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## **Addendum**

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Wallkill Central School District  
Wallkill, New York

SED NO. 62-18-01-06-0-005-018

Reconstruction to  
Plattekill Elementary School

Tt Project No. 17597-22002 – Phase 2B

BID Addendum No. 1  
to  
Drawings and Project Manual

October 21, 2024

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To: ALL BIDDERS

This ADDENDUM forms a part of the BIDDING AND CONTRACT DOCUMENTS and modifies the following documents:

Original DRAWINGS dated December 18, 2023.

PROJECT MANUAL dated December 18, 2023.

Acknowledge receipt of the ADDENDUM in the space provided on the FORM OF PROPOSAL

This ADDENDUM consists of (5) pages and the following:

### **ATTACHMENTS**

PRE-BID REQUEST FOR INFORMATION QUESTIONS/ANSWERS

PRE-BID MEETING SIGN-IN SHEET

### **NEW PROJECT MANUAL SECTIONS**

SECTION 22 32 00 – DOMESTIC WATER FILTRATION EQUIPMENT

SECTION 32 50 00 - BOLLARDS

### **NEW DRAWINGS (11 x 17)**

DP01B Duplex Sump Pump System Schematic

### **REISSUED DRAWINGS (30 x 42)**

DP001 Site Plan

DP130 First Floor Key Plan, Detail and Schedules

DP131 Partial Basement Plan, Details and Schedule

## **PROJECT MANUAL MODIFICATIONS**

**ITEM 1-C-1:** Refer to SECTION 00 01 10 - TABLE OF CONTENTS

1. Division 22, ADD the following:  
“22 32 00 Domestic Water Filtration Equipment”
2. Division 32, ADD the following:  
“32 50 00 Bollards”

**ITEM 1-C-2:** Refer to SECTION 01 10 00 – PROJECT SUMMARY OF WORK – PROJECT SCHEDULE

1. Paragraph 1.5, B., 1., AMEND to read as follows:  
“1. Includes All work shown on the Drawings and Specification, unless noted otherwise. It also includes administrative and coordination responsibilities”.
2. Paragraph 1.5, B., 2., b., AMEND to read as follows:  
“b. Removal and disconnections includes, but is not limited to existing pumps, decommissioned water filtration system, piping, control panel, concrete housing keeping pad, asphalt, concrete sidewalk as identified on the drawings and specifications”.
3. Paragraph 1.5, B., 2., c., AMEND to read as follows:  
“c. Coordinate with the Construction Manager for necessary shutdowns and removals. Minimum of 48-hour notice will be required for any shutdown so that it doesn’t affect the school district’s and Our Lady of Fatima Church operations. Shutdown may be required to be performed during second shift or weekend”.
4. Paragraph 1.5, B., 3., AMEND to read as follows:  
“3. Temporary Facilities
  - a. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01 50 00, “Temporary Facilities and Controls.”
  - b. Provide and maintain temporary electric power and lighting.
  - c. Provide and maintain fire alarm and security system during duration of project.
  - d. Any Utility interruptions to the building need to notified to the construction manager 48 hours prior so that the district can prepare.
  - e. Temporary protection of trenches and building opening during duration of project.
  - f. Contractor to provide temporary water source tied into the school’s water system if water is shutdown for more than 8 hours”.
5. Paragraph 1.5, B., 4., AMEND to read as follows:  
“4. New Construction:
  - a. Please note that the water service is providing water for the school as well as the neighboring church.

- b. Excavation, trenching, backfilling and restoration (including but not limited to grass area and asphalt areas). It is known that existing utilities cross in areas of new work. Contractor is responsible for hiring an independent utility detector company. Any damages to existing utilities known or unknown are the responsibility of the contractor is damaged. The costs of all repairs is the responsibility of the contractor and no costs should be incurred to the owner.
- c. All electrical work.
- d. All water line work
- e. New Bollards with bollard covers. See detail 3/DP001.
- f. Asphalt striping
- g. Provide concrete housekeeping pad
- h. Labeling/ Identification of new piping
- i. Insulation of plumbing piping
- j. Penetration firestopping of any penetrations through existing firewall.
- k. Testing and balancing
- l. Provide owner training”.

6. Paragraph 1.5, B., 6., AMEND to read as follows:

“6. Provide multiple shift work, weekend work, & overtime as needed to complete work as shown on milestone schedule. It is the contractor’s responsibility to include such shift work, weekend work & overtime in their contract. The owner will not be responsible for paying any cost associated with shift work, weekend work & overtime. Contractors will be required to provide a detailed schedule which will be approved by the CM for all shift work required prior to work commencing.

7. Paragraph 1.6, B., 2., a., AMEND to read as follows:

“a. Monday – Friday: On-Site (Interior / Exterior) construction activities between the hours of 6:00 AM and 4:30 PM with motorized equipment, delivery of construction material or any construction practice. Written Permission from Owner required for additional work hours. Provide Owner with 72 Hour Notice before proposed work”.

## **PROJECT MANUAL MODIFICATIONS - PLUMBING**

ITEM 1-C-3: Refer to SECTION 22 11 19 – DOMESTIC WATER PIPING SPECIALTIES

1. Part 2, ADD the following:

### **“2.6 BACKFLOW PREVENTERS**

#### **A. Reduced-Pressure-Principle Backflow Preventers NPS 2 and Smaller:**

- 1. Basis-of-Design Product: Subject to compliance with requirements, provide WATTS; LF009 or a comparable product by one of the following:
  - a. Ames Fire & Waterworks; A WATTS Brand.
  - b. Apollo Valves; a part of Aalberts Integrated Piping Systems.

- c. FEBCO; A WATTS Brand.
  - d. Zurn Industries, LLC.
- 2. Standard: ASSE 1013.
- 3. Operation: Continuous-pressure applications.
- 4. Body: Lead free cast bronze.
- 5. End Connections: Threaded.
- 6. Configuration: Designed for horizontal, straight-through flow.
- 7. Accessories:
  - a. Valves: Ball type with threaded ends on inlet and outlet.
  - b. Air-Gap Fitting: ASME A112.1.2, matching backflow-preventer connection.
- 8. Capacities and Characteristics:
  - a. Size: 1 1/2"
  - b. Design Flow Rate: 28 gpm.
  - c. Pressure Loss at Design Flow Rate: 14 psig."

ITEM 1-C-4: Refer to SECTION 22 14 29 – SUMP PUMPS

1. Paragraph 2.3, C., AMEND to read as follows:

“C. Capacities and Characteristics:

1. Diameter: 36”.
2. Depth: 48” minimum.
3. Inlet No. 1:
  - a. Drainage Pipe Size: 2”.
  - b. Type: Threaded outside.
4. Cover Diameter: 36” minimum, but not less than outside diameter of basin top flange.
5. Vent Size: Not required.”

ITEM 1-C-5: Refer to SECTION 33 11 13 – POTABLE WATER SUPPLY WELLS

1. Paragraph 3.5, AMEND to read as follows:

“3.5 FIELD QUALITY CONTROL

- A. Test Preparation: Clean water supply wells of foreign substances. Swab casings using alkalis, if necessary, to remove foreign substances.
- B. Testing Agency: Engage a qualified testing agency to perform tests and inspections. .

C. Perform the following tests and inspections:

1. Plumbness and Alignment Testing: Comply with AWWA A100.
2. Prepare reports on static level of ground water and level of water for various pumping rates.”

**DRAWING MODIFICATIONS - PLUMBING**

ITEM 1-C-6: Refer to DRAWINGS DP001, DP130 AND DP131

1. DELETE drawings in their entirety and, ADD new drawings attached to this addendum.

ITEM 1-C-7: Refer to DRAWING DP132

1. Detail 3, AMEND as shown on Drawing DP01B attached to this addendum.

**END OF ADDENDUM**



**INSTRUCTIONS TO BIDDERS**  
**ATTACHMENT #1:**  
**PRE-BID REQUEST FOR INTERPRETATION FORM**

**SUBMIT FORM BY EMAIL TO [INE.Wallkill@tetratech.com](mailto:INE.Wallkill@tetratech.com)**

**Project No.:** 17597-22002B

**Date:** 10/8/2024

**Project Name:** Reconstruction to Plattekill Elementary School

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**Bidder Contact Person:** Eric DeRise  
**Bidder Company Name:** S&O Construction Services  
**Bidder Phone:** 845-635-2916  
**Bidder Email Address:** ederise@soconserv.com

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**Question Pertains to:**

**Drawing Number:** DP001, DP130, DP131  
**Plan Area:**  
**Room Number:**  
**Drawing Detail Number:**  
**Specification Section:** 011000 Summary of Work

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**Question: (Please be specific)**

I think the summary of work has not been updated correctly for this phase of work. The summary of work indicates to remove and replace the duplex booster pump, but the plans show to provide water treatment equipment (GAC, etc.).

Can you please revise the summary of work to clarify the PC scope of work?

Also, will the PC provide all of its own site work for the exterior piping as shown on DP001, including trenching, backfilling, restoration, asphalt, etc.?

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**Review by Architect/Engineers:**

**Responded By:** T Farlow **Date:** 10/17/2024

1. See Addendum No. 1 for further clarification.
  2. See Addendum No. 1 for further clarification.
  3. The project is a single prime contract. PC will be responsible for all proposed work including, but not limited to trenching, backfilling, restoration, asphalt, etc. PC may choose to hire a sub contractor to perform the aforementioned site elementats of the contract.
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Submit requests not less than 5 working days prior to the specified Bid Opening date and time. In the event that this question requires clarification or modification of the Bidding Documents, such written information can only be provided by formal Addendum, distributed to all plan holders.



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**Project No.:** 17597-22002B

**Date:** 10/11/2024

**Project Name:** Reconstruction to Plattekill Elementary School

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**Bidder Contact Person:** Eric DeRise  
**Bidder Company Name:** S&O Construction Services  
**Bidder Phone:** 845-635-2916  
**Bidder Email Address:** ederise@soconserv.com

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**Question Pertains to:**

**Drawing Number:** DP130  
**Plan Area:**  
**Room Number:**  
**Drawing Detail Number:**  
**Specification Section:**

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**Question: (Please be specific)**

Also I don't see spec sections on the water treatment equipment (GAC, GSF) that is shown to be provided on DP130. Can you please provide those specs in an addendum?

