04 - STRUCTURE
INDEX OF DRAWINGS

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S-03	CROSS SECTIONS	S-23	WATER HANDLING PLAN - PHASE 2A
S-04	BORING LOGS - 1	S-24	WATER HANDLING PLAN - PHASE 2B
S-05	BORING LOGS - 2	S-25	WATER HANDLING PLAN - PHASE 2C
S-06	BORING LOGS - 3	S-26	CRANE LAYOUT AND ERECTION PLAN
S-07	ABUTMENT AND WINGWALL FOUNDATION AND PILE LAYOUT PLAN	S-27	TEMPORARY UTILITY RELOCATION PLAN
S-08	MICROPILE DETAILS		
S-09	ABUTMENT ELEVATIONS		
S-10	ABUTMENT DETAILS		
S-11	WINGWALL DETAILS		
S-12	FRAMING PLAN		
S-13	PRESTRESSED SOLID DECK BEAM DETAILS - 1		
S-14	PRESTRESSED SOLID DECK BEAM DETAILS - 2		
S-15	PRESTRESSED SOLID DECK BEAM DETAILS - 3		
S-16	LAYOUT PLAN AND ELEVATIONS		
S-17	MISCELLANEOUS DETAILS - 1		
S-18	MISCELLANEOUS DETAILS - 2		
S-19	3-TUBE CURB MOUNTED BRIDGE RAIL DETAILS - 1		
S-20	3-TUBE CURB MOUNTED BRIDGE RAIL DETAILS - 2		

DESIGNED BY: **BENESCH**

STATE OF CONNECTICUT · STEVEN J. DRECHSLER · No. 23441 · LICENSED PROFESSIONAL ENGINEER

Digitally signed by Steven Drechsler
Date: 2025.10.24 13:30:34-04'00'

REVISION DESCRIPTION | DATE | REV.

SIGNATURE BLOCK:
benesch
Alfred Benesch & Company
120 Hebron Avenue
2nd Floor
Glastonbury, CT

DESIGNER/DRAFTER: A. BISI CHECKED BY: M. HABEK

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE:
REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): **VOLUNTOWN**

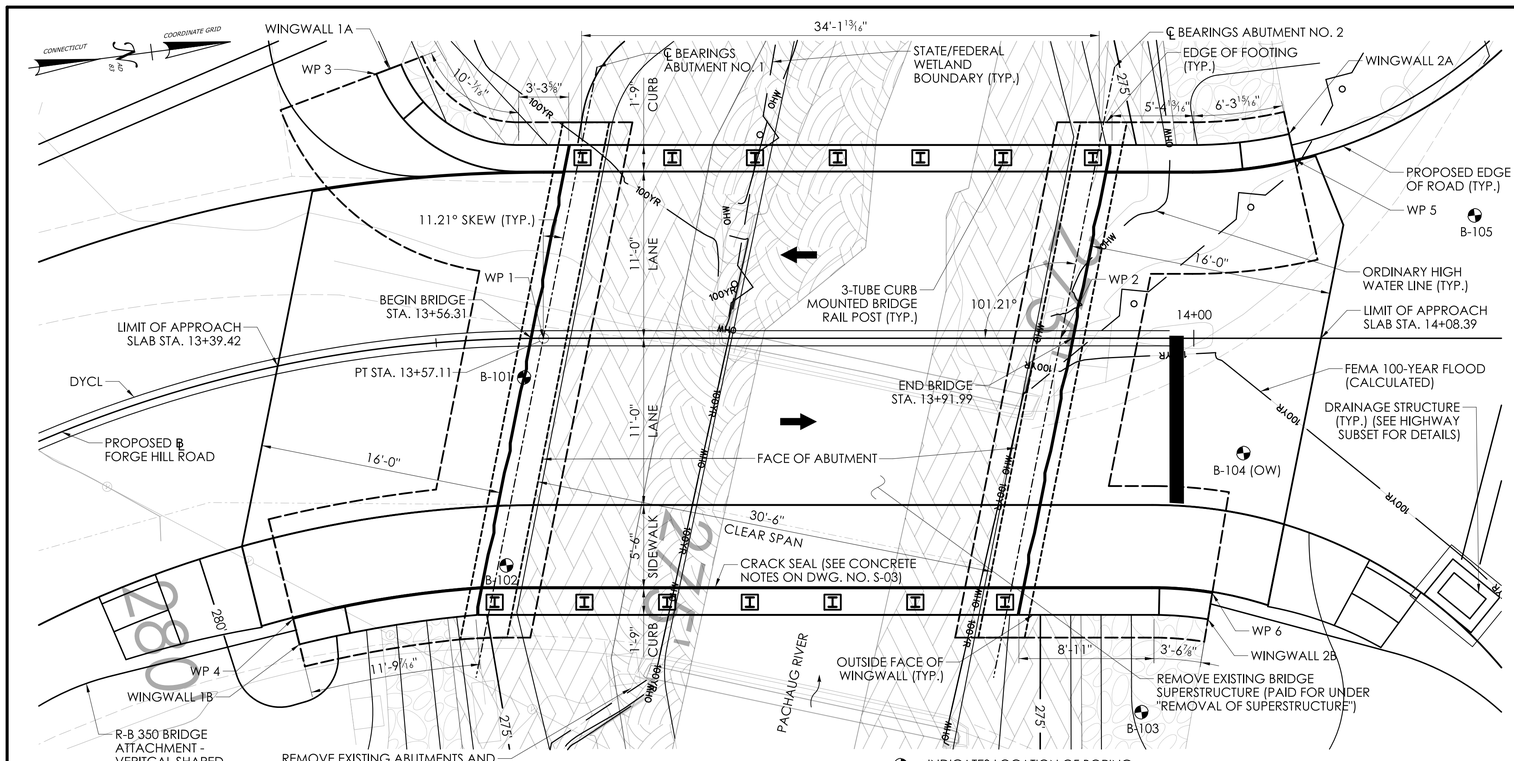
DRAWING TITLE:
INDEX OF STRUCTURE DRAWINGS

PROJECT NO.: **0147-0062**

DRAWING NO.: **S-01**

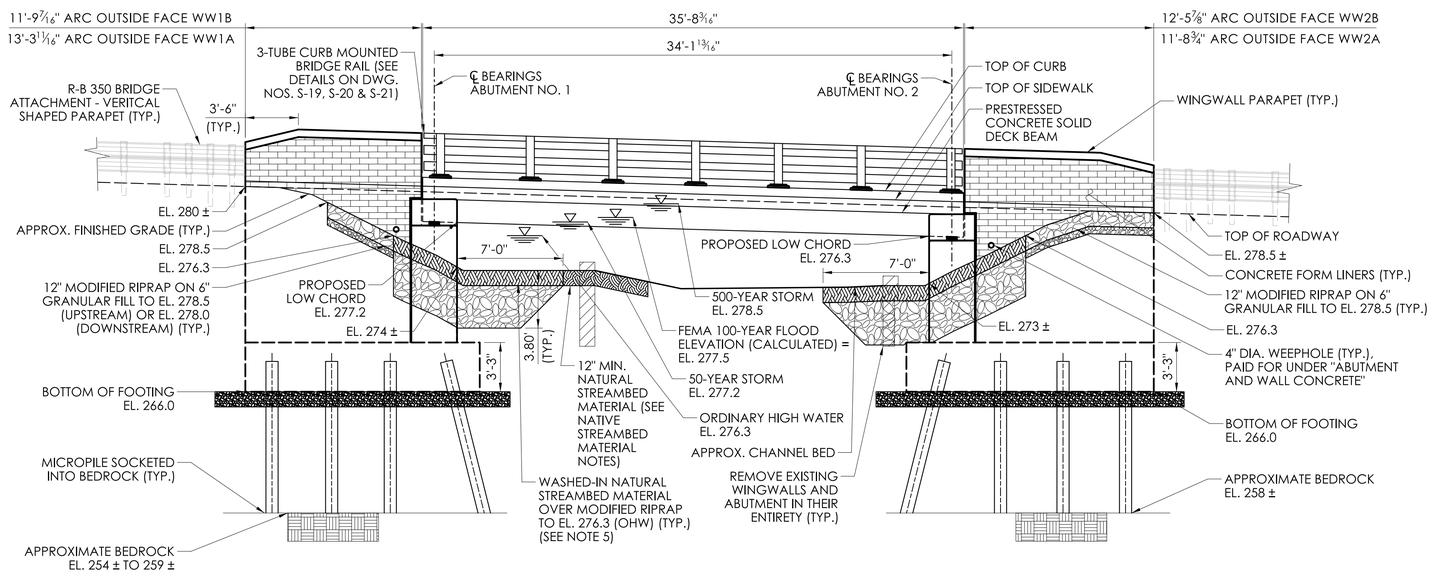
SHEET NO.: **04.01**

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_INDEX.dgn
PLOTTED DATE: 10/16/2025



GENERAL PLAN
SCALE: 1"=5'

: INDICATES LOCATION OF BORING
: NATURAL STREAMBED MATERIAL
: WASHED-IN STREAMBED MATERIAL OVER MODIFIED RIPRAP
: MODIFIED RIPRAP OVER GRANULAR FILL



INLET ELEVATION
SCALE: 1"=5'

GENERAL NOTES

SPECIFICATIONS: CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 819 (2024), SUPPLEMENTAL SPECIFICATIONS DATED JANUARY 2025 AND SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS: ALL ELEMENTS TO BE DESIGNED ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2020, 9TH EDITION, AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL (2003), INCLUDING THE LATEST REVISIONS.

MATERIAL STRENGTHS:
CONCRETE:

CLASS PCC03340	f'c = 3,000 PSI
CLASS PCC04460	f'c = 4,000 PSI
CLASS PCC04462	f'c = 4,000 PSI
PRESTRESSED SOLID DECK BEAMS CLASS PRC08062	f'c = 8,000 PSI

THE CONCRETE STRENGTH, f'c, USED IN DESIGN OF THE CONCRETE COMPONENTS IS NOTED ABOVE. THE COMPRESSIVE STRENGTH OF THE CONCRETE IN THE CONSTRUCTED COMPONENTS SHALL CONFORM TO THE REQUIREMENTS OF 6.01 - CONCRETE FOR STRUCTURES, AND M.03 - PORTLAND CEMENT CONRETE.

REINFORCEMENT:
ASTM A615 GRADE 60 fy = 60,000 PSI (SEE DWG. S-03 FOR MORE INFORMATION)

LIVE LOAD: HL-93, LEGAL AND PERMIT VEHICLES

FUTURE PAVING ALLOWANCE: NONE

BITUMINOUS CONCRETE OVERLAY: THIS SHALL CONSIST OF THREE LIFTS. THE FIRST SHALL BE HMA S0.25 (1 INCH THICK) EXTENDING THE FULL CURB-TO-CURB WIDTH OF THE BRIDGE, THE SECOND LIFT SHALL BE HMA S0.5 VARIABLE THICKNESS WEDGE ESTABLISHING THE PLANE GRADE AND CROSS SLOPE ALONG THE PROPOSED BASELINE. THE THIRD LAYER SHALL BE HMA S0.5 (VARIABLE THICKNESS). MIXES SHALL BE TRAFFIC LEVEL 2. SEE PAVEMENT DETAILS ON DWG. NO. S-03.

FOUNDATION PRESSURES AND PILE LOADS: THE VARIOUS GROUP LOADINGS NOTED ON THE SUBSTRUCTURE PLAN SHEETS REFER TO THE GROUP LOADS AS GIVEN IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

DIMENSIONS: WHEN DECIMAL DIMENSIONS ARE GIVEN TO LESS THAN THREE DECIMAL PLACES, THE OMITTED DIGITS SHALL BE ASSUMED TO BE ZEROS.

BRIDGE IDENTIFICATION PLACARDS: THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEW BRIDGE IDENTIFICATION SIGN AT THE LEADING END OF THE NEW BRIDGE PARAPET ON THE TRAFFIC SIDE. THE SIGNS SHALL BE FABRICATED WITH 40 GAUGE ALUMINUM SHEET METAL. THE SIGNS SHALL BE 4" BY 12" WITH 3" WHITE REFLECTIVE BLOCK LETTERS ON GREEN REFLECTIVE SHEETING. EACH SIGN SHALL READ: 04805. THE FINAL LOCATION AND ATTACHMENT METHOD FOR THE SIGNS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. THE BRIDGE SIGNS SHALL BE PAID UNDER ITEM "SIGN FACE SHEET ALUMINUM (TYPE IX RETROREFLECTIVE SHEETING)."

UTILITIES: THE FOLLOWING UTILITIES ARE LOCATED WITHIN THE PROJECT LIMITS AND SHALL BE PROTECTED DURING CONSTRUCTION: OVERHEAD UTILITIES (EVERSOURCE, FRONTIER, COMCAST). THE CONTRACTOR SHALL COORDINATE ALL WORK RELATED TO UTILITY RELOCATION WITH THE RESPECTIVE UTILITY COMPANIES.

MASH TEST LEVEL: THE 3-TUBE CURB MOUNTED BRIDGE RAIL MEETS THE TL-4 CRITERIA FOR MASH 2016.

NATIVE STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING CONSTRUCTION SHALL BE STOCKPILED AND THEN REPLACED AS DIRECTED BY THE ENGINEER, AND IN ACCORDANCE WITH THE PERMIT DOCUMENTS (PAID FOR UNDER "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL").
2. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.
3. IF A SUFFICIENT QUANTITY OF MATERIAL IS NOT AVAILABLE FROM THE EXISTING STREAMBED CHANNEL WITHIN THE PERMITTED FOOTPRINT OF THE SITE, THE CONTRACTOR SHALL FURNISH VISUALLY INSPECTED AND ACCEPTED (BY DEEP FISHERIES OR OEP) SUPPLEMENTAL STREAMBED CHANNEL MATERIAL FROM AN OFF-SITE SOURCE (PAID FOR UNDER THE ITEM "SUPPLEMENTAL STREAMBED CHANNEL MATERIAL").
4. 1' NATURAL STREAMBED MATERIAL SHALL BE PLACED UP TO PROPOSED CONTOUR ELEVATION 276.3 ON BOTH SIDES OF THE RIVER WITHIN THE DISTURBED AREAS.
5. WASHING-IN OF EXISTING STREAMBED MATERIAL SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISION "WASHING-IN SUPPLEMENTAL STREAMBED MATERIAL."
6. WASHING-IN OF THE INSTALLED SUPPLEMENTAL STREAMBED CHANNEL MATERIAL SHALL BE PAID FOR UNDER ITEM NO. 0202218 - "WASHING-IN SUPPLEMENTAL STREAMBED MATERIAL."

HYDRAULIC SUMMARY TABLE

DRAINAGE AREA [SQ. MI.]	5.5
DESIGN FREQUENCY [YEAR]	100
DESIGN DISCHARGE [CFS]	350
AVERAGE DAILY FLOW ELEVATION [FT]	273.6
DESIGN WATER SURFACE EL. - UPSTREAM [FT]	277.5
DESIGN WATER SURFACE EL. - DOWNSTREAM [FT]	277.2
MAXIMUM SCOUR ELEVATION [FT]	261.7
FREQUENCY [YEAR]	500
WORST CASE SCOUR SUBSTRUCTURE UNIT	ABUTMENT NO. 2

NOTICE TO BRIDGE INSPECTORS

THE DEPARTMENT'S BRIDGE SAFETY PROCEDURES REQUIRE THIS BRIDGE TO BE INSPECTED FOR, BUT NOT LIMITED TO, ALL APPROPRIATE COMPONENTS INDICATED IN THE GOVERNING MANUALS FOR BRIDGE INSPECTION. ATTENTION MUST BE GIVEN TO INSPECTING THE FOLLOWING SPECIAL COMPONENTS AND DETAILS. (THE LISTING FOR COMPONENTS FOR SPECIFIC ATTENTION SHALL NOT BE CONSTRUED TO REDUCE THE IMPORTANCE OF INSPECTION OF ANY OTHER COMPONENT OF THE STRUCTURE.) THE FREQUENCY OF INSPECTION OF THIS STRUCTURE SHALL BE IN ACCORDANCE WITH THE GOVERNING MANUALS FOR BRIDGE INSPECTION, UNLESS OTHERWISE DIRECTED BY THE MANAGER OF BRIDGE SAFETY AND EVALUATION.

COMPONENT OR DETAIL	STRUCTURE SHEET REFERENCE
N/A	N/A

ESTIMATED TRANSPORTATION DIMENSIONS AND WEIGHTS

MEMBER	LENGTH (FT)	HEIGHT (FT)	WIDTH (FT)	WEIGHT (LBS)
PRESTRESSED SOLID DECK BEAM (BEAMS 1 & 6)	35'-9"	2'-3"	5'-6"	32,000
PRESTRESSED SOLID DECK BEAM (BEAMS 2-4)	35'-9"	1'-6"	7'-0"	32,000
PRESTRESSED SOLID DECK BEAM (BEAM 5)	35'-9"	2'-3"	7'-0"	32,000

REV	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Allied Benesch & Company, 120 Historic Avenue 2nd Floor, Glastonbury, CT
DESIGNER/DRAFTER: A. BISI CHECKED BY: M. HABEK

CTDOT CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

DRAWING TITLE: GENERAL PLAN AND ELEVATION

PROJECT NO.: 0147-0062

DRAWING NO.: S-02

SHEET NO.: 04.02

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_GPN.dgn
PLOTTED DATE: 10/17/2025

CONCRETE NOTES

THE FOLLOWING PAY ITEMS AND CONCRETE CLASSES ARE REQUIRED FOR CAST-IN-PLACE BRIDGE COMPONENTS:

ITEM	BRIDGE COMPONENTS	PCC CLASS
FOOTING CONCRETE	ABUTMENT AND WINGWALL FOOTINGS	PCC03340
ABUTMENT AND WALL CONCRETE	ABUTMENT AND WINGWALL STEMS, CHEEKWALLS	PCC03340
APPROACH SLAB CONCRETE	APPROACH SLABS	PCC04460
BRIDGE DECK CONCRETE	CLOSURE POURS BETWEEN DECK BEAMS	PCC04462
BRIDGE SIDEWALK CONCRETE	SIDEWALK ON BRIDGE, SIDEWALK ON APPROACH SLABS, AND CURBS ON BRIDGE	PCC04462
PARAPET CONCRETE	WINGWALL PARAPETS	PCC04462

EXPOSED EDGES: EXPOSED EDGES OF CONCRETE SHALL BE BEVELED 1"X1" UNLESS DIMENSIONED OTHERWISE.

CONCRETE COVER: ALL REINFORCEMENT SHALL HAVE TWO INCHES COVER UNLESS DIMENSIONED OTHERWISE.

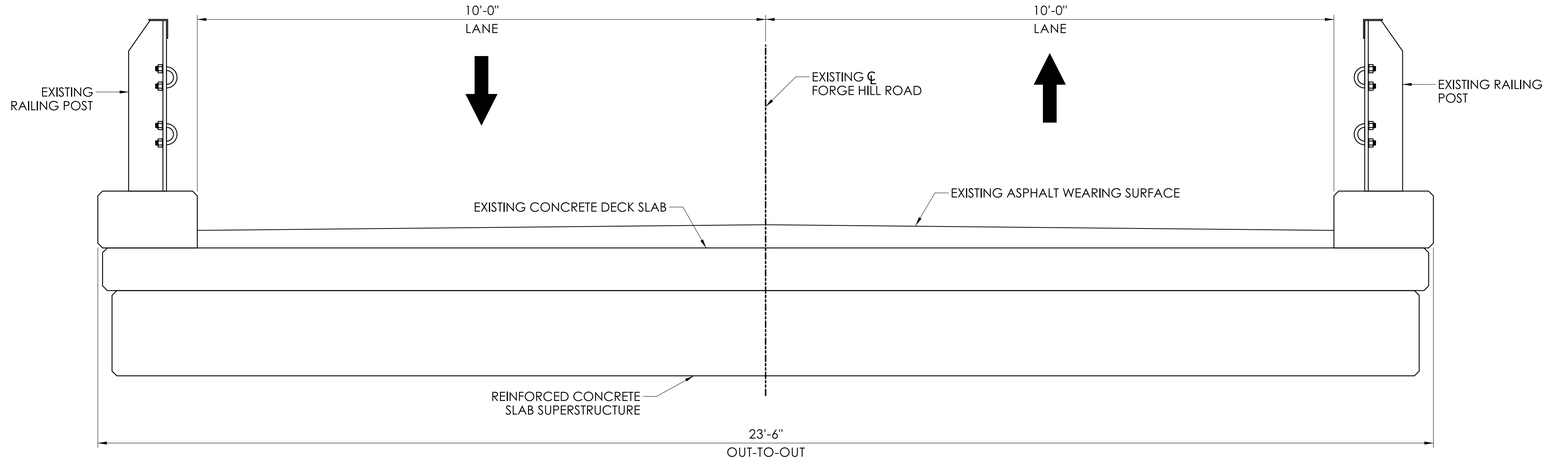
REINFORCEMENT: ALL REINFORCEMENT SHALL BE GALVANIZED AFTER FABRICATION UNLESS NOTED OTHERWISE. ALL REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A767, CLASS 1, INCLUDING SUPPLEMENTAL REQUIREMENTS. THE COST OF FURNISHING AND PLACING THIS REINFORCEMENT SHALL BE INCLUDED IN THE ITEM "DEFORMED STEEL BARS - GALVANIZED."

PREFORMED EXPANSION JOINT FILLER: THE COST OF FURNISHING AND INSTALLING PREFORMED EXPANSION JOINT FILLER IS PAID FOR AS "1" PREFORMED EXPANSION JOINT FILLER FOR BRIDGES."

CONSTRUCTION JOINTS: CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE PLANS, WILL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.

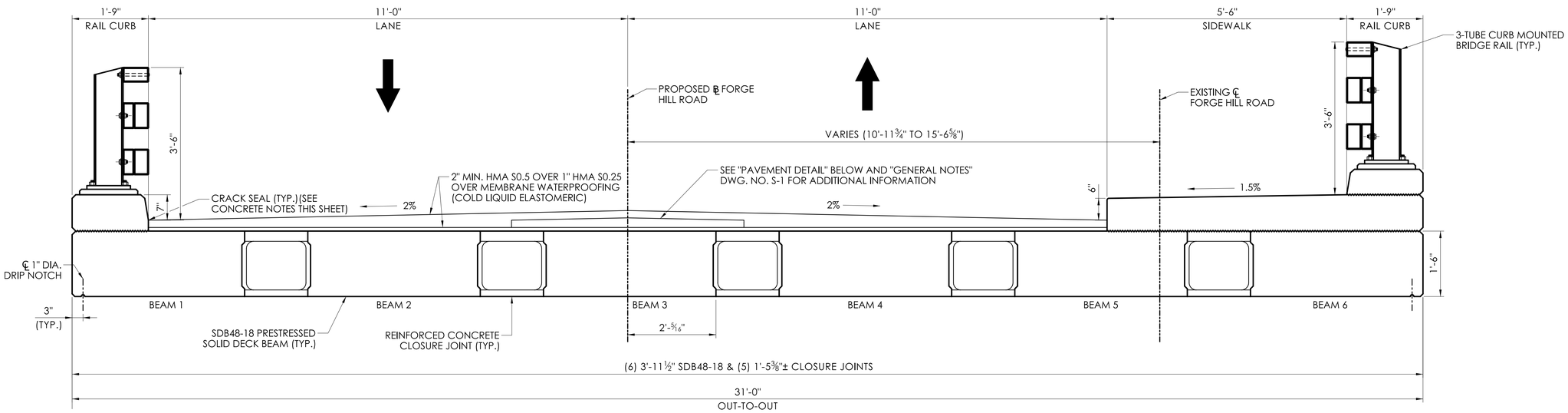
PENETRATING SEALER PROTECTIVE COMPOUND SHALL BE APPLIED TO THE FOLLOWING CONCRETE SURFACES EXPOSED TO SALT SPRAY: CURBS, SIDEWALK AND WINGWALL PARAPETS. THE FRONT FACE AND TOP FACE OF THE CONCRETE SURFACES SHALL BE SEALED, EXCLUDING FORMLINED SURFACES. THE COST SHALL BE INCLUDED IN THE ITEM "PENETRATING SEALER PROTECTIVE COMPOUND."

CRACK SEAL SHALL BE INSTALLED AT THE CURB LINE ALONG THE LENGTH OF THE BRIDGE AND WINGWALLS, BOTH SIDES. CRACK SEALING SHALL BE INCLUDED FOR PAYMENT UNDER THE ITEM, "GUTTER LINE SEALING FOR BRIDGES." SEE SPECIAL PROVISIONS.



