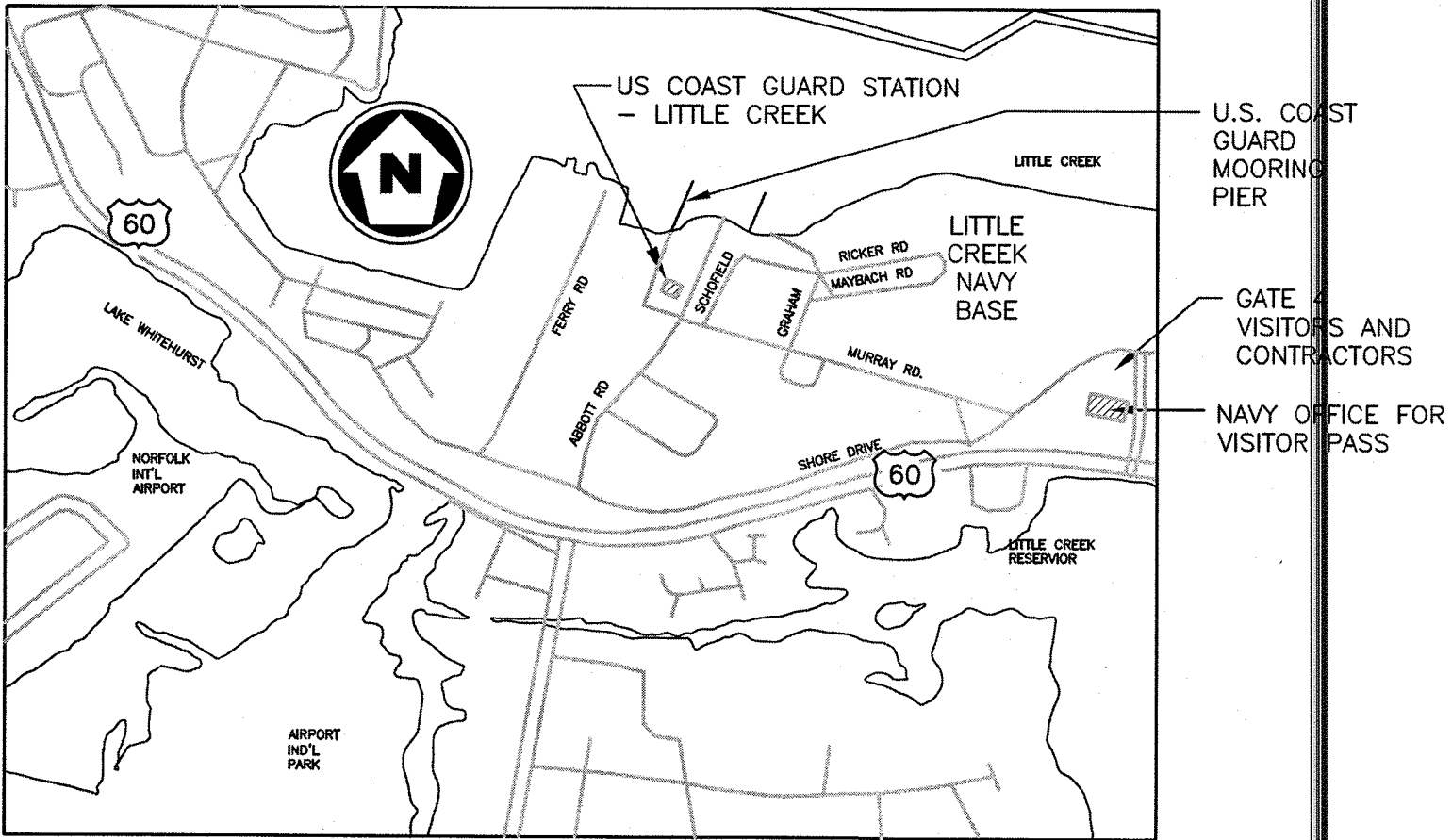
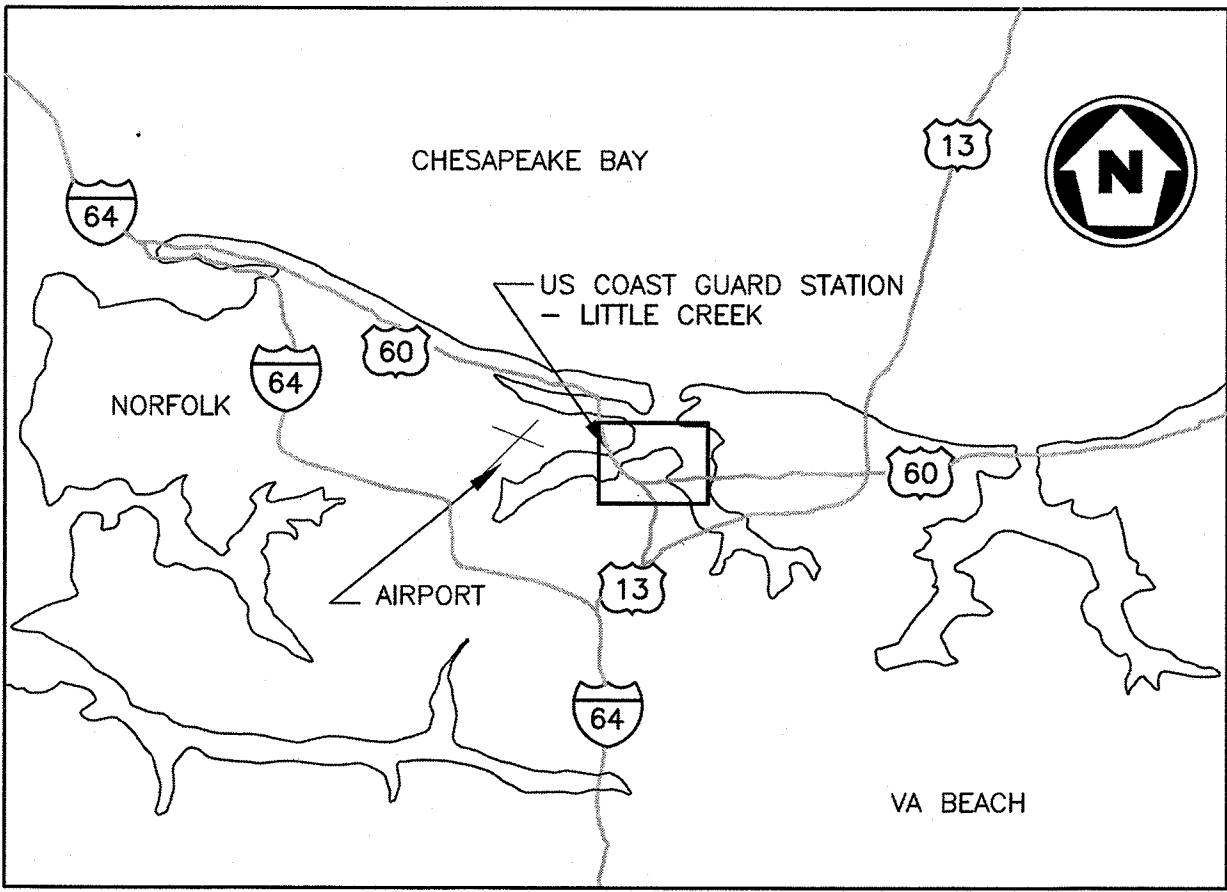


UNITED STATES COAST GUARD
STATION LITTLE CREEK
VIRGINIA BEACH, VIRGINIA

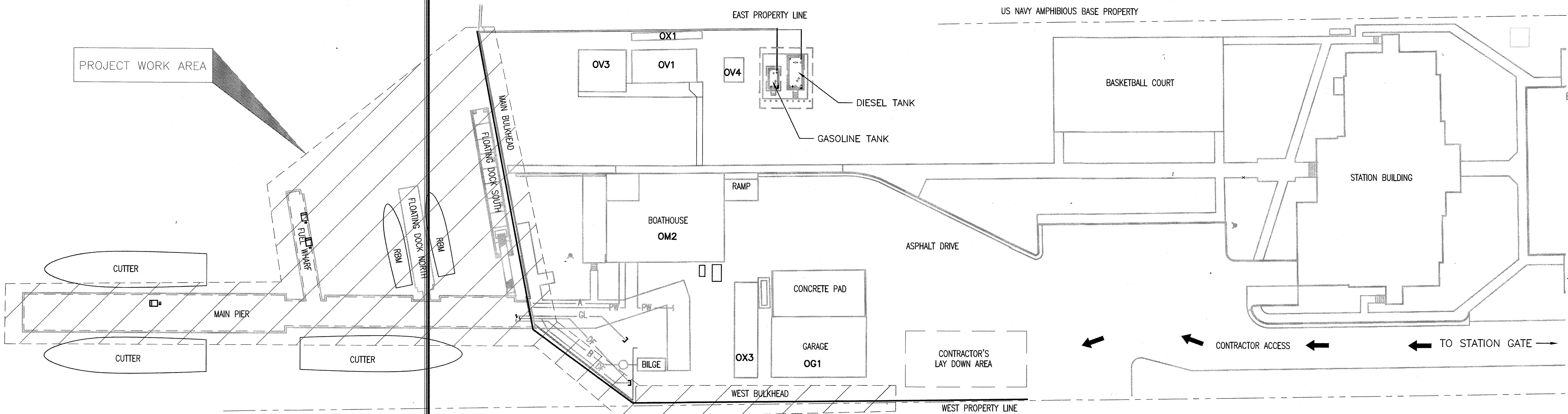
MAJOR M&R OF
WATERFRONT



LOCATION MAP
SCALE: NONE



VICINITY MAP
SCALE: NONE



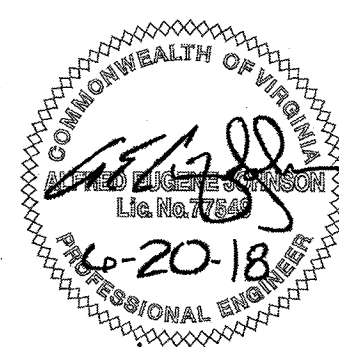
SITE PLAN
SCALE: 1" = 30'-0"

DRAWING INDEX		DRAWING INDEX	
SHEET	TITLE	SHEET	TITLE
G-01	TITLE PAGE	C-06	CIVIL - BULKHEAD IMPROVEMENTS
G-02	GENERAL - SITE SURVEY SOUTH	C-07	CIVIL - BULKHEAD REPAIR DETAIL
G-03	GENERAL - SITE SURVEY NORTH	C-08	CIVIL - PIER BULKHEAD UTILITIES
G-04	GENERAL - MUDLINE SOUNDINGS	C-09	CIVIL - PIER IMPROVEMENTS
C-01	CIVIL - EXIST. BULKHEAD PLANS	C-10	CIVIL - UTILITY DETAILS
C-02	CIVIL - EXIST. BULKHEAD SECTIONS	C-11	CIVIL - SECURITY FENCE DETAILS
C-03	CIVIL - EXIST. BULKHEAD DETAILS	C-12	CIVIL - FENCE & GATE DETAILS
C-04	CIVIL - EXIST./DEMO PIER PLAN	C-13	CIVIL - MISC FENCE DETAILS
C-05	CIVIL - BULKHEAD DEMOLITION PLAN		

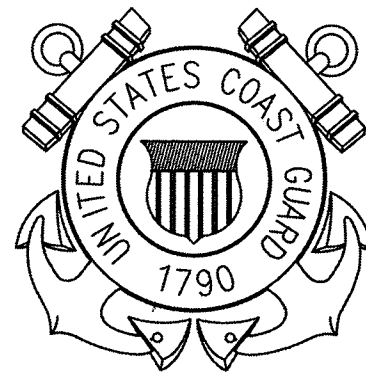
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CONSULTANTS

THE JOHNSON McADAMS FIRM
GREENWOOD, MISSISSIPPI 38930



U. S. COAST GUARD
CIVIL ENGINEERING UNIT
CLEVELAND



USCG. CEU CLEVELAND
1240 EAST 9TH STREET
CLEVELAND, OH 44199-2060

ISSUE		
MARK	DATE	DESCRIPTION

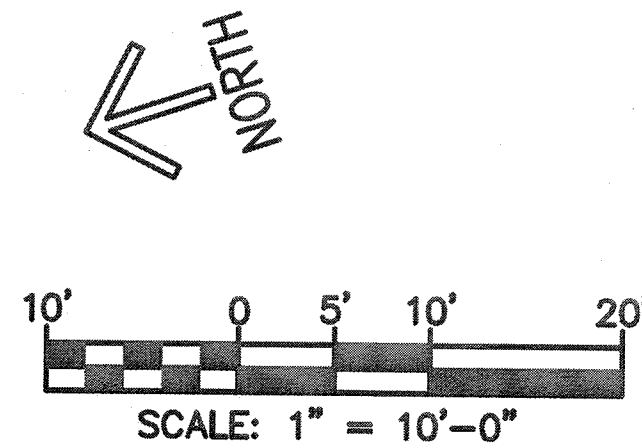
A/E PROJECT NO: 1367-M		
CAD FILE NAME: C8460G01.dwg		
DESIGNED BY: AEJ		
DRAWN BY: ADD		
EDITED BY: ADD		
CHECKED BY: FEJ		

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE	
MAJOR M&R OF WATERFRONT CG STATION LITTLE CREEK VIRGINIA BEACH VA WATERFRONT GENERAL TITLE PAGE	

REVIEWED BY: G.A. DEVAN	REVIEWED BY: C.P. LODGE	REVIEWED BY: J.S. PLACZEK
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR
S.P. HANNIGAN, CDR. APPROVING OFFICER		06/08/18 DATE

PROJECT NUMBER	DRAWING NUMBER
6117402	8460-D
DISCIPLINE/SHT NO G-01	SHEET 1 OF 17



LEGEND	
SYMBOL/ABBREVIATION	DESCRIPTION
○ TEXT	MANHOLE
□ SCO	SANITARY CLEANOUT
● TEXT	VALVE
⊠ WM	WATER METER
⊕ FH	FIRE HYDRANT
⊙ WELL	WELL
⊙ MWELL	MONITOR WELL
⊖ DI	DROP INLET
⊠ CB	CATCH BASIN
RD INV 10.00	ROOF DRAIN
⊠ GM	GAS METER
⊠ PP	POWER POLE
⊠ LP	LIGHT POLE
⊠ GLIGHT	LIGHT POLE /CONCRETE BASE
⊠ GROUND LIGHT	GROUND LIGHT
⊠ PEDESTAL	PEDESTAL
⊠ CURB AND GUTTER	CURB AND GUTTER
⊠ FENCE	FENCE
⊠ PROPERTY LINE	PROPERTY LINE
⊠ RIGHT-OF-WAY LINE	RIGHT-OF-WAY LINE
⊠ BUILDINGS	BUILDINGS
ST (ST) 12" RCP (1)	STORM SEWER
W	PIPE LABEL (SIZE, TYPE, ID)
SS	WATER
SS 8" PVC (2)	SANITARY SEWER
⊠ EHT	PIPE LABEL (SIZE, TYPE, ID)
⊠ UGE	ELECTRIC & TELEPHONE LINE
⊠ TRAFFIC BOX	TRAFFIC BOX
⊠ SIGN	SIGN
⊠ MAIL BOX	MAIL BOX
⊠ TREE	TREE
⊠ BUSH/HEDGE	BUSH/HEDGE
⊠ PAVEMENT	PAVEMENT
⊠ CONCRETE	CONCRETE
⊠ TEMPORARY BENCHMARK (TBM)	TEMPORARY BENCHMARK (TBM)
⊠ ELEVATIONS	ELEVATIONS
⊠ TOP OF CURB ELEVATIONS	TOP OF CURB ELEVATIONS
⊠ TOP OF WALL ELEVATIONS	TOP OF WALL ELEVATIONS
⊠ UTILITY STRUCTURE ID	UTILITY STRUCTURE ID

GENERAL NOTES FOR WATERFRONT WORK

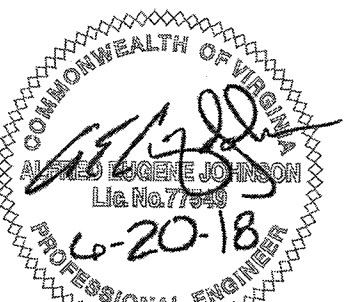
- G-1 THE CONTRACTOR SHALL COORDINATE ALL UTILITIES LOCATED NEAR THE BULKHEAD WITH THE NEW CONCRETE ENCASEMENT WORK IS PERFORMED. THIS SHALL INCLUDE RE-ROUTINE PIER HOTEL SERVICES INCLUDING: FUEL (DIESEL AND GASOLINE), ELECTRICAL, SANITARY SEWER, DOMESTIC WATER, BILGE AND COMMUNICATIONS AS REQUIRED TO RESTORE EXISTING SERVICE/FUNCTION. STORM DRAINAGE PIPING SHALL BE FORMED INTO THE BULK AND NOT RESTRICT CAPACITY.
- G-2 CARE SHALL BE EXECUTED BY THE CONTRACTOR NOT TO EXCEED LOAD CAPACITIES TO THE EXISTING PAVEMENT, BULKHEAD, PIERS OR DOCKS.

- NOTES:
- THIS SURVEY WAS PERFORMED IN OCTOBER 2017.
 - NORTH MERIDIAN SHOWN HEREON IS BASED ON VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE NAD83/93, AS REFERENCED FROM UNITED STATES NAVY, SURVEY CONTROL POINT(S) "LC4". COORDINATE VALUES SHOWN ARE EXPRESSED IN U.S. SURVEY FEET.
 - ELEVATIONS SHOWN HEREON BASED ON NAVD83 AND WERE ESTABLISHED FROM UNITED STATES NAVY VERTICAL CONTROL STATION "LC4", ELEVATION=9.357.
 - THIS SURVEY DOES NOT ADDRESS THE EXISTENCE OR NONEXISTENCE OF WETLANDS, ENVIRONMENTAL HAZARDS, CEMETERIES OR ANY UNDERGROUND STRUCTURE NOT OBSERVED DURING THE COURSE OF THE SURVEY.
 - LOCATION OF UNDERGROUND NON-GRAVITY UTILITIES SHOWN ON THIS SURVEY ARE BASED ON SURFACE INDICATIONS OF SUBTERRANEAN USE AND PAINT MARKINGS FIELD LOCATED BY MSA, P.C. THIS SURVEY DOES NOT GUARANTEE THE EXISTENCE OR NONEXISTENCE OF UNDERGROUND UTILITIES.

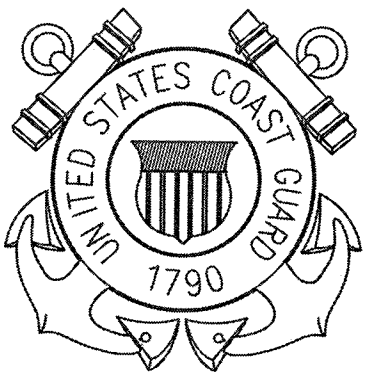
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GREENWOOD, MISSISSIPPI 38930



U. S. COAST GUARD
CIVIL ENGINEERING UNIT
CLEVELAND



USCG. CEU CLEVELAND
1240 EAST 9TH STREET
CLEVELAND, OH 44199-2060

ISSUE

MARK	DATE	DESCRIPTION
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A/E PROJECT NO: 1367-M
CAD FILE NAME: C8460G02.dwg
DESIGNED BY: AEJ
DRAWN BY: ADD
EDITED BY: ADD
CHECKED BY: FEJ

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE

MAJOR M&R OF WATERFRONT
CG STATION LITTLE CREEK VA
VIRGINIA BEACH VA
WATERFRONT
GENERAL
SITE SURVEY SOUTH

REVIEWED BY: G.A. DEVAN	REVIEWED BY: G.P. LODGE	REVIEWED BY: G.S. PLATZKE
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

S.P. HANNIGAN, CDR.
APPROVING OFFICER

06/08/18
DATE

PROJECT NUMBER

6117402

DRAWING NUMBER

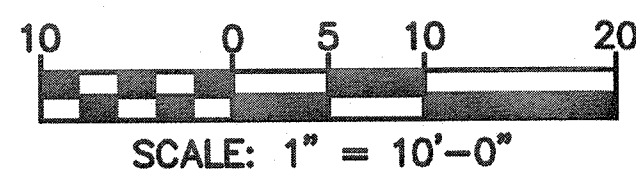
8460-D

DISCIPLINE/SHT NO

G-02

SHEET 2 OF 17

1



SYMBOL/ABBREVIATION	DESCRIPTION
○ TEXT	MANHOLE
□ SCD	SANITARY CLEANOUT
⊙ TEXT	VALVE
⊙ HM	WATER METER
⊙ FH	FIRE HYDRANT
⊙ WELL	WELL
⊙ MWELL	MONITOR WELL
⊙ DI	DROP INLET
⊙ CB	CATCH BASIN
RD INV 10.00	ROOF DRAIN
⊙ GM	GAS METER
⊙ PP	POWER POLE
⊙ LP	LIGHT POLE
⊙ GLIGHT	LIGHT POLE / CONCRETE BASE
⊙ TEXT	GROUND LIGHT
---	PEDESTAL
---	CURB AND GUTTER
---	FENCE
---	PROPERTY LINE
---	RIGHT-OF-WAY LINE
---	BUILDINGS
ST	STORM SEWER
(ST) 12" RCP (1)	PIPE LABEL (SIZE, TYPE, ID)
W	WATER
SS	SANITARY SEWER
(SS) 8" PVC (2)	PIPE LABEL (SIZE, TYPE, ID)
OHE	ELECTRIC & TELEPHONE LINE
UGT	TRAFFIC BOX
□	SIGN
□	MAIL BOX
○	TREE
---	BUSH/HEDGE
---	PAVEMENT
---	CONCRETE
⊙	TEMPORARY BENCHMARK(TBM)
⊙	ELEVATIONS
⊙	TOP OF CURB ELEVATIONS
⊙	TOP OF WALL ELEVATIONS
⊙	UTILITY STRUCTURE ID

PHASING NOTES

PH-1 THE CONTRACTOR SHALL PROVIDE A CONSTRUCTION SCHEDULE (PER SPECIFICATION SECTION 01 32 16) TO THE CONTRACTING OFFICER PRIOR TO BEGINNING CONSTRUCTION. DETAILS SHALL BE PROVIDED NOTING WHERE CONSTRUCTION WILL OCCUR, SEQUENTIAL PHASING AND THE DURATION OF THE WORK TO BE PERFORMED. THE SCHEDULE SHALL ALSO DETAIL THE LENGTHS OF ANTICIPATED INTERRUPTIONS AND HOW THE CONTRACTOR WILL MINIMIZE INTERRUPTIONS TO THE GOVERNMENT'S NORMAL OPERATIONS. COORDINATE CONSTRUCTION SCHEDULE WITH THE CONTRACTING OFFICER'S REPRESENTATIVE (COR) PRIOR TO BEGINNING CONSTRUCTION.

PH-2 PRIOR TO BEGINNING WORK REQUIRING INTERRUPTIONS TO COAST GUARD OPERATIONS OR WORK AFFECTING PERMANENT/EXISTING HOTEL SERVICES, THE CONTRACTING OFFICER'S REPRESENTATIVE SHALL BE GIVEN TWO WEEKS NOTICE. THE NOTICE SHALL INCLUDE ANTICIPATED STAFF AND EQUIPMENT TO BE UTILIZED BY THE CONTRACTOR DURING CONSTRUCTION.

PH-3 THE CONTRACTOR SHALL PROVIDE FOR CONTINUOUS COAST GUARD ACCESS TO THE MOORINGS FOR THE THREE (3) CUTTERS AND TWO (2) 45' RB-M.

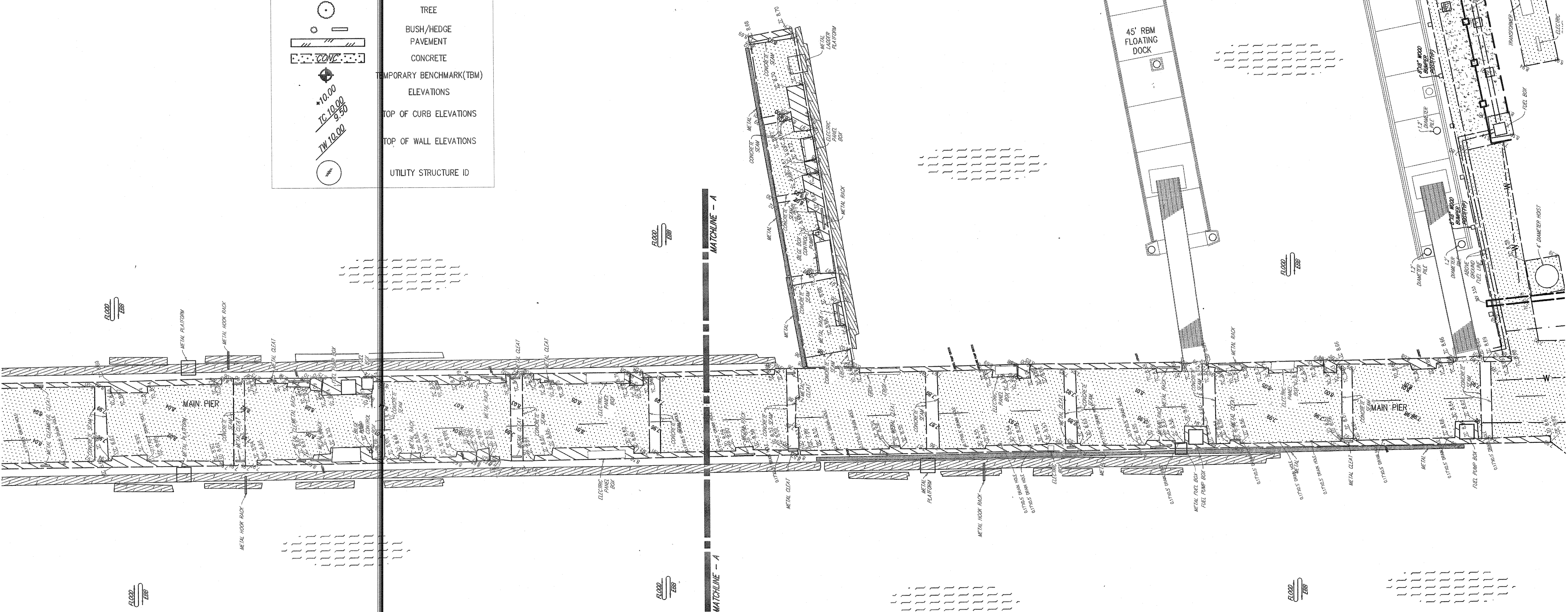
PH-4 PROVIDE AND EXECUTE A PLAN TO MAINTAIN UNINTERRUPTED HOTEL SERVICES TO THE THREE (3) CUTTERS AND TWO (2) 45' RB-M BY TEMPORARY MEANS. THESE SHALL INCLUDE FUEL, COMMUNICATIONS, ELECTRICAL, SANITARY SEWER AND HOTEL WATER.

- PROVIDE TEMPORARY HOTEL WATER BY WAY OF TEMPORARY PIPING WITH CONTROLS TO THE EXISTING SYSTEM PROVIDING SIMILAR FLOW RATE FOR THE EXISTING WATER SYSTEM. THE PERMANENT/EXISTING WATER SERVICE MAY BE INTERRUPTED, WITH A TEMPORARY SERVICE PROVIDED, FOR ONE CONTINUOUS PERIOD NOT TO EXCEED SEVEN DAYS.
- PROVIDE TEMPORARY FUEL BY WAY OF TEMPORARY PIPING WITH CONTROLS TO THE EXISTING SYSTEM PROVIDING SIMILAR FLOW RATE FOR THE EXISTING FUELING SYSTEM. THE PRIMARY LINE SHALL HAVE A 2" MINIMUM INSIDE DIAMETER WITH ALL NECESSARY SECONDARY CONTAINMENT LEAK DETECTION AND CONTROLS. THE PERMANENT/EXISTING FUELING PIPING MAY BE INTERRUPTED, WITH A TEMPORARY SERVICE PROVIDED, FOR ONE CONTINUOUS PERIOD NOT TO EXCEED THREE MONTHS.
- OTHER PERMANENT/EXISTING HOTEL SERVICES SHALL ONLY BE INTERRUPTED FOR A MINIMAL DURATION TO ALLOW CONNECTION/TRANSFER BETWEEN TEMPORARY SERVICES, PIPING, CABLES, ETC.
- TRANSFERS BETWEEN ANY EXISTING AND TEMPORARY HOTEL SERVICES SHALL BE LIMITED TO FOUR (4) HOURS MAXIMUM UNLESS WRITTEN APPROVAL IS RECEIVED FROM THE CONTRACTING OFFICER'S REPRESENTATIVE.

