BRANFORD POINT WHARF REPAIR
PHASE II

Project Site:

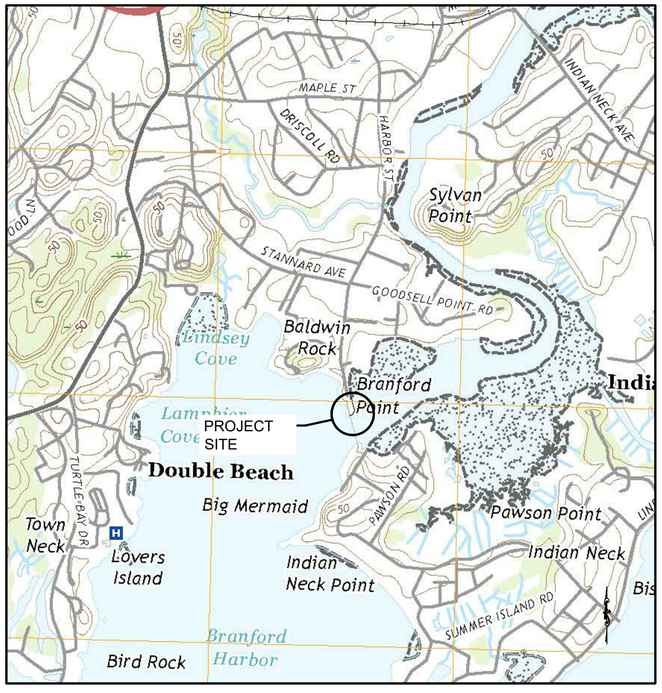
Branford Point
4 Harbor Street
Branford, CT 06405

Owner:

Town of Branford
1019 Main Street
Branford, CT 06405

NOVEMBER 28, 2023

LIST OF DRAWINGS



VICINITY MAP

AERIAL PHOTO

REV	DATE	DESCRIPTION

FOR BID PURPOSES ONLY
NOT FOR CONSTRUCTION

RACE COASTAL ENGINEERING
611 Access Road
Stratford, CT 06615
Tel.: 203-377-0663
racecoastal.com

Prepared for
TOWN OF BRANFORD
ENGINEERING DEPARTMENT
1019 MAIN STREET
BRANFORD, CT 06405

Project
BRANFORD POINT
WHARF REPAIR PHASE II
4 HARBOR STREET
BRANFORD, CT 06405

Drawing
TITLE SHEET

Designed	Drawn	Checked
ZMV/SCS	ZMV	SCS
Job No.	**Date**	**Drawing No.**
2023124	11/28/2023	1 of 10

NOT VALID WITHOUT ENGINEER'S SEAL

PROJECT NOTES

DESCRIPTION OF WORK:

1. THE WORK COVERED UNDER THESE CONTRACT DOCUMENTS, INCLUDING THE DRAWINGS, PROJECT NOTES, AND ALL AMENDMENTS, CONSISTS OF PROVIDING ALL PLANT, LABOR, SUPERVISION, EQUIPMENT APPLIANCES AND MATERIALS AND IN PERFORMING ALL OPERATIONS IN CONNECTION WITH AT LEAST, BUT NOT NECESSARILY LIMITED TO, THE FOLLOWING ITEMS:
   - DEMOLITION & DISPOSAL OF TIMBER WHARF
   - FURNISH & INSTALL NEW CONCRETE CAP
   - FILL VOIDS IN STONE SEAWALL
   - FURNISH & INSTALL NEW TIMBER WHARF
   - COORDINATE WORK WITH OWNER AND PROTECT UTILITIES
2. THE CONTRACTOR SHALL PROVIDE ALL ITEMS AND ACCESSORIES REQUIRED TO COMPLETE ALL ASPECTS OF THE WORK NEEDED FOR A COMPLETE AND PROPER INSTALLATION, ALL IN STRICT ACCORDANCE WITH THE CONTRACT DOCUMENTS.

GENERAL NOTES:

1. ALL ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD) UNLESS NOTED OTHERWISE.
2. SITE INFORMATION WAS BEEN OBTAINED BY RACE COASTAL ENGINEERING, LLC (RACE) ON 06/24/2019 AND ONLY REPRESENT THE SITE CONDITIONS OBSERVED AT THAT TIME.
3. TIDAL ELEVATION DATA HAS BEEN TAKEN FROM BENCH MARK SHEET FOR BRANFORD RIVER, CT STA. 8465233 FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION TIDES AND CURRENTS WEBSITE.

PROJECT TIDAL ELEVATIONS	
DATUM	NAVD 88 (FT)
COASTAL JURISDICTION LIMIT (CJL)	+4.3
HIGH TIDE LINE (HTL)	+4.3
MEAN HIGH WATER (MHW)	+2.7
NAVD 88	0.0
NGVD 29	-1.0
MEAN LOW WATER (MLW)	-3.2

3. PROJECT DESIGN PER CONNECTICUT STATE BUILDING CODE (IBC AND THE CONNECTICUT SUPPLEMENT) FOLLOWING LOADS:
   - 3.1. 250 PSF LIVE LOAD VERTICAL SURCHARGE APPLIED TO REBUILT SEAWALL SECTIONS.
   - 3.2. 100 PSF LIVE LOAD FOR WHARF.
   - 3.3. OTHER
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LAYOUT THE PROJECT PER THE PLANS, NOTIFY ENGINEER AND OWNER IF PROPOSED WORK EXCEEDS PROPERTY LINE OR EXISTING WALL WATERSIDE ENCROACHMENT BASED ON EXISTING WALL LAYOUT.
5. WORK SHALL COMPLY WITH FEDERAL, STATE, AND LOCAL LAWS AND STATUTES AND THE REQUIREMENTS AND CONDITIONS OF ALL REGULATORY PERMITS ISSUED FOR THE WORK. THE CONTRACTOR IS ADVISED THAT THE REGULATORY PERMITS FOR THIS PROJECT MAY CONTAIN ADDITIONAL REQUIREMENTS THAT, AFTER ANY ADDENDUM, SUPERSEDE THE DRAWING NOTES. THE CONTRACTOR IS FURTHER ADVISED THAT IN THE CASE OF ANY DISCREPANCIES WITHIN THE CONTRACT DOCUMENTS FOUND BEFORE CONSTRUCTION, THE FINAL DECISION AS TO WHAT INFORMATION TAKES PRECEDENCE WILL BE MADE BY THE ENGINEER OF RECORD ON THE BASIS OF THAT INTENT. THE CONTRACTOR SHALL NOT CONSTRUCT ANY PORTION OF THE WORK THAT HAS NOT BEEN AUTHORIZED BY THE REGULATORY AGENCIES. APPLICABLE PERMITS INCLUDE BUT ARE NOT LIMITED TO:
   - 5.1. CT DEEP LICENSE #202003006-COP
   - 5.2. USACE PERMIT NUMBER: NAE-2020-00765
6. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, LICENSES, CERTIFICATES OF INSPECTION, AND PAY ALL LEGAL FEES IN CONNECTION WITH THE WORK OF THIS CONTRACT. THE OWNER HAS OBTAINED NECESSARY STATE & FEDERAL REGULATORY PERMITS REQUIRED FOR THE WORK IN REGULATED AREAS. THE CONTRACTOR SHALL REQUEST COPIES OF THOSE REGULATORY PERMITS AND MAKE PROVISION IN THIS WORK AND IN THE COSTS OF THE WORK FOR ALL APPLICABLE CONDITIONS OF THOSE PERMITS. FAILURE TO CONSIDER ANY CONDITION OF THE REGULATORY PERMITS AS A PART OF THE BID SHALL NOT RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITY TO APPLY THOSE CONDITIONS TO HIS WORK AT NO ADDITIONAL COST TO THE OWNER.
7. EXISTING CONDITIONS AND DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION AND FABRICATION OR ORDERING OF ANY CONSTRUCTION MATERIALS.
8. SECTIONS AND DETAILS APPLY TO SAME AND SIMILAR CONDITIONS UNLESS SPECIFICALLY NOTED OTHERWISE HEREIN.
9. DAMAGE TO ANY PROPERTY, PRIVATE OR OF PUBLIC TRUST, OCCURRING DURING THE CONSTRUCTION BY THE CONTRACTOR, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER AT THE EXPENSE OF THE CONTRACTOR.
10. THE CONTRACTOR SHALL SAFEGUARD AND PROTECT ALL EXCAVATIONS.
11. THE CONTRACTOR SHALL USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK.
12. THE CONTRACTOR SHALL USE EQUIPMENT ADEQUATE IN SIZE, CAPACITY, AND NUMBERS, AND MAINTAINED TO THE REQUIREMENTS OF ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS TO ACCOMPLISH THE WORK.
13. THE CONTRACTOR SHALL PROTECT ALL WETLANDS AND COASTAL RESOURCES FROM INTRUSION BY TURBID WATERS, CONSTRUCTION DEBRIS, CONSTRUCTION EQUIPMENT, OR PERSONNEL DURING ALL WORK ACTIVITIES.
14. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND PROTECT FROM DAMAGE ALL UTILITIES, UTILITY STRUCTURES, FUEL LINES & TANKS OR ANY UNKNOWN UTILITIES OR STRUCTURES PRIOR TO ANY WORK, EXCEPT THOSE SPECIFIED FOR DEMOLITION. CONTRACTOR SHALL COORDINATE WITH CALL BEFORE YOU DIG AND RECEIVE REQUIRED MARK OUTS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.
15. LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PERFORM THE WORK THAT, UPON COMPLETION ARE NOT APART OF THE WORK SHALL BE FURNISHED, INSTALLED, AND SUBSEQUENTLY REMOVED FROM THE SITE BY THE CONTRACTOR.
16. TEMPORARY WORK SHALL BE SUBJECT TO THE REQUIREMENTS OF THE STATE AND APPLICABLE LOCAL BUILDING CODES.
17. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IN WRITING IF CONTRACTOR OBSERVES ANY DISCREPANCIES OR ERRORS WHICH WOULD MATERIALLY AFFECT THE PROJECT.
18. THE CONTRACTOR SHALL BE RESPONSIBLE TO LAYOUT THE PROPOSED WORK IN ACCORDANCE WITH THE PLANS.
19. ANY STRUCTURES CONSTRUCTED IN POSITIONS OTHER THAN THE LOCATIONS DEPICTED ON THE PROJECT PLANS SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

EROSION & SEDIMENTATION CONTROLS:

1. THE CONTRACTOR IS ASSIGNED THE RESPONSIBILITY FOR IMPLEMENTING EROSION AND SEDIMENT CONTROL. THE RESPONSIBILITY INCLUDES SUPERVISING THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, NOTIFYING THE CONSERVATION STAFF PERSON OF ANY TRANSFER OF THIS RESPONSIBILITY AND CONVEYING A COPY OF THE CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED.
2. CONTRACTOR SHALL PROTECT FROM DISTURBING OR DAMAGE, WETLAND AREAS ADJACENT TO WORK.
3. SILTATION FENCE SHALL BE PLACED AROUND THE WETLAND AREA PRIOR TO DEMOLITION AND MAINTAINED THROUGHOUT THE LENGTH OF THE PROJECT.
4. WHENEVER POSSIBLE, EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION.
5. PRIOR TO MOBILIZATION, THE CONTRACTOR SHALL PLACE HAY BALES WRAPPED IN MIRAFI 500X GEOTEXTILE FABRIC OR APPROVED EQUAL AROUND EXISTING CATCH BASINS AND STAGING AND STORAGE AREA WITHIN THE WORK AREA.
6. LAND DISTURBANCE SHALL BE KEPT TO A MINIMUM.
7. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL", MAY 2002, ERRATA SEPTEMBER 2007.
8. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD.
9. THE CONTRACTOR SHALL UTILIZE APPROVED METHODS/MATERIALS FOR PREVENTING THE BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES ONTO ADJACENT PROPERTIES AND SITE AREAS.
10. THE CONTRACTOR SHALL MAINTAIN A SUPPLY OF SILT FENCE (100' MIN.) ON SITE FOR EMERGENCY PURPOSES.
11. DUMPING OF OIL, CHEMICALS OR OTHER DELETERIOUS MATERIALS ON THE GROUND OR INTO A WATERCOURSE IS FORBIDDEN. THE CONTRACTOR SHALL PROVIDE A MEANS OF CATCHING, RETAINING, AND PROPERLY DISPOSING OF DRAINED OIL, REMOVED OIL FILTERS, AND OTHER DELETERIOUS MATERIAL. THE CONTRACTOR SHALL IMMEDIATELY REPORT ALL SPILLS OF SUCH MATERIALS TO THE ENGINEER AND THE CT DEEP.

SELECTIVE DEMOLITION:

1. SELECTIVE DEMOLITION AND DISPOSAL SHALL BE PERFORMED IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL PERMIT AND BUILDING CODE REQUIREMENTS.
2. THE CONTRACTOR SHALL REMOVE AND DISPOSE THOSE STRUCTURES AND DERELICT COMPONENTS REQUIRED TO PERFORM THE WORK.
3. SELECTIVE DEMOLITION INCLUDES BUT IS NOT LIMITED TO REMOVAL OF EXISTING MATERIALS, UTILITIES, AND OTHER COMPONENTS ESSENTIAL FOR A COMPLETE PROJECT.
4. THE CONTRACTOR SHALL TAKE REASONABLE CARE IN REMOVING ELEMENTS SELECTED TO BE DEMOLISHED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. DAMAGE OR DESTRUCTION BY THE CONTRACTOR TO EXISTING ELEMENTS DESIGNATED TO REMAIN SHALL BE REPAIRED OR REPLACED IN-KIND AT THE DISCRETION OF THE OWNER AT NO ADDITIONAL COST.
5. ITEMS TO BE REMOVED AND REUSED SHALL BE PLACED IN A STAGING AREA ACCESSIBLE FOR INSPECTION BY THE OWNER.
6. PRIOR TO COMMENCEMENT OF SELECTIVE DEMOLITION, THE CONTRACTOR SHALL SUBMIT A DISPOSAL PLAN FOR ITEMS TO BE DEMOLISHED. DEMOLITION MATERIAL DESIGNATED BY THE OWNER TO BE REMOVED FROM THE SITE SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE DEBRIS DISPOSAL PLAN SHALL ACKNOWLEDGE THIS OWNERSHIP AND SHALL IDENTIFY THE MEANS AND METHODS AND FINAL DISPOSITION FOR DISPOSAL MATERIALS.
7. PRIOR TO COMMENCEMENT OF DEMOLITION, THE CONTRACTOR SHALL CLEARLY MARK THE LIMITS OF THE DEMOLITION FOR REVIEW AND APPROVAL BY THE ENGINEER.
8. COMPLETELY REMOVE ITEMS DESIGNATED LEAVING SURFACES CLEAN, SOUND, AND READY TO RECEIVE NEW MATERIALS AS SPECIFIED IN THE CONTRACT DOCUMENTS.
9. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE STABILITY OF THE STRUCTURES DURING THE COURSE OF DEMOLITION.
10. THE CONTRACTOR SHALL SUBMIT A DISPOSAL CERTIFICATE TO THE OWNER'S REPRESENTATIVE CERTIFYING LEGAL AND PROPER DISPOSAL.
11. ALL DEMOLITION AND CONSTRUCTION WASTE MATERIALS SHALL BE DISPOSED OF LEGALLY OFFSITE BY THE CONTRACTOR, AT THE EXPENSE OF THE CONTRACTOR.

