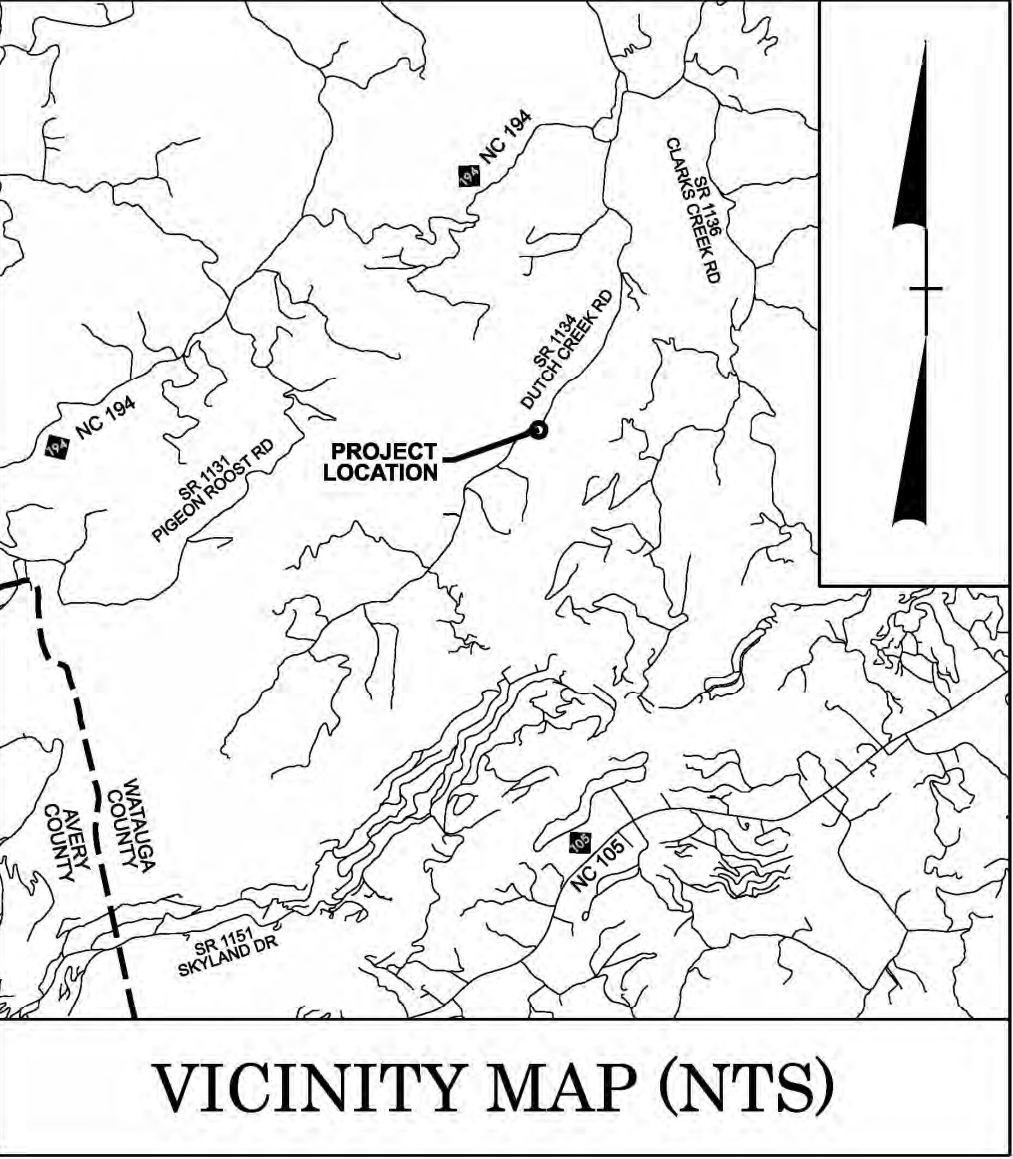


PRB.37212

Site # 095-01-d3efe Private Drive off Dutch Creek Road (SR
1134) over Dutch Creek in Watauga County

PROJECT: 095.01.D3EFE

CONTRACT:



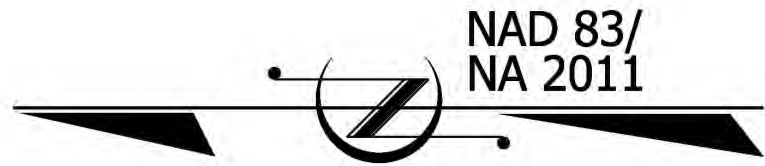
VICINITY MAP (NTS)

NORTH CAROLINA DEPARTMENT OF
EMERGENCY MANAGEMENT

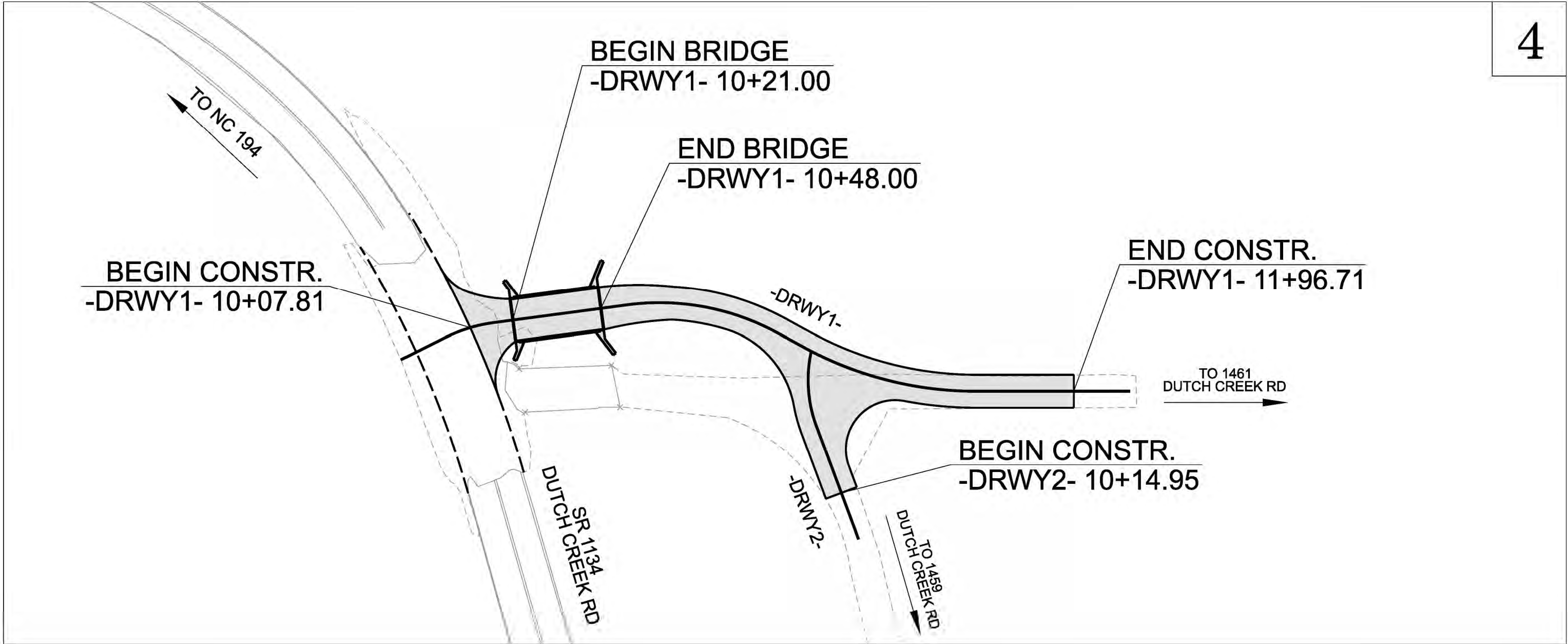
WATAUGA COUNTY

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	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	



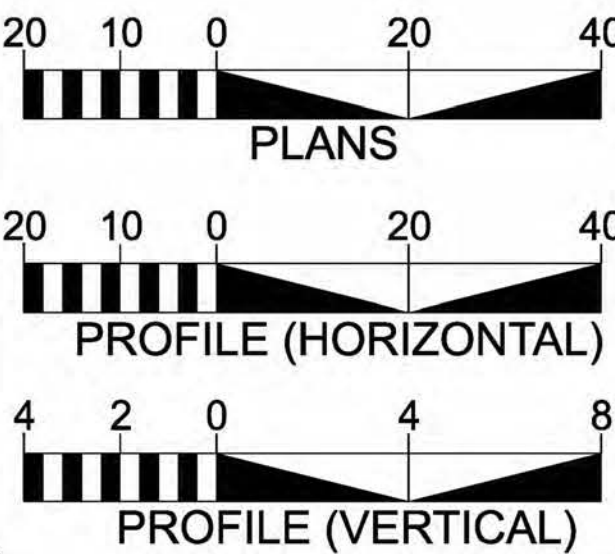
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INDEX OF SHEETS

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

GRAPHIC SCALES



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 Leunhart
CS9ADAC01D74CA17
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

1/8/2026

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



Note: Not to Scale

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Curb Ramp	
Existing Metal Guardrail	
Proposed Guardrail	
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	
Pavement Removal	

VEGETATION:

Single Tree	
Single Shrub	
Hedge	

CONVENTIONAL PLAN SHEET SYMBOLS

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:

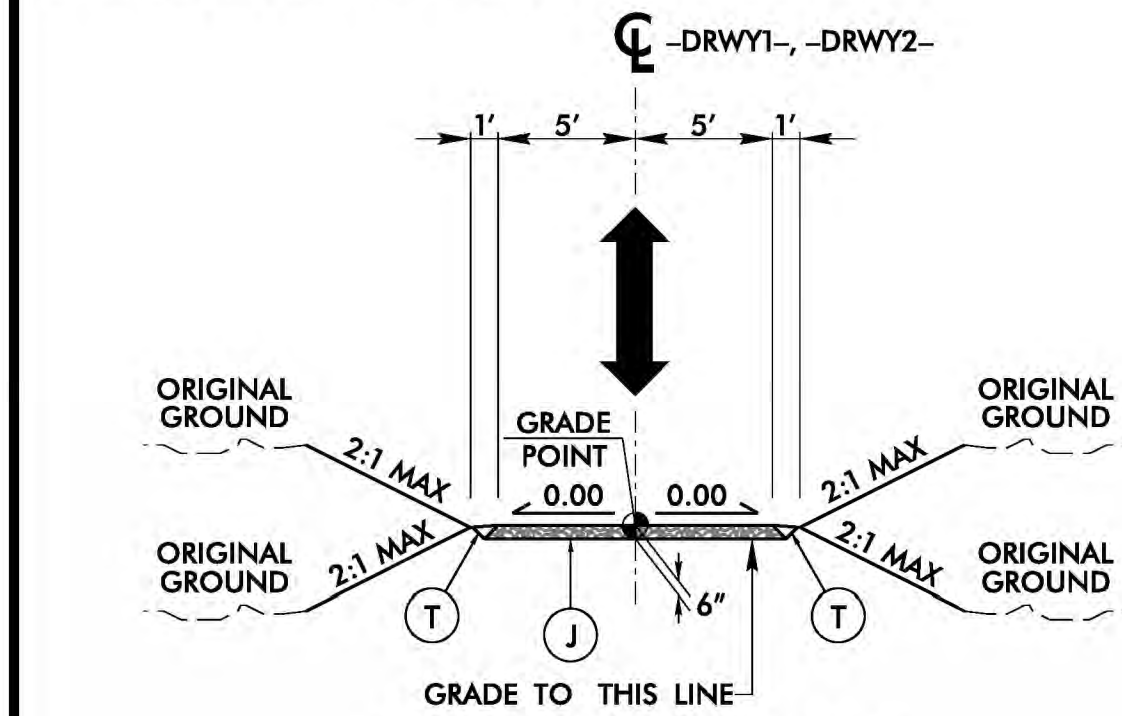
Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line (SUE - LOS B)*	
U/G Tank; Water, Gas, Oil	
Underground Storage Tank, Approx. Loc.	
A/G Tank; Water, Gas, Oil	
Geoenviromental Boring	
Abandoned According to Utility Records	
End of Information	

095.01.03EFE

18

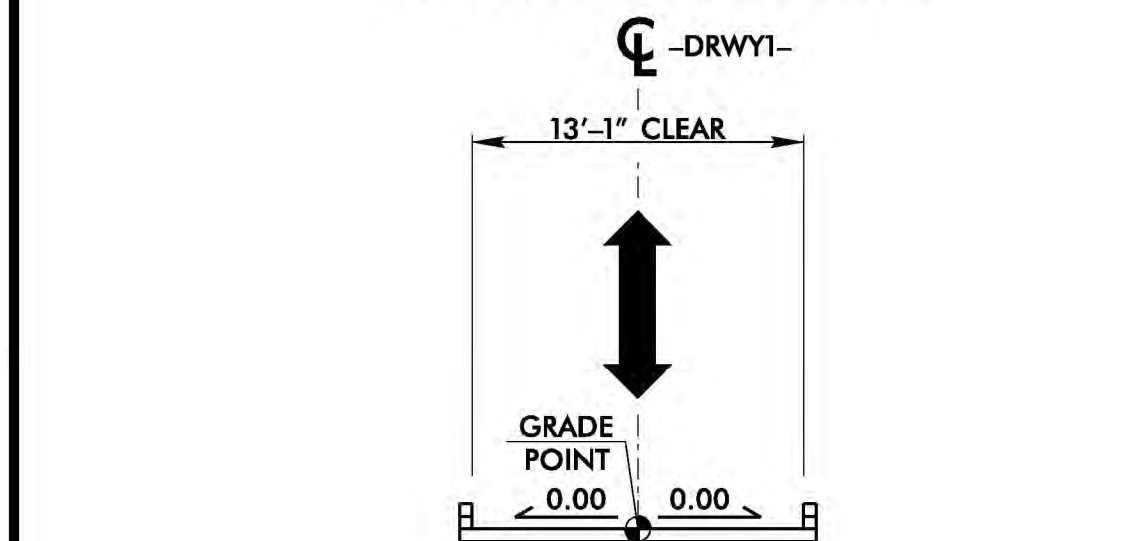
PAYEMENT SCHEDULE (FINAL PAYEMENT DESIGN)	
J	PROP. 6" AGGREGATE BASE COURSE
T	EARTH MATERIAL

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



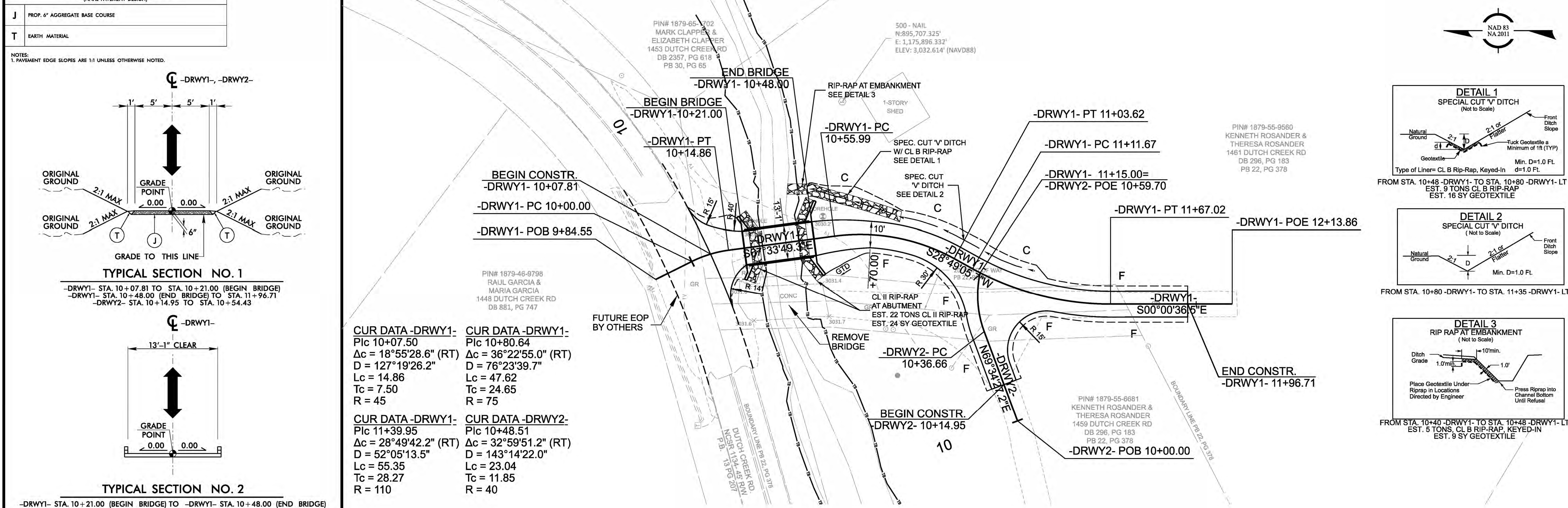
TYPICAL SECTION NO. 1

-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)

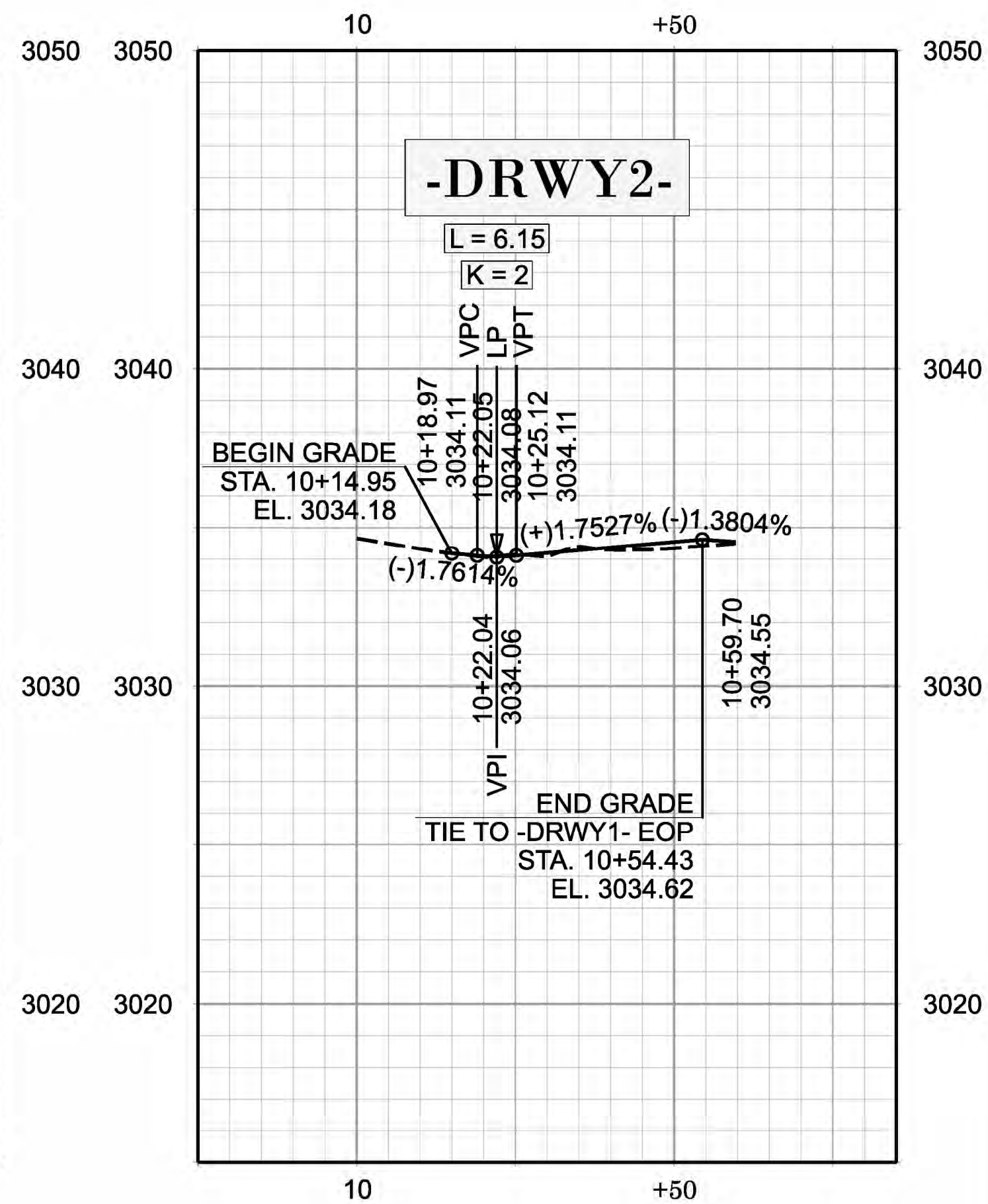
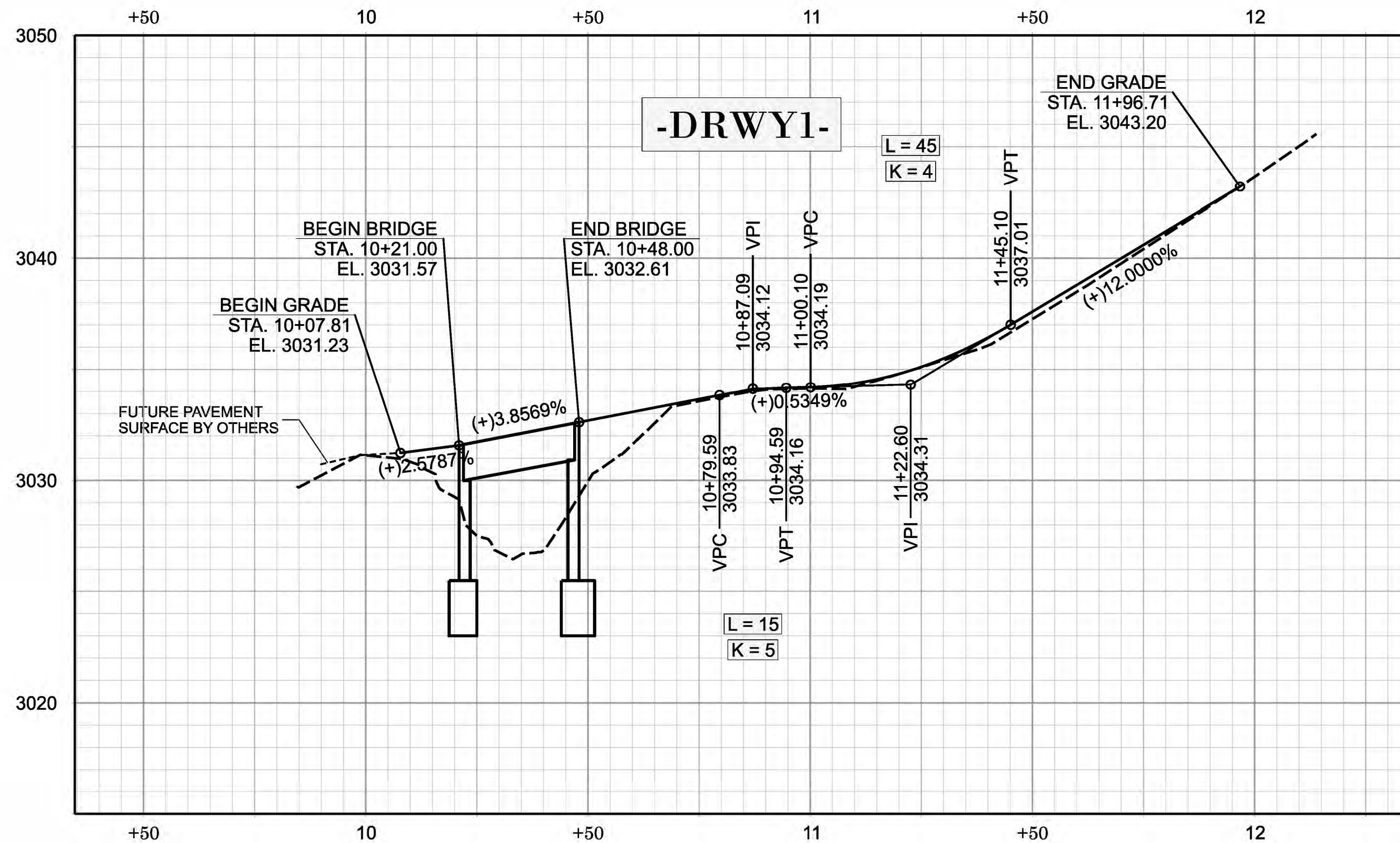


ROADWAY QUANTITIES		
DESCRIPTION	QUANTITY	UNITS
UNCLASSIFIED EXCAVATION	30	CY
BORROW EXCAVATION	1	CY
AGGREGATE BASE COURSE	104	TONS
RIP RAP, CLASS B	14	TONS
RIP RAP, CLASS II	22	TONS
GEOTEXTILE FOR DRAINAGE	49	SY

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 issues 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.