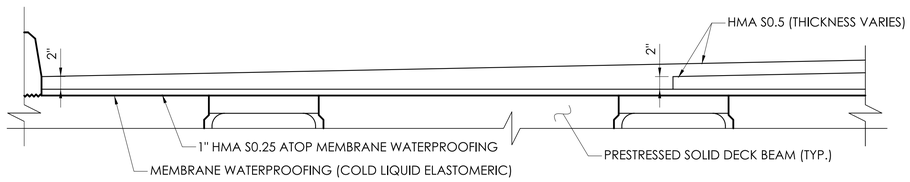
EXISTING CROSS SECTION

SCALE: 3/4"=1'-0"



PROPOSED CROSS SECTION

SCALE: 3/4"=1'-0"



PAVEMENT DETAIL

SCALE: 1"=1'-0"

REV. | DATE | REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Alfred Benesch & Company, 120 Hebron Avenue 2nd Floor, Glastonbury, CT
DESIGNER/DRAFTER: A. BISI CHECKED BY: M. HABEK

CTDOT — CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

DRAWING TITLE: CROSS SECTIONS

PROJECT NO.: 0147-0062

DRAWING NO.: S-03

SHEET NO.: 04.03

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_SEC.dgn
PLOTTED DATE: 10/16/2025

Driller: D. DeAngelas	**Connecticut DOT Boring Report**		Hole No.: B-101
Inspector: T. Ta	Town: Voluntown		Stat./Offset: 13+57.2/R3
Engineer: A. McCauliffe	Project No.: 147-062		Northing: 773813
Start Date: 5-12-23	Route No.: Forge Hill Road over Pauchag River		Easting: 1254228
Finish Date: 5-12-23	Bridge No.: 04805		Surface Elevation: 279.15
Project Description: Forge Hill Road Bridge 04805			
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: NX
Hammer Wt.: 140lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.		
Groundwater Observations: @5.0 after ATD hours			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Pavement Structure	Asphalt (4")	279
	S-1	16 15 13 12	24	11		Misc Fill	Brown c-f SAND, little c-f gravel, trace silt	
	S-2	12 8 7 6	24	13			Brown c-f SAND, little c-f gravel, trace silt, (Top 7")	
5							Light brown c-f SAND, little c-f gravel, trace silt, (Bottom 6")	275
	S-3	11 14 31 54	24	12			Brown c-f SAND, little c-f gravel, little silt, (Top 6")	
	S-4	47 50/5"	11	6		Sand and Gravel	Gray c-f SAND, little c-f gravel, little silt, (Bottom 6")	
							Gray c-f SAND, little m-f gravel, little silt	
10							Boulder from 7ft to 10ft	270
	S-5	15 16 17 23	24	18			Gray and brown c-f SAND, some m-f gravel, little silt	
15								265
	S-6	17 20 23 30	24	6			Gray c-f SAND, and c-f gravel, trace silt	
						Weathered Rock	Charge in drilling action. Suspected top of weathered bedrock	
20						Bedrock		260
	C-1		60	60	0		White and Tan, Granitic GNEISS, fine, slightly weathered, medium interbedded, highly fractured to intensely fractured, weak, 15° to 90° bedding angle, Fracture spacing contains silt (3-3-3-3-3)	
25								255

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES: Boring offset 2ft north due to broken off shoe. Roller bit down to 2ft	Sheet
Earth: 18ft Rock: 12ft		1 of 2
No. of Soil Samples: 6 No. of Core Runs: 2		SM-001-M REV. 1/02

BORING B-101

Driller: D. DeAngelas	**Connecticut DOT Boring Report**		Hole No.: B-101
Inspector: T. Ta	Town: Voluntown		Stat./Offset: 13+57.2/R3
Engineer: A. McCauliffe	Project No.: 147-062		Northing: 773813
Start Date: 5-12-23	Route No.: Forge Hill Road over Pauchag River		Easting: 1254228
Finish Date: 5-12-23	Bridge No.: 04805		Surface Elevation: 279.15
Project Description: Forge Hill Road Bridge 04805			
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: NX
Hammer Wt.: 140lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.		
Groundwater Observations: @5.0 after ATD hours			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25						Bedrock (cont'd)		254
	C-2		60	60	0		White and Tan, Granitic GNEISS, fine, slightly weathered, medium interbedded, highly fractured to intensely fractured, weak, 15° to 90° bedding angle, Fracture spacing contains silt (3-3-3-3-3)	
30								250
							END OF BORING 30ft	
35								245
40								240
45								235
50								230

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES: Boring offset 2ft north due to broken off shoe. Roller bit down to 2ft	Sheet
Earth: 18ft Rock: 12ft		2 of 2
No. of Soil Samples: 6 No. of Core Runs: 2		SM-001-M REV. 1/02

BORING B-101 (CONT.)

Driller: D. DeAngelas	**Connecticut DOT Boring Report**		Hole No.: B-102
Inspector: T. Ta	Town: Voluntown		Stat./Offset: 13+54.8/R15
Engineer: A. McCauliffe	Project No.: 147-062		Northing: 773811
Start Date: 5-12-23	Route No.: Forge Hill Road over Pauchag River		Easting: 1254237
Finish Date: 5-12-23	Bridge No.: 04805		Surface Elevation: 279.15
Project Description: Forge Hill Road Bridge 04805			
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: NX
Hammer Wt.: 140lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.		
Groundwater Observations: @4.0 after ATD hours			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Pavement Structure	Asphalt (3")	279
	S-1	13 16 10 7	24	14		Misc Fill	Light brown c-f SAND, and c-f gravel, little silt	
	S-2	7 6 3 2	24	10			Light brown c-f SAND, little c-f gravel, little silt, (Top 4")	
5							Brown c-f SAND, little c-f gravel, little silt, (Bottom 6")	275
	S-3	3 4 3 6	24	11		Sand and Gravel	Gray brown c-f SAND, little c-f gravel, little silt	
	S-4	3 11 7 10	24	14			Gray c-f SAND, some c-f gravel, trace silt	
10								270
	S-5	21 18 11 12	24	15			Gray and orange c-f SAND, some c-f gravel, trace silt	
15								265
	S-6	35 50/2"	8	2			Gray and orange c-f SAND, some c-f gravel, trace silt	
20	S-7	50/2"	2	2		Weathered Rock	Gray c-f SAND, some c-f gravel, little silt Charge in drilling action at 21ft. Suspected top of weathered bedrock	260
25								255

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet
Earth: 21ft Rock: 14ft		1 of 2
No. of Soil Samples: 7 No. of Core Runs: 2		SM-001-M REV. 1/02

BORING B-102

Driller: D. DeAngelas	**Connecticut DOT Boring Report**		Hole No.: B-102
Inspector: T. Ta	Town: Voluntown		Stat./Offset: 13+54.8/R15
Engineer: A. McCauliffe	Project No.: 147-062		Northing: 773811
Start Date: 5-12-23	Route No.: Forge Hill Road over Pauchag River		Easting: 1254237
Finish Date: 5-12-23	Bridge No.: 04805		Surface Elevation: 279.15
Project Description: Forge Hill Road Bridge 04805			
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: NX
Hammer Wt.: 140lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.		
Groundwater Observations: @4.0 after ATD hours			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25						Bedrock		254
	C-1		60	60	7		White and Tan, Granitic GNEISS, coarse, slightly weathered, medium foliated, highly fractured, weak to medium strong, 15° to 75° bedding angle, (3-3-3-3-3)	
30								250
	C-2		60	60	13		White and Tan, Granitic GNEISS, coarse, slightly weathered, medium foliated, highly fractured, weak to medium strong, 15° to 75° bedding angle, (3-3-3-3-4)	
35								245
							END OF BORING 35ft	
40								240
45								235
50								230

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet
Earth: 21ft Rock: 14ft		2 of 2
No. of Soil Samples: 7 No. of Core Runs: 2		SM-001-M REV. 1/02

BORING B-102 (CONT.)

NOTE: SEE DWG. NO. S-02 FOR BORING LOCATIONS

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Alfred Benesch & Company, 120 Historic Avenue 2nd Floor, Glastonbury, CT
DESIGNER/DRAFTER: A. BISI CHECKED BY: M. HABEK

CTDOT — CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

DRAWING TITLE: BORING LOGS - 1

PROJECT NO.: 0147-0062

DRAWING NO.: S-04

SHEET NO.: 04.04

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_BORING 1.dgn
PLOTTED DATE: 10/16/2025

Driller: D. DeAngelas	**Connecticut DOT Boring Report**		Hole No.: B-103
Inspector: T. Ta	Town: Voluntown		Stat./Offset: 13+96.7/R24.8
Engineer: A. McCauliffe	Project No.: 147-062		Northing: 773838
Start Date: 5-15-23	Route No.: Forge Hill Road over Pauchaug River		Easting: 1254250
Finish Date: 5-15-23	Bridge No.: 04805		Surface Elevation: 278.75
Project Description: Forge Hill Road Bridge 04805			
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: NX
Hammer Wt.: 140lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.		
Groundwater Observations: @5.0 after ATD hours			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Pavement Structure	Asphalt (4")	
	S-1	17 15 7 4	24	10		Misc Fill	Light brown c-f SAND, little c-f gravel, little silt	
	S-2	4 3 1 1	24	0			Inferred similar to S-1	275
5	S-3	8 12 4 4	24	8		Sand and Silt	Inferred from Boring S-6 (dark brown f-sand and silt)	
	S-4	4 6 1 5	24	16		Sand and Gravel	Gray c-f SAND, some c-f gravel, trace silt	
							Gray c-f SAND, little c-f gravel, little silt, (Top 10")	
10							Brown and orange c-f SAND, some m-f gravel, little silt, (Bottom 6")	270
	S-5	16 20 20 24	24	20			Brown c-f SAND, some c-f gravel, little silt	
15							Gray c-f SAND, little c-f gravel, trace silt, (Top 8")	265
	S-6	13 11 23 28	24	14		Glacial Till	Gray c-f SAND, some c-f gravel, little silt, (Bottom 6")	
						Weathered Rock	Charge in drilling action at 18ft	
20						Bedrock		260
	C-1		60	52	13		White and Tan, Granitic GNEISS, coarse, slightly weathered, medium bedded, moderately fractured to highly fractured, highly weathered, medium strong, 0° to 90° bedding angle, (3-3-3-3-4)	
25								255

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet 1 of 2
Earth: 18ft Rock: 12ft		
No. of Soil Samples: 6 No. of Core Runs: 2		SM-001-M REV. 1/02

BORING B-103

Driller: D. DeAngelas	**Connecticut DOT Boring Report**		Hole No.: B-103
Inspector: T. Ta	Town: Voluntown		Stat./Offset: 13+96.7/R24.8
Engineer: A. McCauliffe	Project No.: 147-062		Northing: 773838
Start Date: 5-15-23	Route No.: Forge Hill Road over Pauchaug River		Easting: 1254250
Finish Date: 5-15-23	Bridge No.: 04805		Surface Elevation: 278.75
Project Description: Forge Hill Road Bridge 04805			
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: NX
Hammer Wt.: 140lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.		
Groundwater Observations: @5.0 after ATD hours			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25								
	C-2		60	60	53	Bedrock (cont'd)	White and Tan, Granitic GNEISS, coarse, slightly weathered, medium bedded, moderately fractured, medium strong, 15° to 75° bedding angle, (3-3-3-3-4)	
30								250
							END OF BORING 30ft	
35								245
40								240
45								235
50								230

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet 2 of 2
Earth: 18ft Rock: 12ft		
No. of Soil Samples: 6 No. of Core Runs: 2		SM-001-M REV. 1/02

BORING B-103 (CONT.)

Driller: M. St. John	**Connecticut DOT Boring Report**		Hole No.: B-104 (OW)
Inspector: T. Ta	Town: Voluntown		Stat./Offset: 14+3.4/R7.75
Engineer: A. McCauliffe	Project No.: 147-062		Northing: 773844
Start Date: 5-12-23	Route No.: Forge Hill Road over Pauchaug River		Easting: 1254239
Finish Date: 5-12-23	Bridge No.: 04805		Surface Elevation: 278.25
Project Description: Forge Hill Road Bridge 04805			
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: NX
Hammer Wt.: 300lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.		
Groundwater Observations: @4.0 after ATD hours, @3.2 after After 72hrs hours			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Pavement Structure	Asphalt (4")	
	S-1	21 18 16 12	24	18		Misc Fill	Brown c-f SAND, little m-f gravel, trace silt	
	S-2	11 12 10 10	24	12			Brown c-f SAND, little m-f gravel, little silt	275
5	S-3	6 3 2 4	24	10			Brown c-f SAND, little m-f gravel, little silt, (Top 6")	
	S-4	14 15 18 11	24	11		Sand and Silt	Dark brown c-f SAND, some silt, little f gravel (Bottom 4")	
						Sand and Gravel	Brown c-f SAND, trace silt	270
10							[2ft boulder from 10-12ft]	
	S-5	7 17 37 97	24	8			Gray brown c-f SAND, some c-f gravel, trace silt, (Top 4")	
						Glacial Till	Gray c-f SAND, little c-f gravel, little silt (Bottom 4")	265
15	S-6	50/3"	3	3			Gray c-f SAND, and c-f gravel, trace silt	
						Weathered Rock	Hard grinding from 17ft to 20ft. Inferred top of weathered bedrock at 17ft.	
20						Bedrock		260
	C-1		60	60	17		White and Tan, Granitic GNEISS, medium bedded, moderately weathered, moderately fractured to highly fractured, medium strong, 30° to 90° bedding angle, (Silt between fracture spacing) (3-3-4-4-4)	
25								255

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES: Filter sand and backfill to 18ft, slotted pipe from 18 to 8ft, riser 8 to 0.5ft	Sheet 1 of 2
Earth: 17ft Rock: 18ft		
No. of Soil Samples: 6 No. of Core Runs: 3		SM-001-M REV. 1/02

BORING B-104 (OW)

Driller: M. St. John	**Connecticut DOT Boring Report**		Hole No.: B-104 (OW)
Inspector: T. Ta	Town: Voluntown		Stat./Offset: 14+3.4/R7.75
Engineer: A. McCauliffe	Project No.: 147-062		Northing: 773844
Start Date: 5-12-23	Route No.: Forge Hill Road over Pauchaug River		Easting: 1254239
Finish Date: 5-12-23	Bridge No.: 04805		Surface Elevation: 278.25
Project Description: Forge Hill Road Bridge 04805			
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: NX
Hammer Wt.: 300lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.		
Groundwater Observations: @4.0 after ATD hours, @3.2 after After 72hrs hours			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25								
	C-2		60	30	0	Bedrock (cont'd)	White and Tan, Granitic GNEISS, coarse, moderately weathered, medium interbedded, moderately fractured to highly fractured, weak to medium strong, 15° to 90° bedding angle, (isolated spots of completely weathered bedrock) (3-3-4-3-3)	
30								250
	C-3		60	30	0		White and Tan, Granitic GNEISS, coarse, moderately weathered, medium interbedded, moderately fractured to highly fractured, weak to medium strong, 15° to 90° bedding angle, (isolated spots of completely weathered bedrock) (3-2-2-3-3)	245
35							END OF BORING 35ft	
40								240
45								235
50								230

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES: Filter sand and backfill to 18ft, slotted pipe from 18 to 8ft, riser 8 to 0.5ft	Sheet 2 of 2
Earth: 17ft Rock: 18ft		
No. of Soil Samples: 6 No. of Core Runs: 3		SM-001-M REV. 1/02

BORING B-104 (OW) (CONT.)

NOTE: SEE DWG. NO. S-02 FOR BORING LOCATIONS.

REVISION DESCRIPTION | DATE | REV.

SIGNATURE BLOCK: benesch — Alfred Benesch & Company, 100 Hebron Avenue 2nd Floor, Glastonbury, CT
DESIGNER/DRAFTER: A. BISI CHECKED BY: M. HABEK

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

DRAWING TITLE: BORING LOGS - 3

PROJECT NO.: 0147-0062

DRAWING NO.: S-05

SHEET NO.: 04.05

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_BORING 2.dgn
PLOTTED DATE: 10/16/2025

Driller: M. St. John	**Connecticut DOT Boring Report**		Hole No.: B-105
Inspector: T. Ta	Town: Voluntown		Stat./Offset: 14+18.7/L8
Engineer: A. McCauliffe	Project No.: 147-062		Northing: 773869
Start Date: 5-12-23	Route No.: Forge Hill Road over Pauchag River		Easting: 1254223
Finish Date: 5-15-23	Bridge No.: 04805		Surface Elevation: 278.8
Project Description: Forge Hill Road Bridge 04805			
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: NX
Hammer Wt.: 300lb Fall: 30in.	Hammer Wt.: 300lb Fall: 30in.		
Groundwater Observations: @4.0 after ATD hours			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Pavement Structure	Asphalt (3")	
	S-1	19 18 29 17	24	14		Misc Fill	Brown to gray c-f SAND, little c-f gravel, little silt	
	S-2	12 7 7 4	24	12			Brown to gray c-f SAND, little c-f gravel, little silt, (Top 6")	275
5	S-3	7 8 7 5	24	16		Sand and Silt	Dark brown c-f SAND, some silt, (Bottom 6")	
	S-4	4 6 7 10	24	20			Gray SILT, some f sand	
						Sand and Gravel	Gray f SAND, and silt, (Top 10")	
10	S-5	9 14 26 39	24	14			Gray c-f SAND, little silt, Orange band of c-sand (Bottom 10")	270
							Brown c-f SAND, some c-f gravel, trace silt	
15						Bedrock		265
	C-1		60	52	33		White and Tan, Granitic GNEISS, coarse, medium bedded, slightly weathered, slightly fractured to moderately fractured, medium strong, 15° to 60° bedding angle, (3-4-4-4-4)	260
20	C-2		60	60	70		White and Tan, Granitic GNEISS, coarse, medium bedded, slightly weathered, slightly fractured to moderately fractured, medium strong, 15° to 60° bedding angle, (4-4-4-4-4)	
25							END OF BORING 25ft	255

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 15ft Rock: 25ft	NOTES:	Sheet 1 of 1
No. of Soil Samples: 5 No. of Core Runs: 2		SM-001-M REV. 1/02

BORING B-105

Driller: D. DeAngelas	**Connecticut DOT Boring Report**		Hole No.: B-106
Inspector: T. Ta	Town: Voluntown		Stat./Offset: 14+11.2/R36
Engineer: A. McCauliffe	Project No.: 147-062		Northing: 773857
Start Date: 5-15-23	Route No.: Forge Hill Road over Pauchag River		Easting: 1254263
Finish Date: 5-15-23	Bridge No.: 04805		Surface Elevation: 278.8
Project Description: Forge Hill Road Bridge 04805			
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: NX
Hammer Wt.: 140lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.		
Groundwater Observations: @4.0 after ATD hours			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Pavement Structure	Asphalt (3")	
	S-1	14 10 8 8	24	3		Misc Fill	Brown c-f SAND, little c-f gravel, little silt	
	S-2	10 5 4 3	24	16			Brown c-f SAND, little c-f gravel, little silt, (Top 8")	275
5	S-3	3 6 8 14	24	18		Sand and Silt	Dark brown to black f SAND, and silt, (Bottom 8")	
							Dark brown c-f SAND, some silt, trace f gravel, (Top 8")	
						Sand and Gravel	Gray brown c-f SAND, little c-f gravel, little silt, (Bottom 10")	
	S-4	50/5"	5	2				270
10	S-5	15 12 14 11	24	18			Gray c-f SAND, and c-f gravel, trace silt	
							Gray brown c-f SAND, little m-f gravel, trace silt	
15	S-6	20 16 15 21	24	10			Gray c-f SAND, some c-f gravel, little silt	265
								260
20	S-7	31 50/5"	11	6		Weathered Bedrock	Brown and orange Decomposed bedrock	
25							White and Tan, Granitic GNEISS, coarse, slightly	255

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 20ft Rock: 13ft	NOTES:	Sheet 1 of 2
No. of Soil Samples: 7 No. of Core Runs: 2		SM-001-M REV. 1/02

BORING B-106

Driller: D. DeAngelas	**Connecticut DOT Boring Report**		Hole No.: B-106
Inspector: T. Ta	Town: Voluntown		Stat./Offset: 14+11.2/R36
Engineer: A. McCauliffe	Project No.: 147-062		Northing: 773857
Start Date: 5-15-23	Route No.: Forge Hill Road over Pauchag River		Easting: 1254263
Finish Date: 5-15-23	Bridge No.: 04805		Surface Elevation: 278.8
Project Description: Forge Hill Road Bridge 04805			
Casing Size/Type: 4-in. Casing	Sampler Type/Size: 1-3/8 inch ID		Core Barrel Type: NX
Hammer Wt.: 140lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.		
Groundwater Observations: @4.0 after ATD hours			

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25	C-1		60	60	27		weathered, medium foliated, moderately fractured to moderately fractured, medium strong, 15° to 75° bedding angle, (3-2-3-3-3)	
								250
30	C-2		60	60	7		White and Tan, Granitic GNEISS, coarse, slightly weathered, medium foliated, moderately fractured to moderately fractured, medium strong, 15° to 60° bedding angle, (3-2-2-3-4)	
						Bedrock	END OF BORING 33ft	245
35								
								240
40								
								235
45								
								230
50								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 20ft Rock: 13ft	NOTES:	Sheet 2 of 2
No. of Soil Samples: 7 No. of Core Runs: 2		SM-001-M REV. 1/02

BORING B-106 (CONT.)

NOTE: SEE DWG. NO. S-02 FOR BORING B-105 LOCATION.
SEE DWG. NO. S-07 FOR BORING B-106 LOCATION.

REVISION DESCRIPTION | DATE | REV.

SIGNATURE BLOCK:
benesch
Allied Benesch & Company
120 Historic Avenue 2nd Floor
Glastonbury, CT
DESIGNER/DRAFTER: A. BISI CHECKED BY: M. HABEK

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE:
REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S):
VOLUNTOWN

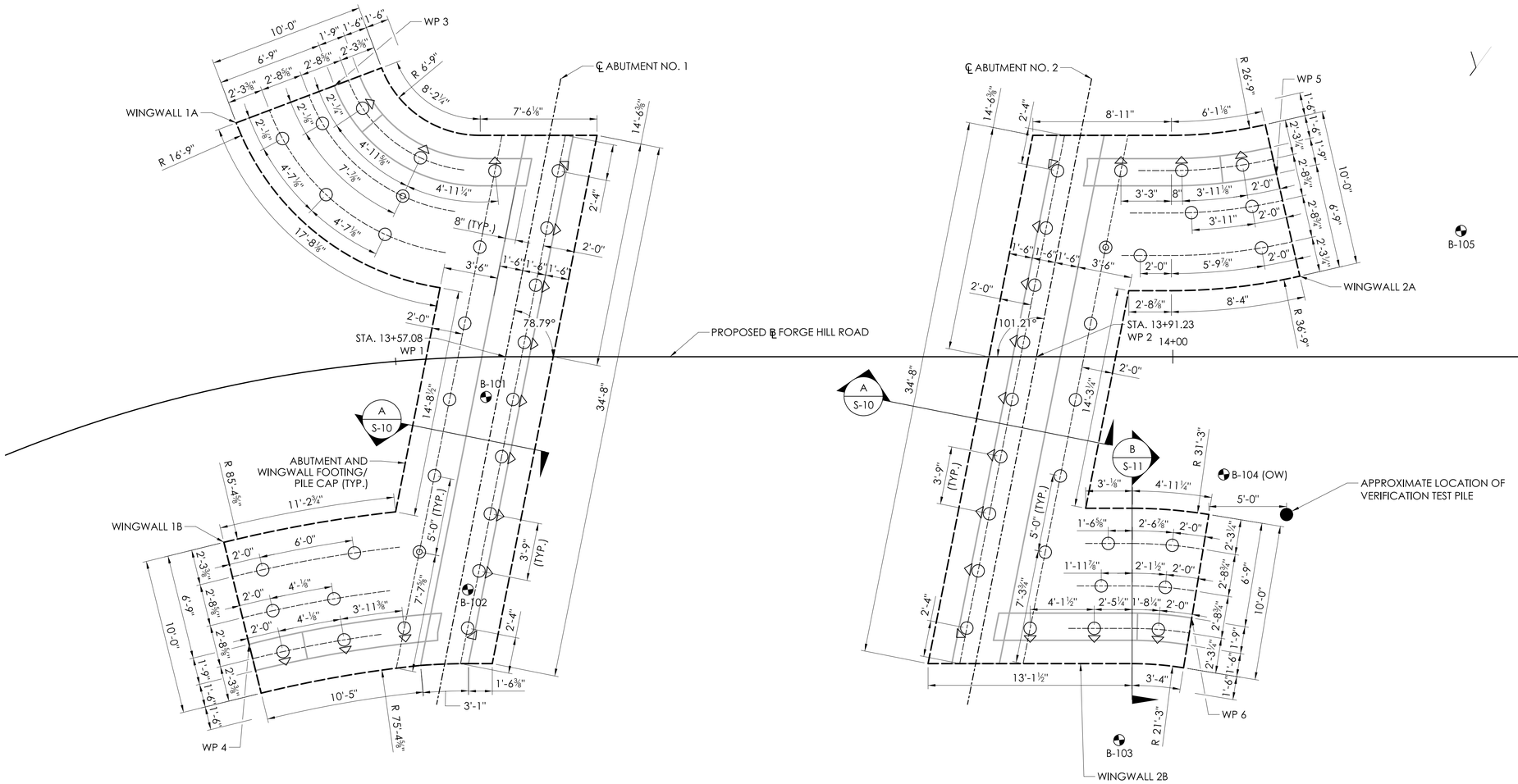
DRAWING TITLE:
BORING LOGS - 3

PROJECT NO.: **0147-0062**

DRAWING NO.: **S-06**

SHEET NO.: **04.06**

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_BORING 3.dgn
PLOTTED DATE: 10/16/2025



: LOCATION OF BORING

: MICROPILE (VERTICAL)

: MICROPILE WITH 1:4 BATTER (IN DIRECTION OF ARROW)

: LOCATION OF VERIFICATION TEST FOR MICROPILES

: LOCATION OF PROOF TEST FOR MICROPILES

—·— : CENTERLINE OF PILE ROW

ABUTMENT AND WINGWALL FOUNDATION AND PILE LAYOUT PLAN

SCALE: ¼"=1'-0"

NOTES:

1. FOR WORKING POINT COORDINATES, SEE DWG. NO. S-16.
2. BATTERED PILES ALONG THE CURVED WALLS ARE ORIENTED ALONG THE WALL RADIUS.
   BATTERED PILES AT ABUTMENT CORNERS ARE ORIENTED TOWARDS THE CORNER OF THE ABUTMENT FOOTING.
   ALL OTHER BATTERED PILES ARE ORIENTED PERPENDICULAR TO THE EDGE OF FOOTING.

