

EXHIBIT D  
SCOPE OF WORK

Definitions

Owner –  
General Contractor –  
Sub Contractor - Bidder

The General Scope of work consists of:

Provide labor, material, equipment, and supervision required to execute the required equipment relocation work for this project, in accordance with the contract documents as identified in Exhibit "A" including but not limited to, the following:

1. Relocate equipment designated in RFP from and to designated sites.
2. Relocate equipment designated in RFP within the THE OWNER Engineering Center in Pontiac.
- 3. Relocate (4) mist collectors from Wixom facility**
4. Provide control of all contents in Sub Contractor designated containers after packing by Owner forces and released by the Owner until turned over to the Owner at the new site.
- 5. Provide, direct and coordinate all Mechanical and Electrical forces to disconnect required equipment at main disconnects, and reconnect equipment per designated termination points on drawings.**
- 6. Recondition equipment as described in RFP documents**
- 7. Vendor Support for relocated equipment**
8. Remove all abandoned utility feeds to removed equipment. (i.e. conduits, pipes).
9. Remove or ground flush all mechanical anchors left from removed equipment.
10. Cover or seal all ductwork and pipe openings resulting from removed equipment.
11. Sub Contractor will participate in General Contractor commissioning plan and validate Electrical and Mechanical load connections prior to initial start up.
12. Per the RFP this project is a NMA designated project and all work performed on must be in accordance.
13. Sub Contractor will follow all Owner and General Contractor Safety Policies, Procedures, and Programs.
14. Include insurance for all equipment during move.

The scope of the Sub Contractor's Work includes all items required for the complete and proper execution and completion of the work set forth above, including without limitation, all items incidental to or reasonably inferable from such work, whether or not expressly shown on the drawings, equipment list, or expressly set forth in the specifications.

## **Exclusions:**

The work specifically excludes:

1. Packing and unpacking of all miscellaneous tools, gages, instruments.
2. Refurbishing any Rooms of Structural, Architectural, Mechanical or Electrical defects as a result of the removal of equipment. (i.e. painting, Concrete, Epoxy, Ceiling,)
3. Refurbishment and repairs of area's effected by moves.
3. Lockout Plaquarding.
4. Eye Wash Stations
5. New Hydraulic Pumps
6. Overhead Hoists
7. Pre-fab Particulate Weigh Room
8. Shielded Enclosures for SEM

## **DETAILED EQUIPMENT REMOVAL AND RELOCATION SCOPE OF WORK**

### **A. General Requirements:**

Sub Contractor shall be responsible for the complete removal and relocation of the equipment identified on the drawings. Operations at all Owner facilities must remain running at all times during the execution of equipment removal and relocation. Any activity that will affect Owner operations must be discussed with Owner at least two (2) weeks in advance.

1. Provide containers suitable for packing and shipping at the various sites for packing the contents of storage cabinets, desks, file cabinets, desk top computers, etc. that are scheduled to be relocated. Provide packing materials for sensitive or breakable equipment. Owner will pack and unpack these containers. Coordinate the size, number and schedule of containers with the Owner at each site. Provide the loading, transport and unloading of these containers to the areas at the Pontiac site designated by the Owner & General Contractor.
2. Decommission identified equipment, furnishings and accessories at the designated sites shown in the documents.
3. Dismantle, package and transport the identified equipment, furnishings and accessories, including those listed as in storage, to the Powertrain Pontiac site.
4. Reassemble and install all identified equipment, furnishings and accessories in the locations shown in the documents.
5. Install and complete utility hook-ups for identified equipment, furnishings and accessories.

6. Test and re-commission all identified equipment, furnishings and accessories to ensure that all are functional individually and properly interface with components, accessories and building and site systems. Sub Sub Contractor shall be responsible for ensuring that all equipment maintains the existing quality of functionality after relocation and installation.
7. Equipment removal and relocation is not a separate contract. Other conditions of the overall package apply to this work.
8. Systems furniture workstations, file cabinets and other office furniture identified on the drawings will be dismantled, moved and re-assembled by the Sub Contractor. Sub Contractor is responsible for providing and installing new electrical, data and voice connections to these furnishings in their new locations.

