Statement of Work

Submitted by:
Department of State

Barrier Installation Project, Khartoum, Sudan
MCAC/SCAC - Job # 7973A/B

The general scope of the project will be as follows:

Statement of Work

Submitted by:
Department of State

Barrier Installation Project, Main CAC and Service CAC – Job# 7973A/B

1.0 OBJECTIVE.

1.1 Remove existing, Norshield, NOR 82, vehicle arrest systems at the Main and Service CAC's. Replace with new Delta Scientific model DSC207S vehicle arrest systems. The barrier will be a 9 footer, dimensions and weights per the attached manual are (122.5" x 78" x 30" @ 5500 Pounds). The enclosure with pumping unit is 60.8" x 35.5" x 60.3" @ 1815 Pounds

2.0 BACKGROUND.

2.1 Recent events at post warrant replacement of the DS approved vehicle arrest systems.

3.0 REQUIREMENTS.

3.1 **Removal Cost Estimation. (Barrier System)**

3.1.1 The contractor shall conduct an estimation of cost for the removal of one (1) Norshield model NOR 82 vehicle arrest system located at the Main CAC and one (1) Norshield model NOR 82 vehicle arrest system located at the Service CAC security booth.

3.1.2 The contractor shall conduct an estimation of cost for the removal of one (1) Norshield model NOR 82 vehicle arrest barrier located at the Main CAC and one (1) Norshield model NOR 82 vehicle arrest system located at the Service CAC security booth.

3.1.3 The contractor shall conduct an estimation of cost as required for the concrete foundation removal and disposal of all waste concrete, barrier road plate/drop-arm[s], reinforcing steel rebar[s], PVC conduit piping, electrical wiring, and waste materials associated with the Norshield model NOR 82 vehicle arrest system[s].

3.1.4 The contractor shall conduct an estimation of cost for the removal of all hydraulic lines, electrical wiring, and PVC conduit piping as connected underground from the Norshield model NOR 82 vehicle arrest barrier and back to the hydraulic pumping unit[s].

3.1.5 The contractor shall conduct an estimation of cost for the removal of the hydraulic pumping unit[s], associated concrete foundation, and all hydraulic lines, electrical wiring, and PVC conduit piping as connected underground and back to the Norshield model NOR 82 vehicle arrest barrier[s].

3.1.6 The contractor shall conduct an estimation of cost for the removal of the enclosure[s] that houses the hydraulic pumping unit[s].

3.1.7 The contractor shall conduct an estimation of cost for the removal of the vehicle Stop/Go signal light assemblies, associated concrete foundation, all electrical wiring, and PVC conduit piping as connected underground and back to the control circuits for the Norshield model NOR 82 vehicle arrest system[s].

3.1.8 The contractor shall conduct an estimation of cost for the removal of the vehicle detector circuits, associated concrete foundation, all electrical wiring, and PVC conduit piping as connected underground and back to the control circuits for the Norshield model NOR 82 vehicle arrest system[s].

3.1.9 The contractor shall conduct an estimation of cost for the removal of existing water drainage piping as required for rerouting the flow of water drainage through and/or around the vehicle barrier construction site[s].

3.1.10 The contractor shall conduct an estimation of cost for the removal of existing fresh water piping as required for the rerouting of fresh water and piping through and/or around the vehicle barrier construction site[s].

3.1.11 The contractor shall conduct an estimation of cost for the removal of existing gas piping (See 3.1.12) as required for the rerouting of gas and piping through and/or around the vehicle barrier construction site[s].

3.1.12 Notice of Construction and/or Repair (See 6.1.21) for any gas line must be submitted to the local oil and gas commission before the start of any construction or repairs. Construction and/or repairs must be under the authority and supervision of the local oil and gas commission.

3.1.13 The contractor shall conduct an estimation of cost for the removal of electrical lines or wiring (See 3.1.14) as required for the rerouting of electrical lines or wiring through and/or around the vehicle barrier construction site[s].

3.1.14 Notice of Construction and/or Repair (See 6.1.22) for any electrical line must be submitted to the local electric cooperative before the start of any construction or repairs. Construction and/or repairs must be under the authority and supervision of the local electric cooperative.