REVISIONS

095.01.D3EFE	
	4

NORTH CAROLINA DEPARTMENT OF
EMERGENCY MANAGEMENT
WATAUGA COUNTY

ROADWAY DESIGN
ENGINEER

1/8/2026

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

**HYDRAULICS
ENGINEER**

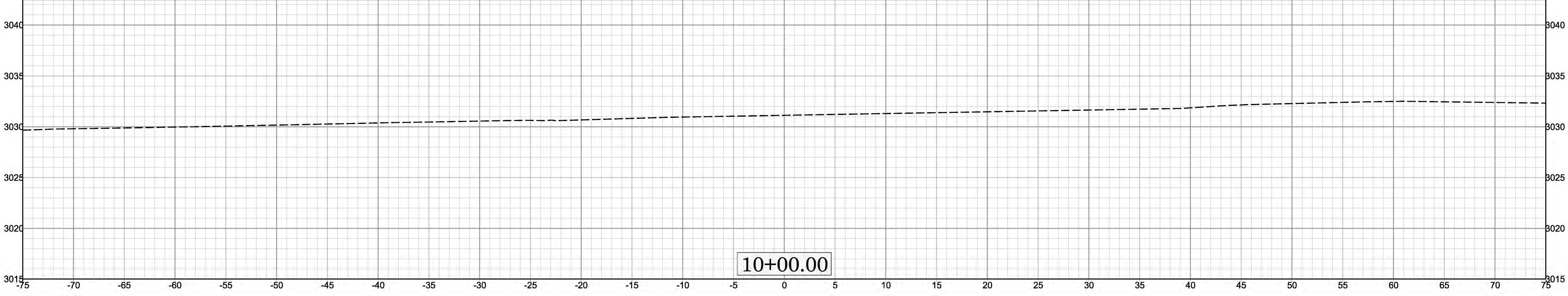
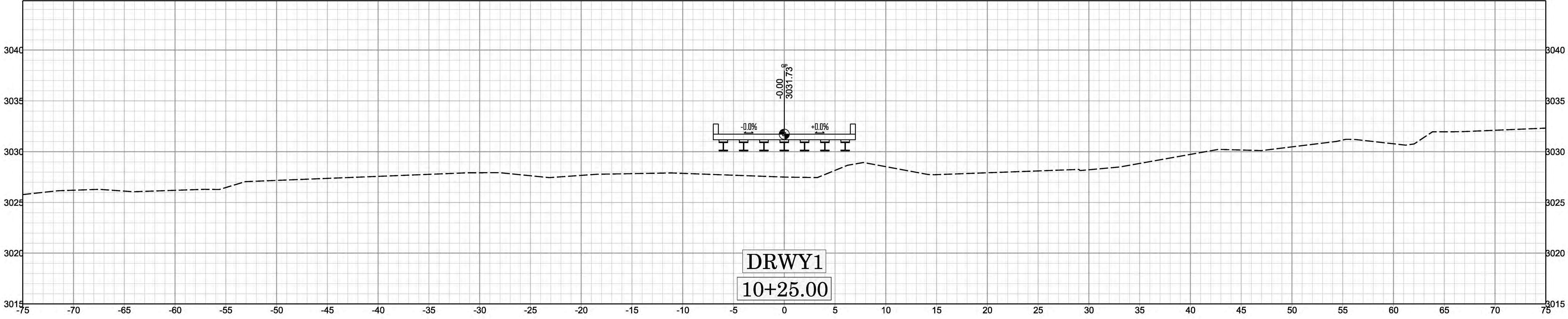
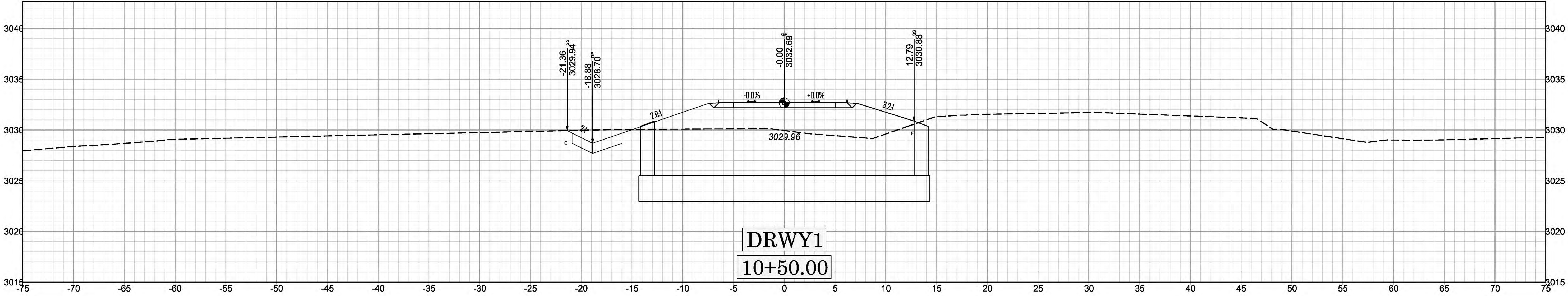


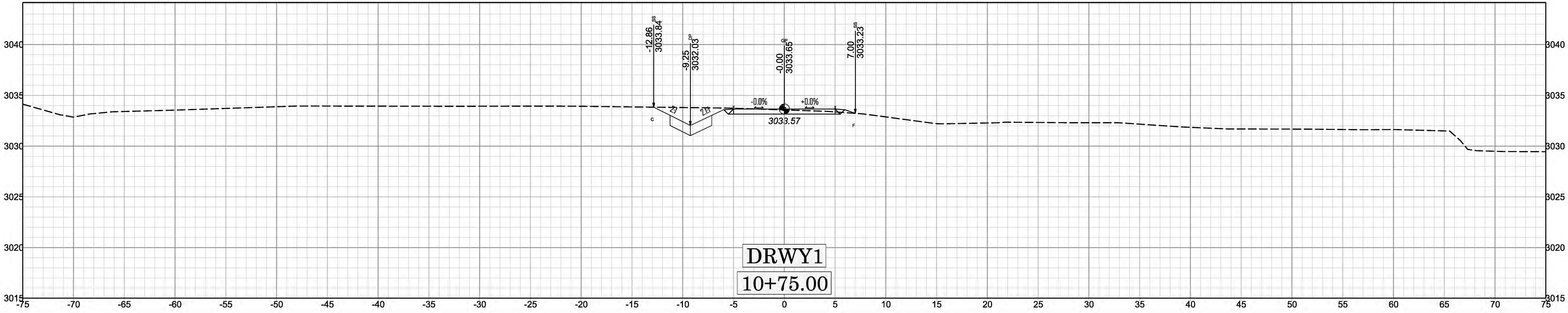
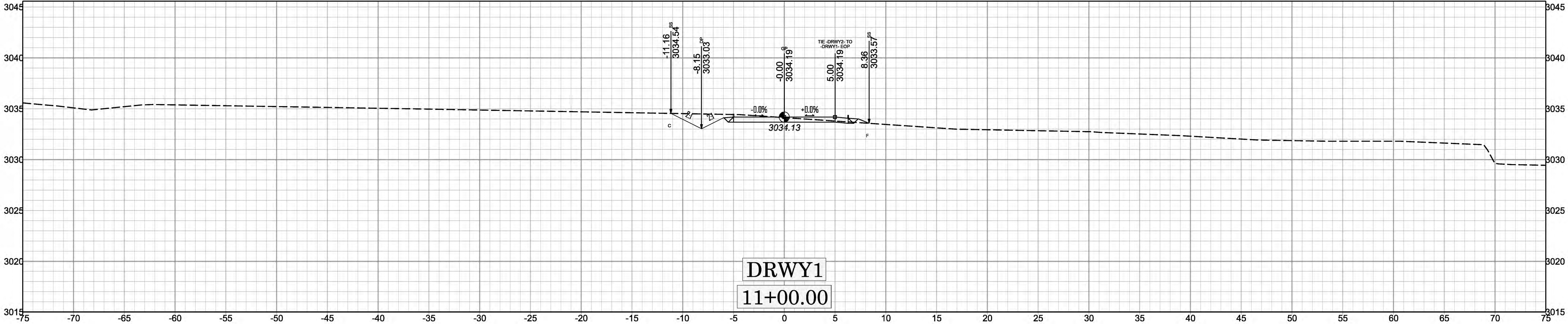
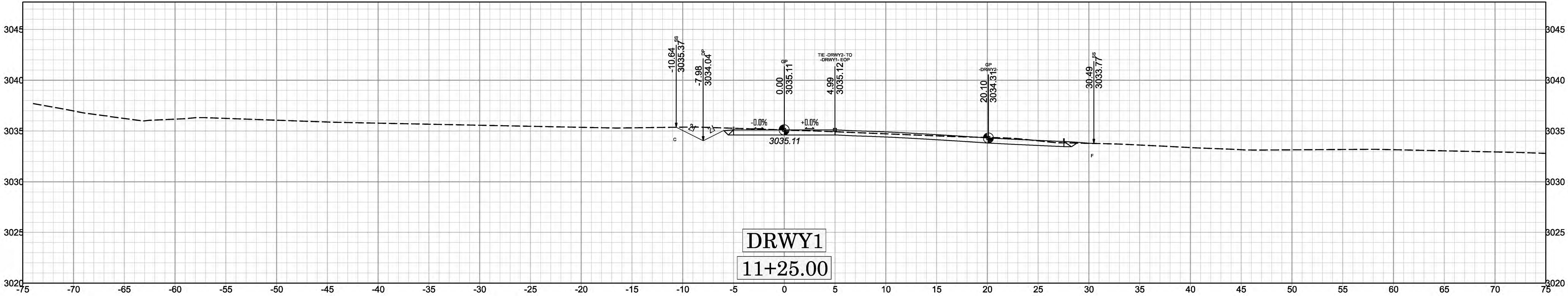
1/8/2026

PREPARED BY



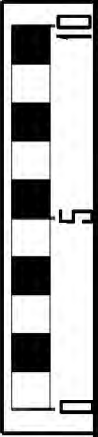
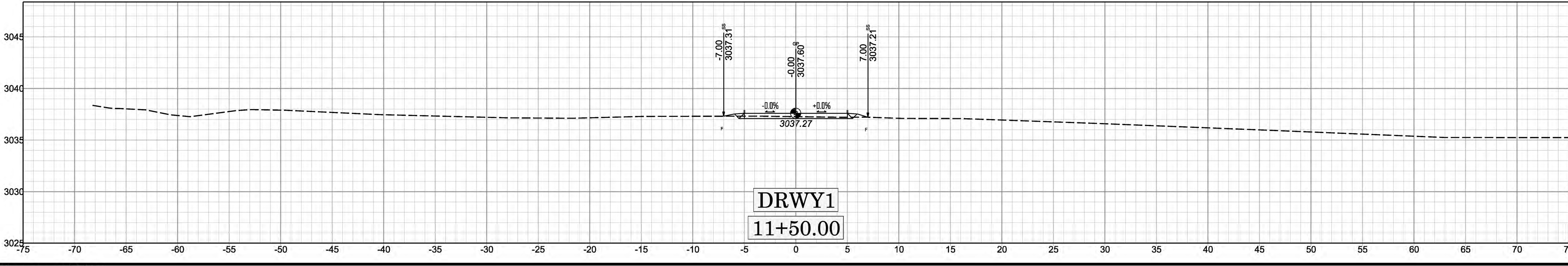
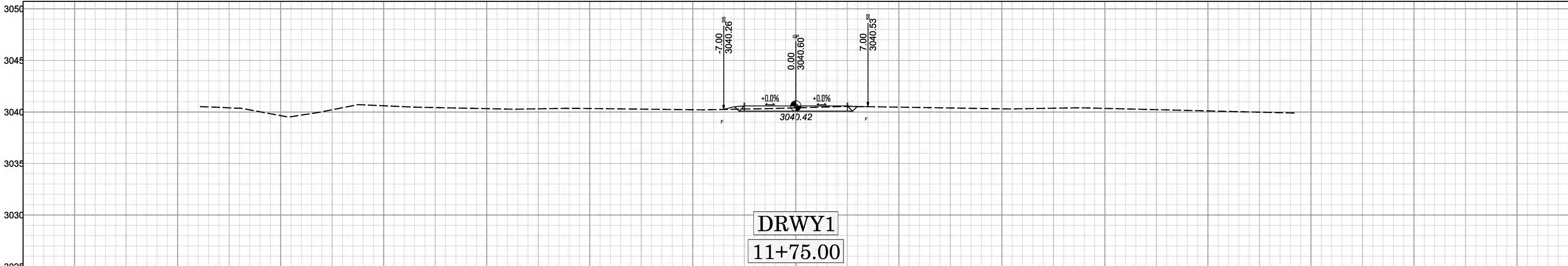
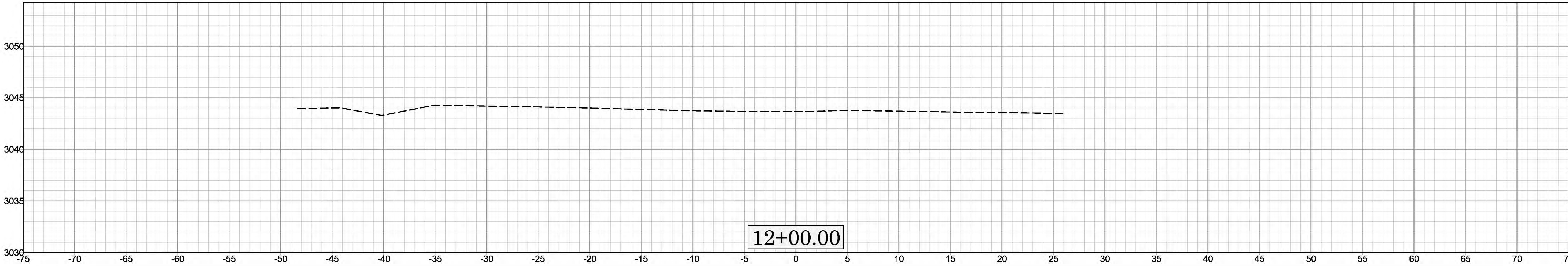
N.C.B.E.I.S. License Number: C-0293





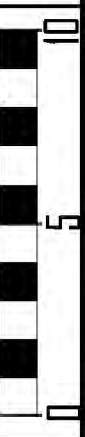
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095.01.D3EFE



X 3

095.01.D8FE



4

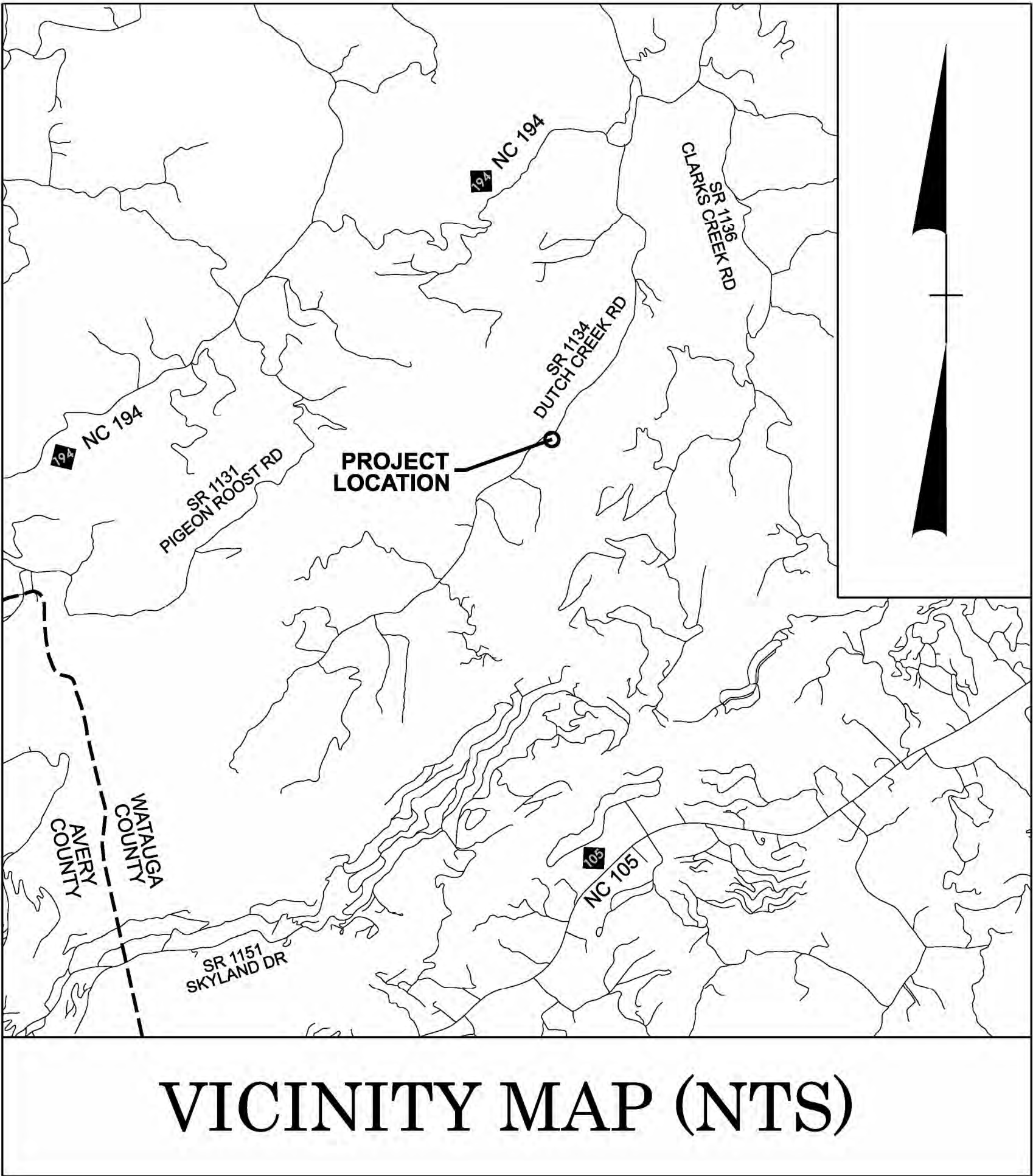
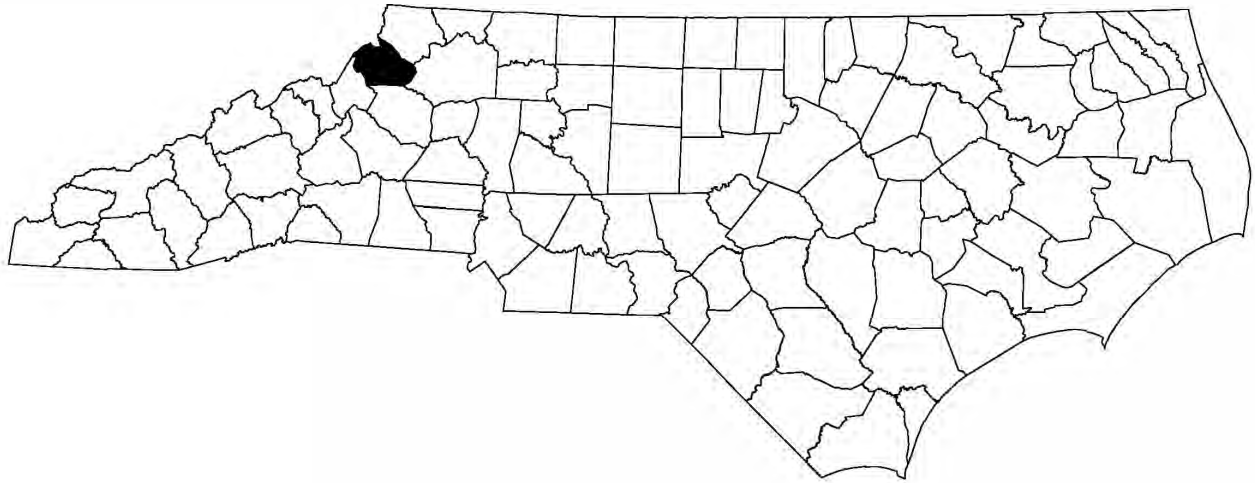
X



NORTH CAROLINA DEPARTMENT OF
EMERGENCY MANAGEMENT

TRANSPORTATION MANAGEMENT PLAN

WATAUGA COUNTY



VICINITY MAP (NTS)

PLANS PREPARED BY:

ETHAN WRIGHT, PE
PROJECT ENGINEER

DANIEL KIMEL
PROJECT DESIGN TECHNICIAN

CONTACTS:

CHRIS WERNER, PE
PRIVATE ROAD AND BRIDGE
PROGRAM MANAGER



INDEX OF SHEETS

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

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



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



SHEET NO.
TMP-1

095.01.D3EFFE

PROJECT:

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$\$\$\$\$\$
\$\$\$\$\$DGN\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

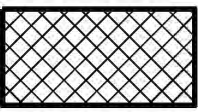
STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1150.01	FLAGGING DEVICES

LEGEND

GENERAL

-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  EXIST. PVMT.
-  NORTH ARROW
-  PROPOSED PVMT.
-  TEMP. SHORING (LOCATION PURPOSES ONLY)

 WORK AREA

 REMOVAL

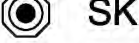
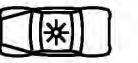
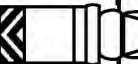
SIGNALS

-  EXISTING
-  PROPOSED
-  TEMPORARY

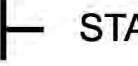
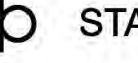
PAVEMENT MARKINGS

-  EXISTING LINES
-  TEMPORARY LINES

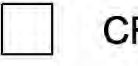
TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

-  PORTABLE SIGN
-  STATIONARY SIGN
-  STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

-  CRYSTAL/CRYSTAL
-  CRYSTAL/RED
-  YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

-  PAVEMENT MARKING SYMBOLS



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621 Hillsborough Street Suite 500 Raleigh, NC 27603
N.C.B.E.L.S. License Number: C-0293

APPROVED: _____
DATE: 1/8/2026





ROADWAY STANDARD
DRAWINGS & LEGEND

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

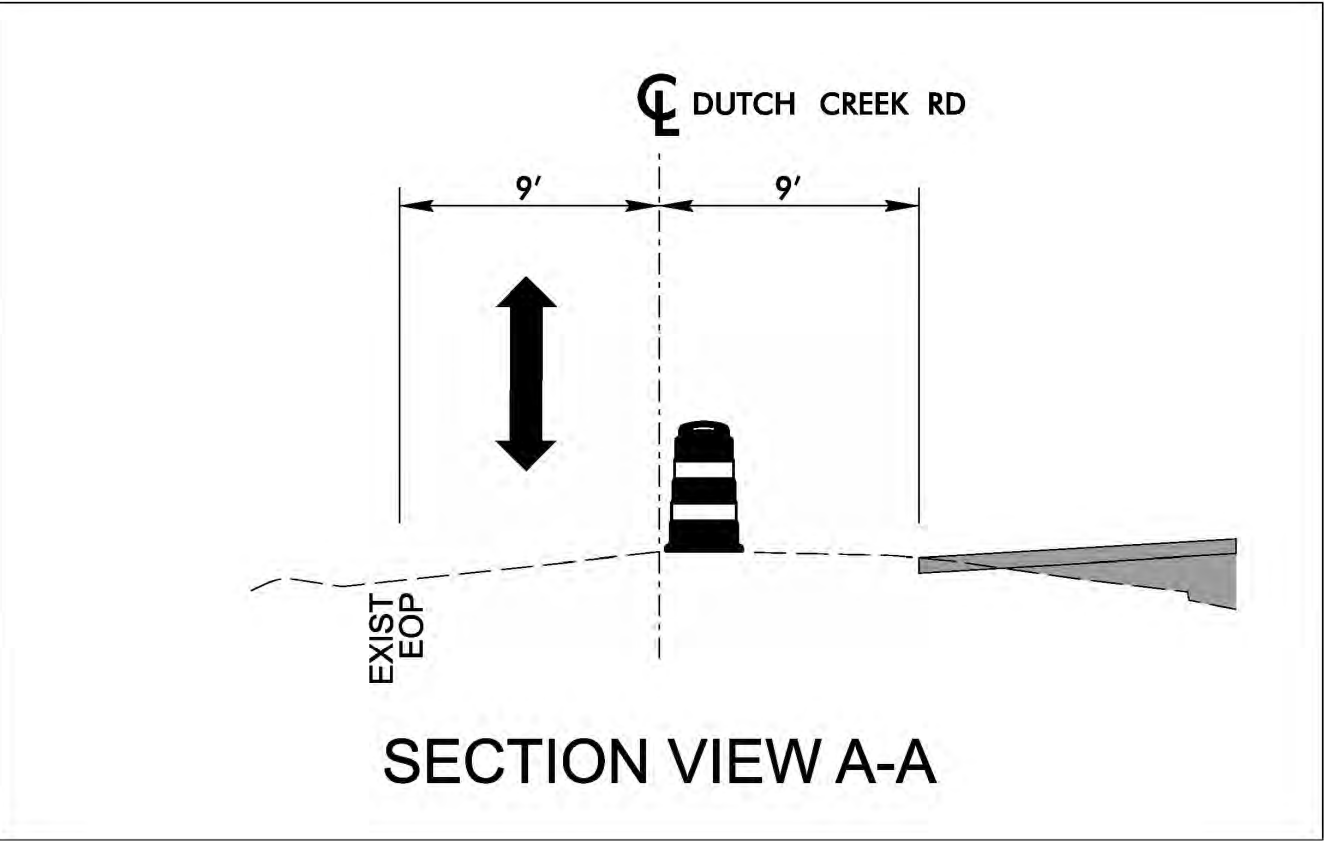
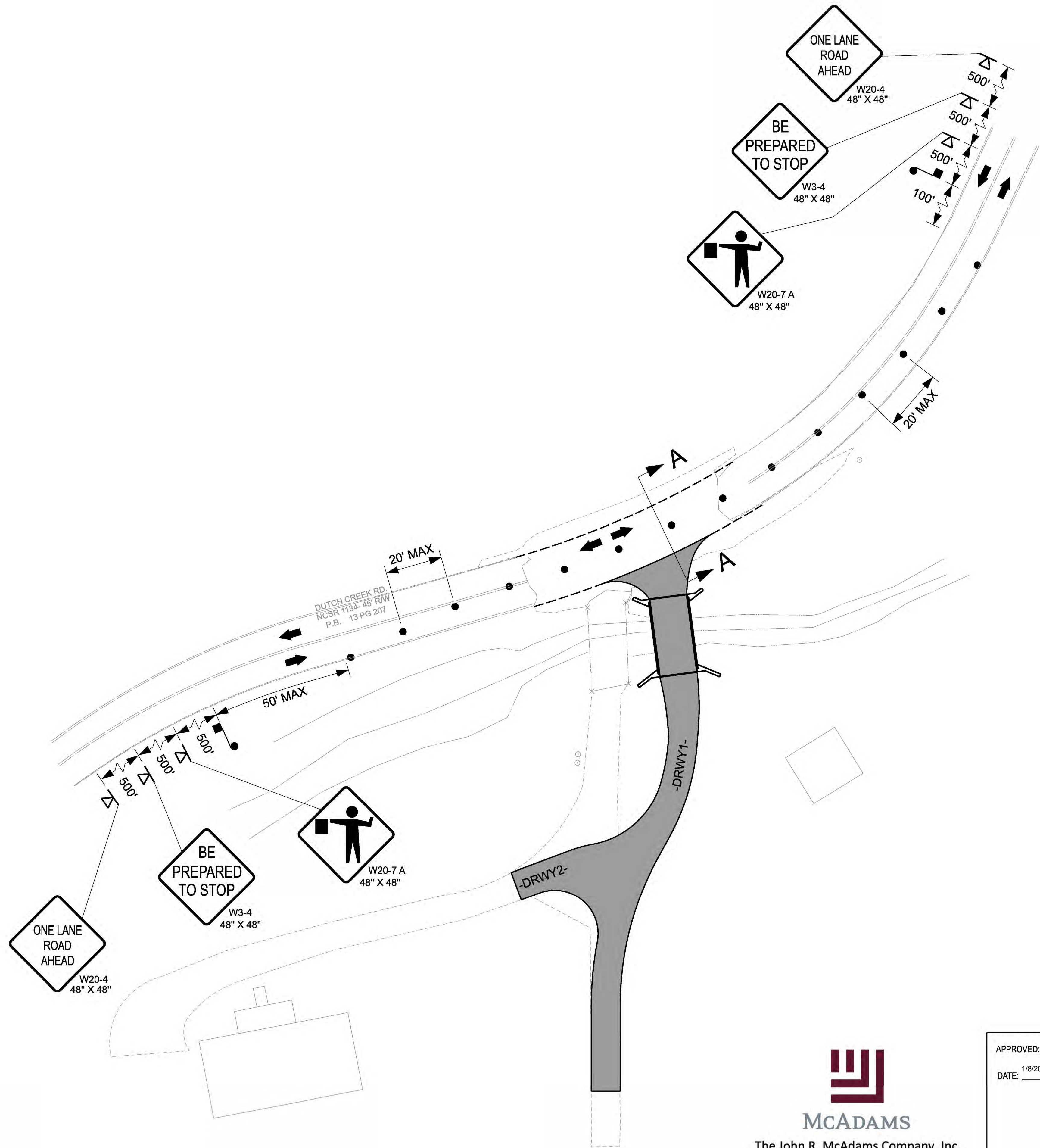
G) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135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



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			TRANSPORTATION OPERATIONS PLAN
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$CON\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$



\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$JDATE\$\$\$\$\$
\$\$\$\$\$JUSERNAME\$\$\$\$\$


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

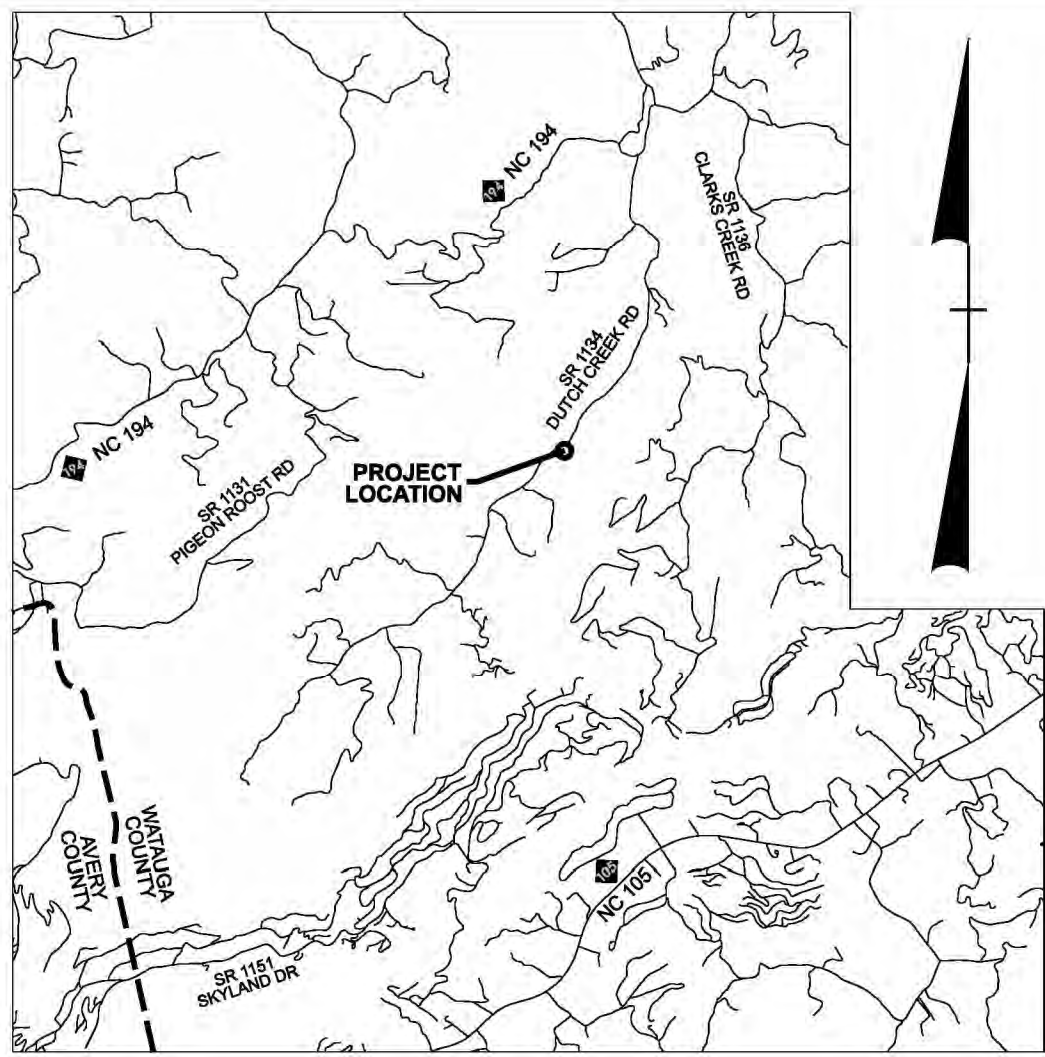
APPROVED: _____
DATE: 1/8/2026

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TEMPORARY TRAFFIC
CONTROL DETAIL

