

NOTES:
 1. ALL STATIONING SHOWN FOR PIPELINES IS FOR REFERENCE ONLY. STATIONING DOES NOT REFLECT THE TOTAL PIPELINE LENGTHS. FIELD VERIFY STATIONING AND LOCATE PIPELINES AS INDICATED ON PLANS AND TRENCH SECTIONS.
 2. ALL PIPING MATERIAL SHALL BE CARBON STEEL EXCEPT AS NOTED.

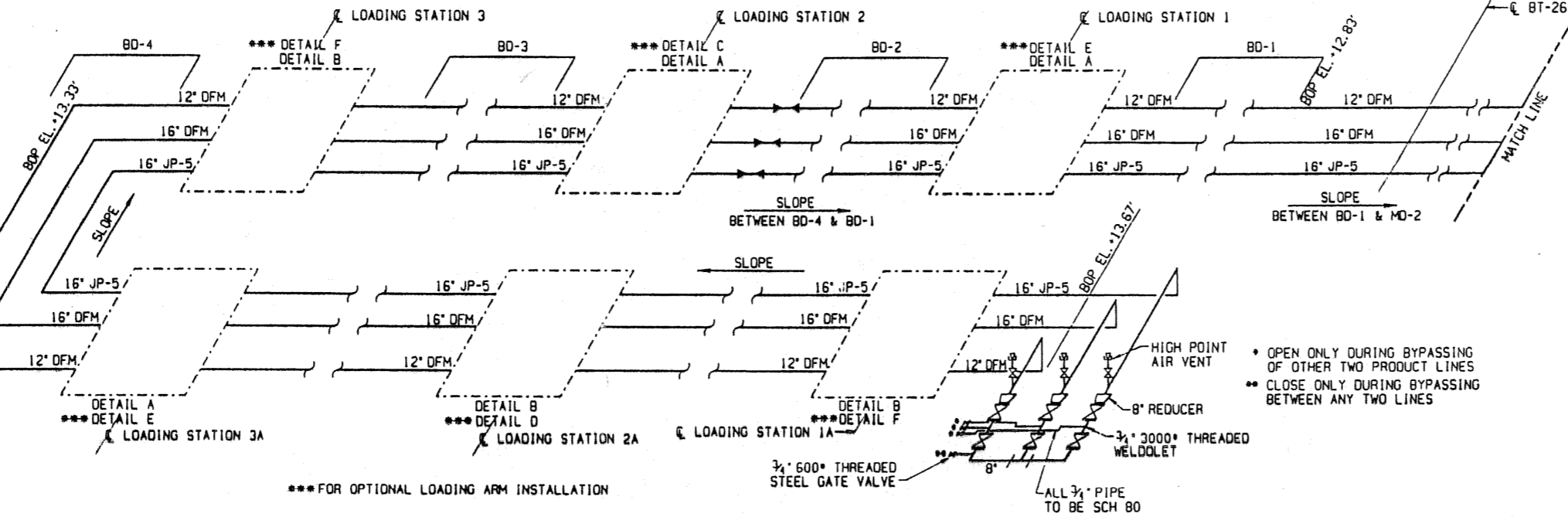
NOTE: FIXED ANCHORS AT BT-4, BT-15 & MO-2
 PRESSURE RELIEF BY-PASS TYPICAL
 ALL VALVES

SYMBOLS

- DIRECTION OF FLOW
- PIPE ANCHOR POINTS
- BLIND FLANGE
- REDUCER CONCENTRIC
- REMOVABLE CAP
- GATE VALVE
- BALL VALVE
- GLOBE VALVE
- PLUG VALVE
- AIR VENT
- CHECK VALVE
- SWIVEL JOINT
- EXPANSION JOINT
- SHOWER HEAD
- EYEWASH

ABBREVIATIONS

- JP-5 JET FUEL
- DFM DIESEL FUEL MARINE
- OW OILY WASTE
- W WATER
- IF INSULATING FLANGE
- PS PIPE SUPPORT
- PSA PIPE SUPPORT ANCHOR
- PSS PIPE SUPPORT SLIDE
- SCH SCHEDULE
- ELL ELBOW
- BOP BOTTOM OF PIPE
- CL CENTERLINE
- UNO UNLESS NOTED OTHERWISE



**DETAIL A (SHOWN)
 DETAIL B (OPPOSITE)
 N.T.S.**

**DETAIL C (SHOWN)
 DETAIL D (OPPOSITE)
 N.T.S.**

**DETAIL E (SHOWN)
 DETAIL F (OPPOSITE)
 N.T.S.**

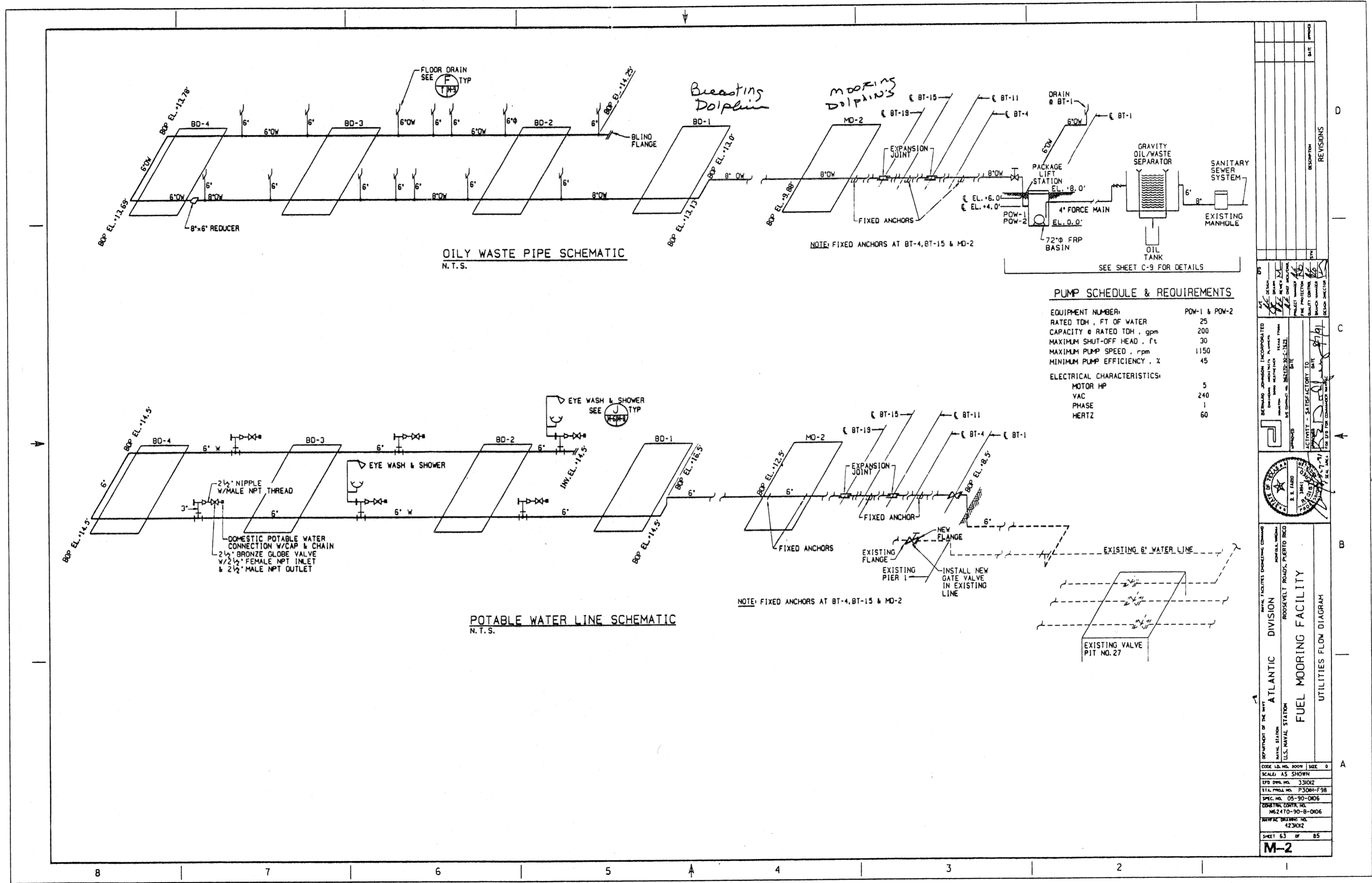
NO.	DATE	DESCRIPTION	BY	CHECKED

REVISIONS

BERNARD JOHNSON INCORPORATED
 1000 N. WASHINGTON BLVD., SUITE 200
 WASHINGTON, D.C. 20004
 TEL: (202) 462-1100
 FAX: (202) 462-1101

DEPARTMENT OF THE NAVY
 DIVISION
 ATLANTIC
 NAVAL STATION
 U.S. NAVAL STATION
 ROOSEVELT ROAD, PUERTO RICO
 FUEL MOORING FACILITY
 PRODUCT PIPING FLOW DIAGRAM

DATE: 07/22/91
 TIME: 16:00
 SHEET: 52 OF 85
M-1



OILY WASTE PIPE SCHEMATIC
N.T.S.

