DRAWINGS FOR
CITY OF CONCORD WATER RESOURCE DEPARTMENT
CORBAN AVENUE PUMP STATION
REHABILITATION

CONCORD, NORTH CAROLINA
OCTOBER 2018

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ISSUED FOR BID
1. The contractor shall review and verify all layout, dimensions and elevations on the plans with site conditions and will, approved equipment drawings as well as all technical specifications prior to starting construction. Should the contractor notify the engineer to obtain the engineer's clarification before commencing with construction.

2. The contractor shall coordinate all related discipline drawings to ensure accurate installation occurs.

3. Contract to provide access to city staff and engineer to all structures at all times.

4. All work under this contract shall concur to the plans and specifications in all respects and shall be subject to approval by the engineer. If there is a discrepancy between the plans and specifications, the contractor shall notify the engineer and the more stringent criteria shall govern. Contractor shall have a printed copy of the approved plans and specifications on the job site at all times.

5. Unless noted, specified, or indicated otherwise, construction shall be as indicated in the applicable typical details and these general notes. Typical details are meant to apply even if not referenced at specific locations where they occur.

6. Any discrepancy or conflict within the drawings and specifications shall be brought to the attention of the owner and engineer. Discrepancies or conflicts not brought to the owner's and engineer's attention and clarified during bidding shall be deemed to have been brought to the owner's and engineer's attention and clarified during construction. The winner's bid is the basis for the award of the proposed contract. The contractor shall proceed under the proposed contract bid. Any agreement by the contractor in accordance with the owner's and engineer's interpretation.

7. Noted dimensions shall take precedence over scales shown on the drawings.

8. The contractor shall be responsible for locating all utilities, whether private or public. Prior to excavation, contractor is responsible to verify depths of existing utilities. The contractor is also responsible to notify the city's public works department of proposed excavation. The contractor shall be responsible for the accuracy and completeness of any such information. No additional payment shall be made for costs incurred relating to the damage of existing buried utilities.

9. The contractor shall have regard to the soil conditions as indicated and shall provide all necessary support and protection to ensure the stability of existing structures and facilities.

10. The contractor shall be responsible for the installation of all utilities, including the trenching and backfilling operations. The contractor shall be responsible for the proper installation of all utilities and for the prevention of damage to existing utilities.

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EXISTING CONCRETE PUMP PAD

PLAN EXISTING CONCRETE PUMP BASE (N.T.B)

SCALE:
CB

DESIGN BY:
AS SHOWN

DESIGN REVIEW BY:
PLAN/PROF.(SDSK) BY:
PROCESS/LAYOUT BY:
APPROVED BY:
DATE:

REVISIONS DATE

TMB/CB

McKIM&CREED, INC.
october 2018

EXISTING FLOOR DRAIN (TYP.)

EXISTING 40 HP PUMP / MOTOR TO REMAIN

EXISTING 15 HP PUMP / MOTOR TO REMOVED AND REPLACED WITH 40 HP PUMP / MOTOR

EXISTING 10"x6" RED. BEND TO BE REMOVED (TYP.)

EXISTING 12"x10" RED. TO BE REMOVED (TYP.)

EXISTING 14"x8" RED. BEND

EXISTING 14" AND 12" DISCHARGE PIPE TO REMAIN (TYP.)

NOTE:
SEE SHEET M2 FOR SUGGESTED CONSTRUCTION SEQUENCE.

EXISTING 40 HP PUMP / MOTOR TO REMAIN

EXISTING 15 HP PUMP / MOTOR TO REMOVED AND REPLACED WITH 40 HP PUMP / MOTOR

EXISTING 10"x6" RED. BEND TO BE REMOVED (TYP.)

