UNITED STATES DEPARTMENT OF STATE *Diplomatic Security Service*	ENGINEERING SECURITY SERVICES REPORT	
POST VISITED Astana, Kazakhstan	**REPORTING OFFICE** ESO Astana	
DATES VISITED N/A	**PURPOSE OF VISIT / WORK PERFORMED** Installation of vehicle barrier hose conduit	**DATE OF LAST VISIT** N/A

1.0 (SBU) SYNOPSIS

(U) Two Delta DSC7000 vehicle barriers were installed in early 2014 and the hydraulic hoses to the drop arm pistons were routed through existing electrical conduit in the HPU rooms and CACs. The conduit were 2" in size and are undersized for the hoses. New conduit of appropriate size should be installed that does not traverse electrical conduit paths.

(U) A local contractor will be hired to install metallic conduit between the HPU rooms and the hydraulic cylinders of the DSC7000 barriers.

REPORTING OFFICER	DATE	DISTRIBUTION	
Donald Ng, SEO/OIC ESO Astana	3/16/2016	Original 1 copy 1 copy	ESO Astana ESC New Delhi RSO, Astana
APPROVED (SUPERVISOR) Joy Baca, OIC ESC New Delhi			
APPROVED (OTHER) Chris Belmonti, Regional Security Officer Astana	3/21/2016		

2.0 (SBU) RECOMMENDATIONS

2.1 (U) Recommendations for Post:

2.1.1 (U) Review and approve ESSR.

2.1.2 (U) Coordinate with ESO Astana to select local contractor capable of installing the required conduit and purchase required materials.

2.2 (U) Recommendations for ESO Astana

2.2.1 (U) Submit ESSR for review and approval by OIC-ESC New Delhi

2.2.2 (U) Create project work order in CMMS and order materials, if required.

2.2.3 (U) Coordinate with RSO and ARSO at post to plan installation of new conduit.

3.0 (SBU) BACKGROUND

3.1 (U) Predication

Delta Scientific DSC7000 vehicle barriers were installed by OBO using local contractors in 2013. The barriers were operational by January, 2014, but recent preventative maintenance revealed the hydraulic hoses connecting the hydraulic power unit and the roadside barriers were routed through 2" electrical conduit and electrical cable trays. In the event of a hydraulic hose leak, the real risk of an electrical fire would develop. Also, the current hydraulic hoses cannot be replaced should they leak or burst since the conduit is undersized for the hoses.

3.2 (SBU) Personnel

Name	Office
Donald Ng	SEO – ESO Astana
Will Shelton	STS – ESO Astana
Maxim Artyomov	RST – ESO Astana

4.0 (SBU) DETAILS

4.1 (U) Service CAC

4.1.1 (U) The existing hydraulic hoses would be disconnected, drained, and left in place as removal is not possible because of the undersized conduits that currently contain them.

4.1.2 (U) New PVC schedule 80 conduit will be installed underground from the associated HPU room to the DSC7000 barrier hydraulic piston via the salley port. The conduit will not traverse any electrical trays, conduit, or junction boxes. To accommodate installation and future replacement of hydraulic hoses, there should

be no sharp turns requiring pull boxes between the HPU room and the barrier hydraulic cylinder. A hose heater tape will be installed with the hydraulic hoses.

