SPECIAL SPECIFICATION

7658

Movable Barrier Transfer Operations and Maintenance for
High Occupancy Vehicle Lanes

1. Description. This item will govern for the Movable Barrier Transfer Operations of the high occupancy vehicle (HOV) lanes in the Dallas Area. This includes, but is not limited to, daily deployment of the movable barrier wall to open and close the HOV lanes, emergency event deployment of the movable barrier wall to open and close the HOV lanes, special event deployment of the movable barrier wall to open and close the HOV lanes, maintenance of all movable barrier transfer machines (BTM) and all movable barrier wall components, and replacement and disposal of old movable barrier sections and associated components. The HOV lane corridors will include the following:

- **IH-30 (ERLT)** from near Good Latimer Expy to near Northwest Drive (Approx. 10.8 miles)

2. Definitions. The following definitions will be referenced throughout this document.

- TxDOT or Department – Texas Department of Transportation
- Engineer – TxDOT Engineer
- DART – Dallas Area Rapid Transit
- HOV – high occupancy vehicle
- Contractor – Contractor to which this specification is awarded
- NCTCOG – North Central Texas Council of Government
- SOP – Standard Operating Procedures
- DalTrans – Dallas Traffic Management Center (TMC)
- CCTV – closed circuit television
- DBE – Disadvantaged Business Enterprise
- Incident – a non-recurring event that either interrupts or overwhelms transportation operations
- BTM – Barrier Transfer Machine
- CBD – Central Business District
- LINDSAY – Lindsay Corporation, operator and maintenance provider prior to this specification
- Preventable Incident – an incident that occurs as a result of negligence by operator

3. General. It is the intent of this specification that the Department is relieved of all duties traditionally performed by the Dallas Area Rapid Transit (DART) in managing the movable barrier wall transfer of the IH-30 (ERLT) HOV lane as noted in this Item.
The HOV lane is set up and taken down by the deployment of movable barriers using the BTMs supplied by the Contractor. It will be the responsibility of the Contractor to ensure that they are completely aware of all the traditional functions as related to the movable-barrier wall transfer operations of the IH-30 (ERLT) HOV lanes.

3.1. **Limits.** During the morning operating period, traffic flows in the westbound direction on the HOV lane (from Northwest Drive towards the CBD) and in the afternoon, traffic flows eastbound on the HOV lane (from CBD towards Northwest Drive). The HOV lane is set up and taken down by the deployment of movable barriers using the BTMs. Intermediate access to and/or egress from the HOV lane is in the vicinity of Northwest Drive, Dolphin Road, and CBD during the morning and afternoon operating periods.

3.2. **Operation Hours.** Hours of operation are 6 a.m. to 10 a.m. in the westbound direction and 3:30 p.m. to 7 p.m. in the eastbound direction between the limits of Northwest Drive and CBD Monday through Friday.

4. **Contractor Employees.** Contractor shall provide enough operational and maintenance personnel as required to operate and maintain the intent of this specification including, but not limited to, flexibility for vacations, sick personnel, etc. The Contractor will supply Maintenance and Operations crews that consist of four (4) operators for each shift (AM & PM), one (1) supervisor, plus one (1) floater. The Contractor shall conduct adequate background check on all employees and provide trained, qualified and uniformed personnel compliant to the following requirements:

4.1. Employees shall be qualified personnel as specified in the operating manual to operate a BTM.

4.2. They shall have a current valid Texas Driver License, Class C for operating the BTM.

4.3. They have the ability to read, write and speak English.

4.4. They must pass TxDOT physical and comprehensive drug screening.

4.5. Supervisor must have Automotive or Diesel/Auto Mechanic's Certificate obtained from an accredited program outside of high school or alternative approved degree/certificate in order to obtain knowledge of verbal and written communication skills, mathematics to perform calculations, and to perform a variety of major repairs to machines.

4.6. All operators must complete an 80 hour intensive training program including at least 40 hours at the BTM manufacturers’ facility and 40 hours of highway safety training.

