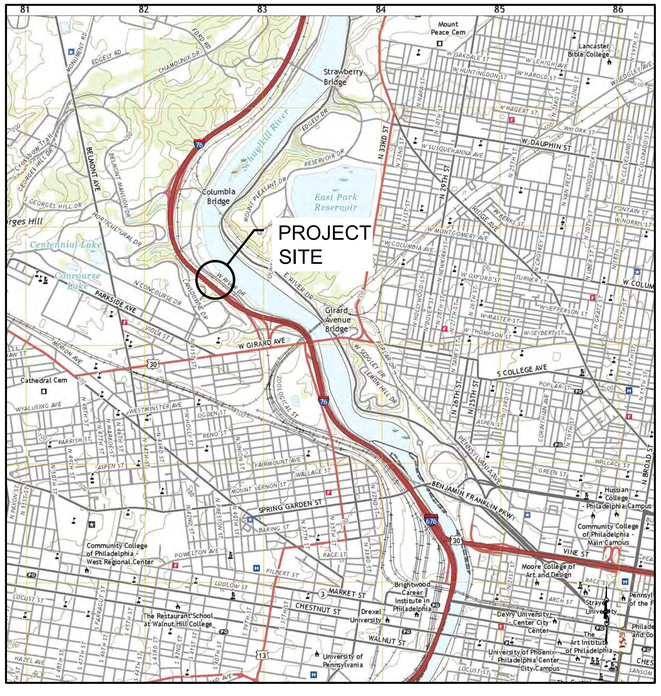
DRAGON BOAT LANDING DOCK IMPROVEMENT
1233 MARTIN LUTHER KING JR. DRIVE

MARCH 24, 2022

LIST OF DRAWINGS



VICINITY MAP

AERIAL PHOTO

DRAFT

REV	DATE	DESCRIPTION

PROGRESS
NOT FOR CONSTRUCTION

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Prepared for
PHILADELPHIA REDEVELOPMENT AUTHORITY
1234 MARKET STREET, 16TH FLOOR
PHILADELPHIA, PA 19107

Project
DRAGON BOAT LOADING DOCK IMPROVEMENT
1233 MARTIN LUTHER KING JR. DRIVE
PHILADELPHIA, PA

Drawing
TITLE SHEET,
DRAWING LIST &
VICINITY MAP

Designed	Drawn	Checked
MJW	MJW	MRR
Job No.	**Date**	**Drawing No.**
2020020	3/24/2022	1 of 8

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:
   - SELECTIVELY DEMOLISH EXISTING ITEMS AS INDICATED
   - REPLACE EXISTING FLOATING DOCKS AND LANDING FLOAT IN-PLACE/ IN-KIND
   - FURNISH AND INSTALL PILES AT EXISTING NORTH FLOATING DOCKS
   - FURNISH AND INSTALL CONCRETE LANDING FOR SOUTH GANGWAY
   - FURNISH & INSTALL FLOATING DOCKS AND ASSOCIATED PILES AT SOUTH DOCK
   - FURNISH AND INSTALL GANGWAY AT SOUTH DOCK
   - RE-GRADE AROUND CONCRETE LANDING AT SOUTH DOCK
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.

DESIGN CRITERIA:

1. DOCK SUPPORT STRUCTURES DESIGNED IN ACCORDANCE WITH THE PHILADELPHIA BUILDING CODE.
2. DOCK SUPPORT STRUCTURES HAVE BEEN DESIGNED BASED IN ACCORDANCE WITH THE APPROPRIATE LOADS AS FOLLOWS:

   A. ASSOCIATED DEAD LOADS
   B. UNIFORM LIVE LOAD OF 60 PSF
   C. UNIFORM GROUND SNOW LOAD OF 25 PSF
   D. UNIFORM CURRENT FORCE OF 46 PSF PER FOOT OF CURRENT, BASED ON A 7.6 FT/SEC VELOCITY AT THE 100 YEAR RETURN PERIOD.
   E. BASIC DESIGN WIND SPEED BASED ON A 115 MPH 3-SECOND GUST FOR A RISK CATEGORY II STRUCTURE.
   F. IMPACT OF DEBRIS: ASSUMED OBJECT WEIGHT OF 1000# AND A VELOCITY OF 7.6 FT/SEC, WITH THE FOLLOWING FACTORS:
   F.a. CD = 1.0
   F.b. CB = 0.2
   F.c. CStr = 0.4

GENERAL NOTES:

1. ELEVATIONS ARE REFERENCED TO THE CITY OF PHILADELPHIA DATUM. CONVERSATION FROM NAVD 88 TO PHILADELPHIA DATUM WAS TAKEN AS -4.5'.
2. THIS SITE INFORMATION HAS BEEN TAKEN FROM A DRAWING TITLED "EXISTING CONDITIONS", PREPARED FOR LANGAN, BY RODRIGUEZ ENGINEERS SURVEYORS GIS., DATED 10/27/2020.
3. ADDITIONAL SITE INFORMATION WAS OBTAINED BY RACE COASTAL ENGINEERING, PC (RACE) ON 11/20/2020 AND CAN ONLY REPRESENT CONDITIONS AT THE TIME OF THE INVESTIGATION.
4. HYDROGRAPHIC SURVEY PERFORMED BY RACE ON 11/20/2020.
5. IN-WATER DEPTHS RECORDED WITH AN ODIM ECHOTRACT CV-100 ECHO SOUNDER AND 200 kHZ, 8 DEG BEAM TRANSDUCER.
6. DATA PROCESSED USING HYPACT SOFTWARE. SOUNDINGS SORTED USING HYPACT CROSS SORT UTILITY.
7. THE INFORMATION DEPICTED REPRESENTS THE RESULT OF SURVEYS MADE ON THE DATED INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING CONDITIONS EXISTING AT THAT TIME.
8. WORK SHALL COMPLY WITH FEDERAL, STATE, AND LOCAL LAWS AND STATUTES AND THE REQUIREMENTS AND CONDITIONS OF ALL REGULATORY PERMITS ISSUED FOR THE WORK.
9. THESE DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE PROJECT REGULATORY PERMITS. THE CONTRACTOR SHALL COMPLY TO ALL CONDITIONS OF THOSE PERMITS. 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.
10. EXISTING CONDITIONS AND DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION AND FABRICATION OR ORDERING OF ANY CONSTRUCTION MATERIALS.
11. SECTIONS AND DETAILS APPLY TO SAME AND SIMILAR CONDITIONS UNLESS SPECIFICALLY NOTED OTHERWISE HEREIN.
12. 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. COMPENSATION TO THE CONTRACTOR WILL NOT BE CONSIDERED.
13. 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.
14. 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.
15. THE CONTRACTOR SHALL PROTECT ALL WETLANDS AND COASTAL RESOURCES FROM INTRUSION BY TURBID WATERS, CONSTRUCTION DEBRIS, CONSTRUCTION EQUIPMENT, OR PERSONNEL DURING ALL WORK ACTIVITIES.
16. 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.
17. LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PERFORM THE WORK THAT, UPON COMPLETION, ARE NOT A PART OF THE WORK, SHALL BE FURNISHED, INSTALLED, AND SUBSEQUENTLY REMOVED FROM THE SITE BY THE CONTRACTOR.
18. TEMPORARY WORK SHALL BE SUBJECT TO THE REQUIREMENTS OF THE STATE AND APPLICABLE LOCAL BUILDING CODES.

PROJECT LAYOUT:

1. PROJECT LAYOUT IS THE RESPONSIBILITY OF THE CONTRACTOR. 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.

SELECTIVE DEMOLITION & DISPOSAL:

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 TO THE OWNER.
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. ALL DEMOLITION AND CONSTRUCTION WASTE MATERIALS SHALL BE DISPOSED OF LEGALLY OFFSITE BY THE CONTRACTOR.

STRUCTURAL STEEL & STEEL FASTENERS:

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 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.
5. CUT, DRILL, AND PUNCH HOLES PERPENDICULAR TO METAL SURFACES. DO NOT FLAME CUT HOLES OR ENLARGE HOLES BY BURNING.
6. STEEL PILES SHALL BE AS FOLLOWS:

   6.1. FLOAT ANCHOR PILES: EPOXY COATED 12"Ø PIPE PILE
7. STEEL PIPE PILES SHALL BE CLOSED END PIPE. STEEL PIPE PILES SHALL HAVE A MINIMUM WALL THICKNESS OF ⅝".
8. STRUCTURAL STEEL MATERIALS SHALL MEET THE FOLLOWING REQUIREMENTS:

   8.1. MISC. STEEL: ASTM A36

   8.2. STAINLESS STEEL: GRADE 316

   8.3. WELD RODS: ASTM A233, E70XX SERIES ELECTRODES AS REQUIRED FOR CONDITIONS OF INTENDED USE.

   8.4. PIPE SECTIONS: ASTM A252 GRADE 3 (MOD), MIN. Fy = 50 KSI
9. STEEL FASTENERS:

   9.1. BOLTS: ASTM A307 GRADE A W/ HEXAGONAL HEADS UNLESS OTHERWISE NOTED

   9.2. NUTS: ASTM A563 GRADE A WITH HEXAGONAL HEADS

   9.3. WASHERS: ASTM F844 WASHERS OR OGEE TYPE AS NOTED
10. STRUCTURAL STEEL FASTENERS AND ASSOCIATED HARDWARE SHALL MEET THE FOLLOWING REQUIREMENTS & SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 & MEET MINIMUM TESTS OF ASTM A239, UNLESS OTHERWISE NOTED.