PROJECT: 095.01.D3EFE



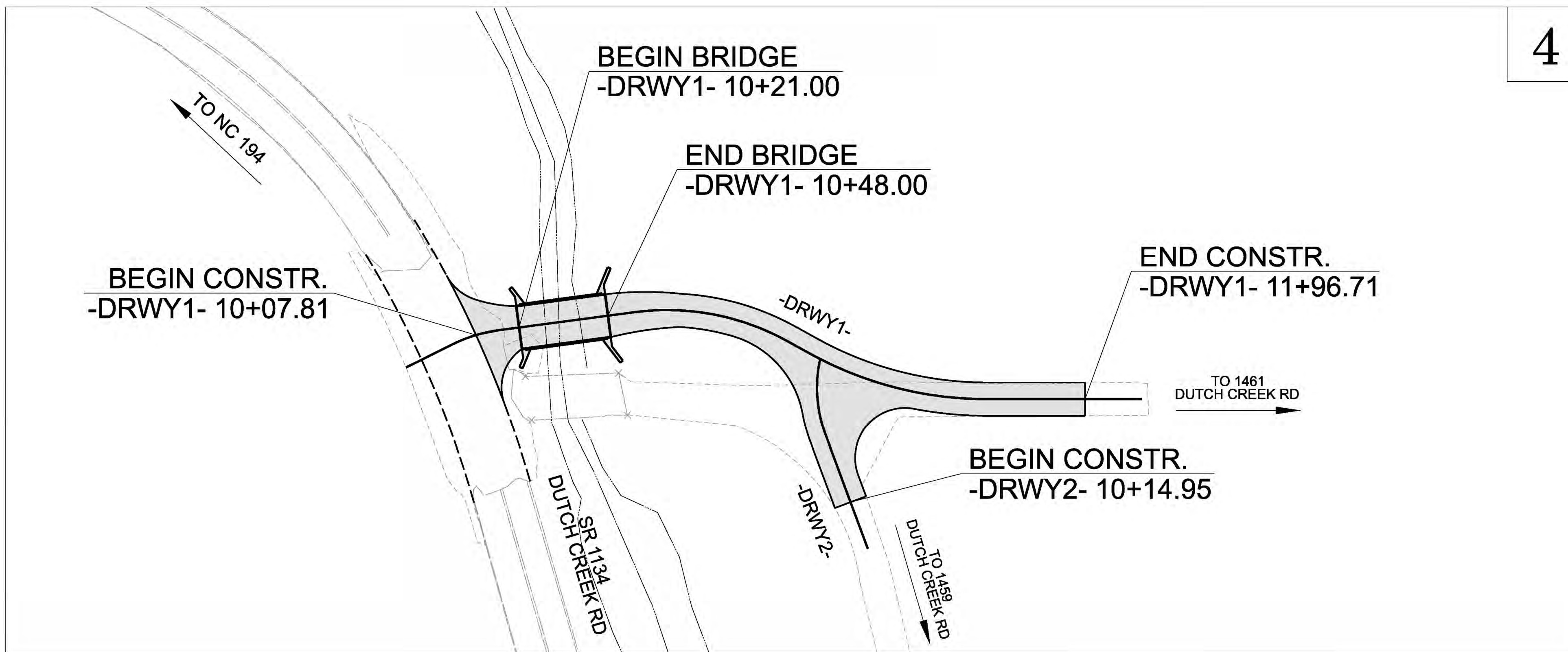
VICINITY MAP
NOT TO SCALE

STATE OF NORTH CAROLINA
EMERGENCY MANAGEMENT
PLAN FOR PROPOSED
EROSION CONTROL

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

TYPE OF WORK: GRADING, PAVING, & STRUCTURE

NAD 83/
NA 2011



4

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.

GRAPHIC SCALE



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:

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

Designed by:

ERIC LEONHART, PE

NAME

3502

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

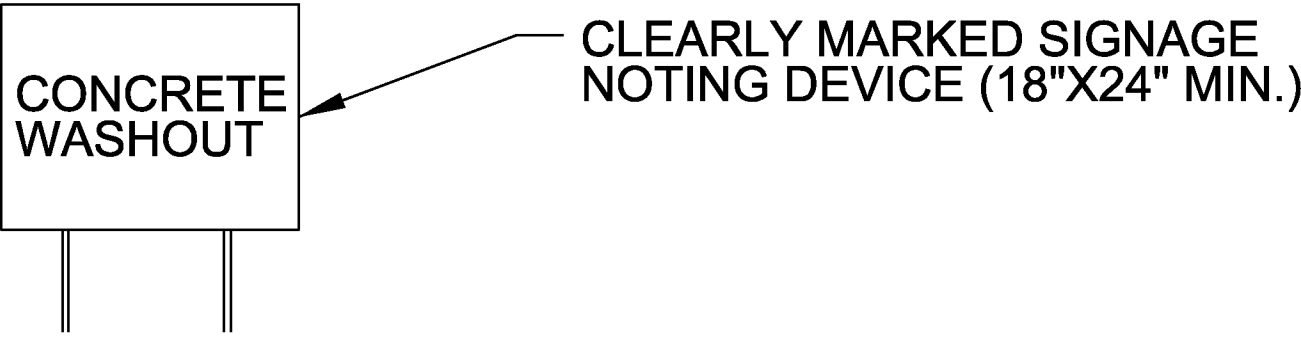
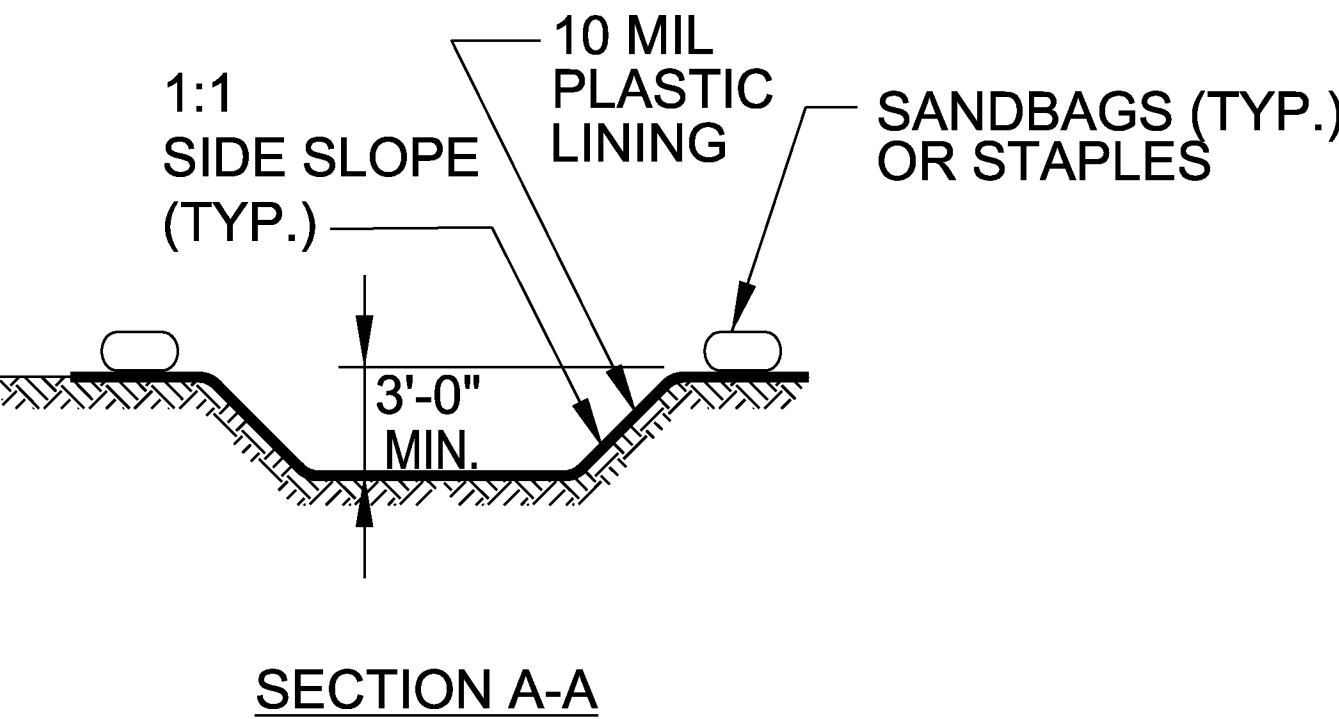
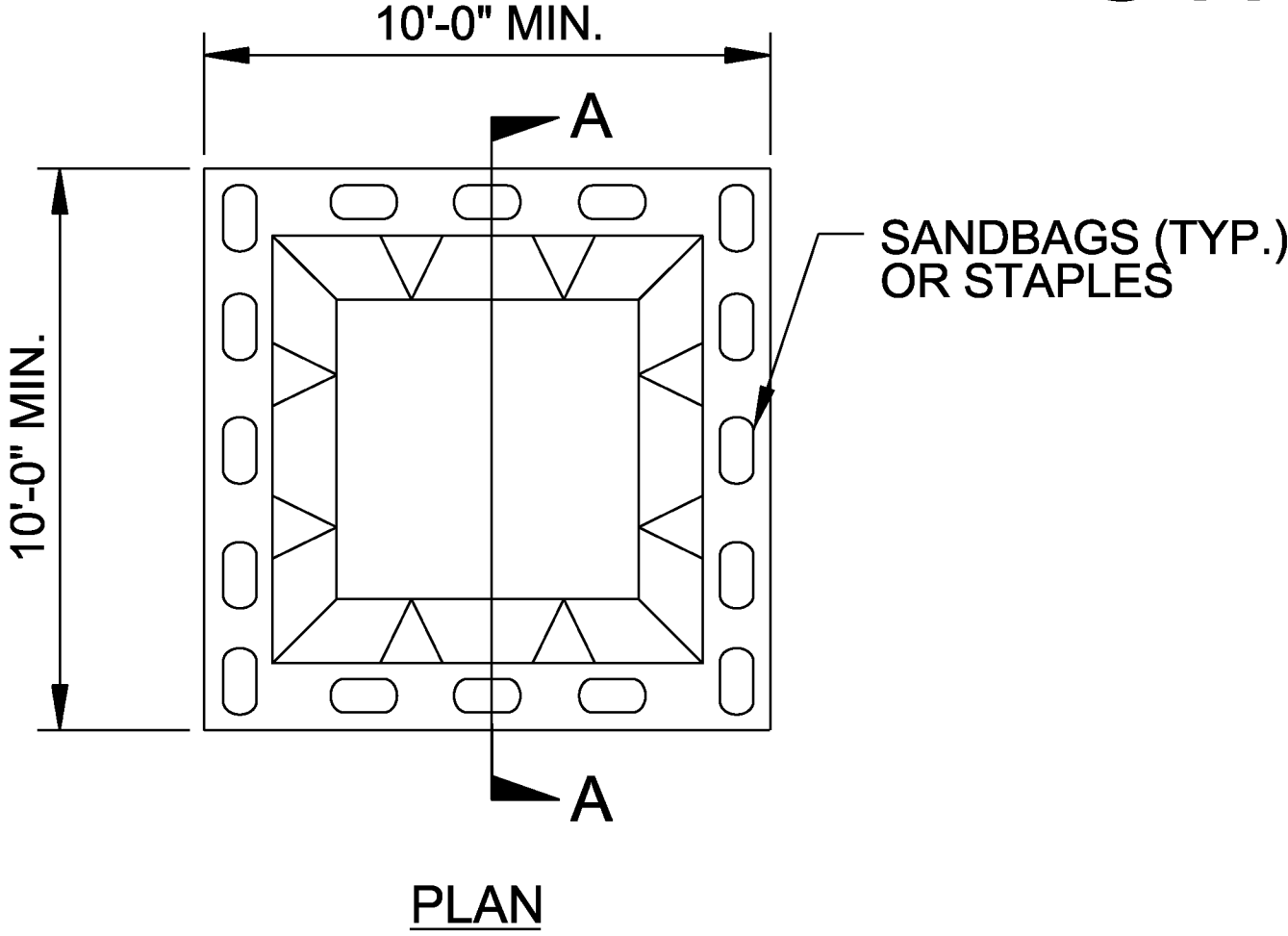
PROJECT REFERENCE NO.	SHEET NO.
095.01.D3EFE	EC-02
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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				

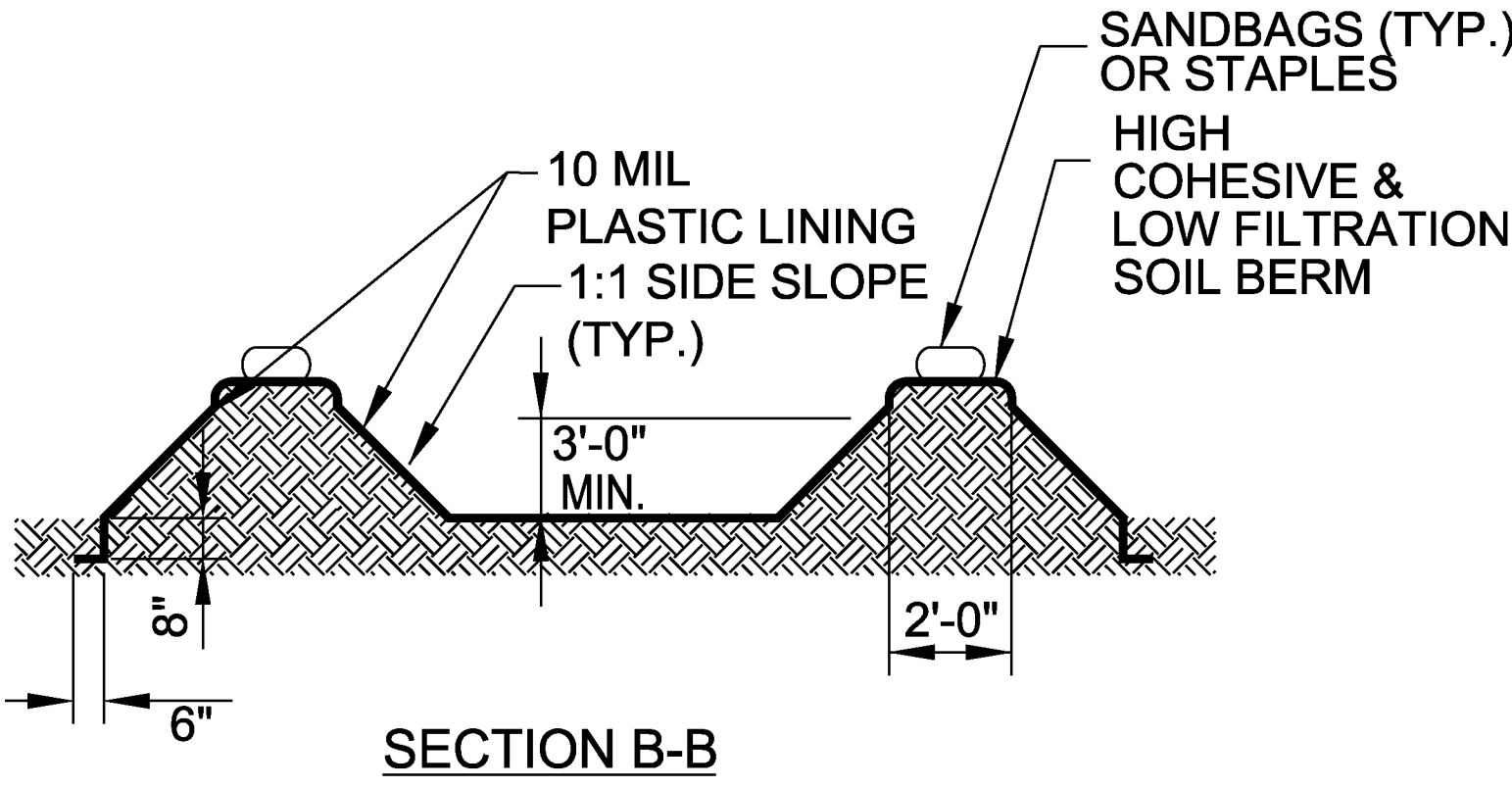
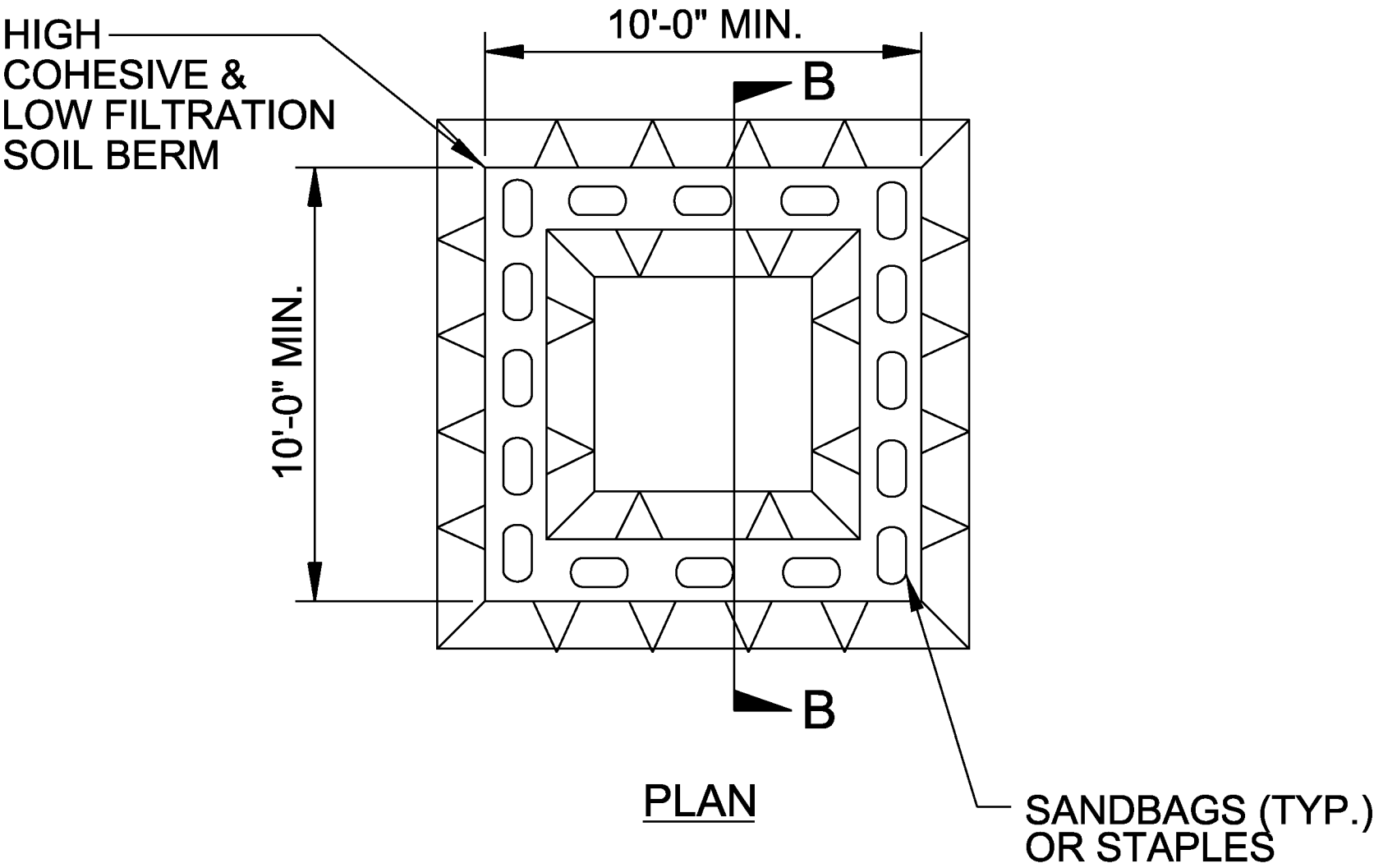
ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER

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



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.



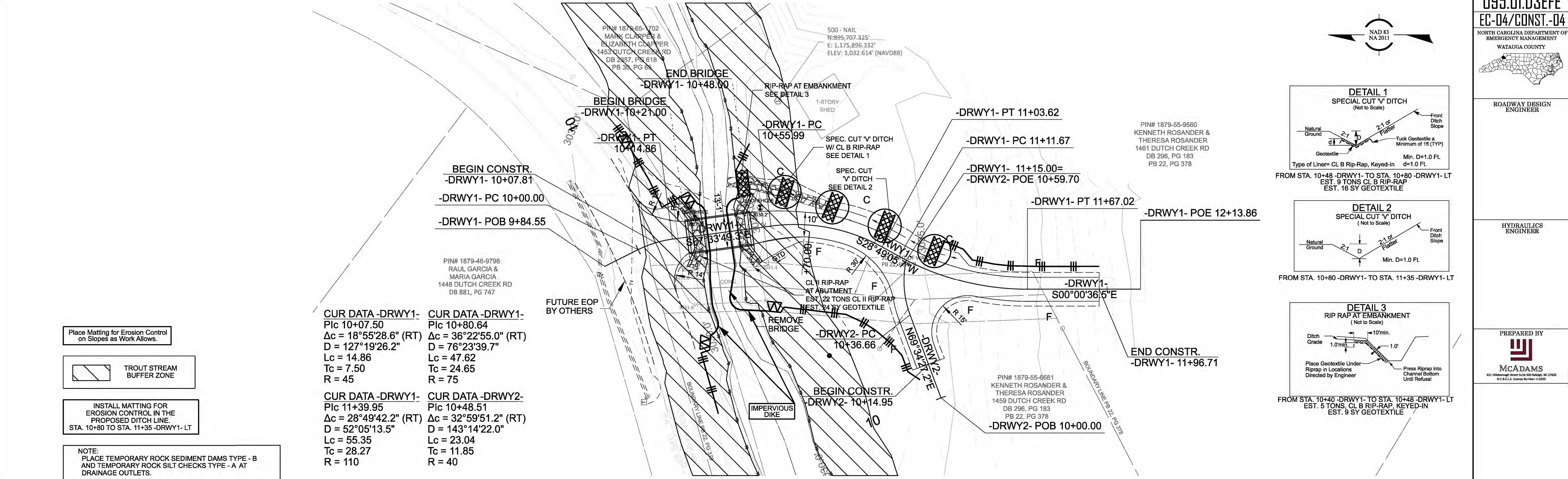
ABOVE GRADE WASHOUT STRUCTURE
NOT TO SCALE

- 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.

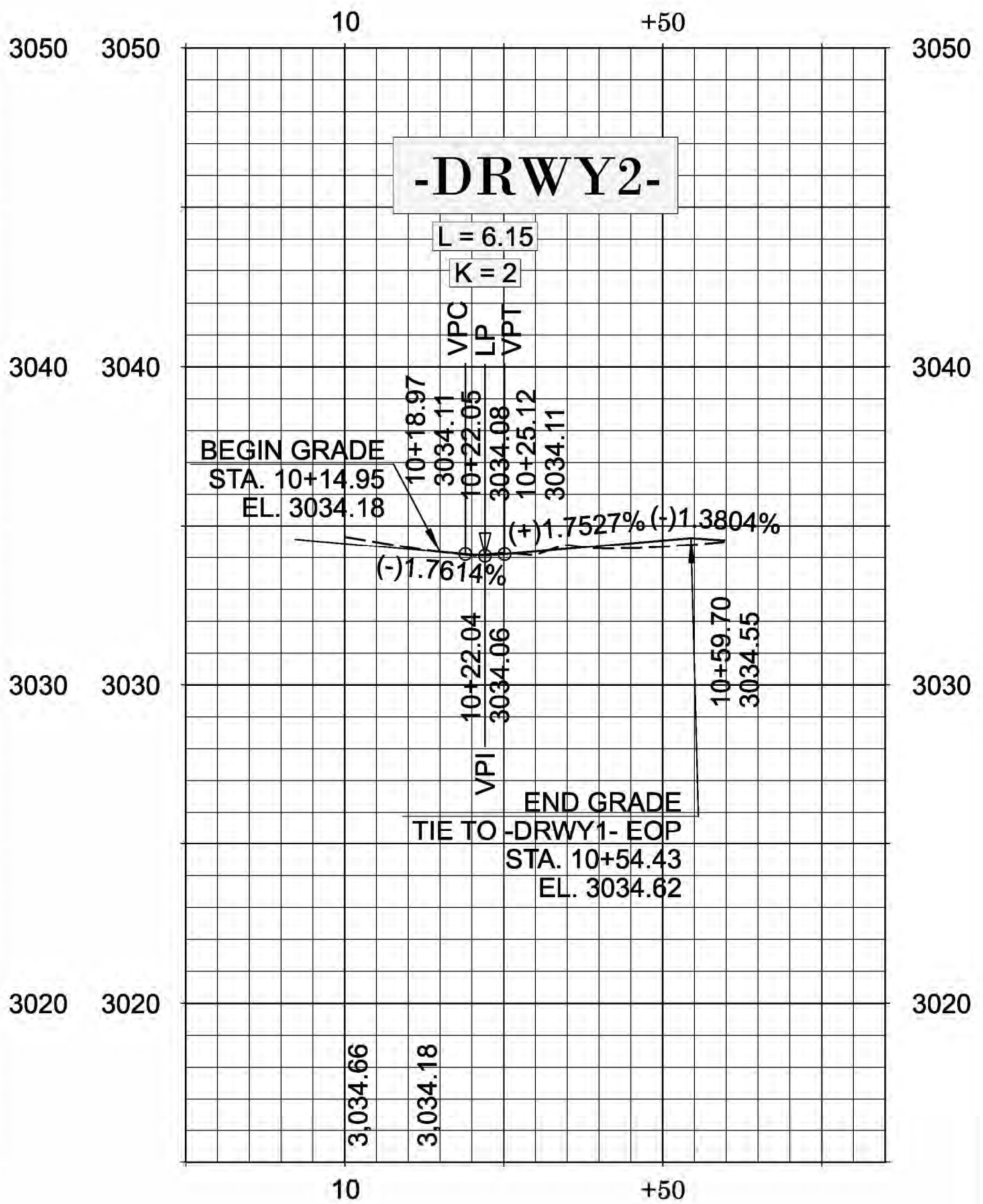
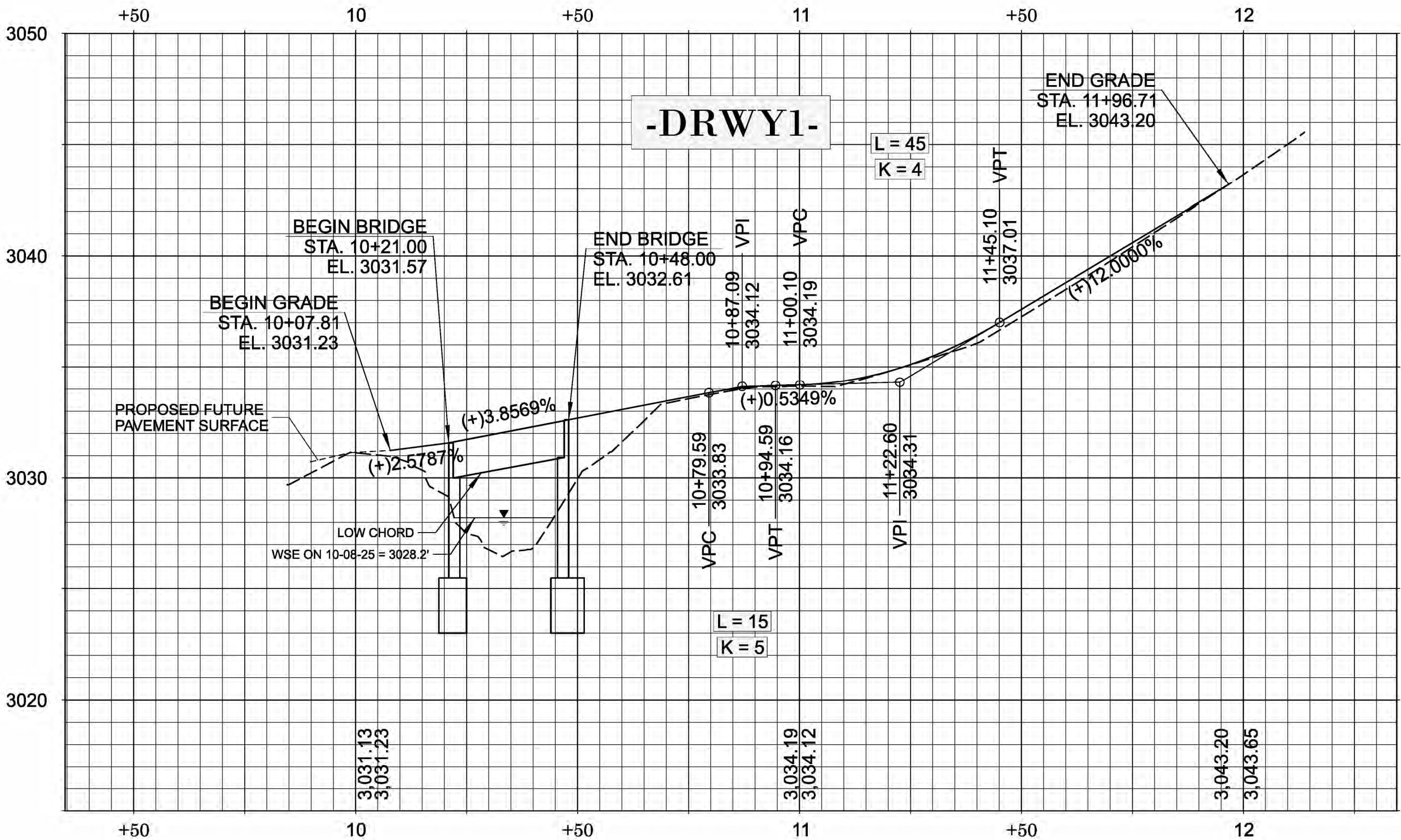
PROJECT REFERENCE NO.	SHEET NO.
095.01.D3EFE	EC-03
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 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

