03.03 - BRIDGE NO. 09206R
INDEX OF DRAWINGS

DRAWING NUMBER	DRAWING TITLE	DRAWING NUMBER	
S3-0	INDEX OF DRAWINGS		
S3-1	SITE PLAN - 1		
S3-2	SITE PLAN - 2		
S3-3	GENERAL PLAN AND ELEVATION		
S3-4	SECTIONS, QUANTITIES AND PROFILE		
S3-5	BORING LOGS AND TEST PIT LOG		
S3-6	STAGE CONSTRUCTION - 1		
S3-7	STAGE CONSTRUCTION - 2		
S3-8	WORK PLATFORM DETAILS		
S3-9	REPAIR DETAILS - 1		
S3-10	REPAIR DETAILS - 2		
S3-11	REPAIR DETAILS - 3		
S3-12	MISCELLANEOUS DETAILS		

DESIGNED BY:

LOCHNER
H.W. LOCHNER, INC
55 Hartland Street, Suite 401
East Hartford, CT 06108

STATE OF CONNECTICUT
RICHARD A. BRAY
LICENSED PROFESSIONAL ENGINEER

Richard Arthur Bray
2018.07.25
17:02:52 -04'00'

VOLUME 3 SUBSETS

SUBSET NO.	SUBSET TITLE	SUBSET SHEET COUNT
01	BRIDGE NO. 09200R	13
02	BRIDGE NO. 09204R	13
03	BRIDGE NO. 09206R	13
04	BRIDGE NO. 09223R	21

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

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PLOTTED: 7/25/2018

DESIGNER/DRAFTER: BC/CR
CHECKED BY: RB

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: ...\SB_MSH_170_3192_MP_25.80_INDEX.dgn

LOCHNER
H.W. LOCHNER, INC
55 Hartland St
East Hartford, CT 06108

APPROVED BY: R. BRAY DATE: 12/06/17

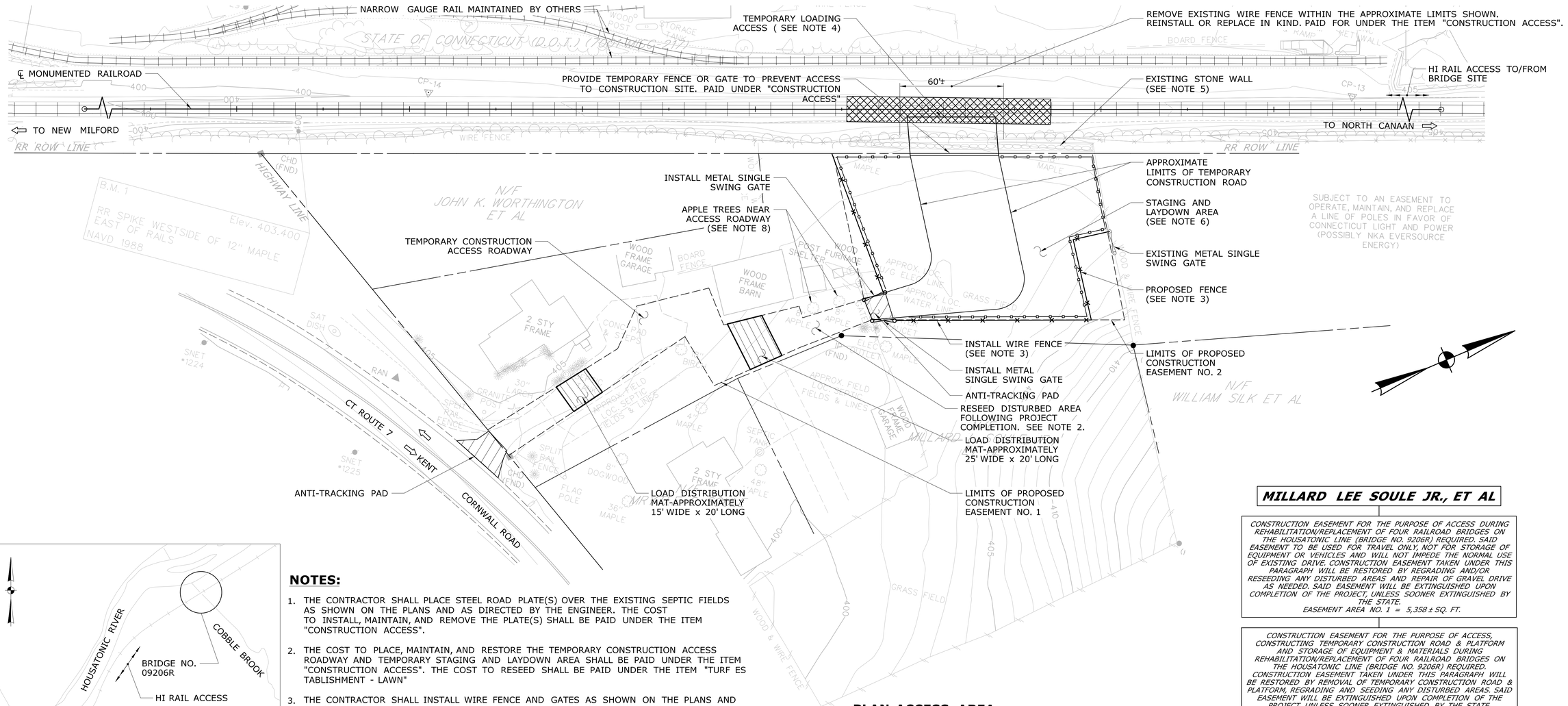
STATE OF CONNECTICUT
RICHARD A. BRAY
LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE:
BRIDGE NO. 09206R HOUSATONIC RAILROAD MP 25.80 OVER COBBLE BROOK

TOWN: **KENT**

DRAWING TITLE: **INDEX OF DRAWINGS**

PROJECT NO. **170-3192**
DRAWING NO. **S3-0**
SHEET NO. **03.03.01**



PLAN-ACCESS AREA

SCALE: 1" = 30'

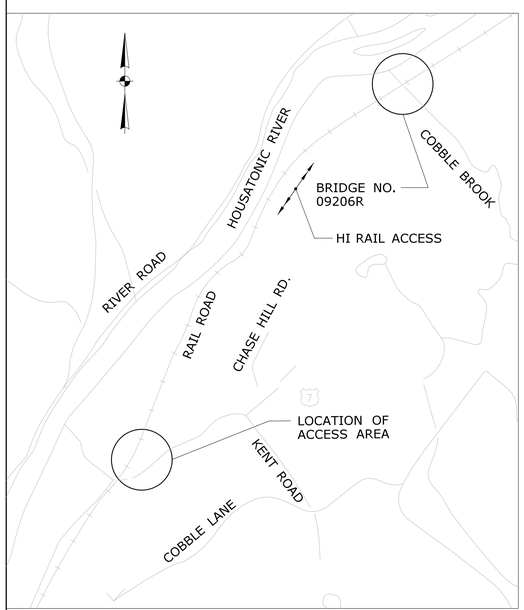
MILLARD LEE SOULE JR., ET AL

CONSTRUCTION EASEMENT FOR THE PURPOSE OF ACCESS DURING REHABILITATION/REPLACEMENT OF FOUR RAILROAD BRIDGES ON THE HOUSATONIC LINE (BRIDGE NO. 9206R) REQUIRED. SAID EASEMENT TO BE USED FOR TRAVEL ONLY, NOT FOR STORAGE OF EQUIPMENT OR VEHICLES AND WILL NOT IMPEDE THE NORMAL USE OF EXISTING DRIVE. CONSTRUCTION EASEMENT TAKEN UNDER THIS PARAGRAPH WILL BE RESTORED BY REGRADING AND/OR RESEEDING ANY DISTURBED AREAS AND REPAIR OF GRAVEL DRIVE AS NEEDED. SAID EASEMENT WILL BE EXTINGUISHED UPON COMPLETION OF THE PROJECT, UNLESS SOONER EXTINGUISHED BY THE STATE.

EASEMENT AREA NO. 1 = 5,358 ± SQ. FT.

CONSTRUCTION EASEMENT FOR THE PURPOSE OF ACCESS, CONSTRUCTING TEMPORARY CONSTRUCTION ROAD & PLATFORM AND STORAGE OF EQUIPMENT & MATERIALS DURING REHABILITATION/REPLACEMENT OF FOUR RAILROAD BRIDGES ON THE HOUSATONIC LINE (BRIDGE NO. 9206R) REQUIRED. CONSTRUCTION EASEMENT TAKEN UNDER THIS PARAGRAPH WILL BE RESTORED BY REMOVAL OF TEMPORARY CONSTRUCTION ROAD & PLATFORM, REGRADING AND SEEDING ANY DISTURBED AREAS. SAID EASEMENT WILL BE EXTINGUISHED UPON COMPLETION OF THE PROJECT, UNLESS SOONER EXTINGUISHED BY THE STATE.

EASEMENT AREA NO. 2 = 14,326 ± SQ. FT.



LOCATION PLAN - SITE NO.3

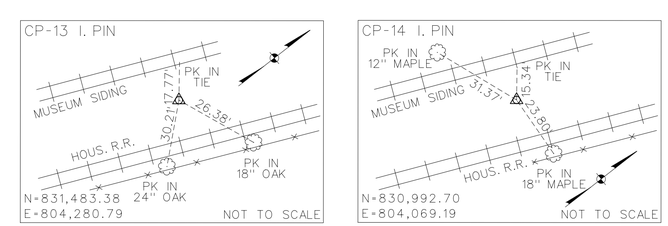
NTS

NOTES:

1. THE CONTRACTOR SHALL PLACE STEEL ROAD PLATE(S) OVER THE EXISTING SEPTIC FIELDS AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. THE COST TO INSTALL, MAINTAIN, AND REMOVE THE PLATE(S) SHALL BE PAID UNDER THE ITEM "CONSTRUCTION ACCESS".
2. THE COST TO PLACE, MAINTAIN, AND RESTORE THE TEMPORARY CONSTRUCTION ACCESS ROADWAY AND TEMPORARY STAGING AND LAYDOWN AREA SHALL BE PAID UNDER THE ITEM "CONSTRUCTION ACCESS". THE COST TO RESEED SHALL BE PAID UNDER THE ITEM "TURF ES TABLISHMENT - LAWN"
3. THE CONTRACTOR SHALL INSTALL WIRE FENCE AND GATES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. FOR FENCE DETAILS, SEE DRAWING "MISCELLANEOUS DETAILS". THE FENCE SHALL SERVE TO KEEP ANIMALS FROM ENTERING THE WORK ZONE. FOLLOWING COMPLETION OF CONSTRUCTION, THE FENCE SHALL BE LEFT IN PLACE. THE COST TO PROVIDE, INSTALL, AND MAINTAIN THE WIRE FENCE SHALL BE PAID UNDER THE ITEM "WIRE FENCE WITH WOOD POSTS". THE COST TO PROVIDE METAL GATES SHALL BE PAID UNDER THE ITEM "SINGLE SWING GATE".
4. THE CONTRACTOR SHALL PROVIDE ACCESS FOR LOADING AND UNLOADING EQUIPMENT AND MATERIALS FOR TRANSPORT TO AND FROM THE CONSTRUCTION SITE. THE MEANS OF ACCESS SHALL NOT BE WITHIN THE RAIL CLEARANCE ENVELOPE DURING NORMAL TRACK OPERATION. THE COST TO PROVIDE, MAINTAIN, AND REMOVE THE MEANS OF TEMPORARY ACCESS SHALL BE PAID UNDER THE ITEM "CONSTRUCTION ACCESS".
5. THE CONTRACTOR SHALL PROVIDE ACCESS TO THE TRACK PAST THE EXISTING STONE WALL. THE WALL SHALL BE RESTORED TO ITS EXISTING CONDITION FOLLOWING COMPLETION OF THE PROJECT. THE COST OF THIS WORK SHALL BE PAID UNDER THE ITEM "CONSTRUCTION ACCESS".
6. THE CONTRACTOR SHALL COORDINATE SHARED ACCESS TO THE TEMPORARY STAGING AND LAYDOWN AREA WITH THE ENGINEER.
7. FOR ANTI-TRACKING PAD INFORMATION, SEE MISCELLANEOUS DETAIL SHEET.
8. BRANCHES ON THE APPLE TREES NEAR THE TEMPORARY CONSTRUCTION ACCESS ROADWAY MAY NEED TO BE TRIMMED TO AVOID CONFLICT WITH CONSTRUCTION VEHICLES. THE CONTRACTOR WILL COORDINATE REQUIRED TREE TRIMMING WITH THE ENGINEER. THE COST TO TRIM THE TREES WILL BE PAID UNDER THE ITEM "SELECTIVE CLEARING AND THINNING (SITE NO. 3)

LEGEND

- SEDIMENTATION CONTROL SYSTEM
- PROPERTY LINE
- PROPOSED WIRE FENCE
- TRACK ACCESS AREA



SURVEY TIES

NTS

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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CHECKED BY: RB
SCALE AS NOTED

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LOCHNER
H.W. LOCHNER, INC
55 Hartland St
East Hartford, CT 06108