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NOTE:
SEE SHEET M2 FOR SUGGESTED CONSTRUCTION SEQUENCE.
SUGGESTED SEQUENCE OF CONSTRUCTION

Contractor shall submit for approval a sequence of construction clearly indicating continuous (without interruption) operation of the station with at least one pump in operation during all phases of construction. A suggested sequence of construction has been provided:

1. Adjust existing MCC per plan to allow for additional space for new MCC construction.
2. Construct new conduit, conductor, and transformer pad prior to new transformer being set by the City of Concord. Old transformer shall remain in service.
3. Construct new MCC enclosure and equipment to include internal feeder breaker, motor starters and variable frequency drives units.
4. Install emergency generator connection at exterior of building with temporary connection to new MCC. Provide temporary generator power.
5. Replace existing pumps/piping with new pumps and piping, per plan.
6. Connect new pumps to new electrical equipment, maintaining existing 40 HP pump on old transformer. Establish reliable operation of new pumps and conduct start-ups.
7. Transfer primary power feed to new MCC.
8. Remove generator power only after new pumps are in reliable operation. Demolish existing MCC, and city of Concord to remove old transformer.
9. Transfer existing 40 HP pump over to new MCC. Establish permanent connections from emergency generator connection and new MCC.

PUMP INFORMATION

DUTY FLOW: 1250 U.S. GPM
DUTY HEAD: 75 FT.
IMPELLER DIA.: 9.54 INCH
POWER REQUIRED: 31.2 HP
NPSH REQUIRED: 8.3 FT.
EFFICIENCY: 75.7%
PEAK POWER: 34.6 HP
**TYPICAL ABBREVIATIONS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>L</td>
<td>Light</td>
</tr>
<tr>
<td>H</td>
<td>High</td>
</tr>
<tr>
<td>V</td>
<td>Voltage</td>
</tr>
<tr>
<td>A</td>
<td>Amperes</td>
</tr>
<tr>
<td>W</td>
<td>Watts</td>
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<tr>
<td>R</td>
<td>Resistance</td>
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<tr>
<td>F</td>
<td>Frequency</td>
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**TYPICAL DEVICE SYMBOLS**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
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<tbody>
<tr>
<td>A</td>
<td>Alternator</td>
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<tr>
<td>V</td>
<td>Valve</td>
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<tr>
<td>F</td>
<td>Fuse</td>
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<tr>
<td>M</td>
<td>Motor</td>
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<tr>
<td>L</td>
<td>Lamp</td>
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**GENERAL ELECTRICAL SYMBOLS**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
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<tbody>
<tr>
<td>+</td>
<td>Positive</td>
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<tr>
<td>-</td>
<td>Negative</td>
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<tr>
<td></td>
<td>Ground</td>
</tr>
<tr>
<td></td>
<td>Short Circuit</td>
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**GENERAL NOTES**

- All equipment and apparatus shall be capable of meeting all applicable codes, standards, and requirements.
- Electrical equipment shall be supplied in accordance with the manufacturer's instructions and drawings.
- Control systems shall be designed and installed in accordance with the project specifications.
- All conduits and raceways shall be installed in accordance with the local electrical codes.
- All electrical equipment shall be labeled with manufacturer's name and model number.

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**LIGHTING SYMBOLS**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
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<tbody>
<tr>
<td></td>
<td>Daylight</td>
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<tr>
<td></td>
<td>Electric Light</td>
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<td>Photocell</td>
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**TYPICAL DEVICE MOUNTING HEIGHTS**

<table>
<thead>
<tr>
<th>Device</th>
<th>Height (ft)</th>
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<tbody>
<tr>
<td>L</td>
<td>8</td>
</tr>
<tr>
<td>M</td>
<td>5</td>
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<tr>
<td>V</td>
<td>3</td>
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**TYPICAL ANSHEEVE DEVICE NUMBERS**

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>First</td>
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<tr>
<td>2</td>
<td>Second</td>
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<tr>
<td>3</td>
<td>Third</td>
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</tbody>
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**CORPORATE AVENUE PUMP STATION**

**REHABILITATION**

**ISSUED FOR BID**

**DATE:** JULY 2018

**DESIGN BY:** McKIM & CREED, INC.

**PLAN/PROF. (SDSK)**

**PROCESS/LAYOUT BY:**

**APPROVED BY:**

**SCALE:** 1/2" = 1'-0"