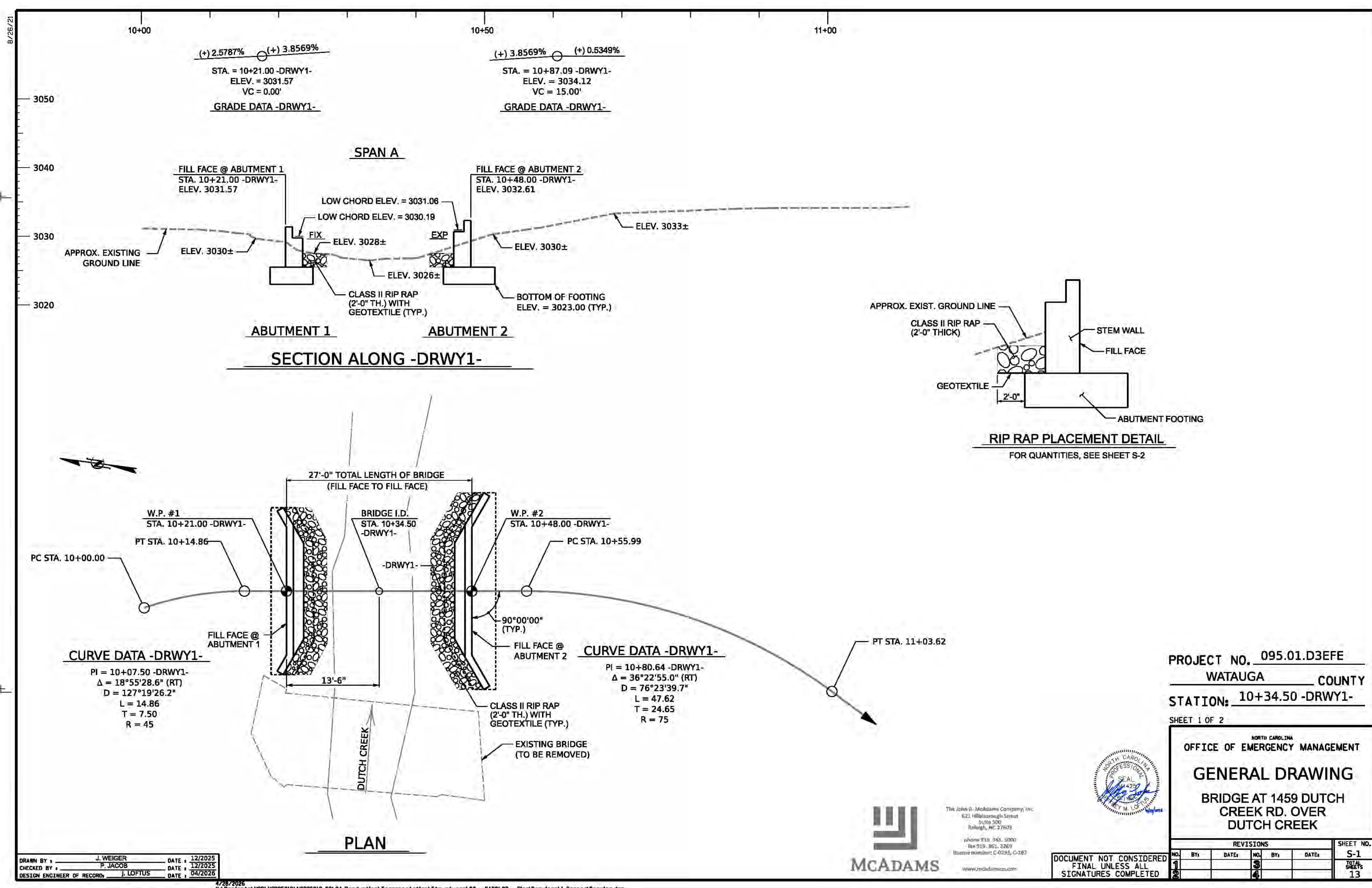


Erosion Control Quantities		
DESCRIPTION	QUANTITY	UNIT
GEOTEXTILE FOR DRAINAGE	210	SY
TEMPORARY SILT FENCE	285	LF
EROSION CONTROL STONE, CLASS A	35	TON
EROSION CONTROL STONE, CLASS B	50	TON
SEDIMENT CONTROL STONE	65	TON
TEMPORARY MULCHING	0.5	ACR
SEED FOR TEMPORARY SEEDING	100	LB
FERTILIZER FOR TEMPORARY 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



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

SHEET 1 OF 2

NORTH CAROLINA
OFFICE OF EMERGENCY MANAGEMENT

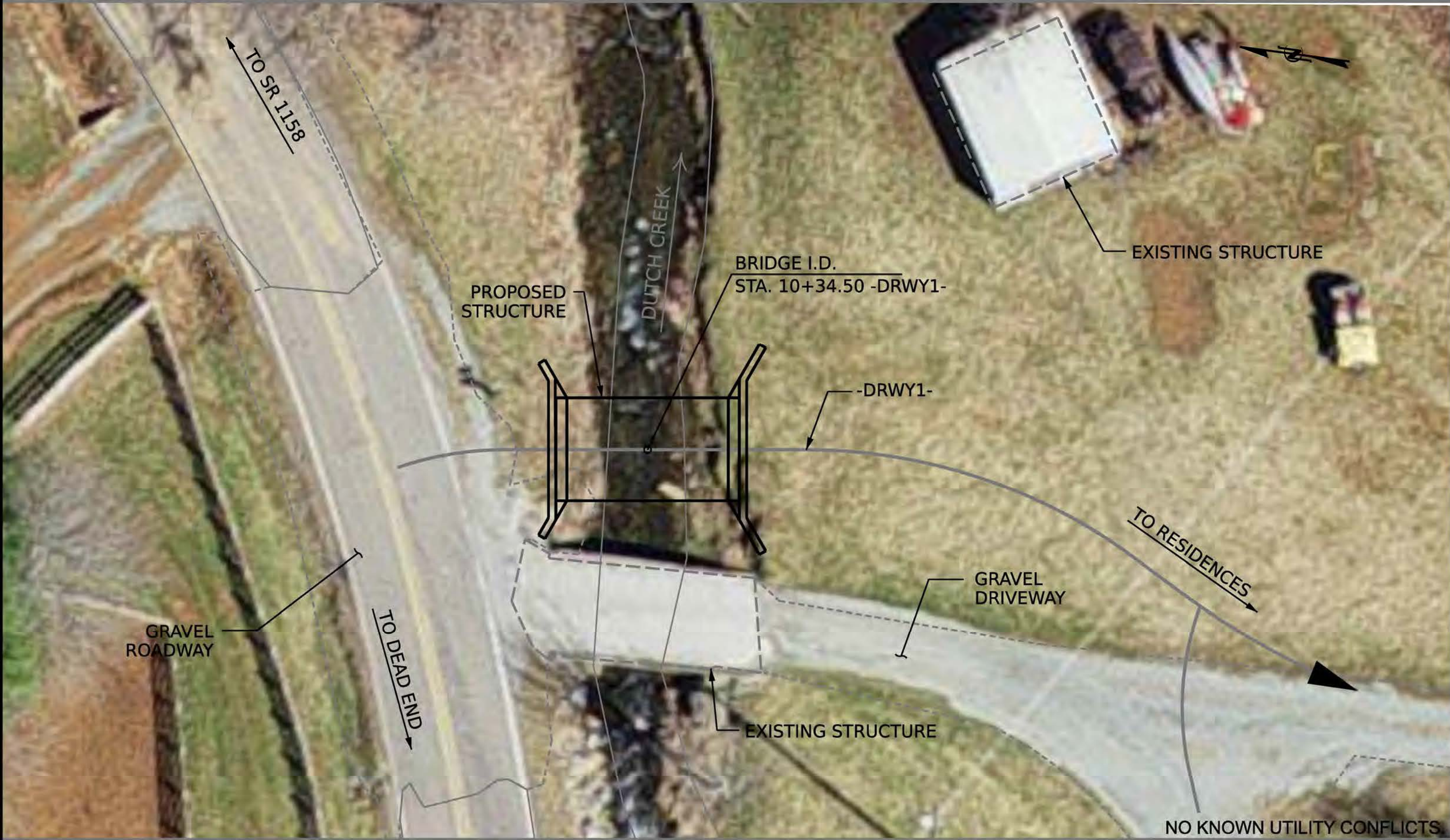
GENERAL DRAWING

BRIDGE AT 1459 DUTCH
CREEK RD. OVER
DUTCH CREEK

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

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

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

4/28/2026
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J. Loftus

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 ¾".

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 ⅛" 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 HARDWARE.

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"



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PROJECT NO. 095.01.D3EFE

WATAUGA COUNTY

STATION: 10+34.50 -DRWY1-

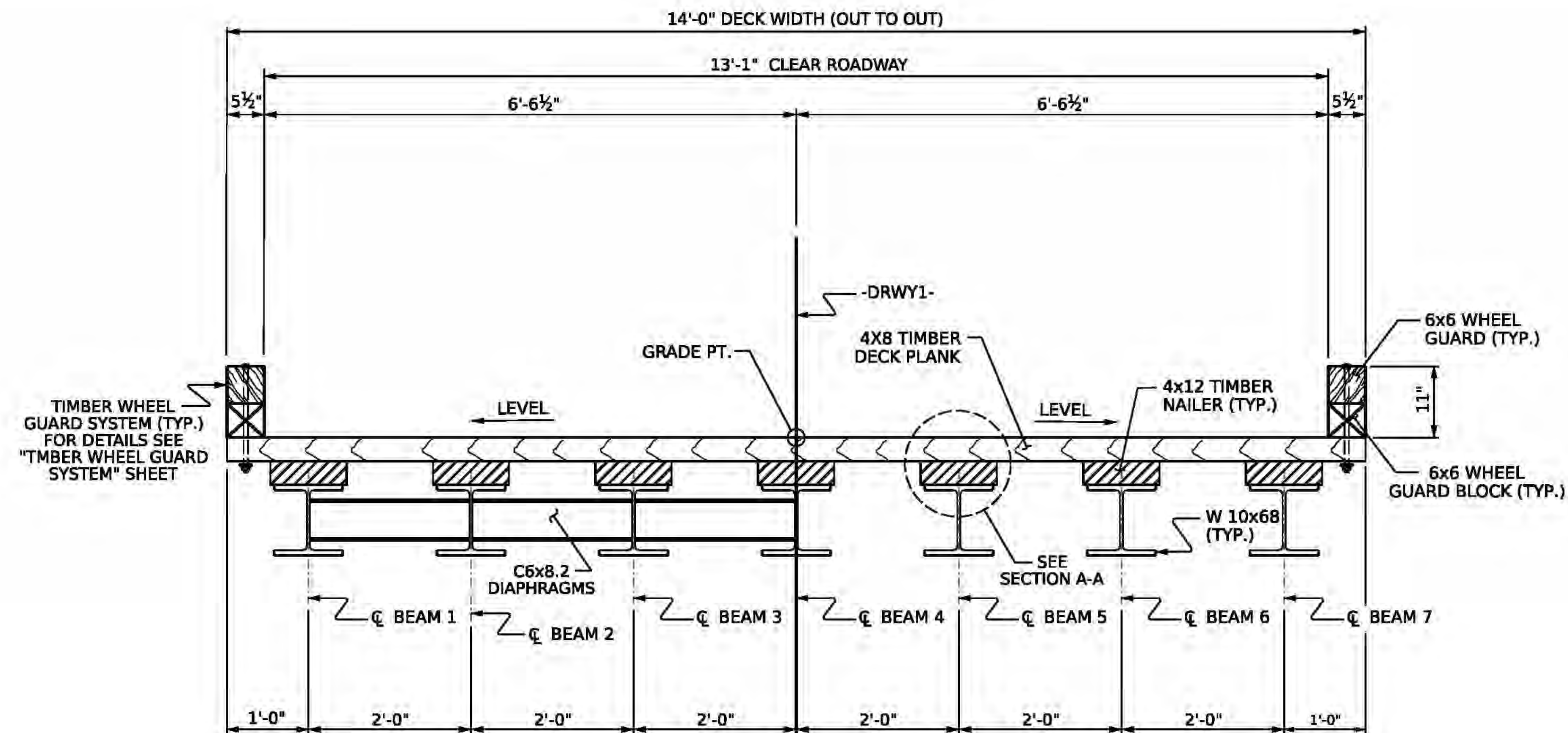
SHEET 2 OF 2

NORTH CAROLINA
OFFICE OF EMERGENCY MANAGEMENT

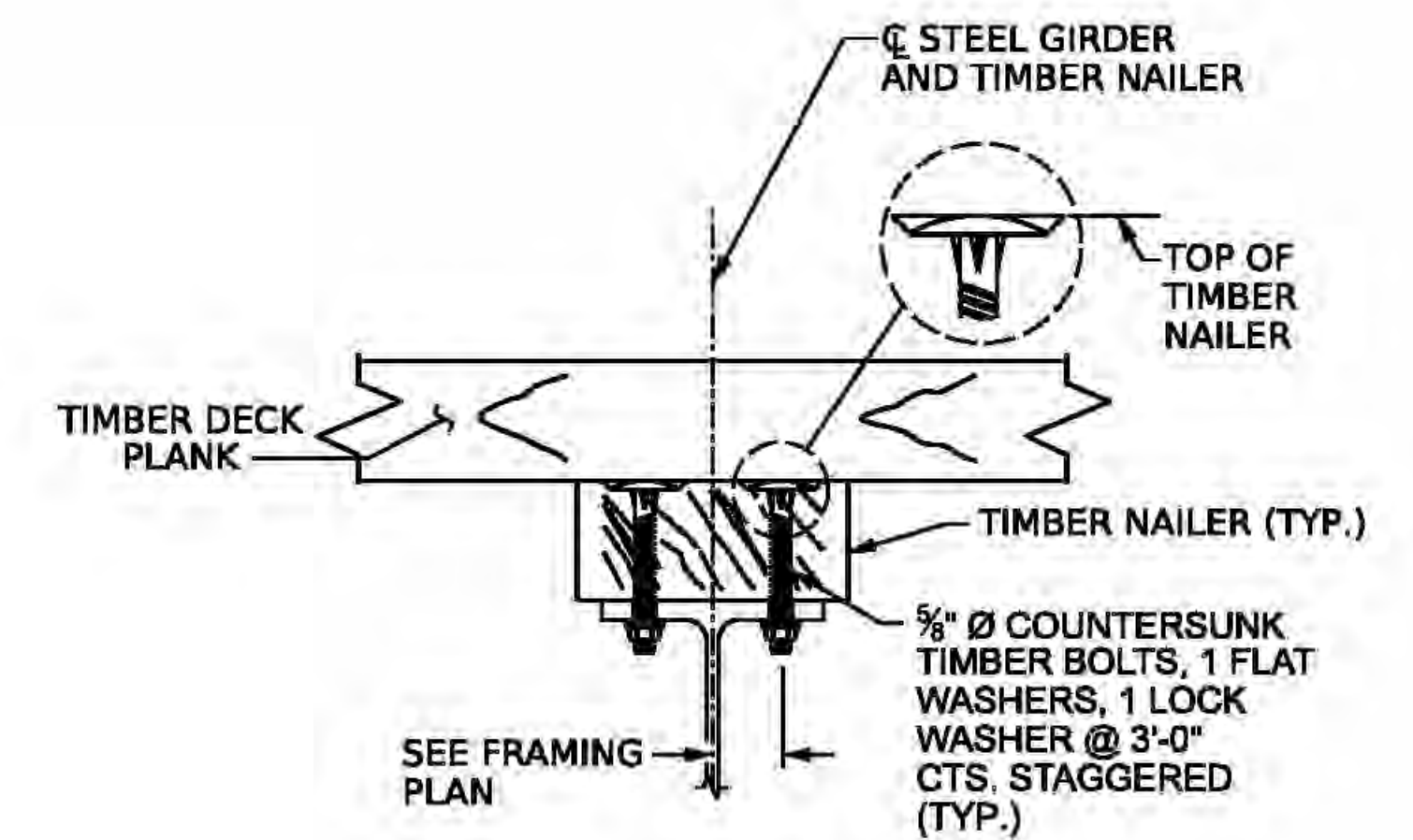
GENERAL DRAWING
BRIDGE AT 1459 DUTCH
CREEK ROAD OVER
DUTCH CREEK

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SIGNATURES COMPLETED

REVISIONS						SHEET NO.
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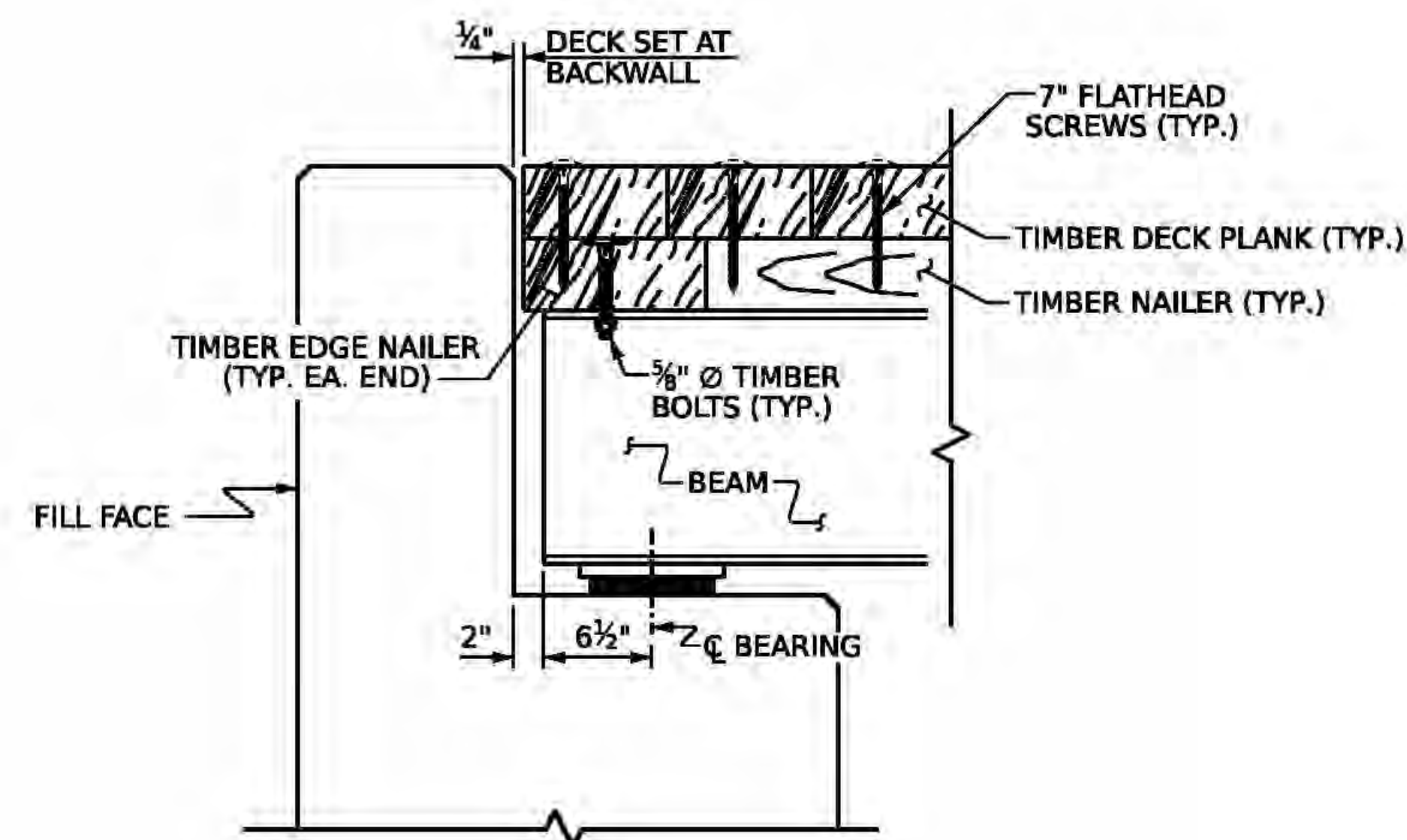


