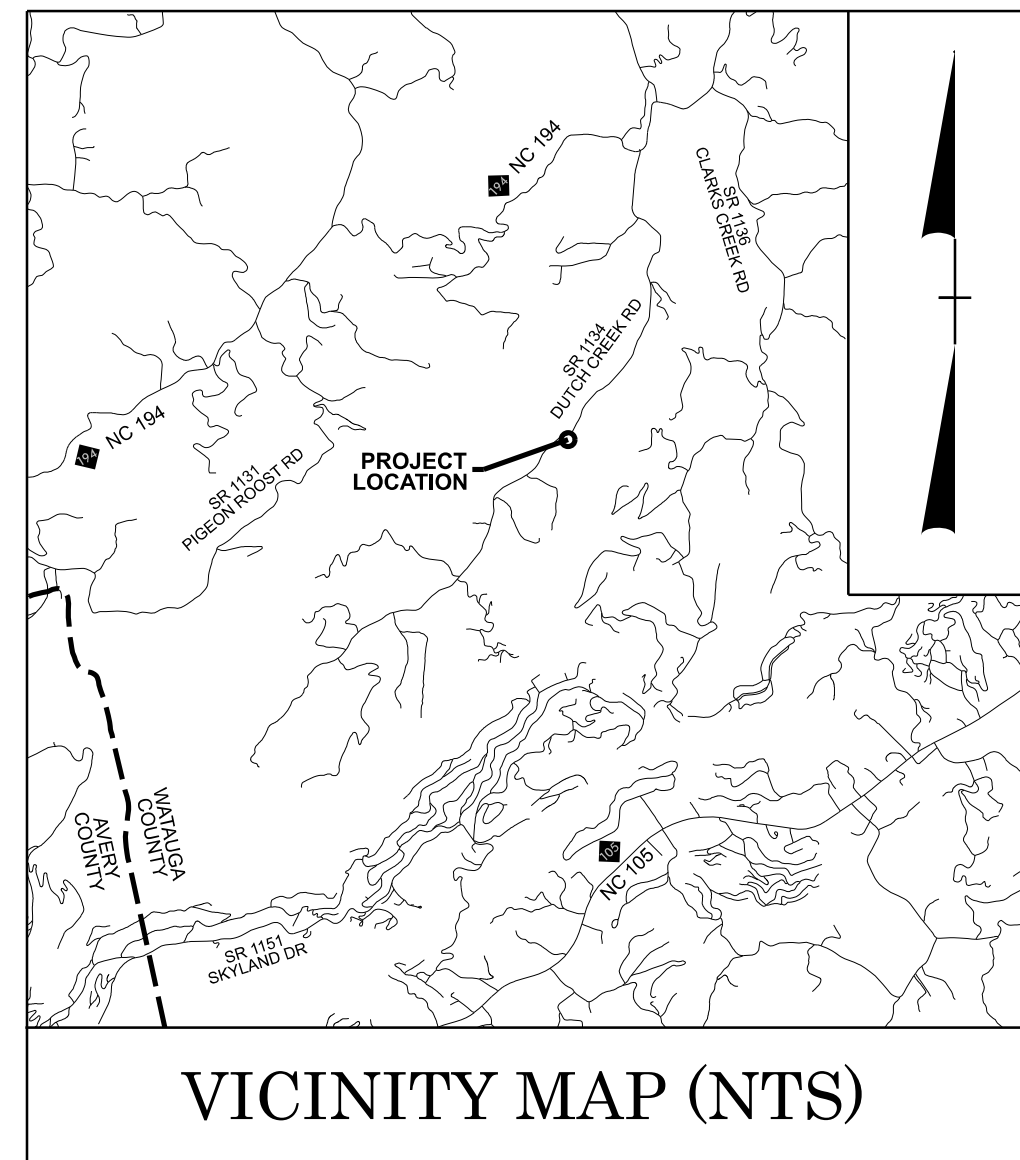
CONTRACT:

# NORTH CAROLINA DEPARTMENT OF EMERGENCY MANAGEMENT

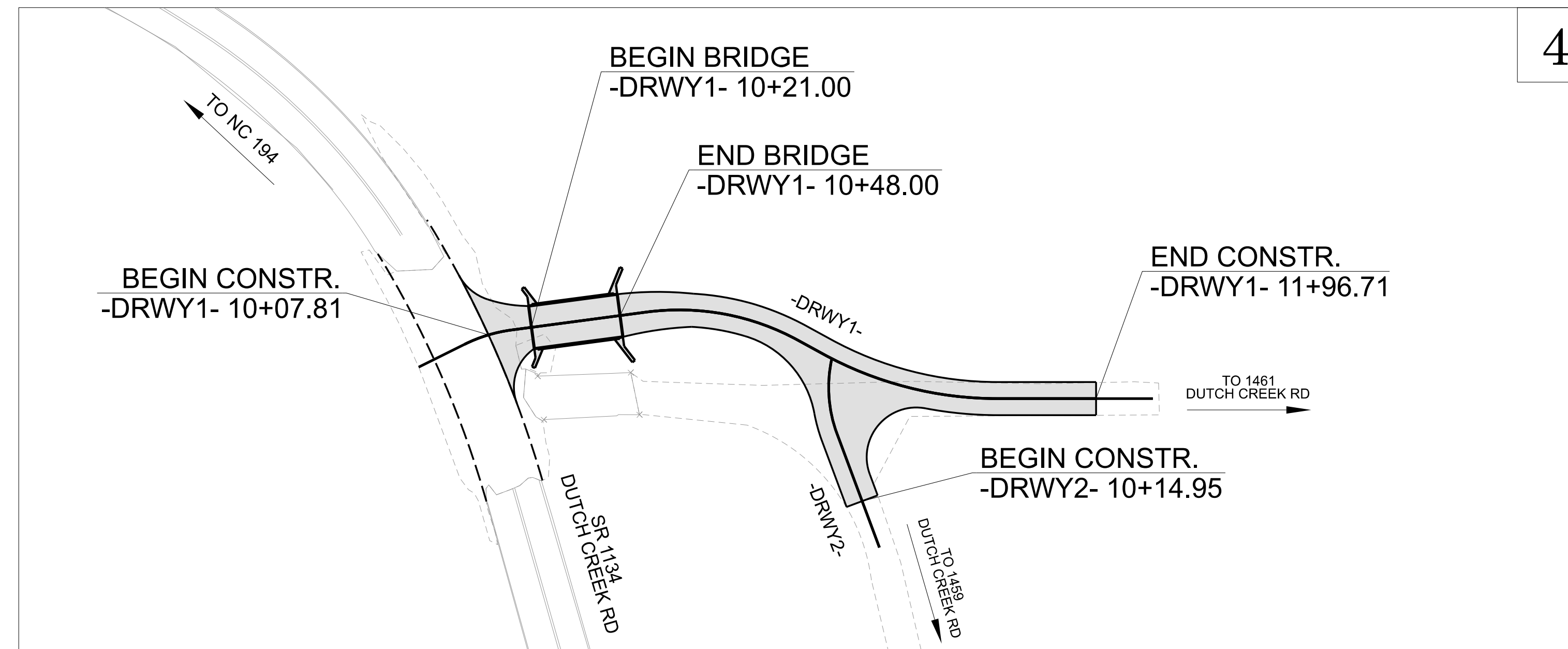
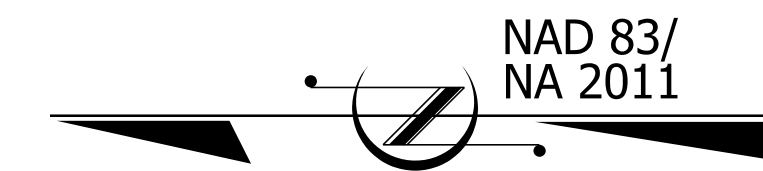
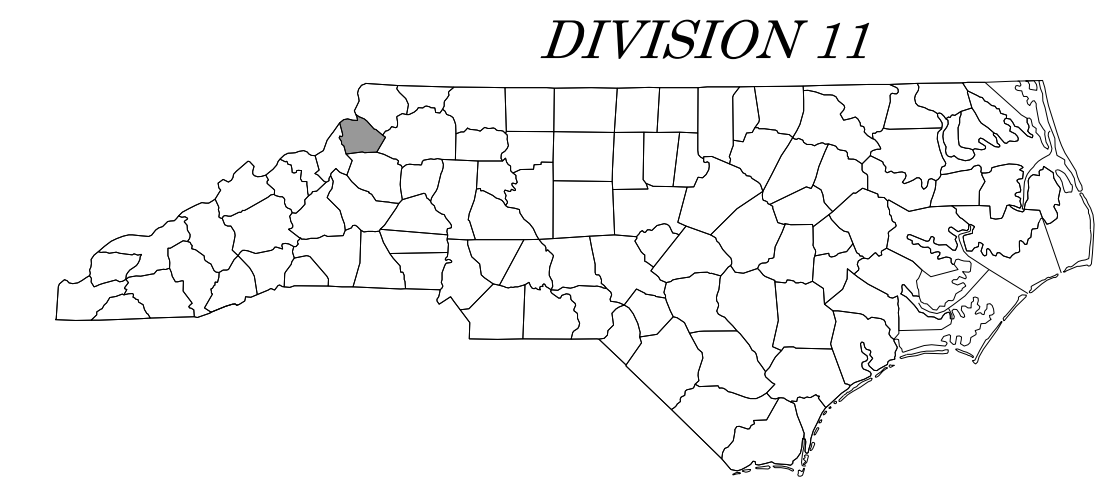
## WATAUGA COUNTY

LOCATION: *PRIVATE BRIDGE OFF DUTCH CREEK RD  
OVER DUTCH CREEK TO 1461 DUTCH CREEK RD*

TYPE OF WORK: *GRADING, PAVING, & STRUCTURE*



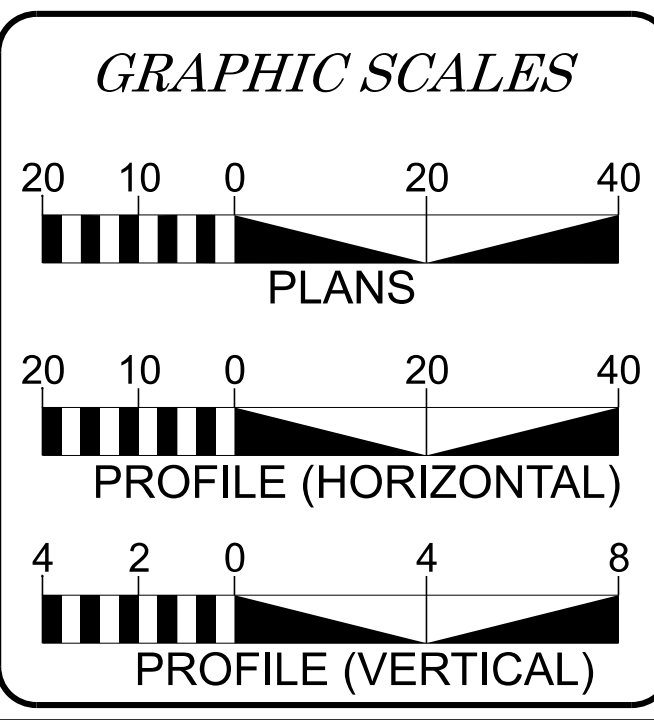
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	095.01.D3EFE	11	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	



4

INDEX OF SHEETS	
SHEET NUMBER	SHEET
1	TITLE SHEET
1B	CONVENTIONAL SYMBOLS
4	TYPICAL SECTIONS, QUANTITIES, PLAN, AND PROFILE SHEET
TMP-1 THRU TMP-2	TRAFFIC CONTROL PLANS
EC-1 THRU EC-04	EROSION CONTROL PLANS
X-1 THRU X-4	CROSS-SECTIONS
S-1 THRU S-13	STRUCTURE PLANS

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



*PROJECT LENGTH*

LENGTH OF ROADWAY PROJECT = 0.031 MILES  
LENGTH OF STRUCTURE PROJECT = 0.005 MILES  
TOTAL LENGTH OF PROJECT = 0.036 MILES

Prepared in the Office of:  
**The John R. McAdams Company, Inc.**  
621 Hillsborough Street Suite 500 Raleigh, NC 27603  
N.C.B.E.L.S. License Number: C-0293

2024 STANDARD SPECIFICATIONS

*RIGHT OF WAY DATE:*  
N/A

*LETTING DATE:*  
N/A

**PAUL JACOB, PE**  
PROJECT ENGINEER

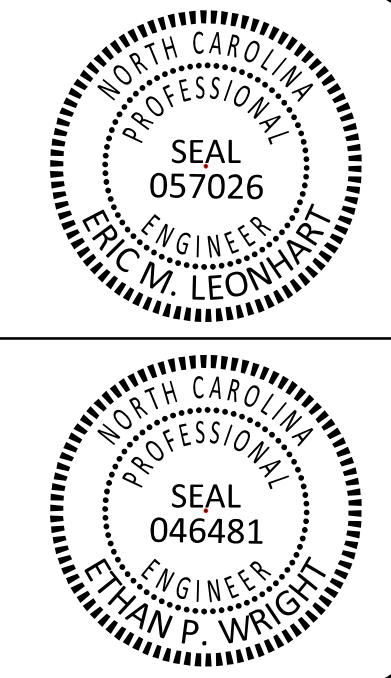
**ETHAN WRIGHT, PE**  
PROJECT DESIGN ENGINEER

*HYDRAULICS ENGINEER*  
1/8/2026

Signed by:  
*Eric Louhart*  
C9ADAC01DZAC417 P.E.  
SIGNATURE:

*ROADWAY DESIGN ENGINEER*  
1/8/2026

Signed by:  
*Ethan P. Wright*  
3E08921020114DE P.E.  
SIGNATURE:



Note: Not to Scale

# CONVENTIONAL PLAN SHEET SYMBOLS

095.01.D3EFE  
IB

## BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin (EIP)	○ EIP
Computed Property Corner	×
Existing Concrete Monument (ECM)	◻ ECM
Parcel / Sequence Number	⑫③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---WLB---
Proposed Wetland Boundary	---WLB---
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---
Existing Historic Property Boundary	---HPB---
Known Contamination Area: Soil	---S---
Potential Contamination Area: Soil	---S---
Known Contamination Area: Water	---W---
Potential Contamination Area: Water	---W---
Contaminated Site: Known or Potential	☠ ?

## BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	▭
Area Outline	▭
Cemetery	▭ +
Building	▭
School	▭
Church	▭
Dam	▭

## HYDROLOGY:

Stream or Body of Water	~~~~~
Hydro, Pool or Reservoir	▭
Jurisdictional Stream	---JS---
Buffer Zone 1	---BZ 1---
Buffer Zone 2	---BZ 2---
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	⌵
Proposed Lateral, Tail, Head Ditch	---FLW---
False Sump	◊

## RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	▭ 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	---C---
Proposed Slope Stakes Fill	---F---
Proposed Curb Ramp	○ CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	▣

## VEGETATION:

Single Tree	☼
Single Shrub	☼
Hedge	~~~~~

Woods Line	~~~~~
Orchard	☼ ☼ ☼ ☼
Vineyard	▭ Vineyard

## EXISTING STRUCTURES:

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

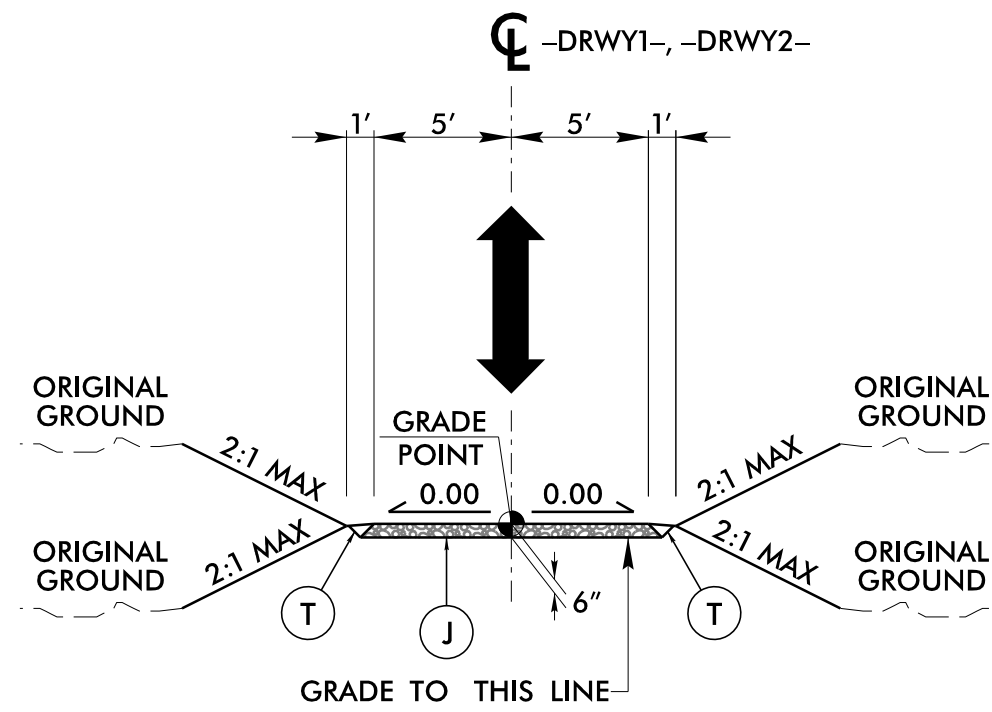
## MISCELLANEOUS:

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	AATUR
End of Information	E.O.I.

**PAVEMENT SCHEDULE**  
(FINAL PAVEMENT DESIGN)

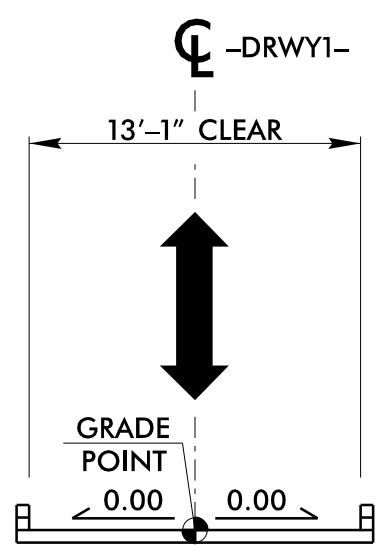
J	PROP. 6" AGGREGATE BASE COURSE
T	EARTH MATERIAL

NOTES:  
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.



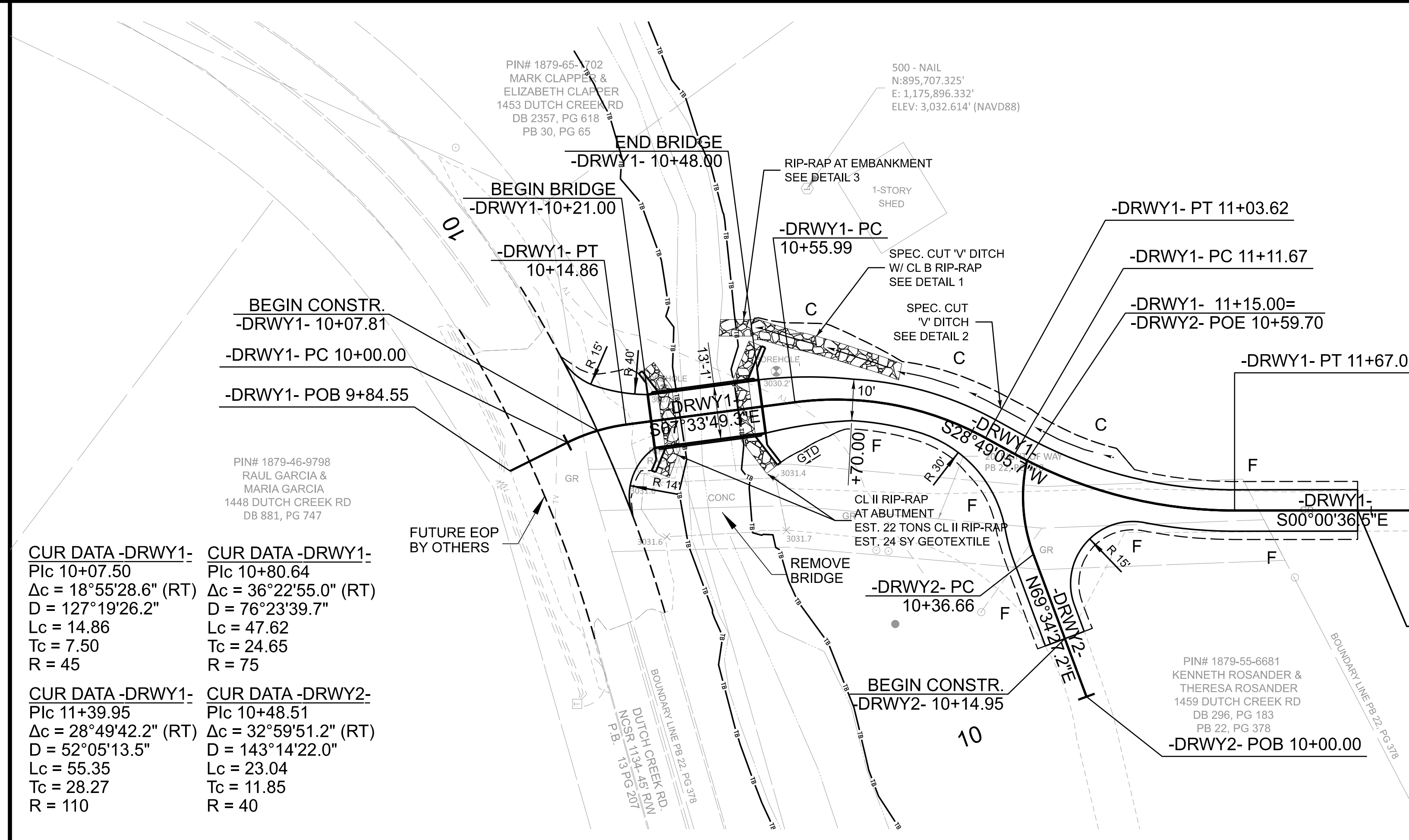
**TYPICAL SECTION NO. 1**

-DRWY1- STA. 10+07.81 TO STA. 10+21.00 (BEGIN BRIDGE)  
-DRWY1- STA. 10+48.00 (END BRIDGE) TO STA. 11+96.71  
-DRWY2- STA. 10+14.95 TO STA. 10+54.43

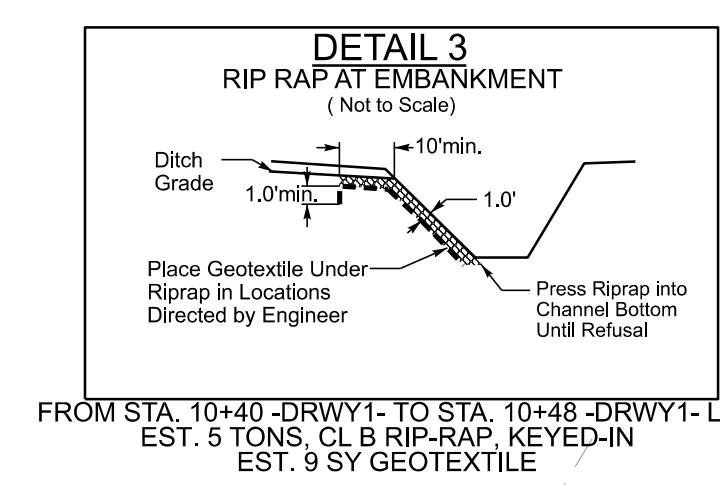
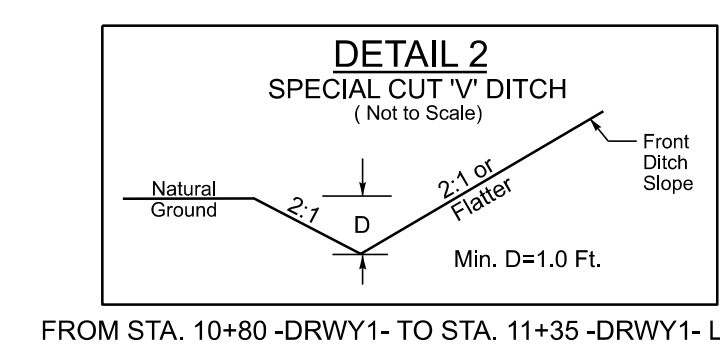
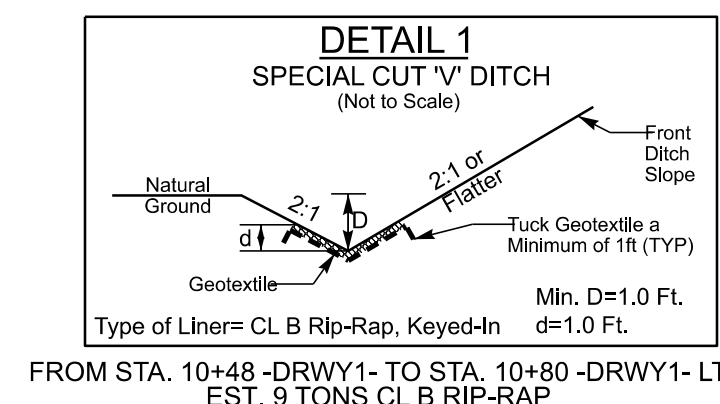
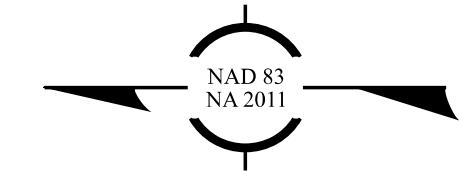


**TYPICAL SECTION NO. 2**

-DRWY1- STA. 10+21.00 (BEGIN BRIDGE) TO -DRWY1- STA. 10+48.00 (END BRIDGE)



<b>CUR DATA -DRWY1-</b> Plc 10+07.50 $\Delta c = 18^{\circ}55'28.6''$ (RT) D = 127°19'26.2" Lc = 14.86 Tc = 7.50 R = 45	<b>CUR DATA -DRWY1-</b> Plc 10+80.64 $\Delta c = 36^{\circ}22'55.0''$ (RT) D = 76°23'39.7" Lc = 47.62 Tc = 24.65 R = 75
<b>CUR DATA -DRWY1-</b> Plc 11+39.95 $\Delta c = 28^{\circ}49'42.2''$ (RT) D = 52°05'13.5" Lc = 55.35 Tc = 28.27 R = 110	<b>CUR DATA -DRWY2-</b> Plc 10+48.51 $\Delta c = 32^{\circ}59'51.2''$ (RT) D = 143°14'22.0" Lc = 23.04 Tc = 11.85 R = 40



095.01.03EFE  
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NORTH CAROLINA DEPARTMENT OF EMERGENCY MANAGEMENT  
WATAUGA COUNTY

ROADWAY DESIGN ENGINEER  
KATHARINE P. WRIGHT  
Professional Engineer  
049481  
1/8/2026

HYDRAULICS ENGINEER  
ERIC M. LEONHART  
Professional Engineer  
057026  
1/8/2026

PREPARED BY  
MCADAMS  
621 Hibernian Street, Suite 500 Raleigh, NC 27603  
N.C. E.L.L. License Number: C-0291

**ROADWAY QUANTITIES**

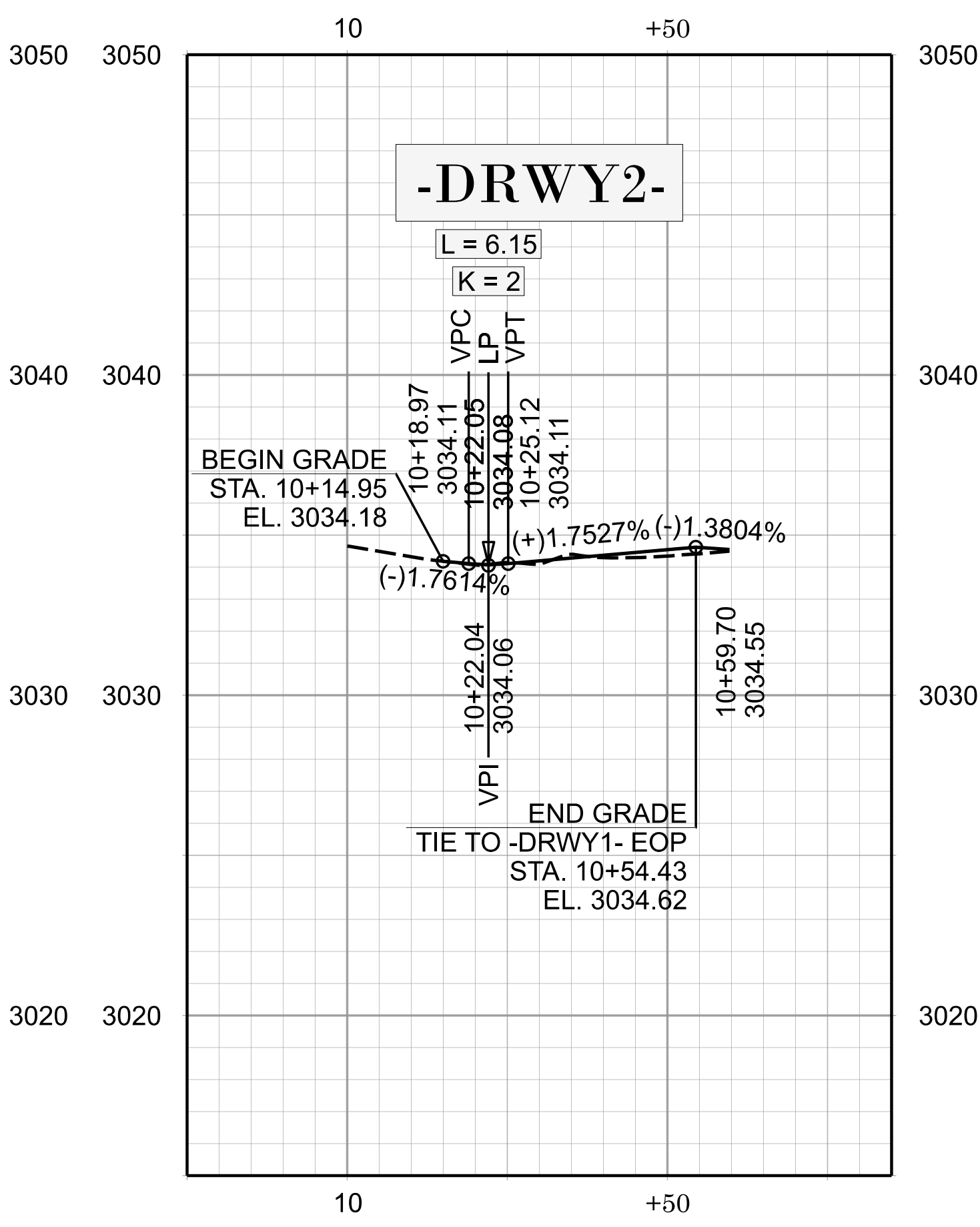
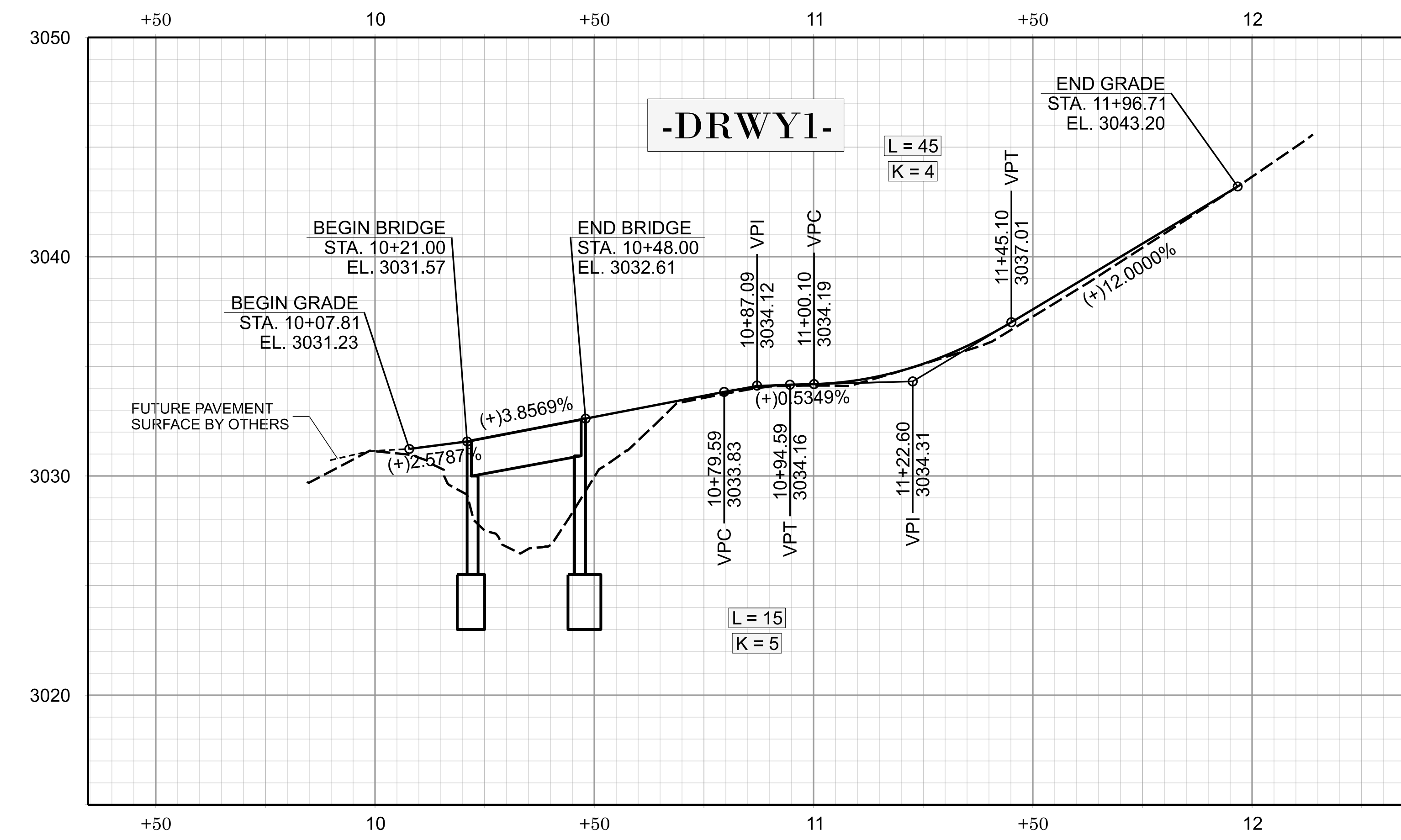
DESCRIPTION	QUANTITY	UNITS
UNCLASSIFIED EXCAVATION	30	CY
BORROW EXCAVATION	1	CY
AGGREGATE BASE COURSE	104	TONS
RIP RAP, CLASS B	14	TONS
RIP RAP, CLASS II	22	TONS
GEOTEXTILE FOR DRAINAGE	49	SY

I hereby certify that I have reviewed the existing hydraulic conveyance at this site, which was a 29 FT long existing bridge with a hydraulic conveyance of 67 SF, replaced with a 27 FT long bridge with a proposed hydraulic conveyance of 73 SF.