EARTHWORK:

1. EXCAVATE ALL MATERIAL OF WHATEVER NATURE, THE REMOVAL OF WHICH IS NECESSARY FOR THE CONSTRUCTION OF FOUNDATIONS AND OTHER STRUCTURES SHOWN ON THE PLANS.
2. THE ELEVATION OF THE BOTTOM OF FOOTINGS, AS SHOWN ON THE PLANS, SHALL BE CONSIDERED AS APPROXIMATE ONLY; THE ENGINEER MAY ORDER SUCH CHANGES IN DIMENSIONS OR ELEVATIONS OF FOOTING AS MAY BE NECESSARY TO SECURE A SATISFACTORY FOUNDATION. CONTRACTOR TO EXCAVATE TO MINIMUM BASE OF WALL ELEVATION. BOTTOM MATERIAL TO BE VERIFIED TO BE SOUND BEDROCK OR SUITABLE BEARING MATERIAL AS DETERMINED BY THE ENGINEER. IF NEEDED, OVER-EXCAVATE AND PLACE A CRUSHED STONE BASE.
3. ROCK OR OTHER SUITABLE FOUNDATION MATERIAL SHALL BE CLEARED OF ALL OVERLYING MATERIAL, CLEANED AND CUT TO A FIRM SURFACE, EITHER LEVEL, STEPPED OR SERRATED, AS DIRECTED BY THE ENGINEER.
4. ANY OVER-BREAKAGE IN ROCK MORE THAN 6 INCHES BELOW THE PLAN GRADE FOR THE BOTTOM OF THE FOOTING NOT AUTHORIZED BY THE ENGINEER SHALL BE REPLACED BY THE CONTRACTOR WITH CONCRETE AT THE CONTRACTOR'S EXPENSE.
5. WHEN THE STRUCTURE IS TO REST ON A MATERIAL OTHER THAN ROCK, SPECIAL CARE SHALL BE TAKEN NOT TO DISTURB THE MATERIAL BELOW THE BOTTOM OF THE EXCAVATION, AND THE FINAL REMOVAL OF THE FOUNDATION MATERIAL TO GRADE SHALL NOT BE MADE UNTIL JUST BEFORE THE FORMS FOR CONCRETE OR MASONRY ARE PLACED. ANY FOUNDATION MATERIAL DISTURBED BELOW PLAN GRADE OR REVISED PLAN GRADE SHALL BE DRESSED AND COMPACTED AT THE CONTRACTOR'S EXPENSE.
6. ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE ABUTMENTS, PIERS, OTHER PERMANENT WORK OR PERVIOUS STRUCTURE BACKFILL SHALL BE FILLED TO THE SURFACE OF THE SURROUNDING GROUND WITH SUITABLE MATERIAL. SUCH BACKFILL SHALL BE THOROUGHLY COMPACTED AND NEATLY GRADED.
7. BACKFILL SHALL BE PLACED ABOVE A PLANE EXTENDING ON A 2 TO 1 SLOPE FROM THE UPPER EDGE OF THE FOOTING TO THE TOP OF THE EMBANKMENT, OR AS SHOWN ON THE PLANS. WHERE THE FACE OF UNDISTURBED MATERIAL IS ABOVE OR BENEATH THIS SLOPE PLANE, THE AMOUNT OF BACKFILL SHALL BE DECREASED OR INCREASED ACCORDINGLY, IF ORDERED BY THE ENGINEER.
8. EACH LAYER OF BACKFILL SHALL BE SPREAD TO A THICKNESS NOT EXCEEDING 6 INCHES DEEP AFTER COMPACTION AND SHALL BE THOROUGHLY COMPACTED BY THE USE OF POWER ROLLERS OR OTHER MOTORIZED VEHICULAR EQUIPMENT, BY TAMPING WITH MECHANICAL RAMMERS OR VIBRATORS, OR BY PNEUMATIC TAMPERS. ANY EQUIPMENT NOT PRINCIPALLY MANUFACTURED FOR COMPACTION PURPOSES OR WHICH IS NOT IN PROPER WORKING ORDER IN ALL ASPECTS SHALL NOT BE USED WITHIN THE AREA DESCRIBED ABOVE.

EARTHWORK (CONT.):

9. SPECIAL ATTENTION SHALL BE GIVEN TO COMPACTION IN PLACES CLOSE TO WALLS WHERE MOTORIZED VEHICULAR COMPACTION EQUIPMENT CANNOT REACH. WITHIN 3 FEET OF THE BACK FACE OF WALLS AND WITHIN A GREATER DISTANCE AT ANGLE POINTS OF WALLS, EACH LAYER OF BACKFILL SHALL BE COMPACTED BY MECHANICAL RAMMERS, VIBRATORS OR PNEUMATIC TAMPERS.
10. THE DRY DENSITY OF EACH LAYER OF BACKFILL AFTER COMPACTION SHALL NOT BE LESS THAN 95% OF THE MAXIMUM DRY DENSITY FOR THAT MATERIAL WHEN DETERMINED BY THE CONTRACTOR IN ACCORDANCE WITH AASHTO T180 AND MEASURED IN-PLACE WITH ASTM D6938 OR OTHER METHODS APPROVED BY THE ENGINEER.
11. WASTE EXCAVATED MATERIAL WHICH IS NOT REQUIRED FOR BACKFILLING, OR WHICH IS UNSUITABLE.
12. NO FILL SHALL BE PLACED AGAINST ANY STRUCTURE UNTIL THE ENGINEER HAS GIVEN PERMISSION TO DO SO, AND IN NO CASE UNTIL AFTER THE PERMITTED TIME FOR REMOVAL OF FORMS.
13. EXCAVATE TO THE REQUIRED DEPTHS IN ACCORDANCE WITH OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) REGULATIONS.
14. PROTECT NEIGHBORING PROPERTY'S, STRUCTURES, AND VEGETATION FROM DAMAGE DURING EARTHWORK ACTIVITIES.
15. BACKFILL SHALL CONSIST OF BROKEN OR CRUSHED STONE OR BROKEN OR CRUSHED GRAVEL.
16. BROKEN OR CRUSHED STONE SHALL CONSIST OF SOUND, TOUGH, DURABLE STONE, REASONABLY FREE FROM SOFT, THIN, ELONGATED, FRIABLE, LAMINATED, MICACEOUS OR DISINTEGRATED PIECES, MUD, DIRT OR OTHER DELETERIOUS MATERIAL.
17. BANK OR CRUSHED GRAVEL SHALL CONSIST OF SOUND, TOUGH, DURABLE PARTICLES OF CRUSHED OR UNCRUSHED GRAVEL FREE FROM SOFT, THIN, ELONGATED OR LAMINATED PIECES AND VEGETABLE OR OTHER DELETERIOUS SUBSTANCES.
18. BACK FILL SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

BACKFILL GRADATION	
SQUARE MESH SIEVES	PERCENT PASSING BY WEIGHT
PASS 5 INCH	100
PASS 3 1/2 INCH	90-100
PASS 1 1/2 INCH	55-95
PASS 3/4 INCH	
PASS 1/4 INCH	25-60
PASS NO. 10	15-45
PASS NO. 40	5-25
PASS NO. 100	0-10
PASS NO. 200	0-5

CAST-IN-PLACE CONCRETE:

1. CAST-IN-PLACE CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 - LATEST EDITION, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS."
2. DETAILING, FABRICATION, AND ERECTION OF REINFORCING STEEL SHALL CONFORM WITH ACI-318 AND ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING, REINFORCED CONCRETE STRUCTURES."
3. READY MIX PLANT EQUIPMENT AND FACILITIES SHALL CONFORM TO THE "CHECK LIST FOR CERTIFICATION OF READY MIXED CONCRETE PRODUCTION FACILITIES" OF THE NRMCA.
4. SUBMIT CONCRETE MIX DESIGN, WITH KNOWN TEST RESULTS, TO THE ENGINEER FOR REVIEW. THE CONCRETE MIX DESIGN SUBMITTAL SHALL CONSIST OF AT LEAST THE FOLLOWING:
   - A. TYPE OF CEMENT.
   - B. DRY WEIGHT OF CEMENT.
   - C. SATURATED SURFACE-DRY WEIGHTS OF FINE AND COARSE AGGREGATES.
   - D. SPECIFIC GRAVITY OF FINE AND COARSE AGGREGATES.
   - E. QUANTITIES, TYPE, NAME AND PRODUCER OF ADMIXTURES, AS APPLICABLE.
   - F. TOTAL WEIGHT OF WATER, INCLUDING THE WATER WHICH IS ABSORBED BY AND ON THE SURFACE OF THE AGGREGATES.
   - G. WATER TO CEMENT RATIO.
   - H. SLUMP: MAXIMUM SLUMP, TAKEN AT THE TRUCK, WILL BE DETERMINED BASED ON THE PUMP HOSE LENGTH. THE MIX DESIGNS SHALL INCLUDE THE ANTICIPATED LOSS OF SLUMP PER 100 FOOT LENGTH OF SPECIFIED HOSE SIZE.
   - I. STRENGTH TEST DATA OF THE PROPOSED MIX DESIGN AS SPECIFIED HEREIN.
5. SUBMIT CONCRETE BATCH TICKETS FOR EACH TRUCK DELIVERED TO SITE. EACH TICKET SHALL NOTE AT LEAST THE FOLLOWING DATA: DESIGN MIX STRENGTH; BATCH PROPORTIONS INCLUDING ACTUAL WATER AND AGGREGATE MOISTURE CONTENTS; DATE AND BATCH TIME; ARRIVAL TIME AT SITE; DISCHARGE TIME; CONCRETE VOLUME; AND ANY CHANGE TO CONCRETE MADE AT THE SITE.
6. CONFORM TO THE RECOMMENDATIONS OF ACI 304 - LATEST EDITION, "RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE."
7. CONCRETE SHALL CONSIST OF THE FOLLOWING MATERIALS:
   - A. PORTLAND CEMENT: TYPE II - LOW ALKALI CONFORMING TO ASTM C 150, "STANDARD SPECIFICATION FOR PORTLAND CEMENT."
   - B. COARSE AND FINE AGGREGATE SHALL BE NORMAL WEIGHT AND UNIFORMLY GRADED AND CLEAN CONFORMING TO ASTM C33, "STANDARD SPECIFICATION FOR CONCRETE AGGREGATES." DO NOT USE AGGREGATE KNOWN TO CAUSE EXCESSIVE SHRINKAGE.
   - C. COARSE AGGREGATE SHALL BE CRUSHED ROCK OR WASHED GRAVEL WITH A MAXIMUM SIZE OF 3/4".
   - D. FINE AGGREGATE SHALL BE NATURAL WASHED SAND OF HARD AND DURABLE PARTICLES VARYING FROM FINE TO PARTICLES PASSING A 3/8" SCREEN, OF WHICH AT LEAST 12% SHALL PASS A 50-MESH SCREEN.
   - E. WATER SHALL BE CLEAN AND POTABLE.
   - F. AIR ENTRAINING ADMIXTURE SHALL CONFORM TO ASTM C260, "STANDARD SPECIFICATION FOR AIR ENTRAINING ADMIXTURE FOR CONCRETE." THE AIR ENTRAINING AGENT SHALL BE A NON-TOXIC CONCENTRATED SOLUTION OF NEUTRALIZED VINSOL RESIN, SUCH AS "DARAVAIR" AS MANUFACTURED BY W.R. GRACE COMPANY OR EQUIVALENT ACCEPTED BY THE ENGINEER.
   - G. WATER REDUCING ADMIXTURE SHALL CONFORM TO ASTM C494 "STANDARD SPECIFICATION FOR CHEMICAL ADMIXTURES FOR CONCRETE." WATER REDUCING AGENT SHALL BE OF TYPE A, B, C, D, E, F, OR G (AS NOTED IN CONCRETE MIX DESIGN) SUCH AS DARACEM-100" OR WRDA-19" AS MANUFACTURED BY W.R. GRACE COMPANY OR EQUIVALENT ACCEPTED BY THE ENGINEER.

CAST-IN-PLACE CONCRETE (CONT.):

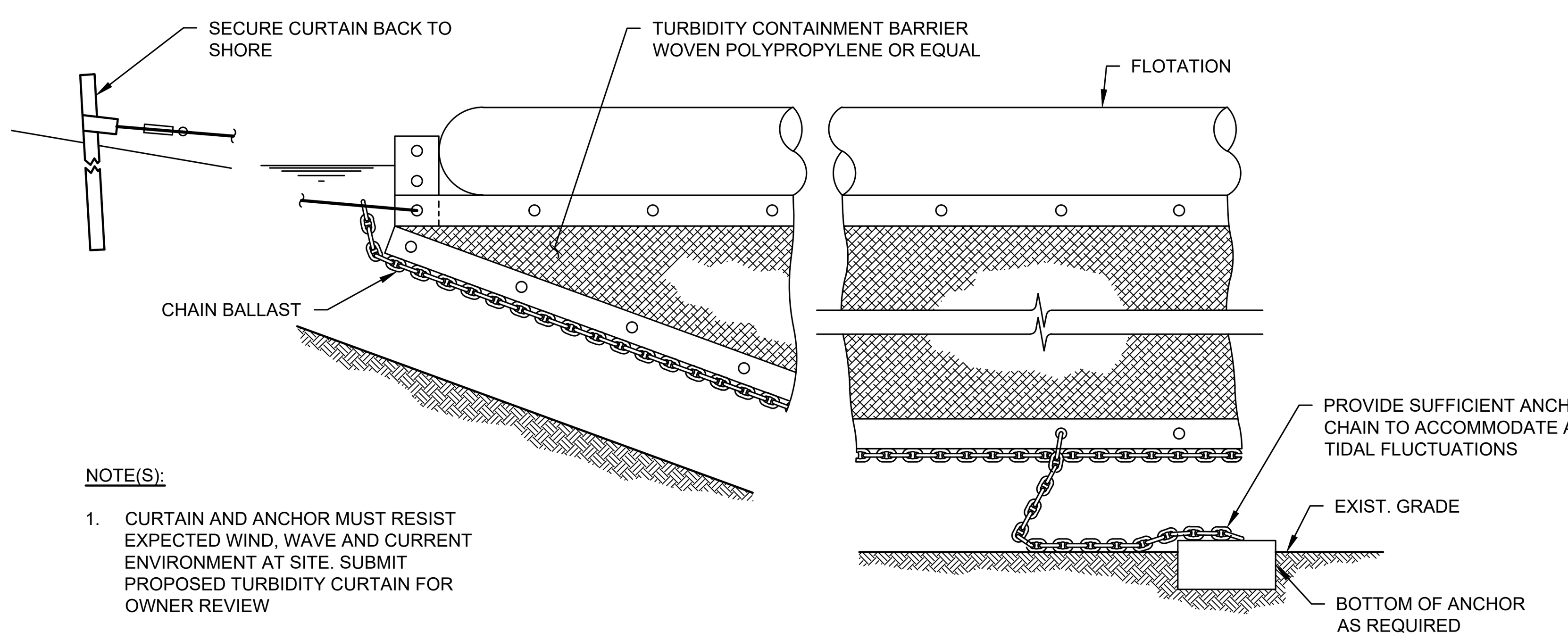
8. REINFORCING STEEL SHALL CONFORM TO ASTM 615 GRADE 60, "SPECIFICATION FOR DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT" AND SHALL BE EPOXY COATED IN COMPLIANCE WITH ASTM A 775.
9. FABRICATE REINFORCEMENT TO THE REQUIRED SHAPES AND DIMENSIONS, WITHIN FABRICATION TOLERANCES STATED IN THE CRSI "MANUAL OF STANDARD PRACTICES."
10. CURING MATERIALS SHALL CONFORM TO ASTM C309, "STANDARD SPECIFICATION FOR LIQUID MEMBRANE-FORMING COMPOUNDS FOR CURING CONCRETE", WET BURLAP, OR PLASTIC MEMBRANE.
11. REINFORCING STEEL SHALL BE ADEQUATELY TIED WITH TIE WIRE AND SUPPORTED WITH CHAIRS THAT HOLD THE BARS TO THE SPECIFIED CLEARANCE. ONE CHAIR SAMPLE SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. NO CLAY OR CONCRETE BRICKS OR ANY OTHER MATERIAL OTHER THAN APPROVED CHAIRS SHALL BE PERMITTED TO SUPPORT REINFORCING STEEL.
12. CONCRETE SHALL BE NORMAL WEIGHT WITH A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI AT 28 DAYS.
13. CONCRETE SHALL HAVE A MAXIMUM WATER TO CEMENT RATIO OF 0.40.
14. CONCRETE SHALL BE PROPORTIONED TO HAVE A SLUMP OF 4 INCHES, + 1 INCH, AT THE DISCHARGE END OF THE PUMP HOSE. USE WATER REDUCING AGENT AS REQUIRED TO ACHIEVE DESIRED SLUMP RANGE. ADDITION OF WATER AT SITE WILL NOT BE PERMITTED. ANY VARIATION TO SLUMP RANGE RESULTING FROM PROPOSED ADMIXTURES SHALL BE NOTED IN MIX DESIGN AND SUBMITTED TO ENGINEER FOR APPROVAL, PRIOR TO ORDERING CONCRETE.
15. CONCRETE SHALL CONTAIN 4% TO 6% ENTRAINED AIR.
16. DESIGN, ERECT, SUPPORT, BRACE, AND MAINTAIN FORMWORK SO IT WILL SAFELY SUPPORT VERTICAL AND LATERAL LOADS WHICH MIGHT BE APPLIED UNTIL SUCH LOADS CAN BE SUPPORTED SAFELY BY THE CONCRETE STRUCTURE IN ACCORDANCE WITH ACI 347 - LATEST EDITION.
17. FORM COATING OR WATER SHALL BE APPLIED TO ALL FORMS. IF COATING IS USED, IT SHALL BE APPLIED PRIOR TO PLACEMENT OF REINFORCING STEEL.
18. FORM TIES AND SPREADERS SHALL BE OF SUCH TYPE AS TO LEAVE NO METAL CLOSER THAN 3 INCHES FROM ANY EXPOSED CONCRETE SURFACE.
19. PLACE REINFORCEMENT TO OBTAIN THE REQUIRED COVERAGE FOR CONCRETE PROTECTION. MINIMUM CONCRETE COVER FOR ALL REINFORCING SHALL BE 3 INCHES EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.
20. CLEAN REINFORCEMENT AND REMOVE LOOSE DUST, EARTH, AND OTHER MATERIALS WHICH REDUCE BOND OR DESTROY BOND WITH CONCRETE.
21. POSITION, SUPPORT, AND SECURE REINFORCEMENT AGAINST DISPLACEMENT BY FORMS, CONSTRUCTION, AND THE CONCRETE PLACEMENT OPERATIONS.
22. REINFORCING STEEL SHALL BE CONTINUOUS UNLESS SPECIFICALLY DETAILED OTHERWISE ON THE CONTRACT DRAWINGS. PROVIDE DOWELS OR LAP SPLICES OF THE APPROPRIATE CLASS TO MAINTAIN CONTINUITY. UNLESS OTHERWISE SHOWN ON THE CONTRACT DRAWINGS LAP BARS ACCORDING TO THE FOLLOWING TABLE WITH NO MORE THAN 60% OF THE TOTAL NUMBER OF BARS SPLICED AT ONE LOCATION.

