NOTES:
1. THIS DRAWING PACKAGE IS PRELIMINARY AND NOT APPROVED FOR CONSTRUCTION.
2. PROJECT IS DESIGN BUILD TYPE. CONTRACTOR SHALL PREPARE A COMPLETE SET OF CONSTRUCTION DRAWINGS THAT ARE CONSISTENT WITH THE INTENT SHOWN IN THIS DRAWING PACKAGE. THE DRAWING PACKAGE SHALL BE SEALED BY A P.E. LICENSED IN THE STATE OF NEVADA.
3. CONTRACTOR'S CONSTRUCTION-DRAWING PACKAGE SHALL BE APPROVED BY THE OWNER, THE CLARK COUNTY FIRE DEPARTMENT AND THE NORTH LAS VEGAS FIRE DEPARTMENT.
4. SEE PROJECT SPECIFICATIONS MANUAL FOR ADDITIONAL REQUIREMENTS.
**Scope of Work**

1. **Contractor shall provide and install complete and fully functional fuel management systems at SMF and at IBMF.**
2. The contractor shall provide final design, construction, startup and warranty of materials and workmanship for the fuel management system at fueling facilities at SMF and IBMF for the preliminary drawing package and the accompanying specifications. Particularly, the contractor shall complete these tasks as implementation of fuel management system:
   - Operator's manual.
   - System control and electrical construction drawings, for approval by the RTC and the authorities having jurisdiction.
   - Furnish all material, equipment and labor to construct the complete, permitted and operational fuel management systems as specified herein.
   - The following key equipment and work shall be provided by contractor:
     - Remote Island Head (RIH) for each island, including power, dispenser supervision and communication connections per manufacturer's requirements.
     - Dispenser Module (DPM) and transmitters for each pump.
     - A RIH located at each island for the purpose of communication to the virtual terminal.
     - Vehicle detector for each island.
     - Remote vehicle data logger (RVDL) located by RTC. Server hardware will be provided by RTC. Contractor shall install host management software on servers at assigned locations by RTC.
   - Monitor and verify communication between remote servers and existing VFD systems.
   - Provide emergency and regular in-service inspection of categories 2 & 3, as required by RTC.
   - Perform tests upon completion of installation to verify 100% operation and monitor system satisfaction to the owner.
   - At IBMF, the contractor shall also provide and install all existing RIH fuel management system and pumps. Include expedite removal and removal of all existing wires.
   - All wired wiring including decommissioning of RIH and INCN systems wiring will be removed and conducted in accordance with NFPA 70 and the NEC.
   - All unused wiring including decommissioning of the INCN systems wiring will be removed and shall be conducted in accordance with NFPA 70 and the NEC.
   - All conduits that are not re-used as part of the upgrade project are to be filled, sealed and capped. Any conduits that are not filled or capped per the upgrade project will be filled with concrete, sealed, and capped at the ends.
   - The fuel management system shall be designed, constructed, installed and tested in accordance with the requirements of the project drawings.
   - All materials and equipment shall be new and of the latest manufacture and in accordance with the project drawings.
   - The system shall be a complete, integrated fuel management system as specifically described in the project drawings.
   - The system shall be capable of facilitating the needs of the SMF & IBMF Operations.

**Fuel Management System Equipment Schedule**

<table>
<thead>
<tr>
<th>S/N</th>
<th>Item</th>
<th>Qty</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fuel Management Terminal</td>
<td>1 EA</td>
<td>RIH3000R by S&amp;A, remote isle head, position and record fueling events.</td>
</tr>
<tr>
<td>2</td>
<td>Data Receiver</td>
<td>1 EA</td>
<td>RIH3000R by S&amp;A, for RIH3000R, transmit data to RIH3000R and receive RIH3000R data.</td>
</tr>
<tr>
<td>4</td>
<td>Site Controller and System Monitoring Software</td>
<td>1 EA</td>
<td>RIH3000R by S&amp;A, system controller and system monitoring software.</td>
</tr>
<tr>
<td>5</td>
<td>Display Panel</td>
<td>1 EA</td>
<td>RIH3000R by S&amp;A, display panel for RIH3000R.</td>
</tr>
<tr>
<td>6</td>
<td>USB Flash Drive</td>
<td>1 EA</td>
<td>RIH3000R by S&amp;A, USB flash drive for RIH3000R.</td>
</tr>
</tbody>
</table>

