



City of Concord, New Hampshire

PURCHASING DIVISION

COMBINED OPERATIONS & MAINTENANCE FACILITY

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June 14, 2011

ADDENDUM NUMBER ONE

RFP43-11

WATER TANK REHABILITATION

TO ALL FIRMS OF RECORD: This addendum forms a part of and modifies the proposal and contract documents and technical specifications for the project named above. The following additions, changes and clarifications are made to the original proposal documents:

1. **Question:** In the interest of ensuring that the City receive the most competitive pricing, any recent tank inspection reports that are available should be included with the RFP. Are any Tank Inspection Reports available?

Answer: The latest inspection report is attached (the cost estimates have been blacked out). All contractors are encouraged to view the tank.

2. **Question:** When was the tank constructed?

Answer: 1983.

3. **Question:** Is this project a State of New Hampshire Prevailing Wage Contract?

Answer: No.

4. **Question:** Will there be water and electrical sources available at the site available for the Contractor's use?

Answer: Yes.

5. **Question:** What are the dimensions of the replacement hatch to be furnished in Optional Item E?

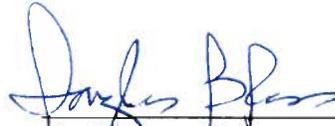
Answer: Replace in kind.

6. **Question:** Would the City consider changing items B and C (Patching and Grout Injection Crack repair, respectively) to unit priced items with bid quantities to promote competitive bid pricing?

Answer: No, all contractors are encouraged to view the tank.

PLEASE BE ADVISED THAT THE PROPOSER MUST ACKNOWLEDGE RECEIPT OF ADDENDUM ONE ON THE PROPOSAL SHEET SIGNATURE PAGE (PAGE 27).

CITY OF CONCORD, NEW HAMPSHIRE



DOUGLAS B. ROSS
PURCHASING MANAGER

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Inspection Report

for

Concord, NH



83C17 – 2.1 MG Portsmouth Street
86C01 – 2.0 MG Auburn Street
88C12 – 0.4 MG Snow Pond Road
97C09 – 1.0 MG Primrose Street
Water Storage Tanks



**INSPECTION OF EXISTING
WATER STORAGE TANKS
*City of Concord, NH***

On Monday June 30, 2008, an inspection was conducted of three existing precast prestressed water storage tanks, a 2.1 MG tank located off Portsmouth Street, a 0.4 MG tank located off Snow Pond Road and a 1.0 MG tank off Primrose Street, all in the City of Concord, NH. Present at this inspection was Jimmy Marceau of the General Service Department and Philip Watson, Sr. Technical Services Engineer, for Natgun Corporation.

On Wednesday July 16, 2008, an inspection was conducted of the 2.0 MG tank the existing precast prestressed water storage tank off Auburn Street. Present at this inspection was Charlie Roberts of the General Service Department, Philip Watson, Sr. Technical Services Engineer and Joseph Pappo Technical Services Engineer for Natgun Corporation.

2.1 MG Portsmouth Street Water Storage Tank

Natgun Corporation constructed this prestressed concrete tank with a precast wall and dome in 1983. It has an inside diameter of 141 ft, a maximum water depth of 18 ft and is differentially backfilled 4 to 6 feet.

Exterior Wall

The exterior tank wall was inspected and found to be in generally good condition with a normal buildup of environmental dirt and contaminants. The bottom 6 to 8 feet of the exposed shotcrete covercoat was sounded and generally found to be solid and intact with no hollow or drummy sounding areas.

Some random hairline cracks were noted on the tank wall. Some of these cracks exhibited a whitish staining. These random hairline cracks appeared to be surface crazing of the

gunitite covercoat. The whitish staining is efflorescence caused by moisture migrating into and then out of the cracks. When this occurs the moisture reacts with free lime in the gunitite and creates efflorescence. The efflorescence is deposited on the surface of the crack and in effect seals the crack and the reaction stops. It appears that in most instances the source of this moisture is external and environmental. In our opinion, these random hairline cracks are insignificant and will not affect the long-term durability of the tank wall.