APPROVED BY: R. BRAY
DATE: 12/06/17

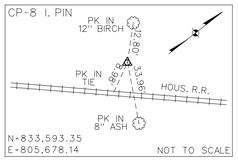
STATE OF CONNECTICUT RICHARD A. BRAY LICENSED PROFESSIONAL ENGINEER

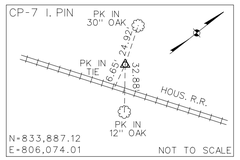
PROJECT TITLE:
BRIDGE NO. 09206R HOUSATONIC RAILROAD MP 25.80 OVER COBBLE BROOK

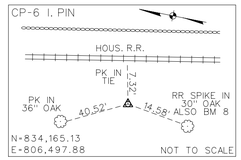
TOWN: **KENT**

DRAWING TITLE: **SITE PLAN-1**

PROJECT NO. **170-3192**
DRAWING NO. **S3-1**
SHEET NO. **03.03.02**

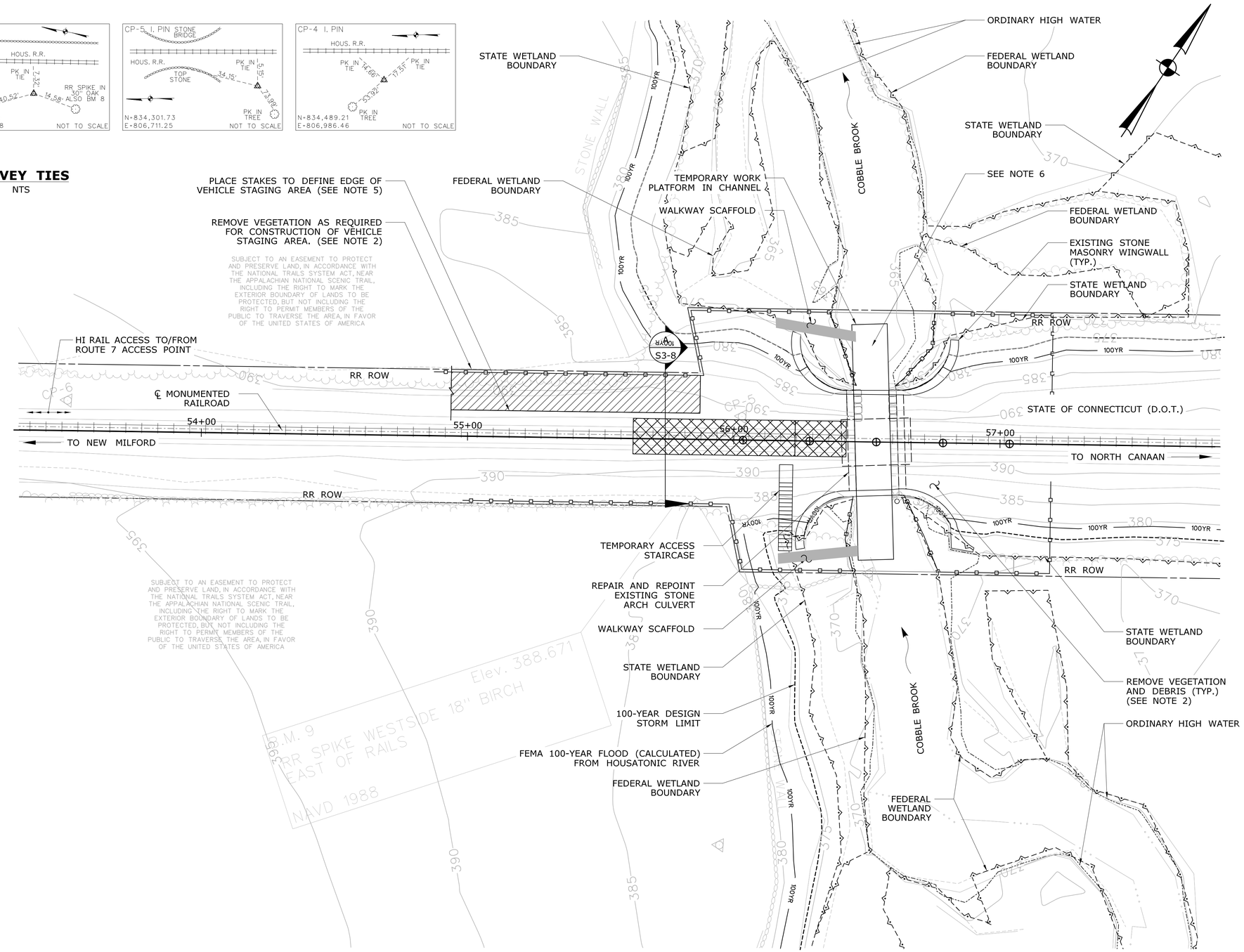






SURVEY TIES

NTS



PLAN

SCALE: 1" = 20'

LEGEND

- SEDIMENTATION CONTROL SYSTEM
- VEHICLE STAGING AREA
- TRACK ACCESS AREA (BY HRR)
- SETTLEMENT MONITORING POINT

NOTES:

1. THE COST TO PLACE, MAINTAIN, AND RESTORE THE VEHICLE STAGING AREA SHALL BE PAID UNDER THE ITEM "CONSTRUCTION ACCESS".
2. THE COST TO REMOVE VEGETATION AND DEBRIS FROM ANY AREAS IMPACTED BY CONSTRUCTION ACTIVITIES SHALL BE PAID UNDER THE ITEM "SELECTIVE CLEARING AND THINNING (SITE NO. 3)". WHERE INVASIVE PLANT SPECIES ARE ENCOUNTERED DURING THE CLEARING OF VEGETATION, THE REMOVAL SHALL BE PAID UNDER THE ITEM "REMOVAL OF INVASIVE SPECIES".
3. THE CONTRACTOR SHALL INSTALL SEDIMENTATION CONTROL SYSTEMS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
4. CONSTRUCTION ACCESS TO THE WORK AREA SHALL BE VIA "HI-RAIL" EQUIPMENT.
5. THE CONTRACTOR SHALL COORDINATE THE PLACEMENT AND LIMITS OF TRACK ACCESS AREAS WITH THE ENGINEER.
6. BOULDER CLUSTERS (NOT SHOWN) SHALL BE PLACED UNDER THE DIRECTION OF A DEEP FISHERIES BIOLOGIST OR OEP SCIENTIST FOLLOWING REMOVAL OF THE TEMPORARY WORK PLATFORM.

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CHECKED BY: RB

SCALE AS NOTED

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DEPARTMENT OF TRANSPORTATION

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LOCHNER
H.W. LOCHNER, INC
55 Hartland St
East Hartford, CT 06108

APPROVED BY: R. BRAY DATE: 12/06/17

STATE OF CONNECTICUT RICHARD A. BRAY LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE:
BRIDGE NO. 09206R HOUSATONIC RAILROAD MP 25.80 OVER COBBLE BROOK

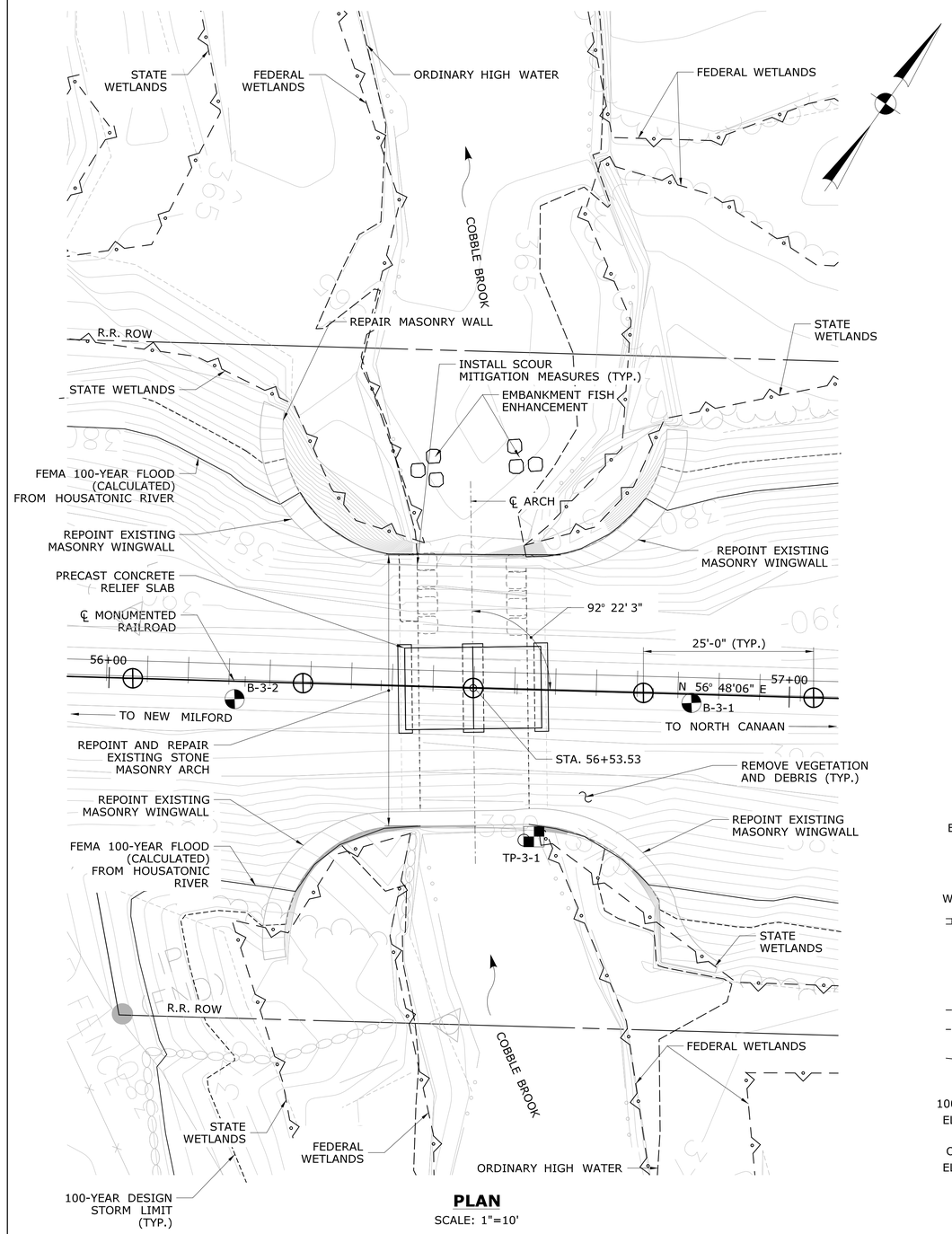
TOWN: **KENT**

DRAWING TITLE: **SITE PLAN -2**

PROJECT NO. **170-3192**

DRAWING NO. **S3-2**

SHEET NO. **03.03.03**



PLAN
SCALE: 1"=10'

GENERAL NOTES

SPECIFICATIONS:
CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 817, DATED 2016, SUPPLEMENTAL SPECIFICATIONS, DATED JANUARY 2018, AND SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS:
AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION (AREMA 2016) AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL (2003 WITH REVISION UP TO AND INCLUDING 2011)

ALLOWABLE DESIGN STRESSES:
CLASS 'F' CONCRETE BASED ON f'_c = 4,000 PSI
REINFORCEMENT (ASTM A615 GRADE 60) BASED ON f_y = 60,000 PSI

LIVE LOAD:
COOPER E80 LOADING

UTILITIES:
THE CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL UTILITIES WITHIN THE PROJECT LIMITS PRIOR TO THE START OF CONSTRUCTION AND SHALL TAKE NECESSARY PRECAUTIONS WHEN WORKING NEAR UTILITIES SO AS NOT TO DISTURB THEM.

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

CONCRETE COVER:
ALL REINFORCEMENT SHALL HAVE 2" COVER UNLESS DIMENSIONED OTHERWISE.

CLASS 'F' CONCRETE:
CLASS 'F' CONCRETE SHALL BE USED FOR PRECAST CONCRETE RELIEF SLAB.

PREFORMED EXPANSION JOINT FILLER:
THE COST OF FURNISHING AND INSTALLING PREFORMED EXPANSION JOINT FILLER SHALL BE INCLUDED IN THE COST OF THE ITEM "CLASS 'F' CONCRETE".

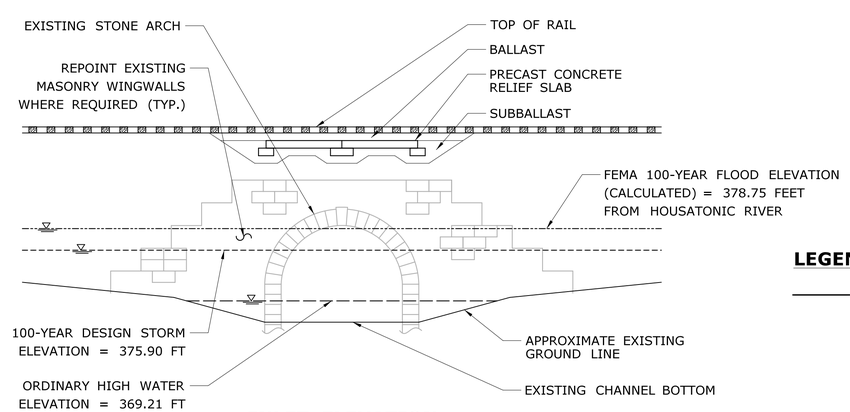
CONSTRUCTION JOINTS:
CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE PLANS, WILL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.

REINFORCEMENT:
ALL REINFORCEMENT SHALL BE ASTM A615, GRADE 60.

ELEVATIONS:
ALL ELEVATIONS ARE GIVEN IN FEET AND ARE REFERENCED TO NAVD-1988. WHEN ELEVATIONS ARE GIVEN TO LESS THAN TWO DECIMAL PLACES, THE OMITTED DIGITS SHALL BE ASSUMED TO BE ZEROES.

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

EXISTING DIMENSIONS:
DIMENSIONS OF THE EXISTING STRUCTURE SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY. THEY HAVE BEEN TAKEN FROM THE ORIGINAL DRAWINGS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY FOR THEIR ACCURACY. WHEN SHOP DRAWINGS BASED ON FIELD MEASUREMENTS ARE SUBMITTED FOR APPROVAL, THE FIELD MEASUREMENT SHALL ALSO BE SUBMITTED FOR REFERENCE BY THE REVIEWER.



INLET ELEVATION
SCALE: 1"=10'

NOTICE TO BRIDGE INSPECTORS

THE DEPARTMENT'S BRIDGE SAFETY PROCEDURES REQUIRE THIS BRIDGE TO BE INSPECTED FOR, BUT NOT LIMITED TO, ALL APPLICABLE COMPONENTS INDICATED IN THE GOVERNING MANUALS FOR BRIDGE INSPECTION. ATTENTION MUST BE GIVEN TO INSPECTING THE FOLLOWING SPECIAL COMPONENTS AND DETAILS. (THE LISTING OF 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
NONE	------

HYDRAULIC DATA

DRAINAGE AREA	4.54 - SQ MI
DESIGN FREQUENCY	100 - YR
DESIGN DISCHARGE	800 - CFS
AVERAGE DAILY FLOW ELEVATION	367.40 OBSERVED 5-22-14
UPSTREAM DESIGN WATER SURFACE ELEVATION	375.90
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	375.05

CONCRETE DISTRIBUTION

SUPERSTRUCTURE	C.Y.	0
SUBSTRUCTURE	C.Y.	9
FOOTINGS	C.Y.	4
TOTAL	C.Y	13

INSPECTION OF FIELD WELDS

METHOD	UNIT	QUANTITY
ULTRASONIC	inch	0
MAGNETIC PARTICLE	feet	0

ABBREVIATIONS

AS	AS SHOWN
C.F.S.	CUBIC FEET PER SECOND
C.Y.	CUBIC YARD
HRR	HOUSATONIC RAILROAD
MP	MILE POST
NTS	NOT TO SCALE
P/C	PRECAST
ROW	RIGHT OF WAY
RR	RAILROAD
TYP	TYPICAL
WP	WORKING POINT

TRANSPORTATION DIMENSIONS AND WEIGHT DATA

MEMBER	SHIPPING LENGTH	SHIPPING HEIGHT	SHIPPING WIDTH	SHIPPING WEIGHT
PRECAST SLAB	12'-0"	1'-0"	10'-0"	18000 LB
PRECAST FOOTING	13'-0"	1'-0"	3'-0"	5850 LB

LEGEND:

RIGHT OF WAY LINE

B-3-X — LOCATION OF BORING PERFORMED BY GEODESIGN, INC. OF MIDDLEBURY, CT BETWEEN 03/25/14 AND 03/27/14.

TP-3-1 — LOCATION OF TEST PIT PERFORMED BY GEODESIGN, INC. OF MIDDLEBURY, CT BETWEEN 03/25/14 AND 03/27/14.

