

CITY OF SAVANNAH EASTERN WHARF BULKHEAD STABILIZATION

SAVANNAH, GEORGIA
COLLINS PROJECT NO. 40-10175.03 TASK #10
ISSUED FOR CONSTRUCTION - 9/16/21

Approximate Location of Project:
LATITUDE 32° 04' 40.6" N
LONGITUDE 81° 04' 29.5" W

PROJECT LOCATION



SOURCE: GOOGLE EARTH

PROJECT SITE



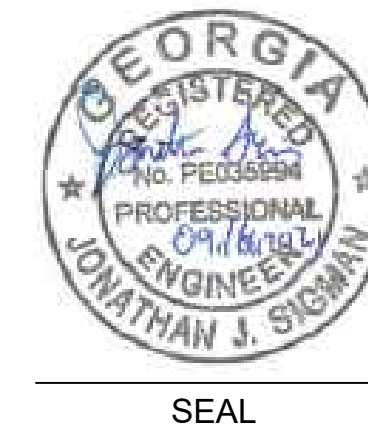
SOURCE: GOOGLE EARTH



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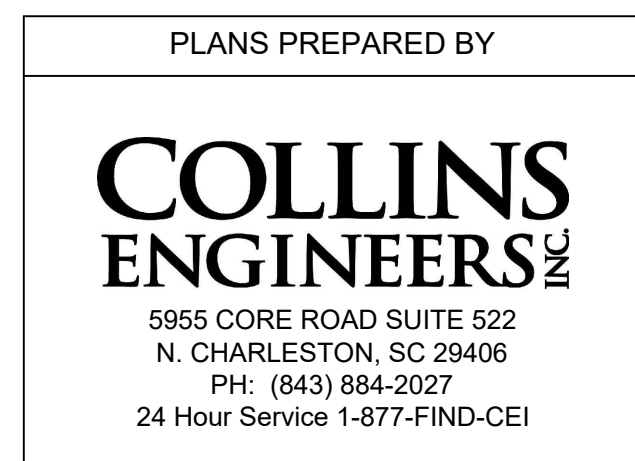
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PROJECT LOCATION
EASTERN WHARF
SAVANNAH, GEORGIA 31401



SEAL

COLLINS ENGINEERS INCORPORATED
CONTROL NUMBER: 0231955



CODES AND DOCUMENTS

- ALL CONSTRUCTION SHALL BE PERFORMED IN CONFORMANCE WITH THE BUILDING AND DESIGN CODES REFERENCED WITHIN THESE DOCUMENTS. THE PROJECT DOCUMENTS REFER TO THE FOLLOWING CODES AND STANDARDS, UON:

BUILDING CODE
INTERNATIONAL BUILDING CODE 2012 WITH GEORGIA AMENDMENTS.

CONCRETE
"BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
THE AMERICAN CONCRETE INSTITUTE (ACI 318-2011)

STRUCTURAL STEEL
"SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, FOURTEENTH EDITION"
THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

- THE STRUCTURAL DRAWINGS AND SPECIFICATIONS ARE ONE PART OF THE CONTRACT DOCUMENTS AND SHALL BE USED IN CONJUNCTION WITH THE REMAINING PARTS OF THE CONTRACT DOCUMENTS. SPECIFICATIONS HAVE BEEN ISSUED IN CONJUNCTION WITH THESE DRAWINGS.
- "DRAWINGS" MEANS THE LATEST STRUCTURAL DESIGN DRAWINGS, UON
"SPECIFICATIONS" MEANS THE LATEST PROJECT SPECIFICATIONS, UON.
- THE SPECIFICATIONS ARE AN INTEGRAL PART OF THE CONTRACT DOCUMENTS AND SHALL BE USED IN CONJUNCTION WITH THE STRUCTURAL DRAWINGS. IN CASES, IF ANY, WHERE REQUIREMENTS INDICATED ON THE STRUCTURAL DRAWINGS DIFFER FROM THE SPECIFICATIONS, NOTIFY THE STRUCTURAL ENGINEER. FOR PRICING, ASSUME THAT THE DRAWINGS TAKE PRECEDENCE OVER THE SPECIFICATIONS IN THE CASE OF ANY CONFLICTS.
- 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.
- ASSUME EQUAL SPACING IF NOT INDICATED ON DRAWINGS.
- USE ONLY DIMENSIONS INDICATED ON THE DRAWINGS. DO NOT SCALE DRAWINGS OR USE ANY DIMENSIONS TAKEN FROM ELECTRONIC DRAWING FILES.

CONTRACTOR RESPONSIBILITIES AND COORDINATION

- THE CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS FOR SUCCESSFUL COMPLETION OF THIS OPERATIONAL PROJECT.
- THE SPECIFICATIONS AND STRUCTURAL DRAWINGS REPRESENT THE REQUIRED REPAIR WORK AND DO NOT INDICATE THE METHOD OF CONSTRUCTION, UON. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND OPERATIONAL SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS, NEW AND EXIST, BY MEASUREMENTS AND SURVEYS AT THE JOB SITE, PRIOR TO SUBMITTAL OF SHOP DRAWINGS. THE CONTRACTOR SHALL TAKE ANY AND ALL OTHER MEASUREMENTS NECESSARY TO VERIFY CONFORMANCE WITH THE DRAWINGS AND TO PERFORM THE WORK PROPERLY.
- ALL FIELDWORK SHALL BE COORDINATED AND CONTINUOUSLY SUPERVISED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL MAKE NO DEVIATION FROM THE DRAWINGS WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER OF RECORD.
- THE CONTRACTOR SHALL NOTIFY THE CITY OF SAVANNAH AND STRUCTURAL ENGINEER OF RECORD OF ANY DISCREPANCIES BETWEEN THE STRUCTURAL DOCUMENTS AND EXISTING CONDITIONS FOR RESOLUTION PRIOR TO PROCEEDING WITH THE WORK.
- THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER OF RECORD OF ANY DISCREPANCIES BETWEEN THE STRUCTURAL DRAWINGS AND DETAILS, FOR RESOLUTION PRIOR TO PROCEEDING WITH THE WORK. COMPLY WITH STANDARD CONDITIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE UNTIL THE CONSTRUCTION OF THE STRUCTURE REACHES ITS FINISHED STATE.
- RIGHT-OF-WAY WORK PERMIT WILL BE REQUIRED. THERE IS NO COST FOR THIS PERMIT.

CONCRETE

- CONCRETE CONSTRUCTION TO CONFORM TO ACI 301 AND ACI 318.
- CONCRETE $f_c = 4000$ PSI @ 28 DAYS. SUBMIT MIX DESIGN FOR APPROVAL.
- REINFORCING TO BE GRADE 60 ($F_y = 60$ KSI) EPOXY COATED PER GDOT.
- PROVIDE NORMAL WEIGHT CONCRETE WITH MINIMUM CURED DENSITY OF 145 PCF, AND AGGREGATE CONFORMING TO ASTM C33, UON.
- PROVIDE MAXIMUM WATER/CEMENT RATIO OF 0.45.
- THE USE OF CALCIUM CHLORIDE AND OTHER CHLORIDE CONTAINING AGENTS IS PROHIBITED. THE USE OF RECYCLED CONCRETE IS PROHIBITED. PLACEMENT WITHIN AND CONTACT BETWEEN ALUMINUM ITEMS, INCLUDING ALUMINUM CONDUIT, AND CONCRETE IS PROHIBITED.

DEMOLITION

- ALL EXIST CONDITIONS SHOWN ARE FOR REFERENCE ONLY AND ARE TO BE FIELD VERIFIED BY THE CONTRACTOR.
- 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.
- THE CONTRACTOR SHALL 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.
- THE EXACT EXTENT OF DEMOLITION SHALL BE VERIFIED AT THE SITE. DETERMINE THE NATURE AND EXTENT OF DEMOLITION THAT WILL BE NECESSARY BY COMPARING THE DRAWINGS WITH THE EXIST CONDITIONS.
- THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE MEANS AND METHODS OF EXCAVATION AND ANY EXCAVATION SUPPORT.
- DO NOT REMOVE MORE OF THE EXISTING STRUCTURE THAN NECESSARY. DO NOT DAMAGE, MAR, OR DEFACE THE REMAINING STRUCTURE OR MATERIALS TO BE REUSED.
- ONLY ONE EXISTING HELICAL ANCHOR/TIE ROD MAY BE CUT AT ANY TIME PRIOR TO INSTALLATION OF AN ADJACENT NEW TIE ROD.

STEEL

- ALL NEW STEEL SHALL CONFORM TO ASTM A-709, GRADE 50, UON.
- TIE RODS SHALL CONFORM TO ASTM A615, GRADE 75 WITH ROLLED THREADS.
- H-PILES SHALL CONFORM TO ASTM A572, GRADE 50
- TENSION TIE RODS TO 30 KIPS TENSION FROM PILE CAP END.
- WELDING SHALL CONFORM TO AWS D1.1 AND USE E70XXLOW HYDROGEN ELECTRODES.
- ALL NEW STEEL TO BE COATED WITH COAL TAR EPOXY, "CARBOLINE BITUMASTIC 300M" OR ENGINEER APPROVED EQUAL. 10 MILS THICKNESS. ONLY THE TOP 25 FT OF STEEL H-PILES MUST BE COATED.
- AREAS OF FIELD WELDS SHALL BE CLEANED TO BRIGHT METAL PRIOR TO WELDING AND TOUCH-UP COATED AFTER INSPECTION.
- ACCESSORIES/HARDWARE FOR TIE RODS SHALL BE MATCHING LOAD CAPACITIES.
- CONTRACTOR TO SUBMIT PROPOSED WALE SPLICE DETAIL AND DESIGN FOR APPROVAL PRIOR TO FABRICATION.

NOMINAL PILE LOADS

COMPRESSION PILE
P = 75 TONS
M = 40 KIP/FT

TENSION PILE
T = 55 TONS
M = 30 KIP/FT

INSTALLED RESISTANCE = 2.5 X NOMINAL LOADS
PDA TESTS SHALL BE PERFORMED ON PILES UNTIL REQUIRED CAPACITY ACHIEVED. TEST FIRST TWO PILES AND 2 PERCENT OF PILES THEREAFTER. TEST PILES WILL BECOME PRODUCTION PILES.