MINIMUM SPLICE LENGTH		
SIZE	UNCOATED/GALVANIZED	EPOXY-COATED
#4	30	36
#5	36	44
#6	44	52
#7	64	76
#8	72	86

23. SLEEVES, INSERTS, ANCHORS, AND EMBEDDED ITEMS REQUIRED FOR ADJOINING WORK OR FOR ITS SUPPORT SHALL BE PLACED PRIOR TO CASTING CONCRETE. ALL EMBEDDED ITEMS SHALL BE POSITIONED ACCURATELY AND SUPPORTED AGAINST DISPLACEMENT
24. TRANSIT MIX THE CONCRETE IN ACCORDANCE WITH PROVISIONS OF ASTM C94 - LATEST EDITION.
25. DO NOT USE CONCRETE AFTER 90 MINUTES FROM TIME OF INTRODUCTION OF WATER TO THE MIX.
26. CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 318-LATEST EDITION, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE."
27. REMOVE FOREIGN MATTER ACCUMULATED IN THE FORMS.
28. RIGIDLY CLOSE OPENINGS LEFT IN THE FORMWORK.
29. WET WOOD FORMS IMMEDIATELY PRIOR TO CONCRETE PLACEMENT. WET WOOD FORMS SUFFICIENTLY TO TIGHTEN UP CRACKS. WET OTHER MATERIAL SUFFICIENTLY TO MAINTAIN WORKABILITY OF THE CONCRETE.
30. USE ONLY CLEAN TOOLS.
31. PERFORM CONCRETE PLACING AT SUCH A RATE THAT CONCRETE WHICH IS BEING INTEGRATED WITH FRESH CONCRETE IS STILL PLASTIC.
32. DEPOSIT CONCRETE AS NEARLY AS PRACTICABLE IN ITS FINAL LOCATION SO AS TO AVOID SEPARATION DUE TO REHANDLING AND FLOWING.
33. DO NOT USE CONCRETE WHICH BECOMES NON-PLASTIC AND UNWORKABLE, OR DOES NOT MEET REQUIRED QUALITY CONTROL LIMITS, OR HAS BEEN CONTAMINATED BY FOREIGN MATERIALS.
34. REMOVE REJECTED AND EXCESS CONCRETE FROM THE JOB SITE.
35. FREE-FALL OF CONCRETE DURING PLACEMENT GREATER THAN EIGHT FEET IS PROHIBITED. THE CONTRACTOR SHALL PLACE CONCRETE WITH A TREMIE TUBE FOR DROPS GREATER THAN EIGHT FEET.
36. DEPOSIT CONCRETE IN HORIZONTAL LAYERS NOT DEEPER THAN 24 INCHES, AND AVOID INCLINED CONSTRUCTION JOINTS.
37. REMOVE TEMPORARY SPREADERS IN FORMS WHEN CONCRETE HAS REACHED THE ELEVATION OF THE SPREADERS.
38. CONSOLIDATE EACH LAYER OF CONCRETE IMMEDIATELY AFTER PLACING, BY USE OF INTERNAL CONCRETE VIBRATORS SUPPLEMENTED BY HAND SPADING, RODDING, OR TAMPING.
39. DO NOT USE VIBRATORS TO TRANSPORT CONCRETE INSIDE THE FORMS.
40. DO NOT USE HORIZONTAL CONSTRUCTION JOINTS, UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS.
41. BEGINNING IMMEDIATELY AFTER PLACEMENT, CONCRETE SHALL BE PROTECTED FROM PREMATURE DRYING, EXCESSIVELY HOT OR COLD TEMPERATURES, AND MECHANICAL DAMAGE AND SHALL BE MAINTAINED WITH MINIMAL MOISTURE LOSS AT A RELATIVE CONSTANT TEMPERATURE FOR THE PERIOD NECESSARY FOR HYDRATION OF THE CEMENT AND HARDENING OF THE CONCRETE.

CAST-IN-PLACE CONCRETE (CONT.):

42. IF COLD WEATHER CONCRETING IS ANTICIPATED, THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS OF ACI 306.1 - LATEST EDITION, “STANDARD SPECIFICATION FOR COLD WEATHER CONCRETING”, AND A PRE-CONSTRUCTION MEETING SHOULD BE HELD TO DEFINE HOW COLD WEATHER CONCRETING METHODS WILL BE USED. COLD WEATHER IS DEFINED AS A PERIOD WHEN FOR MORE THAN THREE SUCCESSIVE DAYS THE AVERAGE DAILY OUTDOOR TEMPERATURE DROPS BELOW 40 DEGREES F. THE AVERAGE DAILY TEMPERATURE IS THE AVERAGE OF THE HIGHEST AND LOWEST TEMPERATURE DURING THE PERIOD FROM MIDNIGHT TO MIDNIGHT. WHEN TEMPERATURES ABOVE 50 DEGREES F OCCUR DURING MORE THAN HALF OF ANY 24 HR DURATION, THE PERIOD SHALL NO LONGER BE REGARDED AS COLD WEATHER.
43. IF HOT-WEATHER CONCRETING IS ANTICIPATED, THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS OF ACI 305.1 - LATEST EDITION, “SPECIFICATION FOR HOT WEATHER CONCRETING”, AND A PRE-CONSTRUCTION MEETING SHOULD BE HELD TO DEFINE HOW HOT WEATHER CONCRETING METHODS WILL BE USED. HOT WEATHER IS DEFINED AS JOBSITE CONDITIONS THAT ACCELERATE THE RATE OF MOISTURE LOSS OR RATE OF CEMENT OF HYDRATION OF FRESHLY MIXED CONCRETE, INCLUDING AN AMBIENT TEMPERATURE OF 80 DEGREES F OR HIGHER, AND AN EVAPORATION RATE THAT EXCEEDS 1 kg/m²/h.
44. FORM TIES SHALL BE PLUGGED SOLID WITH REWORKED CEMENT MORTAR OF THE SAME PROPORTIONS AS THAT USED IN THE CONCRETE.
45. TESTS OF CONCRETE SHALL BE MADE BY AN INDEPENDENT TESTING AGENCY AT THE EXPENSE OF THE OWNER. THAT CONTRACTOR SHALL SCHEDULE TESTS AND NOTIFY THE OWNER AND ENGINEER OF THE TESTING SCHEDULE. TEST SPECIMENS SHALL BE TAKEN FOR EACH 50 CUBIC YARDS, OR PORTION THEREOF, AND EACH DAY'S POUR. TWO SETS OF FOUR, 4x8 IN CYLINDERS SHALL BE PREPARED FOR EACH ROUND OF TESTING. ONE SET SHALL BE FIELD CURED AND ONE SET SHALL BE LAB CURED. SPECIMENS SHALL BE PREPARED AND TESTED IN ACCORDANCE WITH ASTM C39, ASTM C31, AND ASTM C172. CONCRETE SLUMP, AIR CONTENT, AND TEMPERATURE SHALL BE MEASURED FOR EACH BATCH IN ACCORDANCE WITH ASTM C143 AND ASTM C231.

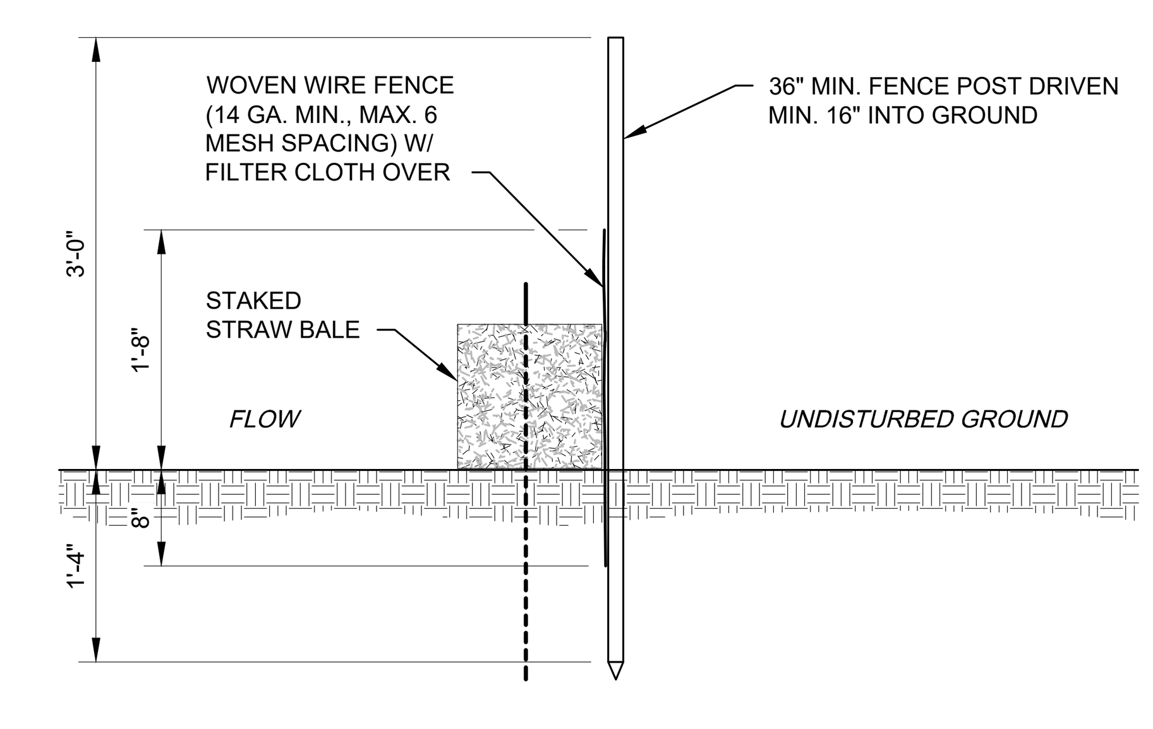


NOTE(S):

1. CURTAIN AND ANCHOR MUST RESIST EXPECTED WIND, WAVE AND CURRENT ENVIRONMENT AT SITE. SUBMIT PROPOSED TURBIDITY CURTAIN FOR OWNER REVIEW

TURBIDITY CURTAIN

SCALE: N.T.S.



SILT FENCE DETAIL

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

REV	DATE	DESCRIPTION

FOR BID PURPOSES ONLY
NOT FOR CONSTRUCTION

RACE COASTAL ENGINEERING
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Prepared for
TOWN OF BRANFORD
ENGINEERING DEPARTMENT
1019 MAIN STREET
BRANFORD, CT 06405

Project
BRANFORD POINT
WHARF REPAIR PHASE II
4 HARBOR STREET
BRANFORD, CT 06405

Drawing
PROJECT NOTES - 1 of 2
& EROSION & SEDIMENTATION CONTROLS

Designed	Drawn	Checked
ZMV/SCS	ZMV	SCS
Job No. 2023124	Date 11/28/2023	Drawing No. 2 of 10

NOT VALID WITHOUT ENGINEER'S SEAL

PROJECT NOTES (CONT.)

TIMBER PILES:

1. TIMBER PILES SHALL BE GREENHEART (CHLOROCARDIUM RODIEI) OR SOUTHERN YELLOW PINE (SYP) AS NOTED BELOW:

   1.1. TIMBER FOUNDATION PILES: GREENHEART (CHLOROCARDIUM RODIEI)

   1.2. TIMBER FENDER PILES: SOUTHERN YELLOW PINE (SYP)

2. GREENHEART (CHLOROCARDIUM RODIEI) PILES SHALL BE UNTREATED W/ MIN. 12" BUTT DIAMETER, AND MEET THE REQUIREMENTS OF PRIME GRADING PER THE GUYANA TIMBER GRADING RULES FOR HARDWOOD, 3RD EDITION, 2002, PUBLISHED BY THE GUYANA FORESTRY COMMISSION, REVISED 2016.

3. GREENHEART (CHLOROCARDIUM RODIEI) PILES PILES SHALL ORIGINATE FROM A SUSTAINABLE SOURCE IN GUYANA. NO LATER THAN THE TIME OF DELIVERY OF MATERIALS TO THE SITE, A CERTIFICATION LETTER FROM THE GREENHEART SUPPLIER SHALL BE PROVIDED TO THE ENGINEER, WHICH SHALL VERIFY: PILE SPECIFICATIONS, VERIFICATION OF SPECIES, LEGAL IMPORTATION, AND SUSTAINABLE HARVEST.

4. SYP PILES SHALL CONFORM TO ASTM D25 WITH THE FOLLOWING MINIMUM DIMENSIONS:

   4.1. TIP CIRCUMFERENCE: 25 INCH

   4.2. TIP DIAMETER: 8 INCH

   4.3. BUTT CIRCUMFERENCE: PER ASTM D25

5. SYP PILES SHALL BE PRESSURE TREATED WITH CHROMATED COPPER ARSENATE (CCA) TO A MINIMUM FINAL RENTENTION OF **2.5** PCF IN ACCORDANCE WITH THE AMERICAN WOOD PRESERVER'S ASSOCIATION (AWPA) STANDARD U-1, COMMODITY SPECIFICATION G.

