



PROPOSAL STATEMENT OF WORK

CITY ENGINEERING DEPARTMENT

TASK #TBD: SCIENTIFIC DIVING AND BENTHIC
ASSESSMENT TO SUPPORT PERMITTING
PIER 2 BULKHEAD AT NAVAL AIR STATION KEY WEST

Key West, FL

This proposal has been prepared in accordance with the current Environmental Engineering Services Agreement between the City of Key West and Tetra Tech, Inc, RFQ 20-002, dated March 24, 2020. The work described herein will be performed on a Time and Materials basis in accordance with the fee schedule established in this agreement. Fees shall be not-to-exceed unless approved in writing by the City of Key West. This proposal is valid for a period of 90 days from the date on this page.

Prepared by: TETRA TECH, Inc.
January 23rd, 2024





PROPOSAL / STATEMENT OF WORK

Tetra Tech will work with the City of Key West Engineering Department (City) by providing Professional Services to perform Scientific Diving and Benthic Assessment services on the areas surrounding the proposed welded patch repairs as depicted in the project drawings for the Navy Mole Pier seawall.



Insert 1: Location of Project Limits (Red Line) along NAS Key West Mole Pier.

Tetra Tech proposes to furnish services under the following categories:

Task 1 –Scientific Diving & Benthic Assessment

The benthic resource survey will be performed by a standard SCUBA team of scientific divers as required by the Florida Keys National Marine Sanctuary. Tetra Tech will coordinate with the Florida Keys National Marine Sanctuary to perform the certified resource survey for the permitting process and prepare a written report cataloging the resources and showing their position and size along the face of the existing wall and within 10 LF of the proposed eleven (11) weld patch locations as shown in the project drawings (Naval Air Station Key West Mole Pier 2 Bulkhead Repair Design Drawings, print date 5/4/2022, attached). This resource survey will be presented to NOAA for comment and will ultimately be used during the permitting process with FDEP and the USACE.



City of Key West – Key West Outer Mole Pier 2 Naval Air Station Key West

Scientific Diving and Benthic Assessment to Support Permitting



Insert 2: Location of Project Limits (Red Line) along NAS Key West Mole Pier.

This cost includes the preparation of the benthic resource survey report with mitigation plan but does not include the physical coral relocation or mitigation. Our mitigation plan will need to be reviewed by NOAA before any mitigation can be performed. It is expected that the benthic resource survey will take two (2) days of field time plus two (2) days of travel time.

The resulting study will be furnished to NOAA/FKNMS to resolve the outstanding requirement on the existing permit application to USACE.

(1) Scientific Diving & Benthic Assessment: \$53,120

PROJECT ASSUMPTIONS

1. The benthic assessment will be limited to the eleven (11) areas of intended repairs as shown on the design drawings developed by Tetra Tech. Tetra Tech will perform the benthic assessment in general conformance with FKNMS Benthic Survey Protocols. Per that requirement, Tetra Tech will observe a minimum buffer area of ten (10) feet vertically and horizontally from the limits of all of the proposed patch repairs.
2. Any site visits requested by the City beyond those detailed above will be billed on an hourly basis.
3. The project budget allows for up to \$500 in permitting fees.
4. The project budget allows for up to \$5,000 in Coral Mitigation fees.
5. Efforts related to re-design or value engineering shall be made available through a separate authorization.
6. Price is based on two (2) travel days, mobilization, demobilization and two (2) days of field investigation working ten (10) hours per day exclusive of any time required to gain access to the work site.
7. Assumes that security / access / badging can be done such that a trip down to Key West prior to the start of inspection is not required.



8. Pay rates utilized to develop pricing are not based on any department of labor imposed prevailing wage determination. Should a specific wage determination be required, pricing may be adjusted accordingly.
9. A secure storage area will be provided for the team’s provided equipment.
10. A dive station will be set up at the seawall’s edge such that diving takes place from land adjacent to the seawall.

PROJECT EXCLUSIONS

This Scope of Work excludes the following items which may be provided under separate authorization:

1. Revisions to the plans.
2. Surveying, Structural, Geotechnical, or Utility Engineering
3. This scope does not include costs associated with removal, repair or replacement of the eleven (11) steel patches mentioned in the RFP.
4. Performance of the prescribed repairs.
5. Detailed cost estimating per Navy standards.
6. Global analysis and assessment of the existing bulkhead system for any external load cases, including mooring and berthing.
7. Repairs or inspections of the tieback system, if in place.
8. Permitting through FDEP, SFWMD, the US Navy or the local Building Department.
9. Coral Studies, Mapping, Relocation Services or Mitigation Fees as may be required by NOAA/FKNMS.
10. Coral mitigation fees beyond \$5,000
11. Permit fees beyond \$500
12. Bid Support
13. Services During Construction

PROJECT FEE

Task	Description	Amount
1	Scientific Diving and Benthic Assessment	\$ 53,120
TOTAL		\$ 53,120