REINFORCEMENT

- REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES:
DEFORMED REINFORCEMENT BARS: ASTM A615 (GRADE 60)
- DETAIL REINFORCEMENT BASED ON THE PROJECT REQUIREMENTS, ACI-318 AND ACI-315.
- ALL LAP SPLICES ARE TO BE ACI STANDARD CLASS B TENSION LAP SPLICES. WHERE BARS OF DIFFERENCE SIZES LAP, PROVIDE LAP SPLICE LENGTH FOR LARGER BAR.
- WHERE A 90-DEG. HOOK IS GRAPHICALLY INDICATED, PROVIDE ACI STANDARD 90-DEG. HOOK.
- FOR BARS INDICATED IN GROUPS, PROVIDE BARS OF EACH GROUP AT EQUAL SPACING, UON.
- WHERE DOWELS ARE INDICATED BUT NOT SIZED, PROVIDE DOWELS THAT MATCH SIZE AND LOCATION OF MAIN REINFORCEMENT AND LAP SPLICE WITH THE MAIN REINFORCEMENT.
- ALL REINFORCEMENT SHALL HAVE 3" CONCRETE PROTECTION (CLEAR COVER), UON.

ABBREVIATIONS

APPROX	APPROXIMATELY	OPP	OPPOSITE
BLDG	BUILDING	PEN	PENETRATION
BTW	BETWEEN	REINF	REINFORCING
CONC	CONCRETE	REQD	REQUIRED
CONT	CONTINUOUS	REQTS	REQUIREMENTS
DIA	DIAMETER	SF	SQUARE FEET
EXIST	EXISTING	SPECS	SPECIFICATIONS
F/	FACE OF	STRUC	STRUCTURAL
HDG	HOT-DIPPED GALVANIZED	T/	TOP OF
HORIZ	HORIZONTAL	TRANS	TRANSVERSE
LONG	LONGITUDINAL	TYP	TYPICAL
MANUF	MANUFACTURER	OC	ON CENTER
MAX	MAXIMUM	UON	UNLESS OTHERWISE NOTED
MIN	MINIMUM	VERT	VERTICAL
NWC	NORMAL WEIGHT CONCRETE	VIF	VERIFY IN FIELD

ISSUED FOR REVIEW	DATE	APPROVED
11/07/2019	09/15/2021	
REVISION	DATE	DESCRIPTION
1		



COLLINS ENGINEERS, INC.
1481 DEAN FOREST RD, SUITE A
SAVANNAH, GA 31405
PH: (912) 790-0123



COLLINS ENGINEERS INCORPORATED
CONTROL NUMBER: 0231955

DES	DEC	DRW	DEC	CHK	JS
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CITY OF SAVANNAH
EASTERN WHARF TIE BACK
GENERAL NOTES



SCALE:	AS SHOWN
PROJECT NO.:	40-10175.03
CONSTR. CONTR. NO.	
DRAWING NO.	
SHEET	2 OF 12

SCHEDULE OF SPECIAL INSPECTION SERVICES

PROJECT	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
1704.2.5 Inspection of Fabricators					
Verify fabrication/quality control procedures	In-plant review (3)	Y	Periodic		
1705.1.1 Special Cases (work unusual in nature, including but not limited to alternative materials and systems, unusual design applications, materials and systems with special manufacturer's requirements)					
	Submittal review, shop (3) and/or field inspection	N			
1705.2 Steel Construction					
1. Fabricator and erector documents (Verify reports and certificates as listed in AISC 360, chapter N, paragraph 3.2 for compliance with construction documents)	Submittal Review	Y	Each submittal		
2. Material verification of structural steel	Shop (3) and field inspection	Y	Periodic		
3. Embedments (Verify diameter, grade, type, length, embedment. See 1705.3 for anchors)	Field inspection	N	Periodic		
4. Verify member locations, braces, stiffeners, and application of joint details at each connection comply with construction documents	Field inspection	Y	Periodic		
5. Structural steel welding:					
a. Inspection tasks Prior to Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-1)	Shop (3) and field inspection	Y	Observe or Perform as noted (4)		
b. Inspection tasks During Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-2)	Shop (3) and field inspection	Y	Observe (4)		
c. Inspection tasks After Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-3)	Shop (3) and field inspection	Y	Observe or Perform as noted (4)		
d. Nondestructive testing (NDT) of welded joints: <i>see Commentary</i>					
1) Complete penetration groove welds 5/16" or greater in <i>risk category</i> III or IV	Shop (3) or field ultrasonic testing - 100%	N	Periodic		
2) Complete penetration groove welds 5/16" or greater in <i>risk category</i> II	Shop (3) or field ultrasonic testing - 10% of welds minimum	N	Periodic		
3) Thermally cut surfaces of access holes when material t > 2"	Shop (3) or field magnetic Partical or Penetrant testing	N	Periodic		
4) Welded joints subject to fatigue when required by AISC 360, Appendix 3, Table A-3.1	Shop (3) or field radiographic or Ultrasonic testing	N	Periodic		
5) Fabricator's NDT reports when fabricator performs NDT	Verify reports	N	Each submittal (5)		
6. Structural steel bolting:					
a. Inspection tasks Prior to Bolting (Observe, or perform tasks for each bolted connection, in accordance with QA tasks listed in AISC 360, Table N5.6-1)	Shop (3) and field inspection	N	Observe or Perform as noted (4)		

SCHEDULE OF SPECIAL INSPECTION SERVICES

PROJECT	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
b. Inspection tasks During Bolting (Observe the QA tasks listed in AISC 360, Table N5.6-2)					
1) Pre-tensioned and slip-critical joints			Observe (4)		
a) Turn-of-nut with matching markings			Periodic		
b) Direct tension indicator			Periodic		
c) Twist-off type tension control bolt			Periodic		
d) Turn-of-nut without matching markings			Continuous		
e) Calibrated wrench			Continuous		
2) Snug-tight joints			Periodic		
c. Inspection tasks After Bolting (Perform tasks for each bolted connection in accordance with QA tasks listed in AISC 360, Table N5.6-3)					
7. Inspection of steel elements of composite construction prior to concrete placement in accordance with QA tasks listed in AISC 360, Table N6.1	Shop (3) and field inspection and testing		Observe or Perform as noted (4)		
1705.2.2 Steel Construction Other Than Structural Steel					
1. Material verification of cold-formed steel deck:					
a. Identification markings	Field inspection		Periodic		
b. Manufacturer's certified test reports	Submittal Review		Each submittal		
2. Connection of cold-formed steel deck to supporting structure:					
a. Welding			Periodic		
b. Other fasteners (in accordance with AISC 360, Section N6)	Shop (3) and field inspection				
1) Verify fasteners are in conformance with approved submittal			Periodic		
2) Verify fastener installation is in conformance with approved submittal and manufacturer's recommendations			Periodic		
3. Reinforcing steel					
a. Verification of weldability of steel other than ASTM A706			Periodic		
b. Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, boundary elements of special concrete structural walls and shear reinforcement			Continuous		
c. Shear reinforcement			Continuous		
d. Other reinforcing steel			Periodic		
4. Cold-formed steel trusses spanning 60 feet or greater					
a. Verify temporary and permanent restraint/bracing are installed in accordance with the approved truss submittal package	Field inspection		Periodic		
1705.3 Concrete Construction					
1. Inspection of reinforcing steel installation (see 1705.2.2 for welding)	Shop (3) and field inspection	Y	Periodic		
2. Inspection of prestressing steel installation	Shop (3) and field inspection	Y	Periodic		

ISSUED FOR REVIEW	11/07/2019	DATE
ADDITION 1	09/15/2021	DATE
DESCRIPTION		DATE
DRW		DATE
APPR		DATE
 COLLINS ENGINEERS <small>COLLINS ENGINEERS, INC. 1481 DEAN FOREST RD, SUITE A SAVANNAH, GA 31405 PH: (912) 790-0123</small>		
 <small>GEORGIA REGISTERED PROFESSIONAL ENGINEER NO. FE035594 JONATHAN J. STEIMAN</small>		
<small>COLLINS ENGINEERS INCORPORATED CONTROL NUMBER: 0231955</small>		
DES	DEC	CHK
DRW	DEC	JS
CITY OF SAVANNAH EASTERN WHARF TIE BACK SPECIAL INSPECTIONS - I		
SCALE: AS SHOWN		
PROJECT NO.: 40-10175.03		
CONSTR. CONTR. NO.		
DRAWING NO.		
SHEET	3	OF 12
G-2		


SCHEDULE OF SPECIAL INSPECTION SERVICES

PROJECT	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
3. Inspection of anchors cast in concrete where allowable loads have been increased per section 1908.5 or where strength design is used	Shop (3) and field inspection	N	Periodic		
4. Inspection of anchors and reinforcing steel post-installed in hardened concrete: Per research reports including verification of anchor type, anchor dimensions, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, concrete minimum thickness, anchor embedment and tightening torque	Field inspection	N	Periodic or as required by the research report issued by an approved source		
5. Verify use of approved design mix	Shop (3) and field inspection	Y	Periodic		
6. Fresh concrete sampling, perform slump and air content tests and determine temperature of concrete	Shop (3) and field inspection	Y	Continuous		
7. Inspection of concrete and shotcrete placement for proper application techniques	Shop (3) and field inspection	Y	Continuous		
8. Inspection for maintenance of specified curing temperature and techniques	Shop (3) and field inspection	Y	Periodic		
9. Inspection of prestressed concrete:	Shop (3) and field inspection	N			
a. Application of prestressing force			Continuous		
b. Grouting of bonded prestressing tendons in the seismic-force-resisting system			Continuous		
10. Erection of precast concrete members					
a. Inspect in accordance with construction documents	Field inspection		In accordance with construction documents		
b. Perform inspections of welding and bolting in accordance with Section 1705.2	Field inspection		In accordance with Section 1705.2		
11. Verification of in-situ concrete strength, prior to stressing of tendons in post tensioned concrete and prior to removal of shores and forms from beams and structural slabs	Review field testing and laboratory reports	N	Periodic		
12. Inspection of formwork for shape, lines, location and dimensions	Field inspection	Y	Periodic		
13. Concrete strength testing and verification of compliance with construction documents	Field testing and review of laboratory reports	Y	Periodic		
1705.4 Masonry Construction					
(A) Level A, B and C Quality Assurance:					
1. Verify compliance with approved submittals	Field Inspection	N	Periodic		
(B) Level B Quality Assurance:					
1. Verification of f_m and f_{AAC} prior to construction	Testing by unit strength method or prism test method	N	Periodic		