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**Review by Architect/Engineers:**

**Responded By:** B. Leonard **Date:** 10/17/24

Please refer to Bid Addendum No 1 for specification section 22 32 00 Domestic Water Filtration Equipment.

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**INSTRUCTIONS TO BIDDERS**  
**ATTACHMENT #1:**  
**PRE-BID REQUEST FOR INTERPRETATION FORM**

**SUBMIT FORM BY EMAIL TO [INE.Wallkill@tetratech.com](mailto:INE.Wallkill@tetratech.com)**

**Project No.:** 17597-22002B

**Date:** 10/14/2024

**Project Name:** Reconstruction to Plattekill Elementary School

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**Bidder Contact Person:** Eric DeRise  
**Bidder Company Name:** S&O Construction Services  
**Bidder Phone:** 845-635-2916  
**Bidder Email Address:** ederise@soconserv.com

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**Question Pertains to:**

**Drawing Number:** DP130, DP131  
**Plan Area:**  
**Room Number:**  
**Drawing Detail Number:**  
**Specification Section:** 221429

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**Question: (Please be specific)**

The plans show a new duplex sump pump with basin and cover to be provided. Spec 221429 refers to the excavating spec. Can you please confirm that there is no existing sump pit where the new duplex pump is to be provided and that this contract is to provide all excavating of the pit, backfilling and finishing of floors around the new pit?

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**Review by Architect/Engineers:**

**Responded By:** B. Leonard **Date:** 10/17/24

The sump pit and pumps are new installation within the existing floor. See Bid Addendum No 1 for additional information.

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BARONE CONSTRUCTION GROUP, INC.  
"BUILDING A FUTURE OF EXCELLENCE"

**Meeting Agenda Sign In Sheet**

October 16, 2024, 3:30 p.m.

(Please Print)

Name	Representing Company	Title or Position
Joe Barone	BCG	PM
Lou Dero	Clean Air	Plumber
Terry Tompkins	Clean Air	Plumber
Robert Rucinski	ATERO P&H	Super
Daniel DiMato	Tetra Tech	Construction Admin
Thomas FAIZLOH	TETRA TECH	PROJECT MANAGER
Eric DeRise	SFO Construction	Estimator

**SECTION 22 32 00 - DOMESTIC WATER FILTRATION EQUIPMENT****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Section Includes:
  - 1. Manganese green sand filter system.
  - 2. Carbon filters

**1.3 PERFORMANCE REQUIREMENTS**

- A. In the event of failure or malfunction during the guarantee period, the contractor shall arrange for repair, adjustment, service or replacement of equipment, as required, by a factory authorized service representative. Contractor shall pay all costs associated with such corrective work
- B. The manufacturer shall further guarantee that:
  - 1. The loss of mineral through attrition during the first 3 years of operation shall not exceed 3 percent per year.
  - 2. The mineral shall not be washed out of the system during the service run or backwashing period.
  - 3. The turbidity and color of the effluent, by reason of passing through the filtration system, shall not be greater than the incoming water.
  - 4. The underdrain system, gravel and mineral shall not become fouled, either with turbidity or dirt, while operating as noted in manufacturer's instructions.

**1.4 ACTION SUBMITTALS**

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, finishes for filters and separators, rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories:
  - 1. Filtration System
  - 2. Filter Media
  - 3. Test kits

- B. Shop Drawings: For water filtration equipment. Include plans, elevations, sections, details, and attachments to other work.

- 1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
- 2. Wiring Diagrams: For power, signal, and control wiring.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For water filtration equipment to include in emergency, operation, and maintenance manuals.
- B. Field quality-control reports.

#### 1.6 MAINTENANCE SERVICE

- A. Initial Maintenance Service: Beginning at Substantial Completion, provide six months' full maintenance by skilled employees of water filtration equipment Installer. Include monthly preventive maintenance, repair or replacement of worn or defective components, cleaning, and adjusting as required for proper water softener operation at rated capacity. Provide parts and supplies the same as those used in the manufacture and installation of original equipment.

#### 1.7 MATERIALS MAINTENANCE SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Spare Diaphragm Valve Rebuild Kits: 4 spare diaphragm valve rebuild kits of each size valves used.

#### 1.8 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of water filtration equipment through one source from a single manufacturer.
- B. Welding Qualifications: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- D. Comply with NSF 61 Annex, "Drinking Water System Components - Health Effects," for all components that will be in contact with potable water.

#### 1.9 PROJECT CONDITIONS

- A. Feedwater Analysis:
  - 1. Well #1:
    - a. Iron: 0.05 ppm.

- b. Manganese: 0.223 ppm.
  - c. Perfluorooctanesulfonic Acid (PFOS): 1.56 ng/L
  - d. Perfluorooctanoic Acid (PFOA): 1.56 ng/L
- 2. Well #2:
  - a. Iron: 3.4 ppm.
  - b. Manganese: 0.0815 ppm.
  - c. Perfluorooctanesulfonic Acid (PFOS): 12.5 ng/L
  - d. Perfluorooctanoic Acid (PFOA): 7.88 ng/L

B. Feedwater Properties:

- 1. Inlet Water Pressure: Approx 50 psig.
- 2. Water Temperature: Approx 50 deg F.

## 1.10 COORDINATION

- A. Coordinate size and location of concrete bases with actual equipment provided.

## PART 2 - PRODUCTS

### 2.1 GENERAL

- A. Note: The filtration equipment model numbers listed are for bidding purposes only. Final equipment selections will be made by the Architect upon completion of domestic water well rehabilitation work and water analysis reports submitted by the Contractor.

### 2.2 CARBON FILTERS

- A. General: Provide a factory assembled, duplex vertical pressure type filter system intended for removing PFOA and PFOS from water, shipped with manifold piping attached to the filter tank for ease of installation and start up. System will include media tank, media and manual backwashing. All equipment and materials shall be supplied in compliance with the specifications as intended for a complete and operational system.
- B. Basis-of-Design Product: Subject to compliance with requirements, provide Carbon Activated Corporation. or comparable product by one of the following:
  - 1. Lakeside Water Treatment
  - 2. Marlo Incorporated.
  - 3. Mueller Water Conditioning, Inc.
- C. Media Tank: Corrosion resistant with distribution system and media.
  - 1. Construction:
    - a. Pipe Connections NPS 2 and Smaller: Threaded according to ASME B1.20.1.

- b. Tank Pipe Connections NPS 2-1/2 and Larger: Steel, Class 150 flanges according to ASME B16.5 or grooved according to AWWA C606. Provide stainless-steel flanges if tank is stainless steel.
    - c. Support: Base, feet, or skirt.
  - 2. Controls: Manual for control of backwash; factory wired for single, external electrical connection.
    - a. Panel: NEMA 250, Type 4 enclosure.
    - b. Backwash Initiation Device: Manual
    - c. Lockout: If sump pumps receiving backwash goes into alarm condition, GAC filter to provide lockout to not allow backwash cycle until alarm is corrected.
- D. Capacity and Characteristics:
- 1. Refer to schedules on the drawings.
  - 2. Filter Backwash Interval: Set based on manufacturers recommendations.
  - 3. Media Tank:
    - a. Material: Grade 70, rolled plate carbon steel with NSF 61 Annex lining material.
    - b. Pressure Rating: 75 psig.
    - c. Media: Activated charcoal.
    - d. Media Quantity: Per manufacturers recommendations
    - e. Manhole: 14" X 18" on top head
    - f. Interior lining: polyethylene
    - g. Exterior coating: Composite
  - 4. Filter media
    - a. High density granular activated carbon (GAC)
    - b. Compliant with AWWA B604-96 standards and Food Chemicals Codex Standards for drinking water
    - c. ANSI/NSF Standard 61 certified.
    - d. Effective size: 0.55 – 0.75mm
    - e. Uniformity coefficient: < 1.9
  - 5. Unit Electrical Characteristics:
    - a. Volts: 120.
    - b. Phase: Single.
    - c. Hertz: 60.

## 2.3 GREENSAND FILTERS

- A. General: Provide a factory assembled, duplex vertical pressure type filter system intended for iron and manganese removal, shipped with manifold piping attached to the filter tank for ease of installation and start up. All equipment and materials shall be supplied in compliance with the specifications as intended for a complete and operational system.

- B. Basis-of-Design Product: Subject to compliance with requirements, provide Lakeside Water Treatment, Inc.; Model LWTFE-MG-21 Commercial Filter System with Chemical Regeneration or comparable product by one of the following:
1. Marlo Incorporated.
  2. Mueller Water Conditioning, Inc.
- C. Tank Construction: FRP/ Composite pressure vessel Electric welded pressure vessels conforming to code and non-code construction and designed for 100-psig working pressure and factory tested at 150-psig with the following features:
1. One 12-by-16-inch manhole in the top head and one 4-by-6-inch hand-hole in the lower side shell.
  2. Pipe Connections NPS 2 and Smaller: Threaded according to ASME B1.20.1.
  3. Pipe Connections NPS 2-1/2 and Larger: Steel, Class 150 flanges according to ASME B16.5 or grooved according to AWWA C606.
  4. Sampling taps located on the shell side of the tank at the juncture of the Anthracite cap and Manganese Greensand filter media.
  5. Finishes:
    - a. Internal Finish: Polyethylene inner lining.
    - b. Exterior Finish: Composite
  6. Expansion: The vessels shall be sized to allow 50% expansion during backwash without media loss.
  7. Accessories:
    - a. Pressure gauges: 2-1/2 inch diameter liquid filled with brass wetted parts and stainless steel case on the inlet and outlet of each tank.
    - b. Sampling cocks: 1/4 inch PVC valves on the inlet and outlet of each tank.
    - c. Automatic finished water diaphragm valves supplied for each filter.
- D. Upper Distributor: Single point baffle constructed of schedule 80 PVC on tanks 42" and smaller.
- E. Lower Distributor: Hub and radial design distribution system constructed of high impact PVC with 0.010" slotted SDR laterals including a hide-out preventer and covered with a sub-fill of 1/8 x 1/16 washed gravel.
- F. Operating Valves: Nest of individual glass-filled Noryl thermoplastic body diaphragm valves with Buna-N diaphragms, EPDM disc & seals and PVC end connections, slow opening and closing action that is free of water hammer. There shall be no special tools required to service the valves. Valves can be operated either hydraulically or pneumatically.
- G. Flow Control: Automatic backwash control that maintains a proper backwash and fast flush flows over a wide variation of operating pressure. Controller shall contain no moving parts, and require no field adjustment.