STRUCTURAL STEEL COATING:

1. FLOAT ANCHOR STEEL PIPE PILES SHALL BE SHOP PRIMED AND COATED WITH BAR-RUST 235 EPOXY COATING AS MANUFACTURED BY ICI DEVOE COATING. COLOR SHALL BE BLACK.
2. UNLESS SPECIFICALLY NOTED OTHERWISE, ALL ITEMS SCHEDULED TO RECEIVE PROTECTIVE COATING SHALL BE FULLY FABRICATED WITH HOLES, CUTS, THREADS, ETC. PRIOR TO RECEIVING PROTECTIVE COATING, PRIOR TO DELIVERY TO SITE.
3. SURFACES SHALL BE CLEANED, AT A MINIMUM, TO STEEL STRUCTURES PAINTING COUNCIL SURFACE PREPARATION SPECIFICATIONS SSPC-SP10 AND TREATED WITH DEVPREP 88 CLEANER, MANUFACTURED BY ICI DEVOE COATINGS, PRIOR TO THE APPLICATION OF BAR-RUST 235 EPOXY COATING. ALL WORK CLEANED IN ONE DAY MUST BE COATED ON THAT DAY AS SOON AS POSSIBLE AFTER BLASTING. THE EPOXY SHALL BE APPLIED WHEN THE SURFACE AND AIR TEMPERATURES ARE AT LEAST 5 DEGREES FAHRENHEIT ABOVE WET BULB AIR TEMPERATURE READINGS. ALL SURFACES TO BE COATED SHALL BE COMPLETELY DRY, FREE OF MOISTURE, SOIL, DUST, SALT, AND GRIT AT THE TIME OF COATING.
4. EPOXY COATING SHALL BE APPLIED WITH BRUSH OR SPRAY IN AT LEAST TWO COATS TO ACHIEVE A MINIMUM OVERALL DRY FILM THICKNESS OF 16 MILS. EACH COAT SHALL BE COMPLETELY CURED BEFORE SUCCEEDING COATS ARE APPLIED AS PER MANUFACTURER'S INSTRUCTIONS. PREPARATION AND APPLICATION SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. COATED SURFACES, EXCEPT FOR SPLICED AREAS, SHALL NOT BE IMMERSED FOR AT LEAST 7 DAYS AFTER THE APPLICATION OF THE COATING. AFTER DRYING, ABRADED AND OTHERWISE DAMAGED AREAS OF COATING ABOVE LOW WATER SHALL BE GENEROUSLY COATED WITH THE MATERIAL SPECIFIED BELOW FOR THIS PURPOSE.
5. THE REPAIRING OF DAMAGED OR ABRADED SURFACES, INCLUDING AREAS OF WELDING, OF THE EPOXY COATING SHALL BE DONE WITH THE EPOXY MATERIAL OF THE SAME TYPE USED FOR THE INITIAL APPLICATION; OR OTHER MATERIAL RECOMMENDED FOR THIS PURPOSE BY THE MANUFACTURER OF THE COATING MATERIALS AND APPROVED BY THE OWNER. REPAIR COATINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS AND DIRECTIONS.
6. THE COATING SHALL BE READILY APPLIED WITHOUT THINNING. IF THINNING IS DESIRED BY THE CONTRACTOR, ADDITIONAL COATS MAY BE REQUIRED TO ACHIEVE THE SPECIFIED FILM THICKNESS. THINNING SHALL NOT BE DONE WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.

PILE INSTALLATION:

1. INSTALLATION SEQUENCE FOR PILES AND FLOATING DOCKS (SHOP DRAWINGS PREPARED IN ADVANCE OF PILE INSTALLATION) SHALL ACCOUNT FOR TOLERANCES NOTED BELOW:

   1.1. INSTALL FLOAT ANCHOR PILES PRIOR TO FABRICATION OF DOCKS

   1.2. IF OBSTRUCTION IS ENCOUNTERED;
   1.2.1. NOTIFY OWNER OR OWNER REPRESENTATIVE
   1.2.2. ATTEMPT TO REDRIVE PILE ON LONGITUDINAL AXIS OF DOCK ±1' FROM DESIGN LOCATION

   1.3. MEASURE LOCATION OF INSTALLED PILES

   1.4. COORDINATE INSTALLED PILE LOCATIONS WITH DOCK MANUFACTURER AND ACCOMMODATE IN DESIGN.
2. PILES SHALL HAVE A "SAFE LOAD" OR BE DRIVEN TO BEDROCK WITH A MINIMUM EMBEDMENT BELOW GRADE AS NOTED BELOW, WHICHEVER IS DEEPER. SAFE LOADING SHALL BE 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. EQUIPMENT AND METHODS FOR INSTALLING PILES SHALL BE SUCH THAT PILES ARE INSTALLED IN THEIR PROPER POSITION AND ALIGNMENT.

   2.1. SAFE LOAD: 5 TONS
   2.2. MINIMUM EMBEDMENT BELOW GRADE: 10'
3. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF THE ABOVE CRITERIA IS NOT ABLE TO BE MET DUE TO SUBSURFACE CONDITIONS.
4. PILES SHALL BE INSTALLED 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. 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.
7. THE PILE HAMMER SHALL BE OF SUITABLE SIZE FOR THE PROPER INSTALLATION OF THE PILE.
8. 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.
9. PILES WHICH ARE DAMAGED DURING INSTALLATION, SHALL BE REMOVED AND DISPOSED OFF-SITE AND REPLACED WITH NEW PILES. NO ADDITIONAL COMPENSATION WILL BE MADE FOR REPLACEMENT PILES AND INSTALLATION.
10. PILES SHALL BE INSTALLED 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.
11. THE CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF EACH PILE INSTALLED. THE RECORDS SHALL GIVE THE BUTT AND TIP DIAMETERS, LENGTH, BEHAVIOR DURING DRIVING, CUT-OFF LENGTHS, RESULTS OF ANY TESTS, DRILLING OR PROBING INFORMATION IF ANY, AND ALL OTHER INFORMATION REGARDING EACH PILE INSTALLED. THESE RECORDS SHALL BE SUBMITTED TO THE ENGINEER ON A DAILY BASIS.
12. CONTRACTOR SHALL CUT THE TOPS OF THE PILES TO THE SAME ELEVATION, EL. +26.0' PHILADELPHIA DATUM.
13. CONTRACTOR SHALL FILL THE PIPE PILES WITH CONCRETE. CONCRETE SHALL BE NORMAL WEIGHT WITH A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT 28 DAYS.
14. CONTRACTOR SHALL INSTALL PVC/HDPE CONICAL CAPS ON TOP OF ALL PILES. PILING CAPS SHALL BE SIZED WITHIN ½" OF THE PILES OUTSIDE DIAMETER. CAPS, CAP CONNECTION METHOD, AND CAP COLORS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING.

FOUNDATION:

1. THE STRUCTURE HAS BEEN DESIGNED TO REST ON SOIL HAVING A PRESUMPTIVE BEARING VALUE OF 3,000 PSF. AN ENGINEER SHALL REVIEW THE BEARING STRATA PRIOR TO CASTING CONCRETE IN ORDER TO VERIFY THE PRESUMPTIVE BEARING VALUE.
2. FOOTINGS SHALL BE PLACED ON UNDISTURBED VIRGIN SOIL, FREE OF FROST, MUD, OR ICE, OR CONTROLLED FILL.
3. FOOTING SUB-GRADE SHALL BE COMPACTED USING A VIBRATORY TAMPER OR A JUMPING SOIL RAMMER AFTER THE SOIL HAS BEEN INSPECTED AND APPROVED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEWATERING, SHORING, SHEETING, OR BRACING REQUIRED TO MAINTAIN A SAFE, DRY, AND STABLE EXCAVATION.
5. NO FOOTINGS SHALL BE PLACED IN WATER.
6. SOIL ADJACENT TO AND BELOW FOOTINGS SHALL BE KEPT FROM FREEZING AT ALL TIMES.
7. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITY LINES, SEWERS, AND FUEL STORAGE TANKS TO AVOID ANY DAMAGE TO THESE. CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" PRIOR TO ANY EXCAVATION.

BACKFILL:

1. BACKFILL OF EXCAVATIONS PERFORMED BY THE CONTRACTOR AS A PART OF THE WORK OR TO ACCOMMODATE THE WORK, SHALL CONSIST OF FREE-DRAINING MATERIAL CONFORMING TO THE FOLLOWING REQUIREMENTS:

   E. FREE-DRAINING MATERIAL SHALL CONSIST OF A MIXTURE OF SAND, GRAVEL, ROCK FRAGMENTS, QUARRY RUN STONE,
   F. AND SHALL NOT HAVE MORE THAN 70%, BY WEIGHT, PASSING THE NO. 40 SIEVE,
   G. AND NOT MORE THAN 10%, BY WEIGHT, PASSING THE NO. 200 MESH SIEVE.
2. BACKFILL MATERIAL SHALL BE INSTALLED IN 12" LIFTS AND EACH LAYER SHALL BE COMPACTED TO 95% OF THE MODIFIED PROCTOR TEST ASTM D1557/AASHTO T180.
3. BACKFILL FOR FOUNDATION WALLS AND RETAINING WALLS SHALL BE COMPACTED GRANULAR SOIL WITH NOT MORE THAN 10% PASSING THE #200 SIEVE. IF ON-SITE SOIL DOES NOT MEET THIS SPECIFICATION, THE CONTRACTOR SHALL BRING IN SOIL FROM OFF-SITE AT HIS OWN EXPENSE.
4. WHERE FOOTINGS ARE BELOW THE GROUNDWATER ELEVATION, PLACE 6 INCHES OF CRUSHED STONE UNDER FOOTINGS. CRUSHED STONE SHALL BE PLACED AFTER THE SUBSOIL HAS BEEN INSPECTED, APPROVED, AND TAMPED.

