

# MECHANIC STREET SEAWALL REPLACEMENT AT PICKERING STREET



DEPARTMENT OF  
PUBLIC WORKS  
CITY OF PORTSMOUTH, NH

WINTER 2013

PREPARED BY  
VINE ASSOCIATES, A DIVISION OF GZA GEOENVIRONMENTAL, INC.  
372 MERRIMAC STREET  
NEWBURYPORT, MA



**LOCUS MAP**

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NHDES FILE #2012-00751  
CITY OF PORTSMOUTH, MECHANIC & PICKERING STREET

MECHANIC STREET SEAWALL  
COVER

PREPARED BY: Vine ASSOCIATES A DIVISION OF	PREPARED FOR: CITY OF PORTSMOUTH, NH
PROJ MGR: CWC DESIGNED BY: CWC DATE: JANUARY 2013	REVIEWED BY: RJM DRAWN BY: JJZ PROJECT NO. 18.0170970.00
CHECKED BY: JJZ SCALE: AS SHOWN REVISION NO.	DRAWING 1 SHEET NO. 1 OF 9

CONTACT NUMBERS:  
PUBLIC WORKS: 427-1530  
WATER DEPARTMENT 427-1552  
AMERICAN FLAGGING: 890-1154  
GAS EMERGENCY: 866-900-4115  
EMERGENCY: 911

**GENERAL NOTES:**

- THE SCOPE OF WORK INCLUDES ALL LABOR, TOOLS, EQUIPMENT, ACCESSORIES, AND MATERIALS TO FURNISH AND INSTALL THE SEAWALL REPLACEMENT. THE SEAWALL REPLACEMENT INCLUDES, BUT IS NOT LIMITED TO:
  - PREPARE AND SUBMIT TO NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES AN EROSION CONTROL/WATER QUALITY PROTECTION PLAN FOR APPROVAL PRIOR TO COMMENCING WORK.
  - REMOVE EXISTING SEAWALL TO THE BOTTOM OF REPAIR ELEVATION INCLUDING TEMPORARY REMOVAL OF PAVEMENT AND ROADWAY FILL MATERIAL, AS NEEDED TO COMPLETE THE REPAIR WORK. USE OF EXPLOSIVES IS NOT PERMITTED.
  - SALVAGE SUITABLE GRANITE BLOCK STONES FOR REUSE AS GRANITE FACING FOR THE REPLACEMENT SEAWALL. MISCELLANEOUS ITEMS FROM THE SEAWALL THAT ARE NOT SUITABLE FOR REUSE, SUCH AS GRANITE CURB AND BRICK, SHALL BE COME THE PROPERTY OF THE CONTRACTOR. ANY EXCESS GRANITE BLOCK SUITABLE FOR REUSE SHALL BECOME THE PROPERTY OF THE CITY AND THE CONTRACTOR SHALL LOAD, TRANSPORT, AND UNLOAD THE GRANITE BLOCK AT A SITE COORDINATED WITH THE CITY.
  - HARBOR BOTTOM MATERIAL REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
  - CONSTRUCT REINFORCED CONCRETE SEAWALL, AS SHOWN.
  - CONSTRUCT STONE BLOCK FACING UTILIZING SALVAGED STONE BLOCKS FROM THE SITE, AS SHOWN.
  - PROVIDE SUPPLEMENTAL GRANITE BLOCK AS NEEDED, SEE SPECIFICATIONS.
  - UPON COMPLETION OF THE SEAWALL, REGRADE THE MUDLINE ALONG THE FACE OF THE SEAWALL TO MATCH APPROXIMATE EXISTING GRADE.
  - CONSTRUCT DRAINAGE SYSTEM, AS SHOWN.
  - REMOVE PAVEMENT, FULL-WIDTH, OF MECHANIC STREET AND REPLACE WITH BITUMINOUS BASE COURSE ONLY. THIS WORK SHALL BE COORDINATED WITH THE CITY AND THE SOUTH END SIDEWALK & ROAD REPLACEMENT PROJECT. THE FINAL WEARING COURSE WILL BE COMPLETED BY OTHERS.
  - SUBMIT A RECORD DRAWING OF AS-BUILT CONDITIONS UPON COMPLETION OF THE WORK.
- UTILITIES AND GENERAL SITE INFORMATION SHOWN ARE APPROXIMATE AND BASED ON LINWORK FROM CITY OF PORTSMOUTH PUBLIC WORKS DEPARTMENT. VERIFICATION OF ACTUAL UTILITY LOCATIONS IS THE RESPONSIBILITY OF THE CONTRACTOR.
- A LIMITED TOPOGRAPHIC SURVEY OF THE SEAWALL AND IMMEDIATELY ADJACENT FEATURES WAS PERFORMED BY VINE ASSOCIATES, A DIVISION OF GZA GEOENVIRONMENTAL, ON JULY 21, 2011.

- ELEVATIONS SHOWN ARE IN FEET AND REFERENCE THE MEAN LOWER LOW WATER DATUM (MLLW). SEE TIDAL DATUMS TABLE.
- DIMENSIONS, ELEVATIONS AND CONDITIONS RELATING TO THE WORK SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING MATERIAL OR COMMENCING WORK. THE CONTRACTOR SHALL ADVISE THE OWNER OF ANY DISCREPANCIES FROM THE WORK SHOWN ON THE DRAWINGS.
- THE CONTRACTOR SHALL MAINTAIN ADEQUATE SURVEY CONTROL, AT ALL TIMES, TO ESTABLISH AND MAINTAIN ALL LINES AND ELEVATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DONE TO STRUCTURES, UTILITIES AND VESSELS OR INJURIES TO THE PUBLIC RESULTING FROM THE CONTRACTOR'S WORK OR WORK OF THE CONTRACTOR'S SUBCONTRACTORS. THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN TEMPORARY CONSTRUCTION FENCES AND BARRIERS AROUND THE CONTRACTOR WORK AREA. DEBRIS AND OIL ABSORBENT BOOMS SHALL BE PLACED SEAWARD OF THE LIMIT OF WORK.
- ACCESS TO THE PRIVATELY OWNED STRUCTURES AT EITHER END OF THE SEAWALL REPLACEMENT WORK SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. TEMPORARY, SHORT-TERM, PERIODS OF NO OR LIMITED ACCESS MAY BE PERMITTED WITH ADVANCED NOTIFICATION AND COORDINATION WITH THE CITY AND THE PROPERTY OWNER.
- THE PORTION OF MECHANIC STREET AFFECTED BY THE SEAWALL REPLACEMENT MAY BE CLOSED FOR THE DURATION OF THE CONSTRUCTION WORK. THIS AREA MAY ALSO BE USED AS CONTRACTOR LAYDOWN AREA. THE CONTRACTOR SHALL EXERCISE CAUTION TO NOT DAMAGE ADJACENT PRIVATE PROPERTY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM THE CONTRACTOR'S WORK OR WORK OF THE CONTRACTOR'S SUBCONTRACTORS. THE CONTRACTOR SHALL EXERCISE CAUTION TO NOT DAMAGE ADJACENT PRIVATE PROPERTY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM THE CONTRACTOR'S WORK OR WORK OF THE CONTRACTOR'S SUBCONTRACTORS.
- THE CONTRACTOR SHALL PERFORM WORK AS PER THE WETLANDS AND SITE SPECIFIC PERMIT 2012-00751 ISSUED BY THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES). ANY CHANGES FROM THE PERMIT AND/OR THESE CONSTRUCTION PLANS SHALL BE APPROVED BY THE ENGINEER AND NHDES.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE REMOVAL AND ERECTION PROCEDURES AND SEQUENCE TO ENSURE THE SAFETY OF THE FACILITIES. THE CONTRACTOR IS RESPONSIBLE TO ERECT, MAINTAIN AND REMOVE TEMPORARY ERECTION MATERIALS AND EQUIPMENT. ALL PROPOSED STAGING AREAS SHALL BE COORDINATED WITH THE CITY BEFORE STARTING THE WORK.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ENVIRONMENTAL CONTROLS AS REQUIRED BY FEDERAL, STATE AND MUNICIPAL REGULATIONS AND PERMITS. ENVIRONMENTAL CONTROLS SHALL INCLUDE, BUT NOT BE LIMITED TO, SILTATION/EROSION CONTROL, TURBIDITY AND DUST.
- THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE FEDERAL, STATE AND MUNICIPAL REGULATIONS, INCLUDING THE FEDERAL DEPARTMENT OF LABOR, SAFETY, HEALTH ACT, U.S. ARMY CORPS OF ENGINEERS, STATE/LOCAL WETLANDS CONTROL, AND PERMITS.
- STORAGE, FUELING AND LUBRICATION OF EQUIPMENT AND MOTOR VEHICLES SHALL BE CONDUCTED IN A MANNER THAT AFFORDS THE MAXIMUM PROTECTION AGAINST SPILL AND EVAPORATION. FUEL, LUBRICANTS AND OIL SHALL BE MANAGED AND STORED IN ACCORDANCE WITH ALL FEDERAL, STATE, REGIONAL, AND LOCAL LAWS AND REGULATIONS. THERE SHALL BE NO STORAGE OF FUEL ON THE PROJECT SITE. FUEL MUST BE BROUGHT TO THE PROJECT SITE AS NEEDED. EQUIPMENT OPERATION, ACTIVITIES, OR PROCESSES PERFORMED BY THE CONTRACTOR SHALL BE IN ACCORDANCE WITH ALL FEDERAL AND STATE AIR EMISSION AND PERFORMANCE LAWS AND STANDARDS.
- THE CONTRACTOR SHALL PROVIDE CONTROL MEASURES AS REQUIRED BY ENVIRONMENTAL REGULATIONS AND AS REQUIRED TO PREVENT DEBRIS FROM ENTERING THE RIVER.
- TEMPORARY COFFERDAM SHALL NOT BE INSTALLED DURING PERIODS OF HIGH TIDE.
- UNCONFINED WORK, WITHIN THE RIVER, SHALL BE DONE AT PERIODS OF LOW TIDE.

**MATERIAL NOTES:**

- MATERIAL AND PRODUCT REQUIREMENTS, WHERE REFERENCED AS NHDOT, THE REQUIREMENT REFERS TO THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION - 2010 EDITION.
 

GRAVEL FILL	NHDOT 209, GRANULAR BACKFILL
CRUSHED STONE	NHDOT 304.4, CRUSHED STONE (FINE)
CONCRETE	28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI NHDOT 520, CLASS AAA (OVERLAY) MAXIMUM 0.400 W/C RATIO CORROSION INHIBITOR
GEOTEXTILE	NHDOT 593 APPLICATION 1 - SUBSURFACE DRAINAGE FOR DRAINAGE WORK APPLICATION 2 - STABILIZATION FOR WALL BASE FOUNDATION
REINFORCING STEEL	ASTM A615, GRADE 60 EPOXY COATED, ASTM A775
DOWELS	STAINLESS STEEL, TYPE 316
GROUT	NON-SHRINK, NON-METALLIC, CEMENT-BASED GROUT APPROPRIATE FOR SALTWATER/MARINE ENVIRONMENT AND SUBMERSION MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 7,000 PSI

**TIDAL DATUMS (1983-2001 TIDAL EPOCH)**

ESTIMATED 100-YEAR FLOOD ELEVATION (STILLWATER)	=	12.76'
HIGHEST OBSERVED WATER LEVEL (2/19/1972)	=	12.34'
MEAN HIGHER HIGH WATER (MHHW)	=	8.84'
MEAN HIGH WATER (MHW)	=	8.43'
NORTH AMERICAN VERTICAL DATUM-1988 (NAVD88)	=	4.62'
MEAN TIDE LEVEL (MTL)	=	4.37'
NATIONAL GEODETIC VERTICAL DATUM-1929 (NGVD29)	=	3.86'
MEAN LOW WATER (MLW)	=	0.32'
MEAN LOWER LOW WATER (MLLW)	=	0.00'

REFERENCE (TIDAL DATUM):  
SEAVEY ISLAND, PORTSMOUTH HARBOR NOAA STA ID #8419870

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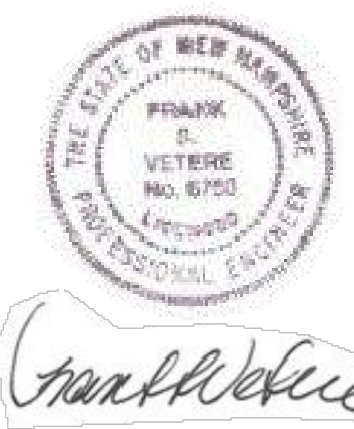


**MECHANIC STREET SEAWALL  
AERIAL IMAGE**

REFERENCE:  
AERIAL IMAGE FROM GOOGLE EARTH PROFESSIONAL  
DATED 2005.  
LINWORK FROM CITY OF PORTSMOUTH DEPARTMENT  
OF PUBLIC WORKS.