GENERAL NOTES FOR WATERFRONT WORK

G-1 THE CONTRACTOR SHALL COORDINATE ALL UTILITIES LOCATED NEAR THE BULKHEAD WHERE THE NEW CONCRETE ENCASUREMENT WORK IS PERFORMED. THIS SHALL INCLUDE RE-ROUTING PIER HOTEL SERVICES INCLUDING; FUEL (DIESEL AND GASOLINE), ELECTRICAL, SANITARY SEWER, DOMESTIC WATER, BILGE AND COMMUNICATIONS AS REQUIRED TO RESTORE EXISTING SERVICE/FUNCTION. STORM DRAINAGE PIPING SHALL BE FORMED INTO THE BULKHEAD AND NOT RESTRICT CAPACITY.

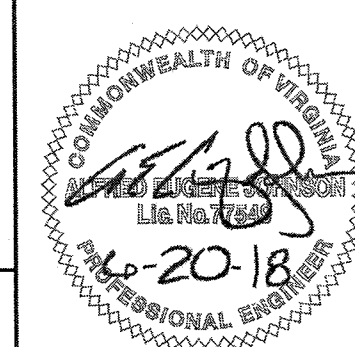
G-2 CARE SHALL BE EXECUTED BY THE CONTRACTOR NOT TO EXCEED LOAD CAPACITIES TO THE EXISTING PAVEMENT, BULKHEAD, PIERS OR DOCKS.



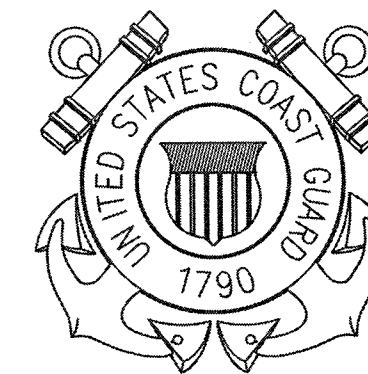
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CONSULTANTS

THE JOHNSON McADAMS FIRM
GREENWOOD, MISSISSIPPI 38930



U. S. COAST GUARD
CIVIL ENGINEERING UNIT
CLEVELAND



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1240 EAST 9TH STREET
CLEVELAND, OH 44199-2060

ISSUE

MARK	DATE	DESCRIPTION

A/E PROJECT NO: 1367-M
CAD FILE NAME: CB460G03.dwg
DESIGNED BY: AEJ
DRAWN BY: ADD
EDITED BY: ADD
CHECKED BY: FEJ

SCALE: AS SHOWN PLOT SCALE: 1:1

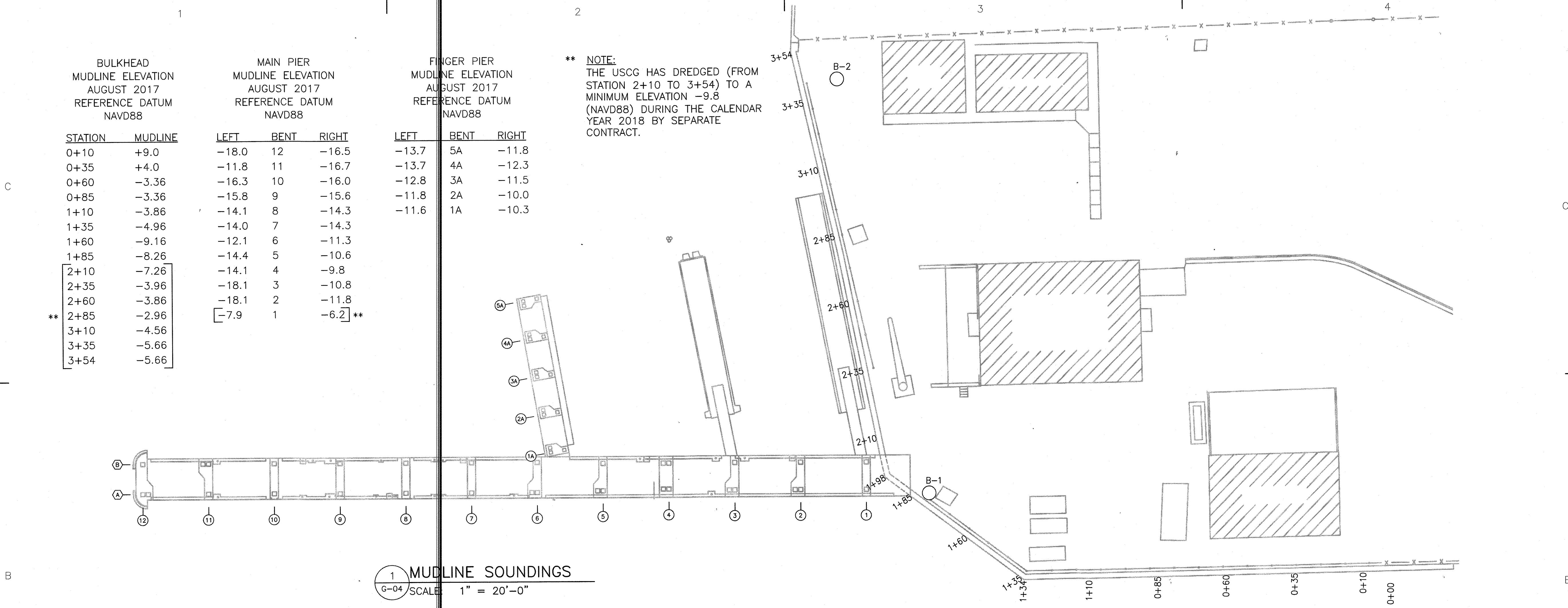
SHEET TITLE

MAJOR M&R OF WATERFRONT
CG STATION LITTLE CREEK
VIRGINIA BEACH VA
WATERFRONT
GENERAL
SITE SURVEY NORTH

REVIEWED BY: G.S. DEVAN
REVIEWED BY: G.P. LODGE
REVIEWED BY: G.S. PLATZKE
PROJECT ENG. BRANCH CHIEF
TECH. DIRECTOR

S.P. HANNIGAN, CDR.
APPROVING OFFICER
06/08/18
DATE

PROJECT NUMBER	DRAWING NUMBER
6117402	8460-D
DISCIPLINE/SHT NO	SHEET 3 OF 17
G-03	

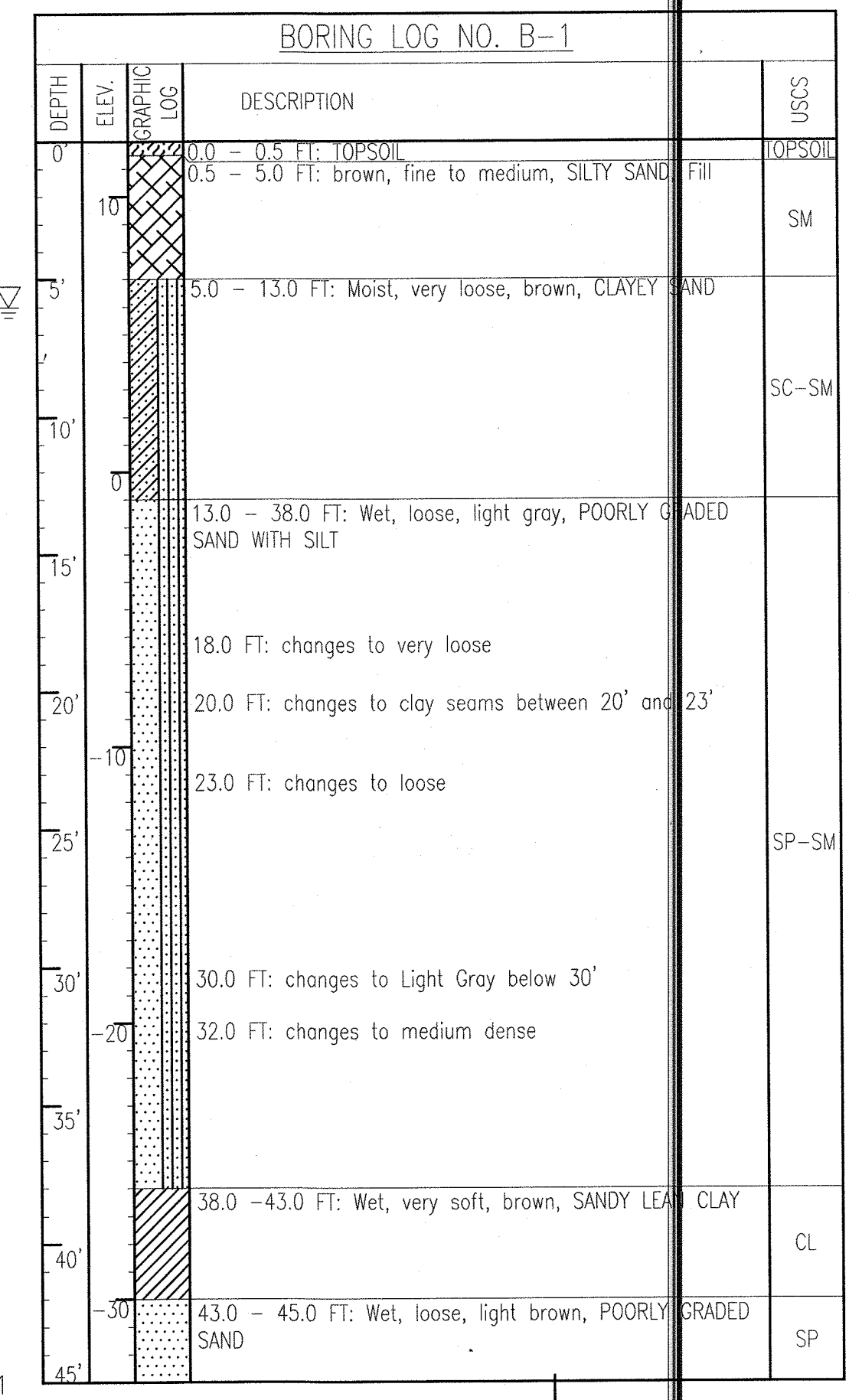


1 MUDLINE SOUNDINGS
G-04 SCALE 1" = 20'-0"

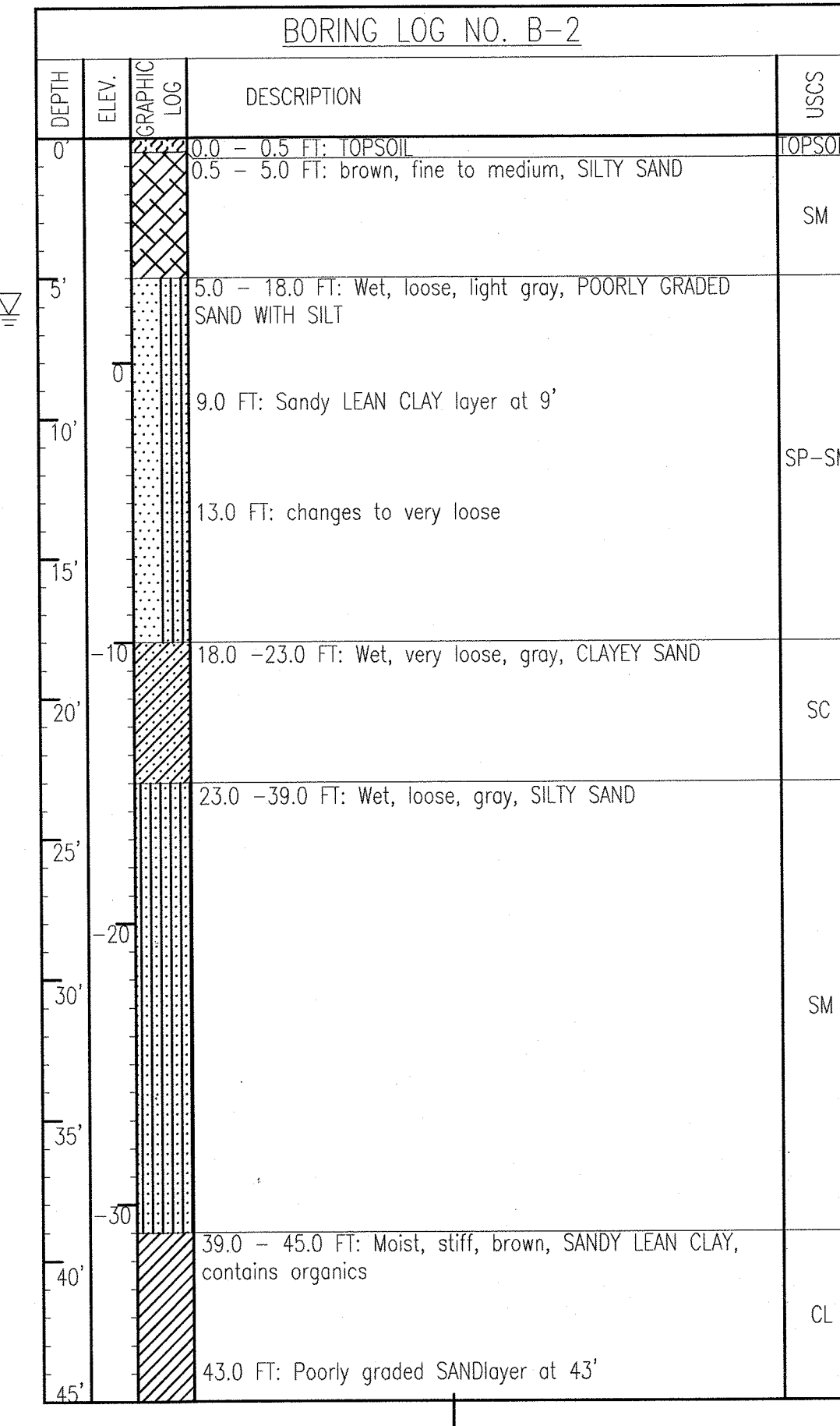
GEOTECHNICAL NOTES

GT-1 BORINGS FOR THIS PROJECT ARE BASED ON: 'SITE SURVEY REPORT, USCG STA LITTLE CREEK' DATED: NOVEMBER 2016. AECOM (BELTSVILLE, MD) PROJECT NUMBER 60493645.

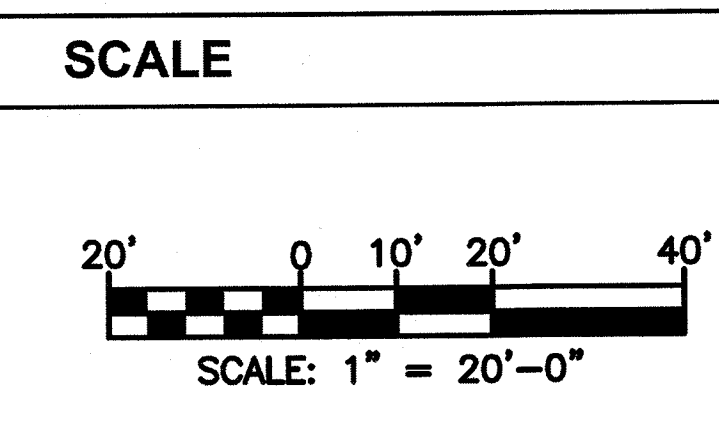
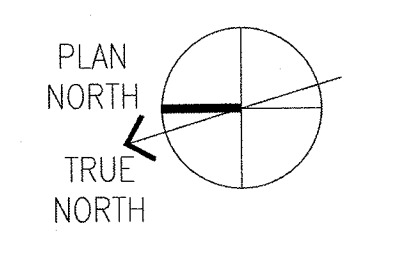
GT-2 GROUNDWATER WAS ENCOUNTERED AT 6- FEET IN THE BORINGS AT THE TIME OF AUGERING. GROUNDWATER LEVEL OBSERVATIONS PROVIDE AN INDICATION OF GROUNDWATER CONDITIONS PRESENT AT THE TIME THE BORINGS WERE DRILLED. GROUNDWATER LEVEL FLUCTUATIONS OCCUR DUE TO SEASONAL VARIATIONS IN THE AMOUNT OF RAINFALL, RUNOFF AND OTHER FACTORS NOT EVIDENT AT THE TIME.



END OF BORING AT 45'
ON 10/20/2016 AT
12:00 P.M.



END OF BORING AT 45'
ON 10/20/2016 AT
4:00 P.M.



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(216) 902-6200

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U. S. COAST GUARD
CIVIL ENGINEERING UNIT
CLEVELAND

USCG. CEU CLEVELAND
1240 EAST 9TH STREET
CLEVELAND, OH 44199-2060

ISSUE		
MARK	DATE	DESCRIPTION

A/E PROJECT NO: 1367-M
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DESIGNED BY: AEJ
DRAWN BY: ADD
EDITED BY: ADD
CHECKED BY: FEJ

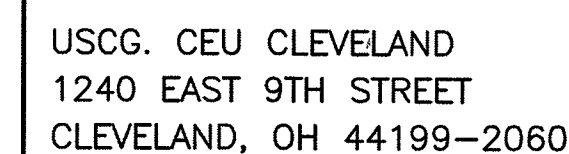
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SHEET TITLE
MAJOR M&R OF WATERFRONT
CG STATION LITTLE CREEK
VIRGINIA BEACH VA
STEEL BULKHEAD
GENERAL
MUDLINE SOUNDINGS

REVIEWED BY:	REVIEWED BY:	REVIEWED BY:
C.S. DEWAN	G.P. LODGE	G.S. PURZEC
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR
S.P. HANNIGAN, CDR. APPROVING OFFICER		06/08/18 DATE

PROJECT NUMBER	DRAWING NUMBER
6117402	8460-D
DISCIPLINE/SHT NO	SHEET 4 OF 17

CONSULTANTS
THE JOHNSON McADAMS FIRM
GREENWOOD, MISSISSIPPI 38930



A/E PROJECT NO:	1367-M
CAD FILE NAME:	C8460C01.dwg
DESIGNED BY:	AEJ
DRAWN BY:	ADD
EDITED BY:	ADD
CHECKED BY:	FEJ

SHEET TITLE

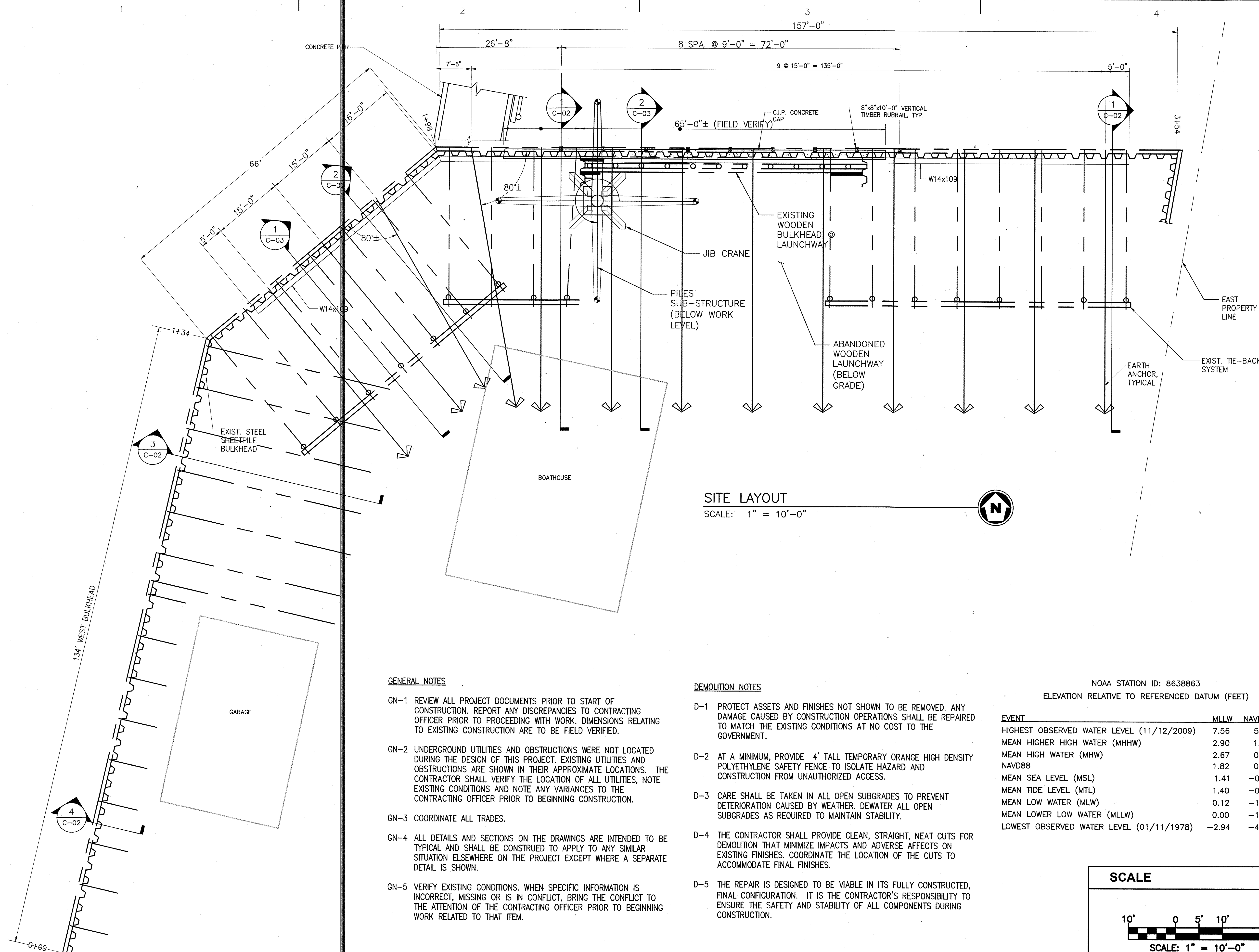
REVIEWED BY: <i>G.P. Devan</i> G.A. DEVAN	REVIEWED BY: <i>G.P. Lodge</i> G.P. LODGE	REVIEWED BY: <i>G.S. Placzek</i> G.S. PLACZEK
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

PROJECT NUMBER	DRAWING NUMBER
----------------	----------------

6117402	8460-D
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DISCIPLINE/SHT NO	
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C-01	SHEET	5	OF	17
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GN-1 REVIEW ALL PROJECT DOCUMENTS PRIOR TO START OF CONSTRUCTION. REPORT ANY DISCREPANCIES TO CONTRACTING OFFICER PRIOR TO PROCEEDING WITH WORK. DIMENSIONS RELATING TO EXISTING CONSTRUCTION ARE TO BE FIELD VERIFIED.

GN-2 UNDERGROUND UTILITIES AND OBSTRUCTIONS WERE NOT LOCATED DURING THE DESIGN OF THIS PROJECT. EXISTING UTILITIES AND OBSTRUCTIONS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES, NOTE EXISTING CONDITIONS AND NOTE ANY VARIANCES TO THE CONTRACTING OFFICER PRIOR TO BEGINNING CONSTRUCTION.

GN-3 COORDINATE ALL TRADES.

GN-4 ALL DETAILS AND SECTIONS ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT EXCEPT WHERE A SEPARATE DETAIL IS SHOWN.

GN-5 VERIFY EXISTING CONDITIONS. WHEN SPECIFIC INFORMATION IS INCORRECT, MISSING OR IS IN CONFLICT, BRING THE CONFLICT TO THE ATTENTION OF THE CONTRACTING OFFICER PRIOR TO BEGINNING WORK RELATED TO THAT ITEM.

D-1 PROTECT ASSETS AND FINISHES NOT SHOWN TO BE REMOVED. ANY DAMAGE CAUSED BY CONSTRUCTION OPERATIONS SHALL BE REPAIRED TO MATCH THE EXISTING CONDITIONS AT NO COST TO THE GOVERNMENT.

D-2 AT A MINIMUM, PROVIDE 4' TALL TEMPORARY ORANGE HIGH DENSITY POLYETHYLENE SAFETY FENCE TO ISOLATE HAZARD AND CONSTRUCTION FROM UNAUTHORIZED ACCESS.

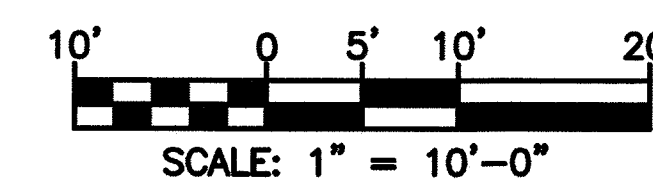
D-3 CARE SHALL BE TAKEN IN ALL OPEN SUBGRADES TO PREVENT DETERIORATION CAUSED BY WEATHER. DEWATER ALL OPEN SUBGRADES AS REQUIRED TO MAINTAIN STABILITY.

D-4 THE CONTRACTOR SHALL PROVIDE CLEAN, STRAIGHT, NEAT CUTS FOR DEMOLITION THAT MINIMIZE IMPACTS AND ADVERSE AFFECTS ON EXISTING FINISHES. COORDINATE THE LOCATION OF THE CUTS TO ACCOMMODATE FINAL FINISHES.

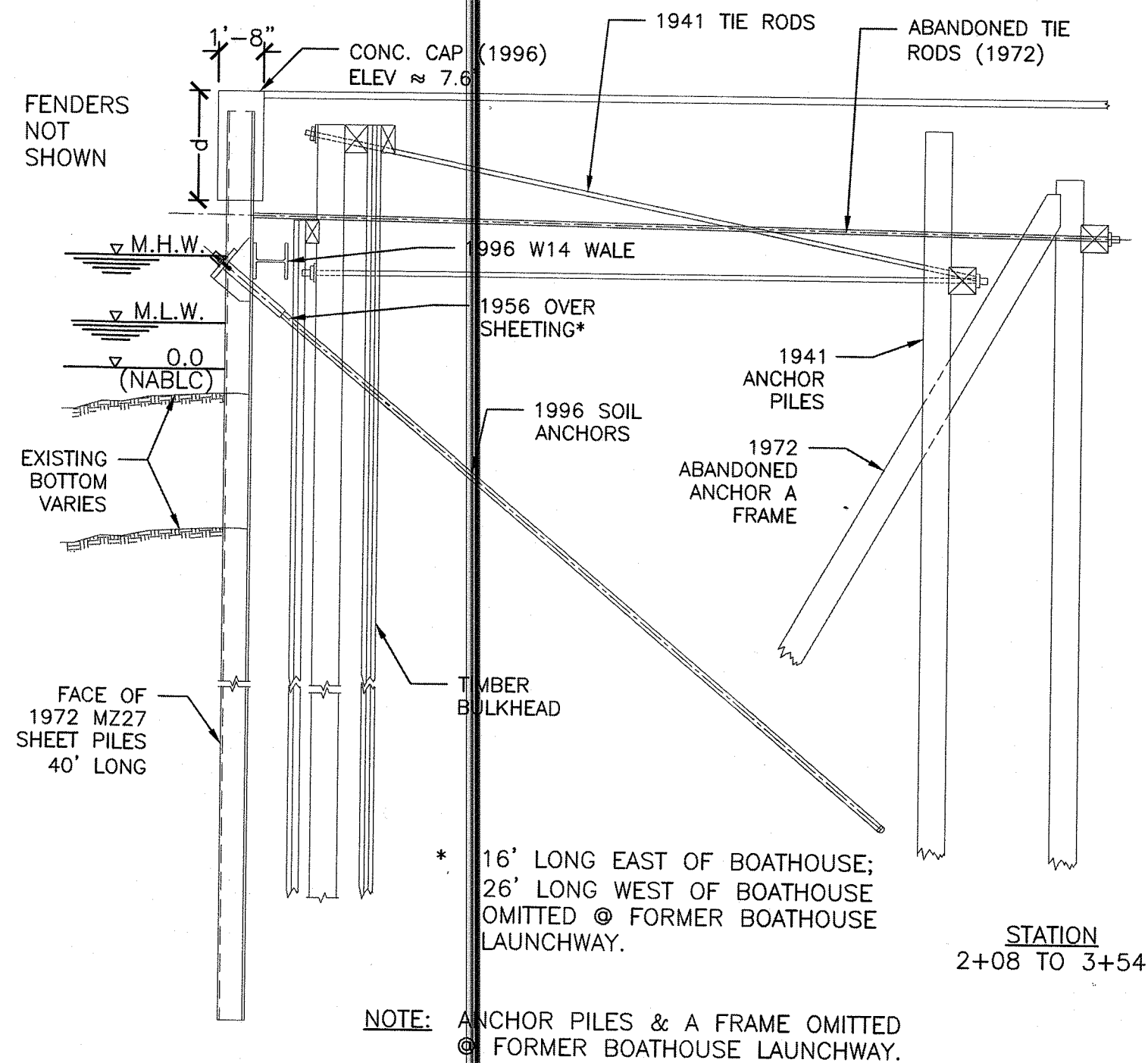
D-5 THE REPAIR IS DESIGNED TO BE VIABLE IN ITS FULLY CONSTRUCTED, FINAL CONFIGURATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THE SAFETY AND STABILITY OF ALL COMPONENTS DURING CONSTRUCTION.

