

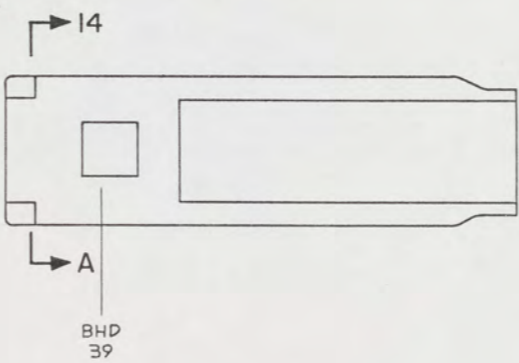
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NOTES:

- THIS DRAWING HAS BEEN DEVELOPED FROM SHIPCHECK INFORMATION FOR ACCOMPLISHING THE INSTALLATION OF ENGINE EXHAUST PIPING ON LCM-8, MOD-1.
- ALL FABRICATION WELDING AND INSPECTION TO BE IN ACCORDANCE WITH NAVSEA 0900-LP-014-5010, WELD SIZES BASED ON USE OF AWS A5.4, CLASS E3086 ELECTRODES FOR CRES STEEL TO CRES STEEL.
- EQUIPMENT AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH USCG AND ABS REGULATIONS.
- REPAIR ALL PAINT DAMAGED BY THIS INSTALLATION AND PAINT ALL NEW STEEL IN ACCORDANCE WITH U.S. ARMY TECHNICAL BULLETIN TB43-0144.
- MATERIAL ORDERED ON THIS DRAWING IS NOT INTENDED TO BE RESTRICTIVE. SUBSTITUTION OF EQUAL QUALITY MATERIAL MAY BE MADE EXCEPT FOR ITEMS MARKED GFE.
- SLIGHT DEVIATIONS FROM DIMENSIONS SHOWN ARE PERMISSIBLE TO SUIT ACTUAL CONDITIONS FOUND ABOARD THE VESSEL.
- ENGINE EXHAUST PIPING TO BE INSULATED IN ACCORDANCE WITH MIL-STD-769. INSULATION ON EXHAUST PIPE SHALL BE 1 INCH THICK CONFORMING TO MIL-I-16411, TYPE II. INSULATION OVER FLANGES SHALL BE REMOVABLE.
- COMPONENTS SHOWN BY SOLID, HEAVY LINES ARE NEW AND ARE TO BE INSTALLED IN ACCORDANCE WITH THIS DRAWING. PHANTOM LINES INDICATE EXISTING COMPONENTS INSTALLED BY DRAWINGS REFERENCED AS NOTED.
- LENGTH OF FIND NO. P-1, P-4 AND P-5 TO BE DETERMINED AT ASSEMBLY.
- REMOVE EXISTING FLANGES, 4 PLACES, WELDED TO OUTER SHELL AND REPLACE WITH FIND NO. M-21. SECURE WELDS SHALL BE WATERTIGHT.
- ENSURE EXHAUST PIPING (AND INSULATION) CLEARS THROTTLE CONTROL CABLE BY A MINIMUM OF 1/2 INCH.

| REFERENCE DRAWINGS |             |                                    |
|--------------------|-------------|------------------------------------|
| NO.                | DRAWING NO. | TITLE                              |
| 1                  | 205-4510047 | LCM-8 MOD 1 PIPING ENGINE EXHAUST  |
| 2                  | 200-5103216 | MACHINERY ARRANGEMENT              |
| 3                  | 259-5103236 | LCM-8 MK 5, ENGINE EXHAUST PIPING  |
|                    |             | ARRANGEMENT                        |
| 4                  | 13226E9451  | LCM-8, MOD-1, ENGINE CONTROL ARRGT |

| SHEETS |     | STATUS OF REVISIONS |     |                      |            |          |
|--------|-----|---------------------|-----|----------------------|------------|----------|
| 3      | 2   | ZONE                | LTR | DESCRIPTION          | DATE       | APPROVED |
| ---    | --- | A                   |     | SEE ECP NO. 90HE3102 | 20 JUNE 88 | AVL/S    |



