

# TOWN OF BARNSTABLE, MASSACHUSETTS

## DEPARTMENT OF PUBLIC WORKS

### BISMORE PARK MARINA

# BULKHEAD REHABILITATION AND WATER LINE REPLACEMENT

## ISSUED FOR BID (REV 1 - 2/14/2025)

ISSUED FOR BID PURPOSES ONLY  
NOT FOR CONSTRUCTION

180 OCEAN STREET  
HYANNIS HARBOR  
BARNSTABLE, MASSACHUSETTS

Prepared for:  
TOWN OF BARNSTABLE, MA



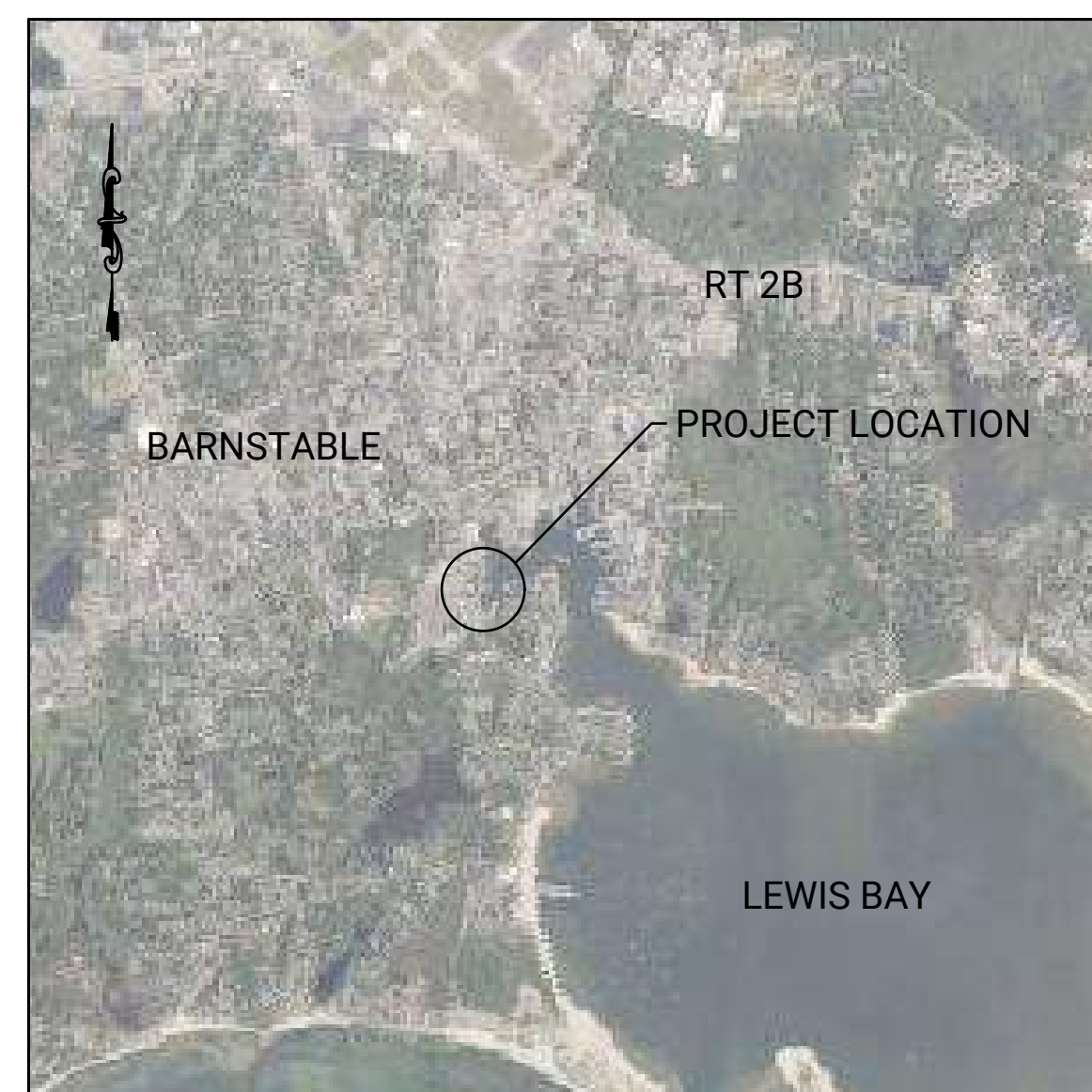
Prepared by:  
Foth Infrastructure & Environment, LLC



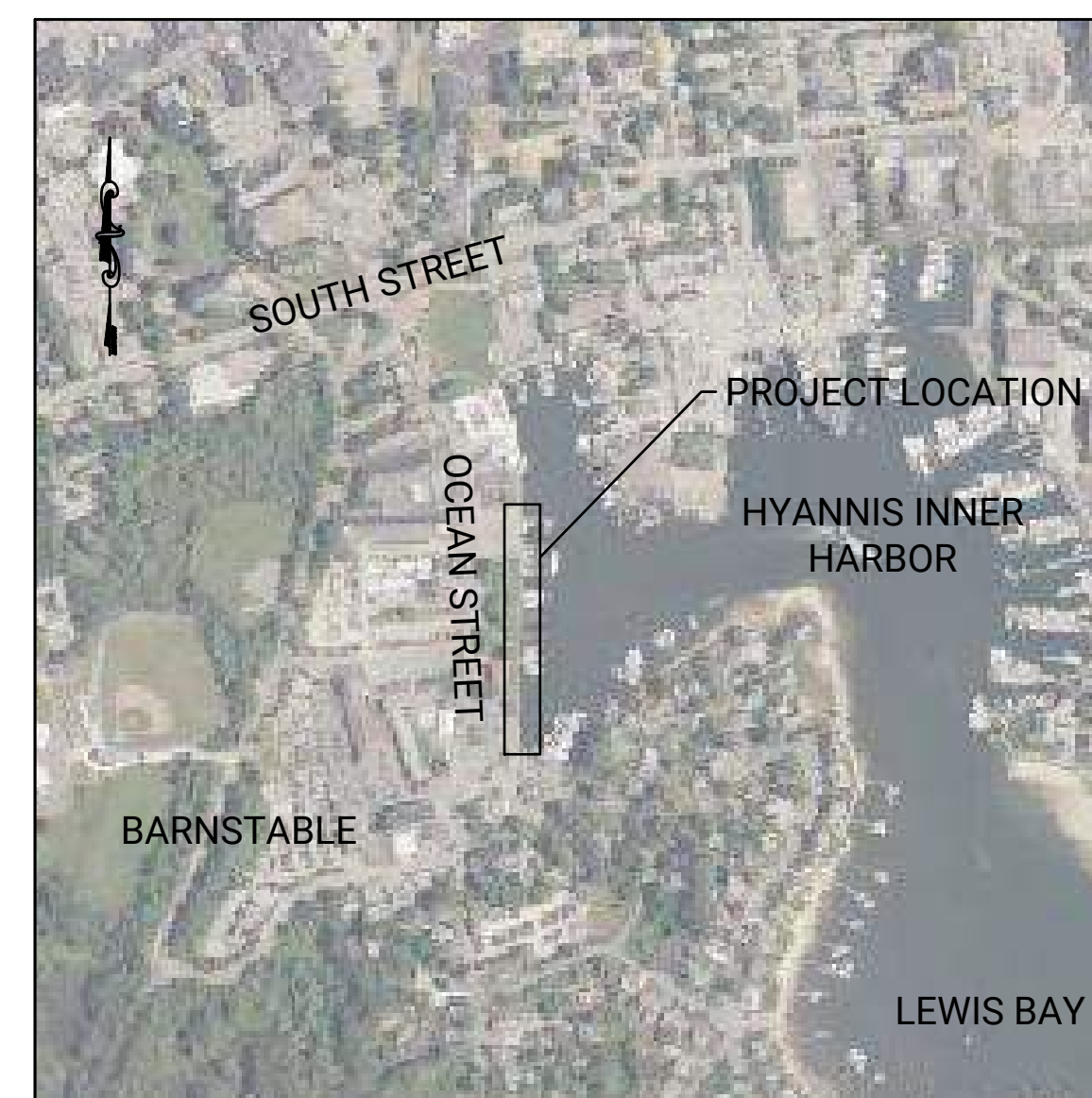
DRAWING INDEX	
SHEET NUMBER	TITLE
1	COVER SHEET
2	BULKHEAD REHABILITATION SITE PLAN
3	BULKHEAD REHABILITATION PROFILE & DETAILS
4	DETAILS