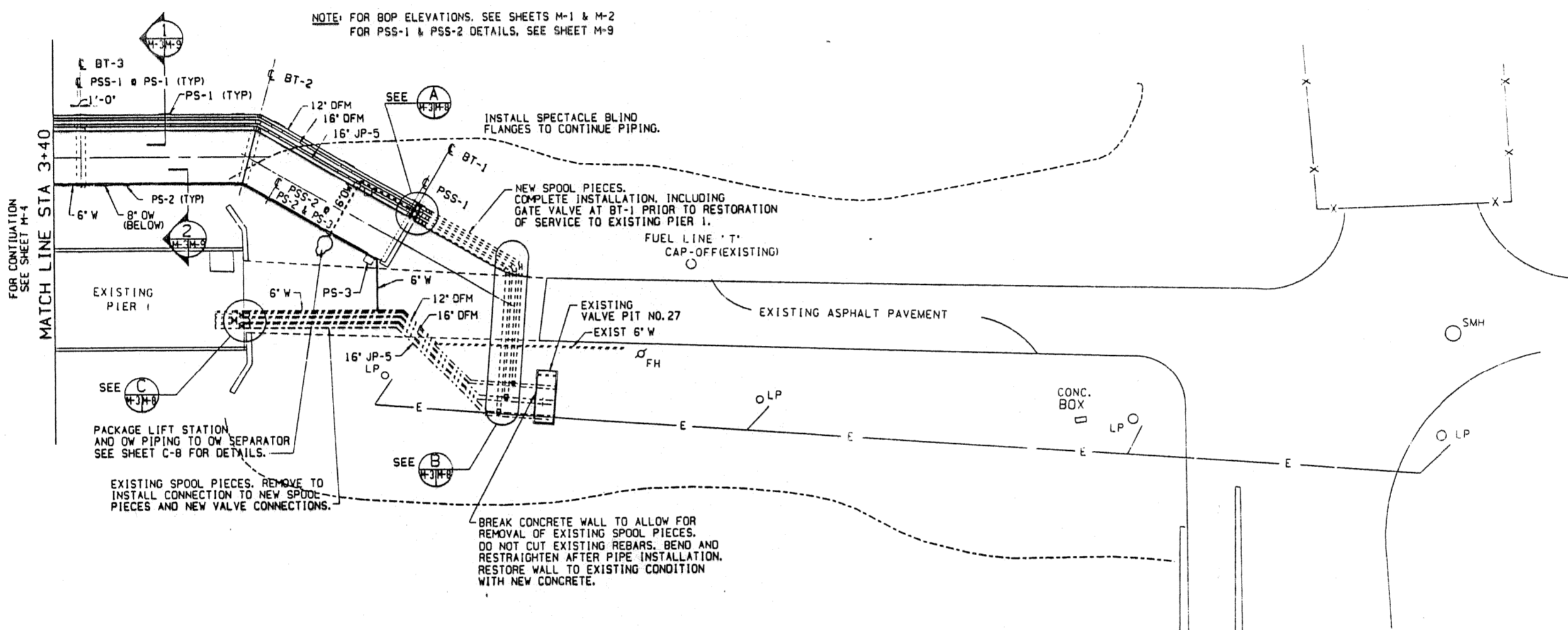
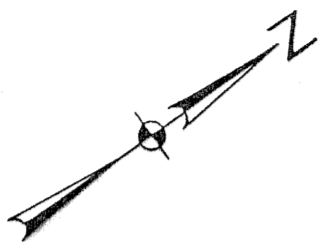
POTABLE WATER LINE SCHEMATIC
N.T.S.

PUMP SCHEDULE & REQUIREMENTS

EQUIPMENT NUMBER: POW-1 & POW-2	
RATED TDH, FT OF WATER	25
CAPACITY @ RATED TDH, gpm	200
MAXIMUM SHUT-OFF HEAD, Ft	30
MAXIMUM PUMP SPEED, rpm	1150
MINIMUM PUMP EFFICIENCY, %	45
ELECTRICAL CHARACTERISTICS:	
MOTOR HP	5
VAC	240
PHASE	1
HERTZ	60

NO.	REVISIONS	DATE	BY	CHKD

DEPARTMENT OF THE NAVY
 NAVAL STATION
 ATLANTIC DIVISION
 FUEL MOORING FACILITY
 UTILITIES FLOW DIAGRAM
 RODNEY ROAD, PIER 10
 P.O. BOX 1000
 NORFOLK, VIRGINIA 23502
 PROJECT NO. 33012
 STA. PROJ. NO. P3081-F98
 SPEC. NO. 05-90-0006
 DRAWING CODE NO. 062470-90-B-0006
 DRAWING NUMBER NO. 423012
 SHEET 63 OF 85
M-2



NOTE: FOR BOP ELEVATIONS, SEE SHEETS M-1 & M-2
FOR PSS-1 & PSS-2 DETAILS, SEE SHEET M-9

INSTALL SPECTACLE BLIND FLANGES TO CONTINUE PIPING.

NEW SPOOL PIECES. COMPLETE INSTALLATION, INCLUDING GATE VALVE AT BT-1 PRIOR TO RESTORATION OF SERVICE TO EXISTING PIER I.

FUEL LINE 1" CAP-OFF (EXISTING)

FOR CONTINUATION SEE SHEET M-4
MATCH LINE STA 3+40

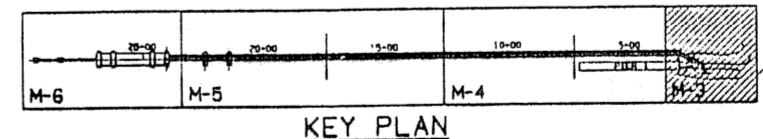
PACKAGE LIFT STATION AND OW PIPING TO OW SEPARATOR SEE SHEET C-8 FOR DETAILS.

EXISTING SPOOL PIECES. REMOVE TO INSTALL CONNECTION TO NEW SPOOL PIECES AND NEW VALVE CONNECTIONS.

BREAK CONCRETE WALL TO ALLOW FOR REMOVAL OF EXISTING SPOOL PIECES. DO NOT CUT EXISTING REBARS. BEND AND RESTRAIGHTEN AFTER PIPE INSTALLATION. RESTORE WALL TO EXISTING CONDITION WITH NEW CONCRETE.