4.2 (U) Main CAC

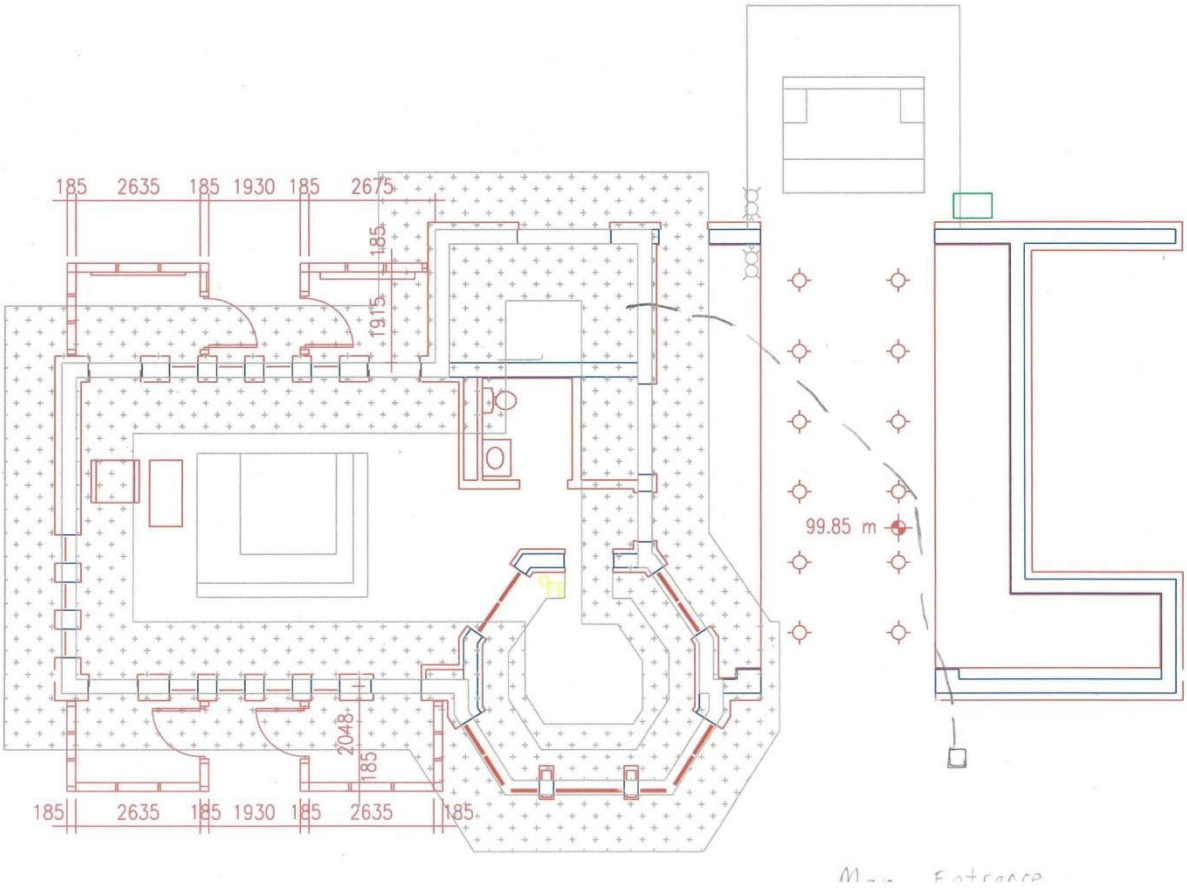
4.2.1 (U) The existing hydraulic hoses would be disconnected, drained, and removed. Should removal prove to be impossible or impractical, they will be left in place.

4.2.2 (U) New PVC schedule 80 conduit will be installed underground from the HPU room to the DSC7000 barrier hydraulic piston via the salley port. The conduit will not traverse any electrical trays, conduit, or junction boxes. To accommodate installation and future replacement of hydraulic hoses, there should be no sharp turns requiring pull boxes between the HPU room and the barrier hydraulic cylinder. A hose heater tape will be installed with the hydraulic hoses.

