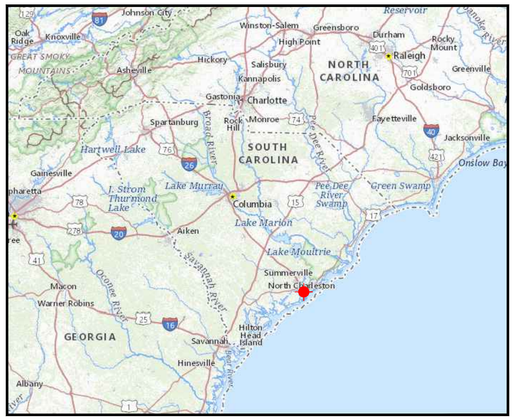
PLANS FOR:

PATRIOTS POINT DEVELOPMENT AUTHORITY
USS YORKTOWN PIER REPAIRS

ISSUED FOR CONSTRUCTION – JULY 30, 2025

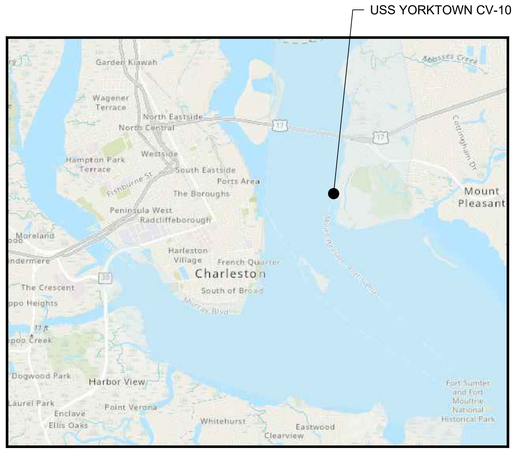
MOUNT PLEASANT, SOUTH CAROLINA

PROJECT LOCATION



LATITUDE: 32.7900011 LONGITUDE: -79.907598

PROJECT SITE



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PROJECT INFORMATION

PROJECT LOCATION

USS YORKTOWN CV-10
40 PATRIOTS POINT ROAD
MOUNT PLEASANT, SC 29464

CLIENT/OWNER

PATRIOTS POINT DEVELOPMENT AUTHORITY
40 PATRIOTS POINT ROAD
MOUNT PLEASANT, SC 29464
(O) 843-901-1651

OWNER CONTACT: DAVID COATES

ENGINEER

GEL ENGINEERING, LLC
2040 SAVAGE ROAD
CHARLESTON, SOUTH CAROLINA 29407
(O) 843-769-7378

ENGINEER OF RECORD: DANIEL CAMPBELL, PE (SC LICENSE No. 34504)

PROJECT DESCRIPTION

PATRIOTS POINT DEVELOPMENT AUTHORITY HAS ENGAGED GEL ENGINEERING, LLC TO PREPARE CONSTRUCTION DRAWINGS FOR REPAIRS OF THE CONCRETE PIER WHICH PROVIDES PUBLIC ACCESS TO THE PATRIOTS POINT NAVAL AND MARITIME MUSEUM IN MOUNT PLEASANT, SOUTH CAROLINA.

CODE INFORMATION

ALL CONSTRUCTION MUST BE PERFORMED IN CONFORMANCE WITH THE BUILDING AND DESIGN CODES REFERENCED WITHIN THESE DOCUMENTS. THE PROJECT DOCUMENTS REFER TO THE FOLLOWING CODES AND STANDARDS, UNLESS OTHERWISE NOTED:

BUILDING CODE
INTERNATIONAL BUILDING CODE 2021 WITH SOUTH CAROLINA MODIFICATIONS

THE FOLLOWING CODES ARE INCLUDED BY REFERENCE PER IBC 2021 CHAPTER 35:

STRUCTURAL STEEL
SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (ANSI/AISC 360-16)
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

STRUCTURAL CONCRETE
BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-19)
AMERICAN CONCRETE INSTITUTE (ACI)

STRUCTURAL TIMBER
NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION-WITH 2018 NDS SUPPLEMENT (ANSI/AWC NDS-2018)
AMERICAN WOOD COUNCIL (AWC)

WELDING
STRUCTURAL WELDING CODE - STEEL (AWS D1.1/D1.1M)
STRUCTURAL WELDING CODE - ALUMINUM (AWS D1.2/D1.2M)
STRUCTURAL WELDING CODE - SHEET STEEL (AWS D1.3/D1.3M)
STRUCTURAL WELDING CODE - REINFORCING STEEL (AWS D1.4/D1.M)
STRUCTURAL WELDING CODE - BRIDGE WELDING CODE (AWS D1.5/D1.5M)
AMERICAN WELDING SOCIETY (AWS)

MASONRY
BUILDING CODE FOR MASONRY STRUCTURES (TMS 402-2016)
THE MASONRY SOCIETY (TMS)

ACCESSIBILITY STANDARD
2010 AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS FOR ACCESSIBLE DESIGN
THE DEPARTMENT OF JUSTICE

SCHEDULE OF DRAWINGS

BID ALTERNATES

THE FOLLOWING BID ALTERNATES ARE FOR MATERIAL OR WORK THAT ARE NOT INCLUDED IN THE BASE BID PRICE. THE CONTRACTOR MUST INCLUDE A LUMP-SUM PRICE FOR EACH BID ALTERNATE.

BID ALTERNATE 1:

ALL WORK ASSOCIATED WITH THE PIER HEAD EXTENSION.

BID ALTERNATE 2:

ALL WORK ASSOCIATED WITH THE BREASTING DOLPHINS 1 AND 2.

BID ALTERNATE 3:

ALL WORK ASSOCIATED WITH MOORING DOLPHINS 1 AND 2.

BID ALTERNATE 4:

ALL WORK ASSOCIATED WITH THE TIMBER FENDER SYSTEM.

GEL Engineering LLC
Problem Solved
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P 843.769.7378 F 843.769.7397
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a member of The GEL Group Inc
ENVIRONMENTAL ▪ ENGINEERING ▪ SURVEYING

Revisions

Description:	By:	Apprv:	Date:
ISSUED FOR CONSTRUCTION	EL	DC	07.30.25

Consultants

Certificate-Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GEL ENGINEERING, LLC No.C02649

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 34504 DANIEL E.B. CAMPBELL 7-30-25

Client

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

Sheet Title

Cover Sheet

Project No. PPDA00124

Drawing No. S0.1

Date 07.30.25

Scale AS SHOWN

RELEASED FOR CONSTRUCTION

DOCUMENTS

1. ALL OBSERVATIONS AND RECOMMENDED REPAIRS ARE BASED ON CONDITIONS OBSERVED AND DOCUMENTED BY GEL ENGINEERING, LLC IN NOVEMBER AND DECEMBER 2024; CONDITIONS CAN CHANGE DUE TO ENVIRONMENTAL EFFECTS, SITE ACTIVITIES, ETC.
2. THE CONSTRUCTION OF THE EXISTING FACILITIES WAS GENERATED BASED ON PLANS PREPARED BY LBC&W DATED FEBRUARY 1975, CUMMINGS AND McCRADEY, INC. DATED MARCH 1980,THE SHERIDAN CORPORATION DATED APRIL 2009, AND FIELD OBSERVATIONS BY GEL ENGINEERING, LLC AND ARE FOR REFERENCE ONLY. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS.
3. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS ARE ONE PART OF THE CONTRACT DOCUMENTS AND MUST BE USED IN CONJUNCTION WITH THE REMAINING PARTS OF THE CONTRACT DOCUMENTS.
4. "DRAWINGS" MEANS THE LATEST STRUCTURAL DESIGN DRAWINGS, UNLESS OTHERWISE NOTED. "SPECIFICATIONS" MEANS THE LATEST PROJECT SPECIFICATIONS, UNLESS OTHERWISE NOTED.
5. ALL DETAILS, SECTIONS, AND NOTES ON THE DRAWINGS ARE INTENDED TO BE TYPICAL WHERE CONDITIONS ARE SIMILAR TO THOSE INDICATED BY DETAIL OR DETAIL TITLE OR NOTE.
6. ASSUME EQUAL SPACING IF NOT INDICATED ON THE DRAWINGS.
7. USE ONLY DIMENSIONS INDICATED ON THE DRAWINGS. DO NOT SCALE DRAWINGS OR USE ANY DIMENSION TAKEN FROM ELECTRONIC DRAWINGS FILES.

DEMOLITION

1. THE CONTRACTOR MUST FURNISH ALL LABOR AND MATERIALS FOR SUCCESSFUL COMPLETION OF THIS PROJECT.
2. ALL EXISTING CONDITIONS SHOWN ARE FOR REFERENCE ONLY AND ARE TO BE FIELD VERIFIED BY THE CONTRACTOR.
3. REMOVED MATERIALS, UNLESS NOTED OTHERWISE, BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES, AND REGULATIONS.
4. THE CONTRACTOR MUST USE QUALIFIED, EXPERIENCED PERSONNEL FOR REMOVAL AND DEMOLITION OPERATIONS. REMOVAL AND DEMOLITION OPERATIONS SHALL BE PERFORMED IN A CAREFUL AND ORDERLY MANNER TO AVOID HAZARDS TO PERSONS, DAMAGE TO PROPERTY, AND THE SPREADING OF DUST AND FLYING PARTICLES.
5. THE EXACT EXTENT OF DEMOLITION TO BE DONE MUST BE VERIFIED AT THE SITE. DETERMINE THE NATURE AND EXTENT OF DEMOLITION THAT WILL BE NECESSARY BY COMPARING THE DRAWINGS WITH THE EXISTING CONDITIONS.
6. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE MEANS AND METHODS OF DEMOLITION AND THE SAFETY OF THE EXISTING STRUCTURE.
7. NO PORTIONS OF THE STRUCTURE MUST BE PERMITTED TO FALL NOR SHALL ANY DEBRIS BE DROPPED EXCEPT BY METHODS WHICH WILL INSURE LIFE SAFETY AND OTHER INSURANCE.
8. DO NOT REMOVE MORE OF THE EXISTING STRUCTURE THAN NECESSARY. DO NOT DAMAGE, MAR, OR DEFACE THE REMAINING STRUCTURE OR MATERIALS TO BE REUSED.
9. THE CONTRACTOR MUST PROVIDE SHORING IN ALL LOCATIONS WHERE EXISTING CONSTRUCTION TO REMAIN WILL BE AFFECTED BY DEMOLITION.

CONCRETE

1. CONCRETE STRENGTH MUST MEET THE FOLLOWING 28-DAY COMPRESSIVE STRENGTH (f'c):

ALL STRUCTURAL CONCRETE	4,000 PSI

2. PROVIDE NORMAL WEIGHT CONCRETE WITH A MINIMUM CURED DENSITY OF 145 PCF.
3. ALL AGGREGATE MUST CONFORM TO ASTM C33, UNLESS OTHERWISE NOTED.
4. THE USE OF CALCIUM CHLORIDE AND OTHER CHLORIDE CONTAINING AGENTS IS PROHIBITED.
5. THE USE OF RECYCLED CONCRETE IS PROHIBITED.
6. PLACEMENT WITHIN AND CONTACT BETWEEN ALUMINUM ITEMS, INCLUDING ALUMINUM CONDUIT, AND CONCRETE IS PROHIBITED, UNLESS OTHERWISE NOTED.
7. MAX WATER:CEMENT RATIO = 0.45

CONTRACTOR RESPONSIBILITIES AND COORDINATION

1. THE CONTRACTOR MUST FURNISH ALL LABOR AND MATERIALS FOR SUCCESSFUL COMPLETION OF THIS PROJECT.
2. THE SPECIFICATIONS AND STRUCTURAL DRAWINGS REPRESENT THE REQUIRED REPAIR WORK AND DO NOT INDICATE THE METHOD OF DEMOLITION OR CONSTRUCTION, UNLESS OTHERWISE NOTED. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND OPERATION OF DEMOLITION AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO.
3. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND REMOVAL OF ALL TEMPORARY BRACING AND CONSTRUCTION SUPPORTS, FOR NEW AND EXISTING STRUCTURES, AS NECESSARY TO COMPLETE THE PROJECT. NO PORTION OF THE PROJECT, WHILE BEING DEMOLISHED, IS INTENDED TO BE STABLE IN THE ABSENCE OF THE CONTRACTOR'S TEMPORARY BRACES AND SUPPORTS. CONTRACTOR MUST RETAIN A STRUCTURAL ENGINEER LICENSED IN THE STATE OF THE PROJECT TO DESIGN ALL TEMPORARY BRACING AND CONSTRUCTION SUPPORTS. SUBMIT ANY DRAWINGS AND/OR CALCULATIONS TO THE OWNER FOR APPROVAL PRIOR TO PERFORMING ANY WORK.
4. THE CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ELEVATIONS, NEW AND EXISTING, BY MEASUREMENTS AND SURVEYS AT THE JOB SITE PRIOR TO BEGINNING WORK AND SUBMITTING SHOP DRAWINGS.
5. THE CONTRACTOR MUST VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO ORDERING REPAIR MATERIALS AND BEGINNING WORK. THE CONTRACTOR MUST NOTIFY THE ENGINEER OF RECORD IMMEDIATELY OF ANY DISCREPANCIES BETWEEN THE DRAWINGS AND EXISTING CONDITIONS FOR RESOLUTION PRIOR TO ORDERING REPAIR MATERIALS AND BEGINNING WORK.
6. THE CONTRACTOR MUST TAKE ANY AND ALL MEASUREMENTS NECESSARY TO VERIFY CONFORMANCE WITH THE DRAWINGS AND TO PERFORM THE WORK PROPERLY.
7. ALL FIELDWORK MUST BE COORDINATED AND CONTINUOUSLY SUPERVISED BY THE CONTRACTOR.
8. THE CONTRACTOR MUST MAKE NO DEVIATION FROM THE DRAWINGS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER OF RECORD.
9. THE CONTRACTOR MUST NOTIFY THE OWNER AND ENGINEER OF RECORD OF ANY DISCREPANCIES BETWEEN THE STRUCTURAL DOCUMENTS AND EXISTING CONDITIONS FOR RESOLUTION PRIOR TO PROCEEDING WITH THE WORK.
10. THE CONTRACTOR MUST NOTIFY THE ENGINEER OF RECORD OF ANY DISCREPANCIES BETWEEN THE STRUCTURAL DRAWINGS AND DETAILS, FOR RESOLUTION PRIOR TO PROCEEDING WITH THE WORK. COMPLY WITH STANDARD CONDITIONS.
11. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE UNTIL THE CONSTRUCTION OF THE STRUCTURE REACHES ITS FINISHED STATE.
12. ALL CONSTRUCTION DEBRIS MUST BE REMOVED FROM THE SITE IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES, AND REGULATIONS.
13. ANY DAMAGE CAUSED TO THE SITE FACILITIES OR LANDSCAPING DURING CONSTRUCTION ACTIVITIES MUST BE REMEDIATED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER. DAMAGED GRASSY AREAS MUST BE REMEDIATED WITH SOD; SEEDING IS NOT AN ACCEPTABLE REPAIR.
14. "BY OTHERS" DENOTES A DELEGATED DESIGN. THE DELEGATED DESIGN IS INCLUDED IN THE CONTRACTORS'S SCOPE OF WORK AND IT IS THE CONTRACTORS'S RESPONSIBILITY TO ENSURE THAT THE WORK IS COMPLETED.
15. REQUESTS FOR INFORMATION (RFI's)
    - 15.1. WHEREAS THE CONTRACTOR WOULD LIKE TO PROVIDE A REQUEST FOR INFORMATION OR CLARIFICATION DURING THE CONSTRUCTION PHASES OF THE PROJECT, THE REQUEST MUST BE MADE IN WRITING TO THE OWNER AND ENGINEER OF RECORD. ALL RFI's MUST BE SUBMITTED TO ALLOW A MINIMUM OF FIVE (5) BUSINESS DAYS FOR OWNER/ENGINEER OF RECORD REVIEW WITHOUT IMPACTING THE SCHEDULE.

CONCRETE REPAIR MATERIALS

1. REPAIR MATERIALS:
   - 1.1. BONDING PRIMER.....SIKA ARMATEC-110 EPOCEM
   - 1.2. CORROSION INHIBITIVE PRIMER.....SIKA ARMATEC-110 EPOCEM
   - 1.3. SHALLOW AND PARTIAL DEPTH CONCRETE REPAIR:
     - 1.3.1. REPAIR MORTAR (HORIZ).....SIKATOP-122 PLUS
     - 1.3.2. REPAIR MORTAR (VERT AND OH).....SIKATOP-123 PLUS
   - 1.4. CONCRETE REPAIR DUE TO SHALLOW COVER
     - 1.4.1. SIKAQUICK VOH
     - 1.4.2. SIKADUR-32 HI-MOD LV
     - 1.4.3. SIKAQUICK-1000
   - 1.5. PATCH PIN.....HELIFIX PATCH PIN
   - 1.6. CRACK REPAIR (INJECTION).....SIKA INJECTION-307
   - 1.7. CRACK REPAIR (GRAVITY FEED).....SIKADUR-35 HI-MOD LV

   THE CONTRACTOR MAY SUBMIT ALTERNATE REPAIR MATERIALS TO THE ENGINEER OF RECORD FOR REVIEW. THE ALTERNATE MATERIALS MUST MEET OR EXCEED THE PROPERTIES OF THE MATERIALS PROVIDED ABOVE.
2. THE CONTRACTOR MUST INSTALL REPAIR MATERIALS PER MANUFACTURER SPECIFICATIONS.
3. SEE SHEETS S7.0 THROUGH S7.2 FOR MORE INFORMATION.

REINFORCEMENT

1. REINFORCEMENT MUST CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES:

DEFORMED BARS	ASTM A615, GR 60
WELDED WIRE FABRIC	ASTM A185

2. DETAIL REINFORCEMENT BASED ON THE PROJECT REQUIREMENTS, ACI-318 AND ACI-315.
3. ALL LAP SPLICES ARE TO BE ACI STANDARD CLASS B TENSION LAP SPLICES. WHERE BARS OF DIFFERENT SIZES LAP, PROVIDE LAP SPLICE LENGTH FOR LARGER BAR.
4. WHERE A 90-DEG. HOOK IS GRAPHICALLY INDICATED, PROVIDE ACI STANDARD 90-DEG. HOOK. WHERE A 135-DEG. HOOK IS GRAPHICALLY INDICATED, PROVIDE ACI STANDARD 135-DEG. HOOK. WHERE A 180-DEG. HOOK IS GRAPHICALLY INDICATED, PROVIDE ACI STANDARD 180-DEG. HOOK.
5. WHERE SHEETS OF WELDED WIRE FABRIC ARE GRAPHICALLY INDICATED TO LAP, PROVIDE ACI STANDARD FULL TENSION WELDED WIRE FABRIC LAP SPLICE.
6. FOR BARS INDICATED IN GROUPS, PROVIDE BARS OF EACH GROUP AT EQUAL SPACING, UNLESS OTHERWISE NOTED.
7. WHERE DOWELS ARE INDICATED BUT NOT SIZED, PROVIDE DOWELS THAT MATCH SIZE AND LOCATION OF MAIN REINFORCEMENT AND LAP SPLICE WITH THE MAIN REINFORCEMENT.
8. WHERE CONCRETE ELEMENTS INTERSECT WALLS, PROVIDE DOWELS TO EXTEND WALL REINFORCEMENT CONTINUOUS.
9. REINFORCEMENT MUST HAVE THE FOLLOWING MINIMUM CONCRETE PROTECTION (CLEAR COVER), UNLESS OTHERWISE NOTED:

SURFACES NOT FORMED	3"
FORMED SURFACES IN CONTACT WITH SOIL OR WATER, OR EXPOSED TO WEATHER	2"
BEAMS, GIRDER, AND COLUMNS	1 1/2"
SLABS AND JOISTS, TOP BARS	3/4"
SLABS AND JOISTS, BOTTOM BARS AND WALLS	1"

10. NO CONSTRUCTION MUST BE MADE WITHOUT REINFORCEMENT. THE FOLLOWING PERCENTAGE OF THE GROSS CROSS SECTIONAL AREA MUST BE PROVIDED AS MINIMUM REINFORCEMENT WHERE NO REINFORCEMENT IS INDICATED:

SPREAD FOOTINGS	BOTTOM 0.33%
STRIP FOOTINGS	BOTTOM 0.20%
SLABS	TOP AND BOTTOM 0.20%
BEAMS	TOP AND BOTTOM 0.33% STIRRUPS #3 @ 12"
COLUMNS	VERTICAL 1.00% TIES #3 @ 18"
WALLS	VERT AND HORIZ, SEE TYPICAL WALL DETAILS

11. CONTINUOUS TOP AND BOTTOM BARS, WHEN INDICATED IN CROSS SECTION ONLY, MUST BE LAPPED AS FOLLOWS:
    - 11.1. TOP BARS AT MIDSPANS.
    - 11.2. BOTTOM BARS CENTERED OVER SUPPORTS.
12. PROVIDE UNCOATED REINFORCEMENT, UNLESS OTHERWISE NOTED.

STRUCTURAL STEEL

1. STRUCTURAL STEEL MUST CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES, UNLESS OTHERWISE NOTED:

W-SHAPE	ASTM A992 (Fy=50ksi)
PLATES	ASTM A36 (Fy=36ksi)
ANGLES	ASTM A36 (Fy=36ksi)
PIPE	ASTM A53, GR B (Fy=35ksi)
HOLLOW STRUC. SECTIONS (RECT)	ASTM A500, GR B (Fy=46ksi)
HOLLOW STRUC. SECTIONS (RND)	ASTM A500, GR B (Fy=42ksi)
CHANNELS	ASTM A36 (Fy=36ksi)
ANCHOR BOLTS	ASTM A307, ASTM F1554, GR 36
HEADED STUDS	ASTM A108

2. FOR STEEL MEMBERS AND EMBEDMENTS EXPOSED TO WEATHER, PROVIDE MARINE GRADE PAINT TO MATCH EXISTING.
3. ALL COPES, HOLES, OPENINGS AND MODIFICATIONS REQUIRED IN STRUCTURAL STEEL MEMBERS FOR ERECTION OR THE WORK OF OTHER TRADES MUST BE SHOWN ON THE SHOP DRAWINGS FOR APPROVAL BY THE ARCHITECT AND ENGINEER OF RECORD.
4. FIELD MODIFICATION OF STRUCTURAL STEEL IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE ARCHITECT AND ENGINEER OF RECORD.

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Revisions

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Consultants

Certificate-Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GEL ENGINEERING, LLC No.C02649

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 34504 E.B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

Sheet Title

General Notes I

Project No. PPDA00124

Drawing No. S1.0

Date 07.30.25

Scale AS SHOWN

RELEASED FOR CONSTRUCTION

DRILLED-IN ANCHORS

1. ADHESIVE ANCHORED THREADED ROD SYSTEMS:

HIT-HY 200 SYSTEM	HILTI CORPORATION
HIT-HY 270 SYSTEM (MASONRY ONLY)	HILTI CORPORATION
HIT-RE 500 SYSTEM	HILTI CORPORATION

2. MECHANICAL EXPANSION ANCHORED SYSTEMS:

KWIK BOLT TZ	HILTI CORPORATION
KWIK BOLT 3	HILTI CORPORATION

3. ALTERNATE SYSTEM EQUIVALENT OR EXCEEDING THE PROPERTIES OF THE SYSTEMS ABOVE WILL BE CONSIDERED; THE CONTRACTOR MUST SUBMIT TO THE ENGINEER OF RECORD FOR REVIEW.
4. REFER TO PLANS AND DETAILS FOR ANCHOR LOCATIONS, SIZE, AND EMBEDMENT REQUIREMENTS.
5. ANCHORS ARE TO BE 3/4" DIAMETER WITH A MINIMUM EMBEDMENT OF 6", UNLESS OTHERWISE NOTED.
6. INSTALL ANCHORS TO MEET THE REQUIREMENTS INDICATED ON THE DRAWINGS, THE CURRENT INTERNATIONAL COUNCIL OF BUILDING OFFICIALS (ICBO) REPORT, AND THE MANUFACTURER'S RECOMMENDATIONS.
7. THE CONTRACTOR MUST LOCATE EXISTING REINFORCEMENT PRIOR TO BEGINNING ANCHOR INSTALLATION.
8. MASONRY ANCHORS ARE TO BE INSTALLED IN SOLID MASONRY OR IN HOLLOW MASONRY THAT HAS BEEN GROUTED SOLID AT LEAST ONE COURSE ABOVE AND ONE COURSE BELOW THE ANCHOR, UNLESS OTHERWISE NOTED.

STRUCTURAL STEEL CONNECTIONS

1. STRUCTURAL STEEL CONNECTION MATERIAL SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES:

ANGLES:	ASTM A36
WTs:	ASTM A36
PLATES:	ASTM A36
BOLTS, NUTS, WASHERS:	ASTM A325 OR A490
WELD ELECTRODES:	E70XX

2. ALL CONNECTIONS, UNLESS INDICATED AS BEING FULLY DESIGNED ON THE STRUCTURAL DRAWINGS, MUST BE DESIGNED AND DETAILED BY AN ENGINEER LICENSED IN THE STATE OF THE PROJECT. THE DESIGN AND DETAILING MUST COMPLY WITH ALL APPLICABLE CODES AND SPECIFICATION SECTIONS.
3. ALL SHOP AND FIELD CONNECTIONS MUST BE WELDED. SUBMITTAL FROM CONTRACTOR FOR VARIATIONS TO TYPICAL CONNECTION DETAILS WILL BE CONSIDERED.
4. FOR CONNECTION DESIGN AND DETAILING, SET CONNECTION WORK POINT AT INTERSECTION OF MEMBER CENTERLINES UON.
5. PROVIDE STIFFENERS, CONTINUITY PLATES, DOUBLER PLATES, OR OTHER NECESSARY ADDITIONAL LOCAL STRENGTHENING MEASURES AS REQUIRED. MEMBER SIZES INDICATED ON DRAWINGS ARE SIZED FOR MEMBER BEHAVIOR AWAY FROM THE CONNECTIONS.
6. ALL WELDING MUST BE PERFORMED BY PREQUALIFIED WELDERS, AND MUST CONFORM TO THE REQUIREMENTS OF THE STRUCTURAL WELDING CODE, UNLESS OTHERWISE NOTED.
7. ALL WELDING ELECTRODES MUST COMPLY WITH THE REQUIREMENTS OF TABLE 4.1 OF THE STRUCTURAL WELDING CODE, ANSI/AWS D1.1.
8. FOR EXPOSED WELDS, PROVIDE WELDING IN CONFORMANCE WITH AWS D1.5.
9. WELDS NOT OTHERWISE NOTED ON DRAWINGS MUST BE CONTINUOUS FILLET WELDS. THE MINIMUM SIZE SHALL BE 1/4" OR AS REQUIRED BY THE AISC SPECIFICATIONS, WHICHEVER IS LARGER. THE MINIMUM WELD LENGTH SHALL BE 3".

SHOP DRAWING SUBMITTALS

1. THIRTY DAYS PRIOR TO SUBMITTING SHOP DRAWINGS, THE CONTRACTOR MUST SUBMIT FOR THE ENGINEER OF RECORD'S REVIEW A SCHEDULE WHICH DETAILS THE ESTIMATED QUANTITY OF SHOP DRAWINGS AND THE DATE THE SHOP DRAWINGS WILL BE RECEIVED BY THE ENGINEER OF RECORD. THE ENGINEER OF RECORD MUST HAVE THE OPPORTUNITY TO REVIEW THE PROPOSED SCHEDULE AND SUBMIT COMMENTS TO THE CONTRACTOR. THE FINAL SHOP DRAWING SCHEDULE MUST BE DEVELOPED AND SUBMITTED TO THE ENGINEER OF RECORD. IN ACCORDANCE WITH THE SHOP DRAWING SCHEDULE, THE ENGINEER OF RECORD WILL RETURN THE SHOP DRAWING ITEMS WITHIN TEN BUSINESS DAYS AFTER HAVING RECEIVED THE REPRODUCIBLE SHOP DRAWING.
2. THE CONTRACTOR IS TO REVIEW EACH SUBMITTAL PRIOR TO FORWARDING TO THE ENGINEER OF RECORD AND OTHER APPLICABLE TRADES. THE CONTRACTOR IS TO STAMP EACH SUBMITTAL VERIFYING THAT THE FOLLOWING IS ADDRESSED:

   2.1. THE SHOP DRAWING IS REQUESTED.
   2.2. THE SHOP DRAWING IS BASED ON THE LATEST DESIGN.
   2.3. THE ENGINEER OF RECORD'S AND OTHER MEMBERS OF THE DESIGN TEAM'S COMMENTS FROM ANY PREVIOUS SUBMITTALS ARE ADDRESSED.
   2.4. THE WORK IS COORDINATED AMONG ALL CONSTRUCTION TRADES.
   2.5. REVISIONS FROM PREVIOUS SUBMITTALS ARE CLEARLY MARKED BY CIRCLING OR CLOUDS.
   2.6. THE SUBMITTAL IS COMPLETE.

3. THE ENGINEER OF RECORD MUST RETURN, WITHOUT COMMENT, SUBMITTALS WHICH THE CONTRACTOR HAS NOT STAMPED OR WHICH DO NOT MEET THE ABOVE REQUIREMENTS. THE ENGINEER OF RECORD'S REVIEW OF SUBMITTALS MUST BE FOR GENERAL CONFORMANCE WITH THE DESIGN INTENT. NO WORK MUST BE STARTED WITHOUT SUCH REVIEW.
4. FOR COMPONENTS THAT REQUIRE ENGINEERING BY THE SUPPLIER, PROVIDE A NOTE ON EACH SHOP DRAWING, WRITTEN AND SIGNED BY THE SUPPLIER'S ENGINEER, INDICATING THAT THE SHOP DRAWING IS IN CONFORMANCE WITH THE CALCULATIONS OF THE SUPPLIER'S ENGINEER.
5. THE FOLLOWING ITEMS REQUIRE SUBMITTALS FOR ENGINEER OF RECORD REVIEW; SEE THE SPECIFICATIONS FOR MORE INFORMATION IF INCLUDED IN THE BID DOCUMENTS:

03200 S	CONCRETE REINFORCING LAYOUT
03300 C	CONCRETE MIX DESIGNS
03300 S	CONCRETE CONSTRUCTION JOINT LAYOUT
05120 S	STRUCTURAL STEEL
05120 S C	STRUCTURAL STEEL CONNECTIONS

S = SHOP DRAWINGS REQUIRED
C = SUPPORTING CALCULATIONS REQUIRED, SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF THE PROJECT.

