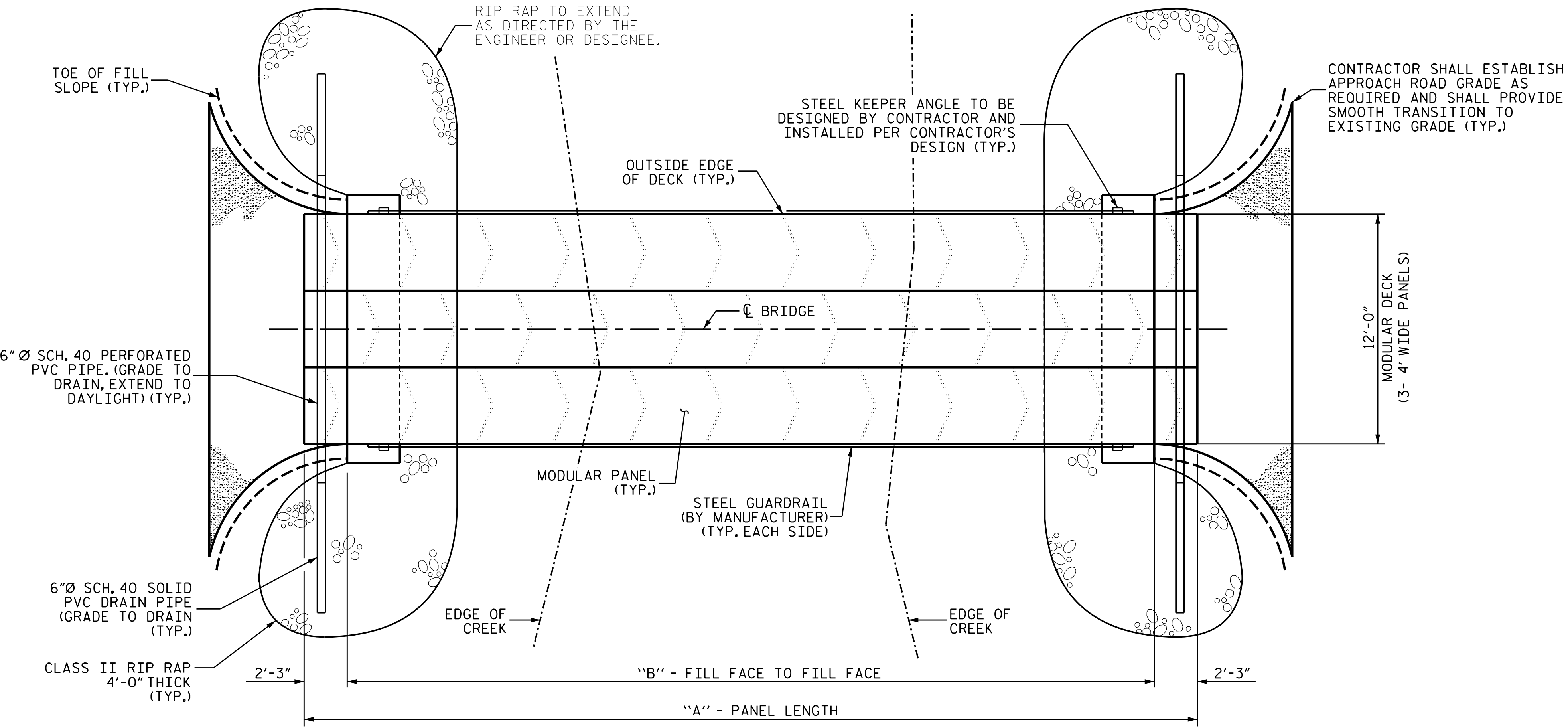


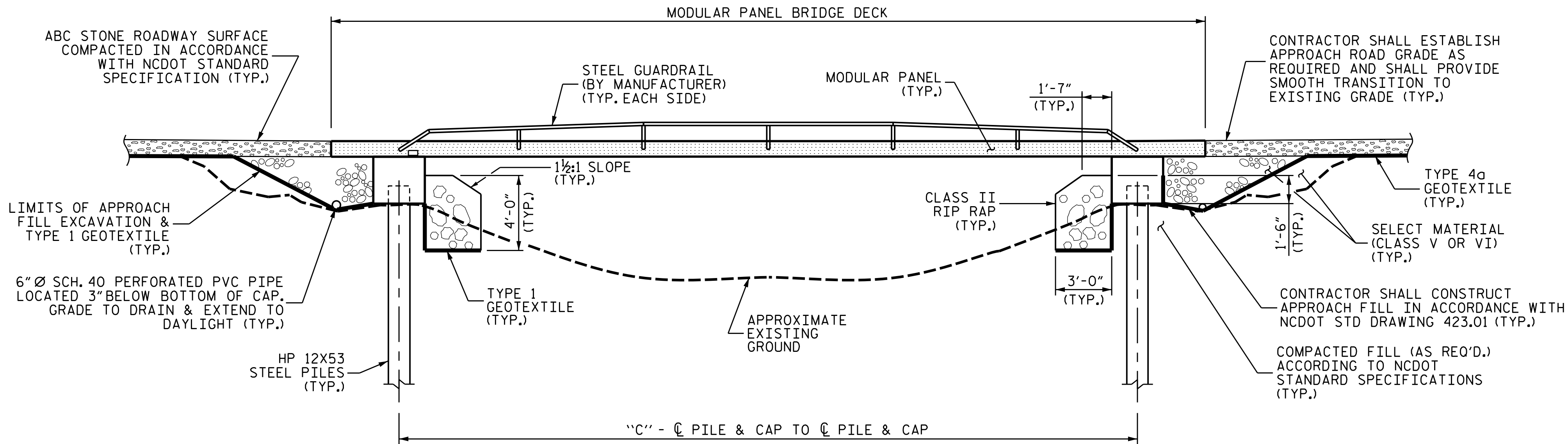
\\jc0101\proj\1\proj\paw\ben\figs\com\fig\2w-01\Documents\Projects\2025\25-00629\25-00629-001\Design\Structures\NC PRB-Panels\Bridges Standards\001-ME Bridge-General Drawing_Sldgn
DATE: 6/11/2026 TIME: 6:11:2026



BRIDGE PLAN

(FOUNDATION TYPE NOT SHOWN FOR CLARITY)

DIMENSIONS TABLE		
A	B	C
30'-0"	25'-6"	22'-9"
40'-0"	35'-6"	32'-9"
50'-0"	45'-6"	42'-9"
60'-0"	55'-6"	52'-9"



BRIDGE ELEVATION

(SHOWING DRIVEN 12X53 STEEL PILES FOUNDATION)

THE MODULAR BRIDGE SHALL BE POSITIONED TO PROVIDE A UNIFORM OVERHANG BEYOND THE FILL FACE OF EACH END BENT. THE OVERHANG SHALL BE SUPPORTED FULL LENGTH. THE CONTRACTOR SHALL PROVIDE A COMPACTED AGGREGATE BEARING SURFACE TO SUPPORT THE SUPERSTRUCTURE OVERHANG.

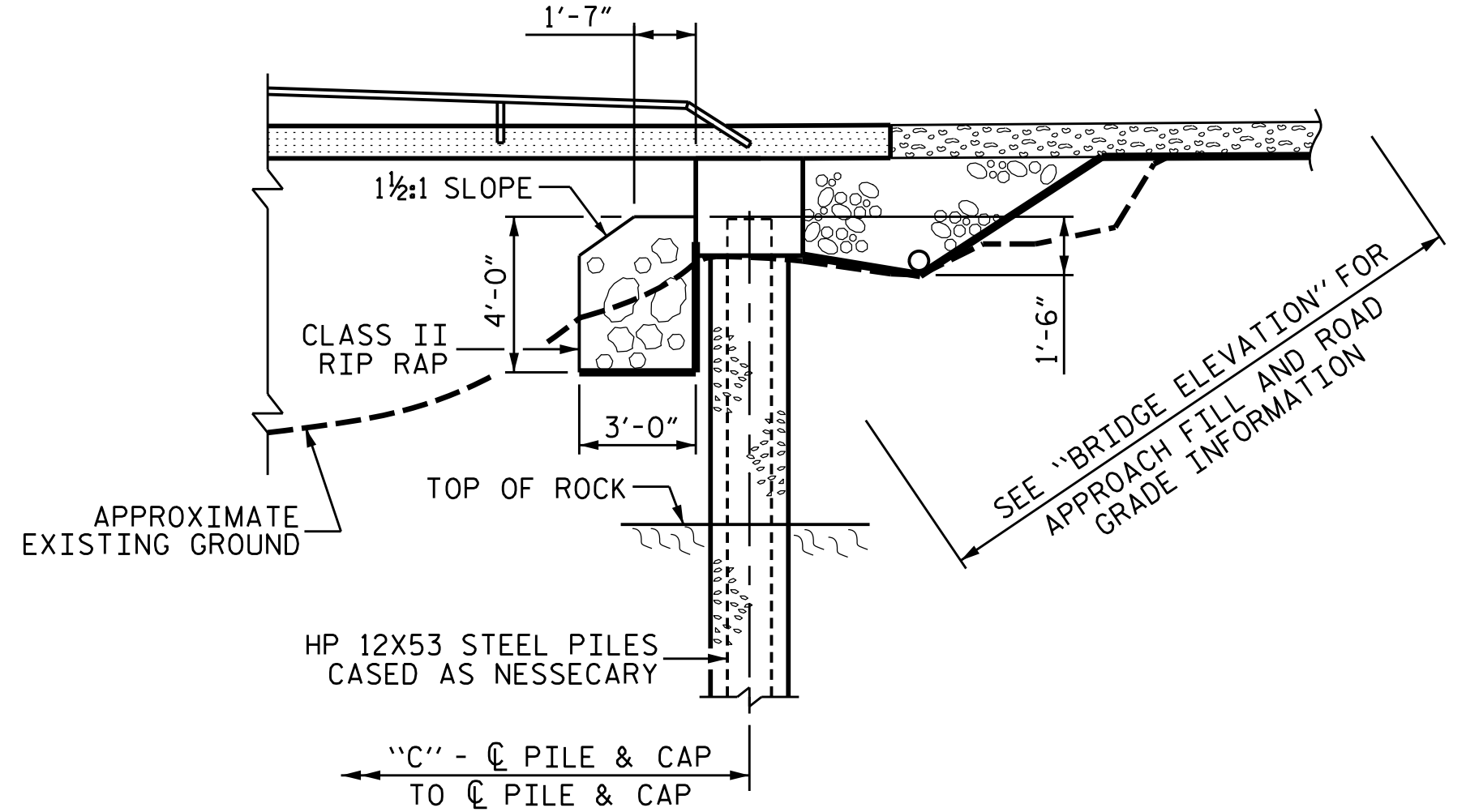
NOTES

CONTRACTOR SHALL LOCATE THE EXPANSION END OF THE SUPERSTRUCTURE ON THE "UPHILL" END OF THE BRIDGE. ONLY ONE EXPANSION END SHALL BE PERMITTED PER BRIDGE, WITH THE OPPOSITE END FUNCTIONING AS THE FIXED (RESTRAINED) END.

CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES, AS REQUIRED ACCORDING TO NCDOT STANDARD SPECIFICATIONS AND THE CONTRACT DOCUMENTS.

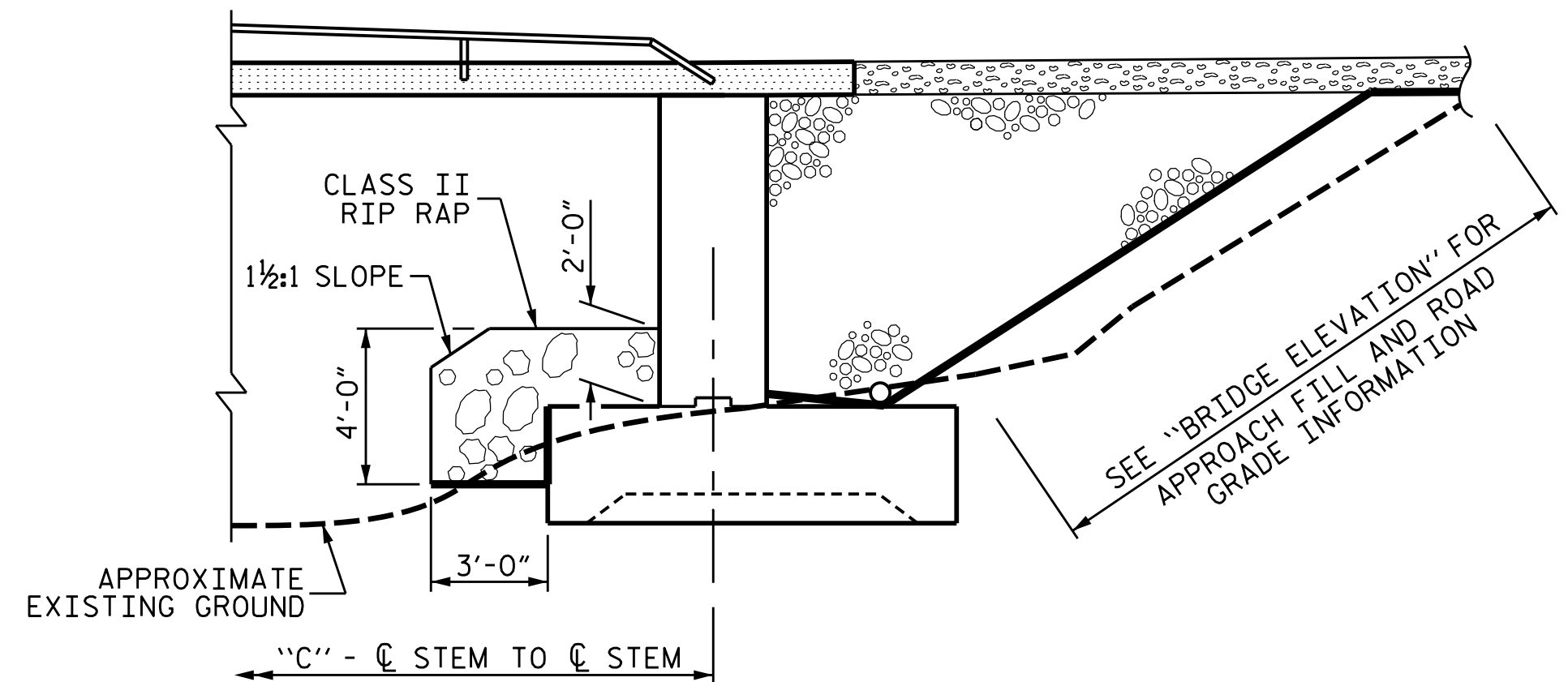
THE CONTRACTOR SHALL SET THE LOW-CHORD ELEVATION OF THE BRIDGE BASED ON EXISTING SITE CONDITIONS AND IN COORDINATION WITH THE ENGINEER, SUCH THAT THE NEW CROSSING PROVIDES CONVEYANCE GREATER THAN OR EQUAL TO THE ORIGINAL DESTROYED CROSSING. THE CONTRACTOR SHALL REFER TO THE BSR WHEN SETTING THE LOW-CHORD ELEVATION OF THE BRIDGE. NO CONSTRUCTION ACTIVITIES SHALL COMMENCE UNTIL ALL PARTIES HAVE AGREED UPON THE LOW-CHORD ELEVATION AND THE DATED PERMIT APPLICATION IS APPROVED.

MODULAR BRIDGE SUPERSTRUCTURE AND STEEL GUARDRAIL SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. FINAL DESIGN, LAYOUT, GEOMETRY, AND DETAILS SHALL BE DESIGNED BY THE CONTRATOR AS PART OF THE MODULAR BRIDGE SYSTEM. THE CONTRACTOR SHALL PROVIDE SEALED MODULAR BRIDGE PLANS PREPARED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER.



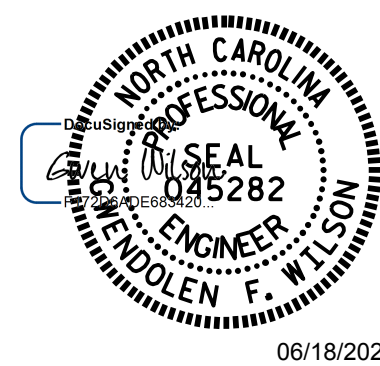
BRIDGE PARTIAL ELEVATION

(SHOWING DRILLED-IN 12X53 STEEL PILES FOUNDATION)