TOWN MANAGER  
MARK S. ELLS

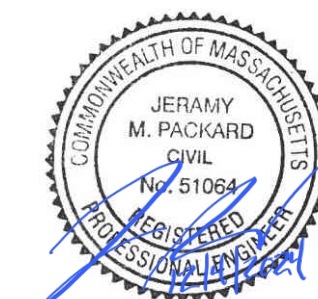
TOWN ENGINEER  
GRIFFIN BEAUDOIN, P.E.



VICINITY MAP

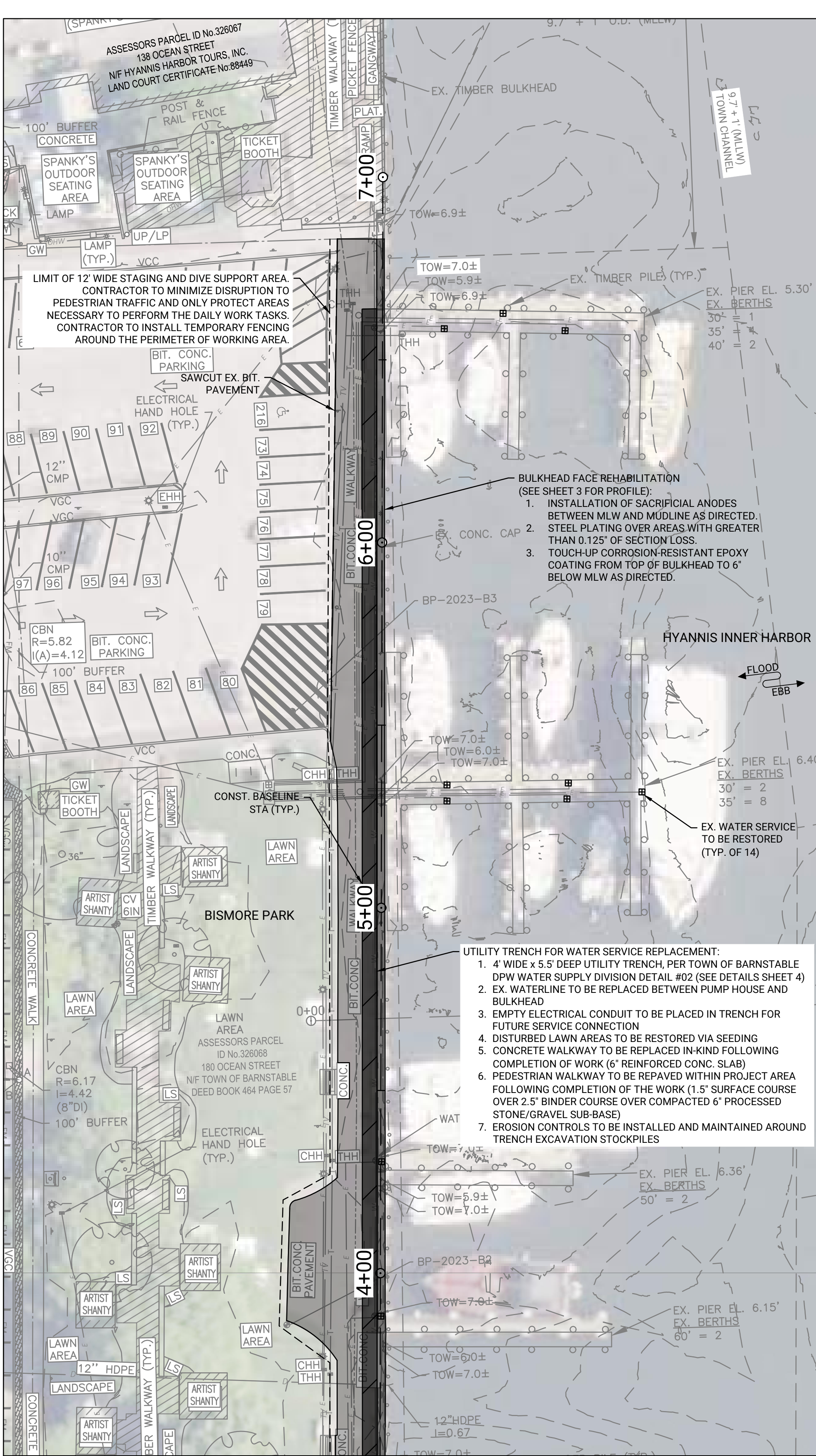
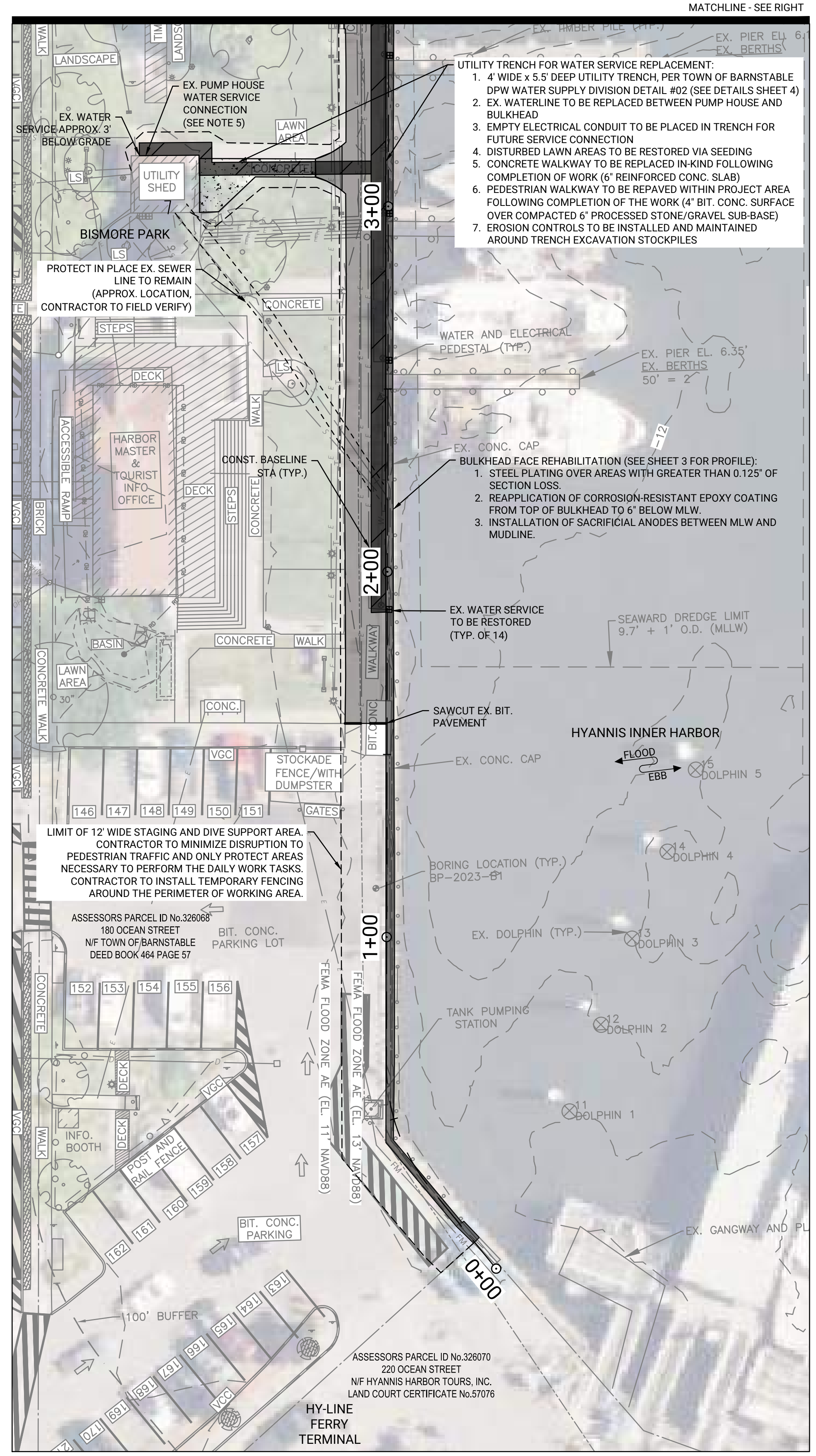
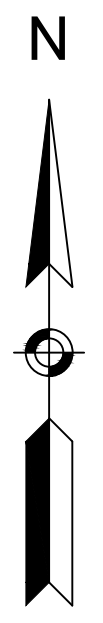