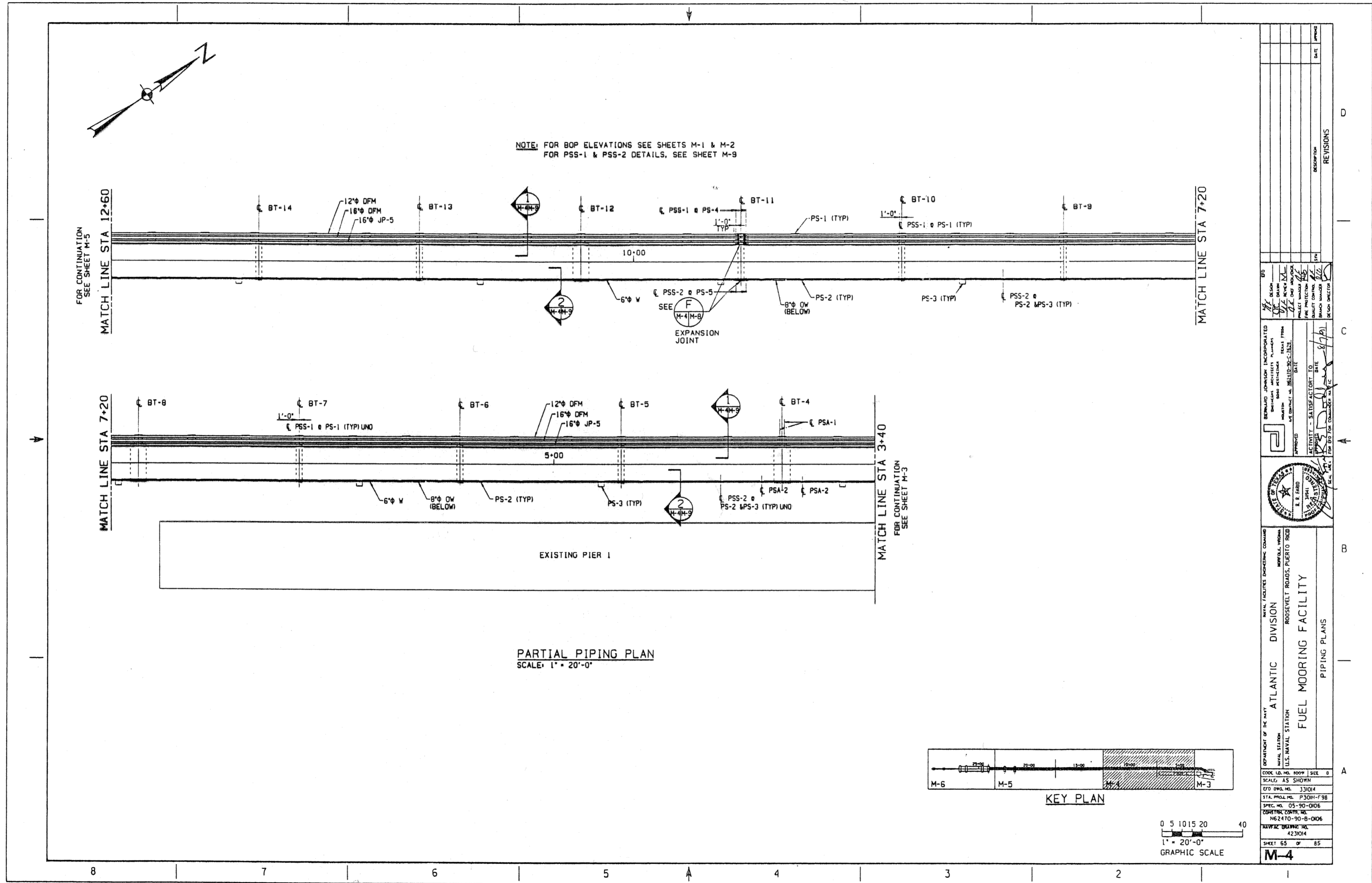
NOTE: FIELD LOCATE ALL DIMENSIONS

PARTIAL PIPING PLAN
SCALE: 1" = 20'-0"



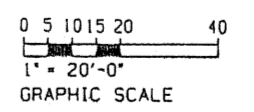
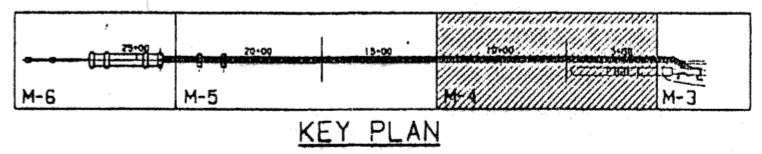
0 5 10 15 20 30 40
1" = 20'-0"
GRAPHIC SCALE

U.S. NAVAL FACILITIES DESIGN & CONSTRUCTION DIVISION U.S. NAVAL STATION ATLANTIC DIVISION ROOSEVELT ROAD, ROBERTS Bldg. FUEL MOORING FACILITY PIPING PLANS		REVISIONS <table border="1"> <thead> <tr> <th>NO.</th> <th>DESCRIPTION</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	DESCRIPTION	DATE	BY																				
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U.S. NAVAL FACILITIES DESIGN & CONSTRUCTION DIVISION U.S. NAVAL STATION ATLANTIC DIVISION ROOSEVELT ROAD, ROBERTS Bldg. FUEL MOORING FACILITY PIPING PLANS	APPROVED: [Signature] DATE: 8/2/91 PROJECT NUMBER: 423013 SHEET NUMBER: 64 OF 85	U.S. NAVAL FACILITIES DESIGN & CONSTRUCTION DIVISION U.S. NAVAL STATION ATLANTIC DIVISION ROOSEVELT ROAD, ROBERTS Bldg. FUEL MOORING FACILITY PIPING PLANS																								
U.S. NAVAL FACILITIES DESIGN & CONSTRUCTION DIVISION U.S. NAVAL STATION ATLANTIC DIVISION ROOSEVELT ROAD, ROBERTS Bldg. FUEL MOORING FACILITY PIPING PLANS	U.S. NAVAL FACILITIES DESIGN & CONSTRUCTION DIVISION U.S. NAVAL STATION ATLANTIC DIVISION ROOSEVELT ROAD, ROBERTS Bldg. FUEL MOORING FACILITY PIPING PLANS	U.S. NAVAL FACILITIES DESIGN & CONSTRUCTION DIVISION U.S. NAVAL STATION ATLANTIC DIVISION ROOSEVELT ROAD, ROBERTS Bldg. FUEL MOORING FACILITY PIPING PLANS																								
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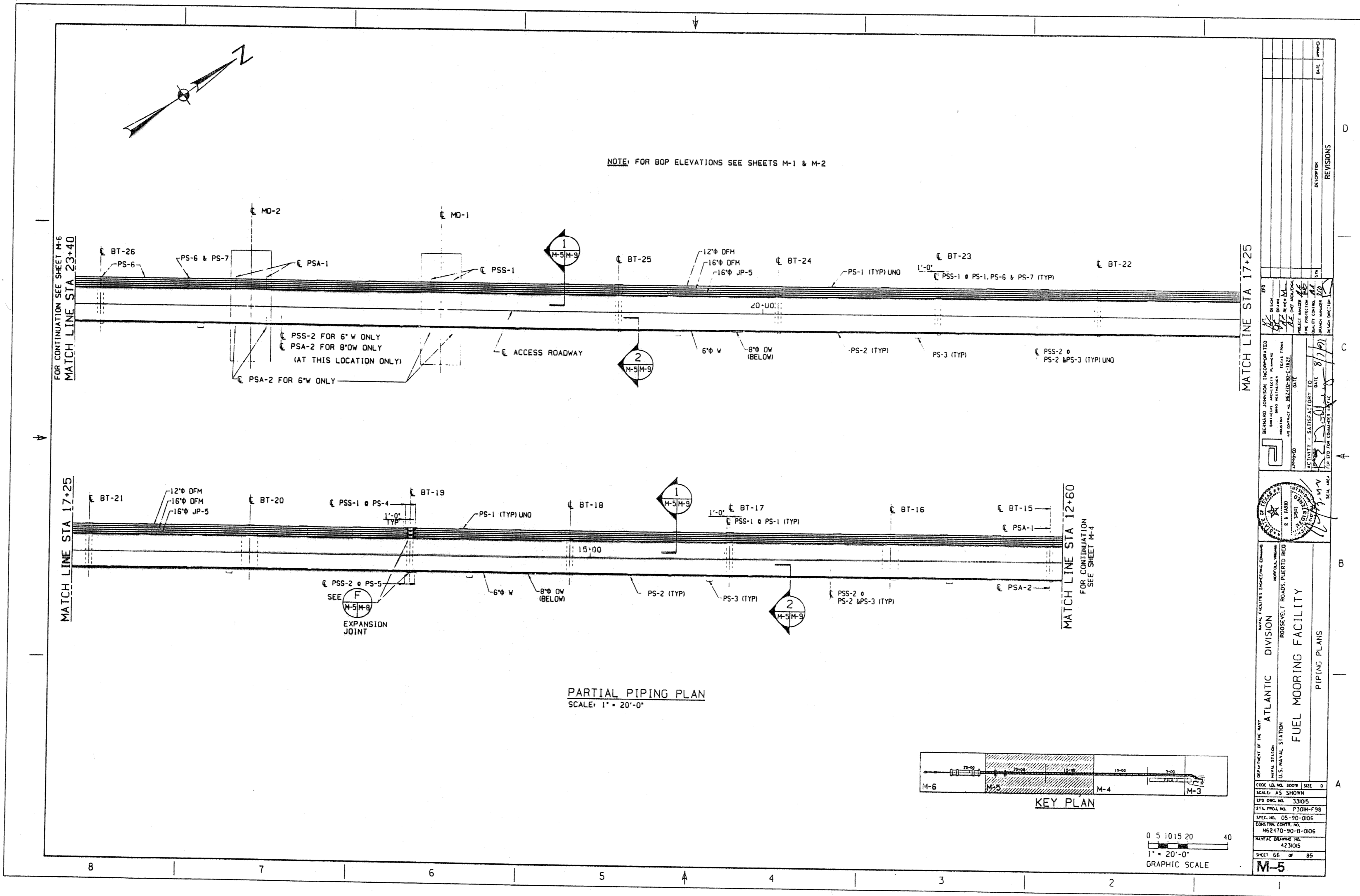