**MECHANIC STREET SEAWALL  
(LOOKING TOWARDS SOUTH)**



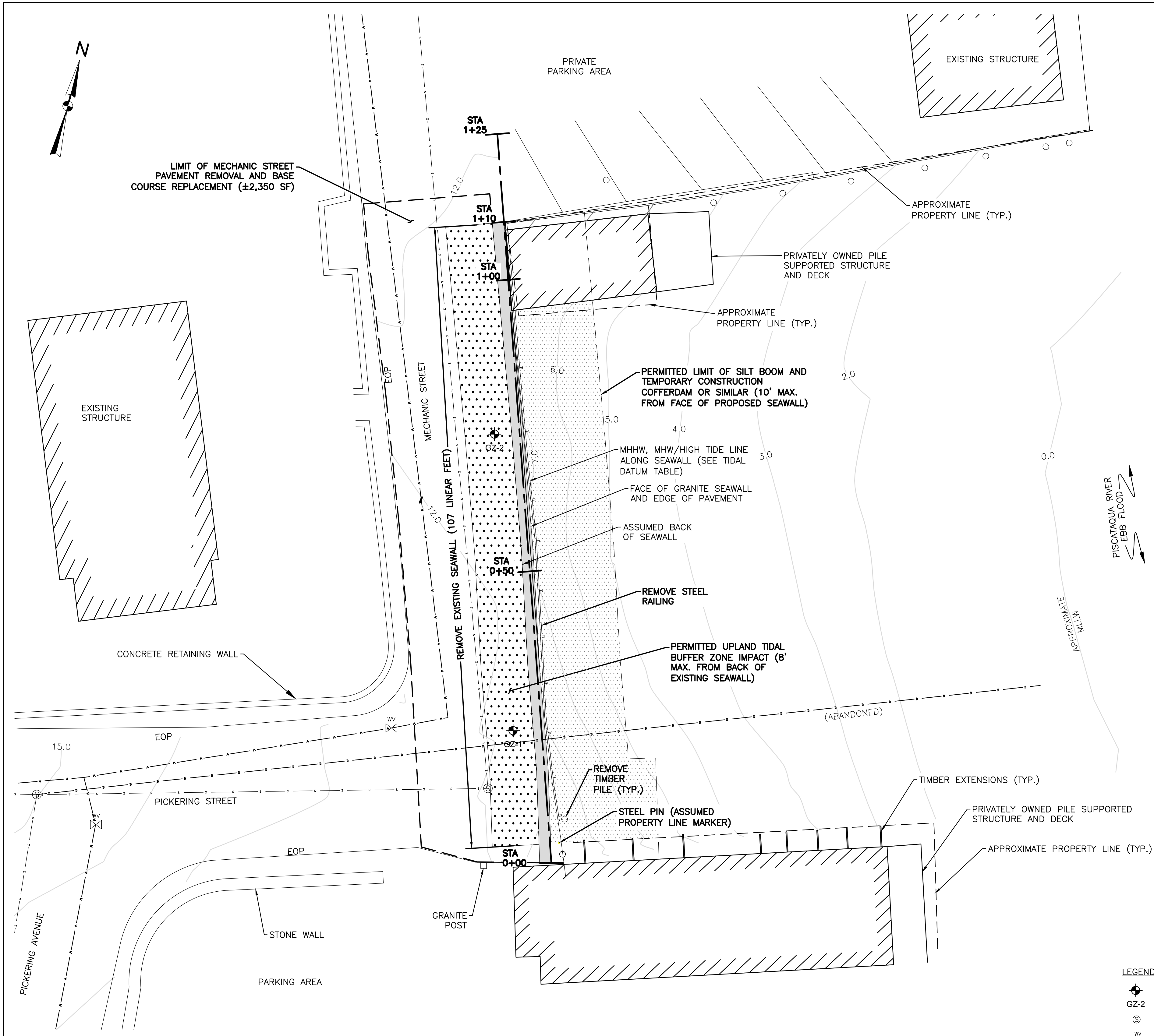
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**NHDES FILE #2012-00751  
CITY OF PORTSMOUTH, MECHANIC & PICKERING STREET**

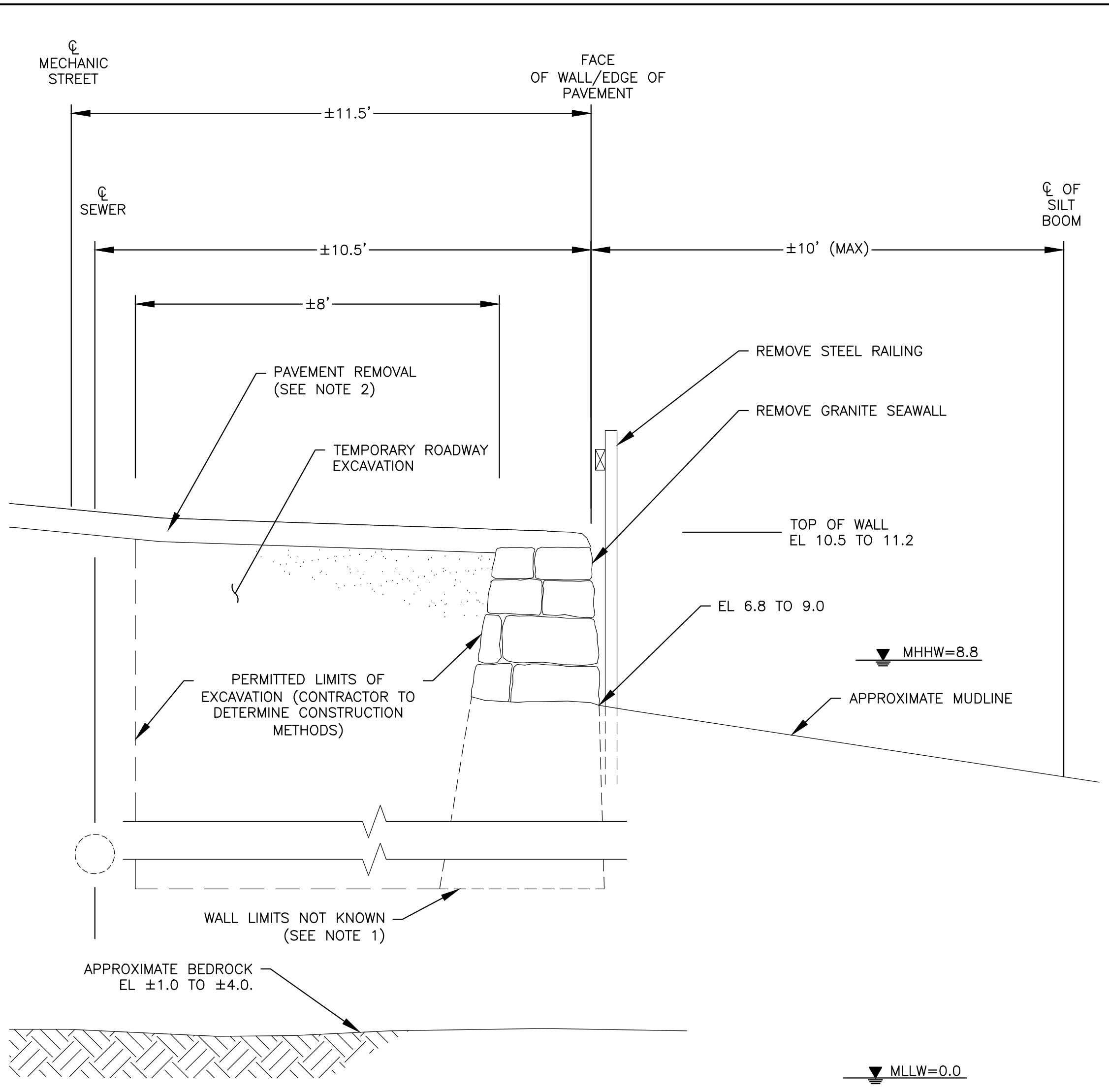
**MECHANIC STREET SEAWALL  
NOTES**

PREPARED BY: Vine ASSOCIATES A DIVISION OF	PREPARED FOR: CITY OF PORTSMOUTH, NH		
PROJ MGR: CWC	REVIEWED BY: RJM	CHECKED BY: JJZ	DRAWING <b>2</b> SHEET NO. 2 OF 9
DESIGNED BY: CWC	DRAWN BY: JJZ	SCALE: AS SHOWN	
DATE: JANUARY 2013	PROJECT NO. 18.0170970.00	REVISION NO. JANUARY 2013	

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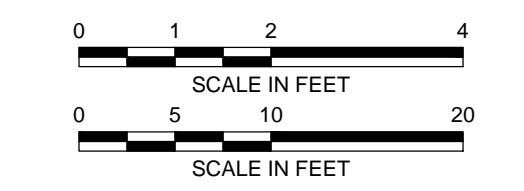


EXISTING CONDITION AND REMOVAL  
SCALE: 1"=10'



EXISTING WALL SECTION AND REMOVALS  
SCALE: 1"=2'

- NOTE:**
1. THE LIMITS OF THE WALL ARE NOT KNOWN. THE WALL IS ASSUMED TO BE OF GRANITE BLOCK CONSTRUCTION WITH MISCELLANEOUS GRANITE CURB SECTION, BRICKS, ETC. INCORPORATED ALONG THE FACE OF THE WALL. BASED ON BORINGS GZ-1 AND GZ-2, THE APPARENT BEDROCK IS LOCATED APPROXIMATELY 7' TO 10' BELOW THE TOP OF THE WALL.
  2. THE CONTRACTOR SHALL REMOVE PAVEMENT, FULL-WIDTH, OF MECHANIC STREET WITHIN THE PROJECT LIMITS.



- LEGEND:**
- BORING COMPLETED BY NEW HAMPSHIRE BORING, INC. ON JULY 14, 2011
  - SEWER MANHOLE
  - WATER GATE
  - EXISTING DRAIN LINE
  - EXISTING SEWER LINE
  - EXISTING WATER LINE
  - SEAWALL REMOVAL
  - PERMITTED UPLAND TIDAL BUFFER IMPACT AREA
  - PERMITTED TIDAL WETLAND TEMPORARY IMPACT AREA

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<b>NHDES FILE #2012-00751</b> <b>CITY OF PORTSMOUTH, MECHANIC &amp; PICKERING STREET</b>			
<b>MECHANIC STREET SEAWALL</b> <b>EXISTING CONDITIONS AND REMOVALS</b>			
PREPARED BY: Vine ASSOCIATES A DIVISION OF GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR: CITY OF PORTSMOUTH, NH		
PROJ MGR: CWC DESIGNED BY: CWC DATE: JULY 2012	REVIEWED BY: RJM DRAWN BY: JJZ PROJECT NO.: 18.0170970.00	CHECKED BY: JJZ SCALE: AS SHOWN REVISION NO.: JANUARY 2013	DRAWING <b>3</b> SHEET NO. 3 OF 9

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TEST BORING LOG											
			City of Portsmouth Mechanic St Seawall Rehabilitation Portsmouth, New Hampshire			BORING NO.: GZ-1 SHEET: 1 of 1 PROJECT NO: 18.170970.00 REVIEWED BY:					
Drilling Co.: New Hampshire Boring Foreman: Greg Leavitt Logged By: Jason Clegg			Type of Rig: Truck Rig Model: Drilling Method: Rotary Wash			Boring Location: See Plan Ground Surface Elev. (ft.): Final Boring Depth (ft.): 15 Date Start - Finish: 7/14/2011 - 7/14/2011			H. Datum: V. Datum:		
Auger/Casing Type: HW I.D./O.D. (in.): 4"/4.5" Hammer Weight (lb.): 300 lb Hammer Fall (in.): 24"			Sampler Type: Split Spoon I.D./O.D. (in.): 1-3/8"/2" Sampler Hmr Wt (lb): 140 Sampler Hmr Fall (in): 30 Other: Safety Hammer			Groundwater Depth (ft.) Date Time Water Depth Stab. Time 7/14/11 0936 4' 12 mins					
Depth (ft)	Casing No.	Blows/Rate	Sample				SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Description Elev. (ft.)
			No.	Depth (ft.)	Pen. (in)	Rec. (in)					
	S-1	1-3	24	8	11	8	ASPHALT	1		0.5' ASPHALT	
	S-2	3-5	24	0	9	9	S-1: Medium dense, brown, fine to coarse SAND, some Silt, trace Gravel, trace Glass.	2		FILL	
	S-3	5-7	24	15	8	11	S-2: No recovery in spoon (see note 2). Medium dense, brown, fine to coarse SAND, some Silt, little Gravel, trace Asphalt.				
	S-4	7-8.8	21	12	17	32	S-3: Top 6": Brown, fine to coarse SAND, some Silt, trace Gravel, trace Brick.			6.8'	
	C-1	10-15	60	57	30	30/3"	Mid 5": Dark gray, fine to medium SAND, some Silt, trace Gravel, trace Brick.			8.8'	
							Bottom 4": Olive, fine to medium SAND and SILT, trace Gravel.				
							S-4: Very dense, olive, fine to medium SAND and SILT, trace Gravel.				
							C-1: Hard, slightly weathered, fine-grained, dark gray, METAPELITE, with close (2"-1") horizontal (0"-5") to vertical (85"-90") iron oxide/clay, stained joints/fractures.				
							Bottom of boring at 15 feet.				
REMARKS 1. Drilled through asphalt roadway to 1 foot before taking sample S-1. 2. Drove HW casing to 5 feet and retrieved it to obtain sample S-2. 3. Split spoon bouncing on obstruction at 8.8 feet. 4. Rollerbit into potential bedrock from 8.8 to 10 feet. Observed dark gray, fine-grained rock fragments in wash water from 8.8 to 10 feet. 5. Cored bedrock from approximately 10 to 15 feet using NX sized core barrel. Data in column named "Blows/6" represents core barrel penetration rate in minutes per foot. RQD = "Rock Quality Designation". 6. Borehole backfilled with soil cuttings, bentonite chips and gravel to approximately 0.5 feet and cold patched about 6-inches of asphalt to surface.											
See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.										Boring No.: GZ-1	

GEOTECHNICAL BORING LOG  
GZ-1

TEST BORING LOG											
			City of Portsmouth Mechanic St Seawall Rehabilitation Portsmouth, New Hampshire			BORING NO.: GZ-2 SHEET: 1 of 1 PROJECT NO: 18.170970.00 REVIEWED BY:					
Drilling Co.: New Hampshire Boring Foreman: Greg Leavitt Logged By: Jason Clegg			Type of Rig: Truck Rig Model: Drilling Method: Rotary Wash			Boring Location: See Plan Ground Surface Elev. (ft.): Final Boring Depth (ft.): 7 Date Start - Finish: 7/14/2011 - 7/14/2011			H. Datum: V. Datum:		
Auger/Casing Type: HW I.D./O.D. (in.): 4"/4.5" Hammer Weight (lb.): 300 lb Hammer Fall (in.): 24"			Sampler Type: Split Spoon I.D./O.D. (in.): 1-3/8"/2" Sampler Hmr Wt (lb): 140 Sampler Hmr Fall (in): 30 Other: Safety Hammer			Groundwater Depth (ft.) Date Time Water Depth Stab. Time 7/14/11 1050 3.5' 10 mins					
Depth (ft)	Casing No.	Blows/Rate	Sample				SPT Value	Sample Description and Identification (Modified Burmister Procedure)	Remark	Field Test Data	Stratum Description Elev. (ft.)
			No.	Depth (ft.)	Pen. (in)	Rec. (in)					
	S-1	1-3	24	10	11	10	ASPHALT	1		0.5' ASPHALT	
	S-2	3-5	24	3	15	8	S-1: Medium dense, brown, fine to coarse SAND, some Gravel, little Silt.				
	S-3	5-6.4	16	6	6	26	S-2: Medium dense, brown, fine to coarse SAND, little Silt, little Gravel.			6'	
							S-3: Top 2": Brown, fine to coarse SAND, little Silt, little Gravel.				
							Bottom 4": Dark gray, ROCK fragments, trace Silt.				
							Bottom of boring at 7 feet.				
REMARKS 1. Drilled through asphalt roadway to 1 foot before taking sample S-1. 2. Rollerbit into possible bedrock from 6.4 to 7 feet. Observed dark gray rock fragments in wash water. Close to no water return. 3. Borehole backfilled with soil cuttings, bentonite chips and gravel to approximately 0.5 feet and cold patched about 6-inches of asphalt to surface.											
See Log Key for explanation of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.										Boring No.: GZ-2	