**Scheduling Notes**

- Final terminations and start-up of all fuel management systems shall be made by manufacturers authorized technicians.
- Data transmitters will be installed in vehicles by others under a separate contract.
NOTES:

1. FIELD LOCATE EXISTING DIESEL, E85 GASOLINE AND CNG DISPENSERS. LOCATE NEW FUEL MANAGEMENT TERMINALS ON ISLANDS AND CONNECT TO EXISTING DISPENSERS.

2. TRACE, LOCATE AND REMOVE ALL EXISTING FUEL MANAGEMENT HARDWARE, INCLUDING WIRING AND OTHER FUEL MANAGEMENT FROM THE EXISTING RNI FUEL MANAGEMENT SYSTEM. SOME RNI EQUIPMENT IS LOCATED IN ROOMS ADJACENT TO THE DISPENSER ISLANDS.

3. LOCATE E-POWER PANEL BOARD 'EHFF' IN ROOM 102 AT FIXED ROUTE FUELLING ISLANDS. INSTALL NEW CIRCUIT BREAKER IN SPARE SLOT AND WIRE TO SUPPLY POWER TO NEW FUEL MANAGEMENT TERMINALS AT FIXED ROUTE FUELING ISLANDS.

4. INSTALL E-POWER PANEL BOARD 'PP1' IN ROOM 102 AT PARATRANSIT FUELLING ISLANDS. INSTALL NEW CIRCUIT BREAKER IN SPARE SLOT AND WIRE TO SUPPLY POWER TO NEW FUEL MANAGEMENT TERMINALS AT PARATRANSIT FUELLING ISLANDS.

5. FOR HEXAGON KEYED CALLOUTS REFER TO DWG. OG-002.

6. LOCATE (E) 'RNI' EQUIPMENT TO BE REMOVED. (SEE NOTE 2)

7. SEE NOTE 3

8.圖示說明:

-FUEL MANAGEMENT PROJECT
-IBMF MAINTENANCE FACILITY
-3210 Citizen Avenue, North Las Vegas, NV 89032

RTC

FUEL SOLUTIONS
2555 E. Southern Avenue, Suite 101
Tempe, Arizona 85282
NOTES:

1. ALL LOW-VOLTAGE EQUIPMENT SHALL BE INSTALLED PER THE WRITTEN INSTRUCTIONS PROVIDED BY THE RESPECTIVE EQUIPMENT MANUFACTURERS.

2. CONDUITS CONTAINING LOW-VOLTAGE WIRES SHALL NOT CONTAIN LINE-VOLTAGE WIRES. PVC COATED CONDUIT ROUTED UNDERGROUND SHALL BE PVC COATED.

3. PROVIDE CAT 6 FOR ALL ETHERNET WIRING.

4. PROVIDE 8-CONDUCTOR #22 SHIELDED WIRING BETWEEN EACH VEHICLE DETECTOR AND DATA RECEIVER.

5. PROVIDE 3-CONDUCTOR #20 SHIELDED WIRING BETWEEN EACH FUEL MGMT. TERMINAL AND VEHICLE DETECTOR.

6. SEE Dwg. 0G-002 FOR SCHEDULE OF HEX-KEYED EQUIPMENT.

7. CONNECT FUEL MANAGEMENT TERMINALS IN PARA-TRANSIT BUILDING TO (E) ETHERNET SWITCH AT THE DATA ROOM IN PARA-TRANSIT BUILDING. FIELD VERIFY EXACT LOCATION.

8. CONNECT FUEL MANAGEMENT TERMINALS IN FIXED-ROUTE BUILDING TO (E) ETHERNET SWITCH AT THE DATA ROOM IN FIXED-ROUTE BUILDING. FIELD VERIFY EXACT LOCATION.