EVENT	MLW	NAVD88
HIGHEST OBSERVED WATER LEVEL (11/12/2009)	7.56	5.74
MEAN HIGHER HIGH WATER (MHHW)	2.90	1.08
MEAN HIGH WATER (MHW)	2.67	0.85
NAVD88	1.82	0.00
MEAN SEA LEVEL (MSL)	1.41	-0.41
MEAN TIDE LEVEL (MTL)	1.40	-0.42
MEAN LOW WATER (MLW)	0.12	-1.70
MEAN LOWER LOW WATER (MLLW)	0.00	-1.82
LOWEST OBSERVED WATER LEVEL (01/11/1978)	-2.94	-4.76

SCALE

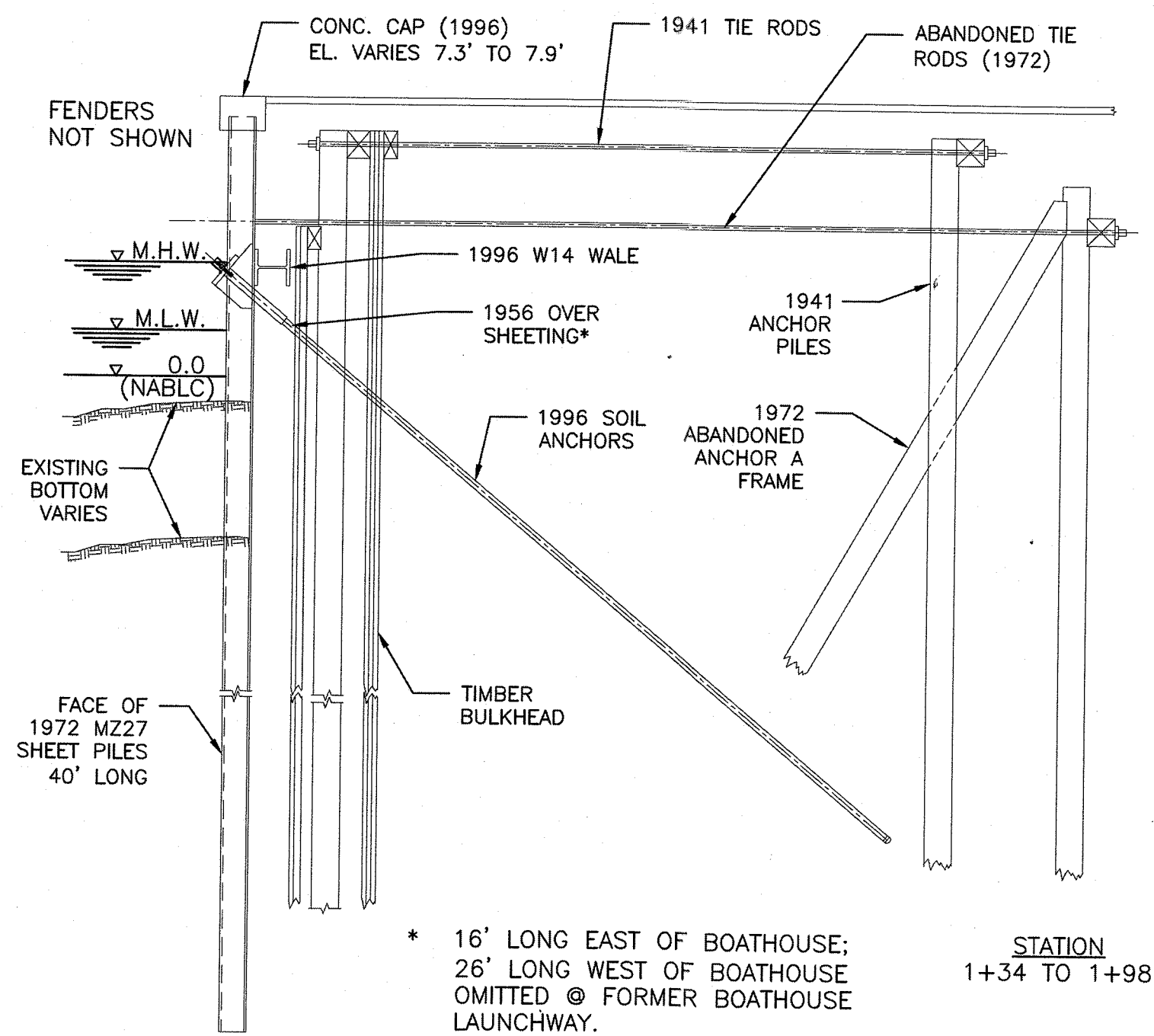


NOTE:
2+27 TO 2+87 d=48"
2+08 TO 2+27 d=15"
2+87 TO 3+54 d=15"



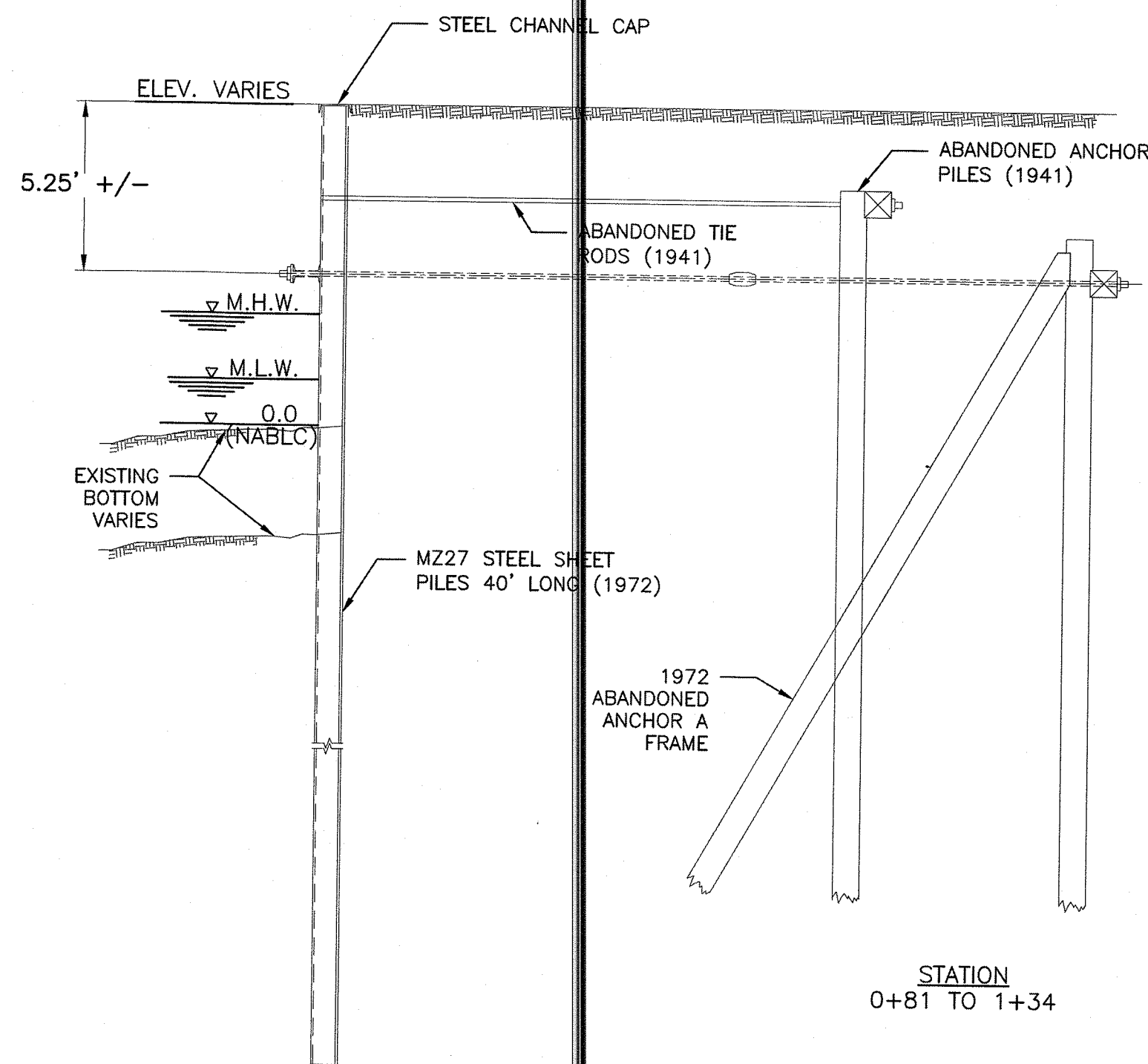
NOTE: ANCHOR PILES & A FRAME OMITTED
© FORMER BOATHOUSE LAUNCHWAY.

1 SECTION A
C-02 SCALE: 3/16" = 1'-0"

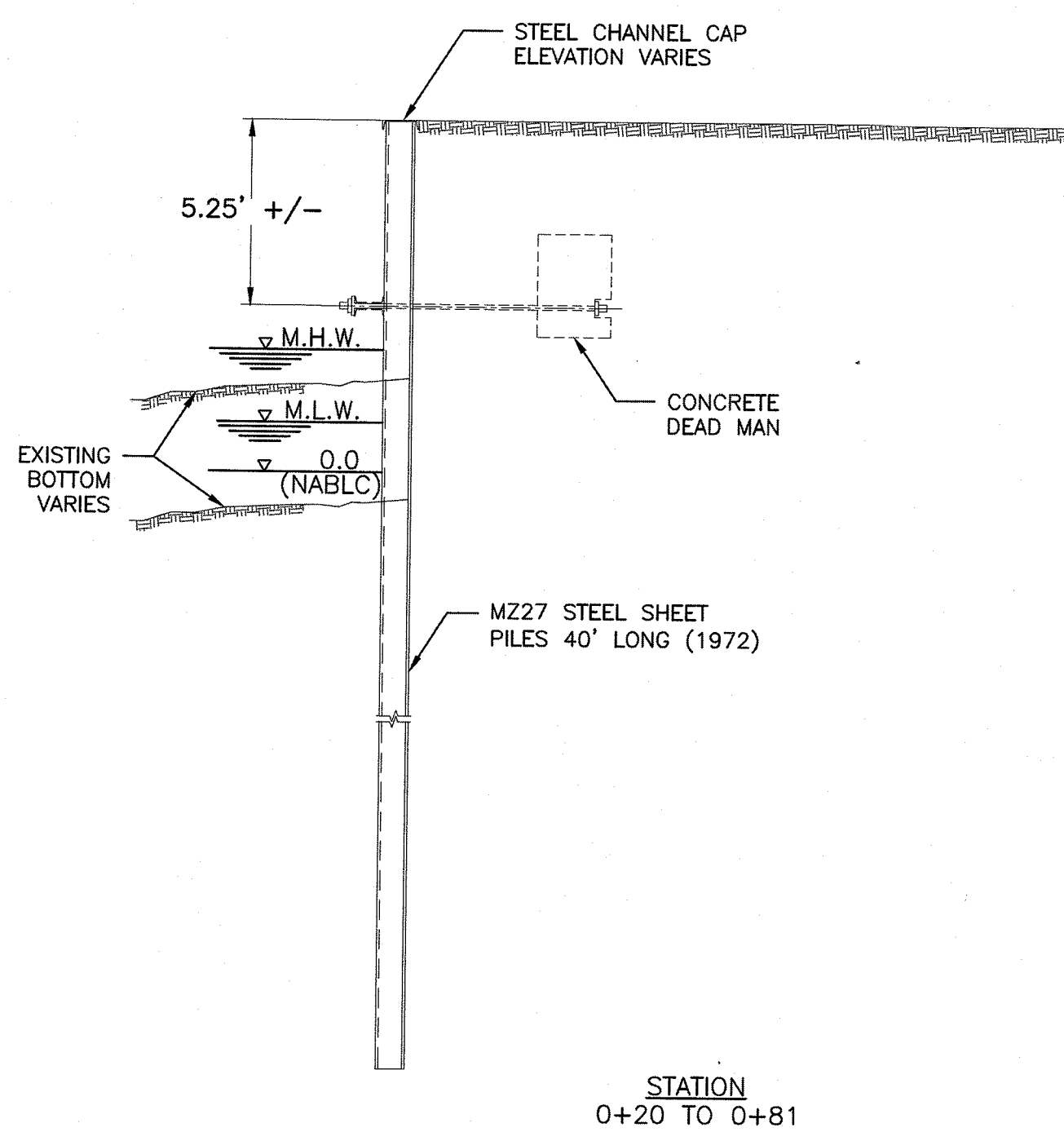


* 16' LONG EAST OF BOATHOUSE;
26' LONG WEST OF BOATHOUSE
OMITTED © FORMER BOATHOUSE
LAUNCHWAY.

2 SECTION B
C-02 SCALE: 3/16" = 1'-0"

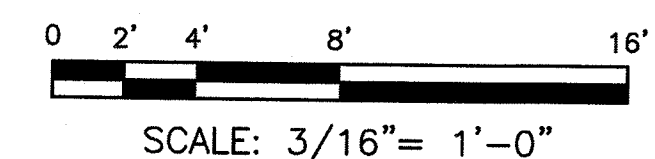


3 SECTION C
C-02 SCALE: 3/16" = 1'-0"



4 SECTION D
C-02 SCALE: 3/16" = 1'-0"

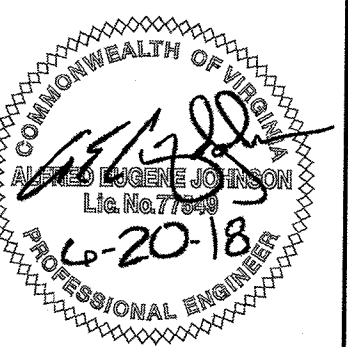
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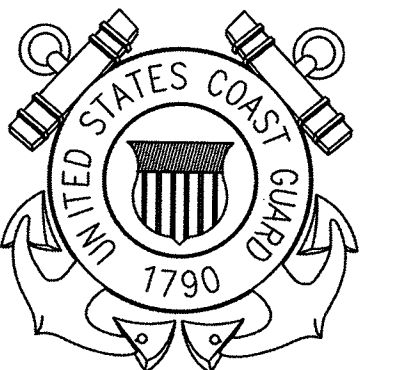
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THE JOHNSON McADAMS FIRM
GREENWOOD, MISSISSIPPI 38930



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CIVIL ENGINEERING UNIT
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CLEVELAND, OH 44199-2060

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CAD FILE NAME: C8460C02.dwg
DESIGNED BY: AEJ
DRAWN BY: ADD
EDITED BY: ADD
CHECKED BY: FEJ

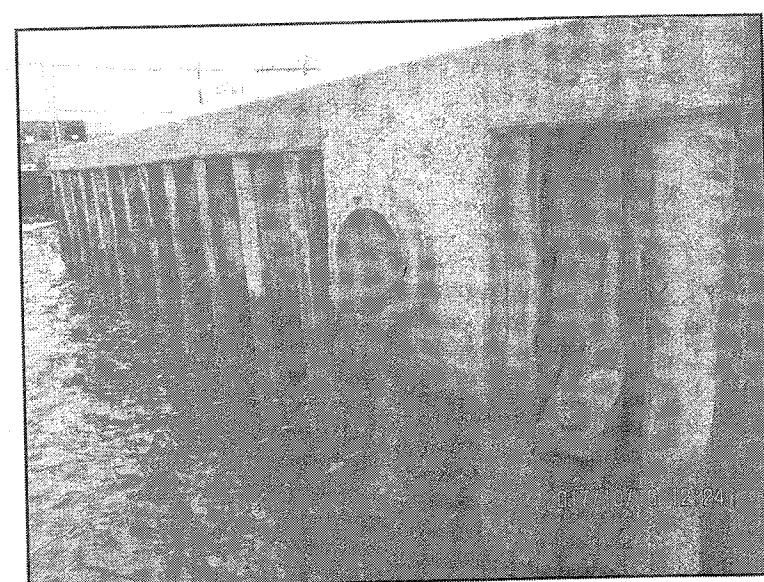
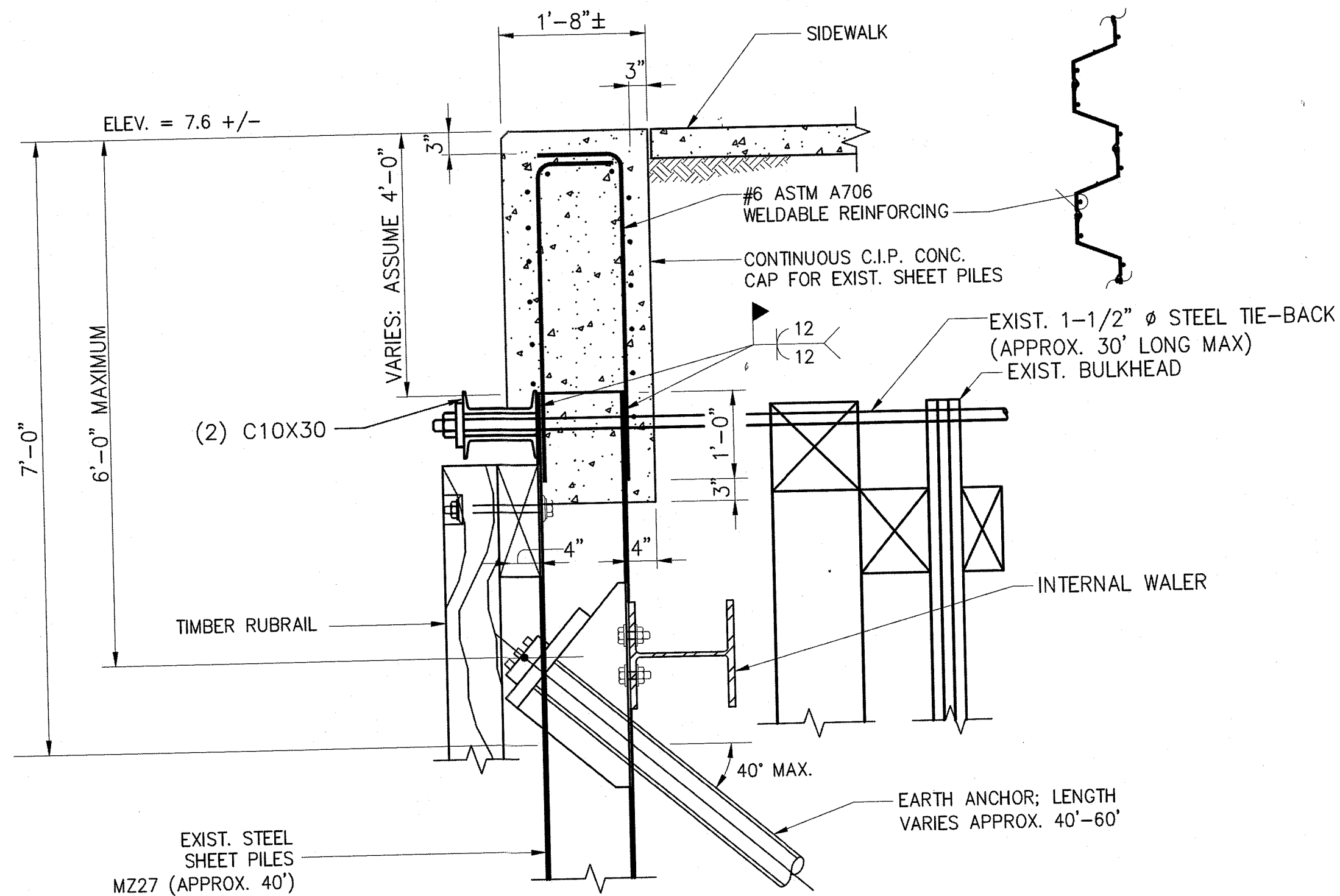
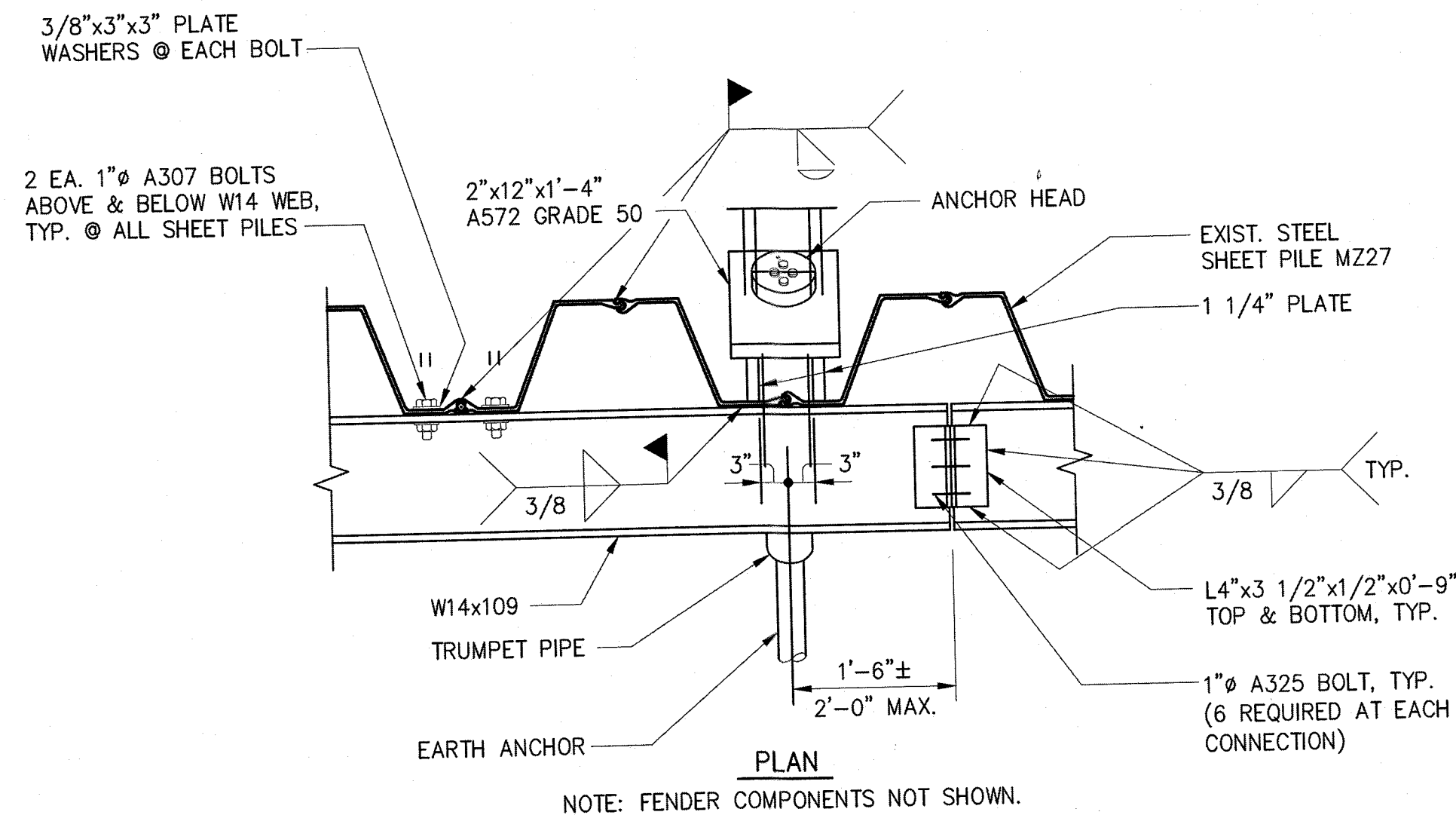
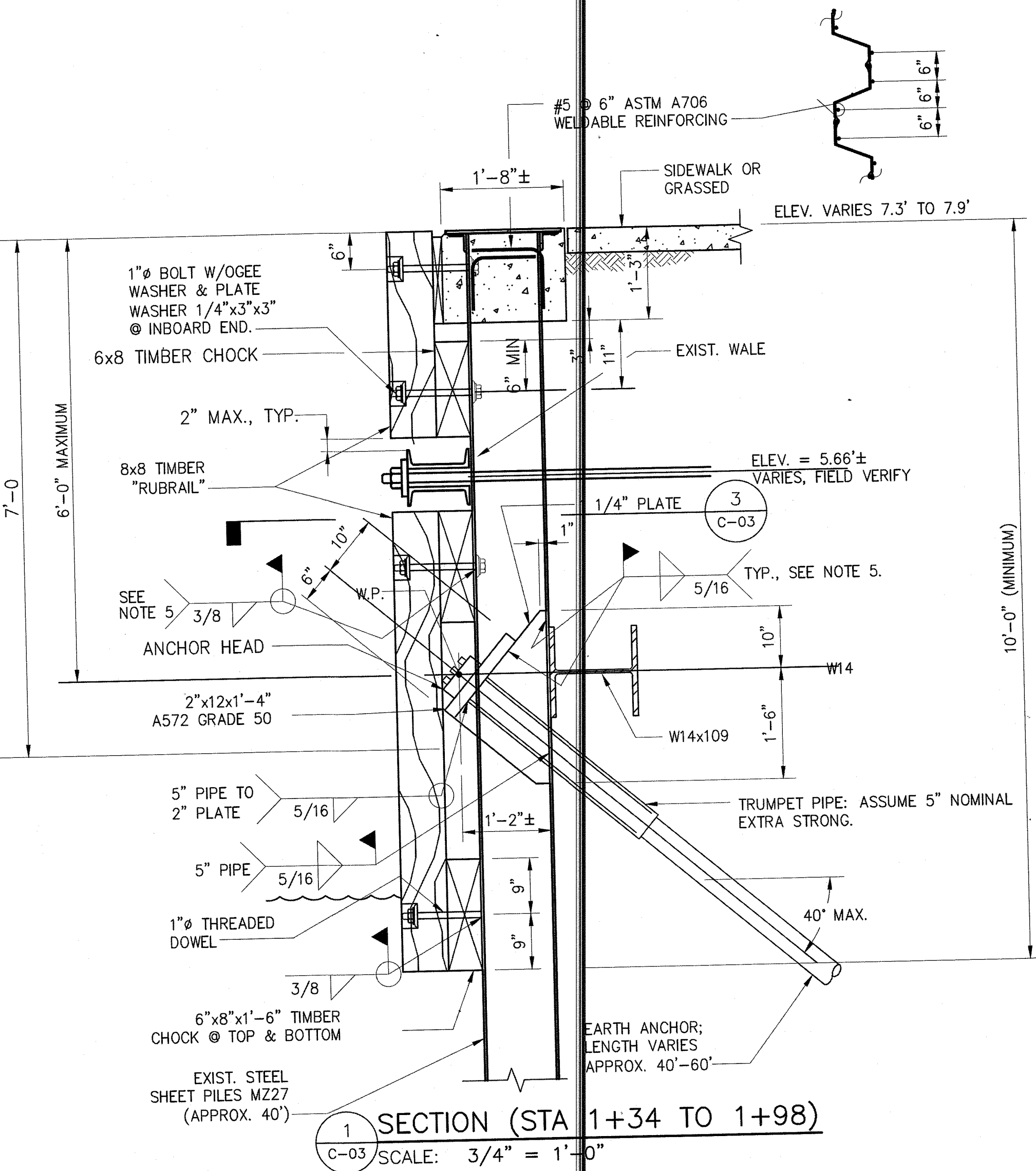
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SHEET TITLE

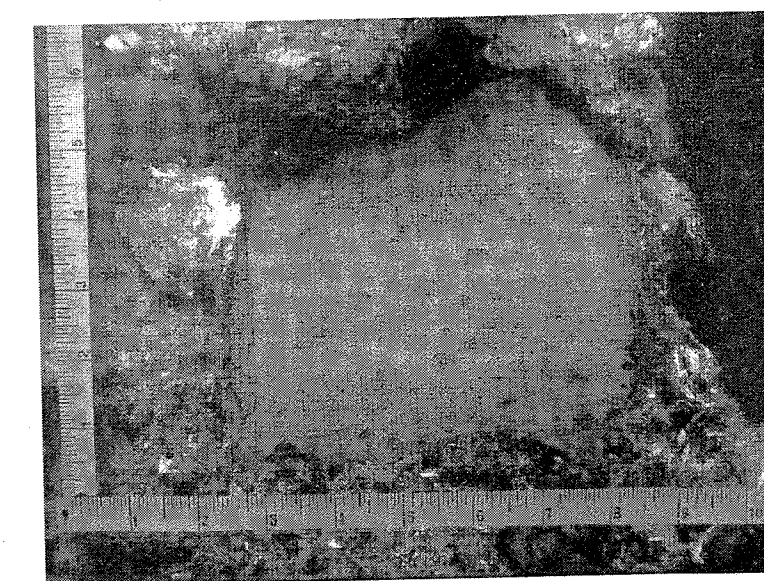
MAJOR M&R OF WATERFRONT
CG STATION LITTLE CREEK VA
VIRGINIA BEACH VA
STEEL BULKHEAD
CIVIL
EXIST. BULKHEAD SECTIONS