LOCATION MAP



SHEET TITLE
COVER SHEET
SHEET NUMBER
1





**SHEETPILE BULKHEAD REPAIR TABLE**

REPAIR ORDER	REPAIR	DESCRIPTION
1	SHEETPILE 3' INTERLOCK WELD	<ol style="list-style-type: none"> <li>CLEAN INTERLOCK AREA TO BE WELDED FROM MARINE GROWTH AND COATING USING A WIRE BRUSH WITH VACUUM SYSTEM OR SIMILAR.</li> <li>APPLY 5/16" FILLET WELD FROM THE TOP OF THE SHEET 3' DOWN AS SHOWN IN DETAIL 2 ON SHEET 3.</li> <li>COAT THE COMPLETED WELD AND SURROUNDING CLEANED AREAS WITH BAR RUST 235 OR SIMILAR.</li> </ol>
2	ANODE INSTALLATION	<ol style="list-style-type: none"> <li>CONTRACTOR SHALL INSTALL ANODES FOLLOWING MANUFACTURER INSTALLATION RECOMMENDATIONS.</li> <li>ANODE STRAPS TO BE WELDED TO THE FACE OF THE BULKHEAD USING A 5/16" WELD ON 3 SIDES. SEE DETAIL 1 ON SHEET 3.</li> <li>UNDERWATER WELDING SHALL FOLLOW THE APPLICABLE SECTIONS OF AWS D3.6M, SPECIFICATION FOR UNDERWATER WELDING.</li> <li>ALL STRAPS AND CLEANED AREAS TO BE COATED WITH CARBOLINE A788 HIGH BUILD EPOXY OR SIMILAR FOLLOWING INSTALLATION.</li> </ol>
3	BULKHEAD THICKNESS IDENTIFICATION	<ol style="list-style-type: none"> <li>ULTRASONIC THICKNESS READINGS TO BE COLLECTED ALONG EACH SHEET AT MIDWATER, IN THE SPLASH ZONE, AND ABOVE HIGH TIDE LINE TO DETERMINE SHEET PILE THICKNESS AT EACH MONITORING LOCATION.</li> <li>CONTRACTOR TO PROVIDE ALL READINGS IN TABLE FORMAT FOR IDENTIFICATION OF AREAS OF THE BULKHEAD WITH GREATER THAN 1/8" AND 1/16" OF SECTION LOSS REQUIRING STEEL PLATING AND RECOATING REPAIRS.</li> </ol>
4	STEEL PLATE REPAIRS TO BULKHEAD	<ol style="list-style-type: none"> <li>CLEAN AROUND AREA TO BE PATCHED FROM MARINE GROWTH AND UNSOUND COATING USING A WIRE BRUSH WITH VACUUM SYSTEM OR SIMILAR.</li> <li>CUT THE 1/4" THICK ASTM A588 GR. 50 PLATE 6" LARGER THAN FIELD MEASURED RUST AND BEND PLATE TO FIT OVER SHEET PILE.</li> <li>COAT THE PLATE WITH BAR RUST 235 OR SIMILAR ALL REPAIRS.</li> <li>CENTER THE PLATE ON THE REPAIR AREA AND APPLY 3/16" WELD ALL AROUND.</li> <li>COAT THE WELD AND EXPOSED AREAS WITH CARBOLINE A788 OR SIMILAR FOR ALL REPAIR AREAS.</li> <li>UNDERWATER WELDING SHALL FOLLOW THE APPLICABLE SECTIONS OF AWS D3.6M, SPECIFICATION FOR UNDERWATER WELDING.</li> </ol>
5	SHEETPILE BULKHEAD RECOATING	<ol style="list-style-type: none"> <li>CLEAN AREAS OF THE EXISTING STEEL BULKHEAD BETWEEN THE TOP OF THE BULKHEAD (+5.5' NAVD88) TO 6" BELOW MLW (+2.5' NAVD88) FROM MARINE GROWTH AND UNSOUND COATING USING A WIRE BRUSH WITH VACUUM SYSTEM OR SIMILAR TO EXPOSE BARE STEEL, AS DIRECTED BY OWNER OR ENGINEER AND RECOAT WITH APPLICABLE PRODUCT.</li> <li>STANDARD STEEL RECOATING TREATMENT SHALL BE APPLIED BETWEEN THE TOP OF THE BULKHEAD (+5.5' NAVD88) AND 2' ABOVE MLW (+0' NAVD88) AS DIRECTED USING BAR RUST 235 OR SIMILAR FOR COATING BY DIVERS ALONG THE ENTIRE LENGTH OF THE BULKHEAD.</li> <li>SPLASH ZONE STEEL RECOATING TREATMENT SHALL BE APPLIED BETWEEN 2' ABOVE MLW (+0' NAVD88) AND 6" BELOW MLW (+2.5' NAVD88) AS DIRECTED USING CARBOLINE A788 HIGH BUILD EPOXY OR SIMILAR FOR COATING BY DIVERS.</li> </ol>