9. PROVIDED CAT 6 FOR ALL ETHERNET WIRING.

10. PROVIDE 8-CONDUCTOR #22 SHIELDED WIRING BETWEEN EACH VEHICLE DETECTOR AND DATA RECEIVER.

11. PROVIDE 3-CONDUCTOR #20 SHIELDED WIRING BETWEEN EACH FUEL MGMT. TERMINAL AND VEHICLE DETECTOR.
1. See DWG. 0G-002 for schedule of hex-keyed equipment.
2. All power feeders are single phase, except as noted. All control and feeder circuits are 120V, unless noted otherwise.
3. All fuel management terminals shall be powered by one dedicated 20 AMP circuit.
4. All fuel management solenoid valves shall be powered by a dedicated 20 AMP circuit.

NOTES:

1. SEE DWG. 0G-002 FOR SCHEDULE OF HEX-KEYED EQUIPMENT.
2. ALL POWER FEEDERS ARE SINGLE PHASE, EXCEPT AS NOTED. ALL CONTROL AND FEEDER CIRCUITS ARE 120V, UNLESS NOTED OTHERWISE.
3. ALL FUEL MANAGEMENT TERMINALS SHALL BE POWERED BY ONE DEDICATED 20 AMP CIRCUIT.
4. ALL FUEL MANAGEMENT SOLENOID VALVES SHALL BE POWERED BY A DEDICATED 20 AMP CIRCUIT.

NOT FOR CONSTRUCTION

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NOTES:

1. FIELD LOCATE EXISTING DIESEL AND CNG DISPENSERS. LOCATE NEW FUEL MANAGEMENT TERMINALS ON ISLANDS AND CONNECT TO EXISTING DISPENSERS.

2. TRACE, LOCATE AND REMOVE ALL EXISTING FUEL MANAGEMENT HARDWARE, INCLUDING TERMINALS, SITE CONTROLLERS, J-BOXES, WIRING AND OTHER FUEL MANAGEMENT FROM THE EXISTING (NON-FUNCTIONAL) FMS FM SYSTEM.

3. CONTRACTOR SHALL LOCATE (E) POWER PANEL IN OFFICE ROOM 411 AND VERIFY AN EXISTING SPARE CIRCUIT BREAKER FOR POWER SUPPLY TO FMT'S (SEE DWG. 2M-602).

4. FOR HEXAGON KEYS CALLOUTS REFER TO DWG. 0G-002.

(E) INTERNET MODEM AND (E) COMPUTER CONNECTED TO RTC NETWORK TO COMMUNICATE WITH FMS SERVER (VERIFY EXACT LOCATION IN ROOM 410)

(E) POWER PANEL LOCATED IN ROOM 411 (SEE NOTE 3)

(E) POWER PANEL LOCATED IN OFFICE ROOM 411 (SEE NOTE 3)

(E) POWER PANEL (LOCATED IN ROOM 411) (SEE NOTE 3)
NOTES:

1. ALL LOW-VOLTAGE EQUIPMENT SHALL BE INSTALLED PER THE WRITTEN INSTRUCTIONS PROVIDED BY THE RESPECTIVE EQUIPMENT MANUFACTURERS.

2. CONDUITS CONTAINING LOW-VOLTAGE WIRES SHALL NOT CONTAIN LINE-VOLTAGE WIRES. RGS CONDUIT ROUTED UNDERGROUND SHALL BE PVC COATED.

3. PROVIDE CAT 6 FOR ALL ETHERNET WIRING.

4. PROVIDE 6-CONDUCTOR #22 SHIELDED WIRING BETWEEN EACH VEHICLE DETECTOR AND DATA RECEIVER.

5. PROVIDE 3-CONDUCTOR #20 SHIELDED WIRING BETWEEN EACH FUEL MGMT. TERMINAL AND VEHICLE DETECTOR.

6. SEE DWG. 0G-002 FOR SCHEDULE OF HEX-KEYED EQUIPMENT.

7. CONNECT FUEL MANAGEMENT TERMINALS TO (E) ETHERNET SWITCH IN DATA ROOM 410.
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