6. CUT ENDS OF SYP PILES SHALL BE COATED WITH TENINO COPPER NAPTHANATE SOLUTION, BY COPPER CARE WOOD PRESERVATIVES, INC. OR OTHER ENGINEER APPROVED EQUAL COPPER NAPTHANATE SOLUTION WITH NOT LESS THAN 2% COPPER METAL CONTENT.

7. TIMBER PILES SHALL BE CUT FROM SOUND LIVE TREES; FREE OF ANY DEFECTS WHICH WILL IMPAIR THEIR STRENGTH, OR USEFULNESS FOR THE PURPOSE INTENDED OR THAT WILL PREVENT PROPER INSTALLATION. ALL TIMBERS SHALL BE DEBARKED AND CLEANLY CUT.

8. TIMBER PILES WILL BE SUBJECT TO INSPECTION BEFORE AND/OR AFTER SHIPMENT TO THE SITE AT THE OPTION OF THE ENGINEER. ANY TIMBER WHICH DOES NOT CONFORM TO ALL THE REQUIREMENTS WILL BE REJECTED.

9. PILE CUT-OFF AND DAPPED SURFACES FOR PIER FOUNDATION PILES SHALL BE COVERED WITH ICE AND WATER SHIELD EXTENDING AT LEAST 1 INCH DOWN THE PILE FACE.

PILE INSTALLATION - VIBRATOR AND IMPACT DRIVING:

1. DRIVEN PILES SHALL HAVE A "SAFE LOAD" AS NOTED BELOW, AS DETERMINED BY THE ENGINEERING NEWS FORMULA EQUATION. AN IMPACT HAMMER WITH A KNOWN RATING WILL BE REQUIRED TO VERIFY THIS CAPACITY. IMPACT HAMMER SPECIFICATIONS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO PILE INSTALLATION.

   1.1. TIMBER FOUNDATION PILES: 15 TON

2. PILES SHALL BE DRIVEN TO A MINIMUM **15'** EMBEDMENT BELOW GRADE AS NOTED BELOW. PILES NOT ABLE TO ACHIEVE DESIGN EMBEDMENT SHALL BE AT MINIMUM SEATED ON BEDROCK AND CONTRACTOR SHALL CONFIRM SUCH SEATING. EQUIPMENT AND METHODS FOR INSTALLING PILES SHALL BE SUCH THAT PILES ARE INSTALLED IN THEIR PROPER POSITION AND ALIGNMENT.

3. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF THE ABOVE CRITERIA IS NOT ABLE TO BE MET DUE TO SUBSURFACE CONDITIONS, AND PRIOR TO DRILLING ANY PILES OTHER THAN THOSE SPECIFICALLY MARKED ON THE DESIGN DRAWINGS.

4. PILES SHALL BE DRIVEN WITHIN 3 INCHES OF THE POSITIONS INDICATED ON THE DRAWINGS. PILES SHALL BE DRIVEN STRAIGHT AND TRUE WITH DEVIATION FROM LONGITUDINAL ACCESS OF NOT MORE THAN 2%.

5. PILES SHALL BE INSTALLED WITH DUE CONSIDERATION FOR THE STABILITY OF ADJACENT STRUCTURES. PILE DRIVING TECHNIQUE SHALL LEAVE THE STRENGTH OF THE PILES UNIMPAIRED AND IN A STATE WHERE LOAD BEARING RESISTANCE FULLY DEVELOPS AND IS RETAINED. IF CONDITIONS AT THE SITE ARE SUCH THAT THE TIP, THE BODY, OR THE BUTT OF THE PILE IS LIKELY TO SUFFER DAMAGE DURING INSTALLATION SPECIAL PRECAUTIONS SUCH AS PRE-DRILLING OR SPUDDING MUST BE TAKEN BY THE CONTRACTOR TO AVOID SUCH DAMAGE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE PLACEMENT OF UNDAMAGED PILES TO THE LOADING CAPACITY, REQUIRED TIP ELEVATION AND EMBEDMENT IN SOUND MATERIAL.

6. PILES SHALL BE DRIVEN WITHOUT SPLICES. PILE BUTTS SHALL BE BANDED OR PROTECTED DURING DRIVING WITH OTHER ENGINEER APPROVED DEVICES. BANDS TO REMAIN ON GREENHEART PILES FOLLOWING INSTALLATION.

7. ALL PILES SHOWING SIGNS OF HEAVING OR LIFTING, OR PILES INSTALLED IN THE WRONG LOCATION SHALL BE EXTRACTED AND REINSTALLED TO THE EMBEDMENT DEPTH AND LOCATION AS SPECIFIED AT NO ADDITIONAL COST TO THE OWNER.

8. THE PILE DRIVING HAMMER SHALL BE OF SUITABLE SIZE FOR THE PROPER INSTALLATION OF THE PILE AND SHALL BE CAPABLE IN ANY CASE OF DELIVERING AN ENERGY PER BLOW AS REQUIRED BY APPROPRIATE DRIVING RESISTANCE REQUIREMENTS.

9. SUITABLE ANVILS OR CUSHIONS SHALL BE USED TO PREVENT DAMAGE TO THE PILES AS REQUIRED. ANVIL OR CUSHION TYPES SHALL BE CHOSEN BASED ON THE PILE SIZE AND MATERIAL SCHEDULED FOR INSTALLATION. THE CUSHIONS USED SHALL PROVIDE ENOUGH PROTECTION TO PREVENT DAMAGE TO THE PILE, BUT SHALL NOT ABSORB A SIGNIFICANT AMOUNT OF ENERGY FROM THE HAMMER BLOW.

10. THE BUTT ENDS OF THE PILES SHALL BE CUT SQUARE WITH THE AXIS, EDGES CHAMFERED, AND, IF NECESSARY, STEEL BANDS OR CAPS SHALL BE USED WHILE DRIVING.

11. PILES WHICH ARE DAMAGED AND HAVE HEADS WHICH SPLIT, BROOM, CRACK, OR CRUSH DURING DRIVING, SHALL BE REMOVED AND DISPOSED OFF-SITE AND REPLACED WITH NEW PILES. NO ADDITIONAL COMPENSATION WILL BE MADE FOR REPLACEMENT PILES AND INSTALLATION.

12. PILES SHALL BE DRIVEN TO A STRATUM OF SATISFACTORY MATERIAL AND SHALL BE ACCURATE AS TO LOCATION AND ALIGNMENT AND TO THE REQUIRED ELEVATIONS, ALL AS SHOWN ON THE DRAWINGS. PILE HEADS WHICH SPLIT, BROOM, CRACK OR CRUSH DURING DRIVING SHALL BE CUT OFF BEFORE DRIVING MAY PROCEED. THE DRIVING SHALL BE CONTINUOUS FOR EACH PILE UNTIL THE RESISTANCE REQUIRED TO DEVELOP THE CAPACITY OF THE PILE IS ACHIEVED OR UNTIL THE MINIMUM EMBEDMENT DEPTH IS REACHED, WHICHEVER IS DEEPER.

13. THE CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF EACH PILE DRIVEN. THE RECORDS SHALL GIVE THE BUTT AND TIP DIAMETERS, LENGTH, DESIGN CAPACITY, PENETRATION UNDER THE LAST-BLOWS OF THE HAMMER, BEHAVIOR DURING DRIVING, CUT-OFF LENGTHS, RESULTS OF ANY TESTS, DRILLING OR PROBING INFORMATION IF ANY, AND ALL OTHER INFORMATION REGARDING EACH PILE DRIVEN. THESE RECORDS SHALL BE SUBMITTED TO THE ENGINEER ON A DAILY BASIS.

TEA TIMBER FRAMING:

1. THE WORK COVERED UNDER THIS SECTION INCLUDES, BUT IS NOT NECESSARILY LIMITED TO; PILE CAPS, STRINGERS, DIAGONAL BRACING, CURBING, AND BLOCKING.

2. ALL VISUALLY GRADED STRUCTURAL LUMBER AND WOOD CONSTRUCTION SHALL CONFORM TO THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" (ANSI/NFPA NDS - LATEST EDITION), ITS SUPPLEMENT, AND COMMENTARY BY THE AMERICAN FOREST & PAPER ASSOCIATION / AMERICAN WOOD COUNCIL.

3. TIMBER SHALL MEET THE REQUIREMENTS OF THE SOUTHERN PINE INSPECTION BUREAU INSPECTION RULES, LATEST EDITION FOR SOUTHERN YELLOW PINE NO. 1 GRADE MINIMUM, SAWN FOUR SIDES (S4S).

4. NO LATER THAN THE TIME OF DELIVERY OF MATERIALS TO THE SITE, CONTRACTOR SHALL SUBMIT CERTIFICATES AS TO CONFORMANCE WITH THE SPECIFIED SPECIES, GRADE, AND TREATMENT PRIOR TO INSTALLATION OF ANY VISUALLY GRADED STRUCTURAL LUMBER.

5. TIMBER SHALL BE HANDLED CAREFULLY, WITHOUT SUDDEN DROPPING, BREAKING OF OUTER FIBERS, BRUISING OR PENETRATING THE SURFACE WITH TOOLS.

6. ALL TIMBER SHALL BE CUT AND FRAMED TO A CLOSE FIT IN SUCH A MANNER THAT THE JOINTS SHALL HAVE FULL CONTACT BETWEEN PLIES OR MEMBERS. NO SHIMMING WILL BE PERMITTED IN MAKING JOINTS NOR WILL OPEN JOINTS BE ACCEPTED.

7. HEAVY TIMBER FRAMING SHALL BE PRESSURE TREATED WITH CHROMATED COPPER ARSENATE (CCA) TO A MINIMUM RETENTION AS NOTED IN THE TABLE BELOW IN ACCORDANCE WITH THE AMERICAN WOOD PRESERVER'S ASSOCIATION (AWPA) STANDARD U-1, COMMODITY SPECIFICATION A AND G:

SYP PRESSURE TREATMENT	
MEMBER	CCA RETENTION (LB/FT3)
STRINGER	1.5
CHOCK	1.5
BLOCKING	2.5
PILE CAP	2.5
BRACING	2.5

8. ALL CUT ENDS SHALL BE COATED WITH TENINO COPPER NAPTHANATE SOLUTION, BY COPPER CARE WOOD PRESERVATIVES, INC. OR OTHER COPPER NAPTHANTE SOLUTION WITH NO LESS THAN 2% COPPER METAL CONTENT, AS APPROVED BY THE ENGINEER.

9. ALL MATERIAL SHALL BE SOUND, WELL SEASONED, AND STRAIGHT GRAINED, FREE FROM SHAKES AND LARGE OR LOOSE KNOTS, AND SHALL HAVE NO DECAYED WOOD, WORM HOLES, OR ANY OTHER DEFECTS WHICH THE OWNER DETERMINES WILL IMPAIR ITS STRENGTH OR DURABILITY.

10. PIECES OF EXCEPTIONALLY LIGHT WEIGHT WILL NOT BE ACCEPTED.

11. ALL MATERIAL SHALL BE STORED OFF OF THE GROUND IN MANNER TO PREVENT DAMAGE AND TO PERMIT EASY INSPECTION.

12. TIMBER SHALL BE SURFACED FOUR SIDES (S4S) UNLESS OTHERWISE NOTED.

13. THE CONTRACTOR SHALL PROVIDE CONTINUOUS ICE AND WATER SHIELD BARRIER ON TOP SURFACE OF ALL DECK FRAMING. EXTEND ICE AND WATER SHIELD AT LEAST 3 INCHES AROUND THE EDGES OF EACH MEMBER UNLESS OTHERWISE NOTED.

TIMBER DECKING:

1. DECKING SHALL BE SOUTHERN YELLOW PINE NO. 1 GRADE MINIMUM.

2. DECKING SHALL BE PRESSURE TREATED WITH MICRONIZED COPPER AZOLE (MCA) TO A MINIMUM FINAL RENTENTION OF **0.7** PCF.

3. DECKING SHALL BE FASTENED TO EACH STRINGER 1" FROM EA. EDGE USING #14 x 5" LONG 316 S.S. FLAT HEAD SCREWS.

4. SCREW HOLES SHALL BE PRE-DRILLED WITH A 5/32" LEAD HOLE. LEAD HOLE SHALL BE NO LONGER THAN THE SCREW EMBEDMENT.

5. LEAD HOLE SHALL BE COUNTER-SUNK TO ASSURE THAT SCREW HEAD IS FLUSH WITH THE FINISHED DECK SURFACE.

6. DECK WOOD SHALL BE STORED IN A CLEAN, DRY, WEATHER PROTECTED LOCATION PRIOR TO INSTALLATION. NO DENTED, STAINED, TWISTED, OR DAMAGED MATERIAL SHALL BE INCORPORATED INTO THE WORK.

7. TOP OF DECK BOARDS SHALL BE FLUSH WITH ADJACENT DECK BOARDS. MAXIMUM ACCEPTABLE DIFFERENCE BETWEEN ADJACENT DECK BOARDS IS 1/8". DEVIATION EXCEEDING THIS AMOUNT SHALL BE CORRECTED BY THE CONTRACTOR. MEANS OF CORRECTING DEVIATION SHALL BE SUBJECT TO THE ENGINEER'S ACCEPTANCE.

STEEL FASTENERS:

1. STEEL FASTENERS SHALL MEET THE FOLLOWING REQUIREMENTS:

   1.1. BOLTS: ASTM A307 GRADE A W/ HEXAGONAL HEADS

   1.2. NUTS: ASTM A563 GRAD A W/ HEXAGONAL HEADS

   1.3. WASHERS: ASTM F844 STANDARD FLAT OR OGEE TYPE AS NOTED

   1.4. ANCHOR RODS: ASTM F1554 GR55

2. STEEL FASTENERS SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 AND MEET THE MINIMUM TESTS OF ASTM A239, UNLESS NOTED OTHERWISE.

3. SUBMIT MANUFACTURER'S CERTIFICATIONS SHOWING THAT THE PRODUCTS MEET OR EXCEED THE REQUIRED STANDARDS FOR: BOLTS, INCLUDING NUTS AND WASHERS; THREADED RODS INCLUDING ALL HARDWARE; FILLER MATERIAL AND FLUX FOR WELDING.

4. SUBMIT CERTIFIED MILL TEST REPORTS INDICATING STRUCTURAL STRENGTH, DESTRUCTIVE AND NON-DESTRUCTIVE TEST ANALYSIS, CHEMICAL AND PHYSICAL PROPERTIES OF EACH TYPE OF STEEL AND CONFORMANCE WITH ASTM A6.

TIMBER GUARDRAIL:

1. THE GUARDRAIL SHALL BE SOUTHERN YELLOW PINE GRADE NO. 1 MINIMUM.

2. TIMBER GUARDRAIL SHALL BE PRESSURE TREATED WITH MICRONIZED COPPER AZOLE (MCA) TO A MINIMUM FINAL RETENTION OF **0.7** PCF.

3. ALL RAILING JOINTS SHALL BE KERF CUT, LOCATED AT HANDRAIL POSTS & GLUED USING WELDWOOD PLASTIC RESIN GLUE OR APPROVED EQUAL BY THE ENGINEER.

4. CONTRACTOR TO USE WELDWOOD PLASTIC RESIN GLUE OR APPROVED EQUAL TO SECURE THE WOOD PLUGS.

5. ONCE PLACED AND CURED CONTRACTOR TO SAND THE TOP RAILS TO A SMOOTH, UNIFORM SURFACE TEXTURE.

6. FOUR (4) SCREWS SHALL BE USED AT A TOP RAIL JOINT WHEN THE JOINT LANDS ON A POST, (2) PER EACH TOP RAIL.

STRUCTURAL STEEL:

1. DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE "MANUAL OF STEEL CONSTRUCTION - ASD", NINTH EDITION, AS ADOPTED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (ASD).