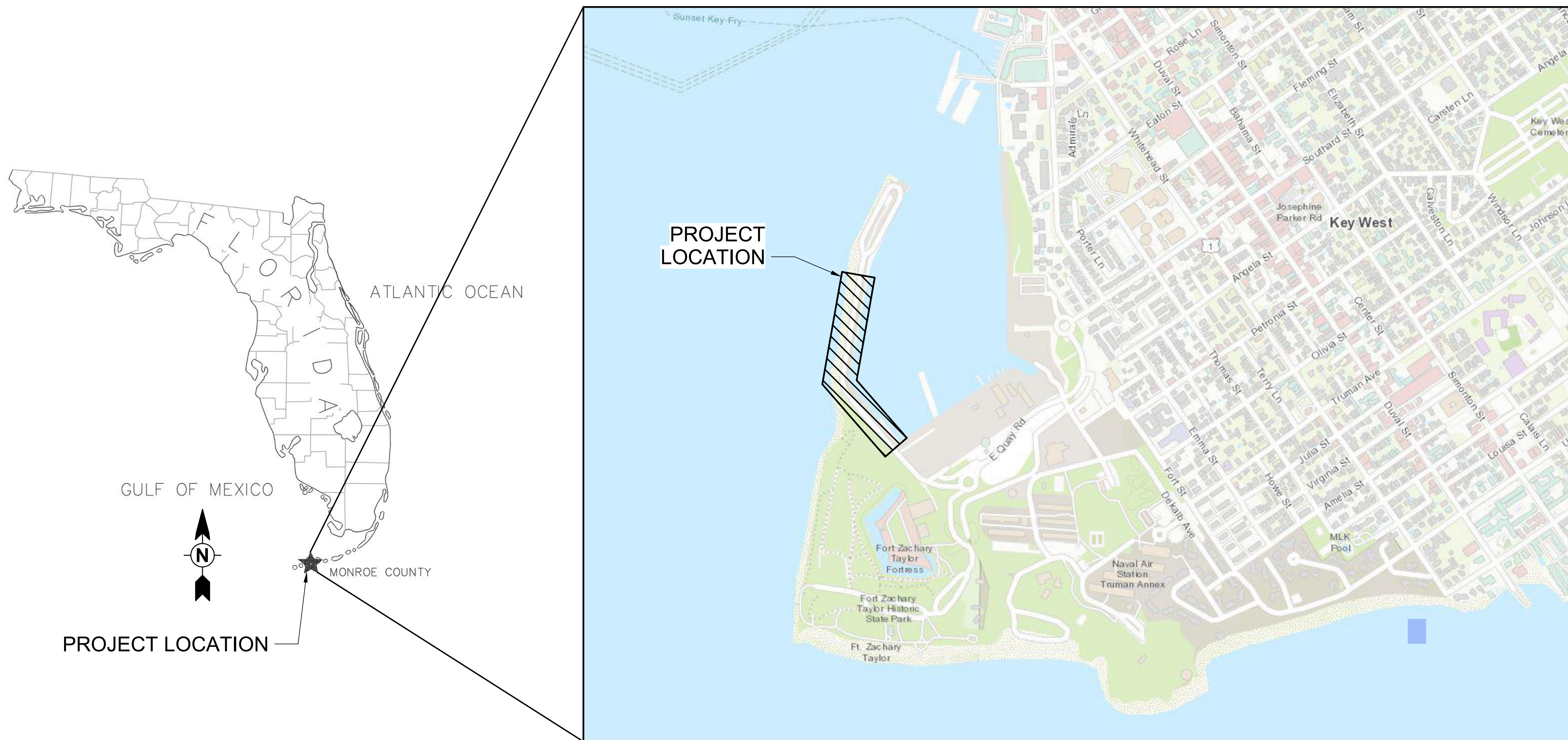
**City of Key West – Key West Outer Mole Pier 2
Naval Air Station Key West**
Scientific Diving and Benthic Assessment to Support Permitting

COST MODEL

CITY OF KEY WEST			TASK 01		TOTAL	
NAVY MOLE PIER BENTHIC ASSESSMENT			SCIENTIFIC DIVING AND BENTHIC ASSESSMENT			
NAME	TITLE	UNIT RATE	QTY	PRICE	QTY	PRICE
TETRA TECH STAFF						
Frodsham, David	Eng/Sci/Planner Senior Staff III	\$ 185.00	24.0	\$4,440	24.0	\$4,440
Martinez Rivera, Francisco	Eng/Sci/Planner Senior Staff I	\$ 155.00			-	
Boberg, Lori	Project Support Services II	\$ 92.00	3.0	\$276	3.0	\$276
Warren, Caprice	Project Support Services IV	\$ 145.00			-	
Zuloaga, Pat	Project Manager	\$ 230.00	40.0	\$9,200	40.0	\$9,200
Canty, Lisa	Eng/Sci/Planner Senior Staff II	\$ 175.00	40.0	\$7,000	40.0	\$7,000
Mendoza, Mike	Eng/Sci/Planner Staff IV	\$ 130.00			-	
Baron, Rob	Eng/Sci/Planner Senior Staff IV	\$ 195.00	90.0	\$17,550	90.0	\$17,550
Reising, Megan	Eng/Sci/Planner Senior Staff II	\$ 175.00			-	
-	-	\$ -	-		-	
-	-	\$ -	-		-	
-	-	\$ -	-		-	
TOTAL LABOR COST			197.0	\$38,466	197.0	\$38,466
TRAVEL						
R/T Airfare		\$ 500.00			-	
Mileage		\$ 0.670	550.0	\$369	550.0	\$369
Rental Car w/Fuel		\$ 80.00	12.0	\$960	12.0	\$960
Misc. Travel Costs (gas, parking, tolls)		\$ 50.00	15.0	\$750	15.0	\$750
Lodging		\$ 240.00	15.0	\$3,600	15.0	\$3,600
Meals & Incidental Expenses		\$ 69.00	15.0	\$1,035	15.0	\$1,035
TOTAL TRAVEL COSTS				\$6,714		\$6,714
OTHER DIRECT COSTS / RENTAL EQUIPMENT / LABORATORY						
Shipping		\$ 10.00			-	
Misc. Equip & Supplies		\$ 100.00	4.0	\$400	4.0	\$400
Boat Fee		\$ 150.00	4.0	\$600	4.0	\$600
Coral Mitigation Fee Budget		\$ 5,000.00	1.0	\$5,000	1.0	\$5,000
Dive Equipment - Air Fills		\$ 45.00	32.0	\$1,440	32.0	\$1,440
Permit Fees		\$ 500.00	1.0	\$500	1.0	\$500
					-	
					-	
TOTAL OTHER DIRECT COSTS				\$7,940		\$7,940
TETRA TECH OWNED EQUIPMENT						
					-	
TOTAL TT EQUIPMENT						
GRAND TOTAL				\$53,120		\$53,120