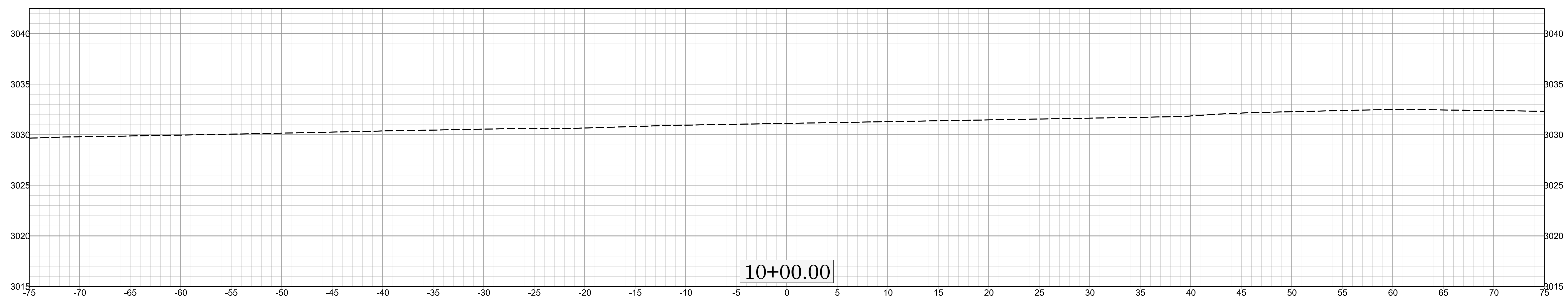
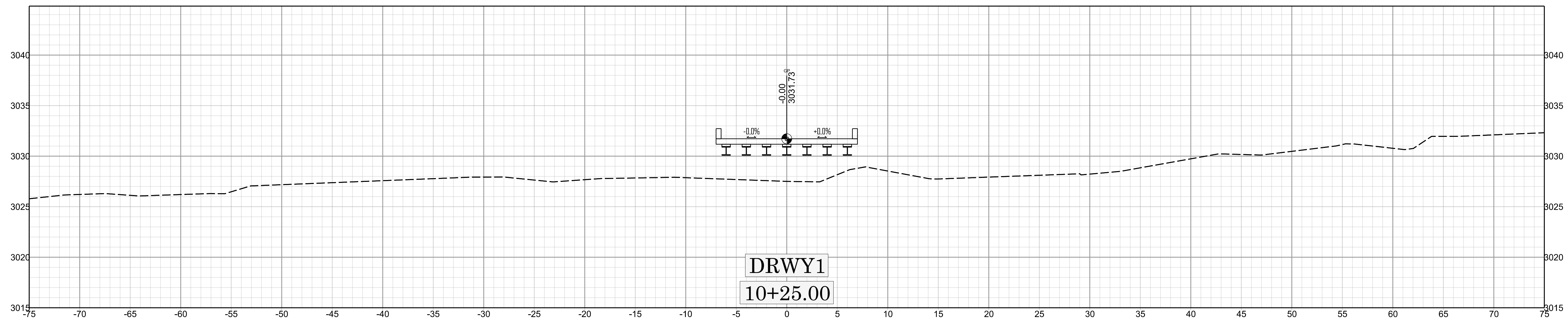
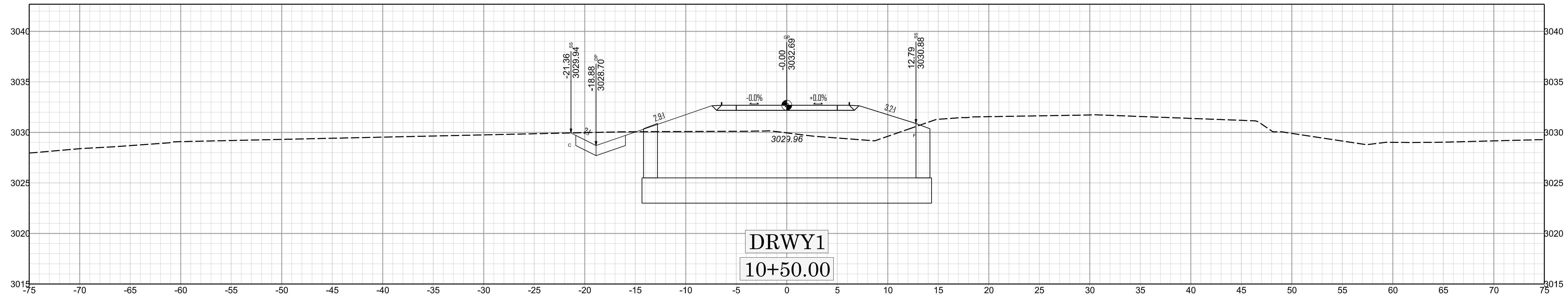
The proposed bridge low chord for the bridge shall be set in accordance with the FEMA Disaster Specific Guidance for the Replacement of Private Roads and Bridges issued on 14 February 2025, "to provide bridge/culvert design plans certified (sealed, signed, and dated) by a Professional Engineer licensed in the State of North Carolina demonstrating that the newly designed and installed private bridge/culvert provides conveyance greater than or equal to the original destroyed crossing".

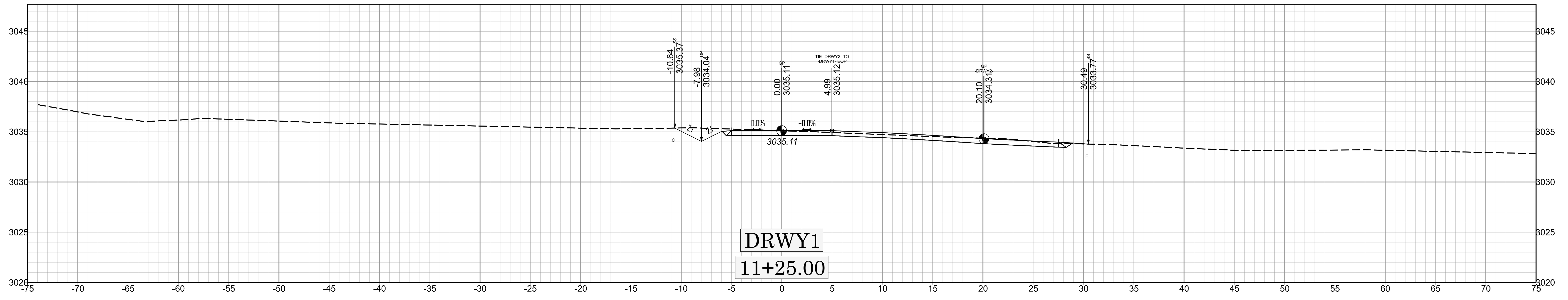
This certification demonstrates that the newly designed and installed private bridge/culvert provides conveyance greater than or equal to the original destroyed crossing. This is based on the best available data provided from post storm evaluations. Portions of the existing structure have been destroyed, removed, modified or shifted from their original location or elevation.

1/8/2026  
Professional Engineer  
ERIC M. LEONHART  
057026

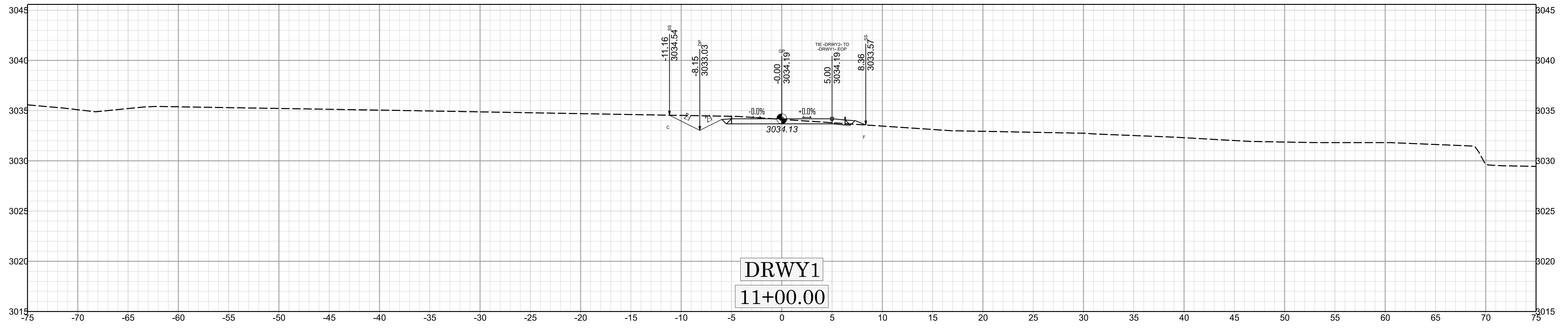
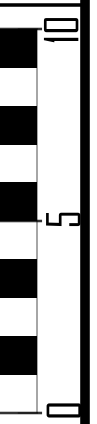


REVISIONS

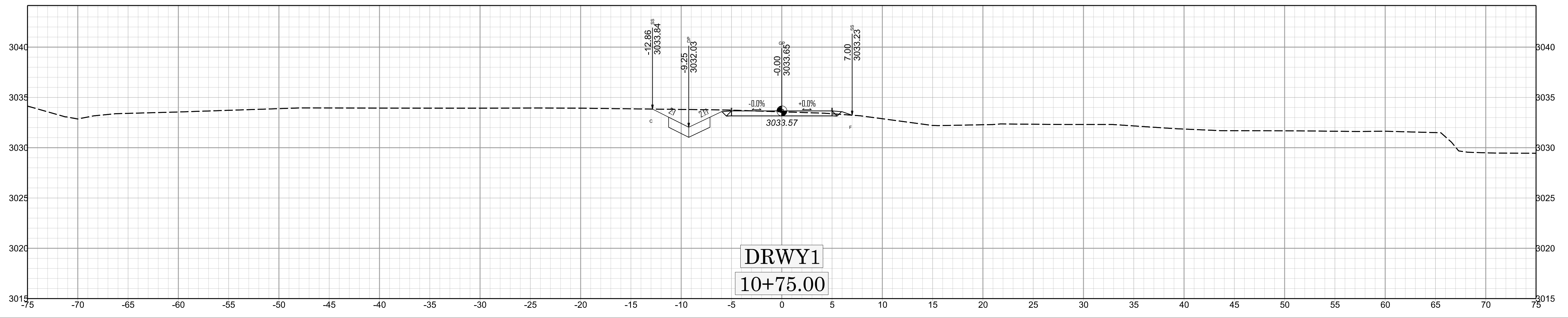




DRWY1  
11+25.00

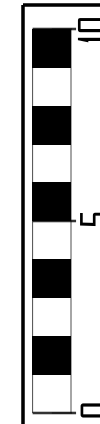
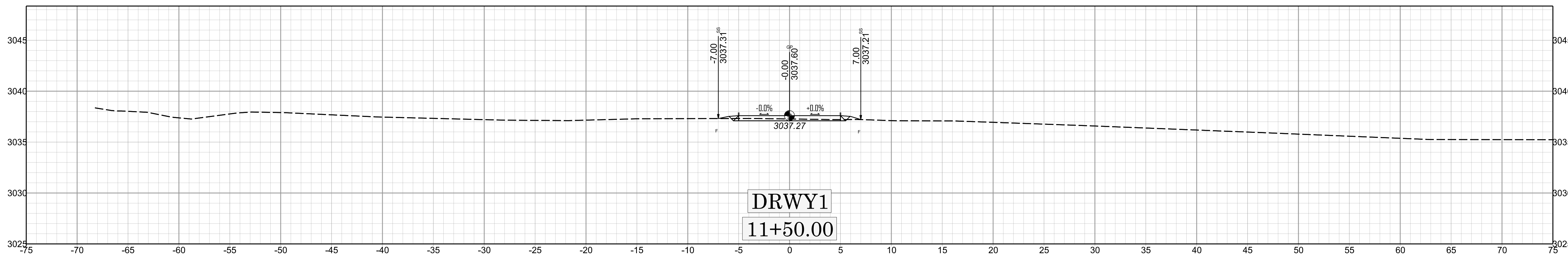
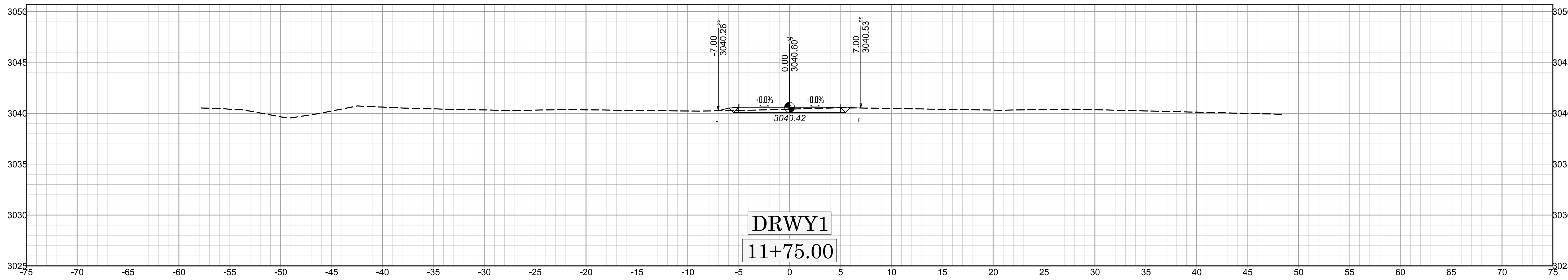
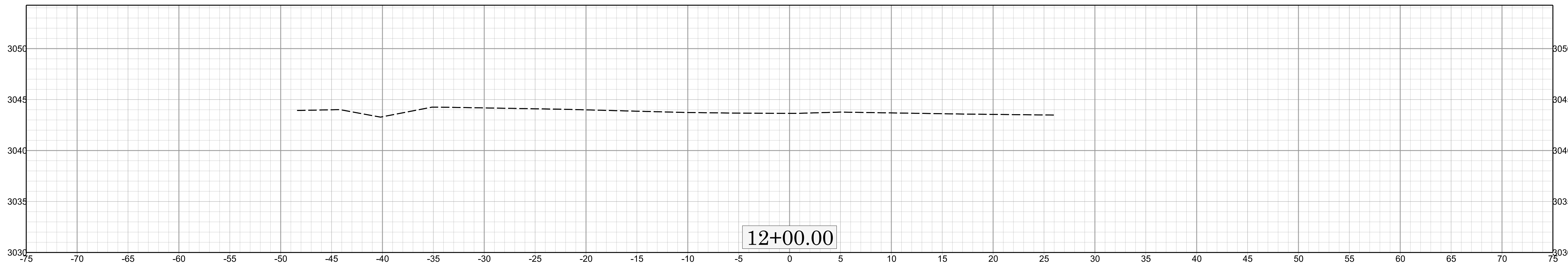


DRWY1  
11+00.00



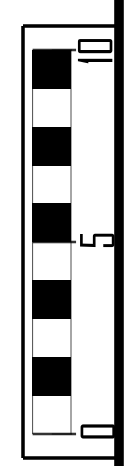
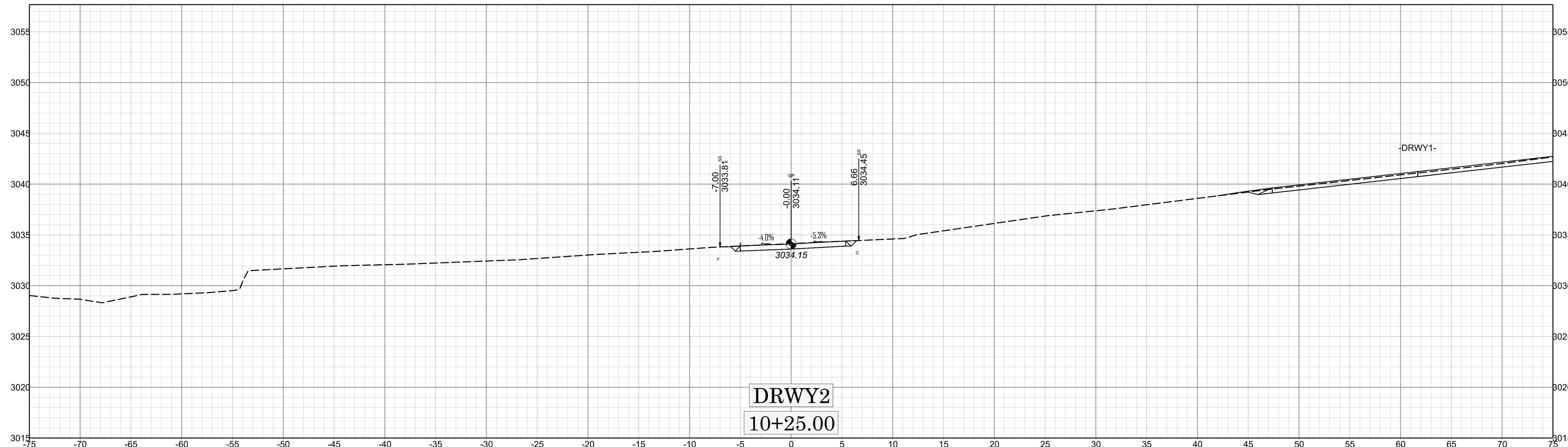
DRWY1  
10+75.00





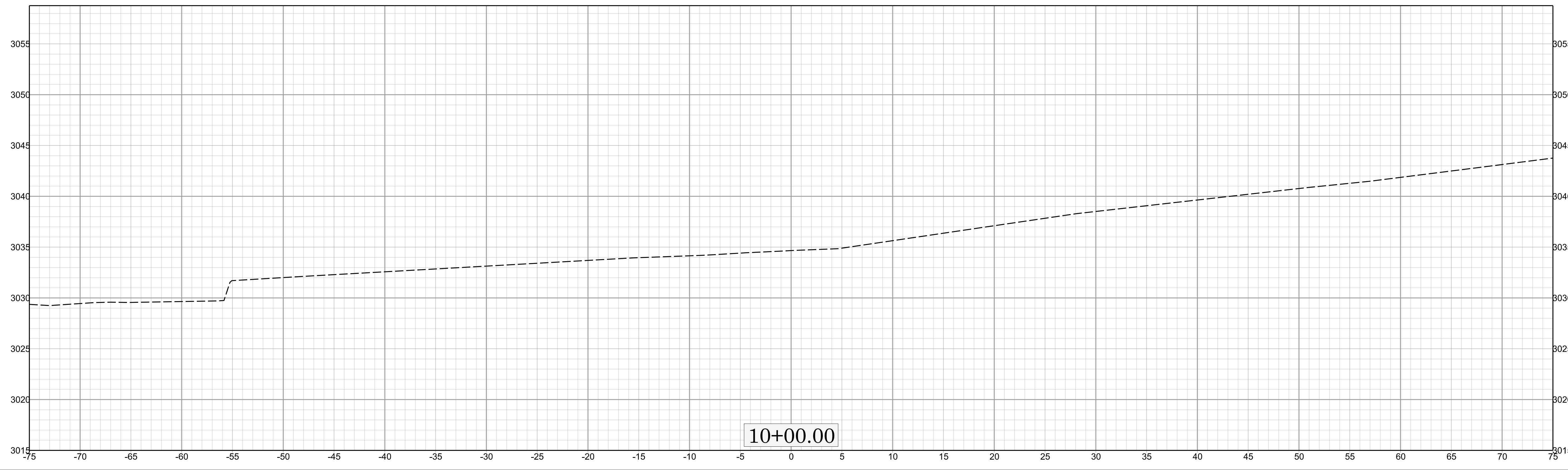
X 3

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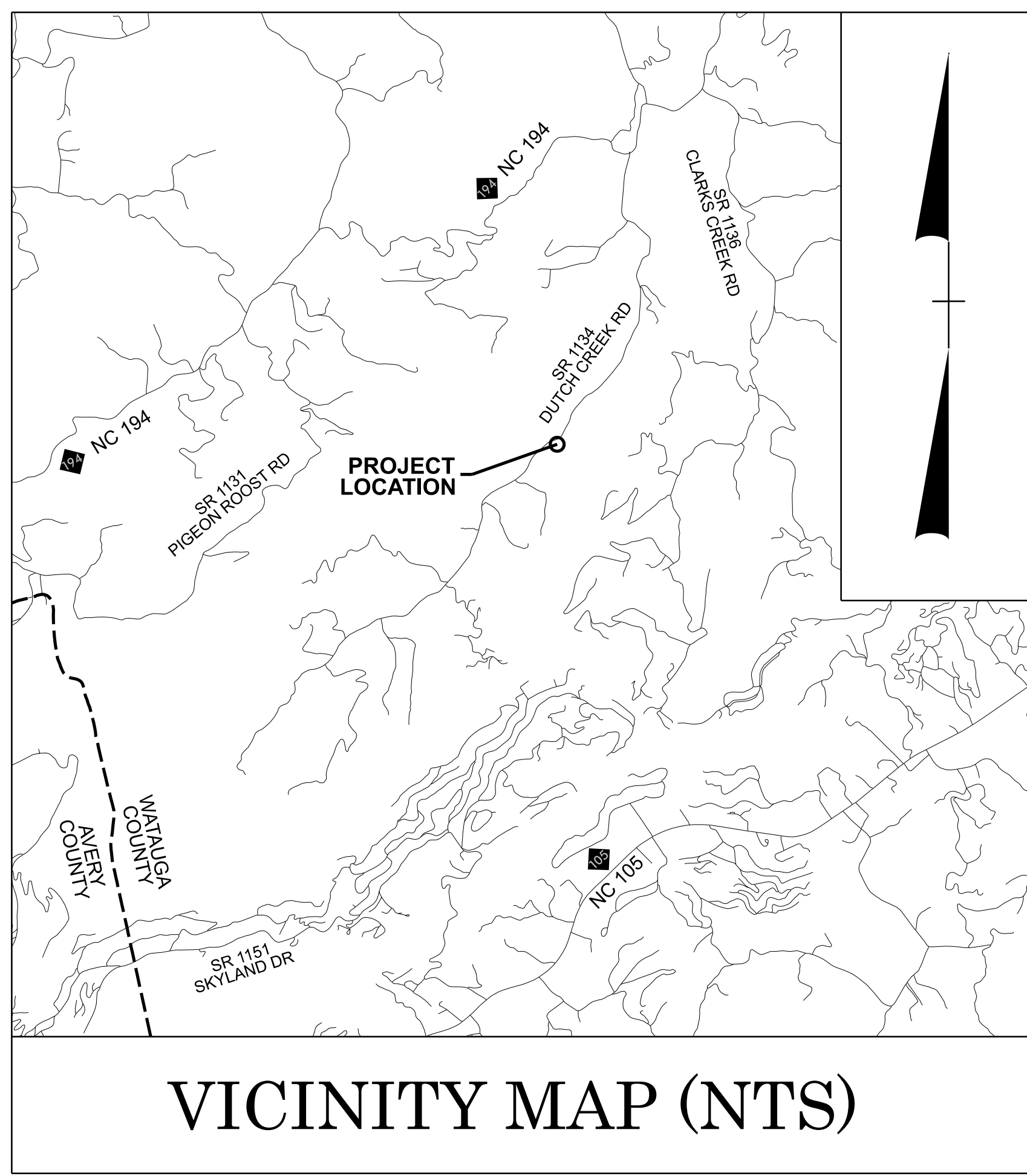
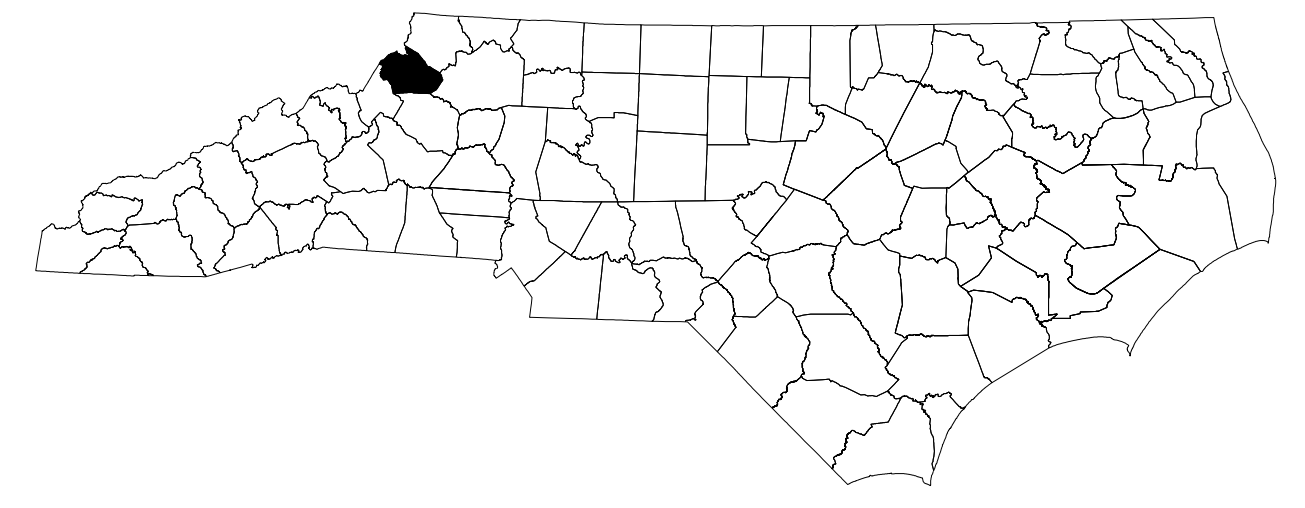
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# NORTH CAROLINA DEPARTMENT OF EMERGENCY MANAGEMENT *TRANSPORTATION MANAGEMENT PLAN*

## WATAUGA COUNTY



VICINITY MAP (NTS)

<u>SHEET NO.</u>	<u>TITLE</u>
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES AND GENERAL NOTES)
TMP-2	TEMPORARY TRAFFIC CONTROL DETAIL

SHEET NO.  
TMP-1

*095.01.D3EFFE*

*PROJECT:*

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

<i>PLANS PREPARED BY:</i>	<i>CONTACTS:</i>
_____ ETHAN WRIGHT, PE PROJECT ENGINEER	_____ CHRIS WERNER, PE PRIVATE ROAD AND BRIDGE PROGRAM MANAGER
_____ DANIEL KIMEL PROJECT DESIGN TECHNICIAN	



**McADAMS**  
 The John R. McAdams Company, Inc.  
 621 Hillsborough Street Suite 500 Raleigh, NC 27603  
 N.C.B.E.L.S. License Number: C-0293

APPROVED: \_\_\_\_\_  
 DATE: 1/8/2026

\$\$\$\$\$ SYSTEM \$\$\$\$\$\$  
\$\$\$\$\$ ADDONS \$\$\$\$\$\$  
\$\$\$\$\$ PURCHASE \$\$\$\$\$\$  
\$\$\$\$\$



## MANAGEMENT STRATEGIES

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

RECOMMENDED STRATEGIES:

TRAFFIC MANAGEMENT STRATEGIES:  
ONE-LANE, TWO WAY OPERATION (FLAGGING)

## GENERAL NOTES / LOCAL NOTES

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

### LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED.
- B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 5 FT OF AN OPEN TRAVEL LANE ON AN UNDIVIDED FACILITY, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 10 FT OF AN OPEN TRAVEL LANE ON A DIVIDED FACILITY, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

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

### TRAFFIC PATTERN ALTERATIONS

- D) NOTIFY NCDOT DIVISION 11 DISTRICT 2 THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

### SIGNING

- E) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION
- F) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

### TRAFFIC CONTROL DEVICES

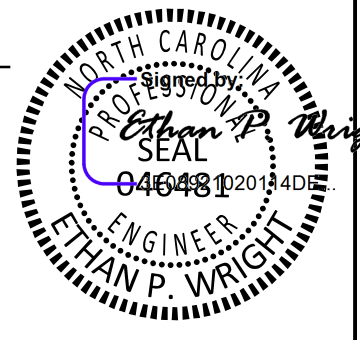
- G) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS),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

\$\$\$ SYSTEM \$\$\$  
 \$\$\$ ADDON \$\$\$  
 \$\$\$ SERIAL \$\$\$  
 \$\$\$ NAME \$\$\$



The John R. McAdams Company, Inc.  
621 Hillsborough Street Suite 500 Raleigh, NC 27603  
N.C.B.E.L.S. License Number: C-0293

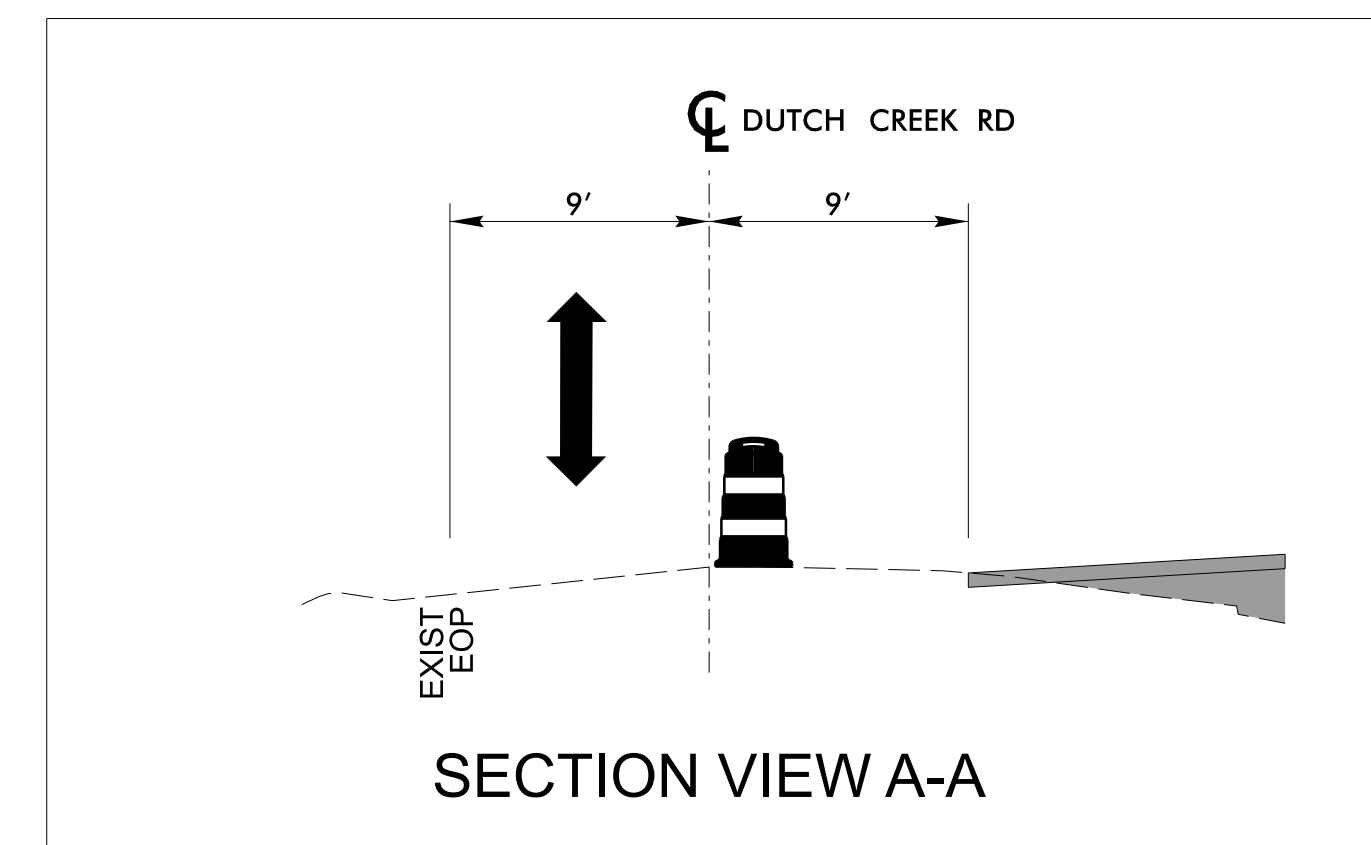
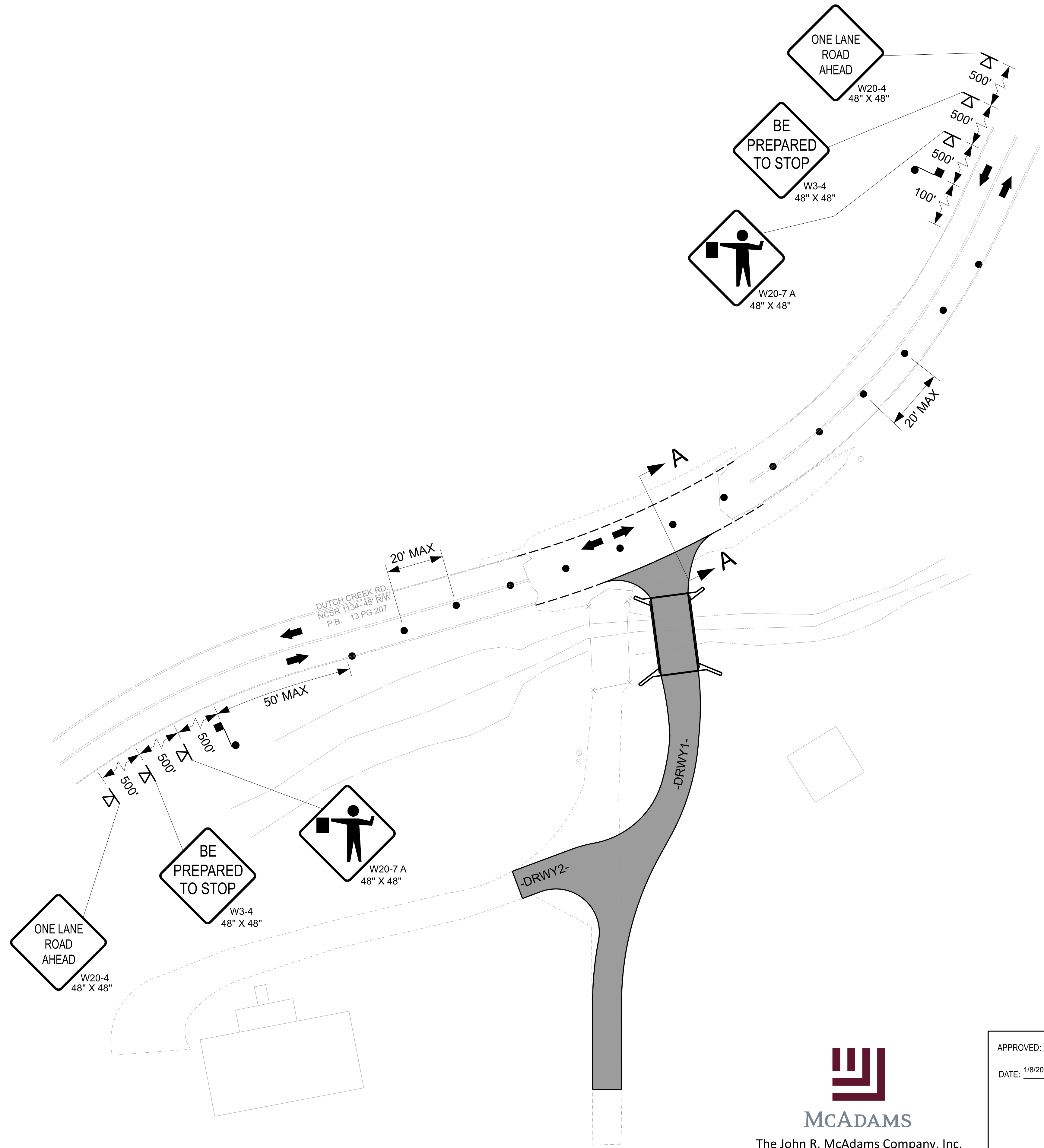
APPROVED: \_\_\_\_\_  
DATE: 1/8/2026