SETTLEMENT MONITORING POINT

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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H.W. LOCHNER, INC
55 Hartland St
East Hartford, CT 06108

APPROVED BY: R. BRAY DATE: 12/06/17

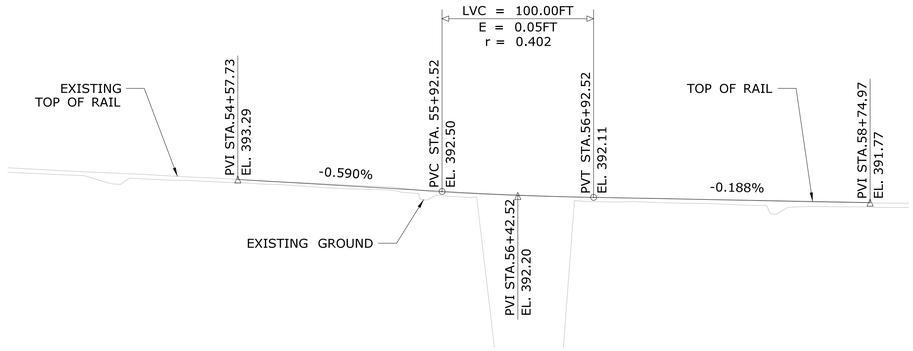
STATE OF CONNECTICUT RICHARD A. BRAY LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE:
BRIDGE NO. 09206R HOUSATONIC RAILROAD MP 25.80 OVER COBBLE BROOK

TOWN: **KENT**

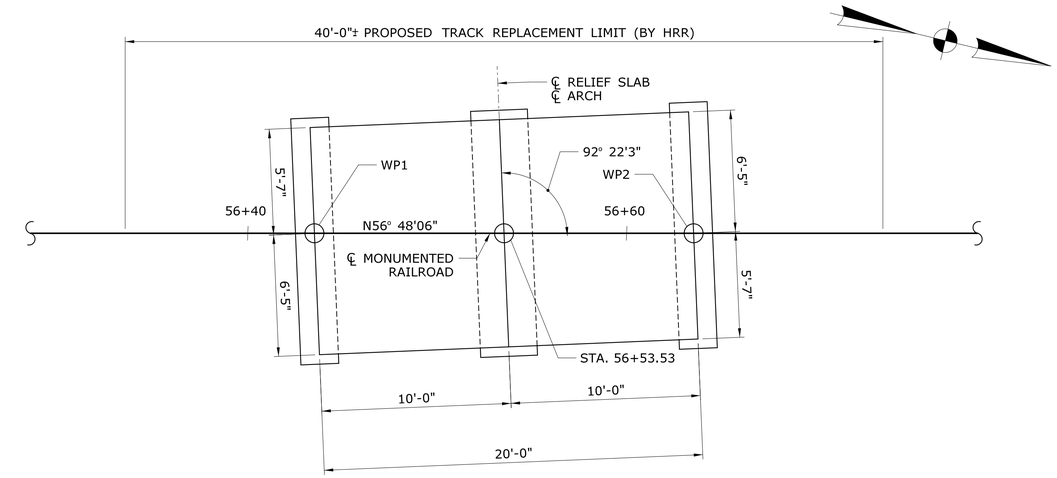
DRAWING TITLE: **GENERAL PLAN AND ELEVATION**

PROJECT NO. **170-3192**
DRAWING NO. **S3-3**
SHEET NO. **03.03.04**



RAILROAD PROFILE

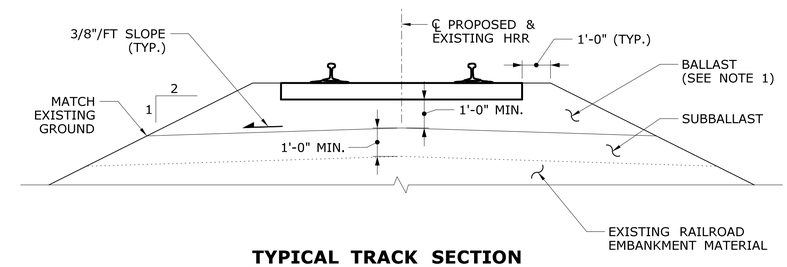
SCALE: VERTICAL 1" = 5'
HORIZONTAL 1" = 50'



RELIEF SLAB LAYOUT PLAN

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

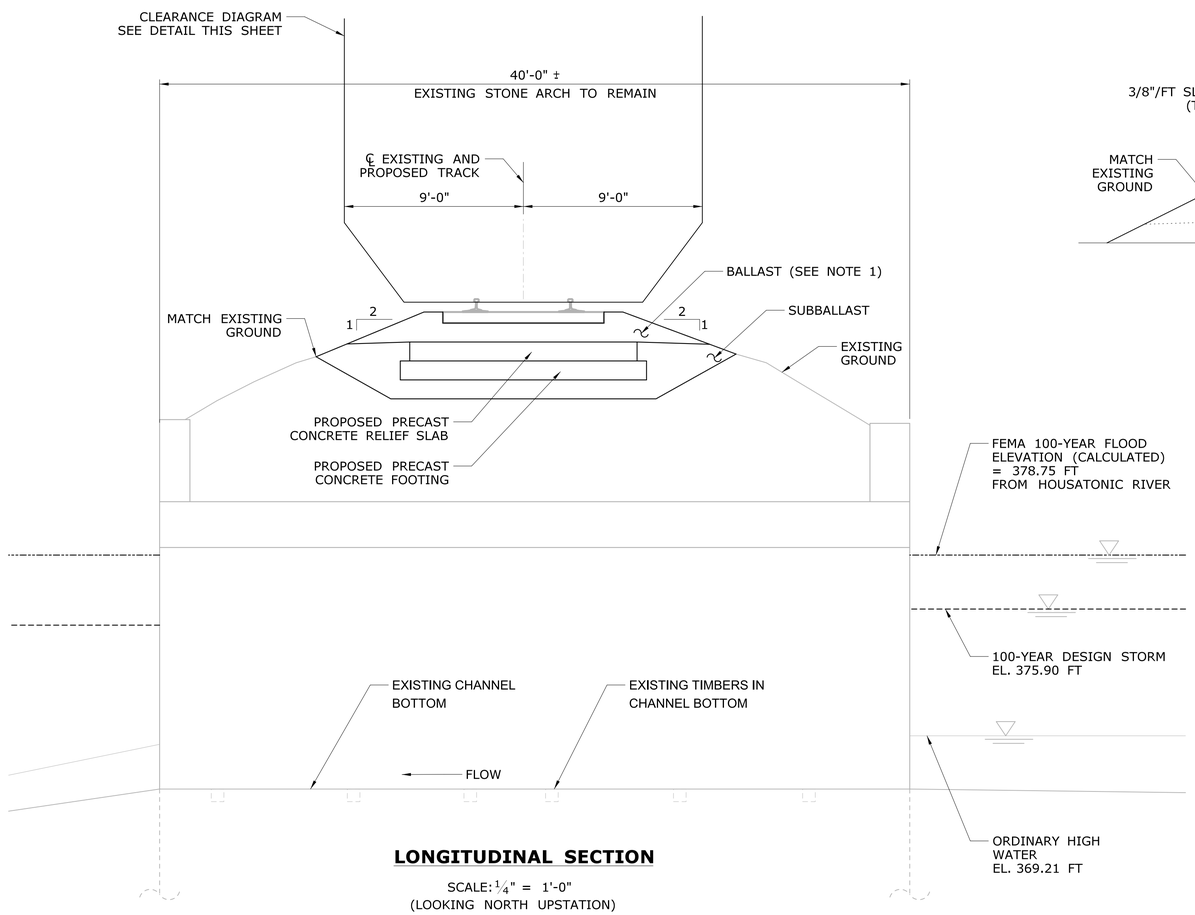
NOTE: EXISTING STONE MASONRY ARCH NOT SHOWN FOR CLARITY.



TYPICAL TRACK SECTION

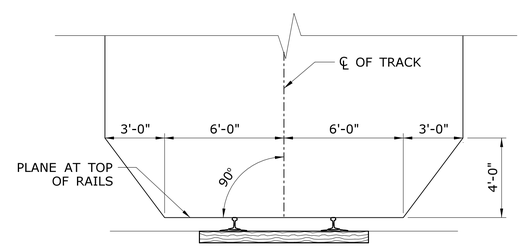
NOT TO SCALE

WORKING POINT COORDINATES		
WP NO.	NORTHING	EASTING
1	834316.48	806750.04
2	834327.44	806766.79



LONGITUDINAL SECTION

SCALE: 1/4" = 1'-0"
(LOOKING NORTH UPSTATION)



RAILROAD CLEARANCE DIAGRAM

N.T.S.

NOTES:

1. CONTRACTOR TO INSTALL BALLAST TO WITHIN 4" OF BOTTOM OF PROPOSED TIE.
2. THE SECTION OF TRACK REMOVED FOR THE PLACEMENT OF THE CONCRETE RELIEF SLAB SHALL BE REPLACED OR REINSTALLED TO MATCH THE EXISTING TRACK GEOMETRY. TRACK GEOMETRY SHOWN HERE IS BASED ON LIMITED FIELD INVESTIGATION.
3. WORKING POINT COORDINATES ARE BASED ON RELIEF SLAB GEOMETRY SHOWN IN THESE PLANS.

TABLE OF BRIDGE QUANTITIES		
ITEM	UNIT	QTY.
CONSTRUCTION ACCESS	LS	LS
ENVIRONMENTAL HEALTH AND SAFETY	LS	LS
EARTH EXCAVATION	CY	15
CHANNEL EXCAVATION - EARTH	CY	4
EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL	CY	4
SETTLEMENT MONITORING PROGRAM	LS	LS
STRUCTURE EXCAVATION - EARTH (COMPLETE)	CY	50
HANDLING WATER (SITE NO. 3)	LS	LS
ANTI-TRACKING PAD	SY	60
BALLAST	CY	20
SUBBALLAST	CY	40
SEDIMENTATION CONTROL SYSTEM	LF	1100
RESETTING STONE MASONRY	LS	LS
PRECAST SUBSTRUCTURE ELEMENTS	CY	13
CONCRETE FILLED BAGS	CY	3
REPOINT MORTAR JOINTS	LF	4750
PLACEMENT OF CHANNEL BOULDER	EA	6
WIRE FENCE WITH WOOD POSTS	LF	300
SINGLE SWING GATE	EA	2
TURF ESTABLISHMENT - LAWN	SY	185
CONSERVATION SEEDING FOR SLOPES	SY	675
WETLAND GRASS ESTABLISHMENT	SF	1813
SELECTIVE CLEARING AND THINNING (SITE NO.3)	LS	LS
CONTROL AND REMOVAL OF INVASIVE VEGETATION	SY	125
REMOVAL OF DETERIORATED CONCRETE	CF	150
MOBILIZATION AND PROJECT CLOSEOUT	LS	LS
CONSTRUCTION STAKING (SITE NO. 3)	LS	LS

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PROJECT TITLE:
BRIDGE NO. 09206R HOUSATONIC RAILROAD MP 25.80 OVER COBBLE BROOK

TOWN: **KENT**

DRAWING TITLE: **SECTIONS, QUANTITIES, & PROFILE**

PROJECT NO. 170-3192
DRAWING NO. S3-4
SHEET NO. 03.03.05

B-3-1

Driller: Trent Roe	**Connecticut DOT Boring Report**		Hole No.: B-3-1
Inspector: Robert Marshall	Town: KENT		Stat./Offset: 56+86/0
Engineer: GeoDesign, Inc.	Project No.: 170-3192 (Geo: 0331-019.00)		Northing: 834338.47
Start Date: 3-26-14	Route No.:		Easting: 806786
Finish Date: 3-27-14	Bridge No.: 09206R		Surface Elevation: 391
Project Description: Four Railroad Bridges on the Berkshire Line of the Housatonic Railroad (MP 25.80)			
Casing Size/Type: HW-4" ID	Sampler Type/Size: SS: 1-3/8" ID		Core Barrel Type:
Hammer Wt.: 300 lb. Fall: 24in.	Hammer Wt.: 140 lb. Fall: 30 in.		
Groundwater Observations: @18.4 feet after 0 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	S-1	4 7 7 8	24	12		Misc. Fill	Medium dense, black to brown fine to coarse GRAVEL and fine to coarse SAND, trace Silt, (damp)	390
	S-2	10 10 9 8	24	11			Medium dense, black to brown fine to coarse SAND, some fine to coarse Gravel, trace Silt, (damp)	
5	S-3	7 6 5 6	24	17			Medium dense, brown fine to medium SAND, little fine to coarse Gravel, little (-) Silt, (damp)	385
	S-4	7 10 7 6	24	14			Medium dense, brown fine to medium SAND,little fine to coarse Gravel, little Silt, (damp)	
10	S-5	5 4 4 4	24	7			Loose, brown fine to medium SAND, little Silt, little (-) fine to coarse Gravel, (wet)	380
	S-6	6 5 3 4	24	12			Loose, brown fine to medium SAND, little Silt, little fine to coarse Gravel, (wet)	
15	S-7	3 7 7 6	24	6			Medium dense, brown fine to coarse SAND, some fine to coarse Gravel, some (-) Silt, (wet)	375
	S-8	6 6 10 11	24	13			Medium dense, brown fine to coarse SAND, little fine to coarse Gravel, little (-) Silt, (wet)	
20	S-9	3 4 4 6	24	0			Loose, NO RECOVERY	370
	S-10	7 11 16 7	24	3			Medium dense, brown fine to medium SAND, some fine to coarse Gravel, trace Silt, (wet)	
25	S-11	9 6 9 13	24	9		Topsoil Sandy Silt	Medium dense, Top 6": black TOPSOIL/ORGANIC SILT Bottom 3": gray fine SAND, little Silt, (wet)	365
	S-12	7 9 10 14	24	12			Medium dense, brown SILT, trace fine Sand, (wet)	
30								

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: 38ft Rock: 0ft
No. of Soil Samples: 14 No. of Core Runs: 0

NOTES: 1. Pilot hole to 5 feet using 4" solid stem augers then switched to 4" ID flush joint casing.

Sheet 1 of 2
SM-001-M REV. 1/02

Driller: Trent Roe	**Connecticut DOT Boring Report**		Hole No.: B-3-1
Inspector: Robert Marshall	Town: KENT		Stat./Offset: 56+86/0
Engineer: GeoDesign, Inc.	Project No.: 170-3192 (Geo: 0331-019.00)		Northing: 834338.47
Start Date: 3-26-14	Route No.:		Easting: 806786
Finish Date: 3-27-14	Bridge No.: 09206R		Surface Elevation: 391
Project Description: Four Railroad Bridges on the Berkshire Line of the Housatonic Railroad (MP 25.80)			
Casing Size/Type: HW-4" ID	Sampler Type/Size: SS: 1-3/8" ID		Core Barrel Type:
Hammer Wt.: 300 lb. Fall: 24in.	Hammer Wt.: 140 lb. Fall: 30 in.		
Groundwater Observations: @18.4 feet after 0 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)
30	S-13	5 11 9 14	24	3		Silty Gravelly Sand *(con't)*	Medium dense, yellow brown fine to medium SAND, some Silt, trace fine Gravel, (wet)	360
35	S-14	14 10 10 9	24	5			Medium dense, yellow brown to gray brown fine to medium SAND, some fine to corase Gravel, little Silt, (wet)	355
							END OF BORING 38ft	
40								350
45								345
50								340
55								335
60								

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: 38ft Rock: 0ft
No. of Soil Samples: 14 No. of Core Runs: 0

NOTES: 1. Pilot hole to 5 feet using 4" solid stem augers then switched to 4" ID flush joint casing.