GALVANIZED COATING

1. MARINE-GRADE COLD GALVANIZING SHALL CONFORM WITH THE REQUIREMENTS OF THE FOLLOWING:

   ASTM A780
   ASTM B117
   DOD-P-21035A
   MIL-P-26915
   MIL-P-46105
   SSPC PAINT 20
   ISO 12944

2. ACCEPTABLE COLD GALVANIZING PRODUCTS INCLUDE:

   17007 BY AERVOE INDUSTRIES, INC
   COLD GALVANIZING CORROSION INHIBITOR BY ITW PROBRANDS

3. THE CONTRACTOR MAY SUBMIT ALTERNATE REPAIR MATERIALS TO THE ENGINEER OF RECORD FOR REVIEW. THE ALTERNATE MATERIALS MUST MEET OR EXCEED THE PROPERTIES OF THE MATERIALS PROVIDED ABOVE.
4. THE CONTRACTOR MUST INSTALL REPAIR MATERIALS PER MANUFACTURER'S SPECIFICATIONS.

ABBREVIATIONS

ADDL	ADDITIONAL
ADJ	ADJACENT
ALT	ALTERNATE
APPROX	APPROXIMATE
ARCH	ARCHITECT OR ARCHITECTURAL
B/	BOTTOM OF
B/B	BACK TO BACK
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BOT	BOTTOM
BRDG	BRIDGING
BRG	BEARING
BTW	BETWEEN
C	COMPRESSION
C/C	CENTER TO CENTER
CIP	CAST-IN-PLACE
CL	CENTER LINE
CLR	CLEAR OR CLEARANCE
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMP	COMPRESSION
CONC	CONCRETE
CONN	CONNECTION(S)
CONST	CONSTRUCTION
CONT	CONTINUOUS
CS	CORROSION STAINING
DBL	DOUBLE
DET	DETAIL
DELAM	DELAMINATION
DIA	DIAMETER
DIAG	DIAGONAL
DIM(S)	DIMENSION(S)
DL	DEAD LOAD
DN	DOWN
DWG(S)	DRAWING(S)
DWL(S)	DOWEL(S)
EA	EACH
ECC	ECCENTRICITY
EF	EACH FACE
EFFLO	EFFLORESCENCE
EL	ELEVATION
ELEC	ELECTRICAL
ENGR	ENGINEER
EOR	ENGINEER OF RECORD
EQ	EQUAL
EQUIP	EQUIPMENT
ERB	EXPOSED REINFORCEMENT BAR(S)
EW	EACH WAY
EXP	EXPANSION
EXIST	EXISTING
EXT	EXTERIOR
F/F	FACE TO FACE
FIN	FINISH(ED)
FL	FLOOR
FND	FOUNDATION
FP	FIREPROOF(ING)
FS	FAR SIDE
FTG	FOOTING
GA	GAGE OR GAUGE
GALV	GALVANIZED
GEN	GENERAL
GR	GRADE
HK	HOOK
HORZ	HORIZONTAL
HP	HIGH POINT
HT	HEIGHT
HVY	HEAVY
ID	INSIDE DIAMETER
IF	INSIDE FACE
INFO	INFORMATION
INT	INTERIOR
INTRM	INTERMEDIATE
JST(S)	JOIST(S)
JT	JOINT
K	KIPS (OR 1,000 POUNDS)
KLF	KIP PER LINEAR FOOT
KSF	KIP PER SQUARE FOOT
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION(S)
LONG	LONGITUDINAL
LOS	LOSS OF SECTION
LP	LOW POINT
LWC	LIGHTWEIGHT CONCRETE
LT	LIGHT
LT WT	LIGHTWEIGHT
M	MOMENT
MATL	MATERIAL
MAX	MAXIMUM
MC	MOMENT CONNECTION(S)
MECH	MECHANICAL
MEZZ	MEZZANINE
MFGR	MANUFACTURER
MID	MIDDLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOD	MODERATE
MSE	MECHANICALLY STABILIZED EARTH
MTL	METAL
MULT	MULTIPLE
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
NWT	NORMAL WEIGHT
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OH	OPPOSITE HAND
OPNG(S)	OPENING(S)
OPP	OPPOSITE
PC	PIECE
PCC	POORLY CONSOLIDATED CONCRETE
PCF	POUNDS PER CUBIC FOOT
PCY	POUNDS PER CUBIC YARD
PERP	PERPENDICULAR
PL	PLATE
PRCST	PRECAST
PRLL	PARALLEL
PSC	PRESTRESSED CONCRETE
PSF	POUNDS PER SQUARE FOOT
RAD	RADIUS
RECM'D	RECOMMENDED
RECT	RECTANGULAR
REF	REFERENCE
REINF	REINFORCE(D) (ING) OR (MENT)
REQD	REQUIRED
RIK	REPLACE IN-KIND
RND	ROUND
RRIK	REMOVE AND REPLACE IN-KIND
S4S	LUMBER SURFACED 4 SIDES
SCHED	SCHEDULE(D)
SDL	SUPERIMPOSED DEAD LOAD
SECT	SECTION
SF	SQUARE FOOT (FEET)
SHT	SHEET
SIM	SIMILAR
SOG	SLAB ON GRADE
SP	SPACE
SPEC(S)	SPECIFICATION(S)
STD	STANDARD
STL	STEEL
STRCT	STRUCTURE
STRCTL	STRUCTURAL
SUPPTS	SUPPORT(S)
SYM	SYMMETRICAL
T	TENSION
T/	TOP OF
T/O	THROUGHOUT
T&B	TOP AND BOTTOM
TRANS	TRANSVERSE
TEMP	TEMPERATURE
TEN	TENSION
TH	THICK OR THICKNESS
TOD	TOP OF DECK
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	SHEAR
VEG	VEGETATION
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WD	WOOD
WP	WORK POINT
WPFG	WATERPROOFING
WS	WATERSTOP
WWF	WELDED WIRE FABRIC

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Description:	By:	Apprv:	Date:
ISSUED FOR CONSTRUCTION	EL	DC	07.30.25

Consultants

Certificate-Seal

SOUTH CAROLINA GEL ENGINEERING, LLC No.C02649 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 34504 E. B. CAMPBELL 7-30-25

Client

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

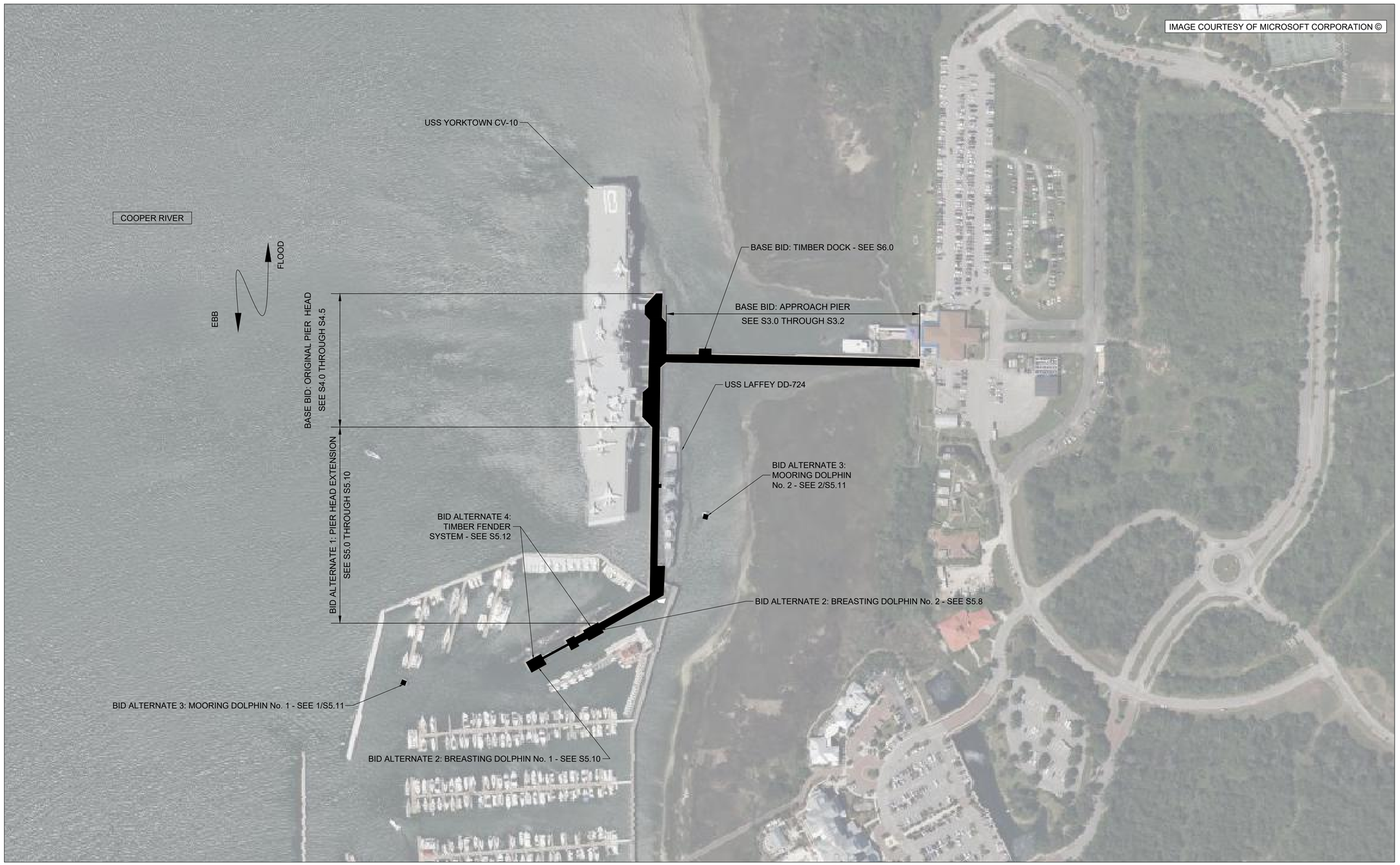
Sheet Title

General Notes II

Project No. PPDA00124
Date 07.30.25
Scale AS SHOWN
Drawing No. S1.1

RELEASED FOR CONSTRUCTION

m:\clientfiles\p\ppda-patriots point development autority\2024 projects\ppda00124 - uss yorktown pier assessment\2.0 cad\ppda00123 - base.dwg : S1.1 (Plotted: 7/30/2025 9:04:25 AM)



N

PLAN: OVERALL SITE

SCALE: NOT TO SCALE

1
S2.0

LEGEND

PORTION PIER INCLUDED IN SCOPE OF WORK

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Consultants

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SOUTH CAROLINA GEL ENGINEERING, LLC No.C02649 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA BOARD OF PROFESSIONAL ENGINEERS AND SURVEYORS No. 34504 DANIEL E.B. CAMPBELL 7-30-25

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

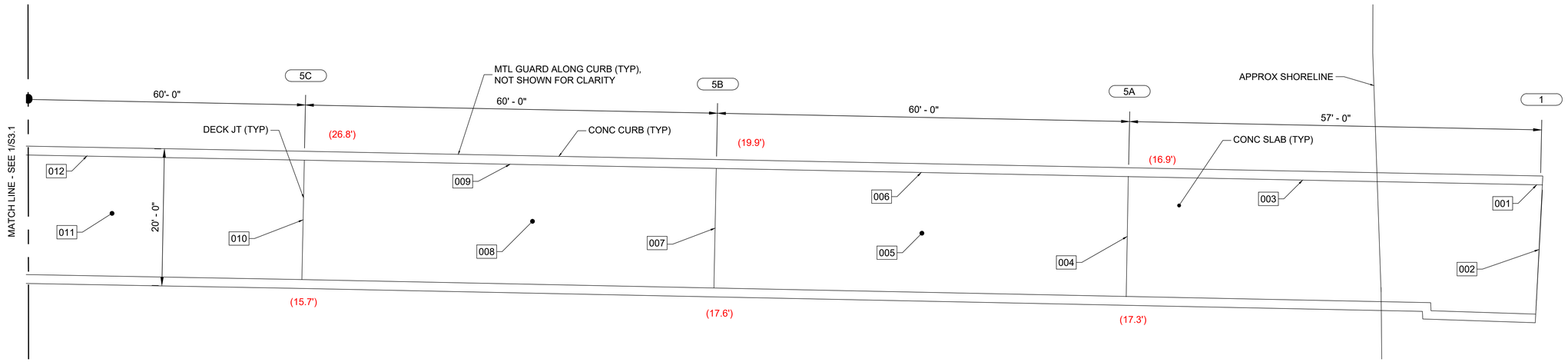
USS Yorktown Pier Repairs

Sheet Title

Overall Site

Project No.	Drawing No.
PPDA00124	S2.0
Date: 07.30.25	
Scale: AS SHOWN	

RELEASED FOR CONSTRUCTION

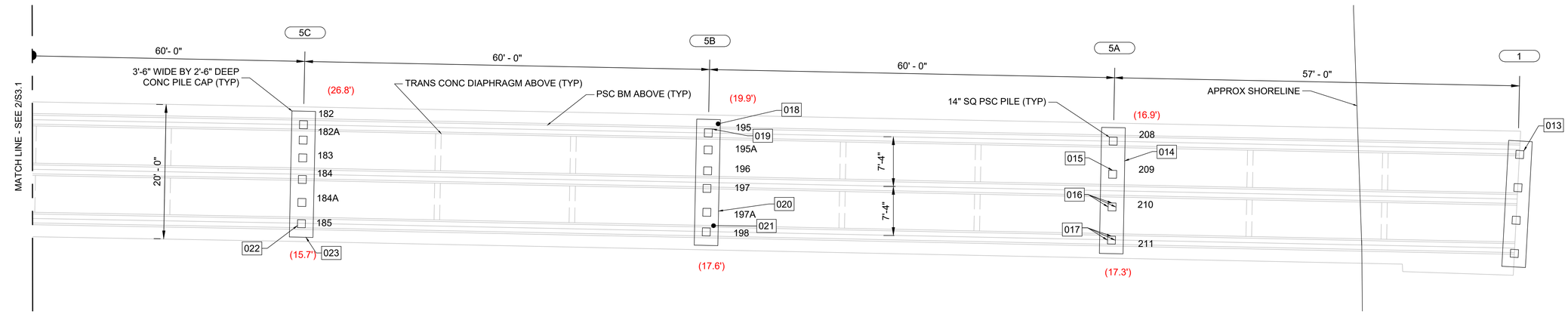


N

APPROACH PIER PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 / S3.0



N

APPROACH PIER PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 / S3.0

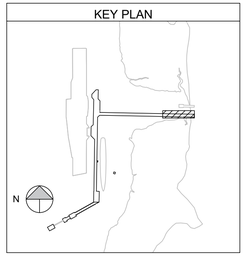
OBSERVATIONS																	
		CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS					
NOTE	ELEMENT	SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DESCRIPTION	REPAIR
001	CURB	✓										8	16		8		2/S7.0
002	JT MATL									✓			FULL			LT DEBRIS BUILD UP	4/S7.2
003	CURB		✓									8	5	1		PREVIOUS REPAIR	2/S7.0
004	JT MATL									✓			FULL			LT DEBRIS AND VEG GROWTH	4/S7.2
005	TOP OF DECK			✓	5	✓						72					3/S7.2
006	CURB						✓					180	1/16			N&S CURBS	3/S7.1
007	JT MATL									✓	✓		FULL			MISSING/ LT DEBRIS AND VEG GROWTH	4/S7.2
008	TOP OF DECK			✓	20	✓						144					3/S7.2
009	CURB						✓					120	1/16			N&S CURBS	3/S7.1
010	JT MATL									✓			FULL			MINOR DEBRIS AND VEG GROWTH	4/S7.2
011	TOP OF DECK			✓	11	✓						144					3/S7.2
012	CURB						✓					120	1/16			N&S CURBS	3/S7.1
013	PILE		✓									8	8		3		3/S7.0
014	PILE CAP						✓					72	1/16			PREVIOUS REPAIR	1/S7.1
015	PILE						✓					14	1/16			HORZ	1/S7.1
016	PILE						✓					42	1/16			HORZ;N;W;E FACES	1/S7.1
017	PILE						✓					42	1/16			HORZ;N;W;E FACES	1/S7.1

OBSERVATIONS																	
		CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS					
NOTE	ELEMENT	SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DESCRIPTION	REPAIR
018	PILE CAP		✓		1	✓						18	4	1/2		AT UNDERSIDE	3/S7.0
019	PILE CAP	✓	✓		1	✓						8	4	1/2		AT UNDERSIDE	3/S7.0
020	PILE CAP	✓	✓		2			✓				36		6	24		3/S7.0
021	PILE CAP		✓									12	12			AT UNDERSIDE	2/S7.0
022	PILE CAP	✓		✓	5							5	14	7			3/S7.0
023	PILE CAP	✓		✓	1	✓						12	2	1/4			3/S7.0

SHEET NOTES

1. PLANS AND EXISTING CONDITIONS GENERATED BASED ON PLANS PREPARED BY LBC&W DATED FEBRUARY 1975, CUMMINGS AND McCRADY, INC DATED MARCH 1980,THE SHERIDAN CORPORATION DATED APRIL 2009, AND FIELD OBSERVATIONS BY GEL ENGINEERING, LLC AND ARE FOR REFERENCE ONLY. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS.
2. PROVIDED EXTENTS ARE THE APPROXIMATE TOTAL OBSERVED AT EACH LOCATION AS OF THE DATE OF FIELD OBSERVATIONS.
3. 000 OBSERVATION; SEE TABLE THIS SHEET FOR EXTENTS AND RECOMMENDED REPAIRS.
4. (X.X') DENOTES APPROX VERTICAL DISTANCE FROM TOP OF DECK TO MUDLINE (FT) ON 12-13-24 AT 12:30 PM; DOES NOT DENOTE ELEVATION.
5. PILES TYPICALLY COVERED WITH MARINE GROWTH FROM THE WATERLINE TO THE MUDLINE.

KEY PLAN



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Consultants

Certificate-Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GEL ENGINEERING, LLC No.C02649

SOUTH CAROLINA BOARD OF PROFESSIONAL ENGINEERS AND SURVEYORS No. 34504 EDWARD B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown Pier Repairs

Sheet Title

Existing Conditions at Approach Pier I

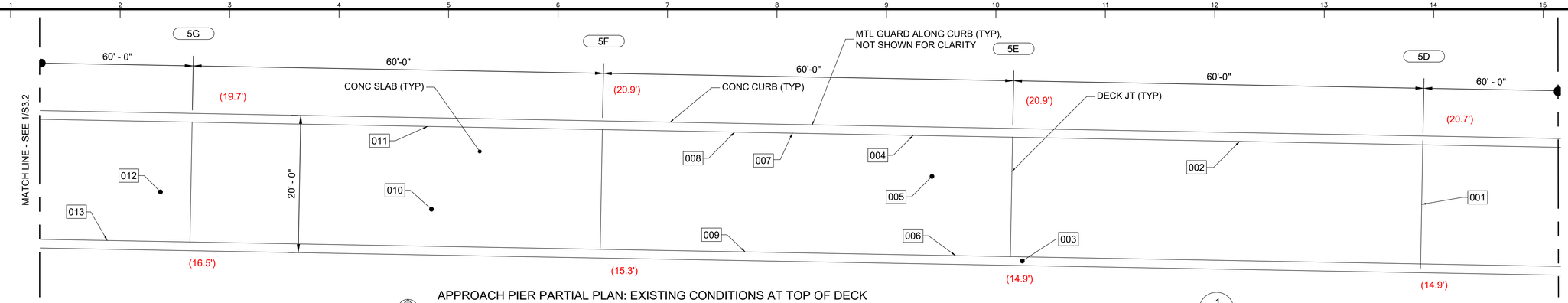
Project No. PPDA00124

Drawing No. S3.0

Date 07.30.25

Scale AS SHOWN

RELEASED FOR CONSTRUCTION

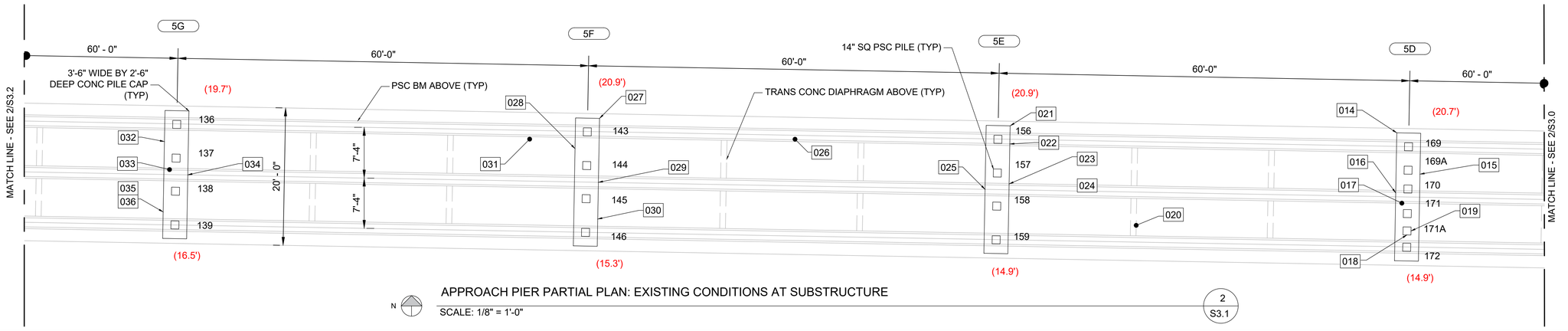


N

APPROACH PIER PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 S3.1



N

APPROACH PIER PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 S3.1

OBSERVATIONS																	
		CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS					
NOTE	ELEMENT	SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DESCRIPTION	REPAIR
001	JT MATL									✓			FULL			MINOR DEBRIS AND VEG GROWTH	4/S7.2
002	CURB						✓					120	1/16			N & S CURBS	3/S7.1
003	CURB	✓										10	10	1 1/2			2/S7.0
004	CURB		✓									30	6		10		2/S7.0
005	TOP OF DECK			✓	1							6	1	1/2			3/S7.2
006	CURB		✓									24	6		12		2/S7.0
007	CURB						✓					120	1/16			N & S CURBS	3/S7.1
008	CURB		✓									16		8	8		2/S7.0
009	CURB	✓	✓									8	4	1/2			2/S7.0
010	TOP OF DECK			✓	16	✓						156	96	1/2			3/S7.2
011	CURB						✓					120	1/16			N & S CURBS	3/S7.1
012	TOP OF DECK			✓	1	✓						6	1/2	1/2			3/S7.2
013	CURB			✓	1	✓							1	1/2	3		3/S7.2
014	PILE CAP		✓										6	4	16		3/S7.2
015	PILE CAP	✓	✓					✓				224	6		6	BOT EDGE	2/S7.0
016	PILE CAP						✓					102	1/16				1/S7.1
017	PILE CAP							✓				224	42			T/O UNDERSIDE	2/S7.0
018	PILE						✓					18	1/8			VERT CS	1/S7.1
019	PILE						✓					18	1/8			VERT CS	1/S7.1
020	DIAPHRAGM	✓		✓	1							36	8		8	2 LOC; TOTAL	3/S7.0
021	PILE CAP						✓					42	1/16				1/S7.1
022	PILE CAP	✓										10	3		3		2/S7.0
023	PILE CAP						✓					222	5/8			6-IN FROM BOTT; CS	1/S7.1
024	PILE CAP		✓				✓	✓				224			30	E FACE	2/S7.0
025	PILE CAP						✓					222	1/4			CS	1/S7.1
026	BEAM	✓										10	7		3		1/S7.2
027	PILE CAP		✓									42	8		8		2/S7.0
028	PILE CAP	✓	✓	✓	1	✓		✓				224	30		9		3/S7.0

OBSERVATIONS																	
		CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS					
NOTE	ELEMENT	SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DESCRIPTION	REPAIR
029	PILE CAP						✓					222	3/16			CS	1/S7.1
030	PILE CAP						✓					66	1/32			VERT & HORZ	1/S7.1
031	BEAM	✓	✓	✓	1	✓						8	8	3/4		AT UNDERSIDE	1/S7.2
032	PILE CAP	✓	✓									60	10	6			2/S7.0
033	PILE CAP						✓					42	1/16			HORZ	1/S7.1
034	PILE CAP						✓					224	3/8			AT UNDERSIDE; CS	1/S7.1
035	PILE CAP							✓				45	42			PCC AT UNDERSIDE	2/S7.0
036	PILE CAP						✓					120	1/4			AT UNDERSIDE	1/S7.1

SHEET NOTES

1. PLANS AND EXISTING CONDITIONS GENERATED BASED ON PLANS PREPARED BY LBC&W DATED FEBRUARY 1975, CUMMINGS AND McCRADY, INC DATED MARCH 1980,THE SHERIDAN CORPORATION DATED APRIL 2009, AND FIELD OBSERVATIONS BY GEL ENGINEERING, LLC AND ARE FOR REFERENCE ONLY. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS.
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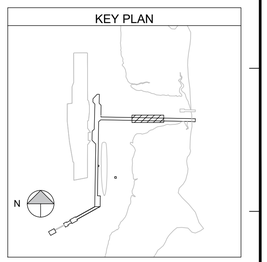
3. [000] OBSERVATION; SEE TABLE THIS SHEET FOR EXTENTS AND RECOMMENDED REPAIRS.
4. (X.X') DENOTES APPROX VERTICAL DISTANCE FROM TOP OF DECK TO MUDLINE (FT) ON 12-13-24 AT 12:30 PM; DOES NOT DENOTE ELEVATION.
5. PILES TYPICALLY COVERED WITH MARINE GROWTH FROM THE WATERLINE TO THE MUDLINE.

KEY PLAN



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Description:	By:	Apprv:	Date:
ISSUED FOR CONSTRUCTION	EL	DC	07.30.25

Consultants

Certificate-Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GEL ENGINEERING, LLC No.C02649

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 34504 EMIL E.B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

Sheet Title

Existing Conditions at Approach Pier II

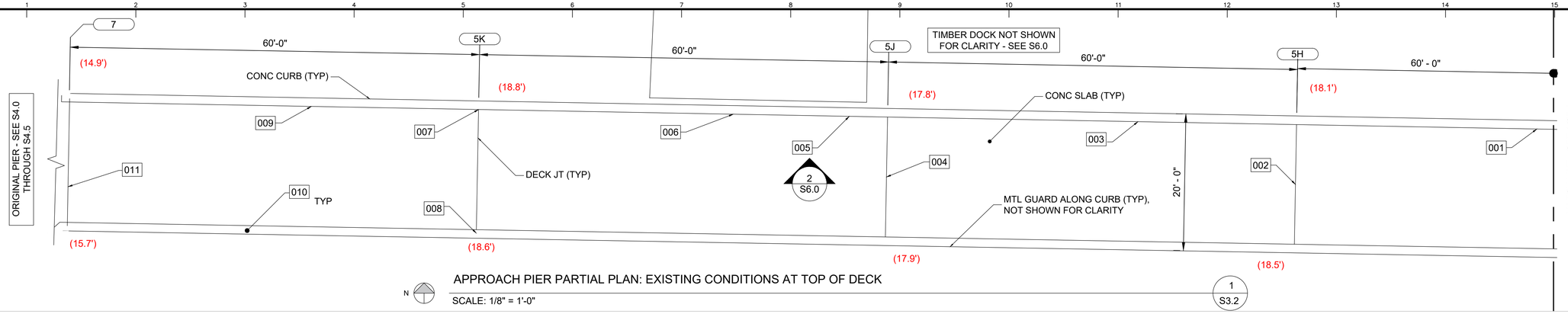
Project No. PPDA00124

Drawing No. S3.1

Date 07.30.25

Scale AS SHOWN

RELEASED FOR CONSTRUCTION

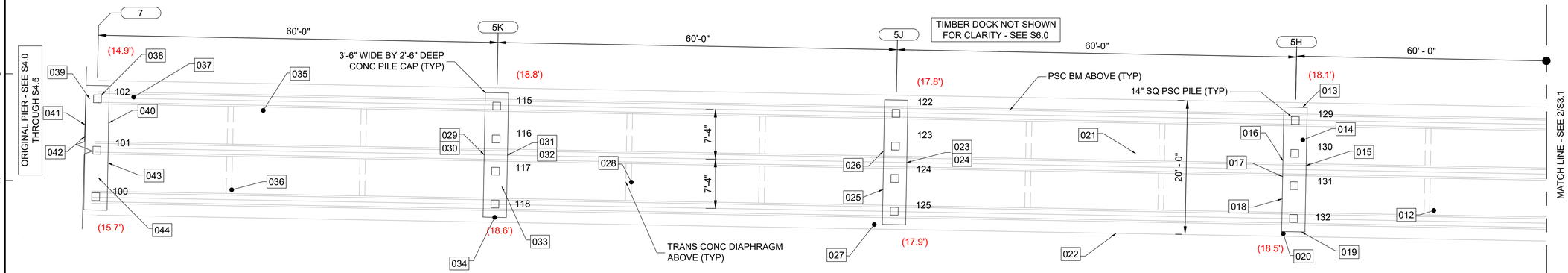


N

APPROACH PIER PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 S3.2



N

APPROACH PIER PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 S3.2

OBSERVATIONS

NOTE	ELEMENT	CONC DEFECTS: SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	OTHER DEFECTS: CORR.	DETERIORATION	MISSING	APPROX EXTENTS: LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DESCRIPTION	REPAIR
001	CURB						✓					180	1/16			N & S CURBS	3/S7.1
002	JT MATL									✓			FULL			MINOR DEBRIS BUILD UP	4/S7.2
003	CURB						✓					180	1/16			N & S CURBS	3/S7.1
004	JT MATL									✓			FULL			MINOR DEBRIS BUILD UP AND VEG GROWTH	4/S7.2
005	CURB											68	15		12	SECTION REMOVED FOR DOCK ACCESS	2/S7.3
006	CURB						✓					120	1/16			N & S CURBS	3/S7.1
007	JT MATL										✓						4/S7.2
008	JT MATL									✓						MINOR DEBRIS BUILD UP	4/S7.2
009	CURB						✓					240	1/16			N & S CURBS	3/S7.1
010	GUARD								✓							LT-TO-MOD T/O	5/S7.2
011	JT MATL									✓		240	FULL			DETERIORATED JT MATL	4/S7.2
012	DIAPHRAGM	✓										10	4	3		1 UTILITY BOLT EXPOSED	2/S7.0
013	PILE CAP		✓										42	4			2/S7.0
014	PILE CAP						✓					224	3/8			ALONG UNDERSIDE; CS	1/S7.1
015	PILE CAP							✓				224			16	PCC	2/S7.0
016	PILE CAP						✓					224	1/4			ALONG UNDERSIDE; CS	1/S7.1
017	PILE CAP	✓										10	10		10		2/S7.0
018	PILE CAP		✓									67			12		2/S7.0
019	PILE CAP		✓										42	12			2/S7.0
020	DECK	✓										24	16	3			2/S7.0
021	DECK	✓	✓	✓	2	✓						3	3	1/2		3 LOC; EA	3/S7.0
022	DECK	✓		✓	4	✓						10	4	1/2		4 LOC; EA	3/S7.0
023	PILE CAP						✓					224	1/4				1/S7.1
024	PILE CAP		✓									224			24	CS	2/S7.0
025	PILE CAP		✓									96	30				2/S7.0
026	PILE CAP						✓					224	3/16			CS	1/S7.1
027	DECK	✓		✓	6							24	24	5		AT UNDERSIDE	3/S7.0

OBSERVATIONS

NOTE	ELEMENT	CONC DEFECTS: SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	OTHER DEFECTS: CORR.	DETERIORATION	MISSING	APPROX EXTENTS: LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DESCRIPTION	REPAIR
028	DIAPHRAGM	✓										30	8		4		2/S7.0
029	PILE CAP						✓					180	1/4				1/S7.1
030	PILE CAP		✓									8	4				2/S7.0
031	PILE CAP	✓	✓	✓		✓						224		1 1/2	30		3/S7.0
032	PILE CAP						✓						1/4			CS	1/S7.1
033	DIAPHRAGM	✓		✓	1	✓						30	8	4		UTILITY BRACKET DISCONNECTED	3/S7.0
034	DECK	✓										24	8		3	AT UNDERSIDE	2/S7.0
035	ROD								✓							AT THRU RODS; TYP 2 PER SPAN FACE	5/S7.2
036	DIAPHRAGM	✓	✓	✓	4	✓						21	21	3		4 LOC; TOTAL	3/S7.0
037	DECK	✓		✓	1							24	4	3		AT UNDERSIDE	3/S7.0
038	PILE						✓						1/16			VERT & HORZ AT ALL FACES IN EXPOSED T/ 16-IN OF PILE W/ CS; HEAVY MARINE GROWTH BELOW	1/S7.1
039	BEAM	✓		✓	1	✓						10	4	1		UP TO 15% LOS	1/S7.2
040	PILE CAP											532			36	PREVIOUS SHOTCRETE REPAIR AT ALL FACES	NOTE 4/S7.0
041	DECK	✓		✓	1	✓						6	4	3/4		AT CLOSURE POUR AT UNDERSIDE; UP TO 15% LOS	3/S7.0
042	DECK	✓		✓	1	✓						16	8	1		AT CLOSURE POUR; UP TO 15% LOS	3/S7.0
043	BEAM	✓										10	24		4	AT BEARING	2/S7.0
044	DIAPHRAGM	✓		✓	1	✓						30	8	4			3/S7.0

SHEET NOTES

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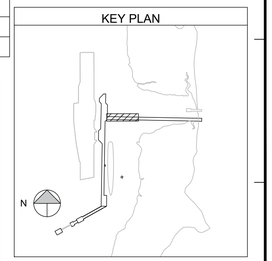
5. PILES TYPICALLY COVERED WITH MARINE GROWTH FROM THE WATERLINE TO THE MUDLINE.