MAXIMUM DESIGN PILE LOADS:

STRENGTH (I): 52 TONS
SERVICE (I): 36 TONS

ULTIMATE MICROPILE CAPACITY = 85 TONS
(BASED ON 0.70 RESISTANCE FACTOR)

ABUTMENT DESIGN LOADS			
	SERVICE I	STRENGTH I	EXTREME II
MAXIMUM DESIGN VERTICAL LOADS (KIPS/FT)	25.03	34.92	23.03
MAXIMUM DESIGN LATERAL LOADS (KIPS/FT)	4.32	6.83	4.32
MAXIMUM DESIGN MOMENT (KIP-FT/FT)	15.84	25.04	15.84

WINGWALL DESIGN LOADS			
	SERVICE I	STRENGTH I	EXTREME II
MAXIMUM DESIGN VERTICAL LOADS (KIPS/FT)	19.80	27.13	19.80
MAXIMUM DESIGN LATERAL LOADS (KIPS/FT)	4.32	6.83	4.32
MAXIMUM DESIGN MOMENT (KIP-FT/FT)	18.72	29.60	18.72

REV. | DATE | REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Alfred Benesch & Company, 100 Hebron Avenue, 2nd Floor, Glastonbury, CT
DESIGNER/DRAFTER: A. BISI CHECKED BY: M. HABEK

CTDOT — CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

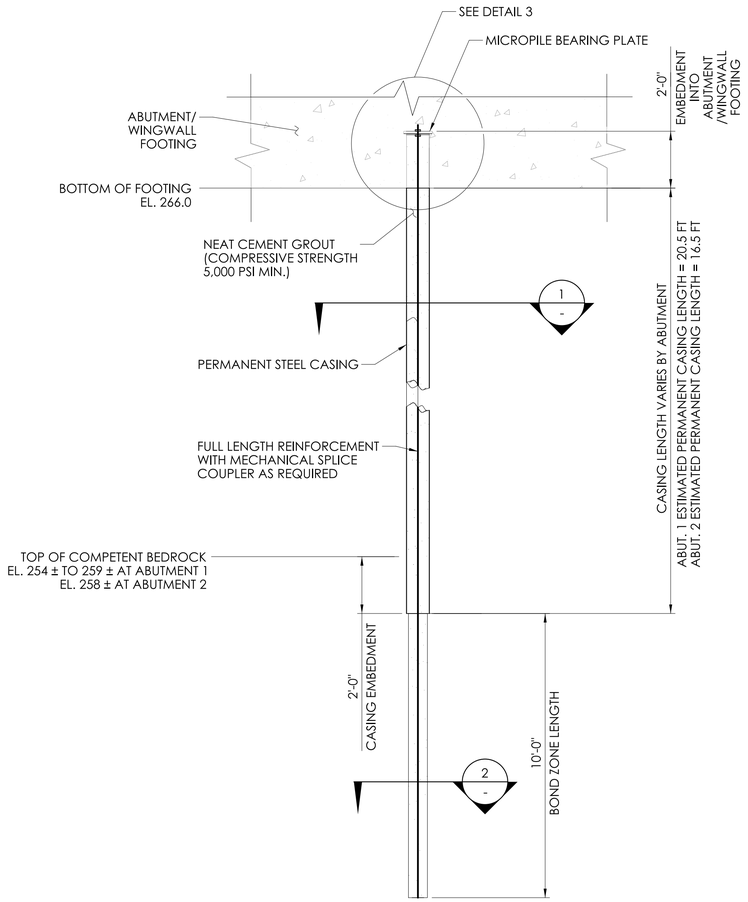
DRAWING TITLE: ABUTMENT AND WINGWALL FOUNDATION AND PILE LAYOUT PLAN

PROJECT NO.: 0147-0062

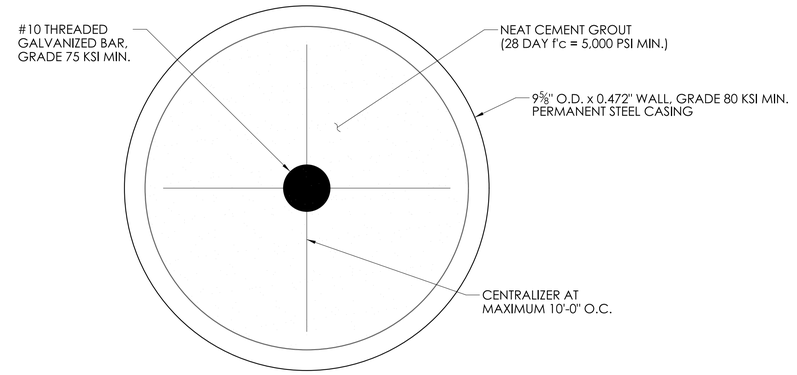
DRAWING NO.: S-07

SHEET NO.: 04.07

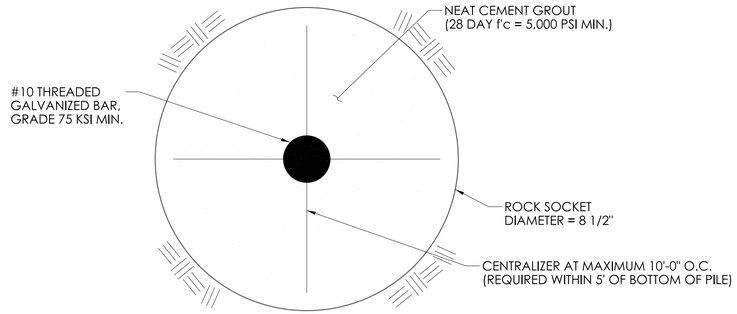
LASTED SAVED BY: abisi FILE NAME: c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_FNDN.dgn
PLOTTED DATE: 10/16/2025



MICROPILE ELEVATION
SCALE: ⅜" = 1'-0"



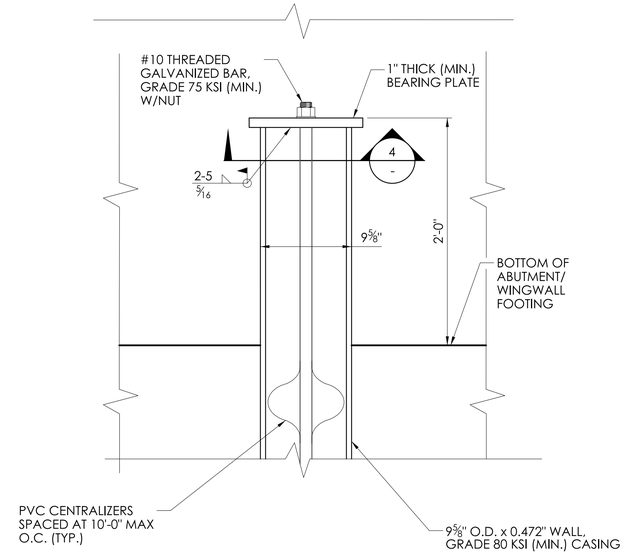
1 - CASED MICROPILE
SCALE: 6" = 1'-0"



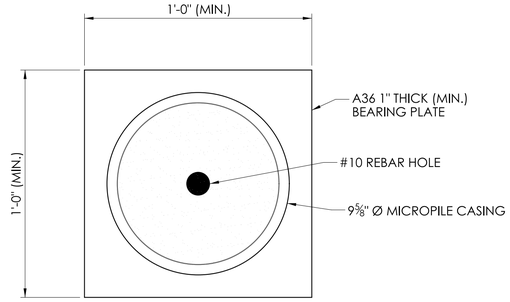
2 - UNCASED MICROPILE
SCALE: 6" = 1'-0"

FINAL MICROPILE DESIGN IS TO BE PROVIDED BY THE CONTRACTOR.

MICROPILE DETAILS



3 - MICROPILE DETAIL
SCALE: 1½" = 1'-0"



4 - MICROPILE BEARING PLATE DETAIL
SCALE: 3" = 1'-0"

MICROPILE NOTES:

1. NO SPLICING OF THE CASING OR CENTRAL REINFORCING WILL BE ALLOWED WITHIN THE TOP 10 FEET OF MICROPILE.
2. THE MECHANICAL SPLICE COUPLERS ON THE REINFORCEMENT SHALL DEVELOP 125% IN TENSION AND COMPRESSION OF THE SPECIFIED YIELD STRENGTH OF THE BAR BEING SPLICED.
3. FOR ADDITIONAL REQUIREMENTS AND INFORMATION REFER TO THE GEOTECHNICAL REPORT.
4. PILE INSTALLATION TOLERANCES APPLY TO THE LEVEL OF FINAL PILE CUT-OFF.
5. MICROPILES SHALL BE PAID FOR UNDER THE ITEM "MICROPILES".

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK:
benesch
Alfred Benesch & Company
120 Hebron Avenue
3rd Floor
Glastonbury, CT
DESIGNER/DRAFTER: S. LACHCIK CHECKED BY: M. HABEK

CTDOT CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

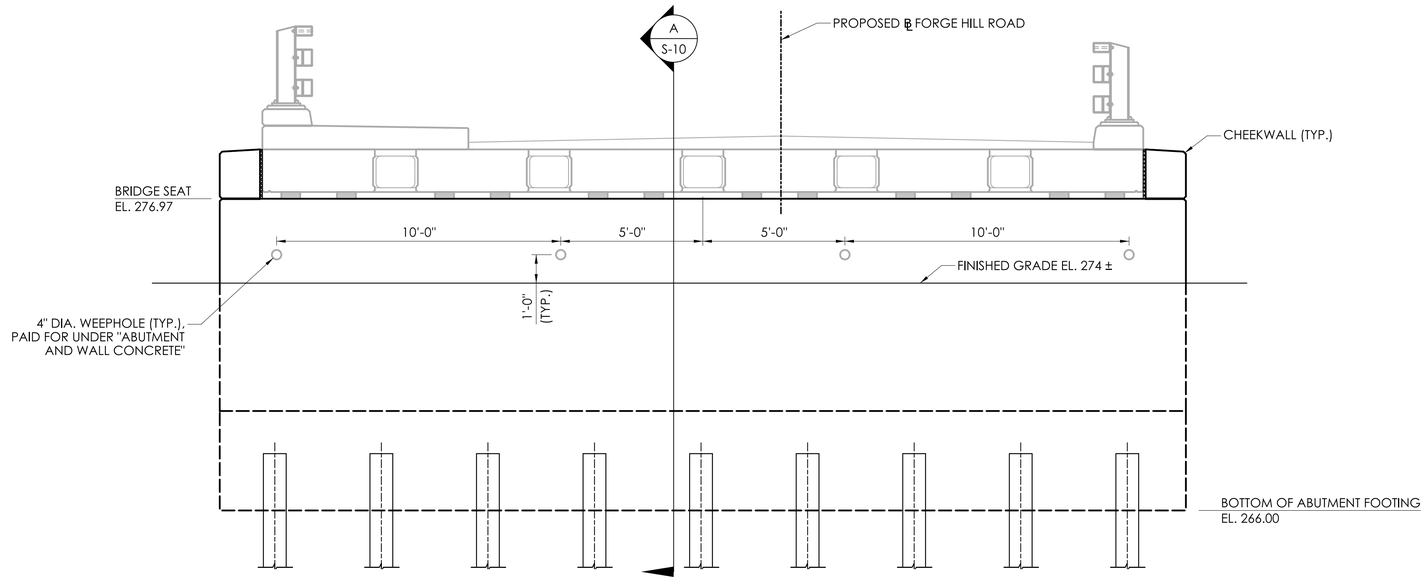
DRAWING TITLE: MICROPILE DETAILS

PROJECT NO.: 0147-0062

DRAWING NO.: S-08

SHEET NO.: 04.08

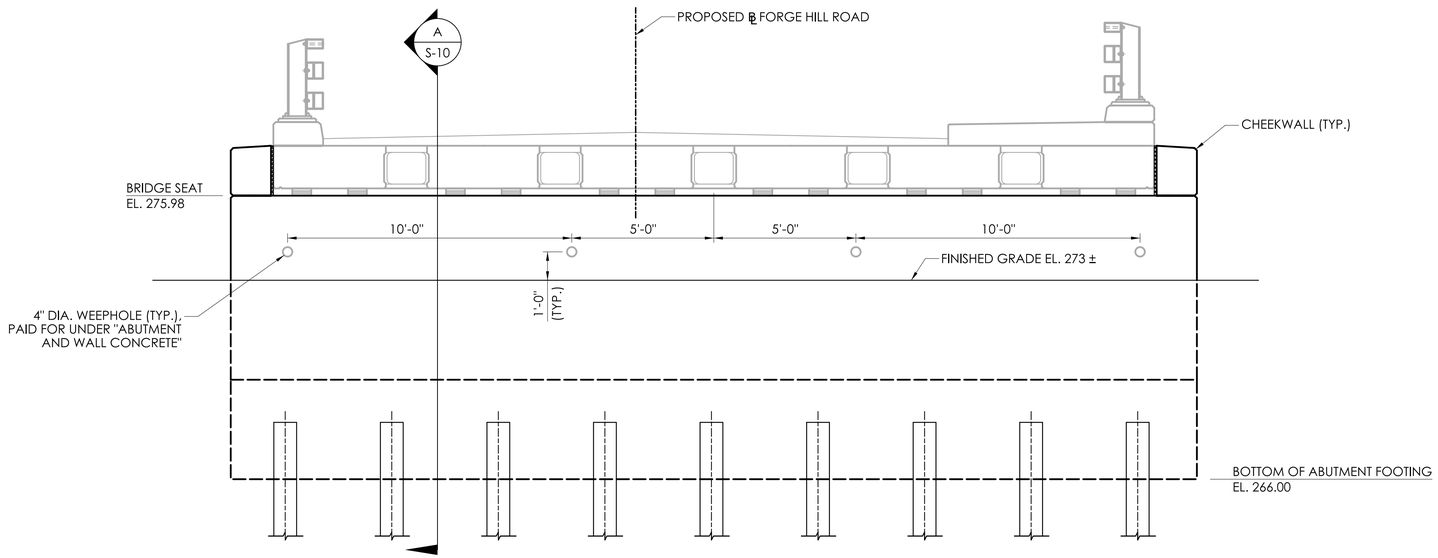
LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_PILE DETAILS.dgn
PLOTTED DATE: 10/24/2025



ABUTMENT NO. 1 ELEVATION

SCALE: 3/8"=1'-0"

NOTE: MICROPILES SHOWN SCHEMATICALLY, SEE DWG. NOS. S-07 & S-08 FOR MORE INFORMATION.



ABUTMENT NO. 2 ELEVATION

SCALE: 3/8"=1'-0"

NOTE: MICROPILES SHOWN SCHEMATICALLY, SEE DWG. NOS. S-07 & S-08 FOR MORE INFORMATION.

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Alfred Benesch & Company, 120 Hebron Avenue, 2nd Floor, Glastonbury, CT

DESIGNER/DRAFTER: A. BISI CHECKED BY: M. HABEK

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: **REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER**

TOWN(S): **VOLUNTOWN**

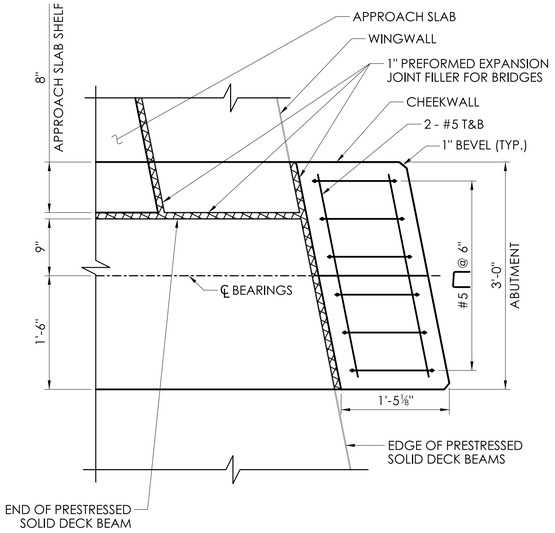
DRAWING TITLE: **ABUTMENT ELEVATIONS**

PROJECT NO.: **0147-0062**

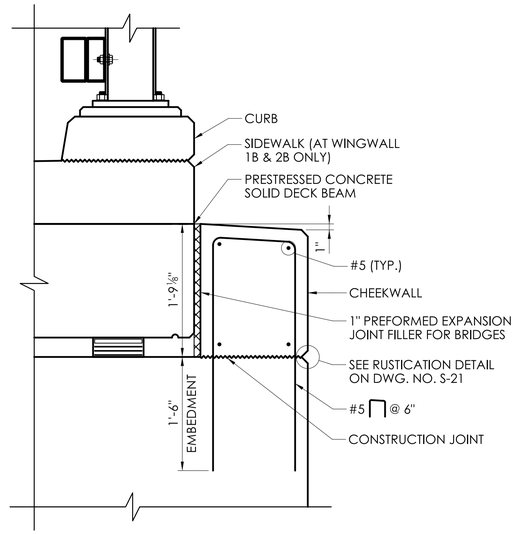
DRAWING NO.: **S-09**

SHEET NO.: **04.09**

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_ABUT ELEVATION.dgn
PLOTTED DATE: 10/16/2025



PLAN



ELEVATION

NOTES:
1. CHEEKWALL AT WINGWALL 2B SHOWN. OTHERS SIMILAR.
2. CURB NOT SHOWN FOR CLARITY.

CHEEKWALL DETAILS

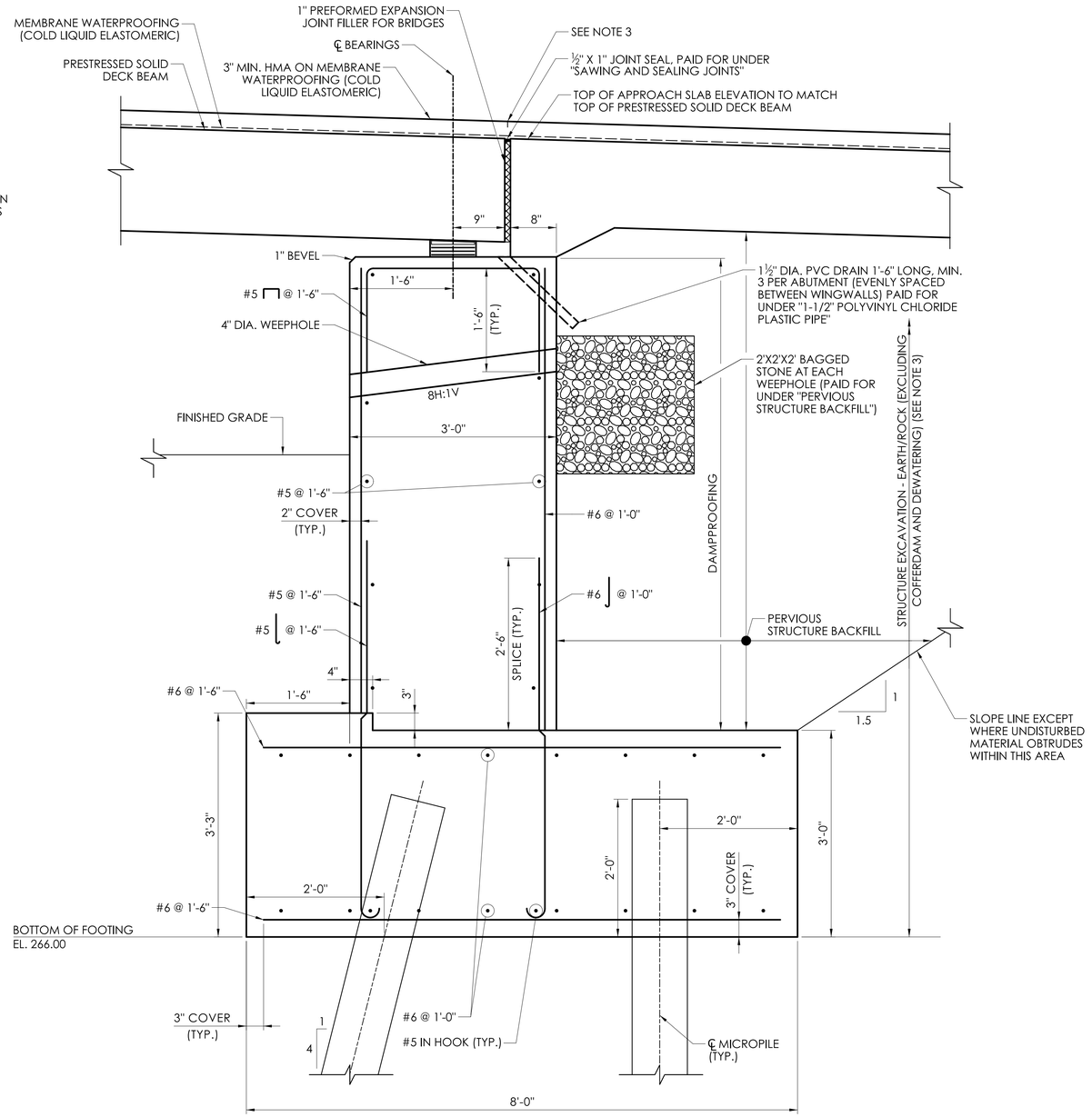
SCALE: 1"=1'-0"

NOTES

1. TYPICAL ABUTMENT SECTION IS TAKEN PERPENDICULAR TO ABUTMENT FACE.
2. CUT BITUMINOUS OVERLAY WITH ⅜" WIDE X 1¾" DEEP KERF AND FILL WITH POURABLE SEALANT. TO BE PAID FOR UNDER THE ITEM "SAWING AND SEALING JOINTS."
3. VERTICAL LIMITS OF "STRUCTURE EXCAVATION - EARTH (EXCLUDING COFFERDAM AND DEWATERING)" AND "STRUCTURE EXCAVATION - ROCK (EXCLUDING COFFERDAM AND DEWATERING)" SHALL EXTEND TO EXISTING GRADE.

EXCAVATION NOTES

1. EXCAVATION WITHIN 2 FEET, HORIZONTALLY, OF ANY PROPOSED SUBSTRUCTURE FOOTING SHALL BE PAID FOR UNDER THE ITEMS "STRUCTURE EXCAVATION - EARTH (EXCLUDING COFFERDAM AND DEWATERING)" AND "STRUCTURE EXCAVATION - ROCK (EXCLUDING COFFERDAM AND DEWATERING)."
2. EXCAVATION BETWEEN EXISTING ABUTMENTS AND 2 FEET IN FRONT OF PROPOSED ABUTMENTS SHALL BE PAID FOR UNDER THE ITEM "CHANNEL EXCAVATION - EARTH." REMOVAL OF EXISTING ABUTMENTS AND WINGWALLS SHALL BE PAID FOR UNDER THE ITEM "REMOVAL OF EXISTING MASONRY."
3. ANY EXCAVATION OUTSIDE OF THE LIMITS DESCRIBED IN NOTES 1 AND 2 ABOVE, AND WITHIN THE EXISTING CHANNEL (BELOW OHW ELEVATION) SHALL BE PAID FOR UNDER THE ITEM "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
4. ANY EXCAVATION OUTSIDE OF THE LIMITS DESCRIBED IN NOTES 1 AND 2 ABOVE, AND OUTSIDE THE EXISTING CHANNEL (ABOVE OHW ELEVATION) SHALL BE PAID FOR UNDER "EARTH EXCAVATION."