SCHEDULE OF SPECIAL INSPECTION SERVICES

PROJECT	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
(C) Level C Quality Assurance:					
1. Verification of f_m and f_{AAC} prior to construction and for every 5,000 SF during construction	Testing by unit strength method or prism test method	N	Periodic		
2. Verification of proportions of materials in premixed or preblended mortar, prestressing grout, and grout other than self-consolidating grout, as delivered to the project site	Field inspection	N	Continuous		
3. Verify placement of masonry units	Field Inspection	N	Periodic		
(D) Levels B and C Quality Assurance:					
1. Verification of Slump Flow and Visual Stability Index (VSI) of self-consolidating grout as delivered to the project	Field testing	N	Continuous		
2. Verify compliance with approved submittals	Field inspection	N	Periodic		
3. Verify proportions of site-mixed mortar, grout and prestressing grout for bonded tendons	Field Inspection	N	Periodic		
4. Verify grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorages	Field Inspection	N	Periodic		
5. Verify construction of mortar joints	Field Inspection	N	Periodic		
6. Verify placement of reinforcement, connectors, and prestressing tendons and anchorages	Field Inspection	N	Level B - Periodic		
			Level C - Continuous		
7. Verify grout space prior to grouting	Field Inspection	N	Level B - Periodic		
			Level C - Continuous		
8. Verify placement of grout and prestressing grout for bonded tendons	Field Inspection	N	Continuous		
9. Verify size and location of structural masonry elements	Field Inspection	N	Periodic		
10. Verify type, size, and location of anchors, including details of anchorage of masonry to structural members, frames, or other construction.	Field inspection	N	Level B - Periodic		
			Level C - Continuous		
11. Verify welding of reinforcement (see 1705.2.2)	Field inspection	N	Continuous		
12. Verify preparation, construction, and protection of masonry during cold weather (temperature below 40°F) or hot weather (temperature above 90°F)	Field inspection	N	Periodic		
13. Verify application and measurement of prestressing force	Field Inspection	N	Continuous		

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SCALE	AS SHOWN	
PROJECT NO.	40-10175.03	
CONSTR. CONTR. NO.		
DRAWING NO.		
SHEET	4	OF 12
G-3		



COLLINS ENGINEERS
COLLINS ENGINEERS, INC.
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 PH: (912) 790-0123



COLLINS ENGINEERS INCORPORATED
 CONTROL NUMBER: 6231955

DES DEC | DRW DEC | CHK JS

CITY OF SAVANNAH
EASTERN WHARF TIE BACK
SPECIAL INSPECTIONS - II

SCHEDULE OF SPECIAL INSPECTION SERVICES

PROJECT	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
14. Verify placement of AAC masonry units and construction of thin-bed mortar joints (first 5000 SF of AAC masonry)	Field inspection	N	Continuous		
15. Verify placement of AAC masonry units and construction of thin-bed mortar joints (after the first 5000 SF of AAC masonry)	Field inspection	N	Level B - Periodic		
		N	Level C - Continuous		
16. Verify properties of thin-bed mortar for AAC masonry (first 5000 SF of AAC masonry)	Field inspection	N	Continuous		
17. Verify properties of thin-bed mortar for AAC masonry (after the first 5000 SF of AAC masonry)	Field inspection	N	Level B - Periodic		
		N	Level C - Continuous		
18. Prepare grout and mortar specimens	Field testing	N	Level B - Periodic		
		N	Level C - Continuous		
19. Observe preparation of prisms	Field inspection	N	Level B - Periodic		
		N	Level C - Continuous		
1705.5 Wood Construction		N			
1. Inspection of the fabrication process of wood structural elements and assemblies in accordance with Section 1704.2.5	In-plant review (3)		Periodic		
2. For high-load diaphragms, verify grade and thickness of structural panel sheathing agree with approved building plans	Field inspection		Periodic		
3. For high-load diaphragms, verify nominal size of framing members at adjoining panel edges, nail or staple diameter and length, number of fastener lines, and that spacing between fasteners in each line and at edge margins agree with approved building plans	Field inspection		Periodic		
4. Metal-plate-connected wood trusses spanning 60 feet or greater: verify temporary and permanent restraint/bracing are installed in accordance with the approved truss submittal package	Field inspection		Periodic		
1705.6 Soils					
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	Field inspection	Y	Periodic		
2. Verify excavations are extended to proper depth and have reached proper material.	Field inspection	Y	Periodic		
3. Perform classification and testing of controlled fill materials.	Field inspection	Y	Periodic		
4. Verify use of proper materials, densities, and lift thicknesses during placement and compaction of controlled fill	Field inspection	Y	Continuous		
5. Prior to placement of controlled fill, observe subgrade and verify that site has been prepared properly	Field inspection	Y	Periodic		

SCHEDULE OF SPECIAL INSPECTION SERVICES

PROJECT	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLE
1705.7 Driven Deep Foundations					
1. Verify element materials, sizes and lengths comply with requirements	Field inspection	Y	Continuous		
2. Determine capacities of test elements and conduct additional load tests, as required	Field inspection	Y	Continuous		
3. Observe driving operations and maintain complete and accurate records for each element	Field inspection	Y	Continuous		
4. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element	Field inspection	Y	Continuous		
5. For steel elements, perform additional inspections per Section 1705.2	See Section 1705.2	N	See Section 1705.2		
6. For concrete elements and concrete-filled elements, perform additional inspections per Section 1705.3	See Section 1705.3	Y	See Section 1705.3		
7. For specialty elements, perform additional inspections as determined by the registered design professional in responsible charge	Field inspection	N	In accordance with construction documents		
8. Perform additional inspections and tests in accordance with the construction documents	Field Inspection and testing	N	In accordance with construction documents		
1705.8 Cast-in-Place Deep Foundations		N			
1. Observe drilling operations and maintain complete and accurate records for each element	Field inspection		Continuous		
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes	Field inspection		Continuous		
3. For concrete elements, perform additional inspections in accordance with Section 1705.3	See Section 1705.3		See Section 1705.3		
4. Perform additional inspections and tests in accordance with the construction documents	Field Inspection and testing		In accordance with construction documents		
1705.9 Helical Pile Foundations					
1. Verify installation equipment, pile dimensions, tip elevations, final depth, final installation torque and other data as required.	Field inspection	N	Continuous		
2. Perform additional inspections and tests in accordance with the construction documents	Field Inspection and testing	N	In accordance with construction documents		

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PROJECT NO.:	40-10175.03	
CONSTR. CONTR. NO.		
DRAWING NO.		
SHEET	5	OF 12

CITY OF SAVANNAH
EASTERN WHARF TIE BACK
SPECIAL INSPECTIONS - III

COLLINS ENGINEERS, INC.
 1481 DEAN FOREST RD., SUITE A
 SAVANNAH, GA 31405
 PH: (912) 790-0123

GEORGIA REGISTERED PROFESSIONAL ENGINEER
 JONATHAN J. STEWART

COLLINS ENGINEERS INCORPORATED
 CONTROL NUMBER: 0231955

DES DEC | DRW DEC | CHK JS




G-4

SCHEDULE OF SPECIAL INSPECTION SERVICES

PROJECT	APPLICABLE TO THIS PROJECT					
	MATERIAL / ACTIVITY	SERVICE	Y/N	EXTENT	AGENT*	DATE COMI
1705.10.1 Structural Wood Special Inspections For Wind Resistance						
1. Inspection of field gluing operations of elements of the main windforce-resisting system	Field inspection		Continuous			
2. Inspection of nailing, bolting, anchoring and other fastening of components within the main windforce-resisting system	Shop (3) and field inspection		Periodic			
1705.10.2 Cold-formed Steel Special Inspections For Wind Resistance		N				
1. Inspection during welding operations of elements of the main windforce-resisting system	Shop (3) and field inspection		Periodic			
2. Inspections for screw attachment, bolting, anchoring and other fastening of components within the main windforce-resisting system	Shop (3) and field inspection		Periodic			
1705.10.3 Wind-resisting Components		N				
1. Roof cladding	Shop (3) and field inspection		Periodic			
2. Wall cladding	Shop (3) and field inspection		Periodic			
1705.11.1 Structural Steel Special Inspections for Seismic Resistance		N				
Inspection of structural steel in accordance with AISC 341	Shop (3) and field inspection		In accordance with AISC 341			
1705.11.2 Structural Wood Special Inspections for Seismic Resistance		N				
1. Inspection of field gluing operations of elements of the seismic-force resisting system	Field inspection		Continuous			
2. Inspection of nailing, bolting, anchoring and other fastening of components within the seismic-force-resisting system	Shop (3) and field inspection		Periodic			
1705.11.3 Cold-formed Steel Light-Frame Construction Special Inspections for Seismic Resistance		N				
1. Inspection during welding operations of elements of the seismic-force-resisting system	Shop (3) and field inspection		Periodic			
2. Inspections for screw attachment, bolting, anchoring and other fastening of components within the seismic-force-resisting system	Shop (3) and field inspection		Periodic			
1705.11.4 Designated Seismic Systems Verification		N				
Inspect and verify that that the component label, anchorage or mounting conforms to the certificate of compliance in accordance with Section 1705.12.3	Field inspection		Periodic			




