MOHAWK MODEL MP-18 DOUBLE-WIDE SPECIFICATIONS

HEAVY DUTY MOBILE COLUMN LIFT

1.0 SCOPE

1.1 THIS SPECIFICATION SETS FOR THE CUSTOMER'S REQUIREMENTS FOR THE PURCHASE OF A HYDRAULIC PORTABLE HEAVY-DUTY WHEEL-CRADLE TYPE MOBILE COLUMN LIFT TO PERMIT LIFTING OF HIGHWAY VEHICLES (BUSES, TRUCKS, ETC.) WEIGHING UP TO 72,000 LBS FOR INSPECTION, CLEANING AND MAINTENANCE. THIS EQUIPMENT SHALL NOT REQUIRE ANY IN-GROUND, PITS, OR SPECIAL FOUNDATIONS. *THIS IS THE ONLY TYPE OF LIFT THAT SHALL BE ACCEPTED*. FIXED *ABOVE GROUND TRACK LIFTS, PARALLELOGRAM, SCISSOR TYPE, OR IN-GROUND LIFTS ARE NOT ACCEPTABLE.*

1.1.1 ALL EQUIPMENT SHALL BE NEW AND UNUSED. THE MODEL BEING BID MUST BE THE MANUFACTURER'S CURRENT PRODUCTION MODEL. USED, RECONDITIONED, LEFTOVER OR DISCONTINUED MODELS SHALL NOT BE ACCEPTED.

1.1.2 EQUIPMENT MUST COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS AND MEET OSHA, UL-201, NEC, AND BE BUILT TO LATEST ANSI STANDARDS. ALI/ANSI ALCTV-98.

1.1.3 EQUIPMENT MUST BE STRUCTURALLY AND SAFETY TESTED AND MANUFACTURER SHALL CERTIFY ITS PRODUCTS ARE DESIGNED AND CONSTRUCTED TO ANSI, ALI/ETL ALCTV 1998 AUTOMOTIVE LIFT STANDARDS. MANUFACTURER SHALL BE A MEMBER IN GOOD STANDING OF THE AUTOMOTIVE LIFT INSTITUTE AND SHALL SUPPLY EVIDENCE AS SUCH AS PART OF THE BID PACKAGE.

1.1.4 EQUIPMENT MUST BE SUPPLIED WITH ALL ANSI, ALI/ETL SAFETY DATA, SAFETY BOOKLETS, ANSI/ALI OIM STANDARD # ALOIM-1994, AND LIFT POINT GUIDES. SAFETY DECALS MUST BE PERMANENTLY PLACED ON THE LIFT IN CLEAR VIEW OF THE OPERATOR.

1.1.5 THE VENDOR SHALL SUBMIT DRAWINGS OF OVERALL DIMENSIONS, UTILITY REQUIREMENTS, PARTS LISTS, MAINTENENCE REQUIREMENTS, OPERATOR MANUALS AND DESCRIPTIVE PRODUCT LITERATURE WITH ITS BID

1.2 THE MANUFACTURER MUST BE A FIRM REGULARLY ENGAGED IN THE DESIGN AND MANUFACTURING OF THE TYPE OF EQUIPMENT SPECIFIED HEREIN FOR A MINIMUM OF 5 YEARS. MANUFACTURER MUST CERTIFY IN WRITNG THAT IT SHALL MAKE PARTS AVAILABLE FOR THE USEFUL SERVICE LIFE OF THE LIFT OR NO LESS THAN 10 YEARS. SUCH CERTIFICATION MUST ACCOMPANY BID TO BE DETERMINED RESPONSIVE

1.2.1 EQUIPMENT BEING OFFERED MUST BE A MODEL THAT HAS BEEN OFFERED FOR A MINIMUM OF 3 YEARS. CONTRACTOR SHALL BE AN AUTHORIZED PARTS STOCKING DISTRIBUTOR FOR THE MANUFACTURER OF THE EQUIPMENT BEING OFFERED.

1.3 THE INTENDED PURPOSE OF THIS LIFT IS FOR UNDER VEHICLE SERVICE OF **ALL CUSTOMER'S VEHICLES**. ALL COMPONENTS SHALL BE WATER RESISTANT AND CONSTRUCTION OF LIFT SHALL BE OF SUCH DESIGN AS TO BE IMPERMEABLE TO WATER, SNOW AND ICE. ON REQUEST, THE BUYER MUST RECEIVE A CURRENT USERS LIST FOR THE SPECIFIED STYLE AND CAPACITY LIFT.

1.4 ALL MATERIAL THICKNESS AND STRUCTURAL DIMENSIONS ARE MINIMUM DIMENSIONAL TOLERANCES UNLESS NOTED ARE AS FOLLOWS; ± 0.25 INCHES FOR DIMENSIONS LESS THAN 10 INCHES; ± 1.0 INCHES FOR DIMENSIONS FROM 10 INCHES TO 5 FEET INCLUSIVE; ± 3.0 INCHES FOR DIMENSIONS GREATER THAN 5 FEET.