KEY PLAN 5-B  
SCALE NONE

| FIND NO.  | QTY   | DESCRIPTION   | UNIT | MATERIAL   | SPECIFICATION  |
|-----------|-------|---|------|--|----------------|
| YARD M-23 | 4     | PLATE, 1/4" THICK X 8 1/2" DIA  |      | ASTM A240  | CRES           |
| YARD M-22 | 32    | SCREW, HEX HD, 3/4"-10 UNC-2A X 1 3/8" L  |      |  | CRES           |
| YARD M-21 | 4     | PLATE, 3/4" THICK X 10" DIA   |      | ASTM A131  | STEEL          |
| YARD M-20 | 4     | PLATE, 1/4" THICK X 10" DIA   |      | ASTM A240  | CRES           |
| YARD M-19 | 8     | GASKET, 7 1/2" OD X 5 1/2" ID X 1/8" THK  |      | MIL-G-14243  | METALLIC ASB   |
| YARD M-18 | 32    | NUT, HEX, 3/4"-10 UNC-2B  |      |  | CRES           |
| YARD M-17 | 64    | WASHER, LOCK SPRING, HELICAL, 3/4" NOM SIZE                                     |      |  | CRES           |
| YARD M-16 | 32    | SCREW, HEX HD, 3/4"-10 UNC-2A X 2" L  |      |  | CRES           |
| YARD M-15 | 4     | GASKET, 8 1/2" OD X 4 3/4" ID X 1/8" THK W/B HOLES, 5/8" DIA ON 7" BC EQ SPACED |      | MIL-G-14243  | METALLIC ASB   |
| GFE M-14  | 87738 | E30MCSVSF   | 4    | EXHAUST EXPANSION JOINT CONNECTOR 5" SIZE (FLEX-WELD)  | COML CRES      |
| YARD M-13 | 2     | WASHER, LOCK SPRING, HELICAL, 3/8" NOM SIZE                                     |      |  | CRES           |
| YARD M-12 | 2     | NUT, HEX, 3/8"-16 UNC-2B  |      |  | CRES           |
| YARD M-11 | 2     | SCREW, HEX HD, 3/8"-16 UNC-2A X 1 1/4" L  |      |  | CRES           |
| YARD M-10 | 2     | ANGLE, 1/4" X 2 1/2" X 2 1/2"   |      | ASTM A36   | STEEL          |
| YARD M-9  | 2     | F.B., 1/4" X 2" X 4 3/8"  |      | ASTM A276  | CRES           |
| YARD M-8  | 64    | SCREW, HEX HD, 1/2"-13 UNC-2A X 1 3/4" L  |      |  | CRES           |
| YARD M-7  | 12    | GASKET, 8" OD X 4 1/4" ID X 1/8" THK W/B HOLES, 5/8" DIA ON 6 1/2" BC EQ SPACED |      | MIL-G-14243  | METALLIC ASB   |
| YARD M-6  | 12    | PLATE, 1/4" THK   |      | ASTM A240  | CRES           |
| GFE M-5   | 22165 | 4 X 21ST-SS   | 4    | FLEXIBLE CONNECTION, 4 INCH SIZE W/FLANGE, 8" OD X 1 1/4" THK W/B HOLES, 5/8" DIA ON 6 1/2" BC X 21" L (HARCO MFG) | COML CRES      |
| YARD M-4  | 128   | NUT, HEX, 1/2"-13 UNC-2B  |      |  | CRES           |
| YARD M-3  | 128   | WASHER, LOCK SPRING, HELICAL, 1/2" NOM SIZE                                     |      |  | CRES           |
| YARD M-2  | 128   | WASHER, FLAT, .562 ID X 1.375 X .109 THK  |      |  | CRES           |
| YARD M-1  | 64    | SCREW, HEX HD, 1/2"-13 UNC-2A X 1 1/2" L  |      |  | CRES           |
| YARD F-3  | 34646 | 21010   | 4    | ELBOW, WELDING, 5" IPS, SCHED 10S, SR, 90° TYPE 304 L (LADISH)   | COML CRES      |
| YARD F-2  | 34646 | 20010   | 4    | ELBOW, WELDING, 4" IPS, SCHED 10S, LR 90° TYPE 304 L (LADISH)  | COML CRES      |
| YARD F-1  | 80120 | TYPE 304/316  | 4    | ELBOW, 90° THD, 4" IPS, CLASS 150 LB (SCHNITZER)   | COML CRES      |
| YARD P-5  | 4     | PIPE, 5" IPS, SCHED 10 S  |      | ASTM A312  | CRES           |
| YARD P-4  | 4     | PIPE, 5" IPS, SCHED 10 S  |      | ASTM A312  | CRES           |
| YARD P-3  | 4     | PIPE, 4" IPS, SCHED 40 S  |      | ASTM A312  | CRES           |
| YARD P-2  | 06164 | GR 304/316  | 4    | NIPPLE, CLOSE, 4" IPS, SCHED 40 (ALL STAINLESS INC)  | COML CRES      |
| YARD P-1  | 4     | GR TP304H/316H  | 4    | PIPE, 4" IPS, SCHED 5 S  | ASTM A312 CRES |

