



Form GSOP 1-PIN (04/98)

STATE OF CALIFORNIA
Department of General Services - Office of Procurement
PURCHASE ORDER

| | | |
|---------------------------|-------------|-------------|
| Purchase Order No. | Rev. | Date |
| 62394 | | 6/30/2009 |

| | | | | |
|---------------------|-------------------------|----------------------|------------------|----------------------|
| Supplier No. | Solicitation No. | Delivery Date | FOB Point | Invoice Terms |
| 665539 | 57316 | 330 Days ARC | Destination | |

| | | | | |
|--|---|---|--------------------------|-----------------|
| ALTEC INDUSTRIES INC 325 INDUSTRIAL WAY DIXON, CA 95620 Attn: STEVE PENA Phone: 707-693-2605 | S DEPT OF TRANSPORTATION h SEE BELOW FOR VARIOUS T LOCATIONS i o p | C CALTRANS-ACCTG/OFC B-15 h EQUIPMENT RECEIVING a PO BOX 160048 T SACRAMENTO, CA 95816 r o g e | | |
| | Agency Billing | Agency Purchase Estimate | Purchase Estimate | Revision |
| | 60063 | 32-12-5432(A) | 67421 | 0 |
| Agency Contact | | Phone | Date Received | |
| RICHARD PEDERSEN | | 916-227-9639 | | |

| Item No. | Quantity | Unit | Commodity Code | Description | Unit Price | Extension |
|---|-------------------|-----------------|-----------------|---|--------------|------------|
| 2 | EA | | 2320-233-0101-7 | TRUCK CAB & CHASSIS DIESEL Digger Derrick w/sign body, mounted on a 2-axle cab & chassis, Complete unit to be supplied in accordance with Specification 03394-023-061, to include the following options: | 197,053.0000 | 394,106.00 |
| Breakdown of Unit Price | | | | | | |
| Base Price (No Options) | | | | \$182,780.00 | | |
| Option 7: Personnel Bucket | | | | \$8,798.00 | | |
| Option 8: Hydraulic Post Puller | | | | \$1,750.00 | | |
| Option 9: Hydraulic Tamper | | | | \$1,710.00 | | |
| Option 10: Pole Grabber | | | | \$no charge | | |
| Option 12: Remote Control | | | | \$no charge/inc | | |
| Option 15: Wire Winch Rope | | | | \$725.00 | | |
| Option 17: Electric Trailer Brake Controller | | | | \$200.00 | | |
| Option 18: Work Lights-Sign Body | | | | \$155.00 | | |
| Option 19: Retractable Electric Cord Reel | | | | \$650.00 | | |
| Option 20: Cone Holders | | | | \$285.00 | | |
| Maint. Cl. | Equip. ID. | EBR/Shop | | | | |
| 03394 | 7003047 | 7003047/31 | | | | |
| 03394 | 7003048 | 7003048/31 | | | | |
| Ship to Caltrans Shop 31 7179 Opportunity Rd., San Diego, Ca 92111 | | | | | | |
| Training is required at the Ship To location as specified. | | | | | | |

Sales and/or use tax to be extra unless noted above

| | | |
|--|------------------------------|-------------------|
| Buyer Shannon Keller SHANNON KELLER | Phone 916-375-4606 | BOC Number |
|--|------------------------------|-------------------|

STATE OF CALIFORNIA

Department of General Services - Office of Procurement

PURCHASE ORDER CONTINUATION

Form GSOP 2-PIN (04/98)

| | | | | |
|---|-----------------|--------------------------|-------------------------------|--|
| <i>Purchase Order No.</i> 62394 | <i>Revision</i> | <i>Date</i> 6/30/2009 | <i>Supplier No.</i> 665539 | <i>Supplier Name</i> ALTEC INDUSTRIES INC |
|---|-----------------|--------------------------|-------------------------------|--|

| <i>Item No.</i> | <i>Quantity</i> | <i>Unit</i> | <i>Commodity Code</i> | <i>Description</i> | <i>Unit Price</i> | <i>Extension</i> |
|--|-------------------|-----------------|-----------------------|---|-------------------|------------------|
| 1 | EA | | 2320-233-0101-7 | TRUCK CAB & CHASSIS DIESEL Digger Derrick w/sign body, mounted on a 2-axle cab & chassis, Complete unit to be supplied in accordance with Specification 03394-023-061, to include the following options: | 194,153.0000 | 194,153.00 |
| <u>Breakdown of Unit Price</u> | | | | | | |
| Base Price (No Options) | | | | \$182,780.00 | | |
| Option 2: 40/60 Seats for 3 Three people. | | | | \$75.00 | | |
| Option 6: CNG Option (If Avail) If not avail, state N/A | | | | \$N/A | | |
| Option 7: Personnel Bucket | | | | \$8,798.00 | | |
| Option 10: Pole Grabber | | | | \$no charge | | |
| Option 12: Remote Control | | | | \$no charge/inc | | |
| Option 13: Additional 30-inch Auger | | | | | | |
| Option 15: Wire Winch Rope | | | | \$725.00 | | |
| Option 18: Work Lights-Sign Body | | | | \$155.00 | | |
| Option 20: Cone Holders | | | | \$285.00 | | |
| <u>Maint. Cl.</u> | <u>Equip. ID.</u> | <u>EBR/Shop</u> | | | | |
| 03394 | 7001978 | 7001978/34 | | | | |
| Ship to Caltrans Shop 34 691 South Tustin St., Orange, Ca 92866 | | | | | | |
| Training is required at the Ship To location as specified. | | | | | | |
| 1 | EA | | 2320-233-0101-7 | TRUCK CAB & CHASSIS DIESEL Digger Derrick w/sign body, mounted on a 2-axle cab & chassis, Complete unit to be supplied in accordance with Specification 03394-023-061, to include the following options: | 199,698.0000 | 199,698.00 |
| <u>Breakdown of Unit Price</u> | | | | | | |
| Base Price (No Options) | | | | \$182,780.00 | | |
| Option 2: 40/60 Seats for 3 Three people. | | | | \$75.00 | | |
| Option 3: Automatic Trans. w/ Integral Retarder | | | | \$6,595.00 | | |
| Option 4: Heated Mirrors | | | | \$85.00 | | |
| Option 7: Personnel Bucket | | | | \$8,798.00 | | |
| Option 10: Pole Grabber | | | | \$no charge | | |
| Option 12: Remote Control | | | | \$no charge/inc | | |
| Option 15: Wire Winch Rope | | | | \$725.00 | | |
| Option 17: Electric Trailer Brake Controller | | | | \$200.00 | | |
| Option 18: Work Lights-Sign Body | | | | \$155.00 | | |
| Option 20: Cone Holders | | | | \$285.00 | | |
| <u>Maint. Cl.</u> | <u>Equip. ID.</u> | <u>EBR/Shop</u> | | | | |
| 03394 | 7005603 | 7005603/21 | | | | |
| Ship to Caltrans Shop 21 1650 Albee Street, Eureka, Ca 95501 | | | | | | |
| Training is required at the Ship To location as specified. | | | | | | |

STATE OF CALIFORNIA

Department of General Services - Office of Procurement

PURCHASE ORDER CONTINUATION

Form GSOP 2-PIN (04/98)

| Purchase Order No. | Revision | Date | Supplier No. | Supplier Name |
|--------------------|----------|-----------|--------------|----------------------|
| 62394 | | 6/30/2009 | 665539 | ALTEC INDUSTRIES INC |

| Item No. | Quantity | Unit | Commodity Code | Description | Unit Price | Extension |
|---|-------------------|-----------------|-----------------|---|--------------|------------|
| 1 | EA | | 2320-233-0101-7 | TRUCK CAB & CHASSIS DIESEL Digger Derrick w/sign body, mounted on a 2-axle cab & chassis, Complete unit to be supplied in accordance with Specification 03394-023-061, to include the following options: | 192,743.0000 | 192,743.00 |
| <u>Breakdown of Unit Price</u> | | | | | | |
| Base Price (No Options) | | | | \$182,780.00 | | |
| Option 7: Personnel Bucket | | | | \$8,798.00 | | |
| Option 10: Pole Grabber | | | | \$no charge | | |
| Option 12: Remote Control | | | | \$no charge/inc | | |
| Option 15: Wire Winch Rope | | | | \$725.00 | | |
| Option 18: Work Lights-Sign Body | | | | \$155.00 | | |
| Option 20: Cone Holders | | | | \$285.00 | | |
| <u>Maint. Cl.</u> | <u>Equip. ID.</u> | <u>FBR/Shop</u> | | | | |
| 03394 | 7005624 | 7005624/24 | | | | |
| Ship to Caltrans Shop 24 1993 Marina Blvd., San Leandro, Ca 94577 | | | | | | |
| Training is required at the Ship To location as specified. | | | | | | |
| 1 | EA | | 2320-233-0101-7 | TRUCK CAB & CHASSIS DIESEL Digger Derrick w/sign body, mounted on a 2-axle cab & chassis, Complete unit to be supplied in accordance with Specification 03394-023-061, to include the following options: | 199,413.0000 | 199,413.00 |
| <u>Breakdown of Unit Price</u> | | | | | | |
| Base Price (No Options) | | | | \$182,780.00 | | |
| Option 2: 40/60 Seats for 3 Three people. | | | | \$750.00 | | |
| Option 3: Automatic Trans. w/ Integral Retarder | | | | \$6,595.00 | | |
| Option 7: Personnel Bucket | | | | \$8,798.00 | | |
| Option 10: Pole Grabber | | | | \$no charge | | |
| Option 12: Remote Control | | | | \$no charge/inc | | |
| Option 15: Wire Winch Rope | | | | \$725.00 | | |
| Option 18: Work Lights-Sign Body | | | | \$155.00 | | |
| Option 20: Cone Holders | | | | \$285.00 | | |
| <u>Maint. Cl.</u> | <u>Equip. ID.</u> | <u>FBR/Shop</u> | | | | |
| 03394 | 7004645 | 7004645/25 | | | | |
| Ship to Caltrans Shop 25 66 Madonna Rd., San Luis Obispo, Ca 93401 | | | | | | |
| Training is required at the Ship To location as specified. | | | | | | |

STATE OF CALIFORNIA

Department of General Services - Office of Procurement

PURCHASE ORDER CONTINUATION

Form GSOP 2-PIN (04/98)

| <i>Purchase Order No.</i> | <i>Revision</i> | <i>Date</i> | <i>Supplier No.</i> | <i>Supplier Name</i> |
|---------------------------|-----------------|-------------|---------------------|----------------------|
| 62394 | | 6/30/2009 | 665539 | ALTEC INDUSTRIES INC |

| <i>Item No.</i> | <i>Quantity</i> | <i>Unit</i> | <i>Commodity Code</i> | <i>Description</i> | <i>Unit Price</i> | <i>Extension</i> |
|---|-----------------|-------------|-----------------------|---|------------------------|------------------|
| 1 | EA | | 2320-233-0101-7 | TRUCK CAB & CHASSIS DIESEL Digger Derrick w/sign body, mounted on a 2-axle cab & chassis, Complete unit to be supplied in accordance with Specification 03394-023-061, to include the following options: | 192,743.0000 | 192,743.00 |
| | | | | <u>Breakdown of Unit Price</u> | | |
| | | | | Base Price (No Options) | <u>\$182,780.00</u> | |
| | | | | Option 7: Personnel Bucket | <u>\$8,798.00</u> | |
| | | | | Option 12: Remote Control | <u>\$no charge/inc</u> | |
| | | | | Option 15: Wire Winch Rope | <u>\$725.00</u> | |
| | | | | Option 18: Work Lights-Sign Body | <u>\$155.00</u> | |
| | | | | Option 20: Cone Holders | <u>\$285.00</u> | |
| | | | | <u>Maint. Cl.</u> <u>Equip. ID.</u> <u>FBR/Shop</u> | | |
| | | | | 03394 7004800 7004800/31 | | |
| Ship to Caltrans Shop 31 7179 Opportunity Rd., San Diego, Ca 92111 | | | | | | |
| Training is required at the Ship To location as specified. | | | | | | |
| <hr/> | | | | | | |
| Total Value: | | | | | | 1,372,856.00 |
| <hr/> | | | | | | |

State of California – DGS Procurement Division
Purchase Order 62394

PRECEDING FISCAL YEAR PURCHASE ORDER

This purchase order is being awarded on **AUGUST 13, 2009** pursuant to Government Code Section 13332.17. Any encumbrances made pursuant to this purchase order shall be construed to have been made on the last day of the preceding fiscal year.

GENERAL PROVISIONS

THE GENERAL PROVISIONS FOR NON-IT COMMODITIES ARE HEREBY INCORPORATED BY REFERENCE. THESE GENERAL PROVISIONS CAN BE OBTAINED BY PHONING (916) 375-4400 OR BY ACCESSING OUR WEBSITE AT:

www.documents.dgs.ca.gov/pd/modellang/GPnonIT0407.pdf

MB-SB-SB/NVSA-DVBE-NS

THE FOLLOWING INFORMATION IS PROVIDED FOR AGENCY USE ONLY:

PRIME CONTRACTOR: NS

FOR THE PURPOSE OF THIS AWARD

Only Free On Board (F.O.B.) Destination will be accepted.

DELIVERY

Delivery is to be completed in full within three hundred and thirty (330) days After Receipt of Order (ARO).

Note: In accordance with paragraph 15 of the General Provisions entitled "Delivery", the contractor shall strictly adhere to the delivery terms and completion schedule as specified in this solicitation. Failure to comply with the delivery requirements, as stated, may be considered a breach of contract and subject the contractor to General Provisions 26, entitled "Rights and Remedies of the State for Default".

FEDERAL EXCISE TAX EXEMPT CERTIFICATE ATTACHED

Federal Excise Tax Exemption Certificate attached.

PURCHASE ORDER CHANGES

This Purchase Order may be amended, modified, or terminated at any time by mutual agreement of the parties, in writing. Change orders amending, modifying or terminating the Purchase Order, including any modifications of the compensation payable, may be issued only by the State Procurement Officer. All such change orders shall be in writing and issued only upon written concurrence of the supplier. Termination, as that term is used in this section, does not include termination for default of the supplier.

SALES TAX

Sales tax was not included in the bid pricing and is not part of this award. Sales tax should be added at time of invoicing. The sales tax rate applied should be based on the rate of the area the product is to be delivered to.

SCPRS

This Purchase order has been registered into the State Contract and Procurement Registration System (SCPRS) at (<http://bidsync.com>). The registration number is EP 1024686.

STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION
DIVISION OF EQUIPMENT

| ITEM NO | UNIT | CAB | TRANS | ENG | CAP | C.A. | F.A. | R.A. |
|---------|------|-------|-------|------|------|------|------|------|
| 03394 | C | CONV. | A-6 | D275 | 35.0 | 120 | 12.0 | 23.0 |

SPECIFICATION NUMBER: 03394-023-061

SPECIFICATION FOR: DIGGER DERRICK W/ SIGN BODY, MOUNTED ON A 2-
AXLE TRUCK – COMPLETE UNIT

PURCHASE ESTIMATE NUMBER: 32-12-5432

TECHNICAL SPECIFICATIONS

It is the intent of this specification to describe the minimum requirements for a complete, rear corner-mounted, telescoping boom digger derrick, winch, body and other specified equipment, installed on a 35,000 pound GVWR truck cab and chassis.

The unit shall be the manufacturer's standard production model(s) and shall be modified to meet these specifications. It shall be equipped with all manufacturer's standard equipment and accessories that are part of the standard published literature.

The unit shall comply with Caltrans Division of Equipment Quality Standards for Electrical, Welding, Paint, and Coatings as defined at:
<http://www.dot.ca.gov/eqsc/qualstand.htm>

Unless otherwise stated, the requirements of the specification shall have precedence over any drawings provided, and the drawings shall have precedence over the completed questionnaire and standard factory specifications or literature.

The equivalency of any referenced item listed on the drawings or in the specification shall be determined by the Division of Equipment Specification Engineer. Only technical changes authorized by the Specification Engineer in writing will be accepted. Technical changes made by any other Division of Equipment, Caltrans, or State employees will not be accepted. All changes to this contract must be in writing.

This specification is composed of four (4) parts as follows: Truck Cab and Chassis; Digger Derrick and Body; Complete Assembled Unit; and, Administrative Requirements.

TRUCK CAB AND CHASSIS

The basic truck cab and chassis shall be a two (2)-axle, diesel-fueled truck with conventional cab and 6-speed automatic transmission. The chassis shall be suitable for mounting a "digger derrick" and body.

1. CAPACITY: The manufacturer's Gross Vehicle Weight Rating (GVWR) and Gross Combined Weight Rating (GCWR) shall not be less than 35,000 pounds and 50,000 pounds, respectively.
2. WHEELBASE: The wheelbase shall be of proper length to give a usable cab-to-axle (CA) distance of 120 inches (± 2 inches). The centerline of the rear axle to the end of frame (AF) dimension shall be a minimum of 75 inches, or as required by the personnel hoist manufacturer. NOTE: Splicing or lengthening the original frame will not be acceptable.
3. ENGINE: The engine shall be an electronic controlled, diesel fueled, inline 6-cylinder, turbo-charged four cycle design, with a minimum of 275 gross SAE hp at not less than 2,000 RPM, and not less than 800 lbs.-ft. gross SAE torque per SAE J1995. The engine shall have a minimum operating RPM range (RPM at peak torque to the RPM of the horsepower specified herein) of not less than 800 RPM.

The engine shall be equipped with the following:

- a. California emissions certification. The engine shall meet all current Federal EPA emissions requirements 'without the use of emissions credits' at time of manufacture.
- b. The primary oil filter shall be the replaceable, spin-on, full-flow type. Make and model as recommended by the engine manufacturer.
- c. An air cleaner system. The system shall be of the correct capacity as recommended by the filter manufacturer to match the demand of the engine. The air cleaner connections shall be dustproof, waterproof, and either tubing or hose mounted to withstand abrasion, wear and vibration. The top of the air cleaner assembly shall not extend above the top of the hood. The air cleaner system shall be one of the following combinations:
 - (1) Two (2) dry-type replaceable paper elements consisting of an outer primary filter and an inner safety element.
 - (2) A centrifuging action pre-cleaner that removes coarse dust and moisture with a self-cleaning dust and water evacuator and a replaceable paper element filter.

- (3) A centrifuging action pre-cleaner that removes coarse dust and moisture with a self-cleaning dust and water evacuator and two (2) dry-type replaceable paper elements consisting of an outer primary filter and an inner safety element.
 - d. An air restriction gauge. The gauge shall be mounted where it is easily viewed during pre-op inspections (ie – may be dash mounted (preferred), or mounted under the hood). It shall be redlined for servicing or replacement as recommended by the engine manufacturer, must hold and maintain the highest reading, and be re-settable (Ref. Filter Minder Air Restriction Gauge, Model No. 3781-325, or comparable).
 - e. A diesel engine compression brake (Ref. Jacobs or comparable). The brake used shall be approved by the engine manufacturer and the model as recommended by the brake manufacturer. There shall be an ON/OFF toggle switch and a two (2) or three (3) position toggle switch to control the number of cylinders actuated by the brake/amount of braking force. Both switches shall be appropriately labeled and dash mounted in the cab within easy reach of the operator.
 - f. A thermostatic controlled radiator fan with an air-actuated clutch for engaging and disengaging the fan. The fan clutch shall be complete with a manual override mounted inside the cab. The switch for the fan clutch override shall be appropriately labeled.
 - g. An electronic hourmeter. The hourmeter shall be dash mounted to record engine running time (Ref. Hobbs Model 85006, solid state, or comparable).
 - h. An engine control, remote mounted. If required by the derrick manufacturer, provisions for a remote mounted engine control (wiring, etc.) shall be supplied and installed to allow remote control of the engine, PTO control commands, etc. for the operation of the PTO and related functions. NOTE: Electronic engine control(s) may provide the needed functions.
 - i. Cruise control.
 - j. Electric key shutoff.
 - k. An oil pressure gauge shall be mounted in the dash. The gauge shall be complete with a warning light and audible alarm for low oil pressure.
4. FRAME: The frame shall be full "C" channel construction. The RBM (Resistance Bending Moment) of the frame shall not be less than 1,700,000 in.-lbs. per rail, and a Section Modulus of not less than 14 cubic inches. The rails

shall be fabricated from steel with a minimum yield strength of 110,000 PSI. Each rail shall be full length with no splicing or added extensions.