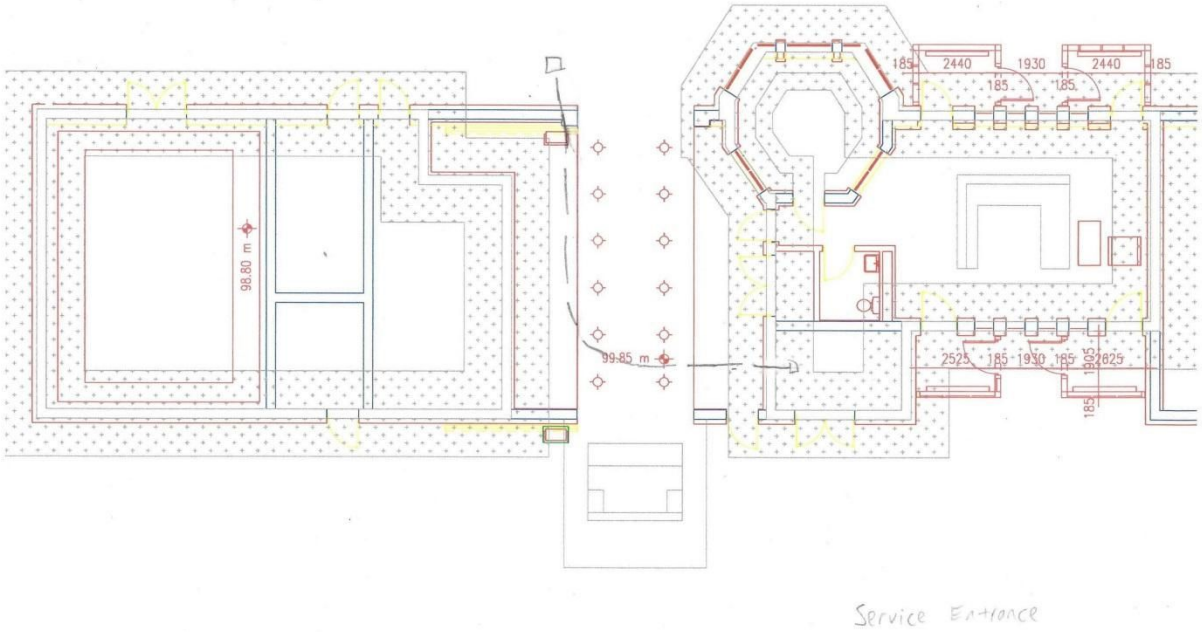
5.0 (U) <u>DATA</u>

5.1 (U) Diagrams

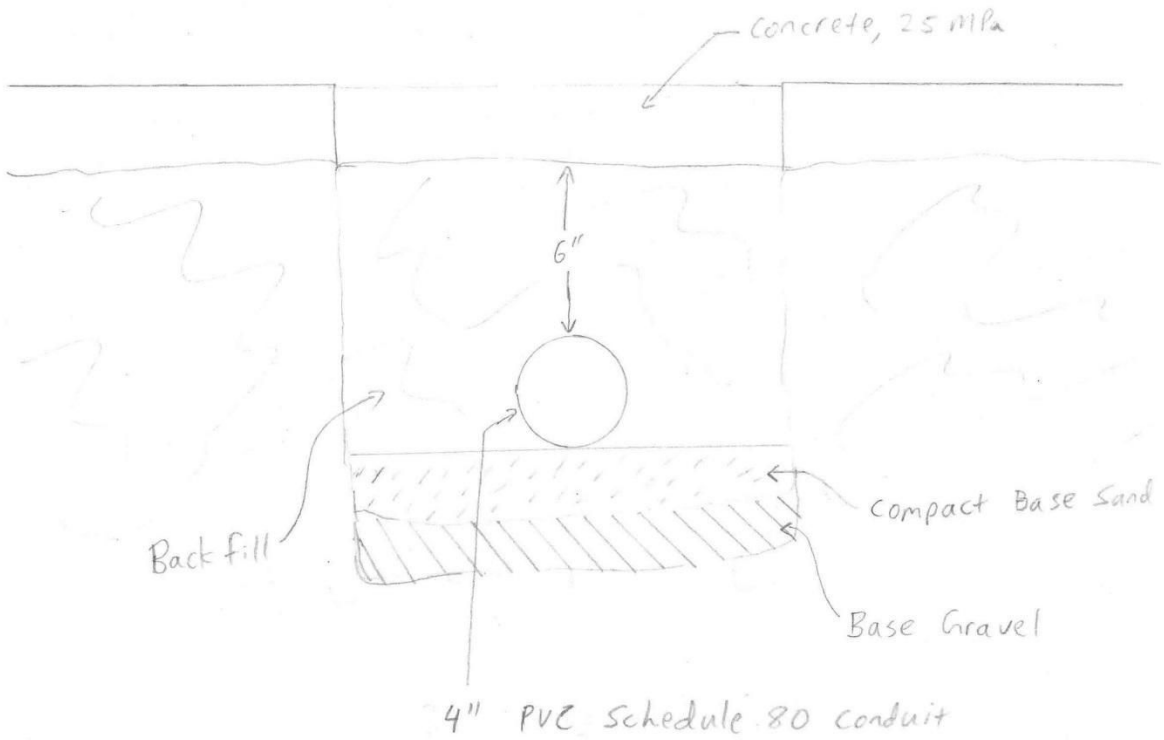
5.1.1 (U) Main CAC



5.1.2 (U) Service CAC



5.1.3 (U) Installation Detail



5.2 (U) Contractor Statement of Work

5.2.1 (U) The United States Embassy Compound in Astana, Kazakhstan will contract a local vendor to install rigid metallic conduit in between the hydraulic pump unit (HPU) and lift cylinders of existing vehicle barriers. Installation will be performed at both Compound Access Control (CAC) buildings on the compound.

5.2.1 (U) The contracted vendor will be responsible for providing material, tools, equipment, and labor necessary to meet the requirements outlined in this Statement of Work.

5.2.2 (U) Work will be performed under the oversight and general direction of a cognizant American staff member of the Engineering Services Office (ESO) Astana.

5.2.3 (U) The contracted vendor will work in a safe and responsible manner to include:

i.) All workers will use appropriate Personal Protective Equipment (PPE) such as hard hats, gloves, safety boots or shoes, hearing protection, and safety glasses while working.

ii.) Tools and equipment will be in good working order and operated in a safe manner. Equipment with manufacturer installed safety guards or switches removed will not be allowed.

iii.) The contracted vendor will have an appointed supervisor with authority over all vendor and subcontractor personnel, and will be the main point of contact of the ESO representative personnel.

iv.) Excavation work will be performed with safety markers in the vicinity of the excavation.