Sheet 2 of 2
SM-001-M REV. 1/02

B-3-2

Driller: Trent Roe	**Connecticut DOT Boring Report**		Hole No.: B-3-2
Inspector: Robert Marshall	Town: KENT		Stat./Offset: 56+19/0
Engineer: GeoDesign, Inc.	Project No.: 170-3192 (Geo: 0331-019.00)		Northing: 834300.59
Start Date: 3-25-14	Route No.:		Easting: 806730.57
Finish Date: 3-26-14	Bridge No.: 09206R		Surface Elevation: 391
Project Description: Four Railroad Bridges on the Berkshire Line of the Housatonic Railroad (MP 25.80)			
Casing Size/Type: HW-4" ID	Sampler Type/Size: SS: 1-3/8" ID		Core Barrel Type: NQ(dt)1-7/8" ID
Hammer Wt.: 300 lb. Fall: 24in.	Hammer Wt.: 140 lb. Fall: 30 in.		
Groundwater Observations: @18.7 feet after 0 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	S-1	8 10 8 7	24	8		Misc. Fill	Medium dense, Top 4": gray black fine to coarse GRAVEL, some fine to coarse Sand, little Silt Bottom 4": brown fine to coarse SAND, trace fine Gravel, trace Silt, (damp)	390
	S-2	8 7 12 10	24	5			Medium dense, brown fine to medium SAND, little (-) Silt, (damp)	
5	S-3	8 9 9 13	24	14			Medium dense, brown to dark brown fine to coarse SAND, little fine to coarse Gravel, trace (+) Silt, (damp)	385
	S-4	9 9 7 7	24	6			Medium dense, brown to dark brown fine to coarse SAND, little fine to coarse Gravel, trace Silt, (damp)	
10	S-5	7 6 4 5	24	9			Medium dense, brown fine to medium SAND, little fine to coarse Gravel, trace Silt, (wet)	380
	S-6	6 6 7 5	24	12			Medium dense, brown fine to medium SAND, little fine to coarse Gravel, trace Silt, (wet)	
15	S-7	7 5 4 5	24	8			Loose, orange brown fine to medium SAND, little fine to coarse Gravel, little Silt, (wet)	375
	S-8	5 6 7 7	24	11			Medium dense, orange brown fine to medium SAND, little fine to coarse Gravel, little Silt, (wet)	
20	S-9	1 2 2 2	24	16		Topsoil Sandy Silt	Loose, Top 8": dark brown, SILT and fine SAND, trace (-) Organics Bottom 8": brown fine SAND and SILT	370
	S-10	2 6 15 19	24	18		Silty Gravelly Sand	Medium Dense, Top 12": gray brown fine to medium SAND, some Silt, trace (-) Organics Bottom 6": gray fine to coarse SAND, little (+) fine to coarse Gravel, little Silt, (wet)	
25	S-11	15 21 16 13	24	6			Dense, brown to orange brown fine to coarse SAND, some fine to coarse Gravel, trace Silt, (wet)	365
30								

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: 45ft Rock: 10ft
No. of Soil Samples: 14 No. of Core Runs: 2

NOTES: 1. Pilot hole advanced to 10 feet using 4" OD solid stem augers then switched to 4" ID flush joint casing.
2. Casing advanced with difficulty below 39 feet to near refussal at 40 feet.

Sheet 1 of 2
SM-001-M REV. 1/02

Driller: Trent Roe	**Connecticut DOT Boring Report**		Hole No.: B-3-2
Inspector: Robert Marshall	Town: KENT		Stat./Offset: 56+19/0
Engineer: GeoDesign, Inc.	Project No.: 170-3192 (Geo: 0331-019.00)		Northing: 834300.59
Start Date: 3-25-14	Route No.:		Easting: 806730.57
Finish Date: 3-26-14	Bridge No.: 09206R		Surface Elevation: 391
Project Description: Four Railroad Bridges on the Berkshire Line of the Housatonic Railroad (MP 25.80)			
Casing Size/Type: HW-4" ID	Sampler Type/Size: SS: 1-3/8" ID		Core Barrel Type: NQ(dt)1-7/8" ID
Hammer Wt.: 300 lb. Fall: 24in.	Hammer Wt.: 140 lb. Fall: 30 in.		
Groundwater Observations: @18.7 feet after 0 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)
30	S-12	8 6 7 14	24	8		Silty Gravelly Sand *(con't)*	Medium dense, gray to brown fine to coarse SAND and (-) SILT, some (-) fine to coarse Gravel, (wet)	360
35	S-13	15 24 26 20	24	14			Dense, orange brown to yellow brown, fine to medium SAND, little Silt, trace fine Gravel, (damp)	355
40	S-14	108/6"	6	4		Weathered Bedrock	Very dense, (spoon refusal), orange brown to yellow brown, fine to medium SAND, some Silt, little fine to coarse Gravel, (damp)	350
45	C-1		60	45	13	Bedrock	Very Poor Quality, Moderately Hard, Moderately Weathered, yellow/white/gray MARBLE, (reacts with HCl) [Core Times (min/ft): 5, 5, 9, 9,3]	345
50	C-2		60	60	55		Fair Quality, Moderately Hard, Moderately Weathered, yellow/white/gray MARBLE, (reacts with HCl) [Core Times (min/ft): 6, 7, 4, 3, 4]	340
55							END OF BORING 55ft	335
60								

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: 45ft Rock: 10ft
No. of Soil Samples: 14 No. of Core Runs: 2

NOTES: 1. Pilot hole advanced to 10 feet using 4" OD solid stem augers then switched to 4" ID flush joint casing.
2. Casing advanced with difficulty below 39 feet to near refussal at 40 feet.

Sheet 2 of 2
SM-001-M REV. 1/02

TP-3-1

GEODESIGN INCORPORATED
Geotechnical | Construction | Environmental
Engineers and Scientists
984 Southford Road - Middlebury, Connecticut 06762
Telephone: 203-758-8836 Fax: 203-758-8842

TEST PIT LOG

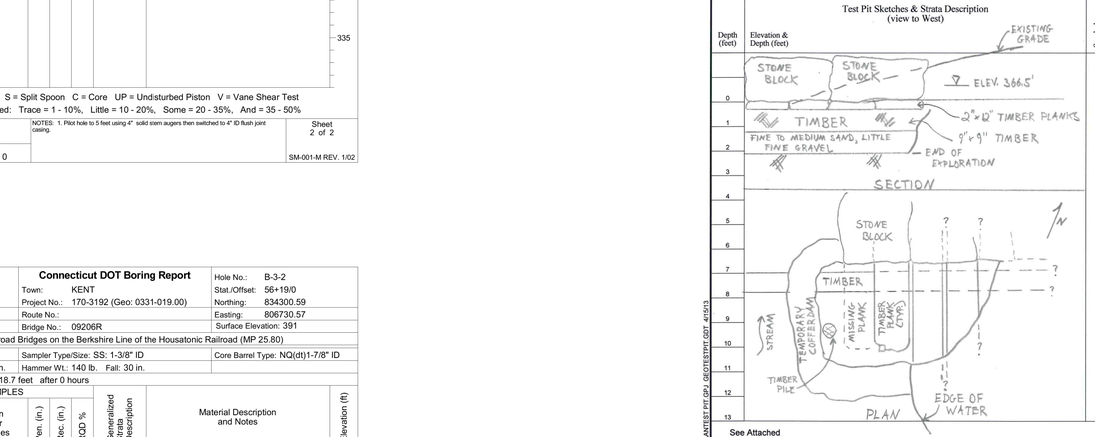
Project Name: Four Railroad Bridges on the Berkshire Line of the Housatonic Railroad Bridge No. 09206R, Canaan, Connecticut State Proj. No. 170-3192

Test Pit No.: TP-3-1
Page No.: 1 of 1
File No.: 0331-019.00
Checked By: RPJ

GeoDesign Rep:	Robert Marshall		
Weather:	Rain, 30's		
Date:	March 28, 2014		
Time Started:	08:30 AM	Time Finished:	12:30 PM
N. Coordinate:		E. Coordinate:	
Ground Surface Elevation (feet):	366 +/-		
Station: MP 25.80	Offset: ft.		

Contractor:	New England Boring Contractors, Inc.	Groundwater Observations			
Operator:	Trent Roe	Date	Depth (ft)	Elevation (ft)	Notes
Make:	Hand	▼ 3/28/14	-	366.5	Water Level
Model:	Excavated	▼			
Capacity:		▼			
Reach:	ft	▼			

Test Pit Sketches & Strata Description (view to West)



Depth (feet)	Elevation & Depth (feet)	Symbol	Excavation Effort	Boulder Count and Class	Moisture
0					
1		M		N/A	Wet
2		M		N/A	Wet
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					

Remarks: See Attached

3 × 5
Test Pit Plan (feet)

Notes:
1. Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time readings were made.
2. Boulder Count Class Designations (diameter range): A = 6"-18" (0.15m - 0.46m) , B = 18"-36" (0.46m - 0.91m), C = >36" (>0.91m).
3. Excavation Effort: E = Easy, M = Moderate, D = Difficult.
4. Proportions Used: Trace = 1-10%, Little = 10-20%, Some = 20-35%, And = 35-50%
5. Stratification lines represent approximate boundary between material types, transitions may be gradual.

Test Pit No.: TP-3-1

4 - TEST PIT LOG NEW 2008-2009 - 2008 CANAANTEST PIT.GPJ - GEOTESTPIT.GDT - 4/16/13

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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PLOTTED: 7/25/2018

DESIGNER/DRAFTER: GEODESIGN
CHECKED BY: GEODESIGN
NOT TO SCALE

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: ...\SB_MSH_170_3192_MP_25.80_S-005.dgn

GEODESIGN INCORPORATED
Geotechnical | Construction | Environmental
Engineers & Scientists
984 Southford Road - Middlebury, CT 06762
Telephone: (203) 758-8836 Fax: (203) 758-8842

APPROVED BY: R. BRAY
DATE: 12/06/17

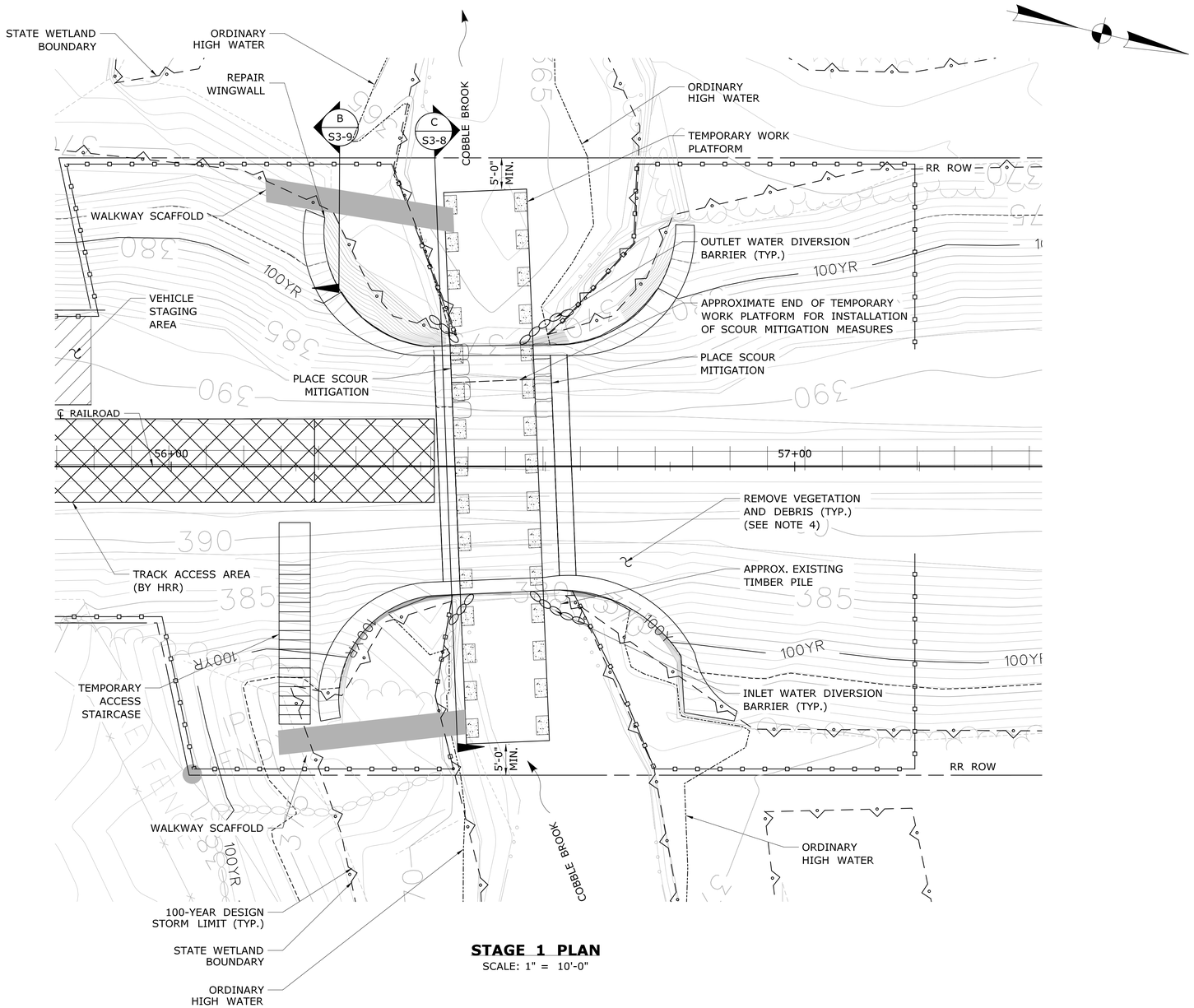
STATE OF CONNECTICUT
RICHARD A. BRAY
LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE:
BRIDGE NO. 09206R HOUSATONIC RAILROAD MP 25.80 OVER COBBLE BROOK

TOWN: **KENT**

DRAWING TITLE: **BORING LOGS & TEST PIT LOG**

PROJECT NO. **170-3192**
DRAWING NO. **S3-5**
SHEET NO. **03.03.06**



STAGE 1 PLAN
SCALE: 1" = 10'-0"

NOTES:

1. THE STEPS LISTED ARE NOT INTENDED TO COVER ALL DETAILS OF THE WORK. THE CONTRACTOR SHALL PREPARE A DETAILED SEQUENCE AND SCHEDULE. STRUCTURE WORK MUST BE COORDINATED AND SEQUENCED WITH OTHER PROJECT WORK.
2. CONSTRUCTION ACTIVITIES WHICH TAKE PLACE PRIOR TO TRACKS BEING TAKEN OUT OF SERVICE SHALL BE PERFORMED IN ACCORDANCE WITH CONTRACT SPECIAL PROVISIONS, INCLUDING "WORK ON RAILROAD PROPERTY", AND "PROSECUTION AND PROGRESS".
3. ALL WORK SHALL BE CONTAINED WITHIN THE RAILROAD RIGHT OF WAY LINES (RR ROW) SHOWN OF THE PLANS.
4. THE REMOVAL OF INVASIVE PLANT SPECIES SHALL BE PAID UNDER THE ITEM "CONTROL AND REMOVAL OF INVASIVE VEGETATION". ALL WORK SHALL BE AS DIRECTED BY THE ITEM SPECIAL PROVISION. REMOVAL OF ALL OTHER VEGETATION AND DEBRIS SHALL BE PAID UNDER THE ITEM "SELECTIVE CLEARING AND THINNING (SITE NO. 3)".