If required, frame rails may be notched or cut out, by the factory, to accept the engine. Any frame reinforcement shall be at least from the rear hanger of the front springs to the rear end of the truck frame.

If a frame rail requires reinforcing, other than an additional full "C" channel (the full length of the main frame rail), the reinforcement design shall be approved by the Department of Transportation, Division of Equipment, Engineering Specifications. NOTE: Flame cutting shall not be allowed on a heat treated frame.

5. TRANSMISSION: The transmission shall be an Allison 3500 RDS 6-speed automatic transmission having a primary shift schedule calibrated for maximum performance from the engine. If driveline speeds do not allow the use of 6th gear, it shall be electronically locked out while still providing the top speed requested in the rear axle-section. The transmission supplied shall be the correct capacity for use with the engine supplied. The cooling system shall incorporate a water-to-oil heat exchanger to maintain fluid at safe working temperature.

The transmission shall be factory-filled (or by the delivering dealer if not available from the factory) with Allison Transynd transmission fluid. The fill location(s) shall be labeled to indicate the transmission has been filled with Transynd.

If an engine brake is supplied, then the shift pattern shall be set to provide progressive downshifting when the brake is activated. Any questions about this function should be addressed with the specification engineer.

The "Auxiliary Function Range Inhibit (STD)" spare input function shall be supplied with the transmission and be available for aftermarket use.

Transmission controls and mounting shall be in accordance with the transmission manufacturer's specifications and recommendations. A lever-type shift selector is preferred and have a range pattern of 1, 2, 3, 4, 5, D, N, and R.

An oil temperature gauge kit shall be supplied and installed in the dash. The temperature gauge shall be: red-lined to indicate the manufacturer's maximum recommended operating temperature; or, equipped with a visual or audible warning to indicate high temperature. The temperature sensor shall be located to indicate the highest oil temperature in the transmission.

A "DO NOT SHIFT" or "RANGE INHIBITED" light shall be supplied and installed to indicate that a diagnostic code has been registered by the transmission ECU, and to warn the driver not to shift the transmission should operating conditions

warrant.

The grade startability shall be not less than 25%.

The transmission as installed shall have the side opening clear for power take-off mounting.

6. COOLING SYSTEM: The engine shall be equipped with the most heavy-duty radiator available with the truck model supplied. The cooling system shall be filled with a suitable anti-freeze that is compatible with water and any ethylene glycol antifreeze, and have a minimum 100,000 mile change interval. The radiator shall be equipped with a deaeration system and temperature controlled fan. A gauge shall be supplied and installed in the dash to measure coolant temperature. The cooling system shall have a minimum 100,000 mile warranty.

The radiator shall be equipped with a low coolant level warning light in case the cooling liquid becomes low (Ref. Robertshaw Model 813 NLU or comparable). This warning light shall be mounted in the dashboard and in view of the driver.

All hoses used in the cooling system (including heater hoses and air compressor hoses) shall be silicone type hoses with silicone type hose clamps. If silicone type hoses are not available from the manufacturer, Ethylene Propylene Diene Monomer (EPDM) hoses (or comparable) may be substituted if the manufacturer provides a 100,000 mile minimum warranty for hoses and clamps.

If an integral automatic transmission retarder is furnished, the cooling system shall be of sufficient capacity to allow full use of the retarder while operating at an ambient temperature of 100°F, down a 12% grade, at the full rated GCW.

7. EXHAUST: The exhaust muffler (after treatment device) shall be mounted in a horizontal position between or beside the frame rails. The exhaust stack shall be mounted in a vertical position behind or beside the right (passenger's) side of the cab and shall be provided with a safety heat shield around the full length of the exposed pipe. A rain cap shall be installed on the exhaust stack; or alternately, a turn-back style outlet may be supplied. The exhaust shall be directed above and away from the cab and any accessories.
8. FRONT AXLE & SUSPENSION: The Gross Axle Weight Rating (GAWR) of the front axle, springs, brakes, wheels, and tires shall not be less than 12,000 pounds. (NOTE: The front axle gross weight rating selected shall provide for a payload of not less than 1,000 lbs.). Brake drums shall be steel, outboard mounted, with ten studs per wheel on a bolt circle diameter of 11.25 inches.

The bearings shall be lubricated by an oil bath, and the hubs shall have Stemco type oil seals with a transparent cap to view the oil level. The lubricant shall be the synthetic type (Ref. Emgard 50W, or comparable). The hubs shall be

labeled to indicate they have been filled with a synthetic lubricant.

The front suspension shall be leaf springs and shall have a rated capacity of not less than the GAWR of the front axle. The front suspension shall be complete with heavy duty shock absorbers.

9. REAR AXLE AND SUSPENSION: The rear axle shall be a single reduction axle, with a minimum Gross Axle Weight Rating of 23,000 pounds for the axle, springs, brakes, wheels, and tires. The rear axle shall be equipped with electronic traction control. The electronic traction control shall monitor wheel speed and work in conjunction with the vehicle Anti-Lock Brake System (ABS) to limit traction loss during acceleration. The gear ratio supplied shall provide a maximum speed of not less than 65 mph in the **highest** transmission gear and at the engine manufacturer's governed RPM. The hubs shall have oil lubricated wheel bearings and an oil seal (Ref. Stemco Guardian Hub Seal or comparable). Brake drums shall be outboard mounted.

The rear axle differential shall be filled with a synthetic type gear lubricant (Ref. Emgard 75W-90, or comparable). The fill location(s) shall be labeled to indicate the differential has been filled with a synthetic lubricant.

The rear suspension shall be leaf springs and have a rated capacity of not less than the GAWR of the rear axle. The auxiliary spring(s) may be leaf or rubber.

10. BRAKES: Full air brakes shall be supplied with "S" cam actuation on all axles to match the axle load rating. The brakes shall be self-adjusting such as Haldex's Self Adjusting Slack Adjustor or comparable. The brake system shall be in compliance with FMVSS No. 121. The following shall be supplied and installed:
- a. A minimum 12 CFM air compressor. Air for the compressor shall be filtered air taken from the air cleaner or air cleaner induction system.
 - b. A Bendix Model AD-IP Air Dryer, or equivalent.
 - c. A 2-axle trailer towing package complete with all controls (foot and hand controls). Controls shall be mounted and air lines terminated at the end of the frame with glad hands. The service line shall be on the left side of the truck and the emergency line on the right side. The parking brake controls shall include either a tractor only parking brake control or an integrated type control that will allow the release of the trailer spring brakes without releasing the truck parking brakes.
 - d. One (1) or more air accessory outlets with pressure protection valves. Any air accessories shall be fed through a pressure protection valve.

- e. A parking brake, spring activated. On tandem axles, there shall be spring chambers on both axles. All spring chambers shall be anti-compounding.
 - f. An air brake emergency stopping system, spring activated and in compliance with FMVSS No. 121.
 - g. Backing plates or dust shields, on all brakes.
 - h. ABS (Anti-lock Brake System). A minimum 4-channel system shall be supplied. The system shall be factory installed.
11. STEERING GEAR: Steering shall be an integral valve hydraulic powered type, as recommended by the manufacturer of the front axle. The steering wheel shall have a tilt and telescopic feature.
12. WHEELS: Six (6) steel disc wheels shall be furnished. The wheels shall be drop center tubeless type designed for use with either radial or bias tires. The wheels shall have 10 bolt holes on an 11.25 inch (285.75mm) bolt circle, and a center bore diameter of 8.66 inches (220mm). All wheels shall be **hub** piloted. Dual wheels shall be mounted using two-piece flange nuts. All wheels supplied on the order shall be of the same make and model (front and rear wheels may differ in model). Wheels shall have a minimum of two (2) hand holes per wheel.
- All wheels shall be painted white in color.
- The use of spacers between the wheels or the wheel and the drum are unacceptable.
- Tire chain clearance shall be provided for dual tire chains with triple side chains. The clearance shall conform to the requirements of SAE J683a.
13. TIRES: Six (6) steel belted radial tubeless type tires, completely mounted and balanced, shall be furnished and installed. Tire size shall be 11R22.5, minimum Load Range 'G'. All tires supplied on this order shall be of the same size, make, and model (front and rear tires may differ in model). NOTE: Front tire size and load rating shall **not** be less than required to meet the Gross Axle Weight Rating of the front axle (see section 8. FRONT AXLE & SUSPENSION).
14. CAB: The cab shall be a conventional cab design, enclosed with an approved safety glass windshield and tempered glass rear and roll-down side windows. The cab shall be rubber and/or air suspension mounted, and shall have a front-tilting hood and fenders.

A wire mesh screen, constructed from corrosion resistant metal, shall be installed behind the grille. NOTE: Bug screens constructed of flexible material and installed in front of the grill will not substitute for the metal screen described above.

The following items, supplementing, if necessary, those items already cataloged as standard cab equipment, shall be furnished and installed:

- a. An air conditioner, integral with the heater, shall be furnished.
- b. Multi-speed cab heater and windshield defroster.
- c. Ashtray and cigar lighter.
- d. Right and left outside rearview mirrors, not less than 90 square inches in size. The mirrors and mounting brackets shall be factory installed (OEM) aerodynamic breakaway type; black, grey, or neutral in color.

Chrome finished brackets are not acceptable.
- e. A downward-viewing convex mirror, located above the passenger (right) door window.
- f. Dual windshield wipers. Electric powered wipers shall be supplied with an intermittent feature.
- g. Dual windshield washers.
- h. Dual arm rests (one on each cab door).
- i. Full instrumentation, including but not limited to the following: speedometer, tachometer, coolant temperature, primary and secondary air pressure, fuel level, and voltmeter. Warning lights shall not substitute for readable indicating instruments. All gauges shall be mounted in the dash or in a factory auxiliary panel.

The tachometer supplied shall be the electric type, powered by the truck's electrical system. The tachometer shall be red-lined at the maximum engine speed as recommended by the engine manufacturer. In lieu of a red line, a label or placard indicating the maximum engine speed (ie - MAX RPM 2200) may be located near the tachometer. The Specifications Engineer shall approve the label material, lettering color, and location.

- j. Fresh air ventilators or combination fresh air and recirculating ventilation system.

- k. Steps and grab handles to safely enter and exit the cab from both sides.
- l. Glove compartment or other storage compartment.
- m. Dome light. Light shall be activated by opening the driver door, the passenger door, and by a switch in the cab.
- n. Floor mats, headliner, and full cab insulation. Bare metal or fiberboard will not be considered as insulation.
- o. Driver's air-suspension-type bucket seat (Ref. National 2000 series, Bostrom Air, or comparable), with high back to support head and shoulders, lumbar support, and a right hinged armrest. Seat cover shall be cloth or vinyl with a cloth insert.
- p. Passenger's seat, non-air, to match the driver's seat. The seat shall have a high back to support the head and shoulders, and a left hinged armrest.

Driver and passenger seats shall have 3 point type seat belts with boot-type retractors.
- q. Cab interior shall be brown or grey in color; or as deemed appropriate by the State.
- r. Dual visors.
- s. Standard AM/FM radio complete with speakers and antenna.
- t. Tilt steering wheel.
- u. Locking cab, with all locks keyed alike and 3 keys supplied.
- v. Air horn(s). Cab mounted preferred; if cab mounting is not available from the manufacturer, alternate location(s) will be acceptable.
- w. Halogen headlamps.
- x. Dedicated ("clean") power leads, 12 volt positive and negative, shall be provided to the cab for a two (2)-way mobile radio. The two (2)-way communication radio will be installed by Caltrans personnel.

NOTE: All gauges and controls shall be marked/identified for function and use in English. The markings shall be explicit, legible, and permanent. International symbols may be used to supplement (not in lieu of or predominate over) the above. Any precautionary signs shall be similarly marked. All gauges shall be panel mounted, shall be consistent in size, color scheme, pointer design, and

label style and size. All gauges shall be adequately illuminated for nighttime operation, with an infinitely variable brightness control from full bright to off. Gauges mounted below the dash are not acceptable. All gauge placement shall provide ready visibility to the operator.

15. FUEL CAPACITY: The total fuel capacity shall be a minimum of 70-gallons in one (1) or two (2) metal safety-type tank(s). The tank(s) shall be mounted on each side of the chassis, under the cab. The fuel tank(s) shall have not less than 15 inches clearance from the bottom of the tank to the ground. Each tank shall have a filler opening. Each tank shall have supply and return lines, and shall draw fuel proportionally. All supply and return lines shall be complete with their own shut off valves. In general, the fuel system shall be designed such that fuel may be drawn and returned from either tank or from both tanks, or as designed by the manufacturer. Each tank shall be equipped with a bottom drain.

16. MISCELLANEOUS: The following equipment shall be furnished and installed:

Standard painted steel front bumper (straight bumper, grey preferred, or black).

Tow hook(s) or pin(s) mounted on the front for towing the vehicle empty.

Mud flaps – black with square corners, behind the rear wheels. Flaps shall be rubber anti-sail type on spring holders.

All filters, where applicable, shall be the spin-on type.

17. ELECTRICAL EQUIPMENT: Minimum electrical equipment shall comply with all Federal Motor Vehicle Safety Standards and State of California Department of Motor Vehicle regulations. The tail, stop, and directional signal lamps may be in combination, and the wires to these lamps shall be in a loom or conduit. A minimum 130-amp alternator with a matching regulator shall be furnished. The battery system shall be made up of not less than two (2) Group 31 12-volt maintenance free batteries (Ref. Delco's Freedom or comparable). The system rating shall be not less than 1,250 CCA (cold cranking amps) at 0° F. and a reserve capacity of not less than 320 minutes at 25 amps and 80° F. Ratings are as established by BCI (Battery Council International) and SAE. Side terminal batteries are not acceptable.

Re-settable circuit breakers shall be supplied in lieu of fuses where available.

A seven conductor jacketed cable and light wiring socket (Ref. Pollak No. 11-721 with a No. 11-761 boot or comparable) for a trailer jumper cable, shall be installed at the end of the frame. The wire color code and wiring of the socket shall be in accordance with the attached wiring schematic, Drawing No. U1-A010-01. The cable shall be one piece (no splices) from the cab or engine compartment to the end of the frame.

NOTE: If the cab and chassis is available with multi-plex wiring capability, the derrick manufacturer may wish to exercise this option for switching control of various installed items (see item 13. SWITCH PANEL, page 20 of 35). Derrick manufacturer and chassis supplier to coordinate.

18. PAINT – CAB AND CHASSIS: The cab, hood, and fenders shall be finish painted with lead-free Winter White color. The finish coat shall be free from runs, drips, sags, etc., and shall be evenly applied to provide a gloss finish. The finish or top coat shall be compatible for re-coat or touch-up with lead-free DuPont Imron 5000, Winter White (#N6431HN H), polyurethane enamel; PPG Delta DUHS (#90604); or, Sherwin Williams Genesis (#G8-40687), equivalent color. Other components may be finished according to the factory standard finish.

19. INSPECTION – CAB & CHASSIS:

DERRICK MANUFACTURER WITHIN THE STATE OF CALIFORNIA: Upon receipt of the cab & chassis by the chassis supplier or derrick manufacturer, and prior to any work, it is the supplier's responsibility to contact the Equipment Parts Coordinator at (916) 227-9636 for inspection. Inspection of the cab & chassis will begin within ten (10) working days from the date of the inspection request by the supplier.

INSPECTION LOCATION: The inspection(s) shall be conducted by the Department of Transportation, Division of Equipment, Quality Assurance. These inspection(s) shall take place at an adequate site provided by the vendor within the State of California. The inspection site shall meet all of the following criteria:

- a. The site shall not be the Purchase Order delivery destination. The site shall be paved, secure and zoned for commercial use.
- b. The site shall include electricity, lights, water, compressed air and a secure paved lot. The facilities shall also include lift equipment adequate to raise the units and support them on safety stands with a minimum of 12 inches of tire clearance. The supplier shall provide conditions which meet the safety standards of CAL-OSHA and Title 8 of the California Code of Regulations.
- c. The adequacy of the site shall be determined by the Department of Transportation, Division of Equipment, Quality Assurance Section. Contact the Quality Assurance Chief at (916) 227-9709 for approval.
- d. If the facility is deemed unacceptable by the Department of Transportation, Division of Equipment, Quality Assurance Section, the vendor shall be billed for the inspection trip including wages and expenses. This cost shall be deducted from the purchase order payment.

DERRICK MANUFACTURER OUTSIDE THE STATE OF CALIFORNIA: Upon receipt of the cab & chassis by the chassis supplier or derrick manufacturer, and prior to any work, it is the supplier's responsibility to contact the Equipment Parts Coordinator at (916) 227-9636 for inspection.

OUT OF STATE TRAVEL: *If the supplier's inspection facility is not within the State of California*, the bidder should include in the bid price, all expenses as listed below for inspection trip(s) for each person (typically 2 persons) as outlined in the inspection section of the specifications and as follows:

- a. Airlines and vehicle reservations will be done through the State of California automated system (RESX).
- b. State employees assigned to travel will submit a Travel Expense Claim (TEC) to cover expenses for lodging, meals, per diem, incidentals, ground transportation including mileage, tolls, parking, etc. to and from the airport at Sacramento, California, for each full workday at the supplier's designated facility. Expenses will be charged in accordance with Caltrans Division of Accounting, Travel Reimbursement Guidelines as shown on <http://dot.ca.gov/hq/asc/travel/ch3.htm>. Travel expenses will be recorded in the State Accounting System as an expenditure to Caltrans Equipment Program.
- c. Caltrans Division of Accounting will set up an Accounts Receivable to bill the Vendor after the TEC submitted by employee has been processed.
- d. After the vendor or manufacturer pays the bill, the Caltrans Division of Accounting will abate the recorded expenditures.
- e. All references to "inspection trip(s) shall be State financed at no cost to the supplier" shall be superseded for the above mentioned expenses when out of state travel is requested by the vendor.

The vendor shall receive a copy of the inspection report within 4 working days of the inspection. Unacceptable or noncompliant items will be listed on the report. If late delivery charges accrue, the vendor will not be held responsible for days in excess of the specified inspection report return period from the end of the inspection to the receipt of the inspection report.

If additional interim inspections are required, such inspection trips shall be at the expense of the supplier at \$75.00 per hour (including travel time) for each employee in addition to the above mentioned Out Of State Travel Expenses.

The State's internal Out of State approval process takes approximately 2-4 weeks for approval. The successful Bidder should plan on submitting an official Out of State request to the Equipment Receiving Manager, in a timely manner, as to

assure the synchronization of the State approval with the corresponding inspection date. This process needs to be performed for as many inspections needed, as outlined in the inspection section of the specification. Inspections will begin within ten (10) working days from the date of the out of state inspection approval.

NOTE: The State will not be held responsible for delivery delays if the successful bidder does not initiate the Out of State travel request in a timely manner, as mentioned above.

20. PAYMENT – CAB & CHASSIS: Process for payment for cab & chassis will be initiated on each unit as they are received by the derrick manufacturer and deemed acceptable. Acceptance shall be based on completion of inspection requirements by Department of Transportation, Division of Equipment, Quality Assurance personnel.

Payment amount shall be equal to thirty (30) percent of each line item price. The discount period will start after acceptance of each unit on the Purchase Order.

DIGGER DERRICK AND BODY

It is the intent of this specification to describe the minimum requirements for a rear corner mounted, telescoping boom digger derrick, winch, sign body and other miscellaneous equipment to be installed by the supplier on a 35,000 pound GVWR, 2-axle, truck cab and chassis described previously.

The attached drawings are included for design reference: Drawings No. E1-D188-01 (rear x-member), E2-D261-01, -02 (double rotator light bracket), U1-A010-01 (trailer socket), Q1-D008-01, -02 (60-gallon hydraulic reservoir), E2-D129-01 (cone holder), and E2-D201-01 (Sign Body) form a part of this specification. The written Specification shall take precedence over the drawings.

The unit shall be designed, built, and supplied in compliance with the latest revision of ANSI A10.31, "Construction and Demolition Operations - Safety Requirements, Definitions and Specifications for Digger Derricks", and the applicable sections of the General Industry Safety Orders, Title 8, California Code of Regulations (T8CCR), Group 13 for Cranes and Other Hoisting Equipment.

