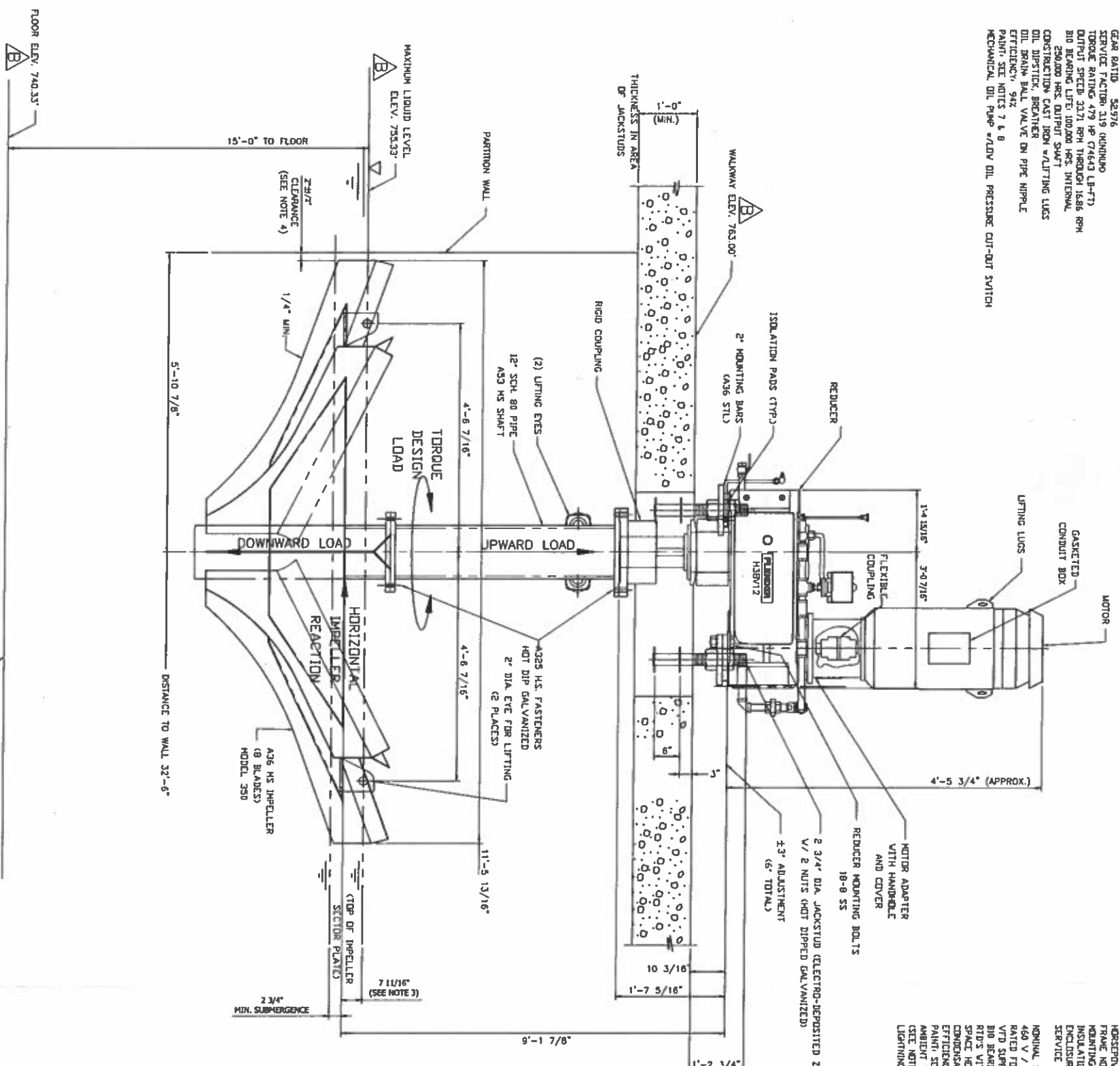


REDUCER SPECS:
 MANUFACTURER: FLENDER
 MODEL: HSBV12
 GEAR RATIO: 50.976
 SERVICE FACTOR: 3.19 (MINIMUM)
 TORQUE RATING: 479 HP (74603 LB-FT)
 OUTPUT SPEED: 33.21 RPM (THEORY) 16.86 RPM
 B10 BEARING LIFE: 100,000 HRS. INTERNAL
 250,000 HRS. OUTPUT SHAFT
 CONSTRUCTION: CAST IRON W/ LIFTING LUGS
 OIL DIRECTION: BREAKER
 OIL DRAIN BALL VALVE ON PIPE NIPPLE
 EFFICIENCY: 94%
 PAINT: SEE NOTES 7 & 8
 MECHANICAL OIL PUMP - LDOV OIL PRESSURE CUT-OUT SWITCH