TYPICAL ABUTMENT SECTION

SCALE: 1"=1'-0"

A
S-07
S-09

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Alfred Benesch & Company, 300 Hebron Avenue, 2nd Floor, Glastonbury, CT
DESIGNER/DRAFTER: A. BISI CHECKED BY: M. HABEK

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

DRAWING TITLE: ABUTMENT DETAILS

PROJECT NO.: 0147-0062

DRAWING NO.: S-10
SHEET NO.: 04.10

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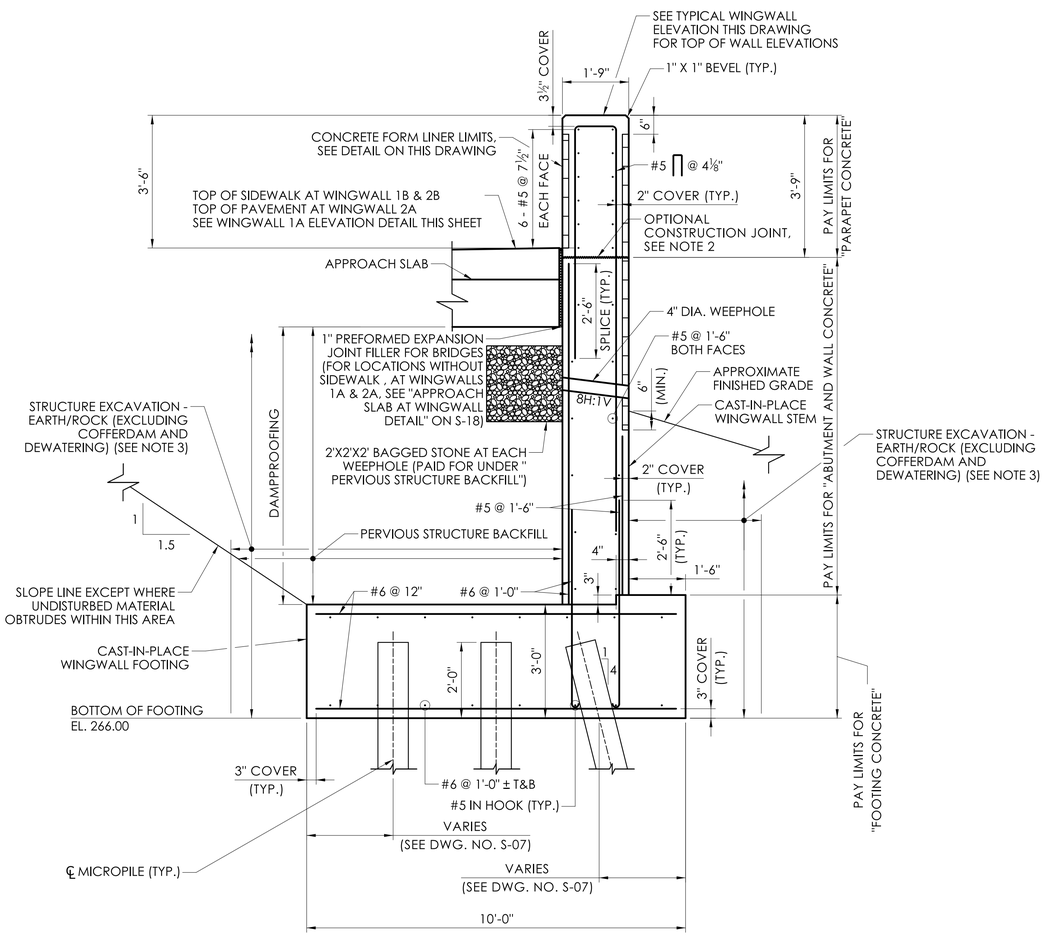
PLOTTED DATE: 10/16/2025

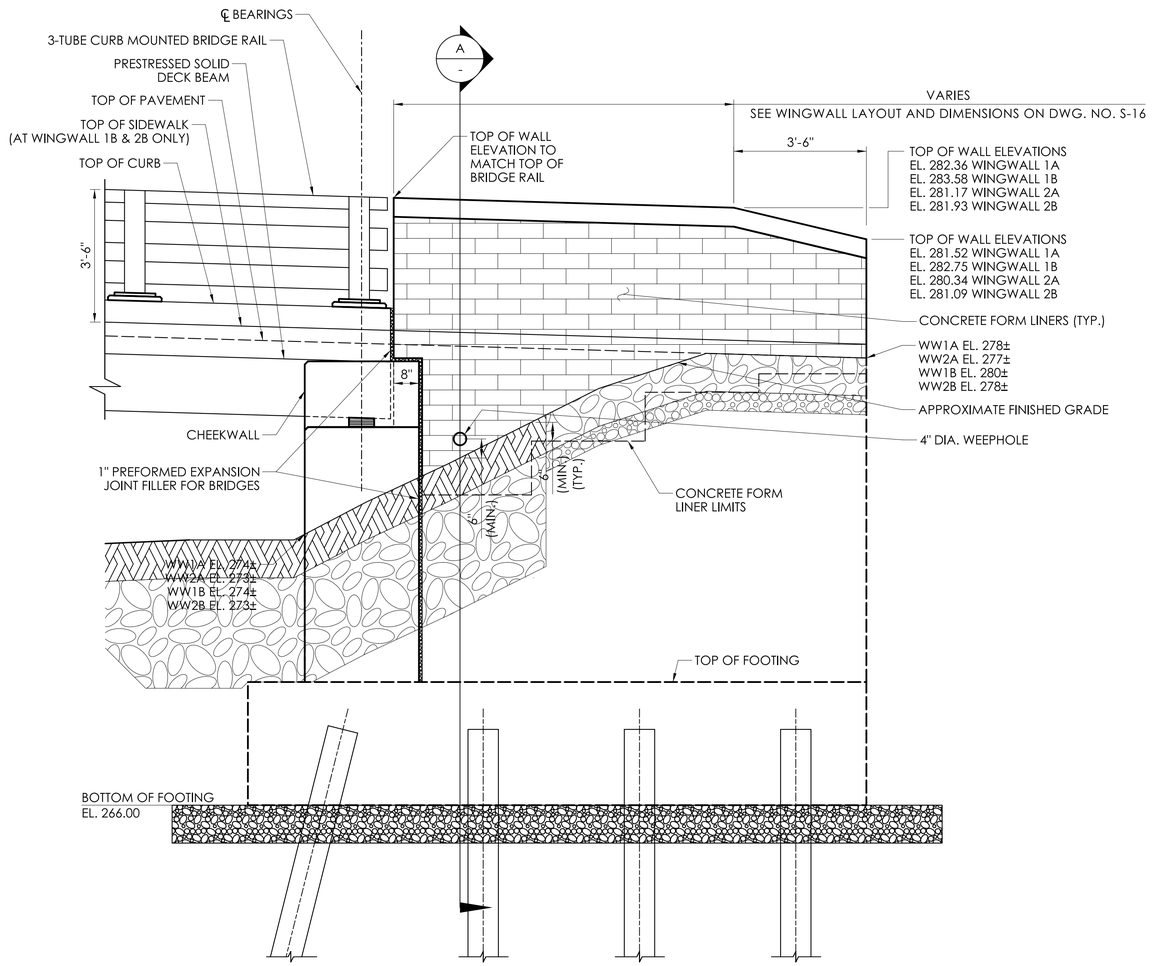


TYPICAL WINGWALL SECTION

SCALE: ½"=1'-0"

(WINGWALL 2B SHOWN, OTHERS SIMILAR)

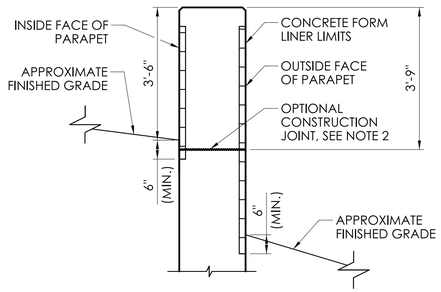
A - B S-07



TYPICAL WINGWALL ELEVATION

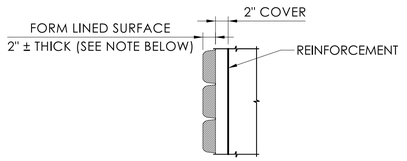
SCALE: ½"=1'-0"

(WINGWALL 2B SHOWN, OTHERS SIMILAR)



WINGWALL 1A ELEVATION

SCALE: ½"=1'-0"



NOTE: FOR ACCEPTABLE CONCRETE FORM LINER MANUFACTURERS AND PATTERNS, SEE SPECIAL PROVISIONS "CONCRETE FORM LINERS."

CONCRETE FORM LINER DETAIL

N.T.S.

NOTES:

1. SEE DWG. NO. S-21 FOR ADDITIONAL REINFORCEMENT IN WINGWALLS.
2. IF THE CONTRACTOR ELIMINATES THE OPTIONAL CONSTRUCTION JOINT, CONCRETE CLASS PCC04462 SHALL BE USED FROM THE TOP OF PARAPET TO TOP SIDE OF FOOTING. PAY LIMITS OF CONCRETE DEFINED ABOVE.
3. VERTICAL LIMITS OF "STRUCTURE EXCAVATION - EARTH (EXCLUDING COFFERDAM AND DEWATERING)" AND "STRUCTURE EXCAVATION - ROCK (EXCLUDING COFFERDAM AND DEWATERING)" SHALL EXTEND TO EXISTING GRADE.

EXCAVATION NOTES:

1. EXCAVATION WITHIN 2 FEET, HORIZONTALLY, OF ANY PROPOSED SUBSTRUCTURE FOOTING SHALL BE PAID FOR UNDER THE ITEMS "STRUCTURE EXCAVATION - EARTH (EXCLUDING COFFERDAM AND DEWATERING)" AND "STRUCTURE EXCAVATION - ROCK (EXCLUDING COFFERDAM AND DEWATERING)."
2. EXCAVATION BETWEEN EXISTING ABUTMENTS AND 2 FEET IN FRONT OF PROPOSED ABUTMENTS SHALL BE PAID FOR UNDER THE ITEM "CHANNEL EXCAVATION - EARTH." REMOVAL OF EXISTING ABUTMENTS AND WINGWALLS SHALL BE PAID FOR UNDER THE ITEM "REMOVAL OF EXISTING MASONRY."
3. ANY EXCAVATION OUTSIDE OF THE LIMITS DESCRIBED IN NOTES 1 AND 2 ABOVE, AND WITHIN THE EXISTING CHANNEL (BELOW OHW ELEVATION) SHALL BE PAID FOR UNDER THE ITEM "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL."
4. ANY EXCAVATION OUTSIDE OF THE LIMITS DESCRIBED IN NOTES 1 AND 2 ABOVE, AND OUTSIDE THE EXISTING CHANNEL (ABOVE OHW ELEVATION) SHALL BE PAID FOR UNDER "EARTH EXCAVATION."

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Alfred Benesch & Company, 120 Hebron Avenue 2nd Floor, Glastonbury, CT

DESIGNER/DRAFTER: A. BISI CHECKED BY: M. HABEK

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

DRAWING TITLE: WINGWALL DETAILS

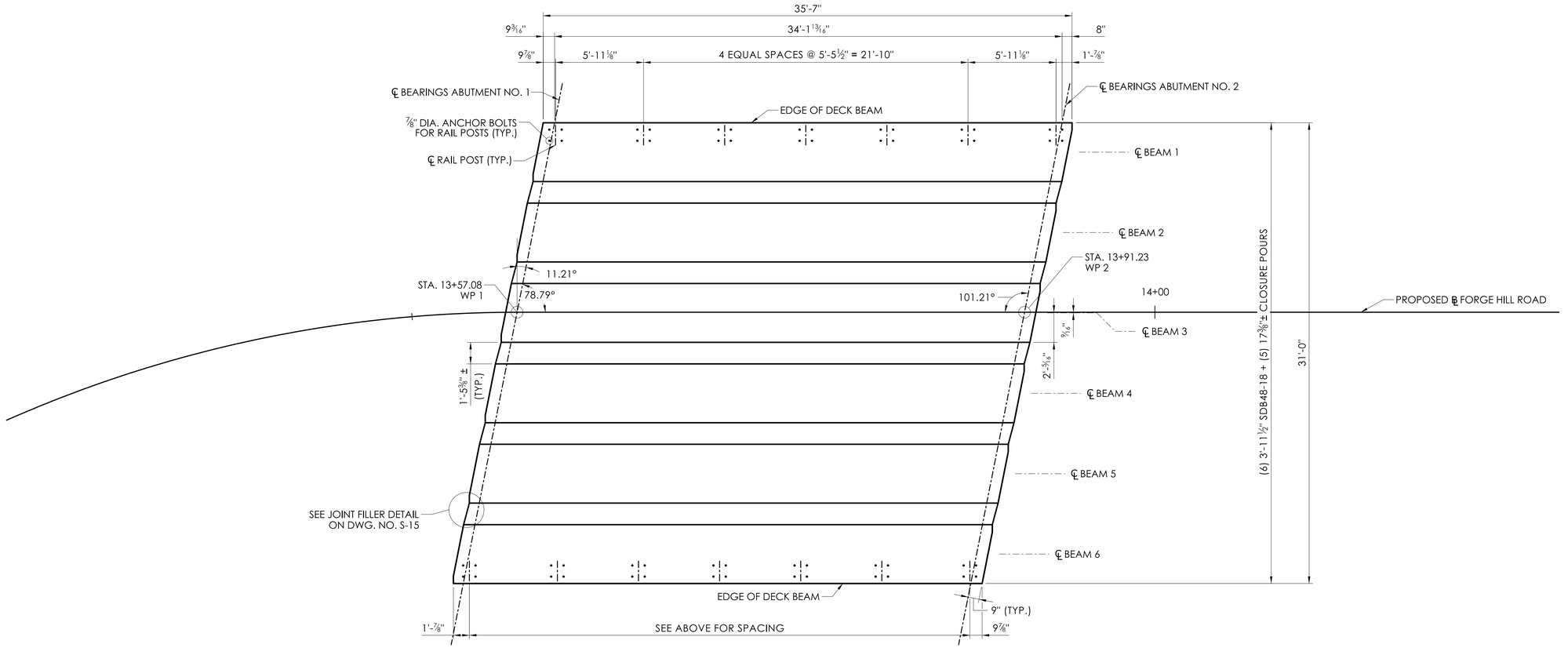
PROJECT NO.: 0147-0062

DRAWING NO.: S-11

SHEET NO.: 04.11

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_WINGWALL DETAILS.dgn
PLOTTED DATE: 10/16/2025

WORKING POINT COORDINATES			
WP	LOCATION	NORTHING	EASTING
1	℄ BEARINGS ABUT. NO. 1 AT ℄	773801.25	1254226.45
2	℄ BEARINGS ABUT. NO. 2 AT ℄	773835.11	1254230.88



FRAMING PLAN
SCALE: ¼"=1'-0"

ESTIMATED CAMBER AT MIDSPAN			
BEAM LOCATION	AT TRANSFER (INCHES)	AT ERECTION (INCHES)	FINAL (INCHES)
BEAMS 1 & 6	0.752	1.180	1.291
BEAMS 2-5	0.752	1.135	1.157

CAMBER NOTES:

AT TRANSFER: CAMBER DUE TO PRESTRESS FORCE AT TRANSFER MINUS THE DEFLECTION DUE TO BEAM WEIGHT.

AT ERECTION: CAMBER (DUE TO PRESTRESS FORCE AT TRANSFER MINUS DEFLECTION DUE TO BEAM WEIGHT) THAT IS PRESENT AT APPROXIMATELY 30-60 DAYS AFTER TRANSFER.

FINAL: LONG-TERM CAMBER THAT IS PRESENT AFTER ALL DEAD LOADS ARE APPLIED TO THE STRUCTURE AND AFTER LONG TERM CREEP AND RELAXATION HAVE TAKEN PLACE.

CAMBER TABLE NOTES

1. CAMBER DATA GIVEN IS POSITIVE (+) FOR UPWARD CAMBER.
2. PRESTRESS CAMBER CALCULATED BASED ON "PCI-DESIGN HANDBOOK - PRECAST AND PRESTRESSED CONCRETE" MULTIPLIERS BY BENTLEY LEAP BRIDGE CONCRETE SOFTWARE.

REV. | DATE | REVISION DESCRIPTION

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DESIGNER/DRAFTER: A. BISI CHECKED BY: M. HABEK

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

DRAWING TITLE: FRAMING PLAN

PROJECT NO.: 0147-0062

DRAWING NO.: S-12

SHEET NO.: 04.12

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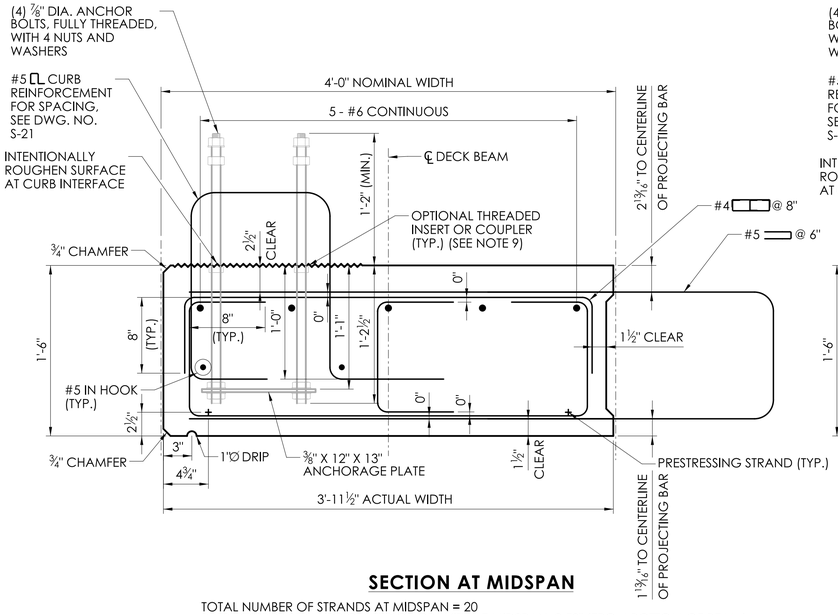
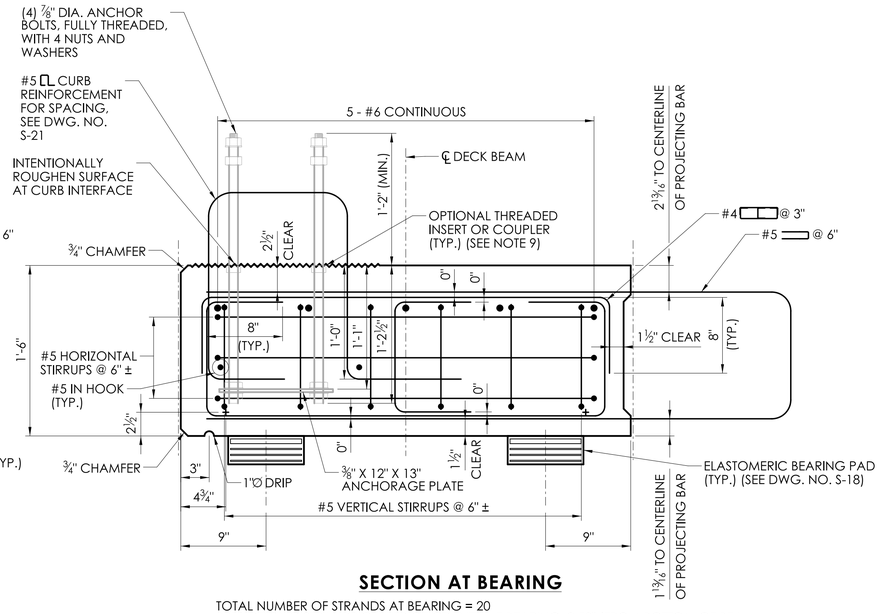
PLOTTED DATE: 10/16/2025



SECTION AT MIDSPAN

TOTAL NUMBER OF STRANDS AT MIDSPAN = 20
PRESTRESSING STRANDS CENTER OF GRAVITY AT MIDSPAN: 2.50" (FROM BOTTOM OF BEAM)

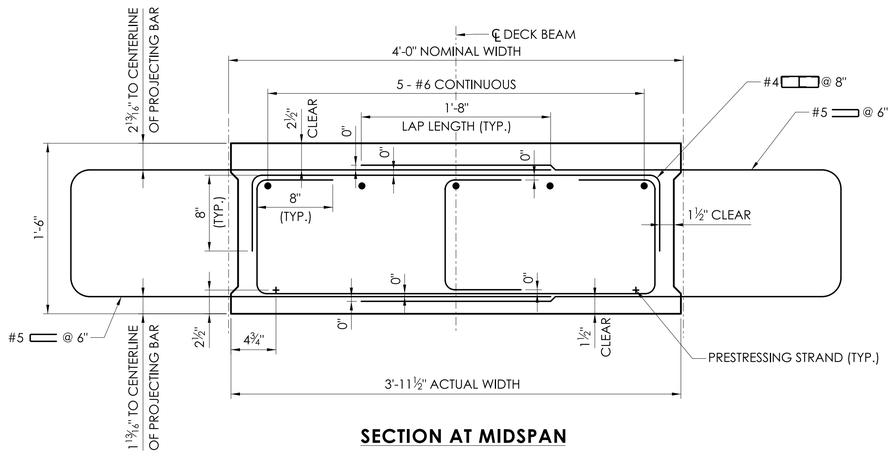


SECTION AT BEARING

TOTAL NUMBER OF STRANDS AT BEARING = 20
PRESTRESSING STRANDS CENTER OF GRAVITY AT BEARING: 2.50" (FROM BOTTOM OF BEAM INCLUDING EFFECTS OF DEBONDING)
DEBOND 2 STRANDS FOR 4'-0", 4 STRANDS FOR 7'-0" AND 2 STRANDS FOR 12'-0"

BEAM 1 (SDB48-18)

SCALE: 1½" = 1'-0"



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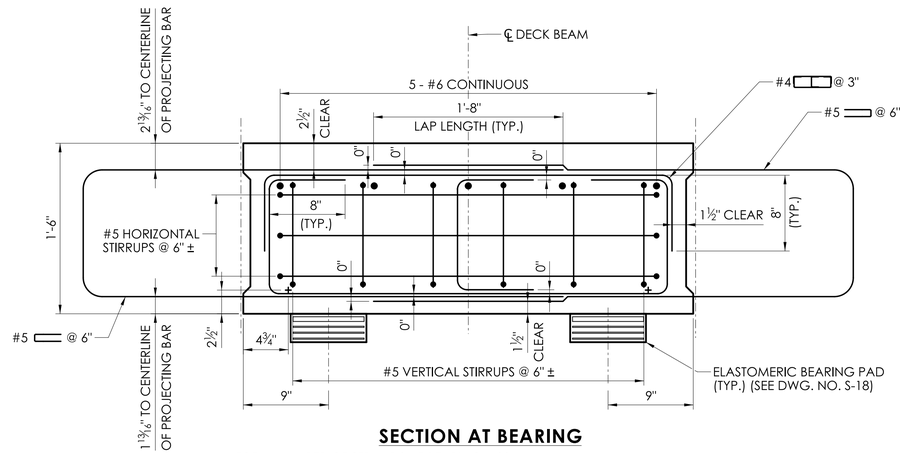


SECTION AT BEARING

TOTAL NUMBER OF STRANDS AT BEARING = 20
PRESTRESSING STRANDS CENTER OF GRAVITY AT BEARING: 2.50" (FROM BOTTOM OF BEAM INCLUDING EFFECTS OF DEBONDING)
DEBOND 2 STRANDS FOR 4'-0", 4 STRANDS FOR 7'-0" AND 2 STRANDS FOR 12'-0"

BEAMS 2 THRU 4 (SDB48-18)

SCALE: 1½" = 1'-0"

PRESTRESSED SOLID DECK BEAM NOTES:

1. PRESTRESSED SOLID DECK BEAMS SHALL BE PAID FOR UNDER ITEM #0514232A "PRESTRESSED DECK UNITS (4'-0" x 1'-6") MODIFIED." SEE SPECIAL PROVISIONS.
2. PRESTRESSED SOLID DECK BEAMS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
   28 DAY COMPRESSIVE STRENGTH: f'c = 8,000 PSI
   COMPRESSIVE STRENGTH AT TRANSFER: f'ci = 6,800 PSI
3. PRESTRESSED STRANDS SHALL BE 0.6" DIAMETER, UNCOATED, LOW RELAXATION STRANDS CONFORMING TO THE REQUIREMENTS OF AASHTO M203, GRADE 270 AND SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
   ULTIMATE STRENGTH f's = 270 KSI
   JACKING TENSION fsi = 44 KIPS PER STRAND
4. PRESTRESSED STRANDS SHALL BE PLACED 2" (MIN.) ON CENTER AND SHALL HAVE A MINIMUM COVER OF 2".
5. ENDS OF DECK BEAMS SHALL BE VERTICAL AFTER APPLICATION OF FULL DEAD LOAD.
6. THE DRILLING OF HOLES IN PRESTRESSED DECK BEAMS, OR USE OF POWDER ACTUATED TOOLS ON PRESTRESSED DECK UNITS WILL NOT BE PERMITTED.
7. THE FABRICATOR IS FULLY RESPONSIBLE FOR THE DESIGN OF THE LIFTING DEVICE WHICH SHALL BE ADEQUATE FOR THE SAFETY FACTOR REQUIRED BY THE ERECTION PROCEDURE.
8. REINFORCEMENT EMBEDDED IN THE BEAMS SHALL BE PAID FOR UNDER "PRESTRESSED DECK UNITS (4'-0" x 1'-6") MODIFIED."
9. ANCHORAGE PLATE, ANCHOR BOLTS, NUTS AND WASHERS FOR RAIL POST ANCHORAGE SHALL BE PAID FOR UNDER "PRESTRESSED DECK UNITS (4'-0" X 1'-6") MODIFIED." FOR MATERIAL REQUIREMENTS, REFER TO BRIDGE RAIL NOTES ON DWG. NO. S-19. OPTIONAL THREADED INSERT OR COUPLERS MAY BE USED AND SHALL BE PAID FOR UNDER "PRESTRESSED DECK UNITS (4'-0" X 1'-6") MODIFIED."
10. SOLID DECK BEAM DIMENSIONS AND DETAILS ARE BASED ON BEAM DESIGNATION SDB48-18 AS SHOWN IN THE NORTHEAST SOLID DECK BEAM GUIDE DETAILS, FIRST EDITION 2024 BY PCI NORTHEAST. MORE INFORMATION CAN BE FOUND AT WWW.PCINE.ORG UNDER "TECHNICAL RESOURCES."