2. WELDING SHALL CONFORM TO THE "STRUCTURAL WELDING CODE FOR STEEL" LATEST EDITION, AS ADOPTED BY THE AMERICAN WELDING SOCIETY (AWS). ALL WELDING SHALL BE PERFORMED BY A CERTIFIED WELDER IN ACCORDANCE WITH AWS STANDARDS.

3. SUBMIT COMPLETE SHOP DRAWINGS DETAILING ALL MEMBERS, PROFILES, SIZES, SPACING, PROPOSED CUTS, CONNECTIONS, CAMBER, HOLES, OPENINGS, FASTENERS, AND SIMILAR DATA. ERECTION PLANS SHOWING THE LOCATION AND FIELD CONNECTION OF ALL MEMBERS. IDENTIFY MEMBERS BY PIECE NUMBERS WHICH CORRESPOND TO ERECTION NUMBERS. STRUCTURAL STEEL CONNECTION DETAILS NOT SPECIFICALLY SHOWN IN THE CONTRACT DOCUMENTS SHALL BE DETAILED BY THE CONTRACTOR AND INCLUDED WITH SHOP DRAWING SUBMITTALS.

4. SUBMIT MANUFACTURER'S CERTIFICATIONS SHOWING THAT THE PRODUCTS MEET OR EXCEED THE REQUIRED STANDARDS FOR: BOLTS, INCLUDING NUTS AND WASHERS; THREADED RODS INCLUDING ALL HARDWARE; FILLER MATERIAL AND FLUX FOR WELDING.

5. SUBMIT CERTIFIED MILL TEST REPORTS INDICATING STRUCTURAL STRENGTH, DESTRUCTIVE AND NON-DESTRUCTIVE TEST ANALYSIS, CHEMICAL AND PHYSICAL PROPERTIES OF EACH TYPE OF STEEL AND CONFORMANCE WITH ASTM A6.

6. CONNECTIONS SHALL BE DESIGNED BY THE STEEL FABRICATOR EXCEPT THOSE SPECIFICALLY DETAILED ON THE CONTRACT DOCUMENTS.

7. FABRICATE AND ASSEMBLE STRUCTURAL STEEL ITEMS IN THE SHOP TO THE GREATEST EXTENT POSSIBLE.

8. PROPERLY MARK AND MATCH-MARK MATERIALS FOR FIELD ASSEMBLY.

9. CUT, DRILL, AND PUNCH HOLES PERPENDICULAR TO METAL SURFACES. DO NOT FLAME CUT HOLES OR ENLARGE HOLES BY BURNING.

10. THE CONTRACTOR IS RESPONSIBLE FOR FIT UP AND INSTALLATION OF ALL STEEL WORK AND SHALL FIELD VERIFY ALL DIMENSIONS AND CONDITIONS.

11. THE STRUCTURE HAS BEEN DESIGNED TO BE SELF-SUPPORTING AND STABLE. THE STABILITY OF THE STRUCTURE PRIOR TO TOTAL COMPLETION IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

12. STRUCTURAL STEEL MATERIALS SHALL MEET THE FOLLOWING REQUIREMENTS:

    12.1. ANGLES: ASTM A36

13. STRUCTURAL STEEL MATERIALS SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE-WITH ASTM A123.

DRY RUBBLE MASONRY SEAWALL REPAIRS:

1. SEAWALL REPAIR WORK SHALL BE PERFORMED BY SKILLED MASONS WITH A MINIMUM OF FIVE YEARS' EXPERIENCE RESTORING HISTORIC MASONRY STRUCTURES.

2. STONES WHICH HAVE BECOME LOOSE, DISPLACED, OR FALLEN SHALL BE RESET INTO THE FACE OF THE SEAWALL.

3. VOIDS IN THE FACE OF THE WALL FACE SHALL BE CHINKED WITH SMALLER CHINKING STONES. DRIVE CHINKING STONES INTO THE JOINTS OF LARGER WALL STONES USING A MALLET SO THAT THE WALL IS PACKED TIGHT. CHINK ALL VOIDS WHICH ARE GENERALLY LARGER THAN 6-IN BY 6-IN.

4. CHINKING STONES SHALL BE HARD, ANGULAR, DURABLE ROCK WITHOUT OPEN FRACTURES, FOLIATION OR OTHER PLANES OF WEAKNESS. NEW STONE SOURCED BY THE CONTRACTOR.

5. MISSING OR DAMAGED STONE SHALL BE REPLACED WITH NEW STONES. NEW STONES SHALL BE PLACED SUCH THAT THE NATURAL STRATIFICATION IS PARALLEL TO THE BEDDING PLANE. LOOSE STONE SHALL BE CAREFULLY REMOVED, CLEANED, AND RESET IN THEIR ORIGINAL POSITION.

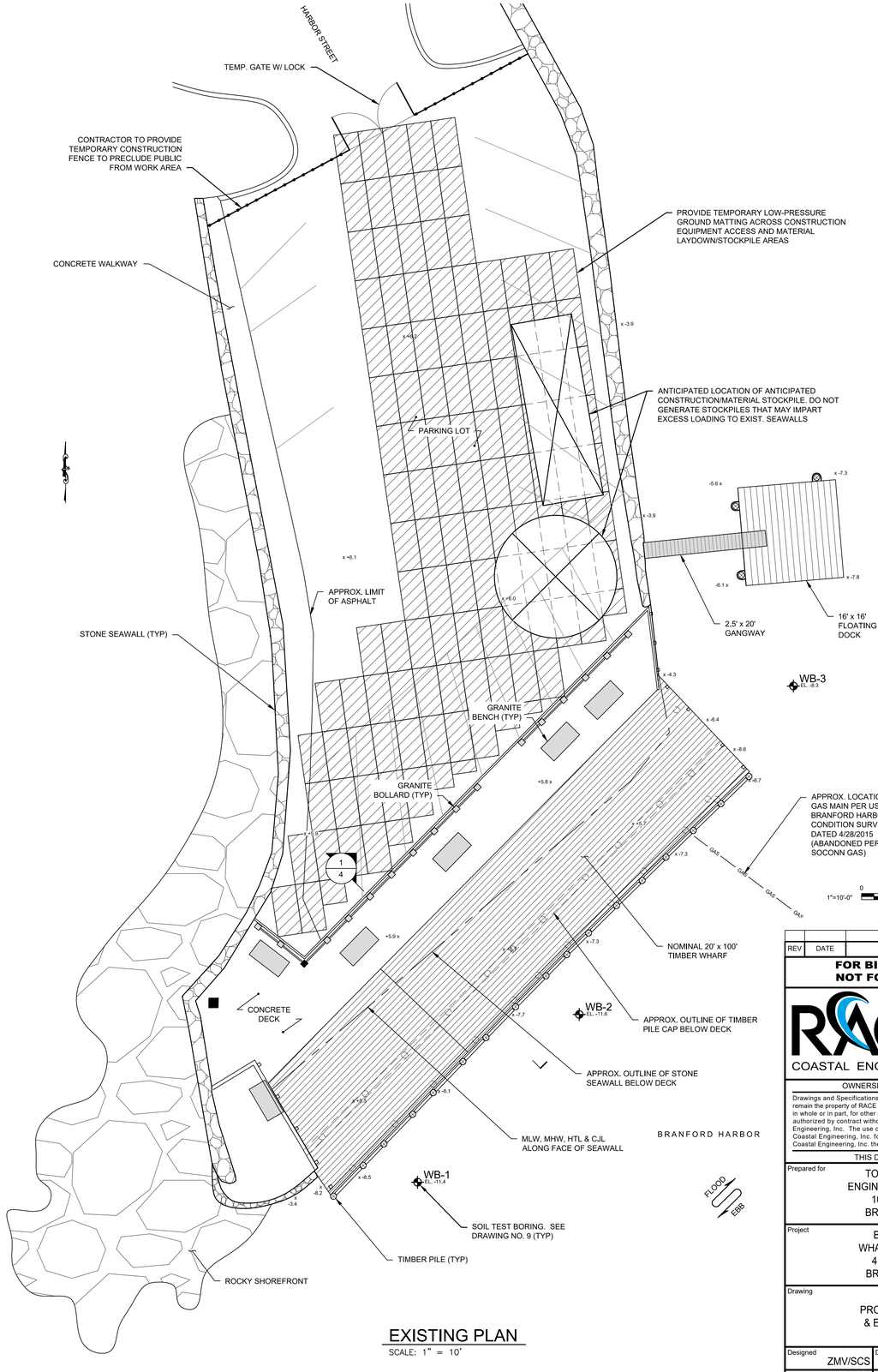
6. REVIEW EXTENTS OF WALL REPAIR WITH OWNER PRIOR TO CONSTRUCTION.

PROTECTION OF EXIST. STRUCTURES & PAVEMENT:

1. USE PROTECTIVE MEASURES AND SAFEGUARDS DURING CONSTRUCTION TO PREVENT DAMAGE TO EXISTING INFRASTRUCTURE AND PROPERTY. SPECIFIC ATTENTION SHALL BE GIVEN TO THE EXISTING ASPHALT PAVEMENT WHICH HAS BEEN RECENTLY REPAIRED.

2. PROVIDE TEMPORARY LOW GROUND PRESSURE MATTING ACROSS PAVEMENT AREAS UTILIZED FOR CONSTRUCTION EQUIPMENT ACCESS AND STAGING, AND MATERIAL LAYDOWN/STOCKPILE. DO NOT UTILIZE MATTING THAT MAY LEAVE IMPRESSIONS TO UNDERLYING SURFACE.

3. DAMAGE TO ANY PROPERTY, PRIVATE OR OF PUBLIC TRUST, OCCURRING DURING THE CONSTRUCTION BY THE CONTRACTOR, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER AT THE EXPENSE OF THE CONTRACTOR.



EXISTING PLAN

SCALE: 1" = 10'

REV	DATE	DESCRIPTION

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RACE COASTAL ENGINEERING
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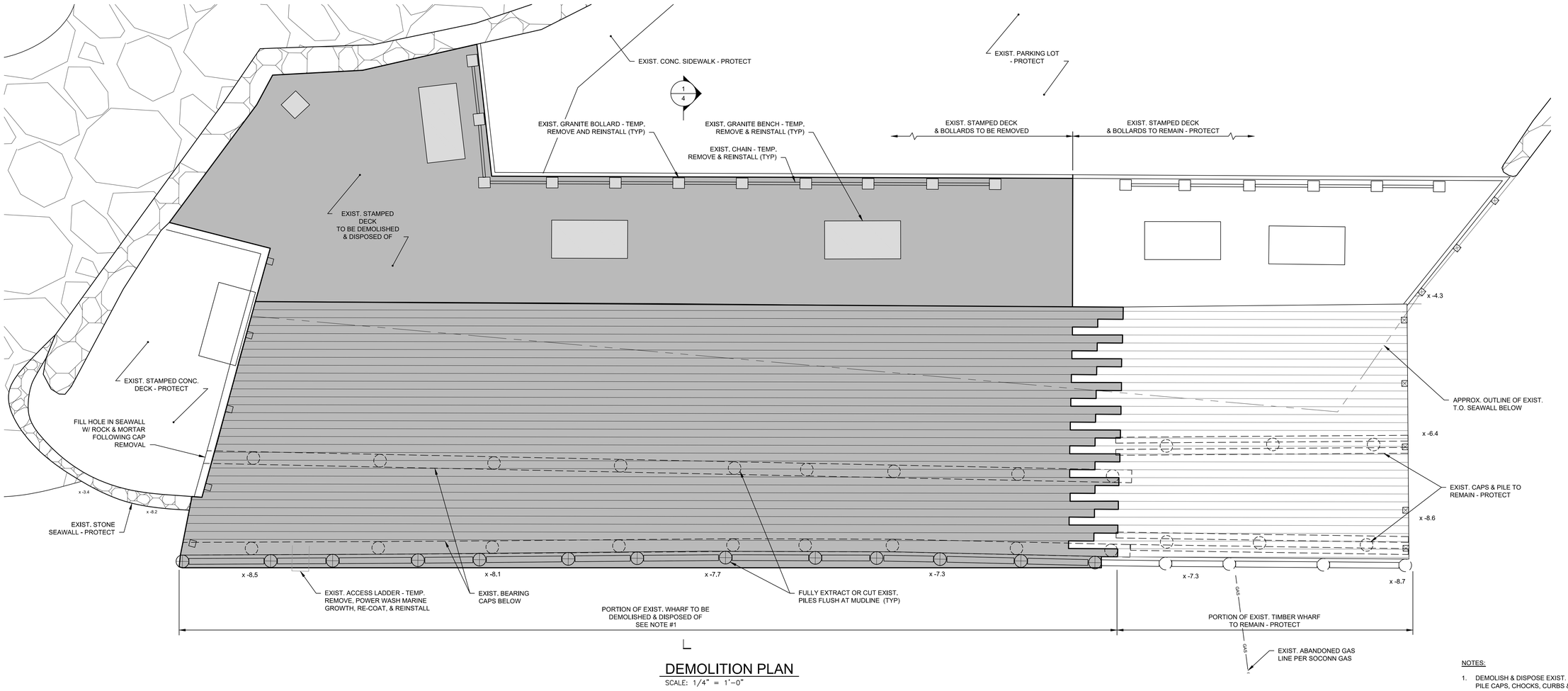
1019 MAIN STREET
BRANFORD, CT 06405

Project
BRANFORD POINT
WHARF REPAIR PHASE II
4 HARBOR STREET
BRANFORD, CT 06405

Drawing
PROJECT NOTES - 2 of 2
& EXISTING SITE PLAN

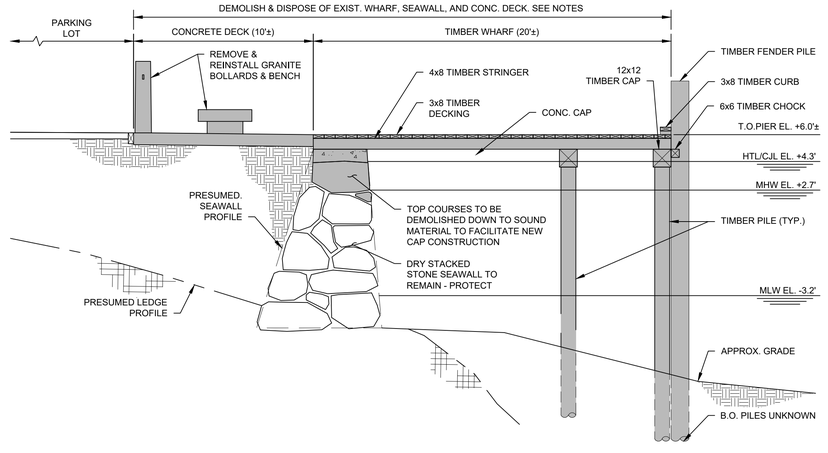
Designed	Drawn	Checked
ZMV/SCS	ZMV	SCS
Job No.	**Date**	**Drawing No.**
2023124	11/28/2023	3 of 10

NOT VALID WITHOUT ENGINEER'S SEAL



DEMOLITION PLAN

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



EXISTING / DEMOLITION SECTION

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

1/3/4

NOTES:

1. DEMOLISH & DISPOSE EXIST. STRINGERS, PILE CAPS, CHOCKS, CURBS & DECKING.

1/4"=1'-0" 0 4 8 FT.