- H. Piping and Fittings: Factory assembled and tested main operating valves and Schedule 80 PVC manifold piping shipped attached to the filter tank for ease of installation and start-up.
- I. Control and Regeneration Initiation: Automatic, 12-day electric time clock controller, mounted in a NEMA 4X fiberglass enclosure, fully adjustable to initiate regeneration at any hour of the day and any day of the week, factory wired for single, external electrical connection. System operation shall be continuous with bypass piping and not more than one tank in backwash cycle at same time.
- J. Filter Media: Dual-media manganese dioxide coated greensand and anthracite filter bed, consisting of two layers to reduce filter pressure drop, provide deep bed filtration and long filter runs and provide efficient iron, manganese and suspended solids removal.
  - 1. First layer: Hard coal anthracite with an effective size of 0.6 to 0.8mm.
  - 2. Second layer: Manganese greensand with an effective size of 0.3 to 0.35mm.
  - 3. 7 cubic feet manganese greensand with 9 inches anthracite coal cap.
  - 4. Total bed depth: Minimum of 30 inches.
- K. Separate Source Backwash: Provide hardware and programming for separate source backwash water than the service water.

## 2.4 SOURCE QUALITY CONTROL

- A. Before shipping, hydrostatically test carbon filters, and greensand filters, to minimum of one and one-half times pressure rating.
- B. Prepare test reports.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of filters.
- B. Examine roughing-in for piping systems to verify actual locations of piping connections before equipment installation.
- C. Examine walls and floors for suitable conditions where filters will be installed.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 EQUIPMENT MOUNTING

- A. Equipment Mounting: Install on concrete bases. Comply with requirements for concrete bases specified in Section 03 30 53 "Miscellaneous Cast-in-Place Concrete."
  - 1. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around full perimeter of concrete base.
  - 2. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete floor.

3. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
4. Install anchor bolts to elevations required for proper attachment to supported equipment.

### 3.3 CARBON-FILTER INSTALLATION

- A. Install carbon filters on concrete base. Comply with requirements for concrete base specified in Section 03 30 53 "Miscellaneous Cast-in-Place Concrete."
- B. Prepare carbon-filter tank distribution system and underbed, if any, for filter media and place specified media into tanks.

### 3.4 GREEN SAND-FILTER INSTALLATION

- A. Install sand-filter tanks on concrete base. Comply with requirements for concrete base specified in Section 03 30 53 "Miscellaneous Cast-in-Place Concrete."
- B. Prepare sand-filter tank distribution system and underbed for filter media and place specified sand and other media into tanks.
- C. Install seismic restraints for sand-filter tanks and accessories and anchor to building structure.

### 3.5 CONNECTIONS

- A. Comply with requirements for piping specified in Section 22 11 16 "Domestic Water Piping." Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to equipment to allow service and maintenance.
- C. Make piping connections between water filtration equipment and dissimilar-metal water piping with dielectric fittings. Comply with requirements for dielectric fittings specified in Section 22 11 16 "Domestic Water Piping."
- D. Install shutoff valves on feedwater-inlet and filtrate-outlet piping of each water filtration equipment filter and on inlet and outlet headers.
  1. Comply with requirements for metal general-duty valves specified in Section 22 05 23 "General Duty Valves for Plumbing Piping."
  2. Comply with requirements for plastic valves specified in Section 22 11 16 "Domestic Water Piping."
  3. Exception: Water filtration equipment with factory-installed shutoff valves at locations indicated.
- E. Install pressure gages on feedwater-inlet and filtrate-outlet piping of each water filtration equipment filter. Comply with requirements for pressure gages specified in Section 22 05 19 "Meters and Gages for Plumbing Piping."
  1. Exception: Water filtration equipment with factory-installed pressure gages at locations indicated.
  2. Exception: Cartridge water filters.
- F. Install drains as indirect wastes to spill into open drains or over floor drains.



### 3.6 IDENTIFICATION

- A. Identify system components. Comply with requirements for identification specified in Section 22 05 53 "Identification for Plumbing Piping and Equipment."

### 3.7 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
- B. Perform tests and inspections.
  - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- C. Tests and Inspections:
  - 1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
  - 2. Operational Test: After electrical circuitry has been energized, start units to confirm proper unit operation.
  - 3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Domestic water filtration equipment will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports.

### 3.8 STARTUP SERVICE

- A. Engage a factory-authorized service representative to perform startup service for greensand filters.
  - 1. Complete installation and startup checks according to manufacturer's written instructions.
- B. Sample filter filtrate after startup and at three consecutive seven-day intervals (total of four samples), and prepare certified test reports for required water performance characteristics.

### 3.9 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain greensand and carbon filters systems.

END OF SECTION 22 32 00

**SECTION 32 50 00 - BOLLARDS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Section Includes:
  - 1. Fabricated bollards.
  - 2. Bollard covers.

**1.3 SUBMITTALS, GENERAL**

- A. General: Submit all action submittals (except Samples for Verification) and informational submittals required by this Section concurrently.

**1.4 ACTION SUBMITTALS**

- A. Product Data: For the following:
  - 1. Fabricated bollards.
  - 2. Bollard covers.
- B. Shop Drawings: Show fabrication and installation details for bollards.
  - 1. Include plans, elevations, sections, and details of bollards and their connections. Show anchorage and accessory items.

**1.5 INFORMATIONAL SUBMITTALS****1.6 QUALITY ASSURANCE**

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

**1.7 PROJECT CONDITIONS**

- A. Field Measurements: Verify actual locations of construction contiguous with bollards by field measurements.

## 1.8 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete. Deliver such items to Project site in time for installation.

## PART 2 - PRODUCTS

### 2.1 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

### 2.2 FERROUS METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Steel Tubing: ASTM A 500, cold-formed steel tubing.

### 2.3 NONFERROUS METALS

- A. Aluminum Castings: ASTM B 26/B 26M, Alloy 443.0-F.

### 2.4 FASTENERS

- A. General: Unless otherwise indicated, provide Type 304 stainless-steel fasteners. Select fasteners for type, grade, and class required.

### 2.5 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Acrylic Primer: Thermoplastic acrylic primer compatible with topcoat.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Rust-Oleum Corporation; 3200 System Clear Blue Undercoat.

- C. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- D. Concrete: Comply with requirements in Section 03 30 53 "Miscellaneous Cast-in-Place Concrete" for normal-weight, air-entrained, concrete with a minimum 28-day compressive strength of 3,000 psi.

## 2.6 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Form exposed work with accurate angles and surfaces and straight edges.
- E. Weld corners and seams continuously to comply with the following:
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  - 2. Obtain fusion without undercut or overlap.
  - 3. Remove welding flux immediately.
  - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.
- G. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.

## 2.7 BOLLARD COVERS

- A. Plastic Bollard Cover: Heavy duty plastic bollard cover that fits over standard site-fabricated steel bollard.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Ideal Shield, Plastic Bollard Cover, 1/4" thick polyethylene or comparable product.
  - 2. Materials: 1/4" thick UV resistant and anti-static LDPE plastic sleeve, domed at top.
  - 3. Sleeve for pipe diameter: 6 inch.
  - 4. Color: Yellow Color warrantied for five years.

## 2.8 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish metal fabrications after assembly.
- C. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

## 2.9 STEEL AND IRON FINISHES

- A. Baked-Enamel, Powder-Coat Finish: Manufacturer's standard, baked, polyester, powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.
- B. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.
  - 1. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.

# PART 3 - EXECUTION

## 3.1 INSTALLATION, GENERAL

- A. Beginning installation constitutes Contractor's acceptance of substrates and conditions.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- C. Coordinate location to avoid utilities.
- D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

- E. Field Welding: Comply with the following requirements:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  2. Obtain fusion without undercut or overlap.
  3. Remove welding flux immediately.
  4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- F. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.
- G. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

### 3.2 INSTALLING FABRICATED METAL BOLLARDS

- A. Fill bollards solidly with concrete and allow concrete to cure seven days before installing.
- B. Anchor bollards in place with concrete footings. Center and align bollards in holes 12 inches above bottom of excavation. Place concrete and vibrate or tamp for consolidation. Support and brace bollards in position until concrete has cured. Set bollard plumb.