CAST-IN-PLACE CONCRETE:

1. CONCRETE SHALL BE NORMAL WEIGHT WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS.
2. CAST-IN-PLACE CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 - LATEST EDITION, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS."
3. CONFORM TO THE RECOMMENDATIONS OF ACI 304 - LATEST EDITION, "RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE."
4. CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 318-LATEST EDITION, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE."
5. READY MIX PLANT EQUIPMENT AND FACILITIES SHALL CONFORM THE "CHECK LIST FOR CERTIFICATION OF READY MIXED CONCRETE PRODUCTION FACILITIES" OF THE NRMCA.
6. 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.
7. 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.
8. 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.
9. CURING MATERIALS SHALL CONFORM TO ASTM C309, "STANDARD SPECIFICATION FOR LIQUID MEMBRANE-FORMING COMPOUNDS FOR CURING CONCRETE", WET BURLAP, OR PLASTIC MEMBRANE.
10. CONCRETE SHALL HAVE A MAXIMUM WATER TO CEMENT RATIO OF 0.40.
11. 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.
12. CONCRETE SHALL CONTAIN 5% ± 1% ENTRAINED AIR.
13. 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.
14. 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
15. TRANSIT MIX THE CONCRETE IN ACCORDANCE WITH PROVISIONS OF ASTM C94 - LATEST EDITION.
16. DO NOT USE CONCRETE AFTER 90 MINUTES FROM TIME OF INTRODUCTION OF WATER TO THE MIX.
17. REMOVE FOREIGN MATTER ACCUMULATED IN THE FORMS.
18. RIGIDLY CLOSE OPENINGS LEFT IN THE FORMWORK.
19. 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.
20. USE ONLY CLEAN TOOLS.
21. PERFORM CONCRETE PLACING AT SUCH A RATE THAT CONCRETE WHICH IS BEING INTEGRATED WITH FRESH CONCRETE IS STILL PLASTIC.
22. DEPOSIT CONCRETE AS NEARLY AS PRACTICABLE IN ITS FINAL LOCATION SO AS TO AVOID SEPARATION DUE TO REHANDLING AND FLOWING.
23. 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.
24. REMOVE REJECTED AND EXCESS CONCRETE FROM THE JOB SITE.
25. 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.
26. REMOVE TEMPORARY SPREADERS IN FORMS WHEN CONCRETE HAS REACHED THE ELEVATION OF THE SPREADERS.
27. CONSOLIDATE EACH LAYER OF CONCRETE IMMEDIATELY AFTER PLACING, BY USE OF INTERNAL CONCRETE VIBRATORS SUPPLEMENTED BY HAND SPADING, RODDING, OR TAMPING.
28. DO NOT USE VIBRATORS TO TRANSPORT CONCRETE INSIDE THE FORMS.
29. DO NOT USE HORIZONTAL CONSTRUCTION JOINTS, UNLESS SPECIFICIALLY SHOWN ON THE DRAWINGS.
30. 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.
31. IF COLD-WEATHER CONCRETING IS ANTICIPATED, A PRECONSTRUCTION MEETING SHOULD BE HELD TO DEFINE HOW COLD WEATHER CONCRETING METHODS WILL BE USED. WHEN THE MEAN DAILY AMBIENT TEMPERATURE IS AT OR BELOW 40 DEGREES F OR 45 DEGREES F AND FALLING, THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS OF ACI 306.1 - LATEST EDITION, "STANDARD SPECIFICATION FOR COLD WEATHER CONCRETING":

   A. SET UP PROPER ENCLOSURE AND HEAT TO 50 DEGREES F FOR AT LEAST TWO (2) HOURS BEFORE STARTING ANY POUR. SET UP INDIVIDUAL THERMOMETERS WITHIN ENCLOSURE TO MONITOR AMBIENT TEMPERATURES NEAR THE FACE OF FRESH CONCRETE. THERMOMETERS SHALL BE PLACED AT A MAXIMUM OF 50-FOOT CENTERS, AT MAJOR CORNERS OR RETURNS, AND AT ENDS OF CONCRETE SECTIONS. MONITOR AND RECORD TEMPERATURES IN A LOG AT EARLY MORNING, NOON, AND EARLY EVENING.

   B. USE A WATER-REDUCING ADMIXTURE WITH AN ACCELERATED SET, BUT DO NOT USE OR RELY UPON ANY MATERIAL AS AN ANTI-FREEZE. USE OF CALCIUM CHLORIDE IS PROHIBITED.

   C. USE VENTED HEATERS WITH BLOWERS SO PLACED THAT THEY DO NOT PRODUCE LOCALIZED HOT SPOTS WHICH MAY DRY OUT THE CONCRETE. EXPOSURE TO EXHAUST GASES FROM COMBUSTION HEATERS IS PROHIBITED FOR THE FIRST 24 HOURS OF THE CURING PERIOD.

   D. MAINTAIN THE TEMPERATURE OF THE FORMWORK AT NOT LESS THAN 50 DEGREES F BUT NOT GREATER THAN 70 DEGREES F FOR 48 HOURS AFTER COMPLETION OF POUR; FORMWORK MAY BE STRIPPED AFTER 72 HOURS AFTER COMPLETION OF POUR. AFTER 48 HOURS OF MAINTAINING AT LEAST 50 DEGREES F, THE TEMPERATURE MAY BE ALLOWED TO DROP GRADUALLY AND SHALL BE KEPT ABOVE 32 DEGREES F FOR A PERIOD OF SEVEN (7) DAYS AFTER COMPLETION OF POUR. PROTECTION DURING THIS PERIOD MAY BE PROVIDED BY EXISTING ENCLOSURE OR BY MEANS INDICATED IN NOTE 5 BELOW.

   E. PROTECTION MAY BE PROVIDED BY USE OF INSULATION METHODS. ADEQUATE INSULATION SHALL CONSIST OF AT LEAST ONE OF THE FOLLOWING:

      - 12" OF DRY EARTH; PROVIDE MOISTURE COVER IF OVER SLAB CONCRETE.
      - 4" OF HAY UNDER ADEQUATE MOISTURE COVER.
      - 1" OF INSULATION BLANKETS WITH VAPOR BARRIER SEAL.
      - OTHER INSULATING MATERIAL ACCEPTABLE TO THE ENGINEER.

      NOTE: EXTREME CONDITIONS OF TEMPERATURE OR WIND MAY REQUIRE MORE PROTECTION.

   F. CONCRETE SHALL NOT BE PLACED ON FROZEN GROUND.

   G. FROZEN CONCRETE SHALL BE REMOVED FROM THE JOB AND REPLACED AT A NO ADDITIONAL COST TO THE OWNER.
33. WHEN THE MEAN DAILY AMBIENT AND SUBSTRATE TEMPERATURE IS ABOVE 80 DEGREES F. THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS OF ACI 305.1 - LATEST EDITION, STANDARD SPECIFICATION FOR HOT WEATHER CONCRETING. CONCRETE SHALL BE PROTECTED FROM THERMAL DAMAGE. PROVISIONS FOR WINDBREAKS, SHADING, FOG SPRAYING, SPRINKLING, PONDING, OR WET COVERING WITH A LIGHT COLORED MATERIAL SHALL BE MADE IN ADVANCE OF PLACEMENT AND SUCH PROTECTIVE MEASURES SHALL BE TAKEN AS QUICKLY AS CONCRETE HARDENING AND FINISHING OPERATIONS WILL ALLOW.

   A. NO CONCRETE SHALL BE PLACED WHEN THE AIR TEMPERATURE IS ABOVE 90 DEGREES F UNLESS THE AIR IS STILL AND RELATIVE HUMIDITY IS ABOVE 80%.

   B. SET UP PROPER WINDBREAKERS FOR CONCRETE SURFACES WHENEVER THE RELATIVE HUMIDITY IS LESS THAN 70% FOR SLIGHT AIR MOTION OR 80% FOR LIGHT BREEZES.

   C. PROVIDE SHADE FOR POURS OTHERWISE EXPOSED TO THE SUN.

   D. CONCRETE IS TO BE AT A TEMPERATURE OF 80 DEGREES F OR LESS WHEN PLACED. IF NECESSARY, THE BATCHING PLANT SHALL COOL AGGREGATES BY SPRAYING OR BY USING CHILLED WATER OR ICE. ALL SUCH WATER SHALL BE ACCOUNTED FOR AS PART OF THE MIXING WATER.

   E. USE AN ADMIXTURE WITH A RETARDED SET.

   F. FORMS SHALL BE THOROUGHLY WETTED AT LEAST DAILY AND MORE OFTEN WHEN THE RELATIVE HUMIDITY IS LOW.

   G. FOR SLABS, MAINTAIN THE REQUIRED MATERIALS FOR CURING ON HAND, SO THEY MAY BE PLACED IMMEDIATELY UPON FINISHING. ALL CONCRETE PLACED IN AMBIENT TEMPERATURES OVER 80 DEGREES F SHALL BE KEPT WET FOR A MINIMUM OF 24 HOURS. INTERMITTENT SPRAYING WILL NOT BE PERMITTED. NO WATER SHALL BE APPLIED BEFORE CONCRETE HAS ACQUIRED ITS INITIAL SET. WHEN THE CONCRETE TEMPERATURE OF ANY SLAB GOES ABOVE 100 DEGREES F, PLACE A LAYER OF SAND ON IT AND KEEP IT CONTINUOUSLY WET UNTIL THE TEMPERATURE IS BELOW 80 DEGREES F.
34. REMOVE ALL FINS, BLEMISHES, AND DEFECTIVE CONCRETE AREAS AND PATCH WHERE REQUIRED WITH REWORKED CEMENT MORTAR OF THE SAME PROPORTIONS AS THAT USED IN THE CONCRETE.
35. FORM TIE HOLES SHALL BE PLUGGED SOLID WITH REWORKED CEMENT MORTAR OF THE SAME PROPORTIONS AS THAT USED IN THE CONCRETE.
36. VERTICAL EXPOSED SURFACES OF CONCRETE SHALL HAVE RUB FINISH.
37. HORIZONTAL EXPOSED SURFACES OF CONCRETE SHALL HAVE A BROOM FINISH W/ 2' TROWEL EDGE.
38. ALL EXPOSED EDGES SHALL HAVE A ¾" CHAMFER.