SCHEDULE OF SPECIAL INSPECTION SERVICES

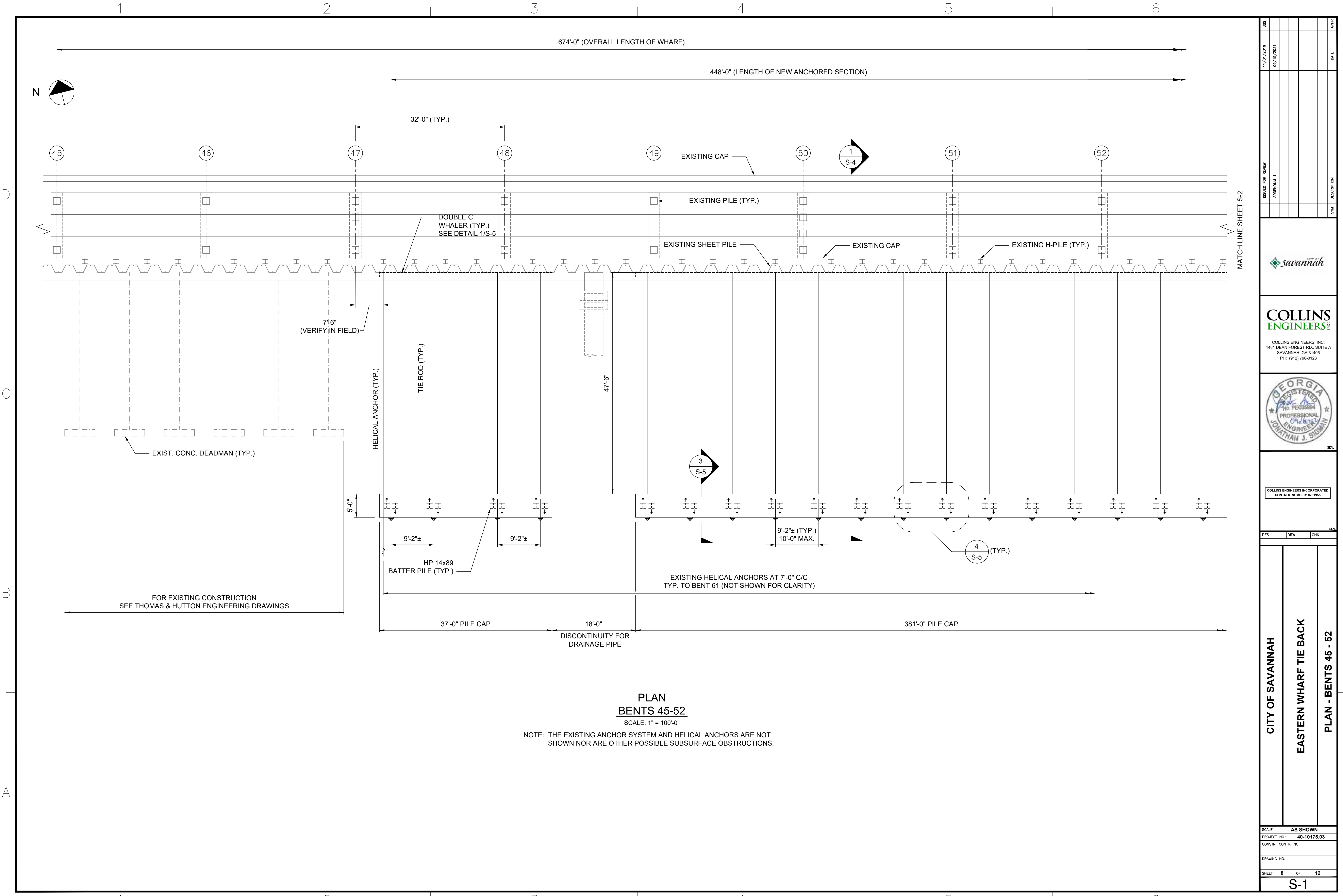
PROJECT	APPLICABLE TO THIS PROJECT					
	MATERIAL / ACTIVITY	SERVICE	Y/N	EXTENT	AGENT*	DATE COMI
1705.11.5 Architectural Components Special Inspections for Seismic Resistance			N			
1. Inspection during the erection and fastening of exterior cladding and interior and exterior veneer	Field inspection		Periodic			
2. Inspection during the erection and fastening of interior and exterior nonbearing walls	Field inspection		Periodic			
3. Inspection during anchorage of access floors	Field inspection		Periodic			
1705.11.6 Mechanical and Electrical Components Special Inspections for Seismic Resistance			N			
1. Inspection during the anchorage of electrical equipment for emergency or standby power systems	Field inspection		Periodic			
2. Inspection during the anchorage of other electrical equipment	Field inspection		Periodic			
3. Inspection during installation and anchorage of piping systems designed to carry hazardous materials, and their associated mechanical units	Field inspection		Periodic			
4. Inspection during the installation and anchorage of HVAC ductwork that will contain hazardous materials	Field inspection		Periodic			
5. Inspection during the installation and anchorage of vibration isolation systems	Field inspection		Periodic			
1705.11.7 Storage Racks Special Inspections for Seismic Resistance			N			
Inspection during the anchorage of storage racks 8 feet or greater in height	Field inspection		Periodic			
1705.11.8 Seismic Isolation Systems			N			
Inspection during the fabrication and installation of isolator units and energy dissipation devices used as part of the seismic isolation system	Shop and field inspection		Periodic			
1705.12.1 Concrete Reinforcement Testing and Qualification for Seismic Resistance			N			
1. Review certified mill test reports for each shipment of reinforcement used to resist earthquake-induced flexural and axial forces in reinforced concrete special moment frames, special structural walls, and coupling beams connecting special structural walls	Review certified mill test reports		Each shipment			

ISSUED FOR REVIEW	11/07/2019	APPROVED	
ADDITION 1	09/15/2021	DATE	
DESCRIPTION		DATE	
			
			
<small>COLLINS ENGINEERS, INC. 1481 DEAN FOREST RD., SUITE A SAVANNAH, GA 31405 PH: (912) 790-0123</small>			
			
<small>COLLINS ENGINEERS INCORPORATED CONTROL NUMBER: 0231955</small>			
DES	DEC	DRW	DEC
CHK	JS		
CITY OF SAVANNAH EASTERN WHARF TIE BACK SPECIAL INSPECTIONS - IV			
<small>SCALE: AS SHOWN PROJECT NO.: 40-10175.03 CONSTR. CONTR. NO. DRAWING NO. SHEET 6 OF 12</small>			
G-5			

SCHEDULE OF SPECIAL INSPECTION SERVICES					
PROJECT					
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
2. Verify reinforcement weldability of ASTM A615 reinforcement used to resist earthquake-induced flexural and axial forces in reinforced concrete special moment frames, special structural walls, and coupling beams connecting special structural walls	Review test reports		Each shipment		
1705.12.2 Structural Steel Testing and Qualification for Seismic Resistance		N			
Test in accordance with the quality assurance requirements of AISC 341	Shop (3) and field testing		Per AISC 341		
1705.12.3 Seismic Certification of Nonstructural Components		N			
Review certificate of compliance for designated seismic system components.	Certificate of compliance review		Each submittal		
1705.12.4 Seismic Isolation Systems		N			
Test seismic isolation system in accordance with ASCE 7 Section 17.8	Prototype testing		Per ASCE 7		
1705.13 Sprayed Fire-resistant Materials		N			
1. Verify surface condition preparation of structural members	Field inspection		Periodic		
2. Verify application of sprayed fire-resistant materials	Field inspection		Periodic		
3. Verify average thickness of sprayed fire-resistant materials applied to structural members	Field inspection		Periodic		
4. Verify density of the sprayed fire-resistant material complies with approved fire-resistant design	Field inspection and testing		Per IBC Section 1705.13.5		
5. Verify the cohesive/adhesive bond strength of the cured sprayed fire-resistant material	Field inspection and testing		Per IBC Section 1705.13.6		
1705.14 Mastic and Intumescent Fire-Resistant Coatings		N			
Inspect mastic and intumescent fire-resistant coatings applied to structural elements and decks	Field inspection		Periodic		
1705.15 Exterior Insulation and Finish Systems (EIFS)		N			
1. Verify materials, details and installations are per the approved construction documents	Field inspection		Periodic		
2. Inspection of water-resistive barrier over sheathing substrate	Field inspection		Periodic		

SCHEDULE OF SPECIAL INSPECTION SERVICES					
PROJECT					
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT*	DATE COMPLETED
1705.16 Fire-Resistant Penetrations and Joints		N			
1. Inspect penetration firestop systems	Field testing		Per ASTM E2174		
2. Inspect fire-resistant joint systems	Field testing		Per ASTM E2393		
1705.17 Smoke Control Systems		N			
1. Leakage testing and recording of device locations prior to concealment	Field testing		Periodic		
2. Prior to occupancy and after sufficient completion, pressure difference testing, flow measurements, and detection and control verification	Field testing		Periodic		
* INSPECTION AGENTS					
FIRM		ADDRESS		TELEPHONE NO.	
1.					
2.					
3.					
4.					
Notes: 1. The inspection and testing agent(s) shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official prior to commencing work. The qualifications of the Special Inspector(s) and/or testing agencies may be subject to the approval of the Building Official and/or the Design Professional.					
2. The list of Special Inspectors may be submitted as a separate document, if noted so above.					
3. Special Inspections as required by Section 1704.2.5 are not required where the fabricator is approved in accordance with IBC Section 1704.2.5.2					
4. Observe on a random basis, operations need not be delayed pending these inspections. Perform these tasks for each welded joint, bolted connection, or steel element.					
5. NDT of welds completed in an approved fabricator's shop may be performed by that fabricator when approved by the AHJ. Refer to AISC 360, N7.					
Are Requirements for Seismic Resistance included in the Statement of Special Inspections?				Yes	No
Are Requirements for Wind Resistance included in the Statement of Special Inspections?				Yes	No
DATE:					

ISSUED FOR REVIEW	11/07/2019	DATE
ADDENDUM 1	09/15/2021	DATE
SYN	DESCRIPTION	DATE
		
		
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<small>COLLINS ENGINEERS INCORPORATED CONTROL NUMBER: 6231955</small>		
DES	DEC	CHK
DRW	DEC	CHK
JS		
CITY OF SAVANNAH EASTERN WHARF TIE BACK SPECIAL INSPECTIONS - V		
<small>SCALE: AS SHOWN PROJECT NO.: 40-10175.03 CONSTR. CONTR. NO. DRAWING NO. SHEET 7 OF 12</small>		
G-6		



PLAN
BENTS 45-52

SCALE: 1" = 100'-0"

NOTE: THE EXISTING ANCHOR SYSTEM AND HELICAL ANCHORS ARE NOT SHOWN NOR ARE OTHER POSSIBLE SUBSURFACE OBSTRUCTIONS.