KEY PLAN



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Description:	By:	Apprv:	Date:
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Consultants

Certificate-Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GEL ENGINEERING, LLC No.C02649

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 34504 E.B. CAMPBELL II

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

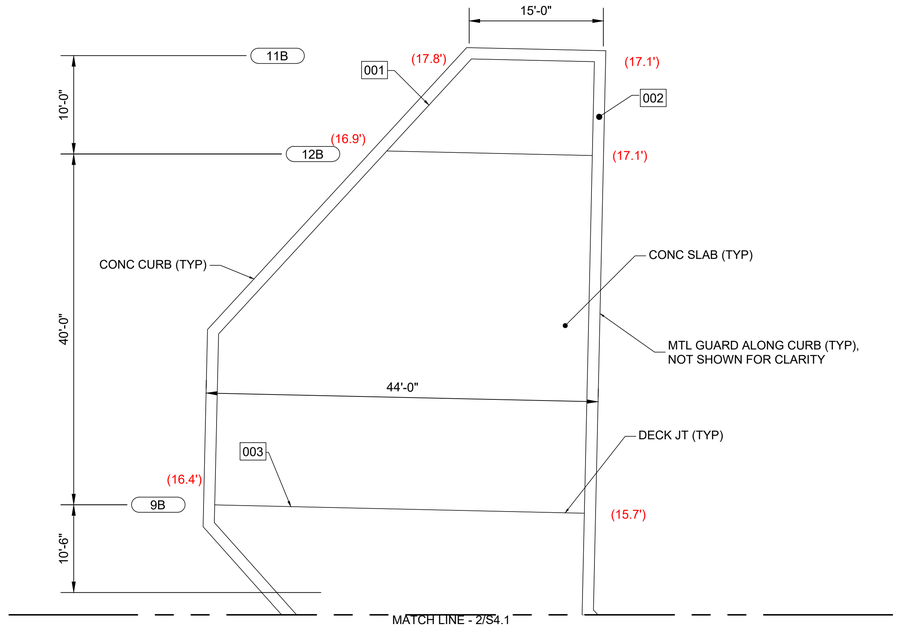
USS Yorktown
Pier Repairs

Sheet Title

Existing Conditions at Approach Pier III

Project No.	Drawing No.
PPDA00124	S3.2
Date: 07.30.25	
Scale: AS SHOWN	

RELEASED FOR CONSTRUCTION



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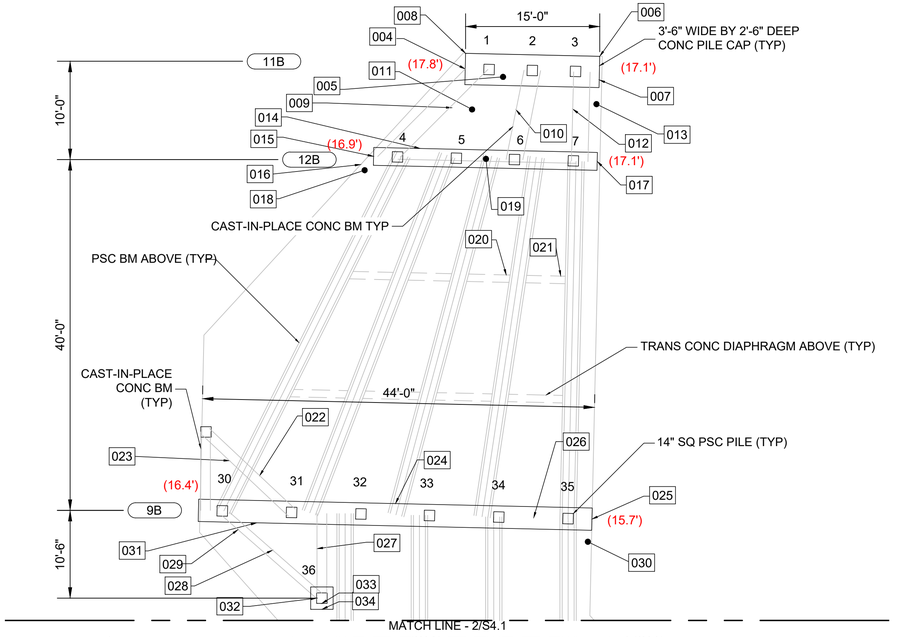
ORIGINAL PIER HEAD PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 / S4.0



N

ORIGINAL PIER HEAD PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 / S4.0

OBSERVATIONS																	
		CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS					
NOTE	ELEMENT	SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DESCRIPTION	REPAIR
001	CURB						✓					86	1/16			E & W CURBS	3/S7.1
002	GUARD								✓							8 LOC	5/S7.2
003	JT MATL									✓		516				DEBRIS BUILD UP	4/S7.2
004	PILE CAP						✓					84	1/16			VERT & HORZ; CS	1/S7.1
005	PILE CAP						✓					30	1/16			AT UNDERSIDE	1/S7.1
006	PILE CAP	✓										17	12	3/4			2/S7.0
007	PILE CAP	✓										5	5	1			2/S7.0
008	PILE CAP	✓										6	4	3/4			2/S7.0
009	BEAM	✓	✓	✓	3							60	12		16	UP TO 50% LOS	2/S7.2
010	BEAM	✓	✓	✓	8							60	12	16		UP TO 50% LOS (PHOTO 1)	2/S7.2
011	DECK	✓				✓						10	3	1/2		AT UNDERSIDE	2/S7.0
012	BEAM	✓	✓	✓	6							96	12		16	UP TO 50% LOS	2/S7.2
013	DECK					✓										EXPOSED CHAIRS; CS TYP AT UNDERSIDE	3/S7.2
014	PILE CAP						✓					300	1/16			VERT & HORZ	1/S7.1
015	PILE CAP	✓		✓	1							4	4	1/2			3/S7.0
016	DECK	✓		✓	2							20	5	2		3 LOC; EA; AT UNDERSIDE	3/S7.0
017	PILE CAP						✓					60	1/8			VERT & HORZ; CS; EXTENTS TO UNDERSIDE T/ 12-IN OF PILE 7	1/S7.1
018	DECK	✓		✓	5							12	8	1		4 LOC; EA; UP TO 15% LOS	3/S7.0
019	PILE CAP						✓					60	1/16			AT UNDERSIDE; CS	1/S7.1
020	DIAPHRAGM	✓		✓								6	12	1/4			3/S7.0
021	DIAPHRAGM															CS AT DIAPHRAGM CONNECTION HARDWARE	3/S7.3
022	PILE CAP						✓					240	1/8			VERT & HORZ	1/S7.1
023	PILE CAP						✓					144	3/16			HORZ	1/S7.1
024	PILE CAP						✓					132	1/16			VERT & HORZ	1/S7.1
025	PILE CAP						✓					72	1/16			VERT & HORZ	1/S7.1
026	DIAPHRAGM	✓		✓	5							48	12	3		UP TO 30% LOS (PHOTO 2)	3/S7.0
027	BEAM	✓		✓	2							16	6	1/2		UP TO 50% LOS	2/S7.2
028	BEAM	✓		✓	1							12	6	1 1/2		UP TO 50% LOS	2/S7.2
029	BEAM		✓									48	2				2/S7.0
030	DECK	✓		✓	9	✓						6	3	1		UP TO 30% LOS	3/S7.2
031	PILE CAP											1140			24	SHOTCRETE	NOTE 4/S7.0
032	PILE CAP						✓					10	1/16			VERT EXTENTS TO PILE 36	1/S7.1
033	PILE						✓					6	1/32			VERT; CS	1/S7.1
034	PILE CAP						✓					36	1/32			VERT	1/S7.1

PHOTOGRAPH 1

PHOTOGRAPH 2

SHEET NOTES

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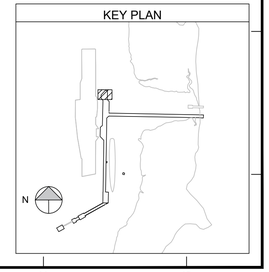
5. PILES TYPICALLY COVERED WITH OYSTERS FROM WATERLINE TO MUDLINE.

KEY PLAN



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Consultants

Certificate-Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GEL ENGINEERING, LLC No.C02649

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 34504 ELIZABETH B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

Sheet Title

Existing Conditions at Original Pier Head I

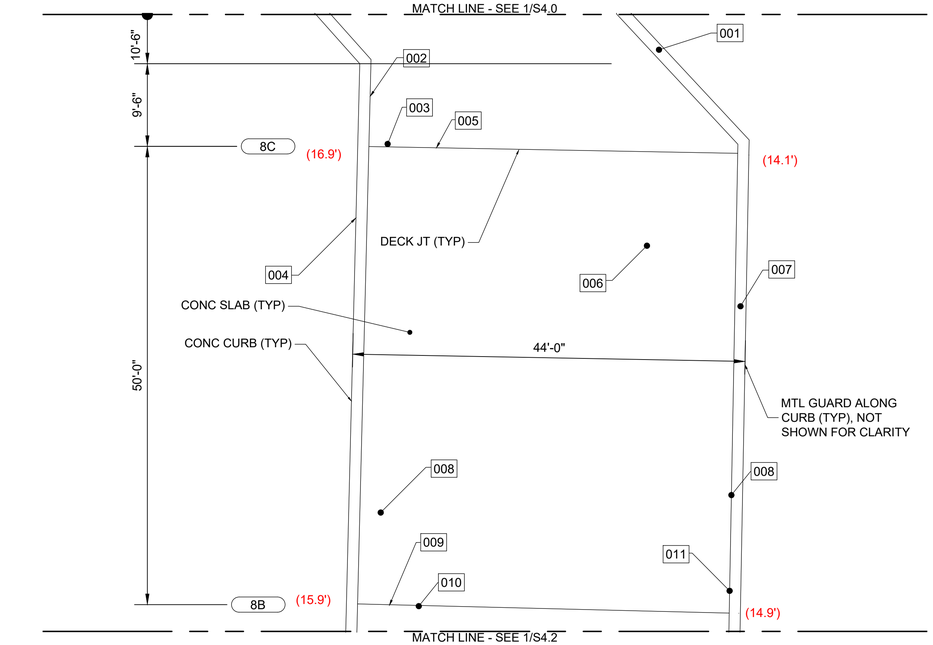
Project No. PPDA00124

Drawing No. S4.0

Date 07.30.25

Scale AS SHOWN

RELEASED FOR CONSTRUCTION

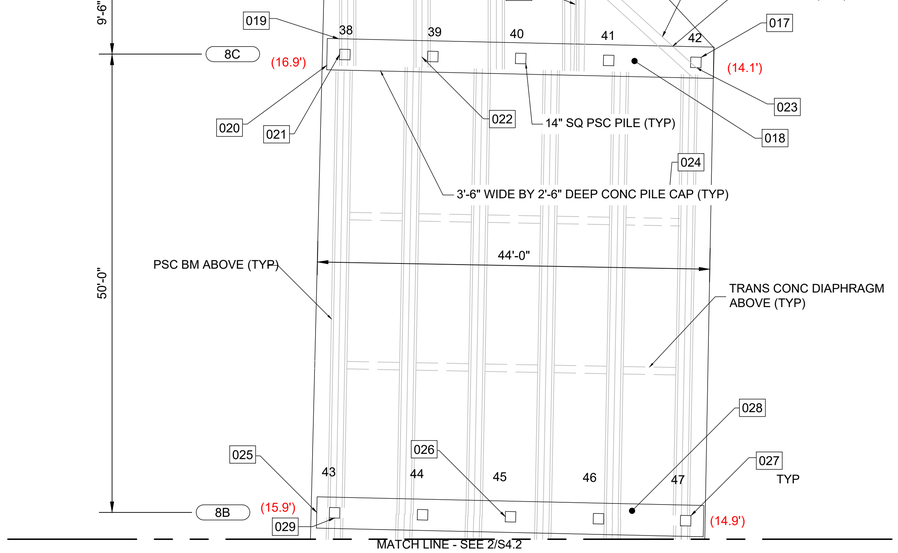


N

ORIGINAL PIER HEAD PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 / S4.1



N

ORIGINAL PIER HEAD PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 / S4.1

OBSERVATIONS																
		CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS				
NOTE	ELEMENT	SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DESCRIPTION	REPAIR
001	GUARD								✓							8 LOC	5/S7.2
002	CURB						✓					41	1/16			E & W CURBS	3/S7.1
003	TOP OF DECK	✓										13	4	3/4		2 LOC; EA	2/S7.0
004	CURB		✓									12	12				2/S7.0
005	JT MATL									✓		516				DEBRIS BUILD UP	4/S7.2
006	TOP OF DECK	✓		✓	1							15	3 1/4			LT SURFACE CORROSION (PHOTO 1)	3/S7.0
007	GUARD								✓							2 LOC	5/S7.2
008	TOP OF DECK				10	✓						4					3/S7.2
008	OTHER										✓					LOOSE/ NOT ENGAGED BOLLARD HARDWARE	TIGHTEN
009	JT MATL									✓		516				DEBRIS BUILD UP	4/S7.2
010	CURB				10	✓						4					3/S7.2
011	CURB	✓										11	5		7		2/S7.0
012	DIAPHRAGM	✓		✓	2							24	3	3		UP TO 30% LOS	3/S7.0
013	PILE CAP						✓					96	1/32			VERT & HORZ	1/S7.1
014	DECK	✓			15	✓						12	8	1/2		UP TO 30% LOS	3/S7.0
015	BEAM	✓	✓	✓	1							24	2	4		UP TO 30% LOS	3/S7.0
016	BEAM	✓	✓	✓	2							108	12	3		W/ PCC; UP TO 30% LOS (PHOTO 2)	3/S7.0
017	PILE						✓					20	1/32			2 LOC; EA; VERT; CS	1/S7.1
018	PILE CAP						✓					96	1/16			AT UNDERSIDE	1/S7.1
019	PILE CAP											600			30	SHOTCRETE AT N;E & S FACES	NOTE 4/S7.0
020	PILE CAP						✓					60	1/16			VERT & HORZ	1/S7.1
021	PILE						✓					10	1/32			VERT	1/S7.1
022	BEAM	✓		✓	2							6	2	1/2		2 LOC; EA; UP TO 25% LOS	1/S7.2
023	PILE						✓					12	1/32			VERT	1/S7.1
024	DECK				3	✓						16				EA; UP TO 25% LOS	3/S7.2
025	PILE CAP						✓					60	1/32			VERT & HORZ; W/ EFFLO CS	1/S7.1
026	PILE						✓					10	1/32			VERT; CS	1/S7.1
027	PILE															SHOTCRETE VISIBLE ON ALL PILES	NOTE 4/S7.0
028	BEAM											48	22			SHOTCRETE SPALLING IN ISO LOC AT BEAM SEATS; SHOTCRETE COVERS ~ 4-FT OF BEAMS	NOTE 4/S7.0
029	PILE						✓					10	1/32			VERT	1/S7.1

PHOTOGRAPH 1

PHOTOGRAPH 2

SHEET NOTES

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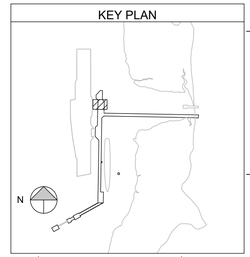
KEY PLAN



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Consultants

Certificate-Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GEL ENGINEERING, LLC No.C02649

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 34504 EVAN B. CAMPBELL 7-30-25

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

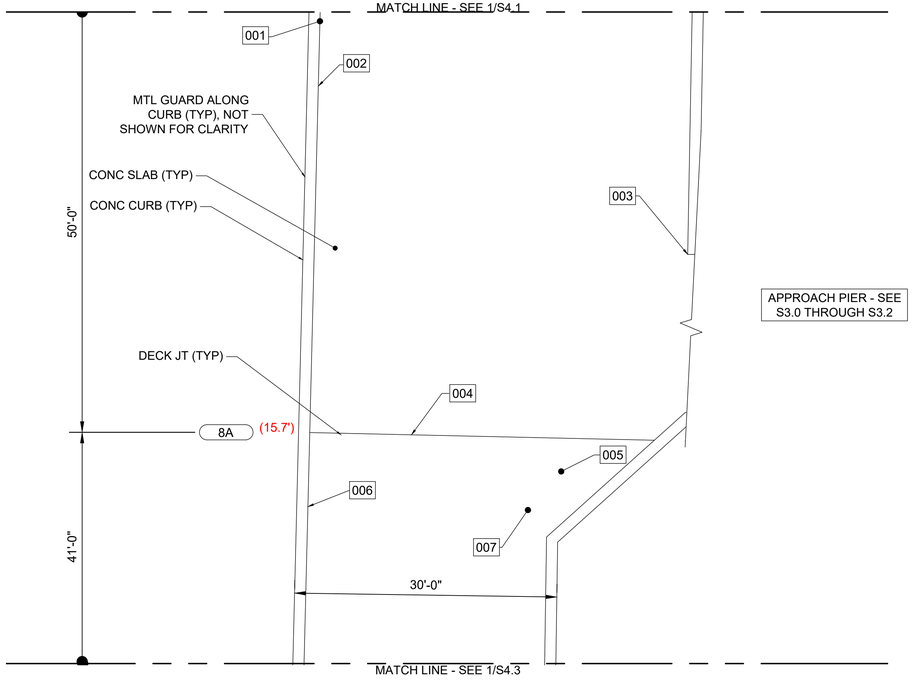
USS Yorktown
Pier Repairs

Sheet Title

Existing Conditions at
Original Pier Head II

Project No.	Drawing No.
PPDA00124	S4.1
Date: 07.30.25	
Scale: AS SHOWN	

RELEASED FOR CONSTRUCTION

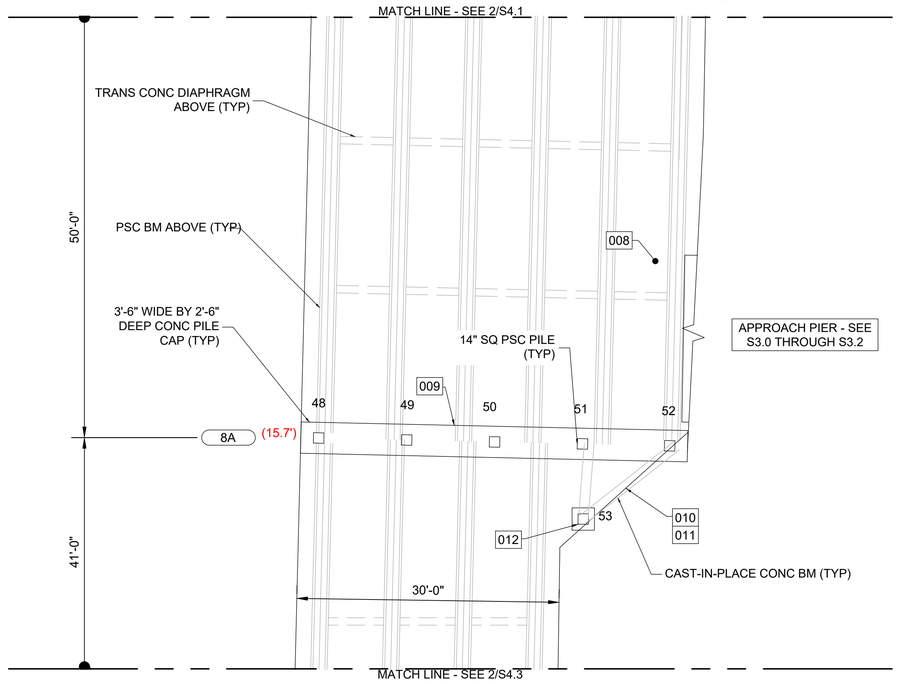


N

ORIGINAL PIER HEAD PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 S4.2



N

ORIGINAL PIER HEAD PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 S4.2

OBSERVATIONS																
		CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS				
NOTE	ELEMENT	SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DESCRIPTION	REPAIR
001	GUARD						✓		✓			2	1/16			IN RAIL VERT; HVY CORROSION AT BASE PL UP TO 50% LOS	RRIK
002	CURB						✓					25	1/16			E & W CURB	3/S7.1
003	CURB	✓	✓									36	14		11	IMPACT DAMAGE (PHOTO 1)	2/S7.0
004	JT MATL									✓		492					4/S7.2
005	TOP OF DECK				5	✓						8	1/2			5 LOC; EA	3/S7.2
006	CURB						✓					60	1/16				3/S7.1
007	TOP OF DECK						✓					40	1/16				3/S7.1
008	DECK				3	✓						20				AT UNDERSIDE	3/S7.2
009	PILE CAP											516			30	SHOTCRETE	NOTE 4/S7.0
010	BEAM	✓		✓	1							9	2	2		UP 10% LOS (PHOTO 2)	3/S7.0
011	BEAM		✓									5	3				2/S7.0
012	PILE		✓									20	4	3			2/S7.0

PHOTOGRAPH 1

PHOTOGRAPH 2

SHEET NOTES

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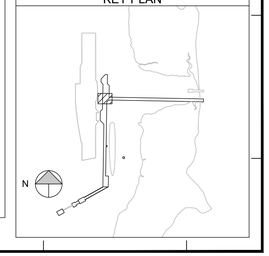
KEY PLAN



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Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

Sheet Title

Existing Conditions at
Original Pier Head III

Project No. PPDA00124

Drawing No. S4.2

Date 07.30.25

Scale AS SHOWN

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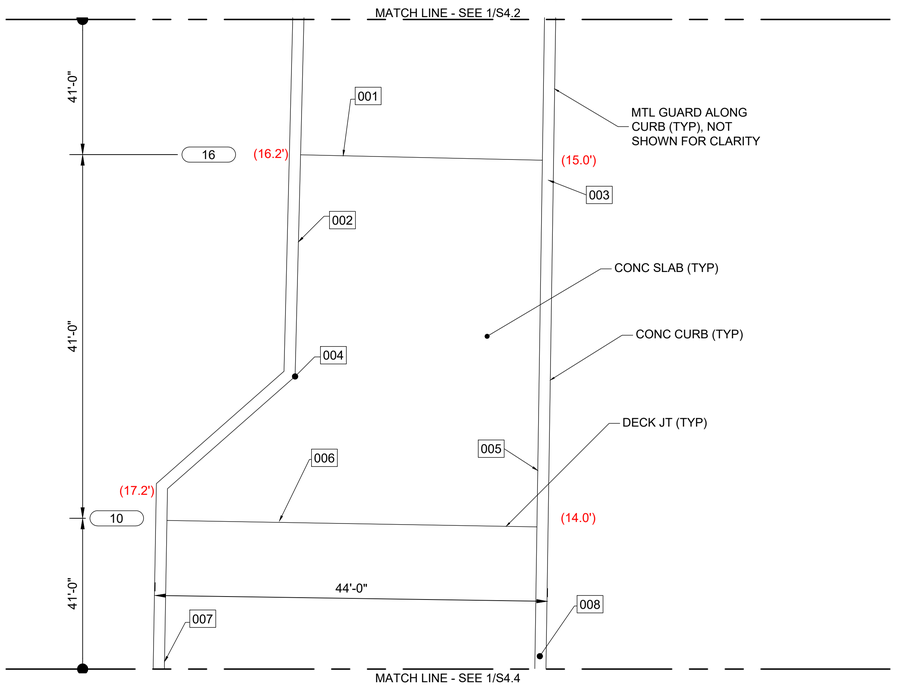
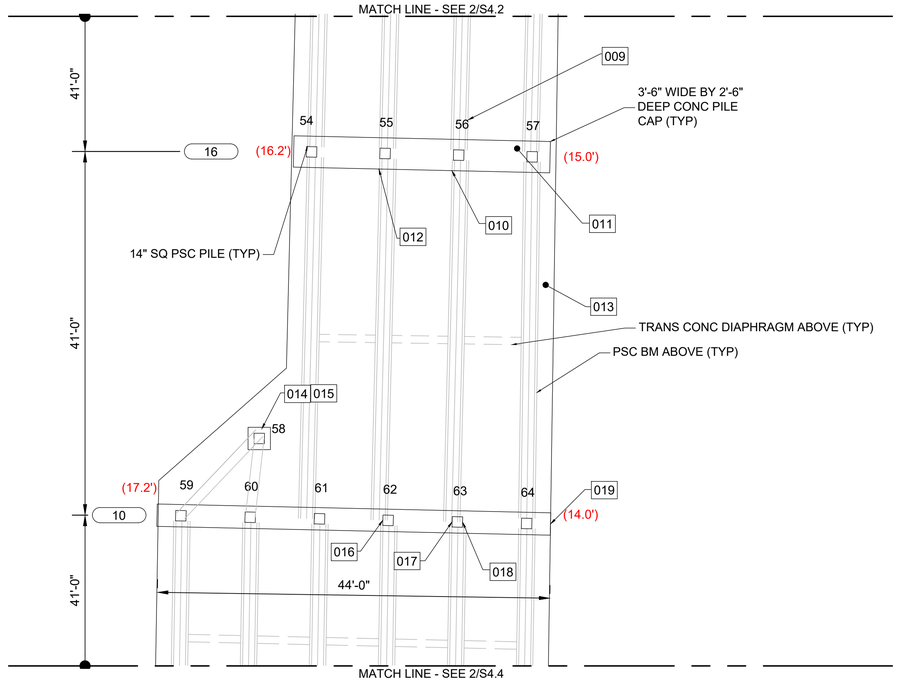


N

ORIGINAL PIER HEAD PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 S4.3



N

ORIGINAL PIER HEAD PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 S4.3

OBSERVATIONS

NOTE	ELEMENT	CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS				DESCRIPTION	REPAIR
		SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)		
001	JT MATL									✓		360					4/S7.2
002	CURB						✓					35	1/16			E & W CURB	3/S7.1
003	GUARD								✓							4 LOC	5/S7.2
004	GUARD								✓							UP TO 75% LOS AT BOLLARD	5/S7.2
005	CURB	✓	✓									15	11		13	AT CURB (PHOTO 1)	2/S7.0
006	JT MATL									✓		528					4/S7.2
007	CURB						✓					48	1/16			E & W CURB	3/S7.1
008	GUARD								✓							4 LOC	5/S7.2
009	BEAM	✓										6	22	6			2/S7.0
010	PILE CAP											1056			30	SHOTCRETE N & S FACES	NOTE 4/S7.0
011	PILE CAP	✓										4	2	2			2/S7.0
012	BEAM	✓	✓									2	22	5			2/S7.0
013	DECK	✓	✓	✓	4							12	6	3/4		5 LOC; EA; UP TO 25% LOS	3/S7.0
014	PILE		✓					✓				40	8			2 LOC; EA (PHOTO 2)	2/S7.0
015	PILE CAP	✓		✓	2							2	2	1		2 LOC; EA; UP TO 25% LOS	3/S7.0
016	PILE						✓					9	1/32			VERT CS	1/S7.1
017	PILE						✓					13	1/16			CS	1/S7.1
018	PILE						✓					12	1/16			2 LOC; EA; VERT	1/S7.1
019	PILE CAP						✓					24	1/16			EXTENTS TO UNDERSIDE	1/S7.1

PHOTOGRAPH 1

PHOTOGRAPH 2

SHEET NOTES

1. PLANS AND EXISTING CONDITIONS GENERATED BASED ON PLANS PREPARED BY LBC&W DATED FEBRUARY 1975, CUMMINGS AND McCRADY, INC. DATED MARCH 1980 THE SHERIDAN CORPORATION DATED APRIL 2009, AND FIELD OBSERVATIONS BY GEL ENGINEERING, LLC AND ARE FOR REFERENCE ONLY. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS.
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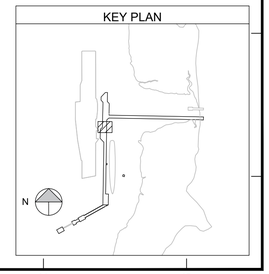
3. 000 OBSERVATION; SEE TABLE THIS SHEET FOR EXTENTS AND RECOMMENDED REPAIRS.
4. (X.X') DENOTES APPROX VERTICAL DISTANCE FROM TOP OF DECK TO MUDLINE (FT) ON 12-13-24 AT 12:30 PM; DOES NOT DENOTE ELEVATION.
5. PILES TYPICALLY COVERED WITH OYSTERS FROM WATERLINE TO MUDLINE.