3.1.15 The contractor shall conduct an estimation of cost for damage restoration improvements as associated with the vehicle arrest system removal process.

3.1.16 The contractor shall identify and address any anomalies of concern.

3.2 Excavation Cost Estimation. (Barrier System)

3.2.1 The contractor shall conduct an excavation estimation of cost as required for the installation of one (1) Delta model DSC207S vehicle arrest system, located at the Main CAC gate and one (1) Delta model DSC207S vehicle arrest system, located at the Service CAC gate.

3.2.2 The contractor shall conduct an excavation estimation of cost as required for the installation of one (1) Delta model DSC207S vehicle arrest barrier, located at the Main CAC gate and one (1) Delta model DSC207S vehicle arrest barrier, located at the Service CAC gate.

3.2.3 The contractor shall conduct an excavation estimation of cost as required for the installation of all hydraulic lines, electrical wiring, and PVC conduit piping as required underground connecting from the Delta model DSC207S vehicle arrest barrier[s] and back to the hydraulic pumping unit[s].

3.2.4 The contractor shall conduct an excavation estimation of cost as required for the installation of the hydraulic pumping unit[s].

3.2.5 The contractor shall conduct an excavation estimation of cost as required for the installation of all hydraulic lines, electrical wiring, and PVC conduit piping as required underground connecting from the hydraulic pumping unit[s] and back to the DSC207S vehicle arrest barrier[s].

3.2.6 The contractor shall conduct an excavation estimation of cost as required for the installation of the enclosures that houses the hydraulic pumping unit[s].

3.2.7 The contractor shall conduct an excavation estimation of cost as required for the installation of the vehicle Stop/Go signal light assemblies, associated concrete foundation, all electrical wiring, and PVC conduit piping as connected underground and back to the control circuits for the Delta model DSC207S vehicle arrest system[s].

3.2.8 The contractor shall conduct an excavation estimation of cost as required for the installation of the vehicle detector circuits, associated concrete foundation, all electrical wiring, and PVC conduit piping as connected underground and back to the control circuits for the Delta model DSC207S vehicle arrest system[s].

3.2.9 The contractor shall conduct an excavation estimation of cost as required for the installation of the vehicle barrier drainage water system to include the appropriate disposal of water to the nearest water drainage or sewer including all associated PVC conduit piping as required underground and connecting from the Delta model DSC207S vehicle arrest barrier[s] and back to the water drainage or sewer system. The excavation for the sump pump will be 60” deep and 36” wide.

3.2.10 The contractor shall conduct an excavation estimation of cost for the installation of water drainage piping as required for the rerouting flow of water drainage through and/or around the vehicle barrier construction site[s].

3.2.11 The contractor shall conduct an excavation estimation of cost for the installation of fresh water piping as required for the rerouting of fresh water and piping through and/or around the vehicle barrier construction site[s].

3.2.12 The contractor shall conduct an excavation estimation of cost for the installation of gas piping (See 3.2.13) as required for the rerouting of gas and piping through and/or around the vehicle barrier construction site[s].

3.2.13 Notice of Construction and/or Repair (See 6.1.21) for any gas line must be submitted to the local oil and gas commission before the start of any construction or repairs. Construction and/or repairs must be under the authority and supervision of the local oil and gas commission.

3.2.14 The contractor shall conduct an excavation estimation of cost for the installation of electrical lines (See 3.2.15) or wiring as required

for the rerouting of electrical lines or wiring through and/or around the vehicle barrier construction site[s].

3.2.15 Notice of Construction and/or Repair (See 6.1.22) for any electrical line must be submitted to the local electric cooperative before the start of any construction or repairs. Construction and/or repairs must be under the authority and supervision of the local electric cooperative.

3.2.16 The contractor shall conduct an estimation of cost for damage restoration improvements as associated with the vehicle arrest system excavation process.