1. GENERAL DESCRIPTION: Unit shall consist of an elevating, telescopic, hydraulically operated 3-stage boom with an auger attached near the end of the second boom section. The unit shall be equipped with a boom tip winch and other equipment as specified. The digger derrick shall be corner mounted on the right (curbside) rear. This mounting location may require an additional spring leaf(s) in the right rear spring pack to level the finished unit.
2. TRAVEL HEIGHT: Traveling height of stowed boom shall not be over 13 feet on a conventional truck cab and chassis with a frame height of approximately 38 inches.
3. PERFORMANCE CHARACTERISTICS:
 - a. Height Extended: When mounted on a conventional truck cab and chassis with truck frame height of 38-inches, the distance from ground to sheave pin on the third boom section shall be not less than 40 feet.
 - b. Reach: The reach shall be not less than 30 feet at 0 degrees elevation from center line of rotation to the drop line with all booms extended.
 - c. Angle of Elevation: The range of elevation angle shall be not less than 15 degrees below horizontal to not less than 80 degrees above horizontal.
 - d. Rotation: The rotation shall be not less than 360 degrees continuous rotation actuated by a hydraulic motor and gear system. Zero (0) degrees shall be over center of truck cab.

- e. Digging Radius: The digging radius shall be a minimum of not less than 20 feet at 0 degrees elevation from centerline of rotation to the digger shaft centerline.
4. DERRICK CAPACITY: The total capacity ratings shall be measured with a boom tip winch, 16-inch auger, and digger as specified. A zoned load chart will not be acceptable. Rated capacities shall apply 360° around the pedestal. The total capacity rating shall comply with all of the following:
- a. At 0 degrees elevation, with boom extended to 20 feet from centerline of rotation to the winch drop line, the capacity at the winch drop line shall be not less than 3,000 lbs.
 - b. At -10 degrees elevation, with boom extended to 19 feet-9 inches from centerline of rotation to the drop line, the capacity at the winch drop line shall be not less than 2,500 lbs.
 - c. At 80 degrees elevation, with boom extended to 4 feet-4 inches from centerline of rotation to the drop line, the capacity at the winch drop line shall be not less than 11,500 lbs.
 - d. The digger derrick shall have sufficient capacity to lift a 24-inch diameter auger, all of the flights filled with 85 lbs./cu. ft. dirt out of an 8-foot deep hole. The auger shall have not less than 36 inches of heavy-duty flighting and be attached to the digger and kelly bar specified below. The unit as described above shall be capable of stable operation in any position and withstand the induced loads at the maximum digging radius.

The successful supplier shall be prepared to test the unit with a 24-inch diameter auger to meet specification if so requested by the State.

The digger derrick capacity charts shall be customized for each unit. The net maximum loads shown on the capacity charts shall be adjusted such that the weight of the digger, pole grabber, winch, etc., have been subtracted from the total capacity rating at the boom position. The digger derrick capacity charts are to be installed at each control station.

Derrick boom angle indicators shall be furnished on each side of the boom visible to the operator.

5. BOOM(S): The first and second boom sections shall be of steel construction with hydraulic powered, telescopic extension and retraction. The third boom section shall be of fiberglass construction with hydraulic extension and retraction.

The outer end of the third boom section shall have provision, on both sides of the boom, to attach a one-man, fiberglass personnel bucket.

6. BOOM SUPPORT: A boom support with strength enough to carry the boom with digger and auger, winch, bucket (if supplied), and unsupported by hydraulics when the boom is stowed and traveling shall be supplied and installed.

The boom cylinders shall have counter-balance valves to lock them in position when there is no hydraulic pressure to extend or retract. The rotation motor shall have a double pilot-operated check valve, which locks the fluid in place when there is no pressure to operate it one way or the other.

7. WINCH: Not less than a 15,000-pound capacity, boom-tip mounted, hydraulic motor-powered winch shall be supplied. The winch shall be equipped with an internal automatic brake to hold rated loads of the winch in a suspended position. The winch drum capacity shall be of sufficient size to spool the size and amount of rope specified.

The winch drum shall be filled to maximum capacity with not less than 3/4-inch synthetic winch rope (Spectron II or comparable). The length of the winch rope shall be not less than 90 feet and shall be installed with a safety hook and downhaul weight at the outer end. The winch shall have a maximum rated line speed of not less than 30 feet per minute (fpm).

The system: winch, winch rope, safety hook block, etc., shall comply with all applicable requirements of the General Industry Safety Orders of the California Division of Industrial Relations, and it shall be relieved to allow full use of the crane's performance characteristics specified by the derrick manufacturer.

The winch shall be equipped with an internal automatic brake to hold rated loads of the winch in a suspended position.

8. DIGGER: The unit shall be equipped with an hydraulically powered, manual shift, 2-speed digger with 8-inch auger suspended beneath the outer second section of the boom.

The digger shall have a minimum torque rating of 12,000 ft.-lbs. in low gear and 2,750 ft.-lbs. in high gear. The low gear speed shall be a maximum of 24 rpm, and the high gear speed not less than 48 rpm. A minimum 2 1/2-inch hex output shaft is required.

A 75-inch long Kelly bar extension shall be supplied.

An automatic latching system with digger stow protection shall be provided for securing the auger to the boom in a travel position.

In addition to the 8-inch auger, a 16-inch and a 24-inch auger shall be supplied. All augers shall have not less than 36 inches of heavy-duty flighting with carbide-tipped pilot bits and teeth.

9. CONTROLS: Controls for the digger derrick functions shall have full hydraulic metering and feathering operating characteristics. All controls shall be lever type with a self-centering spool. The controls shall be mounted on the pedestal left side (street side) and be able to be comfortably operated by an operator standing on the body deck at the rear of the truck. The controls location shall allow the operator a clear view of the digger or derrick functions from the pedestal. A means shall be supplied to allow an operator to safely get onto and off of the body deck from the ground.

Controls shall be labeled and have the following functions:

- a. Derrick rotation, right and left.
- b. Derrick elevation, up and down.
- c. Derrick extension, in and out.
- d. Winch, in and out.
- e. Pole grabber controls, if so equipped.
- f. Foot throttle (or other mutually-agreed type) and tachometer (truck engine).
- g. Engine start-and-kill switch (truck engine).
- h. Digger direction rotation control.
- i. Digger 2-speed shift.
- j. Controls for outriggers shall be located at the rear of the unit and with direct line of sight of the outriggers.
- k. Control for hydraulic tools shall be installed near right front corner of body with valve handle conveniently located and labeled on right side.

10. OUTRIGGERS: A minimum of two (2) hydraulically operated outriggers shall provide stability to the unit. The street side outrigger shall be a modified "A"-frame and the curbside outrigger shall be a swing out "A"-frame. Outriggers shall have a minimum of 5-inches ground penetration, and when retracted shall be not more than 96-inches wide. When the outriggers are extended and the pad first makes ground contact, the span shall be not more than 12 feet, 9 inches (153 inches) measured outside of pad to outside of pad on level ground.

Auxiliary outriggers shall be supplied and installed in lieu of steel ballast, if required to maintain stability at rated capacity per ANSI 10.31.

Outriggers shall be protected by pilot-operated check valves to prevent creeping out when in stowed position, and from collapsing in the event of line failure or power interruption.

The outriggers shall have swivel (flexible) feet with up-turned outer edges to prevent damage to pavement. Outrigger cylinders shall be double-acting and equipped with double pilot check valves which are self locking and capable of supporting the rated capacity of the boom.

One spirit level, bubble-type level, or equivalent indicator shall be installed by each outrigger to indicate levelness fore and aft and side to side of the unit.

All outriggers shall be connected in series to an interlock system to prevent the boom from being operated without the outriggers being extended. The interlock shall not release the boom until the outrigger feet have touched the ground. The force produced by the ground pushing on the foot shall release the interlock regardless of how far the outrigger is extended.

After the outrigger interlock has been disengaged and the boom has then been removed from the boom rest, hydraulic power shall still be available to the boom controls even if an outrigger foot loses ground pressure. The outriggers shall not be capable of being stowed until the boom has been stowed.

There shall be one auxiliary outrigger pad per outrigger supplied. The pad shall be not less than 200 square inches of base area, not over 26 pounds in weight, constructed of material that is highly resistant to stress, cracking, and chipping. The pad shall be equipped with a handle. Wood pads shall not be acceptable. (Ref. Standard Telephone Design, P.O. Box 1008, Tualatin, OR 97062; 503-692-4165, Model #3020; or comparable).

Outrigger pad storage shall be provided on or under the body, one or two on each side.

11. HYDRAULIC SYSTEM: The hydraulic system shall be open centered; designed to operate at the maximum required pressure with a safety factor of four; be equipped with the proper filters, filter condition indicators, relief valves, and reservoir; maintain oil at recommended operating temperature, pressure, flow rate and purity; and, conform to the following additional requirements:
 - a. PTO/Pump: Hydraulic power shall be supplied by a transmission mounted, direct coupled, PTO driven hydraulic pump. The hydraulic pump shall be direct mounted to the PTO. The power takeoff shall be an electric shift with an oil pressure fed idler gear (Ref: Chelsea Model 276 "Hot Shift" or comparable). The safety decals supplied with the PTO shall be installed as recommended by the PTO manufacturer.

A tandem or triple hydraulic pump shall be supplied. The pump shall have rated capacity required to operate the derrick, winch, digger, hydraulic generator and optional tools supplied at maximum load but not simultaneously.

Included in the hydraulic system shall be a priority valve to insure that the generator has priority over the derrick, digger, and hydraulic tool circuit functions. The priority valve shall minimize sudden power surges to the derrick when the other functions are being operated at the same time.

Hydraulic pressure to the hydraulic tool circuit and the hydraulic generator motor shall be a maximum of 1,500 to 2,000 psi.

- b. Hydraulic Tool Circuit: A hydraulic tool circuit with couplers and dust caps meeting the NFPA's flush face quick disconnect coupler requirements shall be supplied and installed convenient to the operator near the right front and right rear corners of the body. The tool circuit shall have a bypass type flow control valve and supply a minimum of eight (8) gpm to the couplers at low engine speed. The tool circuit shall be labeled.
- c. Tank: An approximately 60-gallon hydraulic tank shall be fabricated and installed (Ref. - Drawings No. Q1-D008-01 and -02; ignore General Note 2 on Drawing No. Q1-D008-01.) by the supplier. The hydraulic tank supplied shall be approximately 36-inches high, 6-inches deep, and 60-inches long. This tank may be mounted: transversely against the front body bulkhead; longitudinally at the front left of the body storage area; or, transversely between the front body bulkhead and truck cab as space permits. The reservoir shall have a strainer and a filtered breather cap.

NOTE: A comparable design shall be acceptable upon Specification Engineer review.

The suction line between the strainer and pump shall have a shut off valve. The return line shall also have a shut off valve above the return filter so that the return filter may be removed without draining the system.

- d. Filters: A 10 micron, spin on type, return filter with bypass valve to prevent the restriction of flow in the event that the filter becomes blocked shall be supplied and installed. The filter head shall have a filter condition indicator installed to indicate when the filter needs changing. The filter assembly shall be installed convenient to the operator when changing the filter element, and shall not extend lower than the body.
- e. Derrick Overload Protection: A derrick hydraulic overload protection system shall prevent damage to the booms caused by improper operation of the digger, winch, or by lowering boom loads to an unsafe position.

Means shall be provided to restore the system to normal operation in the event of an overload.

- f. Digger (Auger) Protection: The digger shall be designed to prevent damage from hydraulic shock due to impact torque loading (ie – go over 'relief', or similar feature). This operation (feature) shall not affect other boom or auxiliary functions.
 - g. Materials: No fittings, tubing or pipe used in the construction of the hydraulic system including the low pressure side shall be black iron, galvanized iron, or brass. All fittings and tubing or pipe shall be APPROVED hydraulic type steel or stainless steel. All fittings, tubing, pipe or hose shall be pressure rated with a minimum factor of safety of four. All hose fittings shall be crimp type hydraulic fittings (Aeroquip or comparable).
12. GENERATOR: A minimum 3,000-watt, 115 volts, 60 cycle, single phase, air-cooled, hydraulic motor driven, drip-proof generator built to N.E.M.A. standards shall be installed in the curbside (right), lower, second from front "generator compartment" (Ref. #4 – Dwg. No. E2-D201-01)).

When the generator is operating, a constant flow of oil at low engine speed shall be provided to the generator to maintain frequency at $\pm 5\%$ and voltage at $\pm 10\%$ and full output.

The miscellaneous items described below shall be included in the unit:

- a. One (1) built-in receptacle on the generator with duplex, u-ground, spade-type, 120-volt AC, 3-wire ground fault circuit interrupt (GFCI) outlet. If the generator is not available with a built-in receptacle, a GFCI duplex outlet in a weather-tight box (as described in item 12.c below) shall be installed in the compartment.
- b. Generator controls shall be remote type and installed in the right (curbside) upper, second from front compartment (Ref. #3 – Dwg. No. E2-D201-01)) convenient to operator when compartment door is open. The generator shall have a vibrating reed type frequency meter installed within convenient view of the generator controls.
- c. Three (3) external duplex outlets with flip-top weather-tight caps and boxes shall be installed, one (1) each on outside right and left front of body; and, one receptacle mounted on outside of right rear compartment. All duplex outlets shall be 120 Volt, 20 amp, U-ground duplex straight blade receptacles.

Wire from the generator to the outside receptacles shall be enclosed in

flexible metal conduit from generator to receptacles. Any conduit exposed outside the body compartments and truck cab shall be flexible liquid-tight conduit with seal-tite fittings for connectors (Ref: UL rated Ultratite Alflec Corp., sunlight resistant or comparable). Wiring into the GFCI at the generator shall make all outlets GFCI protected. Circuit breakers shall be used to protect all receptacles installed.

13. SWITCH PANEL: A switch panel (Ref: Wired Rite Systems, Inc., Power-Up Products, or Transportation Safety Devices, Inc. or comparable) shall be supplied and installed in the truck cab containing the following switches, legends, and indicator lights:

- a. The switch panel shall be "hot" when the truck ignition key is in the IGNITION/ON or ACCESSORY position.
- b. A PTO legend and switch. A flashing, 1/2-inch minimum, red, indicator light shall be supplied near the PTO switch to indicate when the PTO is engaged. A flashing legend will be acceptable in lieu of a separate light.
- c. Amber rotating light legend and switch.
- d. Amber flashing lights legend and switch.
- e. Work light legend and switch only if work lights are requested on the Invitation For Bid.
- f. Boom not stowed legend and red indicator light.
- g. Outriggers not stowed legend and red indicator light.
- h. A PTO hour meter shall be supplied and installed in the switch panel and operate only when the PTO is operating.
- i. One (1) blank legend and switch slot.

The amber rotating light, the work lights (if supplied), and the warning lights shall operate when the truck ignition key is in the IGNITION/ON or ACCESSORY position, and whether the PTO is engaged or disengaged.

The switch panel shall be installed within convenient reach of the driver and be manufactured to fit integrally with the dashboard of the vehicle unless otherwise approved by Caltrans. The switches shall be magnetic type circuit breaker switches. The circuit breakers shall not re-set unless the overload has been corrected. The wiring shall not include fuses or thermal circuit breakers for individual circuits and it shall be isolated from the truck wiring system.

The switch panel hot lead shall be protected by a master circuit breaker. The master circuit breaker shall be waterproof, have a push button disconnect for servicing, and be installed as close to the battery as possible. The switch panel shall be hot only with the truck ignition switch in the accessory and on position.

The legends shall have two levels of back-lighting intensity. The low level shall be activated when the ignition switch is turned to accessory. The high level shall be activated only when the individual switch is activated. The legend circuitry shall be on a printed circuit board. The lights shall be solid state type and red. Each legend shall be labeled with the exact wording requested by Caltrans.

Final approval from the Division of Equipment, Specifications Engineer, for the switch panel configuration shall be obtained by the successful supplier before panels are purchased.

IN LIEU OF THE ABOVE-DESCRIBED SWITCH PANEL: If the truck cab and chassis (previously specified) is supplied with a multi-plex electrical system, (wiring, switches, warning notifications, etc.), the above-described switch panel **may** not be required. If ALL required switches, warnings, hour meter, and other capabilities can be accommodated through the use of the vehicle multi-plex electrical system, vehicle switches, etc., they **may** be able to be used in lieu of the described switch panel.

The supplier of the truck cab and chassis and the supplier of the digger derrick shall determine the compatibility of the vehicle multi-plex electrical system with the requirements of the hoist. All functions described and required of the pre-wired switch panel must be accommodated.

Approval by the Specifications Engineer, Caltrans Division of Equipment, of switch locations, configuration, warning lights, etc., shall be obtained by the successful supplier prior to ordering the cab and chassis.

14. WARNING LIGHTS: Two red warning lights on the switch panel described above, in the truck cab, shall be connected to switches on the outriggers and boom saddle. One lamp will indicate when the outriggers are not fully retracted; the other will indicate when the booms are not in the stowed position. Outrigger warning lamp switches, mounted in a protected area at the top of the outrigger shall be supplied on all outriggers. The boom saddle switch shall be a spring wire actuated microswitch with weatherproof enclosure.
15. AMBER ROTATING LIGHT: A 12-volt amber rotating light assembly (mini light bar) with two (2) rotators and halogen bulbs (Ref: Federal Signal/Target Tech Model Halogen Model Highlighter #450112 Amber; ECCO Halogen Model 5315 Amber; or PSE Model 420AH; no exceptions) and mounting bracket (Drawing No. E2-D261-01) shall be supplied and installed behind the cab on the driver's side with the bottom of the light approximately even with the top of the cab so to

be visible from the front and the rear. The light shall be wired to the switch panel described in section 13, SWITCH PANEL.

16. AMBER FLASHING LIGHTS: Two (2) rearward-facing, alternating-flashing, amber LED lights (Ref: Federal Signal, Part No. 607130-02, with built-in flasher) shall be supplied and installed one (1) each on the top left and right side of the body at the rear. The lights shall be protected from damage with steel flat bar contoured around the lights. The lights shall be wired to the switch described in section 13, SWITCH PANEL.

NOTE: The successful bidder shall request an electrical schematic for wiring the amber rotating light, amber flashing lights, work lights (if specified), and 2-way radios (by others) when the vehicle make and model is known.

17. BODY CONSTRUCTION: The body and superstructure shall be constructed entirely of steel and electric arc or resistance welded throughout to form a composite weatherproof and dust tight unit. Exceptions as indicated will be permitted. All compartments and floors shall be formed using watertight and dust-tight construction.

Sheets used in construction of the body shall be not less than the following: Floor, tops, and side box end panels - 16 gauge; Front panel and side box panels - 18 gauge; Doors (double panel construction) - 20 gauge; and Doors (single panel construction) - 14 gauge.

Door panels shall be bolted with nylock type nuts or riveted to the metal hinges and the hinges shall be bolted with nylock type nuts or riveted to the body (no plastic or nylon hinges permitted).

Sheet metal screws shall not be used at any point in the fabrication of this unit. Rivets or bolts, if used, shall be steel, solid shank, of proper size and spacing to provide ample strength for the purpose intended. Exposed joints shall be weatherproof and dust-tight.

Floor base members shall be formed from hot rolled steel. Body sheets and door panels shall be cold rolled sheet steel. Floor plate shall be corrugated, ribbed, or made rigid in some other acceptable manner and shall be supported on a substantial steel frame of crossmembers and stringers. The body shall have not less than four (4) crossmembers for attaching to the truck frame. The front and rear crossmembers shall be minimum 10 gauge steel, the inside crossmembers shall be minimum 12 gauge steel.

Sheets and panels shall be reinforced wherever necessary to provide a proper degree of rigidity.

All exposed edges of fenders, door panels, and shelving shall be folded, or

otherwise stiffened and smooth. Do not bead edges to stiffen.

The sign body shall be equipped with clearance lights, trailer light socket, and combination stop/tail/turn signal (S-T-T) lights in accordance with current Federal and California Vehicle Code requirements.

The floor in the load space shall have drainage outlets in the front section of body.

All compartments shall have a drainage outlet sealed with a rubber plug.