4.7. These personnel shall be dedicated solely to this project throughout the term of the Contract. TxDOT reserves the right to approve personnel qualifications and/or changes. The Contractor shall notify TxDOT, in writing when feasible, and in advance of all personnel changes. The Contractor shall supply the names, telephone numbers, pager numbers, etc., of contractor personnel to TxDOT.
4.8. They shall be well groomed, clean and in complete uniform at all times while on duty.

4.9. There shall be at least four operators per an eight hour shift with a supervisor available in the event any issues or emergencies arise. Conduct and maintain a training program for operators and maintenance personnel.

5. **Contractor Vehicles and Equipment.** Contractor will provide four (4) fully functional BTMs for set-up and take-down of the movable barrier walls and all other associated vehicles needed to maintain operations and maintenance related to movable barrier wall. The contractor shall not use the BTMs for any other purpose other than TxDOT services unless authorized in writing by the Department. The Contractor will be expected to operate and maintain the BTMs and all other associated vehicles throughout the term of the contract and any extension thereafter, at Contractors expense.

5.1. The contractor is responsible to provide all associated vehicles and equipment, including the BTMs, to maintain operations and maintenance. The Department suggests the following minimum requirements:

- 4 Barrier Transfer Machines (BTM)
- Pickup or Van for transport of the BTM Operation Crew(s)
- Pickup or Sedan for Supervisor(s) vehicles
- 2 Forklifts
- Diesel Fuel Tanker Truck for BTM refueling

5.2. Applicable vehicles are required to display at all times, a valid Texas Department of Public Safety inspection slicker. An inspection sticker in poor condition must be replaced.

5.3. Motor Vehicles will be white and the Contractor will provide Engineer approved decals to affix in order to properly show that they are portrayed as a TxDOT operational vehicle and display the name of their company.

5.4. All BTMs are to be housed at the Department provided facilities and are not for use outside of this contract and its requirements. TxDOT will provide to the Contractor joint use of existing TxDOT garages located on IH-30 HOV Lane during the period of contract or any extension thereafter. Obtain Engineer’s approval prior to storage of any other vehicles, parts, tools, etc. at the TxDOT garages located on IH-30 HOV Lane.

5.5. All maintenance and inspections for motor vehicles and machines will be the sole responsibility of the contractor.

5.6. The Contractor shall be responsible for all insurance and licensing requirements in accordance with the insurance provision of the contract.
5.7. Contractor shall maintain the interior and exterior of each BTM in a clean condition at all times throughout the length of the contract. Further, the storage buildings for the BTM machines and surrounding landscape shall be kept clean and free of debris, oil, etc. Prompt action shall be taken to correct items, at Contractor expense, identified by Department or Contractor personnel.

5.8. Properly equipped Contractor vehicles to be used in the performance of all work shall consist of the proper number of barrier transfer machines and any other vehicles equipped with safety devices and markings including roof mounted vehicle light bar with arrow capability, safety chevrons on tailgate and other equipment as needed. Vehicles shall be marked to identify the Contractor and TxDOT as approved by the Engineer.

5.9. Sponsorships for vehicle/machines are acceptable, as approved by the Department. Vehicle/machine appearance including color, decals and any/all markings to be submitted and approved by the Engineer prior to deployment.

5.10. Contractor shall be responsible for providing all equipment including all BTMs, vehicles, vehicle/machine parts, supplies, tools, uniforms, etc. necessary to perform said duties.

5.11. The Contractor shall use and provide proper fuel grades to ensure proper function of all vehicle emissions equipment, minimize smoke, and comply with all State and Federal Regulations concerning emission control. The type and grade fuel used shall comply with the vehicle manufacturer's recommended guidelines.

5.12. Contractor shall supply all repair parts and lubricants for BTMs. The contractor will supply all labor parts, materials, tools, fuel or otherwise to operate and maintain the BTMs and all barrier wall components. Contractor shall conduct all repairs, including warranty work on the BTMs and barrier wall components. Contractor shall stock spare parts, as suggested by manufacturer.