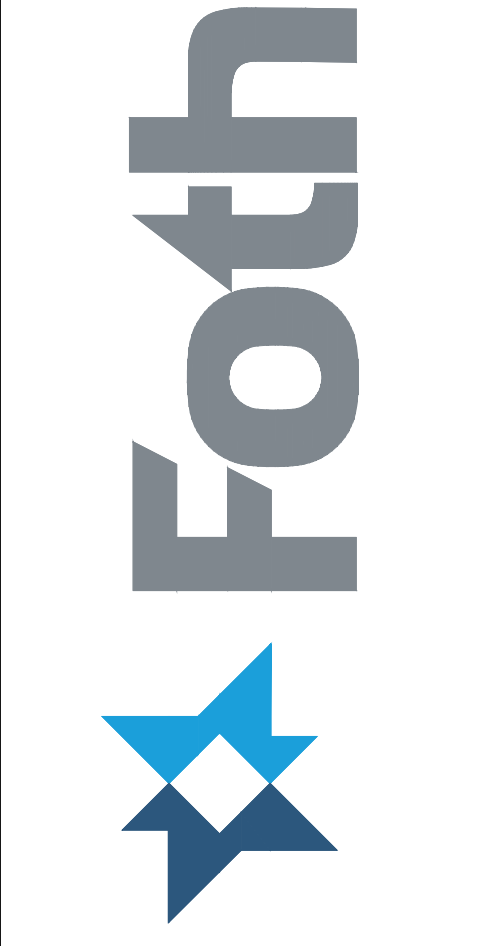
DATUM OFFSETS	
MLLW	NAVD88
4.79	2.54
3.84	1.59
3.50	1.25
2.25	0.00
0.26	-1.99
0	-2.25

OFFSETS TAKEN FROM VDATUM 4.4 ONLINE ON 03/25/2022 FOR 41.6496N, -70.2789W

- NOTES:**
- CONTRACTOR TO INSTALL EPOXY COATINGS AND CATHODIC PROTECTION SYSTEMS PER THE MANUFACTURERS INSTALLATION RECOMMENDATIONS.
  - CONTRACTOR REQUIRED TO USE A WIRE BRUSH WITH VACUUM SYSTEM FOR MARINE GROWTH AND COATING REMOVAL. PROPOSED EQUIPMENT MUST BE SUBMITTED TO THE BARNSTABLE CONSERVATION COMMISSION 4 WEEKS PRIOR TO THE WORK FOR DETERMINATION IF A DEBRIS BOOM WILL BE REQUIRED.
  - CONTRACTOR TO FOLLOW ALL CONDITIONS OUTLINED IN THE BARNSTABLE CONSERVATION COMMISSION ORDER OF CONDITIONS, FILE NO. SE 003-6206.
  - CONTRACTOR IS REQUIRED TO NOTIFY DIGSAFE AT LEAST 72 HOURS PRIOR TO THE START OF ANY EXCAVATION OR TRENCHING WORK. CONTRACTOR IS SOLELY RESPONSIBLE FOR THE REPLACEMENT OF ANY DAMAGES TO EXISTING UTILITIES.
  - CONTRACTOR TO FIELD VERIFY EXISTING UTILITY CONNECTION AT THE PUMP HOUSE AND PIERS. FOLLOWING FIELD VERIFICATION, CONTRACTOR TO SUBMIT UTILITY SERVICE REPLACEMENT PLAN FROM PUMP HOUSE TO PIER FOR ENGINEERS REVIEW.
  - CONTRACTOR TO VERIFY, LOCATE, AND PROTECT EXISTING UTILITIES AND SITE FEATURES TO REMAIN. DAMAGE TO EXISTING UTILITIES AND SITE FEATURES TO REMAIN SHALL BE REPLACED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE TOWN.
  - THE PRELIMINARY DATA SHOWN IS FROM FOTH SURVEYS ON 4/14/2022 (MULTIBEAM) AND 5/3/2022 (TOPO AND LEAD LINES).
  - GROUND SURVEY PERFORMED BY MERRILL ENGINEERS AND LAND SURVEYORS DURING JUNE OF 2022.
  - SOUNDINGS SHOWN ARE FROM THE 10X10 AVG DATA SET FOR MAPPING AND REFER TO DEPTHS BELOW THE MLLW DATUM.
  - CONTOURS SHOWN ARE FROM THE 1X1 AVG DATA SET.
  - PROJECT SITE IS LOCATED WITHIN FEMA FLOOD ZONE AE (EL. 11), ZONE AE (EL. 12), AND ZONE AE (EL. 13) OF THE FLOOD INSURANCE RATE MAP, AS SHOWN ON COMMUNITY MAP No. 25001C0569.J, WHICH BEARS AN EFFECTIVE DATE OF JULY 16, 2014.
  - THE INFORMATION DEPICTED ON THIS PLAN REPRESENTS THE RESULTS OF HYDROGRAPHIC AND TOPOGRAPHIC SURVEYS PERFORMED ON THE DATES SHOWN, AND CAN ONLY BE CONSIDERED AS INDICATING THE SEALED CONDITIONS AT THAT TIME. INTERPOLATED INFORMATION FROM BETWEEN SOUNDING RUNS IS NOT GUARANTEED. SHOALS, OBSTRUCTIONS OR OTHER DIFFERING CONDITIONS MAY EXIST BETWEEN THESE RUNS. NO SURVEYS WERE CONDUCTED TO LOCATE PROPERTY LINES, CHANNEL LIMITS, EASEMENTS, UTILITIES, GEOTECHNICAL FEATURES, SHORELINES, STRUCTURES, HABITATS OR ANY OTHER PHYSICAL FEATURES RELATING TO THE PROJECT SITE, NOR DOES FOTH WARRANT THE EXISTENCE OR LOCATION OF SAID PHYSICAL FEATURES.
  - ALL WORK ACTIVITIES TO BE COORDINATED WITH TOWN OF BARNSTABLE HARBORMASTER.



POSSESSION AND USE OF THE MATERIAL CONTAINED ON THESE DRAWINGS IS GRANTED ONLY IN CONNECTION WITH ITS USE AS IT RELATES TO THE TITLED PROJECT. ANY OTHER USE, REPRODUCTION OR DISCLOSURE OF THE INFORMATION CONTAINED HEREON IS EXPRESSLY PROHIBITED WITHOUT THE WRITTEN CONSENT OF FOTH.  
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**TOWN OF BARNSTABLE  
BISMORE PARK MARINA, HYANNIS, MA  
BULKHEAD REHABILITATION AND  
WATER LINE REPLACEMENT**