REV	DATE	DESCRIPTION

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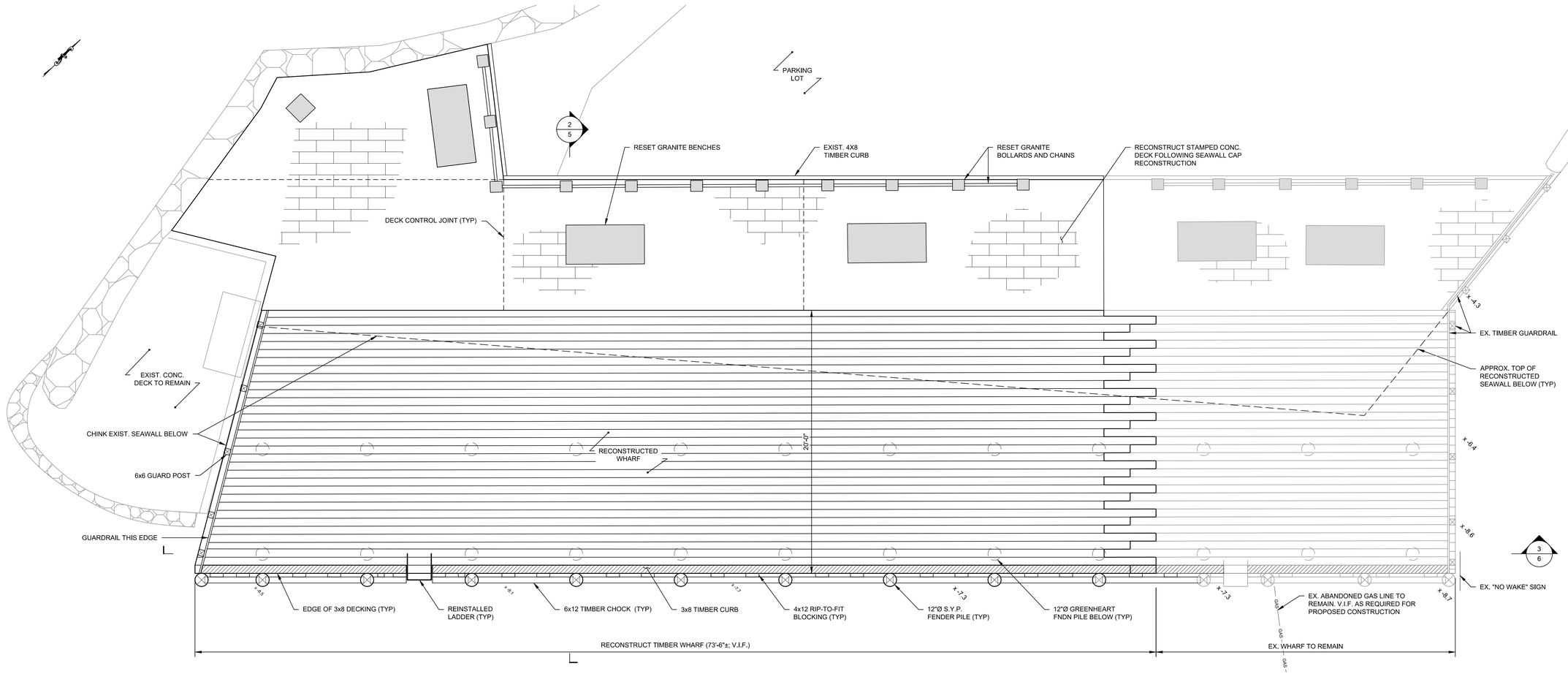
Drawing
DEMOLITION PLAN & SECTION

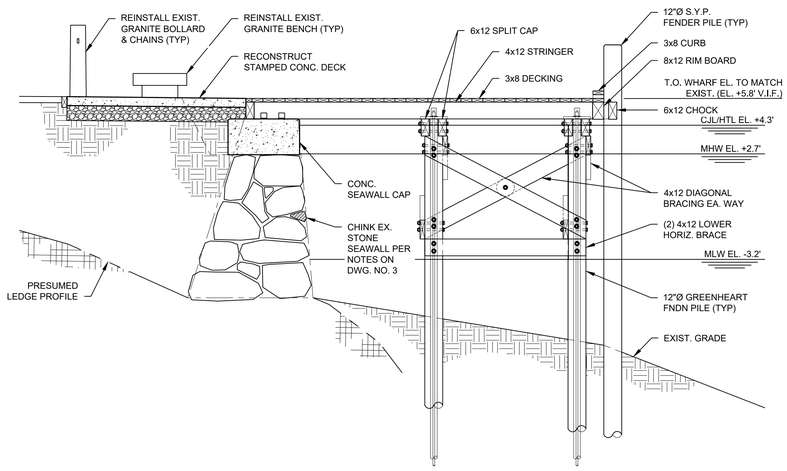
Designed	Drawn	Checked
ZMV/SCS	ZMV	SCS
Job No.	**Date**	**Drawing No.**
2023124	11/28/2023	4 of 10

NOT VALID WITHOUT ENGINEER'S SEAL



WATERFRONT REPAIR PLAN

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



SECTION

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

2
5

1/4"=1'-0" 0 4 8 FT.

REV	DATE	DESCRIPTION

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RACE COASTAL ENGINEERING
611 Access Road
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Tel.: 203-377-0663
racecoastal.com

Prepared for
TOWN OF BRANFORD
ENGINEERING DEPARTMENT
1019 MAIN STREET
BRANFORD, CT 06405

Project
BRANFORD POINT
WHARF REPAIR PHASE II
4 HARBOR STREET
BRANFORD, CT 06405

Drawing
WATERFRONT REPAIR PLAN & SECTION

Designed	Drawn	Checked
ZMV/SCS	ZMV	SCS
Job No.	**Date**	**Drawing No.**
2023124	11/28/2023	5 of 10

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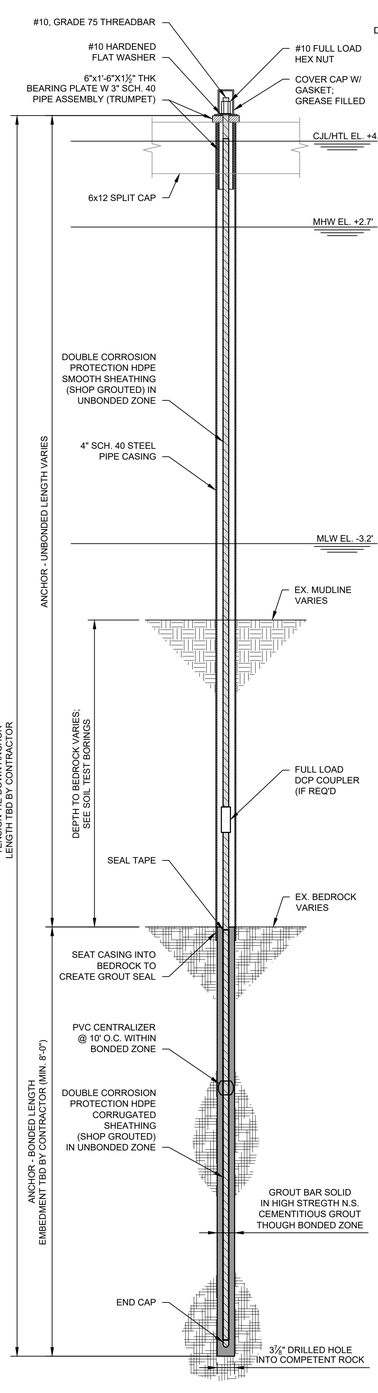
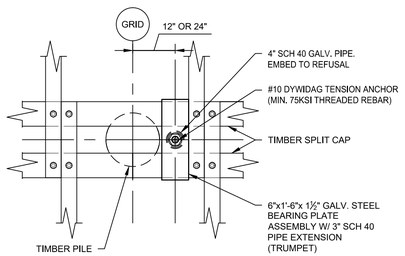


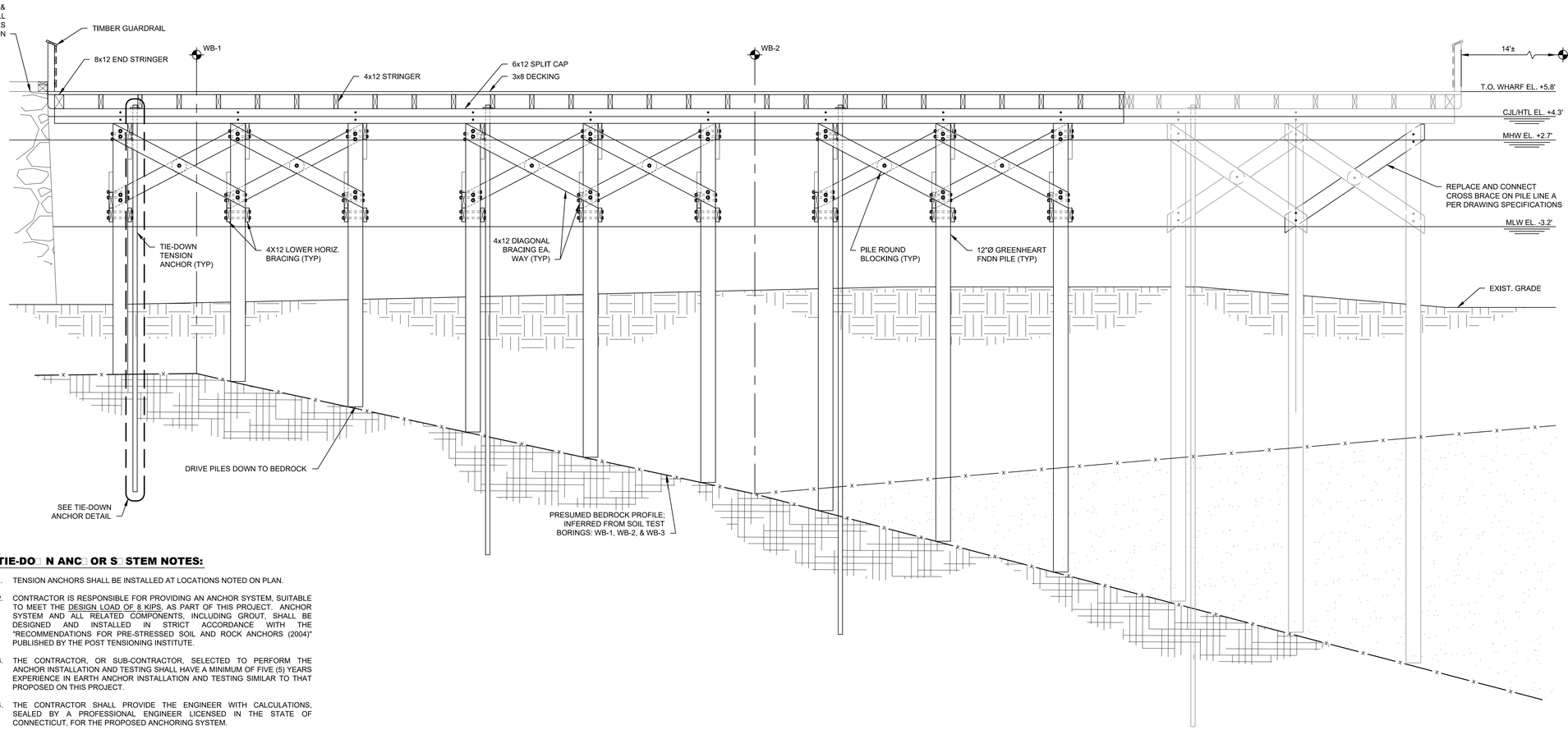
TIE-DOWN ANCHOR

SCALE: 3/4" = 1'–0"



TIE-DOWN ANCHOR PLAN

SCALE: 3/4" = 1'–0"



SECTION 3/5

SCALE: 1/4" = 1'–0"

0 4 8 FT.

1/4"=1'-0"

TIE-DOWN ANCHOR SYSTEM NOTES:

1. TENSION ANCHORS SHALL BE INSTALLED AT LOCATIONS NOTED ON PLAN.
2. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AN ANCHOR SYSTEM, SUITABLE TO MEET THE DESIGN LOAD OF 8 KIPS, AS PART OF THIS PROJECT. ANCHOR SYSTEM AND ALL RELATED COMPONENTS, INCLUDING GROUT, SHALL BE DESIGNED AND INSTALLED IN STRICT ACCORDANCE WITH THE "RECOMMENDATIONS FOR PRE-STRESSED SOIL AND ROCK ANCHORS (2004)" PUBLISHED BY THE POST TENSIONING INSTITUTE.
3. THE CONTRACTOR, OR SUB-CONTRACTOR, SELECTED TO PERFORM THE ANCHOR INSTALLATION AND TESTING SHALL HAVE A MINIMUM OF FIVE (5) YEARS EXPERIENCE IN EARTH ANCHOR INSTALLATION AND TESTING SIMILAR TO THAT PROPOSED ON THIS PROJECT.
4. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH CALCULATIONS, SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT, FOR THE PROPOSED ANCHORING SYSTEM.
5. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND DATA SHEETS DETAILING THE ANCHORING SYSTEM COMPONENTS INCLUDING, BUT NOT LIMITED TO, ANCHOR ROD, ANCHOR HEAD, SPACERS, CENTRALIZERS, GROUT, PLATES, ETC.
6. ANCHORS SHALL BE, AT MINIMUM, DOUBLE CORROSION PROTECTION (DCP) IN ACCORDANCE WITH THE "RECOMMENDATIONS FOR PRE-STRESSED SOIL AND ROCK ANCHORS (2004)" PUBLISHED BY THE POST TENSIONING INSTITUTE.
7. ANCHORS ARE TO BE SPACED AS DEPICTED IN THE CONTRACT DRAWINGS.
8. ANCHORS SHALL BE PROOF-TESTED IN ACCORDANCE WITH THE "RECOMMENDATIONS FOR PRE-STRESSED SOIL AND ROCK ANCHORS (2004)" PUBLISHED BY THE POST TENSIONING INSTITUTE. TESTING TO BE CONDUCTED TO 133% OF THE DESIGN LOAD. TEMPORARY TEST BEAMS, BLOCKING, AND FRAMEWORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY ANCHORS FAILING PROOF OR PERFORMANCE TESTING SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.
9. CONTRACTOR TO SUBMIT ANCHOR INSTALLATION PROCEDURE FOR REVIEW AND APPROVAL BY THE ENGINEER.