1.5 **THIS LIFT SYSTEM SHALL CONSIST OF ELECTRO-HYDRAULIC MOBILE COLUMN WHEEL CRADLE LIFTS, CONTROLS, POWER DISTRIBUTION ELECTRICAL CONNECTORS AND THE CAPABILITY TO ADD ANY AND/OR ALL OF THE OPTIONS DESCRIBED UNDER SECTION 6.0 OF THIS SPECIFICATION**.

1.6 LIFT SHALL BE PROVIDED WITH AN ELECTRIC/ HYDRAULIC POWER UNIT PROVIDING PRESSURIZED OIL TO A HYDRAULIC CYLINDER MECHANICALLY COUPLED TO THE CARRIAGE, WHICH SUPPORTS THE ADJUSTABLE WIDTH TIRE ENGAGEMENT FORKS.

1.7 THE LIFT OPERATION SHALL BE CONTROLLED BY A PROGRAMMABLE LOGIC CONTROL (COMPUTER) TO ENSURE SYNCHRONIZED MOVEMENT WITHIN 1 _" OF THE CARRIAGES IN EITHER "RAISE" OR "LOWER" MODE THROUGH THEIR FULL RANGE. THE SYNCHRONIZED MOVEMENT SHALL BE IN EITHER "ALL" OR "PAIRS" MODE AS SELECTED AT THE MASTER CONTROL PANEL. IT SHALL NOT BE NECESSARY FOR THE OPERATOR TO DO ANY SEPARATE SWITCHING. FAILURE OF ANY SINGLE COLUMN SHALL STOP THE ENTIRE UNIT FROM TRAVELING.

1.8 **LIFT SHALL BE COMPLETELY SELF-REGULATING AT THE TOP AND BOTTOM. PRESSURE RELIEF VALVE SHALL PREVENT OVERLOADING OF THE UNIT AND OVER-EXTENSION OF THE CARRIAGES. MICROSWITCHES ARE NOT ACCEPTABLE. UNIT SHALL SELF REGULATE ON THE DOWNWARD STROKE BY MEANS OF A GRAVITY OPERATED LOWERING VALVE. THE UNIT SHALL NOT DEPEND ON ANY ELECTRICAL DEVICE TO STOP LOWERING WHEN IT IS IN THE FULLY DOWN POSITION.**

1.8.1 UNITS SHALL OPERATE IN PAIRS IF DESIRED. WHEN SWITCHING BACK TO "ALL" MODE, UNITS SHALL "REMEMBER" PAIRED PRESET POSITION AND MAINTAIN LEVEL AS SUCH.

1.9 UNITS SHALL PROVIDE FOR INDIVIDUAL CONTROL OF EACH COLUMN. INDIVIDUAL CARRAIGES CAN BE RAISED OR LOWERED BY PRESSING THE “SINGLE” MODE BUTTON AND THE “RAISE” OR “LOWER” BUTTON SIMULTANEOUSLY. NO SEPARATE SWITCHING SHALL BE NECESSARY TO RETURN TO PAIRS OR ALL OPERATION.

2.0 EQUIPMENT

2.1 COMPLETE ASSEMBLY SHALL CONSIST OF FOUR (4) ELECTRIC OVER HYDRAULIC LIFT UNITS, CONTROLS, AND ANY ACCESSORIES AS SPECIFIED HEREIN. EACH UNIT SHALL HAVE ITS OWN HYDRAULIC PUMP, MOTOR, AND PISTON. ACME SCREW THREAD OR HELICAL BALL SCREW DESIGNS REQUIRING UPPER AND LOWER TRAVEL LIMIT SWITCHES SHALL NOT BE ACCEPTABLE.

2.2 EACH COLUMN SHALL HAVE A CAPACITY OF 18,000 LBS. (8165 KG.) MINIMUM. THE TOTAL LIFTING CAPACITY SHALL BE A COMBINED TOTAL 72,000 LBS. (32660 KG.) MINIMUM CAPACITY.

2.3 COLUMN HEIGHT SHALL BE NO MORE THAN 96 _”. WHEN FULLY RAISED COLUMN SHALL BE NO MORE THAN 141 _”.

2.4 LIFTING STROKE SHALL BE 67” MINIMUM. THIS DIMENSION IS MEASURED FROM THE FLOOR TO THE BOTTOM OF THE CRADLE WHEN THE LIFT IS AT FULL HEIGHT.

2.5 LIFTING UNIT SHALL PERMIT LIFTING OF VEHICLES TO ANY HEIGHT UP TO THE FULL AMOUNT SPECIFIED HEREIN WITH NO LESS THAN 19 LOCKING POSITIONS THROUGHOUT THE LIFTS TRAVEL.