3.2.17 The contractor shall identify and address any anomalies of concern.

3.3 Installation Cost Estimation. (Barrier System)

3.3.1 The contractor shall conduct an estimation of cost as required for the installation of one (1) Delta model DSC207S vehicle arrest system, located at the Main CAC gate and one (1) Delta model DSC207S vehicle arrest system, located at the Service CAC gate.

3.3.2 The contractor shall conduct an estimation of cost as required for the installation of one (1) Delta model DSC207S vehicle arrest barrier, located at the Main CAC gate and one (1) Delta model DSC207S vehicle arrest barrier, located at the Service CAC gate.

3.3.3 The contractor shall conduct an estimation of cost as required for the Delta model DSC207S installation to include the concrete foundation, reinforcing steel rebar, and aggregate materials, as required per manufacture instructions.

3.3.4 The contractor shall conduct an estimation of cost as required for the installation of all new hydraulic lines, electrical wiring, and PVC conduit piping as required underground and connecting from the Delta model DSC207S vehicle arrest barrier[s] and back to the hydraulic pumping unit[s] per manufacture instructions.

3.3.5 The contractor shall conduct an estimation of cost as required for the installation of the hydraulic pumping unit[s] per manufacture instructions.

3.3.6 The contractor shall conduct an estimation of cost as required for the installation of all hydraulic lines, electrical wiring, and PVC conduit piping as required underground connecting from the

hydraulic pumping unit[s] and back to the DSC207S vehicle arrest barrier[s] per manufacture instructions.

3.3.7 The contractor shall conduct an estimation of cost as required for the installation of the enclosure[s] that houses the hydraulic pumping unit[s] per manufacture instructions.

3.3.8 The contractor shall conduct an estimation of cost as required for the installation of the vehicle Stop/Go signal light assemblies, associated concrete foundation, all electrical wiring, and PVC conduit piping as connected underground and back to the control circuits for the Delta model DSC207S vehicle arrest system per manufacture instructions.

3.3.9 The contractor shall conduct an estimation of cost as required for the installation of the vehicle detector circuits, associated concrete foundation, all electrical wiring, and PVC conduit piping as connected underground and back to the control circuits for the Delta model DSC207S vehicle arrest system per manufacture instructions.

3.3.10 The contractor shall conduct an estimation of cost as required for the installation of the vehicle barrier drainage water system[s] to include the appropriate disposal of water to the nearest water drainage or sewer including all associated PVC conduit piping as required underground and connecting from the Delta model DSC207S vehicle arrest barrier and back to the water drainage or sewer system.

3.3.11 The contractor shall conduct an estimation of cost for the installation of the water drainage piping as required for the rerouting flow of drainage water through and/or around the vehicle barrier construction site[s].

3.3.12 The contractor shall conduct an estimation of cost for the installation of fresh water piping as required for the rerouting of fresh water and piping through and/or around the vehicle barrier construction site[s].

3.3.13 The contractor shall conduct an estimation of cost for the installation of gas piping (See 3.3.14) as required for the rerouting of gas and piping through and/or around the vehicle barrier construction site[s].

3.3.14 Notice of Construction and/or Repair (See 6.1.21) for any gas line must be submitted to the local oil and gas commission before the

start of any construction or repairs. Construction and/or repairs must be under the authority and supervision of the local oil and gas commission.

3.3.15 The contractor shall conduct an estimation of cost for the installation of electrical lines (See 3.3.16) or wiring as required for the rerouting of electrical lines or wiring through and/or around the vehicle barrier construction site[s].

3.3.16 Notice of Construction and/or Repair (See 6.1.22) for any electrical line must be submitted to the local electric cooperative before the start of any construction or repairs. Construction and/or repairs must be under the authority and supervision of the local electric cooperative.

3.3.17 The contractor shall conduct an estimation of cost for damage restoration improvements as associated with the vehicle arrest system installation process.

3.3.18 The contractor shall identify and address any anomalies of concern.

3.4 **Estimation of Cost. (Trucking & Equipment)**

3.4.1 The contractor shall conduct an estimation of cost for concrete mixer trucking and delivery of concrete as required for the installation of two (2) Delta model DSC207S vehicle arrest system[s], to include the concrete foundation for the vehicle barrier[s], hydraulic pumping unit[s] and enclosure[s], vehicle detector circuits, and the Stop/Go signal light assemblies as required for the installation project per manufacture instructions.