NOTE: FOR BOP ELEVATIONS SEE SHEETS M-1 & M-2
FOR PSS-1 & PSS-2 DETAILS, SEE SHEET M-9

PARTIAL PIPING PLAN
SCALE: 1" = 20'-0"



DEPARTMENT OF THE NAVY NAVAL STATION U.S. NAVAL STATION ATLANTIC DIVISION ROOSEVELT ROAD, PUERTO RICO FUEL MOORING FACILITY PIPING PLANS		REVISIONS NO. DESCRIPTION DATE 1 2 3 4 5 6 7 8 9 10
CONTROL CENTER NO. 423104 SHEET 65 OF 85 M-4		



NOTE: FOR BOP ELEVATIONS SEE SHEETS M-1 & M-2

FOR CONTINUATION SEE SHEET M-6
MATCH LINE STA 23+40

MATCH LINE STA 17+25

MATCH LINE STA 17+25

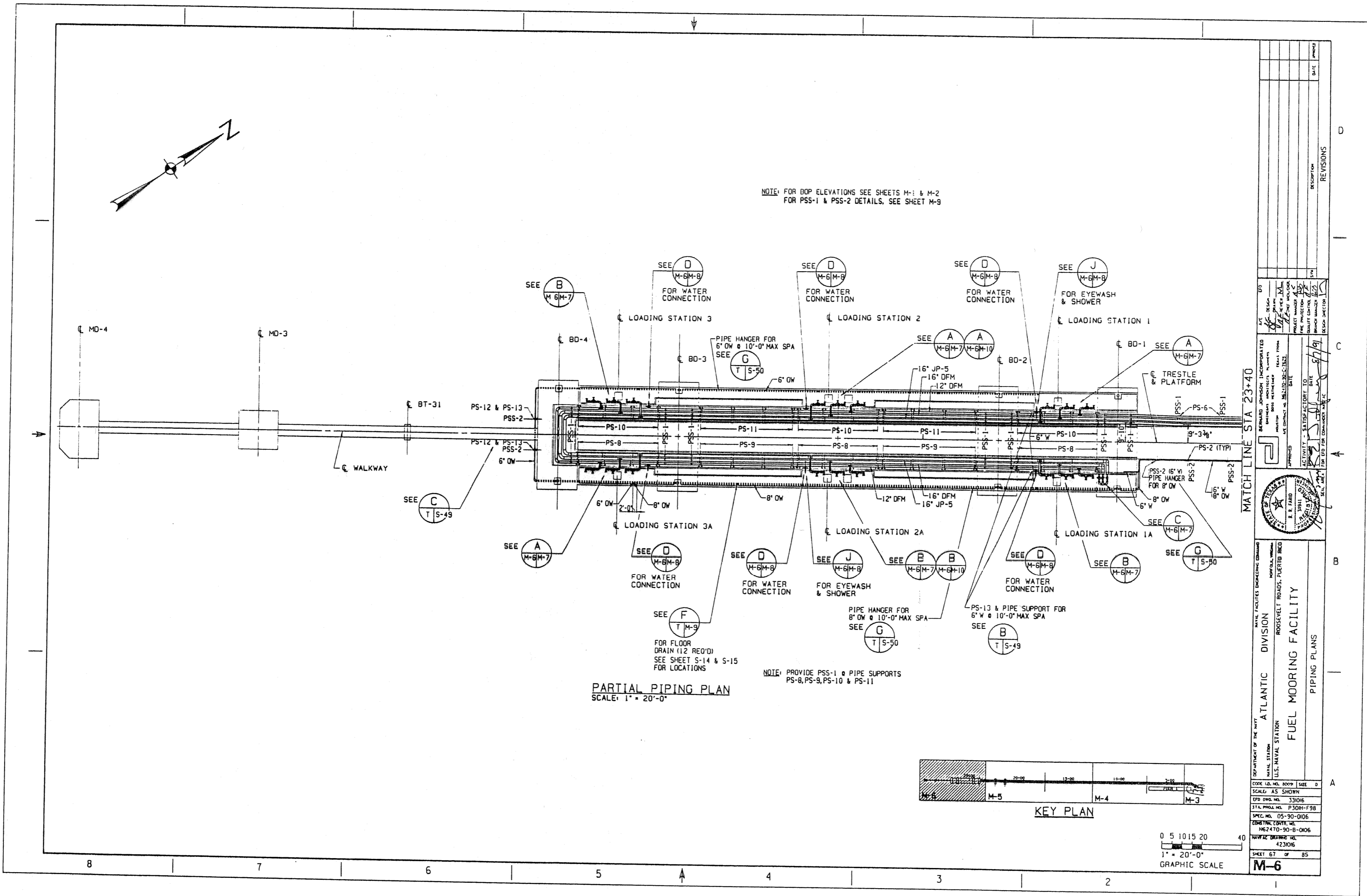
MATCH LINE STA 12+60
FOR CONTINUATION
SEE SHEET M-4

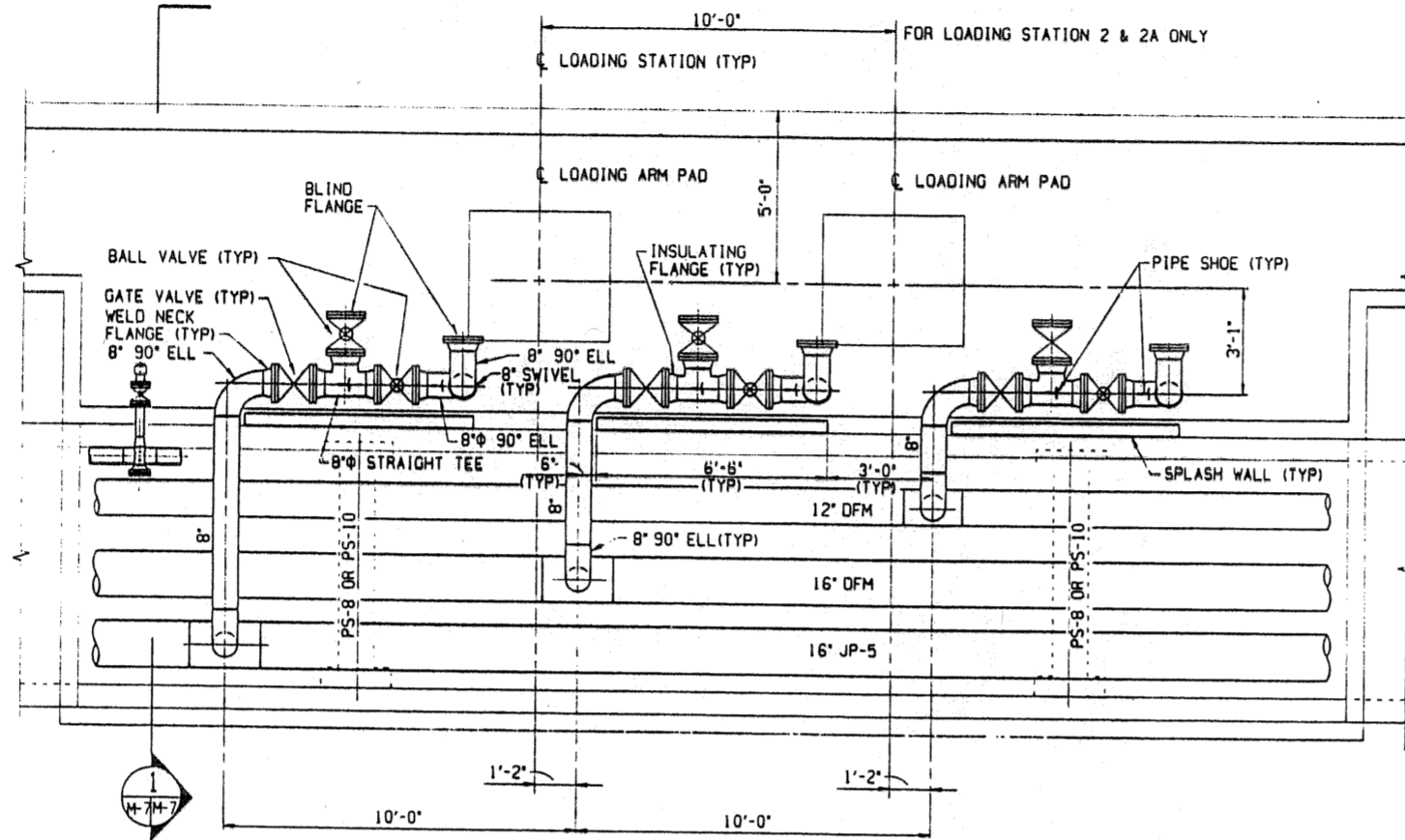
REVISIONS	
NO.	DESCRIPTION
1	ISSUED

BERNARD JOHNSON INCORPORATED
ENGINEERING ARCHITECTS PLANNERS
1000 W. BROADWAY, SUITE 200
NEW YORK, N.Y. 10014
ACTIVITY - SATISFACTORY TO DATE
APPROVED BY: [Signature] DATE: 8/7/91
SCALE: AS SHOWN