ISSUED FOR REVIEW	11/20/2019	JSS
APPENDIX 1	09/15/2021	APPR
DATE		
DESCRIPTION		
SYN		

savannah

COLLINS ENGINEERS INC.

COLLINS ENGINEERS, INC.
1481 DEAN FOREST RD., SUITE A
SAVANNAH, GA 31405
PH: (912) 790-0123

REGISTERED PROFESSIONAL ENGINEER
JONATHAN J. STEWART

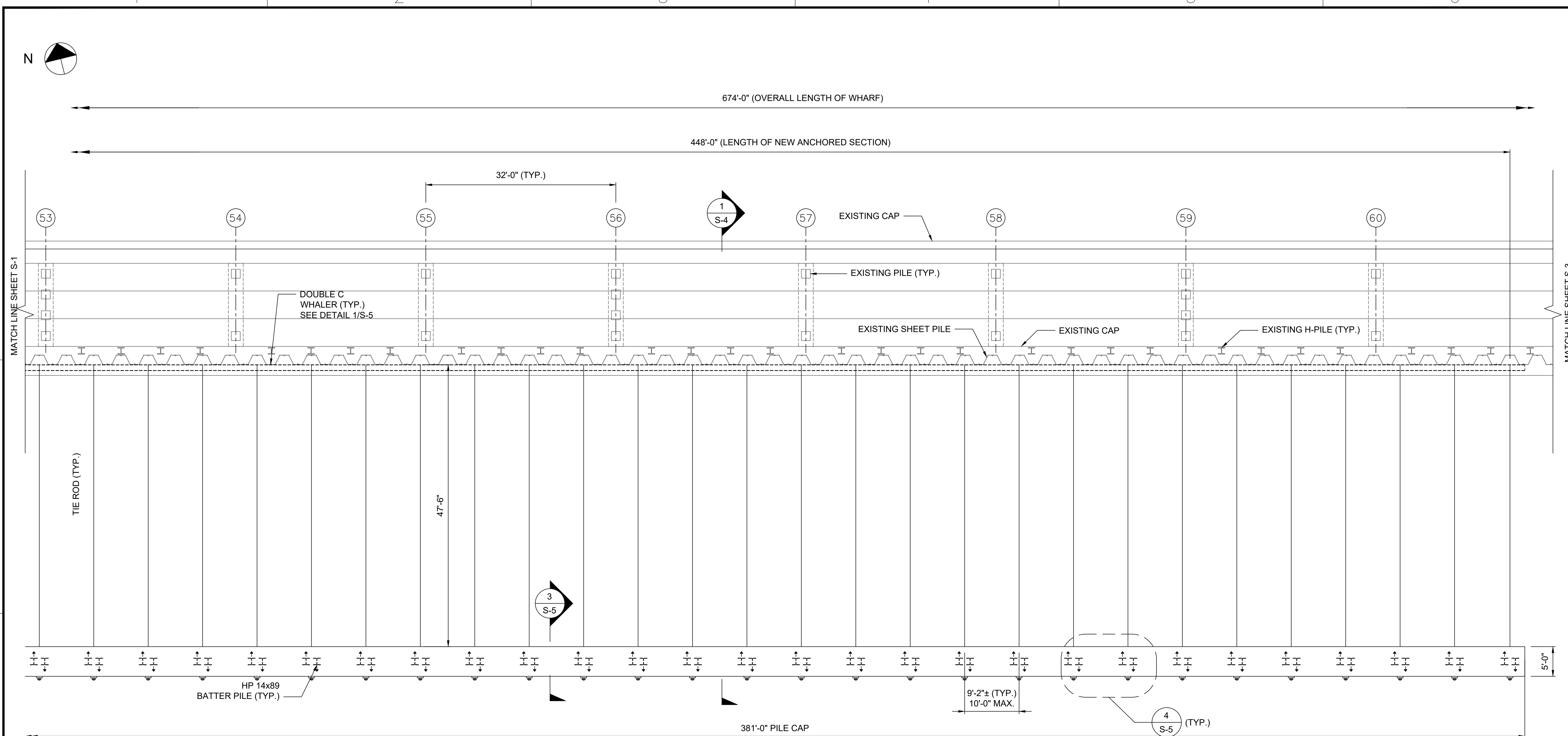
COLLINS ENGINEERS INCORPORATED
CONTROL NUMBER: 0211955

DES | DRW | CHK

CITY OF SAVANNAH
EASTERN WHARF TIE BACK
PLAN - BENTS 45 - 52

SCALE: AS SHOWN
PROJECT NO.: 40-10175.03
CONSTR. CONTR. NO.
DRAWING NO.
SHEET 8 OF 12

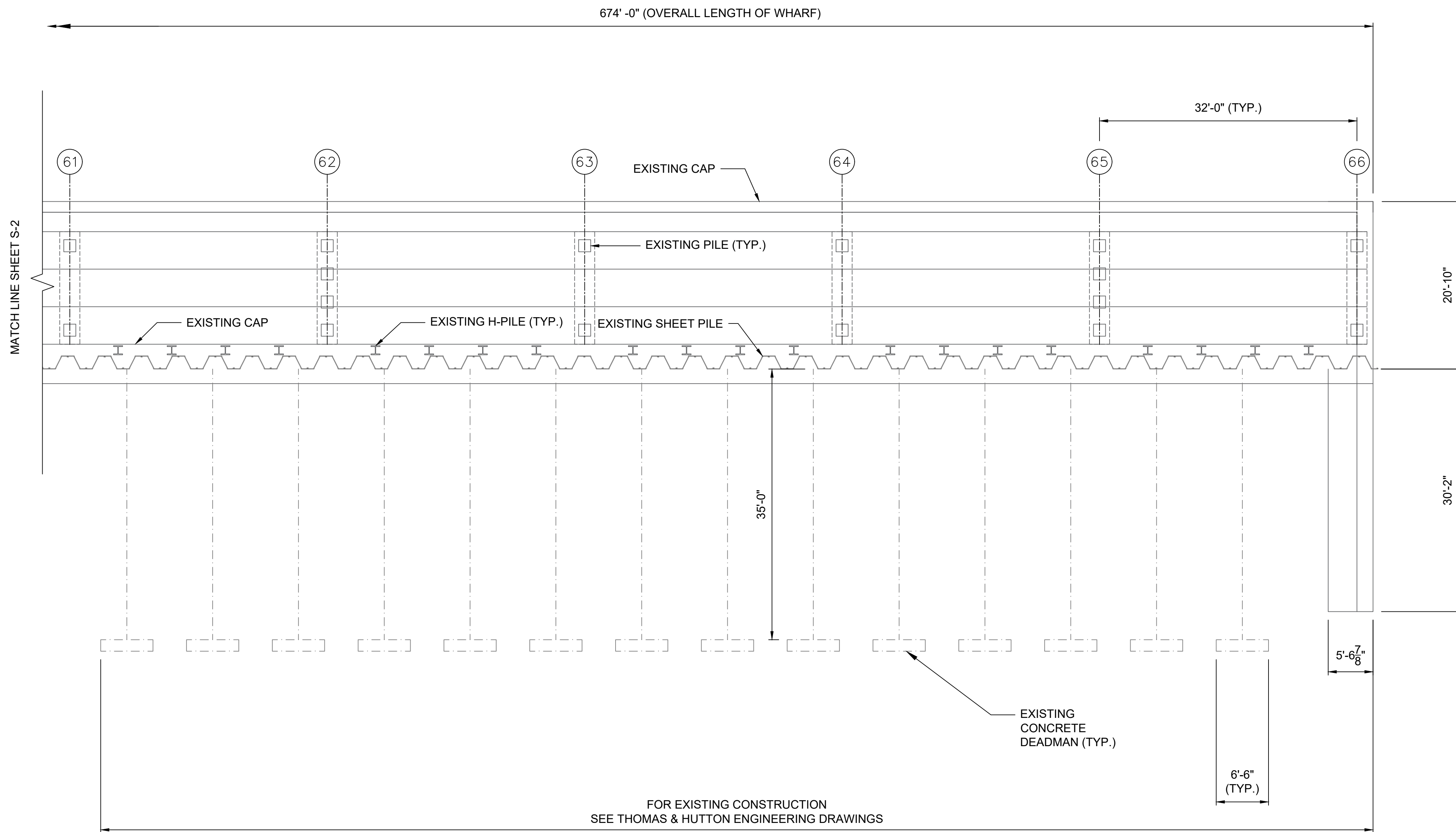
S-1



PLAN
BENTS 53-60
SCALE: 1" = 100'-0"

NOTE: THE EXISTING ANCHOR SYSTEM AND HELICAL ANCHORS ARE NOT SHOWN NOR ARE OTHER POSSIBLE SUBSURFACE OBSTRUCTIONS.

ISSUED FOR REVIEW	DATE	APPROVE
ADDITION 1	09/15/2021	
SYN	DESCRIPTION	
COLLINS ENGINEERS INC. <small>COLLINS ENGINEERS, INC. 1481 DEAN FOREST RD., SUITE A SAVANNAH, GA 31405 PH: (912) 790-0123</small>		
<small>COLLINS ENGINEERS INCORPORATED CONTROL NUMBER: 6231955</small>		
DES	DRW	CHK
CITY OF SAVANNAH EASTERN WHARF TIE BACK PLAN - BENTS 53 - 60		
SCALE: AS SHOWN		
PROJECT NO.: 40-10175.03		
CONSTR. CONTR. NO.		
DRAWING NO.		
SHEET 9 OF 12		
S-2		



PLAN
BENTS 61-66

SCALE: 1" = 100'-0"

NOTE: THE EXISTING ANCHOR SYSTEM AND HELICAL ANCHORS ARE NOT SHOWN NOR ARE OTHER POSSIBLE SUBSURFACE OBSTRUCTIONS.