3.4.2 The contractor shall conduct an estimation of cost for the trucking and delivery of reinforcing steel rebars as required for the installation of two (2) Delta model DSC207S vehicle arrest systems, to include the concrete foundation for the vehicle barriers, hydraulic pumping unit, vehicle Stop/Go signal light assemblies, and water sump pump system as required for the installation project per manufacture instructions.

3.4.3 The contractor shall conduct an estimation of cost for the trucking and delivery of aggregate materials as required for the installation of two (2) Delta model DSC207S vehicle arrest system[s], to include the concrete foundation for the vehicle barrier[s], hydraulic pumping unit, vehicle detector circuits, and the Stop/Go signal light assemblies, and water sump pump system[s] as required for the installation project per manufacture instructions.

3.4.4 The contractor shall conduct an estimation of cost as required for the rental and/or use of all heavy duty equipment (i.e., forklift, front loader, excavator with hoe ram and bucket attachments) and/or other equipment as required for the removal and installation process to include the concrete foundation, reinforcing steel rebar and excavation necessary to the installation project per manufacture instructions.

3.4.5 The contractor shall conduct an estimation of cost as required for the rental and/or use, pickup and delivery of a dumpster[s] as necessary to the project cleanup and waste removal.

3.4.6 The contractor shall conduct an estimation of cost for a vehicle blocking barrier[s] as required to ensure construction site security. The blocking barrier[s] must be approved by the Post RSO or PSO.

3.4.7 The contractor shall conduct an estimation of cost for pedestrian fencing and/or netting as required for pedestrian safety and access control.

3.4.8 The contractor shall identify and address any anomalies of concern.

3.5 **Tasks. (Remove)**

3.5.1 The contractor shall remove two (2) Norshield model NOR 82 vehicle arrest system[s] located at the Main CAC and Service CAC locations.

3.5.2 The contractor shall remove the two (2) Norshield model NOR 82 vehicle arrest barrier[s] located at the Main CAC and Service CAC locations.

3.5.3 The contractor shall remove the concrete foundation, reinforcing steel rebar[s], aggregate material, all hydraulic lines, electrical wiring, and conduit piping as required underground connecting from the Norshield model NOR 82 vehicle arrest barrier[s] and back to the hydraulic pumping unit[s].

3.5.4 The contractor shall remove the hydraulic pumping unit[s], associated concrete foundation, reinforcing steel rebar[s], all hydraulic lines, electrical wiring, and conduit piping as required underground and connecting back to the Norshield model NOR 82 vehicle arrest barrier[s].

3.5.5 The contractor shall remove the enclosure that houses the hydraulic pumping unit[s].

3.5.6 The contractor shall remove the vehicle Stop/Go signal light assemblies, associated concrete foundation, all electrical wiring, and PVC conduit piping as connected underground and back to the control circuits for the Norshield model NOR 82 vehicle arrest system.

3.5.7 The contractor shall remove the vehicle detector circuits, associated concrete foundation, all electrical wiring, and PVC conduit piping as connected underground and back to the control circuits for the Norshield model NOR 82 vehicle arrest system[s].

3.5.8 The contractor shall remove the vehicle barrier drainage water system[s] including all associated PVC conduit piping as connected underground and back to the Norshield model NOR 82 vehicle arrest barrier[s].

3.5.9 The contractor shall remove water drainage piping as required for the rerouting flow of drainage water through and/or around the vehicle barrier construction site[s].

3.5.10 The contractor shall remove fresh water piping as required for the rerouting of fresh water and piping through and/or around the vehicle barrier construction site[s].

3.5.11 The contractor shall remove gas piping (See 3.5.12) as required for the rerouting of gas and piping through and/or around the vehicle barrier construction site[s].

3.5.12 Notice of Construction and/or Repair (See 6.1.21) for any gas line must be submitted to the local oil and gas commission before the start of any construction or repairs. Construction and/or repairs must be under the authority and supervision of the local oil and gas commission.