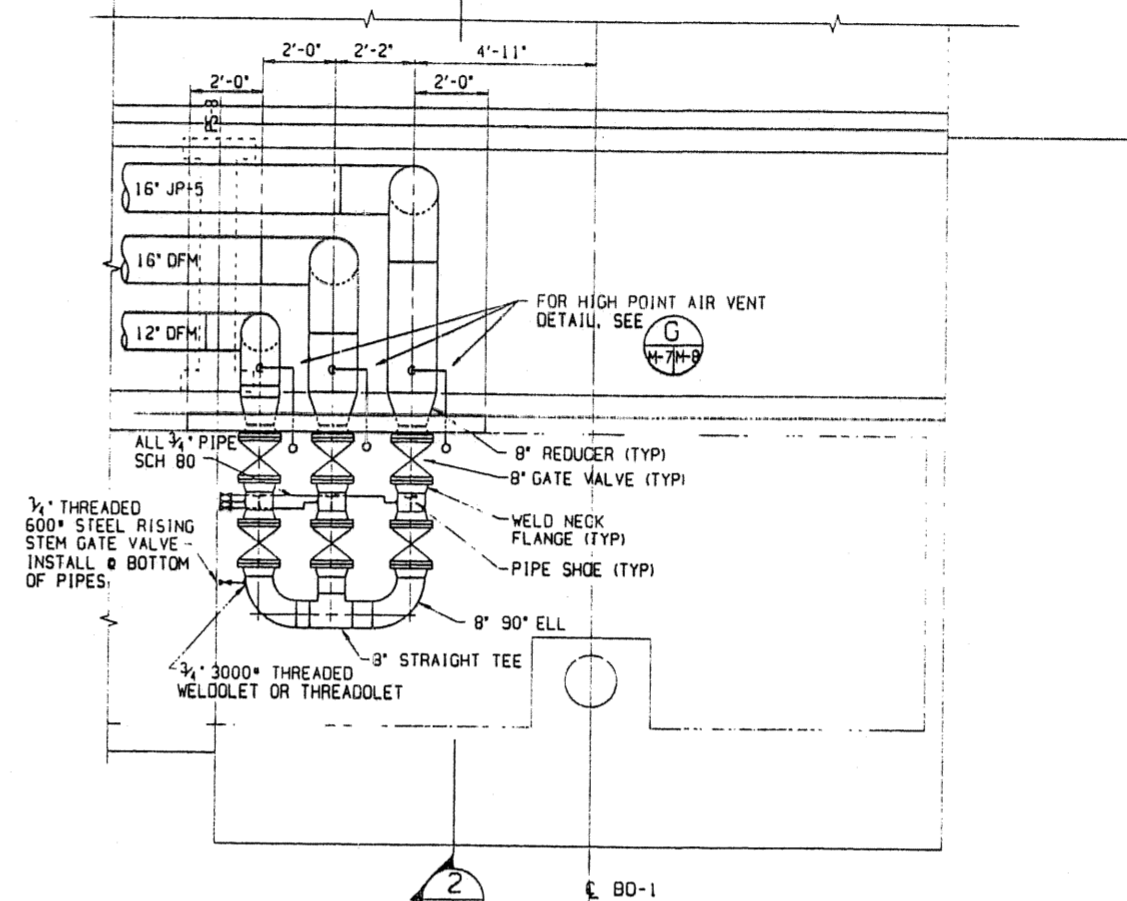
U.S. NAVAL STATION
ATLANTIC DIVISION
ROOSEVELT ROADS, PUERTO RICO
FUEL MOORING FACILITY
PIPING PLANS

CODE NO. 0099 SIZE 0
SCALE: AS SHOWN
DESIGN NO. 3303
SPL. PROJ. NO. P-3031-F38
SPEL. NO. 05-90-0106
CORPORATE NO. 162470-90-B-0106
NAVY DRAWING NO. 423105
SHEET 66 OF 85
M-5