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Alfred Benesch & Company, 120 Hebron Avenue, 2nd Floor, Glastonbury, CT
DESIGNER/DRAFTER: C. SORENSEN CHECKED BY: M. HABEK

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

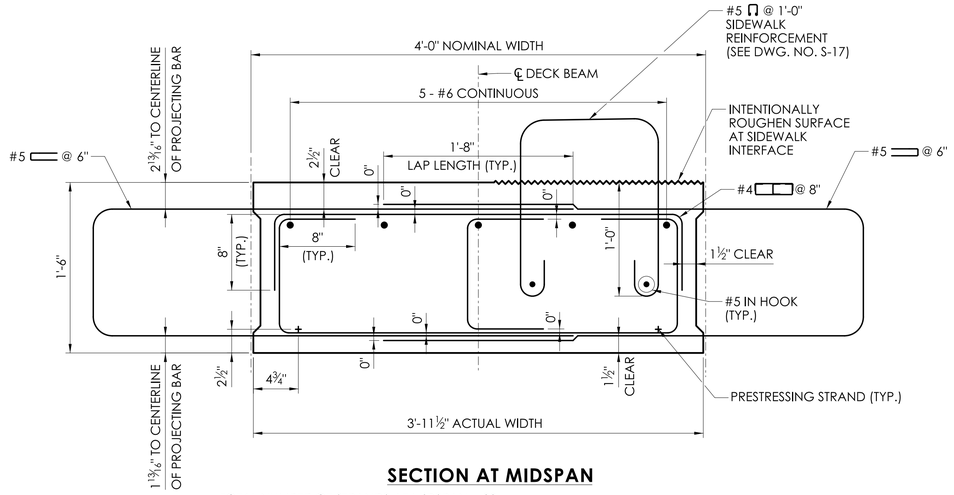
TOWN(S): VOLUNTOWN

DRAWING TITLE: PRESTRESSED SOLID DECK BEAM DETAILS - 1

PROJECT NO.: 0147-0062

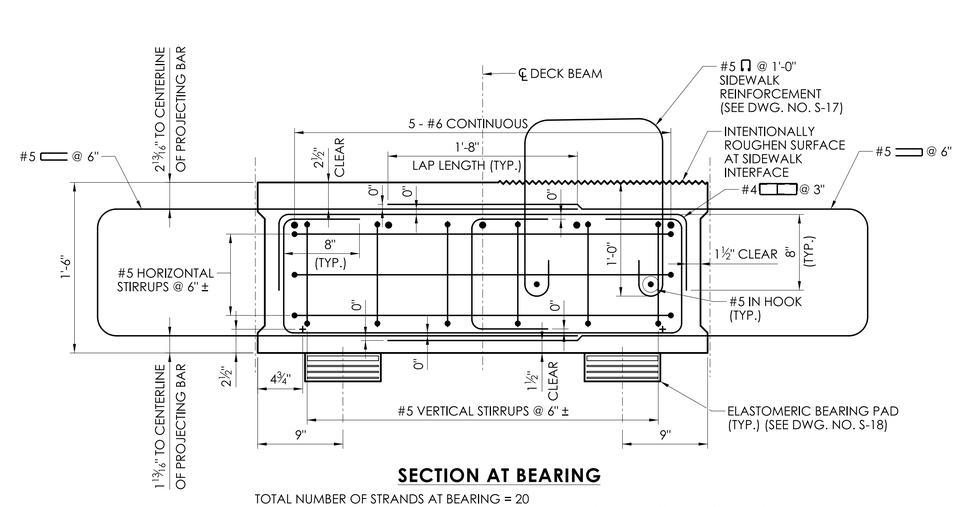
DRAWING NO.: S-13
SHEET NO.: 04.13

LASTED SAVED BY: abisi FILE NAME: c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_BEAM DETAILS 1.dgn
PLOTTED DATE: 10/16/2025



SECTION AT MIDSPAN

TOTAL NUMBER OF STRANDS AT MIDSPAN = 20
PRESTRESSING STRANDS CENTER OF GRAVITY AT MIDSPAN: 2.50" (FROM BOTTOM OF BEAM)

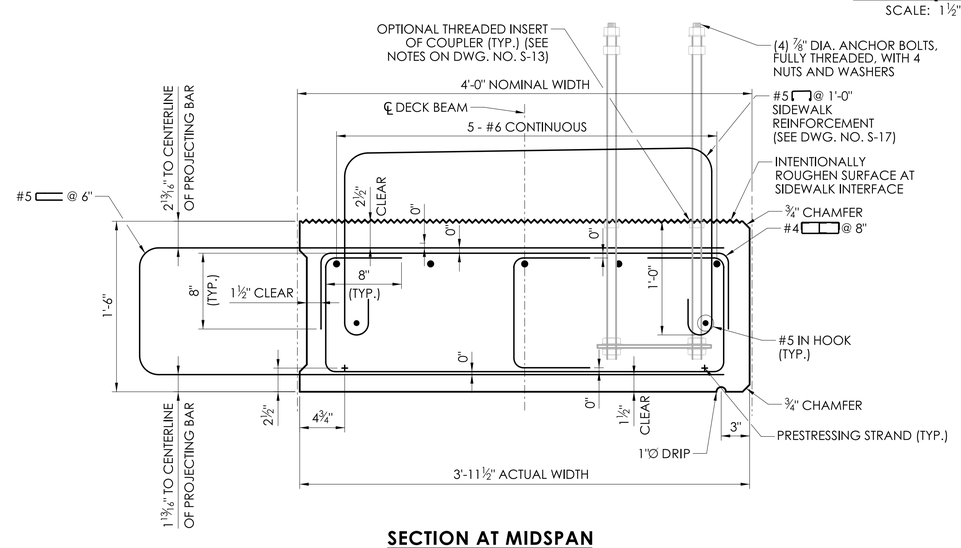


SECTION AT BEARING

TOTAL NUMBER OF STRANDS AT BEARING = 20
PRESTRESSING STRANDS CENTER OF GRAVITY AT BEARING: 2.50" (FROM BOTTOM OF BEAM INCLUDING EFFECTS OF DEBONDING)
DEBOND 2 STRANDS FOR 4'-0", 4 STRANDS FOR 7'-0" AND 2 STRANDS FOR 12'-0"

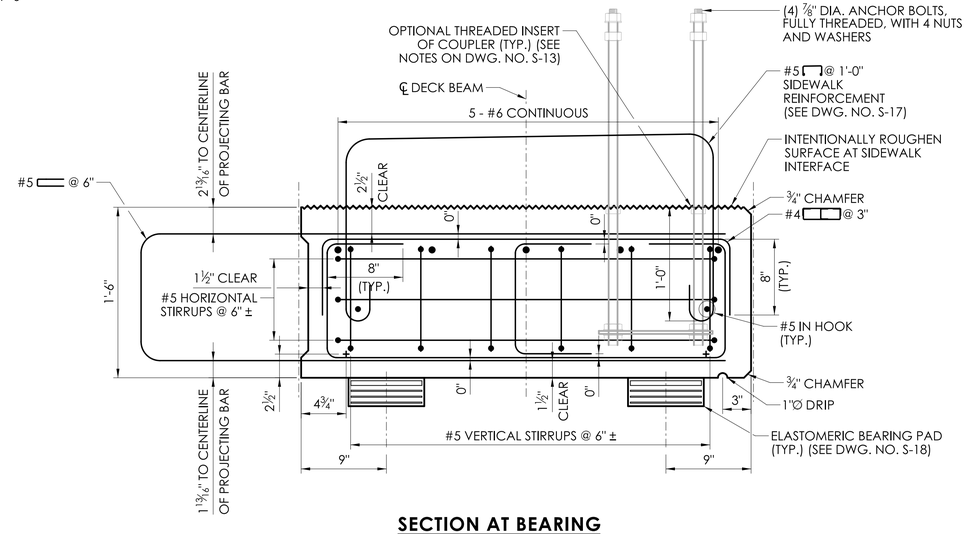
BEAM 5 (SDB48-18)

SCALE: 1½" = 1'-0"



SECTION AT MIDSPAN

TOTAL NUMBER OF STRANDS AT MIDSPAN = 20
PRESTRESSING STRANDS CENTER OF GRAVITY AT MIDSPAN: 2.50" (FROM BOTTOM OF BEAM)



SECTION AT BEARING

TOTAL NUMBER OF STRANDS AT BEARING = 20
PRESTRESSING STRANDS CENTER OF GRAVITY AT BEARING: 2.50" (FROM BOTTOM OF BEAM INCLUDING EFFECTS OF DEBONDING)
DEBOND 2 STRANDS FOR 4'-0", 4 STRANDS FOR 7'-0" AND 2 STRANDS FOR 12'-0"

BEAM 6 (SDB48-18)

SCALE: 1½" = 1'-0"

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Alfred Benesch & Company, 120 Historn Avenue 2nd Floor, Glastonbury, CT
DESIGNER/DRAFTER: C. SORENSEN CHECKED BY: M. HABEK

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

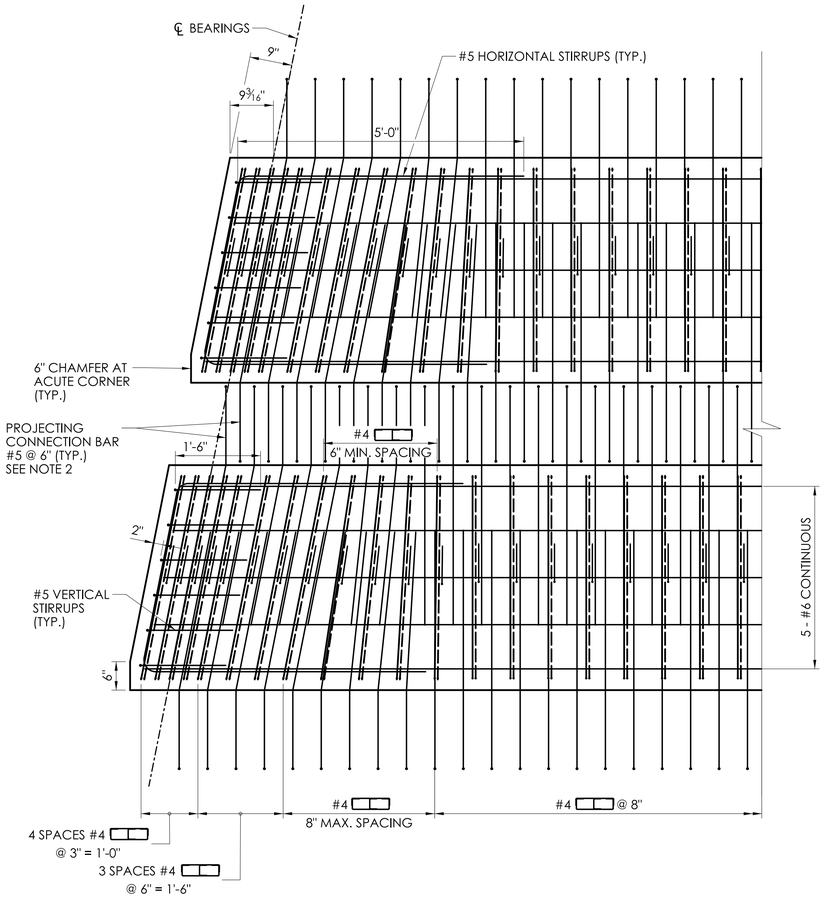
DRAWING TITLE: PRESTRESSED SOLID DECK BEAM DETAILS - 2

PROJECT NO.: 0147-0062

DRAWING NO.: S-14

SHEET NO.: 04.14

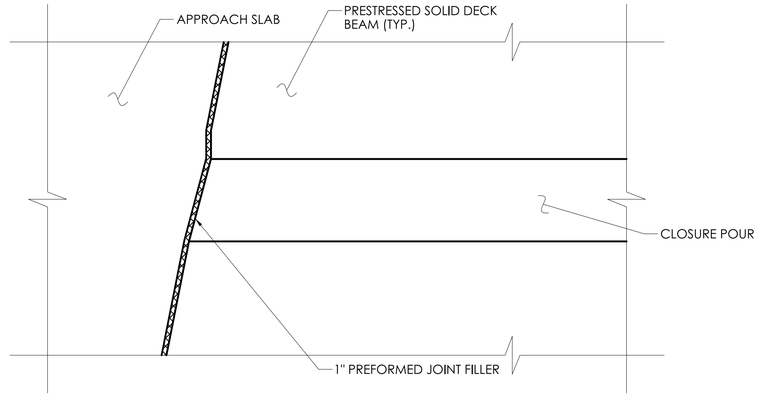
LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_BEAM DETAILS 2.dgn
PLOTTED DATE: 10/16/2025



TYPICAL SOLID DECK BEAM PLAN

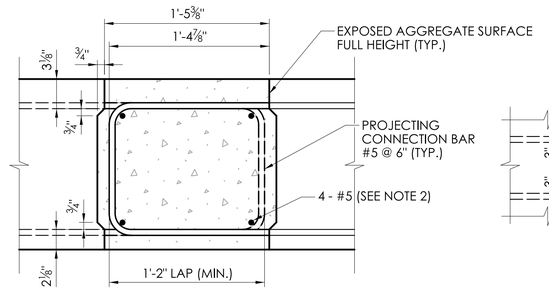
SCALE: 3/4" = 1'-0"

NOTES:
1. INTERIOR BEAMS SHOWN, OTHERS SIMILAR.
2. LOCATIONS OF PROJECTING CONNECTION BARS MAY BE ADJUSTED TO AVOID CONFLICTS WITH #4 STIRRUPS.

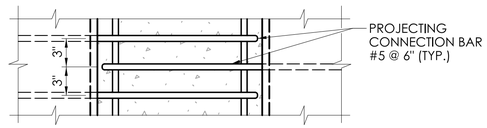


JOINT FILLER AT CLOSURE POUR

SCALE: 3/4" = 1'-0"



SECTION



PLAN

CLOSURE JOINT CONNECTION DETAILS

SCALE: 1 1/2" = 1'-0"

CLOSURE JOINT CONNECTION NOTES:

1. CONCRETE FOR CLOSURE JOINTS SHALL BE PAID FOR UNDER "BRIDGE DECK CONCRETE."
2. NON-PROJECTING REINFORCEMENT FOR CLOSURE JOINTS SHALL BE PAID FOR UNDER "DEFORMED STEEL BARS - GALVANIZED."

REV. | DATE | REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Allred Benesch & Company, 120 Hebron Avenue 2nd Floor, Glastonbury, CT
DESIGNER/DRAFTER: C. SORENSEN CHECKED BY: M. HABEK

CTDOT — CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

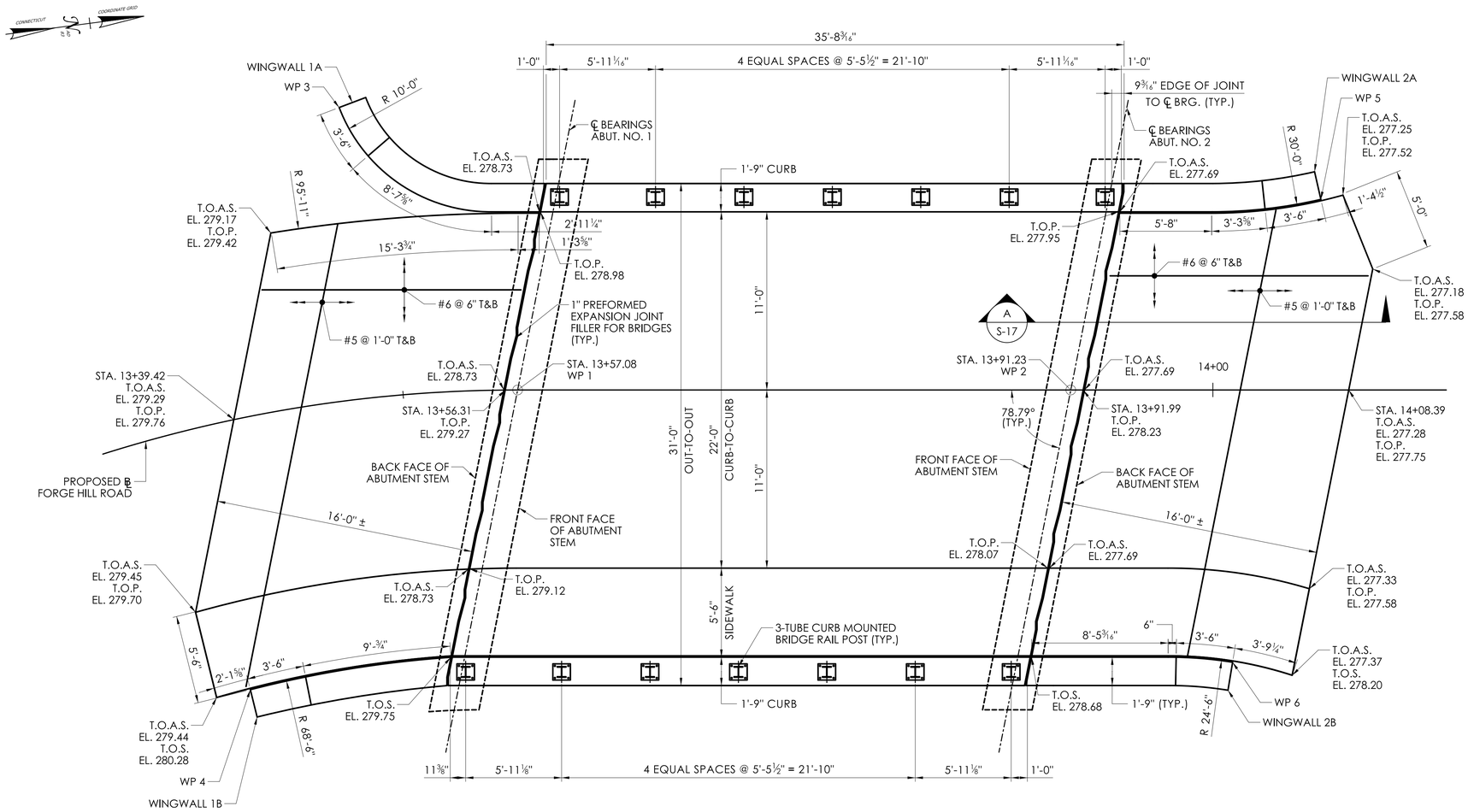
DRAWING TITLE: PRESTRESSED SOLID DECK BEAM DETAILS - 3

PROJECT NO.: 0147-0062

DRAWING NO.: S-15

SHEET NO.: 04.15

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_BEAM DETAILS 3.dgn
PLOTTED DATE: 10/16/2025



LAYOUT PLAN

SCALE: ¼"=1'-0"

NOTES:

1. T.O.P. = TOP OF PAVEMENT
   T.O.S. = TOP OF SIDEWALK
   T.O.A.S. = TOP OF APPROACH SLAB
2. AFTER BEAM ERECTION AND COMPLETION OF CLOSURE POURS, THE CONTRACTOR SHALL SURVEY THE TOPS OF THE BEAMS, AND THEN ADJUSTMENT OF THE OVERLAY THICKNESS, CURB HEIGHT AND SIDEWALK HEIGHT MAY BE REQUIRED.
3. PRESTRESSED SOLID DECK BEAMS AND CLOSURE JOINTS NOT SHOWN FOR CLARITY.

TOP OF PAVEMENT/SIDEWALK ELEVATIONS AND DEAD LOAD DEFLECTIONS

BEAM NO.		℄ BRG ABUT. 1	0.25L	0.5L	0.75L	℄ BRG ABUT. 2
1	TOP OF PAVEMENT ELEVATION	278.96	278.73	278.47	278.21	277.97
	DEAD LOAD DEFLECTION	0.00	0.01	0.01	0.01	0.00
2	TOP OF PAVEMENT ELEVATION	279.10	278.87	278.61	278.35	278.11
	DEAD LOAD DEFLECTION	0.00	0.01	0.01	0.01	0.00
3	TOP OF PAVEMENT ELEVATION	279.24	279.01	278.75	278.49	278.25
	DEAD LOAD DEFLECTION	0.00	0.01	0.01	0.01	0.00
4	TOP OF PAVEMENT ELEVATION	279.17	278.93	278.67	278.41	278.17
	DEAD LOAD DEFLECTION	0.00	0.01	0.01	0.01	0.00
5	TOP OF PAVEMENT ELEVATION	279.10	278.85	278.59	278.33	278.10
	DEAD LOAD DEFLECTION	0.00	0.01	0.01	0.01	0.00
6	TOP OF SIDEWALK ELEVATION	279.72	279.46	279.20	278.94	278.70
	DEAD LOAD DEFLECTION	0.00	0.01	0.01	0.01	0.00

ELEVATION AND DEFLECTION TABLE NOTES

1. L IS SPAN LENGTH BETWEEN ℄ OF BEARINGS.
2. DATA IS GIVEN IN FEET AT THE CENTERLINE OF EACH BEAM.
3. DEAD LOAD DEFLECTION IS TOTAL DEFLECTION DUE TO SIDEWALK, RAIL CURBS, RAILINGS AND WEARING SURFACE.

WORKING POINT COORDINATES

WP	LOCATION	NORTHING	EASTING
1	℄ BEARINGS ABUT NO. 1 AT ℬ	773801.25	1254226.45
2	℄ BEARINGS ABUT NO. 2 AT ℬ	773835.11	1254230.88
3	END OF WW1A STREETSIDE	773792.58	1254207.73
4	END OF WW1B STREETSIDE	773782.48	1254242.66
5	END OF WW2A STREETSIDE	773851.95	1254221.21
6	END OF WW2B STREETSIDE	773842.84	1254248.85

REV | DATE | REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Alfred Benesch & Company, 120 Helcon Avenue, 2nd Floor, Glastonbury, CT
DESIGNER/DRAFTER: A. BISI CHECKED BY: M. HABEK

CTDOT CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

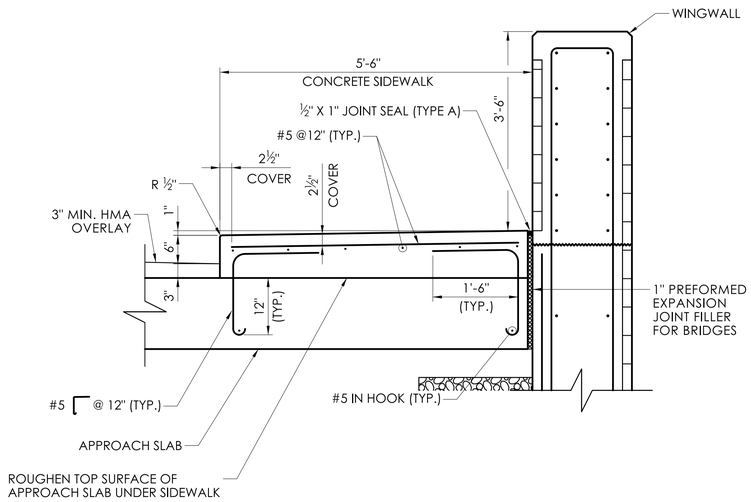
DRAWING TITLE: LAYOUT PLAN AND ELEVATION

PROJECT NO.: 0147-0062

DRAWING NO.: S-16

SHEET NO.: 04.16

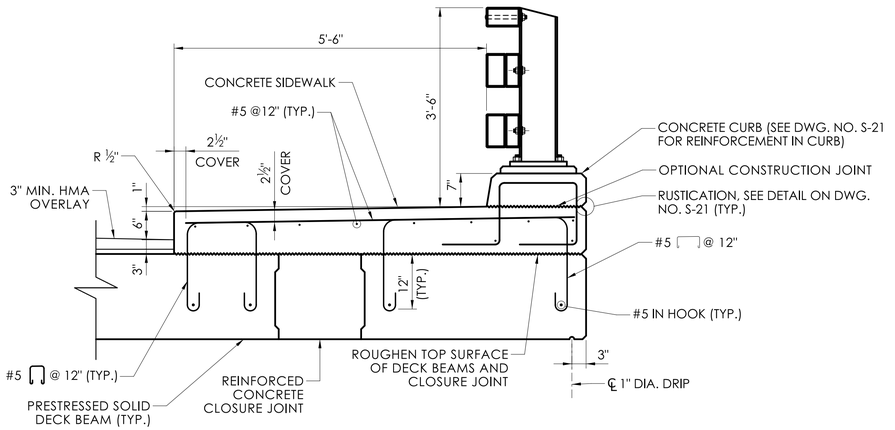
LASTED SAVED BY: abisi FILE NAME: c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_DECK.dgn
PLOTTED DATE: 10/16/2025



SIDEWALK ON APPROACH SLAB DETAIL

SCALE: ¾"=1'-0"

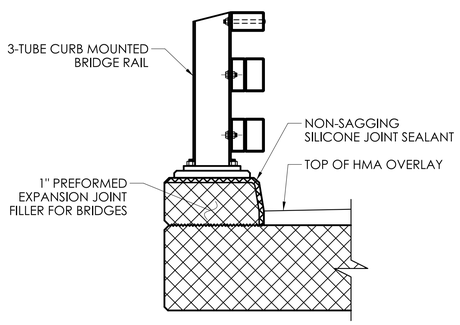
NOTE: SEE DECK SLAB PLAN FOR APPROACH SLAB LIMITS



SIDEWALK ON BRIDGE DETAIL

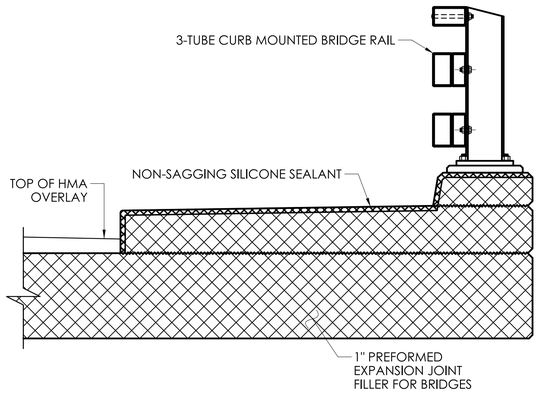
SCALE: ¾"=1'-0"

NOTE: RAIL BASE ANCHOR BOLTS, PRESTRESSED SOLID DECK BEAM REINFORCEMENT AND CLOSURE JOINT REINFORCEMENT NOT SHOWN FOR CLARITY, SEE DWG. NOS. S-14, S-15 & S-19 FOR DETAILS.



JOINT TREATMENT AT RAIL CURB

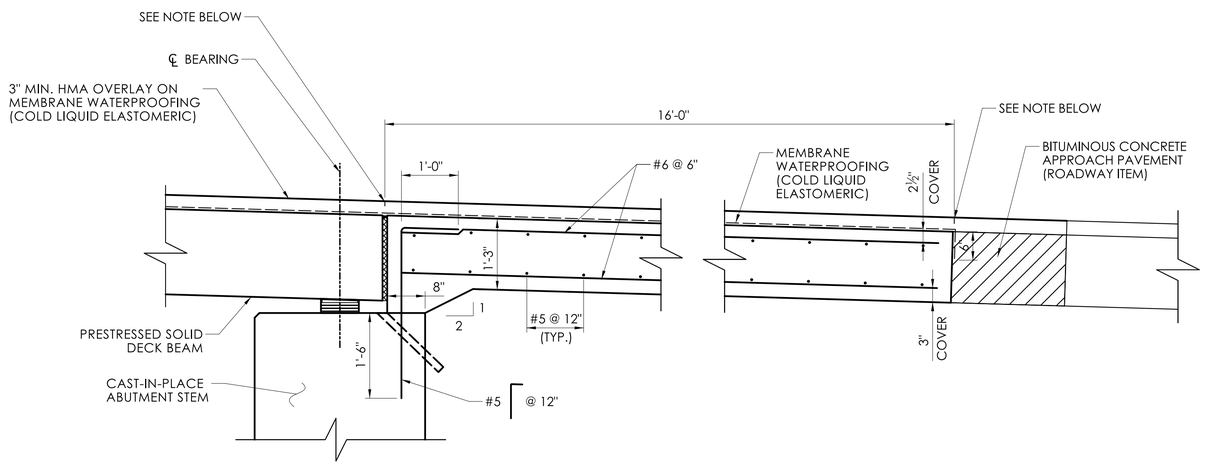
SCALE: ¾"=1'-0"



JOINT TREATMENT AT SIDEWALK

SCALE: ¾"=1'-0"

NOTE: NON-SAGGING SILICONE SEALANT SHALL BE PAID FOR UNDER "BRIDGE SIDEWALK CONCRETE."