KEY PLAN



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Revisions

Description:	By:	Apprv:	Date:
ISSUED FOR CONSTRUCTION	EL	DC	07.30.25

Consultants

Certificate-Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GEL ENGINEERING, LLC No.C02649

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 34504 DANIEL E.B. CAMPBELL 7-30-25

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown Pier Repairs

Sheet Title

Existing Conditions at Original Pier Head IV

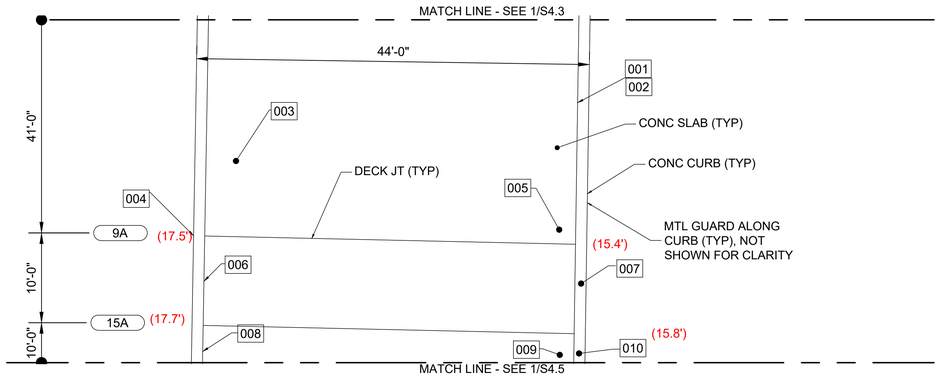
Project No. PPDA00124

Drawing No. S4.3

Date 07.30.25

Scale AS SHOWN

RELEASED FOR CONSTRUCTION



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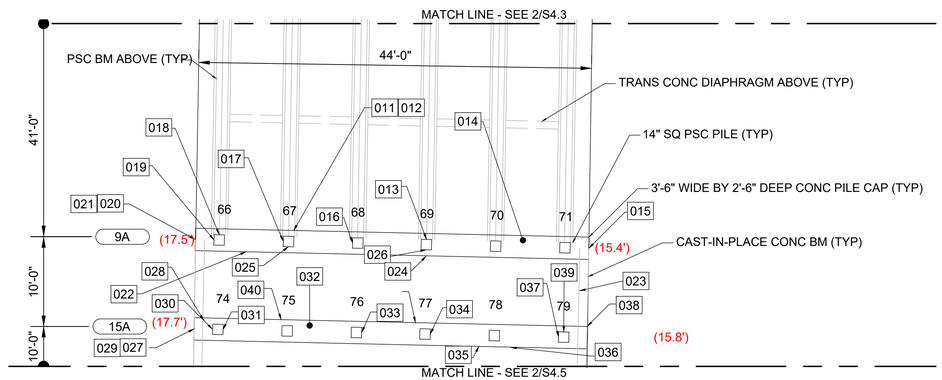
ORIGINAL PIER HEAD PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 S4.4



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ORIGINAL PIER HEAD PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 S4.4

OBSERVATIONS

NOTE	ELEMENT	CONC DEFECTS: SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	OTHER DEFECTS: CORR.	DETERIOR-ATION	MISSING	APPROX EXTENTS: LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DESCRIPTION	REPAIR
001	CURB				1	✓						3					3/S7.2
002	CURB	✓										6	3	1/2			2/S7.0
003	TOP OF DECK	✓										1	1	1/8		30 LOC OVER 3 1/2 SQ FT AREA	2/S7.0
004	CURB		✓									10	13				2/S7.0
005	TOP OF DECK	✓										4	6	1/2		4 LOC; EA	2/S7.0
006	CURB						✓					14	1/16			E & W CURB	3/S7.1
007	GUARD								✓							2 LOC	5/S7.2
008	CURB						✓					22	1/16			E & W CURB	3/S7.1
009	CURB	✓		✓	1							4	7	2		W/ SURFACE CORROSION	3/S7.0
010	GUARD								✓							2 LOC	5/S7.2
011	PILE CAP	✓	✓	✓	2			✓				528			30	UP TO 25% LOS	3/S7.0
012	PILE CAP						✓					528	1/4				1/S7.1
013	PILE						✓					18	1/16			VERT	1/S7.1
014	PILE CAP						✓					210	3/16			AT UNDERSIDE	1/S7.1
015	PILE						✓					6	1/32			2 LOC; EA; VERT; E FACE	1/S7.1
016	PILE						✓					36	1/16			VERT & HORZ; W FACE (PHOTO 1)	1/S7.1
017	PILE						✓					24	1/16			VERT & HORZ; N & W FACES	1/S7.1
018	PILE						✓					24	1/32			2 LOC; EA; N FACE	1/S7.1
019	PILE						✓					20	1/16			VERT & DIAG; W FACE	1/S7.1
020	PILE CAP	✓		✓	1							5	5	1/2		UP TO 15% LOS	3/S7.0
021	PILE CAP						✓					24	1/16			DIAG	1/S7.1
022	PILE CAP	✓	✓	✓	2			✓				528	30			UP TO 25% LOS	3/S7.0
023	BEAM	✓		✓	7							60	12	6			1/S7.2
024	PILE CAP		✓					✓				528			30		2/S7.0
025	PILE						✓					20	1/32			VERT & HORZ; CS; S FACE	1/S7.1
026	PILE						✓					16	1/32			HORZ; S FACE	1/S7.1
027	PILE CAP		✓					✓				12	6			2 LOC; EA	2/S7.0
028	PILE CAP		✓					✓				36	6				2/S7.0
029	PILE CAP						✓					60	1/8			VERT & HORZ CS; W FACE	1/S7.1
030	PILE						✓					12	1/32			VERT; W FACE	1/S7.1
031	PILE						✓					16	1/32			VERT & HORZ; E FACE	1/S7.1
032	PILE CAP						✓					1056	1/4			2 LOC; AT UNDERSIDE W/ EFFLO AND CS	1/S7.1
033	PILE						✓					12	1/16			VERT; E FACE	1/S7.1
034	PILE						✓					10	1/32			VERT; CS; E FACE	1/S7.1
035	PILE CAP		✓					✓				132			30	25% HEAVY ABRASION UP TO 1-IN DEEP; 25% SOUNDS HOLLOW	2/S7.0
036	PILE CAP		✓				✓					309	2			E END OF S FACE; UP TO 1 1/2-IN OF HORZ DISPLACEMENT (PHOTO 2)	3/S7.0
037	PILE						✓					8	1/16			VERT; W FACE	1/S7.1
038	PILE CAP	✓		✓	2							18	9	5		UP TO 50% LOS	2/S7.2
039	PILE CAP						✓					72	1/16			VERT & HORZ	1/S7.1
040	PILE CAP		✓					✓				264			15	2/3 OF WESTERN HALF; AND 1/3 OF EASTERN HALF	2/S7.0

PHOTOGRAPH 1

PHOTOGRAPH 2

SHEET NOTES

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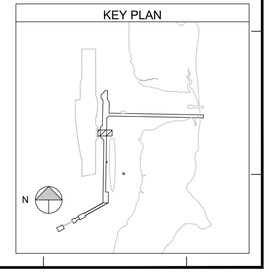
KEY PLAN



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Revisions

Description:	By:	Apprv:	Date:
ISSUED FOR CONSTRUCTION	EL	DC	07.30.25

Consultants

Certificate-Seal

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SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 34504 E. B. CAMPBELL

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PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

Sheet Title

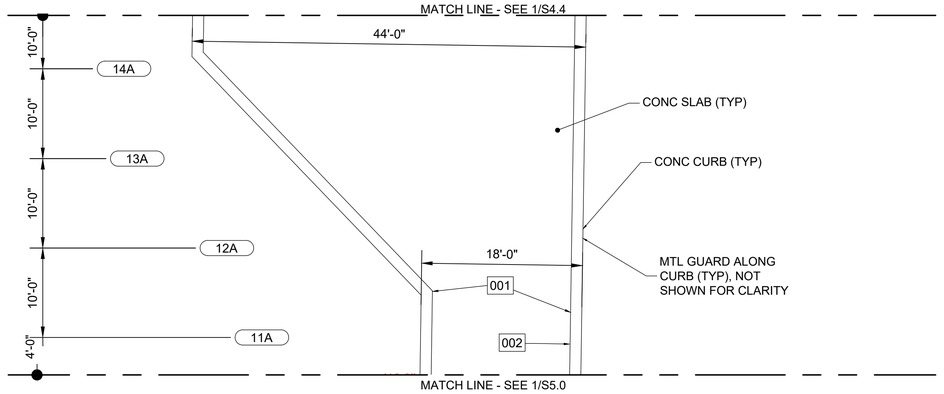
Existing Conditions at
Original Pier Head V

Project No.	Drawing No.
PPDA00124	S4.4

Date
07.30.25

Scale
AS SHOWN

RELEASED FOR CONSTRUCTION

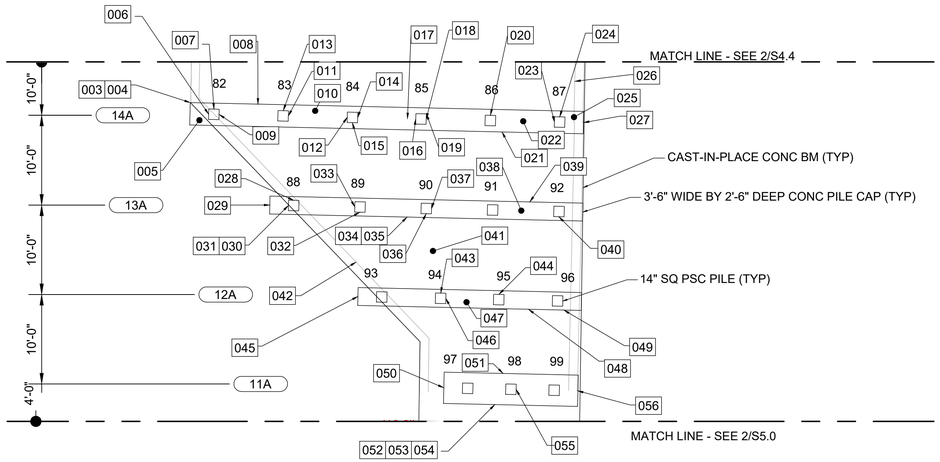


N

ORIGINAL PIER HEAD PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 S4.5



N

ORIGINAL PIER HEAD PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 S4.5

SHEET NOTES

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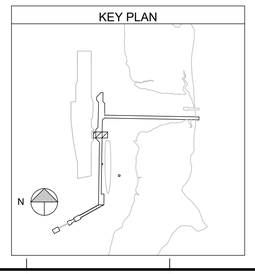
KEY PLAN



OBSERVATIONS																
		CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS				
NOTE	ELEMENT	SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DESCRIPTION	REPAIR
001	TOP OF DECK				2	✓						4					3/S7.2
002	CURB	✓		✓	1								4	4	7		3/S7.0
003	PILE CAP		✓									12	6	1			2/S7.0
004	PILE CAP	✓										3	5	4			2/S7.0
005	PILE CAP		✓									12	6			AT UNDERSIDE W/ CS	2/S7.0
006	PILE						✓					10	1/16			2 LOC; EA; W FACE	1/S7.1
007	PILE						✓					35	1/8			VERT & HORZ; CS; N FACE	1/S7.1
008	PILE CAP		✓					✓				270			30		2/S7.0
009	PILE						✓					12	1/16			VERT; E FACE	1/S7.1
010	PILE CAP						✓					528	3/16			AT UNDERSIDE W/ CS	1/S7.1
011	PILE						✓					16	1/8			VERT; E FACE	1/S7.1
012	PILE						✓					12	1/32			4 LOC; EA; VERT; W FACE	1/S7.1
013	PILE						✓					30	1/32			VERT & HORZ; CS; N FACE	1/S7.1
014	PILE						✓					12	1/32			VERT; CS; E FACE	1/S7.1
015	PILE CAP	✓		✓	4							60	5	3		UP TO 75% LOS	2/S7.2
016	PILE						✓					50	1/16			VERT & HORZ; S FACE	1/S7.1
017	DIAPHRAGM	✓		✓	5							6	6	3/4			3/S7.0
018	PILE						✓					12	1/8			CS; E FACE	1/S7.1
019	PILE	✓										6	3	1/4			2/S7.0
020	PILE						✓					10	1/16			VERT & HORZ; CS; N FACE	1/S7.1
021	PILE CAP		✓					✓				330			30	SOUNDS HOLLOW; REMAINING HAS HEAVY ABRASION UP TO 1-IN DEEP	2/S7.0
022	PILE CAP				2	✓						16				UP TO 50% LOS	3/S7.2
023	PILE						✓					24	1/32			VERT & HORZ; CS; W FACE	1/S7.1
024	PILE						✓					15	1/32			VERT & HORZ; N FACE	1/S7.1
025	PILE CAP		✓									48	5	5		AT UNDERSIDE	2/S7.0
026	BEAM	✓	✓	✓	7							96	8		12	UP TO 25% LOS	1/S7.2
027	PILE CAP	✓										7	4	1			2/S7.0
028	PILE						✓					12	1/32			VERT & HORZ; N FACE	1/S7.1
029	PILE CAP						✓					24	1/8			VERT	1/S7.1
030	PILE						✓					9	1/32			CS; W FACE	1/S7.1
031	PILE						✓					12	1/32			VERT & HORZ; W FACE	1/S7.1
032	PILE						✓					16	1/8			CS; S FACE	1/S7.1
033	PILE						✓					15	1/16			VERT; W FACE	1/S7.1
034	PILE CAP						✓					420	1/4			CS; S FACE	1/S7.1
035	PILE CAP		✓					✓				360			28		2/S7.0
036	PILE						✓					12	1/32			2 LOC; EA; AT PREVIOUS REPAIR; S FACE	1/S7.1
037	PILE						✓					12	1/32			2 LOC; EA; AT PREVIOUS REPAIR; W FACE	1/S7.1
038	PILE CAP						✓					420	1/4			2 LOC; EA; AT UNDERSIDE	1/S7.1
039	PILE CAP						✓					300	1/8			VERT & HORZ	1/S7.1
040	PILE CAP						✓					68	1/16				1/S7.1
041	DECK	✓										12	6			AT UNDERSIDE	2/S7.0
042	BEAM	✓										72	12	5		2 LOC; TOTAL	2/S7.0
043	PILE						✓					8	1/32			VERT; CS; N FACE	1/S7.1
044	PILE CAP						✓					14	1/32			DIAG; N FACE	1/S7.1
045	PILE CAP						✓					33	3/16			EXTENTS TO UNDERSIDE	1/S7.1
046	PILE						✓					8	1/32			VERT; CS; E FACE	1/S7.1
047	PILE CAP						✓					300	1/4			AT UNDERSIDE	1/S7.1
048	PILE CAP		✓					✓				270			30		2/S7.0
049	PILE CAP						✓					201	3/16			T/ OF CAP	1/S7.1
050	PILE CAP						✓					40	3/16			VERT; CS	1/S7.1
051	PILE CAP		✓					✓				120			30		2/S7.0
052	PILE CAP						✓					180	1/32				1/S7.1
053	PILE CAP						✓					180	1/8				1/S7.1
054	PILE CAP		✓					✓				180			15		2/S7.0
055	PILE						✓					18	1/16			VERT; CS; E FACE	1/S7.1
056	PILE CAP						✓					60	1/16			VERT & HORZ; E FACE	1/S7.1

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Project

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USS Yorktown
Pier Repairs

Sheet Title

Existing Conditions at Original Pier Head VI

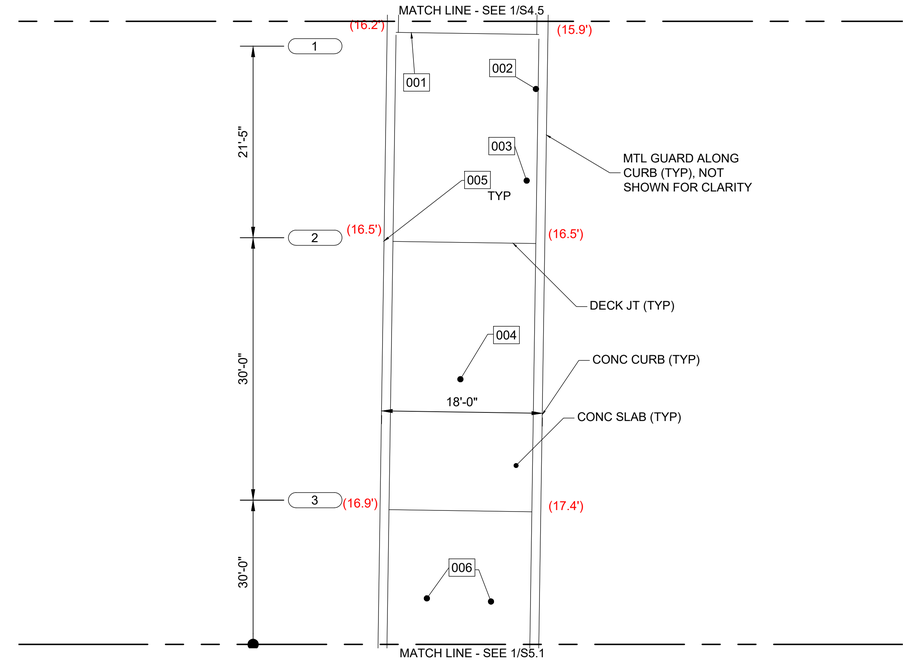
Project No. PPDA00124

Drawing No. S4.5

Date 07.30.25

Scale AS SHOWN

RELEASED FOR CONSTRUCTION



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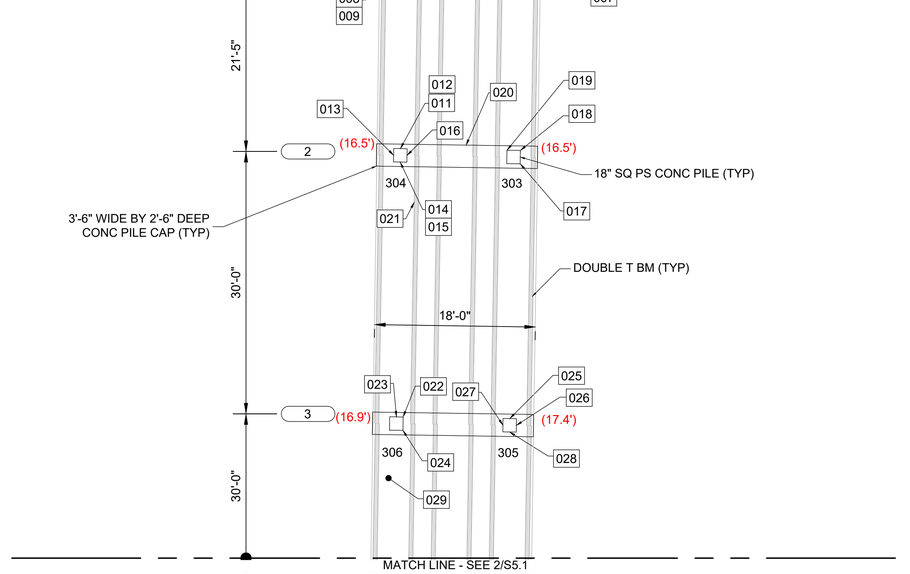
PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 S5.0



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PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 S5.0

OBSERVATIONS																	
		CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS					
NOTE	ELEMENT	SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DESCRIPTION	REPAIR
001	JT MATL										✓					ARMORED JT MISSING 3 FASTENERS	RIK
002	CURB	✓										4	6	1 1/2			2/S7.0
003	CURB	✓		✓	1							4	2	1/4		UP TO 10% LOS	3/S7.0
004	CURB						✓					456	1/16			MULT LOC; TOTAL	3/S7.1
005	TOP OF DECK						✓					648	1/16			TRANSVERSE REFLECTIVE CRACK ABOVE BENTS; TOTAL	3/S7.1
006	TOP OF DECK						✓					360	1/16			2 LOC; EA; REFLECTION CRACK ABOVE DOUBLE TEE	3/S7.1
007	PILE						✓					38	1/4			2 LOC; EA; S FACE	1/S7.1
008	PILE						✓					39	1/4			2 LOC; EA; E & S FACES	1/S7.1
009	PILE						✓					10	1/32			HORZ W/ EFFLO; S FACE	1/S7.1
010	PILE						✓					28	1/32			2 LOC; EA; PREVIOUSLY FILLED; W FACE	1/S7.1
011	PILE						✓					24	1/16			CS; N FACE	1/S7.1
012	PILE		✓									24	8			N FACE	2/S7.0
013	PILE						✓					30	1/8			2 LOC; EA; VERT; CS; W FACE	1/S7.1
014	PILE		✓									12	36			S FACE	2/S7.0
015	PILE						✓					32	1/16			S FACE	1/S7.1
016	PILE						✓					36	3/16			2 LOC; EA; E FACE	1/S7.1
017	PILE		✓									3	3		36	SE CORNER	2/S7.0
018	PILE		✓									3	3		36	NE CORNER	2/S7.0
019	PILE		✓					✓				3	3		36	NW CORNER	2/S7.0
020	PILE CAP			✓	1	✓						2 1/2					3/S7.2
021	DOUBLE TEE			✓	3	✓						48	1/8			BEAM 1; E STEM	3/S7.2
022	PILE		✓									28	6			NE CORNER	2/S7.0
023	PILE						✓					16	1/64			HORZ; N FACE	1/S7.1
024	PILE		✓									37	5			SE CORNER (PHOTO 1)	2/S7.0
025	PILE						✓					24	1/16			3 LOC; EA; CS; N FACE	1/S7.1
026	PILE						✓					45	1/16			VERT & HORZ; TOTAL	1/S7.1
027	PILE		✓				✓					36	1/4			2 LOC; EA; W FACE	2/S7.0
028	PILE	✓	✓									36	16	3		S FACE (PHOTO 2)	2/S7.0
029	DOUBLE TEE	✓										6	6	3/4		TYPICAL AT UTILITY HANGER	2/S7.0

PHOTOGRAPH 1

PHOTOGRAPH 2

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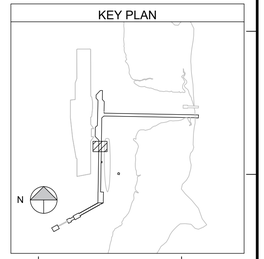
5. PILES TYPICALLY COVERED WITH OYSTERS FROM WATERLINE TO MUDLINE.

KEY PLAN



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Description:	By:	Apprv:	Date:
ISSUED FOR CONSTRUCTION	EL	DC	07.30.25

Consultants

Certificate-Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GEL ENGINEERING, LLC No.C02649

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 34504 E. B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

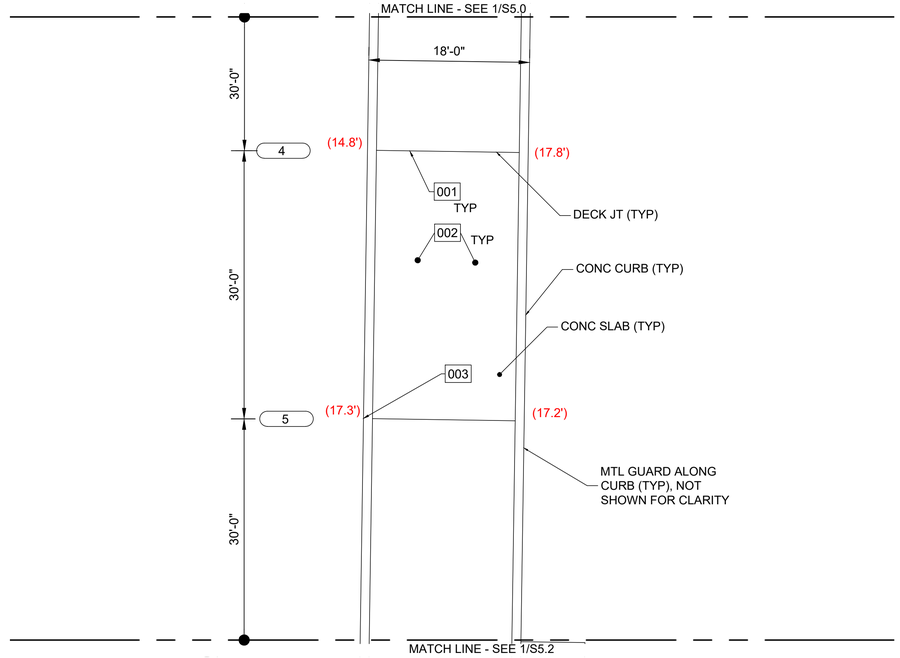
USS Yorktown
Pier Repairs

Sheet Title

Existing Conditions at
Pier Head Extension I

Project No.	Drawing No.
PPDA00124	S5.0
Date: 07.30.25	
Scale: AS SHOWN	

RELEASED FOR CONSTRUCTION

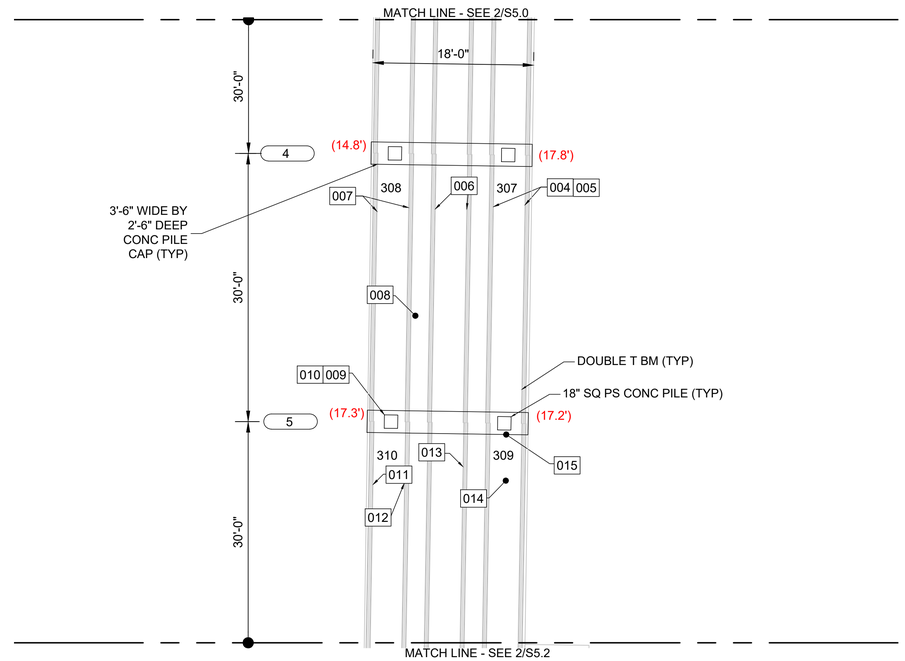


N

PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 / S5.1



N

PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 / S5.1

OBSERVATIONS																	
NOTE	ELEMENT	CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS				DESCRIPTION	REPAIR
		SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)		
001	TOP OF DECK						✓					432	1/16			TRANSVERSE CRACKS ABOVE BENT; TOTAL	3/S7.1
002	TOP OF DECK						✓					1440	1/16			REFLECTIVE CRACKS ABOVE DOUBLE TEES	3/S7.1
003	JT MATL										✓					ARMORED JT MISSING 3 FASTENERS	RIK
004	DOUBLE TEE						✓					24	1/64			BOTH STEMS; EA	1/S7.1
005	DOUBLE TEE	✓		✓	2							3	3	1/4		BOTH STEMS; EA W/ 1 ERB (PHOTO 1)	1/S7.2
006	DOUBLE TEE						✓					24	1/64			2 LOC PER STEM; EA	1/S7.1
007	DOUBLE TEE						✓					24	1/64			1 LOC PER STEM; EA	1/S7.1
008	DOUBLE TEE				4	✓						36	1/8			TOTAL	3/S7.2
009	PILE						✓					16	1/16			CS; N FACE (PHOTO 2)	1/S7.1
010	PILE			✓	1	✓						3	1/4			NW CORNER	3/S7.2
011	DOUBLE TEE	✓		✓	1							2	2	1/4		W STEM	1/S7.2
012	DOUBLE TEE	✓		✓	2							2	2	1/4		2 LOC EA W/ 1 ERB; E STEM	1/S7.2
013	DOUBLE TEE	✓		✓	1							4	4	1/4		E STEM	1/S7.2
014	DOUBLE TEE	✓		✓	1							5	5	3/4		AT UNDERSIDE	1/S7.2
015	DOUBLE TEE						✓					72	1/16			W/ EFFLO	1/S7.1

PHOTOGRAPH 1

PHOTOGRAPH 2

SHEET NOTES

1. PLANS AND EXISTING CONDITIONS GENERATED BASED ON PLANS PREPARED BY LBC&W DATED FEBRUARY 1975, CUMMINGS AND McCRADY, INC. DATED MARCH 1980 THE SHERIDAN CORPORATION DATED APRIL 2009, AND FIELD OBSERVATIONS BY GEL ENGINEERING, LLC AND ARE FOR REFERENCE ONLY. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS.
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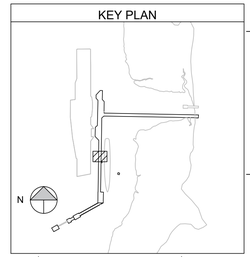
4. (X.X') DENOTES APPROX VERTICAL DISTANCE FROM TOP OF DECK TO MUDLINE (FT) ON 12-13-24 AT 12:30 PM; DOES NOT DENOTE ELEVATION.
5. PILES TYPICALLY COVERED WITH OYSTERS FROM WATERLINE TO MUDLINE.