18. BODY GENERAL ASSEMBLY: Department of Transportation, Division of Equipment Drawing Number E2-D201-01 is included for reference. The circled numbers refer to various items described below in the Specification. Where drawings and specification disagree, the Specifications Engineer shall determine correct configuration. The body shall have overall dimensions of 136 inches in length and 94 inches wide. Dimensions may vary ± 2 inches to accommodate industry standard bodies (or as agreed by the supplier and Specifications Engineer). Right and left body sections shall be joined at the floor, which will be constructed of 10-gauge diamond plate. All expanded metal shall be flattened, style designation $\frac{1}{2}$ "- #13. Finished body shall conform to nominal compartment measurements given in the Specification, with allowance for industry standard tolerances.

The body shall be shear plate or spring mounted. Refer to section 1, page 28, of the Specification for mounting details.

Right front sign compartment, top to bottom and front to back measurements, shall be within 1/4-inch.

When mounted on the cab and chassis previously described, there shall be sufficient space between the front panel and truck cab for installation of the front outriggers; and, hydraulic tank, if applicable.

The following tire chain clearance shall be provided in the body wheel wells: forward and rear at 5 inches, top at 8 inches. These measurements shall apply after all supplier-furnished equipment has been installed.

The unit shall consist of two body sections, 18 inches wide by 136 inches overall length, mounted one (1) on each side of chassis. The body sections shall be joined at the front by a vertical sheet extending from the floor plate to a level with the bottom of the rear cab glass or uppermost surface of the body sections whichever comes first. Compartment dimensions may vary a nominal amount in accordance with industry standard bodies. The acceptable variance shall be determined by the State.

All adjustable shelves shall be tray type adjustable for height on 2, 3, or 4 inch centers.

Longitudinal ribs, hat channel, or other reinforcement shall be incorporated into the top to provide rigidity. Diamond plate is not acceptable to provide rigidity to the top.

The framing of all baskets shall be ¼-inch x 1-inch x 1-inch angle. The sides of all baskets shall be supported on approximately 40-inch centers with ½-inch x 1-inch flat bar.

19. BODY, RIGHT HAND SECTION, CURB SIDE: (numbers after titles are locations on Dwg. No. E2-D201-01).

- a. Sign Rack (#1): The forward most three (3) slots shall be on 4-inch centers, with inside dimensions of 61-inches high and not less than 55½-inches in depth. The remaining nine (9) slots shall be on 4-inch centers, with inside dimensions of 49-inches high, and not less than 49-inches in depth. The width of this slotted compartment shall be 48 inches.

This rack shall occupy the right front body section. Three (3) dividers shall be used as separators for each sign support slot. Dividers shall be constructed by covering ¼-inch x 2-inch cold finished steel flat bar with a microsolv coating, or comparable material. The dividers shall be welded top and bottom as indicated. The back dividers shall be placed 4-inches from the inner wall of this compartment. The front dividers shall be placed 4-inches from the outside face of opening.

There shall be a drop door, twenty-four (24) inches high, hinged at the bottom with microsolv coated support chains to form a work bench. This door shall be hinged such that the full compartment opening is available when the door is open to the horizontal position. The inside of this door shall be covered with ¾-inch marine plywood.

The inboard wall of this rack shall be constructed of flattened expanded metal.

- b. Front Lower Compartment (#2): This compartment shall occupy the space immediately below the sign compartment, be of equal width to the sign compartment, and be approximately 26-inches high x 18-inches deep. The door to this compartment shall be hinged at the bottom, and the inboard wall shall be solid metal. The compartment shall be equipped with one (1) adjustable shelf.
- c. Upper, Second From Front (#3): This compartment shall be 24 inches

wide x 33 inches high x 18 inches deep. The inboard wall of this compartment is to be constructed of solid metal. The door shall be hinged at the front. This compartment shall be equipped with one (1) adjustable shelf.

- d. Lower, Second From Front, "Generator Compartment" (#4): This compartment shall be 24 inches wide x 26 inches high x 18 inches deep. The door for this compartment shall hinge at the bottom and be constructed with louvers to circulate cooling air for the generator. The floor of this compartment shall be reinforced (if required) to support a 3,000-watt hydraulic generator. The depth of the compartment may be expanded for generator fit. The valve to supply oil to the generator shall be installed in the same box, or remote-mounted and solenoid operated.
- e. Rear Horizontal (#5): This compartment shall be 27 inches high by 64 inches long by 18 inches deep. The compartment shall be fitted with two (2) rows of 12-inch deep bolt bins with metal dividers adjustable on 2-inch to 4-inch centers. The door shall hinge at the top with glide supports. A minimum 9-inch head space shall be provided above the bolt bins.
- f. Lower Basket (#6): This open top basket shall be 16-inches high x 18-inches deep x approximately 88-inches long. The sides of this basket shall be covered with expanded metal. The bottom and back end of this basket shall be covered with sheet steel.
- g. Upper Center Basket (#7): This basket shall be 11-inches high x 32½-inches wide x 124-inches long. This basket shall be open-topped, with the sides covered with expanded metal. The front and rear of this basket shall be covered with sheet steel. The rear of this basket shall have a door hinged at the top with door stays. The size of the door shall be 10½-inches x 20-inches, or as large as possible without interfering with the digger derrick.

If required for boom storage with digger and auger attached, this basket may be modified by decreasing the height and/or deleting the rear door. Three (3) binder-type clamps of sufficient strength to resist bending under normal use shall be provided to hold posts.

- h. Center Rear Compartment (#8): This compartment shall be 24-inches high x 32½-inches wide x 88-inches long. The generator compartment may extend into the forward end of this compartment. The center (cargo space side) of this compartment shall be equipped with a 3-inch lower lip and left open. The top, bottom, and front of this compartment shall be enclosed with sheet steel. This compartment shall be fitted with a rear-opening door as large as the pedestal will permit. Any remaining portion of the rear end enclosure shall be covered with sheet steel.

- i. Center Rear Open Shelves, (#9): Two (2) shelves without doors shall occupy the space between the deck and the Center Rear Compartment, #8. These two shelves shall occupy a space 25-inches high x 32½-inches wide x 88-inches long. The Generator Compartment, #4, may extend into the forward end of these shelves. The cargo space side of these shelves shall be equipped with 3-inch retaining lips and left open. The bottom of the top shelf shall be sheet steel, adequately supported to carry lumber, etc. Flat, mild steel strip, 3/16-inch x 3-inch shall be used to form a retainer at the rear opening of these shelves.
20. BODY, LEFT HAND SECTION, STREET SIDE: (numbers after titles are locations on Dwg. No. E2-D201-01).
- a. Front Upper Compartment (#10): This compartment shall be 38-inches high x 48-inches wide x 18-inches deep. The double doors for this compartment shall hinge on the forward and rear sides. The compartment shall be equipped with two (2) adjustable shelves.
- b. Front Lower Compartment (#11): This compartment shall be 21-inches high x 48-inches wide x 18-inches deep. The door shall hinge at the bottom. The compartment shall have one (1) adjustable shelf.
- c. Second From Front Compartment (#12): This compartment shall be 59-inches high x 24-inches wide x 18-inches deep. The compartment shall have four (4) adjustable shelves. The door shall hinge at the front.
- d. Rear Horizontal (#13): This compartment shall be 27-inches high x 64-inches long x 18-inches deep. The bottom of this compartment shall be fitted with bolt bins that are 12-inches in depth, with metal dividers adjustable on 2-inch to 4-inch centers. The door for this compartment shall hinge at the top opening upward on glide supports. Two (2) non-adjustable shelves with 2-inch lip shall be provided above the bolt bins, and shall have a center support.
- e. Upper basket (#14): This basket shall be 12-inches high x 18-inches wide x 244-inches long extending forward over the truck cab. The sides of this basket shall be covered with expanded metal. The bottom, front and rear shall be covered with sheet steel. The top shall be open. The sides shall be adequately supported to prevent bending. The basket shall be equipped with four (4) binder-type clamps to hold materials in the basket.

NOTE: Allow a 3-inch minimum cab clearance below this basket.

NOTE: This basket may be lengthened (if/as necessary) to allow a front support from the front of the basket to the front bumper. The support shall be pinned, hinged, etc to allow easy hood opening.

- f. Lower Basket With Rear Opening (#15): This basket shall be 24-inches high x 18-inches wide x 136-inches long. The sides shall be covered by flattened, expanded metal. The rear shall have a door hinged at the outer edge. The front shall be covered with sheet steel.

CENTER OPEN CARGO SPACE: This area shall consist of that space not required for the compartments and other designated storage area.

A removable board approximately six (6) inches in height shall extend up from the cargo area deck and across the rear opening to prevent loose articles from rolling out while traveling.

LADDER BRACKETS: The two (2) ladder brackets shown on Drawing No. E2-D201-01 shall be supplied, but not installed. The rear bracket supplied shall have a tension clamp.

22. BODY DOORS: Each compartment shall be provided with doors opening outward. Single vertical doors shall hinge at the front. Double vertical doors shall hinge front and rear. Horizontal doors shall hinge at the top or bottom, as specified. All doors shall be equipped with manually detachable, chain or spring over center type door stays unless otherwise specified.

Doors shall be constructed with weatherproof and dustproof seals. All doors shall be fitted with stainless steel rods not less than 5/16-inch diameter. Door latches shall be three (3) point, twist locks with recessed pocket, chrome or stainless steel "T" handles. The three (3) point latches shall be located on opposite ends of the door and at the center.

The handles or door locks shall not be readily removable from the outside. Means for securing locking doors shall be provided by either individual keyed locks or by master lock bars with single locks. All compartment locks shall be keyed alike, and not less than four (4) master keys shall be furnished.

23. COMPARTMENT LIGHTS: Each body compartment shall be equipped with 'rope type' lighting that encircles the full perimeter of the compartment opening. Lighting shall be properly secured, and wired to come on when its door is opened and the truck ignition is in the 'ACC' or 'ON' position. This lighting shall not interfere with adding or removing objects to/from the compartments.

24. REAR PLATFORM / OPERATOR'S AREA: The rear of the body deck shall extend to form an operator's platform, not to exceed twenty-four (24) inches long, and decked with minimum 10-gauge diamond floor plate (see Drawing No. E2-D201-01 for 'general' configuration of this area).

A means for the operator to safely gain access to the deck of the platform from the ground shall be supplied and installed. The lowest step shall not be higher

than 16 inches from the ground, and the rungs shall have uniform centers not to exceed 12 inches. At the rear of the platform, and adjacent to the operator's control station, a forty-two (42) inch high guard rail shall be supplied and installed.

25. SIGNS: The following durable signs, with lettering legible at 12 feet, shall be supplied and placed visible to the operator; 1) Two (2) each sign shall read: "UNLAWFUL TO OPERATE THIS EQUIPMENT WITHIN 10 FEET OF HIGH-VOLTAGE LINES OF 50,000 VOLTS OR LESS". In addition to the above wording, the following statement in small lettering shall be provided on the warning signs: "For Minimum Clearances of High-Voltage Lines in excess of 50,000 volts, see California Code of Regulations, Title 8, Article 37, High-Voltage Electrical Safety Orders". 2) Sign(s) shall be posted at the point of the emergency operation within plain view. For example, a sign describing procedure for bleeding boom cylinders to let the bucket operator down would be posted in sight of the bleed valve.

26. MISCELLANEOUS:

- a. Rear crossmember: A rear crossmember as shown on Drawing No. E1-D188-01 (or comparable) shall be supplied and installed. A comparable crossmember design shall be acceptable upon Specifications Engineer review.

The dimension from the bottom truck frame flange to the bolt hole pattern for the pintle hook may vary to obtain the 30 ± 1 inch hitch eye height from level ground.

- b. Pintle hook: A pintle hook (Premier 580 or comparable) shall be supplied and installed according to Drawing No. E1-D188-01.
- c. Fender extensions: If required, install fender extensions to cover rear dual wheels over each wheel well.
- d. Splash aprons: Install splash aprons behind rear dual tires.
- e. Post holder: A piece of 6-inch x 6-inch square tubing with 1/8-inch wall thickness and approximately 84-inches long shall be mounted on the truck front bumper to be used for small sign installation prior to setting in the ground.
- f. Wheel Chocks and Holders: Two (2) wheel chocks and wheel chock holders shall be supplied and installed on each side of the body. The wheel chocks shall be readily accessible from the ground.
- g. Backup alarm: A backup alarm shall be mounted securely to a truck frame

crossmember at the rear on the drivers' side. The backup alarm shall be wired to operate when the backup lights are on (Ref. ECCO Model 530).

- h. Neutral position interlock: On vehicles equipped with an Allison automatic transmission, the Auxiliary Function Range Inhibit (Standard) spare input shall be deactivated when the boom is not seated. This will prevent neutral-to-range shifting when the boom is not seated. The supplier shall be responsible for enabling this spare input option after receipt of the cab and chassis. The cab and chassis transmission will be equipped with this spare input option disabled.
- i. Final certification: The supplier shall provide the FMVSS final-stage vehicle manufacturer's certification and label.
- j. ANSI certification: The supplier shall verify that the complete unit as mounted meets the most current ANSI Standard A10.31.
- k. Certification: Certification shall be provided verifying that the unit has been load tested and examined to ensure compliance to the requirements of the Division of Occupational Safety and Health Administration at the time of pre-delivery inspection.

COMPLETE ASSEMBLED UNIT

The truck mounted digger derrick and body shall be delivered completely assembled, ready to operate. The truck and all furnished components shall be compatible to maintain the integrity of the entire assembly. There shall be provisions to secure all loose components on the vehicle for transit.

1. MOUNTING: The body, digger derrick, and requested options and attachments shall be mounted by the supplier on a current model conventional truck cab and chassis previously described herein.

The digger derrick shall be mounted on the right rear corner. The supplier shall reinforce the truck frame where necessary to support the unit in this location.

The pedestal shall be welded to a full-length sub-frame, and the sub-frame shear plate type mounted to the truck frame. The shear plates shall be attached to the side of truck frame rails with grade 8 bolts or comparable. All spacer materials used between truck frame, body and hoist sub-frame shall be steel. The supplier shall also build up the truck springs by the amount necessary to level the mounted body, including the corner mounted digger derrick.

2. LINKAGE SYSTEMS: All component linkage and actuation systems not specifically covered in the specifications shall be required to accurately operate the component according to the component manufacturer's specifications. These systems must maintain their designed configuration, adjustment, and serviceability through repeated cycling.

3. HYDRAULIC SYSTEMS AND PLUMBING: All hydraulic lines shall be sized as recommended by the manufacturer of the component to which they attach and shall be adequate for the use intended. All hoses and plumbing shall have a minimum number of bends and shall be free of any kinks. All bends in hoses and tubing shall be not less than the minimum radius as recommended by the hose or tubing manufacturer. Where applicable, plumbing shall be protected by the truck frame and body. Any hoses routed around or through areas, which may cause abrasion and cuts, shall be protected as necessary. All hydraulic components and plumbing shall be mounted and supported to withstand extensive field use. NOTE: The use of black pipe, galvanized pipe, pipe fittings, etc. shall not be used in the oil hydraulic system. No plastic pipe or fittings shall be used in either hydraulic system.

Hydraulic fittings on high pressure lines shall be the swivel type and shall be 37° JIC, NPT, SAE "O" Ring Boss or SAE "O" Ring Flange. Fittings shall be of the proper size to match the hydraulic line to which they attach. Compression type fittings shall not be used in the system. All threads shall be North American or metric type threads (NOTE: Thread types shall not be mixed.). British, etc. threads are unacceptable.

All pipe and fittings shall be rated for the fluid carried in the system.

4. CONTROLS: All controls - electrical, mechanical, pneumatic, hydraulic, etc. shall be within easy access to the operator. Steps and grab handles shall be provided where necessary to provide safe access to controls. Controls shall be appropriately labeled for their function. All labels shall be fabricated from metal or plastic and mounted with rivets or screws (NOTE: Adhesive type decals are not acceptable without prior consent from Department of Transportation, Division of Equipment, Quality Assurance). Lettering on labels shall be easily readable, shall be etched, engraved, or machined and shall contrast with the label color. All labels and gauges shall be printed or marked in English and standard U.S. units.

Any gauges and instruments required to operate the unit shall be visible to the operator, at or near the controls being operated. All gauges shall be permanently labeled to identify their functions with a simple and readable lettering style or equivalent international symbols. All gauges shall be panel mounted, shall be consistent in size, color scheme, pointer design, label style and size. All gauges and instrumentation shall be adequately illuminated for nighttime operation. All external gauges, switches, and controls shall be weather proof and rated for external usage.

There shall be indicator lights located in the truck cab which are activated when the boom or outriggers are not in the transport position.

5. MATERIAL: Construction shall be of all new material free of rust and any defects. All components in the assembly shall be fabricated from a single piece of material. Material which is joined by welding or other means to form a single piece of stock is not acceptable. The finished product shall be free of dents and warpage. The use of any type of body filler is unacceptable. All bolts shall be Grade 5 or better and conform to SAE and ASTM standards. Bolt lengths shall be such that a minimum of two threads shall extend beyond the nut. Nuts shall be the locking type. Nuts and washers shall be compatible with the bolt(s) to which they are attached, as recommended by the fastener manufacturer and in accordance with SAE and ASTM standards. If requested, the supplier shall submit proof of fastener strengths.
6. METAL SHAPING: All breaks shall be free of cracks. Radii shall be at least twice the thickness of the material or in accordance with the requirements established by ASTM for the particular material being formed, whichever is greater. All holes shall be round, of the proper dimension, perpendicular to the material they are produced in, and finished smooth. Oblong holes or holes drilled, bored, etc. at angles are not acceptable. Holes and slots shall be drilled, punched, saw cut, plasma cut, or milled; torch cut is unacceptable. Sharp corners on all material shall be radiused to prevent personnel injury.

7. ELECTRICAL EQUIPMENT: Minimum electrical equipment shall comply with all Federal Motor Vehicle Safety Standards (FMVSS) and State of California Department of Motor Vehicle regulations. Notwithstanding any Federal or State minimum requirements, each unit shall be equipped with two (2) taillights, two (2) stop lights, and turn (left and right) signals. All lights shall be **light emitting diode** (LED) recessed type, mounted in rubber grommets. The tail, stop, and turn signal lamps may be in combination (Ref. Truck-Lite #44982R (round); #60885 (oval); with 'hard coated' lens). Backup lights shall be installed (Ref. Truck-Lite 44141C, with 'hard coated lens). Grommets shall match the light used. Side marker, clearance, and ICC lamps shall be 2½-inch LED units (Ref. Truck-Lite #10250R, #10250Y and #10700 grommets). Retro-reflective tape reflectors (Ref. Petersen Mfg. #B490R and #B490A), shall be used where needed to meet FMVSS requirements for Class A reflectors. Mounting holes for lights shall be the proper dimension as recommended by the manufacturer of the light. The holes shall be punched, plasma, or saw cut and finished smooth; torch cut holes are unacceptable.

All wiring installed by the supplier shall be the stranded copper type and shall have cross-linked polyethylene insulation and be protected in vinyl plastic auto loom and in areas specified, by rigid/flexible conduit. Minimum gauge of wire to the lights shall be in accordance with SAE standards for distance from power source and load demand. Wiring color code for lights shall comply with SAE standard J560(b). The ends of all cut stranded conductors shall be mechanically stripped and fitted with weather proof connectors (Ref. Truck-Lite 'Fit 'N Forget' plug assembly, or comparable; contact Truck-Lite Technical Support at (888) 562-5012). NOTE: no splicing, cutting, or bullet-type plugs are acceptable on wiring looms or lights. The terminals shall be mechanically crimped securely with appropriate tool(s). All splices shall be sealed against moisture. Scotch Lock wire-type piercing devices shall not be used.

Ground return connections shall be attached to the vehicle frame, body and/or engine. In cases where the engine or body is mounted on rubber or other insulation, proper ground shall be provided with grounding straps.

The edge of all metal members which wire harness or loom pass through shall be deburred, flanged, rolled or bushed with suitable grommets. In general, wire routing shall be such that maximum protection is provided by the vehicle sheet metal and structural components. All electrical work and installation of equipment/devices shall be completed in a workmanlike manner, mechanically and electrically secure. Devices, lamps, etc., requiring periodic service shall be serviceable and accessible by providing wire length to reasonably accomplish this.