BRIDGE PARTIAL ELEVATION

(SHOWING SPREAD FOOTING FOUNDATION)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA OFFICE OF
EMERGENCY MANAGEMENT

PRIVATE DRIVEWAY BRIDGE STANDARDS

MODULAR PANEL BRIDGE

GENERAL DRAWING
DRIVEN PILES

REVISIONS

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

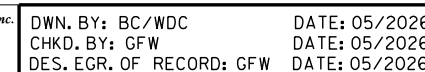
SHEET NO.
S-01
TOTAL
SHEETS
6



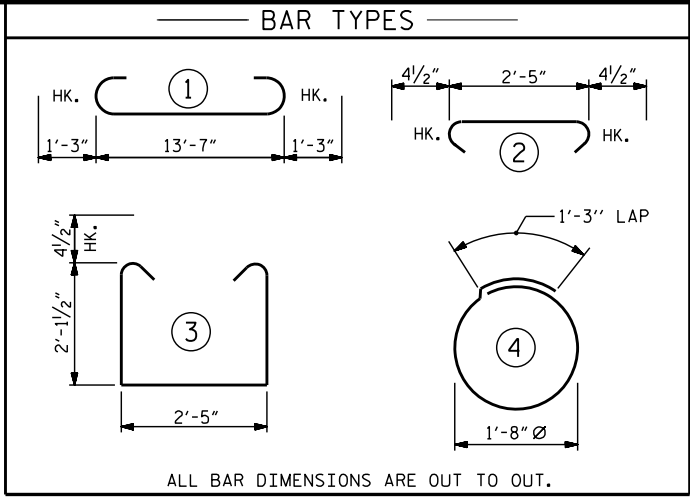
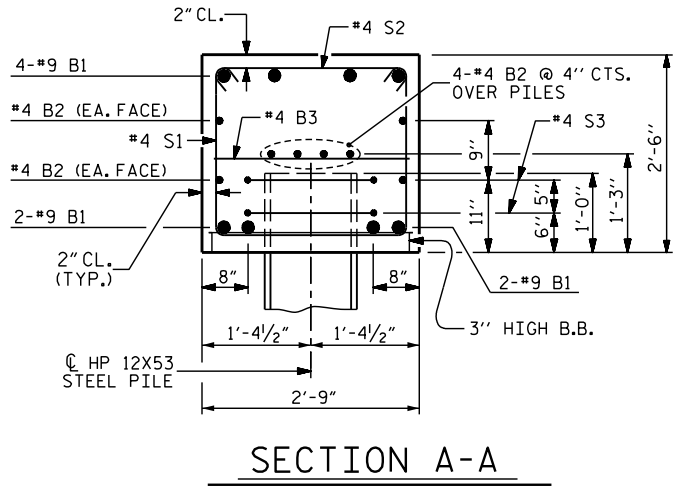
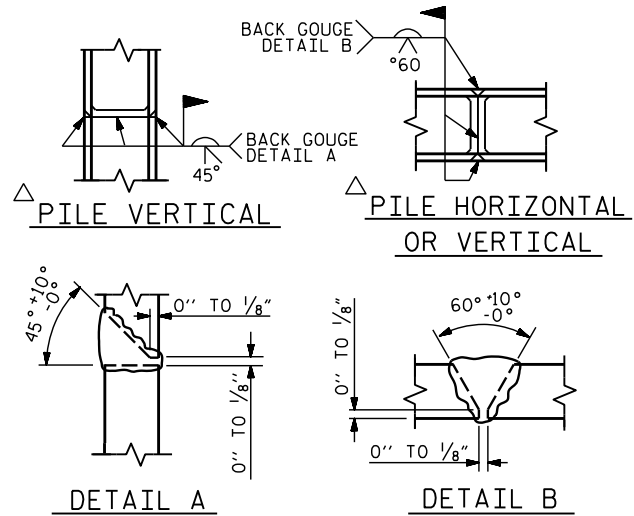
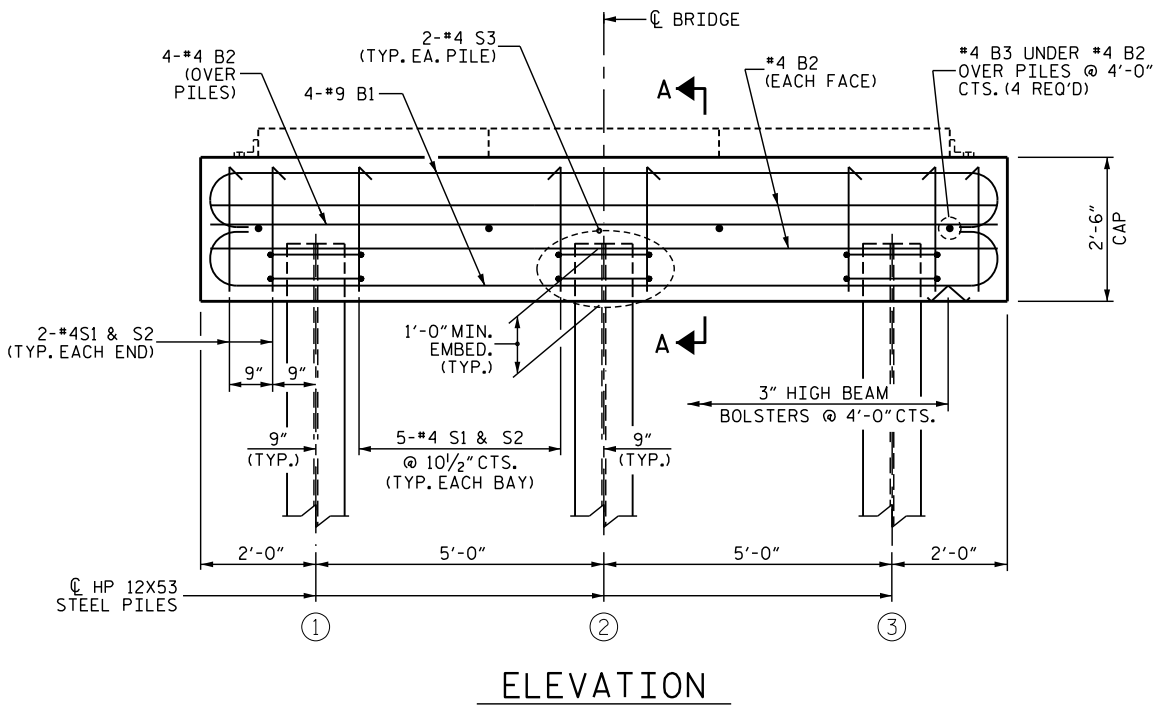
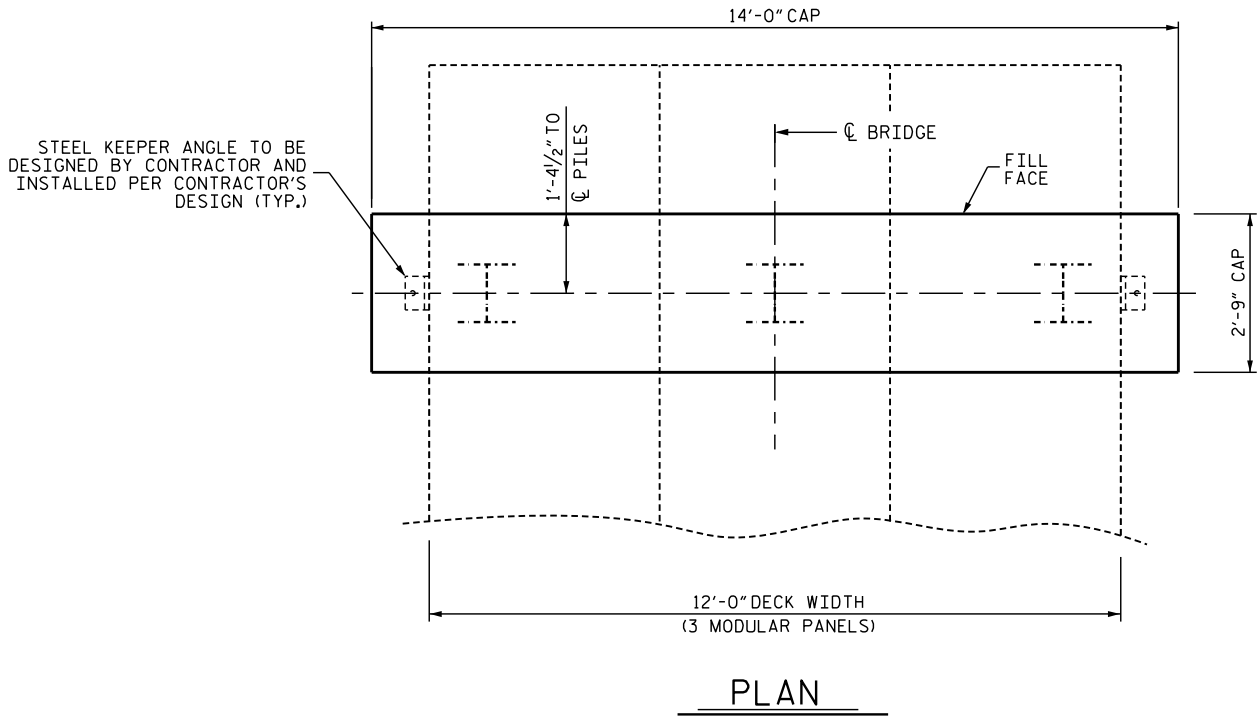
Johnson, Mirmiran, & Thompson Inc.
108 Asheville Commerce Parkway
Candler, NC, 28715
License No: C-3097

DWN. BY: BC/WDC
CHKD. BY: CFW
DES. EGR. OF RECORD: GFW

DATE: 05/2026
DATE: 05/2026
DATE: 05/2026



\\pwworking.com\\jmt\\dwg\\01\\Documents\\Projects\\2025\\25-00529\\25-00529-001\\Design\\Structures\\NC PRB-Panel Bridge Standards 003-ME Bridge_End Bent_Driven Piles.dwg
DATE: 6/2/2026
TIME: 6/2/2026



BILL OF MATERIAL FOR ONE END BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		16'-1"	437
B2	8	#4	STR	13'-8"	73
B3	4	#4	STR	2'-5"	7
S1	14	#4	3	7'-5"	69
S2	14	#4	2	3'-2"	30
S3	6	#4	4	6'-6"	26
REINFORCING STEEL (FOR ONE END BENT)					642 LBS.
CLASS A CONCRETE (FOR ONE END BENT)					3.6 C.Y.

GENERAL NOTES

CONTRACTOR SHALL SLOPE TOP OF CAP TO MATCH
LONGITUDINAL GRADE OF THE BRIDGE. SLOPES SHALL
MATCH ON BOTH END BENT 1 AND END BENT 2 CAPS.

MODULAR BRIDGE SUPERSTRUCTURE SHOWN IS SCHEMATIC ONLY.
ACTUAL MODULAR BRIDGE SYSTEM CONFIGURATION AND MEMBER
SIZING SHALL BE DETERMINED BY THE CONTRACTOR TO MEET
THE SPECIFIED DESIGN LOADS.

FOUNDATION NOTES

DRIVEN PILES

INSTALL PILES IN ACCORDANCE WITH SECTION 450 OF THE
STANDARD SPECIFICATIONS.

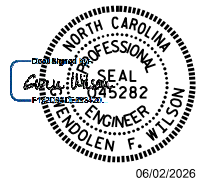
DO NOT INSTALL PILES UNTIL FILL HAS BEEN PLACED.

DRIVE PILES TO A MINIMUM PENETRATION OF AT LEAST 10'-0"
INTO NATURAL GROUND OR CHANNEL BOTTOM.

DRIVE ALL PILES TO REFUSAL BELOW MINIMUM PENETRATION.

PREDRILLING OR SPUDDING MAY BE REQUIRED TO ACHIEVE THE
MINIMUM PILE PENETRATION.

SUBMIT THE PROPOSED PILE DRIVING METHODS AND EQUIPMENT
FOR ACCEPTANCE BY THE ENGINEER.



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

NORTH CAROLINA OFFICE OF
EMERGENCY MANAGEMENT

PRIVATE DRIVEWAY
BRIDGE STANDARDS

MODULAR PANEL BRIDGE

END BENT
DRIVEN PILES

REVISIONS

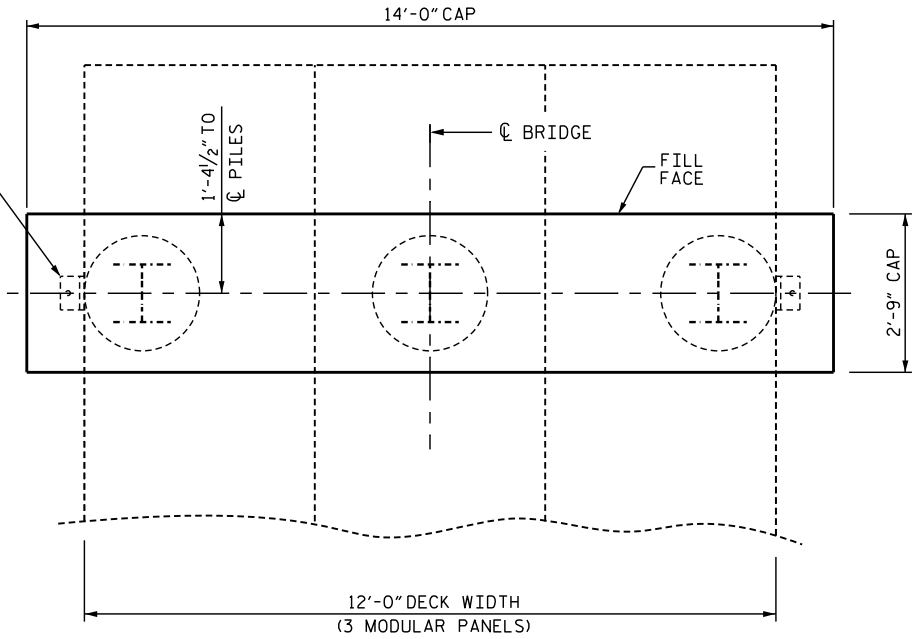
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-03
2			4			TOTAL SHEETS 6

JMT Johnson, Mirmiran, & Thompson Inc.
108 Asheville Commerce Parkway
Candler, NC, 28715
License No: C-3097

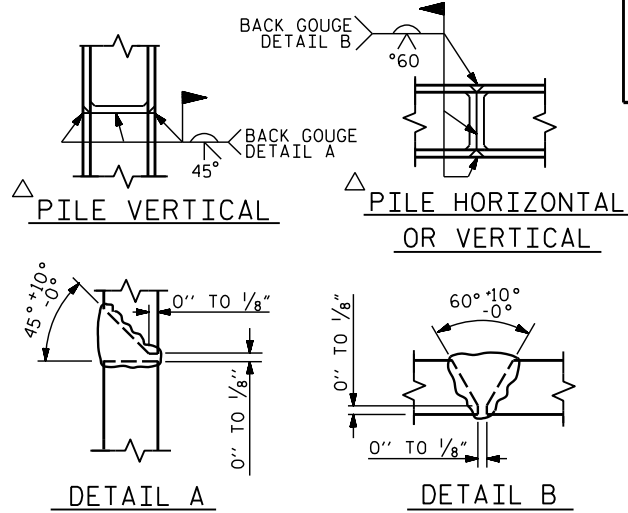
DWN. BY: BC/WDC
CHKD. BY: CFW
DES. EGR. OF RECORD: GFW

DATE: 05/2026
DATE: 05/2026
DATE: 05/2026

STEEL KEEPER ANGLE TO BE
DESIGNED BY CONTRACTOR
AND INSTALLED PER
CONTRACTOR'S DESIGN
(TYP.)

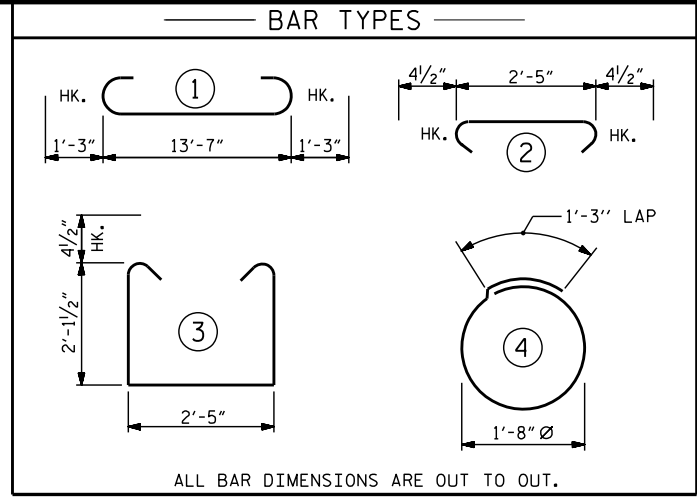


PLAN



PILE SPLICE DETAILS

△ POSITION OF PILE DURING WELDING.



BILL OF MATERIAL

FOR ONE END BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	16'-1"	437
B2	8	#4	STR	13'-8"	73
B3	4	#4	STR	2'-5"	7
S1	14	#4	3	7'-5"	69
S2	14	#4	2	3'-2"	30
S3	6	#4	4	6'-6"	26

REINFORCING STEEL
(FOR ONE END BENT)

642 LBS.

CLASS A CONCRETE
(FOR ONE END BENT)

3.6 C.Y.

GENERAL NOTES

CONTRACTOR SHALL SLOPE TOP OF CAP TO MATCH
LONGITUDINAL GRADE OF THE BRIDGE. SLOPES SHALL
MATCH ON BOTH END BENT 1 AND END BENT 2 CAPS.

MODULAR BRIDGE SUPERSTRUCTURE SHOWN IS SCHEMATIC ONLY.
ACTUAL MODULAR BRIDGE SYSTEM CONFIGURATION AND MEMBER
SIZING SHALL BE DETERMINED BY THE CONTRACTOR TO MEET
THE SPECIFIED DESIGN LOADS.

FOUNDATION NOTES

DRILLED-IN PILES

ROCK QUALITY DESIGNATION (ROD)
GEOLOGICAL STRENGTH INDEX (GSI)

INSTALL DRILLED-IN PILES IN ACCORDANCE WITH SECTION
450 OF THE STANDARD SPECIFICATIONS.

MINIMUM PILE PENETRATION OF 10-FT INTO NATURAL GROUND
OR CHANNEL BOTTOM IS REQUIRED.

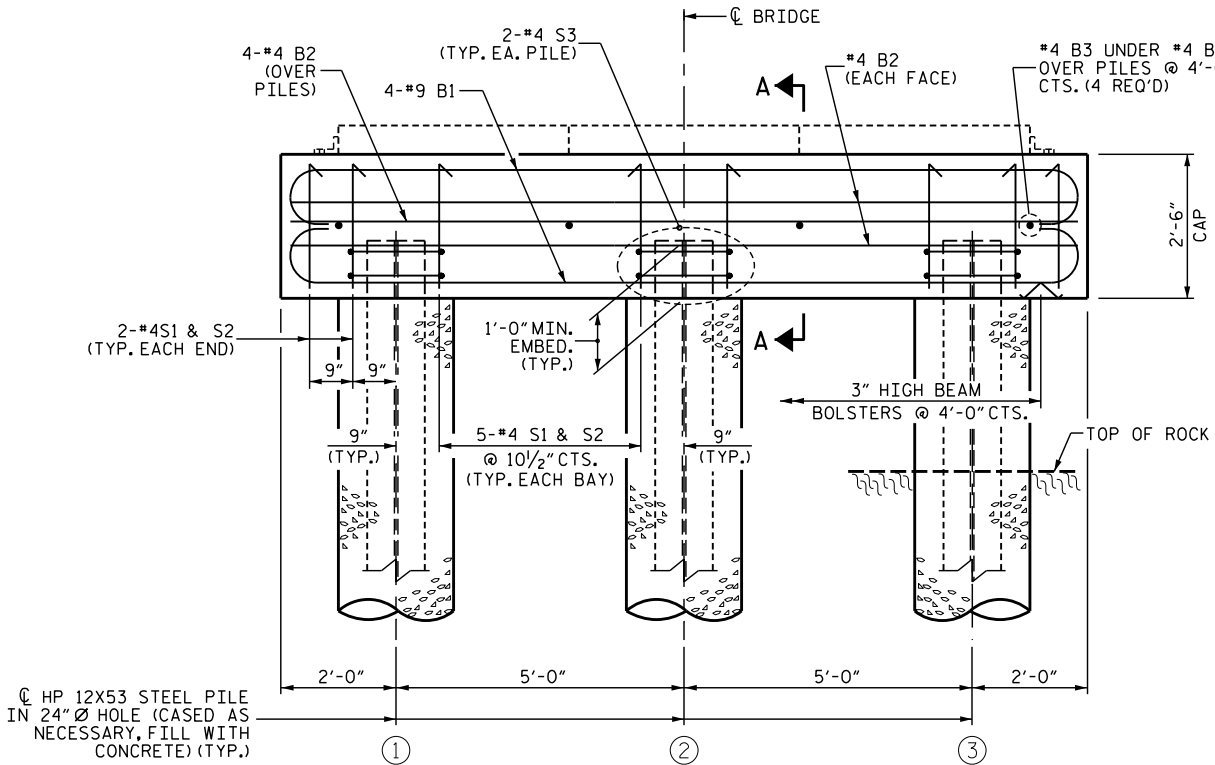
MINIMUM ROCK SOCKET DEPTHS, UNLESS OTHERWISE INDICATED
ON PROJECT SPECIFIC DATA SHEET:

4'-0" MINIMUM (ROD >70, GSI >50)
6'-0" MINIMUM (ROD 30-70, GSI 30-50)
8'-0" MINIMUM (ROD <30, GSI <30)

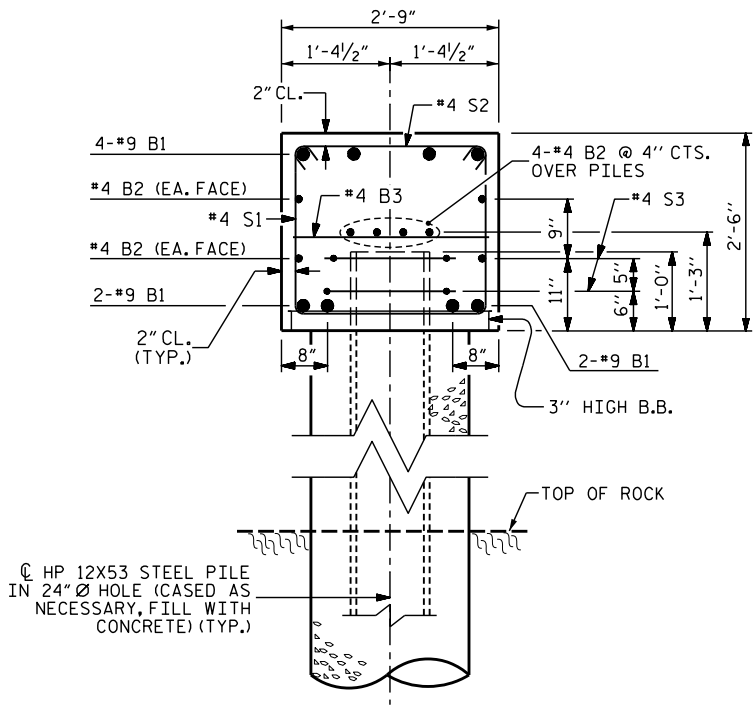
REFER TO BORING LOGS FOR ROD AND GSI DATA.