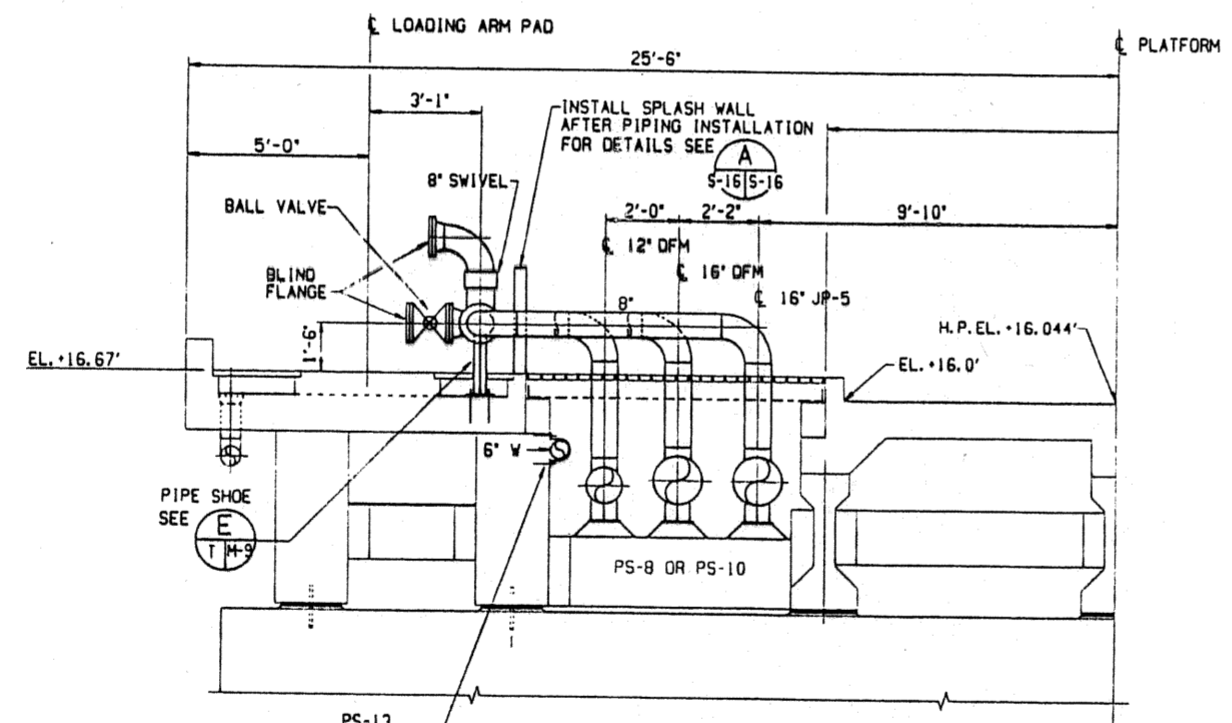




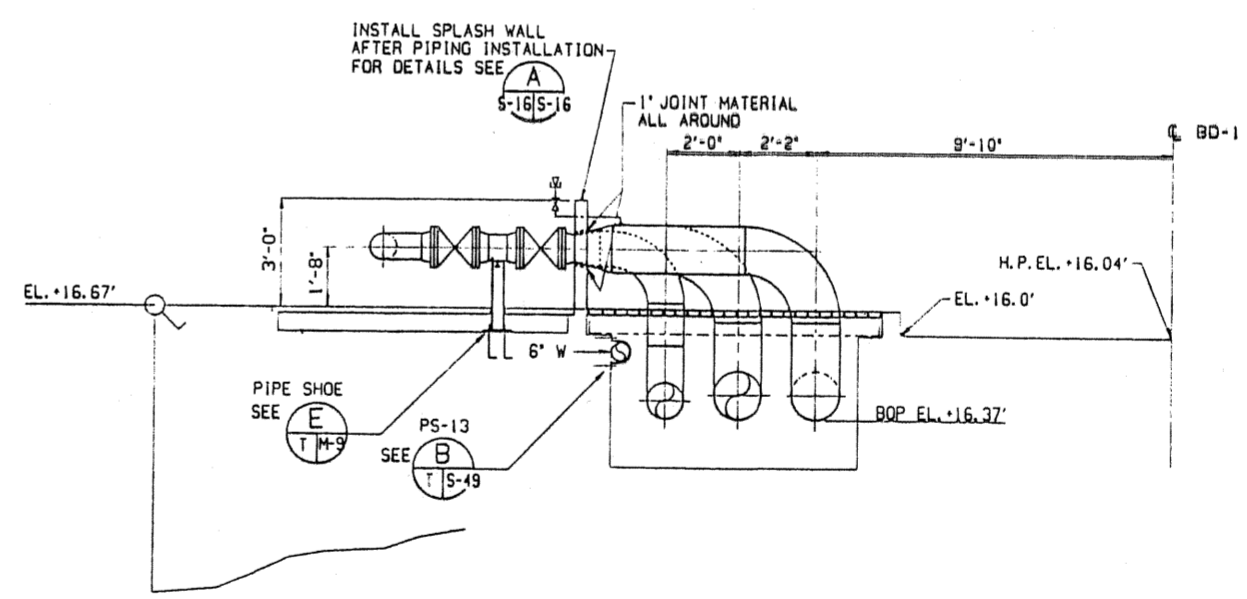
LOADING STATION DETAIL (A) (SHOWN) (B) (OPPOSITE)
SCALE: $\frac{3}{8}'' = 1'-0''$



BY-PASS MANIFOLD DETAIL (C)
SCALE: $\frac{3}{8}'' = 1'-0''$

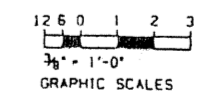


SECTION (1)
SCALE: $\frac{3}{8}'' = 1'-0''$



SECTION (2)
SCALE: $\frac{3}{8}'' = 1'-0''$

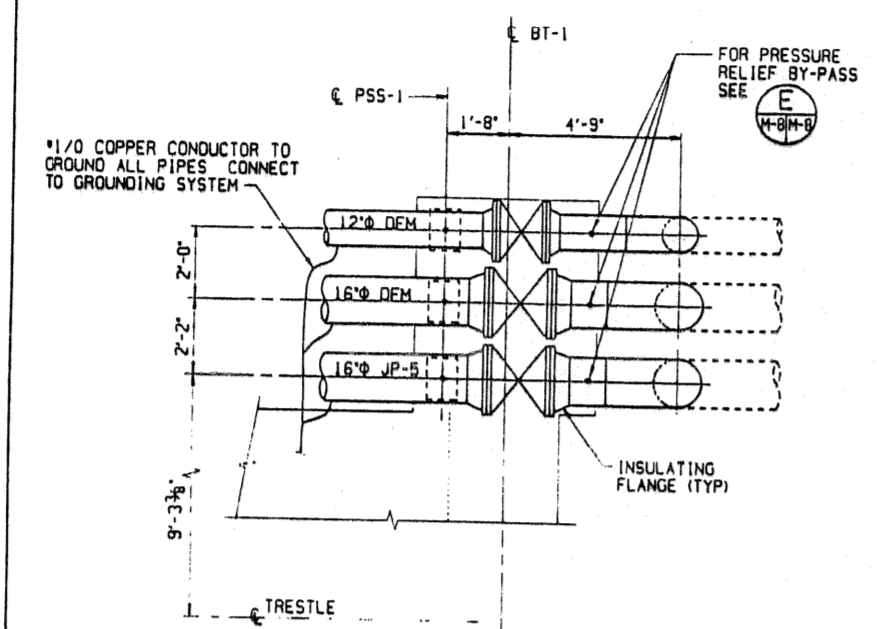
NOTE: FOR OPTIONAL LOADING ARM
INSTALLATION, SEE SHEET M-10



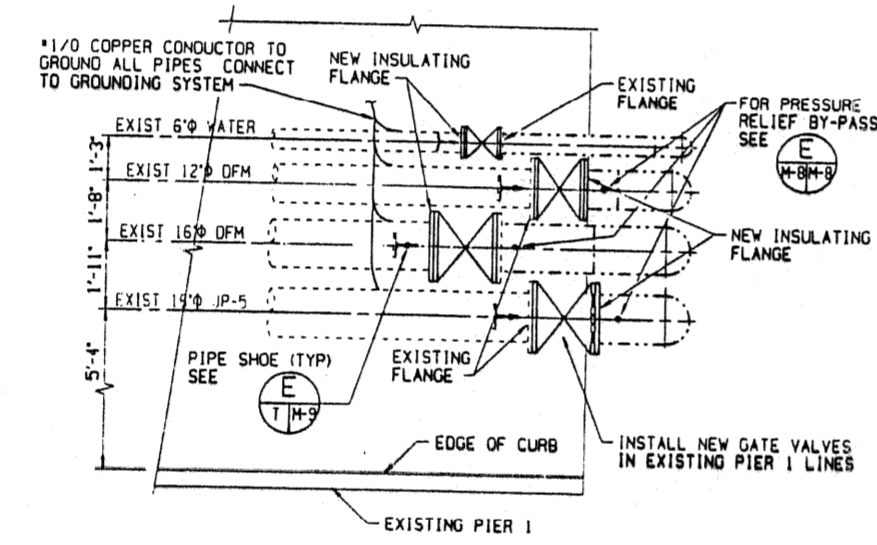
REVISIONS			
NO.	DATE	DESCRIPTION	BY

DESIGNED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE
PROJECT NO.	DATE
DATE OF ISSUE	DATE
BY	DATE

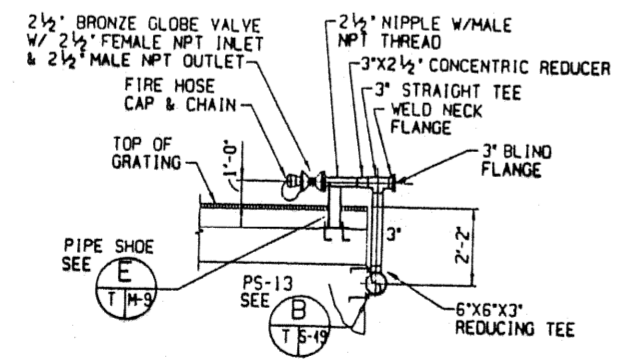
DEPARTMENT OF THE NAVY	ATLANTIC DIVISION	NAVY FACILITIES ENGINEERING COMMAND
NAVAL STATION	ROOSEVELT ROAD, PIER 180	MORNING STAR
FUEL MOORING FACILITY		
PIPING PLANS AND SECTIONS		
CODE	DATE	SCALE
AS SHOWN		



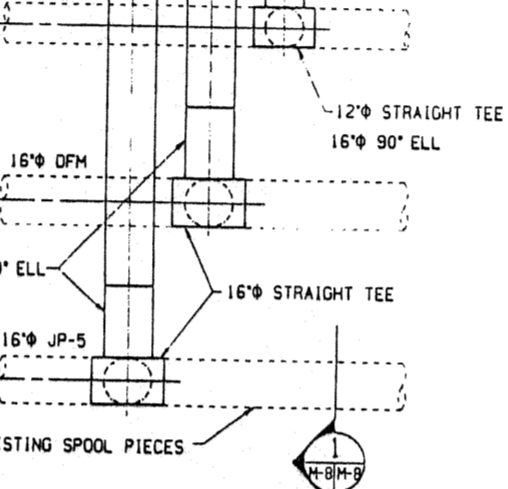
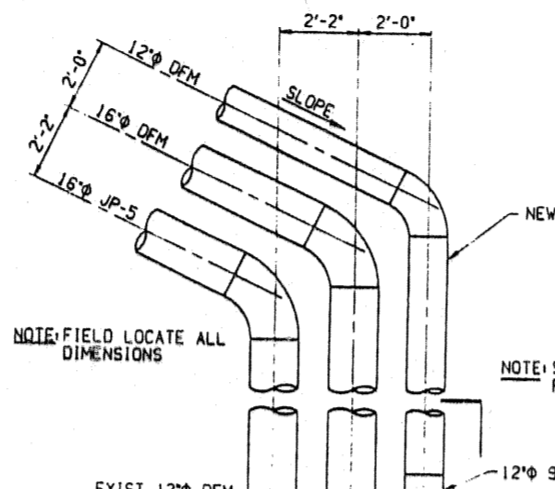
DETAIL A
SCALE: 3/8" = 1'-0"