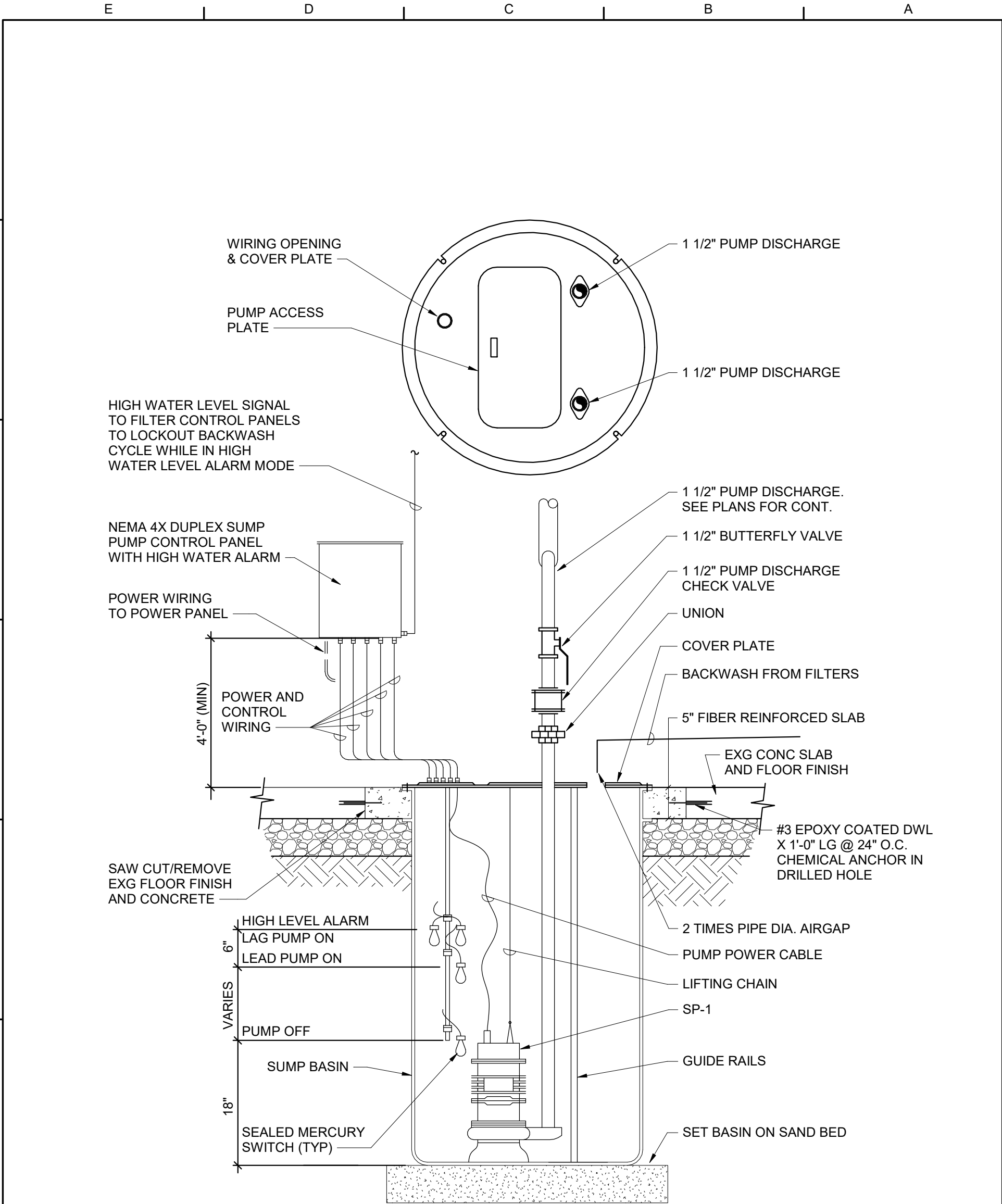
### 3.3 INSTALLING PLASTIC BOLLARD COVERS

- A. Install with manufacturer's neoprene adhesive tape per manufacturer's installation guidelines.

### 3.4 ADJUSTING AND CLEANING

- A. Clean all surfaces thoroughly and protect until acceptance.

END OF SECTION 32 50 00



1 Duplex Sump Pump System Schematic  
NTS



**TETRA TECH**  
ARCHITECTS & ENGINEERS

Tetra Tech Engineers, Architects & Landscape Architects, P.C.

Rev.:

Date:

Description:

Wallkill Central School District

Plattekill Elementary School

Duplex Sump Pump System Schematic

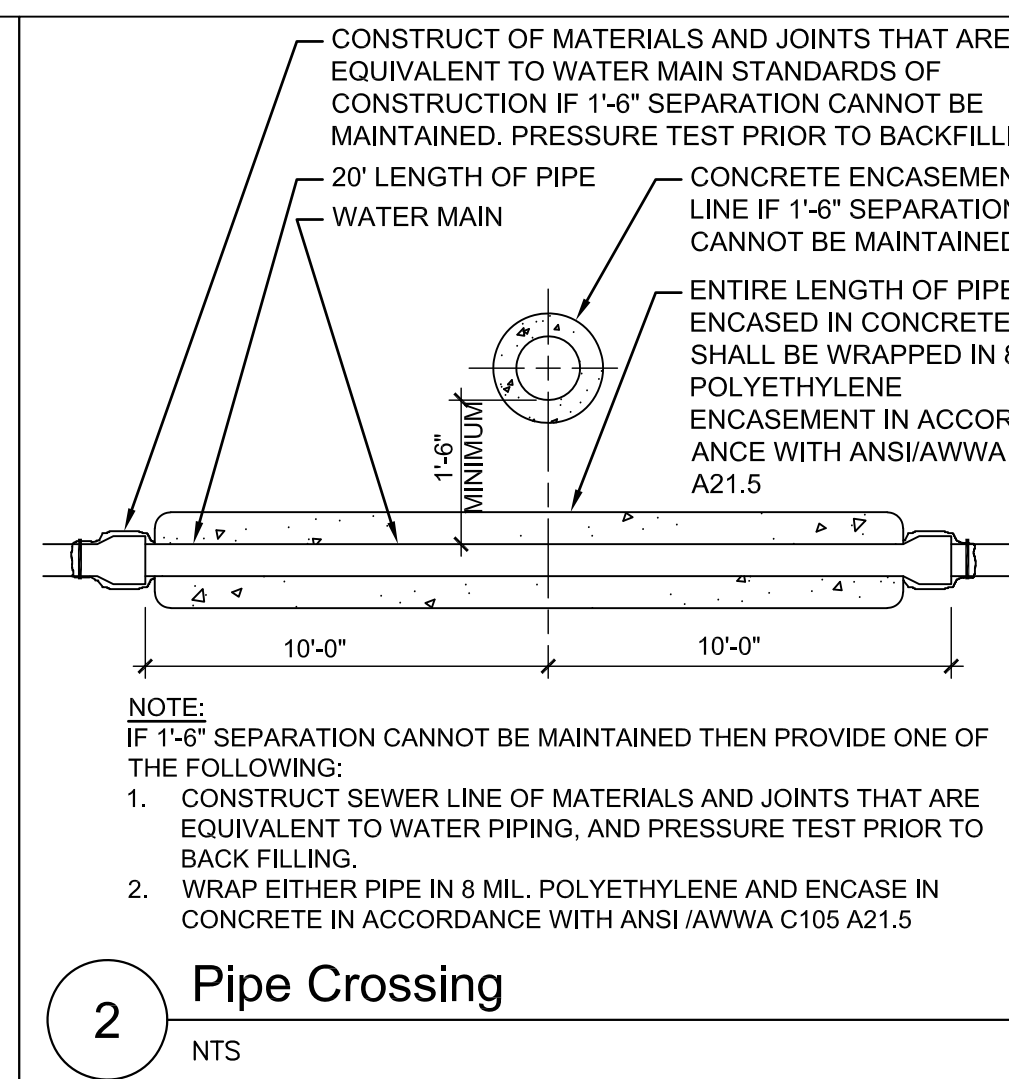
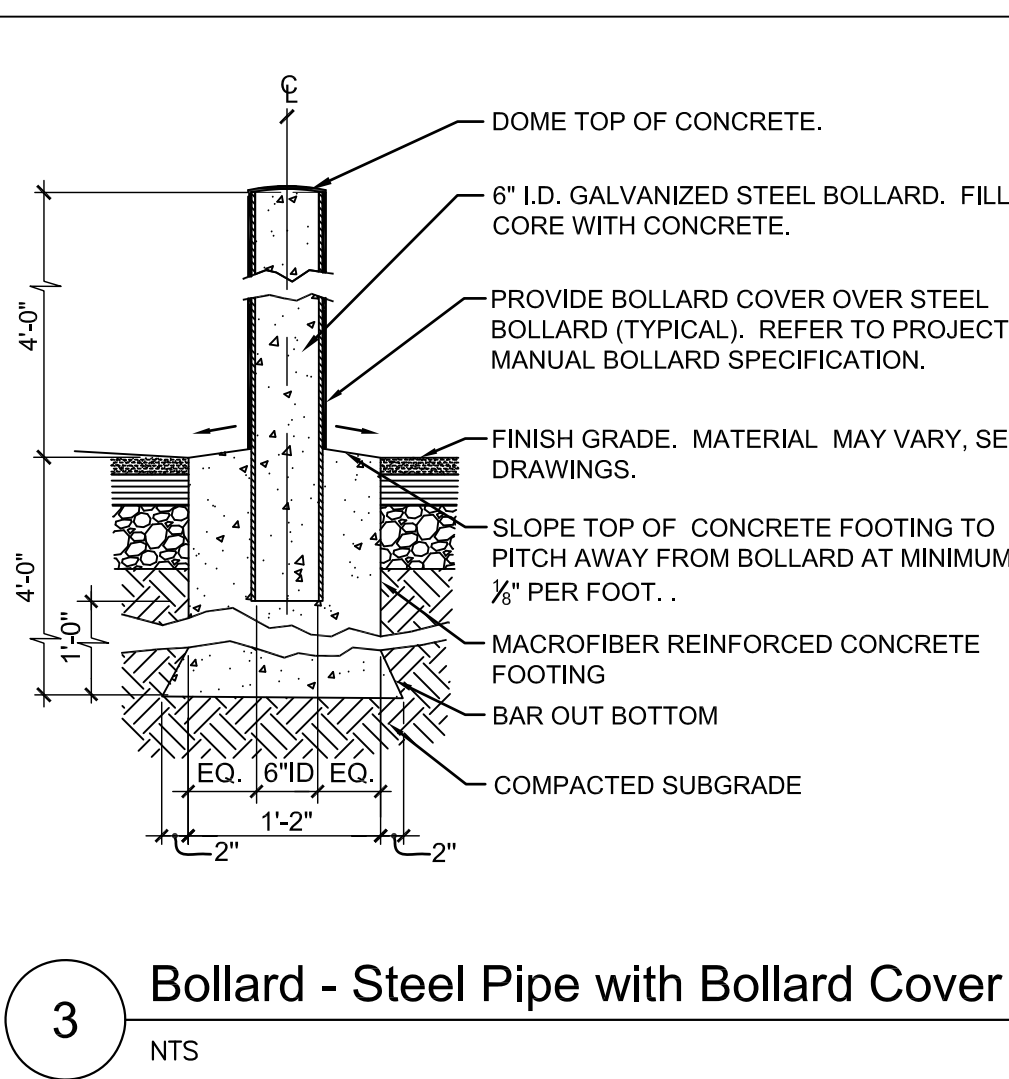
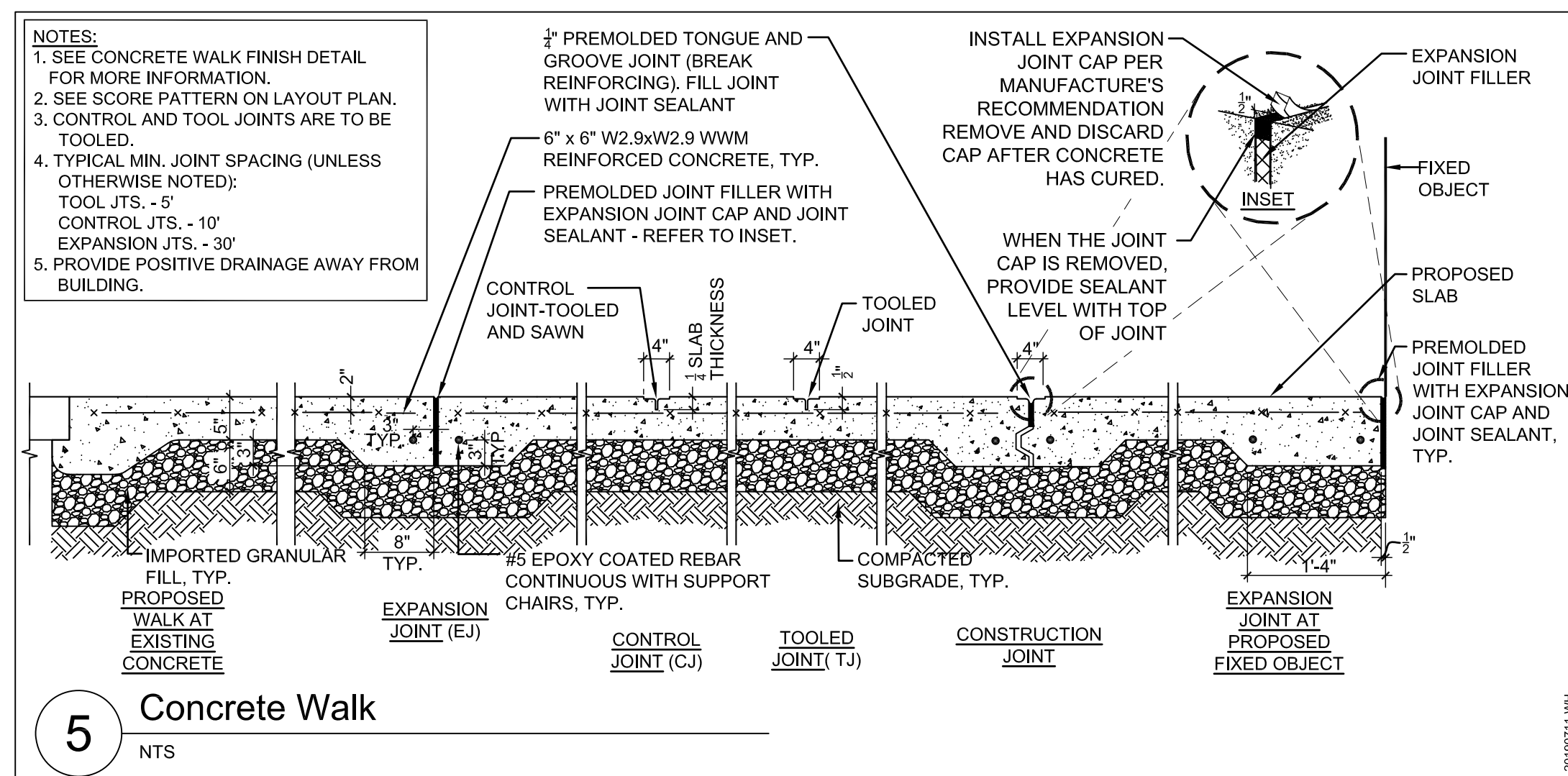
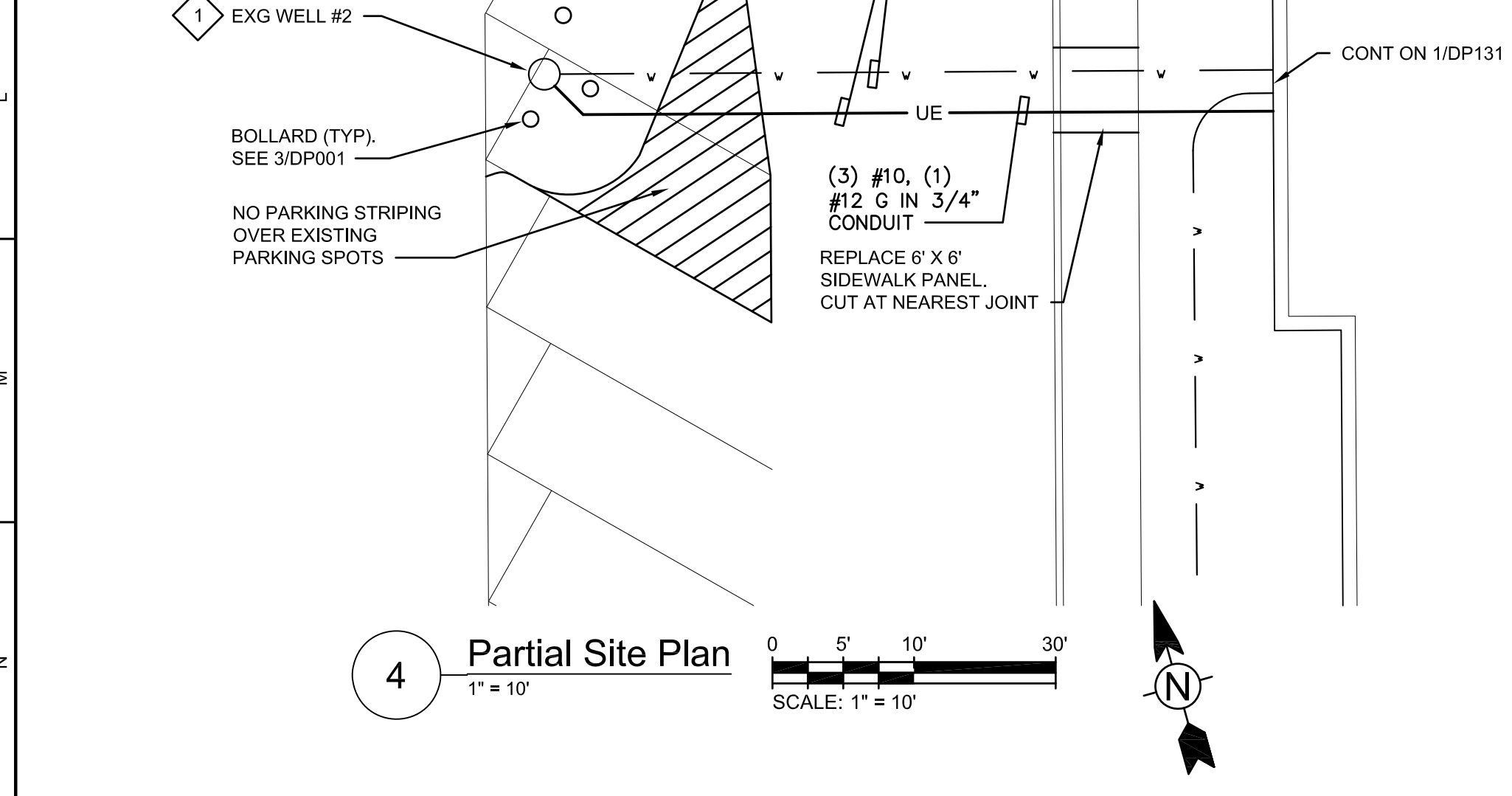
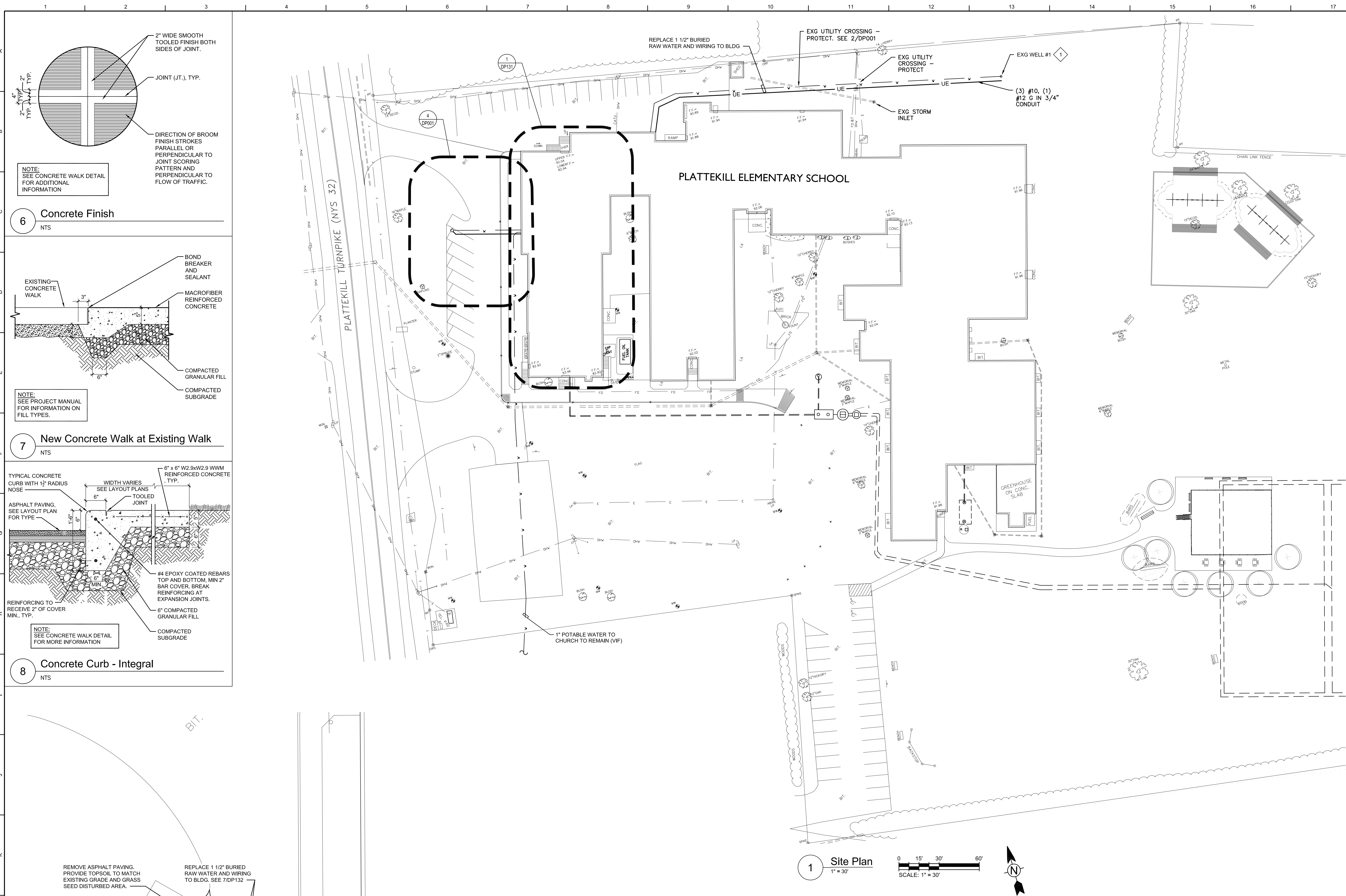
Proj. No.:17597-22002B