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



TRANSPORTATION  
OPERATIONS  
PLAN



\$\$\$\$\$ SYSTEM \$\$\$\$\$\$  
\$\$\$\$\$ DESIGN \$\$\$\$\$\$  
\$\$\$\$\$ USER NAME \$\$\$\$\$\$



**McAdams**  
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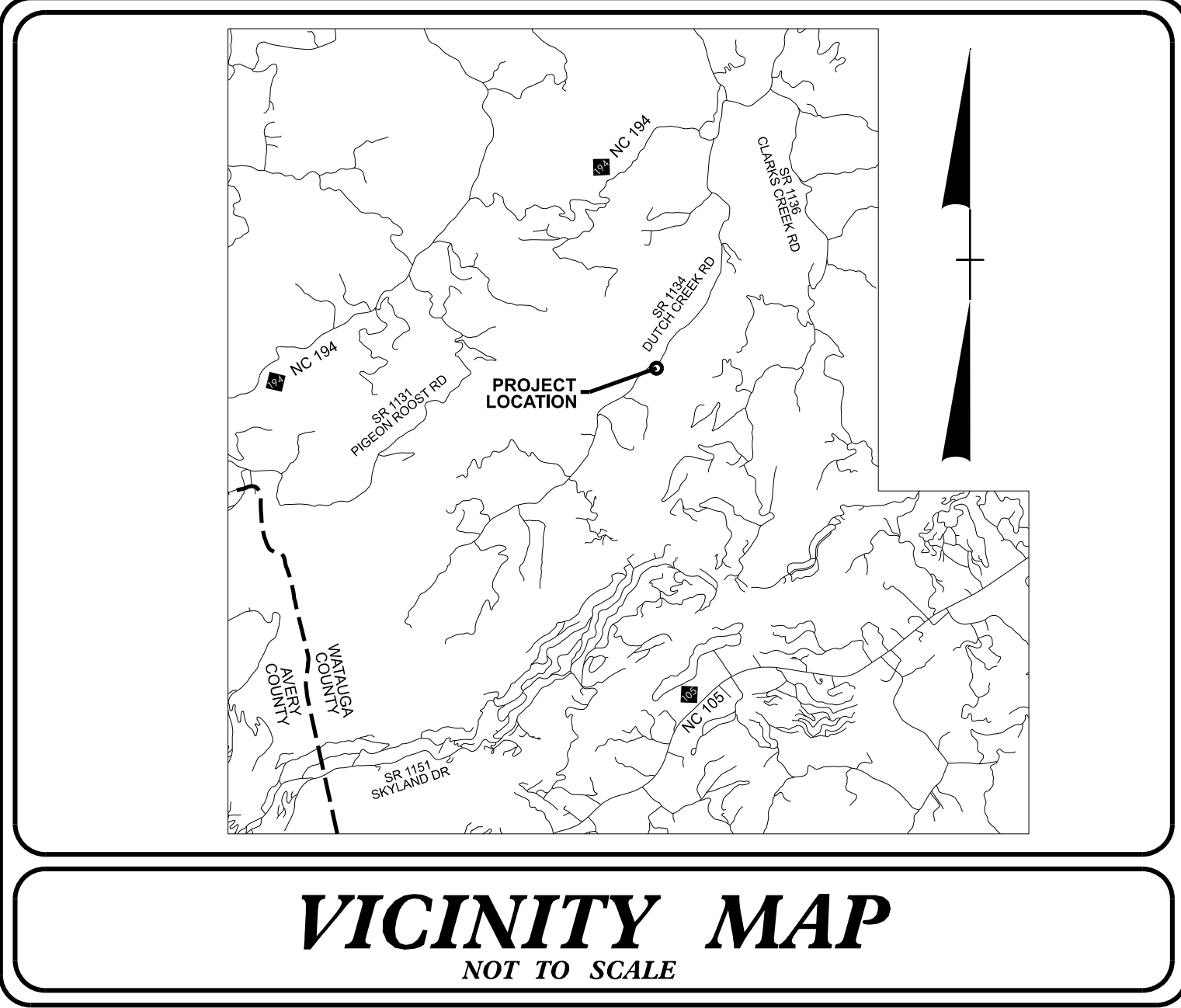
APPROVED: \_\_\_\_\_  
DATE: 1/8/2026

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**TEMPORARY TRAFFIC CONTROL DETAIL**

**PROJECT: 095.01.D3EFE**



STATE OF NORTH CAROLINA  
EMERGENCY MANAGEMENT  

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**PLAN FOR PROPOSED  
EROSION CONTROL**

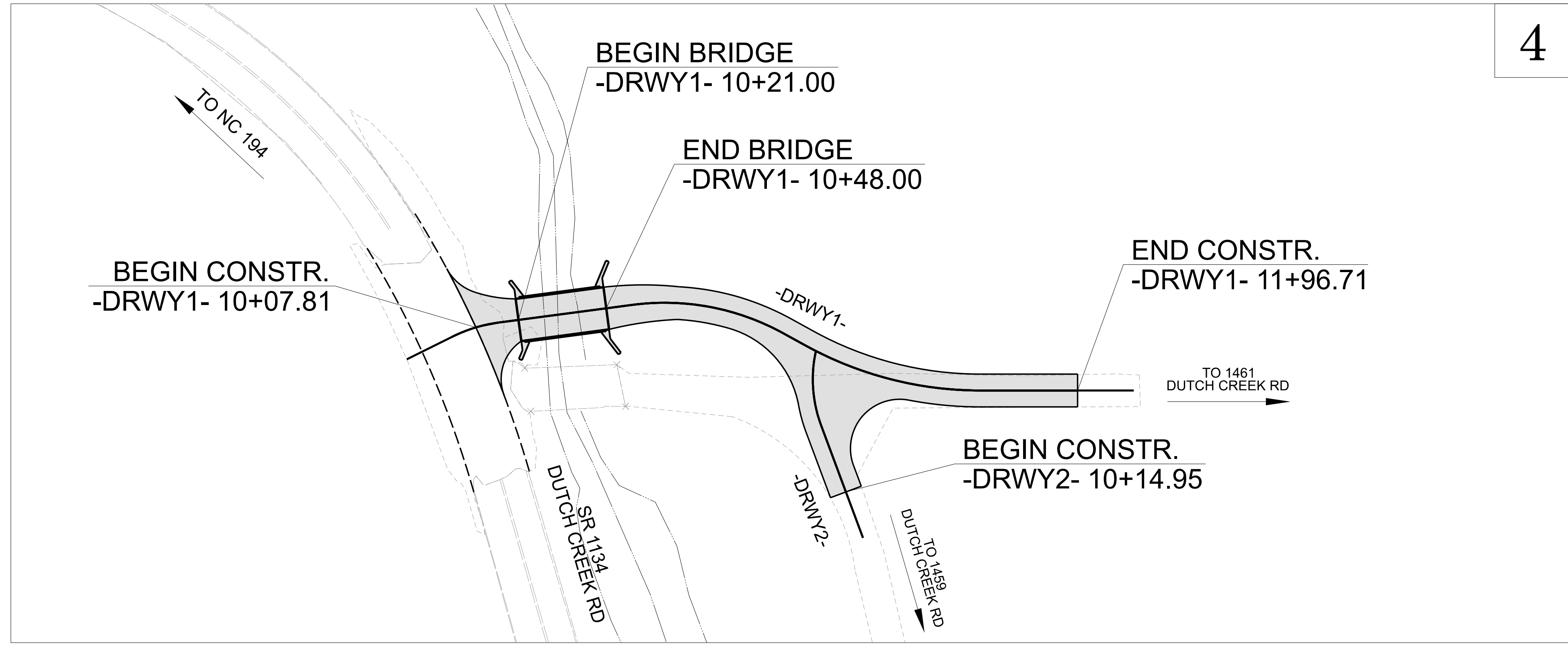
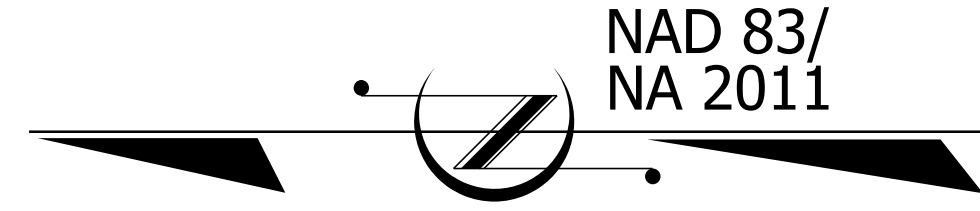
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LOCATION: *PRIVATE BRIDGE OFF DUTCH CREEK RD  
OVER DUTCH CREEK TO 1461 DUTCH CREEK RD*

TYPE OF WORK: *GRADING, PAVING, & STRUCTURE*

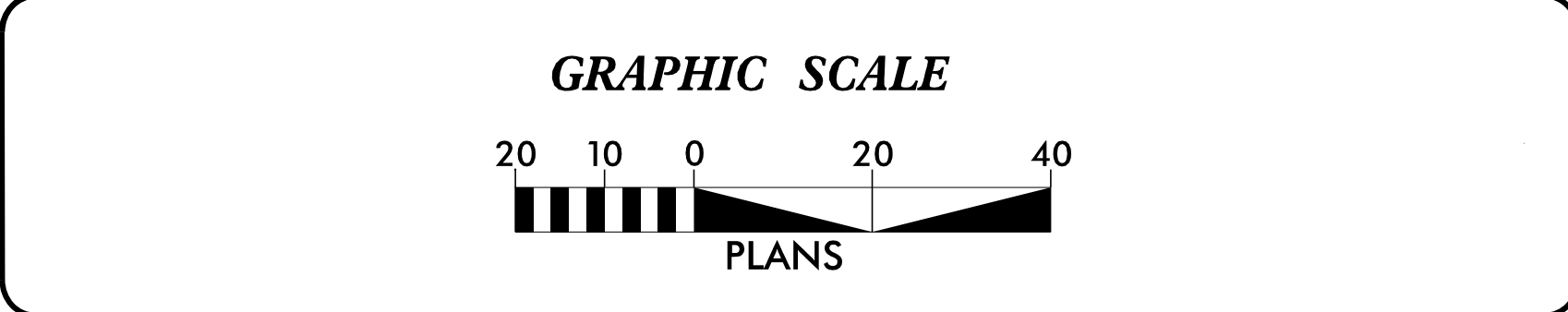
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	095.01.D3EFE	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



**ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT**  
*Refer To E. C. Special Provisions for Special Considerations.*

**THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.**

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



*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.*



*Prepared in the Office of:*

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N.C.B.E.L.S. License Number: C-0293

*Designed by:*

**ERIC LEONHART, PE** **3502**  
NAME LEVEL III CERTIFICATION NO.

**Roadway Standard Drawings**

The "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2024 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

# DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

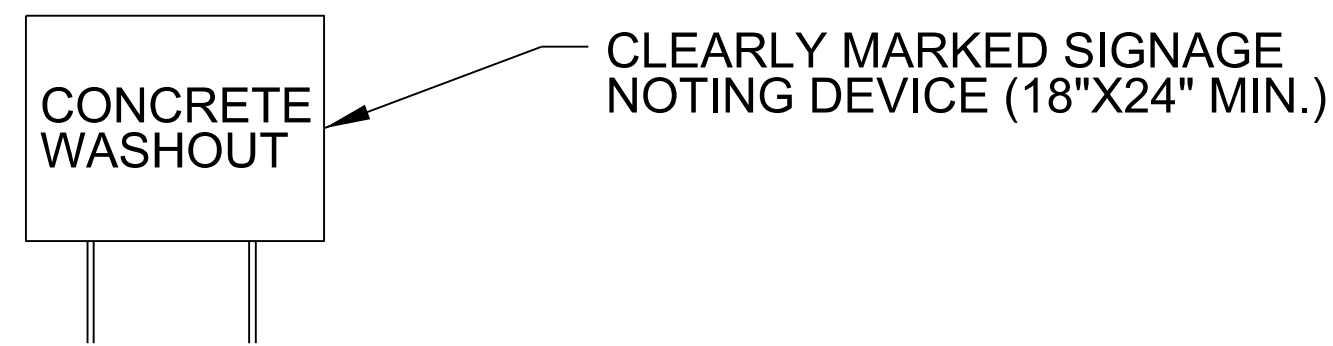
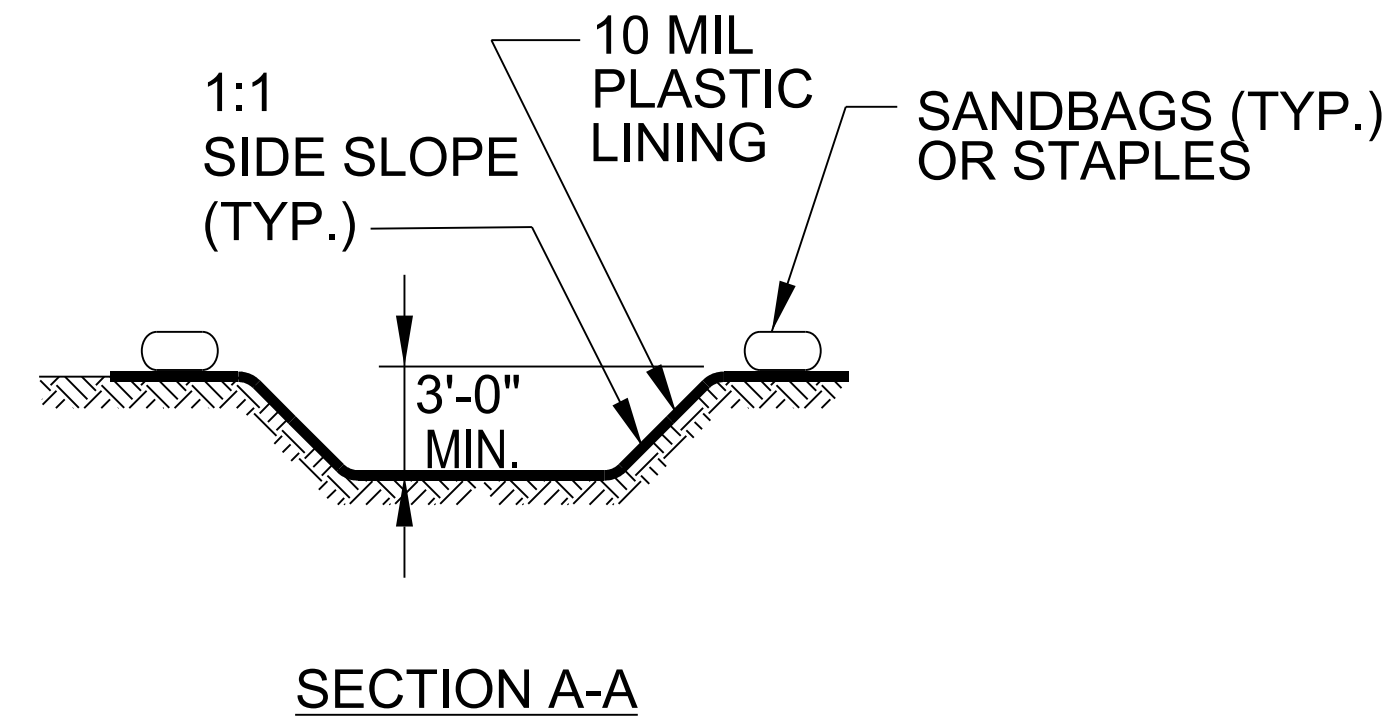
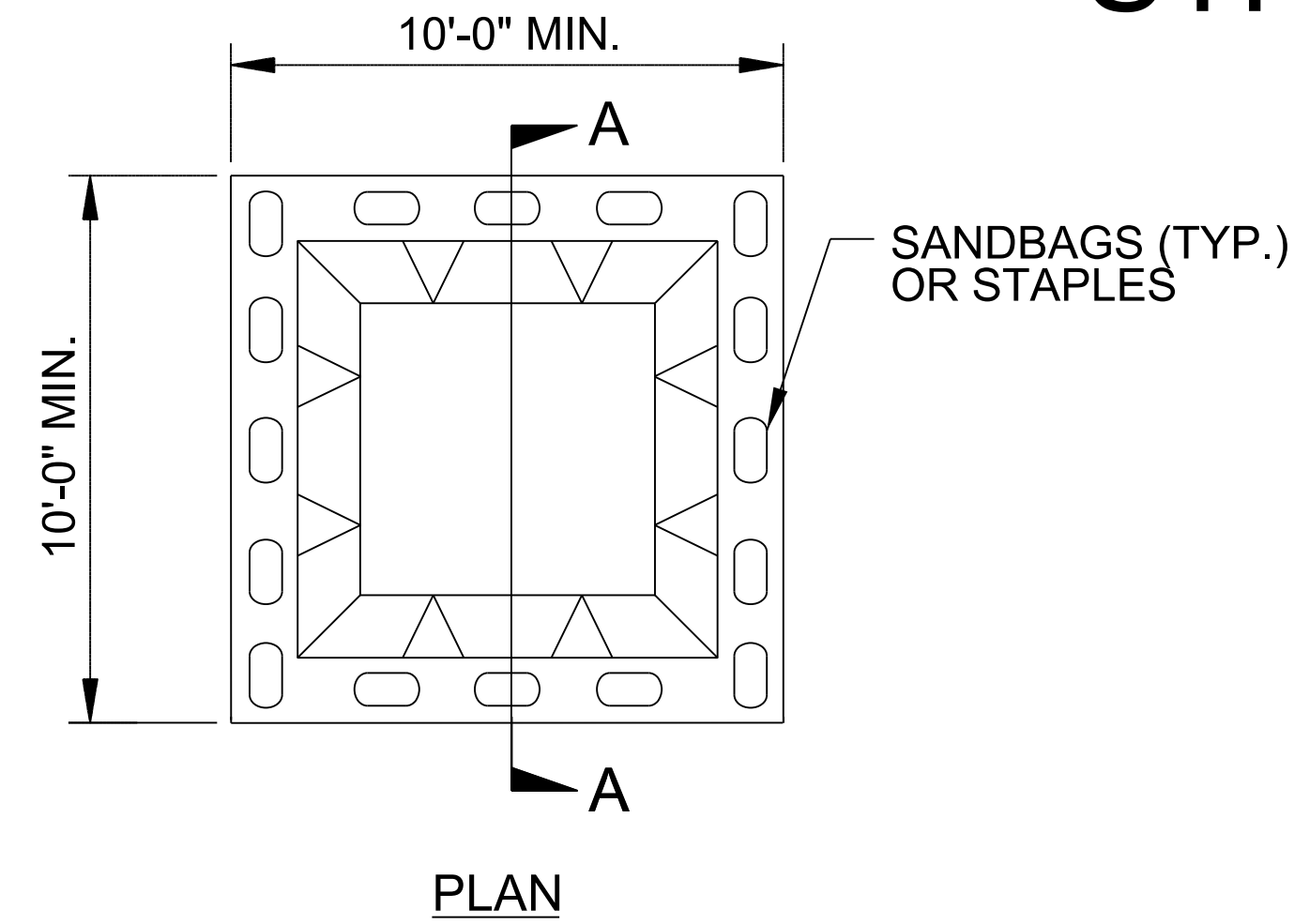
PROJECT REFERENCE NO. <b>095.01.D3EFE</b>	SHEET NO. <b>EC-02</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

## EROSION & SEDIMENT CONTROL LEGEND

Std. #	Description	Symbol	Std. #	Description	Symbol
1605.01	Temporary Silt Fence		1633.01	Temporary Rock Silt Check Type A	
1606.01	Special Sediment Control Fence		1633.02	Temporary Rock Silt Check Type B	
1622.01	Temporary Berms and Slope Drains		1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1630.02	Silt Basin Type B		1634.01	Temporary Rock Sediment Dam Type A	
1630.03	Temporary Silt Ditch		1634.02	Temporary Rock Sediment Dam Type B	
1630.04	Stilling Basin		1635.01	Rock Pipe Inlet Sediment Trap Type A	
1630.05	Temporary Diversion		1635.02	Rock Pipe Inlet Sediment Trap Type B	
1630.06	Special Stilling Basin		1636.01	Excelsior Wattle Check	
1630.07	Skimmer Basin		1636.01	Excelsior Wattle Check with Flocculant	
1630.08	Tiered Skimmer Basin		1636.01	Coir Fiber Wattle Check	
1630.09	Earthen Dam with Skimmer		1636.01	Coir Fiber Wattle Check with Flocculant	
	Infiltration Basin		1636.02	Silt Fence Excelsior Wattle Break	
	Rock Inlet Sediment Trap:			Silt Fence Coir Fiber Wattle Break	
1632.01	Type A		1636.03	Excelsior Wattle Barrier	
1632.02	Type B		1636.03	Coir Fiber Wattle Barrier	
1632.03	Type C				

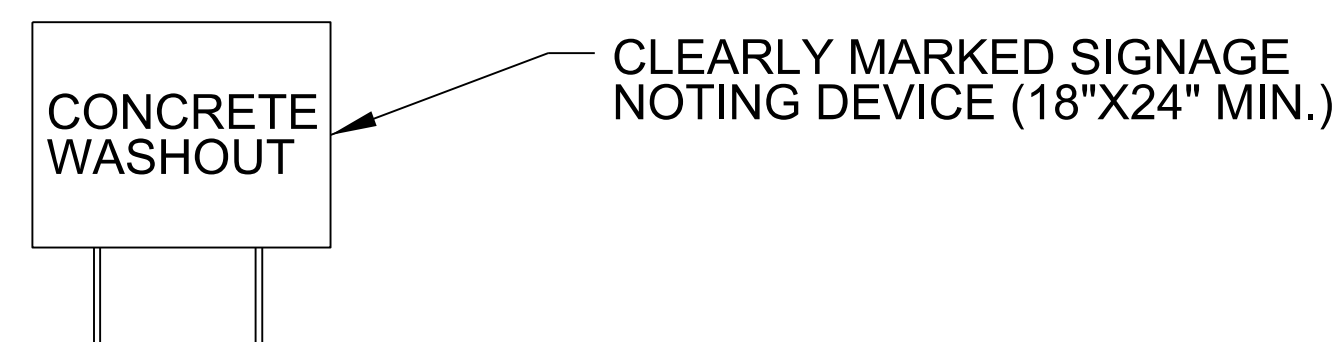
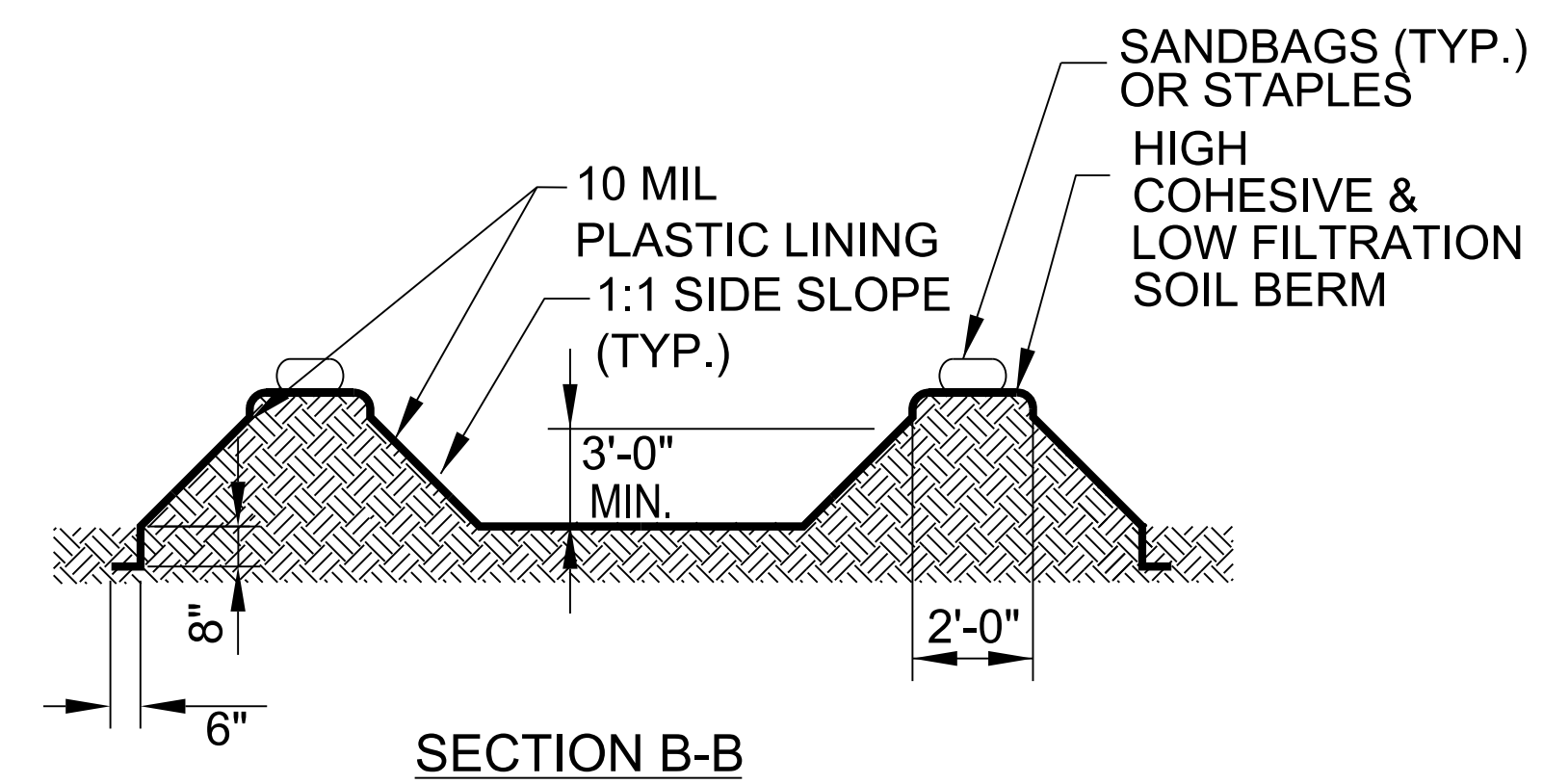
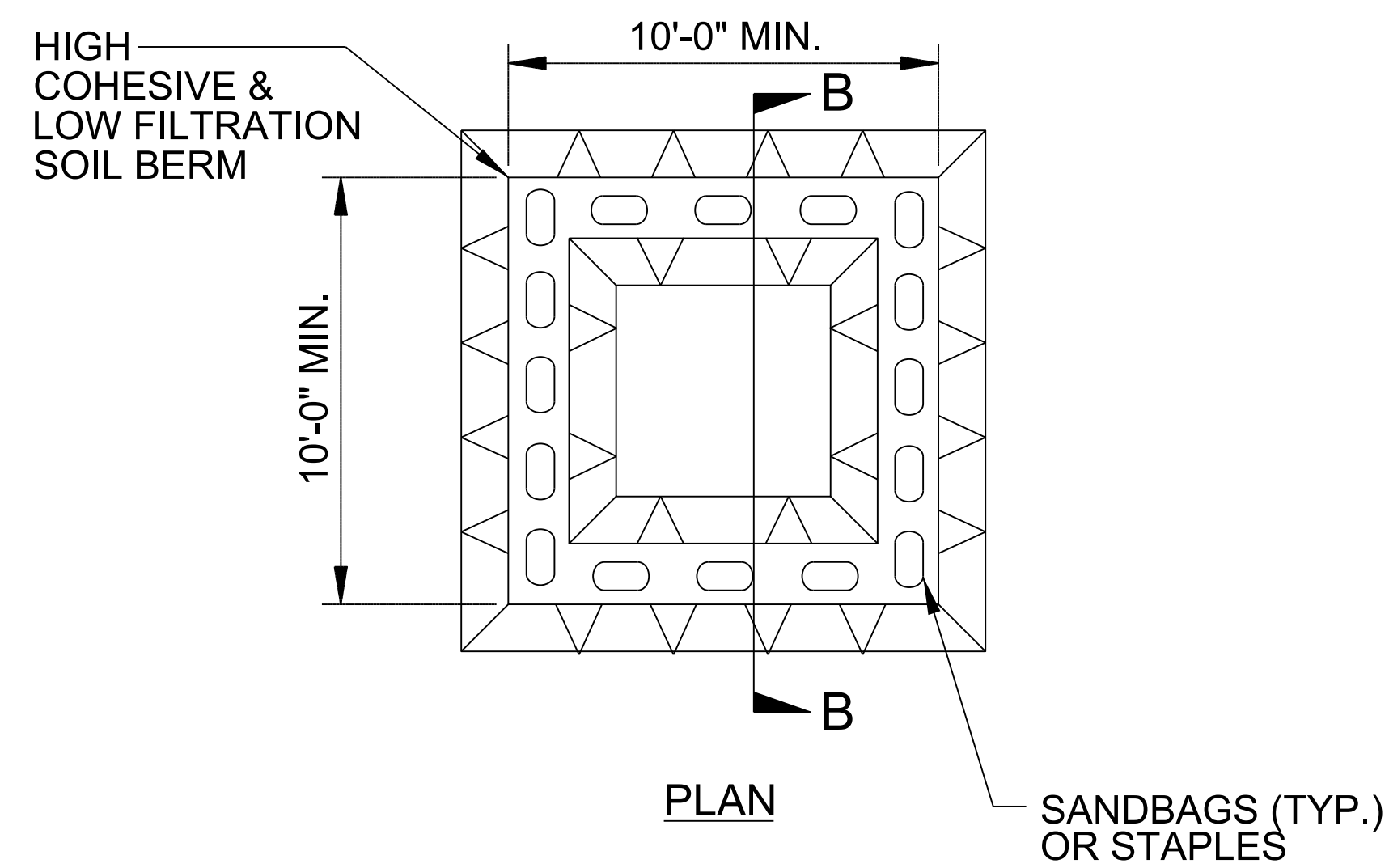
PROJECT REFERENCE NO.	SHEET NO.
095.01.D3EFE	EC-02A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



**BELOW GRADE WASHOUT STRUCTURE**  
NOT TO SCALE

- NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
  2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
  3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.



**ABOVE GRADE WASHOUT STRUCTURE**  
NOT TO SCALE

- NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
  2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
  3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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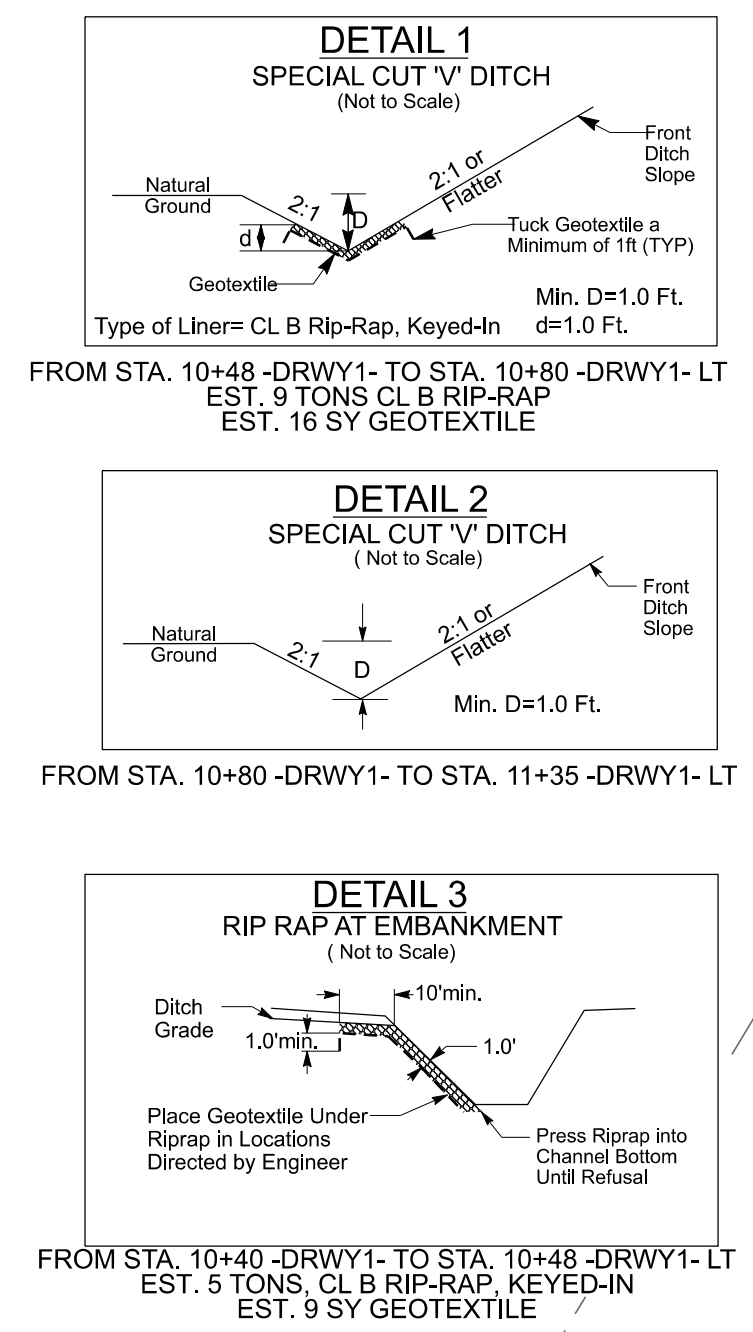
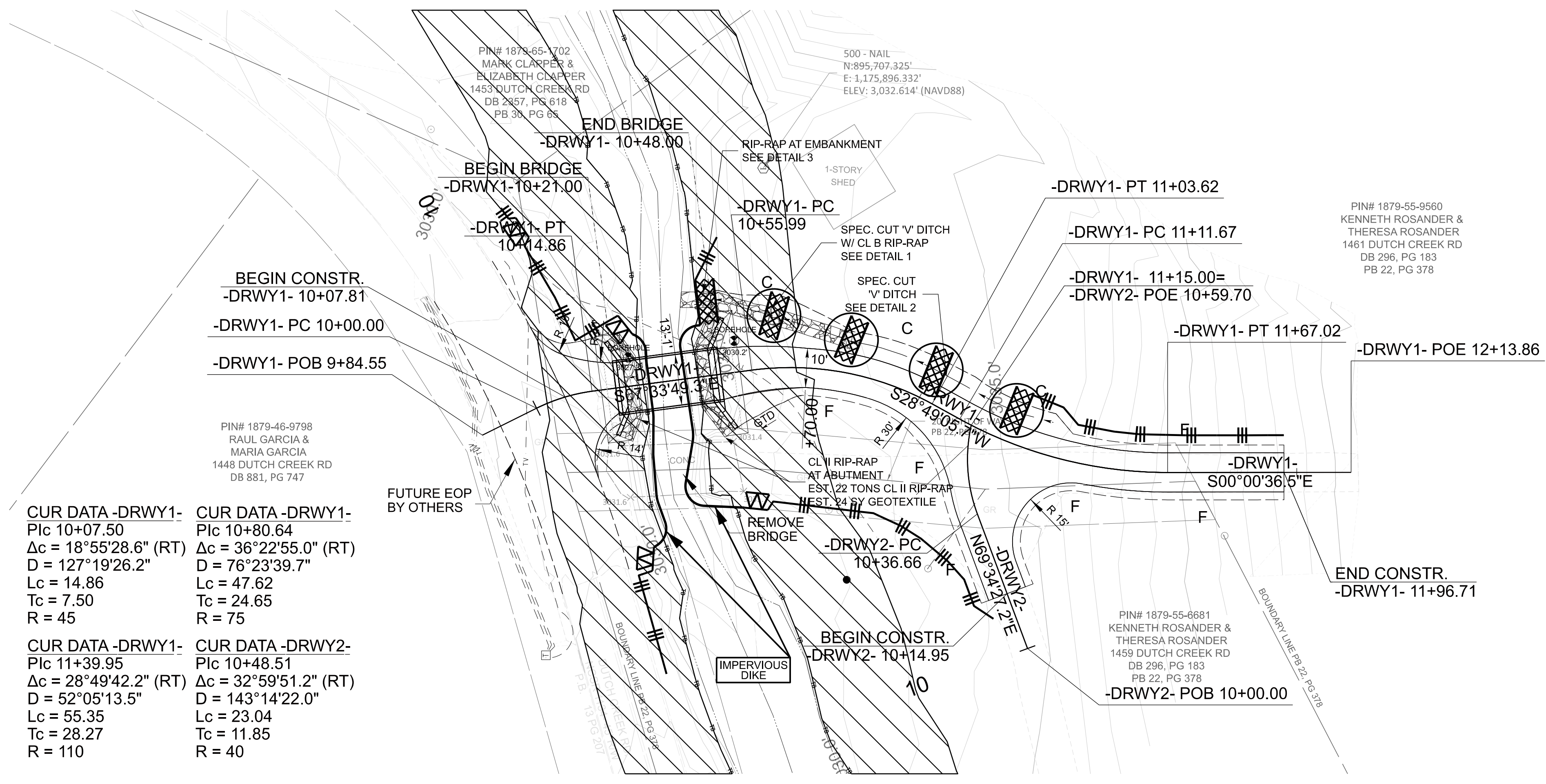
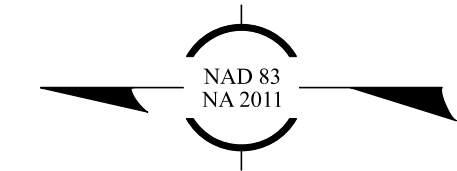


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PROJECT REFERENCE NO.	SHEET NO.
095.01.D3EFE	EC-03
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# ***SOIL STABILIZATION TIMEFRAMES***

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 TO 4:1	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 HQW ZONES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES



Place Matting for Erosion Control on Slopes as Work Allows.