ISSUED FOR REVIEW	DATE	SYN	DESCRIPTION	DATE	APPR
ASSEMBLY 1	09/19/2021				



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 SAVANNAH, GA 31405
 PH: (912) 790-0123



COLLINS ENGINEERS INCORPORATED
 CONTROL NUMBER: 0231955

DES	DRW	CHK
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CITY OF SAVANNAH
 EASTERN WHARF TIE BACK
 PLAN - BENTS 61 - 66

SCALE:	AS SHOWN
PROJECT NO.:	40-10175.03
CONSTR. CONTR. NO.:	
DRAWING NO.:	
SHEET 10 OF 12	
S-3	

1 2 3 4 5 6

ISS	DATE	DESCRIPTION	APP'D
11/01/2019	09/12/2021		
ISSUED FOR REVIEW			
ADDENDUM 1			



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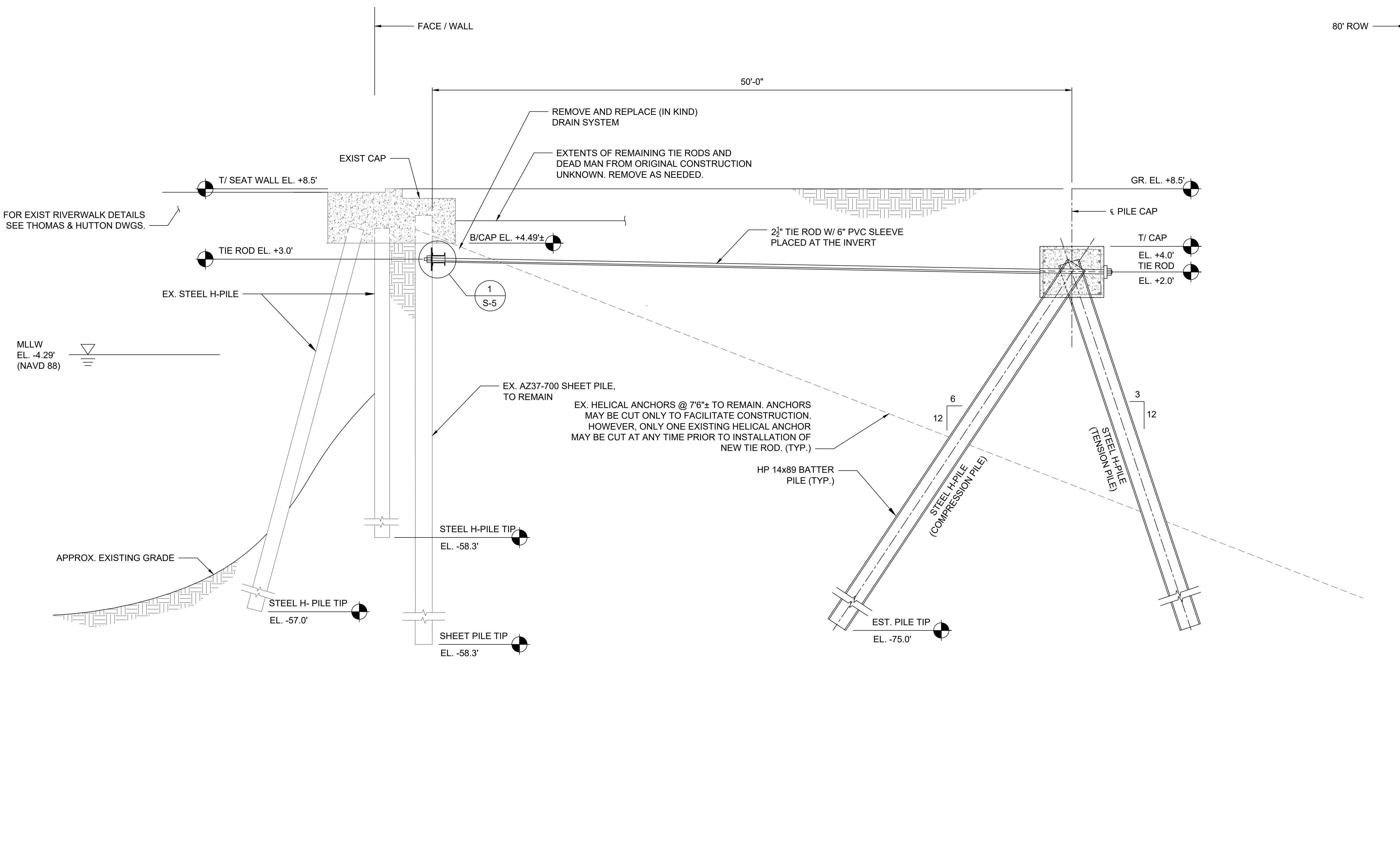