- **Department Standards.** Unless otherwise approved by the Engineer, work performed and materials used under this contract will conform to the latest version of all applicable Department manuals, standards, specifications, statewide special specifications and special provisions, policies and procedures and their addenda. As well as any local laws, rules, regulations, policies and procedures of their respective departments. These include, but are not limited to, the following, which are available online:

  - Maintenance Management Manual
  - Standard Operating Procedures (SOP) Manual for HOV lane facility
  - Department Traffic Control Standard Sheets
  - Texas Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges; 2004 and applicable Special Provisions and Special Specifications
  - Texas Manual on Uniform Traffic Control Devices for Streets and Highways (TMUTCD)
  - Material Producer List
  - Departmental Material Specifications
  - Maintenance Operations Manual
6. **Coordination.** Ensure that proper coordination exists with other Contractors, cities, counties, state and local law enforcement, utilities, fire departments, medical facilities and other state and federal agencies, etc. This includes, but is not limited to, Contractor ensuring communication systems, procedures and technology meet TxDOT and DalTrans specifications.

7. **Maintenance Work Schedules and Plans.** Contractor shall submit a maintenance work plan for approval by the Engineer no later than 12:00 p.m. on the Friday prior to the scheduled week the work is to be performed. This work plan and schedule shall include all scheduled work in the time period stated and shall be on a form as approved by the Engineer. No maintenance shall be performed during any HOV lane Daily Operations hours, Emergency Deployment Operations hours, Special Event Operations hours or any other time that the HOV lane is operational to traffic, unless directed by the Engineer. Some wall work will be allowed in the event barrier wall is impacted and needs to be realigned during HOV operations. Necessary alignment or maintenance of barrier wall is permitted before or after operating hours as needed with Engineers approval.

8. **Complaints/Service Requests.** Report monthly, on a format approved by the Engineer, information on any complaints or service requests received from the public, city, county, etc., from the previous month. This information will include, as a minimum, the following:
   - The date and time of the complaint;
   - The location of the problem;
   - The nature of the complaint;
   - Name of the complainant;
   - Available contact information of complainant;
   - Date, time and action taken to address the complaint and
   - Any legislative contact will be immediately directed to the Engineer so it can be forwarded to the Dallas District’s Director of Operations for response.

9. **Materials and Storage.** Contractor will furnish all materials necessary to complete the work unless otherwise noted. Contractor will furnish the Engineer with documentation indicating material compliance with Department specifications. Contractor shall store any and all new movable barrier wall sections and associated components on Department right-of-way and property as approved. Contractor shall provide storage and disposal of any and all used and old movable barrier wall sections and associated components and materials off Department right-of-way and property.

10. **License and Experience Requirements.** All Contractor or subcontractor personnel will be appropriately licensed for specialized work and at a minimum:
10.1. Contractor shall have experience with heavy diesel, hydraulic operation and maintenance, be a certified crash attenuator installer, have welding and fabrication skills and electrical skills and knowledge and trouble shooting skills for inductive loop technology.

10.2. Contractor shall have experience with migration readings and barrier wall positioning and is required to maintain barrier wall within the manufacturer parameters and provide required reporting and documentation of findings, as specified by manufacturer.

10.3. Contractor will provide a minimum of four weeks training to certify all related personnel and operators as necessary. Training shall be provided by LINDSAY at the cost to the Contractor. Contractor will also be required to go through the following training courses:

- NCTCOG Freeway Incident Management: First Responder and Managers Course

11. **Subcontractors.** Prior to any Subcontractors performing any work on the project, a request for approval of Subcontractor must be submitted and approved.

12. **Traffic Control Plans.** Perform work in conformance with the Texas Manual on Uniform Traffic Control Devices (TMUTCD) and the Traffic Control Standard Sheets.

13. **Scope of Work.** Perform all work required to operate and maintain the movable barrier transfer operations and corresponding maintenance of movable barrier wall sections and associated components on the IH-30 (ERLT) HOV lane and appurtenances excluding only those items of work listed in Section 13.4, "Items Excluded from the Contract". This includes all maintenance required to ensure the IH-30 HOV lane highway system is kept in its designed and constructed or updated condition. Repair any damage caused by the Contractor at no additional cost to the Department.