2.5 SAFETY SYSTEM

2.5 SAFETY SYSTEMS- THE LIFTING SYSTEM SHALL INCORPORATE MULTIPLE REDUNDANT SAFETY SYSTEMS. THE UNIT SHALL MAINTAIN LEVEL AND VEHICLE POSITION IN THE EVENT OF A MECHANICAL FAILURE, MOTOR FAILURE, HYDRAULIC FAILURE OR LOSS OF ELECTRICAL SERVICE BY USING MULTIPLE ELECTRICAL, MECHANICAL, AND HYDRAULIC SAFETY SYSTEMS.

2.5.1 **THE LIFT SHALL INCORPORATE MULTIPLE POSITION SAFETY LOCK LADDER ON ALL POSTS, THROUGH THE FULL LENGTH OF TRAVEL. SPRING LOADED POSITIVE RAKE JAM LOCK SAFETY BAR SHALL BE APPLIED AT ALL TIMES EXCEPT DURING LOWERING. ELECTRIC BRAKES ARE NOT ACCEPTABLE. LOCKS SHALL HAVE NO LESS THAN 19 POSITIONS SPACED EVERY 3” BEGINNING AT 22” OF TRAVEL THRU THE FULL 67” OF STROKE. SAFETY DEVICE SHALL BE A 2” STEEL WEDGE, MINIMUM.**

2.5.1.2 THE MECHANICAL LOCKS SHALL BE RELEASED BY A SINGLE POINT LOCK RELEASE THAT IS LOCATED ON THE CONTROL PANEL AND ON EVERY SINGLE COLUMN.

2.5.1.3 MECHANICAL LOCKS ARE LOCATED IN EACH POST. THE LOCKS SHALL BE MECHANICALLY ENGAGED BY GRAVITY WITH A SPRING LOADED BACK-UP AND RELEASED WITH (1) ELECTRIC SOLENOID ACTIVATING EACH LOCK. EACH SAFETY SHALL HAVE A MANUAL OVERIDE LEVER TO ALLOW FOR MANUAL LOWERING WITHOUT ELECTRICITY.

2.5.1.4 LIFT SHALL INCORPORATE ELECTRICAL SAFETIES TO MONITOR THE POSITION OF ALL CARRIAGES SIMULTANEOUSLY. ELECTRICAL SAFETY SYSTEM SHALL ENGAGE WHENEVER ANY SINGLE CARRIAGE DIFFERS IN HEIGHT FROM ANY OTHER CARRIAGE BY MORE THAN 1 _". ELECTRICAL SAFETIES SHALL EITHER CAUSE THE OUT OF LEVEL CONDITION TO AUTO-CORRECT OR SHALL STOP ALL UNITS AND NOTIFY OPERATOR OF A FAULT CONDITION.

2.5.1.5 SYSTEM MUST INCORPORATE AN INTEGRAL HYDRAULIC SAFETY SYSTEM INCLUDING ELECTRICALLY OPERATED SOLENOID VALVES AND VELOCITY FUSES TO PREVENT UNCONTROLLED DESCENT IN THE EVENT OF A HYDRAULIC FAILURE.

2.6 LIFTING COLUMN

2.6.1 EACH COLUMN UPRIGHT SHALL BE CONSTRUCTED OF (4) 2" x 4" RECTANGULAR STRUCTURAL TUBES FOR MAXIMUM COMPRESSION STRENGTH AND RIGIDITY. STRUCTURAL TUBES SHALL BE RIGIDLY SUPPORTED AND JOINED TOGETHER AT THE BASE WITH _" STEEL PLATE USING 3 POINT FILLET WELDS. A _" STEEL PLATE SHALL ENCLOSE COLUMN STRUCTURAL TUBING AND SHALL BE WELDED ON TWO SIDES OF EACH OF THE FOUR STRUCTURAL TUBES. FORMED COLUMNS WITHOUT REINFORCEMENT, "H-BEAMS" OR COLUMNS WITHOUT STRUCTURAL TUBING IN EACH CORNER ARE NOT ACCEPTABLE.

2.6.2 EACH COLUMN SHALL HAVE A BASE PLATE MADE FROM 1/2'" STEEL PLATE AND 3" x 6" RECTANGULAR STRUCTURAL TUBING FORMING THE FOOTPRINT, MINIMUM. THE BASE PLATE SHALL BE 43" X 38 1/2", MINIMUM.

2.6.3 EACH COLUMN SHALL CONTAIN (1) DIRECT DRIVE LIFTING SYSTEM EVENLY DISTRIBUTING LIFTING FORCE TO EACH OF THE (4) COLUMNS. LIFTING MECHANISMS WHICH REQUIRE MAINTENANCE/ LUBRICATION ARE NOT ACCEPTABLE.

2.6.4 COLUMN BASES SHALL PROVIDE A STABLE PLATFORM FOR VEHICLE LIFTING CAPABLE OF A FULL HEIGHT, FULLY RATED LIFT, AT 3 DEGREES OFF PLUMB. EACH COLUMN SHALL BE EQUIPPED WITH A PALLET STYLE JACKING/STEERING MECHANISM.