REINFORCING STEEL:

1. REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60 AND SHALL BE EPOXY COATED. EPOXY COATING SHALL BE FUSION BONDED AS PER ASTM A775. CONTRACTOR SHALL FABRICATE REINFORCEMENT TO THE SHAPES AND DIMENSIONS REQUIRED, WITHIN FABRICATION TOLERANCES STATED IN THE C.R.S.I. "MANUAL OF STANDARD PRACTICES".
2. DO NOT USE REINFORCING STEEL HAVING ANY OF THE FOLLOWING DEFECTS:

   A. BAR LENGTHS, DEPTHS OR BENDS EXCEEDING THE SPECIFIED FABRICATION TOLERANCE.
   B. BENDS OR KINKS NOT INDICATED ON THE DRAWINGS OR REQUIRED FOR THIS WORK.
   C. BARS WITH CROSS-SECTION REDUCED DUE ANY CAUSE
3. SPACERS, CHAIRS, BOLSTERS, AND OTHER DEVICES NECESSARY FOR THE PROPER REINFORCING STEEL PLACEMENT SHALL BE EPOXY COATED. NO CLAY OR CONCRETE OR ANY OTHER MATERIAL OTHER THAN APPROVED CHAIRS SHALL BE USED. ONE CHAIR SAMPLE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL
4. REINFORCING STEEL SHALL BE ADEQUATELY TIED WITH NYLON, EPOXY, OR PLASTIC COATED TIE WIRE AND SUPPORTED WITH EPOXY COATED CHAIRS TO THE SPECIFIED CLEARANCE.
5. EPOXY COATED REINFORCING STEEL SHALL BE PROTECTED FROM DAMAGE TO THE EPOXY DURING HANDLING AND PLACEMENT. ANY EPOXY COATED REINFORCING STEEL, WHERE THE EPOXY HAS BEEN DAMAGED, SHALL BE EITHER REMOVED FROM THE SIRE OR RE-COATED WITH SIKA TOP 108, ARMETEC, MANUFACTURED BY SIKA CORPORATION, LYNDHURST, NJ OR AN EQUIVALENT APPROVED BY THE ENGINEER. APPLY RE-COATING IN STRICT CONFORMANCE TO THE MANUFACTURER'S INSTRUCTIONS, AT THE CONTRACTOR'S EXPENSE. NOTIFY ENGINEER.

DRAFT

REV	DATE	DESCRIPTION

PROGRESS
NOT FOR CONSTRUCTION

RACE COASTAL ENGINEERING

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Tel.: 203-377-0663
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Prepared for: PHILADELPHIA REDEVELOPMENT AUTHORITY
1234 MARKET STREET, 16TH FLOOR
PHILADELPHIA, PA 19107

Project: DRAGON BOAT LOADING DOCK IMPROVEMENT
1233 MARTIN LUTHER KING JR. DRIVE
PHILADELPHIA, PA

Drawing: PROJECT NOTES 1 OF 2

Designed	Drawn	Checked
MJW	MJW	MRR
Job No. 2020020	Date 3/24/2022	Drawing No. 2 of 8

NOT VALID WITHOUT ENGINEER'S SEAL

PROJECT NOTES

FLOATING DOCK:

1. THE FLOATING DOCK SYSTEM SHALL BE MANUFACTURED BY AN APPROVED MANUFACTURER HAVING A MINIMUM OF TEN YEARS EXPERIENCE IN THE MANUFACTURING AND INSTALLATION OF FLOATING DOCK SYSTEMS, THAT ARE THE SAME TYPE AS PROPOSED FOR THIS PROJECT, ON AT LEAST THREE OTHER INSTALLATIONS.
2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE DOCK SYSTEM TO ENGINEER FOR REVIEW PRIOR TO ORDERING. SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF PA.
3. DOCKS SHALL BE COMPLETELY FABRICATED IN THE MANUFACTURES FACILITY AND SHIPPED TO THE SITE COMPLETED WITH DECKING AND FLOTATION ATTACHED, READY FOR OFF-LOAD DIRECT INTO WATER. KNOCKED DOWN FRAMING SYSTEMS ASSEMBLED AT SITE WILL NOT BE ALLOWED. PANELIZED DECKING SYSTEMS WILL NOT BE ALLOWED.
4. THE CONTRACTOR SHALL FURNISH ALL TOOLS, EQUIPMENT, MATERIALS, AND SUPPLIES AND SHALL PERFORM ALL LABOR, SUPERVISION, ASSEMBLY, AND INSTALLATION OF THE COMPLETE FLOATING DOCK SYSTEMS.
5. FLOATING DOCK DECK SURFACE AND STRUCTURAL FRAMING SHALL BE DESIGNED TO WITHSTAND A UNIFORMLY DISTRIBUTED VERTICAL LIVE LOAD OF 60 PSF AND A CONCENTRATED VERTICAL LOAD OF 400 LBS APPLIED OVER 1 SQUARE FOOT, HOWEVER LOAD CASES SHALL NOT NEED TO BE ANALYZED SIMULTANEOUSLY.
6. FLOTATION SHALL BE DESIGNED TO SUPPORT THE DEAD LOAD PLUS A UNIFORMLY DISTRIBUTED VERTICAL LIVE LOAD OF 15 PSF APPLIED TO THE FULL AREA OF THE DECK SURFACE.
7. FLOATING DOCK SHALL BE DESIGNED TO WITHSTAND THE FORCES OF NON-MOVING ICE.
8. FLOATING DOCK SHALL BE DESIGNED TO WITHSTAND A MINIMUM ALLOWABLE LATERAL CURRENT LOAD OF 46 LBS/FT.
9. FREEBOARD UNDER DEAD LOAD SHALL EQUAL 6" ± 1" OR AS REQUIRED TO MATCH FREEBOARD OF EXISTING FLOATING DOCK STRUCTURES.
10. FREEBOARD UNDER DEAD LOAD PLUS THE 15 PSF LIVE LOAD SHALL BE NO LESS THAN 2".
11. WHEN THE DESIGN UNIFORM 15 PSF LIVE LOAD IS APPLIED TO HALF OF THE FLOATING DOCK WIDTH OR A 400 LB POINT LOAD IS APPLIED 1 FOOT FROM THE EDGE, THE FLOATING DOCK HEEL ANGLE SHALL NOT EXCEED 6 DEGREES.
12. DEAD LOADS SHALL CONSISTS OF THE ENTIRE WEIGHT OF THE FLOATING STRUCTURE, INCLUDING THE GANGWAY AND OTHER ACCESSORIES AND APPURTENANCES.
13. THE LOSS OF FREEBOARD AFTER ONE YEAR OF SERVICE FROM THE TIME OF ACCEPTANCE SHALL NOT EXCEED 1" AND SHALL NOT EXCEED 2" AFTER FIVE YEARS.
14. DECK SURFACES BETWEEN ADJACENT DOCK UNITS SHALL BE AT THE SAME ELEVATION WITH NO MORE THAN ⅛ INCH DIFFERENTIAL.
15. FLOATING DOCK SURFACES SHALL NOT SLOPE MORE THAN 1/2 INCH PER 6 FEET OF DOCK WIDTH OR LENGTH AT THE TIME OF ACCEPTANCE AND NO MORE THAN 3/4 INCH PER 6 FEET AT THE END OF FIVE YEARS OF SERVICE.
16. DOCK UNITS UNDER GANGWAY LOCATIONS SHALL BE NO MORE THAN 2" HIGHER THAN THE FREEBOARD OF THE REST OF THE FLOATING DOCK SYSTEM DURING DEAD LOAD CONDITIONS.
17. FLOTATION SHALL BE HIGH STRENGTH, HIGH DENSITY, POLYETHYLENE. CORE SHALL BE EXPANDED POLYSTYRENE, FACTORY PRE-MOLDED TO ENSURE COMPLETE EXPANSION TO MINIMUM OF 1.0 LB/CF DENSITY. FLOTATION UNITS SHALL BE DESIGNED TO MAINTAIN THE DESIRED BUOYANCY AND FREEBOARD EVEN IF PUNCTURED OR CRACKED. FLOTATION ATTACHMENT TO STRUCTURAL FRAME SHALL BE POSITIVELY ATTACHED BY MEANS OF A THRU BOLT AND NUT. FLOTATION UNIT AND FRAME TO ACT AS ONE INTEGRAL SECTION.
18. DOCK FRAMING TIMBER SHALL BE VISUALLY GRADED STRUCTURAL LUMBER AND SHALL BE SOUTHERN YELLOW PINE (SYP) NO. 1 GRADE MINIMUM, SPIB GRADING RULES. ALL LUMBER SHALL BE SAWN 4 SIDES (S4S) AND CHROMATED COPPER ARSENATE (CCA) PRESSURE TREATED TO A MINIMUM RETENTION OF 0.6 PCF.
19. DOCK FRAMING TIMBER SHALL BE KILN DRIED AFTER TREATMENT.
20. DOCK FRAMING TIMBER SHALL BE SOUND, WELL SEASONED, AND STRAIGHT GRAINED, FREE FROM SHAKES AND LARGE OR LOOSE KNOTS AND SHALL HAVE NO DEFECTS WHICH WILL IMPAIR ITS STRENGTH OR DURABILITY FOR THE INTENDED PURPOSE.
21. DECKING FOR FLOATING DOCK SHALL BE 2x6 SYP NO. 1, COPPER QUAT (ACQ) PRESSURE TREATED TO A MINIMUM RETENTION OF 0.60 PCF, OR COMPOSITE. COORDINATE DECKING TYPE WITH OWNER.
22. DECKING SHALL BE FASTENED TO STRUCTURAL FRAMING W/ TWO (2), 3-1/2" LONG #12 - 316 S.S. DECK SCREWS SPACED 1" FROM EACH EDGE OF DECKING.
23. DECKING SCREW HOLES SHALL BE PRE-DRILLED W/ A 5/32" LEAD HOLE. LEAD HOLE SHALL BE NO LONGER THAN THE SCREW EMBEDMENT.
24. GAP BETWEEN DECKING SHALL BE 1/8".
25. STRUCTURAL STEEL CONNECTORS, BRACKETS AND MISCELLANEOUS PARTS TO BE FABRICATED FROM ASTM A 36 GRADE STEEL.
26. STRUCTURAL STEEL, BOLTS, NUTS, AND WASHERS SHALL BE FABRICATED TO ASTM A307 AND HOT DIPPED GALVANIZED IN ACCORDANCE TO ASTM A 123. A MINIMUM COATING OF 2 OUNCES PER SQUARE FOOT SHALL BE APPLIED. FASTENERS SHALL BE A MINIMUM 1/2" DIAMETER.
27. FLOATING DOCKS SHALL BE FITTED WITH HIGH DENSITY POLYETHYLENE (HDPE) WEAR PADS AT GANGWAY LOCATIONS. COORDINATE HDPE COLOR W/ OWNER.
28. THE FLOATING DOCK HINGE ASSEMBLIES SHALL HAVE A MEANS TO EASILY CONNECT & DISCONNECT TO ALLOW FOR RAPID REMOVAL OF DOCKS.
29. FLOATING DOCK MANUFACTURER SHALL PROVIDE A WARRANTY THAT THEIR FLOATING DOCK SYSTEM WILL MEET THE PERFORMANCE CRITERIA SPECIFIED WITHIN FOR A MINIMUM PERIOD OF 2 YEARS.