MOTOR SPECS:
 MANUFACTURER: RELIANCE
 HORSEPOWER: 150 HP
 FRAME NO: 445 LP
 MOUNTING: VERTICAL, SWAY IRON, P-BASE, MEDIUM THROTT
 INSULATION CLASS: F, WITH B TEMPERATURE RISE AT FULL LOAD
 ENCLOSURE: TEF, XEY
 SERVICE FACTOR: 1.15 ON SINE WAVE POWER
 115 ON VFD POWER
 NOMINAL SPEED: 1800 G.P.L. 1786.6 RPM
 460 V / 3 PH / 60 HZ
 RATED FOR VFD AND INVERTER DUTY WITH B1 THROTTDOWN
 VFD SUPPLIED BY OTHERS
 B10 BEARING LIFE: 200,000 HRS.
 R1DS WITH RELAY
 SPACE HEATER (ENVY 225V)
 CONDENSATION DRAIN
 EFFICIENCY: 96.2% (PRELIMINO
 PAINT: SEE NOTES 7 & 8
 AMBIENT TEMP: 40 DEGREES C
 (SEE NOTE 9)
 LIGHTNING ARRESTER



150 HP AERATOR PLATFORM DESIGN LOADS

DEAD WEIGHT = 10618 LBS.
 TORQUE DESIGN LOAD = 44877 FT-LBS (167 x FL TORQUE)

LOAD DIRECTION:	OPERATION SHOCK LOAD	RECOMMENDED STATIC DESIGN LOAD
UPWARD (GENERAL OPERATION)	5330 LBS	12000 LBS
DOWNWARD (STARTUP ONLY)	3660 LBS	4800 LBS
HORIZONTAL IMPPELLER REACTION	1600 LBS	4800 LBS
MOMENT ARM	9.156 FT.	9.156 FT.
CAUSING THIS BENDING MOMENT AT THE GEAR REDUCER	14850 LB-FT	43948 LB-FT

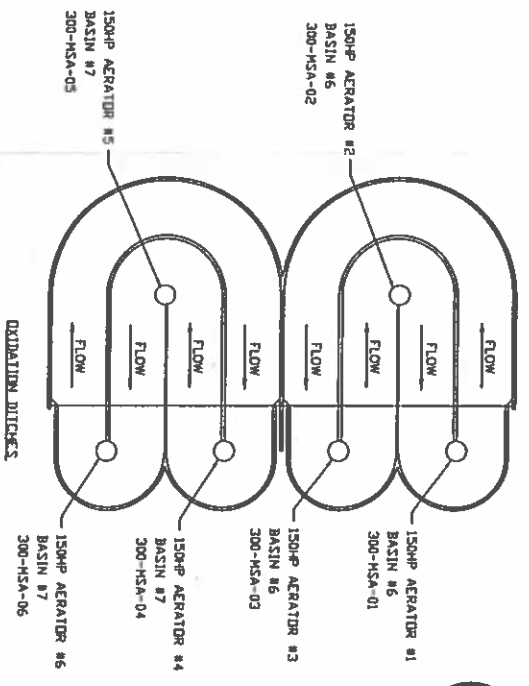
THE HORIZONTAL IMPPELLER REACTION IS A RADIAL FORCE ACTING IN A RANDOM DIRECTION AT THE TOP OF THE IMPPELLER CONE. THIS FORCE CAUSES A 'BENDING MOMENT' AT THE TOP OF THE MOUNTING PLATE. THIS MOMENT IS TRANSFERRED TO THE PLATFORM THROUGH THE GEAR REDUCER, MOUNTING PLATE AND JACKSTUDS.

STRESSES: WE STRONGLY RECOMMEND THE STRESS IN THE PLATFORM BE NO GREATER THAN THE ALLOWABLE VALUES FOR FATIGUE PER THE FOLLOWING REFERENCES:
 1. STEEL PLATFORMS - AISC MANUAL OF STEEL CONSTRUCTION, LATEST EDITION.
 2. CONCRETE PLATFORMS - ACI BUILDING CODE FOR CONCRETE, OR SUPERSEDING SPECIFICATIONS.