KEY PLAN



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ISSUED FOR CONSTRUCTION	EL	DC	07.30.25

Consultants

Certificate-Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GEL ENGINEERING, LLC No.C02649

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 34504 EDWARD B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

Sheet Title

Existing Conditions at
Pier Head Extension II

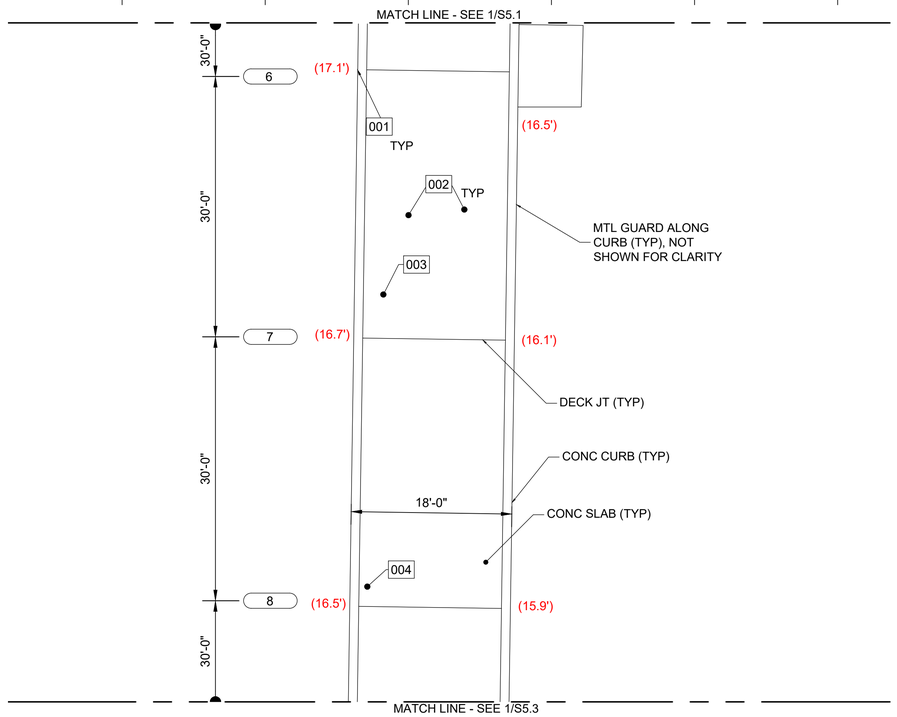
Project No. PPDA00124

Drawing No. S5.1

Date 07.30.25

Scale AS SHOWN

RELEASED FOR CONSTRUCTION

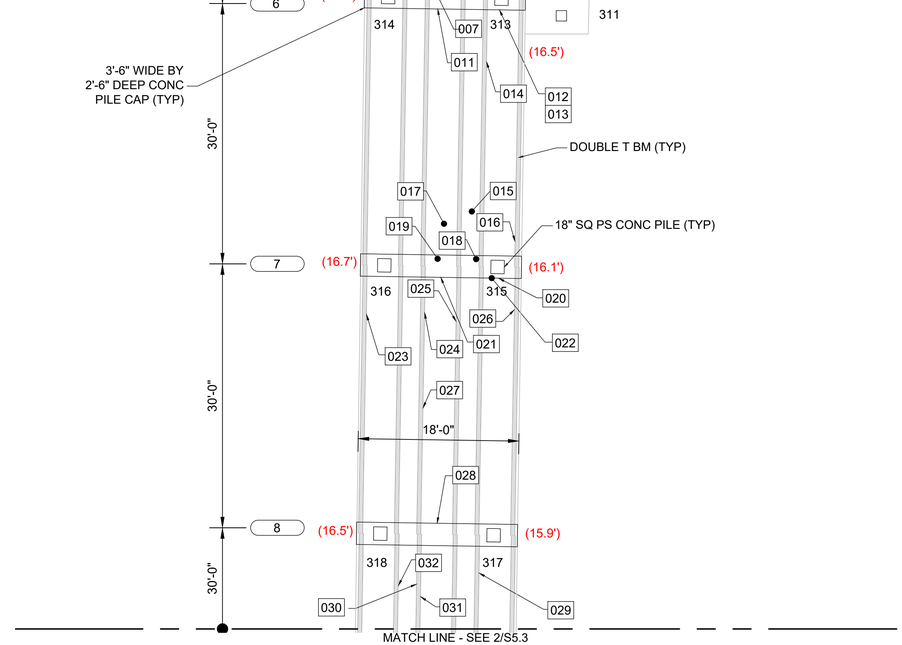


N

PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 S5.2



N

PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 S5.2

OBSERVATIONS																
		CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS				
NOTE	ELEMENT	SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DESCRIPTION	REPAIR
001	TOP OF DECK						✓					648	1/16			TRANSVERSE CRACKS ABOVE BENT; TOTAL	3/S7.1
002	TOP OF DECK						✓					2160	1/16			REFLECTIVE CRACKS ABOVE DOUBLE TEES	3/S7.1
003	TOP OF DECK	✓										2	2				2/S7.0
004	TOP OF DECK	✓										2	2				2/S7.0
005	DOUBLE TEE	✓		✓	2							6	3	1/4		W STEM	1/S7.2
006	DOUBLE TEE						✓					18	1/32			BOTH STEMS; EA	1/S7.1
007	DOUBLE TEE						✓					24	1/32			W STEM (PHOTO 1)	1/S7.1
008	DOUBLE TEE	✓		✓	1							4	4	1/4		E STEM	1/S7.2
009	PILE CAP	✓		✓	4							3	1	1/4		2 LOC; EA; N FLANGE	3/S7.0
010	PILE CAP						✓					24	1/32			N FLANGE	1/S7.1
011	PILE CAP		✓									168		4	10	S FLANGE	2/S7.0
012	PILE CAP	✓	✓	✓	2							40	4		10	UP TO 50% LOS; S FLANGE	2/S7.2
013	PILE CAP			✓	1	✓						3	1/2			S FLANGE	3/S7.2
014	DOUBLE TEE	✓		✓	1							4	2	1/8		W STEM	1/S7.2
015	DOUBLE TEE	✓		✓	2							6	2	1/8		W FLANGE	1/S7.2
016	DOUBLE TEE	✓										2	1/2	1/8		E STEM	2/S7.0
017	DOUBLE TEE	✓	✓	✓	1							6	3	1/8		AT UNDERSIDE	1/S7.2
018	PILE CAP	✓		✓	3							25	18	2		UP TO 50% LOS; AT UNDERSIDE (PHOTO 2)	2/S7.2
019	PILE CAP	✓		✓	2							30	10	3		UP TO 50% LOS; AT UNDERSIDE	2/S7.2
020	PILE CAP		✓									72			6	S FACE	2/S7.0
021	PILE CAP						✓					24	1/16			S FACE	1/S7.1
022	PILE CAP			✓	1	✓						3				AT UNDERSIDE	3/S7.2
023	DOUBLE TEE	✓										2	1	1/8		W STEM	2/S7.0
024	DOUBLE TEE	✓										3	1	1/8		W STEM	2/S7.0
025	DOUBLE TEE	✓										3	1	1/8		E STEM	2/S7.0
026	DOUBLE TEE	✓										2	1	1/8		E STEM	2/S7.0
027	DOUBLE TEE	✓		✓	1							2	2	1/8		W STEM	1/S7.2
028	PILE CAP	✓		✓	2							2	2	1/8		2 LOC; EA W/ 1 ERB	3/S7.0
029	DOUBLE TEE			✓	2	✓						4	4	1/2		W STEM	3/S7.2
030	DOUBLE TEE			✓	1	✓						3	3	1/8		W FLANGE	3/S7.2
031	DOUBLE TEE	✓		✓	1							3	3	1/8		W FLANGE	1/S7.2
032	DOUBLE TEE		✓									2	2			E FLANGE	2/S7.0

PHOTOGRAPH 1

PHOTOGRAPH 2

SHEET NOTES

1. PLANS AND EXISTING CONDITIONS GENERATED BASED ON PLANS PREPARED BY LBC&W DATED FEBRUARY 1975, CUMMINGS AND McCRADY, INC. DATED MARCH 1980 THE SHERIDAN CORPORATION DATED APRIL 2009, AND FIELD OBSERVATIONS BY GEL ENGINEERING, LLC AND ARE FOR REFERENCE ONLY. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS.
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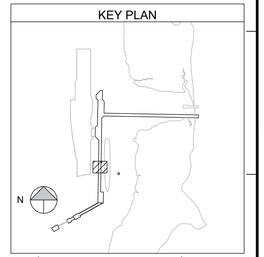
5. PILES TYPICALLY COVERED WITH OYSTERS FROM WATERLINE TO MUDLINE.

KEY PLAN



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SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 34504 E. B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

Sheet Title

Existing Conditions at Pier Head Extension III

Project No.	Drawing No.
PPDA00124	S5.2

Date: 07.30.25

Scale: AS SHOWN

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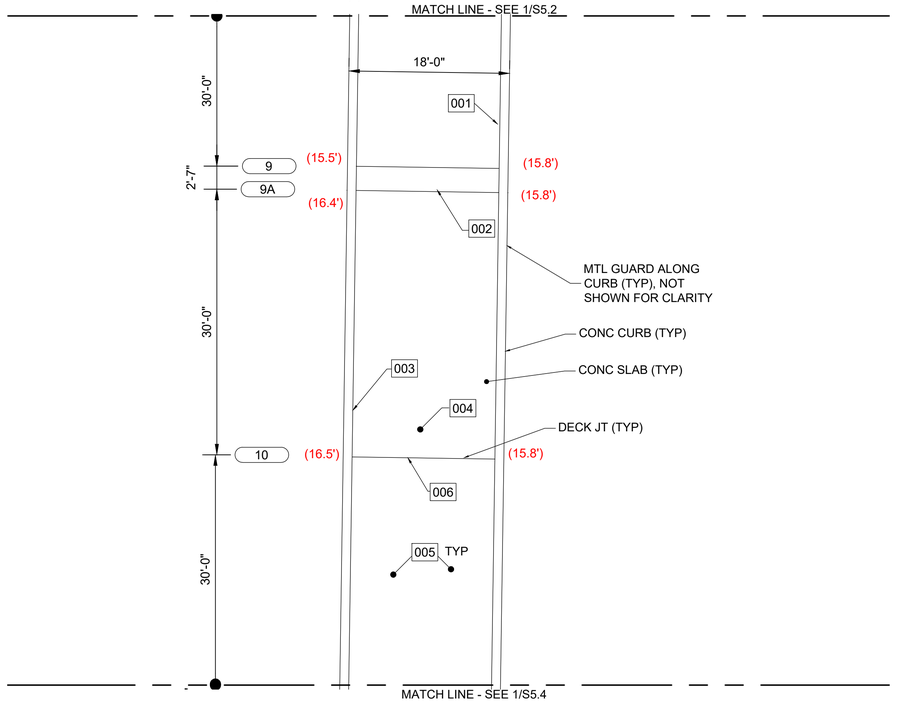
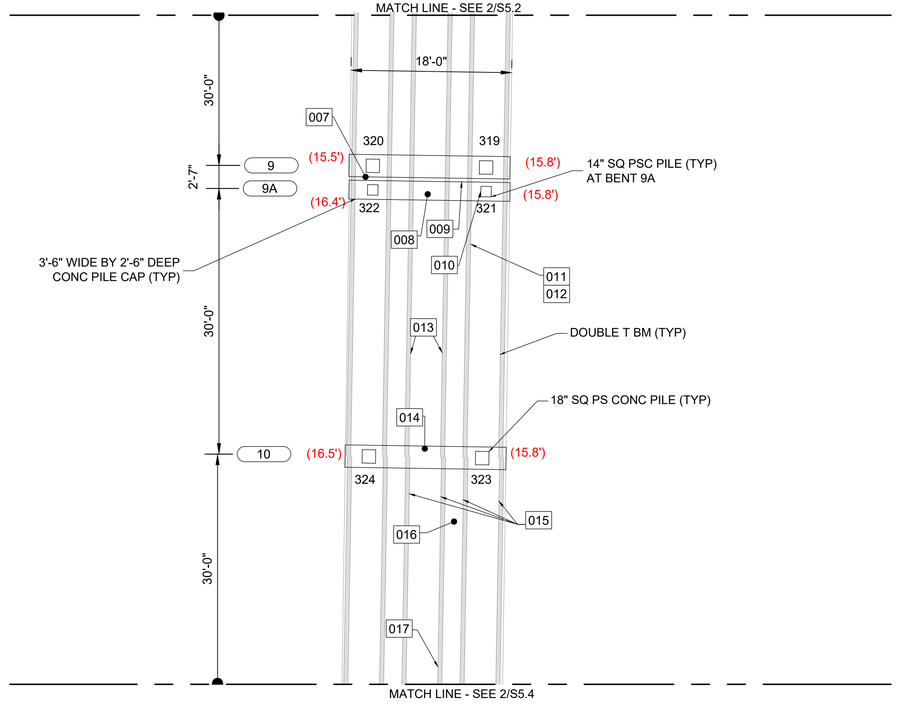


N

PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 S5.3



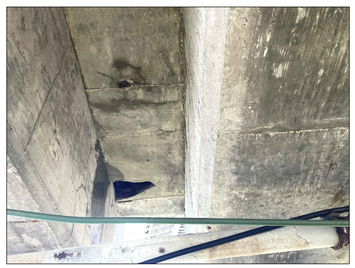
N

PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 S5.3

OBSERVATIONS																
NOTE	ELEMENT	CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS				DESCRIPTION	REPAIR
		SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)		
001	CURB						✓					60	1/16			AT CURB	3/S7.1
002	JT MATL										✓					ARMORED JT MISSING 1 FASTENER	RIK
003	CURB		✓									24	9		12		2/S7.0
004	TOP OF DECK						✓					312	1/16			TRANSVERSE	3/S7.1
005	TOP OF DECK						✓					648	1/16			TRANSVERSE CRACKS ABOVE BENT	3/S7.1
006	TOP OF DECK						✓					1440	1/16			REFLECTIVE CRACKS ABOVE DOUBLE TEES	3/S7.1
007	DOUBLE TEE	✓	✓									12	10	3		DIAPHRAGM (PHOTO 1)	2/S7.0
008	PILE CAP	✓										8	8	3/4		AT UNDERSIDE W/ CS	2/S7.0
009	PILE CAP		✓									24		3	6	S FACE	2/S7.0
010	PILE		✓									14	10			W FACE (PHOTO 2)	2/S7.0
011	DOUBLE TEE	✓	✓	✓	1							6	6	4		2 LOC; EA	1/S7.2
012	DOUBLE TEE	✓	✓									12	3	1/2		W FLANGE	2/S7.0
013	DOUBLE TEE	✓		✓	10							6	1/2	1/8		10 LOC; EA W/ 1 ERB	1/S7.2
014	PILE CAP	✓	✓	✓	4							216	42		8	UP TO 50% LOS	2/S7.2
015	DOUBLE TEE						✓					52	1/4			4 LOC; EA	1/S7.1
016	DOUBLE TEE			✓	6	✓						360	8	1/2		UP TO 50% LOS	3/S7.2
017	DOUBLE TEE			✓	1	✓						3				E FLANGE	3/S7.2



PHOTOGRAPH 1

PHOTOGRAPH 2

SHEET NOTES

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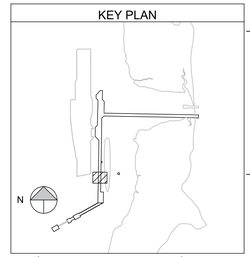
5. PILES TYPICALLY COVERED WITH OYSTERS FROM WATERLINE TO MUDLINE.

KEY PLAN



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Revisions

Description:	By:	Apprv:	Date:
ISSUED FOR CONSTRUCTION	EL	DC	07.30.25

Consultants

Certificate-Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GEL ENGINEERING, LLC No.C02649

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 34504 EMIL E.B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

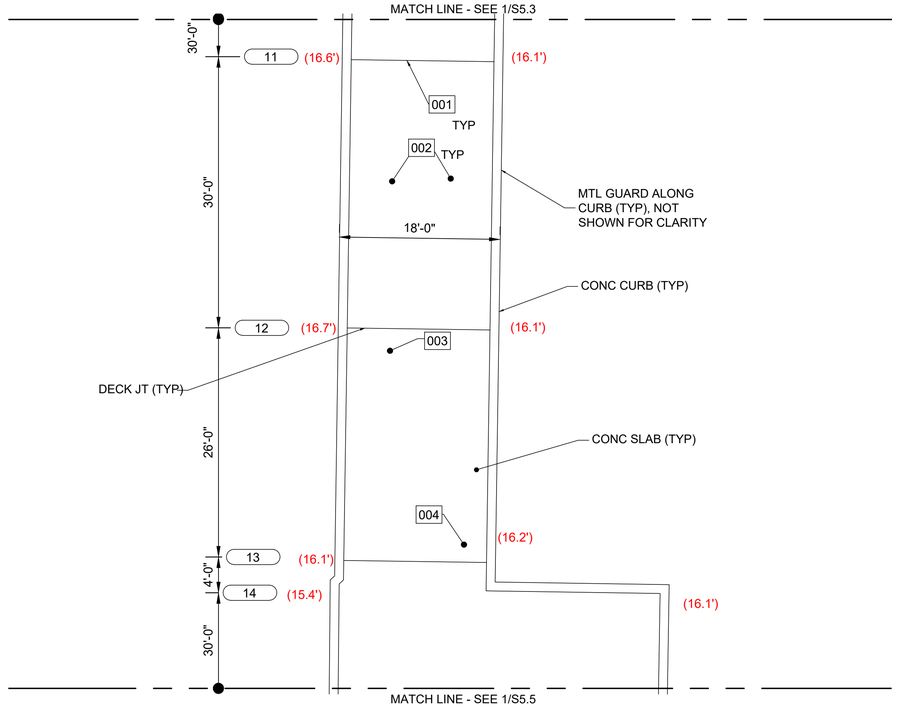
USS Yorktown
Pier Repairs

Sheet Title

Existing Conditions at
Pier Head Extension VI

Project No.	Drawing No.
PPDA00124	S5.3
Date: 07.30.25	
Scale: AS SHOWN	

RELEASED FOR CONSTRUCTION

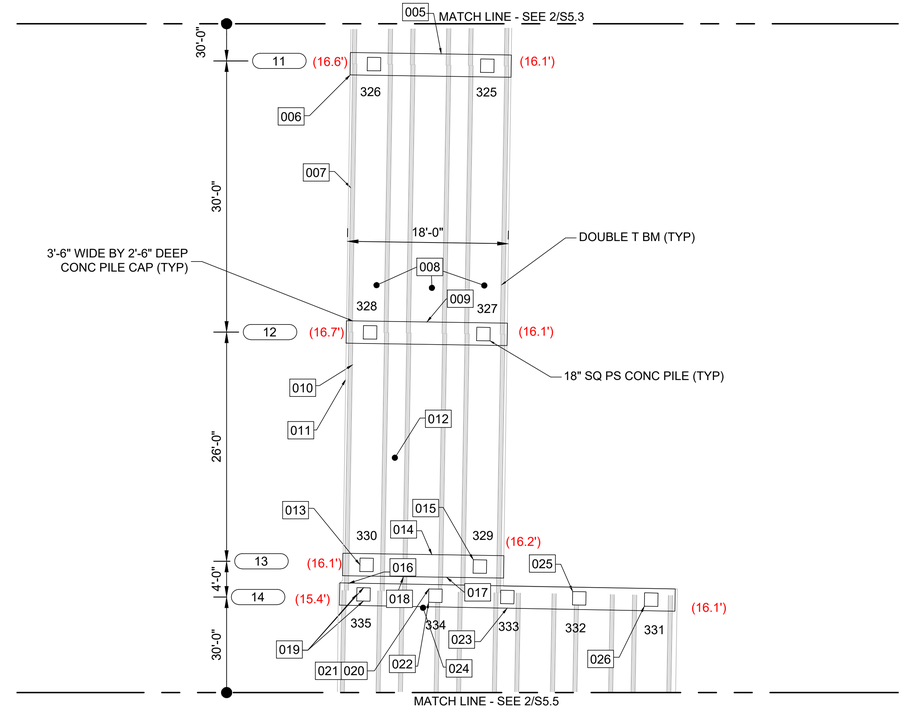


N

PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 S5.4



N

PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 S5.4

OBSERVATIONS																	
NOTE	ELEMENT	CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS				DESCRIPTION	REPAIR
		SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)		
001	TOP OF DECK						✓					648	1/16			TRANSVERSE REFLECTIVE CRACK ABOVE BENTS; TOTAL	3/S7.1
002	TOP OF DECK						✓					1344	1/16			REFLECTIVE CRACKS ABOVE DOUBLE TEES	3/S7.1
003	TOP OF DECK						✓					78	1/16			TRANSVERSE	3/S7.1
004	TOP OF DECK		✓									96	12				2/S7.0
005	PILE CAP		✓									60	6	8		3 LOC; TOTAL; N FACE	2/S7.0
006	PILE		✓									24	18	5		W FACE	2/S7.0
007	DOUBLE TEE	✓		✓	1							30	6		8	EXPOSED PRE-STRESSING; W FACE (PHOTO 1)	1/S7.2
008	DOUBLE TEE			✓	4	✓						3	3	1/2		AT UNDERSIDE; 4 LOC; EA W/ 1 ERB	3/S7.2
009	PILE CAP		✓									216	30		8	N FACE	2/S7.0
010	DOUBLE TEE	✓		✓	2							6	6	1		W FLANGE	1/S7.2
011	DOUBLE TEE		✓									72			12	PREVIOUS REPAIR; W FLANGE	2/S7.0
012	DOUBLE TEE		✓		1	✓						8	3	3		W FLANGE	1/S7.2
013	PILE		✓									40	12	3		W FLANGE	2/S7.0
014	PILE CAP						✓					84	3/16			N FACE	1/S7.1
015	PILE	✓	✓	✓	1							30	12	8		NW CORNER	3/S7.0
016	DOUBLE TEE	✓										16	6		10	FAILED PATCH; W FLANGE	2/S7.0
017	DOUBLE TEE	✓		✓	2							8		1	10	W FLANGE	1/S7.2
018	PILE CAP						✓					24	3/16			S FACE	1/S7.1
019	PILE	✓	✓	✓	1			✓				36	48	2		N;W & S FACES (PHOTO 1)	3/S7.0
020	PILE	✓		✓	1							24	10	5		UP TO 25% LOS; NW CORNER	3/S7.0
021	PILE						✓					24	1/8			NW CORNER	1/S7.1
022	PILE						✓					36	1/16			SW CORNER; CS	1/S7.1
023	PILE CAP						✓					24	1/16			S FACE	1/S7.1
024	PILE CAP						✓					180	1/4			S FACE; CS	1/S7.1
025	PILE		✓				✓					5	10		24	NW CORNER	2/S7.0
026	PILE		✓					✓				3	12		24	SW CORNER	2/S7.0

PHOTOGRAPH 1

PHOTOGRAPH 2

SHEET NOTES

1. PLANS AND EXISTING CONDITIONS GENERATED BASED ON PLANS PREPARED BY LBC&W DATED FEBRUARY 1975, CUMMINGS AND McCRADY, INC. DATED MARCH 1980 THE SHERIDAN CORPORATION DATED APRIL 2009, AND FIELD OBSERVATIONS BY GEL ENGINEERING, LLC AND ARE FOR REFERENCE ONLY. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS.
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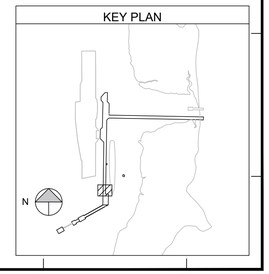
5. PILES TYPICALLY COVERED WITH OYSTERS FROM WATERLINE TO MUDLINE.

KEY PLAN



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Consultants

Certificate-Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GEL ENGINEERING, LLC No.C02649

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 34504 7-30-25 DANIEL E.B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown Pier Repairs

Sheet Title

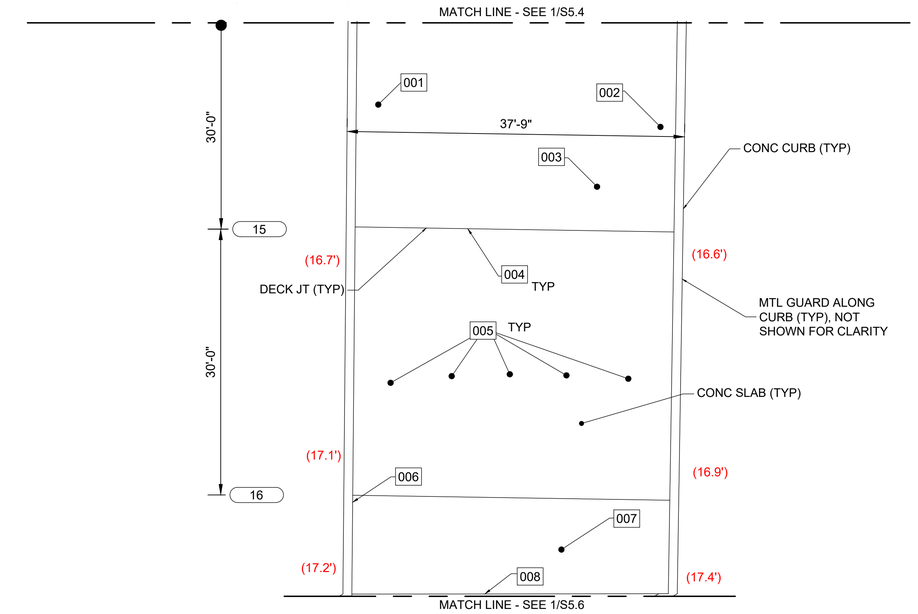
Existing Conditions at Pier Head Extension V

Project No.	Drawing No.
PPDA00124	S5.4

Date: 07.30.25

Scale: AS SHOWN

RELEASED FOR CONSTRUCTION

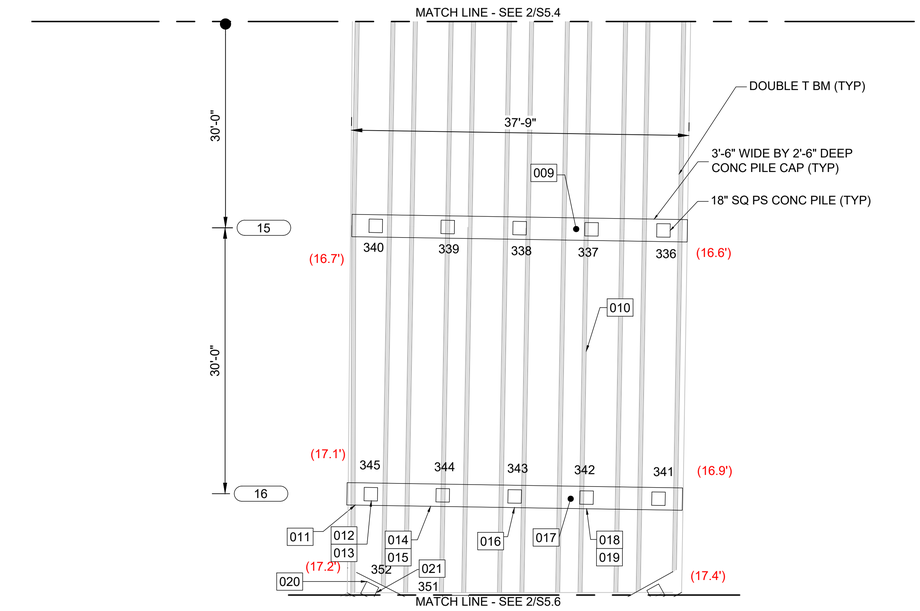


N

PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 S5.5



N

PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 S5.5

OBSERVATIONS																	
NOTE	ELEMENT	CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS				DESCRIPTION	REPAIR
		SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)		
001	TOP OF DECK			✓	14	✓						120	4	1/2			3/S7.2
002	TOP OF DECK		✓									36	36	1/8		DELAM	2/S7.0
003	TOP OF DECK						✓					24	1/32			T/O BTW DT3 AND DT6; EA	1/S7.1
004	TOP OF DECK						✓					912	1/16			TRANSVERSE CRACK ABOVE EACH BENT; TOTAL	3/S7.1
005	TOP OF DECK						✓					3600	1/16			REFLECTIVE CRACK ABOVE DOUBLE TEE; TOTAL	3/S7.1
006	CURB		✓									4	6				2/S7.0
007	TOP OF DECK						✓					240	1/32				1/S7.1
008	JT MATL										✓					ARMORED JT MISSING 4 FASTNERS	RIK
009	PILE CAP		✓									16	30	2		AT UNDERSIDE	2/S7.0
010	DOUBLE TEE	✓		✓	1	✓						24	3	1/2		W FLANGE	1/S7.2
011	PILE CAP	✓	✓					✓				84	12	1/2		S FACE	2/S7.0
012	PILE	✓										6	2	2		BELOW WATERLINE	2/S7.0
013	PILE						✓					8	1/8			BELOW WATERLINE INTO MUDLINE	1/S7.1
014	PILE CAP						✓					12	1/4			S FACE	1/S7.1
015	PILE CAP		✓									48	6	3		S FACE	2/S7.0
016	PILE CAP						✓					96	1/8			S FACE	1/S7.1
017	PILE CAP		✓									12	16			AT UNDERSIDE	2/S7.0
018	PILE CAP						✓					24	1/16			S FACE	1/S7.1
019	PILE CAP	✓		✓	1							4	2		2	S FACE	3/S7.0
020	PILE		✓									6	8		48	NW CORNER	2/S7.0
021	PILE		✓										18	4	36	EXTENDS TO SOUTH FACE	2/S7.0

SHEET NOTES

1. PLANS AND EXISTING CONDITIONS GENERATED BASED ON PLANS PREPARED BY LBC&W DATED FEBRUARY 1975, CUMMINGS AND McCRADY, INC. DATED MARCH 1980 THE SHERIDAN CORPORATION DATED APRIL 2009, AND FIELD OBSERVATIONS BY GEL ENGINEERING, LLC AND ARE FOR REFERENCE ONLY. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS.
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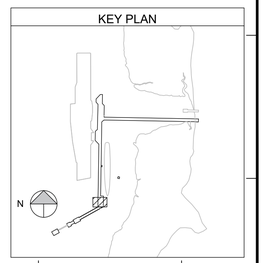
3. 000 OBSERVATION; SEE TABLE THIS SHEET FOR EXTENTS AND RECOMMENDED REPAIRS.
4. (X.X') DENOTES APPROX VERTICAL DISTANCE FROM TOP OF DECK TO MUDLINE (FT) ON 12-13-24 AT 12:30 PM; DOES NOT DENOTE ELEVATION.
5. PILES TYPICALLY COVERED WITH OYSTERS FROM WATERLINE TO MUDLINE.