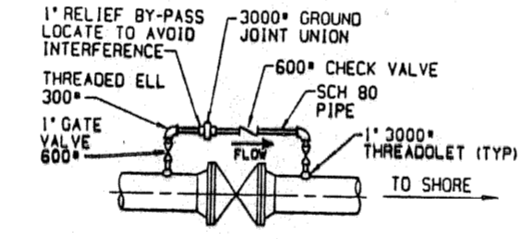
DETAIL C
SCALE: 3/8" = 1'-0"



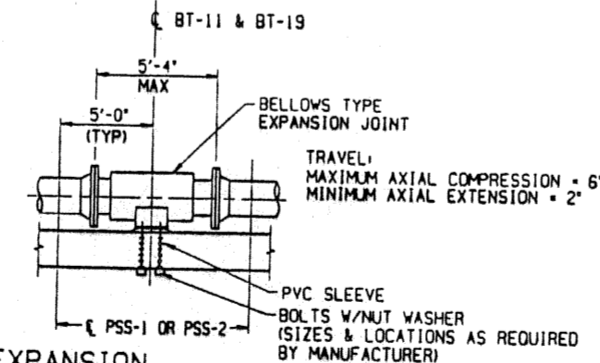
WATER CONNECTION DETAIL D
SCALE: 3/8" = 1'-0"



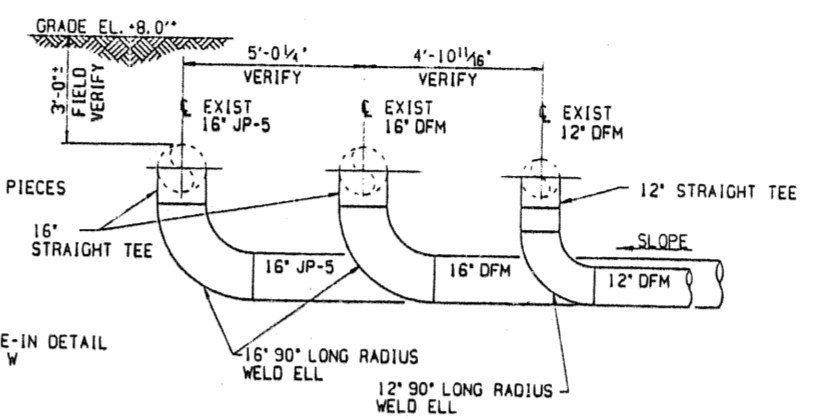
DETAIL B
SCALE: 3/8" = 1'-0"



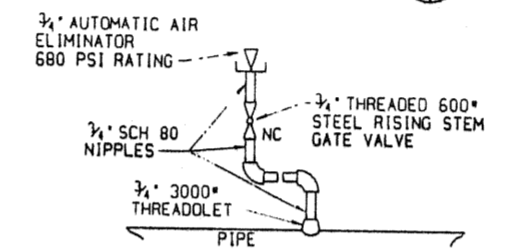
PRESSURE RELIEF BY-PASS DETAIL E
SCALE: NONE



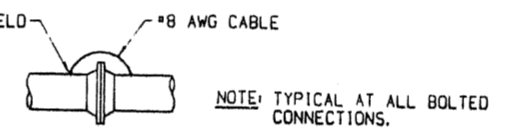
EXPANSION JOINT DETAIL F
SCALE: NONE



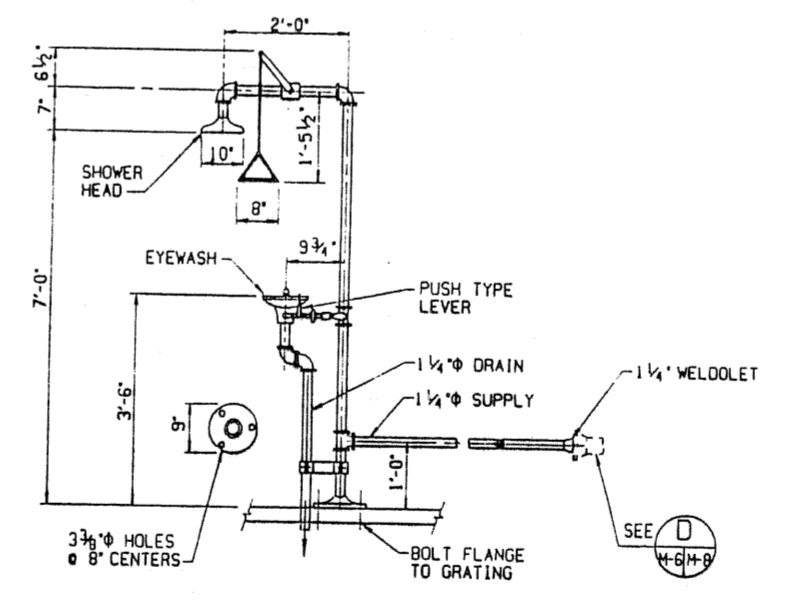
SECTION 1
SCALE: 3/8" = 1'-0"



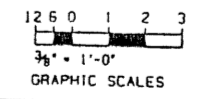
HIGH POINT AIR VENT DETAIL G
SCALE: NONE



CATHODIC CONTINUITY PROVISION DETAIL H
SCALE: NONE



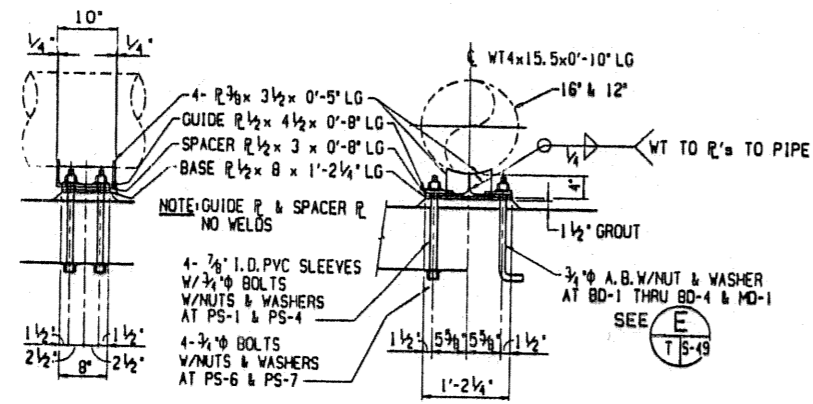
EYEWASH/SHOWER DETAIL J
SCALE: NONE



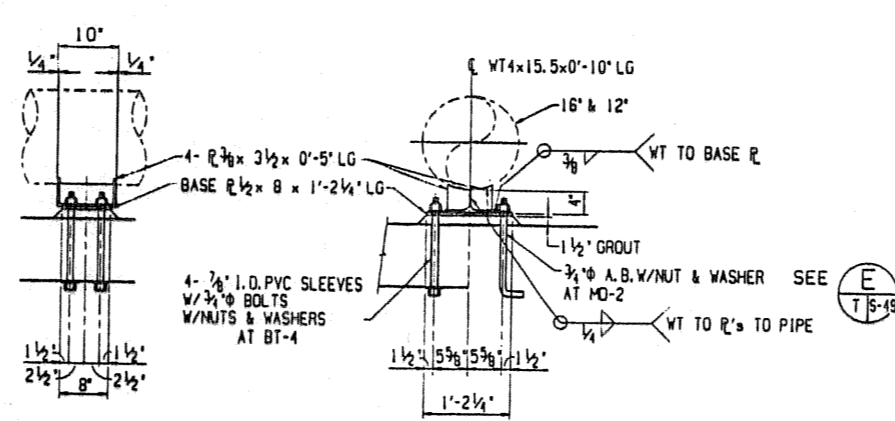
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1	ISSUED FOR CONSTRUCTION	08/11/91	W-8M-B	
2	REVISION			
3	REVISION			
4	REVISION			
5	REVISION			
6	REVISION			
7	REVISION			
8	REVISION			
9	REVISION			
10	REVISION			