2.7 STEERING/ JACKING

2.7.1 EACH STEERING WHEEL SHALL BE OF A PALLET JACKING MECHANISM DESIGN WITH TWO 8" PHENOLIC PLASTIC COATED STEEL WHEELS. STEERING WHEELS SHALL BE RAISED AND LOWERED BY MEANS OF AN OSHA APPROVED HANDLE WITH "RAISE" "LOWER" AND "NEUTRAL" POSITIONS. ***SPRING LOADED OR COLLAPSEABLE STYLE STEERING WHEELS ARE NOT ACCEPTABLE.***

2.7.2 FORWARD FRONT WHEELS SHALL BE 4" STEEL BEARING INCASED ROLLERS FOR EASE OF MOVEMENT.

2.7.3 COLUMNS SHALL BE DESIGNED TO BE MOVED EASILY BY ONE MAN. JACKING MECHANISM SHALL RAISE THE COLUMN 2" MINIMUM OFF THE GROUND, FOR EASE OF MOVEMENT ACROSS ROUGH SURFACES, PALLET STYLE JACKING MECHANISM SHALL AUTOMATICALLY RETRACT IF OPERATOR ATTEMPTS TO RAISE A VEHICLE BEFORE LOWERING JACK.

2.8 CARRIAGE ASSEMBLY

2.8.1 TUBING SUPPORTING THE WHEEL CRADLE JOINED TO A 3/8" BACKING PLATE BY 3 POINT FILLET WELDS, MINIMUM. ALL STRUCTURAL TUBING SHALL HAVE END CAPS WELDED IN PLACE TO MINIMIZE PINCH POINTS AND INTERNAL CONTAMINATION/ RUSTING.

2.8.2 LIFTING FORKS SHALL PROVIDE SAFE, STABLE SUPPORT OF VEHICLE WHEELS INCLUDING TANDEM AXLE VEHICLES. LIFTING FORKS SHALL BE CONSTRUCTED OF _" x 3 1/2" x 5" ANGLE TUBING AND SHALL INCLUDE TWO DOUBLE SIDED CRADLES ON TWO SETS OF COLUMNS IN ORDER TO ACHIEVE LEVEL LIFTING OF TANDEM AXLE VEHICLES OR TO ALLOW FOR LIFTING OF STANDARD SINGLE AXLES WITHOUT MODIFICATION OR USE OF TANDEM AXLE "NON-ROTATOR" CHAINS.

2.8.3 CARRIAGE LIFTING FORKS SHALL BE ADJUSTABLE TO ACCOMMODATE A FULL RANGE OF TIRE SIZES WITHOUT THE USE OF ADAPTERS. ADJUSTABLE FORKS SHALL FULLY ENCLOSE THE LIFTING CARRIAGE TO PREVENT SLIPPAGE OR ANY UNINTENDTED MOVEMENT AND SHALL BE SECURELY FASTENED IN POSITION BY USE OF A CLEVIS PIN.

2.8.4 CARRIAGE FORKS MUST BE ***ADJUSTABLE*** FROM 13" – 23 _". ADJUSTABLE LIFTING FORKS MUST HANDLE UP TO A 48" TIRE SIZE ON SINGLE AXLE CARRIAGES AND TWO 48" TIRES ON DOUBLE AXLE CARRIAGES. DOUBLE AXLE CARRIAGES SHALL BE ADJUSTABLE BETWEEN 13" AND 90" FOR LARGER WHEELED VEHICLES.

2.8.5 EACH CARRIAGE FORK MUST HAVE A LOW PROFILE APPROACH ANGLE TO ACCOMMODATE LARGE FLOATATION TYPE TIRES WITH OUT MODIFICATION OR DRIVE-UP FLOOR PADS TO RAISE THE TIRES. ***FORK ANGLE SHALL NOT EXCEED 31° DEGREES.***

2.8.6 THE CARRIAGE SHALL ACCOMMODATE FORK LIFT ADAPTERS, CHASSIS BEAM ADAPTERS, AND FRAME CONTACT ADAPTERS FOR CARS. ALL OPTIONS AS DESCRIBED IN SECTION 6.0 SHALL BE ACCOMODATED WITH AT ANY TIME IN THE FUTURE WITHOUT FIELD MODIFICATION.

2.8.7 THE CARRIAGE ASSEMBLY SHALL NOT REQUIRE ANY MONTHLY CLEANING WITH SOLVENTS OR ANY MONTHLY LUBRICATION. ALL WEAR SURFACES SHALL BE COMPLETELY SELF-LUBRICATING.