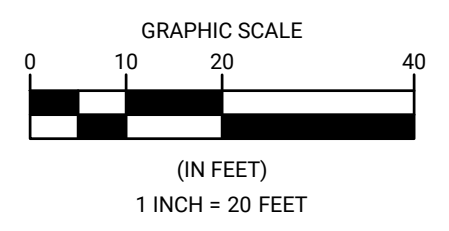
NO.	DATE	BY	DESCRIPTION	REVISED REPAIR TABLE NOTES
1	2/14/25	BPF		

DATE OF PREPARATION		
BY	DATE	
JAH/MEC	4/14/2022	
BPF	11/21/2024	
JMP	11/2024	
JMP	11/2024	

**BULKHEAD REHABILITATION SITE PLAN**

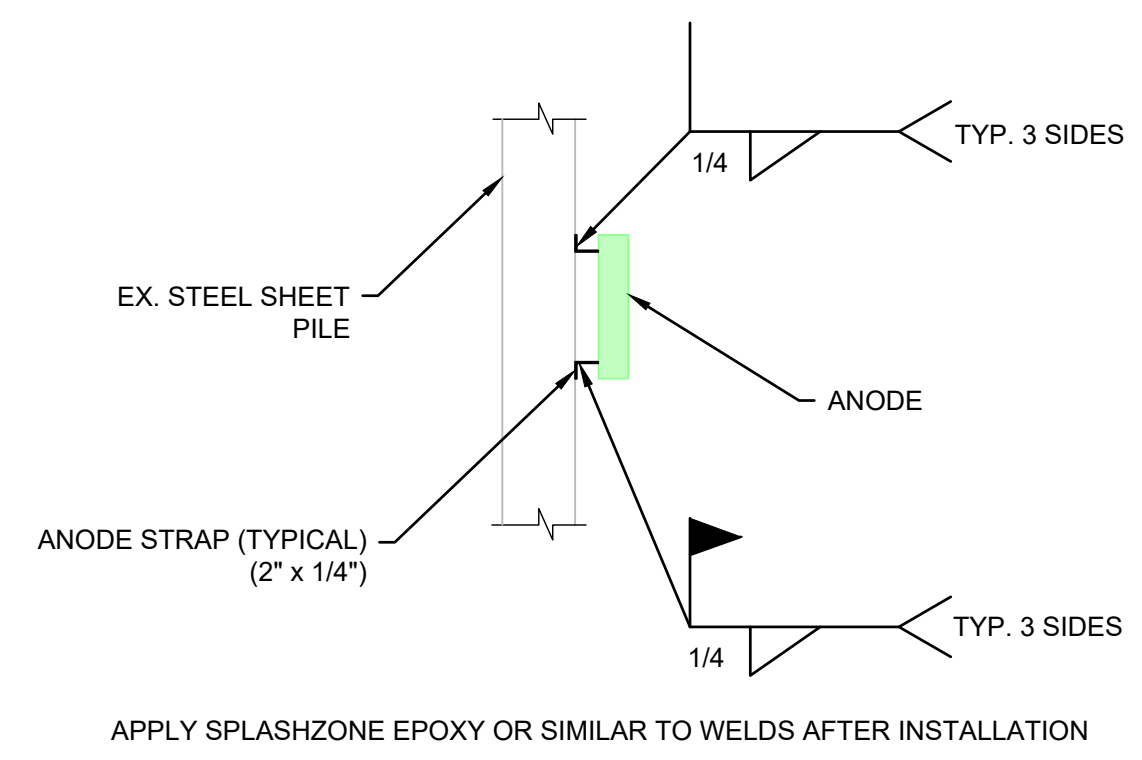
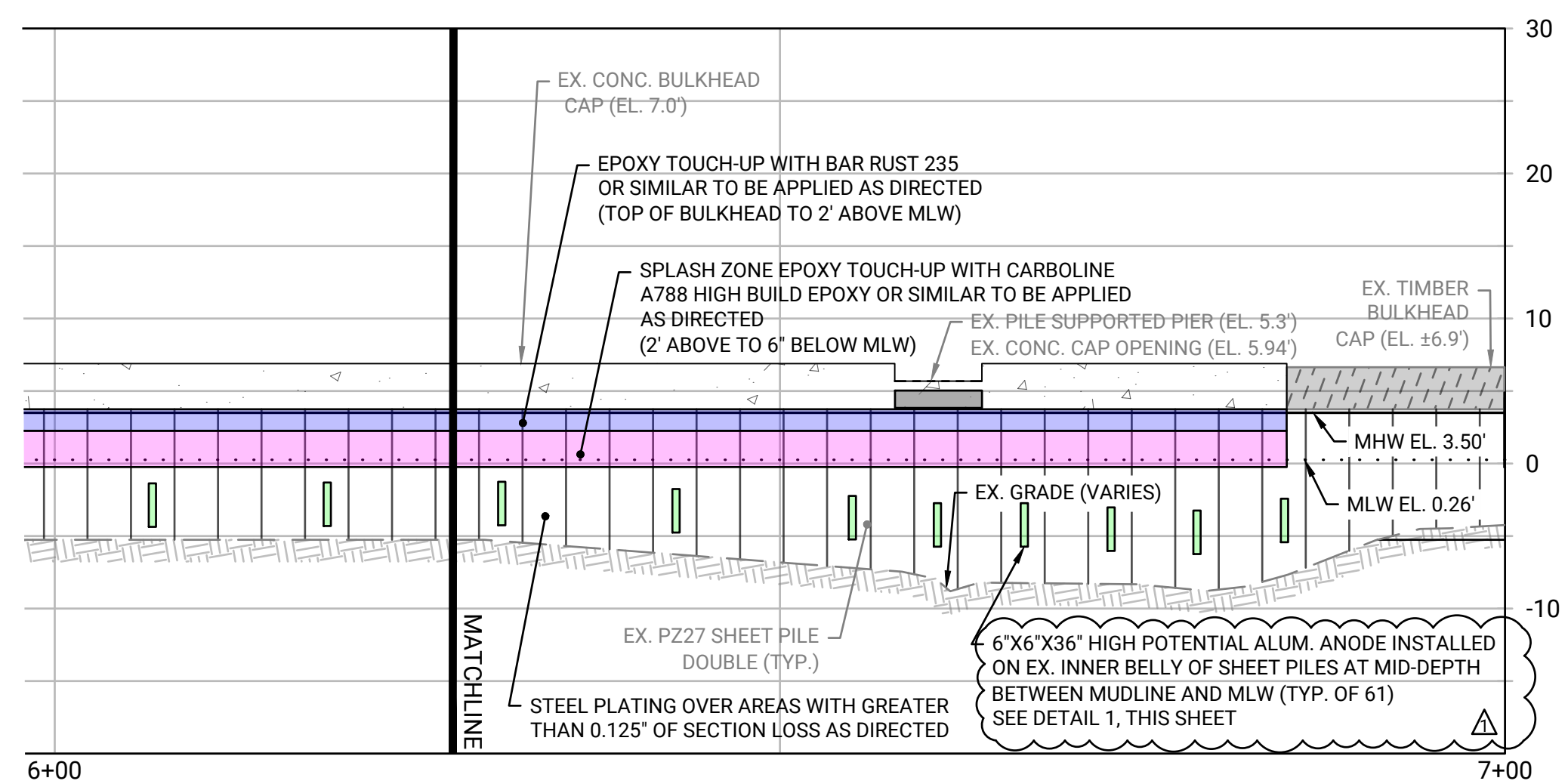
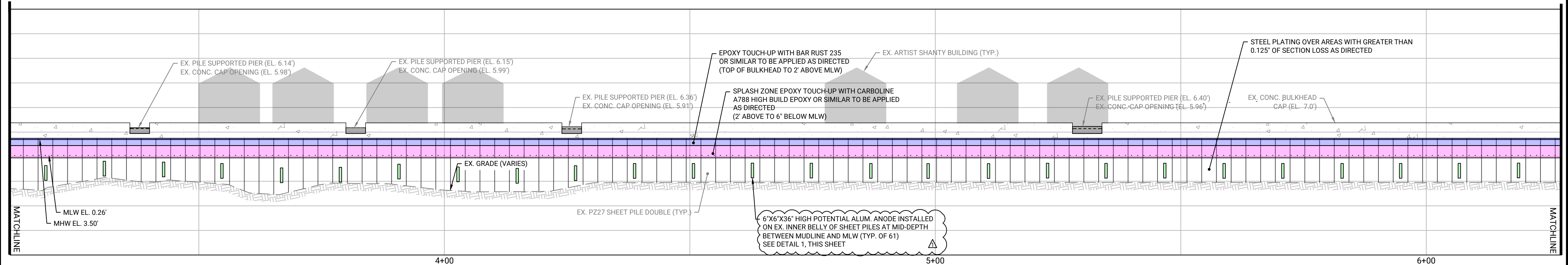
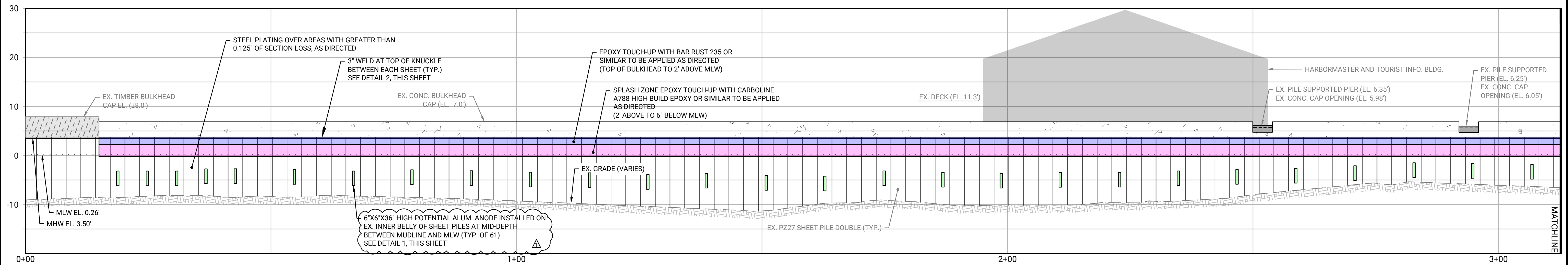
ISSUANCE:  
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PROJECT NO: 22B008.00  
SHEET NUMBER