PILES SHALL BE SEATED IN THE BOTTOM OF THE EXCAVATION.
PILE DRIVING IS NOT REQUIRED.

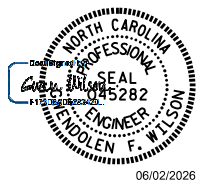
BACKFILL WITH CONCRETE ONLY. DO NOT PROCEED WITH
CONSTRUCTION ACTIVITIES UNTIL THE 28 DAY STRENGTH IS
ACHIEVED.



ELEVATION



SECTION A-A



06/02/2026

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

NORTH CAROLINA OFFICE OF
EMERGENCY MANAGEMENT

PRIVATE DRIVEWAY
BRIDGE STANDARDS

MODULAR PANEL BRIDGE

END BENT
DRILLED IN PILES

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-04
2			4			TOTAL SHEETS 6



Johnson, Mirmiran, & Thompson Inc.
108 Asheville Commerce Parkway
Candler, NC, 28715
License No: C-3097

DWN. BY: BC/WDC
CHKD. BY: CFW
DES. EGR. OF RECORD: GFW

DATE: 05/2026
DATE: 05/2026
DATE: 05/2026

GENERAL NOTES

CONTRACTOR SHALL SLOPE TOP OF CAP TO MATCH LONGITUDINAL GRADE OF THE BRIDGE. SLOPES SHALL MATCH ON BOTH END BENT 1 AND END BENT 2 CAPS.

THE FINAL STEM WALL HEIGHT SHALL BE DETERMINED IN THE FIELD BASED ON EXISTING ROCK ELEVATIONS. THE STEM WALL HEIGHT SHALL NOT BE LESS THAN 3'-0" OR GREATER THAN 8'-0.

STEM WALL REINFORCEMENT AND DETAILS ARE BASED ON A MAXIMUM STEM WALL HEIGHT OF 8'-0". THE CONTRACTOR SHALL ADJUST THE HORIZONTAL REINFORCEMENT LAYOUT TO ACCOMMODATE FIELD-VERIFIED STEM WALL HEIGHTS WHILE MAINTAINING REBAR SIZES, SPACING, LAP LENGTHS, AND THE OVERALL REINFORCING CONFIGURATION SHOWN IN THE STRUCTURAL PLANS AND DETAILS.

MODULAR BRIDGE SUPERSTRUCTURE SHOWN IS SCHEMATIC ONLY. ACTUAL MODULAR BRIDGE SYSTEM CONFIGURATION AND MEMBER SIZING SHALL BE DETERMINED BY THE CONTRACTOR TO MEET THE SPECIFIED DESIGN LOADS.

FOUNDATION NOTES

SPREAD FOOTING

FOUNDATION EXCAVATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SECTION 410 OF THE STANDARD SPECIFICATIONS.

A GEOTECHNICAL ENGINEER LICENSED IN THE STATE OF NORTH CAROLINA SHALL OBSERVE THE BEARING SURFACE AND CONFIRM THE FOOTING IS CONSTRUCTED ON ROCK. THE ENGINEER SHALL PROVIDE A LETTER VERIFYING ACCEPTANCE OF THE BEARING SURFACE.

CLEAN ALL ROCK OF LOOSE MATERIAL AND CUT TO A FIRM SURFACE, AS DIRECTED BY THE ENGINEER AND FILL WITH CONCRETE, MORTAR OR GROUT. LEAVE ROCK SURFACE IN A ROUGH CONDITION.

BEARING SURFACE MUST RESIST A MAXIMUM APPLIED BEARING PRESSURE OF 3.0 TSF.

KEY IN FOOTINGS AT LEAST 1 FT INTO ROCK.

**BILL OF MATERIAL

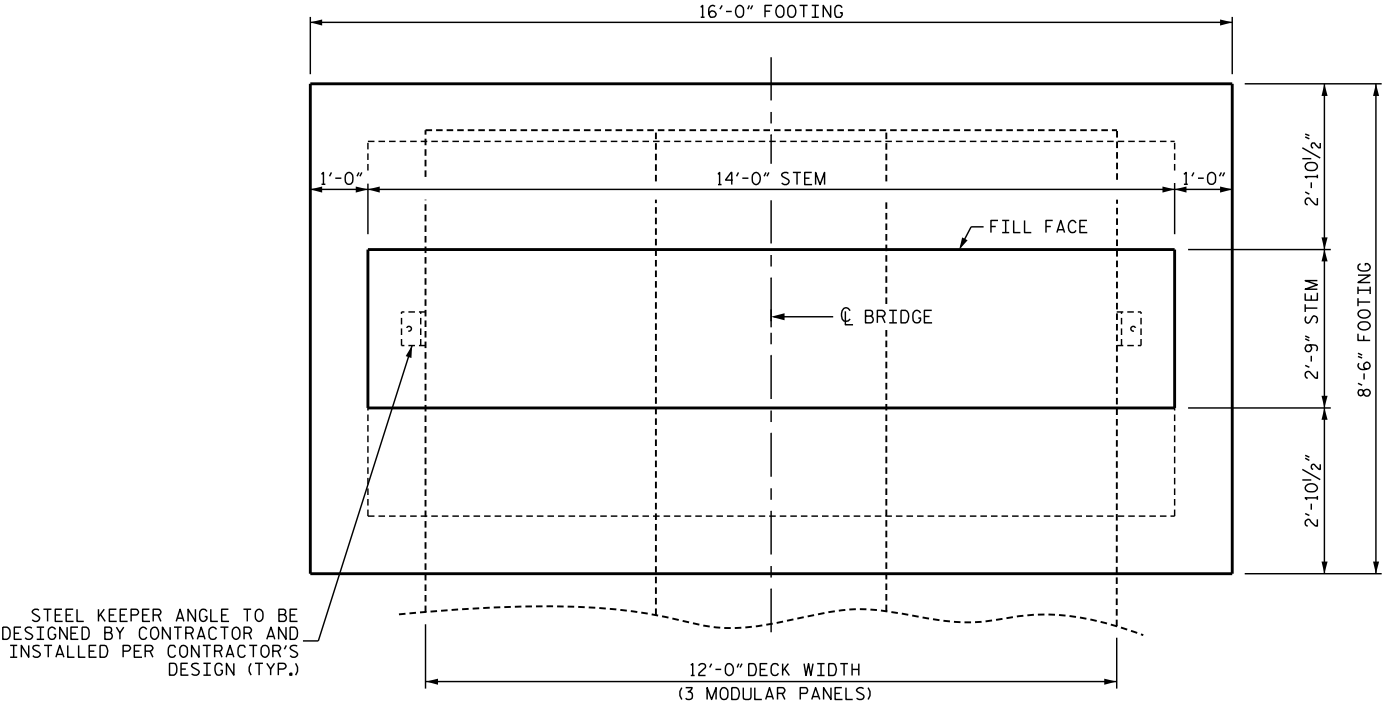
FOR ONE END BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	16	#4	STR	13'-8"	146
B2	4	#9	STR	13'-8"	186
M1	56	#8	3	10'-5"	1,558
M2	4	#5	STR	7'-6"	31
T1	18	#5	1	16'-8"	313
T2	16	#5	1	9'-2"	153
T3	16	#8	1	9'-10"	420
U1	30	#4	2	8'-1"	162
V1	50	#4	4	6'-7"	220
REINFORCING STEEL					3,189 LBS.

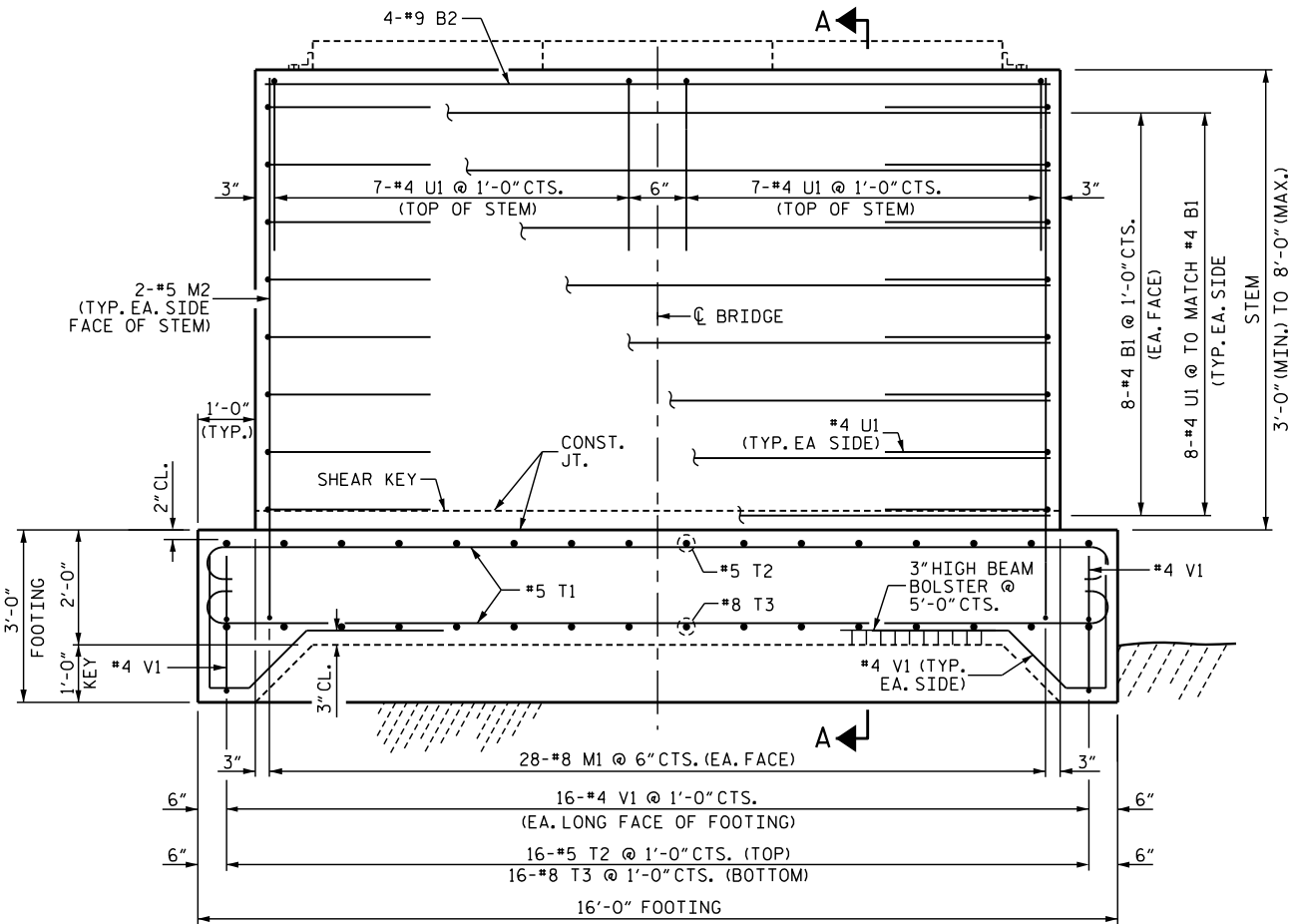
CLASS A CONCRETE BREAKDOWN

POUR #1	FOOTING	12.7 C.Y.
POUR #2	END BENT STEM	11.4 C.Y.
TOTAL		24.1 C.Y.

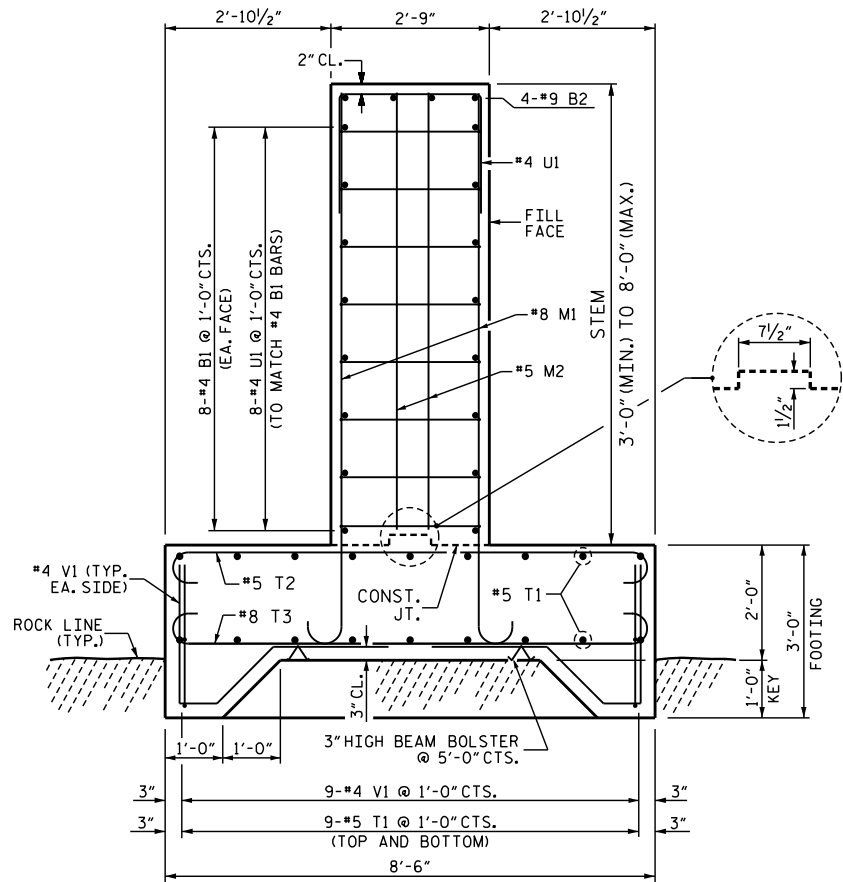
** THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE QUANTITIES AND REINFORCING BARS SHOWN IN THE BILL OF MATERIAL ARE BASED ON AN 8'-0" MAXIMUM STEM WALL HEIGHT. THE CONTRACTOR IS RESPONSIBLE FOR THE FINAL QUANTITIES BASED ON THE ACTUAL STEM WALL HEIGHT.



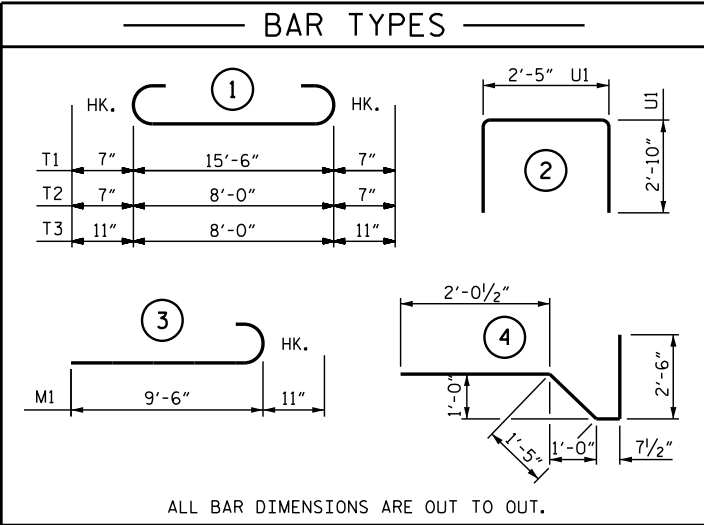
PLAN



ELEVATION



SECTION A-A



ALL BAR DIMENSIONS ARE OUT TO OUT.



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA OFFICE OF
EMERGENCY MANAGEMENT
PRIVATE DRIVEWAY
BRIDGE STANDARDS
MODULAR PANEL BRIDGE

END BENT
SPREAD FOOTING

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-05
2			4			TOTAL SHEETS 6

JMT Johnson, Mirmiran, & Thompson Inc.
108 Asheville Commerce Parkway
Candler, NC, 28715
License No: C-3097

DWN. BY: BC/WDC
CHKD. BY: CFW
DES. EGR. OF RECORD: GFW
DATE: 05/2026
DATE: 05/2026
DATE: 05/2026

STRUCTURAL STEEL / HARDWARE NOTES:

THE MODULAR BRIDGE SUPERSTRUCTURE SHALL BE PROVIDED AND DESIGNED BY THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE SEALED MODULAR BRIDGE PLANS PREPARED BY A LICENSED PROFESSIONAL ENGINEER.

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50 AND PAINTED IN ACCORDANCE WITH SYSTEM 1 OR GALVANIZED OF THE STRUCTURAL STEEL SHOP COATING PROGRAM AND ARTICLE 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

COATING APPLICATION FOR MODULAR BRIDGE STRUCTURAL STEEL SHALL NOT BE PERFORMED UNTIL SHOP FABRICATION INCLUDING CUTTING, DRILLING AND WELDING HAS BEEN COMPLETED.

HARDWARE FOR THE MODULAR BRIDGE SUPERSTRUCTURE SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATION, UNLESS OTHERWISE NOTED ON THE PLANS.

DAMAGED GALVANIZED SURFACES FOR THE MODULAR BRIDGE SUPERSTRUCTURE SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS ARTICLE 1076-77.

DAMAGED PAINTED SURFACES FOR THE MODULAR BRIDGE SUPERSTRUCTURE SHALL BE REPAIRED IN ACCORDANCE WITH SECTION 442 OF THE STANDARD SPECIFICATIONS.

DESIGN LOADS:

LIVE LOAD:

TRUCK LOAD:

THIS BRIDGE WAS DESIGNED FOR:

HS20
GVWR = 72,000 LBS
NUMBER OF AXLES: 3
AXLE WEIGHTS:
GAWR FRONT = 8,000 LBS
GAWR INTERMEDIATE = 32,000 LBS
GAWR REAR = 32,000 LBS

EV2
GVWR = 57,500 LBS
NUMBER OF AXLES: 2
AXLE WEIGHTS:
GAWR FRONT = 24,000 LBS
GAWR REAR = 33,500 LBS

EV3
GVWR = 86,000 LBS
NUMBER OF AXLES: 3
AXLE WEIGHTS:
GAWR FRONT = 24,000 LBS
GAWR INTERMEDIATE = 31,000 LBS
GAWR REAR = 31,000 LBS

LIVE LOAD FACTORS:

HS-20 = 1.75
EV2 = 1.3
EV3 = 1.3

LIVE LOAD FACTORS LOAD RATING:

HS-20 = 1.35
EV2 = 1.0
EV3 = 1.0

MULTIPLE PRESENCE FACTOR:

MPF = 1.0

LANE LOAD:

NO LANE LOAD WAS APPLIED.