UNLESS OTHERWISE SPECIFIED DIM/TOLERANCES ARE:  $\pm$  .01 IN.

ONE PLACE (.01)  $\pm$  —  
TWO PLACE (.001)  $\pm$  —  
THREE PLACE (.0001)  $\pm$  —  
ANGLES  $\pm$  —

DO NOT SCALE THIS DRAWING  
FOR INTERPRETATION OF DRAWING QDD-STD-100 APPLIES

REMOVE BURRS AND BREAK SHARP EDGES  
SHARP EDGES — TO —  
FILLET RADIUS — TO —

MATERIAL

THIRD ANGLE PROJECTION

DESIGN APPROVAL  
DATE 15 Nov 88

APPROVED FOR PROCUREMENT  
DATE 15 Nov 88

DRAWN BY EJR DATE 21 AUG 84  
CHECKED BY G.T. PADD DATE 15 NOV 88  
CONTRACT NO.

U.S. ARMY MOBILITY EQUIPMENT  
RESEARCH AND DEVELOPMENT COMMAND  
FORT BELVOIR, VIRGINIA 22060

LCM-8, MOD-1,  
ENGINE EXHAUST PIPING

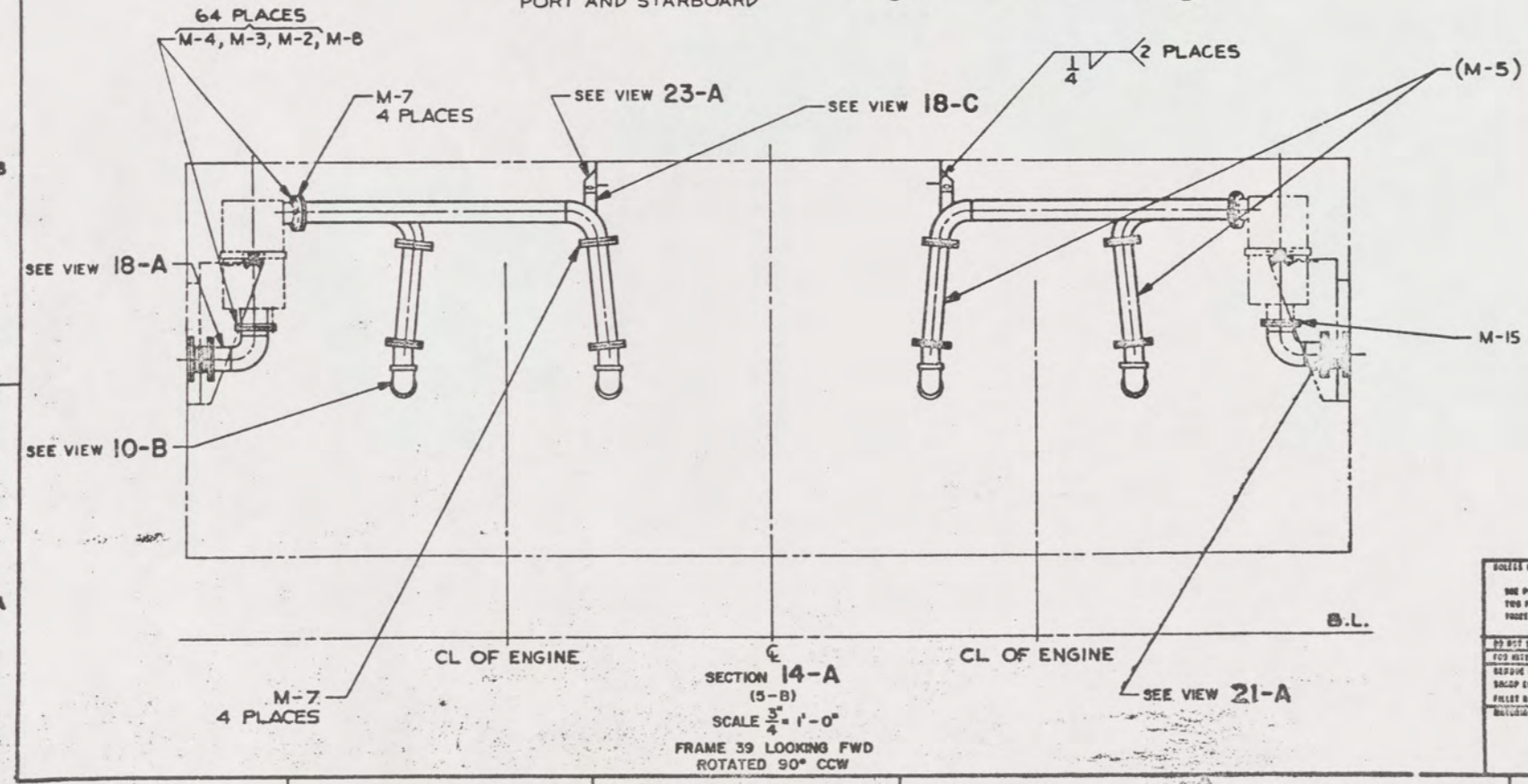
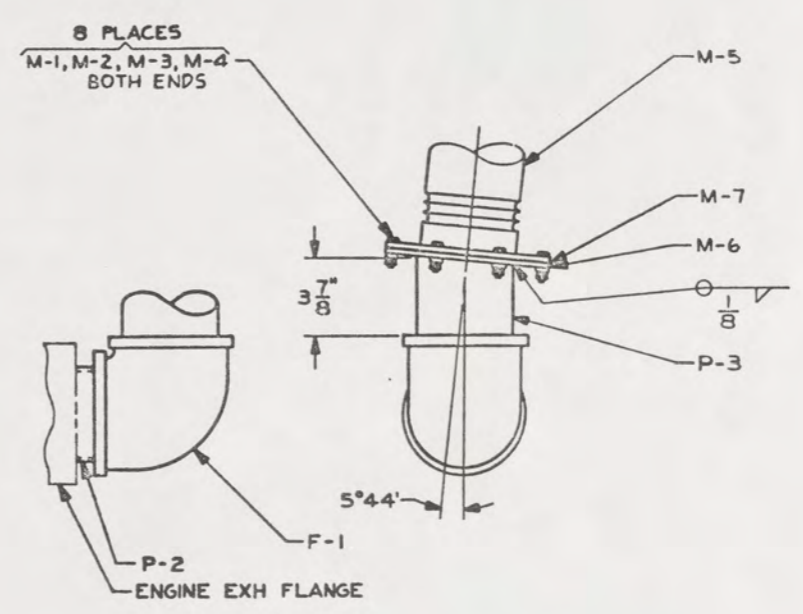
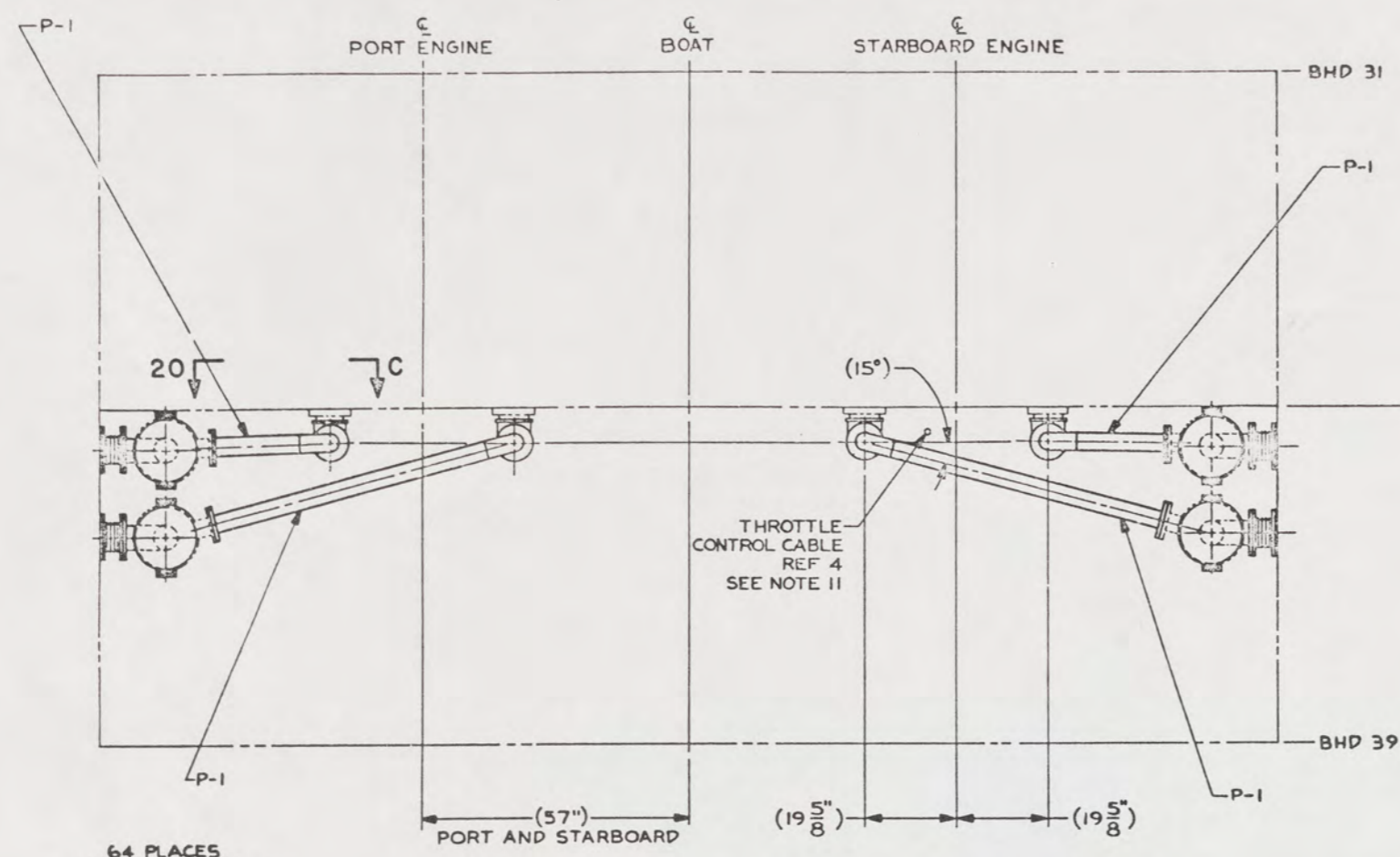
SIZE A1 FSCM 97403 DWG NO 13226E9449  
SCALE 3" = 1' SHEET 1 OF 3