3.5.13 The contractor shall remove electrical lines (See 3.5.14) or wiring as required for the rerouting of electrical lines or wiring through and/or around the vehicle barrier construction site[s].

3.5.14 Notice of Construction and/or Repair (See 6.1.22) for any electrical line must be submitted to the local electric cooperative before the start of any construction or repairs. Construction and/or repairs must be under the authority and supervision of the local electric cooperative.

3.5.15 The contractor shall identify and address any anomalies of concern.

3.6 **Tasks. (Install)**

3.6.1 The contractor shall install one (1) Delta model DSC207S vehicle arrest system located at the Main CAC gate, and one (1) Delta model DSC207S vehicle arrest system located at the Service CAC gate as required per manufacture instructions.

3.6.2 The contractor shall install one (1) Delta model DSC207S vehicle arrest barrier located at the Main CAC gate, and one (1) Delta model DSC207S vehicle arrest barrier located at the Service CAC gate as required per manufacture instructions.

3.6.3 The contractor shall install as required for the Delta model DSC207S, a concrete foundation, reinforcing steel rebar[s], and aggregate materials, as required per manufacture instructions.

3.6.4 The contractor shall install all hydraulic lines, electrical wiring, and PVC conduit piping as required underground and above ground connecting from the Delta model DSC207S vehicle arrest barrier[s] and back to the hydraulic pumping unit per manufacture instructions.

3.6.5 The contractor shall install all hydraulic lines, electrical wiring, and PVC conduit piping as required underground and above ground connecting from the hydraulic pumping unit and back to the DSC207S vehicle arrest barrier[s] per manufacture instructions.

3.6.6 The contractor shall install the hydraulic pumping unit[s] and all associated wiring and PVC conduit piping per manufacture instructions.

3.6.7 The contractor shall install the enclosure that houses the hydraulic pumping unit[s] per manufacture instructions.

3.6.8 The contractor shall install the vehicle Stop/Go signal light assemblies, associated concrete foundation, all electrical wiring, and PVC conduit piping as connected underground and above ground back to the control circuits for the Delta model DSC207S vehicle arrest system[s] per manufacture instructions.

3.6.9 The contractor shall install the vehicle detector circuits, associated concrete foundation, all electrical wiring, and PVC conduit piping as connected underground and above ground back to the control

circuits for the Delta model DSC207S vehicle arrest system per manufacture instructions.

3.6.10 The contractor shall install the vehicle barrier drainage water system[s] to include the appropriate disposal of water to the nearest water drainage or sewer including all PVC conduit piping as required underground and above ground connecting from the Delta model DSC207S vehicle arrest barrier and back to the water drainage or sewer system.

3.6.11 The contractor shall install water drainage piping as required for the rerouting flow of water drainage through and/or around the vehicle barrier construction site[s].

3.6.12 The contractor shall install fresh water piping as required for the rerouting of fresh water and piping through and/or around the vehicle barrier construction site[s].

3.6.13 The contractor shall install gas piping (See 3.6.14) as required for the rerouting of gas and piping through and/or around the vehicle barrier construction site[s].

3.6.14 Notice of Construction and/or Repair (See 6.1.21) for any gas line must be submitted to the local oil and gas commission before the start of any construction or repairs. Construction and/or repairs must be under the authority and supervision of the local oil and gas commission.

3.6.15 The contractor shall install electrical lines (See 3.6.16) or wiring as required for the rerouting of electrical lines or wiring through and/or around the vehicle barrier construction site[s].

3.6.16 Notice of Construction and/or Repair (See 6.1.22) for any electrical line must be submitted to the local electric cooperative before the start of any construction or repairs. Construction and/or repairs must be under the authority and supervision of the local electric cooperative.

3.6.17 The contractor shall identify and address any anomalies of concern.

3.7 **Tasks. (Waste Disposal)**

3.7.1 The contractor shall remove and dispose of all waste materials including any and all concrete, aggregate materials, reinforcing steel rebar[s], steel barrier road plate/drop-arm[s], conduit piping,

and all electrical wiring associated with the removal and installation process pertaining to the Air Hydraulic System[s] and the DSC207S vehicle arrest barrier[s] to include associated system parts.