IMPACT:

DYNAMIC IMPACT FACTOR IS 33%.

DESIGN ASSUMPTIONS/PARAMETERS:

BRIDGE IS SINGLE SPAN.

BRIDGE WIDTH = 12'-11" OUT TO OUT.

GENERAL NOTES:

THE SUBSTRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) "STRUCTURES MANAGEMENT UNIT MANUAL", DATED 6/15/23, AND THE AASHTO "LRFD BRIDGE DESIGN SPECIFICATIONS", 9th EDITION.

THE MODULAR BRIDGE SUPERSTRUCTURE SHALL BE DESIGNED BY THE CONTRACTOR IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, INCLUDING THE GEOMETRY AND REQUIREMENTS SHOWN IN THE PLANS. DESIGN OF SUPERSTRUCTURE IS NOT INCLUDED IN THESE PLANS.

THESE DRAWINGS ARE INTENDED ONLY FOR FOR THE DESIGN AND CONSTRUCTION OF THE BRIDGE SUBSTRUTURE AND FOR THE INSTALLATION OF CONTRACTOR-SUPPLIED SINGLE-SPAN MODULAR BRIDGE SUPERSTRUCTURE FOR PRIVATE DRIVEWAYS IN COUNTIES AS LISTED IN THE CONTRACT DOCUMENTS BY NORTH CAROLINA OFFICE OF EMERGENCY MANAGEMENT IN RESPONSE TO THE DAME CAUSED BY HURRICANE HELENE.

BRIDGE CONSTRUCTION, WORKMANSHIP, AND MATERIALS FOR THE SUBSTRUCTURE SHALL BE IN ACCORDANCE WITH THE NCDOT "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES", 2024 EDITION.

WORK ASSOCIATED WITH THE MODULAR BRIDGE SUPERSTRUCTURE SHALL BE IN ACCORDANCE WITH THE CONTRACTOR'S DESIGN AND APPLICABLE SPECIFICATIONS.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

IT IS ASSUMED THAT THERE ARE NO UTILITY CONFLICTS. THE CONTRACTOR SHALL INVESTIGATE THE PRESENCE OF UTILITIES BEFORE COMMENCING WORK.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.

CONTRACTOR SHALL SET BRIDGE ELEVATIONS SUCH THAT WATER WILL DRAIN AND NOT POND ON THE BRIDGE DECK AND MINIMUM LONGITUDINAL GRADE SHALL BE 0.5% AND MAXIMUM GRADE SHALL BE 6%.
FOR PILE-SUPPORTED END BENTS, PLACE APPROACH EMBANKMENT (CORE MATERIAL) PRIOR TO PILE INSTALLATION.

THIS BRIDGE HAS BEEN DESIGNED FOR ADTT < 100.

EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON SHEET EC-01 ARE FOR GENERAL GUIDANCE ONLY AND REPRESENT MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL REQUIRED EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, CONTRACT DOCUMENTS, AND APPLICABLE REGULATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MODIFYING THESE MEASURES AND PROVIDING ANY ADDITIONAL DEVICES NECESSARY TO ACCOUNT FOR ACTUAL SITE CONDITIONS, INCLUDING GROUNDWATER CONDITIONS AND WEATHER EVENTS, AND TO PREVENT SEDIMENT FROM LEAVING THE PROJECT SITE.

ALL REFERENCES WITHIN THESE PLANS TO "STANDARD SPECIFICATIONS" OR "NCDOT SPECIFICATIONS" SHALL BE GOVERNED BY THE NCDOT "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024.

TRAFFIC CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, INCLUDING THE SPECIAL PROVISIONS, AND IN CONFORMANCE WITH THE NCDOT STANDARD SPECIFICATIONS, NCDOT ROADWAY STANDARD DRAWINGS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING, INSTALLING, AND MAINTAINING ALL TRAFFIC CONTROL DEVICES NECESSARY TO SAFELY CONDUCT THE WORK AND PROTECT THE TRAVELING PUBLIC.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE MODULAR BRIDGE SUPERSTRUCTURE, INCLUDING ALL CONNECTIONS, BEARING DETAILS, AND INTERFACES WITH THE SUBSTRUCTURE. SEALED MODULAR BRIDGE PLANS PREPARED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER SHALL BE SUBMITTED BY THE CONTRACTOR.

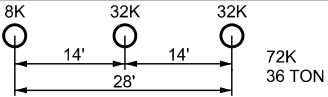
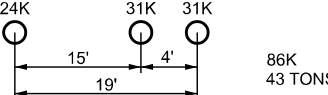
REVIEW OF SHOP DRAWINGS IS FOR GENERAL CONFORMANCE WITH THE PLANS AND DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR DESIGN, FABRICATION, OR CONSTRUCTION.

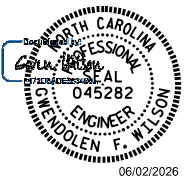
MATERIAL PROPERTIES:

CONCRETE: MINIMUM COMPRESSIVE STRENGTH, f_c = 3,000 psi (CLASS A).

STRUCTURAL STEEL: AASHTO M270, GRADE 50.

WELDS: SMAW, 70 KSI ELECTRODES PER NCDOT STANDARD SPECIFICATIONS.

DESIGN VEHICLES	
REF.#	SCHEMATIC
HS-20	 72K 36 TON
EV2	 57.5K 28.75 TON
EV3	 86K 43 TONS



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

NORTH CAROLINA OFFICE OF
EMERGENCY MANAGEMENT

PRIVATE DRIVEWAY
BRIDGE STANDARDS

MODULAR PANEL BRIDGE

GENERAL NOTES

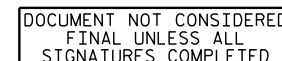
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-06
1			3			TOTAL SHEETS 6
2			4			

JMT Johnson, Mirmiran, & Thompson Inc.
108 Asheville Commerce Parkway
Candler, NC, 28715
License No: C-3097

DWN. BY: BC/WDC
CHKD. BY: CFW
DES. EGR. OF RECORD: GFW
DATE: 05/2026
DATE: 05/2026
DATE: 05/2026



DIMENSIONS TABLE



*SEE BSR FOR RIP RAP LIMITS

TIMBER DECKING SHALL BE 2X8 BOARDS. 4X6 TIMBER DECKING (6" DIMENSION HORIZONTAL) MAY BE USED IN LIEU OF 2X8 DECKING; SEE OPTIONAL TYPICAL SECTION ON SHEET S-03 FOR DETAILS.

CONTRACTOR SHALL ESTABLISH
APPROACH ROAD GRADE AS
REQUIRED AND SHALL PROVIDE
SMOOTH TRANSITION TO
EXISTING GRADE

TYPE 4a
GEOTEXTILE

TYPE 1 GEOTEXTILE

— SELECT MATERIAL
(CLASS V OR VI)

CONTRACTOR SHALL
CONSTRUCT APPROACH FILL
IN ACCORDANCE WITH NCDO
STD DRAWING 423.01

COMPACTED FILL
(AS REQ'D.) ACCORDING
TO NCDOT STANDARD
SPECIFICATIONS

← "E" - C PILE & CAP
TO C PILE & CAP

CONTRACTOR SHALL ESTABLISH
— APPROACH ROAD GRADE AS
REQUIRED AND SHALL PROVIDE
SMOOTH TRANSITION TO
EXISTING GRADE

TYPE 4a
GEOTEXTILE

COMPACTED FILL
(AS REQ'D.) ACCORDING
TO NCDOT STANDARD
SPECIFICATIONS

TYPE 1 GEOTEXTILE

CONTRACTOR SHALL
CONSTRUCT APPROACH FILL
IN ACCORDANCE WITH NCDOT
STD DRAWING 423.01

NORTH CAROLINA OFFICE OF
EMERGENCY MANAGEMENT

PRIVATE DRIVEWAY BRIDGE STANDARDS

SINGLE LANE STEEL BEAM BRIDGE
TIMBER DECK

GENERAL DRAWING

REVISONS						SHEET NO. S-01
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 13
2			4			



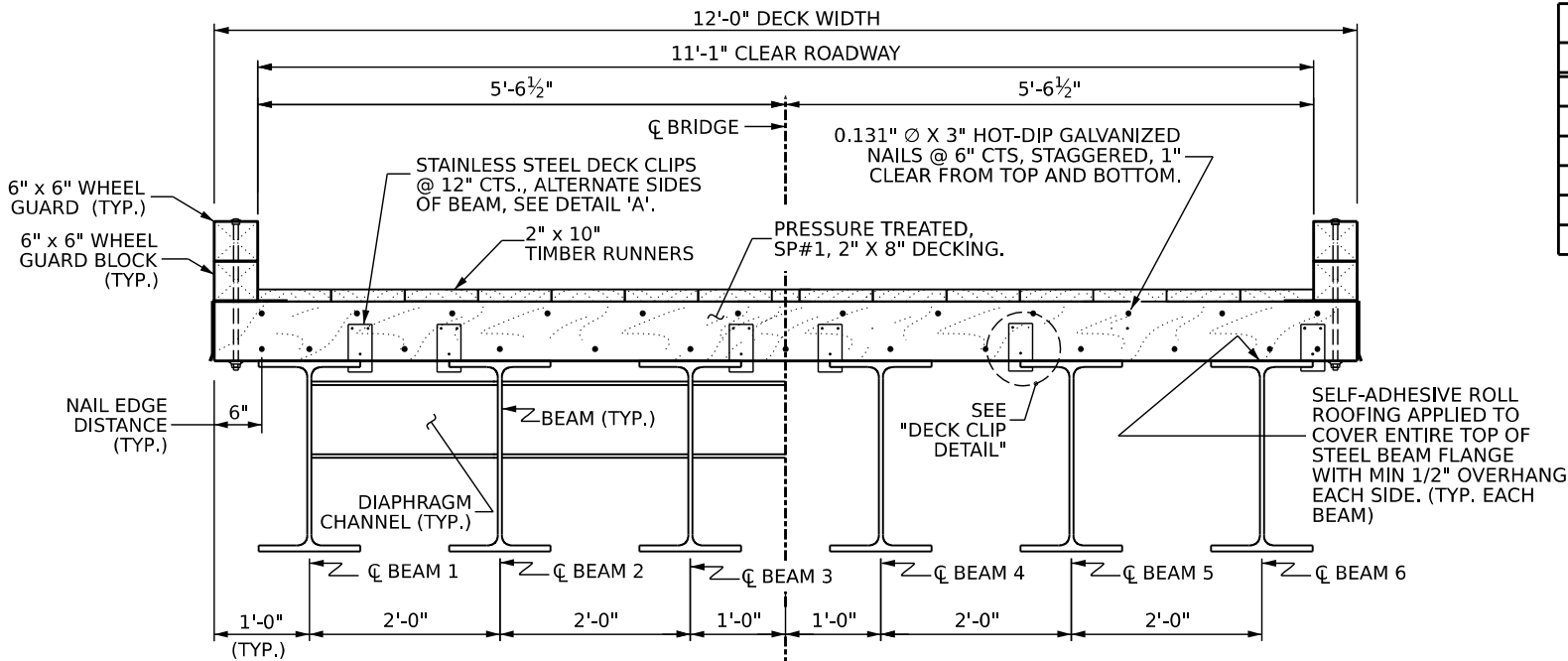
Johnson, Mirmiran, & Thompson Inc.
108 Asheville Commerce Parkway
Candler, NC, 28715
License No: C-3097

ic.	DWN. BY: BC CHKD. BY: GFW DES. EGR. OF
-----	--

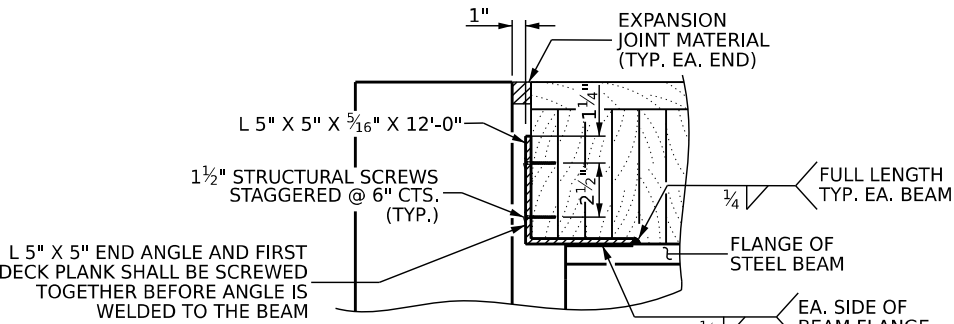
DATE: 04/2026
DATE: 04/2026
W DATE: 04/2026

Docusign Envelope ID: 9C6025E9-2A19-856B-80F3-6EF090F52F39

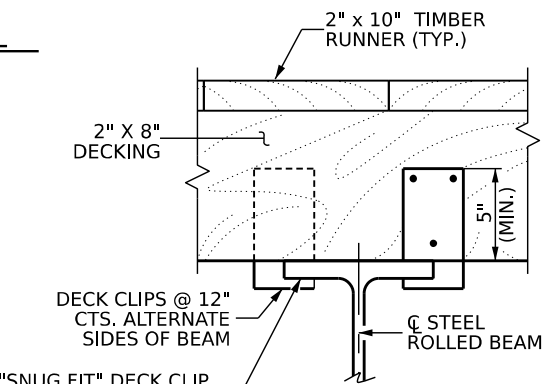
BC:\dcs9\pwr\jmt\pwr\ben\jmt\jmt_2w-01\Documents\Projects\2025\25-00629\25-00629-001\Design\Structures\NC PRB-Steel Beam with Timber Deck Standards\Single Lane Steel Beam with Timber Deck Plans\2 Standard Drawings\20-TO FT - 12 FT DECK WIDTH\002-S2-Typical Section.dgn
DATE: 5/18/2026



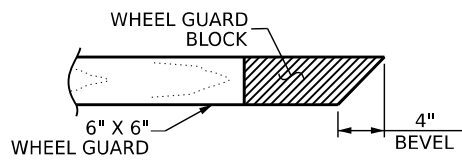
TYPICAL SECTION



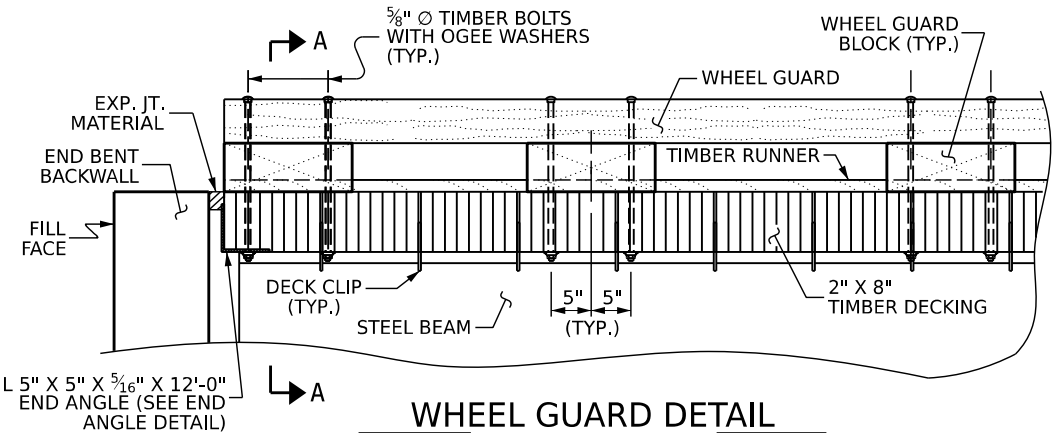
END ANGLE DETAIL



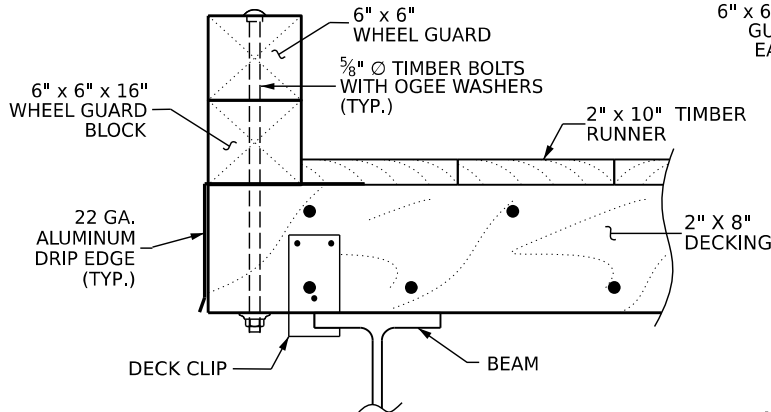
DETAIL 'A'



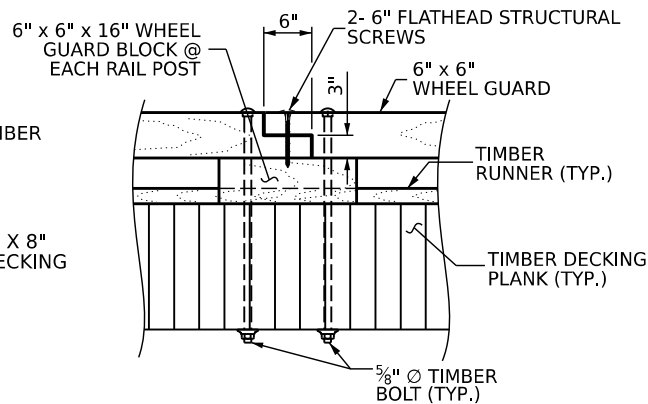
VIEW B-B



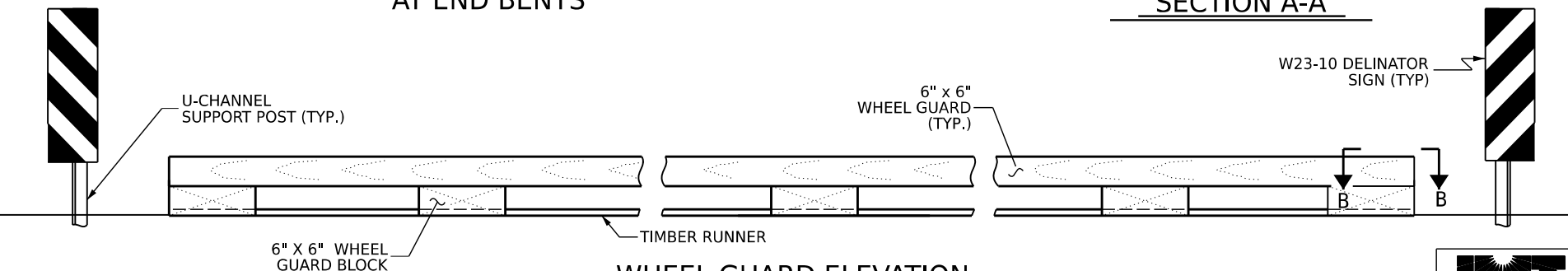
WHEEL GUARD DETAIL AT END BENTS



SECTION A-A



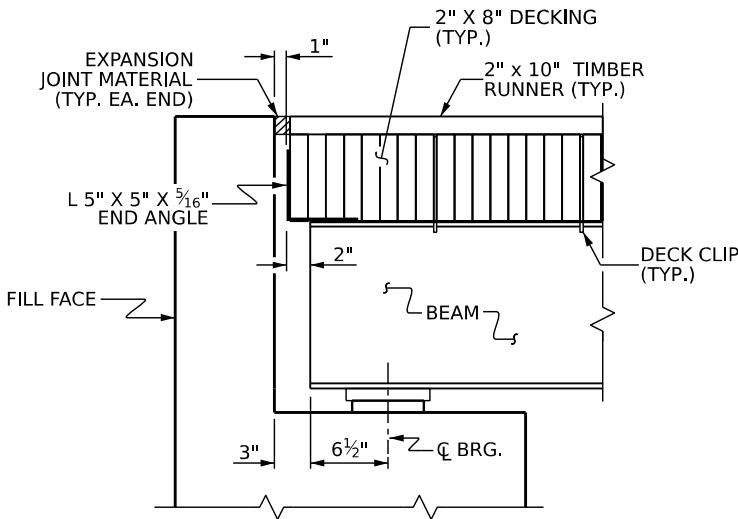
WHEEL GUARD SPLICE DETAIL



WHEEL GUARD ELEVATION

MATERIALS TABLE

SPAN	BEAM	DIAPHRAGM CHANNEL	DECK PLANK	DECKING SQ. FT.
20'-0"	W16X36	C12X20.7	2X8	244
30'-0"	W21X48	C12X20.7	2X8	364
40'-0"	W24X76	C12X20.7	2X8	484
50'-0"	W24X104	C12X20.7	2X8	604
60'-0"	W30X116	C12X20.7	2X8	724
70'-0"	W33X130	C12X20.7	2X8	844

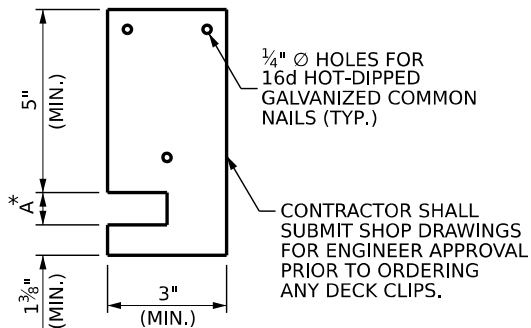


SECTION AT END BENT

DECK CLIP DIMENSIONS

SPAN	BEAM	*A
20'-0"	W16X36	1/2"
30'-0"	W21X48	1/2"
40'-0"	W24X76	3/4"
50'-0"	W24X104	13/16"
60'-0"	W30X116	15/16"
70'-0"	W33X130	15/16"

* DIMENSION A IS FOR INFORMATION ONLY. IT IS BASED ON THE FLANGE THICKNESS PLUS A 1/16" TOLERANCE. THE CONTRACTOR SHALL VERIFY THIS DIMENSION WITH DECK CLIP SUPPLIER. THE DECK CLIP SHALL HAVE A SNUG FIT TO THE BEAM FLANGE.