PILE GUIDES:

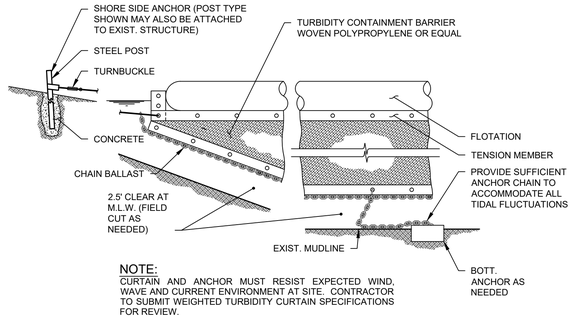
1. PILE GUIDES SHALL BE CONSTRUCTED OF STRUCTURAL STEEL CONFORMING TO ASTM A 36/A 36M, ASTM A 572/A 572M, OR ASTM A 500 AND GALVANIZED IN ACCORDANCE WITH ASTM A 123/A 123M. PILE GUIDE ROLLERS AND WEARING PADS SHALL BE LOW FRICTION, ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE (ASTM D 4020) ON STAINLESS STEEL AXLES.
2. THE CONTRACTOR SHALL FURNISH ALL TOOLS, EQUIPMENT, MEASUREMENTS, MATERIALS, AND SUPPLIES AND SHALL PERFORM ALL LABOR, SUPERVISION, FABRICATION, ASSEMBLY, AND INSTALLATION OF PILE GUIDES.
3. PILE GUIDE ASSEMBLY SHALL INCLUDE FOUR (4) UHMW ROLLERS PER GUIDE. CONTRACTOR TO SUBMIT PILE GUIDE ASSEMBLY SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.
4. CONTRACTOR TO SUBMIT PILE GUIDE ASSEMBLY SHOP DRAWINGS TO THE ENGINEER FOR FOR REVIEW PRIOR TO ORDERING. SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF PA.
5. PILE GUIDE ASSEMBLIES SHALL HAVE A MEANS TO EASILY CONNECT & DISCONNECT TO ALLOW FOR RAPID REMOVAL OF DOCKS IN CASE OF STORMS.
6. PILE GUIDE ASSEMBLIES SHALL BE DESIGNED FOR A 5 KIP MINIMUM FORCE.
7. ISOLATION BARRIERS SHALL BE PROVIDED BETWEEN DISSIMILAR METALS.

GANGWAYS:

1. GANGWAYS SHALL BE MANUFACTURED BY A COMPANY HAVING A MINIMUM OF TEN YEARS EXPERIENCE IN THE MANUFACTURING OF ALUMINUM GANGWAYS.
2. GANGWAYS SHALL BE DESIGNED TO WITHSTAND A DISTRIBUTED VERTICAL LIVE LOAD OF 60 PSF AND A CONCENTRATED LIVE LOAD OF 400 LBS AT ANY LOCATION.
3. GANGWAYS SHALL BE 138 INCHES MINIMUM CLEAR BETWEEN HANDRAILS.
4. DEFLECTION OF THE GANGWAY UNDER LIVE LOAD CONDITIONS SHOULD NOT EXCEED L/360.
5. GANGWAYS SHALL BE DESIGNED FOR A LATERAL WIND LOAD OF 20 PSF ON EXPOSED SURFACES.
6. GANGWAYS SHALL INCLUDE GUARDS AND GRAB RAILS THAT ARE COMPLIANT WITH ALL APPLICABLE CODES, SMOOTH, SNAG-FREE, AND ABLE TO WITHSTAND A 50 PLF LIVE LOAD OR 200 LB POINT LOAD, WHICHEVER IS GREATER, IN ANY DIRECTION.
7. THE GANGWAY SHALL BE FABRICATED OF 5000 AND 6000 SERIES ALUMINUM COMPATIBLE WITH A MARINE ENVIRONMENT. HINGES AND FASTENERS SHALL BE STAINLESS STEEL OR OTHER MATERIALS COMPATIBLE WITH ALUMINUM IN A MARINE ENVIRONMENT.
8. THE WALKWAY SURFACE SHALL BE A SLIP-RESISTANT SURFACE APPROVED BY THE OWNER.
9. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF GANGWAY STRUCTURES AND ENGINEERING CALCULATION, BOTH SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF PENNSYLVANIA, TO THE ENGINEER FOR REVIEW PRIOR TO ORDERING.

EROSION & SEDIMENTATION CONTROLS:

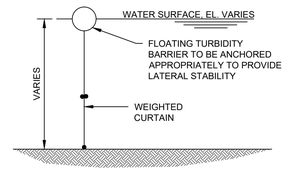
1. CONTRACTOR SHALL PROTECT FROM DISTURBING OR DAMAGE WETLAND AREAS ADJACENT TO WORK AREA.
2. LAND DISTURBANCE SHALL BE KEPT TO A MINIMUM.
3. WHENEVER POSSIBLE, EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION.
4. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE "PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL."
5. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD.
6. ADDITIONAL CONTROL MEASURES SHALL BE INSTALLED DURING THE CONSTRUCTION PERIOD AS NECESSARY AND REQUIRED.
7. THE GENERAL CONTRACTOR SHALL UTILIZE APPROVED METHODS/MATERIALS FOR PREVENTING THE BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES ONTO ADJACENT PROPERTIES AND SITE AREAS.
8. THE GENERAL CONTRACTOR SHALL MAINTAIN A SUPPLY OF SILT FENCE (100' MIN.) ON SITE FOR EMERGENCY PURPOSES.
9. ALL DISTURBED LAWN AREAS OUT OF THE MAJOR CONSTRUCTION AREA THAT ARE TO BE LEFT EXPOSED FOR MORE THAN 30 DAYS SHALL BE PROTECTED WITH A TEMPORARY VEGETATIVE COVER, SEED THESE AREAS WITH PERENNIAL RYE GRASS AT THE RATE OF 40 LBS, PER ACRE (1 LB PER 1,OOO SQ. FT.).
10. THE GENERAL CONTRACTOR IS ASSIGNED THE RESPONSIBILITY FOR IMPLEMENTING THIS EROSION AND SEDIMENT CONTROL PLAN. 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.



NOTE:
CURTAIN AND ANCHOR MUST RESIST EXPECTED WIND, WAVE AND CURRENT ENVIRONMENT AT SITE. CONTRACTOR TO SUBMIT WEIGHTED TURBIDITY CURTAIN SPECIFICATIONS FOR REVIEW.