GEOTECHNICAL BORING LOG  
GZ-2



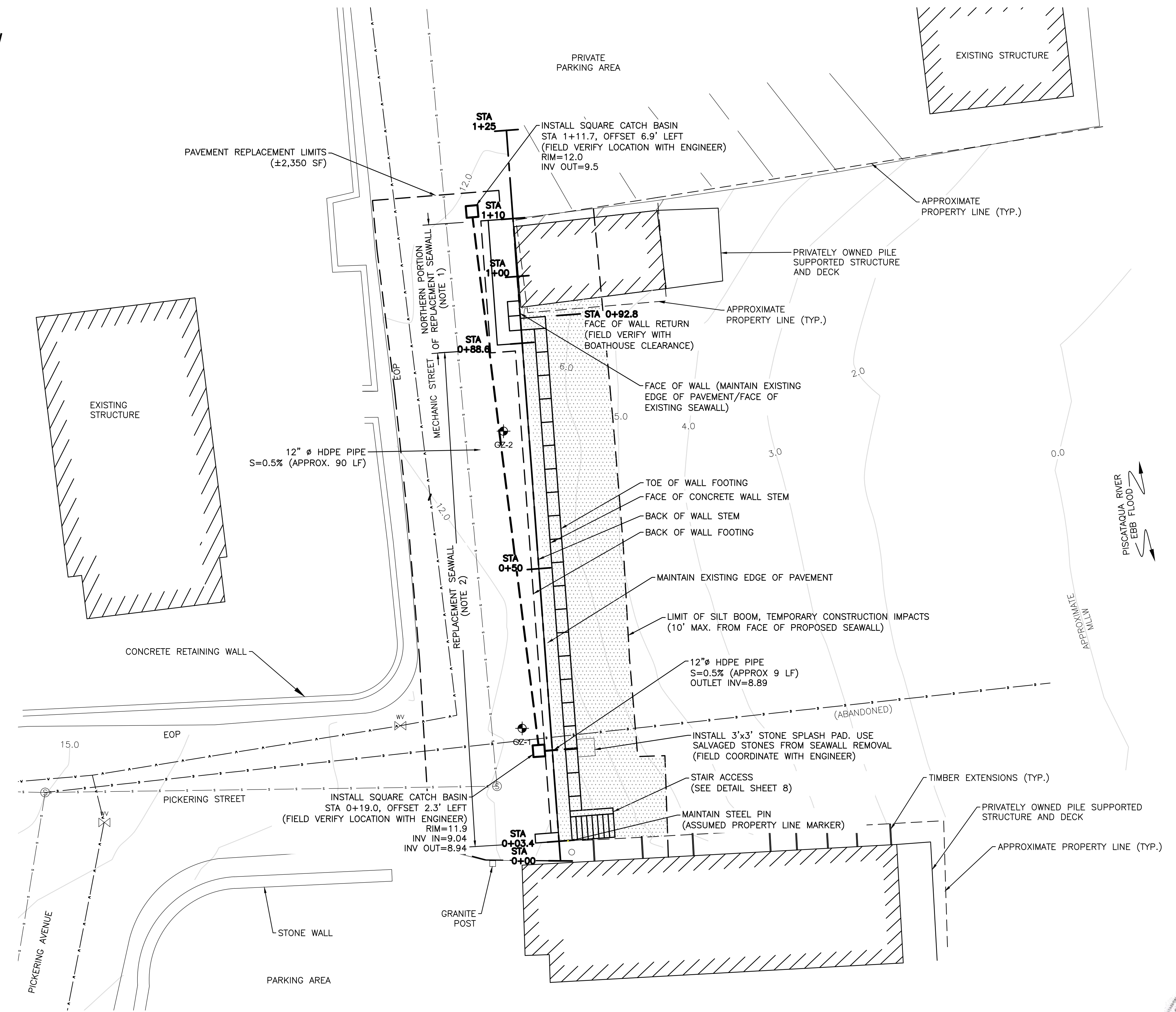
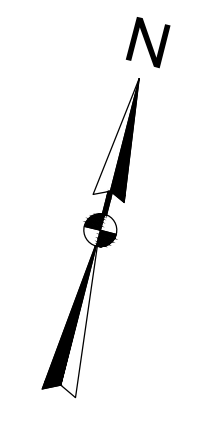
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CITY OF PORTSMOUTH, MECHANIC & PICKERING STREET

MECHANIC STREET SEAWALL  
GEOTECHNICAL BORING LOGS

PREPARED BY: 	PREPARED FOR: CITY OF PORTSMOUTH, NH
PROJ MGR: CWC DESIGNED BY: CWC DATE: JANUARY 2013	REVIEWED BY: RJM DRAWN BY: JJZ PROJECT NO: 18.0170970.00
CHECKED BY: JJZ SCALE: AS SHOWN REVISION NO.	DRAWING 4 SHEET NO. 4 OF 9

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PROPOSED SEAWALL REPLACEMENT PLAN  
SCALE: 1"=10'

- NOTES:**
1. THE NORTHERN PORTION OF THE REPLACEMENT SEAWALL SHALL BE SET SUCH THAT THE FACE OF THE REPLACEMENT WALL STEM MAINTAINS THE FACE OF THE EXISTING WALL/EDGE OF PAVEMENT. GRANITE FACING IS NOT INCLUDED WITHIN THIS PORTION OF THE REPLACEMENT WALL.
  2. EXCEPT AT THE NORTHERN PORTION OF THE REPLACEMENT SEAWALL, THE REPLACEMENT SEAWALL SHALL BE SET SUCH THAT THE BACK OF THE REPLACEMENT WALL STEM MAINTAINS THE FACE OF THE EXISTING WALL/EDGE OF PAVEMENT. GRANITE FACING SHALL BE SET ALONG THE FACE OF THE REPLACEMENT SEAWALL STEM INCLUDING THE WALL RETURN TO THE NORTHERN PORTION OF THE SEAWALL.

- LEGEND:**
- BORING COMPLETED BY NEW HAMPSHIRE BORING, INC. ON JULY 14, 2011
  - SEWER MANHOLE
  - WATER GATE
  - EXISTING DRAIN LINE
  - EXISTING SEWER LINE
  - EXISTING WATER LINE
  - PROPOSED BELOW GRADE STORMWATER DRAIN
  - TIDAL WETLAND TEMPORARY IMPACT AREA

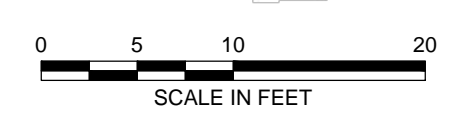
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NHDES FILE #2012-00751  
CITY OF PORTSMOUTH, MECHANIC & PICKERING STREET