DECK CLIP DETAIL



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



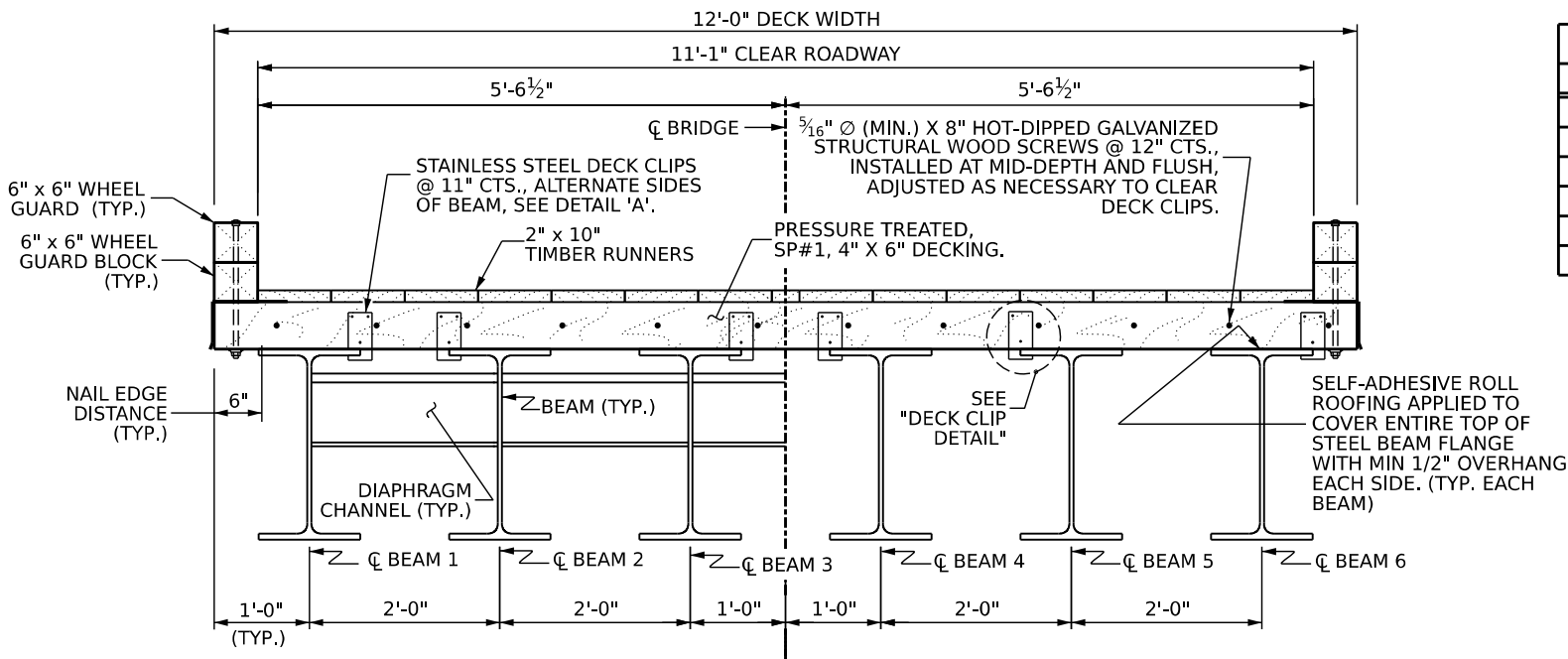
Johnson, Mirmiran, & Thompson Inc.
108 Asheville Commerce Parkway
Candler, NC, 28715
License No: C-3097

DWN. BY: BC
CHKD. BY: CFW
DES. EGR. OF RECORD: GFW

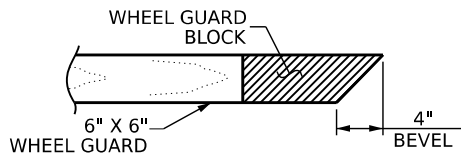
DATE: 04/2026
DATE: 04/2026
DATE: 04/2026

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-02
2			4			
TOTAL SHEETS						13

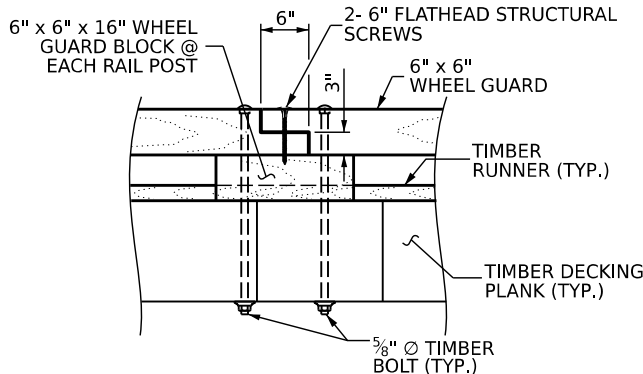
NORTH CAROLINA OFFICE OF
EMERGENCY MANAGEMENT
PRIVATE DRIVEWAY
BRIDGE STANDARDS
SINGLE LANE STEEL BEAM BRIDGE
2X8 TIMBER DECK
TYPICAL SECTION
& RAIL DETAILS



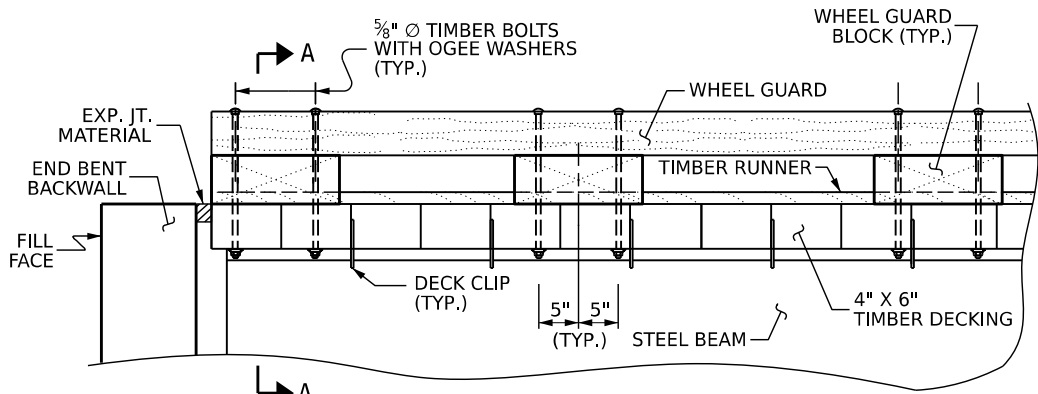
TYPICAL SECTION



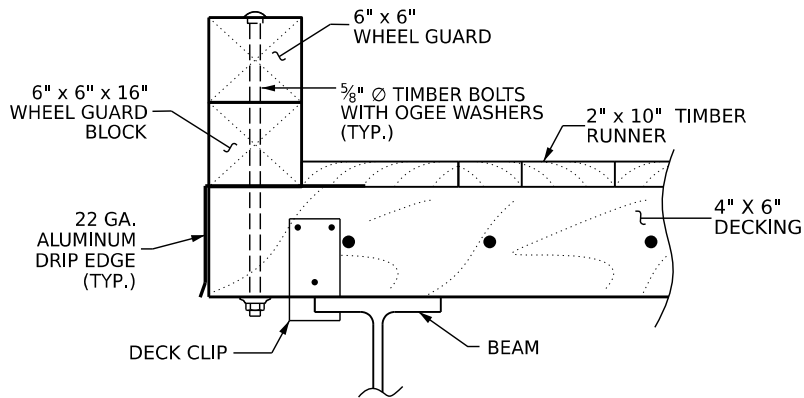
VIEW B-B



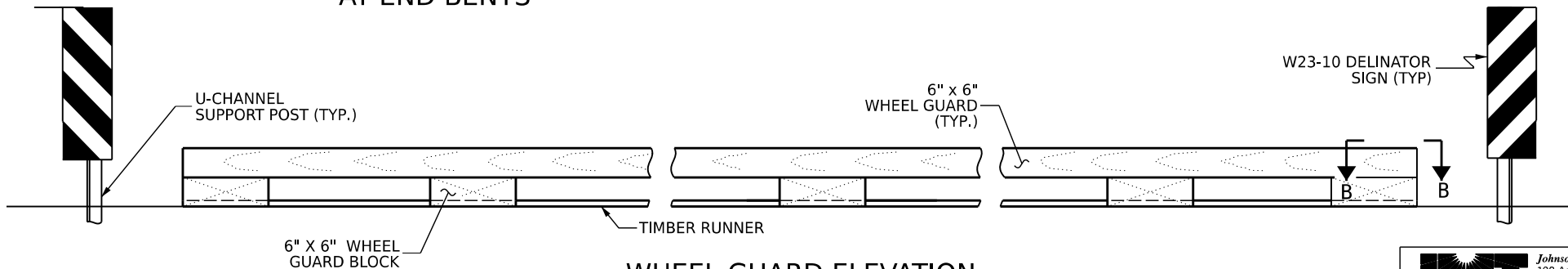
WHEEL GUARD SPLICE DETAIL



WHEEL GUARD DETAIL AT END BENTS

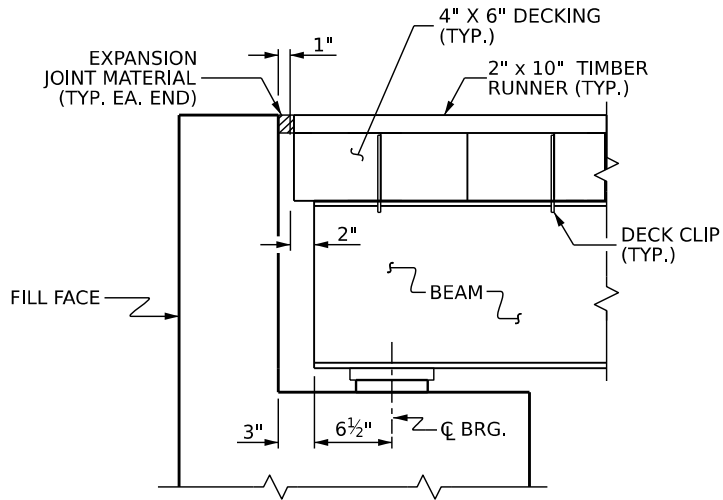


SECTION A-A



WHEEL GUARD ELEVATION

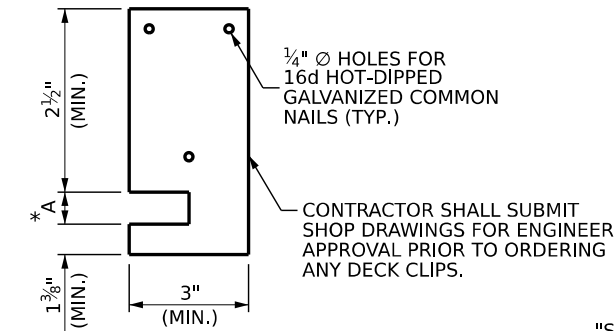
MATERIALS TABLE				
SPAN	BEAM	DIAPHRAGM CHANNEL	DECK PLANK	DECKING SQ. FT.
20'-0"	W16X36	C12X20.7	4X6	244
30'-0"	W21X48	C12X20.7	4X6	364
40'-0"	W24X76	C12X20.7	4X6	484
50'-0"	W24X104	C12X20.7	4X6	604
60'-0"	W30X116	C12X20.7	4X6	724
70'-0"	W33X130	C12X20.7	4X6	844



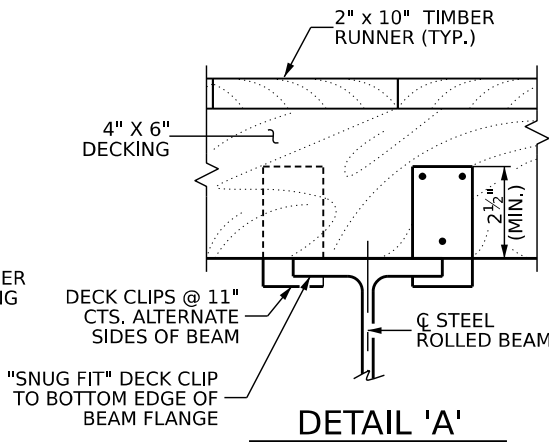
SECTION AT END BENT

DECK CLIP DIMENSIONS		
SPAN	BEAM	*A
20'-0"	W16X36	1/2"
30'-0"	W21X48	1/2"
40'-0"	W24X76	3/4"
50'-0"	W24X104	13/16"
60'-0"	W30X116	15/16"
70'-0"	W33X130	15/16"

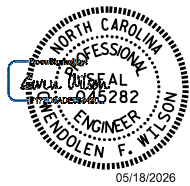
* DIMENSION A IS FOR INFORMATION ONLY. IT IS BASED ON THE FLANGE THICKNESS PLUS A 1/16" TOLERANCE. THE CONTRACTOR SHALL VERIFY THIS DIMENSION WITH DECK CLIP SUPPLIER. THE DECK CLIP SHALL HAVE A SNUG FIT TO THE BEAM FLANGE.



DECK CLIP DETAIL



DETAIL 'A'



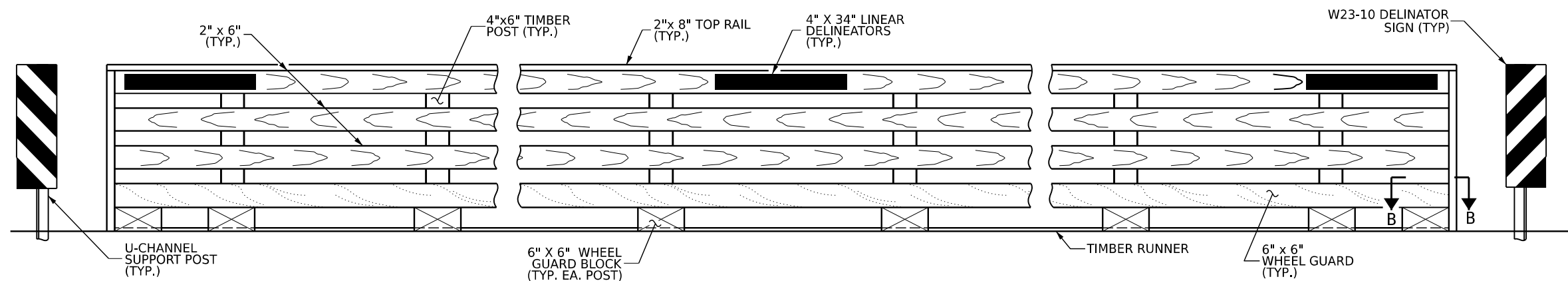
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

JMT Johnson, Mirmiran, & Thompson Inc.
108 Asheville Commerce Parkway
Candler, NC, 28715
License No: C-3097

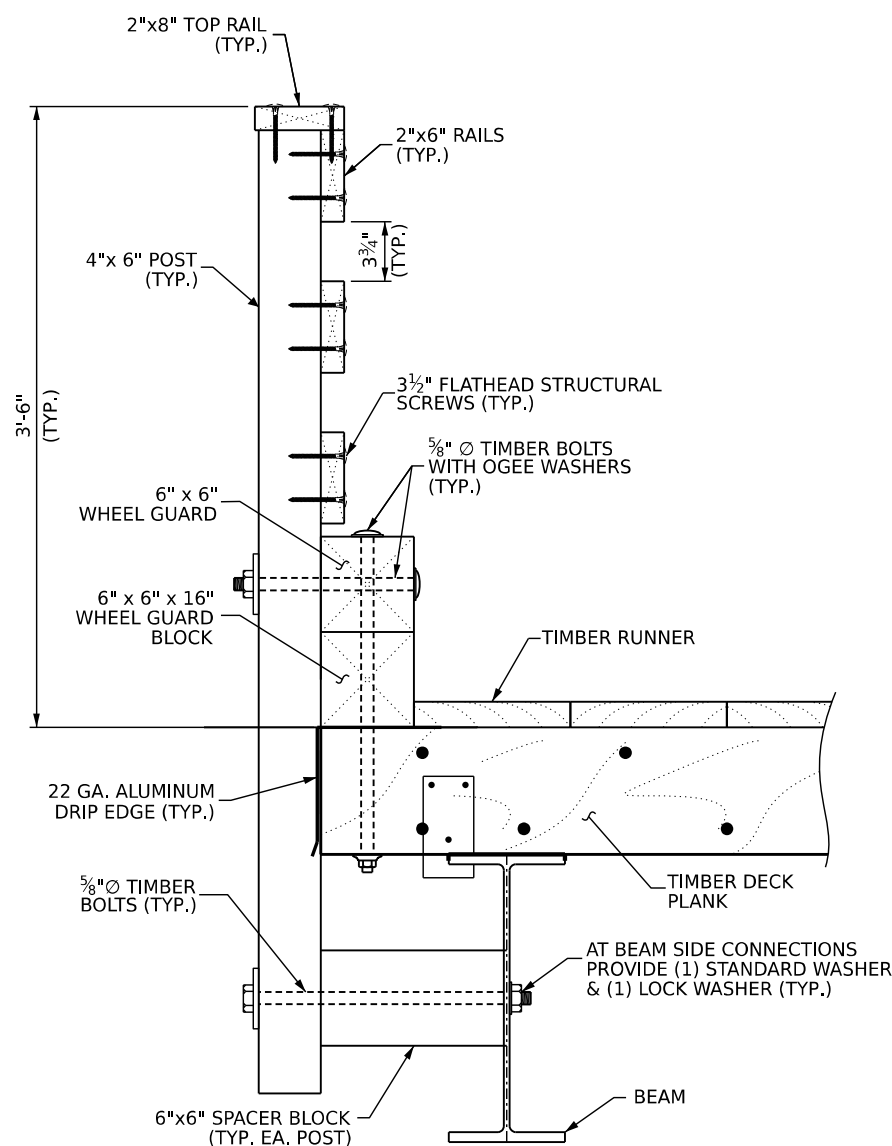
DWN. BY: BC
CHKD. BY: CFW
DES. EGR. OF RECORD: GFW
DATE: 04/2026
DATE: 04/2026
DATE: 04/2026