NAVAL AIR STATION KEY WEST MOLE PIER 2 BULKHEAD REPAIRS

DESIGN DRAWINGS



VICINITY MAP KEY WEST, FLORIDA

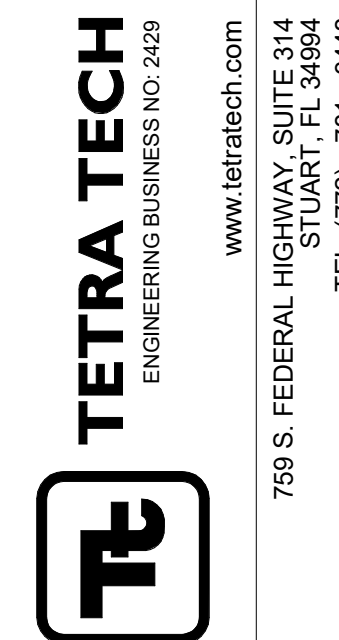


KEY WEST CITY COMMISSION

TERI JOHNSTON, MAYOR
CLAYTON LOPEZ, COMMISSIONER
JIMMY WEEKLEY, COMMISSIONER
GREGORY DAVILA, COMMISSIONER
SAMUEL KAUFMAN, COMMISSIONER
MARY LOU HOOVER, COMMISSIONER
BILLY WARDLOW, COMMISSIONER

INDEX OF SHEETS:

SHEET NO.	TITLE	LATEST UPDATE	REV.
G-001	COVER SHEET AND VICINITY MAP	4/29/22	0
S-001	STRUCTURAL GENERAL NOTES	4/29/22	0
S-101	BULKHEAD PLAN	4/29/22	0
S-301	BULKHEAD SECTIONS	4/29/22	0



Jason L. Burkett, PE
#69879

MARK	DATE	DESCRIPTION	BY

NAVAL AIR STATION KEY WEST
MOLE PIER 2 BULKHEAD
COVER SHEET AND
VICINITY MAP

PROJ: 200-67639-22002
DESN: NNJ
DRWN: NNJ
CHKD: JLB

G-001



STRUCTURAL GENERAL NOTES

- THESE GENERAL NOTES PRESENT AND/OR SUMMARIZE KEY PROJECT INFORMATION FOR THE DRAWING READER'S CONVENIENCE. SEE ALSO INDIVIDUAL DRAWING NOTES AND PROJECT SPECIFICATIONS FOR FURTHER DETAILS AND REQUIREMENTS.
- ALL REFERENCED STANDARDS HEREIN ARE TO MOST RECENT ISSUE IN EFFECT AS OF THE DATE OF THESE DOCUMENTS, UNLESS NOTED OTHERWISE ON THE DRAWING.
- ALL EXISTING DIMENSIONS SHOWN WITH THE ± SYMBOL ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE FABRICATION AND CONSTRUCTION.
- SUBMIT SHOP DRAWINGS, PROJECT DATA AND SAMPLES.
- ACCESS TO THE PROJECT SITE SHALL BE COORDINATED WITH THE US NAVY IN ACCORDANCE WITH THEIR REQUIREMENTS AT THE EXPENSE OF THE CONTRACTOR.

ABBREVIATIONS

ADD'L	ADDITIONAL	GALV	GALVANIZED	PSI	POUNDS PER SQUARE INCH
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	GR.	GRADE	QTY	QUANTITY
CJ	CONSTRUCTION JOINT	HK	HOOK	RAD.	RADIUS
CONC	CONCRETE	HORIZ	HORIZONTAL	REF	REFERENCE
CONST	CONSTRUCTION	HT	HEIGHT	REINF.	REINFORCEMENT
CONT	CONTINUOUS	IN.	INCH	REQ	REQUIRED
COORD	COORDINATE	INSUL	INSULATION	REV	REVISION
CTR	CENTER	L	ANGLE	SCHED	SCHEDULE
DEMO	DEMOLISH	LBS	POUNDS	SF	SQUARE FOOT
DIA	DIAMETER	LF	LINEAR FOOT (FEET)	SHT.	SHEET
DIM	DIMENSION	LOC	LOCATION	SIM.	SIMILAR
DIST	DISTANCE	MATL	MATERIAL	SPA.	SPACE
DTL	DETAIL	MAX	MAXIMUM	SPEC	SPECIFICATIONS
DWG(S)	DRAWING(S)	MFR	MANUFACTURER	SO	SQUARE
DWL	DOWEL	MID	MIDDLE / MIDPOINT	SS	STAINLESS STEEL
E/EXIST.	EXISTING	MIN	MINIMUM, MINUTE	STAG.	STAGGER
EA	EACH	MISC.	MISCELLANEOUS	STD	STANDARD
EF	EACH FACE	MTL	METAL	STL	STEEL
EL / ELEV.	ELEVATION	N	NEW	STL JST	STEEL JOIST
ELEC	ELECTRIC(AL)	N.T.S.	NOT TO SCALE	STRUCT	STRUCTURE(AL)
ENGR	ENGINEER	NA	NOT APPLICABLE	SYM	SYMMETRICAL
EQ	EQUAL	NO	NUMBER	T/	TOP OF
EQUIP	EQUIPMENT	NOM	NOMINAL	THK	THICKNESS
EW	EACH WAY	O.C.	ON CENTER	TYP	TYPICAL
EXIST	EXISTING	O.D.	OUTSIDE DIAMETER	UNO	UNLESS NOTED OTHERWISE
EXP	EXPANSION	OPH	OPPOSITE HAND	V.I.F.	VERIFY IN FIELD
F.V.	FIELD VERIFY	OPNG	OPENING	VERT	VERTICAL
FND.	FOUNDATION	OPP	OPPOSITE	W/	WITH
FRMG	FRAMING	ORIG	ORIGINAL		
FT	FOOT	PLF	POUNDS PER LINEAR FOOT		
FTG	FOOTING	PSF	POUNDS PER SQUARE FOOT		