TROUT STREAM BUFFER ZONE

INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE. STA. 10+80 TO STA. 11+35 -DRWY1-LT

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

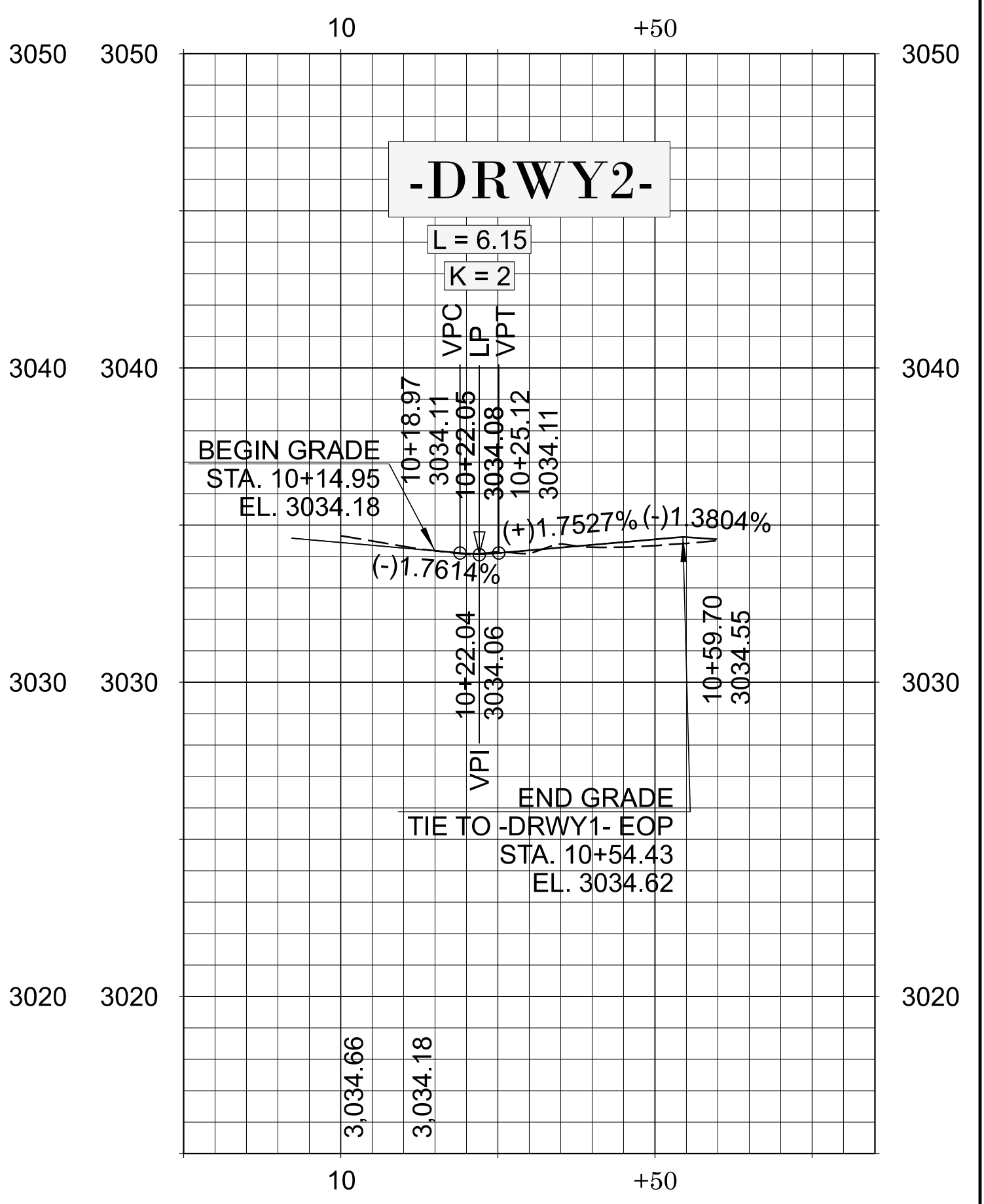
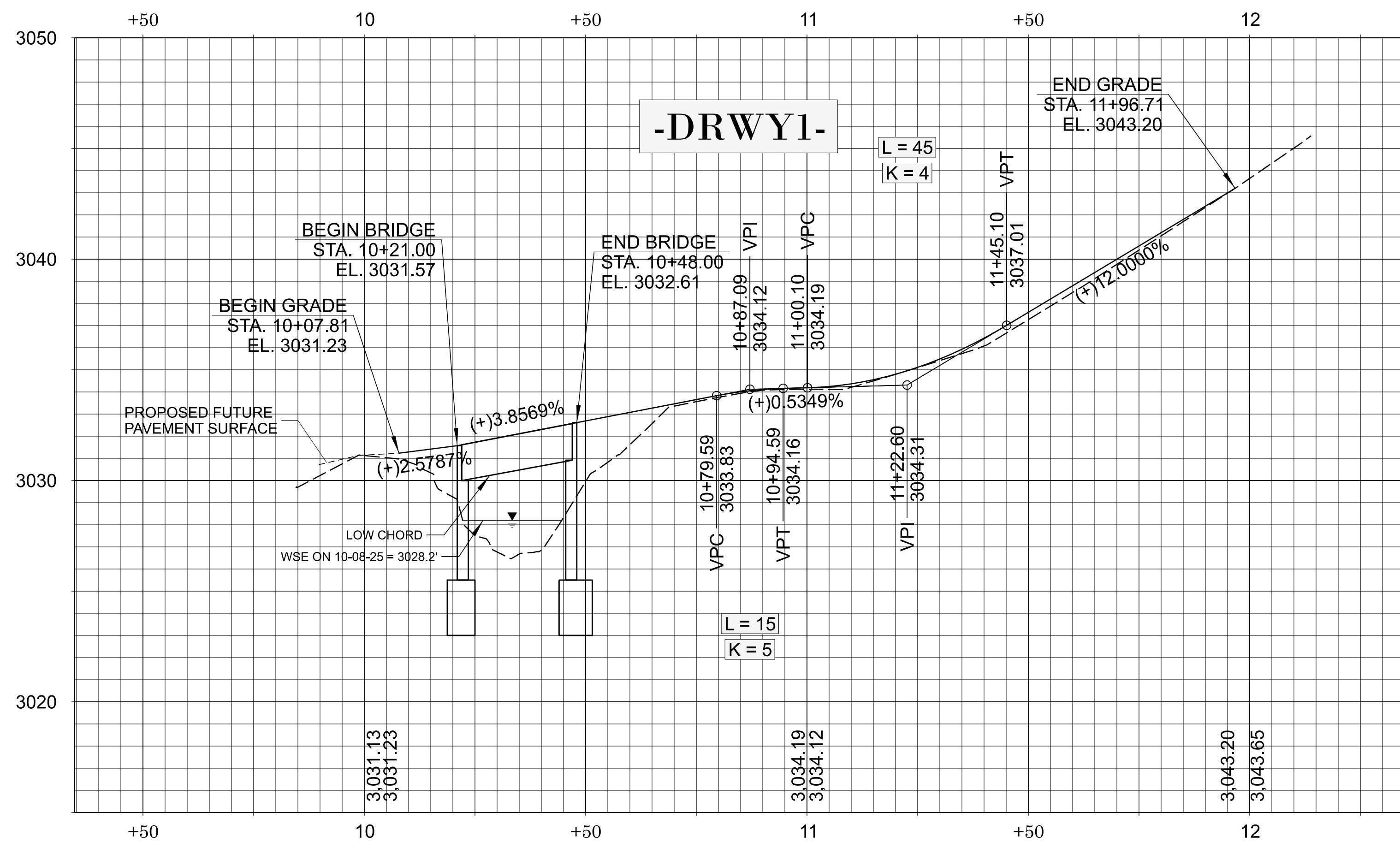
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 $\Delta c = 18^{\circ}55'28.6''$  (RT)  
D = 127°19'26.2"  
Lc = 14.86  
Tc = 7.50  
R = 45

CUR DATA -DRWY1- Plc 10+80.64  
 $\Delta c = 36^{\circ}22'55.0''$  (RT)  
D = 76°23'39.7"  
Lc = 47.62  
Tc = 24.65  
R = 75

CUR DATA -DRWY1- Plc 11+39.95  
 $\Delta c = 28^{\circ}49'42.2''$  (RT)  
D = 52°05'13.5"  
Lc = 55.35  
Tc = 28.27  
R = 110

CUR DATA -DRWY2- Plc 10+48.51  
 $\Delta c = 32^{\circ}59'51.2''$  (RT)  
D = 143°14'22.0"  
Lc = 23.04  
Tc = 11.85  
R = 40

Erosion Control Quantities		
DESCRIPTION	QUANTITY	UNIT
GEOTEXTILE FOR DRAINAGE	210	SY
TEMPORARY SILT FENCE	285	LF
EROSION CONTROL STONE, CLASS A	35	TON
EROSION CONTROL STONE, CLASS B	50	TON
SEDIMENT CONTROL STONE	65	TON
TEMPORARY MULCHING	0.5	ACR
SEED FOR TEMPORARY SEEDING	100	LB
FERTILIZER FOR TEMPORARY SEEDING	0.5	TON
TEMPORARY SLOPE DRAINS	200	LF
SAFETY FENCE	260	LF
SILT EXCAVATION	80	CY
MATTING FOR EROSION CONTROL	710	SY
COIR FIBER MAT	100	SY
1/4" HARDWARE CLOTH	75	LF
SPECIAL STILLING BASINS	2	EA
FLOCCULANT	15	LB
SEEDING AND MULCHING	0.5	ACR
MOWING	0.5	ACR
SEED FOR REPAIR SEEDING	50	LB
FERTILIZER FOR REPAIR SEEDING	0.25	TON
SEED FOR SUPPLEMENTAL SEEDING	50	LB
FERTILIZER TOPDRESSING	0.25	TON
IMPERVIOUS DIKE	125	LF
SPECIALIZED HAND MOWING	10	MHR
CONCRETE WASHOUT STRUCTURE	1	EA
PREFABRICATED CONCRETE WASHOUT	2	EA



REVISIONS

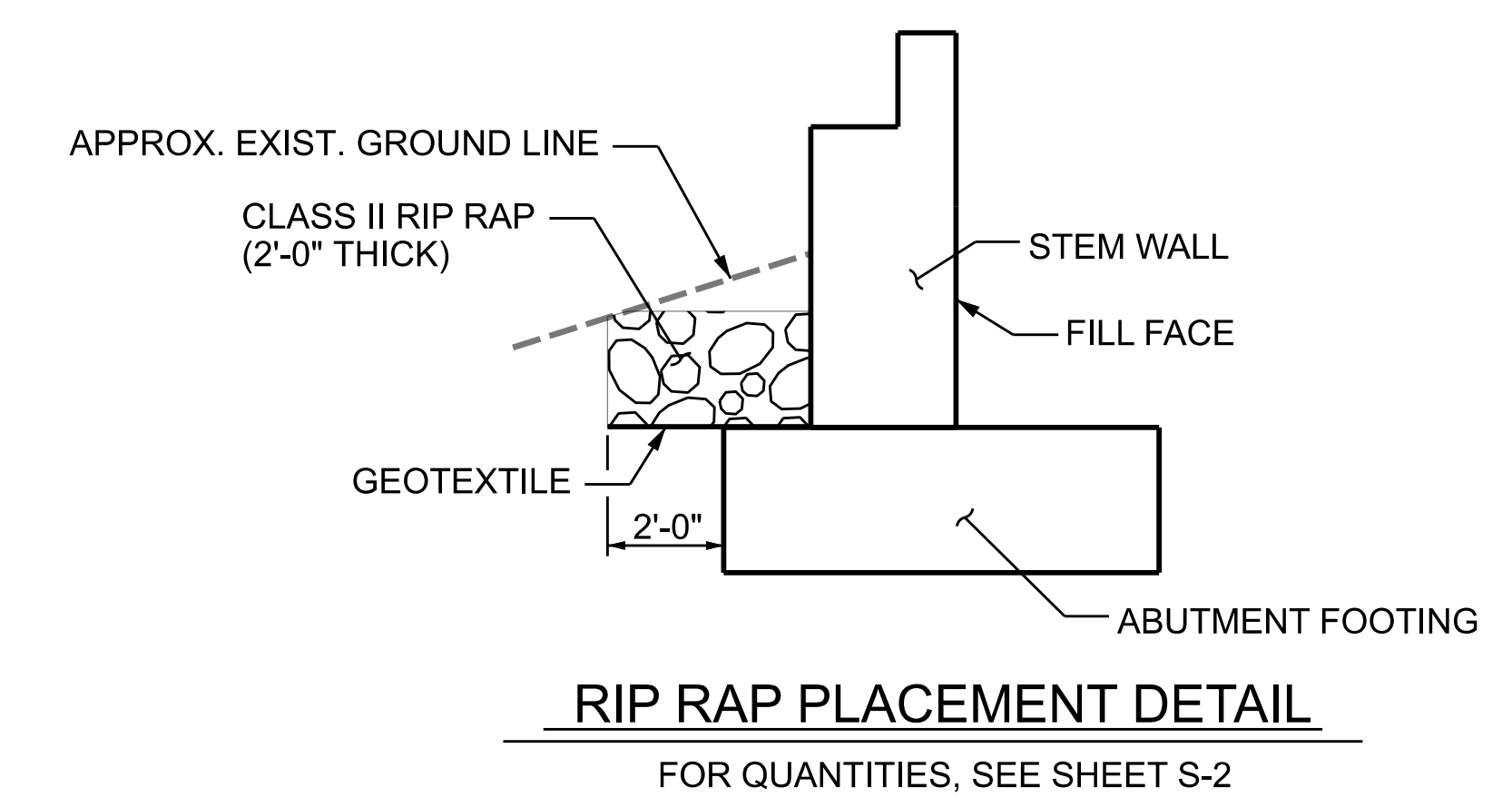
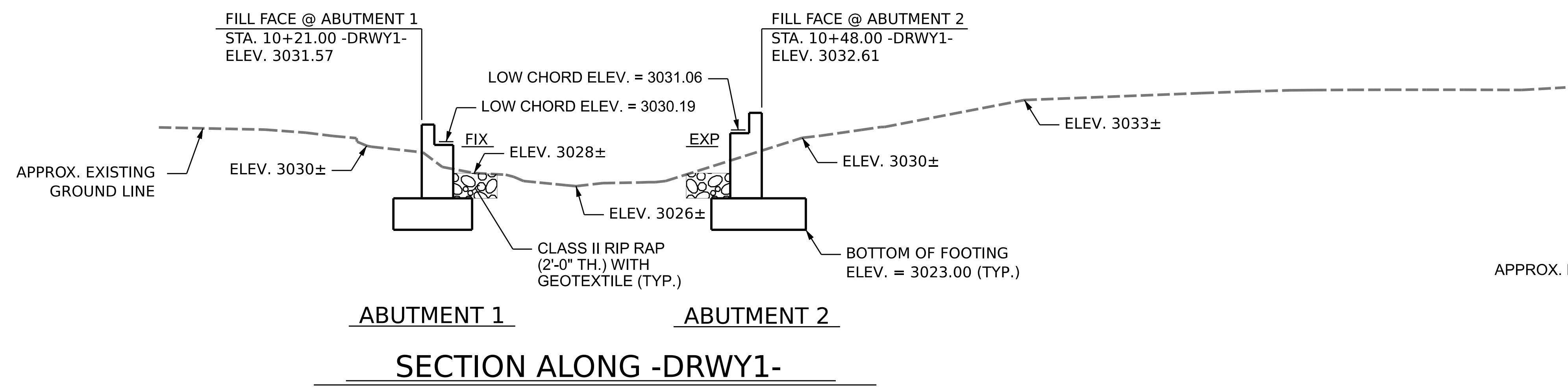
8/26/21

10+00 10+50 11+00

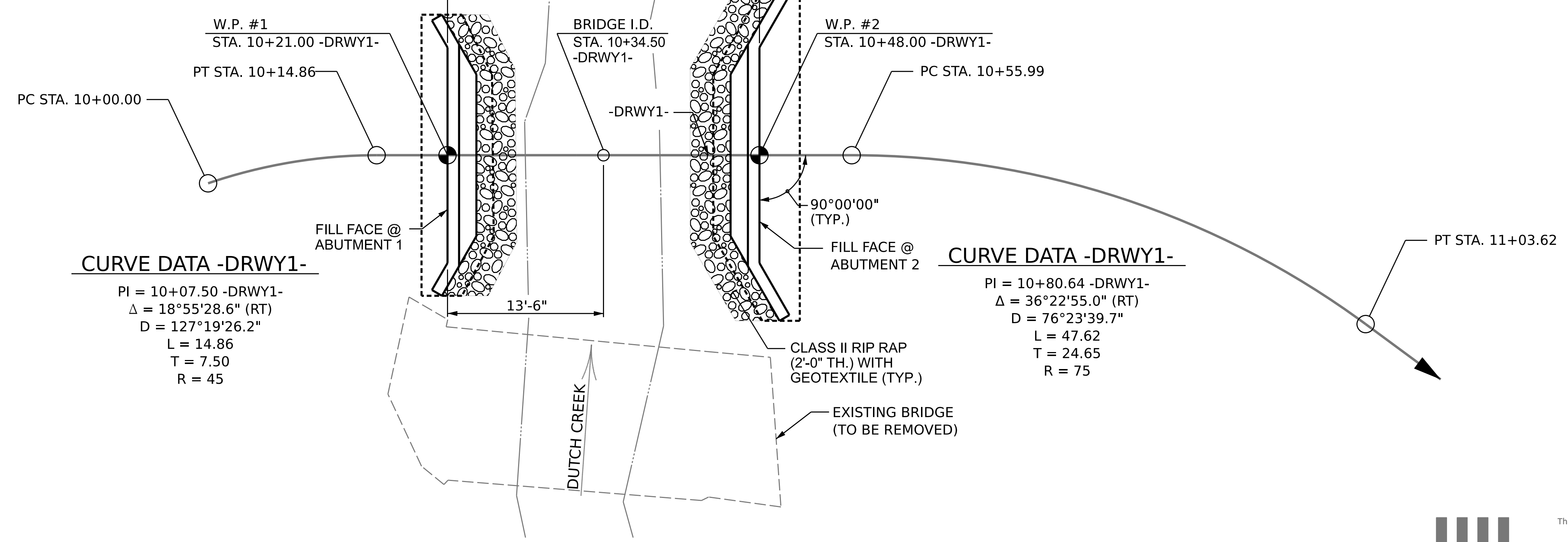
(+) 2.5787% (+) 3.8569%  
 STA. = 10+21.00 -DRWY1-  
 ELEV. = 3031.57  
 VC = 0.00'  
 GRADE DATA -DRWY1-

(+) 3.8569% (+) 0.5349%  
 STA. = 10+87.09 -DRWY1-  
 ELEV. = 3034.12  
 VC = 15.00'  
 GRADE DATA -DRWY1-

SPAN A



27'-0" TOTAL LENGTH OF BRIDGE (FILL FACE TO FILL FACE)



PLAN

DRAWN BY : J. WEIGER DATE : 12/2025  
 CHECKED BY : P. JACOB DATE : 12/2025  
 DESIGN ENGINEER OF RECORD : J. LOFTUS DATE : 04/2026

4/28/2026  
 X:\Projects\NCD\NCD25010\NCD25010\_02\04-Production\Transportation\Structures\03 - CADD\02 - Final Drawings\1.General Drawing.dgn  
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 www.mcadamsco.com



PROJECT NO. 095.01.D3EFE  
 WATAUGA COUNTY  
 STATION: 10+34.50 -DRWY1-  
 SHEET 1 OF 2

NORTH CAROLINA  
 OFFICE OF EMERGENCY MANAGEMENT  
 GENERAL DRAWING  
 BRIDGE AT 1459 DUTCH  
 CREEK RD. OVER  
 DUTCH CREEK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			13

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8/26/21

BM#1, NAIL, STA. 10+61.79, OFFSET 51.15' (LT), ELEV. 3032.61, N. 895707.32, E. 1175896.33



LOCATION SKETCH

**RECOMMENDED INSPECTION AND MAINTENANCE**

BRIDGE INSPECTION PERFORMED BY A CERTIFIED BRIDGE INSPECTOR IS RECOMMENDED ON THE FOLLOWING SCHEDULE:

YEARS 0-10:	INSPECT EVERY 5 YEARS
YEARS 10-20:	INSPECT EVERY 4 YEARS
YEARS 20-30:	INSPECT EVERY 3 YEARS
YEARS 30+:	INSPECT EVERY 2 YEARS

REPAIR ANY PRIORITY MAINTENANCE ITEMS NOTED DURING BRIDGE INSPECTIONS.

IF DETERIORATION IS NOTED IN INSPECTIONS, ACCELERATE SCHEDULE AND INSPECT EVERY 2 YEARS THEREAFTER.

OBSERVE BETWEEN INSPECTIONS FOR CRACKS, RUST, OR SPALLING IN CONCRETE OR STEEL COMPONENTS, SIGNS OF EROSION OR SCOURING AROUND ABUTMENTS, DECK SURFACE WEAR, DAMAGE OR DETERIORATION OF WHEEL GUARDS.

REMOVE DEBRIS AND SEDIMENT FROM THE DECK AND UNDERNEATH THE BRIDGE TO PREVENT PONDING AND EROSION.

STRUCTURAL MAINTENANCE SHOULD INCLUDE TIGHTENING LOOSE BOLTS AND FASTENERS, SEALING CRACKS IN CONCRETE, PATCHING SPALLS IN CONCRETE AND REPLACING DECAYED TIMBER MEMBERS.

**TOTAL BILL OF MATERIAL**

	REMOVAL OF EXISTING STRUCTURE @ STA. 10+34.50	FOUNDATION EXCAVATION	CLASS A CONCRETE	REINFORCING STEEL	APPROX. 11,937 LBS STRUCTURAL STEEL	CLASS II RIP RAP (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	TIMBER DECK SYTEM	TIMBER WHEEL GUARD SYSTEM
	LUMP SUM	CU. YDS.	CU. YDS.	LBS.	LUMP SUM	TONS	SQ.YDS.	LUMP SUM	LUMP SUM	LIN.FT.
SUPERSTRUCTURE								LUMP SUM	LUMP SUM	25.00
ABUTMENT NO. 1		54	22.6	3,895		10	11			
ABUTMENT NO. 2		69	30.0	4,472		12	13			
TOTAL	LUMP SUM	123	52.6	8,367	LUMP SUM	22	24	LUMP SUM	LUMP SUM	25.00

**NOTES**

- ASSUMED LIVE LOAD = HS-20.
- IMPACT ALLOWANCE = 15%.
- THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH AASHTO LRFD DESIGN SPECIFICATIONS EXCEPT AS NOTED.
- EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2024 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR TIMBER BRIDGE DECK ON STEEL BEAMS, SEE SPECIAL PROVISIONS.
- FOR EROSION CONTROL, SEE EROSION CONTROL PLANS.
- AFTER SERVING AS A TEMPORARY STRUCTURE THE EXISTING STRUCTURE CONSISTING OF A 32' LONG x 12' WIDE TIMBER DECK WITH CONCRETE OVERLAY ON TEMPORARY SUPPORTS AND LOCATED 25' UPSTREAM FROM PROPOSED STRUCTURE SHALL BE REMOVED. FOR REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.
- IN AS MUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 10+34.50 -DRWY1-."
- REMOVAL OF THE EXISTING BRIDGE AND WORK ON THE PROPOSED BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER.
- UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF THE STRUCTURE.
- UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4".
- THE BRIDGE SHALL BE BUILT ON THE GRADE SHOWN ON PLANS.
- ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.
- WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.
- WITH THE SOLE EXCEPTION OF THE EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING OR METALLIZING.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.
- ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50 AND GALVANIZED OR PAINTED IN ACCORDANCE WITH SYSTEM 1 OF THE STRUCTURAL STEEL SHOP COATING PROGRAM AND ARTICLE 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- COATING APPLICATION FOR ALL STRUCTURAL STEEL SHALL NOT BE PERFORMED UNTIL SHOP FABRICATION INCLUDING CUTTING, DRILLING AND WELDING HAS BEEN COMPLETED.
- ALL TIMBER AND LUMBER MEMBERS SHALL BE TREATED SOUTHERN PINE AND CONFORM TO SECTION 1082 OF THE STANDARD SPECIFICATIONS.
- ALL TIMBER DIMENSIONS SHOWN ON THE PLANS ARE NOMINAL DIMENSIONS.
- WHEN FIELD CUTTING TIMBER MEMBERS, TREAT NEWLY EXPOSED SURFACES WITH EITHER A BITUMINOUS ASPHALT-BASED ROOFING CEMENT, COPPER NAPHTHENATE PASTE, OR APPROVED PRESERVATIVE SYSTEM BEFORE INSTALLING.
- TREAT ALL DRILLED OR NEWLY EXPOSED HOLES IN TIMBER MEMBERS BY PUMPING WITH BITUMINOUS ASPHALT-BASED ROOFING CEMENT, OR APPROVED PRESERVATIVE SYSTEM BEFORE INSTALLING HARDWARE.
- PRE-DRILL HOLES IN TIMBER AND LUMBER MEMBERS ACCEPTING BOLTS TO ELIMINATE SPLITTING.
- ALL HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATION, UNLESS OTHERWISE NOTED ON THE PLANS.
- DO NOT DRIVE LAG/STRUCTURAL SCREWS WITH A HAMMER, SCREW OR TORQUE LAG/STRUCTURAL SCREWS.
- SCREWS SHALL PROVIDE SUFFICIENT LENGTH SO THAT SCREW SHANK WILL PENETRATE RECEIVING MEMBERS.
- FOR TIMBER BRIDGE DECK SYSTEM INCLUDING HARDWARE FOR BOLT CONNECTIONS AND HARDWARE FOR SCREW CONNECTIONS, SEE TIMBER BRIDGE SUPERSTRUCTURE ON STEEL BEAMS SPECIAL PROVISION.

**LRFR RATING SUMMARY**

	VEHICLE	RATING FACTOR
INVENTORY	HS-20	2.66
	EV-2	2.74
	EV-3	1.77
OPERATING	HS-20	3.45
	EV-2	N/A
	EV-3	N/A

**BRIDGE COORDINATES**

BRIDGE No.	LATITUDE	LONGITUDE
095.01.D3EFE	36° 10'-45.30"	-81° 47'34.30"

PROJECT NO. 095.01.D3EFE  
 WATAUGA COUNTY  
 STATION: 10+34.50 -DRWY1-

SHEET 2 OF 2



NORTH CAROLINA  
 OFFICE OF EMERGENCY MANAGEMENT  
**GENERAL DRAWING**  
 BRIDGE AT 1459 DUTCH CREEK ROAD OVER DUTCH CREEK

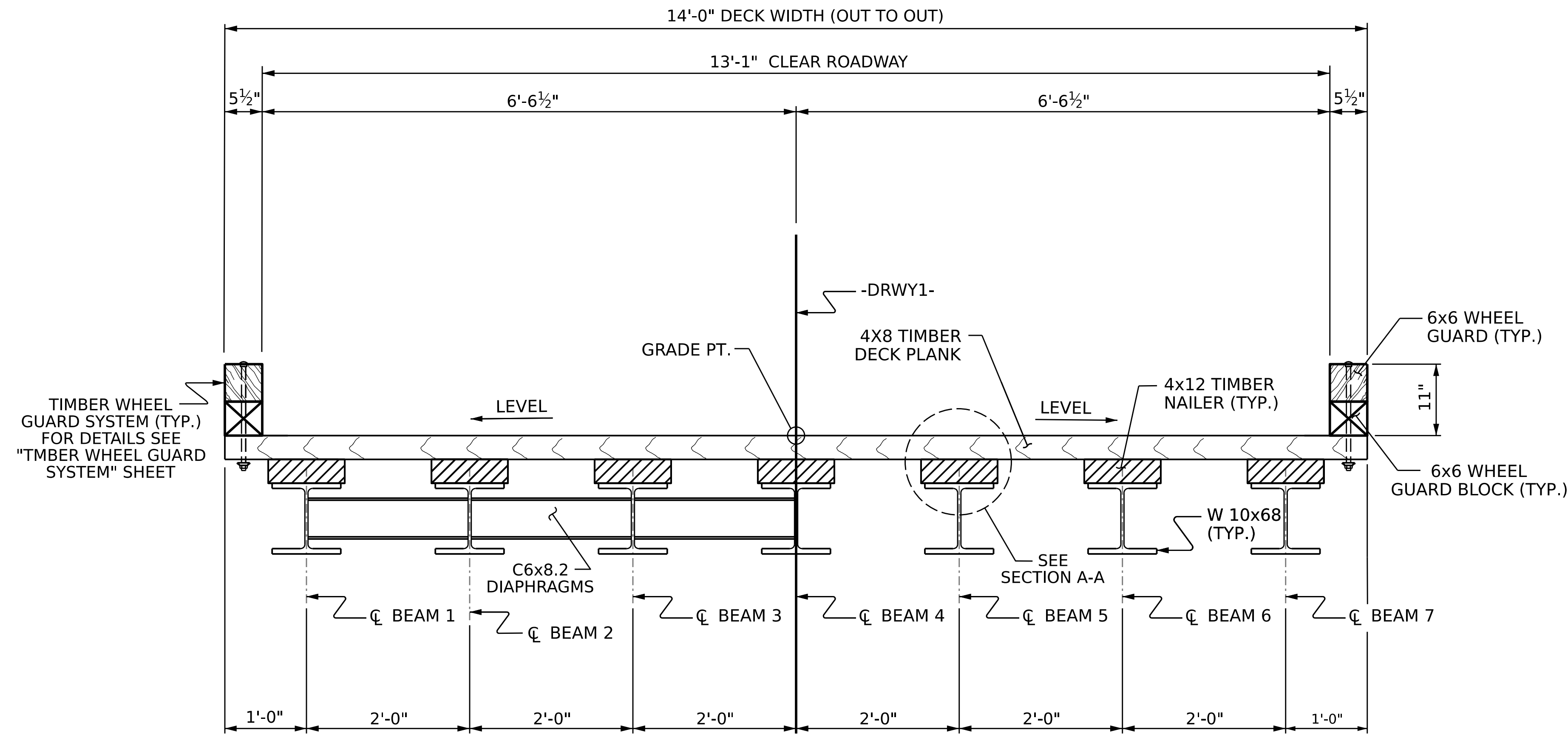
REVISIONS			SHEET NO.
NO.	BY:	DATE:	S-2
1			TOTAL SHEETS 13
2			
3			
4			

DRAWN BY : J. LOFTUS DATE : 12/2025  
 CHECKED BY : P. JACOB DATE : 12/2025  
 DESIGN ENGINEER OF RECORD: J. LOFTUS DATE : 04/2026