NORTH CAROLINA OFFICE OF
EMERGENCY MANAGEMENT
**PRIVATE DRIVEWAY
BRIDGE STANDARDS**
SINGLE LANE STEEL BEAM BRIDGE
4X6 TIMBER DECK
**OPTIONAL TYPICAL SECTION
& RAIL DETAILS**

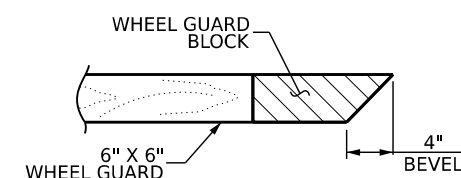
REVISIONS						SHEET NO. S-03
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 13
2			4			



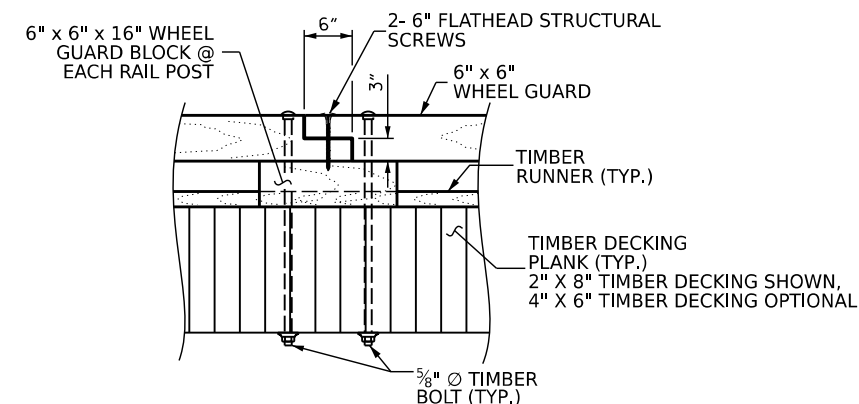
ELEVATION OF OPTIONAL BRIDGE RAIL



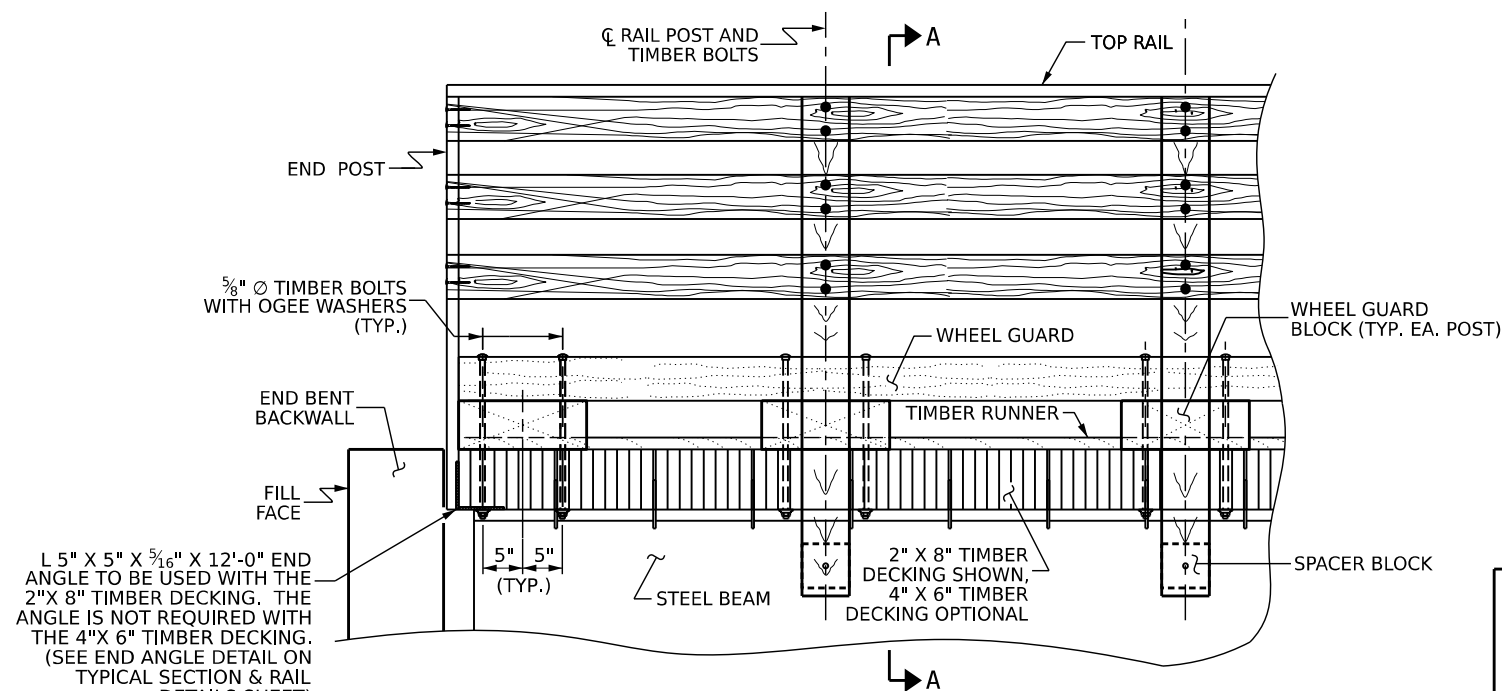
SECTION A-A



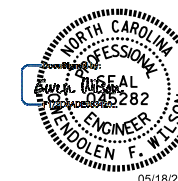
VIEW B-B



WHEEL GUARD SPLICE DETAIL



OPTIONAL RAIL DETAIL AT END BENTS



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

NORTH CAROLINA OFFICE OF
EMERGENCY MANAGEMENT

PRIVATE DRIVEWAY BRIDGE STANDARDS

SINGLE LANE STEEL BEAM BRIDGE
TIMBER DECK

OPTIONAL TIMBER
BRIDGE RAIL

REVISIONS						SHEET NO. S-04
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 13
2			4			



Johnson, Mirmiran, & Thompson Inc.
108 Asheville Commerce Parkway
Candler, NC, 28715
License No: C-3097

DWN. BY: BC
CHKD. BY: GFW
DES. ECR. OF: B

DATE: 04/2026
DATE: 04/2026
DATE: 04/2026

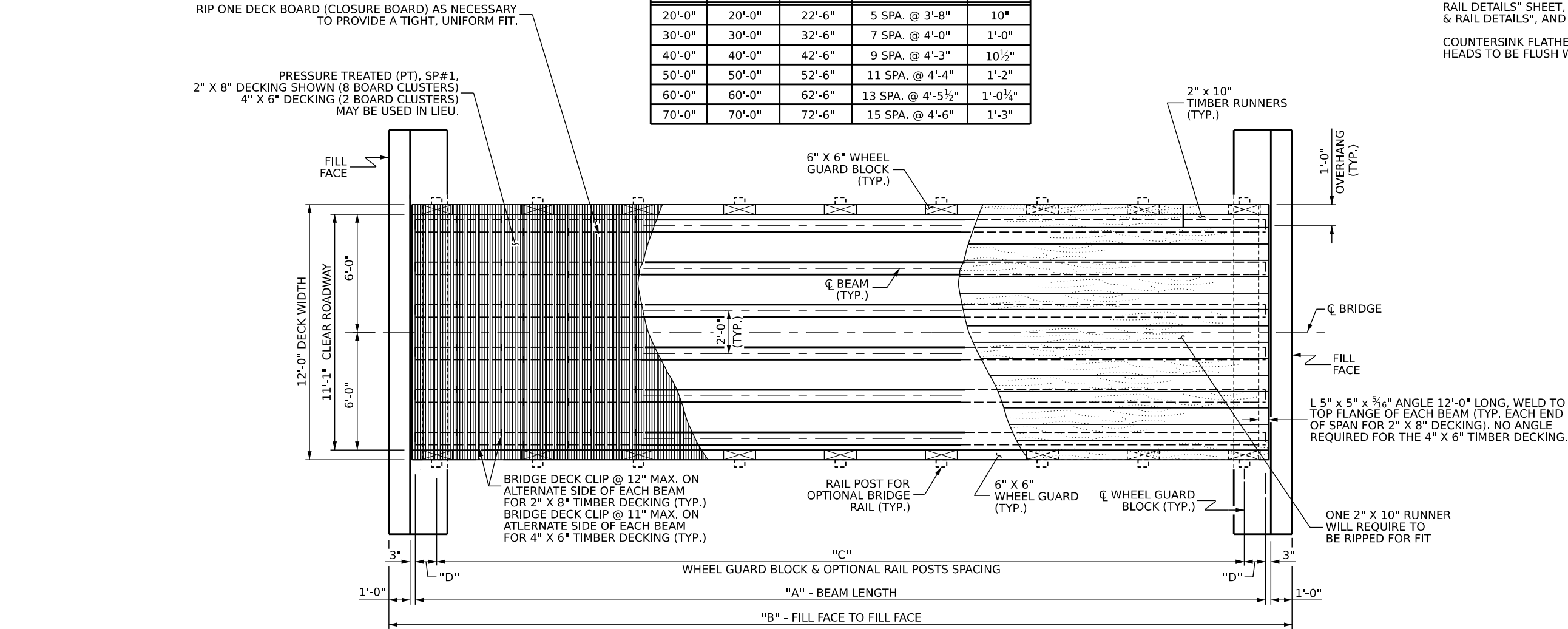
BC:\dcs9\25616\pwworking\jmt.com\jmt_cw-01\Documents\Projects\2025\25-00629\25-00629-001\Design\Structures\NC PRB-Steel Beam with Timber Deck Standards\Single Lane Steel Beam Bridge Standards\Single Lane Steel Beam with Timber Deck Plans\2 Standard Drawings\20-70 FT - 12 FT DECK WIDTH\005-SS_Plan of Span.dgn
DATE: 5/18/2026
TIME: 5/18/2026

DIMENSIONS TABLE				
SPAN	A	B	C	D
20'-0"	20'-0"	22'-6"	5 SPA. @ 3'-8"	10"
30'-0"	30'-0"	32'-6"	7 SPA. @ 4'-0"	1'-0"
40'-0"	40'-0"	42'-6"	9 SPA. @ 4'-3"	10½"
50'-0"	50'-0"	52'-6"	11 SPA. @ 4'-4"	1'-2"
60'-0"	60'-0"	62'-6"	13 SPA. @ 4'-5½"	1'-0¼"
70'-0"	70'-0"	72'-6"	15 SPA. @ 4'-6"	1'-3"

NOTES

FOR ADDITIONAL NOTES, SEE "TYPICAL SECTION & RAIL DETAILS" SHEET, "OPTIONAL TYPICAL SECTION & RAIL DETAILS", AND "GENERAL NOTES" SHEET.

COUNTERSINK FLATHEAD STRUCTURAL TIMBER SCREW HEADS TO BE FLUSH WITH TIMBER SURFACE.

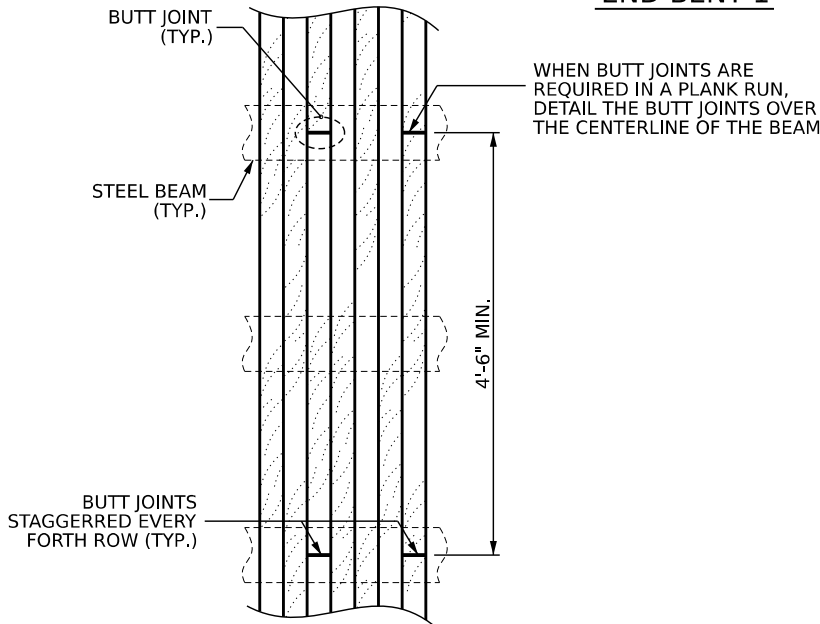


END BENT 1

DECK LAYOUT

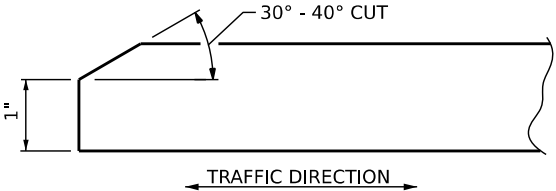
2" X 8" TIMBER DECKING SHOWN. 4" X 6" TIMBER DECKING (6" DIMENSION HORIZONTAL) MAY BE USED IN LIEU OF 2" X 8" DECKING.

END BENT 2



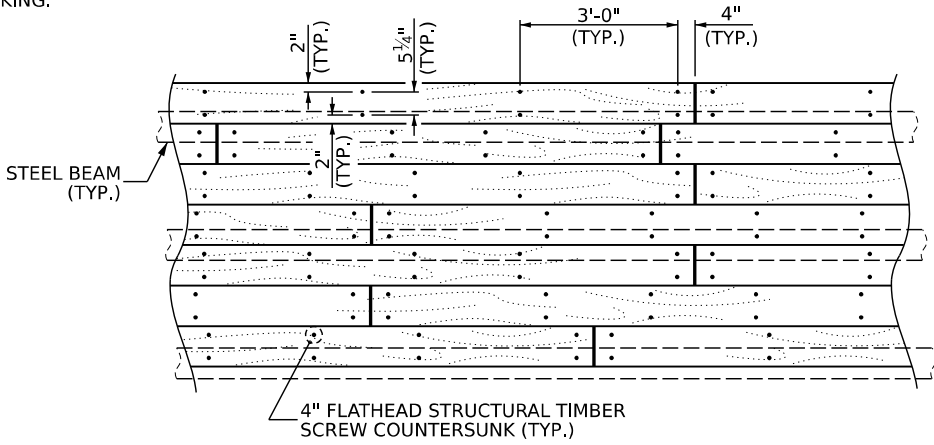
DECKING BOARD BUTT JOINT DETAIL

BUTT JOINTS SHALL BE OVER THE CENTERLINE OF A BEAM. JOINTS SHALL BE STAGGERED EVERY FOURTH DECK BOARD. NONE ALLOWED AT THE EXTERIOR BEAMS.

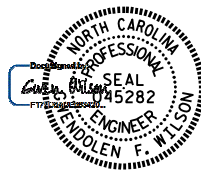


SIDE VIEW
TIMBER RUNNER BEVEL DETAIL

(TYP. AT EACH END OF BRIDGE)



TIMBER RUNNER BUTT JOINT DETAIL



05/18/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA OFFICE OF
EMERGENCY MANAGEMENT
PRIVATE DRIVEWAY
BRIDGE STANDARDS
SINGLE LANE STEEL BEAM BRIDGE
TIMBER DECK
PLAN OF SPAN

REVISIONS						SHEET NO. S-05
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 13
2			4			



Johnson, Mirmiran, & Thompson Inc.
108 Asheville Commerce Parkway
Candler, NC, 28715
License No: C-3097

DWN. BY: BC
CHKD. BY: CFW
DES. EGR. OF RECORD: GFW

DATE: 04/2026
DATE: 04/2026
DATE: 04/2026



Technical drawing of a beam cross-section showing dimensions and components. The drawing includes the following labels and dimensions:

- Dimensions:**
 - "D"**: Overall width of the beam.
 - 6 1/2"**: Distance from the beam end to the centerline of the bearing.
 - "C"**: Distance from the beam end to the centerline of the bearing.
 - "B" - DIAPHRAGM SPACING**: Distance between the centers of the diaphragm holes.
 - "A" - BEAM LENGTH**: Total length of the beam.
 - "E" - RAIL POST SPACING**: Distance between the centers of the rail post holes.
- Components:**
 - BEAM**: The main structural member.
 - BRG. STIFFENER**: Bridge stiffener located at the ends of the beam.
 - CL BEARING**: Centerline bearing located at the ends of the beam.
 - 13/16" Ø RAIL POST HOLE (TYP.)**: Typical hole for a rail post.
 - 13/16" Ø HOLES FOR DIAPHRAGMS (TYP.)**: Typical holes for diaphragms.

BEAM FLANGE ELEVATION

Technical drawing of a stiffener showing dimensions and labels:

- Overall width: G''
- Overall height: H''
- Top flange thickness: $\frac{1}{4}'' \pm \frac{1}{8}''$ (TYP.)
- Top flange width: $\frac{1}{4}''$
- Stiffener thickness: $\frac{1}{2}''$ BRG. STIFFENER
- Stiffener height: $\frac{1}{4}'' \pm \frac{1}{8}''$ (TYP.)
- Bottom flange thickness: $\frac{1}{4}'' \pm \frac{1}{8}''$ (TYP.)
- Bottom flange width: $\frac{1}{4}''$
- Labels: END OF WELD, MILL TO BEAR, $\frac{1}{2}''$ (TYP.)