An SAE standard seven-terminal, trailer light wiring socket (Ref. Pollak No. 11-721 with a No. 11-761 boot or comparable) shall be installed and wired in

accordance with the attached wiring schematic, Drawing No. U1-A010-01. The wiring socket shall be installed in rear bumper above and left of the pintle hook.

8. WELDING: All welding shall comply with the requirements as represented in American Welding Society (AWS), D14:3-82, and American National Standard entitled "Specification for Welding Earthmoving and Construction Equipment."

All welds shall be continuous except as noted. Intermittent or spot welds shall be spaced and proportioned to provide ample strength for the material being welded. Weld sizes not indicated shall be equal to the thickness of the least of the joined plates.

All welds shall be properly fused, displaying proper penetration and a professional finish, and must meet the qualification requirements of applicable AWS specifications. Examples of unacceptable weldments are:

- | | |
|-------------|-----------------------|
| a. Cracks | d. Excessive Splatter |
| b. Undercut | e. Blow Holes |
| c. Overlap | f. Slag Entrapment |

Any weld failing to comply with the AWS specification or failing to pass a quality assurance inspection performed by the State, will be corrected by the manufacturer, at their expense, and be corrected off State property. The State shall determine if a weld is acceptable or deficient.

Any deficient weld shall be corrected by a welder who is certified in accordance with the requirements as established by the American Welding Society (AWS). The welder shall have the proper certification documents indicating that he/she is qualified to perform the type, size, and position of the weld performed, with the welding process utilized, and on the material being welded. The supplier will be required to supply proof of current welding certifications for personnel performing any re-welding on the unit, upon request of the State whether written or verbal.

GRINDING OF WELDS must have prior approval of the Department of Transportation, Division of Equipment, Engineering Specifications. Welds which have been ground without approval shall be subject to complete re-welding upon request, at no additional cost to the State.

All assembly dimensions and tolerances on drawings apply after welding. Excessive warpage of assembled parts is not acceptable. Weld symbols on drawings shall be interpreted per American National Standard Welding Symbols. In the event of the lack of a weld symbol, the best commercial practice shall prevail. The covering of welds with body fillers or similar materials is unacceptable.

9. PAINT:

DIGGER DERRICK: The basic unit and the primary finish surfaces of any optional equipment shall be finish painted with lead-free Winter White color. The finish coat shall be free from runs, drips, sags, etc., and shall be evenly applied to provide a gloss finish. The finish coat shall be lead-free DuPont Imron 5000, Winter White (#N6431 HN H), polyurethane enamel; PPG Delta DUHS (#90604); or, Sherwin Williams Genesis (#G8-40687), NO EXCEPTIONS. All metal surfaces shall be primer painted in accordance with the paint manufacturer's recommendations, not less than 2 mils dry thickness. The finish coat shall be Winter White color referenced above, not less than 2 mils dry thickness (total of 4 mils). Paint thickness may be checked at time of inspection. The finish or top coat shall be compatible for re-coat or touch-up with the above-referenced paint(s). Other minor or incidental component parts may be finished according to the standard factory finish. All paint and primer shall be lead free.

NOTE: Powder coating, if the standard factory finish of the digger derrick (boom sections, pedestal, etc.), is acceptable in lieu of the paint requirement above. Acceptable powder coating color shall be White, or as determined by the Specifications Engineer.

EXCEPTION: Primer or paint shall not be applied to any fiberglass surfaces.

BODY AND COMPONENTS: All metal surfaces shall be finish painted (outside, inside, underside, compartment interiors, etc., as applicable). The finish coat shall be free from runs, drips, sags, etc., and shall be evenly applied to provide a gloss finish. The finish coat shall be lead-free DuPont Imron 5000, Winter White (#N6431 HN H), polyurethane enamel; PPG Delta DUHS (#90604); or, Sherwin Williams Genesis, (#G8-40687), NO EXCEPTIONS. All metal surfaces shall be primer painted in accordance with the paint manufacturer's recommendations, not less than 2 mils dry thickness. The finish coat shall be Winter White color referenced above, not less than 2 mils dry thickness (total of 4 mils). Paint thickness may be checked at time of inspection. The finish or top coat shall be compatible for re-coat or touch-up with the above-referenced paint(s). All paint and primer shall be lead free.

Truck cab and chassis frame and components shall remain the original factory colors. Any chassis mounting scars shall be repaired as necessary and refinished. Any paint overspray (on glass, paint, rubber, etc.) shall be removed and the surface returned to its original condition. All paint material used shall be comparable, as determined by the State, to those referenced above.

10. SAFETY: Equipment installed by the supplier shall comply with applicable sections of the California Vehicle Code, the Safety Orders of the California Department of Industrial Relations, and all Federal regulations.

When delivered, a certification label shall be affixed stating that the completed unit conforms to all applicable "Federal Motor Vehicle Safety Standards" in effect at time of manufacture.

When delivered, a certification label shall be affixed stating that the completed unit or installed item conforms to all applicable safety orders of the Division of Industrial Relations in effect at time of manufacture.

FINAL MANUFACTURER'S I.D. PLATE REQUIRED: A Final Manufacturer's Identification label shall be attached to the complete unit. The label shall be in compliance with the National Traffic and Motor Vehicle Safety Act, section 114 and Federal Code of Regulations 49.

11. BOOKS AND MANUALS – CAB & CHASSIS: One (1) set of standard operator's and lubrication instructions shall be supplied with each unit. Manuals may be paper, electronic media (ie – CD's, DVD's), or web-based (ie – available on manufacturer's website).

BOOKS AND MANUALS – DIGGER DERRICK: One (1) set of operator's manual, complete lubrication instructions, parts books and shop repair manuals (complete with electrical and hydraulic schematics) shall be supplied with each unit on the Purchase Order.

Additionally, one (1) set of standard operator's manual and complete lubrication instructions shall be supplied to the following: California Department of Transportation, Division of Equipment, 1920 35th Street, Sacramento, CA 95816, Attention: Lubrication Coordinator (916) 227-9646.

ADMINISTRATIVE REQUIREMENTS

1. **VEHICLE DOCUMENTATION REQUIRED:** The original dealer's "Report of Sale" shall be furnished by all California licensed dealers at the time of delivery of each unit or units covered by these specifications.

A California certification of compliance for vehicle pollution must be supplied at the time of delivery of each unit.

An original weight certificate from a California certified Weigh Master must be supplied at the time of delivery of each unit.

A Federal Excise Tax Exempt Certificate will be attached to the purchase order. All documentation supplied for registration shall contain the following:

State of California
Department of Transportation/Equipment
34th Street and Stockton Boulevard
P. O. Box 160048
Sacramento, CA 95816

All required documentation shall be sent to the above address by the time of delivery.

NOTE: The State shall register/license all vehicles with the Department of Motor Vehicles:

2. **WARRANTY:**

CAB AND CHASSIS - WARRANTY: The truck cab and chassis, including but not limited to the engine, drive train, suspension, electrical system, all modifications made to the unit prior to delivery, etc., and any optional accessory, shall be free from defects in workmanship and materials and be covered (parts and labor) under warranty for not less than one (1) year or 12,000 miles, whichever occurs first, following the date the Department of Transportation (Caltrans) puts the unit into service. Caltrans will notify the supplier by mail of the in-service date and keep a record of the in-service date.

BODY/DIGGER DERRICK - WARRANTY: All installed equipment including any optional accessory or modification to cab and chassis, shall be free from defects in workmanship and materials and be covered (parts and labor) under warranty for one (1) year following the date the Department of Transportation (Caltrans) puts the unit into service. Caltrans will notify the supplier by mail of the in-service date and keep a record of the in-service date.

COMPLETE UNIT - WARRANTY: A copy of the manufacturer's standard warranty for the unit, any accessory, optional equipment, and components shall be supplied with each unit at delivery, or upon request. The manufacturer will be held responsible for warranty (commencing from the date Caltrans puts the unit into service) for the following circumstances:

1. The manufacturer's standard warranty exceeds one (1) year or 12,000 miles, whichever comes first. Under this circumstance, the supplier is responsible until one (1) year or 12,000 miles, whichever ever comes first, is reached. The manufacturer will be held responsible for the balance of the manufacturer's standard warranty.
2. The supplier is no longer an authorized dealer of the equipment supplied. Under this circumstance, the manufacturer will be held responsible for the balance of the manufacturer's standard warranty. The manufacturer shall establish a fully operational warranty service provider with capabilities equal to or exceeding the supplier's (or his designated warranty provider) within 45 days of the supplier's authorized dealer termination.

If the supplier is not the manufacturer or manufacturer's authorized representative, then a statement agreeing to the warranty conditions stated herein shall be signed by the manufacturer and submitted with the bid.

An In-Shop Warranty agreement (see attached), signed by the supplier or manufacturer, shall be supplied prior to Purchase Order award.

Caltrans, at its option, may perform warranty work under the terms of the In-Shop Warranty agreement. If Caltrans opts not to perform the warranty work, the supplier shall pick up the unit within 48-hours of notification, written or verbal. The unit will be at a Caltrans facility. The unit shall be repaired and returned within 10 working days to the Caltrans facility where the unit was originally picked up. Upon prior approval with Caltrans and in compliance with all Caltrans Policies and Procedures, warranty work may be performed at a Caltrans facility.

The supplier may use a traveling mechanic to perform the warranty work. The supplier will be responsible for all associated costs (travel time, overtime, per diem, etc.).

Any supplier or manufacturer non-compliant with the warranty provisions set forth herein may be subject by the Procurement Division, Department of General Services, State of California to be removed from any future bidding.

For questions regarding the warranty or In-Shop Warranty agreement contact:

California Department of Transportation
Division of Equipment

P.O. Box 160048
Sacramento, CA 95816
Attn.: Warranty Coordinator (916) 227-9724

3. WORKMANSHIP: The equipment and any accessories shall be a product of good workmanship and shall be free from any defects that will affect their appearance or serviceability.
4. TRAINING: When training is requested on the Invitation For Bid, the supplier, at his expense, shall provide a qualified factory authorized service representative (not a salesman) to provide training for operators, mechanics, and parts personnel. This training (not a sales presentation) shall consist of hands-on operation, safety, service and adjustments for the operators; mechanical repair and adjustment specifications for the shop and field mechanics; parts manual orientation, nomenclature and ordering procedures for parts personnel. It shall also cover lubrication and servicing using Division of Equipment lubrication products. This lubrication product information will be provided to the supplier by the Division of Equipment Lubrication and Research Branch at (916) 227-9646.

A training plan outline, containing at least all of the subjects listed above, shall be submitted for approval within 30 days after receipt of the order (ARO) to the Division of Equipment Training Coordinator at (916) 227-9665.

The training shall be provided at the Caltrans Equipment Shop(s) specified in the Invitation For Bid. This training shall be for one (1) 8-hour day (or longer as the supplier or State deems necessary), and the date(s) of the training will be arranged by the Division of Equipment Training Coordinator (916) 227-9665. The full cost of this service shall be included in the bid. All training shall be accomplished within 45 days of acceptance and receipt of the unit at the shop indicated on the Invitation For Bid unless otherwise mutually agreed to between the supplier and the Division of Equipment Training Coordinator.

5. PRINTS: Prints are supplied electronically with the bid in .pdf format. Any hard copies required for estimation, fabrication or sub-contractor communication will be the responsibility of the vendor.

The successful vendor will have 30 calendar days to review the submitted Drawings. If the supplier finds any discrepancies with the prints, the supplier shall notify the Department of Transportation, Equipment Specification's engineer. If the supplier fails to notify the Department of any discrepancies with the prints within this time frame, the supplier may be responsible for all costs involved in correcting the discrepancies on the units bid, as deemed acceptable by the Department.

6. IN-PROCESS REVIEW: The unit(s) may require an in-process review to verify timely progress of construction of the unit(s) and to ascertain compliance with the

intent of the specifications and drawings. If there are any questions regarding the intent of the specifications or drawings, call the "Agency Contact" as indicated on the Purchase Order title page. Any in-process review will be at State expense conducted within the State of California only and will not constitute acceptance of the unit(s).

7. INSPECTION (COMPLETE ASSEMBLED UNIT): This order will require a three (3) phase inspection process. For all inspections the unit(s) will be serviced, washed and ready for, as applicable, inspection or delivery. Inspections will begin within thirty (30) working days from the date of the inspection request by the supplier. It is the supplier's responsibility to contact the Equipment Parts Coordinator at (916) 227-9636 at the appropriate time for inspections.

FIRST PHASE (AT MANUFACTURER'S LOCATION): The first production unit or pre-production model of the series of units on this order shall be completed in accordance with the specifications and drawings, including all requested items and sub-components. Inspection of the pre-production model shall be as follows:

One (1) inspection shall be made at the manufacturer's plant by State of California, Department of Transportation personnel when the unit is fully operable, but not necessarily 100% complete (ie-finish paint, etc.). The inspection at the manufacturer's plant will not constitute final acceptance of the unit. Final acceptance will be made upon delivery of an acceptable, complete digger derrick and body complying with the specifications, at the designated location as stated in the purchase order.

The inspection at the supplier's place of manufacture shall be in accordance with the following:

- a. The inspection trip to the supplier's place of manufacture will be made by two (2) personnel from Caltrans Division of Equipment, Engineering Specifications and Quality Assurance sections, and will be for a minimum of two (2) full working days, excluding travel time. This inspection trip will be made upon notification by the supplier that the digger derrick and service and repair body covered by these specifications is ready for inspection.
- b. A complete operational check of all systems of the digger derrick will be made, and will include, **but not limited to the following**:
 - i. Quality of welds.
 - ii. Securement of lines, hoses and electrical wiring.
 - iii. Stability of equipment and accessories attached to the chassis.
 - iv. Safety factors such as sharp corners, exposure to hot surfaces,

- guard rails, shields over moving parts, and warning placards.
- v. Front and rear axle weights (see **ADMINISTRATIVE REQUIREMENTS**, Section 1, VEHICLE REGISTRATION DOCUMENTS REQUIRED.)
- vi. Testing of the operation of all systems and components.
- vii. Road speed capability.

OUT OF STATE TRAVEL: *If the supplier's inspection facility is not within the State of California*, the bidder should include in the bid price, all expenses as listed below for inspection trip(s) for each person (typically 2 persons) as outlined in the inspection section of the specifications and as follows:

- a. Airlines and vehicle reservations will be done through the State of California automated system (RESX).
- b. State employees assigned to travel will submit a Travel Expense Claim (TEC) to cover expenses for lodging, meals, per diem, incidentals, ground transportation including mileage, tolls, parking, etc. to and from the airport at Sacramento, California, for each full workday at the supplier's designated facility. Expenses will be charged in accordance with Caltrans Division of Accounting, Travel Reimbursement Guidelines as shown on <http://dot.ca.gov/hq/asc/travel/ch3.htm>. Travel expenses will be recorded in the State Accounting System as an expenditure to Caltrans Equipment Program.
- c. Caltrans Division of Accounting will set up an Accounts Receivable to bill the Vendor after the TEC submitted by employee has been processed.
- d. After the vendor or manufacturer pays the bill, the Caltrans Division of Accounting will abate the recorded expenditures.
- e. All references to "inspection trip(s) shall be State financed at no cost to the supplier" shall be superseded for the above mentioned expenses when out of state travel is requested by the vendor.

The vendor shall receive a copy of the inspection report within 4 working days of the inspection. Unacceptable or noncompliant items will be listed on the report. If late delivery charges accrue, the vendor will not be held responsible for days in excess of the specified inspection report return period from the end of the inspection to the receipt of the inspection report.

If additional interim inspections are required, such inspection trips shall be at the expense of the supplier at \$75.00 per hour (including travel time) for each employee in addition to the above mentioned Out Of State Travel Expenses.

The State's internal Out of State approval process takes approximately 2-4 weeks for approval. The successful Bidder should plan on submitting an official Out of State request to the Equipment Receiving Manager, in a timely manner, as to assure the synchronization of the State approval with the corresponding inspection date. This process needs to be performed for as many inspections needed, as outlined in the inspection section of the specification. Inspections will begin within ten (10) working days from the date of the out of state inspection approval.

NOTE: The State will not be held responsible for delivery delays if the successful bidder does not initiate the Out of State travel request in a timely manner, as mentioned above.

Additionally, where applicable, the supplier shall complete and sign the supplier pre-delivery inspection (PDI) form and the supplier shall note the appropriate Purchase Order Number and Line Item on each form.

After inspection and acceptance by the State, the first production unit or pre-production model shall be the criteria or basis for acceptance of the balance of the delivery (if any). This will not constitute final acceptance of each unit remaining on the Purchase Order.

SECOND PHASE (PRE-DELIVERY INSPECTION): In accordance with the State Administrative Manual, Section 4112 and the Caltrans inspection program, each unit will be inspected prior to shipment to the destination on the purchase order. This inspection trip(s) shall be State financed at no cost to the supplier.

Arrangements for pre-delivery inspections shall be made only when multiple units are complete. Each unit shall be identified with the applicable Purchase Order and Line Item. If corrections are needed as a result of the inspection, the corrections shall be made prior to shipment to the purchase order destination. Authorization to deliver unit(s) must be granted by the Department of Transportation, Division of Equipment, Quality Assurance Section.

If additional interim inspections are required, such inspection trips shall be at the expense of the supplier at \$75.00 per hour (including travel time) and all expenses (meals, lodging, and cost of transportation). Travel expenses will be documented on State of California, Department of Transportation, Travel Expense Claim Form, FA302. These fees may be deducted from the invoice.

PRE-PRODUCTION AND PRE-DELIVERY INSPECTION LOCATION: The inspection(s) shall be conducted by the Department of Transportation, Division of Equipment, Quality Assurance. These inspections shall be at the supplier's place of business within the State of California (due to Caltrans business needs) having adequate facilities and security for the inspection. If the supplier's place of business (as indicated on the Purchase Order) is outside of California, or if the

supplier's place of business is not adequate for inspections (as determined by the State), then the supplier shall provide an inspection site as follows:

- a. In the State of California.
- b. The site shall be approved prior to the award of the purchase order by the Department of Transportation, Division of Equipment, Quality Assurance Section. Contact the Quality Assurance Section at (916) 227-9709 for approval.
- c. **The site shall not be the Purchase Order delivery destination.**

THIRD PHASE (FINAL INSPECTION): Each unit will have a final inspection at its delivery destination shown on the Purchase Order to verify acceptability. The State will have five (5) working days after delivery of a unit to conduct the final inspection of said unit. Units delivered to the final Purchase Order destination will be accepted only when all Purchase Order requirements have been met, any shipping damages have been corrected, and all required documents are received by the Department of Transportation, Division of Equipment, Equipment Receiving. These documents include, as applicable, the invoice, vehicle registration documents, parts book, operator's manuals, service manuals, lubrication instructions and charts, warranty information, certifications, questionnaires, etc. Units which are not accepted by the delivery date on the Purchase Order will be considered delivered late.

If the supplier receives notice that the unit(s) is not acceptable, whether written or oral, the unit(s) shipped to the Purchase Order destination shall be removed within seven (7) calendar days. If the supplier fails to remove said unit(s) from the State's facilities within the specified period, the State may forward said unit(s) to the supplier by common carrier at the supplier's expense and risk.

8. **DELIVERY:** Inspection, delivery, and final acceptance of all units on the Purchase Order shall be within 330 calendar days after the Purchase Order date. Contact the State of California, Department of Transportation, Division of Equipment, Equipment Parts Coordinator at (916) 227-9636 for delivery.

Failure of any units to comply with the specifications by the final delivery date may place the supplier in default and may be grounds for the State to invoke Paragraph 26 of the General Provisions, Rights and Remedies of the State for Default. The Department of General Services, Procurement Division will be notified at such time.

Acceptance of delivery or placement in operation of any equipment shall not release the manufacturer from liability for faulty design, workmanship, or materials appearing even after final payment has been made.

9. **LATE DELIVERY CHARGES:** The parties to this agreement acknowledge that

the State shall incur actual damages should the supplier fail to perform the work as called out in the contract and specification on the dates set forth herein. The parties, therefore, have agreed to late delivery charges in the amount of \$80.00 per unit per work day.

Workdays are Monday through Friday inclusive, except State holidays observed Monday through Friday inclusive.

The parties also agree that the amount specified is not unreasonable nor punitive in nature because both parties have carefully considered the amount specified and believe it to be a reasonable estimate, and not excessive at the time the purchase order is entered into.