REVIEWED BY: G.A. DEAN	REVIEWED BY: G.B. LODGE	REVIEWED BY: G.S. PLATZ
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR
S.P. HANNIGAN, CDR. APPROVING OFFICER		06/08/18 DATE

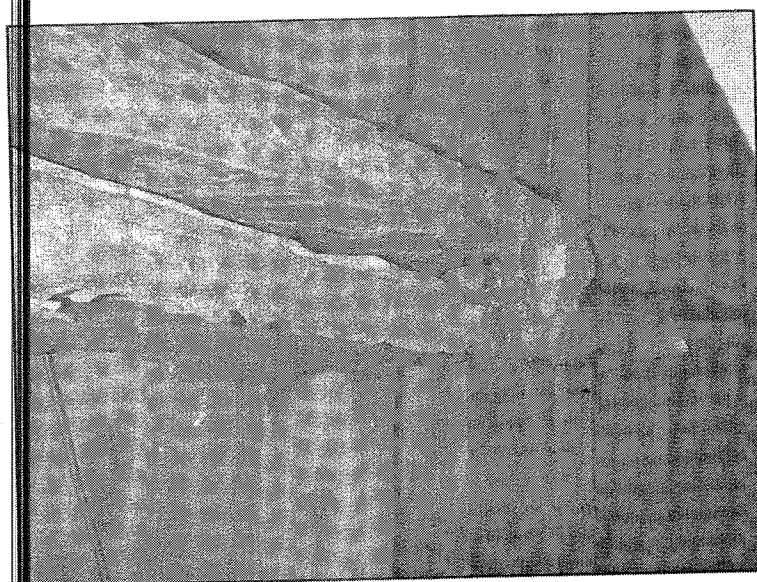
PROJECT NUMBER 6117402	DRAWING NUMBER 8460-D
DISCIPLINE/SHT NO C-02	SHEET 6 OF 17



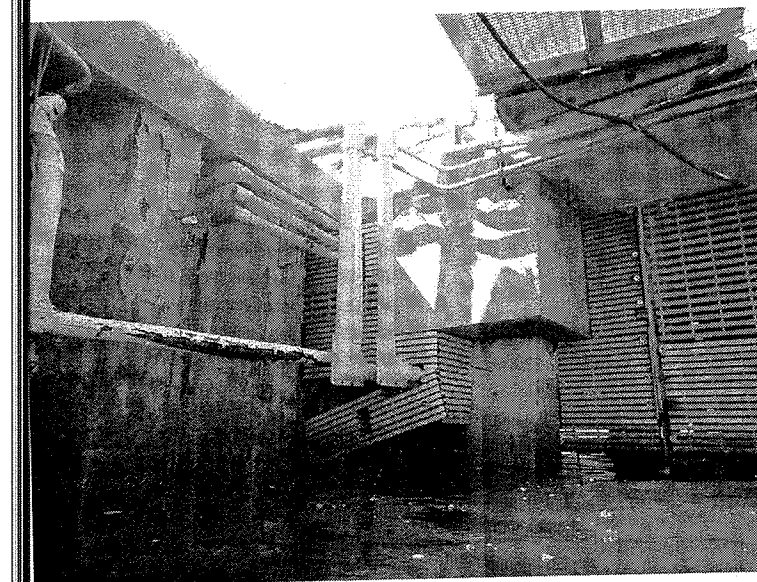
ABOVE WATER BULKHEAD AND COATING



UNDERWATER STEEL CLEANED OF GROWTH



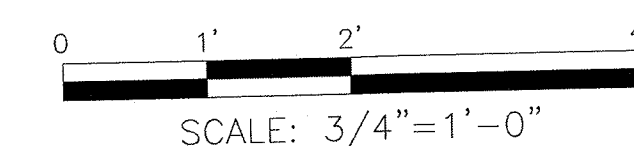
WALE, BULKHEAD AND COATING



PIER BULKHEAD INTERSECTION (2+08)

PHOTO OF EXISTING CONDITIONS
SCALE: NONE

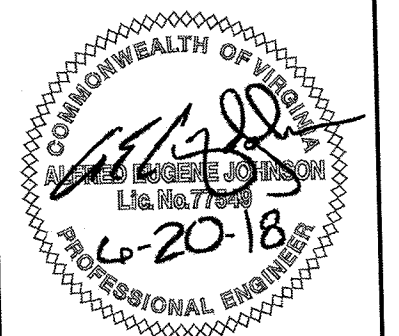
SCALE



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ISSUE

MARK DATE DESCRIPTION

A/E PROJECT NO: 1367-M
CAD FILE NAME: CB460C03.dwg
DESIGNED BY: AEJ
DRAWN BY: ADD
EDITED BY: ADD
CHECKED BY: FEJ

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE

MAJOR M&R OF WATERFRONT
CG STATION LITTLE CREEK
VIRGINIA BEACH VA
STEEL BULKHEAD
CIVIL
EXIST. BULKHEAD DETAILS

REVIEWED BY: G. R. LODGE
PROJECT ENG. BRANCH CHIEF
S.P. HANNIGAN, CDR.
APPROVING OFFICER

REVIEWED BY: G. S. PLAZEK
TECH. DIRECTOR
06/08/18
DATE

PROJECT NUMBER DRAWING NUMBER

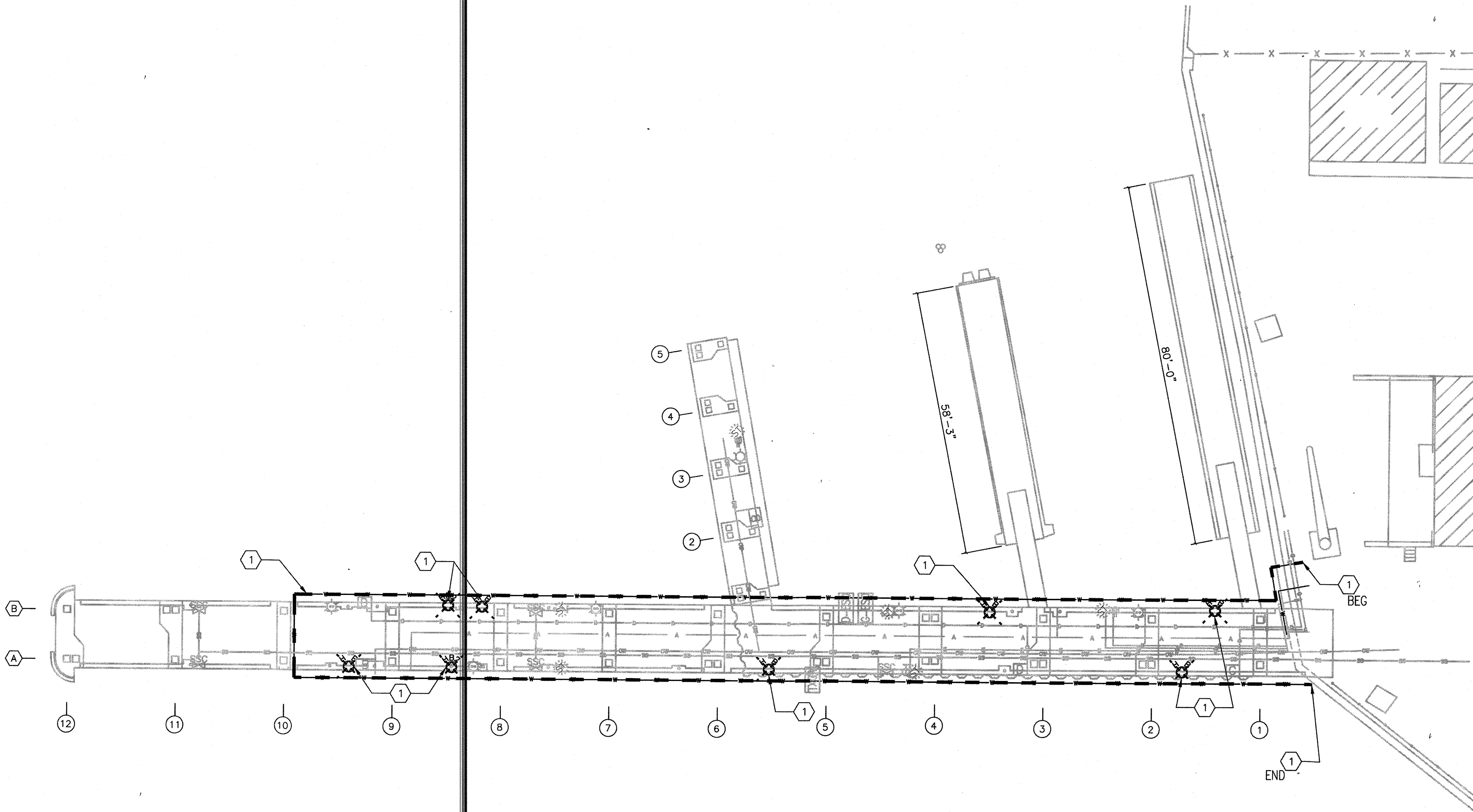
6117402

8460-D

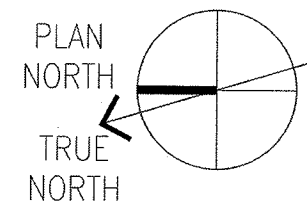
DISCIPLINE/SHT NO

C-03

SHEET 7 OF 17



1 EXISTING/DEMO PIER PLAN
C-04 SCALE: 1/16" = 1'-0"



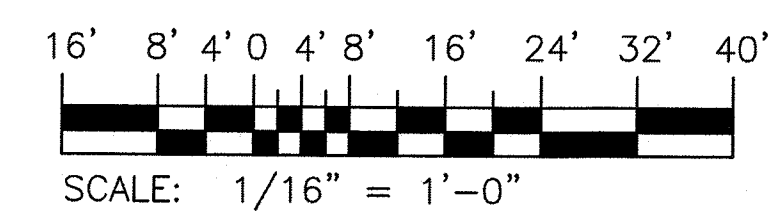
KEYED NOTES

1. REMOVE AND DEMOLISH 2" Ø WATER PIPING, HOSE CONNECTIONS, & APPURTENANCES. FILL IN ABANDONED VOIDS WITH NON-SHRINK GROUT.

LEGEND

- BILGE
- DIESEL FUEL DISPENSER
- GASOLINE FUEL DISPENSER
- DIESEL EMERGENCY SHUT OFF
- GASOLINE EMERGENCY SHUT OFF
- HOSE BIBB
- HOSE BIBB (3/4" & 1-1/2")
- SANITARY SEWER CONNECTION
- CONVENIENCE OUTLET
- SHORE TIE
- SITE LIGHT
- TELEPHONE PANEL
- TRANSFORMER
- COMPRESSED AIR
- DIESEL
- GASOLINE
- ELECTRICAL CONDUIT
- BILGE AND OILY WASTE
- SANITARY SEWER
- WATER

SCALE

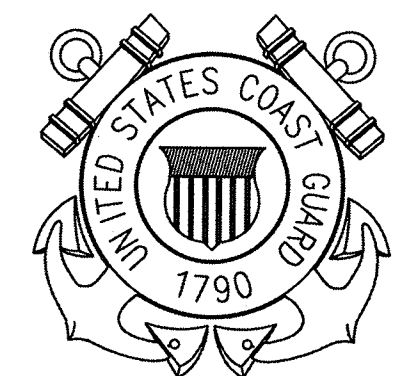


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A/E PROJECT NO: 1367-M	
CAD FILE NAME: C8460C04.dwg	
DESIGNED BY:	AEJ
DRAWN BY:	ADD
EDITED BY:	ADD
CHECKED BY:	FEJ

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE
MAJOR M&R OF WATERFRONT
CG STATION LITTLE CREEK
VIRGINIA BEACH VA
MAIN SHIP PIER
CIVIL
EXIST./DEMO PIER PLAN

REVIEWED BY: G.A. DEYAN	REVIEWED BY: G.P. LODGE	REVIEWED BY: G.S. PLACZEK
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

S.P. HARRIGAN, CDR.
APPROVING OFFICER
06/08/18
DATE

PROJECT NUMBER		DRAWING NUMBER	
6117402		8460-D	
DISCIPLINE/SHIT NO C-04		SHEET 8 OF 17	

SHEET PILE HOLES NOTE:
THE CONTRACTOR SHALL INCLUDE IN THE SCOPE OF REPAIRS THE FOLLOWING. PATCH TEN UNDERWATER 1'X1' HOLES BY WELDING A 3/8" STEEL COVER PLATE, FORMED TO FIT OVER THE HOLE, ON THE WATERSIDE OF THE SHEET PILE BULKHEAD. PROVIDE A 3/8" FILLET WELD AROUND THE PLATE PERIMETER. SEE SHEET PILE HOLES SCHEDULE ON THIS SHEET FOR APPROXIMATE LOCATIONS.

BILGE WATER PIPING
SANITARY SEWER PIPING
COMPRESSED AIR PIPING

FULL DEPTH SAWED LIMITS FOR SIDEWALK DEMOLITION

BOATHOUSE

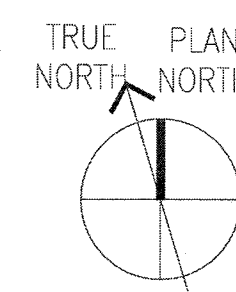
EQUIPMENT STORAGE

KEYED NOTES:

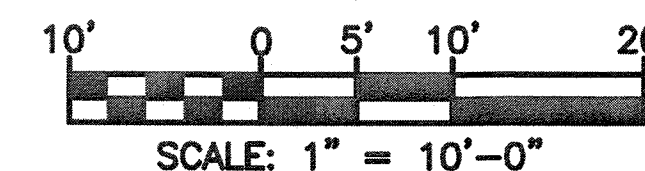
- 1- REMOVE AND DISPOSE FUEL PIPING. CAP FOR RECONNECTION (LIKE-IN-KIND).
- 2- REMOVE AND DISPOSE VINYL FENCING.
- 3- REMOVE AND DISPOSE SECURITY FENCING.
- 4- REMOVE AND DISPOSE OF ELECTRICAL AND CONTROLS CONDUIT AND CONDUCTORS (FOR FUEL SYSTEMS). TEMPORARILY TERMINATE IN A JUNCTION BOX TO BE RECONNECTED (LIKE-IN-KIND).
- 5- REMOVE AND DISPOSE OF CONCRETE SIDEWALK.
- 6- REMOVE AND STORE (6) 14"Ø STEEL PILES. REMOVE AND STORE FLOATING DOCK AND GANGWAY OFF SITE FOR REINSTALLATION AT THE COMPLETION OF THE PROJECT. REPAIR LIST TO THE END DOCK FLOAT (SEE DETAILS 2&3/C-09).
- 7- REMOVE AND DISPOSE OF TIMBER & RUB RAIL FENDERING.
- 8- REMOVE AND DISPOSE OF CONCRETE CAP (1+34 TO 3+54).
- 9- REMOVE EPOXY COATING ON THE STEEL BULKHEAD, WALES AND TIES/SOIL ANCHORS. BLAST CLEAN TO A COMMERCIAL FINISH (AVERAGE HEIGHT 11') LIMITS: STATION 0+00 TO 3+55.
- 10- REPAIR HOLES IN THE STEEL SHEET PILE WITH WELDED PLATES. SEE SCHEDULE (SHEET PILE HOLES) THIS SHEET.
- 11- REMOVE AND STORE CROSS-OVER STAIR SYSTEM (AS DIRECTED BY THE USCG).
- 12- CUT OFF TOP 12" OF STEEL SHEET PILE SECTION. LIMITS: STATION 0+00 TO 1+98 AND 2+08 TO 3+55.
- 13- REMOVE AND STORE SIGN AND POST OFF SITE FOR REINSTALLATION AT THE COMPLETION OF THE PROJECT.
- 14- UNBOLT STEEL JIB CRANE FROM FOUNDATION THEN REMOVE AND DISPOSE. SAW/GRIND BOLTS FLUSH WITH THE TOP OF FOUNDATION.

10 SHEET PILE HOLES

STATION	DESCRIPTION
0+40	CORROSION HOLE AT WEB AND FLANGE INTERFACE AT MUDLINE, STONES BEHIND. 6" HIGH X 6" WIDE
0+41	CORROSION HOLE AT WEB AND FLANGE INTERFACE AT MUDLINE, STONES BEHIND. 6" HIGH X 6" WIDE
0+44	CORROSION HOLE AT WEB AND FLANGE INTERFACE AT MUDLINE, STONES BEHIND. 6" HIGH X 6" WIDE
0+45	CORROSION HOLE AT WEB AND FLANGE INTERFACE AT MUDLINE, STONES BEHIND. 6" HIGH X 6" WIDE
0+50	CORROSION HOLE 1' ABOVE MUDLINE, STONES BEHIND. 10" HIGH X 3" WIDE
0+52	CORROSION HOLE 1' ABOVE MUDLINE, STONES BEHIND. 10" HIGH X 3" WIDE
0+54	CORROSION HOLE 1' ABOVE MUDLINE, STONES BEHIND. 10" HIGH X 3" WIDE
0+56	CORROSION HOLE 1' ABOVE MUDLINE, STONES BEHIND. 10" HIGH X 3" WIDE
0+60	CORROSION HOLE 1' ABOVE MUDLINE, STONES BEHIND. 10" HIGH X 3" WIDE
3+10	3" HOLE AND FINES WASHED OUT, ELEVATION APPROXIMATELY 0.0' MLLW 5" HIGH X 3" WIDE



SCALE

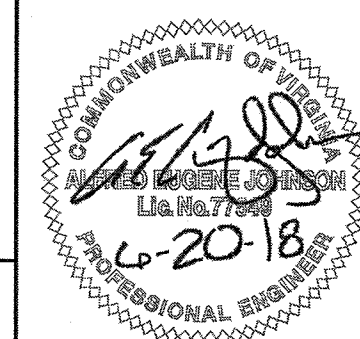


BULKHEAD DEMOLITION PLAN
SCALE: 1" = 10'-0"

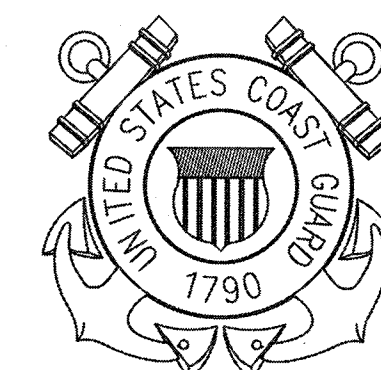
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MARK	DATE	DESCRIPTION

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CAD FILE NAME: C8460C05.dwg
DESIGNED BY: AEJ
DRAWN BY: ADD
EDITED BY: ADD
CHECKED BY: FEJ

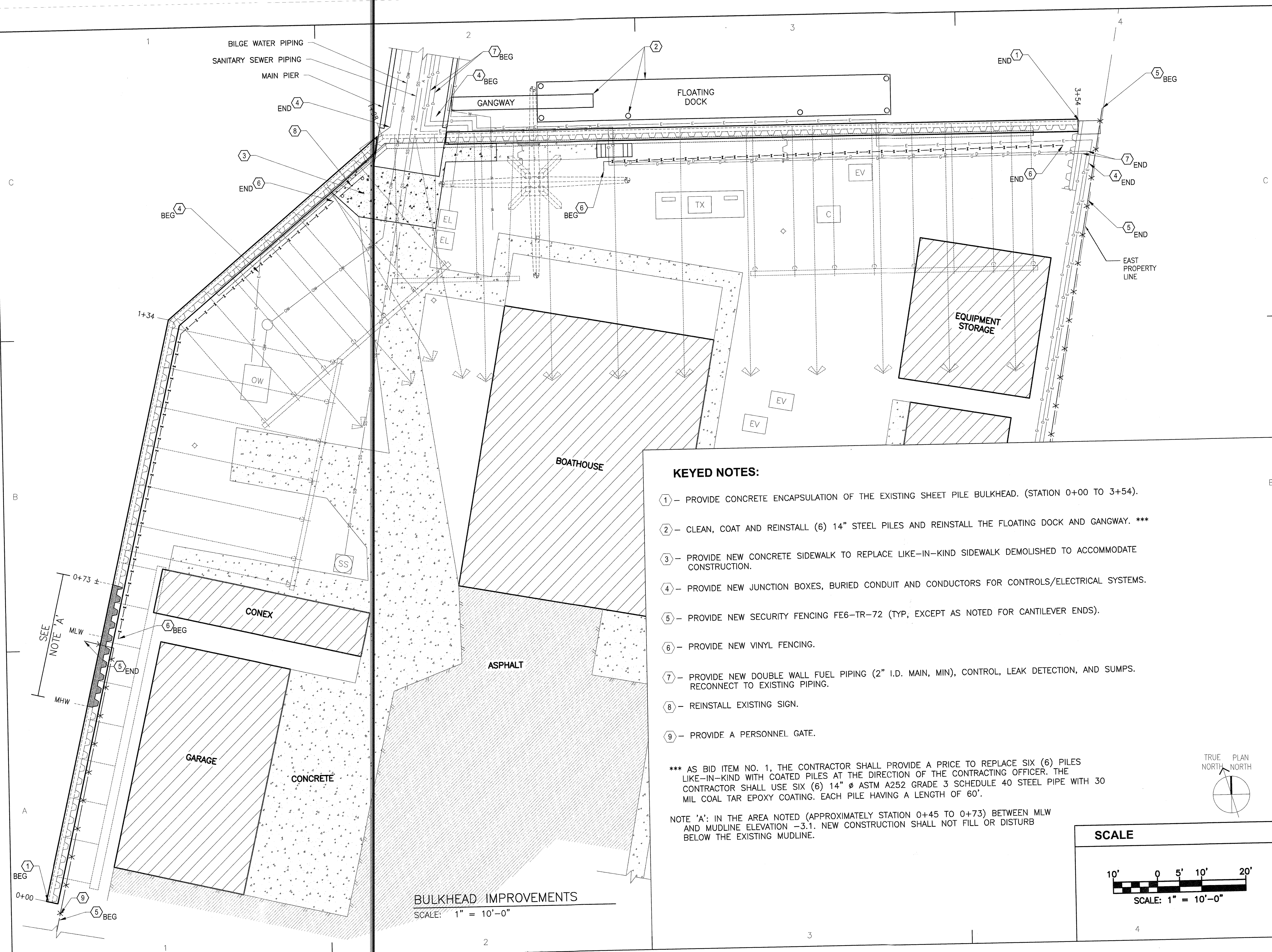
SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE

MAJOR M&R OF WATERFRONT
CG STATION LITTLE CREEK
VIRGINIA BEACH VA
WATERFRONT CIVIL
BULKHEAD DEMOLITION PLAN

REVIEWED BY: G.A. DEYAN
REVIEWED BY: G.P. LODGE
REVIEWED BY: J.S. PLATZER
PROJECT ENG. BRANCH CHIEF TECH. DIRECTOR
S.P. HANNIGAN, CDR.
APPROVING OFFICER
06/08/18
DATE

PROJECT NUMBER 6117402
DRAWING NUMBER 8460-D
DISCIPLINE/SHT NO C-05
SHEET 9 OF 17



KEYED NOTES:

- ① - PROVIDE CONCRETE ENCAPSULATION OF THE EXISTING SHEET PILE BULKHEAD. (STATION 0+00 TO 3+54).
- ② - CLEAN, COAT AND REINSTALL (6) 14" STEEL PILES AND REINSTALL THE FLOATING DOCK AND GANGWAY. ***
- ③ - PROVIDE NEW CONCRETE SIDEWALK TO REPLACE LIKE-IN-KIND SIDEWALK DEMOLISHED TO ACCOMMODATE CONSTRUCTION.
- ④ - PROVIDE NEW JUNCTION BOXES, BURIED CONDUIT AND CONDUCTORS FOR CONTROLS/ELECTRICAL SYSTEMS.
- ⑤ - PROVIDE NEW SECURITY FENCING FE6-TR-72 (TYP, EXCEPT AS NOTED FOR CANTILEVER ENDS).
- ⑥ - PROVIDE NEW VINYL FENCING.
- ⑦ - PROVIDE NEW DOUBLE WALL FUEL PIPING (2" I.D. MAIN, MIN), CONTROL, LEAK DETECTION, AND SUMPS. RECONNECT TO EXISTING PIPING.
- ⑧ - REINSTALL EXISTING SIGN.
- ⑨ - PROVIDE A PERSONNEL GATE.

*** AS BID ITEM NO. 1, THE CONTRACTOR SHALL PROVIDE A PRICE TO REPLACE SIX (6) PILES LIKE-IN-KIND WITH COATED PILES AT THE DIRECTION OF THE CONTRACTING OFFICER. THE CONTRACTOR SHALL USE SIX (6) 14" Ø ASTM A252 GRADE 3 SCHEDULE 40 STEEL PIPE WITH 30 MIL COAL TAR EPOXY COATING. EACH PILE HAVING A LENGTH OF 60'.

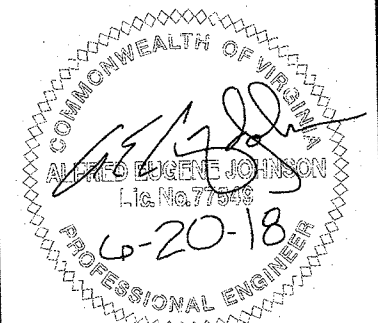
NOTE 'A': IN THE AREA NOTED (APPROXIMATELY STATION 0+45 TO 0+73) BETWEEN MLW AND MUDDLINE ELEVATION -3.1. NEW CONSTRUCTION SHALL NOT FILL OR DISTURB BELOW THE EXISTING MUDDLINE.