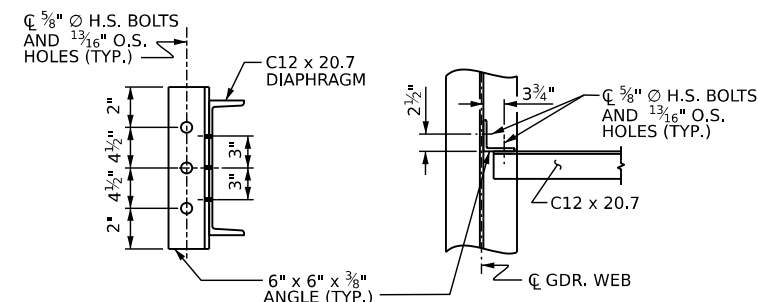
SECTION VIEW - BRG. STIFFENER

STIFFENER DIMENSION			
BEAM	F	G	H
W16X36	1'-3"	3 $\frac{3}{8}$ "	2"
W21X48	1'-7 $\frac{3}{4}$ "	3 $\frac{7}{8}$ "	2"
W24X76	1'-10 $\frac{3}{16}$ "	4 $\frac{1}{4}$ "	2 $\frac{7}{16}$ "
W24X104	1'-10 $\frac{3}{16}$ "	6 $\frac{1}{2}$ "	2 $\frac{3}{4}$ "
W30X116	2'-4 $\frac{1}{4}$ "	5"	3 $\frac{1}{16}$ "
W33X130	2'-7 $\frac{3}{8}$ "	5 $\frac{1}{2}$ "	3 $\frac{1}{8}$ "

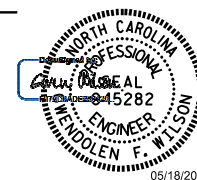
STIFFENER DIMENSION

BEAM	F	G	H
W16X36	1'-3"	3 $\frac{3}{8}$ "	2"
W21X48	1'-7 $\frac{3}{4}$ "	3 $\frac{7}{8}$ "	2"
W24X76	1'-10 $\frac{9}{16}$ "	4 $\frac{1}{4}$ "	2 $\frac{7}{16}$ "
W24X104	1'-10 $\frac{9}{16}$ "	6 $\frac{3}{8}$ "	2 $\frac{3}{4}$ "
W30X116	2'-4 $\frac{1}{4}$ "	5"	3 $\frac{7}{16}$ "
W33X130	2'-7 $\frac{3}{8}$ "	5 $\frac{1}{2}$ "	3 $\frac{1}{8}$ "

ANGLE DETAILS



DIAPHRAGM DETAILS



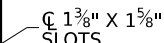
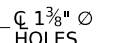
NORTH CAROLINA OFFICE OF
EMERGENCY MANAGEMENT
PRIVATE DRIVEWAY
BRIDGE STANDARDS
SINGLE LANE STEEL BEAM BRIDGE
TIMBER DECK
FRAMING PLAN &
BEAM DETAILS

REVISIONS						SHEET NO. S-06
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 13
2			4			

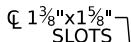
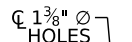
SHEET NO.	S-06
TOTAL SHEETS	13



DIMENSIONS TABLE

(6 REQ'D)
EXPANSION

(6 REQ'D)
FIXED

(6 REQ'D)
EXPANSION

(6 REQ'D)
FIXED

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 $\frac{1}{2}$ 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, 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.



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

EMERGENCY MANAGEMENT

PRIVATE DRIVEWAY BRIDGE STANDARDS

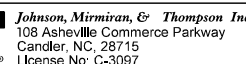
SINGLE LANE STEEL BEAM BRIDGE TIMBER DECK

BEARING DETAILS

REVISIONS						SHEET S-0
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEET 13
2			4			

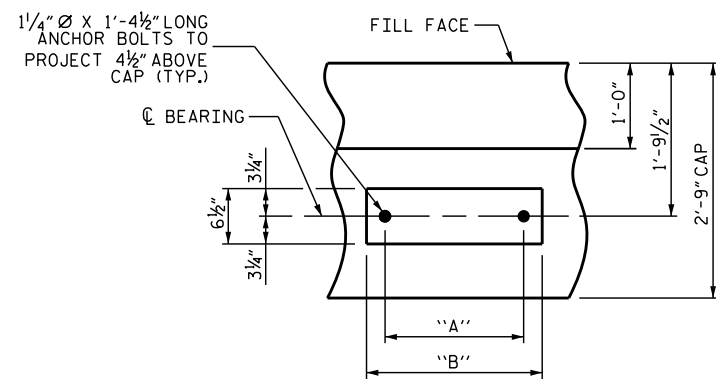
S-07

TOTAL
SHEETS
13



DWN. BY: BC
CHKD. BY: GFV
DES. EGR. OF

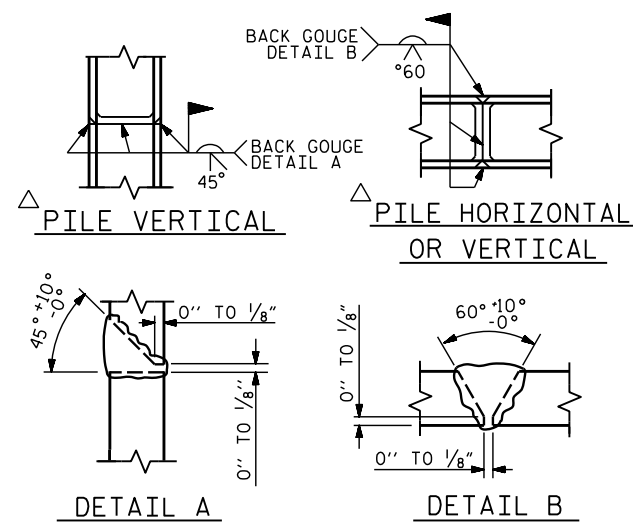
DATE: 04/2026
DATE: 04/2026
DATE: 04/2026



BEARING DETAIL

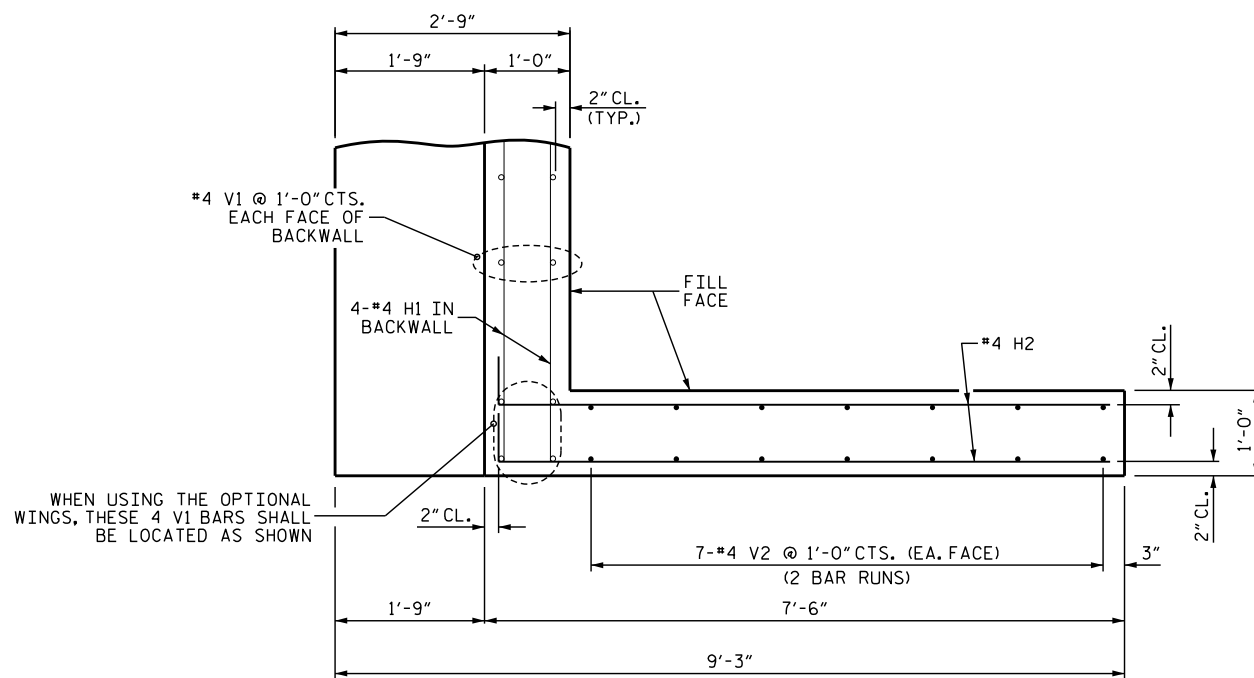
(TYP. EACH BEARING LOCATION)

REFER TO DIMENSIONS TABLE ON SHEET
S-07 FOR DIMENSIONS A AND B.



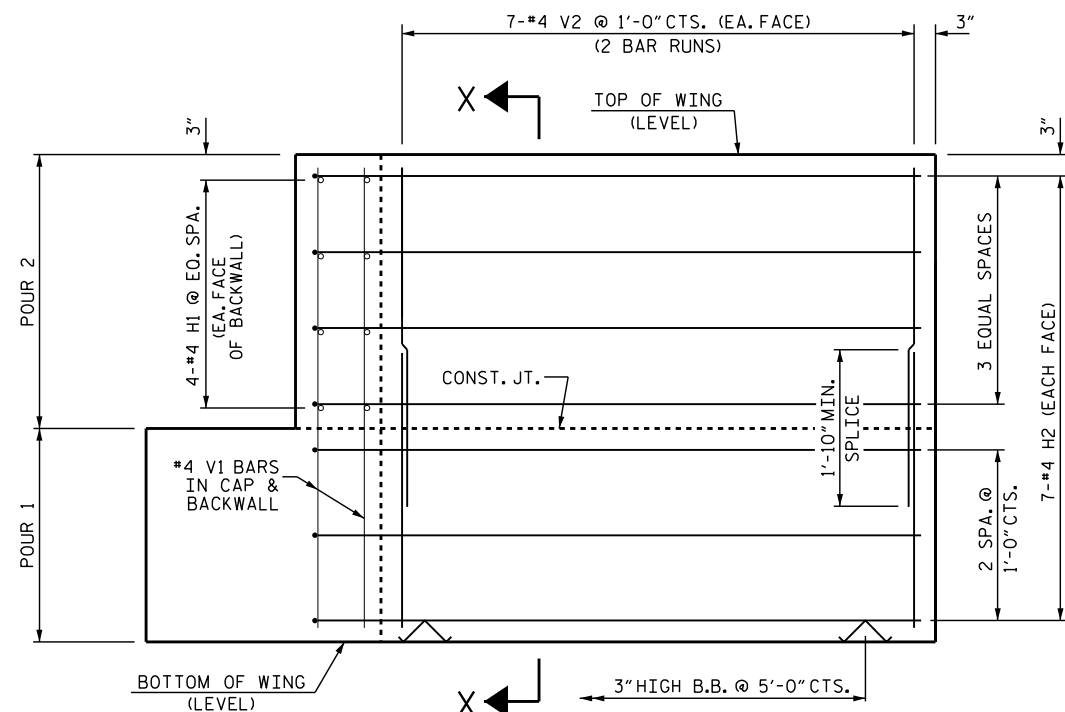
PILE SPLICE DETAILS

△ POSITION OF PILE DURING WELDING.



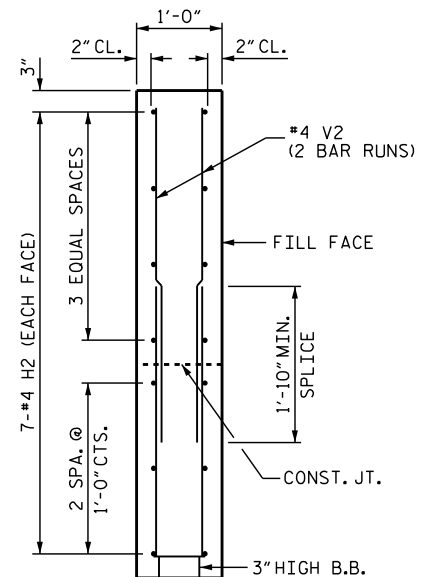
ELEVATION OF WING

(OPTIONAL)



PLAN OF WING

(OPTIONAL)

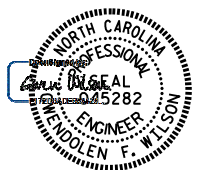


SECTION X-X

(OPTIONAL)

RIGHT SIDE WING SHOWN,
LEFT SIDE WING SIMILAR.

WING HEIGHT DEPENDENT
ON BACKWALL HEIGHT.



/18/2026

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SHEET 2 OF 2

NORTH CAROLINA OFFICE OF
EMERGENCY MANAGEMENT

PRIVATE DRIVEWAY BRIDGE STANDARDS

SINGLE LANE STEEL BEAM BRIDGE TIMBER DECK

OPTIONAL WINGS FOR DRIVEN OR DRILLED-IN PILES

REVISIONS							SHEET NO. S-10
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 13	
1			3				
2			4				

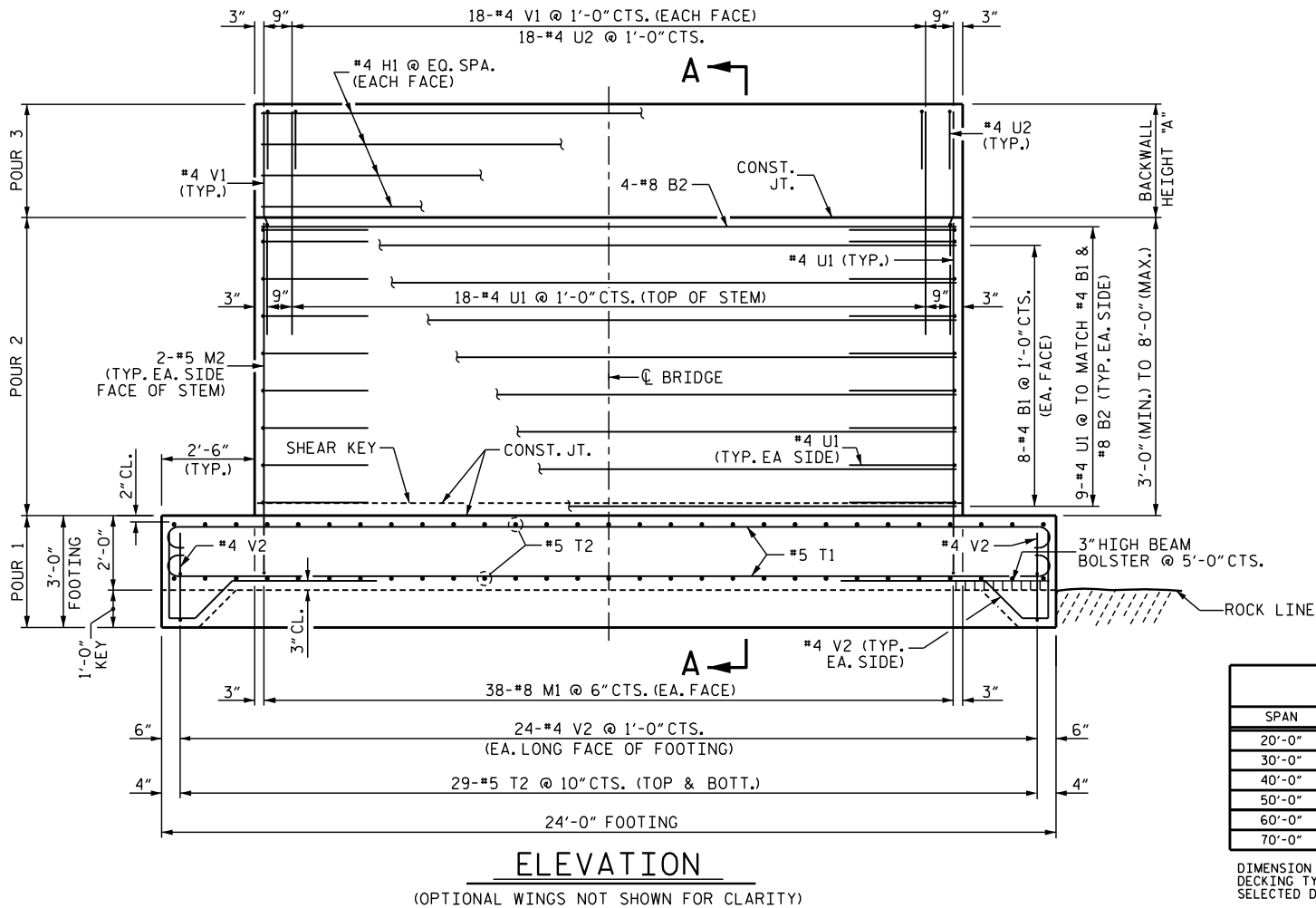
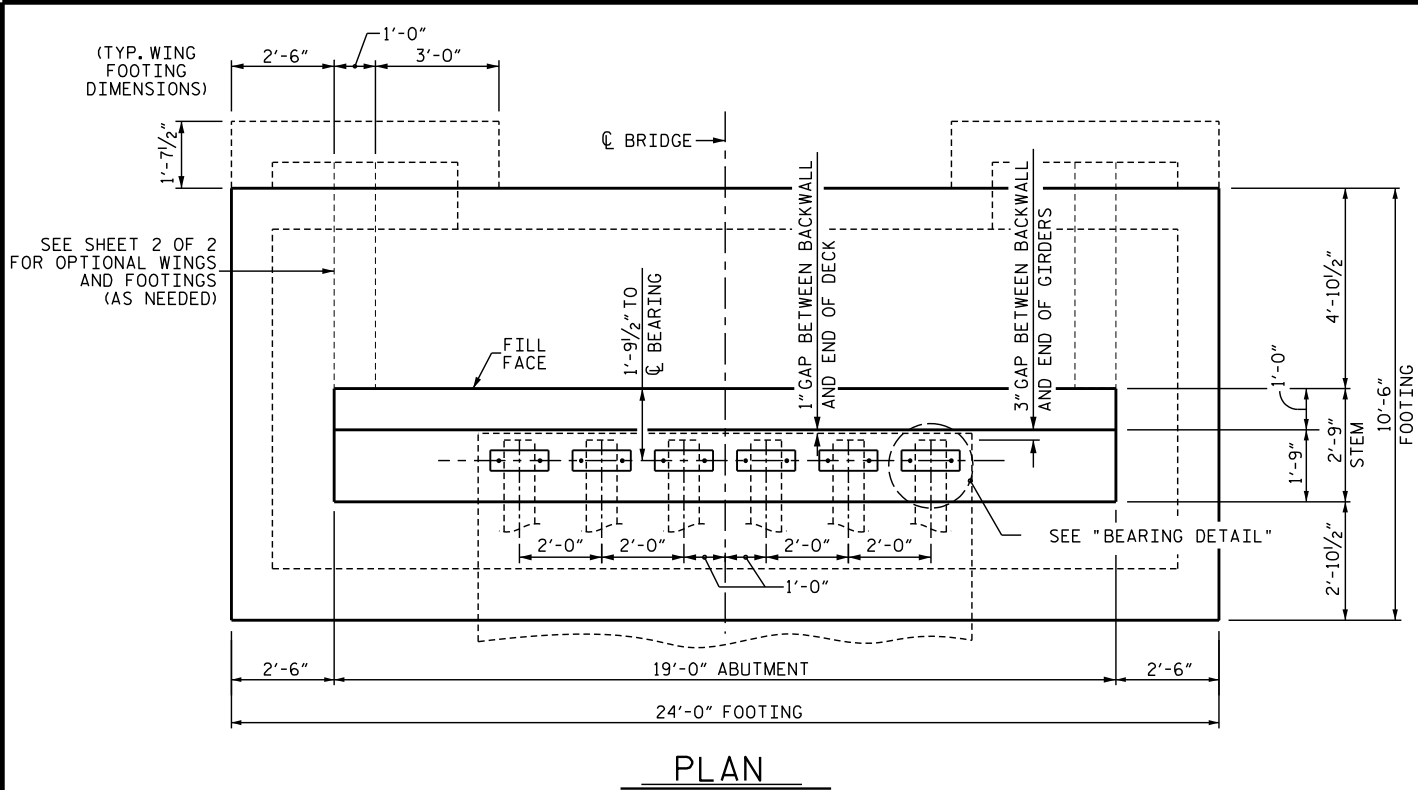