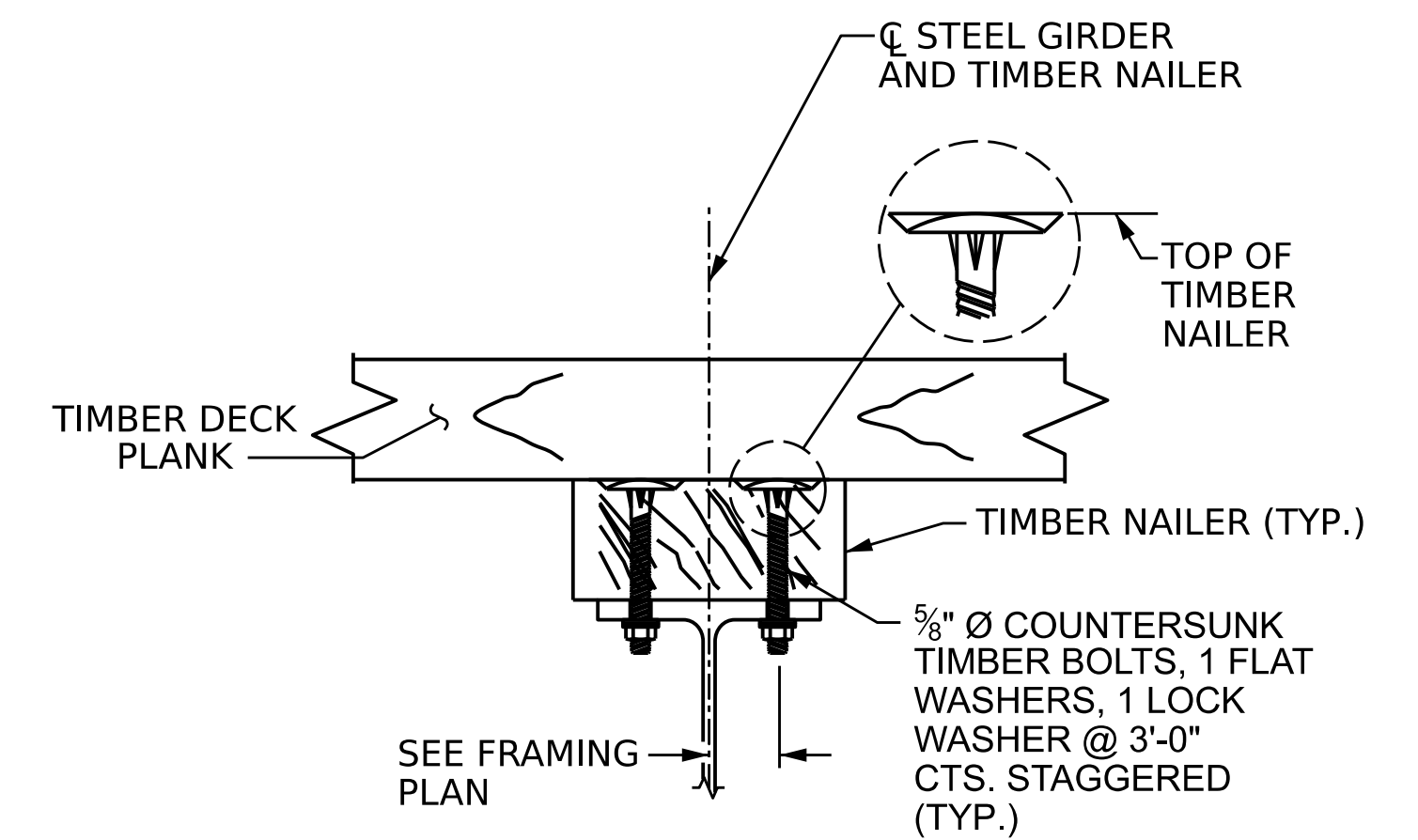
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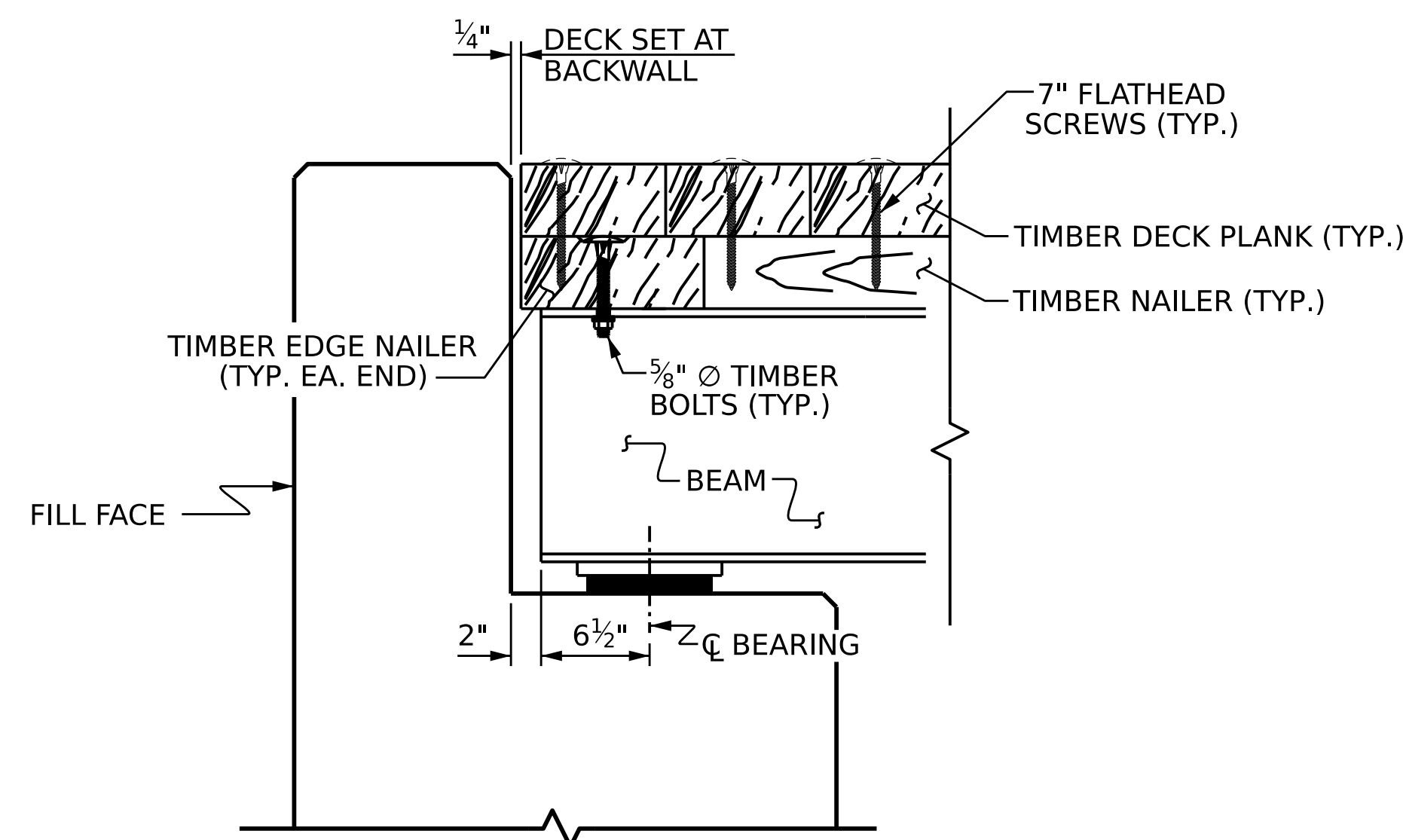
8/26/21



**TYPICAL SECTION**



**SECTION A-A**  
TIMBER NAILER ATTACHMENT DETAILS



**SECTION AT ABUTMENT**

**NOTES**

- FOR TIMBER BRIDGE DECK SYSTEM DETAILS, SEE PLAN OF SPAN.
- FOR TIMBER WHEEL GUARD SYSTEM DETAILS, SEE TIMBER WHEEL GUARD SYSTEM PLAN SHEET.
- PRIOR TO PLACING TIMBER BEAM NAILER AND EDGE NAILER MEMBERS, PLACE A FLASHING MEMBRANE ON THE TOP SIDE OF THE STEEL BEAMS.
- FOR BEAM AND DIAPHRAGM DETAILS, SEE FRAMING PLAN SHEET.

PROJECT NO. 095.01.D3EFE

WATAUGA COUNTY

STATION: 10+34.50 -DRWY1-

SHEET 1 OF 3

NORTH CAROLINA  
OFFICE OF EMERGENCY MANAGEMENT  
SUPERSTRUCTURE  
**TYPICAL SECTION**



The John R. McAdams Company, Inc.  
621 Hillsborough Street  
Suite 500  
Raleigh, NC 27603  
phone 919. 361. 5000  
fax 919. 361. 2269  
license number: C-0293, C-187

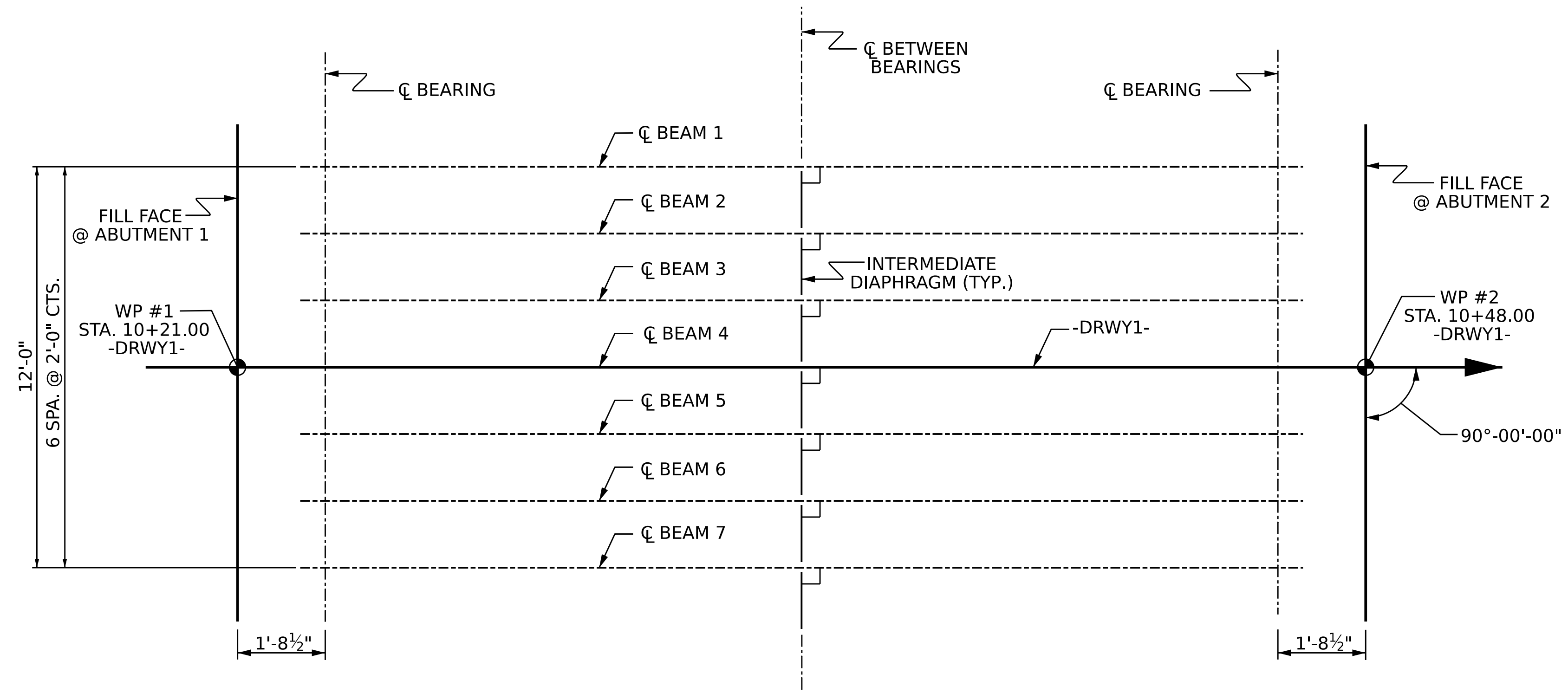


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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			13

DRAWN BY : J. LOFTUS DATE : 12/2025  
 CHECKED BY : P. JACOB DATE : 12/2025  
 DESIGN ENGINEER OF RECORD : J. LOFTUS DATE : 04/2026

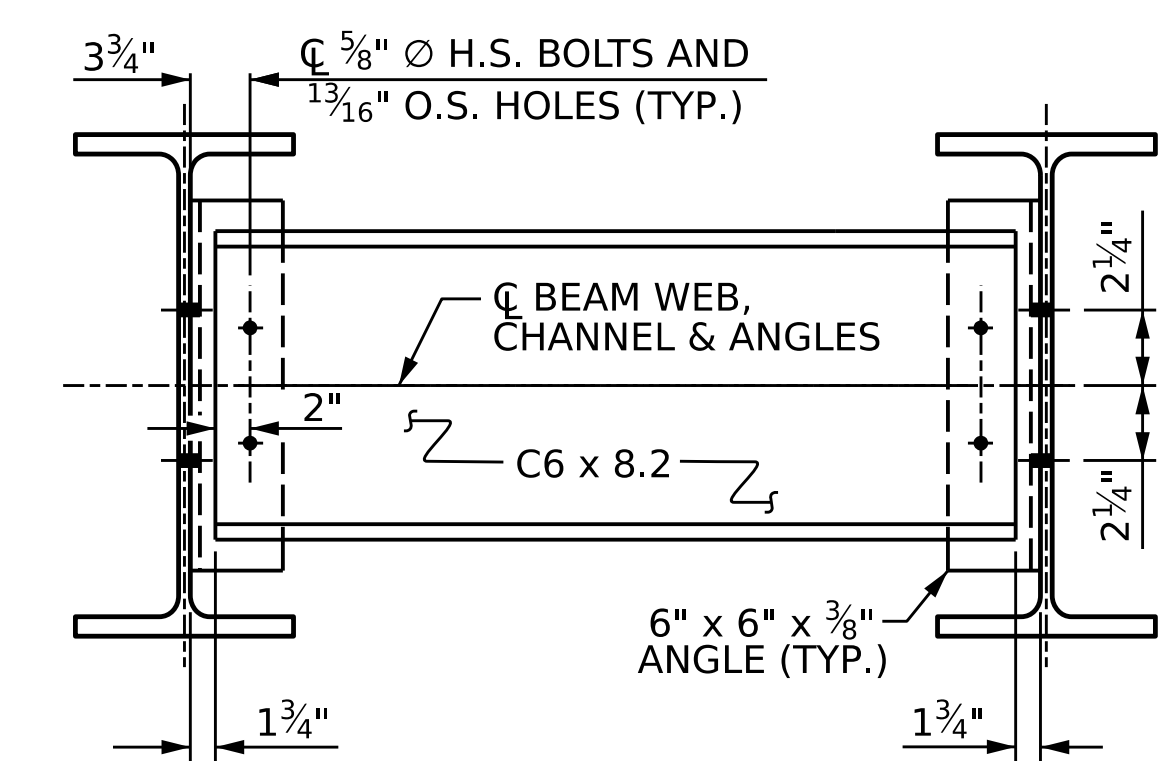


FIXED  
E1, P1

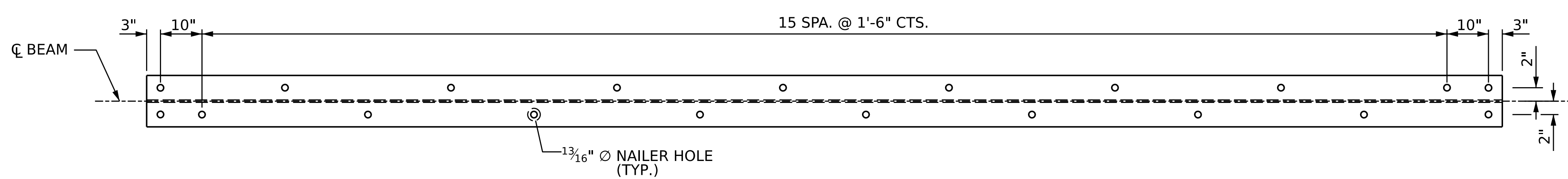
### FRAMING PLAN

EXP.  
E2, P2

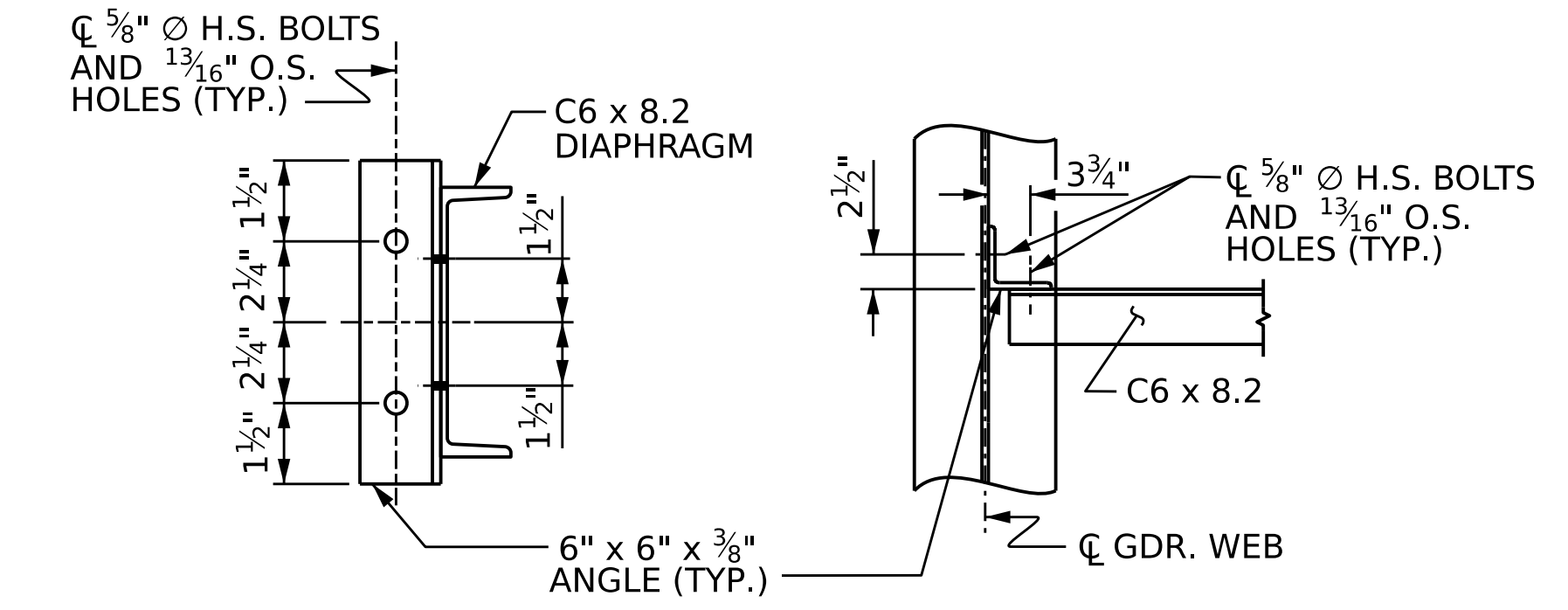
- NOTES**
- NO SALVAGED BEAMS SHALL BE USED, UNLESS OTHERWISE NOTED ON THE PLANS.
  - NO SHOP CAMBER REQUIRED, TURN NATURAL MILL CAMBER UP.
  - ALL STRUCTURAL STEEL FIELD CONNECTIONS SHALL BE 5/8" DIA. GALVANIZED HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.
  - BEAMS SHALL BE PLACED PARALLEL TO THE CHORD.
  - CONTRACTORS OPTION TO WELD CONNECTOR TO BEAM PRIOR TO SHOP COATING.
  - SEE GENERAL DRAWING NOTES FOR COATING.
  - \* FOR SIZE AND LOCATION OF OPTIONAL BOLTED SOLE PLATE, SEE BEARING DETAILS SHEET.



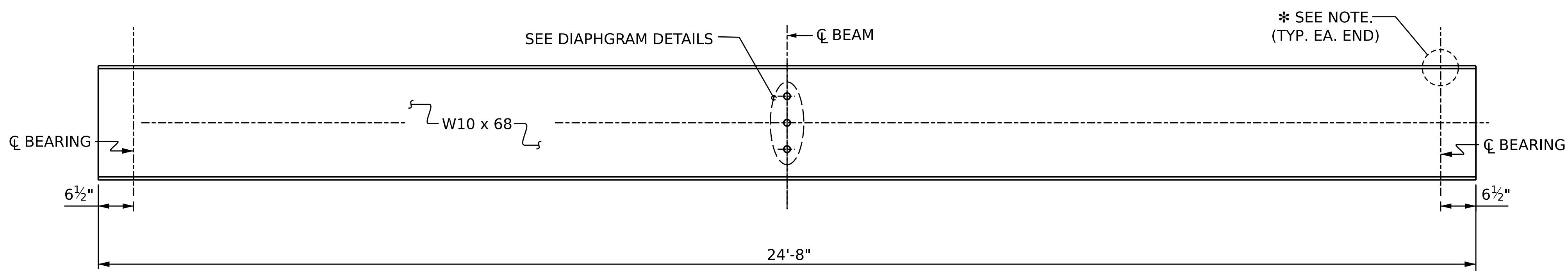
### INTERIOR DIAPHRAGM DETAIL



### TOP FLANGE



### ANGLE DETAIL



### ELEVATION

### BEAM DETAILS



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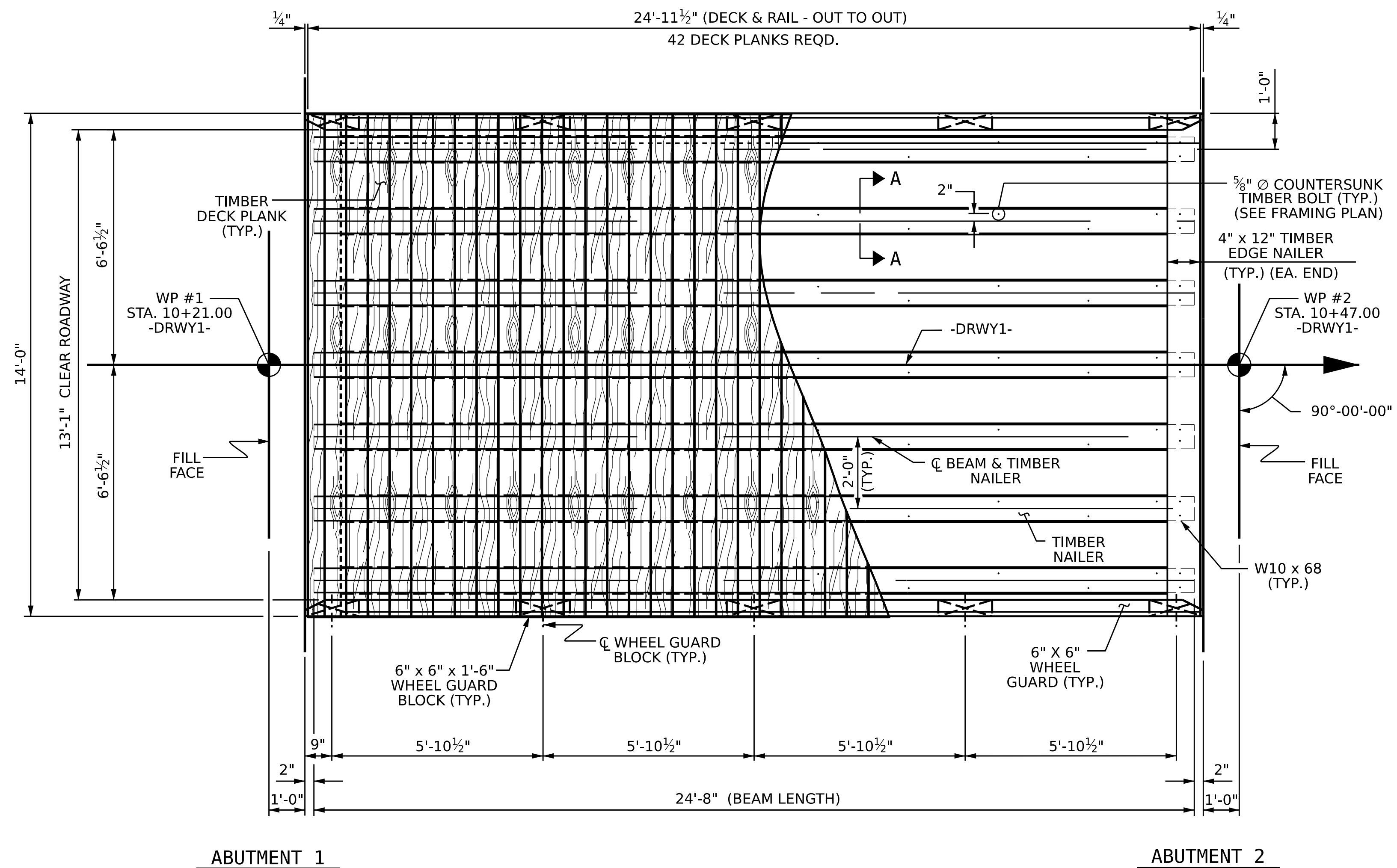
PROJECT NO. 095.01.D3EFE  
WATAUGA COUNTY  
STATION: 10+34.50 -DRWY1-  
SHEET 2 OF 3

NORTH CAROLINA  
OFFICE OF EMERGENCY MANAGEMENT  
SUPERSTRUCTURE  
**FRAMING PLAN FOR  
24'-8" BEAM LENGTH  
90° SKEW**

REVISIONS						SHEET NO. S-4 TOTAL SHEETS 13
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1			3			
2			4			

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DESIGN ENGINEER OF RECORD : J. LOFTUS DATE : 04/2026



**DECK LAYOUT**

**NOTES**

FOR ADDITIONAL NOTES, SEE TYPICAL SECTION AND GENERAL DRAWING SHEETS.

STAGGER TIMBER DECK PLANKS BUTT JOINTS AT 4FT MINIMUMS FROM ADJACENT RUNS.

ATTACH TIMBER DECK PLANKS TO NAILERS WITH TWO STRUCTURAL SCREWS PER TIMBER DECK PLANK.

AVOID HITTING NAILER BOLT WHEN DRIVING TIMBER DECK SCREWS.

SEE BEAM DETAILS FOR SPACING OF TIMBER BOLTS IN TOP FLANGE OF ROLLED BEAM.

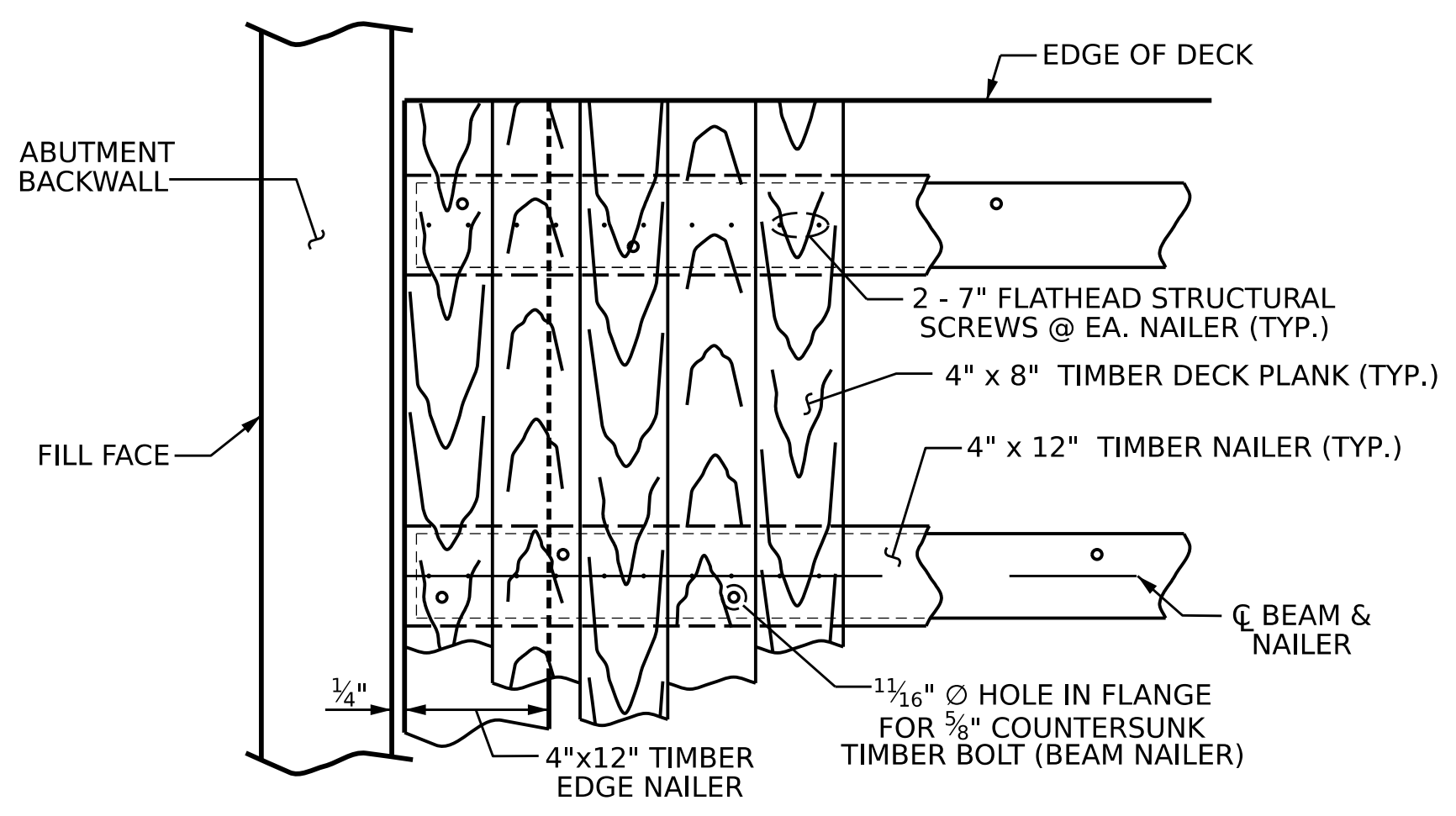
COUNTERSINK TIMBER BOLT AND STRUCTURAL SCREW HEADS TO BE FLUSH WITH TIMBER SURFACE.

TRIM THE EDGE NAILER FLUSH WITH THE EDGE OF DECK.

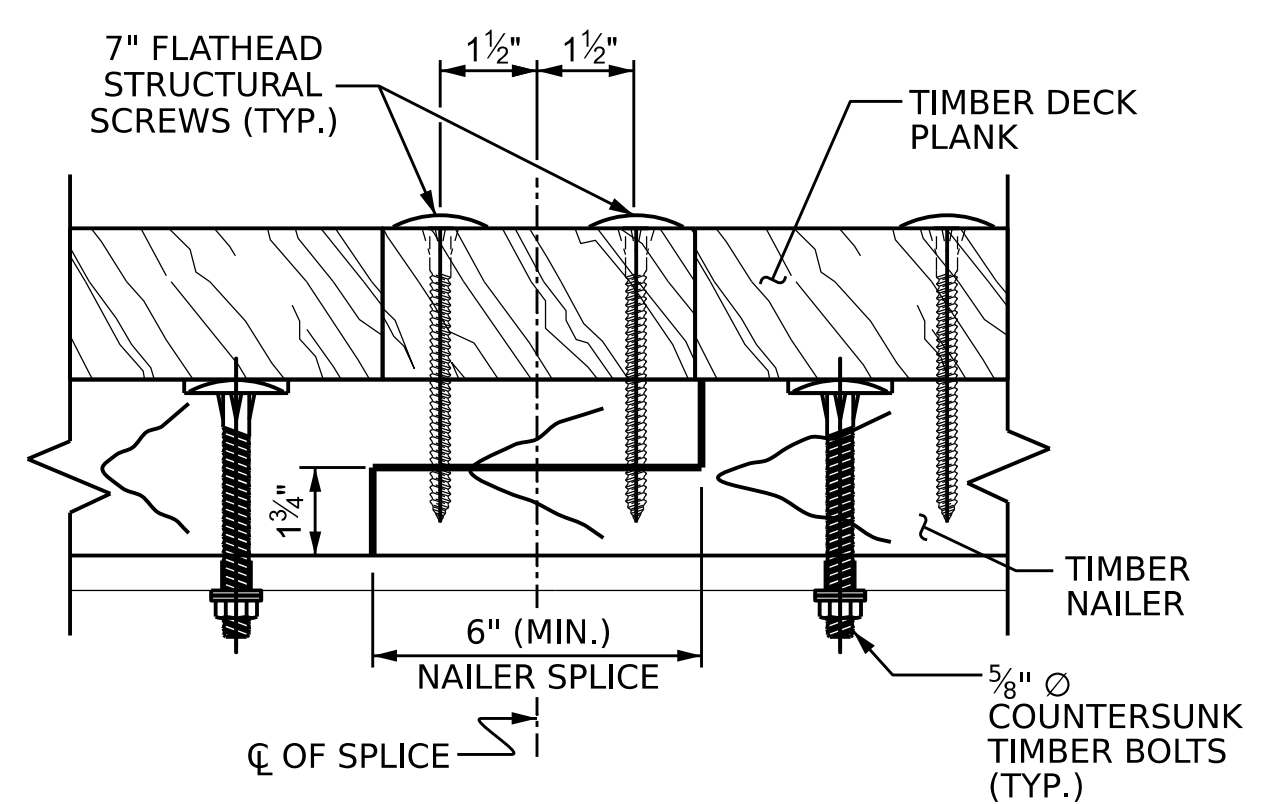
DECK PLANK WIDTH MAY BE CUT TO 6" (MIN.) TO FIT WITHIN LIMITS OF TIMBER DECK. ALL DECK PLANKS ATTACHED TO THE EDGE NAILER SHALL BE FULL WIDTH. CUT BOARDS WILL NOT BE PERMITTED TO BE PLACED ADJACENT TO ONE ANOTHER.

**BILL OF MATERIAL FOR 24.67 FT. SPAN**

TREATED LUMBER		
ITEM	SIZE	LIN. FT.
TIMBER DECK PLANKS	4"x8"	588.0
TIMBER NAILERS	4"x12"	161.6
TIMBER EDGE NAILERS	4"x12"	28.0
TOTAL TREATED LUMBER		777.6 LFT.
HARDWARE		
ITEM	No.	SIZE
5/8" Ø TIMBER BOLTS	140	5/8"
HEAVY HEX NUTS	140	5/8"
STANDARD WASHER	140	5/8"
LOCK WASHER	140	5/8"
FLAT HEAD STR. SCREWS	588	7"



**TYPICAL DECK DETAIL AT ABUTMENT**



**NAILER SPLICE DETAILS**

PROJECT NO. 095.01.D3EFE  
WATAUGA COUNTY  
 STATION: 10+34.50 -DRWY1-  
 SHEET 3 OF 3



NORTH CAROLINA  
 OFFICE OF EMERGENCY MANAGEMENT  
 SUPERSTRUCTURE  
 PLAN OF 24'-8" BEAM  
 13'-1" CLEAR ROADWAY  
 90° SKEW

DRAWN BY : J. LOFTUS DATE : 12/2025  
 CHECKED BY : P. JACOB DATE : 12/2025  
 DESIGN ENGINEER OF RECORD : J. LOFTUS DATE : 04/2026



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1			3			TOTAL SHEETS
2			4			13

### NOTES

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

AT ALL SUPPORTS, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

SOLE PLATES, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL BEARING PLATES SHALL BE AASHTO M270 GRADE 36.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLTS, NUTS, AND WASHERS. SHOP INSPECTION IS REQUIRED.

AT THE APPROVAL OF THE ENGINEER, SOLE PLATES AT THE EXPANSION END MAY BE FIELD WELDED.