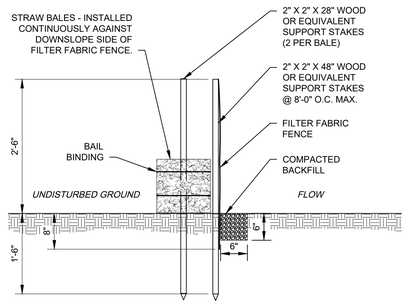
WEIGHTED TURBIDITY CURTAIN DETAIL

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



WEIGHTED TURBIDITY CURTAIN DETAIL

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



SILT FENCE DETAIL

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

DRAFT

REV	DATE	DESCRIPTION

PROGRESS NOT FOR CONSTRUCTION

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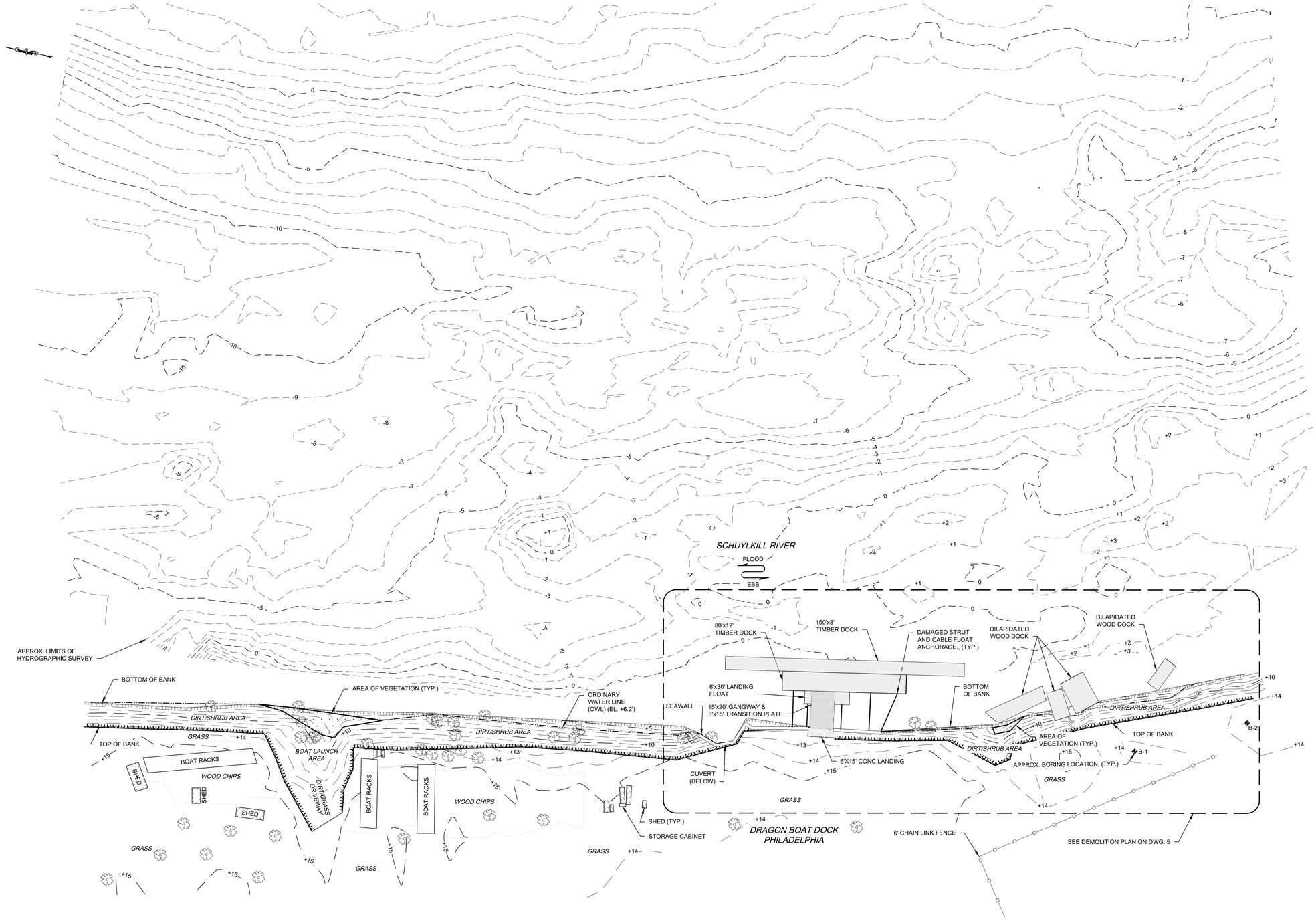
Prepared for
PHILADELPHIA REDEVELOPMENT AUTHORITY
1234 MARKET STREET, 16TH FLOOR
PHILADELPHIA, PA 19107

Project
DRAGON BOAT LOADING DOCK IMPROVEMENT
1233 MARTIN LUTHER KING JR. DRIVE
PHILADELPHIA, PA

Drawing
PROJECT NOTES 2 OF 2

Designed	Drawn	Checked
MJW	MJW	MRR
Job No.	**Date**	**Drawing No.**
2020020	3/24/2022	3 of 8

NOT VALID WITHOUT ENGINEER'S SEAL



EXISTING SITE PLAN

SCALE: 1" = 30'-0"

DRAFT

REV	DATE	DESCRIPTION

PROGRESS NOT FOR CONSTRUCTION

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EXISTING SITE PLAN

Designed	Drawn	Checked
MJW	MJW	MRR
Job No.	**Date**	**Drawing No.**
2020020	3/24/2022	4 of 8

NOT VALID WITHOUT ENGINEER'S SEAL

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COASTAL ENGINEERING

BORING NUMBER **B1**

DRILLING LOG	RACE COASTAL ENGINEERING PROJECT # 2020020	CLIENT PPR	Sheet _1_____ of 2 Sheets
1. PROJECT Dragon Boat Dock 1233 Martin Luther King Jr. Drive		COORDINATE SYSTEM/DATUM State Plane (U.S. FT.)_____	HORIZ. VERT.
2. BORING	2A. LOCATION COORDINATES E = N =	10. MANUFACTURER'S DESIGNATION OF DRILL TYPE _____ Auto Hammer □ Manual Hammer □	
3. DRILLER Summit		11. TOTAL SAMPLES | DISTURBED UNDISTURBED UD	
4. DIRECTION OF BORING Vert. X Inclined □	DEGREEE from VERTICAL / BEARING	12. TOTAL NUMBER OF CORE BOXES _ 1 _____ 13. DATE of BORING: 1/25-26/22	
5. THICKNESS OF OVERBURDEN		14. WATER DEPTH	
6. DEPTH DRILLED INTO ROCK		15. ELEV. TOP OF BORING El. +14' 16.	
36'		17. ENGINEER JP	
8. SIZE & TYPE OF BIT		18. DRILL FOREMAN George &	

Elev.	Depth	Legend	Clasification of Materials	Sample No.	Laboratory Results
	0.0				
	5.0		Organics		
	10.0		Organics w/ trace sand	N/A	
	15.00		Organics w/ trace fine gray sand	1A	
	20.00		organics followed by fine gray sand	2A	
	36-16-26-39		Fine gray sand followed by coarse red sand		

0 5 10 Water 15 20

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COASTAL ENGINEERING

BORING NUMBER **B2**

DRILLING LOG	RACE COASTAL ENGINEERING PROJECT # 2020020	CLIENT PPR	Sheet _1_____ of 2 Sheets
1. PROJECT Dragon Boat Dock 1233 Martin Luther King Jr. Drive		COORDINATE SYSTEM/DATUM State Plane (U.S. FT.)_____	HORIZ. VERT.
2. BORING	2A. LOCATION COORDINATES E = N =	10. MANUFACTURER'S DESIGNATION OF DRILL TYPE _____ Auto Hammer □ Manual Hammer □	
3. DRILLER Summit		11. TOTAL SAMPLES | DISTURBED UNDISTURBED UD	
4. DIRECTION OF BORING Vert. X Inclined □	DEGREEE from VERTICAL / BEARING	12. TOTAL NUMBER OF CORE BOXES _ 1 _____ 13. DATE of BORING: 1/25/22	
5. THICKNESS OF OVERBURDEN		14. WATER DEPTH	
6. DEPTH DRILLED INTO ROCK 5'		15. ELEV. TOP OF BORING El. +14' 16.	
36'		17. ENGINEER JP	
8. SIZE & TYPE OF BIT		18. DRILL FOREMAN George &	

Elev.	Depth	Legend	Clasification of Materials	Sample No.	Laboratory Results
	0.0				
	5.0		Organics		
	10.0		Organics	N/A	
	15.00		Organics	1B	
	20.00		Red brown med grain sand/some gray fine grained sand	2B	
	6-12-16-16		Red brown med/coarse sand	3B	

0 5 10 Water 15 20

DRILLING LOG (Cont. Sheet) | INSTALLATION | 2 of 2 Sheets

1. PROJECT Dragon Boat Dock 1233 | COORDINATE SYSTEM/DATUM State Plane (U.S. FT.)_____ | HORIZ. | VERT.

LOCATION COORDINATES E= N= | ELEVATION TOP OF BORING

Elev.	Depth	Legend	Clasification of Materials	Sample No.	Laboratory Results
	25.00				
	30.00		Read brown coarse sand over ledge. Refusal at 25'	4A	
	35.00				
	40.00				
	45.00				
	50.00				
	55.00				

25 30 35 40 45 50 55

DRILLING LOG (Cont. Sheet) | INSTALLATION | 2 of 2 Sheets

1. PROJECT Dragon Boat Dock 1233 | COORDINATE SYSTEM/DATUM State Plane (U.S. FT.)_____ | HORIZ. | VERT.

LOCATION COORDINATES E= N= | ELEVATION TOP OF BORING

Elev.	Depth	Legend	Clasification of Materials	Sample No.	Laboratory Results
	25.00				
	30.00		Red brown coarse sand	4B	
	35.00		Red brown coarse sand over gravel/ledge Refusal @31' 5' core RQD = 90	5B	
	40.00				
	45.00				
	50.00				
	55.00				