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Project
BRANFORD POINT
WHARF REPAIR PHASE II
4 HARBOR STREET
BRANFORD, CT 06405

Drawing
SECTION & TIE-DOWN ANCHOR

Designed	Drawn	Checked
ZMV/SCS	ZMV	SCS
Job No.	**Date**	**Drawing No.**
2023124	11/28/2023	6 of 10

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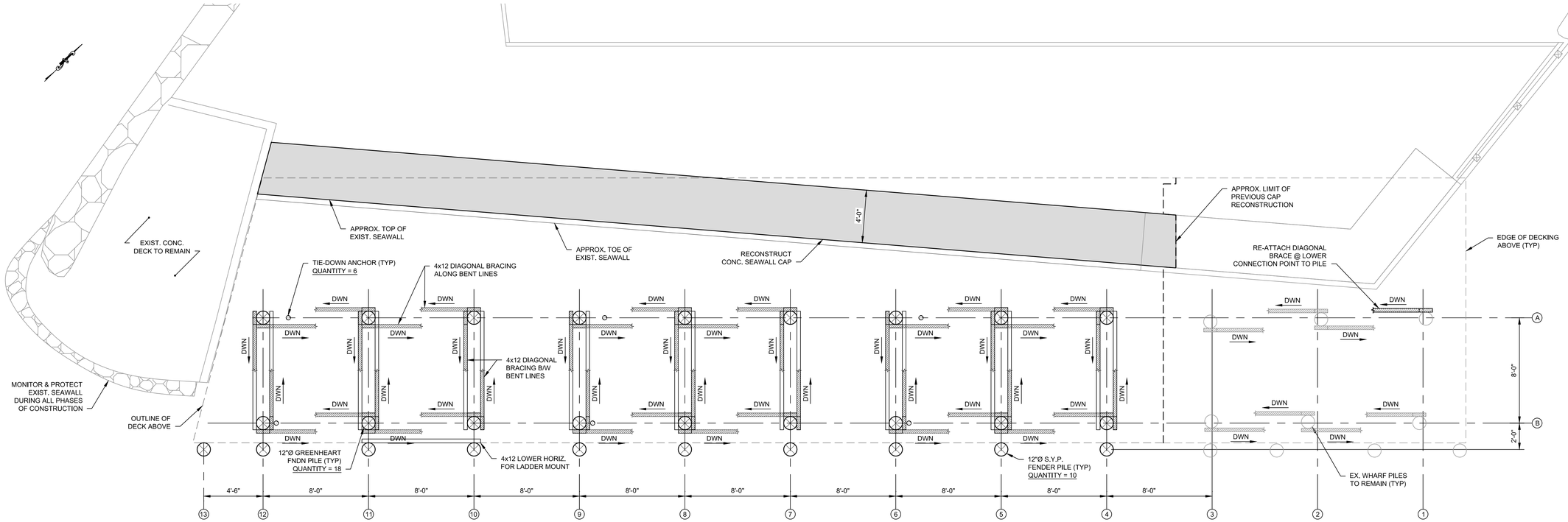
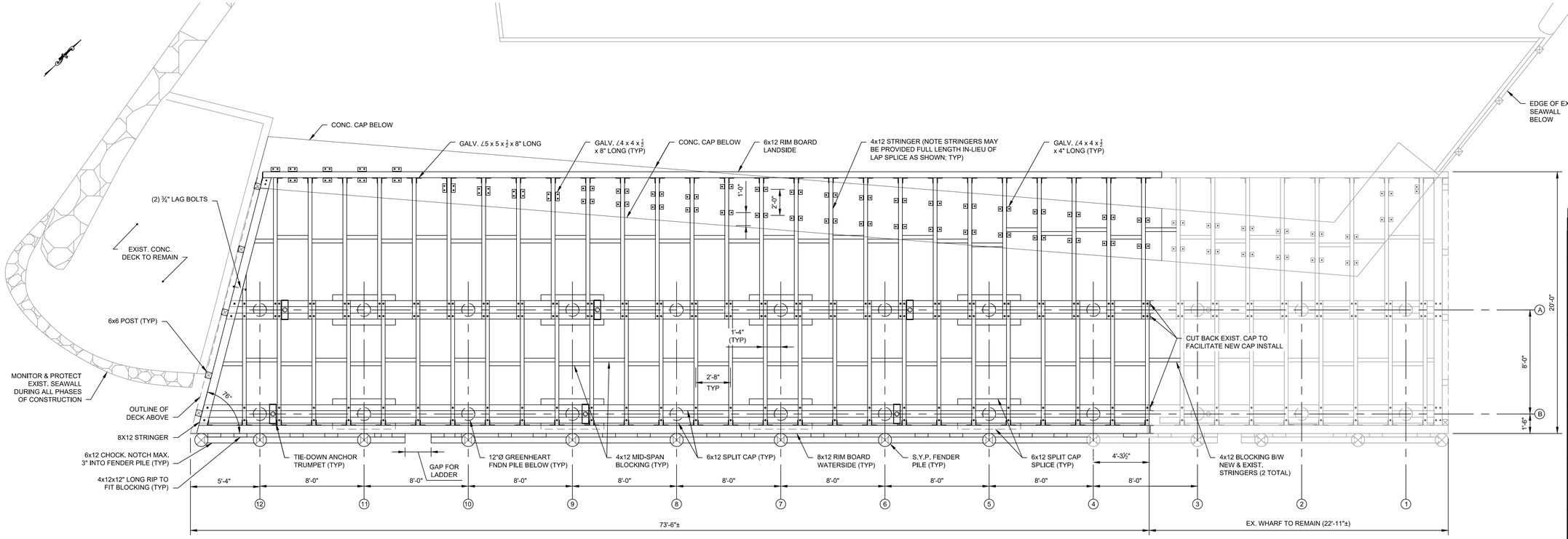


WHARF FOUNDATION PLAN

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



WHARF FRAMING PLAN

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

½"=1'-0" 0 4 8 FT.

REV	DATE	DESCRIPTION

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BRANFORD POINT
WHARF REPAIR PHASE II
4 HARBOR STREET
BRANFORD, CT 06405

Drawing
WHARF FOUNDATION AND FRAMING PLANS

Designed	Drawn	Checked
ZMV/SCS	ZMV	SCS
Job No.	**Date**	**Drawing No.**
2023124	11/28/2023	7 of 10

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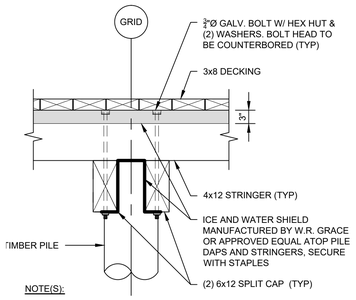
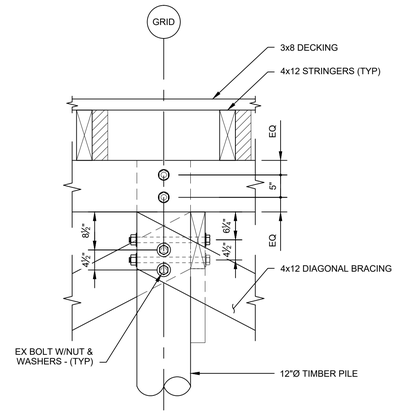


NOTE(S):

1. FILL COUNTERBORED HOLES W/ A788 SPLASH ZONE EPOXY MASTIC BY CARBOLINE COMPANY OR EQUAL APPROVED BY ENGINEER.
2. PILE TO BE CUT SUCH THAT SPLIT CAP BEARS FULLY ON PILE; POORLY CUT PILES WILL BE REJECTED AND THE CONTRACTOR WILL BE REQUIRED TO INSTALL A NEW PILE AT THEIR EXPENSE.

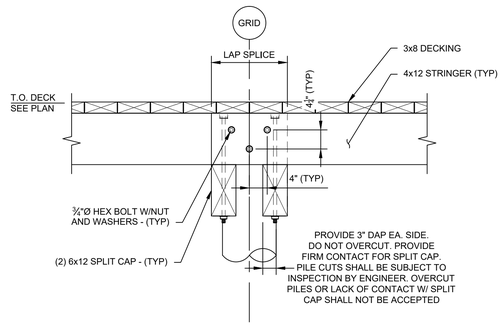
STRINGER-SPLIT CAP CONNECTION

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



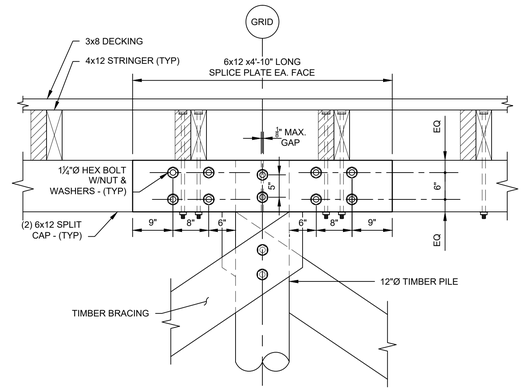
UPPER BRACE-SPLIT CAP CONNECTION

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



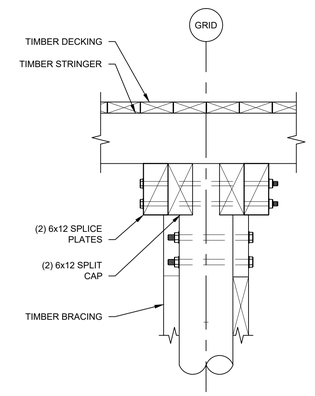
PILE DAP-STRINGER SPLICE

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



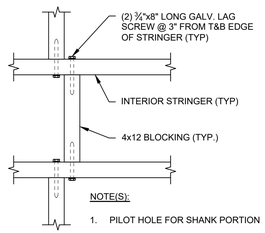
SPLIT CAP SPLICE

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



SPLIT CAP SPLICE SECTION

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

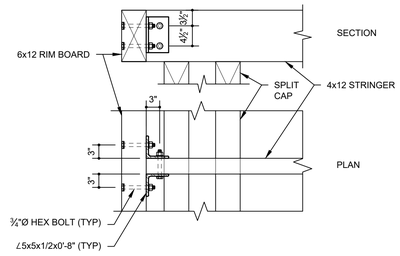


NOTE(S):

1. PILOT HOLE FOR SHANK PORTION = ¾"Ø
2. PILOT HOLE FOR THREAD PORTION = ½"Ø

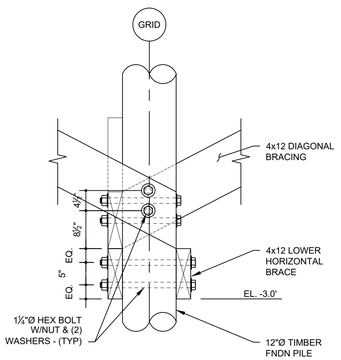
STRINGER BLOCKING

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



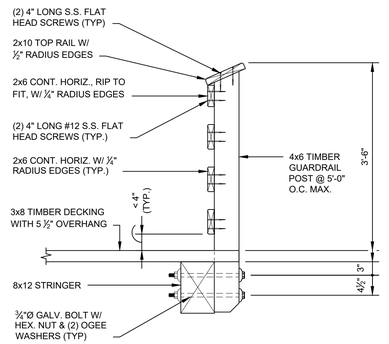
STRINGER-RIM BOARD CONNECTION I

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



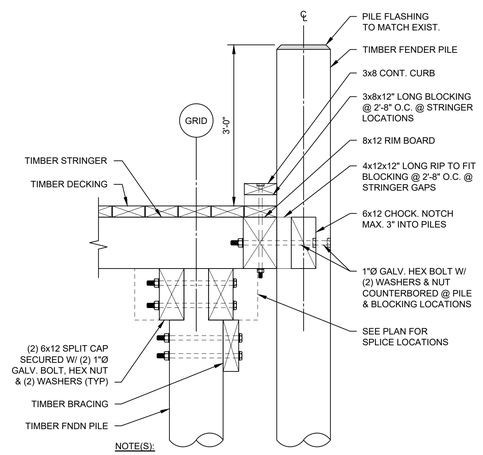
LOWER BRACE CONNECTION

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



TIMBER GUARDRAIL

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

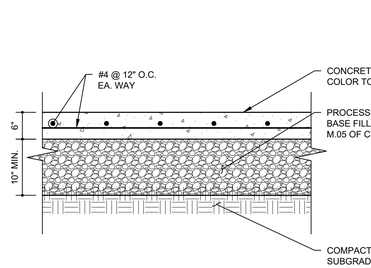


NOTE(S):

1. FILL COUNTERBORED HOLES W/ A788 SPLASH ZONE EPOXY MASTIC BY CARBOLINE COMPANY OR EQUAL APPROVED BY ENGINEER

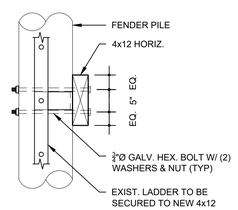
CHOCK-FENDER PILE CONNECTION

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



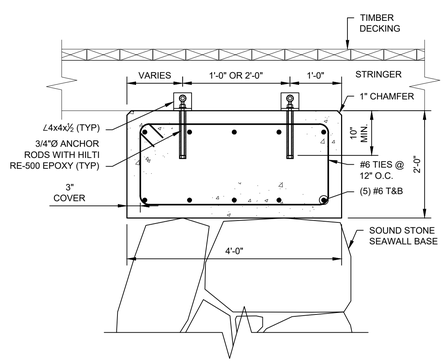
CONCRETE DECK

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



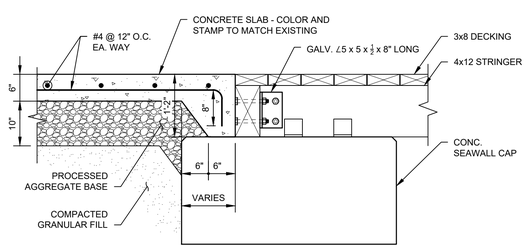
LADDER LOWER HORIZ.

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



CONCRETE CAP

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



LANDSIDE WHARF EDGE

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

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Project
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Drawing
SECTIONS & DETAILS

Designed	Drawn	Checked
ZMV/SCS	ZMV	SCS
Job No. 2023124	Date 11/28/2023	Drawing No. 8 of 10

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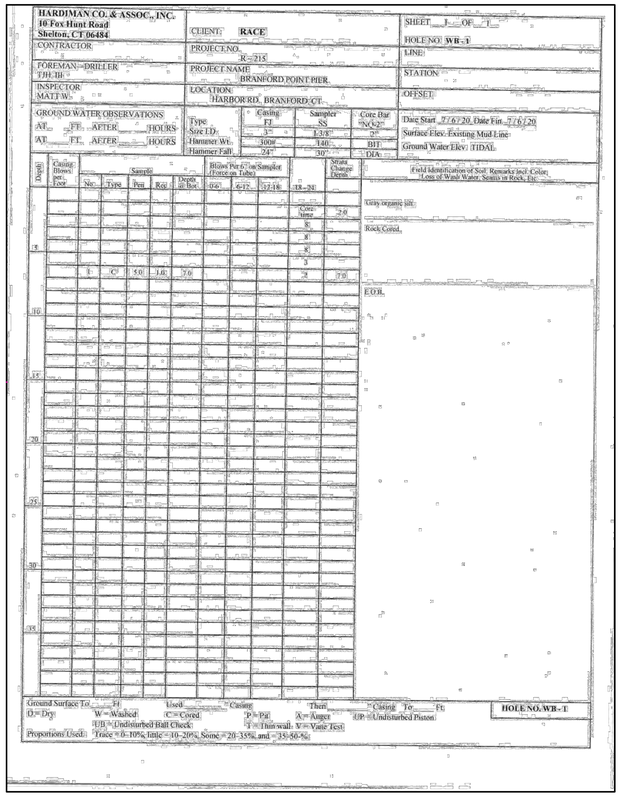
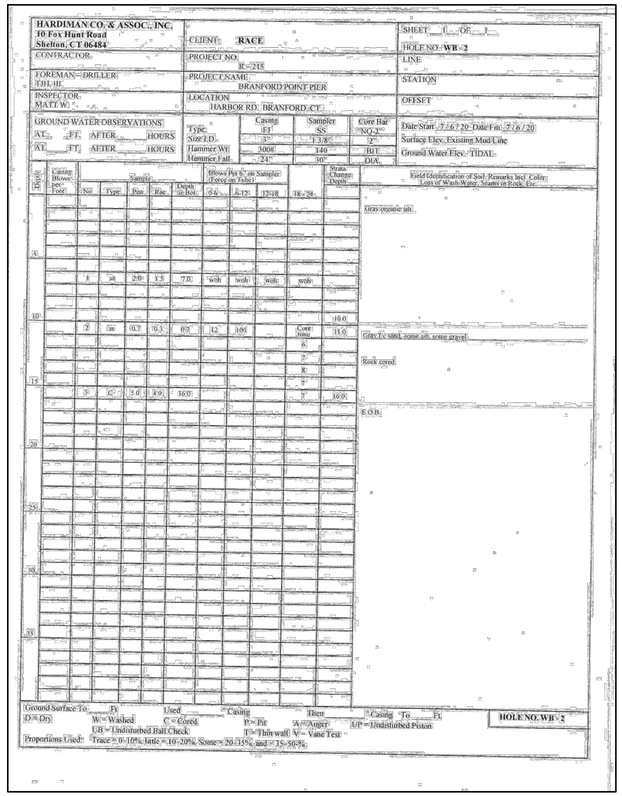
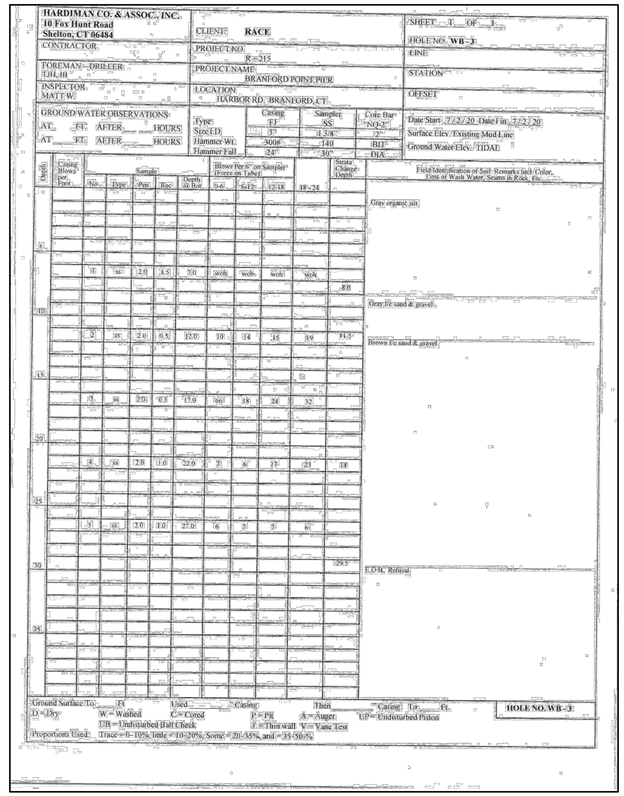