THIS DRAWING APPLIES  
TO HULL NUMBERS  
8540 THROUGH 8560 AND  
8580 THROUGH 8618 ONLY

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| REVISIONS |     | DATE | APPROVED |
|-----------|-----|------|----------|
| ZONE      | LTN |      |          |
|           |     |      |          |

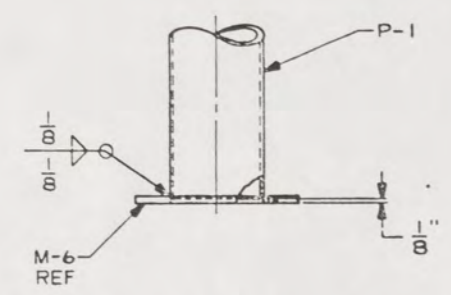


|  |                   |   |                   |  |
|--|-------------------|---|-------------------|--|
| UNLESS SPECIFIED SPECIFICATIONS AND TOLERANCES ARE SHOWN IN THIS DRAWING |                   | DESIGNED BY<br>EJR                            | DATE<br>23 AUG 84 | U.S. ARMY MOBILITY EQUIPMENT<br>RESEARCH AND DEVELOPMENT COMMAND<br>FORT BELVOIR, VIRGINIA 22060 |
| ONE PLACE 1.01   | TWO PLACE 1.01 2  | CHECKED BY<br>GYP                             | DATE<br>15 NOV 85 |  |
| THREE PLACE 1.01 2   | FOUR PLACE 1.01 2 | CONTRACT NO.                                  |                   | LCM-8, MOD-1,<br>ENGINE EXHAUST PIPING   |
|  |                   | DESIGN APPROVAL<br><i>[Signature]</i>         |                   |  |
| FOR INTERPRETATION OF DIMENSIONS SEE 1ST APPLICABLE                      |                   | DATE FOR PRODUCTION<br>15 NOV 85              |                   | SIZE<br>A1   |
| REMOVE SQUARE AND BREAK SHARP EDGES                                      |                   | APPROVED FOR PRODUCTION<br><i>[Signature]</i> |                   | FIG. NO.<br>97403  |
| SHARP EDGES TO   |                   | DATE<br>15 NOV 85                             |                   | PWG. NO.<br>13226E9449   |
| FILLET RADIUS TO   |                   |   |                   | SCALE<br>SHEET 2   |
| MATERIAL   |                   |   |                   |  |

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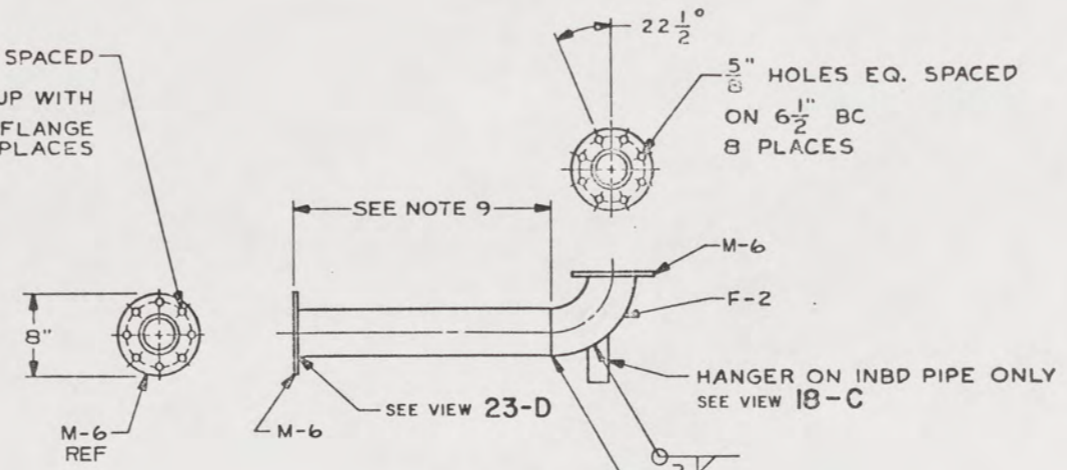


| REVISIONS |      |             |          |
|-----------|------|-------------|----------|
| NO.       | DATE | DESCRIPTION | APPROVED |
|           |      |             |          |
|           |      |             |          |