BULKHEAD IMPROVEMENTS
SCALE: 1" = 10'-0"

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MARK	DATE	DESCRIPTION

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DESIGNED BY: AEJ
DRAWN BY: ADD
EDITED BY: ADD
CHECKED BY: FEJ

SCALE: AS SHOWN PLOT SCALE: 1:1

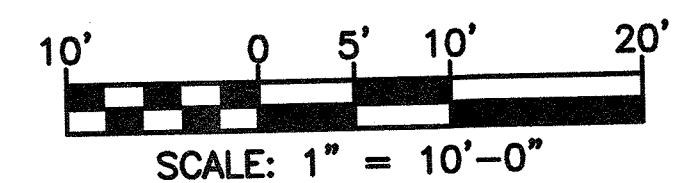
SHEET TITLE
MAJOR M&R OF WATERFRONT
CG STATION LITTLE CREEK
VIRGINIA BEACH VA
WATERFRONT
CIVIL
BULKHEAD IMPROVEMENTS

REVIEWED BY: <i>[Signature]</i> G.A. DEVAN	REVIEWED BY: <i>[Signature]</i> G.P. LODGE	REVIEWED BY: <i>[Signature]</i> G.S. PLAZEK
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

<i>[Signature]</i> S.P. HANNIGAN, CDR. APPROVING OFFICER	06/08/18 DATE
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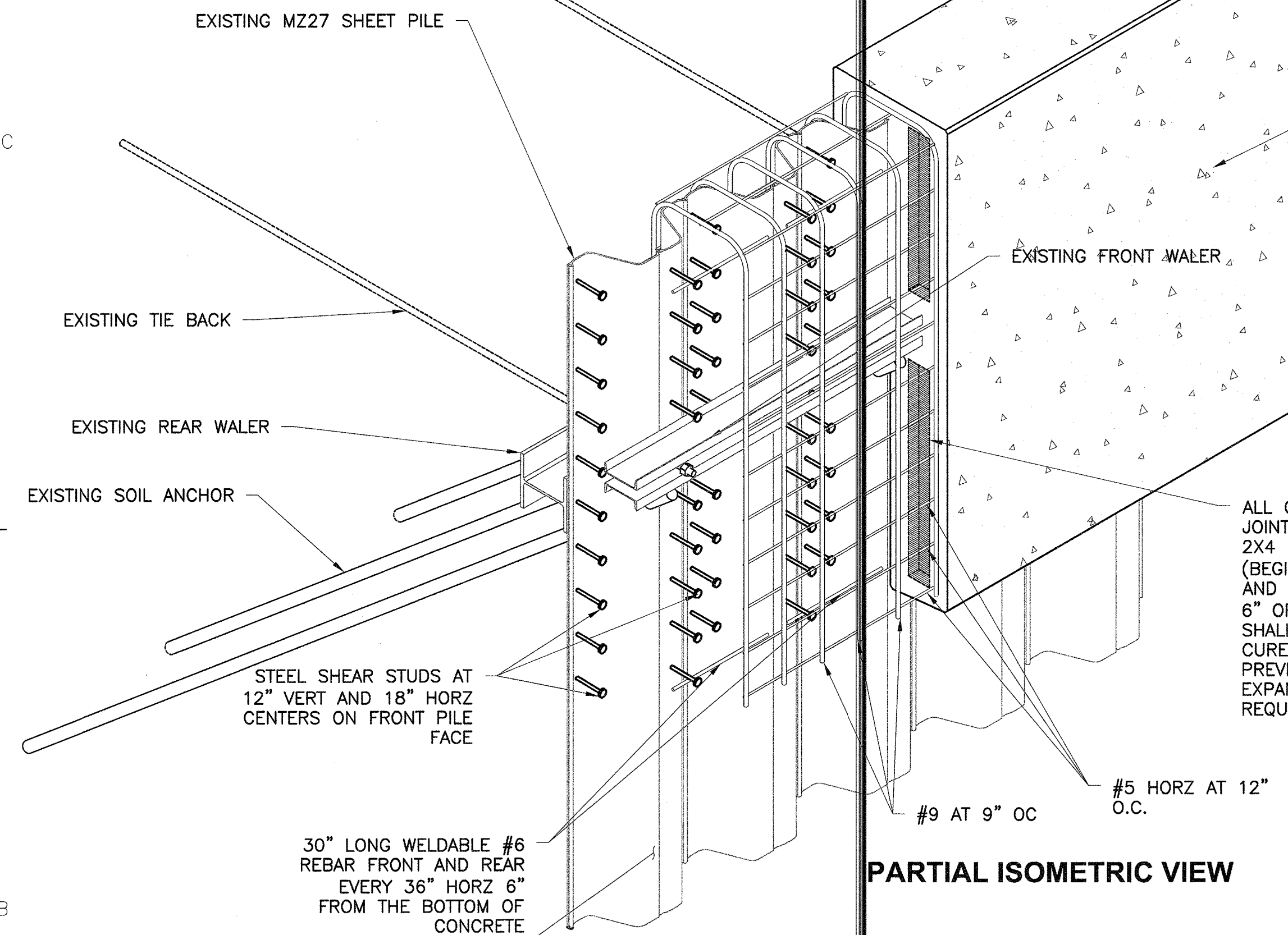
PROJECT NUMBER	DRAWING NUMBER
6117402	8460-D
DISCIPLINE/SH/NO C-06	SHEET 10 OF 17

SCALE



1
AT A MINIMUM, SURFACE PREPARATION OF STEEL TO BE CONCRETE ENCASED SHALL INCLUDE:

- 100% REMOVAL OF BIOLOGICAL GROWTH
- REMOVAL OF UNSOUND COATINGS AND RUST
- REMOVAL OF SURFACE CONTAMINATION SUCH AS OIL, GREASE, DIRT
- REMOVAL OF SURFACE CHLORIDE CONTAMINATION



PARTIAL ISOMETRIC VIEW

PREPARED SHEET PILE FRONT AND REAR TO RECEIVE ENCAPSULATION

FRONT WALER

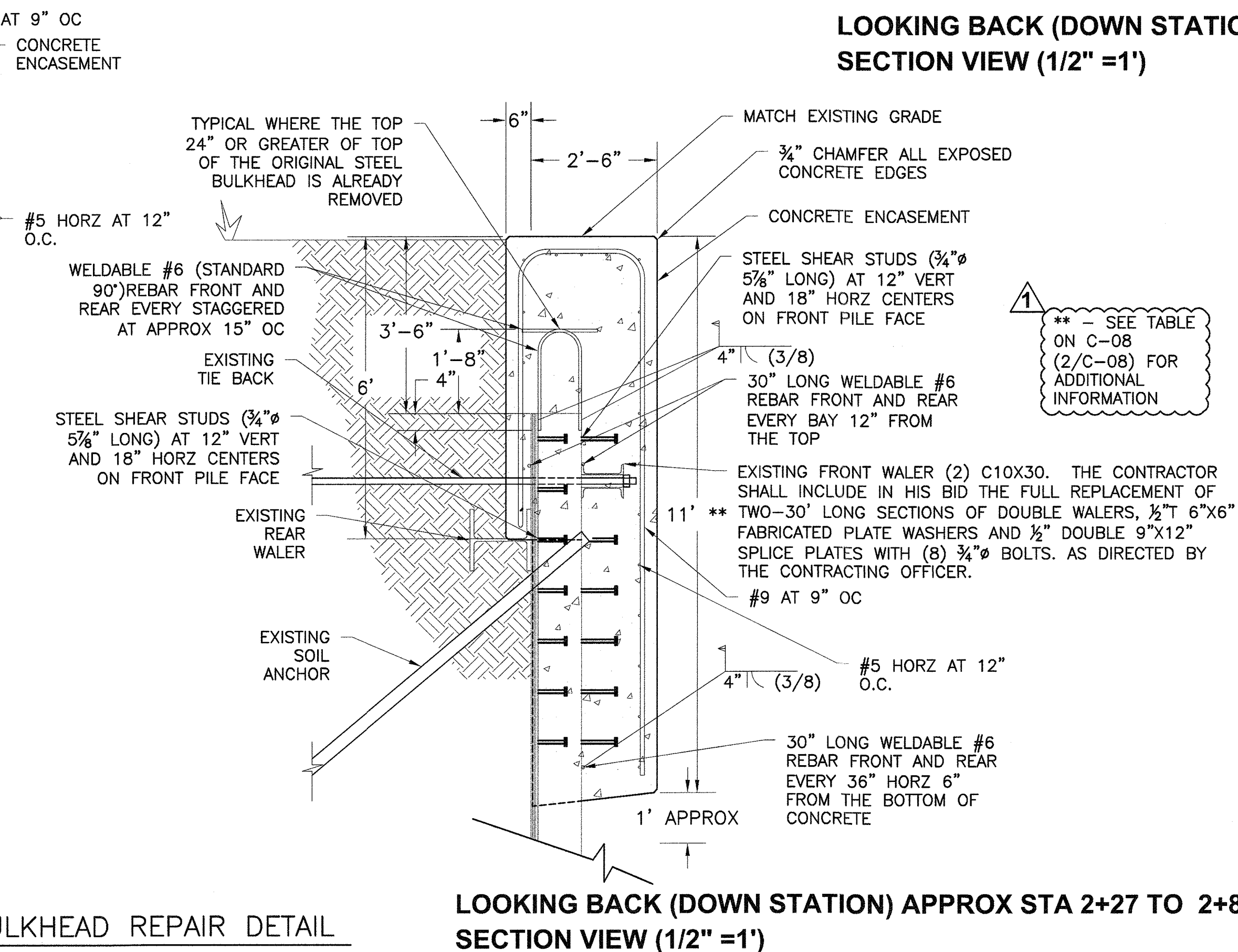
EXISTING TIE BACK

EXISTING SOIL ANCHOR

STEEL SHEAR STUDS AT 12" VERT AND 18" HORZ CENTERS ON FRONT PILE FACE

WATERSIDE FACE
PARTIAL FRONT VIEW (1/2" = 1')

1 BULKHEAD REPAIR DETAIL
C-07 SCALE: VARIES



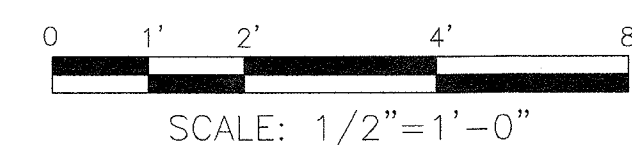
LOOKING BACK (DOWN STATION) APPROX STA 2+27 TO 2+87
SECTION VIEW (1/2" = 1')

31 JULY 2018 - AMENDED FOR INCLUSION INTO 'TIDEWATER JOINT PERMIT APPLICATION (JPA)' VMRC #18-0916.

GENERAL NOTE

FOR CONCRETE PLACEMENT, THE CONTRACTOR SHALL UTILIZE A TREMIE OR PUMP PLACEMENT METHOD. CONCRETE BUCKETS WILL NOT BE PERMITTED FOR UNDERWATER PLACEMENT OF CONCRETE EXCEPT TO DELIVER CONCRETE TO THE TREMIE/PUMP. THE TREMIE/LINE MUST BE WATERTIGHT AND SUFFICIENTLY LARGE TO PERMIT A FREE FLOW OF CONCRETE. KEEP THE DISCHARGE END OF THE PUMP LINE OR TREMIE SHAFT FULL OF CONCRETE TO A POINT WELL ABOVE THE WATER SURFACE. PROCEED WITH PLACEMENT WITHOUT INTERRUPTION UNTIL THE CONCRETE HAS BEEN BROUGHT TO THE REQUIRED HEIGHT. DO NOT MOVE THE TREMIE/LINES HORIZONTALLY DURING A PLACING OPERATION, AND PROVIDE A SUFFICIENT NUMBER OF TREMIES SO THAT THE MAXIMUM HORIZONTAL FLOW IS LIMITED TO NO MORE THAN 15 FEET. WHEN VIBRATION/CONSOLIDATION IS PERFORMED, DO NOT AGITATE THE CONCRETE WATER INTERFACE.

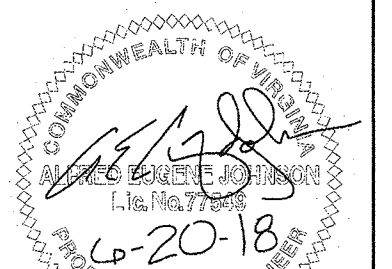
SCALE



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A/E PROJECT NO: 1367-M
CAD FILE NAME: C8460C07.dwg
DESIGNED BY: AEJ
DRAWN BY: ADD
EDITED BY: ADD
CHECKED BY: FEJ

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE

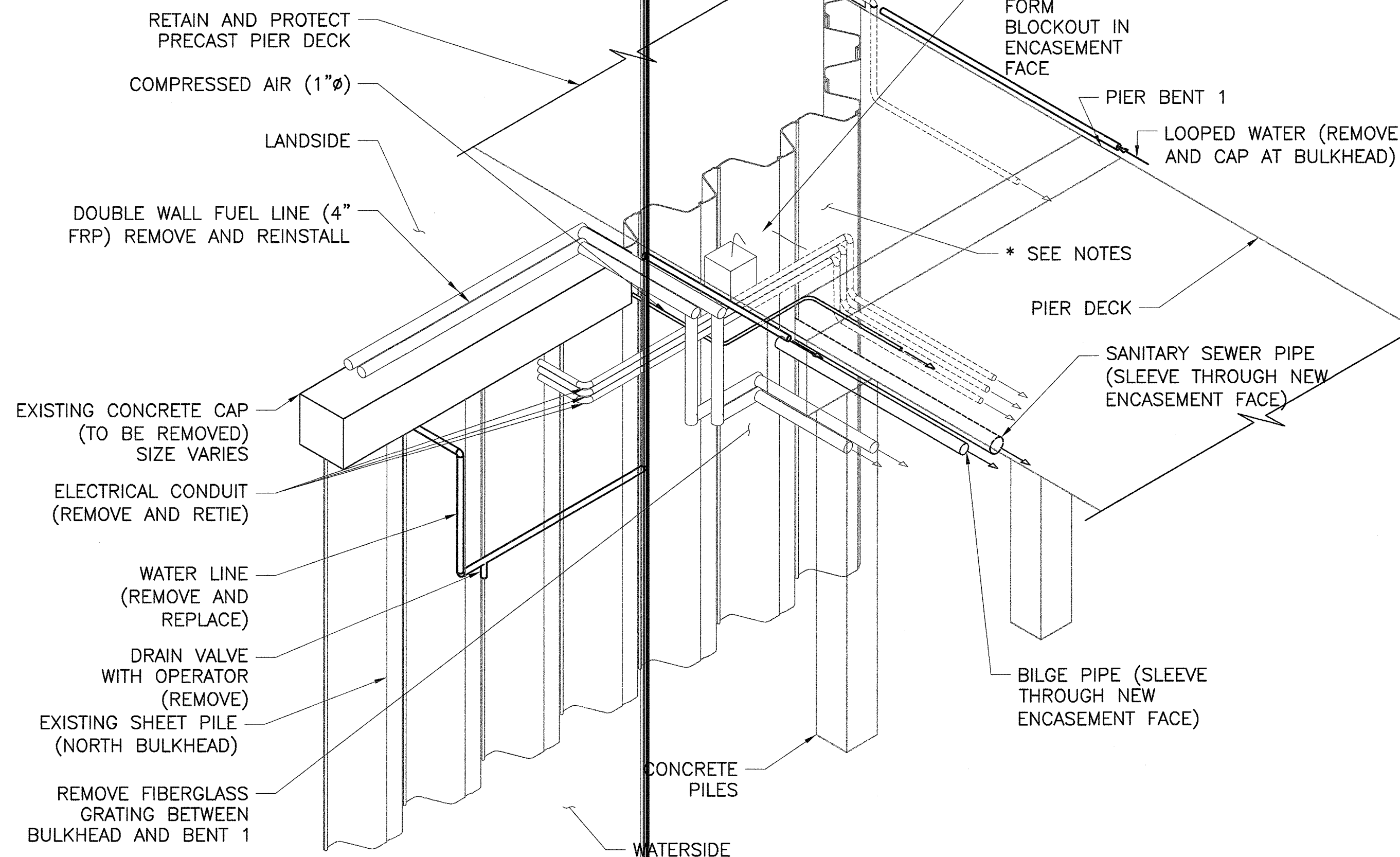
MAJOR M&R OF WATERFRONT
CG STATION LITTLE CREEK VA
VIRGINIA BEACH VA
STEEL BULKHEAD
CIVIL
BULKHEAD REPAIR DETAIL

REVIEWED BY: G. E. LUDGE	REVIEWED BY: G. E. LUDGE	REVIEWED BY: G. S. PLAZEK
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

S.P. HANNIGAN, CDR. APPROVING OFFICER	06/08/18 DATE
--	------------------

PROJECT NUMBER 6117402	DRAWING NUMBER 8460-D
DISCIPLINE/SHT NO C-07	SHEET 11 OF 17

- * NOTES—
- HIDDEN LINES DENOTE UNDER DECK UTILITIES.
 - RETAIN PIER DECK ABOVE SHEET PILE AND PROVIDE WATERSIDE CONCRETE ENCASEMENT, EPOXY COATED REINFORCING, WELDED REINFORCEMENT AND SHEAR STUDS IN THE AREA DIRECTLY BELOW THE PIER DECK. PROVIDE A 1" THICK EXPANSION JOINT BETWEEN THE BOTTOM OF PIER DECK AND TOP OF ENCASEMENT.
 - PROVIDE LAND SIDE JUNCTION BOXES WHERE ELECTRIC/CONTROLS/COMMUNICATIONS LINE ARE DISRUPTED FOR NEW WORK AND RECONNECT TO SERVICE HOTEL UTILITIES.
 - REPLACE FUEL LINES TO MATCH LIKE-IN-KIND WHERE DISRUPTED FOR NEW WORK.
 - VIEW IS ORIENTED SOUTHWEST.
 - FIELD VERIFY UTILITY TYPES, SIZES AND POINTS OF SERVICE.



1
C-08 SCALE: NONE

APPROXIMATE ELEVATIONS (NAVD88)					
STATION	TOP OF BULKHEAD	MEAN HIGH WATER	MEAN LOW WATER	BOTTOM OF CONCRETE ENCASEMENT	MUDLINE ****
0+00	10.80	0.85	-1.70	7.00 ***	10.00
0+25	10.10	0.85	-1.70	3.00 ***	6.00
0+50	9.50	0.85	-1.70	-3.10	-0.40
0+75	8.90	0.85	-1.70	-3.10	-3.40
1+00	8.20	0.85	-1.70	-3.10	-3.70
1+25	7.60	0.85	-1.70	-3.10	-4.50
1+50	7.70	0.85	-1.70	-3.10	-7.50
1+75	7.90	0.85	-1.70	-3.10	-8.60
2+00	8.60 **	0.85	-1.70	-3.10	-10.60
2+25	7.60	0.85	-1.70	-3.10	-10.60
2+50	7.60	0.85	-1.70	-3.10	-10.20
2+75	7.60	0.85	-1.70	-3.10	-10.50
3+00	7.60	0.85	-1.70	-3.10	-9.90
3+25	7.60	0.85	-1.70	-3.10	-10.30
3+50	7.60	0.85	-1.70	-3.10	-10.50

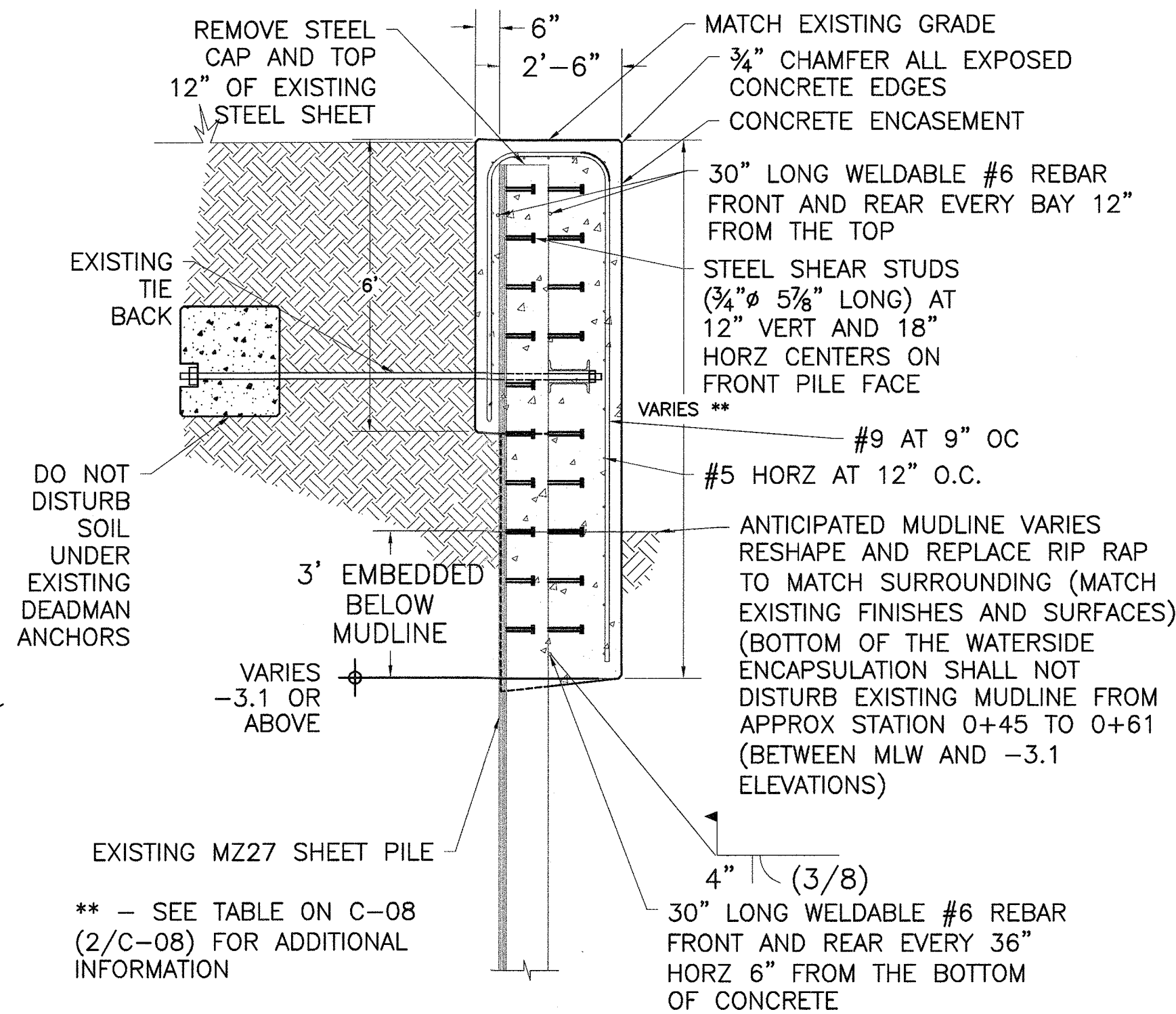
* — TOP OF BULKHEAD = TOP OF EXISTING BULKHEAD AND TOP OF NEW CONCRETE ENCASEMENT.

** — ELEVATION DENOTES TOP OF PIER. FORM AND PLACE ENCASEMENT TO THE BOTTOM OF THE PIER ABOVE WITH A 1" EXPANSION MATERIAL.

*** — EMBED 3.0' BELOW EXISTING MUDLINE.

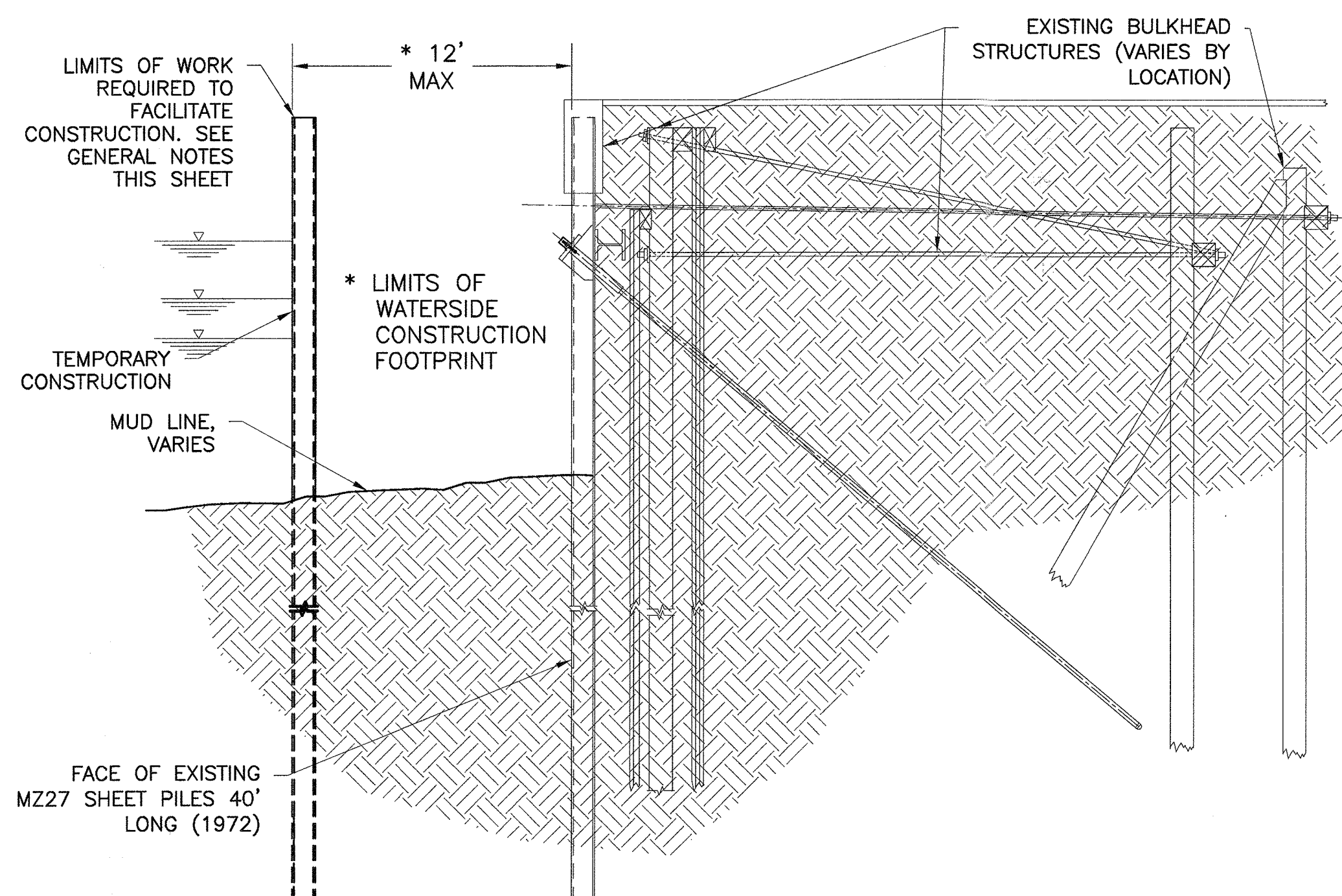
**** — (2+00 TO 3+50) BASED ON AS-BUILT SURVEYS (MAY 14 2018) PROVIDED BY USCG.

2 WORKING ELEVATIONS
C-08 SCALE: NONE



LOOKING BACK (DOWN STATION)
SECTION VIEW (1/2" = 1')

3 BULKHEAD REPAIR DETAIL
(STATION 0+00 TO APPROX 0+73)
C-08 SCALE: 1/2" = 1'-0"

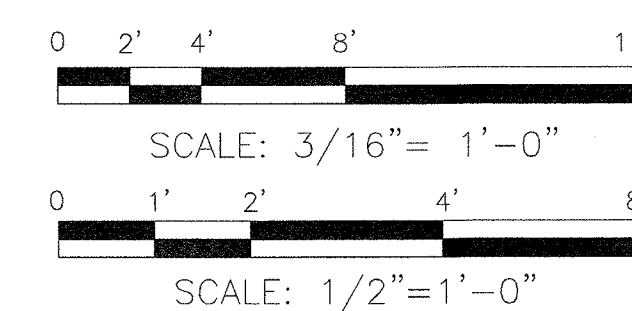


4 LIMITS OF ALLOWABLE TEMPORARY CONSTRUCTION FOOTPRINT
C-08 SCALE: 3/16" = 1'-0"

GENERAL NOTE

DETAIL 4/C-08:
THIS DETAIL SHOWS THE ALLOWABLE LIMIT OF WATERSIDE ENCROACHMENT. THE CONTRACTOR IS RESPONSIBLE FOR THE CONSTRUCTION OF THE REPAIR WORK. ANY METHODS NECESSARY TO FACILITATE CONSTRUCTION OR NECESSARY FOR DEWATERING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL NOT PROJECT BEYOND THE INDICATED LIMITS. ALL WORK REQUIRED TO FACILITATE CONSTRUCTION OF REPAIRS SHALL BE TEMPORARY, BE REMOVED PRIOR TO PROJECT COMPLETION AND BE RESTORED TO MATCH EXISTING PRE-CONTRACT SURROUNDING CONDITIONS.