It is, therefore agreed, that the supplier will pay the State of California the sum of \$80.00 per unit per work day (as stated above) for each work day the work remains uncompleted or unaccepted by the State, provided the total late delivery charges assessed against supplier shall in no event exceed twenty-five percent (25%) of the total value of the entire order, and the supplier agrees to pay said damages as herein provided. In the event such damages are not paid, the supplier agrees that the State may deduct the amount thereof from any monies due or that may become due said supplier.

10. PAYMENT: Process for payment will be initiated on each unit as units are received and deemed acceptable. The discount period will start after acceptance of each unit on the Purchase Order.
11. QUESTIONNAIRE: The attached questionnaire shall be filled out and will become a part of each bid submitted. Any portion of the questionnaire which is not applicable to the equipment shall be shown as N/A (not applicable).

Unless otherwise stated in the purchase order, the requirements of the written purchase order specification shall have precedence over the completed questionnaire; and the completed questionnaire shall have precedence over standard factory specifications or literature.

12. GENERAL: One (1) complete set of additional filters (air, oil, water, fuel, hydraulic, etc.) shall be supplied with the first unit delivered. This additional set of filters shall be as recommended by the manufacturer and shall be complete with the appropriate part numbers for identification.

Each unit and any accessory shall be delivered completely assembled and ready to operate.

No exceptions to the specifications will be allowed unless the exceptions are listed on the purchase order or subsequent addenda.

The component parts of the unit shall be new and of proper size and design to safely withstand the maximum stresses imposed.

The manufacturer's torque rating of each driven part shall be equal to or exceed the torque rating of its driving member.

Complete printed specifications, published literature, and photos or illustrations (as available) of unit or units that the bidder proposes to furnish shall be supplied upon request.

All equipment and accessories cataloged as standard, unless superseded by these specifications, are to be furnished and included in purchase price of this unit.

The supplier or the manufacturer of the equipment being supplied shall guarantee that all replacement parts for the equipment shall be available for delivery to the State within five (5) working days after the request is telephoned to the manufacturer, or supplier. This requirement shall be in effect for a period of five (5) years after the date the equipment is put into service by the State of California. Suppliers may be removed from the bid list for failure to meet the parts availability obligation.

Bids will not be considered if supplier's designated f.o.b. delivery destination is other than the delivery address stated in the invitation to bid.

Only new models, produced and/or assembled by existing manufacturers of like or similar equipment, will be considered. Special options may be included only when recommended by the manufacturer of the unit and approved by the State.

All equipment/options are to be factory installed. If the equipment/options are not available factory installed, dealer installed equipment/options may be acceptable. The bidder is to specify those items that will be dealer installed.

"Caravan" or "drive-away" deliveries from points outside the State of California will not be accepted.

The State reserves the right to purchase one (1) additional unit, or up to an additional 25% of the quantity on the Purchase Order, at bid prices, for State Agencies and California Local Government Agencies. Orders for such additional units shall be placed within 180 days of bid award date.

The State reserves the right to amend the contract, up to 10% of the Purchase Order amount, to cover deficiencies or inconsistencies within or between the drawings and the technical specifications. These amendments shall cover the cost of any materials involved, and/or the standard shop labor rate for modification or installation.

CHANGE ORDERS: This contract may be amended, modified or terminated at any time by mutual agreement of the parties. Change orders amending, modifying or terminating the contract including any modification of the compensation payable may be issued only by the State Procurement Officer and shall be in writing. Termination, as that term is used in this section, does not include termination for default of the supplier.

Dustin Lucero, 5/28/09
DUSTIN LUCERO
INSIDE SALES REP.

OPTIONS

The following options or accessories shall be furnished on the cab and chassis, digger, derrick, or complete unit only when specified on the Invitation for Bid and Purchase Order. Price on options listed shall be per unit. Include price of options with bid.

TRUCK CAB AND CHASSIS

1. PASSENGER AIR RIDE SEAT: In lieu of the non-air passenger bucket seat requested in the CAB section of this Specification, an air suspension type bucket seat to match the drivers seat shall be supplied. The seat shall have a high back to support the head and shoulders. Seat covers shall be cloth or vinyl with a cloth insert. A hinged center arm rest (left) shall be supplied. The seat shall have 3-point type seat belts with boot-type retractor(s).

OPTION 1 PRICE: \$ 267.00

2. 40/60 SEATS FOR THREE (3) PEOPLE: The driver's seat shall be independent of the passenger, and be of the air suspension type with a high back. The passenger seat shall be a 2-passenger bench seat and shall match the drivers seat in color. Seat covers shall be cloth, or vinyl with a cloth insert. If available, headrest(s) shall be provided for the outboard passenger and center passenger.

OPTION 2 PRICE: \$ 75.00

3. AUTOMATIC TRANSMISSION W/ INTEGRAL RETARDER: In lieu of the Allison automatic transmission specified in Section 5 of the Specification, the transmission shall be an Allison, Model 3500-RDS, 6-speed automatic transmission with an integral output retarder. The transmission shall be complete with torque converter, automatic lock-up clutch, auxiliary oil cooler, and PTO provisions.

NOTE: The engine brake specified in section 3.e. of the Specification shall be deleted with this option.

The transmission retarder shall be activated by a separate fully modulated foot pedal control (preferred), or a dash-mounted switch, while the throttle is in the closed position. If a foot pedal is supplied, it shall be located in the same approximate location as a clutch pedal, and shall be positioned at the same angle as the brake pedal. There shall be a master switch in the dash for the retarder with an indicator light showing when the retarder is in operation. The system shall be as recommended by Allison Transmission. The retarder control valve shall be set for high capacity. An oil temperature gauge, to monitor transmission/retarder fluid temperature, shall be installed in the dash. The gauge shall be back-lighted in the same manner as other dash gauges, and: be red-

lined to indicate the manufacturer's maximum recommended operating temperature; or, equipped with a visual or audible warning to indicate high temperature. The sensor for the oil temperature gauge shall be located to read the highest temperature in the system. The vehicle brake lights shall be activated when the retarder is activated.

The cooling system for the transmission shall incorporate a water/oil heat exchanger to maintain oil at a suitable working temperature as recommended by the transmission manufacturer.

The electronic controls for the transmission (shift points) shall be calibrated to provide maximum performance from the engine. The operator shall be able to lock or hold the transmission in any selected gear.

Transmission controls and mounting shall be in accordance with the transmission manufacturer's specifications and recommendations. The transmission control shall be a lever type shifter, located to the right of the driver. Operation of the lever shall be forward and back (not side to side) and shall be easily accessible to the driver. The transmission shall have a shift pattern of 1, 2, 3, 4, 5, D, N and R (Note: Reverse shall be located toward the front of the shifter). The shift lever shall be back-lighted for nighttime operation.

There shall be adequate clearance to direct mount a PTO on the transmission.

The transmission shall be factory-filled (or by the delivering dealer if not available from the factory) with Allison Transynd transmission fluid. The fill location(s) shall be labeled to indicate the transmission has been filled with Transynd.

A "SCAAN" computer printout shall be supplied with each bid, or upon request, for the transmission, torque converter, and axle ratios the vendor proposes to supply. The State and Allison shall determine if the torque converter and axle ratios are acceptable.

OPTION 3 PRICE: \$6,595.00

4. **HEATED MIRRORS:** Right and left outside rearview mirrors, not less than 90 square inches in size, electrically heated. The mirrors and mounting brackets shall be factory installed (OEM) aerodynamic breakaway type; black, grey or neutral in color.

Chrome finished brackets are not acceptable.

OPTION 4 PRICE: \$85.00

5. 10-SPEED MANUAL TRANSMISSION: In lieu of the automatic transmission, a manual transmission shall be supplied and installed. The transmission shall be of a twin countershaft design and shall have 10 speeds forward with a deep ratio first gear and reverse. The transmission shall be rated at not less than the maximum torque delivered from the engine. The transmission shall be complete with oil pump and auxiliary oil cooler (Ref. - Fuller Model No. FR-9210B, or comparable).

The transmission shall be filled with a synthetic type gear lubricant (Ref. Emgard 50W, or comparable). The fill location(s) shall be labeled to indicate the transmission has been filled with a synthetic lubricant.

Adequate clearance shall be provided for a transmission mounted PTO.

A shifting pattern diagram shall be submitted for the transmission and rear axle ratio(s) supplied.

The clutch shall be a two-plate design, not less than 14 inches in diameter, faced with ceramic buttons and a minimum torque capacity of 800 ft-lbs. Means for lubricating the clutch release bearing without removing a cover on the clutch housing shall be supplied and installed.

OPTION 5 PRICE: \$(4,692.00) Deduct

6. CNG OPTION: In lieu of the diesel-fueled engine described in section 3. ENGINE, of the TECHNICAL SPECIFICATIONS, the supplier shall provide a CNG-fueled engine of not less than 275 horsepower and a minimum torque rating of not less than 800 lb-ft. The engine will be acceptable without the engine compression brake previously described.

Converted vehicles shall meet current certification requirements of the US Environmental Protection Agency (EPA) and California Air Resources Board (CARB) as applicable at the time of bid opening.

The minimum fuel capacity shall be not less than seventy (70) diesel-gallon equivalent of CNG. The capacity shall be calculated at 5.2 gallons of CNG for each gallon of diesel fuel.

The fuel tank(s), plumbing, fittings, etc. shall be rated for 3,600 PSI filling. All components shall be as recommended and approved for use in high pressure CNG fuel systems, and shall comply with all requirements of the engine manufacturer. The fueling port shall be compatible for use with 3,600 PSI and lower filling stations. There shall be a pressure gauge located near the fueling port, and a fuel capacity gauge installed in the dash.

If CNG OPTION is not available, list the price as NOT AVAILABLE (N.A.) here,

and on the Invitation for Bid (IFB).

OPTION 6 PRICE: \$ N/A

If CNG OPTION is not available, provide price below for diesel-fueled engine and diesel fuel system per section 3. ENGINE and section 15. FUEL CAPACITY of the Specification. This option price would normally be 0 (zero) as diesel engine and diesel fuel system is the base (or standard) for this unit.

DIESEL ENGINE/FUEL PRICE: \$ 0

DIGGER DERRICK

7. PERSONNEL BUCKET: A single person, fiberglass bucket shall be supplied and equipped to attach at the upper end of the third boom section by means of a quick detachable pin assembly. The personnel bucket capacity shall be not less than 300 pounds in both positions.

Provisions shall be made on both sides of the boom to mount the bucket, with access to the controls on the center of the boom (see also Top Controls, following).

The bucket shall have a "U" shaped entry/exit on the boom tip side of the bucket and furthest from the pedestal. The exit/entry shall be approximately 18-inches wide x 20-inches high. This opening will be used for entering and exiting the bucket when stowed. The top of the opening shall be equipped with a safety strap, made of synthetic material to prevent employee from falling through the exit/entry. The exit/entry shall be a full cut-out. A crawl through opening shall not be acceptable.

Personnel buckets shall be made from molded reinforced fiberglass plastic laminated with iso-resin. The personnel bucket shall have minimum thicknesses of 1/4-inch bottom, 1/4-inch top reinforcing lip, 3/16-inch sides, and 1/4-inch on a 4- to 5-inch reinforcing band around the "U" shape exit/entry.

The bucket shall be equipped with a waterproof quick removable cover. The bucket shall have a water drain hole in the bottom of the bucket with a plug removable from the bucket exterior.

The bucket shall be stenciled with its load capacity in at least 4-inch minimum black numbers and letters on adjacent sides to be visible from the ground when the bucket is installed and operational.

The personnel bucket shall be equipped with manufacturer's standard tool tray. The bucket will be gravity leveling and be equipped with a hand-controlled brake assembly for stability while working from the bucket.

A safety belt attaching ring with metal anchor direct to boom shall be installed. One safety belt and lanyard shall be provided.

Hydraulic outlets and not less than one (1) 120-volt electrical outlet shall be installed convenient to the operator in the personnel bucket.

Top controls: The top controls shall have full-metering and feathering operating characteristics and shall be provided convenient to the operator in the personnel bucket. Top controls shall be installed on the outer end of the third boom

section; and, shall control the boom rotation, elevation, boom extension, and winch. Access to the controls shall be on the center of the boom for use on either side of the boom. A boom angle indicator and a boom load chart shall be clearly visible to the operator in the personnel bucket.

An engine kill switch shall be provided convenient to the operator in the personnel bucket to allow operator to stop the hydraulic system engine in the event of an emergency.

A manual or automatic engine throttle control shall be supplied and installed at the bucket to allow high speed operation of the derrick.

IN LIEU OF center-mounted controls described above, a remote control (see Option 12) may be supplied with the Personnel Bucket option.

OPTION 7 PRICE: \$8,798.00 Note: Includes option #12 remote controls

NOTE: HYDRAULIC TOOL HOSE: Not less than fifty (50) feet of ½-inch dual hose shall be supplied providing that any of the optional hydraulic hand tools listed on this and following option pages are specified. This hose shall be equipped with matching ¾-inch drip-less quick couplers used on the supply and tools.

8. HYDRAULIC POST PULLER: The hydraulic puller (Ref: Stanley, Post Puller PP10, Order No. PP10100 open center, or comparable) shall be equipped with a separate ram, chain, and self-supporting base and conform to the following specifications:

- a. Weight-70 lbs. max.
- b. Pulling Force-9800 lbs.
- c. Pressure-2,000 psi
- d. Porting-NPTF

OPTION 8 PRICE: \$1,750.00

9. HYDRAULIC TAMPER: A valve-in-handle hydraulic tamper conforming to the following approximate specifications shall be supplied (Ref. Stanley TA 54, Racine Pole Tamper, or comparable).

- a. Overall length: 54 inches, equipped with 2-foot handle.
- b. Weight: 25 lbs.
- c. Stroke rate: 600 to 1,600 per minute.

- d. Operating pressure: Up to 2,000 psi.
- e. Stroke: 2 to 3 inches.
- f. Impact: 55 pounds at 1,600 strokes per minute.
- g. Tamping feet: Kidney shaped, 6-inch round and 4" x 8" rectangular.

OPTION 9 PRICE: \$1,710.00

10. POLE GRABBER: A hydraulic operated, hydraulic tilting pole grappler shall be installed at the outer end of second boom section. The pole grabber shall be installed so as not to interfere with the operation of the boom tip winch.

OPTION 10 PRICE: \$No Charge

11. HYDRAULIC JACK HAMMER: An open center, valve in handle hydraulic jack hammer conforming to the following specifications shall be supplied (Ref: Greenlee-Fairmont Model H4875A, or comparable):

Weight: 75 lbs.

Length: 28-1/2-inches.

Width: 15-inches.

Blows Per Minute: 1200 at 9 gpm.

Operating Pressure: Up to 2000 psi.

OPTION 11 PRICE: \$2,750.00

12. REMOTE CONTROL: In addition to the console-mounted digger derrick lever controls, the hoist shall be equipped with an FCC-approved radio remote control. The radio remote control shall allow fully proportional and fully simultaneous operation of the following functions: boom up/down, boom rotation, and boom(s) extend/retract. The radio remote shall also, as a minimum, allow proportional control of the following: digger dig/reverse and boom winch up/down. The radio remote control shall provide engine throttle control and engine stop/start, and, emergency stop of all functions and chassis engine instantaneously. The remote control shall not operate the outriggers.

OPTION 12 PRICE: \$7,314.00 if selected without option #7 personnel bucket. No charge if option #7 selected.

13. ADDITIONAL 30-INCH AUGER: A 30-inch auger shall be supplied in addition to the 8-inch, 16-inch, and 24-inch auger as specified in Item 8, page 14. The

30-inch auger shall have heavy-duty flighting and carbide-tipped pilot bits and teeth. The unit must be capable of stable operation with the 30-inch auger and other induced loads at the maximum digging radius. The unit shall be designed to dig 30-inch diameter holes that are 10 feet deep. The torque rating of the digger shall not be less than 12,000 foot-pounds. The digger shall be a two-speed manual shift, with the two-speed control at the operator's control station with all other digger controls.

OPTION 13 PRICE: \$ 1,335.00

14. **ALASKAUG AUGERS:** In lieu of the 8-inch, 16-inch, and 24-inch auger as specified in Item 8, page 14; and, in lieu of the 30-inch auger specified in Option 14 above: **supply** Alaskaug Model 9000 Series augers in 8-inch, 10-inch, 18-inch, and 30-inch sizes (Ref. Alaskaug, Inc., 513-242-2702). All other requirements as specified in Item 8 of the Specification and Option 14, unless in conflict with the construction of Alaskaug Model 9000 Series augers, shall remain unchanged.

OPTION 14 PRICE: \$ 3,850.00

15. **WIRE WINCH ROPE:** Winch shall be equipped with steel wire winch rope in lieu of nonconductive synthetic winch rope.

OPTION 15 PRICE: \$ 725.00

16. **TRANSMISSION (INFO. ONLY):** The cab & chassis will be supplied with a manual transmission (installed by OEM) in lieu of an automatic 6-speed transmission.

The PTO shall be electric over air shift. Any air accessory shall be plumbed to the chassis air system through a pressure protection valve provided on the cab and chassis.

The neutral position interlock as described in section 25, part h, "Miscellaneous: Neutral Position Interlock," is not applicable.

COMPLETE ASSEMBLED UNIT

17. ELECTRIC TRAILER BRAKE CONTROLLER: An electric trailer brake controller (Ref. Raybestos Model #761-9035, or comparable) shall be installed under the dash within easy reach of the driver and wired to the trailer jumper cable supplied with the cab and chassis in accordance with Drawing No. U1-A010-01.

OPTION 17 PRICE: \$ 200.00

18. WORK LIGHTS – SIGN BODY: Two (2) work lights (Ref: Hella Model #90601, no exceptions) shall be supplied and installed on the rear of the body. One (1) shall be mounted to the rear of the left side upper basket (#14 on Drawing No. E2-D201-01) facing rearward; and, one (1) shall be mounted to the rear of the right side basket (#6 on Drawing No. E2-D201-01) facing rearward. The work lights shall be mounted inboard of the Flashing Amber Lights previously described. Both shall be wired to the work light switch described in section 13 (p.19), SWITCH PANEL.

OPTION 18 PRICE: \$ 155.00

19. RETRACTABLE ELECTRIC CORD REEL: A spring-loaded, retractable cord reel with not less than 40 feet of 3-wire, 12 ga. electrical cord and plug shall be furnished and installed. The reel cord shall be wired to the 120V. AC generator outlets circuit (see page 20 of 36, section 12. GENERATOR). The reel shall be located on the right (passenger) side of the body; exact location to be determined in consultation with the Specification Engineer.

OPTION 19 PRICE: \$ 650.00

20. CONE HOLDERS: Two (2) cone holders shall be supplied and installed on the front bumper in accordance with Drawing No. E2-D129-01. The holder uprights shall be spaced approximately 22 inches apart and centered between the truck tow hooks.

OPTION 20 PRICE: \$ 285.00

CALTRANS IN-SHOP WARRANTY AGREEMENT

Name of Supplier/Manufacturer Altec Industries, Inc.
Warranty Representative (print or type) Paul Kom
Street Address 1450 North First Street
City, State, Zip Code Dixon, CA 95620
Telephone Number 707-678-0800
Solicitation No. 57316 Due Date 5/29/09
Item (Quantity/Brand/Model) Seven (7) Altec DL42-BC

When equipment is purchased for Caltrans, a section of the specifications requires the supplier/manufacturer to enter into an In-Shop Warranty Agreement.

The terms of the In-Shop Warranty Agreement for this equipment are as follows:

1. Labor rate charged by Caltrans will be \$150.00 per hour.
2. Warranty claims will be processed on a Caltrans Work Order unless the supplier/manufacturer furnishes standard warranty forms.
3. Suppliers'/manufacturers' standard flat rate time schedules shall be used as a guide for In-Shop Warranty repair time. If a supplier's/manufacturer's flat rate time schedule is not available, Caltrans will use the time that is recorded on the Caltrans Work Order.
4. Replacement parts will be available within 5 working days from the date of receipt by supplier/manufacturer of a Purchase Order, whether the order is made by telephone or in writing.
5. Replaced parts will be held 60 days for inspection by the supplier/manufacturer.
6. Original Equipment Manufacturers' parts will be used as replacement parts; or, if OEM parts are not available, after-market parts of equal or better quality will be utilized.
7. Copies of invoices for all parts will be provided to the supplier/manufacturer.