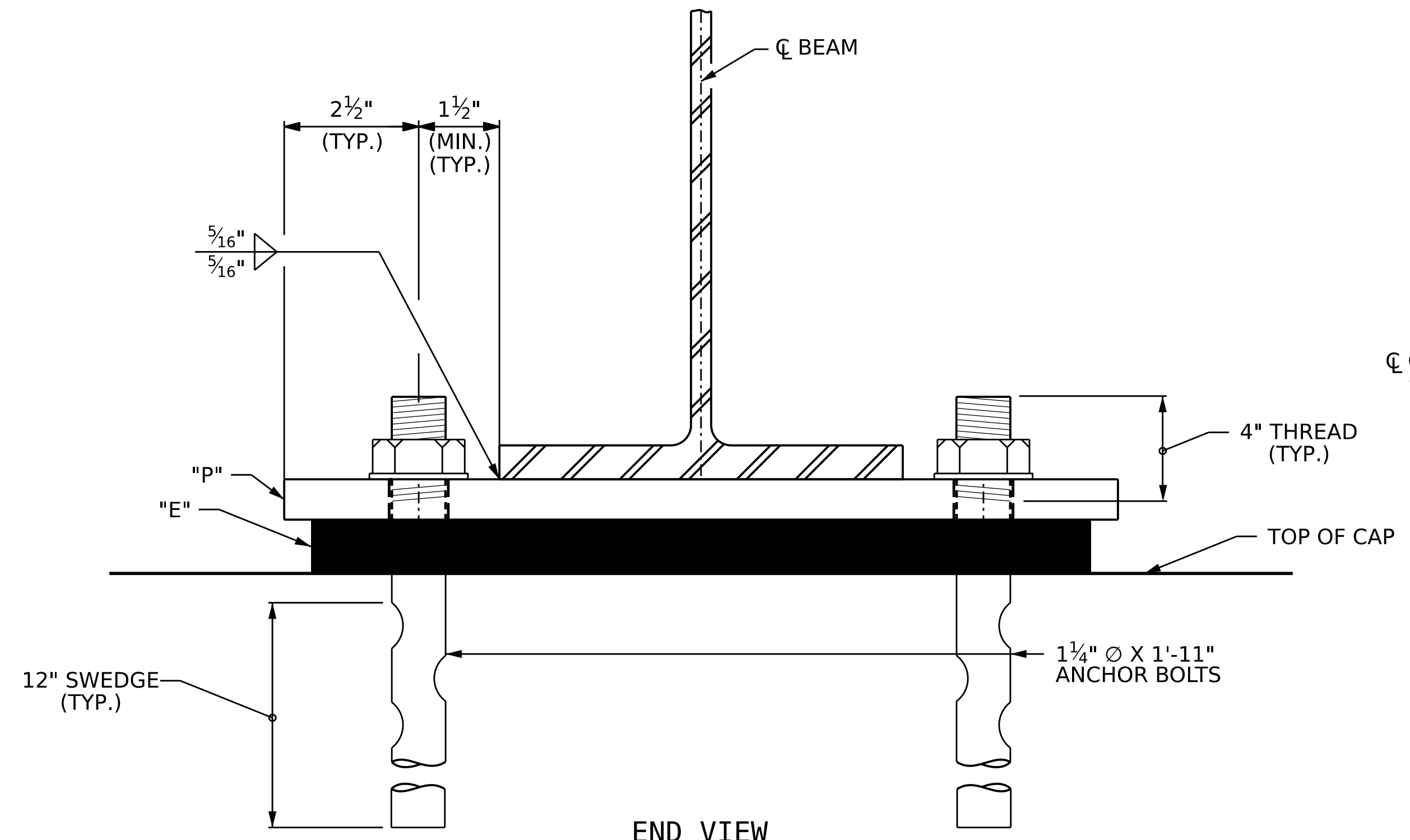
WHEN FIELD WELDING THE SOLE PLATE TO THE GIRDER FLANGE, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300° F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

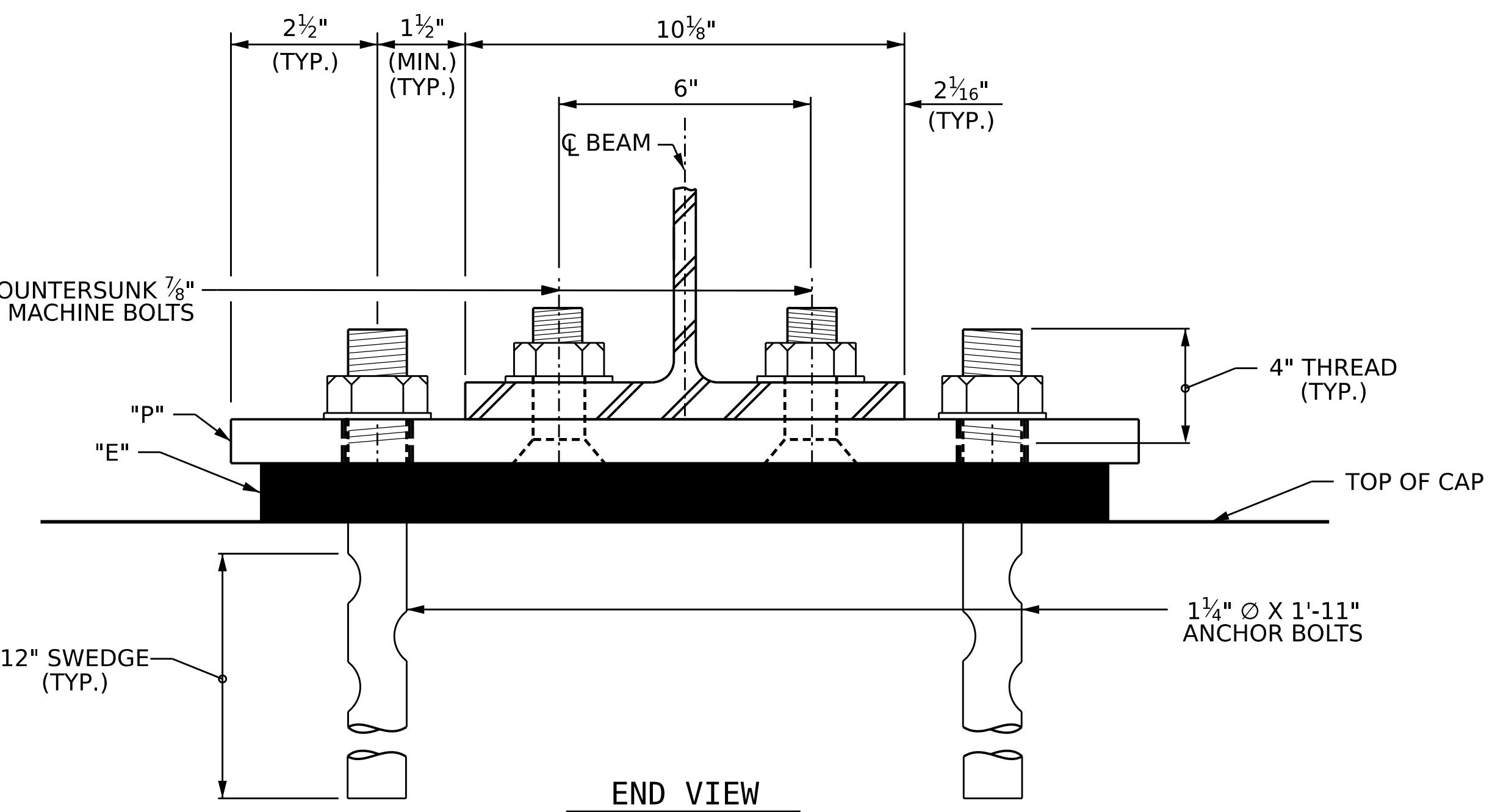
AT NO ADDITIONAL COST TO THE OWNER, THE CONTRACTOR MAY USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF CAST-IN-PLACE ANCHORS. LEVEL 1 FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE ANCHOR BOLT IS 30 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS.

ADHESIVELY ANCHORED ANCHOR BOLTS SHALL BE THREADED FULL LENGTH.

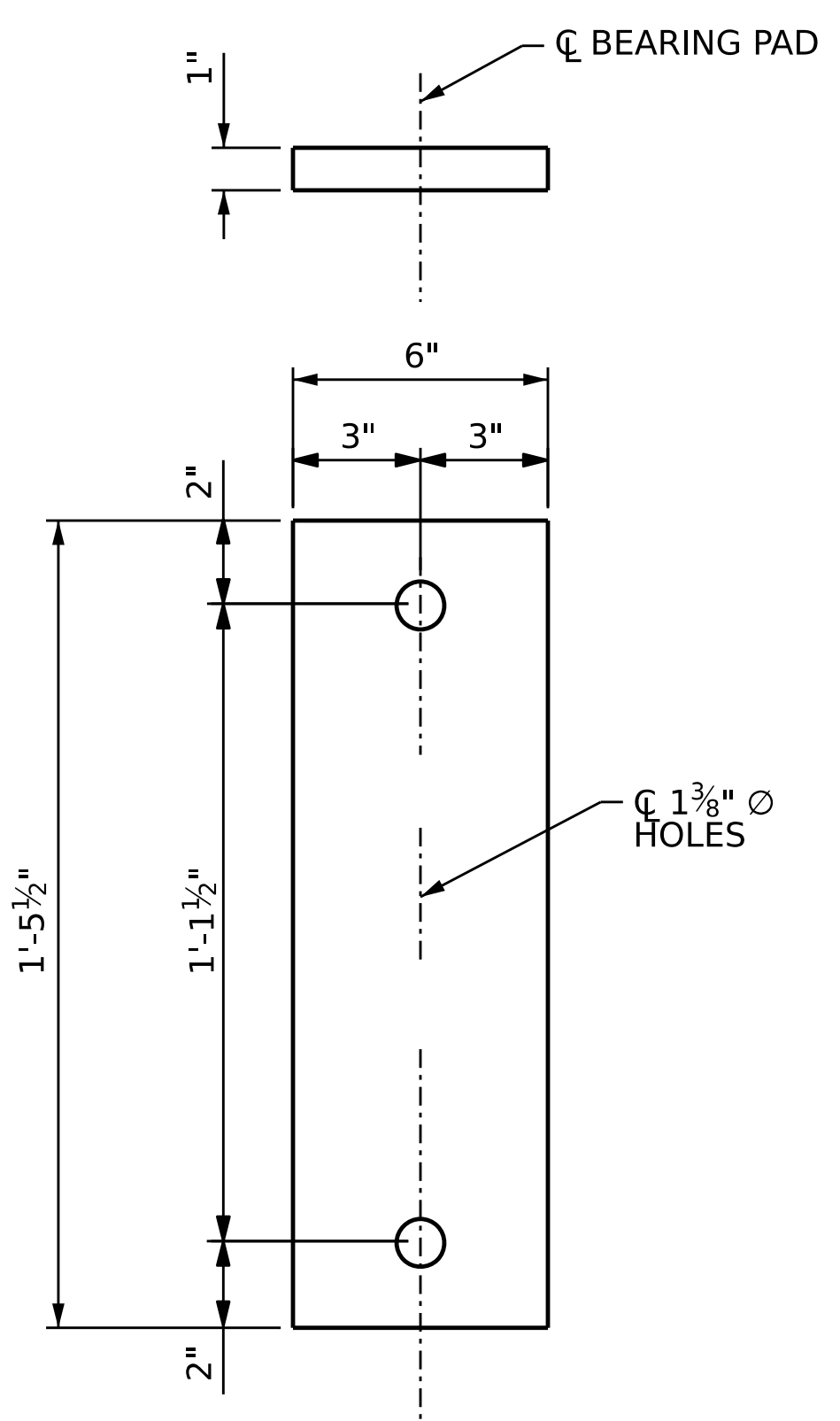
AT THE APPROVAL OF THE ENGINEER, THE OPTIONAL BOLTED SOLE PLATE MAY BE USED AT NO ADDITIONAL COST TO THE OWNER.



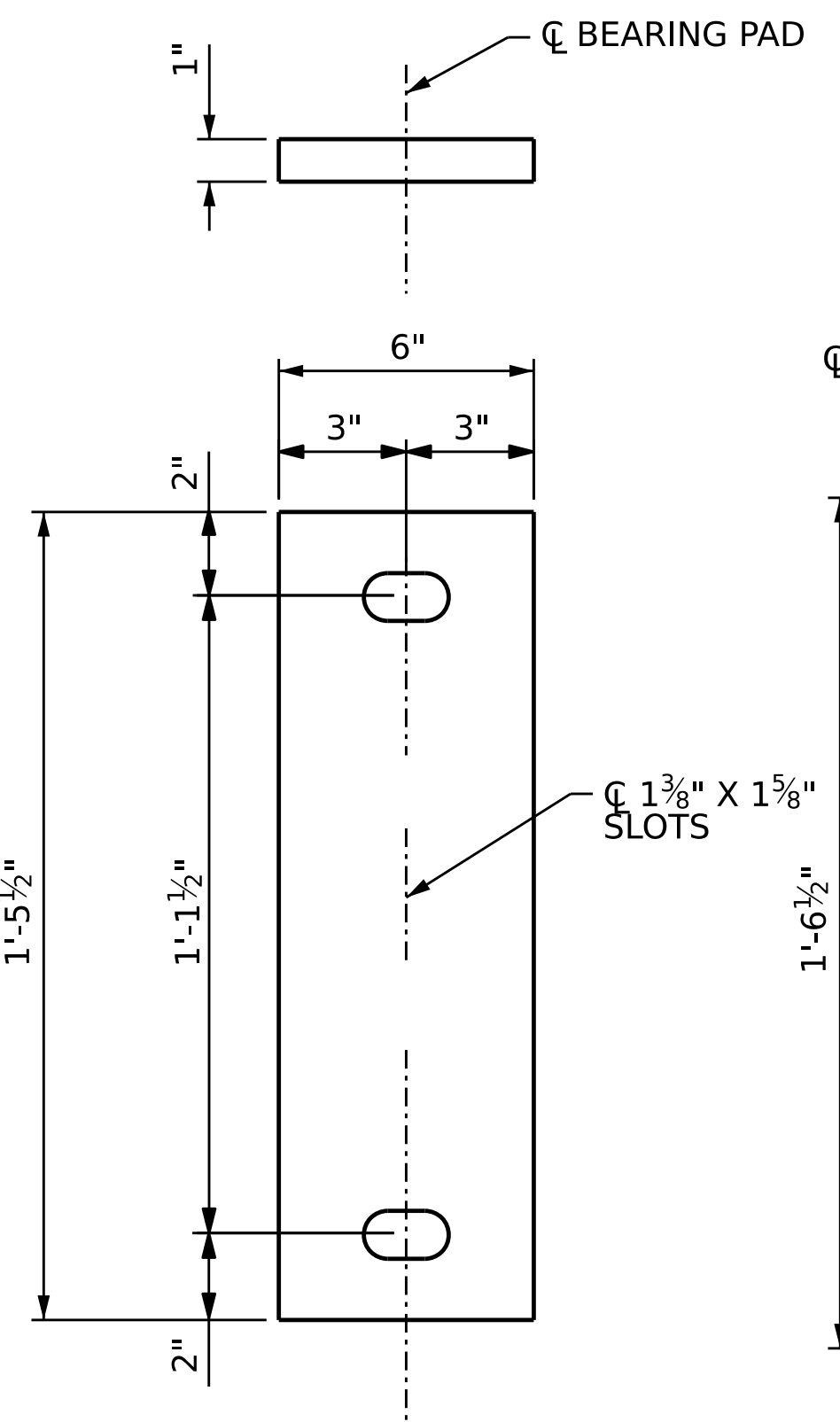
END VIEW  
**WELDED**



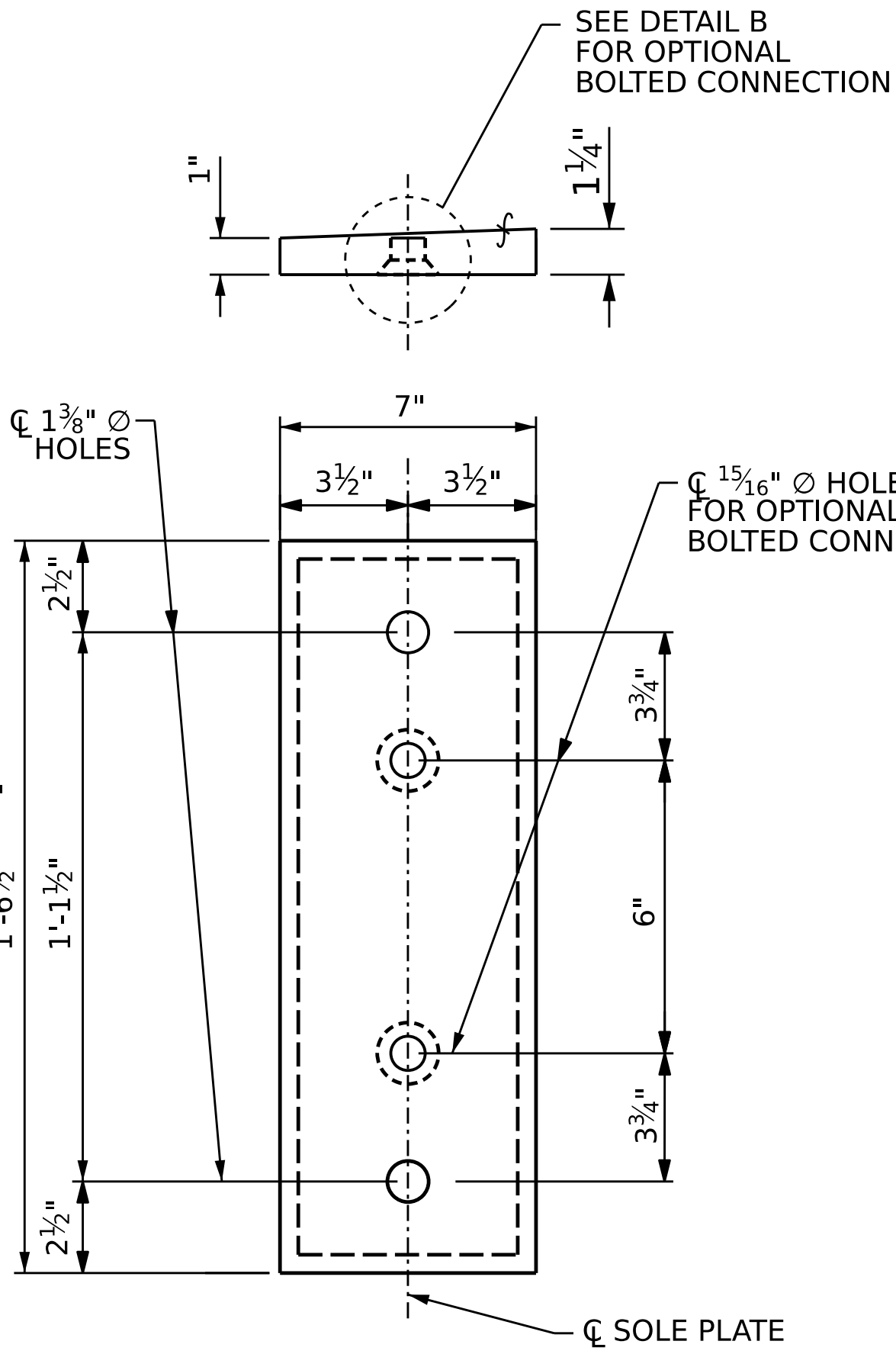
END VIEW  
**OPTIONAL BOLTED**



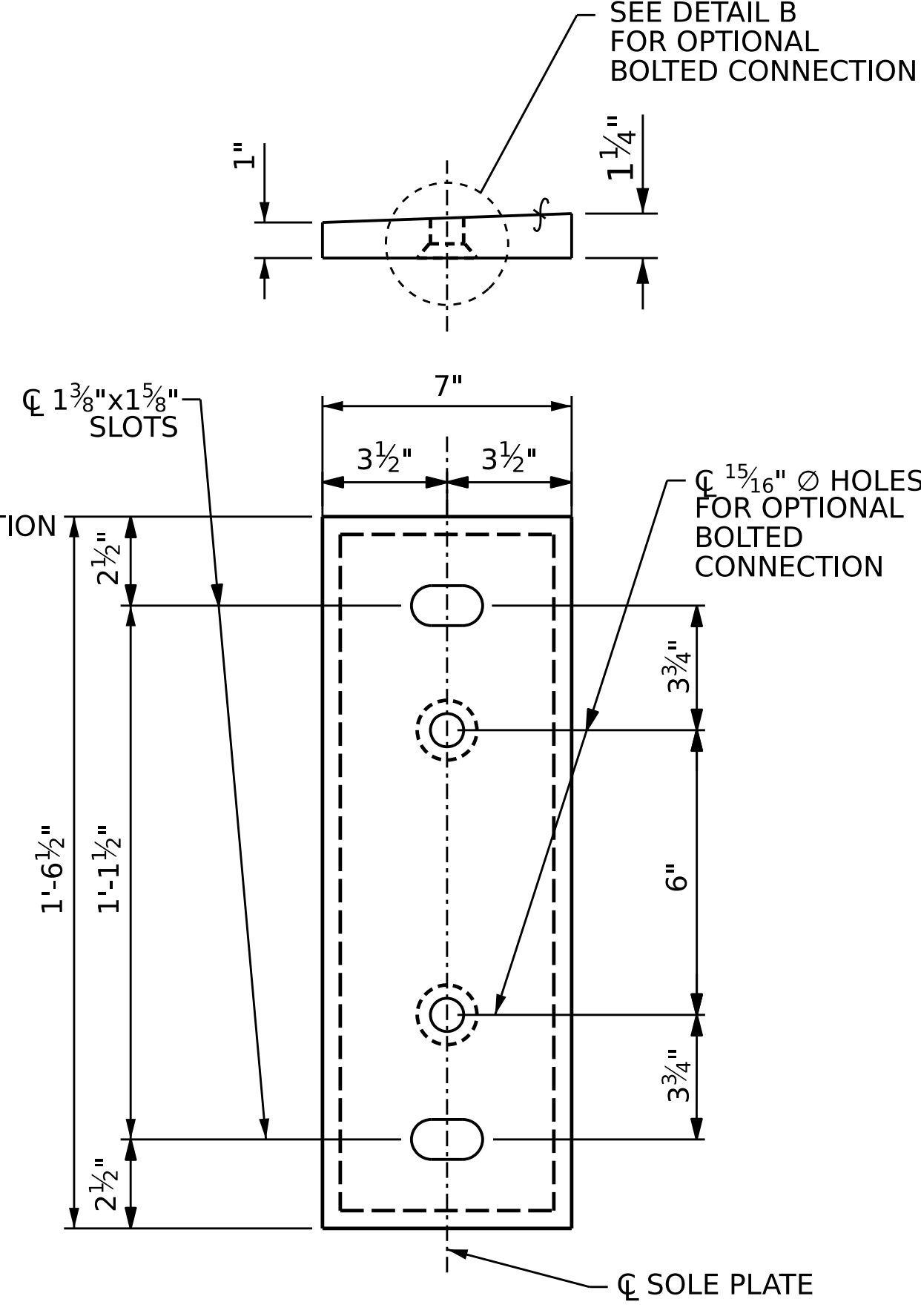
**E1 ELASTOMERIC BEARING DETAILS**  
(7 REQ'D)  
FIXED



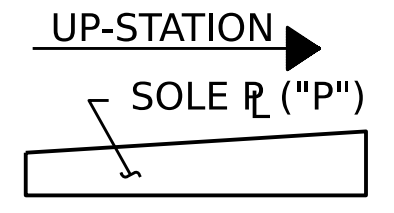
**E2 ELASTOMERIC BEARING DETAILS**  
(7 REQ'D)  
EXPANSION



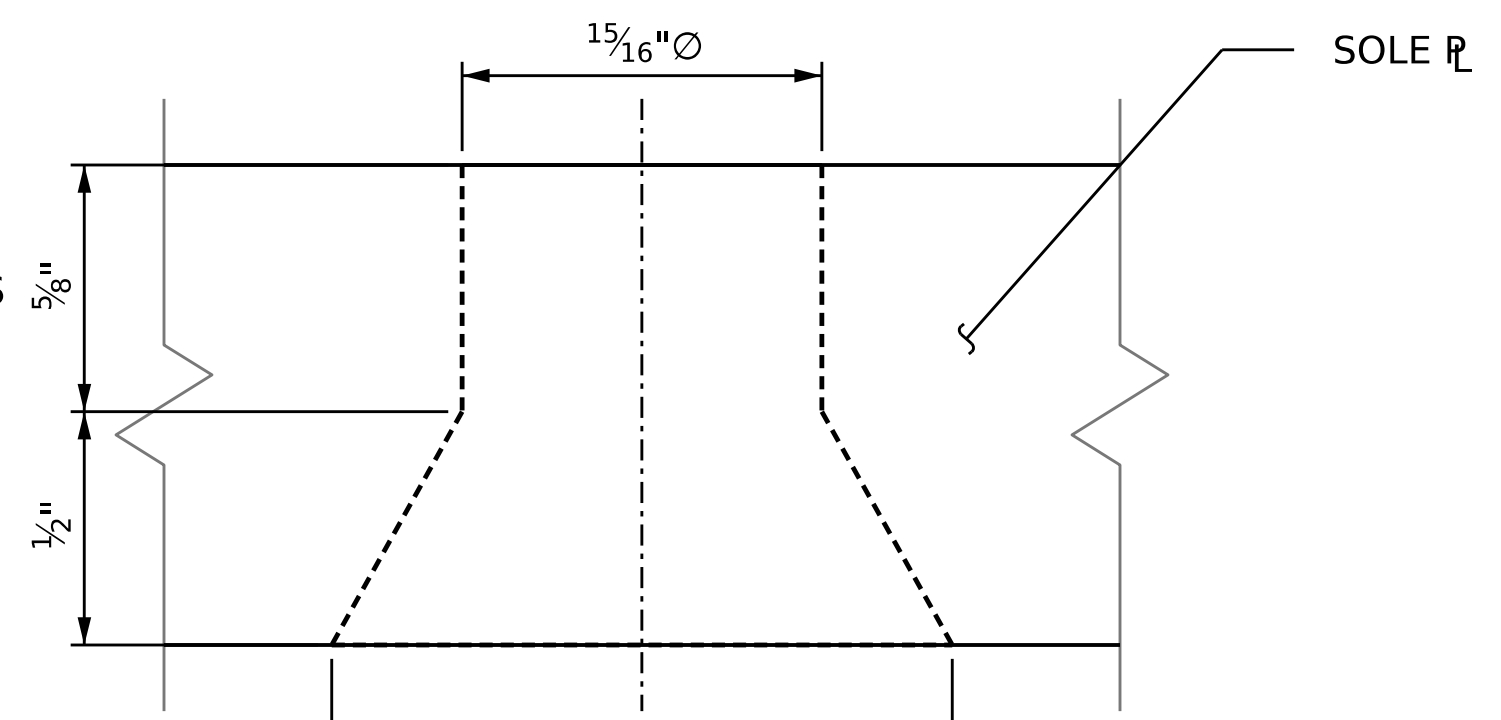
**P1 SOLE PLATE DETAILS**  
(7 REQ'D)  
FIXED



**P2 SOLE PLATE DETAILS**  
(7 REQ'D)  
EXPANSION



**SOLE PLATE PLACEMENT DETAIL**



**DETAIL B**

PROJECT NO. 095.01.D3EFE  
WATAUGA COUNTY  
STATION: 10+34.50 -DRWY1-



NORTH CAROLINA  
OFFICE OF EMERGENCY MANAGEMENT

### BEARING DETAILS TYPE II

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DESIGN ENGINEER OF RECORD : J. LOFTUS DATE : 04/2026

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1			3			
2			4			

8/26/21

**BILL OF MATERIAL  
FOR ONE RAIL 25 FT (2 REQ.D)**

TREATED LUMBER		
ITEM	SIZE	LIN. FT.
WHEEL GUARD	6"x6"	25.00
WHEEL GUARD BLOCK	6"x6"	7.50

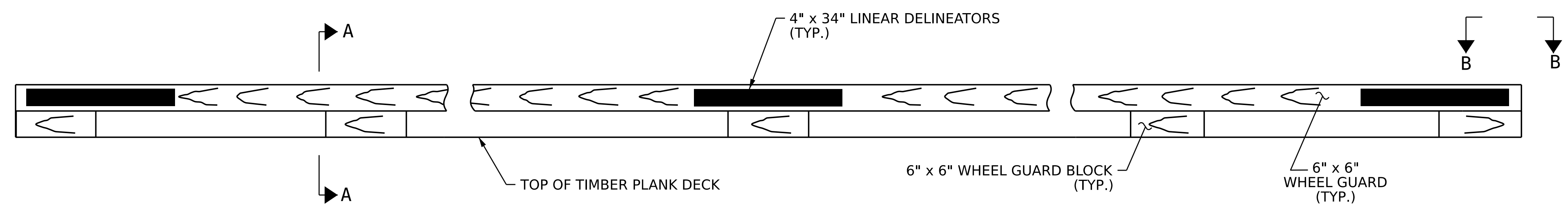
HARDWARE		
ITEM	Nos.	SIZE
TIMBER BOLTS (WHEEL GUARD)	5	5/8" Ø
HEAVY HEX NUTS	5	5/8" Ø
OGEE WASHERS	5	5/8" Ø

ACCESSORIES		
ITEM	Nos.	
4 X 34 LINEAR DELINEATOR	6	

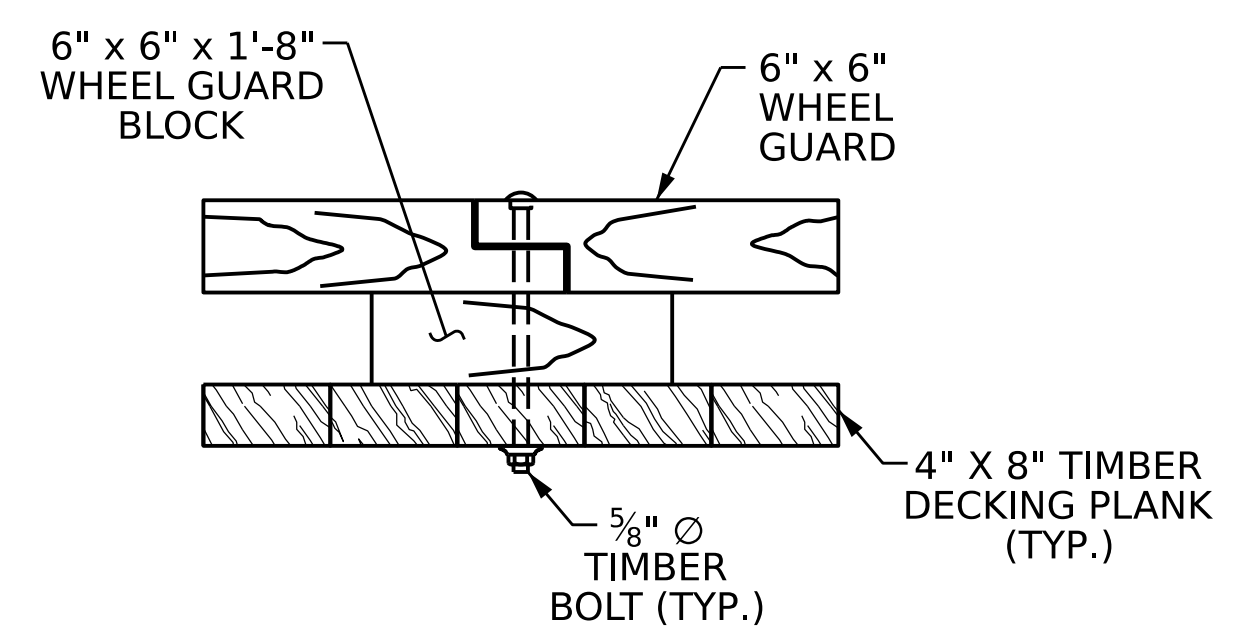
PAY LENGTH = 25.0 LIN. FT.

**NOTES**

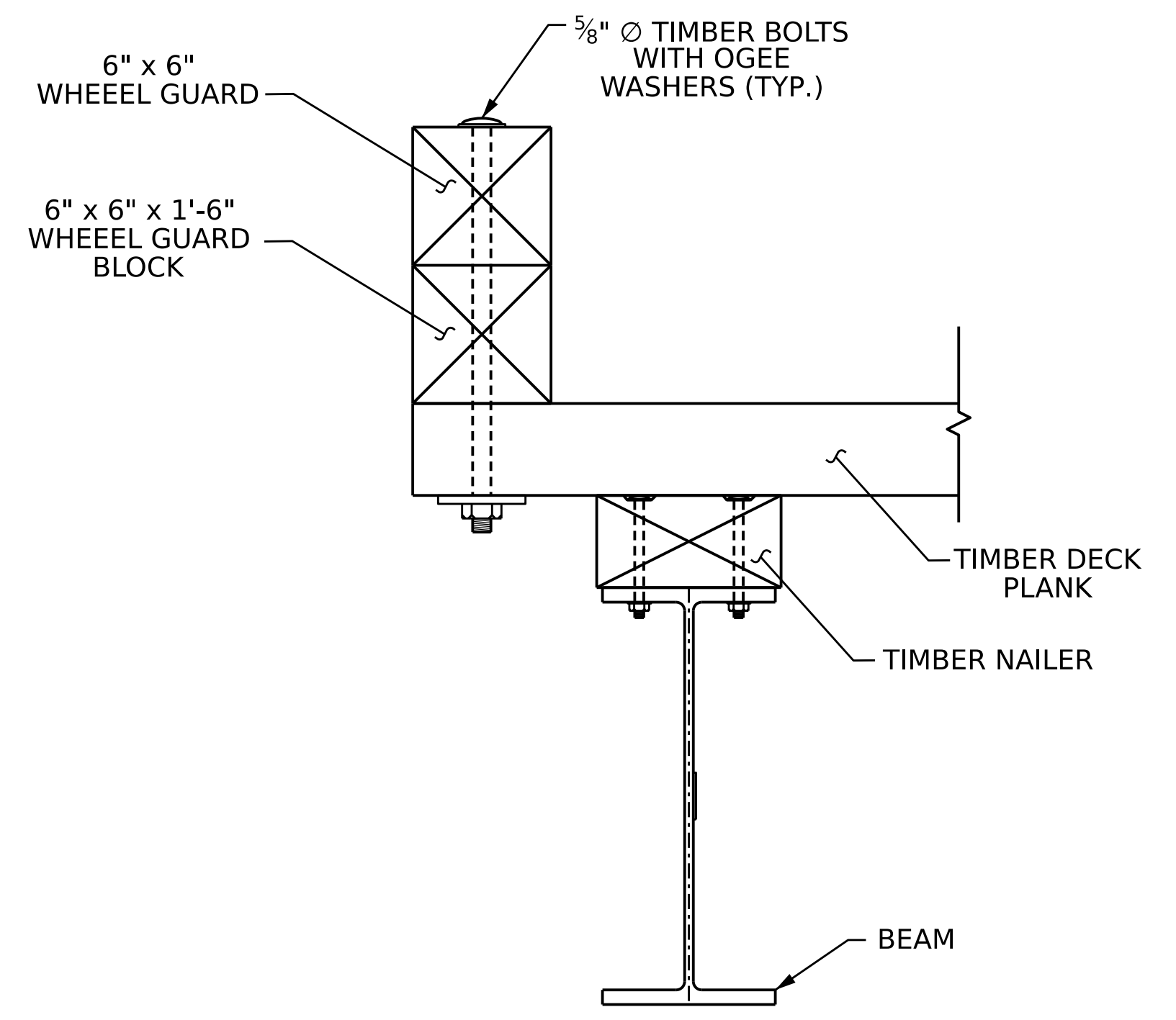
TREAT ALL DRILLED OR NEWLY EXPOSED HOLES IN TIMBER MEMBERS BY PUMPING WITH BITUMINOUS ASPHALT-BASED ROOFING CEMENT, OR APPROVED PRESERVATIVE SYSTEM BEFORE INSTALLING HARDWARE.  
SEE PLAN OF SPAN SHEET FOR ADDITIONAL INFORMATION.