BORING LOG WB-1



BORING LOG WB-2



BORING LOG WB-3

NOTES:

1. LOCATION OF BORINGS (WB-1 TO WB-3) ARE SHOWN IN EXISTING PLAN ON DWG 4

REV	DATE	DESCRIPTION

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Project
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WHARF REPAIR PHASE II
4 HARBOR STREET
BRANFORD, CT 06405

Drawing
SOIL TEST BORING LOGS

Designed	Drawn	Checked
ZMV/SCS	ZMV	SCS
Job No.	**Date**	**Drawing No.**
2023124	11/28/2023	9 of 10

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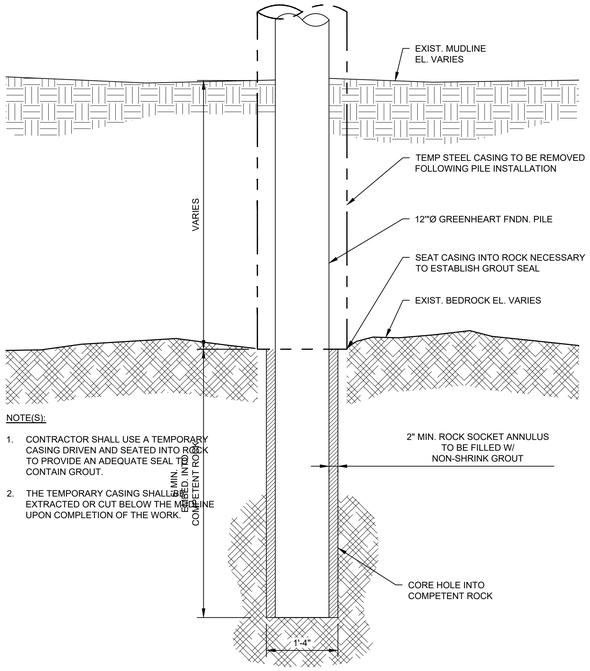
UNIT PRICE ITEM ONLY - NOT PART OF BASE BID



NOTE(S):

1. CONTRACTOR SHALL USE A TEMPORARY CASING DRIVEN AND SEATED INTO ROCK TO PROVIDE AN ADEQUATE SEAL TO CONTAIN GROUT.
2. THE TEMPORARY CASING SHALL BE EXTRACTED OR CUT BELOW THE MUDLINE UPON COMPLETION OF THE WORK.

PILE ROCK SOCKET

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

PILE INSTALLATION - BORED PILE / ROCK SOCKETS:

1. PROVIDE EQUIPMENT CAPABLE OF ESTABLISHING HOLES OF THE MINIMUM DIAMETER AND TO THE DEPTH OR ELEVATIONS SHOWN ON THE PLANS. TEMPORARY SLEEVES OR CASINGS ARE PERMITTED AND MAY BE REQUIRED. JETTING IS NOT PERMITTED.
2. THE CONTRACTOR SHALL PERFORM THE EXCAVATIONS REQUIRED THROUGH WHATEVER MATERIALS ARE ENCOUNTERED, TO THE DIMENSIONS AND ELEVATIONS SHOWN IN THE PLANS OR OTHERWISE REQUIRED BY THE SPECIFICATIONS.
3. PERFORM WORK IN MANNER THAT CAUSES NO SUBSIDENCE OF THE SURROUNDING GROUND SURFACE.
4. SUBMIT THE PROPOSED PROCEDURE AND EQUIPMENT FOR DRILLING AND GROUTING ROCK SOCKETS FOR PILES TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO COMMENCING THE WORK. THE SUBMITTAL SHOULD INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING INFORMATION:
   - 4.1. INFORMATION DESCRIBING THE TYPE OF EQUIPMENT TO BE USED, INCLUDING DRILL RIG, CRANES, DRILLING TOOLS, FINAL CLEANING EQUIPMENT, TREMIE OR CONCRETE PUMPS, CASING (INCLUDING CASING DIMENSIONS, MATERIAL AND SPLICE DETAILS), ETC.
   - 4.2. PROPOSED METHOD FOR DRILLING THE ROCK SOCKET. INCLUDE A DESCRIPTION OF HOW THE CONTRACTOR WILL ACHIEVE THE DESIGN BOTTOM OF ROCK SOCKET ELEVATION.
   - 4.3. PROPOSED METHOD FOR CLEANING OUT THE ROCK SOCKET PILE EXCAVATION. INCLUDE A DESCRIPTION OF HOW THE CONTRACTOR WILL PERFORM SPOIL REMOVAL AND DISPOSAL.
   - 4.4. DOCUMENTATION THAT SHOWS THAT THE CONTRACTOR, DRILLER, AND FOREMAN HAVE THE REQUISITE PRIOR EXPERIENCE IN INSTALLING ROCK SOCKET PILES.
   - 4.5. PILE EXCAVATION METHODS, AND FINAL PILE DIMENSIONS.
   - 4.6. METHOD OF PILE PLACEMENT, INCLUDING SUPPORT AND CENTRALIZATION TYPE AND METHODS.
   - 4.7. DETAILS AND METHOD OF GROUT PLACEMENT, CURING, AND PROTECTION.
   - 4.8. GROUT MIX DESIGN FORMULATED FOR UNDERWATER, MARINE USE.
5. THE EXCAVATION AND DRILLING EQUIPMENT SHALL HAVE ADEQUATE CAPACITY, INCLUDING POWER, TORQUE AND DOWN THRUST TO EXCAVATE A HOLE OF BOTH THE MAXIMUM DIAMETER AND TO A DEPTH OF 20 PERCENT BEYOND THE DEPTHS SHOWN ON THE PLANS.
6. BORED PILE ROCK SOCKET EXCAVATION IS EXCAVATION OF COMPETENT ROCK, ACCOMPLISHED WITH CONVENTIONAL ROCK DRILLING TOOLS, SUCH AS COREBARRELS OR DOWN-THE-HOLE HAMMERS, ATTACHED TO DRILLING EQUIPMENT OF THE SIZE, POWER, TORQUE, AND DOWN THRUST (CROWD) AS PROPOSED BY THE CONTRACTOR. TOP OF COMPETENT ROCK AS SHOWN ON THE PLANS IS APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR.
7. IF THE ASSUMED TOP OF SOCKET ELEVATION SHOWN ON THE PLANS VARIES BY MORE THAN 2 FT, STOP WORK AND NOTIFY THE ENGINEER.
8. WHEN DRILLED SHAFTS ARE LOCATED IN OPEN WATER AREAS, EXTEND EXTERIOR CASINGS FROM ABOVE THE WATER ELEVATION INTO THE GROUND TO PROTECT THE SHAFT CONCRETE FROM WATER ACTION DURING PLACEMENT AND CURING OF THE CONCRETE. INSTALL THE EXTERIOR CASING IN SUCH A MANNER SO AS TO PRODUCE A POSITIVE SEAL AT THE BOTTOM OF THE CASING AND PREVENT PIPING OF WATER OR OTHER MATERIALS INTO OR FROM THE SHAFT EXCAVATION.
9. DURING DRILLING OR EXCAVATION OF THE SHAFT(S), MAKE FREQUENT CHECKS OF THE PLUMBNESS, ALIGNMENT, AND DIMENSIONS OF THE SHAFT. CORRECT ANY DEVIATIONS EXCEEDING THE ALLOWABLE TOLERANCES USING A PROCEDURE APPROVED BY THE ENGINEER. FINAL BORED PILE DEPTHS SHALL BE MEASURED WITH A SUITABLE WEIGHTED TAPE OR OTHER APPROVED METHODS AFTER FINAL CLEANING.

PILE INSTALLATION - BORED PILE / ROCK SOCKETS(CONT.):

10. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH DOCUMENTATION THAT THE BERTH IS CLEAR ROCK REMNANTS, SLOUGHED MATERIAL FROM THE SIDE SLOPE, AND ANY OTHER DEBRIS OR MATERIAL RESULTING FROM DRILLING OPERATIONS AND PILE INSTALLATION. SHOULD ANY MATERIAL BE FOUND IN THE BERTH, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF IT AT NO EXPENSE TO THE SATISFACTION OF THE OWNER.
11. ANNULUS OF PILES SHALL BE GROUTED SOLID WITH NON-SHRINK GROUT, AS SOON AS POSSIBLE FOLLOWING PILE PLACEMENT, AND AFTER THE ENGINEER HAS ACCEPTED THE CLEANLINESS OF THE BORED PILE. THE ENGINEER MAY RE-INSPECT THE BORED PILE FOR CLEANLINESS SHOULD THERE BE ANY DELAYS BETWEEN INITIAL ACCEPTANCE OF BORED PILE CLEANLINESS AND COMMENCEMENT OF THE GROUTING. IF DURING THE DELAY THE ENGINEER HAS DETERMINED THAT THE BORED PILE CLEANLINESS HAS DETERIORATED, THE ENGINEER MAY REQUIRE THE CONTRACTOR TO RE-CLEAN THE BORED PILE, AT NO ADDITIONAL COST TO THE OWNER.
12. GROUT PLACEMENT SHALL BE CONTINUOUS FROM THE BOTTOM OF THE BORED PILE TO THE ELEVATION NOTED ON THE PLANS. GROUT SHALL BE PLACED THROUGH A TREMIE OR CONCRETE PUMP. THE FREE FALL PLACEMENT OF GROUT SHALL NOT BE PERMITTED.
13. TREMIES USED TO PLACE GROUT SHALL CONSIST OF A TUBE OF SUFFICIENT LENGTH, WEIGHT, AND DIAMETER TO DISCHARGE THE GROUT AT THE ROCK SOCKET BASE ELEVATION. THE TREMIE SHALL NOT CONTAIN ALUMINUM PARTS. THE INSIDE AND OUTSIDE SURFACES OF THE TREMIE SHALL BE CLEAN AND SMOOTH TO PERMIT BOTH FLOW OF GROUT AND UNIMPEDED WITHDRAWL DURING GROUTING. THE WALL THICKNESS OF THE TREMIE SHALL BE ADEQUATE TO PREVENT CRIMPING OR SHARP BENDS, WHICH RESTRICT GROUT PLACEMENT.
14. BEGINNING IMMEDIATELY AFTER PLACEMENT, THE GROUT SHALL BE PROTECTED FROM PREMATURE DRYING, EXCESSIVELY HOT OR COLD TEMPERATURES, AND MECHANICAL DAMAGE AND SHALL BE MAINTAINED WITH MINIMAL MOISTURE LOSS AT A RELATIVE CONSTANT TEMPERATURE FOR THE PERIOD NECESSARY FOR THE HYDRATION OF THE CEMENT AND HARDENING OF THE GROUT.
15. GROUT SURFACES NOT COVERED BY FORMS OR WITHIN THE INTER-TIDAL ELEVATIONS SHALL BE PROTECTED FROM LOSS OF SURFACE MOISTURE FOR NOT LESS THAN SEVEN DAYS.
16. BAGGED, PRE-MIXED FORMULATIONS OF NON-SHRINK GROUT SHALL MEET THE REQUIREMENTS OF ASTM C 1107, GRADE B. THE GROUT MUST BE MIXED WITH POTABLE WATER FOR USE. THE GROUT SHALL BE MIXED TO A FLOWABLE CONSISTENCY AS DETERMINED BY ASTM C 230. ALL BAGGED MATERIAL SHALL BE CLEARLY MARKED WITH THE MANUFACTURER'S NAME, DATE OF PRODUCTION, BATCH NUMBER, AND WRITTEN INSTRUCTIONS FOR PROPER MIXING, PLACEMENT AND CURING OF THE PRODUCT.
17. THE CONTRACTOR MAY FORMULATE AND DESIGN A GROUT MIX FOR USE ON THE PROJECT IN LIEU OF USING A PREBAGGED PRODUCT. THE CONTRACTOR MUST OBTAIN PRIOR WRITTEN APPROVAL OF THE ENGINEER FOR ANY SUCH PROPOSED MIX DESIGN. ANY SUCH MIX DESIGN SHALL INCLUDE THE PROPORTIONS OF HYDRAULIC CEMENT, POTABLE WATER, FINE AGGREGATES, EXPANSIVE AGENT, AND ANY OTHER NECESSARY ADDITIVE OR ADMIXTURE. THIS MATERIAL SHALL MEET ALL OF THE SAME CHEMICAL AND PHYSICAL REQUIREMENTS AS MUST THE PRE-BAGGED GROUT, IN ACCORDANCE WITH ASTM C1107, GRADE B.
18. GROUT SHALL HAVE A MINIMUM 28-DAY DESIGN COMPRESSIVE STRENGTH OF 5,000 PSI.
19. TESTS OF GROUT SHALL BE MADE BY AN INDEPENDENT TESTING AGENCY AT THE EXPENSE OF THE OWNER. THAT CONTRACTOR SHALL SCHEDULE TESTS AND NOTIFY THE OWNER AND ENGINEER OF THE TESTING SCHEDULE. GROUT SHALL BE SAMPLED AND TESTED FOR COMPRESSIVE STRENGTH IN ACCORDANCE WITH AASHTO T106/ASTM C109 AT A FREQUENCY OF NO LESS THAN ONE SET OF THREE (3) 2-INCH GROUT CUBES FROM EACH GROUT PLANT EACH DAY OF OPERATION OR PER EVERY 10 PILES, WHICHEVER OCCURS MORE FREQUENTLY. THE COMPRESSIVE STRENGTH SHALL BE THE AVERAGE OF THE THREE (3) CUBES TESTED.

REV	DATE	DESCRIPTION

FOR BID PURPOSES ONLY
NOT FOR CONSTRUCTION

RACE COASTAL ENGINEERING
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Prepared for
TOWN OF BRANFORD
ENGINEERING DEPARTMENT
1019 MAIN STREET
BRANFORD, CT 06405

Project
BRANFORD POINT
WHARF REPAIR PHASE II
4 HARBOR STREET
BRANFORD, CT 06405

Drawing
PILE ROCK SOCKET

Designed	Drawn	Checked
ZMV/SCS	ZMV	SCS
Job No.	**Date**	**Drawing No.**
2023124	11/28/2023	10 of 10

NOT VALID WITHOUT ENGINEER'S SEAL