## **B. Equipment Removal**

1. Equipment removal operations that will interfere with the Owner's operations or use of his facilities, including the shutting down of mechanical and electrical services shall be scheduled with the Owner and General Contractor to cause a minimum amount of interruption.
2. Perform all equipment removal operations in accordance with the project sequencing, scheduling and phasing requirements as defined in the documents.
3. Prior to actual removal operations, Sub Contractor shall inspect each piece to be relocated and verify utility disconnection requirements, move paths and alterations to existing facilities required to execute the removal and relocation.
4. Disconnect, cap or terminate and abandon existing utilities and services exposed as a result of removal operations that are not required to remain in use, observing all governing codes and site specific safety requirements.
5. Disconnect mechanical and electrical work to be removed back to the nearest convenient connection (pipe main, bus duct, panel, etc.) to existing services which are to remain.
6. Tag all control wiring and connections to control equipment as it is disconnected to ensure proper re-installation.
7. Remove all anchoring devices from equipment as required. Provide new anchors rails or other assemblies if removal and reuse is not practical.

8. Sub Contractor shall replace all gaskets, anchors, fittings or other accessories that are damaged during decommissioning or disassembly that will affect equipment operation and functionality.
9. Sub Contractor shall move all chairs that are located at desks, workbenches, workstations or other equipment that is being relocated. Sub Contractor shall separately tag these chairs as necessary to ensure that they are moved with the associated equipment.

**C. Equipment Relocation**

1. Disassemble equipment as required to transport to new location. Label all components as necessary for reassembly. Follow any special packing or move instructions indicated or as instructed by the Owner.
2. Stage equipment for transport at each site using paths and locations approved by the Owner and/or General Contractor.
3. Remove any doors, walls or other building elements or systems required to move the equipment to the staging area. After the equipment has been moved, re-install all removed building elements and systems to their original condition and function, unless otherwise directed by the Owner or General Contractor.
4. Provide any protection required to walls, doors, floor slabs or other building elements during the movement of the equipment to prevent damage to the existing building and its systems. Repair any damage caused by move operations to existing building elements and systems.
5. All equipment with the new location indicated as "ARGB" or "TBD" shall be decommissioned and moved to a storage site on the Powertrain Pontiac campus to be determined by GM.

**D. Equipment Installation**

1. Install all equipment in the grid location or dimensions indicated on the drawings. Level all equipment, furnishings and accessories, using shims or other leveling devices and accessories as required. Anchor the equipment as it was anchored in its previous location. Use only chemical type anchors in existing concrete. Expansion type anchors are not acceptable.
2. Provide any protection required to walls, doors, floor slabs or other building elements during the movement of the equipment to prevent damage to the existing building and its systems. Repair any damage caused by move operations to existing building elements and systems.
3. Connect all mechanical and electrical utilities as indicated on the drawings. Test all connections, couplings, circuits etc to ensure that equipment, furnishings and accessories are ready to be inspected and turned over to the General Contractor. Repair or correct any connections as required.

4. Provide all miscellaneous brackets, hangers, supports, seals, gaskets, covers or other accessories to install the equipment and utility connections to the equipment to operate properly and meet local codes and THE OWNER safety requirements. Equipment and components supported from trusses shall be secured to trusses only at panel points. All header steel connections to building trusses shall be four-bolt arrangement.
5. Report any damage to equipment, furnishings or accessories occurring during moving, transport or re-installation to the General Contractor.
6. Coordinate with the Owner and General Contractor, the shutdown and drainage of any piping systems and shutdown of electrical systems required for disconnection or installation.
7. Provide assistance to troubleshoot and commission the start-up of relocated equipment. THE OWNER will perform the calibration of their equipment after installation.