13.1. **Daily Deployment Operations** – includes daily open and close procedures on IH-30 (ERLT) HOV lane as required, unless otherwise directed by the Engineer or Department

13.1.1. **Daily Opening of the HOV Lanes.** Contractor shall perform the daily opening of HOV lane movable barrier wall based on the sequence of procedures provided in the HOV lane SOP manual.

13.1.1.1. The HOV lane daily opening procedures includes at a minimum:

- proper placement of barrier wall

13.1.1.2. Daily opening times for the HOV lane shall occur at the following scheduled time, unless otherwise noted by the Engineer:

- IH-30 (ERLT) - Westbound 6:00 a.m. / Eastbound 3:30 p.m.

13.1.2. **Daily Closing of the HOV Lanes.** Contractor shall perform the daily closing of HOV lane movable barrier wall based on the sequence of procedures provided in the HOV lane SOP manual.

13.1.2.1. The HOV lane daily closing procedures includes at a minimum:

- proper stowing away of barrier wall
13.1.2.2. Daily closing times for the HOV lane shall occur at the following scheduled times, unless otherwise noted by the Engineer:

- IH-30 (ERLT) - Westbound 10:00 a.m. / Eastbound 7:00 p.m.

13.2. **Non-routine Deployment Operations** - include Emergency and Special Event Operations on IH-30 (ERLT) HOV lanes as required that are not performed as Daily Deployment Operations of open and close procedures, unless otherwise directed by the Engineer or Department. These non-routine operations are considered a full closure or opening of a major section of the HOV lane. Contractor notification of Non-routine Deployment Operations will be provided by the Engineer. Non-routine Operations will not be paid for directly but will be considered subsidiary to the overall items in this contract.

13.2.1. **Emergency Event Deployment of the HOV Lanes.** Upon notification by the Engineer, Contractor shall perform emergency event opening/closing of the movable barrier wall based on the sequence used for daily opening/closing procedures provided in the HOV lane SOP manual, unless directed otherwise by the Engineer. The Emergency Event Deployment shall be restored to the proper operating period as directed by the Engineer. Emergency Event Deployment shall be included as part of this specification. Contractor should estimate there being approximately six (6) Emergency Events per year.

13.2.1.1. The HOV lane emergency event deployment procedures includes at a minimum:

- proper placement of barrier wall as directed by Engineer
- restoration of barrier wall to proper operating period

13.2.2. **Special Event Deployment of the HOV Lanes.** Upon notification by the Engineer, Contractor shall perform special event opening/closing of the movable barrier wall based on the sequence used for daily opening/closing procedures provided in the HOV lane SOP manual, unless directed otherwise by the Engineer. The Special Event Deployment shall be restored to the proper operating period as directed by the Engineer. Special Event Deployment shall be included as part of this specification. Contractor should estimate there being approximately two (2) Special Events per year.

13.2.2.1. The HOV lane special event deployment procedures includes at a minimum:

- proper placement of barrier wall as directed by Engineer
- restoration of barrier wall to proper operating period

13.3. **Maintenance** – includes all maintenance and associated parts required to operate and maintain the IH-30 (ERLT) HOV lane movable barrier wall sections and associated components.
13.3.1. **Movable Barrier Wall Components.** Barrier wall and associated components include all related barrier wall sections and all associated components, parts and tools needed to maintain and keep the HOV lane operational.

13.3.1.1. While performing any HOV lane SOP sequence for opening/closing procedures, Contractor shall visually inspect all movable barrier wall sections and associated components for proper operation and notify the Engineer immediately upon the finding of any malfunction or damaged component.

13.3.1.2. Contractor shall perform any repair as needed outside of any HOV lane operating hours in a timely manner, unless directed otherwise by Engineer, in order to maintain and keep the HOV lane operational.

13.3.1.3. Contractor shall perform preventive maintenance to barrier wall sections and wall components to Manufacturers specifications.