Date:10/15/24

Drawn By: BCL

Drawing No.:

DP01B



### General Notes

- VERIFY ALL PIPING LOCATIONS, SIZES, AND ARRANGEMENTS IN FIELD PRIOR TO BID. NOTIFY ARCHITECT IN WRITING OF ANY DISCREPANCIES.
- LEGALLY DISPOSE OF ALL DEMOLITION DEBRIS.
- INCLUDE TRENCHING, CUTTING AND PATCHING OF FLOORS, WALLS AND CEILINGS, INCLUDING CEILING TILE REMOVAL AND REPLACEMENT, WHEN REQUIRED FOR PLUMBING WORK. PATCH ABANDONED OPENINGS AND DISTURBED FINISHES TO MATCH EXISTING. TAKE PRECAUTIONS TO PROTECT STRUCTURAL INTEGRITY OF FLOOR OR WALLS WHEN TRENCHING OR CUTTING.
- MATERIALS FOR PLUMBING INSTALLATION SHALL BE NEW, UNLESS SPECIFICALLY NOTED OTHERWISE.
- NO PART OF PUBLIC WATER SUPPLY MAY BE PLACED INTO SERVICE UNTIL FINAL APPROVAL FROM ULSTER COUNTY DEPARTMENT OF HEALTH IS RECEIVED.
- ANY ADDITIONAL TREATMENT REQUIREMENTS TO MEET NEW YORK CODE, RULES AND REGULATIONS WILL BE ISSUED BY ARCHITECT AFTER FINAL WATER LAB ANALYSIS IS SUBMITTED AND PRIOR TO PLACING THE WELLS INTO SERVICE.

### Plumbing Notes

- REMOVE EXISTING MANHOLE AND EXTENSION CASING TO PROVIDE CONDITION SHOWN ON 8/01/132. REMOVE EXISTING WELL PUMP, 1 1/2" DROP TUBE, AND WIRING IN EXISTING WELL CASING. WELLS ARE 6-5/8" DIAMETER AND APPROXIMATELY 225 FEET DEEP. VERIFY IN FIELD ACTUAL DEPTH AND NOTIFY ENGINEER IN WRITING. REHABILITATE WELL BY UTILIZING CO<sub>2</sub> INJECTION OR HYDRO FRACTURING IN ACCORDANCE WITH NYSDOH AND NYDEC REQUIREMENTS. PERFORM A WELL YIELD TEST AND LAB ANALYSIS OF WATER QUALITY FOR EACH WELL AFTER REHABILITATION. NOTIFY ARCHITECT IN WRITING THE RESULTS. REPLACE WELL PUMP, 1 1/2" DROP TUBE, PITLESS UNIT AND POWER WIRING, AND INSTALL WITHIN EXISTING WELL CASING. REPLACE WELL CAPS AND EXTEND TO MINIMUM 18" ABOVE GRADE. SEE WELL PUMP SCHEDULE ON DP131 AND DETAILS ON DP132. FINAL WELL PUMP SELECTION WILL BE MADE AFTER WELL YIELD TESTS HAVE BEEN SUBMITTED TO ENGINEER.

S.E.D. Control No. 62-18-01-06-0-005-018

1	10/18/24	BID Addendum No 1
Rev. No.:	Date:	Description:



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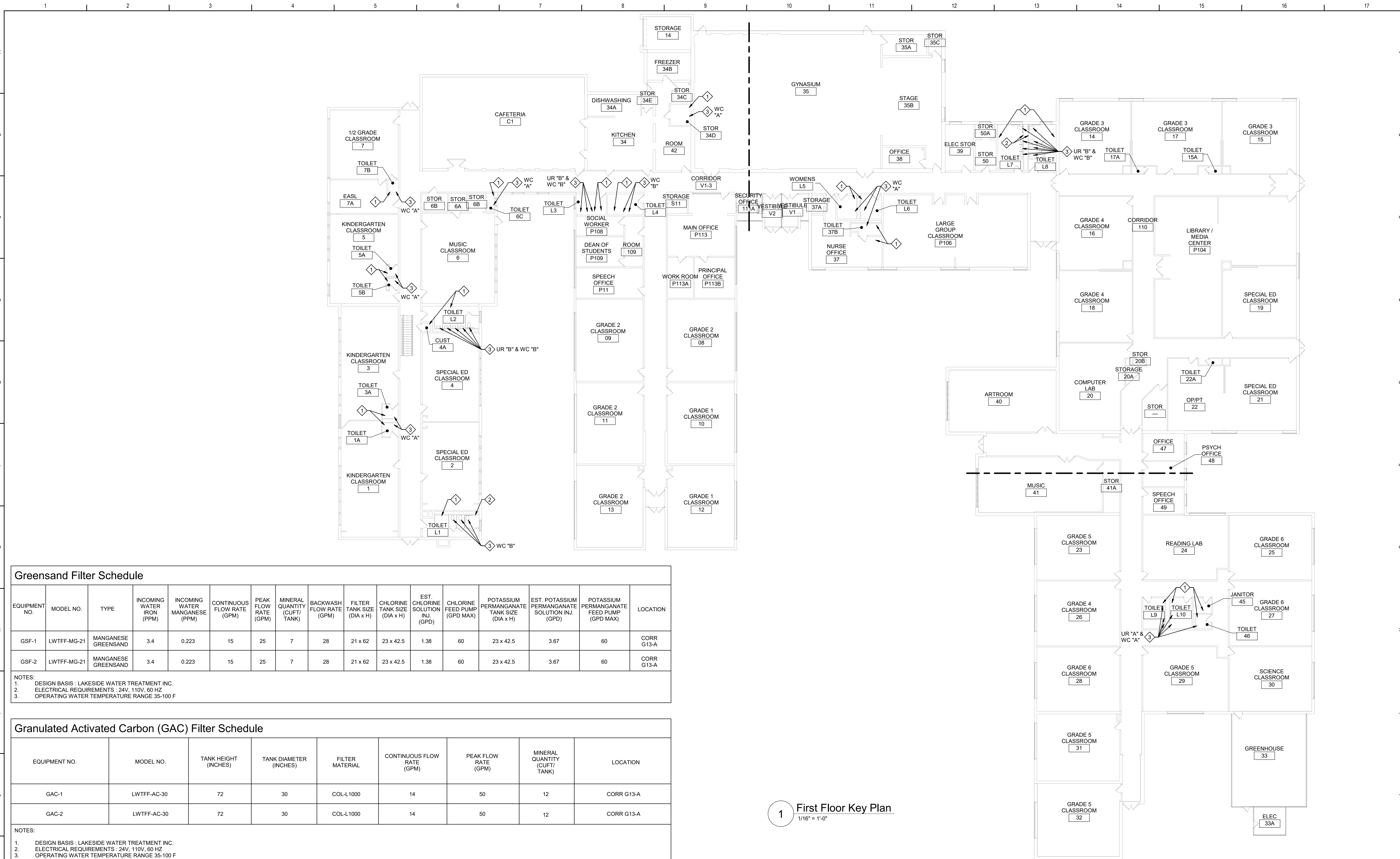
Walkill Central School District  
Walkill, New York

Reconstruction to:  
Plattekill Elementary School

Site Plan

Drawn by: BCL	Date: 12/18/2023	Drawing No.:
Project No.:	17597-22002B	DP001





Plan Notes  
A. REFER TO DRAWING NO. DP001 FOR GENERAL NOTES.