APPROACH SLAB (LONGITUDINAL SECTION)

SCALE: ¾"=1'-0"

A / S-16

NOTE:
CUT BITUMINOUS OVERLAY WITH ⅜" WIDE X 1¾" DEEP KERF AND FILL WITH POURABLE SEALANT, TO BE PAID FOR UNDER THE ITEM "SAWING AND SEALING JOINTS".

REV. | DATE | REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Alfred Benesch & Company, 120 Hebron Avenue 2nd Floor, Glastonbury, CT

DESIGNER/DRAFTER: S. LACHCIK CHECKED BY: M. HABEK

CTDOT — CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

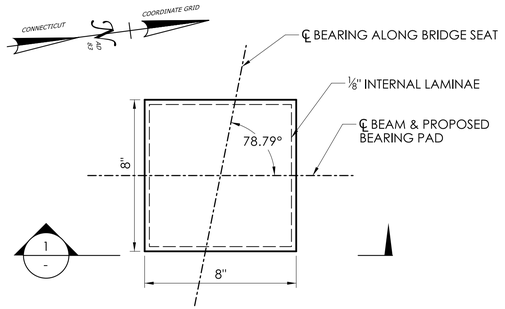
DRAWING TITLE: MISCELLANEOUS DETAILS - 1

PROJECT NO.: 0147-0062

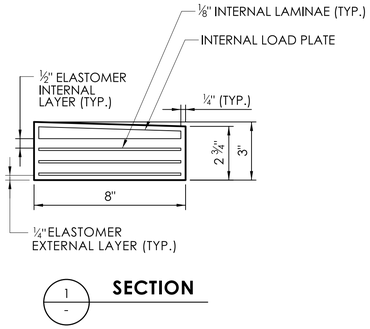
DRAWING NO.: S-17

SHEET NO.: 04.17

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_MIS DETAILS 1.dgn
PLOTTED DATE: 10/16/2025

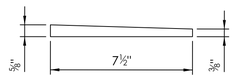


PLAN
SCALE: 3"=1'-0"

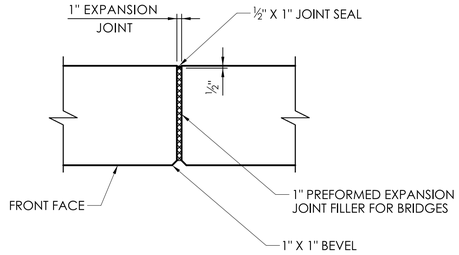


SECTION

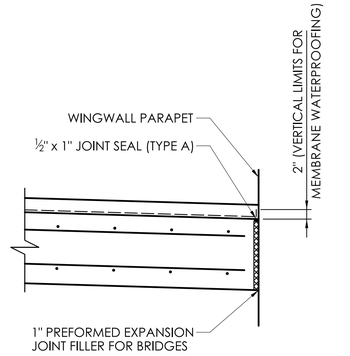
ELASTOMERIC BEARING PAD
SCALE: 3"=1'-0"



INTERNAL LOAD PLATE DETAIL
SCALE: 3"=1'-0"



VERTICAL STEM JOINT DETAILS AT ABUTMENT/WINGWALL INTERFACE
SCALE: ¾"=1'-0"



APPROACH SLAB AT WINGWALL DETAIL
SCALE: ¾"=1'-0"

STEEL-LAMINATED ELASTOMERIC BEARING NOTES:

1. METHOD A WAS USED TO DESIGN STEEL REINFORCED RECTANGULAR ELASTOMERIC BEARING PADS.
2. ELASTOMER SHALL HAVE A HARDNESS (SHORE 'A') 60 DUROMETER AND A SHEAR MODULUS WITHIN THE RANGE OF 0.13 KSI TO 0.20 KSI AT 73°F.
3. STEEL LAMINAE SHALL CONFORM TO ASTM A1011, GRADE 36.
4. TAPERED INTERNAL LOAD PLATE SHALL CONFORM TO AASHTO M 270 GRADE 36.
5. ELASTOMERIC BEARING PADS SHALL BE INSTALLED AT AN AMBIENT TEMPERATURE BETWEEN 50°F AND 80°F.

ELASTOMERIC BEARING DESIGN LOADS	
DL (KIPS)	LL+I (KIPS)
14.4	20.0

1. NO REINFORCEMENT SHALL PASS THROUGH EXPANSION JOINTS OR CONTRACTION JOINTS. REINFORCEMENT SHALL PASS THROUGH CONSTRUCTION JOINTS.
2. JOINT SEAL TO EXTEND FROM TOP OF FOOTING TO TOP OF WALL.

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Alfred Benesch & Company, 120 Hebron Avenue, 2nd Floor, Glastonbury, CT
DESIGNER/DRAFTER: A. BISI CHECKED BY: M. HABEK

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

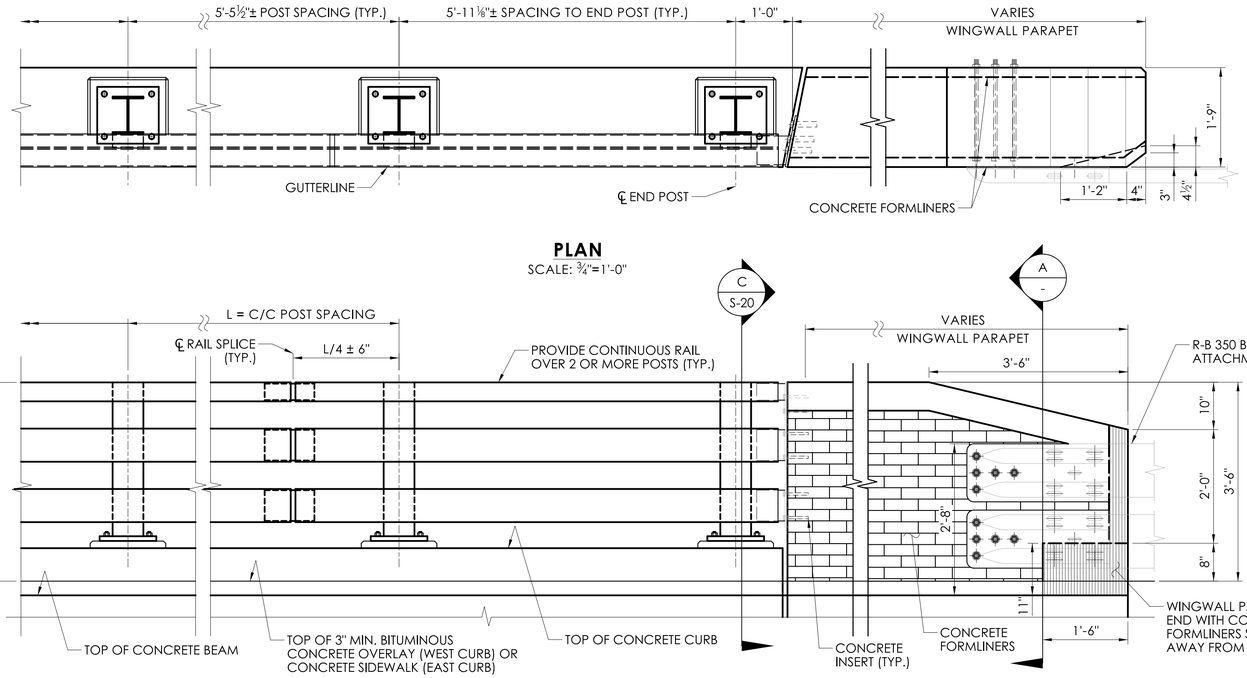
DRAWING TITLE: MISCELLANEOUS DETAILS - 2

PROJECT NO.: 0147-0062

DRAWING NO.: S-18

SHEET NO.: 04.18

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_MIS DETAILS 2.dgn
PLOTTED DATE: 10/16/2025



PLAN
SCALE: ¾"=1'-0"

ELEVATION
SCALE: ¾"=1'-0"

BRIDGE RAIL NOTES

THE 3-TUBE CURB MOUNTED BRIDGE RAIL HAS BEEN EVALUATED AT TEST LEVEL 4 (TL-4) AND COMPLIES WITH MASH 2016.

CONCRETE ON THE CURB AND WINGWALL PARAPET SHALL BE CLASS PCC04462. THE COMPRESSIVE STRENGTH OF THE CONCRETE, BASED ON TEST CYLINDERS, SHALL BE NO LESS THAN 4,000 PSI PRIOR INSTALLING THE EPOXY GROUT BELOW THE BASEPLATES. PRIOR TO ALLOWING THE RAIL, CURB AND WINGWALL TO BE PLACED IN SERVICE FOR THE PROTECTION OF VEHICULAR TRAFFIC, THE COMPRESSIVE STRENGTH OF THE GROUT, BASED ON STRENGTH GAIN OVER TIME LISTED IN THE GROUT MANUFACTURER'S DATA SHEET, SHALL BE NO LESS THAN 5,000 PSI.

THE 1 IN. DIAMETER PIPE SHALL CONFORM TO ASTM A53, GRADE B OR ASTM A501 AND SHALL BE GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A123.

THE REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60 AND BE HOT-DIP GALVANIZED.

HOLLOW STRUCTURAL SHAPES SHALL CONFORM TO ASTM A500 GRADE C OR ASTM A501, GRADE B.

ALL OTHER STEEL SHALL CONFORM TO ASTM A572, GRADE 50 UNLESS NOTED OTHERWISE.

THE SILICON CONTENT OF THE STEEL USED FOR THE EXPOSED MEMBERS AND PLATE COMPONENTS SHALL FALL WITHIN THE RANGE OF 0 TO 0.04% OR 0.15% TO 0.25%.

THE ANCHOR BOLTS SHALL CONFORM TO ASTM F1554, GRADE 105. THE NUTS SHALL CONFROM TO ASTM A563, GRADE DH. THE WASHERS SHALL CONFORM TO ASTM F436. THE BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM F2329.

ALL HIGH STRENGTH BOLTS SHALL CONFORM TO ASTM F3125 GRADE A325, TYPE 1. NUTS SHALL CONFORM TO ASTM A563, GRADE DH. CIRCULAR, FLAT, HARDENED STEEL WASHERS SHALL CONFORM TO ASTM F436. THE BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM F2329 OR ASTM B695, CLASS 55.

DOME HEAD BOLTS WITH WRENCH SLOTS USED FOR THE TOP RAIL SHALL CONFORM TO ASTM F3125 GRADE A325, TYPE 1 OR ASTM A449, GRADE 1, SUBSTITUTION OF DOME HEAD BOLTS WITH BOLTS MEETING DIFFERENT MATERIAL REQUIREMENTS IS NOT PERMITTED. NUTS SHALL CONFORM TO ASTM A563, GRADE DH. CIRCULAR, FLAT, HARDENED STEEL WASHERS SHALL CONFORM TO ASTM F436. THE BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM F2329 OR ASTM B695, CLASS 55.

RAIL ELEMENTS SHALL BE FABRICATED TO THE HORIZONTAL AND VERTICAL ALIGNMENT OF THE STRUCTURE. POSTS SHALL BE INSTALLED NORMAL TO GRADE IN THE LONGITUDINAL DIRECTION AND VERTICAL IN THE TRANSVERSE DIRECTION.

ANCHORAGE PLATES, ANCHOR BOLTS, NUTS, WASHERS AND OPTIONAL INSERTS FOR BRIDGE RAIL POST ANCHORAGES SHALL BE PAID FOR UNDER "PRESTRESSED DECK UNITS (4'-0" X 1'-6") MODIFIED." ALL OTHER BRIDGE RAIL MATERIALS, INCLUDING CONCRETE INSERTS, HARDWARE AND EPOXY GROUT, SHALL BE PAID FOR UNDER THE ITEM "3-TUBE CURB MOUNTED BRIDGE RAIL."

ALL STEEL SHAPES, PLATES AND HOLLOW STRUCTURAL SECTIONS SHALL BE SHOP METALLIZED IN ACCORDANCE WITH THE SPECIAL PROVISION "METALLIZING STRUCTURAL STEEL (SITE NO. 1)." ALL STEEL SHALL BE TOPCOATED FEDERAL STANDARD COLOR 14062 (DARK GREEN). THE APPLICATION OF THE TOPCOAT SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISION "METALLIZING STRUCTURAL STEEL (SITE NO. 1)."

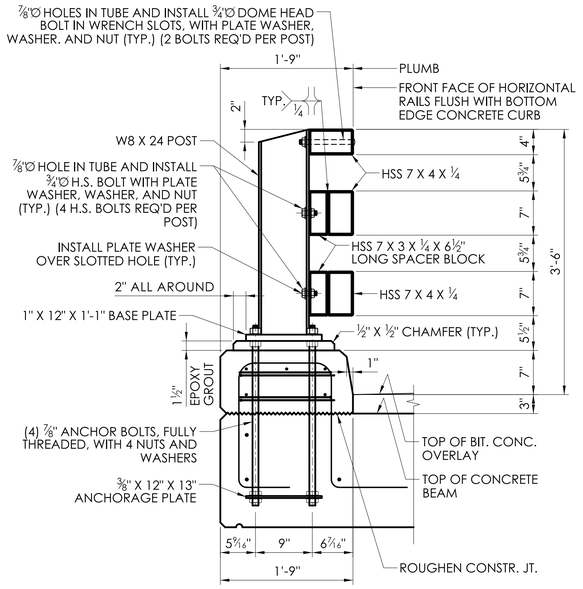
ALL EXPOSED GALVANIZED BOLT HEADS, WASHERS AND NUTS SHALL BE HAND TOOL CLEANED TO THE SATISFACTION OF THE ENGINEER, PRIOR TO THE FIELD COLOR TOPCOAT APPLICATION.

THE COLORED TOPCOAT USED TO PAINT THE EXPOSED GALVANIZED BOLT HEADS, WASHERS AND NUTS SHALL BE FROM THE SAME MANUFACTURER AND LOTS OF COLORED TOPCOAT THAT WAS SHOP APPLIED TO THE METALLIZED STEEL POSTS, TUBES AND PLATES.

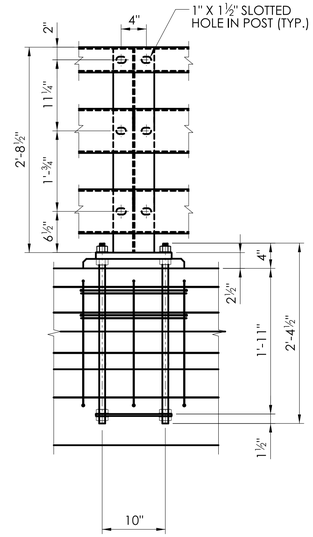
THE METALLIZING ALONG WITH THE FIELD TOUCH UP AND SEALING OF THE STEEL PLATES, POSTS AND RAILS ARE INCLUDED FOR PAYMENT UNDER THE ITEM "METALLIZING STRUCTURAL STEEL (SITE NO. 1)."

THE FIELD TOUCH UP PAINTING OF THE GALVANIZED FASTENERS IS INCLUDED FOR PAYMENT UNDER THE ITEM "METALLIZING STRUCTURAL STEEL (SITE NO. 1)."

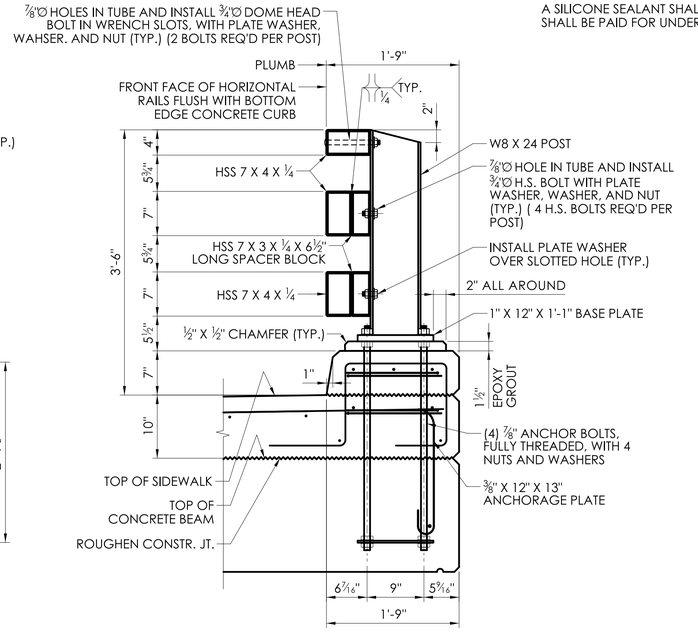
A SILICONE SEALANT SHALL BE APPLIED AT RAIL SPLICE LOCATIONS AND END BLOCK CONNECTIONS TO PREVENT MOISTURE INFILTRATION. SILICONE SEALANT SHALL BE PAID FOR UNDER THE ITEM "3-TUBE CURB MOUNTED BRIDGE RAIL."



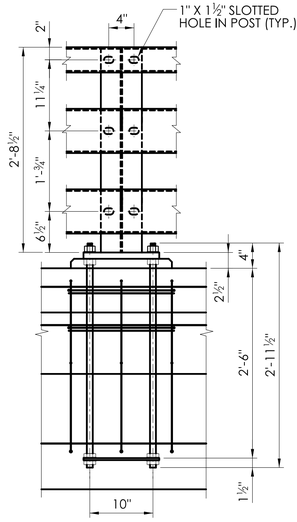
TYPICAL SECTION AT POST



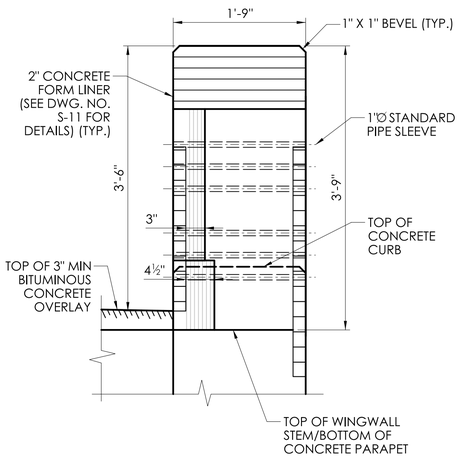
ELEVATION AT POST



TYPICAL SECTION AT POST



ELEVATION AT POST



SECTION
SCALE: 1"=1'-0" (A / -)

CURB AND POST DETAILS (WEST CURB)
SCALE: 1"=1'-0"

CURB AND POST DETAILS (EAST CURB)
SCALE: 1"=1'-0"

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Alfred Benesch & Company, 120 Hebron Avenue 2nd Floor, Glastonbury, CT

DESIGNER/DRAFTER: A. BISI — CHECKED BY: M. HABEK

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

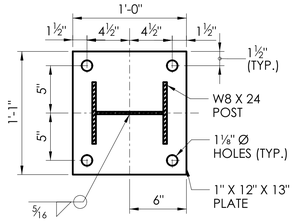
DRAWING TITLE: 3-TUBE CURB MOUNTED BRIDGE RAIL DETAILS - 1

PROJECT NO.: 0147-0062

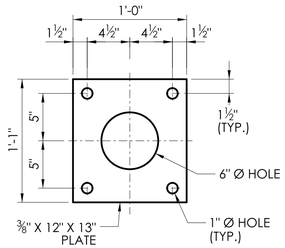
DRAWING NO.: S-19

SHEET NO.: 04.19

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_BRIDGE RAIL 1.dgn
PLOTTED DATE: 10/16/2025



BASE PLATE DETAIL
SCALE: 1½" = 1'-0"



ANCHOR PLATE DETAIL
SCALE: 1½" = 1'-0"

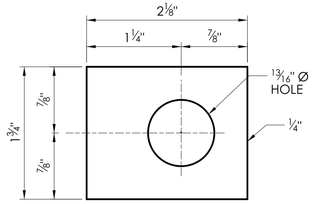
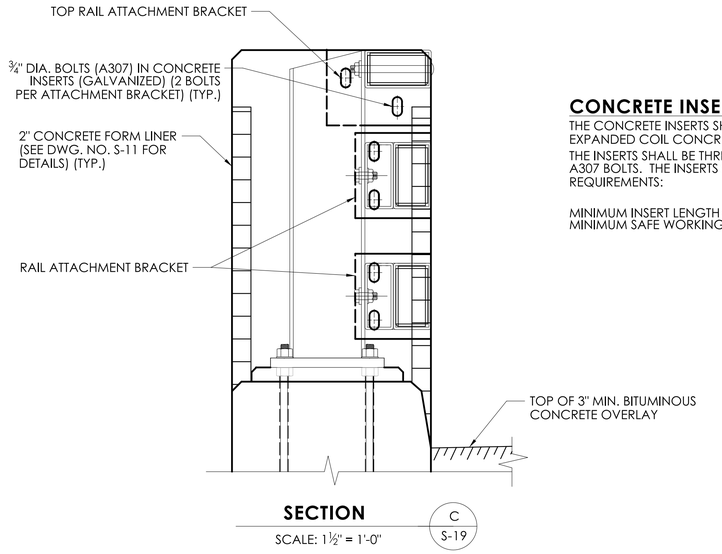


PLATE WASHER "C"
SCALE: FULL SCALE



SECTION
SCALE: 1½" = 1'-0"

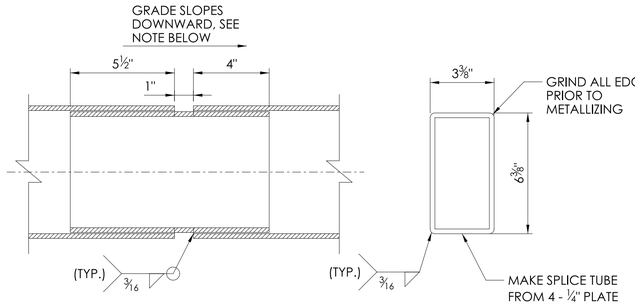
C
S-19

CONCRETE INSERT NOTES

THE CONCRETE INSERTS SHALL BE HOT-DIP GALVANIZED, EXPANDED COIL CONCRETE INSERTS WITH A CLOSED-BACK.

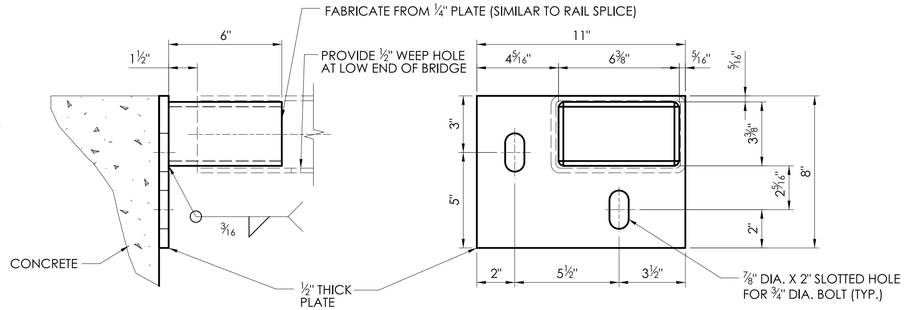
THE INSERTS SHALL BE THREADED TO RECEIVE ¾" DIA. ASTM A307 BOLTS. THE INSERTS SHALL MEET THE FOLLOWING REQUIREMENTS:

MINIMUM INSERT LENGTH = 4½"
MINIMUM SAFE WORKING LOAD IN TENSION = 4000 LBS.

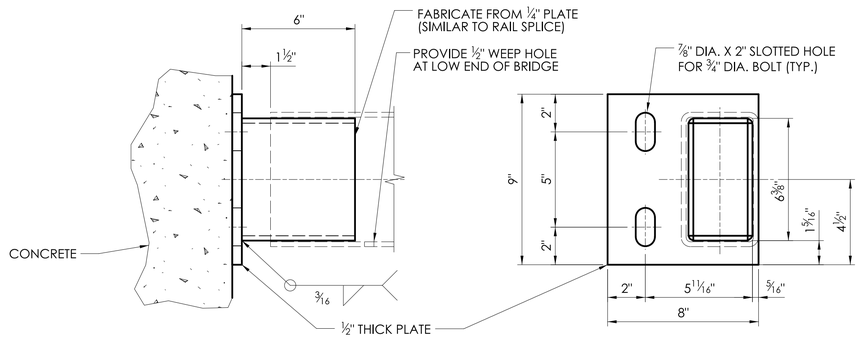


RAIL SPLICE DETAILS
SCALE: 3" = 1'-0"

NOTE:
MALE END OF SPLICE SHALL BE AT THE LOW END.