COLLINS ENGINEERS INCORPORATED
 CONTROL NUMBER: 9231995

DES: _____ DRW: _____ CHK: _____

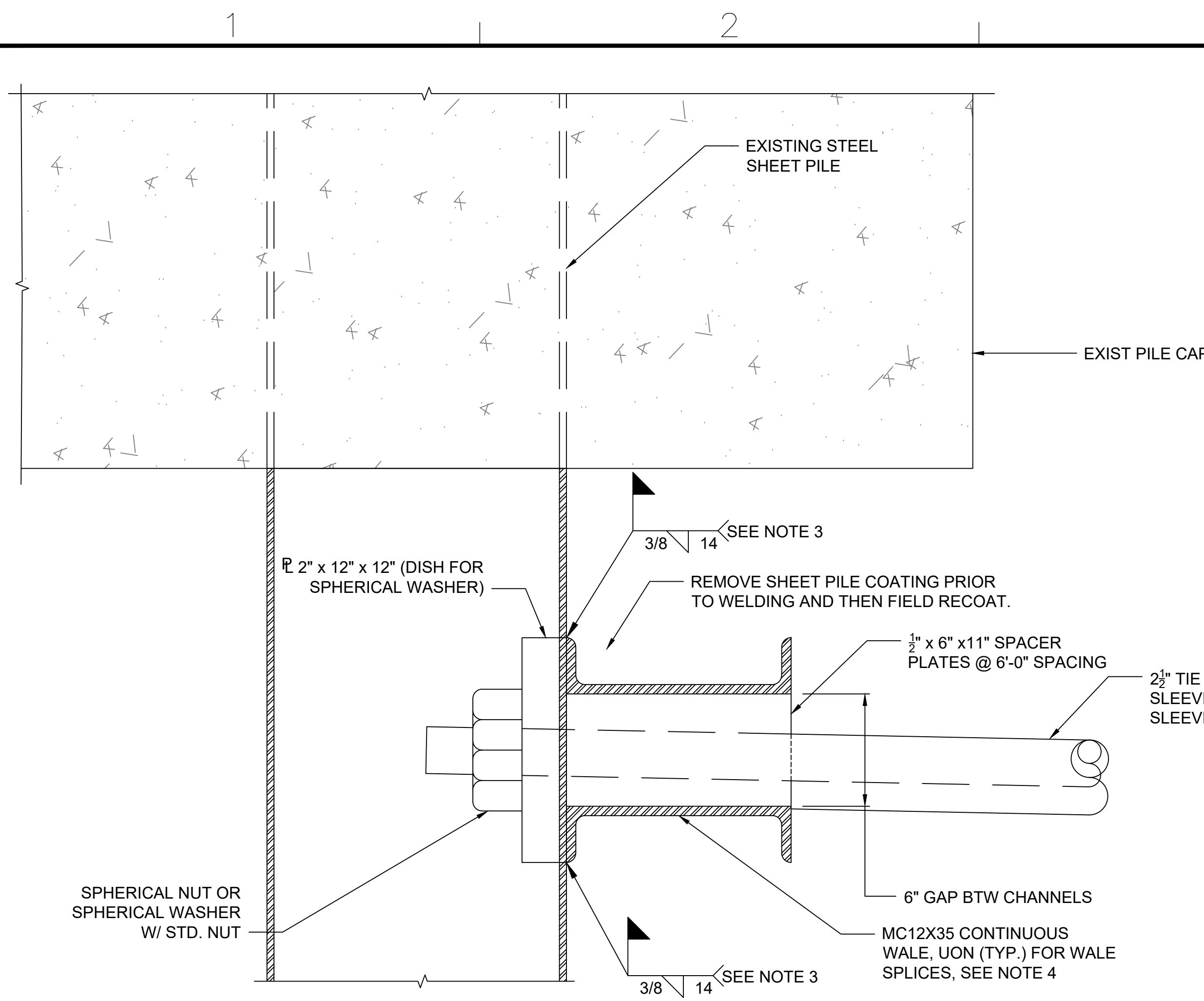
CITY OF SAVANNAH
EASTERN WHARF TIE BACK
TIE BACK DETAIL

SCALE: AS SHOWN
 PROJECT NO.: 40-10175.03
 CONSTR. CONTR. NO.:
 DRAWING NO.:
 SHEET 11 OF 12
S-4



SECTION: TIE BACK AND PILE CAP
 SCALE: 1/4" = 1'-0"
 NOTE: POTENTIAL SUBSURFACE OBSTRUCTIONS NOT SHOWN

1 2 3 4 5 6

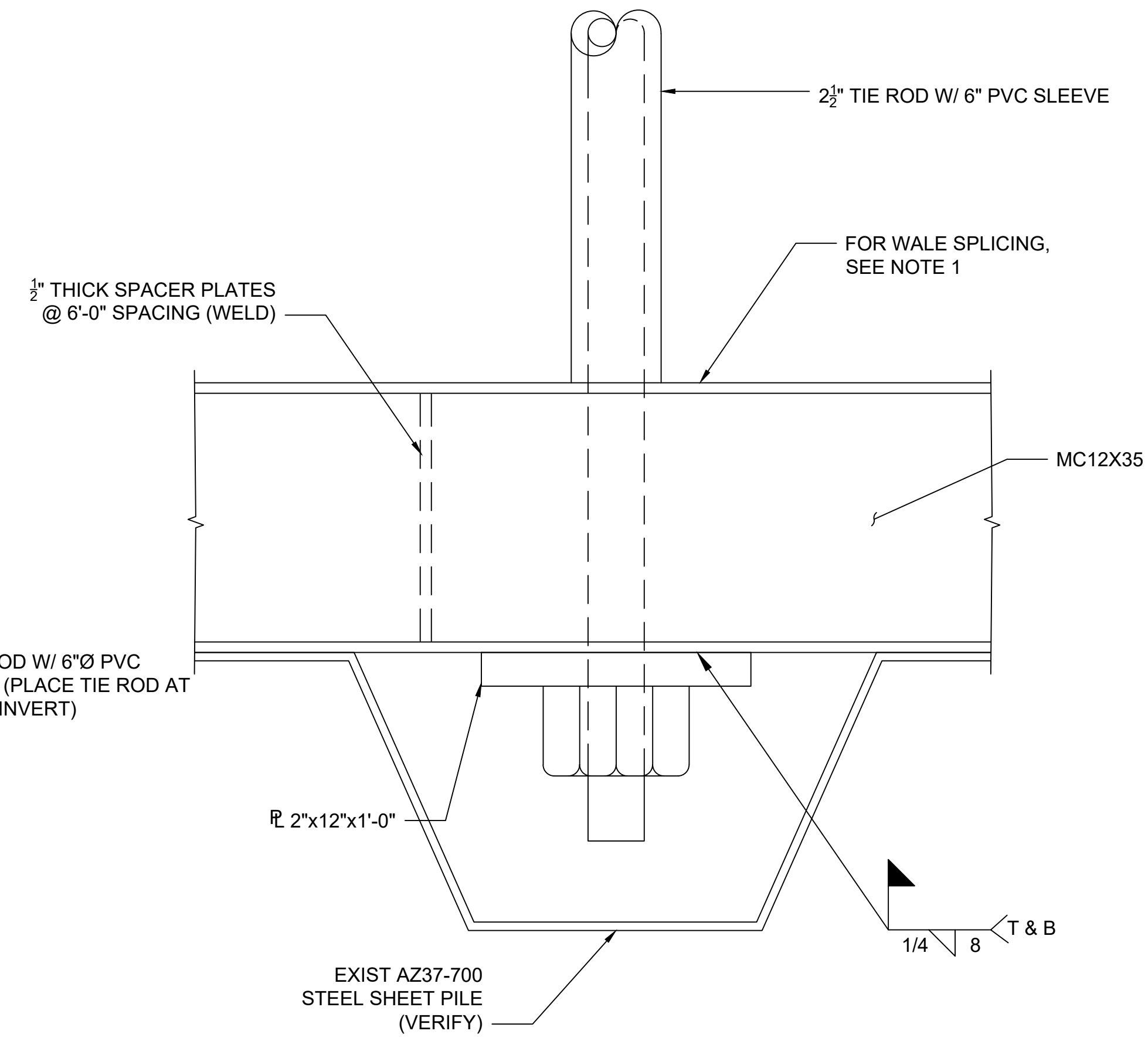


DETAIL: CHANNEL CONNECTION

SCALE: 1" = 5'-0"

- NOTE: 1. PROVIDE FULL WELDED STEEL PLATE SHIMS AS REQUIRED FOR FIELD FIT-UP OF WALE TO PILES.
 2. PROVIDE WALE SUPPORT BRACKETS AT 20' SPACING MINIMUM
 3. USE 7" LONG WELD FOR CONNECTION OF WALE TO THE SHEET PILE AT EVERY OTHER SHEET PILE PAIRS. 7" LONG WELD AT PAIRS THAT DO NOT HAVE AN ADJACENT TIE ROD.
 4. CONTRACTOR TO SUBMIT WALE SPLICE DETAIL FOR ENGINEERING APPROVAL.

1
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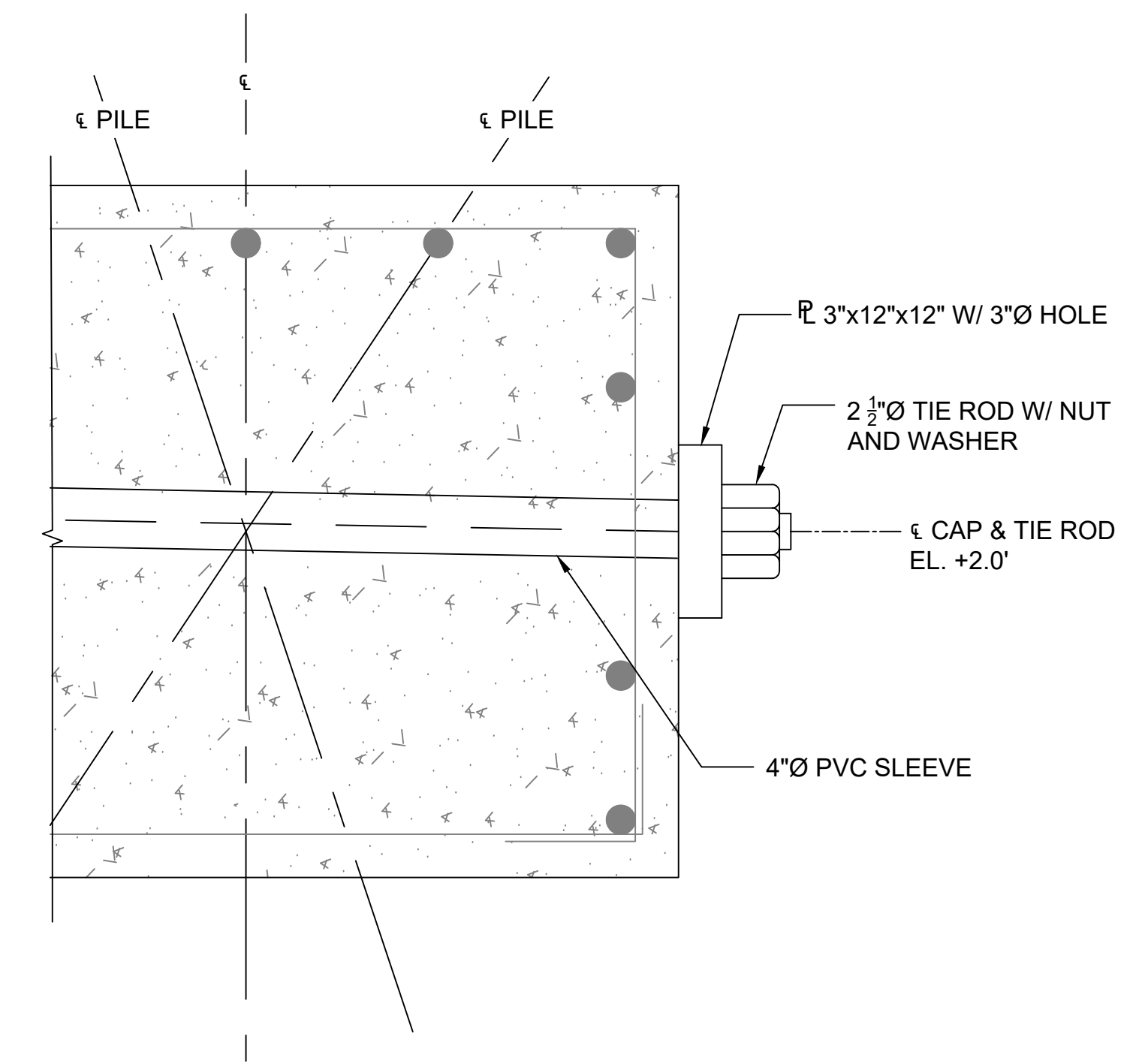


DETAIL: CHANNEL CONNECTION

SCALE: 1" = 5'-0"

- NOTE: 1. HAND TIGHTEN PRIOR TO TENSIONING. VERIFY NUT IS WRENCH-TIGHT AFTER TENSIONING ROD. DAMAGE THREADS AFTER TIGHTENING TO PREVENT BACK OUT.

2
S-5

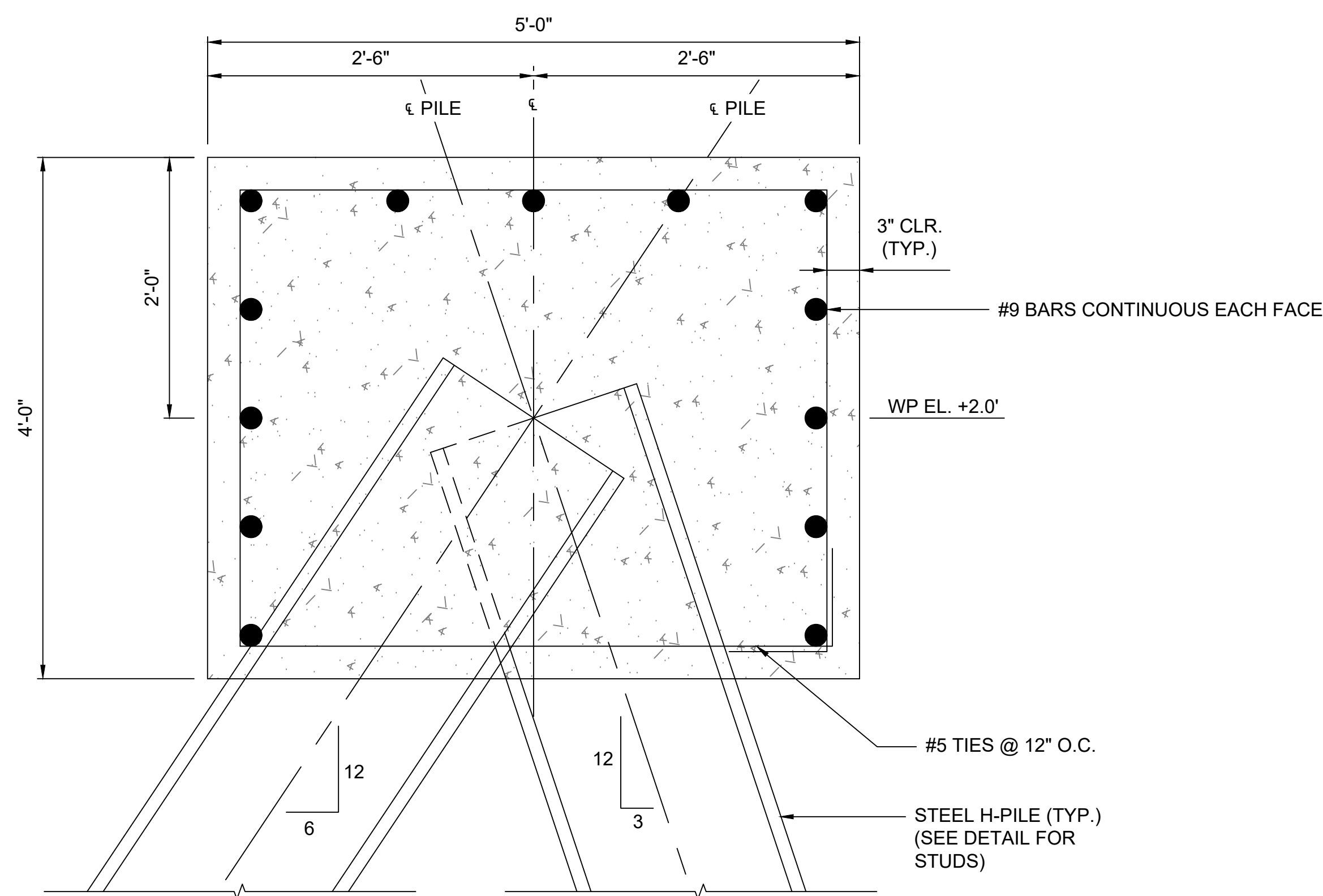


DETAIL: TIE ROD AT CAP

SCALE: 1" = 10'-0"

- NOTE: FOR DETAILS NOT SHOWN SEE PILE CAP SECTION 3/S-5. PRELOAD TIE ROD TO 30 KIPS TENSION FROM PILE CAP ENDS. VERIFY NUT IS WRENCH-TIGHT AFTER TENSIONING ROD. DAMAGE THREADS AFTER TIGHTENING TO PREVENT BACK OUT.