- Plumbing Notes
- 1 AFTER WELLS HAVE BEEN PUT BACK INTO SERVICE, REMOVE STRAINERS ON ALL EXISTING SINK AND LAVATORY FAUCETS WITHIN BUILDING. RUN WATER THROUGH OPEN FAUCETS TO CLEAR ANY DEBRIS AND SEDIMENT FROM THE SUPPLY PIPING UNTIL CLEAN WATER IS ATTAINED. CLEAN, INSPECT AND RE-INSTALL STRAINERS ON FAUCETS. VERIFY IN FIELD EXACT QUANTITIES AND LOCATIONS.
  - 2 AFTER WELLS HAVE BEEN PUT BACK INTO SERVICE, OPEN ANY EXISTING DRAIN VALVES, HOSE BIBBS, WALL HYDRANTS, ETC TO AID IN REMOVING ANY DEBRIS AND SEDIMENT FROM THE SUPPLY PIPING UNTIL CLEAN WATER IS ATTAINED. VERIFY IN FIELD EXACT QUANTITIES AND LOCATIONS.
  - 3 BY BASE BID: AFTER WELLS HAVE BEEN PUT BACK INTO SERVICE, DISASSEMBLE EXISTING FLUSH VALVE. RUN WATER THROUGH OPEN VALVE TO CLEAR ANY DEBRIS AND SEDIMENT FROM THE SUPPLY PIPING UNTIL CLEAN WATER IS ATTAINED. CLEAN AND INSPECT FLUSH VALVE ASSEMBLY BEFORE INSTALLING FLUSH VALVE REBUILD KIT. VERIFY IN FIELD EXISTING MAKE AND MODEL FOR EACH FLUSH VALVE PRIOR TO ORDERING REBUILD KITS. BY ALTERNATE NUMBER 1: AFTER WELLS HAVE BEEN PUT BACK INTO SERVICE, REPLACE FLUSH VALVE IN-KIND.

Greensand Filter Schedule

EQUIPMENT NO.	MODEL NO.	TYPE	INCOMING WATER IRON (PPM)	INCOMING WATER MANGANESE (PPM)	CONTINUOUS FLOW RATE (GPM)	PEAK FLOW RATE (GPM)	MINERAL QUANTITY (CUFT/ TANK)	BACKWASH FLOW RATE (GPM)	FILTER TANK SIZE (DIA x H)	CHLORINE TANK SIZE (DIA x H)	EST. CHLORINE SOLUTION INJ. (GPD)	CHLORINE FEED PUMP (GPD MAX)	POTASSIUM PERMANGANATE TANK SIZE (DIA x H)	EST. POTASSIUM PERMANGANATE SOLUTION INJ. (GPD)	POTASSIUM PERMANGANATE FEED PUMP (GPD MAX)	LOCATION
GSF-1	LWTF-21	MANGANESE GREENSAND	3.4	0.223	15	25	7	28	21 x 62	23 x 42.5	1.38	60	23 x 42.5	3.67	60	CORR G13-A
GSF-2	LWTF-21	MANGANESE GREENSAND	3.4	0.223	15	25	7	28	21 x 62	23 x 42.5	1.38	60	23 x 42.5	3.67	60	CORR G13-A

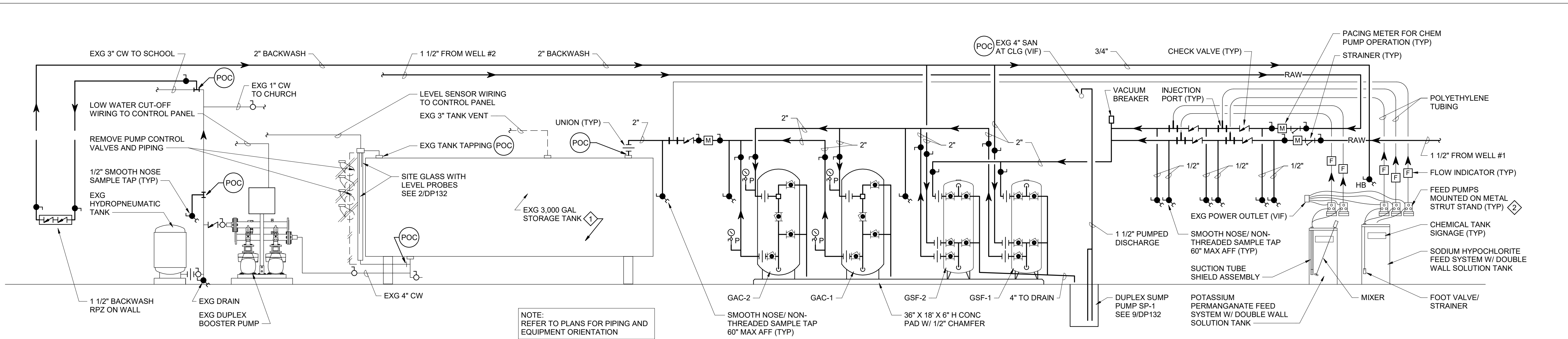
- NOTES:
- DESIGN BASIS - LAKESIDE WATER TREATMENT INC.
  - ELECTRICAL REQUIREMENTS : 24V, 110V, 60 HZ
  - OPERATING WATER TEMPERATURE RANGE 35-100 F

Granulated Activated Carbon (GAC) Filter Schedule

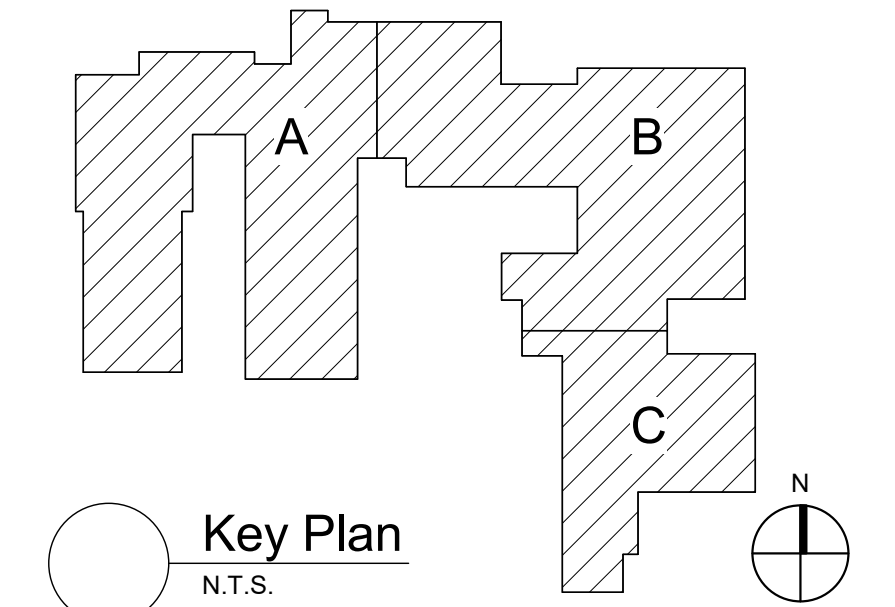
EQUIPMENT NO.	MODEL NO.	TANK HEIGHT (INCHES)	TANK DIAMETER (INCHES)	FILTER MATERIAL	CONTINUOUS FLOW RATE (GPM)	PEAK FLOW RATE (GPM)	MINERAL QUANTITY (CUFT/ TANK)	LOCATION
GAC-1	LWTF-AC-30	72	30	COL-L-1000	14	50	12	CORR G13-A
GAC-2	LWTF-AC-30	72	30	COL-L-1000	14	50	12	CORR G13-A

- NOTES:
- DESIGN BASIS - LAKESIDE WATER TREATMENT INC.
  - ELECTRICAL REQUIREMENTS : 24V, 110V, 60 HZ
  - OPERATING WATER TEMPERATURE RANGE 35-100 F

1 First Floor Key Plan  
1/16" = 1'-0"



2 Domestic Water System Schematic  
N.T.S.



S.E.D. Control No. 62-18-01-06-0-005-018

10/18/24 BID Addendum No 1  
Rev. No.: Date: Description:



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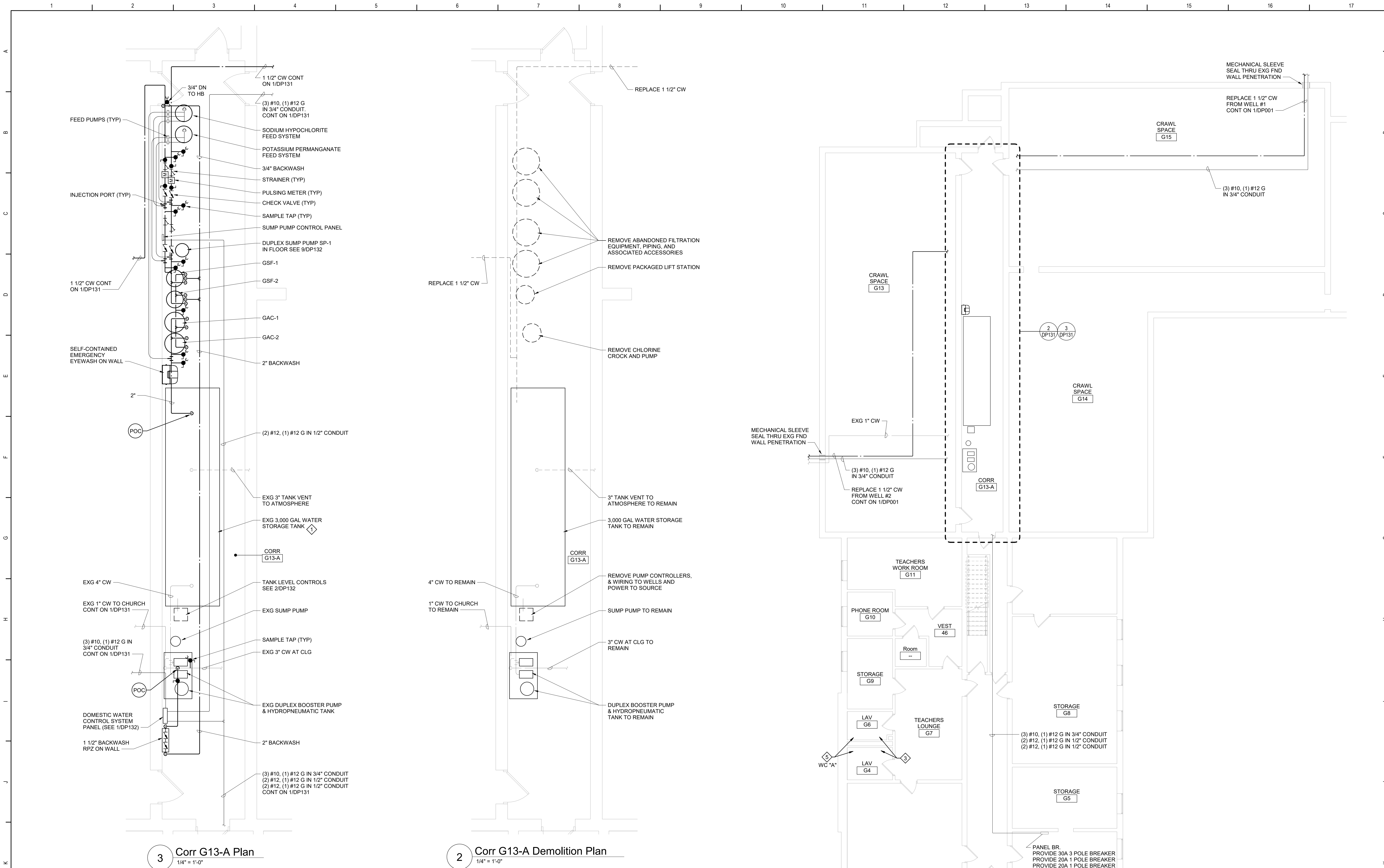