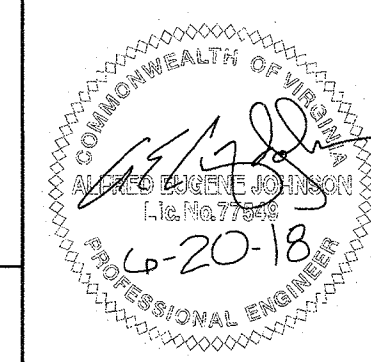
SCALE



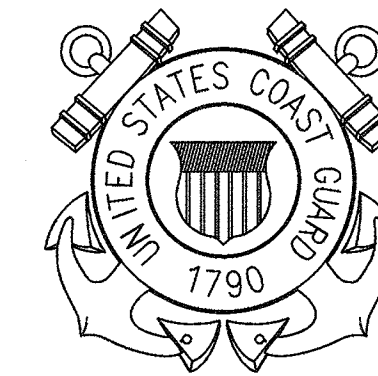
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CONSULTANTS

THE JOHNSON McADAMS FIRM
GREENWOOD, MISSISSIPPI 38930



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CLEVELAND



USCG. CEU CLEVELAND
1240 EAST 9TH STREET
CLEVELAND, OH 44199-2060

ISSUE

MARK	DATE	DESCRIPTION

A/E PROJECT NO: 1367-M
CAD FILE NAME: C8460C08.dwg
DESIGNED BY: AEJ
DRAWN BY: ADD
EDITED BY: ADD
CHECKED BY: FEJ

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE

MAJOR M&R OF WATERFRONT
CG STATION LITTLE CREEK
VIRGINIA BEACH VA
STEEL BULKHEAD
CIVIL
PIER BULKHEAD UTILITIES

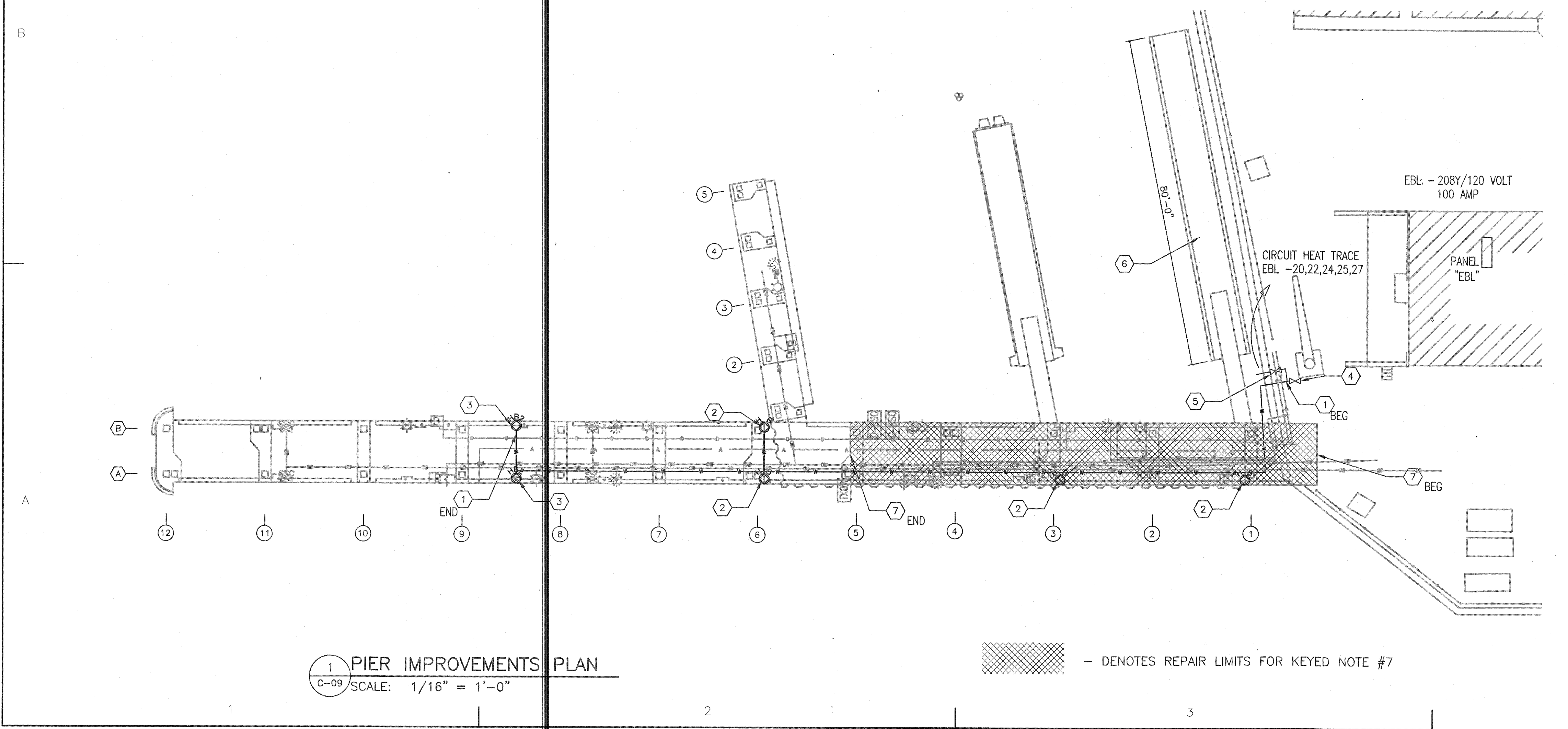
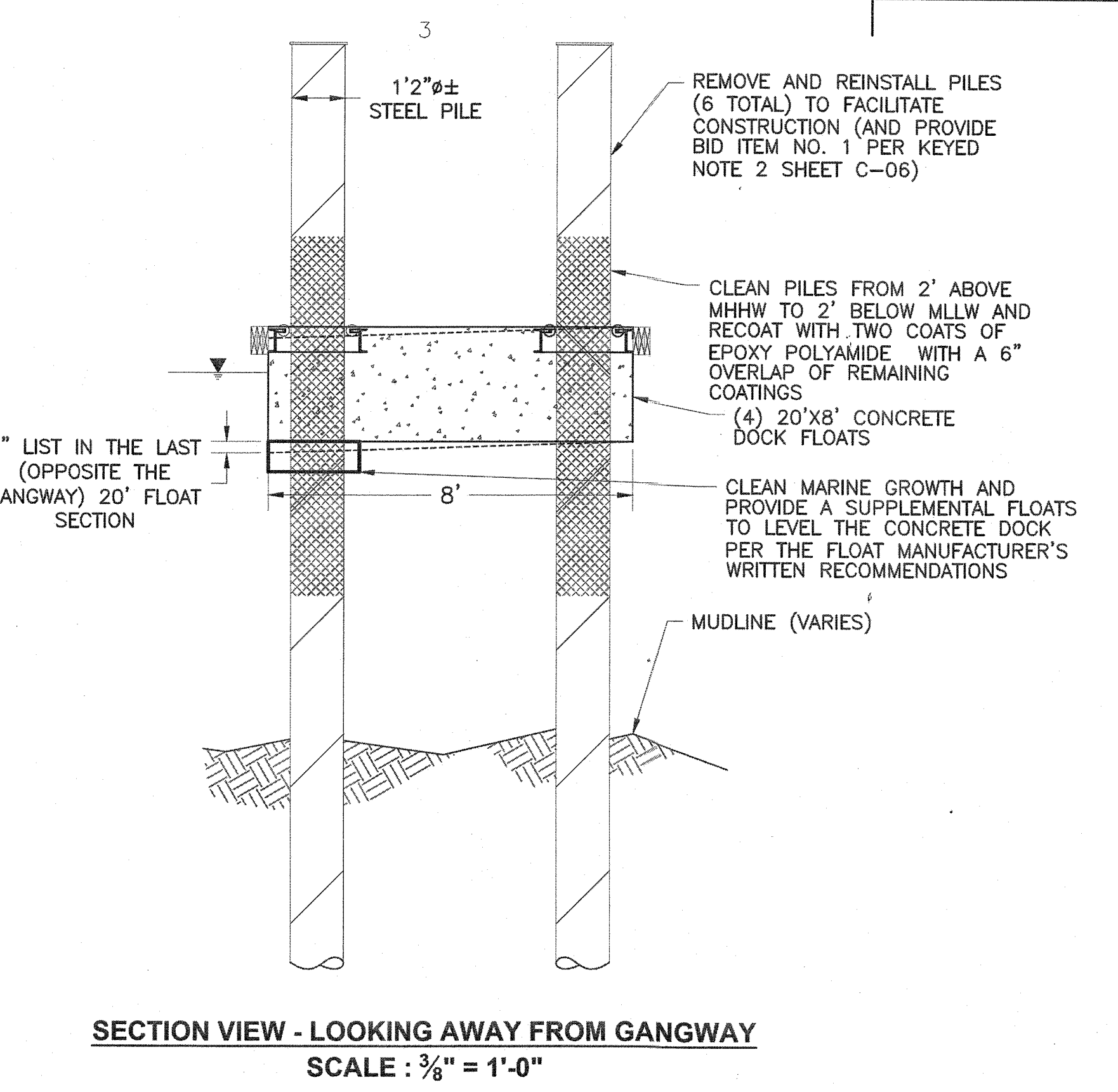
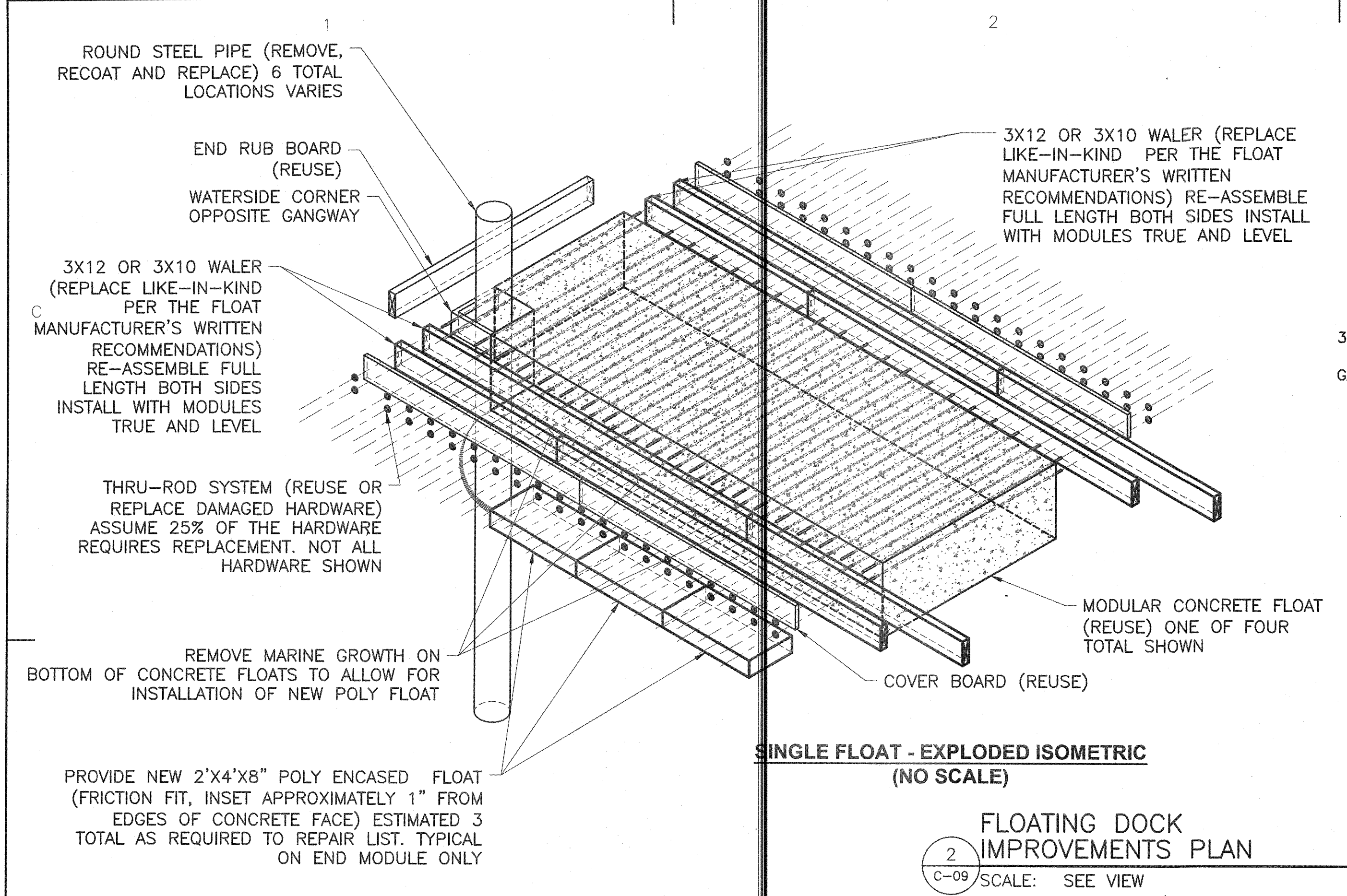
REVIEWED BY: G.A. DEWAN
REVIEWED BY: G.P. LODGE
REVIEWED BY: G.S. PLACZEK
PROJECT ENG. BRANCH CHIEF TECH. DIRECTOR

S.P. HANNIGAN, CDR.
APPROVING OFFICER
06/08/18
DATE

PROJECT NUMBER DRAWING NUMBER

6117402 8460-D

DISCIPLINE/SHT NO
C-08 SHEET 12 OF 17



KEYED NOTES

1. PROVIDE NEW 2" Ø WATER LINE WITH HEAT TRACE. TIE TO EXISTING SERVICE APPROXIMATELY 10' LANDSIDE OF BULKHEAD. PROVIDE NEW HEAT TRACE
2. PROVIDE 3/4" Ø HOSE CONNECTION.
3. PROVIDE 3/4" Ø & 1-1/2" Ø HOSE CONNECTIONS.
4. PROVIDE ISOLATION VALVE.
5. PROVIDE BALL VALVE FOR DRAINAGE.
6. REMOVE AND REINSTALL THE FLOATING CONCRETE DOCK (SEE DETAIL 2 THIS SHEET).
7. PREPARE AND SEAL MAIN PIER DECK WALKING SURFACE WITH HIGH MOLECULAR WEIGHT METHACRYLATE. (EXTENTS ARE FROM BENT 0 TO BENT 5) FULL DECK WIDTH WITH FACE AND TOP OF BOTH CURBS

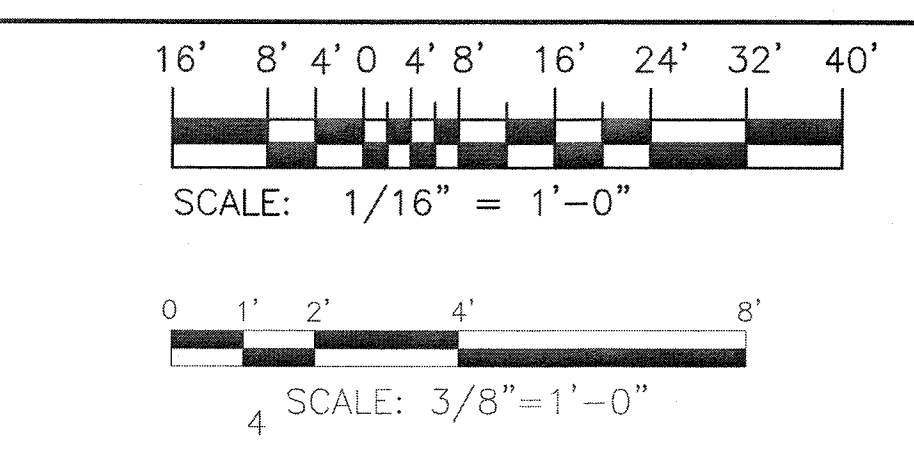
GENERAL NOTE

- A. ALL NEW EXPOSED WATER PIPING SHALL HAVE HEAT TRACE (EQUIVALENT TO 6 WATTS/LINEAR FOOT, FEED FROM EXISTING CIRCUITS) AND 1" OF SHIELDED INSULATION.

LEGEND

- BILGE
- DIESEL FUEL DISPENSER
- GASOLINE FUEL DISPENSER
- D-ESG DIESEL EMERGENCY SHUT OFF
- G-ESG GASOLINE EMERGENCY SHUT OFF
- HOSE BIBB
- HOSE BIBB (3/4" & 1-1/2")
- SANITARY SEWER CONNECTION
- CONVENIENCE OUTLET
- SHORE TIE
- SITE LIGHT
- TELEPHONE PANEL
- TRANSFORMER
- COMPRESSED AIR
- DIESEL
- GASOLINE
- ELECTRICAL CONDUIT
- BILGE AND OILY WASTE
- SANITARY SEWER
- WATER

SCALE



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CLEVELAND, OH 44199-2060

ISSUE	MARK	DATE	DESCRIPTION

A/E PROJECT NO: 1367-M
CAD FILE NAME: C8460C09.dwg
DESIGNED BY: AEJ
DRAWN BY: ADD
EDITED BY: ADD
CHECKED BY: FEJ

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE

MAJOR M&R OF WATERFRONT
CG STATION LITTLE CREEK
VIRGINIA BEACH VA
MAIN SHIP PIER
CIVIL
PIER IMPROVEMENTS

REVIEWED BY:	REVIEWED BY:	REVIEWED BY:
G. DEVAN	G. P. LODGE	G. S. PLAZEK
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

S.P. HANNIGAN, CDR.
APPROVING OFFICER

06/08/18
DATE

PROJECT NUMBER	DRAWING NUMBER
6117402	8460-D
DISCIPLINE/SHT NO	SHEET 13 OF 17

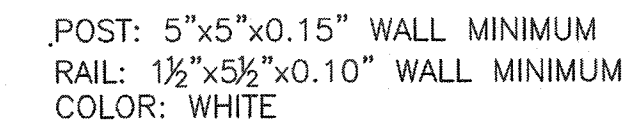
C-09

- A. THE INTENT IS TO REMOVE AND REPLACE THE FUEL PIPING THAT IS IN CONFLICT WITH THE NEW CONSTRUCTION.
- B. PROVIDE HANGERS OR MOUNTINGS PER THE MANUFACTURER'S WRITTEN RECOMMENDATIONS FOR THIS APPLICATION
- C. RECONNECT EXISTING LEAK DETECTION (AGGRESSIVE SYSTEMS, INC.).
- D. REUTILIZE EXISTING SUMPS WHERE COMPATIBLE WITH THE NEW PIPING AND WHERE FEASIBLE.

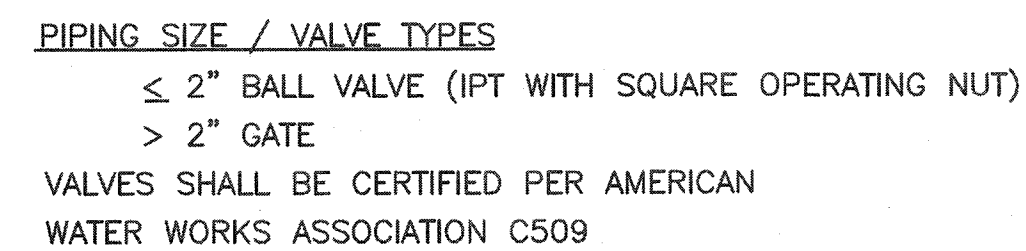


1. ALL NEW PIPING SHALL BE PAINTED PER MIL-STD-101C REQUIREMENTS AND BE A REFLECTIVE COLOR.
2. TITLES SHALL BE BLACK AND PRIMARY WARNING COLORS SHALL BE YELLOW, #13655.
3. BANDS SHALL BE A MINIMUM WIDTH OF 1"
4. THE PIPE SHALL BE TITLED WITH STENCILED LETTERS SHALL HAVE A MINIMUM HEIGHT OF 3/4" AND INDICATE THE FUEL TYPE TRANSFERRED.

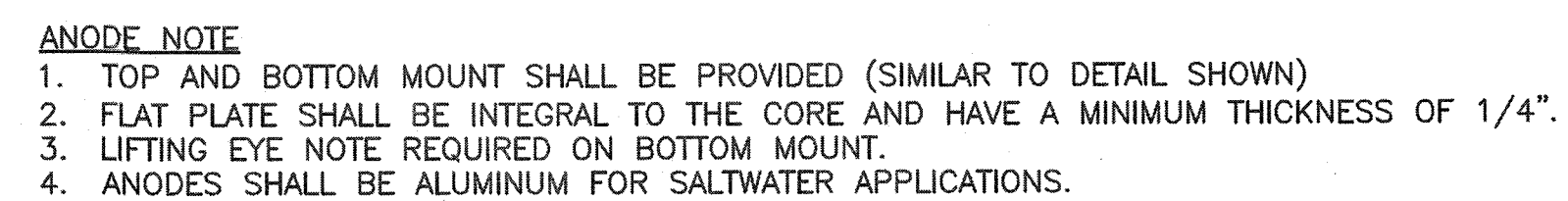
- DIESEL
- GASOLINE
- WATER



C-10 SCALE: NONE



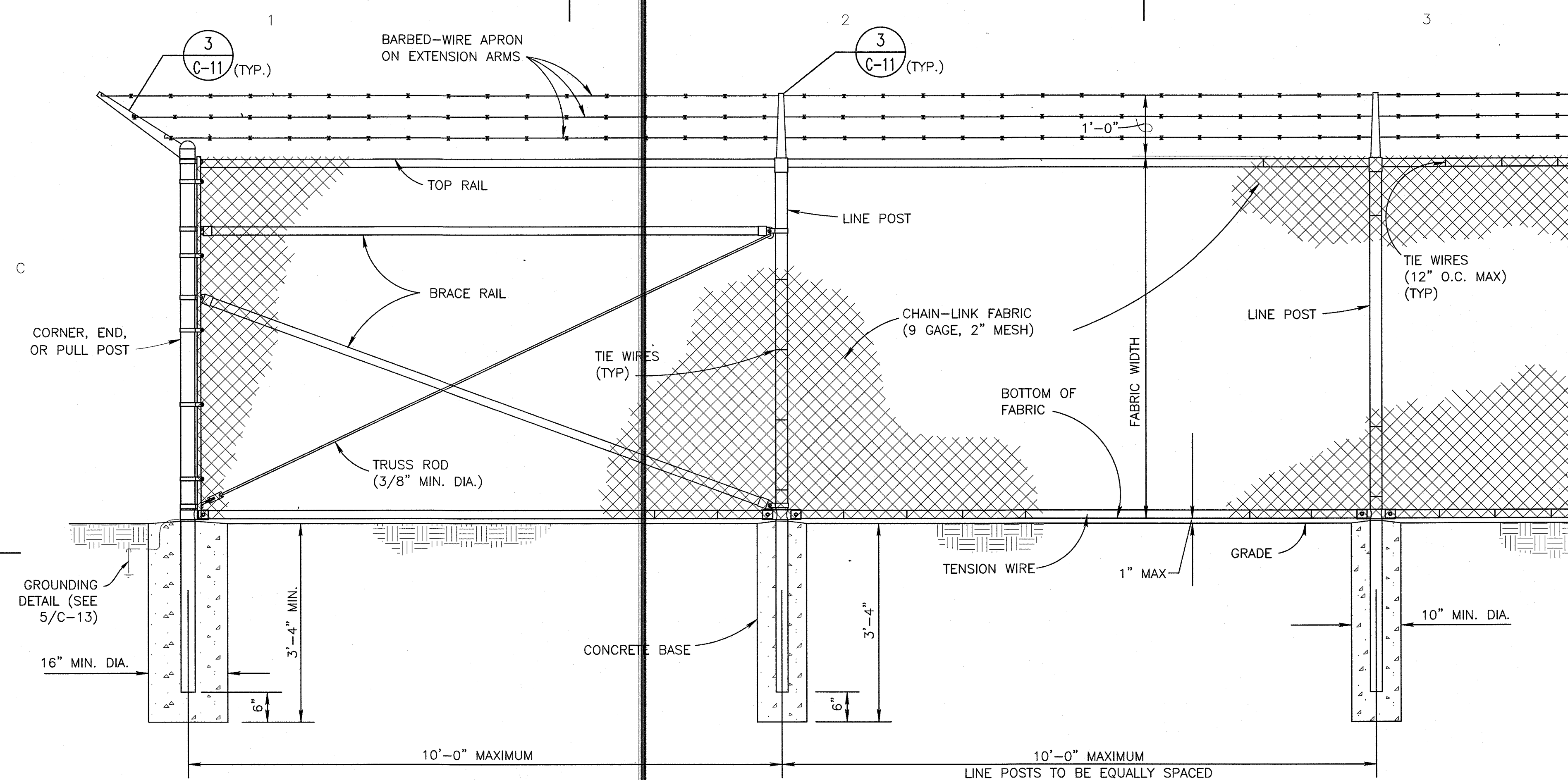
C-10 SCALE: NONE



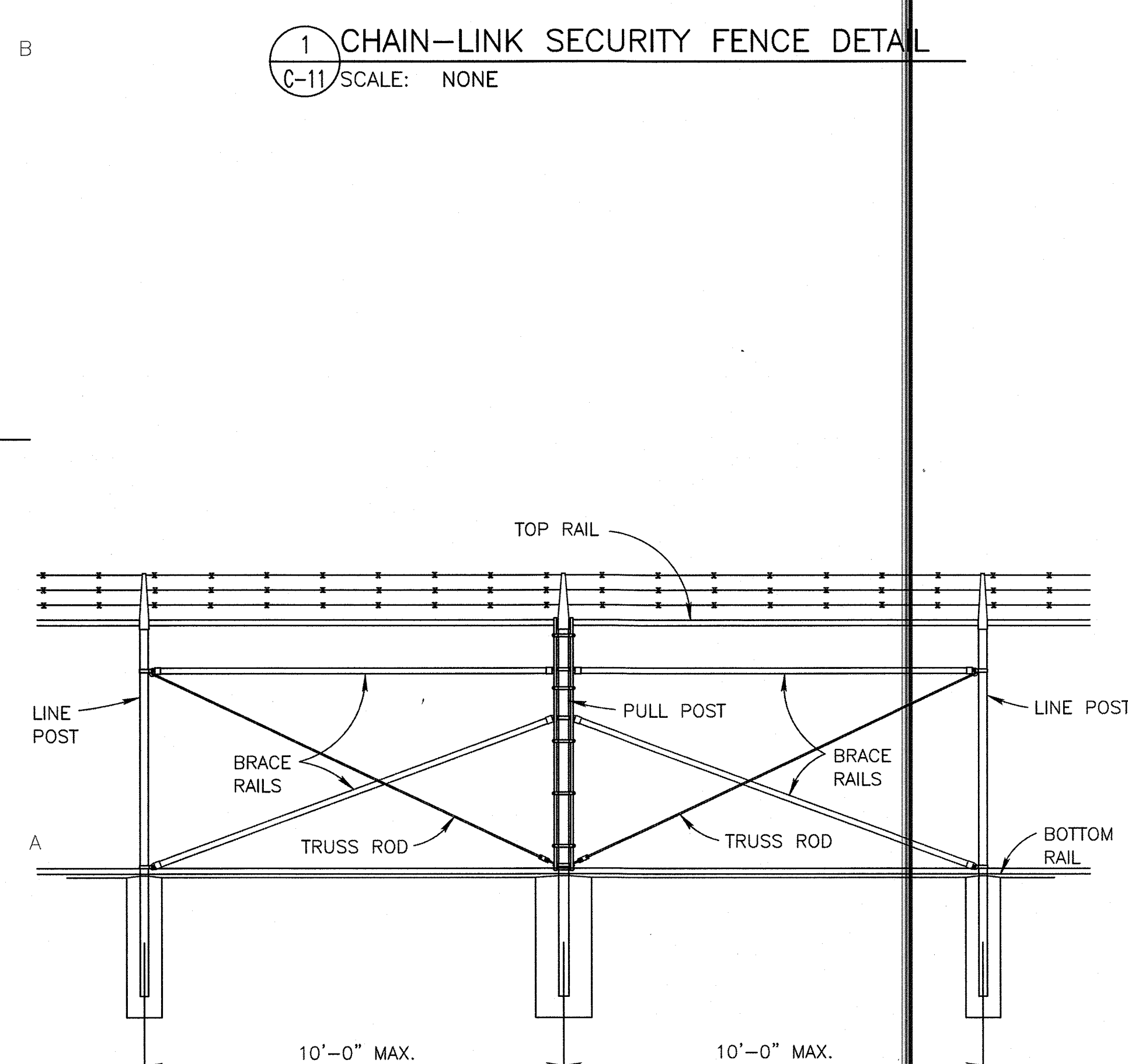
1. PROVIDE A MINIMUM OF ONE SACRIFICIAL ANODE PER 3'-0" LINEAR DISTANCE OF BULKHEAD.
2. ANODES SHALL:
 - 2.1. BE ALUMINUM MANUFACTURED SPECIFICALLY FOR USE WITH SHEET PILE STRUCTURES WITH A CURRENT CAPACITY OF 7.6 LB/A/YR MINIMUM.
 - 2.2. PROVIDE A MINIMUM AVERAGE CURRENT OF 0.18 AMPS/YR OVER 20 YEARS
 - 2.3. HAVE A TOTAL WEIGHT OF 40 LBS (MINIMUM) PER LINEAR FOOT OF BULKHEAD.
 - 2.4. HAVE A TOP MOUNTED PER THE SUPPLIERS WRITTEN RECOMMENDATIONS A APPROXIMATELY 4' BELOW MLLW.
 - 2.5. NOT BE MOUNTED UNTIL AFTER BULKHEAD REPAIR WORK IS COMPLETE.