MECHANIC STREET SEAWALL  
REPLACEMENT PLAN

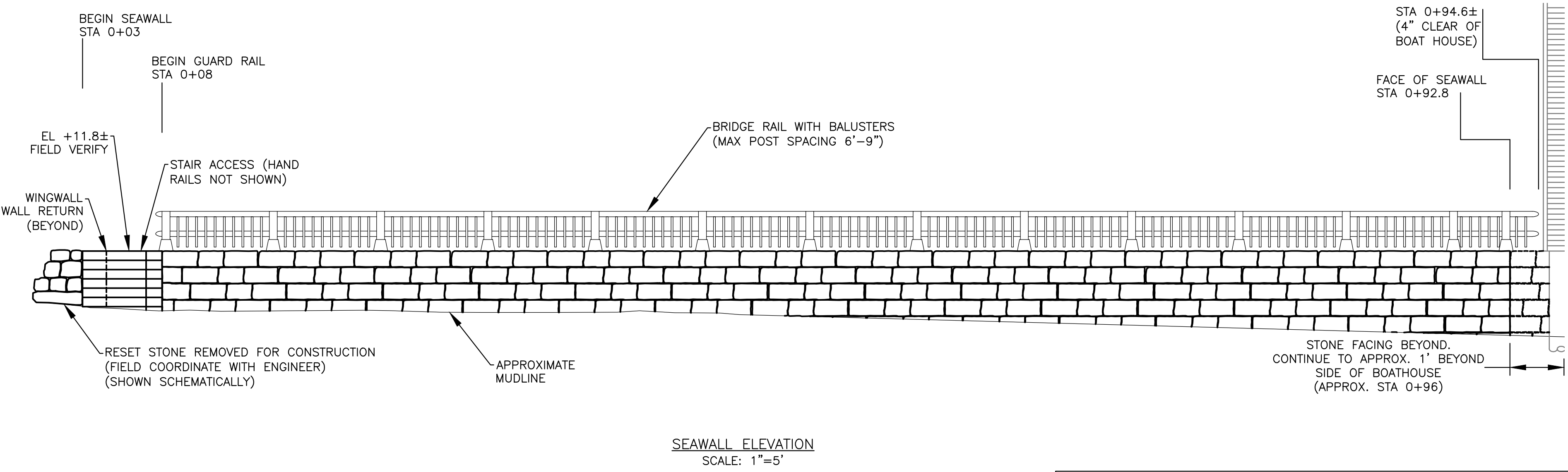
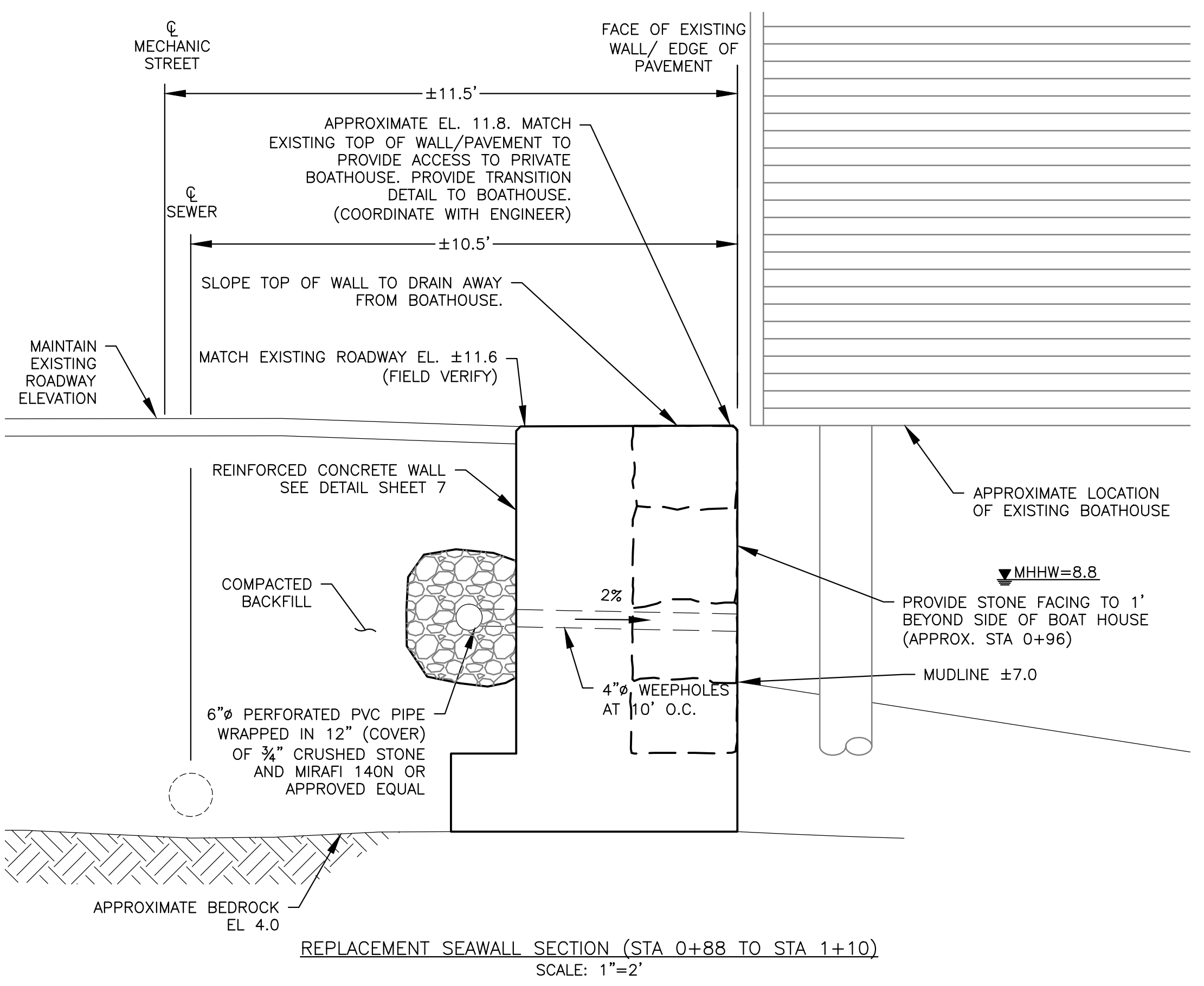
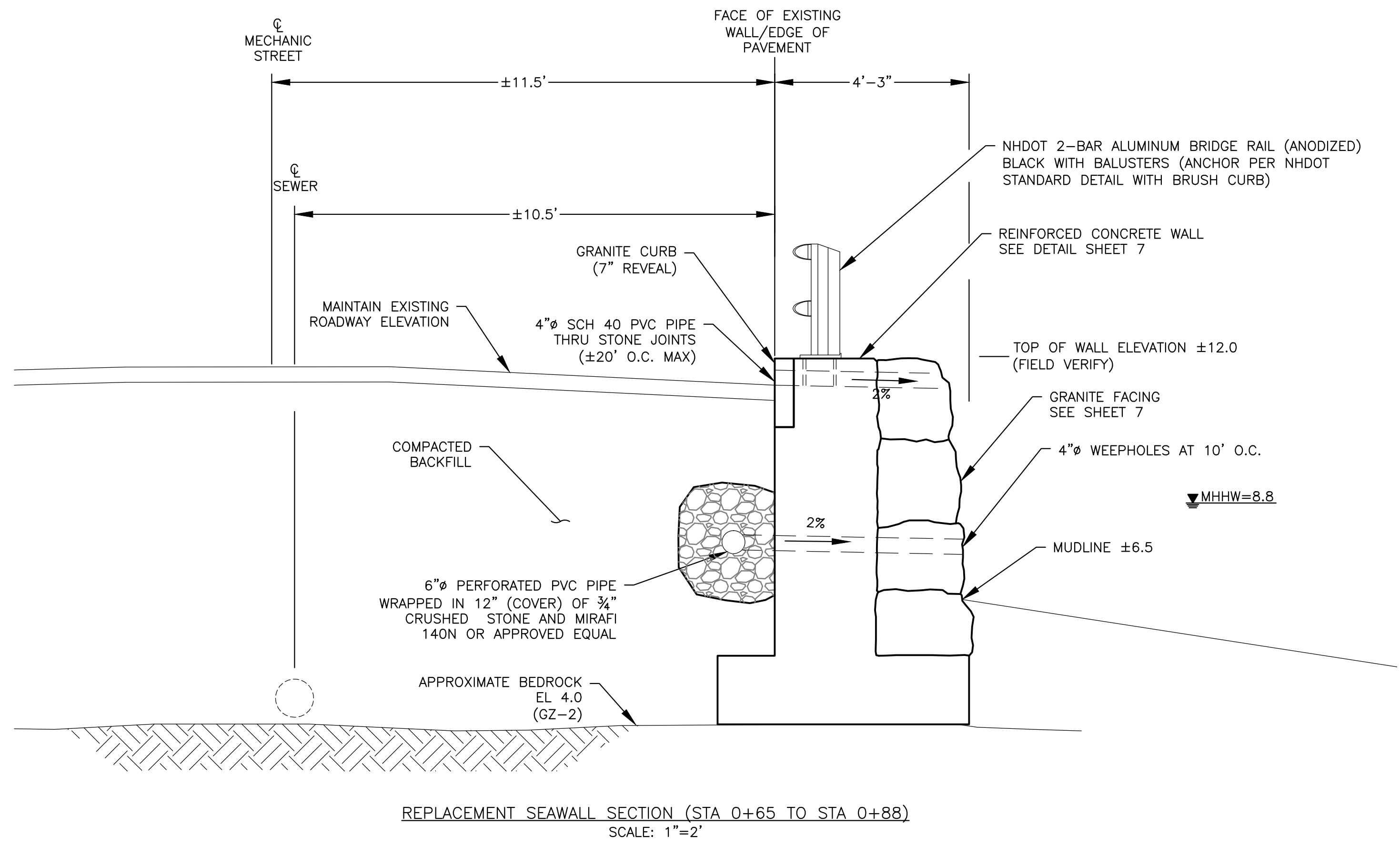
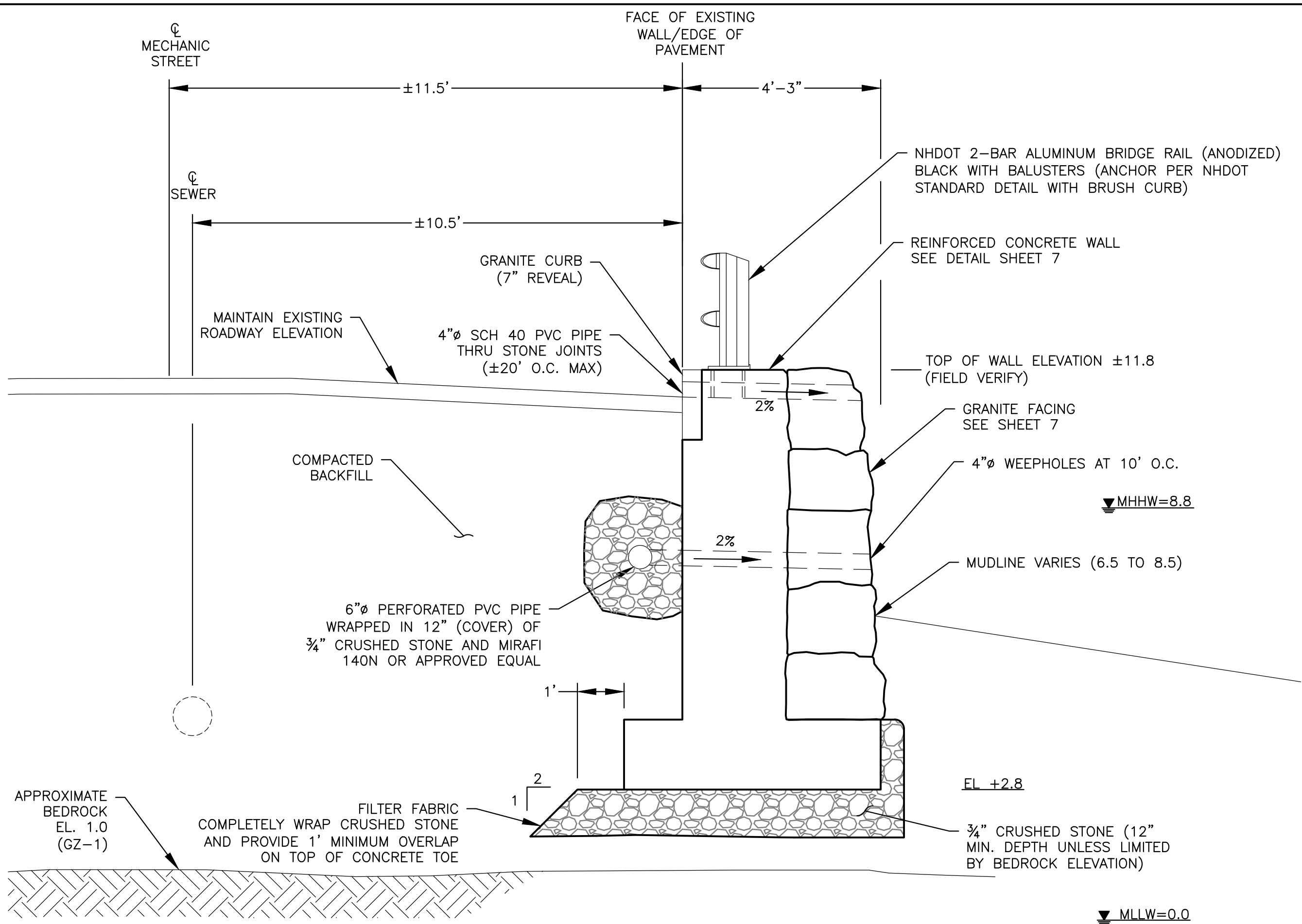
PREPARED BY: GZA GeoEnvironmental, Inc. ENGINEERS AND SCIENTISTS  
www.gza.com  
PREPARED FOR: CITY OF PORTSMOUTH, NH

PROJ MGR: CWC	DESIGNED BY: CWC	DATE: JULY 2012	REVIEWED BY: RJM	DRAWN BY: JJZ	PROJECT NO. 18.0170970.00	CHECKED BY: JJZ	SCALE: AS SHOWN	REVISION NO. JANUARY 2013	DRAWING
								5	SHEET NO. 5 OF 9



*Frank Wehler*

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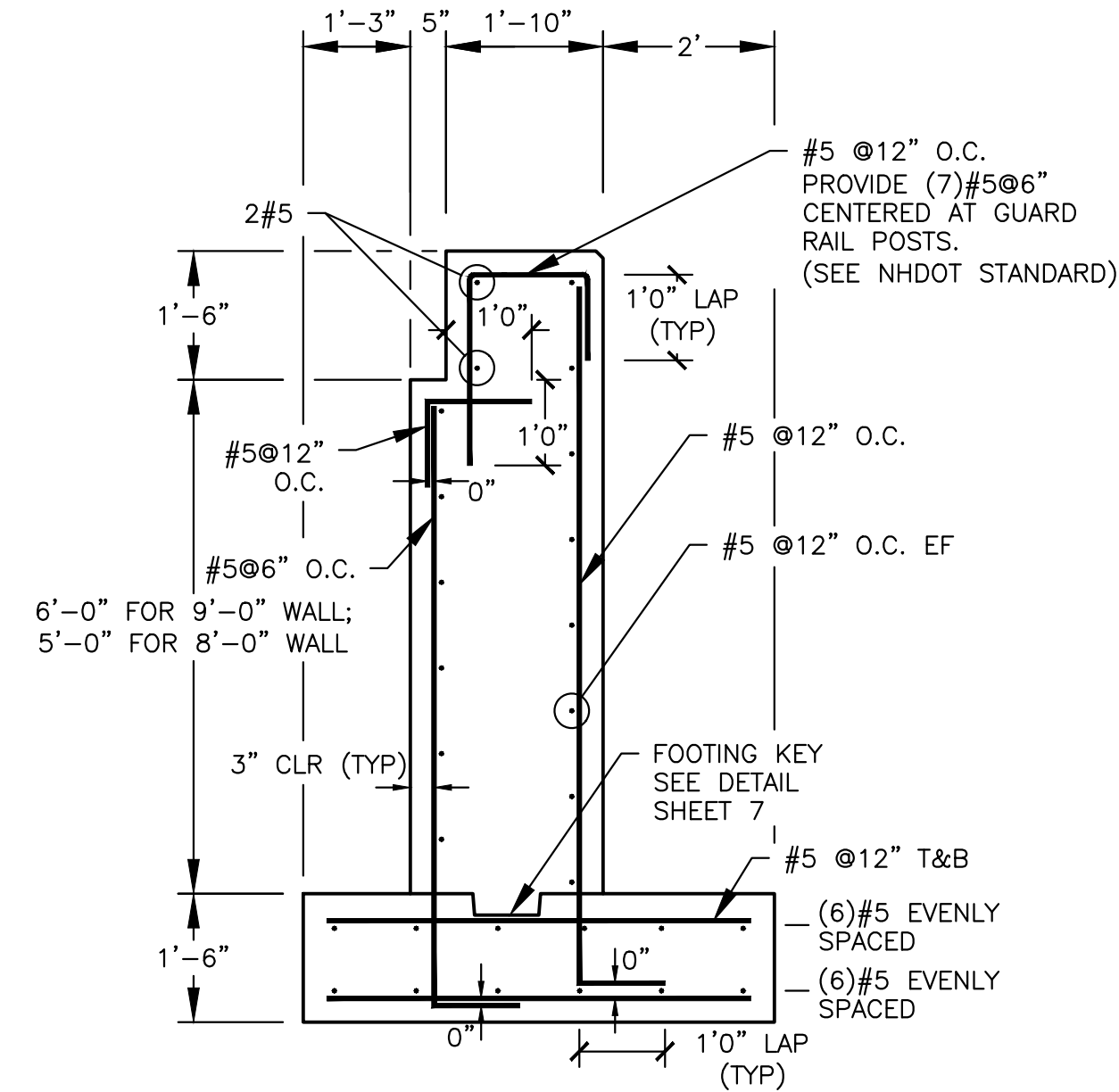
*Frank Wehner*

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<b>NHDES FILE #2012-00751</b> <b>CITY OF PORTSMOUTH, MECHANIC &amp; PICKERING STREET</b>			
<b>MECHANIC STREET SEAWALL</b> <b>REPLACEMENT SECTIONS AND ELEVATION</b>			
PREPARED BY: Vine ASSOCIATES A DIVISION OF	PREPARED FOR: CITY OF PORTSMOUTH, NH		
PROJ MGR: CWC DESIGNED BY: CWC DATE: JULY 2012	REVIEWED BY: RJM DRAWN BY: JJZ PROJECT NO. 18.0170970.00	CHECKED BY: JJZ SCALE: AS SHOWN JANUARY 2013	DRAWING <b>6</b> SHEET NO. 6 OF 9