2.8.8 **THE CARRIAGE ASSEMBLY SHALL ROLL UP AND DOWN SMOOTHLY IN THE COLUMNS, ON FOUR (4) 3" DOUBLE SIDED UHMW GUIDE BEARINGS. THESE GUIDE BEARINGS SHALL BE WARRANTED AGAINST FAILURE FOR THE LIFE OF THE UNIT. GUIDE BEARINGS SHALL REQUIRE MINIMAL ANNUAL MAINTENANCE.** ***BUSHING TYPE ROLLERS ARE NOT ACCEPTABLE.***

2.8.9 EACH OF THE (4) CARRIAGES SHALL BE LIFTED BY MEANS OF A DIRECT DRIVE LIFTING CYLINDER SYSTEM. THE CARRIAGE SHALL BE CONNECTED DIRECTLY TO THE TOP OF THE CYLINDER BY (1) 1" DIAMETER ASTM A-311 _" CLASS B HARDENED STEEL BOLT TO MAINTAIN NON-WEARING CONSTRUCTION DESIGN. ***MECHANICAL SCREW TYPE DESIGNS ARE NOT ACCEPTABLE.***

2.8.10 EACH CARRIAGES SHALL SUPPORT BOTH FRONT AND REAR. CHASSIS ADAPTERS OR BE ABLE TO HOIST VEHICLES BY THE BUMBER/ FRAME WHERE APPLICABLE.

2.8.11 CARRIAGE HEIGHT AT FULL RISE SHALL BE NO MORE THAN 11' 8 1/2".

2.8.12 CARRIAGE TOP SHALL MAINTAIN 12" MINIMUM DISTANCE FROM VEHICLE BODY WHEN FULLY RAISED.

2.8.13 CARRIAGE SHALL PROVIDE A 3" GAP BETWEEN LIFTING FORKS AND COLUMN FOOTING TO PREVENT PINCHING OF PERSONNEL OR EQUIPMENT AS CARRIAGE DESCENDS. ADEQUATE CLEARANCE SHALL BE PROVIDED SO THAT TOE GUARDS SHALL NOT BE NECESSARY.

2.9 POWER UNIT

2.9 CONTROL CONSOLE- LIFTING SPEED SHALL BE 60" PER MINUTE OR 66 SECONDS MAXIMUM FROM THE FLOOR TO FULL HEIGHT.

2.9.1 THE CONTROL CONSOLE SHALL BE ATTACHABLE TO ANY COLUMN, MAKING THAT COLUMN THE "MASTER" OR BE AVAILABLE AS A FREE STANDING UNIT (OPTIONAL) WITH THE OPERATING CONTROLS AT A 40" WORKING HEIGHT.

2.9.2 THE CONSOLE MUST BE CAPABLE OF BEING PLACED ANYWHERE 360° AROUND THE LIFT.

2.9.3 CONTROL CONSOLE SHALL HOUSE THE FOLLOWING EQUIPMENT:

- MOMENTARY CONTACT (DEAD-MAN) CONTROLS
- PROGRAMABLE LOGIC CONTROL
- 2 COLUMN, 4 COLUMN OR 6 AND 8 COLUMN SELECTOR SWITCH
- NEMA 12 ENCLOSURE FOR ELECTRICAL TERMINAL STRIPS
- FAULT SENSOR AND INDICATOR LIGHT AT EACH COLUMN
- 4 UNIT WEATHERPROOF WIRE CONNECTOR WITH MECHANICAL LOCK
- EMERGENCY STOP BUTTON WHICH SHALL STOP ALL MOTION WHEN PUSHED. UNIT MUST BE RESET AFTERWARD TO OPERATE
- FAULT RESET

2.9.4 THE CONTROL PANEL SHALL HAVE THE FOLLOWING CONTROLS MOUNTED ON IT WHILE STILL MAINTAINING IT'S SEALING ABILITY:

- "POWER ON" PILOT LAMP, WITH A GASKETED SCREW-ON RED PLASTIC LENS.
- FAULT CONTROL INDICATOR
- "RAISE" AND "LOWER" CONTROLS, EACH CONSISTING OF A WATER RESISTANT HEAVY-DUTY SWITCH
- "PAIRS" OR "ALL" SELECTOR SWITCH
- SINGLE CONTROL BUTTON
- EACH ELECTRICAL RECEPTACLE SHALL BE NUMBERED TO IDENTIFY ITS APPROPRIATE COLUMN CONNECTION
- MAIN POWER SWITCH, WATER RESISTANT AND LOCKABLE, NEMA 12 RATED.

2.9.5 ALL CONTROLS, WARNINGS, AND INSTRUCTIONAL INFORMATION SHALL BE OIL RESISTANT, LAMINATED, OR ENGRAVED IN PLASTIC. METAL SERIAL TAG SHALL BE RIVETED INTO PLACE.

2.9.6 ALL CONTROL DECALS BE PROVIDED PER ANSI/ALI OIM STANDARD # ALOIM-1994.

2.9.7 SUPPLY VOLTAGE SHALL BE APPLIED IN INTER-CONNECTING CABLES ONLY WHEN RAISING. AT ALL OTHER TIMES, ONLY 24-VOLT CONTROL VOLTAGE SHALL BE ALLOWED IN INTER-CONNECTING CABLES. WHEN LIFT IS IDLE, NO LINE VOLTAGES SHALL RESIDE IN INTERCONNECTING CABLES TO ELIMINATE THE RISK OF AN ELECTRICAL HAZARD.