STAGE CONSTRUCTION (GENERAL)

1. INSTALL SEDIMENTATION CONTROL SYSTEM AS SHOWN ON THE PLANS.
2. CLEAR VEGETATION AND DEBRIS FROM SLOPES BEHIND MASONRY WINGWALLS AS DIRECTED BY THE ENGINEER.
3. ESTABLISH MONITORING POINTS FOR THE SETTLEMENT MONITORING PROGRAM AT APPROVED LOCATIONS.
4. CONSTRUCT VEHICLE STAGING AREA AT THE CONSTRUCTION SITE.
5. CONSTRUCT TRACK ACCESS AREA (BY HOUSATONIC RAILROAD)
6. CONSTRUCT TEMPORARY ACCESS STAIRCASE.

STAGE CONSTRUCTION-STAGE 1 (TRACK IN SERVICE)

THE FOLLOWING STEPS WILL BE PERFORMED BY THE CONTRACTOR, UNLESS OTHERWISE NOTED, DURING SHORT TERM TRACK OUTAGES (DAILY OR WEEKEND).

1. BEGIN ASSEMBLY OF TEMPORARY WORK PLATFORM AGAINST SOUTH WALL OF STONE MASONRY ARCH. EXTEND PLATFORM TO THE VICINITY OF THE SCOUR MITIGATION .
2. INSTALL SCOUR MITIGATION MEASURES AS DIRECTED BY THE ENGINEER AND AS SHOWN ON THE PLANS.
3. CONTINUE ASSEMBLY OF THE TEMPORARY WORK PLATFORM. PLACE WATER HANDLING MEASURES TO DIVERT WATER FROM THE NORTH FACE OF THE ARCH WALL.
4. REPAIR AND REPOINT NORTH ARCH WALL, NORTHWEST AND NORTHEAST WINGWALLS.
5. REMOVE DETERIORATED CONCRETE FROM THE SPANDREL WALL AT THE OUTLET END OF THE ARCH.
6. SHIFT TEMPORARY WORK PLATFORM AND WATER HANDLING MEASURES TO THE NORTH WALL OF THE STONE MASONRY ARCH.
7. REPAIR AND REPOINT SOUTH ARCH WALL, AND SOUTHEAST WINGWALL. REPAIR COLLAPSED END OF SOUTHEAST WINGWALL.
8. BEGIN REMOVAL OF TEMPORARY WORK PLATFORM. PLACE BOULDER CLUSTERS IN THE APPROXIMATE LOCATION SHOWN ON THE PLANS. BOULDERS SHALL BE INSTALLED UNDER THE DIRECTION OF A DEEP FISHERIES BIOLOGIST OR OEP SCIENTIST.
9. COMPLETE REMOVAL OF TEMPORARY WORK PLATFORM AND ALL WATER HANDLING MEASURES. STREAM CHANNEL SHALL BE RESTORED TO EXISTING CONDITION.
10. REMOVE TEMPORARY ACCESS STAIRCASE.
11. REMOVE TEMPORARY CRANE PAD.

LEGEND

- SEDIMENTATION CONTROL SYSTEM
- VEHICLE STAGING AREA
- TRACK ACCESS AREA
- —100 YR— FEMA 100 YR FLOOD (CALCULATED)

TEMPORARY HYDRAULIC DATA	
AVERAGE DAILY FLOW	8 CFS
AVERAGE SPRING FLOW	16 CFS
2-YEAR FREQUENCY DISCHARGE	180 CFS
TEMPORARY DESIGN DISCHARGE	97 CFS
TEMPORARY DESIGN FREQUENCY	6 TIMES SPRING FLOW
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	368.23
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	365.85

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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PLOTTED: 7/25/2018

DESIGNER/DRAFTER: BC/CR
CHECKED BY: RB
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: ...\SB_MSH_170_3192_MP_25.80_S-006.DGN

LOCHNER
H.W. LOCHNER, INC
55 Hartland St
East Hartford, CT 06108

APPROVED BY: R. BRAY DATE: 12/06/17

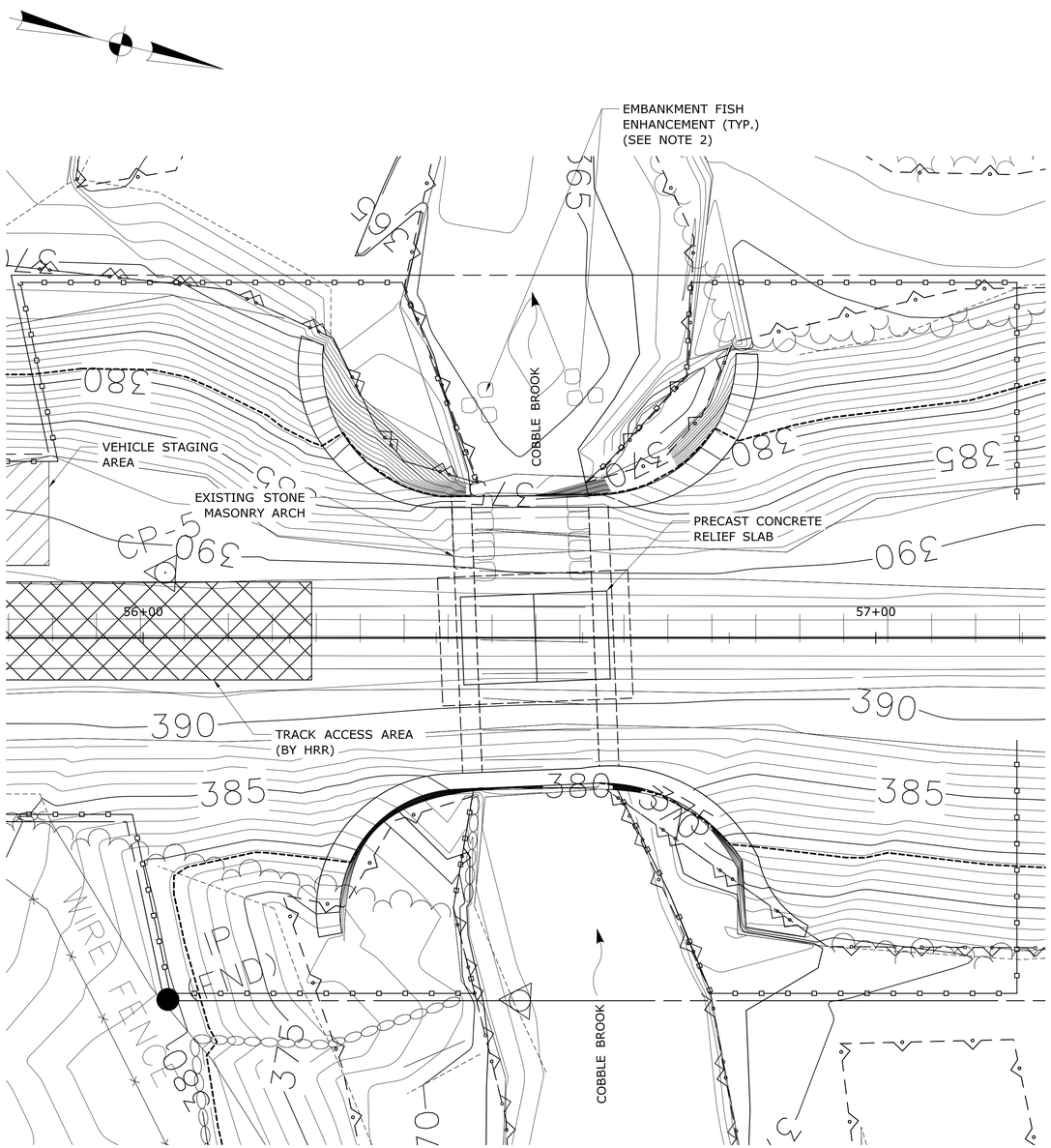
STATE OF CONNECTICUT RICHARD A. BRAY LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE:
BRIDGE NO. 09206R HOUSATONIC RAILROAD MP 25.80 OVER COBBLE BROOK

TOWN: **KENT**

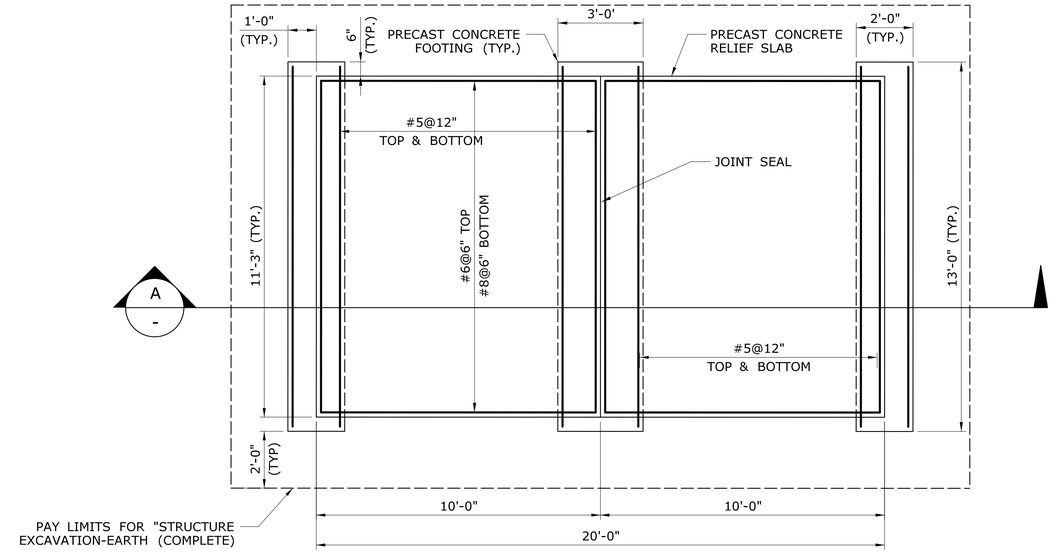
DRAWING TITLE: **STAGE CONSTRUCTION-1**

PROJECT NO. **170-3192**
DRAWING NO. **S3-6**
SHEET NO. **03.03.07**

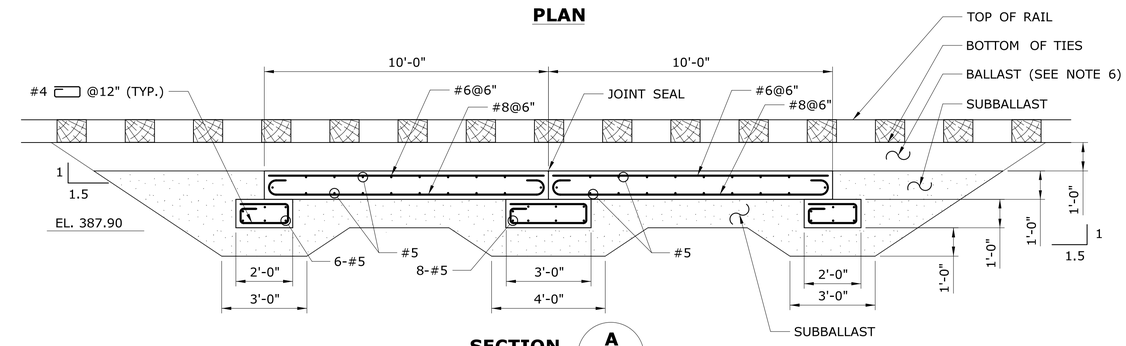


STAGE 2 PLAN

SCALE: 1" = 10'-0"



PLAN



SECTION A -

PRECAST CONCRETE RELIEF SLAB

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

NOTES

1. THE COST TO FABRICATE, TRANSPORT, AND INSTALL THE PRECAST CONCRETE RELIEF SLAB AND PRECAST CONCRETE FOOTINGS SHALL BE PAID UNDER THE ITEM "PRECAST SUBSTRUCTURE ELEMENTS".
2. THE CONTRACTOR SHALL PLACE BOULDER CLUSTERS IN THE APPROXIMATE LOCATIONS SHOWN. PLACEMENT OF BOULDER CLUSTERS SHALL BE INSTALLED UNDER THE DIRECTION OF A DEEP FISHERIES BIOLOGIST OR OEP SCIENTIST.
3. INSTALL 24" (MIN.) DIAMETER BOULDERS

LEGEND

- SEDIMENTATION CONTROL SYSTEM
- VEHICLE STAGING AREA
- TRACK ACCESS AREA
- 100 YR — FEMA 100 YR FLOOD (CALCULATED)

STAGE CONSTRUCTION-STAGE 2 (TRACK OUT OF SERVICE)

THE FOLLOWING STEPS WILL BE PERFORMED DURING A SHORT TERM TRACK OUTAGE. ALL WORK IN THIS STAGE SHALL BE PERFORMED BY THE CONTRACTOR, UNLESS OTHERWISE NOTED.

1. HRR SHALL REMOVE TRACK AND TIES WITHIN THE APPROXIMATE LIMITS SHOWN ON THE PLANS.
2. EXCAVATE RAIL BED TO THE ELEVATION SHOWN. THE BASE OF EXCAVATION SHALL BE SMOOTH AND LEVEL.
3. PLACE PRECAST CONCRETE FOOTINGS ON SUBBALLAST, AS SHOWN.
4. PLACE SUBBALLAST AROUND FOOTINGS. SUBBALLAST ELEVATION SHALL MATCH TOP OF FOOTING ELEVATION FOR PLACEMENT OF PRECAST CONCRETE RELIEF SLABS.
5. PLACE PRECAST CONCRETE RELIEF SLABS. CONTINUE PLACEMENT OF SUBBALLAST. FINAL SUBBALLAST ELEVATION SHALL MATCH TOP OF RELIEF SLAB.
6. CONTRACTOR PLACE BALLAST TO WITHIN FOUR INCHES OF BASE OF TIE.
7. HRR SHALL COMPLETE BALLAST PLACEMENT, RAIL AND TIES.