C-10 SCALE: NONE

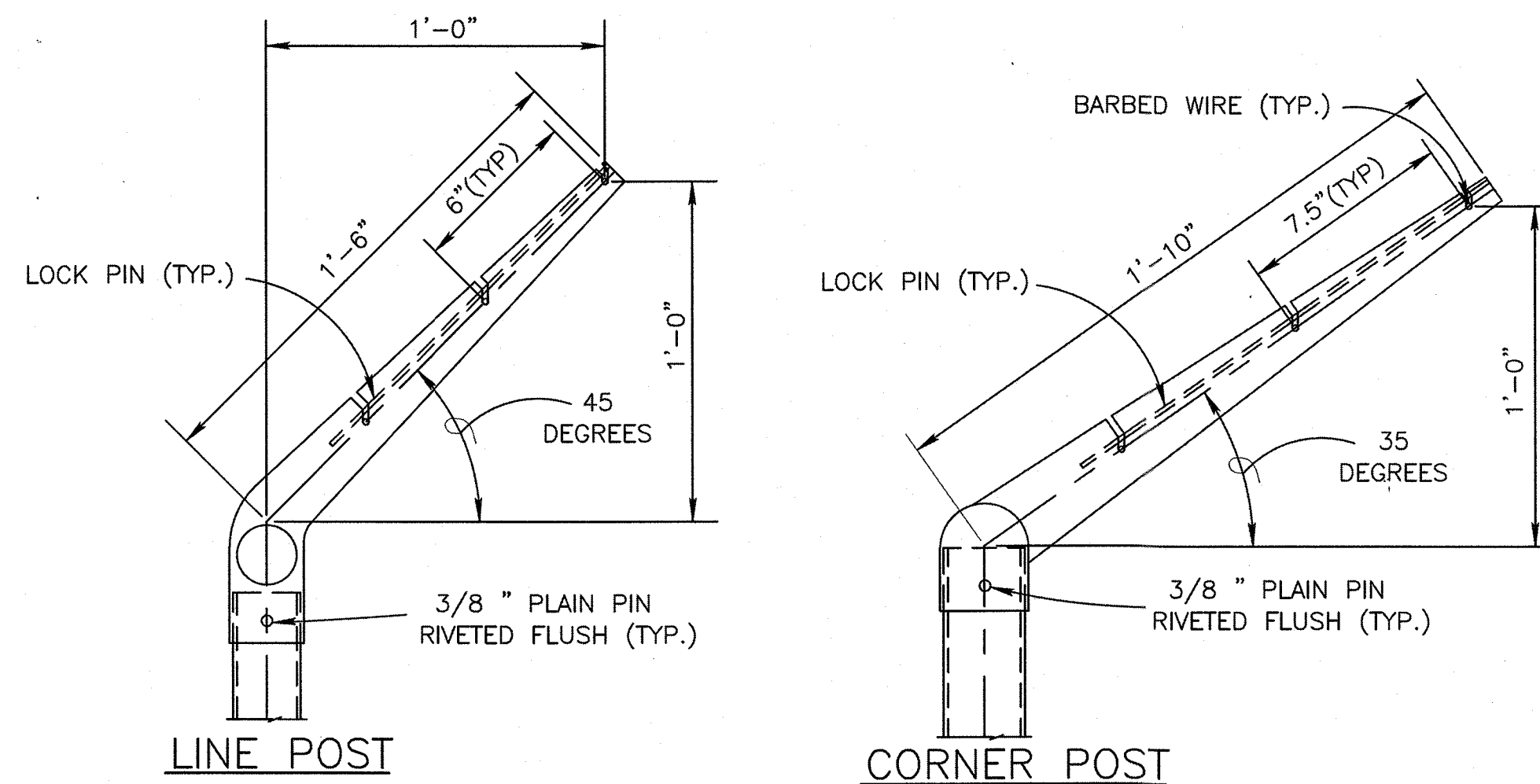
PROJECT NUMBER	DRAWING NUMBER
6117402	8460-D
DISCIPLINE/SHT NO	
C-10	SHEET 14 OF 17



1 CHAIN-LINK SECURITY FENCE DETAIL
C-11 SCALE: NONE



2 BRACE PANEL DETAIL
C-11 SCALE: NONE



3 EXTENSION ARM DETAIL
C-11 SCALE: NONE

STEEL POST SCHEDULE			
USE AND SECTION	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)		
	FABRIC WIDTH 72" OR LESS	FABRIC WIDTH 84" TO 96"	FABRIC WIDTH 108" AND OVER
CORNER, END & PULL POSTS TUBULAR – ROUND	2.375" O.D.	2.875" O.D.	4.00" O.D.
LINE POSTS TUBULAR – ROUND	1.90" O.D.	2.375" O.D.	2.875" O.D.
BOTTOM & BRACE RAILS TUBULAR – ROUND TUBULAR – SQUARE H-SECTION C-SECTION (ROLL-FORMED)	1.66" O.D. 1.50" SQ. 1.625" X 1.50" 1.625" X 1.25"		

GENERAL NOTES (SECURITY)

- A. FABRIC: THE STANDARD FENCE FABRIC SHALL BE ALUMINUM-COATED STEEL WIRE CHAIN LINK WITH MESH OPENINGS NOT LARGER THAN TWO INCHES PER SIDE AND A TWISTED AND BARBED SELVAGE AT TOP AND BOTTOM IN ACCORDANCE WITH THE SPECIFICATIONS. UTILIZE 6-GAUGE FOR BASE PERIMETER OR HEIGHTENED SECURITY ZONES AND 9-GAUGE FOR BASE INTERIOR OR WHEN JOINING AN EXISTING FENCE WHICH IS ALREADY 9-GAUGE.
- B. FABRIC TIES: ONLY 12-GAUGE STEEL TIES SHALL BE USED. COATING OR PLATING WILL BE ELECTROLYTICALLY COMPATIBLE WITH THE FENCE FABRIC TO INHIBIT CORROSION.
- C. REINFORCEMENT: TENSION WIRES SHALL BE INSTALLED AND INTERWOVEN (OR AFFIXED WITH FABRIC TIES) ALONG THE TOP & BOTTOM OF THE FENCE FOR STABILIZATION OF THE FENCE FABRIC.
- D. FENCE HEIGHT: CHAIN LINK FABRIC SHALL BE 7' HIGH WITH AN ADDITIONAL 1' IN HEIGHT COMPOSED OF 3 STRANDS OF BARBED WIRE AS REQUIRED. THE TOTAL FENCE HEIGHT SHALL BE 8'.
- E. GROUND CLEARANCE: BOTTOM OF THE FENCE FABRIC SHALL BE WITHIN TWO INCHES OF FIRM SOIL.
- F. TOP GUARDS: A TOP GUARD IS AN OVERHANG OF BARBED WIRE ALONG THE TOP OF A FENCE, FACING OUTWARD (AWAY FROM PROTECTED SITE) AND UPWARD AT APPROX. 45 ANGLE. TOP GUARD SUPPORTING ARMS WILL BE PERMANENTLY AFFIXED TO THE TOP OF FENCE POSTS TO INCREASE THE OVERALL HEIGHT OF THE FENCE AT LEAST 1 FOOT. THREE STRANDS OF 12-GAUGE BARBED WIRE, EQUALLY SPACED, SHALL BE INSTALLED ON THE SUPPORTING ARMS.
- G. FENCE POSTS: SHALL BE ASTM F1043 OR F1083 ROUND PIPE OR SQUARE TUBE AND SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS. FENCE POST SPACING AND SIZE (DIAMETER) SHALL BE DETERMINED IN ACCORDANCE WITH CHAIN LINK FENCE MANUFACTURERS' INSTITUTE (WLG 2445). SPACING SHALL NOT EXCEED 10'-0" OC. SIZE (DIAMETER) SHALL NOT BE LESS THAN THAT SPECIFIED.
- H. WIRE TIES, RAILS, POSTS, AND BRACES SHALL BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL BE PLACED ON THE SIDE OPPOSITE THE SECURE AREA.
- I. PROVIDE BRACE PANEL WHENEVER STRAIGHT RUNS EXCEED 500 FEET.

LEGEND

- | | |
|-----------------|--|
| <u>TYPE FE5</u> | - CHAIN-LINK FENCE WITHOUT BARBED-WIRE APRON |
| <u>TYPE FE6</u> | - CHAIN-LINK FENCE W/BARBED-WIRE ON SINGLE OUTRIGGER |
| <u>TYPE FE7</u> | - CHAIN-LINK FENCE W/BARBED-WIRE ON DOUBLE OUTRIGGER |
| <u>TYPE FE8</u> | - CHAIN-LINK FENCE W/BARBED-WIRE AND BARBED-TAPE ON DOUBLE OUTRIGGER |

TR	- FENCE WITH TOP RAIL AND TENSION WIRE AT BOTTOM
TBR	- FENCE WITH TOP AND BOTTOM RAILS
TWB	- TENSION WIRE TOP AND BOTTOM
TWBR	- FENCE WITH TOP TENSION WIRE AND BOTTOM RAIL

FINAL NUMBER IS FABRIC WIDTH IN INCHES.

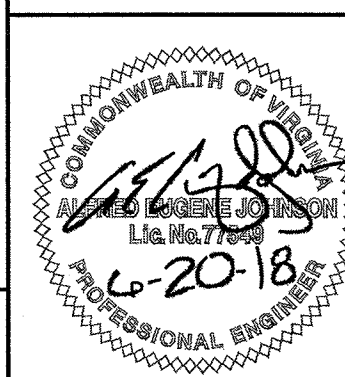
EXAMPLES:

- FE6-TR-72 - CHAIN-LINK SECURITY FENCE
WITH BARBED-WIRE ON SINGLE OUTRIGGER,
TOP RAIL, AND 72 INCH FABRIC WIDTH.
- FE5-TWB-84 - CHAIN-LINK SECURITY FENCE
WITH NO APRON, TOP AND BOTTOM TENSION
WIRE, AND 84 INCH FABRIC WIDTH.

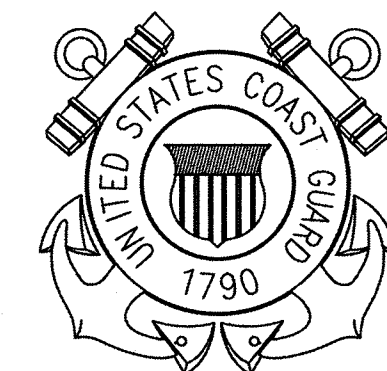
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1240 EAST 9TH STREET
CLEVELAND, OH 44199-2060

ISSUE		
MARK	DATE	DESCRIPTION

A/E PROJECT NO: 1367-M

CAD FILE NAME: C8460C11.dwg

DESIGNED BY:	AEJ
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DRAWN BY:	ADD
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EDITED BY:	ADD
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CHECKED BY:	FEJ
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SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE

MAJOR M&R OF WATERFRONT
CG STATION LITTLE CREEK
VIRGINIA BEACH VA

PERIMETER FENCE
CIVIL
SECURITY FENCE DETAILS

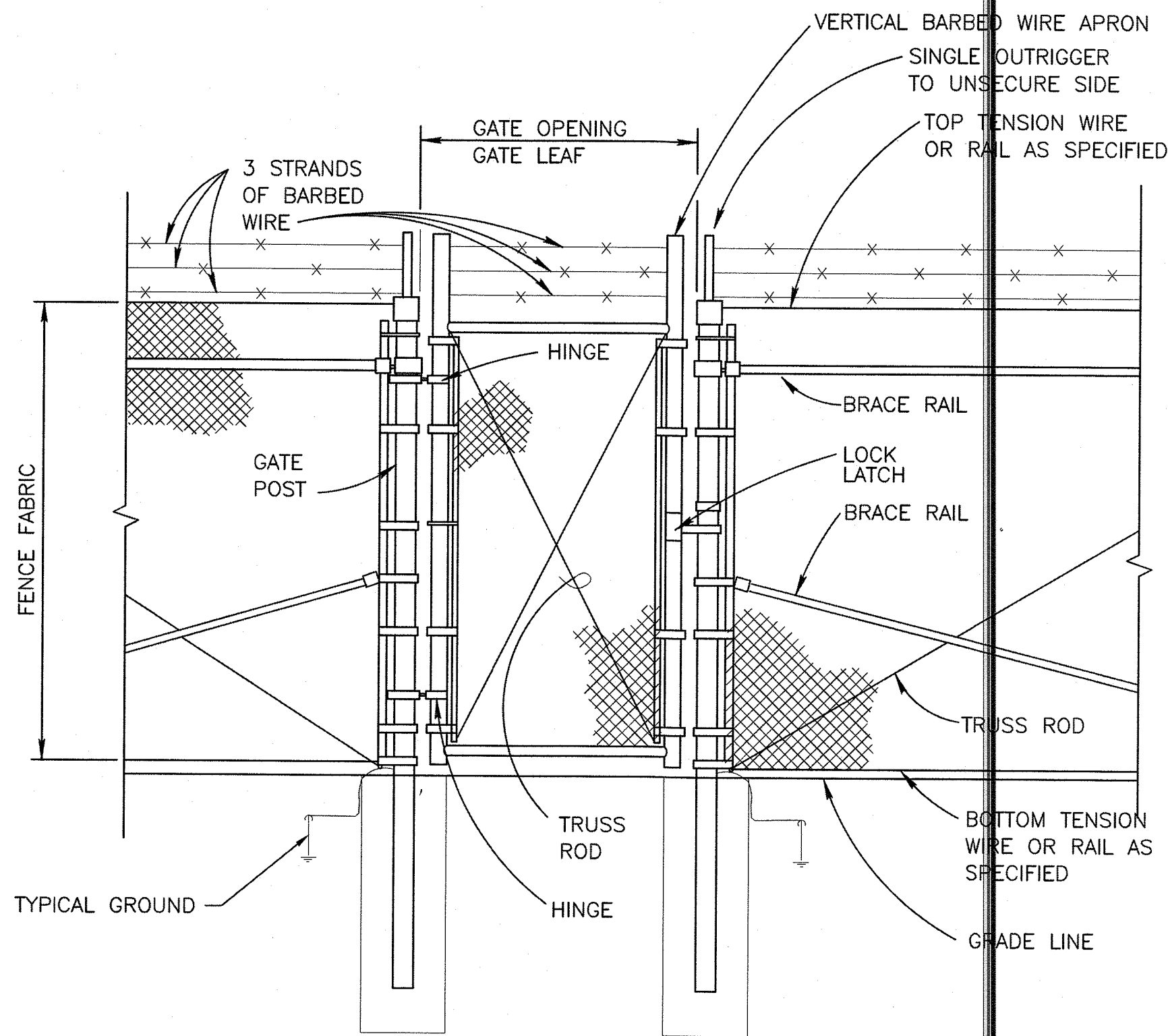
REVIEWED BY: <i>S.D.V.</i> G.A. DEVAN	REVIEWED BY: <i>[Signature]</i> G.P. LODGE	REVIEWED BY: <i>[Signature]</i> G.S. PLACZEK
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR

<i>[Signature]</i> S.P. HANNIGAN, CDR.	06/08/18
_____ APPROVING OFFICER	_____ DATE

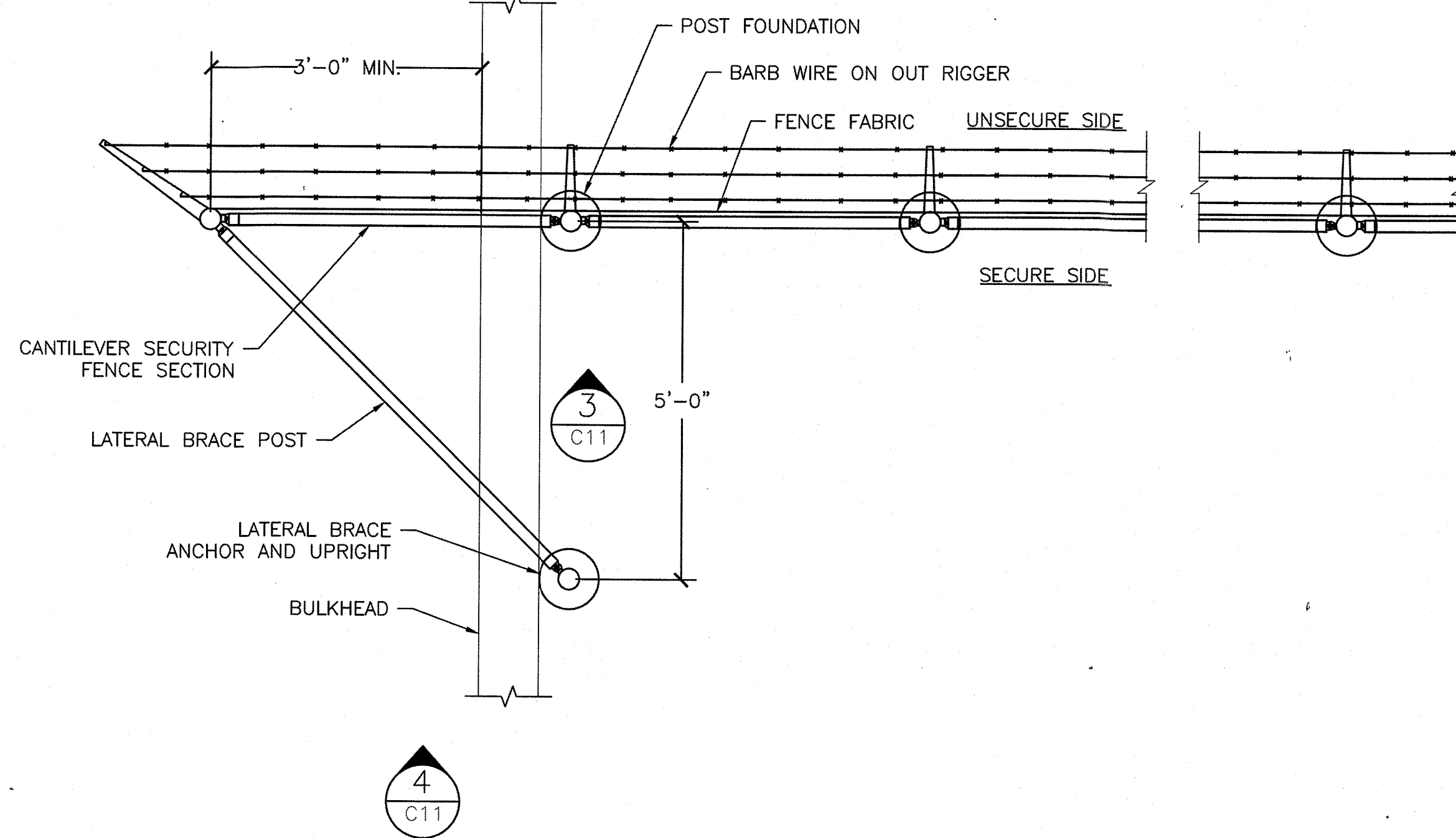
PROJECT NUMBER		DRAWING NUMBER	
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6117402	8460-D
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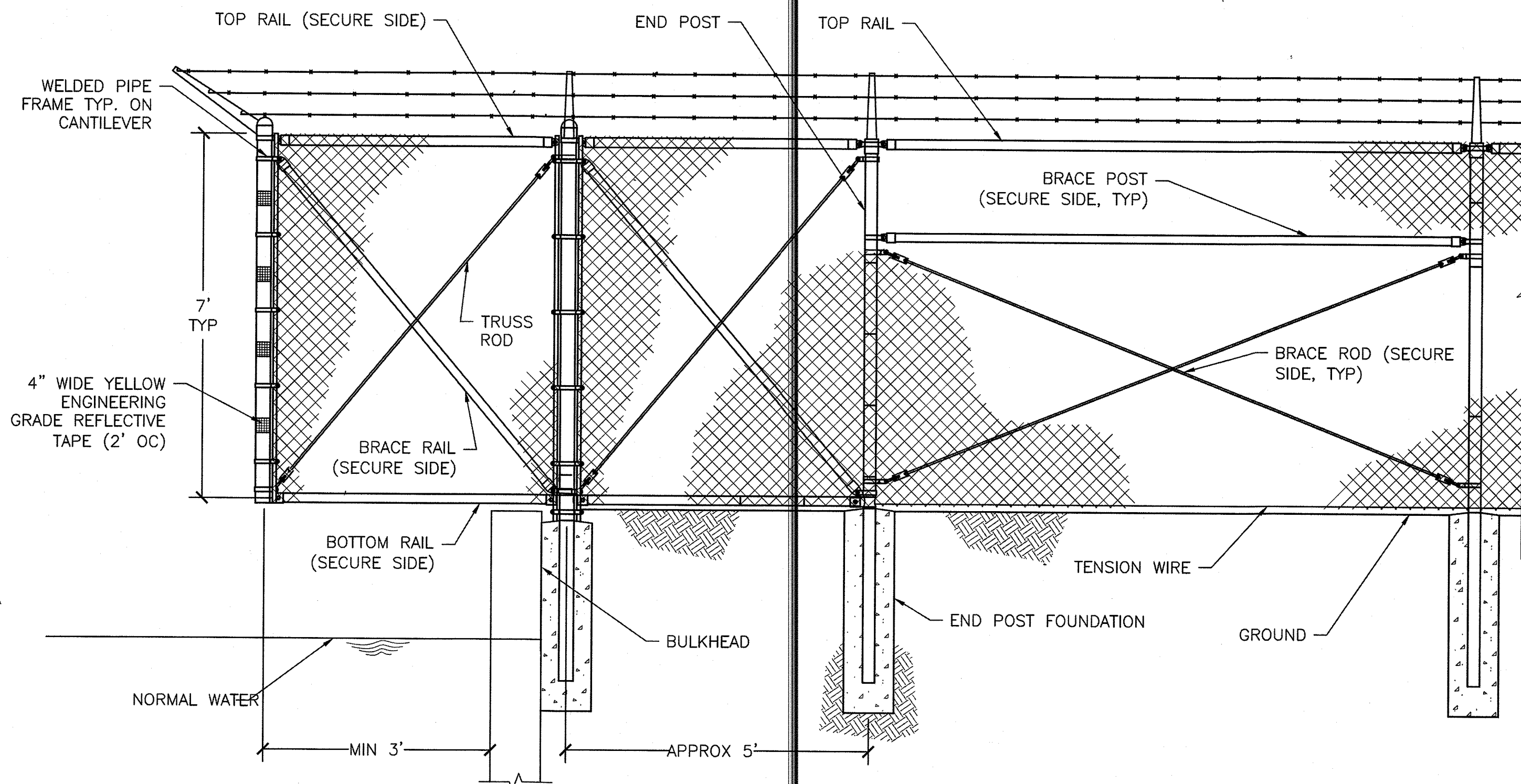
DISCIPLINE/SHT NO	
C-11	SHEET 15 OF 17



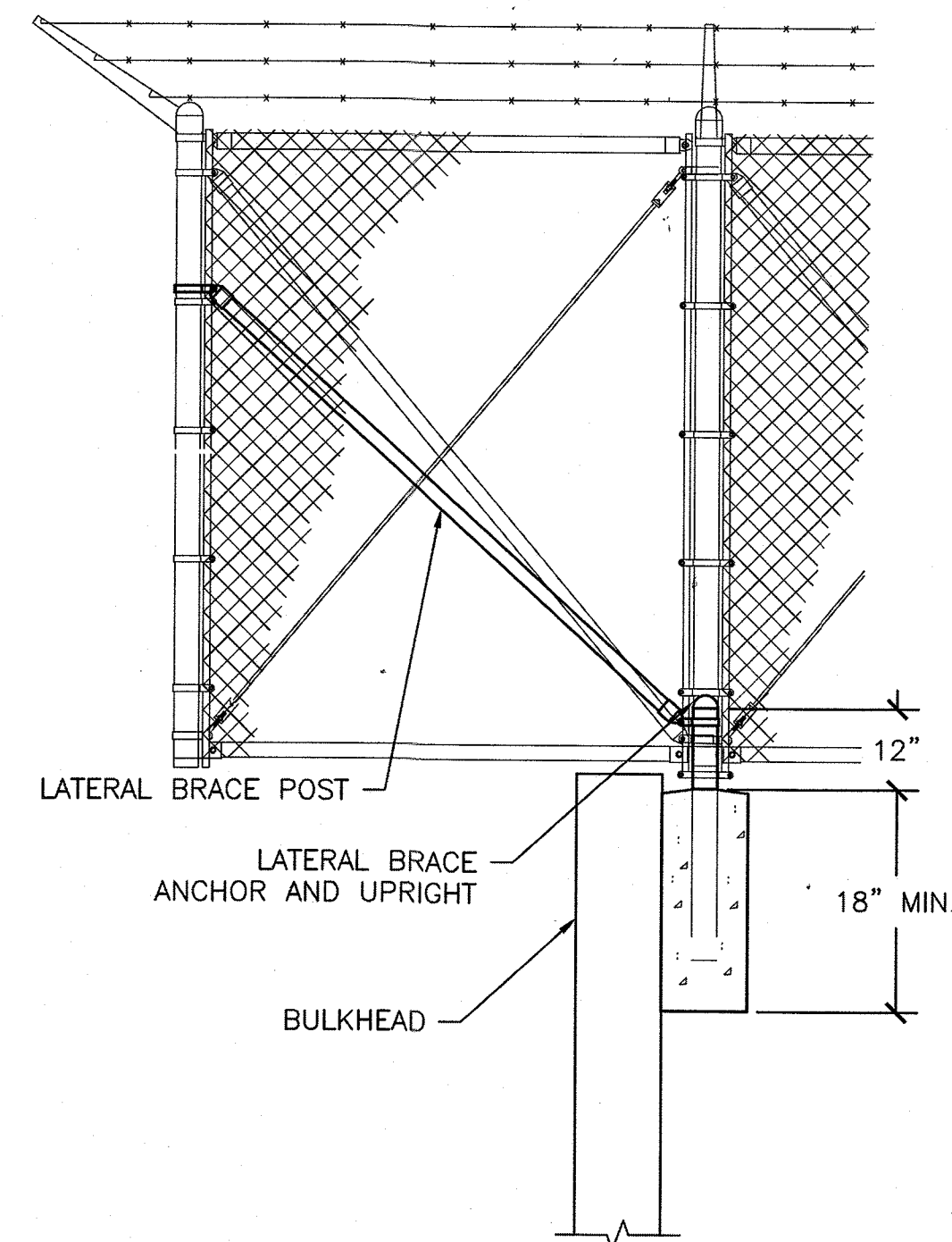
1 PERSONNEL GATE TYPE FE-6 FENCE
C-12 SCALE: NONE



2 CANTILEVER END PLAN
C-12 SCALE: NONE



3 CANTILEVER END DETAIL
C-12 SCALE: NONE



4 CANTILEVER END DETAIL
C-12 SCALE: NONE

GENERAL NOTES

- DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPE OF FENCE SECTIONS AND METHODS OF INSTALLATION WHICH COMPLY WITH THE SPECIFICATIONS.
- PERSONNEL GATES SHALL BE CONSTRUCTED WITH LATCH ASSEMBLY AND GATE KEEPERS EXCEPT AS NOTED.
- ALL GATE FRAMES SHALL MEET THE MINIMUM REQUIREMENTS OF ASTM F900 1.90" NOMINAL (ROUND) OR 2.00" NOMINAL (SQUARE). GATE FRAMES SHALL BE OF WELDED CONSTRUCTION OR SHALL BE ASSEMBLED USING HEAVY FITTINGS. AT CONTRACTOR'S OPTION A WELDED HORIZONTAL BRACE MAY BE USED IN LIEU OF TRUSS RODS TO BRACE ALL-WELDED GATE FRAMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER RIGID CONSTRUCTION OF ALL GATES SUPPLIED.
- FENCING TO BE DEMOLISHED SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ALL FENCING, APPURTENANCES, AND FOOTINGS. ALL FOOTING VOID SHALL BE BACKFILLED AND COMPACTED TO MATCH SURROUNDING IN-SITE MATERIAL.
- CODED GATE LOCK SHALL BE HEAVY DUTY, WEATHERPROOF, MECHANICAL DUAL SIDED COMBINATION LOCK, ADA COMPLIANT, MARINE GRADE FINISH, PICK/BUMP PROOF, AND A LIFETIME MECHANICAL MANUFACTURER WARRANTY. ACCESS TO CODE ENTRY SHALL BE PROVIDED ON BOTH THE ENTRY AND EGRESS SIDES OF THE SECURE AREA.

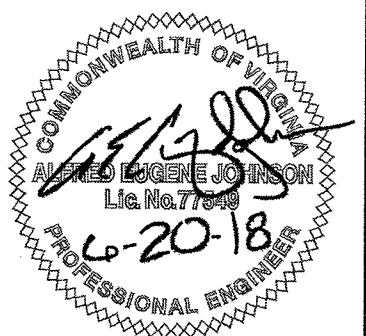
GATE POSTS & FOUNDATIONS: GATE POST SIZE AND ASSOCIATED FOOTING DIAMETER TO BE DETERMINED BY MANUFACTURER, BASED ON LEAF WEIGHT & DIMENSION, BUT NOT LESS THAN DIAMETER SHOWN ON THESE DRAWINGS. MINIMUM FOOTING DIAMETERS (TO BE FILLED W/4000 PSI CONC): 40" Ø FOR 8" POST; 36" Ø FOR 6" POST; 24" Ø FOR 4" POST; OTHER SIZES TO BE DESIGNED BY MFR OR KTR. NO FOOTING WIDTH SHALL BE LESS THAN 4(X) THE POST WIDTH.