2.9.8 IN THE EVENT OF A POWER FAILURE IT SHALL BE POSSIBLE TO LOWER EACH COLUMN WITHOUT THE USE OF ANY SPECIAL TOOLS. NO DISASSEMBLY OF COLUMNS OR HAND CRANKING OF DRIVE MECHANISMS SHALL BE NECESSARY. MECHANICAL LOCKS SHALL REMAIN IN POSITION AT ALL TIMES UNLESS MANUALLY RELEASED BY THE OPERATOR.

2.9.9 COMPUTER CONTROLS SHALL PREVENT THE STARTUP OF MORE THAN ONE

MOTOR AT ANY TIME TO PREVENT VOLTAGE SPIKES THROUGH CONTROL SYSTEM. ELECTRICAL POWER INPUT SHALL BE ALLOWED TO ONE COLUMN ONLY TO ELIMINATE ANY POSSIBLE MISINTERPRETATION OF POWER SUPPLY AND/ OR CONTROL CABLING. UNIT SHALL ACCOMMODATE OBSTACLE SENSOR PACKAGE IF SO DESIRED.

3.0 NON-POWERED COLUMNS

NON-POWERED COLUMNS SHALL HOUSE THE FOLLOWING EQUIPMENT:

- MOMENTARY CONTACT (DEAD-MAN) CONTROLS (UP AND DOWN)
- SINGLE UNIT OPERATION MODE
- NEMA 12 ENCLOSURE FOR ELECTRICAL TERMINAL STRIPS
- FAULT SENSOR AT EACH COLUMN
- EMERGENCY STOP BUTTON WHICH SHALL STOP ALL MOTION WHEN PUSHED. UNIT MUST BE RESET AFTERWARD TO OPERATE
- FAULT RESET

3.1 ELECTRIC MOTOR

3.1.1 MOTOR SHALL BE AVAILABLE IN 208/230/440/460/480 VOLT, 3 PHASE, 60 HZ, TEFC OF NORTH AMERICAN MANUFACTURE. 1 MOTOR SHALL BE PROVIDED FOR EACH COLUMN, 2 HP MINIMUM. MOTOR SHALL NOT REQUIRE REWORK FOR REPLACEMENT. STANDARD MOTOR SHALL BE 208-230 2HP 3 PHASE.

3.1.2 MOTOR SHALL BE PROTECTED AGAINST ELECTRICAL OVERLOAD.

3.1.3 FULL LOAD AMPS: 40 AMPS @ 208V, 36 AMPS @ 230V, AND 18 AMPS @ 460V. MOTORS SHALL BE TOTALLY ENCLOSED AND FAN COOLED AGAINST OVERHEATING.

3.1.4 CONTROL VOLTAGE FOR ALL CIRCUITRY AND CARRIAGE POSITION SENSORS SHALL BE 24 VOLTS. ALL ELECTRICAL COMPONENTS LESS THAN 18" OFF THE FLOOR SHALL BE CLASS I EXPLOSION PROOF RATED.

3.1.5 MOTORS SHALL BE FULLY ENCLOSED FOR PROTECTION FROM INCIDENTAL DAMAGE. MOTOR BEARINGS SHALL BE SEALED FOR LIFE, PRE-LUBRICATED FOR A MINIMUM OF 5 YEARS USE.

3.2 HYDRAULICS

3.2 THE LIFT SHALL INCORPORATE A PRECISION POSITION SENSOR CONTROL SYSTEM, CAPABLE OF SYNCHRONIZING CARRIAGE ELEVATIONS DURING BOTH RAISING AND LOWERING OPERATIONS WITH THE MOST ADVERSE RATED LOAD PLACED ON THE LIFT, WITH FORE AND AFT AND SINGLE OVER-RIDE CONTROLS TO MANUALLY LEVEL THE LIFT. SYSTEM SHALL INCORPORATE AN EASILY REPLACEABLE TOOTHED TIMING BELT WITH A ROTARY ENCODER.

3.2.1 OIL RESERVOIRS SHALL BE METAL 3-GALLON CAPACITY WITH LIQUID LEVEL AND

TEMPERATURE GUAGES. RESERVOIR AND MOTOR ASSEMBLY SHALL BE LOCATED BELOW THE CENTER LINE OF THE COLUMN TO ASSURE LOW CENTER OF GRAVITY, EASE OF MOVEMENT AND MINIMAL "TOPPLING HAZARD". ALL HYDRAULIC COMPONENTS SHALL BE EASILY ACCESSIBLE.

3.2.2 EACH HYDRAULIC CYLINDER SHALL HAVE A VELOCITY FUSE INTEGRALLY MOUNTED TO PREVENT COLLAPSE IN THE EVENT OF A FLUID LEAK.