FOLLOWING STAGE CONSTRUCTION-STAGE 2 (TRACK IN SERVICE)

THE FOLLOWING STEPS WILL BE PERFORMED BY THE CONTRACTOR DURING A SHORT TERM TRACK OUTAGES (DAILY OR WEEKEND).

1. RESTORE AREA TO EXISTING CONDITION. THIS SHALL INCLUDE DISASSEMBLY OF VEHICLE STAGING AREA, REMOVAL OF SEDIMENTATION CONTROL SYSTEM, AND OTHER (AS DIRECTED BY THE ENGINEER)

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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PLOTTED: 7/25/2018

DESIGNER/DRAFTER: BC/CR
CHECKED BY: RB
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: ...\SB_MSH_170_3192_MP_25.80_S-007.DGN

LOCHNER
H.W. LOCHNER, INC
55 Hartland St
East Hartford, CT 06108

APPROVED BY: R. BRAY
DATE: 12/06/17

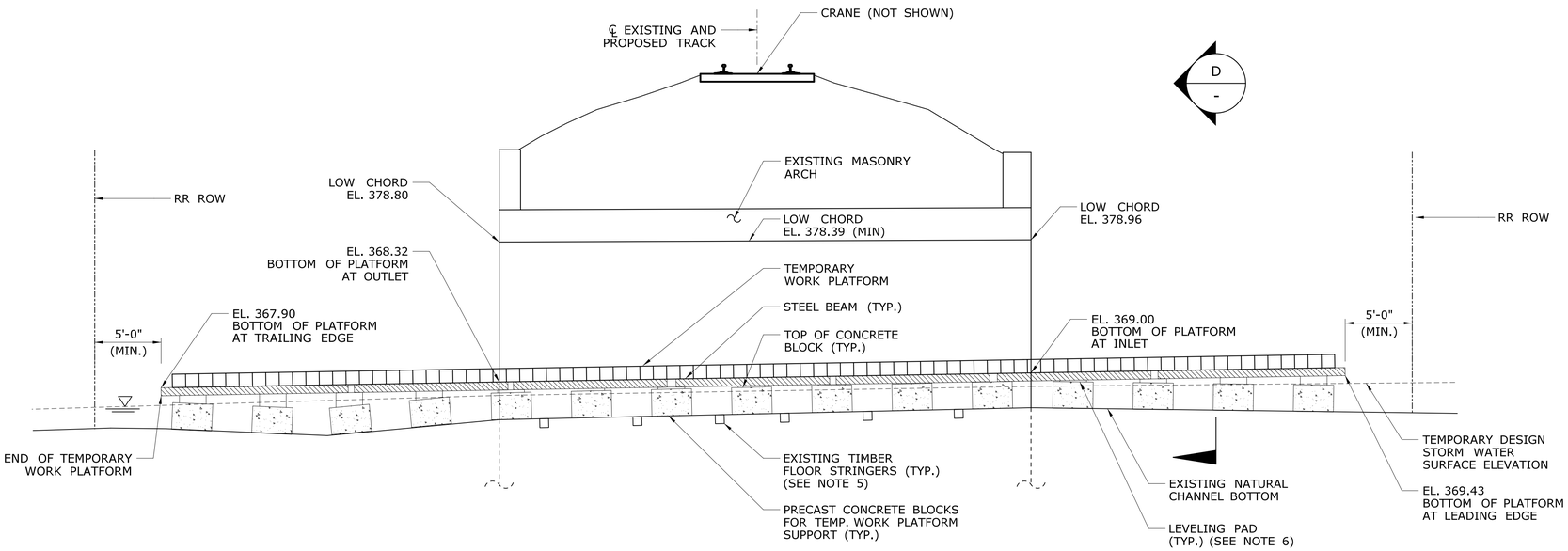
STATE OF CONNECTICUT RICHARD A. BRAY LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE:
BRIDGE NO. 09206R HOUSATONIC RAILROAD MP 25.80 OVER COBBLE BROOK

TOWN: **KENT**

DRAWING TITLE: **STAGE CONSTRUCTION-2**

PROJECT NO. **170-3192**
DRAWING NO. **S3-7**
SHEET NO. **03.03.08**

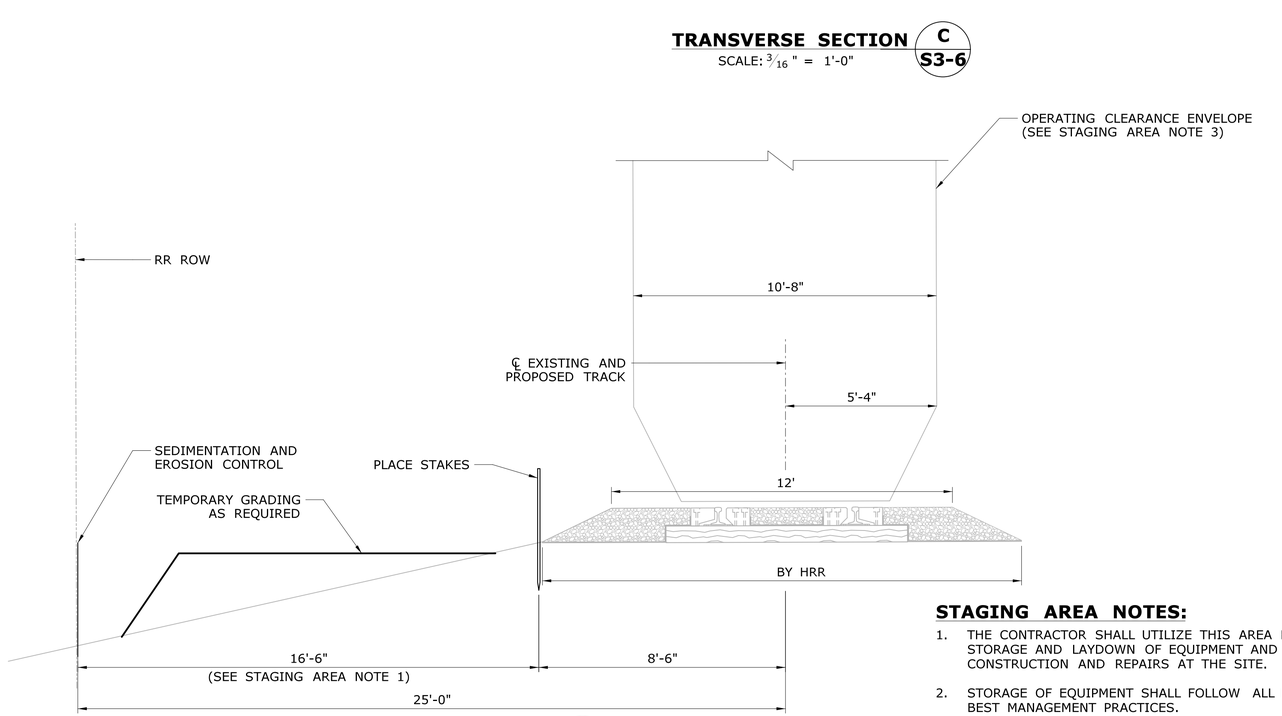


TRANSVERSE SECTION C / S3-6

SCALE: 3/16" = 1'-0"

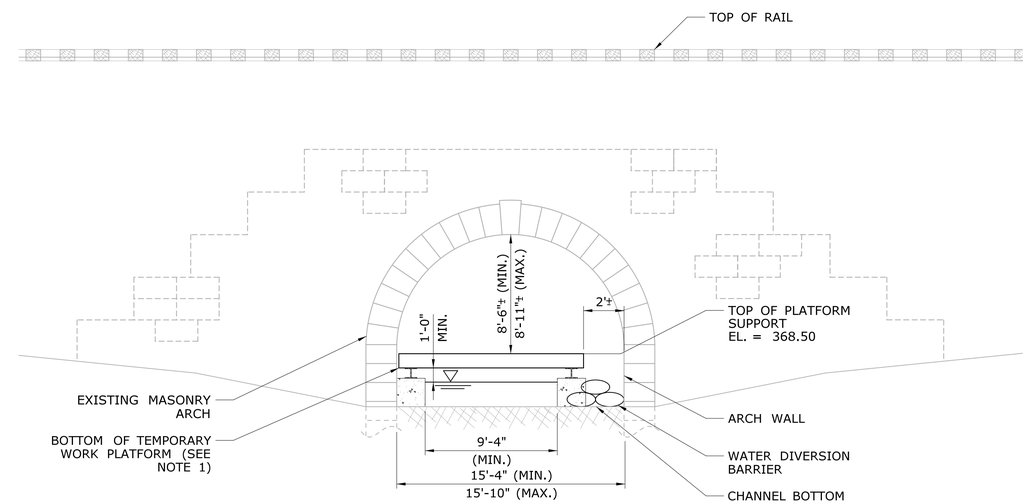
WORK PLATFORM ASSEMBLY NOTES:

1. ALL MATERIALS AND EQUIPMENT FOR CONSTRUCTION OF THE TEMPORARY WORK PLATFORM MUST BE LOWERED FROM TRACK LEVEL.
2. THE PLATFORM SHALL BE CONSTRUCTED TO THE MINIMUM ELEVATION SHOWN ON THE PLANS.
3. THE COST TO CONSTRUCT, RELOCATE, AND DISASSEMBLE THE TEMPORARY WORK PLATFORM SHALL BE PAID UNDER THE ITEM "CONSTRUCTION ACCESS".
4. WORK BELOW WATERLINE SHALL PROCEED AS SHOWN. THE CONTRACTOR SHALL INSTALL WATER DIVERSION BARRIER ALONG EITHER WALL. FOLLOWING COMPLETION OF THAT WORK, THE TEMPORARY PLATFORM SHALL BE SHIFTED TO ALLOW WORK TO BE PERFORMED ON THE REMAINING WALL.
5. THE LOCATIONS OF THE EXISTING TIMBER MEMBERS SHOWN ARE APPROXIMATE AND SHALL BE FIELD VERIFIED. THE PRECAST CONCRETE BLOCKS SHALL BE PLACED TO AVOID CONFLICT WITH THE TIMBER MEMBERS.
6. ADD LEVELING PAD OR SHIM, AS REQUIRED, TO MAINTAIN CONSTANT SLOPE AT TOP OF WORK PLATFORM.



SECTION A / S3-2

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



INLET ELEVATION D / -

SCALE: 3/16" = 1'-0"

STAGING AREA NOTES:

1. THE CONTRACTOR SHALL UTILIZE THIS AREA FOR THE TEMPORARY STORAGE AND LAYDOWN OF EQUIPMENT AND MATERIALS USED FOR CONSTRUCTION AND REPAIRS AT THE SITE.
2. STORAGE OF EQUIPMENT SHALL FOLLOW ALL REQUIREMENTS LISTED IN BEST MANAGEMENT PRACTICES.
3. CLEARANCE ENVELOPE SHOWN IS BASED ON AREMA PLATE "F".

NOTE:

1. STAGE 1A SHOWN. PLATFORM WILL BE SHIFTED TO THE OPPOSITE WALL FOR STAGE 1B CONSTRUCTION. THE COST TO COMPLETE THIS WORK WILL BE PAID UNDER THE ITEM "CONSTRUCTION ACCESS".

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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PLOTTED: 7/25/2018

DESIGNER/DRAFTER: BC/CR
CHECKED BY: RB
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: ...\SB_MSH_170_3192_MP_25.80_S-008.DGN

LOCHNER
H.W. LOCHNER, INC
55 Hartland St
East Hartford, CT 06108

APPROVED BY: R. BRAY
DATE: 12/06/17

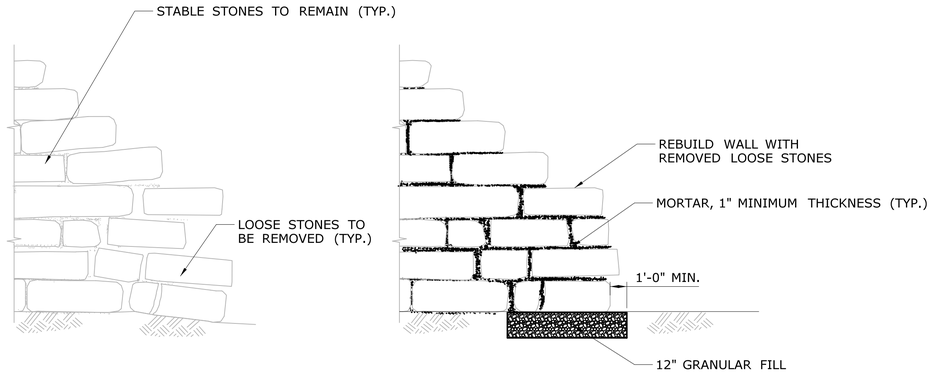
STATE OF CONNECTICUT RICHARD A. BRAY LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE: BRIDGE NO. 09206R HOUSATONIC RAILROAD MP 25.80 OVER COBBLE BROOK

TOWN: KENT

DRAWING TITLE: WORK PLATFORM DETAILS

PROJECT NO. 170-3192
DRAWING NO. S3-8
SHEET NO. 03.03.09



EXISTING WALL END **PROPOSED WALL END**

SOUTHWEST WINGWALL REPAIR (B / S3-6)

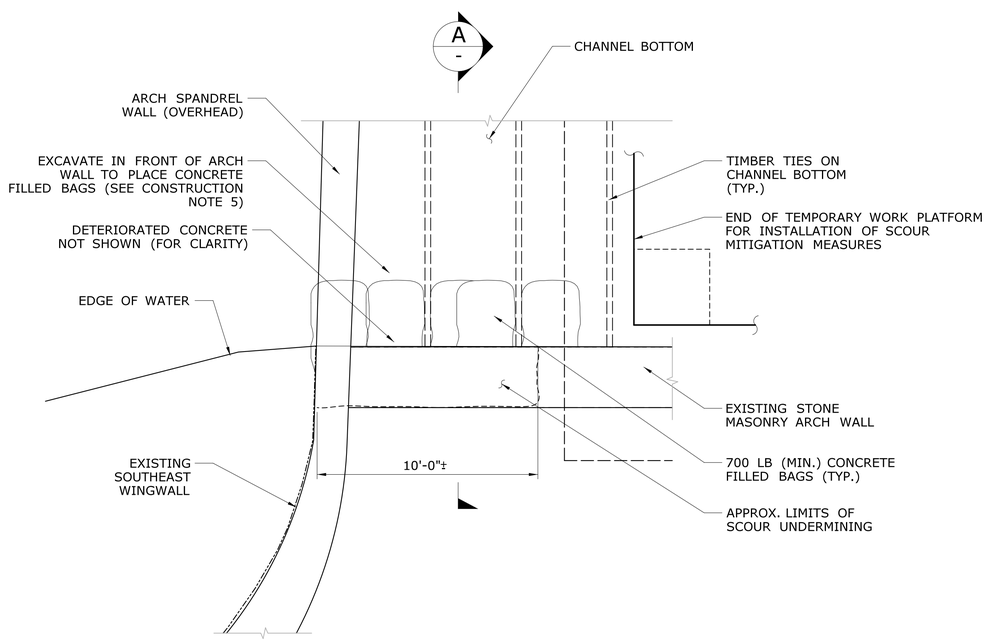
NTS

WINGWALL REPAIR NOTES:

1. REMOVE THE LOOSE AND FALLING STONES FROM THE END OF THE SOUTHEAST WINGWALL. EXCAVATE BEHIND THE WALL AS REQUIRED TO ACCESS ALL SHIFTED STONE COURSES.
2. PLACE 12" OF GRANULAR FILL BASE LEVELING PAD WITHIN THE LIMITS OF THE SHIFTED STONES. GRANULAR FILL BASE SHALL EXTEND A MINUMUM OF 1'-0" FROM ALL FACES.
3. REBUILD THE WALL WITH THE STONES PREVIOUSLY REMOVED PLACING STONES FIRMLY SEATED IN A 1" MINIMUM THICK MORTAR BED.
4. THE COST TO REPAIR AND REBUILD THE EXISTING MASONRY WINGWALL SHALL BE PAID UNDER THE ITEM "RESETTING STONE MASONRY"

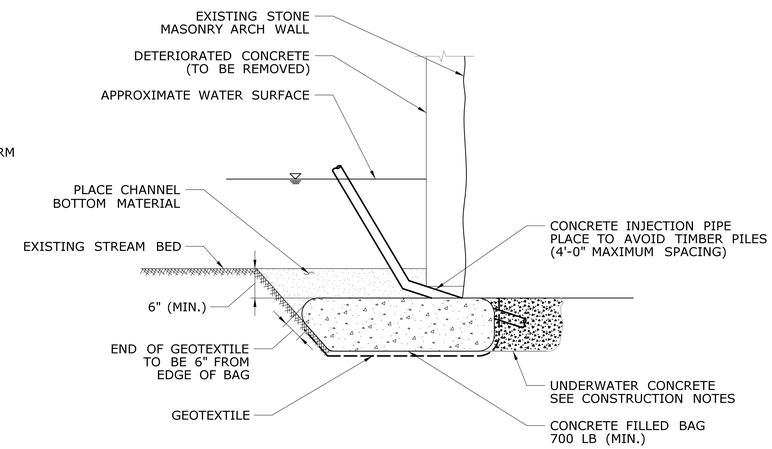
CONCRETE FILLED BAGS NOTES:

1. CONCRETE FILLED BAGS SHALL BE FABRIC FORMS CONSISTING OF TWO LAYERS OF WOVEN SYNTHETIC FABRIC WITH SELF SEALING FILLING VALVES. TEXICON CONCRETE BAGS OR APPROVED EQUAL SHALL BE USED.
2. CONCRETE FILLED BAGS SHALL BE PLACED AS FORMS TO ENCLOSE THE UNDERMINED AREA. PVC TUBES WILL BE INSTALLED BETWEEN THE BAGS. THE BAGS SHALL BE FILLED WITH UNDERWATER CONCRETE, IF NOT PRE-FILLED. UNDERWATER CONCRETE SHALL BE A PUMPABLE FINE AGGREGATE PORTLAND CEMENT CONCRETE.
3. THE FINAL FILLED WEIGHT (MIN) OF THE CONCRETE FILLED BAGS SHALL BE AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL PROVIDE BAGS OF SUFFICIENT VOLUME TO ACHIEVE THE REQUIRED WEIGHT WHEN FILLED WITH CONCRETE.
4. AFTER THE CONCRETE FILLED BAGS HAVE BEEN INSTALLED AND SET, THE UNDERMINED AREA SHALL BE FILLED WITH UNDERWATER CONCRETE BY PUMPING THROUGH THE PVC TUBES. THE TUBES SHALL BE CUT FLUSH WITH CONCRETE BAGS FOLLOWING POUR.
5. ALL EFFORTS TO AVOID UNDERMINING THE CULVERT FURTHER SHALL BE EMPLOYED BY THE CONTRACTOR. INSTALLATION WORK SHALL BE CONDUCTED IN A MANNER TO PREVENT FURTHER DAMAGE. CARE SHALL BE TAKEN TO ENSURE THAT RELIEF PIPES ARE UNOBSTRUCTED TO ALLOW FOR THE ESCAPE OF WATER FROM THE UNDERMINED AREA DURING PLACEMENT OF THE UNDERWATER CONCRETE AND TO LIMIT THE PRESSURE EXERTED ON THE EXISTING FOUNDATION MATERIAL.
6. UNDERWATER CONCRETE AND CONCRETE FOR CONCRETE FILLED BAGS SHALL EXHIBIT A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI CONCRETE AT 28 DAYS.
7. THE COST FOR PLACEMENT OF ALL SCOUR MITIGATION MEASURES SHALL BE PAID UNDER THE ITEM "CONCRETE FILLED BAGS".



SCOUR MITIGATION DETAILS

NTS



SECTION A -

NTS

CONSTRUCTION NOTES:

1. AREAS ON WHICH FABRIC FORMS ARE TO BE PLACED SHALL BE FREE OF OBSTRUCTIONS SUCH AS ROOTS OR PROJECTING STONES. FABRIC FORMS SHALL BE PLACED BETWEEN TIMBER TIES.
2. FOOT TRAFFIC ON THE FILLED CONCRETE BAGS SHALL BE RESTRICTED TO AN ABSOLUTE MINIMUM FOR ONE HOUR AFTER FILLING.
3. GAPS BETWEEN THE STRUCTURE AND CONCRETE FILLED BAGS SHALL BE GROUTED.
4. UNDERWATER CONCRETE SHALL BE PLACED BY PUMPING THROUGH THE CONCRETE INJECTION PIPE. THE PUMP HOSE SHALL BE CONNECTED AT THE LOWEST ELEVATION AND LOW PRESSURE PUMPING SHALL BE PERFORMED UNTIL CONCRETE IS OBSERVED. THE PUMP HOSE SHALL THEN BE MOVED TO THE ADJACENT CONCRETE INJECTION PIPE AND THE PROCESS CONTINUED. THIS PROCEDURE SHALL BE CONTINUED UNTIL THE CONCRETE HAS BEEN PUMPED SUCCESSIVELY INTO ALL VOIDS AT THE UNDERMINED AREA.
5. THE COST TO REMOVE MATERIAL FOR THE PLACEMENT OF CONCRETE FILLED BAGS SHALL BE PAID UNDER THE ITEM "CHANNEL EXCAVATION - EARTH".
6. ANY MATERIAL EXCAVATED FOR THE PLACEMENT OF CONCRETE FILLED BAGS SHALL BE STOCKPILED ON SITE FOR LATER USE. THIS SHALL BE PAID UNDER THE ITEM "EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL".

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PLOTTED: 7/25/2018

DESIGNER/DRAFTER: BC/CR
CHECKED BY: RB
NOT TO SCALE

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FILENAME: ...\SB_MSH_170_3192_MP_25.80_S-009.DGN

LOCHNER
H.W. LOCHNER, INC
55 Hartland St
East Hartford, CT 06108

APPROVED BY: R. BRAY DATE: 12/06/17

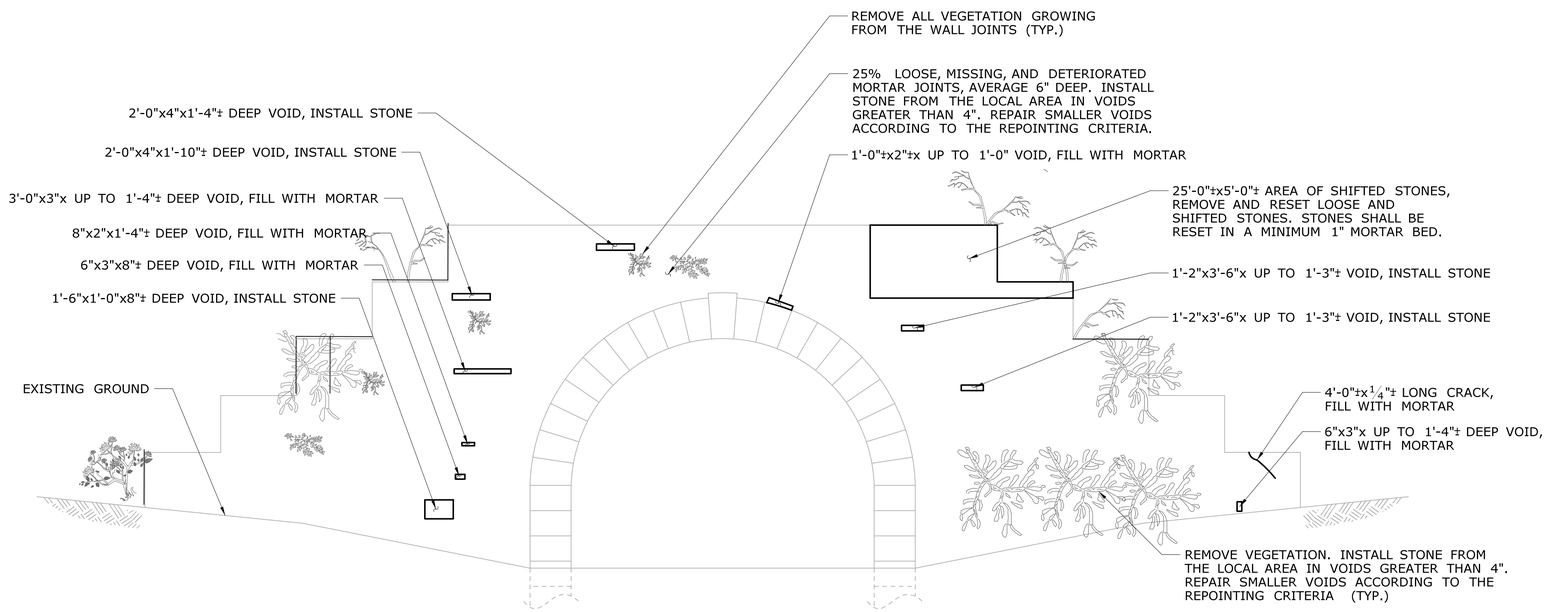
STATE OF CONNECTICUT RICHARD A. BRAY LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE: BRIDGE NO. 09206R HOUSATONIC RAILROAD MP 25.80 OVER COBBLE BROOK

TOWN: KENT

DRAWING TITLE: REPAIR DETAILS - 1

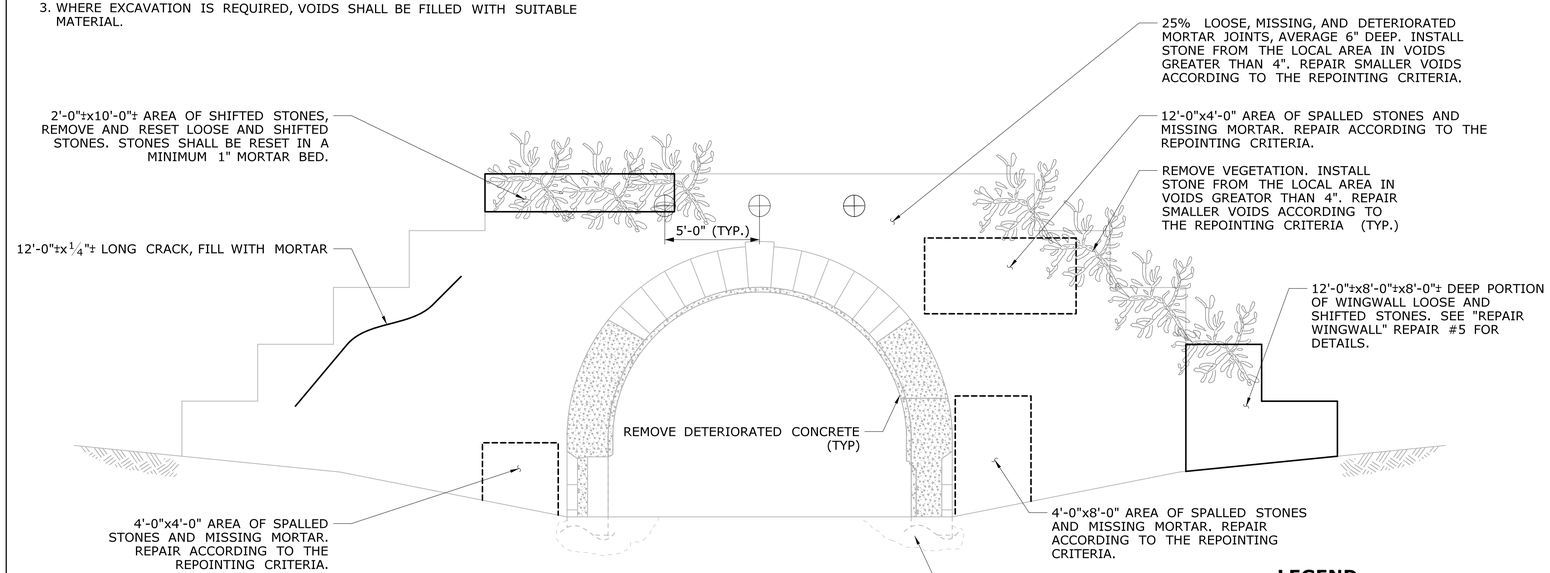
PROJECT NO. 170-3192
DRAWING NO. S3-9
SHEET NO. 03.03.10



INLET ELEVATION
N.T.S.

NOTES:

1. ALL TREES, SHRUBS AND VINES ARE TO BE REMOVED WITHIN THE LIMITS OF REMOVAL SHOWN IN THIS PLAN AND AS DIRECTED BY THE ENGINEER.
2. THE ENTIRE ROOT SYSTEM OF THE SELECT VEGETATION IS TO BE REMOVED.
3. WHERE EXCAVATION IS REQUIRED, VOIDS SHALL BE FILLED WITH SUITABLE MATERIAL.



OUTLET ELEVATION
N.T.S.

NOTE: WORK PLATFORM NOT SHOWN

LEGEND:

⊕ SETTLEMENT MONITORING POINT

NOTES:

1. JOINTS TO BE PRESSURE GROUTED SHOWN IN THE ELEVATIONS ARE THE MINIMUM AMOUNT OF PRESSURE GROUTING REQUIRED AND ARE BASED ON VISUAL INSPECTION OF THE STRUCTURE. ADDITIONAL AREAS OF PRESSURE GROUTING ARE TO BE DETERMINED DURING THE REPOINTING OF THE ABUTMENTS BASED ON THE REPOINTING CRITERIA.
2. THE REPAIR DETAIL SHALL BE APPLICABLE FOR BOTH REPOINTING OF JOINTS AND REPAIR OF CRACKS GREATER THAN 3/16".