TOP RAIL ATTACHMENT BRACKET
SCALE: 3" = 1'-0"



RAIL ATTACHMENT BRACKET
SCALE: 3" = 1'-0"

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK:
benesch
Allfred Benesch & Company
120 Hebron Avenue
2nd Floor
Glastonbury, CT
DESIGNER/DRAFTER: A. BISI
CHECKED BY: M. HABEK

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE:
REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S):
VOLUNTOWN

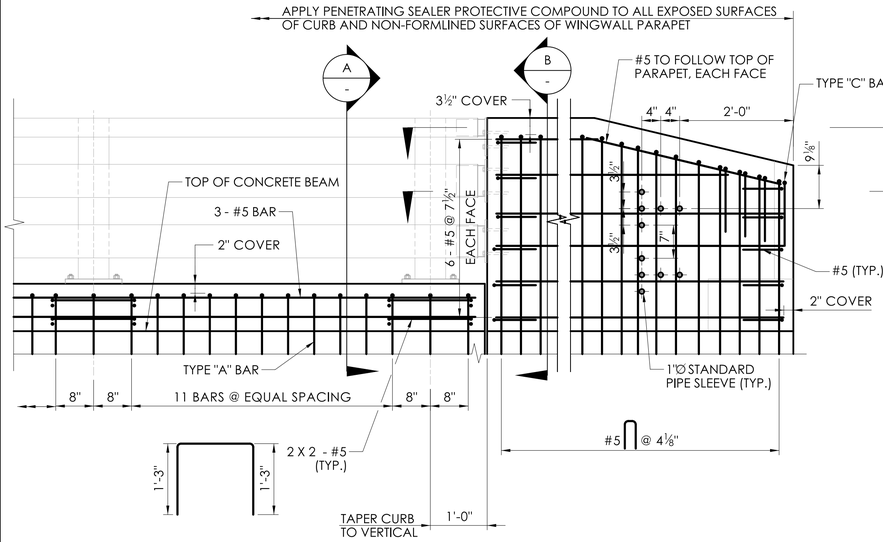
DRAWING TITLE:
3-TUBE CURB MOUNTED BRIDGE DETAILS - 2

PROJECT NO.: **0147-0062**

DRAWING NO.: **S-20**

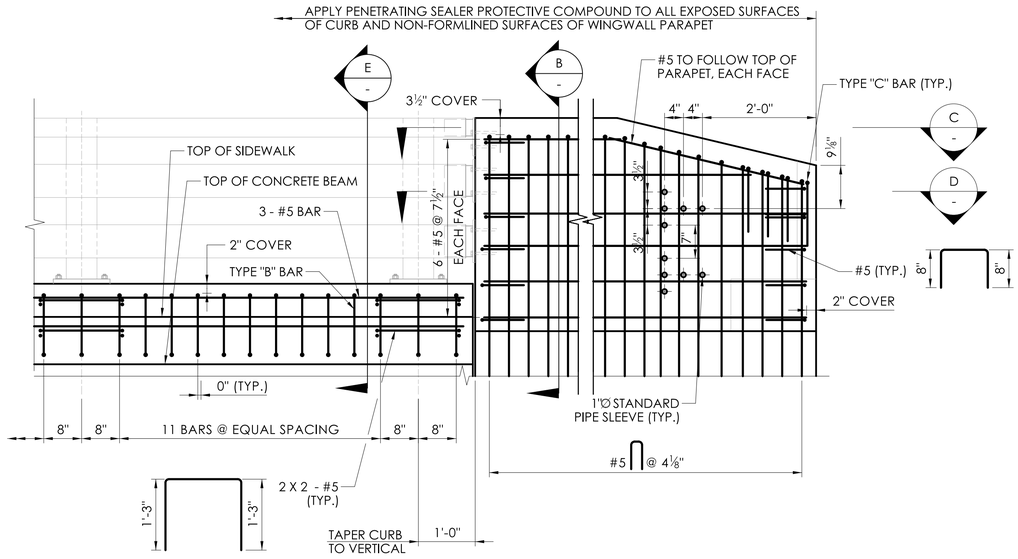
SHEET NO.: **04.20**

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_BRIDGE RAIL 2.dgn
PLOTTED DATE: 10/16/2025



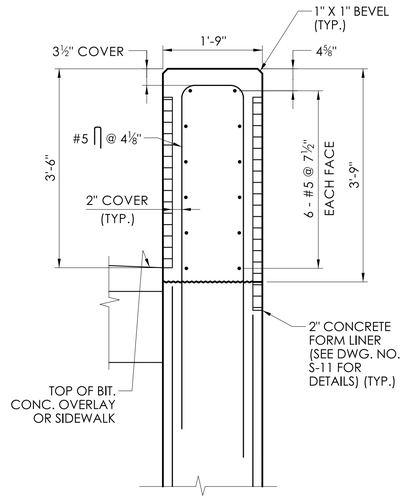
ELEVATION - WEST CURB AND WINGWALL PARAPET REINFORCEMENT

SCALE: ¾"=1'-0"



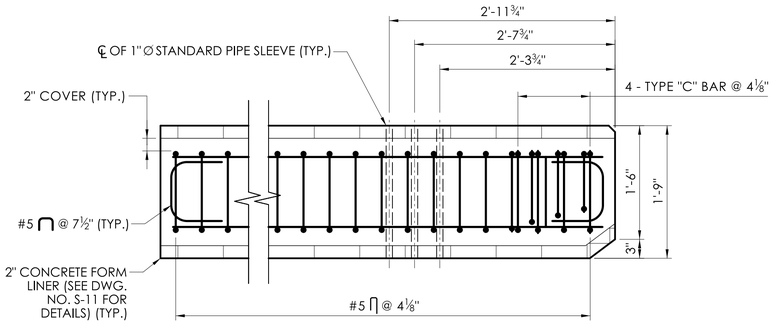
ELEVATION - EAST CURB AND WINGWALL PARAPET REINFORCEMENT

SCALE: ¾"=1'-0"



SECTION B

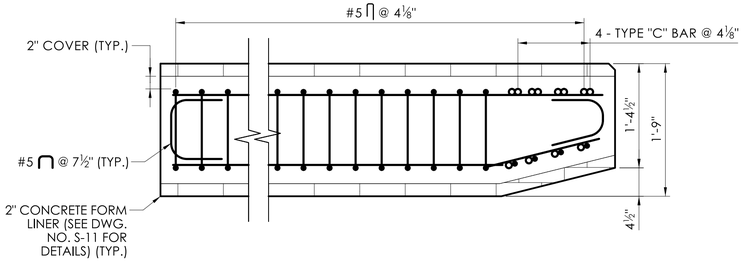
SCALE: ¾"=1'-0"



PLAN SECTION - WINGWALL REINFORCEMENT

SCALE: 1"=1'-0"

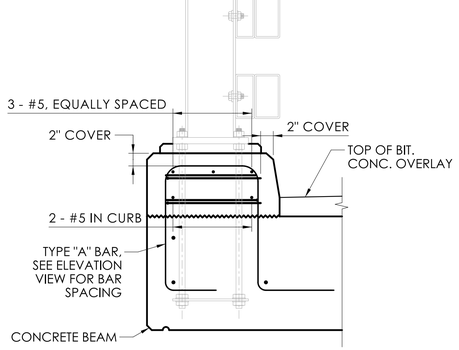
C



PLAN SECTION - WINGWALL REINFORCEMENT

SCALE: 1"=1'-0"

D

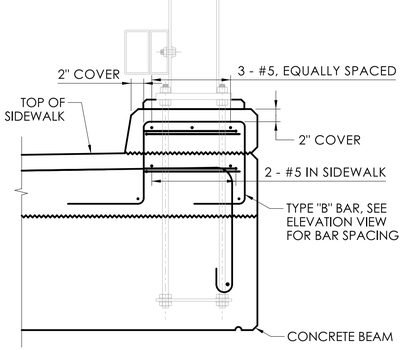


SECTION A

SCALE: 1"=1'-0"

A

NOTE: REINFORCEMENT IN PRESTRESSED SOLID DECK BEAM NOT SHOWN FOR CLARITY.

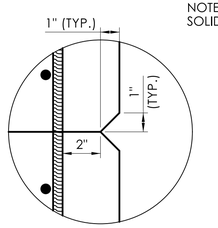


SECTION E

SCALE: 1"=1'-0"

E

NOTE: REINFORCEMENT IN SIDEWALK AND PRESTRESSED SOLID DECK BEAM NOT SHOWN FOR CLARITY.



TYPICAL RUSTICATION DETAIL

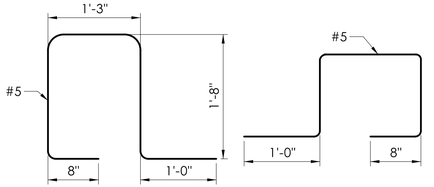
SCALE: 3"=1'-0"

REINFORCEMENT SPLICE NOTES:

1. THE SPLICE LENGTH FOR THE LONGITUDINAL REINFORCEMENT IN THE CURB AND WINGWALL SHALL BE AS FOLLOWS UNLESS DIMENSIONED OTHERWISE:

BAR SIZE	SPLICE LENGTH
#5	2'-4"

2. THE SPLICES SHALL BE ALTERNATED SO THAT 50% OR LESS OF THE LONGITUDINAL BARS ARE SPLICED AT THE SAME LOCATION.

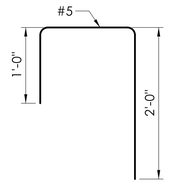


TYPE "A" BAR

SCALE: N.T.S.

TYPE "B" BAR

SCALE: N.T.S.



TYPE "C" BAR

SCALE: N.T.S.

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Alfred Benesch & Company, 120 Hebron Avenue 2nd Floor, Glastonbury, CT

DESIGNER/DRAFTER: A. BISI CHECKED BY: M. HABEK

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

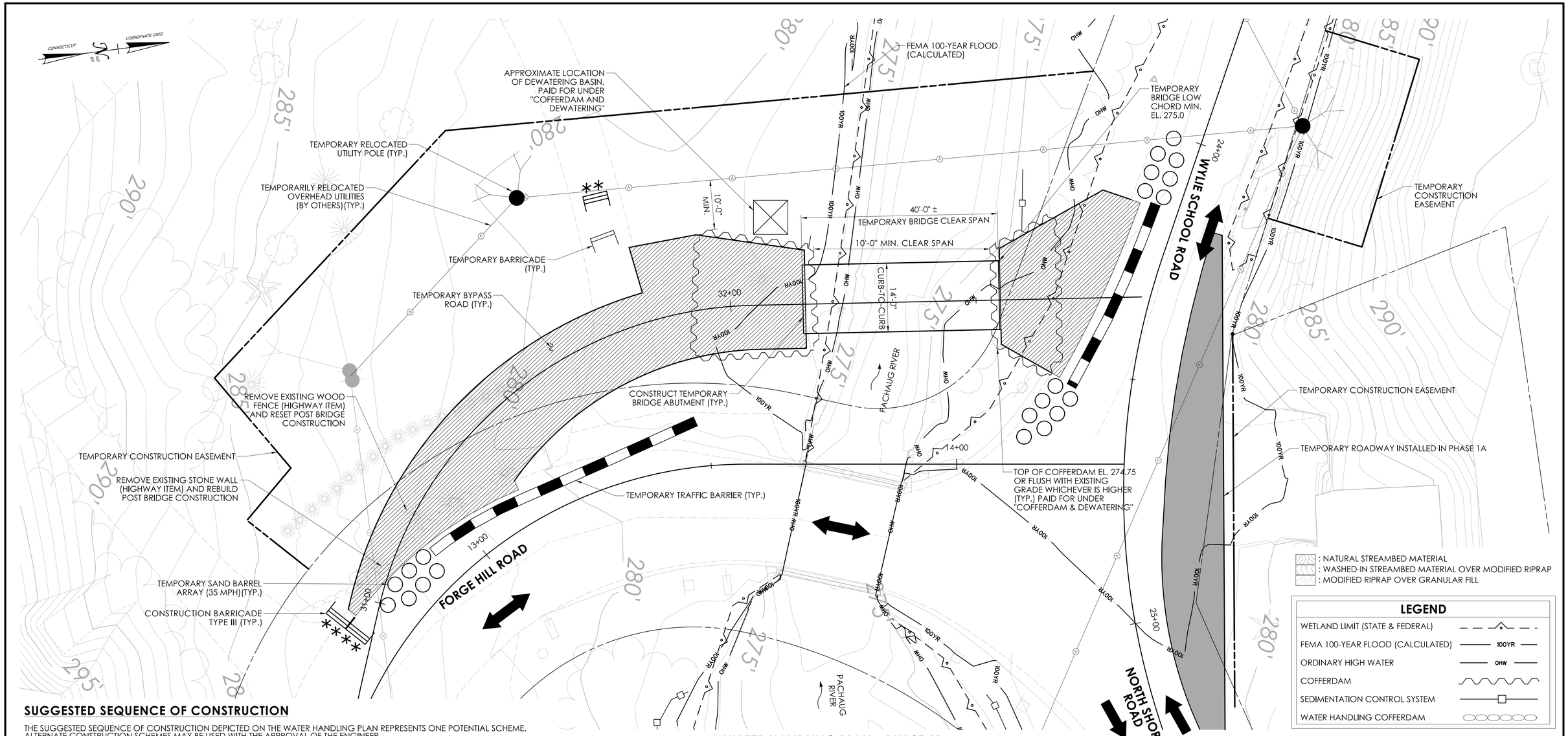
DRAWING TITLE: 3-TUBE CURB MOUNTED BRIDGE RAIL - REINFORCEMENT

PROJECT NO.: 0147-0062

DRAWING NO.: S-21

SHEET NO.: 04.21

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_BRIDGE RAIL REINFORCEMENT.dgn
PLOTTED DATE: 10/16/2025



WATER HANDLING PLAN - PHASE 1B

SCALE: 1"=10'

SUGGESTED SEQUENCE OF CONSTRUCTION

THE SUGGESTED SEQUENCE OF CONSTRUCTION DEPICTED ON THE WATER HANDLING PLAN REPRESENTS ONE POTENTIAL SCHEME. ALTERNATE CONSTRUCTION SCHEMES MAY BE USED WITH THE APPROVAL OF THE ENGINEER.

ADVANCE WORK

1. TEMPORARILY RELOCATE EXISTING OVERHEAD UTILITIES (BY OTHERS). SEE DWG. NO. S-28 FOR DETAILS.

PHASE 1A

1. INSTALL TEMPORARY ROADWAY ON THE NORTH SIDE OF THE INTERSECTION OF WYLIE SCHOOL ROAD AND NORTH SHORE ROAD IN ACCORDANCE WITH MPT PHASE 1A UTILIZING ALTERNATING ONE-WAY TRAFFIC WITH TEMPORARY SIGNALS (SEE DWG. NO. MPT-02, TRAFFIC SUBSET).

PHASE 1B

1. INSTALL MPT PHASE 1B UTILIZING ALTERNATING ONE-WAY TRAFFIC WITH TEMPORARY SIGNALS, SIGNAGE AND TRAFFIC BARRIERS (SEE DWG. NO. MPT-02, TRAFFIC SUBSET).
2. CLEAR & GRUB AND INSTALL SEDIMENTATION CONTROL SYSTEM.
3. INSTALL PHASE 1B COFFERDAM, TEMPORARY BARRICADES AND DEWATERING FOR CONSTRUCTION OF TEMPORARY BRIDGE ABUTMENTS.
4. CONSTRUCT TEMPORARY BRIDGE. TEMPORARY BRIDGE TO BE DESIGNED BY THE CONTRACTOR TO THE REQUIREMENTS SPECIFIED IN THE SPECIAL PROVISIONS FOR ITEM 0502195A TEMPORARY BRIDGE. FOR FOUNDATION RECOMMENDATIONS REFER TO GEOTECHNICAL REPORT.
5. CONSTRUCT TEMPORARY BYPASS ROAD WEST OF THE EXISTING BRIDGE.
6. MODIFY WYLIE SCHOOL RD. / N. SHORE RD. INTERSECTION TO ALLOW FOR PHASE 2A/2B/2C ONE-WAY ALTERNATING TRAFFIC
7. REMOVE COFFERDAM NOT REQUIRED FOR PHASE 2A CONSTRUCTION.

WATER HANDLING NOTES

1. THE CONTRACTOR SHALL MAINTAIN WATER THROUGH THE COFFERDAM (10'-0" MIN. OPENING) DURING CONSTRUCTION OF THE TEMPORARY BRIDGE AND NEW STRUCTURE.
2. A DEWATERING BASIN SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS.
3. COFFERDAM SHALL CONSIST OF AN APPROVED SYSTEM THAT THE CONTRACTOR ELECTS TO USE WHICH WILL SAFELY CONVEY WATER FLOWS THROUGH THE CONSTRUCTION AREA, SHALL BE ABLE TO SUPPORT CONSTRUCTION ACTIVITY AND EXCAVATION, AND SHALL CONFORM TO PERMITS. COFFERDAMS SHALL BE PAID FOR UNDER "COFFERDAM AND DEWATERING."
4. TEMPORARY WATER HANDLING SYSTEM SHALL CONSIST OF AN APPROVED SYSTEM THAT THE CONTRACTOR ELECTS TO USE WHICH WILL SAFELY CONVEY WATER FLOWS THROUGH THE CONSTRUCTION AREA, SHALL BE ABLE TO SUPPORT CONSTRUCTION ACTIVITY AND SHALL CONFORM TO PERMITS. TO BE PAID FOR UNDER "HANDLING WATER" (SEE SPECIAL PROVISIONS).
5. ANY WATER HANDLING SCHEME DEPICTED WITHIN THE DEPARTMENTS 'HANDLING WATER TYPICAL SCHEMATICS' MAY BE UTILIZED UNLESS SPECIFICALLY PROHIBITED. A MEANS AND METHOD FOR WATER HANDLING SYSTEM SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL.
6. WATER HANDLING SYSTEM SHALL NOT EXCEED IMPACT AREAS SHOWN ON THE WETLAND AND FLOODPLAIN IMPACT SHEETS OF THE PERMIT PLANS.

UNCONFINED IN-STREAM WORK BMP NOTE:

ANY UNCONFINED IN-STREAM WORK WITHIN THE WATERCOURSE SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE.

THE TOWN WILL REVIEW AND MAY APPROVE THE METHODS OF UNCONFINED IN-WATER WORK WITH CONSIDERATION OF THE FOLLOWING:

* PROPOSED SCHEDULE FOR WORK OPERATIONS
* ALL UNCONFINED IN-WATER WORK SHALL BE MINOR IN NATURE
* DISTURBANCE SHALL BE LIMITED TO AREAS THAT HAVE BEEN APPROVED FOR TEMPORARY AND PERMANENT IMPACT
* BEST MANAGEMENT PRACTICE SHALL BE UTILIZED WHEREVER POSSIBLE TO MINIMIZE TURBIDITY/SEDIMENT TRANSPORT DOWNSTREAM
* DISTURBED AREAS AND THE DURATION OF DISTURBANCE SHALL BE MINIMALIZED TO THE EXTENT POSSIBLE
* IN-STREAM WORK SHALL BE DONE DURING PERIODS OF LOW FLOW

TEMPORARY HYDRAULIC DATA	
AVERAGE DAILY FLOW (ADF) [CFS]	10
AVERAGE SPRING FLOW (ASF) [CFS]	20
2 YEAR FREQUENCY DISCHARGE [CFS]	30
TEMPORARY DESIGN DISCHARGE [CFS]	70
TEMPORARY DESIGN FREQUENCY	5-YEAR
TEMPORARY WATER SURFACE EL. - UPSTREAM	275.0 FEET
TEMPORARY WATER SURFACE EL. - DOWNSTREAM	274.7 FEET

TIME-OF-YEAR RESTRICTION NOTE:

ANY TREE CLEARING WORK INCLUDING TRIMMING, CUTTING AND REMOVAL OF TREES WITH A 3" DBH OR GREATER SHOULD BE RESTRICTED TO THE PERIOD FROM NOVEMBER 1 TO APRIL 14. GROUND DISTURBING ACTIVITIES SHOULD BE DONE BETWEEN APRIL 1 AND OCTOBER 31 (INCLUSIVE) TO AVOID KILLING HIBERNATING ANIMALS.

REVISION DESCRIPTION | DATE | REV.

SIGNATURE BLOCK:
benesch
Alfred Benesch & Company, 120 Hebron Avenue, 2nd Floor, Glastonbury, CT
DESIGNER/DRAFTER: S. LACHCIK CHECKED BY: M. HABEK

CTDOT CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

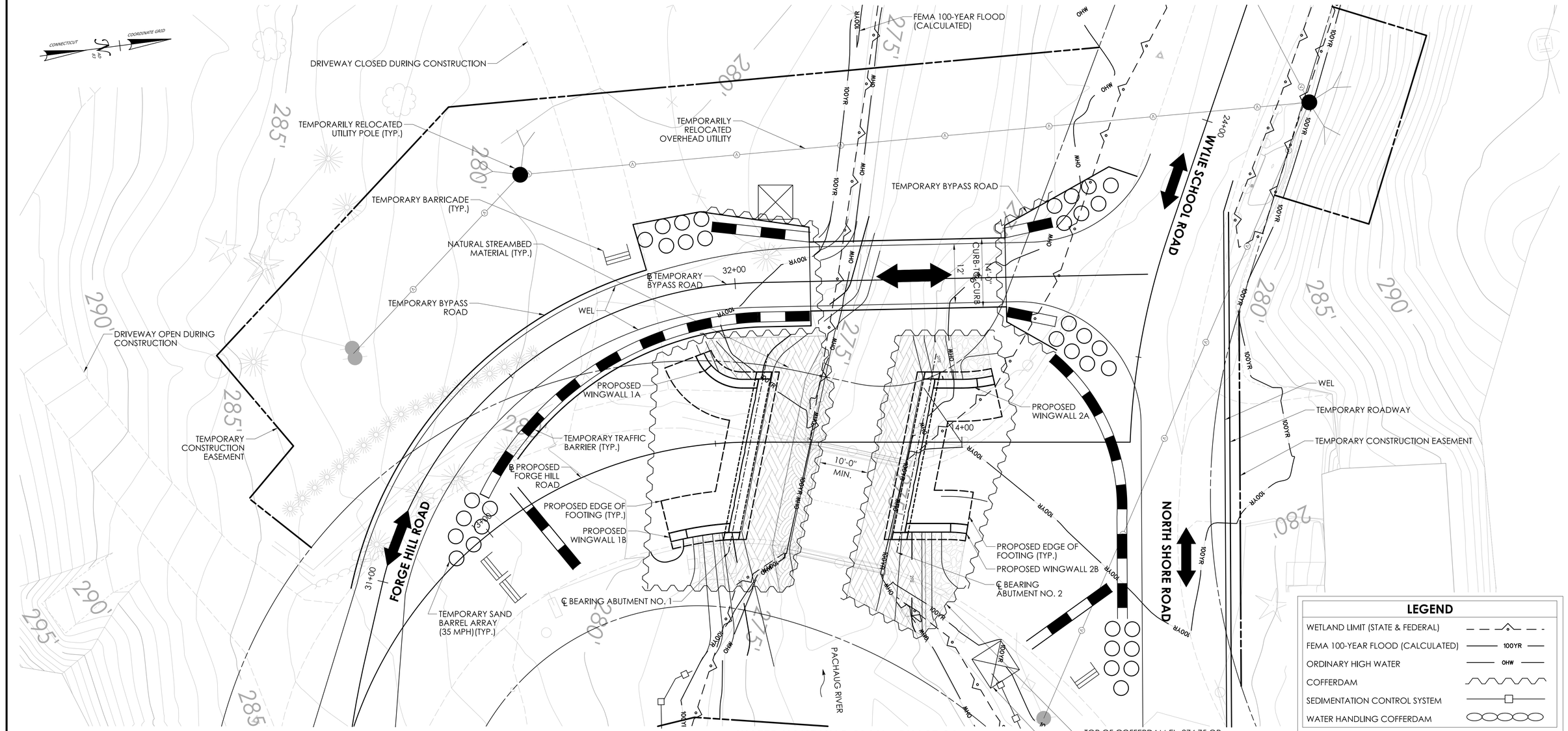
DRAWING TITLE: WATER HANDLING PLAN - PHASE 1

PROJECT NO.: 0147-0062

DRAWING NO.: S-22

SHEET NO.: 04.22

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_WATER HANDLING 1.dgn
PLOTTED DATE: 10/17/2025



WATER HANDLING PLAN - PHASE 2A

SCALE: 1"=10'

FOR WATER HANDLING NOTES REFER TO "WATER HANDLING PLAN - PHASE 1", DWG. NO. S-22.

TOP OF COFFERDAM EL. 274.75 OR FLUSH WITH EXISTING GRADE WHICHEVER IS HIGHER (TYP.) PAID FOR UNDER "COFFERDAM & DEWATERING"

APPROXIMATE LOCATION OF DEWATERING BASIN (TYP.) PAID FOR UNDER "COFFERDAM AND DEWATERING"

LEGEND

- WETLAND LIMIT (STATE & FEDERAL)
- FEMA 100-YEAR FLOOD (CALCULATED) — 100YR
- ORDINARY HIGH WATER — OHW
- COFFERDAM
- SEDIMENTATION CONTROL SYSTEM
- WATER HANDLING COFFERDAM

: NATURAL STREAMBED MATERIAL
: WASHED-IN STREAMBED MATERIAL OVER MODIFIED RIPRAP
: MODIFIED RIPRAP OVER GRANULAR FILL

SUGGESTED SEQUENCE OF CONSTRUCTION

PHASE 2A

1. INSTALL MPT PHASE 2 UTILIZING ALTERNATING ONE-WAY TRAFFIC WITH TEMPORARY SIGNALS, SIGNAGE AND TEMPORARY TRAFFIC BARRIERS AND RE-ROUTE TRAFFIC ONTO TEMPORARY BYPASS ROAD.
2. INSTALL TEMPORARY DEBRIS SHIELD FOR REMOVAL OF EXISTING SUPERSTRUCTURE (PAID FOR UNDER "REMOVAL OF SUPERSTRUCTURE"). MINIMUM ELEVATION OF TEMPORARY DEBRIS SHIELD EL. 275.90. EXISTING LOW CHORD EL. 276.9.
3. REMOVE EXISTING BRIDGE SUPERSTRUCTURE AND REMOVE DEBRIS SHIELD.
4. INSTALL PHASE 2A COFFERDAMS. REMOVE EXISTING BRIDGE SUBSTRUCTURES.
5. EXCAVATE INSIDE COFFERDAMS TO APPROXIMATE BOTTOM OF NEW SUBSTRUCTURES. STOCKPILE NATURAL STREAMBED MATERIAL (IN UPLAND AREA). TOWN TO PROVIDE STOCKPILE AREA OUTSIDE OF PROJECT SITE LIMITS (SEE NTC-STOCKPILE AREA).
6. INSTALL MICROPILES FOR PROPOSED SUBSTRUCTURES.
7. CONSTRUCT FOOTINGS, ABUTMENTS AND WINGWALLS FOR THE PROPOSED BRIDGE STRUCTURE.
8. RE-GRADE PROPOSED CHANNEL WITHIN COFFERDAMS. PARTIALLY INSTALL WASHED-IN NATURAL STREAMBED MATERIAL OVER RIPRAP, AND NATURAL STREAMBED MATERIAL.
9. BACKFILL AND GRADE SLOPES AROUND ABUTMENTS AND WINGWALLS.
10. REMOVE COFFERDAM AND DEWATERING BASIN INSTALLED IN PHASE 2A NOT REQUIRED FOR PHASE 2B CONSTRUCTION.