3.2.3 CYLINDER SPECIFICATION (4 CYLINDERS TOTAL)

- **BARREL OUTSIDE DIAMETER: 3.375"**
- **BARREL INSIDE DIAMETER: 3.0"**
- **ROD (CHROME PLATED) DIAMETER: 1.75"**
- **CYLINDER STROKE: 67"**

3.2.4 HYDRAULIC CYLINDER SHALL BE COMPLETELY ENCLOSED AND PROTECTED BY THE CARRIAGE THROUGHOUT ITS ENTIRE TRAVEL. A STEEL ENCLOSURE SHALL PROTECT THE PISTON AGAINST DAMAGE AND CONTAMINATION BY DEBRIS. PLASTIC CYLINDER BOOTS OR VINYL SHEETING IS NOT ACCEPTABLE.

3.2.5 THE LIFT SHALL BE DRIVEN BY HYDRAULIC GEAR PUMPS CAPABLE OF SUPPLYING THE APPROPRIATE PRESSURE AND FLOW TO OPERATE THE LIFT.

3.2.6 REPLACEABLE CARTRIDGE TYPE OIL FILTER, WITH A 10-MICRON FILTERING SURFACE SHALL BE LOCATED IN THE RETURN FLOW OIL PORT IN THE OIL RESERVOIR.

3.2.7 HYDRAULIC FLUID SHALL BE 32 WEIGHT HYDRAULIC OIL OR APPROVED EQUAL.

3.2.8 ALL HYDRAULIC HOSES SHALL BE OF STEEL REINFORCED CONSTRUCTION, WITH A BURST RATING OF 13,500 PSIG (MINIMUM) AND HAVE STANDARD JIC FITTINGS THROUGHOUT. HYDRAULIC TUBING TO CONSIST OF SEAMLESS STAINLESS STEEL WITH A MINIMUM OUTSIDE DIAMETER OF 3/8".

4.0 WARRANTY

4.1 STANDARD WARRANTY ON ALL STRUCTURAL COMPONENTS AND POWER UNIT WARRANTY IS A FULL 3 YEARS, PARTS, LABOR, SHIPPING, AND TRAVEL ARE ALL INCLUDED.

4.2 HYDRAULIC CYLINDERS ARE COVERED BY A LIMITED "EXTENDED LIFETIME CYLINDER WARRANTY" AFTER THE INITIAL 3-YEAR WARRANTY HAS EXPIRED.

4.3 CARRIAGE GUIDE BEARINGS ARE COVERED BY AN "EXTENDED LIFETIME CYLINDER WARRANTY" AFTER THE INITIAL 3-YEAR WARRANTY HAS EXPIRED.

5.0 STANDARD EQUIPMENT

SAFETY AND OPERATIONS MANUAL.

ANSI/ALI OIM BOOKLET (ALI STANDARD # ALOIM-1994).

ANSI/ALI LIFTING IT RIGHT BOOKLET (ALI STANDARD # SM93-1).

ANSI/ALI LIFTING POINT GUIDE BOOKLET (ALI STANDARD # ALI/LP-GUIDE).

ANSI/ALI SAFETY DECALS AFFIXED TO LIFT.

TYPE 32 JACK OIL FOR HYDRAULIC PUMP AND RESERVOIR.

6.0 AVAILABLE OPTIONS

6.1 AUTOMOTIVE FRAME CONTRACT ADAPTORS – UNITS MUST ACCOMMODATE FRAME CONTACT ADAPTORS TO ALLOW CARS, LIGHT DUTY TRUCKS AND VANS TO BE LIFTED BY THE FRAME FOR "WHEELS FREE SERVICE". STACKABLE HEIGHT ADAPTORS MUST BE INCLUDED TO CLEAR FUEL TANKS, RUNNING BOARDS, ETC ON THESE VEHICLES.

6.2 PORTABLE SUPPORT STANDS – UNITS CAN OPERATE IN CONJUNCTION WITH 18,000 LBS CAPACITY JACK STANDS TO SUPPORT WHEEL FREE VEHICLE SERVICE JACK STANDS SHALL PROVIDE RIGID WELDED CONSTRUCTION CAPABLE OF SUPPORTING (IN SETS) THE ENTIRE VEHICLE IN THE UP POSITION.

6.2.1 STANDS SHALL BE PROVIDED WITH WHEELS FOR EASE OF MOVEMENT. STANDS SHALL BE DESIGNED SUCH THAT ONE PERSON CAN MOVE THEM. THESE WHEELS SHALL NOT SUPPORT THE WEIGHT OF A LIFTED VEHICLE. STANDS SHALL INCLUDE COLLAPSABLE HANDLE FOR EASE OF MOVEMENT OVER ROUGH SURFACES.

6.2.2 MODEL JS18-1830 SHALL HAVE A CAPACITY OF 18,000 LBS AND SHALL BE ADJUSTED BY PIN INSERT AT 6" INTERVALS. ADJUSTMENT SHALL BE SPRING LOADED FROM 18" TO 30". JACKS SHALL HAVE A 1 _" SCREW SHAFT WITH HAND CRANK AT THE TOP FOR FINE ADJUSTMENT.