TYPICAL SECTION



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



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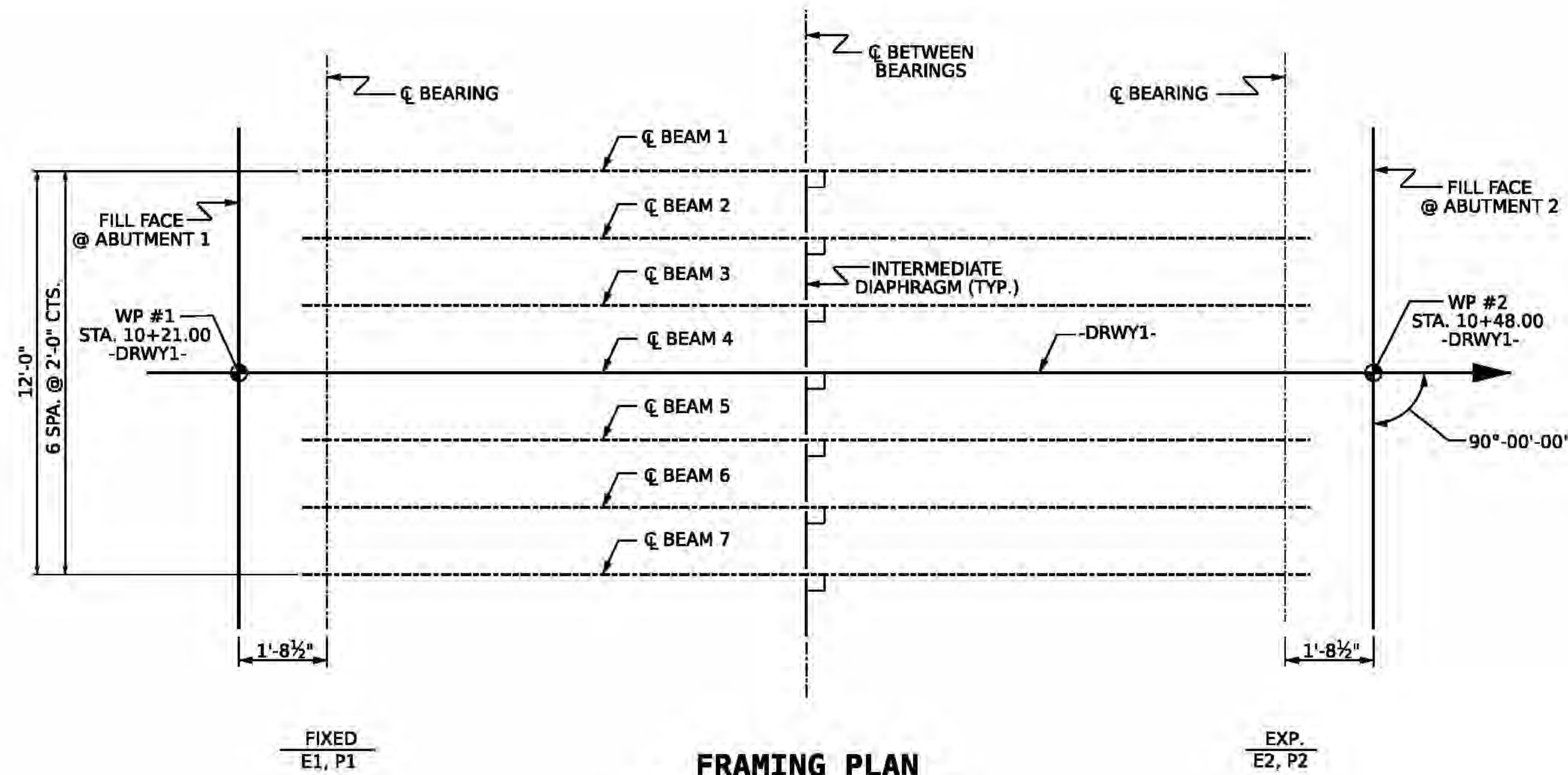
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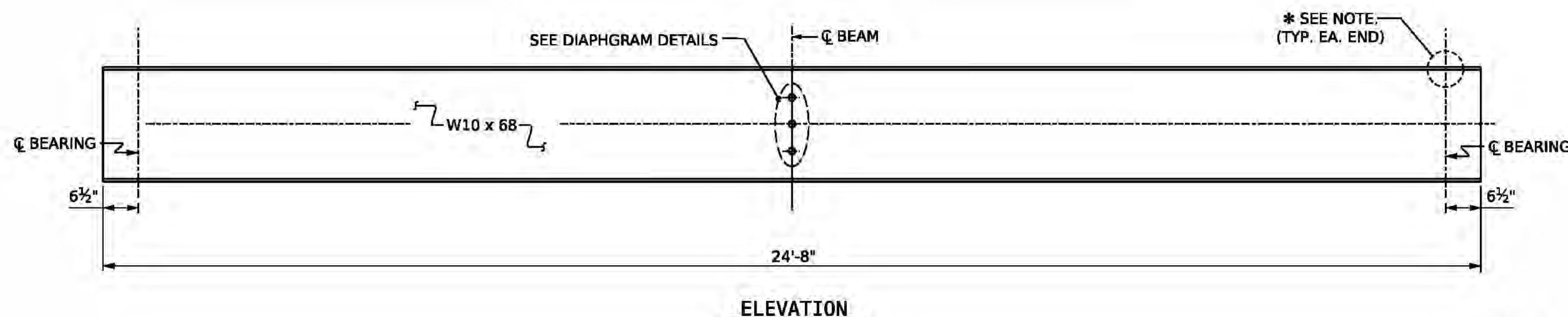
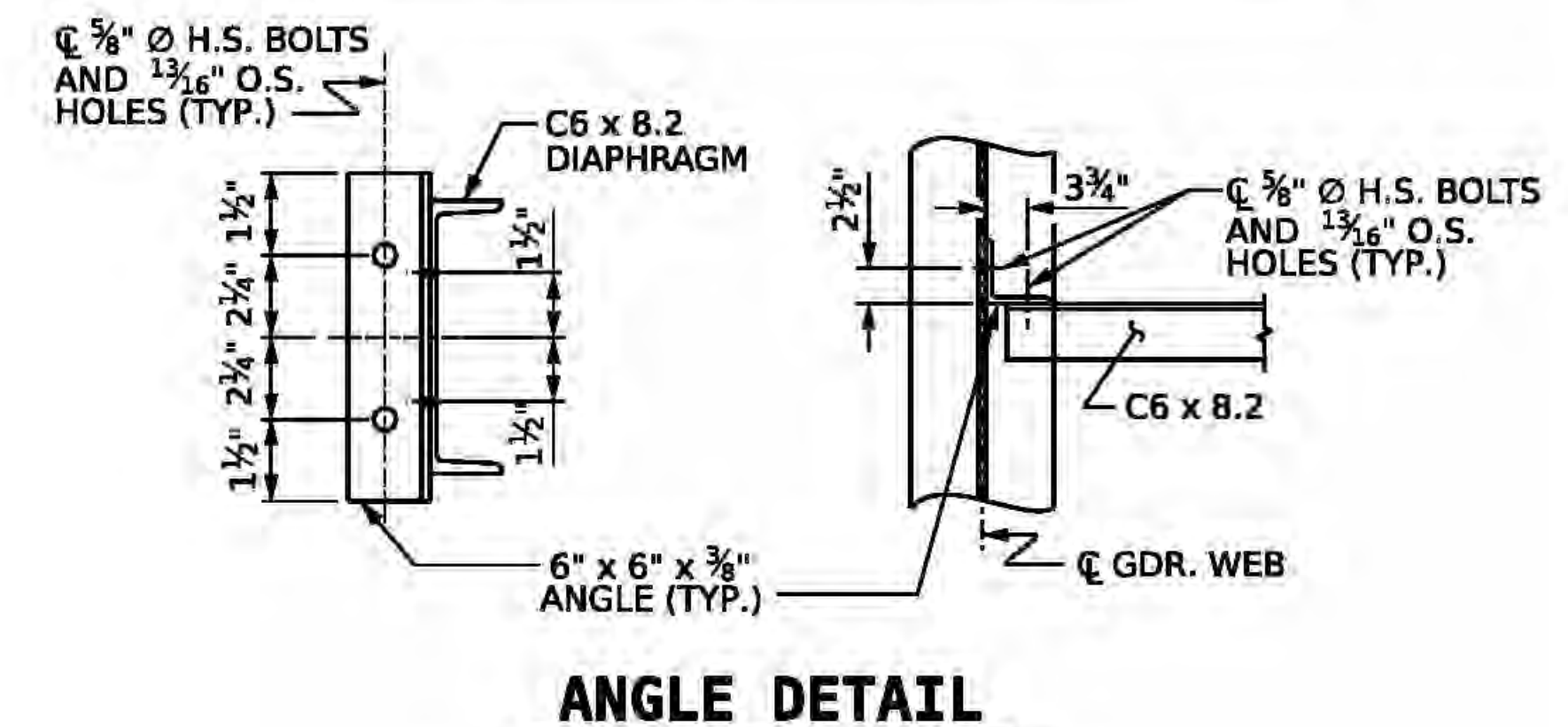
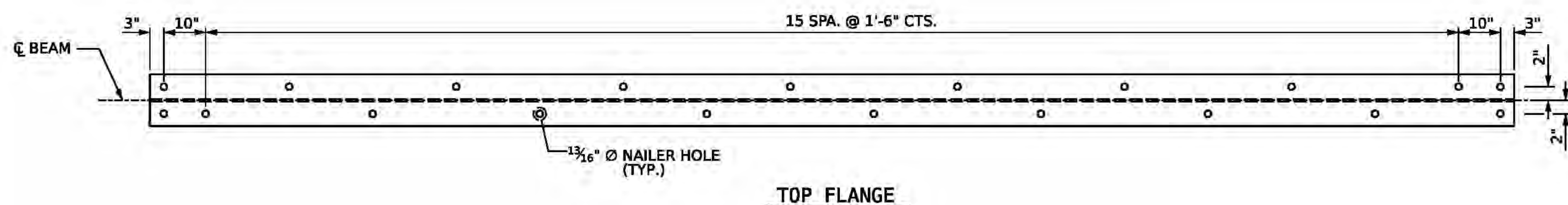
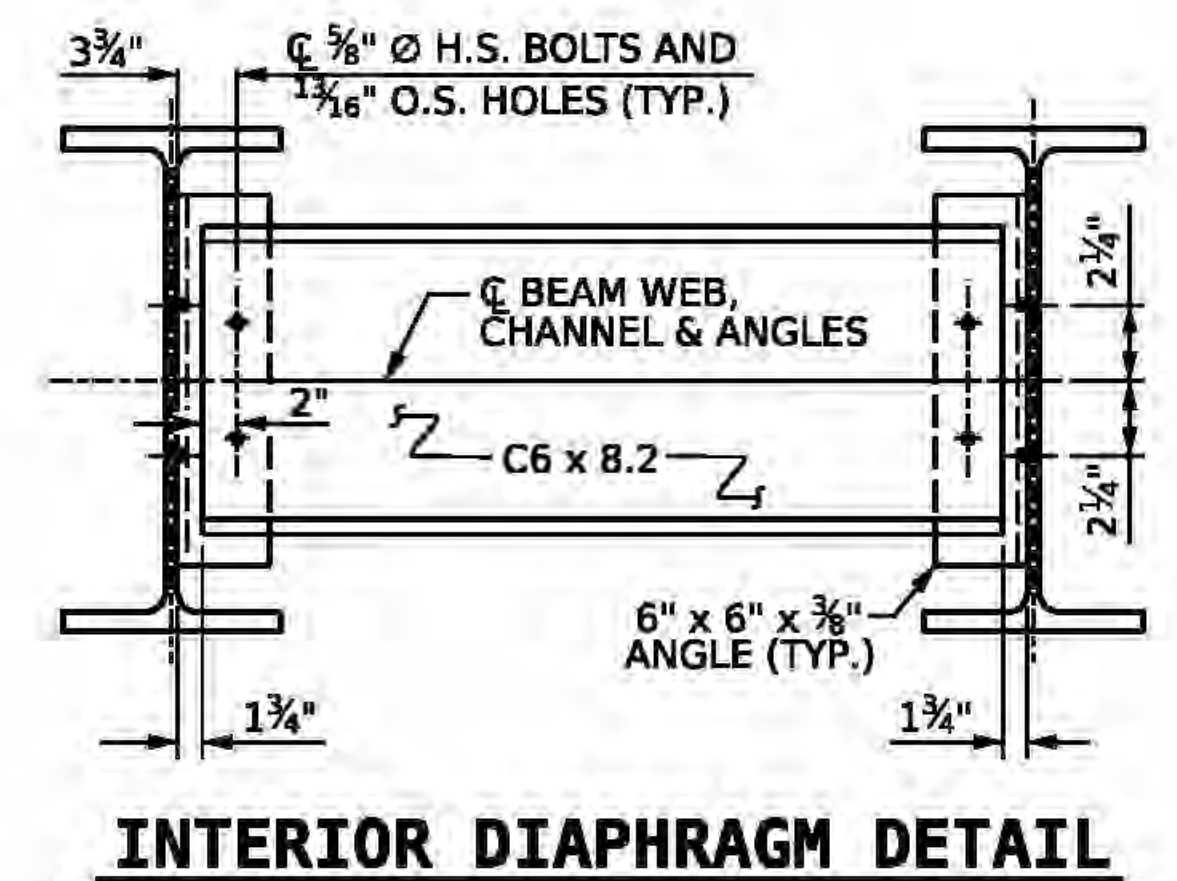
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1			3			S-3
2			4			TOTAL SHEETS 13

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

4/28/2026
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loftus



- 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 $\frac{5}{8}$ " 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.



BEAM DETAILS

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

4/28/2026
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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.
NO.	BY	DATE	NO.	BY	DATE	
1			3			S-4
2			4			TOTAL SHEETS 13



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.

ITEM	No.	SIZE
3/8" Ø TIMBER BOLTS	140	3/8"
HEAVY HEX NUTS	140	3/8"
STANDARD WASHER	140	3/8"
LOCK WASHER	140	3/8"
FLAT HEAD STR. SCREWS	588	7"

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2			4		

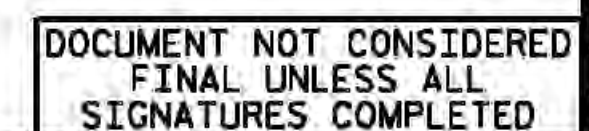
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TOTAL SHEETS

13

4/28/2026
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infus

www.mindgarden.com



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	$\frac{5}{8}$ " $\varnothing$
HEAVY HEX NUTS	5	$\frac{5}{8}$ " $\varnothing$
OGEE WASHERS	5	$\frac{5}{8}$ " $\varnothing$

ACCESSORIES

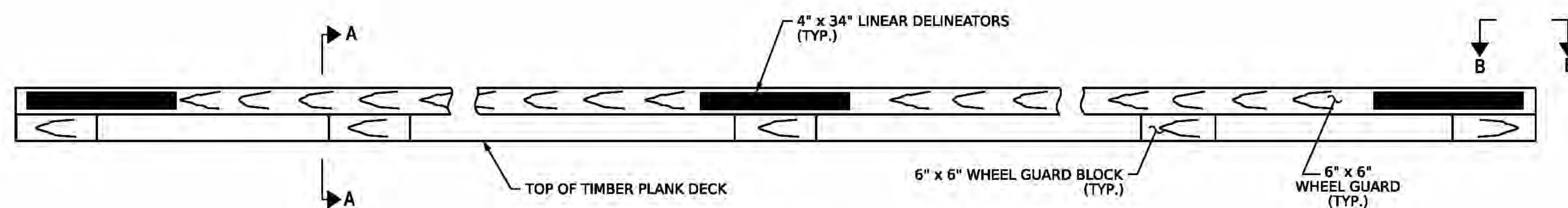
ITEM	Nos.
4 X 34 LINEAR DELINEATOR	6

PAY LENGTH = 25.0 LIN. FT.

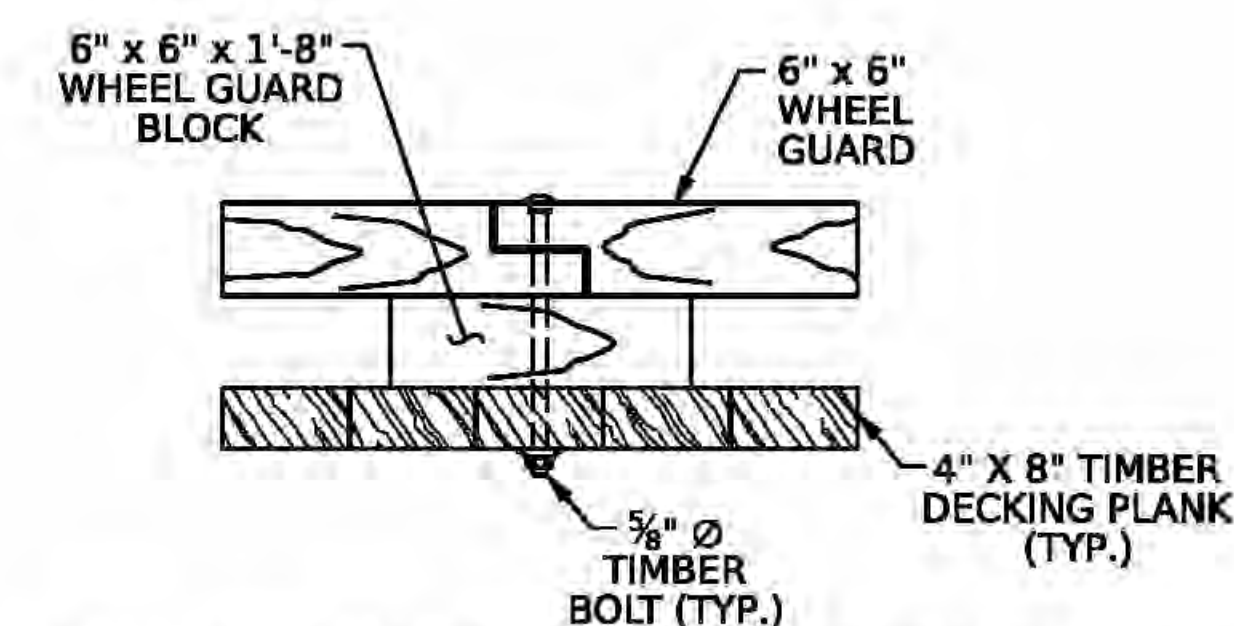
NOTES

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.

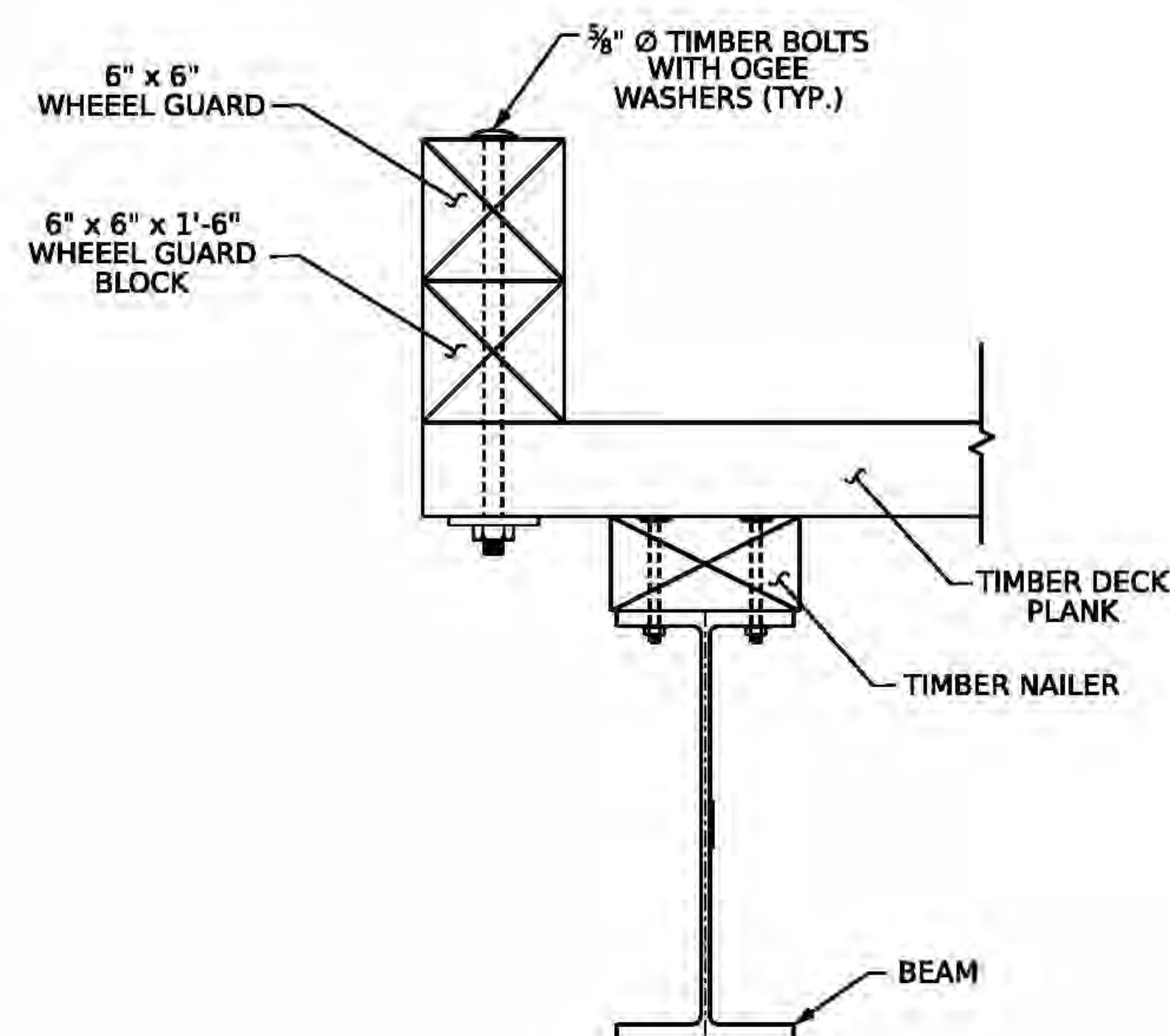
SEE PLAN OF SPAN SHEET FOR ADDITIONAL INFORMATION.



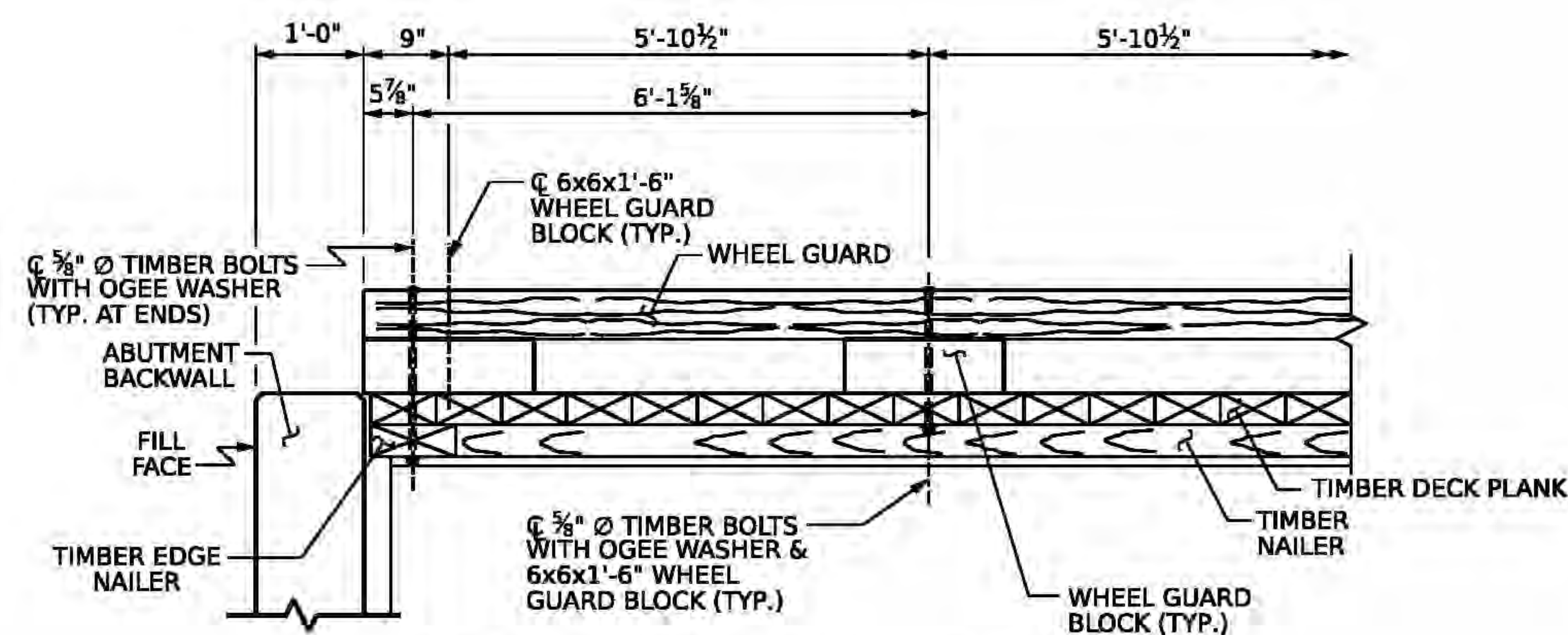
ELEVATION



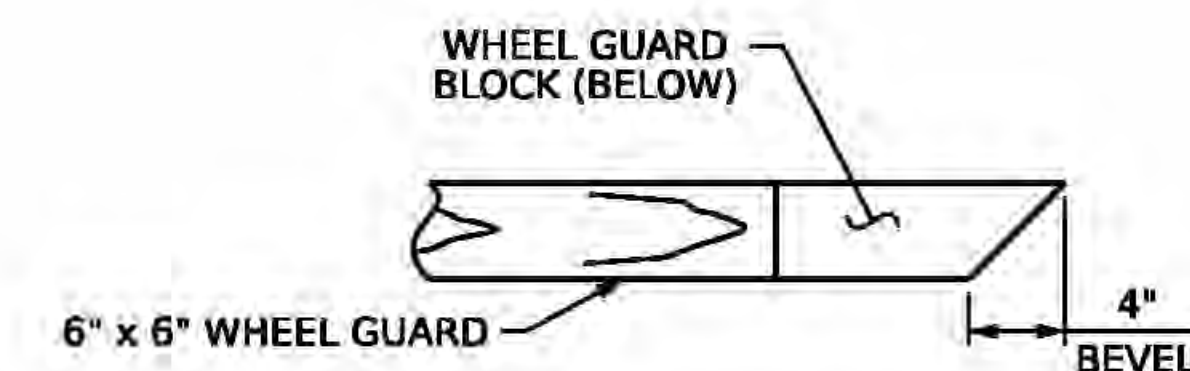
WHEEL GUARD SPLICE DETAIL



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



The John R. McAdams Company, Inc.
 621 Hillsborough Street
 Suite 500
 Raleigh, NC 27603
 Phone 919.361.5900
 Fax 919.362.3269
 License Number: C-0293, C-187

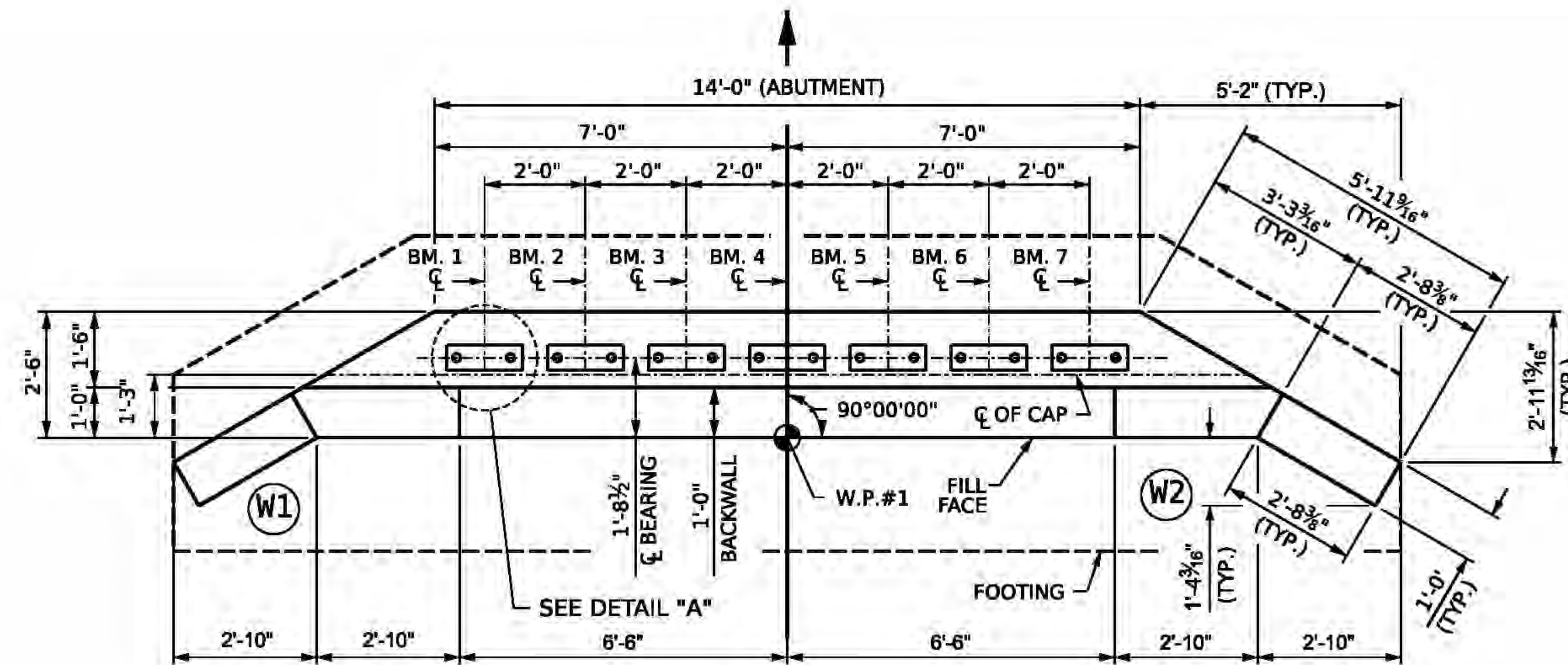


www.mcadamsinc.com

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 SIGNATURES COMPLETED

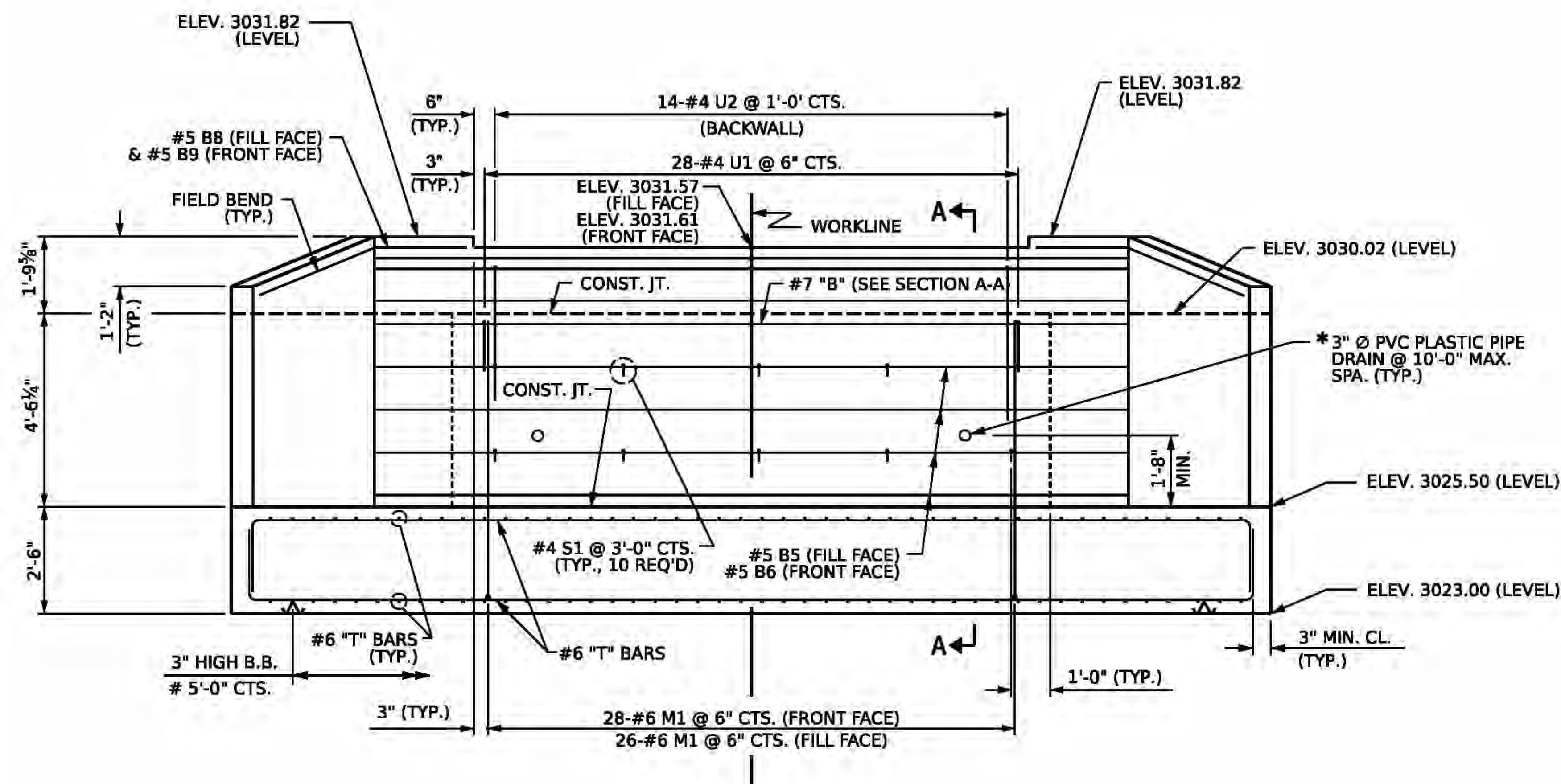
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NO.	BY	DATE	NO.	BY	DATE	
1			3			S-7
2			4			TOTAL SHEETS 13