Several random cracks predominantly on the South side were noted to exhibit a build-up of hard efflorescence with glistening moisture at the surface. Some of these appear to be centered near wall slots. We recommend that the City of Concord General Services Department continue to observe these cracks and notify Natgun if any significant changes should occur.

Exterior Dome

The precast tank dome appears to be in excellent condition. All of the precast panel concrete and cast in place circumferential and radial slots or construction joints appeared to be excellent condition, free of any deterioration or spalling concrete.

Tank Interior

As the tank's water level was approximately 7 to 8 feet below overflow, we were able to view the wall surface in the operating range and underside of the dome from the dome hatch and top of the interior ladder. The portion of the underside of the dome and interior wall in the operating range that was visible, appears to be in very good condition, free of any deterioration or other defects.

Appurtenances

The tank has a fiberglass vent with a 2' 0" diameter throat located at the apex of the tank dome. The screen appeared to be intact and free of any tears or holes.

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The access hatch appears to be the original aluminum Bilco S-50. The hatch appears to function and operate smoothly, however some of the hardware is deteriorated or missing. The overflow pipe as viewed from the hatch appears to be clean, free of any obstructions and in very good condition.

Recommendations

Based on our observations we make the following recommendations with cost estimates associated with each:

Tank Exterior Repairs

- Inject the tank wall at locations exhibiting visible moisture, with Hydro Active Flex LV, an NSF approved hydrophobic grout.

Cost Estimate: [REDACTED]

Tank Exterior

- Clean by high-pressure water blast, all exterior surfaces of the tank wall and dome to remove all foreign matter, dust, dirt, efflorescence and other surface contaminants, including a rinse down using a minimum 5% chlorine solution to kill all mold and mildew. Apply two coats of Tammscoat, an acrylic high build decorative coating, to the tank wall and dome.

Cost Estimate: [REDACTED]

Hatch Replacement

- Remove existing hatch cover.
- Form, reinforce and cast a new hatch curb.
- Install a new Halliday aluminum hatch with padlock.

Cost Estimate: [REDACTED]

2.0 MG Auburn Street Water Storage Tank

Natgun Corporation constructed this prestressed concrete tank with a precast wall and dome in 1986. It has an inside diameter of 92 ft, a maximum water depth of 40 ft and is backfilled 6 feet.

Exterior Wall

The exterior tank wall was inspected and found to be in generally good condition with a normal buildup of environmental dirt and contaminants. The bottom 6 to 8 feet of the exposed shotcrete covercoat was sounded and generally found to be solid and intact with no hollow or drummy sounding areas.

Exterior Dome

The precast tank dome appears to be in excellent condition. All of the precast panel concrete and cast in place circumferential and radial slots or construction joints appeared to be excellent condition, free of any deterioration or spalling concrete. The cementitious decorative coating originally applied to the tank exterior has weathered significantly, especially on the dome.

Tank Interior

We inspected the tank interior from a rubber raft disinfecting the raft and all associated equipment with a 10% chlorine solution. The tank's water level was approximately 7 to 8 feet below overflow, allowing us to view the wall surface in the operating range and underside of the dome. The underside of the dome was in excellent condition free of any spalls and deterioration. The interior wall appeared to be in very good condition, however in the operating range, some minor scouring of the precast concrete wall finish has occurred. We believe this was caused during the winter months, by a combination of an ice lens that forms on the top of the water, abrading the wall surface as the water elevation fluctuates. It is our opinion, this minor scouring is insignificant and will not affect the long term durability of the tank wall.

Appurtenances

The tank has a fiberglass vent with a 2' 0" diameter throat located at the apex of the tank dome. The screen appeared to be intact and free of any tears or holes.

The access hatch appears to be the original aluminum Bilco S-50. The hatch appears to function and operate smoothly, however vandals accessed the dome at some point and attempted to pry open the hatch from one of the corners and broke the latching mechanism.

The overflow pipe as viewed from the hatch appears to be clean, free of any obstructions and in very good condition.

The interior ladder and safety climbing device appear to be in good condition.