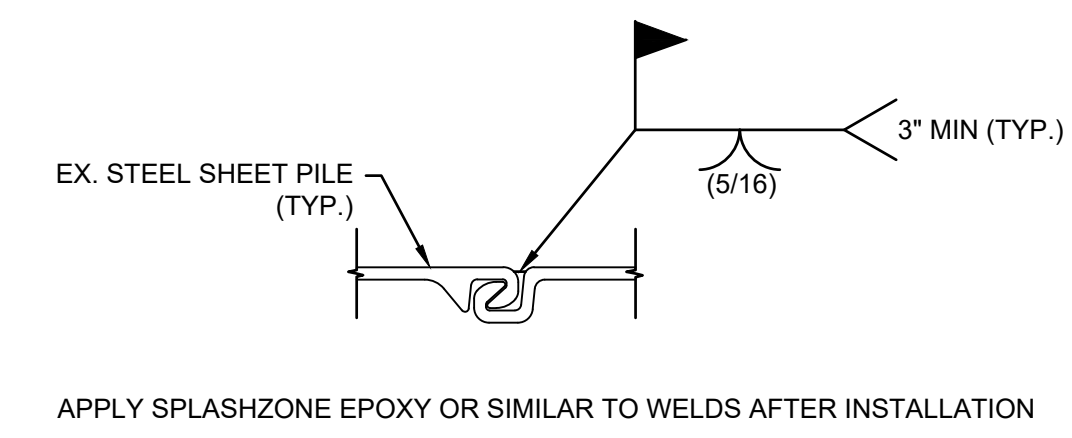




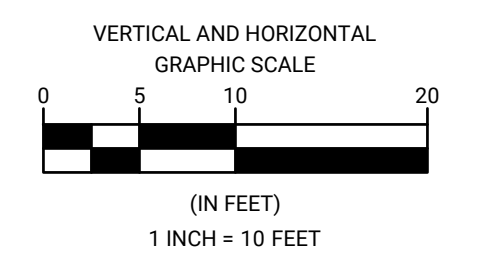
TOWN OF BARNSTABLE  
BISMORE PARK MARINA, HYANNIS, MA  
BULKHEAD REHABILITATION AND  
WATER LINE REPLACEMENT



1 OFFSET MOUNT ANODE INSTALLATION - TYPICAL  
SCALE: NTS



2 3" INTERLOCK WELD - TYPICAL  
SCALE: NTS



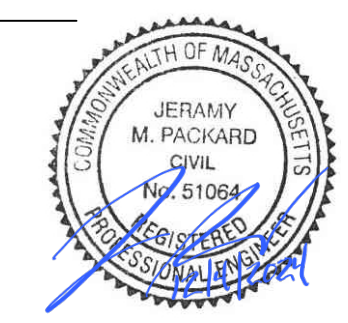
REVISIONS		DESCRIPTION	DATE	BY
NO.	DATE	DESCRIPTION	DATE	BY
1	2/14/2025	NUMBER OF ANODES RECONCILED TO REFLECT 61 TOTAL		BPF

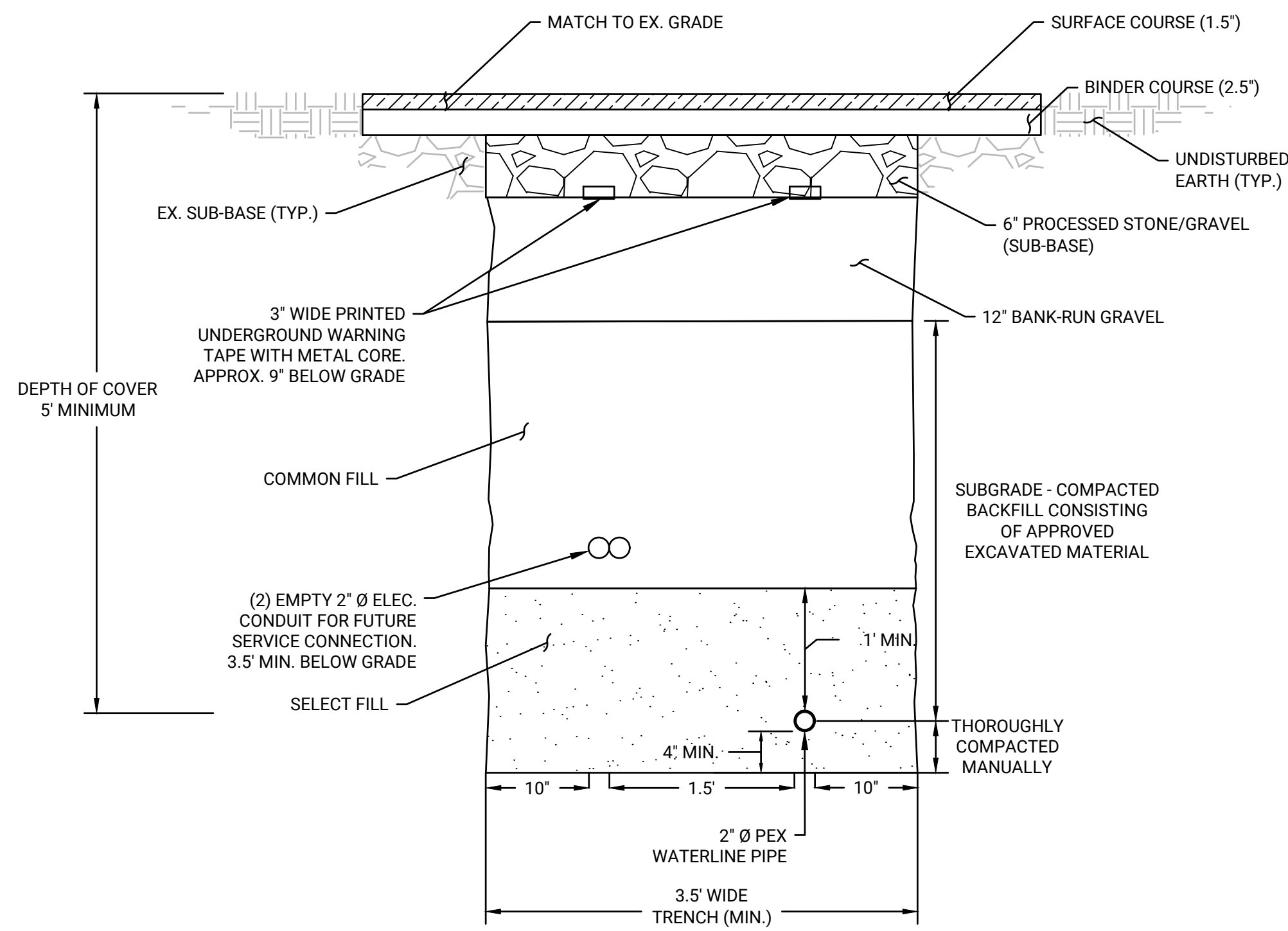
DATE OF PREPARATION		
BY	DATE	
SURVEYED	JAH/ MEC	4/14/2022
DRAWN	BPF	11/21/2024
DESIGNED	JMP	11/2024
CHECKED	JMP	11/2024