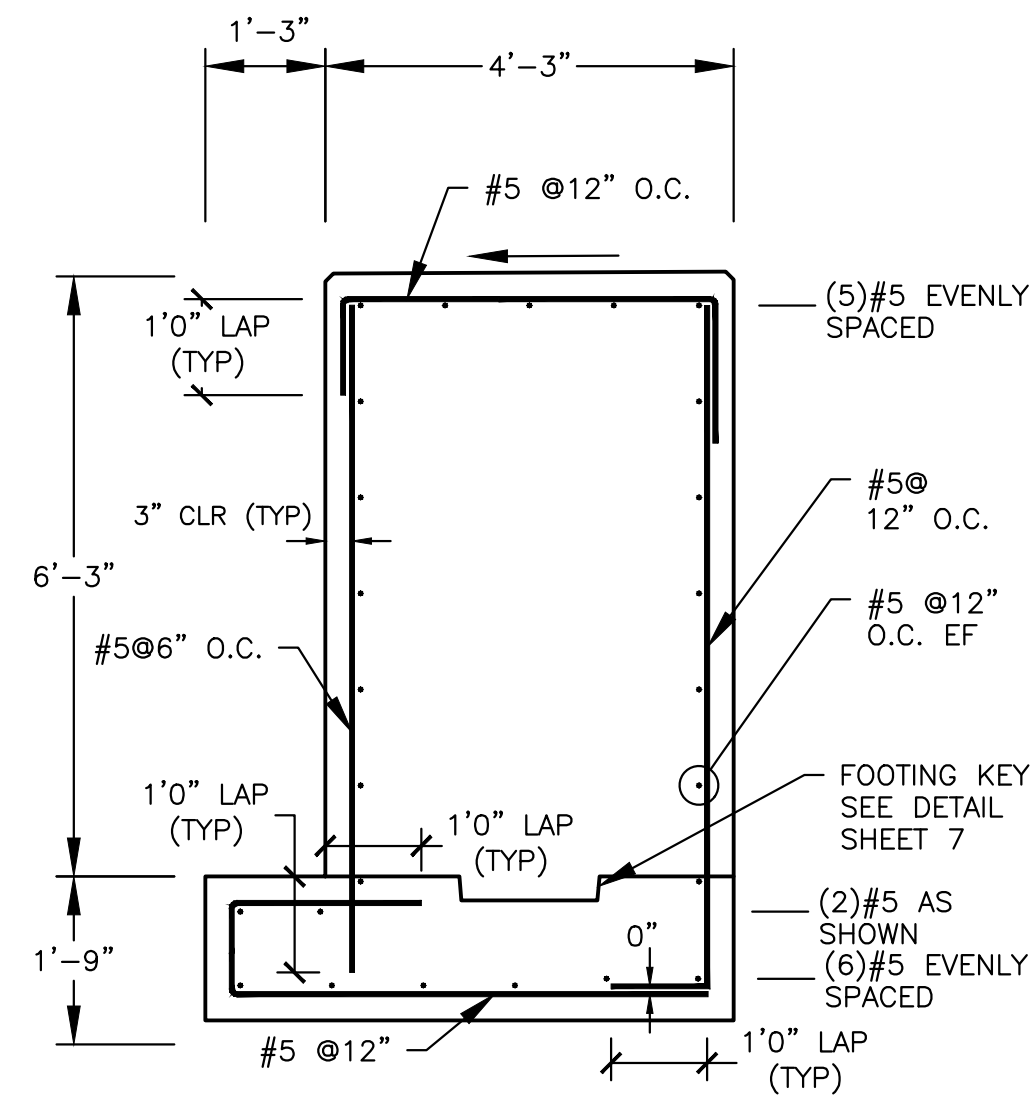


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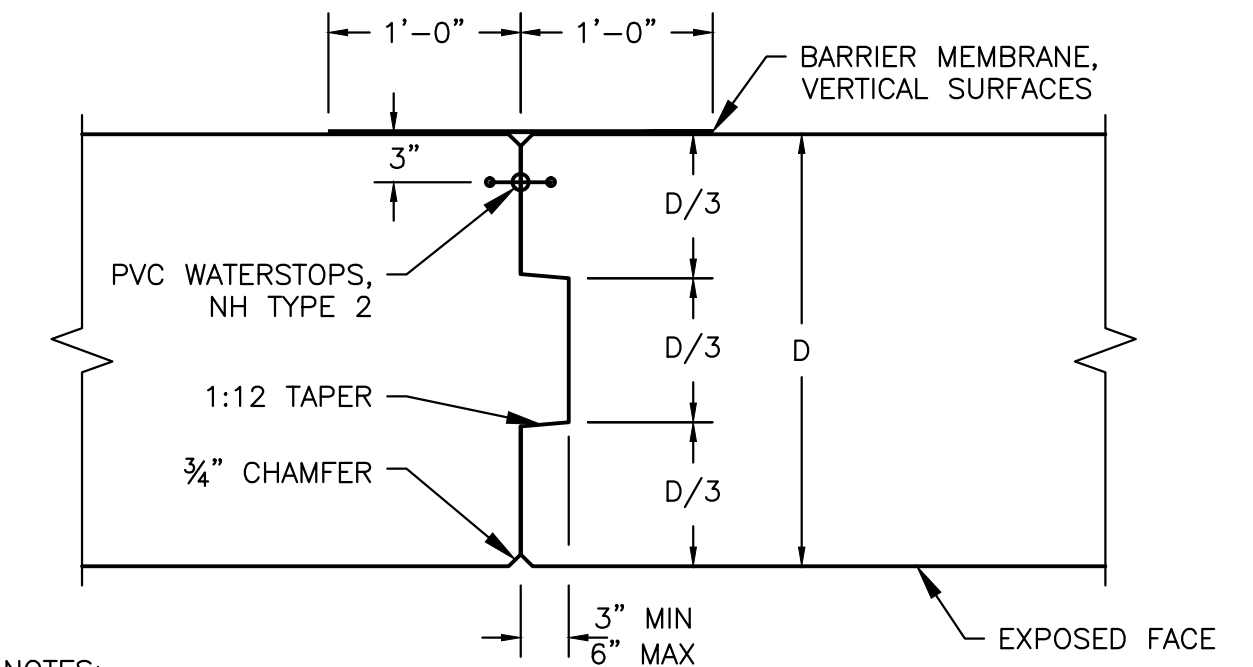
REPLACEMENT SEAWALL REINFORCING  
SCALE: 1"=2'

SEAWALL SECTION SHOWN IF FOR AN 8' TO 9' OVERALL WALL HEIGHT (INCLUDING FOOTING). IF BEDROCK IS ENCOUNTERED AT AN ELEVATION ABOVE EL. 4.0, NOTIFY THE ENGINEER



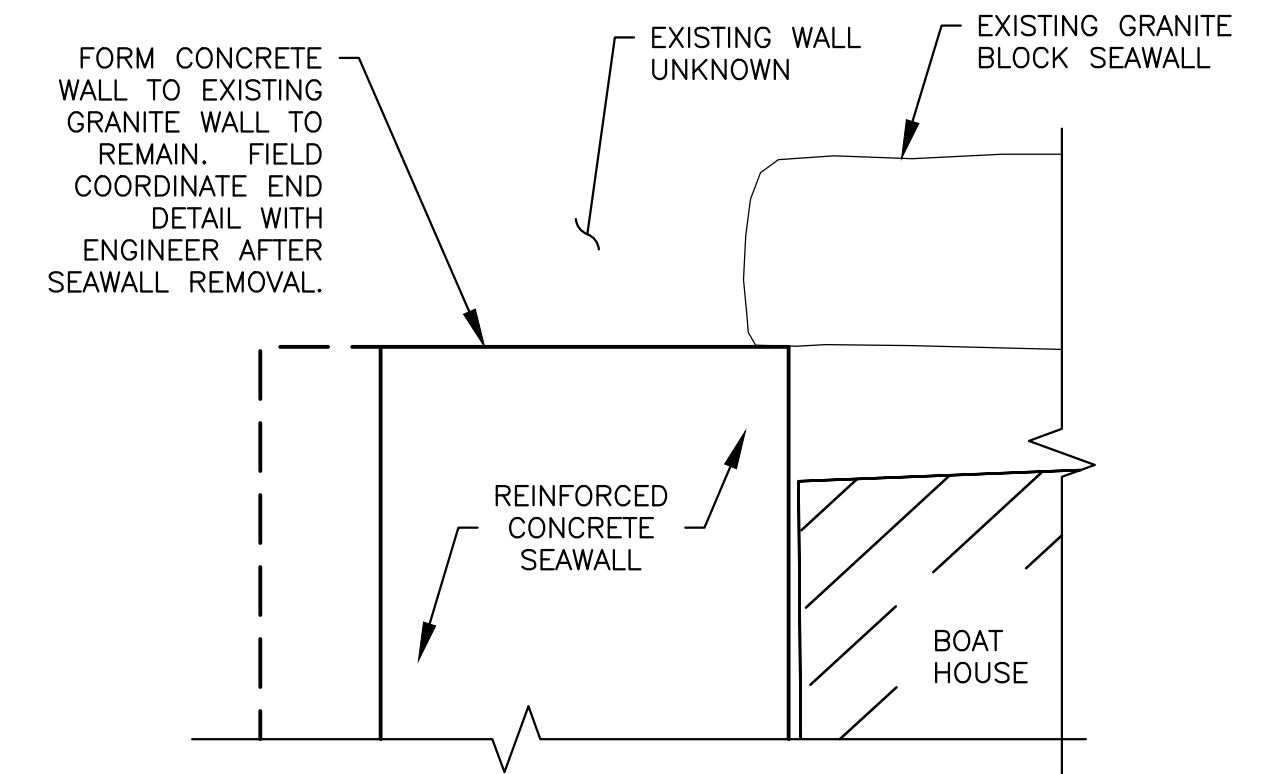
REPLACEMENT SEAWALL REINFORCING  
(STA 0+65 TO STA 0+88)  
SCALE: 1"=2'

SEAWALL SECTION BASED ON AN OVERALL 8 FT HEIGHT (INCLUDING FOOTING). IF BEDROCK IS ENCOUNTERED, AT AN ELEVATION ABOVE EL. +4.0 NOTIFY THE ENGINEER

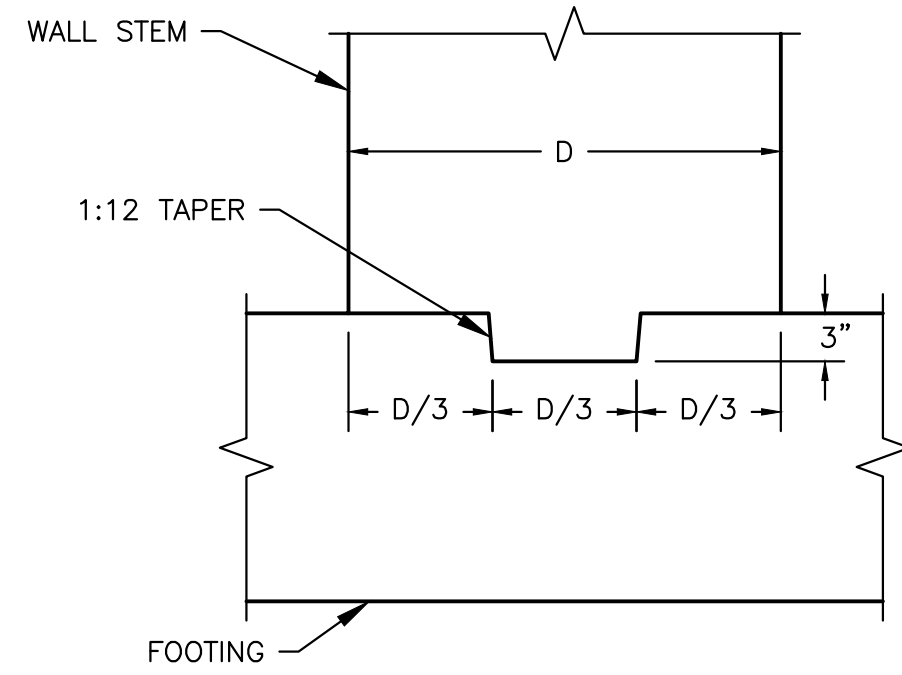


- NOTES:
- IF REINFORCING EXTENDS THROUGH THE JOINT, WATERSTOP IS NOT REQUIRED
  - MAXIMUM 50 FOOT SPACING.

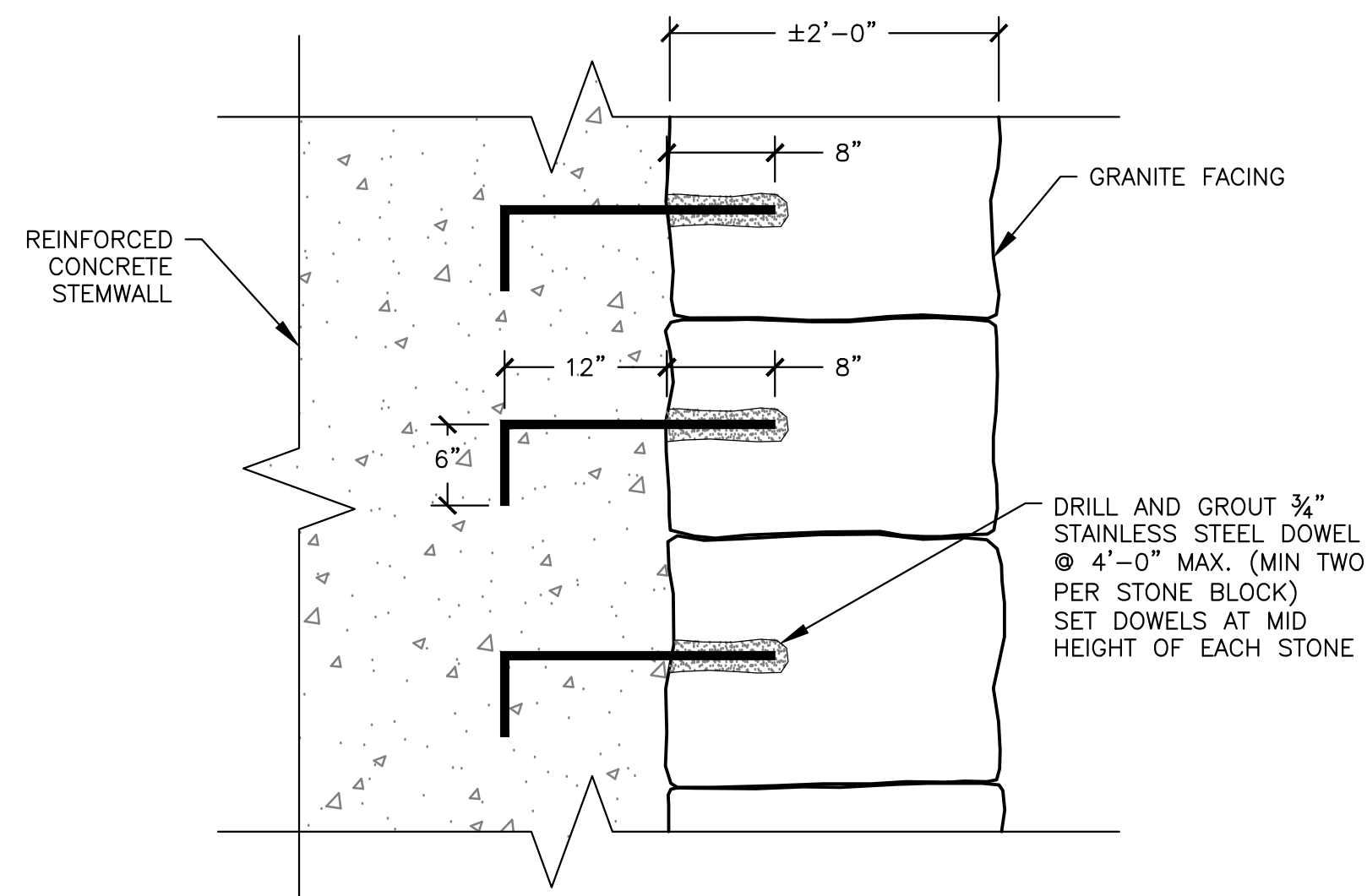
CONSTRUCTION JOINT DETAIL  
SCALE: N.T.S.