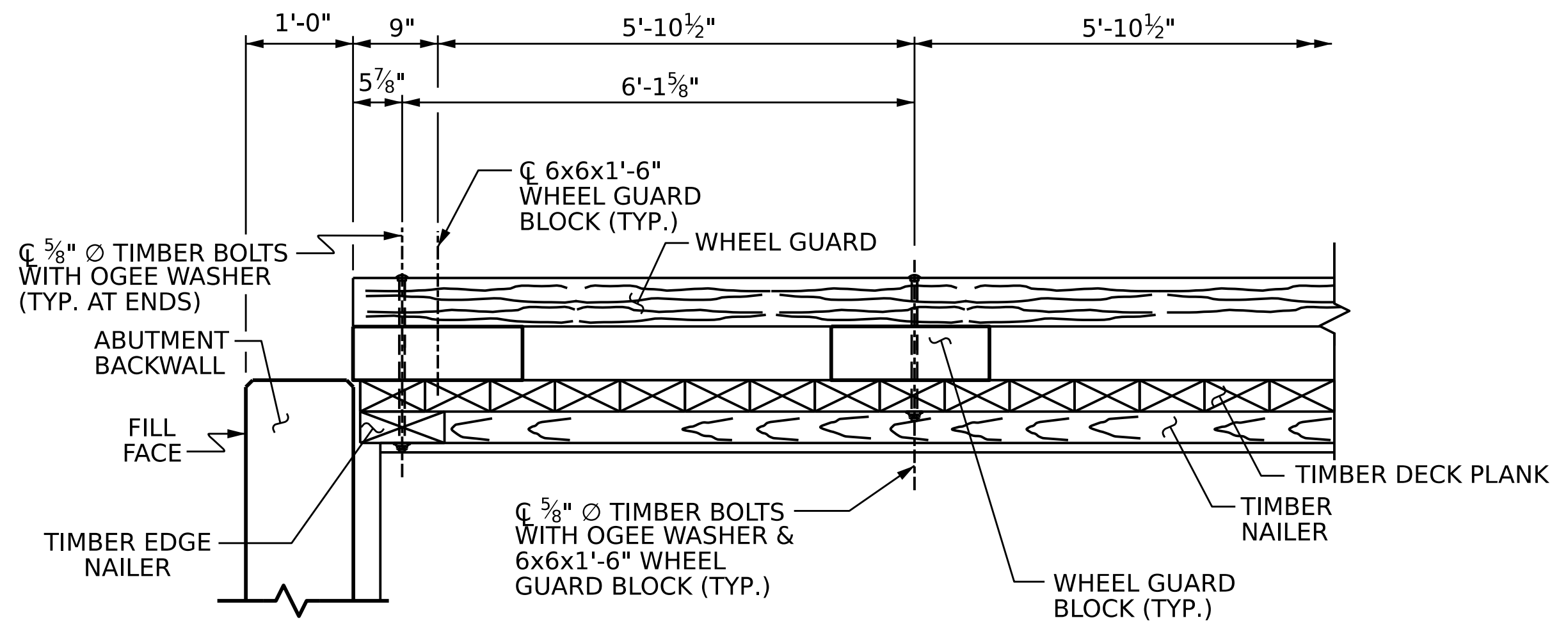
**ELEVATION**



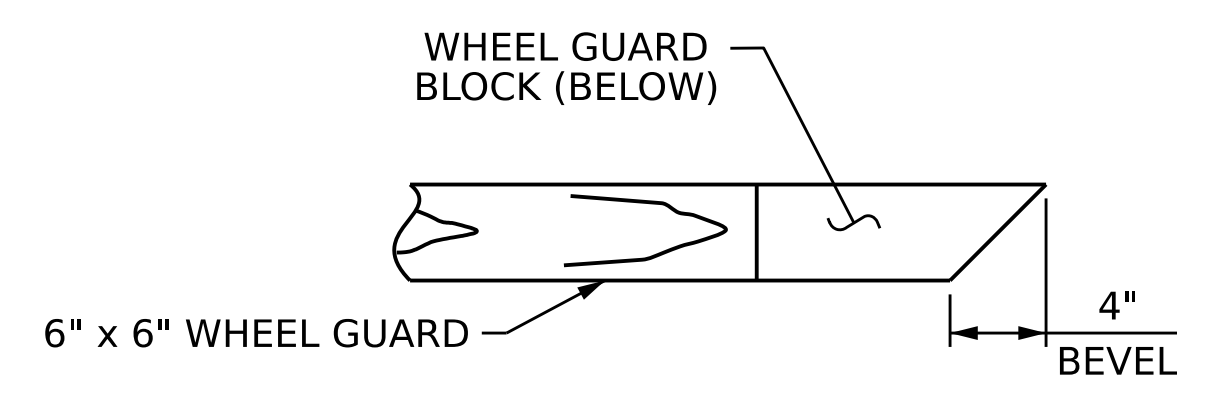
**WHEEL GUARD SPLICE DETAIL**



**SECTION A-A**



**WHEEL GUARD DETAIL AT ABUTMENTS**



**VIEW B-B**

PROJECT NO. 095.01.D3EFE  
WATAUGA COUNTY  
STATION: 10+34.50 -DRWY1-



NORTH CAROLINA  
OFFICE OF EMERGENCY MANAGEMENT  
**TIMBER WHEEL GUARD SYSTEM**

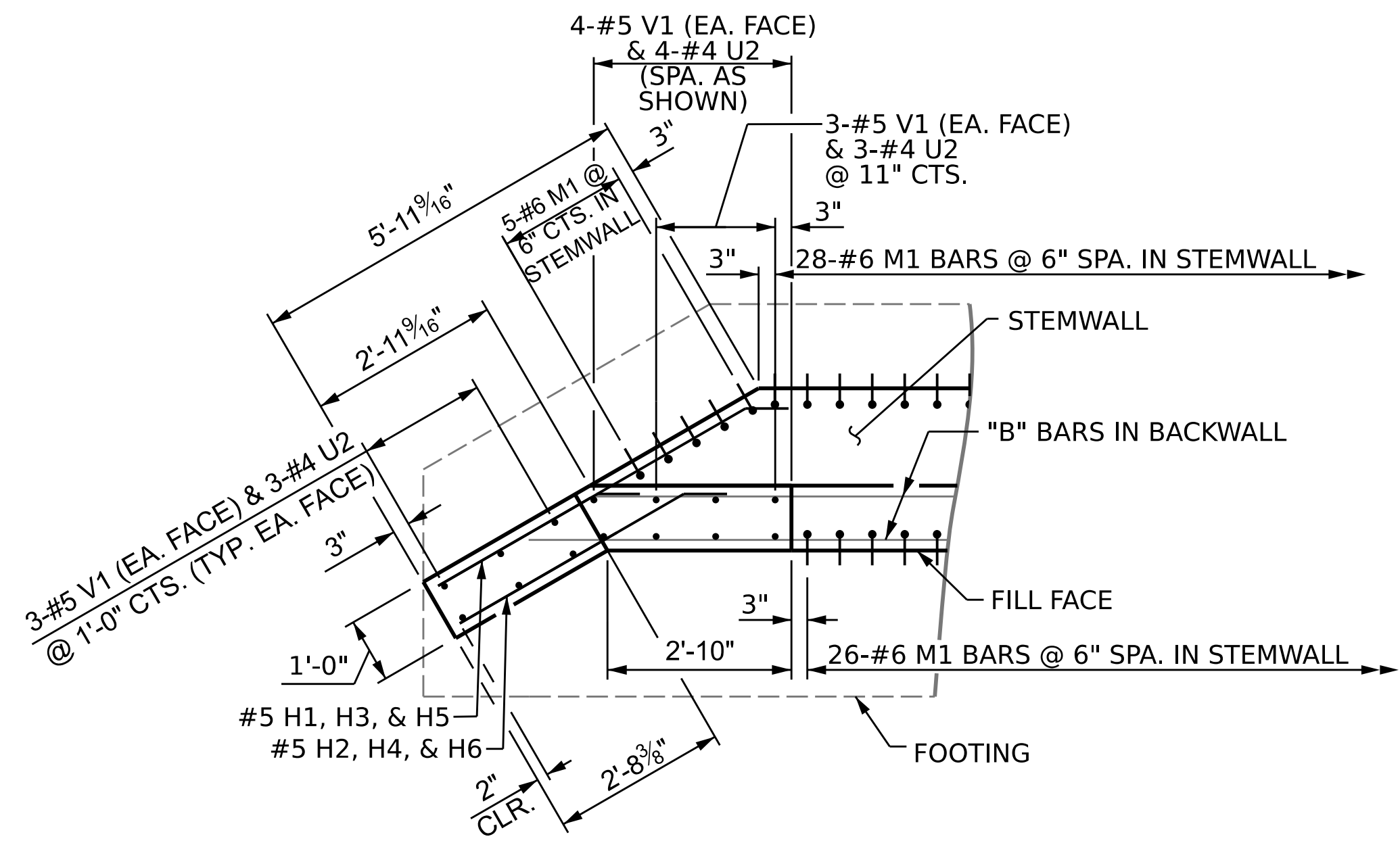
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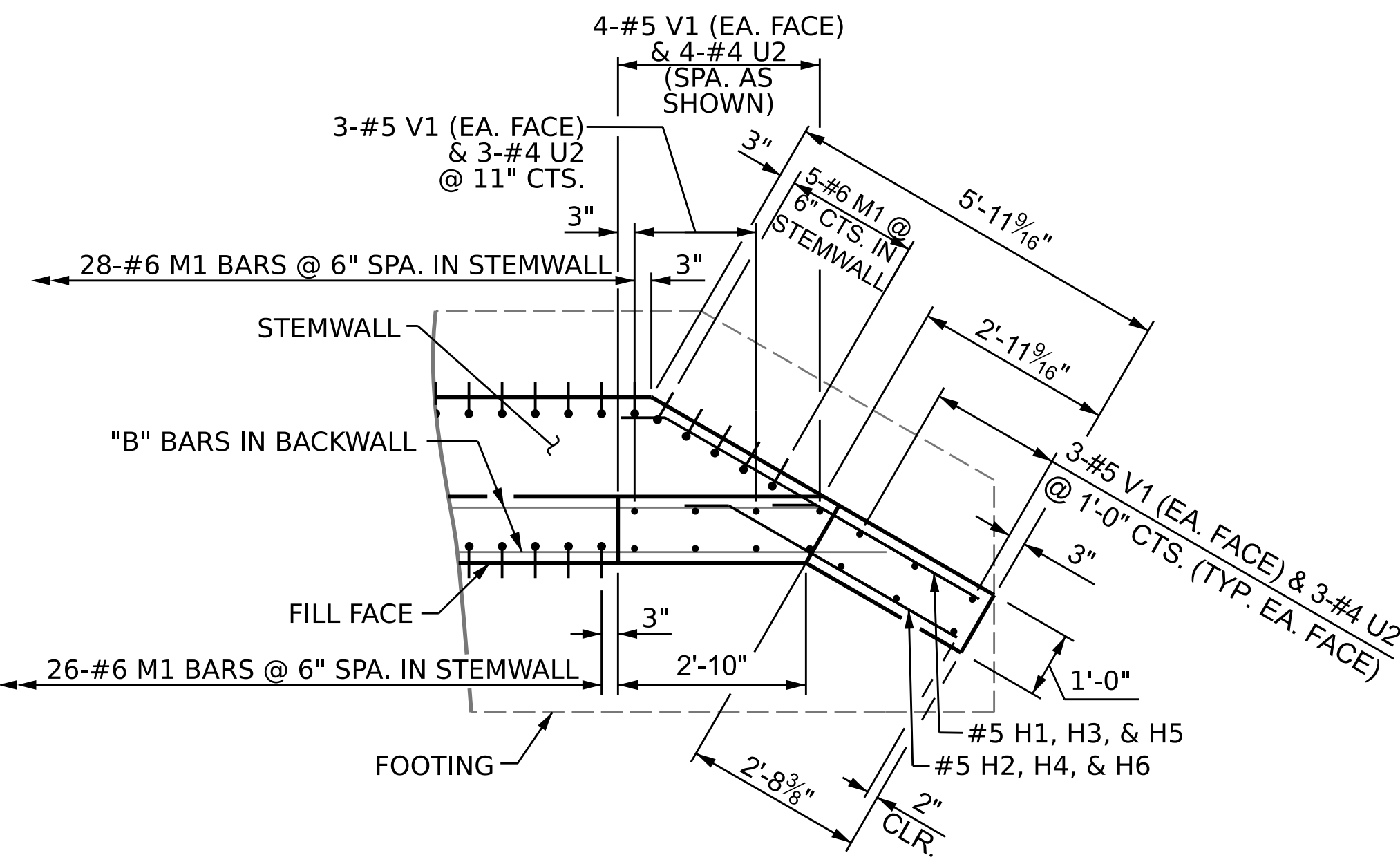
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2			4			TOTAL SHEETS 13

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DESIGN ENGINEER OF RECORD: J. LOFTUS DATE : 04/2026

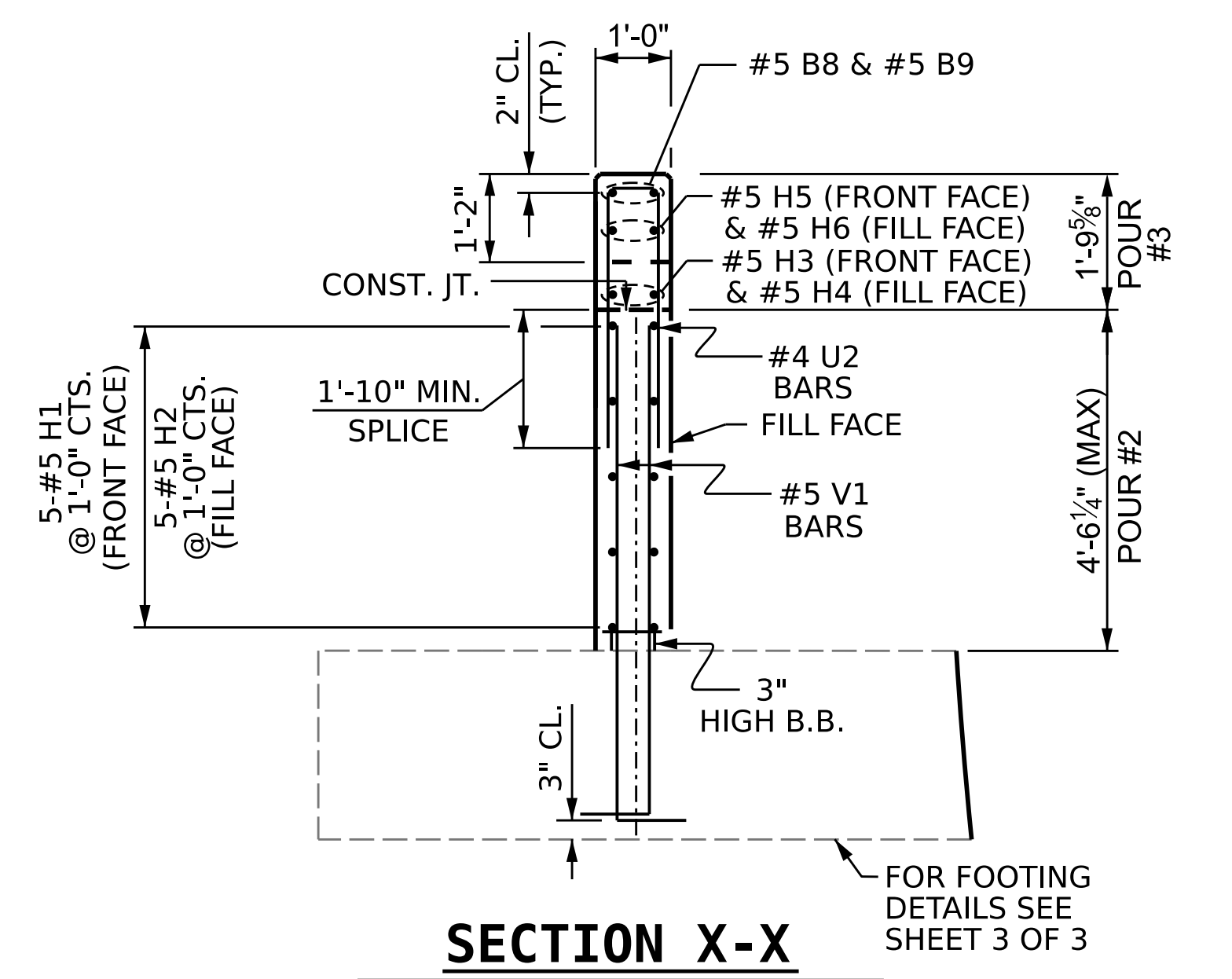




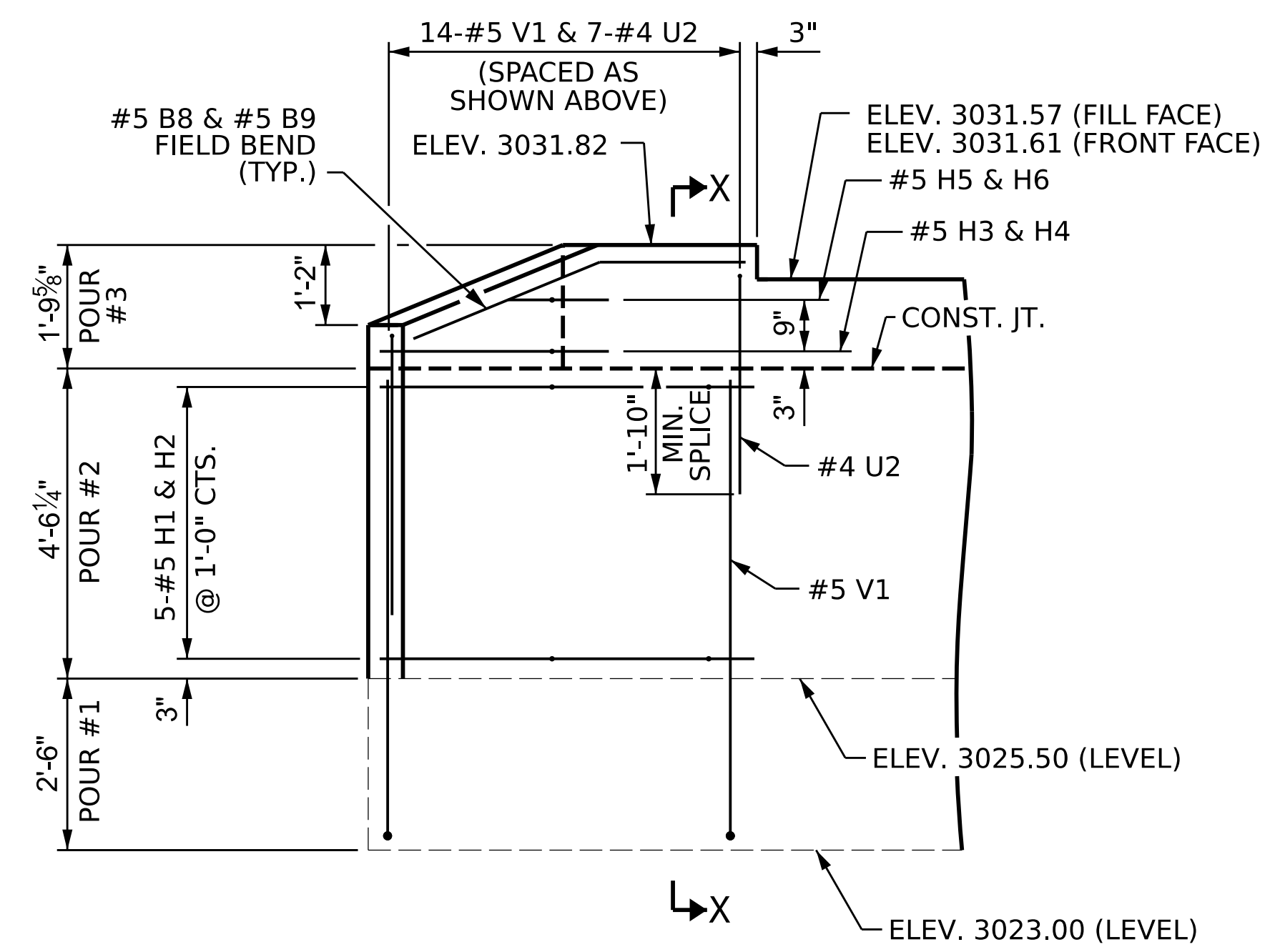
PLAN OF WING (W1)



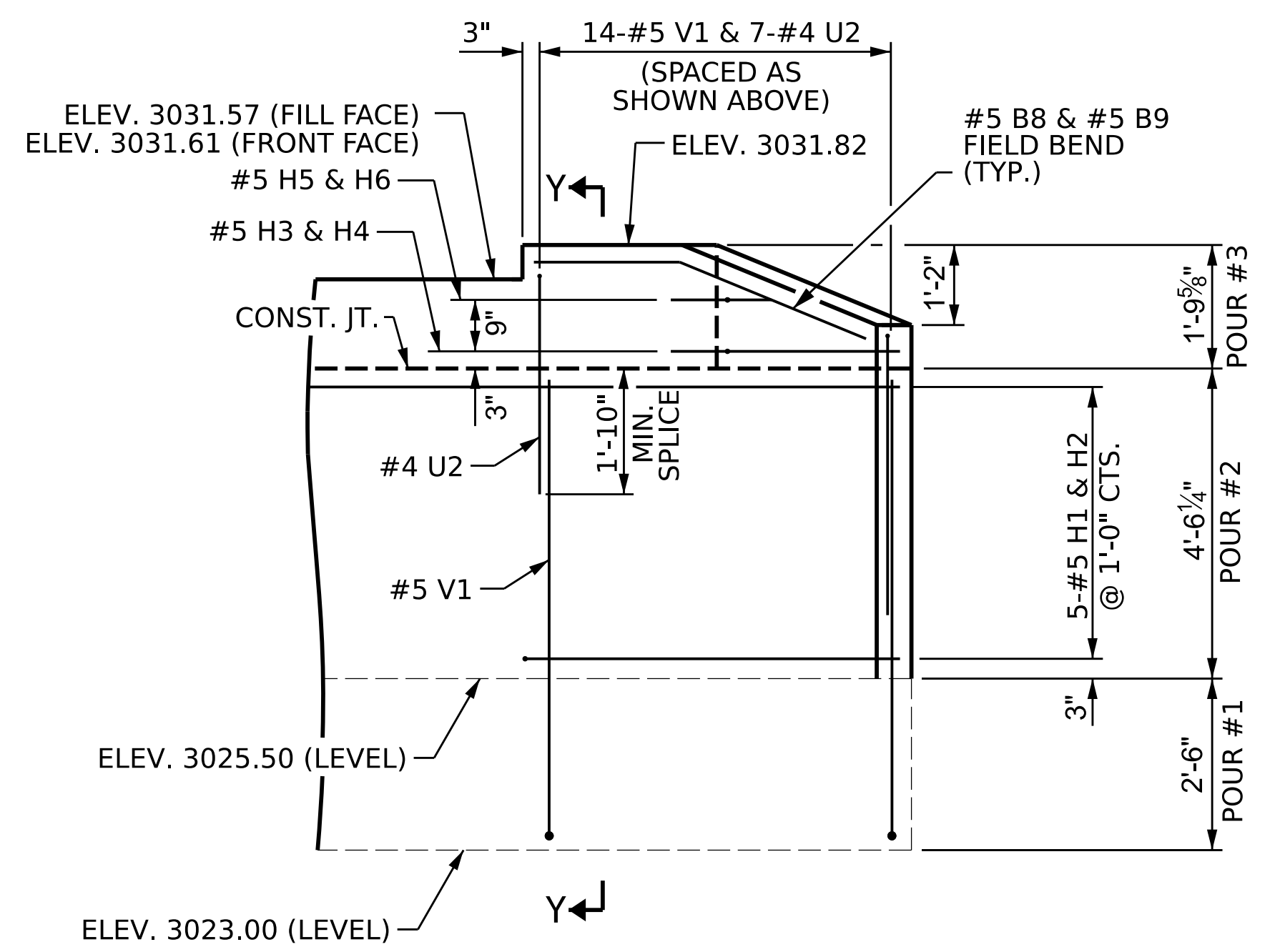
PLAN OF WING (W2)



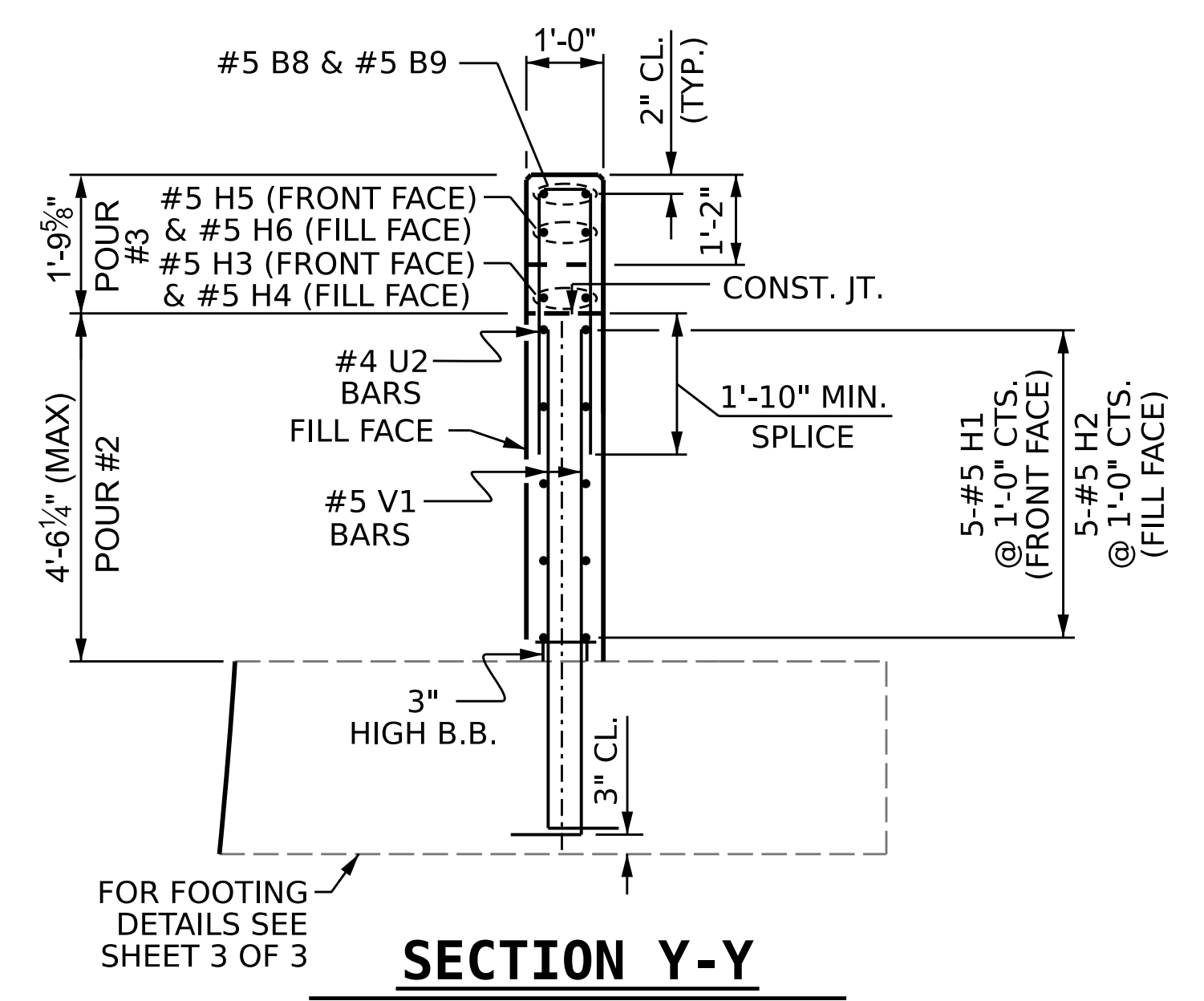
SECTION X-X



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION Y-Y

PROJECT NO. 095.01.D3EFE  
 WATAUGA COUNTY  
 STATION: 10+34.50 -DRWY1-  
 SHEET 2 OF 3



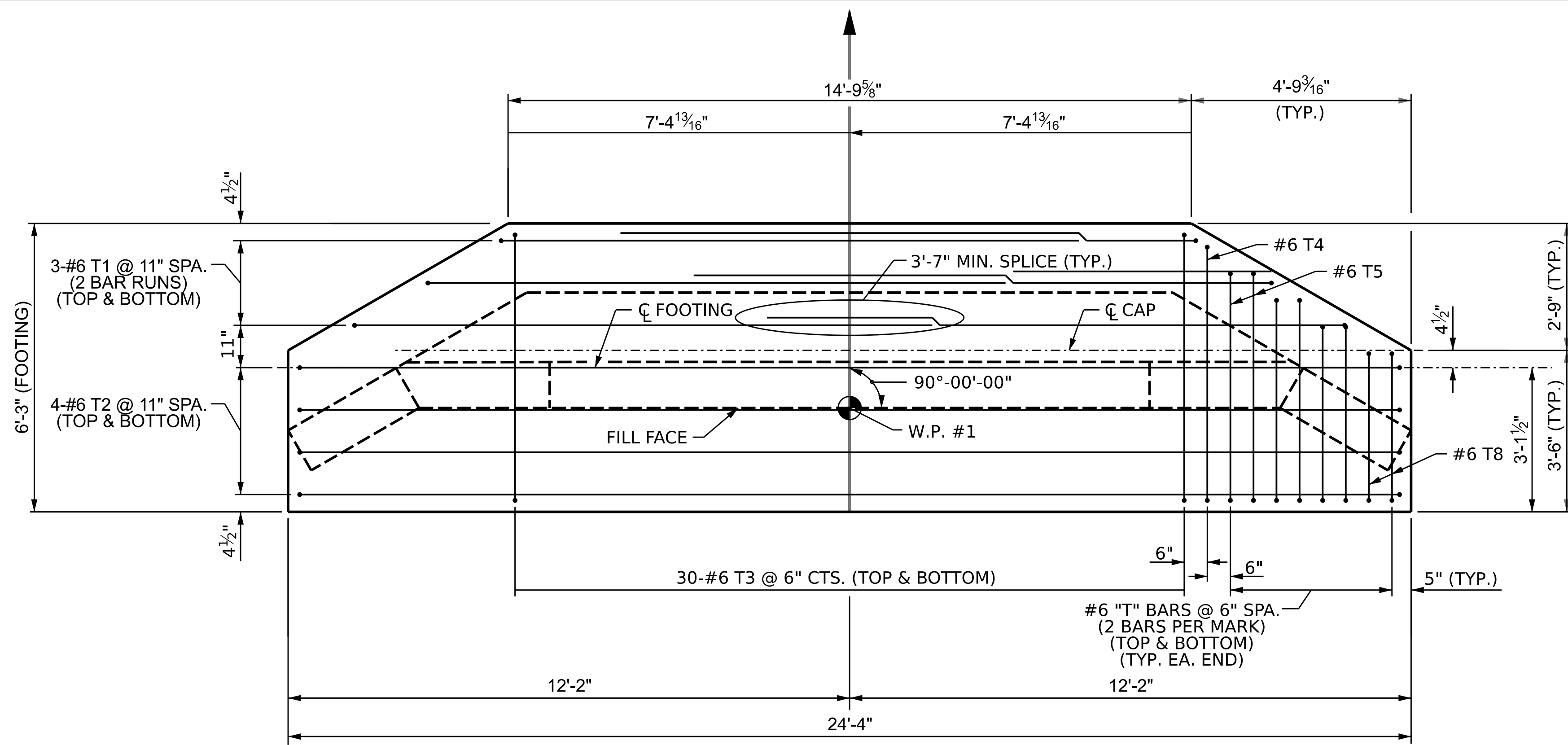
NORTH CAROLINA  
 OFFICE OF EMERGENCY MANAGEMENT  
 SUBSTRUCTURE  
**ABUTMENT No. 1**  
**WING DETAIL**

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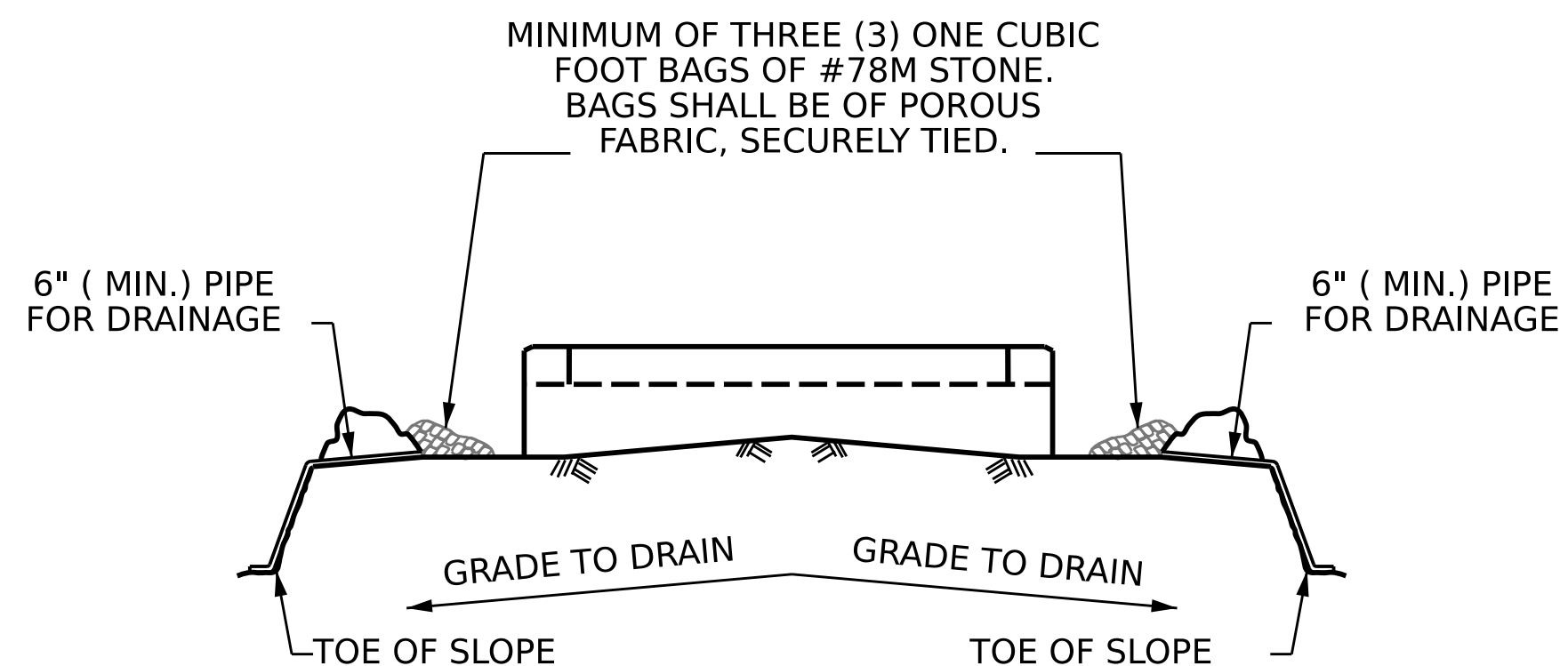
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DESIGN ENGINEER OF RECORD :	J. LOFTUS	DATE :	04/2026