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



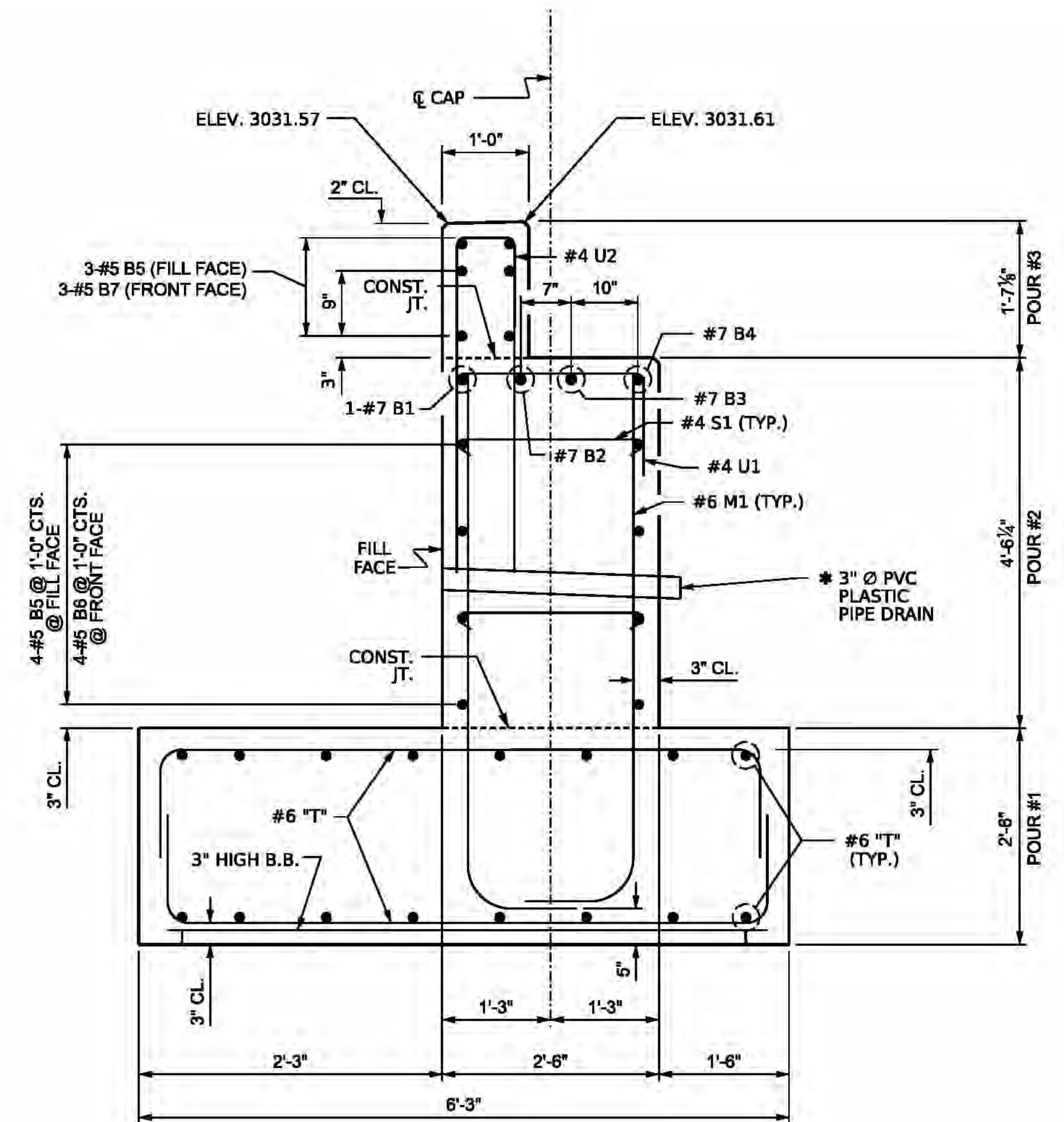
PLAN

(FOR FOOTING DIMENSIONS, SEE SHEET 3 OF 3)



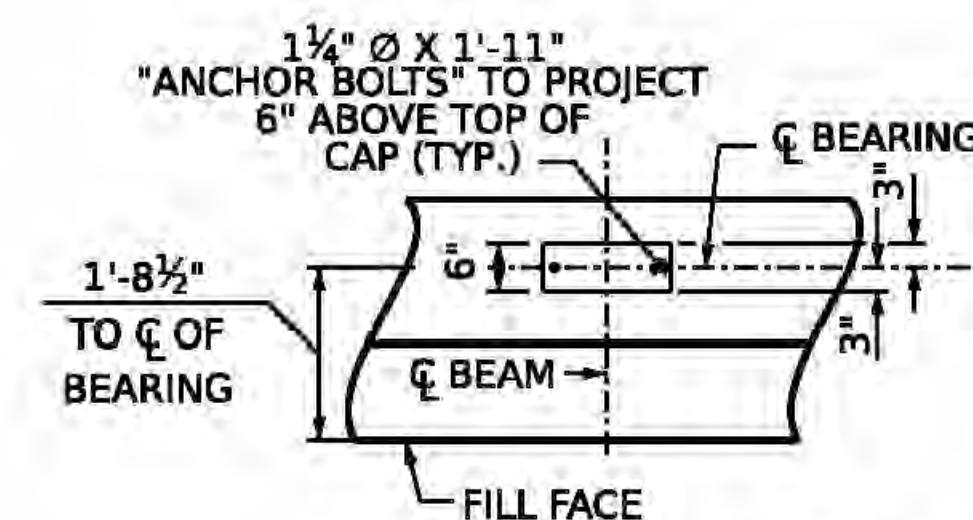
ELEVATION

(FOR WING DETAILS SEE SHEET 2 OF 3)
(FOR FOOTING DIMENSIONS SEE SHEET 3 OF 3)



SECTION A-A

*(FOR PIPE DRAIN DETAILS, SEE SHEET 3 OF 3)



DETAIL "A"

(FOR BEARING TYPE
SEE BEARING SHEET)

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

SHEET 1 OF 3

NORTH CAROLINA
OFFICE OF EMERGENCY MANAGEMENT
SUBSTRUCTURE
ABUTMENT No. 1

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
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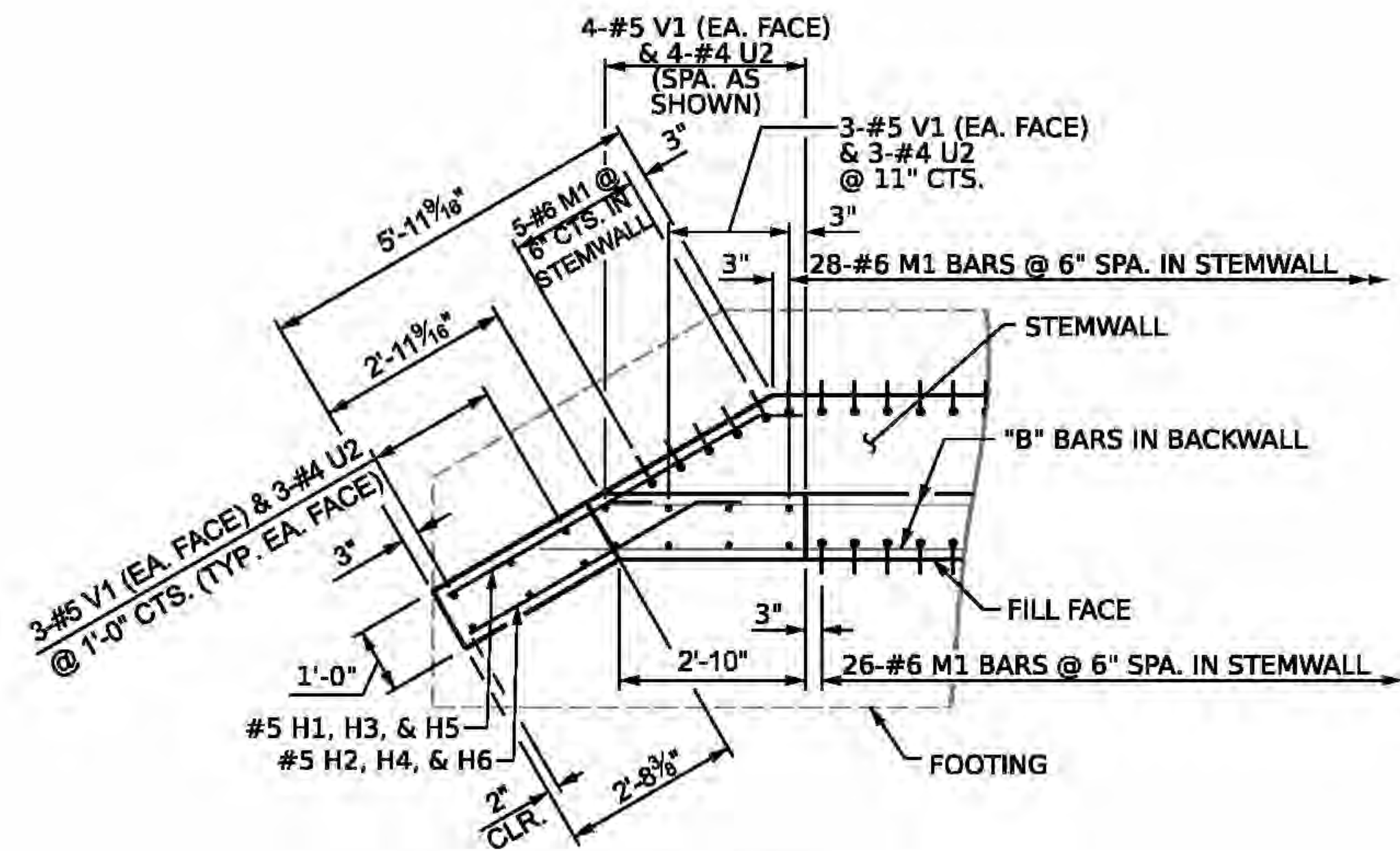
The John R. McAdams Company, Inc.
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fax 919.362.3269
license number: C-0295, C-187

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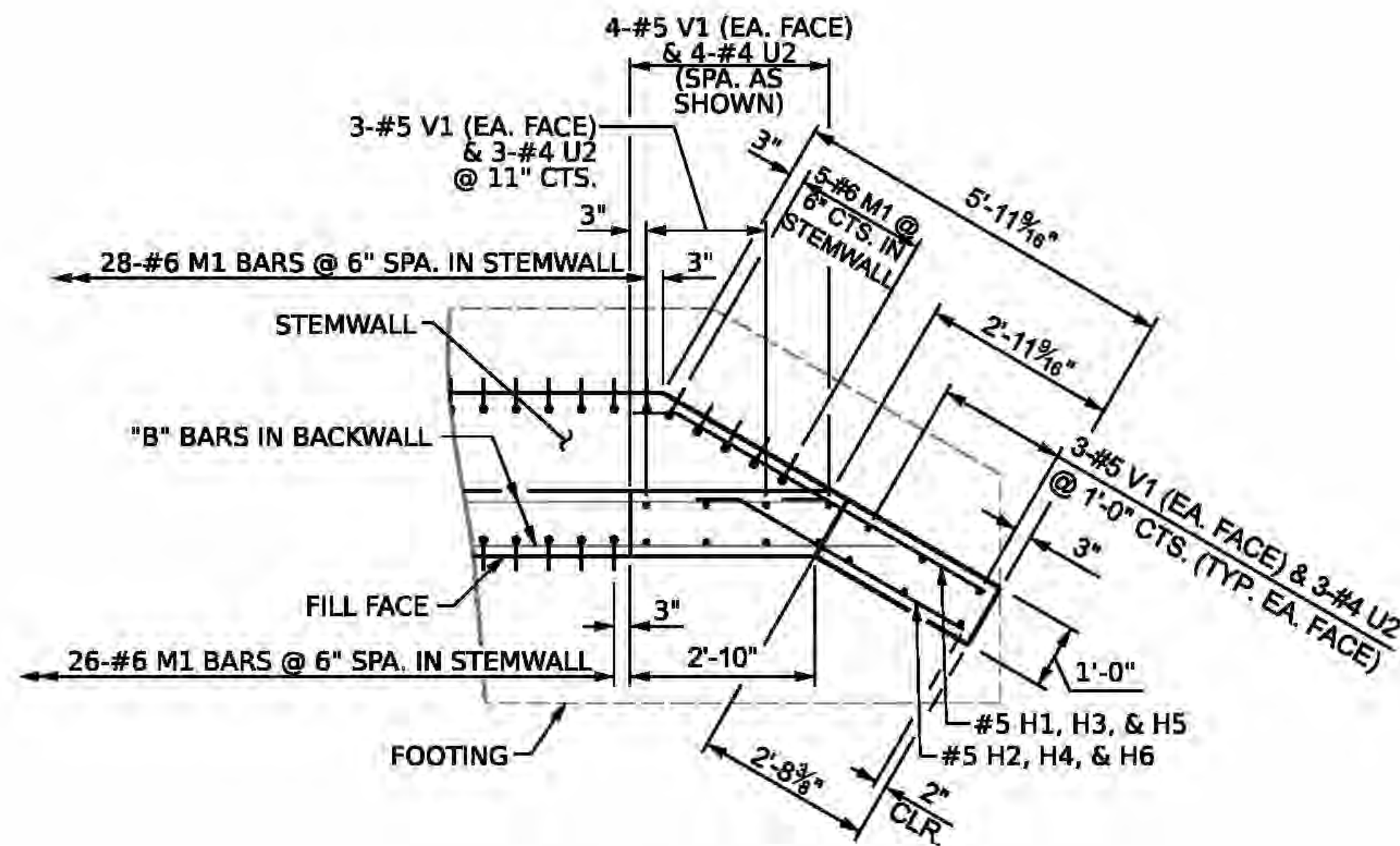


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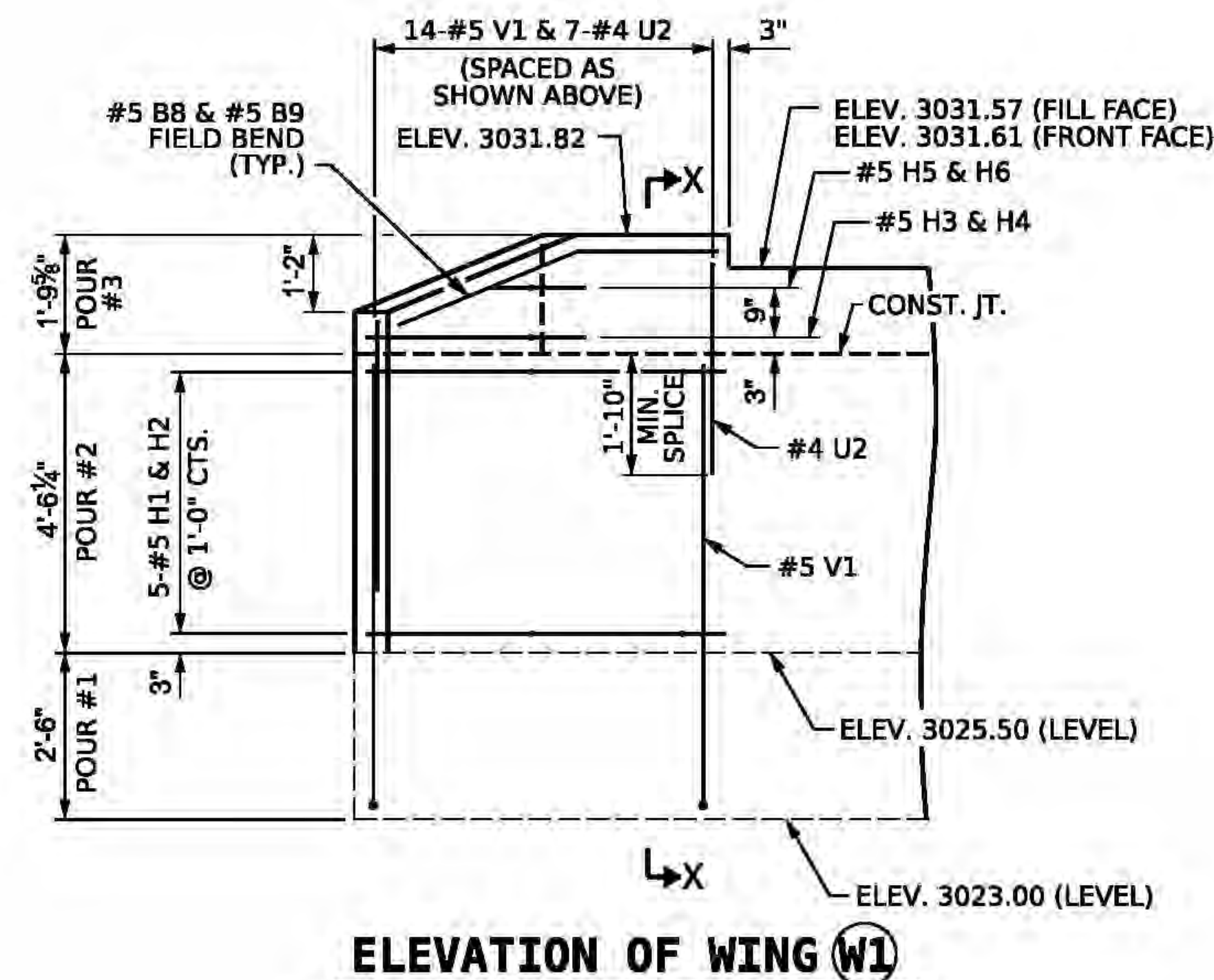
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loftus



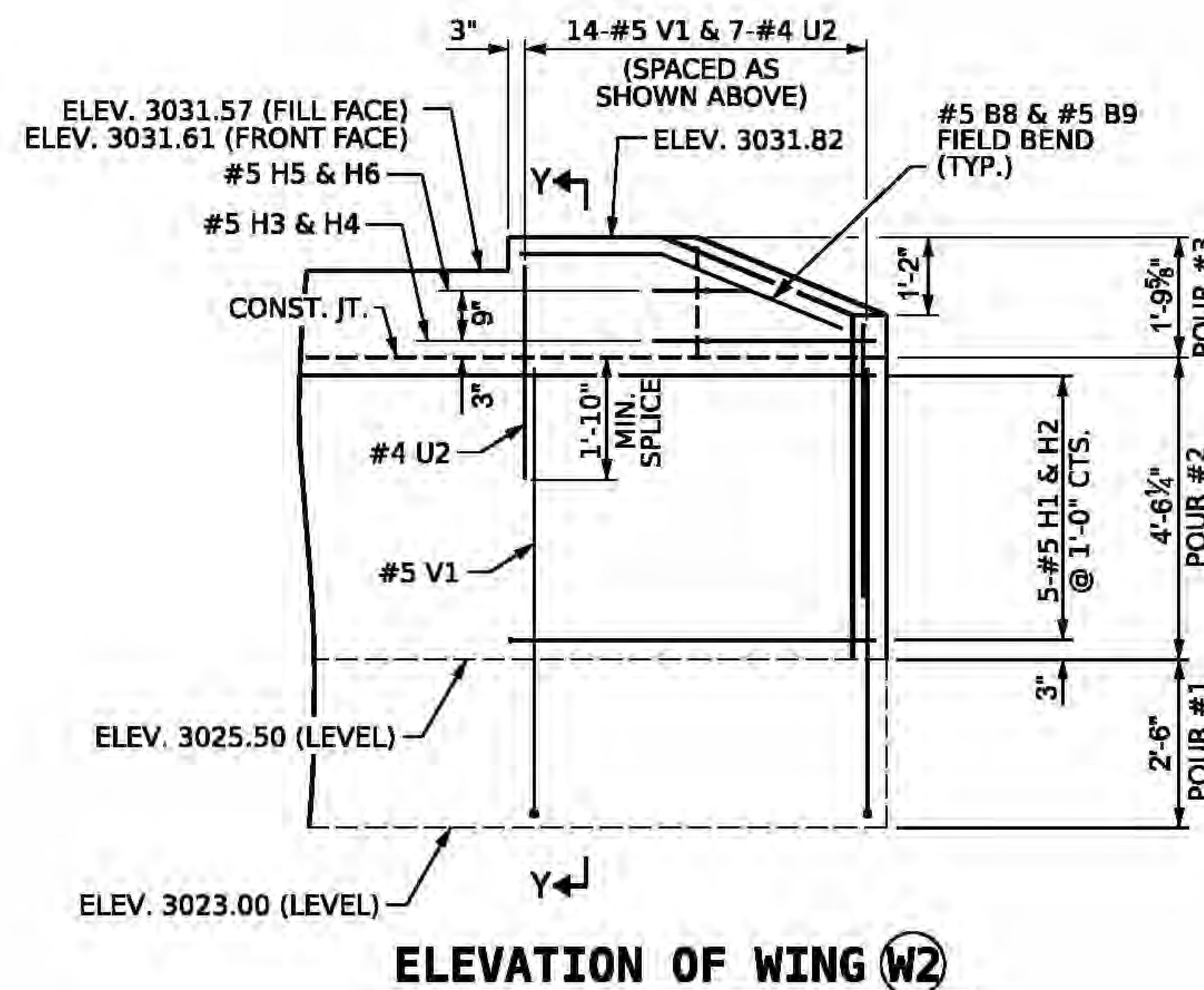
PLAN OF WING (W1)



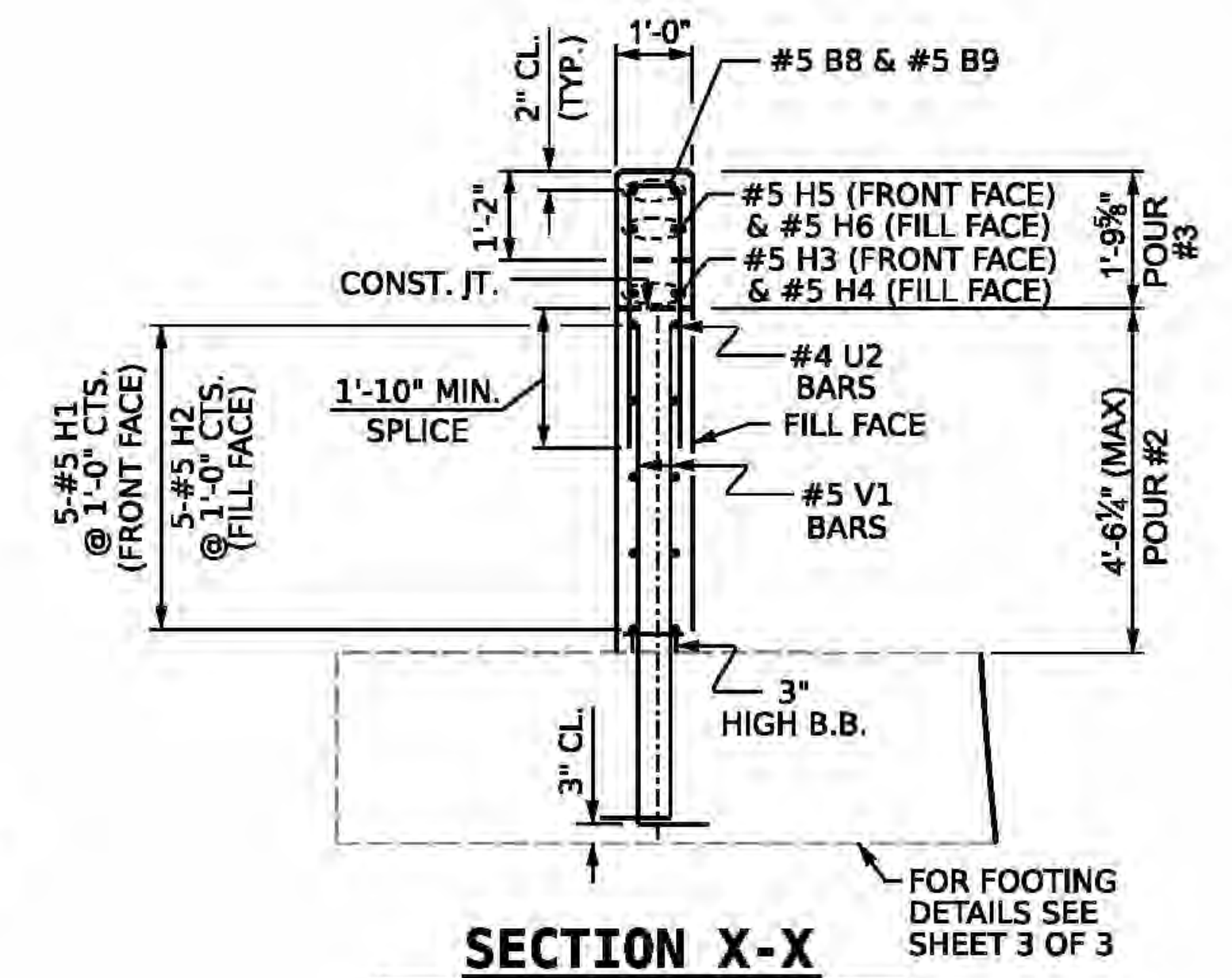
PLAN OF WING (W2)



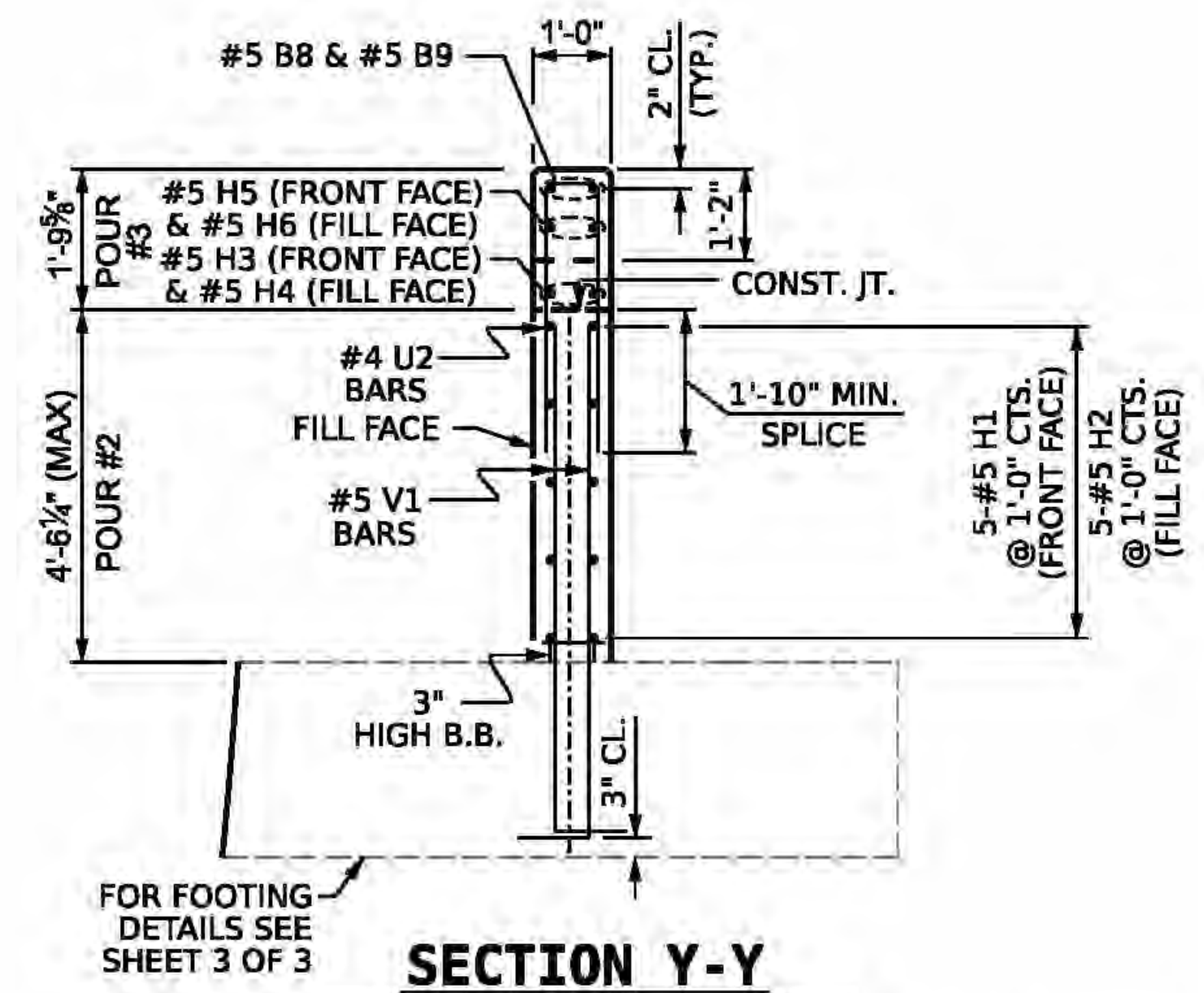
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X