Johnson, Mirmiran, & Thompson Inc.
108 Asheville Commerce Parkway
Candler, NC, 28715
License No: C-3097

C.	DWN. BY: BC CHKD. BY: GFW DES. EGR. OF R
----	--

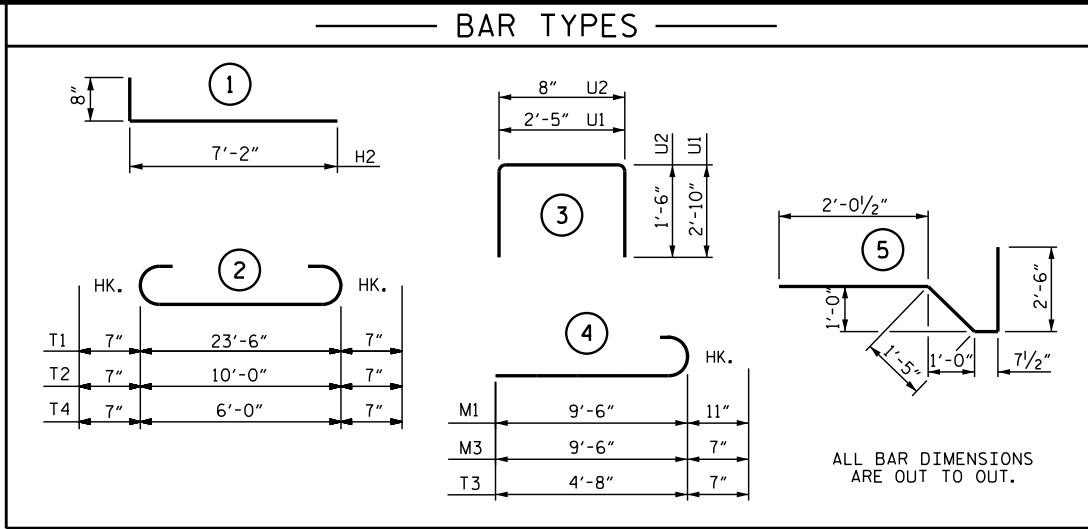
DATE: 04/2026
DATE: 04/2026
DATE: 04/2026

B:\projects\2025\25-00629\25-00629-001\Design\Structures\NC PRB-Steel Beam with Timber Deck Standards\Single Lane Steel Beam with Timber Deck Plans\2 Standard Drawings\20-TO FT - 12 FT DECK WIDTH\01-Sill-End Bent-Spread Footing
DATE: 5/18/2026
TIME: 5:18/2026



BACKWALL HEIGHT			
SPAN	BEAM	A (2X8 DECKING)	A (4X6 DECKING)
20'-0"	W16X36	2'-2 3/8"	1'-10 1/8"
30'-0"	W21X48	2'-7 3/8"	2'-3 5/8"
40'-0"	W24X76	2'-10 3/8"	2'-6 1/8"
50'-0"	W24X104	2'-10 3/4"	2'-7"
60'-0"	W30X116	3'-4 3/4"	3'-1"
70'-0"	W33X130	3'-7 3/4"	3'-4"

DIMENSION "A" (BACKWALL HEIGHT) VARIES BASED ON DECKING TYPE, USE VALUES CORRESPONDING TO SELECTED DECKING OPTION.



GENERAL NOTES

U1 BARS IN STEM MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

CONTRACTOR SHALL SLOPE TOP OF CAP TO MATCH LONGITUDINAL GRADE OF THE BRIDGE. SLOPES SHALL MATCH ON BOTH END BENT 1 AND END BENT 2 CAPS.

WINGS MAY BE REQUIRED AT THE DIRECTION OF THE ENGINEER OR DESIGNEE.

FOR OPTIONAL WINGS FOR END BENT, SEE SHEET 2 OF 2.

FOR SECTION A-A, SEE SHEET 2 OF 2.

THE FINAL STEM WALL HEIGHT SHALL BE DETERMINED IN THE FIELD BASED ON EXISTING ROCK ELEVATIONS. THE STEM WALL HEIGHT SHALL NOT BE LESS THAN 3'-0" OR GREATER THAN 8'-0".

END BENT REINFORCEMENT AND DETAILS ARE BASED ON A MAXIMUM STEM WALL HEIGHT OF 8'-0" AND THE SHORTEST BACKWALL HEIGHT USING 2X8 DECKING. CONTRACTOR SHALL ADJUST REINFORCEMENT FOR FIELD-VERIFIED STEM WALL HEIGHTS AND BACKWALL HEIGHTS WHILE MAINTAINING BAR SIZES, SPACING, SPLICE LENGTHS, AND OVERALL CONFIGURATION SHOWN.

FOUNDATION NOTES

SPREAD FOOTING

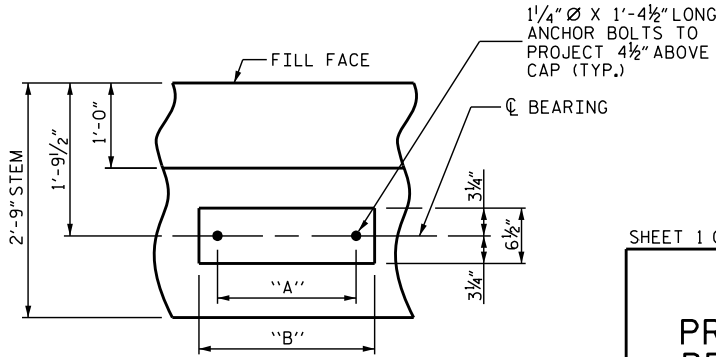
FOUNDATION EXCAVATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SECTION 410 OF THE SPECIFICATIONS.

A GEOTECHNICAL ENGINEER LICENSED IN THE STATE OF NORTH CAROLINA SHALL OBSERVE THE BEARING SURFACE AND CONFIRM THE FOOTING IS CONSTRUCTED ON ROCK. THE ENGINEER SHALL PROVIDE A LETTER VERIFYING ACCEPTANCE OF THE BEARING SURFACE.

CLEAN ALL ROCK OF LOOSE MATERIAL AND CUT TO A FIRM SURFACE, AS DIRECTED BY THE ENGINEER AND FILL WITH CONCRETE, MORTAR OR GROUT. LEAVE ROCK SURFACE IN A ROUGH CONDITION.

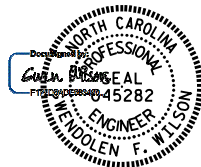
BEARING SURFACE MUST RESIST A MAXIMUM APPLIED BEARING PRESSURE OF 5.0 KSF.

KEY IN FOOTINGS AT LEAST 1 FT INTO ROCK.



** BILL OF MATERIAL FOR ONE END BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	16	#4	STR	18'-8"	200
B2	4	#8	STR	18'-8"	199
H1	8	#4	STR	18'-8"	100
M1	76	#8	4	10'-5"	2,114
M2	4	#5	STR	7'-6"	31
T1	26	#5	2	24'-8"	669
T2	58	#5	2	11'-2"	676
U1	38	#4	3	8'-1"	205
U2	20	#4	3	3'-8"	49
V1	40	#4	STR	6'-0"	160
V2	70	#4	5	6'-7"	308
H2	52	#4	1	7'-10"	272
M3	40	#5	4	10'-1"	421
M4	40	#5	STR	5'-4"	223
T3	32	#5	4	5'-3"	175
T4	8	#5	2	7'-2"	60
V2	22	#4	5	6'-7"	97
REINFORCING STEEL (W/O WINGS)				4711 LBS.	
REINFORCING STEEL (WITH WINGS)				5959 LBS.	
CLASS A CONCRETE BREAKDOWN					
POUR #1	FOOTING			22.5 C.Y.	
POUR #2	END BENT STEM			15.5 C.Y.	
POUR #3	BACKWALL			1.6 C.Y.	
WINGWALLS (OPTIONAL)				7.5 C.Y.	
TOTAL CLASS A CONCRETE (W/O WINGS)				39.6 C.Y.	
TOTAL CLASS A CONCRETE (WITH WINGS)				47.1 CY	

**THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE QUANTITIES AND REINFORCING BARS SHOWN IN THE BILL OF MATERIAL ARE BASED ON AN 8'-0" MAXIMUM STEM WALL HEIGHT AND THE SHORTEST BACKWALL HEIGHT USING 2X8 DECKING. THE CONTRACTOR IS RESPONSIBLE FOR THE FINAL QUANTITIES BASED ON THE ACTUAL STEM WALL AND BACKWALL HEIGHTS.



05/18/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SHEET 1 OF 2

NORTH CAROLINA OFFICE OF EMERGENCY MANAGEMENT					
PRIVATE DRIVEWAY BRIDGE STANDARDS					
SINGLE LANE STEEL BEAM BRIDGE					
TIMBER DECK					
END BENT					
SPREAD FOOTING					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-11					TOTAL SHEETS 13



Johnson, Mirmiran, & Thompson Inc.
108 Asheville Commerce Parkway
Candler, NC, 28715
License No: C-3097

DWN. BY: BC
CHKD. BY: CFW
DES. EGR. OF RECORD: GFW

DATE: 04/2026
DATE: 04/2026
DATE: 04/2026

Q:\Millon\DWG\1\m1-pw-bentley.com\m1-pw-01\Documents\Projects\2025\25-00629\25-00629-001\Design\Structures\NC PRB-Steel Beam with Timber Deck Standards\Single Lane Steel Beam with Timber Deck Plans\2 Standard Drawings\20-70 FT - 12 FT DECK WIDTH\015-SIS-General Notes.dgn
DATE: 6/3/2026
TIME:

STRUCTURAL STEEL / HARDWARE NOTES:

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50 AND PAINTED IN ACCORDANCE WITH SYSTEM 1 OR GALVANIZED IN ACCORDANCE WITH THE STRUCTURAL STEEL COATINGS 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 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 BE OF SUFFICIENT LENGTH TO PROVIDE FULL THREAD ENGAGEMENT INTO RECEIVING MEMBERS.

REPAIR ANY DAMAGED GALVANIZED SURFACES IN ACCORDANCE WITH STANDARD SPECIFICATION ARTICLE 1076-7.

REPAIR ANY DAMAGED PAINTED SURFACES IN ACCORDANCE WITH SECTION 442 OF THE STANDARD SPECIFICATIONS.

STRUCTURAL WOOD SCREWS SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATION.

TIMBER / LUMBER NOTES:

ALL TIMBER AND LUMBER MEMBERS SHALL BE TREATED NO.1 SOUTHERN PINE AND CONFORM TO SECTION 1082 OF THE STANDARD SPECIFICATIONS.

ALL TIMBER DIMENSIONS SHOWN ON THE PLANS ARE NOMINAL DIMENSIONS. DESIGN IS BASED ON ACTUAL DRESSED DIMENSIONS.

PRE-DRILL HOLES IN TIMBER MEMBERS RECEIVING BOLTS TO ELIMINATE SPLITTING. PRE-DRILL HOLES FOR SCREWS AS NECESSARY TO PREVENT SPLITTING IN TIMBER MEMBERS.

DESIGN LOADS:

LIVE LOAD:

TRUCK LOAD:

THIS BRIDGE WAS DESIGNED FOR:

HS20
GVWR = 72,000 LBS
NUMBER OF AXLES: 3
AXLE WEIGHTS:
GAWR FRONT = 8,000 LBS
GAWR INTERMEDIATE = 32,000 LBS
GAWR REAR = 32,000 LBS

EV2
GVWR = 57,500 LBS
NUMBER OF AXLES: 2
AXLE WEIGHTS:
GAWR FRONT = 24,000 LBS
GAWR REAR = 33,500 LBS

EV3
GVWR = 86,000 LBS
NUMBER OF AXLES: 3
AXLE WEIGHTS:
GAWR FRONT = 24,000 LBS
GAWR INTERMEDIATE = 31,000 LBS
GAWR REAR = 31,000 LBS

LIVE LOAD FACTORS:

HS-20 = 1.30
EV2 = 1.3
EV3 = 1.3

LIVE LOAD FACTORS LOAD RATING:

HS-20 = 1.35
EV2 = 1.0
EV3 = 1.0

MULTIPLE PRESENCE FACTOR:

MPF = 1.0

LANE LOAD:

NO LANE LOAD WAS APPLIED.

IMPACT:

DYNAMIC IMPACT FOR WOOD/TIMBER COMPONENTS IS ZERO. DYNAMIC IMPACT FACTOR FOR ALL OTHER COMPONENTS IS 33%.

DEAD LOADS:

WEARING SURFACES SHALL NOT BE ALLOWED.

WEIGHT OF TIMBER = 40 PCF.

DESIGN ASSUMPTIONS/PARAMETERS:

SUPERSTRUCTURE WILL BE SIX LINES OF I-BEAMS.

BRIDGE IS SINGLE SPAN.

BRIDGE WIDTH = 12'-0" OUT TO OUT.

GENERAL NOTES:

THIS BRIDGE IS DESIGNED IN ACCORDANCE WITH THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) "STRUCTURES MANAGEMENT UNIT MANUAL", DATED 6/15/23, 2024 NCDOT IN-KIND TIMBER BRIDGE REPLACEMENT PROGRAM, AND THE AASHTO "LRFD BRIDGE DESIGN SPECIFICATIONS", 9th EDITION.

THESE DRAWINGS ARE INTENDED ONLY FOR USAGE IN THE INSTALLATION OF SINGLE SPAN I-BEAM BRIDGES FOR PRIVATE DRIVEWAYS IN COUNTIES AS LISTED IN THE CONTRACT DOCUMENTS BY NORTH CAROLINA OFFICE OF EMERGENCY MANAGEMENT IN RESPONSE TO THE DAMAGE CAUSED BY HURRICANE HELENE.

BRIDGE CONSTRUCTION, WORKMANSHIP, AND MATERIALS SHALL BE IN ACCORDANCE WITH THE NCDOT "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES", 2024 EDITION.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

IT IS ASSUMED THAT THERE ARE NO UTILITY CONFLICTS. THE CONTRACTOR SHALL INVESTIGATE THE PRESENCE OF UTILITIES BEFORE COMMENCING WORK.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.

CONTRACTOR SHALL SET BRIDGE ELEVATIONS SUCH THAT WATER WILL DRAIN AND NOT POND ON THE BRIDGE DECK AND MINIMUM LONGITUDINAL GRADE SHALL BE 0.5% AND MAXIMUM GRADE SHALL BE 6%.

FOR PILE-SUPPORTED END BENTS, PLACE APPROACH EMBANKMENT (CORE MATERIAL) PRIOR TO PILE INSTALLATION.

THIS BRIDGE HAS BEEN DESIGNED FOR ADTT < 100.

EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON SHEET EC-01 ARE FOR GENERAL GUIDANCE ONLY AND REPRESENT MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL REQUIRED EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, CONTRACT DOCUMENTS, AND APPLICABLE REGULATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MODIFYING THESE MEASURES AND PROVIDING ANY ADDITIONAL DEVICES NECESSARY TO ACCOUNT FOR ACTUAL SITE CONDITIONS, INCLUDING GROUNDWATER CONDITIONS AND WEATHER EVENTS, AND TO PREVENT SEDIMENT FROM LEAVING THE PROJECT SITE.

ALL REFERENCES WITHIN THESE PLANS TO "STANDARD SPECIFICATIONS" OR "NCDOT SPECIFICATIONS" SHALL BE GOVERNED BY THE NCDOT "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024.

TRAFFIC CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, INCLUDING THE SPECIAL PROVISIONS, AND IN CONFORMANCE WITH THE NCDOT STANDARD SPECIFICATIONS, NCDOT ROADWAY STANDARD DRAWINGS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING, INSTALLING, AND MAINTAINING ALL TRAFFIC CONTROL DEVICES NECESSARY TO SAFELY CONDUCT THE WORK AND PROTECT THE TRAVELING PUBLIC.

MATERIAL PROPERTIES:

CONCRETE: MINIMUM COMPRESSIVE STRENGTH, f'c = 3,000 psi (CLASS A)

STRUCTURAL STEEL: AASHTO M270, GRADE 50.

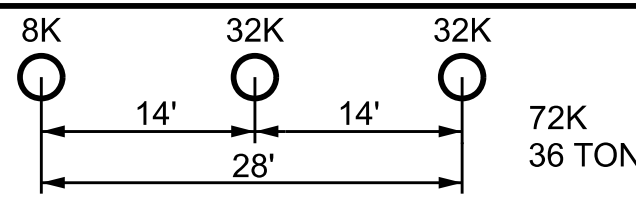
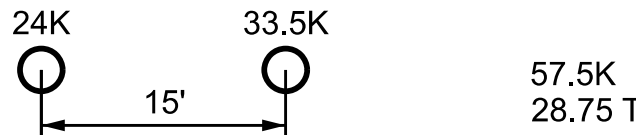
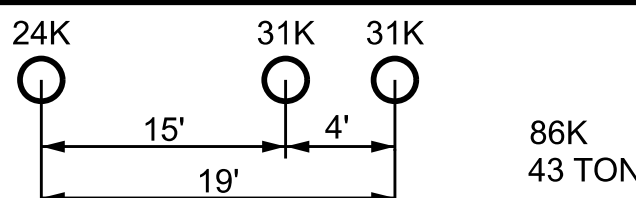
WELDS: SMAW, 70 KSI ELECTRODES PER NCDOT STANDARD SPECIFICATIONS.

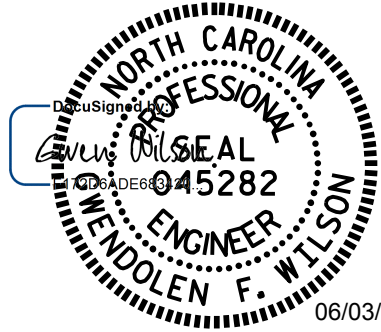
ANCHOR BOLTS: ASTM F1554, GRADE 55.

BOLTS SHALL CONFORM TO ASTM F3125, GRADE A325. PROVIDE GALVANIZED NUTS AND WASHERS COMPATIBLE WITH THE BOLTS.

TIMBER: ALL TIMBER & DIMENSIONAL LUMBER SHALL BE NO. 1 VISUALLY GRADED, SOUTHERN PINE WITH REFERENCE DESIGN VALUES OF: Fbo = 1.35 ksi AND Fvo = 0.175 ksi OR GREATER.

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS WITH A SHEAR MODULUS OF 0.110 KSI.

REF.#	DESIGN VEHICLES	
	SCHEMATIC	
HS-20		
EV2		
EV3		



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



Johnson, Mirmiran, & Thompson Inc.
108 Asheville Commerce Parkway
Candler, NC, 28715
License No: C-3097

DWN. BY: BC
CHKD. BY: CFW
DES. EGR. OF RECORD: GFW

DATE: 04/2026
DATE: 04/2026
DATE: 04/2026

NORTH CAROLINA OFFICE OF EMERGENCY MANAGEMENT					
PRIVATE DRIVEWAY BRIDGE STANDARDS					
SINGLE LANE STEEL BEAM BRIDGE TIMBER DECK					
GENERAL NOTES					
REVISIONS					SHEET NO. S-13
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS 13					