DESIGN CRITERIA

1. REFERENCES:

- ICC INTERNATIONAL BUILDING CODE, 2018 EDITION, RISK CATEGORY II IN ACCORDANCE WITH TABLE 1604.5
- STATE BUILDING CODE: FLORIDA BUILDING CODE, 7TH EDITION
- ASCE/SEI 7-16 - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
- UFC 4-150-07: O&M - MAINTENANCE OF WATERFRONT FACILITIES, JUNE 2001; CHANGE 1, 01 SEPTEMBER 2012
- UFC 1-200-01: DOD BUILDING CODE (GENERAL BUILDING REQUIREMENTS), WITH CHANGE 1, 08 OCTOBER 2019
- UFC 3-301-01: STRUCTURAL ENGINEERING, WITH CHANGE 1, 01 OCTOBER 2019

STRUCTURAL STEEL

1. REFERENCES:

- AISC STEEL CONSTRUCTION MANUAL, 14TH EDITION

2. MATERIALS:

- GRADE STEEL ANGLES, AND PLATES: ASTM A36
- ANCHOR BOLTS: ASTM F1554, GRADE 55, WELDABLE.
- STRUCTURAL BOLTS: ASTM A325-N

3. CONNECTIONS:

- WELDING - PERFORM WELDING IN ACCORDANCE WITH AWS D1.1 OR AWS D3.6 CODES, LATEST EDITION, WELDS SHALL BE MADE ONLY BY OPERATORS CERTIFIED BY AWS IN PERFORMING THE TYPE OF WORK INDICATED.

4. TOLERANCES: AISC CODE OF STANDARD PRACTICE (LATEST EDITION)

5. SHOP DRAWINGS:

- SUBMIT ERECTION AND FABRICATION SHOP DRAWINGS.
- SUBMIT ERECTION PROCEDURES AND TEMPORARY BRACING PLAN FOR A/E REVIEW.
- SUBMIT WELDING PROCEDURES INCLUDING INFORMATION OF WELD STRENGTH AND WELDING ROD MATERIAL.

UNDERWATER WELDING

1. REFERENCES:

- AWS D3.6, 2017

2. CLASSIFICATION AND DESIGN OF WELDED CONNECTION: CLASS A WELD

3. WELDING ROD:

- MATERIAL: NICKEL OR STAINLESS STEEL.
- ROD USED SHOULD BE ACCEPTABLE FOR WELDING HIGH CARBON MATERIAL TO LOW CARBON MATERIAL.
- WELDING ROD TO MEET AWS D3.6 CODE REQUIREMENTS.

4. WORKMANSHIP:

- REPAIR PROCEDURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE WELD REPAIR BEGINS. THE SURFACES TO BE WELDED AND THE SURFACES ADJACENT TO THE WELD SHALL BE FREE FROM SCALE, PAINT, MARINE GROWTH, OR OTHER FOREIGN MATTER.
- BEFORE WELDING OVER PREVIOUSLY DEPOSITED METAL, ALL SLAG SHALL BE REMOVED. ADJACENT BASE METAL SHALL BE CLEANED BY BRUSHING OR OTHER SUITABLE MEANS. THIS REQUIREMENT SHALL APPLY NOT ONLY TO SUCCESSIVE LAYERS BUT ALSO TO SUCCESSIVE BEADS AND TO THE CRATER AREA WHEN WELDING IS RESUMED AFTER ANY INTERRUPTION.
- AFTER COMPLETION OF A WELD, WELDED SURFACES SHALL BE CLEANED AND PREPARED SUCH THAT SURFACE FINISH CONDITIONS WILL NOT INTERFERE WITH INSPECTIONS OR NONDESTRUCTIVE EXAMINATIONS TO BE EMPLOYED. EXCESSIVE SLAG AND SPATTER SHALL BE REMOVED FROM THE WELD AND ADJACENT BASE METAL. SURFACE DISCONTINUITIES WHICH COULD MASK WELD DEFECTS SHALL BE REMOVED.

5. QUALIFICATION:

- ALL PERSONS PERFORMING ANY WELDING SHALL BE QUALIFIED FOR A GIVEN WELD CLASS IN ACCORDANCE WITH THIS CLAUSE. SATISFACTORY EVIDENCE THAT THE REQUIREMENTS ARE MET SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER PRIOR TO ANY PRODUCTION WELDING.
- THE CHEMICAL COMPOSITIONS OF ALL BASE METALS TO BE WELDED IN PRODUCTION SHALL BE KNOWN OR DETERMINED IN ACCORDANCE WITH ANY OF THE FOLLOWING METHODS: SPECIFICATION LIMITS, MILL TEST REPORTS, ANALYSIS USING STANDARD TEST METHODS AND HISTORICAL DATA.