**D. New Equipment**

1. N/A

**F. Equipment Refurbishment and OEM Support**

1. For the equipment identified in the attached list, execute the scope of work identified for each piece or group of pieces, using the OEM listed. Bid price to include all materials, labor, travel time and expenses required to complete the listed scope of work.

**Refurbished Equipment and OEM Support**

Equipment:	T-Slot Bedplates
Lab Area:	Wixom Component Lab
OEM:	Baycast Technologies PO Box 676 Bay City, MI 48707-0676
OEM Contact Name:	Scott Holman
OEM Phone Number:	989-892-9500 Ext. 280
THE OWNER Contact Name:	Alan Churchill
THE OWNER Phone Number:	248-343-8146

Scope of Work to be Performed:

- **Remove (4) Floor Bed Plates** currently located in the main aisle way of the Wixom Component Lab. These Bed Plates were removed from the back test cells (grouted in floor)

- **Refurbish Floor Bed Plates.** This is to include removal of the residual grout, resurfacing the top surface area, replacement of leveling system and painting.
- Provide isolators for Bed Plates.
- **Store Bed Plates** until Pontiac Facility construction is complete for area of installation.
- Ship to the Pontiac Facility.
- Work with General Sub Contractor to assure Bed Plates are properly unloaded from truck and transferred to Laboratory floor.
- Install and Level Bed Plates as appropriate.
- **Remove (8) Bed Plates** and (2) T-slot Tables currently located in the Wixom Test Lab. These Plates are currently in-service and will be available for refurbish in (2) groups. These Tables are not, nor have they been, grouted into the floor.
- Refurbish Bed Plates including resurfacing the top surface area, replacement of leveling system and painting.
- Provide isolators for Bed Plates
- Ship to the Pontiac Facility
- Work with General Sub Contractor to assure Bed Plates are properly unloaded from truck and transferred to Laboratory floor.
- Install and Level Bed Plates as appropriate.

Equipment:	Thermal Chambers (See list below)
Lab Area:	Wixom Sealing Lab
OEM:	Thermotron 291 Kollen Park Drive Holland, MI 49423
OEM Contact Name:	Ron Wiley
OEM Phone Number:	616-392-1491
THE OWNER Contact Name:	Alan Churchill
THE OWNER Phone Number:	248-343-8146

Scope of Work to be Performed:

- Prepare Machines for shipment. This preparation is to include the following:
  - Perform pre-shipment calibration and document.
  - Disconnect all components and pack for shipping.
  - Pump down refrigerant as applicable.
  - Disconnect refrigerant system between chamber and machine section.
  - ⊖ Disconnect main power.
  - Advise / assist on any packaging, wrapping, transferring to skid as required for shipping.
- Sub Contractor to make sure that Machines are properly loaded onto truck for transportation to Pontiac site.
- Sub Contractor to assure Machines are properly unloaded from truck and transferred to Laboratory floor, to minimize any disruption to Machine function.
- Set up Machines in new workspace. This set up is to include the following:
  - Advise / assist on unpacking of equipment
  - Work with electrician to re-connect main power.
  - Re-connect all components to Machines.
  - Interconnect refrigerant system between chamber and machine section.
  - Leak test, evacuate refrigerant system.
  - Release refrigerant charge
  - Re-start machines and check operation.

- Calibrate and certify that machines are running at optimum performance.
- Demonstrate performance through comparison of pre-shipping documentation
- Work with technician to set-up machines and run test parameters, to ensure machines are working correctly.
- Sub Contractor with the assistance of Owner to dispose of and provide all working fluids.