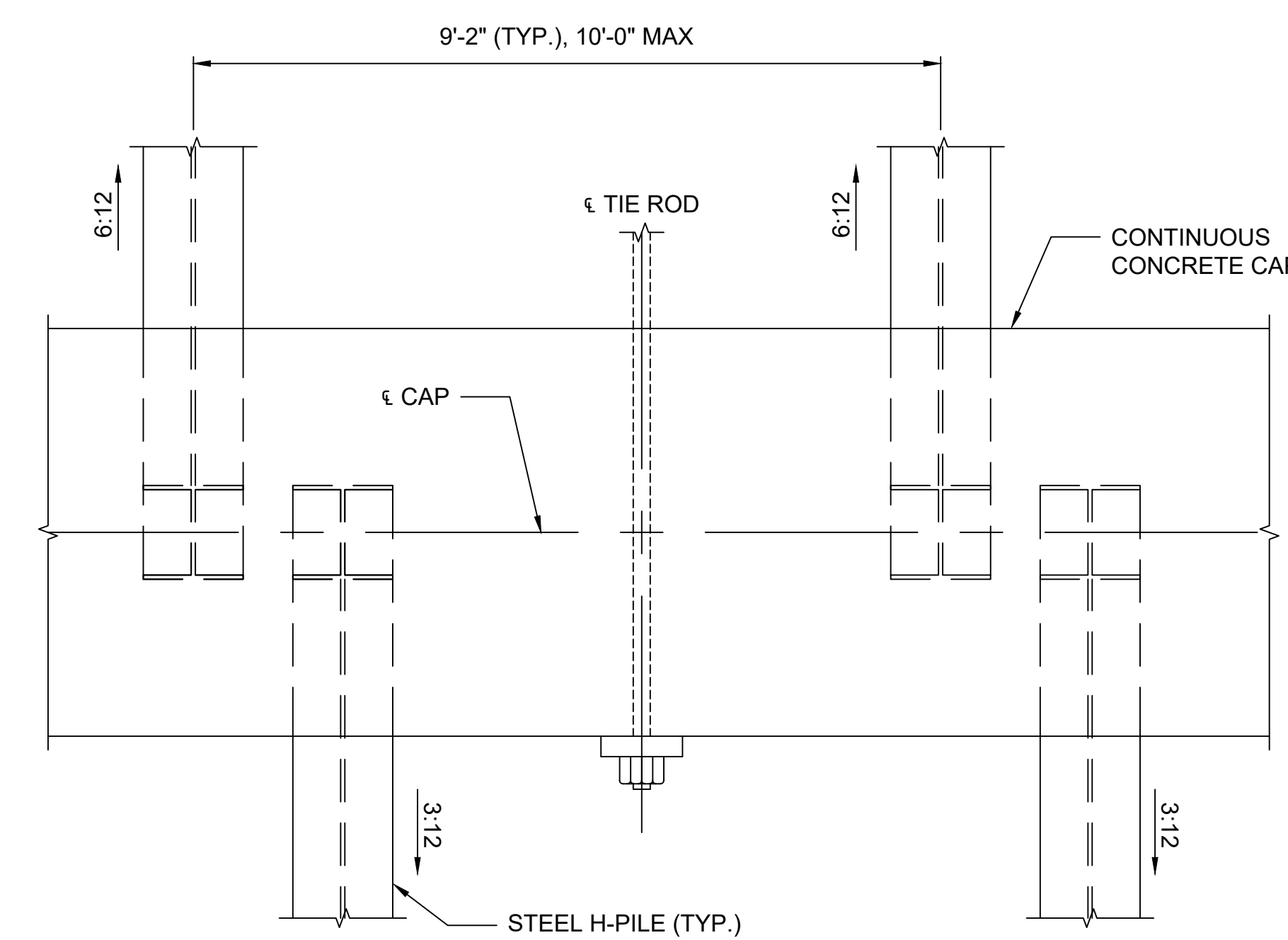
6
S-5



SECTION: PILE CAP

SCALE: 1" = 10'-0"

3
S-5

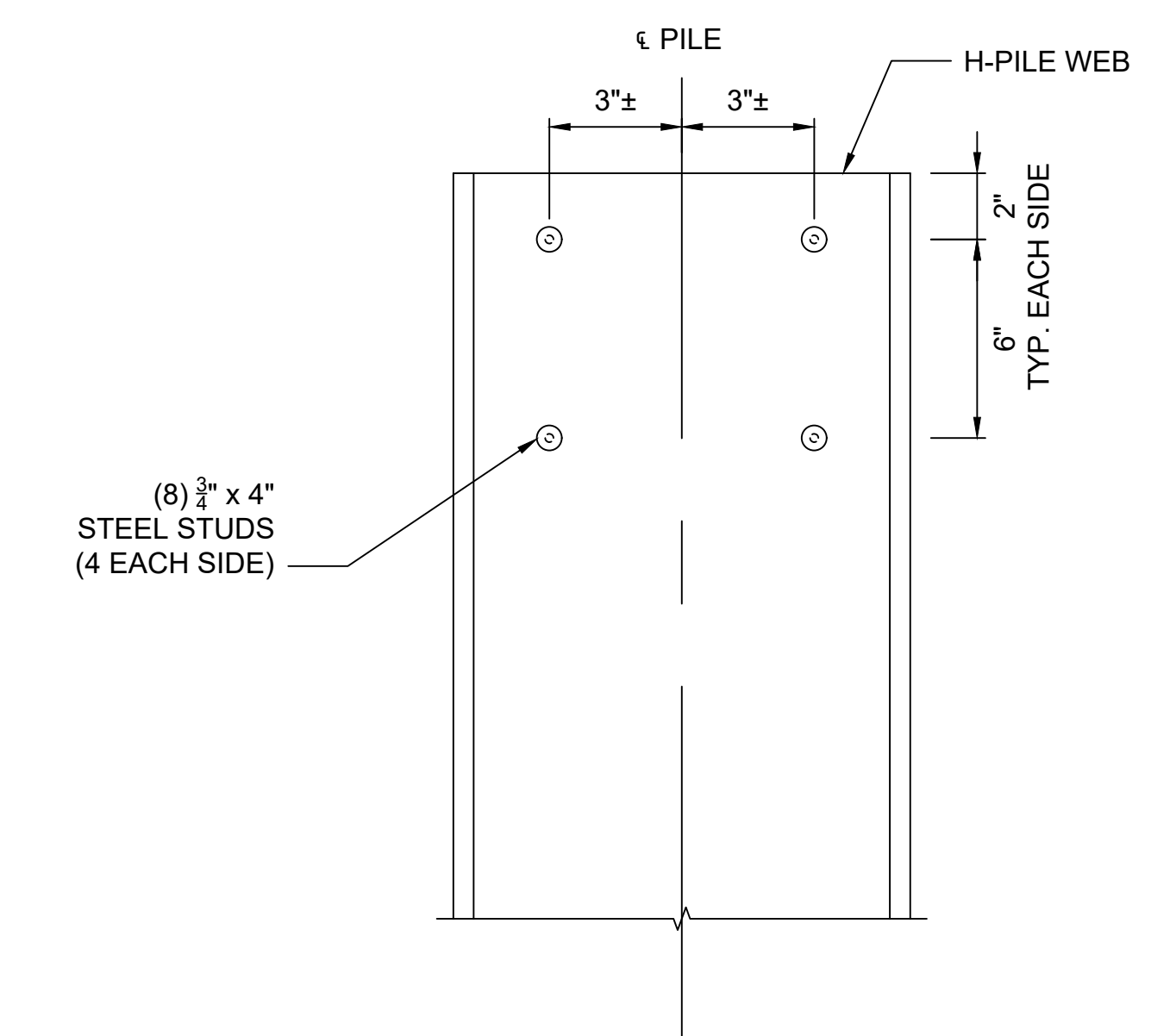


PARTIAL PLAN: PILE CAP

SCALE: 1" = 20'-0"

- NOTE: THE EXISTING ANCHOR SYSTEM AND HELICAL ANCHORS ARE NOT SHOWN NOR ARE OTHER POSSIBLE SUBSURFACE OBSTRUCTIONS.

4
S-5



DETAIL: TENSION PILE STUD PLACEMENT

SCALE: 1" = 5'-0"

- NOTE: PROVIDE FULL PENETRATION WELD FOR STUD TO H-PILE WEB

5
S-5

ISS	DATE	APP'D
11/01/2019	09/12/2021	

NO.	DESCRIPTION	DATE
1		



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 CONTROL NUMBER: 6231985

DES	DRW	CHK	SEA

CITY OF SAVANNAH
 EASTERN WHARF TIE BACK
 DETAILS

SCALE:	AS SHOWN
PROJECT NO.:	40-10175.03
CONSTR. CONTR. NO.:	
DRAWING NO.:	
SHEET	12 OF 12

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