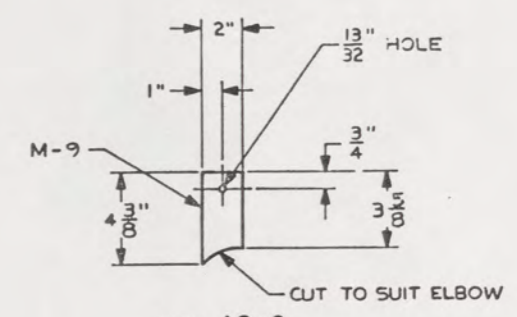


VIEW 23-D  
TYPICAL WELD OF PIPE TO FLANGE

HOLES EQ. SPACED ON 6 1/2" BC TO LINE UP WITH INLET MUFFLER FLANGE 8 PLACES

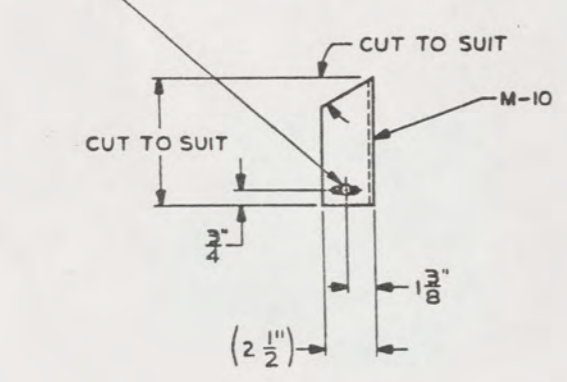


VIEW 20-C  
(15-D)  
SCALE 1 1/2" = 1'-0"  
UPPER EXHAUST PIPE  
4 PLACES

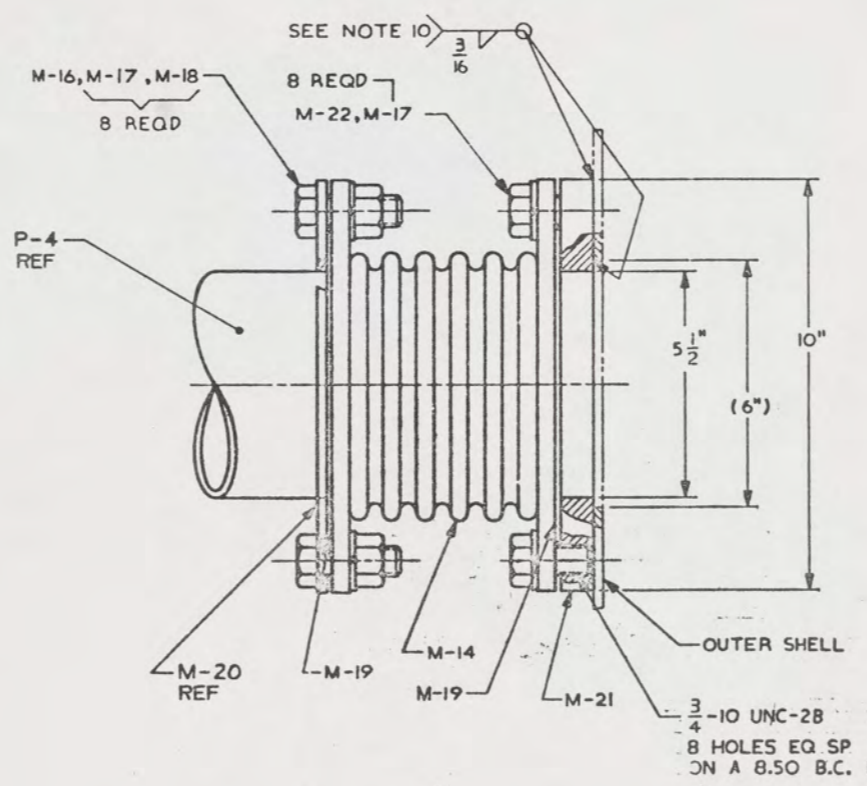


VIEW 18-C  
(13-B)  
EXHAUST ELBOW HANGER  
2 PLACES

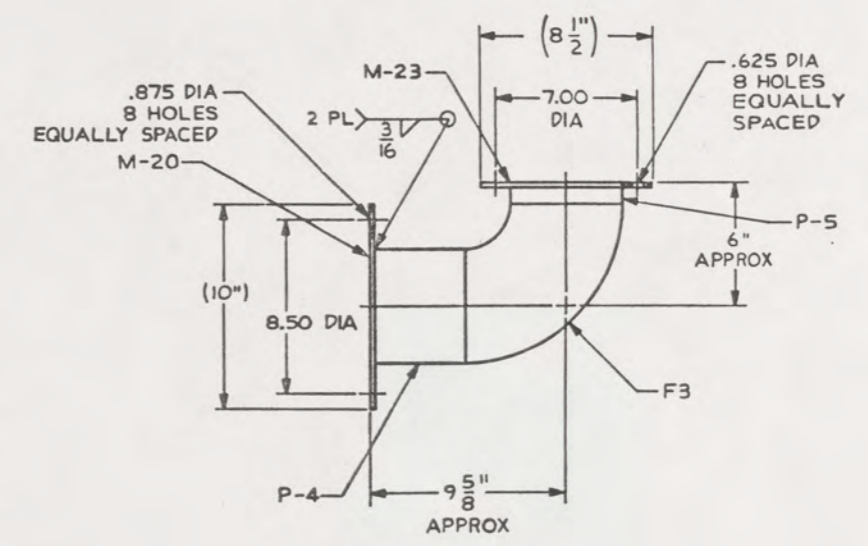
M-11, M-12, M-13 1 1/4" X 13/32" SLOTTED HOLE FOR 3/16" DIA FASTENERS



VIEW 23-A  
(14-B)  
SUPPORT FOR EXHAUST ELBOW HANGER  
2 REQD-1 AS SHOWN, 1 OPPOSITE



VIEW 21-A  
(12-A)  
SCALE 6" = 1'-0"  
4 PLACES



VIEW 18-A  
(16-B)  
SCALE 3" = 1'-0"  
4 PLACES  
SEE NOTE 9

|  |                      |  |                   |  |                        |
|--|----------------------|--|-------------------|--|------------------------|