KEY PLAN



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Consultants

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SOUTH CAROLINA PROFESSIONAL ENGINEER No. 34504 ELIZABETH B. CAMPBELL

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Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

Sheet Title

Existing Conditions at
Pier Head Extension VI

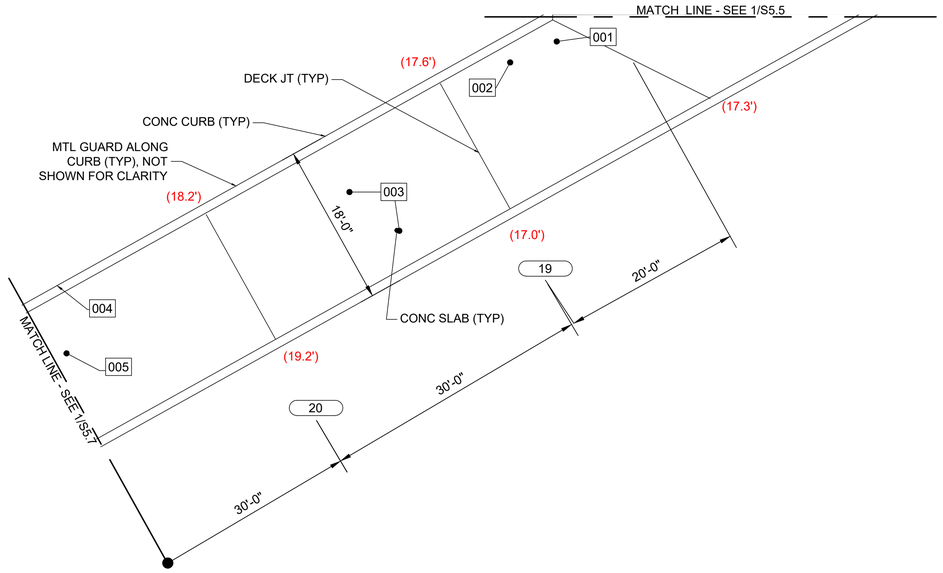
Project No. PPDA00124

Drawing No. S5.5

Date 07.30.25

Scale AS SHOWN

RELEASED FOR CONSTRUCTION

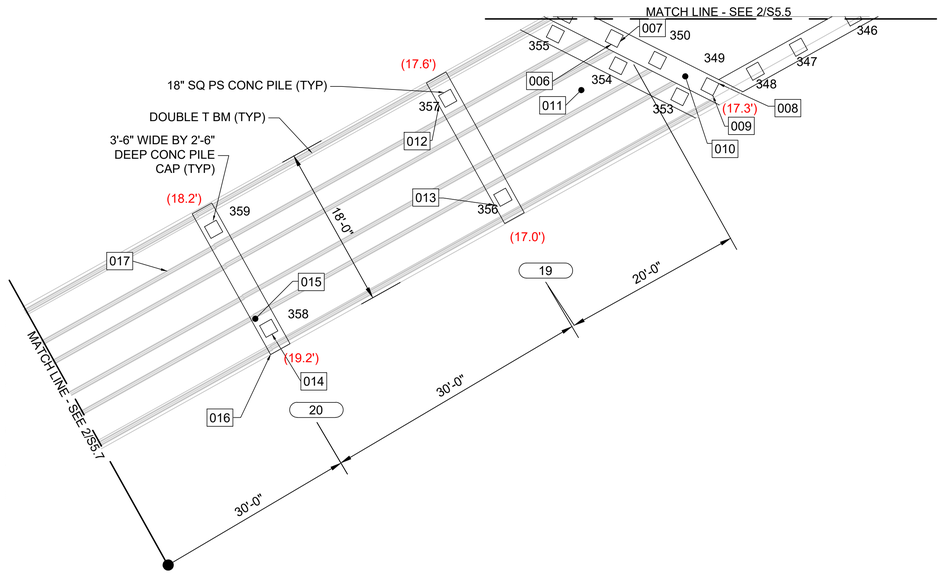


N

PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 / S5.6



N

PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 / S5.6

OBSERVATIONS

NOTE	ELEMENT	CONC DEFECTS: SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	OTHER DEFECTS: CORR.	DETERIOR-ATION	MISSING	APPROX EXTENTS: LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DESCRIPTION	REPAIR
001	TOP OF DECK		✓									12	3	3			2/S7.0
002	TOP OF DECK			✓	1							9	3	1/4			3/S7.2
003	TOP OF DECK						✓					1920	1/16			REFLECTIVE CRACK ABOVE DOUBLE TEE; TOTAL	3/S7.1
004	CURB		✓									144	6	1/2		DELAM	2/S7.0
005	TOP OF DECK		✓									4	4				2/S7.0
006	PILE						✓					48	1/16			S FACE; CS	1/S7.1
007	PILE						✓					24	1/32			E FACE; CS	1/S7.1
008	PILE		✓									10	12		48	NE CORNER	2/S7.0
009	PILE		✓									8	3		48	SE CORNER	2/S7.0
010	PILE CAP	✓		✓	2							30	24	3		AT UNDERSIDE	3/S7.0
011	DOUBLE TEE	✓		✓	1							24	3	1/2		AT UNDERSIDE	1/S7.2
012	PILE CAP						✓					36	1/16			S FACE	1/S7.1
013	PILE CAP		✓									36	3		10	S FACE	2/S7.0
014	PILE						✓					48	1/4			PREVIOUSLY REPAIRED; E FACE	1/S7.1
015	PILE CAP	✓	✓	✓	6			✓				48	30	8		AT UNDERSIDE	3/S7.0
016	PILE CAP		✓									6	10		48	AT PREVIOUS REPAIR; SW CORNER	2/S7.0
017	DOUBLE TEE	✓		✓	1								4	1/2	8	E STEM	1/S7.2

SHEET NOTES

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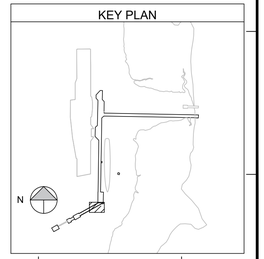
4. (X.X') DENOTES APPROX VERTICAL DISTANCE FROM TOP OF DECK TO MUDLINE (FT) ON 12-13-24 AT 12:30 PM; DOES NOT DENOTE ELEVATION.
5. PILES TYPICALLY COVERED WITH OYSTERS FROM WATERLINE TO MUDLINE.

KEY PLAN



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SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GEL ENGINEERING, LLC No.C02649

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 34504 EMILIE B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

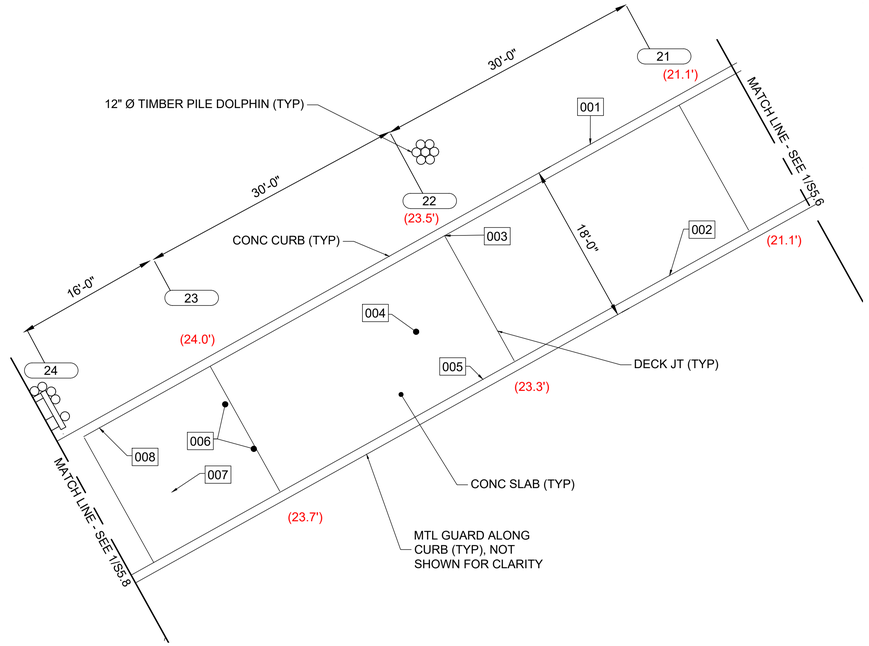
USS Yorktown
Pier Repairs

Sheet Title

Existing Conditions at
Pier Head Extension VII

Project No.	Drawing No.
PPDA00124	S5.6
Date: 07.30.25	
Scale: AS SHOWN	

RELEASED FOR CONSTRUCTION

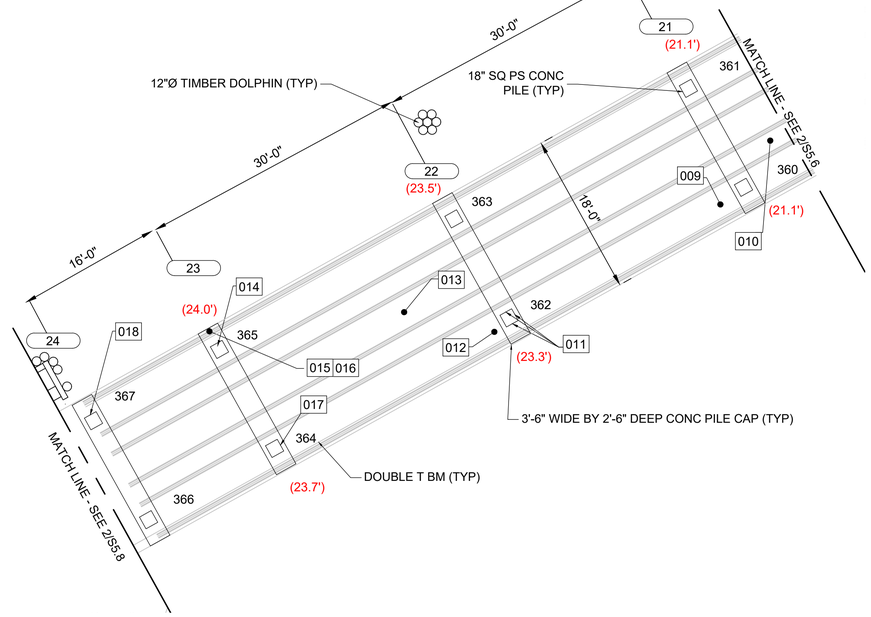


N

PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 S5.7



N

PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 S5.7

OBSERVATIONS																	
		CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS					
NOTE	ELEMENT	SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DESCRIPTION	REPAIR
001	CURB	✓										6	6	3/4			2/S7.0
002	CURB											384	4			SECTION OF CURB REMOVED	2/S7.3
003	CURB		✓									18		2	9		2/S7.0
004	TOP OF DECK	✓										24	8	1/2			2/S7.0
005	CURB	✓										6	6	3/4			2/S7.0
006	TOP OF DECK						✓					1824	1/16			REFLECTIVE CRACKS ABOVE DOUBLE TEE; TOTAL	3/S7.1
007	TOP OF DECK						✓					60	1/32			TRANSVERSE	1/S7.1
008	CURB	✓										12	4		3		2/S7.0
009	DOUBLE TEE	✓				✓						240	3	1/2		AT UNDERSIDE	2/S7.0
010	DOUBLE TEE		✓		1	✓						24	24	1/2		AT UNDERSIDE	2/S7.0
011	PILE	✓	✓				✓	✓				60		4		E & N FACES; 3 LOC; EA	2/S7.0
012	DOUBLE TEE	✓		✓	3							6	12	1/2		AT UNDERSIDE	1/S7.2
013	DOUBLE TEE	✓		✓	3							30	30			AT UNDERSIDE; 3 LOC; TOTAL	1/S7.2
014	PILE		✓				✓						10		48	W FACE	2/S7.0
015	PILE CAP		✓									12	12			AT UNDERSIDE	2/S7.0
016	PILE CAP		✓									8	16			AT UNDERSIDE	2/S7.0
017	PILE		✓									20	6		3	N FACE	2/S7.0
018	PILE		✓				✓						12	3	36	W FACE; CS	2/S7.0

SHEET NOTES

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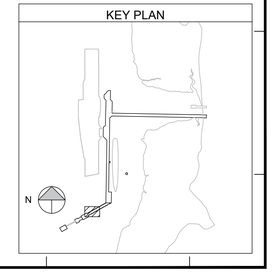
5. PILES TYPICALLY COVERED WITH OYSTERS FROM WATERLINE TO MUDLINE.

KEY PLAN



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Consultants

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SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 34504 ELIZABETH B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

Sheet Title

Existing Conditions at
Pier Head Extension VIII

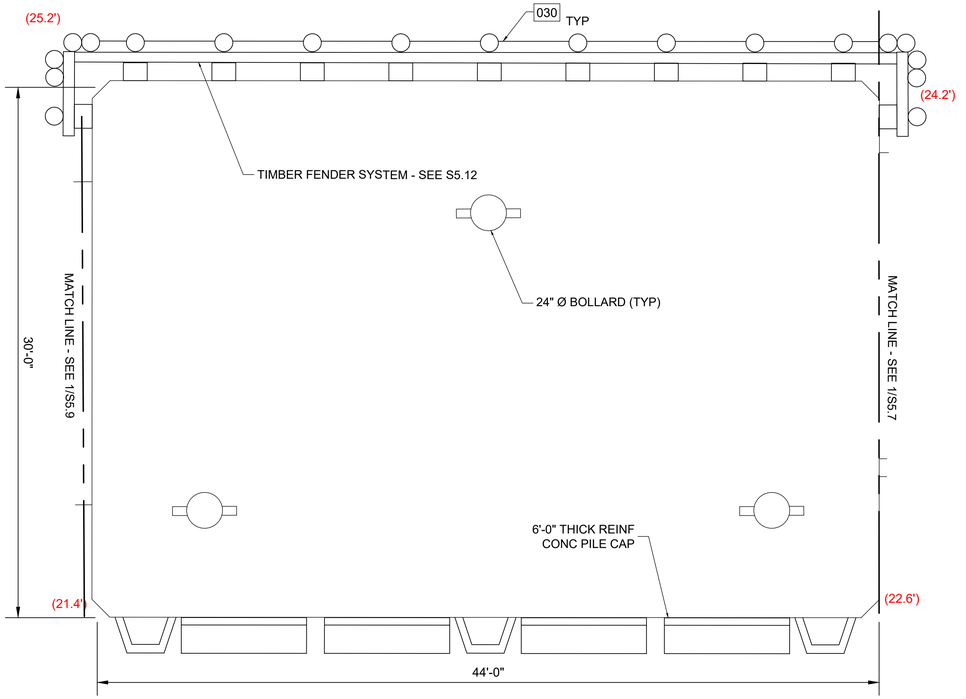
Project No. PPDA00124

Drawing No. S5.7

Date 07.30.25

Scale AS SHOWN

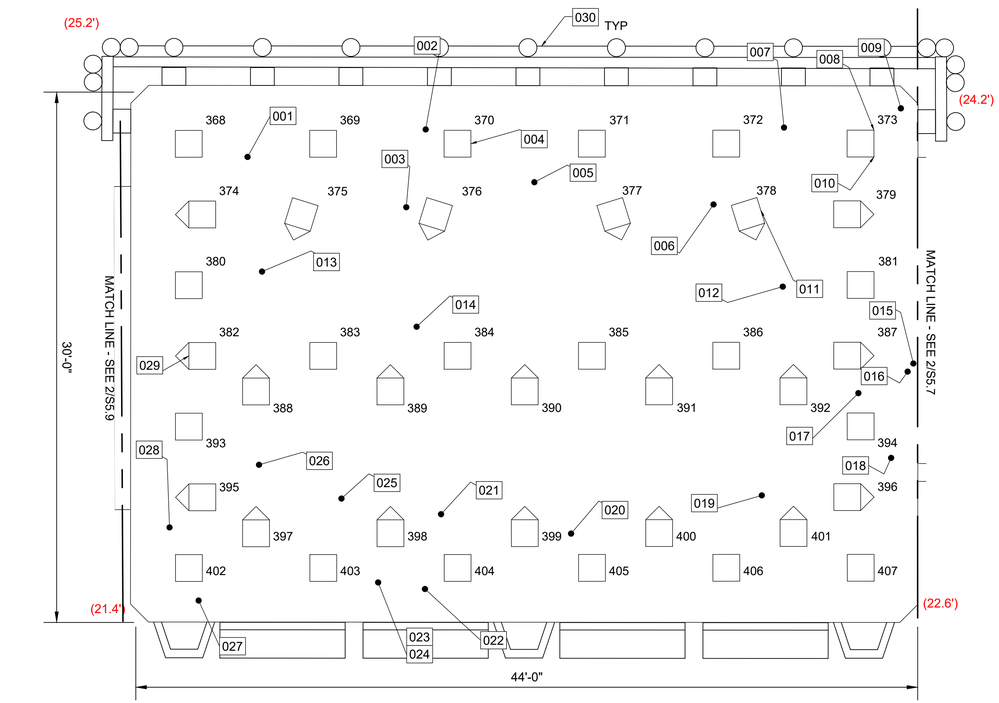
RELEASED FOR CONSTRUCTION



PLAN: EXISTING CONDITIONS AT TOP OF DECK AT BREASTING DOLPHIN No. 2

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

1 S5.8



PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE AT BREASTING DOLPHIN No. 2

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

2 S5.8

OBSERVATIONS																	
NOTE	ELEMENT	CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS				DESCRIPTION	REPAIR
		SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)		
001	PILE CAP		✓									36	24				2/S7.0
002	PILE CAP		✓									24	24				2/S7.0
003	PILE CAP		✓									96	24				2/S7.0
004	PILE						✓					30	3/16			CS	1/S7.1
005	PILE CAP		✓									96	48				2/S7.0
006	PILE CAP		✓									18	36				2/S7.0
007	PILE CAP		✓									24	12				2/S7.0
008	PILE						✓					30	1/16			CS	1/S7.1
009	PILE CAP	✓		✓	2							24	18	4			3/S7.0
010	PILE		✓									4	4		36		2/S7.0
011	PILE						✓					24	1/16			CS	1/S7.1
012	PILE CAP		✓									24	24				2/S7.0
013	PILE CAP		✓									36	24				2/S7.0
014	PILE CAP		✓									72	36				2/S7.0
015	PILE CAP		✓									24	12				2/S7.0
016	PILE CAP						✓					48	1/64				1/S7.1
017	PILE CAP															PREVIOUS REPAIR FORM	NOTE 4/S7.0
018	PILE CAP			✓	5	✓						60	1	1/4		TOTAL	3/S7.2
019	PILE CAP		✓									72	36				2/S7.0
020	PILE CAP		✓									24	36				2/S7.0
021	PILE CAP		✓									36	36				2/S7.0
022	PILE CAP		✓									24	24				2/S7.0
023	PILE CAP		✓									24	24				2/S7.0
024	PILE CAP						✓					12	1/64				1/S7.1
025	PILE CAP		✓									38	38			5 LOC; TOTAL	2/S7.0
026	PILE CAP		✓									38	38			2 LOC; TOTAL	2/S7.0
027	PILE CAP						✓					30	1/64				1/S7.1
028	PILE CAP		✓									60	16				2/S7.0
029	PILE						✓					30	1/8			CS	1/S7.1
030	TIMBER FINDER																4/S5.12

SHEET NOTES

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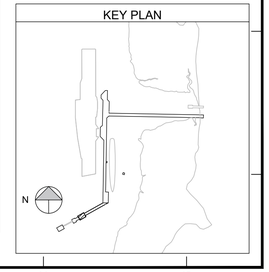
4. (X.X') DENOTES APPROX VERTICAL DISTANCE FROM TOP OF DECK TO MUDLINE (FT) ON 12-13-24 AT 12:30 PM; DOES NOT DENOTE ELEVATION
5. A MOORING ANALYSIS FOR THE MOORING DOLPHINS WAS OUTSIDE THE SCOPE OF GEL'S ASSESSMENT. A MOORING ANALYSIS MUST BE COMPLETED PRIOR TO THE DOLPHINS BEING USED FOR MOORING.

KEY PLAN



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Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

Sheet Title

Existing Conditions at Breasting Dolphin No. 2

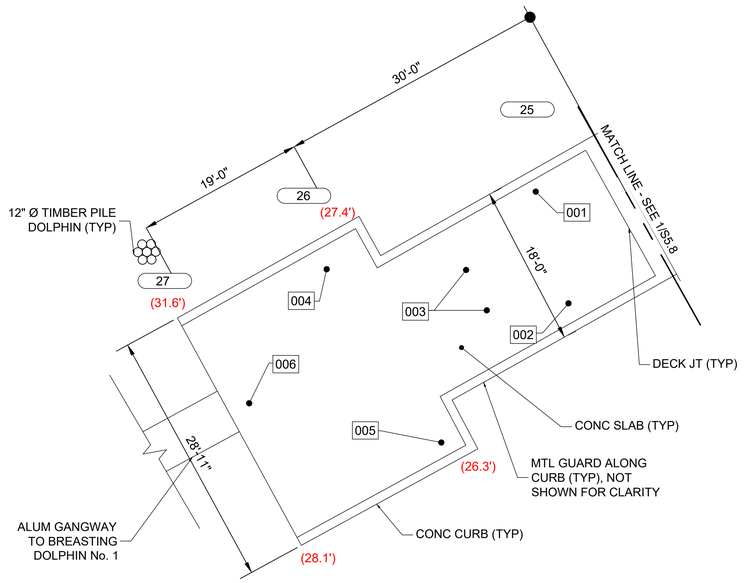
Project No. PPDA00124

Drawing No. S5.8

Date 07.30.25

Scale AS SHOWN

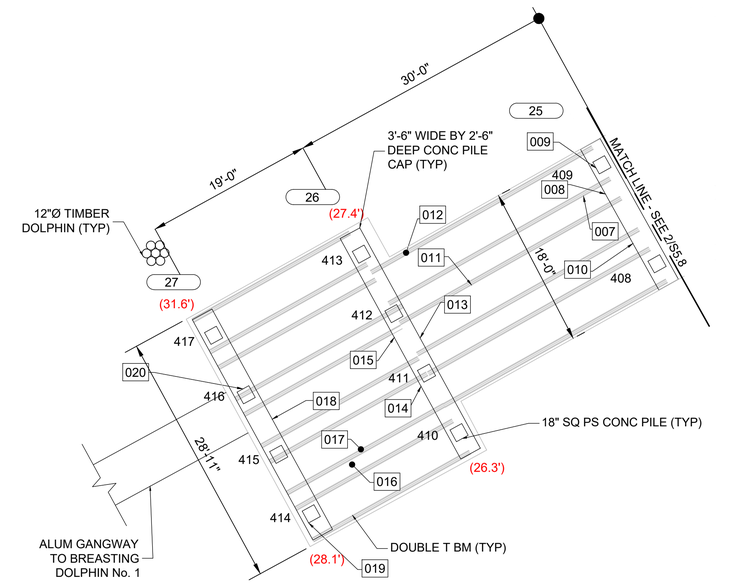
RELEASED FOR CONSTRUCTION



N PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT TOP OF DECK

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

1 / S5.9



N PIER HEAD EXTENSION PARTIAL PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE

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

2 / S5.9

OBSERVATIONS																	
NOTE	ELEMENT	CONC DEFECTS						OTHER DEFECTS			APPROX EXTENTS				DESCRIPTION	REPAIR
		SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)		
001	STEEL								✓							T/O HOIST	
002	TOP OF DECK	✓		✓	1	✓						14	1	1/4			3/S7.2
003	TOP OF DECK						✓					1176	1/16			REFLECTIVE CRACKS ABOVE DOUBLE TEES; TOTAL	3/S7.1
004	TOP OF DECK						✓					120	1/16				3/S7.1
005	TOP OF DECK		✓				✓					144	1	1/8		MAP CRACKING T/O; AREA OF DELAM	2/S7.0
006	TOP OF DECK						✓					84	1/32				1/S7.1
007	DOUBLE TEE			✓	4	✓						3				4 LOC; EA W/ 1 ERB	3/S7.2
008	PILE CAP						✓					120	1/16				1/S7.1
009	PILE		✓										18	4	36		2/S7.0
010	PILE CAP						✓					24	1/32				1/S7.1
011	DOUBLE TEE			✓	1	✓						4	4	1/2			3/S7.2
012	DOUBLE TEE		✓									12	6		12		2/S7.0
013	PILE CAP			✓	1	✓						1					3/S7.2
014	PILE CAP		✓					✓				120	8		8		2/S7.0
015	PILE CAP						✓					72	1/8				1/S7.1
016	DOUBLE TEE	✓										3	2	1		AT CORE CUT	1/S7.2
017	DOUBLE TEE	✓		✓	1							12	6	1		AT CORE CUT	1/S7.2
018	PILE CAP	✓	✓	✓	19							300	30		8		3/S7.0
019	PILE		✓									48	4	4			2/S7.0
020	PILE		✓				✓					48	18			EA; MAP CRACKING T/O ALL FACES; FAILED PATCH	2/S7.0

SHEET NOTES

1. PLANS AND EXISTING CONDITIONS GENERATED BASED ON PLANS PREPARED BY LBC&W DATED FEBRUARY 1975, CUMMINGS AND McCRADY, INC. DATED MARCH 1980 THE SHERIDAN CORPORATION DATED APRIL 2009, AND FIELD OBSERVATIONS BY GEL ENGINEERING, LLC AND ARE FOR REFERENCE ONLY. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS.
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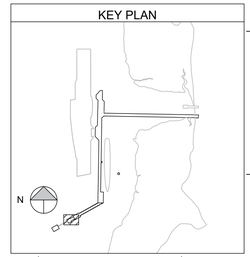
3. [000] OBSERVATION; SEE TABLE THIS SHEET FOR EXTENTS AND RECOMMENDED REPAIRS.
4. (X.X') DENOTES APPROX VERTICAL DISTANCE FROM TOP OF DECK TO MUDLINE (FT) ON 12-13-24 AT 12:30 PM; DOES NOT DENOTE ELEVATION.
5. PILES TYPICALLY COVERED WITH OYSTERS FROM WATERLINE TO MUDLINE.

KEY PLAN



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Description:	By:	Apprv:	Date:
ISSUED FOR CONSTRUCTION	EL	DC	07.30.25

Consultants

Certificate-Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GEL ENGINEERING, LLC No.C02649

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 34504 ELIZABETH E.B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

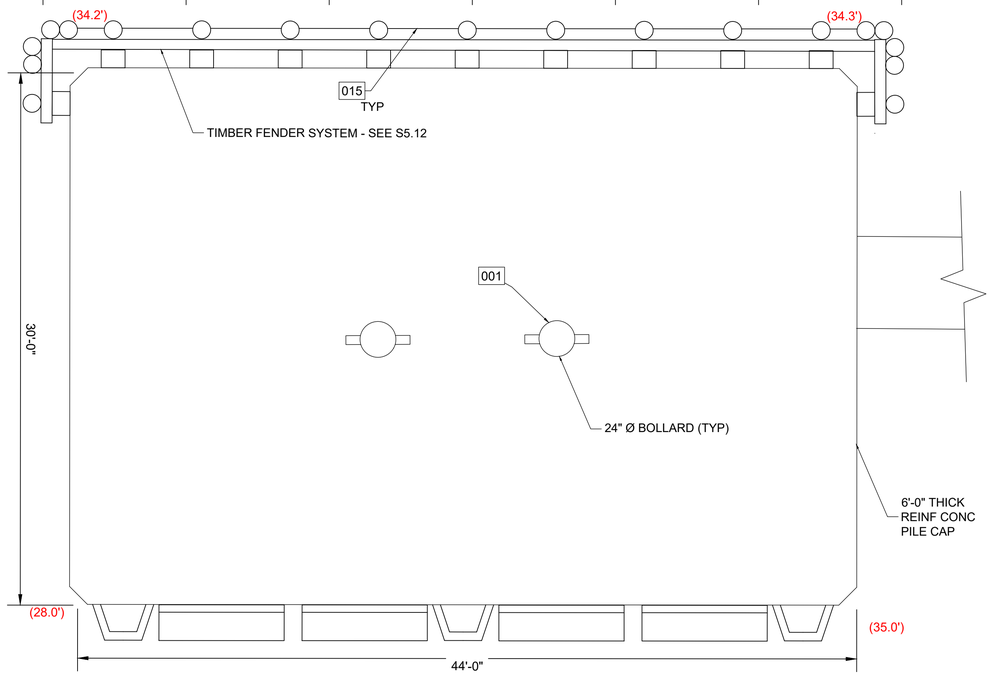
USS Yorktown
Pier Repairs

Sheet Title

Existing Conditions at
Pier Head Extension IX

Project No.	Drawing No.
PPDA00124	S5.9
Date: 07.30.25	
Scale: AS SHOWN	

RELEASED FOR CONSTRUCTION

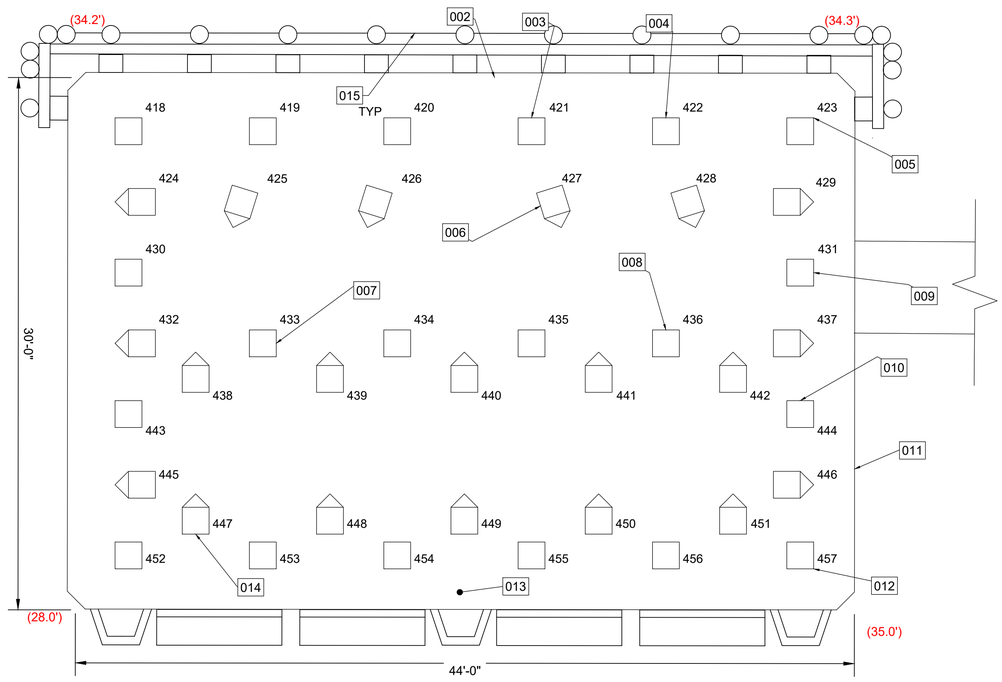


PLAN: EXISTING CONDITIONS AT TOP OF DECK AT BREASTING DOLPHIN No. 1

N

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

1 S5.10



PLAN: EXISTING CONDITIONS AT SUBSTRUCTURE AT BREASTING DOLPHIN No. 1

N

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

2 S5.10

OBSERVATIONS																
NOTE	ELEMENT	CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS				DESCRIPTION	REPAIR
		SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)		
001	BOLLARD								✓							COATING FAILURE	5/S7.2
002	PILE CAP						✓					72	1/32			6 LOC; EA	1/S7.1
003	PILE		✓									12			24		2/S7.0
004	PILE						✓					16	1/16			CS	1/S7.1
005	PILE		✓									30	8	4			2/S7.0
006	PILE						✓					30	1/8				1/S7.1
007	PILE						✓					36	1/8				1/S7.1
008	PILE						✓					30	1/8				1/S7.1
009	PILE						✓					30	1/8			EA FACE	1/S7.1
010	PILE	✓	✓									12	12		16	PREVIOUS REPAIR	2/S7.0
011	PILE CAP						✓					72	1/32			3 LOC; EA	1/S7.1
012	PILE						✓					30	1/8			CS	1/S7.1
013	PILE CAP	✓	✓	✓								1056	720	12		AT UNDERSIDE	3/S7.0
014	PILE						✓					20	1/8			IN PREVIOUS REPAIR	1/S7.1
015	TIMBER FINDER																4/S5.12

SHEET NOTES

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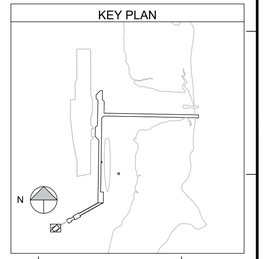
4. (X.X') DENOTES APPROX VERTICAL DISTANCE FROM TOP OF DECK TO MUDLINE (FT) ON 12-13-24 AT 12:30 PM; DOES NOT DENOTE ELEVATION
5. A MOORING ANALYSIS FOR THE MOORING DOLPHINS WAS OUTSIDE THE SCOPE OF GEL'S ASSESSMENT. A MOORING ANALYSIS MUST BE COMPLETED PRIOR TO THE DOLPHINS BEING USED FOR MOORING.

