1. All existing pipework, piping, valves, equipment, and associated items to be removed. New piping and equipment will be supplied by the Contractor in accordance with the new plans and specifications.

2. Existing electrical systems and utility connections are to remain as noted. New electrical systems and utility connections will be supplied by the Contractor in accordance with the new plans and specifications.

3. Existing HVAC systems are to remain as noted. New HVAC systems will be supplied by the Contractor in accordance with the new plans and specifications.

4. Existing water systems are to remain as noted. New water systems will be supplied by the Contractor in accordance with the new plans and specifications.

5. Existing gas systems are to remain as noted. New gas systems will be supplied by the Contractor in accordance with the new plans and specifications.

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Water Treatment Plant
Ann Arbor, Michigan
Ammonia Feed System Modifications
General Notes, Abbreviations and Symbols

PROCESS SYMBOL LEGEND

PROCESS ABBREVIATIONS

PROCESS CHEMICAL FEED NOTES

P-1
1. Field verify equipment and structure dimensions, locations, as well as available spacing for pipe installation. Plans show piping schematically.

2. Contractor shall submit proposed piping to owner for review and approval prior to installation.

3. Repaint west interior wall after patching plaster and drywall, and prior to mounting ammonia feed panels. See specification 09 91 00.

4. Contractor shall ensure day tank is fully evacuated and depressurized prior to removing and replacing tank gauge.

5. See sheet P-3 and P-5 for detail on valves associated with ammoniator panels.

NOTES

- Use of equipment and systems has been limited to equipment and systems required by the owner.
- Refer to the site layout for the location of existing equipment.
- Refer to the construction drawings for additional details.
- All work shall be performed in accordance with applicable codes and standards.
- Any discrepancies shall be brought to the attention of the owner.

NOTES

- Reviewer
- Designer
- Drawn By
- Hard copy is intended to be 24"x36" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.
- Manager

PLOT INFO:
Z:\2017\172108\CAD\CD\AMMONIA FEED SYSTEM MODIFICATIONS\P004170681.DWG

LAYOUT:
P-4

DATE: 2/5/2019
TIME: 2:13:52 PM
USER: RS2

PROJECT NO.
170681

FIGURE NO.
P-4

Water Treatment Plant
Ann Arbor, Michigan
Ammonia Feed System Modifications
Ammonia Building Process Plan

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Water Treatment Plant
Ann Arbor, Michigan
Ammonia Feed System Modifications
Ammonia Feed Sections and Temporary Schematic

Temporary Ammonia Feed System Schematic

Specifications:
1. Ammonia storage capacity shall be provided in a secure and locked area.
2. Ammonia shall be delivered by tanker truck.
3. Ammonia shall be stored in accordance with all applicable regulations.
4. Ammonia shall be fed to the water treatment plant through a dedicated line.
5. Ammonia shall be monitored for concentration and flow rate.
6. Ammonia shall be stored in a manner that minimizes environmental impact.

Section 1: Water Treatment Plant
Section 2: Ammonia Feed System
Section 3: Temporary Ammonia Storage
Section 4: Ammonia Feed Piping

Revision: 2/6/2019
BIDS AND CONSTRUCTION P-5

TLW
1. Field verify equipment and structure dimensions and locations. Coordinate work with pipe and ammoniator installation.

2. Contractor shall submit proposed conduit layout to owner for review and approval prior to installation.

3. Conductors and cables:
   - Power wire: No. 12 AWG minimum, THHN/THWN.
   - Control cable: No. 14 AWG minimum, THHN/THWN.
   - Instrument cable: No. 16 AWG minimum, insulated copper conductors, twisted shielded pair.

4. All wires shall be installed in conduit.

5. Conduit types:
   - Minimum conduit size is 3/4"C.
   - Conduit in ammonia building shall be Schedule 80 PVC.
   - Conduit outside shall be (RGS).

6. Provide (2) weatherproof, GFCI duplex receptacles with two gang weatherproof while-in-use, extra duty cover. Mount at 60-inches above finished floor.

7. Use (3) of the spare wires located in C2-A1 junction box for the chemical feed rate feedback (AO1) from the ammoniator control valves back to RIO-C2 panel. Wire to the following spare analog inputs:
   - PLC-2 rack R2 slot 2 input 6: AP-1 chemical feed rate
   - PLC-2 rack R2 slot 2 input 7: AP-2 chemical feed rate
   - PLC-2 rack R2 slot 3 input 6: AP-3 chemical feed rate

8. Reuse conduit, install new cable for the existing CW1 feed rate set point and CW2 feed rate set point from green panel in control room. Wire as follows:
   - Ammoniator panel AP-1: CW1 feed rate set point.
   - Ammoniator panel AP-2: EITHER CW1 or CW2 feed rate set point as determined by selector switch.
   - Ammoniator panel AP-3: CW2 feed rate set point.