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES  |                      | DESIGNED BY<br>EJR                                 | DATE<br>27 AUG 84 | U.S. ARMY MOBILITY EQUIPMENT<br>RESEARCH AND DEVELOPMENT COMMAND<br>FORT BELVOIR, VIRGINIA 22060 |                        |
| ONE PLACE (1.0) ±  | TWO PLACE (.05) ±    | CHECKED BY<br>G.T. PHILLIPS                        | DATE<br>18 NOV 83 |  |                        |
| THREE PLACE (.005) ±   | FOUR PLACE (.0005) ± | CONTRACT NO.                                       |                   | <b>LCM-8, MOD-1,<br/>ENGINE EXHAUST PIPING</b>   |                        |
| ON THE DRAWING THIS SYMBOL INDICATES THE LOCATION OF ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED |                      | DESIGN APPROVAL<br><i>John H. Dwyer</i>            | DATE<br>17 MAR 88 |  | SIZE<br>A1 97403       |
| SHARP EDGES TO<br>FILLET RADIUS TO   |                      | APPROVED FOR PRODUCTION<br><i>Joseph R. W. ...</i> | DATE<br>15 MAR 88 |  | PART NO.<br>13226E9449 |
| MATERIAL   |                      |  |                   | SCALE<br>SHEET 3   |                        |