LEGEND

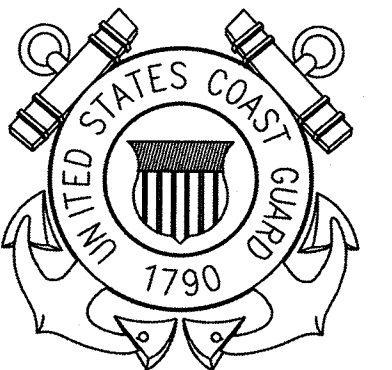
- GATE NOMENCLATURE:
- FENCE TYPE
 - FE5, FE6, ETC.
 - FENCE HEIGHT
 - INCHES
 - TYPE OPENING
 - SO (SINGLE)
 - DO (DOUBLE)
 - HINGE
 - RA (STANDARD)
 - HO (OFFSET)
 - OPENING
 - FEET (CLEAR OPENING BETWEEN GATE POSTS)

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ISSUE		
MARK	DATE	DESCRIPTION

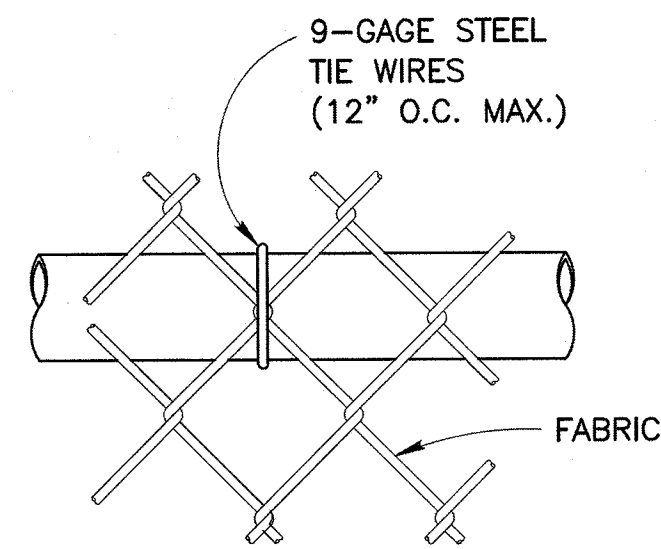
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CAD FILE NAME: C8460C12.dwg
DESIGNED BY: AEJ
DRAWN BY: ADD
EDITED BY: ADD
CHECKED BY: FEJ

SCALE: AS SHOWN PLOT SCALE: 1:1

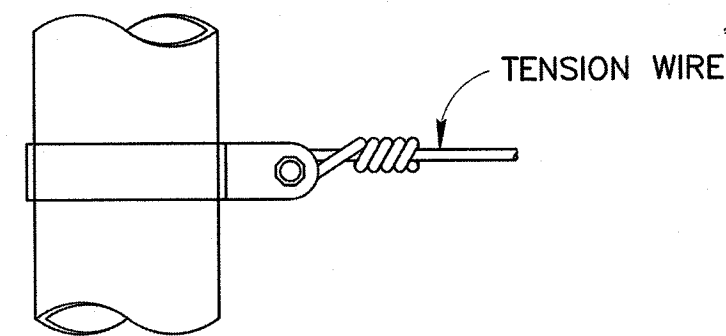
SHEET TITLE
MAJOR M&R OF WATERFRONT
CG STATION LITTLE CREEK
VIRGINIA BEACH VA
PERIMETER FENCE
CIVIL
FENCE & GATE DETAILS

REVIEWED BY: G.P. DEYAN	REVIEWED BY: C.P. LOUGE	REVIEWED BY: G.P. PLANK
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR
S.P. HANNIGAN, CDR. APPROVING OFFICER		06/08/18 DATE

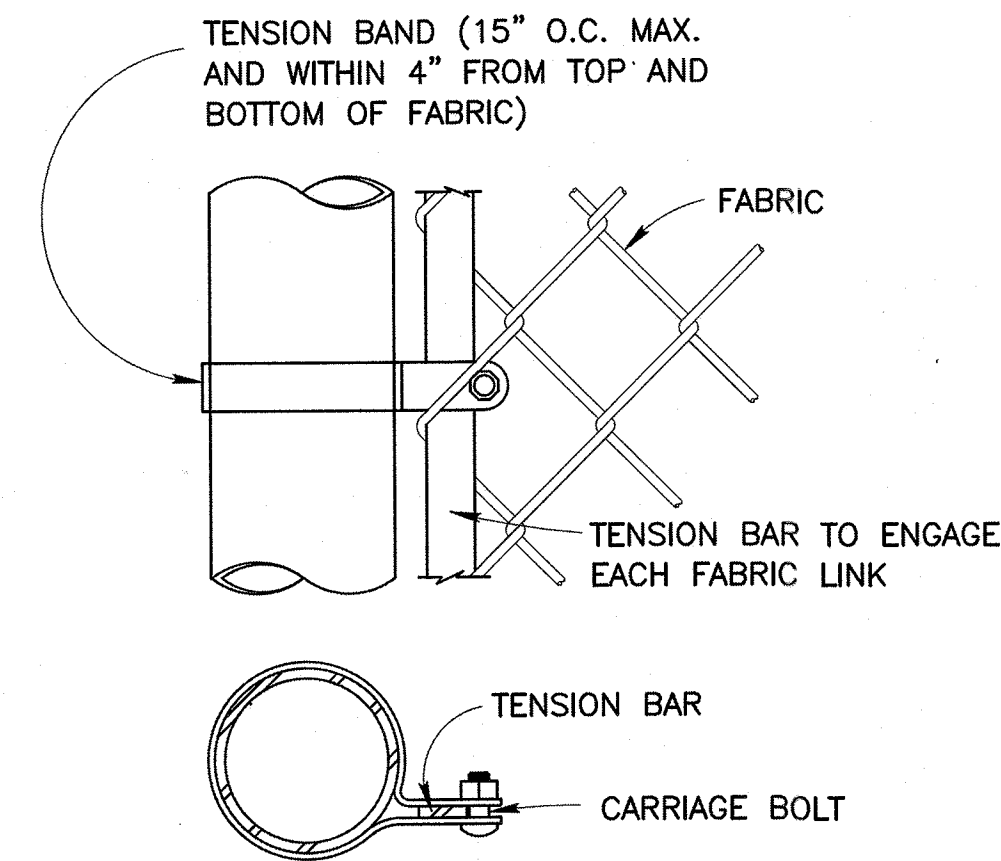
PROJECT NUMBER 6117402	DRAWING NUMBER 8460-D
DISCIPLINE/SHT NO C-12	SHEET 16 OF 17



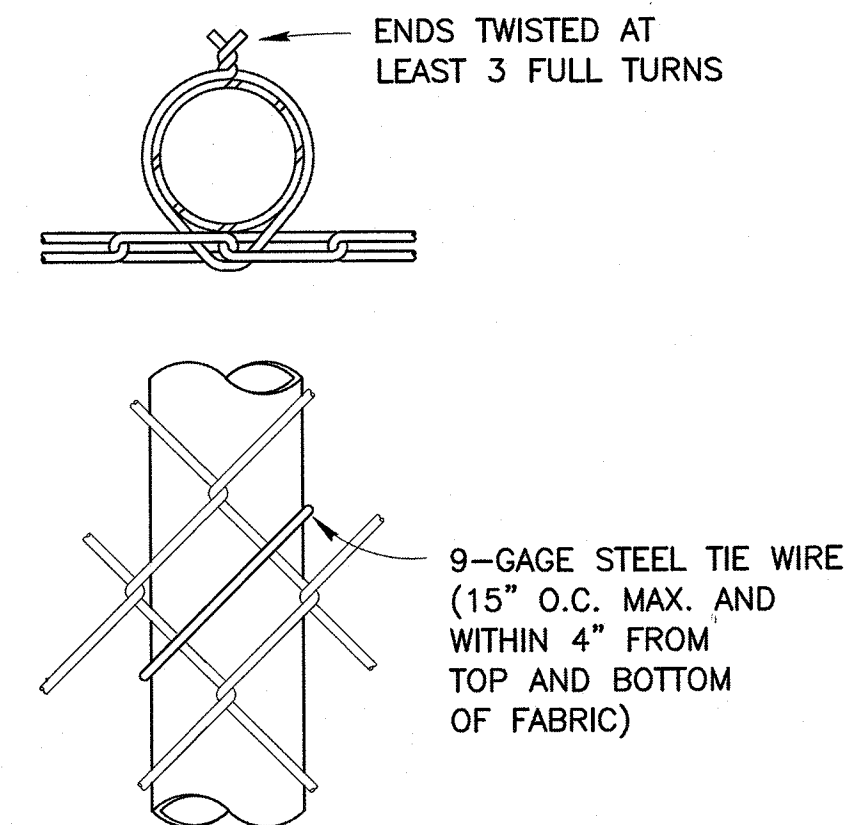
1 BRACE RAIL ATTACHMENT
C-13 SCALE: NONE



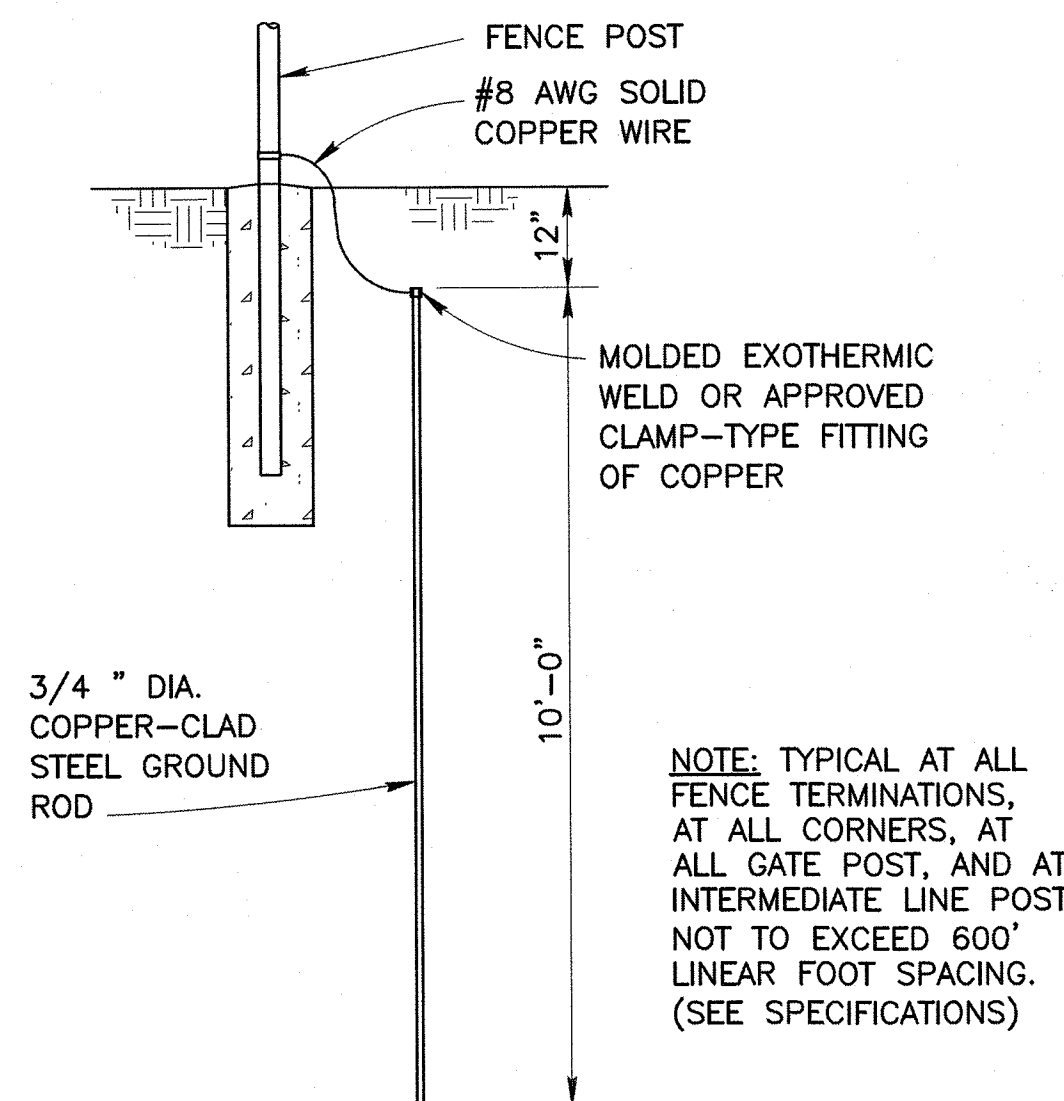
2 TENSION BAND DETAIL
C-13 SCALE: NONE



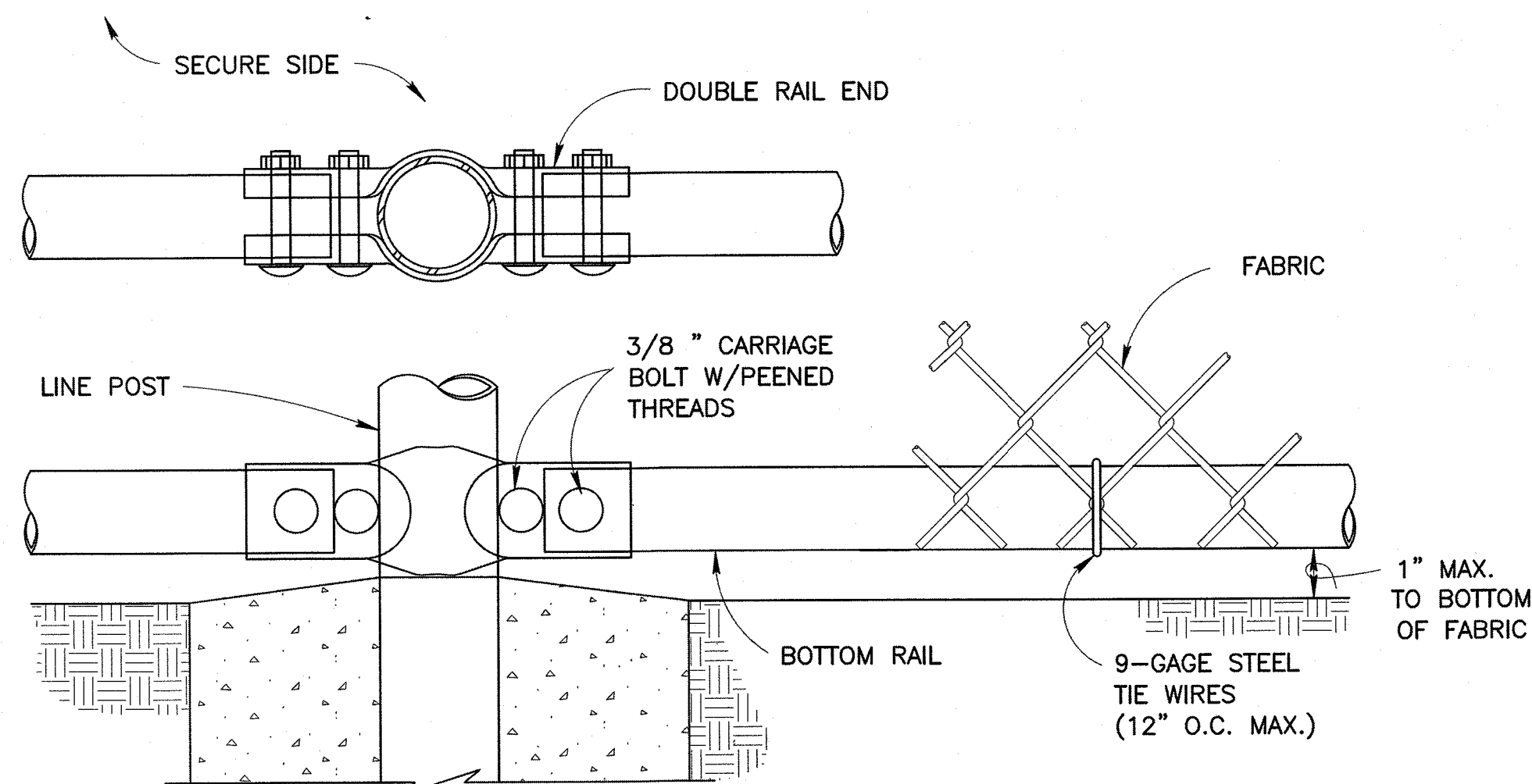
3 END OR GATE POST DETAIL
C-13 SCALE: NONE



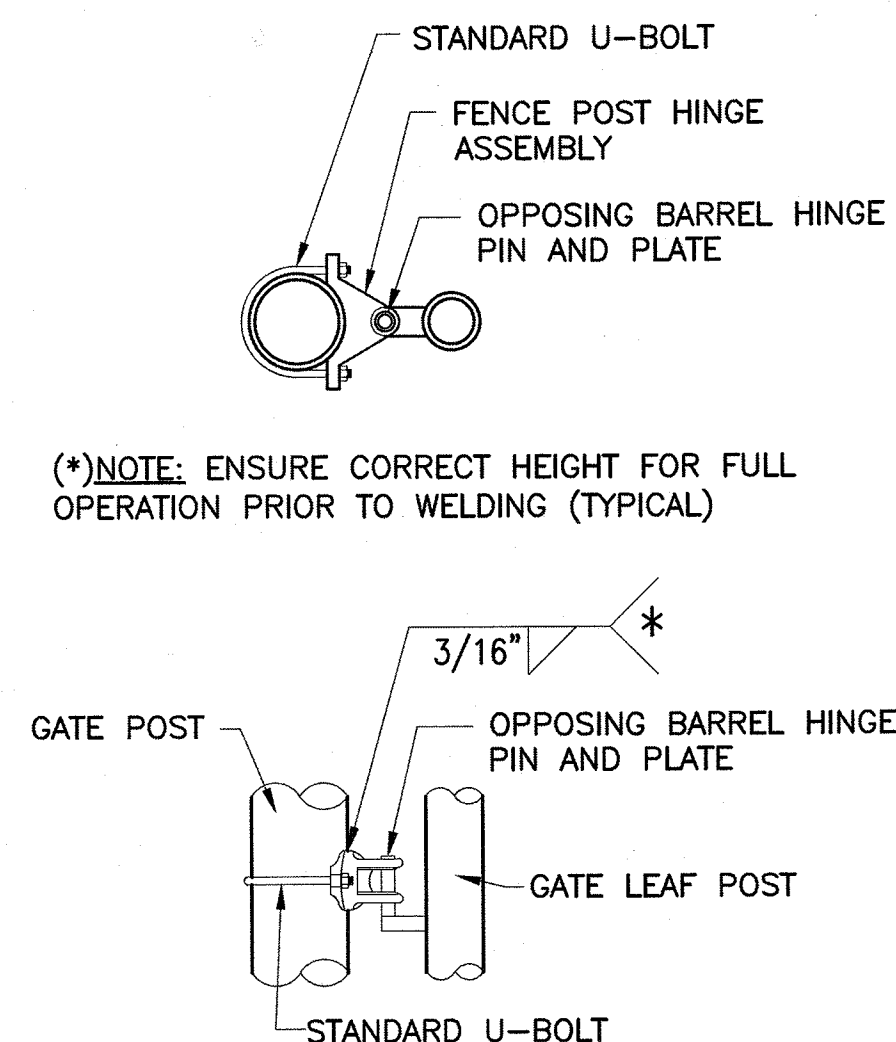
4 LINE POST ATTACHMENTS
C-13 SCALE: NONE



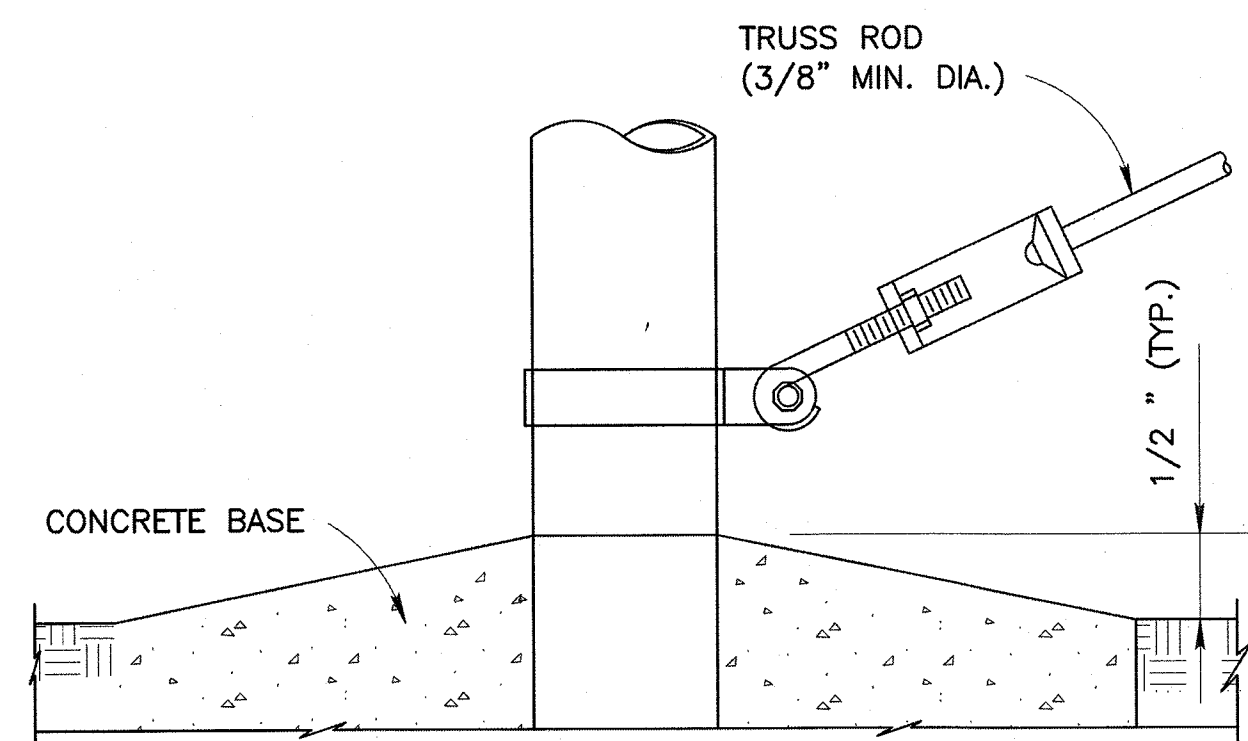
5 GROUNDING DETAIL
C-13 SCALE: NONE



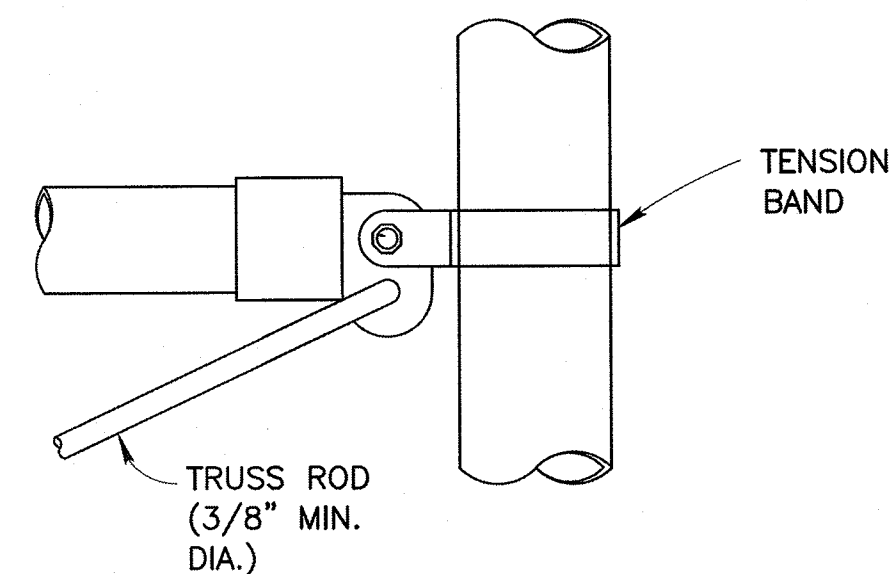
6 BOTTOM RAIL DETAILS
C-13 SCALE: NONE



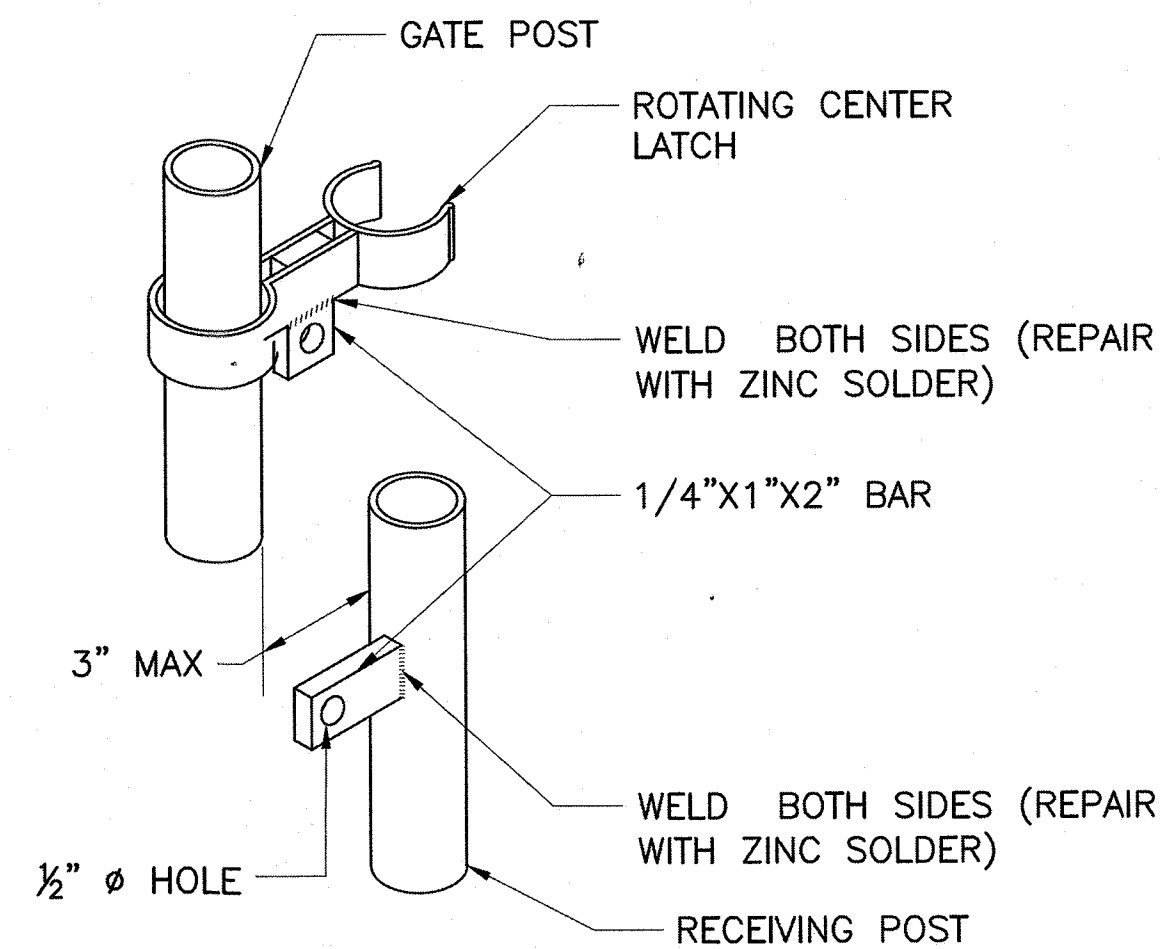
7 STANDARD HINGE
C-13 SCALE: NONE



8 TRUSS ROD AND BAND
C-13 SCALE: NONE



9 BRACE RAIL CLAMP DETAIL
C-13 SCALE: NONE



10 GATE LATCH DETAIL
C-13 SCALE: NONE

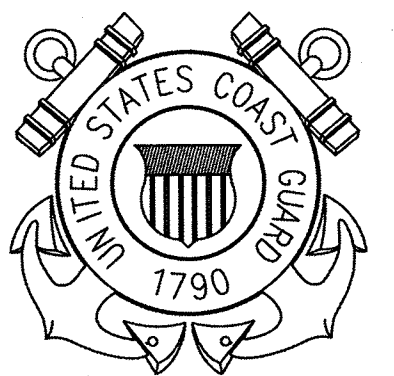
USCG CEU
CLEVELAND, OHIO
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U. S. COAST GUARD
CIVIL ENGINEERING UNIT
CLEVELAND



USCG. CEU CLEVELAND
1240 EAST 9TH STREET
CLEVELAND, OH 44199-2060

ISSUE		
MARK	DATE	DESCRIPTION

A/E PROJECT NO: 1367-M
CAD FILE NAME: C8460C13.dwg
DESIGNED BY: AEJ
DRAWN BY: ADD
EDITED BY: ADD
CHECKED BY: FEJ

SCALE: AS SHOWN PLOT SCALE: 1:1

SHEET TITLE

MAJOR M&R OF WATERFRONT
CG STATION LITTLE CREEK
VIRGINIA BEACH VA
PERIMETER FENCE
CIVIL
MISC FENCE DETAILS

REVIEWED BY: G. P. LODGE	REVIEWED BY: S. P. HANNIGAN, CDR.	REVIEWED BY: S. P. HANNIGAN, CDR.
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR
APPROVING OFFICER		DATE 06/08/18

PROJECT NUMBER	DRAWING NUMBER
6117402	8460-D
DISCIPLINE/SHT NO	SHEET 17 OF 17
C-13	