Caltrans will contact the supplier/manufacturer for authorization to perform In-Shop Warranty repairs as stated in this agreement. Only under extreme emergency conditions will In-Shop Warranty be performed without prior authorization. If Caltrans opts not to perform the warranty work, the supplier shall pick up the unit within 48 hours of notification, written or verbal.

In-Shop Warranty Agreement shall remain in effect until all conditions of warranty in the State of California specifications and in the original manufacturer's warranty expire.

Signature, Caltrans Warranty Coordinator _____
Signature, Supplier/Manufacturer *Justin Luccero* Date 5/28/09
Date _____

QUESTIONNAIRE - TRUCK CAB AND CHASSIS

Make International
Model 4400

1. **CAPACITY:** Mfr's. GVWR 35,000lbs Mfr's. GCWR 50,000lbs

2. **WHEELBASE:** Wheelbase 193 in. Cab-to-axle 120 in.

3. **ENGINE:** Make/Model International MaxxForce DT
Gross HP 285 @ 2400 rpm
Gross torque 800 ft. lbs. @ 1400 rpm
Engine brake Type/Make/Model Combo Engine and Exhaust / International / Diamond Logic

4. **FRAME:** Resistance Bending Moment (RBM) 1,701,600 inches/lbs rail
Section Modulus 14.18 cubic inches

5. **TRANSMISSION:** Make/Model Allison 3500 RDS
Filled with Transynd fluid? (y/n) Yes

Transmission Option 4 and/or 6: Make/Model Fuller FR-9210B
Filled with synthetic gear lubricant? (y/n) Yes
Lubricant product name Emgard 50W Synthetic
Lubricant change interval 500,000 Hwy / 250,000 Vocational
Increase product warranty w/ synthetic Lube? (y/n) No

6. **COOLING SYSTEM:**
Coolant w/ 100,000 mile warranty or filter and conditioner? Yes
Coolant product name Shell Rotella
Coolant change interval 300,000 miles months/miles

7. **EXHAUST:** Horizontal muffler? (y/n) Yes
Vertical exhaust? (y/n) Yes

8. **FRONT AXLE & SUSPENSION:** GAWR 12,000lbs
Hubs filled with synthetic lubricant? (y/n) Yes
Lubricant change interval City-60,000 miles / 6 mo , Hwy - 100K / 12 months/miles
Front springs - capacity at ground 12,000 lbs.

9. REAR AXLE & SUSPENSION: Make/Model Spicer S23170D
Manufacturer's Rating 23,000 lbs.
GAWR/Ratio 23,000 / 6.83
Single or two speed Single
Top geared speed 65 mph
Startability 46%
Electronic traction control? (y/n) Yes
Differential filled with synthetic lubricant (y/n) Yes
Lubricant change interval 12 months / 100,000 miles months/miles
Rear springs – capacity at ground 23,000 lbs.

10. BRAKES: ABS 2- or 4-channel? 4

| <u>WHEELS</u> | <u>FRONT</u> | <u>REAR</u> |
|-------------------------|--------------------|--------------------|
| Rim Size (Dia. x Width) | <u>22.5 x 8.25</u> | <u>22.5 x 8.25</u> |
| Manufacturer's Rating | <u>14,800</u> | <u>27,780</u> |
| Hub Piloted? (y/n) | <u>Yes</u> | <u>Yes</u> |

| <u>TIRES:</u> | <u>FRONT</u> | <u>REAR</u> |
|---------------|--------------------|--------------------|
| Size | <u>11R22.5</u> | <u>11R22.5</u> |
| Capacity | <u>12,350</u> lbs. | <u>23,360</u> lbs. |

13. CAB: Conventional or tilt Conventional
Hood and fenders: Tilt? (Yes/No) Yes
Stationary grill? (Yes/No) No

14. FUEL CAPACITY: Number, location, and capacity of tanks One (1) 70 gallon
fuel tank right side under cab

QUESTIONNAIRE -- DIGGER DERRICK

16. GENERAL: Manufacturer Altec
Model DL42
17. PERFORMANCE CHARACTERISTICS:
Number of stages 3 stages
Height from sheave pin to level ground 41.4 ft.-in.
Reach from center line of rotation to drop line at 0° elevation 31.6 ft.-in.
Angle of elevation: -18 degrees below horizontal to 84 degrees above horizontal
Rotation: 360 degrees; continuous or non-continuous continuous
Digging Radius: 21.5 ft.-in.
18. DERRICK CAPACITY: At 0° and radius of 20 feet to load line 3113
At -10° elevation and radius of 19 feet, 9 inches to load line 2580
At 80° elevation and radius of 4 feet, 4 inches to load line 16311
19. WINCH: Manufacturer Gear Products Model 008-00130-1
Location Boom Tip Capacity 15000lbs
Maximum line speed 39 fpm
20. DIGGER: High speed torque 2948 ft.lbs. Low speed torque 12045 ft.lbs.
High speed RPM 90.1 Low speed RPM 21.0
21. CONTROLS: (Write in type for each location)
Pedestal: T-stand with individual lever controls
Bucket(s): Individual levers with remote control and docking station
22. OUTRIGGERS: Quantity 2 Locations front of body and at rear
attached to pedestal
Type A-frame with folding shoe at front. Walking beam at curb side rear and modified
A-frame at street side rear.
Spread on level ground - outside of pad to outside of pad: 138.5 inches
Retracted width: 94.8 inches
Swivel (flexible) feet? (Y/N) Yes
23. GENERATOR: (if supplied) Mfr. & Model Stanley AL35095

QUESTIONNAIRE - COMPLETE ASSEMBLED UNIT

24. DIMENSIONS:
Overall Height 148 inches estimated
Overall Length 303 inches estimated
25. WEIGHTS:
Front Axle Curb Weight 9078lbs estimated
Rear Axle Curb Weight 15499lbs estimated
Total Curb Weight 24577lbs estimated
26. INSPECTION LOCATION: Altec Industries, Inc.
325 Industrial Way
Dixon, CA 95620
27. WARRANTY PROVIDER: Altec Industries, Inc.
325 Industrial Way
Dixon, CA 95620

LIST ANY ADDITIONAL INFORMATION OR EXCEPTIONS TO THE SPECIFICATIONS BELOW (USE ADDITIONAL SHEETS IF NECESSARY):

Altec Industries, Inc.

NAME OF FIRM

325 Industrial Way

STREET ADDRESS

Dixon, CA 95620

CITY, STATE, ZIP CODE

707-678-0800

PHONE NUMBER



SIGNATURE

Dustin Lucero

NAME

Inside Sales Representative

TITLE

5/28/09

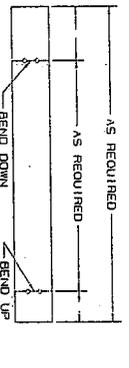
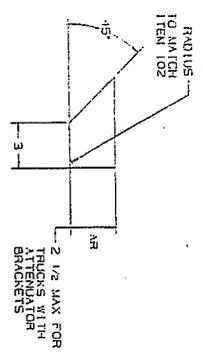
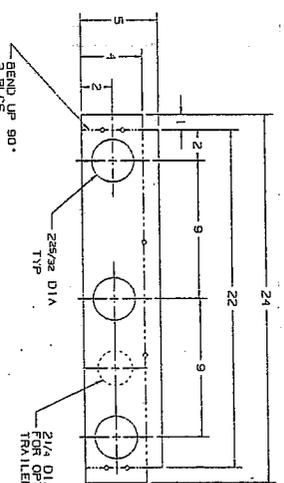
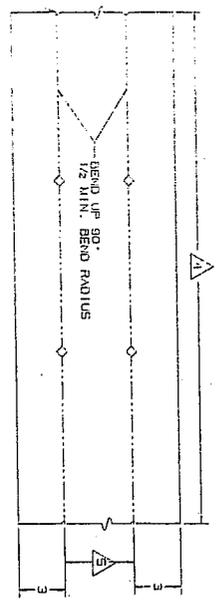
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BILL OF MATERIALS

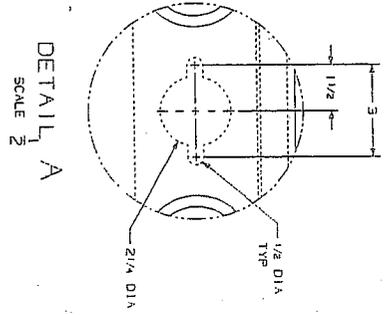
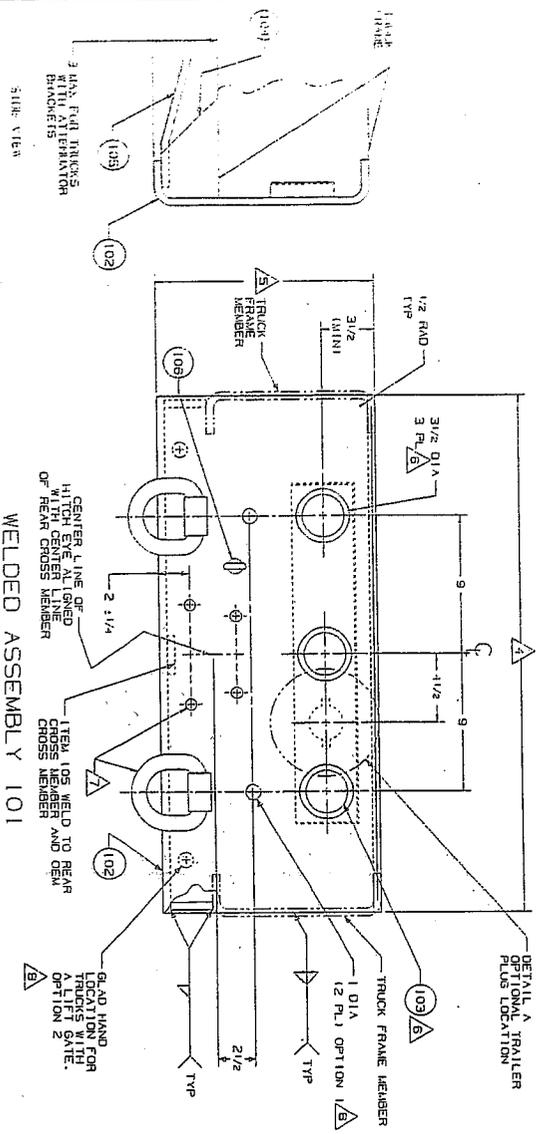
| ITEM | QTY | DESCRIPTION |
|------|-----|---|
| 101 | 1 | WELDED ASS'Y CONSISTS OF ITEMS 102-108 |
| 102 | 1 | 1/2" X 1/4" X 1/4" IN. S.W. PLATE, 48IN X 36 |
| 103 | 1 | 16 GA X 5 X 24 HR. STL. ASTM A503 |
| 104 | 1 | 1/2 HR. STL. PLATE OR FLAT 58IN X 36 |
| 105 | 1 | 1/2 X 2 1/2 HR. STL. PL. AT ASTM A36 |
| 106 | 1 | 3/4" ID 1-1/2" OD WELD ON EYE OF TRUCK FRAME |
| 107 | 2 | 3/4" D-RING W/ WELD ON BIRTH OF TRUCK FRAME |
| 108 | 2 | 1 INCH D-RING W/ WELD ON BIRTH OF TRUCK FRAME |

NOTES:
 1. ALL WELDS ELECTRICAL AND PAINT ALL TO BE IN ACCORDANCE WITH THE WELDED JOINT STANDARDS GO TO THE WELDED JOINT STANDARDS TO VIEW EQUIPMENT QUALITY STANDARDS.
 2. ALL JOINTS TO BE WELDED JOINT WELDS, ALL TO BE AT LEAST THE THICKNESS OF THE THINNER OF THE TWO METALS TO BE JOINED AND MEAT APPEARANCE.

- 3. DEBURR AND GRIND ALL SHARP EDGES
- 4. THIS DIMENSION IS THE TRUCK FRAME WIDTH PLUS ONE FRAME THICKNESS.
- 5. HEIGHT OF REAR CROSSMEMBER SHALL BE THE HEIGHT OF PRINTE FROM THE CENTER OF INSTALLATION OF PRINTE FROM THE CENTER OF BODY.
- 6. OPTIONAL LOCATION FOR REAR TO BE IN BODY.
- 7. BOLT PATTERN TO MATCH HITCH
- 8. FOR VEHICLES UNDER 30,000 GVW USE 1/2" DIA. AND 1-5/8" HITCH WITH 3/4" DIA. HITCH
- 9. FOR VEHICLES 30,000 GVW OR GREATER USE 3/4" DIA. AND 2" HITCH WITH 1" DIA. HITCH
- 10. USE BOLT AND PLATE WITH 1/2" THICKNESS HITCH FROM GROUND LEVEL TO CENTER OF HITCH EYE FASTEN HITCH WITH PROPER SIZE GRADE 9 BOLTS AND LOCKWASHERS.
- 11. LOCATE GLAND HOLE 1" DIA. HOLES PER DETAIL 1 OR 2 AS SPACE ALLOWS.



REAR CROSS MEMBER BRACE
 WELD AT ASSEMBLY
 SOME VEHICLES WILL REQUIRE
 ALTERNATIVE BRACING
 CONTACT ENGINEERING
 DESIGN GROUP

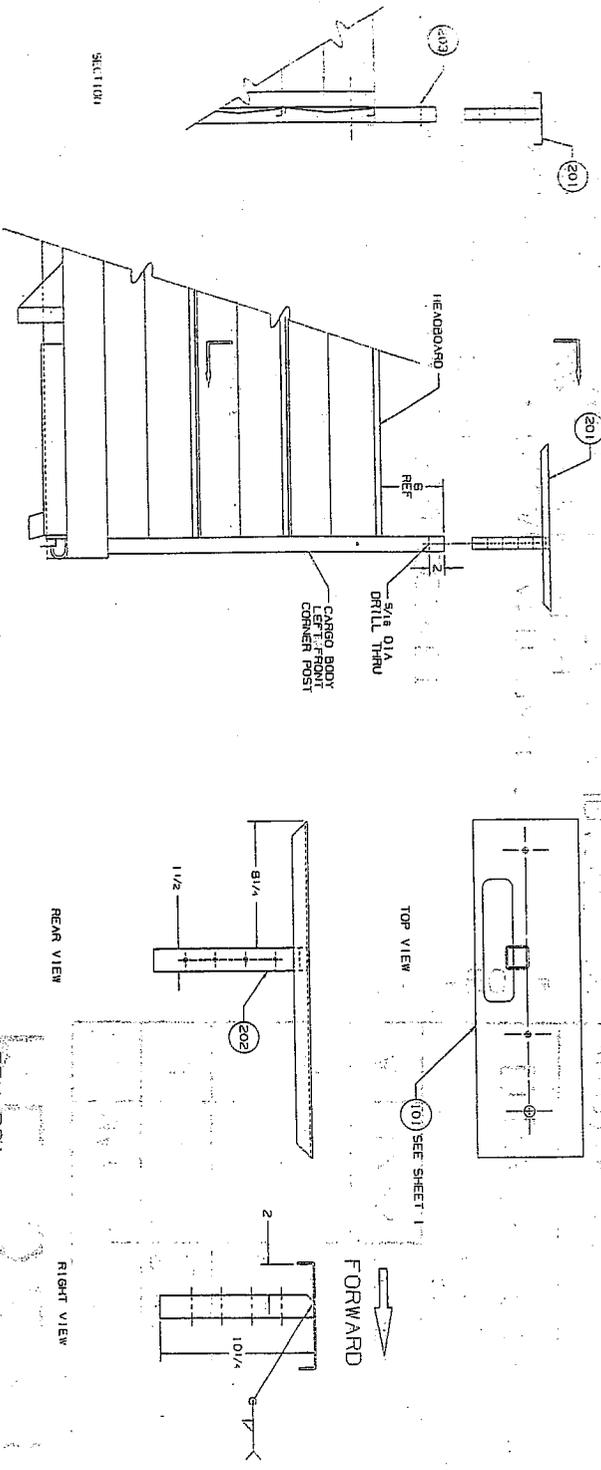


| ITEM | DESCRIPTION | QTY | UNIT |
|------|--|-----|------|
| 1 | WELDED ASSEMBLY 101 | 1 | EA |
| 2 | REAR CROSSMEMBER | 1 | EA |
| 3 | REAR CROSSMEMBER BRACE | 1 | EA |
| 4 | REAR LIGHT BRACKET | 1 | EA |
| 5 | TRUCK FRAME MEMBER | 1 | EA |
| 6 | TRUCK FRAME MEMBER BRACE | 1 | EA |
| 7 | TRUCK FRAME MEMBER BRACE BRACE | 1 | EA |
| 8 | TRUCK FRAME MEMBER BRACE BRACE BRACE | 1 | EA |
| 9 | TRUCK FRAME MEMBER BRACE BRACE BRACE BRACE | 1 | EA |
| 10 | TRUCK FRAME MEMBER BRACE BRACE BRACE BRACE BRACE | 1 | EA |

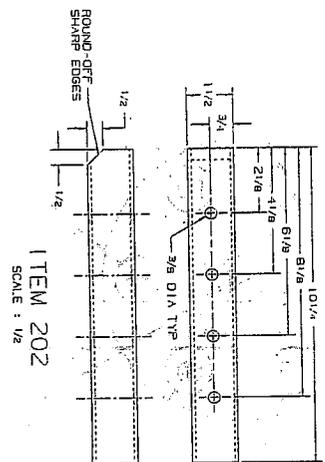
PE 32-12-5432

STATE OF CALIFORNIA
 DEPARTMENT OF INDUSTRIAL RELATIONS
 DIVISION OF EQUIPMENT
 TYPICAL REAR CROSSMEMBER

| BILL OF MATERIALS | |
|-------------------|---|
| ITEM | DESCRIPTION |
| 201 | W.L.D. ASSEMBLY CONSISTS OF 101 AND 202 |
| 202 | 1 1/2" x 1 1/2" x 120 x 10 1/4 LB STL. SQ. TUBES |
| 203 | 1 1/2" SQ. LMC x 2 1/2" LB GRD 5 END 1 W. IN LK. IN 1 |



ROTATOR MOUNT DETAIL
SCALE: 1/8"

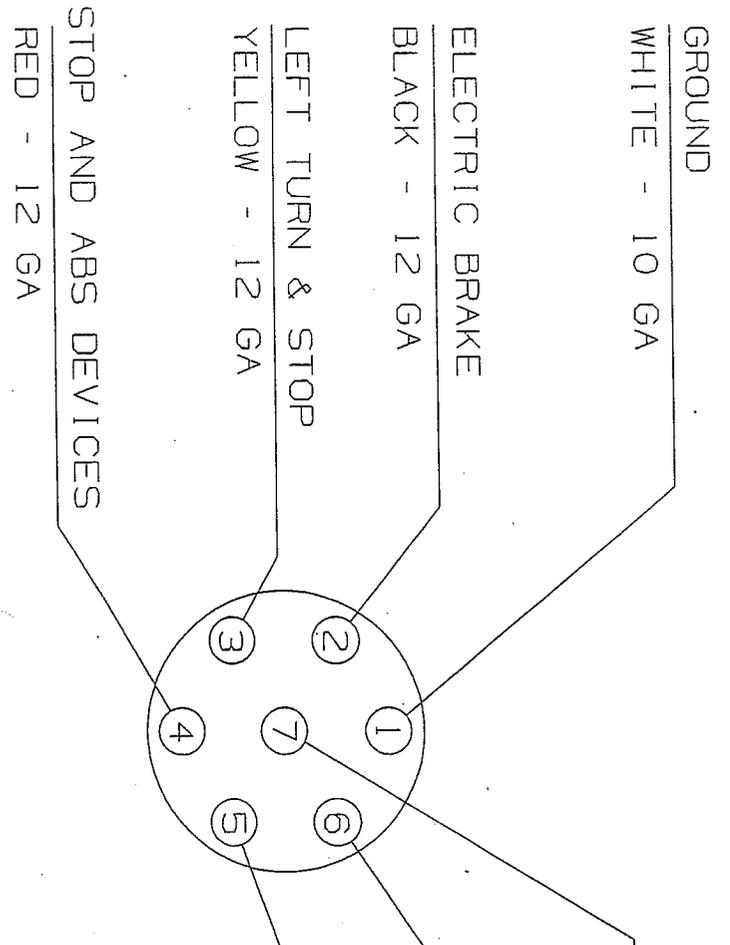


ITEM 202
SCALE: 1/2"

- NOTES:
1. ALL JOINTS TO BE WELDED CONTINUOUS UNLESS OTHERWISE SPECIFIED. SIZE OF ALL WELDS TO BE AS SHOWN IN THE DRAWING. ALL WELDS TO BE MADE BY A WELDER WHO IS QUALIFIED IN THE WELDING OF THE ABOVE MATERIALS.
 2. ALL WELDS ELECTRICAL AND PAINTING WILL BE DONE BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE QUALITY OF THE WELDS AND PAINTING TO VIEW EQUIPMENT QUALITY STANDARDS.