6. INSPECTION:

- CONTRACTOR SHALL ENSURE THAT MATERIALS, FABRICATION, AND EXAMINATION PROCEDURES CONFORM TO THIS CODE.
- THE ENGINEER SHALL BE NOTIFIED PRIOR TO THE START OF WELDING OPERATIONS:
 - INSPECTION OF MATERIALS. THE ENGINEER SHALL HAVE THE RIGHT TO EXAMINE THE MATERIALS, WELDING CONSUMABLES, AND SUPPORTING DOCUMENTATION TO VERIFY THAT THEY ARE QUALIFIED FOR USE IN PRODUCTION WELDING.
 - INSPECTION OF EQUIPMENT. THE ENGINEER SHALL HAVE THE RIGHT TO EXAMINE THE EQUIPMENT TO VERIFY THAT IT IS SUITABLE FOR USE IN PRODUCTION WELDING.
- ALL WELDS, INCLUDING REPAIR WELDS, SHALL BE EXAMINED BY UNDERWATER VIDEO.
- CONTRACTOR SHALL PROVIDE SUFFICIENT EVIDENCE TO THE OWNER/EO TO VERIFY THAT THE SIZE, LENGTH, AND LOCATION OF ALL WELDS CONFORM TO THE REQUIREMENTS OF THIS STANDARD AND TO THE DETAIL DRAWINGS, THAT NO SPECIFIED WELDS ARE OMITTED, AND THAT NO UNSPECIFIED WELDS HAVE BEEN ADDED WITHOUT APPROVAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR INITIAL VISUAL EXAMINATION OF ALL WELDS. THE CONTRACTOR SHALL CORRECT NONCONFORMING WELDS IN ACCORDANCE WITH THE WELDING PROCEDURE SPECIFICATION AND THE REQUIREMENTS OF THIS CODE.
- IN THE EVENT THAT NONCONFORMING WELDS, OR THE REMOVAL OF NONCONFORMING WELDS, DAMAGE THE BASE METAL AND RETENTION OF THE BASE METAL IS NOT IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR SHALL REMOVE AND REPLACE THE DAMAGED BASE METAL OR SHALL OTHERWISE CORRECT THE DEFICIENCY IN A MANNER APPROVED BY THE ENGINEER.

SOIL VOID INFILL MATERIAL

1. REFERENCES:

- ASTM D1621
- ASTM D1622

2. MATERIAL:

- HIGH DENSITY POLYURETHANE FOAM GROUT.
- PROPERTIES:
 - DENSITY (ASTM D1622) = 3.5 - 4.5 LBS./CU. FT.
 - COMPRESSIVE STRENGTH (ASTM D-1621) = 55 PSI (MIN.)
 - TENSILE STRENGTH (ASTM D-1623) = 90 PSI (MIN.)
 - SHEAR STRENGTH (ASTM C-273) = 45 PSI (MIN.)
 - FLEXURAL STRENGTH (ASTM D-790) = 90 PSI (MIN.)
 - CLOSED CELL CONTENT (ASTM D-1940) = +85 (%)
- IT SHALL BE WATER BLOWN AND REACH 90% COMPRESSIVE STRENGTH WITHIN 30 MINUTES OF INJECTION.

3. MATERIAL TESTS AND SUBMITTALS:

- MATERIAL MEETS ALL THE ASTM REQUIREMENTS
- AQUATIC AND TERRESTRIAL TOXICITY TESTING AND CHEMICAL ANALYSIS (RCRA METALS, TOC, AND COD). IT MUST SHOW A LACK OF TOXICITY AT 200 PPM TCLP LEACHATE AND SHOW NON-TOXIC FOR ALL TEST SPECIES.
- PANEL TEST FOR HYDRO-INSENSITIVITY OF HIGH-DENSITY POLYURETHANE GROUT.
- FIVE MACHINE MIXED FIELD SAMPLES FOR DENSITY
- FIVE MACHINE MIXED FIELD SAMPLES FOR COMPRESSIVE STRENGTH

4. CONTRACTOR SHALL CONDUCT A SITE VISIT PRIOR TO SUBMITTING A BID. THE PRE-BID SITE VISIT MUST BE COORDINATED BY THE OWNER'S REPRESENTATIVE.

5. DRILL INJECTION HOLES IN THE PATTERN SHOWN ON THE STANDARD DRAWINGS BY MATERIAL SUPPLIER. CONTINUOUSLY MONITOR FOR MOVEMENT OF THE STRUCTURE. INSTALL A RAPID SET, NON-SHRINK PATCHING MATERIAL INTO THE ANNULAR SPACE BETWEEN THE EXISTING SHEET PILES AND NEW REPAIR PLATE AND STRIKE PATCHES FLUSH WITH THE SURFACE OF THE SURROUNDING.

6. MATERIAL SUPPLIER SHALL HAVE A MINIMUM 3 YEARS OF EXPERIENCE INJECTING 1:1 BY VOLUME, TWO-PART, EXPANSIVE POLYURETHANE FOAM GROUT THROUGH HOLES OR TUBES INTO SOILS WITH MONITORING. EVIDENCE OF PRIOR SIMILAR PROJECT EXPERIENCE MUST BE SUBMITTED WITH THE BID DOCUMENTS. AN EMPLOYEE OF THE COMPANY SHALL BE A LICENSED PROFESSIONAL ENGINEER (P.E.) WITH A MINIMUM OF 3 YEARS OF EXPERIENCE IN STABILIZATION OF SHEET PILE SOILS.

7. A TURBIDITY BARRIER SHALL BE USED TO CAPTURE AND REMOVE ALL POLYURETHANE FOAM GROUT THAT FLOATS TO THE SURFACE DURING INSTALLATION.