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CTDOT — CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

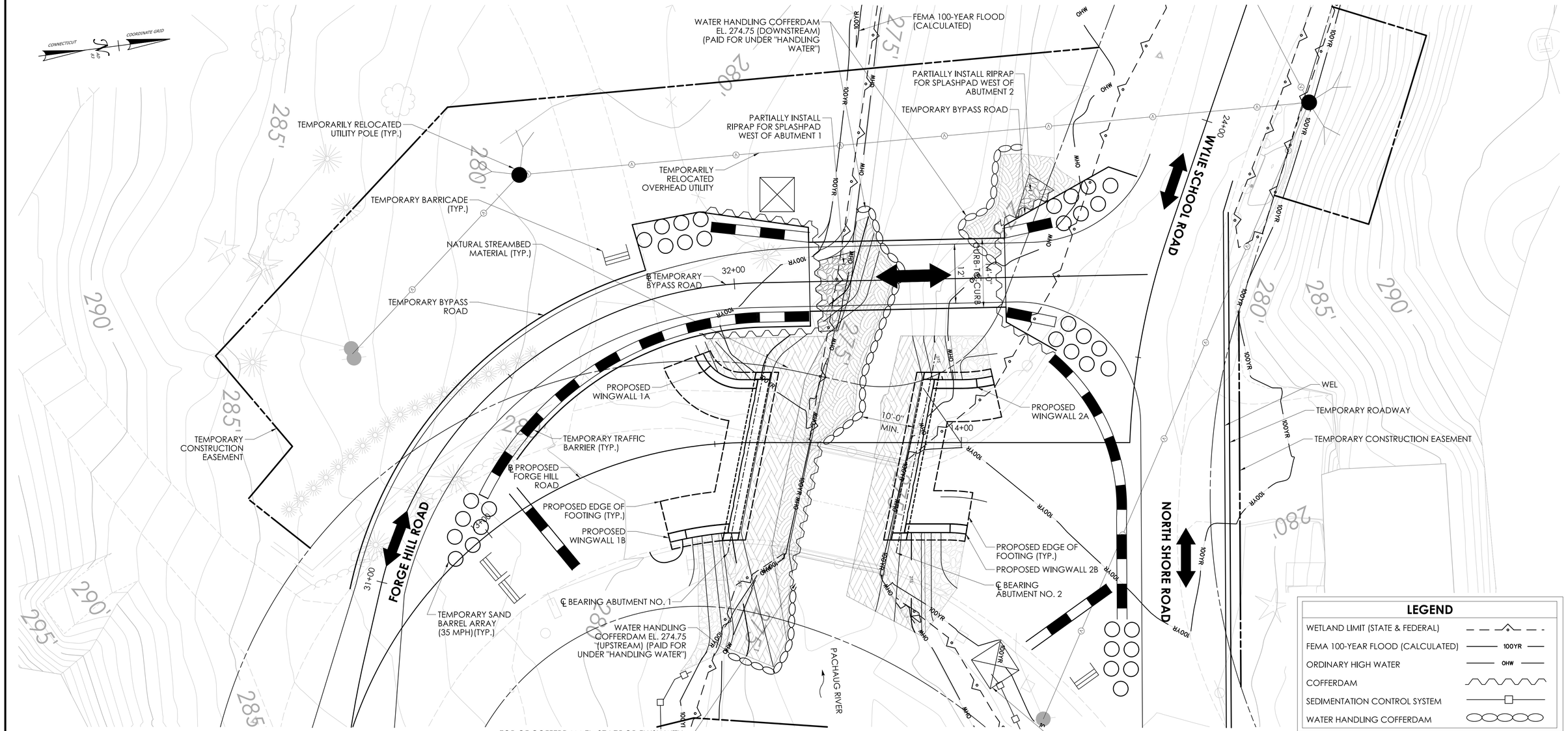
DRAWING TITLE: WATER HANDLING PLAN - PHASE 2A

PROJECT NO.: 0147-0062

DRAWING NO.: S-23

SHEET NO.: 04.23

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_WATER HANDLING 2A.dgn
PLOTTED DATE: 10/17/2025



WATER HANDLING PLAN - PHASE 2B

SCALE: 1"=10'

FOR WATER HANDLING NOTES REFER TO "WATER HANDLING PLAN - PHASE 1", DWG. NO. S-22.

SUGGESTED SEQUENCE OF CONSTRUCTION

PHASE 2B

1. MAINTAIN TRAFFIC OVER TEMPORARY BYPASS ROAD.
2. INSTALL WATER HANDLING COFFERDAM AS SHOWN.
3. RE-GRADE PROPOSED CHANNEL WITHIN WATER HANDLING COFFERDAM. FINISH INSTALLATION OF STREAMBED MATERIAL, AND WASHED-IN STREAMBED MATERIAL OVER RIPRAP. PARTIALLY INSTALL RIPRAP FOR SPLASHPADS WEST OF PROPOSED ABUTMENTS 1 AND 2.
4. REMOVE COFFERDAM AND WATER HANDLING COFFERDAM NOT REQUIRED FOR PHASE 2C CONSTRUCTION.

REV. | DATE | REVISION DESCRIPTION

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DESIGNER/DRAFTER: S. LACHCIK CHECKED BY: M. HABEK

CTDOT CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

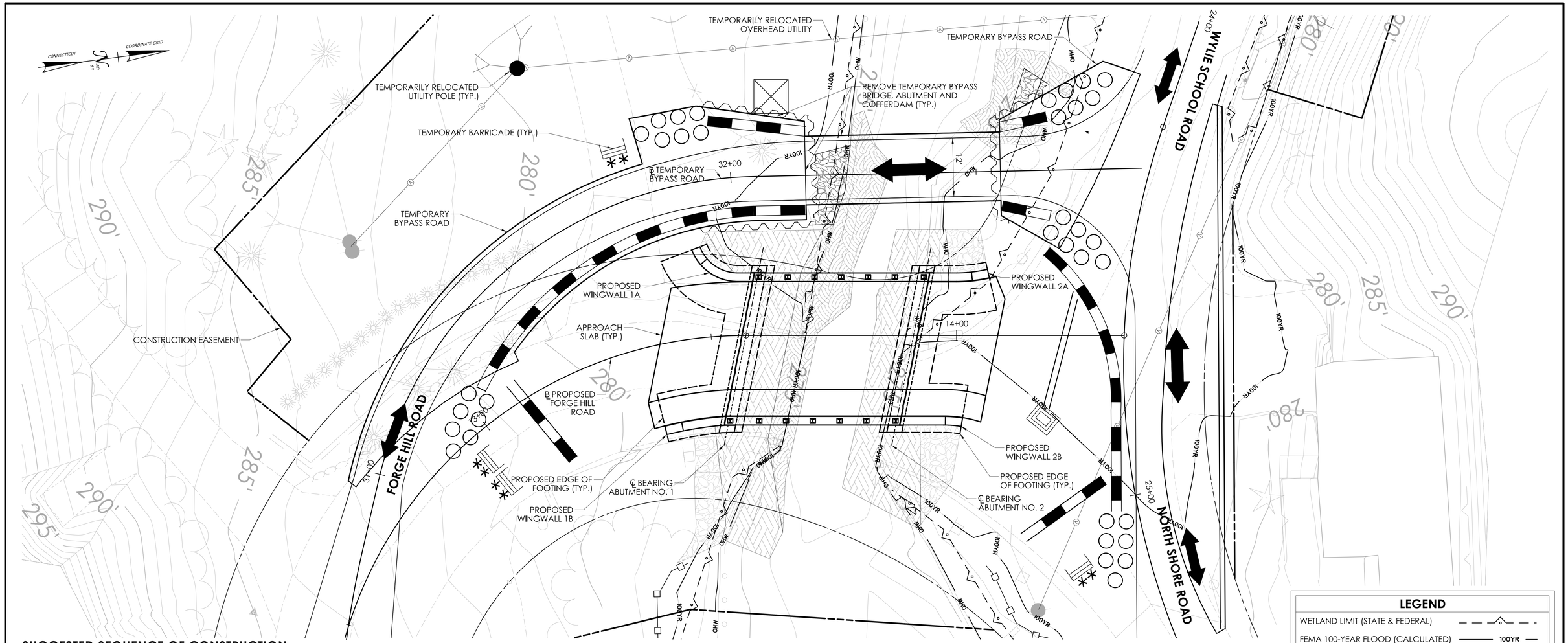
DRAWING TITLE: WATER HANDLING PLAN - PHASE 2B

PROJECT NO.: 0147-0062

DRAWING NO.: S-24

SHEET NO.: 04.24

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_WATER HANDLING 2B.dgn
PLOTTED DATE: 10/17/2025



WATER HANDLING PLAN - PHASE 2C

SCALE: 1"=10'

LEGEND	
WETLAND LIMIT (STATE & FEDERAL)	
FEMA 100-YEAR FLOOD (CALCULATED)	100YR
ORDINARY HIGH WATER	OHW
COFFERDAM	
SEDIMENTATION CONTROL SYSTEM	
WATER HANDLING COFFERDAM	

: NATURAL STREAMBED MATERIAL
: WASHED-IN STREAMBED MATERIAL OVER MODIFIED RIPRAP
: MODIFIED RIPRAP OVER GRANULAR FILL

SUGGESTED SEQUENCE OF CONSTRUCTION

PHASE 2C

1. MAINTAIN TRAFFIC OVER TEMPORARY BYPASS ROAD.
2. INSTALL PRESTRESSED SOLID DECK BEAMS.
3. TIE REBAR, FORM AND POUR CLOSURE JOINTS BETWEEN DECK BEAMS.
4. CONSTRUCT APPROACH SLABS.
5. TIE REBAR, FORM AND POUR CONCRETE SIDEWALK AND CURBS.
6. INSTALL MEMBRANE WATERPROOFING AND 1" HMA S0.25 ON BRIDGE & APPROACH SLAB.
7. INSTALL 3-TUBE CURB MOUNTED BRIDGE RAIL.
8. INSTALL CATCH BASIN AT STA. 14+18 R AND SECTION OF R.C.P. AS ALLOWED WITHOUT DISRUPTING TEMPORARY ROADWAY.
9. INSTALL PROPOSED ROADWAY SUBBASE (USED AS A TEMPORARY DRIVING SURFACE) AND TEMPORARY TRANSITION ONTO APPROACH SLABS (SEE DWG. NO. MPT-01, TRAFFIC SUBSET).

PHASE 3

1. REMOVE MPT PHASE 2A/2B/2C SIGNAGE AND BARRIERS NOT REQUIRED FOR PHASE 3. RE-ROUTE TWO-WAY TRAFFIC ONTO NEWLY CONSTRUCTED BRIDGE AND PARTIALLY CONSTRUCTED PROPOSED APPROACH ROADWAY. USING CTDOT APPROVED TEMPORARY MPT PLANS AS NECESSARY (SEE MPT SPECIFICATIONS), REMOVE TEMPORARY BYPASS ROAD AND TEMPORARY BRIDGE CONNECTING FORGE HILL ROAD TO WYLIE SCHOOL ROAD. REMOVE TEMPORARY ROADWAY NORTH OF THE INTERSECTION OF WYLIE SCHOOL ROAD AND NORTH SHORE ROAD. REMOVE TEMPORARY TRAFFIC BARRIERS.
2. COMPLETE INSTALLATION OF ROADWAY DRAINAGE (SEE DWG. NO. DRN-01, HIGHWAY SUBSET) AND INSTALL REMAINDER OF RIPRAP SPLASHPADS WEST OF ABUTMENTS 1 AND 2. REMOVE REMAINING COFFERDAM.
3. INSTALL ROADWAY GUIDERAILS (SEE DWG. NO. PLN-01, HIGHWAY SUBSET) AND PAVE ROADWAY USING CTDOT APPROVED TEMPORARY TRAFFIC CONTROL METHODS.
4. INSTALL PLANTINGS AND TURF ESTABLISHMENT.
5. REMOVE SEDIMENTATION CONTROL SYSTEMS UPON PERMANENT STABILIZATION.

POST-CONSTRUCTION PHASE

RELOCATE UTILITIES BACK TO ORIGINAL LOCATIONS (BY OTHERS).

PHASE 3 CONSTRUCTION NOTE:

ALL WATER HANDLING STRUCTURES SHALL BE FULLY REMOVED. THE ENTIRETY OF THE TEMPORARY BRIDGE STRUCTURE SHALL BE FULLY REMOVED. THE CONTRACTOR SHALL NOT ABANDON ANY TEMPORARY BRIDGE OR WATER HANDLING STRUCTURE IN PLACE.

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Alfred Benesch & Company, 120 Hebron Avenue, 2nd Floor, Glastonbury, CT
DESIGNER/DRAFTER: A. BISI CHECKED BY: M. HABEK

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

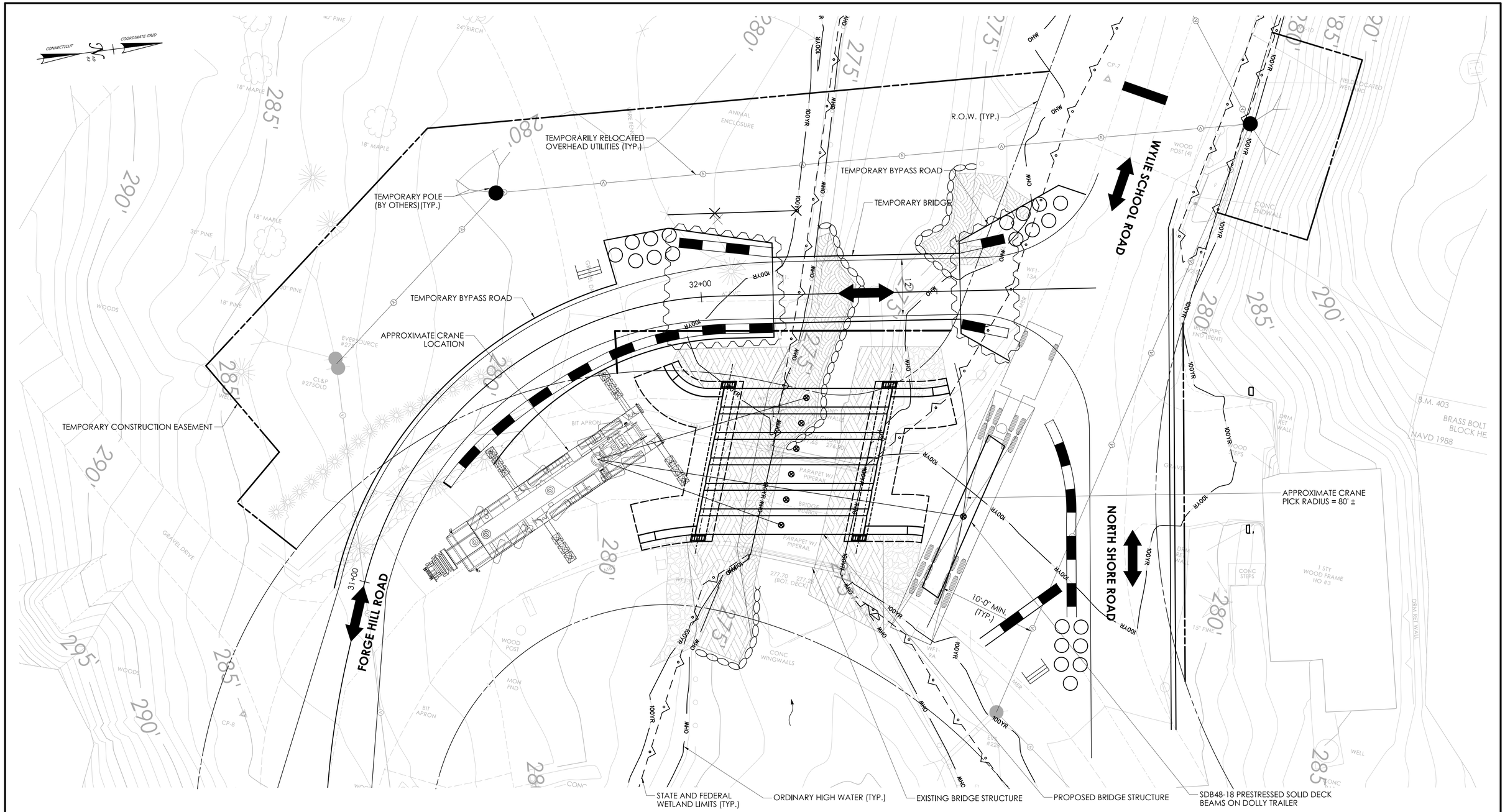
DRAWING TITLE: WATER HANDLING PLAN - PHASE 2C

PROJECT NO.: 0147-0062

DRAWING NO.: S-25

SHEET NO.: 04.25

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_WATER HANDLING 3.dgn
PLOTTED DATE: 10/17/2025



CRANE AND ERECTION NOTES

1. THE CONTRACTOR SHALL COORDINATE ANY TEMPORARY IMPACTS TO OVERHEAD UTILITIES WITH THE AFFECTED UTILITY COMPANY.
2. THE CONTRACTOR SHALL EVALUATE ANY CRANE SURCHARGE ON COFFERDAMS, TEMPORARY BRIDGE AND PROPOSED BRIDGE SUBSTRUCTURE ELEMENTS.
3. THE SUGGESTED SEQUENCE OF CONSTRUCTION DEPICTED ON THE WATER HANDLING PLAN REPRESENTS ONE POTENTIAL SCHEME. ALTERNATE SEQUENCE OF CONSTRUCTION SCHEMES MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
4. THE COST OF THE CRANE, FOR ERECTION OF THE SUPERSTRUCTURE, SHALL BE INCLUDED UNDER THE ITEM "PRESTRESSED DECK UNITS (4'-0" X 1'-6") MODIFIED".
5. TREE REMOVAL TO ACCOMMODATE CRANE MOVEMENTS WILL NOT BE ALLOWED OUTSIDE OF THE TIME-OF-YEAR RESTRICTIONS AND SHALL BE APPROVED BY THE ENGINEER. TREE REMOVAL SHALL BE PAID FOR UNDER THE ITEM, "CLEARING AND GRUBBING".

CRANE LAYOUT

SCALE: 1"=10'

: NATURAL STREAMBED MATERIAL
: WASHED-IN STREAMBED MATERIAL OVER MODIFIED RIPRAP
: MODIFIED RIPRAP OVER GRANULAR FILL

PIECE	PIECE WT. (KIPS)	RIG. WT. (KIPS)	SAFETY FACTOR	PICK WT. (KIPS)	CRANE		
					PICK WT. (KIPS)	PICK RAD (FT)	CAPACITY (KIPS)
SDB48-18 PRESTRESSED SOLID DECK BEAMS	32	2.5	1.5	52	52	±80	78

NOTE: CRANE CAPACITIES ARE BASED ON GROVE GMK 6400. OTHER CRANES MAY VARY.

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CTDOT CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER

TOWN(S): VOLUNTOWN

DRAWING TITLE: CRANE LAYOUT AND ERECTION PLAN

PROJECT NO.: 0147-0062

DRAWING NO.: S-26

SHEET NO.: 04.26

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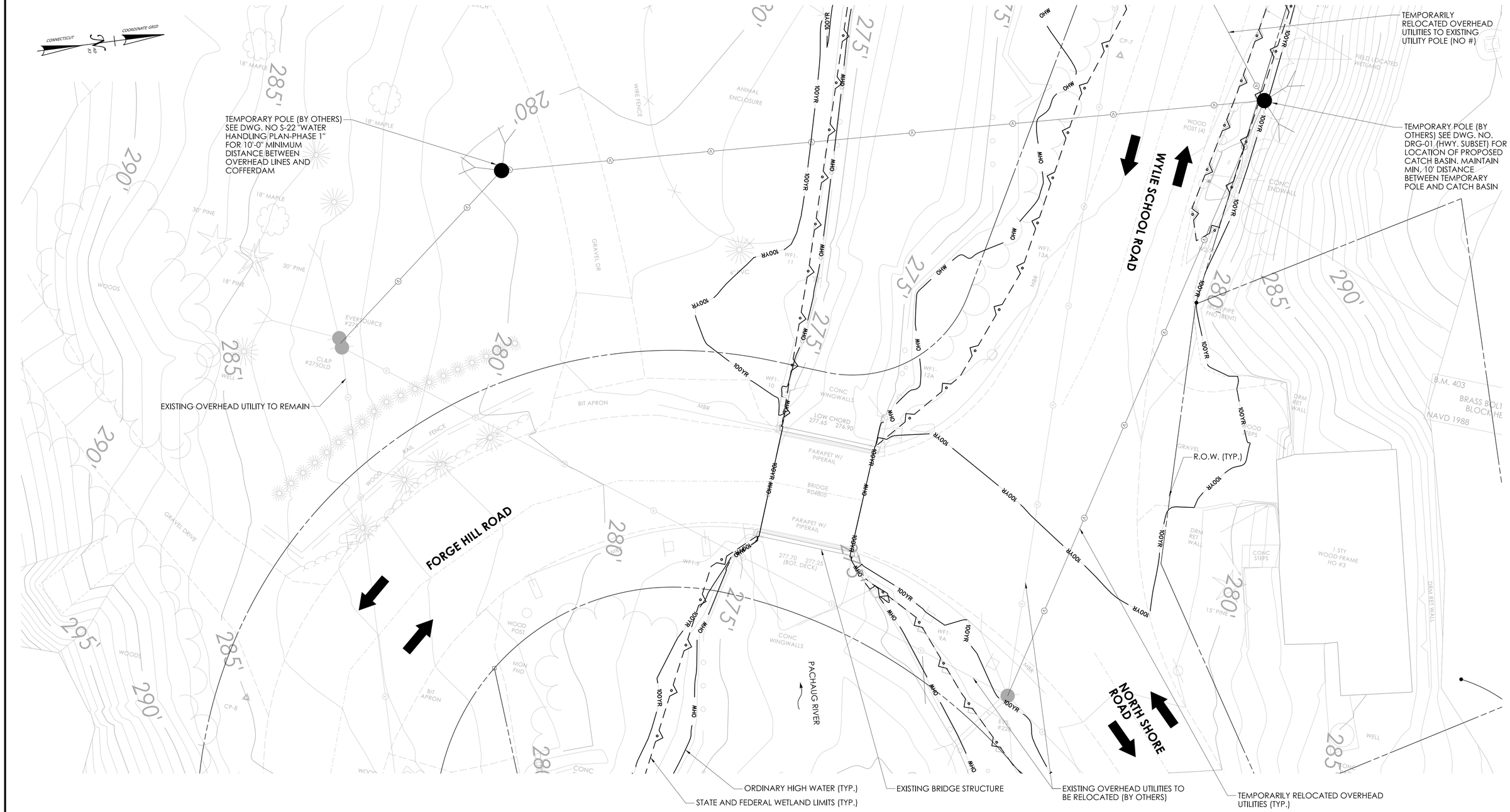
PLOTTED DATE: 10/17/2025



TEMPORARY UTILITY RELOCATION PLAN

SCALE: 1"=10'

NOTES

1. FOR THE SUGGESTED CONSTRUCTION SEQUENCE, REFER TO "WATER HANDLING PLAN", DWG. NOS. S-22 THROUGH S-25.
2. RESPECTIVE UTILITY COMPANIES ARE RESPONSIBLE FOR THE RELOCATION OF THEIR FACILITIES; REFER TO CONTRACT SPECIFICATIONS AND/OR SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

REV.	DATE	REVISION DESCRIPTION

SIGNATURE BLOCK: benesch — Alfred Benesch & Company, 100 Hebron Avenue, 2nd Floor, Glastonbury, CT

DESIGNER/DRAFTER: S. LACHCIK CHECKED BY: M. HABEK

CONNECTICUT DEPARTMENT OF TRANSPORTATION

PROJECT TITLE: **REPLACEMENT OF BRIDGE NO. 04805; FORGE HILL ROAD OVER PACHAUG RIVER**

TOWN(S): **VOLUNTOWN**

DRAWING TITLE: **TEMPORARY UTILITY RELOCATION PLAN**

PROJECT NO.: **0147-0062**

DRAWING NO.: **S-27**

SHEET NO.: **04.27**

LASTED SAVED BY: abisi **FILE NAME:** c:\pwwordir\benesch projects\projects\d0216186\SB_CP_0147-0062_TEMP UTILITY.dgn
PLOTTED DATE: 10/16/2025