3.7.2 The contractor shall identify and address any anomalies of concern.

3.8 **Project Time Line.**

3.8.1 The contractor shall determine the project time line required to initiate and complete the removal, excavation, and installation as a fully operational vehicle arrest system.

3.8.1 The contractor shall identify and address any anomalies of concern.

4.0 GOVERNMENT FURNISHED MATERIALS.

4.1 The government shall provide the following;

4.1.1 The government shall provide the Delta model DSC207S vehicle arrest barricades.

4.1.2 The government shall provide the Delta control panel[s].

4.1.3 The government shall provide the Delta hydraulic power unit[s]. (HPU)

4.1.4 The government shall provide the Delta enclosure[s], (for the hydraulic pumping unit[s]).

4.1.5 The government shall provide the Delta Stop/Go signal assemblies.

4.1.6 The government shall provide the vehicle detector circuit[s].

4.1.7 The government shall provide the hydraulic oil. 46 Grade or comparable substitute.

4.1.8 The government shall provide the dry nitrogen, 2000 PSI.

4.1.9 The government shall provide the spray paint, safety yellow.

4.1.10 The government shall provide the spray paint, gloss black.

4.1.11 The government shall provide all of the hydraulic hoses, hose fittings, PVC/EMT conduit, conduit fittings, water drainage piping, fresh water piping, gas piping, HPU electrical wiring, control wiring,

biodegradable grease cleaner, and miscellaneous parts associated with the installation.

4.1.12 The contractor shall identify and address any anomalies of concern.

5.0 CONTRACTOR FURNISHED MATERIALS.

5.1 The contractor shall provide the following;

5.1.1 The contractor shall provide all concrete required for the foundation installation of two (2) DSC207S vehicle barrier[s] per manufacture instructions.

5.1.2 The contractor shall provide all concrete required for the foundation installation of the hydraulic pumping unit to include the enclosure that houses the hydraulic pumping unit per manufacture instructions.

5.1.3 The contractor shall provide all concrete and aggregate materials required for the foundation installation of the vehicle detector circuits, and the Stop/Go signal light assemblies per manufacture instructions.

5.1.4 The contractor shall provide all concrete required for the foundation installation of the water drainage piping.

5.1.5 The contractor shall provide all concrete required for the foundation installation of the fresh water piping.

5.1.6 The contractor shall provide all concrete required for the foundation installation of the gas piping (See 5.1.7).

5.1.7 Notice of Construction and/or Repair (See 6.1.21) for any gas line must be submitted to the local oil and gas Commission before the start of any construction or repairs. Construction and/or repairs must be under the authority and supervision of the local oil and gas commission.

5.1.8 The contractor shall provide all concrete required for the foundation installation of the electrical lines or wiring (See 5.1.9).

5.1.9 Notice of Construction and/or Repair (See 6.1.22) for any electrical line must be submitted to the local electric cooperative before the start of any construction or repairs. Construction and/or repairs must be under the authority and supervision of the local electric cooperative.

5.1.10 The contractor shall provide all aggregate materials required for the foundation installation of the DSC207S vehicle barrier[s] per manufacture instructions.

5.1.11 The contractor shall provide all aggregate materials required for the foundation installation of the hydraulic pumping unit and enclosure that houses the hydraulic pumping unit per manufacture instructions.

5.1.12 The contractor shall provide all aggregate materials required for the foundation installation of the water drainage piping.

5.1.13 The contractor shall provide all aggregate materials required for the foundation installation of the fresh water piping.

5.1.14 The contractor shall provide all aggregate materials required for the foundation installation of the gas piping (See 5.1.15).

5.1.15 Notice of Construction and/or Repair (See 6.1.21) for any gas line must be submitted to the local oil and gas Commission before the start of any construction or repairs. Construction and/or repairs must be under the authority and supervision of the local oil and gas commission.