Recommendations

Based on our observations we make the following recommendations with cost estimates associated with each:

Tank Exterior

- Clean by high-pressure water blast, all exterior surfaces of the tank wall and dome to remove all foreign matter, dust, dirt, efflorescence and other surface contaminants, including a rinse down using a minimum 5% chlorine solution to kill all mold and mildew. Apply two coats of Tammscoat, an acrylic high build decorative coating, to the tank wall and dome.

Cost Estimate:



Hatch Replacement

- Remove existing hatch cover.
- Form, reinforce and cast a new hatch curb.
- Install a new Halliday aluminum hatch with padlock.
- Install stainless steel security strap over the new hatch.

Cost Estimate:



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0.4 MG Snow Pond Road Water Storage Tank

Natgun Corporation constructed this prestressed concrete tank with a precast wall and dome in 1988. It has an inside diameter of 46 ft, a maximum water depth of 32 ft and is backfilled 4 feet.

Exterior Wall

The exterior tank wall was inspected and found to be in generally good condition with a normal buildup of environmental dirt and contaminants. The bottom 6 to 8 feet of the exposed shotcrete covercoat was sounded and generally found to be solid and intact with no hollow or drummy sounding areas.

Some random hairline cracks were noted on the tank wall. Some of these cracks exhibited a whitish staining. These random hairline cracks appeared to be surface crazing of the gunite covercoat. The whitish staining is efflorescence caused by moisture migrating into and then out of the cracks. When this occurs the moisture reacts with free lime in the gunite and creates efflorescence. The efflorescence is deposited on the surface of the crack and in effect seals the crack and the reaction stops. It appears that in most instances the source of this moisture is external and environmental. In our opinion, these random hairline cracks are insignificant and will not affect the long-term durability of the tank wall.

Exterior Dome

As this tank does not have an exterior ladder the precast tank dome was not accessible. We did notice however a small spalled piece of concrete at the base of the wall suspected to be from on the dome.

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Appurtenances

The overflow pipe outlet thru the wall appeared free of any obstructions and in very good condition. The rodent screen was intact and in good condition as well.

Recommendations

Based on our observations we make the following recommendations with cost estimates associated with each:

Tank Exterior

- Clean by high-pressure water blast, all exterior surfaces of the tank wall and dome to remove all foreign matter, dust, dirt, efflorescence and other surface contaminants, including a rinse down using a minimum 5% chlorine solution to kill all mold and mildew. Apply two coats of Tammscoat, an acrylic high build decorative coating, to the tank wall and dome.

Cost Estimate: [REDACTED]

Inspect Dome and Interior Operating Range

- This item is contingent upon The City of Concord to providing suitable access to the tank dome.

Cost Estimate: [REDACTED]

1.0 MG Primrose Street Water Storage Tank

Natgun Corporation constructed this prestressed concrete tank with a precast wall and dome in 1997. It has an inside diameter of 57.75 ft, a maximum water depth of 51 ft and is backfilled 4 feet.

Exterior Wall

The exterior tank wall was inspected and found to be in generally good condition with a normal buildup of environmental dirt and contaminants. The bottom 6 to 8 feet of the

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exposed shotcrete covercoat was sounded and generally found to be solid and intact with no hollow or drummy sounding areas.

Exterior Dome

The precast tank dome appears to be in excellent condition. All of the precast panel concrete and cast in place circumferential and radial slots or construction joints appeared to be excellent condition, free of any deterioration or spalling concrete.

Tank Interior

As the tank's water level was approximately 7 to 8 feet below overflow, we were able to view the wall surface in the operating range and underside of the dome from the dome hatch and top of the interior ladder. The portion of the underside of the dome and interior wall in the operating range that was visible, appears to be in very good condition, free of any deterioration or other defects.

Appurtenances

The tank has a fiberglass vent with a 2' 0" diameter throat located at the apex of the tank dome. The screen appeared to be intact and free of any tears or holes.

The Halliday dome access hatch appears to be the original, is functional, operates smoothly and generally in excellent condition.

The overflow pipe as viewed from the hatch appears to be clean, free of any obstructions and in very good condition.

The through wall manway appeared to be in excellent condition, dry and free of any deterioration and defects.

Recommendations

Based on our observations no remedial work is recommended at this time, however we would advise the City of Concord to report any changes observed in the tank's condition.