ENVIRONMENTAL REGULATIONS

1. WELDING NEW REPAIR PLATES ON THE EXISTING SHEET PILES IS ASSUMED TO BE "MAINTENANCE REPAIRS" OF AN EXISTING BULKHEAD.

2. PROPOSED REPAIRS ARE ASSUMED TO BE EXEMPT FROM ENVIRONMENTAL PERMITTING, PURSUANT TO F.S. 62-330.051 "EXEMPT ACTIVITIES". CONTRACTOR SHALL VERIFY EXEMPTIONS WITH THE ARMY CORPS OF ENGINEERS (USACE), THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) AND THE FLORIDA KEYS NATIONAL MARINE SANCTUARY (NOAA/FKNMS) TO ENSURE REGULATORY COMPLIANCE.

REPAIR SCHEDULE AND BASE BID QUANTITIES

STA	REPAIR PLATES		SOIL VOID FILL		NOTES
	VERTICAL LOCATION	PLATE SIZE (WIDTH x HEIGHT)	VERTICAL LOCATION	ESTIMATED VOID VOLUME (CUBIC FEET)	
1+00	BOTTOM OF EXPOSED SHEET	20" x 56"	BOTTOM OF EXPOSED SHEET	8	REFER TO R-3 ON 1/S-301 FOR REPAIR PLATE DETAIL
1+15	4 FT UP FROM BOTTOM EXPOSED SHEET	36" x 89"	5.5 FT UP FROM BOTTOM EXPOSED SHEET	7560	INFILL VOID FROM GRADE WITH #57 STONES BEFORE INJECTING WITH POLYURETHANE REFER TO R-3 ON 1/S-301 FOR REPAIR PLATE DETAIL
1+15	BOTTOM OF EXPOSED SHEET	22" x 31"	NA	NA	REFER TO R-3 ON 1/S-301 FOR REPAIR PLATE DETAIL
1+20	BOTTOM OF EXPOSED SHEET	22" x 39"	BOTTOM OF EXPOSED SHEET	8	REFER TO R-3 ON 1/S-301 FOR REPAIR PLATE DETAIL
1+24	BOTTOM OF EXPOSED SHEET	22" x 90"	BOTTOM OF EXPOSED SHEET	8	REFER TO R-3 ON 1/S-301 FOR REPAIR PLATE DETAIL
1+39	4 FT UP FROM BOTTOM EXPOSED SHEET	22" x 70"	2 FT UP FROM BOTTOM EXPOSED SHEET	8	REFER TO R-3 ON 1/S-301 FOR REPAIR PLATE DETAIL
1+45	BOTTOM OF EXPOSED SHEET	22" x 32"	BOTTOM OF EXPOSED SHEET	8	REFER TO R-3 ON 1/S-301 FOR REPAIR PLATE DETAIL
1+62	BOTTOM OF EXPOSED SHEET	22" x 32"	BOTTOM OF EXPOSED SHEET	8	REFER TO R-3 ON 1/S-301 FOR REPAIR PLATE DETAIL
5+00	BOTTOM OF EXPOSED SHEET	20" x 52"	BOTTOM OF EXPOSED SHEET	8	REFER TO R-3 ON 1/S-301 FOR REPAIR PLATE DETAIL
6+85	SPLIT SEAM AT B/ EXPOSED SHEET (~33FT BELOW GR)	12" x 33"	BOTTOM OF EXPOSED SHEET	8	REFER TO R-2 ON 1/S-301 FOR REPAIR PLATE DETAIL
9+10	SPLIT SEAM AT B/ EXPOSED SHEET (~33FT BELOW GR)	6" x 21"	BOTTOM OF EXPOSED SHEET	8	REFER TO R-1 ON 1/S-301 FOR REPAIR PLATE DETAIL
TOTAL:		226" x 545"			

NOT

- ALL STEEL PLATE SIZES AND VOID VOLUMES ARE APPROXIMATE AND TO BE FIELD VERIFIED.
- CONTRACTOR SHALL PROVIDE UNIT PRICES FOR ADD/DEDUCT OF ACTUAL QUANTITIES OF STEEL, STONE AND FOAM FILL.