DEFLECTIONS: WE STRONGLY RECOMMEND THE DEFLECTION IN THE PLATFORM BE NO GREATER THAN THE ALLOWABLE VALUES FOR PER THE FOLLOWING REFERENCES:
 1. STEEL PLATFORMS - AISC MANUAL OF STEEL CONSTRUCTION, LATEST EDITION.
 2. CONCRETE PLATFORMS - ACI 308.4 BUILDING CODE FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES OR SUPERSEDING SPECIFICATIONS.

NOTE: THE MECHANICAL COMPONENTS OF THIS AERATOR OPERATE AT THE FOLLOWING ROTATING FREQUENCIES (CRPS):

MOTOR	29.77 - 14.88
SHAFT	0.56 - 0.28
IMPPELLER	2.15 - 1.57



- NOTES:**
- SEE DRAWINGS 499496 AND 557328 FOR ADDITIONAL INFORMATION.
 - EMCO WATER TECHNOLOGIES (EWT) WILL FURNISH SIX (6) AERATORS AS SHOWN AND NOTED.
 - THREE (3) UNITS WILL ROTATE CLOCKWISE.
 - THREE (3) UNITS WILL ROTATE COUNTERCLOCKWISE.
 - SPARE PARTS:
 - ONE (1) LOW SPEED FLEXIBLE MOTOR COUPLING
 - ONE (1) HIGH SPEED FLEXIBLE MOTOR COUPLING
 - FIELD TEST WILL DETERMINE FINAL SETTING.
 - WALL CLEARANCE OF 2'-11/2" IS CRITICAL AND MUST BE HELD.
 - TOTAL WEIGHT OF EQUIPMENT = 10618 LBS.
 - WEIGHT OF THE SINGLE HEAVIEST ITEM = 4360 LBS.
 - USE TEMPLATE TO SET THE JACKSTUDS, JACKSTUDS AND TEMPLATE ARE NOT BY EMCO WATER TECHNOLOGIES. TAKE APPROPRIATE MEASURES TO ENSURE THAT JACKSTUDS ARE VERTICAL PRIOR TO SETTING.
 - SURFACE PREPARATION TO CONSIST OF:
 - MOTORS AND REDUCERS TO BE MANUFACTURERS STANDARD.
 - ALL FABRICATED STEEL TO BE SSPC-SP-10 GREY WHITE METAL BLAST.
 - SHOP PAINT TO CONSIST OF:
 - MOTORS AND REDUCERS TO BE MANUFACTURERS STANDARD EPOXY. ALL FABRICATED STEEL TO HAVE ONE (1) SHOP COAT OF THINCO 161-1211 3-5 MILS DFT. (MIN)
 - BEFORE STARTING MOTOR PERFORM MEGGER TEST TO CHECK FOR PRESENCE OF WATER.
 - ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF A.W.S. WELDING PROCEDURES, WITH DUPLICATION RECORDS PER A.W.S. D11.
 - NO SPECIAL TOOLS ARE REQUIRED.
 - THE AERATORS SHALL ALWAYS OPERATE ABOVE 30 HZ TO MAINTAIN PROPER REDUCER LUBRICATION. THE NORMAL OPERATIONAL RANGE IS 30-60HZ TO MAINTAIN ADEQUATE MIXED LIQUOR CHANNEL VELOCITY.

THIS DRAWING IS CERTIFIED FOR:

CUSTOMER/CONTRACTOR HAS VERIFIED ALL ELEVATIONS/DIMENSIONS.

CUSTOMER: PEPPER-LAWSON CONSTRUCTION, INC.
 CUSTOMER ORDER NO.: 18078-117033-P004
 EMT ORDER NUMBER: CSW0000153-01
 PROJECT: MEDIO CREEK WRC
 PROJECT LOCATION: SAN ANTONIO, TX
 CONSULTING ENGINEER: PAPE-DAWSON / PLUMBER
 BY: GARY BRID DATE: 07/18/2007

EMCO COMPANY A DIV OF PEPPER-LAWSON CONSTRUCTION, INC.

WATER TECHNOLOGIES

PROJECT: CSW0000153-01

DATE: 18JUL07

GENERAL ARRANGEMENT

150 HP

EMCO AERATOR

DO NOT SCALE PRINTS

REF. FROM: 558028

SHEET 1 OF 1

DWG. NO. 557331

REV B

Tammy

ILLUSTRATIVE ELEVATION

00001
EIMCO JOB NUMBER:
GSW-0000153-100
EIMCO PART-NUMBER:
557335-01
TAG NUMBER:

FLENDER CORPORATION
OBSERVE OPERATING INSTRUCTIONS
V5 320
10 US GAL
452.9 HP
150 HP
893.2-1206
10.9-33.7
52.9761
329127-3-5
GSW 0000153-100