PE 32-12-5432

| | | | | |
|--|---------------|-------------------------------|-------------|--------|
| REV | 07/06 | UPROPER ITEM 101, ANNO DAWREN | DESCRIPTION | NOV 11 |
| REV | | | | |
| STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION DIVISION OF EQUIPMENT | | | | |
| AUSTRIAN MOUNT FOR DOUBLE ROTATOR ON CARGO TRACKS | | | | |
| SCALE AS NOTED | DATE 08/18/03 | BY 0301-02 | | |
| FROM JAHME | DATE 08/18/03 | BY 0301-02 | | |
| REVISED BY | DATE | BY | | |



- NOTE:
1. USE 7 WIRE RUBBER COVERED CABLE
1-10 GA & 6-12 GA
 2. COMBINATION STOP, TAIL, &
TURN LIGHTS.
 3. COLE-HERSEE# 12310 SOCKET
WITH 81356 BOOT.
 4. ALL WELDS, ELECTRICAL AND PAINT
WILL BE IN COMPLIANCE WITH
CALTRANS EQUIPMENT QUALITY STANDARDS.
GO TO www.dot.ca.gov/hq/eqsc TO
VIEW EQUIPMENT QUALITY STANDARDS.

CT STK # 034-1265

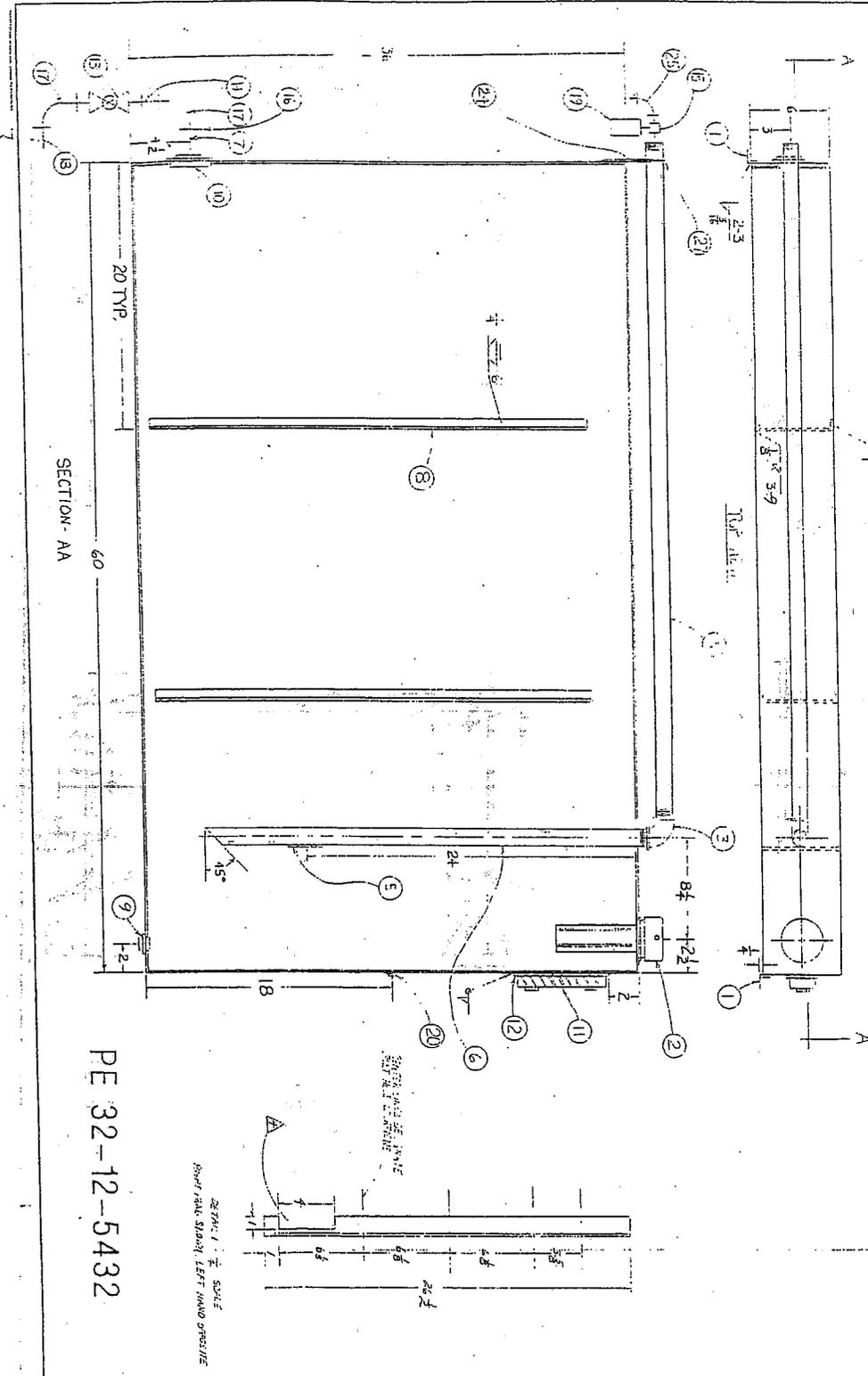
PE 32-12-5432

| | | | |
|---|--------|---|----------|
| E | MAY 04 | ADDED ABS NOTES TO PIN 4 & 7 | J. Payne |
| D | 3-02 | REMOVED 11-761 FROM NOTE 3 | DOWNIN |
| C | 6-99 | PIN 7 WAS ELECTRIC BRAKE PIN 2 WAS BACK UP LIGHT | G.T.H. |
| B | 5/96 | CHNGD BLUE & WHITE | FLOWER |
| A | 1/96 | REDRAWN ON CAD | FLOWER |

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF EQUIPMENT

WIRING SCHEMATIC FOR TRAILER SOCKET

| | | | | |
|---------|------|----------|---------|---------------------|
| SCALE | NONE | DATE | 3-12-84 | U1-A010-01 |
| DRAWN | GTH | DESIGNED | STAFF | |
| CHECKED | | APPROVED | | SHEET 1 OF 2 SHEETS |



SECTION - AA
60
PE 32-12-5432

DETAIL 1 - 1/2" SCALE
SHOW TANK STAND, LEFT HAND DRIVE

MATERIALS LIST

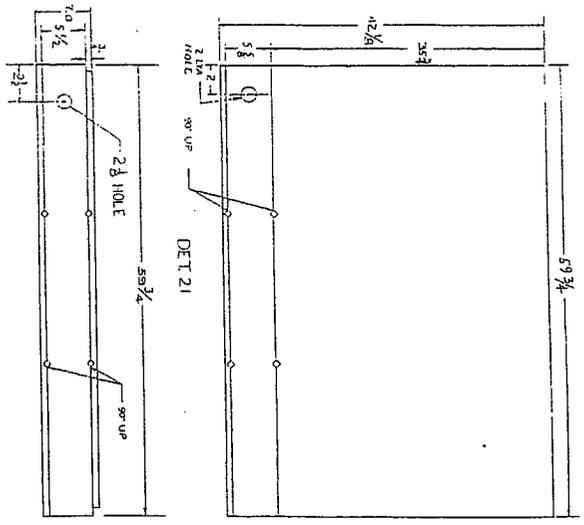
| ITEM NO. | DESCRIPTION |
|----------|---------------------------|
| 1 | 2 1/2" x 2 1/2" ANGLE STL |
| 2 | FLOW METER BREATHER |
| 3 | 1 1/2" NPT ELBOW |
| 4 | 1 1/2" x 3" NIPPLE |
| 5 | 1 1/2" x 3" NIPPLE |
| 6 | 1 1/2" x 3" NIPPLE |
| 7 | 1 1/2" x 3" NIPPLE |
| 8 | 1 1/2" x 3" NIPPLE |
| 9 | 1 1/2" x 3" NIPPLE |
| 10 | 1 1/2" x 3" NIPPLE |
| 11 | LENZ VISUAL LEVEL GAUGE |
| 12 | 1 1/2" x 3" NIPPLE |
| 13 | 1 1/2" x 3" NIPPLE |
| 14 | 1 1/2" x 3" NIPPLE |
| 15 | 1 1/2" x 3" NIPPLE |
| 16 | 1 1/2" x 3" NIPPLE |
| 17 | 1 1/2" x 3" NIPPLE |
| 18 | 1 1/2" x 3" NIPPLE |
| 19 | 1 1/2" x 3" NIPPLE |
| 20 | 1 1/2" x 3" NIPPLE |
| 21 | 1 1/2" x 3" NIPPLE |
| 22 | 1 1/2" x 3" NIPPLE |
| 23 | 1 1/2" x 3" NIPPLE |
| 24 | 1 1/2" x 3" NIPPLE |
| 25 | 1 1/2" x 3" NIPPLE |
| 26 | 1 1/2" x 3" NIPPLE |
| 27 | 1 1/2" x 3" NIPPLE |

GENERAL NOTES

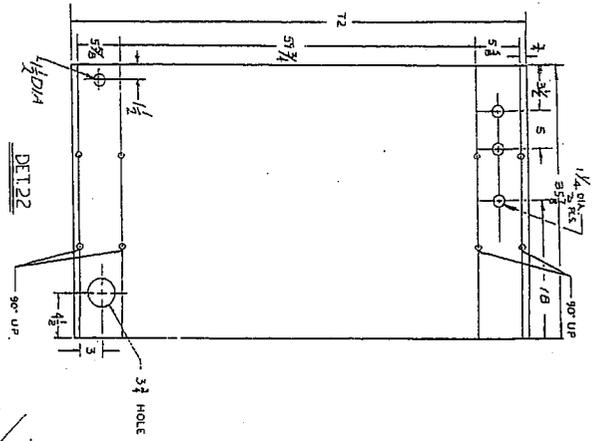
1. REFER TO DRAWING FOR MATERIALS LIST.
2. REFER TO DRAWING FOR MATERIALS LIST.
3. REFER TO DRAWING FOR MATERIALS LIST.
4. REFER TO DRAWING FOR MATERIALS LIST.
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17. REFER TO DRAWING FOR MATERIALS LIST.
18. REFER TO DRAWING FOR MATERIALS LIST.
19. REFER TO DRAWING FOR MATERIALS LIST.
20. REFER TO DRAWING FOR MATERIALS LIST.
21. REFER TO DRAWING FOR MATERIALS LIST.
22. REFER TO DRAWING FOR MATERIALS LIST.
23. REFER TO DRAWING FOR MATERIALS LIST.
24. REFER TO DRAWING FOR MATERIALS LIST.
25. REFER TO DRAWING FOR MATERIALS LIST.
26. REFER TO DRAWING FOR MATERIALS LIST.
27. REFER TO DRAWING FOR MATERIALS LIST.

| ITEM NO. | DESCRIPTION | QUANTITY | UNIT |
|----------|---------------------------|----------|------|
| 1 | 2 1/2" x 2 1/2" ANGLE STL | 1 | PC |
| 2 | FLOW METER BREATHER | 1 | PC |
| 3 | 1 1/2" NPT ELBOW | 1 | PC |
| 4 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 5 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 6 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 7 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 8 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 9 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 10 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 11 | LENZ VISUAL LEVEL GAUGE | 1 | PC |
| 12 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 13 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 14 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 15 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 16 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 17 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 18 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 19 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 20 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 21 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 22 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 23 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 24 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 25 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 26 | 1 1/2" x 3" NIPPLE | 1 | PC |
| 27 | 1 1/2" x 3" NIPPLE | 1 | PC |

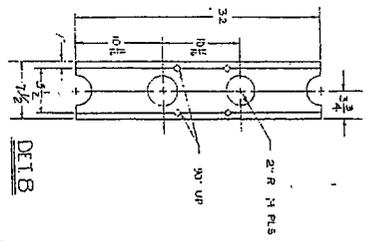
40 GALL HYD TANK
TOOL BOX
Q1-D3-1



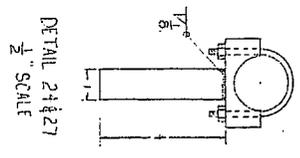
DETAIL 21



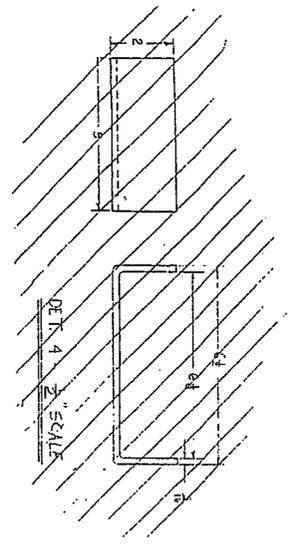
DETAIL 22



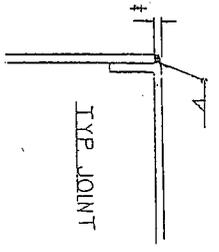
DETAIL B



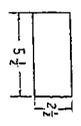
DETAIL 24
1/2" SCALE



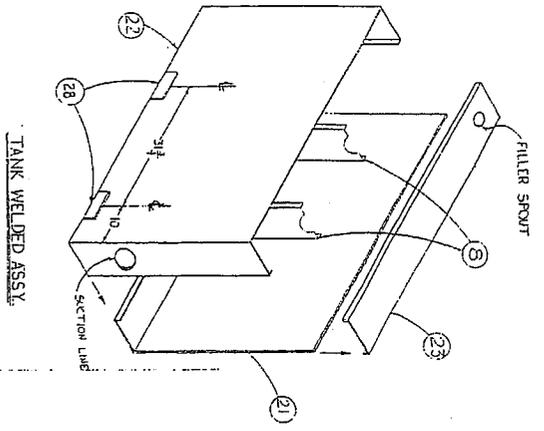
DETAIL 4
1/2" SCALE



TYP. JOINT



DETAIL 5 - 1/4" SCALE



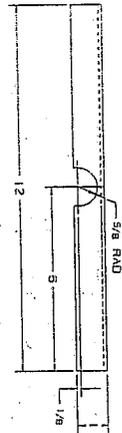
TANK WELDED ASSY.

| | | | |
|--|-------------|-------------------------------|------|
| NO. | DATE | DESCRIPTION | BY |
| H | 7-10-64 | DELETE DET 1 CHANGE TO DET 28 | |
| THIS IS THE REVISED DRAWING. THE ORIGINAL DRAWING IS TO BE KEPT FOR RECORD AND IS TO BE USED FOR THE PURPOSE OF THE ORIGINAL DRAWING ONLY. | | | |
| DEPARTMENT OF THE ARMY OFFICE OF EQUIPMENT 60 GAL. HYD. TANK TOOL BOX MOUNTED | | | |
| DATE | BY | NO. | REV. |
| 7-10-64 | [Signature] | 61-13-81 | 1 |
| DRAWN BY: [Signature] CHECKED BY: [Signature] | | Q1-D8-2 2 | |

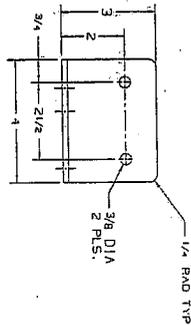
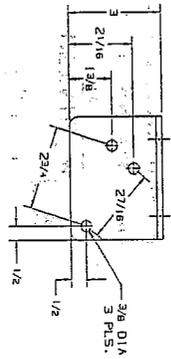
PE 32-12-5432

BILL OF MATERIALS

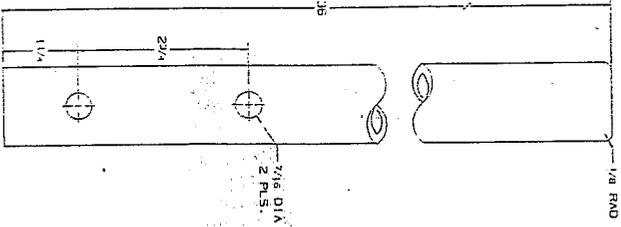
| ITEM | QTY | DESCRIPTION |
|------|-----|---|
| 101 | 1 | ASSEMBLY C/O ITEMS 102-106 |
| 102 | 2 | 3 x 3 x 3/16 x 4 LB. STD. STL. ANGLE |
| 103 | 1 | 1 NON-STCD 80 x 38 LG. STL PIPE UNCOATED |
| 104 | 2 | 3/8-16 UNC x 2 1/2 LG. BOL. 1 W/ LOCKWASHER |
| 105 | 1 | 1 x 1 x 1/8 x 12 LB. STD. STL. ANGLE |
| 106 | 1 | 3/8 x 23/8 x LOCKWALL PIN STL (400-1038) |



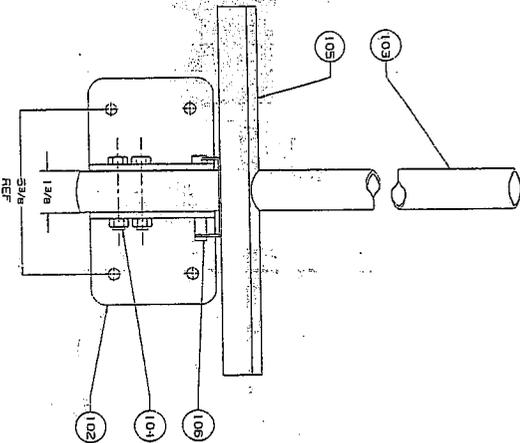
ITEM 105



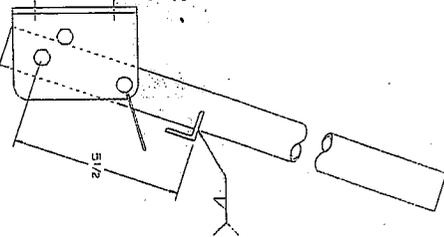
ITEM 102
LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE



ITEM 103
FULL SCALE



ITEM 101



- NOTES:
- ALL JOINTS TO BE WELDED CONTINUOUS. RAISE ALL WELDS TO SPECIFIC SIZE OR ALL WELDS TO BE AT LEAST THE THICKNESS OF THE THINNER OF THE ADJACENT DETAILS.
 - WELD JOINT ASSEMBLY SUCH THAT BASE OF CURVES CLEANS TOP OF BUMPER.
 - ALL WELDS, ELECTRICAL, AND PAINT WILL BE IN CONTACT WITH CALTRANS EQUIPMENT QUALITY STANDARD EQUIPMENT QUALITY STANDARDS TO VIEW.

PE 32-12-5432

CT STK. #051-1748

| REV | DATE | DESCRIPTION | BY |
|-----|-------|---|----------|
| L | 02/04 | DRAWN ITEM 103 TO FULL SCALE | DOMINIC |
| K | 01/02 | ADDED NOTE 3 | JRT |
| J | 05/01 | ITEM #103 CHG'D TO UNCOATED | JDR |
| I | 01/00 | CHG'D 1 1/4 TO 1 3/8 ITEM 101 | JDR |
| H | 03/82 | #103 WAS SCH. 40 | FEELER |
| G | 10/91 | ITEM 103 WAS 3/8 FROM 3/4. GUNDED | ROBERTS |
| F | 07/91 | POSITION OF ITEM 102 WAS 23/8" | FEELER |
| E | 5/91 | REPOSITIONED ITEM 102 & REMOVED "HIT" FROM WELD NOTE 1. | HINDERS |
| D | 9/90 | ADDED TO CAD/CAM SYSTEM | E. D. E. |

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
EQUIPMENT DIVISION
TWO POSITION CONE NUMBER

SCALE: 1/8" = 1" (11/20)
DATE: 11/78
DRAWN: EDR/ISS: EDR/CHK: EDR/APP: EDR/DATE: 11/78
CHECKED: EDR/CHK: EDR/DATE: 11/78