5.1.16 The contractor shall provide all aggregate materials required for the foundation installation of the electrical lines or wiring (See 5.1.17).

5.1.17 Notice of Construction and/or Repair (See 6.1.22) for any electrical line must be submitted to the local electric cooperative before the start of any construction or repairs. Construction and/or repairs must be under the authority and supervision of the local electric cooperative.

5.1.18 The contractor shall provide any additional reinforcing steel rebar[s] required for the foundation installation of the DSC207S vehicle barrier[s] per manufacture instructions beyond the rebar cages provided.

5.1.19 The contractor shall provide all reinforcing steel rebar[s] required for the foundation installation of the hydraulic pumping unit[s] and enclosure[s] that houses the hydraulic pumping unit per manufacture instructions.

5.1.20 The contractor shall provide all reinforcing steel rebar[s] required for the foundation installation of the water drainage piping.

5.1.21 The contractor shall provide all reinforcing steel rebar[s] required for the foundation installation of the fresh water piping.

5.1.22 The contractor shall provide all reinforcing steel rebar[s] required for the foundation installation of the gas piping (See 5.1.23).

5.1.23 Notice of Construction and/or Repair (See 6.1.21) for any gas line must be submitted to the local oil and gas Commission before the start of any construction or repairs. Construction and/or repairs must be under the authority and supervision of the local oil and gas commission.

5.1.24 The contractor shall provide all reinforcing steel rebar[s] required for the foundation installation of the electrical lines or wiring (See 5.1.25).

5.1.25 Notice of Construction and/or Repair (See 6.1.22) for any electrical line must be submitted to the local electric cooperative before the start of any construction or repairs. Construction and/or repairs must be under the authority and supervision of the local electric cooperative.

5.1.26 The contractor shall provide a dumpster[s] as required for the cleanup and disposal of all waste materials.

5.1.27 The contractor shall provide all excavation and installation equipment required (i.e. forklift, front loader, excavator with hoe ram and bucket attachments, handheld breaker hammer, arc welding equipment, cutting torch, ground tamper, wheel barrow[s], powered saw for concrete cutting, steel rake[s], pick axe[s], flat head shovel[s], spade shovel[s], push broom[s], water hose w/spray attachments, pressure washer, large handheld grinder with cutoff and masonry wheels, electrical extension cord[s], concrete vibrator[s], chain slings, etc.

5.1.28 The contractor shall provide all excavation materials (i.e. masonry blocks, lumber for formwork, concrete to concrete expansion joints, plastic sheeting for concrete curing, string line, nails, expandable spray foam, etc.).

5.1.29 The contractor shall provide all small handheld tools, drills, drill bits, wrenches, screwdrivers, knockout hole punch set, hole saw kit, fish

tape, handheld hydraulic oil fluid pump, large funnel spout, trowels, concrete floats etc. as required for the installation project.

5.1.30 The contractor shall provide well covers as required for the project installation. The well and covers shall meet or exceed a 25 ton load capacity.

5.1.31 The contractor shall provide vehicle blocking barrier[s] as required to ensure construction site security. The blocking barrier[s] must be approved by the Post RSO or PSO.

5.1.32 The contractor shall provide pedestrian fencing and/or netting as required for pedestrian safety and access control.

5.1.33 The contractor shall identify and address any anomalies of concern.

6.0 CONTRACTOR RESPONSIBILITIES.

6.1 The contractor shall conform to the following;

6.1.1 The contractor shall conform to the manufacture guidelines and installation specifications.

6.1.2 The contractor shall verify and be responsible for all dimensions and conditions at the job site[s].

6.1.3 The contractor shall verify that the foundation concrete will be placed directly into neat excavations, and where sides of the excavation are not stable the contractor shall provide shoring. Type and method of shoring shall be at the contractor's option.

6.1.4 The contractor shall ensure the excavation is kept dry at all times.

6.1.5 The contractor shall ensure the concrete is laboratory designed, machine mixed, producing 3,000 PSI (20,68 MPA) at 28 days.