6.2.3 MODEL JS18-3047 SHALL HAVE A CAPACITY OF 18,000 LBS AND SHALL BE ADJUSTED BY PIN INSERT AT 6" INTERVALS. ADJUSTMENT SHALL BE SPRING LOADED FROM 30" TO 47". JACKS SHALL HAVE A 1 _" SCREW SHAFT WITH HAND CRANK AT TOP FOR FINE ADJUSTMENT.

6.2.4 MODEL JS18-4775 SHALL HAVE A CAPACITY OF 18,000 LBS AND SHALL BE ADJUSTED BY PIN INSERT AT 6" INTERVALS. ADJUSTMENT SHALL BE SPRING LOADED FROM 47" TO 75". JACKS SHALL HAVE A 1 1/2" SCREW SHAFT WITH HAND CRANK AT TOP FOR FINE ADJUSTMENT.

6.2.5 MODEL JS2-4775 DOUBLE AXLE STAND SHALL HAVE A CAPACITY OF 18,000 LBS

AND SHALL BE ADJUSTED BY PIN INSERT AT 6" INTERVALS. ADJUSTMENT SHALL BE SPRING LOADED FROM 47" TO 75".

6.3 CHASSIS BEAM ADAPTER- UNITS SHALL ACCOMODATE CHASSIS FRAME CONTACT ADAPTER (ONE REQUIRED PER PAIR OF COLUMNS) TO ALLOW FOR "WHEELS FREE" FRAME LIFTING OF VEHICLES. CHASSIS LIFTING BEAM SHALL BE. CONSTRUCTED OF A RIGID 3/8" x 5" x 8" TWIN "I –BEAM" DESIGN WITH TWO "TRAPPED" ADJUSTABLE SADDLE BLOCKS TO ENGAGE VEHICLE FRAME. CHASSIS BEAM SHALL INCORPORATE 4 SWIVEL CASTERS TO ASSURE EASE OF POSITIONING UNDER VEHICLE.

6.4 DETACHABLE PLATFORM RUNWAYS- UNIT SHALL ACCOMMODATE DETACHABLE PLATFORM RUNWAYS TO CONVERT THE UNIT FROM WHEEL ENGAGING TO DRIVE-ON TRACK STYLE LIFTING. TRACKS SHALL BE AVAILABLE IN 20', 25' AND 30' LENGTHS.

6.4.1 PLATFORM RUNWAYS SHALL BE AT A MINIMUM 24" WIDE AND MANUFACTURED OF _" SKID-PROOF CHECKER PLATE, 10" STRUCTURAL STEEL CHANNELS AND SUPPORT GUSSETS WITH POCKETS FOR COLUMN FORK INSERTION. RUNWAYS SHALL BE PROVIDED WITH FRONT WHEEL STOPS AND REAR APPROACH RAMPS.

6.5 FORK-LIFT ADAPTER- UNIT SHALL ACCOMMODATE FORK LIFT ADAPTER FOR CONVERSION TO A PAD LIFT DESIGN, TWO POST LIFT. PAD LIFT SHALL CONSIST OF 2 EACH, DRIVE UP RAMPS, FLAT DECK CRADLE PLATFORM AND FRONT WHEEL STOP PLATFORM/ DRIVE-THRU ADAPTER. ADAPTER MUST ACCOMMODATE LIFTING OF FORK LIFTS AND UNI-BODY AUTOMOBILES BY THE "PINCH WELD".

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6.6 FRAME CONTACT ADAPTERS- UNITS MUST ACCOMMODATE FRAME CONTACT ADAPTERS TO ALLOW CARS AND LIGHT TRUCKS TO BE LIFTED BY THE FRAME FOR "WHEELS FREE SERVICE" ADAPTERS MUST INCLUDE "STEP UP PADS" TO CLEAR FUEL TANKS, RUNNING BOARDS, ETC ON THESE VEHICLES.

6.7 REMOTE CONTROL UNIT SHALL ACCEPT THE ADDITION OF A REMOTE PENDULUM OPERATOR CONTROL. CONTROL SHALL ALLOW OPERATOR TO WALK AROUND VEHICLE AND INSPECT FOR SAFE LIFTING/LOWERING DURING OPERATION.

6.8 OBSTACLE SENSOR PACKAGE.

QUALIFICATION OF BIDDERS

THIS BID SHALL BE AWARDED ONLY TO A RESPONSIBLE BIDDER, QUALIFIED TO PROVIDE THE WORK SPECIFIED. THE BIDDER SHALL SUBMIT THE FOLLOWING INFORMATION WITH THEIR PROPOSAL.

LIST 5 REFERENCES OF JOBS OF EQUAL VALUE WITH THE SAME SPECIFIED EQUIPMENT.

COMPANY NAME	CONTACT	PHONE #

file: MP18DOUBLEWIDESPEC
Rev: 4/02