Wallkill Central School District  
Wallkill, New York

Reconstruction to:  
Plattekill Elementary School

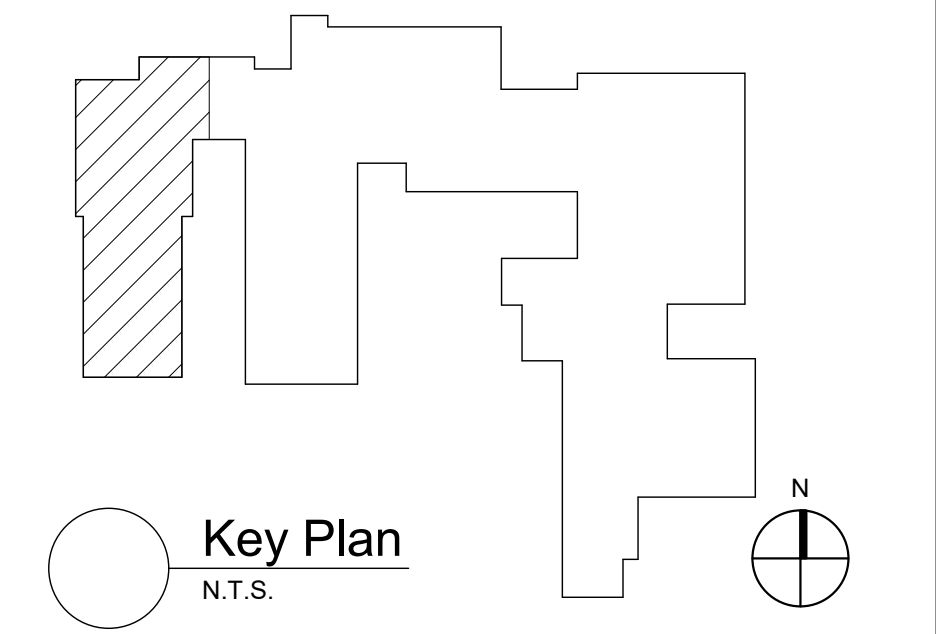
First Floor Key Plan, Detail and  
Schedules

Drawn By: BCL Date: 12/18/2023 Drawing Number:  
Project No.: 17597-22002B DP130

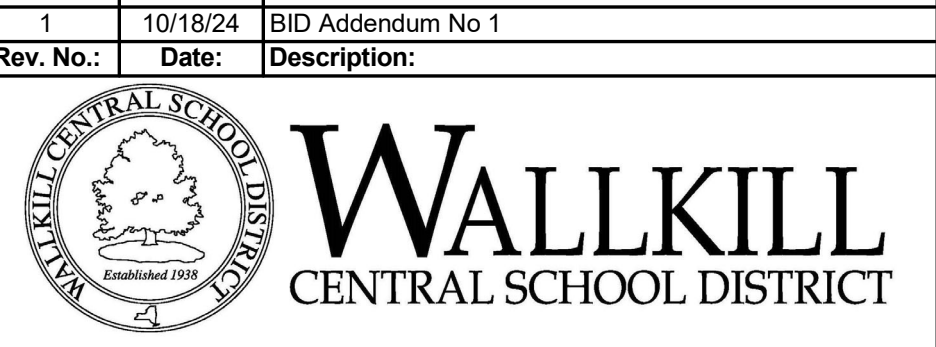


- Plan Notes**
- A. REFER TO DRAWING NO. DP001 FOR GENERAL NOTES.
  - B. REMOVE ABANDONED ACCESSIBLE PIPING TO MAIN BRANCHES, STACKS OR RISERS AS REQUIRED TO ELIMINATE EXPOSED PIPING AND DEAD END PIPING RUNS LONGER THAN 1'-0". COORDINATE CONCEALMENT OF PIPING WITH FINAL CONSTRUCTION OF WALLS, FLOORS AND CEILINGS.

- Plumbing Notes**
- 1. CLEAN INTERIOR OF EXISTING WATER STORAGE TANK. TANK TO BE CLEANED UTILIZING HIGH PRESSURE STEAM AND/OR BRUSHING. LEGALLY DISPOSE OF WATER, SLUDGE, MINERAL DEPOSITS, ETC REMOVED FROM TANK. DISINFECT TANK AND PIPE PER AWWA C652 UPON COMPLETION OF WORK.
  - 2. CALIBRATE FEED PUMP DOSAGE SO RESIDUAL CHLORINE LEVEL AT OUTLET OF STORAGE TANK DOES NOT EXCEED 4 PARTS PER MILLION, IN ACCORDANCE WITH NEW YORK CODE, RULES AND REGULATIONS SUBPART 5-1 PUBLIC WATER SYSTEMS.
  - 3. AFTER WELLS HAVE BEEN PUT BACK INTO SERVICE, REMOVE STRAINERS ON ALL EXISTING SINK AND LAVATORY FAUCETS WITHIN BUILDING. RUN WATER THROUGH OPEN FAUCETS TO CLEAR ANY DEBRIS AND SEDIMENT FROM THE SUPPLY PIPING UNTIL CLEAN WATER IS ATTAINED. CLEAN, INSPECT AND RE-INSTALL STRAINERS ON FAUCETS. VERIFY IN FIELD EXACT QUANTITIES AND LOCATIONS.
  - 4. AFTER WELLS HAVE BEEN PUT BACK INTO SERVICE, OPEN ANY EXISTING DRAIN VALVES, HOSE BIBBS, WALL HYDRANTS, ETC TO AID IN REMOVING ANY DEBRIS AND SEDIMENT FROM THE SUPPLY PIPING UNTIL CLEAN WATER IS ATTAINED. VERIFY IN FIELD EXACT QUANTITIES AND LOCATIONS.
  - 5. BY BASE BID: AFTER WELLS HAVE BEEN PUT BACK INTO SERVICE, DISASSEMBLE EXISTING FLUSH VALVE. RUN WATER THROUGH OPEN VALVE TO CLEAR ANY DEBRIS AND SEDIMENT FROM THE SUPPLY PIPING UNTIL CLEAN WATER IS ATTAINED. CLEAN AND INSPECT FLUSH VALVE ASSEMBLY BEFORE INSTALLING FLUSH VALVE REBUILD KIT. VERIFY IN FIELD EXISTING MAKE AND MODEL FOR EACH FLUSH VALVE PRIOR TO ORDERING REBUILD KITS. BY ALTERNATE: AFTER WELLS HAVE BEEN PUT BACK INTO SERVICE, REPLACE FLUSH VALVE IN-KIND.



S.E.D. Control No. 62-18-01-06-0-005-018



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**BID SET**



Wallkill Central School District  
Wallkill, New York

Reconstruction to:  
Plattekill Elementary School

Partial Basement Plan, Details and  
Schedule

Drawn By: BCL Date: 12/18/2023 Drawing Number:  
Project No.: 17597-22002B **DP131**

Domestic Well Pump Schedule													
DWG LABEL	LOCATION	DESIGN MAKE AND MODEL	CAPACITY	TOTAL HEAD	MAX CONT OPERATING TEMP	INLET / OUTLET SIZE	RPM	HORSE POWER	FULL LOAD AMPS	VOLTAGE	PHASE	HERTZ	NOTES
			GPM	FEET	°F	NPS							
WP-1	EXG WELL	GRUNDFOS 10 SQ15-330	13	275	104	1 1/2"	3450	2.5	7.5	208	3	60	1, 2
WP-2	EXG WELL	GRUNDFOS 10 SQ15-330	13	275	104	1 1/2"	3450	2.5	7.5	208	3	60	1, 2

NOTES:  
1. INSTALL PUMP ON 1 1/2" DROP PIPE AND ROUTE WIRING FROM WELL HEAD DOWN CASING TO PUMP. CONNECT WIRING AND DISCHARGE PIPE TO EXISTING SERVICES.  
2. FINAL WELL PUMP SELECTION WILL BE MADE AFTER WELL YIELD TESTS AND EXISTING WELL DEPTH INFORMATION HAVE BEEN SUBMITTED TO ENGINEER.

Sump Pump Schedule											
DWG LABEL	LOCATION	CAPACITY (EACH PUMP)	TOTAL DYNAMIC HEAD	MAX CONT OPERATING TEMP	DISCHARGE	PUMP SPEED	HORSE POWER	VOLTAGE	PHASE	HERTZ	NOTES
		GPM	FEET	°F	NPS	RPM					
SP-1	CORR G13-A	30	25	140	2	3000	1/2	120	1	60	1, 2, 3

NOTES:  
1. DESIGN MAKE: LIBERTY PUMPS OR APPROVED EQUAL.  
2. DUPLEX PUMPS WITH LEVEL CONTROLS.  
3. DATA PROVIDED IS FOR EACH OF THE TWO PUMPS. CONTROLLER TO ALTERNATE BETWEEN PUMPS.