6.1.6 The contractor shall ensure the cement is tested Portland cement conforming to ASTM C150, Type II Only.

6.1.7 The contractor shall ensure the aggregates conform to ASTM C33 & B GRADE per standard specifications. Maximum size of aggregate shall be 1-1/2 inches (38mm).

6.1.8 The contractor shall ensure the reinforcing steel to be deformed bars conforming to ASTM A615, grade 60 (60,000 PSI or 413.7MPA). All steel reinforcement for the works are #4 or 0.5”.

6.1.9 The contractor shall ensure that all hooks and bends conform to ACI STANDARD 318. Latest revision. Inside diameter of hooks and bends shall be at least six (6) bar diameters.

6.1.10 The contractor shall provide spacer bars, chairs, spreaders, blocks, etc. as required to positively hold the steel in place before concrete is poured.

6.1.11 The contractor shall ensure the concrete is conveyed from the mixer to final deposit by methods that will prevent separation or loss of materials.

6.1.12 The contractor shall ensure the concrete is thoroughly consolidated by suitable means during placement and shall be thoroughly worked around reinforcement and embedded fixtures and corners of forms.

6.1.13 The contractor shall ensure the concrete is maintained above 50°F (10°C) and in a moist condition for at least seven (7) days after placement. The contractor shall ensure that adequate equipment shall be provided for heating concrete materials and protecting concrete during freezing or near freezing weather.

6.1.14 The contractor shall ensure that where exterior wall face requires shoring and/or forming, the forms shall be substantial and sufficiently tight to prevent leakage, and that forms shall not be removed until the concrete is seven (7) days old.

6.1.15 The contractor shall ensure that backfilling will be done by depositing and tamping into place clean sand or pouring lean concrete to 95% percent compaction. Water jetting shall not be allowed.

6.1.16 The contractor shall ensure that conduit and pipes of aluminum are not utilized within the construction.

6.1.17 The contractor shall ensure that construction joints that are not indicated on the drawings shall not be allowed. The contractor shall ensure that where a construction joint is to be made, the surface of the concrete shall be thoroughly cleaned and all laitance and standing water removed.

6.1.18 The contractor shall be responsible for the protection of all adjacent areas against damage and shall repair all damaged areas to match existing improvements.

6.1.19 The contractor shall be responsible for the protection of all electrical lines and/or wiring located in the adjacent areas against damage and shall repair all damaged electrical lines and/or wiring.

6.1.20 The contractor shall be responsible for the protection of all water, gas, and sewage lines located in the adjacent area against damage and shall repair all damaged water, gas and/or sewage lines.

6.1.21 The contractor shall be responsible for notifying the local Oil and Gas Commission before the commencement of any construction and/or repairs of gas lines.

6.1.22 The contractor shall be responsible for determining the location of underground power lines, water, gas, and sewer mains to prevent damage during construction. It is critical to protect City utilities from “dig-ins”, which could result in death, injury and considerable liability.

6.1.23 The contractor shall keep the construction area clean at all times and at completion of work remove all surplus materials, equipment and debris leaving the premises in a clean condition acceptable to the owner or owners representative.

6.1.24 The contractor shall perform damage restoration improvements as associated with the vehicle arrest system installation.

6.1.25 The contractor shall identify and address any anomalies of concern.

7.0 DELIVERY REQUIREMENTS.

7.1 The contractor shall provide the following:

7.1.1 The contractor shall provide daily verbal progress reports to the government project representative.

7.1.2 The contractor shall provide weekly written progress reports as requested by the government project representative.

7.1.3 The contractor shall identify and address any anomalies of concern.

8.0 PERIOD OF PERFORMANCE.

8.1 Initiation and completion date.

8.1.1 Date of Award_____.

8.1.2 Project Initiation Date_____.

8.1.3 Project Completion Date: 60 days from Project Initiation Date.

9.0 COMMENTS.

9.1 Additional Information:

9.1.1 Throughout the installation process there will be a government project representative on site to assist the contractor with any anomalies or areas of concern.

9.1.2 The contractor, upon completion of the project shall remand all documentation for the project as required by post Regional Security Officer and/or Post Security Officer.