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1			3		TOTAL SHEETS 13
2			4		

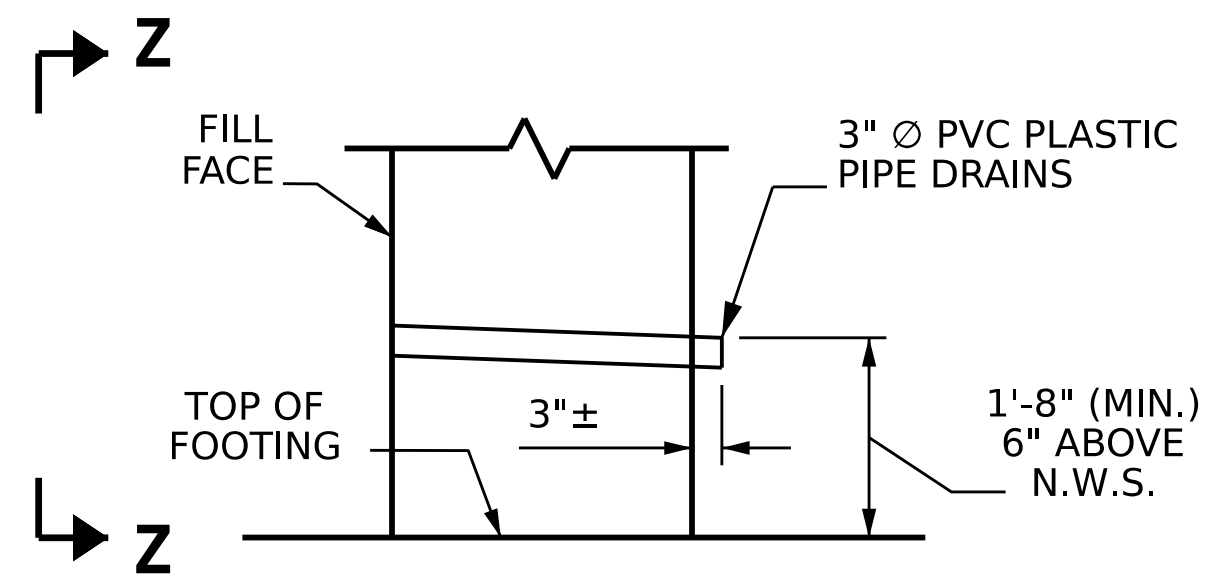
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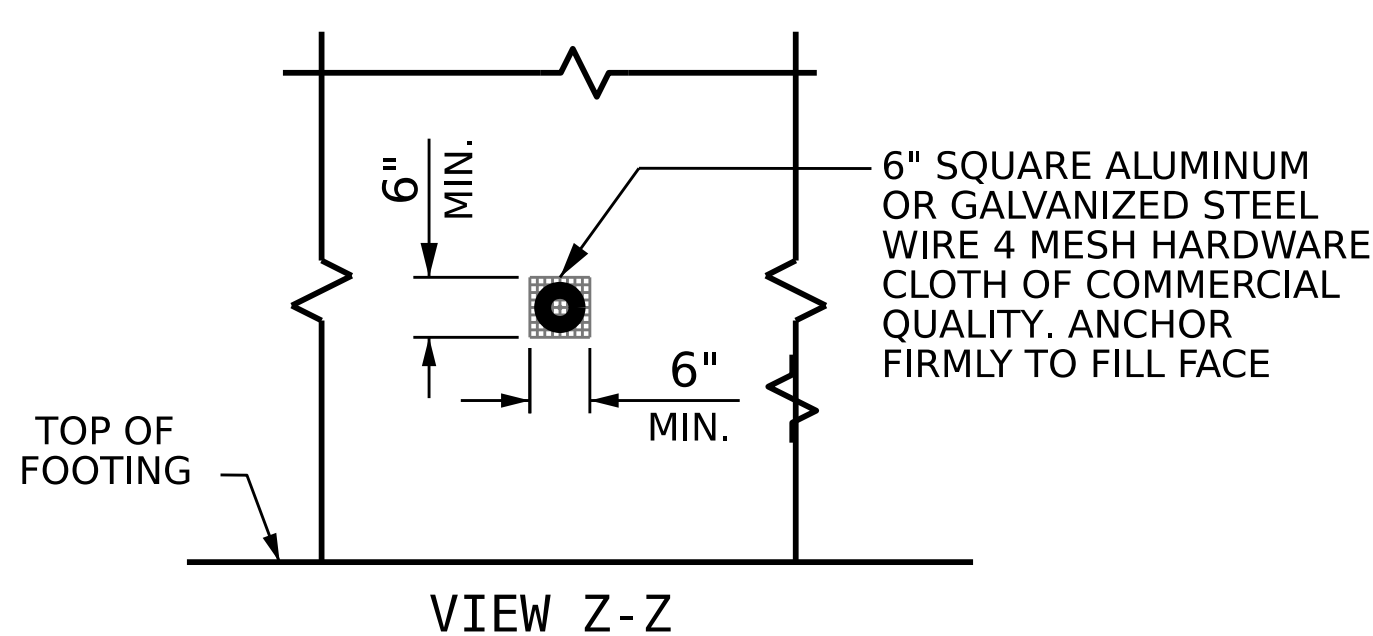
**PLAN OF FOOTING**



**TEMPORARY DRAINAGE AT END BENT**



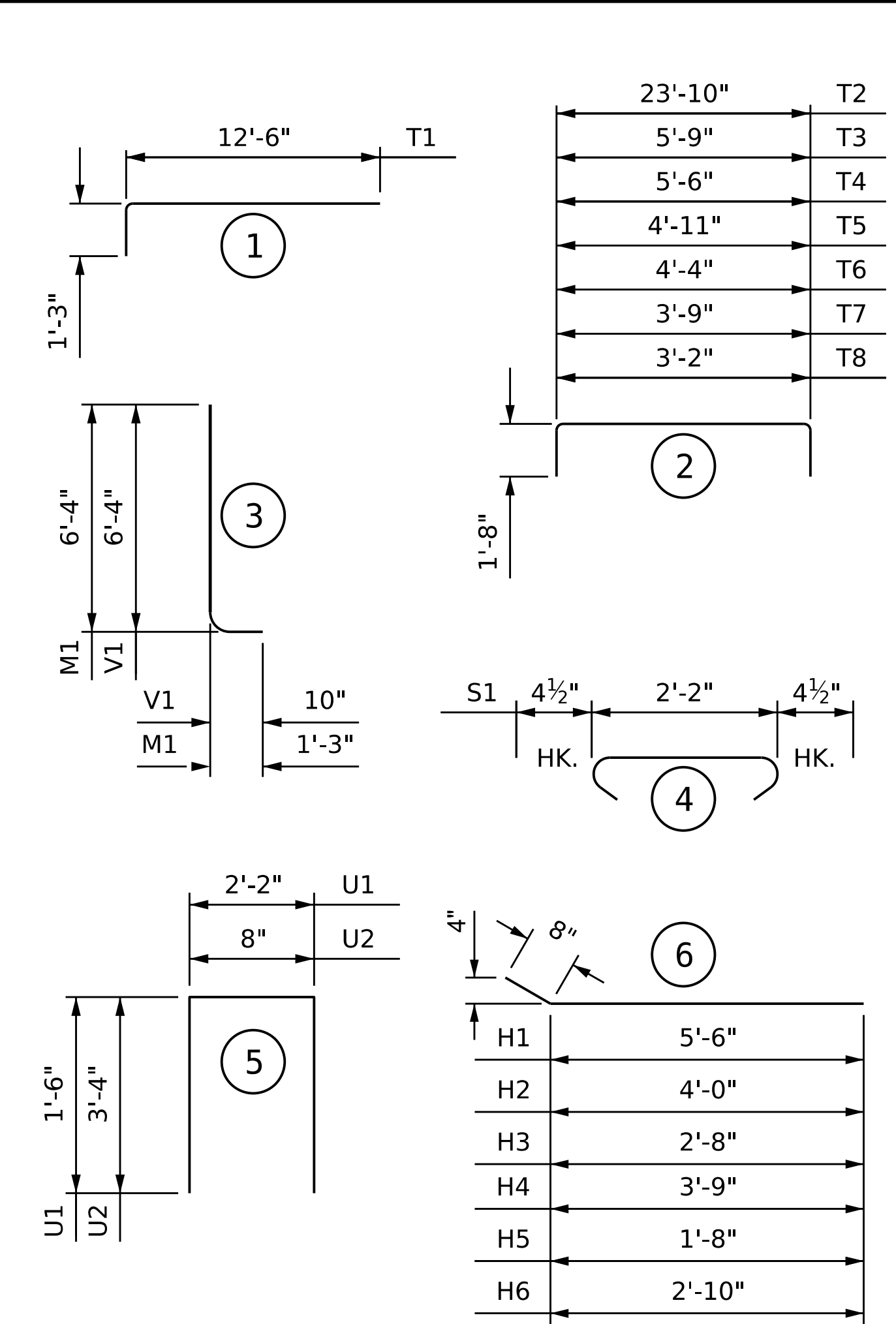
**SECTION THRU ABUTMENT**



**PIPE DRAIN DETAILS**

NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE PVC PLASTIC PIPE DRAINS, HARDWARE CLOTH AND FASTNERS. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE FOR THE SEVERAL PAY ITEMS.

**BAR TYPES**



ALL BAR DIMENSIONS ARE OUT TO OUT.

**BILL OF MATERIAL**

ABUTMENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	1	#7	STR.	21'-0"	43
B2	1	#7	STR.	18'-8"	38
B3	1	#7	STR.	16'-8"	34
B4	1	#7	STR.	13'-10"	28
B5	7	#5	STR.	21'-2"	155
B6	4	#5	STR.	13'-10"	58
B7	3	#5	STR.	19'-1"	60
B8	2	#5	STR.	5'-6"	11
B9	2	#5	STR.	5'-2"	11
H1	10	#5	6	6'-2"	64
H2	10	#5	6	4'-8"	49
H3	2	#5	6	3'-4"	7
H4	2	#5	6	4'-5"	9
H5	2	#5	6	2'-4"	5
H6	2	#5	6	3'-6"	7
M1	64	#7	3	7'-7"	992
S1	10	#4	4	2'-11"	19
T1	12	#6	1	14'-4"	258
T2	8	#6	2	27'-6"	330
T3	60	#6	2	9'-5"	849
T4	4	#6	2	9'-2"	55
T5	8	#6	2	8'-7"	103
T6	8	#6	2	8'-0"	96
T7	8	#6	2	7'-5"	89
T8	8	#6	2	6'-10"	82
U1	28	#4	5	5'-2"	97
U2	28	#4	5	7'-4"	137
V1	28	#5	3	7'-2"	209

REINFORCING STEEL 3,895

**CLASS A CONCRETE BREAKDOWN**

POUR #1 FOOTING AND SHEAR KEY	12.90 C.Y.
POUR #2 STEM AND PART OF WINGS	8.30 C.Y.
POUR #3 BACKWALL & UPPER PART OF WINGS	1.40 C.Y.
<b>CLASS A CONCRETE TOTAL</b>	<b>22.60 C.Y.</b>

**NOTES**

ALL WORK SHALL BE IN ACCORDANCE WITH THE CURRENT VERSION OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

THE SPREAD FOOTINGS ARE DESIGNED FOR A FACTORED RESISTANCE OF 2.8 TSF. CHECK FIELD CONDITIONS FOR THE REQUIRED RESISTANCE OF 2.8 TSF JUST BEFORE PLACING CONCRETE.

U1 STIRRUPS MAY BE SHIFTED AS NECESSARY TO CLEAR "ANCHOR BOLTS."

THE TOP SURFACE AREAS OF THE ABUTMENT SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

THE 3"Ø PVC PLASTIC DRAIN PIPE SHALL MEET THE MINIMUM REQUIREMENTS OF ASTM D1785, AND SHALL BE SLOPED FOR PROPER DRAINAGE.

PROJECT NO. 095.01.D3EFE  
 WATAUGA COUNTY  
 STATION: 10+34.50 -DRWY1-

SHEET 3 OF 3



NORTH CAROLINA  
 OFFICE OF EMERGENCY MANAGEMENT  
 SUBSTRUCTURE  
**ABUTMENT No. 1**  
**FOOTING DETAILS**

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

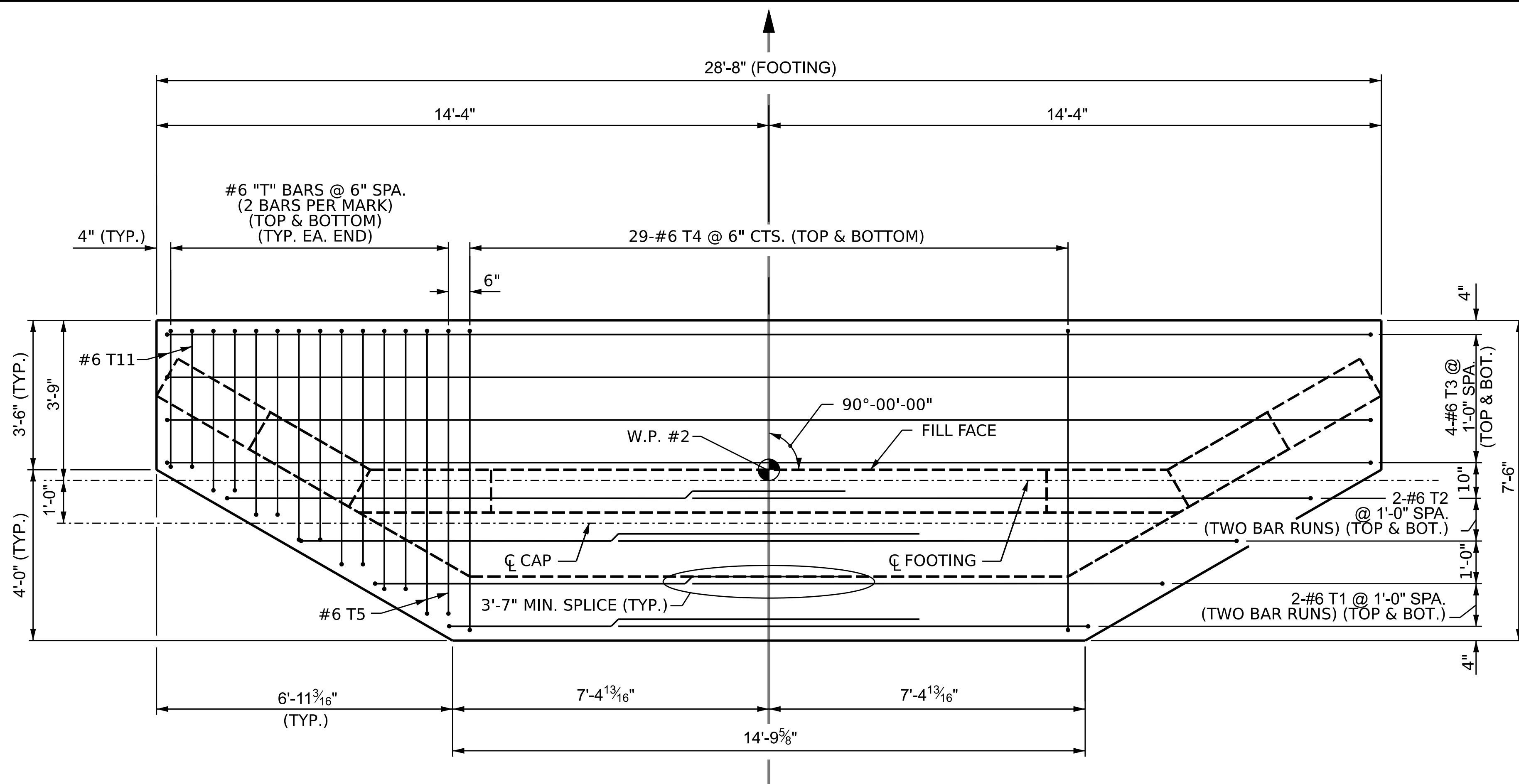
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DRAWN BY: J. WEIGER DATE: 12/2025  
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 DESIGN ENGINEER OF RECORD: J. LOFTUS DATE: 04/2026

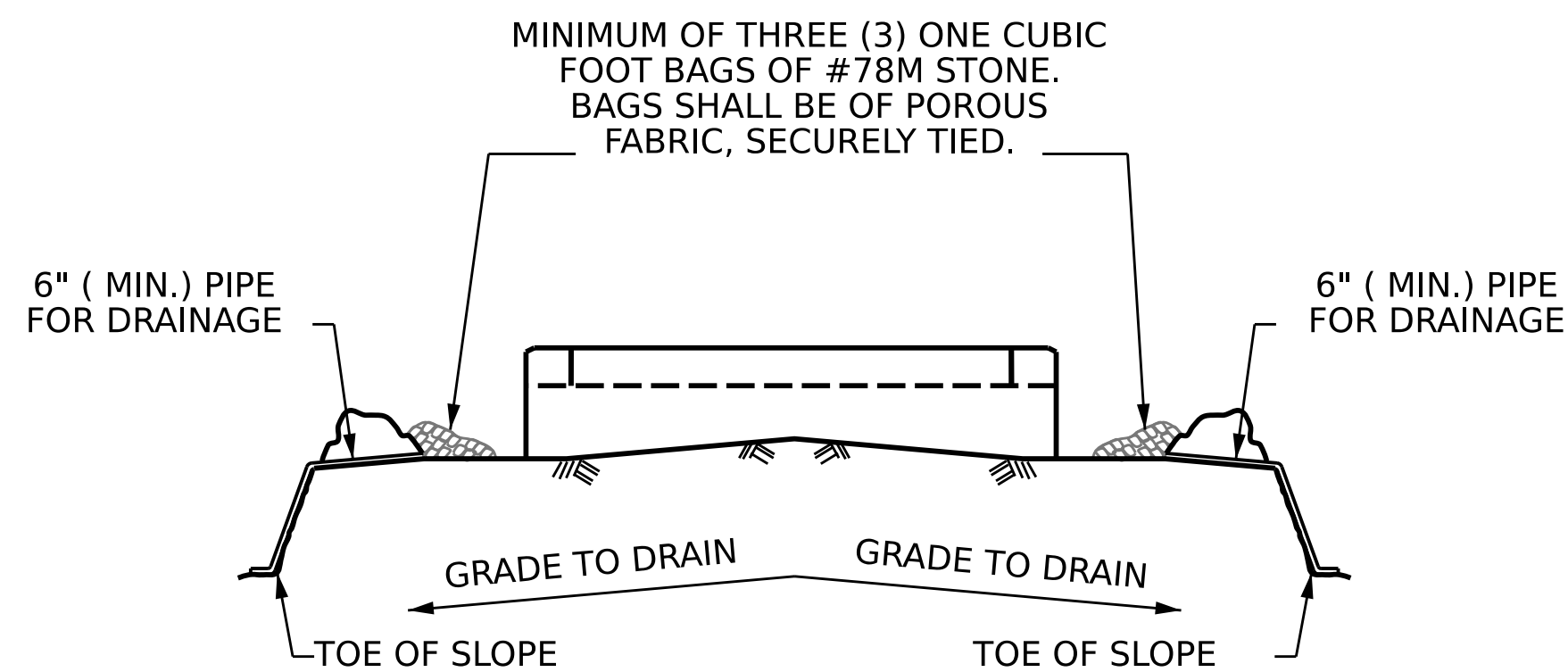
**McADAMS**  
 The John R. McAdams Company, Inc.  
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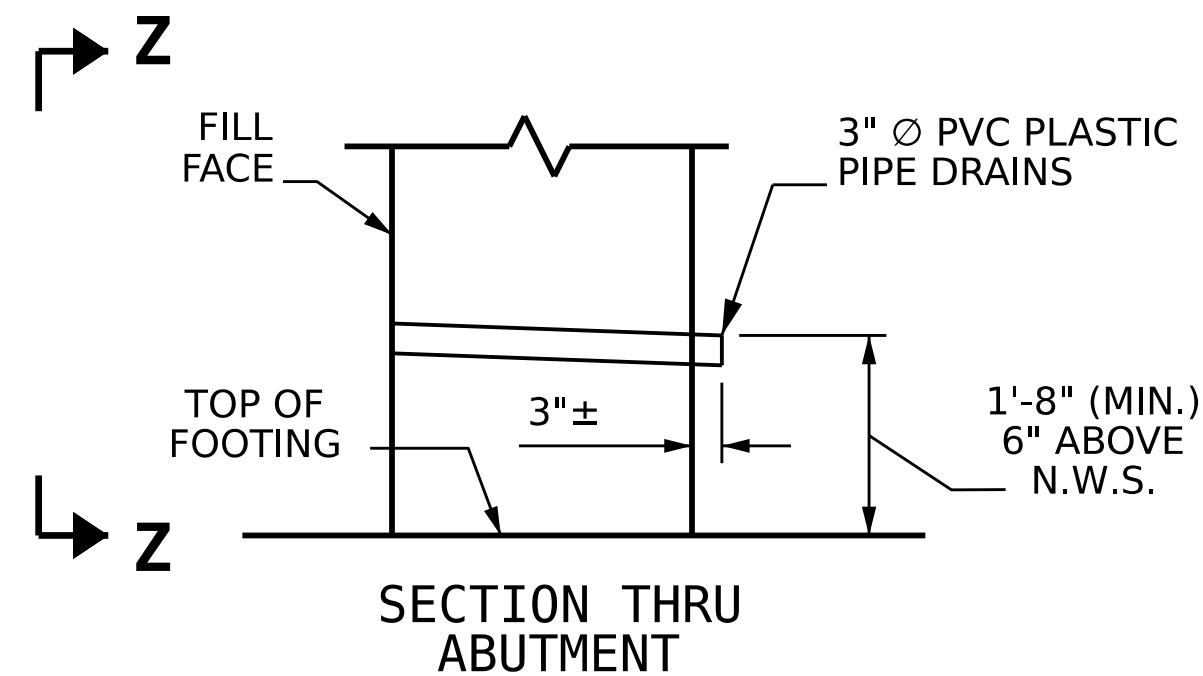




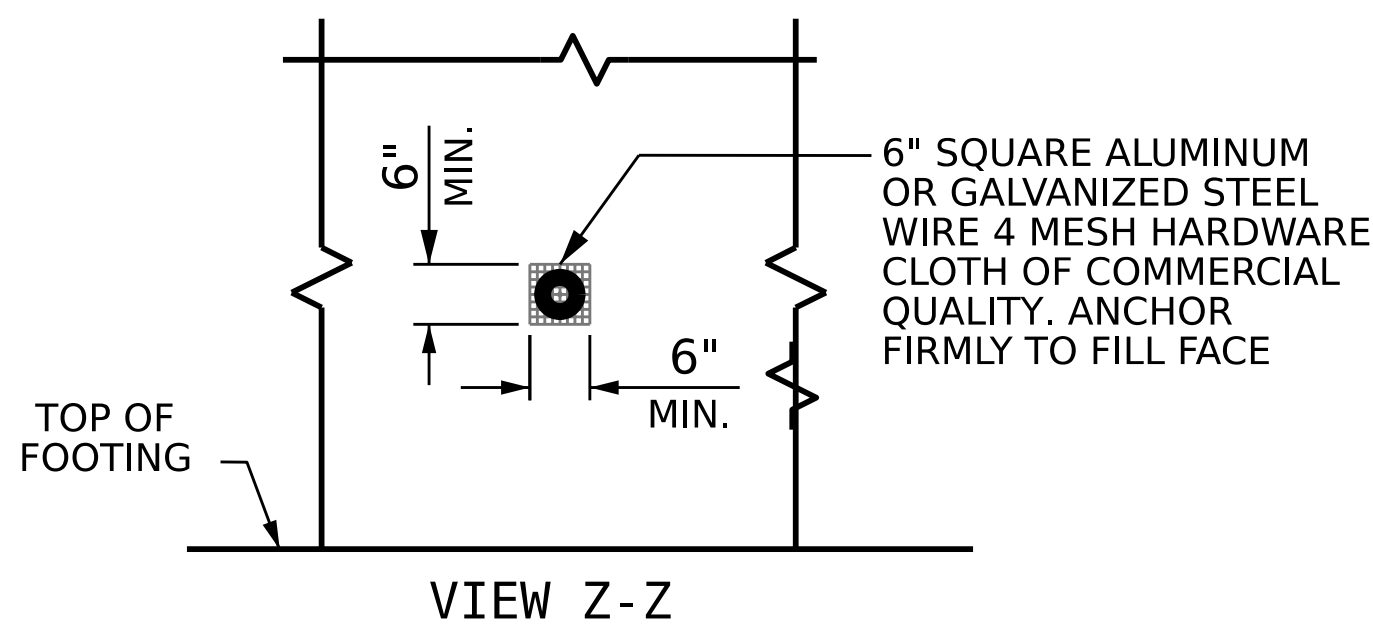
PLAN OF FOOTING



TEMPORARY DRAINAGE AT END BENT

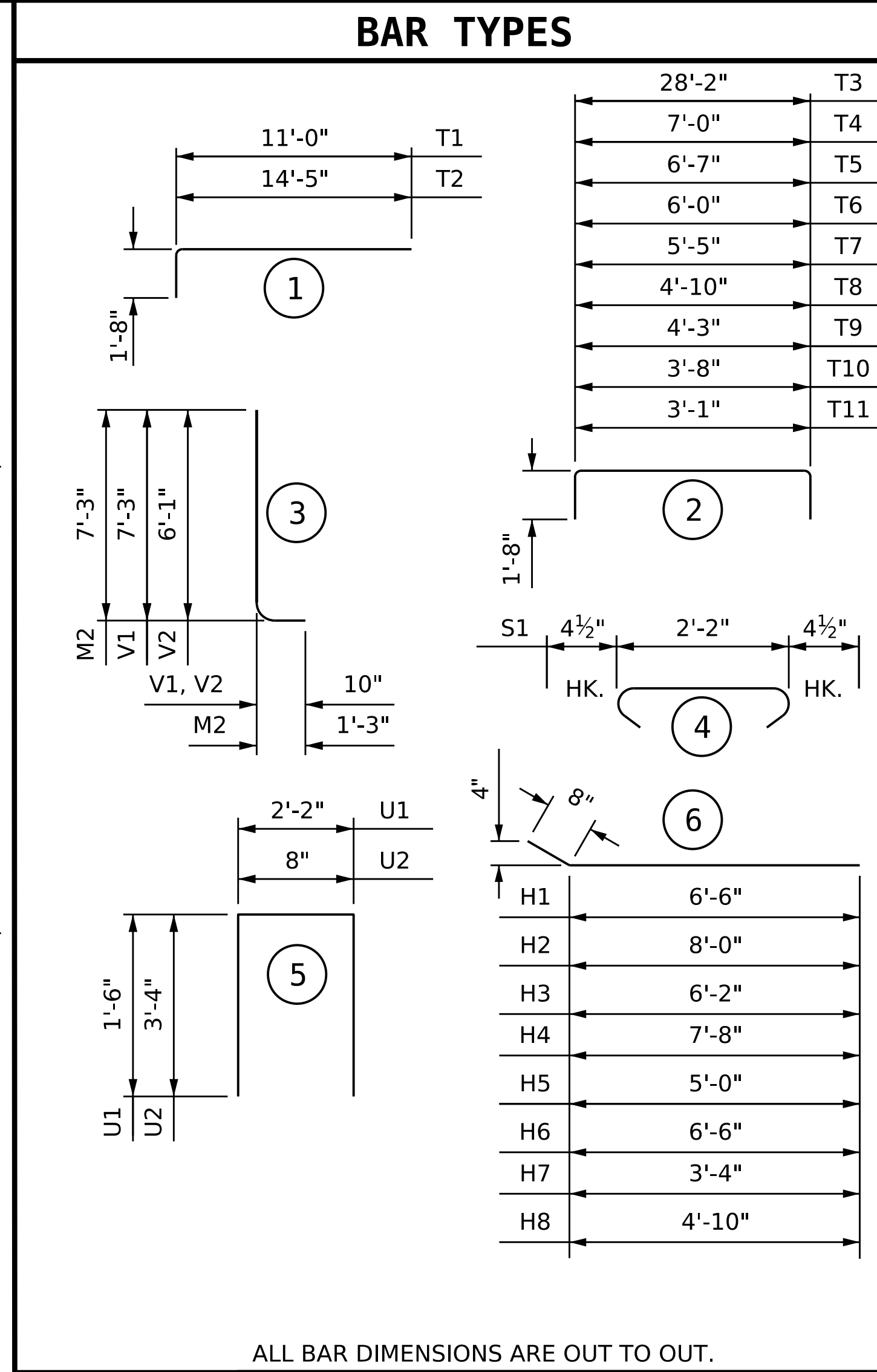


SECTION THRU ABUTMENT



PIPE DRAIN DETAILS

NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE PVC PLASTIC PIPE DRAINS, HARDWARE CLOTH AND FASTNERS. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE FOR THE SEVERAL PAY ITEMS.



ALL BAR DIMENSIONS ARE OUT TO OUT.

CLASS A CONCRETE BREAKDOWN		
POUR #1 FOOTING		17.40 C.Y.
POUR #2 STEM AND PART OF WINGS		11.00 C.Y.
POUR #3 BACKWALL & UPPER PART OF WINGS		1.60 C.Y.
<b>CLASS A CONCRETE TOTAL</b>		<b>30.00 C.Y.</b>

NOTES

ALL WORK SHALL BE IN ACCORDANCE WITH THE CURRENT VERSION OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

THE SPREAD FOOTINGS ARE DESIGNED FOR A FACTORED RESISTANCE OF 2.8 TSF. CHECK FIELD CONDITIONS FOR THE REQUIRED RESISTANCE OF 2.8 TSF JUST BEFORE PLACING CONCRETE.

U1 STIRRUPS MAY BE SHIFTED AS NECESSARY TO CLEAR "ANCHOR BOLTS."

THE TOP SURFACE AREAS OF THE ABUTMENT SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

THE 3"Ø PVC PLASTIC DRAIN PIPE SHALL MEET THE MINIMUM REQUIREMENTS OF ASTM D1785, AND SHALL BE SLOPED FOR PROPER DRAINAGE.

BILL OF MATERIAL

ABUTMENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	1	#7	STR.	21'-0"	43
B2	1	#7	STR.	18'-8"	38
B3	1	#7	STR.	16'-8"	34
B4	1	#7	STR.	13'-10"	28
B5	8	#5	STR.	21'-2"	177
B6	5	#5	STR.	13'-10"	72
B7	3	#5	STR.	19'-1"	60
B8	2	#5	STR.	8'-0"	17
B9	2	#5	STR.	7'-8"	16
H1	10	#5	6	7'-2"	75
H2	10	#5	6	8'-8"	90
H3	2	#5	6	6'-10"	14
H4	2	#5	6	8'-4"	17
H5	2	#5	6	5'-8"	12
H6	2	#5	6	7'-2"	15
H7	2	#5	6	4'-0"	8
H8	2	#5	6	5'-6"	11
M1	64	#7	3	8'-1"	1057
S1	10	#4	4	2'-11"	19
T1	8	#6	1	12'-8"	152
T2	8	#6	1	16'-1"	193
T3	8	#6	2	31'-6"	379
T4	58	#6	2	10'-4"	869
T5	8	#6	2	9'-11"	119
T6	8	#6	2	9'-4"	112
T7	8	#6	2	8'-9"	105
T8	8	#6	2	8'-2"	98
T9	8	#6	2	7'-7"	91
T10	8	#6	2	7'-0"	84
T11	8	#6	2	6'-5"	77
U1	28	#4	5	5'-2"	97
U2	28	#4	5	7'-4"	137
V1	32	#5	3	8'-1"	270
V2	4	#5	3	6'-11"	29
REINFORCING STEEL					4,472

DRAWN BY :	J. WEIGER	DATE :	12/2025
CHECKED BY :	J. LOFTUS	DATE :	12/2025
DESIGN ENGINEER OF RECORD :	J. LOFTUS	DATE :	04/2026



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PROJECT NO. 095.01.D3EFE  
 WATAUGA COUNTY  
 STATION: 10+34.50 -DRWY1-

SHEET 3 OF 3  
 NORTH CAROLINA  
 OFFICE OF EMERGENCY MANAGEMENT  
 SUBSTRUCTURE  
 ABUTMENT No. 2  
 FOOTING DETAILS

REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

TOTAL SHEETS 13

## STANDARD NOTES

### DESIGN DATA:

SPECIFICATIONS .....	AASHTO (CURRENT)
LIVE LOAD .....	SEE PLANS
IMPACT ALLOWANCE .....	SEE AASHTO
STRESS IN EXTREME FIBER OF STRUCTURAL STEEL - AASHTO M270 GRADE 36 .....	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W ...	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50 .....	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION - GRADE 60 .....	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION .....	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR .....	SEE AASHTO
STRUCTURAL TIMBER - TREATED OR UNTREATED EXTREME FIBER STRESS .....	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER .....	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH .....	30 LBS. PER CU. FT. (MINIMUM)

### MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2024 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

### CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

### CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED  $\frac{3}{4}$ " WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO  $1\frac{1}{2}$ " RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A  $\frac{1}{4}$ " FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A  $\frac{1}{4}$ " RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

### DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

### ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

### REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

### STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE  $\frac{7}{8}$ "  $\emptyset$  SHEAR STUDS FOR THE  $\frac{3}{4}$ "  $\emptyset$  STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 -  $\frac{7}{8}$ "  $\emptyset$  STUDS FOR 4 -  $\frac{3}{4}$ "  $\emptyset$  STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF  $\frac{7}{8}$ "  $\emptyset$  STUDS ALONG THE BEAM AS SHOWN FOR  $\frac{3}{4}$ "  $\emptyset$  STUDS BASED ON THE RATIO OF 3 -  $\frac{7}{8}$ "  $\emptyset$  STUDS FOR 4 -  $\frac{3}{4}$ "  $\emptyset$  STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST  $\frac{5}{16}$ " IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY  $\frac{1}{16}$ " OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

### HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

### SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.