KEY PLAN



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Consultants

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SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GEL ENGINEERING, LLC No.C02649

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 34504 DANIEL E.B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

Sheet Title

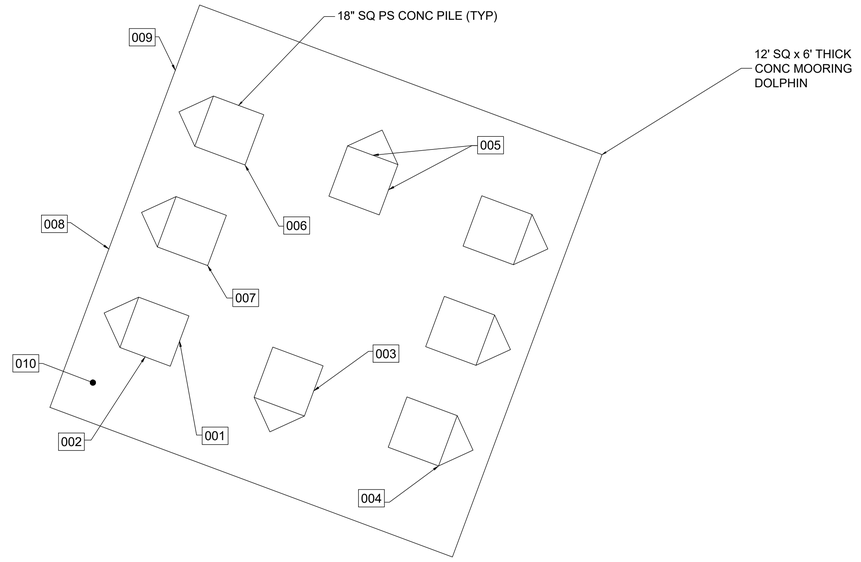
Existing Conditions at
Breasting Dolphin No. 1

Project No.	Drawing No.
PPDA00124	S5.10

Date: 07.30.25

Scale: AS SHOWN

RELEASED FOR CONSTRUCTION



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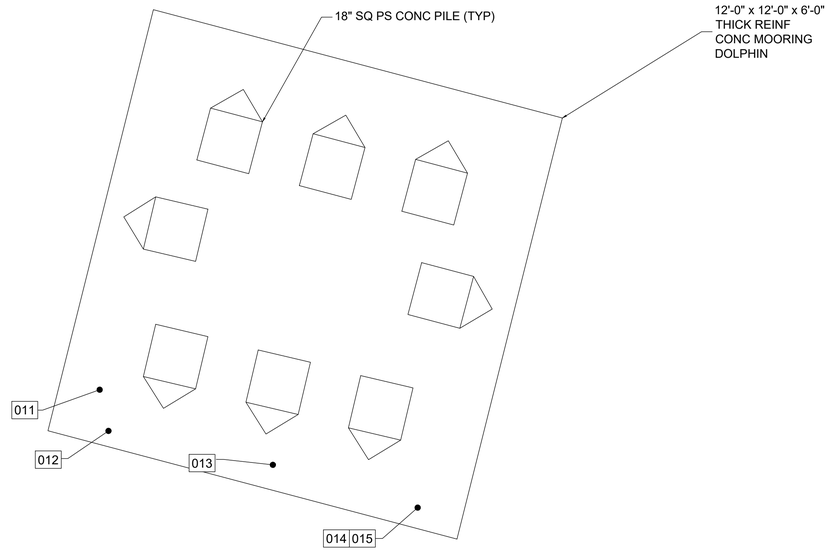
PLAN: EXISTING CONDITIONS AT MOORING DOLPHIN No. 1

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

1 / S5.11



N

PLAN: EXISTING CONDITIONS AT MOORING DOLPHIN No. 2

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

2 / S5.11

OBSERVATIONS																	
		CONC DEFECTS							OTHER DEFECTS			APPROX EXTENTS					
NOTE	ELEMENT	SPALL	IMPENDING SPALL	EXPOSED REINF	# OF BARS	SHALLOW REINF	CRACK	HOLLOW	CORR.	DETERIOR-ATION	MISSING	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DESCRIPTION	REPAIR
001	PILE		✓									6	18		36		2/S7.0
002	PILE						✓					30	1/32			VERT & HORZ; TOTAL	1/S7.1
003	PILE	✓	✓										18	8	30		2/S7.0
004	PILE		✓									30	8	4			2/S7.0
005	PILE						✓					36	1/64			TOTAL	1/S7.1
006	PILE		✓										10	10	30		2/S7.0
007	PILE		✓										18	6	30		2/S7.0
008	PILE CAP						✓					48	1/32				1/S7.1
009	PILE CAP						✓					48	1/32				1/S7.1
010	PILE CAP	✓	✓	✓	12							144	144	12		UP TO 75% LOS AT UNDERSIDE	2/S7.2
011	PILE CAP				1	✓						12	4	1/2		AT UNDERSIDE	3/S7.2
012	PILE CAP	✓		✓	1	✓						7	7	1/2		AT UNDERSIDE	3/S7.2
013	PILE CAP	✓		✓	1	✓						8	4	1/2		AT UNDERSIDE	3/S7.2
014	PILE CAP	✓		✓	1	✓						12	4	1/2		AT UNDERSIDE	3/S7.2
015	PILE CAP	✓		✓	1	✓						3	4	1/2		AT UNDERSIDE	3/S7.2

SHEET NOTES

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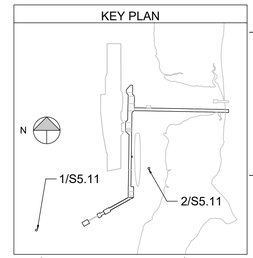
KEY PLAN



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Consultants

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SOUTH CAROLINA — GEL ENGINEERING, LLC No.C02649 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA — No. 34504 — REGISTERED PROFESSIONAL ENGINEER — E. B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

Sheet Title

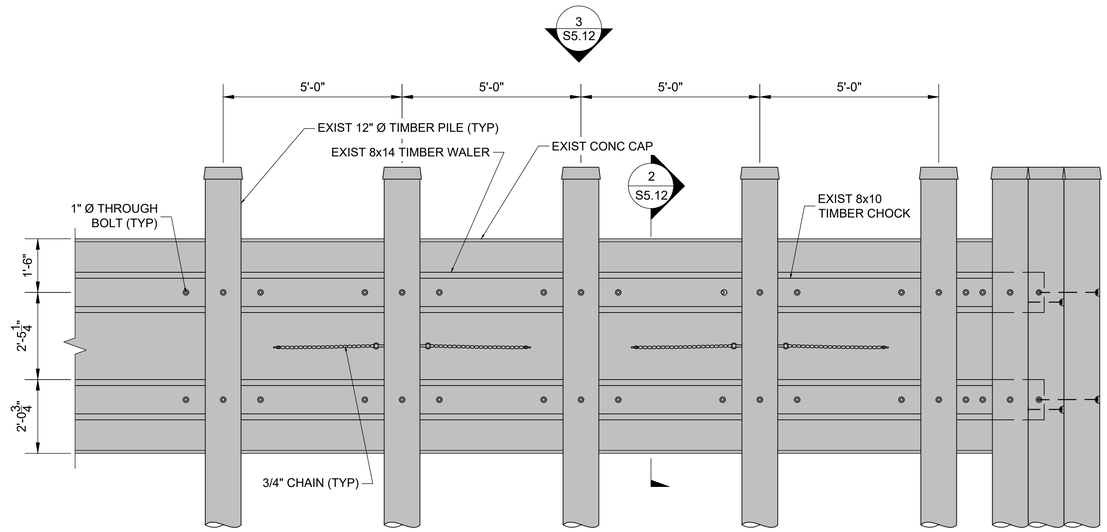
Existing Conditions at Mooring Dolphins No. 1 and 2

Project No.	Drawing No.
PPDA00124	S5.11

Date: 07.30.25

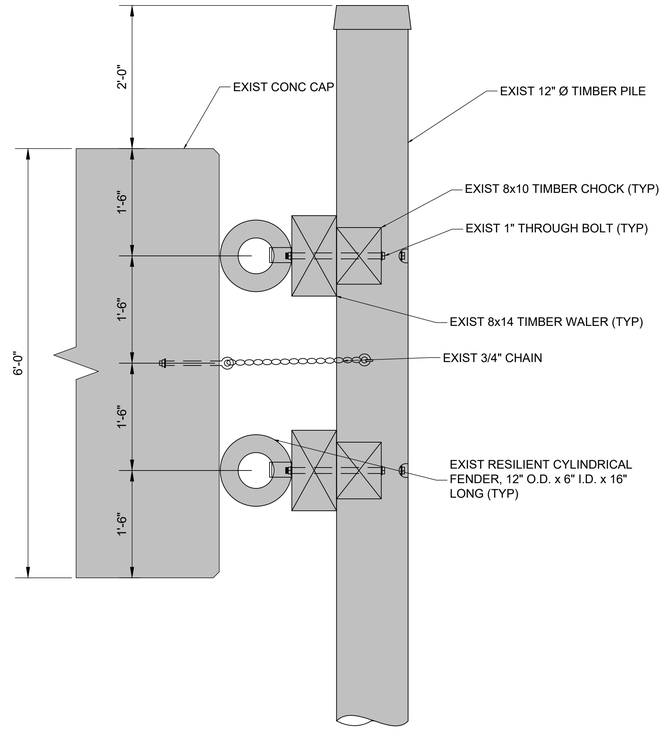
Scale: AS SHOWN

RELEASED FOR CONSTRUCTION



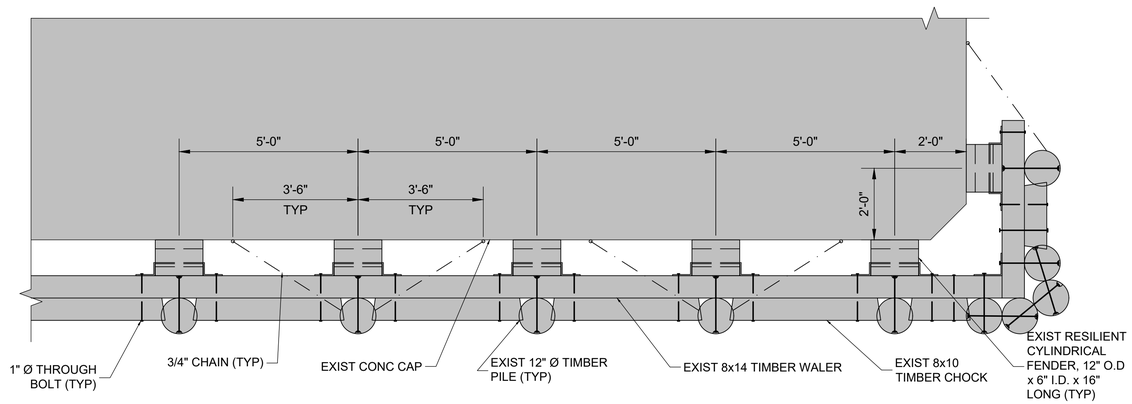
PARTIAL ELEVATION: TIMBER FENDER SYSTEM
SCALE: 1/2" = 1'-0"

1
S5.12



SECTION: TIMBER FENDER SYSTEM
SCALE: 1" = 1'-0"

2
S5.12



PARTIAL PLAN: TIMBER FENDER SYSTEM
SCALE: 1/2" = 1'-0"

3
S5.12

1. REMOVE AND REPLACE ALL COMPONENTS OF THE TIMBER FENDER SYSTEM IN-KIND WITH STAINLESS STEEL HARDWARE.

TIMBER FENDER REPLACEMENT

4
S5.12

SHEET NOTES

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SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 34504 E.B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

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Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

Sheet Title

Existing Timber Fender System

Project No. PPDA00124
Drawing No. S5.12
Date 07.30.25
Scale AS SHOWN

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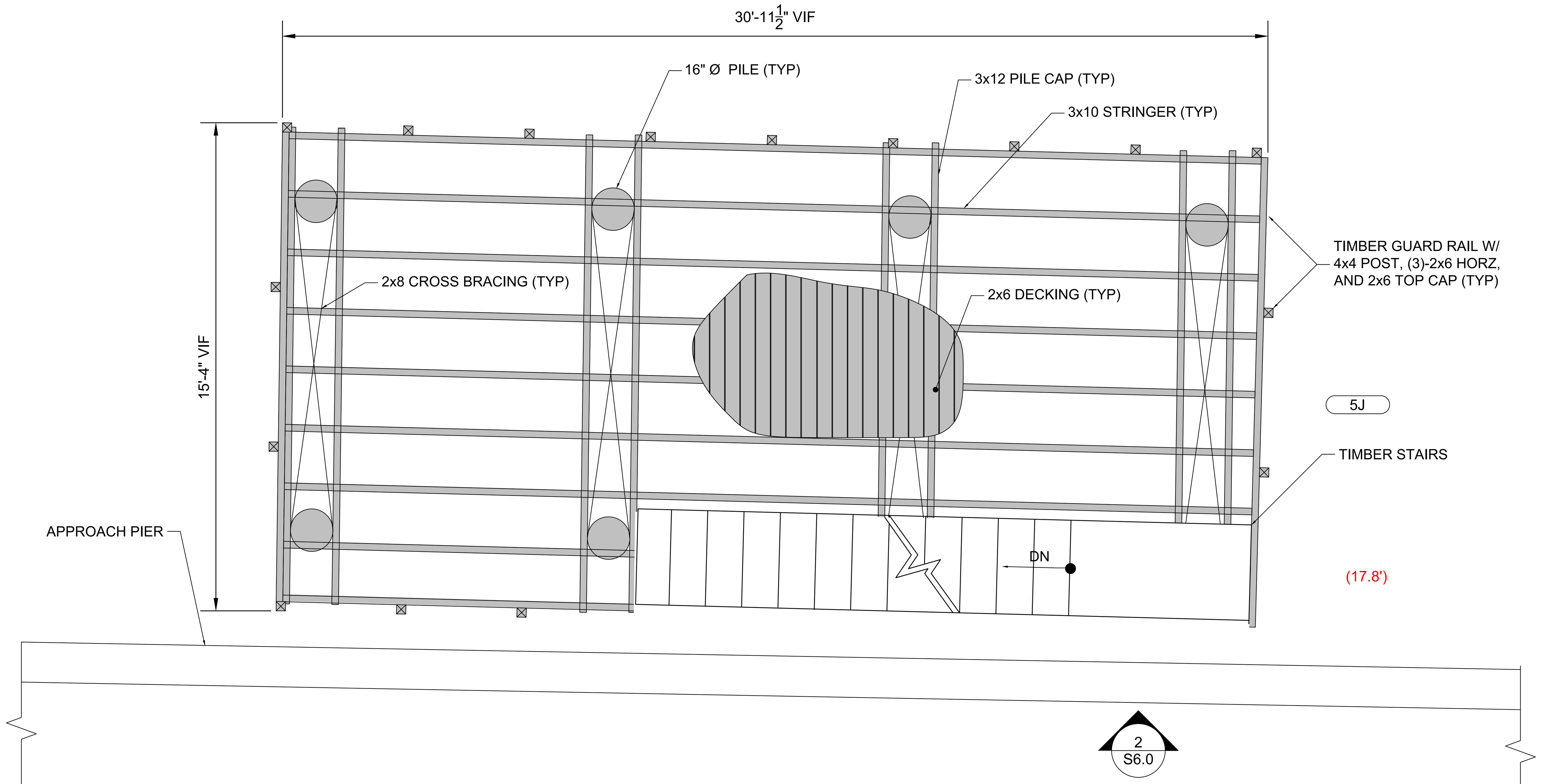
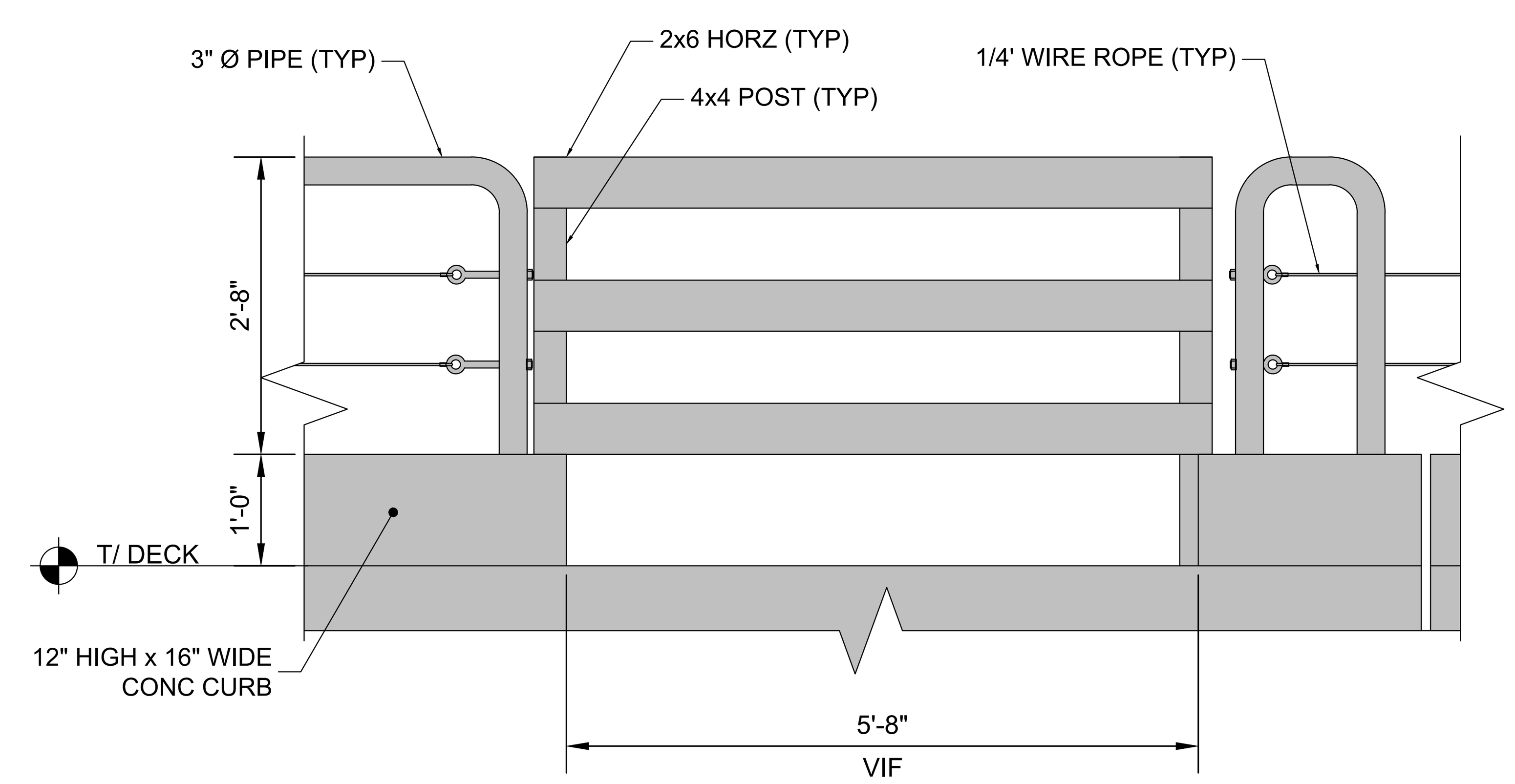


N

PLAN: EXISTING CONDITIONS AT TIMBER DOCK

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

1
S6.0

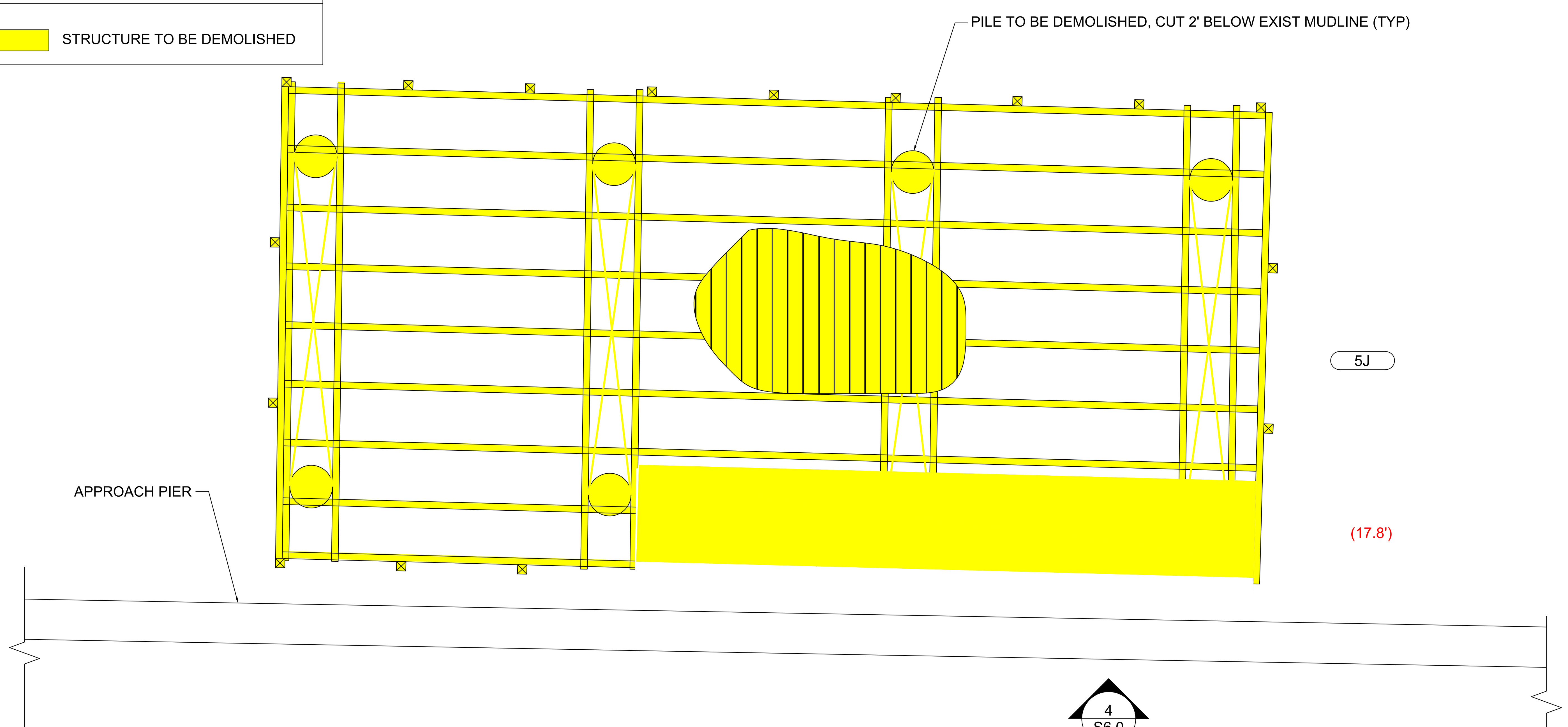


PARTIAL ELEVATION: EXISTING CONDITIONS AT TIMBER DOCK ACCESS

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

2
S6.0

LEGEND
STRUCTURE TO BE DEMOLISHED

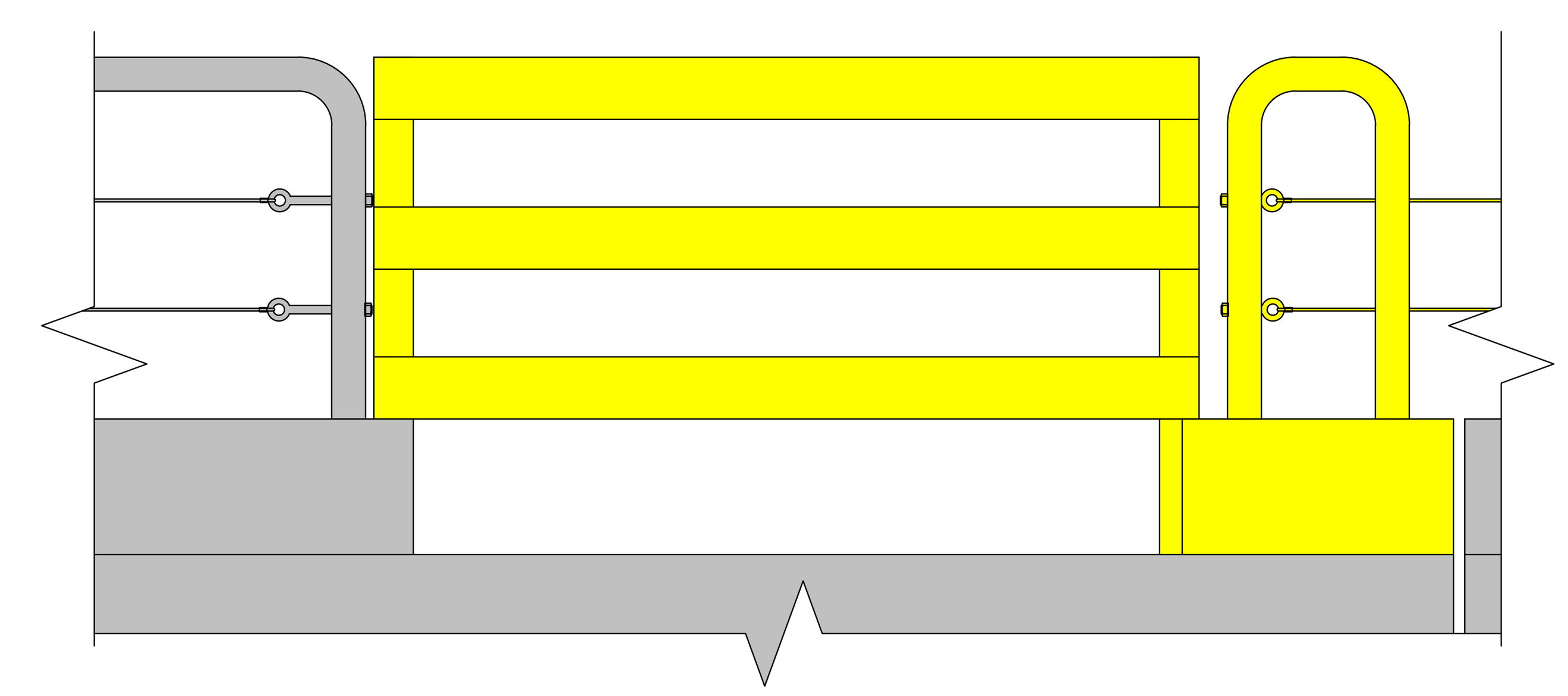


N

PLAN: TIMBER DOCK DEMOLITION

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

3
S6.0



PARTIAL ELEVATION: TIMBER DOCK ACCESS DEMOLITION

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

4
S6.0

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Consultants

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SOUTH CAROLINA GEL ENGINEERING, LLC No.C02649 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 34504 DANIEL E. B. CAMPBELL 7-30-25

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

Sheet Title

Timber Dock

Project No.
PPDA00124

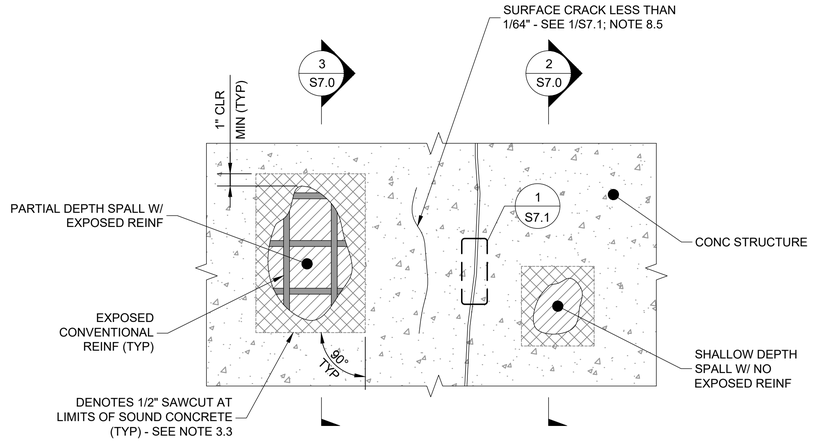
Drawing No.
S6.0

Date
07.30.25

Scale
AS SHOWN

RELEASED FOR CONSTRUCTION

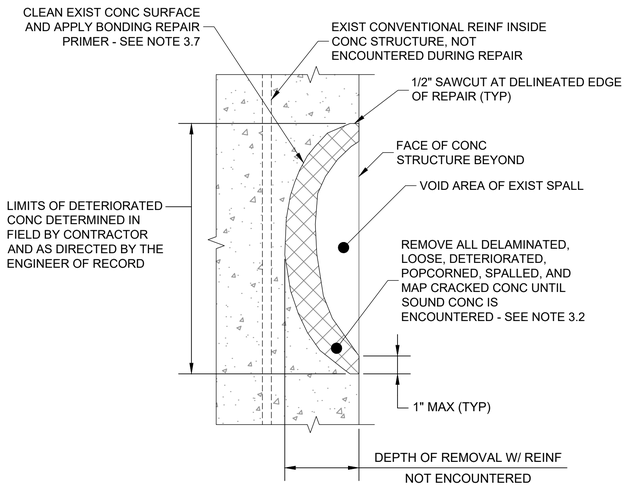
m:\clientfiles\p\ppda-patriots point development autority\2024 projects\ppda00124 - uss yorktown pier assessment\2.0 cad\ppda00123 - base.dwg : S6.0 (Plotted: 7/30/2025 9:10:18 AM)



ELEVATION: CONVENTIONALLY REINFORCED CONCRETE STRUCTURE

SCALE: NOTE TO SCALE

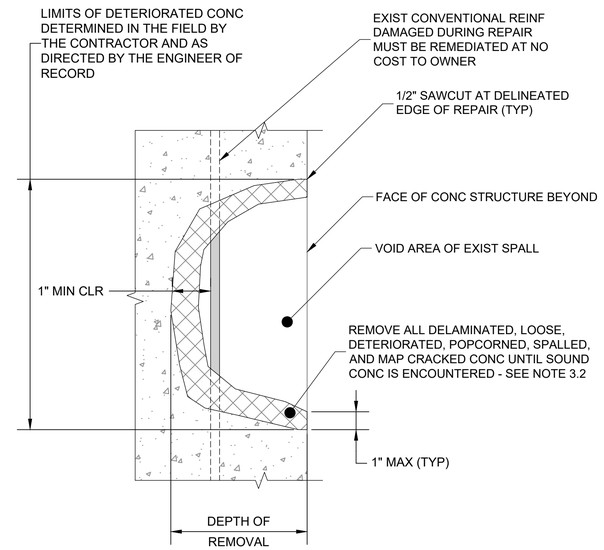
1
S7.0



SECTION: PARTIAL DEPTH SPALL REPAIR (REPAIR TYPE I)

SCALE: NOT TO SCALE NO EXPOSED REINFORCEMENT

2
S7.0



SECTION: PARTIAL DEPTH SPALL REPAIR (REPAIR TYPE II)

SCALE: NOT TO SCALE EXPOSED REINFORCEMENT

3
S7.0

CONCRETE REPAIR NOTES

1. REPAIR MATERIALS:

   1.1. BONDING PRIMER.....SIKA ARMATEC-110 EPOCEM
   1.2. CORROSION INHIBITIVE PRIMER.....SIKA ARMATEC-110 EPOCEM
   1.3. SHALLOW AND PARTIAL DEPTH CONCRETE REPAIR:
      1.3.1. REPAIR MORTAR (HORIZ).....SIKATOP-122 PLUS
      1.3.2. REPAIR MORTAR (VERT AND OH).....SIKATOP-123 PLUS
   1.4. CONCRETE REPAIR DUE TO SHALLOW COVER
      1.4.1. SIKAQUICK VOH
      1.4.2. SIKADUR-32 HI-MOD LV
      1.4.3. SIKAQUICK-1000
   1.5. PATCH PIN.....HELIFIX PATCH PIN

   THE CONTRACTOR MAY SUBMIT ALTERNATE REPAIR MATERIALS TO THE ENGINEER OF RECORD FOR REVIEW. THE ALTERNATE MATERIALS MUST MEET OR EXCEED THE PROPERTIES OF THE MATERIALS PROVIDED ABOVE.