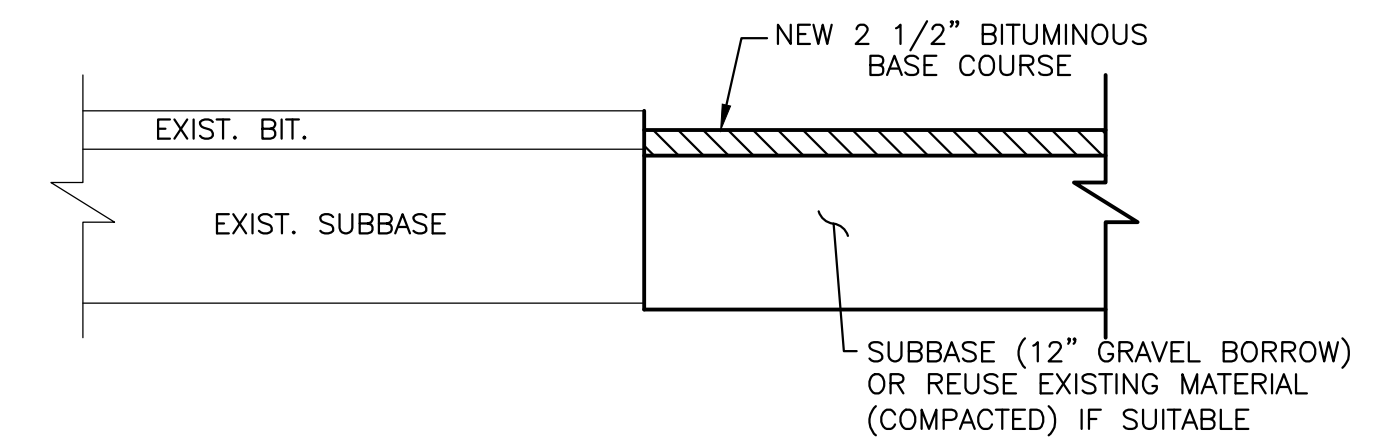
SEAWALL NORTH END DETAIL - PLAN  
SCALE: 1"=2'



FOOTING KEY DETAIL  
SCALE: N.T.S.



GRANITE FACING CONNECTION DETAIL  
SCALE: N.T.S.



PROPOSED PAVEMENT DETAIL  
SCALE: N.T.S.



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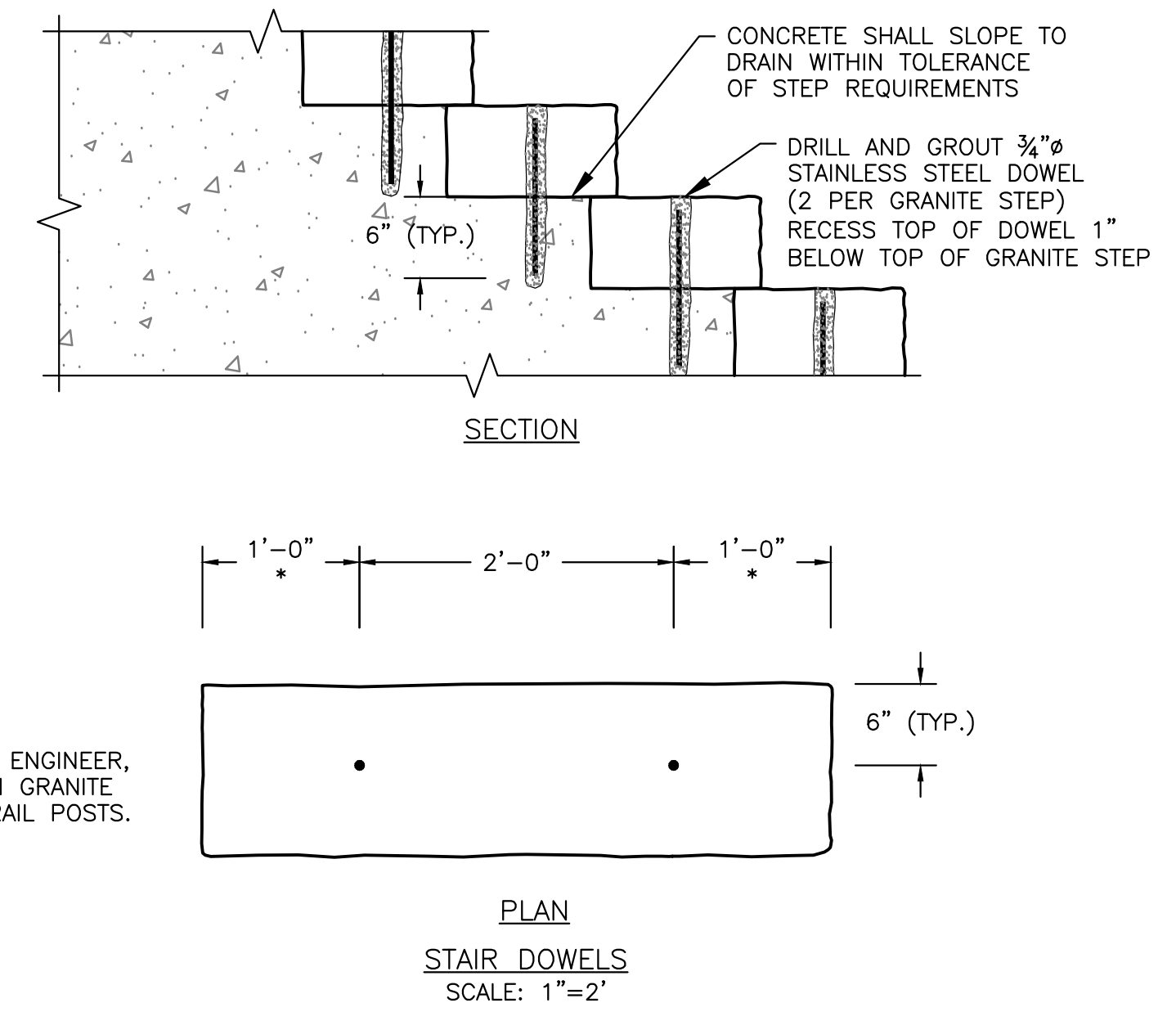
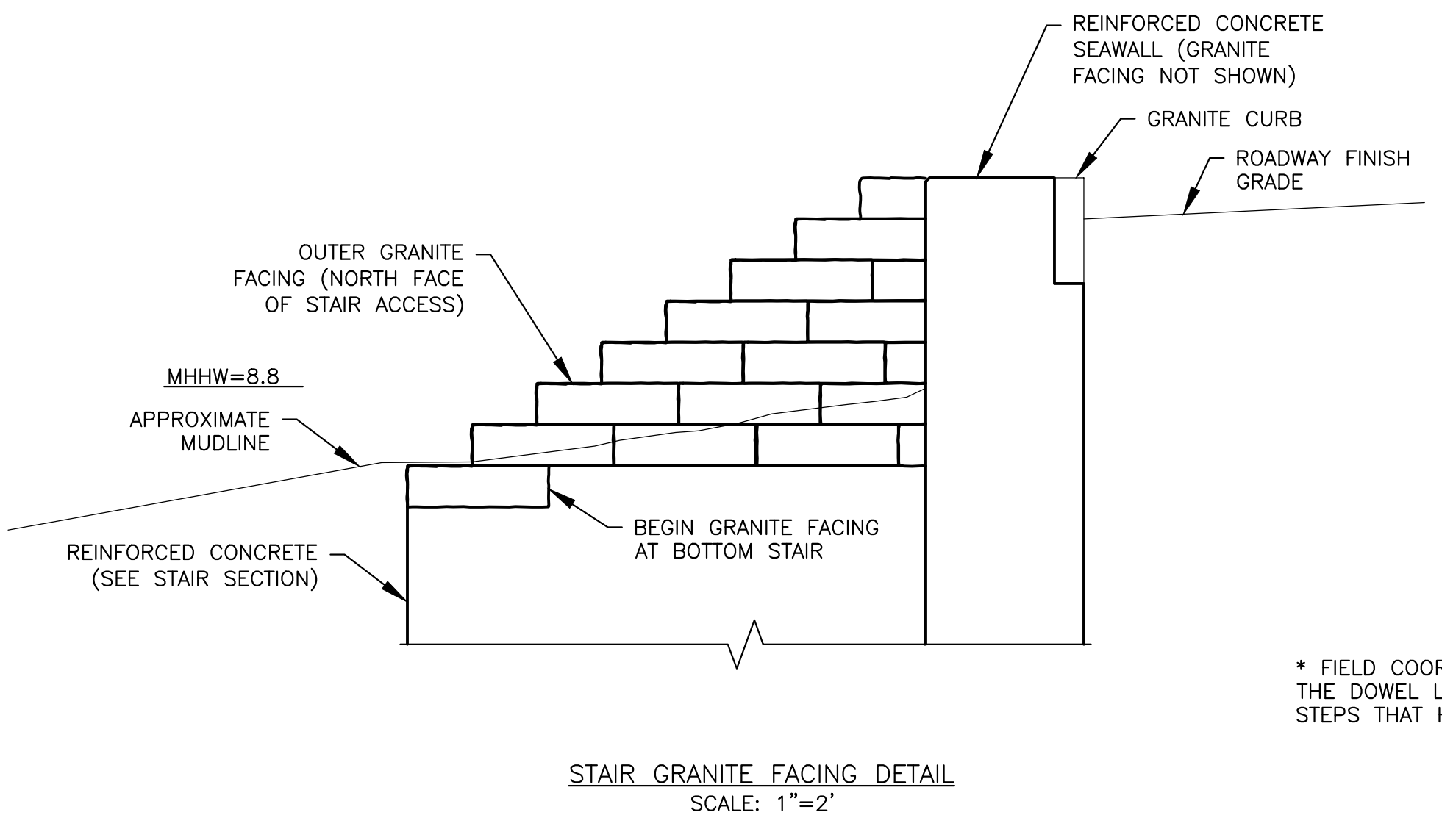
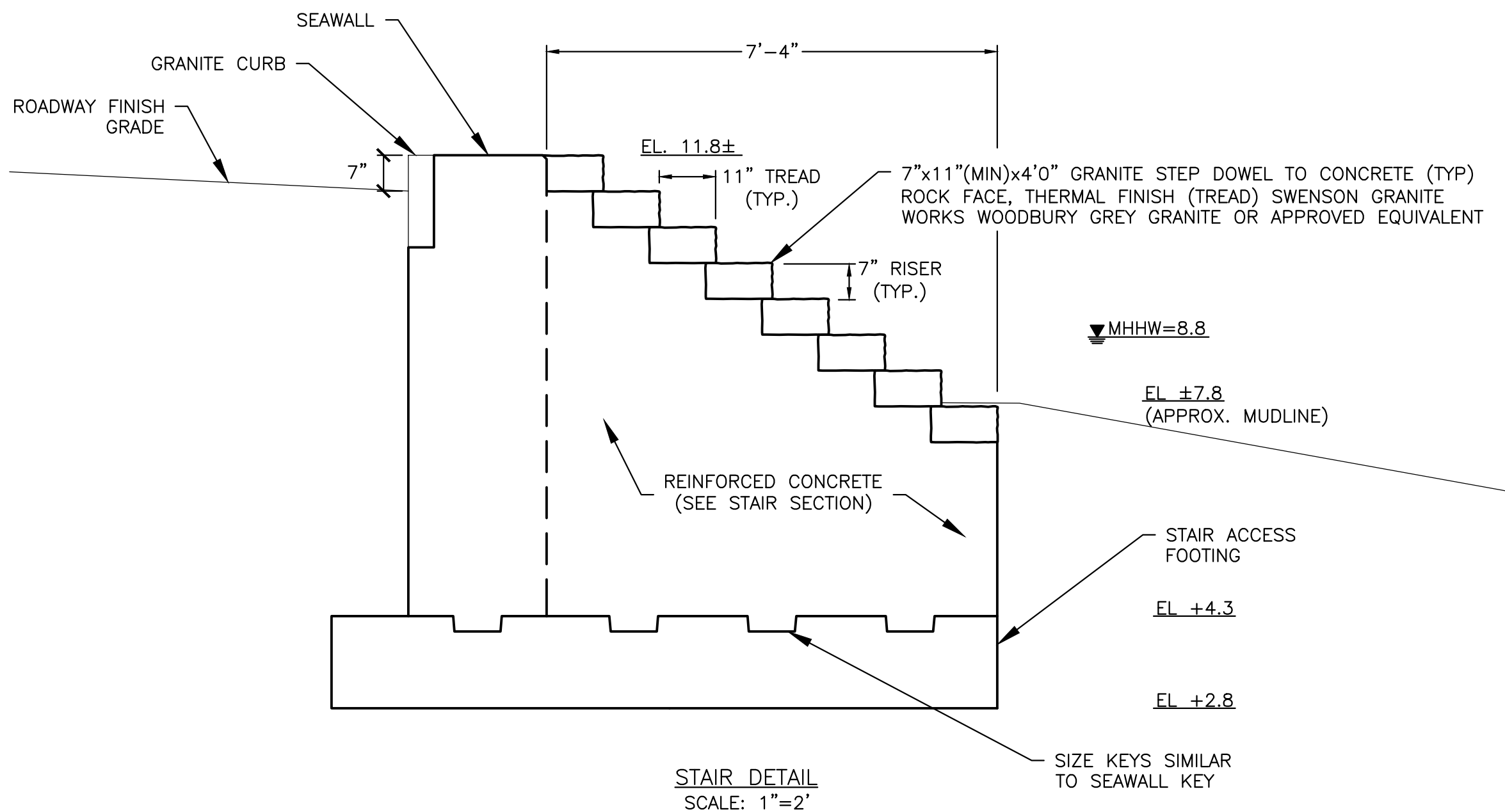
NHDES FILE #2012-00751  
CITY OF PORTSMOUTH, MECHANIC & PICKERING STREET