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

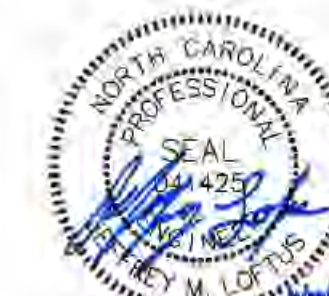
SUBSTRUCTURE
ABUTMENT No. 1
WING DETAIL

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			S-9
2			4			TOTAL 13

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SIGNATURES COMPLETED



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NOTES



McADAMS

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BILL OF MATERIAL

ABUTMENT 1

PROJECT NO. 095.01.D3EFE

WATAUGA COUNTY

STATION: 10+34.50 -DRWY1-

SHEET 3 OF 3

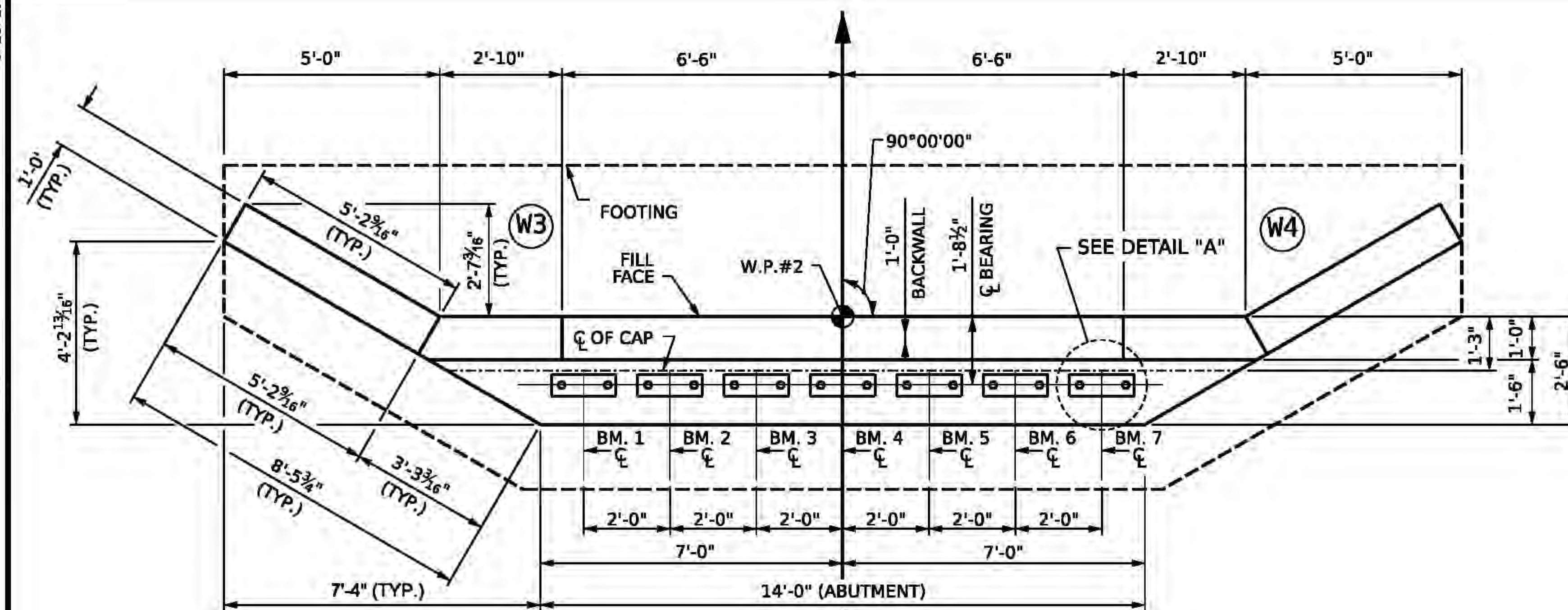
NORTH CAROLINA
OFFICE OF EMERGENCY MANAGEMENT

SUBSTRUCTURE

ABUTMENT No.1 FOOTING DETAILS

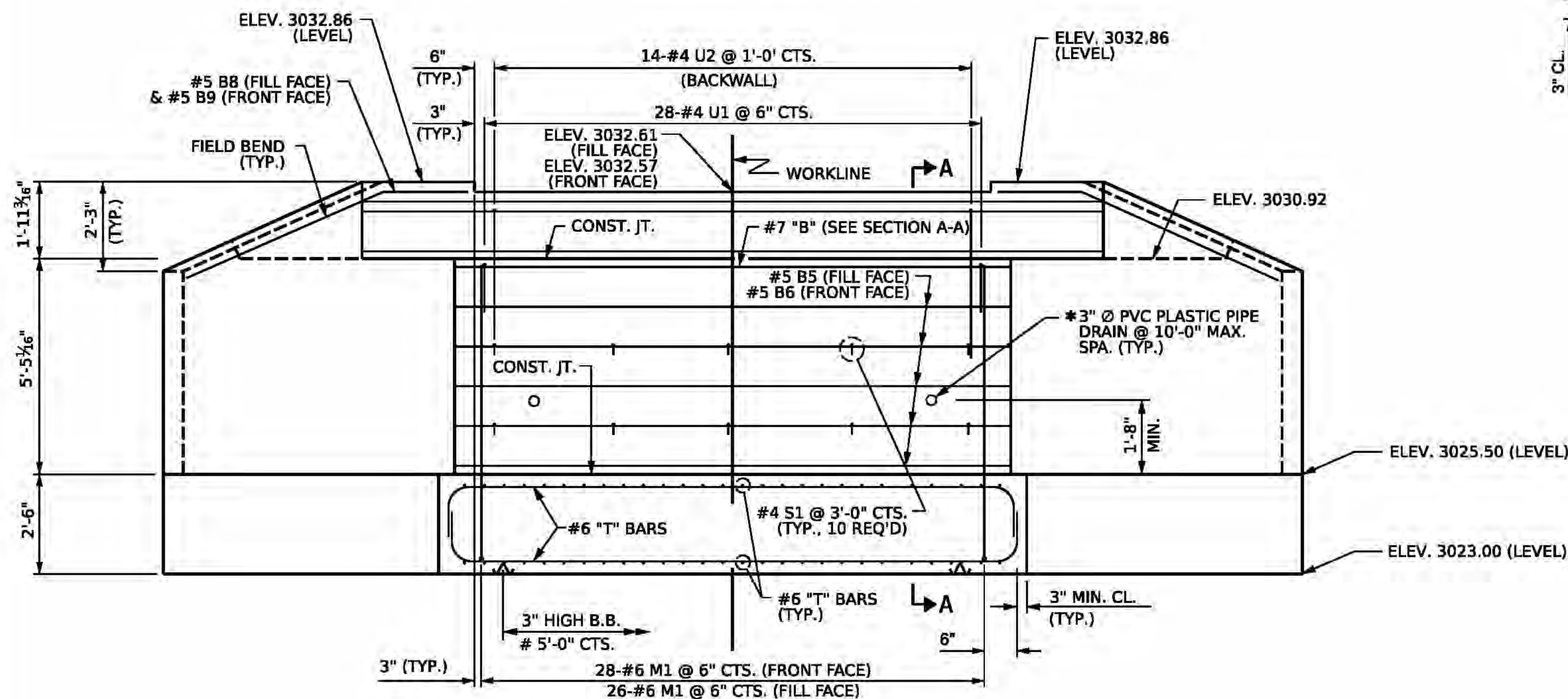
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NO.	BY	DATE	NO.	BY	DATE	S-10 TOTAL SHEETS 13
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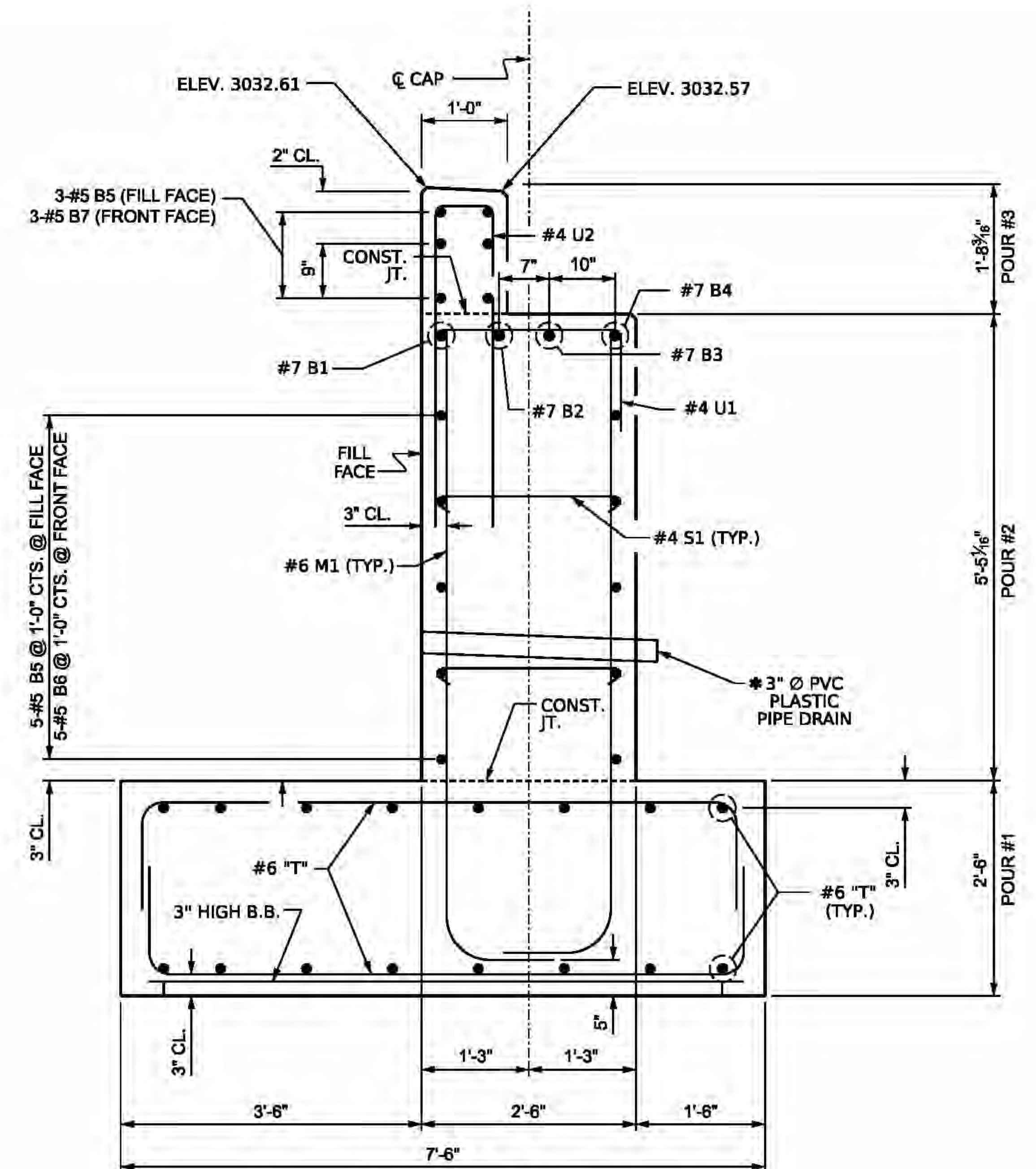
PLAN

(FOR FOOTING DIMENSIONS AND ELEVATIONS, SEE SHEET 3 OF 3)



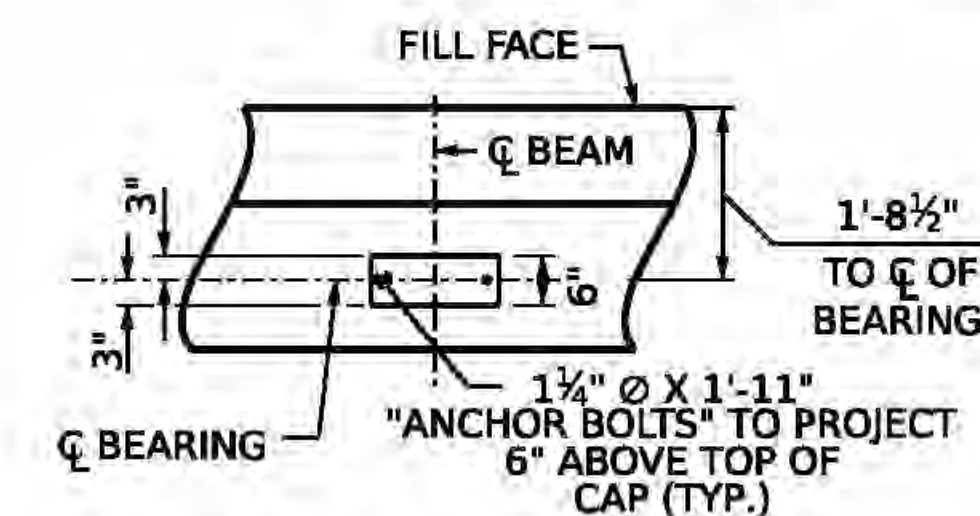
ELEVATION

(FOR WING DETAILS SEE SHEET 2 OF 3)
(FOR FOOTING DIMENSIONS SEE SHEET 3 OF 3)



SECTION A-A

* (FOR PIPE DRAIN DETAILS, SEE SHEET 3 OF 3)



DETAIL "A"

(FOR BEARING TYPE
SEE BEARING SHEET)



MCADAMS

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Abstract



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

SHEET 1 OF 3

NORTH CAROLINA
OFFICE OF EMERGENCY MANAGEMENT

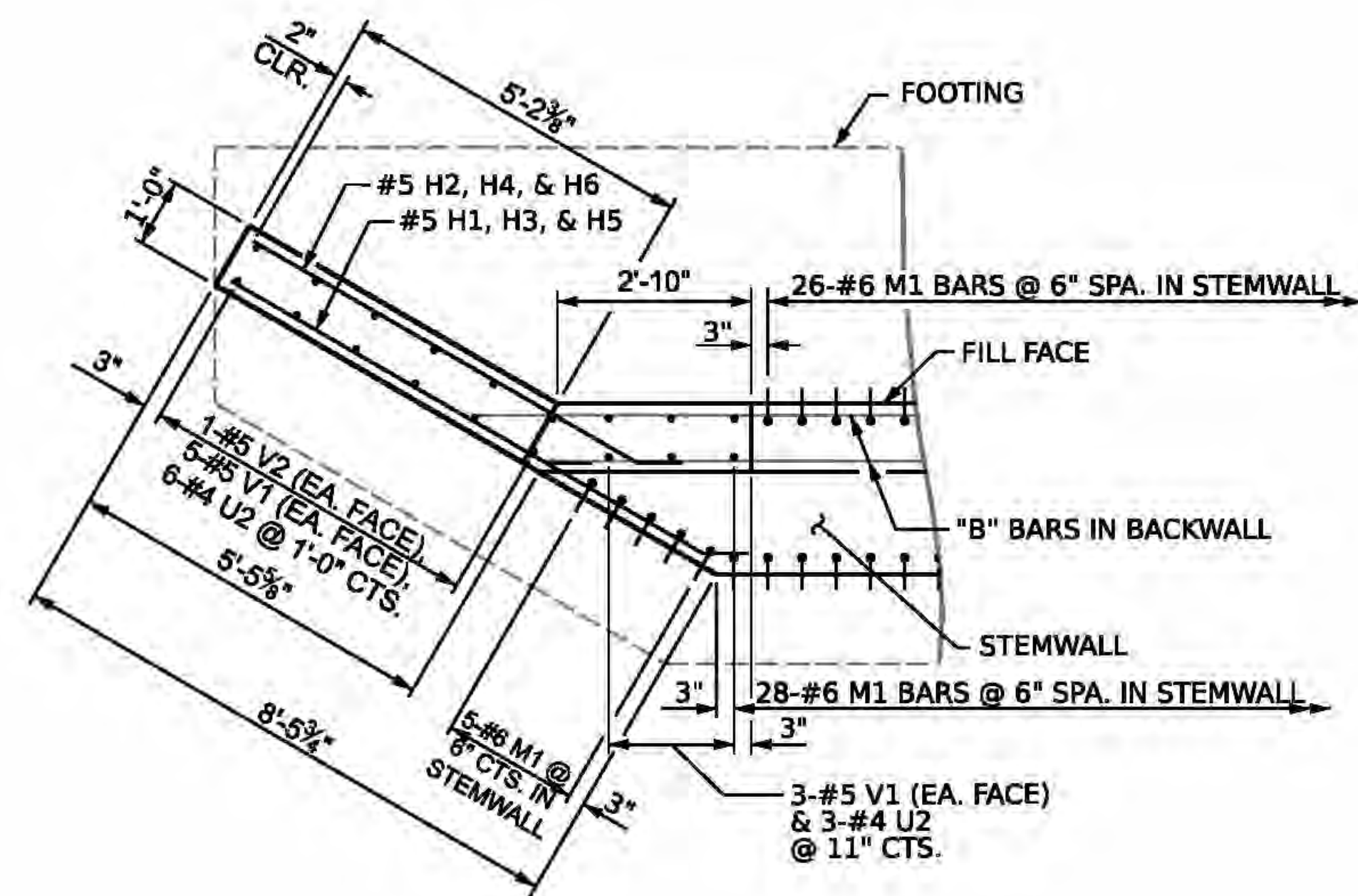
SUBSTRUCTURE
ABUTMENT No.2

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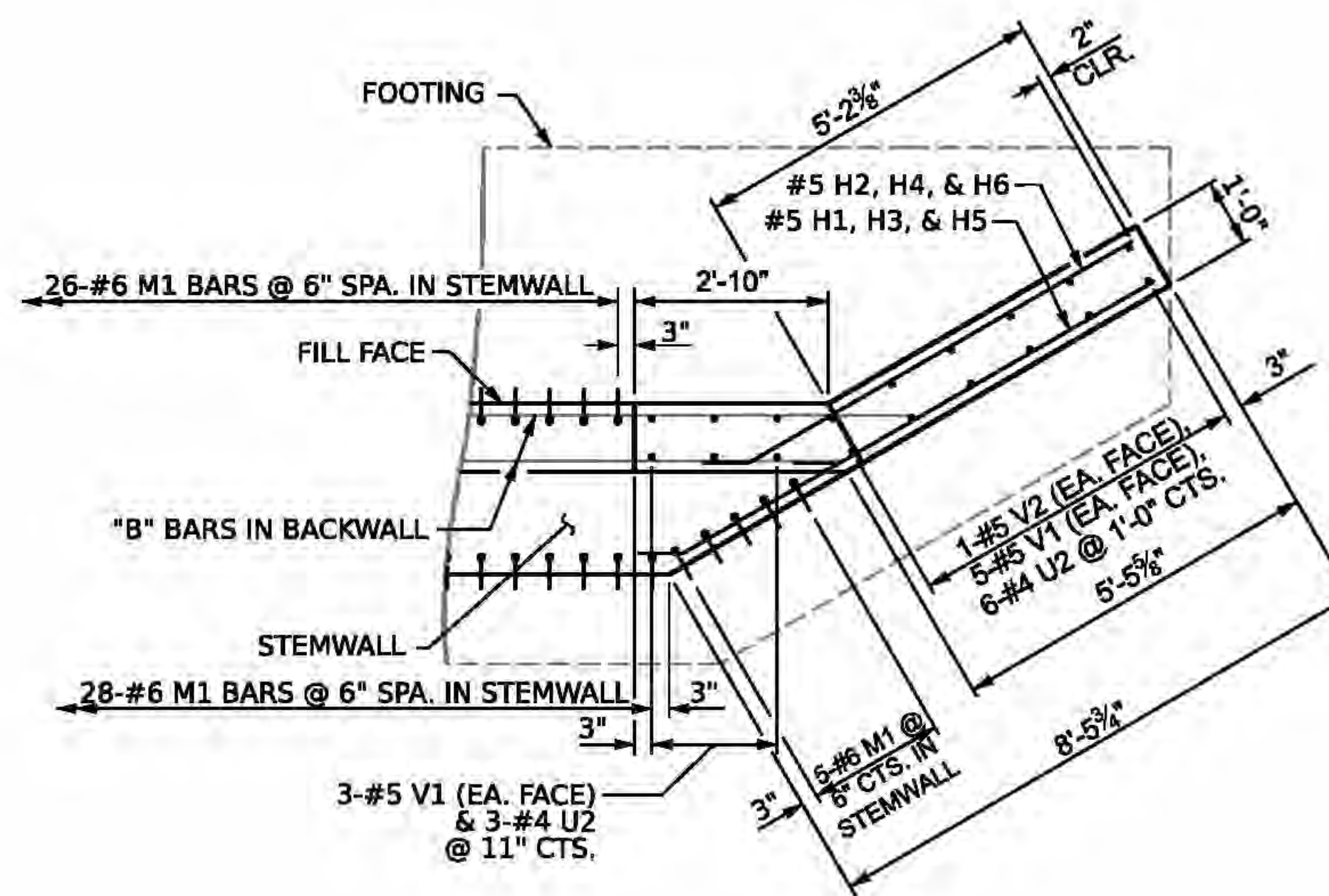
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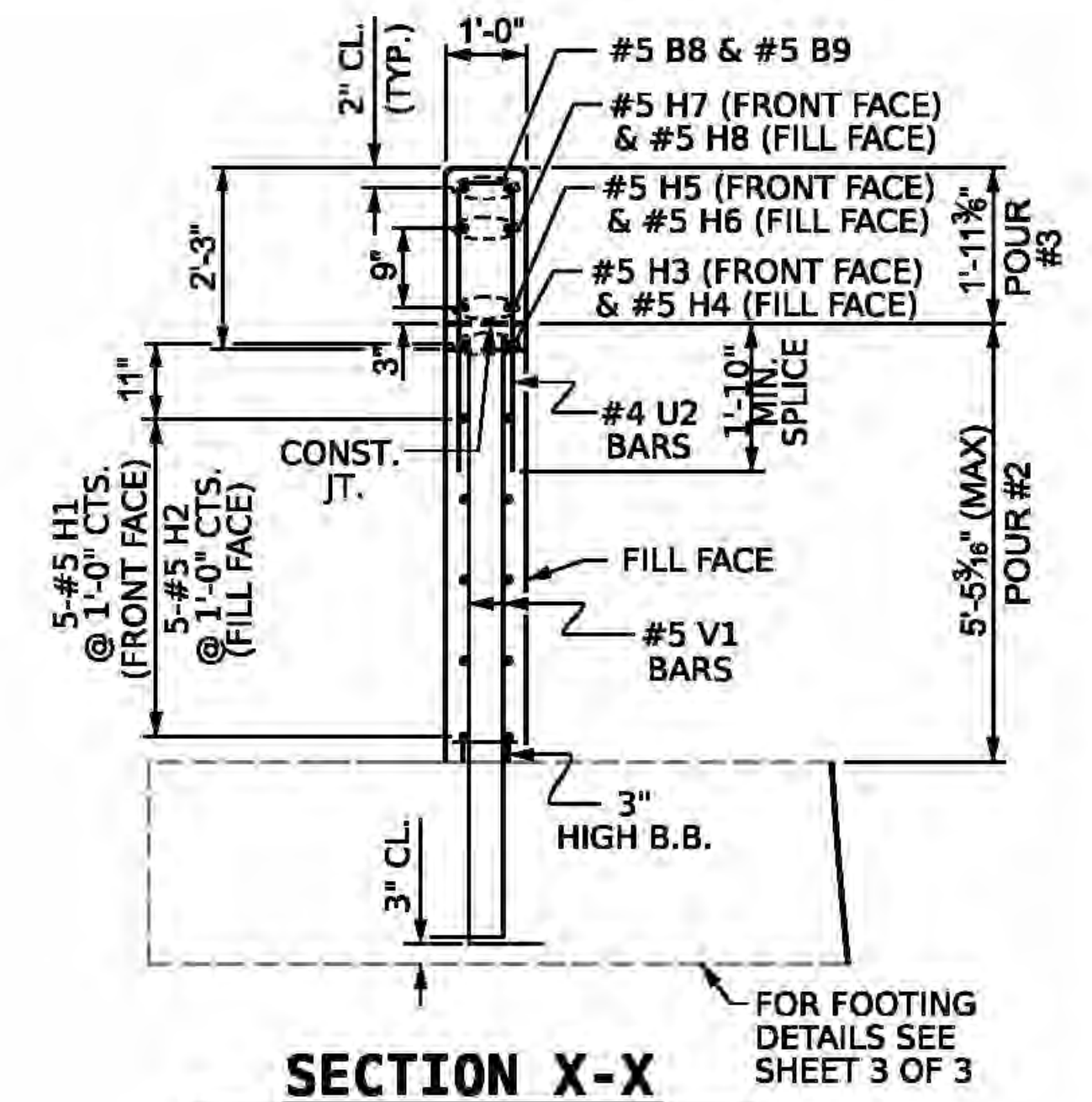
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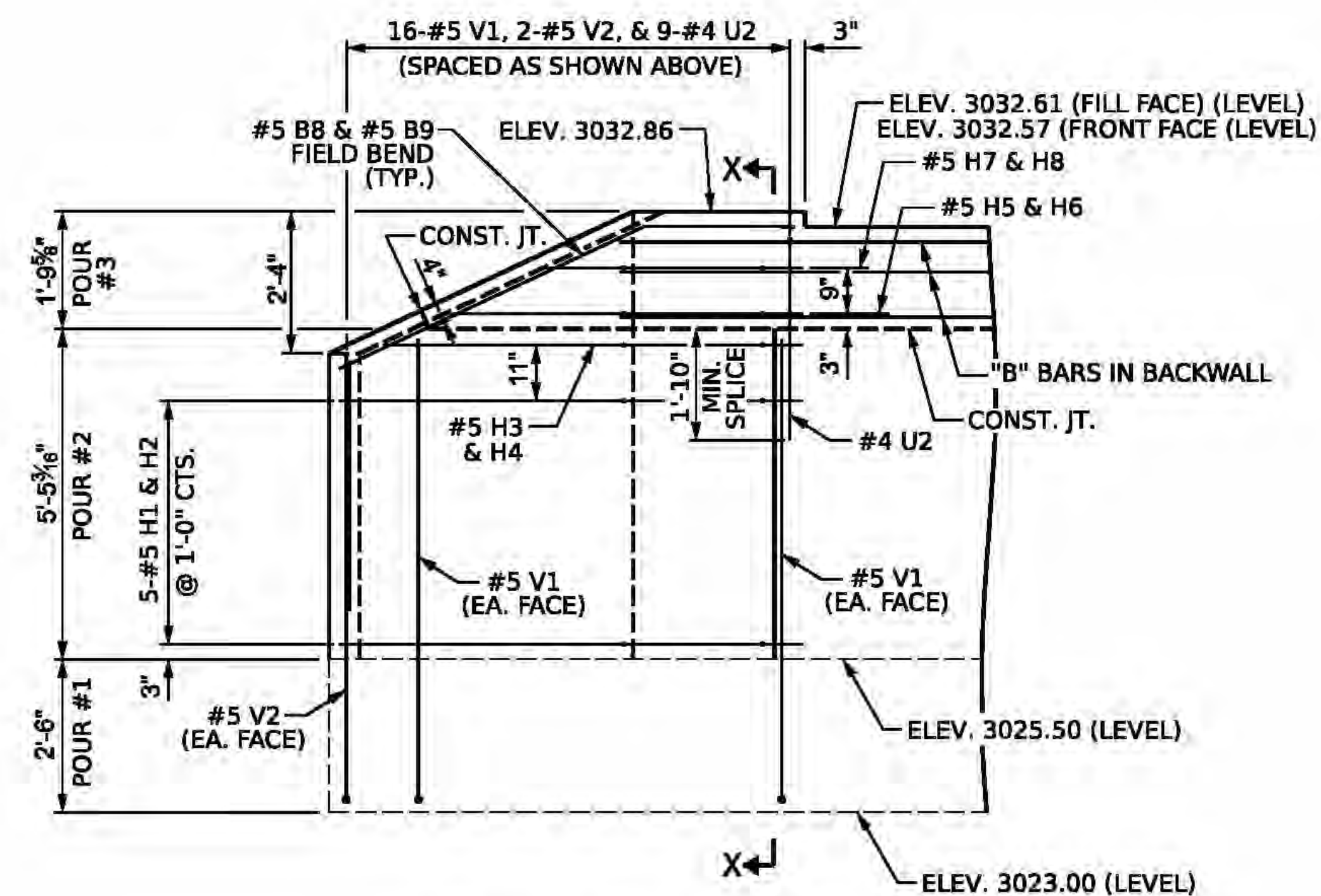
PLAN OF WING (W3)