Jason L. Burkett, PE
#69879

BY

DESCRIPTION

DATE

MARK

NAVAL AIR STATION KEY WEST
MOLE PIER 2 BULKHEAD

STRUCTURAL GENERAL
NOTES

PROJ: 200-67639-22002

DESN: JLB

DRWN: NNJ

CHKD: JLB

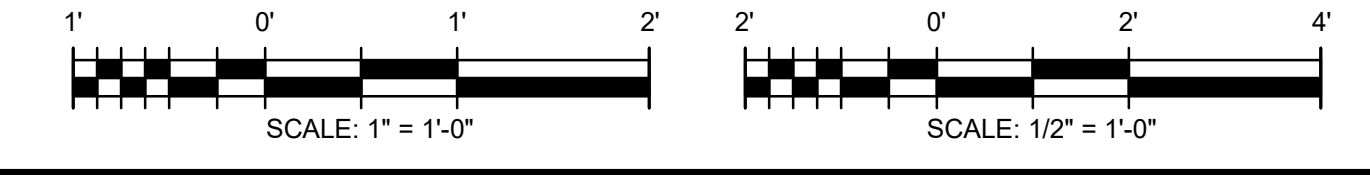
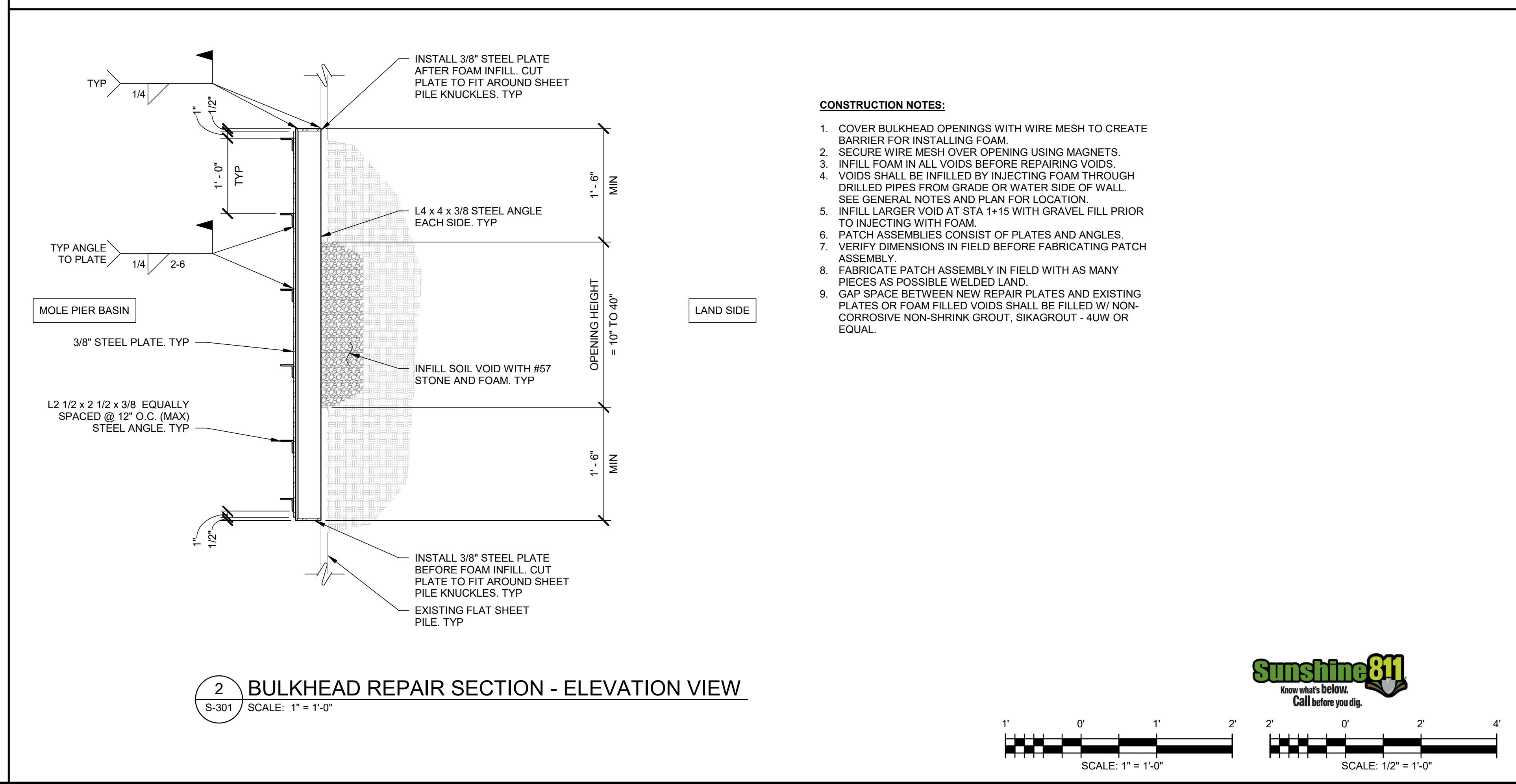
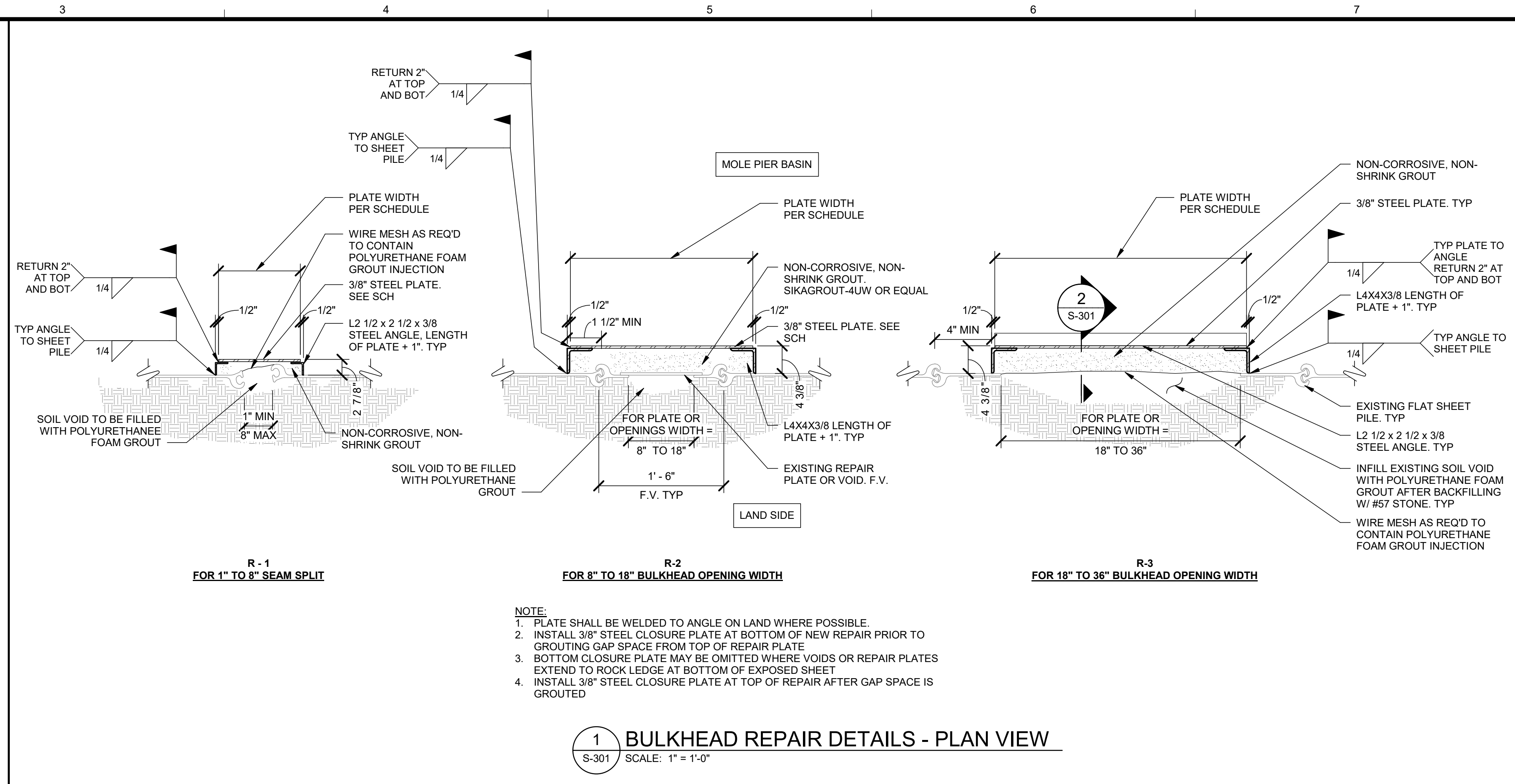
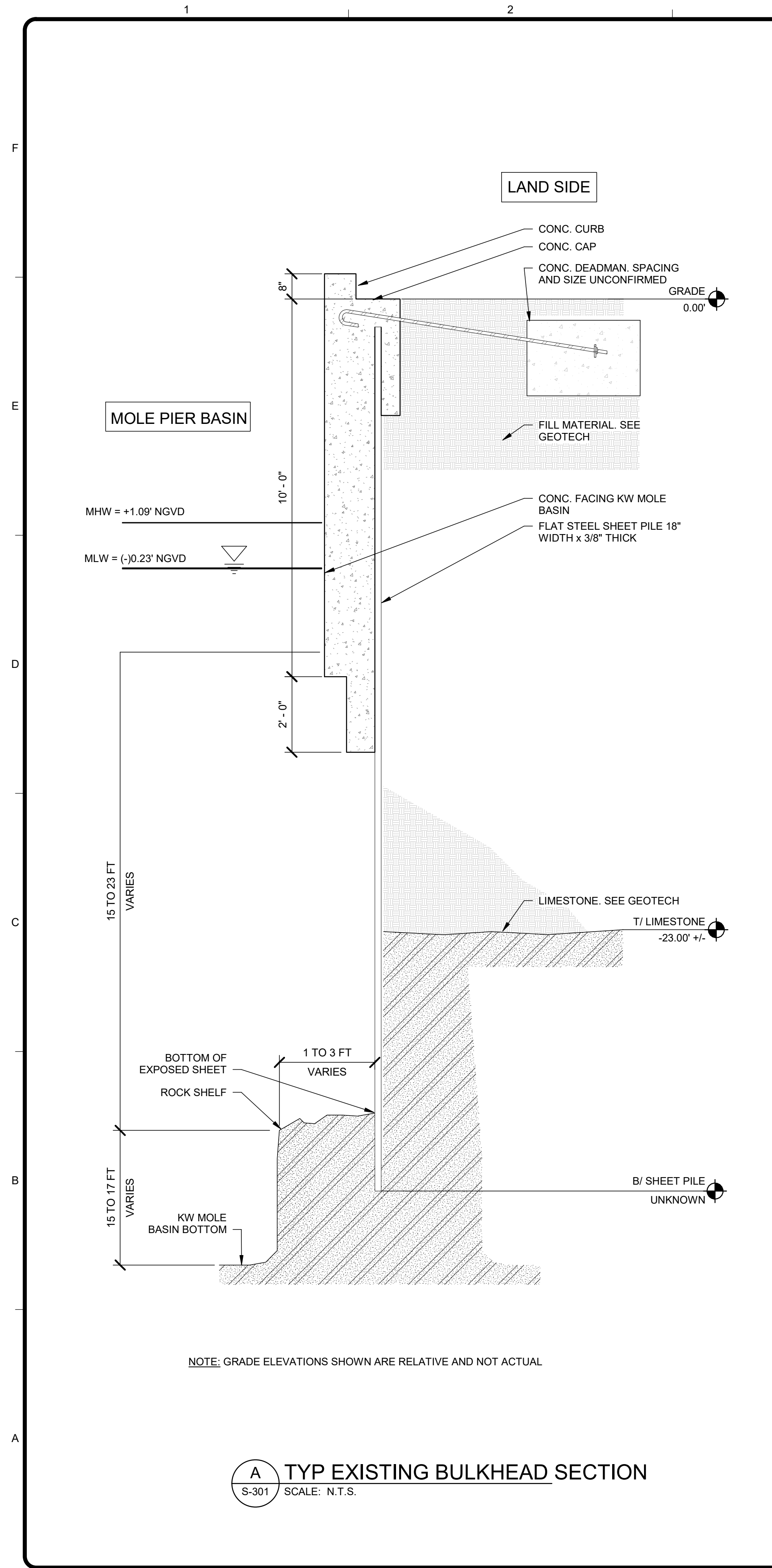
S-001




Know what's below.
Call before you dig.

Bar measures 1 inch, otherwise drawing is not to scale

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TETRA TECH
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STUART, FL 34984
TEL: (772) - 781 - 3448


Jason L. Burkett, PE
#69879

BY	DATE	DESCRIPTION

NAVAL AIR STATION KEY WEST
MOLE PIER 2 BULKHEAD
BULKHEAD SECTIONS

PROJ:	200-67639-22002
DESN:	JLB
DRWN:	NNJ
CHKD:	JLB

S-301



Know what's below.
Call before you dig.

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