MECHANIC STREET SEAWALL  
REPLACEMENT DETAILS

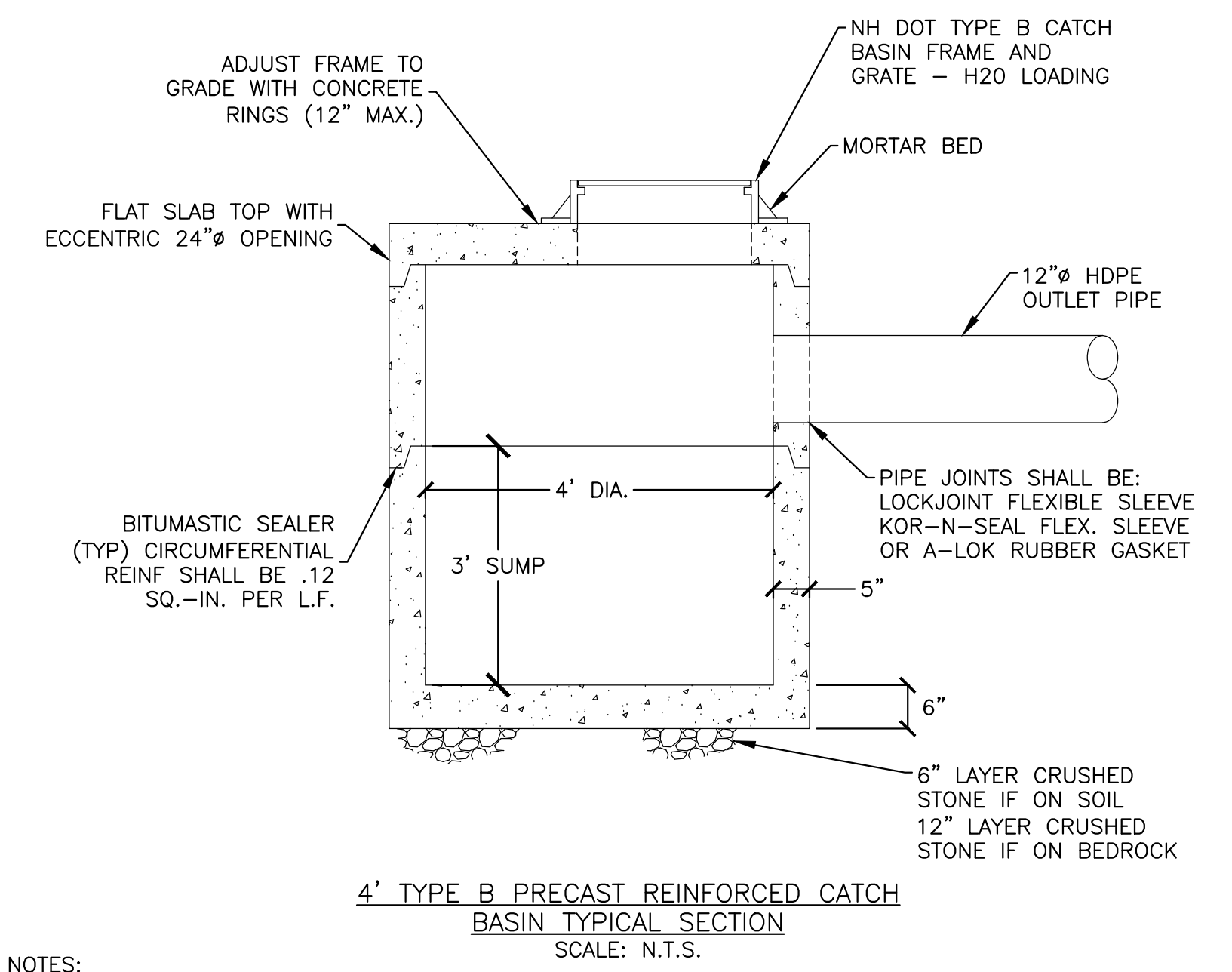
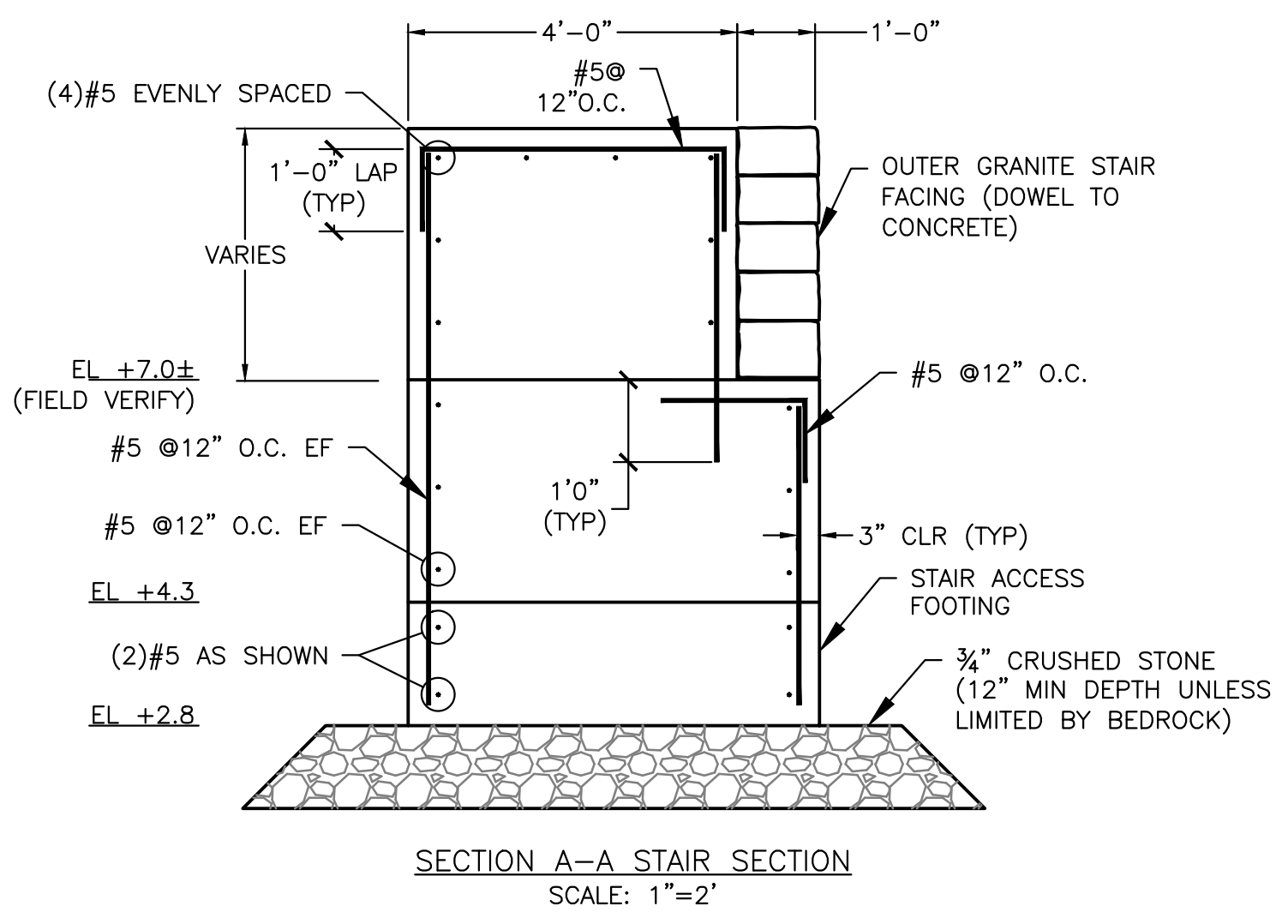
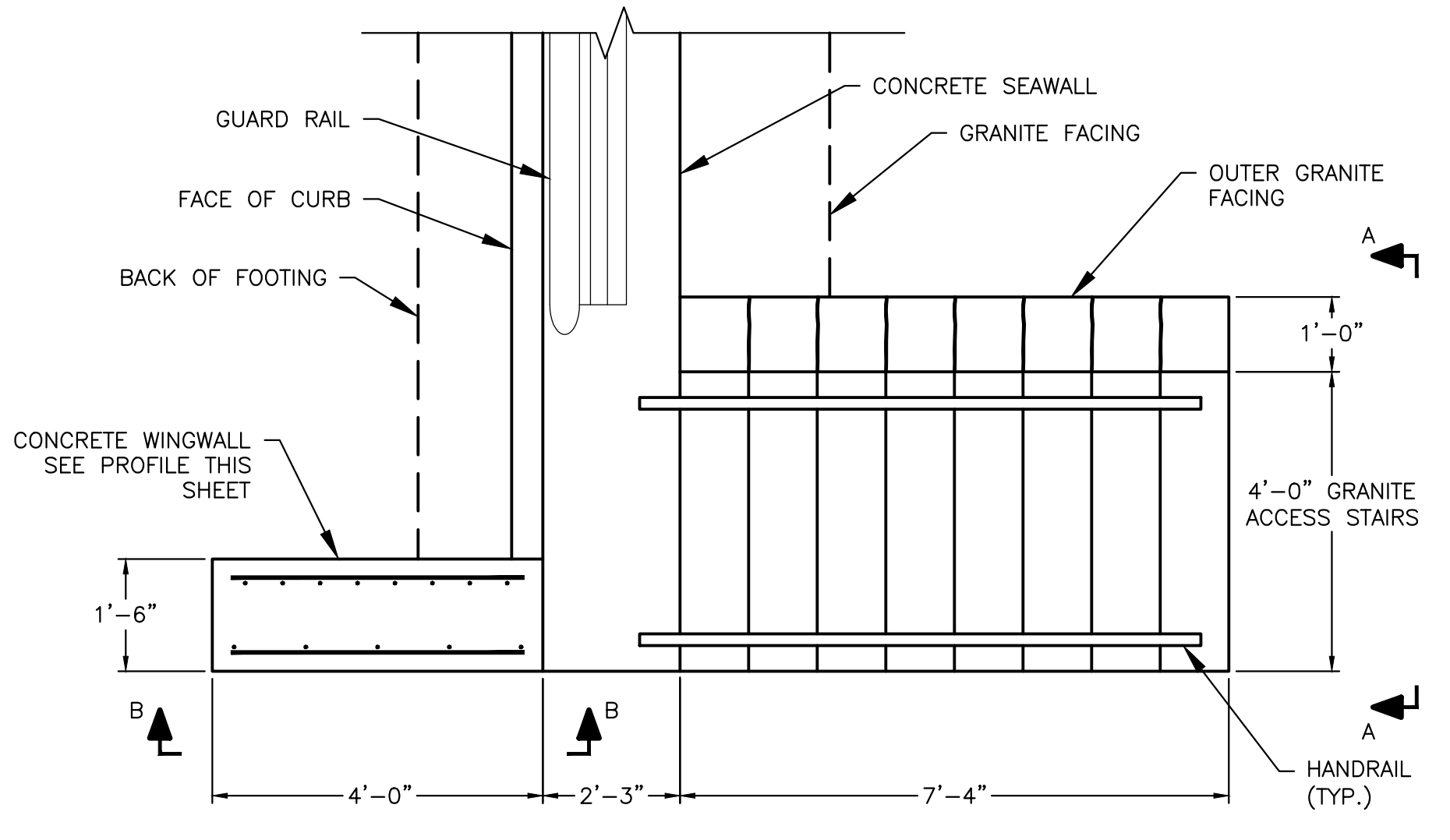
PREPARED BY: <b>Vine Associates</b> A DIVISION OF <b>GZA GeoEnvironmental, Inc.</b> Engineers and Scientists www.gza.com		PREPARED FOR: CITY OF PORTSMOUTH, NH	
PROJ MGR: CWC	DESIGNED BY: CWC	REVIEWED BY: RJM	CHECKED BY: JJZ
DATE: JANUARY 2013	PROJECT NO: 18.0170970.00	DRAWN BY: JJZ	SCALE: AS SHOWN
		REVISION NO:	DRAWING
		JANUARY 2013	7
		7 OF 9	