DESIGNED BY	W-8M-B
CHECKED BY	W-8M-B
DATE	08/11/91
PROJECT NO.	423101B
ACTIVITY	SAFETY ELECTRICITY TO
DATE	08/11/91
BY	W-8M-B
CHKD.	W-8M-B
DATE	08/11/91
PROJECT NO.	423101B
ACTIVITY	SAFETY ELECTRICITY TO
DATE	08/11/91
BY	W-8M-B
CHKD.	W-8M-B
DATE	08/11/91

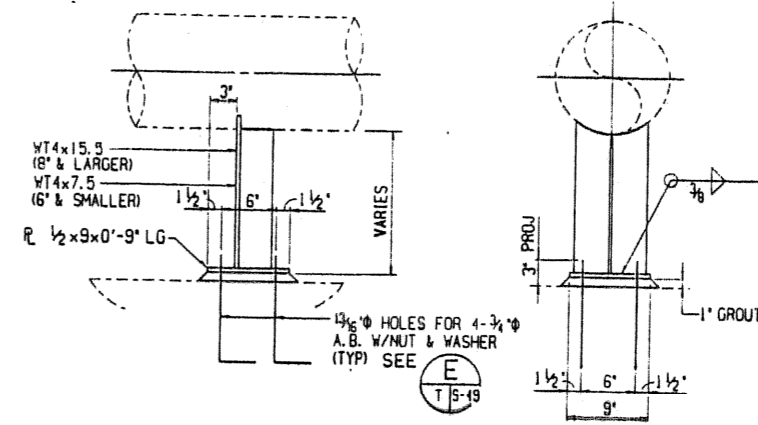
DEPARTMENT OF THE NAVY	ATLANTIC DIVISION
NAVY FACILITIES ENGINEERING CENTER	ROOSEVELT ROAD, PIER 10 BLDG
NAVY STATION	FUEL MOORING FACILITY
U.S. NAVAL STATION	MISCELLANEOUS PIPING DETAILS
PROJECT NO.	423101B
SHEET NO.	69 OF 85
M-8	



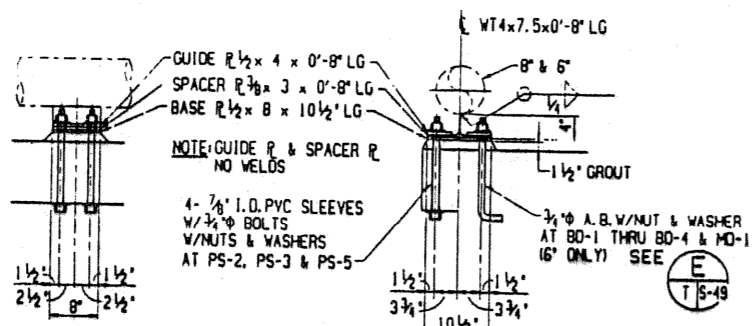
PIPE SUPPORT SLIDES DETAIL
SCALE: 1" = 1'-0"
PSS-1



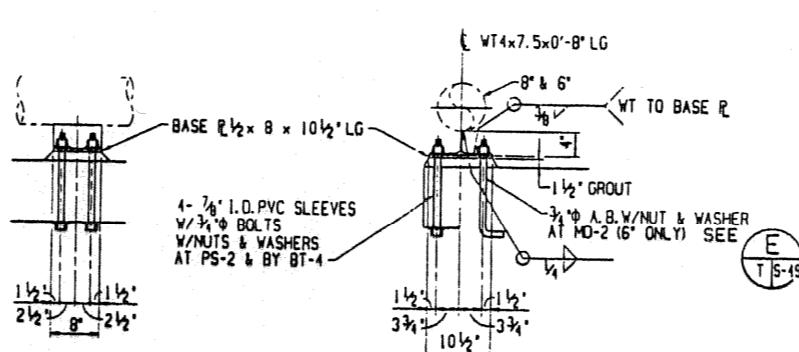
PIPE SUPPORT ANCHORS DETAIL
SCALE: 1" = 1'-0"
PSA-1



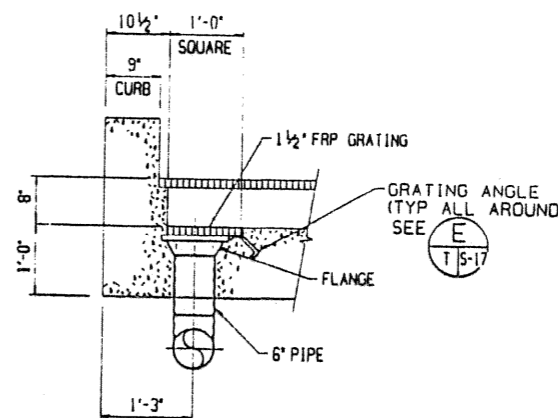
PIPE SHOE DETAIL
SCALE: 1" = 1'-0"
E



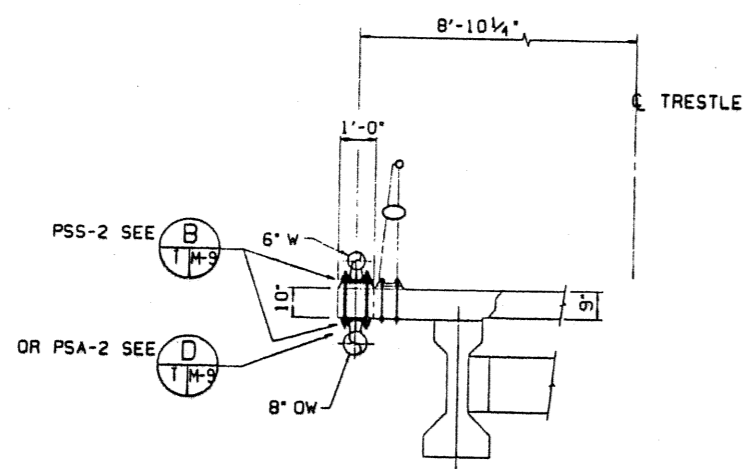
PIPE SUPPORT SLIDES DETAIL
SCALE: 1" = 1'-0"
PSS-2



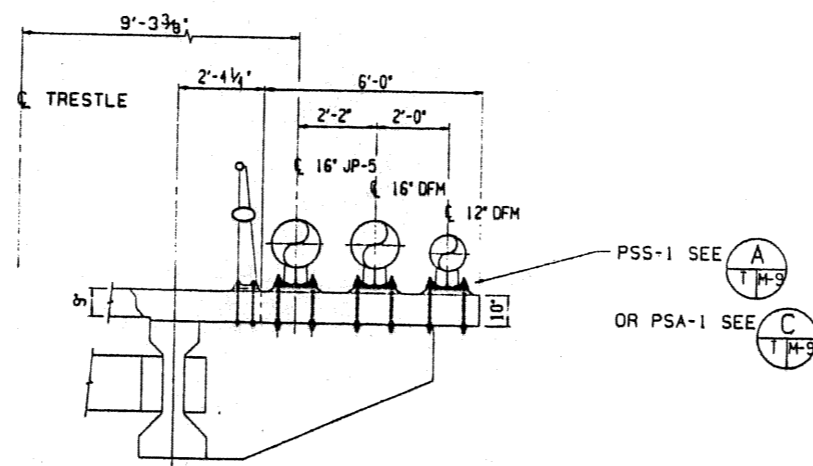
PIPE SUPPORT ANCHORS DETAIL
SCALE: 1" = 1'-0"
PSA-2



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



SECTION 2
SCALE: 1/2" = 1'-0"
M-4, M-5



SECTION 1
SCALE: 1/2" = 1'-0"
M-4, M-5

NO.	DESCRIPTION	DATE
1	ISSUED FOR CONSTRUCTION	7/22/91
2	REVISION	
3	REVISION	
4	REVISION	
5	REVISION	
6	REVISION	
7	REVISION	
8	REVISION	
9	REVISION	
10	REVISION	

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 DIVISION
 ROOSEVELT STATION
 U.S. NAVAL FACILITY
 FUEL MOORING FACILITY
 MISCELLANEOUS PIPING DETAILS
 M-9
 SHEET 70 OF 85
 CODE: 12.6.0.1.2
 SCALE: AS SHOWN
 LFD: 33109
 TTA: 33081-F38
 SPEC. NO.: 05-90-0106
 DRAWING CONTROL NO.: 423109
 DATE: 6/24/90
 NAVY DRAWING NO.: 423109
 GRAPHIC SCALE