SHEET TITLE:  
**BULKHEAD REHABILITATION PROFILE & DETAILS**

ISSUANCE:  
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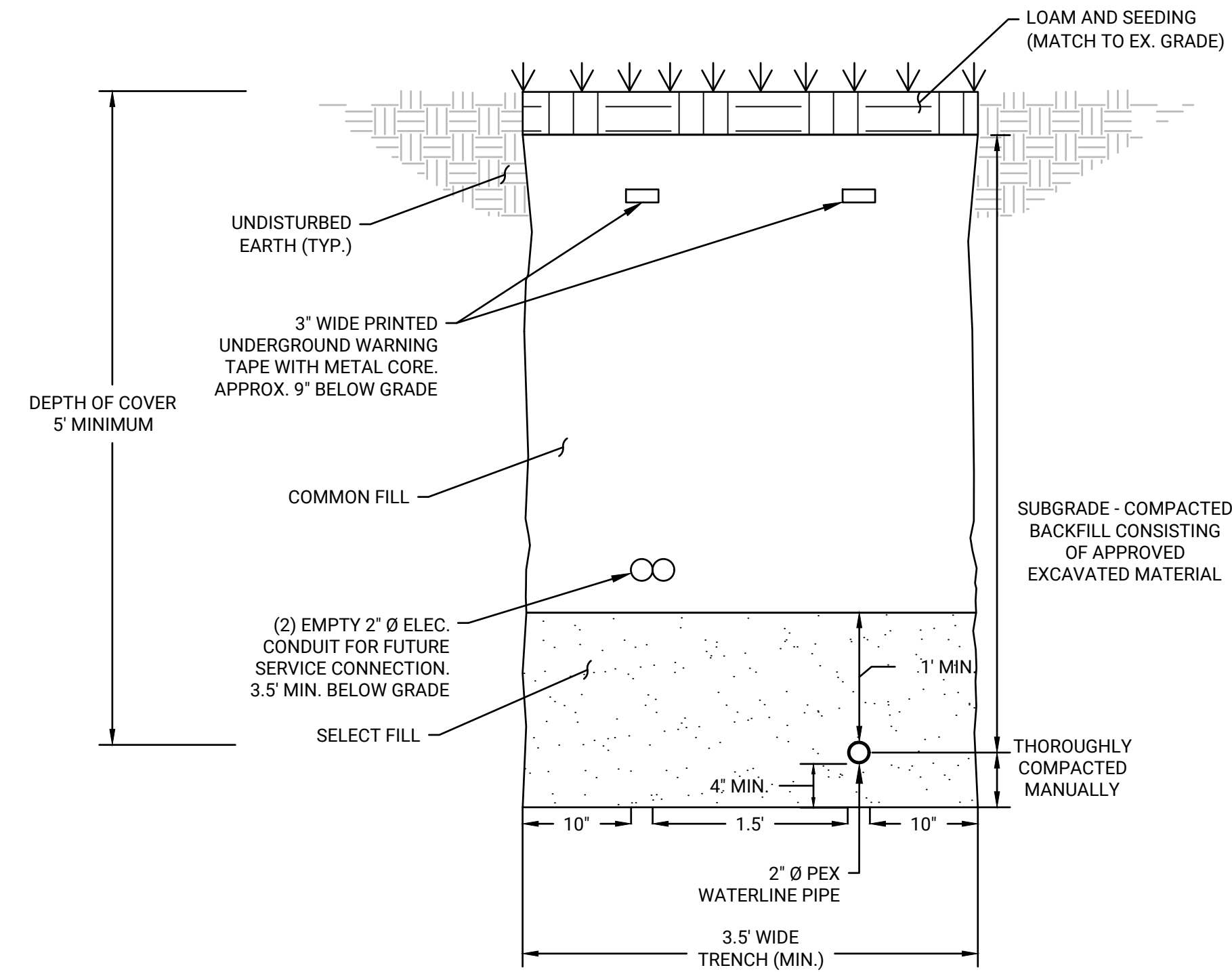
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SHEET NUMBER





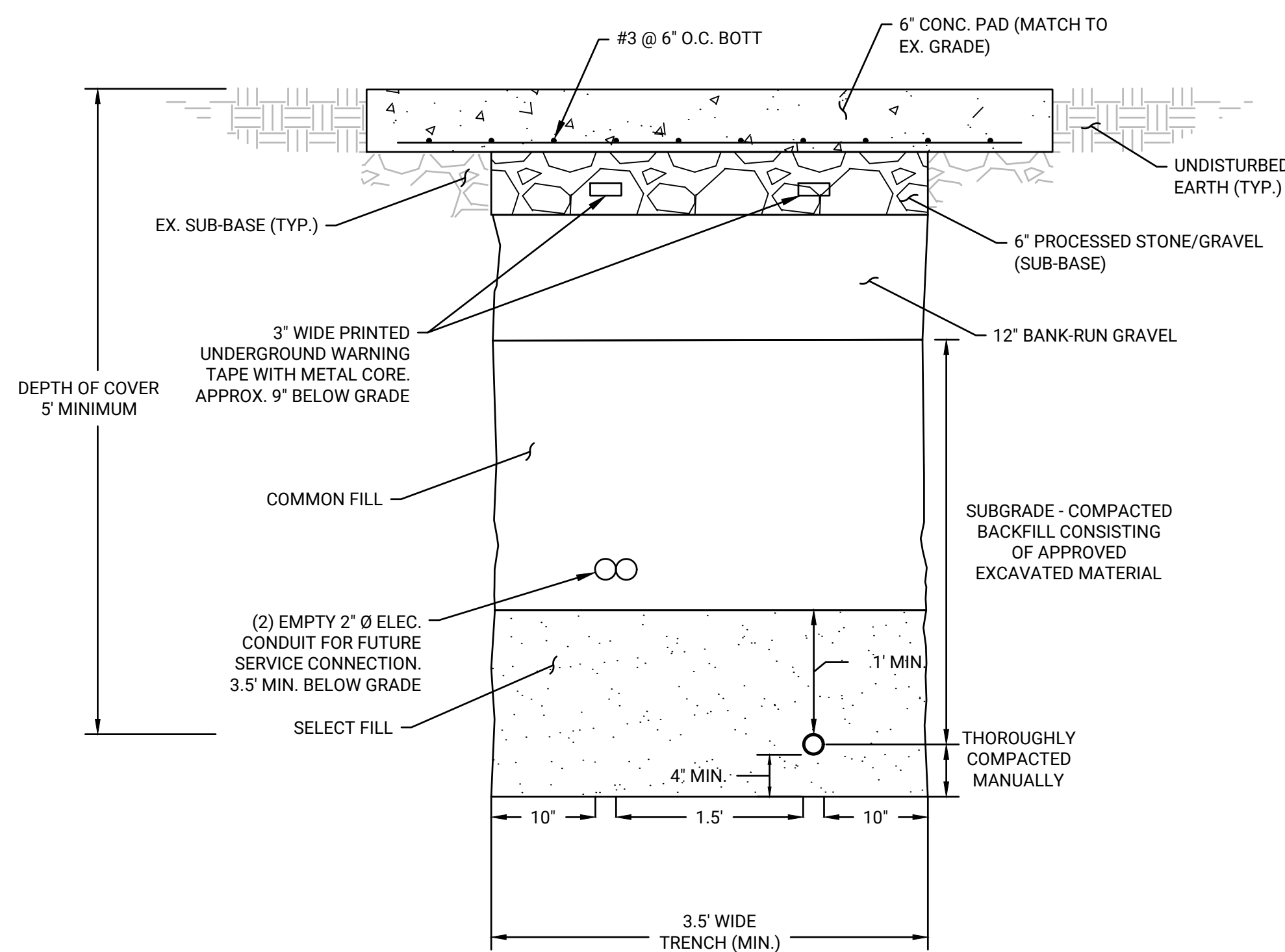
**WATER SYSTEM UTILITY TRENCH  
W/ REPAVEMENT DETAIL**  
SCALE: 1"=1'