25 30 35 40 45 50 55

DRAFT

REV	DATE	DESCRIPTION

PROGRESS
NOT FOR CONSTRUCTION

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

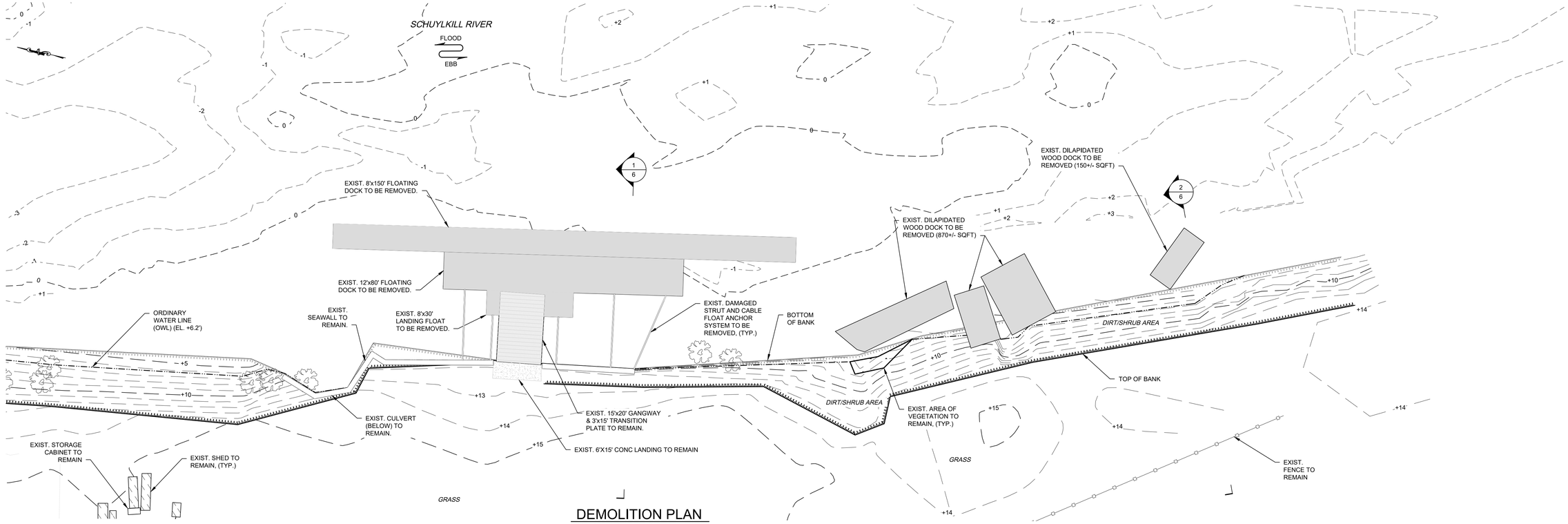
Prepared for
PHILADELPHIA REDEVELOPMENT AUTHORITY
1234 MARKET STREET, 16TH FLOOR
PHILADELPHIA, PA 19107

Project
DRAGON BOAT LOADING DOCK IMPROVEMENT
1233 MARTIN LUTHER KING JR. DRIVE
PHILADELPHIA, PA

Drawing
BORING LOGS

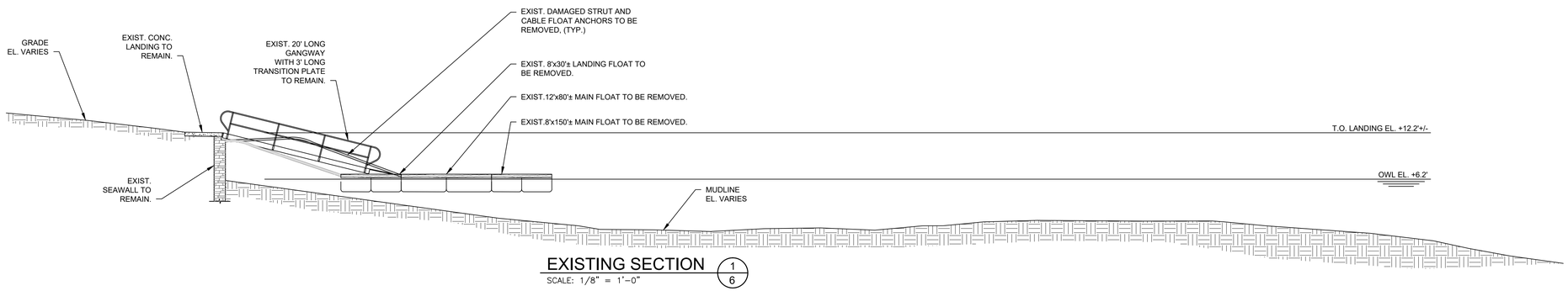
Designed	Drawn	Checked
MJW	MJW	MRR
Job No. 2020020	Date 3/24/2022	Drawing No. 5 of 8

NOT VALID WITHOUT ENGINEER'S SEAL



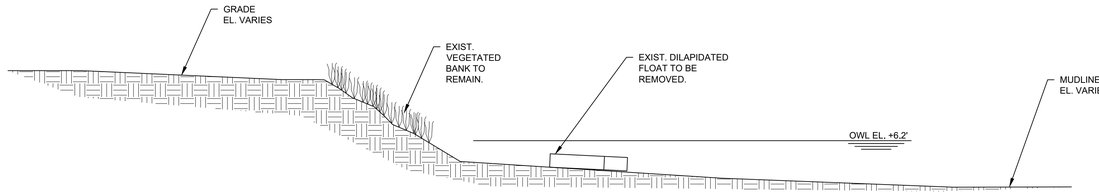
DEMOLITION PLAN

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



EXISTING SECTION 1/6

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



EXISTING SECTION 2/6

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

DRAFT

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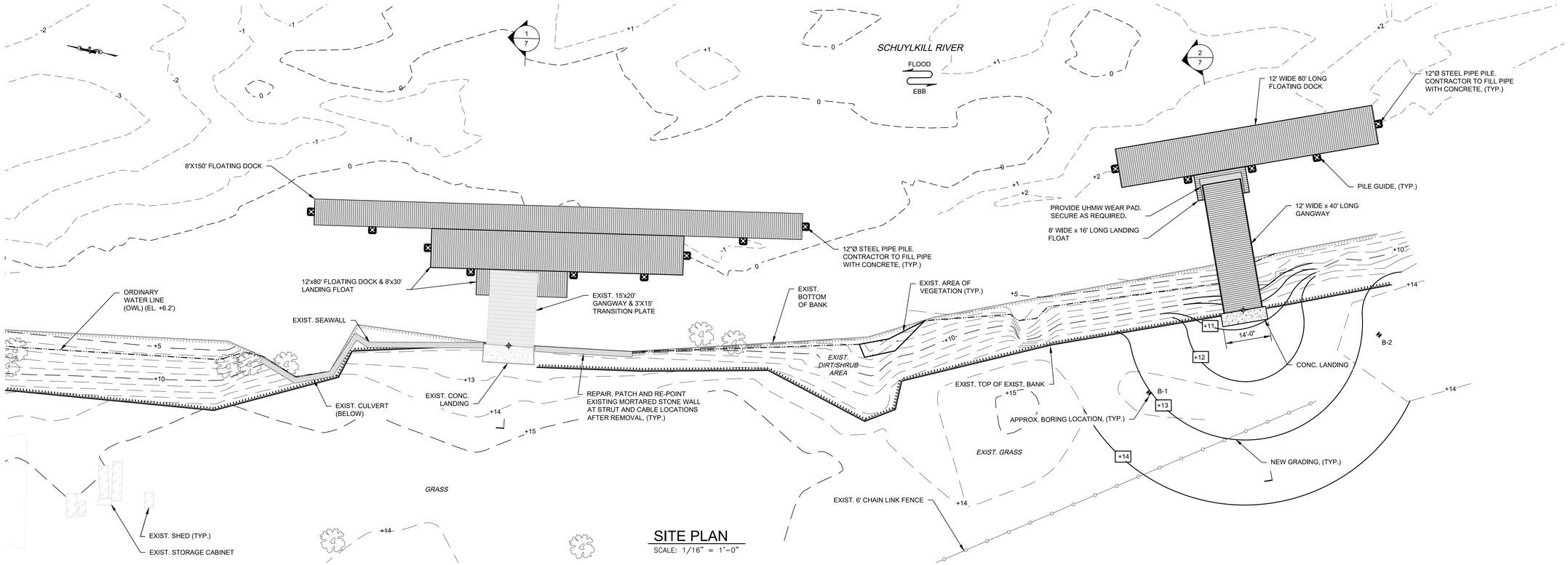
Project
DRAGON BOAT LOADING DOCK IMPROVEMENT
1233 MARTIN LUTHER KING JR. DRIVE
PHILADELPHIA, PA

Drawing
DEMOLITION PLAN & SECTIONS

Designed	Drawn	Checked
MJW	MJW	MRR

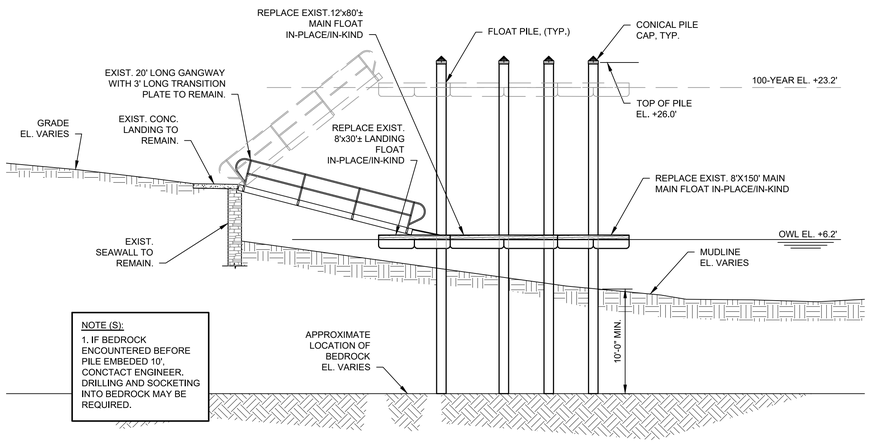
Job No.	Date	Drawing No.
2020020	3/24/2022	6 of 8