13.4. **Items Excluded from the Contract.** Maintenance of any of the following HOV lane items: small and large signing, illumination, electrical to automated equipment, crash attenuators (except those related to movable barrier wall sections and associated components), fixed pylons, thermoplastic pavement markings and reflective pavement markers (except those related to the movable barrier wall sections and associated components), Intelligent Transportation Systems including changeable Dynamic Message Signs, static signs with flasher operation and lane control signals, unless otherwise noted in the plans, are excluded from the contract. Also excluded from this contract are traffic control activities such as movement of delineator panels and devices, opening and closing gates or providing escort for the Barrier Transfer Machine when moving on the roadway and not transferring barrier.

14. **Performance Standards.** Listed below are performance standards, which will be utilized. The safety of the traveling public is of the utmost importance and will take priority over any other work. Work will be scheduled as soon as possible. Time based performance standards will be defined by the clock time at DALTRANS unless directed otherwise by the Engineer. Performance standards and pay levels will be based on the HOV lane corridor as being active or in "operational status" (meaning the corridor has Daily Deployment Operations) of an HOV lane, as described in section 12.4). The Department will inspect, verify and/or evaluate the work performed by the Contractor.

14.1. **Key Performance Measures**

14.1.1. **Staffing**

- Contractor shall maintain at least 2 crews trained in assessing and repairing equipment failures for the duration of the contract.
- Contractor shall have the flexibility to deploy barrier wall for both the eastbound and westbound directions for maintenance activities of TxDOT and other entities when notified twenty-four hours in advance by the Engineer or the Department.
14.1.2. **On-time Performance**
- Safely, efficiently and effectively operate and maintain the BTVs and associated operations with a 97% on-time opening/closing goal each month.

14.1.3. **Quality of Service**
- Contractor shall assess and repair routine equipment failures within five working days of failure.
- Contractor will assess and repair critical equipment failures within 8 hours of failure notification.

14.1.4. **Safety record**
- There shall be no more than two *preventable incidents* in a fiscal year as determined by the Department.
- If third preventable incident occurs by the same operator, contractor must take proper disciplinary actions to include removal from the project.

14.1.5. **Response time**
- Contractor's representative shall respond to the Department’s representative within 15 minutes during the operating hours of the facility and within two hours during non-operational hours.

14.2. **Contractor Performance.** The pay level to the Contractor will be based on the performance levels attained for the **Key Performance Measures** as described in Section 14.1.

14.2.1. If Contractor meets all of the Key Performance Measures in a given month, as determined by the Engineer or the Department, the pay level for that month will be 100 percent.

14.2.2. If Contractor fails to meet any of the Key Performance Measures in a given month, as determined by the Engineer or the Department, **the pay level for that month will be as follows:**

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<tr>
<th>Measures not met</th>
<th>Percent Pay</th>
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<tr>
<td>0</td>
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<tr>
<td>1</td>
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<td>80%</td>
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<td>3</td>
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<td>4 or more</td>
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15. **Measurement.** This Item will be measured by the month for the one year contract period for the IH-30 (ERLT) HOV lane corridor for the maintenance, operation and repair of barrier wall, proper disposal of unusable barrier, and for the daily deployment, emergency deployment, and special event deployment of the movable barrier wall to open and close the HOV lanes.

15.1. The Engineer will inform the contractor of any closings due to inclement weather and of any changes to the HOV operations for Holidays.

16. **Payment.** The work performed and materials furnished in accordance with this Item and measured as provided for under "Measurement" will be paid for at the unit price bid for “Movable Barrier Transfer Operations and Maintenance for High Occupancy Vehicle Lanes” for the area specified.

16.1. This price will be performance based compensation for this work and for furnishing all labor, equipment, materials, fuel, tools, disposal of removed materials and incidentals necessary to complete the work for the contract period.

17. **Payment Schedule.** A monthly payment will be made by multiplying the Unit price bid by the pay level attained as described in "Contractor Performance" in section 14.2 for that particular month.

18. **Contract Termination.** The Department or Engineer may terminate this contract if at such a time there is a cumulative number **Key Performance Measures** not met that demonstrate a failure of the Contractor to comply with the performance standards described herein.