Equipment: Wyko Optical Profiler (PSC84.01)  
 Lab Area: Tribology Lab Pontiac GMNA  
 OEM: Veeco  
 2650 East Elvira Rd.  
 Tucson, AZ 85706-7123  
 OEM Contact Name: John G. Ryan  
 OEM Phone Number: 520-741-1044 X1080  
 THE OWNER Contact Name: Ron Thomas  
 THE OWNER Phone Number: 248-668-2346

Scope of Work to be Performed:

- Prepare Machine for shipment. This preparation is to include the following:
  - Lock all moveable parts to ensure safe shipping and handling.
  - Disconnect all components and pack for shipping.
  - Disconnect main power.
  - Advise / assist on any packaging, wrapping, transferring to skid as required for shipping.
- Sub Contractor to make sure that Machine is properly loaded onto truck for transportation to Pontiac site.
- Sub Contractor to assure Machine is properly unloaded from truck and transferred to Laboratory floor, to minimize any disruption to Machine function.
- Set up Machine in new workspace. This set up is to include the following:
  - Advise / assist on unpacking of equipment
  - Re-connect main power.
  - Re-connect all components to Machine.
  - Re-start machine and do the calibration, to ensure machine is working correctly.

Equipment: Talysurf Profilometer (PSC84.03)  
 Lab Area: Tribology Lab Pontiac GMNA  
 OEM: The Marshal Group  
 PO Box 1074  
 Flint, MI 28430  
 OEM Contact Name: Paul Marshall  
 OEM Phone Number: 248-789-3346  
 THE OWNER Contact Name: Ron Thomas  
 THE OWNER Phone Number: 248-668-2346

Scope of Work to be Performed:

- Prepare Machine for shipment. This preparation is to include the following:
  - Lock all moveable parts to ensure safe shipping and handling.
  - Disconnect all components and pack for shipping.
  - Disconnect main power.

- Advise / assist on any packaging, wrapping, transferring to skid as required for shipping.
- Sub Contractor to make sure that Machine is properly loaded onto truck for transportation to Pontiac site.
- Sub Contractor to assure Machine is properly unloaded from truck and transferred to Laboratory floor, to minimize any disruption to Machine function.
- Set up Machine in new workspace. This set up is to include the following:
  - Advise / assist on unpacking of equipment
  - Re-connect main power.
  - Re-connect all components to Machine.
  - Re-start machine and do the calibration, to ensure machine is working correctly.

Equipment: SEM-JSM 5900 (WXC77.01, WXC77.03, WXC77.04)  
 Lab Area: Wixom Met Lab  
 OEM: JEOL  
 11 Dearborn Road  
 PO Box 6043  
 Peabody, MA 01961-6043

OEM Contact Name: Joe Zachemski  
 OEM Phone Number: 847-823-0306  
 THE OWNER Contact Name: Ron Thomas  
 THE OWNER Phone Number: 248-668-2346

Scope of Work to be Performed:

- Prepare Machine for shipment. This preparation is to include the following:
  - Pack to ensure safe shipping and handling.
  - Disconnect all components and pack for shipping.
  - Remove all fluids.
  - Disconnect main power.
  - Advise / assist on any packaging, wrapping, transferring to skid as required for shipping.
- Sub Contractor to make sure that Machine is properly loaded onto truck for transportation to Pontiac site.
- Sub Contractor to assure Machine is properly unloaded from truck and transferred to Laboratory floor, to minimize any disruption to Machine function.
- Set up Machine in new workspace. This set up is to include the following:
  - Advise / assist on unpacking of equipment
  - Re-connect main power.
  - Re-connect all components to Machine.
  - Fill all fluids.
  - Re-start machine and calibrate as required.
  - Work with engineer & OEM to set-up machine and to ensure machine is working correctly.
- Sub Contractor with the assistance of Owner to dispose of and provide all working fluids.

Equipment: Hardness Testers (WXC79.22-01, WXC79.22-02, WXC79.22-03, WXC79.22-04, WXC80.01-01, WXC80.01-02)  
 Lab Area: Wixom Met Lab  
 OEM: Sun-Tec  
 46590 Ryan Court

OEM Contact Name: Novi, MI 48377  
Nancy Antonik  
OEM Phone Number: 248-669-3100  
THE OWNER Contact Name: Ron Thomas  
THE OWNER Phone Number: 248-668-2346

Scope of Work to be Performed:

- Prepare Machine for shipment. This preparation is to include the following:
  - Pack to ensure safe shipping and handling.
  - Disconnect all components and pack for shipping.
  - Advise / assist on any packaging, wrapping, transferring to skid as required for shipping.
- Sub Contractor to make sure that Machine is properly loaded onto truck for transportation to Pontiac site.
- Sub Contractor to assure Machine is properly unloaded from truck and transferred to Laboratory floor, to minimize any disruption to Machine function.
- Set up Machine in new workspace. This set up is to include the following:
  - Advise / assist on unpacking of equipment
  - Re-start machine and calibrate.
  - Work with engineer & OEM to set-up machine and to ensure machine is working correctly.
- Sub Contractor with the assistance of Owner to dispose of and provide all working fluids.

Equipment: EDS (WXC77.02)  
Lab Area: Wixom Met Lab  
OEM: Thermo Noran  
2551 West Beltline Hwy  
Middleton, WI 53562  
OEM Contact Name: Gary Hawkinson  
OEM Phone Number: 608-835-0816  
THE OWNER Contact Name: Ron Thomas  
THE OWNER Phone Number: 248-668-2346

Scope of Work to be Performed:

- Prepare Machine for shipment. This preparation is to include the following:
  - Pack to ensure safe shipping and handling.
  - Disconnect all components and pack for shipping.
  - Remove all fluids.
  - Disconnect main power.
  - Advise / assist on any packaging, wrapping, transferring to skid as required for shipping.
- Sub Contractor to make sure that Machine is properly loaded onto truck for transportation to Pontiac site.
- Sub Contractor to assure Machine is properly unloaded from truck and transferred to Laboratory floor, to minimize any disruption to Machine function.
- Set up Machine in new workspace. This set up is to include the following:
  - Advise / assist on unpacking of equipment

- Re-connect main power.
- Re-connect all components to Machine.
- Re-start machine and calibrate as required.
- Work with engineer & OEM to set-up machine and to ensure machine is working correctly.
- Sub Contractor with the assistance of Owner to dispose of and provide all working fluids.

**Exhibit A**  
**Reference documents:**

ftp Internet web site: [ftp://EIRead:94\\*!78@Contractorhome.com/WABids](ftp://EIRead:94*!78@Contractorhome.com/WABids)

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| <ul style="list-style-type: none"> <li>○ THE OWNER Pontiac Powertrain Phase 2<br/>Dated 10/26/04</li> <li>○ RFQ &amp; Front End Documents</li> <li>○ Bid Issues <ul style="list-style-type: none"> <li>▪ Dwg. and Spec. List.pdf</li> <li>▪ Equipment Criteria – Components.pdf</li> <li>▪ Equipment Criteria – PPO-GC2.pdf</li> <li>▪ Equipment Criteria – Non-Fueled Test Cells.pdf</li> <li>▪ Equipment Criteria – System.pdf</li> <li>▪ Specifications (folder)</li> <li>▪ Instruction to Bidders (folder)</li> <li>▪ Drawings (folder)</li> <li>▪ Commissioning Plan</li> </ul> </li> <li>○ Addendum 1(11-04-05)</li> </ul> | <p>E-File</p> <p>E-File Dated 10/24/05</p> <p>E-File Dated 10/26/05</p> <p>E-File Dated 10/26/05</p> <p>E-File Dated 11/02/05</p> <p>E-File Dated 11/02/05</p> <p>E-File Dated 11/02/05</p> <p>E-File Dated 11/02/05</p> <p>E-File Dated 11/02/05</p> <p>E-File Dated 10/24/05</p> <p>E-File Dated 10/24/05</p> <p>E-File Dated 10/20/05</p> <p>E-File Dated 10/24/05</p> <p>E-File Dated 11/04/05</p> |
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- Addendum 2 (11-07-05)
- Walk Thru Notice
- THE OWNER General Conditions  
Dated 10/24/05
- Addendum 3 (11-18-05)
- Addendum 4 (11/23/05)

E-File Dated 11/08/05  
E-File Dated 11/08/05  
E-File

E-File Dated 11/18/05  
E-File Dated 11/29/05