2. THE CONTRACTOR MUST INSTALL REPAIR MATERIALS PER THE MANUFACTURER'S SPECIFICATIONS.

3. CONVENTIONALLY REINFORCED CONCRETE REPAIR:

   3.1. THE ACTUAL LOCATIONS, EXTENTS, AND TYPES OF CONCRETE REPAIR WILL BE DETERMINED IN THE FIELD. THE CONTRACTOR MUST REPAIR ALL AREAS DETERMINED NECESSARY AS DIRECTED BY THE ENGINEER OF RECORD AFTER THE CONTRACTOR HAS SOUNDED AND MARKED ALL REPAIR AREAS.

   3.2. CONCRETE REPAIR WORK INCLUDES REMOVING ALL DELAMINATED, LOOSE, DETERIORATED, POPCORNED, SPALLED, AND MAP CRACKED CONCRETE. TO LOOSEN AND REMOVE THE CONCRETE, THE CONTRACTOR MUST NOT USE ANY PNEUMATIC OR POWER HAMMER WEIGHT IN EXCESS OF 30 POUNDS, UNLESS OTHERWISE NOTED BELOW. CONCRETE MUST BE REMOVED 3" BEYOND UNSOUND EDGE OF CONCRETE.

   3.3. ALL REPAIR AREAS MUST BE DELINEATED BY A 1/2" DEEP SAWCUT CUT PERPENDICULAR TO THE CONCRETE SURFACE; THE SAWCUTS MUST BE MADE ORTHOGONAL TO EACH OTHER, RESULTING IN A SQUARE OR RECTANGULAR DELINEATION AROUND THE REPAIR AREA. THE SAWCUTS SHOULD BE PLACED AT LEAST 1" AWAY FROM THE SOUND EDGE OF THE SPALLED AREA. THE CONTRACTOR MUST AVOID DAMAGING EXISTING REINFORCEMENT WHEN PERFORMING SAWCUTS.

   3.4. ALL REINFORCING STEEL EXPOSED DURING REMOVAL OF UNSOUND MATERIAL MUST BE UNDERCUT, ENSURING A MINIMUM CLEARANCE OF 3/4" BETWEEN THE REINFORCING STEEL AND SURROUNDING CONCRETE. THE CONTRACTOR MUST NOT USE ANY PNEMATIC OR POWER HAMMER WEIGHT IN EXCESS OF 15 POUNDS. CONCRETE REMOVAL MUST EXTEND ALONG THE EXPOSED BAR UNTIL THERE IS NO FURTHER DELAMINATION, UNSOUND CONCRETE, OR SIGNIFICANT CORROSION UNTIL THE BAR IS WELL BONDED TO THE SURROUNDING CONCRETE. NOTIFY THE ENGINEER OF RECORD IMMEDIATELY IF CONCRETE REMOVAL MUST EXTEND BEYOND THE DELINEATED REPAIR AREA.

   3.5. ALL REINFORCING STEEL EXPOSED DURING REMOVAL OF UNSOUND MATERIAL MUST BE THOUROUGHLY BLAST CLEANED TO A WHITE METAL FINISH AND COATED WITH A CORROSION INHIBITIVE PRIMER. ALLOW TO FULLY CURE PRIOR TO INSTALLING CONCRETE REPAIR MATERIAL.

   3.6. ALL SURFACES WHICH WILL HAVE REPAIR MATERIAL PLACED AGAINST IT MUST BE ROUGHENED TO A MINIMUM AMPLITUDE OF 1/4" USING A MAXIMUM 15 POUND CHIPPING HAMMER OR OTHER APPROVED EQUIPMENT/METHODS.

   3.7. IMMEDIATELY PRIOR TO PLACING REPAIR MATERIAL AGAINST EXISTING CONCRETE, CLEAN EXISTING SURFACES BY ABRASIVE BLASTING OR HIGH PRESSURE WATER BLASTING WITH WATER CONTAINING NO DETERGENTS OR BOND INHIBITING CHEMICALS. APPLY BONDING PRIMER IMMEDIATELY PRIOR TO PLACING REPAIR MATERIAL.

   3.8. FOR SPALLS WITH 1 1/2" DEPTH OR GREATER, PROVIDE STAINLESS STEEL HELIFIX PATCH PINS OR APPROVED EQUAL. INSTALL PER MANUFACTURER RECOMMENDATIONS.

   3.9. ALL SURFACES MUST BE RUBBED TO PRODUCE A SMOOTH FINISH.

4. LOCATIONS OF PREVIOUS REPAIRS MUST BE ASSESSED FOR SOUNDNESS BY THE CONTRACTOR. IF UNSOUND, REPAIR PER PROCEDURE ABOVE.

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Certificate-Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION GEL ENGINEERING, LLC No.C02649

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 34504 ELIZABETH B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
40 Patriots Point Road
Mount Pleasant, SC 29464

Project

40 Patriots Point Road
Mount Pleasant, SC 29464

USS Yorktown
Pier Repairs

Sheet Title

Details I

Project No.	Drawing No.
PPDA00124	S7.0
Date: 07.30.25	
Scale: AS SHOWN	

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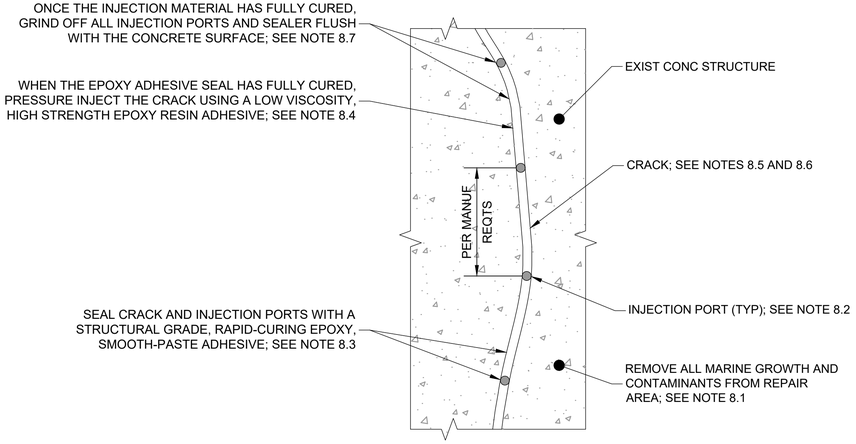


DETAIL: PRESSURE INJECTION CRACK REPAIR (REPAIR TYPE III)

1 / S7.1

SCALE: NOT TO SCALE

PRESSURE INJECTION CRACK REPAIR NOTES

1. REPAIR MATERIALS:

   1.1. CRACK AND INJECTION PORT SEAL.....SIKADUR-33
   1.2. CRACK INJECTION.....SIKADUR-35 HI-MOD LV

   THE CONTRACTOR MAY SUBMIT ALTERNATE REPAIR MATERIALS TO THE ENGINEER OF RECORD FOR REVIEW. THE ALTERNATE MATERIALS MUST MEET OR EXCEED THE PROPERTIES OF THE MATERIALS PROVIDED ABOVE.

2. THE CONTRACTOR MUST PERFORM WORK FROM A STABLE SURFACE WHICH PROVIDES UNOBSTRUCTED ACCESS TO THE ENTIRE REPAIR AREA.

3. THE CONTRACTOR MUST INSTALL REPAIR MATERIALS PER THE MANUFACTURER'S SPECIFICATIONS.

4. ONLY CONTRACTORS CERTIFIED BY THE REPAIR MATERIAL MANUFACTURER MAY PERFORM THE REPAIR WORK.

5. CRACKS WHICH EXHIBIT CORROSION STAINING SHOULD BE SOUNDED BY THE CONTRACTOR ALONG THEIR LENGTH. IF NO UNSOUND CONCRETE IS ENCOUNTERED, PERFORM EPOXY INJECTION PER THE SEQUENCE BELOW. IF UNSOUND OR DELAMINATED CONCRETE IS ENCOUNTERED, PERFORM CONCRETE REPAIR PER 1/SS7.0.

6. WHERE CONCRETE REPAIR AND CRACK INJECTION WORK ARE ADJACENT, THE CONTRACTOR MUST PERFORM THE CRACK INJECTION WORK PRIOR TO PERFORMING CONCRETE REPAIRS.

7. REFER TO THE REPAIR PLANS AND OBSERVATION TABLES FOR THE CRACK REPAIR LOCATIONS AND EXTENTS.

8. REPAIR SEQUENCE:

   8.1. THE REPAIR AREA MUST BE SOUND AND CLEAN; ALL MARINE GROWTH, GREASE, DUST, WAXES, CURING COMPOUNDS, OR OTHER CONTAMINANTS MUST BE REMOVED ALONG THE FULL LENGTH OF THE CRACK REPAIR AREA. THE CLEANED AREA MUST PROVIDE A CONTAMINANT FREE, OPEN TEXTURED SURFACE. THE CONTRACTOR MAY CLEAN USING MECHANICAL OR BLAST CLEANING MEANS.

   8.2. INSTALL INJECTION PORTS PER REPAIR MATERIAL MANUFACTURER'S RECOMMENDATIONS.

   8.3. SEAL CRACK AND INJECTION PORTS WITH A STRUCTURAL GRADE, RAPID-CURING EPOXY, SMOOTH-PASTE ADHESIVE SUCH AS SIKADUR-33 OR ENGINEER APPROVED EQUIVALENT.

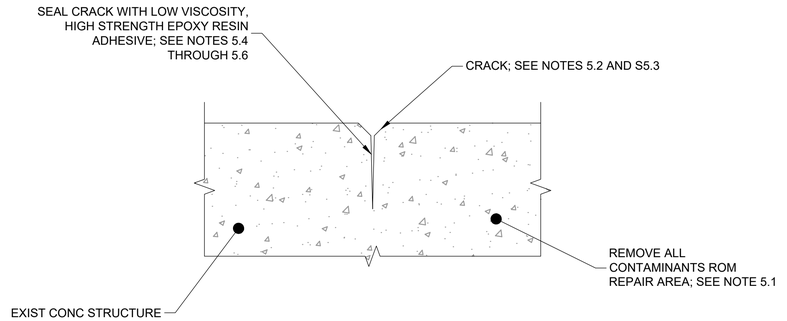
   8.4. WHEN THE EPOXY ADHESIVE SEAL HAS FULLY CURED, PRESSURE INJECT THE CRACK USING A LOW VISCOSITY, HIGH STRENGTH EPOXY RESIN ADHESIVE SUCH AS SIKADUR 55SLV (1/64" THROUGH LESS THAN 1/16") OR SIKADUR-35 HI-MOD LV (1/16" THROUGH 1/4") OR ENGINEER APPROVED EQUIVALENT.

   8.5. CRACKS THAT ARE LESS THAN 1/64" WIDE DO NOT REQUIRE REPAIR UNLESS DIRECTED BY THE ENGINEER OF RECORD.

   8.6. CRACKS THAT ARE 1/64" WIDE OR GREATER MUST BE REPAIRED BY EPOXY INJECTION.

   8.7. ONCE THE INJECTION MATERIAL HAS FULLY CURED, GRIND OFF ALL INJECTION PORTS AND SEALER FLUSH WITH THE CONCRETE SURFACE.

9. IF CRACK TO BE INJECTED IS AT A PREVIOUS CONCRETE REPAIR THAT IS UNSOUND, THE CONTRACTOR MUST REMOVE UNSOUND MATERIAL AND REPAIR PER 2/S7.0 OR 3/S7.0 AS REQUIRED.



DETAIL: GRAVITY FEED HORIZONTAL CRACK REPAIR (REPAIR TYPE IV)

2 / S7.1

SCALE: NOTE TO SCALE

GRAVITY FEED CRACK REPAIR NOTES

1. REPAIR MATERIALS:

   1.1. GRAVITY FEED CRACK REPAIR.....SIKADUR-35 HI-MOD LV

   THE CONTRACTOR MAY SUBMIT ALTERNATE REPAIR MATERIALS TO THE ENGINEER OF RECORD FOR REVIEW. THE ALTERNATE MATERIALS MUST MEET OR EXCEED THE PROPERTIES OF THE MATERIALS PROVIDED ABOVE.

2. THE CONTRACTOR MUST INSTALL REPAIR MATERIALS PER THE MANUFACTURER'S SPECIFICATIONS.

3. ONLY CONTRACTORS CERTIFIED BY THE REPAIR MATERIAL MANUFACTURER MAY PERFORM THE REPAIR WORK.

4. REFER TO THE REPAIR PLANS AND OBSERVATION TABLES FOR THE CRACK REPAIR LOCATIONS AND EXTENTS.

5. REPAIR SEQUENCE:

   5.1. THE REPAIR AREA MUST BE SOUND AND CLEAN; ALL GREASE, DUST, WAXES, CURING COMPOUNDS, OR OTHER CONTAMINANTS MUST BE REMOVED ALONG THE FULL LENGTH OF THE CRACK REPAIR AREA. THE CLEANED AREA MUST PROVIDE A CONTAMINANT FREE, OPEN TEXTURED SURFACE.

   5.2. USE A GRINDING OR ROTARY TOOL WITH A DIAMOND BLADE TO CREATE A "V" SHAPED GROOVE ALONG THE FULL LENGTH OF THE CRACK. ENSURE THAT THE "V" SHAPED GROOVE IS CREATED WITH A CONSISTENT DEPTH AND IS WIDE ENOUGH TO ACCOMMODATE THE CRACK REPAIR MATERIAL.

   5.3. BLOW THE "V" NOTCHED CRACK CLEAN WITH OIL-FREE COMPRESSED AIR.

   5.4. POUR A LOW VISCOSITY, HIGH STRENGTH EPOXY RESIN ADHESIVE SUCH AS SIKADUR-35 HI-MOD LV OR ENGINEER APPROVED EQUIVALENT INTO THE "V" NOTCHED CRACK. CONTINUE PLACEMENT UNTIL COMPLETELY FILLED. IF THE CRACK APPEARS TO BE FULL DEPTH OR REFLECTIVE, SEAL UNDERSIDE OF SLAB PRIOR TO INSTALLING THE REPAIR MATERIAL.

   5.5. REMOVE ALL EXCESS OR OVER-POUR MATERIAL IMMEDIATELY.

   5.6. THE FINAL APPEARANCE OF THE CRACK REPAIR MUST BE CLEAN, WITH THE CURED REPAIR MATERIAL VISIBLE ALONG THE FULL LENGTH OF THE CRACK FLUSH WITH THE CONCRETE SURFACE. REMNANT, EXCESS, OR OVER-POUR MATERIAL WILL NOT BE ACCEPTED AND MUST BE REMOVED AT NO COST TO THE OWNER.

1. PREPARE CRACK FOR REPAIR MATERIAL SIMILAR TO NOTES 5.1 THROUGH 5.3 IN DETAIL 2/S7.1.

2. INSTALL A NON-SAG ELASTIC SEALANT SUCH AS SIKAFLEX CONCRETE FIX OR ENGINEER APPROVED EQUIVLENT INTO THE "V" NOTCHED CRACK.

3. REMOVE ALL EXCESS OR OVER-POUR MATERIAL IMMEDIATELY.

4. THE FINAL APPEARANCE OF THE CRACK REPAIR MUST BE CLEAN, WITH THE CURED REPAIR MATERIAL VISIBLE ALONG THE FULL LENGTH OF THE CRACK FLUSH WITH BE REMOVED AT NO COST TO THE OWNER..

DETAIL: CRACK REPAIR AT CURBS

3 / S7.1

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Consultants

Certificate-Seal

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SOUTH CAROLINA PROFESSIONAL ENGINEER No. 34504 E. B. CAMPBELL II

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PATRIOTS POINT NAVAL & MARITIME MUSEUM

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Project

40 Patriots Point Road
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USS Yorktown
Pier Repairs

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Details II

Project No. PPDA00124

Drawing No. S7.1

Date 07.30.25

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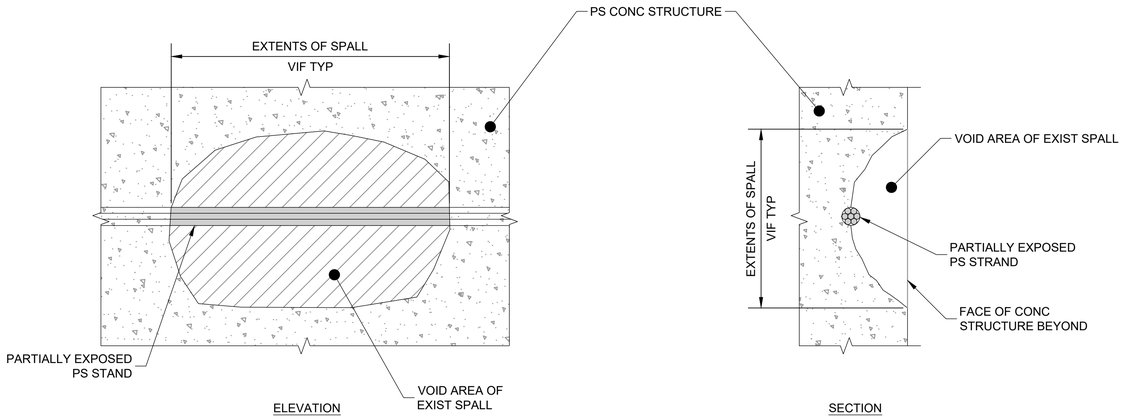


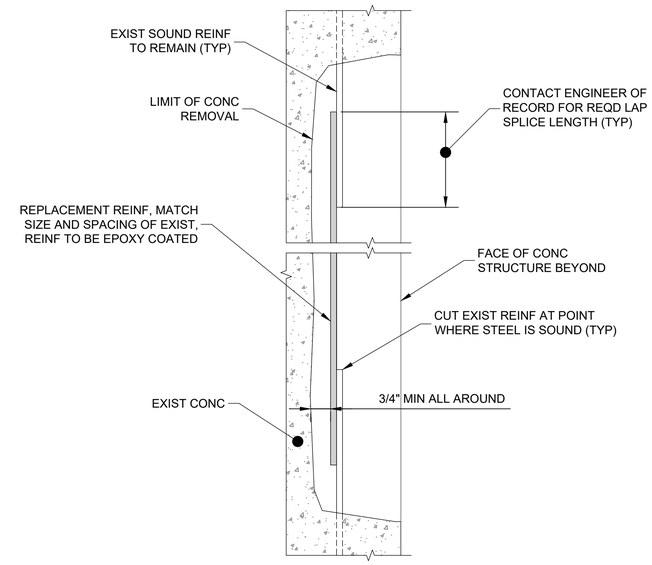
PRE-STRESSED CONCRETE REPAIR (REPAIR TYPE V)

1 / S7.2

SCALE: NOT TO SCALE

REPAIR NOTES:

1. REMOVE ALL DELAMINATED, LOOSE, DETERIORATED, AND SPALLED CONCRETE FROM THE REPAIR AREA WITH THE USE OF HAND TOOLS; USE OF PNEUMATIC OR POWER TOOLS IS PROHIBITED. THE CONTRACTOR MUST EXERCISE EXTREME CAUTION TO NOT DAMAGE THE EXPOSED PRE-STRESSING STRAND(S).
2. THE EXPOSED PRE-STRESSING STRAND(S) MUST BE THOROUGHLY CLEANED WITH A WIRE BRUSH; CAREFULLY REMOVE CORROSION BUILDUP OR LOOSE MATERIAL FROM THE STRAND. FOLLOWING CLEANING, THE CONTRACTOR MUST VERIFY THAT THE STRAND DOES NOT EXHIBIT GREATER THAN 10% SECTION LOSS. NOTIFY THE ENGINEER OF RECORD IMMEDIATELY IF MORE THAN 10% SECTION LOSS IS OBSERVED.
3. CLEAN EXISTING SURFACES WITHIN REPAIR AREA BY ABRASIVE BLASTING OR HIGH PRESSURE WATER BLASTING WITH WATER CONTAINING NO DETERGENTS OR BOND INHIBITING CHEMICALS. APPLY BONDING PRIMER AND CORROSION INHIBITIVE PRIMER TO REPAIR AREA AND EXPOSED STRAND(S); ALLOW TO FULLY CURE BEFORE PLACING REPAIR MATERIAL.
4. INSTALL REPAIR MORTAR PER MANUFACTURER'S REQUIREMENTS.
5. ALL SURFACES MUST BE RUBBED TO PRODUCE A SMOOTH FINISH.



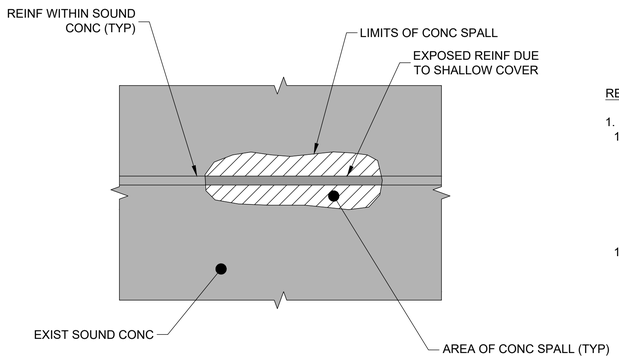
DETAIL: REINFORCEMENT REPLACEMENT (REPAIR TYPE VI)

2 / S7.2

SCALE: NOT TO SCALE

REPAIR NOTES

1. THE CONTRACTOR MUST PREPARE THE REPAIR AREA PER PARTIAL DEPTH REPAIR REQUIREMENTS, SEE S7.0.
2. THE DETAIL MUST ALSO BE USED IF THE CONTRACTOR DAMAGES EXISTING REINFORCEMENT TO THE EXTENT THAT THE REINFORCEMENT REQUIRES REPLACEMENT.
3. THE CONTRACTOR MAY USE COUPLERS TO CONNECT REPLACEMENT AND EXISTING REINFORCING STEEL. THE CONTRACTOR MUST ENSURE THAT SUFFICIENT SPACE IS PROVIDED TO FACILITATE ENGAGEMENT ALONG THE FULL LENGTH OF THE COUPLER CONTACT LENGTH. THE CONTRACTOR MUST SUBMIT COUPLER TO ENGINEER OF RECORD FOR REVIEW PRIOR TO ORDERING MATERIAL.



REPAIR NOTES

1. EXPOSED REINFORCEMENT TO SHALLOW COVER:
   - 1.1. HORIZONTAL SURFACE:
     - 1.1.1. PREPARE REPAIR AREA PER NOTES ON S7.0.
     - 1.1.2. INSTALL SIKADUR-32 HI-MOD LV EPOXY ON TO THE CLEANED STEEL AND PREPARED CONCRETE SURFACE. WHILE EPOXY IS WET, INSTALL SIKAQUICK 1000 (1/4" TO 2" NEAT CONCRETE REPAIR) REPAIR MATERIAL.
     - 1.1.3. THE REPAIR AREA MUST FULLY CURE PRIOR TO RE-OPENING TO TRAFFIC.
   - 1.2. VERTICAL SURFACE:
     - 1.2.1. PREPARE REPAIR AREA PER NOTES ON S7.0.
     - 1.2.2. INSTALL SIKADUR-32 HI-MOD LV EPOXY ON TO CLEANED STEEL AND PREPARED CONCRETE SURFACE. WHILE EPOXY IS WET, INSTALL SIKAQUICK VOH (1/8" TO 3" NEAT CONCRETE REPAIR) REPAIR MATERIAL.

PARTIAL PLAN: EXPOSED REINFORCEMENT DUE TO SHALLOW COVER (REPAIR TYPE VII)

3 / S7.2

SCALE: NOT TO SCALE

DECK JOINT MATERIAL REPLACEMENT

1. REMOVE EXISTING JOINT MATERIAL.
2. INSTALL POURABLE COMPRESSIBLE BRIDGE JOINT MATERIAL SUCH AS DELASTIC-LS BY D.S. BROWN; INSTALL PER MANUFACTURES RECOMMENDATIONS.

DETAIL: DECK JOINT MATERIAL

4 / S7.2

1. PREPARE EXISTING STRUCTURAL STEEL SURFACE PER SHERWIN WILLIAMS GUIDELINES ON MACROPOXY 646 DATA PAGES.
2. APPLY MARINE GRADE SHERWIN WILLIAMS COATING PER MANUFACTURER GUIDELINES AND SPECIFICATIONS. FOR BIDDING PURPOSES, ASSUME THE FOLLOWING:
   - 2.1. 1ST COAT - SW MACROPOXY 646 FAST CURE EPOXY, B58-600/B58V600
   - 2.2. 2ND COAT - SW HI-SOLIDS POLYURETHANE GLOSS, B65-300/B60V30
   - 2.3. 3RD COAT - SW HI-SOLIDS POLYURETHANE GLOSS, B65-300/B60V30
3. FOR BIDDING PUPOSES, ASSUME PREPARATION AND RE-COATING OF ALL STRUCTURAL STEEL; SEE PLANS/NOTES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD DETERMINE THE EXACT QUANTITY OF RE-COATING REQUIRED.
4. COLOR TO MATCH EXISTING, COORDINATE WITH OWNER.

DETAIL: STEEL COATING REPAIR

5 / S7.2

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SOUTH CAROLINA — No. 34504 — REGISTERED PROFESSIONAL ENGINEER — E. B. CAMPBELL

Client

PATRIOTS POINT NAVAL & MARITIME MUSEUM

Patriots Point Development Authority
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Project

40 Patriots Point Road
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USS Yorktown
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Details III

Project No.	Drawing No.
PPDA00124	S7.2

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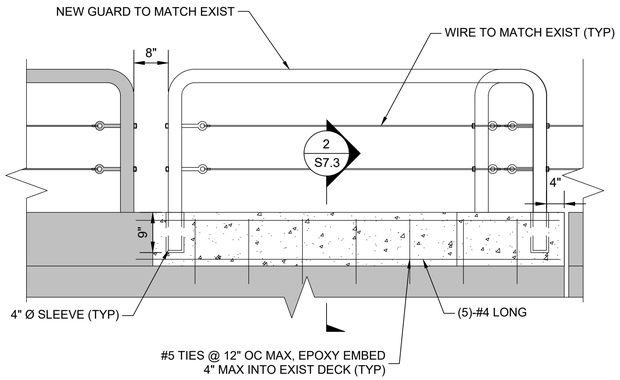
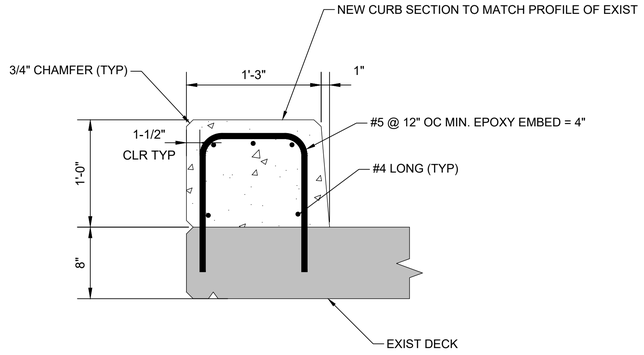


PARTIAL ELEVATION: CURB REPAIR AT TIMBER DOCK

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

1
S7.3



SECTION: CURB REPAIR

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

2
S7.3

STEEL CLEANING AND COLD-GALVANIZING

1. CLEAN EXISTING CONNECTION HARDWARE WITH HAND TOOLS AND COAT WITH AN ACCEPTABLE COLD GALVANIZING COMPOUND; SEE SHEET S1.1 *GALVANIZED COATING* NOTE 5.

STEEL CLEANING AND COLD-GALVANIZING

3
S7.3

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Details IV

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