- NOTES:
- 2" Ø PEX IS TO BE INSTALLED USING VIEGA PURE FLOW PEX OR EQUAL APPROVED BY THE ENGINEER
  - EMPTY 2" Ø ELEC. CONDUIT IS TO BE INSTALLED USING CANTEX PVC SCH 40 CONDUIT OR EQUAL APPROVED BY ENGINEER



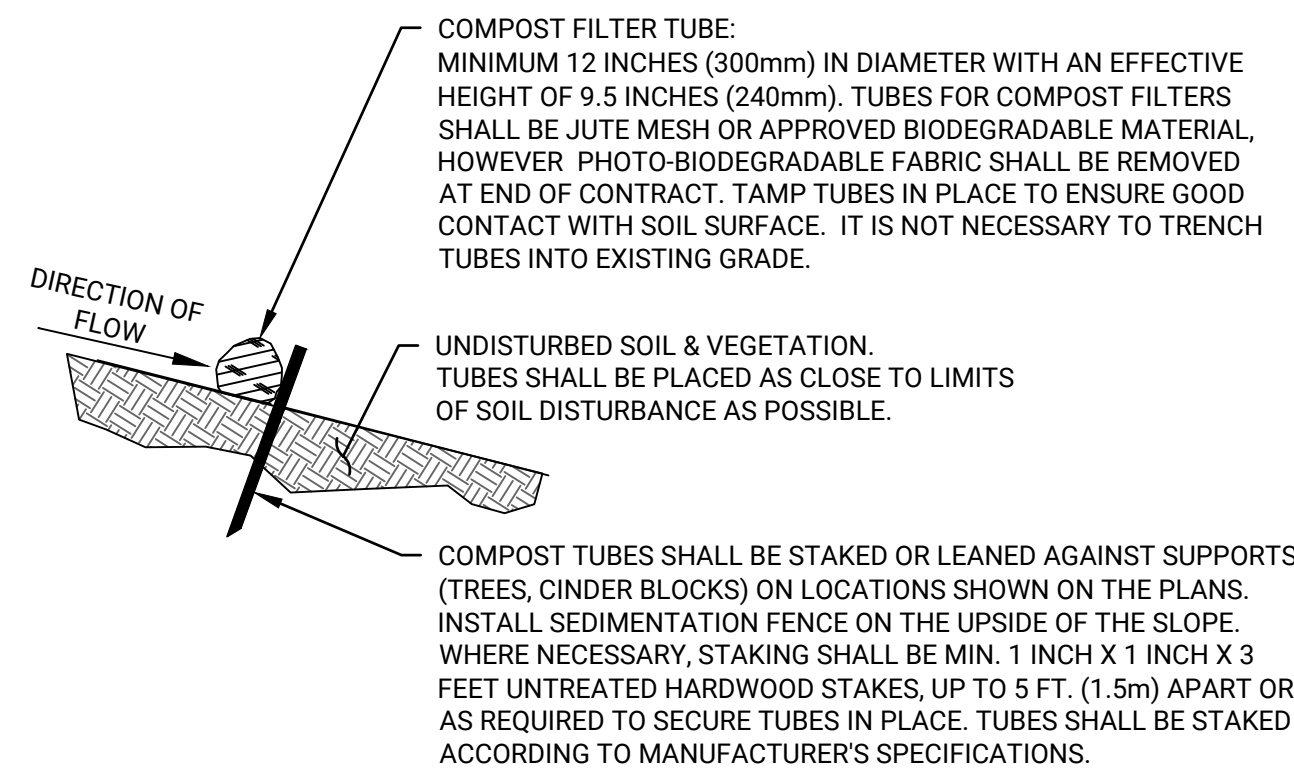
**WATER SYSTEM UTILITY TRENCH  
W/ LOAM & SEEDING DETAIL**  
SCALE: 1"=1'

- NOTES:
- 2" Ø PEX IS TO BE INSTALLED USING VIEGA PURE FLOW PEX OR EQUAL APPROVED BY THE ENGINEER
  - EMPTY 2" Ø ELEC. CONDUIT IS TO BE INSTALLED USING CANTEX PVC SCH 40 CONDUIT OR EQUAL APPROVED BY ENGINEER



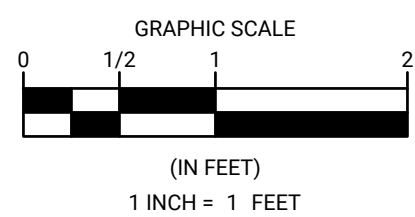
**WATER SYSTEM UTILITY TRENCH  
W/ CONCRETE PAD DETAIL**  
SCALE: 1"=1'

- NOTES:
- 2" Ø PEX IS TO BE INSTALLED USING VIEGA PURE FLOW PEX OR EQUAL APPROVED BY THE ENGINEER
  - EMPTY 2" Ø ELEC. CONDUIT IS TO BE INSTALLED USING CANTEX PVC SCH 40 CONDUIT OR EQUAL APPROVED BY ENGINEER



**TEMPORARY COMPOST FILTER TUBE DETAIL**  
SCALE: NTS

- NOTES:
- PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
  - INSTALL TUBES/SILT FENCE ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
  - TUBE LOCATION MAY BE SHIFTED TO ADJUST TO LANDSCAPE FEATURES, BUT SHALL PROTECT UNDISTURBED AREA AND VEGETATION TO MAXIMUM EXTENT POSSIBLE.
  - FASTEN SEDIMENTATION FENCE FABRIC AND SUPPORT WIRE SECURELY TO THE UPSLOPE SIDE OF THE FENCE POST WITH WIRE TIES OR STAPLES. EXTEND WIRE 6 INCHES INTO THE TRENCH.
  - DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
  - ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
  - ADDITIONAL STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
  - CONTRACTOR MAY SUBMIT FOR APPROVAL AN ALTERNATIVE SEDIMENT CONTROL BARRIER FOR CONSTRUCTION USE



REVISIONS		DATE OF PREPARATION	
NO.	DESCRIPTION	BY	DATE

DATE OF PREPARATION		
BY	DATE	
SURVEYED	JAH/ MEC	4/14/2022
DRAWN	BPF	11/21/2024
DESIGNED	JMP	11/2024
CHECKED	JMP	11/2024

SHEET TITLE:  
**DETAILS**

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SHEET NUMBER  
**4**