NOT VALID WITHOUT ENGINEER'S SEAL



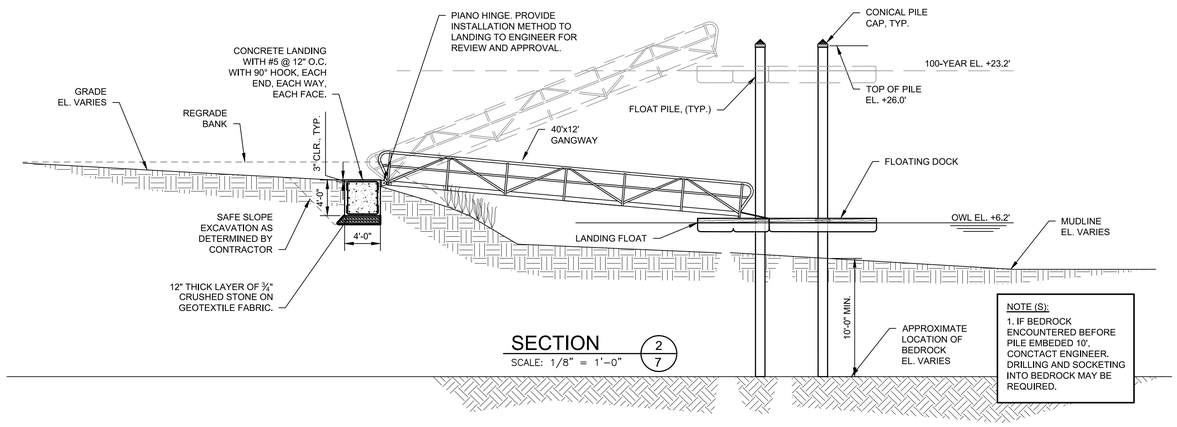
SITE PLAN

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



SECTION 1/7

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



SECTION 2/7

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

DRAFT

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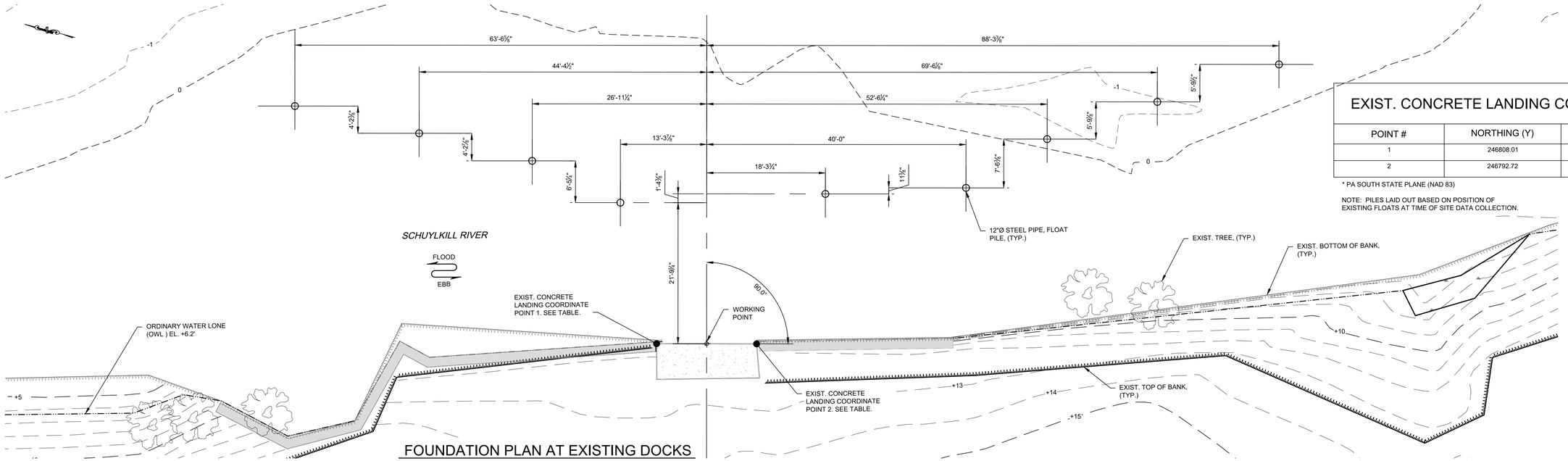
PHILADELPHIA, PA 19107

Project
DRAGON BOAT LOADING DOCK IMPROVEMENT
1233 MARTIN LUTHER KING JR. DRIVE
PHILADELPHIA, PA

Drawing
SITE PLAN

Designed	Drawn	Checked
MJW	MJW	MRR
Job No. 2020020	Date 3/24/2022	Drawing No. 7 of 8

NOT VALID WITHOUT ENGINEER'S SEAL



FOUNDATION PLAN AT EXISTING DOCKS

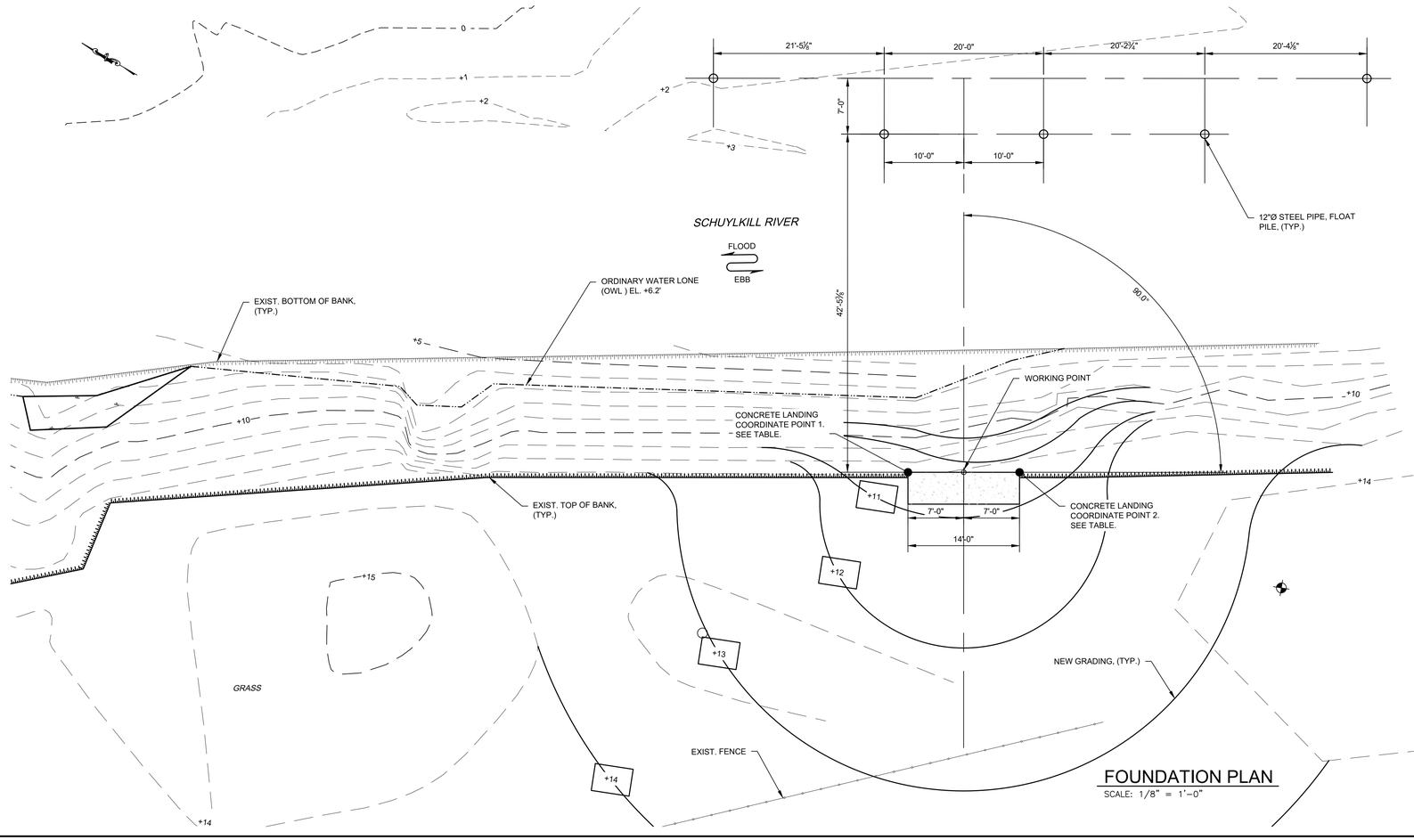
SCALE: 1/8" = 1'-0"

EXIST. CONCRETE LANDING COORDINATES*

POINT #	NORTHING (Y)	EASTING (X)
1	246808.01	2681618.62
2	246792.72	2681620.58

* PA SOUTH STATE PLANE (NAD 83)

NOTE: PILES LAID OUT BASED ON POSITION OF EXISTING FLOATS AT TIME OF SITE DATA COLLECTION.



FOUNDATION PLAN

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

CONCRETE LANDING COORDINATES*

POINT #	NORTHING (Y)	EASTING (X)
1	246587.93	2681672.93
2	246574.88	2681677.99

* PA SOUTH STATE PLANE (NAD 83)

DRAFT

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PHILADELPHIA, PA

Drawing
FOUNDATION PLANS

Designed	Drawn	Checked
MJW	MJW	MRR
Job No.	Date	Drawing No.
2020020	3/24/2022	8 of 8

NOT VALID WITHOUT ENGINEER'S SEAL