v.) Care will be taken to avoid damage to Embassy facilities and equipment.

5.2.4 (U) The contracted vendor will adhere to embassy compound security requirements, including providing the names of construction staff to the Regional Security Office (RSO) at least 48 hours prior to visit for clearance. Vendor employees will not leave the immediate construction site to enter the embassy compound without appropriate escort.

5.2.5 (U) The materials provided by the vendor will meet, at a minimum, the following requirements:

i.) 4" I.D. PVC schedule 80 conduit and fittings, and wall thickness of approximately 8.5 mm. Thin wall electrical conduit is not acceptable.

ii.) 25 GPa compressive strength concrete

iii.) #4 rebar

iv.) Compactable base gravel

v.) Compactable base sand, dried

5.2.6 (U) Excavation of the conduit route will involve cutting concrete roadway surfaces reinforced with #4 steel rebar spaced 200mm. The vendor will repair any cut rebar sections by welding in equivalent rebar before pouring of concrete cap. Base gravel, fill, and backfill will be compacted by machine compactor if possible. Otherwise, hand compacting is required.

5.2.7 (U) Finish work will involve grading the concrete level with surrounding undisturbed concrete and with the same surface finish, removal of debris and trash, and returning the salley port to the same condition as before the start of construction.

5.2.8 (U) Vendor will provide a schedule outlining the required time to complete the project, with details of daily work goals as part of any cost estimate provided to the General Services Office of the embassy.