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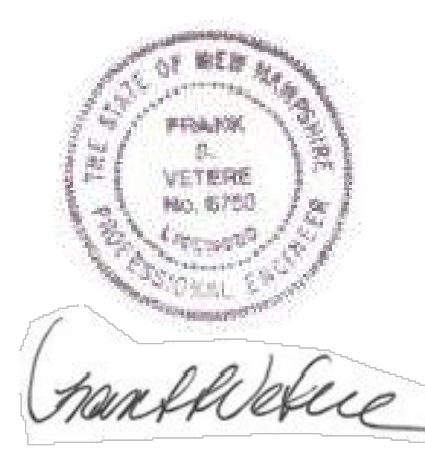
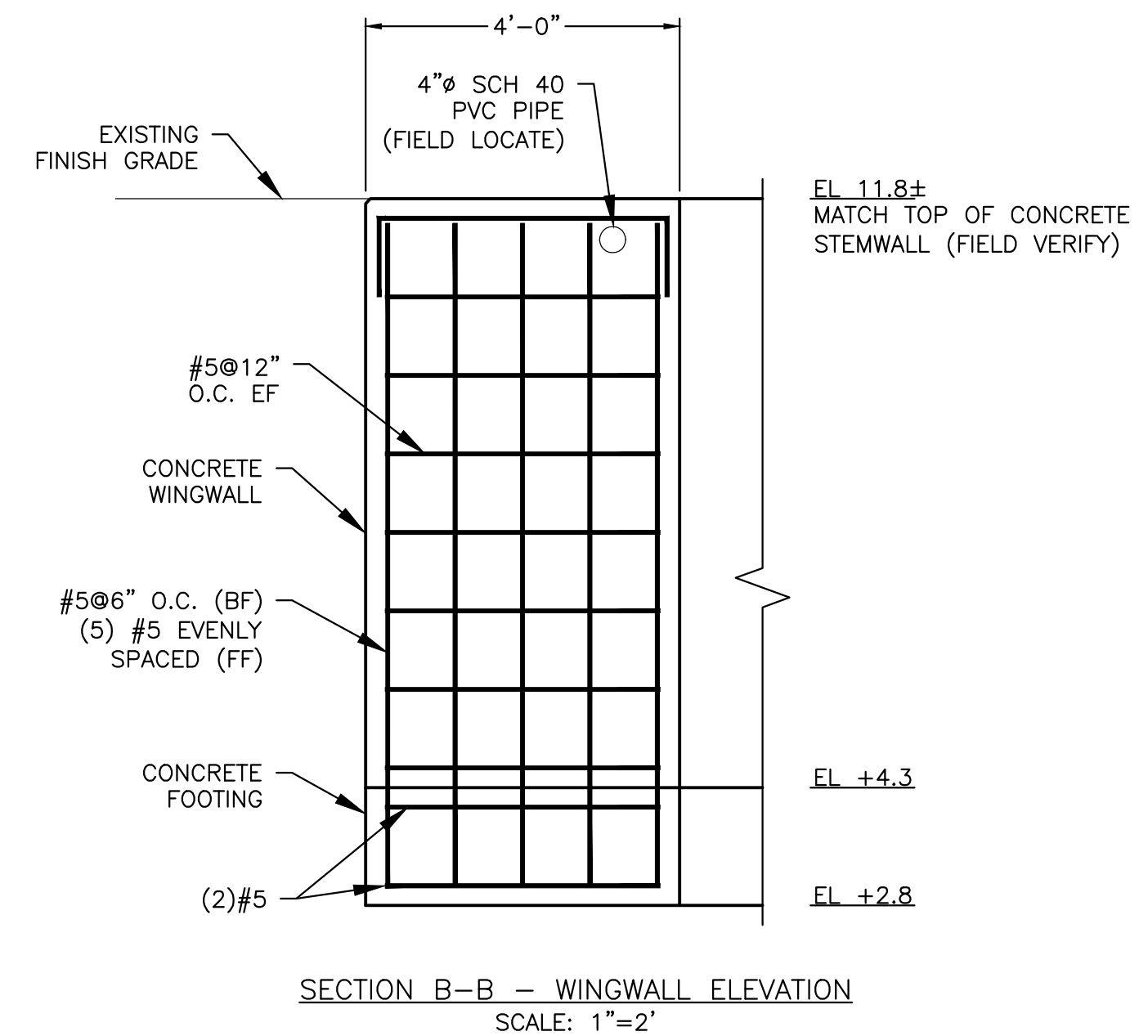
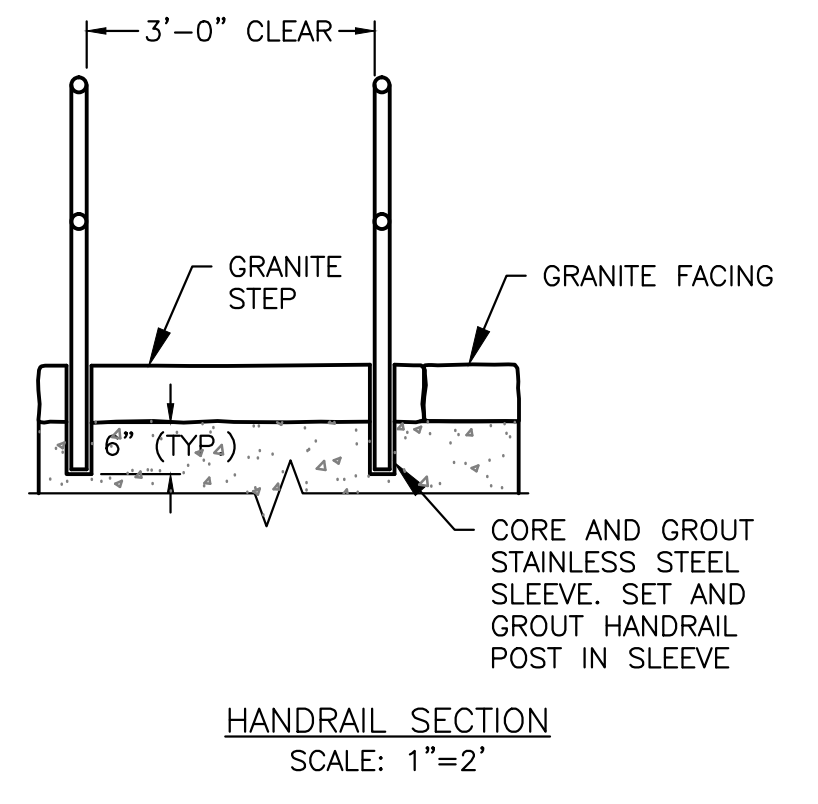
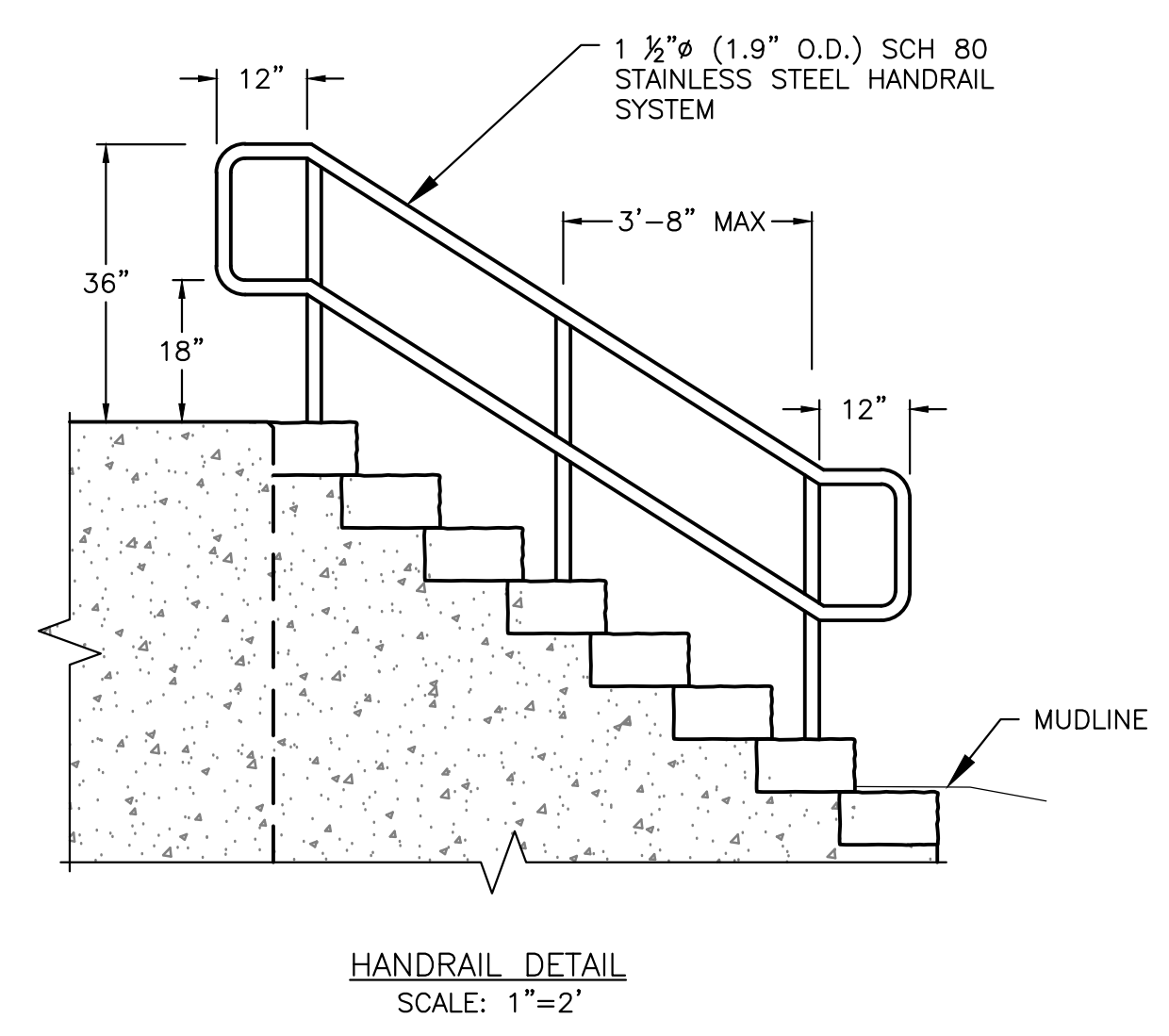


\* FIELD COORDINATE WITH ENGINEER, THE DOWEL LOCATIONS ON GRANITE STEPS THAT HAVE HAND RAIL POSTS.



NOTES:

1. ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 PSI). CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER L.F. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
2. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.
3. STEPS ARE NOT ALLOWED.
4. CATCH BASINS SHALL HAVE EJP FLOW DIRECTION CATCH BASIN LINER (EJP PRODUCT NUMBER 68896).
5. EACH CATCH BASIN SHALL BE FITTED WITH A SNORKEL. SNORKEL SHALL BE THE ELIMINATOR CATCH BASIN OIL AND DEBRIS TRAP MANUFACTURED BY GROUND WATER RESCUE, INC.. THE ELIMINATOR SHALL BE INSTALLED ON EACH OUT-FLOWING INVERT.



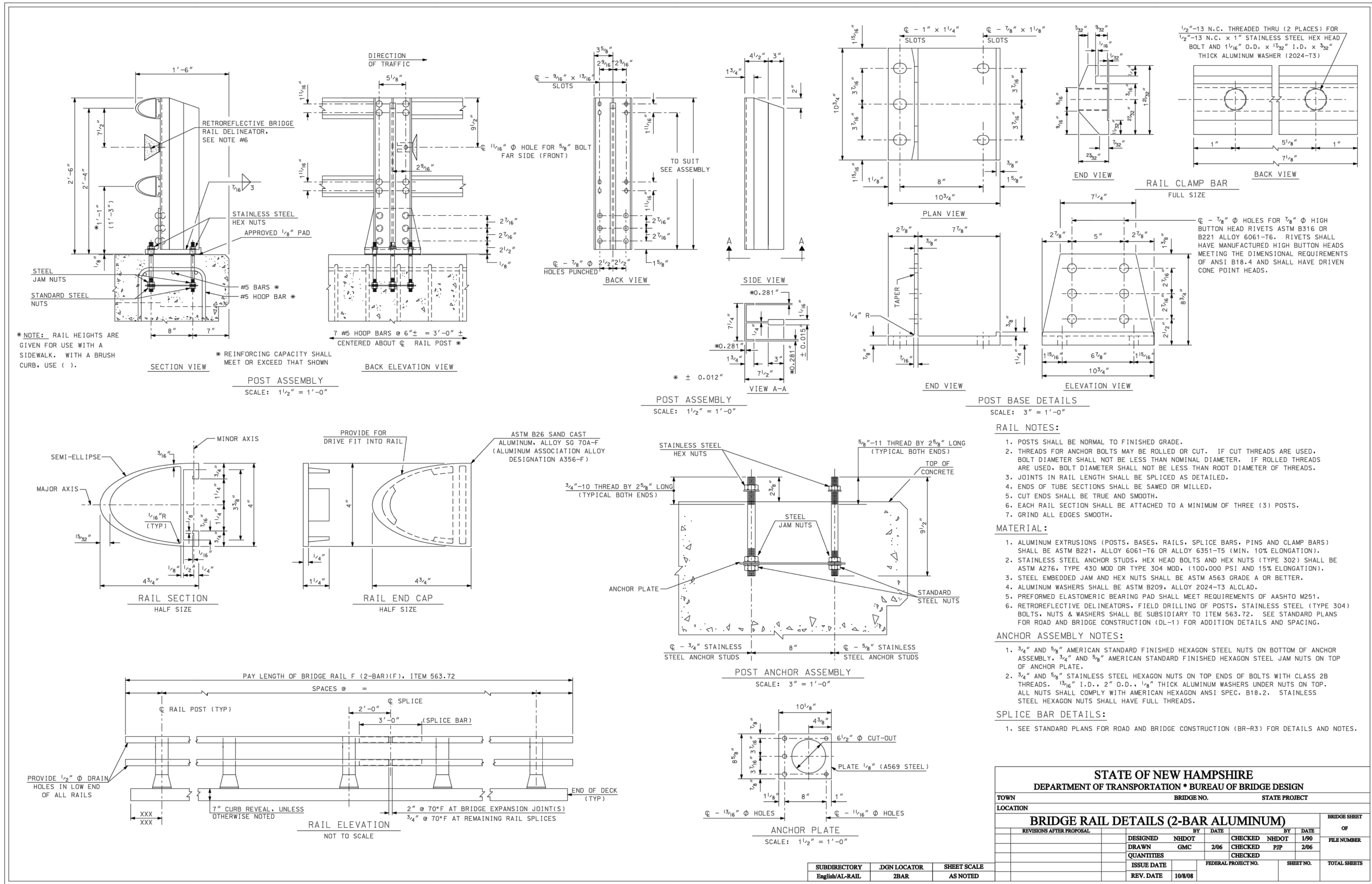
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NHDES FILE #2012-00751  
CITY OF PORTSMOUTH, MECHANIC & PICKERING STREET

MECHANIC STREET SEAWALL  
STAIR ACCESS AND MISCELLANEOUS DETAILS

PREPARED BY: Vine Associates a division of GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR: CITY OF PORTSMOUTH, NH
PROJ MGR: CWC DESIGNED BY: CWC DATE: JANUARY 2013	REVIEWED BY: RJM DRAWN BY: JJZ PROJECT NO. 18.0170970.00
CHECKED BY: JJZ SCALE: AS SHOWN JANUARY 2013	DRAWING NO. 8 SHEET NO. 8 OF 9





**MATERIAL MODIFICATION NOTE:**  
 1. STAINLESS STEEL SHALL BE TYPE 316.

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NHDES FILE #2012-00751  
 CITY OF PORTSMOUTH, MECHANIC & PICKERING STREET

MECHANIC STREET SEAWALL  
 NHDOT STANDARD, BRIDGE RAIL DETAILS  
 (2-BAR ALUMINUM)

PREPARED BY: Vine Associates & Scientists  
 PREPARED FOR: CITY OF PORTSMOUTH, NH

PROJ MGR: CWC	REVIEWED BY: RJM	CHECKED BY: JJZ	DRAWING
DESIGNED BY: CWC	DRAWN BY: JJZ	SCALE: AS SHOWN	9
DATE: JANUARY 2013	PROJECT NO. 18.0170970.00	REVISION NO. JANUARY 2013	

SHEET NO. 9 OF 9