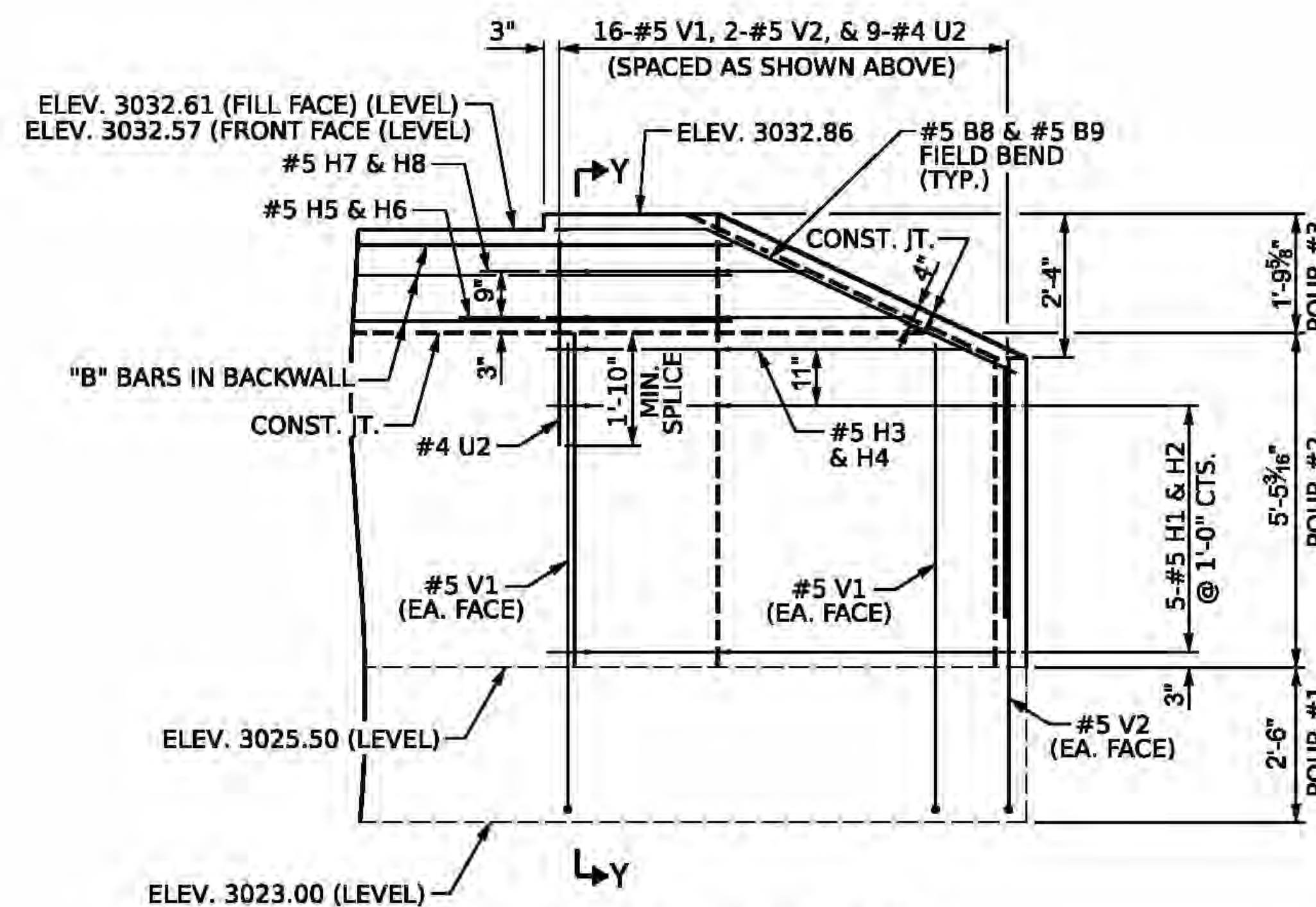
PLAN OF WING (W4)



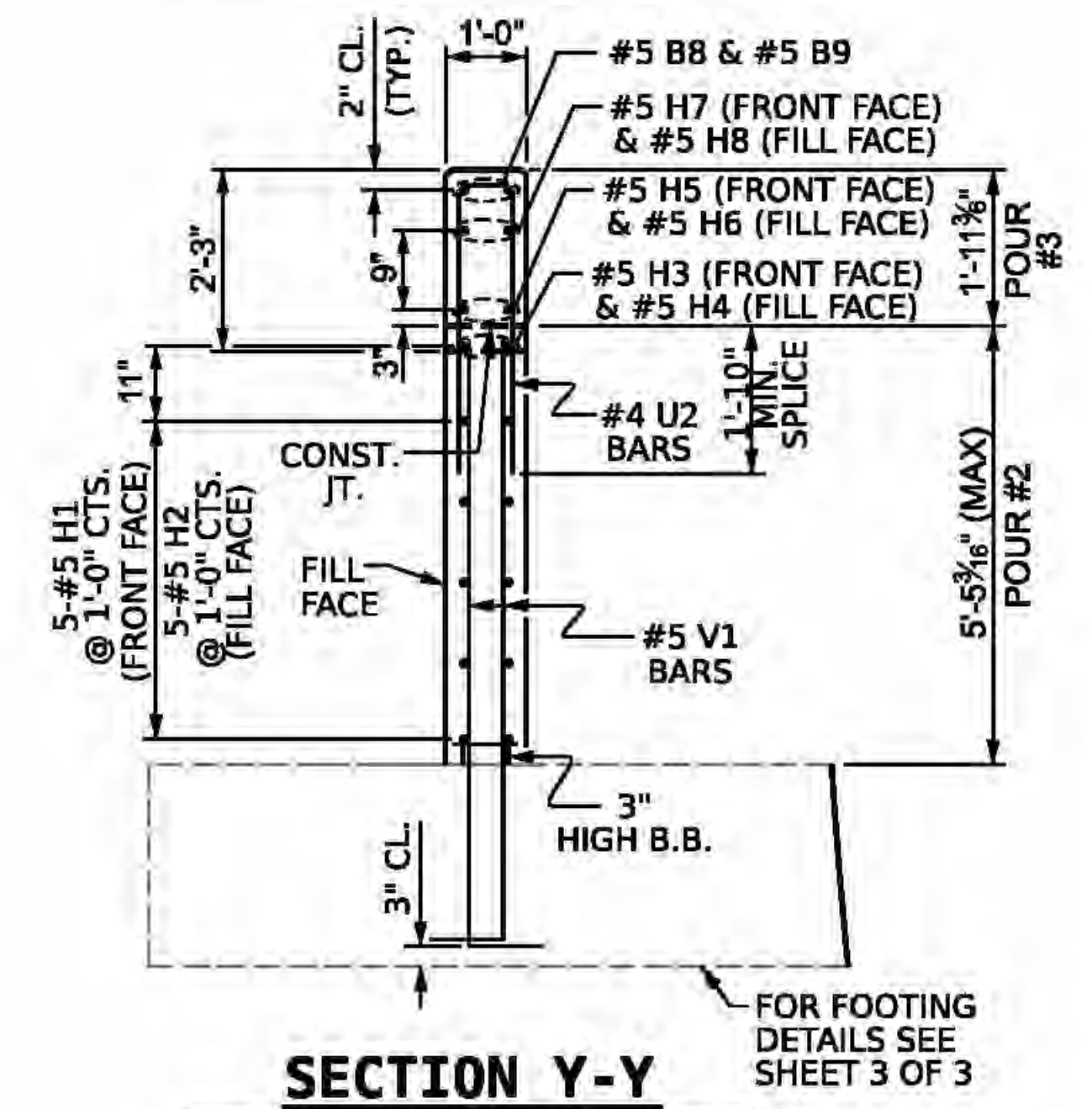
SECTION X-X



ELEVATION OF WING (W3)



ELEVATION OF WING (W4)



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.2
WING DETAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 13
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2			4			

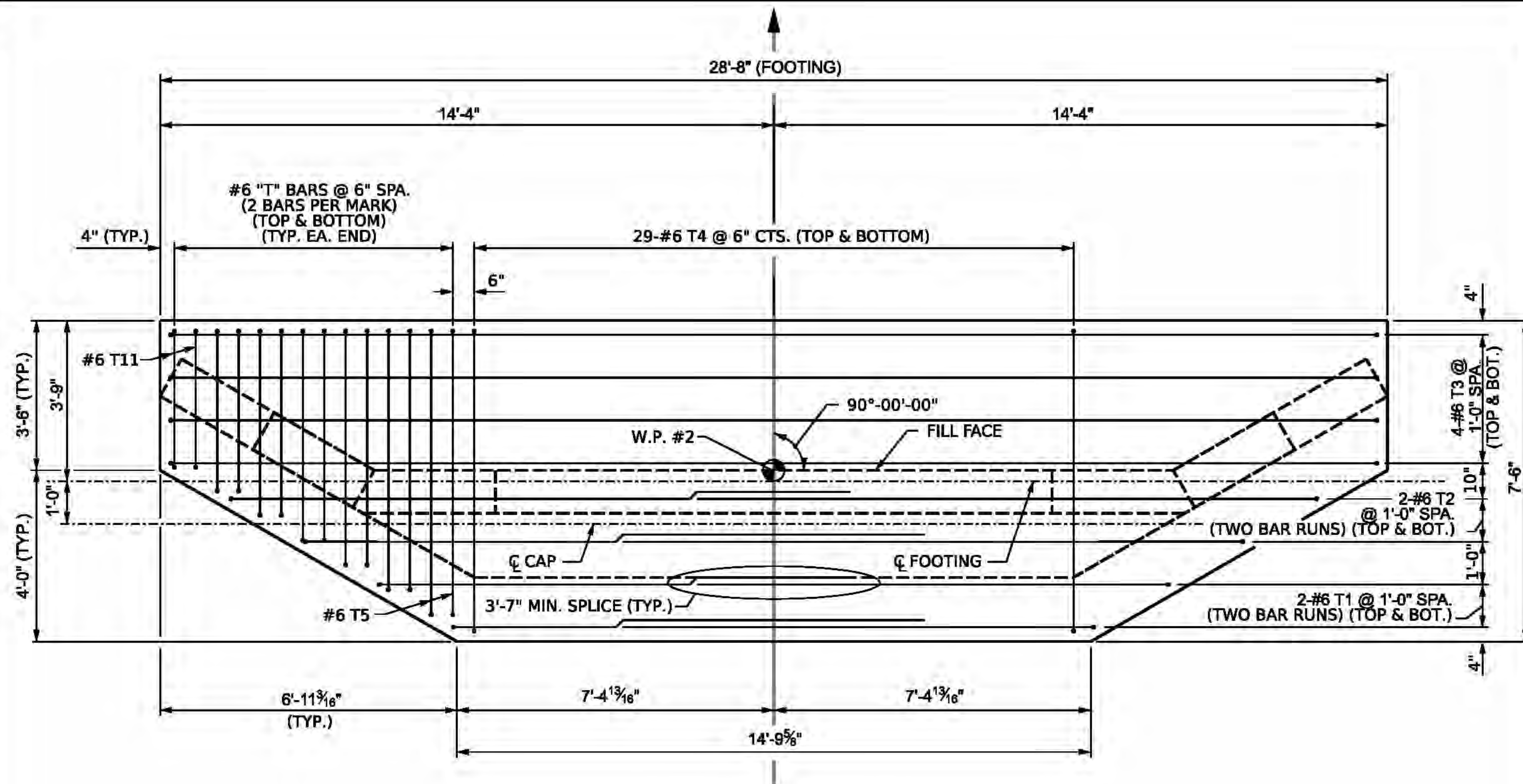
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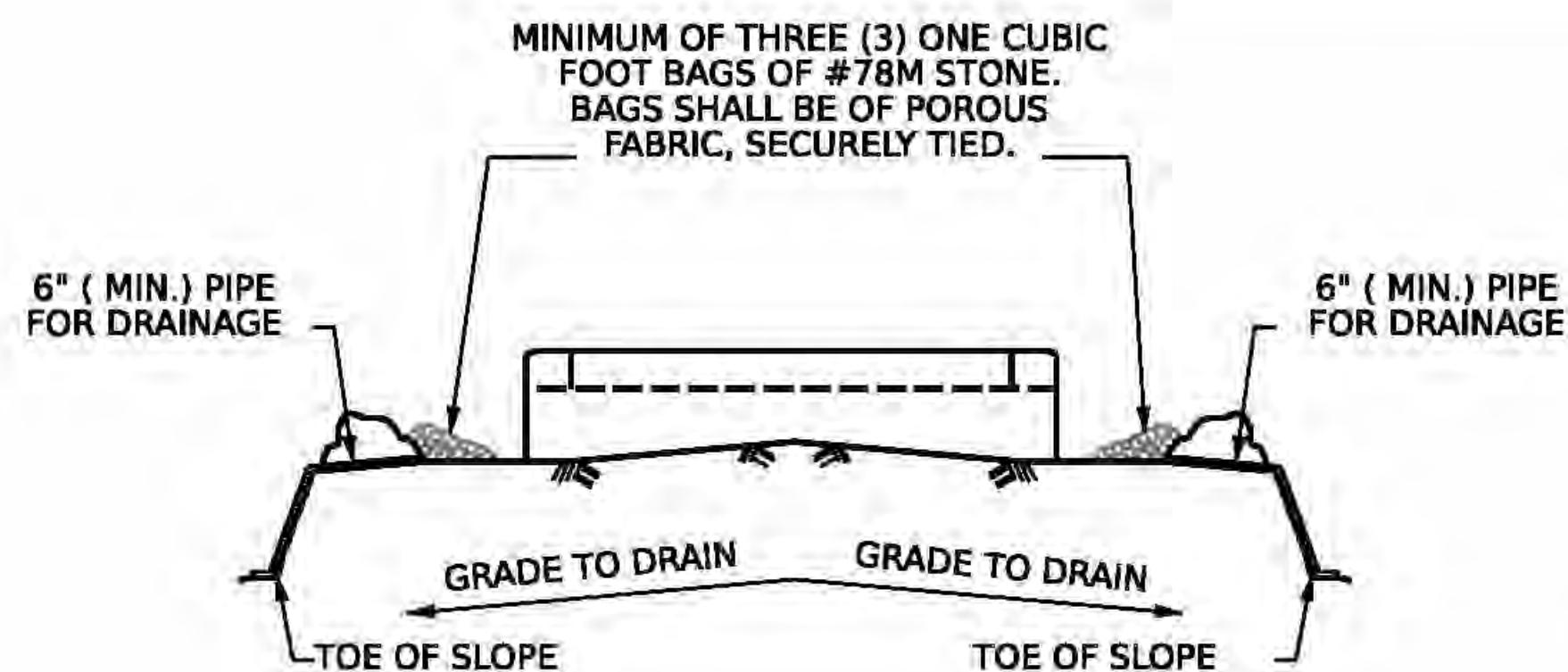


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PLAN OF FOOTING

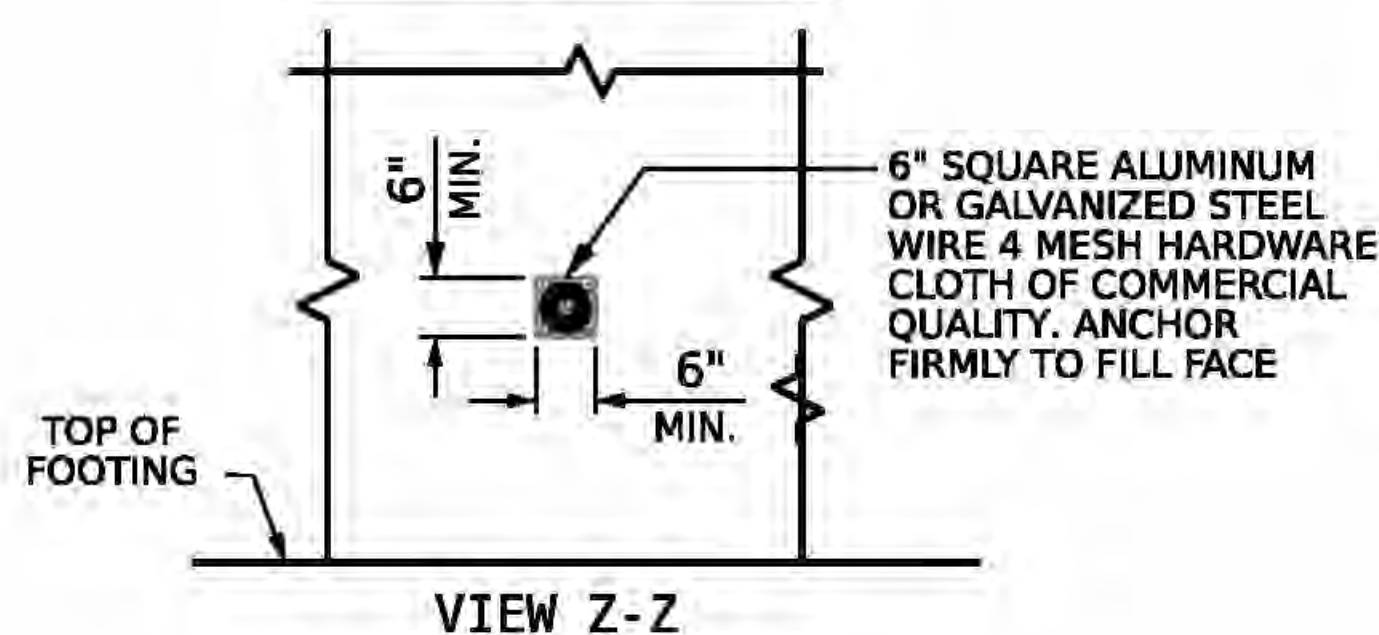
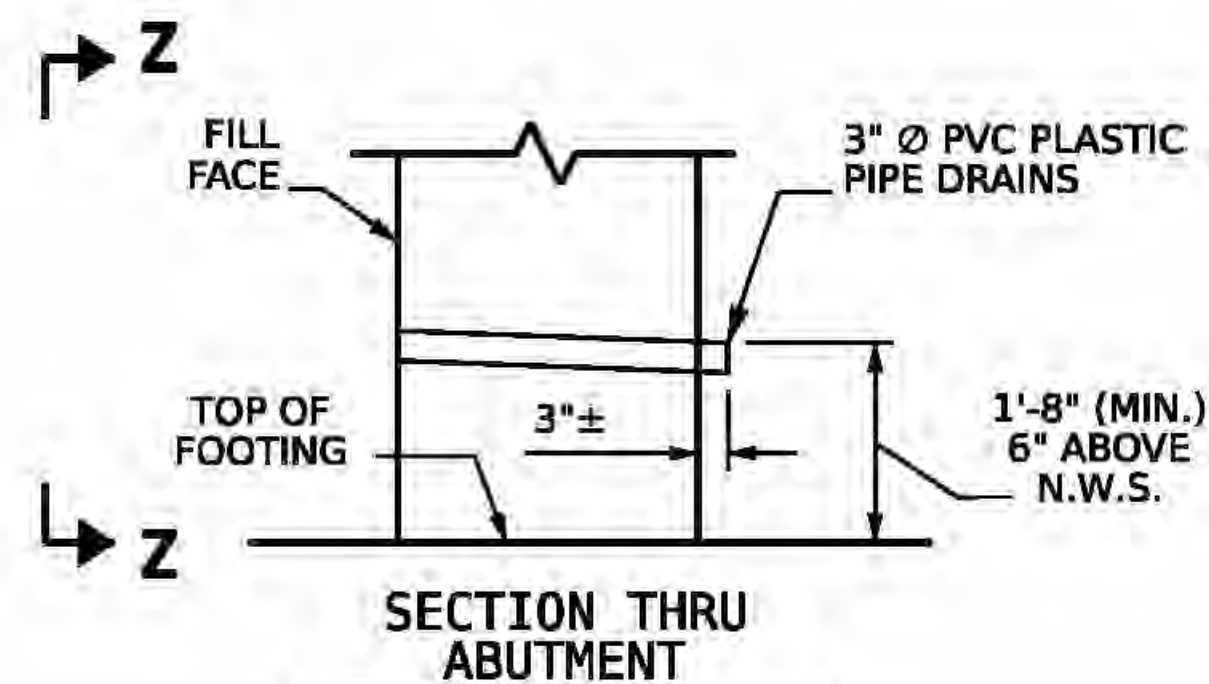


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

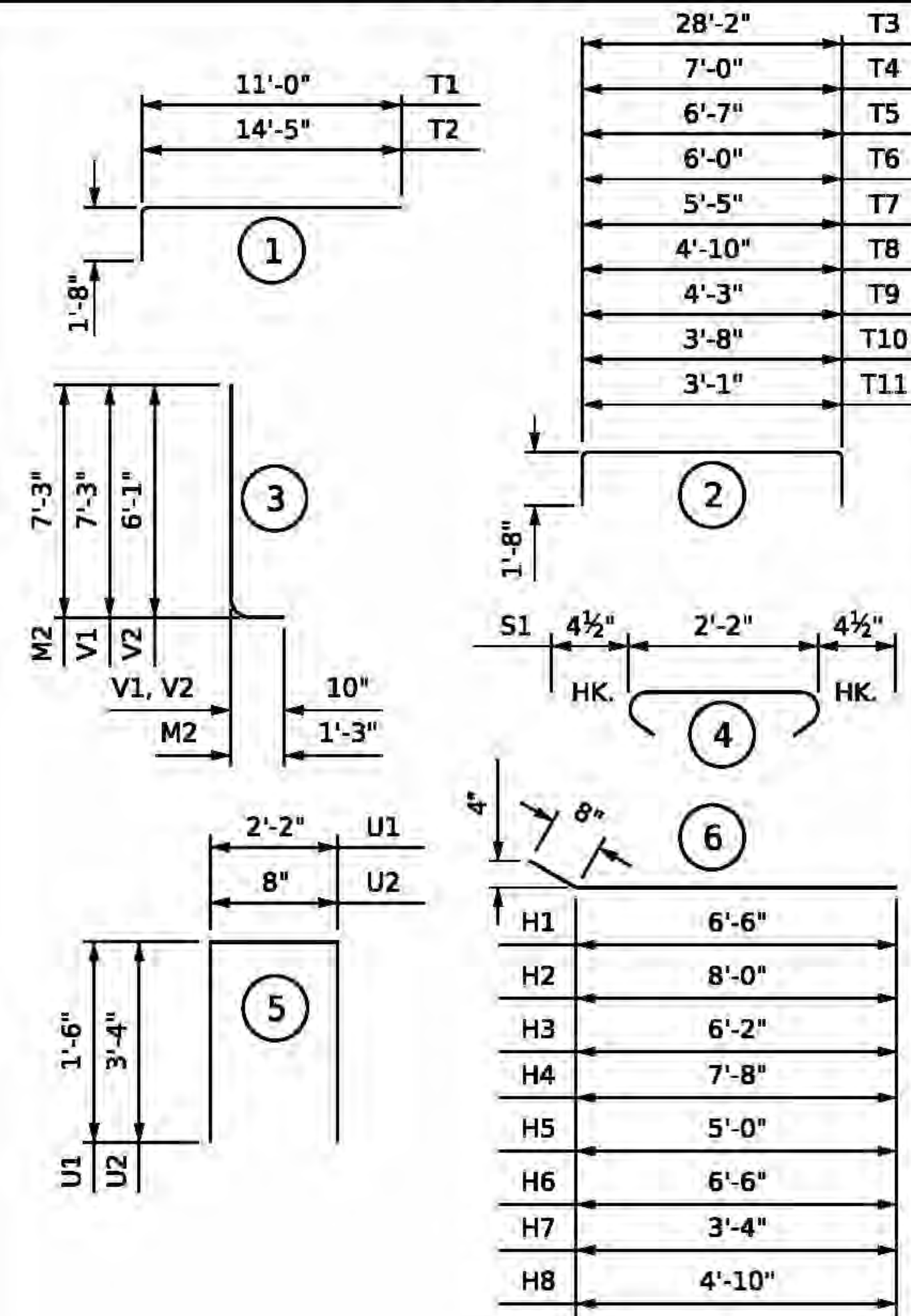
TEMPORARY DRAINAGE AT END BENT



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



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 ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" 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 ¼" 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 ⅞" Ø SHEAR STUDS FOR THE ¾" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞" Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾" Ø STUDS BASED ON THE RATIO OF 3 - ⅞"Ø STUDS FOR 4 - ¾" Ø 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 ⅝" 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 ⅛" 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.

VILLI

NC:DOI BURE SINGLE 0838/3 - I ASK 400 BANNER ELK - DUICH CREEK.GPJ NC DOI.GDI 10/27/25

VILLI 2

NC DOT BORE SINGLE 0838/3 - IASK 400 BANNER ELK - DUICH CREEK.GPJ NC_DOT.GDI 10/27/25

GEOTECHNICAL BORING REPORT

BORE LOG

SHEET 1

WBS 083873.01.D3EFE				TIP Task 400				COUNTY WATAUGA				GEOLOGIST J. Baskin			
SITE DESCRIPTION Task 400 - Replace Driveway Bridge over Dutch Creek on Dutch Creek Rd (SR 1134)												GROUND WTR (ft)			
BORING NO. EB1				STATION N/A				OFFSET N/A				ALIGNMENT N/A			
COLLAR ELEV. 3,030.2 ft				TOTAL DEPTH 18.8 ft				NORTHING 895,716				EASTING 1,175,852			
DRILL RIG/HAMMER EFF./DATE F&R7348 CME-750X 87% 12/20/2024								DRILL METHOD H.S. Augers				HAMMER TYPE Automatic			
DRILLER S. Davis				START DATE 10/09/25				COMP. DATE 10/09/25				SURFACE WATER DEPTH N/A			

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
3035																	
3030	3,030.2	0.0													3,030.2	GROUND SURFACE	0.0
			1	5	3									3,028.2	ARTIFICIAL FILL Brown, fine to cse. Sandy Silty CLAY (A-7) w/ trace gravel and roots	2.0	
3025	3,026.7	3.5	4	11	15												
3020	3,021.7	8.5	23	40	60											RESIDUAL Tan, fine to cse. Sandy Silty CLAY (A-6)	
3015	3,016.7	13.5	12	28	72/0.4										3,016.2	WEATHERED ROCK Weathered Rock (meta-siltstone)	14.0
	3,011.7	18.5													3,011.7		18.5
	3,011.5	18.7	60/0.0												3,011.4	CRYSTALLINE ROCK Crystalline Rock (meta-siltstone) Boring Terminated with Standard Penetration Test Refusal at Elevation 3,011.4 ft in Crystalline Rock (meta-siltstone)	18.8

GEOTECHNICAL BORING REPORT

BORE LOG

SHEET 2

WBS 083873.01.D3EFE				TIP Task 400				COUNTY WATAUGA				GEOLOGIST J. Baskin			
SITE DESCRIPTION Task 400 - Replace Driveway Bridge over Dutch Creek on Dutch Creek Rd (SR 1134)												GROUND WTR (ft)			
BORING NO. EB2				STATION N/A				OFFSET N/A				ALIGNMENT N/A		0 HR. 1.6	
COLLAR ELEV. 3,027.3 ft				TOTAL DEPTH 15.2 ft				NORTHING 895,745				EASTING 1,175,848		24 HR. FIAD	
DRILL RIG/HAMMER EFF./DATE F&R7348 CME-750X 87% 12/20/2024								DRILL METHOD H.S. Augers				HAMMER TYPE Automatic			
DRILLER S. Davis				START DATE 10/10/25				COMP. DATE 10/10/25				SURFACE WATER DEPTH N/A			

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
3030																
	3,027.3	0.0													GROUND SURFACE	0.0
3025	3,023.8	3.5	3	7	6	13								W	ALLUVIAL Brown, Silty fine to cse. SAND (A-1-b) w/ gravel	2.0
3020	3,018.8	8.5	22	16	7	23								W	RESIDUAL Tan, f. Sandy Silty CLAY (A-6) w/ rock fragments	7.0
3015	3,012.1	15.2	95	0.5	0.1										WEATHERED ROCK Weathered Rock (meta-siltstone)	
	3,012.1	15.2	60	0.0											CRYSTALLINE ROCK Crystalline Rock (meta-siltstone) Boring Terminated with Standard Penetration Test Refusal at Elevation 3,012.1 ft on Crystalline Rock (meta-siltstone)	15.2