SURFACE PREPARATION / APPLICATION

1. REMOVE ALL LOOSE, DETERIORATED CONCRETE/MORTAR, DIRT, OIL, GREASE, AND ALL BOND-INHIBITING MATERIALS FROM SURFACE.
2. PROVIDE A MINIMUM REPAIR DEPTH OF 1/2".
3. PREPARATION WORK SHOULD BE DONE BY SCABBLER, CHISELING, WIRE BRUSHING, OR OTHER APPROPRIATE MECHANICAL MEANS.
4. ROUGHEN CONTACT SURFACE WITH A MINIMUM PROFILE OF APPROXIMATELY 1/16" FOR BONDING WITH NEW MORTAR.
5. SATURATE SURFACE WITH CLEAN WATER PRIOR TO APPLYING MORTAR.
6. SUBSTRATE SHOULD BE SATURATED SURFACE DRY (SSD) WITH NO STANDING WATER DURING APPLICATION.
7. HAND PACK MORTAR INTO JOINTS AS REQUIRED.

REPOINTING MORTAR

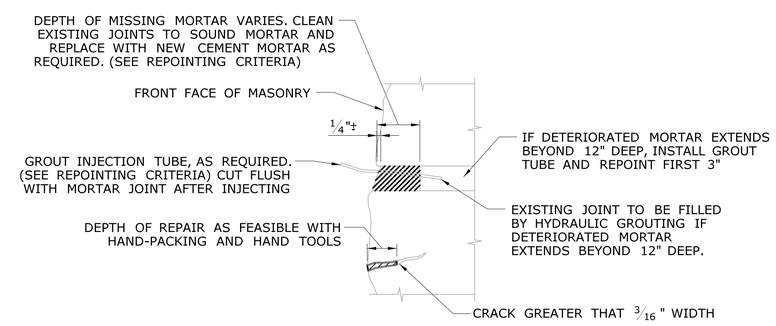
1. MORTAR SHALL BE LIME-BASED MORTAR CONFORMING TO THE REQUIREMENTS OF ASTM C-270. MORTAR SHALL BE MIXED IN ACCORDANCE WITH M.11.04. PROPRIETARY PRE-BLENDED CEMENTITIOUS MORTARS MAY BE USED AS AN ALTERNATE AS APPROVED BY THE ENGINEER.
2. UNDERWATER REPAIRS REQUIRE A SEPARATE MORTAR. UNDERWATER REPAIR MORTAR SHALL BE FOX INDUSTRIES FX-70-8 DP UNDERWATER MORTAR, THIXOTROPIC, NON-SHRINKING GROUT; OR APPROVED EQUAL.
3. REPAIRS PERFORMED ON VERTICAL AND OVERHEAD APPLICATIONS SHALL USE MORTAR DESIGNED FOR SUCH APPLICATION.

REPAIR NOTES

1. THE DETERIORATION SHOWN AND THE RECOMMENDED METHODS OF REPAIR ARE INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE ENGINEER SHALL PERFORM AN INSPECTION OF THE EXISTING SUBSTRUCTURE TO DETERMINE LOCATIONS AND EXACT LIMITS OF ALL AREAS TO BE REPAIRED. THE ENGINEER SHALL THEN DETERMINE THE TYPE OF REPAIR FOR EACH AREA.
2. THE CONTRACTOR SHALL NOT PERFORM ANY WORK WITHOUT APPROVAL BEING GRANTED BY THE ENGINEER.
3. REPAIR LOCATIONS OF LOOSE, MISSING, AND DETERIORATED MORTAR JOINTS AND VOIDS BY INSTALLING STONES IN VOIDS GREATER THAN 4" WIDE AND REPOINTING ACCORDING TO THE REPOINTING CRITERIA.

REMOVE DETERIORATED CONCRETE NOTES

1. REMOVAL OF DETERIORATED CONCRETE SHALL BE PERFORMED IN A MANNER THAT DOES NOT DAMAGE THE EXISTING MASONRY TO REMAIN IN PLACE
2. SAWCUT OR CHISEL TO A DEPTH OF AT LEAST 1" TO DEFINE REMOVAL AREAS.
3. MAXIMUM HAMMER SIZE USED TO REMOVE DETERIORATED CONCRETE SHALL BE 15 POUNDS.
4. THE CONTRACTOR SHALL DESIGN AND ERECT PROTECTIVE MEASURES TO CONTAIN MASONRY DEBRIS DURING REMOVAL. THE COST OF THESE MEASURES SHALL BE PAID UNDER THE ITEM "REMOVAL OF DETERIORATED CONCRETE"



REPOINTING DETAIL
N.T.S.

REPOINTING CRITERIA

LOOSE, SOFT OR UNSOUND MORTAR SHALL BE REMOVED BY MECHANICAL MEANS INCLUDING CHISELING, WIRE BRUSHING, AIR PRESSURE OR OTHER HAND TOOLS. WHERE DEPTH OF UNSOUND MORTAR EXCEEDS 2", JOINT SHALL BE REPOINTED AS SHOWN IN THE DETAIL. WHERE DEPTH OF UNSOUND MORTAR EXCEEDS 12" AND CAVITIES EXIST IN JOINTS, GROUT INJECTION TUBES SHALL BE INSTALLED AND THE FIRST 3" OF THE JOINT SHALL BE REPOINTED. AFTER THE GROUT HAS SET THE CAVITY SHALL BE FILLED BY INJECTING GROUT.

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DESIGNER/DRAFTER: BC/CR
CHECKED BY: RB
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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

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LOCHNER
H.W. LOCHNER, INC
55 Hartland St
East Hartford, CT 06108

APPROVED BY: R. BRAY DATE: 12/06/17

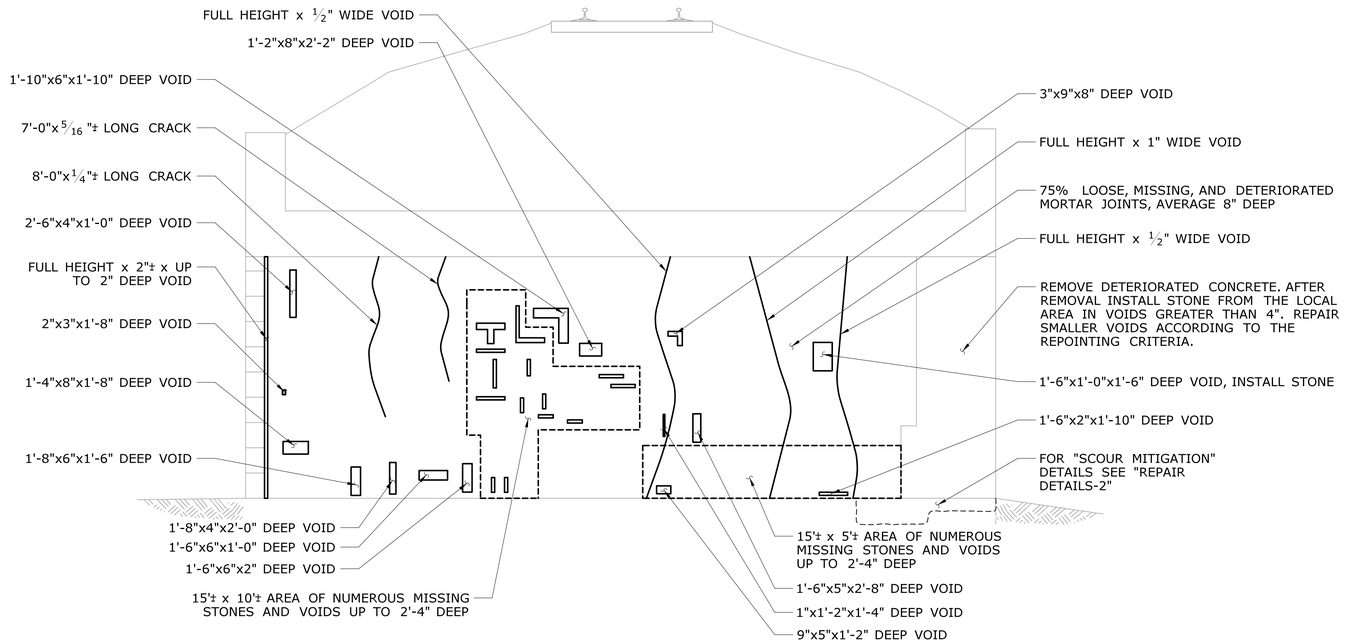
STATE OF CONNECTICUT RICHARD A. BRAY LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE:
BRIDGE NO. 09206R HOUSATONIC RAILROAD MP 25.80 OVER COBBLE BROOK

TOWN: **KENT**

DRAWING TITLE: **REPAIR DETAILS - 2**

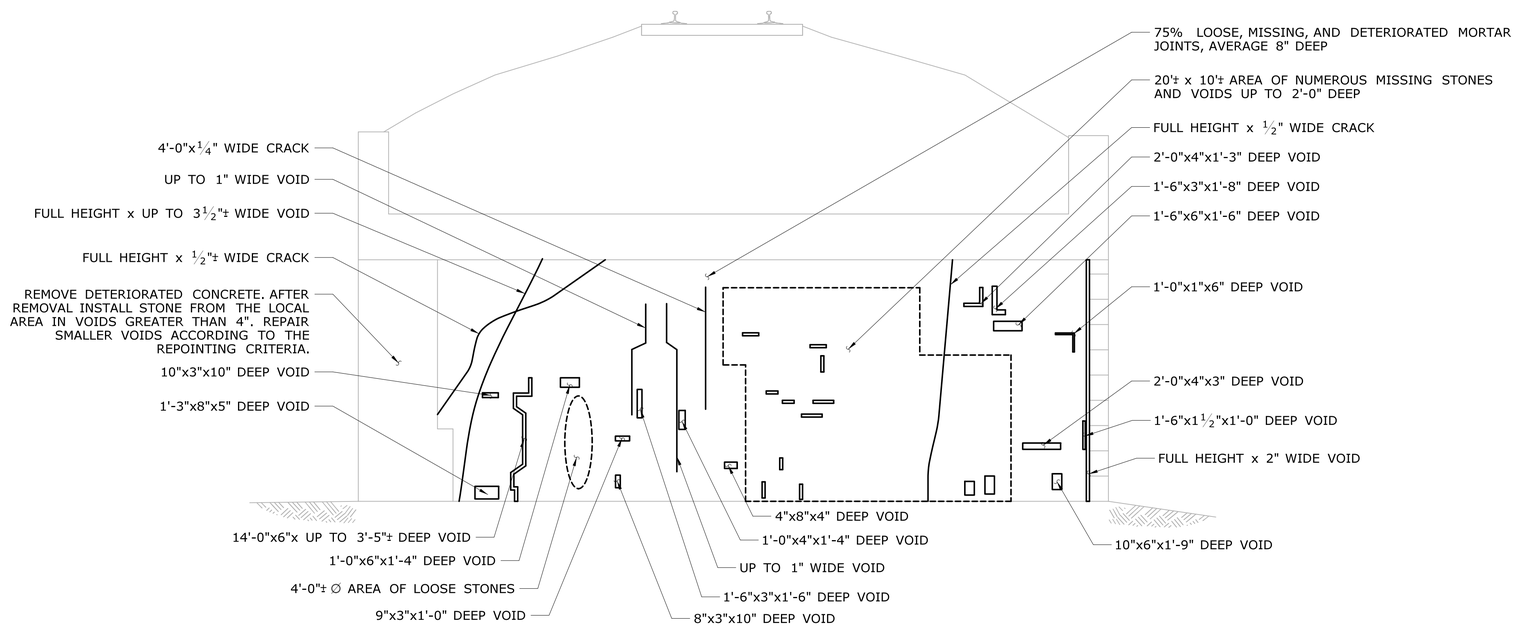
PROJECT NO. **170-3192**
DRAWING NO. **S3-10**
SHEET NO. **03.03.11**



SOUTH ARCH BARREL ELEVATION
N.T.S.
(DEVELOPED VIEW)

NOTES:

1. REPAIR AND REPOINT AS DIRECTED BY THE ENGINEER.
2. FOR REPAIR AND REPOINTING NOTES AND DETAILS, SEE "REPAIR DETAILS-2"



NORTH ARCH BARREL ELEVATION
N.T.S.
(DEVELOPED VIEW)

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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55 Hartland St
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APPROVED BY: R. BRAY DATE: 12/06/17

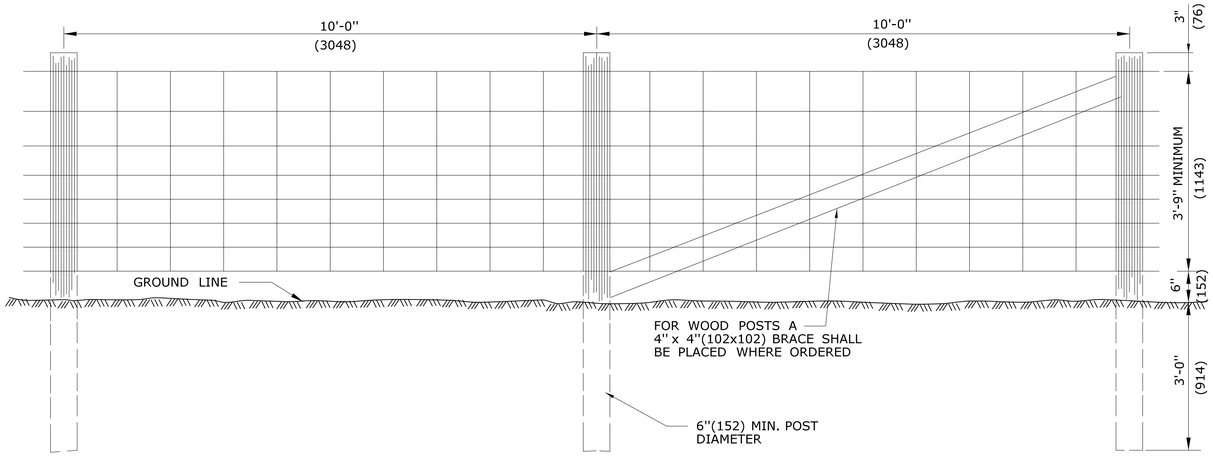
STATE OF CONNECTICUT RICHARD A. BRAY LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE:
BRIDGE NO. 09206R HOUSATONIC RAILROAD MP 25.80 OVER COBBLE BROOK

TOWN: **KENT**

DRAWING TITLE: **REPAIR DETAILS - 3**

PROJECT NO. **170-3192**
DRAWING NO. **S3-11**
SHEET NO. **03.03.12**



WIRE FENCE

N.T.S.

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H.W. LOCHNER, INC
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STATE OF CONNECTICUT RICHARD A. BRAY LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE:
BRIDGE NO. 09206R HOUSATONIC RAILROAD MP 25.80 OVER COBBLE BROOK

TOWN: **KENT**

DRAWING TITLE: **MISCELLANEOUS DETAILS**

PROJECT NO. **170-3192**

DRAWING NO. **S3-12**

SHEET NO. **03.03.13**